VISIONPRO
System Manual

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VISIONPRO

The Digital PBX for Small Offices

System Manual

Documentation Disclaimer

Matrix ComSec reserves the right to make changes in the design or components of the product as engineering and manufacturing may warrant. Specifications are subject to change without notice.

This is a general documentation for all models of the product. The product may not support all the features and facilities described in the documentation.

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CHAPTER 1

Introduction

Welcome

Thank you for choosing Matrix VISIONPRO! We hope you will make optimum use of this intelligent, integrated SOHO PBX[1]. Please read this document carefully to get acquainted with the product before installing and operating it.

About this System Manual

This document provides detailed information and instructions for installing and operating VISIONPRO.

You may also refer to the *VISIONPRO Quick Start* for quick installation. For instructions on using the features of VISIONPRO refer to the *VISIONPRO User Card*.

To view or download the documents, scan the QR Code printed on the Product Label/Packaging Label.

You can also view or download the documentation from https://www.matrixtelesol.com/product-manuals.html

For product registration and warranty related details, please visit https://www.matrixcomsec.com/product-registration-form.html

This is a common documentation for all variants of VISIONPRO. This document is written with reference to the variant **VISIONPRO 308**, unless otherwise specified.

Intended Audience

This System Manual is aimed at:

- **System Engineers**, who will install, maintain and support the VISIONPRO. System Engineers are persons who customize the system configuration to meet the requirements of the organization/users. It is assumed that they are experienced in installing PBX, are familiar with telecom wiring technology, how it works, and the various technical terms and functions associated with it.

  No one, other than the System Engineer is permitted to make any alterations to the configuration of the VISIONPRO.

1. *'SOHO PBX' stands for 'Small Office Home Office Private Branch Exchange'.*

- **System Administrators**, who will administer the VISIONPRO. Generally an operator/receptionist in an organization, or the staff manning the reception or front desk area of the establishment are selected as System Administrators.

  It is assumed that the System Administrators have some previous experience in administering a PBX and its terminals. The System Administrators are not expected to install and configure the PBX, but only carry out the routine jobs and features that are specific to them like configuring only specific features which does not affect the performance of the whole system.

- **Users**, persons/organizations who will use the resources of the VISIONPRO. They may be personnel of small and home businesses, and other commercial and public organizations/institutions.

How to Read this System Manual

This document is organized in a manner to help you get familiar with VISIONPRO, understand the system installation, configuration and use of the features.

This System Manual is presented in a manner that will help you find the information you need easily and quickly.

Instructions

The instructions in this document are written in a step-by-step format. Each step, its outcome and indication/ notification, wherever they occur, have been described.

Commands/Feature Access Codes

These are strings of digits dialed from a station for specific purposes. For example,

- To call another Station, Department Group.
- To grab a Trunk line.
- To use or set/cancel Features like Call Forward, Toll Control.

Notices

The following symbols have been used for notices to draw your attention to important items.

Note: *to indicate something that requires your special attention or to remind you of something you might need to do when you are using the system.*

Caution: *to indicate an action or condition that is likely to result in malfunction or damage to the system or your property.*

Warning: *to indicate a hazard or an action that will cause damage to the system and or cause bodily harm to the user.*

Tip: *to indicate a helpful hint giving you an alternative way to operate the system or carry out a procedure, or use a feature more efficiently.*

Terminology used in this System Manual

The technical terms and Acronyms used in this System Manual are standard terms, commonly used in the telecommunications and data communications industry. Considering the broad group of intended users of this manual, wherever possible, use of jargon has been avoided.

Acronyms have been defined in the text and a list of the same is appended. Refer “Acronyms” for details.

Some of the terms specific to this Manual that you will encounter are defined below:

- **'VISIONPRO'**, **'System'**, **'PBX':** These words are used interchangeably and synonymously to refer all models of VISIONPRO.
- **Called party/Callee:** The person to whom a call is made.
- **Calling party/Caller:** The person who makes a call.
- **CO Network:** The public telephone exchange consisting of two-wire trunks, that is analog trunk lines from the POTS network.
- **CO Lines:** The lines subscribed from the CO Network. In this document it refers to Analog, two-wire Trunk Lines.
- **External Calls:** Calls made by station users of VISIONPRO to subscribers of PSTN, PLMN, ITSP, GSM etc.
- **External Numbers:** Numbers of parties/individuals outside the PBX network. These are unique number strings which are given to subscribers of PSTN, PLMN, ITSP, GSM etc.
- **CO Port/FXO Port:** Standard trunk port supported by VISIONPRO.
- **SLT Port/FXS Port:** Standard station port supported by VISIONPRO.
- **Internal Calls:** Calls made from and received by station users of VISIONPRO between themselves.
- **Internal numbers:** These are same as the station flexible numbers. Refer “Flexible Numbers” for more information.
- **Port:** These are the physical interfaces of the trunk and station lines.
- **Service Provider:** The providers of telecom network lines/Internet including POTS, PSTN, GSM, and Internet Telephony Service Providers (ITSP). However, in VISIONPRO this term basically denotes only PSTN telecom network provider as it supports only CO trunk ports.
- **Single Line Telephone (SLT):** Any standard two-wire telephones attached as stations of the VISIONPRO.
- **Station/Extension:** It is a standard telephone instrument - Single Line Telephone (SLT) connected to the system.
- **System Administrator Commands/SA Commands:** Number strings dialed from the System Administrator access/mode to operate features or set/cancel features for other stations.

- **System Commands/SE Commands/Programming Commands:** Number strings dialed from the System Engineer access/mode to configure the system features/functions.

Using this manual, you will be able to set up, operate and make optimum use of this feature packed digital PBX.

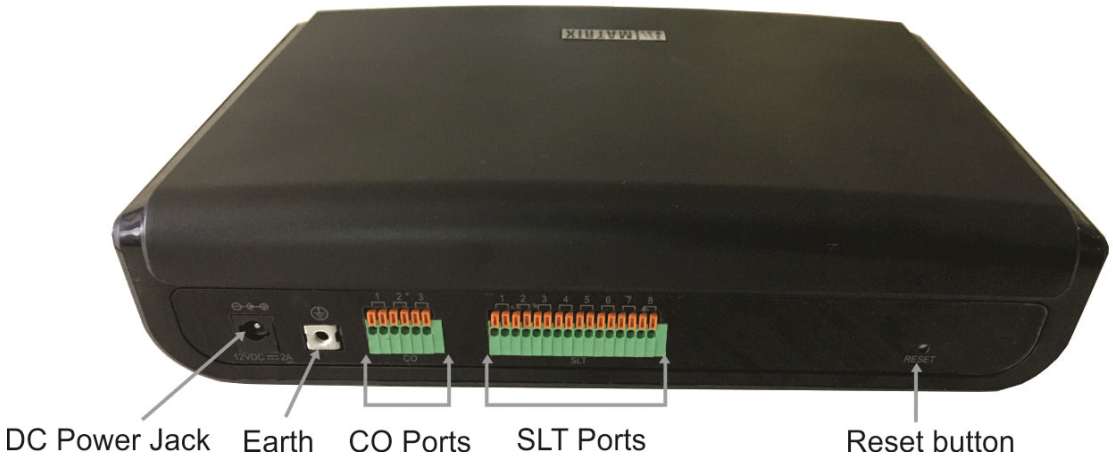
If you encounter any technical problems, please contact your dealer/reseller or the Matrix Customer Care.

CHAPTER 2

Know Your VISIONPRO

Overview

Matrix VISIONPRO is an integrated digital SOHO *(Small Office Home Office)* PBX which caters to the communication requirements of small businesses or nascent enterprises and specifically designed for small offices, banks, schools, departmental stores, hospitals and similar establishments. Loaded with value added features, it reduces communication cost and enhances the productivity of the organization. Unlike other PBX's in range, it is a digital PBX with built-in one port power fail transfer, DTMF and FSK CLI support and 100% non-blocking.



VISIONPRO series from Matrix offers the following variants,

- **VISIONPRO 206** with 2 CO Trunk Ports (FXO Ports) and 6 SLT Ports (FXS Ports).
- **VISIONPRO 308** with 3 CO Trunk Ports (FXO Ports) and 8 SLT Ports (FXS Ports).
- **VISIONPRO 412** with 4 CO Trunk Ports (FXO Ports) and 12 SLT Ports (FXS Ports).

VISIONPRO offers connectivity to analog CO networks. So, you can have access to same or different CO service providers on a single platform. The system's intelligent Least Cost Routing logic diverts your calls through the appropriate service provider's trunk, ensuring that least possible call cost is incurred.

VISIONPRO can be optimally used by small businesses, taking full advantage of its SOHO PBX grade features and facilities.

Features Supported

- Efficient Power Supply based on Switched Mode Power Supply Scheme.
- Supports On-site programming as well as Remote programming.

Supports basic features like,

- Alarms
- Auto Call Back
- Barge-in
- Internal Dialing
- Call Hold
- Call Forward
- Call Park
- Call Pick Up
- Call Toggle (Call Splitting)
- Call Transfer
- Class of Service (CoS)
- Distinctive Rings
- Executive-Secretary (Hotline)
- Flexible Numbers
- Hotline
- Hunting Schemes
- Interrupt Request
- Last Number Redial
- Music on Hold (MoH)
- On-site Programming
- Power Down Mode
- Programmable Feature Access
- Programmable access to Programming of System
- Pulse and DTMF dialing

It also supports advanced features like,

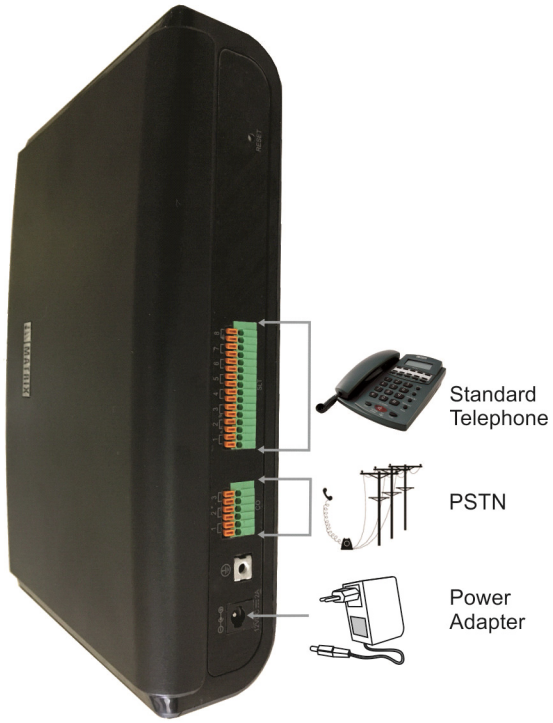
- Abbreviated Dialing
- Alternate Number Dialing
- Auto-Attendant
- Automatic Call Disconnection
- Auto Day/Night Mode
- Auto Redial
- Auto Shut Dynamic Lock
- Boss Ring
- Call Forward - Trunk
- Call Privacy
- CLIP (Caller Line Identification and Presentation)
- CLI based Call Forward - Trunk
- CLI based Routing
- Conference
- Dial by Name
- DID (Direct Inward Dialing)
- DOSA (Direct Outward System Access)
- Department Call
- Least Cost Routing (LCR)

- Live Call Supervision (LCS)
- Programmable Timers
- Programmable Trunk Access
- Raid
- Selective Trunk Access
- Toll Control
- Trunk Access Groups
- Voice Guidance
- Walk-in Class of Service

Refer "Appendix" for a complete list of software features, hardware and technical specifications.

Ports and Connectors

Port	Description
PowerPort	To connect the external power adapter of 12V@2A.
Earth	To connect the telecom earth to the system.
CO	To connect the CO trunk lines from PSTN.
SLT	To connect station SLT phones, FAX machines.
RESET	To reset the SE and the SA Password to their respective default values.



LEDs

LED	Color	Description
PWR	Green	To indicate system power ON/OFF condition.
STS	Green	To indicate the system status during various conditions.

For more details about Power ON and Reset Cycle of the system, refer “Starting Up VISIONPRO”.

CHAPTER 3

Installing VISIONPRO

Before You Start

Before you begin the installation of VISIONPRO, make sure that the required telecom wiring has been done.

The number of stations you require and their location will determine the type of cabling you require on your premises.

We recommend that you plan the wiring and the installation of VISIONPRO according to your current and expected future requirements; so it is recommended that you use a Main Distribution Frame (MDF) for terminating trunk and station cables.

Before you begin the installation and set up of the system, make sure you have the following:

- A suitable location to install the Main Distribution Frame (MDF)[2] and the VISIONPRO hardware. Using the MDF is optional; if you want you can connect the station and trunk lines directly to the system.
- Necessary telecom wiring in place, with wall jacks for station lines at the required locations.
- A dedicated Power supply outlet close to the system.
- Standard, good quality, twisted pair telephone cables with 0.5 mm conductor diameter.
- For the **SLT** (FXS) ports, arrange for as many standard analog telephone instruments as required to connect as SLT stations. You may select any standard telephone instruments like rotary phones or cordless phones. It is preferable to use SLTs having the CLI (Calling Line Identification) support.
- A fax machine, if required, to connect to the SLT (FXS) port.
- For the **CO** (FXO) ports, arrange for one or more active analog, two-wire trunk lines, as required.

Well begun is half done; plan your hardware installation well.

2. *The MDF connects outside telephone lines coming from the local exchange, on one side and the internal (PBX side) lines on the other. In simple form, the MDF is a special metallic frame designed and constructed with columns of receptacles to firmly hold the termination modules for the trunk and station cables. The cables or trunk lines to/from the Public Telephone Exchange terminate on the line side and cross connections (jumpers) run to the opposite (PBX) side of the MDF. From those terminals, a multi-core cable runs from a second set of terminals into the PBX.*

Selecting the Installation Site for VISIONPRO

VISIONPRO maybe be mounted on a table or wall. Refer to the mechanical dimensions of the model you have, when selecting the site for installation and deciding whether to mount the system on a table top, or on the wall, or on a rack.

Select an appropriate site to install the VISIONPRO taking into consideration the following recommendations and precautions:

- The site of installation should be well-ventilated, moisture and dust free, and not exposed to direct sunlight, heat, excessive cold or humidity.
- The site should be equidistant from all the stations to simplify cabling network and reduce cabling costs.
- The system should be installed at a height of at least 3.5 feet from the ground. Installation at this height makes preventive or corrective maintenance tasks easy.
- The system should be installed away from any source of electromagnetic noise such as any radio equipment, heavy transformers, faulty electric chokes of tube-lights, any device having faulty coil, etc.

Also refer, "Protecting VISIONPRO and Yourself".

Selecting Cables

- Select standard good quality telephone cables with 0.5 mm conductor diameter for the internal as well as over-head cabling.
- Use twisted pair wires to reduce interference.
- Use separate cable conduits for electrical and telephone cables.
- The length of the cables must not be too long. They must have minimum number of joints. This will help you detect cable faults easily.
- Maintain cable records so that cables and cross-connections on the MDF can be correctly identified and connected. The records should be in a clear, legible and editable format depending on future requirements.

Selecting Telephones

Select appropriate telephone instruments to be connected as station phones. You may connect any standard model of Single Line Telephones (SLTs) preferably with CLI support. You can also use your existing telephone instruments.

Providing Power Supply Source

- For the Power Supply source of VISIONPRO, refer "Technical Specifications".
- Arrange for a separate power point and switch, close to the system.

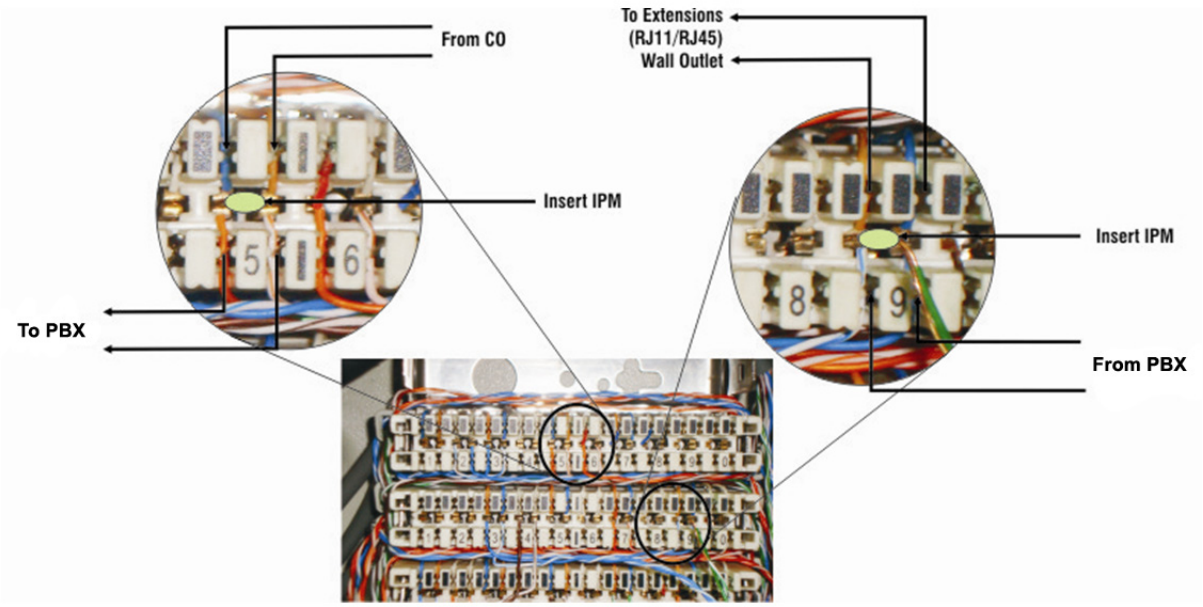
- Power supply for the system must be separate from other heavy electrical loads like air-conditioners, heaters, welding machines, electrical motors, etc.

Terminating Trunk and Station Cables on the MDF

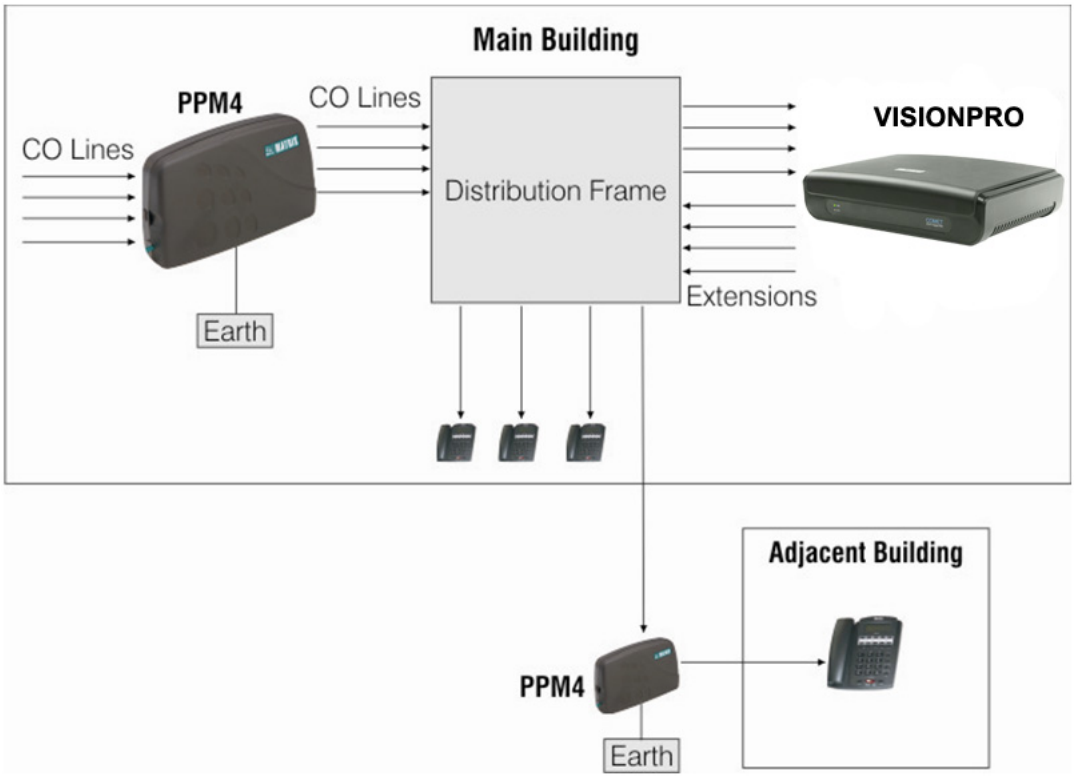
- Terminate the CO Trunk Line cables from the CO (public telephone exchange) into the 'Trunk Lines' side of the MDF using the punch tool for Krone modules.
- Terminate all the telephone (station) cables (connected to the wall sockets/outlets) into the 'Station Lines' side of the MDF using the punch tool for Krone modules.
- Label the trunk and station line cables for easy identification and keep a record of the trunk and station lines in an editable format.
- Install Primary Protection Modules (PPM) with Gas Discharge Tubes (GDT) and fuses on entry points for all trunk lines. This is to protect the system from heavy voltages from trunk lines and overhead stations.

  The product warranty does not cover damages resulting from lack of primary protection on trunk lines.
- It is recommended that you also install Primary Protection Modules (PPM) with GDT and fuses on all station lines, particularly off-premise stations.

  For this, you are recommended to use the Primary Protection Module (PPM4) supplied by Matrix.
- A typical connection between a PBX and the MDF is illustrated in the figure below.



You are recommended to use the “Primary Protection Module - PPM4” supplied by Matrix. A typical connection scenario including the PPM, the MDF and the system along with station and trunk cables is shown below.



Input Protection Modules (IPM)

Install IPM on the Krone Modules of the MDF. Input protection modules are for analog input channels to protect against over-voltages that may be applied between any two input connectors or between an input connector and the ground.

Primary Protection Module - PPM4

Matrix provides Primary Protection Modules (PPM) consisting of four PPM circuits. The PPM4 contains Gas Discharge Tubes and Fuses.

The Gas Discharge Tube is an over voltage protection device. It has three terminals. It is connected parallel to the CO Line or the overhead station cable. The third terminal is connected to a telecom earth. When the voltage between any of the two terminals exceeds the permissible limit (general 150V), the gas in the device begins to conduct and the terminals with the earth terminal. Heavy voltage passes to the earth instead of entering the system, thereby protecting the system.

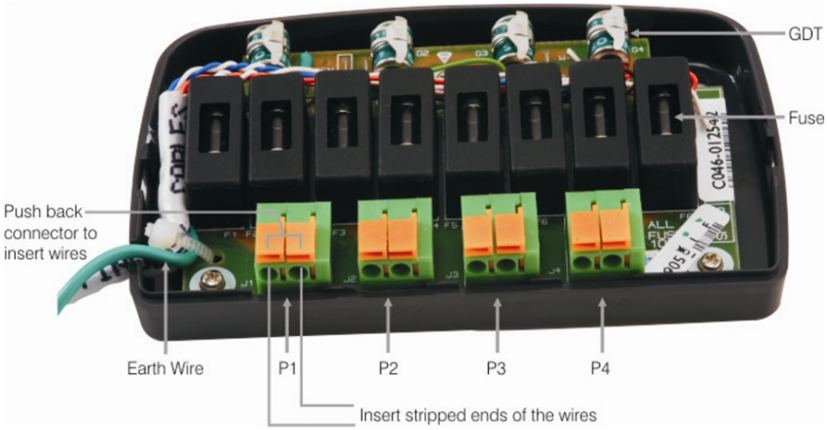
The Fuses in the PPM4 are an over current protection device. Whenever the current builds up beyond the permissible limit, (generally 100mA), the fuse opens to protect the circuit ahead.

PPM4 must be properly earthed to work well. It is recommended that PPM4 be connected to a separate telecom earth (ground).

Telecom earth is a dedicated earth (ground) only for the PBX. A dedicated earth greatly reduces the risk of back voltage.

Installing PPM4

Refer the block diagram above for the location of the PPM4.



1. Unpack the PPM and check the package contents.
2. Select an appropriate location for the PPM4. Refer the block diagram above when deciding where to place the PPM4. Also, take into consideration the length of the cables of the PPM4.
3. Use the Mounting Template supplied with the PPM4 to drill holes on the wall to fix the PPM in the selected location. Fix the screws supplied with the PPM4 into the drilled holes, with their heads protruding from the wall.
4. You may mount the PPM4 first and connect the cables or, you may connect the cables first and then mount the PPM4.
5. To connect cables, press the snap fits on both sides of the PPM4 to release the cover. Remove the cover.
6. Connect the Earth wire (green wire) to the Telecom Earth.
7. Now connect the CO Trunk wires from the CO side into the PPM4 port connectors marked as P1, P2, P3 and P4.
8. Now, terminate the wire pairs emerging from the PPM4 multi-pair cable into the 'Trunk Lines' side of the MDF using the punch tool for Krone Modules.
9. Replace the cover of the PPM4 by pressing back the snap fits on both sides.
10. Mount the PPM, if not done already.

Protecting VISIONPRO and Yourself

VISIONPRO is an electronic device. When you handle any electrical or electronic equipment, you are in a situation that could cause you bodily harm, besides damage to the product. When handling any electronic equipment, you must be aware of the safety hazards involved in electrical circuitry and the standard practices for accident prevention.

Take every safety precaution to reduce the risk of fire, electric shock and injury to persons. Read and understand the precautions, do's and don'ts of handling this product.

These instructions are not exhaustive. So, take all the necessary precautions for handling electronic and electrical appliances. Your safety and that of the others lies in your hands.

Location

- Do not place this product in locations that are close to a water source, on moveable or unstable surfaces, near high frequency generating devices, and areas where it may be exposed to dust, direct sunlight, heat, excessive cold or humidity, where shocks or vibration are frequent or strong.

- Do not leave cables exposed on the ground where they may be trampled upon, or get damaged by entangling with feet or pressure from other heavy objects.

Power Supply

- This product should be operated with proper supply voltage as mentioned in "Technical Specifications".

- Protect the system from heavy voltages from the mains.

- VISIONPRO has trunk and station interfaces. So there are chances of heavy voltages entering the system from trunk lines or from overhead stations due to:

    - Heavy voltage line falling on the CO line or on the overhead station cables. A dangerous surge can occur if a telephone line comes in contact with a power line.

    - Lightning/Thunderbolts.

    - Short-circuit of trunk lines or overhead station cables with electric cables.

- The power supply of VISIONPRO is designed on switch mode design and hence supports a wider range of operating voltage. However to protect the system from abrupt changes in the input voltage, use of CVT within range of 100VA or 150VA is recommended.

- Protect VISIONPRO from lightning and electrical surges by installing Primary Protection/Surge Protectors on the trunk and long-distance or off-premise station lines. The product warranty does not cover damages resulting from lack of primary protection on trunk lines. For details, refer "Primary Protection Module - PPM4".

Battery

VISIONPRO contains a 3VDC/15mAh (Li-Al) alloy Manganese Dioxide coin battery (ML 1220 - Rechargeable) of diameter 12.5mm and height 2.0mm. The battery should be replaced only by authorized dealers of Matrix. End users must not attempt to replace it.

There lies the risk of explosion if the battery is replaced in an incorrect manner. Please dispose off used batteries properly without violating the regulations in your country/region.

Telecom Earth (Ground)

To protect the system from extremely high voltage currents resulting from lightning strikes, you must install a lightning protector on an outside (CO) line.

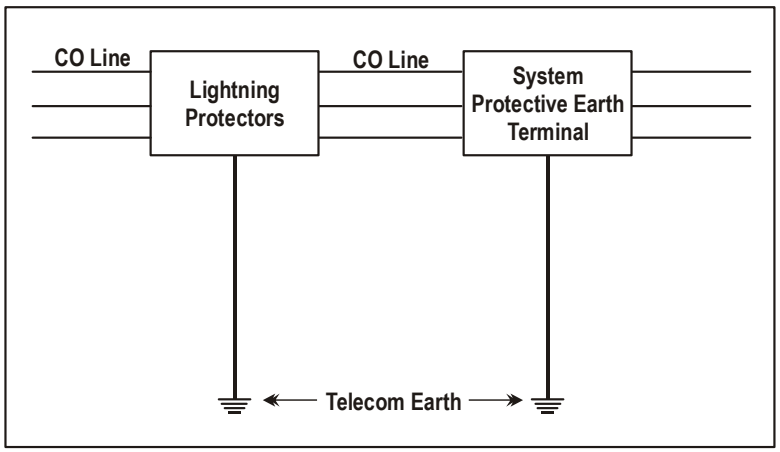
Telecom Earth (Ground) is the most important safety procedure to prevent electrical shocks and fires. It protects the system from lightning strikes, electrical transients, static discharges, electromagnetic interference and surges of telephone lines.

A dedicated terminal for earthing is provided in the port side panel of the system to which the telecom earth should be connected.

Telecom earth is a dedicated earth only for the PBX. The advantage of having a dedicated earth is that there is no risk of back voltage. There are chances that if the earthing is not perfect, instead of providing protection to the system, it may damage the system.

Make sure your electrical earthing is proper and separate from the telecom earth used for the system.

Protecting the system from high current surges is achieved by installing primary protection device. A lightning protector is a primary protection device which is used to prevent a dangerous surge from entering the building and damaging the system. For equipment installed in a more exposed environment, it is necessary to protect the system with primary protectors such as PPMs. With the development of electronic equipment, problems due to lighting surges have increased. A dangerous surge can occur if a telephone line comes in contact with a power line. A lightning protector should be installed on an outside (CO) line to prevent a dangerous surge from entering the building and damaging the system. The best place for the insertion of the primary protection is the cable entry point of the building, shelter or equipment housing.



This is not always possible but every attempt should be made to place the primary protection as close as possible to the entry point of the cables into the building, shelter or equipment housing. Hence, the system should be installed with lighting protectors. In addition, grounding (connection to earth ground) is very important to protect the system.

Refer "How to Make the Telecom Earth" for detailed information.

Protecting the System from Static charges

While installing the system or servicing the system, care must be taken to provide a path to the static charges. It is strongly recommended that the system engineer should touch a grounded object before touching the system before installation or maintenance tasks.

Shock and Fire Hazard

- Always wear a properly earthed, electrostatic discharge preventive wrist strap/belt while handling the system and its components to prevent damage to the system and harm towards yourself.
- Do not open the system in power ON condition, to avoid shock hazards.
- The ventilation openings on the sides of the product's enclosure must not be blocked or covered to prevent overheating.
- Never insert or push objects of any kind into the product through the openings as they may touch dangerous voltage points or short-out parts which may result in fire or electric shock.
- Do not overload wall outlets and station cords as this can result in the risk of fire or electric shock.
- Do not overload wall outlets and station cords as this can result in the risk of fire or electric shock.
- Avoid using a telephone (other than a cordless type) during a storm, to prevent electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak so as to prevent the risk of fire.

External Devices

- When you connect external devices like telephone instruments, cables, connectors, etc., ensure that they are of standard make and of good quality, so that the functioning of the system is not affected.
- Matrix does not guarantee the performance of external devices that are not supplied by it.

Cleaning and Maintenance

- Switch off power supply, and only then unplug the product from the power outlet before cleaning.
- Do not use liquid cleaners or aerosol cleaners.
- Use a dry cloth for cleaning.

Service and Repair

- Do not disassemble the product on your own. Incorrect reassembly may cause electric shock when the product is used. Take the product to a qualified technician when service or repair work is required.

- This product must be serviced by a qualified technician only. Call your dealer, if-

    - the power supply cord or plug is damaged or frayed.
    - liquid has been spilled into the product.
    - the product has been exposed to rain or water.
    - the product has been dropped or the cabinet has been damaged.
    - the product exhibits a distinct change in performance.

Disposal

- This product must be disposed according to the national laws and regulations prevailing in the country where it is installed.

Getting Started

Unpack VISIONPRO and verify your package contents. In case any of the items is missing or damaged, contact your Dealer/Distributor.

Packing List

The ideal sales package for VISIONPRO should contain the following items:

Sr. No.	Item Name	Quantity
1	VISIONPRO Unit	1
2	12V Power Adapter	1
3	Wall Mounting Template	1
4	Screw Grips	2
5	M7/30 Screws	2

You can view or download the documentation of the product by scanning the QR code printed on the Product Label/Packaging Label.

Connecting CO Trunks

The CO (FXO) ports of VISIONPRO provides the interface to connect the VISIONPRO to the CO network. The CO interface supports different standards and features of networks across the world.

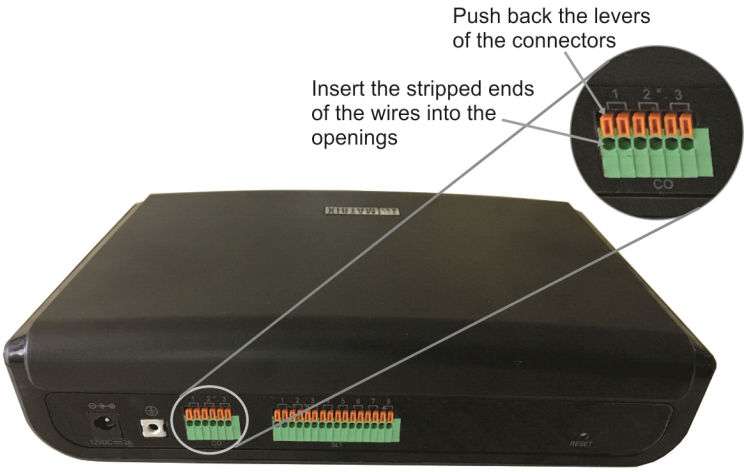
The number of CO ports supported by the configurations of VISIONPRO are:

- **VISIONPRO 206:** 2 CO Ports
- **VISIONPRO 308:** 3 CO Ports
- **VISIONPRO 412:** 4 CO Ports

Use standard, good quality, twisted-wire pair telephone cables to connect the CO ports of VISIONPRO (having 2.54 mm Push type connectors) to the Trunk Lines from your exchange.

Connecting Trunk Lines to the CO Ports

Use 0.5mm, non-stranded cables to connect the Trunk Lines to the CO ports.



To connect the Trunk Lines to the CO ports,

- strip off about half a centimeter of the insulation off the wire ends of the sensor device.
- using a blunt pin or a small flat screw driver, push back the (orange-color) levers of the connector.
- insert the stripped ends of the two wires into the two (green-color) openings of the connector, with one wire in each opening.
- ensure that both wires fit neatly into the opening.
- release pressure on the levers. Both wires will be held in place by spring clamp action.

To remove the wires,

- push back the levers.
- pull out the wires gently.
- release pressure on the levers.

Connecting Single Line Telephones (SLTs)

The SLT (FXS) ports provide the interface to connect the Single Line Telephone (SLT) instruments as station phones. Any standard, two-wire, analog single line telephone instrument like Rotary or Pulse-Tone or Cordless or Feature phones with or without Calling Line Identification (CLI) support.

A fax machine can also be connected to the SLT port.

The number of SLT ports supported by the configurations of VISIONPRO are:

- **VISIONPRO 206:** 6 SLT ports
- **VISIONPRO 308:** 8 SLT ports
- **VISIONPRO 412:** 12 SLT ports

When connecting Single Line Telephones as stations to your VISIONPRO,

1. Decide the number of SLT instruments required and arrange them.

   You may also connect Fax machines, if required.

Use SLTs equipped with a 'Flash' key, as several of the features and facilities of the VISIONPRO require you to press Flash. If any of the SLTs you have selected does not have a Flash key, tap the Hook switch of the phone. It is equivalent to dialing the Flash key and has the same effect.

2. Use standard twisted wire pair the cables of good quality to connect the analog single line telephone instruments to the SLT ports (having 2.54 mm Push type connectors) of VISIONPRO. For more information, refer the steps as mentioned in “Connecting Trunk Lines to the CO Ports”.

3. Place the SLTs, fax machines at the desired location.

4. Terminate the cables from the SLT ports of VISIONPRO on the wall jacks.

5. Connect the SLTs, Fax machine to the wall jacks.

Starting Up VISIONPRO

Power ON

- Check the mains voltage at the power plug from where the power supply is to be fed to the system. It should be as per the specifications mentioned in "Technical Specifications".
- Make sure system's earthing is proper.
- Plug in the Power Adapter of VISIONPRO into the power outlet. Ensure proper contacts. Switch ON the system. Observe the reset cycle on the front panel of the system.

Reset Cycle

- As soon as you power ON the system, the PWR (Power) LED on the front panel starts glowing. The STS (Status) LED starts glowing approximately 5 seconds after power ON. Thereafter, the STS LED blinks in a cadence of 1s ON and 1s OFF.
- The system also feeds Dial Tone to the stations.
- Check for Dial Tone on the telephone instruments connected to the system.

VISIONPRO supports the Power Down Mode which helps you placing external outgoing calls even during power fail conditions. Refer "Power Down Mode" for further details.

LED Indication

LED	Status	Meaning	Cadence
PWR (Power)	ON	System Powered ON	Continuous
	OFF	System Powered OFF	
STS (System Status)	Slow Blinking	Health is Normal	1s ON and 1s OFF
	Fast Blinking	AC Impedance test is running	500ms ON and 500ms OFF
	Continuous ON/ Continuous OFF	System fault	

Testing the Installation

In the Power ON mode the system is ready for use with predefined values of variables like station flexible numbers, timers and other programmable parameters. It is required to check the functioning of the system by testing all the stations and the trunks. It can be done by making internal calls to other stations and by making trunk calls.

Test all stations for Dial Tone, Ring Back Tone (RBT), speech and ring one by one.

Test functioning of the trunks by dialing external numbers from one of the stations and checking the trunk tones and speech. Ring on the trunk can be tested by dialing the trunk number from any external device like your mobile phone.

Making an Internal Call

- Lift the handset.
- Dial the desired station's flexible number. For the list of default flexible numbers, see "Configuration Modes".
- The called station rings. You get the Ring Back Tone.
- Speech is established when the called station answers.

Stations having access to internal call will only be able to make internal calls. By default, all stations can make internal calls.

Making an External Call

- Lift the handset.
- Dial a Trunk Access Code (TAC). Default TACs are 0, 5, 61, 62, 63, 64.
- Dial the external number.

Stations having access to trunk and higher Toll Control will only be able to make external calls. For details, refer "Class of Service (CoS)" and "Toll Control".

Answering Calls

When a call is placed on your station from an internal caller, then your phone rings as - Trin..... Trin..... This is called single ring.

If the caller is an external caller, and the trunk call lands on your station, then your phone rings as - Trin....Trin.....Trin.....Trin..... This is called double ring.

Internal and external calls can be differentiated by the type of rings played.

For details, refer "Distinctive Rings".

Programming the System

Many a times it happens that the default settings do not meet our requirements and there is the requirement to configure the system as per customer/user preferences. Programming is possible from the System Engineer (SE) or the System Administrator (SA) mode. To begin programming the system, refer "Configuring VISIONPRO".

CHAPTER 4

Configuring VISIONPRO

Configuration Modes

VISIONPRO is a flexible system and can be programmed to suit your needs. Programming can be done at three levels: System Engineer (SE), System Administrator (SA) and User Level. A distinct set of features and facilities can be configured at each of these levels.

It is possible to configure the VISIONPRO from any location using a phone. You can use a phone connected to the SLT port of the VISIONPRO to configure the system ***On-site*** *(where it is installed). You can also configure the system using a phone* ***Off-site****, that is from a Remote location. You can access both the System Engineer mode as well as the System Administrator mode from the remote location. To know more, see "Remote Configuration".*

Each VISIONPRO variant has fixed number of station and trunk ports. Each station port has a software port and a flexible number associated to it which are used for unique identification. Similarly, each trunk port has a software port associated to it.

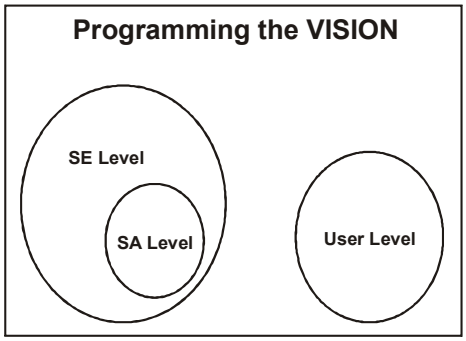
For Station ports refer to the table below:

Flexible Number (Default)	Software Port Number
21	00
22	01
23	02
24	03
25	04
26	05
27	06
28	07

Software Port Number for Trunk ports are 0, 1 and 2.

- *Programming from SE or SA mode is based on the software port. On the other hand, programming from the User level (like Personal Memory, Dynamic Lock etc.) is based on flexible numbers.*
- *You can change the default flexible numbers assigned to station software ports at any point of time. See "Flexible Numbers" for instructions.*

How these three configuration modes are related to each other, has been shown in the figure below.



System Engineer (SE) Mode

At the System Engineer level, the entire system configuration, all programmable features and facilities of the VISIONPRO can be changed as per the end user requirements. All the programming commands are allowed from SE mode.

Only the System Engineer, the person who installs, configures and maintains the PBX must be allowed access to this mode.

Access to the SE mode is protected by means of a password, referred throughout this document as the SE Password. SE Password is a 4-digit secret code used to avoid unauthorized access to SE mode. By default, SE Password is ***1234***.

If you forget the SE Password, you can restore it to its default value. Refer "System Security (SE and SA Passwords)" for instructions.

Entering the SE mode using a Telephone

- *You can enter the SE mode only from the stations which have 'SE Programming Access' allowed in their "Class of Service (CoS)". By default, station 21 is given access to the programming mode.*
- *Only one person can enter the SE mode at a time.*

To enter the SE mode from a station of VISIONPRO,

- Dial ***1#91-SE Password***.
- You get Programming Tone to indicate entry into the SE mode.
- Now, dial the desired SE command to configure. For the list of commands, refer "Programming Commands".
- You get the Confirmation Tone.

To exit the SE mode,

- Dial ***00***.
- You will hear the Dial Tone of the VISIONPRO.

If the SE Password you entered is incorrect, you will get the Error Tone.

System Administrator (SA) Mode

At the System Administrator level, only a limited set of features can be changed. It is a subset of the SE mode and hence supports only a few programming commands.

The System Administrator may be the operator or the receptionist, or any one responsible for the operation and maintenance of the system.

The access to SA mode may be protected by means of a password, referred to as the SA Password in this document. SA Password is a 4-digit secret code used to avoid unauthorized access to SA mode. By default, SA Password is ***1111***.

If you forget the SA Password, you can restore it to its default value. For more details, refer "System Security (SE and SA Passwords)".

Entering the SA Mode using a Telephone

- *You can enter SA mode only from stations which have 'SA Programming Access' enabled in their "Class of Service (CoS)".*
- *Only one person can enter the SA mode at a time.*

To enter SA mode from a station phone,

- Dial ***1#92-SA Password***.
- You get the Confirmation Tone to indicate successful entry into the SA mode.
- Dial SA command strings.
- You get the Confirmation Tone.

To exit the SA mode,

- Dial ***00***.
- You will hear the Dial Tone of the VISIONPRO.

Following programming commands are allowed from the SA mode:

- Day to Night and Night to Day switching command (if programmed in Manual mode).
- Global Abbreviated Dialing command.

- *Programming is accomplished by dialing separate codes (string of digits) for different settings. This eliminates need for entering long and confusing programming sequences. Programming commands are broken into two parts: Codes and Values.*

- *The system accepts and executes the command immediately, but it takes approximately 2 minutes to save a command. So, it is advisable that you do not turn OFF the system for 2 to 3 minutes after entering the last command.*

- *The system continues to function normally even during programming. This allows the SE or SA to change the settings without disturbing any communication.*

User Mode

The User mode allows any station user to set/cancel desired features by dialing specific commands from their stations. Station users do not need to log into the SE/SA mode to access those features.

However, a User Password is provided to all station users which is a 4-digit code and used to protect PBX stations from unauthorized access to specific features[3]. The default User Password is ***1111***. It can be changed by the station users from their respective stations to any desired value, not exceeding 4 digits.

If station users forget their User Password, it can be cleared and restored to the default value *1111* by the System Engineer (SE). Refer "User Password" for more details.

3. *For the list of features refer, "User Password".*

Configuring using the Phone Wizard

VISIONPRO supports a special mode to quickly configure some of the basic features which can render the system in an optimum working and usable condition without much rigorous programming. This mode of programming is referred as the Phone Wizard.

Phone Wizard allows programming of certain basic features only. For detailed programming of all the features, refer the respective feature description.

How it works

Like normal programming, you must enter the programming mode to start configuring the system. SE Programming Access must be allowed in the "Class of Service (CoS)" of the station from which Phone Wizard configuration is to be done.

- *Phone Wizard programming mode can be entered from station 21 irrespective of the CoS assigned to it.*
- *In general, wizard commands can be of 2 or 3 digits long. At any time you can exit the wizard by dialing **"0"**.*

How to configure

- To enter the Phone Wizard programming mode, dial,
  1#98-SE Password.
  Where,
  Default SE Password is **1234**.

The Phone Wizard consists of commands to configure the following parameters,

- "System Parameters"
- "Station Parameters"
- "Trunk Parameters"

System Parameters

Following System Parameters can be configured using the wizard,

- Set Current Date
- Set Current Time
- Set New SE Password
- Set New SA Password

Set Current Date

- Dial **27-Date-Month-Year-Day**
  Where,
  Date is from 01 to 31
  Month is from 01 to12

Year is from 00 to 99 (here, base year is '2000'. Enter '07' for year '2007')
Day is from 1 to 7 where, 1 = Sunday.

For more details, refer "Real Time Clock (RTC)".

Set Current Time

- Dial **28-Hour-Minute**
  Where,
  Hour is from 00 to 23.
  Minute is from 00 to 59.

Time has three parameters: Hour, Minute and Second. However, the above command has only two parameters. The third parameter, Seconds will be set as '00' whenever new time is programmed. For more details, refer "Real Time Clock (RTC)".

Set New SE Password

- Dial **291-New SE Password**
  Where,
  SE Password is a 4 digit number string. Valid digits are from 0-9.

For more details, refer "System Security (SE and SA Passwords)".

Set New SA Password

- Dial **292-New SA Password**
  Where,
  SA Password is a 4 digit number string. Valid digits are from 0-9.

For more details, refer "System Security (SE and SA Passwords)".

Station Parameters

Following Station Parameters can be configured using the wizard,

- Class Of Service
- Toll Control
- Clear All the Features
- Flash Timer for station
- Flexible Number
- Operator Station

Class of Service (CoS)

- To assign CoS to individual stations, dial,
  31-Ext-Day CoS Group-Night CoS Group

- To assign CoS to all stations, dial,
  31-*-Day CoS Group-Night CoS Group
  Where,
  Ext is the flexible number of the station. Flexible number can be of 1,2,3 or 4 digits.
  Day CoS group is from 0 to 7
  Night CoS Group is from 0 to 7

For more details, refer chapter "Class of Service (CoS)".

Example:
Assign CoS group '4' for Day time and '6' for Night time to station '23'.

Solution. Dial, ***31-23-4-6***

Toll Control

- To assign Toll Control to individual stations, dial,
  32-Ext-Day AL/DL List-Night AL/DL List

- To assign Toll Control to all stations, dial,
  32-*-Day AL/DL List-Night AL/DL List
  Where,
  Ext is the flexible number of the station. Flexible number can be of 1,2,3 or 4 digits.
  Allowed List (AL) is from 0 to 7.
  Denied List (DL) is from 0 to 7.

For details, refer "Toll Control".

Example:
Program AL/DL List number 3 for Day time and 4 for Night time for station '25'.

Solution. Dial, ***32-25-3-4***

Clear All the Features

- To clear all features for a station, dial,
  343-Ext[4]
  Where,
  Ext is the flexible number of a station. Flexible number can be of 1,2,3 or 4 digits.

For more details, refer "Cancel All Station Features".

Flash Timer for station

- To assign Flash Timer to individual stations, dial,
  36-Ext-Flash Timer Count

---

4. This is same as dialing the command '100' from a station to cancel all its features (see "Cancel All Station Features"). But '100' can be dialed by any user from a station phone whereas command '343' can be dialed by SE only.

- To assign Flash Timer to all stations, dial,
  36-*-Flash Timer Count
  Where,
  Ext is the flexible number of a station. Flexible number can be of 1,2,3 or 4 digits.
  Flash Timer Count is from 1 to 9 where Count 1 implies to 70-100 ms.

Flash Timer Count	Flash Timer value in ms
1	70-100
2	101-200
3	101-300
4	101-400
5	101-500
6	101-600
7	101-700
8	101-800
9	101-900

  For example, to set Flash timer value as 101-600 ms, dial Flash Timer Count as 6.

For more details, refer "Station Parameters".

Example:
Program Flash timer of 101- 800 ms for station 25.

Solution. Dial ***36-25-8***

Flexible Number

- To assign Flexible Number to individual stations, dial,
  37-Software Port No-Flexible Number-#*

- To load the default Flexible Numbers, dial,
  37-*-0
  Where,
  Software Port No is from 00 to 07.
  Flexible Number can be any 1,2,3 or 4 digit number strings. Terminate the command using '**#***' if the flexible number consists of less than four digits. Two stations can not have the same flexible number.

For more details, refer "Flexible Numbers".

Example:
Assign flexible number 401 to the software port number 00.

Solution. Dial ***37-00-401-#****

Operator Station

- To assign a particular station as the operator, dial,
  391-Ext

Where,
Ext is the flexible number of a station. Flexible number can be a 1, 2, 3 or 4 digit number string.

For details, refer "Configuring Operator".

Example:
Program station 25 as the Operator station.

Solution. Dial ***391-25***.

Trunk Parameters

Following Trunk Parameters can be configured using the wizard,

- Trunk Enable/Disable and Dial Type
- DID
- DOSA
- Trunk Landing Destination For Day Mode
- Trunk Landing Destination For Night Mode
- Hunt Timer
- Hunting Scheme

Trunk Enable/Disable and Dial Type

- To enable/disable a trunk and assign a dial type, dial,
  41-Trunk-Enable/Disable Flag-Dial Type Flag

- To enable/disable trunks and assign the dial type for all trunks at once,
  41-*-Enable/Disable Flag-Dial Type Flag
  Where,
  Trunk is from 0 to 2.
  Enable/Disable flag codes are,

Code	Meaning
0	Disable
1	Enable

Dial type can be either Pulse or Tone where corresponding flag codes are,

Code	Meaning
0	Pulse
1	Tone

For further details, refer "Trunk Parameters".

Example:
Enable Trunk2 and configure Dial type as 'Pulse'.

Solution. Dial ***41-2-1-0***

DID

- To configure a trunk for DID calls, dial,
  43-Trunk-Day Code-Night Code
  Where,
  Trunk is from 0 to 2
  Day Code/Night Code flags are,

Code	Meaning
0	Disable
1	Enable

For details, refer "Direct Inward Dialing (DID)".

Example:
Program Trunk2 so that DID facility is disabled in Day time while it is enabled in Night time.

Solution. Dial ***43-2-0-1***

DOSA

- To configure a trunk for DOSA calls, dial,
  45-Trunk-Day Code-Night Code
  Where,
  Trunk is from 0 to 2.
  Day Code/Night Code flags are,

Code	Meaning
0	Disable
1	Enable

For details, refer "Direct Outward System Access (DOSA)".

Example:
Program Trunk2 for not allowing DOSA facility in Day time and allowing only during Night time.

Solution. Dial ***45-2-0-1***

Trunk Landing Destination for Day Mode

- To assign the Trunk Landing Destination for Day Mode for a trunk, dial,
  47-Trunk-Ext1-Ext2-Ext3-Ext4

- To assign the Trunk Landing Destination for Day Mode for all trunks at once, dial,
  47-*-Ext1-Ext2-Ext3-Ext4
  Where,
  Trunk is from 0 to 2.
  Ext1 to Ext4 are the flexible numbers of destination stations. Flexible number can be of 1,2,3 or 4 digits.
  Maximum four destinations can be programmed for a single trunk.

For details, refer "Station Groups" and "Trunk Landing Groups (TLGs)".

Example:
Assign station numbers 21, 22 and 23 as the Trunk Landing Destinations for Trunk1 for Day time.

Solution. Dial ***47-1- 21-22-23***

Trunk Landing Destination for Night Mode

- To assign the Trunk Landing Destination for Night Mode for a trunk, dial,
  48-Trunk-Ext1-Ext2-Ext3-Ext4

- To assign the Trunk Landing Destination for Night Mode for all trunks at once, dial,
  48-*-Ext1-Ext2-Ext3-Ext4
  Where,
  Trunk is from 0 to 2.
  Ext1 to Ext4 are the flexible numbers of destination stations. Flexible number can be of 1,2,3 or 4 digits.
  Maximum four destinations can be programmed for a single trunk.

For details, refer "Station Groups" and "Trunk Landing Groups (TLGs)".

Example:
Assign station numbers 24, 25 as the Trunk Landing Destinations for Trunk1 for Night time.

Solution. Dial, ***48-1-24-25***

Hunt Timer

- To configure the Hunt Timer, dial,
  212-Timer
  Where,
  Timer is from 01-99 seconds.

- *For details, refer "Station Groups".*

- *Hunt Timer is defined as the time for which a station rings when a trunk call lands on that station. It is similar to the 'Ring Timer'. On expiry of the Hunt Timer, the next station of the Station Group assigned to the trunk will start ringing.*

  For example, maximum four stations can be programmed for a single trunk. Now if the CO office gives ring for 90 seconds and the Hunt Timer programmed is 18 seconds; then all four stations will ring for 18 seconds each alternately. Refer "Hunting Scheme" below for more details. Default Hunt Timer is 18 seconds.

Example:

Program the Hunt Timer as 20 seconds.

Solution. Dial ***212-20***

Hunting Scheme

- To configure the Day and Night Hunting scheme for a trunk, dial,
  46-Trunk-Day Hunting Scheme-Night Hunting Scheme

- To configure the Day and Night Hunting scheme for all trunks at once, dial,
  46-*-Day Hunting Scheme-Night Hunting Scheme
  Where,
  Trunk is from 0 to 2.
  Hunting Scheme is from 0 to 3. Select the scheme as per the table below.

Hunting Scheme[a]	Meaning
0	Hunting Off
1	Round Robin
2	Delayed Simultaneous
3	Immediate Simultaneous

a.To select the desired Hunting Scheme, refer the following descriptions.

Different hunting schemes are explained below,

- **Hunting Off:** In this case, the call lands on the programmed station and only that station would ring.

- **Round Robin:** In this case, the call lands on the programmed station and rings there till the Hunt Timer expires; if not answered, then it goes to the next programmed station and again rings there till the Hunt Timer expires and goes on in this manner.

- **Delayed Simultaneous:** In this case, the call lands on the programmed station and it rings till the Hunt Timer expires. Thereafter, all the stations start ringing simultaneously. The call can be answered from any of the ringing stations.

- **Immediate Simultaneous:** In this case, the call lands on the programmed stations and all the stations start ringing simultaneously. Any station can answer the call.

Example:
Program the system so that the call on Trunk1 lands in round robin fashion on programmed stations during Day time and lands simultaneously on these stations during Night time.

Solution. Dial, ***46-1-1-3***

For more details, refer "Station Groups" and "Trunk Landing Groups (TLGs)".

- To exit the wizard mode, dial "**0**". You can exit this mode at any time by dialing this command.

Remote Configuration

VISIONPRO can be configured from any remote location. A remote user, preferably the system engineer, if not present at the location where the system is installed, will be able to configure the system using the same commands as used from a local station of the system. The remote user can login into the SA or SE programming mode and configure the system as per the requirement.

How to use

- From the remote location, make a call to the system.
- Ask the operator (or, any person answering your call) at the system end to put you on hold first by dialing ***Flash*** and then dial the commands ***1#91-SE Password*** or, ***1#92-SA Password***. When the operator dials 'Flash', you get the on-hold music.
- Operator dials any of the above commands.
- On successful dialing of the command, the operator gets the Confirmation Tone first followed by the Error Tone. Thereafter, the operator gets free and you enter the Remote Programming mode.
- You can now dial the desired programming command from the remote end and program the system.
- If the command dialed by you is valid and accepted by the system, you will get the Confirmation Tone.
- You can continue dialing other programming commands, if desired on getting the Programming Tone again.
- Once you finish programming, dial **'00'** to exit the programming mode. The system will place an external call on the trunk and route it as per the configured Trunk Landing Group (TLG). For more details, refer "Trunk Landing Groups (TLGs)".
- However, if you disconnect the call without dialing the logout command (that is, '00'), the system handles the situation as follows-
    - If Disconnect Supervision is set on the trunk and it receives valid Disconnect Supervision signal, the call is dropped and the system logs out immediately from the programming mode by releasing the trunk port.
    - If Disconnect Supervision is not set on the trunk and/or it does not receive any valid Disconnect Supervision signal, the call is dropped and the system logs out from the programming mode once the DOSA Inactivity Timer expires.
    - If no activity is detected by the system from your end (that is, from the external party) till the expiry of the DOSA Inactivity Timer, the system automatically disconnects the call and logs out from the programming mode.

CHAPTER 5

Configuring Stations

Station configuration takes into account the following parameters,

- “Station Parameters”
- “Station Groups”

Station Parameters

Station Parameters include configuration of the following,

- **CLIP Type:** VISIONPRO provides a facility to detect the calling number and present it to the station. This is known as Calling Line Identification and Presentation (CLIP). For this feature to work, the telephone instrument connected to the station port must support CLIP.

  VISIONPRO supports 3 signaling protocols to represent CLI on the port: DTMF, FSK-V.23, and FSK-BellCore. Select the appropriate signaling protocol.

  If you want to disable CLI on a port, select 'None'.

- **Flash Timer:** In Pulse Dialing, codes are dialed in pulses. A Flash key is generally used to dial this code. Flash is dialed to break the loop current for a certain duration that can range from 70ms to 900ms. Flash Timer defines this time period for which the loop current breaks.

  If this break time of station current loop is of optimum level, VISIONPRO senses it rightly as a flash. But, if the time is more, it can be wrongly interpreted as disconnection. On the other hand, if the flash timer is set to a higher value, a genuine disconnection will take longer time.

  You have to configure the station flash timer with a higher value than the flash timer used by the telephone connected to it.

- **Digit Padding:** Certain telephone instruments do not display the DTMF CLI information if the number of digit(s) received are less than a particular count. To take care of it, the length of the incoming number is adjusted by padding digits.

  Digit Padding works only when CLIP Type is selected as DTMF.

- **AC Impedance:** The SLIC used with each SLT port provides a facility to adjust the AC impedance of the SLT port with the communication equipment connected to it.

Generally, most telephone instruments that are connected have nominal characteristics with AC impedance of 600Ω. However, the VISIONPRO allows you to connect instruments with AC impedance other than 600Ω.

- **Transmit Gain and Receive Gain:** You can increase or decrease the level of Outgoing Speech (Transmit Gain) and Incoming Speech (Receive Gain) on the SLT port by changing the Tx Gain and Rx Gain respectively to the desired level. Different levels can be set for each port.

- **Answer Signaling:** An Answer Signal is a signal generated on the SLT port to indicate that the called party (remote party) has answered the call and the call has matured.

  Answer Signaling on the SLT port is particularly useful when there is a PCO machine or any Billing equipment connected to the SLT port. With Answer Signaling enabled on an SLT port, when an outgoing call is made from that SLT port to any other port, for example, CO port and the called party (remote party) answers, the Public Network provides an Answer Signal to the trunk port to indicate call maturity.

  This signal can be passed on to the SLT port to indicate the PCO machine/billing equipment in the form of Answer Signaling. On detecting Answer Signaling the PCO machine/billing equipment can start billing.

  Answer Signaling is generated in the form of Polarity Reversal or Battery Reversal, whereby the Battery polarity of the SLT port gets reversed. For example, if the battery polarity of the SLT port is +ve for TIP and -ve for RING in speech condition, then on call maturity, TIP becomes -ve and RING becomes +ve.

  To generate Answer Signaling on the SLT Port, select Polarity Reversal. Select ‘None’ if Answer Signaling is not required to be generated on the SLT port.

- **Disconnect Signaling:** A Disconnect Signal is the signal generated on the SLT port to indicate that the called party (remote party) has disconnected the call.

  Disconnect Signaling on the SLT port is useful when there is a PCO machine or any Billing equipment connected to the SLT port. With Disconnect Signaling enabled on an SLT port, when an outgoing call is made from that SLT port to any other port, say, CO port and the called party (remote party) disconnects (goes ON Hook), the Public Network provides a Disconnect Signal to trunk port to indicate call disconnection. This signal can be generated on the SLT port to indicate the PCO machine/Billing equipment connected to this port to consider the call as disconnected and stop billing. Thus, Disconnect Signaling on the SLT port helps prevent excessive billing.

  VISIONPRO supports two types of Disconnect Signals on the SLT Port:

  - **Polarity Reversal:** Call Disconnection is signaled in the form of Polarity Reversal. The Battery polarity of the SLT port will be reversed. For example, if the battery polarity of the SLT port is '+ve' for TIP and '-ve' for RING in speech condition then on disconnection, TIP will become '-ve' and RING, '+ve'. When call is disconnected, user will get Error tone.

  - **Open Loop:** Call Disconnection is signaled in the form of Open Loop Disconnect Pulse, whereby the Battery voltage on the SLT port is removed for the duration of the Open Loop Disconnect Timer programmed for that SLT port and will be restored on the expiry of this Timer. However, the Polarity of Battery Voltage on the SLT port is not changed. When call is disconnected, the SLT user gets Error tone.

    To generate Disconnect Signaling on the SLT Port, select Polarity Reversal or Open Loop as appropriate. Select **None** if Disconnect Signaling is not required to be generated on the SLT port.

- **Open Loop Disconnect Timer (ms):** This parameter is applicable only if the option Open Loop Disconnect is selected as Disconnect Signaling type on the SLT port.

  Open Loop Disconnect Timer is the time period for which the system will remove Battery Voltage on the SLT port and restore Battery Voltage on the expiry of this timer to signal Call Disconnection.

  The range of the timer is from 68 to 952ms with a gap of 68ms each between any two consecutive values.

- **Loop Current (mA):** The SLT Port provides Loop Current to the telephone instrument connected to the port to drive it.

  The Loop Current is to be increased/decreased according to the length of the telephony wiring cable between the wall jack (into which the SLT telephone instrument is plugged) and the MDF (into which the cables from the SLT port are terminated).

  The longer the Loop Length of the SLT port, the greater the likelihood of current dissipation, affecting speech quality of the telephone instrument connected to the SLT port.

  The system supports Loop Current of 25, 30, 35 and 40mA. By default, the Loop Current for SLT port is set to 25mA which is sufficient to support Loop Length of 1 kilometer.

  You may change the Loop Current according to the Loop Length of the SLT.

- **Loop Length:** The Loop Length is the distance between the Central Office and the telephone instrument connected to the SLT port. Select the Loop Length as Up to 5km or Above 5km according to your installation scenario.

- **Minimum Current for OFF-Hook Detection:** VISIONPRO detects OFF-Hook state of an SLT instrument and gives Dial tone on the basis of the current drawn by it from the SLT port. However, all types and brands of SLT instruments may not uniformly draw the same minimum current; some may draw lesser and some may draw more, making OFF-Hook detection difficult for VISIONPRO. To resolve this, VISIONPRO provides for programmable values for threshold current for OFF-Hook detection: 10mA, 12mA, 14mA, 16mA and 18mA.

  By default, the value of the Minimum Current for OFF-Hook detection is set to 12mA. Change this value according to the current drawn by your SLT instrument.

  When an SLT instrument draws current equal to or greater than the programmed threshold value of current for OFF-Hook detection, VISIONPRO will consider the SLT instrument as OFF-Hook and will offer Dial tone to the SLT.

- **ON-Hook Detection Current (mA) or lower:** VISIONPRO detects ON-Hook state of an SLT instrument to route calls on the basis of the current drawn by it from the SLT port. However, as all types and brands of SLT instruments may not uniformly draw the same current, ON-Hook detection becomes difficult for the system.

  To resolve this, VISIONPRO provides programmable values of threshold current for ON-Hook Detection: 10mA, 12mA, 14mA, 16mA and 18mA. By default, the value of the ON-Hook Detection Current is set to 10mA.

  When an SLT instrument draws current equal to or lower than the programmed threshold value of current for ON-Hook detection, VISIONPRO will consider the SLT instrument as ON-Hook.

SLT instruments also vary in the level of current drawn during the normal 'idle' state and when Flash is dialed[5] (simulated idle state). So, when the Flash key of an SLT instrument is pressed, and if the instrument draws a higher current than the threshold defined for the 'idle' state, the system will not be able to detect Flash (ON-Hook state).

Consider this when changing the value of ON-Hook Detection Current. Define the value considering the current drawn by your SLT instrument in idle state, as well as when Flash key is pressed.

- **Ring Type/Ringing Signal:** The SLIC used with the SLT port allows you to change the Ring Type: Sinusoidal, Trapezoidal, Low Sinusoidal, Low Trapezoidal. This is helpful in cases when telephone instruments, which expect sinusoidal type of ringing current, are connected to the SLT port. By default the Ring Type for all SLT ports is Trapezoidal.

- **Internal Inter Digit Wait Timer:** This timer signifies the time for which the system waits for the next digit while dialing internal numbers and feature commands.

How to configure

- Enter SE mode.

- To configure the CLIP Type for a station, dial,
  4101-1-Station-CLIP Type
  Where,
  Station is the software port number of the station from 00 to 07.

CLIP Type	Meaning
0	None
1	DTMF
2	FSK-V.23
3	FSK-BellCore

By default, 2 is set as CLIP Type.

  - To configure the same CLIP Type for all stations at once, dial,
    4101-*-CLIP Type

- To configure the Flash Timer for a station, dial,
  4102-1-Station-Flash Timer Index
  Where,
  Station is the software port number of the station from 00 to 07.

Flash Timer Index	Flash Timer value in ms
1	70-100
2	101-200
3	101-300
4	101-400
5	101-500
6	101-600
7	101-700

5. *Dialing 'Flash' by pressing either the 'Flash Key' or the Hook-switch causes the phone to go in ON-Hook state briefly for 600-800 milliseconds. Thus ON-Hook state is simulated briefly. The SLT may draw a higher current when 'Flash' is dialed.*

Flash Timer Index	Flash Timer value in ms
8	101-800
9	101-900

By default, Flash timer index is 6.

If the Flash Timer range is configured as 70-100ms, Pulse dialing for that particular SLT phone will not work.

- To configure the same Flash Timer value for all stations, dial,
  4102-*-Flash Timer Index

- To configure the Digit Padding for a station, dial,
  4104-1-Station-Count
  Where,
  Station is the software port number of the station from 00 to 07.
  Count is from 0 to 9.

  By default, the count is 9 for each station.

  - To configure the same digit padding count for all stations at once, dial,
    4104-*-Count

If count is programmed as 0, the calling party's number will be displayed the same which is received. If the count is programmed between 1 to 9, the digit length of the calling party's number displayed will be equal to the count. For example, if the count value is programmed as 4 and station number 21 is calling, then two zeroes will be padded to 21 to maintain the length 4. The display will be '2100'.

- To configure the AC Impedance for a station, dial,
  4105-1-Station-Code
  Where,
  Station is the software port number of the station from 00 to 07.

Code	Meaning
0	600Ω
1	900Ω
2	350Ω + (1000Ω || 0.21μF)
3	220Ω + (820Ω || 120nF)

Default AC impedance is 600Ω.

- To configure the same AC Impedance for all stations at once, dial,
  4105-*-Code

- To configure the Transmit Gain for a station, dial,
  4106-1-Station-Code
  Where,
  Station is the software port number of the station from 00 to 07.

Code	Gain (in dB)
00	-3
01	0 (Default)
02	3

Code	Gain (in dB)
03	6
04	5.5
05	5
06	4.5
07	4
08	3.5
09	2.5
10	2
11	1.5
12	1
13	0.5
14	-0.5
15	-1
16	-1.5
17	-2
18	-2.5
19	-3.5
20	-4
21	-4.5
22	-5
23	-5.5
24	-6
25	-6.5
26	-7
27	-7.5
28	-8
29	-8.5
30	-9
31	-9.5
32	-10
33	-10.5
34	-11
35	-11.5
36	-12

Default Transmit Gain Code is 01.

- To configure the same Transmit Gain for all stations at once, dial,
  4106-*-Code

- To configure the Receive Gain for a station, dial,
  4107-1-Station-Code
  Where,
  Station is the software port number of the station from 00 to 07.

Code	Gain (in dB)
00	-3
01	0 (Default)
02	3

Code	Gain (in dB)
03	6
04	5.5
05	5
06	4.5
07	4
08	3.5
09	2.5
10	2
11	1.5
12	1
13	0.5
14	-0.5
15	-1
16	-1.5
17	-2
18	-2.5
19	-3.5
20	-4
21	-4.5
22	-5
23	-5.5
24	-6
25	-6.5
26	-7
27	-7.5
28	-8
29	-8.5
30	-9
31	-9.5
32	-10
33	-10.5
34	-11
35	-11.5
36	-12

Default Receive Gain Code is 01.

- To configure the same Receive Gain for all stations at once, dial, **4107-*-Code**

- To configure the Answer Signaling for a station, dial, **4111-1-Station-Code**
  Where,
  Station is the software port number of the station from 00 to 07.

Code	Answer Signal
0	None
1	Polarity Reversal

Default is None.

- To configure the same Answer Signaling for all stations at once, dial,
  4111-*-Code

- To configure the Disconnect Signaling for a station, dial,
  4112-1-Station-Code
  Where,
  Station is the software port number of the station from 00 to 07.

Code	Disconnect Signal
0	None
1	Polarity Reversal
2	Open Loop

Default is None.

- To configure the same Disconnect Signaling for all stations at once, dial,
  4112-*-Code

- To configure the Open Loop Disconnect Timer for a station, dial,
  4113-1-Station-Code
  Where,
  Station is the software port number of the station from 00 to 07.

Code	Open Loop Disconnect Timer (in ms)
01	68
02	136
03	204
04	272
05	340
06	408
07	476
08	544
09	612
10	680
11	748
12	816
13	884
14	952

Default is 7 (476ms).

- To configure the same Open Loop Disconnect Timer for all stations at once, dial,
  4113-*-Code

- To configure the Loop Current for a station, dial,
  4116-1-Station-Code
  Where,

Station is the software port number of the station from 00 to 07.

Code	Loop Current (in mA)
0	25
1	30
2	35
3	40

Default is 25mA.

- To configure the same Loop Current for all stations at once, dial,
  4116-*-Code

- To configure the Loop Length for a station, dial,
  4117-1-Station-Code
  Where,
  Station is the software port number of the station from 00 to 07.

Code	Loop Length
1	Up to 5km (16404 ft.)
2	Above 5km (16404 ft.)

Default is Up to 5km (16404 ft.).

- To configure the same Loop Length for all stations at once, dial,
  4117-*-Code

- To configure the Minimum Current for Off-hook Detection for a station, dial,
  4118-1-Station-Code
  Where,
  Station is the software port number of the station from 00 to 07.

Code	Minimum Current for Off-hook Detection (in mA)
1	10
2	12
3	14
4	16
5	18

Default is 2 (12mA).

- To configure the same Minimum Current for Off-hook Detection for all stations at once, dial,
  4118-*-Code

- To configure the On-hook Detection Current or lower for a station, dial,
  4119-1-Station-Code
  Where,
  Station is the software port number of the station from 00 to 07.

Code	On-hook Detection Current or lower (in mA)
0	10
1	12

Code	On-hook Detection Current or lower (in mA)
2	14
3	16
4	18

Default is 1 (10mA).

- To configure the same On-hook Detection Current or lower for all stations at once, dial, **4119-*-Code**

- To configure the Ring Type/Ringing Signal for a station, dial, **4120-1-Station-Code**
  Where,
  Station is the software port number of the station from 00 to 07.

Code	Ring Type/Ringing Signal
0	Low Sinusoidal
1	Low Trapezoidal
2	Sinusoidal
3	Trapezoidal

Default is 3 (Trapezoidal).

- To configure the same Ring Type/Ringing Signal for all stations at once, dial, **4120-*-Code**

- To configure the Internal Inter Digit Wait Timer for the system, dial, **3009-Seconds**
  Where,
  Valid Range: 000 to 255 seconds.

  Default is 007 seconds.

- Exit SE mode.

Station Groups

As the name implies, a ‘Station Group’ is a group of stations which are grouped together to serve specific purposes. The destinations in a station group can be used as the landing destinations for incoming trunk calls or destinations for department calls.

- *Maximum sixteen station groups can be formed. Maximum four stations can be configured in each station group.*
- *Same station group can be assigned for Trunk Landing Group as well as for Department call. Refer “Trunk Landing Groups (TLGs)” and “Department Call” for more details.*

How it works

To be able to use Station Groups, make sure you have configured the following:

- The time for which each station rings.
- The sequence in which various stations in the group should ring.
- The number of stations that should ring at a time.

It works as follows,

- Once a station starts ringing, it can be set to ring continuously till the call is answered. Such a station continues ringing even when other stations of the group are hunted. This is called “Continuous” ringing and can be programmed for each station.
- If the call is not answered even after hunting the last station, the system will loop back and start from the first station once again till the ring timer of the trunk exchange expires.
- A fresh call can start hunting either from the first station of the group or from the station which terminated the last call. This method is called “Rotation Method” and can be set for each group. If rotation method is enabled, the fresh call will land on the destination next to the station which received the last call. This enables equal distribution of incoming calls to all the destinations within the group. If the rotation method is disabled, a fresh call will always land on the first station of the station group.

- *By default, stations (destinations) with software port numbers from 00 to 03 are assigned to all station groups; Ring timer is set to 15 seconds and Rotation is ON.*
- *Any station can answer the call using the Call Pickup feature. See “Call Pickup” for more details.*
- *Any station group can be programmed as Department group.*
- *Any station group can be programmed as Trunk Landing Group.*

How to configure

1. Decide the number of station groups to be formed, decide the sequence in which the stations should be arranged. Program these parameters using command ***4702.***
2. Define Ring Timer for which each station should ring using command ***4703.***
3. Decide whether the station should get continuous ring and configure it using command ***4704.***
4. Program the rotation type for the station group using command ***4705.***

5. If required, default a station group using command ***4701.***

If written on a plain sheet of paper, each group entry in the station group table would appear as shown below.

	Dest0	Dest1	Dest2	Dest3
Station Number				
Ring Timer				
Continuous Ring				
Rotation Method	Yes or No			

To configure as per above instructions,

- Enter SE mode.

- To configure a station in a station group, dial,
  4702-1-Station Group-Destination Index-Station
  Where,
  Station Group is from 00 to 15.
  Destination Index is from 0 to 3.
  Station is a software port number and varies from 00 to 07.

  - To configure the same station in the same destination index in all station groups, dial,
    4702-*-Destination Index-Station

- To configure the Ring Timer for which each station in the group should ring, dial,
  4703-1-Station Group-Destination Index-Timer
  Where,
  Station Group is from 00 to 15.
  Destination Index is from 0 to 3.
  Timer is in seconds from 00 to 99.

  - To configure the same Ring Timer value for stations with the same destination index in all station groups, dial,
    4703-*-Destination Index-Timer

- To configure continuous or non-continuous ring for a destination in the group, dial,
  4704-1-Station Group-Destination Index-Continuous Ring
  Where,
  Station group is from 00 to 15.
  Destination Index is from 0 to 3.

Continuous Ring	Meaning
0	The station rings for the timer set
1	The station rings continuously till the call is answered

  - To configure continuous or non-continuous ring for stations with the same destination index in all station groups, dial,
    4704-*-Destination Index-Continuous Ring

- To configure the rotation method for a station group, dial,
  4705-1-Station Group-Rotation Method
  Where,
  Station group is from 00 to 15.

Rotation Method	Meaning
0	Fresh call should always land on the first station within the group

Rotation Method	Meaning
1	Fresh call lands on a station following the rotation method

  - To configure the same rotation method for all the station groups, dial,
    4705-*-Rotation Method

- To assign default stations to a station group, dial,
  4701-1-Station Group-#
  Where,
  Station group is from 00 to 15.

  - To assign default stations to all station groups at once, dial,
    4701-*-#

- Exit SE mode.

Example 1:
Program the system to meet the following requirements,

- Marketing department is frequently accessed by callers using DID facility.
- Marketing department has four stations which are 21, 22, 23 and 24 (s/w ports 00, 01, 02 and 03).
- The stations should ring in a sequence which are 21, 22, 23, 24.
- Station 21 should ring for 20 seconds.
- If no reply, 21 should continue ringing and 22 should also ring for 10 seconds.
- If no reply, 21 should continue ringing and 23 should also ring for 15 seconds.
- If still no reply, 21 should continue ringing and 24 should also ring for 20 seconds.
- Call traffic should be distributed equally on all four destinations.

Solution. The requirement is for department call. Hence a station group for this purpose should be formed.

Dial following commands in SE mode,

4702-1-00-0-00
4702-1-00-1-01
4702-1-00-2-02
4702-1-00-3-03
4703-1-00-0-20
4703-1-00-1-10
4703-1-00-2-15
4703-1-00-3-20

4704-1-00-0-1
4704-1-00-1-0
4704-1-00-2-0
4704-1-00-3-0
4705-1-00-1

To configure this station group as department group, refer “Department Call”.

Example 2:
Program a station group to meet following requirements,

- A company has eight stations 21, 22, 23, 24, 25, 26, 27, 28 (Software port numbers 00, 01, 02, 03, 04, 05, 06, 07).
- Call on trunk1 should land on station 21, 22, 23, 24 in Day time and on station 21, 22, 27, 28 in Night time.
- In Day time, each station should ring for 20 seconds. Calls should always land on station 21 first.

- In Night time, station 21 and 22 should ring continuously. Station 27 and 28 should ring for first 30 seconds along with station 21 and 22.

Solution. The requirement is for trunk landing destinations. Two station groups one for Day time and other for Night time should be formed to meet the requirement.

Use following commands in SE mode:

4702-1-01-0-00
4702-1-01-1-01
4702-1-01-2-02
4702-1-01-3-03

4703-1-01-0-20
4703-1-01-1-20
4703-1-01-2-20
4703-1-01-3-20

4704-1-01-0-0
4704-1-01-1-0
4704-1-01-2-0
4704-1-01-3-0

Refer “Trunk Landing Groups (TLGs)” to assign a station group to a trunk. Station group1 can be assigned to trunk1 for Day time.

4702-1-02-0-00
4702-1-02-1-01
4702-1-02-2-06
4702-1-02-3-07

4703-1-02-0-30
4703-1-02-1-30
4703-1-02-2-30
4703-1-02-3-30
4704-1-02-0-1
4704-1-02-1-1
4704-1-02-2-0
4704-1-02-3-0

4705-1-02-0

Refer “Trunk Landing Groups (TLGs)” to assign a station group to a trunk. Station group2 can be assigned to trunk2 for Night time.

CHAPTER 6

Configuring Trunks

To configure the system's trunks, you must configure the following,

- "Trunk Parameters"
- "Trunk Access Groups (TAGs)"
- "Trunk Landing Groups (TLGs)"

Trunk Parameters

Similar to the stations, it is recommended to configure the Trunk Parameters at the beginning for smooth functioning of the trunks connected to the system. VISIONPRO offers flexible settings for each trunk.

Trunk parameters include the following,

- **Trunk Enable/Disable:** A trunk port can be enabled or disabled separately. This can be useful when a particular trunk goes out of order and hence, it should be barred from being allocated to a user.
- **Dial Type:** You can configure the Dial type as Pulse or Tone according to the dialing method supported by the CO network to which the CO trunk port is connected.
- **Trunk Type:** Different types of CO trunks can be interfaced with the system; for example, a Normal dial type trunk or a Hotline type trunk or a Delayed Hotline type trunk or a Special trunk.

  Normal dial type trunk is the conventional trunk available from the service provider.

  Hotline type trunk is the trunk that connects two destinations immediately on grabbing.

  Delayed Hotline type trunk is a special trunk available from the service provider, which works as a normal dial type for some time after grabbing the trunk and thereafter works as a Hotline dial type.
- **Speech Connection Delay Timer:** It is the time after which the system gives Dial Tone to a station user on grabbing a trunk line.

  To understand the significance of this timer, let us consider an example. A telephone line coming from an old telephone exchange is interfaced with the VISIONPRO. Now a station user, who does not have access to long distance numbers, grabs a trunk line and dials a number 1022-26305555. The PBX allows this number since it starts with '1' but since the actual Dial Tone from the telephone exchange comes after some time, the telephone exchange interprets this number as 022-26305555 and establishes the speech.

This way a station user who does not have permission for long distance calling, can dial out a long distance number. This situation can be prevented by setting the Speech Delay Timer to an appropriate value. It can be configured for individual trunks.

- **CLI type:** Define the Calling Line Identification (CLI) format for the CO line by selecting the format supported by your service provider. Regarding this, you may consult the service provider of the selected trunk line. VISIONPRO detects the CLI sent by the CO network and sends this information to the landing station/operator with the ringing signal.

- **Pause Timer:** It is the time for which the system waits before dialing out a number after grabbing the trunk. This timer inserts delay when digits of a number string are out dialed from the CO trunk.

  Some times it is observed that after grabbing the trunk line, the user does not get PSTN Dial Tone immediately. Instead he/she gets the Dial Tone from the PSTN after some time. This normally occurs in older types of PSTNs. When user is dialing the number, he/she inadvertently waits for the Dial Tone and then dials the number. But this is not so when the PBX dials the number. When Redial or Auto Redial or Abbreviated Dialing feature is used, the PBX grabs the trunk line and dials out the number at its own. Now if there is no pause time programmed, then for older PSTN systems it is possible that the PBX may dial out the number before getting the Dial Tone from the PSTN. This may result in dialing of wrong numbers. To avoid such instances, VISIONPRO offers this timer, which can be set for individual trunks. Pause Timer is used during Redial, Auto Redial and Abbreviated (Memory) Dialing.

- **Receive Gain and Transmit Gain:** You can increase or decrease the level of Incoming Speech (Receive Gain) and Outgoing Speech (Transmit Gain) on the trunk port by changing the Rx Gain and Tx Gain respectively to the desired level. Different levels can be set for each trunk port type.

- **AC Termination Impedance:** The AC Termination Impedance *(or simply, the AC Impedance)* of the CO port must match to the AC Termination Impedance supported by the PSTN network.

- **CO Termination:** This parameter allows you to increase the near-end echo cancellation on the CO trunk. Near-end echo is primarily caused by the mismatch between AC Termination Impedance (presented by the CO port of VISIONPRO to the line) and CO Termination (Impedance presented by the Central Office to the line), and to some extent by the transmit and receive signal path.

  By correcting the line impedance mismatch, you can increase the near-end echo cancellation. This is done by configuring the AC Termination Impedance and the CO Termination, and then selecting a CO Line Type *(see the next parameter)* that most closely resembles the line that connects the CO port of VISIONPRO to the Central Office.

  Configuring the correct **CO Termination** value depends on the region where VISIONPRO is deployed. For example, if AC Termination Impedance in your location is 600Ω and the CO Termination impedance is 900Ω in series with 2.16µF, then configure AC Impedance as 600Ω and CO Termination as 900Ω + 2.16µF.

You are recommended to conduct the AC Impedance Test for the line connected to the CO port on which you will apply this configuration. The AC Impedance Test will help you to determine the most appropriate values for the AC impedance, CO Termination and the CO Line Type. For more information see the topic "AC Impedance Test".

- **CO Line Type:** This parameter allows you to configure the Line model for the CO Termination you have selected. You need to configure a line type that most closely resembles the line connecting VISIONPRO to the Central Office. To configure the **CO Line Type**, you may select a specific EIA line model from the eight available options (EIA-0 to EIA-7) or a specific wire gauge and length (2000 ft. 22/24/26awg).

- **Answer Supervision:** It is a signal from the CO network to indicate the call maturity. Whenever you make an outgoing call from CO trunk, the CO network will provide answer signal when the called party answers.

  This feature is particularly helpful to enable accurate billing. When the signal is received, the billing will start and in the absence of this signal, the call will not be billed, ensuring that unanswered and unsuccessful call attempts are not billed.

  Answer Supervision Signal has following two options:

  - **Pseudo Answer:** It is used when no signaling is available from the PSTN. If this option is selected, the call will be considered as matured on the expiry of the 'Pseudo Answer Supervision Timer' (programmable; default 10 seconds), irrespective of whether or not the call actually gets matured. After this, the Call Duration Timer starts. Finally, the system starts detecting the “Disconnect Supervision” signal configured for the CO port.

Configure this option only if there is no Answer Supervision Signal supported.

  - **Polarity Reversal:** It is used as the maturity signal when the answer signaling is given in the form of Battery Reversal. If the battery polarity of the line is -ve for TIP and +ve for RING, when the called party has answered the call, the CO network will reverse the battery polarity. So TIP becomes +ve and RING -ve. After this, the Call Duration Timer is started. Finally system starts detecting the Disconnect Supervision signal configured for the CO port.

    By default, Answer Supervision is set as Pseudo Answer for each CO port.

Configure the same Answer Supervision signal as provided by your CO Network.

- **Pseudo Answer Supervision Timer:** Configure this timer if you have selected 'Pseudo Answer' as the Answer Supervision Signal option.

  This is the time period for which the system will wait before treating a call as matured (regardless of whether or not it was answered). The range of this Timer is from 1 to 255 seconds. By default the Pseudo Answer Supervision Timer is set to 10 seconds.

When Pseudo Answer is selected as the Answer Supervision signal, the call duration measured by the system will not accurately reflect the actual call duration because the Pseudo Answer Supervision Timer is not related to the actual call maturity. For example, if the Pseudo Answer Supervision Timer is set to 015 seconds, the call will be considered as matured after 015 seconds, even if it is answered after 20 seconds. Similarly, if this Timer is set to 080 seconds, but the call was answered after 020 seconds and disconnected after 040 seconds, this call will never be considered as matured as it ends before 080 seconds.

- **Disconnect Supervision:** It is a signal from the CO network to indicate call disconnection. Whenever a call (incoming or outgoing) made from the CO trunk is disconnected by the remote party, the CO network will send Disconnect signal to the CO port. VISIONPRO will detect this signal and release the CO port.

  Disconnect Supervision signal is important when a PCO machine is connected to the (SLT Port) VISIONPRO.

  In such scenarios, it is desirable that calls that are disconnected by either end - calling party or called party - is terminated by the system and the port is released. If the called (remote) party has disconnected the call but the calling party (station that made the outgoing call from VISIONPRO) has not disconnected the call, the call remains live within the system.

So, Disconnect Supervision signal is important, particularly when calls are routed from CO-to-CO ports, to indicate to the system that it needs to disconnect the call and release the port.

Disconnect Supervision signal has three options:

- **None:** When there this no signaling supported. Configure this option only if there is no Disconnect Supervision signal supported.

- **Polarity Reversal:** Call disconnection is signaled as Polarity Reversal when the call is disconnected by the remote user. For example, if the battery polarity of the CO port is '+ve' for TIP and '-ve' for RING in speech condition then on disconnection by the remote user, TIP will become '-ve' and RING '+ve'. The user gets an Error tone and the CO port is released.

- **Open Loop Disconnect:** Call Disconnection is signaled in the form of Open Loop, whereby the Battery voltage on the CO port is removed for a short duration. Voltage is restored after this short duration. However, the Polarity of Battery Voltage on the CO port is not changed.

  This option is to be selected when call disconnection is signaled in the form of Open Loop Disconnect pulse by the CO network. System will check Open Loop Disconnect signal for the time configured for Open Loop Disconnect Timer for each CO port. If the time of the Open Loop signal detected is less than the Open Loop Disconnect Timer configured, it will not be considered as valid Open Loop signal for releasing the CO port. But if Open loop is detected continuously for at least for the time duration set as the Open Loop Disconnect timer, it is considered as a valid Disconnect Supervision signal. The call will be released and caller will get Error tone.

  By default, Disconnect Supervision is set to None for each CO port.

  Select the same Disconnect Supervision signal as provided by your CO Network.

Select the same Answer Supervision and Disconnect Supervision signal type supported by your CO network for the CO ports. Consider the following case:

The CO network supports Polarity Reversal signal as Answer and Disconnect Supervision. But you have configured 'Pseudo Answer' as Answer Supervision signal and 'Polarity Reversal' as Disconnect Supervision signal for the CO ports in the system.

In this case, when a call is made through the CO port, the call will be considered as matured after the Pseudo Answer Supervision Timer. Now, when the called party answers the call, the CO generates 'Polarity Reversal' as answer supervision signal on the CO port. But as 'Polarity Reversal' is also configured as the Disconnect Supervision for the port, the system will interpret this (Answer Signaling) signal as Disconnect Supervision signal and disconnect the call.

- **Open Loop Disconnect Timer (ms):** This parameter is applicable only if the option Open Loop Disconnect is configured as the Disconnect Supervision type on the CO port.

  The range of this timer is from 017 to 986 milliseconds. By default, the Timer is set to 204ms.

- **Call Disconnect Tone Detection:** This parameter is to be configured if Call Disconnection is signaled by the CO network in the form of Disconnect Tone.

When there is an incoming/outgoing call on/from the CO port is answered, the system will check whether the flag Disconnect Tone detection is enabled. Only if the flag is enabled, the system will detect the Disconnect Tone.

If Disconnect Tone is detected, the system will consider the call as ended and will release the CO port.

- **Call Disconnect Tone Frequency:** To enable the system to detect the Call Disconnect Tone accurately, you must set the Frequency of the Disconnect Tone, as supported by the CO network.
  - **Frequency 1 (Hz):** Frequency 1 is from 0000 to 4095 Hz. Default: 0400Hz
  - **Operator:** This parameter has 3 options: No operator, Modulation (*), Addition (+). Default: None.

    If None is selected, frequency 2 will not be applicable.

    If Modulation is selected, frequency 1and frequency 2 will be used as modulation, F1* F2

    If Addition is selected, frequency 1 and frequency 2 will be used as addition, F1 + F2.
  - **Frequency 2 (Hz):** Frequency 2 is from 0000 to 4095 Hz. Select Frequency 2 if Dual Frequency Call Disconnect Tone is supported by the CO network. Default: 0000Hz.
- **Call Disconnect Tone Cadence:** To enable the system to detect the Call Disconnect Tone accurately, you must also set the Cadence (ON-OFF time) of the Disconnect Tone, as supported by the CO network.
  - **ON Time 1 (ms), OFF Time 1 (ms):** Select Cadence for the first cycle ON Time1 and OFF Time 1. It may be 0000 to 4095 milliseconds. Default: 0750 ms ON Time 1, 0750 ms OFF Time 1
  - **ON Time 2 (ms), OFF Time 2 (ms):** Select Cadence for the second cycle ON Time 2 and OFF Time 2. It may be 0000 to 4095 milliseconds. Default: 0750 ms ON Time 2, 0750 ms OFF Time 2.
  - **ON Time 3 (ms), OFF Time 3 (ms):** Select Cadence for the third cycle ON Time 3 and OFF Time 3. It may be 0000 to 4095 milliseconds. Default: 0000 ms ON Time 3, 0000 ms OFF Time 3.
  - **ON Time 4 (ms), OFF Time 4 (ms):** Select Cadence for the fourth cycle ON Time 4 and OFF Time 4. It may be 0000 to 4095 milliseconds. Default: 0000 ms ON Time 4, 0000 ms OFF Time 4.

  When call disconnect tone detected on the port matches the Frequency and Cadences you have set, the call will be disconnected and the CO port will be released.

  When Disconnect cadence is zero, VISIONPRO will skip that cadence and match the next cadence.
- **Ring Cadence OFF Timer:** Configure this timer to set the OFF time for Ring cadence. During the incoming call on CO port, if the CO gives ring in which the Ring OFF period is quite long, the system will consider that the ring has been stopped, and will stop ringing the SLT port, even though the incoming call is still present.

  To get accurate indication, the system supports Ring Cadence OFF timer on CO port so that ring can continue even for incoming calls with long Ring OFF period.

  The range of the Ring Cadence OFF timer is from 1 to 9 seconds. By default the timer is set to 6 seconds.

- **DTMF Detection Minimum ON Timer (ms):** The default settings of DTMF Detection serve the requirements of most of the applications. However, you may need to fine tune the DTMF related timers (as mentioned in following parameters) if you face any problems in DTMF detection.

  This timer signifies the minimum time period for which the DTMF signal should be present in order to be detected. The valid range of this timer is 17 to 204 milliseconds. By default, Minimum ON Time is set to 34 milliseconds.

- **DTMF Detection Minimum OFF Timer (ms):** This parameter signifies the minimum time period between successive DTMF digits. The valid range of this time is 17 to 204 milliseconds. By default, Minimum OFF Timer is set to 68.

- **DTMF Out Dial ON Time (ms):** While dialing out the DTMF digits from the CO port, this feature comes into play. It is the time width of the DTMF digit to be dialed out by the CO port. By default the ON Time is set to 102 milliseconds.

- **DTMF Out Dial Inter-Digit Pause Time (ms):** When the CO port dials out the DTMF digits on the CO, it waits for the Inter Digit Pause Timer, while dialing the DTMF digits on CO trunk. This timer is programmable. By default the timer is set to 102 milliseconds.

  These DTMF Out Dial attributes are applied when the features Redial, Auto Redial and Abbreviated Dialing are used to dial out the numbers from the CO port.

- **Flash Timer on Trunk (ms):** This parameter is relevant for dialing out Flash on the CO trunk to access some of the features of the PSTN. Configure the desired time of Flash to be generated on the CO trunk. TherangeofthetimerisfromTherangeofthetimerisfrom83to900ms.BydefaulttheFlashTimerissetto600ms.0
  0

- **ON-Hook Speed (ms):** This parameter allows you to set the amount of time for the line-side device to go ON-Hook.

  The ON-Hook speed specified is measured from the time the ON-Hook bit is cleared until loop current equals to zero. Select the desired ON-Hook Speed from the following options:
  - <0.5ms
  - 3 ms
  - 26 ms

  By default, <0.5ms is selected as ON-Hook Speed.

- **OFF-Hook Speed (ms):** This parameter defines the time to settle the line transients after which transmission or reception can occur. Select the desired OFF-Hook Speed from the following options:
  - 512 ms
  - 128 ms
  - 64 ms
  - 8 ms

  By default, OFF-Hook Speed is set to 8ms.

- **Current Limiting Mode:** With this parameter you can enable Loop Current Limiting mode. When this parameter is enabled, the Loop Current will be limited to a maximum of 60mA.

- **Minimum Loop Current (mA):** This parameter sets the minimum loop current at which DAA module of the CO port can operate. Select the minimum operational loop current from the following options as per your requirement:
  - 10mA
  - 12mA
  - 14mA
  - 16mA

  The minimum Operational Loop Current set by default is set to 10mA.

- **TIP-RING Voltage (Volts):** This parameter allows TIP-RING Voltage Adjustment on the line side.

  Countries where Low voltage is required should use lower TIP-RING voltage. Adjust the values to match your country requirements from the following options:
  - 3.1
  - 3.2
  - 3.35
  - 3.5

  The default TIP-RING voltage is 3.5.

- **Ringer Impedance:** Set the Ringer Impedance - High or Synthesized - for the CO port according your country-specific requirement.

  'High' signifies 20MOhm Ringer Impedance. This is the default Ringer Impedance provided on the line side by the DAA module of the CO port. The DAA Module can provide higher impedance when 'Synthesized' impedance is selected.

  Some countries like Poland, South Africa and Slovenia require higher Ringer impedance which is achieved by the DAA module, when Ringer Impedance is set as 'Synthesized'.

  By default 'High' (20MOhm) is selected.

- **Ringer Threshold (Vrms):** This parameter defines the level below which the CO port would not validate the Ring signal and the level above which it would validate the Ring signal. Set Ringer Threshold to the desired value from the following options:
  - 13.5 - 16.5
  - Reserved
  - 19.35 - 23.65
  - 40.5 - 49.5

  By default 13.5 - 16.5 Vrms is set as Ringer Threshold.

- **Trunk First Digit Wait Timer:** This timer signifies the time for which VISIONPRO waits for the first digit after grabbing the trunk.

- **Trunk Inter Digit Wait Timer:** This timer signifies the time for which VISIONPRO waits between accepting two digits from the caller. This timer is loaded when the caller dials the first digit (digit could be other than station number) and waits for the second digit.

How to configure

To configure,

- Enter SE mode.

- To enable/disable a trunk, dial,
  3101-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Meaning
0	Trunk Port disabled
1	Trunk Port enabled

By default, all trunks are enabled.

- To enable/disable all the trunks, dial,
  3101-*-Code

Example:

To disable trunk2, dial, ***3101-1-2-0***

- To configure the dial type of a trunk, dial,
  3102-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Meaning
0	Pulse Type
1	Tone Type

By default, all trunks are programmed as Tone type.

- To configure the same dial type for all the trunks, dial,
  3102-*-Code

Example:

Program trunk2 with Pulse dialing.

Solution. Dial, ***3102-1-2-0***

- To define a trunk type, dial,
  3103-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Meaning
0	Normal Dial Type
1	Delayed Hotline Type
2	Hotline Type

By default, Trunk type is Normal Dial Type.

- To define the same trunk type for all trunks, dial,
  3103-*-Code

Example:

Program trunk port2 for hotline dial type.
Solution. Dial, ***3103-1-2-2***

- To configure the Speech Connection Delay Timer for a trunk, dial,
  3104-1-Trunk-Speech Timer
  Where,
  Trunk is the software port number from 0 to 2.
  Speech Timer is from 0 to 9.

  - To configure the same Speech Connection Delay Timer for all trunks, dial,
    3104-*-Speech Timer
    Where,
    Speech Timer is from 0 to 9.

- To configure the CLI type for a trunk, dial,
  3105-1-Trunk-CLI Type
  Where,
  Trunk is the software port from 0 to 2.

CLI Type	Meaning
00	None
01	Any ETSI DTMF format
02	Any FSK V.23 Format
03	Any FSK BELLCORE Format
04	1st ring, ETSI DTMF, 2nd ring
05	Polarity Reversal, ETSI DTMF, 1st ring
06	1st ring, FSK, 2nd ring
07	DTAS, FSK, 1st ring
08	RPAS, FSK, 1st ring
09	Polarity Reversal, DTAS, FSK, 1st ring
10	Any DTMF format (without start/stop code)

By default, CLI type is 2 on all the trunks.

- To configure the same CLI type for all the trunks, dial,
  3105-*-CLI Type

- To configure the Pause Timer for a trunk, dial,
  3106-1-Trunk-Code
  Where,

Trunk is the software port number from 0 to 2.

Code	Pause Timer
0	500ms
1	1000ms
2	1500ms
3	2000ms
4	2500ms

Default code value is 1.

- To configure the same Pause Timer for all trunks, dial,
  3106-*-Code

- To configure the Receive Gain (in dB) for a trunk, dial,
  3107-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Gain in (dB)	Code	Gain in (dB)	Code	Gain in (dB)	Code	Gain in (dB)
01	10	22	1.5	43	-0.6	64	-6
02	9.5	23	1.4	44	-0.7	65	-6.5
03	9	24	1.3	45	-0.8	66	-7
04	8.5	25	1.2	46	-0.9	67	-7.5
05	8	26	1.1	47	-1	68	-8
06	7.5	27	1	48	-1.1	69	-8.5
07	7	28	0.9	49	-1.2	70	-9
08	6.5	29	0.8	50	-1.3	71	-9.5
09	6	30	0.7	51	-1.5	72	-10
10	5.5	31	0.6	52	-1.6	73	-10.5
11	5	32	0.5	53	-1.7	74	-11
12	4.5	33	0.4	54	-1.8	75	-11.5
13	4	34	0.3	55	-1.9	76	-12
14	3.5	35	0.2	56	-2	77	-12.5
15	3	36	0.1	57	-2.5	78	-13
16	2.5	37	0	58	-3	79	-13.5
17	2	38	-0.1	59	-3.5	80	-14
18	1.9	39	-0.2	60	-4	81	-14.5
19	1.8	40	-0.3	61	-4.5	82	-15
20	1.7	41	-0.4	62	-5		

Code	Gain in (dB)	Code	Gain in (dB)	Code	Gain in (dB)	Code	Gain in (dB)
21	1.6	42	-0.5	63	-5.5		

Default code value is 37.

- To configure the same Receive Gain (in dB) for all trunks, dial,
  3107-*-Code

- To configure the Transmit Gain (in dB) for a trunk, dial,
  3108-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Gain in (dB)	Code	Gain in (dB)	Code	Gain in (dB)	Code	Gain in (dB)
01	10	22	1.5	43	-0.6	64	-6
02	9.5	23	1.4	44	-0.7	65	-6.5
03	9	24	1.3	45	-0.8	66	-7
04	8.5	25	1.2	46	-0.9	67	-7.5
05	8	26	1.1	47	-1	68	-8
06	7.5	27	1	48	-1.1	69	-8.5
07	7	28	0.9	49	-1.2	70	-9
08	6.5	29	0.8	50	-1.3	71	-9.5
09	6	30	0.7	51	-1.5	72	-10
10	5.5	31	0.6	52	-1.6	73	-10.5
11	5	32	0.5	53	-1.7	74	-11
12	4.5	33	0.4	54	-1.8	75	-11.5
13	4	34	0.3	55	-1.9	76	-12
14	3.5	35	0.2	56	-2	77	-12.5
15	3	36	0.1	57	-2.5	78	-13
16	2.5	37	0	58	-3	79	-13.5
17	2	38	-0.1	59	-3.5	80	-14
18	1.9	39	-0.2	60	-4	81	-14.5
19	1.8	40	-0.3	61	-4.5	82	-15
20	1.7	41	-0.4	62	-5		
21	1.6	42	-0.5	63	-5.5		

Default code value is 37.

- To configure the same Transmit Gain (in dB) for all trunks, dial,
  3108-*-Code

- To configure the AC Termination Impedance for a trunk, dial,
  3111-1-Trunk-Code
  Where,
  Trunk is the software port from 0 to 2.

Code	AC Termination Impedance
00	600Ω
01	900Ω
02	270Ω + (750Ω || 150 nF) and 275Ω + (780Ω || 150 nF)
03	220Ω + (820Ω || 120 nF) and 220Ω + (820Ω || 115 nF)
04	370Ω + (620Ω || 310 nF)
05	320Ω + (1050Ω || 230 nF)
06	370Ω + (820Ω || 110 nF)
07	275Ω + (780Ω || 115 nF)
08	120Ω + (820Ω || 110 nF)
09	350Ω + (1000Ω || 210 nF)
10	200Ω + (680Ω || 100 nF)
11	600Ω + 2.16 µF
12	900Ω + 1 µF
13	900Ω + 2.16 µF
14	600Ω + 1 µF
15	Global complex impedance

By default, code 0 is selected.

- To configure the same AC Termination Impedance for all trunks, dial,
  3111-*-Code

- To configure the CO Termination for a trunk, dial,
  3112-1-Trunk-Code
  Where,

Trunk is the software port from 0 to 2.

Code	CO Termination
00	None
01	900Ω + 2.16 µF
02	600Ω
03	1200Ω + 376Ω + 112 nF
04	150Ω + 510Ω + 47 nF
05	220Ω + 820Ω + 150 nF
06	600Ω + 1.5 µF
07	220Ω + 120Ω + 115 nF
08	220Ω + 820Ω + 115 nF
09	370Ω + 620Ω + 310 nF
10	220Ω + 820Ω + 120 nF
11	300Ω + 1000Ω + 220 nF
12	270Ω + 750Ω + 150 nF
13	200Ω + 560Ω + 100 nF

By default, code 0 is selected.

- To configure the same CO Termination for all trunks, dial, **3112-*-Code**

- To configure the CO Line Type for a trunk, dial, **3113-1-Trunk-Code**
  Where,
  Trunk is the software port from 0 to 2.

Code	CO Line Type
00	EIA-0
01	EIA-1
02	EIA-2
03	EIA-3
04	EIA-4
05	EIA-5
06	EIA-6
07	EIA-7
08	2000 ft. 22 awg
09	2000 ft. 24 awg
10	2000 ft. 26 awg

By default, code 0 is selected.

- To configure the same CO Line Type for all trunks, dial,
  3113-*-Code

- To configure the Answer Supervision type for a trunk, dial,
  3114-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Answer Supervision Type
0	Pseudo Answer
1	Polarity Reversal

Default code value is 0.

- To configure the same Answer Supervision type for all trunks, dial,
  3114-*-Code

- To configure the Pseudo Answer Supervision Timer for a trunk, dial,
  3117-1-Trunk-Seconds
  Where,
  Trunk is the software port number from 0 to 2.
  Seconds is from 1 to 255 seconds.

  Default is 10 seconds.

- To configure the same Pseudo Answer Supervision Timer for all trunks, dial,
  3117-*-Seconds

- To configure the Disconnect Supervision type for a trunk, dial,
  3115-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Disconnect Supervision Type
0	None
1	Polarity Reversal
2	Open Loop Disconnect

Default code value is 0.

- To configure the same Disconnect Supervision type for all trunks, dial,
  3115-*-Code

- To configure the Open Loop Disconnect Timer for a trunk, dial,
  3116-1-Trunk-Code
  Where,

Trunk is he software port number from 0 to 2.

Code	Open Loop Disconnect Timer (in ms)	Code	Open Loop Disconnect Timer (in ms)
01	17	31	527
02	34	32	544
03	51	33	561
04	68	34	578
05	85	35	595
06	102	36	612
07	119	37	629
08	136	38	646
09	153	39	663
10	170	40	680
11	187	41	697
12	204	42	714
13	221	43	731
14	238	44	748
15	255	45	765
16	272	46	782
17	289	47	799
18	306	48	816
19	323	49	833
20	340	50	850
21	357	51	867
22	374	52	884
23	391	53	901
24	408	54	918
25	425	55	935
26	442	56	952
27	459	57	969
28	476	58	986
29	493		
30	510		

Default code value is 12.

- To configure the same Open Loop Disconnect Timer for all trunks, dial, **3116-*-Code**

- To enable/disable Call Disconnect Tone for a trunk, dial,
  3133-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Meaning
0	Disable
1	Enable

Default code value is 0.

- To enable/disable Call Disconnect Tone for all trunks, dial,
  3133-*-Code

- To set the Call Disconnect Tone Frequency for a trunk, dial,
  3134-1-Trunk - Frequency 1 - Operator - Frequency 2
  Where,
  Trunk is the software port number from 0 to 2.
  Frequency 1 and Frequency 2 can be from 0000 to 4095Hz

Operator	Meaning
0	None
1	Summation (+)
2	Modulated (*)

Default Frequency 1, Operator and Frequency 2

Frequency 1	Operator	Frequency 1
0400Hz	0	0000Hz

- To set the Call Disconnect Tone Frequency for all the trunks, dial,
  3134-*-Frequency 1 - Operator - Frequency 2

- To set the Call Disconnect Tone Cadence for a trunk, dial,
  3135-1-Trunk- Index - ON Time - OFF Time
  Where,
  Trunk is the software port number from 0 to 2.
  Index is from 0 to 3.
  ON Time and OFF Time can be from 0000 to 4095msec

Default Index and ON Time - OFF Time

Index 0	Index 1	Index 2	Index 3
ON Time - OFF Time	**ON Time - OFF Time**	**ON Time - OFF Time**	**ON Time - OFF Time**
0750 msec - 0750 msec	0750 msec - 0750 msec	0000 msec - 0000 msec	0000 msec- 0000 msec

- To set the Call Disconnect Tone frequency for the trunks, dial,

3135-*- Index - ON Time - OFF Time

- To configure the Ring Cadence OFF Timer for a trunk, dial,
  3118-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Ring Cadence OFF Timer
1	1 second
2	2 second
3	3 second
4	4 second
5	5 second
6	6 second
7	7 second
8	8 second
9	9 second

Default code is 6.

- To configure the same Ring Cadence OFF Timer for all trunks, dial,
  3118-*-Code

- To configure the DTMF Detection Minimum ON Timer for a trunk, dial,
  3119-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Minimum ON Timer
01	17 ms
02	34 ms
03	51 ms
04	68 ms
05	85 ms
06	102 ms
07	119 ms
08	136 ms
09	153 ms
10	170 ms
11	187 ms
12	204 ms

Default code is 2.

- To configure the same DTMF Detection Minimum ON Timer for all trunks, dial, **3119-*-Code**

- To configure the DTMF Detection Minimum OFF Timer for a trunk, dial, **3120-1-Trunk-Code**
  Where,
  Trunk is the software port number from 0 to 2.

Code	Minimum OFF Timer
01	17 ms
02	34 ms
03	51 ms
04	68 ms
05	85 ms
06	102 ms
07	119 ms
08	136 ms
09	153 ms
10	170 ms
11	187 ms
12	204 ms

Default code is 4.

- To configure the same DTMF Detection Minimum OFF Timer for all trunks, dial, **3120-*-Code**

- To configure the DTMF Outdial ON Time for a trunk, dial, **3121-1-Trunk-Code**
  Where,
  Trunk is the software port number from 0 to 2.

Code	DTMF ON Time
01	51 ms
02	68 ms
03	85 ms
04	102 ms
05	119 ms
06	136 ms
07	153 ms
08	170 ms

Code	DTMF ON Time
09	187 ms
10	204 ms

Default code is 4.

- To configure the same DTMF Outdial ON Time for all trunks, dial,
  3121-*-Code

- To configure the DTMF Outdial Inter-digit Pause Time for a trunk, dial,
  3122-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	DTMF Inter-digit Pause Time
01	17 ms
02	34 ms
03	51 ms
04	68 ms
05	85 ms
06	102 ms
07	119 ms
08	136 ms
09	153 ms
10	170 ms
11	187 ms
12	204 ms

Default code is 6.

- To configure the same DTMF Outdial Inter-digit Pause Time for all trunks, dial,
  3122-*-Code

- To configure the Flash Timer for a trunk, dial,
  3123-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Flash Timer
0	83ms
1	100ms
2	200ms
3	300ms

Code	Flash Timer
4	400ms
5	500ms
6	600ms
7	700ms
8	800ms
9	900ms

Default code is 6.

- To configure the same Flash Timer for all trunks, dial,
  3123-*-Code

- To configure the ON-Hook Speed for a trunk, dial,
  3126-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	ON-Hook Speed
0	< 0.5ms
1	3ms
2	26ms

Default code is 0.

- To configure the same ON-Hook Speed for all trunks, dial,
  3126-*-Code

- To configure the OFF-Hook Speed for a trunk, dial,
  3127-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	OFF-Hook Speed
0	512ms
1	128ms
2	64ms
3	8ms

Default code is 3.

- To configure the same OFF-Hook Speed for all trunks, dial,
  3127-*-Code

- To configure the Current Limiting Mode for a trunk, dial,
  3128-1-Trunk-Flag
  Where,

Trunk is the software port number from 0 to 2.

Flag	Meaning
0	Current limiting mode disabled
1	Current limiting mode enabled

Default code is 1.

- To configure the same Current Limiting Mode for all trunks, dial,
  3128-*-Flag

- To configure the Minimum Loop Current for a trunk, dial,
  3129-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Minimum Loop Current (in mA)
0	10
1	12
2	14
3	16

Default code is 0.

- To configure the same Minimum Loop Current for all trunks, dial,
  3129-*-Code

- To configure the TIP-RING Voltage for a trunk, dial,
  3130-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	TIP-RING Voltage (in Volts)
0	3.1
1	3.2
2	3.35
3	3.5

Default code is 3.

- To configure the same TIP-RING Voltage for all trunks, dial,
  3130-*-Code

- To configure the Ringer Impedance for a trunk, dial,
  3131-1-Trunk-Code
  Where,

Trunk is the software port number from 0 to 2.

Code	Ringer Impedance
0	High
1	Synthesized

Default code is 0.

- To configure the same Ringer Impedance for all trunks, dial,
  3131-*-Code

- To configure the Ringer Threshold for a trunk, dial,
  3132-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2.

Code	Ringer Threshold
0	13.5-16.5
1	Reserved
2	19.35-23.65
3	40.5-49.5

Default code is 0.

- To configure the same Ringer Threshold for all trunks, dial,
  3132-*-Code

- To configure the Trunk First Digit Wait Timer, dial,
  3010-Seconds
  Where,
  Default: 025 seconds.
  Valid Range: 000 to 255 seconds.

- To configure the Trunk Inter Digit Wait Timer, dial,
  3011-Seconds
  Where,
  Default: 006 seconds.
  Valid Range: 000 to 255 seconds.

- Exit SE mode.

Trunk Access Groups (TAGs)

All the trunks connected to the system can be clubbed together in different groups which are called Trunk Access Groups. Trunk Access Groups provide efficient allocation of trunks to different stations.

- A Trunk Access Group can have maximum three trunks and a total of eight such Trunk Access Groups can be formed.
- A station can be allotted different Trunk Access Groups during Day time and Night time.
- To access these groups, you must dial any of these Trunk Access Codes (TACs) - 0, 5, 61, 62, 63, 64.
- These Trunk Access Groups can be allotted to individual stations.

  For example, in Day time, the Trunk Access Code ‘0’ can be assigned to a Trunk Access Group containing all the trunks. Doing so, on dialing ‘0’ during the Day time, a station user gets any of the free trunks from the Trunk Access Group.

  Similarly, in Night time, the same Trunk Access Code ‘0’ can be assigned to a Trunk Access Group containing no trunk. Doing so, on dialing ‘0’ during Night time, the station user gets Error Tone.

The following table displays the default mapping among Trunk Access Groups, allowed trunks in each group and the Trunk Access Codes to be dialed to access the trunks.

Trunk Access Group	Trunk(s) Allowed	Trunk Access Code (Both Day time/Night time)
0	0, 1, 2	0 and 5[a]
1	0	61
2	1	62
3	2	63
4	No trunk	64
5	No trunk	No code assigned
6	No trunk	No code assigned
7	No trunk	No code assigned

a. Dialing TACs 0 and 5 provides access to all the trunks that a VISIONPRO variant currently supports. For example, in case of VISIONPRO 412, dialing either of these TACs (0 or 5) will provide access to all the four trunks provided they are free. Similarly, for VISIONPRO 206, dialing TAC 0 or 5 will allow access to all the two trunks provided they are free.

System uses two methods while allotting a trunk from the Trunk Access Group. By assigning the Rotation code to the Trunk Access Groups, you can define which method should be used. These two methods are as follows.

- **Remember the last trunk (Rotation ON):** In this method the system remembers the last trunk used and allots the next free trunk in the group to a station.

- **Don’t remember the last trunk (Rotation OFF):** In this method, the system searches for a free trunk and this searching starts from the first trunk programmed in the group. If the first trunk is free, it is allotted to the station. In such case it is possible that first few trunks in a group would be used frequently.

How to configure

1. Decide the number of Trunk Access Groups to be formed. Program these groups using command ***4402.***
2. Program the rotation code to select a trunk within the Trunk Access Group using command ***4403.***
3. Set a Trunk Access Group to default settings using command ***4401*** (if required).
4. Assign a Trunk Access Group and a Trunk Access Code to a station for Day time.

5. Assign a Trunk Access Group and a Trunk Access Code to a station for Night time.

To configure as per the instructions given above,

- Enter SE mode.

- To assign trunk(s) to a Trunk Access Group, dial,
  4402-1-Trunk Access Group-Trunk0.....Trunk2/#
  Where,
  Trunk Access Group is from 0 to 7.
  Trunk0....Trunk2 are the software port numbers of the trunks from 0 to 2.

*One or more trunks can be configured at once but it is necessary to terminate the command by dialing **'#'**. To configure none of the trunks in a Trunk Access Group, only terminate the command by dialing **'#'**. For more clarification, see the example given at the end of this topic.*

  - To assign the same trunk(s) to all Trunk Access Groups at once, dial,
    4402-*-Trunk0....Trunk2/#

- To configure the rotation code for a group, dial,
  4403-1-Trunk Access Group-Rotation Code
  Where,
  Trunk Access Group is from 0 to 7.

Rotation Code	Meaning
0	Trunk rotation is OFF within the group
1	Trunk rotation is ON within the group

By default, Trunk Rotation is ON within the group.

  - To configure the same rotation code for all the groups, dial,
    4403-*-Rotation Code

- To default a Trunk Access Group (only if required), dial,
  4401-1-Trunk Access Group-#
  Where,
  Trunk Access Group is from 0 to 7.

  - To default all Trunk Access Groups at once, dial,
    4401-*-#

- To assign a Trunk Access Group and Trunk Access Code to a station for Day time, dial,
  4411-1-Station-Trunk Access Group Index-Trunk Access Group
  Where,
  Station is from 00 to 07.
  Trunk Access Group Index is from 0 to 5. Following table shows the mapping of Trunk Access Group Indexes to the Trunk Access Codes.

Trunk Access Group Index	Trunk Access Code
0	0
1	5
2	61
3	62

Trunk Access Group Index	Trunk Access Code
4	63
5	64

Trunk Access Group is from 0 to 7.

By default, all trunks are allowed to all stations.

- To assign the same Trunk Access Group and Trunk Access Code to all the stations for Day time, dial, **4411-*-Trunk Access Group Index-Trunk Access Group**

- To assign a Trunk Access Group and Trunk Access Code to a station for Night time, dial, **4412-1-Station-Trunk Access Group Index-Trunk Access Group**
  Where,
  Station is from 00 to 07.
  Trunk Access Group Index is from 0 to 5. Refer the above table to view the mapping of Trunk Access Group Indexes to the Trunk Access Codes.
  Trunk Access Group is from 0 to 7.

  By default, all trunks are allowed to all stations.

  - To assign the same Trunk Access Group and Trunk Access Code to all the stations for Night time, dial, **4412-*-Trunk Access Group Index-Trunk Access Group**

- Exit SE mode.

Example:

Program the system to fulfil the following requirements,

- 3 trunks.
- 3 departments: Technical, Marketing and Administration.
- Technical department should get access to trunk 0 and 1 during Day time by dialing ‘0’.
- Marketing department should get access to trunk 1 and 2 during Day time by dialing ‘0’.
- Administration department should get access to all the three trunks during Day time by dialing ‘0’.
- Security station (station 28) should not get access to any trunk during Day time.
- Technical department and Marketing department should not get trunk access to any trunk during Night time.
- Administration department should get access to trunk 1 by dialing ‘0’ during Night time.
- Station 28 (security station-software port 07) should get access to all the trunks by dialing ‘0’ during Night time only.
- Technical department has two stations 21 and 22 (software ports 00 and 01).
- Marketing department has two stations 23 and 24 (software ports 02 and 03).
- Administration department has three stations 25, 26, 27 (software ports 04, 05, 06).

Solution: Dial the following commands in SE mode,

4402-1-0-0-1-# *(to assign trunks to a Trunk Access Group)*
4402-1-1-1-2-#
4402-1-2-0-1-2-#
4402-1-3-# *(to configure a Trunk Access Group having no trunks at all)*
4402-1-4-1-#

For Technical department during Day,

4411-1-00-0-0
4411-1-01-0-0

For Marketing department during Day,

4411-1-02-0-1
4411-1-03-0-1

For Administration department during Day,

4411-1-04-0-2
4411-1-05-0-2
4411-1-06-0-2

For Security station (station 28) during Day,

4411-1-07-0-3
4411-1-07-1-3
4411-1-07-2-3
4411-1-07-3-3

For Technical department during Night,

4412-1-00-0-3
4412-1-01-0-3
4412-1-00-1-3
4412-1-01-1-3
4412-1-00-2-3
4412-1-01-2-3
4412-1-00-3-3
4412-1-01-3-3

For Marketing department during Night,

4412-1-02-0-3
4412-1-03-0-3
4412-1-02-1-3
4412-1-03-1-3
4412-1-02-2-3
4412-1-03-2-3
4412-1-02-3-3
4412-1-03-3-3

For Administration department during Night,

4412-1-04-0-4
4412-1-05-0-4
4412-1-06-0-4

For Security station (station 28) during Night,

4412-1-07-0-2

Trunk Landing Groups (TLGs)

A Trunk Landing Group is a group of stations on which incoming calls on a particular trunk land. VISIONPRO can be configured to land trunk calls from different trunks on different stations during Day time and Night time.

VISIONPRO uses the station groups for this purpose where multiple stations can be present. It is possible to assign a station group to a trunk. The trunk call would land on these stations as per the programming of the station group.

How it works

- A station group should be assigned to a trunk as the Trunk Landing Group.
- Different station groups can be assigned to a trunk during Day time and Night time. Incoming calls on a trunk can be made to land on different stations during Day time and Night time.

- *By default, station group **'00'** as assigned to all trunks.*
- *If the landing destination has set Call Forward, then calls landing on this trunk will be forwarded accordingly.*

How to configure

1. Decide the number of station groups to be used as Trunk Landing Groups, define a station group using commands ***4702, 4703, 4704*** and ***4705.*** Refer "Station Groups" for more details.
2. Assign a station group to a trunk for Day time using command ***3301.***
3. Assign a station group to a trunk for Night time using command ***3302.***

To configure as described in the above steps,

- Enter SE mode.
- Program the station groups as per your requirement. Refer "Station Groups" for details.
- To assign a station group as the Trunk Landing Group for a trunk during Day time, dial,
  3301-1-Trunk-Station Group
  Where,
  Trunk is the trunk software port from 0 to 2.
  Station Group is from 00 to 15.
  - To assign the same station group as the Trunk Landing Group for all the trunks during Day time, dial,
    3301-*-Station Group
- To assign a station group as the Trunk Landing Group for a trunk during Night time, dial,
  3302-1-Trunk-Station Group
  Where,
  Trunk is the trunk software port from 0 to 2.
  Station Group is from 00 to 15.
  - To assign the same station group as the Trunk Landing Group for all the trunks during Night time, dial,
    3302-*-Station Group

By default, station group '00' is assigned to all trunks during Day time as well as during Night time.

- Exit SE mode.

Example:

Program the system for following requirements:

- 3 CO lines (S/w ports 0 to 2) are interfaced with VISIONPRO.
- First two CO lines, CO1 and CO2 should land on station 21, 23, 25, 22 (S/w port 00, 02, 04, 01 respectively) during Day time. Rotation must be allowed.
- CO1 and CO2 should ring on each station for 10 seconds. Station should ring in the given sequence only.
- First two CO lines, CO1 and CO2 should land on station 21 (S/w ports 00) during Night time.
- CO1 and CO2 should ring on station 21 continuously.
- Third line should land on station 28 and 29 (S/w port 07 and 08 respectively) simultaneously during Day time and Night time.
- CO3 should ring continuously on both the stations.

Solution. Dial following commands in SE mode,

Make Group 0 as per the requirement:

4702-1-00-0-00 *(to configure the station group)*
4702-1-00-1-02
4702-1-00-2-04
4702-1-00-3-01

4703-1-00-0-10 *(to configure the Ring Timer)*
4703-1-00-1-10
4703-1-00-2-10
4703-1-00-3-10

4704-1-00-0-0 *(to configure continuous or non-continuous ring)*
4704-1-00-1-0
4704-1-00-2-0
4704-1-00-3-0

4705-1-00-1 *(to configure the rotation method)*

Make Group 1 as per the requirement:

4702-1-01-0-00 *(to configure the station group having the same station)*
4702-1-01-1-00
4702-1-01-2-00
4702-1-01-3-00

4703-1-01-0-10 *(to configure the Ring Timer)*
4703-1-01-1-10
4703-1-01-2-10
4703-1-01-3-10

4704-1-01-0-1 *(to configure continuous or non-continuous ring)*
4704-1-01-1-1
4704-1-01-2-1
4704-1-01-3-1

4705-1-00-0 *(to configure the rotation method)*

Make Group 2 as per the requirement:

4702-1-02-0-07 *(to configure the station group)*
4702-1-02-1-08
4702-1-02-2-07
4702-1-02-3-08

4703-1-02-0-10 *(to configure the Ring Timer)*
4703-1-02-1-10
4703-1-02-2-10
4703-1-02-3-10

4704-1-02-0-1 *(to configure continuous or non-continuous ring)*
4704-1-02-1-1
4704-1-02-2-1
4704-1-02-3-1

4705-1-02-0 *(to configure the rotation method)*

3301-1-0-00 *(to assign a station group as the Trunk Landing Group for a trunk during Day time)*
3301-1-1-00
3301-1-2-02

3302-1-0-01 *(to assign a station group as the Trunk Landing Group for a trunk during Night time)*
3302-1-1-01
3302-1-2-02

By default, all the station groups contain first four stations. Hence, if less number of stations are to be programmed in a station group then assign the same stations again for remaining destinations within the group. As shown in the example above, station group 1 contains only one station i.e. station 21. Hence all other destinations within a group are assigned the same station.

CHAPTER 7

Configuring Operator

In the context of a PBX, users understand the term 'Operator' as a person who handles multiple simultaneous calls and functions as the link between the callers and the called parties.

VISIONPRO allows any station to be assigned as the Operator.

How it works

When any station presses ‘9’, the system diverts the call to the operator station.

How to configure

- Enter SE mode.
- To configure a station as the Operator, dial,
  1101-Station
  Where,
  Station is the software port number which varies from 00 to 07.

By default, Operator station is assigned to the phone connected to software port number 00.

- Exit SE mode.

Example:

Program station 28 (software port 07) as the operator.

Solution. Dial, ***1101-07*** in SE mode.

CHAPTER 8

Features and Facilities

Abbreviated Dialing

Abbreviated Dialing is the use of ‘Short Codes’ (abbreviated numbers) to dial out long-digit numbers. It is also referred to as the Memory Dialing. Abbreviated Dialing allows you to dial frequently used long-digit numbers quickly and easily.

This feature requires you to store the frequently called, long-digit numbers and their corresponding short codes in special lists, known as the 'Directories'. These directories may be 'Personal' or 'Global'.

VISIONPRO supports two types of Abbreviated Dialing based on the type of the directory used,

- Personal Abbreviated Dialing
- Global Abbreviated Dialing

Personal Abbreviated Dialing

Personal Abbreviated Dialing makes use of the Personal Directory.

Each station user is assigned a single Personal Directory. A maximum of 10 numbers can be stored in each Personal Directory. Each number is stored at a separate location (memory index). These numbers are dialed out using Access Codes 800-809. Here, 8 is the feature access code for Memory Dialing and 00-09 are the location codes for Personal Abbreviated Dialing.

The system checks Trunk Access Group and Toll Control assigned to the user before dialing the Personal Directory number.

- *Each station user can access only the Personal Directory assigned to it.*
- *Personal Directory can be configured by the System Engineer, as well as station users. Station users can add contacts only to the Personal Directory assigned to them.*

Global Abbreviated Dialing

Global Abbreviated Dialing makes use of a system-wide list of numbers stored in the memory of VISIONPRO, referred to as the Global Directory. Global Directory can be programmed either by the System Engineer or the System Administrator.

The Global Directory is divided into two parts i.e. Global Directory Part 1 and Global Directory Part 2. A maximum of 90 numbers can be stored in the common memory space called the 'Global Memory'. In Global Directory Part 1 you can store 45 numbers. Each number is stored at a separate index, that is from 10 to 54. In Global Directory Part 2 you can store 45 numbers. Each number is stored at a separate index, that is from 55 to 99.

These numbers are dialed out using Access Codes 810-899. Here, 8 is the feature access code for Memory Dialing and 10-99 are the location codes for Global Abbreviated Dialing.

The Global Directory is common for all the users and can be accessed by any station connected to the VISIONPRO. Make sure this feature is enabled in the Class of Service assigned to the station user. For more details, see "Class of Service (CoS)". By default all users are allowed access to Global Directory Part 1 and 2.

How to configure

Configuring Personal Directory

To configure a telephone number in the Personal Directory, dial,

- **18-Location Code-Trunk Access Code-Number-#***
  Where,
  Location Code (Personal Memory Index) is from 00 to 09.
  Trunk Access Code is 0, 5, 61, 62, 63, 64. For the list of default TACs applicable to your VISIONPRO variant, refer "Trunk Access Groups (TAGs)".
  Number is the telephone number, maximum 16 digits. If the number has less than 16 digits, you must dial **'#*'** to terminate the command.

Example: To configure the telephone number 0265-2630555 at directory index 00 with Trunk Access Code '62', dial
18-00-62-02652630555.

Once this location is configured with the number, dial ***800*** to call the number.

Configuring Global Directory

- Enter SE mode.

- To configure a telephone number in a Global Directory index, dial,
  1301-1-Location Code-Number-#*
  Where,
  Location Code (Global Memory Index) is from 10 to 99. For Global Directory Part 1, it is from 10 to 54. For Global Directory Part 2, it is from 55 to 99.
  Number is the telephone number, maximum 16 digits. If the number is less than 16 digits, you must dial **'#*'** to terminate the command.

Example: To configure the telephone number of Police i.e. 100 at the location code 10, dial ***1301-1-10-100#*.*** To call the Police, user has to dial ***810.***

- To clear a single number from a Global Directory index, dial,
  1301-1-Location Code-#*
  Where,
  Location Code is from 10 to 99.

- To clear all the numbers at once, dial,
  1301-*-#

- To assign a Trunk Access Group for a single Global Directory index, dial,
  1302-1-Location Code-Trunk Access Group
  Where,
  Location Code is from 10 to 99.
  Trunk Access Group is from 0 to 7.

  - To assign the same Trunk Access Group for all Global Directory indexes, dial,
    1302-*-Trunk Access Group.

- Exit SE mode.

To add Pause while configuring a number, use the Pause digit '#3'. For example, to store a string of digits 265-Pause-2556575; configure the number as 265-#3-2556575.

How to use

Personal Abbreviated Dialing

- Lift the handset.
- Dial **8**
- Dial Personal Directory Index number: **00** to **09**.
- The desired number will be dialed out.

Global Abbreviated Dialing

- Lift the handset.
- Dial **8**
- Dial Global Directory Index number: **10** to **99**.
- The desired number will be dialed out.

AC Impedance Test

VISIONPRO supports the AC Impedance Test to achieve clear, audible and echo-free speech over the CO Trunks. This test helps you to set the most appropriate values for the following CO Trunk parameters,

- AC Termination Impedance (or, AC Impedance)
- CO Termination
- CO Line Type

The test helps to correct the line impedance mismatch between the AC Termination Impedance presented by the CO port of VISIONPRO to the line and the CO Termination Impedance presented by the Central Office (CO) to the line.

Conducting the AC Impedance Test

You can conduct the AC Impedance Test of a specific CO trunk port by placing an outgoing call to a pre-defined number using that CO port.

Before you conduct the AC Impedance Test, make sure you have the following,

- a telephone instrument with a valid number. You are recommended to use a mobile handset having the Mute function. Also, make sure that you can answer the call from the telephone/mobile handset you will use for the test.
- the CO trunk which you want to test.

At a time, you can conduct the test for a single CO trunk port only.

You can conduct the test after you have set the relevant test parameters. To do this,

- Enter SE mode from an SLT connected to the system.
- To select the Test Mode, dial,
  3136-Index
  Where,

Index	Test Mode
0	Reliable
1	Accurate

  The Recommended Test Mode is Reliable.

  The Reliable Test Mode suggests the AC Impedance settings on the basis of most commonly used AC Impedances, CO Terminations and CO Line Types across the globe. The test using Reliable Test Mode takes approximately **5 minutes** to complete.

  The Accurate Test Mode suggests the AC Impedance settings on the basis of all the possible AC Impedances, CO Terminations and CO Line Types across the globe. The test using the Accurate Test

Mode takes approximately **1 hour and 20 minutes** to complete.

- To configure the phone number on which you want to place the test call, dial,
  3137-Number
  Where,
  Number is the telephone number, maximum 16 digits. If the number is less than 16 digits, you must dial **'#'** to terminate the command.

The number can be a landline or a mobile number. However, we recommend you to use a mobile number for the test call. If you are using a mobile number, be sure the handset of the configured number supports the Mute function.

- To configure the CO Port number through which the test call will be placed, dial,
  3138-Trunk
  Where,
  Trunk is the software port number from 0 to 2

This must be the same CO trunk port for which AC Impedance parameters are to be set.

- As soon as you dial the last command, the test starts. The system places a call to the phone number you have configured.

While the test is being conducted, you will hear pulsating tone on all the trunk ports of the system.

- Answer the test call from the telephone/mobile handset (preferable: mobile handset). You will hear Music-on-Hold as per the type of Answer Supervision you have configured for the CO trunk you are testing.

  For example, the default Answer Supervision is Pseudo Answer and the Pseudo Answer Supervision Timer is 10 seconds. If you have not changed this default settings, you will hear the Music-on-Hold after 10 seconds on answering the call.

- As the Music-on-Hold starts playing, mute the microphone of your handset.

  If you are making the test call to a landline number, mute the call using the Mute key of the phone. If your phone does not have a Mute key, unplug the handset cable from the phone body. This is to prevent test signals from reflecting back into the mic of the handset.

- After approximately 5 seconds of Music-on-Hold, you will hear the test signals being transmitted by the system for the duration of the test.

  During the test run, the Status LED blinks with a cadence of 500ms ON and 500ms OFF.

- On completion of the test, the system will automatically disconnect the call. The Status LED will start blinking in its normal cadence, that is, 1s ON and 1s OFF.

- However, if you wish to abort the test midway, dial the **Abort Test** command,
  3140

Viewing the Test Results

On successful completion of the AC Impedance test, the system provides three best matching test results for the selected CO port. Each test result consists of the best matching codes of AC Termination Impedance, CO Termination and CO Line Type applicable to the selected CO port. The system stores these codes in a specific Result Index in the following format,

Result Index	AC Termination Impedance Code	CO Termination Code	CO Line Type Code
0	Any code value between 00 - 15	Any code value between 00 - 13	Any code value between 00 - 10
1	Any code value between 00 - 15	Any code value between 00 - 13	Any code value between 00 - 10
2	Any code value between 00 - 15	Any code value between 00 - 13	Any code value between 00 - 10

To view the actual values of AC Termination Impedance, CO Termination and CO Line Type corresponding to each code, refer "Configuring Trunks".

You can view the codes of AC Termination Impedance, CO Termination and CO Line Type corresponding to only one Result Index at a time.

- To view the codes of AC Termination Impedance, CO Termination and CO Line Type stored at a particular Result Index, dial the following command from an SLT (make sure the SLT has CLI support),
  3139-Trunk-Result Index
  Where,
  Trunk is the software port from 0 to 2 for which the test has been conducted.
  Result Index is any value from 0 to 2. Recommended is 0.

- Go ON-Hook.

- You receive an incoming ring and the codes of the dialed Result Index are displayed on the CLI of the SLT. Make sure you note down these values on a piece of paper. You must assign them to the selected CO port.

Result Index 0 stores the best code values of AC Termination Impedance, CO Termination and CO Line Type; hence it is recommended that you apply these values to the selected CO port and verify the results.

Applying the Test Results

To apply the test result codes to the selected CO port,

- Enter SE mode.

- To configure the AC Termination Impedance for the trunk, dial,
  3111-1-Trunk-AC Termination Impedance Code
  Where,
  Trunk is the software port from 0 to 2 for which the test has been conducted.
  AC Termination Impedance Code is the value obtained corresponding to Result Index 0.

Code	AC Termination Impedance
00	600Ω

Code	AC Termination Impedance
01	900Ω
02	270Ω + (750Ω || 150 nF) and 275Ω + (780Ω || 150 nF)
03	220Ω + (820Ω || 120 nF) and 220Ω + (820Ω || 115 nF)
04	370Ω + (620Ω || 310 nF)
05	320Ω + (1050Ω || 230 nF)
06	370Ω + (820Ω || 110 nF)
07	275Ω + (780Ω || 115 nF)
08	120Ω + (820Ω || 110 nF)
09	350Ω + (1000Ω || 210 nF)
10	200Ω + (680Ω || 100 nF)
11	600Ω + 2.16 µF
12	900Ω + 1 µF
13	900Ω + 2.16 µF
14	600Ω + 1 µF
15	Global complex impedance

- To configure the same AC Termination Impedance for all trunks (provided the service provider is the same for all trunks), dial,
  3111-*-AC Termination Impedance Code

It is possible that the CO trunks subscribed from the same exchange differ in their AC Impedance settings. In such a case, you must run the test for each CO trunk separately and assign obtained code values to each of these trunks.

- To configure the CO Termination for the trunk, dial,
  3112-1-Trunk-CO Termination Code
  Where,
  Trunk is the software port from 0 to 2 for which the test has been conducted.
  CO Termination Code is the value obtained corresponding to Result Index 0.

Code	CO Termination
00	None
01	900Ω + 2.16 µF
02	600Ω
03	1200Ω + 376Ω + 112 nF
04	150Ω + 510Ω + 47 nF
05	220Ω + 820Ω + 150 nF
06	600Ω + 1.5 µF
07	220Ω + 120Ω + 115 nF
08	220Ω + 820Ω + 115 nF

Code	CO Termination
09	370Ω + 620Ω + 310 nF
10	220Ω + 820Ω + 120 nF
11	300Ω + 1000Ω + 220 nF
12	270Ω + 750Ω + 150 nF
13	200Ω + 560Ω + 100 nF

- To configure the same CO Termination for all trunks (provided the service provider is the same for all trunks), dial,
  3112-*-CO Termination Code

- To configure the CO Line Type for the trunk, dial,
  3113-1-Trunk-CO Line Type Code
  Where,
  Trunk is the software port from 0 to 2 for which the test has been conducted.
  CO Line Type Code is the value obtained corresponding to Result Index 0.

Code	CO Line Type
00	EIA-0
01	EIA-1
02	EIA-2
03	EIA-3
04	EIA-4
05	EIA-5
06	EIA-6
07	EIA-7
08	2000 ft. 22 awg
09	2000 ft. 24 awg
10	2000 ft. 26 awg

- To configure the same CO Line Type for all trunks (provided the service provider is the same for all trunks), dial,
  3113-*-CO Line Type Code

- Exit SE mode.

Verifying the Test Results

- Verify the test results by making a trial call from a station by grabbing the CO trunk on which the test has been conducted. There should be no echo and speech should be audible and clear.

- If you still hear echo during the trial call, you may proceed as follows,

  - View the codes corresponding to Result Index 1 and apply them to the selected trunk port. If the performance is still not satisfactory, then view the codes corresponding to Result Index 2 and apply

them. Also verify the speech quality.

- Still if you are unable to obtain satisfactory results, re-run the test using the **Accurate Test** mode.

- Repeat as per above mentioned descriptions to conduct further tests as per your requirement.

Alarms

VISIONPRO offers four different types of alarms to address the varying requirements of most of its users. These can be categorized as — Duration Alarm, Time Alarm, Daily Alarm, Remote Alarm. When alarms are set, the station rings for the duration set as the “Alarm Ring Timer”.

Customized greeting message can be played to the caller, when the alarm call is answered. To record the message, refer “Voice Message Applications”.

- *Each station can register as many as three different alarm requests (that is one Duration alarm, one Time alarm and one Daily alarm) at a time.*
- *If the station is busy at the time of alarm, then the alarm call is served once it becomes free.*
- *Alarm settings are retained in the system during power down mode and system upgrades. However, if alarm is set and the system is powered down within 1 minute, then alarm settings are lost.*

Duration Alarm

You can set this alarm to arrive after a specific time duration. When the set time duration expires, your station starts ringing with a different ring cadence. When you lift the handset, you hear music/voice message.

- *Only one Duration alarm can be set at a time on one station. The latest alarm supersedes the previous one, if set.*
- *All stations can set Duration alarm for same duration simultaneously.*

Time Alarm

You can set this alarm to arrive at a specific time. At the set time, your station starts ringing with a different ring cadence. When you lift the handset, you hear music/voice message.

- *Only one Time alarm can be set at a time on one station. The latest alarm supersedes the previous one, if set.*
- *All stations can set Time alarm for same time simultaneously.*

Daily Alarm

You can set this alarm to arrive daily at a specific time. At the set time, your station starts ringing with a different ring cadence. When you lift the handset, you hear music/voice message.

- *Only one Daily alarm can be set at a time on one station. The latest alarm supersedes the previous one, if set.*
- *All stations can set Daily alarm for same time simultaneously.*

Remote Alarm

A Remote alarm can be set by any station user/operator for some other station. At the set time, the remote station (on which the alarm has been set) starts ringing with a different ring cadence. When the station user lifts the handset, music/voice message is played.

- *You can set a single Time alarm or a Duration alarm or a Daily alarm on one remote station at a time. However, different types of these alarms (that is, Time alarm or Duration alarm or Daily alarm) can be set simultaneously on the same remote station.*

- *Any station can set Remote alarms on other stations only if 'Remote Alarm' feature is allowed in its Class of Service. However, if the remote station has the Alarm feature disabled in its CoS and the operator sets Remote Alarm for that station, alarm is set and played successfully.*

How to configure

Alarm and Remote Alarm, both are configurable features. To allow access to set/cancel Alarm and Remote Alarm to a user refer "Class of Service (CoS)".

Alarm Ring Timer

This is the duration for which a station rings when it receives an Alarm call.

To configure the timer,

- Enter SE mode.

- Dial **3013-Seconds**
  Where,
  Allowable range for seconds is 000 to 255.
  Default: 045 seconds.

- Exit SE mode.

Voice Message for Alarm

You can configure the system to play the desired voice message when users answer the alarm call. For more details, refer "Voice Message Applications".

How to use

Alarms can be set/canceled by the station users themselves. The station users can also ask the Operator to set Remote alarms for them, if required.

Setting a Duration Alarm

- Lift the handset.
- Dial **161**
- Enter the Minutes. Minutes is from 00 to 99.
- Replace handset.

Example: Dial **161-09** to set an alarm after 9 minutes.

Setting a Time Alarm

- Lift the handset.
- Dial **162**
- Enter the Hours and the Minutes in 24-hour format. Hours is from 00 to 23 and Minutes is from 00 to 59.
- Replace handset.

Example: Dial **162-1630** to set an alarm at 4.30PM.

Setting a Daily Alarm

- Lift the handset.
- Dial **163**
- Enter the Hours and the Minutes in 24-hour format. Hours is from 00 to 23 and Minutes is from 00 to 59.
- Replace handset.

Example: Dial **163-1230** to set a daily alarm at 12.30PM.

Canceling Duration/Time/Daily Alarm

- Lift the handset.
- Dial **160**
- Replace handset.

Setting a Remote Alarm

Duration Alarm

- Lift the handset.
- Dial **164-Station-1-Minutes**.
  Where,
  Station is from 21 to 36
  Minutes is from 00 to 99
- Replace handset.

Time Alarm

- Lift the handset.
- Dial **164-Station-2-Hours-Minutes**.
  Where,
  Station is from 21 to 36
  Hours is from 00 to 23
  Minutes is from 00 to 59
- Replace handset.

Daily Alarm

- Lift the handset.
- Dial **164-Station-3-Hours-Minutes**.
  Where,
  Station is from 21 to 36
  Hours is from 00 to 23
  Minutes is from 00 to 59

- Replace handset.

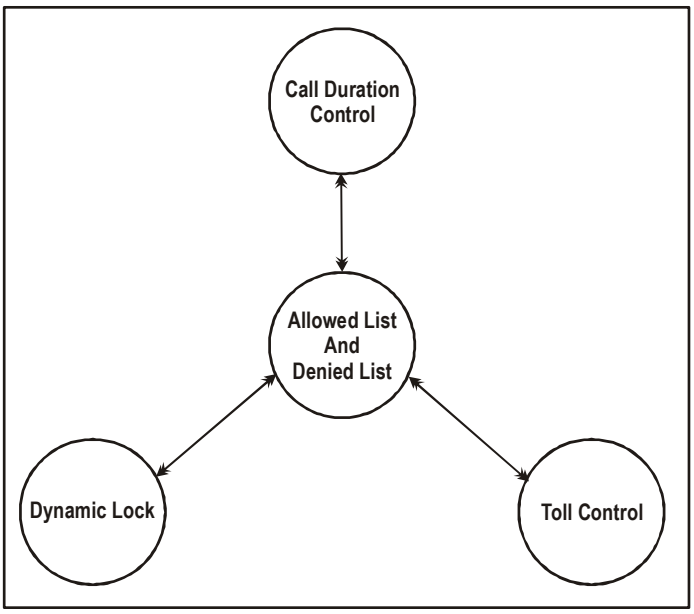
Example: To set a daily wake up alarm at 5.30PM on station 23 from station 26, dial **164-23-3-1730** from station 26.

Canceling a Remote Alarm

- Lift handset.
- Dial **164-Station-0**
- Replace handset.

Allowed and Denied Lists

Allowed and denied lists are a group of number strings. VISIONPRO uses these lists to support three different features - Toll Control, Dynamic Lock and Call Duration Control.



Association of Allowed list and Denied list with Toll Control

When a number is dialed out from a station, VISIONPRO compares the dialed number string with the number strings in allowed and denied lists provided proper lists have been assigned to the station. Refer “Toll Control” for details.

Association of Allowed list and Denied list with Dynamic Lock

If you lock your station and thereafter dial out a number, VISIONPRO will compare the dialed number string with the number strings in allowed and denied lists for the locked status. You must assign the required allowed and/or denied number list to the station. Refer “Dynamic Lock” for details.

Association of Allowed list and Denied list with Call Duration Control

If Call Duration Control feature is set for a station, VISIONPRO compares the dialed number string with the number strings in allowed and denied lists for Call Duration Control (CDC) set condition. VISIONPRO disconnects the call if the number string dialed by the station matches with the denied list for CDC condition. Refer “Call Duration Control (CDC)” for details.

How it works

You can configure a maximum of 8 allowed lists and 8 denied lists. Maximum 16 entries (or, number strings) can be programmed in one allowed or one denied list.

Each entry in either list can be up to 16 characters long.

The number strings can be complete telephone numbers, area codes or few initial digits of telephone numbers.

The default allowed list is given below:

Location/ List	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
1	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
3	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
4	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
5	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
6	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
7	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B

The default denied list is given below:

Location/ List	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0	0	1	2	3	4	5	6	7	8	9	B	B	B	*	#	F
1	0	95	98	96	94	B	B	B	B	B	B	B	B	*	#	F
2	0	95	98	94	B	B	B	B	B	B	B	B	B	*	#	F
3	0	95	B	B	B	B	B	B	B	B	B	B	B	*	#	F
4	0	B	B	B	B	B	B	B	B	B	B	B	B	*	#	F
5	00	B	B	B	B	B	B	B	B	B	B	B	B	*	#	F
6	B	B	B	B	B	B	B	B	B	B	B	B	B	*	#	F
7	B	B	B	B	B	B	B	B	B	B	B	B	B	*	#	F

- *Default allowed list for Day and Night is '2' whereas default denied list for Day and Night is '4'.*
- *'Allowed list 0' and 'Denied list 0' are assigned in locked condition by default.*

How to configure

Configuring Allowed Number List

- Enter SE mode.
- To configure the number strings in the allowed list, dial,
  1202-1-Allowed List-Location Index-Number-#*
  Where,
  Allowed list is from 0 to 7.
  Location Index is from 00 to 15.
  Number is a complete telephone number or a truncated telephone number or an area code. If the number is less than 16 digits, you must dial **'#*'** to terminate the command.

Example: To configure 022 in allowed list 4, dial - **1202-1-4-00-022-#***

However, 022 can be programmed in any desired location index.

- To configure the same number in a specific location index for all the allowed lists, dial,
  1202-*-Location Index-Number-#*

- To restore default values in an allowed list, dial,
  1201-1-Allowed List-#
  Where,
  Allowed List is from 0 to 7.

  - To restore default values in all allowed lists at once, dial,
    1201-*-#

- Exit SE mode.

Configuring Denied Number List

- Enter SE mode.

- To configure numbers in the denied list, dial,
  1204-1-Denied List-Location Index-Number-#*
  Where,
  Denied list is from 0 to 7.
  Location Index is from 00 to 15.
  Number is a complete telephone number or a truncated telephone number or an area code. If the number is less than 16 digits, you must dial **'#*'** to terminate the command.

  - To configure the same number in a specific location index for all the denied lists, dial,
    1204-*-Location Index-Number-#*

- To restore default values in a denied list, dial,
  1203-1-Denied List-#
  Where,
  Denied List is from 0 to 7.

  - To restore default values in all the denied lists at once, dial,
    1203-*-#

- Exit SE mode.

Example: Program Allowed List and Denied List for following requirement:

- Allow all numbers except 'ISD'.

Solution: On observing the default lists, we can conclude that,

- This condition can be fulfilled using default denied list 5. Assign this list to the required station. See "Toll Control" for more information.

Alternate Number Dialing

Alternate Number Dialing allows you to dial different phone numbers in an attempt to reach a person whose line is busy.

Alternate Number Dialing is useful when the person or organization you are trying to reach has more than one number, where they may be reached. The system dials out different phone numbers of the same party, saving your time and effort of dialing each of these numbers manually.

You simply need to Redial the number or set Auto Redial for the number. Doing so, the system tries alternate numbers, if programmed. If Auto Redial is requested, the system gives you a ring when the number goes through.

How it works

Global Directory is used to accomplish this feature. An Alternate group number should be assigned to a number in the Global Directory. An Alternate group number can vary from 00 to 99.

Suppose two numbers programmed at index 10 and 11 are to be used as Alternate numbers. Then both the numbers should be programmed as one group in the Global Directory. Doing so, when a station user dials an external number, the system checks for it in the Global Directory. If the number is busy and the user tries Redial, the system automatically opts for Alternate Number dialing. It tries the next number available in the Alternate group. If this number is also busy, it tries next number in the group. All the numbers are tried in this way. This continues as long as the user accesses the Redial feature.

If the user tries Auto Redial, the system tries for all the numbers in the Alternate group one by one. If any of the number is through, it gives a ring to the caller. If all the numbers are busy in the group then the system sets Auto Redial for the last number dialed and waits for RBT from the remote end. It informs the caller when the call is through by placing a ring on your station.

For example, ABC Ltd. has four telephone numbers such as 2640459, 2631235, 2635589 and 2565590 and all are to be used as Alternate Numbers. So, all these four numbers should be programmed in the Global Directory.

Now you configure them in indexes ranging from 10 to 13. All these numbers should be assigned one Alternate group, say, 00. Doing so, all these numbers act as the Alternate Number for each other. Whenever a user dials any of these numbers and tries Redial or Auto Redial, Alternate Number dialing logic comes into play automatically. If a user dials 2640459 and finds it busy and then tries Redial (or, Auto Redial), the system automatically dials 2631235. This is repeated every time a Redial (or, Auto Redial) is accessed.

If no alternate number is available for a main number in the Global Directory then the system redials the last dialed number while trying the Redial or the Auto Redial.

- *Alternate Numbers are used during Redial and Auto Redial. Hence all the timers related to these features should be programmed properly.*
- *If Auto Redial is set for a number having Alternate numbers, the system tries all the Alternate numbers first and then sets the Auto Redial for the last number dialed.*
- *One number can have one or more than one Alternate numbers. Maximum 90 alternate numbers can be assigned to a number.*

- *Alternate Number Dialing also works with "Abbreviated Dialing". For example, a station user dials the abbreviated code 8100, and the dialed out number is busy. When the station user sets Redial or Auto Redial, the VISIONPRO will try the alternate numbers related to 8100.*

- *Alternate number is allowed to all the stations.*

- *Stations not having access to Global Directory can also use Alternate Number dialing.*

How to configure

To use Alternate Number Dialing, you must do the following:

1. Make a list of numbers to be programmed as the Alternate Numbers.
2. Create Alternate Number Groups.
3. Configure Alternate Number Groups in the Global Directory using command **1303**.

If you write down the numbers on a piece of paper, the Global Directory after assigning Alternate Group Numbers would appear as shown below,

Index	Main Number	TAG	Alternate Number Group
10	022281110001	0	00
11	022234567890	3	00
12	022281110002	0	00
:	:	:	:
:	:	:	:
98	0332987654321	2	01
99	033298765432	4	01

To configure Alternate Number Groups in the Global Directory,

- Enter SE mode.

- To assign an Alternate Group Number, dial,
  1303-1-Index-Alternate Group Number
  Where,
  Index is from 10 to 99. It is the Global Directory Index number.
  Alternate Group Number is from 00 to 99.

  - To clear all the Alternate Group Numbers, dial,
    1303-*-#

- Exit SE mode.

Example: Program the system to fulfil the following requirements:

- ABC Ltd. has five telephone numbers - 2640075, 2640076, 2640077, 2635151 and 2635173.
- XYZ Ltd. has three telephone numbers - 2788856, 2788896, 2788857.

Step 1

Make a table as shown below on a piece of paper,

Index	Number	TAG	Alternate Number Group
10	2640075	0	00

Index	Number	TAG	Alternate Number Group
11	2640076	0	00
12	2640077	0	00
13	2635151	0	00
14	2535173	0	00
15	2788856	0	05
16	2788896	0	05
17	2788857	0	05

If the Global Directory is not programmed then configure it first as explained in "Abbreviated Dialing".

Step 2

Dial following commands in SE mode to configure the Alternate Group Numbers,

- **1303-1-10-00**
- **1303-1-11-00**
- **1303-1-12-00**
- **1303-1-13-00**
- **1303-1-14-00**
- **1303-1-15-05**
- **1303-1-16-05**
- **1303-1-17-05**

Auto Call Back (ACB)

If the station number you have dialed is busy or is not responding, you may use the Auto Call Back feature, instead of repeatedly dialing the number. Similarly, when you dial a code to access a trunk and the trunk is busy, you may set Auto Call Back.

VISIONPRO offers two types of Auto Call Back as follows,

- Auto Call Back on Busy
- Auto Call Back on No Reply.

How it works

Auto Call Back on Busy (ACB-Busy)

If a station user finds the dialed station to be busy, Auto Call Back can be set by dialing the ACB command during Busy Tone. When the dialed station becomes free, it rings. Simultaneously, the station that requested Auto Call Back also starts ringing.

Whoever answers first gets the Ring Back Tone (RBT), whereas the other end keeps on ringing. Once the other party answers, Ring Back Tone stops and speech is established.

If Auto Call Back ring is not answered before the expiry of the Auto Call Back Ring Timer (default: 30 seconds; programmable), it stops and Auto Call Back request gets cleared.

Similarly, Auto Call Back can also be requested on a busy trunk.

Auto Call Back on No Reply (ACB-No Reply)

If the dialed station is not answering the call, caller station can set ACB on No Reply while Ring Back Tone is played. When the dialed station user returns to desk and picks up the handset (or, goes OFF-Hook and ON-Hook), the system detects its availability and places a call to the caller station. Both stations come in speech when the station that requested ACB answers the call.

- *Each station of VISIONPRO can set only one Auto Call Back request at a time. If you set another Auto Call Back request, before the first one has been served, the system will override the first request and serve the second.*
- *ACB - Busy and ACB - No Reply can be used simultaneously.*
- *Auto Call Back works for internal calls and for accessing trunk ports only.*

How to configure

Auto Call Back is a "Class of Service (CoS)" dependant feature. An station user can set/cancel Auto Call Back only if it is enabled in the station's Class of Service.

The only configuration involved in this feature is enabling/disabling Auto Call Back in the Class of Service and changing the duration of the Auto Call Back Ring Timer, if required.

Auto Call Back Ring Timer

Time after which the Auto Call Back ring on a station stops.

To configure,

- Enter SE mode.
- Dial **3014-Seconds**
  Where,
  Default: 030 seconds.
  Valid Range: 000 to 255 seconds.
- Exit SE mode.

How to use

Auto Call Back on Busy

To set Auto Call Back on Busy,

- Dial **2** on Busy Tone.
- You get Confirmation Tone.
- Replace handset.

To cancel Auto Call Back,

- Lift handset.
- Dial **102**.
- You get Confirmation Tone.
- Replace handset.

Auto Call Back on No Reply

To set Auto Call Back on No Reply,

- Dial **Flash** on Ring Back Tone.
- Dial **2**.
- You get Confirmation Tone
- Replace handset.

To cancel Auto Call Back on No Reply,

- Lift handset.
- Dial **102**.
- You get Confirmation Tone.
- Replace handset.

Auto Redial

The Auto Redial feature retries an external call automatically if the dialed number is busy. It repeatedly checks the busy line till it is free. When the called number is no longer busy, the system places a ring on the caller station.

Auto Redial saves time and the effort of repeatedly dialing the entire phone number over and over until the call goes through.

The Auto Redial feature is supported for external numbers only. VISIONPRO also allows multiple Auto Redial. Three different numbers can be set for Auto Redial simultaneously.

How it works

When you dial a number and get Busy Tone, you can set Auto Redial by dialing its command. When Auto Redial is set,

- VISIONPRO checks for a free trunk to dial the number.
- VISIONPRO dials out the requested number and waits until the 'Auto Redial - Ring Back Tone Wait Timer[6]' expires to sense the Ring Back Tone from the requested number. This timer is programmable and is set to 60 seconds by default.
- If the system does not detect Ring Back Tone for 60 seconds, it releases the trunk, increments the Auto Redial Retry Count and tries again after some time. Otherwise, if the system detects a Busy Tone, it releases the trunk, increments the Auto Redial Retry Count and redials the number automatically after some time. This process is repeated until the system detects the Ring Back Tone.
- When VISIONPRO detects the Ring Back Tone instead of the Busy Tone, it places a ring on the station that has set Auto Redial. The station rings for the duration of the 'Auto Redial Ring Timer[7]'. This timer is programmable and is set to 45 seconds by default.
- The station must go OFF-Hook to get connected to the external party.
- If the station is in the middle of any activity such as dialing, ringing or in speech, VISIONPRO suspends Auto Redial until the station becomes idle again. Later on, it dials the requested number again.

To change the number of redial attempts and the interval between them, you must configure the Auto Redial Retry Count and the Auto Redial Retry Interval respectively. In addition to these, the system has two other related timers, which can be configured to match user preference:

- Auto Redial Ring Back Tone (RBT) Wait Timer
- Auto Redial Ring Timer

6. Time for which VISIONPRO waits to sense the RBT from the PSTN/CO Network after dialing the requested number.

7. Time for which the station that has requested Auto Redial should ring.

- *VISIONPRO allows to set multiple Auto Redials. A station user can set Auto Redial for **three** different numbers at a time from the same station.*
- *More than one station can attempt Auto Redial/multiple Auto Redials simultaneously.*
- *The system uses the same Trunk Access Code that was used for dialing the number. If you dialed '0', the system grabs one of the free trunks selected on dialing '0'.*
- *The system suspends Auto Redial if there is any activity (ringing/speech/dialing) on the station that requested Auto Redial. It resumes as soon as the station becomes free.*
- *Frequency and timings are critical for Auto Redial to work.*
- *In case multiple Auto Redials are set, selective cancellation of Auto Redial for a particular number cannot be done.*
- *If multiple Auto Redials are set, all the Auto Redial requests of a station are cancelled on executing the cancel Auto Redial command.*
- *If the number was dialed for the first time using Selective Trunk Access, the system will use the same trunk for Auto Redial.*
- *If a station has 'Dynamic Lock' set, and have also set 'Auto Redial', the system will check the Toll control as per dynamic lock level.*

Auto Redial may not work well on CO trunks, as its functioning greatly depends on line condition. Unlike digital trunks, the line condition of Analog trunks may not always measure up to the standard requirement for Auto Redial to function. Auto Redial does not work in following cases,

- *If the trunk lines do not support standard tones.*
- *If trunk condition is poor and various tones cannot be detected properly.*
- *If the called party lifts within 3 seconds after ring is played on his/her phone.*

How to configure

For Auto Redial to work, you must,

- Enable the feature 'Auto Redial' in the "Class of Service (CoS)" of the stations to which this feature is to be allowed.
- Change the **Auto Redial Retry Count** and the **Auto Redial Retry Interval** to match user preferences. This will change the number of redial attempts made by the system and the interval between them.
- If required, also change other related Timers such as **Auto Redial Dial Tone Wait Timer**, **Auto Redial Ring Back Tone (RBT) Wait Timer** and **Auto Redial Ring Timer**.

Auto Redial Dial Tone Wait Timer

It specifies the time for which VISIONPRO waits before executing Auto Redial.

To configure,

- Enter SE mode.
- Dial **3031-Seconds**
  Where,
  Default: 003 seconds.
  Valid Range: 000 to 255 seconds.
- Exit SE mode.

Auto Redial Ring Back Tone (RBT) Wait Timer

It specifies the time for which VISIONPRO waits to sense RBT from the PSTN after dialing the requested number.

To configure,

- Enter SE mode.
- Dial **3032-Seconds**
  Where,
  Default: 060 seconds.
  Valid Range: 000 to 255 seconds.
- Exit SE mode.

Auto Redial Ring Timer

It specifies the time for which the station that has requested Auto Redial should ring when Auto Redial Call is placed.

To configure,

- Enter SE mode.
- Dial **3033-Seconds**
  Where,
  Default: 045 seconds.
  Valid Range: 000 to 255 seconds.
- Exit SE mode.

Auto Redial Retry Interval

It specifies the time between two Auto Redial attempts.

To configure,

- Enter SE mode.

- Dial **3029-Seconds**
  Where,
  Default: 015 seconds.
  Valid Range: 000 to 255 seconds.

- Exit SE mode.

Auto Redial Retry Count

It specifies the number of times VISIONPRO tries the same number.

To configure,

- Enter SE mode.

- Dial **3030-Count**
  Where,
  Default: 005
  Valid Range: 000 to 255.

- Exit SE mode.

Auto Redial Number Count

It specifies the number of external numbers that can be set for Auto Redial simultaneously from one station. Auto Redial Number Count is 3 and it is non-programmable.

How to use

To set Auto Redial,

- When the external number you are trying is busy, go ON-Hook on Busy Tone.
- Lift the handset.
- Dial **77**
- You get Confirmation Tone.
- Replace handset.

In case of multiple Auto Redials, repeat all of the above steps to set Auto Redial for other numbers (maximum 3 numbers possible).

Example:
Dialed number 0265-2630555 is busy. To use Auto Redial feature, disconnect and dial **77.**

To cancel Auto Redial,

- Lift the handset.
- Dial **70**.
- You get Confirmation Tone.
- Replace handset.

Barge-In

Barge-In allows you to break into an on-going conversation between two station users or between a station user and an external caller.

Barge-In can be used by the Operator to transfer incoming calls to busy stations. The Operator can put the caller on hold, barge into the busy station to inform about the call, and then transfer the call.

VISIONPRO offers flexibility to allow/deny Barge-In feature to a station user, that is allow the station user to barge into on-going conversations. It also provides the flexibility to prevent conversations of station users from being barged in, referred to as Privacy from Barge-In.

How it works

When your call is urgent and you cannot wait for the called person to become free, you can land in his/her conversation after an intimation using the Barge-In feature.

When you Barge-In, you get the Ring Back Tone while the called person gets beeps for 10 seconds (default value). This timer duration is defined as the Barge-In timer and it is programmable.

During the beeps, the called person can dial '**Flash**' to answer your call.

If the called party does not answer during these 10 seconds, the call is forcibly answered and you are connected to the called party. The third party is put on hold and gets on-hold music; hence he/she cannot listen to your conversation.

If you disconnect after speech, the called party will automatically be connected to the held party.

Feature Interactions

- **Call States:**
    - Barge-In works only if the dialed station is busy. The dialed station may be busy with another station or trunk (external number).
    - Barge-In works only if the user about to be barged in is in a two-way normal speech with another user or external party.

      It will not work if the busy indication is due to the user being OFF-Hook, or in the middle of dialing, or accessing a feature of the PBX.
- **Privacy from Barge-In:** If the feature 'Privacy from Barge-In' is allowed for a station, it cannot be barged into.
- Barge-In can also be used after putting one party on hold. An important trunk call can be transferred to a busy station after putting the calling party on hold and barging-into the busy destination to inform about the held call.

How to configure

The functioning of this feature is controlled by three parameters, 'Barge-In', 'Privacy from Barge-In' and 'Barge-In Timer'.

Barge-In and Privacy from Barge-In

First decide which of the stations are to be allowed Barge-In and the stations that are to be protected against Barge-In. Accordingly enable/disable the features Barge-In and Privacy from Barge-In in the Class of Service of the station users.

Refer the topic “Class of Service (CoS)” and “Privacy” for details.

Barge-In Timer

It is the time after which the caller gets connected to the called party using Barge-In.

To configure,

- Enter SE mode.
- Dial **3016-Seconds**
  Where,
  Default: 010 seconds.
  Valid Range: 000 to 255 seconds.
- Exit SE mode.

How to use

When dialed station is busy,

- Dial **3** on Busy Tone.
- You get Ring Back Tone (RBT). The called person gets beeps.

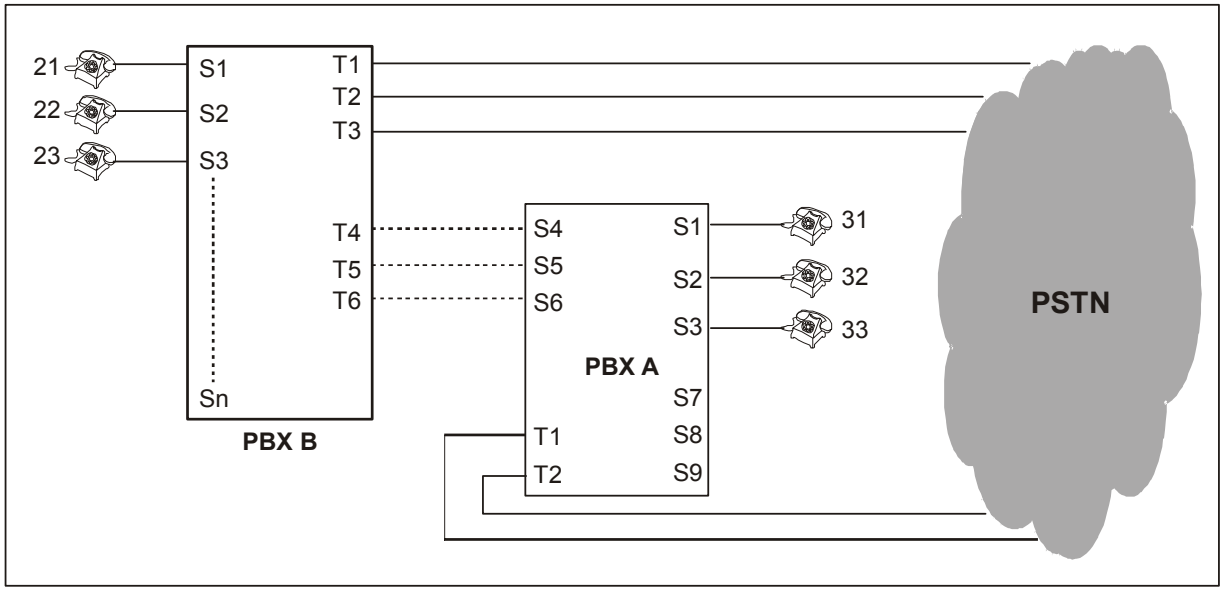
Behind the PBX Application

Many times, small and medium range PBX systems are connected behind some bigger PBX systems. Such applications are used mainly to expand the existing capacity of the big PBX already in use. Stations coming from the big PBX are used as trunks of the small PBX. There could also be some PSTN trunks coming directly on the smaller PBX. Such configurations are known as ‘Behind the PBX’ application.

In such situations, it is not easy to implement toll control restrictions.

How it works

Consider the following illustration.



PBX-A is connected behind PBX-B. In this 'Behind the PBX' configuration, the Trunk Lines T4, T5, T6 of PBX-B are connected to the stations (SLT) S4, S5, S6 of PBX-A.

However, Trunk lines T1, T2 and T3 of PBX-A are connected directly to the CO.

In such application scenarios, implementing toll control restrictions for the trunks becomes difficult for PBX-B.

For example: station Number 21 of PBX-B in the above illustration is not allowed the facility of long distance dialing. It has access to all the CO trunks.

When the user of station 21 wants to access T1, T2 or T3 (which are direct trunks from the CO to PBX-B) the user dials '0' (or the Trunk Access Code assigned) and gets CO dial tone. When the user dials the number, PBX-B applies Toll Control.

Similarly, when the user of station 21 tries to grab a trunk T4, T5 or T6 (which are connected to stations of PBX-A) by dialing Trunk Access Code '0' (or the Trunk Access Code assigned), the user gets the dial tone of PBX-A. This means, the user of station 21 must dial '0' again (or the assigned Trunk Access Code) to grab CO dial tone of the T1/T2 trunks connected to PBX-A.

However, when the user dials '0' again, PBX-B applies Toll Control. It detects the dialed number as ‘00’ and interprets this as an attempt to dial a long distance number. Since station 21 is not allowed long distance dialing in its Toll Control, PBX-B rejects dialing on the trunk and plays an error tone to station 21.

VISIONPRO solves this problem by providing programmable PBX Expansion Count (PEC) for each trunk. This count is the number of digits to be ignored before toll control check begins. The PBX Expansion Count is same as the number of PBXs connected between the main PBX and the last subscriber.

On trunks that are connected to another PBX, in this case, T4, T5, and T6, PBX Expansion Count must be configured with the same number of digits as the Trunk Access Codes assigned for PBX-B. For example, if the Trunk Access Code is a single digit number like '0', the PBX Expansion Count must be configured as '1'. If the Trunk Access Code is a two-digit number like ‘61’, the PBX Expansion Count should be configured as '2'.

On trunks directly connected to the CO network, as for T1, T2, T3 of VISIONPRO, the PBX Expansion Count must be configured as ‘0’.

To take the above example further, assume PBX Expansion Count is configured as ‘1’ on T4, T5 and T6. When the user of station 21 dials ‘0’ followed by another ‘0’ to grab T1 or T2 trunk of PBX-A, the system will check the PEC configured on the trunk. On finding the count as ‘1’, the system will ignore the first ‘0’ dialed by the station, and let the station user grab T1 or T2 by considering the second ‘0’. The station user will get the CO dial tone from T1 or T2 of PBX-A.

- *The PBX Expansion Count should be configured only for 'Behind the PBX Applications'. For all normal applications, this count must be set to '0' for all the trunks. Otherwise, external number dialing may be hampered. Features like Least Cost Routing will also be affected.*

- *VISIONPRO supports PBX Expansion Count for each trunk.*

How to configure

For CO Trunks that are directly connected to the CO, PBX Expansion Count must be configured as ‘0’.

For CO Trunks that are connected to the stations of another PBX, PBX Expansion Count must be configured as per the number of digits in the Trunk Access Codes defined for trunks in the other PBX. If the TAC of the other PBX is of single digit, configure PBX Expansion Count as '1'. If TAC is of double or triple digits, select '2' or '3' respectively as the PBX Expansion Count.

To configure the PBX Expansion Count on a CO Trunk port,

- Enter SE mode.
- Dial **3201-1-Trunk-PEC Count**.
  Where,
  Trunk is the software port number from 0 to 2.
  PEC Count is the PBX Expansion Count from 0 to 9.

  By default, PEC for all trunks is 0.

  - To configure the same PBX Expansion Count for all trunks, dial,
    3201-*-PEC Count
- Exit SE mode.

Example:

Program PBX Expansion Count = 1 for trunk port 2.

Solution. Dial **3201-1-2-1**

Boss Ring

This feature helps the user to identify the caller. A person in the organization having higher hierarchy can be assigned this feature. Whenever a person having access to Boss Ring calls any other person in the organization, the called station rings differently. This helps the called party to identify the caller.

How it works

Boss Ring is a programmable feature. Please refer “Class of Service (CoS)” for details on how to allow Boss Ring to a user. Also see “Distinctive Rings” to check the Ring Type assigned to Boss Ring.

Boss Ring is same as the Alarm Ring.

Call Duration Control (CDC)

Call Duration Control (CDC) allows a maximum time limit to be set on internal and external (both incoming and outgoing) phone calls. When the maximum call duration is reached, the calls are disconnected, after a warning tone indicating to the user that the current call will be disconnected.

By limiting the duration of the conversations, CDC helps in increasing the availability of trunks which is important in high call traffic situations. Besides increasing trunk availability, CDC curbs unrelated and unproductive conversations.

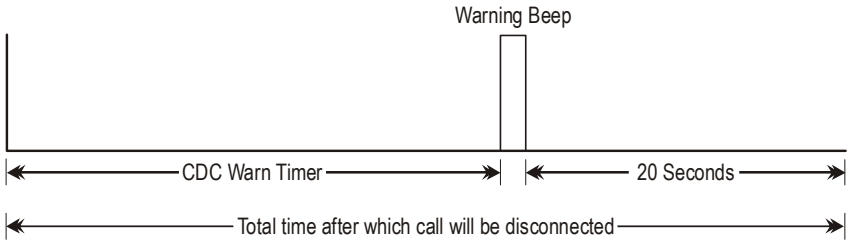
How it works

VISIONPRO uses Allowed Lists and Denied Lists to support this feature. When a call is made, the system compares each digit of the dialed number string with the number strings in Allowed and Denied list.

- If the dialed number string matches with any of the number strings available in Allowed list, the system treats CDC to be OFF and does not disconnect the call.
- If the dialed number string matches with any of the number strings available in Denied list, the system treats CDC to be ON and disconnects the call after CDC timer (provided the CDC Disconnection flag is enabled).
- If the dialed number string matches with a number string that is available in both the Allowed and the Denied list, then Allowed list is given priority and the system treats CDC to be OFF.

The system gives warning beep to the user on expiry of the CDC timer. The call continues for another 20 seconds after the beep and gets disconnected if the disconnection flag is enabled. This 20 seconds timer is fixed.

If the disconnection flag is disabled then the system does not disconnect the call but reloads the CDC timer again. The system gives warning beeps every time the CDC timer is matured. This helps the user to know the duration for which he/she has been talking.



If CDC is turned ON for Internal calls (both incoming and outgoing internal calls), the system does not check the Denied list and applies CDC to all types of Internal calls.

If CDC is turned ON for Internal calls and CDC table is assigned to the calling party and called party, CDC will be applied to the calling party only.

Feature Interactions

- **Call Transfer**: In case of transferred call, the CDC timer gets reset and starts again afresh on the transferred station.
- **Conference**: CDC is treated as turned OFF.
- **Call Park**: CDC is treated as turned OFF.

How to configure

Call Duration Control can be enabled/disabled for each station for the following cases,

- Call Duration Control for Outgoing (External) calls.
- Call Duration Control for Incoming (External) calls.
- Call Duration Control for Internal calls.

Configuring CDC parameters (such as enabling CDC for different types of calls, defining the CDC timer, assigning Allowed and Denied lists) forms a table which is called the CDC Table. Decide the CDC table that you should configure. Each CDC table would appear as shown below:

Parameter	Value
Internal Call Control	Yes/No
Incoming Call Control	Yes/No
Outgoing Call Control	Yes/No
Allowed List	List Number from 0 to 7
Denied List	List Number from 0 to 7
CDC Timer	000-999 seconds
CDC Disconnection Flag	Yes/No

- *Maximum four CDC tables can be programmed.*
- *One such table can be assigned to the station user.*
- *All CDC tables are available by default and they satisfy most of the requirements. Hence these tables can be directly assigned to the stations.*

The default CDC Table is configured as follows,

CDC Table	Meaning
0	CDC OFF for all calls
1	CDC ON for Outgoing STD and ISD calls
2	CDC ON for Outgoing 95, 98, STD and ISD calls
3	CDC ON for all Outgoing calls

- *However for special types of requirements, customized Allowed and Denied Lists should be programmed and should be assigned to a CDC table. Then after this CDC table should be assigned to a station. Refer "Allowed and Denied Lists" for more details. For example, to disconnect all calls starting with '0' except those starting with '022', configure an allowed list with string '022' and denied list with string '0' and assign these lists to the CDC table.*

- *By default, **CDC table 0** is assigned to each station.*

As you know which parameters need to be configured for the CDC tables, proceed as follows,

1. Take a pen and a paper. Decide the types of Call Duration Controls to be programmed for each station.

2. If the requirement can be met by using the default CDC tables, assign a default CDC table to a station using command ***4920.***

3. If the requirement cannot be met by the default CDC tables then configure the relevant parameters, for example, enabling CDC for Outgoing/Incoming calls, configuring the disconnection flag, CDC timer etc. This completes programming one CDC table. Program remaining three CDC tables likewise, if required.

4. Assign the desired CDC table to the station using command ***4920.***

5. A CDC table can be set to default using command ***4901.***

As per above instructions, configure the following.

- Enter SE mode.

- To assign a CDC table to a station user, dial,
  4920-1-Station-CDC table
  Where,
  Station is from 00 to 07.
  CDC table is from 0 to 3.

  - To assign the same CDC table to all stations at once, dial,
    4920-*-CDC Table

If your requirement can be met by using the default CDC tables, you can leave after executing only the above commands. If the requirement cannot be met by the default CDC tables then configure the relevant CDC table parameters as described in following instructions.

- To enable/disable CDC for **Outgoing Calls** in a CDC table, dial,
  4910-1-CDC Table-Code
  Where,
  CDC Table is from 0 to 3.

Code	Meaning
0	CDC for Outgoing Call is to be disabled
1	CDC for Outgoing Call is to be enabled

  - To enable/disable CDC for **Outgoing Calls** in all CDC tables at once, dial,
    4910-*-Code

- To enable/disable CDC for **Incoming Calls** in a CDC table, dial,
  4911-1-CDC Table-Code
  Where,
  CDC Table is from 0 to 3.

Code	Meaning
0	CDC for Incoming Call is to be disabled
1	CDC for Incoming Call is to be enabled

  - To enable/disable CDC for **Incoming Calls** in all CDC tables at once, dial,
    4911-*-Code

- To enable/disable CDC for **Internal Calls** in a CDC table, dial,
  4912-1-CDC Table-Code
  Where,
  CDC Table is from 0 to 3.

Code	Meaning
0	CDC for Internal Call is to be disabled
1	CDC for Internal Call is to be enabled

  - To enable/disable CDC for **Internal Calls** in all CDC tables at once, dial,
    4912-*-Code

- To assign the disconnection flag to a CDC table, dial,
  4913-1-CDC Table-Disconnection Flag
  Where,
  CDC Table is from 0 to 3.

Disconnection Flag	Meaning
0	Call is not disconnected
1	Call is disconnected

  - To assign the same disconnection flag to all CDC tables at once, dial,
    4913-*-Disconnection Flag

- To assign the CDC Timer to a CDC table, dial,
  4914-1-CDC Table-CDC Timer
  Where,
  CDC Table is from 0 to 3.
  CDC Timer is from 000 to 999 seconds.
  Default: 160 seconds

  - To assign the same CDC Timer to all CDC tables at once, dial,
    4914-*-CDC Timer

- To assign an Allowed List to a CDC table, dial,
  4915-1-CDC Table-Allowed List
  Where,
  CDC Table is from 0 to 3.
  Allowed List is from 0 to 7.

  - To assign the same Allowed List to all the CDC tables at once, dial,
    4915-*-Allowed List

- To assign a Denied List to a CDC table, dial,
  4916-1-CDC Table-Denied List
  Where,
  CDC Table is from 0 to 3.
  Denied List is from 0 to 7.

  - To assign the same Denied List to all CDC tables at once, dial,
    4916-*-Denied List

- To assign a CDC Table to another station, dial the command **4920** as described at the beginning of configuration.

- To restore the default settings of a CDC table, dial,
  4901-1-CDC Table-#
  Where,
  CDC Table is from 0 to 3.

  - To restore the default settings of all CDC Tables at once, dial,
    4901-*-#

- Exit SE mode.

Example: Program station 21 (software port number 00) for the following requirement:

Disconnect all calls after 180 seconds.

Solution:
Assign default CDC table 3 to station 21. Dial **4920-1-00-3** in SE mode.

Since default CDC Timer is 160 seconds and 20 seconds are added as warning time, the calls will get disconnected after 180 seconds. Hence no programming is required.

Call Forward

In an organization people might move from one place to another to accomplish a job. They do not sit at fixed places. A user might go to his colleague's desk to work on a project they are doing jointly. A manager might go to the production floor or remain in conference room for few hours. In such situations, a user cannot afford to miss the important calls. He/she would like to attend all calls from his/her new location. To fulfill this requirement, VISIONPRO offers Call Forward to destination stations.

By default, in case of normal Call Forward (as described above), calls are forwarded to another station. However, VISIONPRO supports another feature where calls on your personal trunk line can be diverted to your residence telephone number/mobile number/any external number as per your requirement. This facility of diverting your incoming trunk calls is different from the normal Call Forward feature.

So to differentiate between these two features, Call Forward in the system is categorized as follows,

- **Call Forward - Station:** Using this feature, calls landing on a station can be forwarded to another station. Call Forward - Station can be set for the following conditions,
    - **Unconditionally:** Your calls are forwarded to the destination station automatically without waiting for a response from your station.
    - **If Busy:** Your calls are forwarded to the destination station only when the your phone is busy.
    - **If No Reply:** Your calls are forwarded to the destination station only when you do not answer your call. Call gets forwarded after the expiry of the **Forward on No-Reply** timer (default value: 30 seconds; programmable).
- **Call Forward - Trunk:** Using this feature, calls landing on a trunk can be forwarded to another external number using another trunk.

How it works

Call Forward - Station

A has set Call Forward - Station to station B unconditionally.

- The system forwards all calls for A to B, without checking for the Busy Tone or waiting for the Forward on No-Reply Timer to expire.

A has set Call Forward - Station to station B on Busy.

- The system forwards calls for A to B on detecting Busy Tone from A.

A has set Call Forward - Station on No Reply to station B.

- The system waits for the Call Forward No-Reply Timer to expire when A's station rings, and thereafter forwards the call to B.

- *The system supports only single-point Call Forward - Station, which means, if the destination station is also forwarded, the call will not follow the forwarded path. For example: Calls for station A are set to be forwarded to station B. Call Forward is also set on station B with C as the destination number. Calls for A will land on B only and calls for B will land on C only.*

- *Only one Call Forward - Station Type can be set from a station. Every new Call Forward - Station Type set overrides the previous one.*

- *In Call Forward - Station, if the destination station is not free, system will not place the call.*

- *When Call Forward - Station is set on your phone, you will get the Feature Tone on lifting the handset instead of the Dial Tone.*

Call Forward - Trunk

'A' has set Call Forward - Trunk on trunk1 to external number 9875689899 during Night time.

- The system forwards all calls on trunk1 during Night time to 9875689899.

- *Its functions are similar to the DOSA (Direct Outward System Access) feature. A call placed using the Call Forward - Trunk feature shall get disconnected after time = DOSA Inactivity Timer + DOSA Warn Timer. Hence to continue the call, it is mandatory for the user to dial any digit after the warning beeps.*

- *To disconnect the call it is advisable to dial '**#0**'. For more information, refer "Direct Outward System Access (DOSA)".*

How to configure

Call Forward - Station

To allow access to **Call Forward - Station** to a station, you need to do the following configurations:

1. Enable Call Forward in the "Class of Service (CoS)" of the stations.

2. If required, change the duration of the **Forward on No-Reply Timer** as described below.

Forward on No-Reply Timer

Time after which the call gets forwarded.

To configure the timer,

- Enter SE mode.

- Dial **3018-Timer**
  Where,
  Default: 015 seconds.
  Valid Range: 000 to 255 seconds.

- Exit SE mode.

Call Forward - Trunk

To configure **Call Forward - Trunk** on a trunk, you must proceed as follows,

1. Decide the trunk whose calls are to be forwarded.
2. Assign a Trunk Access Group to be used to forward these calls.
3. Assign the destination number where the calls are to be forwarded.

As per above instructions configure **Call Forward - Trunk** parameters as described below.

- Enter SE mode.
- To enable/disable Call Forward - Trunk on a trunk during Day time, dial,
  3701-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2 of the trunk whose calls are to be forwarded.

Code	Meaning
0	Call Forward - Trunk disabled
1	Call Forward - Trunk enabled

  - To enable/disable Call Forward - Trunk on all trunks during Day time, dial,
    3701-*-Code

- To enable/disable Call Forward - Trunk on a trunk during Night time, dial,
  3702-1-Trunk-Code
  Where,
  Trunk is the software port number from 0 to 2 of the trunk whose calls are to be forwarded.

Code	Meaning
0	Call Forward - Trunk disabled
1	Call Forward - Trunk enabled

  - To enable/disable Call Forward - Trunk on all trunks during Night time, dial,
    3702-*-Code

    By default, Call Forward - Trunk is disabled on all trunks.

- To assign Trunk Access Group to forward the calls of a trunk, dial,
  3703-1-Trunk-Trunk Access Group
  Where,
  Trunk is the software port number from 0 to 2 of the trunk whose calls are to be forwarded.
  Trunk Access Group is the Trunk Access Group number from 0 to 7 through which the calls are to be forwarded.

- To assign destination number where the calls are to be forwarded for a trunk, dial,
  3704-1-Trunk-Telephone Number-#*
  Where,
  Trunk is the software port number from 0 to 2 of the trunk whose calls are to be forwarded.
  Telephone Number is the external number (maximum 16 digits) where the calls are to be forwarded. If it has less than 16 digits, then complete the command by dialing **'#*'**.

- Exit SE mode.

Example:
Calls on trunk0 during Night time are to be forwarded to 02653630555 using Trunk Access Group 1.

Solution. Dial the following command to configure this requirement in SE mode,

3702-1-0-1
3703-1-0-1
3704-1-0-02653630555-#*

How to use

Call Forward - Station

To set Call Forward - Station,

- Lift the handset.
- Dial **131** for **Call Forward - Unconditionally**.

  Or,

  Dial **133** for **Call Forward - If No Reply**.

  Or,

  Dial **134** for **Call Forward - If Busy**.

- Dial the destination station number where the calls are to be forwarded.
- You get Confirmation Tone.
- Replace the handset.

Example 1:
If Station 23 wants to forward all calls to Station 24, he/she should dial ***131-24***.

Example 2:
Station 23 wants that if he/she does not answer the calls, calls should be forwarded to Station 24. Then he/she should dial ***133-24***.

Example 3:
If station 23 wants to forward all calls to station 24 when he/she is busy, he/she should dial ***134-24***.

To cancel Call Forward - Station,

- Lift the handset.
- Dial **130**.
- You get Confirmation Tone.
- Replace handset.

Call Forward - Trunk

It will function according to the configuration made in the trunk on which Call Forward - Trunk is enabled. Refer “Call Forward - Trunk” in the section “How it works” for details.

Call Hold

Call Hold allows the user to make another call without disconnecting the ongoing call.

How to configure

For Call Hold to work, it must be enabled in the "Class of Service (CoS)" for the station.

How to use

To put an ongoing call on Hold,

- Dial **Flash**.

  You get the Dial Tone. Remote party is put on hold and gets Music on Hold. You may dial another station number to place an internal call or dial a Trunk Access Code followed by an external number to place an external call.

If the remote party (who has been put on hold) is a trunk and another trunk is to be accessed, then dial 80 or 85 or 861 or 862 or 863 or 864 after dialing Flash. For the list of default TACs applicable to your VISIONPRO variant, refer "Trunk Access Groups (TAGs)".

Call Park

Call Park allows you to put a call on hold, releasing yourself from the call so that it can be retrieved later. When you park a call, you can release yourself from it so that you can attend other calls. The parked party hears music.

While a call is parked, you may use other system features including Call Pick Up, Call Follow Me, if required. After completing the current call, you can retrieve the parked call only from the same station that had parked it.

How it works

A and B are station users. C is the caller.

- C calls B.
- A picks up the call from B's station.
- As B is not present at the desk, A parks the call by dialing the Call Park command.
- C gets the on-hold music.
- A tries to find B (by either calling several numbers or by going in person or sending someone).
- The parked call remains as it is for the duration of the Call Park Timer, which is set to 45 seconds by default.
- A finds B.
- B retrieves the call by dialing the command for retrieving a parked call from the same station used to park the call (here his/her own station).
- Otherwise, if A cannot locate B or if B cannot attend the call, A can also retrieve the call from the same station used to park the call (here B's station).

However,

- If A does not retrieve the call within 45 seconds, the call returns back automatically and the station, that had parked the call, starts ringing. This timer is called Call Park Timer and is programmable.

- If the station is busy for longer period of time (more than 45 seconds) and,

    - If the parked party is an internal party (a station), then the call gets disconnected.
    - If the parked party is an external party and Privacy from Trunk call Beeps is enabled, then the system hunts the station for another 45 seconds. The caller gets the Ring Back Tone whereas the station gets the call waiting beeps. There after the call gets disconnected.
    - If the parked party is an external party and Privacy from Trunk call Beeps is disabled, the system hunts the station for Ring Back Tone timer and there after disconnects the call.

How to configure

To be able to use this feature, you must do the following configurations:

- Enable Call Park in the "Class of Service (CoS)" for the stations which you want to allow this feature.

- If required, change the value of the Call Park Timer to the desired duration.

Call Park Timer

It is the time after which the call returns back to the station that parked the call.

To configure,

- Enter SE mode.
- Dial **3015-Timer**.
  Where,
  Default: 045 seconds.
  Range: 000 to 255 seconds.
- Exit SE mode.

How to use

To park a call when you are in speech with a station/trunk,

- Dial **Flash**.
- You get Feature Tone.
- Dial **7**.
  Call is parked.

To retrieve the parked call,

- Lift the handset.
- You get Dial Tone.
- Dial **17**.
  You are connected to the station/external caller.

Call Pickup

Call Pickup allows station users to answer calls ringing on other stations from their own station; without physically going to the ringing stations.

Station users can pick-up both internal and trunk calls ringing on other stations.

VISIONPRO offers two types of Call Pickups,

- **Call Pickup Group** - Stations are assigned Call Pickup Groups. Any station in a Pickup Group can answer calls ringing on other stations within the same group only.
- **Call Pickup Selective** - Calls ringing on any station of the system can be answered.

How it works

Call Pickup Group

- Stations must be assigned to Call Pickup Groups.
- As many as 10 such groups may be formed.
- In case more stations are ringing, the station with the least port number will be picked up first.
- When a station within a group rings, any station within the same group can pick up the call by dialing ‘4’, the (default) feature access code for Call Pickup Group.
- ***By default, all stations are in the same group.***

Call Pickup Selective

- Stations need not be in Call Pickup Groups.
- Whenever a station rings, the call can be picked up by any station of the system by dialing 12 (default feature access code for Call Pickup Selective) and the flexible number of the ringing station.

When more than one stations are ringing, you can choose which one to answer first using the Call Pickup Selective feature.

How to configure

1. Decide the number of Call Pickup Groups to be formed.
2. Program the stations in Call Pickup Groups using command ***4301***.
3. Assign a Class of Service group with Call Pickup Selective feature enabled.

To configure as per above instructions,

- Enter SE mode.
- To configure station(s) in Call Pickup Groups, dial,
  4301-1-Station-Call Pickup Group
  Where,
  Station is the software port number from 00 to 07.
  Call Pickup Group is from 0 to 9.
  - To configure all stations in the same Call Pickup group, dial,
    4301-*-Call Pickup Group
- To allow Call Pickup Selective feature to a user, assign him/her a Class of Service with Call Pickup Selective enabled. Refer “Class of Service (CoS)” for details.
- Exit SE mode.

How to use

To pick up a ringing station in your group,

- Lift the handset.
- Dial **4**
- Speak to the caller.

To pick up any ringing station,

- Lift the handset.
- Dial **12**
- Dial the number of the ringing station you want to pick up.
- Speak to the caller.

Call Progress Tones (CPTs)

Call Progress Tones (CPT) are audible tones sent from switching systems such as PSTN or PBX to calling parties to indicate the status of calls.

Each CPT has a distinctive tone frequency and cadence assigned to it, for which some standards have been established by the International Telecommunication Union (ITU).

On the basis of specific frequency and cadence, the CPTs generated by VISIONPRO are categorized as follows:

CPT	Event	Sound	Duration	Timer
Dial Tone	Played on lifting the handset.	Tooooooooooo	Played for 7 seconds. After which Error Tone starts	Dial Tone Timer (this timer is programmable)
Ring Back Tone (RBT)	Played when the internal number you have dialed is free.	Turroo... Turrroo	Played for 45 seconds	Ring Back Tone Timer (this timer is programmable)
Busy Tone (Engage Tone)	High pitch beeps with equal ON and OFF periods, played when the dialed station is busy.	Tooooooo..... Tooooooo	Played for 7 seconds.	Busy Tone Timer (this timer is programmable)
Error Tone (Congestion/ Refusal Tone as per ITU)	Fast beeps, played on performing a wrong operation or accessing a feature that is not allowed.	Too…Too…Too …Too	Played for 30 seconds	Error Tone Timer (this timer is programmable)
Internal Call Waiting Tone or ICWT (Intrusion Tone as per ITU)	Short beeps followed by longer OFF duration repeated every second; played to the busy station user when another station attempts Interrupt Request/Barge-In	Beep…… Beep	Played for the duration of Interrupt Request Timer or Barge-In Timer.	Interrupt Request Timer, Barge-In Timer (both timers are programmable). Refer "Barge-In" and "Interrupt Request (IR)" respectively.
External Call Waiting Tone (CO Call Waiting Tone or CCWT as per ITU)	Two ticks followed by a longer OFF time of approximately 3 seconds; played to a busy station when there is a new incoming Trunk call.	Beep...Beep… ……..Beep... Beep	Played for the duration of the Transfer-On Busy Timer	Transfer-On Busy Timer. Refer "Call Transfer".
Feature Confirmation Tone (Acceptance Tone as per ITU)	Continuous tone with fast beeps; played to confirm successful use of features.	Beep... Beep... Beep	Played for 3 seconds.	Feature Confirmation Tone Timer (this timer is programmable)

CPT	Event	Sound	Duration	Timer
Feature Tone	Short beep followed by a longer OFF duration repeated every second; played when dialing feature access codes	Beep..... Beep	Played for 7 seconds.	
Programming Tone	Short beep followed by a longer OFF duration repeated every second and exactly similar to the Feature Tone; played to prompt you to enter fresh commands during programming	Beep..... Beep	Played for the duration of the Inter Digit Timer (default: 015 seconds) which signifies the time for which VISIONPRO waits between accepting two digits from the SE/SA programming mode. This timer is loaded when the SE/SA dials the first digit and waits for the second digit.	Inter Digit Timer (this timer is programmable)
Programming Confirmation Tone	Continuous, fast beeps; played to indicate that system has received a valid command and is processing it.	Beep... Beep... Beep	Played for 3 seconds.	Programming Confirmation Tone Timer (this timer is programmable)
Programming Error Tone	Fast beeps, played on a wrong programming command being dialed.	Too…Too…Too …Too	Played for 3 seconds.	Programming Error Tone Timer (this timer is programmable)

How to configure

To assign the Call Progress Tone Region Code as per the country/region,

- Enter SE mode.
- To configure the CPTG Type, dial,
  1109 - Region Code
  Where,
  Region Code is from 00 to 39.

  Default code is 00.

Refer table below to assign the required Region Code (first column),

CPTG Region Code	Region	Dial tone 1		Dial Tone 2		Ring Back Tone		Busy Tone	
		Freq.	Cadence (sec)	Freq.	Cadence (sec)	Freq.	Cadence (sec)	Freq.	Cadence (sec)
00	Region1	440	Continuous	350+440	Continuous	350+440	0.4on 0.2off 0.4on 2.0off	440	0.75on 0.75off
01	Region2	400	Continuous	400	Continuous	400	0.6on 0.2off 0.2on 2.0off	400	0.5on 0.5off

CPTG Region Code	Region	Dial tone 1		Dial Tone 2		Ring Back Tone		Busy Tone	
		Freq.	Cadence (sec)	Freq.	Cadence (sec)	Freq.	Cadence (sec)	Freq.	Cadence (sec)
02	Region3	350+440	Continuous	350+440	Continuous	440+480	2.0on 4.0off	480+620	0.5on 0.5off
03	Argentina	425	Continuous	425	Continuous	425	1.0on 4.0 off	425	0.3on 0.2off
04	Australia	425*25	Continuous	425*25	Continuous	400*25	.4on .2off .4on 2.0off	425	0.375on 0.375off
05	Brazil	425	Continuous	425	Continuous	425	1.0on 4.0 off	425	0.25on 0.25off
06	Canada	350+440	Continuous	350+440	Continuous	440+480	2.0on 4.0off	480+620	0.5on 0.5off
07	China	450	Continuous	450	Continuous	450	1.0on 4.0off	450	0.35 on 0.36off
08	Egypt	425*50	Continuous	425*50	Continuous	425*50	2.0on 1.0off	425*50	1.0on 4.0off
09	France	440	Continuous	440	Continuous	440	1.5on 3.5off	440	0.5on 0.5off
10	Germany	425	Continuous	425	Continuous	425	1.0on 4.0off	425	0.48on 0.48off
11	Greece	425	0.2on 0.3off 0.7on 0.8off	425	0.2on 0.3off 0.7on 0.8off	425	1.0on 4.0off	425	0.3on 0.3off
12	India1	400*25	Continuous	400*25	Continuous	400*25	.4on .2off .4on 2.0off	400	0.75on 0.75off
13	Indonesia	425	Continuous	425	Continuous	425	1.0on 4.0off	425	0.5on 0.5off
14	Iran	425	Continuous	425	Continuous	425	1.0on 4.0off	425	0.5on 0.5off
15	Iraq	400	0.4on 0.2off 0.4on 1.5off	400	0.4on 0.2off 0.4on 1.5off	400	Continuous	400	1.0on 1.0off
16	Israel	400	Continuous	400	Continuous	400	1.0on 3.0off	400	0.5on 0.5off
17	Italy1	425	Continuous	425	Continuous	425	1.0on 4.0off	425	0.5on 0.5off
18	Japan	400	Continuous	400	Continuous	400*25	1.0on 2.0off	400	.5on .5off
19	Kenya	425	Continuous	425	Continuous	425	0.67on 3.0off 1.5on 5.0off	425	0.2on 0.6off 0.2on 0.6off
20	Korea	350+440	Continuous	350+440	Continuous	440+480	1.0on 2.0off	480+620	0.5on 0.5off
21	Malaysia	425	Continuous	425	Continuous	425	0.4on 0.2off 0.4on 2.0off	425	0.5on 0.5off
22	Mexico	425	Continuous	425	Continuous	425	1.0on 4.0off	425	0.25on 0.25off
23	New Zealand	400	Continuous	400	Continuous	400+450	0.4on 0.2off 0.4on 2.0off	400	0.5on 0.5off
24	Philippines	425	Continuous	425	Continuous	425+480	1.0on 4.0off	480+620	0.5on 0.5off
25	Poland	425	Continuous	425	Continuous	425	1.0on 4.0off	425	0.5on 0.5off
26	Portugal	425	Continuous	425	Continuous	425	1.0on 5.0off	425	0.5on 0.5off
27	Russia	425	Continuous	425	Continuous	425	0.8on 3.2off	425	0.4on 0.4off
28	Saudi Arabia	425	Continuous	425	Continuous	425	1.2on 4.6off	425	0.5on 0.5off
29	Singapore	425	Continuous	425	Continuous	425*24	0.4on 0.2off 0.4on 2.0off	425	.75on .75off
30	South Africa	400*33	Continuous	400*33	Continuous	400*33	0.4on 0.2off 0.4on 2.0off	400	.5on .5off
31	Spain	425	Continuous	425	Continuous	425	1.5on 3.0off	425	0.2on 0.2off
32	Thailand	400*50	Continuous	400*50	Continuous	400	1.0on 4.0off	400	0.5on 0.5off
33	Turkey	450	Continuous	450	Continuous	450	2.0on 4.0off	450	0.5on 0.5off
34	UAE	350+440	Continuous	350+440	Continuous	400+450	0.4on 0.2off 0.4on 2.0off	400	0.375on 0.375off
35	UK	350+440	Continuous	350+440	Continuous	400+450	0.4on 0.2off 0.4on 2.0off	400	0.375on 0.375off
36	USA	350+440	Continuous	350+440	Continuous	440+480	2.0on 4.0off	480+620	0.5on 0.5off
37	Italy2	400	Continuous	400	Continuous	400	1.0on 2.0off	400	0.5on 0.5off
38	Belgium	425	Continuous	425	1.0on 0.25off	425	1.0on 3.0off	425	0.5on 0.5off

CPTG Region Code	Region	Dial tone 1		Dial Tone 2		Ring Back Tone		Busy Tone	
		Freq.	Cadence (sec)	Freq.	Cadence (sec)	Freq.	Cadence (sec)	Freq.	Cadence (sec)
39	India2	350+440	Continuous	350+440	Continuous	350+440	0.4on 0.2off 0.4on 2.0off	400	0.75on 0.75off

CPTG Region Code	Region	Error Tone		Confirmation Tone		Feature Tone		CCWT		ICWT	
		Freq	Cadence (sec)	Freq.	Cadence (sec)	Freq	Cadence (sec)	Freq.	Cadence (sec)	Freq	Cadence (sec)
00	Region1	440	0.25on 0.25 off	350+440	0.1on 0.1off	350+ 440	0.1on 0.9off	350+440	0.1on 0.1off 0.1on 2.7off	440	0.1on 2.9off
01	Region2	400	0.25on 0.25 off	400	0.1on 0.1off	400	1.5on 0.1off	400	0.2on 4.8off	400	0.2on 4.8off
02	Region3	440	0.25on 0.25 off	350+440	0.1on 0.1off	350+ 440	0.1on 0.9off	440+480	0.1on 0.1off 0.1on 2.7off	440	0.1on 2.9off
03	Argentina	425	0.3on 0.4off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.3on 10.0off	425	0.1on 2.9off
04	Australia	425	0.375on 0.375off	425*25	0.1on 0.1off	425* 25	0.1on 0.9off	425	0.2on 0.2off 0.2on 4.4off	425	Continuous
05	Brazil	425	0.25on 0.25 off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.05on 1.0off	425	0.1on 2.9off
06	Canada	480+ 620	0.25on 0.25off	350+440	0.1on 0.1off	350+ 440	0.1on 0.9off	440	0.3on 10.0off	480+ 620	0.5on 0.5off
07	China	450	0.7on 0.7off	450	0.1on 0.1off	450	0.1on 0.9off	450	0.4 on 4.0off	450	0.2on 0.2off 0.2on 0.6off
08	Egypt	450	0.5on 0.5off	425*50	0.1on 0.1off	425* 50	0.1on 0.9off	425*50	0.1on 0.1off 0.1on 2.7off	450	0.5on 0.5off
09	France	440	0.25on 0.25off	440	0.1on 0.1off	440	0.1on 0.9off	440	0.3on 10.0off	440	0.1on 2.9off
10	Germany	425	0.24on 0.24off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.2on .2off .2on 5.0off	425	0.1on 2.9off
11	Greece	425	0.15on 0.15off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.3on 10.0off 0.3on 10.0off	425	0.15on 0.25off 0.15on 1.45off
12	India1	400	0.25on 0.25off	400	1.0on 4.0off	400* 25	0.1on 0.9off	400	0.2on 0.1off 0.2on 7.5off	400	0.15on 4.85off
13	Indonesia	425	0.25on 0.25off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.15on 0.15off 0.15on 10.0off	425	0.1on 2.9off
14	Iran	425	0.25on 0.25off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.2on 0.2off 0.2on 10.0off	425	0.1on 2.9off

CPTG Region Code	Region	Error Tone		Confirmation Tone		Feature Tone		CCWT		ICWT	
		Freq	Cadence (sec)	Freq.	Cadence (sec)	Freq	Cadence (sec)	Freq.	Cadence (sec)	Freq	Cadence (sec)
15	Iraq	400	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off	400	0.1on 0.1off 0.1on 2.7off	400	0.1on 2.9off
16	Israel	400	0.25on 0.25off	400	0.17on 0.14off 0.34on 5.0off	400	0.1on 0.9off	400	0.5on 10.0off	400	0.1on 2.9off
17	Italy1	425	0.2on 0.2off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.4on 0.1off 0.25on 0.1off 0.15on 5.0off	425	0.1on 2.9off
18	Japan	400	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off	400*25	0.5on 2.0off 0.05on 0.45off 0.05on 3.45off	400*25	0.1on 2.9off
19	Kenya	425	0.2on 0.6off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.1on 0.1off 0.1on 2.7off	425	0.1on 2.9off
20	Korea	480+620	0.3on 0.2off	350+440	0.1on 0.1off	350+440	0.1on 0.9off	350+440	0.25on 0.25off 0.25on 3.25off	350+440	0.1on 2.9off
21	Malaysia	425	2.5on 0.5off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.2on 0.2off 0.2on 5.0off	425	0.1on 2.9off
22	Mexico	425	0.25on 0.25off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.1on 0.1off 0.1on 2.7off	425	0.1on 2.9off
23	New Zealand	400	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off	400	0.2on 3.0off 0.2on 5.0off	425	0.1on 2.9off
24	Philippines	480+620	0.25on 0.25off	425	0.1on 0.1off	425	0.1on 0.9off	440	0.3on 10.0off	440	0.1on 2.9off
25	Poland	425	0.5on 0.5off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.15on 0.15off 0.15on 4.0off	425	0.1on 2.9off
26	Portugal	450	0.33on 1.0off	425	1.0on 0.2off	425	0.1on 0.9off	425	0.2on 0.2off 0.2on 5.0off	425	0.2on 1.4off
27	Russia	425	0.25on 0.25off	425	0.1on 0.1off	425	0.1on 0.9off	950	0.333on 1.0off	425	0.1on 2.9off
28	Saudi Arabia	425	0.25on 0.25off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.15on 0.2off 0.15on 10.0off	425	0.1on 2.9off

CPTG Region Code	Region	Error Tone		Confirmation Tone		Feature Tone		CCWT		ICWT	
		Freq	Cadence (sec)	Freq.	Cadence (sec)	Freq	Cadence (sec)	Freq.	Cadence (sec)	Freq	Cadence (sec)
29	Singapore	425	0.25on 0.25off	425	0.125on 0.125off	425	0.1on 0.9off	425	0.3on 0.2off 0.3on 3.2off	425	0.25on 2.0off
30	South Africa	400	0.25on 0.25off	400*33	0.1on 0.1off	400* 33	0.1on 0.9off	400*33	0.4on 4.0off	400	0.15on 0.25off 0.15on 1.45off
31	Spain	425	0.25on 0.25off	425	0.1on 0.1off	425	0.1on 0.9off	425	0.175on 0.175off 0.175on 3.5off	425	0.1on 2.9off
32	Thailand	400	0.3on 0.3off	400*50	0.1on 0.1off	400* 50	0.1on 0.9off	400	0.1on 0.1off 0.1on 2.7off	400	0.1on 2.9off
33	Turkey	450	0.2on 0.2off .6on .2off	450	0.04on 0.04off	450	0.1on 0.9off	450	.2on .6off .2on 8.0off	450	0.1on 2.9off
34	UAE	400	0.4on 0.35off 0.225on 0.525off	350+440	0.1on 0.1off	350+ 440	0.1on 0.9off	350+440	0.1on 0.1off 0.1on 2.7off	350+ 440	0.1on 2.9off
35	UK	400	0.4on 0.35off 0.225on 0.525off	350+440	0.1on 0.1off	350+ 440	0.1on 0.9off	350+440	0.1on 0.1off 0.1on 2.7off	400	0.2on 4.8off
36	USA	480+ 620	0.25on 0.25off	350+440	0.1on 0.1off	350+ 440	0.1on 0.9off	440	0.3on 10.0off	480+ 620	0.5on 0.5off
37	Italy2	400	0.25on 0.25 off	400	0.1on 0.1off	400	1.75on 0.1off	400	0.2on 2.5off	400	0.2on 0.2off 0.2on 2.5off
38	Belgium	425	0.167on 0.167 off	425	0.1on 0.1off	425	0.1on 0.9off	1400	0.175on 0.175off 0.175on 3.5off	440	0.1on 2.9off
39	India2	400	0.25on 0.25 off	350+440	0.1on 0.1off	350+ 440	0.1on 0.9off	350+440	0.1on 0.1off 0.1on 2.7off	350+ 440	0.5on 0.5off 1.0on 5.0off

The meaning of frequency notation is as follows:

- ***f1*f2:*** *f1 is modulated by f2.*
- ***f1+f2:*** *The juxtaposition of two frequencies f1 and f2 without modulation.*

- Exit SE mode.

To configure different timers applicable to different CPTs,

- Enter SE mode.

- To configure the Dial Tone Timer, dial,
  3001-Seconds
  Where,
  Range: 001 to 255 seconds.
  Default: 007 seconds.

- To configure the Ring Back Tone Timer, dial,
  3002-Seconds
  Where,
  Range: 001 to 255 seconds.
  Default: 045 seconds.

- To configure the Busy Tone Timer, dial,
  3003-Seconds
  Where,
  Range: 001 to 255 seconds.
  Default: 007 seconds.

- To configure the Error Tone Timer, dial,
  3004-Seconds
  Where,
  Range: 001 to 255 seconds.
  Default: 030 seconds.

- To configure the Feature Confirmation Tone Timer, dial,
  3005-Seconds
  Where,
  Range: 001 to 255 seconds.
  Default: 003 seconds.

- To configure the Programming Inter Digit Timer (for the Programming Tone), dial,
  3006-Seconds
  Where,
  Range: 001 to 255 seconds.
  Default: 015 seconds.

- To configure the Programming Error Tone Timer, dial,
  3007-Seconds
  Where,
  Range: 001 to 255 seconds.
  Default: 003 seconds.

- To configure the Programming Confirmation Tone Timer, dial,
  3008-Seconds
  Where,
  Range: 001 to 255 seconds.
  Default: 003 seconds.

- Exit SE mode.

Call Toggle

Call Toggle allows you to have two simultaneous telephone conversations, that is talking to two persons alternately.

Call Toggle is also referred to as Hold-Consult or Call Splitting. You can toggle between:

- Two internal calls (two stations).
- An internal call and an external call (station and trunk).
- Two external calls (two trunks).

How it works

- Only one of the two persons will be in conversation with you at a time. The other person is put on hold and gets music and cannot hear your conversation.
- When you are in speech with a station and get external call waiting tone, you can dial ***Flash*** to answer the trunk call. The station is put on hold and gets music. Now, you can toggle between the two persons.
- Interrupting station can also be answered in the same way as described above. Your current call is put on hold and speech with the interrupting station is established. Once again, you can split between the two conversations.
- A is in speech with B. A holds B and calls C. Now, A and C are in speech while B is the held party. Now A wants to call an external party. A can make an external call by dialing **Flash-8**. Dialing this command parks B, puts C on hold and plays Dial Tone to A. Now A can dial a Trunk Access Code to grab a trunk. A can have conference with station C and the external party.

- *Conference can be invoked to include both the parties by dialing **Flash-0**.*
- *You can also transfer the active call (one who is in conversation with you) to the third person.*
- *You can also park the current call by dialing '**Flash-7**'.*
- *You can release the party in speech by dialing '**Flash-2**'.*
- *You can release the held party by dialing '**Flash-3**'.*

How to configure

Call Toggle is a Class of Service dependant feature. Refer "Class of Service (CoS)" for details on how to allow Call Toggle to a user.

How to use

Call Toggle between two internal calls (two stations):

- Speech with a station.
- Dial **Flash**. Current station is put on hold.

- Dial another station number.
- Speech with the called station.
- Dial **Flash-1**.
- Speech with the held party.
- Continue dialing **Flash-1** repeatedly to speak alternately to both the parties.

Call Toggle between an internal call and an external call (trunk):

- Speech with a trunk (external party).
- Dial **Flash**. Current party is put on hold.
- Dial a station number.
- Speech with the called station.
- Dial **Flash-1**.
- Speech with the held party.
- Continue dialing **Flash-1** repeatedly to speak alternately to both the parties.

Call Toggle between two external calls (trunks):

- Speech with a trunk.
- Dial **Flash.** Current trunk is put on hold.
- Dial **8**.
- You get Feature Tone.
- Dial a Trunk Access Code.
- You get Trunk Dial Tone.
- Dial another external number.
- Speech with the called party.
- Dial **Flash-1**.
- Speech with the held party.
- Continue dialing **Flash-1** repeatedly to speak alternately to both the parties.

Call Transfer

Call Transfer enables you to relocate an existing call from a station or trunk to another station or to an external number. Calls can be transferred after notifying the other station/external number about the impending transfer or can be transferred directly without notification.

The types of Call Transfer VISIONPRO offers are:

- **Call Transfer – Screened:** The Operator informs the destination party about the impending transfer by putting the current call on hold and only after getting confirmation (from the destination party), the call is transferred.

- **Call Transfer – While Ringing:** The Operator puts the caller on Hold, dials the desired party's number and transfers the call when the desired party's station starts ringing.

- **Call Transfer – On Busy:** The Operator puts the caller on Hold, dials the desired party's number and transfers the call even when the desired party is in speech with another person. The busy station gets intrusion tone and can choose to answer the intruding (transferred) call.

- **Call Transfer – Trunk-to-Trunk:** An external call is transferred on to another trunk line. The Operator puts the external caller on Hold, dials the desired party's external number, and transfers the call after or without notifying the desired party of the impending transfer.

  Trunk-to-Trunk call transfer may be used to transfer incoming calls for out-of-office station users to their cell phones, or to connect personnel at remote or distant locations. For instance: an out-of-office executive who does not have long distance dialing permission can call the office and request the operator to connect him/her to the desired party on a trunk line.

How it works

Call Transfer - Screened

- The Operator puts the caller on hold.
- Then dials the desired party's station and informs the desired party of the impending transfer.
- The desired party may choose to accept the call; only then the call is transferred.

Call Transfer - While Ringing

- In this case, call is transferred without waiting for the destination to answer.
- Operator can use this feature when there are other calls pending. This is also known as **Wait For Ring Transfer**.
- If the called station does not answer within 45 seconds, the call comes back to the station that transferred the call. This is same as Ring Back Tone Timer.
- If the station that transferred the call is free at the time of call return, caller gets ring.
- If the station that transferred the call is busy at the time of call return and if it was an internal call transfer, then the caller gets error tone.
- If the station that transferred the call is busy at the time of call return and if it was a trunk call transfer, then the system gives beeps to the station who transferred the call (provided privacy against beeps is not enabled).

Call Transfer - On Busy

- In this case, call is transferred to a station already in speech with some other person.
- The busy destination station gets intrusion tone. He/she can speak to the calling person by dialing ***Flash***.
- Call can be transferred to a busy station only if it is not programmed with call privacy from trunk calls.
- If the called station does not respond to the intrusion tone within 45 seconds, the call comes back to the station that transferred the call.
- If the station that transferred the call is free at the time of call return, caller gets ring.
- If the station that transferred the call is busy at the time of call return and if it was an internal call transfer, then the caller gets busy tone.
- If the station that transferred the call is busy at the time of call return and if it was a trunk call transfer, then the system waits for the station to become free. The caller gets Ring Back Tone.

Call Transfer - Trunk-to-Trunk

- In this case, an external call can be transferred to another trunk line.
- The operator need not remain in speech. Two external persons can speak through the VISIONPRO.
- In case a colleague has not come to the office, his incoming calls can be transferred to his/her residence's phone line or to his mobile.
- In case a remote colleague does not have long distance or international dialing facility from his present location, he/she can dial the office number and request the operator to connect to the desired long distance number.
- In this case, a warning tone is fed after the DOSA Inactivity Timer. To extend the call, either of the persons has to dial a digit in tone (DTMF). Dialing of '***#0***' terminates the call and both the trunks get released.

*While waiting for the station to answer, you can abandon the transfer by dialing **Flash**. The ring on the station stops and you get connected to the person on hold.*

How to configure

To be able to use Call Transfer, this feature must be enabled in the Class of Service group of the stations to be allowed this feature. Refer the topic "Class of Service (CoS)" to know more.

How to use

To make a Call Transfer - Screened,

- Speech with a station or a trunk.
- Dial **Flash**.
- Dial the destination station number.
- Speech when answered.
- Replace the handset.
- Call is transferred.

To make a Call Transfer - While Ringing,

- Speech with a station or a trunk.
- Dial **Flash**.
- Dial the destination station number.
- Replace the handset while the destination party is ringing.
- Call is transferred.

To make a Call Transfer - On Busy,

- Speech with a station or a trunk.
- Dial **Flash**.
- Dial the destination station number.
- You get Busy Tone.
- Dial **5** on Busy Tone.
- Replace the handset during Ring Back Tone.
- Call will be transferred to the busy station and it will get intrusion tone.

To make a Call Transfer - Trunk to Trunk,

- You are in a 3-way conversation with two trunks as described in Call Toggle. Refer “Call Toggle” for details.
- Dial **Flash**.
- Dial **6**.
- Replace the handset.
- Trunks are connected while you are disconnected.

Calling Line Identification and Presentation (CLIP)

VISIONPRO provides the facility of detecting the caller's number and presenting it on the display of the called station. This feature is called Calling Line Identification and Presentation (CLIP).

The calling number can be presented on the display of stations that support CLI protocols.

These protocols are supported on trunks as well as on stations. Any type of trunk line that supports DTMF or FSK signaling can be interfaced with the VISIONPRO.

Similarly, any type of telephone instrument that supports DTMF or FSK signaling protocol can be connected to the VISIONPRO.

How it works

When CLIP is enabled on a trunk,

- VISIONPRO senses the digits sent by the PSTN during the ringing phase.
- It sends this information to the landing station/Operator along with the ringing signal. The number of the caller is displayed on the LCD of the station[8]. The system also stores this information in its memory.
- When the landing station/Operator transfers the incoming call to another station, putting the external caller on hold, the system sends this information to the station to which the call is transferred.
- During the transfer, the number of the landing station/Operator will be displayed on the transferred destination. On successful call transfer, the caller's number will be displayed.

VISIONPRO offers a facility to display calling party's number or held party's number (while transferring) or both. If the option to display both the calling party's number and the held party's number is selected then on the LCD, calling party's number is displayed first followed by the held party's number. The calling party could be internal or external.

How to configure

The functioning of this feature is controlled by two parameters: CLIP Type and Caller ID Presentation while Transfer. CLIP type can be assigned separately to the trunks and the stations.

To configure,

- Enter SE mode.
- Configure the CLIP Type of the station using the command **4101**. Refer "How to configure" in "Station Parameters" for more details.
- Configure the CLIP Type of the station using the command **3105**. Refer "How to configure" in "Trunk Parameters" for more details.

8. *In case of Internal calls the calling station's name and number, both are presented to the called station.*

- To configure the Caller ID Presentation while Transfer (or, CLI transfer) mode, dial, **1607-Code**

  Where,

Code	Meaning
0	Calling Party's Number is displayed (whether internal caller or external caller).
1	Held Party's number is displayed (whether internal caller or external caller).
2	Both calling party and held party's number is displayed.

- Exit SE mode.

Cancel All Station Features

This feature enables you to cancel the following features, all at once, if they are set on your phone.

- Alarms
- Auto Call Back
- Call Follow-Me
- Call Forward
- Hotline
- Hot Outward Dialing
- Walk-In Class of Service

- *VISIONPRO supports separate cancellation code for each feature. But it is desirable to have a master command to cancel all the features by a single command.*

- *All stations can avail this facility.*

How to use

Station users can cancel *all* features set on their station from their own station. To cancel,

- Lift the handset.
- Dial **100**.
- You get Confirmation Tone.
- Replace the handset.

Class of Service (CoS)

Class of Service (CoS) defines the level of permission that a station have on a PBX. It defines the set of features of the PBX that the station is to be allowed access to.

The feature requirements can also vary from time to time for different station users. For example, the features required during Day time and during Night time may not be the same.

Further, it is the system's responsibility to allow or deny feature access to users depending on their needs. This accessibility of different features for a user is assigned by the Class of Service (CoS).

How it works

VISIONPRO supports a flexible CoS programming for different station users. Users can be assigned different CoS depending on their and the organization's requirements. All the features supported by the system are presented in the form of a list.

Each feature in the list is identified with a 2-digit number. Following table lists all the features with feature index to be used during programming:

Feature Index	Feature Name
00	Internal Call
01	Hold and Transfer
02	Selective Call Pick Up
03	Auto Call Back
04	Call Park
05	Global Directory Part-I
06	Global Directory Part-II
07	Continued Dialing (Flashing on Trunk)
08	SE Programming Access
09	SA Programming Access
10	Dynamic Lock
11	Call Forward (Always, Busy, No-Reply, Follow-Me)
12	Hotline
13	Auto Redial
14	Alarm
15	Remote Alarm
16	Interrupt Request
17	Blank
18	Blank
19	Blank
20	Trunk-to-Trunk Transfer
21	Barge-In
22	Conference
23	Privacy from DID
24	Privacy from Trunk Beeps
25	Privacy from Barge-In and Interrupt Request
26	Privacy from Raid
27	Boss Ring

Feature Index	Feature Name
28	Live Call Supervision
29	Raid
30	DOSA

Feature Indexes from 17 to 19 are left blank. You will get Error Tone if you try to configure these indexes.

Relevant features from this list can be selected and configured in a group. You can make few feature access groups depending upon the requirement. By default, the first group has none of the features enabled. Second group has only internal dialing enabled. Third group has common features like Call Pickup, Call Transfer, Internal Dialing etc. The eighth group has all the features enabled.

The default CoS group chart is displayed in the table below:

Group	0	1	2	3	4	5	6	7
00	N	Y	Y	Y	Y	Y	Y	Y
01	N	N	Y	Y	Y	Y	Y	Y
02	N	N	Y	Y	Y	Y	Y	Y
03	N	N	Y	Y	Y	Y	Y	Y
04	N	N	Y	Y	Y	Y	Y	Y
05	N	N	Y	Y	Y	Y	Y	Y
06	N	N	Y	Y	Y	Y	Y	Y
07	N	N	Y	Y	Y	Y	Y	Y
08	N	N	N	Y	Y	Y	Y	Y
09	N	N	Y	Y	Y	Y	Y	Y
10	N	N	N	Y	Y	Y	Y	Y
11	N	N	N	Y	Y	Y	Y	Y
12	N	N	N	Y	Y	Y	Y	Y
13	N	N	N	Y	Y	Y	Y	Y
14	N	N	N	Y	Y	Y	Y	Y
15	N	N	N	N	Y	Y	Y	Y
16	N	N	N	N	Y	Y	Y	Y
17	N	N	N	N	Y	Y	Y	Y
18	N	N	N	N	Y	Y	Y	Y
19	N	N	N	N	Y	Y	Y	Y
20	N	N	N	N	Y	Y	Y	Y
21	N	N	N	N	N	Y	Y	Y
22	N	N	N	N	N	Y	Y	Y
23	N	N	N	N	N	N	Y	Y
24	N	N	N	N	N	N	Y	Y
25	N	N	N	N	N	N	Y	Y
26	N	N	N	N	N	N	Y	Y
27	N	N	N	N	N	N	Y	Y
28	N	N	N	N	N	N	N	Y
29	N	N	N	N	N	N	N	Y
30	N	N	N	N	N	N	N	Y

Now, these groups can be allocated to the users depending upon the hierarchy of the user in the organization. A user can be assigned different CoS groups for Day time and Night time. Once these groups are assigned to the users, the user's CoS table would appear as shown below:

Station Number	CoS Group for Day Time	CoS Group for Night Time
00	7	1
01	6	4
02	4	4
03	3	3
04	6	4
:	:	:
:	:	:

- *Maximum eight CoS groups can be formed (0-7).*
- *Each feature can be enabled or disabled in each group.*
- *The **second** group is the default CoS group.*

How to configure

1. Decide the required number of CoS groups.
2. Prepare the list of features required in each CoS group and configure it using command ***4602.***
3. To restore default configuration in a CoS group, use the command ***4601*** (if required).
4. Assign CoS group to a station during Day time using command ***4610.***
5. Assign CoS group to a station during Night time using command ***4611.***

On a piece of paper, chalk out the number of CoS groups to be formed and which features are to be assigned to each group. Then configure as per above instructions,

- Enter SE mode.
- To enable/disable a feature in a CoS group, dial,
  4602-1-CoS Group-Feature Index-Code
  Where,
  CoS Group is from 0 to 7.
  Feature Index is from 00 to 30. Feature Indexes from 17 to 19 are left blank. You will get Error Tone if you try to configure these indexes.

Code	Meaning
0	Feature Disabled
1	Feature Enabled

  - To enable/disable a feature in all the CoS groups, dial,
    4602-*-Feature Index-Code
- To restore default configuration in a CoS group, dial,
  4601-1-CoS Group-#

Where,
CoS Group is from 0 to 7.

- To restore default configuration in all CoS groups at once, dial,
  4601-*-#

- To assign a CoS group to a station during Day time, dial,
  4610-1-Station-CoS Group
  Where,
  Station is the software port from 00 to 07.
  CoS Group is from 0 to 7.

  - To assign a CoS group to all stations during Day time, dial,
    4610-*-CoS Group

- To assign a CoS group to a station during Night time, dial,
  4611-1-Station-CoS Group
  Where,
  Station is the software port from 00 to 07.
  CoS Group is from 0 to 7.

  - To assign a CoS group to all stations during Night time, dial,
    4611-*-CoS Group

- Exit SE mode.

CLI Based Routing

VISIONPRO provides the facility of detecting the caller's number and presenting it on the display of the called station. This feature is called Calling Line Identification and Presentation (CLIP).

On the basis of CLI, it is possible for calls from a particular external number to land on a particular station or a group of stations. This is known as CLI Based Routing.

How it works

On arrival of an incoming call, the system identifies the calling party's number and compares it with the numbers in the CLI table. The CLI table must be configured by the system engineer during programming.

If the number is present in the CLI table, the call is routed according to the CLI programmed (also known as the CLI based routing); else the call is routed according to the Trunk Landing Group (TLG) programmed.

CLI based routing can be enabled or disabled during Day/Night time separately.

VISIONPRO offers the facility to forward a call to an external number based on the CLI numbers. Using this feature it is possible to forward a call from a known destination to another pre-configured destination number.

- *CLI based Call Forward - Trunk is possible only for the first eight indexes (00-07) in the CLI table.*
- *Maximum 25 CLI numbers can be routed to the desired destinations.*
- *If the call is routed to a station and if the station is busy/not responding, the call is routed as per the programmed Trunk Landing Group.*

How to configure

If CLI based routing is required for incoming calls, the system must be programmed as per following instructions.

- Enter SE mode.
- To enable/disable CLI based routing during Day time, dial,
  1602-Code
  Where,

Code	Meaning
0	Disable CLI based routing
1	Enable CLI based routing

By default, CLI based routing is disabled during Day time.

- To enable/disable CLI based routing during Night time, dial,
  1603-Code
  Where,

Code	Meaning
0	Disable CLI based routing
1	Enable CLI based routing

By default, CLI based routing is disabled during Night time.

- To configure the incoming telephone numbers in a CLI table, dial,
  1604-1-Index-Telephone Number-#*
  Where,
  Index is from 00 to 24.
  Telephone Number is the calling party's telephone number (Maximum 16 digits). Terminate the command with **'#*'** if the number has less than 16 digits. Old telephone numbers can be overwritten by new telephone numbers.

  - To clear all telephone numbers from the CLI table, dial,
    1604-*-#

- To assign destination type and destination for the incoming telephone numbers in the CLI table, dial,
  1605-1-Index-Destination Type-Destination
  Where,
  Index is from 00 to 24.

Destination Type	Meaning
0	If call is to be routed to particular station
1	If call is to be routed to a station group
2	If call is to be routed to external number

Destination	Meaning
00-07	Port Number of the station
00-15	Station Group
00-07	Trunk Access Group Number

  - To assign the same destination type and destination for all the incoming telephone numbers in the CLI table, dial,
    1605-*-Destination Type-Destination.

- To configure the external destination number where the call is to be routed for CLI based Call Forward - Trunk, dial,
  1606-1-Index-Destination Number-#*
  Where,
  Index is from 00 to 07.
  Destination Number is the telephone number (maximum 16 digits) where the calls are to be forwarded. Terminate the command with **'#*'** if the number has less than 16 digits.

  On using above command a table shown below will be created in the system's memory automatically.

Index	Caller's Telephone Number	Destination Type	Destination	Call Forward - Trunk Destination
00	022-8585858	2	0	2656565
01	011-7575757	2	0	2782085
02	020-5889988	2	0	2662266
:	:	:	:	:
:	:	:	:	:
07	033-5656565	0	0	

- To set CLI parameters to default, dial,
  1601-#

On issuing above command,

- *CLI based routing is turned OFF.*
- *All entries in the CLI table are cleared.*
- *Destination is cleared.*
- *Number string in the Call Forward - Trunk destination is also cleared.*

- Exit SE mode.

CLI Based Routing Ring Timer

It specifies the time for which a station rings if the call is routed to it based on the CLI based routing.

To configure,

- Enter SE mode.
- Dial **3019-Seconds**.
  Where,
  Default: 015 seconds.
  Valid Range: 000 to 255 seconds.
- Exit SE mode.

Conference

VISIONPRO offers the facility of 3-Party Conference calls. If a user is already talking to someone and wants to include a third person in the current conversation, he/she can create a 3-Party conference.

Following three combinations are allowed in 3-party conference:

- All three stations.
- Two stations and one trunk.
- One station and two trunks.

It is also possible to conduct an **Unsupervised 3-Party Conference**, wherein the operator connects two trunks through the system and withdraws himself/herself from the three-way speech.

Suppose you are at city A. Your two colleagues are at city B and city C. Now using this feature, you staying at City A, can make a conference call with the persons in City B and in City C. After the conference is established and if you disconnect, then the persons in City B and in City C will be in speech with each other.

- *Unsupervised conference calls are same as the DOSA calls. The unsupervised conference call shall get disconnected after time = DOSA Inactivity Timer + DOSA Wait Timer. Hence to continue the unsupervised conference, it is mandatory for the user to dial any digit after the warning beeps. Refer "Direct Outward System Access (DOSA)" for more details.*

- *To disconnect the call it is advisable to dial '**#0**'.*

- *VISIONPRO supports maximum 2 simultaneous 3-party conferences at a time.*

How it works

A, B, C are stations.

3-Party Conference between stations

- A is in speech with B.
- A and B want to include C in their conversation.
- A puts B on Hold.
- A gets Feature Tone. B gets on-hold music.
- A dials C's station number. A gets Ring Back Tone.
- A is in speech with C.
- A dials ***Flash-0***; a three-way speech is established.
- A, B, and C are now in a 3-party conference.

- Any of them can disconnect to withdraw from the conference.
- If C disconnects, A and B will be in a normal two-way speech.
- A and B can carry on the conversation or can have another conference with a trunk (external number) or with a different station.

Similarly, a conference can be created including one station and a trunk or including two trunks.

How to configure

For this feature to work, the 'Conference' feature must be enabled in the Class of Service group of the stations that are to be allowed this feature. Refer "Class of Service (CoS)" for detailed instructions and programming.

How to use

To create a **3-party conference** when you are already in a 3-way mode as described in Call Toggling,

- Dial **Flash-0**.
- 3-party conference is established.

To create an **Unsupervised 3-party conference** when you are already in a 3-way mode as described in Call Toggling,

- Dial **Flash-0**.
- 3-party conference is established.
- Dial **Flash**.
- One of the trunks goes on hold. You come in speech with the other trunk.
- Dial **Flash-6**.
- The two trunks are connected.

Refer "Call Toggle" and "Call Transfer" for more details.

Continued Dialing (Flashing on Trunk)

Continued Dialing allows a station to dial the desired external number, wait for the called party to answer and then dial additional digits. This helps users to access services like Auto Attendant, Voice Mail and Interactive Voice Response (IVR).

It also helps in using features like Call Toggling or Call Waiting provided by the service providers.

How to configure

For this feature to work, it must be enabled in the Class of Service group of the stations that are to be allowed this feature. Refer "Class of Service (CoS)" for detailed instructions and programming.

How to use

- Speech with a trunk.
- Dial **Flash**.
- You get Dial Tone.
- Dial ***#***.
- Dial Tone stops. Speech with the trunk again.
- Dial the desired Service Provider code.

Example:

To use Call Toggling facility of the telecom exchange from any station,

- Dial ***Flash-#.*** This informs the system to pass the dialed digits on the trunk line.
- Dial the service provider's code to access Call Toggling (for example, Flash-1).
- Speech with the second call.
- Dial ***Flash-#.*** This informs the system to pass the dialed digits on the trunk line.
- Dial the service provider's code to access Call Toggling (for example, Flash-1).
- Speech with the first call.
- Dial ***Flash-#.*** This informs the system to pass the dialed digits on the trunk line.
- Dial the service provider's code to access Call Toggling (for example, Flash-1).
- Speech with the second call.

After dialing '#', the system allows dialing the code within the time duration configured as the Trunk Inter Digit Wait Timer. If the code on the trunk line is dialed after that duration of dialing '#', the system considers it to be invalid code and does not pass it on the trunk line. To configure the timer, refer "Trunk Parameters".

Department Call

Department Call enables you to group together stations of a particular department so that callers can reach anyone within the department. VISIONPRO offers the flexibility to the group of station users belonging to a particular department to be configured within a single group. This group is called a department group. The call made to this group using a code is called Department Call. The access code used to make such call is called Department Number.

- *Department Call is allowed from any station.*
- *Department call can also be made through DID.*
- *Only Call Transfer - Screened is possible on a department group. Refer "Call Transfer" for details.*

How it works

- Maximum four department groups can be formed which are numbered from 0 to 3.
- These groups can be accessed by dialing the department numbers ranging from 3980 to 3983. For more information, refer "How to use".

How to configure

1. Decide the number of department groups to be configured.
2. Program station groups accordingly.
3. Program the desired station group as department group using command ***4801.***

Once you have decided the number of department groups to be configured, proceed as mentioned below.

- Enter SE mode.
- Program station groups for this purpose. Refer "Station Groups" for details.
- To assign a station group as a department group, dial,
  4801-1-Department Group-Station Group
  Where,
  Department group is from 0 to 3.
  Station Group is from 00 to 15.
  - To assign the same station group to all department groups, dial,
    4801-*-Station Group
- Exit SE mode.

Example:
Program station group 00 as department group 0 and department group 1 whereas station group 01 as department group 2 and department group 3.

Solution. Dial following commands in SE mode,

4801-1-0-00
4801-1-1-00
4801-1-2-01
4801-1-3-01

How to use

Making a department call is same as calling another station.

- Lift the handset.
- Dial the desired Department Group Number - **3980** or **3981** or **3982** or **3983**.
- You get Ring Back Tone as the call lands on the programmed station within the department group.
- Talk when the call is answered.
- Replace handset.

Example:

To access any of the free stations in a group 0, dial ***3980.***

Dial By Name

A caller can reach the desired person in an organization by dialing the name of the person instead of dialing their station numbers. This is an advanced feature of an auto-attendant when the external caller uses Direct Inward Dialing (DID).

How it works

- The caller calls a DID and Voice Guidance enabled trunk of VISIONPRO.
- Since DID is enabled for the trunk, the system answers the call by going OFF-Hook.
- VISIONPRO greets the caller as per Day time or Night time since Voice Guidance is enabled for the trunk.
- System plays the initial guidance message, “Dial a station number. Dial # if you wish to dial by name. Or dial 9 for operator”.
- The system feeds Dial Tone to dial the station number and plays beeps to access dial by name.
- Caller dials ‘#’ to access dial by name.
- System plays the Dial by Name message, “Dial first three letters of the name of the person you wish to call”.
- Caller dials the digits corresponding to the first three alphabets of the name.
- If all the digits dialed are valid, the system plays the Call Transfer message, “Please hold while your call is being transferred”.
- If the dialed station answers the call, the system completes Call Transfer and the caller gets connected to the desired station user.

- *It is mandatory to configure the station names if this feature is to be used.*
- *Dial by Name can only be used by accessing DID. Refer “Direct Inward Dialing (DID)” for details.*
- *Abbreviate the names of station users to their first three alphabets only. For example, abbreviate Mark to ‘MAR’, John to ‘JOH’ etc. However, a station user’s name can be abbreviated to any desirable acronym with maximum of three letters (all alphabets are allowed).*
- *It is advisable that the SE programs the station names in such a manner that no acronym corresponds to two different names.*
- *If in an organization, two persons have the same name then a suitable acronym should be given to each of them to avoid any confusion. It is also possible to mention such typical case in the Dial by Name message itself, which can be configured. For example, the message can be recorded as: “Please dial first three letters of the name of the person you wish to talk. For John Doe dial 564 and for John Dylan dial 395”.*
- *Please note that VISIONPRO does not distinguish between two names having the same dialing digits. For example, VISIONPRO cannot distinguish between ‘Patrick’ and ‘Paul’ because caller would dial*

728 in both cases. Such combinations are not allowed. VISIONPRO will not allow programming of the same name or names with common codes.

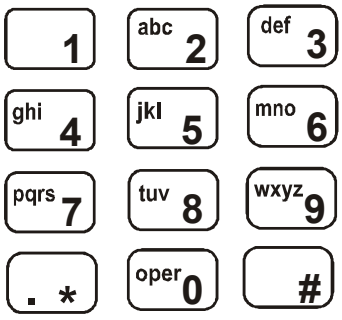
- *The caller should have a telephone instrument with alphabets printed on the keys.*
- *VISIONPRO checks the dialed station name for its validity. If the dialed number is not valid, it plays wrong dial message and asks the caller to dial again.*

How to configure

1. Program the station names using the command ***4103.***
2. Activate Voice Guidance on the trunks.

To configure,

- Enter SE mode.
- To configure a station name, dial,
  4103-1-Station-Name
  Where,
  Station is the software port number of the station from 00 to 07.
  Name is the alphanumeric string of three characters.



- To clear a station name, dial,
  4103-1-Station-#
  Where,
  Station is the software port number of the station from 00 to 07.
  - To clear all the station names, dial,
    4103-*-#
- To activate Voice Guidance on the trunks, refer “Direct Inward Dialing (DID)” and “Voice Message Applications”.
- Exit SE mode.

How to use

- Call a Voice Guidance enabled trunk of VISIONPRO.
- Listen to the initial guidance message.
- Dial **#**.
- Dial first three letters of the name of the person you wish to talk.
- VISIONPRO transfers the call to the dialed station.
- Talk when the station user answers.

Direct Inward Dialing (DID)

The system can perform the task of an operator by greeting the external caller and transferring the call to the desired station. This facility is called Direct Inward Dialing (DID).

This feature enables frequent callers to reach their desired stations by dialing the station numbers or dialing the station names from their phones.

DID offers the following advantages,

- Reduces traffic burden on the operator.
- Calls are transferred faster, which saves the caller's time.
- Useful even during non-working hours and holidays.

How it works

- The caller calls a DID enabled trunk of VISIONPRO.
- Since DID is enabled for the trunk, the system answers the call by going OFF-Hook[9].
- The system checks if voice message greeting is configured for the trunk for the current time and greets the caller as per Day time or Night time and plays the initial guidance message. If voice message greeting is not configured, then the system plays the music.
- System plays the Dial Tone/beeps or plays the Dial Message prompting the caller to dial the desired station name or number or department group number.
- Caller dials the digits corresponding to the name or the number of the desired station/department group. To access dial by name to reach the desired station, refer "Dial By Name".
- The caller must dial digits corresponding to the name or the number before the DID Beeps Timer expires.
    - If the DID Beeps Timer expires, the system plays the No Dial Message and routes the call to the programmed destination. The process is terminated at this stage.
    - Otherwise, if valid digits are not received, the system plays the Wrong Dial message or plays the Error Tone to the caller. Thereafter, the system again plays the Dial Tone or plays the Dial Message prompting the caller to dial the desired station name or number or department group number and repeat the process.
- If all the digits dialed are valid and the desired station is free, the system transfers the call. At this time the caller gets Ring Back Tone.
- The system plays the Programming Message and waits for the destination station to answer within the DID Ring Timer.
- If the dialed station answers the call within the DID Ring Timer, the system connects the caller to the dialed station user.

9. If DID is not enabled for a trunk, then the system routes the call to the programmed landing destination station.

- However, if the dialed station user fails to answer the call within the DID Ring Timer, the system plays the No Reply Message or plays the Routing Tone to the caller. Thereafter, the system again plays the Dial Tone or plays the Dial Message prompting the caller to dial the desired station name or number or department group number and repeat the process.

*By default, DID is **disabled** on all trunks during Day time and Night time.*

How to configure

1. Enable/Disable DID on trunk/s during Day time using command ***3501.***
2. Enable/Disable DID on trunk/s during Night time using command ***3502.***
3. Enable/Disable Voice Guidance for DID on trunk/s during Day time using command ***3503.***
4. Enable/Disable Voice Guidance for DID on trunk/s during Night time using command ***3504.***
5. Program the DID timers using command ***3022-3028.*** See "DID Timers" described below.
6. Record DID voice message (if required).

DID Timers

- **DID Inactivity Timer:** It signifies the time after which the system disconnects the trunk call if not replied by any station. To elaborate, when a DID call arrives, the system attends the call after DID answer wait timer. If no digit is dialed (by the caller) then the call is routed to the landing destination. The system waits for the call to be answered by a station for DID Inactivity timer. On expiry of this timer, the system disconnects the call.
- **DOSA/DID Answer Wait Timer:** It signifies the time after which the system answers a DOSA/DID call.
- **DOSA/DID Music Timer:** It signifies the time for which the system plays music after answering the call.
- **DOSA/DID Dial Tone Timer:** It signifies the time for which the system gives dial tone to the caller to dial the desired station name/number or department group number (for DID) or to dial the Trunk Access Code to grab a trunk (for DOSA).
- **DOSA/DID Beeps Timer:** It signifies the time for which the system gives beeps to the caller to grab the trunk line or dial the desired station name/number or department group number. This timer is same as DOSA/DID Dial Tone Timer.
- **DID Ring Timer:** It signifies the time for which the dialed station rings when call lands through DID.
- **DOSA/DID Busy Tone Timer:** It signifies the time for which the system gives busy tone to the caller if the station/department group dialed by the caller is busy (for DID) or if the trunk, which the caller is trying to grab is busy (for DOSA).
- **DOSA/DID Error Tone Timer:** It signifies the time for which the system gives error tone to the caller if the caller dials invalid codes/digits.

To configure the DID parameters,

- Enter SE mode.

- To activate/deactivate DID on a trunk during Day time, dial,
  3501-1-Trunk-Code
  Where,
  Trunk is the software port from 0 to 2.

Code	Meaning
0	DID deactivated
1	DID activated

  - To activate/deactivate DID on all trunks during Day time, dial,
    3501-*-Code

- To activate/deactivate DID on a trunk during Night time, dial,
  3502-1-Trunk-Code
  Where,
  Trunk is the software port from 0 to 2.

Code	Meaning
0	DID deactivated
1	DID activated

  - To activate/deactivate DID on all trunks during Night time, dial,
    3502-*-Code

- To activate/deactivate Voice Guidance for DID on a trunk during Day time, dial,
  3503-1-Trunk-Code
  Where,
  Trunk is the software port from 0 to 2.

Code	Meaning
0	Voice Guidance for DID deactivated
1	Voice Guidance for DID activated

  - To activate/deactivate Voice Guidance for DID on all trunks during Day time, dial,
    3503-*-Code

- To activate/deactivate Voice Guidance for DID on a trunk during Night time, dial,
  3504-1-Trunk-Code
  Where,
  Trunk is the software port from 0 to 2.

Code	Meaning
0	Voice Guidance for DID deactivated
1	Voice Guidance for DID activated

  - To activate/deactivate Voice Guidance for DID on all trunks during Night time, dial,
    3504-*-Code

*By default, Voice Guidance for DID is **ON** on all trunks during Day time and Night time.*

- To set the various timers related to DID, dial commands as displayed in the following table.

Timer Name	Command	Default (Sec.)	Valid Range
DID Inactivity Timer	***3022-Seconds***	060	000 to 255
DOSA/DID Answer Wait Timer	***3023-Seconds***	005	000 to 255
DOSA/DID Music Timer	***3024-Seconds***	005	000 to 255
DOSA/DID Dial Tone Timer and DOSA/DID Beeps Timer	***3025-Seconds***	005	000 to 255
DID Ring Timer	***3026-Seconds***	030	000 to 255
DOSA/DID Busy Tone Timer	***3027-Seconds***	005	000 to 255
DOSA/DID Error Tone Timer	***3028-Seconds***	005	000 to 255

- To record DID voice message, refer "Voice Message Applications" for more details.
- Exit SE mode.

Example:

Activate DID for the trunk2 during Day time and Night time.

Solution. Dial the following commands in SE mode,

- ***3501-1-2-1***
- ***3502-1-2-1***

Direct Outward System Access (DOSA)

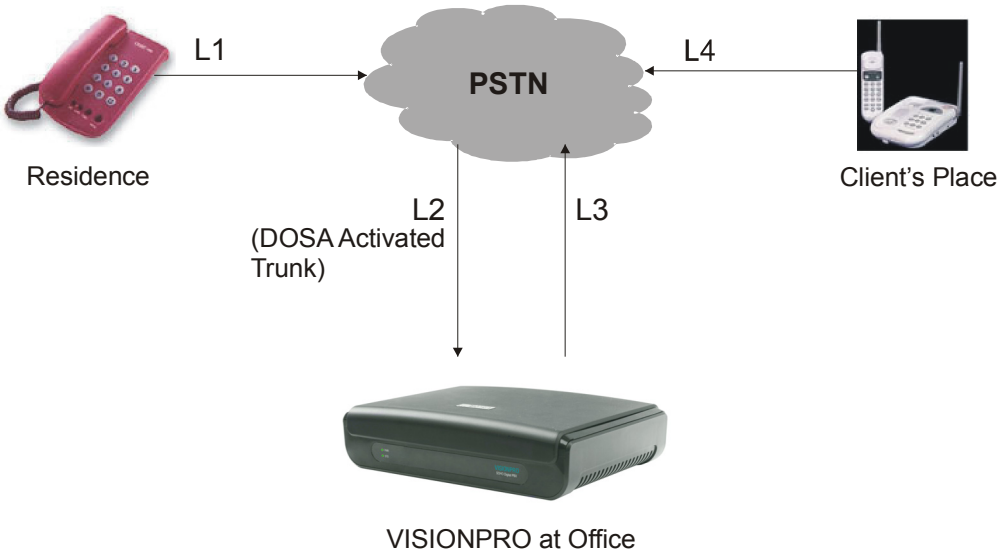
DOSA enables a user to use the system resources for making outgoing call from a remote location. This facility is generally used to make long distance calls.

This feature allows access to system resources to remote users, and therefore has serious implications for your system's security. Protect your system from unauthorized access and misuse. It is recommended to protect this facility with a unique password.

How it works

- A call lands on a DOSA enabled trunk. System answers the call after DOSA/DID Answer Wait Timer.
- System greets the caller or plays music to the caller for the time equal to DOSA\DID Music Timer.
- The system plays Dial Tone for time equal to the Dial Tone Timer. The system waits for the caller to dial **1-Station Number-User Password** (the caller should dial this in Tone mode (DTMF) only).
- The system checks if the station number and the password are correctly dialed.
    - If the number and/or the password is not proper, the system plays Error Tone for the time equal to the Error Tone Timer. Otherwise, if voice guidance is enabled on the trunk, the system plays the Voice Guidance for Wrong Dial message. The system waits for correct station number and password and expects the caller to repeat above steps again.
    - If time-out occurs, the system transfers the call to the landing destination of the trunk and further call processing is terminated.
- If the caller logs in successfully, the system plays the DOSA Dial Tone (short beeps) for the time equal to the DOSA Beeps Timer. The system waits for the caller to grab a trunk during these beeps by dialing the Trunk Access Codes or codes for Abbreviated dialing (800-899).
- The system allots the trunk to the caller (provided it is free) and waits for the caller to dial the external number.
- At this stage, either of the following two possibilities may arise,
    - **The Called Party is free:** The caller gets RBT. Speech is established when the called party answers. If the called party does not answer the call then the call gets disconnected after time = DOSA Inactivity Timer + DOSA Warn Timer. If the caller needs to continue the call, he/she must dial any digit.
    - **The Called Party is busy:** Hence, the caller gets Busy Tone. Caller should dial '#0' to disconnect (it is equivalent to ON-Hook command in DOSA mode). Caller gets DOSA Dial Tone. The caller may retry by grabbing a trunk and dialing out the same or different number again. Else to log out of the DOSA session, the caller must dial '#0'.

To make a DOSA call, minimum two trunk lines are used (L2 and L3 as shown in the figure below). Hence, these should be connected to the PBX. However, in the entire process four trunk lines are (L1, L2, L3 and L4 as shown in the figure below) used while using this facility.



When a caller dials a DOSA activated trunk, two trunk lines (L1 and L2) are used. Then the caller grabs the third trunk (L3) and dials the desired phone number where fourth line (L4) is used.

In DOSA calls, speech quality may deteriorate as the length of the path increases.

- *DOSA facility can be enabled on one or more trunks.*
- *DOSA can be enabled/disabled for Day and Night modes independently.*
- *Because of poor line conditions, it is possible that DOSA facility may not work.*
- *Abbreviated Dialing is allowed through DOSA.*

How to configure

1. Enable/disable DOSA on trunk/s during Day time and Night time using command ***3601*** and ***3602.***
2. Assign a CoS group with DOSA enabled to a station to which DOSA call is to be allowed.
3. Set DOSA Inactivity Timer using command ***3020.*** Refer "DOSA Timers" below.
4. Set DOSA Warn Timer using command ***3021.*** Refer "DOSA Timers" below.

DOSA Timers

- **DOSA Inactivity Timer:** It signifies the time after which the system gives warning beeps to the caller. For this time duration a line remains active even after the call is finished if the caller forgets to log out by dialing '#0'. Hence it is advisable to configure this timer for optimum period.
- **DOSA Warn Timer:** It signifies the time after which the system disconnects the call.

For the remaining list of timers, refer "DID Timers" in "Direct Inward Dialing (DID)".

As mentioned above, configure DOSA parameters as follows,

- Enter SE mode.
- To activate/deactivate DOSA on a trunk during Day time, dial,
  3601-1-Trunk-Code
  Where,
  Trunk is the software port from 0 to 2.

Code	Meaning
0	DOSA deactivated
1	DOSA activated

  - To activate/deactivate DOSA on all the trunks during Day time, dial,
    3601-*-Code
- To activate/deactivate DOSA on a trunk during Night time, dial,
  3602-1-Trunk-Code
  Where,
  Trunk is the software port from 0 to 2.

Code	Meaning
0	DOSA deactivated
1	DOSA activated

  - To activate/deactivate DOSA on all the trunks during Night time, dial,
    3602-*-Code
- Assign a CoS group having DOSA enabled to a station. For more details, please refer "Class of Service (CoS)".
- To configure the DOSA Inactivity Timer, dial,
  3020-Seconds
  Where,
  Default: 060 seconds.
  Valid Range: 000 to 255 seconds.
- To configure the DOSA Warn Timer, dial,
  3021-Seconds
  Where,
  Default: 015 seconds.
  Valid Range: 000 to 255 seconds.
- Exit SE mode.

Example:
Consider the following requirements:

Station : 23 (software port 02), Trunk : 0, CoS group : 7 (DOSA enabled), CoS group : 4 (DOSA disabled).

You have to disable DOSA during Day time and enable DOSA during Night time.

Solution. Dial following commands in SE mode,

3601-1-0-0
3602-1-0-1
4610-1-02-4
4611-1-02-7

How to use

If you are a remote user, to be able to use DOSA, you must know:

- the number of the trunk on which DOSA is enabled.
- the number of the station and the User Password which you want to access.
- the duration of the DOSA related Timers, so that you may dial digits accordingly, without delay.
- the special digits that is, '#0' to be dialed during a DOSA login session.

To access DOSA,

- Dial a DOSA activated trunk.
- On getting the PBX Dial Tone, dial ***1-Station Number-User Password***. You get DOSA Dial Tone (short beeps).
- On getting DOSA Dial Tone, dial a Trunk Access Code to grab another trunk to get the P&T Dial Tone.
- On getting the P&T Dial Tone, dial the desired phone number.
- Dial any digit to continue the talk.
- Dial '***#0***' to disconnect the call.
- You are still logged in the system. You can make another call by grabbing P&T line.
- Dial '***#0***' to end the DOSA session.

Distinctive Rings

Distinctive Rings are ringing patterns used for distinguishing between different types of call events. For instance, a triple ring indicates Boss Ring while a double ring indicates trunk calls.

VISIONPRO offers four different Ring Types for the following six incoming call events.

1. Internal Call.
2. Trunk Call.
3. Alarm Call.
4. Auto Call Back Call.
5. Programming Ring.
6. Boss Ring.

Four Ring Types and Cadences are shown in the following table.

Ring Index	Ring Type	Ring Cadence (ms)								Call Events
		ON	OFF	ON	OFF	ON	OFF	ON	OFF	
1	Single	750	2250	-	-	-	-	-	-	Internal Call
2	Double	400	400	400	1800	-	-	-	-	Trunk Call
3	Triple	400	200	400	200	400	1400	-	-	Alarm/Boss Ring
4	Fast	500	1000	500	1000	500	1000	-	-	ACB/Programming Ring

Ring cadences are not programmable.

Dynamic Lock

Dynamic Lock allows station users to change the Toll Control Levels (Calling Permissions) of their stations on their own by dialing a code. With this feature, station users can prevent misuse of outgoing call facility from their stations, specially in their absence.

Stations can be locked manually or automatically.

- If manual lock is selected, then user should lock the station while leaving the work place by dialing the required command. On returning back to work place, the station can be unlocked by dialing another command.
- If automatic lock is selected, the system locks the station after the programmed time duration automatically on executing the lock command. The timer starts from the time when the station is locked and it can be programmed.

- *The changing of Toll Control requires the station user to dial the four-digit User Password. The system will not accept the default User Password (1111). The station user must first change the default User Password. Refer the topic "User Password" for instructions on changing the password.*
- *The Dynamic Lock Timer can be set to a maximum of 99 minutes.*
- *The Dynamic Lock Timer must be set to '00' when using Manual Dynamic Lock.*

How it works

When a user locks his/her station, the toll control of the station changes to limited dialing or no dialing.

If you lock your station and thereafter dial out a number, VISIONPRO will compare the dialed number string with the number strings in allowed and denied lists for the locked status. This is called **Dynamic Toll Control**. You must assign the required allowed and/or denied number list to the station.

So before using Dynamic Lock,

- Make sure to configure the desired allowed and denied lists. If the default allowed and denied lists satisfy your requirement, then you should not customize any of the lists. To configure either lists, refer "Allowed and Denied Lists".
- Assign the desired allowed and/or denied lists to the stations according to which numbers can be dialed out when the stations are locked. To assign the allowed and/or denied lists as per Day or Night time, refer "Toll Control".

- *Allowed list 0 and Denied list 0 are assigned in locked condition by default.*
- *Default allowed list for Day and Night is '2' whereas default denied list for Day and Night is '4'.*

How to configure

- For this feature to work, it must be enabled in the Class of Service of the stations. Refer "Class of Service (CoS)" for details.

- Decide whether you want to use Manual or Automatic Dynamic lock.
- If you decide to use Manual Dynamic Lock, set the parameter ‘minutes’ in the command ***143-User Password-Minutes*** to 00. Here, ‘Minutes’ specify the time in minutes after which the station gets locked automatically.
- If you decide to use Automatic Dynamic Lock, set the parameter ‘minutes’ in the command ***143-User Password-Minutes*** to a desirable value between 01-99. Here, ‘Minutes’ specify the time in minutes after which the station gets locked automatically.
- Use the commands ***140*** and ***141-User Password*** to lock the station and unlock the station respectively whenever required.

Change your User Password to avoid misuse of your station. Refer the topic “User Password” for instructions on changing the password.

How to use

Station users can set Dynamic Lock—Manual or Automatic—by themselves for their station.

To set Dynamic Lock-Manual or Automatic,

- Lift the handset.
- Dial **143-User Password-Minutes**. For Dynamic Lock Manual, enter Minutes value as ‘00’ while for Dynamic Lock Automatic, enter Minutes value between 01-99. By default, it is manual lock.
- You get Confirmation Tone.
- Replace handset.

To lock the station,

- Lift the handset.
- Dial **140**
- You get Confirmation Tone.
- Replace handset.

Once the station is locked, you will be able to dial the numbers depending on the dynamic toll control.

To unlock the station,

- Lift the handset.
- Dial **141**
- Enter the User Password.
- You get Confirmation Tone.
- Replace handset.

- *To change the User Password, refer “User Password”.*
- *In case you forget your password, do not panic. Contact the System Administrator (SA) or the System Engineer (SE) so that they can set your password to its default value. Refer “System Security (SE and SA Passwords)” for more details.*

Flexible Numbers

VISIONPRO offers flexibility to assign a number of your choice to a station. This number is called the Flexible Number of the station. For example, to call the first station having software port number 00, one has to dial 21. It is possible to change this code to any other number of your choice.

The system loads default access codes (flexible numbers) to all the stations on first power ON. Later on the stations can be assigned desired flexible numbers, if required.

Flexible numbers can be dialed from dial phase to call another station. These numbers should be unique and should not match with any other station or any of the feature commands available during the dial phase.

It is possible to have single digit, 2-digit, 3-digit and 4-digit flexible numbers. Few stations may have single digit, few may have 2-digit, few may have 3-digit and remaining may have 4-digit flexible numbers.

- *It is not possible to give any station, a flexible number '0'.*
- *If the flexible number of a station starts with a digit which is same as the feature access code for some specific feature, then **'*'** is required to be dialed before accessing that feature. For example, if a station is assigned a flexible number 42 then to access the Group Call Pickup feature, the user must dial **'*4'** (default feature access code for Group Call Pickup is '4' which must be preceded by a '*' in this case).*
- *Flexible number having common digits can't be assigned to another station. For example, if 3101 is used then 310 cannot be configured. Same way if 3111 is used then 311 cannot be configured.*
- *Same flexible number cannot be assigned to two different stations. For example, if you have used 211 for one station then 211 can't be assigned to any other station.*
- *It is possible to clear the flexible numbers of all the stations. However, the default values can be restored by executing the command to set the flexible numbers of all the stations to their default values.*
- *When the flexible number of a station is cleared, one cannot call that station. However the station can make calls as usual.*
- *Use flexible numbers for all the features used from the User mode. Software port numbers are to be used only during SE or SA mode.*

How to configure

To configure the flexible numbers as per your requirement,

- Enter SE mode.
- To configure the flexible number for a station, dial,
  4201-1-Station-Flexible Number-#*
  Where,
  Station is from 00 to 07.
  Flexible Number can be any number string having 1, 2, 3 or 4 digits.
  Terminate the command using '**#***' if flexible number is less than four digits.

- To set the flexible numbers of all the stations to their default values, dial,
  4201-*-#

The default flexible numbers assigned to the system is shown in the following table-

Software Port	Flexible Number
00	21
01	22
02	23
03	24
04	25
05	26
06	27
07	28

- To clear the flexible numbers of all the stations, dial,
  4201-*-0

- Exit SE mode.

Example:
Software port 00 to 03 should be assigned flexible numbers as 31 to 34 and software port from 04 to 07 should be assigned flexible numbers as 21 to 24.

Solution. Dial the following commands in SE mode,

4201-1-00-31#*
4201-1-01-32#*
4201-1-02-33#*
4201-1-03-34#*
4201-1-04-21#*
4201-1-05-22#*
4201-1-06-23#*
4201-1-07-24#*

Follow Me

Using this feature, you can make your calls follow you wherever you go. You can receive your calls on another station, whenever you want.

How it works

- A's station number is 21.
- B's station number is 23.
- A is currently at B's station.
- A wants to receive calls of station 21 from station 23.
- A sets Call Follow Me on station 23.
- All calls landing on A's station 21 will be forwarded to station 23.
- When A returns to station 21, A cancels Call Follow Me.

- *The Dial Tone of the station changes to Feature Tone if its calls are forwarded.*
- *Multiple users can use 'Follow Me' from the same station.*
- *Follow Me can be overwritten. For example, station A sets Follow Me on station B. After a period of time, it goes to station C. A can receive calls on station C by setting Follow Me on station C. Follow Me set by A on station B will be canceled automatically.*
- *Follow Me cannot be chained. If station A sets Follow Me on station B and station B sets Follow Me on station C, then, calls landing on station A will be forwarded to station B and calls landing on station B will be forwarded to station C.*

How to configure

To be able to use Follow Me, station users must have Call Forward feature enabled in their "Class of Service (CoS)".

How to use

To access Follow Me from another station,

- Lift the handset of the other station.
- Dial **132**
- Dial your station number.
- Dial your User Password.
- You get Confirmation Tone.
- Replace handset.

To cancel Follow me (from your own station),

- Lift the handset of your station.
- Dial **130**
- You get Confirmation Tone.
- Replace handset.

Example:

My station number is 23 and User Password is 1212. At present I am at station 21. I want that all my calls on station 23, should come to station 21.

Solution. Dial ***132-23-1212*** from station 21.

Hotline

This feature eliminates repeated dialing of numbers from a station. Hotline can be set for Internal Station Numbers, Trunks and External Numbers.

- **Hotline - Internal:** It helps to avoid repeated dialing of a station number. The caller gets connected to the programmed station after a specific duration (programmable as the Hotline Timer) on lifting the handset.

- **Hotline - Trunk:** In this case, the moment you lift the handset and wait for a specific duration (programmable as the Hotline Timer), you get connected to any of the free trunks from the assigned Trunk Access Group. This feature is useful when you are making more number of trunk calls compared to internal calls. When this feature is enabled, on lifting the handset you get the trunk Dial Tone after the Hotline Timer expires. This feature is also called **Hot Outward Dialing (HOD)**.

- **Hotline - External Number:** In this case, the moment you lift the handset and wait for a specific duration (programmable as the Hotline Timer), you get connected to a configured external number. This feature is useful when you make calls to a particular external number many times in a day. When this feature is enabled, on lifting the handset and as soon as the Hotline timer expires, the system dials the external number. This feature is also called **Hotline with Number**.

In case Hotline is set on a station, you get the regular Dial Tone at first on lifting the handset. If you do not dial anything during this regular Dial Tone and the Hotline timer expires, the system places the hotline call to the programmed destination. This delay allows the user to dial other numbers without canceling hotline.

Only one type of Hotline can be activated on a station at a time.

How it works

- Select the type of Hotline as per your requirement: Internal station Numbers, Department Groups, External Numbers, Outgoing Trunks.

- Configure the Hotline Timer. Configure a value as per your requirement.

  For example, C, the Sales Manager has to frequently dial the number of B, the Sr. Co-ordinator-Sales. C sets Hotline for B's number and also configures the Hotline Timer as 5 seconds. Now,

  - C goes OFF-Hook.
  - VISIONPRO gives regular Dial tone and waits for 5 seconds.
  - If no digit is dialed by this time, B's number will be dialed out automatically.

How to configure

To be able to use Hotline, station users must have this feature enabled in their "Class of Service (CoS)".

How to use

Hotline can be set/canceled by users for their own station.

To set Hotline on a station **(Hotline - Internal)**,

- Lift the handset.
- Dial **153 - Station Number**.
- You get Confirmation Tone.
- Replace the handset.

Example:

The boss needs to speak to the secretary (station number 22) many times in a Day. He/she can avoid repeated dialing by activating the Hotline Internal feature on his/her station: ***153-22***.

To set Hot Outward Dialing **(Hotline - Trunk)**,

- Lift the handset.
- Dial **151 - Trunk Access Code**.
- You get Confirmation Tone.
- Replace the handset.

Example:

To simulate dialing of Trunk Access Code 62 on lifting the handset, dial ***151-62.***

To set Hot Outward Dialing with Number **(Hotline - External Number)**,

- Lift the handset.
- Dial **152-Trunk Access Code- Number-#***. Terminate the 'Number' by **'#*'** only if it is less than 16 digits.
- You get Confirmation Tone.
- Replace the handset.

Example:

Activate Hotline for external number 0265 2630555 with Trunk Access Code '62'.

Solution. Dial following command to set this feature: **152-62-02652630555-#***

To set the Hotline Timer,

- Lift the handset.
- Dial **154 - Seconds**.
- You get Confirmation Tone.
- Replace the handset.

The default value of Hotline Timer is 3 seconds and valid range is 2-9 seconds.

To Cancel Hotline,

- Lift the handset.
- Dial **150**
- You get Confirmation Tone.
- Replace the handset.

Please note that the cancelation code must be dialed while the PBX Dial Tone is played.

Interrupt Request (IR)

Interrupt Request allows you to break into an on-going conversation after intimating the station user about the interruption.

In case of an urgent call, the operator can put the call on hold, interrupt the busy station user to inform about the urgent call and then transfer that call.

How it works

- A, B and C are users of the system.
- A and B are talking to each other.
- C calls A.
- C gets Busy Tone.
- C dials Interrupt Request command.
- C gets Ring Back tone (RBT) and A gets beeps indicating about a new call. If A dials **Flash** to answer C's call before the expiry of the Interrupt Request Timer, A will be in speech with C. B is put on hold and will get music on hold.
- If A does not dial Flash before expiry of the timer, C's call will be disconnected.
- After the conversation between C and A is over and C goes ON-Hook, speech between B and A will be re-established.

Interrupt Request works even when the destination is talking on a trunk line.

Feature Interactions

- **Call States:**
  - Interrupt Request works only if the dialed station is busy. The dialed station may be busy with another station or trunk (external number).
  - Interrupt Request works only if the user about to be interrupted in is in a two-way normal speech with another user or external party.
  - It will not work if the busy signal is due to the user being OFF-Hook, or in the middle of dialing, or accessing a feature of the PBX.
- **Call Toggle:** Once A and C are connected to each other, A can toggle between B and C using Call Toggle feature. Refer "Call Toggle" for details.
- **Privacy from Interrupt Request:** If the feature Privacy from Interrupt Request is enabled for a station, it cannot be interrupted.

- Interrupt Request can also be used after putting one party on hold. An important trunk call can be transferred to a busy station after putting the calling party on hold and interrupting the busy destination to inform him/her about the important call.

How to configure

To be able to use Interrupt Request, station users must have this feature enabled in their “Class of Service (CoS)”.

Interrupt Request Timer

It is the time for which the station on which interrupt request is made gets the beeps. By default, the timer is set to 45 seconds.

To configure the timer,

- Enter SE mode.
- Dial **3017-Seconds**
  Where,
  Default: 045 seconds.
  Valid Range: 000 to 255 seconds
- Exit SE mode.

How to use

When dialed station is busy,

- Lift the handset.
- Dial the station number.
- You get Busy Tone.
- Dial **5** on Busy Tone.
- You get Ring Back Tone (RBT). The called station user gets beeps.
- The called station user can dial **Flash** to answer your call.
- Talk if call is answered.

Last Number Redial

This feature redials the last external number dialed from a station. This feature saves time during retrying a busy external number. It is same as pressing the REDIAL button of the telephone instrument.

How it works

- Station A dials the command for Last Number Redial.
- The system dials the last external number dialed from station A using the same Trunk Access Code which was used for dialing that number last time.

If station A has 'Dynamic Lock' set and accesses Last Number Redial feature, the system will check for Toll Control as per the Lock Level set for station A before dialing out the number.

How to configure

Configure the Redial Wait Timer as mentioned below.

Redial Wait Timer

It signifies the time for which the system waits once the user dials '7'. The Auto Redial code is 77. Hence, if user wants to try Last Number Redial on pressing '7', the system waits for Inter Digit Timer and then gives the Confirmation Tone. This timer can be reduced to '0' if Auto Redial is not used.

To configure this timer,

- Enter SE mode.
- Dial **3034-Seconds**
  Where,
  Default: 002 seconds.
  Valid Range: 000 to 255 seconds.
- Exit SE mode.

How to use

- Lift Handset
- Dial **7** and wait.
- The system dials out the external number last dialed out from your station.

Least Cost Routing (LCR)

Least Cost Routing (also referred to as Automatic Route Selection) is an expense control feature of VISIONPRO.

Least Cost Routing (LCR) is useful when there are different trunk lines for making outgoing calls, and the service providers of these trunks offer different tariffs for calls made to certain locations or numbers or during a particular time of the day.

When a trunk call is made from a station of VISIONPRO, LCR recognizes where the call is going to be routed. It selects the lowest cost trunk from all the trunks allotted to that station to make outgoing calls, depending upon how the LCR is configured.

The system can be configured to select the most cost effective trunk for the time of the day when the call is made from the station, or to select the most cost effective trunk for the destination number dialed from the station, or to select the most cost effective trunk considering both time of the day and the destination number.

VISIONPRO supports three types of LCR, which can be configured:

1. **Time zone based LCR:** This type of LCR may be used when you have trunk lines of more than one Service Provider, and each offers a different tariff according to the time of the day.

   For example, Service Provider 1 offers a lower tariff for calls made between 9am to 8pm, while Service Provider 2 offers a lower tariff for calls made between 8pm to 9am.

   When Time zone based LCR is configured, the system uses the *Online-dialing* logic, whereby digits dialed by the user are directly passed on to the trunk.

2. **Number based LCR:** This type of LCR may be used when you have trunk lines of more than one Service Provider, and each offers different tariffs according to the area or distance, or phone numbers dialed. For instance, Service Provider 1 provides lower calling rates for calls made from City A to City B, than Service Provider 2 and Service Provider 3.

   This logic uses *Store and Forward dialing*. In Store and Forward dialing, the digits are first stored in a memory location and then these are dialed on to the trunk.

3. **Mixed LCR:** This logic is used when the rates of service providers differ both Time zone wise and number wise. For example, Service Provider 1 offers lower rates for calls made from City A to City B during peak hours 9am to 8pm, as compared to Service Provider 2, whereas Service Provider 2 offers lower rates for calls made from City A to City B during off peak hours (8pm to 9 am).

   When Mixed LCR is configured, the system uses *Store and Forward dialing* logic, whereby digits dialed by the user are first stored at a memory location in the system, and then dialed out on the lowest cost trunk.

How it works

When a station user dials a Trunk Access Code to grab a trunk, the following series of events take place.

- The system checks if LCR type is selected and depending on that allots a trunk to the station as per following conditions.

- If **No LCR** is selected, then the system allots a free trunk from the Trunk Access Group (TAG) depending upon the rotation flag.

- If **Time zone based LCR** is selected, then the system finds the cheapest trunk from the group depending upon the time on which call is made.

    - If the cheapest trunk is free, it is allotted to the station so that the station user can dial out the external number. If it is busy, the system searches for the next available cheaper trunk, if present in the TAG and allots it to the station. The system checks in this manner until any free trunk can be allotted to the station or otherwise plays the Busy Tone.

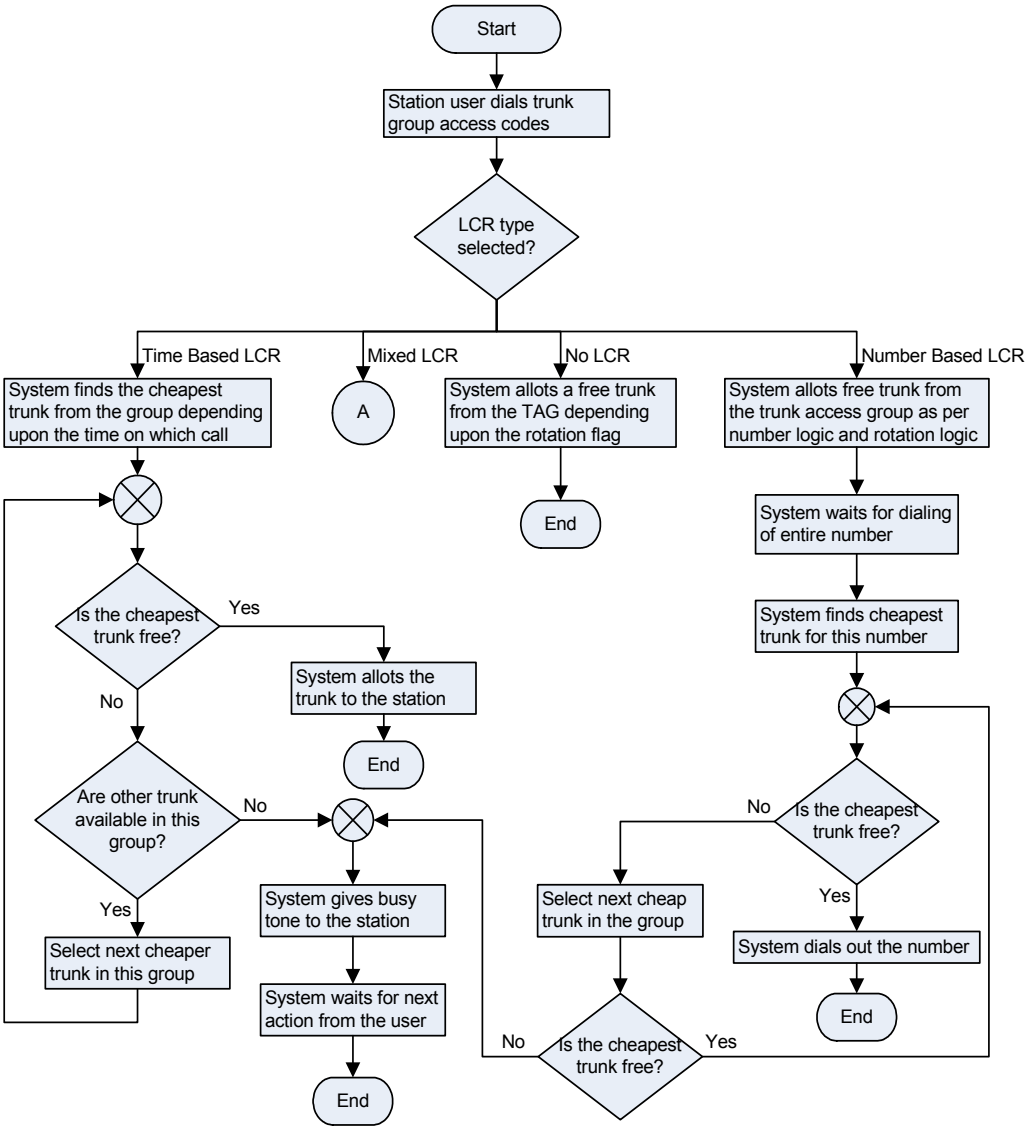
- If **Number based LCR** is selected, then the system allots a free trunk from the TAG as per the number logic and the rotation logic and waits for the entire number string to be dialed out. It then finds out the cheapest trunk from the group.

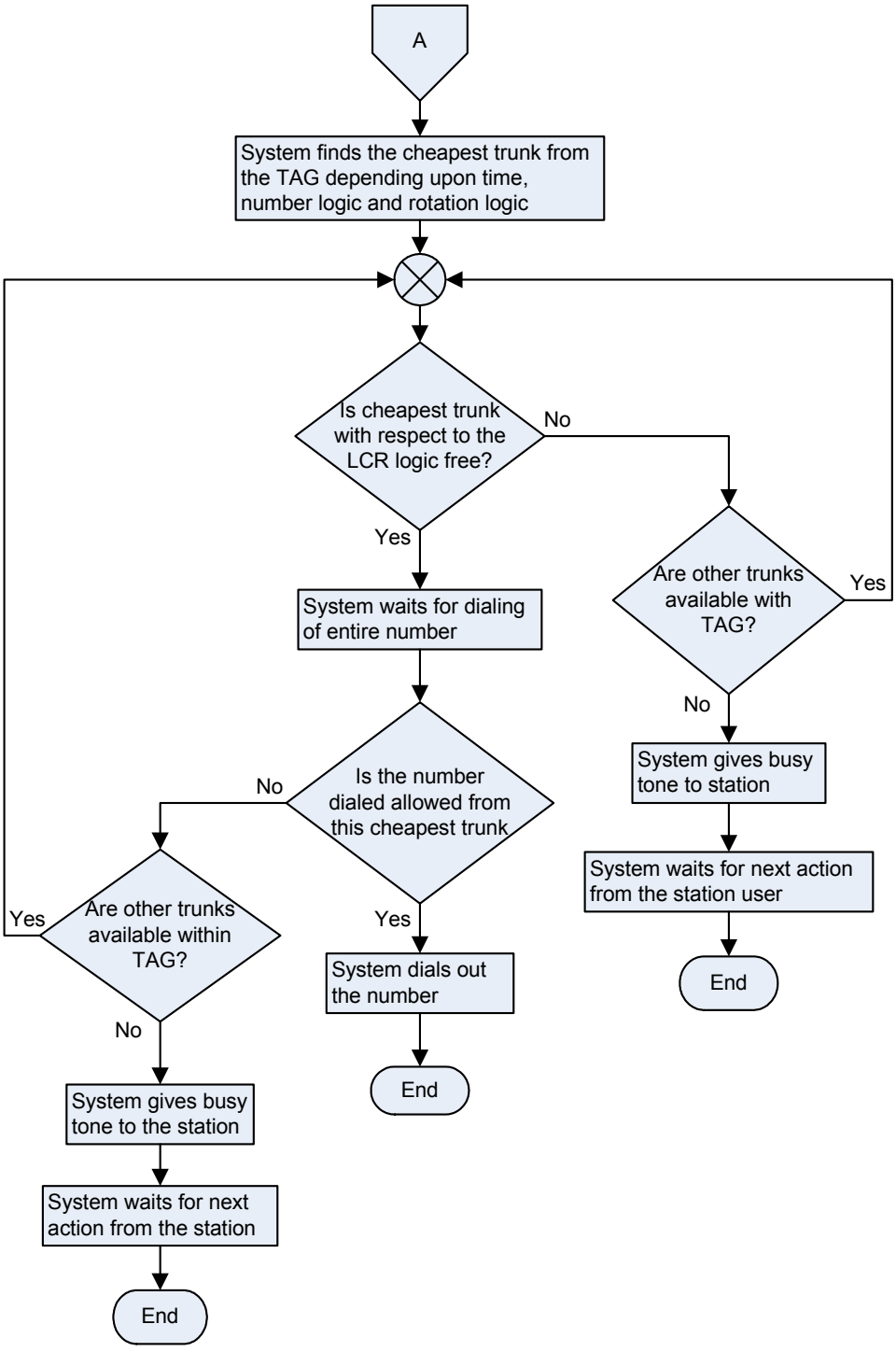
    - If the cheapest trunk is free, the number is dialed out. If it is busy, the system searches for the next available cheaper trunk, if present and allots it to the station. The system checks in this manner until any free trunk can be allotted to the station or otherwise plays the Busy Tone.

- If **Mixed LCR** is selected, then the system finds the cheapest trunk from the TAG depending upon the time, number logic and rotation logic.

    - If the cheapest trunk with respect to the LCR logic is free, the system waits for the entire number string to be dialed out. If dialed number string is allowed from this trunk, call is placed. If the trunk is busy, the system searches for the next available cheaper trunk, if present and allots it to the station. The system checks in this manner until any free trunk can be allotted to the station or otherwise plays the Busy Tone.

You can refer the following flow charts for a clear understanding of the entire process.





How to configure

1. Decide the type of LCR to be configured for a Trunk Access Group (which may be - No LCR, Time zone based LCR, Number based LCR or Mixed LCR) using command ***3401.***

2. Assign the Service Provider (SP) code to each trunk using command ***3402.***

3. Configure the LCR table as per the LCR type selected using commands ***3412, 3413*** or ***3422, 3423*** or ***3432, 3433*** and ***3434.***

As per the above guidelines, start configuring as mentioned below.

- Enter SE mode.

- To configure the LCR type for a Trunk Access Group, dial,
  3401-1-Trunk Access Group-LCR Type
  Where,
  Trunk Access Group is from 0 to 7.

LCR Type	Meaning
0	No LCR
1	Time zone based LCR
2	Number based LCR
3	Mixed LCD (Time zone based + Number based)

  - To configure the same LCR type for all Trunk Access Groups, dial,
    3401-*-LCR Type

- To assign Service Provider (SP) code to each trunk, dial,
  3402-1-Trunk-SP Code
  Where,
  Trunk is a software port from 0 to 2.
  SP Code is from 0 to 3.

  - To assign the same Service Provider code to all trunks, dial,
    3402-*-SP Code

  - Now, configure the LCR table as per the LCR type selected. Refer following details.

Time zone based LCR

If Time zone based LCR is to be used, first of all make the following table on a plain paper.

Time Zone Index	Service Providers in hierarchical order of increasing cost			
0	2	1	0	3
1	2	1	3	0
2	1	2	3	0
3	0	1	2	3

In the above table for different time zones, configure the service providers in hierarchical order of increasing cost. For example, If we have four service providers - BSNL (SP#0), TATA (SP#1), Reliance (SP#2) and Hughes (SP#3) and if for time zone 0 (08.00 to 22.00), the services of Reliance are the cheapest followed by TATA, BSNL and Hughes then the first row in the table would appear as shown in the table.

- To configure the Time Zone Index, dial,
  3412-1-Time Zone Index-Start Time-End Time
  Where,
  Time Zone Index is from 0 to 3.
  Start time is the time in HH:MM format when the time zone starts.
  End Time is the time in HH:MM format when the time zone ends.

The Time Zone table looks like:

Time Zone Index	Start Time	End Time
0	HH:MM	HH:MM
1	HH:MM	HH:MM
2	HH:MM	HH:MM
3	HH:MM	HH:MM

- To configure the **Service Provider (SP)** sequence for each Time Zone, dial,
  3413-1-Time Zone Index-SP0-SP1-SP2-SP3
  Where,
  Time Zone Index is from 0 to 3.
  SP0: Cheapest Service Provider.
  SP1: Cheaper Service Provider.
  SP2: Cheap Service Provider.
  SP3: Costly Service Provider.

It is mandatory to complete the above command. If less number of service providers are used, then repeat the cheapest Service Provider for remaining SPs.

- To default Time Zone wise LCR table, dial,
  3411-*-#

  Default time zone is 00:00 to 23:59.
  Default Service Provider sequence is from 0 to 3.

The default Time zone based LCR table would appear similar to the table shown below,

Time Zone Index	Service Provider in hierarchical order of increasing cost			
00:00-23:59	0	1	2	3
00:00-23:59	0	1	2	3
00:00-23:59	0	1	2	3
00:00-23:59	0	1	2	3

When a call is placed in such a Time Zone which is not configured in the Time Zone based LCR table (that is, no matching Time Zone Index is found for the current time), the system routes the call according to the last Time Zone Index entry configured (that is, Time Zone Index 3).

Number based LCR

If Number based LCR is to be used, first make the following table on a plain paper.

Number Index	Service Provider in hierarchical order of increasing cost			
0	1	3	0	2
1	2	1	3	0
:	:	:	:	:
9	Blank	Blank	Blank	Blank

In the above table for Number Index (number string in Number Index 0 can be a complete telephone number or a truncated number or an area code), configure the service providers in hierarchical order of increasing cost. For example, if we have four service providers - BSNL (SP#0), TATA (SP#1), Reliance (SP#2) and Hughes (SP#3) and

if for area code 022, the services of TATA are the cheapest followed by Hughes, BSNL and Reliance, then the first row in the table would appear as shown in it.

- To configure Number Index, dial,
  3422-1-Number Index-Number String-#*
  Where,
  Number Index is from 0 to 9.
  Number string can be a complete telephone number or a truncated telephone number or an area code.
  Number string is of maximum 16 digits and if it has less than 16 digits, then it must be completed with '**#***'.

  By default, no number string is programmed in Number Index.

The number string table looks like:

Number Index	Number String
0	(16 Digits Allowed)
1	(16 Digits Allowed)
:	:
8	(16 Digits Allowed)
9	(16 Digits Allowed)

- To configure the **Service Provider (SP)** sequence for the each number index, dial,
  3423-1-Number Index-SP0-SP1-SP2-SP3
  Where,
  Number Index is from 0 to 9.
  SP0: Cheapest Service Provider.
  SP1: Cheaper Service Provider.
  SP2: Cheap Service Provider.
  SP3: Costly Service Provider.

It is mandatory to complete this command. If less number of service providers are used, then repeat the cheapest Service Provider for remaining SPs.

- To default the Number based LCR table, dial,
  3421-*-#

The default Number based LCR table would look like:

Number Index	Service Provider in hierarchical order of increasing cost			
Blank	0	1	2	3
Blank	0	1	2	3
:	:	:	:	:
Blank	0	1	2	3

When a call is placed to such a number which is not configured in the Number based LCR table (that is, no matching Number String is found for the dialed number string), the system routes the call according to the first Number Index entry configured (that is, Number Index 0).

Mixed LCR

If Mixed LCR is to be used, make following table on a plain paper.

No. Index/TZ Index	0(022)	1(011)	2(033)	.....	9(95)
0 (08 to 12)	0,1,3,2	3,0,2,1	3,1,2,0	.....	0,1,2,3
1 (12 to 16)	2,1,0,3	0,2,3,1	2,3,1,0	.....	2,1,3,0
2 (16 to 20)	0,2,3,1	3,1,2,0	0,1,2,3	.....	0,1,2,3
3 (20 to 24)	3,0,2,1	1,0,3,2	2,3,1,0	.....	2,0,3,1

Suppose we have four basic service providers - BSNL (SP#0), TATA (SP#1), Reliance (SP#2) and Hughes (SP#3).

For Area code 022 (Number Index 0) in time zone 08.00-12.00 (time zone index 0), BSNL provides cheapest services followed by TATA, Hughes and Reliance. Then the first entry in first row would be as shown in the table.

For Area code 011 (Number Index 1) in time zone 08.00-12.00 (time zone index 0), Hughes provides cheapest services followed by BSNL, Reliance & TATA, then the second entry in first row would be as shown in the table.

For Area code 022 (Number Index 0) in time zone 12.00-16.00 (time zone index 1), cheapest services are offered by Reliance followed by TATA, BSNL and Hughes. The 1st entry in 2nd row would be as shown in the table.

- To configure the Time Zone Index for Mixed LCR, dial,
  3432-1-Time Zone Index-Start Time-End Time
  Where,
  Time Zone Index is from 0 to 3.
  Start Time is the time in HH:MM format when the Time zone starts.
  End Time is the time in HH:MM format when the Time zone ends.

  By default, Time zone is 00.00 to 23.59.

The time zone table looks like:

Time Zone Index	Start Time	End Time
0	HH:MM	HH:MM
1	HH:MM	HH:MM
2	HH:MM	HH:MM
3	HH:MM	HH:MM

- To configure the Number Index for Mixed LCR, dial,
  3433-1-Number Index-Number String-#*
  Where,
  Number Index is from 0 to 9.
  Number string can be a complete telephone number, a truncated telephone number or an area code.
  Number string is of maximum 16 digits and if it has less than 16 digits, then it must be completed with '**#***'.

  By default, Number String is 'Blank'.

The number string table look like:

Number Index	Number String
0	(16 digits allowed)
1	(16 digits allowed)
:	:
9	(16 digits allowed)

- To configure the Service Provider (SP) sequence for the each Time Zone, dial,
  3434-1-Number Index-Time Zone Index-SP0-SP1-SP2-SP3
  Where,
  Number Index is from 0 to 9.
  Time Zone Index is from 0 to 3.
  SP0: Cheapest Service Provider.
  SP1: Cheaper Service Provider.
  SP2: Cheap Service Provider.
  SP3: Costly Service Provider.

It is mandatory to complete this command. If less number of Service Providers are used, then repeat the cheapest Service Provider for remaining SPs.

- To default the Mixed LCR table, dial,
  3431-*-#

  Default Number Index is 'Blank'.
  Default Time Zone is 00:00 to 23:59.
  Default Service Provider sequence is from 0 to 3.

Default Mixed LCR table is shown below:

No. Index/TZ Index	Blank	Blank	Blank	.....	Blank
00:00 to 23:59	0 to 3	0 to 3	0 to 3	.....	0 to 3
00:00 to 23:59	0 to 3	0 to 3	0 to 3	.....	0 to 3
00:00 to 23:59	0 to 3	0 to 3	0 to 3	.....	0 to 3
00:00 to 23:59	0 to 3	0 to 3	0 to 3	.....	0 to 3

- Exit SE mode.

Example 1:

- Three trunks viz. One trunk of BSNL, one of Hughes and one of Reliance are connected to the VISIONPRO.
- BSNL is cheapest during 08.00 to 16.00 followed by Hughes and Reliance.
- Hughes is cheapest during 16.00 to 20.00 followed by BSNL and Reliance.
- Reliance is cheapest for 20.00 to 23.00 followed by BSNL and Hughes.
- BSNL is cheapest for 23.00 to 08.00 followed by Reliance and Hughes.

Service providers can be assigned SP numbers as -
BSNL = SP0
Reliance = SP1
Hughes = SP2

Use following command to assign SP number to trunks:

3402-1-0-0
3402-1-1-1
3402-1-2-2

Use following command to configure Time Zone LCR type for the Trunk Access Group:

3401-1-0-1

Use following command to configure LCR time zones:

3412-1-0-0800-1600
3412-1-1-1600-2000
3412-1-2-2000-2300
3412-1-3-2300-0800

Use following commands to assign service providers for the respective time zone:

3413-1-0-0-2-1-0
3413-1-1-2-0-1-3
3413-1-2-1-0-2-1
3413-1-3-0-1-2-0

With above programming the Time Zone based LCR table will look as below:

Time Zone Index	Service Providers in hierarchical order of increasing cost			
08:00 to 16:00	0	3	2	0
16:00 to 20:00	3	0	2	3
20:00 to 23:00	2	0	3	2
23:00 to 08:00	0	2	3	0

Example 2:

- Three trunks, one trunk of BSNL, one of Hughes and one of Reliance are connected to VISIONPRO.
- BSNL is cheapest for Baroda-Mumbai call followed by Reliance and Hughes.
- Reliance offers cheapest service if a local is made to 2665555 from 2630555 followed by Hughes and BSNL.
- Hughes offers cheapest service for Baroda-Delhi call followed by BSNL and Reliance.

Service providers can be assigned SP numbers as -
BSNL = SP0.
Reliance = SP1.
Hughes = SP2.

Use following command to assign SP numbers to each trunk:

3402-1-1-0
3402-1-2-1
3402-1-3-1

Use following command to configure Number based LCR type:

3401-1-0-2

Use following command to configure number index for LCR:

3422-1-0-022-#*
3422-1-1-665555-#*
3422-1-2-011-#*

Use following command to assign SPs for respective numbers:

3423-1-0-0-1-2-0
3423-1-1-1-2-0-1

3423-1-2-2-0-1-2

With above programming the Number based LCR table will look as below:

Number Index	Service Providers in hierarchical order of increasing cost			
022	0	2	3	0
2665555	2	3	0	2
011	3	0	2	3
Blank	0	1	2	3

Live Call Supervision

Using Live Call Supervision, a station can know the last external number dialed by another station, even when that station is in speech with an external party.

This feature is useful for supervisors who want to know whom their subordinates are calling to.

This feature is supported on stations having CLI support.

How it works

- A is the supervisor of B.
- A wants to know where B is calling, A can use Live Call Supervision.
- When B dials an external number it is stored in the system's memory.
- When A requests Live Call Supervision for B's station, the system retrieves the last external number dialed by B and presents it on the display of A's phone.
- If the last number dialed by B is an internal number, A will get error tone, as the system supports Live Call Supervision for external calls only.

Live Call Supervision can also be used when the station being supervised is in speech with an external party.

How to configure

To be able to use Live Call Supervision, station users must have this feature enabled in their Class of Service. See "Class of Service (CoS)" for details.

How to use

- Lift the handset.
- Dial **199 - Station Number** to be supervised.
- You get the Confirmation Tone.
- Replace the handset.
- Your station rings. The number is displayed on the LCD of your CLI phone.
- Lift the handset.
- You get Dial Tone.

Privacy

While two stations are in speech, it is desired that no third person can listen to their conversation. However if few important stations are allowed to use features like Interrupt Request, Barge-in and Raid, they can intrude other's conversation. Also if DID is activated, outside caller can reach any station or if there is a call from another trunk line, it will interrupt your conversation by giving intrusion tone. Some times this is very annoying and undesirable. VISIONPRO provides privacy against all these types of intrusions. This is known as Privacy.

There are four types of intrusions from which a user may wish to have privacy:

- Privacy from Interrupt Request and Barge-In.
- Privacy from Raid.
- Privacy from Trunk call intrusion (Beeps).
- Privacy from DID call.

These four types are provided as programmable features in the Class of Service groups. A user can be assigned any combination of above four privacy options by selecting an appropriate Class of Service group. If it is required that no other station can raid your station then the corresponding feature that is, *Privacy from Raid* in the Class of Service should be enabled. Likewise, other features should be enabled or disabled as per the requirement.

How it works

Intrusions can occur on a station when another station invokes any one of the following features:

- "Interrupt Request (IR)"
- "Barge-In"
- "Raid"

Intrusions can also occur,

- When an external caller uses "Direct Inward Dialing (DID)" to reach a station.
- When there is a call from a trunk line when you are in speech with someone else and your station is configured in the "Trunk Landing Groups (TLGs)".

To prevent such intrusions, VISIONPRO enables you to set the following types of Privacy:

- **Privacy from Interrupt Request, Barge-In:** This type of Privacy protects a station from intrusions by other stations using Interrupt Request or Barge-In.

  For example: Station A has Privacy from Interrupt Request and Barge-In.

  Station A and B are in speech, Station C attempts to intrude the conversation by Interrupt Request or Barge-In. Station C's call will be blocked and C will get error tone.

- **Privacy from Raid:** This type of Privacy protects a station from intrusions by other stations using Raid.

  For example: This type of Privacy is set on Station A. Station A and B are in speech, Station C uses Raid to intrude the conversation. Station C's call will be blocked and C will get error tone.

- **Privacy from Trunk call intrusion (Beeps):** This type of Privacy prevents the trunk landing destinations that are busy from being intruded by another waiting trunk call.

For example: Station A is the first landing destination for calls on Trunk 1. Station A and B are in speech. A new call lands on Trunk 1. If A has Privacy from Trunk call intrusion/Beeps enabled, A will not hear the intrusion beeps. The system will land the call on the next landing destination for calls on Trunk 1.

When an incoming trunk call lands on a station from which you have already logged into the Programming mode and if the station has Privacy from Trunk call intrusion (beeps) disabled, then CCWT (CO Call Waiting Tone/External Call Waiting Tone) will not be played. However, the external caller will get a busy alert.

- **Privacy from DID**: This type of Privacy protects the station from being accessed by external callers using DID.

  For example: This type of Privacy is set on station A. Station A and B are in speech, external caller C uses DID to call station A. C's call will be blocked and C will get DID Error Tone/DID Error Message.

How to configure

To provide Privacy to a station, you must enable the relevant Privacy options in the "Class of Service (CoS)" of the station user.

Example:

Program station 21 such that no other station can Raid it.

Solution. Assign it a Class of Service group with the feature *Privacy from Raid* enabled.

Raid

Raid allows you to interrupt an ongoing conversation of another station user and convert the conversation into a three-way call. However, the raided station user does not come to know that it has been raided unless you speak.

How it works

- A, B and C are station users.
- A and B are in speech.
- C calls A.
- C gets Busy Tone.
- C dials the command for Raid.
- Three-way speech is established between A, B and C.
- If any of these three parties disconnect, two-way speech is established between the remaining parties.

Feature Interactions

- Raid works only if the dialed station is busy in a normal two-way speech. The two-way speech may be with another station or with an external number on a trunk.
- Raid will not work if **Privacy from Raid** is enabled in the Class of Service of the station being raided.

Raid is a sensitive feature. You are advised to restrict access to this feature to selected station users. If a user is allowed the access to Raid, he/she should use this responsibly.

How to configure

To be able to use Raid, station users must have this feature enabled in their “Class of Service (CoS)”.

How to use

When the dialed station is busy,

- Dial **4** on Busy Tone.

Real Time Clock (RTC)

Various features and facilities provided by the VISIONPRO use date and time parameters. Such facilities work properly only if the system is set with correct date and time values. These features are:

- Alarms
- Time Table

VISIONPRO is equipped with built-in Real Time Clock (RTC) circuit. This circuit is to be set once with the current Date, Day and Time values. Once set, it then updates itself regularly to keep track of the parameters. However, the RTC circuit can drift over a long period of time. So, you may check and reset the date and time values at regular intervals to correct this drift.

How to configure

- Enter SE mode.

- To set the Date, Month and the Year, dial,
  1001-Date-Month-Year
  Where,
  Date is from 01 to 31
  Month is from 01 to 12
  Year is in two digits from 00 to 99

- To set the Day of the week, dial,
  1002-Day
  Where,

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7

- To set the Time, dial,
  1003-Hours-Minutes
  Where,
  Hours is in 24-hours format and have two digits from 00 to 23
  Minutes is in two digits from 00 to 59

- Exit SE mode.

Example:

Set the system RTC as 1st April 2014, Tuesday at 9:00AM.

Solution. Dial following commands in SE mode:

1001-01-04-14
1002-3
1003-09-00

Selective Trunk Access

VISIONPRO supports three trunk lines[10]. The station user can access a particular trunk by dialing a Trunk Access Code. VISIONPRO provides the facility to assign a Trunk Access Code to grab a single trunk or any free trunk from a group of trunks (also known as the Trunk Access Groups).

It is possible to configure Trunk Access Groups containing only one trunk. Thereby, it is possible to access a particular trunk by dialing the assigned Trunk Access Code.

For example, the default configuration in the system allows you to access the first trunk (L1) by dialing 61, the second trunk (L2) by dialing 62 and the third trunk (L3) by dialing 63. Refer “Trunk Access Groups (TAGs)” for further details.

How to use

- Lift the handset.
- Dial **61** or **62** or **63**
- You get Dial Tone of the trunk.
- Dial the desired external number.

By default, any of the free trunks can be accessed by dialing TACs ‘0’ or ‘5’.

10. Total number of supported trunks will differ according to the VISIONPRO variant.

Time Tables

Certain features of the VISIONPRO like Operator, Class of Service, Toll Control, Trunk Access Groups, among others, require stations and trunks to behave differently according to the time of the day.

A Day can be divided into two time zones - Day time (Working Hours) and Night time (Non-Working Hours). Each Day of the week can be programmed for different Day time and Night time. Such a schedule of a week is called the Time Table.

The default Time Table used by the system is displayed below.

Time Zone/ Weekdays	Day time (Working Hours)		Night time (Non-Working Hours)	
	Start Time	End Time	Start Time	End Time
Sunday	00:00	00:00	00:00	23:59
Monday	09:00	18:00	18:00	09:00
Tuesday	09:00	18:00	18:00	09:00
Wednesday	09:00	18:00	18:00	09:00
Thursday	09:00	18:00	18:00	09:00
Friday	09:00	18:00	18:00	09:00
Saturday	09:00	18:00	18:00	09:00

VISIONPRO offers two modes of operation for the system - Manual and Auto.

- **Manual mode:** If the system is set for the Manual mode, the system should be configured for Day time or Night time manually. This mode is useful in offices where there are no fixed office hours or at residences where two different set of features/facilities are not required.

- **Auto mode:** If the system is set for Auto mode, the system itself switches from Day time to Night time and vice-versa.

- *The system will not take care of any holiday coming on the working days. On these days, the system should be programmed to Manual mode and should be changed to Night mode before leaving the office on the Day before the holiday. When you return to the office, you can change it to Day time and then to Auto mode.*

- *Working hours and Non-working hours can be interpreted as the Day time and the Night time respectively.*

How to configure

1. Set the time table in Manual or Auto mode using command ***1051.***

2. Set Day or Night mode using command ***1052*** (only if Manual mode is selected).

3. Program the time table for the week using command ***1053.***

To configure as per above instructions,

- Enter SE mode.

- To configure the system in Manual/Auto mode, dial,
  1051-Code
  Where,

Code	Meaning
0	Manual Day-Night Mode
1	Auto Day-Night Mode

  By default, the system is in Auto Day-Night Mode.

Example:

Program the system in Auto Day-Night mode.

Solution. Dial ***1051-1***

- If Manual mode is selected, to set the Day or Night mode (can be done from SA mode as well), dial,
  1052-Code
  Where,

Code	Meaning
0	Night Mode
1	Day Mode

Example:

Set system in Day mode.

Solution. Dial ***1052-1***

- To configure the time table, dial,
  1053-Day Code-Start Time-End Time
  Where,

Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Code	1	2	3	4	5	6	7

  Start Time: Working Hours Start Time in two digits and in 24 hours Hour:Minute format.
  End Time: Working Hours End Time in two digits and in 24 hours Hour:Minute format.
  The left over time is taken as Night time (Non-Working Hours). Hence Night time need not be programmed.

- Exit SE mode.

Example:

Program a time table with normal office hours from 08:30 to 17:00 hours from Monday to Saturday. Sunday is a Holiday. Set the time table in Auto mode.

Solution. Dial the following commands in SE mode,

1053-1-0000-0000
1053-2-0830-1700
1053-3-0830-1700
1053-4-0830-1700
1053-5-0830-1700
1053-6-0830-1700
1053-7-0830-1700
1051-1

Toll Control

Toll Control (or, Toll Restriction) is an expense control feature of VISIONPRO. It enables you to configure the system so that each station has a designated calling permission referred to as the 'Call Privilege'.

Each type of Call Privilege allows the station to call certain numbers and restricts it from calling others. The station can also be restricted from dialing of specific telephone numbers.

Toll Control can,

- Restrict dialing all local telephone numbers.
- Restrict dialing certain local telephone numbers.
- Restrict dialing telephone numbers starting with ‘95’.
- Restrict dialing certain area codes (for example, area codes 03 and 04).
- Allow dialing only specific telephone numbers (for example, 2630555).
- Allow dialing only specific area codes.
- Allow dialing only those telephone numbers starting with a particular digit (for example, 1).

Toll Control forms the basis of the features “Dynamic Lock”.

Using “Dynamic Lock”, station users can change the Toll Control (Call Privilege) of their stations on their own. To support this feature, VISIONPRO offers Toll Control which uses the Allowed and Denied lists. Refer “Allowed and Denied Lists” to configure the lists.

How it works

- When a call is made from a station, the VISIONPRO compares each digit of the dialed number string with the number strings configured in allowed and denied lists.
    - If the dialed number string matches with any of the number strings available in the allowed list, VISIONPRO dials the number on the trunk; else compares with the number strings in the denied list.
    - If the dialed number string matches with any of the number strings available in the denied list, VISIONPRO restricts dialing the number and gives error tone to the station user.
    - If the dialed number string matches with a number string that is available in both allowed and denied lists, then allowed list is given priority and the dialed number is dialed out on the trunk.

How to configure

1. Take a pen and a paper. Write down the Toll Control to be assigned to each station properly.
2. Check whether the requirement can be met by using the default allowed and denied lists.
3. If the default allowed lists satisfy the requirement, then assign allowed lists to the stations using commands ***4501*** and ***4502*** for Day and Night time respectively.
4. If default denied lists satisfy the requirement, assign denied lists to the stations using commands ***4511*** and ***4512*** for Day and Night time respectively.

5. If the requirement cannot be satisfied by default allowed and denied lists, then list down the customized numbers to be programmed in the allowed and denied lists on a piece of paper.

6. Program the numbers/number strings to be allowed in the allowed list using command ***1202*** while those to be denied in the denied list using command ***1204*** respectively. Refer "Allowed and Denied Lists" to configure the lists.

7. Assign customized allowed list to the stations using commands ***4501*** and ***4502*** for Day and Night time respectively.

8. Assign customized denied lists to these stations using commands ***4511*** and ***4512*** for Day and Night time respectively.

9. Also assign a default/customized allowed list to these stations for the locked condition using commands ***4521.***

10. Similarly, assign a default/customized denied list to these stations for the locked condition using commands ***4522.***

11. Keep the configuration pages/sheets at a safe place for future reference.

To configure as per the above instructions,

- Enter SE mode.
- If the default allowed lists satisfy the requirement, then assign allowed lists to the stations for Day and Night time respectively as follows.
    - To assign allowed list to a station during Day time, dial,
      4501-1-Station-Allowed List
      Where,
      Station is the software port number of the user from 00 to 07.
      Allowed List is from 0 to 7.
        - To assign the same allowed list to all stations during Day time, dial,
          4501-*-Allowed List
    - To assign allowed list to a station during Night time, dial,
      4502-1-Station-Allowed List
      Where,
      Station is the software port number of the user from 00 to 07.
      Allowed List is from 0 to 7.
        - To assign the same allowed list to all stations during Night time, dial,
          4502-*-Allowed List
- If default denied lists satisfy the requirement, then assign denied lists to the stations for Day and Night time respectively as follows.
    - To assign denied list to a station during Day time, dial,
      4511-1-Station-Denied List
      Where,
      Station is the software port number of the user from 00 to 07.

Denied List is from 0 to 7.

- To assign the same denied list to all stations during Day time, dial,
  4511-*-Denied List

- To assign denied list to a station during Night time, dial,
  4512-1-Station-Denied List
  Where,
  Station is the software port number of the user from 00 to 07.
  Denied List is from 0 to 7.

  - To assign the same denied list to all stations during Night time, dial,
    4512-*-Denied List

- If the requirement is not met by the default allowed and denied lists then write down the requirement on a piece of paper and configure corresponding allowed and denied lists as described in the topic “Allowed and Denied Lists”.

  - Assign the customized allowed list to the stations using commands ***4501*** and ***4502*** for Day and Night times respectively.

  - Assign the customized denied lists to these stations using commands ***4511*** and ***4512*** for Day and Night times respectively.

- To assign allowed list to a station for locked condition, dial,
  4521-1-Station-Locked Allowed List
  Where,
  Station is the software port number of the user from 00 to 07.
  Locked Allowed List is from 0 to 7.

  - To assign the same allowed list to all stations for locked condition, dial,
    4521-*-Locked Allowed List

- To assign denied list to a station for locked condition, dial,
  4522-1-Station-Locked Denied List
  Where,
  Station is the software port number of the user from 00 to 07.
  Locked Denied List is from 0 to 7.

  - To assign the same denied list to all stations for locked condition, dial,
    4522-*-Locked Denied List

- Exit SE mode.

How to use

Let us understand this with the help of an example:

The requirement of the organization is that Station 21 must be able to make calls to Mumbai (022) but should not be able to make any other long distance calls.

Solution: In this case, number string ‘022’ should be programmed in one of the locations of the allowed list and should be assigned to station 21. Similarly, station 21 should not be allowed any other long distance call, hence the default denied list 4 (which is already assigned to it) will serve the required purpose.

One such allowed and a denied list should also be assigned to the station for the locked condition.

Once the station has been locked, the station user can make calls as per the allowed and denied lists assigned to the station for the locked condition. ***This is called Dynamic Toll Control****.*

- *Allowed list 0 and Denied list 0 are assigned in locked condition by default.*
- *Default Allowed list for Day and Night is ‘2’ whereas default Denied list for Day and Night is ‘4’.*

Voice Message Applications

VISIONPRO allows you to record different voice messages which can be played to callers/users for specific situations. For example, if Auto Attendant are enabled on a trunk line, you can configure the system to play Voice Messages to greet and guide callers. When a feature like Auto Redial is set you can configure the system to play a message to the called party in case he/she answers the call before the caller. You can also configure the system to play Voice Messages instead of the default 'Music-on-Hold'.

Voice messages find their applications in following features/facilities:

- Music on Hold (MoH).
- Day Greeting.
- Night Greeting.
- Initial Guidance Message.
- Dial by Name Message.
- No Dial Message.
- Wrong Dial Message.
- Transfer Message.
- Busy Message.
- No Reply Message.
- Alarm.
- Emergency Message.
- Auto Redial.

- *Maximum sixteen voice modules with a combined size of 256 seconds is available in VISIONPRO. So, by default, duration of each voice module part is, 256/16 = 16 seconds.*
- *It is possible to assign the same Voice Module to more than one Voice Message Application.*
- *Only four voice modules will be played simultaneously. Thereafter, other users will get on hold music.*

Applications of Voice Guidance

- **Voice guidance for Music On Hold**
  Callers who are put on hold are usually played music as they wait. You can play a voice message instead of music to the callers. The message may contain any promotional information about your company or services provided by your organization.

  For example:
  "Welcome to Progressive Bearings. We are glad to announce that we are now an ISO 9001 company. We deliver best and optimum quality products to all our customers."

- **Voice guidance for the Day Time Greeting**
  For the Day time a pre-recorded greeting or welcome message is played to the callers.

  Popular Day time message is:
  "Welcome to Progressive Bearings."

- **Voice guidance for Night Time Greeting**
  For the Night time a pre-recorded message is played to the callers so that the system greets the callers in your absence and also guides them.

Popular Night time message is:
“Sorry, we are closed. Please call later”.

- **Voice message for Initial Guidance**
  Default initial guidance message is:
  “Dial a station number. Dial # if you wish to dial by name or dial 9 for operator”.

- **Voice guidance for Dial by Name**
  Default message is “Dial first three letters of the name of the person you wish to call”.

- **Voice guidance for No Dial Message**
  Default message is “Sorry, you have not dialed any digit”.

- **Voice guidance for Wrong Dial**
  Default message is “The number is not valid”.

- **Voice guidance for Transfer Message**
  Default message is “Please hold while your call is being transferred”.

- **Voice guidance for Busy**
  Default message is “The person you are trying to reach is busy on another call”.

- **Voice guidance for No Reply**
  Default message is “The person you dialed is not available”.

- **Voice guidance for Alarm**
  A pre-recorded voice message is played to the users on which Alarm is set when the wake-up alarm call is served. This feature is very useful in hotels where wake-up alarms are to be set for guests at the oddest hours. With the Voice Message for alarms, guests can be greeted when they answer the call.

  Default alarm message is:
  “Greetings! This is your reminder call. Have a nice Day!”.

- **Voice guidance for Emergency Message**
  A pre-recorded voice message is played to the users during an emergency situation.

  Emergency message could be:
  “This is an emergency call. Please dial 999 for help”.

- **Voice guidance for Auto Redial**
  During Auto Redial, if the call goes through and the system detects Ring Back Tone, the system places a ring to the station that requested Auto Redial. At this point of time both, the requesting station as well as the destination number ring. Now if the destination answers the call before the station user, internal on hold music is played. Instead of playing the on hold music a pre-recorded message can be played.

  Message for Auto Redial could be:
  “Please hold. You will be attended to, shortly”.

How to configure

1. Divide the total VM duration into required number of parts. To do that, assign the duration of each part using the command ***1403.*** By default, each part is of equal duration, that is, 16 seconds *(since, the total VM size supported by the system is 256 seconds. So, total number of VM parts at default settings are 256/16 = 16)*. If required, you can configure each part of different duration and accordingly the number of parts will also change.

2. Record VM for a partition (except MoH) using command ***1405.*** However, to record the MoH, use the command ***1411.***

3. Playback the recorded message of a partition (except MoH) using command ***1406.*** To playback the recorded MoH, use the command ***1412.***

4. Assign partition to VM application using command ***1407.***

5. Default VM configuration using command ***1401-#***, if required.

To configure as per above mentioned steps,

- Enter SE mode.

- To configure the duration of each VM part (which, in turn, also divides the total VM Duration in the desired number of parts), dial,
  1403-Index
  Where,

Index	Duration of each part (in Seconds)	Total Number of Parts excluding MoH
1	16	15
2	24	9
3	32	7
4	40	5
5	48	4
6	64	3
7	80	2
8	128	1

By default, Index is 1.

- *On dialing the above command, Confirmation Tone is played approximately after 15 seconds. Till that time you will get silence. So, for successful application of the command, you must wait for that time duration till the Confirmation Tone is played.*

- *You can change the number of voice module parts and accordingly the duration of each part except the Music on Hold (MoH) application. Maximum duration for MoH application is limited to 16 seconds only.*

- To record the VM partition (except MoH), dial,
  1405-Part Number

Where,
Part Number is from 01 to 15.

Part Number 00 is fixed for MoH application and cannot be used to record the message for another application.

- To playback the recorded VM of a partition (except MoH), dial,
  1406-Part Number
  Where,
  Part Number is from 01 to 15.

- To record the message/music for MoH, dial,
  1411

It automatically records the message/music for MoH in Part Number 00.

- To playback the recorded MoH, dial,
  1412

- To assign an application to a VM partition, dial,
  1407-Voice Message Application-Part Number
  Where,
  Voice Message Application is from 01 to 12. Refer the below table for their meanings.
  Part Number is from 00 to 15.

Voice Message Application	Meaning
01	Day Greeting
02	Night Greeting
03	Initial Guidance Message
04	Dial by Name Message
05	No Dial Message
06	Wrong Dial Message
07	Transfer Message
08	Busy Message
09	No Reply Message
10	Alarm
11	Emergency Message[a]
12	Auto Redial

a.Currently the Emergency Message does not have any applicability. However, considering future implementations, it is provided in the system.

This command allows you to assign Part Number 00 since the user may use the MoH file (stored in Part Number 00) for another application. For example, one can use the same music of MoH to be played during Alarm calls also.

  - You can also de-assign an application from a VM partition. To do that, dial,
    1407-Voice Message Application-#

- To set default values for all the VM parameters, dial,
  1401-#

On issuing this command VM configuration will be as follows,

- VM duration will be set to 256 seconds.
- Number of VM parts will be 16.
- Recording source will be set as Telephone.
- Assignment of Voice Message Application to Part Number will be as per the table displayed above.

- Exit SE mode.

Recording/Verifying a Voice Message

To record a message do the following:

Make sure:
- *you select a good quality telephone.*
- *the person recording the message has a clear voice.*
- *you switch off the fans and there is silence in the room.*

- Lift handset.
- Enter in the programming mode from this station.
- Dial ***1405-Part Number*** or ***1411*** (to record customized MoH).
- You will get the Confirmation Tone.
- Start recording your message.
- The system records whatever is spoken.
- Replace the handset as soon as the message is over (or, wait for the Confirmation Tone). You may also press the hook switch to avoid delay.
- You will get ring because you are in the programming mode.
- To verify the recorded message, dial ***1406-Part Number*** or ***1412*** (to playback the customized MoH).
- Listen to the message.
- Repeat the above procedure if you are not satisfied with the message.

*On executing the command, **1403-Index**, with a different value other than your current Index, all previous recordings in the system will be deleted.*

Walk-In Class of Service

Every station user of VISIONPRO is assigned a Toll Control defining its calling permission.

With Walk-In Class of Service, station users of VISIONPRO can make calls from any other station of the system as per the Toll Control of their own station.

This feature is useful to station users who frequently move away from their desk, as it allows them to access the same level of calling permissions as their own station from another station.

The station user is automatically logged out from the station into which the user has walked-in, after one call.

Walk-In Class of Service is a password protected facility and the default User Password **1111** will not be accepted to access the feature. To be able to walk into another station, station users must change their own User Password first.

To know about assigning calling permission to station users, see “Toll Control” and to change the User Password, see “User Password”.

How it works

With the help of this example, let us understand how Walk-in Class of Service works.

Here, station user A having the number 21, has long distance calling facility (toll control) allowed. Station user B having the number 22, does not have long distance calling (toll control) allowed.

Here,

- 21 is the **Source** Station, whose Toll Control is used from another station (22) by performing Walk-In.
- 22 is the **Destination** Station on which Walk-In is performed.

Now, station user A is at B's desk and needs to make a long distance call. B’s station does not have long distance calling.

- Station user A can 'Walk-In' into B's station (22) by dialing,
  - the command for 'Walk-In Class of Service'.
  - A’s station number, that is, 21.
  - A’s User Password (the default password 1111 will not be accepted, it must be changed first).
- On successful Walk-In, VISIONPRO applies the Toll Control of the Source Station 21 on the Destination Station 22.
- Station user A can make long distance call from station B now.
- A will be 'Walked-Out' automatically when the current call ends or if A goes ON-Hook at any time after walking into station 22.

How to use

To perform a Walk-In, on the Destination Station,

- Lift the handset of the Destination Station.
- Dial **111**
- Dial your station number.
- Dial your User Password.
- You get the Confirmation Tone.
- You can make your call now, during the Confirmation Tone or after you get the Dial Tone.

CHAPTER 9

Configuring System Parameters

System Parameter configuration includes commands which are executed to make system-wide changes and access the system's version-revision information. Following feature commands are considered,

- **Loading the Default Configuration**
- **Setting the default values to all the timers**
- **Configuring the Companding Type:** You may select the Companding Algorithm according to the Regulatory Requirement of the country/region where the system is installed. Default: A-law.
- **Displaying the system's version and revision**

How to Configure

Loading the Default Configuration

To load the default configuration of the system,

- Enter SE mode.
- Dial, **1103-Reverse SE Password**.
- Exit SE mode.

On executing this command, all the programmable parameters of the system will be set to default values as mentioned in the corresponding feature topics. However, the timings of the voice messages recorded in the system will not be set to default.

Setting default values to all Timers

- Enter SE mode.
- Dial, **1107-*-#**
- Exit SE mode.

Configuring the Companding Type

- Enter SE mode.
- Dial, **1108-Code**
  Where,

Code	Companding Type
0	A-law
1	μ-law

Default code is 0.

- Exit SE mode.

Displaying the System's Version and Revision

- Enter SE mode from a station having the CLI support.
- Dial, **1110**
- You get the Confirmation Tone.
- Replace your handset.
- You get an incoming ring and the system's version-revision is displayed on the LCD of the station. The display format of system's version-revision varies depending on the **CLIP Type** set for the station.
  - If programmed CLIP Type for the station is DTMF, display format is "<Version No><Revision No>". For example, "0101".
  - If programmed CLIP Type for the station is either FSK-V.23 or FSK-BellCore, display format is "V<Version No>R<Revision No>". For example, "V01R01".
- Exit SE mode.

CHAPTER 10

Maintenance and Troubleshooting

Power Down Mode

VISIONPRO provides a special facility where-in, during power failure a trunk line is connected directly to a station. This is known as Power Down Mode. When mains power supply resumes, the PBX also starts functioning normally. This change over from normal operation to power down operation and again back to normal functioning is automatic and it is taken care of by the system itself.

During power failure condition, external calls can be made from such a station. Also the incoming calls on that trunk can land on that station. In this way, your link to the outside world is retained even during the dark-outs.

How it works

During power down mode, by default, trunk1 gets connected to station 21. During this condition, as you go OFF-Hook from station 21, you will get the Trunk Dial Tone. So, even during power down condition, you can dial external numbers using the system.

Trunk	Power Down Station
L1	21

At the time of power failure as well as when power resumes, all ongoing calls will be disconnected.

System Security (SE and SA Passwords)

VISIONPRO's programming mode is secured at three levels,

- System Engineer level. This level is protected by the SE Password.
- System Administrator level. This level is protected by the SA Password.
- User level. This level is protected by the User Password.

System Engineer (SE) Password

- This password is the main password of the system and should be kept secret for exclusive use only by the System Engineer. SE Password is needed to enter the System Engineer mode of the system to change any setting of the system.

- SE Password is a 4-digit password. Valid digits are 0-9

- The System Engineer may not know the SA Password or the User Password. However, SE can clear these passwords and set them to their default values.

How to configure

To change the SE Password,

- Enter SE mode.

- Dial, **1104-Old SE Password-New SE Password**
  Where,
  New SE Password is a number string of 4-digits.

  Default SE Password is **1234**.

- Exit SE mode.

System Administrator (SA) Password

- The System Administrator uses this password.

- SA Password is a 4-digit password. Valid digits are 0-9

How to configure

To change the SA Password,

- Enter SE mode.

- Dial, **1105-Old SA Password-New SA Password**
  Where,
  New SA Password is a number string of 4-digits.

Default SA Password is **1111**.

- Exit SE mode.

Forgot your SE and/or SA Password?

It is mandatory to remember the SE/SA Password for programming. It is advisable to make a note of these passwords at a safe place.

However, if either of these passwords are lost, then it can be set to its default value without altering any other system settings. This can be done by pressing the Reset Switch.

Pressing the Reset Switch using a blunt pin or similar object for **more than 5 seconds** restores both the SE and the SA Passwords to their respective default values (SE Password to 1234 and SA Password to 1111).

User Password (User Security)

The user can secure his/her station from unauthorized access to several features by way of using the User Password. For operational details on this topic, refer “User Password”.

User Password

The User Password is a 4-digit code for station users to protect their station phones from unauthorized use. The default User Password is ***1111***. It can be changed by the station users from their phones to any desired value, not exceeding 4 digits.

In case the station user forgets the password, it can be cleared and restored to the default value *1111* by the System Engineer (SE) or the System Administrator (SA).

The User Password is required to access and use the following features of VISIONPRO.

- Call Follow Me
- Dynamic Lock
- Direct Outward System Access (DOSA)
- Walk-In Class of Service

- *The station user must change the default password for all the above listed features. The system will not allow feature access with the default User Password.*

- *The User Password for a station can be changed only from that station phone. However it can be cleared by SE from any other station, which has access to the programming mode.*

How to use

To change the User Password,

- Lift the handset.
- Dial **144**
- Dial the current User Password (default password *1111* if not changed already).
- Dial a new User Password *(maximum 4 digits)*.
- You get Confirmation Tone.
- Replace handset.

To assign default User Password to a station

- Enter SE mode.

- Dial, ***1106-Station***
  Where,
  Station is from 00 to 07.

- Exit SE mode.

Appendix

Technical Specifications

System Capacity and Resources

	VISIONPRO 206	VISIONPRO 308	VISIONPRO 412
Total Ports	8	11	16
Trunk (Max.)	2	3	4
Stations (Max.)	6	8	12
Voice Module	16 modules of 16 seconds each	16 modules of 16 seconds each	16 modules of 16 seconds each
Conference	2 conferences of 3-party each	2 conferences of 3-party each	2 conferences of 3-party each
Power Down Mode	Supported for 1 Trunk	Supported for 1 Trunk	Supported for 1 Trunk

Technology

Type of Switching	PCM/TDM, Digital Switching, 100% Non-Blocking
Processor	16-bit DSP

SLT (Analog Station)

Signaling	Loop Start
Dialing	DTMF and Pulse (10/20PPS)
Off Hook AC Impedance	600/900/Complex
Off Hook Current	39mA max
Loop Limit	1800Ω max
On-Hook Voltage (Tip/Ring)	-48V nominal
DTMF Detection	ITU-T Q.24
Return Loss	>18dB
Longitudinal Balance	>50dB
Transmission Level Adjust	Tx Gain: -12dB to +6dB, Rx Gain: -12dB to +6dB
Ringing	Trapezoidal 60VRMS/25Hz and Sinusoidal 52VRMS/25Hz

REN	3
CLI Reception	DTMF, FSK ITU-T V.23 and FSK Bellcore 202
Protection	Over Voltage Secondary Protection
Physical Connector	2.54mm Push Type Connector

CO (Central Office) / Two-Wire Trunk (TWT)

Signaling	Loop Start
Loop Limit	1200Ω
Off Hook AC Impedance	600/900/Complex
Pulse Dialing	10/20 PPS
DTMF Dialing and Reception	ITU-T Q.23 and Q.24
Return Loss	>18dB
Longitudinal Balance	>50dB
Transmission Level Adjust	Tx Gain: -15dB to +10dB, Rx Gain: -15dB to +10dB
CLI Reception	DTMF, FSK ITU-T V.23 and FSK Bellcore 202
Call Maturity	Delay and Polarity Reversal
Protection	Over Voltage and Over Current Secondary Protection
Physical Connector	2.54mm Push Type Connector

Power Supply

Input	External Adapter 12V@2A for VISIONPRO 206, 308, 412

Mechanical

Dimension (W x D x H)	231.00 x 162.5 x 55.00 mm
Weight	0.65kg (Unit Weight) including CPU Card and Enclosure

Environment

Operating Temperature	0° to 45°C
Operating Humidity	95% RH, Non-condensing
Storage Temperature	- 20 Degree to +70 Degree
Storage Humidity	0 - 95% RH, Non-Condensing

Feature Commands

Programming the System

Enter SE mode	***1#91-SE Password***
Enter SA mode	***1#92-SA Password***
Exit SE/SA Mode	***00***

Alarms

Duration Alarm	***161-Minute***
Time Alarm (Wake Up)	***162-Hour-Minute***
Daily Alarm	***163-Hour-Minute***
Remote Alarm (Duration)	***164-Station-1-Hour-Minute***
Remote Alarm (Time)	***164-Station-2-Hour-Minute***
Remote Alarm (Daily)	***164-Station-3-Hour-Minute***
Cancel Remote Alarm	***164-Station-0***
Cancel All set Alarms	***160***

Auto Call Back (ACB)

Auto Call Back-On Busy	***Station-2***
Cancel Auto Call Back	***102***
Auto Call Back-On No Reply	***Station-Flash-2***
Cancel Auto Call Back	***102***

Auto Redial

Auto Redial	***77***
Cancel Auto Redial	***70***

Barge-In

Barge-In	***Station-3***

Call Forward

Call Forward-All Calls	***131-Station***
Cancel Forward	***130***
Call Forward-If Busy	***134-Station***
Cancel C.F.-If Busy	***130***
Call Forward - If No Reply	***133-Station***

Cancel C.F.-If No Reply	***130***

Call Hold

Call Hold	***Flash***

Call Park

Call Park	***Flash-7***
Retrieve Parked Call	***17***

Call Pick Up

Call Pick Up-Group	***4***
Call Pick Up-Selective	***12-Station***

Call Toggle (Call Splitting)

Call Splitting	***Flash-1***

Call Transfer

Call Transfer - Screened/While Ringing	***Flash-Station***
Call Transfer - On Busy	***Flash-Station-5***
Call Transfer - Trunk-to-Trunk	***Flash-6***

Cancel Station Features

Cancel Station Features	***100***

Conference

Conference 3-Party	***Flash-0***

Continued Dialing

Continued Dialing	***Flash-#-Desired Code***

Department Call

Department Call	***3980/3981/3982/3983***

Dynamic Lock

Lock the station	***140***
Unlock the station	***141-User Password***
Set Dynamic Lock-Manual or Automatic	***143-User Password-Minute***
Change Password	***144-Old Password-New Password***

Follow Me

Call Follow Me	***132-Your Station Number-Your User Password***
Cancel Follow Me	***130 (from your station)***

Hot Line

Hot Line	***153-Station***
Hot Line Timer	***154-Seconds***
Hot Outward Dialing	***151-Trunk Access Code***
Hot Outward Dialing-With Number	***152-Trunk Access Code-Number-#****
Cancel Hot Line and HOD	***150***

Interrupt request

Interrupt Request	***Station-5***

Last Number Redial

Last Number Redial	***7***

Live Call Supervision

Live Call Supervision	***199-Station***

Memory Dialing

Use Memory Dialing	***8-Directory Index***

Programming Personal Memory

Program Personal Memory	***18-Location Code-Trunk Access Code-Number-#***

Raid

Raid	***Station-4***

Trunk Access Code

Trunk Access Code	***0 or 5 or 61 or 62 or 63 or 64[a]***

a. For the list of default TACs applicable to your VISIONPRO variant, refer “Trunk Access Groups (TAGs)”.

Walk-In Class Of Service

Walk-In Class Of Service	***111-Your Station-Your User Password***

Programming Commands

Abbreviated Dialing

Program a telephone number in global directory	***1301-1-Location Code-Number-#****
Clear number in a particular global directory index	***1301-1-Location-#****
Clear the number in all the global directory indexes	***1301-*-#***
Set Trunk Access Group for particular location	***1302-1-Location-Trunk Access Group***
Set same Trunk Access Group for all locations	***1302-*-Trunk Access Group***

AC Impedance Test

Select the Test Mode	***3136-Index***
Configure the number to place the test call	***3137-Number***
Configure the CO Port number	***3138-Trunk***
Abort Test	***3140***
Viewing code values stored at a particular Result Index (viewing the test result)	***3139-Trunk-Result Index***

Allowed and Denied Lists

Program numbers in the allowed list	***1202-1-Allowed List-Location Index-Number-#****
Program same numbers in all the allowed lists	***1202-*-Location Index-Number-#***
Default all numbers in allowed list	***1201-1-Allowed List-#***
Default all number strings in all the allowed lists	***1201-*-#***
Program numbers in denied list	***1204-1-Denied List-Location Index-Number-#****
Program same numbers in all the denied lists	***1204-*-Location Index-Number-#****
Default all number strings in a denied list	***1203-1-Denied List-#***
Default all number strings in all the denied lists	***1203-*-#***

Alternate Number Dialing

Assign alternate group number	***1303-1-Index-Alternate Group Number***
Clear all the Alternate Group Numbers	***1303-*-#***

Behind the PBX Applications

Program PBX Expansion count (PEC) for a trunk	***3201-1-Trunk-PEC Count***
Program same PBX Expansion count for all trunks	***3201-*-PEC Count***

Call Duration Control

Assign a CDC table to a station user	***4920-1-Station-CDC Table***

Assign the same CDC table to all the stations	***4920-*-CDC Table***
Enable/disable CDC for Outgoing call in a CDC table	***4910-1-CDC Table-Code***
Enable/disable CDC for Outgoing call in all CDC tables	***4910-*-Code***
Enable/disable CDC for Incoming call in a CDC table	***4911-1-CDC Table-Code***
Enable/disable CDC for Incoming call in all CDC tables	***4911-*-Code***
Enable/disable CDC for Internal call in a CDC table	***4912-1-CDC Table-Code***
Enable/disable CDC for Internal call in all CDC tables	***4912-*-Code***
Assign disconnection flag	***4913-1-CDC Table-Disconnection Flag***
Assign same disconnection flag to all CDC tables	***4913-*-Disconnection Flag***
Assign CDC Timer	***4914-1-CDC Table-CDC Timer***
Assign same CDC Timer to all CDC tables	***4914-*-CDC Timer***
Assign allowed list to a table	***4915-1-CDC Table-Allowed List***
Assign same allowed list to a table	***4915-*-Allowed List***
Assign denied list to a table	***4916-1-CDC Table-Denied List***
Assign same denied list to a table	***4916-*-Denied List***
Default a CDC table	***4901-1-CDC Table-#***
Default all the CDC tables	***4901-*-#***

Call Pickup

Program a station in call pickup group	***4301-1-Station-Call Pickup Group***
Program all stations in same call pickup group	***4301-*-Call Pickup Group***

Call Progress Tones

Configure the CPTG Type	***1109-Region Code***
Configure the Dial Tone timer	***3001-Seconds***
Configure Ring Back Tone timer	***3002-Seconds***
Configure the Busy Tone timer	***3003-Seconds***
Configure the Error Tone timer	***3004-Seconds***
Configure the Feature Confirmation Tone timer	***3005-Seconds***
Configure the Programming Inter Digit timer	***3006-Seconds***
Configure the Programming Error Tone timer	***3007-Seconds***
Configure the Programming Confirmation Tone timer	***3008-Seconds***

Calling Line Identification and Presentation (CLIP)

Program the CLIP type for a station	***4101-1-Station-CLIP Type***
Program same CLIP type for all stations	***4101-*-CLIP Type***
Configure the CLI Type for a trunk	***3105-1-Trunk-CLI Type***
Configure the same CLI Type for all trunks	***3105-*-CLI Type***
Program the Caller ID Presentation while Transfer (or, CLI transfer) mode	***1607-Code***

Class of Service (CoS)

Enable/disable a feature in a CoS Group	***4602-1-CoS Group-Feature Index-Code***
Enable/disable a feature in all the CoS Groups	***4602-*-Feature Index-Code***
Default all features in a CoS Group	***4601-1-CoS Group-#***
Default all features in all the CoS Groups	***4601-*-#***
Assign a CoS Group to a station during Day time	***4610-1-Station-CoS Group***
Assign a CoS Group to all stations during Day time	***4610-*-CoS Group***
Assign a CoS Group to a station during Night time	***4611-1-Station-CoS Group***
Assign a CoS Group to all stations during Night time	***4611-*-CoS Group***

CLI Based Routing

Enable/disable CLI based routing during Day time	***1602-Code***
Enable/disable CLI based routing during Night time	***1603-Code***
Program the incoming telephone number in a CLI table	***1604-1-Index-Telephone Number-#****
Clear all the telephone numbers from the CLI table	***1604-*-#***
Assign destination type & destination for IC telephone Number in the CLI table	***1605-1-Index-Destination Type-Destination***
Assign same destination type & destination for all the IC Numbers in the CLI table	***1605-*-Destination Type-Destination***
Program the destination number for CLI based Call Forward - Trunk	***1606-1-Index-Destination Number-#****
Default the CLI Parameters	***1601-#***

Department Call

Program station group as department group	***4801-1-Department Group-Station Group***
Program same station group to all department groups	***4801-*-Station Group***

Dial by Name

Program the station name	***4103-1-Station-Name***
Clear a station name	***4103-1-Station-#***
Clear all the station names	***4103-*-#***

Direct Inward Dialing (DID)

Activate DID on a trunk during Day time	***3501-1-Trunk-Code***
Activate DID on all trunks during Day time	***3501-*-Code***
Activate DID on a trunk during Night time	***3502-1-Trunk-Code***
Activate DID on all trunks during Night time	***3502-*-Code***
Activate Voice Guidance for DID on a trunk during Day time	***3503-1-Trunk-Code***

Activate Voice Guidance for DID on all trunks during Day time	***3503-*-Code***
Activate Voice Guidance for DID on a trunk during Night time	***3504-1-Trunk-Code***
Activate Voice Guidance for DID on all trunks during Night time	***3504-*-Code***

Direct Outward System Access (DOSA)

Enable/disable DOSA on a trunk during Day time	***3601-1-Trunk-Code***
Enable/disable DOSA on all the trunks during Day time	***3601-*-Code***
Enable/disable DOSA on a trunk during Night time	***3602-1-Trunk-Code***
Enable/disable DOSA on all the trunks during Night time	***3602-*-Code***

Call Forward - Trunk

Enable/disable Call Forward - Trunk on a trunk during Day time	***3701-1-Trunk-Code***
Enable/disable Call Forward - Trunk on all trunks during Day time	***3701-*-Code***
Enable/disable Call Forward - Trunk on a trunk during Night time	***3702-1-Trunk-Code***
Enable/disable Call Forward - Trunk on all trunks during Night time	***3702-*-Code***
Assign Trunk Access Group to forward calls of a trunk	***3703-1-Trunk-Trunk Access Group***
Assign the destination number where the calls are to be forwarded for a trunk	***3704-1-Trunk-Telephone number-#***

Flexible Numbers

Program the flexible number for a station	***4201-1-Station-Flexible Number-#****
Clear the flexible numbers of all the stations	***4201-*-0***
Default the flexible numbers of all the stations	***4201-*-#***

Least Cost Routing (LCR)

Program LCR type for a Trunk Access Group	***3401-1-Trunk Access Group-LCR Type***
Program LCR Type for all Trunk Access Groups	***3401-*-LCR Type***
Assign service provide code to each trunk	***3402-1-Trunk-SP Code***
Assign same service provider code to all trunks	***3402-*-SP Code***
Program time zone index	***3412-1-Time Zone Index-Start Time-End Time***
Program the SP sequence for the each Time zone	***3413-1-Time Zone Index-SP0-SP1-SP2-SP3***
Default Time Zone wise LCR table	***3411-*-#***
Program number Index	***3422-1-Number Index-Number String-#****
Program the Service Provider sequence for each number Index	***3423-1-Number index-SP0-SP1-SP2-SP3***

Default Number wise LCR tables	***3421-*-#***
Program time zone Index for Mixed LCR	***3432-1-Time Zone-Start Time-End Time***
Program Number Index for Mixed LCR	***3433-1-Number Index-Number String-#****
Program the Service Provider sequence for the each time zone	***3434-1-No. Index-TZ Index-SP0-SP1-SP2-SP3***
Default Mixed LCR table	***3431-*-#***

Operator

Program the Operator Station	***1101-Station***

Programming using Phone Wizard

To enter Phone Wizard programming mode	***1#98-SE Password***
Set current date	***27-Date-Month-Year-Day***
Set current time	***28-Hour-Minute***
Set New SE Password	***291-New SE Password***
Set New SA Password	***292-New SA Password***
Class of Service	***31-Ext-Day CoS Group-Night CoS Group***
Toll Control	***32-Ext-Day AL/DL List-Night AL/DL List***
Clear all the features	***343-Ext***
Flash Timer for station	***36-Ext-Flash Timer Count***
Flexible Number	***37-Software Port No.-Flexible Number-#****
Operator Station	***391-Ext***
Enable/Disable and Dial Type	***41-Trunk-Enable/Disable Flag-Dial Type***
DID ON/OFF	***43-Trunk-Day Code-Night Code***
DOSA ON/OFF	***45-Trunk-Day Code-Night Code***
Trunk Landing Destination for Day Mode	***47-Trunk-Ext1-Ext2-Ext3-Ext4***
Trunk Landing Destination for Night Mode	***48-Trunk-Ext1-Ext2-Ext3-Ext4***
Hunt Timer	***212-Timer***
Hunting Scheme	***46-Trunk-Day Hunting Scheme-Night Hunting Scheme***

Real Time Clock

Set current Date	***1001-Date-Month-Year***
Set current Day	***1002-Day***
Set current Time	***1003-Hours-Minutes***

Station Group

Program station group	***4702-1-Station Group-Destination Index-Station***
Program same station for all station groups	***4702-*-Destination Index-Station***
Program the time for which each station in the group should ring	***4703-1-Station Group-Destination Index-Timer***

Programming ring timer for stations with same destination index for all station groups	***4703-*-Destination Index-Timer***
Program continuous/non-continuous ring for a destination in the group	***4704-1-Station Group-Destination Index-Continuous Ring***
Program continuous/non-continuous for station with same destination index in all station groups	***4704-*-Destination Index-Continuous Ring***
Program rotation method for a station group	***4705-1-Station Group-Rotation Method***
Program rotation method for all the station group	***4705-*-Rotation Method***
Assign default stations to a station groups	***4701-1-Station Group-#***
Assign default stations to all station groups	***4701-*-#***

Station Parameters

Program the CLIP type for a station	***4101-1-Station-CLIP Type***
Program same CLIP type for all stations	***4101-*-CLIP Type***
Configure the Flash Timer for a station	***4102-1-Station-Flash Timer Index***
Configure the Flash Timer for all stations	***4102-*-Flash Timer Index***
Configure digit padding for a station	***4104-1-Station-Count***
Configure digit padding for all stations	***4104-*-Count***
Configure the AC Impedance for a station	***4105-1-Station-Code***
Configure the same AC Impedance for all stations	***4105-*-Code***
Configure the Transmit Gain for a station	***4106-1-Station-Code***
Configure the same Transmit Gain for all stations	***4106-*-Code***
Configure the Receive Gain for a station	***4107-1-Station-Code***
Configure the same Receive Gain for all stations	***4107-*-Code***
Configure the Answer Signaling for a station	***4111-1-Station-Code***
Configure the same Answer Signaling for all stations	***4111-*-Code***
Configure the Disconnect Signaling for a station	***4112-1-Station-Code***
Configure the same Disconnect Signaling for all stations	***4112-*-Code***
Configure the Open Loop Disconnect Timer for a station	***4113-1-Station-Code***
Configure the same Open Loop Disconnect Timer for all stations	***4113-*-Code***
Configure the Loop Current for a station	***4116-1-Station-Code***
Configure the same Loop Current for all stations	***4116-*-Code***
Configure the Loop Length for a station	***4117-1-Station-Code***
Configure the same Loop Length for all stations	***4117-*-Code***
Configure the Minimum Current for Off-hook Detection for a station	***4118-1-Station-Code***
Configure the same Minimum Current for Off-hook Detection for all stations	***4118-*-Code***
Configure the On-hook Detection Current or lower for a station	***4119-1-Station-Code***
Configure the same On-hook Detection Current or lower for all stations	***4119-*-Code***
Configure the Ring Type/Ringing Signal for a station	***4120-1-Station-Code***
Configure the same Ring Type/Ringing Signal for all stations	***4120-*-Code***

Program Internal Inter Digit Wait Timer	***3009-Seconds***

System Parameters

Load default configuration	***1103-Reverse SE Password***
Load default values of all timers	***1107-*-#***
Configuring the Companding Type	***1108-Code***
Displaying the system's version and revision	***1110***

System Security (Passwords)

Change SE Password	***1104-Old SE Password-New SE Password***
Change SA Password	***1105-Old SA Password-New SA Password***

Time Table

Program the system in Manual/Auto mode	***1051-0/1***
Set Day or Night mode	***1052-1/0***
Program the time table	***1053-Day-Start Time-End Time***

Toll Control

Assign allowed list to a station during Day time	***4501-1-Station-Allowed List***
Assign allowed list to all stations during Day time	***4501-*-Allowed List***
Assign allowed list to a station during Night time	***4502-1-Station-Allowed List***
Assign allowed list to all stations during Night time	***4502-*-Allowed List***
Assign denied list to a station during Day time	***4511-1-Station-Denied List***
Assign denied list to all stations during Day time	***4511-*-Denied List***
Assign denied list to a station during Night time	***4512-1-Station-Denied List***
Assign denied list to all stations during Night time	***4512-*-Denied List***
Assign allowed list to a station for locked condition	***4521-1-Station-Locked Allowed List***
Assign allowed list to all stations for locked condition	***4521-*-Locked Allowed List***
Assign denied list to a station for locked condition	***4522-1-Station-Locked Denied List***
Assign denied list to all stations for locked condition	***4522-*-Locked Denied List***

Trunk Access Group (TAG)

Put trunk(s) in Trunk Access Group (TAG)	***4402-1-Trunk Access Group-Trunk0…Trunk2/#***
Put same trunk(s) in all Trunk Access Groups	***4402-*-Trunk0…..Trunk2/#***
Program rotation code for a group	***4403-1-Trunk Access Group-Rotation Code***
Program same rotation code for all the groups	***4403-*-Rotation Code***
Default a Trunk Access Group	***4401-1-Trunk Access Group-#***
Default all Trunk Access Groups	***4401-*-#***

Assign a TAG and TAC to a station for Day time	***4411-1-Station-Trunk Access Group Index-Trunk Access Group***
Assign TAG and TAC to all the stations for Day time	***4411-*-Trunk Access Group Index-Trunk Access Group***
Assign a TAG and TAC to a station for Night time	***4412-1-Station-Trunk Access Group Index-Trunk Access Group***
Assign TAG and TAC to all the stations for Night time	***4412-*-Trunk Access Group Index-Trunk Access Group***

Trunk Landing Group (TLG)

Assign station group as TLG for a trunk for Day time	***3301-1-Trunk-Station Group***
Assign same station group as TLG for all the trunks for Day time	***3301-*-Station Group***
Assign station group as TLG for a trunk for Night time	***3302-1-Trunk-Station Group***
Assign same station group as TLG for all the trunks for Night time	***3302-*-Station Group***

Trunk Parameters

Enable/disable a trunk	***3101-1-Trunk-Code***
Enable/disable all trunks	***3101-*-Code***
Program the dial type of a trunk	***3102-1-Trunk-Code***
Program the same dial type for all trunks	***3102-*-Code***
Define a trunk type	***3103-1-Trunk-Code***
Program Speech Connection Delay timer for a trunk	***3104-1-Trunk-Speech Timer***
Program same Speech Connection Delay timer for all trunks	***3104-*-Speech Timer***
Configure the CLI Type for a trunk	***3105-1-Trunk-CLI Type***
Configure the same CLI Type for all trunks	***3105-*-CLI Type***
Configure the Pause Timer for a trunk	***3106-1-Trunk-Code***
Configure the same Pause Timer for all trunks	***3106-*-Code***
Configure the Receive Gain (in dB) for a trunk	***3107-1-Trunk-Code***
Configure the same Receive Gain (in dB) for all trunks	***3107-*-Code***
Configure the Transmit Gain (in dB) for a trunk	***3108-1-Trunk-Code***
Configure the same Transmit Gain (in dB) for all trunks	***3108-*-Code***
Configure the AC Termination Impedance for a trunk	***3111-1-Trunk-Code***
Configure the same AC Termination Impedance for all trunks	***3111-*-Code***
Configure the CO Termination for a trunk	***3112-1-Trunk-Code***
Configure the same CO Termination for all trunks	***3112-*-Code***
Configure the CO Line Type for a trunk	***3113-1-Trunk-Code***
Configure the same CO Line Type for all trunks	***3113-*-Code***
Configure the Answer Supervision type for a trunk	***3114-1-Trunk-Code***
Configure the same Answer Supervision type for all trunks	***3114-*-Code***
Configure the Disconnect Supervision type for a trunk	***3115-1-Trunk-Code***

Configure the same Disconnect Supervision type for all trunks	***3115-*-Code***
Configure the Open Loop Disconnect Timer for a trunk	***3116-1-Trunk-Code***
Configure the same Open Loop Disconnect Timer for all trunks	***3116-*-Code***
Configure the Pseudo Answer Supervision Timer for a trunk	***3117-1-Trunk-Seconds***
Configure the same Pseudo Answer Supervision Timer for all trunks	***3117-*-Seconds***
Enable/disable Call Disconnect Tone for a trunk	**3133-1-Trunk-Code**
Enable/disable Call Disconnect Tone for all the trunks	**3133-*-Code**
Set the Call Disconnect Tone Frequency for a trunk	**3134-1-Trunk - Frequency 1 - Operator - Frequency 2**
Set the Call Disconnect Tone Frequency for all trunks	**3134-*-Frequency 1 - Operator - Frequency 2**
Set the Call Disconnect Tone Cadence for a trunk	**3135-1-Trunk- Index - ON Time - OFF Time**
Set the Call Disconnect Tone Cadence for all the trunks	**3135-*- Index - ON Time - OFF Time**
Configure the Ring Cadence OFF Timer for a trunk	***3118-1-Trunk-Code***
Configure the same Ring Cadence OFF Timer for all trunks	***3118-*-Code***
Configure the DTMF Detection Minimum ON Timer for a trunk	***3119-1-Trunk-Code***
Configure the same DTMF Detection Minimum ON Timer for all trunks	***3119-*-Code***
Configure the DTMF Detection Minimum OFF Timer for a trunk	***3120-1-Trunk-Code***
Configure the same DTMF Detection Minimum OFF Timer for all trunks	***3120-*-Code***
Configure the DTMF Outdial ON Time for a trunk	***3121-1-Trunk-Code***
Configure the same DTMF Outdial ON Time for all trunks	***3121-*-Code***
Configure the DTMF Outdial Inter-digit Pause Time for a trunk1	***3122-1-Trunk-Code***
Configure the same DTMF Outdial Inter-digit Pause Time for all trunks	***3122-*-Code***
Configure the Flash Timer for a trunk	***3123-1-Trunk-Code***
Configure the same Flash Timer for all trunks	***3123-*-Code***
Configure the ON-Hook Speed for a trunk	***3126-1-Trunk-Code***
Configure the same ON-Hook Speed for all trunks	***3126-*-Code***
Configure the OFF-Hook Speed for a trunk	***3127-1-Trunk-Code***
Configure the same OFF-Hook Speed for all trunks	***3127-*-Code***
Configure the Current Limiting Mode for a trunk	***3128-1-Trunk-Flag***
Configure the same Current Limiting Mode for all trunks	***3128-*-Flag***
Configure the Minimum Loop Current for a trunk	***3129-1-Trunk-Code***
Configure the same Minimum Loop Current for all trunks	***3129-*-Code***
Configure the TIP-RING Voltage for a trunk	***3130-1-Trunk-Code***
Configure the same TIP-RING Voltage for all trunks	***3130-*-Code***
Configure the Ringer Impedance for a trunk	***3131-1-Trunk-Code***
Configure the same Ringer Impedance for all trunks	***3131-*-Code***
Configure the Ringer Threshold for a trunk	***3132-1-Trunk-Code***

Configure the same Ringer Threshold for all trunks	***3132-*-Code***
Program Trunk First Digit Wait Timer	***3010-Seconds***
Program Trunk Inter Digit Wait Timer	***3011-Seconds***

User Security (User Password)

Default User Password of a station	***1106-Station***

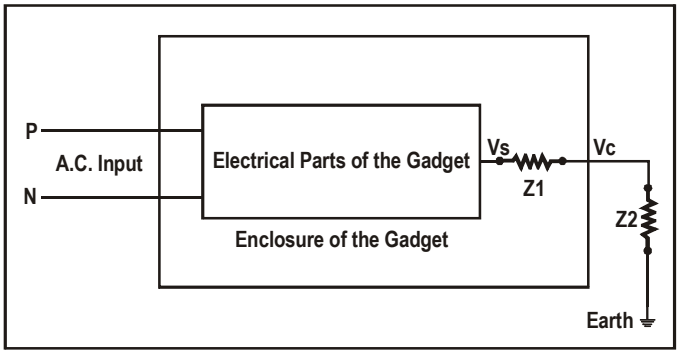
Voice Message Applications

Divide voice module in desired number of parts and of desired duration	***1403-Index***
Record VM partition (except MoH)	***1405-Part Number***
Playback the recorded VM partition (except MoH)	***1406-Part Number***
Record the MoH	***1411***
Playback the recorded MoH	***1412***
Assign an application to a VM partition	***1407-Voice Message Application-Part Number***
De-assign an application from a VM partition	***1407-Voice Message Application-#***
Set default values for all the VM parameters	***1401-#***

How to Make the Telecom Earth

The Earth (Ground) is the most important safety procedure to prevent electrical shocks and fires. It protects from lightning strikes, electrical transients, static discharges, electromagnetic interference and electrical hazards.

A proper earth must be in place to protect people and the system. The following explanation shows how a perfect electrical earth can save lives.



In the above diagram, **Vc = Vs *Z2 / Z1 + Z2**
Where,

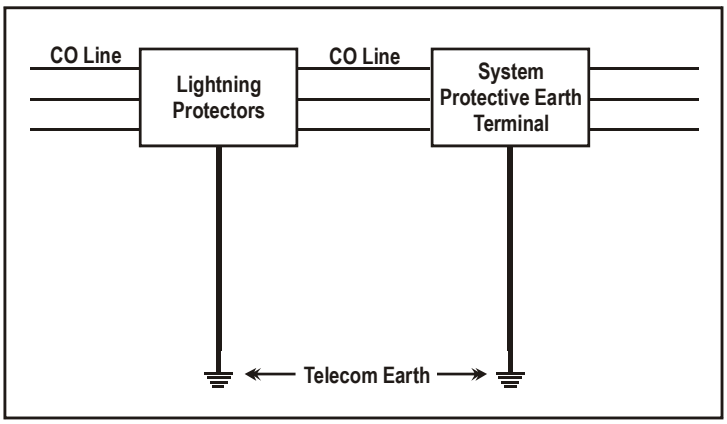
- Z1 is the stray impedance between the electrical parts of the Gadget and the Chassis.
- Z2 is the stray impedance between the Chassis and the Earth.
- If Z2 = 0 then Vc = 0

This formula implies that if the impedance between the Chassis and the Earth is reduced to Zero, then the Voltage on the Chassis, that is, Vc, would be Zero and hence any person touching the enclosure will not get an electric shock. Hence Z2 should be made Zero.

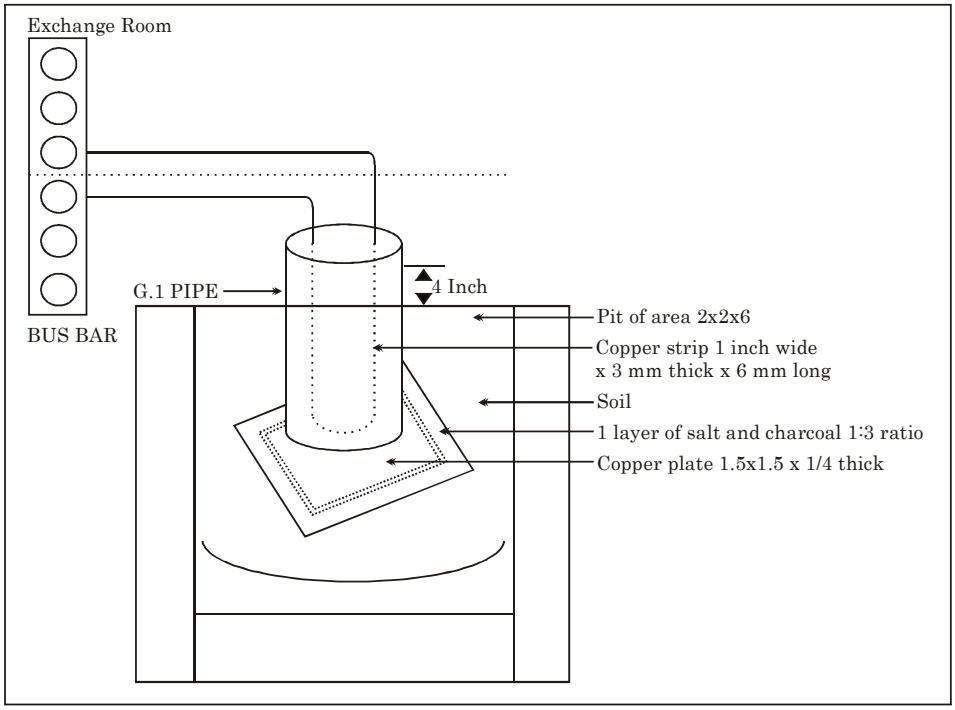
This can be done by providing a perfect earth to the electrical equipment.

It is recommended that you provide a dedicated earth for the PBX/any other telecom equipment. This dedicated earth is called the Telecom Earth (Ground).

Providing a separate Telecom Earth to the telecom equipment eliminates the possibility of any back-voltage on the earth.



How to make a perfect Earth



- Dig a pit of area 2 feet x 2 feet x 6 feet (L x B x D).
- Get a copper plate of size 1.5 feet x 1.5 feet x 0.25 feet.
- Connect a copper strip of size 1-inch wide, 3 mm thick and 6 feet length at the center of the copper plate by welding or nuts and bolts.
- Insert a G.I. pipe onto the copper strip till it reaches the copper plate.
- Place this set up into the pit. Make sure that at least 4 inches of the G.I. pipe is above the ground level.
- Fill the bottom of the pit with a 1-inch layer of charcoal and salt in the proportion of 3:1 (3 parts charcoal, 1 part salt) and then cover with the soil.
- Connect a bare 14 SWG copper wire (double) on the top of the copper strip and run it to the exchange room and connect it on the bus bar.
- The Bus bar is a copper strip, 4 inches long with 6 screws and nuts mounted on it. It has to be fixed on the wall in the exchange room.
- The earth wire of the Primary Protection Modules (PPM)/system should be connected to this Bus bar.
- Water the earth at regular intervals.

- *Make sure you comply with all applicable laws, regulations and guidelines.*
- *Proper earthing is very important to protect the PBX from external noise and to reduce the risk of electrocution in the event of a lightning strike.*

Troubleshooting

All servicing must be carried out ONLY by qualified service personnel. There are no user serviceable parts inside the system.

Always switch off "MAINS" marked switches of the system before opening it and remove power cable from Mains plug, to avoid risk of electric shock.

VISIONPRO is not turning ON.

- Please check the Mains Power.
- Please check the Switch.
- Please check the Main Fuse (315mA).
- Please check the MOV (275/14).
- Please check for loose connection of PT3 connector.
- Please contact authorised Matrix dealer.

One station is not working.

- Please change the telephone instrument and check.
- Please check wiring of that station.
- Please contact authorised Matrix dealer.

When I call station 21, the call goes to station 22.

- Your call might have been forwarded. Dial 130 from 21 to cancel Call Forward.

Station not ringing.

- Check ringer volume of the telephone instrument.
- Dial 130 to disable call forward/call follow me feature, if enabled.
- Try replacing the telephone instrument.

Station found busy.

- Check whether the receiver and hook-set is properly kept on the cradle.
- Check wiring.
- Try replacing the telephone instrument.

Station cannot dial.

- Ensure dialing is not disabled through programming. Check “Class of Service (CoS)” for that.
- Try replacing telephone instrument.

Incoming Call does not land correctly.

- Ensure proper programming of Trunk Landing Group for the trunk. Refer “Trunk Landing Groups (TLGs)”.
- Check for Call Privacy from incoming calls. Refer “Privacy”.
- Check the Time programmed in the PBX. This is a time sensitive feature. Refer “Time Tables”.

CLI Number does not appear on the station.

- Please clarify with your Telephone Company (Service Provider) for CLI facility.
- Please check whether the station where you are checking CLI function is programmed as CLI Phone.
- Please contact authorized Matrix dealer.

Acronyms

DOSA	:	Direct Outward System Access. A facility to allow a remote access.
DTMF	:	Dual Tone Multi Frequency. When a code (digit) is dialed, two different specific frequencies are transmitted.
Flash	:	A code required to use various system features.
LED	:	Light Emitting Diode.
LCD	:	Liquid Crystal Display.
MDF	:	Main Distribution Frame.
OFF-Hook	:	A condition in which the handset of the telephone instrument is lifted from the cradle.
ON-Hook	:	A condition in which the handset of the telephone instrument rests on the cradle (Idle condition of the phone).
PBX	:	Private Branch Exchange.
P & T	:	Post and Telegraph.
PSTN	:	Public Switched Telephone Network.
PULSE Dialing	:	A type of signaling in which codes (digits) are dialed in pulses.
Pulse	:	A waveform generated by making and breaking of loop current.
RTC	:	Real Time Clock. Date and Time keeping circuit.
SA Mode	:	System Administrator Mode. General housekeeping functions are allowed from SA Mode.
SA	:	System Administrator.
SE Mode	:	System Engineer Mode. Entire programming can be done from this mode.
SE	:	System Engineer.
SP	:	Service Provider.
Station	:	Internal station to which a telephone is connected.
SWG	:	Standard Wire Gauge.
TONE Dialing	:	A type of signaling in which codes (digits) are dialed in DTMF mode.
Tones	:	Different frequencies used for signaling.
Trunk	:	An external trunk line coming from the service provider.

Warranty Statement

Matrix warrants that its products will be free from defects in material and workmanship, under normal use and service for a period of twelve (12) months from the date of installation.

Matrix warranties the replacement or repair of any product or component(s) found to be defective during the applicable period and return the same, or grant a reimbursement credit with respect to the product or component. Parts repaired or replaced will be under warranty throughout the remainder of the original warranty period only. In case of software configure design defect(s) that prevents the configure from performing the specified functionality, affecting service and beneficial use of the product, Matrix reserves the right to incorporate solutions in its new release of the software and make it available to the customer within a reasonable period of time. The above said with regard to the software design defect, constitutes the sole obligation of Matrix and its authorized installer with respect to the product.

Matrix does not, however, affirm or stand for that the functions or features contained in the system will satisfy its end-user's particular purpose and /or requirements or that the operation of the configure will be uninterrupted or error free.

This warranty is voidable by Matrix:

1. If the product is used other than under normal use and is not properly serviced and maintained by qualified technicians.
2. If the product is not maintained under proper environmental conditions.
3. If the product is subjected to abuse, damage, misuse, neglect, fire, power flow, acts of God, accident.
4. If the product is installed or used in combination or in assembly with the products that are not supplied or authorized by Matrix or are of inferior quality or design than Matrix supplied products, which may cause reduction or degradation in functionality.
5. If the product is operated outside the product's specifications or used without designated protections.
6. If the completely filled warranty cards have not been received by Matrix within 15 days of the installation.

In no event will Matrix be liable for any damages, including lost profits, lost business, lost savings, downtime or delay, labor, repair or material cost, injury to person, property or other incidental or consequential damages arising out of use of or inability to use such product, even if Matrix has been advised of the possibility of such damages or losses or for any claim by any other party.

Except for the obligations specifically set forth in this Warranty Policy Statement, in no event shall Matrix be liable for any direct, indirect, special, incidental or consequential damages, whether based on contract or any other legal theory, and where advised of the possibility of such damages.

Neither Matrix nor any of its channel partners makes any other warranty of any kind, whether expressed or implied, with respect to Matrix products. Matrix and its distributors, dealers or sub-dealers specifically disclaim the implied warranties of merchantability and fitness for a particular purpose.

This warranty is not transferable and applies only to the original user of the Product. All legal course of action subjected to Vadodara (Gujarat, India) jurisdiction only.

Disposal of Products/Components after End-Of-Life

Main components of Matrix products are given below:

- **Soldered Boards:** At the end-of-life of the product, the soldered boards must be disposed through e-waste recyclers. If there is any legal obligation for disposal, you must check with the local authorities to locate approved e-waste recyclers in your area. It is recommended not to dispose-off soldered boards along with other waste or municipal solid waste.

- **Batteries:** At the end-of-life of the product, batteries must be disposed through battery recyclers. If there is any legal obligation for disposal, you may check with local authorities to locate approved batteries recyclers in your area. It is recommended not to dispose off batteries along with other waste or municipal solid waste.

- **Metal Components:** At the end-of-life of the product, Metal Components like Aluminum or MS enclosures and copper cables may be retained for some other suitable use or it may be given away as scrap to metal industries.

- **Plastic Components:** At the end-of-life of the product, plastic components must be disposed through plastic recyclers. If there is any legal obligation for disposal, you may check with local authorities to locate approved plastic recyclers in your area.

After end-of-life of the Matrix products, if you are unable to dispose-off the products or unable to locate e-waste recyclers, you may return the products to Matrix Return Material Authorization (RMA) department.

Make sure these are returned with:
- proper documentation and RMA number
- proper packing
- pre-payment of the freight and logistic costs.

Such products will be disposed-off by Matrix.

"SAVE ENVIRONMENT SAVE EARTH"

E-Waste Management and Handling Rules

E-waste is a popular, informal name for electronic products nearing the end of their useful life. E-wastes are considered dangerous, as certain components of some electronic products contain materials that are hazardous, depending on their condition and density. The hazardous content of these materials pose a threat to human health and environment. Discarded electronics products such as circuit boards, batteries, wires and other electronic accessories if improperly disposed can leach lead and other substances into soil and groundwater. Many of electronic products can be reused, refurbished or recycled in an environmentally sound manner so that they are less harmful to the ecosystem.

Benefits of E-waste Recycling leach

Electronics Recycling Conserves Natural Resources

There are many materials that can be recovered from old electronic products. These materials can be used to make new products, thus reducing the need for the new raw materials. For instance, various metals can be recovered from circuit boards and other electronics can be recycled.

Electronics Recycling Supports the Community

Donating your old electronics plays an important role in the provision of refurbished products which can be of great help to certain industries, small organizations and non-profitable organizations. It also helps individuals gain access to technology that they could not have otherwise afforded.

Electronics Recycling Creates Employment Locally

Considering that around 90 percent of electronic equipment is recyclable, electronics recycling can play a significant role in creating employment. This is because new firms dealing with electronics recycling will form and existing firms will look to employ more people to recover recyclable materials. This can be triggered by the increase in the demand for electronics recycling.

Electronics Recycling Helps Protect Public Health and the Environment

Many electronics have toxic or hazardous materials such as mercury and lead, which can be harmful to the environment if disposed in trashcans. Reusing and recycling electronics safely helps in keeping the hazardous materials from harming humans or the environment. For example, certain electronic components and batteries are hazardous since they have lead in them. Printed circuit boards contain harmful materials such as cadmium, lead, mercury and chromium.

Instead of keeping old electronics or dumping them in landfills, recycling or reusing them is an appropriate option that should be supported by individuals and organizations. Considering the benefits of electronics recycling, it is very important that people in various parts around the world embrace this concept.

Creates Jobs

E-waste recycling creates new jobs for professional recyclers and creates a second market for the recycled materials.

Do's & Don'ts

Do's:

- Always look for information on the catalogue with your product for end-of-life equipment handling.
- Ensure that only Authorized Recyclers/Dismantler handle your electronic products.
- Always call at our toll-free No's to Dispose products that have reached end-of life.
- Always drop your used electronic products, batteries or any accessories, when they reach the end of their life at your nearest Authorized E-Waste Collection Points.
- Always disconnect the battery from product and ensure any glass surface is protected against breakage.

Don'ts:

- Do not dismantle your electronic Products on your own.
- Do not throw electronics in bins having "Do not Dispose" sign.
- Do not give e-waste to informal and unorganized sectors like Local Scrap Dealer/ Rag Pickers.
- Do not dispose your product in garbage bins along with municipal waste that ultimately reaches landfills.

E-Waste Management Plan

M/s. MATRIX COMSEC PVT LTD has partnered with **E-Waste Recyclers India (EWRI)** to comply with the new India E-Waste management and handling rules in providing drop-of centers and environmentally sound management of end of life electronics.

EWRI has obtained authorizations from the appropriate governmental agency for their processing facilities. EWRI will receive and recycle customer returned equipment, including all the e-waste. Customers can drop their e-waste in the drop-box provided at various collection centers of EWRI.

A list of collection centers along with the address is mentioned below.

The customers can also call on the following toll free number (1800-102-5679) from Monday to Friday between 10:00 AM to 5:30 PM to get details about the collection centers.

Collection Centers:

State/ City	Location	Logistic	Address	Toll-Free Number
Delhi	Rangpuri	Professional Logistics	Rangpuri, Milakpur Kohi Rangpuri, Rangpuri, New Delhi - 110037	1800-102-5679
Gurugram	Gurugram	Professional Logistics	295, LIG Colony, Sector 31, Gurugram, Haryana - 122022	1800-102-5679
Jharkhand	Dhanbad	Professional Logistics	Sardar Patel Nagar, Dhanbad, Jharkhand - 826004	1800-102-5679
Noida	Salarpur Khadar	Professional Logistics	2, Gejha Rd, Goyal Colony, Salarpur Khadar, Sector 102, Noida, Uttar Pradesh - 201304	1800-102-5679
Mumbai	Vashi	Professional Logistics	Plot-92,gala no 01,Sector 19C Vashi Navi, Mumbai - 400705	1800-102-5679

State/ City	Location	Logistic	Address	Toll-Free Number
Pune	Vallabh Nagar	Professional Logistics	No.3/20,Near Ashok Sah Bank, Vallabh Nagar, S.T.Stand Road, Pimpri, Pune - 302021	1800-102-5679
Odisha	Cuttack	Professional Logistics	Cuttack, Odisha	1800-102-5679
Hyderabad	Secunderabad	Professional Logistics	4,Block-3,4th Shatter at 179, MPR Estates Near Old Check Post Old Bowaenpally Secunderabad, Hyderabad - 500011	1800-102-5679
Bangalore	Yeshwanthpur	Professional Logistics	No.44 1st floor 2nd main D.D.U.T.T.L. Yeshwanthpur, Bangalore - 560022	1800-102-5679
Mangalore	Bhathery Road Boloor	Professional Logistics	Opp. Hindustan Lever Ltd, Sulthan, Bhathery Road Boloor, Mangalore (KA) - 575003	1800-102-5679
Jharkhand	Ranchi	Professional Logistics	Ranchi, Jharkhand	1800-102-5679
Chennai	Sennerkuppam	Professional Logistics	27,Sakthi Nagar Phase-II, Sennerkuppam, Near Bisleri Water Plant, Chennai - 600056	1800-102-5679
Rajasthan	Jaipur	Professional Logistics	A-81, 200 ft. By Pass, Heerapura, Jaipur, Rajasthan - 302021	1800-102-5679
Bokaro	Odisha	Professional Logistics	Cuttack, Odisha, India	1800-102-5679
Guwahati	Kundil	Professional Logistics	HN-34, Kundil Nagar Basistha Chariali, Near Parbhat Apartment, Guwahati - 781029	1800-102-5679
Lucknow	Kanpur Road	Professional Logistics	S-175,Ist Floor Transport Nagar Near RTO Kanpur Road Lucknow - 226004	1800-102-5679
Madhya Pradesh	Indore	Professional Logistics	284 AS-3 Scheme No.-78,Vijay Nagar, Indore, Madhya Pradesh	1800-102-5679
Ahmedabad	Pushp Penament	Professional Logistics	Shop No D-18, Pushp Penament, Behind Mony Hotel, Isanpur, Ahmedabad	1800-102-5679
Patna	Malyanil buddha	Professional Logistics	Dr. A.K Pandey (IPS) Malyanil buddha Colony, Patna (Bihar) - 800001	1800-102-5679
Andhra Pradesh	Vishakapatnam	Professional Logistics	Shop No.8, New Gajuwaka, Opp. High School Road, Vishakapatnam, Andhra Pradesh - 530026	1800-102-5679
Chandigarh	Pharbhat Road	Professional Logistics	Shop no:-19, Pharbhat Road, Opp:- Tennis Academy, Zirakpur, Chandigarh, Punjab	1800-102-5679

State/ City	Location	Logistic	Address	Toll-Free Number
Kolkata	B.T. ROAD DUNLOP	Professional Logistics	156A/73, Northern Park, B.T. Road Dunlop, Kolkata -700108	1800-102-5679
Odisha	Bhubaneswar	Professional Logistics	Acharya Vihar - jaydev Vihar Rd, Bhubaneswar, Odisha	1800-102-5679
West Bengal	Asansol	Professional Logistics	Shop No-4 Asansol Station Bus Stand Road, Munshi Bazar, Asansol, West Bengal - 713301	1800-102-5679

Regulatory Information

TEC Certificate:

सत्यमेव जयते

दूरसंचार विभाग,भारत सरकार

DEPARTMENT OF TELECOMMUNICATIONS, GOVERNMENT OF INDIA

दूरसंचार अभियांत्रिकी केंद्र

TELECOMMUNICATION ENGINEERING CENTRE

CERTIFICATE OF MANDATORY CONFORMANCE

No.: 672900014 **Dated:** 2019-10-01

This is to certify that the product described below conforms to the Essential Requirement issued by TEC under Mandatory Testing and Certification of Telecom Equipment as notified vide Indian Telegraph (Amendment) Rules, 2017.

APPLICANT:
MATRIX COMSEC PRIVATE LIMITED, 394, GIDC, MAKARPURA, BARODA 390010, GUJARAT, INDIA

ORIGINAL EQUIPMENT MANUFACTURER:
MATRIX COMSEC PRIVATE LIMITED, 394, GIDC, MAKARPURA, BARODA 390010, GUJARAT, INDIA

PRODUCT NAME:
Private Automatic Branch Exchange

PRODUCT VARIANT:
Private Automatic Branch Exchange

MODEL NO. :
VISIONPRO412

ESSENTIAL REQUIREMENT NO. :
TEC67291906

SOFTWARE VERSION:
V1R16

HARDWARE VERSION:
V1R6

VALID FROM :
2019-10-01

VALID UPTO:
2024-09-30

FAMILY NAME:
NA

QR CODE:

ASSOCIATED MODEL NO & INTERFACES TESTED:
as given overleaf (if any)

PRADEEP KUMAR MISRA
Digitally signed by PRADEEP KUMAR MISRA
Date: 2019.10.01 13:55:50 +05'30'
(P. K. MISRA)
DIRECTOR (TA)

1. Terms & Conditions mentioned at TEC website shall be applicable.
2. Bill of Material is annexed with this certificate.

List of Associated Models

S.No.	Certificate No.	Associated Model
1	672900014.1	VISIONPRO308
2	672900014.2	VISIONPRO206

List of Interfaces Tested

1. 2 Wire Trunk

BILL OF MATERIAL									
Module Name	Module Code	Module Hardware Version	Module Software Version	Sub Unit Name	Sub Unit Model No.	Remarks	Module present in Main Model	Module present in Associated model-1	Module present in Associated model-2
Model No.							VISIONPRO 412	VISIONPRO 308	VISIONPRO 206
Power Supply	NA	V1R6	V1R16			Power supply to VISIONPRO is applied from Adapter	Y	Y	Y
CPU Card	NA	V1R6	V1R16			CPU Module on base PCB	Y	Y	Y
Analog Trunks (CO)	NA	V1R6	V1R16			Small Office - Home Office PABX with 4 Analog Trunk Line (Co) - VISIONPRO 412 3 Analog Trunk Line (Co) -	Y	Y	Y

BILL OF MATERIAL									
Module Name	Module Code	Module Hardware Version	Module Software Version	Sub Unit Name	Sub Unit Model No.	Remarks	Module present in Main Model	Module present in Associated model-1	Module present in Associated model-2
						VISIONPRO 308 2 Analog Trunk Line (Co) - VISIONPRO 206			
Analog Extensions (SLT)	NA	V1R6	V1R16			Small Office - Home Office PABX with 12 Analog Extension (SLT) - VISIONPRO 412 8 Analog Extension (SLT) - VISIONPRO 308 6 Analog Extension	Y	Y	Y

BILL OF MATERIAL									
Module Name	Module Code	Module Hardware Version	Module Software Version	Sub Unit Name	Sub Unit Model No.	Remarks	Module present in Main Model	Module present in Associated model-1	Module present in Associated model-2
						(SLT) - VISI ONPRO206			

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MATRIX COMSEC

Head Office
394-GIDC, Makarpura, Vadodara - 390010, India.
Ph: (+91)1800-258-7747
E-mail: Customer.Care@MatrixComSec.com

www.MatrixTeleSol.com

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