ETERNITY

The Universal Telephony Gateway for Any Existing PBX

Different telecom networks offer advantages in different aspects. Today's businesses expect the specific benefits from each of these networks. The VoIP, GSM/3G, ISDN and POTS are four such Omni-present networks. It is vital for the users to reach these networks transparently as they offer wider connectivity and lower telephony costs!

However, it is not easy to interface these networks with the existing PBX. Most of the PBXs were not designed to interface with these modern networks. Of course, one can replace the PBX with its accessories and install a new-generation equipment. But this is a very costly solution.

Presenting, Matrix ETERNITY – the Universal Telephony Gateway that offers integrated interfaces for VoIP, GSM/3G, ISDN BRI/PRI, T1/E1 and POTS networks. It can be used with any brand of PBX or even in a stand-alone mode.

ETERNITY allows the users to make and receive calls on all the networks transparently. It supports flexible and intelligent Least Cost Routing (LCR) leading to significant cost savings and round-the-clock connectivity, allowing them to dynamically select one of these networks on per-call basis for obvious benefits of reach, cost and quality of service.

Let Matrix ETERNITY add a competitive edge to your business by providing connectivity to the modern telecom networks and reducing your telephony costs

MATRIX
TELECOM SOLUTIONS

Bridge to the VoIP, GSM, 3G, ISDN and POTS Networks

Matrix ETERNITY is an integrated, flexible gateway to interface with traditional analog or new-generation digital and wireless telecom networks. They include traditional analog interfaces like FXS, FXO, E&M and Magneto and digital networks like T1/E1, ISDN BRI, and ISDN PRI. Further GSM, 3G and VoIP networks are also supported. ETERNITY Universal Gateway implemented licensing architecture and required to have Gateway license to avail gateway functionality.

Flexibility and scalability are key strengths of the Matrix ETERNITY. Its open architecture with universal slots allows any interface cards to be inserted in any of the slots available. This flexibility facilitates "all-in-one" gateway. There is no need of having multiple gateway equipment for various interfaces. Not only that, the ETERNITY can be configured to serve the exact traffic requirements of an organization by combination of interface cards tailored for required number of ports. The configuration can be changed any time to keep pace with the changing needs of an organization to tackle the problems of congestion and under-utilization effectively.

ETERNITY supports universal routing thus allowing routing a VoIP call on to GSM/3G or T1/E1/PRI. Similarly, a call from T1/E1/PRI can be routed either on VoIP, GSM/3G or POTS ports. Fixed or Least Cost Routing can be selected to decide route for an outgoing call. It can handle calls on all the ports simultaneously allowing full traffic on all the ports.

Existing PBX users can avail the low-tariff of VoIP or GSM/3G networks by connecting Matrix ETERNITY with PBX system without changing their existing infrastructure. The users continue to make and receive calls without worrying on which network their calls are routed. Matrix ETERNITY routes the calls either on VoIP, GSM/3G, ISDN or POTS network depending on the destination numbers dialed by the users. In addition, ETERNITY can also be used in stand-alone mode by connecting T1/E1/PRI ports directly with the ISDN network or T1/E1 network.

Intelligent and flexible routing is the forte of the Matrix ETERNITY. Various Least Cost Routing (LCR) schemes are offered. The elaborate routing algorithm encompasses different attributes like Port, Calling Number, Called Number and Time. It selects the most cost-effective route for a given number at specified time. In addition, it allows the flexibility of reserving ports for important users. Numbers dialed can be translated by Automatic Number Translation (ANT) feature to match with the destination network.

Matrix ETERNITY is very easy to install and operate. Universal slot architecture allows use of VoIP, GSM /3G and T1/E1/PRI cards in exactly required combination. Built-in web-server allows the system engineer to configure various parameters locally or remotely using any Internet browser. Antenna mixer (4 to 1) is built-in each GSM/3G Card and hence only one or two antenna are required per card.
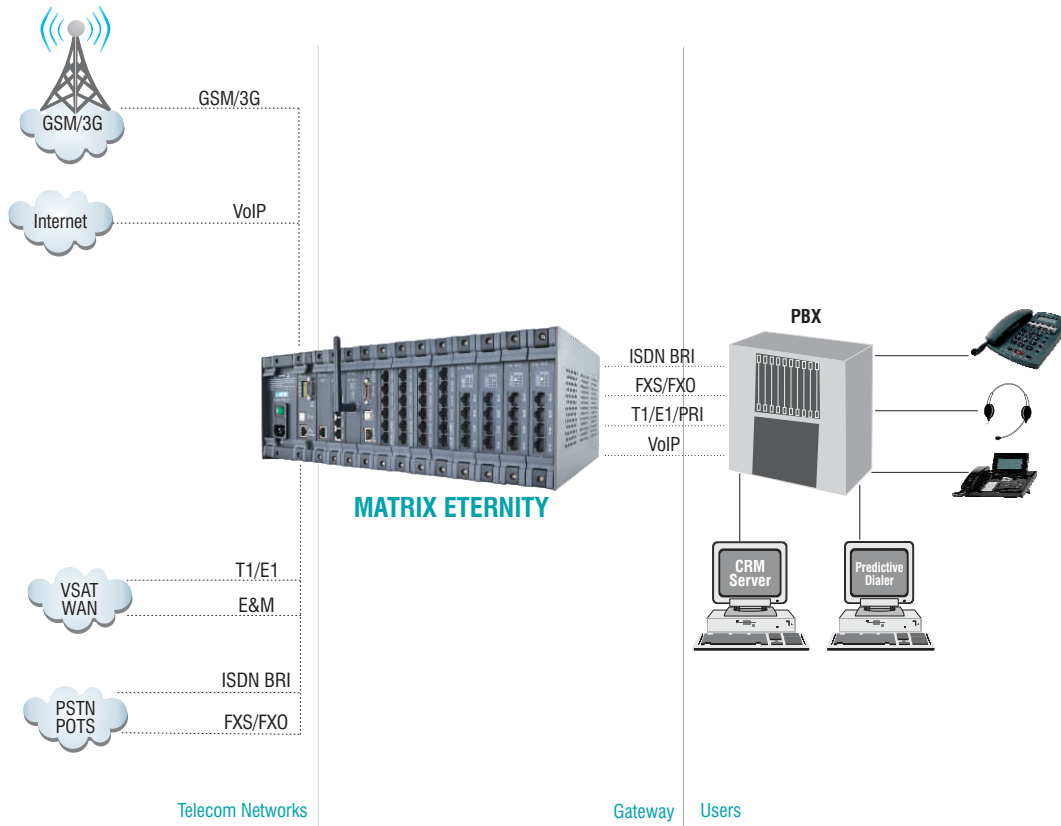
ETERNITY PE

ETERNITY GE

ETERNITY ME

INBOUND/OUTBOUND CALL CENTRES

ETERNITY Gateway can be interfaced to the existing PBX and dialers set-up of a call centre. Call Centre agents can make long distance, international calls using multiple networks connected to the gateway

Without worrying on which network the call is routed. It ensures round-the-clock connectivity in addition to reduced telephony costs..
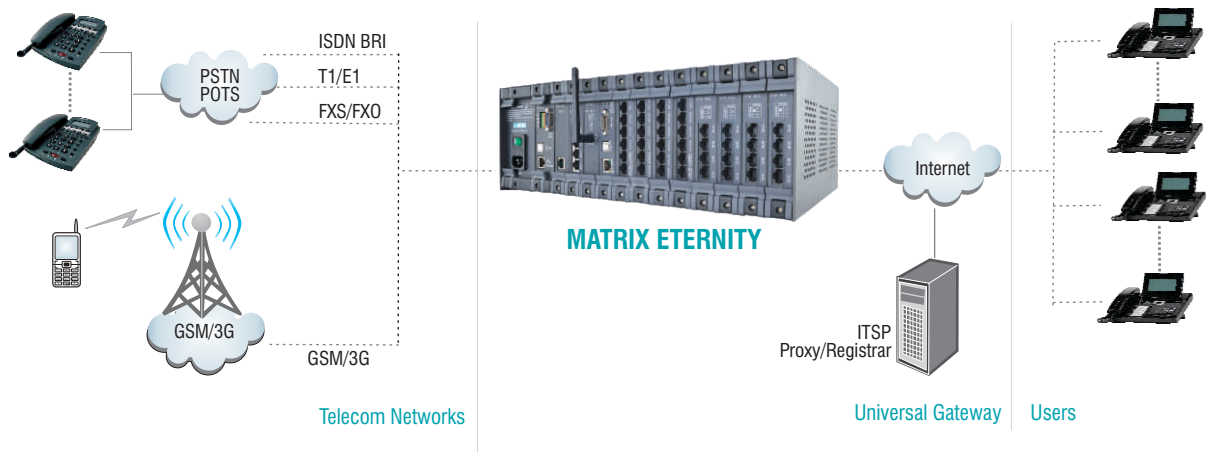

ETERNITY - Universal Gateway for Call Centres

INTERNET TELEPHONY SERVICE PROVIDERS (ITSPs)

An ITSP can offer low-tariff schemes to the users of existing GSM and PSTN networks. With the GSM-PSTN-VoIP gateway ITSP can route calls originated from PSTN and GSM networks over their IP network.

Further, placing gateways at the regional footprints, networks can now be accessed bearing local telephony charges. In the entire process customers save on their telephony bills and ITSPs gain significant return on investment.
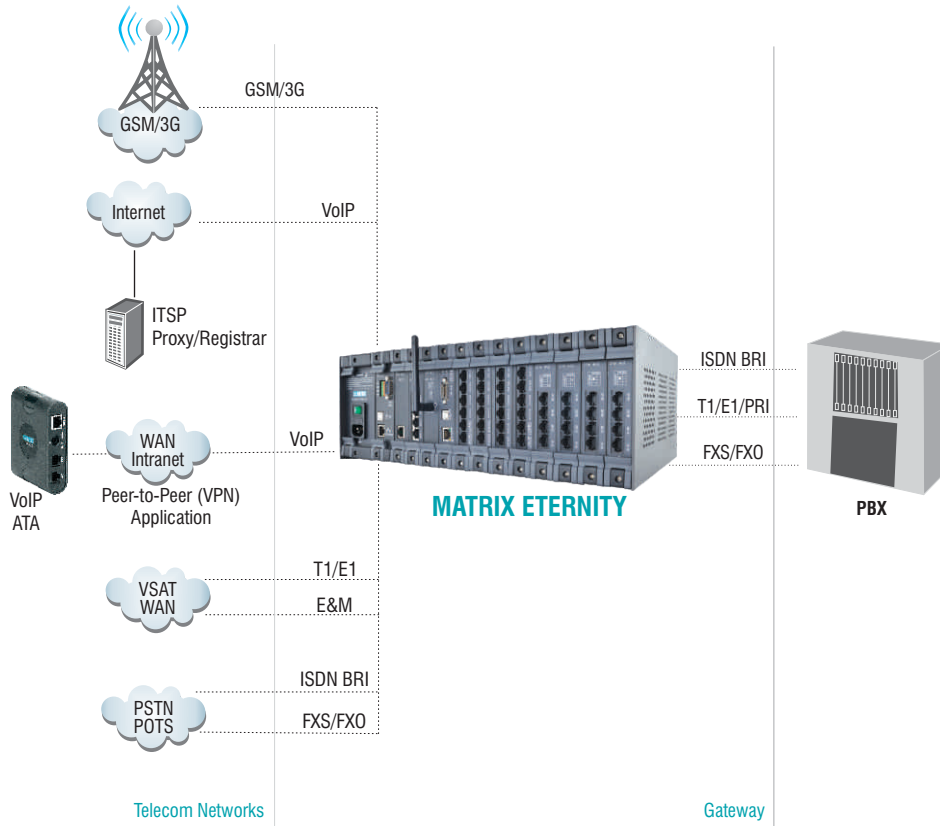

ETERNITY - Universal Gateway for ITSP

▇ TARGET CUSTOMERS

LEGACY/TRADITIONAL TDM PBX USERS

Today's telephony networks such as GSM, VoIP, POTS and ISDN offer varied benefits of coverage, speed, cost and quality of service. Organizations often employ multiple gateways to connect to these diverse networks.

ETERNITY Universal Gateway integrates all of these telephony networks with an existing PBX, through a common platform. This eliminates any scope of interoperability issues. It also provides option to choose between network interfaces and flexibly scale the gateway to match individual requirements.
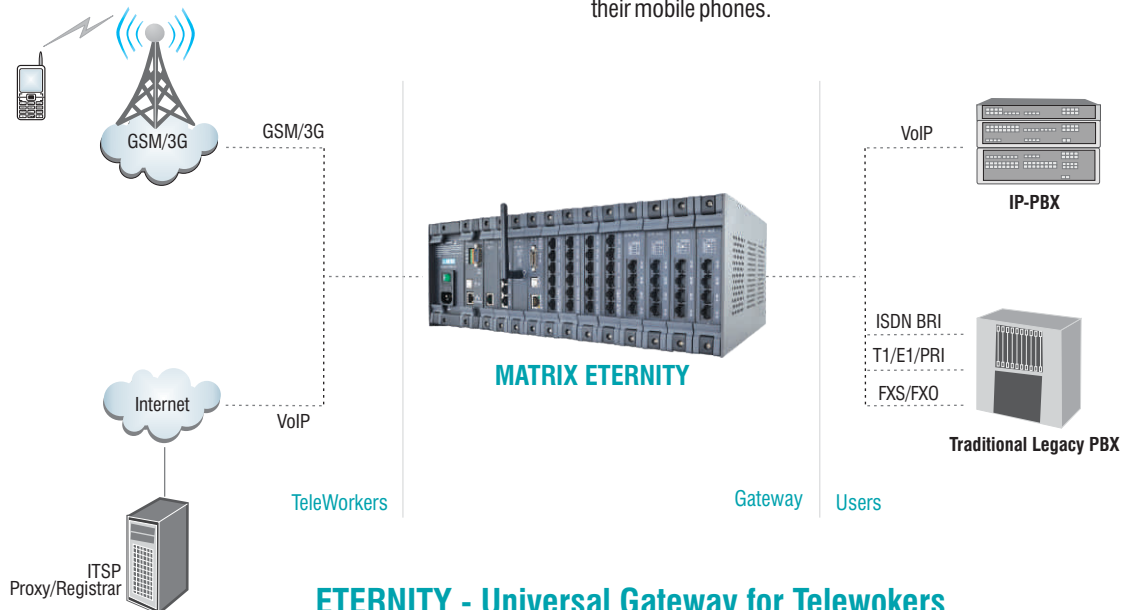

ETERNITY - Universal Gateway for TDM PBX

TELEWORKERS

Communicating with field employees is essential and routine task of an organization, also a major constituent of higher telephony cost. Switching to low tariff GSM and VoIP connectivity to communicate with

Field employees significantly lowers this cost fraction. Moreover, the varied network interfaces such as GSM and VoIP greatly enhance the user mobility, allowing them to use PBX resources and features from their mobile phones.

ETERNITY - Universal Gateway for Telewokers

◼ KEY FEATURES

3G Network Support
Matrix ETERNITY GSM 3G Card offers accessibility to 3G networks for Voice communication. It supports Quad-Band for 2G Networks and Tri-Band for WCDMA Network. It supports fallback compatibility and hence offers flexibility to access any available network. Users are always assured for connectivity using the alternate network in case of preferred (3G) network signal is weak or unavailable. With power of 3G, organization can experience the Noise-free, Stanch and Crystal Clear Voice Quality, Enhanced Security and Utmost Coverage.

Allowed and Denied Lists
Allowed and Denied Lists are used to restrict dialing of long-distance and international numbers. A number is blocked if its prefix matches any entry in the Denied Lists. On the other hand, a number is allowed to go through if matched with any entry of Allowed List. This provides flexibility of allowing only specific numbers while blocking all others.

Automatic Number Translation
The ETERNITY modifies the dialed number or part thereof so that it matches with the numbering plan of the destination networks like PSTN, GSM/3G and VoIP. For example on VoIP network, if a user dials the number (223344) to call www.abc.com, the ETERNITY adds appropriate access code (*777) specified by the ITSP and dials out the number - *777223344 instead of 223344. In the case of GSM/3G network when a user dials the local number, ETERNITY adds respective country-area codes as an appropriate prefix.

Call Accounting System (CAS) Interface
Matrix ETERNITY offers interface for most types of Call Accounting System protocols available world-wide. This helps in easy integration of the third party call accounting software with the Matrix ETERNITY.

Call Budget on Trunks
Service providers offer various attractive schemes to enhance customer services. For example, customer can make free calls for first 500 minutes, every month. In such cases, Universal Gateway allows you to define call budget in terms of amount and minutes on the Trunks i.e. TWT, DS1, BRI, GSM and SIP. Once budget gets exhausted, it will not allow further outgoing calls. Amount and minutes consumed on each trunk port can be cleared either manually or automatically on specified date of every month, to a specified value.

Call Detail Recording (CDR) – Outgoing
ETERNITY stores all the outgoing calls made in its internal memory. Various reports can be generated on the Ethernet port using filters like Port, Number, Date, Time, Duration of the Call, etc.

Call Detail Recording (CDR) – Incoming
ETERNITY maintains log of all the incoming calls in its memory. Details like Port, Date, Time, Caller Number, Answer Time and Call Duration are stored in the database. Various reports can be generated on the Ethernet port using filters like Port, Number, Date, Time, Duration of the Call, etc.

Call Duration Control (CDC)
Duration of each call made through Matrix ETERNITY can be controlled. When the duration of a call exceeds the set time limit, the call gets forcefully disconnected. Different time limits can be set on each port.

Call Maturity
The call maturity information received on the outgoing destination port is transmitted to the source port to prevent hanging of the port.

Caller Line Identification Presentation (CLIP)
Matrix ETERNITY supports CLIP on FXO, ISDN, GSM/ /3G/CDMA and VoIP lines.

Call Progress Tones
Call Progress Tones like Dial Tone, Ring Back Tone, Busy Tone and Alert Tone can be selected to match with the tones used in the region or the country where ETERNITY is installed.

CLI based Routing
Matrix ETERNITY can route the call based on the caller's number. This allows routing of certain callers to specific ports directly without intervention of the operator.

Compact and Sturdy
Matrix ETERNITY is all-integrated gateway housed in a rack. It can be mounted in any of three ways - 19" Rack, Table-Top or Wall Mount.

Conference Bridge
Built-in Conference Bridge allows callers to dial-in a live conference at a scheduled time just by dialing a code. Multiple simultaneous conferences are supported each having multiple participants with the upper capacity of 15/21 participants.

CUG over GSM/3G
Matrix ETERNITY Gateway offers In-skin GSM/3G solution with which as many as 32 SIMs can be used. An organization can take an advantage of this with CUG facility offered by service provider. For example there is a workforce of 20 on field and 100 in the office and their requirement is to offer 20 CUG SIMs to the field and 8 SIMs can be inserted on the GSM card plugged-in to the system. These 8 SIMs are accessible and shared by all office staff. Hence, any call made out of the organization to field is through CUG SIMs, resulting in significant cost savings.

Day Light Saving
The Real Time Clock (RTC) of the ETERNITY moves forward or backward automatically in tune with the Day Light Saving requirements of the country.

Direct Dial-In (DDI) Routing
ETERNITY can be programmed intelligently for DDI Routing feature which makes it possible to route the call to desired station directly. The functionality of this routing logic should be supported by PBX.

Distributed Processing Architecture
Matrix ETERNITY deploys multi-processor architecture, wherein each card has its own dedicated micro-controller, code and data memory. The local processor is responsible for processing of commands and generating events for the Master. The Master processor is a 32-bit RISC processor and controls all the slave cards. This technology enhances flexibility and reliability.

Emergency Number Dialing
This feature allows user to make the emergency number using GSM/3G and T1/E1/PRI TE port. At the most 4 emergency numbers of maximum of 24 digits can be stored.

Fax over IP (FoIP)
Matrix ETERNITY user can send and receive Fax over SIP trunk. The ETERNITY supports FoIP using T.38 Vocoder and Pass Through technology.

Fixed Number Dialing
Pre-configured number can be dialed out as soon as a call lands on a port. This allows point-to-point connectivity without the repeated need of dialing the same number.

Flexible Configurations
ETERNITY can be configured to meet the exact port and traffic requirements preventing fixed overheads. Modular system design gives flexibility to expand the system capacity at any given point of time. System's capacity can be enhanced by just placing the required card in the system. Multiple cards of the same type can be used simultaneously giving flexibility in all directions.

■ KEY BENEFITS

RETAIN EXISTING PBX INFRASTRUCTURE

Matrix ETERNITY works as an adjunct to your existing telephony infrastructure. There is no need to replace any equipment like PBX, Operator Consoles, Key Phones, Standard Phones, Power Supply and Wiring. This not only saves lot of equipment cost, but also saves time and efforts required for re-training.

UNIVERSAL CONNECTIVITY

Communication technologies has witnessed emergence of diverse networks beginning with wired PSTN/ISDN networks to the wireless GSM/3G and new-age IP networks. It is vital for any modern enterprise to link its telecom infrastructure with these networks for the twin benefits – Connectivity and Cost. Matrix ETERNITY forms the vital link to these networks ensuring right connectivity for each and every call. Matrix ETERNITY brings all these networks to every desk of your organization.

TRANSPARENT OPERATION

Matrix ETERNITY internally manages different protocols required to interface with different telecom networks and provides a consistent interface to all its users. When connected with any existing PBX, the ETERNITY remains completely transparent to the users and allows them to make and receives calls and also use PBX features as previously. Least Cost Routing (LCR) algorithm to select the most appropriate network for a given call also works transparently.

REDUCED TELEPHONY COST

The most tangible benefit of Matrix ETERNITY is the significant reduction in the telephony cost. There are many opportunities for savings without compromising the quality of connection. Closed User Group (CUG) is one such case where mobile companies allow free calling amongst a group of specified users. One of the CUG SIM/RUIM Card can be inserted in the Matrix ETERNITY allowing all the PBX users to make and receive free calls to their colleagues who are not in the office – travelling, at home, on vacation, at plant or at a customer site.

EMERGENCY STANDALONE FUNCTIONALITY

In emergencies such as break-down of PBX infrastructure, ETERNITY Universal Gateways can work as a stand-alone system enabling organizations with vital communication, saving huge amount of business loss, borne otherwise.

GSM-VoIP GATEWAY

VoIP-T1/E1/PRI GATEWAY

VoIP-FXS GATEWAY

GSM-T1/E1/PRI GATEWAY

VoIP-ISDN BRI GATEWAY

GSM-FXS GATEWAY

GSM-ISDN BRI GATEWAY

Hot Swap

This is very important hardware feature of Matrix ETERNITY ME. Any of the cards can be plugged-in or plugged-out (Swap) during the system ON condition, without disturbing the functioning of the system.

Hunting Group

ETERNITY offers different schemes to select destination port for an incoming call. They are First Free and Round Robin.

International Mobile Equipment Identity (IMEI) Number

IMEI number provided on ETERNITY GSM engine is a unique 15 digit code to identify an individual GSM port. This number can be used to associate the GSM port with a particular GSM network.

Jeeves - Web Based Programming Tool

ETERNITY supports built-in web server for system configuration locally through LAN or remotely through Internet. Web browsers like Internet Explorer, Mozilla Firefox can be used to log in to the ETERNITY to further open and modify the system configuration.

Least Cost Routing

ETERNITY selects a port that offers the least cost for an outgoing call. Itsupports different LCR algorithms viz. when call is originated from GSM/ 3G port, T1/E1/PRI port or SIP trunk. Different routing options like CLI Based, Fixed, All Calls, Dialed Number Based and Called Number Based are provided to select the most cost-effective route.

Multi-Stage Dialing

There are many applications which require dialing of few fixed numbers before the actual number. An abbreviated short code can be programmed to eliminate numbers of dialing stages. A convenient feature which processes calls faster and saves time.

Network Selection

Each GSM/3G port can be programmed to work only with a few selected networks preventing a GSM/3G port from registering with an overlapping costly network. This flexibility is very useful when Matrix ETERNITY is installed near a state or national border.

Peer-to-Peer Calling

ETERNITY can make and receive calls from other VoIP users without any Registrar or Proxy Servers. Numbers and IP addresses can be assigned to the other VoIP users to provide direct access across the network. Organizations having multiple locations like branch offices and factories can use this features to provide direct dialing between these end-points.

Port Status

Matrix ETERNITY monitors availability of all the ports continuously. If a port is not available for any reason, ETERNITY routes the call on the next best-fit port.

QSIG

Networking of multiple ETERNITY and PBX is possible over T1/E1 links. QSIG facilitates value added features like Call Transfer, Call Forward, Do Not Disturb with Override, Call Offer, Call Intrusion, Auto Call back (No Reply and Busy) Message Wait, CLIP, COLP, CLIR, COLR, CNIP, CONP etc. It is required to activate QSIG license to avail this functionality.

Redundancy (Optional)

ETERNITY ME10SDC offers redundancy for its all important functional blocks - Control, Switching and Power. It supports duplication of the Master Card, Switch Card and PS48VDC Card. For any failure on the Power Card and the Switch Card, the stand-by card takes over smoothly. Whereas, if the Master Card fails, the stand-by Master Card takes over automatically but the system restarts. Redundancy is offered in the ETERNITY ME10SDC only.

SIM PIN

ETERNITY allows user to program 8 digits PIN number (Personal Identification Number) which prevents the SIM against unauthorized use. User has to enter PIN for making any operations. User can change the SIM PIN as and when required. SIM gets blocked if PIN is entered wrongly thrice in a row.

SIM PUK

PUK (Personal Unlock Key) number provided by service provider can be read by ETERNITY. It is an 8-digit number which is assigned to the SIM card. PUK is required to unlock the SIM which gets blocked on entering SIM PIN wrongly thrice in a row.

SIP Accounts

ETERNITY allows maximum of 32 SIP Accounts of multiple service providers or all from a single service provider. Each SIP trunk can be programmed for either making outgoing calls, receiving incoming calls or both. Various allocation methods like First Free, Round Robin are supported to select the most appropriate SIP ITSP for a given call. Diffserv and Precedence are supported for QOS.

Speech Gain Setting

Matrix ETERNITY allows user to set Receive and Transmit gain on GSM/3G port to improve quality of speech.

System Activity Log

ETERNITY maintains a complete system activity log. User can find out when a particular card was removed from the system or even when a particular port was not detected by the software.

Time Zones

Call routing can adapt to different routing needs during day time, lunch time and night hours. Four different time zones can be programmed and each port can be programmed to function differently in each time zone.

Universal Routing

ETERNITY supports port-agnostic routing. A call received on a GSM/3G port or SIP Account, can be routed on any channel of a T1/E1/PRI NT port, T1/E1/PRI TE or even another GSM/3G port. Similarly, a call received on any channel of T1/E1/PRI NT port can be placed on a GSM/3G port, any SIP trunk, any channel of T1/E1/PRI TE port or even another channel of T1/E1/PRI NT port.

Universal Slots

All the expansion slots of Matrix ETERNITY are universal in nature. Any interface card can be inserted in any slot and the system will configure it automatically. This scheme eliminates configuration bottle-necks because any slot can be used for VoIP, GSM/3G, T1/E1/PRI, ISDN BRI or POTS and thus allowing completely flexible configuration.

Voice Greetings and Prompts

Matrix ETERNITY offers voice greetings and guidance to the users at various call phases. Maximum five calls can be given voice prompts simultaneously.

Voice Mail System Card

Matrix ETERNITY offers an option of integrated, "in-skin" voice mail. Voice Mail card can manage 16 simultaneous calls. It has capacity of 512 mailboxes with adequate storage capacity.

SOFTWARE FEATURES LIST

- 3G Network Support
- Allowed and Denied Lists
- Automatic Number Translation
- Call Budget on Trunks
- Call Detail Recording (CDR)
- Call Maturity
- Call Duration Control (CDC)
- Caller Line Identification Presentation (CLIP)
- Call Progress Tones
- CLI based Routing
- CUG over GSM/3G
- Day Light SavingDirect Dial-In (DDI) Routing

- Emergency Number Dialing
- Fax over IP – T.38 and Pass-Through
- Fixed Number Dialing
- IMEI Number
- Jeeves - Web-based Programming Tool
- Least Cost Routing
- Multi-Stage Dialing
- Network Selection
- Peer-to-Peer Calling
- Phone Book (Number Lists)
- Port Status
- QSIG

- Remote Programming
- SIM PIN
- SIM PUK
- SIP Accounts
- Speech Gain Setting
- System Activity Log
- System Fault Log
- Time Tables
- Time Zones
- Universal Routing
- Voice Prompts
- Voice Mail

HARDWARE FEATURES LIST

- 19" Sub-Rack
  (ETERNITY ME10S, GE12S and PE6SP)
- Compact and Sturdy Design
- Distributed Processing Architecture
- Quad-Band Support

- High Density Switching
- Hot Swap (ETERNITY ME)
- Modular Architecture
- Printer Port (ETERNITY ME)
- Real Time Clock (RTC)

- Redundancy (ETERNITY ME10SDC)
- RS232C Ports
- USB Port
- Universal Slot Architecture
- Wall and Table-Top Mounting

For detailed technical information, please refer ETERNITY Technical Specifications Brochure.

ABOUT MATRIX

ISO 9001 Company, Matrix is a leader in Telecom and Security solutions for modern businesses and enterprises. An innovative, technology driven and customer focused organization; the company is committed to keep pace with the revolutions in the telecom and security industries. With around 30% of its human resources dedicated to the development of new products, Matrix has launched cutting-edge telecom products like IP-PBX, Universal Gateways, VoIP Gateways and Terminals, GSM Gateways, Access Control and Time-Attendance Systems and Fire Alarm Systems. These solutions are feature-rich, reliable and conform to the international standards. Having global foot-prints in Asia, Europe, North America, South America and Africa through an extensive network of more than 500 channel partners, Matrix ensures that the products serve the needs of its customers faster and longer. Matrix has gained trust and admiration of more than 150,000 customers representing the entire spectrum of industries. Matrix has won many awards for its innovative products.

CE   FC   RoHS COMPLIANT

For further information contact:

MATRIX

TELECOM SOLUTIONS

MATRIX COMSEC PVT. LTD.

394-GIDC, Makarpura,
Vadodara-390010, India.
Phone: +91 265 2630555
Fax: +91 265 2636598
Email: Inquiry@MatrixComSec.com
SMS 'MATRIX' to 99987 55555
www.MatrixComSec.com

Due to continuous technology upgradations, product specifications are subject to change without notice.