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Mediatrix® 3000 Series

The Mediatrix 3000 Series are multi-function devices combining VoIP IAD, Gateway, IP Router, NAT/Firewall and QoS control in a secure and powerful platform.

This platform, featuring R2 CAS E1, ISDN E1 PRI, T1 PRI, BRI, or FXS/FXO interfaces, provides an ideal solution for enterprise voice applications or for connecting to a service provider's broadband access.

With FXO interfaces, it is the ideal solution to deploy private or hosted toll bypass networks. It provides a simple, transparent and cost-effective way of maintaining a connection to the PSTN.

The Mediatrix 3000 Series also allows Enterprises Service Providers, and System Integrators to deploy secure systems and generate additional revenue streams.

Key Benefits

- Feature rich carrier grade product
- Analog FXS/FXO, ISDN BRI, ISDN T1/E1 PRI, or R2 CAS E1 interface ports
- Deployable in SIP VoIP networks
- Up to 60 simultaneous calls
- Secured SIP signalling and media transmission
- User programmable call handling
- Networking features: complete VoIP-enabled IP router
- Security features: NAPT/Firewall, SNMPv3, SSH, HTTPS. Hardware ready and enhanced capable to support SRTP and SIP over TLS
- Proven voice algorithms implemented on dedicated DSP engine for voice quality on each interface card
- Fax over IP support, including T.38
- Multiple codec support
- Can support local VoIP network
- Remote management capabilities

- May be synchronized via the Remote clock synchronization feature ('Master' unit required) – Mediatrix 3400 models.

Mediatrix 3000 Overview

Designed specifically for enterprise applications, the Mediatrix 3000 Series gateways make use of existing broadband access equipment to connect to any standards-based VoIP network.

The Mediatrix 3000 series gateways meet the requirements of enterprises that want to connect their Analog or ISDN/R2 CAS equipment, such as PBXs, through a FXS, BRI, or PRI interface to an IP network or as a gateway to the PSTN.

The Mediatrix 3000 offers security features such as TLS, SRTP, certificates management, and HTTPS designed to bring enhanced security for the network management, SIP signalling and media transmission aspects.

The Mediatrix 3000 series is targeting:

- Enterprises with branch offices and remote offices, including SOHOs
- Enterprises seeking access to the benefits of Voice over IP without discarding existing legacy equipment
- Enterprises wishing to implement Voice over IP through a gradual, transparent, and cost-effective migration.
- Multi-tenant / multi-dwelling units and premises wishing to implement Voice over IP while maintaining existing wiring and handsets.
- Enterprises looking to implement secure RTP (SRTP) and Secure SIP (SIPS).

![Mediatrix 3000 Series logo]

- The Mediatrix 3000 series platforms are available with different packages including the Basic Digital Gateway or the Secure Controller add-on.

Applications

The Mediatrix 3000 VoIP gateways allow any office to use an existing IP network for lower-cost voice communications.

The Mediatrix units link any standard R2 CAS E1, ISDN E1 PRI, T1 PRI, BRI, or FXS/FXO connection to the IP network and deliver the clarity of toll quality voice for a comprehensive VoIP solution.

T.38 FoIP, fax bypass, and modem bypass capabilities ensure that the Mediatrix 3000 gateways seamlessly transport voice and data services. The Mediatrix 3000 gateways offer flexibility and scalability for VoIP network integration and low bandwidth voice.

With configurable FXS/FXO, NT/TE BRI/PRI ports, call-switching, and user-programmable call routing (including caller/called ID), Mediatrix 3000 gateways integrate smoothly into existing PBX and PSTN networks.

The Mediatrix 3000 series provides a gateway to the PSTN for IP-based PBX and Key Systems. Thereby, it allows the deployment of VoIP Remote Line Extension and Branch Office Connectivity solutions without sacrificing any local PSTN access points.

By connecting CO lines from a selected site to VoIP networks, the Mediatrix 3000 series enable service providers and enterprises to use VoIP connections between pre-determined local networks.

Mediatrix 3000 Hardware Models

Mediatrix 3208 / 3216

- 6 FXO ports + 2 FXS ports card
- 1 or 2 cards
- Up to 16 simultaneous calls

Mediatrix 3404 / 3408 - BRI

- 5 x ISDN BRI ports software configurable as NT or TE per card
- 1 or 2 BRI cards
- 8 or 16 simultaneous calls
- Configurable point-to-point, point-to-multipoint and connector pinout
- Cut-through relay for emergency operation (bypass connection)
- Optional power feeding module

Mediatrix 3531 / 3532 –T1

- 23 or 46 simultaneous calls
- 1 or 2 ISDN PRI ports
- NT/TE software configurable

Mediatrix 3621 / 3631 / 3632 –E1

- 15, 30 or 60 simultaneous calls
- 1 or 2 ISDN/R2 CAS PRI ports
- NT/TE software configurable

Mediatrix 3731

- 1xT1/E1 card software configurable as NT or TE
- 7 FXS ports + 1 Bypass port card
- Up to 37 simultaneous calls

Mediatrix 3732

- 1 x 6 FXO ports + 2 FXS ports card
- 1xT1/E1 card software configurable as NT or TE
- Up to 38 simultaneous calls

Mediatrix 3734

- 1xT1/E1 card software configurable as NT or TE
- 5 x ISDN BRI ports card software configurable as NT or TE
- Up to 38 simultaneous calls

Mediatrix 3741

- 7 FXS ports + 1 Bypass port card
- 5 x ISDN BRI ports card software configurable as NT or TE
- Up to 15 simultaneous calls

Mediatrix 3742

- 6 FXO ports + 2 FXS port card
- 5 x ISDN BRI ports card software configurable as NT or TE
- Up to 15 simultaneous calls

Technical Specifications

Voice Processing

- Vocoders: G.711 (A-law, µ-law), G.723.1, G.726, G.729a/b
- G.168 echo cancellation
- DTMF detection and generation
- Carrier tone detection and generation
- Silence detection / suppression and Comfort Noise Generation level software adjustable
- Configurable dejitter buffer
- Configurable transmit packet length
- RTP/RTCP - RFC 1889, RFC 1890, RFC 2833, RFC 3389

Enhanced Security

- HTTPS, for the exchange of Configuration File and web pages.

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- SRTP with MIKEY or SDES.
  - Supported Cypher
    - AES – 128 bits
- MIKEY key management protocol (RFC 3830 and 4567).
- SDES key management protocol (RFC 4568).
- X.509 Certificate management.
- TLS transport method.
  - Supported Key Exchange Mechanism:
    - RSA
    - Diffie-Hellman
  - Supported Cyphers (minimum):
    - AES (128 and 256 bits)
    - 3DES (168 bits)

Fax and Modem Support
- Fax over IP
- T.38 Fax relay (9.6 k, 14.4 k)
- G.711 Fax and Modem Bypass
- Clear channel (G.711) or T.38
- T.38, fax tone detection and pass-through on G.711 and G.726

IP Telephony Protocol
- SIP
- Multiple SIP Proxy support via DNS SRV

Management
- SNMPv3, HTTP, FTP, TFTP, HTTPS
- TR-069 for massive deployments (optional feature available at purchase time)
- Auto-provisioning for VoIP parameters
- Automatic firmware download
- User-friendly web Pages for VoIP Parameters

ISDN Signaling
- Euro ISDN EDSS-1 / ETSI PRI/NET5
- ETS 300 011 (ISDN PRI UNI)
- ETS 300 012-1 (ITU-T I.430)
- ETS 300 402-2 (ITU-T Q.921)
- ETS 300 403-1/2 (ITU-T Q.931)
- ETS 300 102-2 (ITU-T Q.931)
- ISDN NI-2 (US T1 PRI)
- ISDN DMS100 (US T1 PRI)
- ISDN 5ESS (US T1 PRI)
- ISDN speech, audio and data (Fax Gr 4, UDI 64, RDI 64)
- ECMA-143 (QSIG-BC)

CAS Signaling (Mediatrix 3600 Series)
- E1 R2 Digital Line Signalling (ITU-T Q.421)
- E1 R2 MFC Interregister Signalling (ITU-T Q.441)
- Country-specific R2 settings for Brazil, Argentina, Mexico and Saudi Arabia

Call Routing
- Local switching
- Interface hunt groups
- Routing Criteria
  - Interface
  - Calling/called party number
  - Time of day, day of week, date
  - ISDN bearer capability
- Number manipulation functions
  - Replace numbers
  - Add/remove digits
  - Multiple remote gateways
  - PLAR
- Call properties manipulations
- SIP header manipulations

QoS Marking
- TOS/DiffServ
- IEEE 802.1p/Q

WAN Connection
- 1 x 10/100 BaseT Ethernet RJ-45 connector

IP Routing NAT and Firewall
- NAT/PAT/Firewall
- Statefull inspection
- Static routes
- Source-based routing
- IP filtering and Port forwarding
- DHCP Client
- DHCP Server
- PPPoE client
- VLAN support

QoS / Traffic Control
- 802.1q priority tagging
- TOS/DiffServ tagging

LAN Switch
4 Ethernet 10/100 Base-T Ethernet RJ-45 ports

Enhanced Telephony Features
- Call Forward / Call Transfer / Conference Call / Call Waiting support
- Inter-digit timer and IP dialing
- Echo Cancellation / Dynamic Jitter Buffer / Voice Activity Detection / Silence Suppression
- Message Waiting Indication, via FSK
- Flash hook event signaling
- Caller ID Generation (Name & Number) as per Bellcore DTMF or FSK
- CCNR / CCBS
- PRACK & UPDATE

- Multiple Virtual Gateways

Physical Specifications

Operating Environment
- Operating temperature: 0°C to 40°C.
- Storage temperature: -20°C to $+70^{\circ}$C
- Humidity: up to 85 %, non-condensing

Power Supply
- Internal 100-240 VAC power supply

Mechanical
- Rack mount, Desk mount, Wall mount
- 2 interface card slots
- Stackable units to increase port count

Dimensions
- Height: 4.4 cm (1.73 in.) approx.
- Width: 44.5 cm (17.5 in.) approx.
- Width (mounting brackets): 48.5 cm (19 in.) approx.
- Depth: 20.5 cm (8 in.) approx

Ordering Models

	Analog	BRI	T1 PRI	E1 PRI
Analog Gateway	Mediatrix 3208 Mediatrix 3216	N/A	N/A	N/A
Digital Gateway	N/A	Mediatrix 3400 DG	Mediatrix 3500 DG	Mediatrix 3600 DG
Hybrid Gateway	Mediatrix 3731 Mediatrix 3732 Mediatrix 3741Mediatrix 3742	Mediatrix 3734 Mediatrix 3741 Mediatrix 3742	Mediatrix 3731 Mediatrix 3732 Mediatrix 3734	Mediatrix 3731 Mediatrix 3732 Mediatrix 3734