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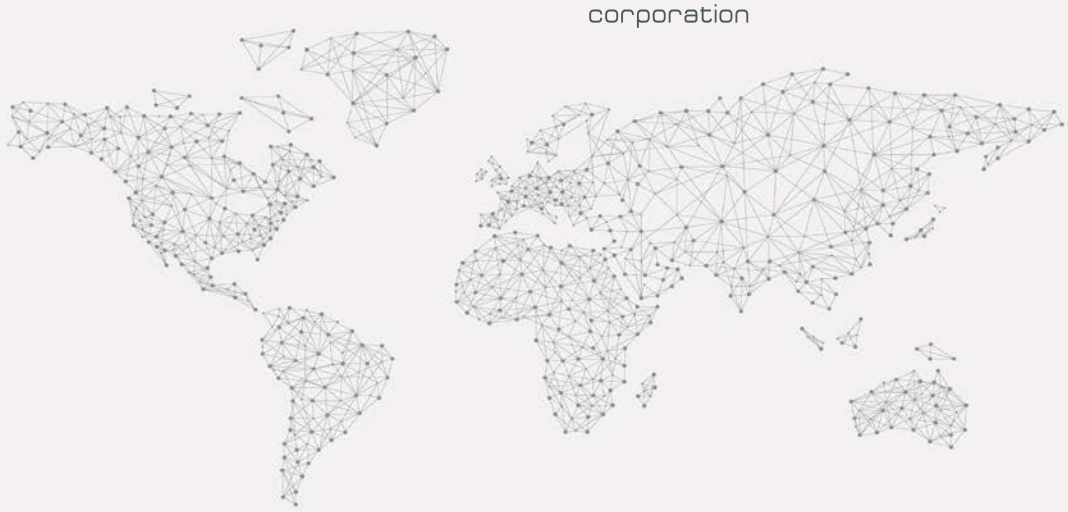

Mediatrix® Sentinel 400 SBC

The Sentinel 400 bundles the capabilities of a Session Border Controller and a Media Gateway, featuring E1/T1 PRI, ISDN BRI, FXS, and FXO interfaces. Robust, field-upgradable, and ready for third-party software integration, this multi-service business platform is designed for medium and large enterprises. Sentinel 400 is ideally targeting applications for up to 2000 users.

The Sentinel 400 delivers a flexible architecture designed to address a variety of applications including security, demarcation point, SIP normalisation, and survivability.

Survivability

Sentinel ensures service continuity by establishing external calls through the PSTN or the secondary trunk and by routing internal calls when the primary network is temporarily unavailable.

SIP Normalisation

Sentinel normalises major vendor SIP signaling protocols into a single well-defined interface that can be adapted to any specific IMS or Softswitch implementation.

Network Demarcation

Create a clear separation between the enterprise's and the operator's networks by hiding the topologies and credentials, and by blocking unauthorised users.

Integration with Third-Party Applications

Sentinel provides an open environment for system integrators to bundle their own applications into a business-class multi-service platform, increasing CPE investment profitability while addressing customer needs.

Housekeeping

Sentinel monitors the quality of service and provides enhanced remote troubleshooting tools to understand and resolve issues affecting the service.

Remote Users

Sentinel solves far-end NAT traversal problems and supports SIP manipulations, providing communication service access to branch offices, home workers, or travellers as if they were on the same site.

Mediatrix® Sentinel 400 SBC

Applications

Operators

- ✓ Facilitate TDM replacement projects, fully migrating to SIP or integrating the current legacy equipment
- ✓ Ensure security, protection against fraud, and interoperability for SIP trunk deployments
- ✓ Provide survivability and QoS in Hosted Unified Communications/PBX deployments

System Integrators

- ✓ Safely connect branch offices and mobile workers to the enterprise PBX or UC system
- ✓ Integrate 3rd-party applications in a single box for niche markets
- ✓ Perform SIP normalisation translating any vendor implementation into a single well-defined SIP interface
- ✓ Allow cost-effective and profitable SIP deployments in a smooth integration with legacy telephone systems
- ✓ Create a shield of confidentiality between the enterprise and the public network

Key Features

Carrier-Grade Features

T.38 and clear channel fax over IP

High performance processing of up to 240 voice channels

Easy Configuration and Management

Zero-touch configuration

Intuitive Web GUI

Customisable factory settings

Networking

Dual-stack IPv6 and IPv4

Multiple IP addresses and VLANs

NAT, firewall, and router capabilities

Robust Security

Enterprise communication encryption

SIP-enabled firewall inspects and authorises communications and prevents DoS attacks

Field Upgradability

Scalable and modular design allows adding interface cards as enterprise needs to evolve

Third-party application integration

Open environment allows easy integration of third-party software

Benefits

- ✓ High quality built and carrier-grade validation standards contribute to the industry's most reliable platform
- ✓ Extensive TR-069 support for an easy management of large-scale deployments with a centralised EMS
- ✓ Superior rule-based SBC with dynamic routing and manipulations for solving complex deployment scenarios

Technical Specifications

Session Border Controller
Back-to-Back user agent
SIP header manipulation
SIP registrar
SIP authentication
SIP failover
Registration throttling/caching
Call forking
Advanced, rule-based, call routing
Dynamic call routing based on:
• Peer monitoring state
• Registration cache
Call Admission Control (CAC), per trunk, based on:
• Call volume
• Bandwidth usage
• Concurrent calls
Near and far-end NAT traversal
Audio and video media relay
Codec filtering
SIP and media encryption
UDP/TCP/TLS interworking
DTMF interworking

Virtual Machine Support
Up to 2 virtual machines
Up to 8 GB RAM (1 GB is reserved for Mediatrix host application)
Up to 240 GB SSD storage (16 GB is reserved for Mediatrix host application)

Media Processing
G.711 (A-law and µ-law), G.722, G.726, and G.729a/b; G.168 echo cancellation
DTMF detection and generation
Carrier tone detection and generation
Silence detection/suppression and comfort noise
Configurable de-jitter buffer and packet length
Packet loss concealment

Enhanced Security
Signaling and media topology hiding
Denial of Service (DoS) protection of core and enterprise networks
Call rate limitation
SIP over TLS
SRTP with AES cipher – 128 bits
SDES key management protocol (RFC 4568)
TLS-encrypted configuration and management
X.509 certificate management
OCSP (Online Certificate Status Protocol) revocation status verification
TLS Version 1.2
Secure TLS ciphers like ECDHE with AES-256 and SHA-384

Management
Zero-touch provisioning
TR-069, TR-104, and TR-111
Web GUI
SSH and TELNET
SMNP v1, v2c, and v3
Scripts/firmware files uploaded via HTTP, HTTPS, FTP, and TFTP
Dual firmware banks
Multiple levels of management access rights
Customisable CDR
Event notifications via Syslog, SIP, log file, and SNMP traps
Remote activation of service licenses

Monitoring and Troubleshooting
Alarms and traps
Call quality reporting (eMOS) (RTCP-XR as per RFC 6035)
Call Details Record (CDR)
Subscriber's active registration and call monitoring
Media quality statistics
System: CPU and memory usage
PCM capture
IP network capture
Diagnostic traces

Quality of Service (QoS)
Bandwidth limitation and traffic shaping
TOS/DiffServ
IEEE 802.1p/Q

IP Telephony Protocol
SIP (RFC 3261) over UDP, TCP, and TLS
IMS (3GPP TS 24.229)
RTP (RFC 3550)
SDP (RFC 4566)
Multi-part body support
Redundancy support via DNS SRV
Multiple trunk support
IPv4 and IPv6 dual stack signaling and media

Digital Telephony
Euro ISDN EDSS-1/ETSI PRI/NET5 BRI/NET3
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, and RDI 64)
ECMA-143 (QSIG-BC)
E1 R2 digital line signaling (ITU-T Q.421)
E1 R2 MFC inter-register signaling (ITU-T Q.441)
Presets for: Brazil, Argentina, Mexico, Saudi Arabia, Venezuela, Philipines, and ITU-T
T1/E1 E&M (Immediate, Wink-Start, Feature Group-B, and Feature Group-D), MF-R1, DTMF
Advice of Charge AOC-D and AOC-E (ETS 300 182)

Analog Telephony
Support for call forward, call transfer, conference call, call waiting, CCNR, and CCBS
Multiple country presets
Customisable tones and ring patterns
Echo cancellation
Message Waiting Indication (MWI), via FSK and voltage (80v)
Caller ID detection (name & number) as per Bell-core FSK
On-hook/off-hook caller ID generation (name & number) as per Bell-core DTMF or FSK and Telebras BINA
Answer and disconnect signaling

Fax and Modem Support
Group 3/super G3 fax real-time fax over IP
T.38 fax relay (9.6 k and 14.4 k)
Clear channel (G.711) fax and modem pass-through

Networking
IPv4 – IPv6
Multiple IP addresses per link or VLAN
Multiple VLANs per link
DHCP client
PPPoE (RFC 2516)
IEEE 802.1q + DSCP QoS tagging (media, signaling, and mgmt)
IEEE 802.1x wired authentication
LLDP-med (ANSI/TIA-1057)
QoS traffic shaping
Firewall with stateful inspection, rate-limitation, and automatic black-listing
Static routing
NAPT
DHCP Server

Power Supply
Single or dual internal 100-240 VAC power supply
Optional 48 VDC PSU available

Physical Interfaces
5 x 10/100/1000 BaseT Ethernet RJ-45 connectors
2 x TDM sync RJ-45 connectors
2 x USB 2.0 Type-A connectors
1 to 8 x RJ-48 E1/T1 connectors*
4, 8, 12, 16, 20, 24, or 28 x RJ-48 BRI S/T connectors*
4, 8, 12, 16, 20, 24, or 28 x RJ-11 FXS connectors*
4, 8, 12, 16, 20, 24, or 28 x RJ-11 FXO connectors*
(*Depending on configuration)

Operating Environment
Operating temperature: 0°C to 40°C
Storage temperature: -20°C to 70°C
Humidity: up to 85%, non-condensing

Dimensions
Height: 4.4 cm
Width (mounting brackets): 48.5 cm
Depth: 33 cm
Weight: 7Kg approx.

Ordering
Customers can order individual modules or a combination of them assembled from factory into a Sentinel base unit.
SBC licences can be later uploaded for service activation. Sentinel also offers optional redundant power supply and 48 VDC unit.

Module	Description
Base Unit	1 WAN + 4 LAN Gigabit Ethernet 8 slots for telephony cards
Telephony Cards	1 x PRI port card 4 x BRI port card 4 x FXS port card 4 x FXO port card DSP card (when using FXS/FXO/BRI)
SBC Licenses	Maximum 2000 No extra license required
Mounting	Rack
Network	5 x 10/100/1000 Base-T

This datasheet applies to model: S.

media5 corporation **A Trusted Partner**

Media5 Corporation is a global supplier of multimedia communication solutions, offering a complete set of IP-based products and technologies.

With a focus on innovation and excellence in customer support, we deliver highly adaptive hardware and ready-to-market software components. This allows our customers and partners to take advantage of secure, reliable, and comprehensive communication solutions.

Present in more than one hundred countries, Media5 has its headquarters in Canada and local representatives in North and Latin America, Europe, and the Middle East.

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