



# Mediatix<sup>®</sup> Sentinel 400 SBC

The Sentinel 400 bundles the capabilities of a Session Border Controller and a Media Gateway. 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 250 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

## Media Processing

G.711 (A-law and  $\mu$ -law), 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

## 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  
Supported TLS key exchange mechanism:  
• RSA  
• Diffie-Hellman  
Supported TLS ciphers (minimum):  
• AES (128 and 256 bits)  
• 3DES (168 bits)

## 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

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 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  
RTCP-XR – special order

## 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  
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, Philippines, 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, 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  
Caller ID detection (name & number) as per Bell-core FSK  
On-hook/off-hook caller ID generation (name & num-

ber) 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

### 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

### Operating Environment

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

### Power Supply

Internal 100-240 VAC power supply

### 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 FXS ports card 4 x FXO ports card DSP card (when using FXS/FXO)
SBC Licenses	No restrictions on number of users/registrations Individual session 10 session package

*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 SIP-based products and technologies.

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

Mediatrix access devices include a complete set of VoIP Adaptors, Media Gateways, and Session Border Controllers customer premise equipment to connect any network to cloud telephony services.

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