# Mediatrix® Sentinel 100 Hybrid SBC

The Sentinel 100 Hybrid SBC combines a Session Border Controller and a Media Gateway in a robust multi-service business platform capable of addressing complex needs for SMBs. Sentinel 100 goes up to 120 simultaneous VoIP channels and targets applications for up to 500 users.

With a flexible architecture designed for a variety of use cases, including SIP Trunking, Hosted Services, and Unified Communications, Sentinel 100 is a trustworthy solution for any stage of SIP deployment with incomparable QoS monitoring, security, survivability, and interoperability.

Featuring support for ISDN PRI, E&M, and R2 E1/T1 CAS, Sentinel 100 is also the most reliable platform for legacy PBX connectivity and fallback to the PSTN. Sentinel SBCs are fully certified with Broadsoft softswitches.



## Survivability

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

## Remote Users

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

## 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.

## Legacy and IP Systems Integration

With its flexible configuration of FXS, FXO, and PRI telephony ports, call-switching, and user-defined call properties (including caller/calling ID), the Mediatrix Sentinel smoothly integrates legacy CPE into IP systems.

# *Mediatrix® Sentinel 100*

## Applications

### Operators

✓ Facilitate TDM replacement project by integrating the current legacy equipment in a first phase, and then complete the transition to pure SIP in a later phase, without having to replace the CPE.

✓ Ensure security, protection against fraud, and interoperability for SIP trunk deployments.

✓ Provide survivability in Hosted Unified Communications/PBX deployments by using a built-in PSTN gateway in case of a WAN failure.

### System Integrators

✓ Safely connect SIP trunks, PSTN, branch offices, and mobile workers to the enterprise TDM or IP-PBX.

✓ Allow cost-effective and profitable SIP deployments in a smooth integration with SIP-based and legacy telephone systems.

✓ Create a shield of confidentiality between the enterprise and the Internet.

## Key Features

### Carrier-Grade Features

T.38 and clear channel fax over IP

High performance processing of up to 120 voice channels

### Robust Security

Enterprise communication encryption

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

### 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

## 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 μ-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, 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, 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 & 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
Internal 100-240 VAC power supply

### Physical Interfaces
5 x 10/100/1000 BaseT Ethernet RJ-45 connectors
2 x TDM sync RJ-45 connectors
1 x USB 2.0 Type-A connector

### 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): 48.3 cm
Depth: 19.5 cm

### SBC Licensing
A license is needed for each concurrent call.
No restrictions on number of users/registrations

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|---|---|
| SBC Sessions | Up to 120 sessions |
| Registered Users | Up to 500 |
| Voice Channels | Up to 120 channels<br>Up to 4 E1/T1<br>Up to 24 FXS/FXO |
| Network | 5 x 10/100/1000 Base-T |

*This datasheet applies to model: M.*

## 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.

For additional information, contact your Media5 representative.
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