

# SV6000M

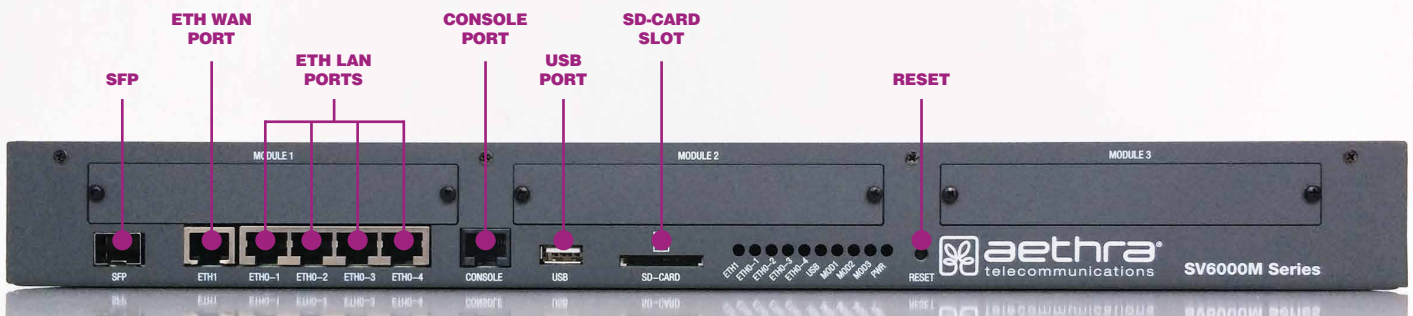
## MULTISERVICE ENTERPRISE ACCESS



### Enterprise Class Access Services

Aethra Telecommunications SV6000M is a business class router and integrated access device dedicated to small enterprises and branch offices of large enterprises.

Aethra Telecommunications SV6000M grants sustainable throughput with services, advanced L2 / L3 traffic prioritization and classification and multiple fixed and mobile WAN interfaces.



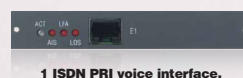
### Up to two modular WAN options and 3G / LTE with integrated SIM holder.

The onboard combo GE WAN interface can be complemented with up to two modular WAN interfaces for fixed access and one internal 3G / LTE module.



### Up to three modular voice options.

Analog FXS and FXO, ISDN BRI and ISDN PRI modules are available for the most flexible voice configurations.



SV6000M	WAN	LAN	WiFi	FXS/BRI/PRI	FXO	G.729 ch.	LTE <sup>2</sup>	USB
SV6000MW	GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 0	0	0	✓	1
SV6000MVW	1x A/VDSL2 GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 0	0	0	✓	1
SV6000MVXW	VX GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 0	0	0	✓	1
SV6000MS2W	2x SHDSL.bis <sup>1</sup> GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 0	0	0	✓	1
SV6000MS4W	4x SHDSL.bis <sup>1</sup> GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 0	0	0	✓	1
SV6000MP1W	GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 1 (PRI: NT/TE)	0	30	✓	1
SV6000MP2W	GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 2 (PRI: NT/TE)	0	60	✓	1
SV6000MP3W	GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 3 (PRI: NT/TE)	0	90	✓	1
SV6000MS2P1W	2x SHDSL.bis <sup>1</sup> GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 1 (PRI: NT/TE)	0	30	✓	1
SV6000MS4P1W	4x SHDSL.bis <sup>1</sup> GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 1 (PRI: NT/TE)	0	30	✓	1
SV6000MS4P2W	GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 2 (PRI: NT/TE)	0	60	✓	1
SV6000MS4VP1W	4x SHDSL.bis <sup>1</sup> 1x A/VDSL2 / GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 1 (PRI: NT/TE)	0	30	✓	1
SV6000MVP2W	1x A/VDSL2 GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 2 (PRI: NT/TE)	0	60	✓	1
SV6000MVP1W	VX GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 1 (PRI: NT/TE)	0	30	✓	1
SV6000MVVP1W	2x A/VDSL2 GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 1 (PRI: NT/TE)	0	30	✓	1
SV6000MVXP1W	1x A/VDSL2 VX / GbE SFP 100/1000	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 1 (PRI: NT/TE)	0	30	✓	1
SV6000MVE2P1W	2x VDSL2 35b A / VDSL2 GbE / SFP	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 1 (PRI: NT/TE)	0	30	✓	1
SV6000MVE2P2W	2x VDSL2 35b A / VDSL2 GbE / SFP	4 x GbE	802.11b/g/n, 2.4 GHz, WEP WPA1/2, WPS	0 / 0 / 2 (PRI: NT/TE)	0	60	✓	1

NOTES <sup>1</sup>ATM and EFM support; <sup>2</sup>factory option.

## TECHNICAL SPECIFICATIONS

### LED Indicators

- POWER
- MODULE (1-3)
- USB
- ETH0 (1-4)
- ETH1

### Physical Interfaces

- 1-port GbE with RJ-45 and SFP connectors (Eth1)
- 4-port GbE switch with RJ-45 connectors (Eth0)
- 1-port console with RJ45 connector
- 1-host USB
- 1-port SD Card
- 3-MODULE
- 1-2-port A/VDSL2 with RJ-11 connector
- 2-4-port SHDSL with RJ-11 connectors
- 1-port VX with DB26 connector
- 1-port ISDN-PRI with RJ-45 connector
- 4-port ISDN-BRI with RJ-45 connectors
- 4-port FXS + 4-port FXO with RJ-11 connectors

### VDSL2/ADSL2+ Network Interface

- VDSL2 interface
- support for profile 35b (Vplus - EVDSL)
- backward compatible with ADSL2/2+
- ITU-T G.993.2
- Profiles: 8a, 8b, 8c, 8d, 12a, 12b, 17a, 30a, 35b
- Full Vectoring
- Profile 17a, 30a and 35b 2-pair bonding
- DELT
- ADSL2/2+ interface
- ITU-T G.992.1 Annex A, B<sup>(4)</sup>
- ITU-T G.992.3 Annex A, B, J, L, M<sup>(4)</sup>
- ITU-T G.992.5 Annex A, B, J, L, M<sup>(4)</sup>
- T1.413
- Downstream line rate: up to 24 Mbps
- Upstream line rate: up to 1 Mbps, up to 3.5 Mbps with Annex M

### SHDSL Network Interface

- 2-4-pair ShDSL.bis interface, ATM/EFM support
- ETSI TS 101 524,
- ITU G.991.2 Annex A
- ITU G.991.2 Annex B
- ITU G.991.2 Annex F
- ITU G.991.2 Annex G
- IEEE 802.3ah EFM
- Line rate up from 72 kbps to 22800 kbps

### Frame Relay on V/X

- QoS Management
- FRF.12
- LMI: Q.933a, T1.617
- Multiprotocol over Frame Relay (RFC1490)
- DLCI bundling

### 3G/LTE

- LTE (FDD) B1/B2/B3/B5/B7/B8/B20
- DC-HSPA+/HSPA+/HSPA/UMTS dual-band B1/B2/B5/B8
- EDGE/ GPRS/ GSM quad-band 850/900/1800/1900 MHz
- Data Transfer Rate
- DC-HSPA+ :Downlink:42 Mbps, Uplink: 5.76 Mbps
- LTE FDD: Downlink:100 Mbps, Uplink: 50 Mbps @Bandwidth 20M (CAT3)

### ATM

- Services
- Up to 8 VCCs
- Class of Services (CBR, VRB-rt, VBR-nrt, UBR+, UBR)
- Voice and Data packets over different VCCs (VC bundling)
- Selective CLP marking
- F4/F5 OAM cells, AIS and RDI
- ATM: ITU T-I.361, ITU T-I363.5, ITU T-I432, ITU T1610, ITU T-I731
- Access protocols
- IP over AAL-5, Ethernet over AAL-5 (RFC2684)
- PPP over AAL-5 (RFC2364)
- PPP over Ethernet (RFC2516)
- LLC/SNAP and VC encapsulation
- Multiprotocol Interconnect over Frame Relay (RFC1490 Bridged, RFC1490 Routed)

### WiFi Interface

- IEEE 802.11b/g/n
- WEP encryption
- WPA1 and WPA2
- IEEE 802.1x authentication
- MAC filtering

### Voice Interfaces

- FXS
- Compliant to Q.552 requirements
- Port impedance: real 600Ω or complex Euro values
- Low distortion ringing voltages
- Diagnostic features
- FXO
- Compliant to ETSI TBR 21 requirements
- ISDN-BRI

- 4-port NT/TE VOICE (2-port TE DATA)
- Fully compliant to L1 standards (ETSI ETS 300 012)
- PP and PMP configuration
- ISDN-PRI
- 1-port NT/TE with RJ-45 connector
- Balanced E1 G.703/G.704
- Fully compliant to L1 standards (ITU-T I.413, ETSI ETS 300 011)
- Euro ISDN EDSS-1
- ETS 300 125 (ITU-T Q.921)
- ETS 300 102-1 (ITU-T Q.931)

### Voice Processing

- Voice Codes
- ITU-T G.711 (A-law, μ-law)
- ITU-T G.729a (Factory Setup Option)
- Transparent pass-through
- ITU-T G.165/G.168 echo cancellation
- Voice Activity Detection and Comfort Noise Generation
- RTP/RTCP (RFC1889)
- Up to 90 Voice Channels VoIP

### Signalling

- Euro ISDN EDSS-1
- ETS 300 125 (ITU-T Q.921)
- ETS 300 102-1 (ITU-T Q.931)
- SIP 2.0 according to RFC 3261 (TCP or UDP transport)
- En-block and Overlap sending
- ISDN speech, audio and data (Fax Gr 2/3)
- DTMF detection and carrying (RFC2833), DTMF info
- Local Generation of
- Dial tone
- Ring back tone (180 Ringing reply)
- Call Waiting tone- Busy tone
- Fast Busy tone

### Fax and Modem Support

- T.38 fax relay
- Automatic G.711 Fax and Modem Pass-Through

### Supplementary Services <sup>(1)</sup>

- Locally managed <sup>(2)</sup> or Softswitch-based
- Call hold
- Consultation call
- Call waiting
- Call forwarding
- Caller Identity Presentation (CLIP), DTMF and FSK based
- Identity restriction
- Call transfer
- 3party conference (FXS only)
- MSN

### DDI Bundle

- GNR Management
- Multi-port to one number association and vice versa
- Multi-port to multi-number range association

### IP Functions

- IP Routing
  - RIP v1/v1c/ v2, BGP, OSPF
  - VRF-Lite
  - Enhanced Network Address and Port Translation (NAPT) engine, with multiple
  - ALGs (including SIP, TFTP and H.323)
  - DHCP Server/Client/Relay, DHCP Learning
  - Multicast IGMP v1/v2/v3, PIM-SM, Static
- Routing Filtering Redistribution
- Firewalling
- Extended Access Lists
- Stateful Packet Inspection including Denial of Service attacks
- IP Services
  - DNS proxy
  - DDNS client
  - VPN (GRE, IP, PPTP server/client)
  - IPSec with DES, 3DES and AES
  - ICMP, IGMP snooping, Telnet, TFTP
  - Layer 3 QoS according to DiffServ model (RFC2474, RFC2475)
  - Priority based queuing (Absolute Priority, WFQ, RED)
  - Extensive monitoring, tracing and troubleshooting facilities

### Ethernet Services

- Self Learning Bridge with up to 1k MAC addresses and automatic ageing
- Full-Duplex IEEE 802.3x
- Half-Duplex back pressure flow control
- Automatic MDI/MDI-X crossover
- Broadcast/Multicast storm protection
- VLANs (802.1Q and 802.1p) port based management
  - Tag/Re-Tag/Untag
  - Trunking (VLAN multiplexing)
  - Priority based queuing

### Authentication

- PAP/CHAP/MS-CHAPv1 and v2 authentication
- Basic and Digest schemes (RFC2617) Service Resiliency
- ISDN backup
- VRRP (RFC2338)
- Dial on Demand Routing

### Management & Configuration

- Password Protected Access
  - 2 login levels + configurable privilege access right
  - AAA and local authentication
  - TACACS+
- Local Management
  - Console port
  - Extensive CLI
- Remote Management
  - CLI (internal Telnet Server)
  - HTTP (embedded WEB Server)
  - HTTPS (embedded Secure HTTP WEB Server)
  - SNMP Agent (v1, v2c, v3)
  - SSH
  - Syslog
  - Network Performance Monitor
  - Ping MIB
  - TR-069 <sup>(3)</sup>
- Firmware upgrades: Local and Remote (TFTP & FTP client embedded)

### Ethernet OAM functionality

- Link Layer OAM (IEEE 802.3ah OAM)
- Service Layer OAM (IEEE 802.1ag Connectivity Fault Management)
- ITU-T Y.1731 Performance Monitoring
- SAM according to ITU-T Y.1564

### Environment

- Operating Temperature:
  - 5° ÷ 45°C (23° ÷ 113°F)
- Non-Operating Temperature:
  - 40° ÷ 70°C (-40° ÷ 158°F)
- Operating Humidity:
  - 10 ÷ 93% (noncondensing)

### Compliance & Approvals

- Storage:
  - ETSI EN 300 019-2-1 T 1.3
- Transportation:
  - ETSI EN 300 019-2-2 T 2.3
- Operating Conditions:
  - ETSI EN 300 019-2-3 T 3.2
- EMC:
  - EN 55022, EN 55024,
  - EN 61000-3-2, EN 61000-3-3
- Protection: ITU-T K.21
- Safety: EN 60950-1

### Physical Dimensions

- 430mm x 202mm x 45mm (1 rack unit)

### Weight

- Chassis Only: 2,4kg

### Power

- External power supply
- AC input voltage: 100-240 Vac
- AC input frequency: 50/60 Hz
- AC input current: max 1,2A

### NOTES

<sup>(1)</sup> Supplementary Services management is not yet fully standardised by international bodies and their implementation could be subject to revisions

<sup>(2)</sup> Depending on the specific service, a common implementation between the IAD and the Softswitch needs to be agreed

<sup>(3)</sup> TR-069 available under license

<sup>(4)</sup> For Annex B and Annex J support please contact your sales representative

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