

The AEP Series V is a chassis based platform that provides a robust, reliable and highly supportable solution to the demand for multi-service communication and vastly increased bandwidth efficiency. Enabling the full range of voice and data services between organisations' headquarters and their regional and often remote branch locations, AEP Series V is the result of many years' experience in delivering converged solutions in complex environments.



Advanced digital and analogue voice functionality

The AEP Series V platform provides flexibility to customers by combining both digital and analogue capability in a single solution. The digital voice module integrates with Vados bandwidth management to deliver optimal efficiency whilst preserving toll-quality voice. Network designers can choose between communication technologies to best suite their specific requirements. The Series V platform supports VoIP VTES, VoIP SIP and VoFR, using switched Frame Relay. Calls can be routed on the basis of call set up information or CLID, and can onward connect to either another digital channel or an analogue line. Interconnection of two similar PBX systems is also possible, with voice compression and transparent handling of the HDLC based D channel. The analogue voice modules are available to support FXS, FXO and E&M interfaces and are used in conjunction with the DVI module to provide compression and analogue-to-digital conversion. Each analogue card has four ports and may be used in combination with each other.

BENEFITS

- High bandwidth efficiencies and savings
- Service enablement
- Converged voice and data services
- Lower TCO
- Revenue enhancement
- Proven reliability
- Future proof design
- Toll quality voice over limited bandwidth
- Embedded QoS security capabilities

FEATURES

- Multi-service support
- Bandwidth management
- Toll quality voice with bandwidth compression
- Digital & Analogue Voice
- High reliability
- Flexible chassis based platform

Delivering specialist convergence solutions across the enterprise

The Series V platform addresses the challenges of enterprise and service provider customers who have specialist communication convergence needs, combining flexible support for a wide range of protocols with digital and analogue voice services. Thanks to its high port density capability, the Series V serves the communication needs of organisations that have a large user footprint at their branch locations.

Reliability and flexibility

The Series V modular chassis provides for truly scalable convergence solutions in a single platform. Available in either a 7 or 13 slot configuration, each individual system can be built to match the specific requirements of its application. It utilizes the CPU-F or, for multi-processor and hot swap functionality, the DUO-F. The ongoing development of each provides a highly reliable CPU boasting many up-to-date features.

Key features at a glance

CPU-F & DUO-F features

- Dual WAN ports up to 2.048Mbps each
WAN interfaces:
V24, V11, V36 (RS449) & V36 interim (V35 software selectable)
Unstructured G.703, 75ohm or 120ohm
- Two 10/100Mbps Ethernet ports
- WAN port bonding
- Flash based and battery backed configuration areas
- Two Flash areas for operating code updates
- SNMP management via megaWATCH or other NMS
- Environmental monitoring system
- Compression/Encryption DSP Module (future roadmap)

Voice software features

- User selectable compression algorithms supported:
G.711 PCM @ 64Kbps (μ Law or A Law)
G.727 E-ADPCM @ 16, 24, 32 or 40Kbps
G.726 ADPCM @ 16, 24, 32 or 40Kbps
G.723.1 MP-MLQ @ 5.3 or 6.3Kbps
G.729 CS-ACELP @ 8KbpsNETCODER™ @ 6.4, 7.2, 8, 8.8 or 9.6Kbps
- G.165 Echo cancellation up to 16ms
- Silence compression or suppression with comfort noise generation
- User configurable voice and tone volume
- User configurable tones for different countries
- DTMF detection and generation
- Tone pair generation
- Bad frame interpolation
- Automatic voice/fax switching
- Software upgradeable

Digital Voice Module (DVM)

- Slot in module with primary rate interface supporting 10, 20 or 30 voice, fax or modem calls
- 2Mbps PRI to G.703 (RJ45), G.704 structure with signalling to Q.931
- Modem support to 14.4Kbps, V32bis & V34 (V22 via special order)
- Voice compression – see voice software features
- IDLE support – releasing unused bandwidth for data
- SS7 support in both transparent and ‘spoofed’ mode

Analogue Voice Modules

FXS

- 4 telephone interface ports
Link selectable ring setting – country specific settings
Onboard PSU supplying battery and ring voltages
TBR/Hook Flash detection

FXO

- 4 Exchange line interface ports
Supports both Earth and TBR/Hook Flash functions
Optional SPM filter

E&M

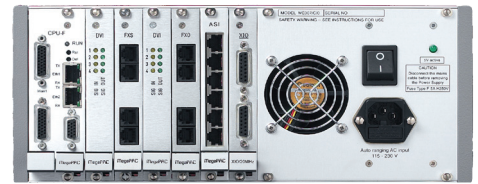
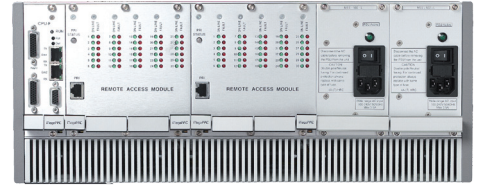
- 4 E&M interface ports
Supports either 2 or 4 wire transmission paths
Supports signalling types I, II, IV and V per port
-48VDC or +24VDC signalling
2 & 4 Wire Voice support with no signalling
Onboard PSU

All of the above to be used in conjunction with the DVI card
DVI features are described under ‘Voice software features’

The VadOS operating system

The need to integrate multiple data sources does not have to require a complex and proliferated network infrastructure that is unwieldy and difficult to support. AEP Networks provides a single platform solution that provides all the benefits of reduced capital expenditure, simplified training and engineering resource efficiency.

The core component throughout the entire AEP Networks product range is the VadOS operating system. VadOS recognises the importance of each data stream as dictated by business need and assigns a level of service integrity and quality of service while dynamically managing bandwidth for optimal use. This approach to aggregating and delivering voice and other mission critical application data streams over the most efficient transport mechanism enables our customers to intelligently handle multiple protocol communication requirements with ease.



vadOS | Functional Specifications

Serial Link Support

- Standard:
 - Vados V-TES architecture
 - Frame Relay
 - NNI/UNI, LMI (ANSI & ITU)
 - Switched & PVC
 - TCP/IP PPP (RFC 1331), SLIP
 - TPAD
 - PAP/CHAP & MLP
 - X.25 (1980 & 1984), X.32
 - OSI Transport (Class 0, 2, 3)
 - V.25bis
 - Async port up to 115.2Kbaud (X.3, X.28, X.29)
 - HDLC transparent pass-through
 - Bandwidth management
 - Auto link back-up
 - Link and Channel bonding
- Optional:
 - IBM SDLC / QLLC
 - APACs 30+40
 - X.42
 - SMDS

Terminal Emulation

- Standard:
 - TCP Telnet (Client & Server)
 - Transparent Telnet (RFC 1006)
- Optional:
 - ICL 7561
 - Hitachi T560
 - IBM 3270 (inc.Kanji)
 - Telnet (RFC 1646)

Voice Support

- Standard:
 - VoIP SIP, VoIP VTES, VoFR
 - User selectable compression algorithms:
 - G.711 PCM @ 64Kbps (uLaw or ALaw)
 - G.727 E-ADPCM @ 16, 24, 32 or 40Kbps
 - G.726 ADPCM @ 16, 24, 32 or 40Kbps
 - G.723.1 MP-MLQ @ 5.3 or 6.3Kbps
 - G.729 CS-ACELP @ 8Kbps
 - NETCODER™ @ 6.4, 7.2, 8, 8.8 or 9.6Kbps
 - G.165 Echo cancellation up to 16ms
 - Silence compression or suppression with comfort noise generation
 - User configurable voice and tone volume
 - User configurable tones for different countries
 - DTMF detection and generation
 - Tone pair generation
 - Bad frame interpolation
 - Automatic voice/fax switching
 - Fax and Modem Support
 - Non-dial connect (PVC)
 - Dial connect (Switched Frame Relay/ISDN)
 - Time Break Recall (TBR) support
 - TOS/DiffServe

IBM Networking

- Standard:
 - SDLC
 - QLLC
 - Ethernet DLC

Bandwidth Optimisation

- Standard:
 - V-TES (VADOS Proprietary)
 - IP/UDP Header compression
 - IP/UDP/RTP Header compression
 - Voice-frame multiplexing
- Optional:
 - Hardware Data Compression (LZS, MPPC)
- **TCP/IP Routing & Ethernet Support**
- Standard:
 - MAC bridging, IP routing
 - OSPF, RIP, RIP2
 - NAT/PAT
 - OSI TP4
 - GOSIP CLNS/CONS
 - BootP Client
 - DHCP client
 - DHCP Server
 - IP/UDP encapsulation with DiffServ
 - Port/Address Filtering
 - Metro Ethernet 802.1p
 - 802.1q Ethernet trunk

- Optional:
 - IPX routing, OSI ES-IS
 - DLC local termination

Security

- Optional:
 - Hardware based DES or Triple DES Encryption (subject to UK export approval)

Satellite Networking

- Standard:
 - Vados VTES
 - SCPC, TDM/SCPC (Integral Support)
 - TDMA (I-Direct, ViaSat, Hughes)
 - Inmarsat BGAN/RBGAN
 - Asymmetrical & Symmetrical clocking
 - Data Splitter/Combiner
 - TCP Acceleration
 - Serial VSAT Terrestrial Link Back up
 - IP VSAT Terrestrial Link Back up

Management Support

- Standard:
 - Local async console (RS232)
 - Virtual port for remote access
 - SNMP (MIBs: MIB2 & Enterprise)
 - megaWATCH (SNMP Management)
 - Billing and Accounting
 - Local/Remote configuration, upload, download, TFTP
 - Remote software download, TFTP
 - RADIUS
 - Internal protocol Data scope
 - Menu and Presentation Service
 - Security (Password, address validation)
- Optional:
 - IBM Netview

Optional modules are only included by special order; additional charges may be applicable.

Chassis Based Systems including CPU

V4207

V4207

7 slot chassis, Series V CPU-F which includes 2 software selectable WAN interfaces & 2 x 10/100 Ethernet Ports, single wide ranging AC Mains PSU or Optional Single 48v DC

v4213

V4213

13 slot chassis, Series V CPU-F which includes 2 software selectable WAN interfaces & 2 x 10/100 Ethernet Port, dual wide ranging AC Mains PSU or Optional Single or Dual 48v DC

Analogue Voice Modules

V-DVI

DVI Analogue Voice compression module (requires FXS / FXO / E&M interface module).

V-FXS

FXS Voice Module Interface - 4 Telephones

V-FXO

FXO Voice Module Interface - 4 Exchange Lines

V-E&M

E&M Voice Module Interface - 4 Tie Lines

Digital Voice Modules - includes a Primary Rate Module

V-DVM/10-1

Digital Voice Module, 10 channels – first system (switched)

V-DVM/20-1

Digital Voice Module, 20 channels – first system (switched)

V-DVM/30-1

Digital Voice Module, 30 Channels – first system (switched)

V-DVM/10-2

Digital Voice Module, 10 channels – second system (switched)

V-DVM/20-2

Digital Voice Module, 20 channels – second system (switched)

V-DVM/30-2

Digital Voice Module, 30 Channels – second system (switched)

V-DVM/10i-1

Digital Voice Module, 10 channels – first system (idle)

V-DVM/20i-1

Digital Voice Module, 20 channels – first system (idle)

V-DVM/30i-1

Digital Voice Module, 30 Channels – first system (idle)

V-DVM/10i-2

Digital Voice Module, 10 channels – second system (idle)

V-DVM/20i-2

Digital Voice Module, 20 channels – second system (idle)

V-DVM/30i-2

Digital Voice Module, 30 Channels – second system (idle)

Other Modules

V-DUO-F

Loosely coupled Dual Ethernet module with 2 x 10/100 support and two software selectable WAN interfaces (V11, V24, V35, V36). Includes hot swap capability

V-XIO

20MHz XIO module with 2 synchronous links at speeds up to 2.048Mbps

V-XIO-G703

20MHz XIO module with 2 synchronous links at speeds up to 2.048Mbps provided on two G703 interfaces

V-ASI-PLUS

ASI module (max 10 per chassis) provides 6 async ports up to 115Kbps or 6 sync ports up to 64Kbps with V24 presentation via RJ45 connections for both. (some restrictions apply)

V-ASI

ASI module (max 6 per chassis) provides 6 async ports up to 115Kbps or 6 sync ports up to 64Kbps with V24 presentation via RJ45 connections for both.

V-PRI

MKII Primary Rate ISDN module (supports 30B+D), Euro ISDN standard. Supports fractional E1

V-BRI

Basic Rate ISDN module (supports 2B+D), Euro ISDN standard

V-FIO

Supports 4 high speed software synchronous or asynchronous configurable WAN interfaces presented on 4 x HDR26. Max 4 FIO modules per chassis.

V-CPU-F

CPU-F (normally already supplied with VA-4207/4213)

V-FXS

FXS (needs VA-DVI)

V-FXO

FXO (needs VA-DVI)

V-E&M

E&M (needs VA-DVI)

V-COMP

Compression/Encryption Module (not yet released)

Cables

CAB-WAN-X21CP

WAN Port as an X21 DTE to an X21 DCE

CAB-WAN-X21TS

WAN Port as an X21 DCE to an X21 DTE (Socket ended)

CAB-WAN-X21TP

WAN port as an X21 DCE to an X21 DTE (Plug ended)

CAB-WAN-V35CP

WAN port as a V35 DTE to a V35 DCE

CAB-WAN-V35TS

WAN port as a V35 DCE to a V35 DTE

CAB-WAN-V24CP

WAN port as a V24 DTE to a V24 DCE

CAB-WAN-V24TS

WAN port as a V24 DCE to a V24 DTE

CAB-WAN-V36TS

WAN port as a V36 DCE to a V36 DTE

CAB-WAN-S30CP

WAN port as a V36 DTE to an RS530 satellite modem

CAB-WAN-S449CP

WAN port as a V36 DTE to an RS449 satellite modem

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