



Key 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

MegaPAC F

Product Overview

The Ultra Electronics AEP MegaPAC F 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's MegaPAC F is the result of many years' experience in delivering converged solutions in complex environments.

Advanced digital and analogue voice functionality

The MegaPAC F 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 Ultra Communicate 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.



AEP



Delivering specialist convergence solutions across the enterprise

The Ultra Communicate 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 MegaPAC F serves the communication needs of organisations that have a large user footprint at their branch locations.

Reliability and flexibility

The MegaPAC F modular chassis provides for truly scalable convergence solutions in a single platform. Available in a 13 slot configuration, each individual system can be built to match the specific requirements of its application. It utilises 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

<p>CPU-F & DUO-F features</p> <ul style="list-style-type: none"> • 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) 	<p>Digital Voice Module (DVM)</p> <ul style="list-style-type: none"> • 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
<p>Voice software features</p> <ul style="list-style-type: none"> • 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 	<p>Analogue Voice Modules</p> <p>FXS</p> <ul style="list-style-type: none"> • 4 telephone interface ports • Link selectable ring setting – country specific settings Onboard PSU supplying battery and ring voltages TBR/Hook Flash detection <p>FXO</p> <ul style="list-style-type: none"> • 4 Exchange line interface ports • Supports both Earth and TBR/Hook Flash functions Optional SPM filter <p>E&M</p> <ul style="list-style-type: none"> • 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 <p>All of the above to be used in conjunction with the DVI card DVI features are described under ‘Voice software features’</p>

The Ultra Electronics AEP 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 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 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.

Functional Specifications

<p>Serial Link Support</p> <p>Standard:</p> <ul style="list-style-type: none"> 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 <p>Optional:</p> <ul style="list-style-type: none"> IBM SDLC / QLLC APACs 30+40 X.42 SMDS <p>Terminal Emulation</p> <p>Standard:</p> <ul style="list-style-type: none"> TCP Telnet (Client & Server) Transparent Telnet (RFC 1006) Optional: ICL 7561 Hitachi T560 IBM 3270 (inc.Kanji) Telnet (RFC 1646) 	<p>Voice Support</p> <p>Standard:</p> <ul style="list-style-type: none"> 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 <p>IBM Networking</p> <p>Standard:</p> <ul style="list-style-type: none"> SDLC QLLC Ethernet DLC 	<p>Bandwidth Optimisation</p> <p>Standard:</p> <ul style="list-style-type: none"> V-TES (VADOS Proprietary) IP/UDP Header compression IP/UDP/RTP Header compression Voice-frame multiplexing <p>Optional:</p> <ul style="list-style-type: none"> Hardware Data Compression (LZS, MPPC) <p>TCP/IP Routing & Ethernet Support</p> <p>Standard:</p> <ul style="list-style-type: none"> 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 <p>Optional:</p> <ul style="list-style-type: none"> IPX routing, OSI ES-IS DLC local termination <p>Security</p> <p>Optional:</p> <ul style="list-style-type: none"> Hardware based DES or Triple DES Encryption (subject to UK export approval) 	<p>Satellite Networking</p> <p>Standard:</p> <ul style="list-style-type: none"> 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 <p>Management Support</p> <p>Standard:</p> <ul style="list-style-type: none"> Local async console (RS232) Virtual port for remote access SNMP (MIBs: MIB2 & Enterprise) megaWATCH (SNMP Management) Billing and Accounting Local/Remote configuration, download, upload, download, TFTP Remote software download, TFTP RADIUS Internal protocol Data scope Menu and Presentation Service Security (Password, address validation) <p>Optional:</p> <ul style="list-style-type: none"> IBM Netview
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Optional modules are only included by special order; additional charges may be applicable.

Chassis Based Systems including CPU	
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	
VA-DVI	DVI Analogue Voice compression module (requires FXS / FXO / E&M interface module).
VA-FXS	FXS Voice Module Interface - 4 Telephones
VA-FXO	FXO Voice Module Interface - 4 Exchange Lines
VA-E&M	E&M Voice Module Interface - 4 Tie Lines
Digital Voice Modules - includes a Primary Rate Module	
VA-DVM/10-1	Digital Voice Module, 10 channels – first system (switched)
VA-DVM/20-1	Digital Voice Module, 20 channels – first system (switched)
VA-DVM/30-1	Digital Voice Module, 30 Channels – first system (switched)
VA-DVM/10-2	Digital Voice Module, 10 channels – second system (switched)
VA-DVM/20-2	Digital Voice Module, 20 channels – second system (switched)
VA-DVM/30-2	Digital Voice Module, 30 Channels – second system (switched)
VA-DVM/10i-1	Digital Voice Module, 10 channels – first system (idle)
VA-DVM/20i-1	Digital Voice Module, 20 channels – first system (idle)
VA-DVM/30i-1	Digital Voice Module, 30 Channels – first system (idle)
VA-DVM/10i-2	Digital Voice Module, 10 channels – second system (idle)
VA-DVM/20i-2	Digital Voice Module, 20 channels – second system (idle)
VA-DVM/30i-2	Digital Voice Module, 30 Channels – second system (idle)

Other Modules

VA-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

VA-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)

VA-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.

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

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

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

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

VA-FXS - FXS (needs VA-DVI)

VA-FXO - FXO (needs VA-DVI)

VA-E&M - E&M (needs VA-DVI)

VA-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-530CP WAN port as a V36 DTE to an RS530 satellite modem
- CAB-WAN-5449CP WAN port as a V36I DTE to an RS449 satellite modem
- CAB-HDR26-V24CP HDR26 Cable connects to V24 DCE, 3m
- CAB-HDR26-V24TS HDR26 Cable connects to V24 DTE, 3m
- CAB-HDR26-X21CP HDR26 Cable connects to X21 DCE, 3m
- CAB-HDR26-X21TS HDR26 cable connects to X21 DTE, 3m
- CAB-HDR26-V35CP HDR26 Cable connects to V35 DCE, 3m
- CAB-HDR26-V35TS HDR26 Cable connects to V35 DTE, 3m
- CAB-HDR26-449CP HDR26 Cable connects to RS449 DCE, 3m
- CAB-HDR26-5449CP HDR26 Cable connects to RS449 Satellite modem, 3m
- CAB-HDR26-449TS HDR26 Cable connects to RS449 DTE, 3m
- CAB-HDR26-530CP HDR26 Cable connects to RS530 DCE, 3m
- CAB-HDR26-530TS HDR26 Cable connects to RS530 DTE, 3m
- CAB-HDR26-WAN-NS HDR26 cable to WAN stub - to be used along with CAB-WAN cable



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