

# vadACCESS™ | Product Information

The vadACCESS range 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, vadACCESS is the result of many years' experience in delivering converged solutions in complex environments.



vadACCESS

## 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

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## Delivering specialist convergence solutions across the enterprise

The vadACCESS 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 vadACCESS serves the communication needs of organisations that have a large user footprint at their branch locations.

## Reliability and flexibility

The vadACCESS 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.

## Advanced digital and analogue voice functionality

The vadACCESS 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 vadACCESS 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.

## 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’

# Product Information

## 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. Vados Systems 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 Vados Systems 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)
  - HDL 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.

# vadACCESS | Ordering Information

## Chassis Based Systems including CPU

<b>VA-4207</b>	<b>vadACCESS 4207</b> 7 slot chassis, vadACCESS 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
<b>VA-4213</b>	<b>vadACCESS 4213</b> 13 slot chassis, vadACCESS 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

<b>VA-DVI</b>	DVI Analogue Voice compression module (requires FXS / FXO / E&M interface module).
<b>VA-FXS</b>	FXS Voice Module Interface - 4 Telephones
<b>VA-FXO</b>	FXO Voice Module Interface - 4 Exchange Lines
<b>VA-E&amp;M</b>	E&M Voice Module Interface - 4 Tie Lines

## Digital Voice Modules - includes a Primary Rate Module

<b>VA-DVM/10-1</b>	Digital Voice Module, 10 channels – first system (switched)
<b>VA-DVM/20-1</b>	Digital Voice Module, 20 channels – first system (switched)
<b>VA-DVM/30-1</b>	Digital Voice Module, 30 Channels – first system (switched)
<b>VA-DVM/10-2</b>	Digital Voice Module, 10 channels – second system (switched)
<b>VA-DVM/20-2</b>	Digital Voice Module, 20 channels – second system (switched)
<b>VA-DVM/30-2</b>	Digital Voice Module, 30 Channels – second system (switched)
<b>VA-DVM/10i-1</b>	Digital Voice Module, 10 channels – first system (idle)
<b>VA-DVM/20i-1</b>	Digital Voice Module, 20 channels – first system (idle)
<b>VA-DVM/30i-1</b>	Digital Voice Module, 30 Channels – first system (idle)
<b>VA-DVM/10i-2</b>	Digital Voice Module, 10 channels – second system (idle)
<b>VA-DVM/20i-2</b>	Digital Voice Module, 20 channels – second system (idle)
<b>VA-DVM/30i-2</b>	Digital Voice Module, 30 Channels – second system (idle)

## Other Modules

<b>VA-DUO-F</b>	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
<b>VA-ASI-PLUS</b>	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)
<b>VA-ASI</b>	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.
<b>VA-PRI</b>	MKII Primary Rate ISDN module (supports 30B+D), Euro ISDN standard. Supports fractional E1
<b>VA-BRI</b>	Basic Rate ISDN module (supports 2B+D), Euro ISDN standard
<b>VA-FIO</b>	Supports 4 high speed software synchronous or asynchronous configurable WAN interfaces presented on 4 x HDR26. Max 4 FIO modules per chassis.
<b>VA-CPU-F</b>	CPU-F (normally already supplied with VA-4207/4213)
<b>VA-FXS</b>	FXS (needs VA-DVI)
<b>VA-FXO</b>	FXO (needs VA-DVI)
<b>VA-E&amp;M</b>	E&M (needs VA-DVI)
<b>VA-COMP</b>	Compression/Encryption Module (not yet released)

## Cables

<b>CAB-WAN-X21CP</b>	WAN Port as an X21 DTE to an X21 DCE
<b>CAB-WAN-X21TS</b>	WAN Port as an X21 DCE to an X21 DTE (Socket ended)
<b>CAB-WAN-X21TP</b>	WAN port as an X21 DCE to an X21 DTE (Plug ended)
<b>CAB-WAN-V35CP</b>	WAN port as a V35 DTE to a V35 DCE
<b>CAB-WAN-V35TS</b>	WAN port as a V35 DCE to a V35 DTE
<b>CAB-WAN-V24CP</b>	WAN port as a V24 DTE to a V24 DCE
<b>CAB-WAN-V24TS</b>	WAN port as a V24 DCE to a V24 DTE
<b>CAB-WAN-V36TS</b>	WAN port as a V36 DCE to a V36 DTE
<b>CAB-WAN-530CP</b>	WAN port as a V36 DTE to an RS530 satellite modem
<b>CAB-WAN-S449CP</b>	WAN port as a V36 DTE to an RS449 satellite modem