

V50plus

Powerful and Compact

vocality
international

PRO Range



Introduction

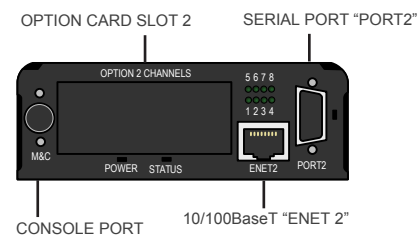
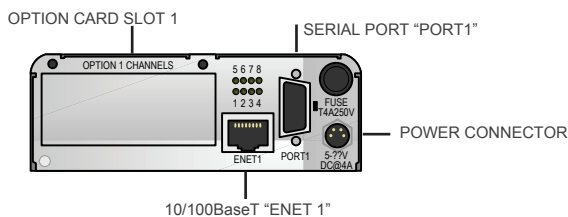
The V50plus Multiplexer provides a compact and yet fully featured implementation of the larger V150 and V200 units. The V50plus provides an impressive range of features and options and is completely compatible with the entire range of Vocality Mux/Router products. It provides access to all of the core features of the Vocality range such as analogue voice, bridge/routing, serial data together with a number of software options, selectable by feature key.

MAJOR FEATURES

- High Performance / Small Size
- Designed to be Integrated
- Secure Voice Supported
- Optimised for BGAN
- Serial Mux or IP Router in same unit
- TCP Acceleration / PEP

APPLICATIONS INCLUDE

- News Gathering Communications
- Emergency Order Wire Services
- Bridge Router with TCP Acceleration
- Military Man Pack Systems
- Integrated Flyaway Systems
- Covert Briefcase and Intel Systems
- Secure STU or STE Voice over Inmarsat BGAN and iDirect



spec sheet

V50plus

SPECIFICATION

The V50plus is designed to support up to 16 voice/fax channels or up to 16 10/100base-T Ethernet switch ports (or combination of both) and has two serial data ports. In the interests of channel density, the POTS FXS and FXO interfaces are now offered on separate cards but both still offer 4-wire Tipline interfaces on the first four channels. STU-III, SCIP (formerly FNBDT) and STE (analogue) support is provided by a dedicated Secure Voice Relay (SVR) module which attaches to each analogue voice module and offers up to eight channels. The V50plus will interwork with any other unit in the Vocality range or another V50plus.

V50plus Chassis

Option slots 1 and 2 support the full range of option modules in any combination.

MECHANICAL:

Form Factor:	Desktop/shelf mount
Maximum # of modules:	2
Cooling:	Forced air cooling from single 30mm inlet fan
Operating Conditions:	0-40degC 0-90%RH non-condensing
MTBF:	>100,000hours at 40degC
Dimensions:	255 x 121 x 44mm
Indicators:	4 red/green for Status, Power, Port1, Port2 2 Green (RX Carrier), 2 Yellow (RX activity) for Ethernet1, Ethernet2 Additional LEDs by option module: 8 green per FXS voice 8 green per FXO voice 8 yellow per Ethernet switch 4 yellow + 4 green per ISDN module
Max. Weight:	1Kg

FUNCTIONAL:

Electrical:

Line Input Rating:	9-18 V DC@4A
Consumption(max):	40W
AC Adaptor:	100-240VAC 47-63Hz @ 0.6A

Serial Data ports:

Number of ports:	2
Presentation:	DB15F HD DCE or DTE
Electrical Interfaces:	V.24, V.11, V.35, V.36, RS449, RS530, RS530A
V.24 Rates:	Async up to 115200bps at standard baud rates Sync int/ext clock multiples of 25bps up to 9600bps, Multiples of 800bps up to 115200bps
All others:	Sync int/ext clocks in multiples of 25bps up to 9600bps Multiples of 800bps up to 512Kbps Multiples of 8Kbps up to 5.12Mbps
Async Format:	5-8 data bits, OENMS Parity, 1-2.5 stop bits
Sync Format:	Transparent or HLDC NRZ/NRZI
Clocking:	Independent RX/TX with EXT, INT, PLL sourcing
Function:	Aggregate or tributary
Aggregate Protocol:	Vocality Proprietary Packetised

10/100base-T Ethernet ports:

Number of Ports:	2
Presentation:	UTP on 8-way RJ45 with auto-MDIX
Formats:	IEEE 802.3u(10base-T), IEEE 802.3z(100base-TX)
Indicators:	Green (RX carrier), Yellow (RX activity)
Bridge/Router Capability:	
Functions:	Bridging or IPv4 static router with DHCP client/server/relay RIP, OSPF routing protocols UDP Relay for Broadcasts Fragmentation and reassembly Dynamic Bandwidth Assignment (DBA)
Options:	IEEE802.1d Spanning Tree Bridging Performance Enhancing Proxy (PEP)

M&C Port:

Presentation:	6-way locking mini-DIN
Electrical Interface:	V.24/RS232 serial
Format:	Async up to 115200bps
Protocol:	Formatted terminal emulation or TTY mode

V50plus is a product under continuous development. Information given in these pages is for general information only and is subject to change.

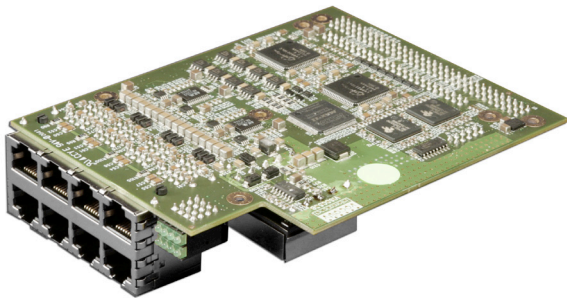
V50plus Option Modules

OVERVIEW

The versatility of the V50plus platform lies in the range of Option Modules which may be integrated. Included in the range are an 8-port FXS analogue voice module, an 8-port FXO analogue voice module, a Secure Voice Relay (SVR) module, and an ISDN BRI module and an 8-port 10/100base-T Ethernet switch. Thanks to the symmetry of the design, any one of these modules may be fitted at either end of the product, or both, in any combination. The installation of these modules is normally performed in the factory when the unit is ordered. It is possible to install modules in the field BUT THIS WILL INVALIDATE THE WARRANTY UNLESS PERFORMED BY TRAINED PERSONNEL IN AN ESD-PROTECTED AREA.

FXS Analogue Voice Option

SPECIFICATION



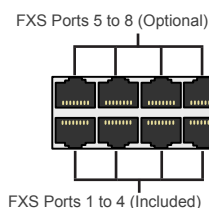
Introduction

The Analogue Voice Option Module (FXS) offers 8 ports for the connection of telephones, modems and fax machines. The sockets are delivered as RJ45 - also supporting RJ11.

The module contains the hardware for 8 full telephone ports, but a reduced cost 4 port configuration is shipped as standard, with channels 5 to 8 software enabled through the use of a feature key. When the time comes to upgrade the number of voice ports, you will just need a text-based feature key to be issued from Vocality.

MAJOR FEATURES

- 8 port FXS voice card
- 4 channels expanded to 8 by Feature Key

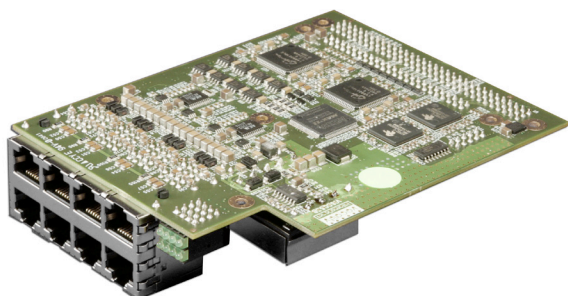


FXS Analogue Voice Module (68053):

Number of channels:	4/8 by Feature Key
Presentation:	8-way RJ-45
Indicators:	8 green LEDs, one per FXS channel
Interfaces:	2-wire FXS for connection to telephone/trunk port with ring voltage/cadence generation and dial pulse/ring trip detection on all ports
	4-wire Tie-line on first four ports only with Type V E&M keying activation and loop output
Compression:	G.723.1 (5.3/6.3Kbps MP-MLQ), G.729 Annex A (8Kbps CS-ACELP), G.726 (16-40Kbps ADPCM), G.727 (16-40Kbps E-ADPCM), G.711 (64Kbps PCM) μ -law or A-law
	Proprietary NetCoder® (6.4, 7.2, 8.0, 8.8, 9.6Kbps)
Relays:	DTMF, Group 3 FAX relay at 2400-14400bps, V.32bis Modem relay up to 14400bps, Secure Voice Relay (see below)
Signalling	MFR1, R1, R2, SS4, SS5, Call Progress
Echo cancellation:	G.168 adaptive (16/32mS tail)
Coding delay:	Per algorithm
Gain:	\pm 31dB programmable in 1 dB
Maximum 'M'lead activation range:	+0.8 to -48V
Maximum 'E'lead voltage:	+/- 100V relative to chassis
Maximum 'E'lead current:	+/- 100mA
Supplementary Option Card:	Secure Voice Relay Card (68718/8):
Relays:	STU-IIB, STU-III
Rates:	2400, 4800, 9600bps secure or non-secure
No of channels:	Eight simultaneously per card

FXO Analogue Voice Option

SPECIFICATION



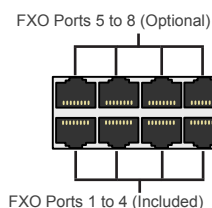
Introduction

The Analogue Voice Option Module (FXO) offers 8 ports for the connection to the PABX or PSTN. The sockets are delivered as RJ45 - also supporting RJ11.

The card contains the hardware for 8 full telephone ports, but a reduced cost 4 port configuration is shipped as standard, with channels 5 to 8 software enabled through the use of a feature key. When the time comes to upgrade the number of voice ports, you will just need a text-based feature key to be issued from Vocality.

MAJOR FEATURES

- 8 port FXO voice card
- 4 channels expanded to 8 by Feature Key

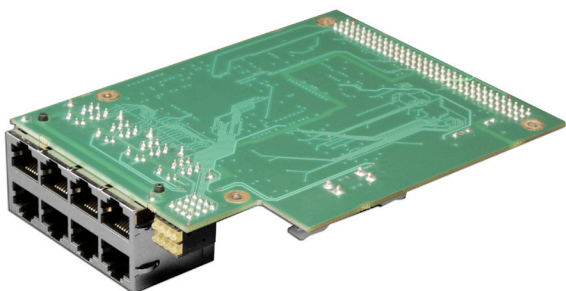


FXO Analogue Voice Option Module (68056):

Number of channels:	4/8 by Feature Key
Presentation:	8-way RJ-45
Indicators:	8 green LEDs, one per FXS channel
Interfaces:	2-wire FXO for connection to PBX extension port with ring voltage/cadence generation and dial pulse/ring trip detection on all ports
	4-wire Tie-line on first four ports only with Type V E&M keying activation and loop output
Compression:	G.723.1 (5.3/6.3Kbps MP-MLQ), G.729 Annex A (8Kbps CS-ACELP), G.726 (16-40Kbps ADPCM), G.727 (16-40Kbps E-ADPCM), G.711 (64Kbps PCM) μ -law or A-law
	Proprietary NetCoder® (6.4, 7.2, 8.0, 8.8, 9.6Kbps)
Relays:	DTMF, Group 3 FAX relay at 2400-14400bps, V.32bis Modem relay up to 14400bps, Secure Voice Relay (see below)
Signalling	MFR1, R1, R2, SS4, SS5, Call Progress
Echo cancellation:	G.168 adaptive (16/32mS tail)
Coding delay:	Per algorithm
Gain:	\pm 31dB programmable in 1 dB
Maximum 'M'lead activation range:	+0.8 to -48V
Maximum 'E'lead voltage:	+/- 100V relative to chassis
Maximum 'E'lead current:	+/- 100mA
	Supplementary Option Card: Secure Voice Relay Card (68718/8):
Relays:	STU IIB, STU III, STE in analogue STU III mode & SCIP (formerly FNBTD)
Rates:	2400, 4800, 9600bps secure or non-secure
No of channels:	Eight simultaneously per card

Ethernet Switch Option

SPECIFICATION



10/100Base-T Ethernet Switch Option Module (68054/68054PoE)

Number of Ports:	8
Presentation:	UTP on 8-wire RJ45 with auto-MDIX
Format:	IEEE 802.3u(10base-T)
	IEEE 802.3z(100base-TX)
Indicators:	Eight yellow LEDs, one per channel (RX carrier)
Power-over-Ethernet:	PoE version available with external -48V supply

Please note: The Ethernet Switch Option Module substitutes the V50plus built in 10/100BaseT ethernet port at that end of the V50plus.

Introduction

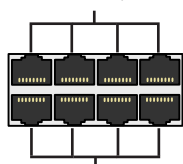
When the Ethernet Switch Option Module is installed, the single, local Ethernet port at that end of the V50plus is routed to the bank of 8 Ethernet ports – expanding it's connectivity. Eight 10/100 base-T ports are presented, with LEDs on each socket to show network activity.

Vocality can supply a variant which offers PoE (Power over Ethernet) support, to deliver power to tributary devices such as VoIP phones.

MAJOR FEATURES

- 8 ports 10/100 base-T (with optional PoE support)
- Integrated router re-direct to the switch ports

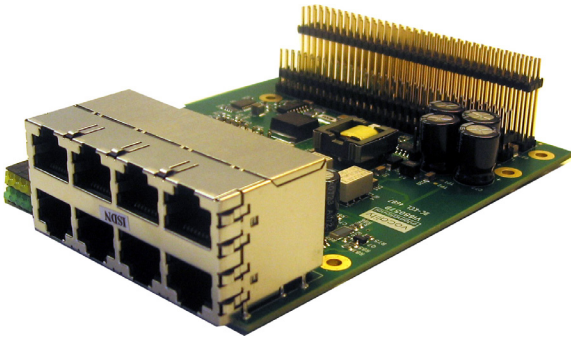
Ethernet Ports 5 to 8 (Included)



Ethernet Ports 1 to 4 (Included)

ISDN BRI Option

SPECIFICATION

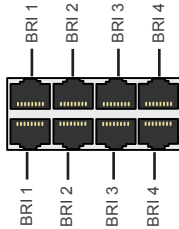


Introduction

The ISDN BRI Option Module allows either 1 or 4 Basic Rate Interfaces to be installed into the V50plus per Option Slot. If both Option Slots were used, it would support up to 8 x ISDN BRI in the V50plus.

MAJOR FEATURES

- ISDN Basic Rate Ports x 1 expandable to 4

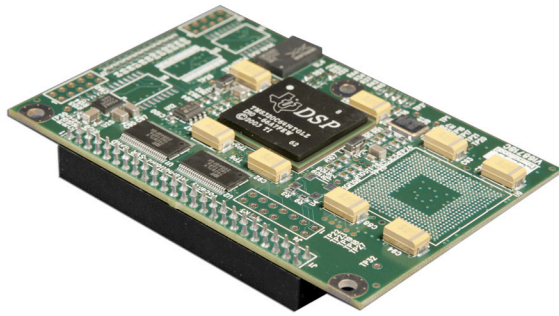


ISDN BRI Option Module (68057,68059)

Number of Physical Ports:	2 wired in parallel (8 with Expansion Card 68059 fitted)
Number of BRIs:	1 (4 with Expansion Card 68059 fitted)
Structure of BRIs:	2B+D
Presentation:	8-wire RJ45 x 8 (6 not be used unless 68059 fitted)
Interface Type:	Basic Rate S/T
Link Layer:	ITU-T I.430, Q.921
Protocol Support:	ETSI NET3, US National ISDN, AT&T 5ESS, Nortel DMS-100, France VN6
Functions Supported:	(1) Dialup Aggregate as Terminal Adaptor, (2) Tributary service as ISDN Network
Features:	SPID, LDN, Bandwidth Top-up and Bonding
Device Type	TE(as TA), NT(as Network Function)
Indicators:	Four yellow/green LED pairs, one per BRI

Secure Voice Relay Options

SPECIFICATION



SVR Option Card for Analogue Voice Cards (FXO/FXS)

Secure Voice Relay Card (68718/8):

Relays:	STU IIB, STU III, STE in analogue STU III mode & SCIP (formerly FNBDT)
Rates:	2400, 4800, 9600bps secure or non-secure
No of channels:	Eight simultaneously per card

Introduction

Every voice card in the Vocality PRO range can be enhanced with a special, small module which enables bandwidth efficient support for secure phones.

STE and STU phones are supported in the Secure Voice Relay module at data rates from 2,400bps up to 9,600bps. Even operational over BGAN terminals with contended class, the Vocality Secure Voice Relay has been repeatedly proven to achieve upwards of 95% call success rate.

The Secure Voice Relay functionality offers huge bandwidth reduction for many brands of secure phones and cryptos using Vocality's proprietary training technology

SUPPORTED DEVICES

- STU III (US DoD)
- STE (US DoD)
- STU IIB (NATO)
- SCIP / FNBDT
- Commercial Modem Relay to 14.4Kbps
- Milsec-1A
- General Dynamics Sectera / Talk Secure
- Crypto AG
- TCC and many more

Software Feature Keys

OVERVIEW

PEP TCP Enhancement

PEP is a feature that can be purchased for any of the cards based on the Standard CPU Card. It is free with the High Speed CPU Card.

Users operating routers over satellite know all too well the detrimental effects high latency (and potentially errors too) have on the efficiency of regular, terrestrial routers. To combat these effects on TCP traffic, Vocality offers the PEP - a feature which combats the effects of latency on regular, non-secure TCP/IP traffic.

Part Code: SWF/PEP

SNMP

The Vocality SWF/SNMP is used to allow monitoring of the network using a SNMP (Simple Network Management Protocol) NMS (Network Management System). Vocality's SNMP supports a variety of Management Information Bases (MIB's) which must be provided to the User's Network Management System (NMS) to provide the NMS with a database of managed objects. At this time Vocality SNMP only provides monitoring of status, with configuration changes being made using Telnet.

Part Code: SWF/SNMP

SIP

Session Initiated Signalling, or SIP, is used as a universal method of communicating devices such as VoIP phones. SIP Licences can be purchased to enable a specific number of SIP agents, allowing connectivity between the Vocality V150 and these SIP Devices either to a SIP PROXY or direct to SIP phones.

Part Code: SWF/SIP

8 Port Voice

Voice modules are supplied by the factory with the number of enabled channels stored in memory. It is possible to upgrade a module from 4 to 8 channels using a Feature Key which is applied via a Debug Menu.

Part Code: SWF/VOICE8