

V150 Datasheet

KEY FEATURES

- ▼ Rackmount 1U communication chassis
- ▼ Modular card options to easily create configurations based on customer requirements
- ▼ Redundant power supplies

COMPATIBLE WITH



IP Router



Acceleration



Network Security



Four wire



Secure voice



POTS voice



ISDN



Serial data



Hand Portable

V150 offers modular flexibility and redundancy in a 1RU rackmount device. The unit can be installed as fixed infrastructure or in vehicle, such as a news gathering truck or tactical communications vehicle.

VOICE, VIDEO AND DATA CONNECTIVITY

Offering connectivity options for analog voice, VoIP, RoIP, ISDN and serial controlled devices, V150 is the perfect solution for those looking for maximum connectivity in a rackmount chassis.

MODULAR CARD DESIGN

V150 is based on modular card design allowing customers to choose from a wide range of configurations to create a V150 that perfectly meets their communication needs.

SCALABILITY AND REDUNDANCY

The low profile 1U rack is designed to support up to three modular cards and dual redundant power supplies, providing great flexibility and total system confidence.

COMPATIBLE WITH INDUSTRY STANDARD MEDIA SERVERS

The unit supports connectivity to many different media servers including CISCO, Avaya and Asterisk, allowing for easy integration into existing communication infrastructure.

VOICE OPTIMIZATION

Reduce bandwidth by up to 65%, increase the number of concurrent phone calls and improve call quality over low bandwidth links such as satellite and cellular networks.

DATA ACCELERATION

Increase download speeds and reduce the bandwidth over satellite links for corporate traffic such as network data, Internet access or file transfers.

SUPPORT FOR MULTIPLE MANUFACTURERS

Radio and telephone devices from different manufacturers can be part of a single system, providing a unified network regardless of brand, radio frequency or technology type.

Technical Data

MECHANICAL

Form Factor:	1RU 19" rackmount enclosure
Max. number of cards:	3
Cooling:	Forced air cooling from two 1.57in / 40mm inlet fans
Operating Conditions:	0-50degC ambient 0-90%RH non-condensing
MTBF:	>200,000hours at 50degC
Dimensions:	19 x 14.96 x 1.73in / 482 x 380 x 44mm
Indicators:	5 red/green for Bay status, others per option card; 2 Green (RX Carrier), 2 Yellow (RX activity) for Ethernet1, Ethernet2; Additional LEDs by option module: 8 green per Analog/Radio Relay voice, 8 yellow per Ethernet switch
Weight:	5.51lb / 2.5kg
Part number:	68150 or 68150/DUAL (dual power supply option)

Electrical:

Rating:	100-240V AC 47-63Hz@2A
Consumption(max):	125W
AC Adaptor:	Filtered IEC inlet and optional IEC on umbilical for backup PSU

FUNCTIONAL

M&C Port:

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

Alarm Port:

Presentation:	6-way locking mini-DIN (shares M&C Connector)
Electrical Interface:	Single pole voltage-free changeover relay
Contact rating:	24V AC 1A

SOFTWARE FEATURE KEYS

SWF/SNMP	SNMP Software Feature Key
SWF/VLAN	VLAN Feature Key
SWF/8V	Activating analog voice on ports 5-8
SWF/VOIP/SIP10	Block of 10 Analog to SIP User Agents for SIP based VoIP functionality

HARDWARE OPTIONS

Up to three option cards may be installed in the V150 from the following range:	
	Standard CPU Card (68151)
	FXS Analog voice/FAX (68153), with or without Universal Modem Relay Board (68718/1000)
	FXO Analog voice/FAX (68156), with or without Universal Modem Relay Board (68718/1000)
	Radio Relay E&M Four Wire card (8 channels) (68164)
	10/100Base-T Ethernet Switch (68154), with PoE option available
	ISDN BRI (68157) with or without expansion from single to quad BRI (68059)
	High-speed CPU Card (68201)
	Serial Data Card (68204) with or without 8-port expansion card (68205)
	Digital Voice (68155) and Dual Digital Voice Card (68155/DUAL)
	Many cards in this range are based on the Standard CPU Card, characterized by the addition of a specific module.
	Description of the V150/V200 Options Cards follow.

V150 is a product under continuous development.
Information subject to change. Correct at time of printing. Mar 2017.

Please be advised that Vocality offers two variants of VOS software — one including IPsec and SSH features and one without these features. The IPsec / SSH variant of the software is subject to UK dual-use export control restrictions, whereas the software without IPsec / SSH is not subject to specific export control.

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Option cards

Both the V150 and the V200 use the same Option Cards. So you can migrate upwards from V150 to V200 Chassis and use the same cards, or use cards from a V200 to add functionality to a V150.

There are the High Speed CPU and Standard CPU cards which drive the units.

In addition there are ISDN BRI, FXS, FXO, Radio Relay E&M Four Wire and Ethernet cards which are based on the Standard CPU card with an additional Option Module fitted (ISDN BRI, FXS, FXO, Radio Relay E&M Four Wire or Ethernet). All cards based on the Standard CPU have the same core functionality. This provides a very useful set of features which can be built upon with software feature keys and additional option modules.

The full range of cards provides a comprehensive platform for deploying Voice and Data over Satellite. With a wide range of Trunk interfaces for your Hub or Command Center through to interfaces more suitable for deployed users or End User environments.

At its minimum, a V150 must be loaded with a Standard CPU Card, or an option card based upon a Standard CPU Card. This card delivers the management capabilities, as well as a single serial data port and a 10/100 base-T single router port. Multiple routers can be installed into a single chassis by installing multiple Standard CPU Cards, delivering the option to have isolated routers operating alongside each other in a single unit.

Vocality provide both leading edge functionality and legacy interface support. Whether it is replacing obsolete systems or building new, Vocality provides bandwidth efficiency and platform optimization to suit your application, network architecture and budget.

The following pages provide technical data for each of the Options Cards available.

	V150 Essential	V200 Essential	V150 Option	V200 Option
High Speed CPU		•	•	•
Power Supply Unit [V200 only]		•		•
Standard CPU	•		•	•
FXS Analogue Voice*, with UMR option available			•	•
FXO Analogue Voice*, with UMR option available			•	•
Radio Relay E&M Four Wire*			•	•
10/100base-T Ethernet Switch*, with PoE option available			•	•
ISDN BRI*, with expansion to quad BRI available			•	•
Serial Data			•	•
Digital Voice* + Dual Digital Voice*			•	•

Items marked * are modules fitted on a Standard CPU card.

High Speed CPU

Each card offers serial data, together with two bridge/router ports offering IP aggregate, tributary or VoIP connectivity.

The CPU card includes the following functionality :

- One serial port (Up to 10Mbps)
- Two Ethernet ports (10/100/1000 Dual Port Router / Bridge / Aggregate / Telnet)
- Serial M&C port
- Alarms port
- LED indicators
- TCP PEP (Performance Enhanced Proxy)
- SNMP Management
- Special Option Card slot (for future use)

MECHANICAL

Power consumption:	15-20W
MTBF:	87,000hours
Dimensions:	3.94 x 9.84 x 1.38in / 100 x 250 x 35mm
Weight:	0.6lb / 0.27kg
Part number:	68201

FUNCTIONAL

Serial Data port:

Presentation:	DB15F HD DCE or DTE
Electrical Interfaces:	RS232, V.35, RS422, RS449, V.36 and V.11
V.24 Rates:	Async: up to 115200bps at standard baud rates. Sync: int/ext clock in 25bps multiples up to 9600bps, 800bps multiples up to 115200bps.
All others:	Sync: int/ext clocks at 25bps multiples up to 9600bps, 800bps multiples to 512kbps, 8kbps multiples to 10.24Mbps
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 Packetized

10/100/1000base-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), IEEE 802.3ab(1000base-T)
Indicators:	Green (RX carrier), Yellow (RX activity)

Bridge/Router Capability:

Functions:	IPv4 static router with DHCP client/server/relay RIP, OSPF, BGP routing protocols, UDP Relay for Broadcasts, Fragmentation and reassembly, Dynamic Bandwidth Assignment (DBA), IEEE802.1d, Spanning Tree Bridging
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Special Option Card Slot:

Available Options:	To be announced
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Supervisor 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

Alarm Port:

Presentation:	RJ11
Functions:	2 sets of voltage-free contact changeovers
Contact rating:	24V AC 1A

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Standard CPU

Each card offers serial data, together with one bridge/router port offering IP aggregate, tributary or VoIP connectivity.

The Standard CPU card includes the following functionality :

- One serial port (Up to 5 Mbps)
- One Ethernet port (10/100 Dual Port Router / Bridge / Aggregate / Telnet)
- LED indicators
- Option Card slot for additional interface card

MECHANICAL

Number of channels:	1 Serial Data, 1 10/100base-T ENET, 1 Option Slot
Indicators:	2 Red/Green for POWER, STATUS
Switches:	Alert button
MTBF:	130,000hours at 50degC
Weight:	0.26kg
Part number:	68151

FUNCTIONAL

Serial Data port:

Number of ports:	1
Presentation:	DB15F HD DCE or DTE
Indicators:	1 Red/Green
Electrical Interfaces:	RS232, V.35, RS422, RS449, V.36 and V.11
V.24 Rates:	Async: up to 115200bps at standard baud rates. Sync: int/ext clock in 25bps multiples up to 9600bps, 800bps multiples up to 115200bps
All others:	Sync: int/ext clocks at 25bps multiples up to 9600bps, 800bps multiples to 512kbps, 8kbps multiples 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 Packetized

10/100base-T Ethernet Port:

Number of Ports:	1
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:	IPv4 static router with DHCP client/server/relay, RIP, OSPF, BGP routing protocols, UDP Relay for Broadcasts, Fragmentation and reassembly, Dynamic Bandwidth Assignment (DBA), IEEE802.1d, Spanning Tree Bridging
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FXS Analog voice

All features as for Standard CPU Card with the addition of:

FUNCTIONAL

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
Relays:	DTMF, Group 3 FAX relay at 2400-14400bps, V.32bis Modem relay up to 14400bps, Universal Modem Relay (see below)
Signaling:	Pulse, DTMF, Call Progress
Echo cancellation:	G.168 adaptive (16/32ms tail)
Coding delay:	Per algorithm
Gain:	\pm 31dB programmable in 1dB
Maximum 'M' lead activation range:	+0.8 to -48V
Maximum 'E' lead voltage:	+/- 100V relative to chassis
Maximum 'E' lead current:	+/- 100mA
Part number:	68153

HARDWARE OPTIONS

Universal Modem Relay Board:

Relays:	STU-IIB, STU-III, STE
Rates:	2400, 4800, 9600bps secure or non-secure
Number of Channels:	Eight simultaneously per card
Part number:	68718/8

FXO Analog Voice

All features as for Standard CPU Card + FXS Analog Voice Option with the exception of:

FUNCTIONAL

Interfaces:	2-wire FXO for connection to PBX extension port with ring voltage/cadence detection and dial pulse/ring trip generation on all ports
Part number:	68156

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Radio Relay E&M Four Wire

All features as for Standard CPU Card with the addition of:

FUNCTIONAL

Number of channels:	8
Presentation:	8-way RJ-45
MTBF:	130,000hours at 50degC
Indicators:	8 green LEDs, one per channel
Interfaces:	4-wire Tie-line 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
Relays:	DTMF
Signaling:	E&M, Pulse, DTMF, Call Progress
Echo cancellation:	G. 168 adaptive (16/32mS tail)
Coding delay:	Per algorithm
Gain:	\pm 31dB programmable in 1dB
Impedance:	600 ohms
Max Input Level (1kHz):	6.0V pk-pk
Max Output Level (1kHz):	7.1V pk-pk
Input-Output Gain (1kHz):	+1.36dB unterminated
Max 'M' lead activation range:	+0.8 to -48V
Passband Flatness:	+/- 1.0dB (300-3300Hz)
Maximum 'E' lead voltage:	-55V to +60V relative to chassis
Maximum 'E' lead current:	+/- 100mA
Part number:	68164

Ethernet Switch

All features as for Standard CPU Card, but substitutes the 10/100base-T port with:

FUNCTIONAL

Number of Ports:	8
Presentation:	UTP on 8-way RJ45 with auto-MDIX
Formats:	IEEE 802.3u(10base-T), IEEE 802.3z(100base-TX)
Indicators:	Eight yellow LEDs, one per channel (RX carrier)
Power consumption:	10-15W
Power-over-Ethernet:	PoE version available with external -48V supply
Weight:	0.84lb / 0.38kg
Part number:	68154

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ISDN BRI

All features as for Standard CPU Card, with the addition of:

FUNCTIONAL

Number of Physical Ports:	2 wired in parallel (8 with expansion card fitted)
Number of BRIs:	1 (4 with expansion card fitted)
Structure of BRIs:	2B+D
Presentation:	8-wire RJ45 x 8 (6 not to be used unless expansion card fitted)
Interface Type:	Basic Rate S/T
Link Layer:	ITU-TI.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 Function
Features:	SPIID, LDN, Bandwidth Top-up and Bonding
Device Type:	TE (as TA), NT (as Network Function)
Indicators:	Four yellow/green LED pairs, one per BRI
Power consumption:	5-10W
MTBF:	90,000hours at 50degC
Part number:	68157 (68059 Expansion Card)

Serial Data

All four serial ports are presented via a 68-way VHDCI connector. A four-way adapter cable is supplied which presents each port on an individual high density 15-way D-type connector. This may then be used in combination with our range of type-specific interface cables.

MECHANICAL

Power Consumption:	15-20W
MTBF:	40,000hours at 50degC for the Base Card and 90,000hours at 50degC for the Expansion Card
Dimensions:	3.94 x 9.84 x 1.38in / 100 x 250 x 35mm
Weight:	0.6lb / 0.27kg
Part number:	68204 (68205 Expansion Card)

FUNCTIONAL

Serial Data port:	
Number of ports:	4 expandable to 12
Presentation:	VHDCI plus Converter Cable
Electrical Interfaces:	RS232, V.35, RS422, RS449, V.36 and V.11
V.24 Rates:	Async: up to 115200bps at standard baud rates. Sync: int/ext clock in 25bps multiples up to 9600bps, 800bps multiples up to 115200bps.
All others:	Sync: int/ext clocks at 25bps multiples up to 9600bps, 800bps multiples to 512kbps, 8kbps multiples to 10.24Mbps
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 Packetized

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Digital Voice + Dual Digital Voice

For higher density applications, the Digital Voice Card presents either one or two independent E1 or T1 spans on a choice of either BNC or RJ45 UTP connector. The base card presents a single E1 or T1 span and may be expanded to two E1 or T1 spans by the addition of an extra Digital Voice Module. Based on the Standard CPU Card, the card also presents one serial port and one 10/100base-T Ethernet port.

MECHANICAL

Power Consumption:	10-20W
Dimensions:	3.94 x 9.84 x 1.38in / 100 x 250 x 35mm
Weight:	1.01/1.21lb / 0.46/0.55kg
Part number:	68155 (23/30 channels) or 68155/DUAL (46/60 channels)

FUNCTIONAL

Number of ports:	One or two E1/T1 spans, either 23/30 channels or 46/60 channels
Presentation:	Two RX/TX BNC pairs (unbalanced) or dual RJ45 (balanced)
Impedance:	75, 100 or 120ohm termination for short- or long-haul by soft selection
Coding:	G.703 B8ZS/AMI
Clocking:	Co-directional, either Internal or Loop timing
Framing:	For E1: G.703 For T1: D4, ESF
Protocols:	For E1: ETSI Q.931 (DSS1) For T1: CCS:National ISDN2 (NI2), AT&T 5ESS, Nortel DMS-100 CCS
Standards Compliance:	ANSI: T1.403-1995, T1.231-1993, T1.408 AT&T: TR54016, TR62411 ITU: G.703, G.704, G.706, G.736, G.775, G.823, I.431 ETSI DSS1 (ETS300 403), QSIG (EN 300 172, ECMA 143)
Compression:	G.723.1 (5.3/6.3kbps MP-MLQ), 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) u-Law or A-law, Proprietary NetCoder® (6.4,7.2,8.0,8.8,9.6kbps)

Relays:	Group 3 FAX Relay at 2400-14400bps V.32bis Modem Relay up to 14400bps
Echo Cancellation:	G.168 Adaptive (16/32mS tail)

Serial Data port:

Number of ports:	1
Presentation:	DB15F HD DCE or DTE
Indicators:	1 Red/Green
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 in 25bps multiples up to 9600bps, 800bps multiples up to 115200bps
All others:	Sync int/ext clocks at 25bps multiples up to 9600bps, 800bps multiples to 512kbps, 8kbps multiples 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 Packetized

10/100base-T Ethernet:

Number of ports:	1
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:	IPv4 static router with DHCP client/server/relay RIP, OSPF, BGP routing protocols UDP Relay for Broadcasts Fragmentation and reassembly Dynamic Bandwidth Assignment (DBA) IEEE802.1d Spanning Tree Bridging
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