# BASICS Radio Relay Datasheet

## KEY FEATURES

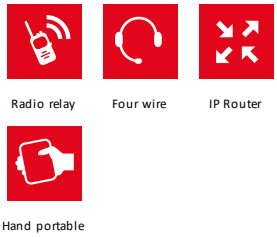
- Connect radio users with fixed line and cellular telephone users
- Compatible with IP telephone systems such as Asterisk, Cisco and Avaya
- Extend radio network services over IP networks (RoIP)
- Optional network optimization features to reduce bandwidth usage


### COMPATIBLE WITH

Intracom

AVAYA

MOTOROLA SOLUTIONS




**BASICS Radio Relay provides connectivity of traditional push-to-talk and digital radio systems with fixed line and cellular telephone systems.**

### CONNECT PUSH-TO-TALK USERS TO TELEPHONE USERS

BASICS Radio Relay makes it easy to connect push-to-talk radio users with fixed line and cellular telephone users. From a telephone system users can talk with radio holders, two-way, exactly as they would with any other telephone user. Radio holders can also call telephone users via their radio handset.

This unit can be used standalone or as part of a bigger network. It is compatible with equipment from leading manufacturers including Asterisk, Cisco and Avaya.

### EXTEND RADIO NETWORK RANGE

Radio networks can be easily extended across multiple sites or campuses, using existing IP networks to transmit and receive radio traffic. Broadcasters clean feed or talkback services can be extended to trucks.

### SUPPORT FOR MULTIPLE RADIO DEVICES

Radio devices from different manufacturers can be part of single radio system, providing a unified network regardless of radio brand, frequency or technology. Ideal for use over satellite networks.

### INTEGRATE WITH RADIO DISPATCH SYSTEMS

As a part of an emergency response solution, the BASICS Radio Relay is easily integrated with many of the leading radio dispatch systems including Motorola Solutions WAVE, Intracom VCOM and Mutualink IWS.

### OPTIMIZATION AND ACCELERATION

Vocality's optional voice optimization and data acceleration are included as standard, able to reduce the bandwidth required by up to 60%. Ideal for use over satellite networks.

### OTHER MODELS WITH THIS FUNCTIONALITY:

- BASICS PC104 form factor units for system integrators;
- BASICS Rackmount to sit alongside other BASICS units;
- BASICS Toughbox for harsher conditions.

For details see separate datasheets .

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# Technical Data

## MECHANICAL

| | |
|---|---|
| Form Factor: | Standalone enclosure |
| Cooling: | Conduction by internal Heat Jacket to case |
| Operating Conditions: boxed* | -40degC to +70degC ambient 0-95%RH non-condensing |
| Shock and Vibration: | TBC |
| MTBF: | >175,000hours at 70degC |
| Dimensions: | 4.84 x 5.37 x 1.04in / 123 x 136.5 x 26.5mm |
| Indicators: | 4 blue voice channel status LEDs, 2 blue Ethernet port status LEDs, 1 bicolor red/green status LED, white case LEDs |
| Weight: | 0.68lb / 308g |
| **Electrical:** | |
| Supply Input Rating: | 5V DC +/-5% |
| Consumption(typ): | 3W |
| Mains Adapter: | 100-240V AC @1A, 50-60Hz (Output 5V DC@4A) |
| **Connectors:** | |
| DC Power: | 4-way locking Power Connector |
| M&C: | 6-way Locking Mini-DIN |
| Uplink, Downlink Ethernets: | 2 x 8-way RJ45 |
| Analogue Voice Ports: | 4 x 8-way RJ45 |
| Part number: | 68564/RP/1 |

## FUNCTIONAL — COMMON TO ALL FORM FACTORS

| | |
|---|---|
| **M&C Port:** | V.24/RS232 serial |
| Format: | Async 9600bps, 8 data bits, no parity, 1 stop bit |
| Protocol: | Formatted terminal emulation or TTY mode |
| **10/100base-T Ethernet Ports:** | 2 |
| Presentation: | Auto-MDIX |
| Formats: | IEEE 802.3i(10base-T), IEEE 802.3u(100base-TX) |
| Basic Protocol Support: | DNS Client, DHCP Client, Telnet |
| Extended Protocol Support: | SWF/ROUTER Feature Key enables static routing, RIP, OSPF, Multicast client, Unicast RTP, Multicast RTP, NAT Traversal by STUN |
| SIP Protocol Support: | Registrar for SIP clients enabled by Feature Key |
| Functionality: | Vocality IP Aggregate, IP passthrough, SIP voice gateway |
| RTP Packet Sampling Rates: | 20ms, 30ms, 40ms, 50ms, 60ms, 80ms, 100ms or AUTO |
| **Analogue Voice/FAX Ports:** | 1 standard (expandable to 4 by Feature Key) |
| Interfaces: | 4-wire Tie-line with Types I, II and 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 |
| 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 relative to chassis |
| Passband Flatness: | +/- 1.0dB (300-3300Hz) |
| Maximum 'E' lead voltage: | -55V to +60V relative to chassis |
| Maximum 'E' lead current: | +/- 100mA |
| Signaling: | E&M, Pulse, DTMF, Call Progress |
| Activation: | M-Lead, Vox, Permanent, Dialing |
| Echo cancellation: | G.168 adaptive (16/32mS tail) |
| Coding delay: | Per algorithm |
| Gain: | ± 31dB programmable in 1dB |

## SOFTWARE FEATURE KEYS

| | |
|---|---|
| SWF/1V | Port activation key (up to 3 per hardware unit) |
| SWF/SNMP | SNMP Software Feature Key |
| SWF/ROUTER | Standard IP Router (inc PEP & PACE) |
| SWF/VLAN | VLAN Feature Key |

* When the equipment is adequately protected from direct user contact, the equipment will reliably operate with an ambient temperature within the specified range. When the equipment is installed in a user-accessible location, adequate heatsinking must be provided to ensure the case temperature does not exceed 70degC (BS EN60950-1:2006 Table4C) for user protection.

BASICS Radio Relay 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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