Data Sheet

Megaplex Accessories

Ringer-2100R, Ringer-4104R, Ringer-2000, Ringer-2200N

DC Feed and Ring Power Supplies for Voice/Fax and ISDN Modules

- DC feed (battery) and ringing voltages for connected telephones
- Compatible with all voice/fax modules with FXS interface
- Support of E&M interfaces requiring -48 VDC
- Phantom feeding for ISDN interfaces
- Available in 3 models

Ringer-2000, Ringer-2200N, Ringer-2100R and Ringer-4104R are DC power supplies for Megaplex voice/fax modules that require DC voltages for telephone loop-current feed (battery) and for ring signal generation. Ringers can also be the DC source for ISDN interface modules that deliver phantom power feeding.

A Ringer is needed to supply DC power for Megaplex systems equipped with FXS voice modules connected directly to telephones. Ringers provide -48 VDC "battery voltage", used by the voice modules for powering the telephones and for generating the AC telephone ring signal. In addition, Ringer-2000 can also provide -24 VDC "battery voltage" (instead of -48 VDC).

Note: *DC-powered chassis do* ***not*** *require a Ringer for most of the voice modules. For more information, refer to the relevant module data sheet and/or contact the nearest authorized RAD Partner.*

E&M voice modules for direct connection to PBXs may also require a -48 VDC for certain signaling standards or long line applications (although the internal -12 VDC provided by the chassis is sufficient for most PBXs).

A +60 or +72 VDC "ring voltage" output may be required by older FXS voice modules for conversion to an AC telephone ring signal (see the VC-4/4A/8/8A/16 module data sheet for DC requirements). AC-powered Ringer-2100R/4104R and Ringer-2000 models provide +72 VDC, while DC-powered models provide +60 VDC.

A Ringer can supply the DC voltages used for the phantom power feeding required by ISDN interfaces. Higher voltages for "U" interface phantom feeding can be created within the "U"-interface modules, by combining the various Ringer output voltages. For example, a -48 VDC "battery voltage" together with a +72 VDC "ring voltage", can be used to create 120 VDC.

RINGER-2100R AND RINGER-4104R PLUG-IN MODULES

Ringer-2100R is a plug-in module for the Megaplex-2100 and Megaplex-4100 chassis. Ringer-4104R is a plug-in module for the Megaplex-4104 chassis. The modules are 4U-high and occupy two I/O slots. The modules provide DC power for up to 32 active voice channels.

Ringer-2100R/4104R has an internal output connector, which supplies the voltages to the installed voice or ISDN modules via the internal voltage bus of the Megaplex chassis backplane, without the need for connection cables.

RINGER-2000 STANDALONE UNIT

The Ringer-2000 standalone unit provides DC power for up to 60 active voice channels.

Ringer-2000 is a 1U-high standalone unit that can be installed in 19 inch racks. The unit has ten 3-pin DC output connectors on the rear panel for connection to multiple Megaplex units/modules. The voltage is passed from the Ringer-2000 DC output connectors via cables to the DC input connectors on the power supply modules. See *Ordering* for cable information.

Ringer-2000 is supplied with -48 VDC "battery voltage" output and +72 VDC ring voltage.

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Ringer-2100R, Ringer-4104R, Ringer-2000, Ringer-2200N

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RINGER-2200N STANDALONE UNIT

The more powerful Ringer-2200N standalone unit provides DC power for up to 120 active voice channels (4 full E1 trunks). Ringer-2200N provides -48 VDC output for both feed and ring signals.

Optionally, a +48 VDC output is also available for creating 96 VDC if higher voltages are required by HS-U modules.

Ringer-2200N is a 1U-high standalone unit that can be installed in 19-inch racks. The regular and ISDN units feature, respectively, four or one 3-pin terminal block DC-output connectors (see *Figure 3*) on the rear panel, for connection to multiple Megaplex units. The CBL-RINGER2200N-1/TB cable is available for connecting between a Ringer-2200N 3-pin TB DC-output connector and a 3-pin TB DC-input connector on Megaplex power supply modules.

To conform with both ANSI and ETSI standards, Ringer-2200N features LED indicators on both front and rear panels. Thus, the indicators are always viewable, whether the unit is mounted with the cable connectors at the front or the rear of the rack.

Note: *The stated number of active voice channels that each Ringer model supports refers to the number of calls that are ongoing or ringing simultaneously. However, in most applications, not all channels are active at the same time. For example, if it is estimated that only 50% of the channels are active simultaneously, a Ringer-2100R/4104R will actually suffice to support 64 voice channels.*

The number of ISDN channels that can be supported depends on the output of the Ringer model (see Table 1), the current required, and the actual line lengths.

Specifications

GENERAL

DC-Output Connectors

Ringer-2000: 10 x 3-pin female
Ringer-2200N: 4 x 3-pin TB male
Ringer-2200N/ISDN: 1 x 3-pin TB male
Ringer-2100R/4104R: internal DC connector to chassis voltage bus

See Figure 2 and Figure 3 for pinouts.

Environment

Operating temperature:
Ringer-2100R/4104R/2200N: -10°C to 55°C (14°F to 131°F)
Ringer-2000: -0°C to 45°C (32°F to 113°F)
Storage temperature: -20°C to +70°C (-4°F to +158°F)
Humidity: up to 95%, non-condensing

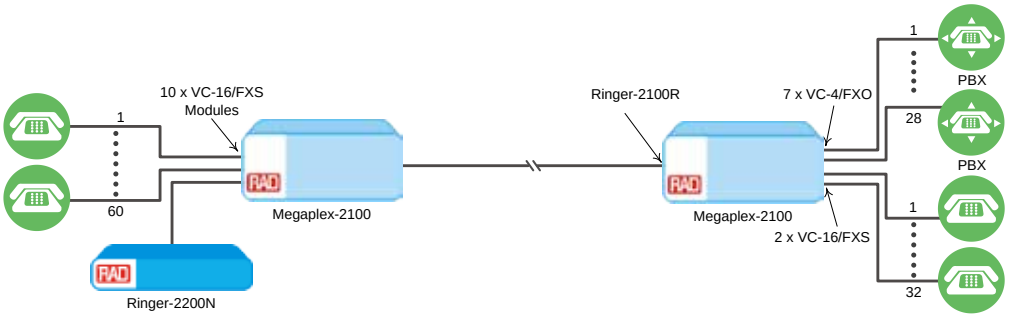

Figure 1. Ringer-2200N and Ringer-2100R Supporting Combined Remote Extension and Hot Line

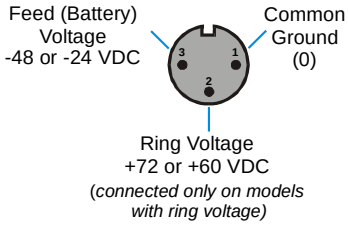

Figure 2. Pinout of 3-pin DIN DC-Output Connectors

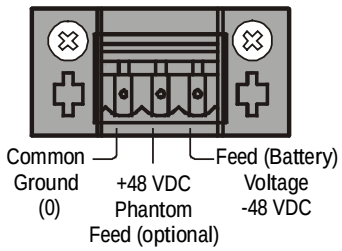

Figure 3. Pinout of 3-pin TB DC-Output Connectors

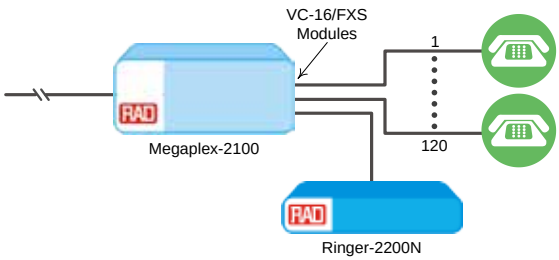

Figure 4. Ringer-2200N Supporting a Megaplex-2100 Chassis with 120 VC-16/FXS Voice Channels

PHYSICAL

Ringer-2100R/4104R
4U-high module occupies two I/O slots of the Megaplex chassis

Ringer-2000
Height: 44 mm (1.7 in – 1U)
Width: 480 mm (19.0 in)
(including integral rack-mount brackets)
Depth: 310 mm (12.2 in)
Weight: 2.1 kg (4.6 lb)

Ringer-2200N
Height: 44 mm (1.7 in – 1U)
Width: 430 mm (17.0 in)
Depth: 310 mm (12.2 in)
Weight: 2.1 kg (4.6 lb)

INDICATORS

Ringer-2100R/4104R, Ringer-2000

RING VOLTAGE (green) – On when ring voltage is within the normal range

BATTERY VOLTAGE (green) – On when feed voltage is within the normal range

Ringer-2200N

LEDs are repeated on both front and rear panels:

- -48V (green) – On when -48 VDC output voltage is within the normal range
- +48V (green) optional – On when +48 VDC output voltage is within normal range

Table 1. Power Specifications

	Ringer-2100R/4104R		Ringer-2000	Ringer-2200N	
	AC	**-24 VDC**	**115 or 230 VAC with -48/+72 ISDN output**	**115 or 230 VAC with -48 output (no ring voltage)**	**115 or 230 VAC with –48/+48 ISDN output**
Operating (Input) Voltage	115 to 230 AC (±10%), 50/60 Hz	-24 VDC (-18 to -36 VDC)	115 or 230 VAC (±10%), 50/60 Hz	115 or 230 VAC (±10%), 50/60 Hz	115 or 230 VAC (±10%), 50/60 Hz
DC (Feed) Voltage Output	-48 VDC (±5%), 1.2A max	-24 VDC (±5%), 1.2A max	-48 VDC (±5%), 3.0A max	-48 VDC (±5%), 6.0A max	-48 VDC (±5%), 6.0A max
Ring Voltage Output*	+72 VDC (±5%), 0.7A max	+60 VDC (±5%), 0.7A max	+72 VDC (±5%), 0.7A max	none	+48 VDC (±5%), 1.6A max
	***Note**: Maximum combined output for Battery and Ring voltages is 65W.*				

*may be required for HS-S, HS-U-6/12

Data Sheet

Ringer-2100R, Ringer-4104R, Ringer-2000, Ringer-2200N

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Ordering

RECOMMENDED CONFIGURATIONS

RINGER-2100R/AC

Power supply module for Megaplex-2100/2104 and Megaplex-4100 chassis with 115 to 230 VAC operating voltage

RINGER-4104R/AC

Power supply module for Megaplex-4104 chassis with 115 to 230 VAC operating voltage

RING2000/48/72/230

Standalone power supply unit with 230 VAC operating voltage and -48/+72 VDC output voltage

RINGER-2200N/110

RINGER-2200N/230

Standalone power supply units for up to 120 active voice channels with 110 or 230 VAC operating voltage and -48 VDC output voltage

SPECIAL CONFIGURATIONS

Please contact your local RAD partner for additional configuration options

SUPPLIED ACCESSORIES

AC power cord

3-wire open-ended cable (ISDN option only)

CBL-RINGER2200N-1/OPEN
Cable with stripped ends (no connector) for connecting to a Ringer-2200N 3-pin TB DC-output connector

Note: *Supplied with Ringer-2200N*

KM-2004/RM
Hardware for mounting the Ringer-2000 unit in a 19-inch rack

RING-2200-RM
Hardware kit for mounting the Ringer-2200N unit into a 19-inch rack

OPTIONAL ACCESSORIES

CBL-RINGER-1/TB
Cable for connecting a Ringer-2000 3-pin DC-output DIN (circular) connector to a 3-pin TB Megaplex DC-input connector

CBL-RINGER2200N-1/TB
Cable for connecting a Ringer-2200N TB DC-output connector to a 3-pin TB Megaplex DC-input connector

CBL-RINGER2200N-2/TB
Cable for connecting a Ringer-2200N TB DC-output connector to two Megaplex chassis

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International Headquarters
24 Raoul Wallenberg Street
Tel Aviv 69719, Israel
Tel. 972-3-6458181
Fax 972-3-6498250, 6474436
E-mail market@rad.com

North America Headquarters
900 Corporate Drive
Mahwah, NJ 07430, USA
Tel. 201-5291100
Toll free 1-800-4447234
Fax 201-5295777
E-mail market@radusa.com

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