

Spectre V^R Systems

Mobile and Base Station VHF Systems



- **Systems up to 75W Power Output**
- **Compact Stack-mount holds up to two Radios & Amplifiers**
- **Designed for Superior Co-site Performance**
- **ECCM, COMSEC, and Data**
- **“Jerk-and-run” Design – Easy Conversion to Manpack**
- **MIL-STD-1275A Power Conditioning**
- **MIL-STD-810 Environmental**

The Spectre V is a complete 30-88 MHz VHF/FM system designed to cope with today's most pressing tactical communications requirements. There are two core products in the Spectre V family – the PRC2100V, an advanced VHF radio with frequency hopping and encryption capability, and the PRC2150, a single-channel version of the 2100V. Either radio can be used for both voice and high-speed data operation, with sophisticated error-correction algorithms providing for reliable data communications in either single-channel or frequency hopping modes.

In addition to its use in demanding manpack applications, the Spectre V provides high performance in critical vehicular or fixed station configurations. The compact mechanical design of the product lends itself well to configurations where space is at a premium. The mobile system is designed for maximum utilization of physical space, requiring only 9" (228 mm) of width and 13" (330 mm) of depth. All mobile systems feature flexible “jerk-and-run” operation. The radio(s) can be quickly and easily removed from the mount without affecting the installation; a battery can be attached, and the radio ready to use as a manpack at a moment's notice.

A major consideration in mobile installations is the radio's performance in the presence of co-located systems. The Spectre V has a significant advantage over other tactical VHF equipment in this regard. The receiver's high dynamic range allows multiple units to be installed on the same vehicle. Operation with minimal antenna spacing is possible without diminished communications performance.

The Spectre V^R features RF power outputs from 0.5W up to 75W, single and dual stack configurations, multiple side-by-side installations in cramped locations, and the ability to provide reliable communications under extreme conditions in the harshest environments. All Spectre V^R systems have power conditioning compliant to MIL-STD-1275A, are waterproof, and meet the required sections of environmental spec MIL-STD-810.

Spectre V^R System Components

In addition to the radio, which can be either the PRC2100V or the PRC2150, the other major components of any Spectre V^R system, mobile or base station, include the MT2100MM Shock Tray, MT2100 Power Box, and AM2100 RF Booster Amplifier. These are all designed as part of the integrated, self-contained Spectre V^R System, and together make up the most compact, functional, and versatile mobile or base station VHF station on the market today.

- The **MT2100MM** is a heavy-duty vehicular shock tray that can hold up to two Spectre radios, their associated MT2100s, and RF booster amplifiers in a single stack-mount configuration. The amplifier(s) can be mounted on top or on either side of the stack depending on the physical constraints imposed by the allowable space.
- The **MT2100** is a power conditioning and signal routing box that sits atop the MT2100MM, holds the Spectre V transceiver, and contains all the mobile electronic circuitry. The box is powered from the raw vehicle, generator, or in the case of a base station, associated power supply +28Vdc. It provides power conditioning for the +28Vdc input to the amplifier, and contains converter circuitry to create the +12Vdc input for the transceiver.
- A single MT2100 is required for each transceiver used in the mobile or base station configuration. The unit also has provision for an output +28Vdc connector to allow routing the raw input power to a second mount when multiple installations are required.
- The **AM2100** is a RF booster amplifier for the PRC2100V or PRC2150 transceiver. It can provide up to 75W of RF output power and is powered from conditioned +28Vdc provided from the MT2100. The amplifier is functional in all transceiver modes, including full-band hopping, encryption, and data.

- The **AM2100** can be operated at a reduced power setting if so specified, and also contains a bypass mode to allow low power operation when mission requirements dictate. The amplifier is waterproof and electrically robust, with internal protection against antenna mismatch and power line faults.

Other Accessories

Other system accessories are also available as required. Mobile and base station antennas, external speakers, and power supplies can be obtained from Datron. The company also provides applications engineering as needed to insure that each customer receives a system that truly suits his situational requirements. This includes specifying all the interconnecting cables as well as the major system components. Contact the factory or your Regional Sales Director for more information.

Antennas

- **OE-254/GRU.** A broadband, base station antenna that provides excellent range.
- **4242-MK1.** 30-88 MHz broadband vehicular end-fed whip antenna. Omni-directional, no tuning required. Should be used with good ground plane. Length is 3.2 meters (10.5 ft.). Order C992172 or C992175 separately.
- **4242-MK2.** 30-88 MHz broadband vehicular center-fed whip antenna. Omni-directional, no tuning required. Should be used on towers or where poor grounding conditions exist since antenna is ground-independent. Length is 3.2 meters (10.5 ft.). Order C992172 or C992175 separately.
- **LS-R.** Waterproof external loudspeaker. Connects directly to the MT2100. Up to 5W output.
- **UPS100-28.** 115/230 Vac power supply for use with base station systems. Order C991614 power cable separately. Specify ac voltage when ordering.

Spectre V^R System Configurations The generic configurations described here illustrate just a small part of the flexibility available in the Spectre V^R family. Note: All configurations require +28Vdc input primary power.



◀ **Single, Low-Power System.** A complete single transceiver, low power (without amplifier) system can be used in a vehicle or in a base station configuration. This system features a single Spectre V^R transceiver contained in a mount, and should be used when a single-unit configuration that can provide up to 10W RF power output is needed. An external loudspeaker can be connected to the MT2100 to monitor the audio if needed.

▶ **High-Power System.** A single radio, high power system should be used when up to 75W is required out of a single-unit system. A single Spectre V transceiver and AM2100 RF Booster Amplifier are stacked in a single mount. The amplifier can be mounted on top, or on either side of the stacked configuration.



◀ **Dual, Low-Power System.** A two transceiver, low power system should be used when co-site performance is required at the 10W level, as two Spectre V transceivers are stacked in a single mount. The system allows for simultaneous transmission and reception on the same vehicle.

▶ **Dual, High-Power System.** A two transceiver, high power system should be used when co-site performance is required at the 75W level, as two Spectre V transceivers and a single AM2100 amplifier are stacked in a single mount. The system allows for simultaneous transmission and reception on the same vehicle. This system can either have a separate amplifier for each radio, or a single amplifier, with the first radio “keyed” using the amplifier.



SPECIFICATIONS

MT2100MM

Size 1.5" x 9" x 11.5" (H x W x D)
Weight 15.3 lbs. (6.9 kg)

MT2100

Input Power 20 to 32 Vdc, 35A, max.
Output power (radio) +13.6Vdc, regulated, 6A, max.
Output power (AM2100) +20-32Vdc, unregulated, 20A, max.
Audio output 2W, min.
Intercom (optional) Compatible with AN/VIC1/2
Size 2.5" x 8.5" x 11.5" (H x W x D)
Weight 6.5 lbs (2.9 kg)
Environmental MIL-STD-810
Temperature -40 to +60 degrees C.

AM2100

Input power requirements 20 to 32 Vdc, 28 Vdc, nominal, negative ground; 7.5A typical current drain at 28 Vdc; 10A, max
Frequency range 30 to 88 Mhz, continuous coverage
RF output power 75W +/- 1.0 dB, into 50 ohm resistive load at 28 Vdc; 2 dB degradation in RF output, max, at 20 Vdc.
RF output into VSWR 85% of rated RF output, min, into 2:1 VSWR at 28 Vdc; 70% of rated Output, min, into 3:1 VSWR at 28 Vdc.
Duty Cycle Continuous at +60 degrees C (w/o sun-loading)
Input Drive (RF) 5W, max
RF harmonic output 50 dB below carrier, minimum
Impedance 50 ohms, RF input and output
RF output port protection Protected against keydown into open or short (automatic switchover to bypass mode)
Thermal protection Protected against thermal overload (+95 degrees C automatically switches unit to bypass mode – low power
Size 5.33 x 21.46 x 16.9 cm (2.1 x 8.45 x 6.65 in.), max. -
H x W x D
Weight 6.0 kg (13.2 lbs)
Temperature -40 to +60 degrees C.
Environmental MIL-STD-810

Note: all specifications subject to change without notice