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The Microwave Connection

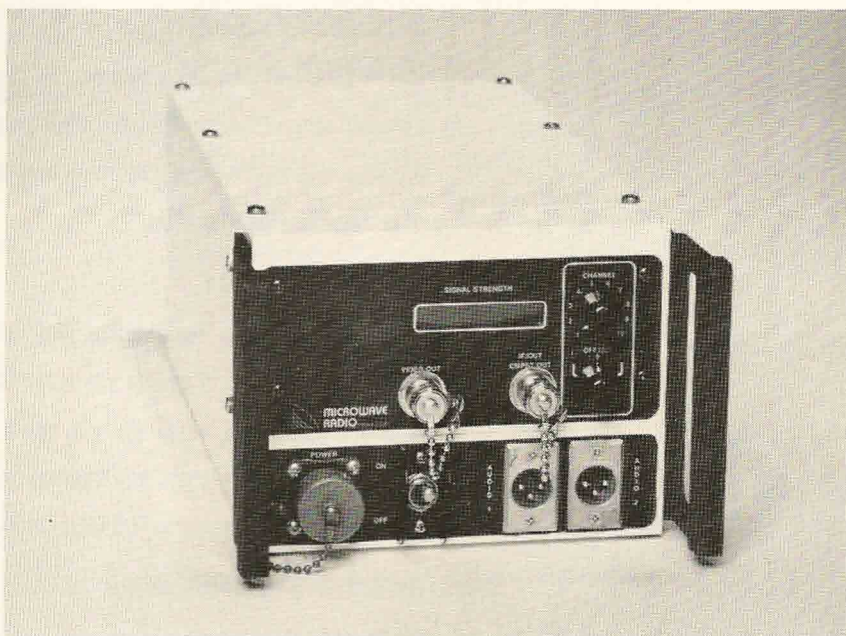
ProStar MR 13 GHz Portable Receiver

Features

- Dual conversion, frequency synthesized
- Superior rejection of adjacent channel signals
- Frequency bands:
12.7 - 13.2 GHz — 10 channels standard
10.5 - 13.25 GHz — 10 channels optional
- Dual audio demodulators
- Low noise preamplifier standard
- Built-in power supply — 115/230 Vac (50/60 Hz) or 11.5 to 32 Vdc
- Ruggedized, weather-resistant

Ordering Information

901340 ProStar MR Receiver
842221-1 Transit Case



The ProStar MR Portable Receiver is a self-contained, frequency agile receiver that offers superior performance, functionality and reliability. This dual conversion receiver provides full frequency agility across the domestic, government and international 12/13 GHz bands.

Its compact, lightweight design is ideal for broadcast applications such as portable tripod-mounted sidewalk, roof top or window link applications, and mobile news car or van repeater applications. Due to its superior performance, it can also be employed for network programming, emergency restoration, airborne repeater and intercity link applications where broadcast quality performance is essential.

The ProStar MR is designed to operate in crowded RF environments. A low noise preamplifier is standard and provides a typical overall receiver noise figure of 3.5 dB. Adjacent channel rejection is extremely high, and superior dynamic range permits high quality performance over a wide range of RF input levels.

The ProStar MR Receiver provides a composite baseband output, a filtered video output, and two 600 Ohm balanced audio outputs. These connectors, plus the AC/DC power connector, are provided on the front panel. The RF input connector is located on the rear of the unit.

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PREMIUM RECEIVER DESIGN

The ProStar MR Receiver incorporates many Microwave Radio Corporation (MRC) exclusive design features that are not available in conventional receivers. The result is superior performance that includes: unparalleled selectivity, rapid and precise channel selection, and excellent audio performance.

SUPERIOR RF DESIGN

The ProStar MR features a superior RF front-end design that includes a high dynamic range LNA, an RF band filter and a high dynamic range mixer. This provides users with the ability to receive desired weak signals, even in the presence of strong interfering signals.

FREQUENCY AGILITY

The ProStar MR features a digital synthesizer that supports 10 channels for full multichannel flexibility across the 12/13 GHz broadcast band. MRC's unique channel selection scheme provides the unit with a rapid and precise channel selection capability. For government and international use, the ProStar MR can be programmed for any 10 channels in any 500 MHz portion of the 10.5 to 13.25 GHz range.

DUAL AUDIO DEMODULATORS

ProStar MR Receivers are equipped with dual audio demodulators. These demodulators provide exceptional audio performance.

INTERNAL AC/DC POWER SUPPLY

A unique advantage of the ProStar MR Receiver is the ability to operate from AC or DC power sources with no modifications or external converters. The built-in AC/DC power supply allows quick and easy operation from 11.5 to 32 Vdc or 115/230 Vac, 50/60 Hz power sources.

RUGGED, WEATHER-RESISTANT ENCLOSURE

The ProStar MR Receiver electronics are enclosed in a ruggedized, weather-resistant case designed to function reliably under the most adverse field conditions. All connectors, switches and indicators are weatherproof and designed to withstand rugged usage.

ProStar MR Receiver

SPECIFICATIONS

GENERAL

Type: Superheterodyne, frequency agile, dual conversion
 Radio capacity: 525/625 line video, two audio channels
 Frequency range:
 Domestic, broadcast 12.7 - 13.2 GHz — 10 channels
 International 10.5 - 13.25 GHz — any 500 MHz
 Local oscillator: Digital frequency synthesizer
 Frequency stability: $\pm 0.005\%$
 Receiver noise figure: 3.5 dB max.
 Receiver threshold (37 dB video S/N): -82 dBm max.
 IF bandwidth (70 MHz IF):
 Standard 20 MHz
 Optional 30 MHz
 Video outputs: Two; one video and one composite
 baseband
 Level 1 V P-P
 Impedance 75 ohms
 IF output (70 MHz):
 Level +5 dBm
 Impedance 75 ohms
 Audio outputs: Two
 Level 0 to +18 dBm
 Impedance 600 ohms balanced

VIDEO PERFORMANCE (See Table 1)

Signal-to-noise: 65 dB minimum
 Signal-to-hum (P-P/RMS): 56 dB

AUDIO PERFORMANCE (NOTE 1)

Frequency response:
 40 Hz to 15 kHz ± 1.5 dB maximum
 40 Hz to 10 kHz ± 0.5 dB maximum
 Harmonic distortion:
 @ 75 kHz peak deviation 0.5% maximum
 @ 200 kHz peak deviation 1.5% maximum
 De-emphasis:
 525 line 75 μ s
 625 line 50 μ s
 Optional Flat
 Audio output level:
 TT @ 75 kHz peak deviation 0 to +9 dBm
 Maximum +18 dBm
 Audio impedance: 600 ohms balanced
 Audio signal-to-noise ratio: 65 dB Minimum
 Ref: 75 kHz peak deviation with pulse and bar video test
 signal @ -40 dBm RCL

POWER REQUIREMENTS

115/230 Vac (50/60 Hz) or 11.5 or 32 Vdc at 38W

PHYSICAL CHARACTERISTICS

Size: 5.0" (H) x 6.5" (W) x 12.0" (D)
 (12.7 x 16.5 x 30.4 cm)
 Weight: 14.5 lbs. (6.6 kg)

ENVIRONMENTAL

Temperature:
 Operating -30 to +55°C
 Full specifications -20 to +50°C
 Relative humidity: 95% (0 to +40°C)
 Altitude:
 Operating 15,000 ft (4,500 m)
 Storage 50,000 ft (15,000 m)

NOTE 1: Based on 20 MHz IF BW, RCL of -40 dBm and 525 line CCIR weighting. Receiver contribution only.

Specifications subject to change without notice.

Table 1. Video Performance**

(Note: Composite and filtered video outputs except as noted.)

Video Performance	20 MHz IF Filter (Standard)	30 MHz IF Filter (Optional)
Frequency Response (Composite Output) 10 kHz to 5.5 MHz*	± 0.25 dB maximum	± 0.25 dB maximum
Differential Phase (10-90% APL)	1°	0.5°
Differential Gain (10-90% APL)	2%	2%
Field Tilt	1 IRE unit	1 IRE unit
Chroma Delay Inequality (RCD)		
Composite Output	± 20 ns	± 20 ns
Filtered Output	± 40 ns	± 40 ns
Chroma Gain Inequality (RCL)	± 2 IRE units	± 2 IRE units
Luminance Non-Linearity	2% maximum	2% maximum
Long-Time Distortion (Bounce)	35 IRE units	35 IRE units

* Filtered output frequency response is dependent upon selected video filter.