



**MICROWAVE
RADIO** corporation

The Microwave Connection

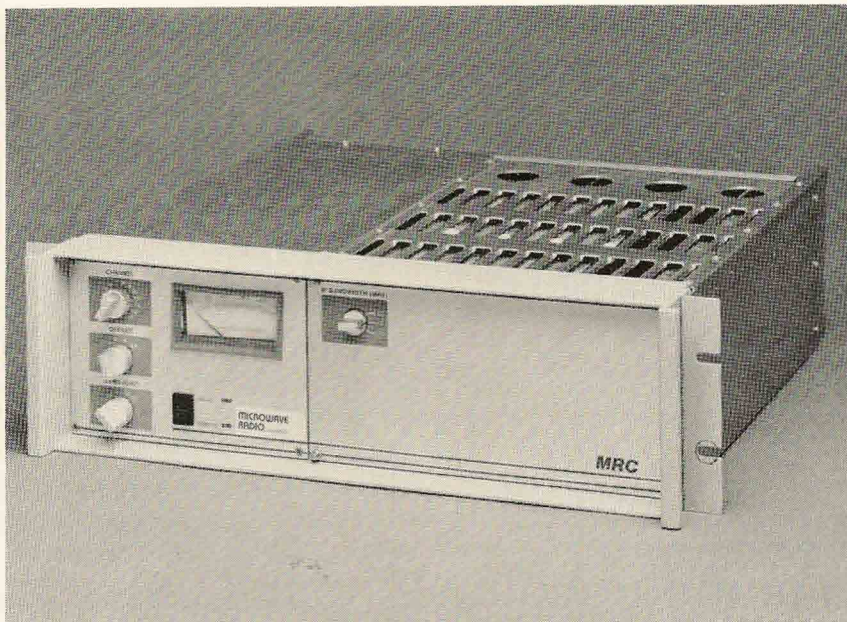
ProStar MRC™ 2 GHz Central Receiver

Features

- Dual conversion frequency synthesized
- Superior adjacent channel rejection
- Frequency bands:
 - 1990-2110 MHz—21 channels
 - 1710-1850 MHz—10 channels
 - 2200-2450 MHz—10 channels
 - 2300-2700 MHz—10 channels
- Remote control capability
- Low noise preamplifier standard
- Selectable IF bandwidth

Ordering Information

900206 ProStar MRC Receiver
Specify two audio subcarrier frequencies



The ProStar MRC is a high performance rack mounted receiver. This dual conversion receiver has been designated for operation in crowded RF environments where undesired adjacent signals may be significantly stronger than the desired signal. Superior performance is achieved through the use of state-of-the-art design techniques and components. Excellent threshold and sensitivity specifications are achieved through the use of a built-in LNA. The ProStar MRC is equipped with two IF filters. The channel, IF filter selection and other key functions may be remotely controlled. The receiver is offered in a number of frequency bands which cover both the U.S. broadcast and government allocations as well as the international CCIR 2 GHz frequency allocations.

The receiver features several different IF filter options ranging from a highly selective narrow band (10 MHz B.W.) S.A.W. filter, used under crowded U.S. ENG band conditions when the "shot must get thru" to wider bandwidth filters providing full CCIR performance. Two filters may be selected either singly or in cascade depending on interference conditions. When the narrow band filters are "switched in" greater than 60 dB rejection is provided at ± 10 MHz.

The receiver is provided to meet either the NTSC 525 Line or CCIR/PAL/SECAM 625 Line Standard. The standard receiver is supplied with two audio channels.



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PRO-STAR 2 GHZ CENTRAL RECEIVER SPECIFICATIONS

GENERAL

Type: Super heterodyne dual conversion
 Capacity: CCIR video plus 2 audio channels
 Frequency range: 1.7 to 2.7 GHz in the following sub bands:
 (Note 1)
 Band A: 1.99 to 2.10 GHz, 7 channels plus offsets
 Band B: 1.71 to 1.85 GHz, 10 channels
 Band C: 2.2 to 2.45 GHz, 10 channels
 Band D: 2.3 to 2.7 GHz, 10 channels
 Receiver noise figure: 2 dB typ. 2.5 dB max.
 Local oscillators: Digital synthesizer (1st L.O.)
 phase locked (2nd L.O.)
 Local oscillator stability: $\pm 0.005\%$
 1st IF frequency: 744 MHz
 1st IF bandwidth: 30 MHz
 2nd IF frequency: 70 MHz
 2nd IF bandwidth: (2 switchable bandwidths provided): Optional:
 10 plus a 15, 20 or 30 MHz bandwidth filter
 Receiver Selectivity (typ)
 with 10 and 15 MHz bandwidth selected: $-3 \text{ dB} \pm 6 \text{ MHz}$
 $-60 \text{ dB} \pm 9.5 \text{ MHz}$
 with 15 MHz bandwidth selected: $-3 \text{ dB} \pm 7.5 \text{ MHz}$
 $-60 \text{ dB} \pm 19 \text{ MHz}$
 with 20 MHz bandwidth selected: $-3 \text{ dB} \pm 10 \text{ MHz}$
 $-60 \text{ dB} \pm 22 \text{ MHz}$
 with 30 MHz bandwidth selected: $-3 \text{ dB} \pm 14 \text{ MHz}$
 $-60 \text{ dB} \pm 32 \text{ MHz}$
 Video output (4.25 or 5.5 MHz filter optional): 1V p-p for ± 4 MHz deviation
 ± 4 MHz deviation
 Baseband output (wideband): 1V p-p for ± 4 MHz deviation
 IF output: 70 MHz at $+3 \text{ dBm} \pm 3 \text{ dB}$
 Audio sub-carrier frequency: 4.83, 5.8, 6.2, 6.8, 7.5, 8.3 or any
 CCIR frequency (Note 2)
 Two standard (optional frequency agile de-modulator available)

VIDEO PERFORMANCE

Emphasis: Standard CCIR 525 or 625 line
 Signal to noise (CCIR weighted): 70 dB min
 Signal to hum: 65 dB min
 Frequency response:
 Video output, (with 4.2 MHz video filter and 15 MHz IF
 bandwidth)
 10 KHz to 4.2 MHz: $\pm 0.25 \text{ dB max}$
 Video output, (with 5.5 MHz video filter and 15 MHz IF
 bandwidth)
 10 KHz to 5.5 MHz: $\pm 0.25 \text{ dB max}$
 Baseband output
 10 KHz to 8 MHz: $+0.5, -3 \text{ dB max}$
 Field tilt: 1% max

The following specifications are a function of IF Bandwidth

| | 10 MHz | 15 MHz | 20 MHz | 30 MHz |
|---------------------|-------------------------|---------------------|---------------------|---------------------|
| IF bandwidth: | 10 MHz | 15 MHz | 20 MHz | 30 MHz |
| Diff gain: | 6% typ | 1% max | 1% max | 1% max |
| Diff phase: | 3 deg typ | 1 deg max | 0.5 deg max | 0.5 deg max |
| Chroma gain: | 5% typ | 4% max | 2% max | 2% max |
| Chroma delay: | $\pm 30 \text{ ns typ}$ | $\pm 20 \text{ ns}$ | $\pm 20 \text{ ns}$ | $\pm 20 \text{ ns}$ |
| "T" Pulse Response: | 2% typ | 1% max | 1% max | 1% max |

AUDIO PERFORMANCE

Frequency response
 50 Hz to 15 KHz: $\pm 1.5 \text{ dB max}$ (Note 3)
 50 Hz to 10 KHz: $\pm 0.5 \text{ dB max}$
 Emphasis: 75 micro sec standard
 50 micro sec or flat available
 Harmonic distortion:
 At standard deviation of 75 KHz pk @ 1 KHz TT: 0.5% max
 deviation with 200 KHz pk overload: 2% max
 Audio output level:
 1 KHz TT at 75 KHz pk
 deviation: Adjustable 0 to +9
 Factory set at +9 dBm
 Audio output impedance: 600 ohms balanced - standard
 150 ohm or 50 ohm impedance available
 Audio signal to noise ratio: 70 dB min
 Ref: 75 KHz pk deviation with pulse and bar video test signal and
 -40 dBm RCL :

REMOTE CONTROL FUNCTIONS

Signal strength, squelch, channel selection, IF bandwidth, local
 remote, alarm

POWER REQUIREMENTS

115 or 230V AC $\pm 13\%$, 50 to 400 KHz at 50 watts

PHYSICAL CHARACTERISTICS

Size: 5.25" (H) x 19" (W) x 15.4" (D)
 (13.3 x 48.3 x 39.3 cm)
 Weight: 25 lbs (11.4 KG)

TEMPERATURE RANGE

Operational: -20 to $+55 \text{ deg C}$
 Full specifications: $+10$ to $+40 \text{ deg C}$
 Relative humidity: 98% (10 to 40 deg C)
 Altitude
 Operational: 15,000 ft (4500 m)
 Storage: 50,000 ft (15,000 m)

- Note 1: Other frequencies and channel plans available on special order.
 Note 2: When 10 MHz IF bandwidth is switched in only specifications
 on 4.83 MHz sub-carrier is guaranteed.
 Note 3: Audio response includes a 15 KHz low pass/notch filter which
 improves the audio S/N. This filter may be removed on
 special order if a wider bandwidth or flat audio channel is
 required.