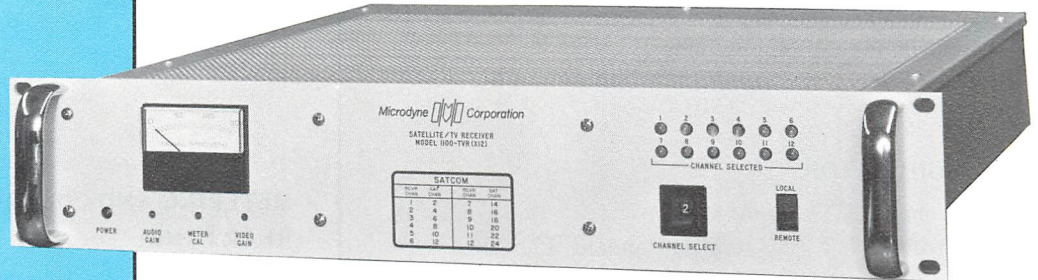


# SATELLITE EARTH STATION RECEIVER



## Model 1100-TVR(X12)

### FEATURES

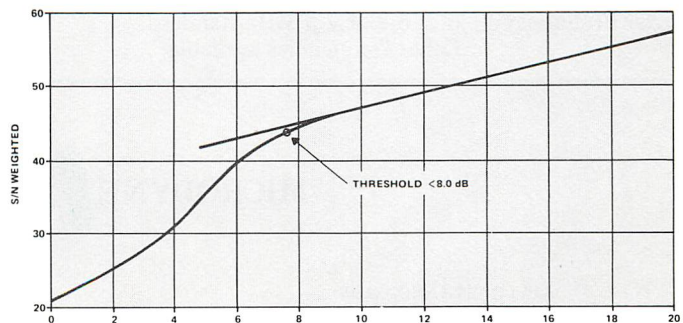
- Voltage Tuned Preselector
- Local or Remote Tuning
- C Band to Video and Audio in One Compact Unit
- Threshold at 8.0 dB C/N
- Computer Control Compatibility
- EIA and CCIR Compatible
- Additional Audio Subcarrier Demodulators Optional

### DESCRIPTION

The 1100-TVR(X12) represents one of Microdyne's newest products developed for the reception of Wideband Satellite data. These receivers are EIA and CCIR compatible and are designed for reception of wideband FM signals via domestic and international satellites. Applications include Pay TV (CATV) Independent Television Stations, Wideband Business Data and related future areas of development where optimum phase linearity and sensitivity are required.

The 1100-TVR(X12), featuring Microdyne's patented voltage tuned preselector, provides 12 selectable channels either locally or remotely switchable. The receiver can be provided with any 12 of the 24 channels available on the Satellites and can be easily reconfigured in the field for other assignments.

Superior 8.0 dB C/N FM demodulator threshold extension characteristics (Patent Pending) are standard. Exceptional video and audio baseband performance of microdyne receivers have been well documented by many competitive technical evaluations. Furthermore, they provide an MTBF reliability figure in excess of 13,000 hours. These receivers readily interface with any existing TV earth terminal, one to be installed by the user or one that is to be purchased as a complete turnkey installation. Each receiver is a complete down link unit housed in one compact enclosure.



Threshold Characteristics

**SPECIFICATIONS**

Single Conversion  
12 channel operation  
Crystal LO stability  $\pm 0.001\%$  from  $0^{\circ}$  to  $50^{\circ}\text{C}$ ;  
1 part in  $10^6$  per three months.

**DOWN CONVERTER**

Input Frequency 3.7 - 4.2 GHz.  
Input Impedance 50 ohms.  
RF Bandwidth 40 MHz nominal at 1 dB.  
Output Frequency 70 MHz.

**IF/DEMODULATOR**

IF Frequency 70 MHz.  
IF Bandwidth 30 MHz standard; 17.5, 20,  
25, 36 and 40 MHz available.

**VIDEO PERFORMANCE**

Operating Parameters	Format	System	$f_v$ Maximum
	525/60	M	4.25 MHz
	625/50	B	5.0 MHz
	625/50	DKL	6.0 MHz

Deviation Range 5 to 13 MHz peak at de-emphasis crossover frequency.

Video Output  
Frequency Response 10 Hz to  $f_v$  Max.  $\pm 0.5$  dB.  
Impedance 75 ohms.  
Level 1V peak-to-peak.  
Level Adjustment (front panel)  $\pm 0.5\text{V}$  continuous.  
De-Emphasis 525 lines per CCIR Rec. 405.1 standard. Other de-emphasis filters available.

Polarity Black to white transitions positive going. Reverse polarity optional.

Clamping  $>40$  dB for 30 Hz triangular dispersion waveform.

**NON-LINEAR DISTORTION**

Differential Gain  $\pm 2\%$  max. 10-90% APL.  
Differential Phase Less than  $\pm 1^{\circ}$ , 10-90% APL.  
2T Pulse Distortion Less than 2%.

**LINEAR DISTORTION**

Line Time Distortion Less than  $\pm 1.5\%$ .  
Field Time Distortion Less than  $\pm 1.5\%$ .

**AUDIO OUTPUTS**

Subcarrier Frequency 6.2, 6.8 or 7.5 MHz standard.  
Other frequencies available.

Frequency Response 20 Hz to 15 kHz  $\pm 0.5$  dB.  
De-Emphasis 75  $\mu\text{sec}$ . Other options available.  
Output Level Continuously adjustable, 0V to +10 dBm.  
Impedance 600 ohms balanced.  
Harmonic Distortion 1% maximum.  
Additional Audio Channels Provisions are incorporated in the receiver for the installation of up to (3) three additional subcarrier demodulators for the reception of other audio or data programming.

**METERING AND CONTROLS**

**REAR PANEL**

Power ON/OFF.  
AGC/MGC Internal.  
Manual Gain Control Control adjusts manual gain level (65 dB range).  
Accessory Plug Remote control interface.  
DC Power 24V DC output for LNA power.

**FRONT PANEL**

Channel Select Digital numerical switch provides local selection of desired channel.  
Channel Selected Separate LED display for each channel indicates selected channel.  
Remote/Local Switch Selects remote or local control of channel selection. Remote control of channel selection is accomplished by grounding applicable channel line through accessory connector on rear panel of receiver. LED indicates channel selected remotely.  
Audio Gain Adjusts audio output level 0V to +10 dBm.  
Video Gain Adjusts video output level to  $1 \pm 0.5\text{V}$ .  
Meter Calibration Calibration control for signal strength meter.

**ENVIRONMENTAL**

Temperature Operating: 0 to  $50^{\circ}\text{C}$ .  
Storage:  $-60^{\circ}$  to  $+60^{\circ}\text{C}$ .  
Atmospheric Pressure Operating: To 10,000 feet.  
Storage: To 50,000 feet.  
Mechanical  $3\frac{1}{2}$ " H x 19" W x 20" D.  
Weight Approximately 20 lbs.  
Prime Power 115/230VAC 50 to 400 Hz.  
DC power optional.  
Power Consumption Approximately 30 watts.

