

Ground Systems

Telemetry Receiver

MRX736

- Available with 2185 to 2485 MHz or 1429 to 1540 MHz tuners
- Highly selective RF tuning with 100 kHz tuning steps
- Four selectable IF bandwidths: 100 kHz to 12 MHz, or 1.2 MHz to 40 MHz for the wideband unit
- Two selectable FM demodulators for extended range operation
- Processes PCM/FM NRZ-L data rates from 50 kHz to greater than 7 Mbps, or 1.0 Mbps to 20 Mbps for the wideband version
- AM tracking output for an Antenna Control Unit (ACU)
- CE mark compliance with 89/336/EEC
- Rugged construction with seamless aluminum RF cavity
- Easy to set up and monitor with the Visual Test System's graphical user interface (GUI)



The MRX736 Telemetry Receiver is a dual full-size ISA board available in both standard and wideband configurations to meet your data acquisition application. Both configurations are designed to handle a wide variety of applications, including analog FM camera video and telemetry PCM/FM data rates from 50 kbps to over 7 Mbps, or for the wideband version, 1.0 Mbps to 20 Mbps. The units also provide AM tracking outputs to feed an Antenna Control Unit (ACU) for tracking applications. The receivers can be supplied with RF tuners for L- or E- (extended S-) band applications.



communications

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MRX736 Specifications*

Inputs

RF tuning range	.1429 to 1545 MHz (L-band) or 2185 to 2485 MHz (E-band); other ranges available – consult factory
Type	.Dual conversion, superheterodyne
RF input	.Top plate SMA female, 50 W
Operating level/ dynamic range	.-95 dBm to -10 dBm max. input level
Maximum operating level	.+10 dBm without damage to the unit
Tuning step size	.100 kHz
Noise figure	.12 dB max.
VSWR	.1.5:1 typical, 2:1 max.
Image rejection	.60 dB min.
IF rejection	.50 dB min.
Spurious rejection	.50 dB min.

Outputs

COR outputs	.Pin 6 TTL=1 (COR on), pin 7 TTL=0 (COR on), P/O top plate accessory connector
Video output level	.4 Vp-p max. adjustable over 63 dB in 1 dB steps
Video output impedance	.75 W unbalanced
Video output coupling	.AC or DC programmable
Video output filters	.Four selectable, plus bypass; bandwidth determined by IF bandwidth or customer-specified
Video output connector	.Top plate SMA female

Functions

1st IF center frequency	.440 {500} MHz
1st LO type	.Synthesized, 100-kHz step size
2nd LO type	.Synthesized
Reference oscillator	.10.0 MHz (optional 10-MHz input)
LO stability	. 1.5×10^{-6} over 0 to 50° C
2nd IF center frequency	.20 {70} MHz
2nd IF output	.Top plate SMA connector @ -10 dBm, 50 W
2nd IF bandwidth	.Select four (4) from: 300/500/750 kHz, 1/1.5/2/2.4/3.3/4/5/6/10/12 MHz, {1.2/3.3/4.0/5/6/10/12/15/20/25/30/40 MHz}; other filters available – consult factory
AM tracking output	.Envelope (non-coherent)
AM frequency response	.Limited by AGC TC at the low end to 100 kHz

AM output level	.2 Vp-p for 50% AM modulation into 75 W load
AM outputs	.Pin 1 and pin 9 of top plate accessory connector
AGC time constants	.0.1, 1.0, 10, 100, 1000 msec
AGC linearity	. ± 2 dB over any 30 dB range
AGC outputs	.Pin 2 and pin 8 of top plate accessory connector, 1 kW load or higher
Demodulation	.FM only, {patented delay line}
Demodulation bandwidth	.Medium and wide, selectable
Demodulation response	.5 MHz analog, 7 Mbps PCM/FM NRZ-L codes (15 MHz analog, 20 Mbps PCM/FM NRZ-L codes)
COR threshold	.Remotely adjustable

Monitor & Control Functions

AGC Freeze	.AGC Level
AGC Time Constant	.AGC Auto Zero
COR Status	.COR Threshold
Demod Bandwidth	.Deviation Monitor
External Reference	.IF Bandwidth
Manual Gain	.RF Tuned Frequency
Synthesizer Lock	.Tuning Meter
Video Bandwidth	.Video Output Level
Video Coupling	.Video Polarity

Power Consumption

+5V supply	.6.0 A typical
Power dissipation	.30 W typical

Physical Characteristics

Mechanical	.ISA-compatible board; requires two ISA slots
Size	.Full slot
Rear panel	.4 SMA, 1 accessory
Operating temperature	.0° to 55° C
Relative humidity	.< 90% (non-condensing)

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