

Airborne Telemetry

VR10 Series Video Data Receiver for Unmanned Vehicles

- L, S, or Dual L/S Band Operation
- Single or Multi-Channel Options
- Local and/or Remote Frequency Selection
- High Quality NTSC or PAL Color
- Excellent Sensitivity
- 10 Cubic Inch Compact Size
- Very Low Current Draw
- Single or Dual Subcarriers
- Optional LED Signal Strength Indicator



The most compact full-featured Video Receiver available today, the VR10 Series is designed to provide the same performance as the VR20 Series but in a smaller package and at a lower cost. Based on a dual board design, the unit takes full advantage of new surface mount parts, including a fully filtered front end for excellent rejection and sensitivity.

Fixed frequency and frequency agile (multi-channel) models allow operation in the L or S-Bands. Where agile operation is required, one to three small rotary switches, located on the side of the unit, allow setting of the desired frequency down to 1 MHz increments. When remote frequency selection is desired, the unit is programmed through the DB15 connector with a BCD code. This may be used to interface with thumbwheels or computer devices, or a preset frequency program plug. Either the Rotary Switch and/or remote frequency selection can be supplied. Frequencies can also be set through an optional RS232 Serial Port.

The dual-band model tunes to 1.7 to 1.85 GHz and 2.2 to 2.5 GHz. As an option, the unit may be ordered with continuous selection from 1.7 to 2.5 GHz.

One or two subcarrier demodulators are available for high quality audio or data. The 75-ohm video output will drive a standard video monitor or recorder. A composite video output is also available.

A true log amp DC voltage, proportional to the relative received signal strength is available at the DB15 connector to drive an external meter to aid in antenna alignment. As an option, an LED signal strength indicator on the side of the housing can also provide the user a visual indication of the received signal level.

*A Southern California Microwave
Product*



communications

Telemetry-West

Excellence You Can Measure

VR10 Series Video/Data Receiver Specifications

ELECTRICAL

RF Characteristics:

Frequency: Any from 1.7 to 2.5 GHz (specify at time of order)

Frequency Selection (select any combination of the 3 methods at time of order):

Serial: select any frequency in 10kHz increments via RS232 or TTL level serial interface

Parallel: up to 128 channels or 1 MHz steps via remote BCD code

Built in switches: up to 100 channels or 1 MHz steps

Frequency Stability: +/- .003%

Sensitivity: -85 dBm input for +12 dB Video SNR

Input Impedance: 50 ohms

VSWR: 2.0:1 maximum

Image Rejection: 60 dB minimum

Noise Figure: 6 dB maximum

Dynamic Range: 60 dB minimum

IF Bandwidth: 27 MHz 3 dB nominal

L.O. Radiation: -25 dBm maximum

Power Requirements

Input Voltage (Including ripple and noise): +12 to +16 VDC

Current Draw: 300 mA maximum

Isolation: B- common to chassis

Reverse Polarity Protection: Yes, up to 16V

Video Characteristics

Output Polarity: Increasing Frequency causes positive output

Frequency Response: 6 Hz to 5.5 MHz per CCIR 405 525 line de-emphasis, +/- 1.5 dB

Output Amplitude: Adjustable, set to 1.0V p-p +/- 1.2dB for +/- 4 MHz deviation

Modulation Linearity: 1% max. least squares method

Modulation Distortion: 2% maximum (end to end with transmitter)

Subcarrier Characteristics

Frequency: Any from 5.8 to 8.5 MHz

Frequency Response: DC to 10 kHz +/- 1.5dB (AC coupled and up to 2 audio subcarriers also available)

Data Rate: 19.2k bits per second of NRZL data (others available up to 26k)

Output Amplitude: RS232 levels (others including TTL and audio levels available)

ENVIRONMENTAL SPECIFICATIONS

Temperature: Operating: 0 to +50 degrees C baseplate minimum (other temperature ranges available)

Altitude: Unlimited

Humidity: Up to 95%, non-condensing

MECHANICAL SPECIFICATIONS

Size: 3" x 3.5" x 1"

Weight: 9 oz. maximum

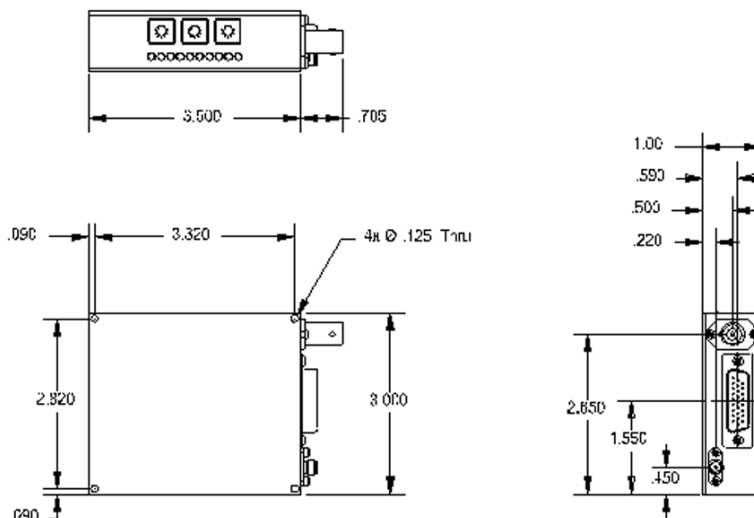
Connectors

RF: SMA female

Video: BNC female

Power, Data, Frequency Select, Signal Strength: DB-15P

Options: SMC video connector, LED signal strength indicators



VR10 Series Video/Data Receiver Mechanical Outline Drawing

U.S. Headquarters

9020 Balboa Avenue
San Diego, CA 92123-3507
858-694-7500 800-351-8483
Fax: 858-279-0693

Southern California Microwave

2732 Via Orange Way
Spring Valley, CA 91978-1744
619-670-3414
Fax: 619-670-0127

www.L-3Com.com/tw



communications
Telemetry-West