

VETA Monitor Receiver (VMR)

COBHAM

The most important thing we build is trust.

Applications

- Mobile and Portable Audio/Video Monitor
- High-Security Surveillance Applications
- Studio Wireless Links

Key Features

- 8" Integrated Sunlight Readable LCD Monitor
- Input Frequency: 0.174 to 8.5 GHz (In-Bands)
- COFDM Demodulation (*400 or 2K Carriers)
- Band widths from *1.25 MHz to 8 MHz
- Uses Professional batteries
- Internal Block Down Converters
- Compact and lightweight

* Note: Optional



Cobham's Very Efficient Transmission Apparatus (VETA) Product Line provides several key features that enable high-quality and low-latency wireless Audio/Video (A/V) transmission for the most demanding short or long distance point to point or point to multipoint transmission applications. VETA uses a robust digital modulation system known as Coded Orthogonal Frequency Division Multiplexed (COFDM) that provides a robust link that is immune to multipath interference and provides crisp, clear pictures in the most difficult of terrains!

Cobham's VETA Monitor Receiver (VMR) is a state-of-the-art COFDM Receiver for Mobile/Portable applications. This compact, battery (IDX or Anton Bauer) or DC operated receiver contains Two internal Block Down Converters for Diversity reception, a VETA compliant Receiver, 8-inch flat screen, sun-light readable monitor with headphone jack. It has a brightness level of 1,000 cd/m² and a typical contrast ratio of 600:1. An analog A/V output jacks are provided for viewing on another monitor.

The VETA product line supports standard DVB-T 2K carriers with bandwidths of 6, 7, or 8 MHz. Additionally, optional 1.25 MHz or 2.5 MHz RF bandwidths with 400 carriers that allow both increased reception range and larger quantity of simultaneous A/V links to operate in the same frequency band. The wider bandwidths provide greater throughput that allow the system to transfer the highest quality Video. The standard VMR is supplied with dual Diversity inputs and internal RF Block Down Converters (BDCs) with a user selected frequency band. The VMR's Maximal Ratio Diversity Combiner provides optimum reception in difficult fading and multipath environments. Additionally, the Diversity combining can

provide up to 2.5 dB in link performance, increasing the receiver's sensitivity to -97.5 dBm at 8 MHz bandwidth!

One of the biggest problems encountered in the transition from Analog to Digital A/V systems has been the inherent Digital Coding/Decoding delays that in some Digital systems are 400 ms or more causing as much as 34 Video frames of latency! The VETA Transmitters & Receivers employ internal MPEG-2 or MPEG-4 (User Selectable) Encoders and Decoders with specially designed 'Low-Delay' coding technology, which provides an end to end latency of approximately 44 ms, approximately 2 Video frames of latency, *without* the introduction of any further MPEG encoding artifacts. This ensures that the picture you see is what is happening *now* - crucial for applications such as Surveillance, and Law Enforcement, where personnel are reacting to Real-Time Events.

Control and status monitoring can be accomplished via the VMR's Side Control Panel or via an external IBM PC and Cobham's M.S. Windows application control software. Critical performance parameters like Signal to Noise Ratio (SNR), Pre and Post FEC Bit Error Rate (BER) and Packet Errors are provided both on the on the On-Screen Display or M.S. Windows control program.

Security of transmission is ensured by the use of Standard ABS encryption or, for greater security, the optional AES 128 or 256 bit scrambling algorithms.

Specifications:

COFDM RF Input

Input Impedance: 50 Ohms, <1.5:1 VSWR
Input Frequency: 0.174 to 8.5 GHz (In-Bands)
Frequency Accuracy: (+/-) 10 ppm

Demodulation

DVB-T # of Carriers: 2K
DVB-T Bandwidth: 8/ 7/ 6 MHz
DVB-T Guard Interval: 1/32, 1/16, 1/8, 1/4
DVB-T FEC 1/2, 2/3, 3/4, 5/6, 7/8
DVB-T Modulation QPSK, 16-QAM, 64-QAM
Optional VETA Narrow BW Modes
VETA # of Carriers: 400
VETA Bandwidth: 2.5 MHz or 1.25 MHz
VETA Guard 1/16, 1/8
VETA FEC 1/3, 2/3
VETA Modulation QPSK, 16-QAM
Threshold: (6, 7, & 8 MHz BW)
 QPSK 1/2: <-95 dBm
 16-QAM 1/2: <-89 dBm
 64-QAM 1/2: <-83 dBm
(Optional Diversity can improve threshold by 2.5 dB)

VETA BW Threshold: -100 dBm to -105 dBm

Video Decoding

Compression Standard: MPEG-2 or MPEG-4
Chrominance Profile: 4:2:0
Line Standard: 525 and 625 (NTSC/PAL)
Horizontal Resolution: 704, 528, 480, 352 pixels
Systems Latency end to end delay: ~44 ms for 6, 7, or 8 MHz, Narrow BW to ~120 ms (w/VETA TX Only) mode dependant

Video Outputs

1- Composite w/OSD
Standards: NTSC (with and without pedestal) or PAL
Output Impedance: 75 Ohms
Output Level: 1V p-p
Frequency Response: 10 Hz to 4 MHz, +/- 1.5 dB

VETA Monitor Receiver (VMR)



Audio Decoding

Number of Channels: 2
Audio Compression: NICAM
Bits Per Sample: 12 or 8
Sampling Frequency: 32 KHz, 16 KHz or 8 KHz
Frequency Response: 200 Hz to 10 KHz, +/- 1.0 dB
Analogue Audio Outputs: RCA

RS232 Data Output

Baud Rate: Up to 115 Kbaud.
Connector: p/o J1, DB-9F

Security Option

ABS is standard. The VMR can optionally be provided with Advanced Encryption System (AES) 128 or 256 for protecting the signal in sensitive applications.

Control

Local Control:

Side Panel with 8 channel/mode select, Preset key selection (1-8).

Local Monitoring:

Side Panel:

Signal Strength (Bar Graph), Channel & Mode, invalid Encryption Key and Rx Lock.

On Screen Display:

Signal To Noise Ratio (SNR), Pre and Post FEC Bit Error Rate (BER) and Packet Errors are provided both on the On-Screen Display and the M.S. Control Application.

Remote Control:

RS232 Control from PC GUI. All receiver options and functions are controlled via the remote interface.

Remote Monitoring:

All RX measurements and controls

DC Power Options:

Battery – IDX or Anton Bauer Options
External Power: 9-16V DC
Power Consumption: <26 Watts

Connectors:

Antennas: N-F
Video Output: BNC-F
Audio Outputs (L/R): RCA-F
DC Input: 4-Pin XLR
Control & Data: DB-9F

Mechanical properties:

Dimensions (WxDxH): 12.2 in X 3.5 in X 6.5 in
30.9 cm x 8.89 cm x 16.51 cm
Less Battery Connector & Battery
Weight: 6.2 lbs / 2.8 kg
Operation temperature: -10°C to +50 °C
Humidity: Up to 95% non-condensing