

The most important thing we build is trust.

Applications

- High-Security Surveillance Audio/Video Receiver
- Helicopter links
- Mobile and Portable AV Applications

Key System Features

- COFDM Demodulation (*400 or 2K Carriers)
- Bandwidths from *1.25 MHz to 8 MHz
- Input Frequency: 0.174 to 7.2 GHz (In-Bands)
- Internal or External Block Down Converters
- Low End to End System Latency (~40 mS)
- Secure – ABS / *AES 128 or 256 Scrambling
- ASI Output Port
- *Optional LAN IP Streaming Interface

* Note: Optional

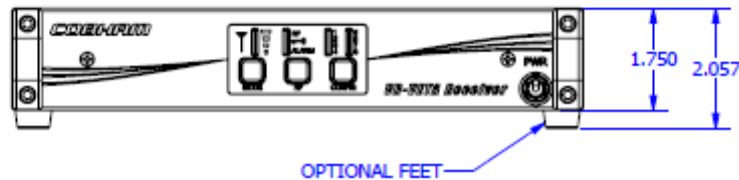
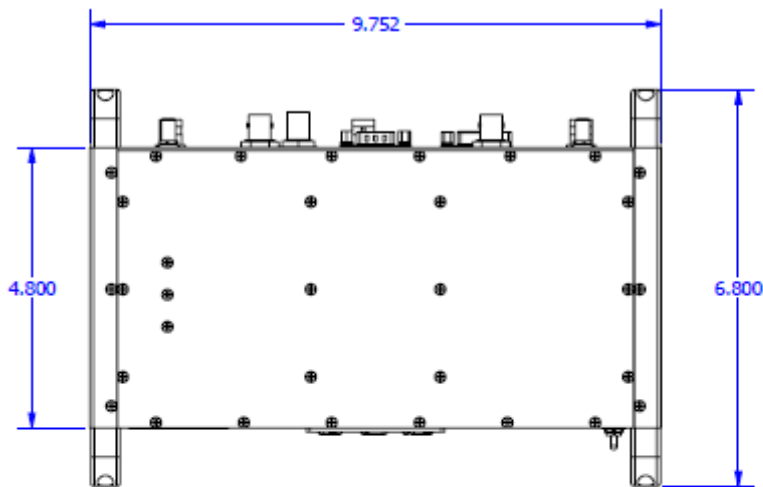


GMS' Very Efficient Transmission Apparatus (VETA) Product Line provides several key features that enable high-quality and low-latency wireless Audio/Video (A/V) transmission for the most demanding short or long distance point to point or point to multipoint transmission applications. VETA uses a robust 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!

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 VR is supplied with Dual Maximal Ratio Diversity inputs and internal RF Block Down Converters (BDCs) with a user selected frequency band. The VR'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! Optional external GMS BDCs are available that can support other frequency bands and optimize reception when mounted directly to remote Antennas.

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 400ms 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 40ms *without* the introduction of any further MPEG encoding artifacts. This translates to approximately 2 Video frames of latency and 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.

VETA Receiver (VR)



The VETA Receiver's versatile housing can be optionally mounted in a suitcase, can sit on a desktop, or be configured to mount in a 19-inch instrumentation rack.

Control and status monitoring can be accomplished via the VETA Receiver's Front Panel or via an external IBM PC and GMS' M.S. Windows application control software. Critical performance parameters like Signal To Noise Ratio (SNR), Pre and Post FEC Bit Error Rate (BER), and invalid Encryption Key are provided both on the on the On-Screen Display or M.S. Windows control program.

The VR also includes internal Low-Latency Audio/Video Decoder (MPEG-2 or MPEG-4) and output circuits that provide Video, Two Audio and Data Channels. 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.

The ASI output can output a transport stream to External Decoders and Recording Devices. This allows the VR to support a wide variety of additional formats including HD/SD AVC/h.264. The optional VETA IP Network Adapter (VNA) provides the VR with a Video streaming capability for network interfacing. An optional M.S. Windows software Decoder and Recording application is also available.

Specifications:

COFDM RF Input

Input Ports: 2
Connectors: BNC-F
Input Impedance: 50 Ohms, <1.5:1 VSWR
Input Frequency: 0.9 to 7.2 GHz (In-Bands)
Frequency Accuracy: +/- 5 ppm

COFDM IF Input

Input Ports: 2
Input Connector: BNC-F
Input Impedance: 75 Ohms, <1.5:1 VSWR
Input Frequency: 0.174 to 849 MHz
Frequency Accuracy: (+/-) 2 ppm
Final IF Bandwidth: 10 MHz @-3 dB
LO Radiation: <-25 dBm
DC Output: 12 V @ 500 mA

External Down-Converters (optional)

Frequencies >845 MHz

Demodulation

DVB-T # of Carriers: 2 K
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
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: <-83dBm
(Optional Diversity can improve threshold by 2.5 dB)
VETA BW Threshold: -100 dBm to -105dBm

Transport Stream Port

ASI – BNC - F

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: ~40 ms for 6, 7, or 8 MHz, Narrow BW to ~120 mS (w/VETA TX Only, mode dependant)

Video Outputs

1- Composite w/OSD, 1-S-Video
Standards: NTSC (with and without pedestal) or PAL
Video Connectors: Composite – BNC-F,
S-Video – p/o J-1,
DB-15F

Output Impedance: 75 Ohms

Output Level: 1 Vpp

Frequency Response: 10 Hz to 4 MHz, +/- 1.5 dB

Audio Decoding

Number of Channels: 2
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: Un-balanced outputs, Line Level
Output Impedance: <100 Ohms Unbalanced
Connector: LEMO 5 pin

RS232 Data Output

Baud Rate: Up to 115 k baud.

Connector: p/o J2, DB-9M

Security Option

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

Optional LAN/USB Interface

Refer to GMS' VETA IP Network Adapter (VNA) Data Sheet. This optional module provides 10/100 Base-T LAN (RJ-45) Interface that can be used for Audio/Video/User-Data streaming.

VETA Receiver (VR)



Control

Local Control: Front Panel with 8 channel/mode select, Preset key selection (1-8).

Local Monitoring:

Front Panel: Signal Strength (Bar Graph), Channel & Mode, and Rx Lock.

OSD:

Signal To Noise Ratio (SNR), Pre and Post FEC Bit Error Rate (BER), invalid Encryption Key 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.

RSSI Monitoring:

Receiver signal strength indicators (0 – 4.5VDC) for tuners 1 & 2.

Connector: p/o J1, DB-15F

Physical

Less Handles

Dimensions: 9.752" W x 4.8" D x 1.754" H

24.77 cm W x 12.19 cm D x 4.45 cm H

With Handles

Dimensions: 9.752" W x 6.8" D x 1.754" H

24.77 cm W x 17.27 cm D x 4.45 cm H

Weight: 3.69 lbs (1.67 kg)

Environmental

Operational Temperature: -10 °C to +70 °C

Power

DC Voltage Range: 9 - 16 VDC

Reverse Voltage Protection

Power Consumption: 12 Watts

W/ Optional AC to DC Adapter

AC Voltage: 90-264 VAC @ 45-440 Hz

AC Power Consumption: 13 Watts

Circuit Breaker Protector