

Standard Definition Messenger Transmitter- SDI Version (SDMT-S)

COBHAM

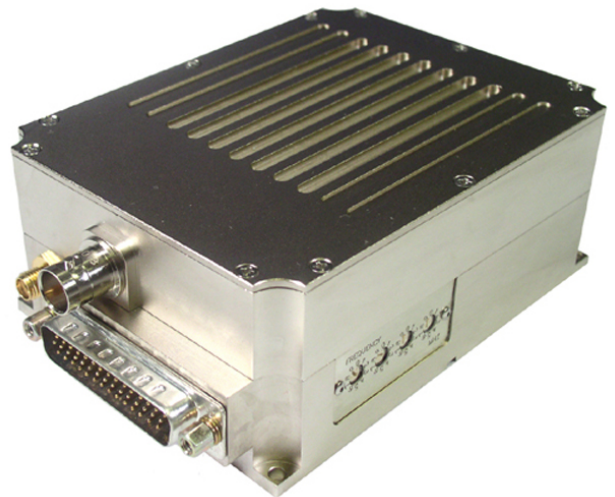
The most important thing we build is trust.

Applications

- High-Security Surveillance Applications
- Helicopter Links
- Electronic News Gathering (ENG)
- Studio Wireless Links
- Sports
- Point of View
- UAV/UGV Applications
- Mobile and Portable AV Applications

Key System Features

- ASI, SDI, Component & S-Video Interfaces
- Built-in 4:2:0 MPEG-2 Encoder
- COFDM Modulation
- Local & Remote Control
- Output Frequency: 0.36 to 7 GHz (In-Bands)
- Scrambling Option (AES)
- User Data Option
- Low Power Consumption
- Rugged and Compact Portable Design



GMS' Standard Definition Messenger Transmitter with SDI Option (SDMT-S) accepts Composite, S-Video, Component analog Video or SDI digital video as well as up to two audio channels (Mic or Line Level). Both the video and the audio are compressed according to MPEG specifications (Video MPEG2 and audio MPEG1 Layer II). However, unlike other MPEG-2 systems, the high-frequency video signal components are preserved. The audio, video program element streams are multiplexed with basic service data to indicate the service name. This transmitter is compatible with most commercial DVB-T receivers and Set-Top Boxes as well as professional receivers.

The stream can be scrambled with an optional AES scrambling system to provide secure protection in sensitive applications. This option requires the receive system to use a GMS Digital Data Processing Card (DDPC) with the AES decryption FW Option. The SDMT-S also has a User Data Option that allows RS-232 serial data with rates up to 9.6 kBaud within the transport stream.

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GMS offers several companion receivers and ancillary equipment required to cover a wide variety of applications and budgets. A Standard Definition Messenger Link (SDML) is formed when the SDMT or SDMT-S is combined with one of GMS' Messenger Digital Receivers, one or two external Down-Converters, antennas, and a SD MPEG2 decoder. GMS' SDMLs provide a unique combination of security and link reliability for the most demanding short or long distance Audio/Video (A/V) point to point and point to multipoint transmission applications.

MDL uses a robust digital modulation system known as Coded Orthogonal Frequency Division Multiplexed (COFDM) that provides frequency diversity and powerful Forward Error Correction (FEC) algorithms. The Messenger Smart Receiver supports Spatial Maximal Ratio Pre-Detect Diversity Combining to combat short delay spread multipath reflections found in indoor environments. The MDL provides a robust wireless link that is effective against the multipath interference experienced by analog systems and provides crisp, clear pictures in the most difficult of terrains.

One of the biggest problems encountered in the transition from an analog to a digital A/V platform has been the inherent digital coding delays that in some digital systems are 400 ms or more. The SDMT-S/MSR combination in SP@ML mode can provide an end-to-end latency down to approximately 200 ms *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 sports coverage, surveillance, and law enforcement, where personnel are reacting to real-time events.

SDMT-S Special Features

Monochrome Video Mode (custom option, consult factory)

Surveillance applications often do not require chrominance data in the video. The SMDT-S has been provided with a luminance (monochrome) only mode. When in this mode, bit rate is saved giving sharper monochrome pictures.

Video Only Mode

In applications where audio is not required, the audio channels can automatically be switched off. Bit rate is automatically switched over to the video channel in this situation.

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Specifications:

COFDM RF Output

Output Frequency: 0.36 to 7 GHz (In-Bands)
Bandwidth: Selectable 6, 7, 8 MHz
RF Output Power: Up to 200 mW (programmable)
Connector: SMA-F

Video Encoding

SDI, Composite or S-Video or Component Input:
Standards: NTSC or PAL
Compression Standard: MPEG-2
Chrominance Profile: 4:2:0
Line Standard: 525 and 625
Horizontal Resolution: 704 pixels
Vertical Resolution: 576 (625 line), and 480
(525 line)
Video Bit rates: 3.73 Mbit/S to 15 Mbit/s
System Latency¹ end to end delay: 200 ms
Connector: p/o DB-44F

Audio Encoding

Analogue Audio Inputs:
Dual, Line-Level or Mic-Level, Single-Ended or
Differential, Clip Level 12dB
Input Impedance: 600 Ohms (Mic), 2 kOhms (Line)
Compression Standard: MPEG Layer II
Bit rates: 256 kbit/s/ch
Sampling Frequency: 32 kHz, 44.1 kHz, or 48 kHz
THD: < 0.1 % max.
Response: 20 Hz to 12 kHz, +/- 0.25dB
Crosstalk: >55 dB min
S/N: >60 dB RMS
Connector: p/o DB-44F

Scrambling Option

Type: 128 Bit Advanced Encryption Standard (AES)
Key Storage: User Controlled, Local or Remote
Implementation: Everything except TS Header
Requires DDPC with AES Option on RX Side

Optional Input

ASI Port: DVB-T compliant ASI Transport Stream
(ASI Only Option available)
Connector: BNC-F

Modulation

Modulation Type: COFDM w/QPSK or 16 QAM
64 QAM available in ASI input mode only
FEC²: 1/2, 2/3, 3/4, 5/6, 7/8
Guard Intervals²: 1/32, 1/16, 1/8, 1/4
Spurious: <50 dBc
COFDM Carriers: 2k Carriers

User Data Option

Protocol: RS-232C, Asynchronous, 8 Bits, No Parity,
1 Stop Bit
Data Rate: Selectable, Up to 9.6 kBaud
User Data PID: Selectable
Connector: p/o DB-44F

Physical (without mating connectors)

Dimensions: 3.25" (W) x 4.5" (D) x 1.76" (H)
8.26 cm x 11.43 cm x 4.47 cm
Weight: 13.4 oz (379.9 grams)

Environmental:

Operational Temperature: -10 to 70 deg C

Humidity: Up to 100% non-condensing

¹ Modulation mode and decoder dependant

² May be limited in certain modes

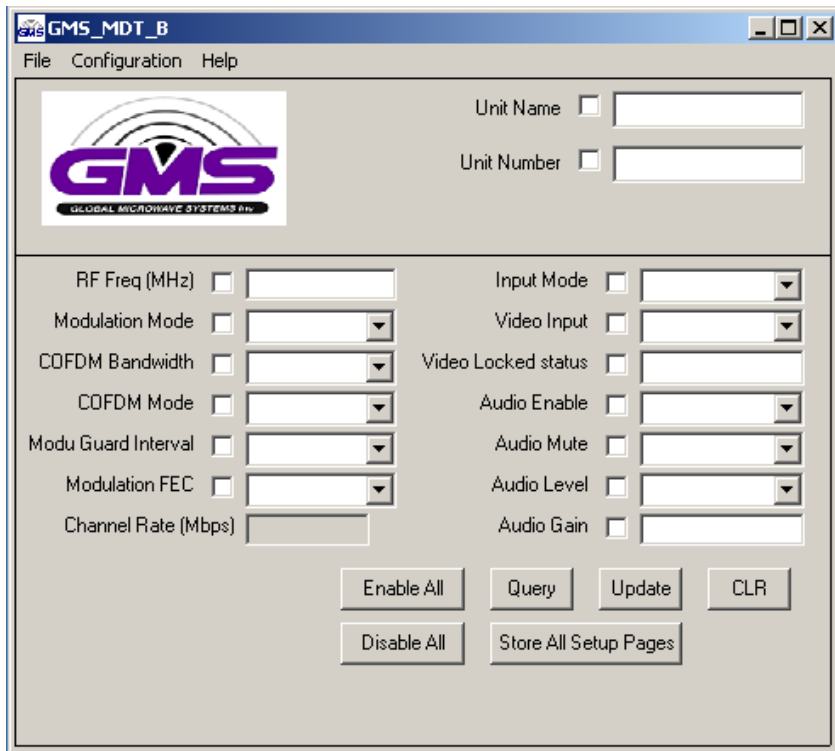
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DC Power

DC Voltage Range: 9 -15 V

Power Consumption: 9.6 – 10.8 Watts (model dependent)



Control

SDMT-S is designed to be controlled through its USB-1 or RS-232 control port via the supplied MS Windows based control application. A remote control unit (RCU) is available. Local control of the operating frequency is provided on the side of the housing.