

Digital Video Broadcast Server (DVBS)



Digital Video Broadcast Server is a flexible multi-mission field unit capable of receiving DVB-compatible intelligence broadcast services.

Key Features and Benefits

- Digital video broadcast satellite signal processing
- Network multimedia server
- Real-time audio, video and data
- File storage up to 60 gigabytes
- Classified and unclassified services
- MPEG-2 video/audio and IP data processing

Digital Video Broadcast Server (DVBS) tunes and demodulates a DVBS L-band RF signal input and simultaneously provides classified video and audio, unclassified video and audio, and data outputs. The unit extracts DVBS packets of interest based on user-specified packet identification. When classified packets are received, they are routed to the internal/external decryption device. When audio/video packets are received, the unit performs MPEG-2 decompression. Data packets are reassembled into files, stored and served over the network.

DVBS is an advanced technology program. It leverages DARPA and Raytheon-funded advanced PC card chassis and card developments. Multiple units have been built, tested and demonstrated. A Web-based user interface allows DVBS to interface with a variety of client workstations. The unit size and weight is one-tenth that of today's systems with similar functionality. The flexible architecture of DVBS will provide the infrastructure for the future intelligence signal-receive suite. Its size, functionality, and affordability meet many of the existing man-pack requirements.

Applications

Special Operations Forces Brigade Combat Team Future Combat Systems TES-Lite

- Portable construction: less than 0.20 cubic feet
- PC card technology
- Weighs under 10 pounds
- Rugged construction
- Conductively cooled
- AC and DC power options

DVB-S RF Inputs

Accepts L-band input from external LNB

Input RF range: 950 MHz – 2150 MHz

Input level range: -65 to -25 dBm signal input

DVBS signal: compliant with ETS 300 784

DVBS transport packets: MPEG (ISO 13818-1)

LNB control output: 13/18 V polarity control; 22 kHz low band (10.7 – 11.7 GHz) and high band (11.7 – 12.7 GHz) selection

DVBS Processing

RF-to-IF conversion, tune, and Automatic Gain Control

Quaternary Phase Shift Keying demodulator

Forward Error Correction

Packet extraction

Pre-COMSEC packet sorting

COMSEC decryption

Post-COMSEC packet sorting

MPEG-2 video and audio recovery

DVBS Transport Packet Routing

Unclassified MPEG-A/V to unclassified audio/video output
DVB-PSI to system controller capable

Unclassified MPEG-IP to controller for file re-assembly/ storage

Multimedia Outputs

Unclassified and classified audio output

- Level: stereo, 2V peak-to-peak into 600 ohm load
- Connector: Mini XLR

Unclassified and classified video output

- ANSI/SMPTE 170 M NTSC, PAL, SECAM BNC female connector

Data Output

Type: RS422 Synchronous Serial
Signals: clock and data
Rate: 10 Mbits/sec.
Connector: 9-pin subminiature D

Potential P³I

UAV video
PENTR (TDDS/TIBS)
Extended frequency bands
DMSP (weather)

User Interface

Web-based
Roles: administrator, master, general user
Management: access control, master user, network and storage
File directory
Receiver control
Data routing control
Program guide and service selection
System status

Network Interface and Protocols

Interface: bidirectional 10/100baseT, RJ45 receptacle
Internet Protocol (unicast, broadcast and multicast) - IETF RFC 793
Transport Control Protocol - IETF RFC 791
HyperText Transfer Protocol - IETF RFC 1945

Physical and Environmental

Conductively cooled
Volume: <0.20 cubic ft.
Weight: <10 lbs.
Dimensions: 8.5 in. X 7.6 in. X 4.1in.
Card types: industry-standard card bus
Operating temperature: 0°C to 40°C
Storage temperature: -20°C to -70°C
Relative humidity: 90%, non-condensing
Operating vibration: swept 1G (5 – 500 Hz)
Operating vibration: random 0.67G (5 – 500 Hz)
Operating shock: 150 G/2ms

Power

AC input

- Input voltage range: 90 – 240 V
- Input Frequency Range: 47 – 400 Hz

DC input

- Input voltage range: 18 36 V
- Maximum current: 3.0 A; typical current: 1.7 A at 24 V
- Maximum power: 54 W; typical power: 40 W
- Connector: 104Z051

COMSEC

External Crypto Interface

Internal Crypto

- DS101/102 key/algorithm load for COMSEC: U-183 type, 6-pin connector compatible with KYK-13 or a KOI-18 fill device
- Walburn (KGR-94, KIV-19, etc.)

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