CBSP ULV
COMMERCIAL BROADBAND SATELLITE PROGRAM UNIT LEVEL VARIANT TERMINAL

Bringing Bandwidth to the Fleet!

The Commercial Broadband Satellite Program (CBSP) Unit Level Variant (ULV) terminal provides high data rate communications to small naval combatants and support ships. The terminals provide tri-band operations: X and Ka band over military satellites and Ku and Ka band over commercial satellites. The CBSP ULV is a commercial off-the-shelf/non-developmental item SATCOM system expanding upon the U.S. Navy’s successful AN/WSC-6(V)9 terminal. These terminals, also provided by Harris, have demonstrated fleet availability of 99 percent while supporting bandwidth on-demand networks. The CBSP ULV terminal supports multiple missions including quality of life and MILSATCOM backup.

The CBSP ULV terminal supports full duplex communications at data rates up to 21.4 Mbps using Single Channel Per Carrier (SCPC) modems and dynamic bandwidth modems. The system uses interchangeable single-band feeds, which support X band, Ku band and military/commercial Ka-band operations.
Supports the quality of life mission providing access to:
- E-mail
- Web browsing
- Chat rooms
- File transfers
- Voice-over-IP Telephone

Supports the SHF MILSATCOM back-up mission with:
- NIPRNet
- SIPRNet
- Secure telephones
- Afloat personal telecommunications
- Video teleconferencing
- Video tele-training
- Tele-medicine/ medical imagery
- National primary imagery dissemination
- Intelligence database/ tactical imagery

The antennas provide IESS-601 Standard G and MIL-STD-188-164A compliant beam patterns using a 1.32m reflector mounted on a high dynamics three-axis positioner enclosed within a protective radome. The positioner provides continuous azimuth axis rotation and incorporates inertial elements for stabilization. The below deck communications equipment is housed in a single shock/vibration isolated, RFI shielded cabinet which contains modems, a beacon receiver, terminal controller antenna control unit, power conditioning, and supporting equipment with cables. The terminal is unique in that it contains two different types of modems—the MD-1366 Enhanced Bandwidth Efficient Modem (EBEM) for static SCPC operation and the SLM-5650A dSCPCmodem for dynamic operation.

All equipment is hardened to the naval environment and all control is provided over a LAN via PC-based Graphical User Interface.

### SYSTEM FEATURES

- **Satellite Operation:**
  - Military X band
  - Commercial Ku band
  - Mil/Commercial Ka band
- **Transmit frequency:**
  - X: 7.9 to 8.4 GHz
  - Ku: 13.75 to 14.5 GHz
  - Ka: 29 to 31 GHz
- **Receive frequency:**
  - X: 7.25 to 7.75 GHz
  - Ku: 10.95 to 12.75 GHz
  - Ka: 19.2 to 21.2 GHz
- **EIRP (dBW):**
  - X: 56.8
  - Ku: 58.8
  - Ka: 56.6
- **G/T (dBi/K) @ 10 degrees elevation**
  - X: 14.9
  - Ku: 18.5
  - Ka: 19.8
- **EBEM channel data rate:**
  - 64 kbps to 16 Mbps
- **SLM-5650A channel data rate:**
  - 64 kbps to 21.4 Mbps
- **Coverage:**
  - Full hemispherical
- **Polarization:**
  - X: LHCP/LHC or LHC/LHC
  - Ku: Vertical/ Horizontal or Horizontal/ Vertical
  - Ka: RHCP/LHC or LHC/RHC
- **Satellite acquisition/reacquisition:**
  - < 5 minutes/ < 5 minutes

### ENVIRONMENTAL

- **Shock:** Per MIL-S-901D, Grade B, Type I
- **Vibration:** Levels per MIL-STD-167
- **Operating Temperature Range:**
  - Above deck: -28°C to +50°C
  - Below deck: +10°C to +50°C
- **Non-Operating Temperature Range:**
  - -40°C to +70°C
- **EMI/EMC:** Per MIL-STD-461 shipboard
- **Power:** MIL-STD-1399, 440Vac, 3 Phase, 60 Hz
- **Maximum operating wind:** 75 knots with gusts to 130 knots (survive 155 knot gusts)

### OPTIONS

- Single or Dual Antennas
- Reduced Radar Cross Section per NAV-SEA letter Ser 05T1/C07-009 14 March 2007
- SAASM GPS receiver
- UPS