AVIAT DVM-ExP2

STABILIZED MICROWAVE PLATFORM

Aviat DVM-ExP2 stabilized microwave platform is developed to meet the stringent requirements of the offshore oil and gas industry. It provides cost effective, high capacity communications links as an alternative to satellite. The DVM platform is able to maintain highly reliable, high availability communications with floating or mobile vessels or platforms, even in heavy seas and severe weather conditions, over distances of 50km or more. The DVM system is also ATEX/IECEx certified for operation in potentially hazardous and explosive environments often found in these applications.

Reliable, Cost-Effective Communications for Offshore Installations

Aviat has long been a provider of microwave solutions for the oil and gas industry, deploying microwave communications links between fixed platforms at sea and the shore. Now in conjunction with our partner, BATS Wireless, Aviat has developed a solution that enables microwave communications links to be established with mobile and floating platforms and moving vessels, through the use of BATS novel and proprietary platform that that locates, locks, and tracks broadband communication systems. The BATS tracking system will greatly improve ship-to-ship/shore microwave connections, even for moving/mobile vessels, where other systems have been ineffective.

Stabilized System with Connect and Track Technology

The Aviat/BATS DVM solution uses innovative connect and track technology, allowing for a reliable and high capacity microwave link to be maintained even with the continual movement of one or both of the radio end points. The system uses a dynamically stabilized platform that can automatically adjust to support communications between a floating installation, even in high seas and severe weather, to a fixed end station onshore, or with other vessels and platforms in-field, or both. Operators can establish long distance (up to 50 km or more) microwave links that can support up to 1 Gbit/s throughput with 99.999% availability. Links can be fully hot standby protected (1+1) for additional resilience for critical links.

The Connect & Track technology combines input from the the radio received signal indication (RSSI) with calibrated gyro, GPS, heading, and radio monitor stream data, to derive a predictive and reactive tracking algorithm that provides precise and real time control data in an extremely high level of pointing accuracy of within +/-0.05 degrees, even in conditions of pitch and roll up to +/- 90 degrees.

ATEX Class 1 Zone 1 Certified

Another key feature of the DVM platform is that it is certified for deployments in ATEX/IECEx Class 1 Zone 1 hazardous area environments, due to a fully enclosed purge/pressurization system. The DVM features a fiberglass / composite-reinforced dome an automatic purge/pressurization system that monitors and controls the atmosphere within the protected domed enclosure.

High Performance, High Availability Microwave

The DVM platform incorporates Aviat's high performance ODU600 radio unit, for maximum range, high transmit power, and high availability paths. The ODU600 has bullet-proof reliability, with field demonstrated mean time between failure (MTBF) of well over 100 years. The DVM can be used in conjunction with either Aviat's Eclipse hybrid indoor units, for high speed Carrier Ethernet plus TDM transport, or the Aviat CTR microwave router, that supports highly integrated IP/MPLS networking features.

KEY FEATURES

- Communications link capacities up to 1 Gbit/s
- Operating frequency range: Licensed bands from 5 to 38 GHz
- Link distances up to 50 km or more, with 99.999% availability (design dependent)
- Non-protected (1+0), hot standby (1+1), double capacity (2+0) links, diversity optional
- Track and Control: RSSI data, sensor data from the calibrated gyro unit, Shipboard GPS & heading information
- Pan and Tilt range: +/- 90°
- Pointing accuracy: +/- 0.05°
- Pan/Tilt axis range: 360° / 180° (±10°) *Antenna Dependent
- Dome dimensions (including radio/antenna): 1.36m (diameter) x 2.62m (height), 300 kg
- Environmental: IP-66

Specifications

RADIO SPECIFICATIONS (WITH ODU600):

- Frequency Band Options:
  - 5, L6/U6, 7, 8, 11, 13, 15, 18, 23, 26, 28, 32, 38 and 42 GHz
- Fixed or Adaptive Coding and Modulation (ACM):
  - QPSK or 16, 32, 64, 128, 256, 512, 1024QAM
- Capacity Range:
  - Airlink Capacity: 9 - 436 Mbit/s
  - Ethernet / IP Throughput: 9 - 554 Mbit/s
- Configuration Support:
  - 1+0, 1+1 Hot-Standby with optional Space Diversity
  - 2+0 Co-Channel Operation with/without XPIC
  - 2+0 Radio Channel Aggregation with Layer 1 Link Aggregation (L1LA)
- Power consumption: < 40W (typical 1+0)

RADIO INDOOR UNIT SPECIFICATIONS

ECLIPSE INU/INUE

- Dimensions: 1 or 2RU
- Throughput/Capacity Range (per link):
  - Carrier Ethernet/IP - 11 to 462 Mbit/s
  - Native TDM
    - Up to 100xE1 or 127xDS1
    - Up to 2xSTM1 or 2xOC3
- Modulations: QPSK, 16, 32, 64, 128, 256 QAM
- Adaptive Coding and Modulation (ACM)
- Capacity doubling: co-channel operation with XPIC
- Advanced QoS features, including port and VLAN prioritization, VLAN Q and Q-in-Q tagging, Flow control, Link aggregation
- Synchronization options: Synchronous Ethernet (G.8262), IEEE 1588v2 and E1/DS1 line clock
- Fault and Configuration Management
- Secure Management
- Payload Encryption

CTR 8540 MICROWAVE ROUTER

- Dimensions: 1RU
- High Density Ports:
  - 12 x GbE ports, including 4xSFP ports
  - 8 x PoE ports
  - 16 x T1/E1 ports for legacy TDM and PWE
  - ODU density – up to 8x ODUs
  - Optional plug-in STM-1 SFP module
- Capacity Features
  - 4 Gbit/s throughput in 1RU (8x500Mbit/s)
  - Modulation: QPSK-1024 QAM, with ACM
  - 1+0, 1+1 Hot Standby, Space or Frequency diversity
  - X-pol interference cancellation (XPIC)
  - Multi-layer Header compression (ML-HC) - up to 300% throughout improvement
- Advanced CTR Networking
  - Carrier Ethernet/L2 Services - QoS, VLAN and Q-in-Q support, RSTP/MSTP, L2LA (802.1AX), EOAM
  - IP/MPLS networking – IPv4 and IPv6, Unicast and multicast routing, RIP, OSPF, BGP, Label Distribution Protocol (LDP), Resource Reservation Protocol with Traffic Engineering extensions (RSVP-TE), Virtual Private LAN Service (VPLS), Virtual Private Wire Service (VPWS), LSP Protection with BFD and MPLS Fast Re-route (FRR), LSP Ping and Traceroute

RADIO STANDARDS COMPLIANCE:

- EMC: EN 301 489-1, EN 301 489-4
- Operation: EN 300 019, Class 4.1
- Transportation: ETSI_EN-300-019-1-1, Class 2.3
- Safety: IEC/EN 60950-1, IEC/EN 60950-22
- RF Performance: EN 302 217-2-2
- Maximum Permissible Exposure: EN 50385

DVM EXP2 SPECIFICATIONS

- Dimensions: 1.36m (dia) x 2.6m (H)
- Weight: 300 kg
- Environmental: IP-66
- Operating Temperature: -20 to +60C
- Pan and Tilt range: +/- 90°
- Pointing accuracy: +/- 0.05°
- Pan/Tilt axis range: 360° / 180° (±10°) *Antenna Dependent
- Ex Protection: Ex II 2 G Ex db ib pxb IIB + H2 T4 Gb

EXRMCU - RACK MOUNT CONTROL UNIT

- Dimensions: 2RU, 8.9 (H) x 48 (W) x 33 (D) mm
- Weight: 4.5 kg
- Operating Temperature: 0 to +55C
- Electrical: 100-240 VAC, 50-60 Hz
- Network Ports: Ethernet (10/100/1000 Mbit/s)

ACCESSORIES

- GPS Targeting Stabilizer
- Junction Box for Extended Cabling Runs (+330 ft.)
- Positioning Unit Cabling, up to 330 ft.
- Mil-Spec Ethernet Cabling: Insulated Cat 5e Cabling, available up to 330 ft.
- Mounting Brackets / Hardware

DVM EXP2 ATEX/IECEX COMPLIANCE

- ATEx
  - EN 60079-0:2012, EN 60079-1:2014, EN 60079-2:2014, EN 60079-11:2012
- IECEx
  - IEC 60079-0:2011 6th Ed., IEC 60079-1:2014-06 7th Ed., IEC 60079-2:2014-07 6th Ed.

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