

SOLUTION GUIDE

DVM ExP2

FUNCTIONAL DESIGN SPECIFICATION

Introduction

The DVM ExP2 system delivers BATS' innovative connect and track technology, allowing for the dynamic connection and continual movement of high-throughput point-to-point (PTP). BATS systems provide stabilized microwave links that can automatically adjust for movement, either due to environmental or requirement changes; and provide a stable and secure, high-bandwidth, private communications and data pipeline either back onshore, with vessels and platforms in-field, or both.

The DVM ExP2 system by BATS is a robust and innovative solution leveraging advanced connect and track technology. It ensures the dynamic, high-throughput connection of point-to-point (PTP) microwave links, addressing both environmental and operational challenges. Designed for use in ATEX/IECEX Class 1 Zone 1 hazardous environments, the DVM ExP2 system is enclosed within a durable purge/pressurization-protected housing, delivering reliable, high-bandwidth communications in field applications.

Key Features and Capabilities

1. Connect and Track Technology

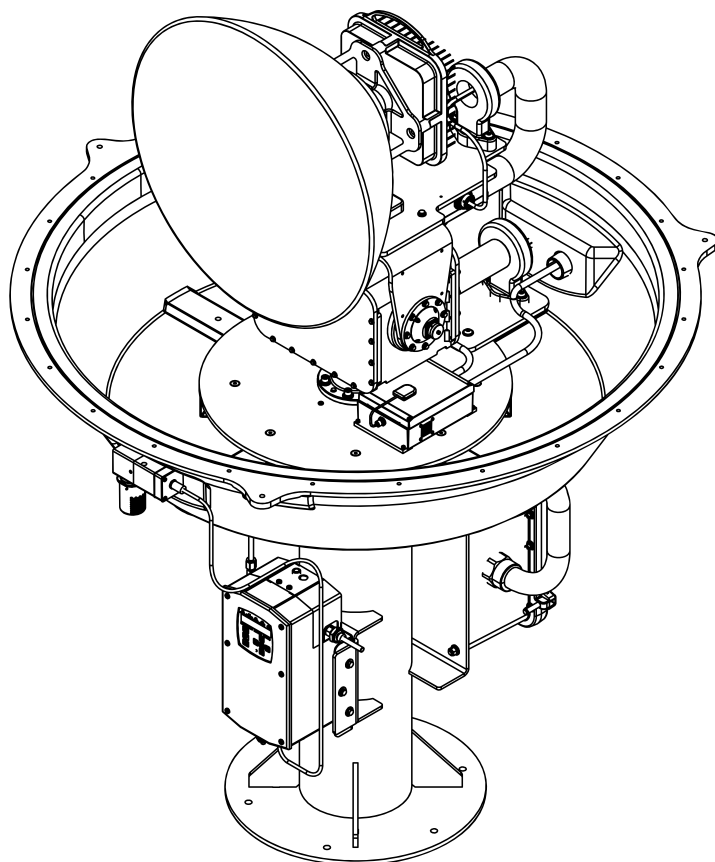
- **Dynamic Signal Tracking:**
 - Utilizes radio signal level (RSL) data from the ODU, processed via the Radio Signal Converter (RSC).
 - Integrates gyro, GPS, heading, and real-time signal data for predictive and reactive tracking.
- **Continuous Signal Monitoring:**
 - Maintains optimal signal quality even during movement or environmental disruptions.
 - Ensures rapid response to connection loss through:
 1. Reverting to the link's last known or current position.
 2. Initiating a horizon scan for viable signals.

2. Fail-Safe Mechanisms

- **Backup Beaconing:** If a viable signal cannot be re-established, the system sends a status beacon to other spatially diverse BATS systems within the network.
- **Automated Home State:** Returns to a home state until prompted by location changes or status signals.

Ex Protection System Operation

- **Startup and Purging**
 - On startup, the ExP2 system purges the enclosure to remove flammable gases or dust.
 - Purge Cycle: A minimum of 10 purge cycles is required before pressurization begins.
- **Pressurization and Operation**
 - Pressurization Process: Maintains predefined levels to protect internal components.
 - Power Control: After achieving desired pressurization, power is supplied to the tracking and RF transmission components via the ExPDU.
- **Gas Detection and Fault Management**
 - During gas detection events, the system continues to operate for predefined durations (30 min, 60 min, 2 hours, or longer) using an optional air receiver tank.
- **Fault Response:**
 - If pressure drops below the minimum threshold:
 - Power is immediately cut off to critical components.
 - Visual alarms are activated on the digital screen.
 - Alarm contacts are provided for remote monitoring via client RMS.



WARNING

PRESSURIZED ENCLOSURE

DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT

THIS ENCLOSURE SHALL NOT BE OPENED UNLESS THE AREA IS KNOWN TO BE FREE OF FLAMMABLE MATERIALS OR UNLESS ALL DEVICES HAVE BEEN DE-ENERGIZED. POWER SHALL NOT BE RESTORED AFTER ENCLOSURE HAS BEEN OPENED UNTIL COMBUSTIBLE GASES HAVE BEEN REMOVED AND THE ENCLOSURE HAS BEEN REPRESSURIZED IN ACCORDANCE TO THE PRESSURIZATION SYSTEM START-UP INSTRUCTIONS.



BROADBAND ANTENNA TRACKING SYSTEMS, INC.
8431 GEORGETOWN ROAD STE 600 INDIANAPOLIS IN USA

CE_{xxx} Ex II 2 G Ex px IIB + H2 T4 Gb

IECEX ETL14.0000X

ETL14ATEX1234

BTS-EXP2-AV01-EX

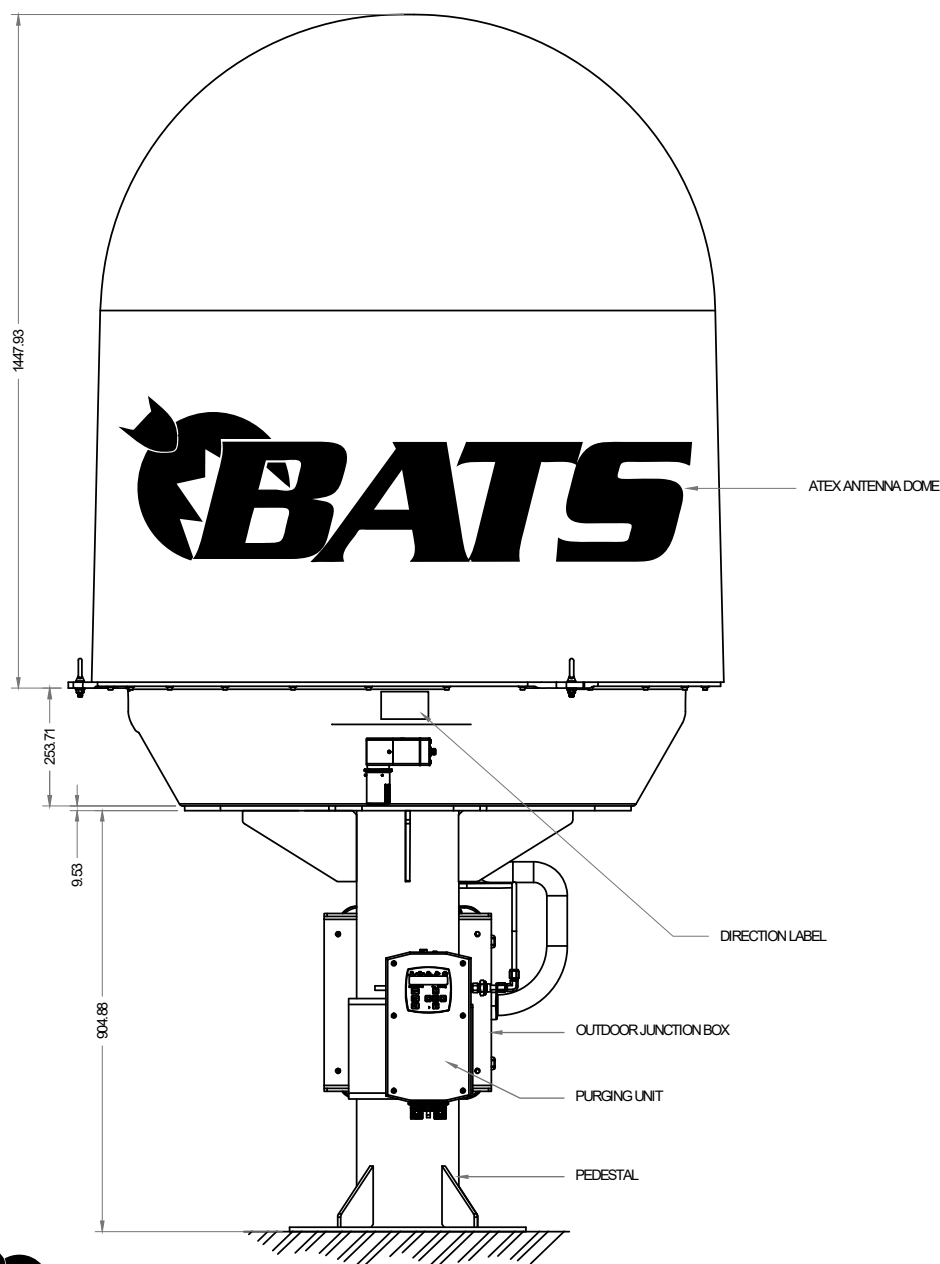
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Specifications

DVM ExP2 - Enclosed Tracking System for Ex Environments (90 lb-ft. Ld Torque)

PHYSICAL DIMENSIONS	1358.65 (Ø) x 2616.05 (H)
WEIGHT	300 kg
ENVIRONMENTAL	Standardized to IP-66; Class 1, Zone 1 - ATEX / IECEx
OPERATING TEMPERATURE*	-20° to 60°C
PAN/TILT-AXIS RANGE	360° / 180° (±10°) *Antenna Dependent
PAN/TILT-AXIS SPEED	0° - 25°/sec (PAN) 0° - 10°/sec (TILT)
Ex PROTECTION	Ex II 2GD Ex px IIB + H2 T4

ExRMCU - Rack Mount Control Unit for DVM ExP2

PHYSICAL DIMENSIONS	1.75 inches (H) X 19 inches (W) X 13 inches (D)
WEIGHT	10 lbs
OPERATING TEMPERATURE*	0°C - 55° C (-40°C Option)
OPERATING VOLTAGE	AC: 100 - 240 VAC; 50-60 Hz
NETWORK PORTS	ETHERNET (10/100/1000 Mbps)

Components & Accessories

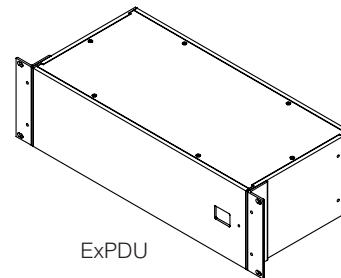
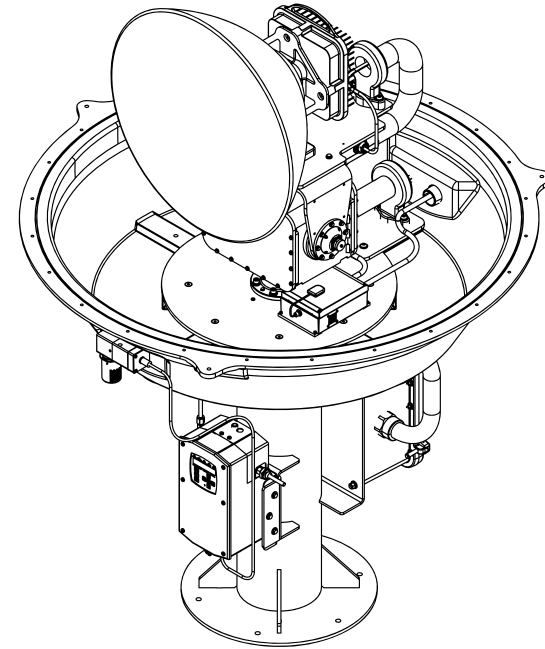
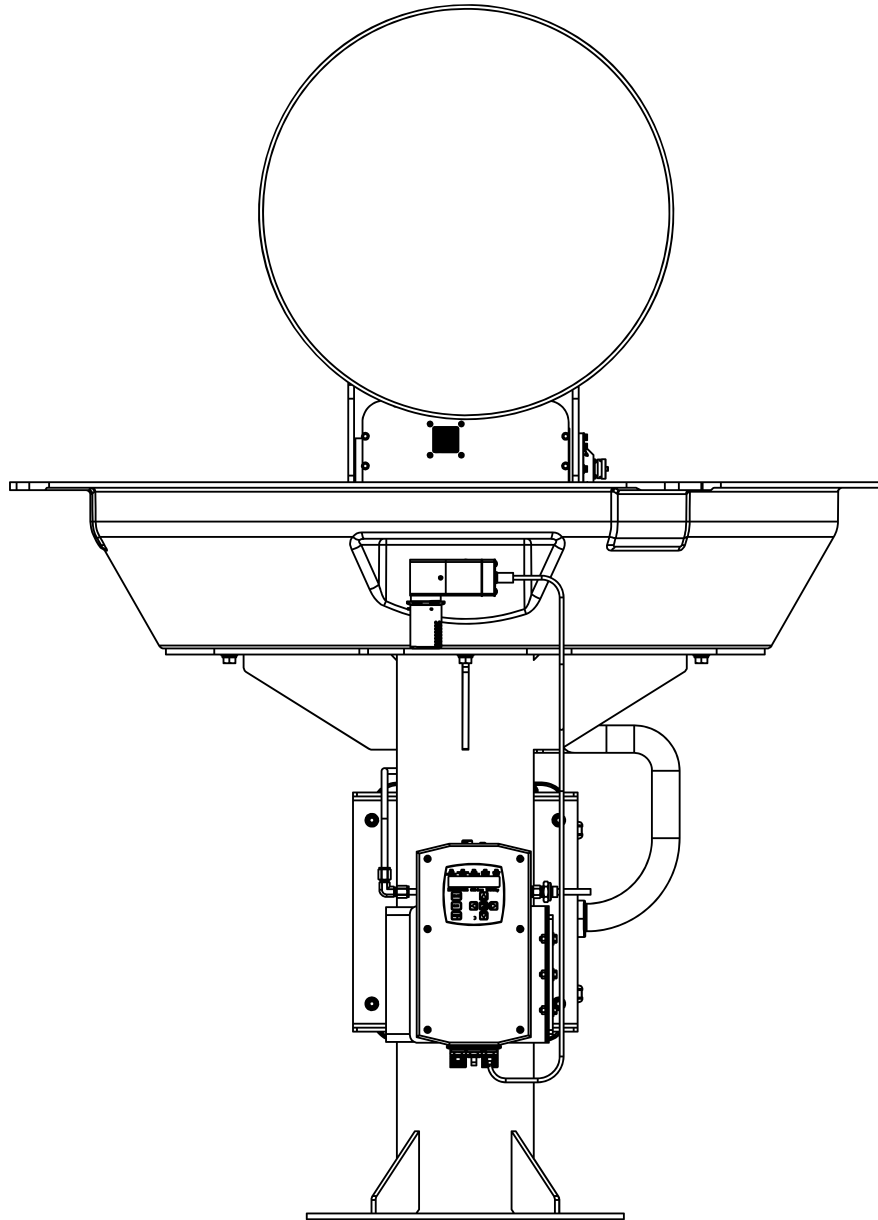
GPS Targeting Stabilizer	GPS-Based Signal Targeting & Stabilization
Junction Box	Connection Box for Extended Cabling Runs (+330 ft.)
Positioning Unit Cabling	PU Power Cables, Available up to 330 ft.
Mil-Spec Ethernet Cabling	Insulated Cat 5e Cabling, Available up to 330 ft.
Mounting Brackets / Hardware	Universal Pedestal Mount Kits, Radio Mount Kits

*Additional Components Required
*All Measurements in MM Unless Specified

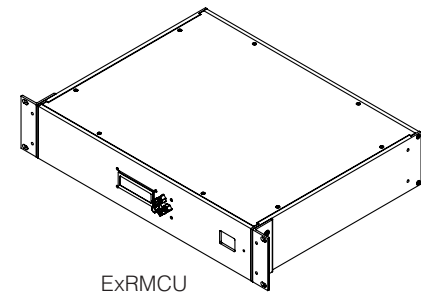
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ExPDU



ExRMCU