

# MET AREA DATA RECEIVER MODEL METHUB

BULLETIN METHUB

$$p = \frac{\rho RT}{m}$$

$$S(\lambda) = S_0(\lambda) e^{-m \cdot \delta(\lambda)}$$

$$B(T) = bT^4$$

## General Description

The Met Area Data Receiver Model METHUB is a digital data receiver hub for geographically distributed, wireless weather stations such as the YES Model TMS-7200. For homeland security applications requiring continuous real time wind data to drive Hazard and Prediction Capability (HPAC) plume dispersion models, the METHUB automatically collects and distributes data. HAZMAT teams can rapidly deploy a metropolitan-area environmental monitoring system using the METHUB at the core.



A RF-linked “cluster” consisting of a central METHUB receiver hub and ten or more TMS-7200 RadioMet *Weather Transmitters* can be setup rapidly by minimally-trained personnel. Each wireless weather station sends data in real time to the METHUB, which distributes data to both a laptop (via dialup or TCP/IP) and also to other downstream decision support tools. Sensor data are displayed in real time via METDAS software.

## Applications

METHUB supports distributed networks of wireless weather sensors:

- Emergency response/HAZMAT
- Homeland Security for NBC attacks
- Military tactical weather
- Government meteorological agencies
- Wildland fire weather support
- Regulatory compliance at industrial sites



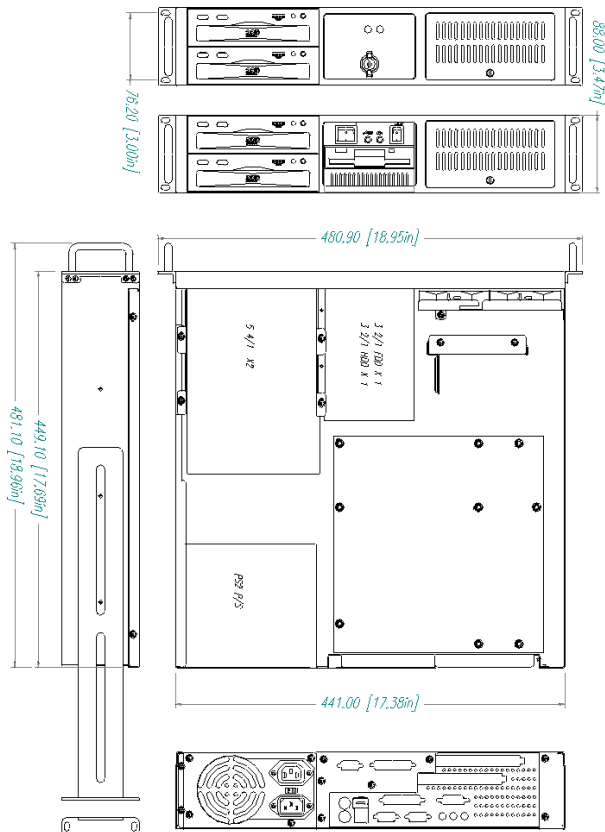
## METHUB Met Data Receiver

### Features

- Compact EIA 2U rack mount construction
- Rapid setup
- CPU-managed for remote management
- Reliable “hands-off” RF digital telemetry



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### Mechanical Interface of 2U EIA 19" Chassis

DIMENSIONS IN mm (INCHES)

### Mechanical Configuration

A 2U EIA 19" rack mount chassis holds the system. Internally, the METHUB consists of:

- 5/4 wave vertical antenna
- Digitally controlled FM receiver with commercial grade front end RF filtering
- Digital packet data decoder subsystem
- Embedded x86 processor with, supporting SSH2, ODBC and JDBC data interfaces to http/web server and database applications
- 30 Gb data drive for non volatile storage
- V.90 telephone modem for dial-in access
- 10/100BaseT 802.3 interface for LAN
- AC power supply and cooling fans

METHUB is fed by a vertical RF antenna typically mounted at a high location within line-of-sight of all TMS-7200 stations. RF data packets are processed via time-division multiplexing. METHUB performs an automatic cyclical redundancy check on the packet and passes error free data to display software. Data are also internally logged for later study and auditing. Connected to you LAN, a METHUB can act as an Internet data server that can be remotely administered and

monitored from anywhere your TCP/IP network reaches.

### Setup and Maintenance

Setup consists of assigning a static TCP/IP address and connecting to a wired (802.3) or wireless (802.11) network. METHUB can be permanently or temporarily installed—it can be setup quickly in mobile command centers and is ruggedly designed for HAZMAT or wildland fire applications.

### Options

METHUB is designed to work with METDAS real time display and link software. METDAS provides integration with HPAC Transport and Dispersion plume models via serial RS-232, dial-up modem or TCP/IP (LAN/WAN) interfaces, and runs on user-supplied PC.

A rack mount uninterruptible power supply is also available for METHUB sites without backup AC power.

### Specifications

**Met parameters:** ingests all sensor data produced by YES Model TMS-7200 weather sensors, including data from optional RAD-7001 nuclear alpha/beta/gamma radiation detectors.

**Operating Temp Range:** -20°C to +40°C

**Storage Temp Range:** -50°C to +60°C

**Temperature Range:** -40 to +50°C; +/- 0.5°C

**Humidity Range:** 0-95% RH; non-condensing

**RF Telemetry:** Frequency Modulation, Frequency Shift Keyed, redundant, time division multiplexed in 405-406 MHz, +/-40 KHz deviation

**Error Detection:** Cyclical Redundancy Check

**RF Range:** 5-7 miles line of sight; 2-3 miles urban via supplied 5/4 wave vertical antenna w/50' coax.

**Data latency:** 1 minute maximum.

**Mechanical:** See drawing, 2U EIA 19" rack size.

**Interfaces:** V.90 Modem (RJ11), 10/100BaseT 802.3 Ethernet (RJ45), 3.5" floppy drive for software updates.

**Power:** 110/220 Vac 50/60 Hz. 140 watts



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