

# TASK

## Tactical Atmospheric Sounding Kit

### Portable Soundings

QinetiQ North America's Tactical Atmospheric Sounding Kit (TASK) measures wind speed, wind direction, pressure, temperature and humidity. This information enables users to observe and report real-time atmospheric data, including winds aloft, in support of localized weather forecasting for tactical, weather-dependent missions such as embarked air cavalry operations, aerial delivery and artillery support.

#### How it Works:

The TASK system continuously measures and broadcasts wind speed, wind direction, pressure, temperature and humidity. Measurements are made through the air column, to altitudes greater than 40,000 ft, on a six cubic foot weather balloon (about 32 inch diameter). TASK Radiosonde atmospheric data is relayed by the TASK UHF Transceiver to a standard issue laptop or other computer via USB where it can be used to calculate High Altitude-Low Opening / High Altitude-High Opening (HALO/ HAHO) mission release points or Container Delivery System (CDS) drops during precision air delivery operations.

Forward deployed units can report real-time atmospheric conditions either by voice or net-centric data transmission. The data can also be imported into standard weather forecasting software to produce tactical weather reports for mission planning and modeling.

For aerial resupply by heavy lift aircraft, the TASK data is fully Precision Airdrop System (PADS®)/Joint Precision Airdrop System (JPADS) compatible, enabling the unit requiring resupply to send highly localized and current weather data to an incoming airlifter.



#### FEATURES/BENEFITS

- Situational awareness for mission planning
- Reports real-time atmospheric conditions
- Fully PADS/JPADS compatible
- Data transfer by voice or network
- Data can be imported into forecasting software to produce tactical weather reports
- Lightweight—weighs less than 2 kg
- Self-contained kit

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The TASK system consists of a lightweight TASK Ultra High Frequency (UHF) Radiosonde; a small, lightweight composite tank (capable of holding enough pressurized helium to support one to two radiosonde deployments depending on balloon size); an inflatable 30 gram weather balloon; and a small, wearable TASK UHF Transceiver.

TASK provides real-time automated weather data collection capability in a lightweight, transportable kit.

### Specifications

- Kit Dimensions: 16 (W) x 20 (L) x 6.5 (D) inches

#### Sensor Accuracies and Ranges

- Wind Speed: 0-165m/s range;  $\pm 0.5$  m/s error
- Wind Direction:  $\pm 1^\circ$
- Pressure:  $\pm 1.8$  hPa; 4.0-1,100 hPa
- Air Temperature:  $\pm 0.3^\circ\text{C}$ ;  $-80^\circ\text{C}$  to  $+60^\circ\text{C}$
- Relative Humidity:  $\pm 2.5\%$ ; 0-100%

#### USB Transceiver

- Dimensions: 9.5 (W) x 4.3 (L) x 1.9 (D) cm
- Antenna Length: 9 cm
- USB Cable Length: 92 cm
- Weight: 112 g
- Interface: USB
- Band: 400-406 MHz (UHF)
- Sensitivity: 102 dBm nominal
- Output Power: 23 dBm nominal
- Power: USB 5Vdc @500 mA
- Line of Sight: >150 km
- Fully PADS®/JPADS Compatible

#### High-Pressure Helium Bottle

- Weight: 1.7 kg (empty)
- Volume: 1.15 L @ 4500 psi
- Balloon Fill Capacity: 352 L (15 cu ft) at sea level
- Dimensions: 34.3 x 11 cm diameter
- Filling-tube Length: 82.5 cm (coiled)

#### Operational Performance Capabilities

- Band: 400-406 MHz (UHF)
- Vertical Resolution: <1 m
- Dimensions: 12.3 x 37.9 x 34.7 cm
- Weight (balloon and radiosonde): 38.3 g or 88 g

#### Radiosonde Transmitter

- Band: 400-406 MHz (UHF)
- RF Power: 50 – 500 mW
- Line of Sight: >150 km
- Fully PADS®/JPADS Compatible