

TECHNICAL DATA SHEET

RAPTOR DBS-BL LAP[®]-3000 Upgrade Radar Wind Profilers



System: RAPTOR DBS-BL Radar Wind Profiler

Applications: Real-time operational support for weather forecasting, aviation operations, pollution studies, and other applications demanding high quality meteorological data products.

Transmit Frequency: 915 MHz nominal; additional frequencies available

Antenna: Reuse of original LAP[®]-3000 antenna - upgraded with solid-state phase shifters

Transmitter: Reuse of original LAP[®]-3000 power amplifier

Receiver: All new, fully digital IF Tx and Rx

Power Supplies: New replacement units made by DeTect

Profiler Health Monitor: New DeTect system for monitoring all critical statuses and health

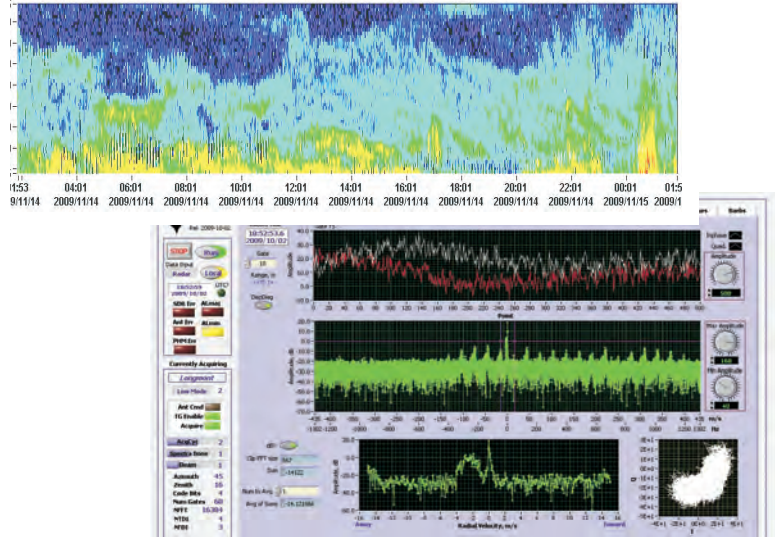
Height Resolution: User selectable from 75 to 1000 meters

Range: <110m to 4km

AC Power: 120 or 240 VAC, 50 or 60 Hz single phase standard (country of delivery power systems available)

Network: Remote system display and control via fiber optic, wireless, PSTN or cellular networks

PC OS: Windows[®] or Red Hat[®] Linux



Above Top: Display of returned Signal to Noise Ratio. Image shows layers and clouds. Above Bottom: Diagnostic time series and spectra display allows investigation of hardware problems or radio frequency interference.

Below: The RAPTOR DBS-BL upgrade includes solid-state phase shifters to replace the original mechanical units. These phase shifters are designed to last for the life of the system with no maintenance or consumables.



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The DeTect RAPTOR line of Radar Wind Profilers provides unattended, real-time operational support for weather forecasting and aviation, aerospace, military, research and other applications demanding high quality meteorological data products. RAPTOR

systems utilize the latest in digital radar technologies to insure high reliability and low operating cost. With a full digital receiver system and advanced signal processing, the result is superior data products at high temporal resolution suitable for true operational applications. With the Radio Acoustic Sounding System (RASS) option, the system additionally provides vertical profiles of virtual temperature. RAPTOR systems are modular, scalable and engineered and constructed to high standards incorporating commercial off-the-shelf (COTS) components to reduce costs of ownership and enable ongoing technology insertion and upgrade opportunities.

The RAPTOR DBS-BL LAP[®]-3000 upgrade is nominally a 915 or 1290 MHz radar for boundary-layer wind profiling. Alternate frequency configurations are also available and systems can be custom configured to comply with country or project specific operating requirements.

Customizable options include but are not limited to: transmit power, and frequency, antenna size, computer operating system, and AC operating voltage. The system uses a server-class PC for radar control and signal processing and a proprietary software package that includes:

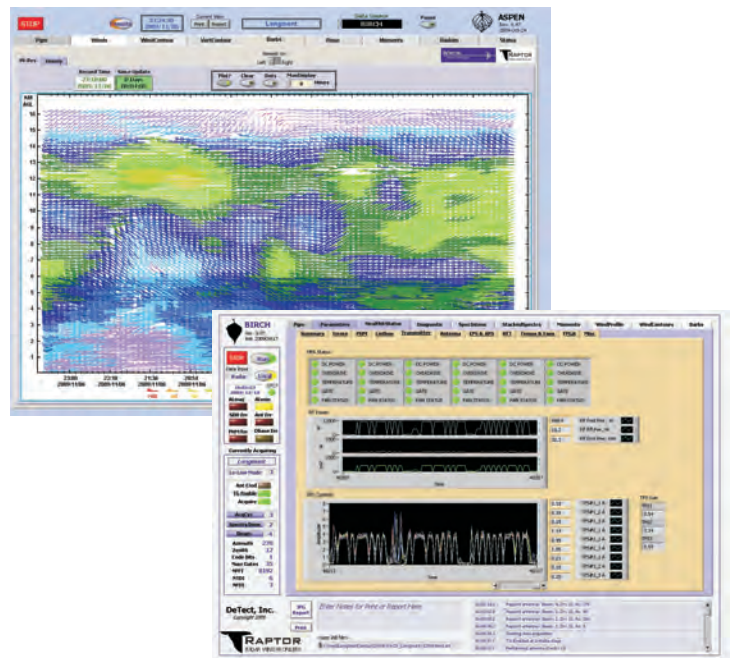
- BIRCH radar control software with consensus processing wind calculation software, and low-level data (time series and spectra), moments and winds products displays and data archive.
- ASPEN advanced signal detection processing and data display software with time/height continuity analysis, multi-peak discrimination, QC algorithms displays and data archive.

The complete RAPTOR DBS-BL LAP[®]-3000 upgrade system includes:

- Intermediate Frequency Converter (IFC) Subsystem (acts as analog front-end for digital receiver)
- Up/Down Converter and Transmit/Receive Switch
- Profiler Health Monitor (PHM) (optional)
- Electronics Power Supply (EPS)
- Surge/lightning protection on antenna RF and control cables
- RASS upgrade and or reconditioning

All RAPTOR radar systems come with a full parts and labor warranty that includes:

- On-site service
- Technical support
- Data QA/QC checking
- RAPTOR software upgrades



Above: Highly customizable, operator-friendly display of wind speed and direction.

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