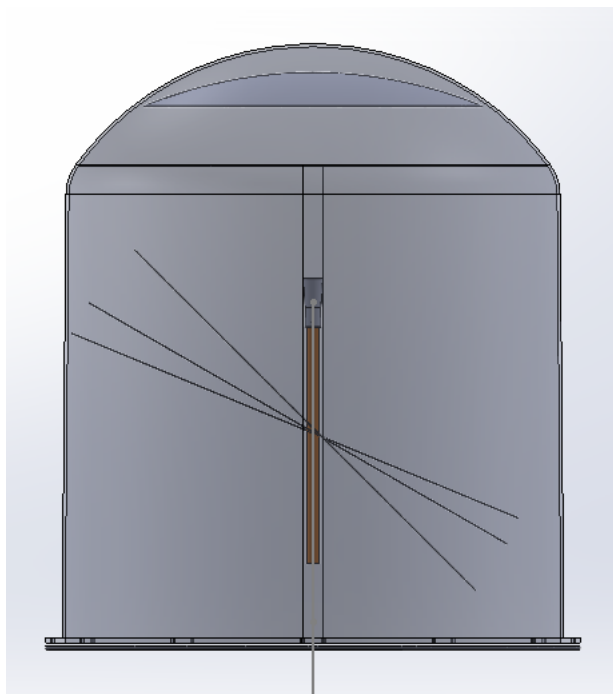




StormQuant Bat Series X-Band Doppler Dual-Polarization Radar

User Manual and Installation Guide



FCC ID: 2AV9O-BATV1

Model number: 200AA

Serial number 24-28-000

Software version: 4.0.0

Firmware versions: BRD108-0002; FPGA-0011; TMS-0004

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Federal Communications Compliance

This device complies with FCC part 15 Rules.

NOTE: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

Safety Warnings

Warning indicates a potentially hazardous situation which if not avoided will result in death or serious injury, and/or property damage.

ELECTRICAL SAFETY

WARNING: To reduce the risk associated with electric shock resulting from contacting high voltage AC: Ensure the source power is OFF or the AC power cable is DISCONNECTED from the source before connecting wire from the AC source to the radar. Do not attempt to install or physically move the radar while it is connected to electrical power. Portions of this equipment derive power from sources that have high voltage levels. These must be serviced by qualified personnel who have previous training or certification to safely work on high voltage equipment. Consult a qualified electrician.

RADAR SAFETY

WARNING: This product radiates RF energy in the course of normal operation. Radar RF energy can be harmful to the eyes. The Exposure Reference Levels (ERL) are as determined by IEEE C95.1 (2019), Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 kHz to 300 GHz, as it pertains to “restricted” and “unrestricted” environments. Hazard assessments, corresponding required personnel exclusion areas, and protective measures are based upon these values, as a minimum.

For operations where personnel are in direct line of sight exposure (i.e. same horizontal plane of transmitting radar beam):

Keep a minimum safe distance of **209 ft** for uncontrolled exposure limit – $1.0\text{mW}/\text{cm}^2$

For operations where personnel are not in direct line of sight exposure (i.e. below the horizontal plane of the transmitting radar beam):

Keep a minimum safe distance of **10 ft** below the bottom of the radar for ERL (all parties) - $.01 - .04\text{mW}/\text{cm}^2$

PERSONAL SAFETY



WARNING: To reduce the risk of impact hazards resulting from falls, accidents with passing vehicles, and/or from use of unstable equipment:

Use appropriate work zone traffic control procedures, methods and equipment.

Use appropriately rated mounting hardware, lifting equipment, a personnel safety devices.

Installation

StormQuant radars are owned by StormQuant Inc. StormQuant radars are installed by authorized third-party vendors who are licensed and insured for their specific operations. The radars must not be adjusted, moved or tampered with in any way without prior permission and direction of authorized StormQuant personnel.

StormQuant radar installers will comply with the warnings within this manual and industry occupational safety and health standards.

Once the radar is physically mounted in the permanent location on the tower or building, the installer will be ready to: 1) arm the radar transmitter, 2) connect the power cable, 3) connect the ethernet cable.

1. An AC/Ethernet Interface Box is installed at the bottom of the radar. The box is accessed through a removable panel on the Thermal Management System (TMS) base plate (images below). This box has a single toggle switch on the face which points to a green or red light. Ensure the toggle switch is pointed toward the red light.
2. The radar is powered by a 110-120V (60 Hz) 20 amp circuit. In compliance with above safety warnings, the installer will attach the provided power cable (StormQuant Bat BOM Part XXXX) to the appropriate power receptacle on the AC/Ethernet Interface Box. (red cable in image below).
3. The radar sends data to servers on the internet via a cellular modem or hard-wired internet connection. The installer will attach the provided ethernet cable (StormQuant Bat BOM Part YYYY) to the AC/Ethernet Interface Box.



Access Panel in TMS Base Plate



AC/Ethernet Interface Box

Peripheral Equipment



Each radar location will include an environmentally controlled support room or an approved National Electrical Manufacturers Association (NEMA) box to house the radar peripheral support equipment (e.g. cellular modem, uninterruptable power supply, generator, ethernet switch, web power switch, etc.). For more information reference the *StormQuant Bat Series Peripheral Equipment Guide*.

Operation and Sustainment

StormQuant radars are operated remotely by authorized software engineers. Frequency channels, scan strategies and other programmable functions are coordinated and optimized based on user needs, environmental conditions and system capabilities. In addition, the entire network of radars is remotely monitored for status, health and reliability. For more information, reference the *StormQuant Radar Operations and Sustainment Guide*.