

**Title:** Delta 2024 UAH MAPNet Mobile Alabama X-Band (MAX) Radar Surface Meteorological Data

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### **1.0 Dataset Overview**

The UAH Mobile Atmospheric Profiling Network (MAPNet) Mobile Alabama X-Band radar (MAX) is a mobile X-Band radar. Surface data is collected via a 10-meter, retractable meteorological tower. When high winds or lightning is in the vicinity, the tower is often lowered. Logbooks have been provided to help the user determine if/when the tower was lowered among other references. This data has undergone preliminary quality control and should be considered final.

IOP 1

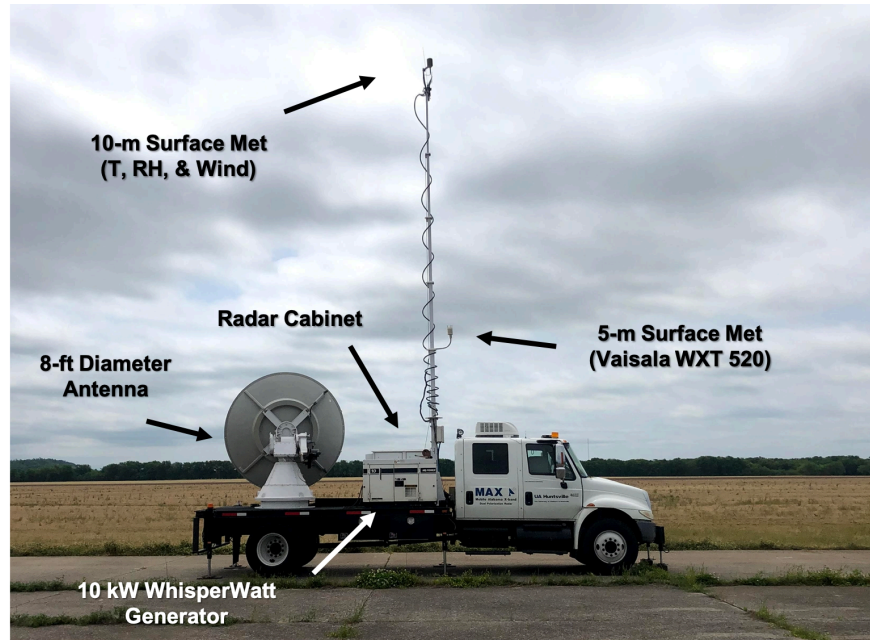
Time Period: 2024/02/28 0507 to 2024/02/28 0803Z

Location: 38.1264, -88.0967 elevation: 119 m Heading: 51 deg

### **2.0 Instrument Description:**

Mounted to the back of an International 4300, MAX is a dual polarization mobile X-band radar. A retractable 10-m AGL mast is mounted to the bed of the truck to provide surface in-situ meteorological measurements. MAX has a set of leveling jacks that allows the truck to be leveled prior to operations and is verified by the operator. The tower is outfitted with the following instruments:

- Campbell Scientific CR800 Data Logger
- RM Young 05103 Wind Monitor
- Campbell Scientific HMP45AC Temperature and relative humidity sensor



**Fig 1.** The MAX platform

### **3.0 Data Collection and Processing**

Data is collected at 1 second intervals. Data have been quality controlled to remove erroneous data using subjective sanity checks. Although the orientation of the anemometer relative to true North should have been set for each IOP, orientation corrections of the anemometers were applied when necessary.

### **4.0 Data Format**

Two data files per day are available (one for the measurements at 10m and one for the measurements at 5m via the WXT520).

#### 10 m measurements

The 10m data files are named max\_YYYYMMDD\_sfc.dat, where:

YYYY -> year

MM -> month

DD -> day

sfc.dat -> sfc station data

COLUMN      VARIABLE

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0      -> Program Constant  
1      -> Year  
2      -> Julian Day  
3      -> Hour (UTC)  
4      -> Minute (UTC)  
5      -> Second (UTC)  
6      -> Wind Speed at 10m (m/s)  
7      -> Wind Direction at 10m (deg)  
8      -> Relative Humidity at 10 m (%)  
9      -> Temperature at 10m (C)  
10     -> Air Pressure (hPa)  
11-16 -> WXT data

### **5.0 Data Remarks**

Please note that the WXT520 was not used during this project. As such, all data associated with the WXT will be marked as -7999 which corresponds to missing.