

Advancement through Innovation

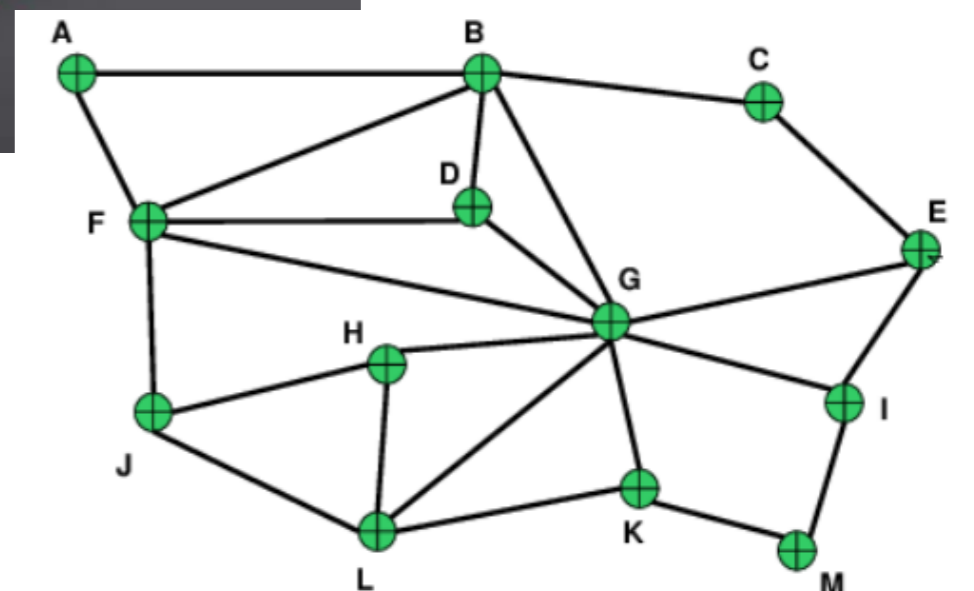
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# Q8 Mesh Support

Antelope/Kinematics User's Group

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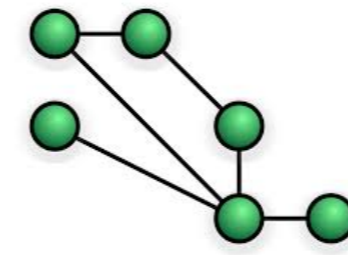


# AGENDA

- 1 Mesh Overview**  
Extending your reach
- 2 Block Diagram**  
What's in the box
- 3 Configuration**  
Pairing and Defining
- 4 Sample Data**

# Mesh (Dust) Networking

Extending Your Reach



A new way to extend your Q8, wirelessly

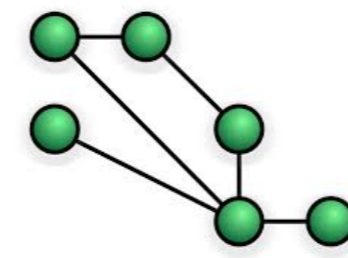
First implementation, supplies low rate data from auxiliary environmental inputs as well as from a Vaisala WXT-53X weather station. This data is fully integrated into the Q8 data streams, telemetry, and recording with accurate timing from the Q8

Mesh devices are paired wirelessly with a specific Q8 and data can “hop” via other network nodes in range and give a range of approximately 100m using a 2.4GHz frequency



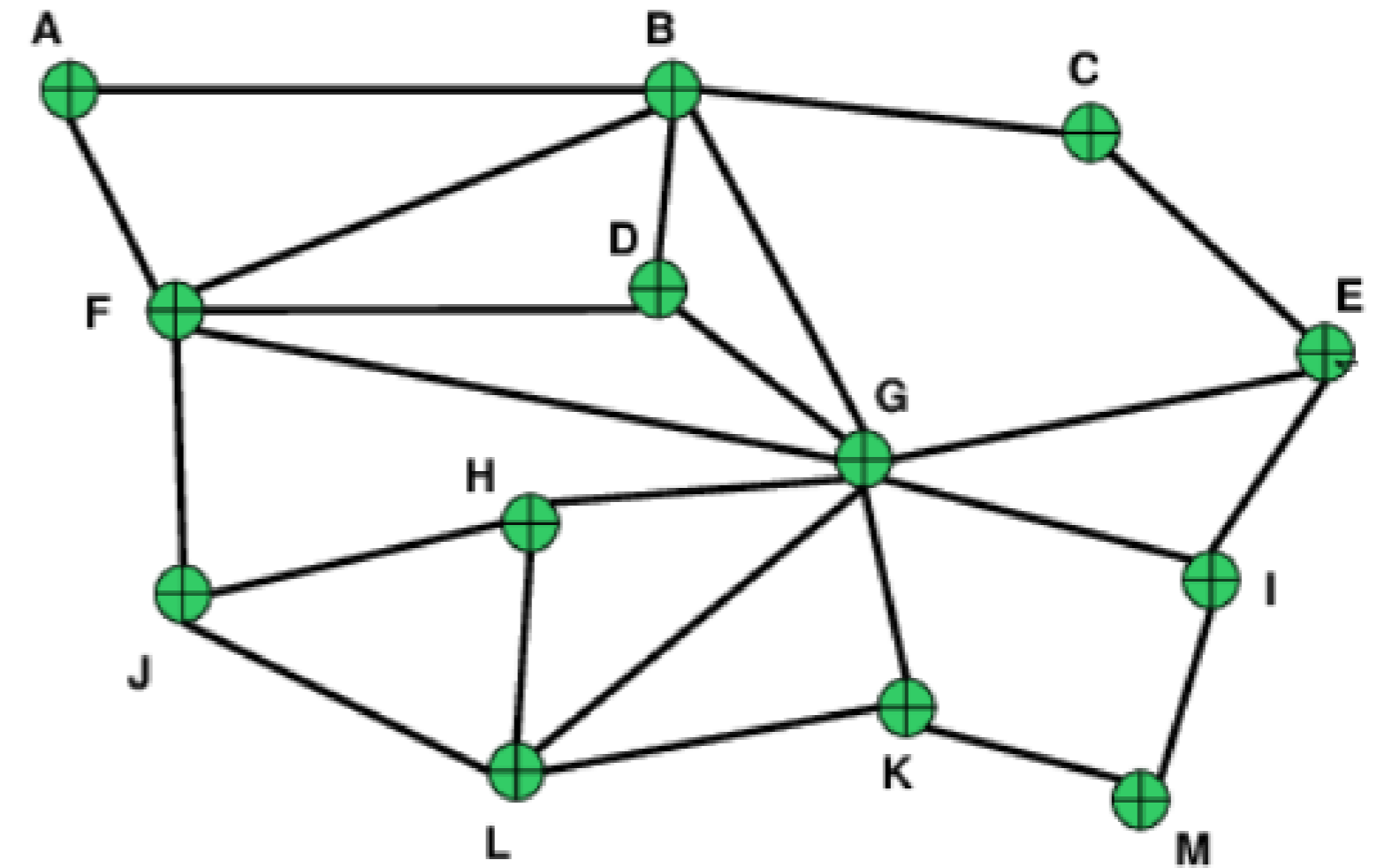
# Mesh (Dust) Networking

Extending Your Reach



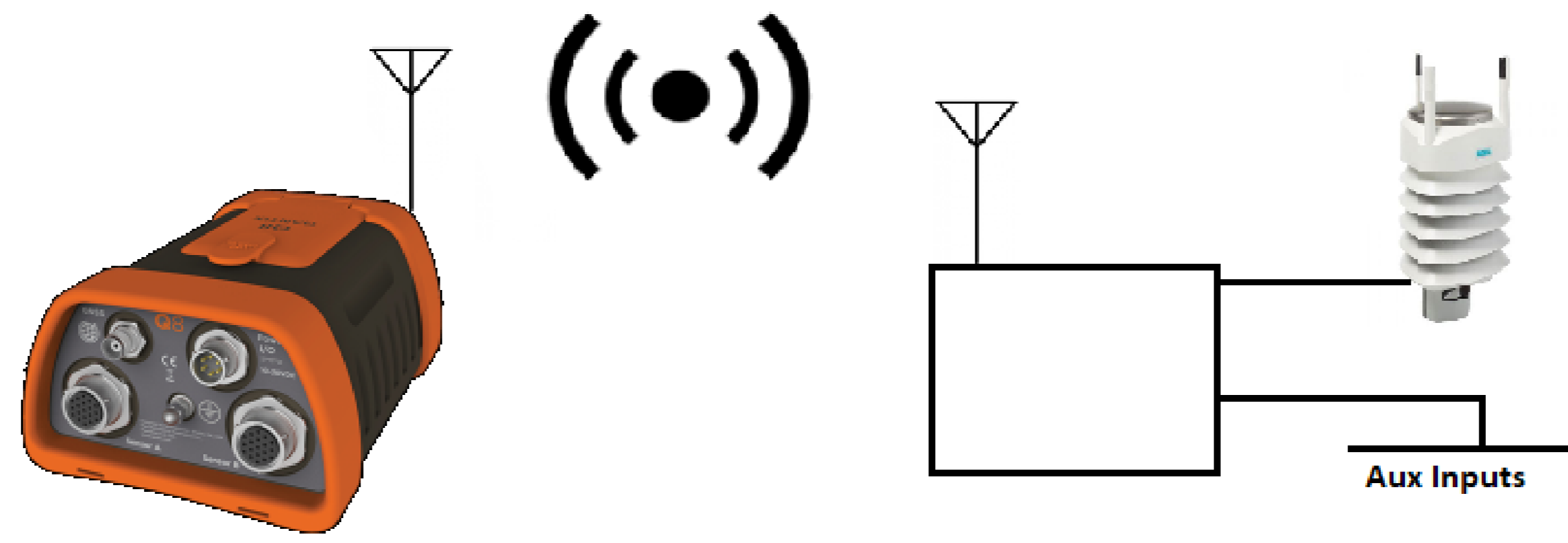
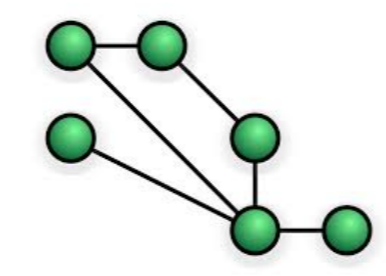
Exact range varies with terrain and obstacles,  
50m to >500m

The network is really a mesh. Remote devices can forward communications from other remote devices to the Q8 host. In principle, this increases the total size of the mesh, and allows for communications that might not otherwise be line-of-sight from the Q8 to the most remote unit



# Mesh (Dust) Networking

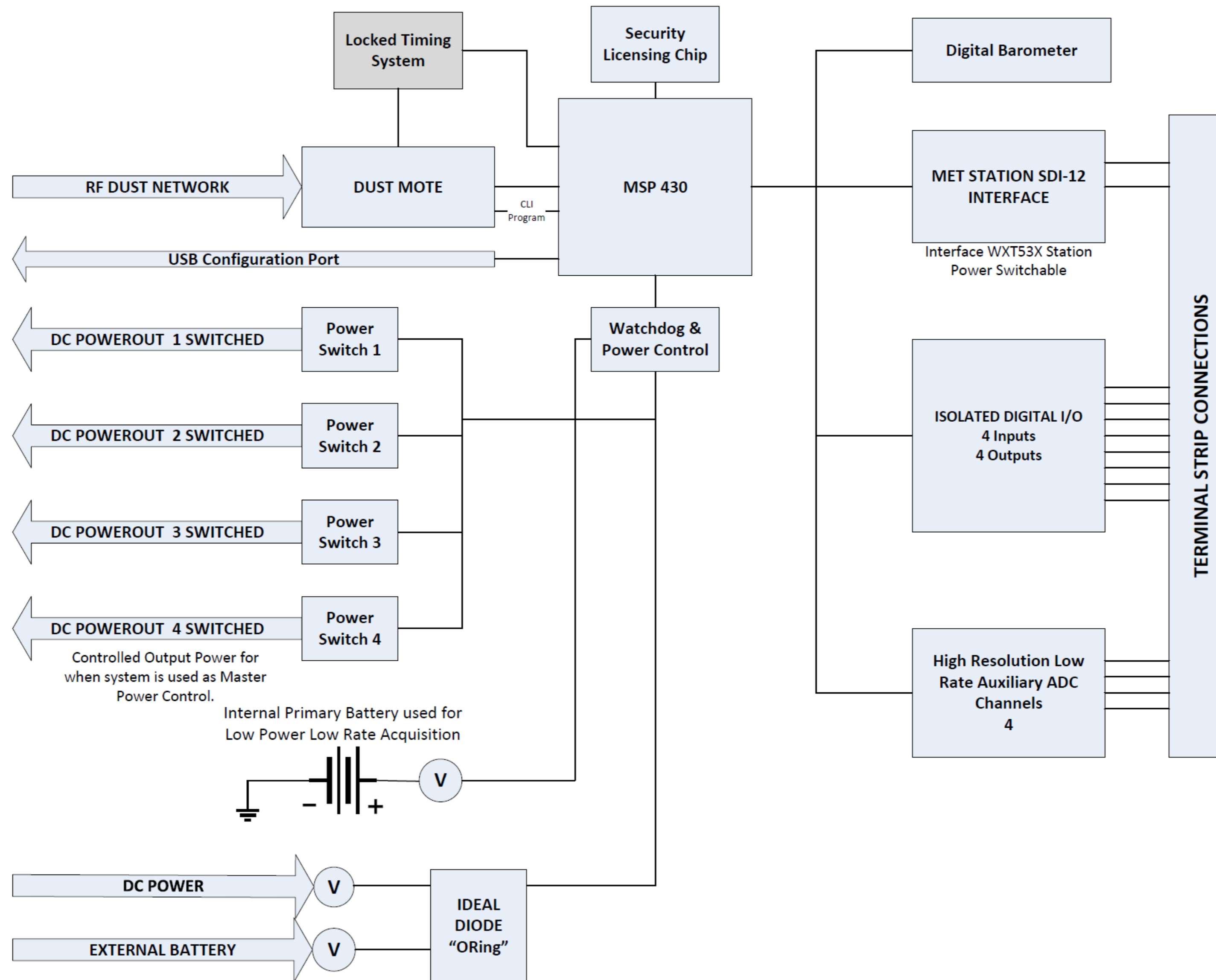
Extending Your Reach



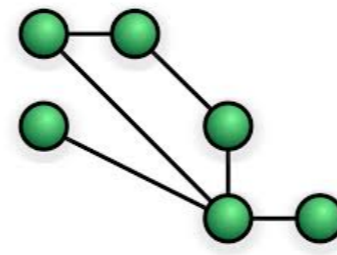
This is not for bringing data in from a mountaintop remote unit. It's for intrasite communications without wires, complicated connections, and compromising data quality and survivability to lightning caused by ground loops in wired connections



# Dust Mote Block Diagram



# Configuration



Mesh Devices

Enable Mesh Subsystem    Mesh Network ID

Device Number	Tag ID	Enable Data	Enable Status
1	<input type="text" value="283"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

[help](#)

Mesh Data

Device 1: Weather Station Version 1.0

Channel	Rate	Loc-Name	Channel	Rate	Loc-Name
1	1.0 SPS	<input type="text" value="W1-LWD"/>	2	1.0 SPS	<input type="text" value="W1-LWS"/>
3	1.0 SPS	<input type="text" value="W1-LDO"/>	4	1.0 SPS	<input type="text" value="W1-LKO"/>
5	1.0 SPS	<input type="text" value="W1-LIO"/>	6	1.0 SPS	<input type="text" value="W1-LRR"/>
7	1.0 SPS	<input type="text" value="W1-LRH"/>	8	1.0 SPS	<input type="text" value="W1-LKH"/>
9	1.0 SPS	<input type="text" value="W1-LEH"/>	10	1.0 SPS	<input type="text" value="W1-LEP"/>
11	1.0 SPS	<input type="text" value="W1-LER"/>			

[help](#)

Mesh Status

Device 1	Weather Station Version 1.0
Last Received	2022-11-14 14:11:40
	Status Line One
	Status Line Two
	T31,V3.617,R132,C2

# Configuration

## Mesh Devices

**Enable Mesh Subsystem.** If checked then the Mesh Network manager in the Q8 is enabled.

**Mesh Network ID.** A number between 1 and 65535 to allow multiple Dust Networks in the same area. The default is 1 and Mesh Devices also default to 1. Should you need to run multiple Q8's in the same area, and you can't put all the devices on the same Q8 then each Q8 will need their own unique Network ID. You will need to configure each Mesh Device for the network you want them to run on.

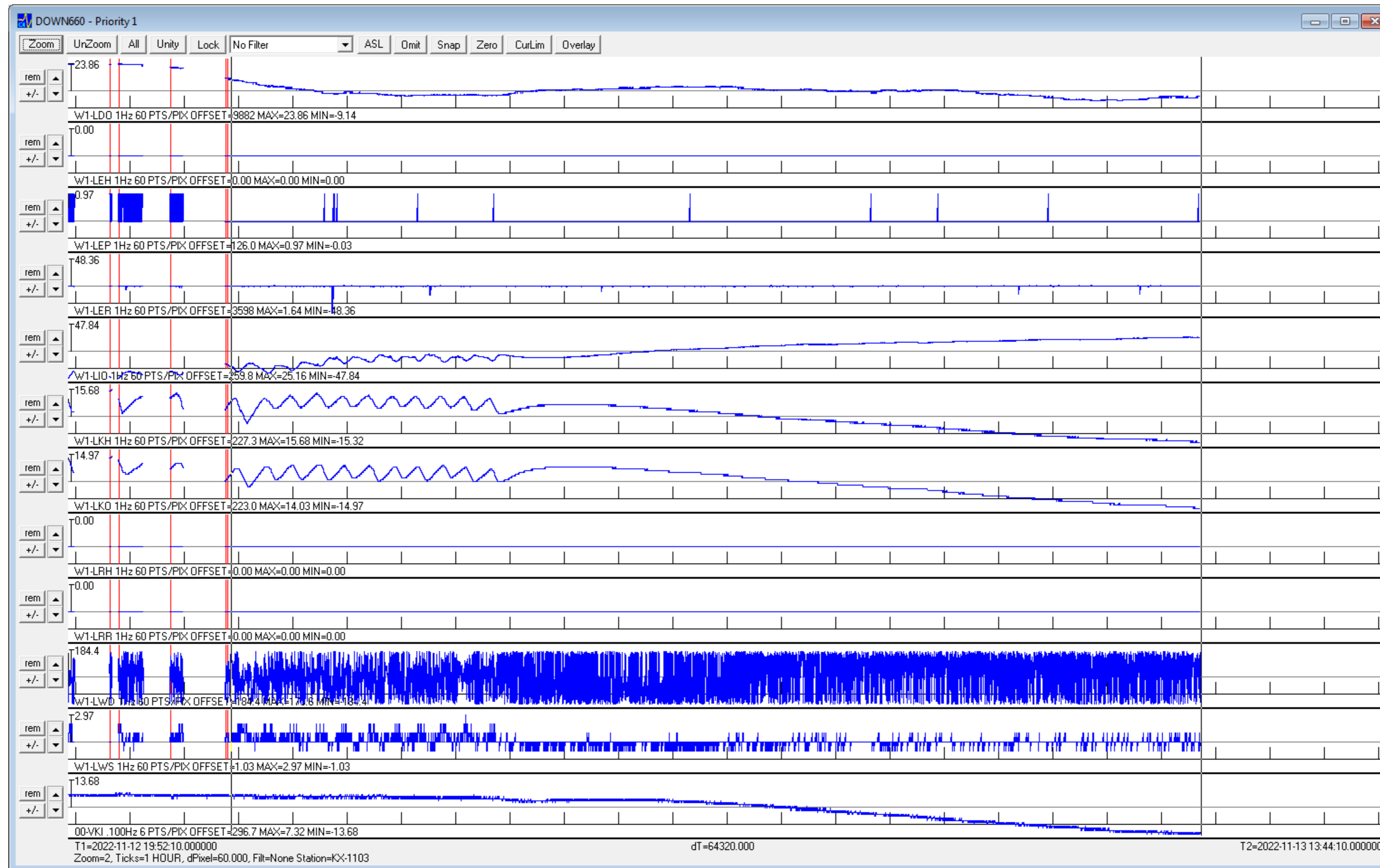
**Tag ID.** Each Mesh Device has a unique Tag ID between 1 and 1048575, you can think of it as a serial number. Enter the number, or clear for no Mesh Device associated with that 'Device Number'. The device number is used to indicate which SEED channels go with each Mesh Device. If you change the Tag ID then any SEED channels associated with that device will be removed since there is no way for the Q8 to know if the new device has the same channels available.

**Enable Data.** Checked to tell the Mesh Device to send data packets to the Q8.

**Enable Status.** Checked to tell the Mesh Device to send status packets to the Q8.



# Data Appears as Additional Channels





Thank you!



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