

rne04 work

rne04: This RMY has error flags on almost every sample. In the past, we've found this to be the case if the voltage is below 12V. This tower is the only one with RMYs that isn't AC or Solar powered. (It is powered by a 24VDC supply at a lidar.) To solve the power problem, we tried routing 24VDC from the DCDC converter to the DCDC input on the serial frontpanel, but found that it was pulled down. Last night, I tried routing directly from the 24VDC input and blew fuses. This morning determined that the 24VDC issues must be due to something on the frontpanel, so tried 12VDC again. We brought a spare sensor and cable which worked fine on the ground at 12VDC, so we replaced both on the tower. The new sensor still gave bad data on the tower.

Back in the ops center, realized the VERTEX problem with 15V protection diodes on the front panel was the source of the power problem. Even after removing this (from one port), found that the 20W DCDC converter would pull the 24V power down, but a 10W DCDC converter worked fine. Ran back up the hill once more, switched DSM boxes (keeping the same Pi and hat). Now, the sensor is getting solid 24V. (actually 24.18) VDC. But...the sensor still gives bad data.

This must be a grounding issue. Indeed, nowhere is "-" attached to Earth. Earth on the sensor isn't attached to anything and the sensor ground lug isn't attached. The DSM isn't grounded either. This all sounds bad, but several other towers (e.g. the new solar-powered TNW masts) are wired essentially the same way and running fine. Perhaps it is related to this also being a "staked-in" tower. Andy and I will see if we can come up with a workable strategy to ground this system.