STATION: PETB DATE: 2021-04-09 TIME: ~16:00UTC to ~21:00UTC TECH: GD, AM

REASON FOR VISIT:
Intended to install Cambium/Xeta radio. This did so we…
Installed Sierra Wireless cell modem

PROBLEMS FOUND:
Cambium/Xeta would not connect reliably to its parent at Mt. Vollmer.

PROBLEMS FIXED:
-Did not install Cambium/Xeta radio. Instead replaced Cradle Point with Sierra Wireless.

EQUIPMENT INSTALLED: (name, s/n, uc#)
- IOTA battery charger, pn: DLS-30; with AGM dongle
Installed new DIN rail with…
- Sierra Wireless, model: RV50X, Verizon, pn: 1103052
  sn: QR0242025901B118, IMEI: 358643075248414
- DIN-4 relay: sn: DIN42101003895
- Reused existing Adam switch.
- Victron LVD, pn: BP65, set to "3A" 11.25V disconnect and 13.25V reconnect.

EQUIPMENT REMOVED: (name, s/n, uc#)
- Cradle Point cell modem (replaced with Sierra Wireless)
- "JF" run-charge battery charger (replaced with IOTA)

COMMENTS:
We tried different locations for the antenna. Finally we temporarily mounted the antenna on a ten foot poll and set it up on the walking trail (which is on a berm) directly adjacent, and north of the marina. This means that the altitude of the antenna was about ten feet higher than the top of the antenna mast at the site.
The final results were: The Cambium/Xeta radio seemed to connect with its parent at Mt. Vollmer, because it showed the parent radio in its neighbor list. But it would not reliability send data. I did about 100 individual radio pings, but only one was successful.

Data from the neighbor list showed that local RSSI was -98dB and local noise was -114dB. The minimum signal required for 229kbps (which is what we were using) should be -105dB. So it is a mystery why the radio did not seem to work.

This log file is saved, in the images directory for PETB, as a pdf with screen shots for the Cambium/Xeta radio.

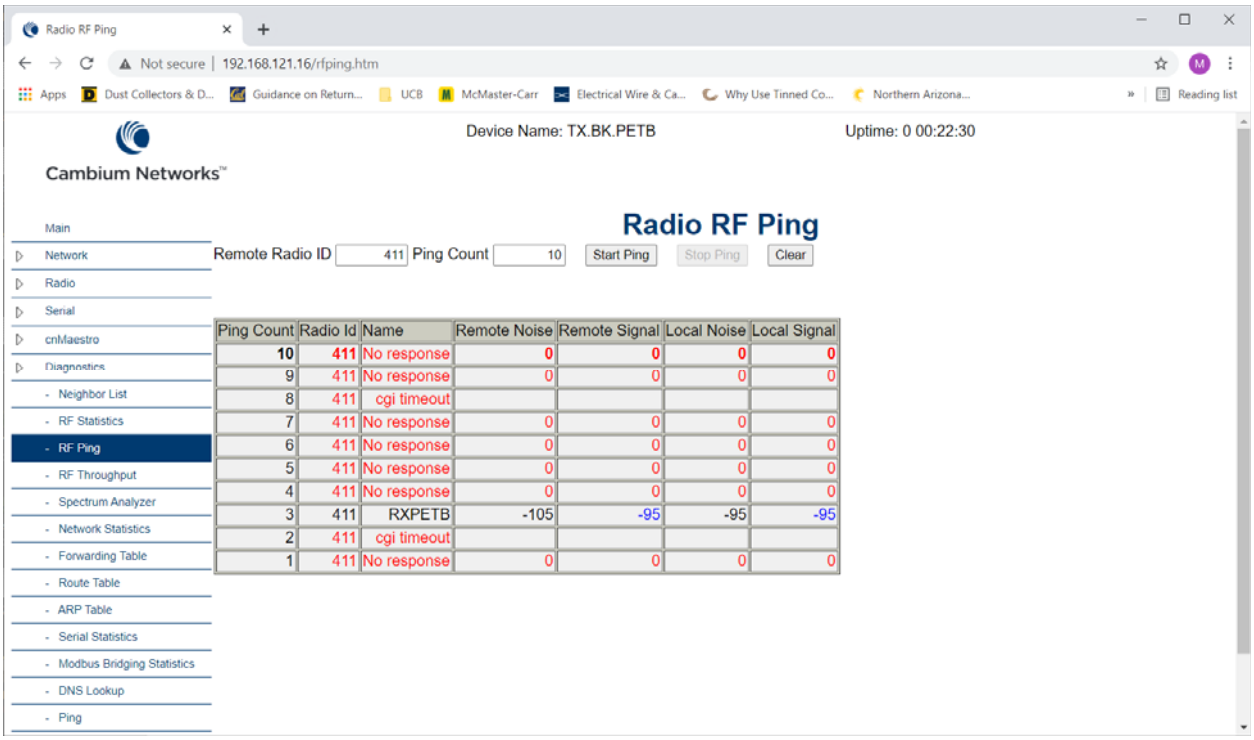
After returning from the trip, and reviewing Google Earth, I discovered that I may have been pointing the antenna 10 to 15 degrees west of Mt. Vollmer. The vector from PETB to Mt. Vollmer is 136 deg true, and I used the compass app on my cell, but maybe it was out of calibration.

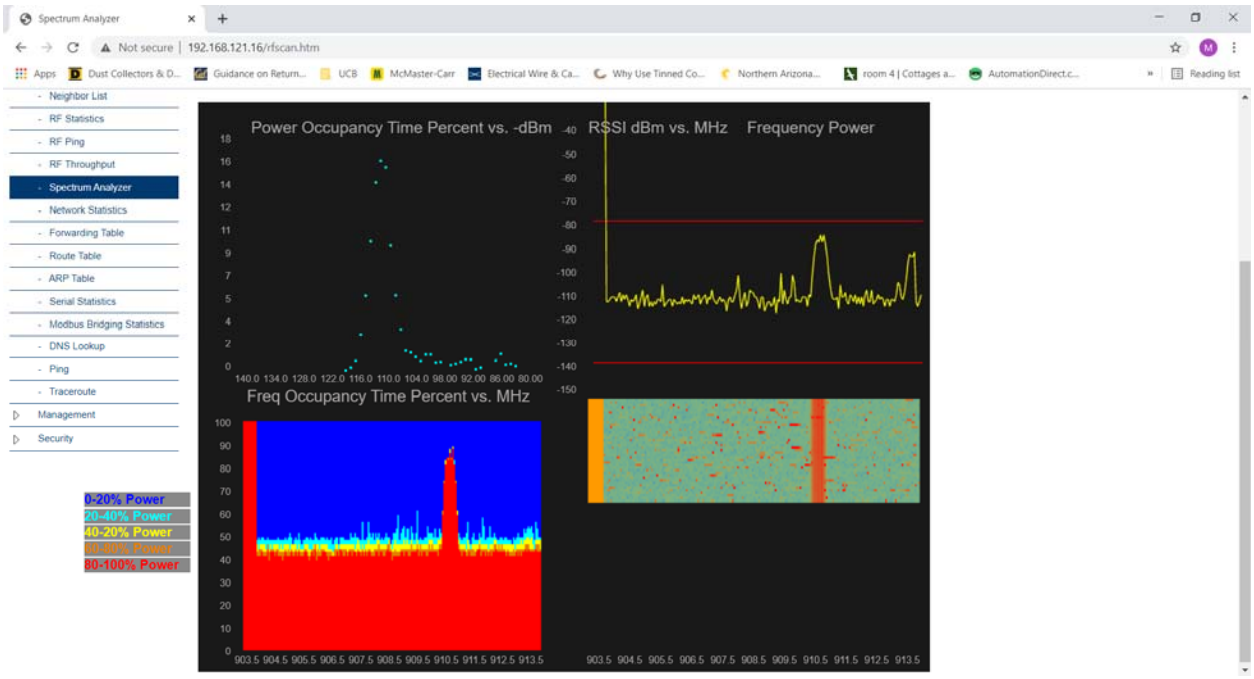
Since the radio did not work, we swapped the existing Cradle Point with a Sierra Wireless. We removed the SIM card from the CP and inserted it in the SW.

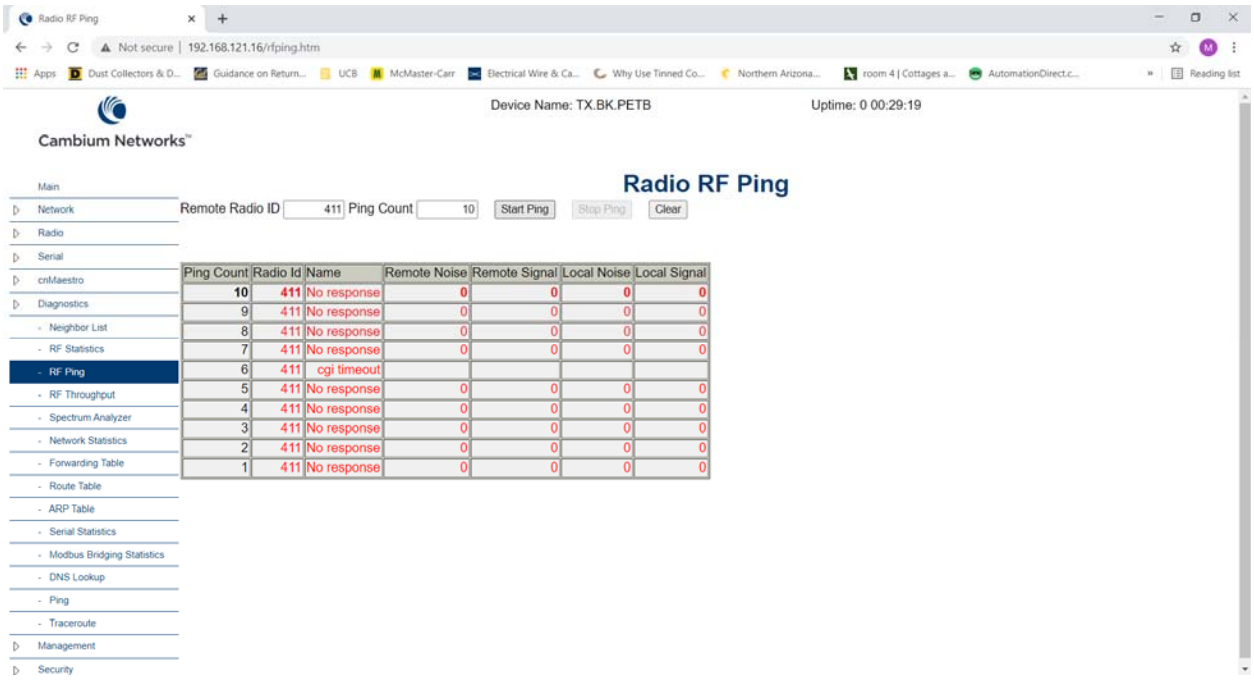
We also installed a new power/charging system.
Finally we vacuumed both enclosures.

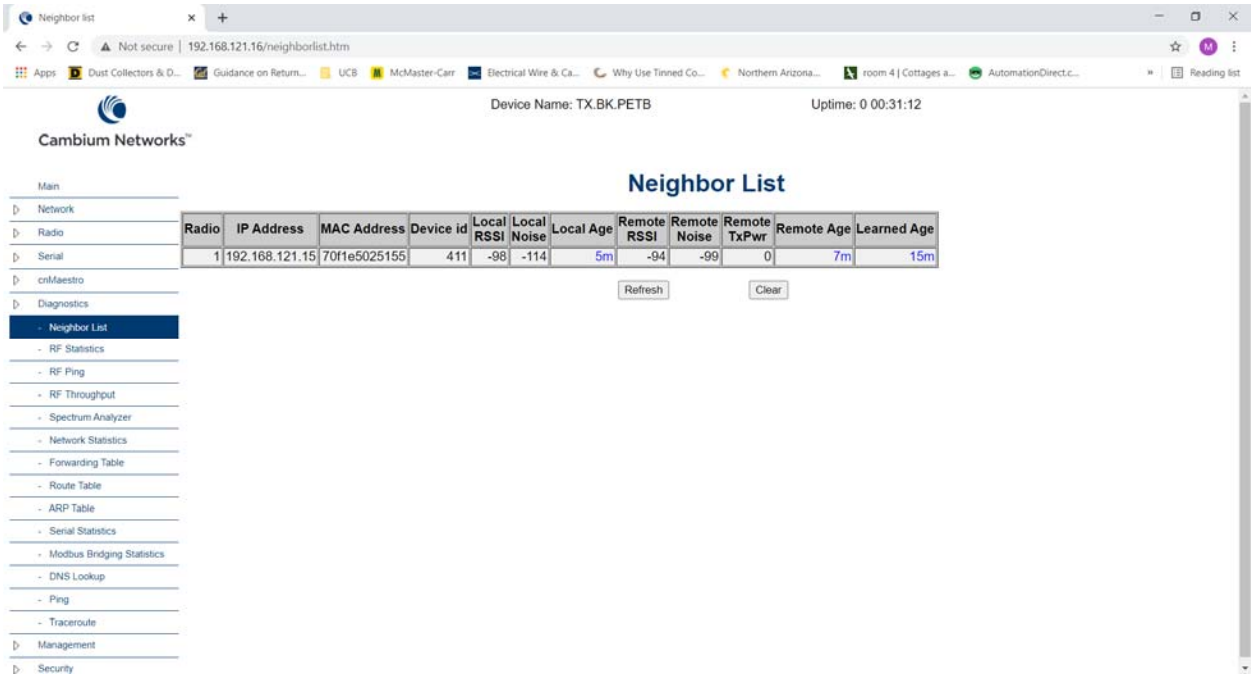
IMAGES: Yes

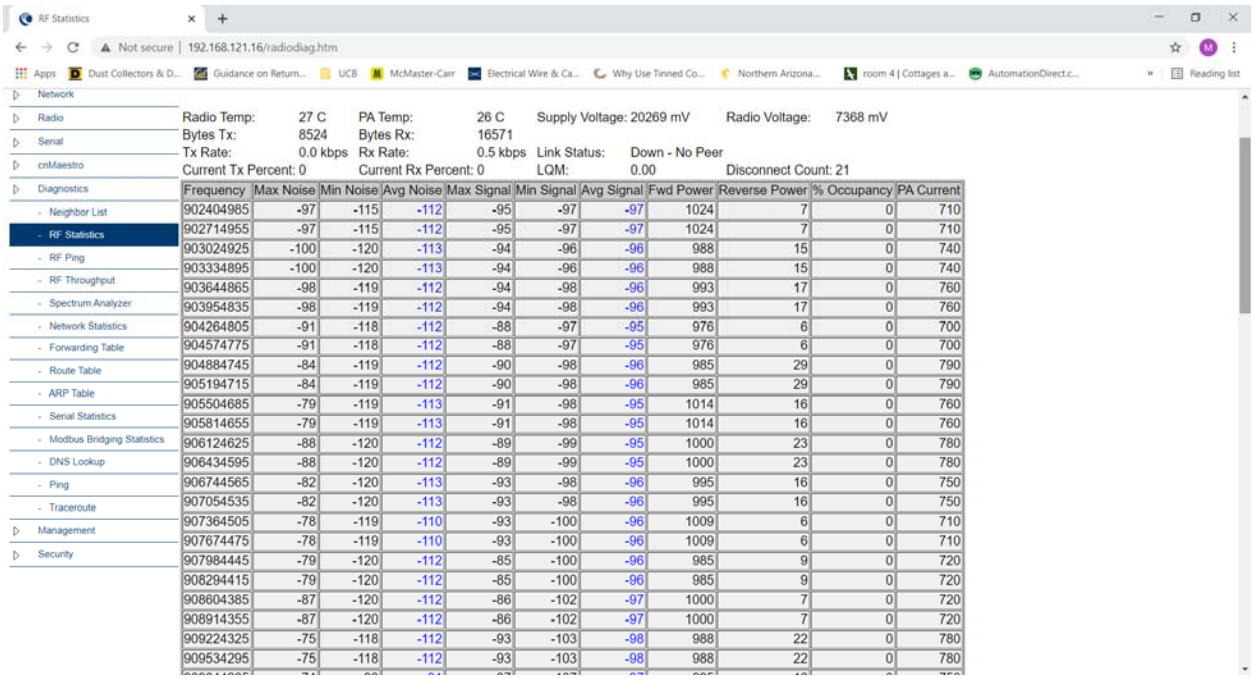
CONSIDERATION FOR FUTURE SITE WORK:
I'd like to go back to PETB with the radio and try again. I'll try to point the antenna in the right direction to Mt. Vollmer and I also want to test from a road that is South of the marina.


Radio RF Ping
Not secure | 192.168.121.16/rfping.htm
Device Name: TX.BK.PETB
Uptime: 0 00:22:30
Cambium Networks
Radio RF Ping
Remote Radio ID 411 Ping Count 10 Start Ping Stop Ping Clear
Main
Network
Radio
Serial
cnMaestro
Diagnostics
Neighbor List
RF Statistics
RF Ping
RF Throughput
Spectrum Analyzer
Network Statistics
Forwarding Table
Route Table
ARP Table
Serial Statistics
Modbus Bridging Statistics
DNS Lookup
Ping
Ping Count | Radio Id | Name | Remote Noise | Remote Signal | Local Noise | Local Signal
10 | 411 | No response | 0 | 0 | 0 | 0
9 | 411 | No response | 0 | 0 | 0 | 0
8 | 411 | cgi timeout
7 | 411 | No response | 0 | 0 | 0 | 0
6 | 411 | No response | 0 | 0 | 0 | 0
5 | 411 | No response | 0 | 0 | 0 | 0
4 | 411 | No response | 0 | 0 | 0 | 0
3 | 411 | RXPETB | -105 | -95 | -95 | -95
2 | 411 | cgi timeout
1 | 411 | No response | 0 | 0 | 0 | 0


Spectrum Analyzer
Not secure | 192.168.121.16/rfscan.htm
Neighbor List
RF Statistics
RF Ping
RF Throughput
Spectrum Analyzer
Network Statistics
Forwarding Table
Route Table
ARP Table
Serial Statistics
Modbus Bridging Statistics
DNS Lookup
Ping
Traceroute
Management
Security
Power Occupancy Time Percent vs. -dBm
RSSI dBm vs. MHz
Frequency Power
Freq Occupancy Time Percent vs. MHz
0-20% Power
20-40% Power
40-20% Power
60-80% Power
80-100% Power


Radio RF Ping
Not secure | 192.168.121.16/rfping.htm
Cambium Networks
Device Name: TX.BK.PETB
Uptime: 0 00:29:19
Radio RF Ping
Main
Network
Radio
Serial
cnMaestro
Diagnostics
Neighbor List
RF Statistics
RF Ping
RF Throughput
Spectrum Analyzer
Network Statistics
Forwarding Table
Route Table
ARP Table
Serial Statistics
Modbus Bridging Statistics
DNS Lookup
Ping
Traceroute
Management
Security
Remote Radio ID 411 Ping Count 10 Start Ping Stop Ping Clear
Ping Count | Radio Id | Name | Remote Noise | Remote Signal | Local Noise | Local Signal
10 | 411 | No response | 0 | 0 | 0 | 0
9 | 411 | No response | 0 | 0 | 0 | 0
8 | 411 | No response | 0 | 0 | 0 | 0
7 | 411 | No response | 0 | 0 | 0 | 0
6 | 411 | cgi timeout
5 | 411 | No response | 0 | 0 | 0 | 0
4 | 411 | No response | 0 | 0 | 0 | 0
3 | 411 | No response | 0 | 0 | 0 | 0
2 | 411 | No response | 0 | 0 | 0 | 0
1 | 411 | No response | 0 | 0 | 0 | 0


Neighbor list
Not secure | 192.168.121.16/neighborlist.htm
Cambium Networks
Device Name: TX.BK.PETB
Uptime: 0 00:31:12
Neighbor List
Main
Network
Radio
Serial
cnMaestro
Diagnostics
Neighbor List
RF Statistics
RF Ping
RF Throughput
Spectrum Analyzer
Network Statistics
Forwarding Table
Route Table
ARP Table
Serial Statistics
Modbus Bridging Statistics
DNS Lookup
Ping
Traceroute
Management
Security
Radio | IP Address | MAC Address | Device id | Local RSSI | Local Noise | Local Age | Remote RSSI | Remote Noise | Remote TxPwr | Remote Age | Learned Age
1 | 192.168.121.15 | 70f1e5025155 | 411 | -98 | -114 | 5m | -94 | -99 | 0 | 7m | 15m
Refresh Clear



Frequency	Max Noise	Min Noise	Avg Noise	Max Signal	Min Signal	Avg Signal	Fwd Power	Reverse Power	% Occupancy	PA Current
902404985	-97	-115	-112	-95	-97	-97	1024	7	0	710
902714955	-97	-115	-112	-95	-97	-97	1024	7	0	710
903024925	-100	-120	-113	-94	-96	-96	988	15	0	740
903334895	-100	-120	-113	-94	-96	-96	988	15	0	740
903644865	-98	-119	-112	-94	-98	-96	993	17	0	760
903954835	-98	-119	-112	-94	-98	-96	993	17	0	760
904264805	-91	-118	-112	-88	-97	-95	976	6	0	700
904574775	-91	-118	-112	-88	-97	-95	976	6	0	700
904884745	-84	-119	-112	-90	-98	-96	985	29	0	790
905194715	-84	-119	-112	-90	-98	-96	985	29	0	790
905504685	-79	-119	-113	-91	-98	-95	1014	16	0	760
905814655	-79	-119	-113	-91	-98	-95	1014	16	0	760
906124625	-88	-120	-112	-89	-99	-95	1000	23	0	780
906434595	-88	-120	-112	-89	-99	-95	1000	23	0	780
906744565	-82	-120	-113	-93	-98	-96	995	16	0	750
907054535	-82	-120	-113	-93	-98	-96	995	16	0	750
907364505	-78	-119	-110	-93	-100	-96	1009	6	0	710
907674475	-78	-119	-110	-93	-100	-96	1009	6	0	710
907984445	-79	-120	-112	-85	-100	-96	985	9	0	720
908294415	-79	-120	-112	-85	-100	-96	985	9	0	720
908604385	-87	-120	-112	-86	-102	-97	1000	7	0	720
908914355	-87	-120	-112	-86	-102	-97	1000	7	0	720
909224325	-75	-118	-112	-93	-103	-98	988	22	0	780
909534295	-75	-118	-112	-93	-103	-98	988	22	0	780