

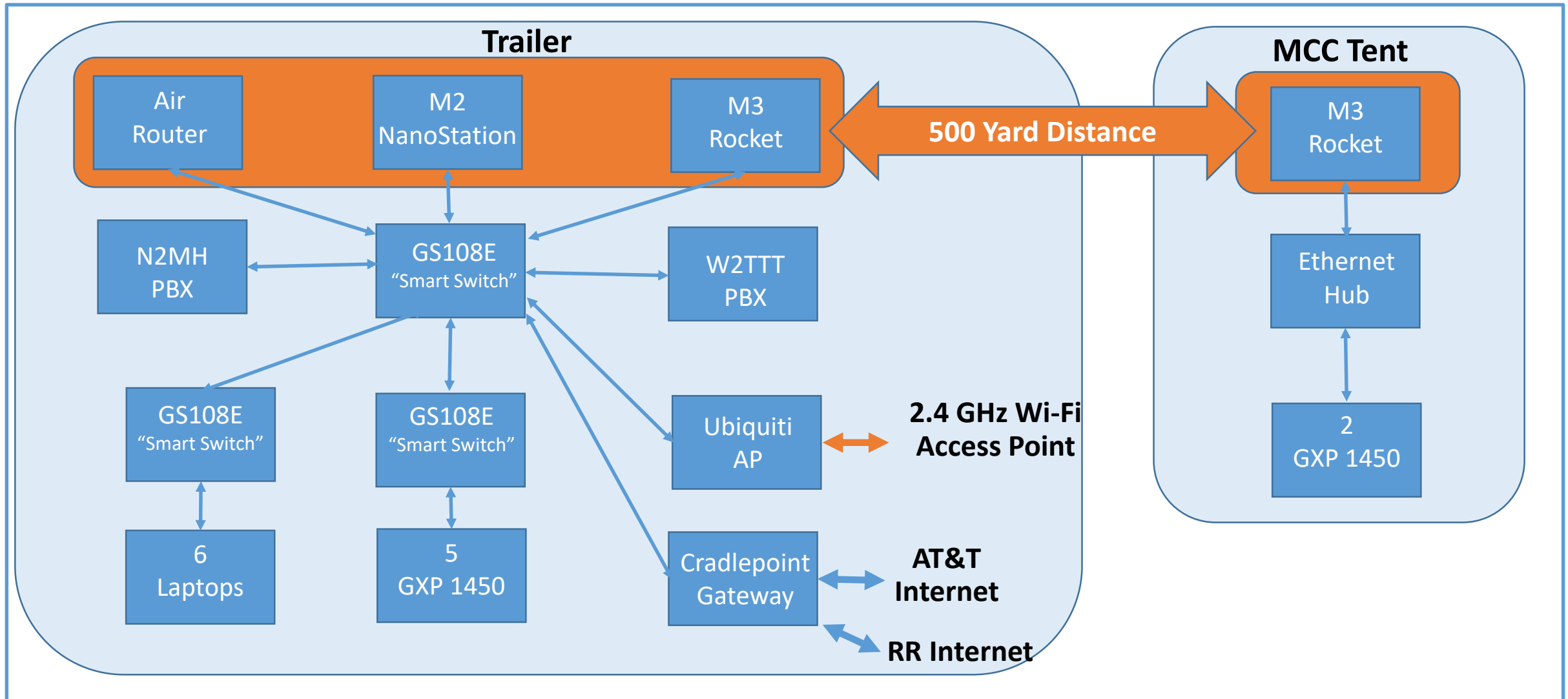
New York City Marathon 2016

Amateur Radio Emergency Data Network (AREDN) Mesh Network Objectives

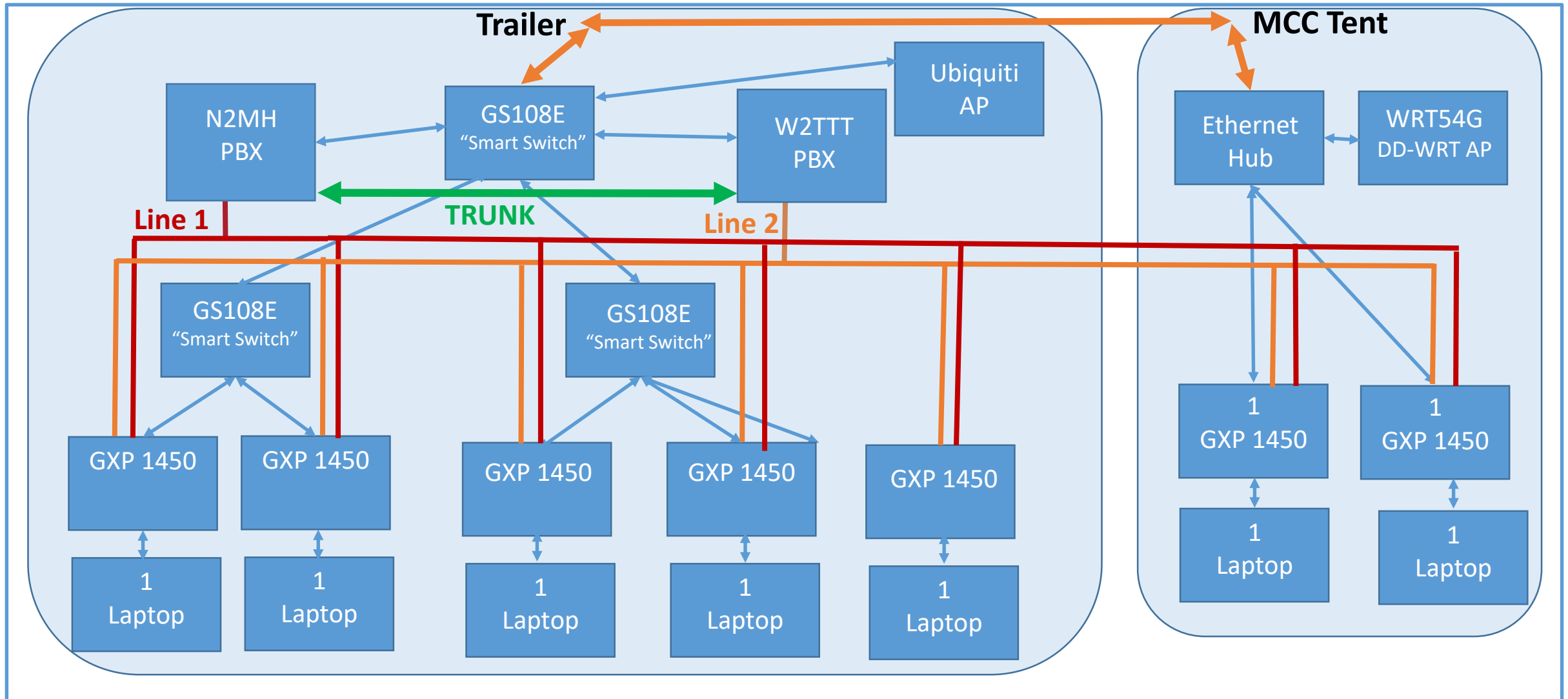
Provide Voice and Data Communications between five Operating Positions in the Amateur Radio Communications Trailer and the Race Control Center (RCC) Tent and access to the Internet

1. Provide reliable connectivity across a 500 yard path in Central Park between the trailer and MCC.
2. Provide a phone at each operating position (5 in the trailer, one in the RCC tent)
3. Provide a data port and Ethernet cable for user-supplied laptops at each of six positions.
4. Provide an extra data port in the RCC for a second user-supplied computer.
5. Enable access to the Internet gateway for the purposes of:
 - Editing a Google doc used as a tracking sheet
 - General situational awareness
6. Provide an Internet interface to the Roadrunner-supplied Internet drop in the trailer.
7. Provide a backup Internet capabilities via an AT&T cellular interface
 - The viability of a cellular data connection in Central Park is dubious and is only being considered for future reference.
8. Provide an interface to the Roadrunner-supplied Voice telephone network.
 - The specific requirements for this interface are pending and will be considered as a stretch goal.

New York City Marathon 2016 Amateur Radio Emergency Data Network (AREDN) Mesh Network System Diagram As Requested



New York City Marathon 2016 Amateur Radio Emergency Data Network (AREDN) Mesh Network VoIP Phone & Computer Diagram As Deployed



New York City Marathon 2016

Amateur Radio Emergency Data Network (AREDN) Mesh Network

Key Components

Amateur Radio Communications Trailer

- 1 Ubiquiti M3 Rocket & Sector Antenna
- 1 Ubiquiti M2 Nanostation
- 1 Ubiquiti Access Point
- 2 Netgear GS108E Smart Switch
- D-Link G0-SW-8G Switch
- 5 Grandstream IP Phones GXP 1450
- 1 BeagleBone Black Asterisk/All-Star Node (W2TTT)
- Cradlepoint MBR-1400 Router
- Sierra Wireless AC-340U LTE Modem on AT&T
- 1 Ubiquiti AirRouter (N2MH)
- 1 BeagleBone Black Asterisk/All-Star Node (N2MH)
- Power Supplies & Cables
- Mast and support hardware

Medical Control Center (RCC)

- 1 Ubiquiti M3 Rocket & Sector Antenna
- Ethernet Hub
- 2 Grandstream IP Phones GXP 1450
- Linksys WRT-54GL DD-WRT AP
- Power Supplies & Cables
- Mast and support hardware

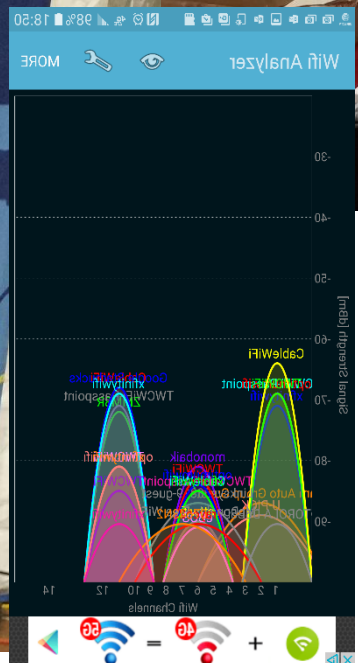
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AREDN Mesh Network & APRS Status

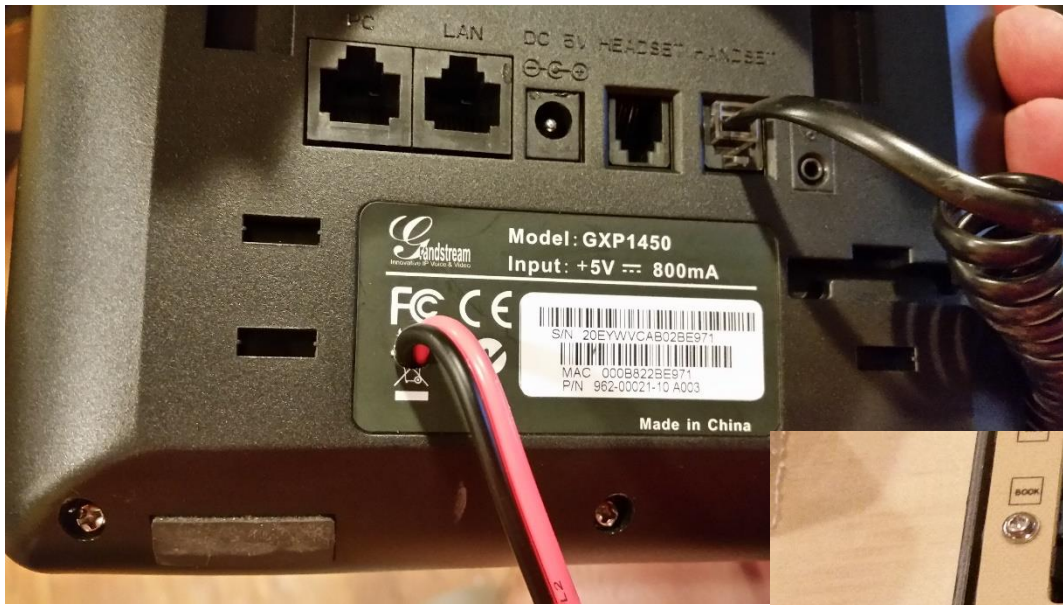
- **Amateur Radio Emergency Data Network (AREDN) Mesh Network**
- **Automatic Packet Reporting System™ (APRS) Network**

- **Team**

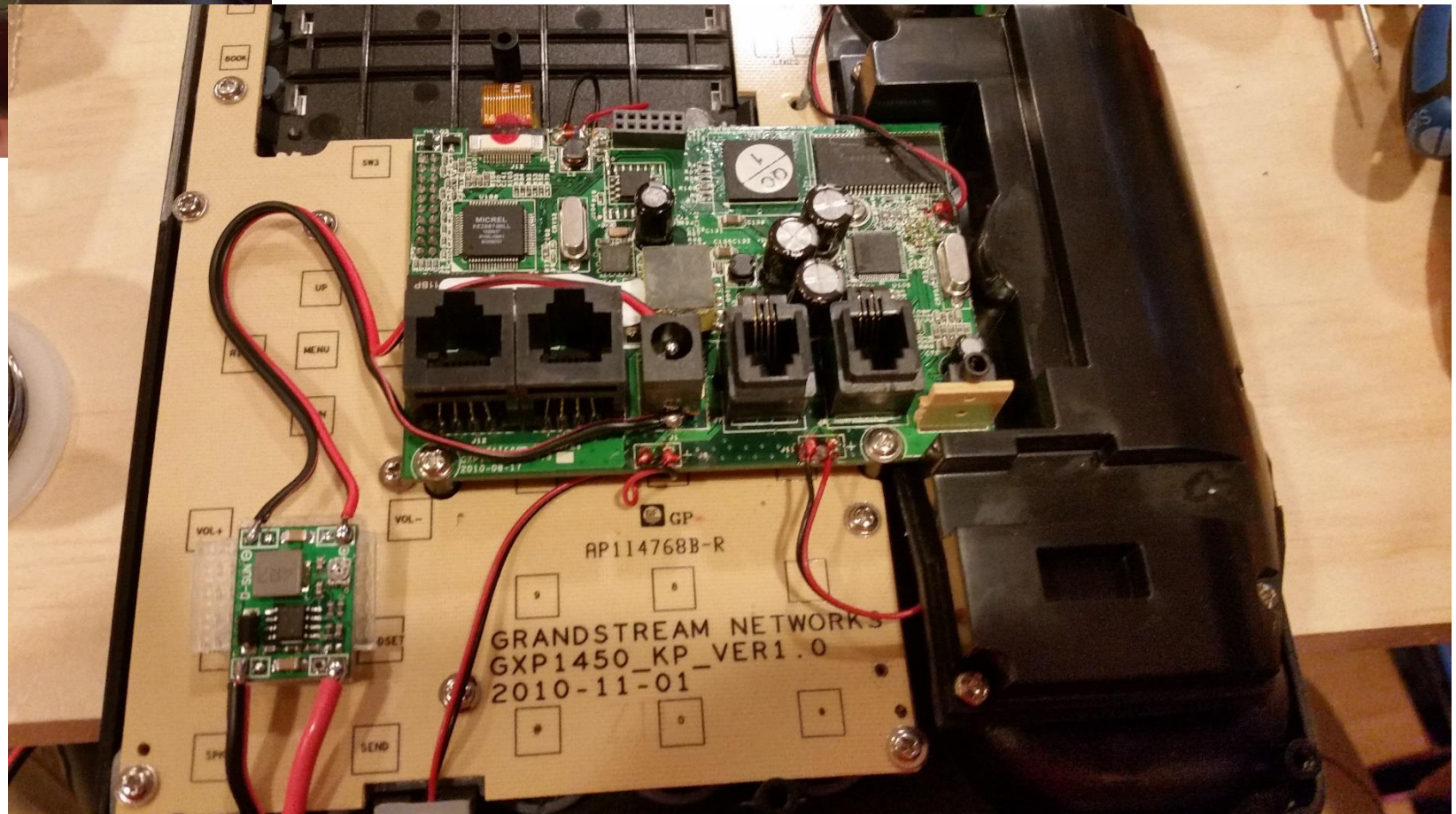
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| • Mark | N2MH | 201.341.7257 | n2mh@n2mh.net |
| • Dave | N3UXK | 973.809.8674 | dhenninger@gmail.com |



Hillary and Mark, N2MH at Red Cross Test Senior Staff Briefing at NYC Roadrunners NYC Marathon Map in RCC Wi-Fi at Finish Line the day before



Grandstream GXP 1450 12 V to 5 V Conversion Module and Anderson PowerPoles





Mike, K2MPH & Gordon, W2TTT
Deb, KC2GPV & Mike, K2MPH after
Saturday Setup in Central Park

Dave Henninger, N3UXK at RCC node

5 AM at the 2016 NYC Marathon Finish Line in Central Park



10 AM at the 2016 NYC Marathon Finish Line in Central Park





Medical Dropout
Net Controls



Long Distance view of
RCC 3 GHz Node from
Amateur Radio Trailer

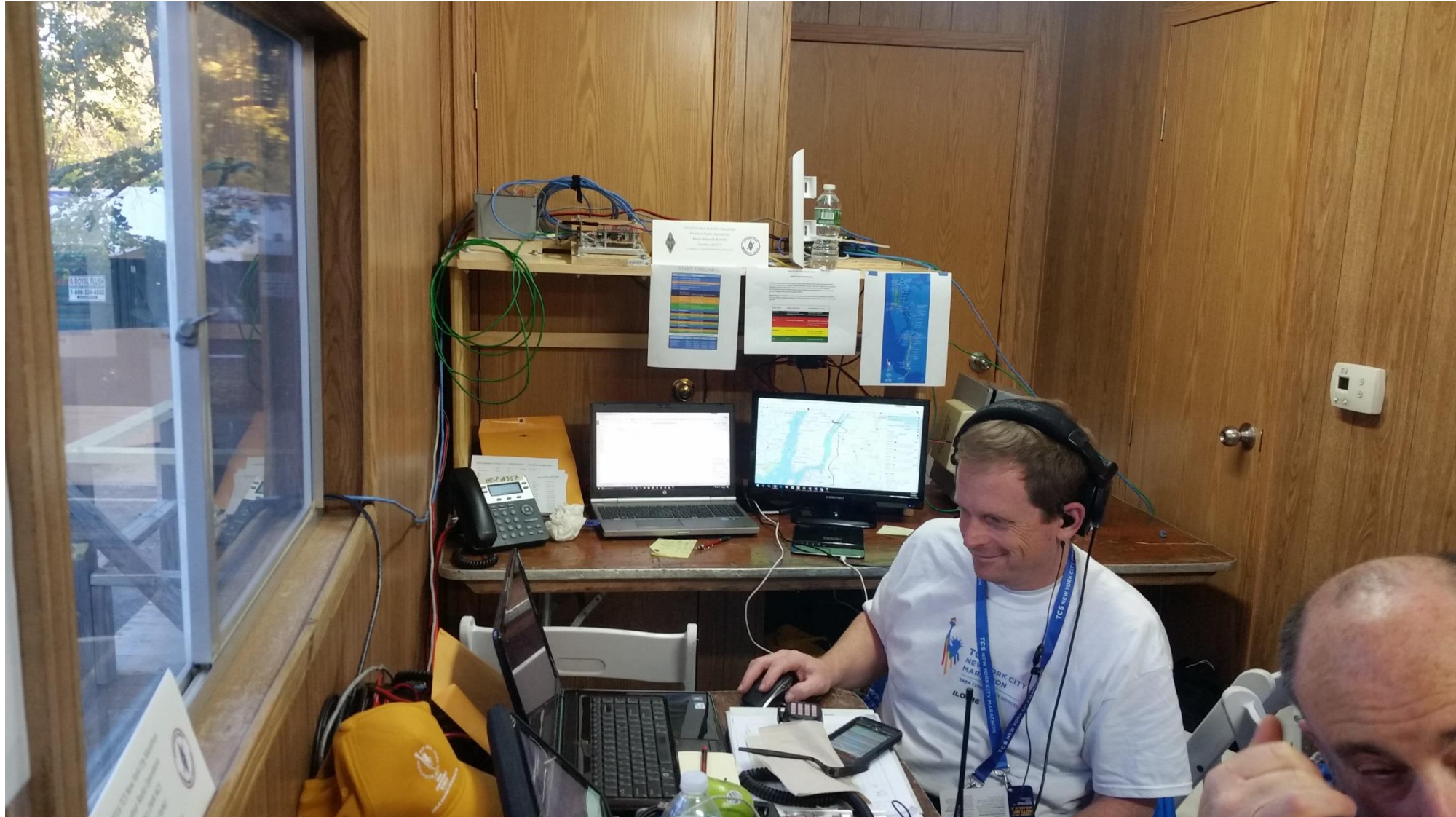




Logistics and Dropout Net Controls



Jamison, DMR Net Control and AREDN & APRS Net Controls



2016 New York City Marathon Recap

Questions?

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