



# Pinellas County Satellite Systems

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**A.C.S.**

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# Pinellas County Satellite Systems Agenda



- Compact Rapid Deployable – SatRunners
  - Overview
  - Component Description
  - Network Architecture



# Pinellas County SatRunner Overview



- Capabilities
  - Cellular Network on Wheels (COW)
    - Range up to 2 Miles
    - AT&T FirstNet® - SAT1 and SAT2
    - Verizon – SAT2 Only
  - ViaSat Satellite Communications
  - Wi-Fi and Wired Local Internet Connections
  - On and Off-the-Grid Power
    - 50 Amp Hr LiFePO<sub>4</sub> Battery
    - 1.8 kVA Generator – 60 Hour Hours
    - 6-Gallon Auxiliary Gas Tank





# Pinellas County SatRunner Overview



- Transportability
  - Easy to move
  - Can negotiate ramps, elevators, and confined spaces
- Vehicle Transport
  - Truck
  - Class III or higher 2" Receiver Hitch





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### Ka-Band Satellite System

- Antenna Reflector
- RF Electronics
- Elevation and Azimuth Motors
- GPS Antenna

### High-Gain Cellular Antennas

- 6 dBi Gain
- 15 Ft Extendable Mast
- FirstNet Band-14 – Sat1 and Sat 2
- Verizon – Sat2 Only

### Generator

- Honda 2200W Generator
- 6-Gallon Auxiliary Fuel Tank with Auto-Feed System
- Up to 60 Hours Runtime



GPS – Global Positioning System  
dBi – dB Isotropic

### Thermoelectric Air Conditioner

- 400 BTU
- AC / Heater



- AC – Air Conditioner
- Ah – Amp Hours
- BTU – British Thermal Units
- ICU – Inverter Charger UPS
- UPS – Uninterruptible Power Supply

### Battery and ICU System

- 1000W Pure Sine Wave Inverter
- 50 A Battery Charger / Manager / UPS
- 50 Ah LiFePO4 Battery



- AC – Air Conditioner
- Ah – Amp Hours
- BTU – British Thermal Units
- ICU – Inverter Charger UPS
- UPS – Uninterruptible Power Supply

### Cellular Modem

- FirstNet (Band-14)
- Up to 2 Mile Range
- Connected to 6dBi High Gain Mast Mounted Antennas

### Power Control Module (PCM)

- Input Power Source Selection
- Battery Monitor
  - Voltage, Current, Battery Temp, Amp Hrs used, Amp Hrs Remaining
- Power Switches
  - Master Power
  - Internal / External Lights
- Alarm System – Visual and Audible
- USB Charger Ports
- Environmental Controls
  - Air Conditioner / Heat

### ViaSat Modem

- Analog to Digital Interface between Cradlepoint Router and Satellite System

### Cradlepoint Router

- Wi-Fi Router
- WAN Input and LAN Outputs
- 5 Ethernet ports
- AT&T FirstNet® LTE Cellular Modem



PinCo CRD One

### WinGard Satellite Controller

- Central Decision maker for Satellite Communications
  - Auto-Search and Acquire
- Sends Power to Sat Antenna System
- Sends Commands to the Sat Antenna and receives status
  - Moves motors
  - Keeps track of antenna type, State, position, and Calibration



PinCo CRD One

### Cellular Modem

- FirstNet (Band-14)
- Up to 2 Mile Range
- Connected to 6dBi High Gain Mast Mounted Antennas

### Cellular Modem

- Verizon
- Up to 2 Mile Range
- Connected to 6dBi High Gain Mast Mounted Antennas

### iNetVu Satellite Controller

- Central Decision maker for Satellite Communications
  - Auto-Search and Acquire
- Sends Power to Sat Antenna System
- Sends Commands to the Sat Antenna and receives status
  - Moves motors
  - Keeps track of antenna type, State, position, and Calibration



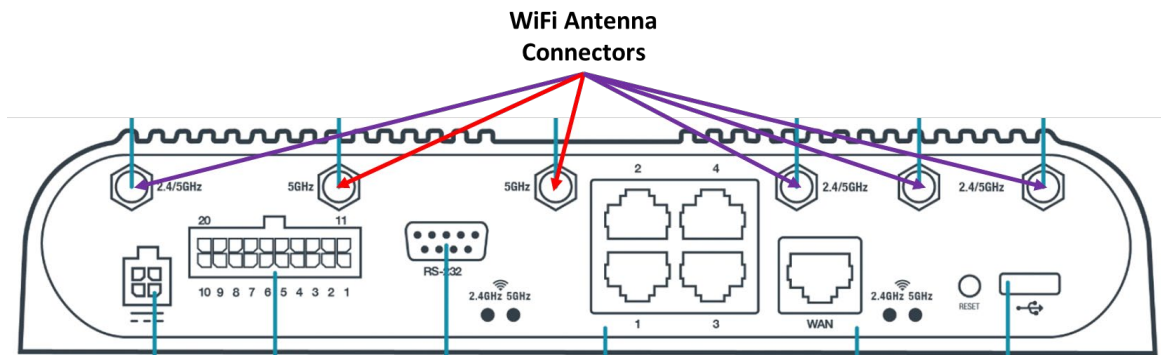
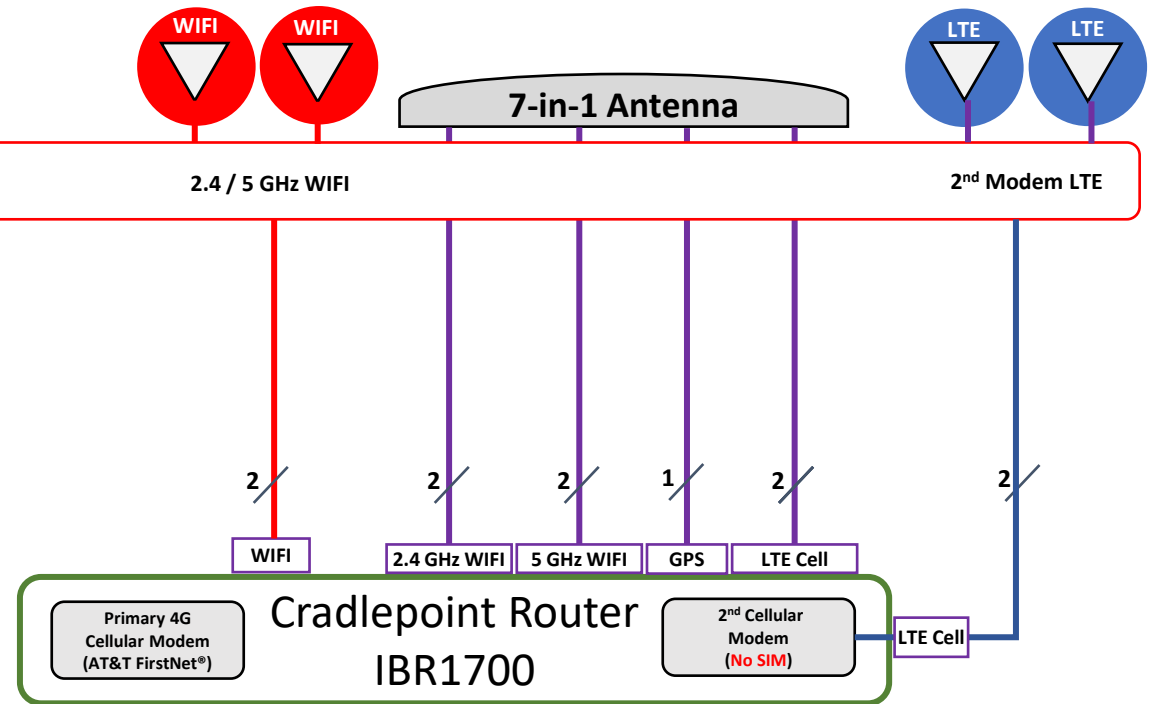
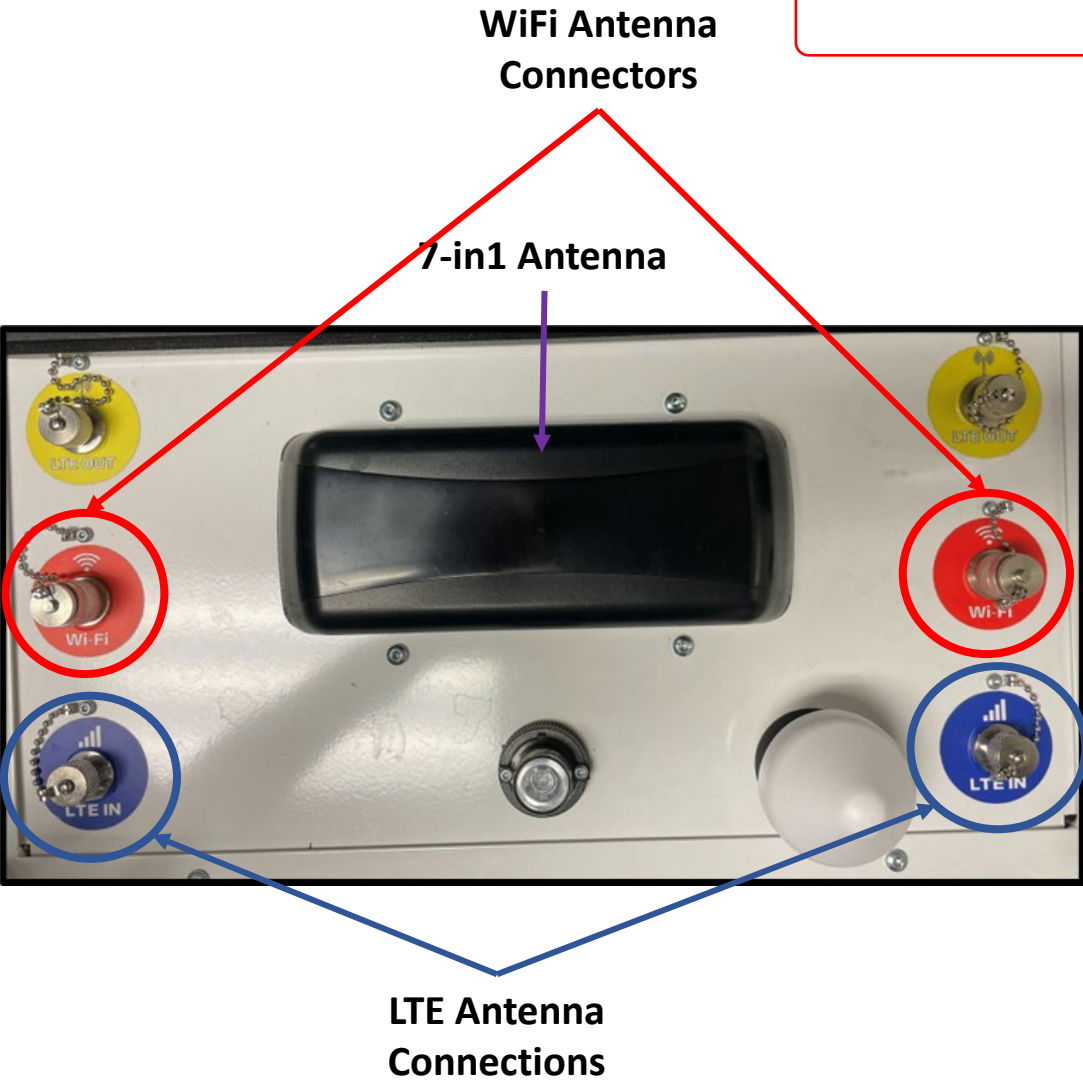
PinCo CRD Two

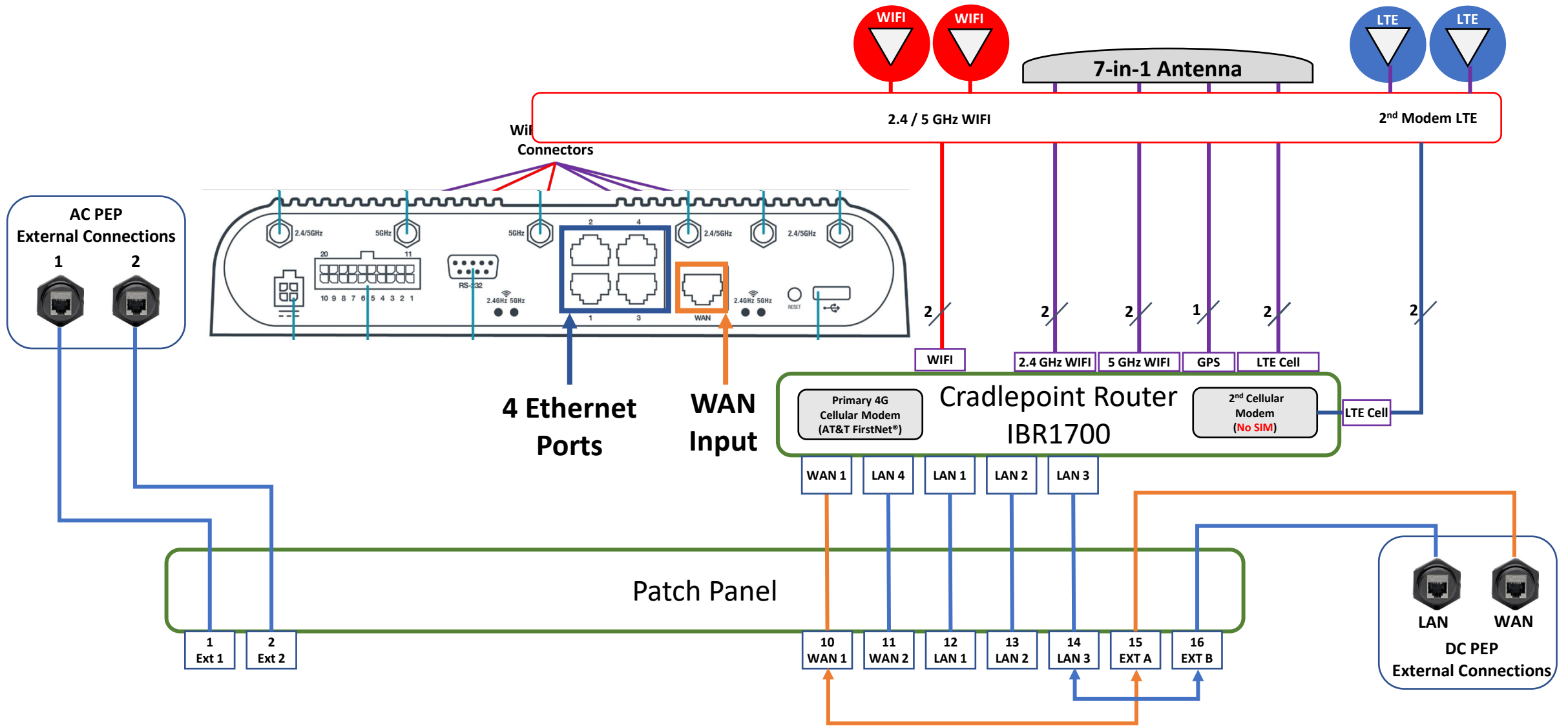


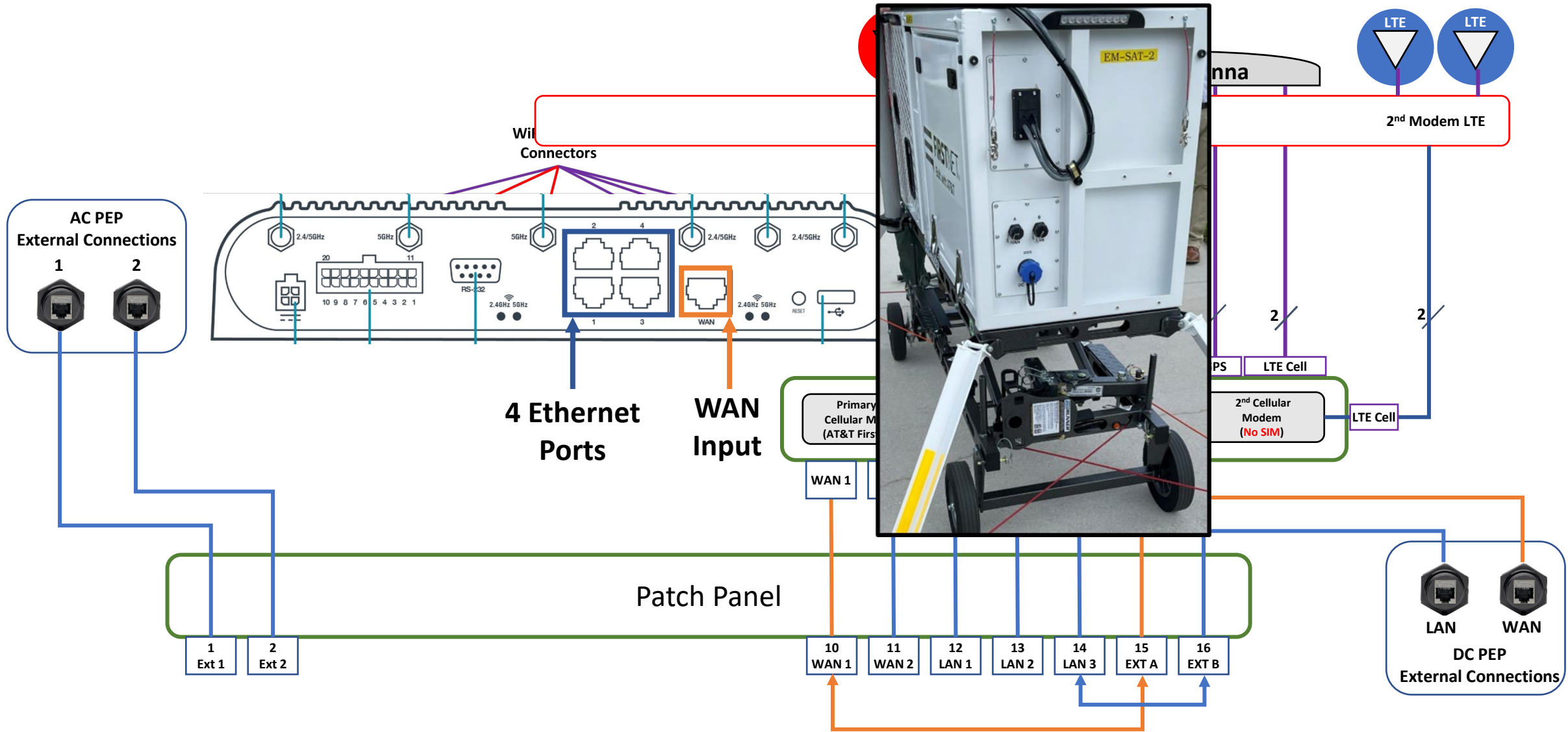
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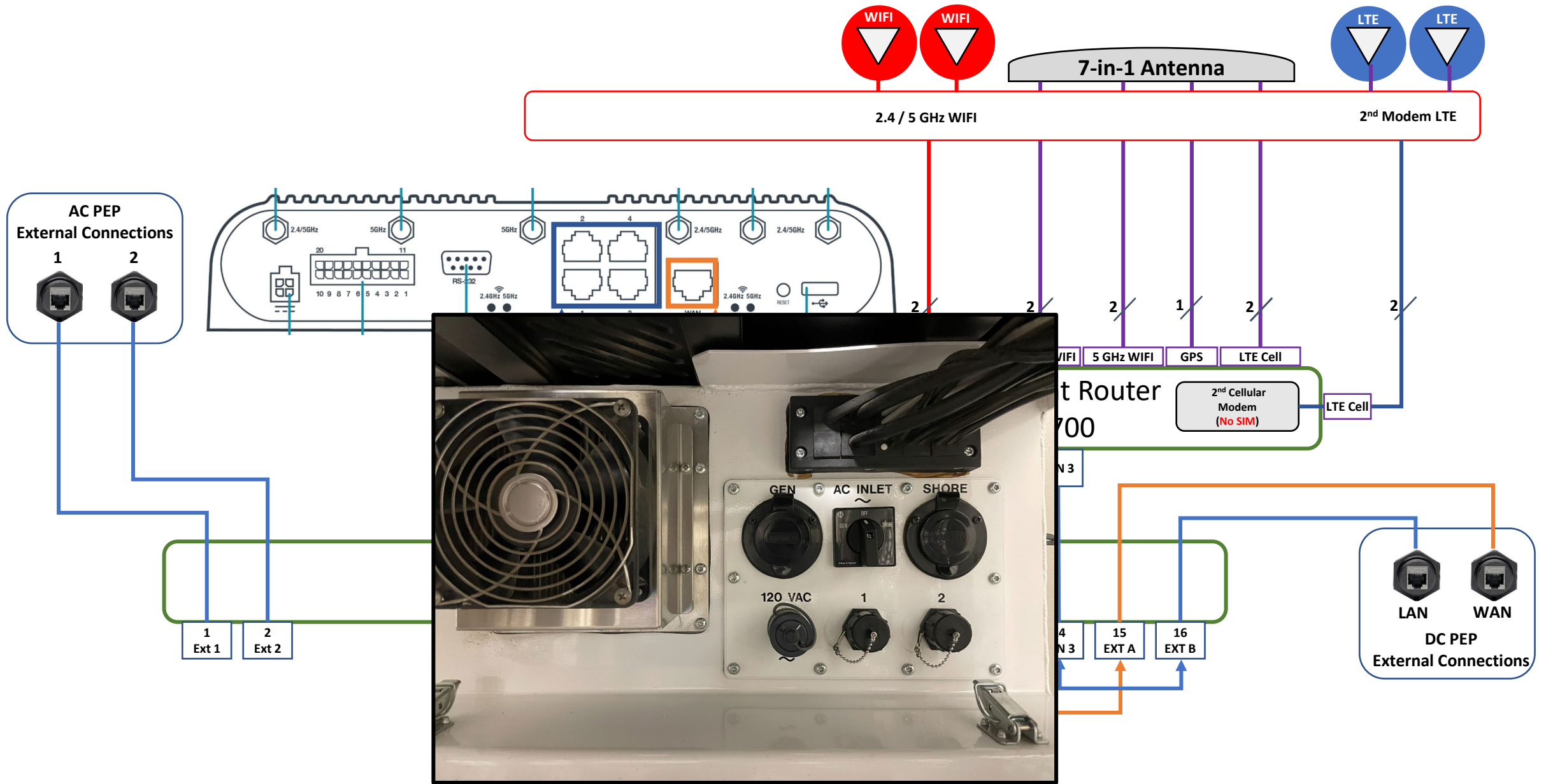


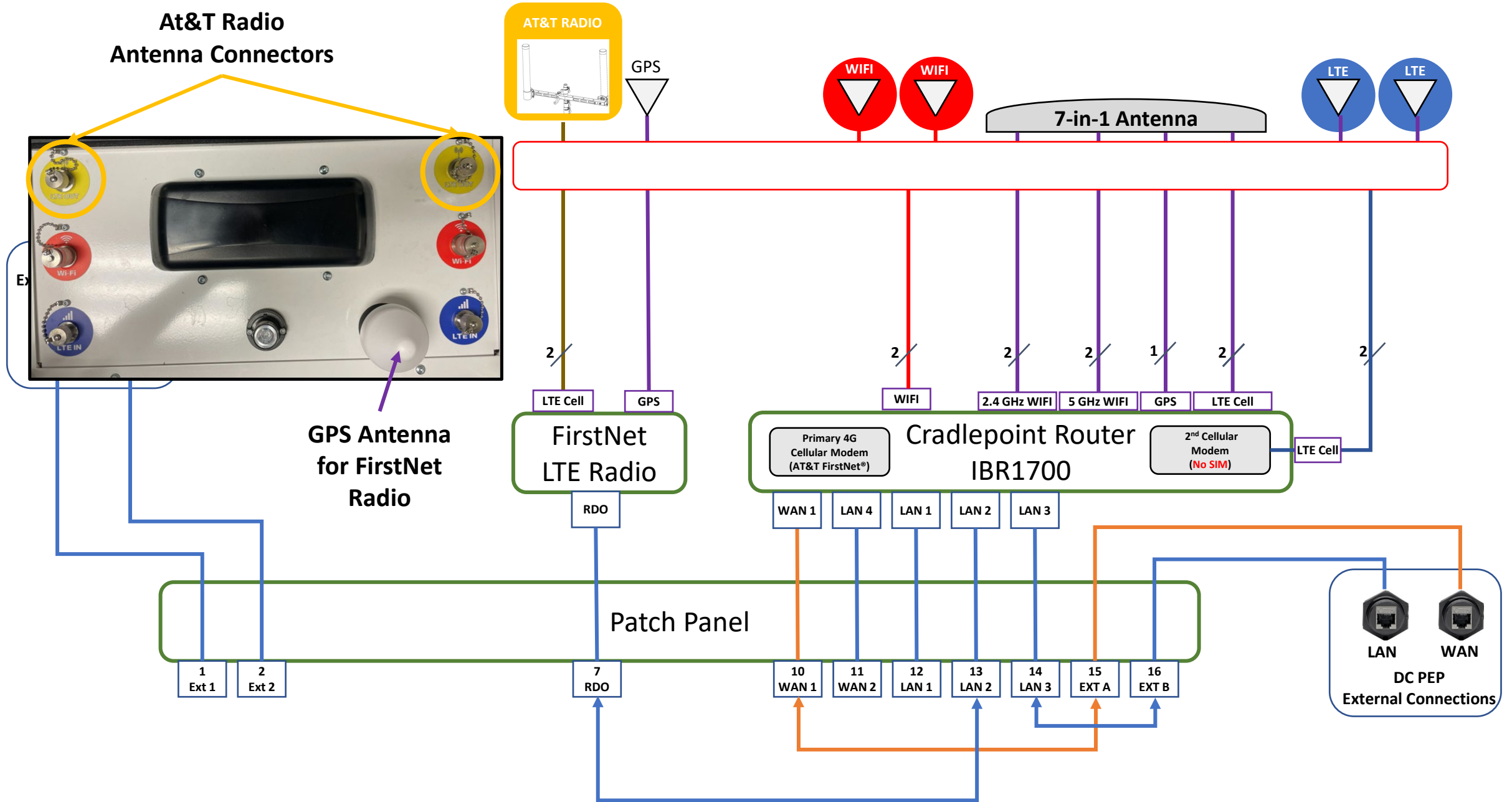
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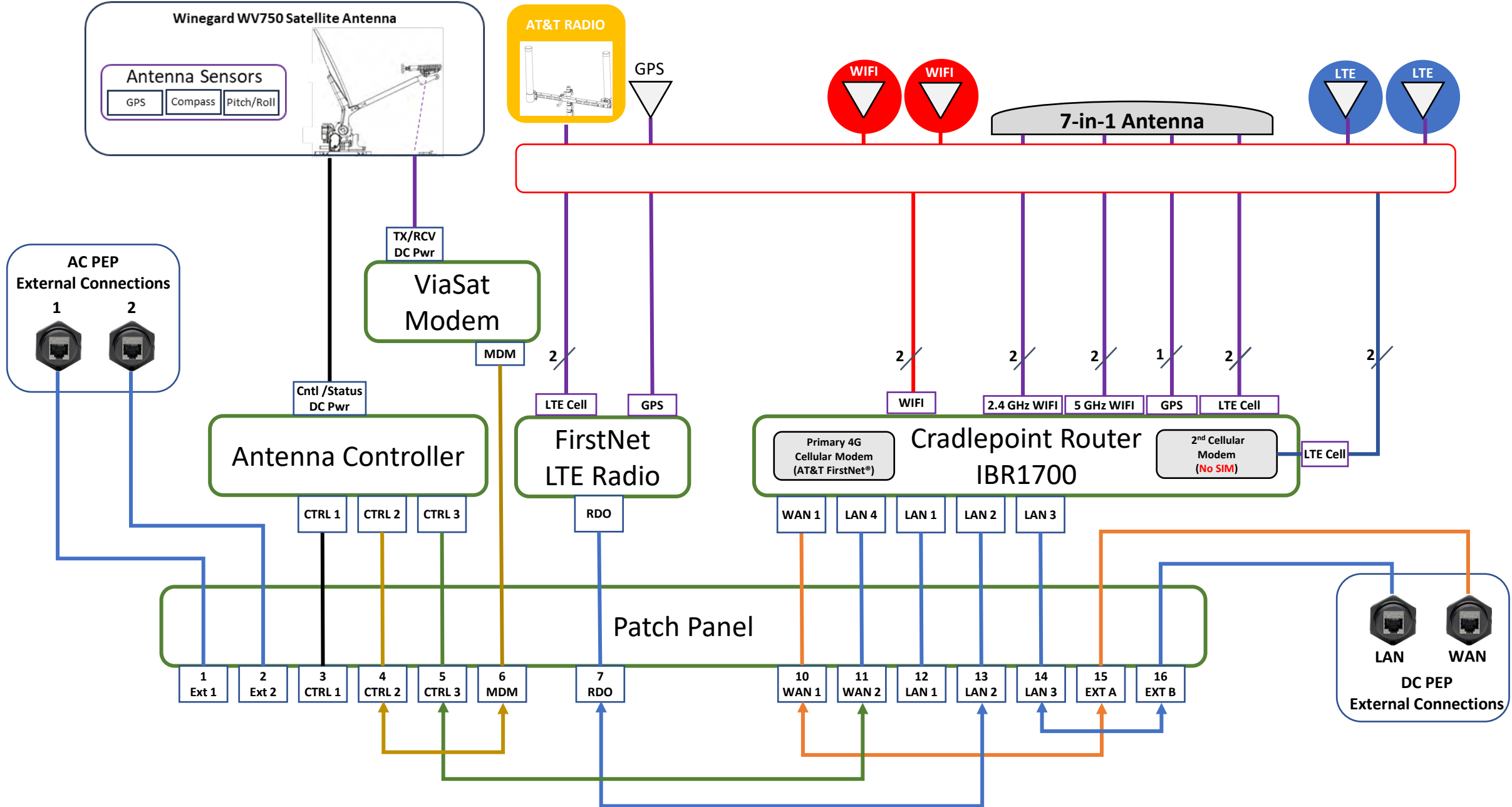


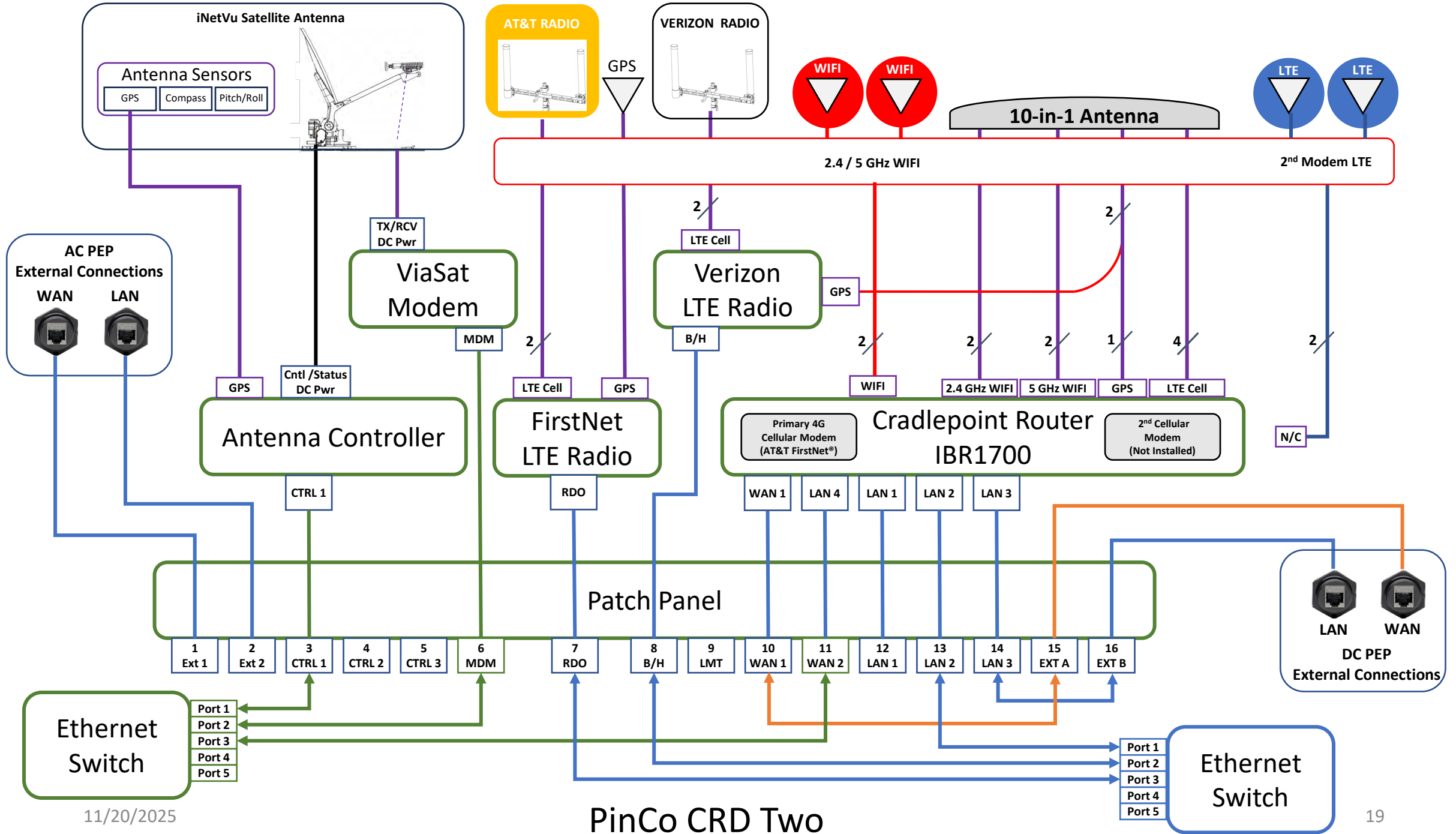


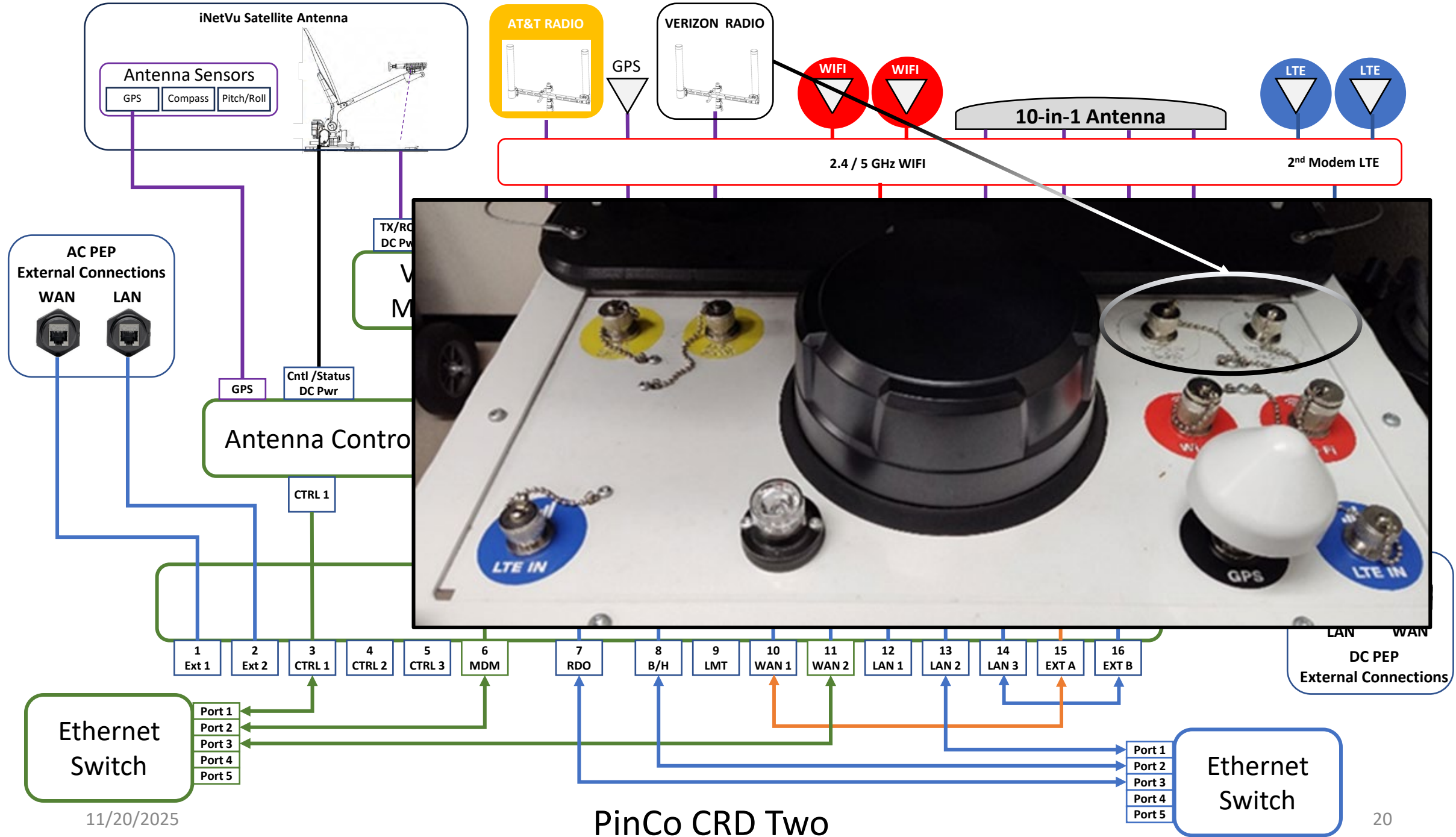














**Back-up**