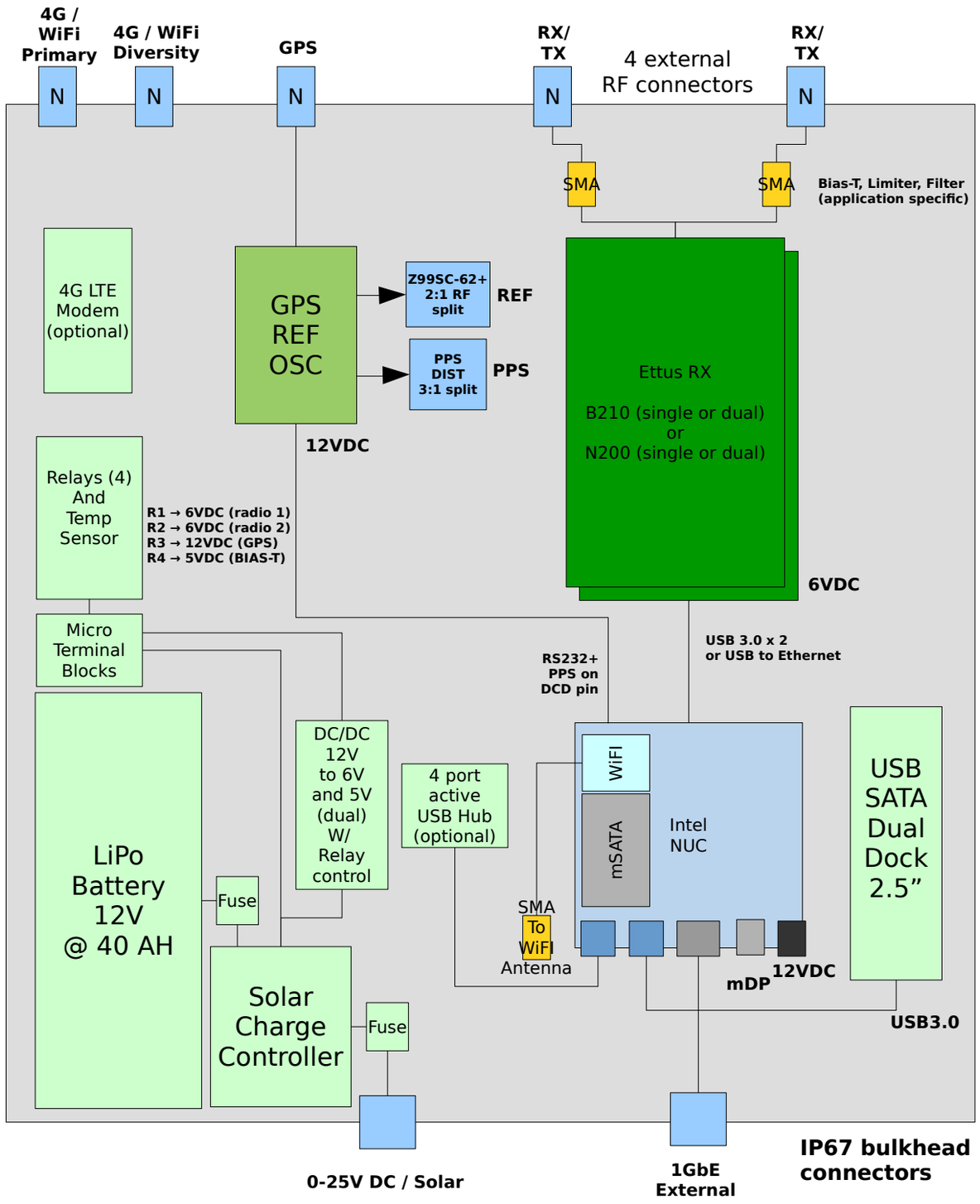
MIDAS-Micro Data Acquisition System (MIDAS-μ oSeries ; outdoor)



This is a highly integrated data acquisition system using Ettus digital receivers (B210 or N200), Outdoor IP67 enclosure, GPS synchronization, an embedded Intel computer, and a solid state disk. A conformal shielding enclosure is used to provide a standard set of I/O connections. A 12 to 24V DC power connector is provided with internal regulation to enable use with a wide range of standard DC sources (e.g. 12V DC supply or solar). An GPS clock source may be used with an RF splitter may be used to provide coherent operation of two receivers. If a 4G LTE modem is used an internal powered USB hub may be necessary.

Note: an unpowered USB hub is necessary to connect a keyboard and mouse. This should be placed in the relay control path temporarily or in a spare port if only a single radio is used.

IP67 Aluminum Enclosure

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Size : B4	Drawn By : FDL	Revision : 1.0	
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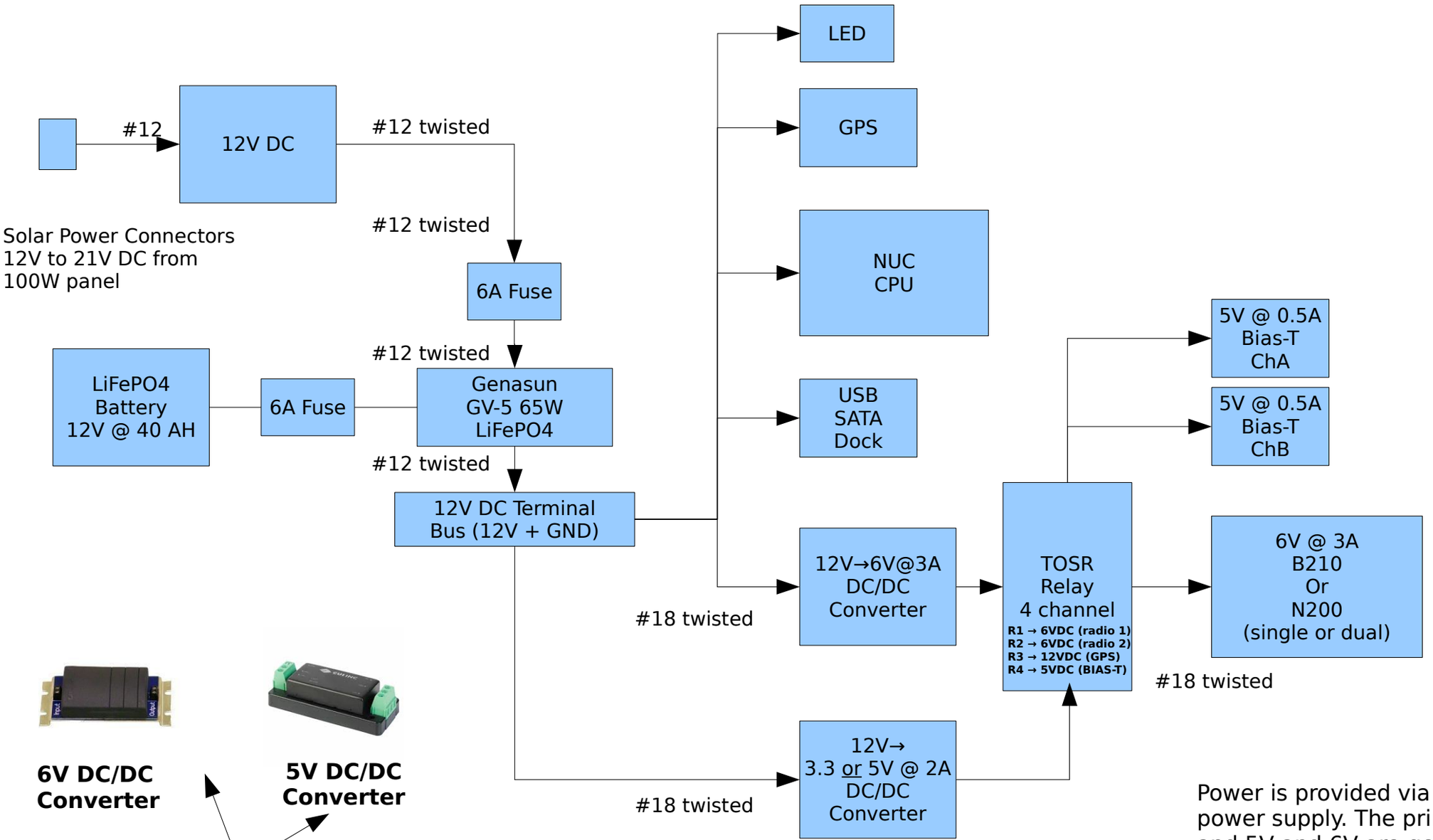
MIDAS-Micro Data Acquisition System
Power Wiring



6V DC/DC Converter

5V DC/DC Converter

Power is provided via solar power or external power supply. The primary supply of 12V DC and 5V and 6V are generated using a DC/DC converters and connected a terminal strip inside the enclosure. Star ground distribution to terminal block. Use of multiple N200 units may require a larger 6V DC/DC converter for some applications.

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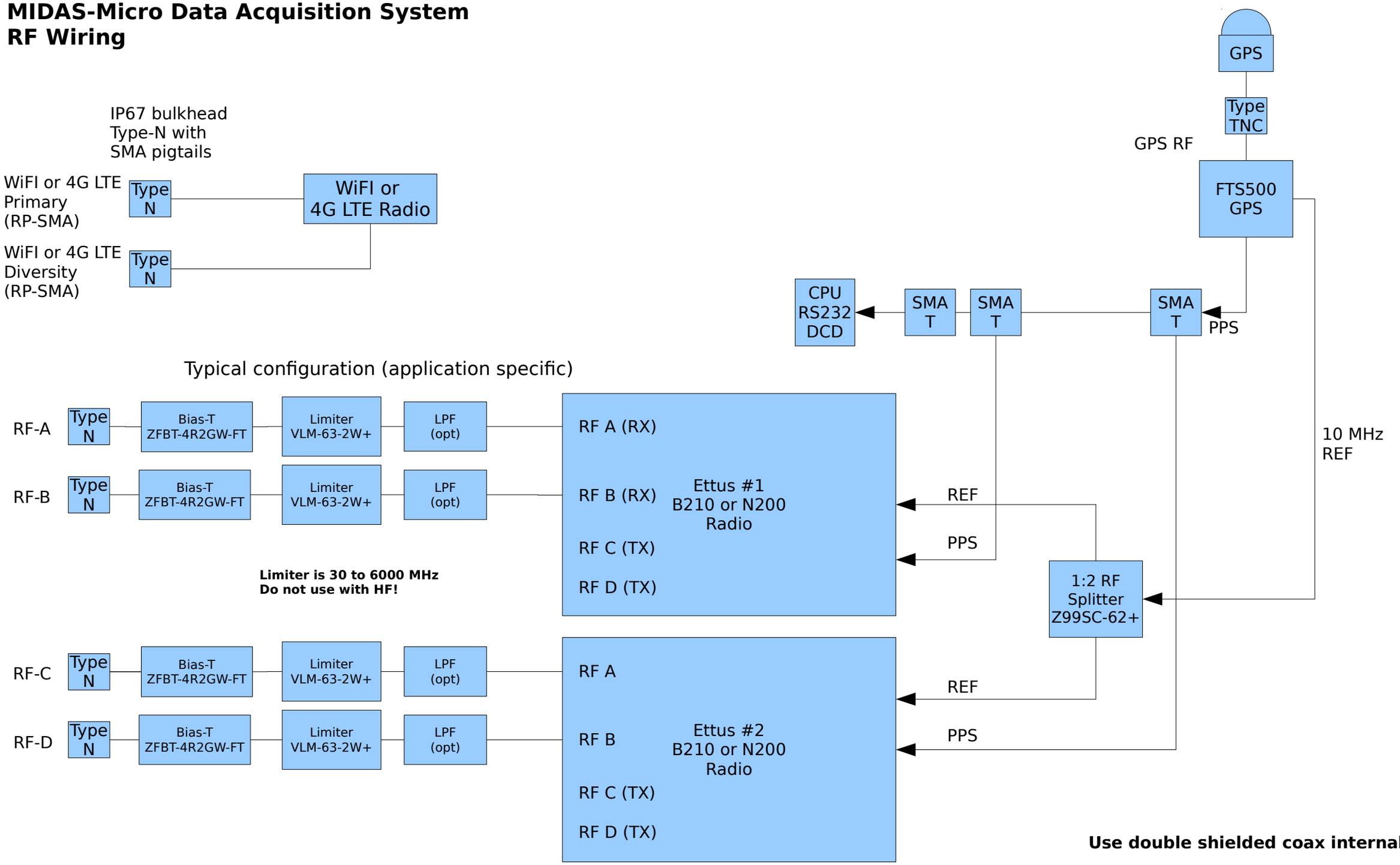
MIDAS-Micro Data Acquisition System
RF Wiring



Two RF inputs are provided for with 5V or 3.3V bias-T connection. An optional limiter or low pass filter may be used on each antenna connection. Up to four inputs / outputs are supported. A GPS antenna is attached via a TNC connector. Antennas for 802.11ac WiFI (primary + diversity) or 4G LTE are provided. The exact configuration depends on the Ettus Radio payload which may include up to two radios (B210 or N200 in any combination.)

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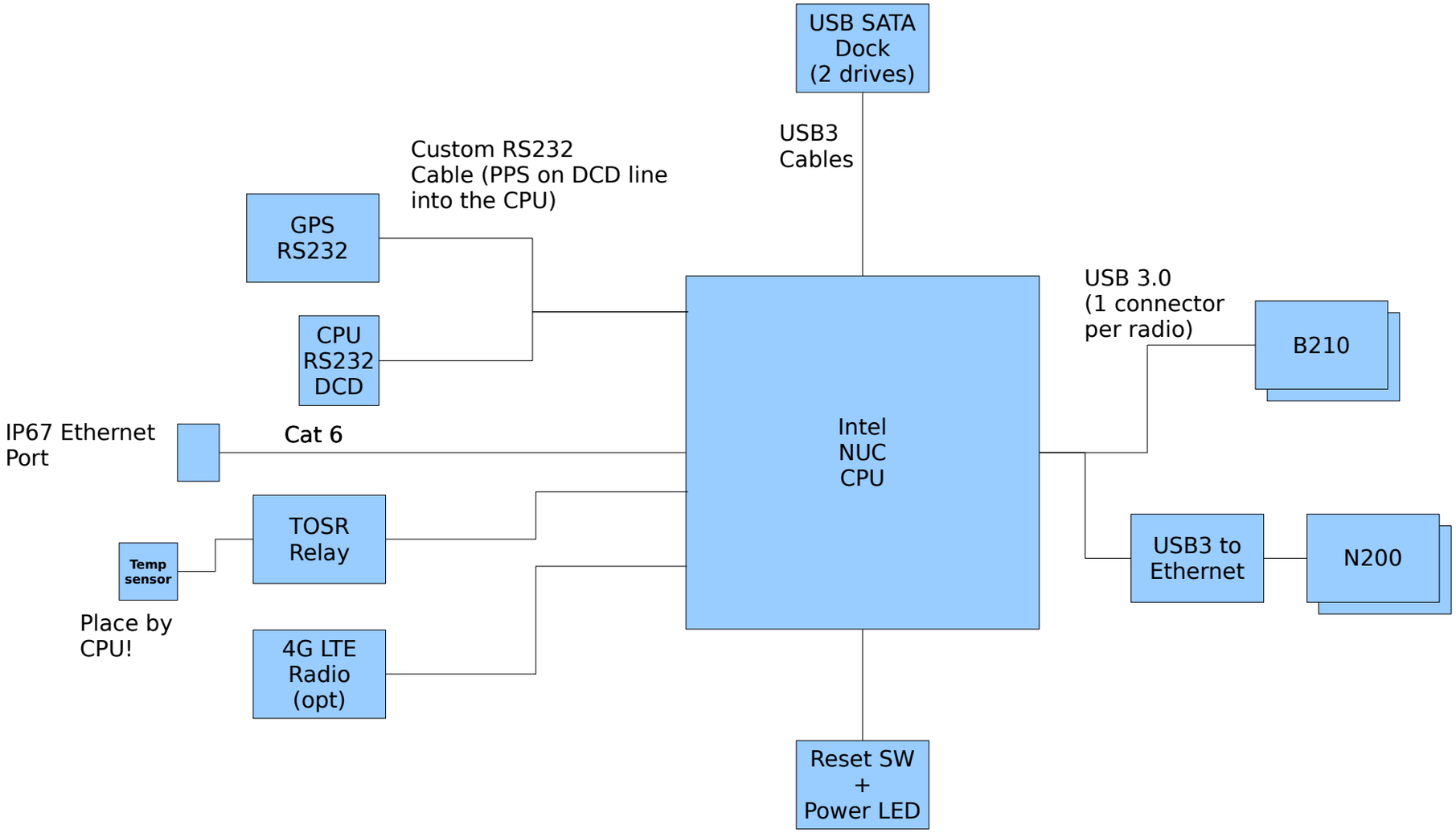
MIDAS-Micro Data Acquisition System
Data Wiring



A Industrial Intel NUC is used as the core system computer. Ethernet is connected to provide external interface and data connection. USB3 wiring is provided to the drives, relay control, and radios. Radios should be on separate USB 3 connections. For N200 radios a USB3 to ethernet converter is required. GPS control, data, and PPS signal are provided via RS232. This enables NTPD operation in GPS disciplined mode. Keyboard, mouse, and display access are only provided with the enclosure open and an extra USB hub. Reset and power is connected to the NUC (it will be necessary to modify the chassis). Secure cables with tie downs so they can't back out of devices.

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