backplane_signals

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net_overview

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Backplane Signal Descriptions:

IO lines:

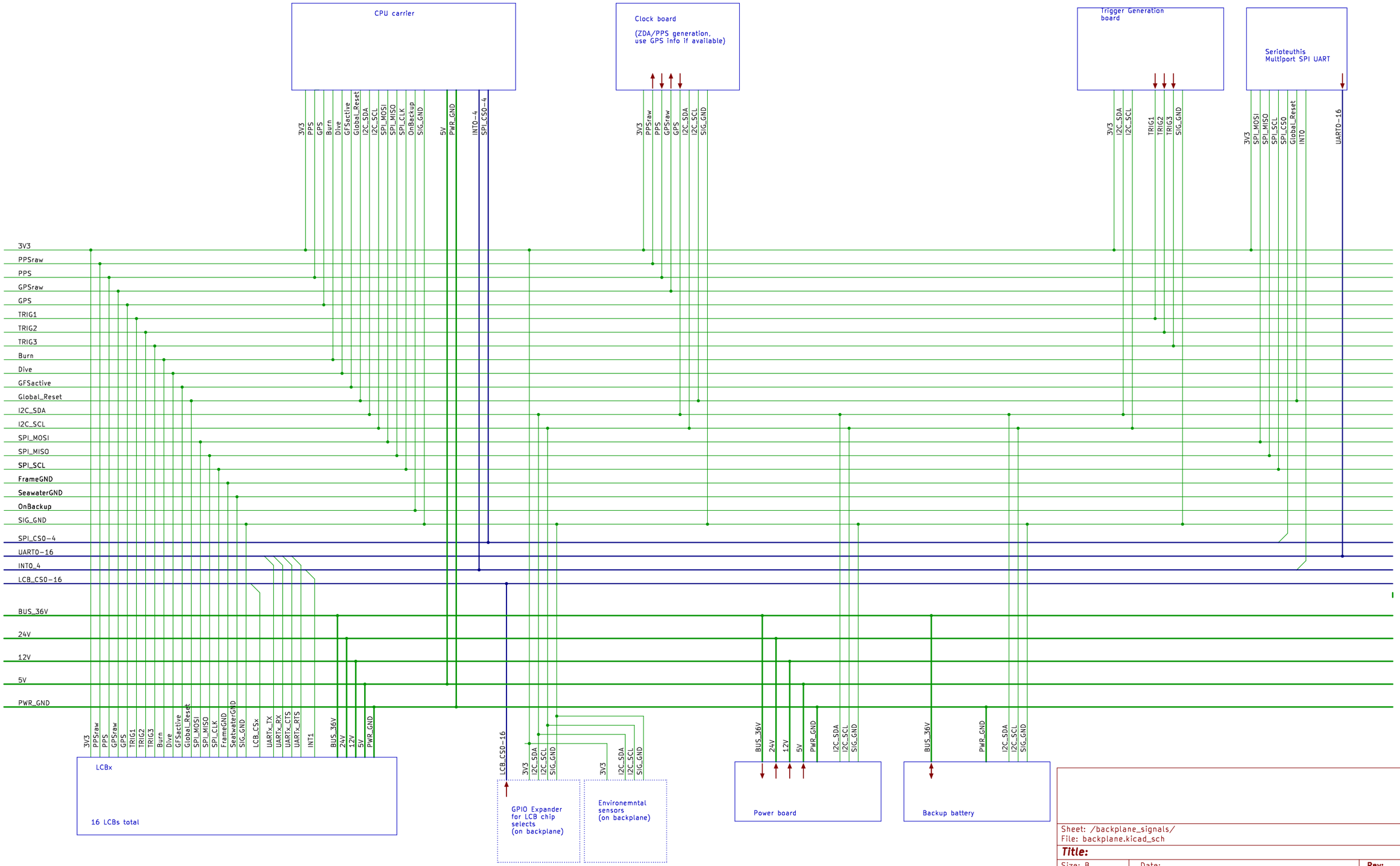
3V3	3.3V logic supply for board components
PPSraw	3.3V TTL, PPS from external GPS receiver
PPS	3.3V TTL, master PPS generated by clock module, uses raw PPS to syncronize to GPS time if available
GPSraw	3.3V TTL, GPS NMEA sentences (GGA, ZDA, etc.) from external GPS receiver
GPS	3.3V TTL, GPS sentences from clock module (will be always available, even underwater at least for ZDA)
TRIG1	3.3V TTL, trigger output 1, for sync of sonars
TRIG2	3.3V TTL, trigger output 2, for sync of sonars
TRIG3	3.3V TTL, trigger output 3, for sync of sonars
Burn	3.3V TTL, when on: burn wire, multiple sources can trigger this line
Dive	3.3V TTL, on when vehicle is under water (as determined by external pressure switch)
GFSactive	3.3V TTL, on when ground fault scan is running (might be needed to deisolate ceratin LCBs that are permanently isolated, otherwise GF doesn't show up)
Global_Reset	3.3V TTL, normally high; when low, all components connected go into reset
I2C_SDA	3.3V TTL, I2C data line
I2C_SCL	3.3V TTL, I2C clock line
SPI_MOSI	3.3V TTL, SPI data
SPI_MISO	3.3V TTL, SPI data
SPI_CLK	3.3V TTL, SPI clock
FrameGND	connection to chassis ground
SeawaterGND	connection to external electrode exposed to seawater (required for GF scan)
OnBackup	3.3V TTL, when high, systems runs on internal rechargeable battery backup
SIG_GND	Ground for 3.3V logic supply and all data lines

Buses:

SPI_CS0-4	3.3V TTL, 4x SPI chipselect for SPI devices needing low latency (like multiport UART)
SPI_INT0-4	3.3V TTL, 4x interrupt lines for low latency SPI devices
UART0-16	3.3V TTL, 16x UART lines consisting of TX, RX, RTS, CTS each (64 signals total)
LCB_CS0-16	3.3V TTL, 16x SPI chipselect for LCBs, these can be slow so are generated by GPIO expander

Power:

BUS_36V	25-36V bus power
24V	24V power
12V	12V power
5V	5V power
PWR_GND	Power return



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