BOX PLANS · CROSS-CHECK

every box against every other box and every wire · v10.5 · 2026-11-02

Both ends of every cable between two boxes agree (20 cables): same cable, same cores, same job at both ends.

Every hole matches the Electronics and Wiring Plan's box entry tables (Appendix A) (82 entries), every cable fits its gland, and **every main bus board line lands where the plans say.**

Found: the small fixes below, nothing to decide. All are in Pending Amendments.

FIX IN THE GUIDES

1. **Electronics and Wiring Plan, sec 5.1:** add "take the 120 ohm resistor off each SN65HVD230 CAN board" (central node, Release Node B, wet lab box). The molded end plugs are the only end resistors.
2. **Compute Bay Housing and Wiring Plan, sec 4.3:** the watchdog relay's trigger jumper sits so a dead Nano leaves the coil off and the Pi on. **Electronics and Wiring Plan, sec 4.1:** which way the HiLetgo relay boards' jumper sits (L or H) is not written.
3. **Electronics and Wiring Plan, Pi A box (A1, entry 6), and Box Wiring Sheets v10.5, page 8:** both put an alive line optocoupler in the Pi A box. It belongs in the Pi B box only.
4. **Electronics and Wiring Plan, central node (A3):** the G2 drive's fault wire needs a pull-up resistor, not a pull-down.
5. **Compute Bay Housing and Wiring Plan, sec 10.3:** feed the 600 W MOS boards' DC+ from the release bus.
6. **Electronics and Wiring Plan, wet lab box (A18):** the DO sensor's FTDI cable puts 5 V on its red wire. Cut back and tape its red, brown and green.
7. **Electronics and Wiring Plan, central node entry 9 and backup battery board (A10):** their Open lines are out of date. Bilge_Pump_Wiring_2026-10-31 and the Backup Battery Board plan settle them.
8. **Box Wiring Sheets v10.5, page 42** (the wing box notes): puts the wing box's 24 V feed (line 14) on the branch bar. It is on the backup-fed bar (Electronics and Wiring Plan, sec 7.6).
9. **Electronics and Wiring Plan, Pi A and Pi B boxes (A1, A2):** the Pi carriers take 5 V on a USB-C socket; no guide names the lead to it. The USB hub's 5 V lead from Pi A has no cable named: 16 AWG, not 22 (only about 0.1 V to spare).
10. **Electronics and Wiring Plan, Release Node B (A15):** no pin map for its five pins. **Compute Bay Housing and Wiring Plan, sec 12:** no channel order for the four cord pullers, no expander pin order. The box plans draw Claude's picks, marked.
11. **Electronics and Wiring Plan, Release Node B (A15):** its release pair cable (to the horns) is not named; a 12 or 14 AWG pair may not fit its PG7 gland.
12. **Electronics and Wiring Plan, wing box (A17):** needs a sixth hole if Pi B's CAN drop joins the wing cable there. Its five glands are missing from Appendix A's totals.
13. **Wire and Cable Buy List (E4) and Bill of Materials (sec 15.12):** the 30 AWG copper for the 22 fuse links (18 taps, 4 shunt leads) was never bought; the BOM prices only nine links.
14. **Battery Box Building Guide:** one 20-pack of cell bus bars against about 54 links, and their 72 mm hole spacing against a 73 mm cell pitch with mica; the main glands near the lid inserts; how XT1's lead joins the 12-core.
15. **Compute Bay Housing and Wiring Plan:** conformal coat on every board; the order tracker struck it (Sep 26). One of the two is out of date.
16. **Electronics and Wiring Plan, Pi A box (A1):** still has the INA226 meter in Pi A's feed; it was sent back Sep 8.
17. **Electronics and Wiring Plan, Starlink (A13, sec 6.3), Build Guide comms section, Bill of Materials and Box Wiring Sheets v10.5, page 40:** no box for Starlink. The Mini sits bare on deck.
18. **Electronics and Wiring Plan, wet lab box (A18):** about 38 rail blocks with two wires to a screw (the guide says about 30).

FIX IN THE ORDER TRACKER

1. Central node: still 13 fuses with a ch 12 5 A fuse; the guides say 12 (ch 12 is spare since pump 2 moved to Pi B's side). Fuse holders: 17 boat wide, not 18.
2. The Winford boards' row and the Thomson MD share one UPS number (1Z6252510348114798); the Winford boards went USPS on Oct 5.
3. Network switch box row links to a DigiKey search for the hydrophone gland.
4. DDR-60L-5 and the USB isolators still say on the way (due mid October).

CROSS-CHECK · CABLES BETWEEN BOXES

each cable named by both its ends

EVERY CABLE BETWEEN TWO BOXES: ALL 21 AGREE

One end	Other end	Cable
Backup board IridB	Iridium B P	14/2 tinned duplex
Starlink enclosure power	Central node 5	16/2 duplex tinned **(disagree)**
Pi A 12	USB hub T	Short 2-core lead
Pi A 4	VESC A U	One Micro-C cordset cut in the
Pi A 6	Pi B 5	One Micro-C cordset cut in the middle
Pi A 7	Iridium A S	Iridium A's RockBLOCK USB cable
Pi A 8	Switch box 7	Plain indoor Cat6, premade
Pi A S	USB hub a	The hub's own detachable USB lead
USB hub 4	Wet lab 14	The SBE 45 FTDI RS-232 cable's bare
USB hub 5	Wet lab 12	The DO sensor FTDI RS-485 cable's
USB hub b	Wing box 5	Shielded Cat6 on hand, about 5 ft,
USB hub c	BMS box 4	The SBMS0 WiFi/USB board's USB lead,
Pi B 1	Backup board PiB	14/2 tinned duplex
Pi B 6	Detector 1	Belden 6504FE, 22 AWG 6-core
Pi B 7	Iridium B S	Iridium B's own RockBLOCK cable, USB
Pi B 8	Switch box 8	Cat6 UTP, premade, long run aft
Central node 16	Backup board OrionRemote	16/2
Central node 21	Battery box 3b	Mike's 20/3
Central node 6	Wet lab 2	16/2 duplex, sealant-filled
BMS box 1	Battery box 3	ENERJOUR 18 AWG 10-core, UL 2464,
BMS box 1a	Battery box 3a	22 AWG 12-core shielded, 0.24 in

MAIN BUS BOARD LINES (ELECTRONICS AND WIRING PLAN, SEC 7.6)

Line	Feeds	Breaker, wire	Lands
L2	Release Node B	30 A, 12/2	Node B 2
L3	Central node	15 A, 16/2	Central node 1
L4	Release bus A	30 A, 12/2	Central node 10
L5	Steering	20 A, 14/2	Central node 3
L6	Network switch box, its	20 A, 16/2	Switch box 10
L7	Iridium A	5 A, 16/2	Iridium A P
L9	Wet lab, its one 24 V	15 A, 16/2	Central node 20
L10	Pi A box	10 A, 16/2	Pi A 1
L12	USB hub box	5 A, 16/2	USB hub 1
L13	Orion feed	10 A, 14/2	Backup board OrionIn
L14	Wing box, for the slip	5 A, 16/2	Wing box 1

Lines 8 and 11 end at a converter and a pump, not a box; line 1 has no breaker (its spot feeds the Argodiode); line 15 (pump 2) leaves the backup battery board, drawn in the Backup Battery Board plan.

CROSS-CHECK · CABLES TO DEVICES

every other cable out of a box: to a device, a CAN tee, the surge board or the lightning copper

Box, hole	Goes to	Cable
Pi A 11	GPS A antenna	GPS A antenna coax
Pi A 2	CAN tee control	Micro-C cordset cut:
Pi A 3	CAN tee house	Micro-C cordset cut:
Pi A B	lightning copper	6 AWG tinned green
Backup board Conv	backup converter	12/2 tinned duplex,
Backup board Panels	50 W panels	14/2 tinned duplex,
Backup board Pump2	bilge pump 2	14/2 tinned duplex
Iridium A X	Iridium A stub	LMR-240 class coax
Iridium B X	Iridium B stub	LMR-240 class coax
Starlink enclosure network	surge board,	Outdoor Cat6, premade
Node B 1	CAN tee house	Micro-C cordset, cut
Node B 3	drogue box 1 horn B	Fire pair cable
Node B 4	drogue box 2 horn B	Fire pair cable
Wing box 2	slip ring	Hull cable P
Wing box 3	slip ring	Hull cable T
Wing box 4	slip ring	Hull cable C
Wet lab 1	CAN tee house	Micro-C cordset, cut
Wet lab 10	Celsius probe	Probe's own 4-wire
Wet lab 11	DO sensor	DO sensor's own
Wet lab 13	SBE 45	SBE 45's own cable
Wet lab 3	Iwaki pump	Pump's own cord
Wet lab 4	Kamoer pump	Pump's own cord
Wet lab 5	Gulper	Pump's own cord
Wet lab 6	valve 1	Valve 1's own 5-wire
Wet lab 7	valve 2	Valve 2's own cable
Wet lab 8	flow meter	Flow meter's own
Wet lab 9	pressure sensor	Transducer's own
USB hub 2	BaroVUE 10	The BaroVUE 10's own
USB hub 3	HygroVUE 10	The HygroVUE 10's own
USB hub d	dAISy antenna	The Eifagur antenna's
USB hub e	MOTU M2	The MOTU M2's USB
Pi B 2	CAN tee control	Cut Micro-C drop
Pi B 3	CAN tee house	Cut Micro-C drop
Pi B 4	wing actuator CAN	Not set
Pi B 9	GPS B antenna	GPS B antenna coax
Central node 11	drogue boxes	CONEPY 14/4 tinned,
Central node 12	pullers port	18/4 shielded tinned,
Central node 13	pullers starboard	18/4 shielded tinned,
Central node 15	camera port UV C	22/12 offcut, 0.24 in
Central node 17a	post lights	22/12 shielded
Central node 17b	wind meter post	22/12 offcut, 0.24 in
Central node 17c	encoder A	Belden 6504FE, 0.175
Central node 18	horn	16/2 duplex
Central node 19	air probes	22/12 offcut, 0.24 in
Central node 2	CAN tee control	Micro-C drop, a cut
Central node 4	Ewellix	Ewellix leads: 14 AWG
Central node 5	Starlink Mini	16/2 duplex,
Central node 7	bow lantern	12/2 offcut,
Central node 8	em trak	16/2 duplex,
Central node 9	bilge pumps	C4 18/4 shielded
Switch box 1	surge board, fwd	Indoor Cat6, premade,
Switch box 2	surge board, aft	Indoor Cat6, premade,
Switch box 3	surge board, fisheye	Indoor Cat6, premade,
Switch box 4	surge board,	Indoor Cat6, premade,
Switch box 5	underwater camera	Plain UTP Cat6,
Switch box 6	light driver dry box	Indoor Cat6, premade
Switch box 9	surge board,	Indoor Cat6, premade,
VESC A C	CAN tee control	Cut Micro-C, male end
VESC A S	ME1616 sensor	Sensor harness, six
VESC A Φ1	ME1616	ME1616 phase lead
VESC A Φ2	ME1616	ME1616 phase lead
VESC A Φ3	ME1616	ME1616 phase lead