WAVERACK 2U Pro · Machining job (cut only)

For: any CNC or laser shop From: John, WAVERACK / Sunsets & Soundwaves · waverack.vercel.app

The job

Machine the metal parts for one WAVERACK 2U Pro. Cut only, no engraving. Four parts:

- FRONT panel: screen window, 2 vent windows, 4 holes (7 features)
- REAR panel: 34 holes
- MOUNTING PLATE and SCREEN BRACKET: see the last page

Either machine customer-supplied panels or make new ones. Panels are Hammond RM2U19BKFP: extruded 6063 aluminium, black textured powder coat, 415.30 x 88.13 mm face, 3.18 mm thick, with 16.5 mm deep returns along both long edges.

Files

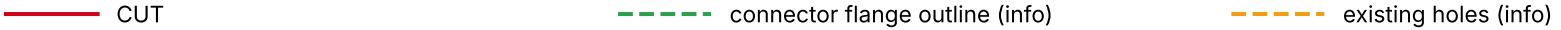
FRONT_panel_CUT_ONLY.dxf, REAR_panel_CUT_ONLY.dxf, PLATE.dxf, SCREEN_BRACKET.dxf (all mm, 1:1). Layers: CUT = cut through · BEND = bend line · ENGRAVE (plate and bracket only) = optional layout marks, skip them on a CNC · REFERENCE_* and NOTES = information only, do NOT cut. 1:1 printouts of every part included.

Set-up

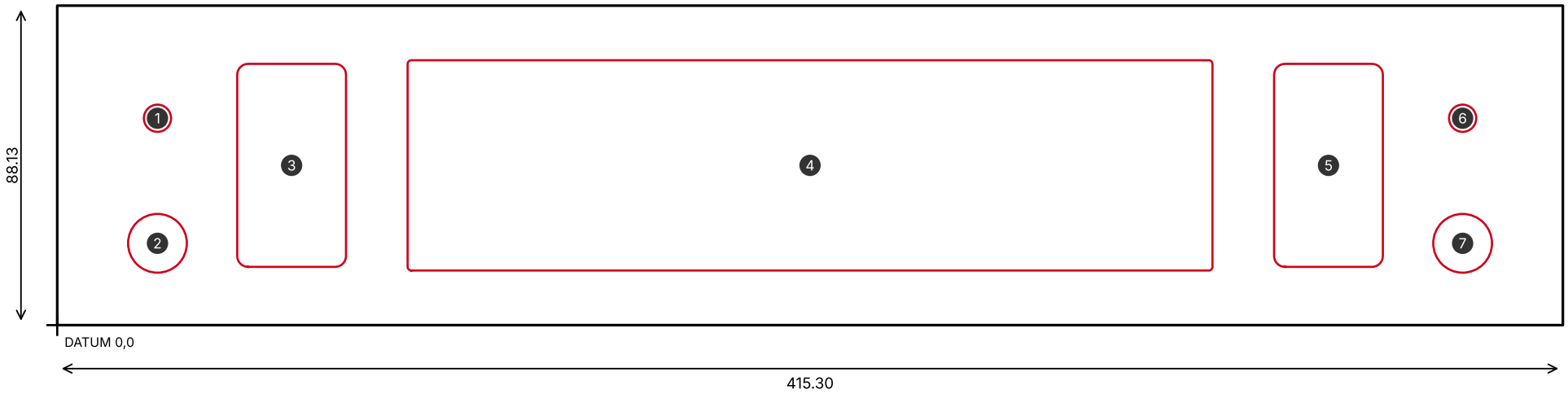
- Cut the FACE only. Do not cut or mark the returns. Support the face; the returns hang off.
- Datum 0,0 = lower-left corner of the face, looking at the side that faces OUT (front: the front; rear: the outside of the rear panel). The cuts are symmetric, so either end can go on the left.
- All sizes are FINISHED sizes: compensate for cutter radius or kerf.
- Tolerance: ±0.1 mm on the screw-hole patterns around each Ø 24 hole, ±0.2 mm elsewhere. Inside corners: 0.8 mm radius or larger is fine.
- A used REAR panel may have a few small holes near one end (orange dashed in its file). The new openings cover them. No need to fill them.
- FRONT vents are two plain 30 x 56 R3 windows. A black mesh gets bonded behind them later, not your job.
- The front panel gets Cerakoted after machining, so marks on its finish do not matter. Please protect the rear panel finish. Deburr the back of all cuts.

Please confirm

Quote, turnaround, and that your fixturing clears the 16.5 mm returns.



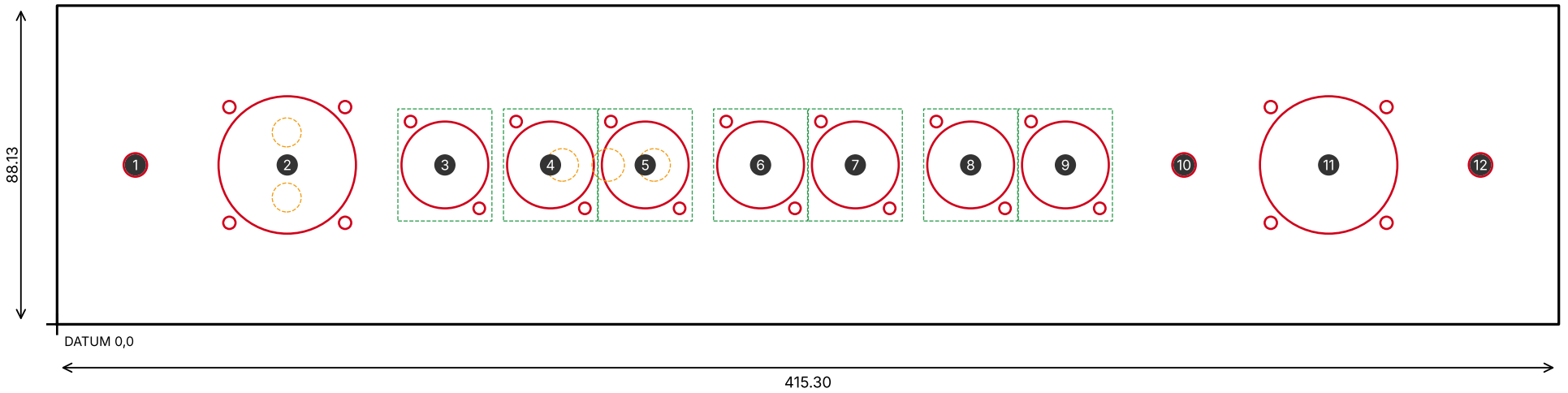
FRONT PANEL · viewed from the front · all dimensions mm · X/Y = feature centre from datum



FRONT cut list (7 features)

#	Feature	X (mm)	Y (mm)	Cut
1	Browse encoder (Bourns PEC11R)	27.65	57.07	Ø 7.5 hole
2	POWER button (Adafruit #558)	27.65	22.57	Ø 16.2 hole
3	Intake vent (black mesh bonded behind)	64.65	44.07	30.0 x 56.0 slot, R3 corners
4	Screen window (Waveshare 8.8")	207.65	44.07	222.0 x 58.0 slot, R1 corners
5	Intake vent (black mesh bonded behind)	350.65	44.07	30.0 x 56.0 slot, R3 corners
6	Volume encoder (Bourns PEC11R)	387.65	57.07	Ø 7.5 hole
7	OUT MUTE button (Adafruit #917)	387.65	22.57	Ø 16.2 hole

REAR PANEL · viewed from the outside (back of the unit) · all dimensions mm · X/Y = feature centre from datum

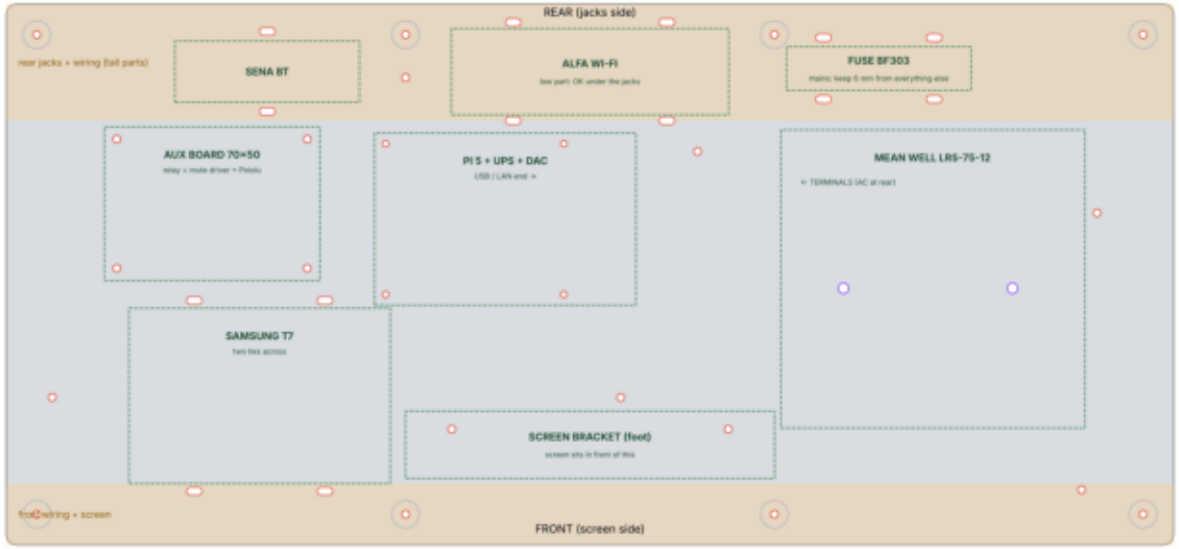


REAR cut list (12 features)

#	Feature	X (mm)	Y (mm)	Cut
1	Wi-Fi antenna (RP-SMA)	21.65	44.07	Ø 6.5 hole
2	Exhaust fan (Noctua NF-A4×10)	63.65	44.07	Ø 38.0 + 4 x Ø 3.4 on 32 × 32 square
3	POWER IN powerCON TRUE1 (NAC3MPX-TOP)	107.25	44.07	Ø 24.0 + 2 x Ø 3.2, top-left + bottom-right only
4	LAN etherCON (NE8FDP)	136.45	44.07	Ø 24.0 + 2 x Ø 3.2, top-left + bottom-right only
5	USB (NAUSB-W)	162.65	44.07	Ø 24.0 + 2 x Ø 3.2, top-left + bottom-right only
6	METER IN L RCA (NF2D-B-9)	194.55	44.07	Ø 24.0 + 2 x Ø 3.2, top-left + bottom-right only
7	METER IN R RCA (NF2D-B-2)	220.75	44.07	Ø 24.0 + 2 x Ø 3.2, top-left + bottom-right only
8	OUT L XLR (NC3MD-L-1)	252.65	44.07	Ø 24.0 + 2 x Ø 3.2, top-left + bottom-right only
9	OUT R XLR (NC3MD-L-1)	278.85	44.07	Ø 24.0 + 2 x Ø 3.2, top-left + bottom-right only
10	Bluetooth antenna (RP-SMA)	311.65	44.07	Ø 6.5 hole
11	Exhaust fan (Noctua NF-A4×10)	351.65	44.07	Ø 38.0 + 4 x Ø 3.4 on 32 × 32 square
12	Wi-Fi antenna (RP-SMA)	393.65	44.07	Ø 6.5 hole

MOUNTING PLATE and SCREEN BRACKET

HOLD: I will confirm these two against the real parts before you cut them. Quote them now, cut them when I say go.





Mounting plate, seen from ABOVE, front at the bottom. Red = tapped holes (2.05 tap M2.5, 2.5 tap M3) and tie slots. Purple = Ø3.4 countersunk from below (power supply). Blue dotted = also drill the case floor here. Orange = keep-out zones.

Mounting plate

3.0 mm 5052-H32 aluminium, 380 × 176 mm, R4 corners. Sits on the case floor.

Holes: Ø2.05 tap M2.5 (Pi stack) · Ø2.5 tap M3 (boards, tie bases, plate-to-floor) · Ø3.4 countersunk from the BOTTOM for M3 × 5 flat heads (power supply). Slots 5 × 2.5 for cable ties. Tapping by hand on my end is fine if easier.

Screen bracket

3.0 mm 5052-H32, flat blank 120.0 x 91.69 mm, one 90° bend on the BEND line, inside radius 3 mm (k 0.42, bend allowance 6.69). After bending: foot 22 mm, leg 75 mm, outside. No brake? Mill it from 3 mm angle, or make it as two flat pieces screwed together. Slots are 3.4 wide for adjustment.