VE6IDK GoBox

"Plug & Go"

Everything started with getting a crossband repeater into my QTH because I'm ground floor, facing south and covered all around from apartment buildings. There is one location where I can have an antenna mounted and be able to get into the local VE6HM repeater. I don't want to have 50ft, YES, about 50ft of coax through the apartment routed to the balcony outside. Solution: Crossband repeat.

Here is the first outcome. The frame is an old HP 8590A Spectrum analyzer which I parted out.

Using here a Wouxun KG-UV920P-A dual band radio, Meanwell 30A PSU and a Diamond Triplexer (all I had around).

OK, good enough worked fine but did not like the space I had left and wasting it. A GoBox was born.

Removed everything and started with the layout, collecting parts, and making a list of needed parts and what it could look like eventually when it is finished.

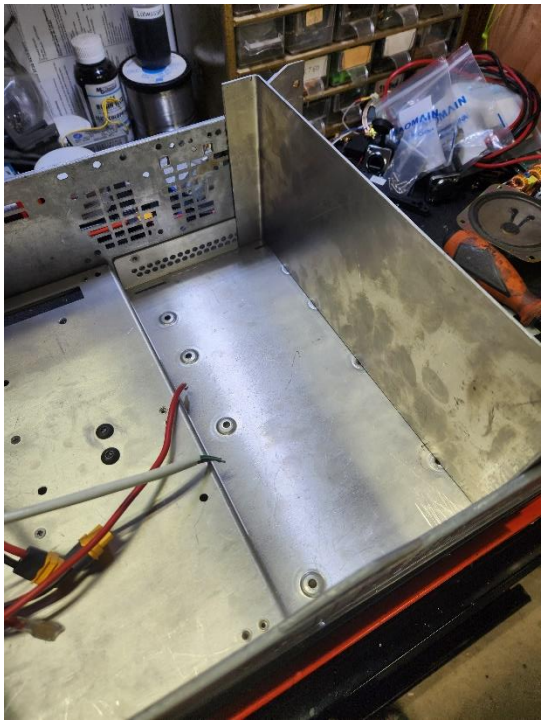
Goal was to have a batterie build in but also be able to hook it up to AC and not pending on batterie life. Another problem came up with charging batter, switching between AC and battery but also be able to plug in an external battery/source. Well, that's simple. One issue was, being on battery power and plug in external power source. There will be a huge potential difference between the batteries/source and may cause batterie damage etc.

All figured out and started wiring. The HP 8590 frame had a spare space on the bottom which was just perfect for power distribution.

Some photos of the layout.

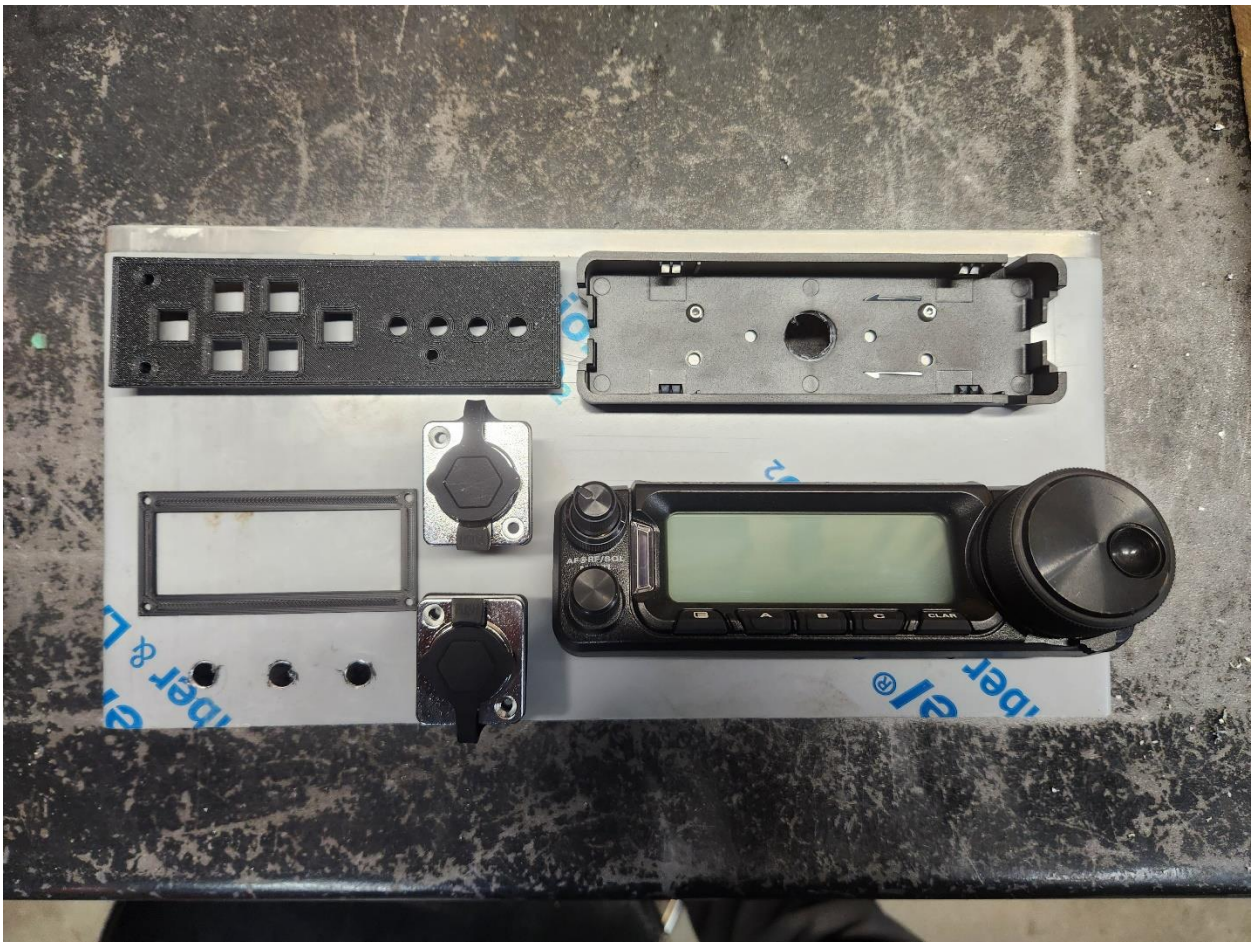
Ok. Layout is working out but the HP frame was open at the front and the original face plate had all the holes for buttons, display etc. More on that later.

Had a local metal supplier bend me an aluminum piece which will be my main face plate to hold all in one location.



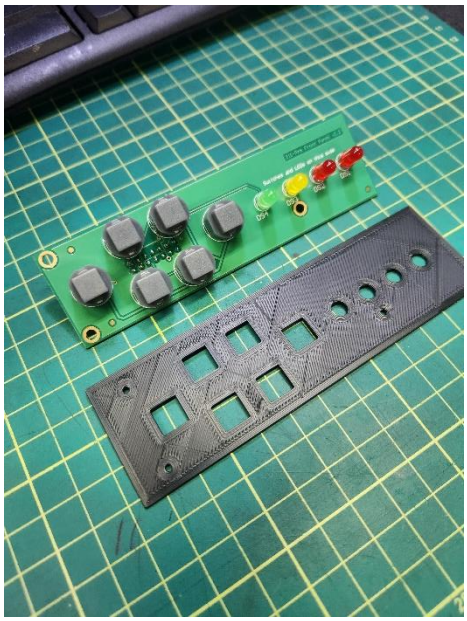
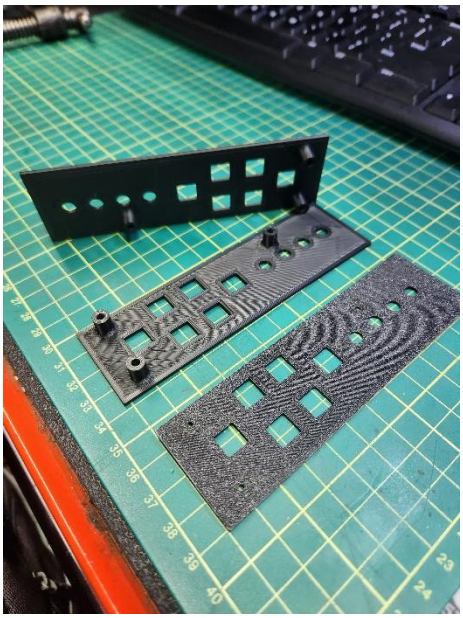
Few modification to the frame had to be done and drilling holes. All said and DONE. Let's go into the layout of the front panel.

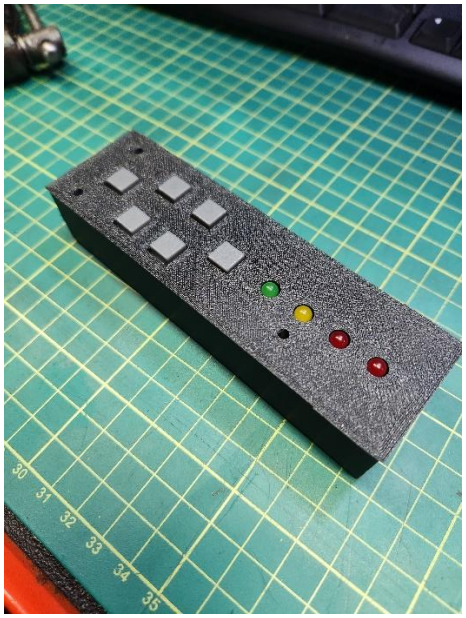
Everything needs to be accessible from the front and no wires should be coming from the inside out. External Microphone jacks are ordered. WAIT! What about the audio?? Audio might have hard time getting out of this metal box… OK, I need a speaker and amplifier. More parts ordered…



Holes for the amplifier are drilled and everything has its final layout. A battery power meter is also added to monitor battery voltage and current draw. Disassembled the original power meter and crated a drill template for the display with my 3D printer (middle left). Playing on HF sometimes requires an antenna tuner. OK, I have a LDG Z11Pro I want to use. Cutting out the hole rectangular was not an option. Disassembled the tuned an recreated the face for the buttons and LED's (top left). All in all, required a few versions to get tolerances right. See photos below.

LDG Tuner control panel relocation(still waiting for a proper length cable, by the time of writing)

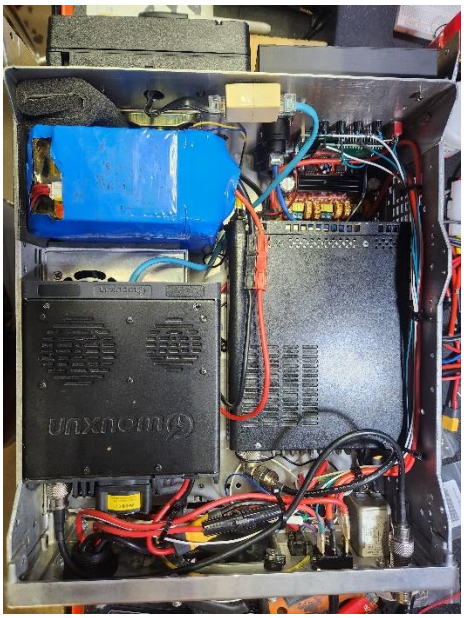



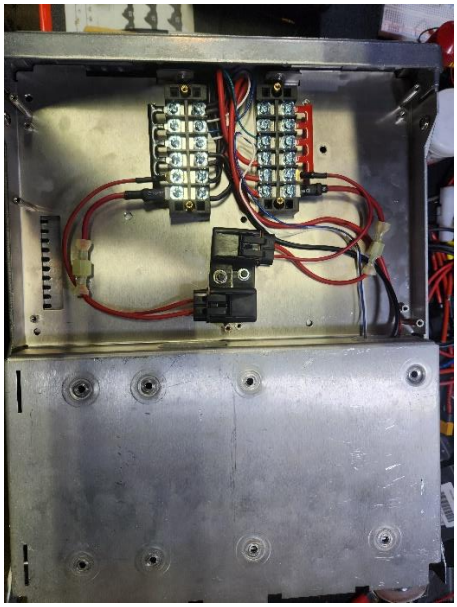


Everything had its place now and its time to wire up everything and finish it as much as possible. Still waiting on a 14 pin flat cable and also the original HP front plate to be machined out.

Almost finished GoBox below

AC and DC power source are independent. Extern input is separated from battery use in switch middle position but, can be used for solar power input while on battery. Charge port is only for charging while everything is off. Fan can be turned on when needed.



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FAN
FAN CHG DC AC
ON
HF MIC
VHF MIC
VHF/UHF TWIN BAND FM TRANSCEIVER KG-UV920P-A
MENU
EXIT
YAESU
HF/50MHz TRANSCEIVER FT-891
MULTI
A
B
C
CLAR
MALOSSI
Boyesen

Specifications and Links

Specifications:

- 12V 24Ah LiFePo batterie (DIY)
- Wouxun KG-UV920P-A (paid $50 and repaired it)
- Yaesu FT-891
- LDG Z-11 Pro Tuner
- Meanwell 12V 30Amp PSU

Parts:

Switch
https://www.amazon.ca/gp/product/B01J31IBH0/ref=ppx_yo_dt_b_asin_title_o00_s00?ie=UTF8&psc=1

Amplifier

https://www.amazon.ca/gp/product/B07WC1W9C6/ref=ppx_yo_dt_b_asin_title_o01_s00?ie=UTF8&psc=1

RJ-45 Connector

https://www.amazon.ca/gp/product/B071Z766V5/ref=ppx_yo_dt_b_asin_title_o01_s00?ie=UTF8&psc=1

Front Speaker

https://www.amazon.ca/gp/product/B09R9WY9R6/ref=ppx_yo_dt_b_asin_title_o02_s00?ie=UTF8&psc=1

Terminal Block

https://www.amazon.ca/gp/product/B0B24FZWPH/ref=ppx_yo_dt_b_asin_title_o03_s00?ie=UTF8&psc=1

Thanks' for reading!!

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