Why this additional board?

For the users of the F1CHF MiniTiouner V1, and the F5XG batch, as well as the BATC version V2, it was not possible to control the LNB's remote power supply via Jean-Pierre F6DZP's Minitioune V0.8s software.

Description hardware

I developed an additional card (32 * 41mm) using as in the MiniTiounerPro the chip RT5047 from RICHTEK, a highly integrated voltage regulator and interface IC.
It fit on top of the existing Minitiouner board designed by F1CHF thanks to the fixing holes having the same spacing.

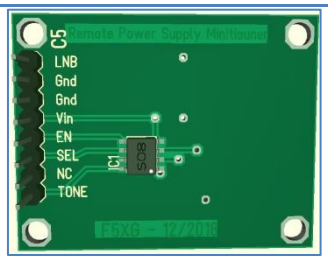

Figure 1 3D picture top

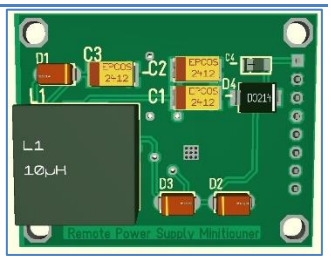

Figure 2 3D picture bottom

The schematic is simply what is described in the datasheet.

Nothing special, except that it is necessary to use Schottky diodes, this is mandatory for D1 in particular.

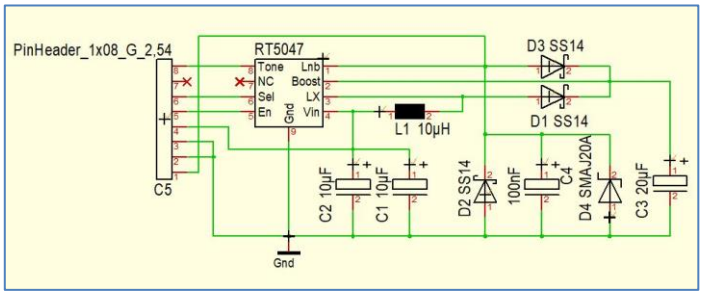

Figure 3 The schematic

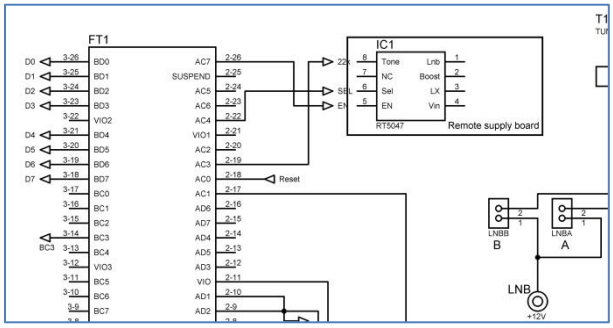

Figure 4 How to connect

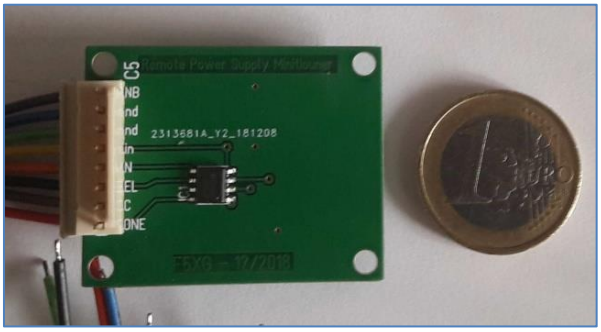
Figure 5 RT5047 Board

Software

I asked Jean-Pierre F6DZP for the upgrade possibility like with MiniTiounerPro, in the Expert mode to drive per software LNB voltages, 22kHz & (why not?)Fplug while having on hand a MiniTiouner. (See Figure **6** Screenshot options of LNB, Fplug & 22kHz)
He answered: "Yes I can do it ….but, In one future software development via the mintioune.ini file, I will add the choice of external module RT5047 in order to drive these options."

And he did it! Thank you Jean-Pierre.

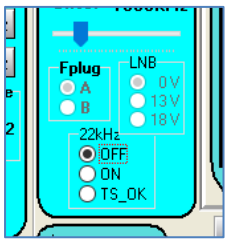

Figure 6 Screenshot options of LNB, Fplug & 22kHz

UPDATE June 2019

Jean-Pierre F6DZP has put online the software version MinitiouneV09beta8_9 package.
The BATC MiniTiouner V2 is recognized by this new software, BUT not the F1CHF / F5XG MiniTiouner card.
The FUTURE online software now will correct this problem also for MiniTiouner version V1 (NB I tested it).

WARNING …. The 22kHz signal is to be recovered on the pin:

- 12 of the NIM for the F1CHF MiniTiouner V1 card, and of the same batch F5XG
- 40 of the NIM for BATC MiniTiouner V2 Card

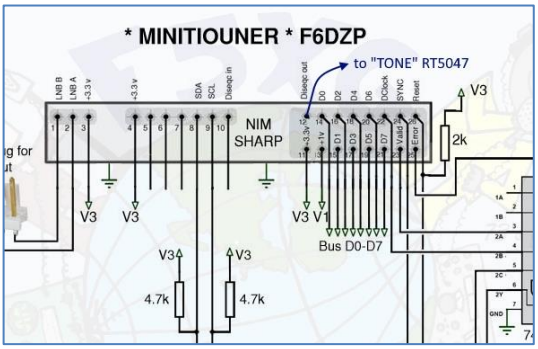

Figure 7 Extract diagram NIM SHARP V1

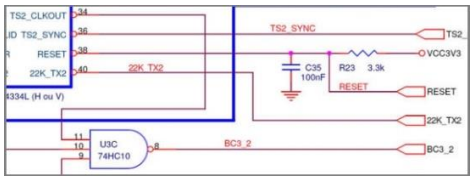

Figure 8 Extract diagram NIM V2 BATC

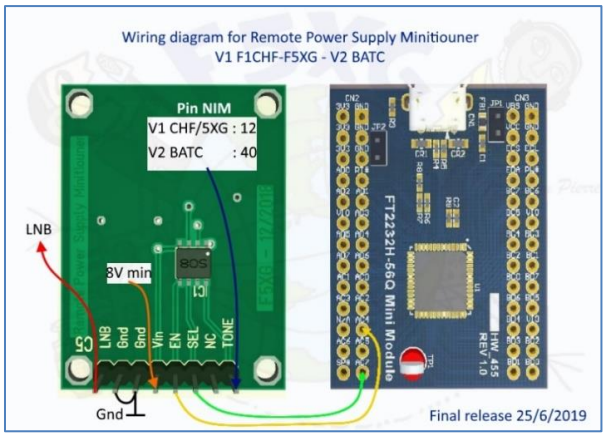

Figure 9 Card Connections V1 et V2

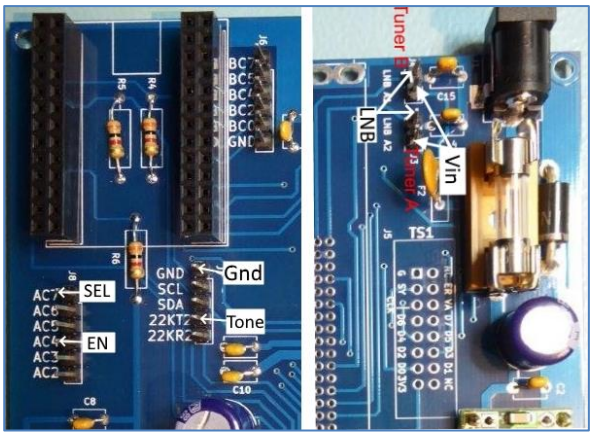

Figure 10 Card Connections V2 BATC

Card wiring V1

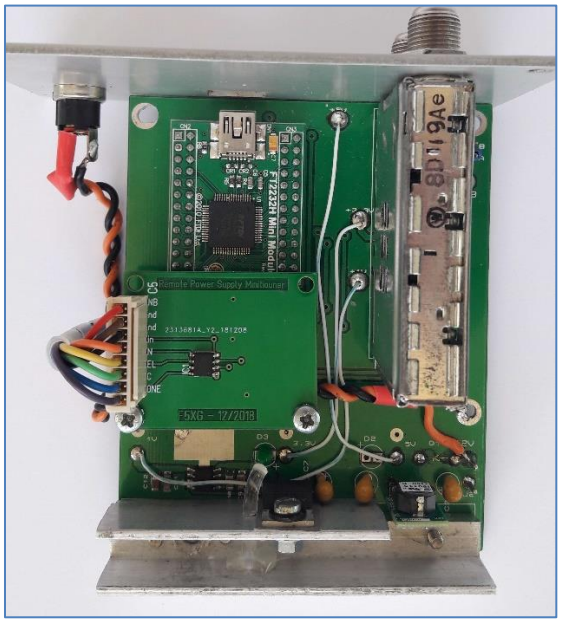

Figure 11 the board in place

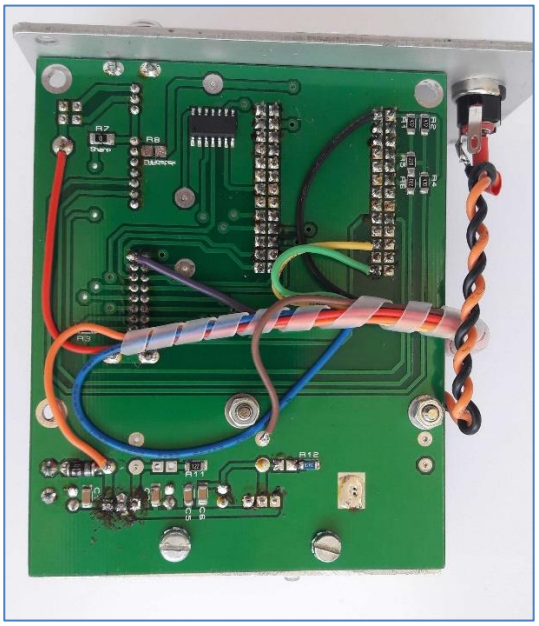

Figure 12 wiring

Card wiring V2

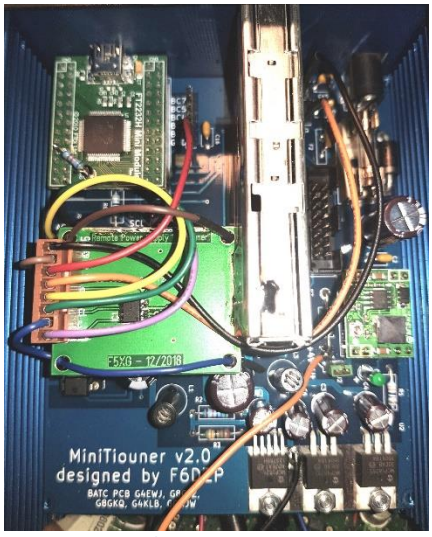

Figure 13 implementation ON8GE Pierre

Figure 14 implementation 2WØODS Dale

Conclusion

Everything is working properly on V1 and V2 cards. (Watch video from Dale 2WØODS)
The RT5047 receives the 22kHz signal driven by the NIM commands, and generated in the latter: 420mV p.p. square.
The 13 and 18V voltages are fine modulated by the 22kHz, when this option is selected (~ 100mV p.p.)
The naming is incorrect on the v2.0 board as LNB1 is Tuner B and LNB2 is Tuner A (see Figure **10** Card Connections V2 BATC).

Bill of material

See next page

Bill of material

; Date=19.janvier.2019 13:55

; Auteur= F5XG
;

Pos	Qty	Name	Value	Case	Provider
1	2	C1,C2	SMD TAN.10/16	Tantalum capacitor SMD 10 µF 16 VDC	Reichelt
2	1	C3	SMD TAN.22/20	Tantalum capacitor SMD, 22 µF/20 V	Reichelt
3	1	C4	KEM C0G1206 100N	1206_capacitor	Reichelt
4	1	C5	PS 25/8G BR	Straight connector for PCB, 8 pins	Reichelt
5	3	D1,D2,D3	B 140 F	Schottky Diodes SMD DO214AC/SMA	Reichelt
6	1	D4	P6SMB 20CA SMD	Surge protection diode 20V, DO-214AA	Reichelt
7	1	IC1	RT5047	SO8_SOT96-1_EP	ebay
8	1	L1	L-PISM 10µ	Power inductance SMD, PISM	Reichelt