

## MinitiounerPro2 – User Guide

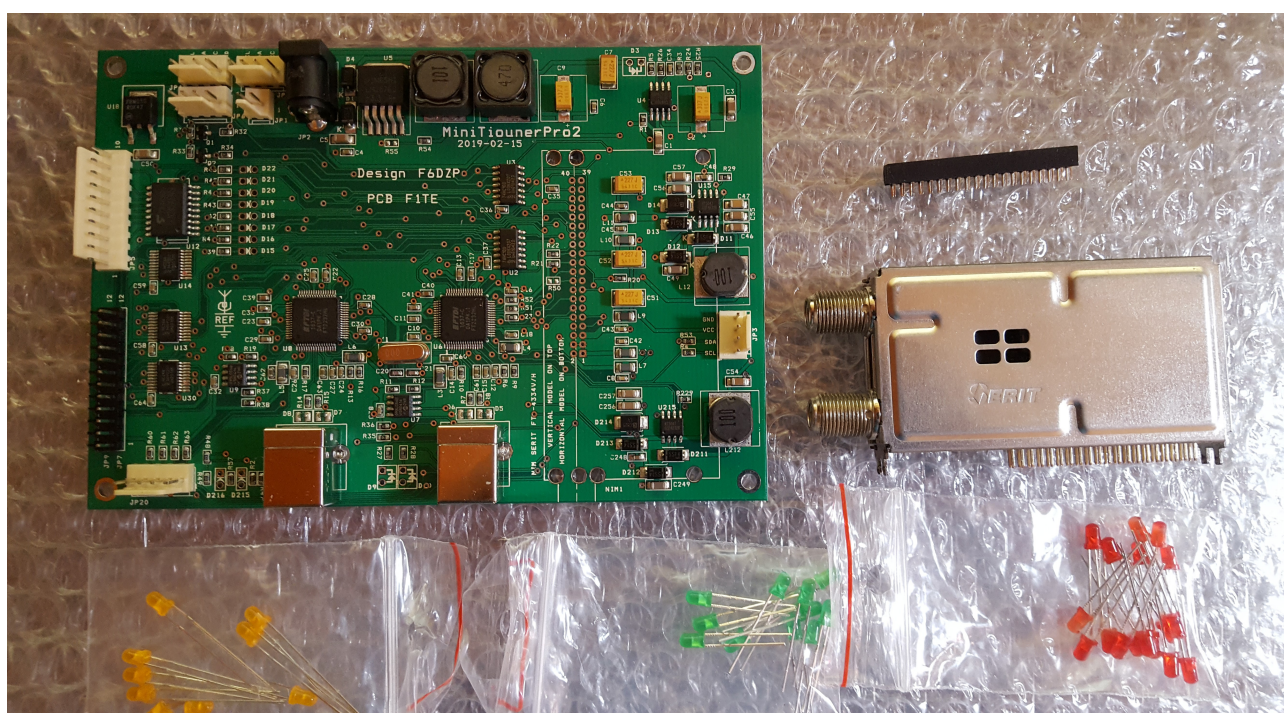
Production and distribution of MinitiounerPro2 is funded and performed by REF (Réseau des Émetteurs Français). This device was realized in close collaboration with its initial designer F6DZP.

So far, about 500 receivers have been produced. MinitiounerPro2 is available at "boutique du REF". It is a semi kit allowing to build easily a digital television receiver, probably one of the most performing to date.

It's also a measuring instrument providing a lot of useful information about signals received from 144 to 2450 MHz.

### KIT. composition

It includes a pre-assembled printed circuit with all CMS components, a NIM SERIT FTS-4334LV, a 40 pin connector associated with the NIM and several differently colored LED, their functions will be explained later. NIMS performs tuner and demodulator function.



### MinitiounerPro and MinitiounerPro2

MinitiounerPro2 possesses 2 independent supply sources to feed 2 LNB. Main LNB or LNB A is in the upper F connector of the tuner, secondary LNB or LNB B is in the lower connector.

(MinitiounerV1 only offer one supply source)

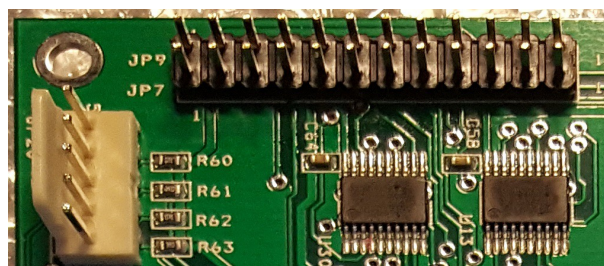
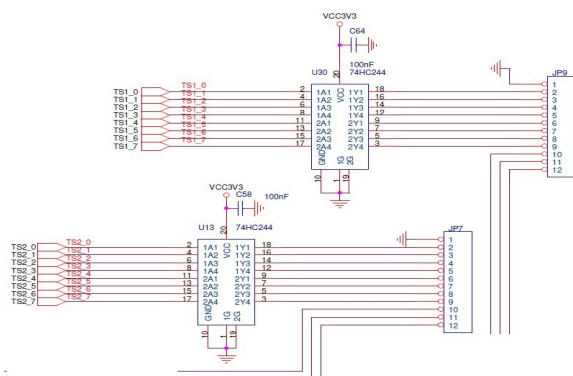
Both MinitiounerPro V1 and V2 can receive and transmit to a PC 2 simultaneous emissions by transferring transport stream TS1 and TS2 (TS = transport Stream) through USB plugs master (TS2) and auxiliary (TS1). The Software Minitioune processes only TS2. Expected software Dual Tioune in preparation will handle TS1 and TS2.

Simultaneously MinitiounerProV1 sends TS2 as a parallel signal (format LVTTTL) to JP7 while MinitiounerProV2 send both TS2 and TS1 to JP7-JP9.

These parallel outputs are very useful for direct transfer to a modulator DVB equipped with such input (e.g. MiniMod or DTX1)

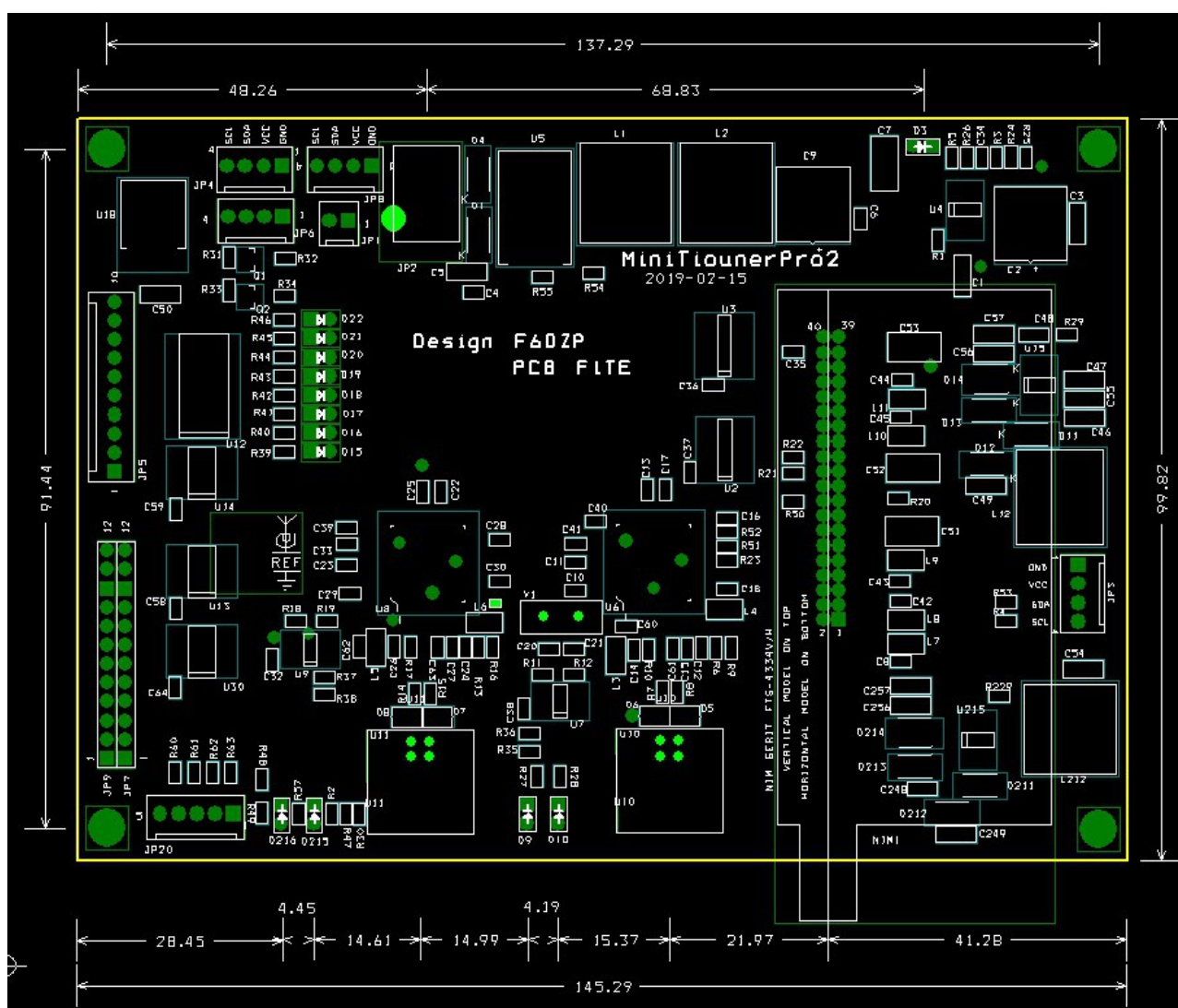
They can also be used to feed a signal analyzer if you dispose of an analyzer with that kind of input. These are the only differences between both versions, completely compatible.

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Transport-stream TS1 and TS2

## Board dimensions

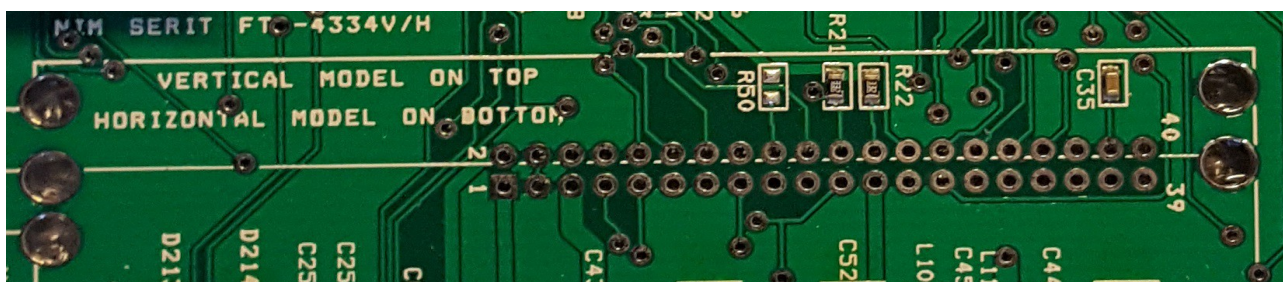


## Assembling of NIM.

The first thing to do is soldering the connector



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*NIM connector*

Here, the NIM (Network Interface Module) is a FTS-4334-LV, V standing for vertical installation. The connector must be installed component side and soldered opposite side.

An another model, FTS-4334-LH, H for horizontal can also be installed, but in that case, connections being inverted, it must be installed on rear face and soldered on component side, and the tuner has to be installed horizontally on the rear face of the card.

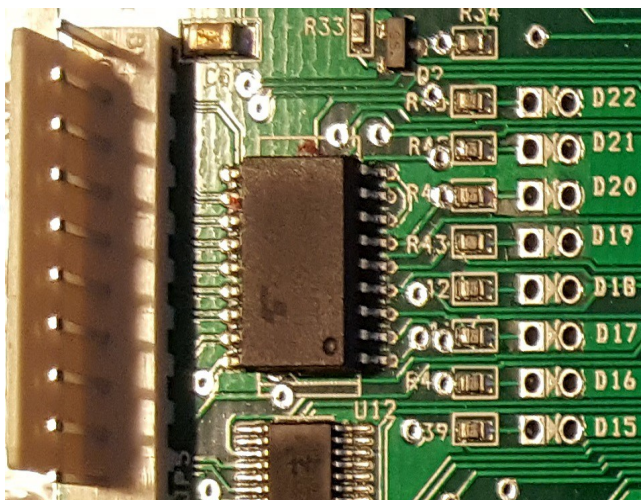
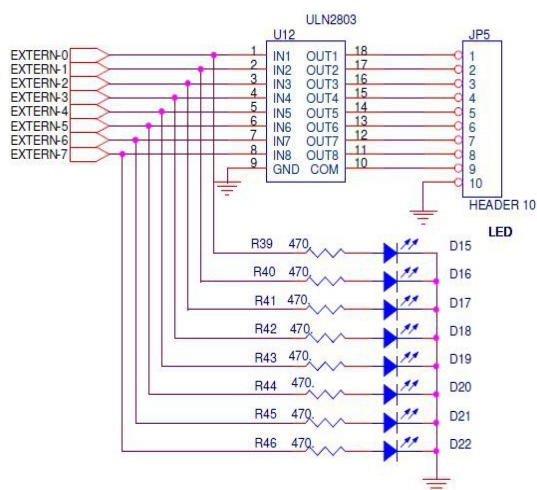
Check that all connector's pins are positioned normally, and that none is folded under. Solder the connector, take great care to use just the necessary amount of tin solder, excess of solder will the connector pin and could then make NIM insertion impossible.

The NIM will be secured in position by soldering the ground pins.

Leds are not PCB mounted, therefore you will be able to place them in the front face of the case box.

### Les LED D15 à D22.

Designed to visualize output state of lines on JP5 upper left of board.

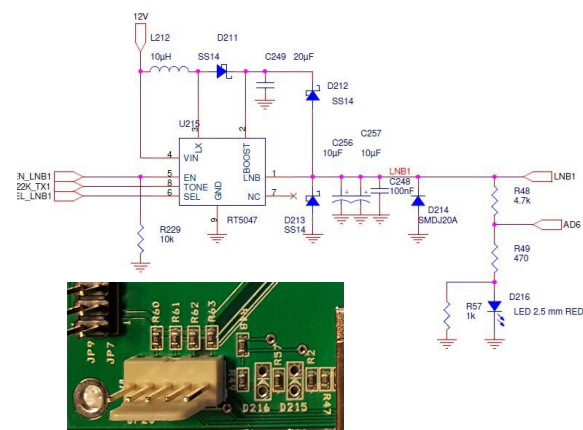


#### *Output aux.*

These are 8 output signals in open collector controlled by software. Designed for future utilization.

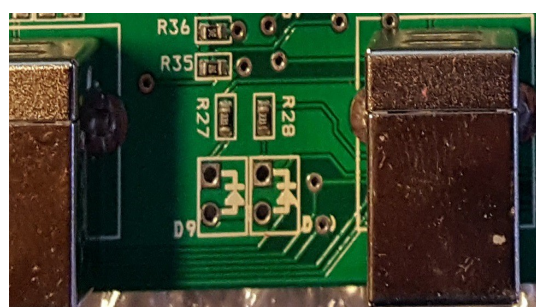
## Diodes D215 and D216.

These diodes are located at output of generating circuit of 14/18 volts and 22 KHz for external LNB heads. They indicate voltage presence. The same diagram is identical for LNB2. Please make sure that connections to LNBs connected to the NIM are not short-circuited and that their consumption is normal, otherwise there is a risk of damage for RT5047 integrated circuits.



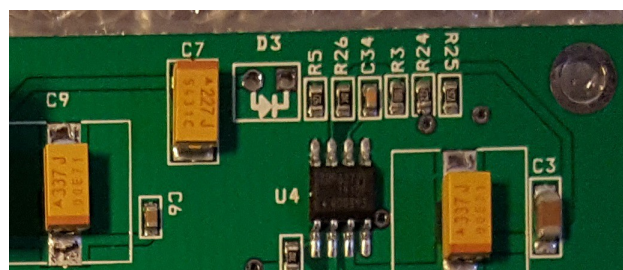
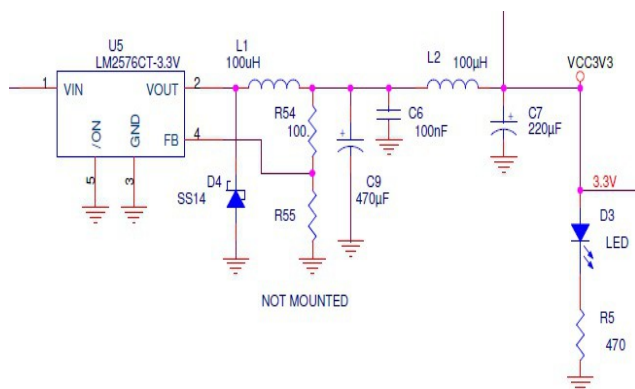
## Diodes D9 and D10.

Located on FT2232H outputs, these leds indicate locking presence on TS (Transport Stream) master (TS2) or auxiliary (TS1)



*TS display*

## Diode D3.



*LED PS OK*

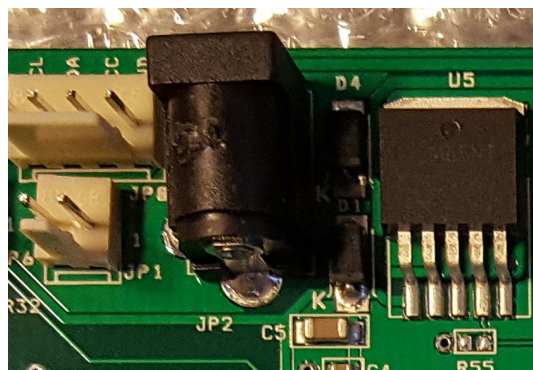
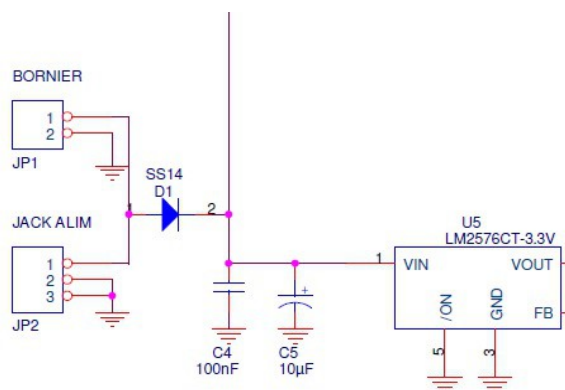
Located on power supply indicates the PS is turned on

## Supply voltage of the board.

Supply voltage must be between 8 and 16 volts maximum. Average consumption is 250 mA, plus LNB consumption if one is also connected on the tuner .

This supply voltage can be connected on 2,1 jack JP2 or on JP1 (2 contacts connector) located on its left-hand side

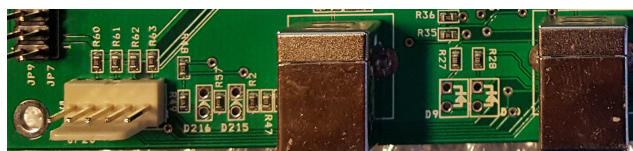
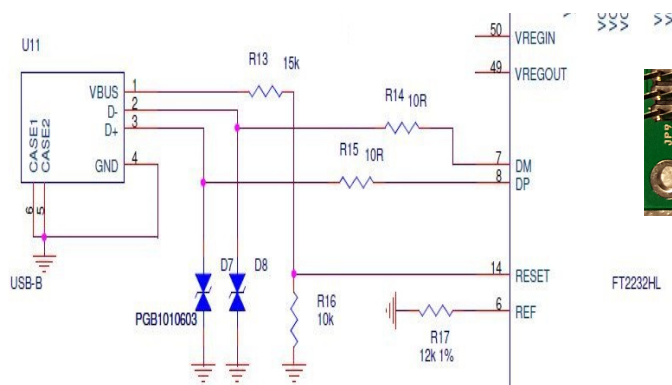
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### USB connectors.

Type B (chosen for robustness). There are two.

The one on right hand side below FT2232 U6 is for TS2 “Master”. It’s the main USB connection. The second one below FT2232 U8 is for TS1 “Auxiliary”



### USB connectors

The other connectors are used for non-essential applications and more explanations will be described on VIVADATV forum

### Connecting and turning on.

Connect all USB cords and turn on the Minitiouner. As usual, Windows indicates a new peripheral has been connected. We have preprogrammed chips FT2232 and Windows should indicate that in a form depending on OS version.



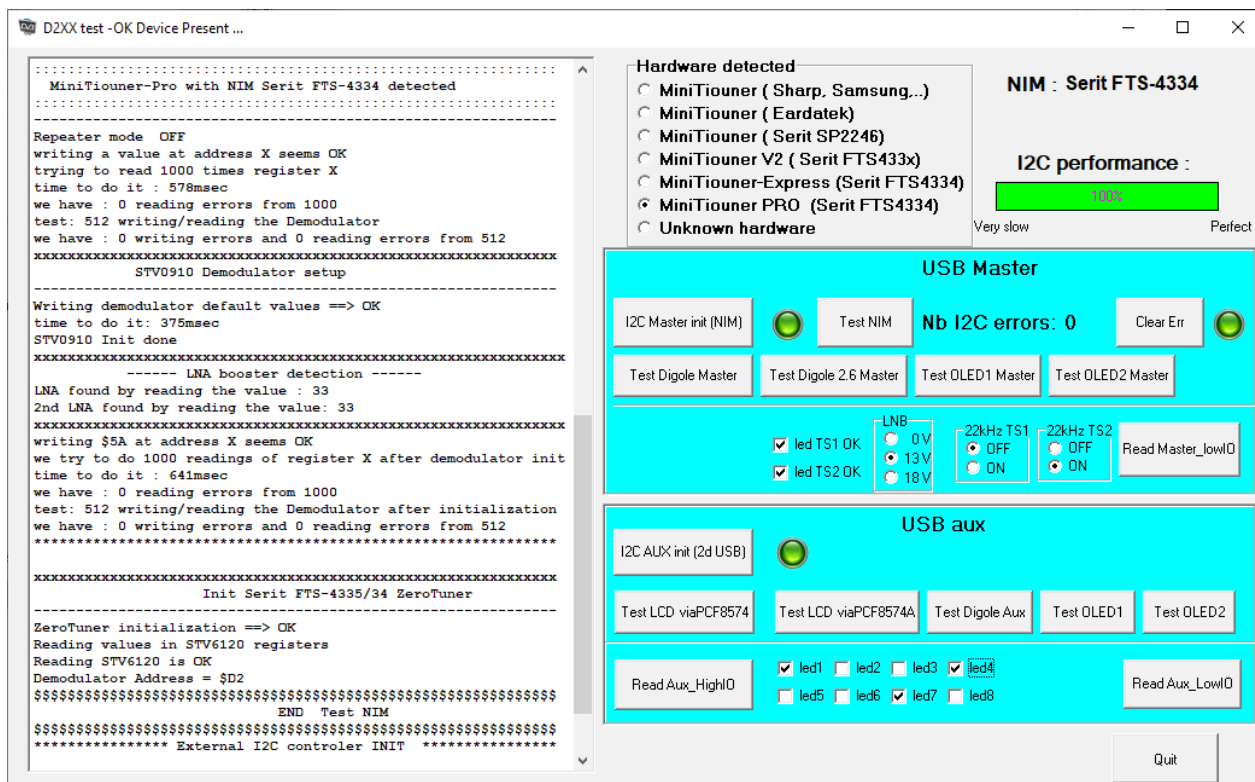
### First tests.

Jean Pierre, F6DZP, is the author of software packages. On his site VIVADATV , a test program is available. It’s on his site and only on his site that you will find all appropriate programs.



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The program « Test my minitiouner » will identify all discovered resources.



This program will initialize the NIM and then test the dialogue with the NIM, it will exercise the different LEDs and generates various supply voltage for LNB.

It allows also testing of various LEDs connected on accessories plugs. Refer to site VIVADATV for more information.

After completion of these tests, you can install Minitioune software.

This software is in constant evolution and amelioration. The last version ‘up to date’ will recognize your MinitiounerPro2 without any problem.

You must upload version 0,8s which is a complete package with a file ‘read me’.

You can also load the beta version V-0,9 , the final version 0.9 is expected by September 2019.

Good reception in DATV

Lucien SERRANO, F1TE.  
Aout 2019

Forum DATV : <http://www.vivadatv.org/>

REF : <https://www.r-e-f.org/>

REF online shop : <https://boutique.r-e-f.org/>