
A NEW DVB-S/S2 DATV RECEIVER

I have been working on a new DATV DVB-S/S2 receiver design the last 6 months or so and is now finished. It is contained in a small enclosure about the size of a cigarette package that is completely assembled and tested. The DATV-Express group is responsible for the design, construction and sale of this item named "Minitiouner-Express" previously designed by Jean Pierre Courjaud F6DZP.

We will sell it at our DATV-Express.com web site through PayPal for \$75 plus shipping, (\$7 USA and \$33 to all other countries). We have tentatively terminated the sale of the DATV-Express transmitter board which was a very successful product with over 250 sold worldwide but now it's time to move on. The "Minitiouner-Express" DVB-S/S2 tuner/receiver/analyzer on the right is the result.

This unit connects between an antenna(s) and a PC computer USB2 port using a Windows 7, 8 or 10 operating system. It will receive DVB-S/S2 144MHz to 2420MHz digital television signals with symbol rates between 100K symbols/sec and 10M symbols/sec when used with the included MiniTioune software. In operation, the computer monitor will display the received video and graphic quadrature constellation of the landing dots, show graphically the level and quality of the incoming signal and display the FEC data with setup parameters.

It has two "F" female RF inputs to receive up to two simultaneous independent signals viewed one at a time with A or B soft keys in the MiniTioune software downloaded at: <http://www.vivadatv.org/viewtopic.php?f=60&t=416>. The resultant video and diagnostics are then shown on the computer monitor display. There are provisions to source a DC voltage on either or both RF connectors to power a preamplifier at the antenna. Since the MiniTiouner-Express itself will operate from a +8 to +24VDC source, the preamp voltage requirements dictate the MiniTiouner-Express supply voltage.

The user must provide both the correct USB cable and a DC power source. The DC requirements are 12VDC @ ~300Ma without DC preamplifier power. The enclosure's aluminum cover protects the internals from damage but is not rated for outdoor use. Because of the USB limitation, it must be operated close to the computer. The RF input sensitivity is about -95dBm at FEC=7/8 or -100 dBm at FEC=1/2 which is better than the best set top box I've tested. MiniTiouner-Express has an internal preamplifier but because of its wide bandwidth, it has a rather poor noise figure. Therefore, a bandpass filter and preamp at the antenna is recommended. If a Down East Microwave preamplifier is used, the 1288MHz threshold signal level will go down to about -105dBm at FEC=1/2.

The Tutioune software was created by Jean Pierre Courjaud, F6DZP in France. (The name Tutioune" comes from the French word roughly meaning "to tune"). It is primarily used to receive the HamVideo DATV in the International Space Station but is also widely utilized by Hams all over the world as an excellent DVB-S and DVB-S2 diagnostic utility so digital ATV signals can be measured precisely. We congratulate Jean Pierre for his excellent software contribution to the advancement of DATV DVB-S/S2 pioneering. He has worked hard in recent years to create the Minitiouner and Minitiouner Pro circuit boards for which this design is based. Without his work, it would have been very difficult to achieve.

... WA8RMC

