

PlutoDVB2 Firmware

Késako ?

- PlutoDVB2 firmware is a DVB dedicated firmware developed by F5OEO Evariste for the Adalm-Pluto
- Pluto+ and ANTSDR E200 are also supported hardware
- It uses a DVB-S/S2 modulator in fpga
- It can handle transport stream for video and also IP (DVB-GSE)
- It could also be used as a standard Pluto

Hardware

- Pluto Rev B and D are supported
- The recommended setup is to use Pluto over ethernet
- For easy GSE operation, a minitiouner plugged on the ethernet hub adapter is recommended
- 2 CPUs enable by default
- Frequency extension Tx/Rx : 46.875Mhz-6Ghz
- SymbolRate beetween 20KS and 4MS

Stream mode

- test : generate a test card and tone
- pass : (default mode at reboot); passthrough mode, Pluto could be used with third party software (gnuradio ...)
- dvbs2-ts : dvbs2 with transport stream
- dvbs : dvb-s only with transport stream
- dvbs2-gse : dvbs2 with generic encapsulation (ip over dvb)

DVB-S2 setting

- FEC {1/4,1/3,2/5,3/5,4/5,8/9,9/10}
- Constellation {qpsk,8psk,16apsk,32apsk}
- Frame type {short,long}
- Pilots {0,1}
- Symbol rate {25000..4000000}
- Roll-off {0.20, 0.15}
- FEC mode : {fixed,variable}
- Dynamic gain regarding to fec {0,1}

Spectrum

- A live spectrum is available through a websocket and a webpage

MQTT ?



- Message Queuing Telemetry Transport (**MQTT**)
- The Standard for IoT Messaging
- It is designed as an extremely lightweight publish/subscribe messaging transport that is ideal for connecting remote devices with a small code footprint and minimal network bandwidth
- F5OEO is using MQTT messages to control the Pluto DVB-S/S2 modulator

Longmynd

- Longmynd software to control a MiniTiouner is included in the PlutoDVB2 firmware
- Special version supporting DVB-GSE
- Longmynd is controlled by MQTT messages
- MiniTiouner is connected to an USB port on the Pluto

GUI...

- The firmware is focused on a robust dvbs2 kernel
- Human interface is out of scope

Helpers/GUI are already available from contributors:

- F4HSL: batch files for windows, Quickstart documentation
- ZS1SCI: DATV-Red 4.x (Node-Red implementation)
- F1EJP: DATV-Easy 3.x
- DL5OCD: DATV-NotSoEasy V1.x

Source

- All the information of this presentation are from F5OEO github here:
<https://github.com/F5OEO/pluto-ori-ps/wiki>
- by the QR-Code

