

Portsdown Update

Dave G8GKQ



Topics

- Project Status
- Recent developments
- New possibilities?





Status – Portsdown 2020

- RPi 3 with 3.5 inch or 7 inch Touchscreen
- Supported with current functionality
- Does not support PicoTuner
- Will live on for a few years yet
- If not updated will work forever



Status – Portsdown 4

- RPi 4 with 7 inch Touchscreen or web
- Supports PicoTuner
- Developments in test equipment
- Web control from a browser
- The latest fielded capability



Status – Portsdown 5

- RPi 5 with 7 inch Touchscreen, HDMI screen and mouse or web
- Currently still under development
- Does not yet transmit reliably
- Release in Q3 2025



Recent Developments – P4

- Noise Figure Meter works with Pluto
- Noise Meter works with Pluto
- Added File Menu
- Ryde receiver
- Boot Options
- Support for Muntjac SDR



File Menu

File Menu (4)

Select
IQ File

Play IQ
File

Play IQ
File in loop

Mount USB
Drive

File
Explorer

Update
Ryde RX

List Network
Raspberry Pis

List Network
Devices

List USB
Devices

Copy File
for Paste

Paste File
to Directory

Rename File

Exit



Recent Developments – P4

Start-up App Menu (34)





Muntjac TX SDR

- Uses RP2040 and SDR chip from Caribou
- Covers 70 cm and 13 cm
- Low cost
- Development on hold





Portsdown 5

- Extra row of buttons
- Mouse and HDMI option (not HDMI touchscreen)
- Possible video source switching without dropping TX
- New features



Main Menu

Portsdown 5 DATV Transceiver Main Menu

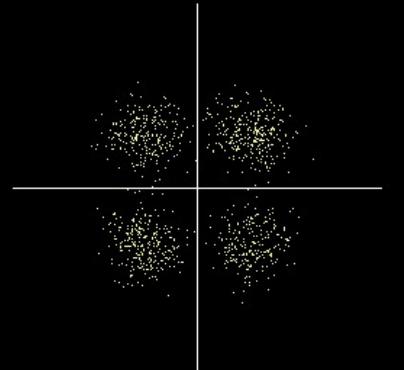
Transmit	Receive	DATV Tools	Config	File
Select	Menu	Menu	Menu	Menu
Modulation	Encoding	Output to	Format	Source
DVB-S2 QPSK	H264	Lime Mini	16:9	Test Card
Freq	Sym Rate	FEC	Band/Tvtr	Lime Gain
437.00	333	2/3	70cm	85
EasyCap	Caption	Audio	Atten	Att Level
Comp Vid	On	Auto	None	-10.00
Preset 1	Preset 2	Preset 3	Preset 4	Store
146_333	437_Lime	1255_HD	437-Pluto	Preset
Shutdown System	Band Viewer	Test Equipment	Locator Calculator	Stream Viewer



Portsdown 5 RX Diagnostics

- Ability to display and measure phase noise
- Nulls

DVB-S2 Lock
10491.547 MHz
1500 kS
FEC 4/5
QPSK
A71A
QARS
H264 MPA
MER 9.1 (4.7 needed)
RF Input Level -50 dB
Nulls 1.4%
Touch Centre to Exit



Amplitude MER 8.9 dB
Phase MER 8.8 dB



Portsdown 5

- Raspberry Pi 5 not ideal for video
- H264 encoder not usable
- VLC image orientation locked
- Slow Progress



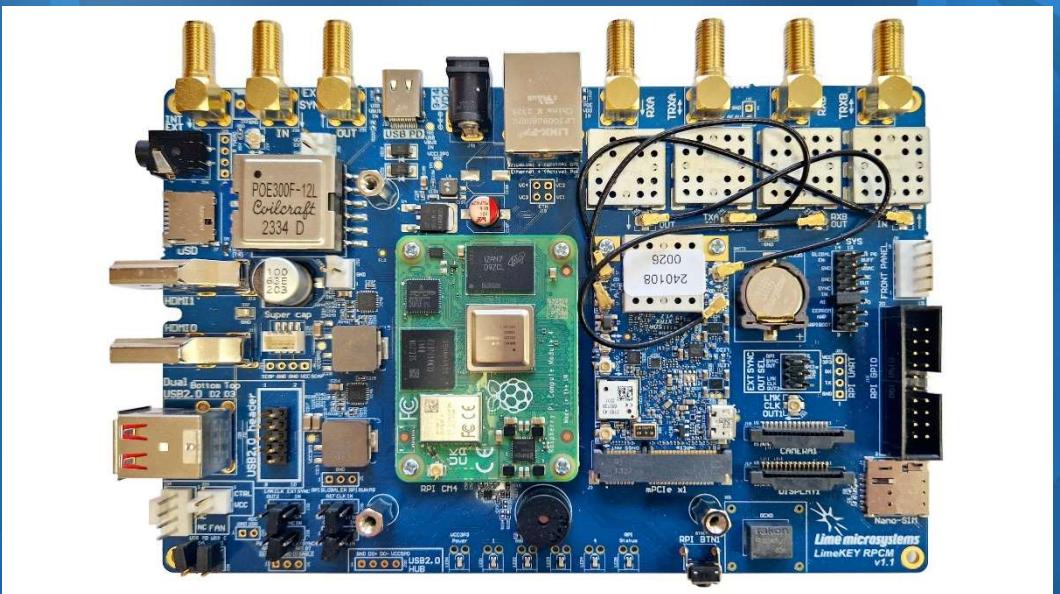
Other Projects

- LimeNET Micro 2.0 DE
- Spectrum Analyser IF using LimeSDR



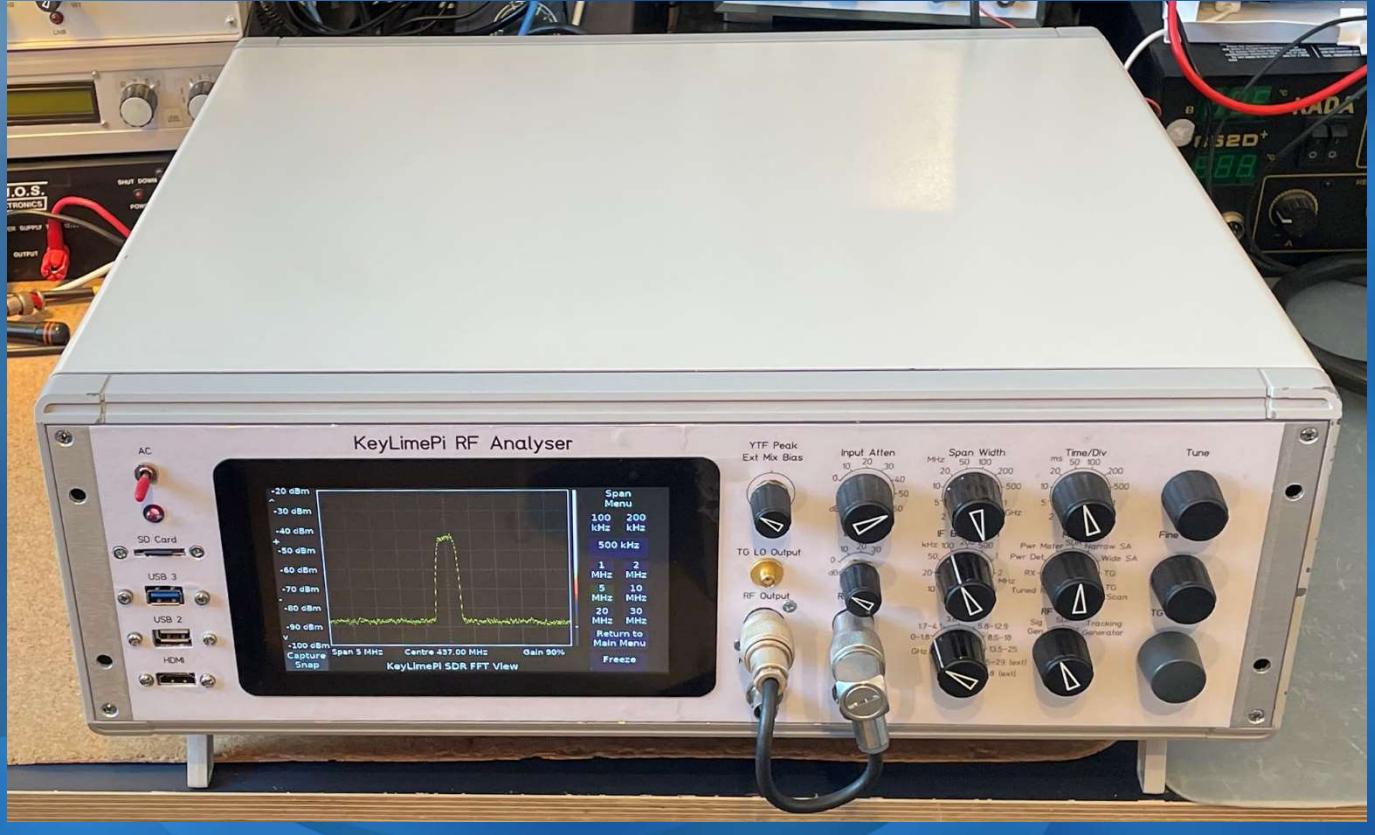
Other Projects

- LimeNET Micro 2.0 DE





RF Analyser





RF Analyser

- Based on an HP 8565A – extended to 25 GHz
- LimeSDR IF
- Raspberry Pi 5 and touchscreen (Portsdown 5)
- Includes
 - Sig Gen
 - Noise Figure Meter
 - Tracking Generator to 15 GHz



Questions