



Digital Amateur Television 20210403

Inc. DATV Activity w/e 20210320



- Purpose
- DATV Activity summary
- Live reception demo
- Transport stream discussion
- Comparison with DVB transport stream



Purpose

- To promote activity between ATV stations
- Enabling testing & contacts to be made
- Proving ideas, designs and equipment
- Dates provided by the BATC



DATV – Digital ATV

- DVB-S / DVB-S2
- UHF Amateur bands
- Eg: 437MHz
- Transport Stream (TS)
- Video & associated metadata



Equipment



The photograph shows a radio shack or ham radio station. The setup includes a laptop displaying a software interface, a large digital display showing '88.88.88', and various electronic equipment on a desk. A sign on the wall reads 'G7APD 1092JJ'. A small sign on the desk says '2m + 70cm + 23cm'. A digital clock shows '10:55'.

70cm BP Filter
& Preamplifier



RATS Activity Summary

Ian M0IJS, Mike G8DLX, Geoff G3TQF. Saturday 20th March 10:00 ~ 12:00.

Goals were to establish contact across town between Mike, RATS and Geoff. These three points plot a line on the map. Other interested parties included Phil 2E0VEZ in IO92jh, Willoughby.

A receive station at the RATS clubhouse (IO92jj) was operated by M0IJS.

Talkback via 2Mtrs was successful between participating RATS stations although no others were heard during the session. Talkback at the RATS clubhouse was vertically polarised via a white stick collinear. A fault was detected on the 2Mtr beam which would have ordinarily been used.

Mike in Bilton (IO92ii) sent DATV using his Portsdown 2018 platform. PA provided by a Mitsubishi 30W module built within a kit from Minikits. LPF either side and 4.5W driven to an 8Ele horizontal beam.

Rx Screen shots

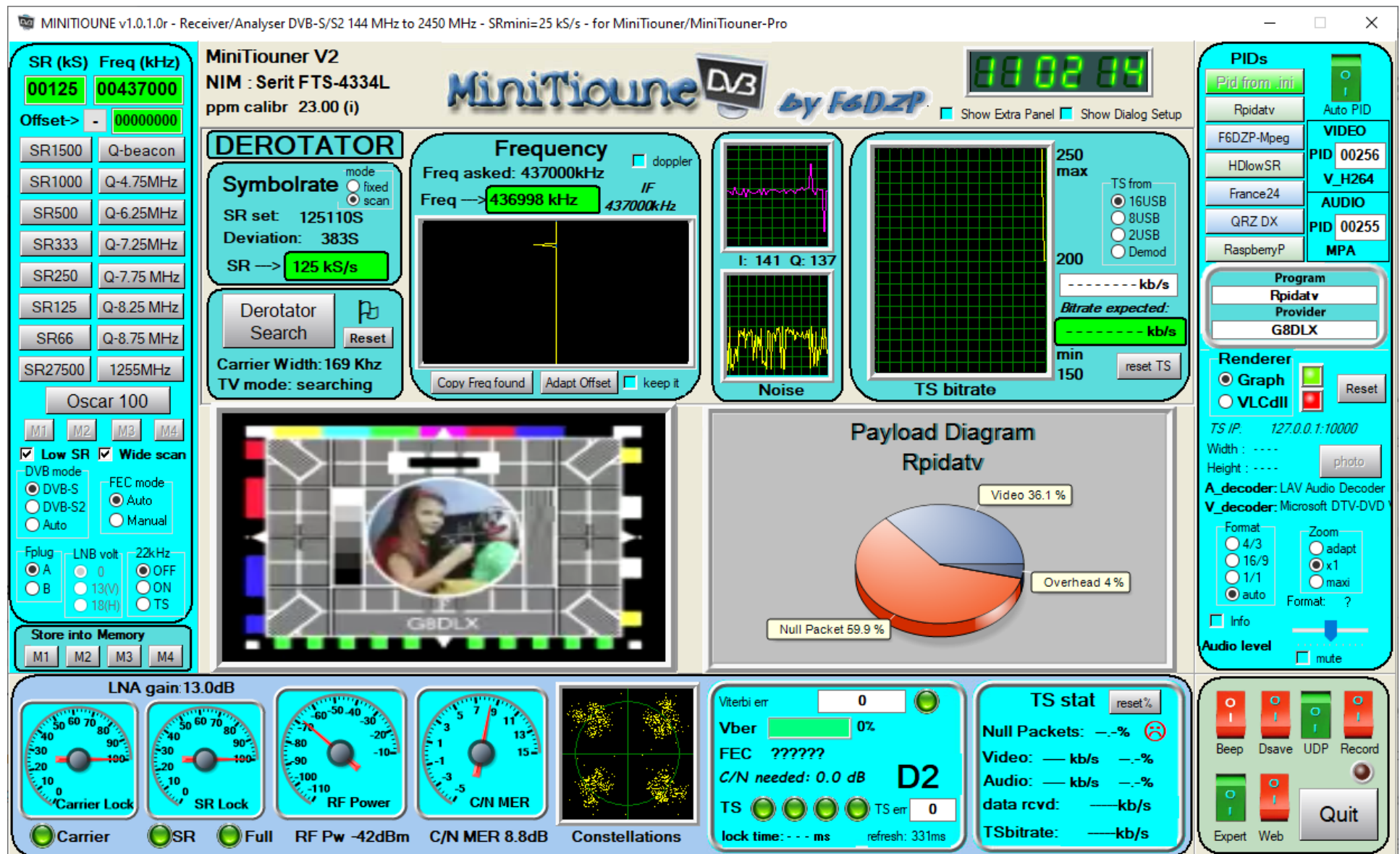
Ref Description

- | | |
|---|------------------------------|
| 1 | Mike G8DLX, 125kS, Test card |
| 2 | Mike G8DLX, 333kS, Test card |
| 3 | Mike G8DLX, 333kS, Camera |

Locations

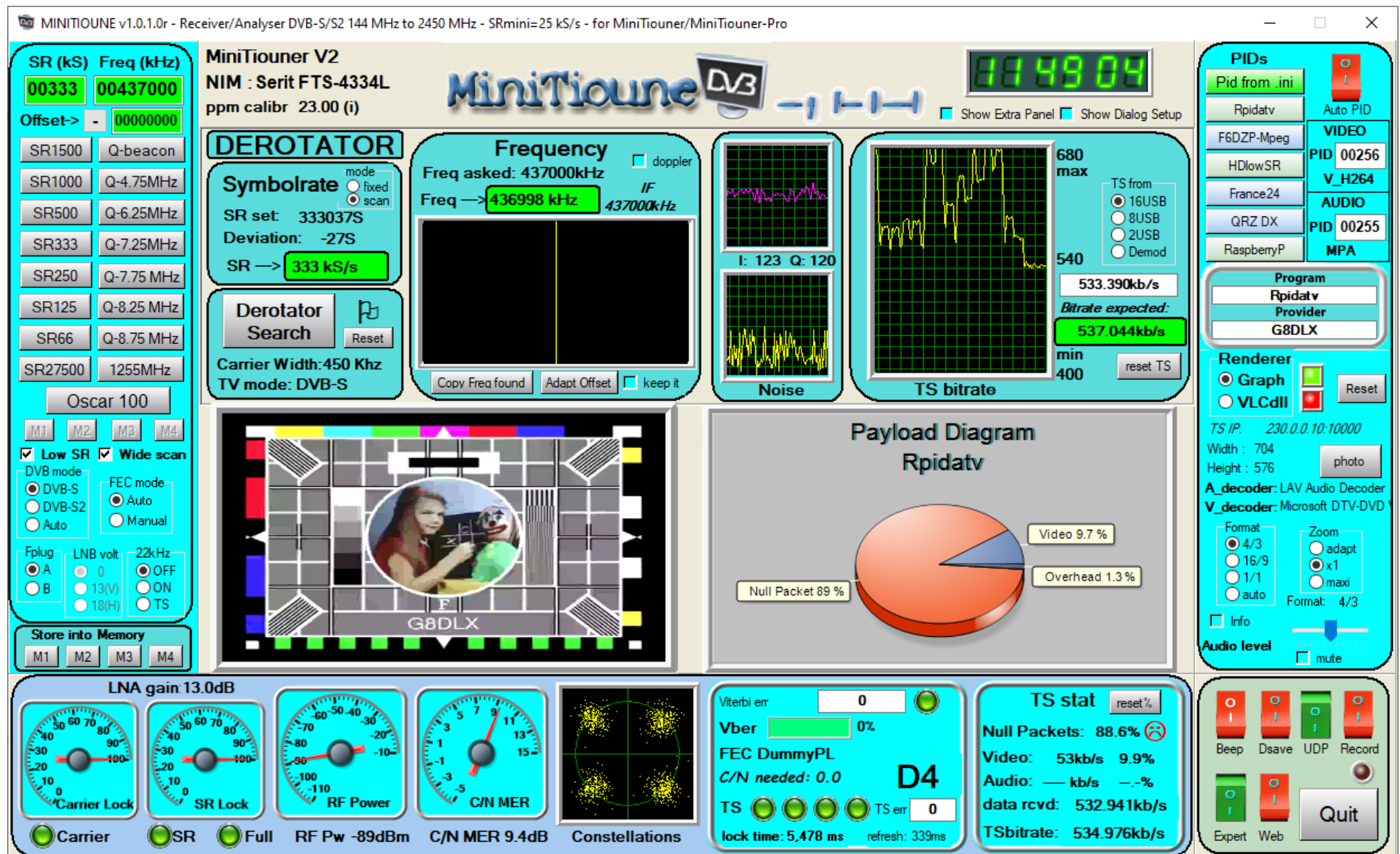
- | | |
|-------|----------------------------|
| M0IJS | IO92jj (Brownsover, Rugby) |
| G8DLX | IO92ii (Bilton, Rugby) |
| G3TQF | IO91jj (Newton, Rugby) |





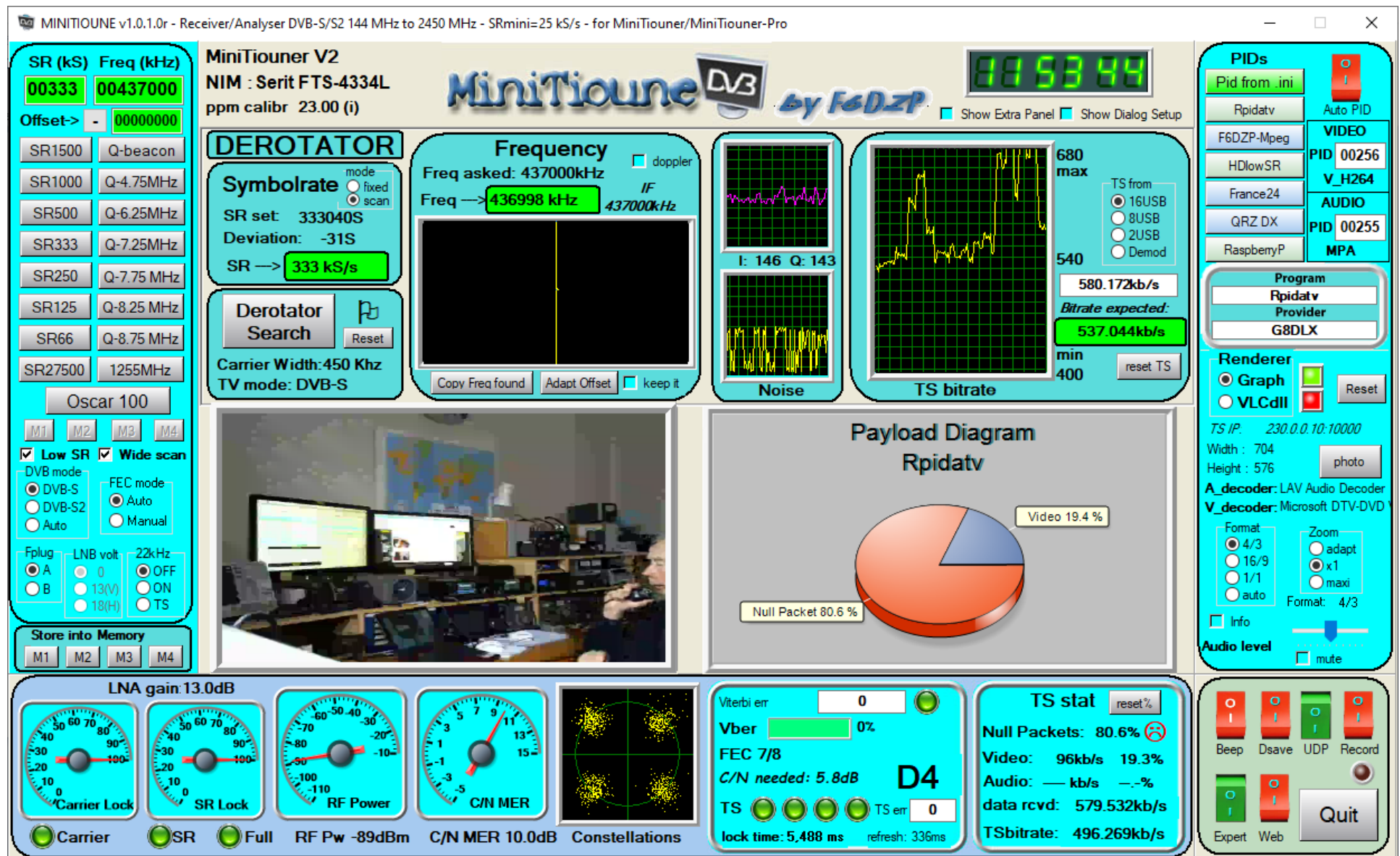
Rx Screenshot 1





Rx Screenshot 2





Rx Screenshot 3

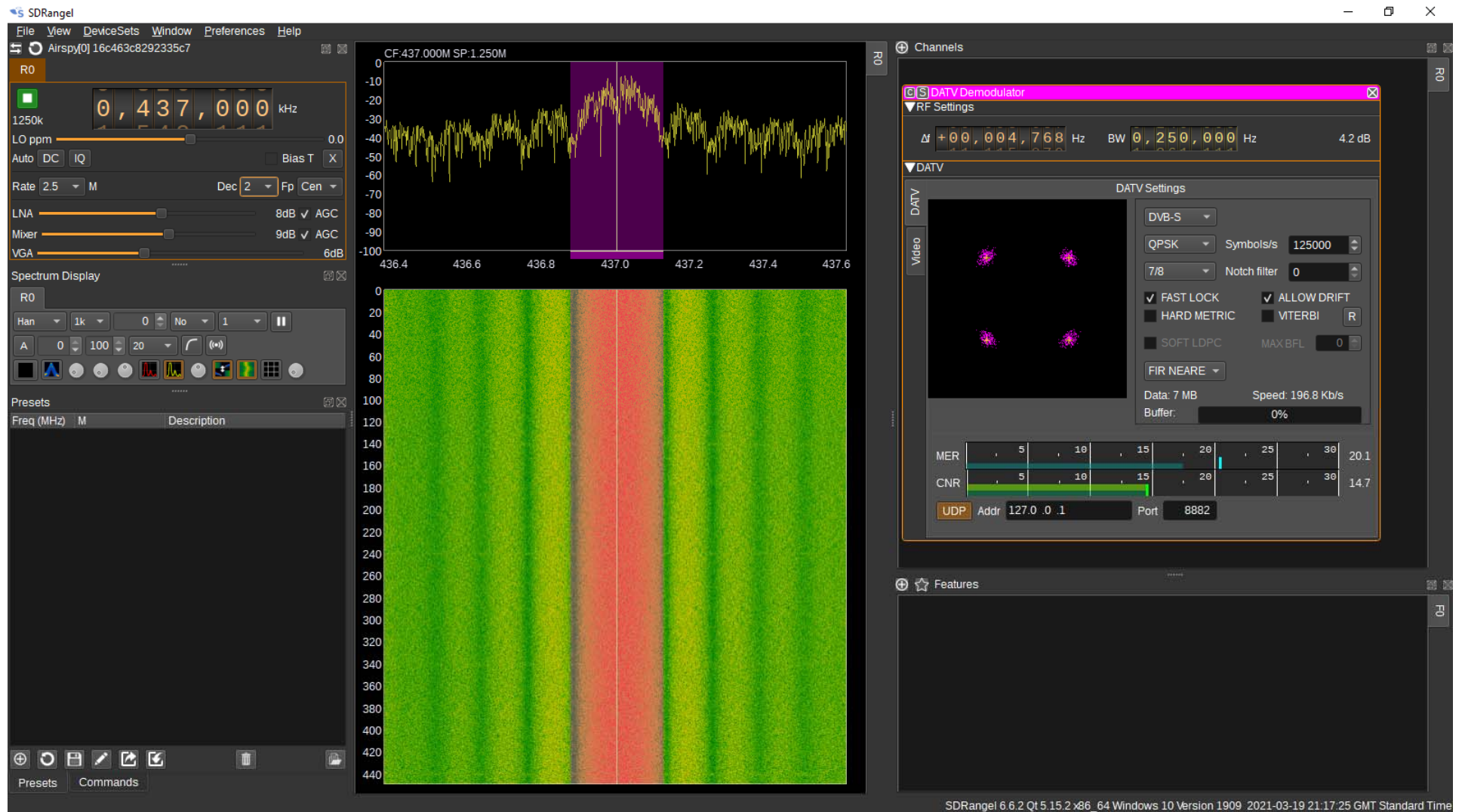


How to get involved!

Whilst the examples here show a transmission across town – you can do the same with a Raspberry Pi across your shack.

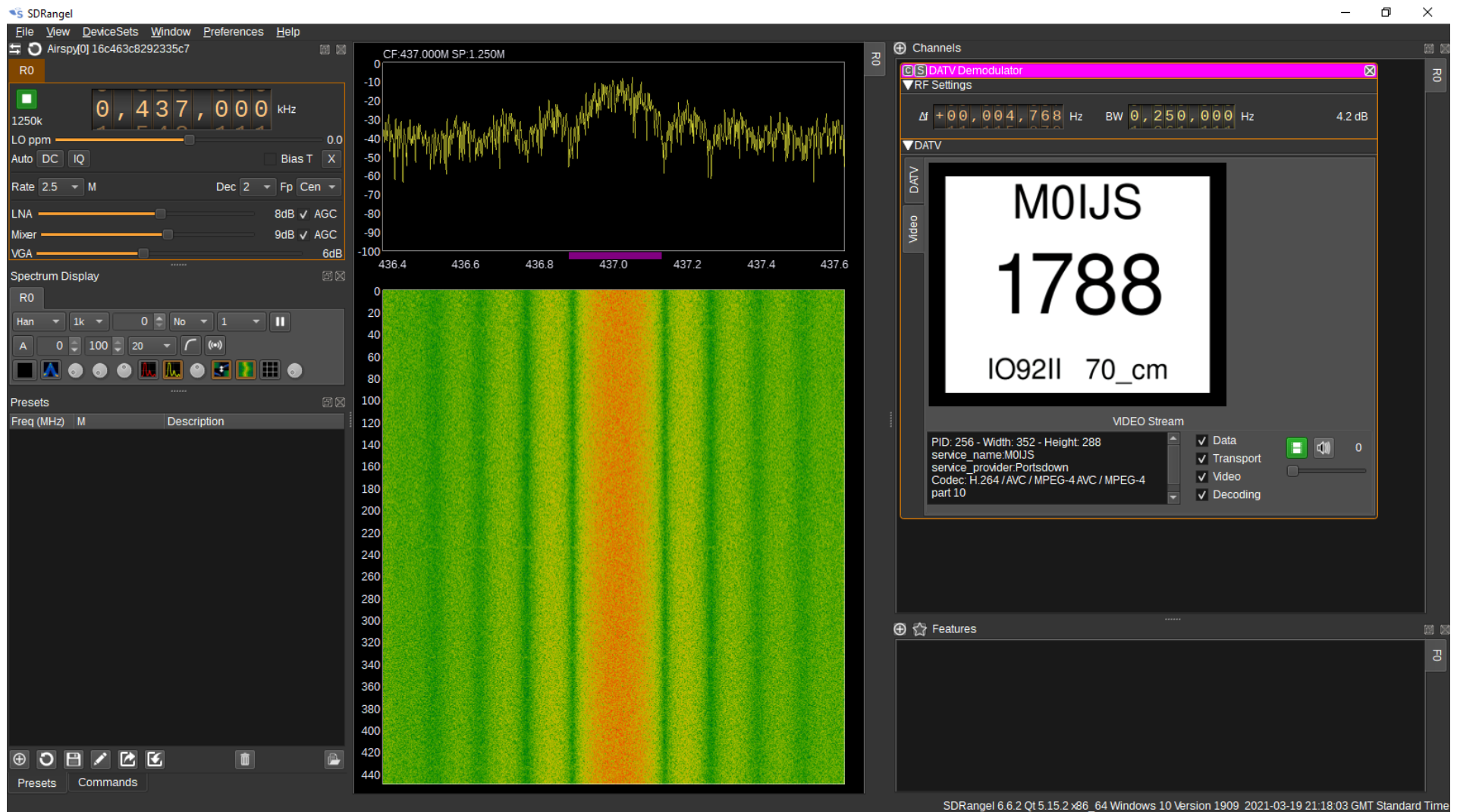
Receive can be done using a dedicated Tuner/Demodulator, or as Geoff G3TQF has shown, with an Airspy and SDRangel.





SDRangel DATV demod view





SDRangel DATV video view



Follow on activities

- Build a Portsdown 2020!
- Use SDRangel to decode DATV
- Regular discussions between
 - Mike G8DLX
 - Geoff G3TQF
 - Ian M0IJS
 - Phil 2E0VEZ



RATS DATV

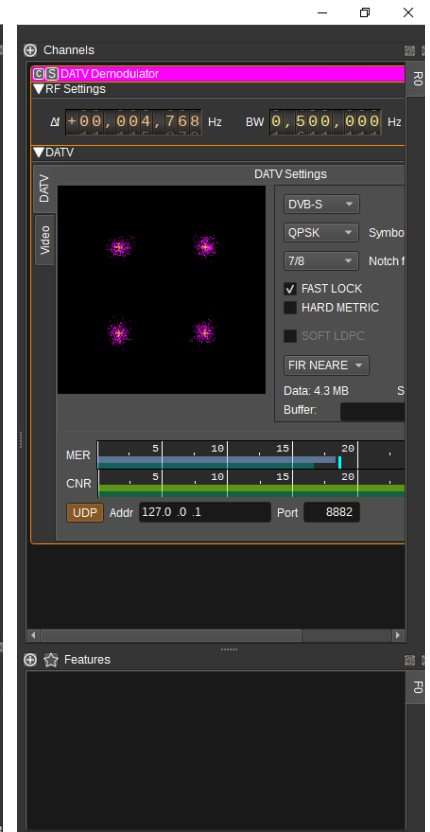
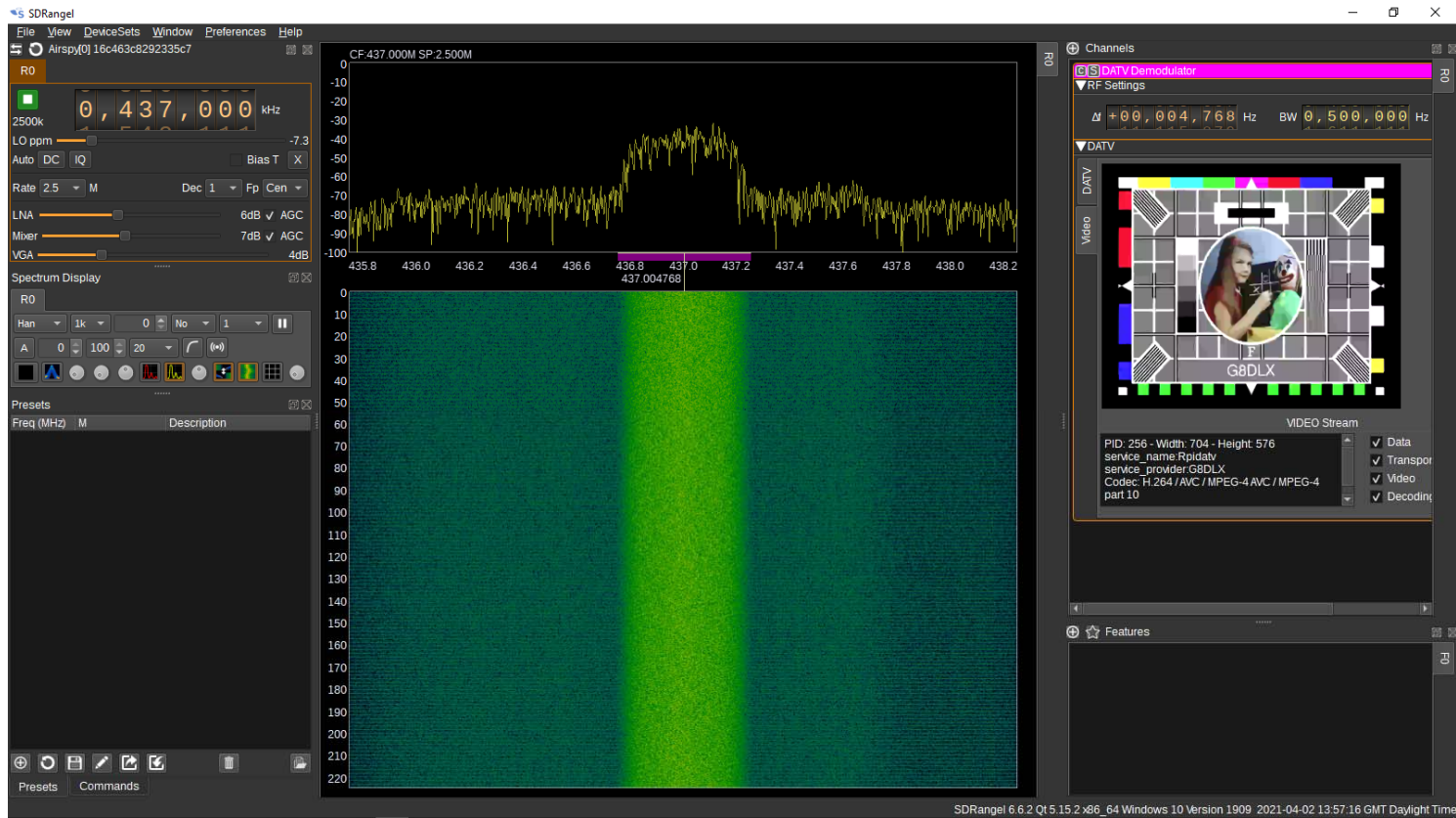
Backup Material



Minituner



20210402 G8DLX / M0IJS



20210402 G8DLX / M0IJS

TSReader -- 2.8.46b

File Export View Record Playback Plugins Settings Help

PAT PID 0x0000
PMT PID 0x00ff - Program 1
SDT PID 0x0011 <1>

PAT Version Number: 0
Transport Stream ID: 0 (0x0000)
PMT PID 255 (0x00ff) - Program 1 Rpidatv

Active PIDs: ☐ Disabled ☐ Sort Decending ☒ Sort by Rate ☐ Sort by PID

0x1fff (88.12 % ~ 473.24 Kbps)
0x0100 (10.52 % ~ 56.46 Kbps)
0x00ff (0.46 % ~ 2.43 Kbps)
0x0011 (0.46 % ~ 2.43 Kbps)
0x0000 (0.46 % ~ 2.43 Kbps)

General Information
Source: Multicast UDP
Tuner: 230.0.0.10 port 10000
Signal: n/a
Network Type: DVB
Run Time: 000:00:34

MPEG-2 Statistics

	PAT	PMT	CAT	NIT	SDT	EIT
Sections	46	40	0	0	47	0
CRC Errors	0	0	0	0	0	0
Continuity Errors:	0			Mux. bitrate:	537044 bps	
TEI Errors:	0			Last sec.:	0.523 Mbit	
Sync losses:	0			In buffer:		
				Out buffer:		

Video Decode
1 - Rpidatv
h264
G8DLX



20210402 G8DLX / M0IJS

MINITIOUNE v1.0.1.0r - Receiver/Analyser DVB-S/S2 144 MHz to 2450 MHz - SRmini=25 kS/s - for MiniTouner/MiniTouner-Pro

MiniTouner V2
NIM : Serit FTS-4334L
ppm calibr 23.00 (i)

SR (kS) Freq (kHz)
00333 00437000
Offset-> - 00000000

SR1500 Q-beacon
SR1000 Q-4.75MHz
SR500 Q-6.25MHz
SR333 Q-7.25MHz
SR250 Q-7.75MHz
SR125 Q-8.25MHz
SR66 Q-8.75MHz
SR27500 1255MHz

Oscar 100
M1 M2 M3 M4

☒ Low SR ☐ Wide scan
DVB mode: ☒ DVB-S ☐ DVB-S2 ☐ Auto
FEC mode: ☒ Auto ☐ Manual
Fplug: ☒ A ☐ B LNB volt: ☒ 0 ☐ 13(V) ☐ 18(H) 22kHz: ☒ OFF ☐ ON ☐ TS

Store into Memory
M1 M2 M3 M4

DEROTATOR
Symbolrate mode: ☐ fixed ☒ scan
SR set: 333031S
Deviation: -15S
SR -> 333 kS/s
Derotator Search Reset
Carrier Width: 450 KHz
TV mode: DVB-S

Frequency ☐ doppler
Freq asked: 437000kHz
Freq -> 437000 kHz 437000kHz
IF
Copy Freq found Adapt Offset ☐ keep it

Noise
I: 151 Q: 147

TS bitrate
680 max
540
532.827kb/s
Bitrate expected: 537.044kb/s
min 400 reset TS

Payload Diagram Rpidatv
Pie chart data:
Null Packet 75.5 %
Video 22.3 %
Overhead 2.2 %

TS stat reset %
Null Packets: 75.5%
Video: 120kb/s 22.2%
Audio: — kb/s — %
data rcvd: 532.827kb/s
TSbitrate: 539.338kb/s

Renderers
☒ Graph ☐ VLCdll
Reset

TS IP: 230.0.0.10:10000
Width: 704
Height: 576
photo
A_decoder: LAV Audio Decoder
V_decoder: Microsoft DTV-DVD
Format: ☒ 4/3 ☐ 16/9 ☐ 1/1 ☐ auto
Zoom: ☐ adapt ☒ x1 ☐ maxi
Format: 4/3
Info
Audio level ☐ mute

Beep Dsave UDP Record
Expert Web Quit

LNA gain: 13.0dB
Carrier Lock SR Lock RF Power C/N MER Constellations
Carrier SR Full RF Pw -58dBm C/N MER 11.2dB

Viterbi err 0 Vber 0% FEC DummyPL C/N needed: 0.0 dB D5 TS lock time: 479 ms refresh: 302ms

