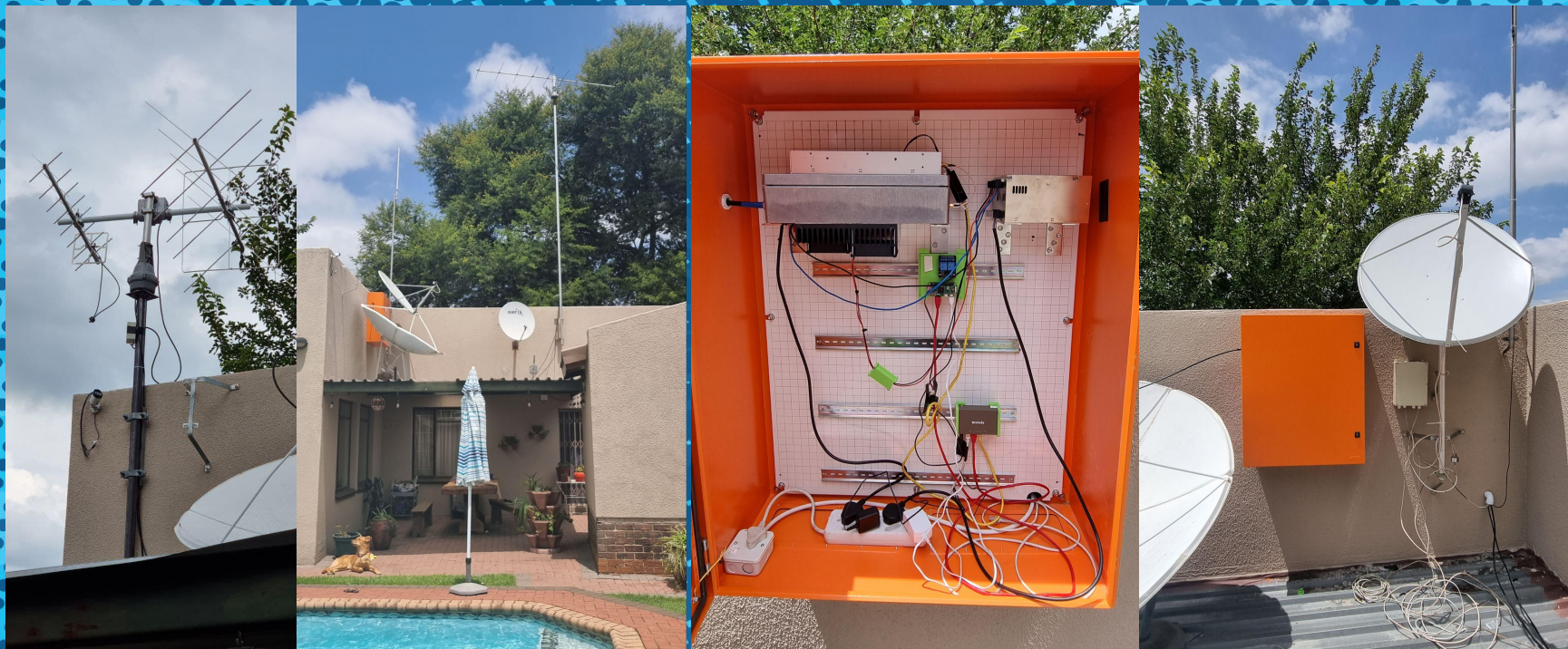


DATV Developments

Tom Van den Bon - ZR6TG



Whoami ?



Tom Van den Bon - ZR6TG - South Africa - KG33WG

ZS DATV - QO100

Software interface for ZS DATV QO100. The main window displays a video feed of a man wearing a headset, likely a radio operator. The interface includes various control panels and status indicators. On the left, there's a list of frequencies and a 'Wide view' section. On the right, there's a 'PSTN' section with a 'Photo' button. At the bottom, there are several circular meters and a 'Quit' button.

Software interface for ZS DATV QO100. The main window displays a video feed of a man in a checkered shirt. The interface includes various control panels and status indicators. On the left, there's a list of frequencies and a 'Wide view' section. On the right, there's a 'PSTN' section with a 'Photo' button. At the bottom, there are several circular meters and a 'Quit' button.

Software interface for ZS DATV QO100. The main window displays a video feed of a man in a checkered shirt. The interface includes various control panels and status indicators. On the left, there's a list of frequencies and a 'Wide view' section. On the right, there's a 'PSTN' section with a 'Photo' button. At the bottom, there are several circular meters and a 'Quit' button.

Software interface for ZS DATV QO100. The main window displays a video feed of a man in a checkered shirt. The interface includes various control panels and status indicators. On the left, there's a list of frequencies and a 'Wide view' section. On the right, there's a 'PSTN' section with a 'Photo' button. At the bottom, there are several circular meters and a 'Quit' button.

QO-100

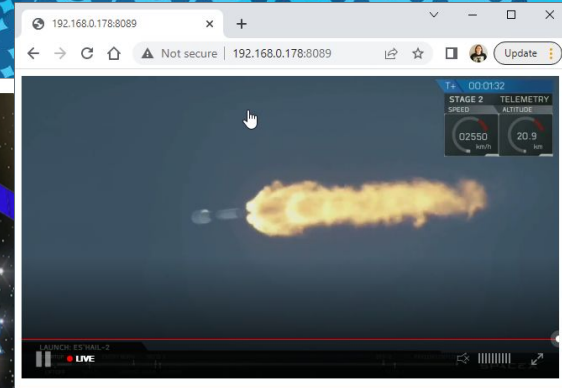
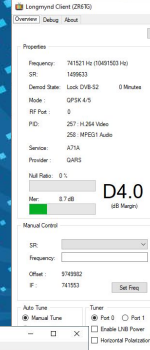
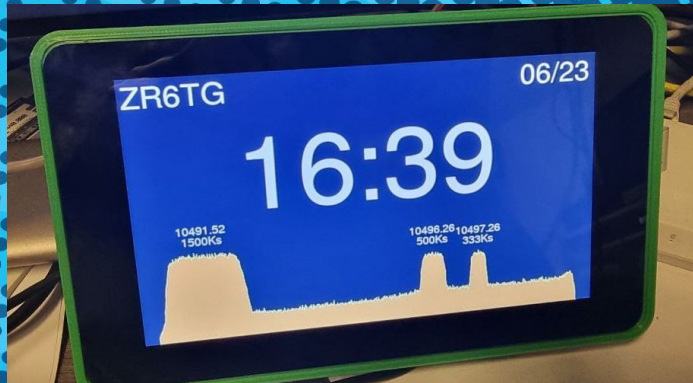


	Beacon			Wide and Narrow DATV										Narrow DATV					
	Beacon			1MS			1MS			1MS									
				333	333	333	333	333	333	333	333	333	333	333	333	333	333		
	Beacon Only			Experimental modes and DVB-S/S2			DVB-S/S2 all symbol rates					DVB-S/S2 at 333 kS and lower							
	2401.5	2402.5		2403.5	2404.5	2405.5	2406.5	2407.5	2408.5	2409.5									
	Uplink (MHz)																		
	10491.0	10492.0	10493.0	10494.0	10495.0	10496.0	10497.0	10498.0	10499.0										
	Downlink (MHz)																		

AMSAT-DL : <https://amsat-dl.org/en/>

BATC : <https://batc.org.uk/>

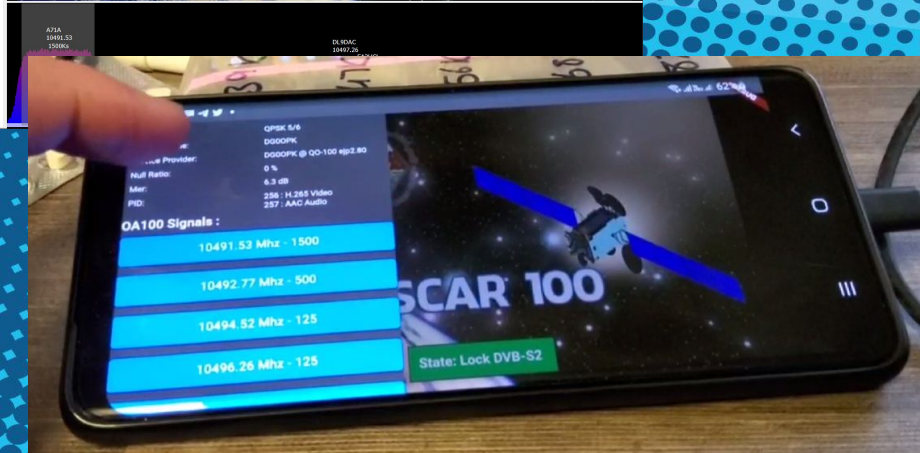
Projects and Experiments - 2022



A collage of images related to satellite projects. The top left image shows a river and a bridge. The top right image shows a castle and the text "Herkules - Kassel". The bottom left image shows a satellite launch. The bottom right image shows a red background with a satellite icon.

Winterhill Client (ZNR70)

SR	Service	Provider	MCR	D	Freq	SR	SR	SR	Mode	TS	ASB	Volume	Active
1	Link DVB-S2 G8KOE	P2.110509	7.8	4.7	10497.214	333	10.0	QPSK 3/4	H20-AAC	192	160.0	100%	
2	Link DVB-S2 DL12AX	Z800_Detector	7.8	3.8	10498.223	333	11.0	QPSK 3/4	H20-AAC	192	160.0	100%	
3	Link DVB-S2 F1TE	140Kusom	2.5	2.5	10499.239	333	2.1	QPSK 1/2	H20-AAC	192	160.0	100%	
4	Flamingo				10498.760	333	0.0			127	0.0	100%	



Longmynd

This screenshot shows the GitHub repository page for `myorangedragon/longmynd`. The repository is public and has 18 stars. The main branch is `master`, and there is 1 branch and 0 tags. The repository description is "An Open Source Linux ATV receiver". The file list includes `.gitignore`, `.travis.yml`, `LICENSE`, `Makefile`, `README.md`, `beep.c`, `beep.h`, `errors.h`, and `fake_read.c`. A merge pull request #18 from `philcrump/phil-bch-ldpc-lnb-v-stat...` is shown, dated Apr 17, 2020, with 90 commits. The right sidebar shows the repository's metadata, including the README, GPL-3.0 license, 1 star, 0 watching, 15 forks, and a language usage chart.

myorangedragon / longmynd (Public)

Watch 9 Fork 15 Star 18

Code Issues 1 Pull requests 1 Actions Projects Security Insights

master 1 branch 0 tags

Go to file Add file + Code + About

myorangedragon Merge pull request #18 from philcrump/phil-bch-ldpc-lnb-v-stat... 09c6434 on Apr 17, 2020 90 commits

- `.gitignore` Add .gitignore. 3 years ago
- `.travis.yml` Travis: Add 16.04/18.04 gcc 5/6/7/8/9 build test matrix. 3 years ago
- `LICENSE` Longmynd: First public release 3 years ago
- `Makefile` Travis: Add 16.04/18.04 gcc 5/6/7/8/9 build test matrix. 3 years ago
- `README.md` README.md: Add documentation of Error Count and LNB Voltage status... 2 years ago
- `beep.c` beep.c: Sanity-check MER value before setting tone frequency. 3 years ago
- `beep.h` Add MER beep. 3 years ago
- `errors.h` Add separate thread for i2c functions, use status struct object to st... 3 years ago
- `fake_read.c` Longmynd: First public release 3 years ago

Releases: No releases published

Packages: No packages published

This screenshot shows the GitHub repository page for `philcrump/longmynd`, which is a fork of `myorangedragon/longmynd`. The repository is public and has 15 forks. The main branch is `master`, and there is 1 branch and 0 tags. The repository description is "An Open Source Linux ATV receiver". The file list includes `.github/workflows`, `web`, `.gitignore`, `.gitmodules`, `LICENSE`, `Makefile`, `README.md`, `beep.c`, and `beep.h`. A commit by `philcrump` titled "ci-build.yml: Revert arm/aarch64 updates" is shown, dated May 16, with 180 commits. The right sidebar shows the repository's metadata, including the README, GPL-3.0 license, 1 star, 0 watching, 15 forks, and a language usage chart.

philcrump / longmynd (Public)

forked from myorangedragon/longmynd

Watch 0 Fork 15 Star 1

Code Pull requests Actions Projects Security Insights

master 1 branch 0 tags

Go to file Add file + Code + About

This branch is 90 commits ahead of myorangedragon:master. Contribute +

- philcrump ci-build.yml: Revert arm/aarch64 updates. 180 commits on May 16
- `.github/workflows` ci-build.yml: Revert arm/aarch64 updates. 4 months ago
- `web` Fix explicit null termination of strncpy() use. 4 months ago
- `.gitignore` Makefile: Generate dependencies to prevent misbuilds on header chang... 4 months ago
- `.gitmodules` Add web click interface. 8 months ago
- `LICENSE` Longmynd: First public release 3 years ago
- `Makefile` Makefile: Generate dependencies to prevent misbuilds on header chang... 4 months ago
- `README.md` Add AGC2 gain to status output (\$Z7) 14 months ago
- `beep.c` beep.c: Sanity-check MER value before setting tone frequency. 3 years ago
- `beep.h` Add MER beep. 3 years ago

Releases: No releases published

Packages: No packages published

Languages: C 53.0%, JavaScript 45.1%, HTML 1.0%, Roff 0.5%, Makefile 0.2%, CSS 0.1%, Shell 0.1%

<https://github.com/myorangedragon/longmynd>

<https://github.com/philcrump/longmynd>

Networked DATV Receiver Concept

Raspberry PI + Longmynd Software

Minituner Hardware

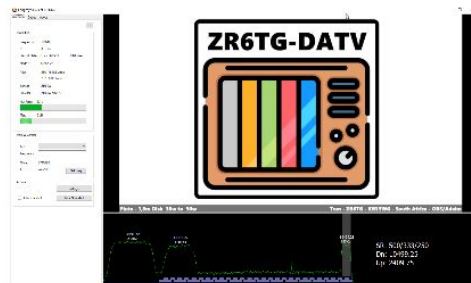


Network



Longmynd Client

Remote access to minituner with Longmynd client v1



<https://www.zr6tg.co.za/longmynd-client/>

- Networked
- Multi Platform
- Raspberry PI
- Open Source
- Longmynd Based
- Multiple Clients

Longmynd Client

The screenshot displays the Longmynd Client (ZR6TG) interface. The left sidebar contains the following sections:

- Properties:**
 - Frequency: 741521 Hz (10491503 Hz)
 - SR: 1499633
 - Demod State: Lock DVB-S2 0 Minutes
 - Mode: QPSK 4/5
 - RF Port: 0
 - PID: 257 : H.264 Video, 258 : MPEG1 Audio
 - Service: A71A
 - Provider: QARS
 - Null Ratio: 0 %
 - Mer: 8.7 dB
 - D4.0** (dB Margin)
- Manual Control:**
 - SR: [Dropdown]
 - Frequency: [Input]
 - Offset: 9749982
 - IF: 741553 [Set Freq]
- Auto Tune:**
 - ☒ Manual Tune
 - ☐ Auto Tune (Time)
 - ☐ Auto Tune (Hold)
- Tuner:**
 - ☒ Port 0 ☐ Port 1
 - ☐ Enable LNB Power
 - ☐ Horizontal Polarization
- Media:**
 - ☐ Auto Snapshot [Take Snapshot]
- Volume:** 4 %
- [Settings]

The main window displays a video feed of a satellite in space. The video includes the following text and logos:

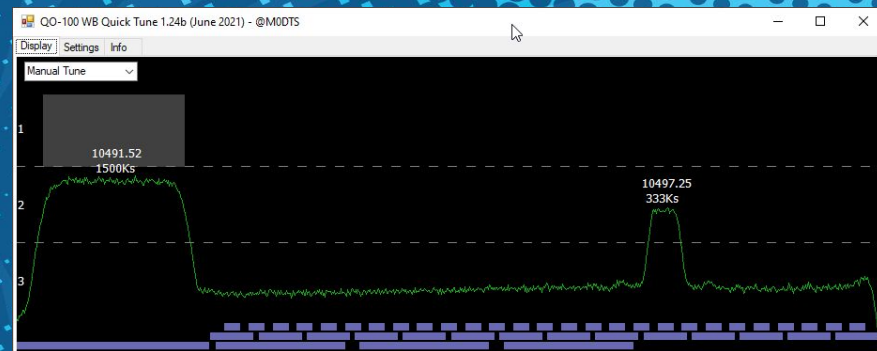
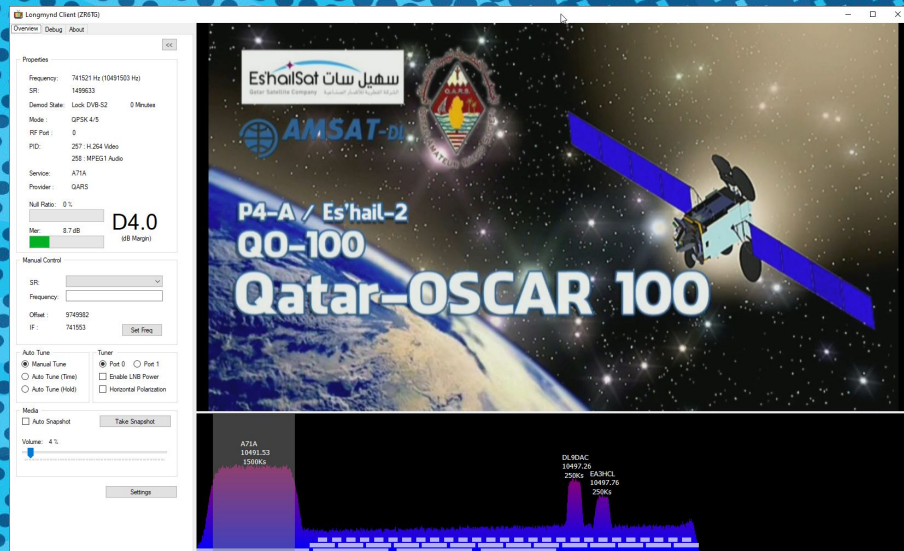
- Es'hailSat سات سهيل (Qatar Satellite Company)
- AMSAT-DI
- QARS
- P4-A / Es'hail-2
- QO-100
- Qatar-OSCAR 100**

At the bottom of the interface, there are two status bars:

- Left Status Bar:**
 - A71A
 - 10491.53
 - 1500Ks
- Right Status Bar:**
 - DLSDAC 10497.26 250Ks
 - EA3HCL 10497.76 250Ks

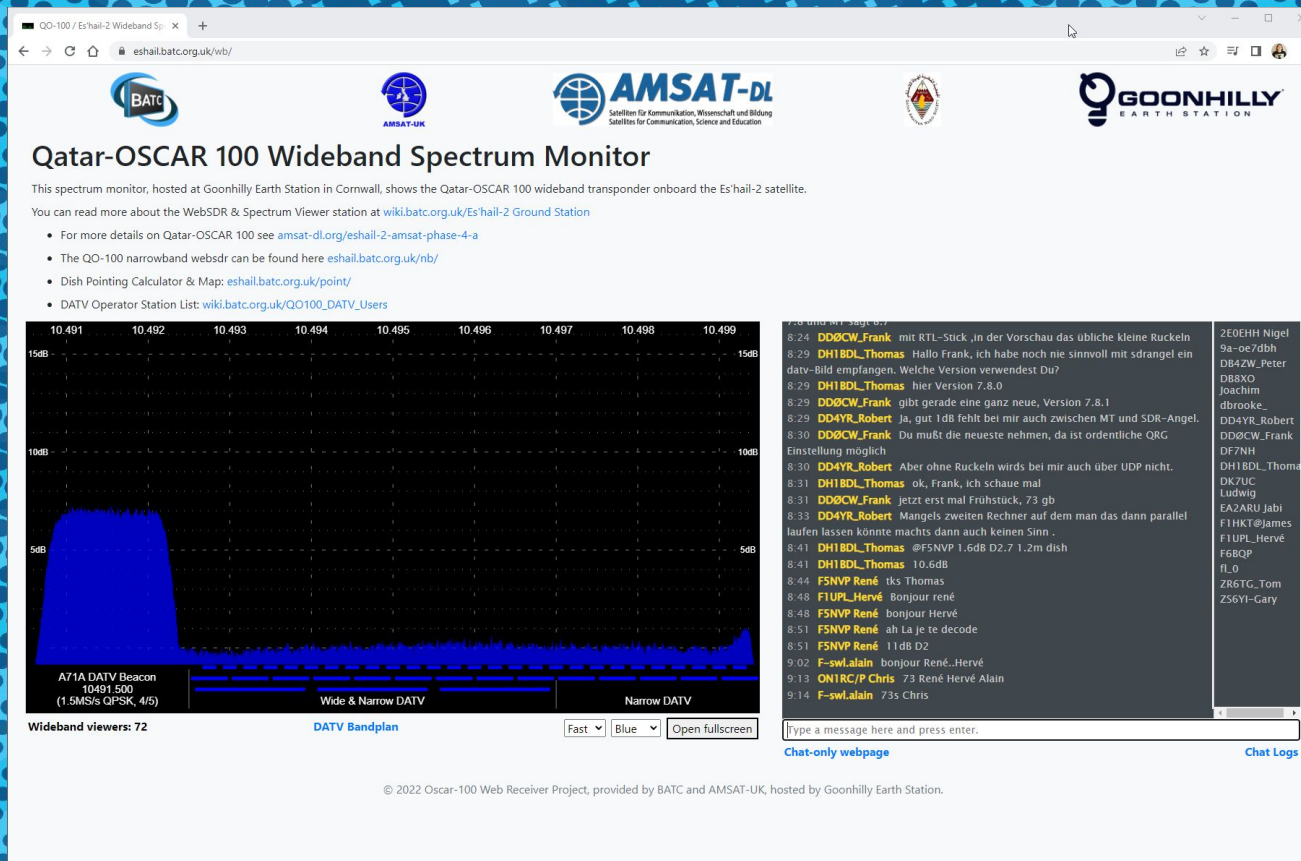
<https://www.zr6tg.co.za/longmynd-client/>

QO-100 Quicktune Integration

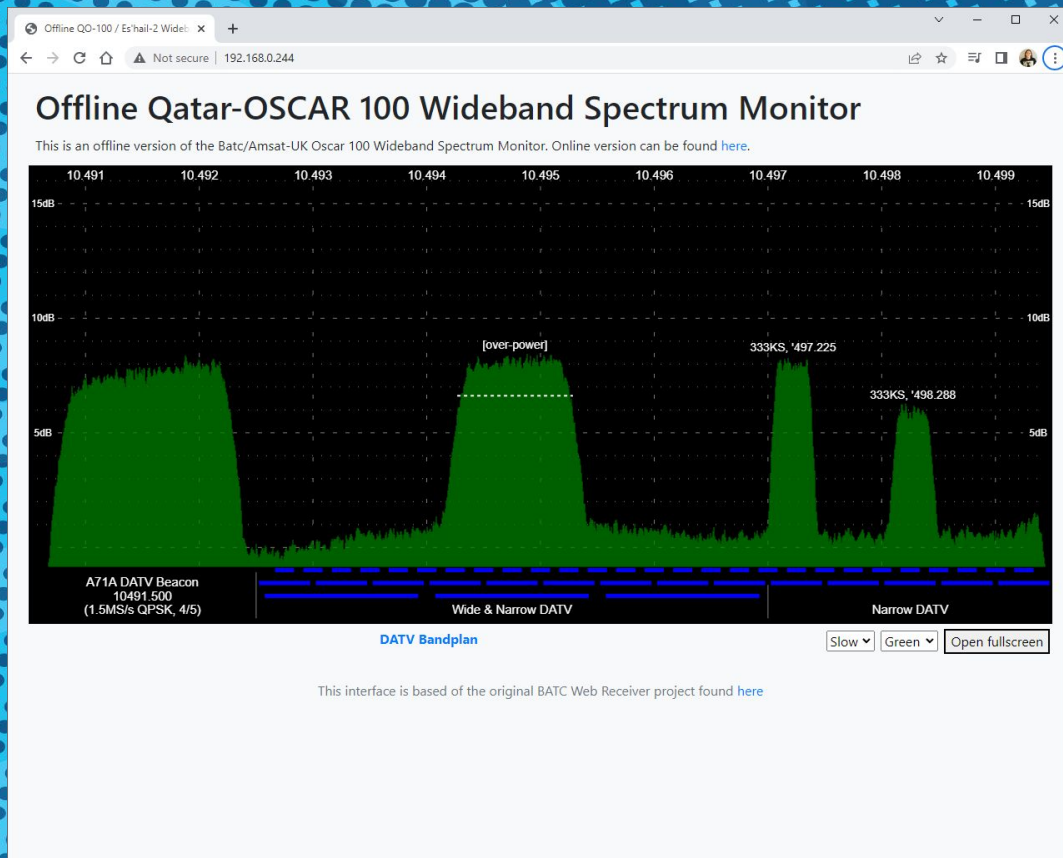


<https://github.com/m0dts/QO-100-WB-Live-Tune>

Online Wideband Spectrum Monitor



Offline Wideband Spectrum Monitor



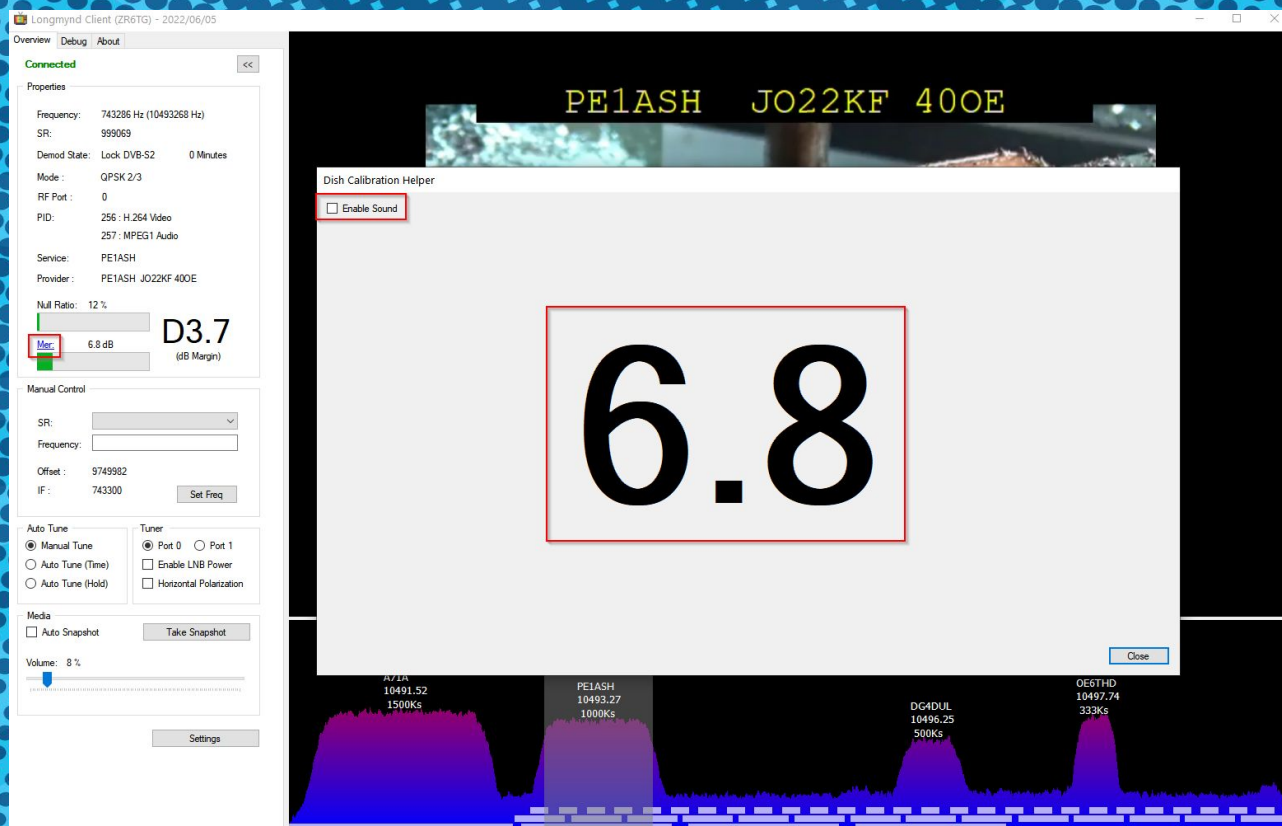
- BATC FFT Server
- Raspberry PI
- 8 Mhz Bandwidth
- Airspy R2 SDR
- Offline!
- No Chat :(

Shack Gadget - Activity Monitor

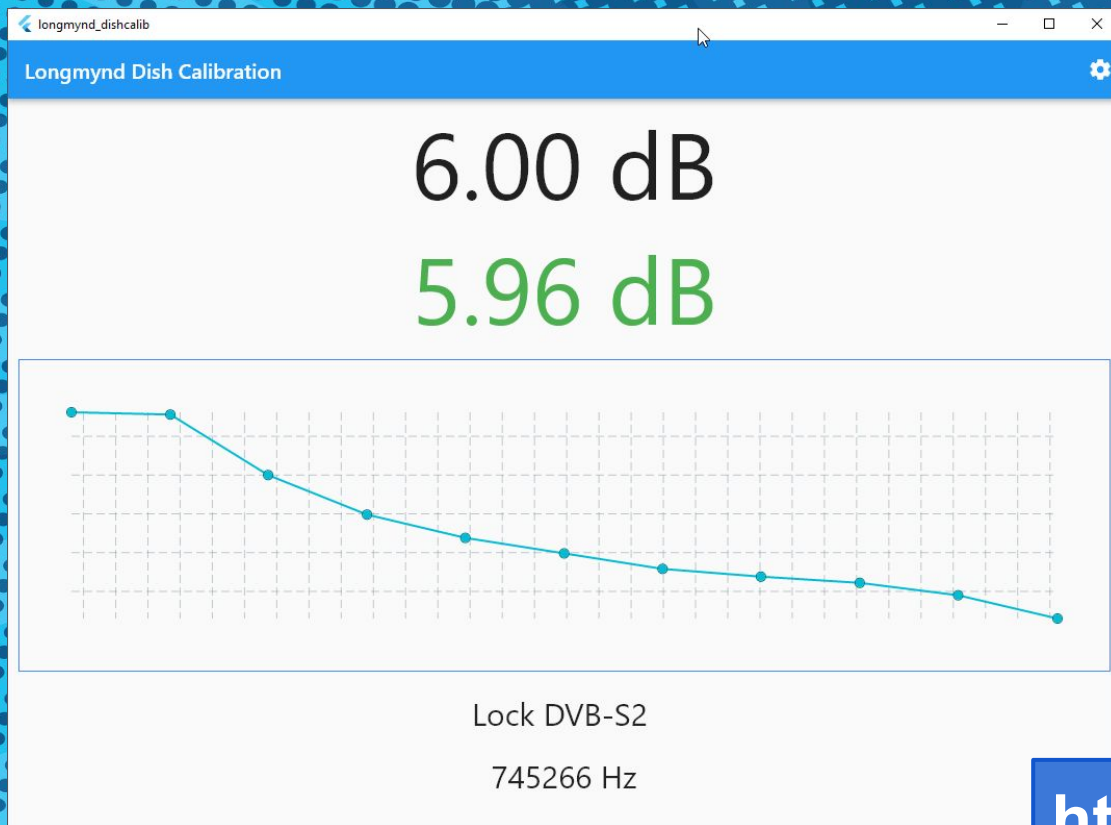


<https://www.zr6tg.co.za>

Dish Calibration

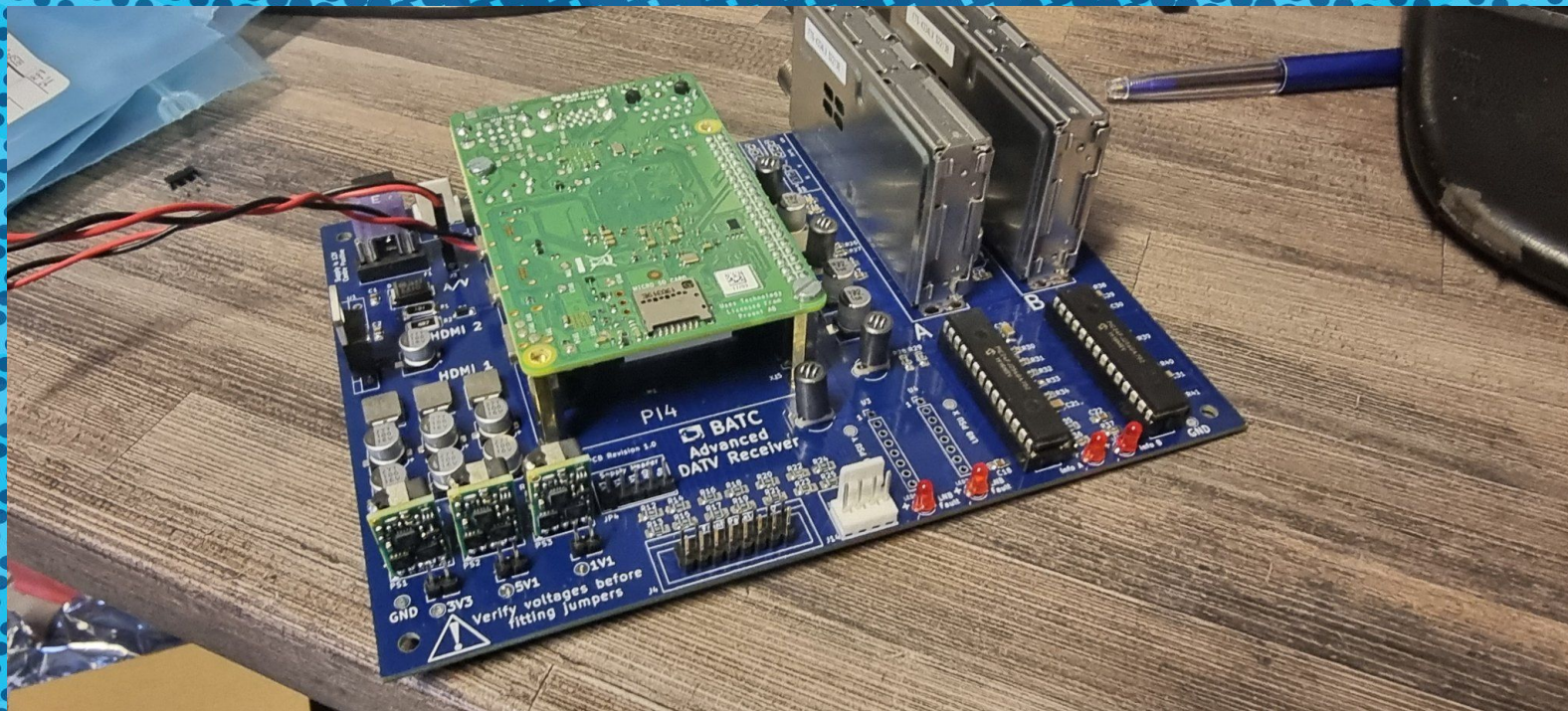


Mobile Dish Calibration App



<https://www.zr6tg.co.za>

Winterhill - Advanced Receiver




https://wiki.batc.org.uk/WinterHill_Receiver_Project


Winterhill Client

Winterhill Client (ZR6TG)

Overview | Debug



G8KOE




Herkules - Kassel

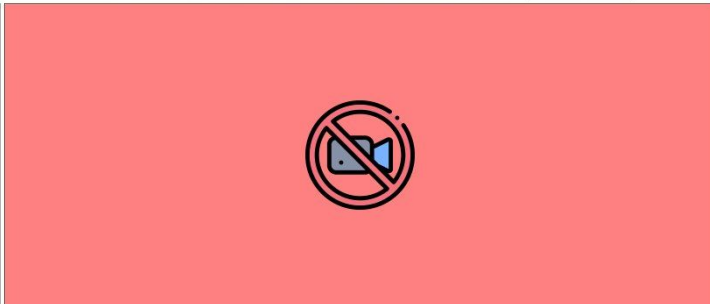
DLIZAX Dietmar









SENSOR	VALUE
T1	51.0 °C
T2	39.9 °C
U1	5.27 V
U2	7.60 V
U3	12.0 V
U4	26.7 V
I1	8.1 A

AX Dietmar near Kassel J041SG ↔ DAT



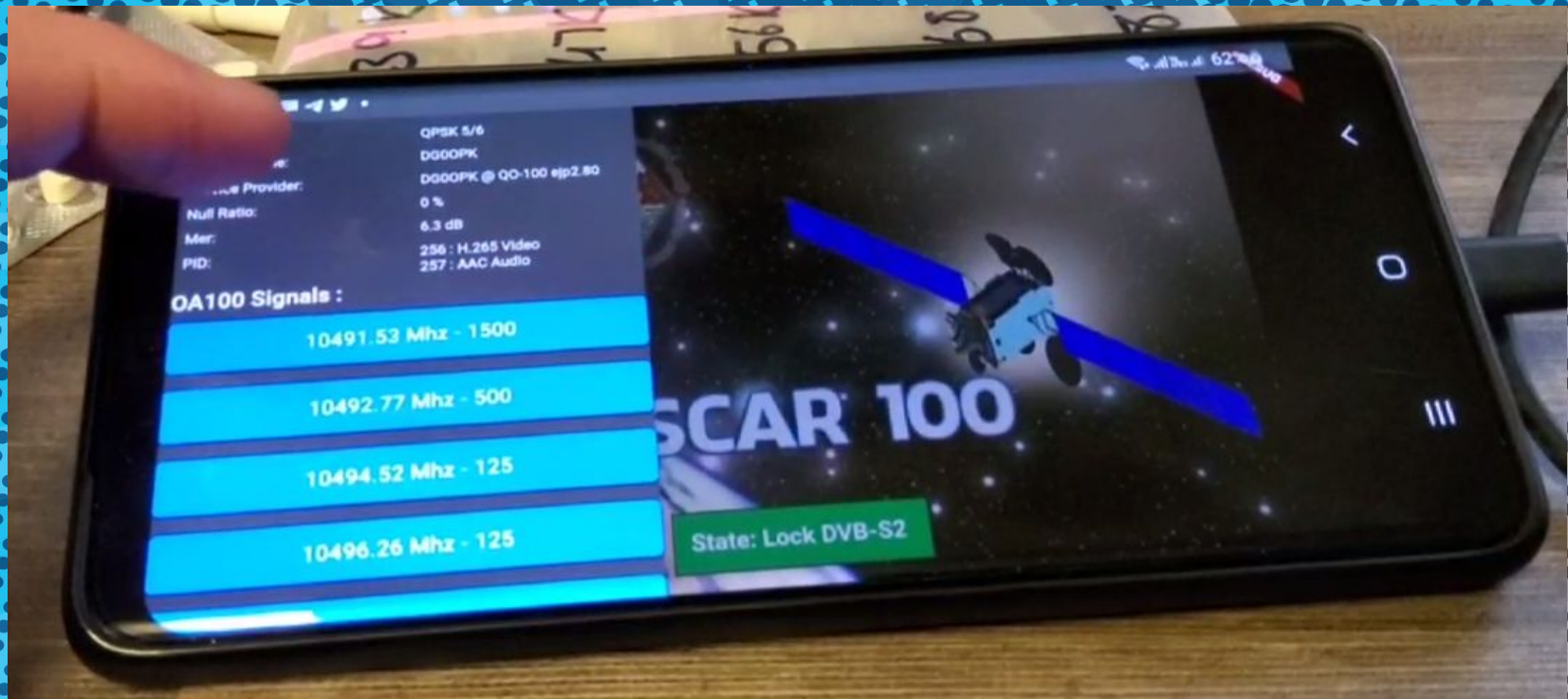
Island december 2022 Crozet



RX	Service	Provider	MER	D	Freq	SR	Null	Mode	Media	TS Addr	Volume	Actions
1	Lock DVB-S2 G8KOE	P2.1450GRB	7.8	4.7	10497.214	333	13.0	QPSK 2/3	H265-AAC	192.168.0.105	<div><div></div></div> 100%	 
2	Lock DVB-S2 DLIZAX	2908_Dietmar	7.8	3.8	10498.223	333	11.0	QPSK 3/4	H265-AAC	192.168.0.105	<div><div></div></div> 100%	 
3	Lock DVB-S2 FITE	1404Lucien	3.5	2.5	10499.239	333	2.1	QPSK 1/2	H265-AAC	192.168.0.105	<div><div></div></div> 100%	 
4	Hunting				10498.750	333	0.0			127.0.0.1	<div><div></div></div> 100%	 

<https://www.zr6tg.co.za>

Android Client



Android Client

12:05

Reported TS IP: 192.168.0.230

Reported TS Port: 4300

Frequency: 741521

SR: 1499633

RF Port: 0

Demod State: Lock DVB-S2

Mode: QPSK 4/5

Service Name: A71A

Service Provider: QARS

Null Ratio: 0 %

Mer: 9.1 dB

PID: 257 : H.264 Video
258 : MPEG1 Audio

OA100 Signals :

10491.54 Mhz - 1500

10498.76 Mhz - 250

00:07:13

State: Lock DVB-S2

SPACEX

12:04

OA100 Signals :

Settings

Longmynd host:
192.168.0.178

TS UDP Port:
4300

WS Port:
8080

Freq Offset:
9749982

Cancel Save

1 2 3 4 5 6 7 8 9 0

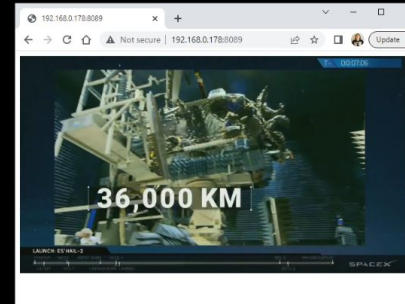
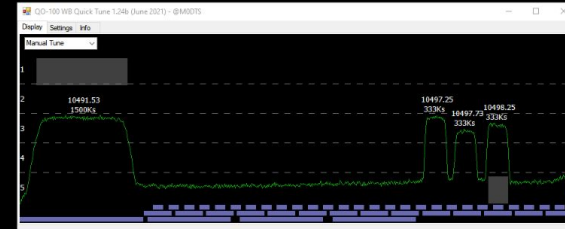
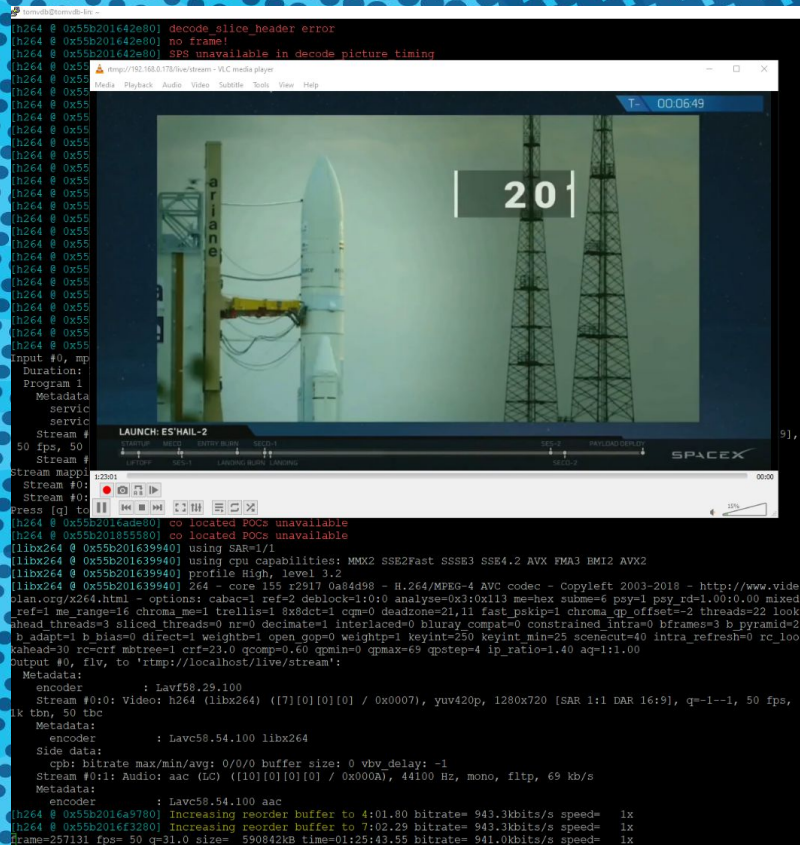
q w e r t y u i o p

a s d f g h j k l

↑ z x c v b n m ↵

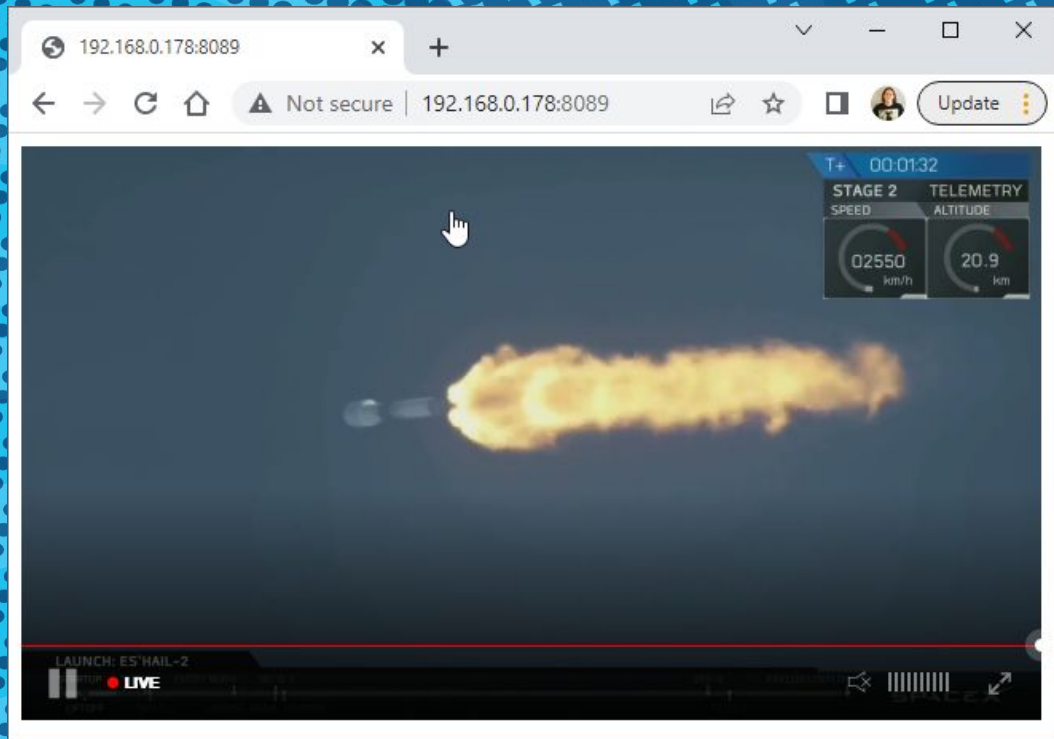
!#1 , English (US) . Done

Webstreaming Experiment



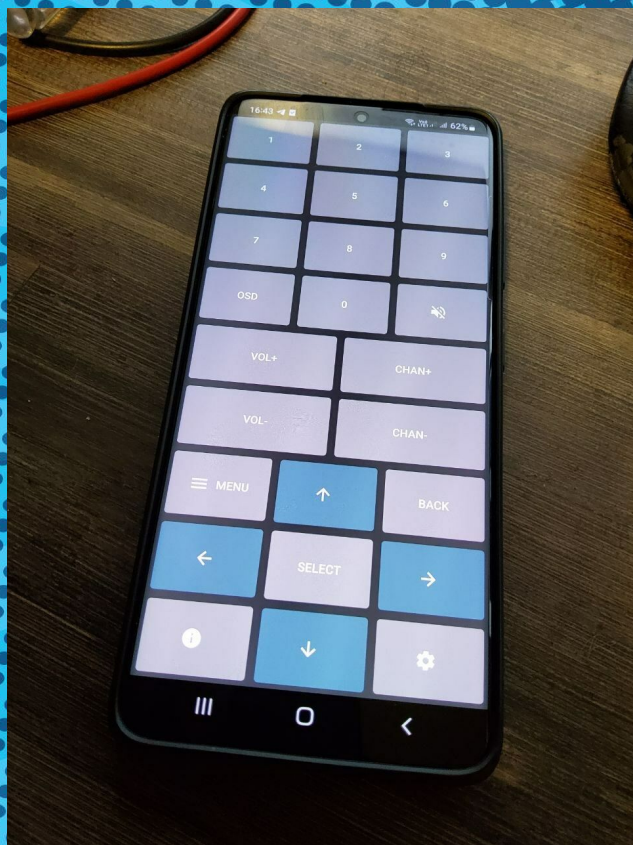
<https://www.zr6tg.co.za>

Webstreaming Experiment



- Nginx
- Nginx-RTMP
- FFmpeg

Mobile App Ryde Remote



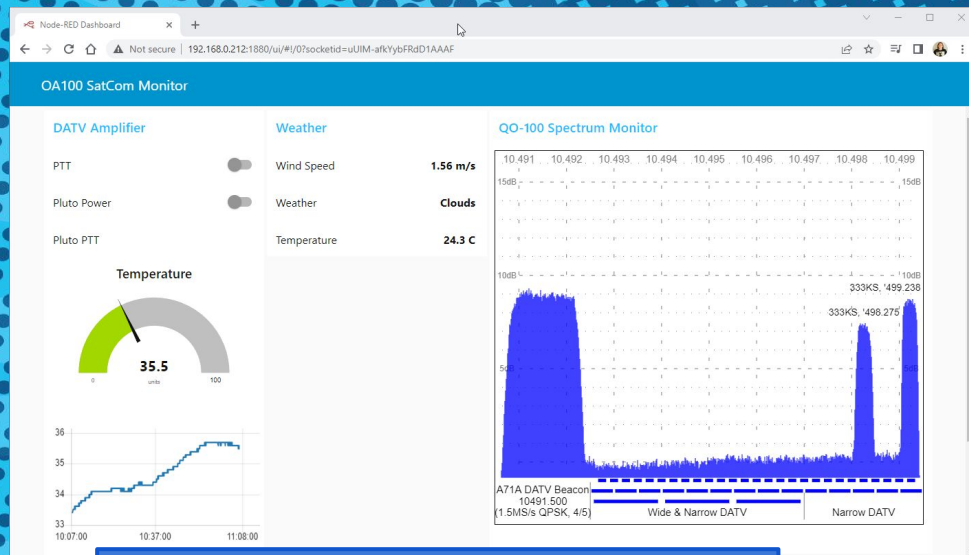
<https://www.zr6tg.co.za>

PlutoSDR via Network

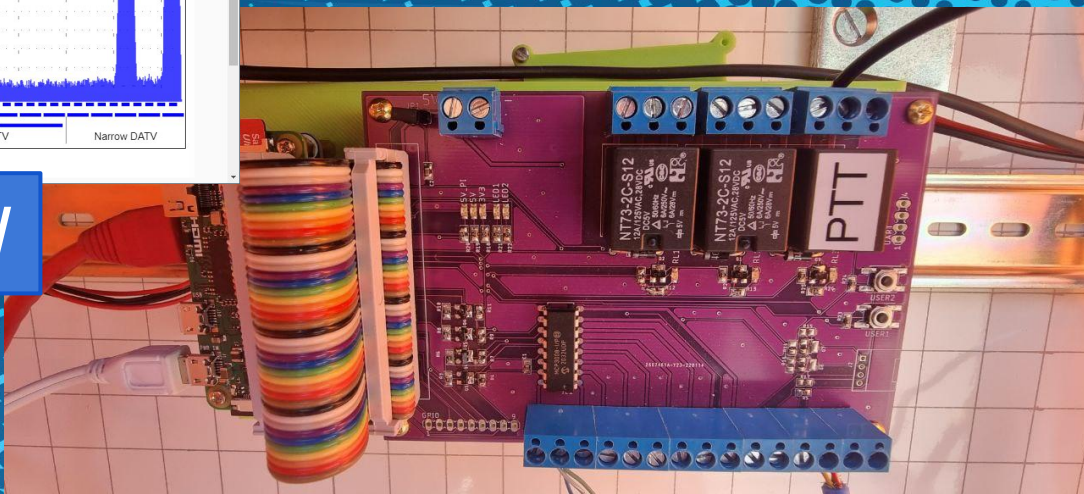


- Some USB -> Ethernet Devices Unreliable
- PlutoSDR - USB Ethernet Device
- Basic configuration is setting up a firewall to forward the ports
- Ports: 22 (ssh), 80 (web), 30431 (sdr soft), 8282 (datv firmware)

DATV Monitor Station



<https://nodered.org/>



Thank you!

Thanks to the BATC and AMSAT-DL!

Also thanks to the following individuals that have been an important part of all the experiments:

Phil - M0DNY

Rob - M0DTS

Dave - G8GKQ

Brian - G4EWJ

Martin - G4FKK

Benno - PA3FBX

Bert - PA3AOD

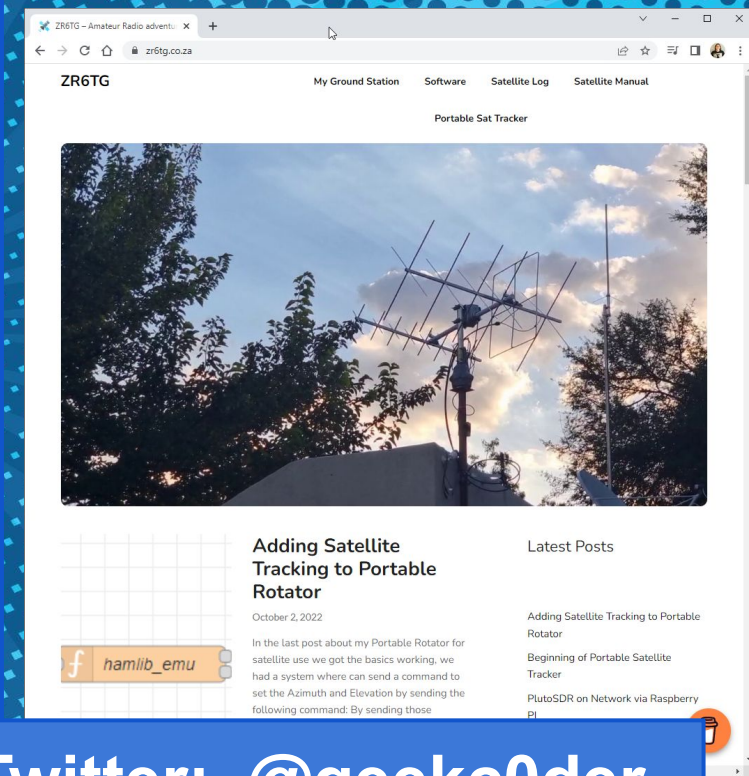
Gary - ZS6YI

Any everyone who bought me a beer or two ;)



Resources

- Software Downloads/Instructions
<https://www.zr6tg.co.za/>
- British Amateur Television Club
<https://batc.org.uk/>
- Amsat-DL
<https://amsat-dl.org/en/>



Twitter: @geekc0der