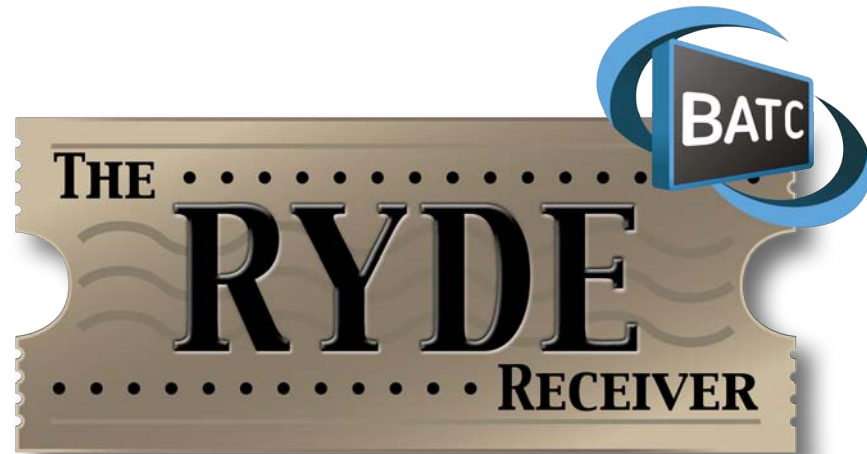


# Intro



Tim  
MWORUD

# In the Beginning

Potential DATV setup box project (aka the Ryde project)

to: [@phyl](#) Thu, Apr 23, 2020 6:52 am

With the lack of any reliable source for STB hardware (a recent ebay purchase of quantity 3 of one item delivered 3 major variants of hardware) B4TC believe there is a need for a reproducible DVB-S and DVB-S2 DATV receiver using the MiniTouner hardware and Right Tool providing HDMI and Composite outputs.

With the Pertouner and Longpond software and MiniTouner hardware, the worldwide ATV community has access to some very valuable open source resources and based on these, B4TC believe the community has the resources to develop a dedicated DATV receiver.

The primary use cases would be a dedicated DATV receiver for home station use and a low symbol rate DATV receiver with reliable lock detection for remote use at ATV repeater sites. We have developed the following specifications and are now looking for a small team of people (see parameters) to pick this up and develop a project which will sit alongside Pertouner and Longpond projects.

Outline specification would be:

**RF and de-modulation capability**

DVB-S and DVB-S2 demodulation is required - frequency range, symbol rate range and FEC choices will be the same as the MiniTouner system. <https://github.com/Phyl0x/MiniTouner>

Reception of SCPC transport streams and decoding MPEG-2, H264 and H265 video and MP3 and AAC audio streams. Reception of MDC streams is not a primary requirement but could be a future enhancement.

The decoded video and audio would be presented on the HDMI port with embedded audio or on a composite video port with separate analog audio feeds. Simultaneous outputs are not required and the port to use would be selected via the system set up menu.

**Hardware**

It is envisaged the project will use the MiniTouner USB tuner card <https://github.com/Phyl0x/MiniTouner-hardware-Source> (SEE hardware or design) ideally the host hardware will be the Raspberry Pi 4 although other readily available supported Linux hardware could be used.

No integrated screen is required and the output will be displayed on either an HDMI or Composite monitor.

An infrared remote control is required and it is envisaged the project will use existing standard control hardware and codes - eg <https://github.com/Phyl0x/MiniTouner-hardware-Source>

A hardware tuner lock signal should be provided, probably from the RF GPIO lines.

The user would be expected to provide case and PSU etc.

**Code base**

It is envisaged the project would use the Longpond open source Linux ATV receiver developed by Heather Lombard and available here: <https://github.com/HeatherLombard/ATV-Source>

A significant amount of the functionality required for this project is available within the Longpond implementation in the B4TC Pertouner project by Dave Cramp and can be used as a basis for this project. <https://github.com/Phyl0x/MiniTouner-hardware-Source> - see below

**Functionality**

On initial start up the software should default to composite video out and take the user in to a system set up menu where parameters such as video output, Symbol rate, Satellite operation, LNB offset, LNB offset and the default RF and decode parameters would be selected. Set up of any frequency pre sets would also be done from this menu.

On normal start up, the decoded video output using the default setup parameters should be displayed.

From the default screen a channel set up menu should be accessible by pressing a single button. This will allow selection of RF frequency (if satellite operation is selected in system menu this will include the LNB offset) and Symbol rate - a number of pre-set frequency options is desirable. Each will take you to video output display and a button to take you to the system menu would be displayed.

A selectable banner showing receiver status, HD and SI information should be displayed across the bottom of the video window.

**Network capability**

The initial requirement is for a standalone DVB-S / S2 receiver although future enhancements could include remote control over SIP, the ability to view B4TC live streams and a TV USB output. All these functions are already available in the B4TC Pertouner / Longpond system code.

**Support**

The B4TC will support development of this project and use of the B4TC github, forum and wiki is encouraged. B4TC would be willing to provide binary builds to cover project users etc.

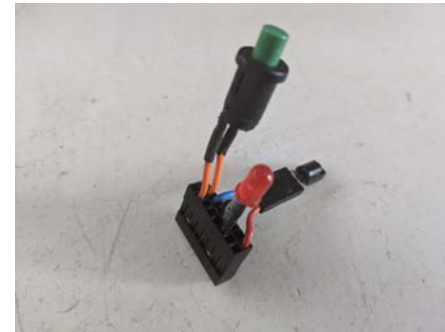
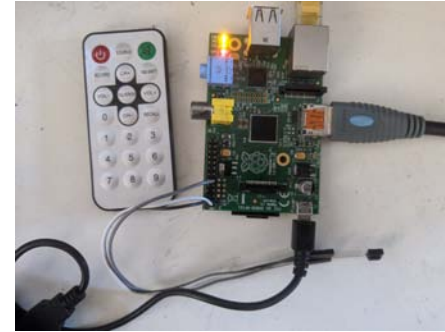
If you are willing and able to have a crack at this project, we'd love to hear from you!

73  
Newt - G8UTZ

- Set top box
- Low SR, all codecs
- Raspberry Pi + MiniTouner
- Pi GPIO + IR
- Use existing code
- On screen menu
- On screen display
- Network control & streams
- SR scan

# The Past

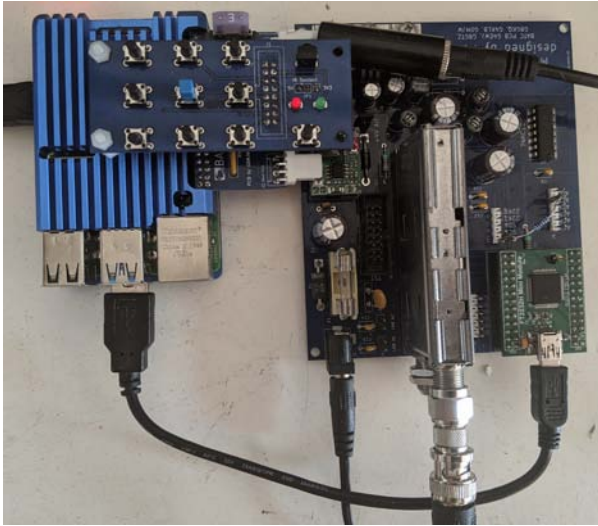
- Proof of Concept
- Functional Prototype
- GitHub Publish
- Dave integrated & announced



# The Culprits

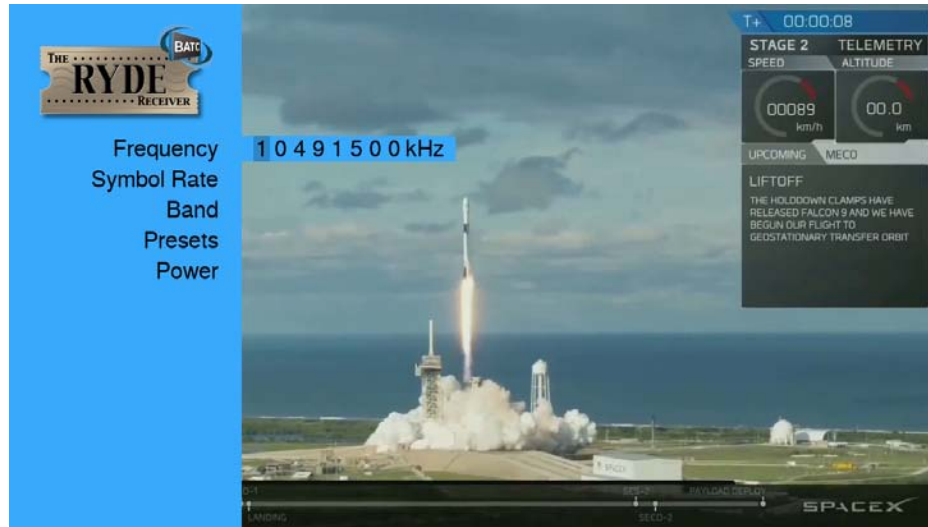
- Tim (MW0RUD): RydePlayer
- Dave (G8GKQ): Ryde Build, Handset Wrangling, Alpha Testing
- Heather (M0HMO) & Phil (M0DNY): Longmynd
- Mike (G0MJW): Hardware
- Testers: Pointing out when I've broken it (G4KLB, G8VPG, G8XZD, G0MJW and DL5BCA)

# The Present – Hardware



- Raspberry Pi 4 + MiniTiouner
- IR remotes
- GPIO Board
- Button Board

# The Present – What works



- Play anything (probably)
- Manual tuning
- SR/Frequency scanning
- Bands
- Presets
- Config file

# The Present – What doesn't work

- ~~SR Scan~~
- VLC Kernel Oops
- No display crash
- No Pi hardware decode
- See GitHub issues

# The Near Future

- Mute
- On Screen Display
- SD Cards

The screenshot displays a satellite receiver interface with a central video feed of a rocket launch. The interface includes several data overlays and controls:

- Top Left:** Logo for "THE RYDE RECEIVER" with "BATC" in a speech bubble.
- Top Right:** A "Mute" icon (a speaker with a red slash) is highlighted with a red circle.
- Center Right:** A speed gauge showing "00099 km/h" and "6.4 km". Below it, a "dB MER" gauge shows a value of "6.4".
- Bottom Right:** A text box displays "LIFTOFF" and "THE HOLDDOWN CLAMPS HAVE RELEASED FALCON 9 AND WE HAVE BEGUN OUR FLIGHT TO GEOSTATIONARY TRANSFER ORBIT".
- Bottom Center:** A table of technical data:

QO-100 Beacon	DVB-S2 QPSK 4/5
A71A	257: H.264
QARS	258: MP1 audio

Additional data at the bottom right includes "1499.633kS" and "10498257kHz".

2020-10-24

MW0RUD



# The Middle Future

- On screen configuration
- Network control
- More sound control
- Auto-setup handsets
- Fine tune LO
- Recording

# The Distant Future

- BATC streamer support (both ways)
- Additional hardware support
- Customizable “Not Locked” screen
- Multi channels per carrier
- HDMI CEC
- New cool features you haven’t asked for yet!

# The Questions

Any Questions?