

The background of the image is a software-defined radio (SDR) spectrum plot. It features a dark background with a green waveform at the top, a white horizontal line, and a multi-colored spectrum at the bottom. A red vertical line is positioned at approximately 7071 kHz. The text is overlaid on this background.

RASPBERRY PI SDR

Craig J. Coley, WB5KUU

WHY SOFTWARE DEFINED RADIO?

- Filters and Demodulation in computer instead of hardware.
- CW, AM, FM, SSB even Spread Spectrum modes by software.
- Direct conversion reduces transceiver complexity and cost.
- Wideband VHF receiver, \$22.00 (RTL-SDR).
- High performance HF receiver, \$200.00 (Airspy HF+).
- 5W 80m-10m transceiver, \$240.00 (RS-HFIQ).

RASPBERRY PI 3B+

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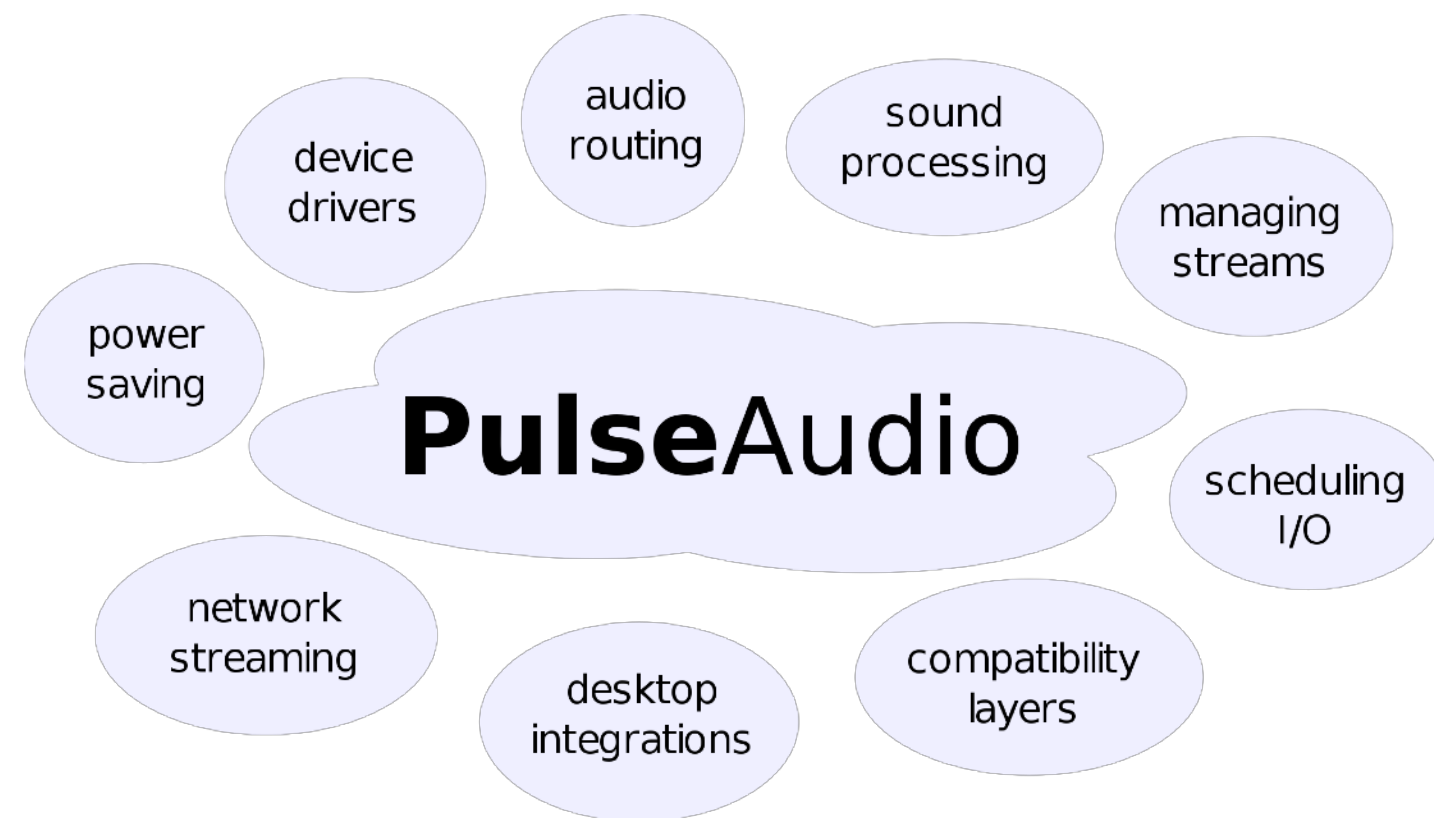
- Less than \$40.00
- Broadcom BCM2837B0, Cortex-A53 (ARMv8) 64-bit SoC @ 1.4GHz
- 1GB LPDDR2 SDRAM
- 2.4GHz and 5GHz IEEE 802.11.b/g/n/ac wireless LAN, Bluetooth 4.2, BLE
- Gigabit Ethernet over USB 2.0 (maximum throughput 300 Mbps)
- Extended 40-pin GPIO header
- Full-size HDMI
- 4 USB 2.0 ports
- CSI camera port for connecting a Raspberry Pi camera
- DSI display port for connecting a Raspberry Pi touchscreen display
- 4-pole stereo output and composite video port
- Micro SD port for loading your operating system and storing data
- 5V/2.5A DC power input
- Power-over-Ethernet (PoE) support (requires separate PoE HAT)



RASPBIAN JESSIE LINUX

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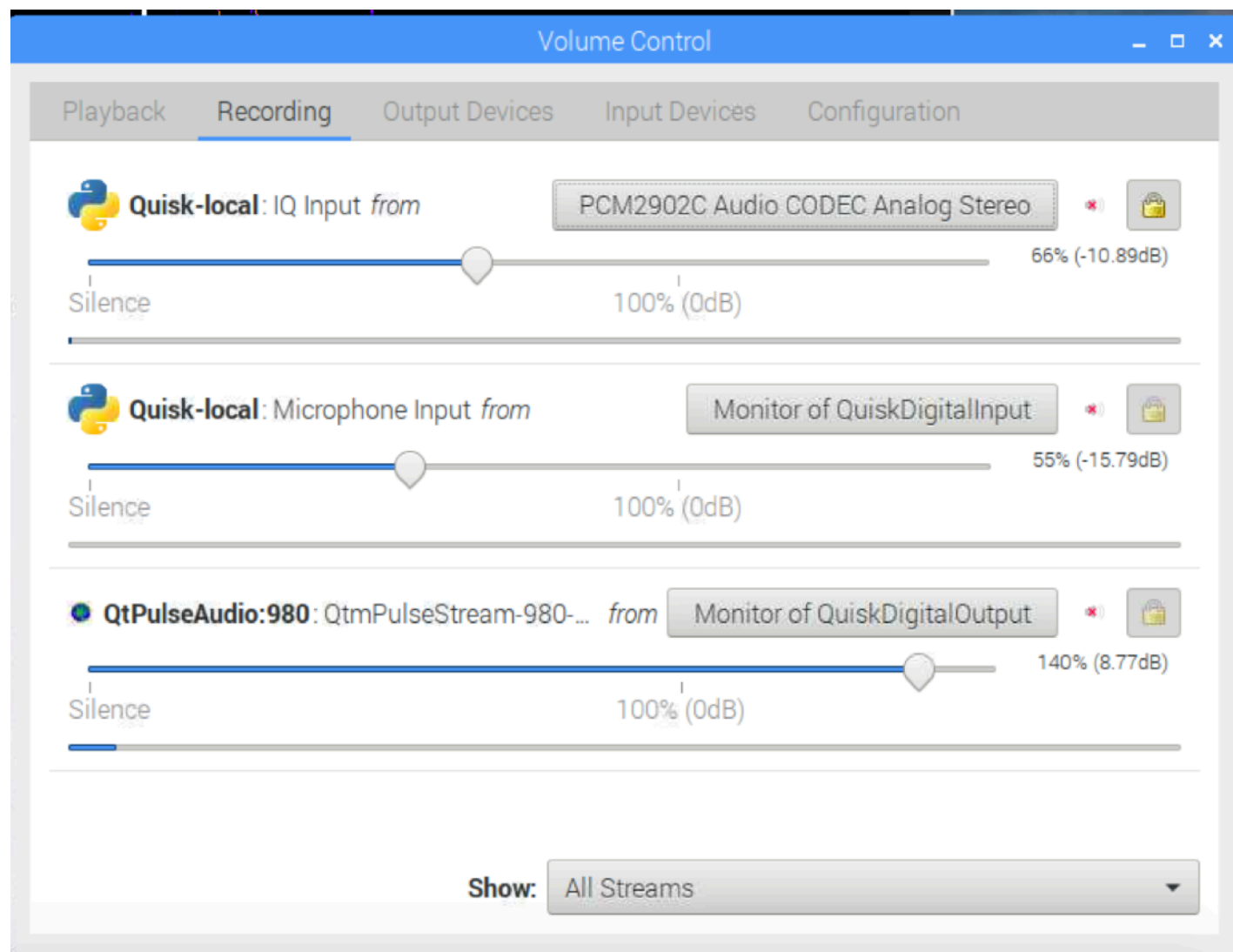
- Linux is a real-time operating system which is perfect for Software Defined Radio.
- Widely supported and updated.
- Wide application support.
- Totally Free and Open Source.



PULSEAUDIO

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- Per-application volume controls.
- Compatible with many popular audio applications.
- Multiple audio sources and sinks.
- Low **latency** operation.
- Built-In level monitors.
- Free and Open Source
- Routes audio between programs.





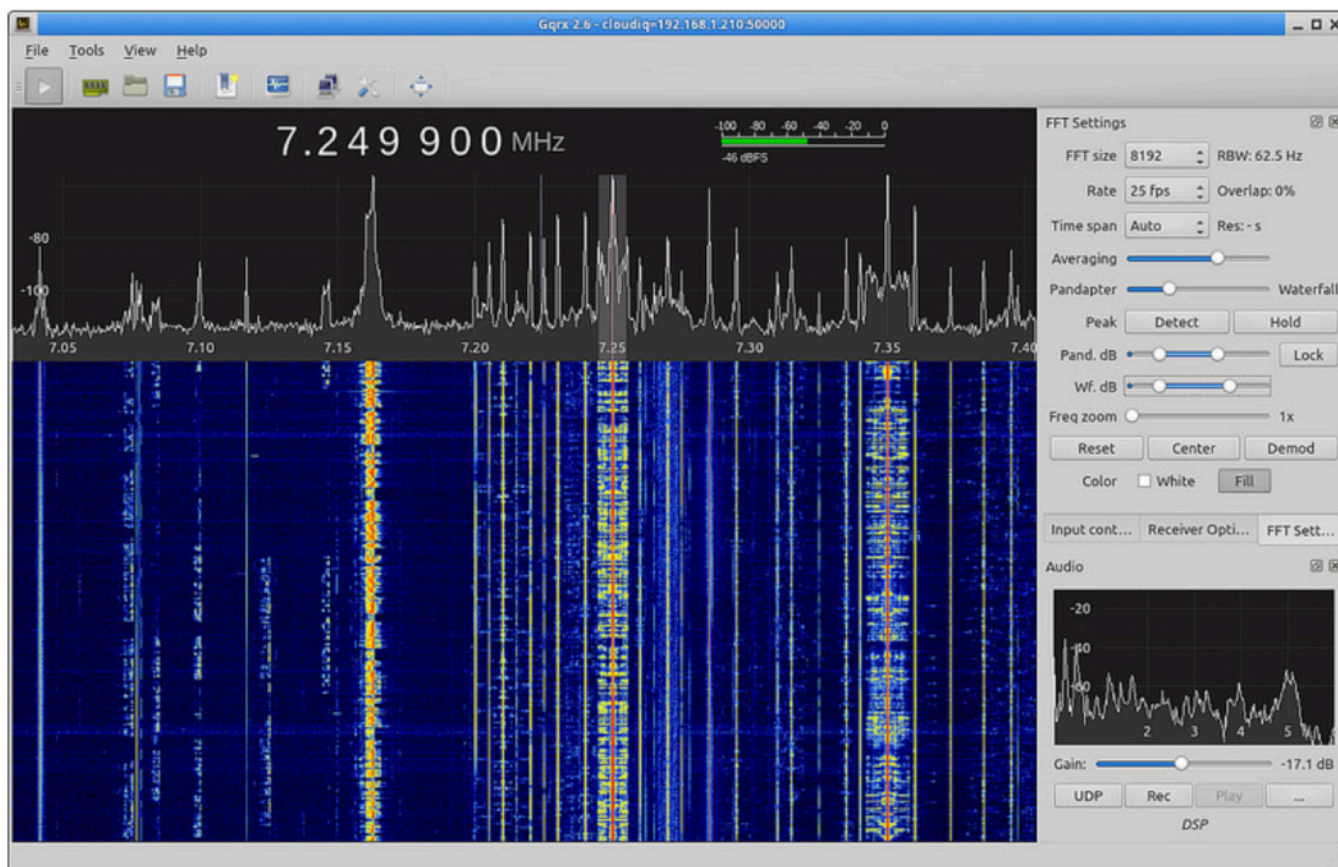
REAL VNC REMOTE DESKTOP

- Allows remote rig control
- Included with Raspbian Jessie
- Clients for Windows and OSX
- Does not support streaming audio
- Great for remote digital modes

GQRX SDR-FOR RECEIVERS

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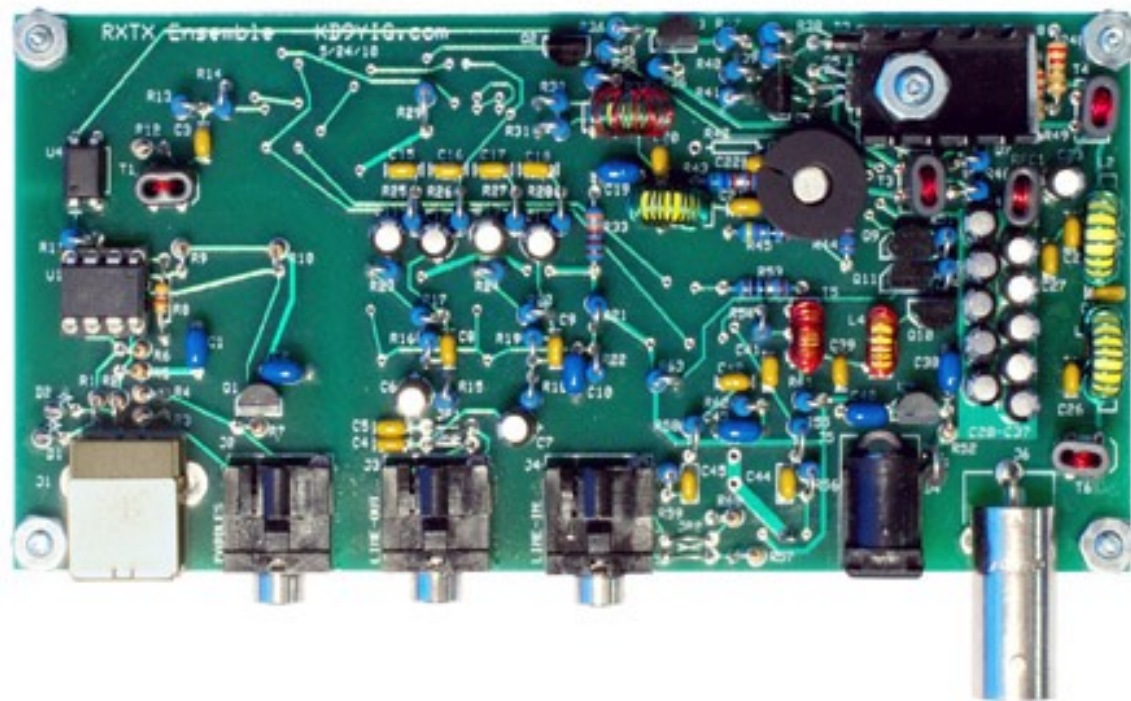
- Open Source SDR by Alex, OZ9AEC
- RTL-SDR support
- Airspy HF+ SDR support
- Remote VNC or IP access support
- Requires heat sink on processor
- GQRX.dk



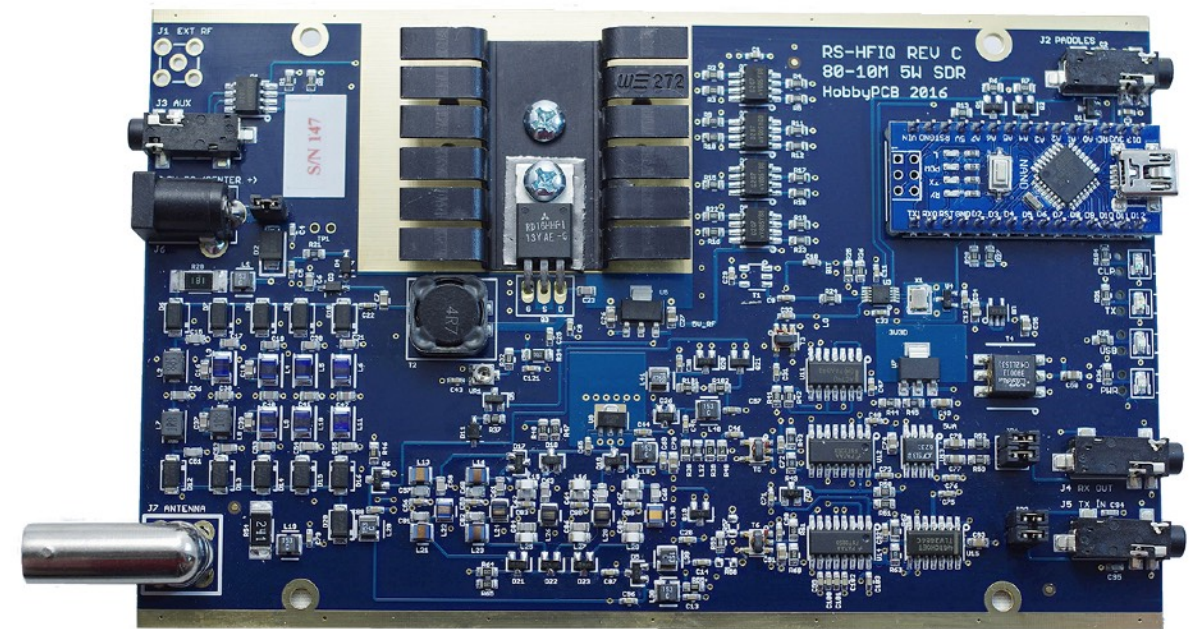


QUISK SDR-FOR TRANSCEIVERS

- Originally written by James, N2ADR
- Efficient and Fast
- Softrock RXTX SDR support
- RS-HFIQ SDR support
- Remote VNC support
- Requires heat sink on processor
- <http://james.ahlstrom.name/quisk/>



Softrock RXTX SDR 40m-20m, 1W

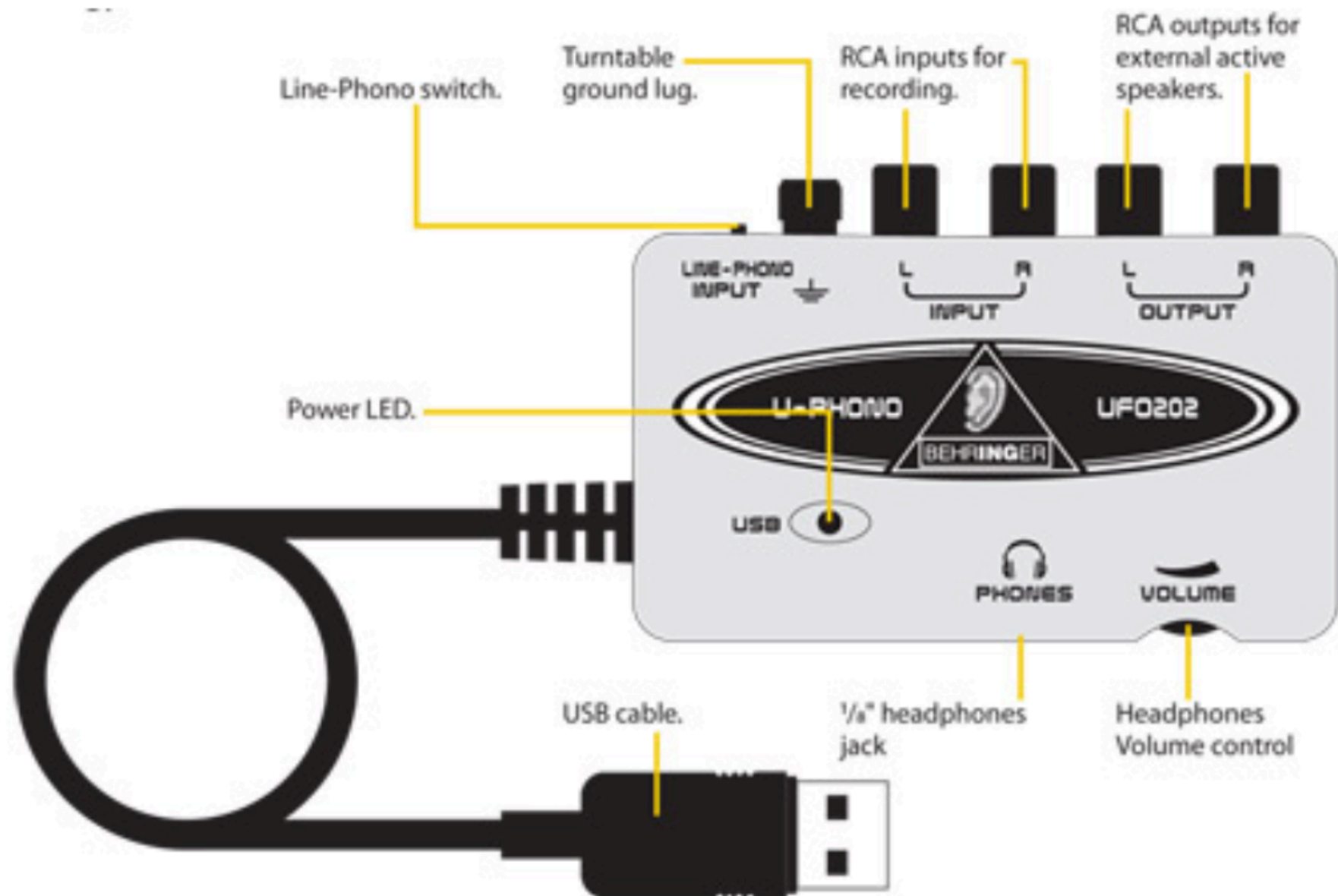


RS-HFIQ SDR 80m-10m, 5W

LOW LATENCY SOUND CARD

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- Behringer UFO202
- Plug and Play on Linux and Windows
- [\\$29.95 on Amazon](#)



RASPBERRY PI SDR RADIO



RASPBERRY PI SDR RADIO AND WSJT-X USING VNC

PortaDigiPi (raspberrypi) - VNC Viewer

Radio RS-HFIQ Quis... [wxPython: stdout/st... Volume Control WSJT-X - Wide Graph WSJT-X v1.9.1 by K...

WSJT-X - Wide Graph

Control 500 1000 1500 2000 2500

WSJT-X v1.9.1 by K1JT

File Configurations View Mode Decode Save Tools Help

Band Activity

UTC	dB	DT	Freq	Message
114800	-11	-1.6	1915	~ CQ YV5ZV FK60 !Venezuela
114800	-15	1.3	2631	~ C020Y C03LE EL82
114830	-12	0.4	963	~ KA9VRX KD9BVD -18
114830	4	0.2	1719	~ IN3BJS K0SDW DM42
114830	-4	-1.6	1914	~ CQ YV5ZV FK60 !Venezuela
114900	-9	0.4	963	~ KA9VRX KD9BVD RRR
114900	6	0.3	1719	~ IN3BJS K0SDW DM42
114900	-7	-1.6	1915	~ CQ YV5ZV FK60 !Venezuela
114930	-11	0.4	963	~ KA9VRX KD9BVD RRR
114930	9	0.2	1719	~ IN3BJS K0SDW DM42

Rx Frequency

UTC	dB	DT	Freq	Message
113945	Tx	2277	~ CQ WB5KU0 EM12	
114000	-1	-0.9	2278	~ WB5KU0 VE3LFN EN82
114015	Tx	2277	~ VE3LFN WB5KU0 -01	
114045	Tx	2277	~ VE3LFN WB5KU0 -01	
114030	-2	-0.9	2278	~ WB5KU0 VE3LFN R-14
114045	Tx	2277	~ VE3LFN WB5KU0 RRR	
114100	-8	-0.8	2278	~ WB5KU0 VE3LFN 73
114115	Tx	2277	~ 73 QRP 4W	
114145	Tx	2277	~ CQ WB5KU0 EM12	
114130	-5	-0.9	2278	~ WB5KU0 VE3LFN 73

☐ CQ only Log QSO Stop Monitor Erase Decode Enable Tx Halt Tx Tune ☒ Menus

40m **7.074 000** ☐ Tx even/1st

DX Call DX Grid Tx 2277 Hz Tx ← Rx

VE3LFN Rx 2278 Hz Rx ← Tx

Lookup Add ☒ Hold Tx Freq

Report -8 ☒ Auto Seq ☒ Call 1st

2018 Dec 14 11:50:13

Receiving FT8 Last Tx: CQ WB5KU0 EM12 13/15 WD:5m

Generate Std Msgs Next Now Pwr

VE3LFN WB5KU0 EM12 Tx 1

VE3LFN WB5KU0 -08 Tx 2

VE3LFN WB5KU0 R-08 Tx 3

VE3LFN WB5KU0 RRR Tx 4

VE3LFN WB5KU0 73 Tx 5

CQ WB5KU0 EM12 Tx 6

Scope Config RX Filter Help

Port: Analog Output

85% (-4.24dB)

100% (0dB)

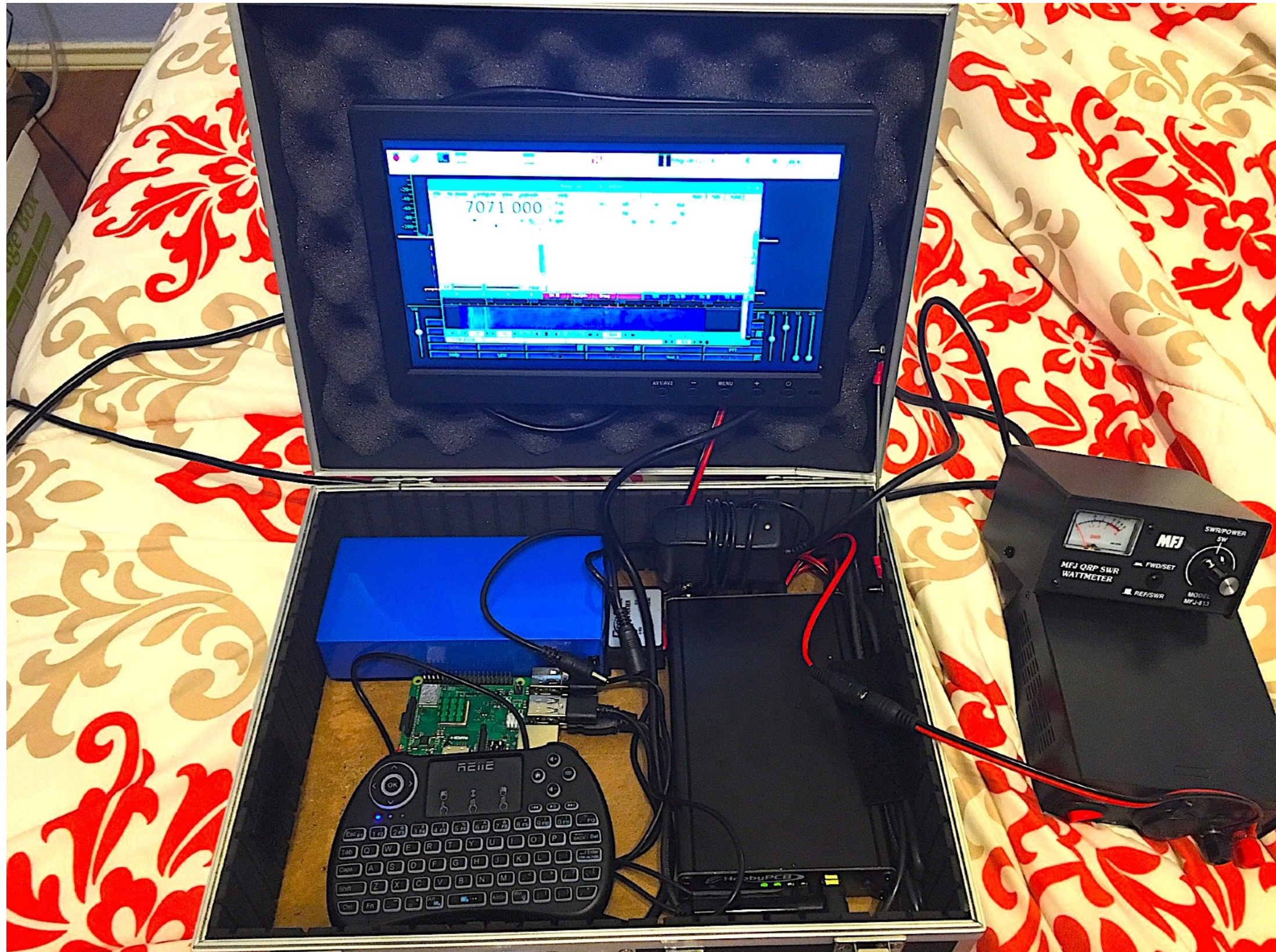
Advanced

bcm2835 ALSA Analog Stereo

Port: Analog Output

Show: All Output Devices

EASY TO BUILD A PORTABLE GO-SYSTEM



DISK IMAGES OF COMPLETE SYSTEM AVAILABLE ON REQUEST

QUESTIONS?