SARTS Remote Receiver Project

Pulau Ubin 2025

By 9V1YC & 9V1SA

RF noise is everywhere

5000

6000

0:49:54 0:49:55

-33

-36 -39 -42 -45 -48

-51 -54 -57 -60

-63 -66

-69

-72 -75 -78

-81 -84

-87

-93

-96 -99 -102 -105 -108 -111 -114 -117 -120 -123 -126 -129

RMS

3000

4000

- Household lighting, appliances, monitors...
- Public lighting, solar charging systems
- Unfiltered switching power supplies
- Broadband equipment, mesh systems, ethernet
- Non-amateur service RFI (broadcast, government...)

7000

8000

9000

10000

11000

B/500.0 Hz avg | -78.2 dB

Possible solutions

6000

• Properly filtered (or linear) power supplies

7000

• Ferrite / RF chokes

5000

- Noise cancelling "QRM eliminators"
 - Loop antennas Bandpass filters
- Properly shielded coax
- Good grounding
- Move the receiver

8000

9000

10000

11.968.066 Hz

11000

dB/500.0 Hz avg | -78.2 dB(

0:49:54 0:49:55

-33 -36 -39

-42 -45 -48

-51 -54

-57 -60 -63

-66 -69

-72

-75 -78

-81 -84

-87

-93 -96

-99 -102 -105

-108 -111

-114

-117 -120 -123 -126 3000

4000

Remote receiver location criteria

- Away from populated areas
- Reasonably easy access for installation and maintenance.
 - Clear area for solar panel charging
 - 4G or 5G coverage
 - **Rent-free**
- Friendly landlord

Pulau Ubin remote receiver proposal



- Solar powered / self-contained
- 2m mast + 1m HF loop antenna
- Utility box for SDR, battery & router
- Small concrete footer
- 4G wireless internet connection
- Fenced off from public areas
- Available to SARTS members and SST
- Option to review / renew after 1 year









🛜 💵 Map 🛓 Apps 🖌 Tools 🗸 📲 Statistics 🗸 i Help 👻 ? Support

🐣 + Register → Dogin 🗣 M1 (4G LTE) - Singapore 👻



DR Is users on HF

-DR-design SPR / FT8 / FT4 5V @ 1.5 A



1111

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•HF : 1KHz-61.44MHZ •VHF : 118MHz-145MHZ

HF Antenna

VHF Antenna

HF

REF-CLK

AIR

EXT-CLK

GPS Antenna

GPS

https://www.rx-888.com/





Admin interface													
Status	Control	Connect	Config	Webpage	Public	DX	Update	Network	GPS	Log	Console	Extensions	Security
Zynq7010, v2025.415, 13 SDR channels with GPS Uptime: 23:11:33 UTC: 00:56 Local: 08:56 Asia/Singapore (SGT) Alpine 3.20, DNA: 0042c5896950481c, Serial #: 25010022 GPS: acquire yes, track 32, good 32, fixes 31, ADC clock 61.440000 (83.0k avgs) SNR: All 18 dB, HF 19 dB Browser: Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:138.0) Gecko/20100101 Firefox/138.0													
Zynq7010: cpu0 cpu1 54% 53% usr 5% 4% sys 41% 43% idle, 38°C 100°F 667 MHz Network (all channels): audio 72 kB/s, waterfall 11 kB/s (22 fps), http 0 kB/s, total 83 kB/s (664 kbps)													
RX0 (2400:d802:36c0:7800:d848:5a72:331c:85fd, Singapore, Singapore) 21250.00 kHz usb z10 0:01:49 (kick) RX1 RX2 "FT4-30m" (127.0.0.1, 64 decoded) 10140.00 kHz usb z0 FT8 23:10:08 (kick) RX3 "FT4-20m" (127.0.0.1, 382 decoded) 14080.00 kHz usb z0 FT8 23:10:08 (kick) RX4 "FT4-15m" (127.0.0.1, 153 decoded) 21140.00 kHz usb z0 FT8 23:10:08 (kick) RX5 "FT8-80m" (127.0.0.1, 48 decoded) 3573.00 kHz usb z0 FT8 23:10:08 (kick) RX6 "FT8-40m" (127.0.0.1, 266 decoded) 7074.00 kHz usb z0 FT8 23:10:08 (kick) RX7 "FT8-30m" (127.0.0.1, 742 decoded) 10136.00 kHz usb z0 FT8 23:10:08 (kick) RX8 "FT8-20m" (127.0.0.1, 742 decoded) 14074.00 kHz usb z0 FT8 23:10:08 (kick) RX9 "FT8-17m" (127.0.0.1, 1889 decoded) 14074.00 kHz usb z0 FT8 23:10:08 (kick) RX10 "FT8-15m" (127.0.0.1, 1471 decoded) 18100.00 kHz usb z0 FT8 23:10:08 (kick) RX10 "FT8-15m" (127.0.0.1, 158 decoded) 24915.00 kHz usb z0 FT8 23:10:08 (kick) RX11 "FT8-12m" (127.0.0.1, 1288 decoded) 28074.00 kHz usb z0 FT8 23:10:08 (kick) RX12 "FT8-10m" (127.0.0.1, 228 decoded) 28074.00 kHz usb z0 FT8 23:10:08 (kick) RX12 "FT8-10m" (127.0.0.1, 289 decoded) 28074.00 kHz usb z0 FT8 23:10:08 (kick) RX12 "FT8-10m" (127.0.0.1, 288 decoded) 28074.00 kHz usb z0 FT8 23:10:08 (kick)													

Your SDR *may* restart during the nightly update window for the following reasons. The restart will not occur when there are active user connections. But **will** occur if there are only "background" connections such as FT8/WSPR autorun, kiwirecorder (e.g. wsprdaemon) etc. To prevent *any* restarts disable all of the restart sources listed below until all of the icons are grey in color.

- DX tab: Automatically download community database
- Update tab: Automatically install software updates
- Network tab: Automatically download IP blacklist

Wellbrook ALA1530LN Loo

- Donated by 9V1PK
- 50 KHz 30 MHz
- 1m diameter
- 50 Ohm feed
- 12V @ 200ma





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On	all bands v	, show	signals	~	rcvd by	~	the callsign	~	9v1yc

using all modes v over the last 24 hours v Go! Display options Permalink

Monitoring 9V1YC (last report 5 mins ago). Automatic refresh in 5 minutes. Small markers are the 2853 transmitters (show logbook) heard (distance chart) at 9V1YC (8914 reports, 108 countries last 24 hours; 22198 reports, 121 countries last week). There are 6156 active monitors: 1807 on 20m, 1500 on 6m, 1118 on 15m, 1041 on 40m, 884 on 17m, 708 on 10m, 614 on 30m, 381 on 80m, 339 on 12m, 229 on 60m, 122 on 2m, 32 on unknown, 21 on 11m, 17 on 600m, 14 on 2.4Ghz, 12 on 10Ghz, 9 on 70cm, 4 on 2200m, 4 on invalid, 3 on 23cm, 2 on 8m, 1 on 4m. Legend



Statistics - Comments to Philip Gladstone - Online discussions - Reception records: 57,480,449,508 - Hosting by Fast Serv Networks, LLC



Next steps

- Site survey to confirm 4G coverage
- Test mobile router's bandwidth limits with multiple users
- Test solar charging system on rooftop