



VE2DX ÉLECTRONIC

VE2DX Hybride SDR TR Switches

Version 01.05.01

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VE2DX Electronics Design Inc. 2024c

WWW.VE2DX.COM

!!! WARNINGS !!!

Read the following carefully, and DO NOT PROCEED unless you fully understand your new device!!!

1. Theory

Congratulation on your purchase of your SDR1-TR or SDR1-TRPlus from VE2DX Electronics Design Inc.

Your SDR1 Hybrid Switch was designed with innovative approaches for the best operations in your station. Your SDR1 Hybrid Switch is a simple Hybride TR (Transmit/Receive) switch that was design to help you integrate in a simple way a Software Defined Receiver (SDR) to your existing station. This is done by inserting your SDR1 Hybrid switch between your Antenna and your Transceiver and adding your SDR Receiver by connecting the SDR Antenna Port to your SDR1 Hybrid Switch.

Your SDR1 Hybrid Switch will automatically monitor for incoming RF from the Transceiver while at the same time monitoring the PTT from your transceiver (Optional) to switch offline your SDR receiver and to prevent any damage to your SDR Receiver from any RF from the transceiver, by automatically switching your SDR receiver antenna to ground in your SDR1 Hybrid Switch.

As stated SDR1 Hybrid Switch can also monitor the PTT (Optional) of your Transceiver, This is to prevent in modes like SSB to rapidly trigger ON and OFF your SDR1 Hybrid Switch.

There are two versions of the VE2DX Electronics Design Inc. SDR1 Hybrid Switches; The SDR1-TR supporting from 1Mhz to 172Mhz using PL-259 coax connectors, and the SDR1-TRPlus supporting from 1Mhz to 1.5Ghz using special relays and N-Type connectors. Both use SMA output connector for the SDR receiver output signals.

Like all VE2DX Electronics Design Inc. products we are proud to offer you designs with heavy high-quality filtering and shielding in an innovative approach. The enclosure and PCBs are fully shielded on multiple layers, The RF area is shielded from the switching area, the front and rear panels are actualy PCB with double sided shielding. Every Power, Control Signals AND their GROUNDS are also RFI Filtered.

Finally, if required all SDR1 devices have an optional lightning arrestor that can easily be added.

2. Instructions;

2.1. Verifications;

- Carefully verify the content of the box.

Box content:

1 X SDR1-TR or SDR1-TRPlus

- Carefully remove the **VE2DX SDR1-TR** or **SDR1-TRPlus** from the bag and look for any damage.

Contact your reseller or **VE2DX Electronics Design Inc.** at 450-689-4591 or info@ve2dx.com if you find any damage.

2.2. Tools required;

Tools required for the installation ;

- 2.5mm Allen Hex key or screewdriver.

2.3. Installation;

Please follow these steps carefully.

SDR1-TR:

- Once the **VE2DX SDR1-TR** is removed from its packaging and the preceding verifications have been made.
- Using high quality coaxes with PL-259 connectors.
 - o Run a short coax * with PL-259 connectors between your Transceiver and the Radio port of your SDR1-TR.
 - o Run a short coax * with SMA connectors between your SDR Receiver Antenna port and the SDR port of your SDR1-TR.
 - o Connect your antenna to the Antenna port of your SDR1-TR.
 - o Connect a proper and RF filtered ** 12VDC power supply to your SDR1-TR.
 - o If needed connect your transceiver PTT output signal to the PYY input in the front of your SDR1-TR.

SDR1-TRPlus:

- Once the **VE2DX SDR1-TRPlus** is removed from its packaging and the preceding verifications have been made.
- Using high quality coaxes with N-Type connectors.
 - o Run a short coax * with N-Type connectors between your Transceiver and the Radio port of your SDR1-TRPlus.
 - o Run a short coax * with SMA connectors between your SDR Receiver Antenna port and the SDR port of your SDR1-TRPlus.
 - o Connect your antenna to the Antenna port of your SDR1-TRPlus.
 - o Connect a proper and RF filtered ** 12VDC power supply to your SDR1-TRPlus.
 - o If needed connect your transceiver PTT output signal to the PYY input in the front of your SDR1-TR.

* We strongly recommend the usage of high quality coaxes with preinstalled PL259 connectors.

* We DO NOT recommend the usage of connector adapters; these can cause signal losses.

* Coax selections should be based on the frequency and quality factor for the intended operations to prevent signal losses or equipment damage.

** We strongly recommend the usage of VE2DX EF1 or EF2 12 VDC EMI/RFI filters to eliminate any weak signal interference in your SDR receiver.

3. Specification;

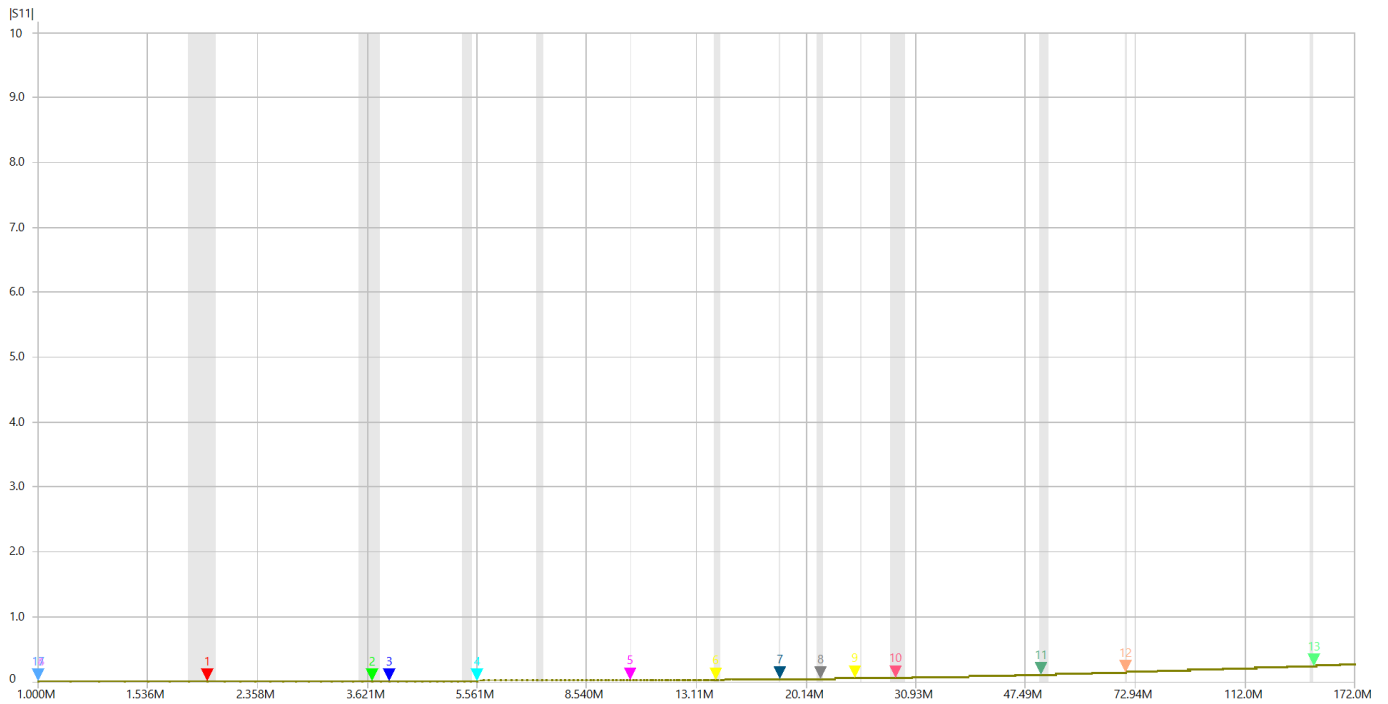
3.1. General;

Switching Voltage	12-15 VDC
Maximum Frequency:	SRD1-TR 1-172Mhz * SRD1-TR 1-1.5Ghz *
Maximum Power:	100Watts
RX/TX Isolation:	More than 80 db.
Signal Loss:	Less than 1db.
Average SWR:	SRD1-TR 1:1.146 * SRD1-TRPlus 1:1.595 *.
Return Loss	SRD1-TR -39.039 * SRD1-TRPlus -40.974 dB *.
SDR RX status during TX: The SDR receiver antenna input is ALWAYS grounded during TX.	
Enclosure:	Extruded Aluminium.
Device Weight:	SRD1-TR 13 Oz/370 g SRD1-TR 15 Oz/430 g
DeviceSize:	3.465inch X 4 inch X 1.3inch 88mm X 100mm X 35mm

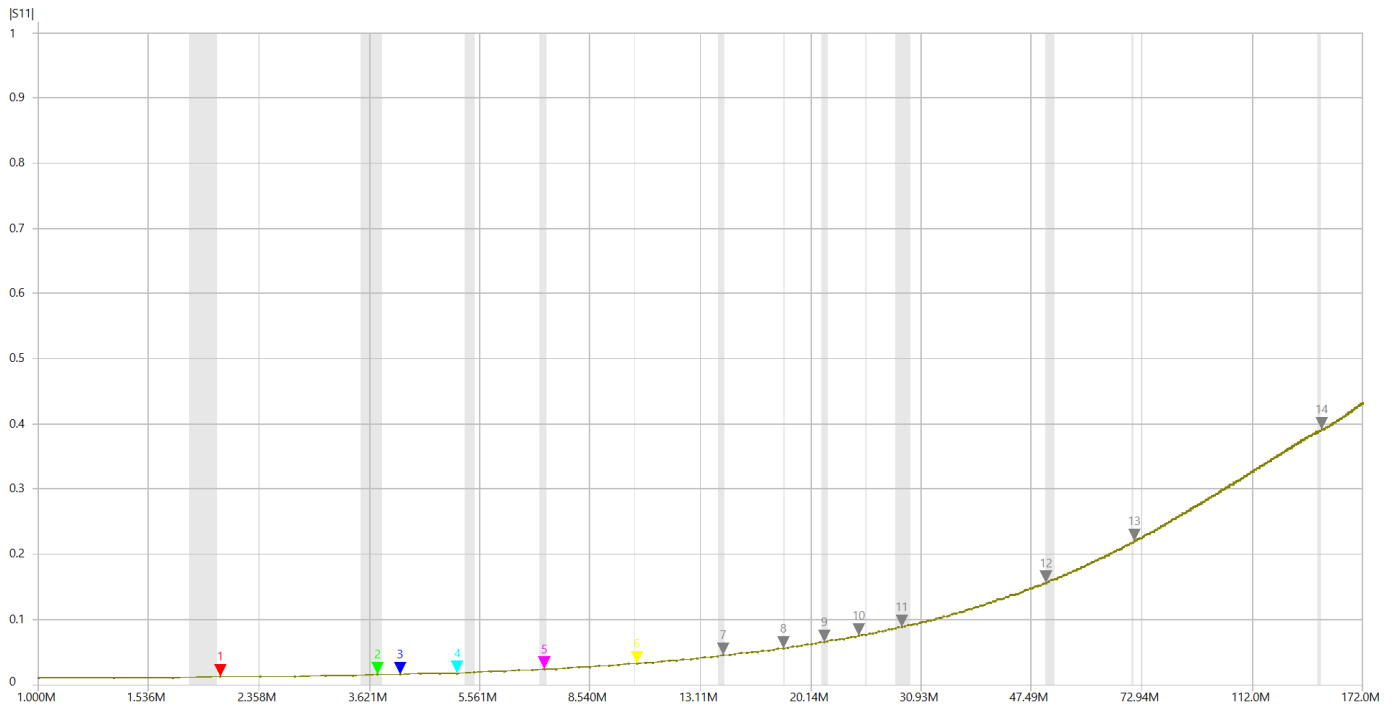
* Upper frequency limit may vary based on the installation. For proper operation make certain proper installation is done for the intended frequency.

3.2. SDR1-TR;

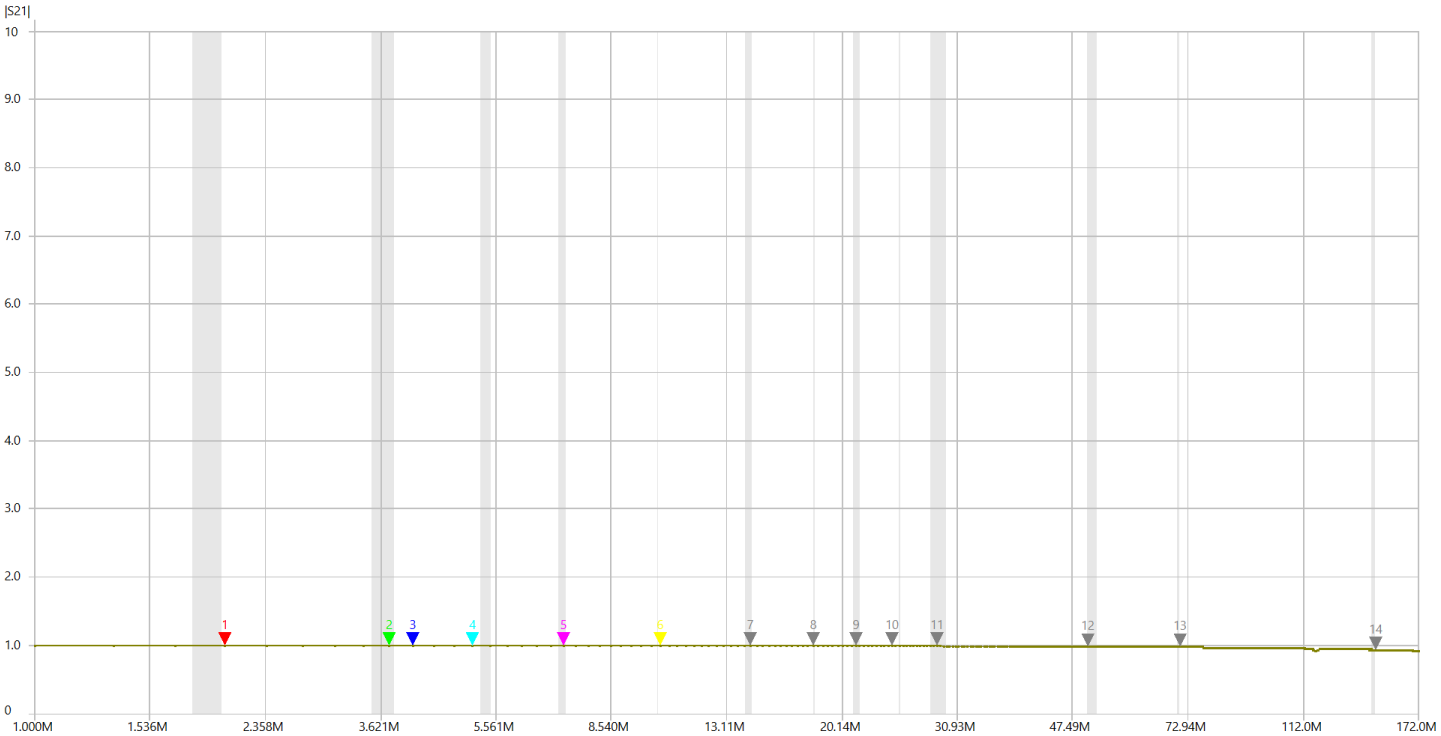
SDR1-TR S11 TX



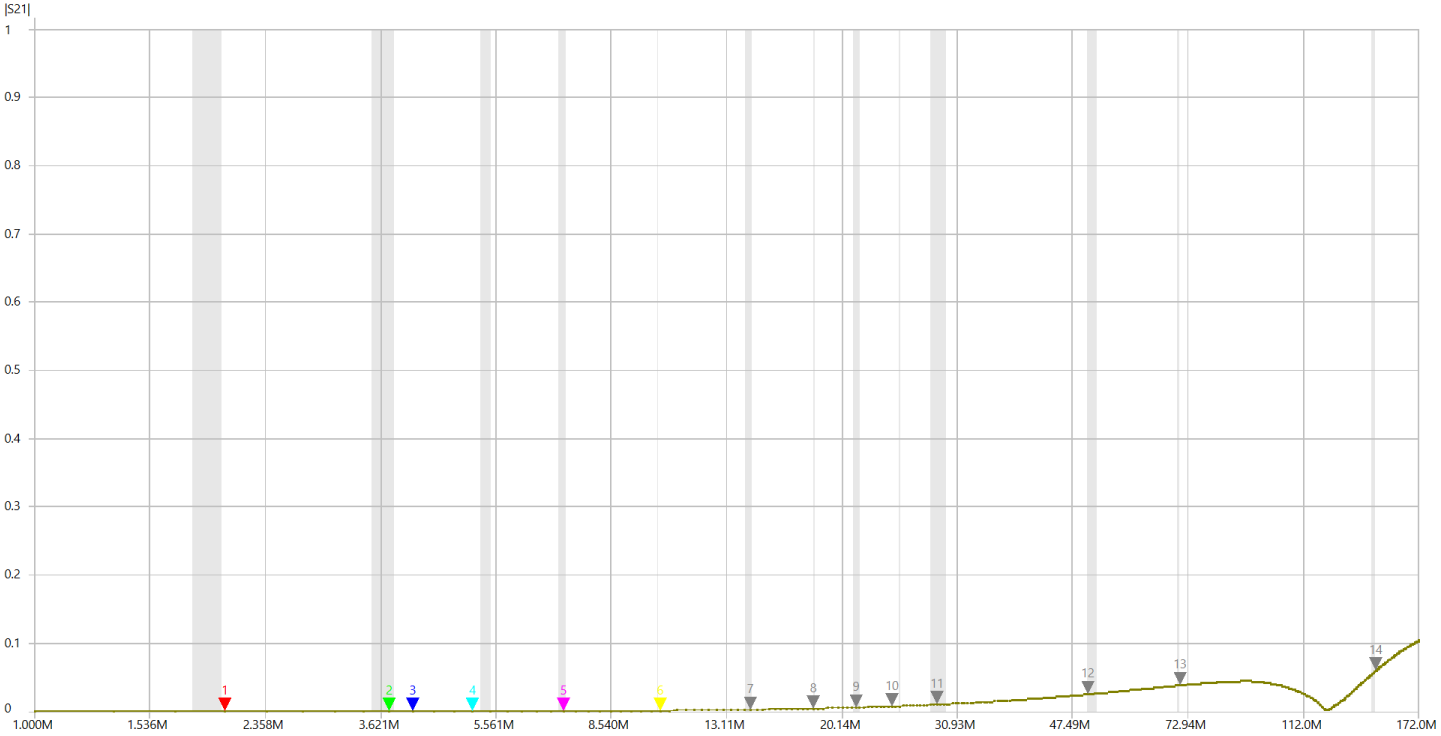
SDR1-TR S11 RX



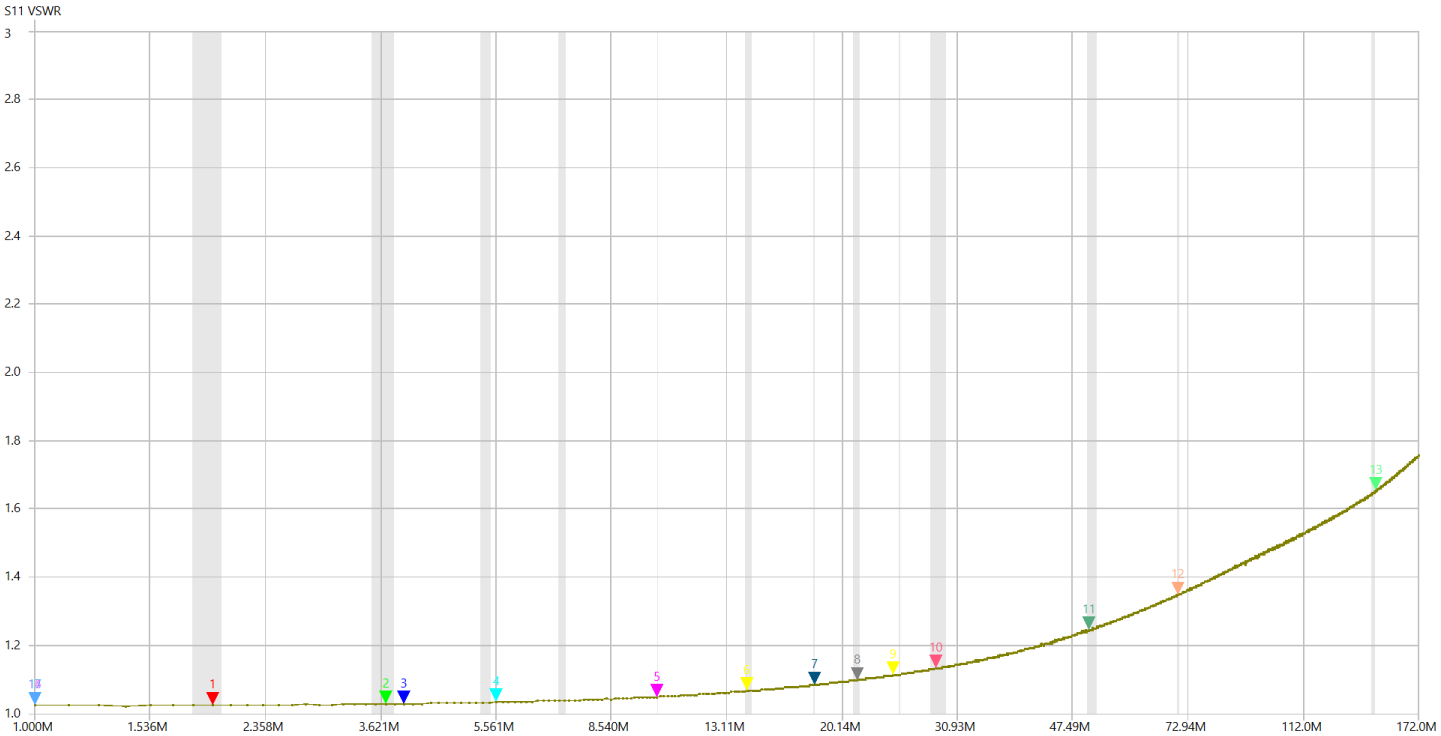
SDR1-TR S21 TX



SDR1-TR S21 RX

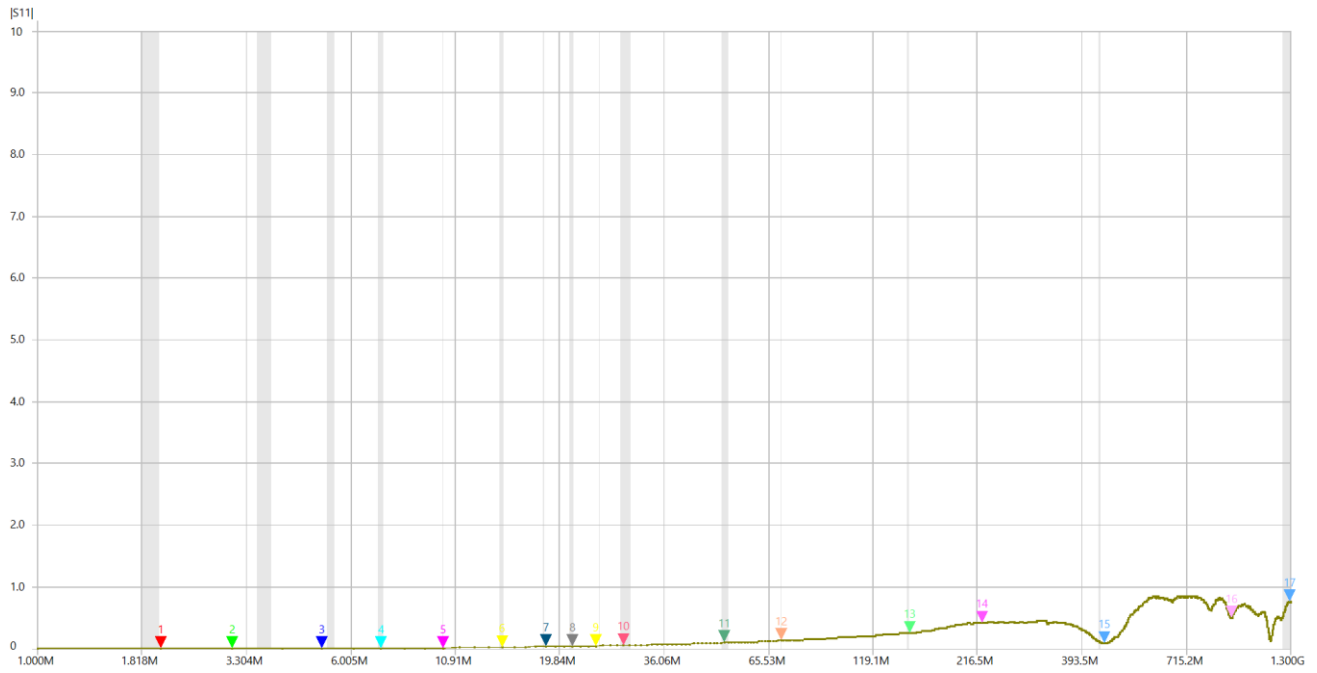


SDR1-TR TX SWR

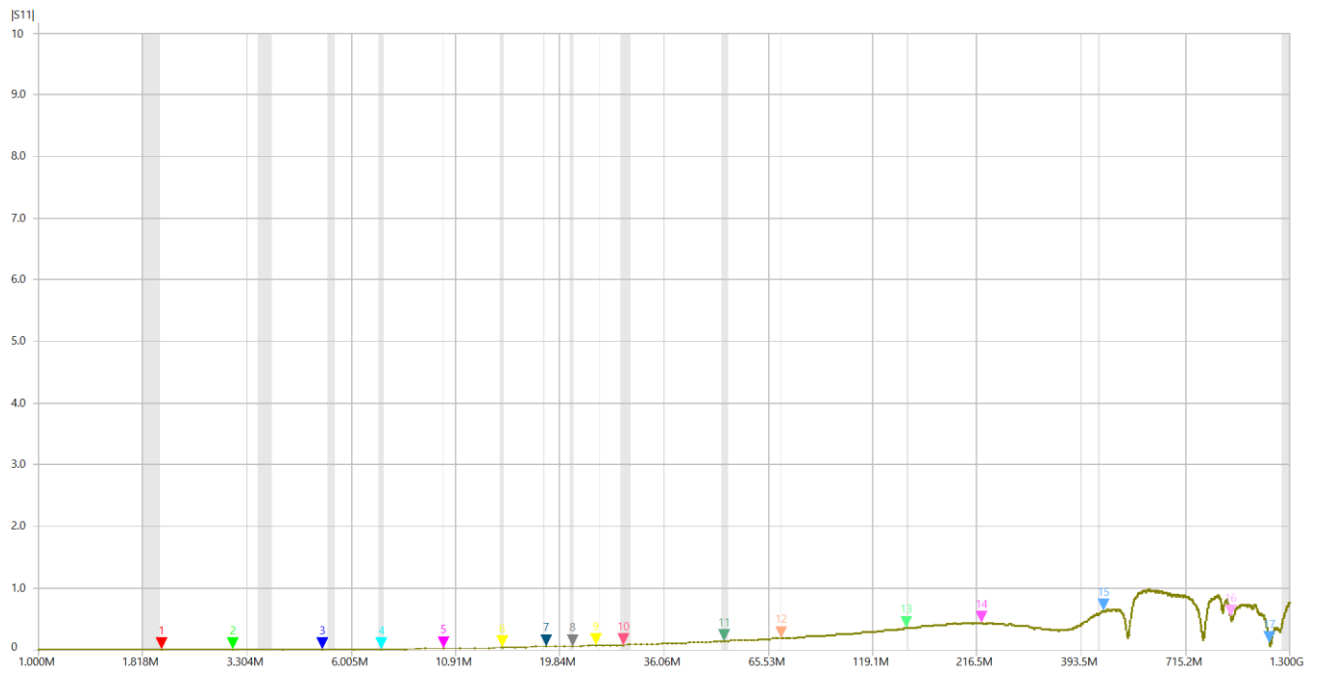


3.3. SDR1-TRPlus;

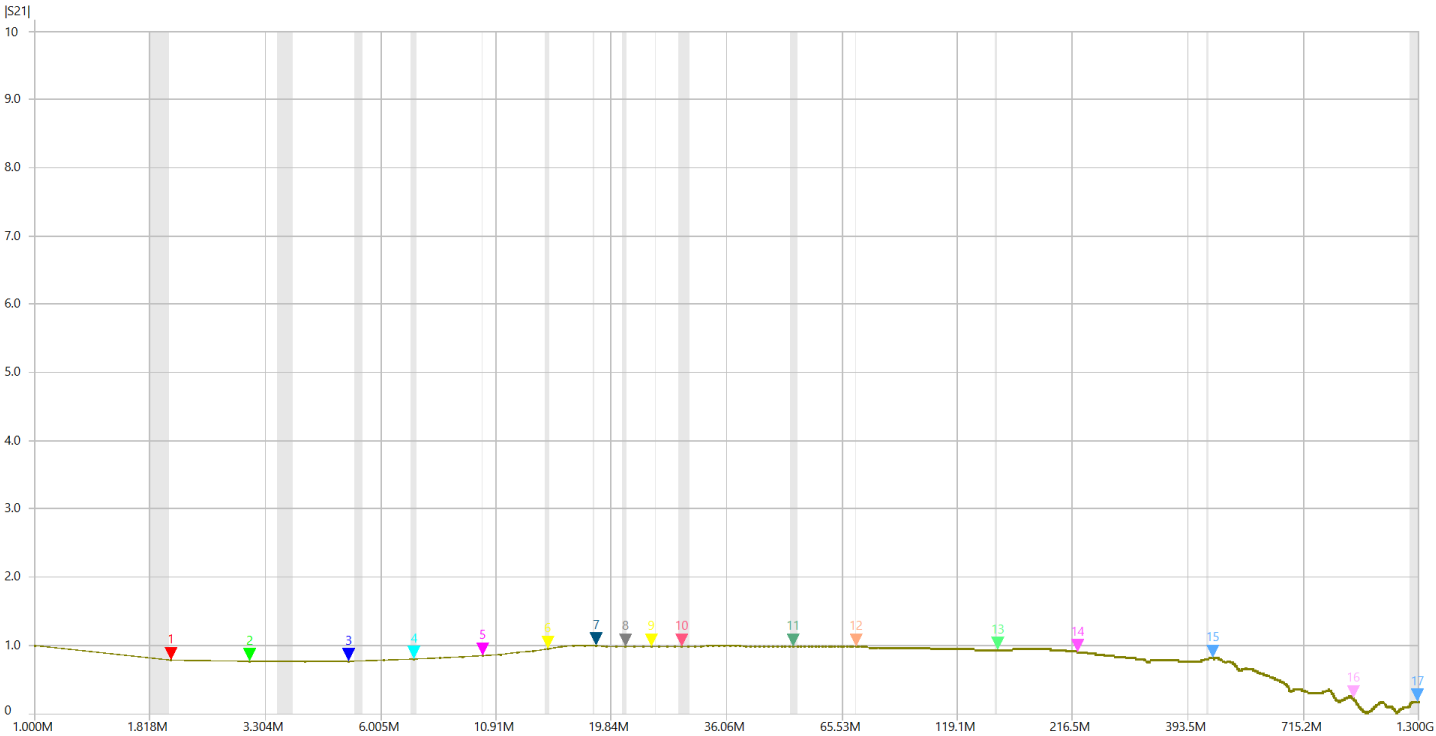
SDR1-TRPlus S11 TX



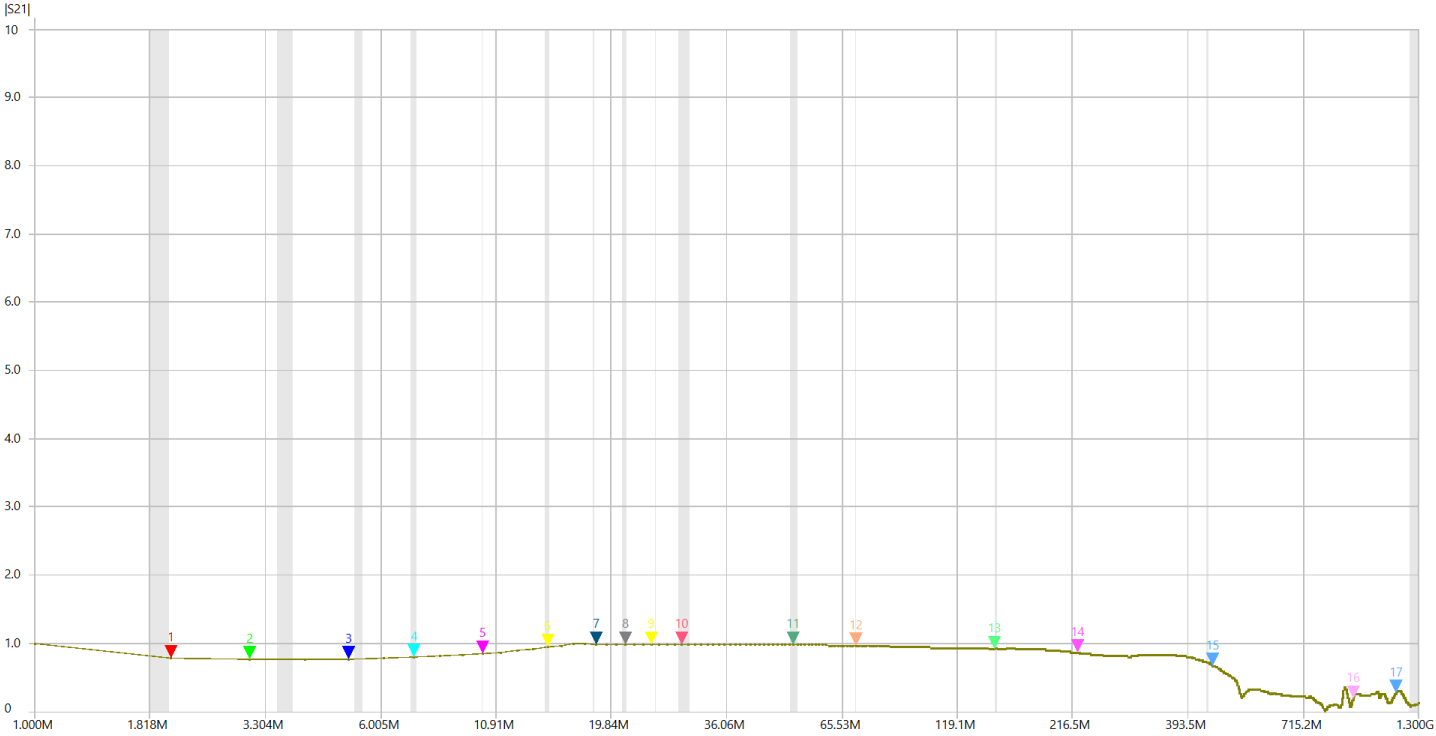
SDR1-TRPlus S11 RX



SDR1-TRPlus S21 TX



SDR1-TRPlus S21 RX



SDR1-TRPlus TX SWR

