

## RF-S5K (Variable RF Sampler – 4,000 Watts)

**RF Sampler** - The model **RF-S5K** (Variable RF Sampler) The RF-S5K Variable RF Sampler provides a proven, plug-and-play solution for directly sampling the RF envelope from handheld, mobile, or high-power transmitters and amplifiers. It delivers a clean, un-rectified, variable non-directional sample at the BNC output, ideal for spectrum analysis, oscilloscope RF envelope monitoring (SSB, AM, FM, CW), frequency counting and control, or generating digital pre-distortion feedback signals for compatible SDR systems. When paired with our model RF-D, the RF-S5K also serves as the post-amplifier reference sampler for Splatter View operation.



Designed for HF, VHF, and UHF use, the RF-S5K offers passive-flat VSWR performance across a wide frequency range with an extremely low insertion loss of <0.1 dB. VNA performance sweeps are available in the Product Info Sheet PDF.

All CleanRF Systems enclosures are built, assembled, and tested in the USA near the grounds of WWV. Each unit features a rugged baked-on black textured finish, long-barrel SO-239 connectors for easy installation, and is fully warrantied against electrical and mechanical defects. Every RF-S5K includes a 6 ft. RG-58 BNC cable and UHF male-to-male adapter for true plug-and-play operation.

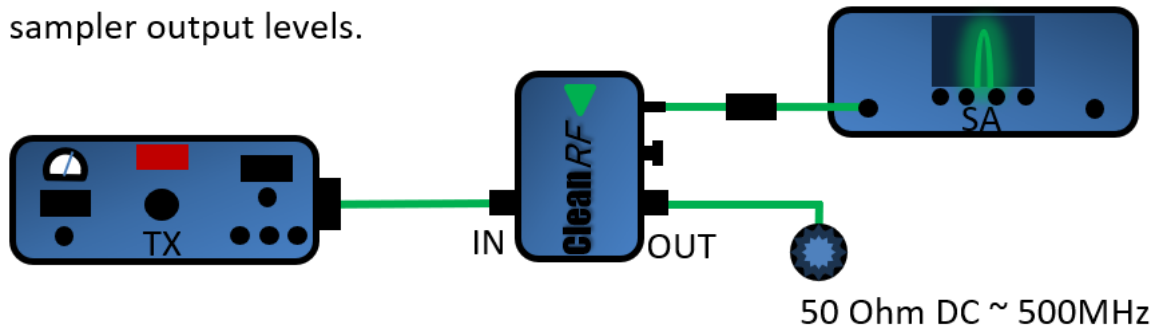
### RF-S5K Specifications Below For 2024 rev

	Rated Input	Frequency Response	Sampler Output
<b>HF / MF</b>	4000w	500 kHz ~ 30 MHz	–60dBm @ 15 MHz
<b>6m</b>	1500w	40 ~ 60 MHz	–50dBm
<b>2m</b>	500w	140 ~ 180 MHz	–39dBm
<b>70cm</b>	50w	400 ~ 500 MHz	–29dBm

**RF-S5K Specifications:**

- Frequency Response:
  - MF/HF: 500 kHz ~ 30 MHz
  - 6m: 40 ~ 60 MHz
  - 2m: 140 ~ 180 MHz
  - 70cm: 400 ~ 500 MHz
  
- Rated Input:
  - MF/HF: 4,000w PEP
  - 6m: 1,500w PEP
  - 2m: 500w PEP
  - 70cm: 50w PEP
  
- Sampler Output:
  - MF/HF: -60dBm @ 15MHz
  - 6m: -50dBm
  - 2m: -39dBm
  - 70cm: -29dBm
  
- Connectors In: SO-239
- Connectors Out: SO-239 and BNC
- Controls: Variable RF Output 6dB
- VSWR: < 1:1.1
- Insertion Loss: < 0.1 dB
- Cable and Adapter: 6 Ft. BNC Male-to-BNC Male and UHF Male-to-Male Adapter
- Applications:
  - Oscilloscope Vertical "Y" In (Post-Amplifier Reference Signal)
  - Pre-Distortion Sampling for use with Anan Pure Signal®
  - RF Modulation Envelope Monitor
  - Peak Envelope Power Monitor
  - Spectrum Analysis
  
- Dimensions: W 2 1/8" x L 3 1/4" x H 1 5/8"

Conceptual illustration shown with optional 20dB fixed attenuator for use with max rated VHF and UHF power, ensure sampler output does not exceed that of the SA input, review reference tables for sampler output levels.



### Sampler VHF Output Reference

#### 2m Band

30dBm = 1w	-39	-9 dBm Out
37dBm = 5w	-39	-2 dBm Out
40dBm = 10w	-39	1 dBm Out
47dBm = 50w	-39	8 dBm Out
50dBm = 100w	-39	11 dBm Out
57dBm = 501w	-39	18 dBm Out

#### 6m Band

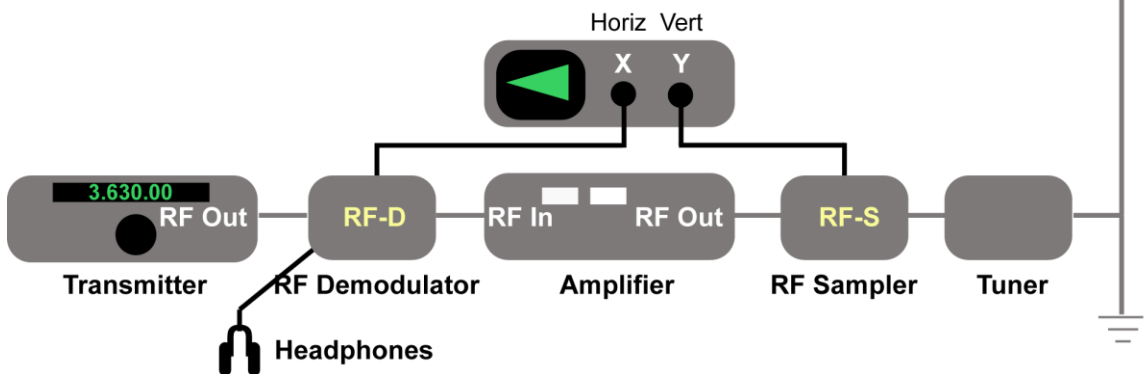
30dBm = 1w	-50	-20 dBm Out
40dBm = 10w	-50	-10 dBm Out
50dBm = 100w	-50	0 dBm Out
57dBm = 501w	-50	7 dBm Out
60dBm = 1000w	-50	10 dBm Out
62dBm = 1580w	-50	12 dBm Out



Splatter View Block Diagram

### Scope / RF Demodulator / RF Sampler Wiring Chain

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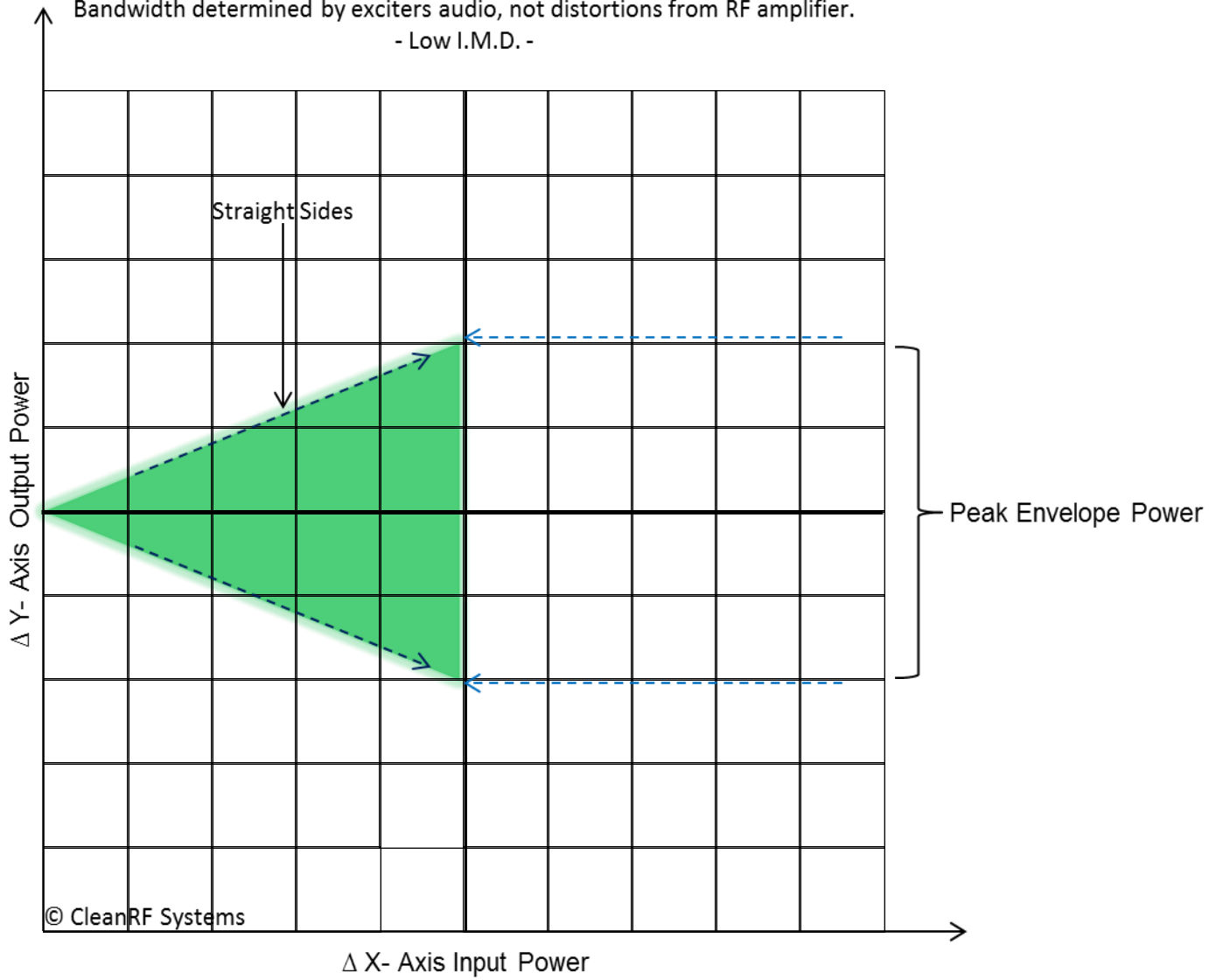


Trapezoidal Linear RF Pattern Provided by CleanRF Systems Splatter View.

Note sides of Trapezoid are straight with distinct angles.

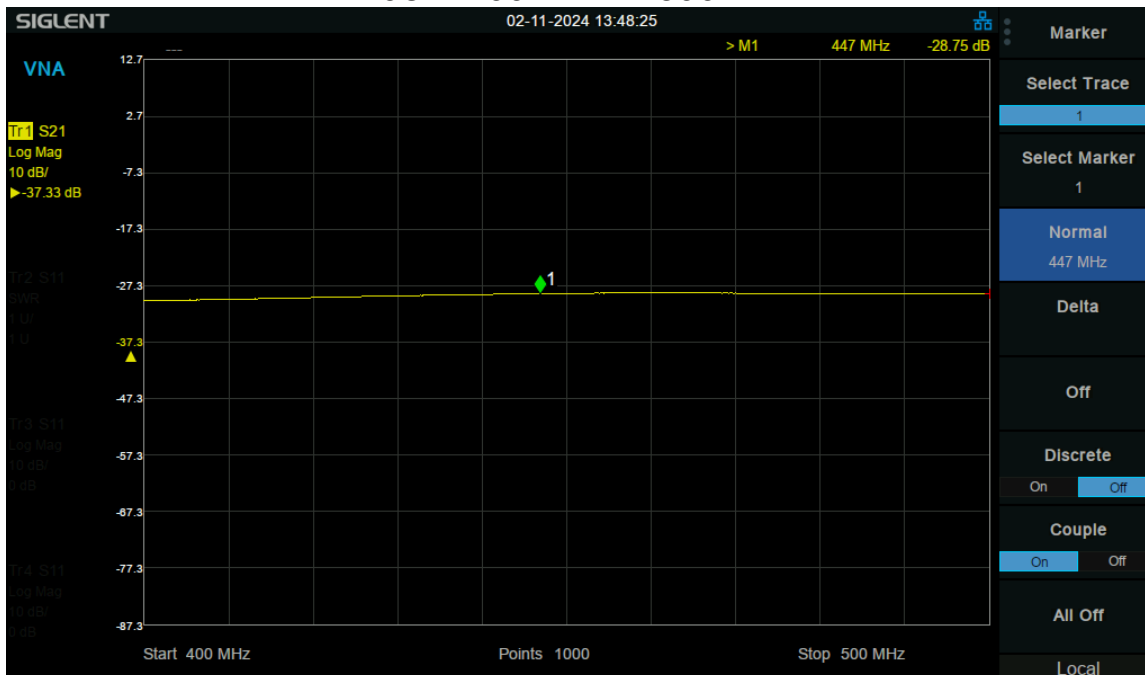
Bandwidth determined by exciter's audio, not distortions from RF amplifier.

- Low I.M.D. -



## VNA Sweeps Below Shown Pot Fully CW -Rev 2024-

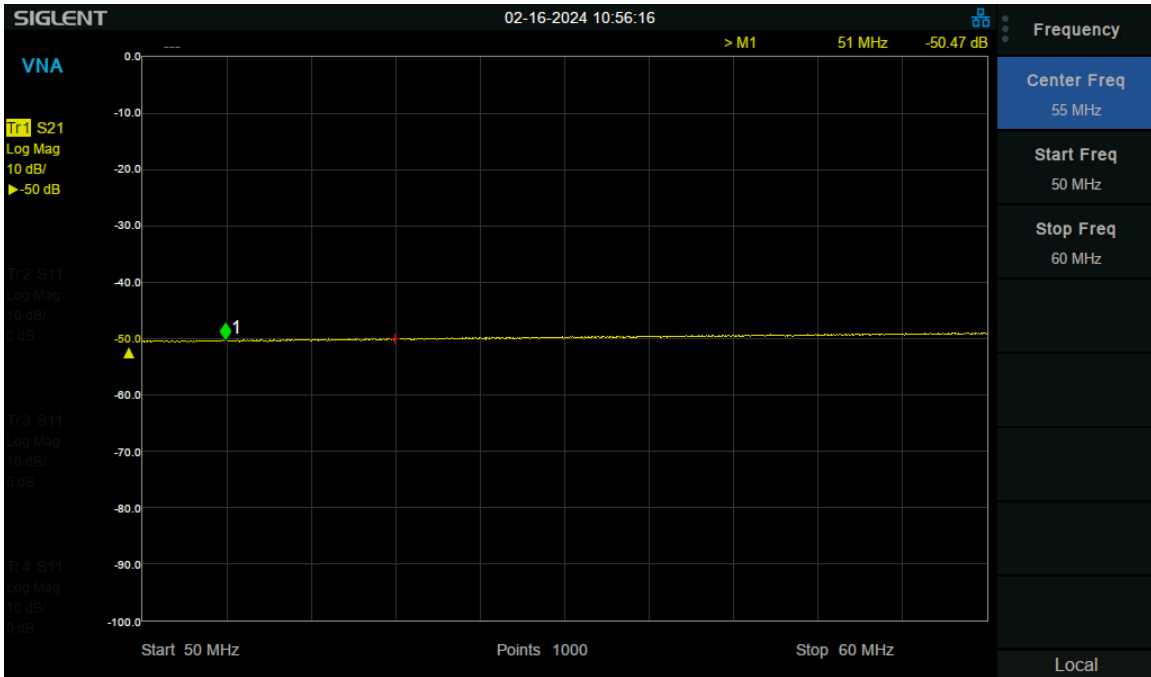
### 70cm 400 MHz – 500 MHz



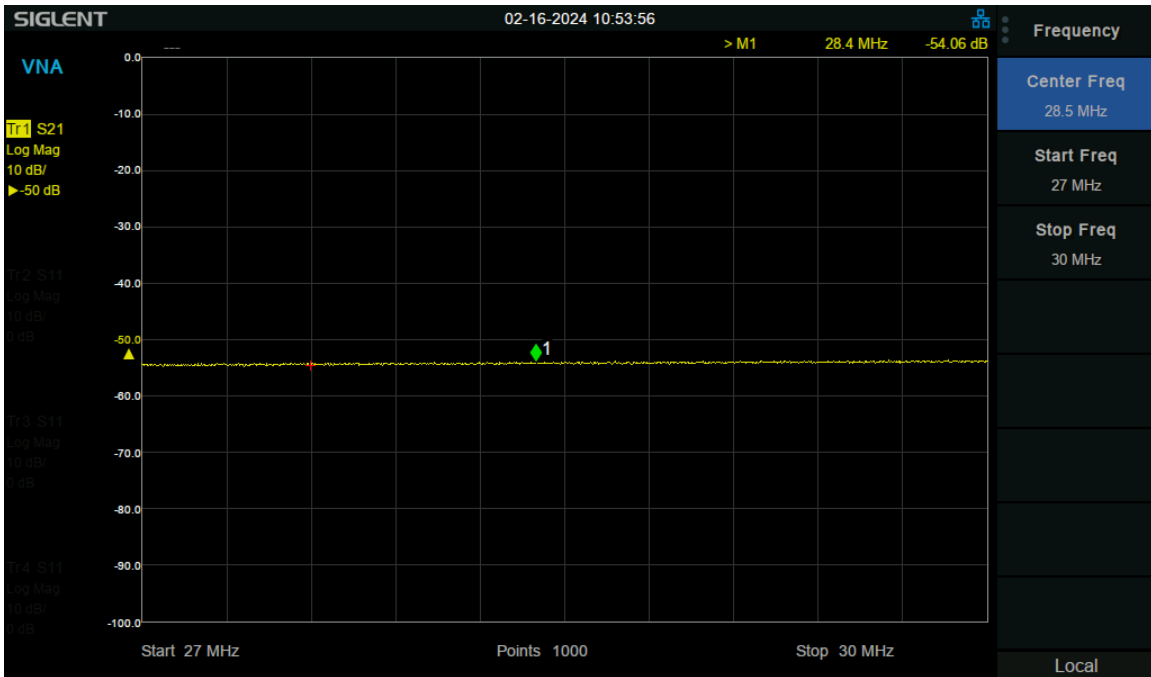
### 2m 140 MHz – 180 MHz



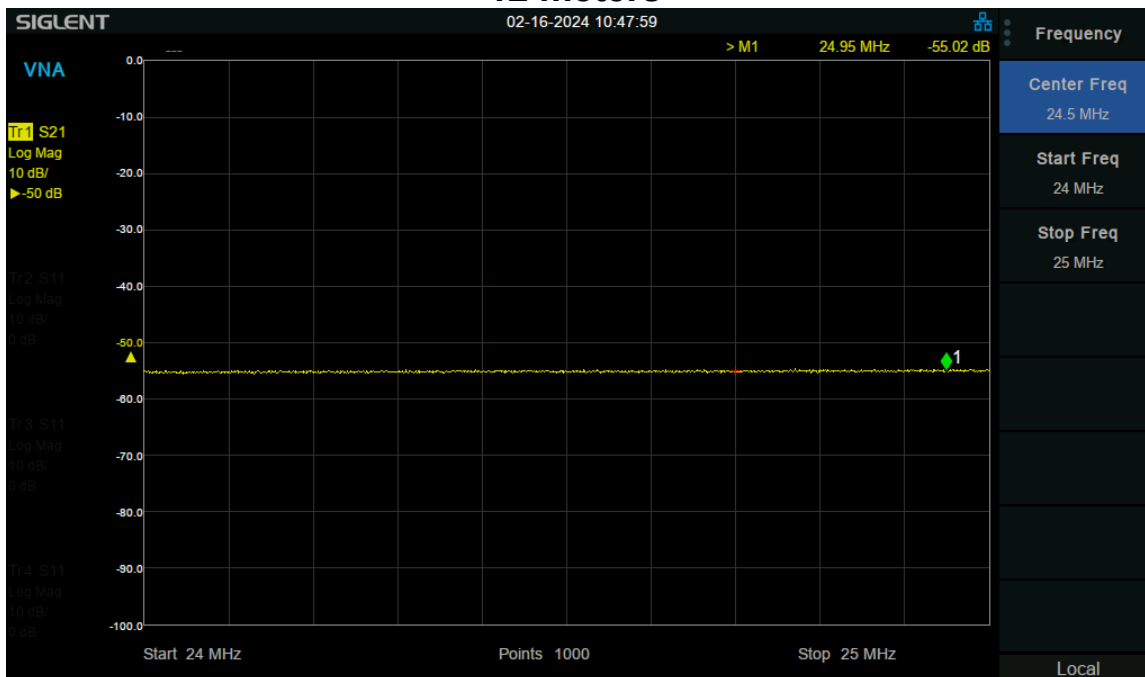
### 6 meters



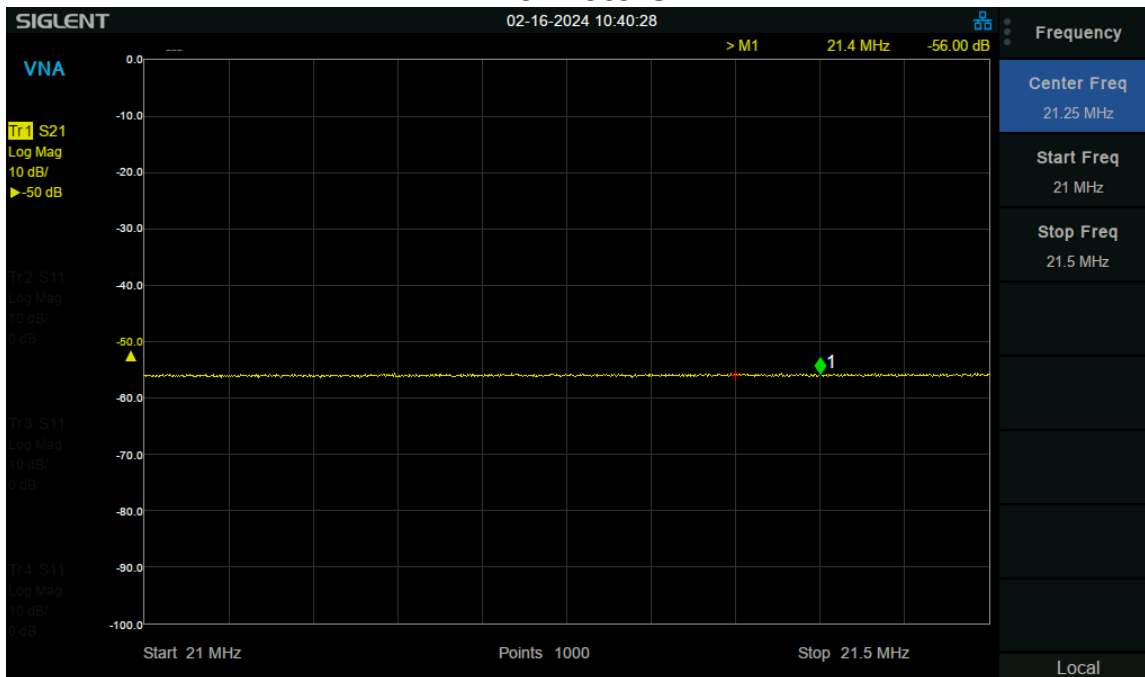
### 10/11 meters



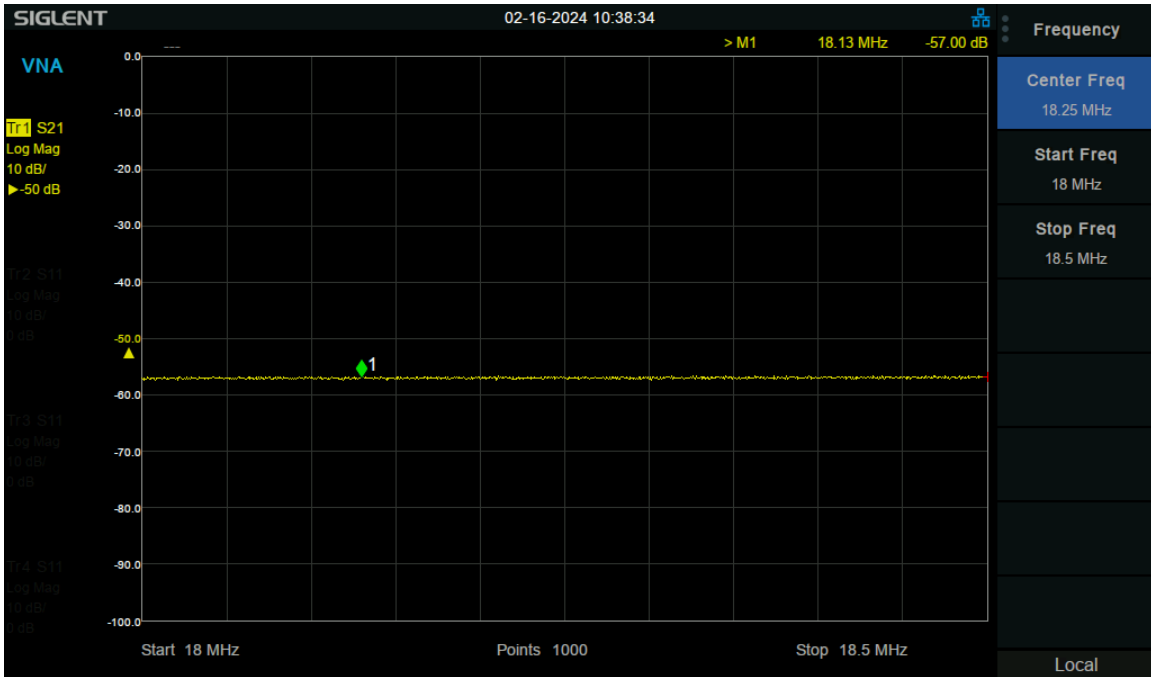
## 12 meters



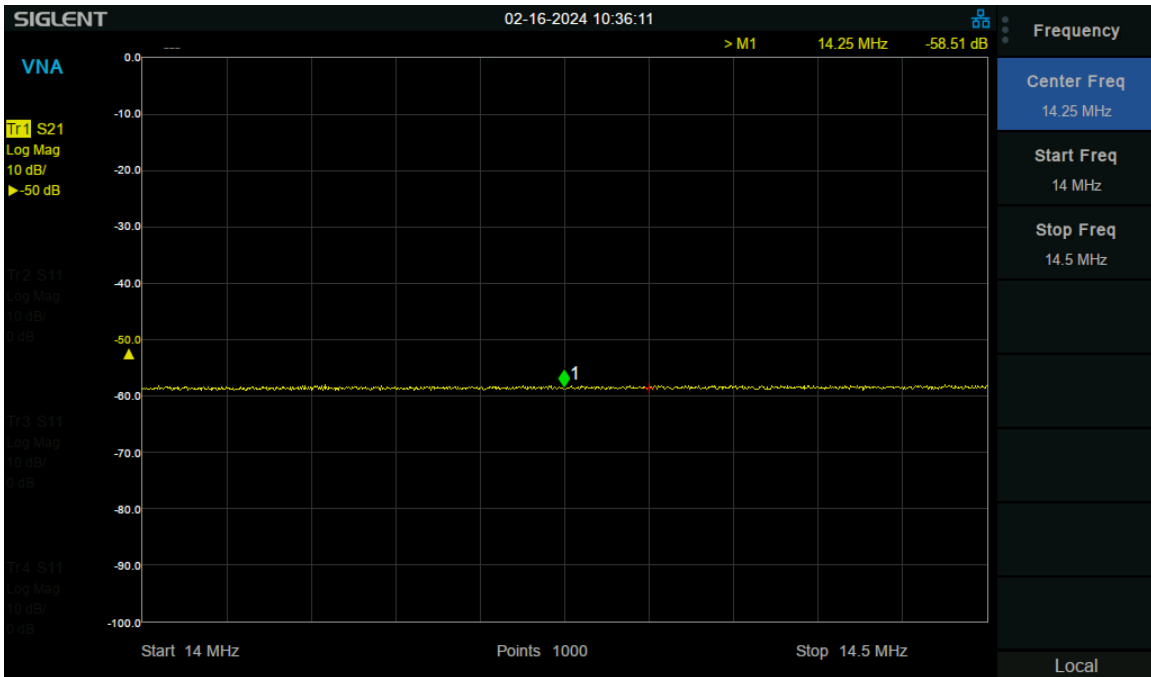
## 15 meters



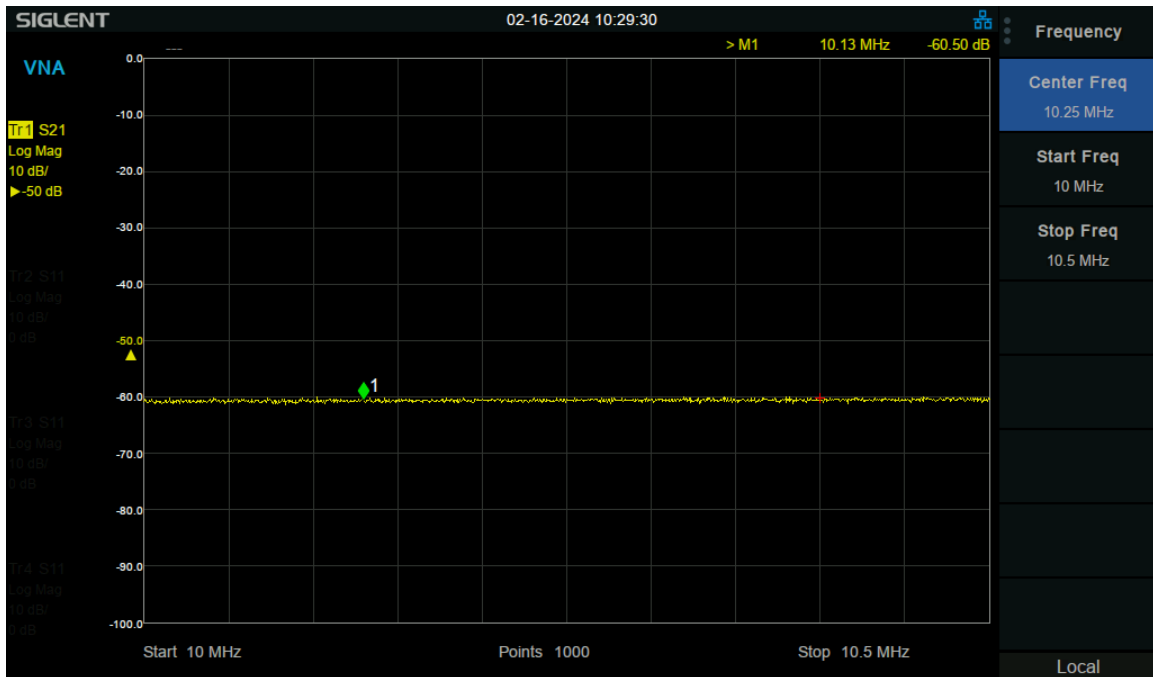
# 17 meters



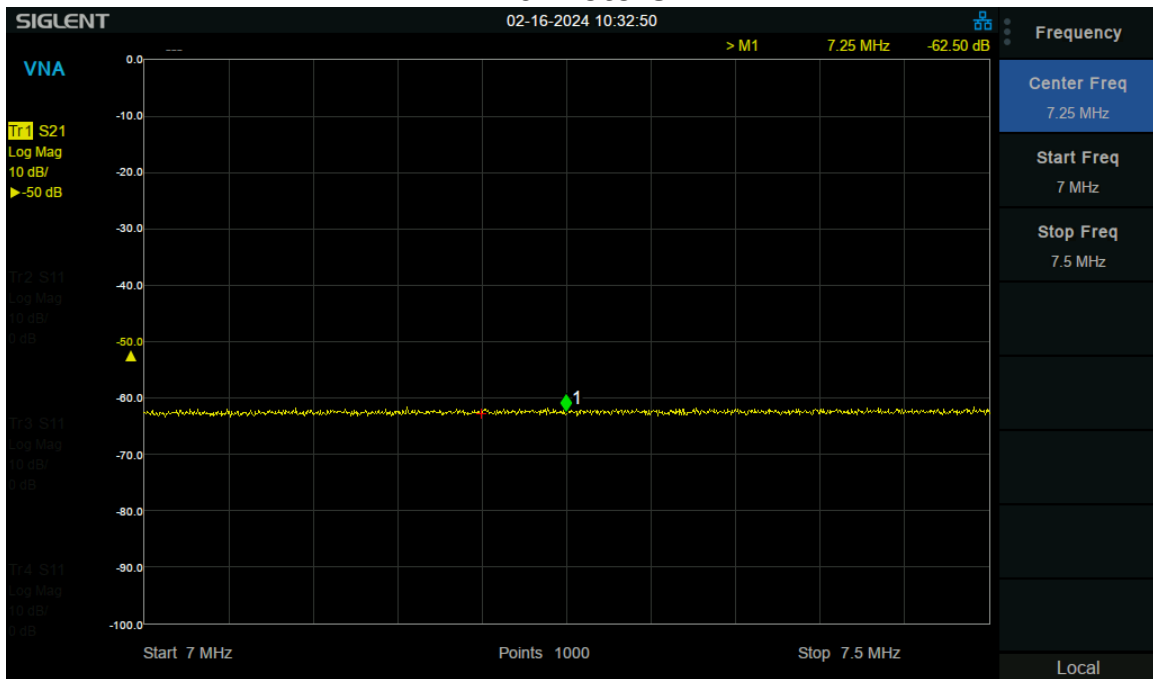
# 20 meters



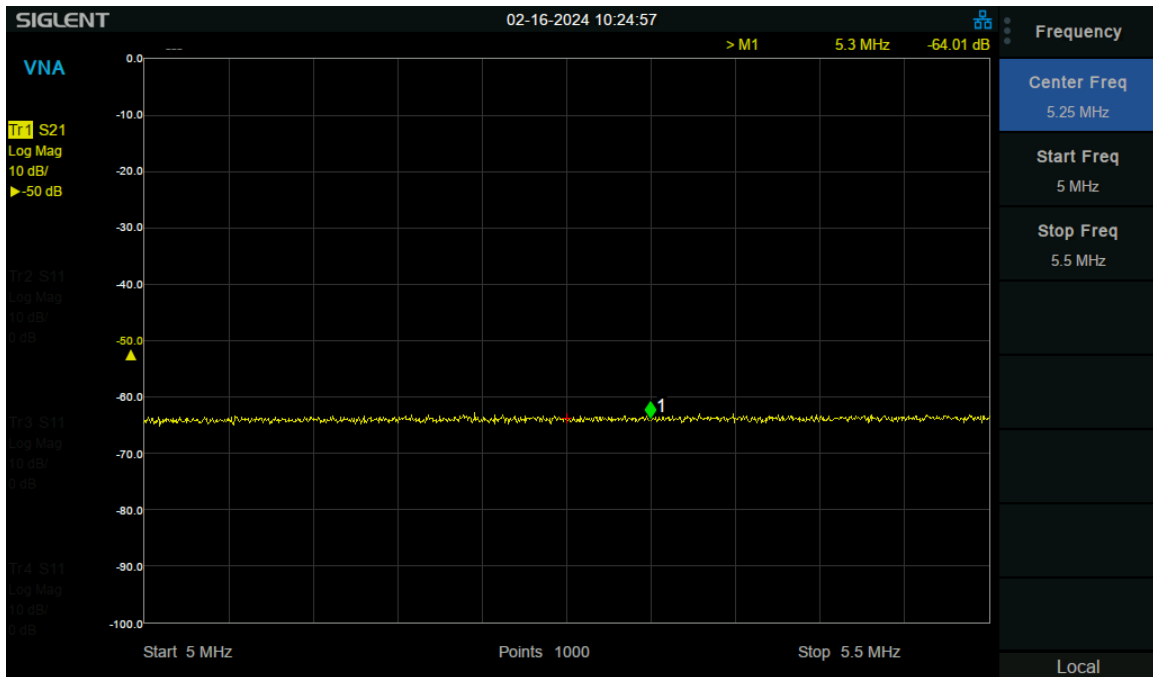
### 30 meters



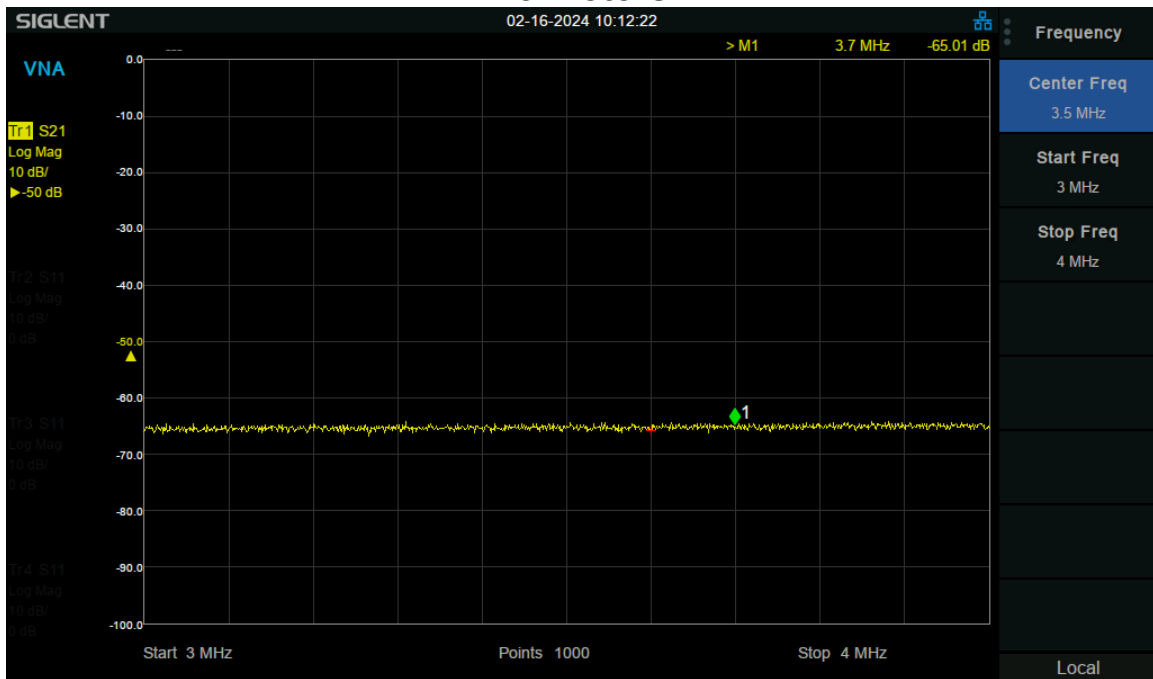
### 40 meters



### 60 meters



### 75 meters



# 160 meters

