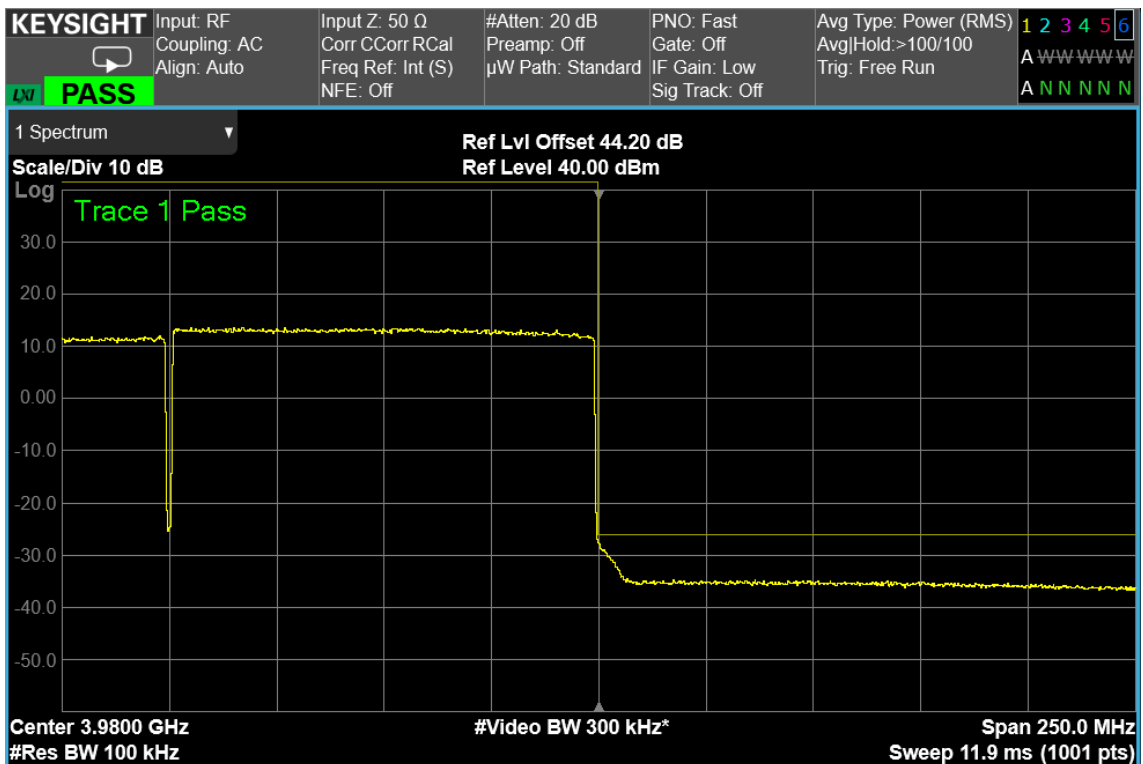


100 MHz signal, High Band Edge, 2 carrier, nominal input signal



100 MHz signal, High Band Edge, 2 carrier, nominal input signal + 3dB

Clause 27.53(l) Radiated Spurious emissions

(l) 3.7 GHz Service. The following emission limits apply to stations transmitting in the 3700-3980 MHz band:

(1) For base station operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (l)(1) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Test date: 2022-11-21 to 2022-11-25
 Test results: Pass

Special notes

Test equipment				
Equipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.
Antenna Trilog 25MHz - 8GHz	Schwarzbeck	VULB9162	9162-025	2024-07
Antenna 1-18 GHz	Schwarzbeck	STLP 9148	STPL 9148-123	2024-06
Double Ridge Horn Antenna	RFSpin	DRH40	061106A40	2023-04
Broadband Amplifier	Schwarzbeck	BBV9718C	00121	2023-01
Broadband Bench Top Amplifier	Sage	STB-1834034030-KFKF-L1	18490-01	2023-04
EMI Receiver	Rohde & Schwarz	ESW44	101620	2023-08
Spectrum analyzer	R&S	FSW43	101767	2023-01
Controller	Maturo	FCU3.0	10041	NCR
Tilt antenna mast	Maturo	TAM4.0-E	10042	NCR
Turntable	Maturo	TT4.0-5T	2.527	NCR
Semi-anechoic chamber	Nemko	10m semi-anechoic chamber	530	NCR
Shielded room	Siemens	10m control room	1947	NCR

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use
 (*) Equipment supplied by manufacturer's

Clause 27.53(m) Radiated spurious emissions, continued

Test data

The D.U.T. was positioned according to the radiated emissions set-up

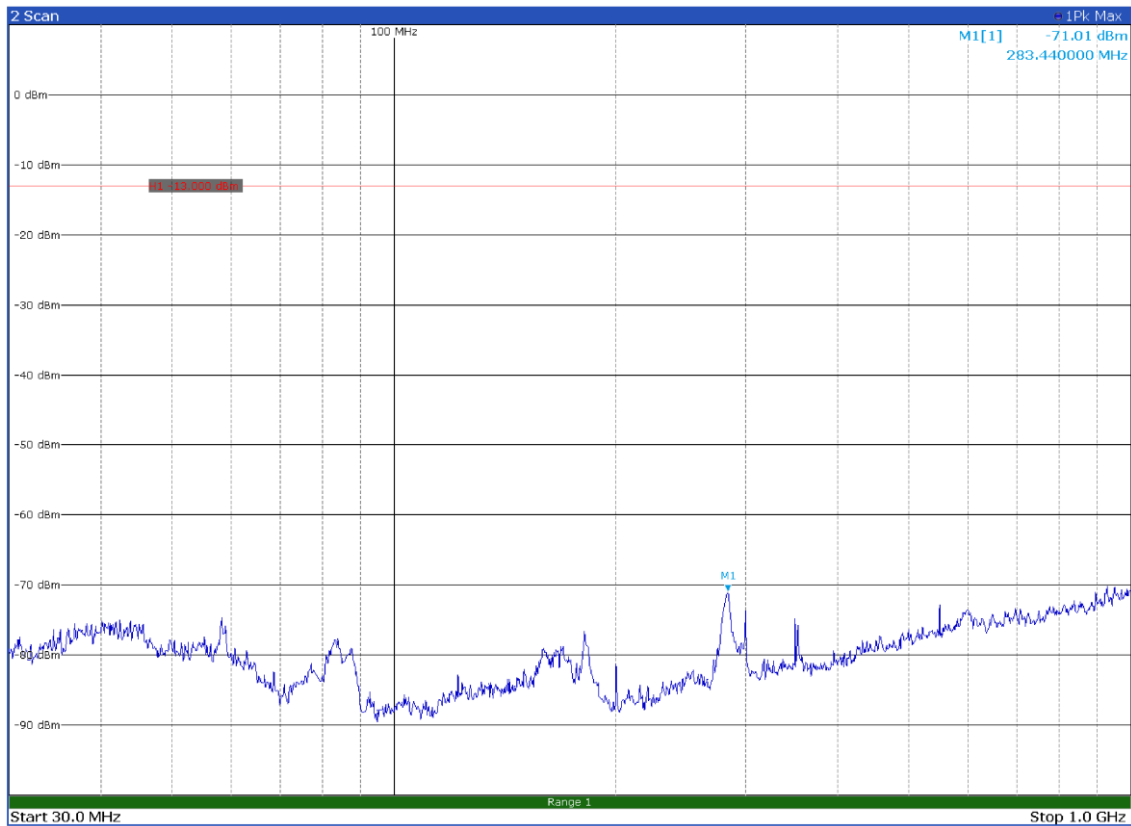
The D.U.T. antenna connector was terminated by a 50 Ω shielded dummy load.

The spectrum was searched from 30 MHz to 1 GHz (RBW 100 kHz) & 1 GHz (RBW 1 MHz) to the tenth harmonic of the carrier.

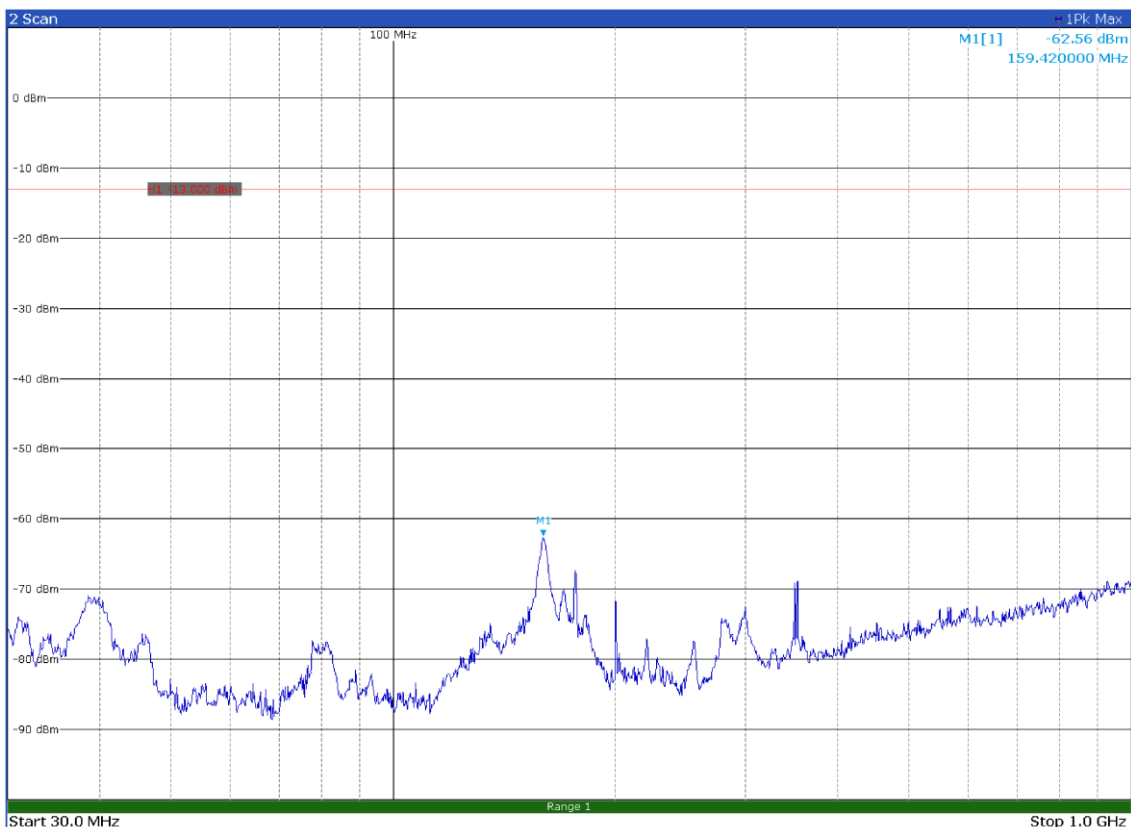
Spurious emissions measurement results:

Frequency (MHz)	Polarization. V/H	Field strength (dBm)	Limit (dBm)	Margin (dB)
Low channel				
7412.500	H	-20.77	-13	-7.77
7406.500	V	-21.59	-13	-8.59
Mid channel				
7682.500	H	-19.94	-13	-6.94
7682.500	V	-24.20	-13	-11.2
High channel				
7952.500	H	-18.50	-13	-5.5
7952.500	V	-22.71	-13	-9.71

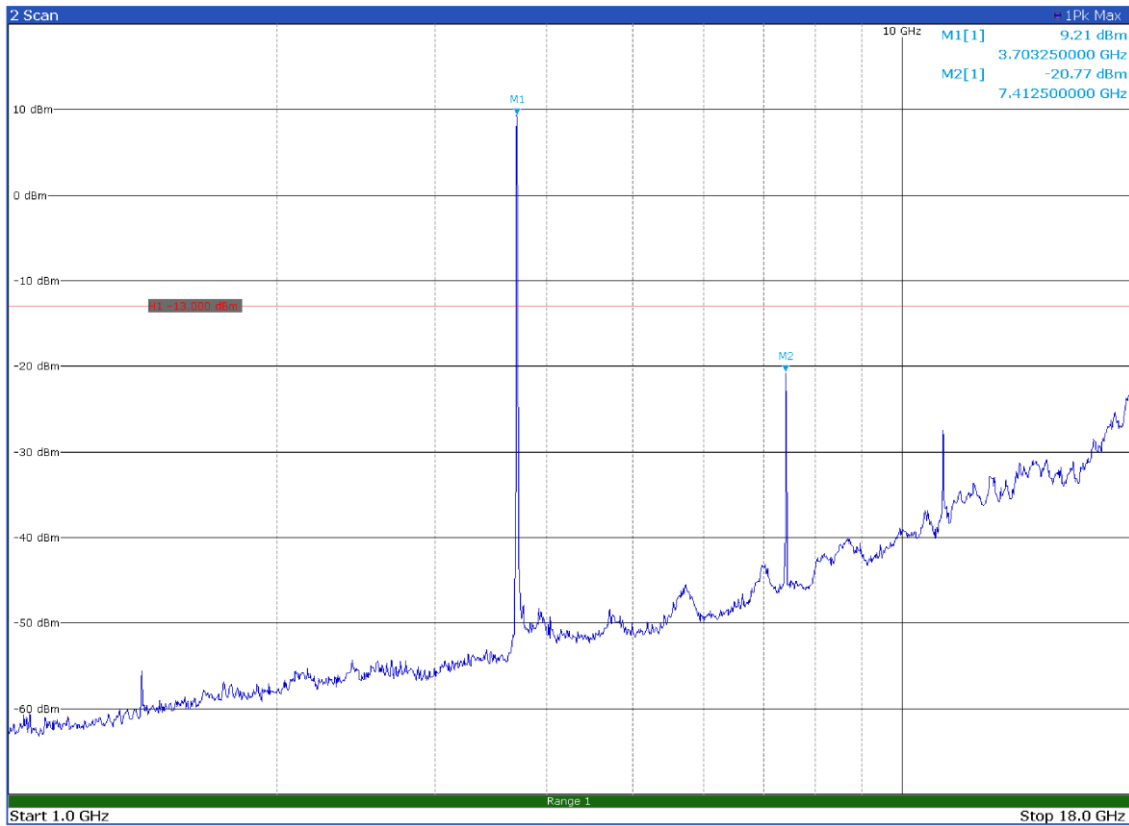
Note: Field strength includes correction factor of antenna, cable loss, amplifier, and attenuators where applicable.



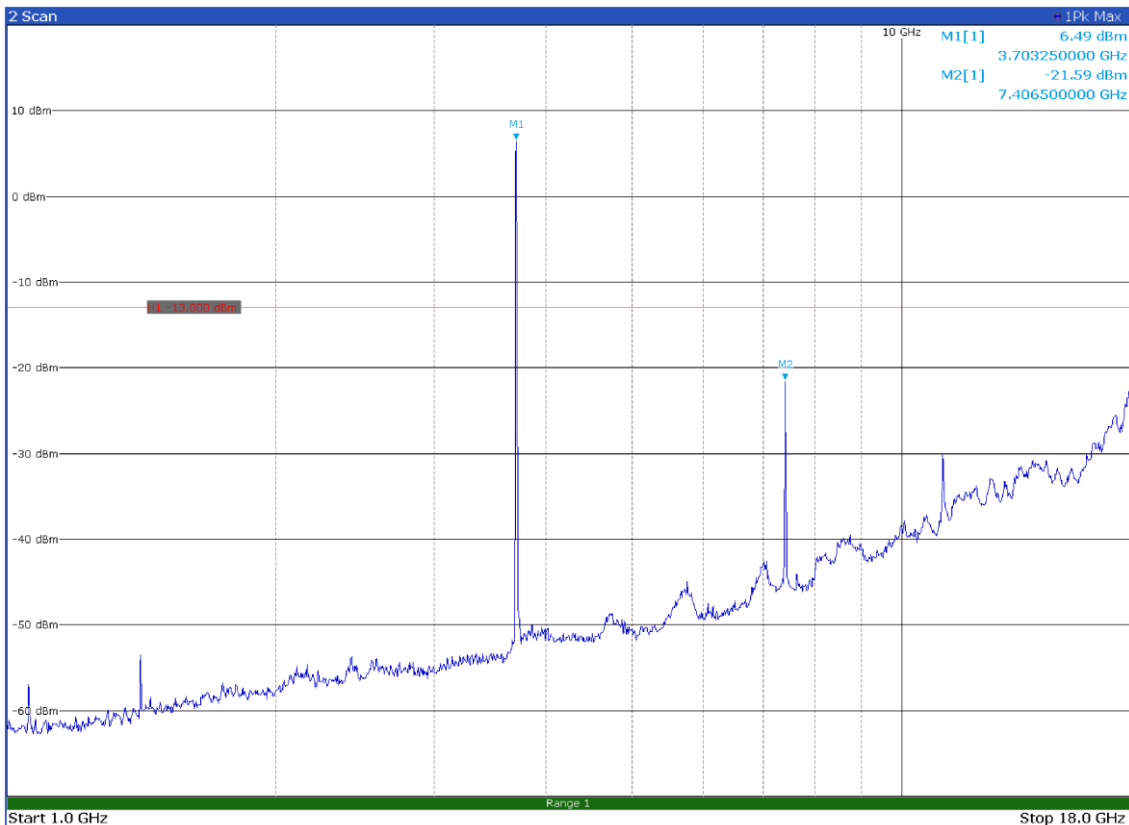
10 MHz signal, Bottom Channel, 30MHz - 1GHz, H Pol



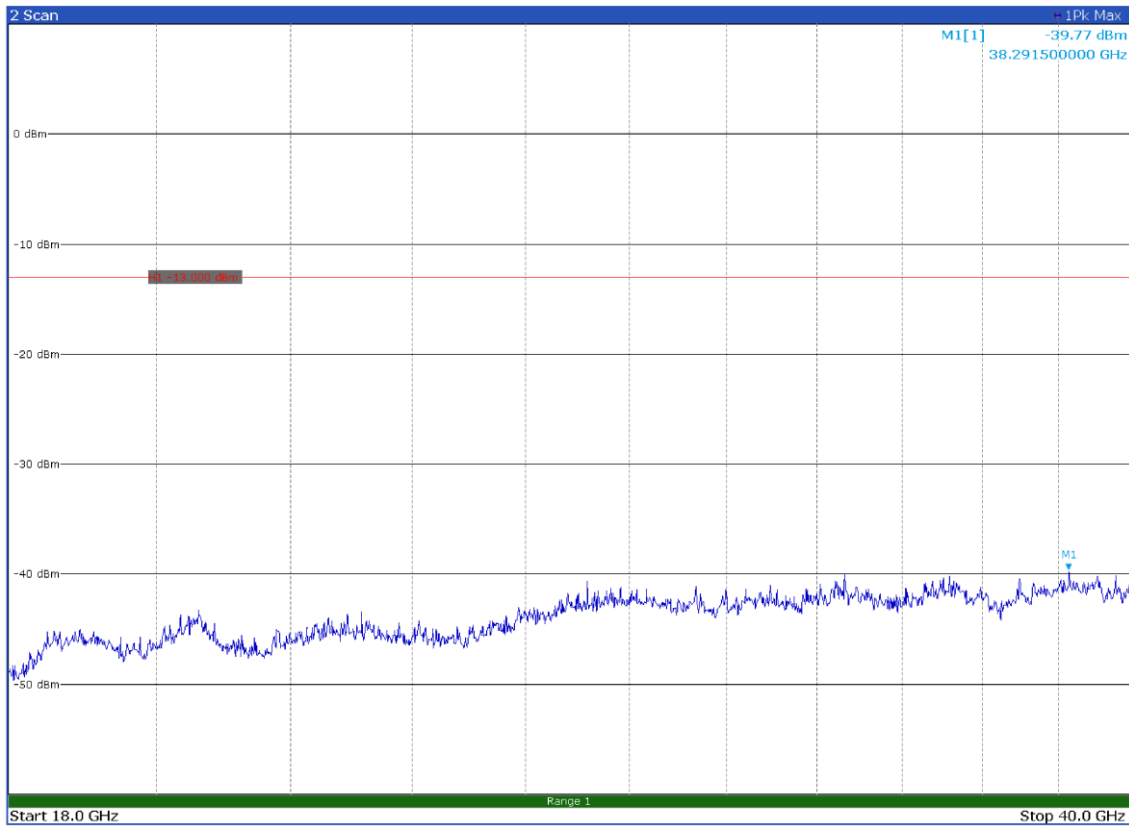
10 MHz signal, Bottom Channel, 30MHz - 1GHz, V Pol



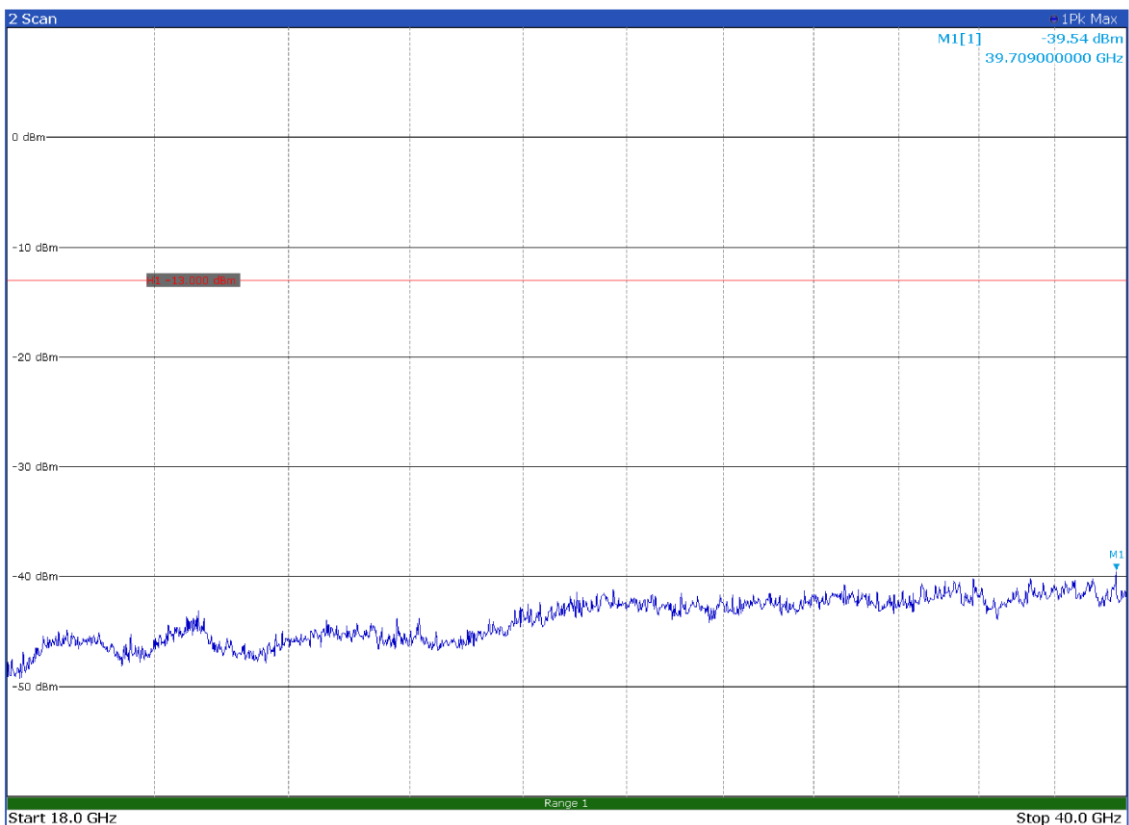
10 MHz signal, Bottom Channel, 1GHz - 18GHz, H Pol



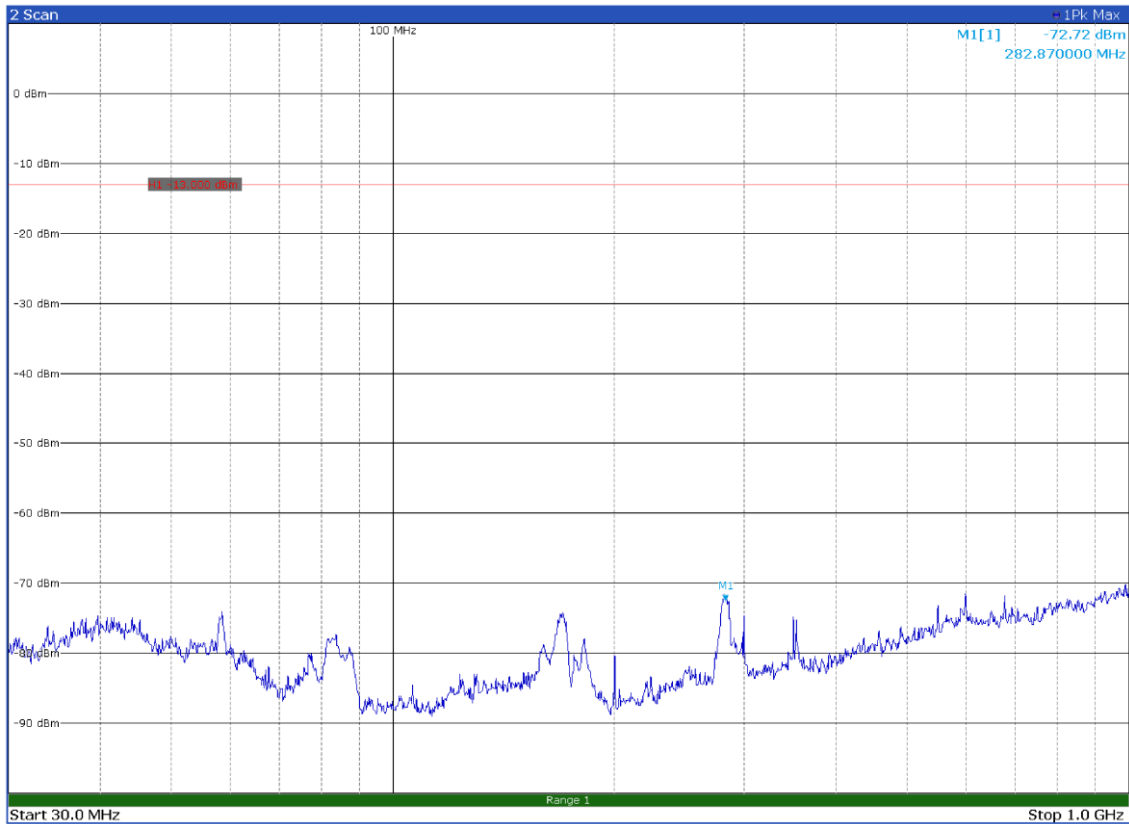
10 MHz signal, Bottom Channel, 1GHz - 18GHz, V Pol



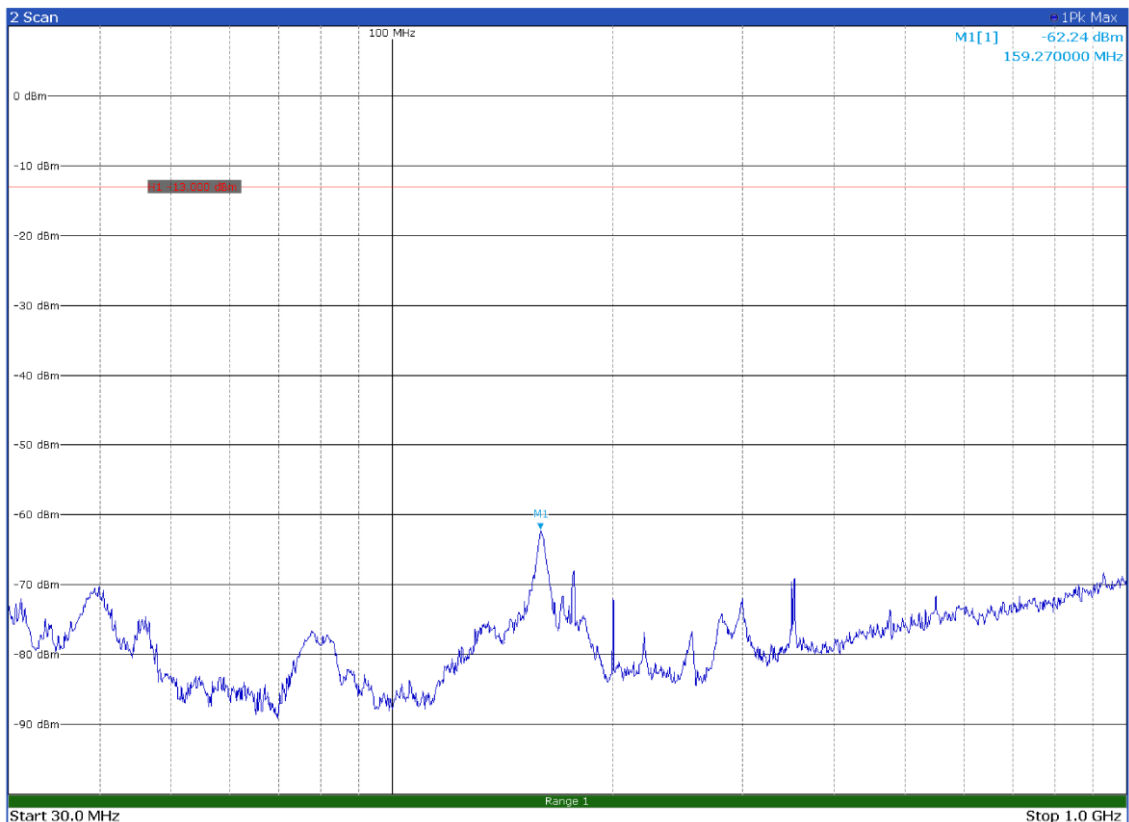
10 MHz signal, Bottom Channel, 18GHz - 40GHz, H Pol



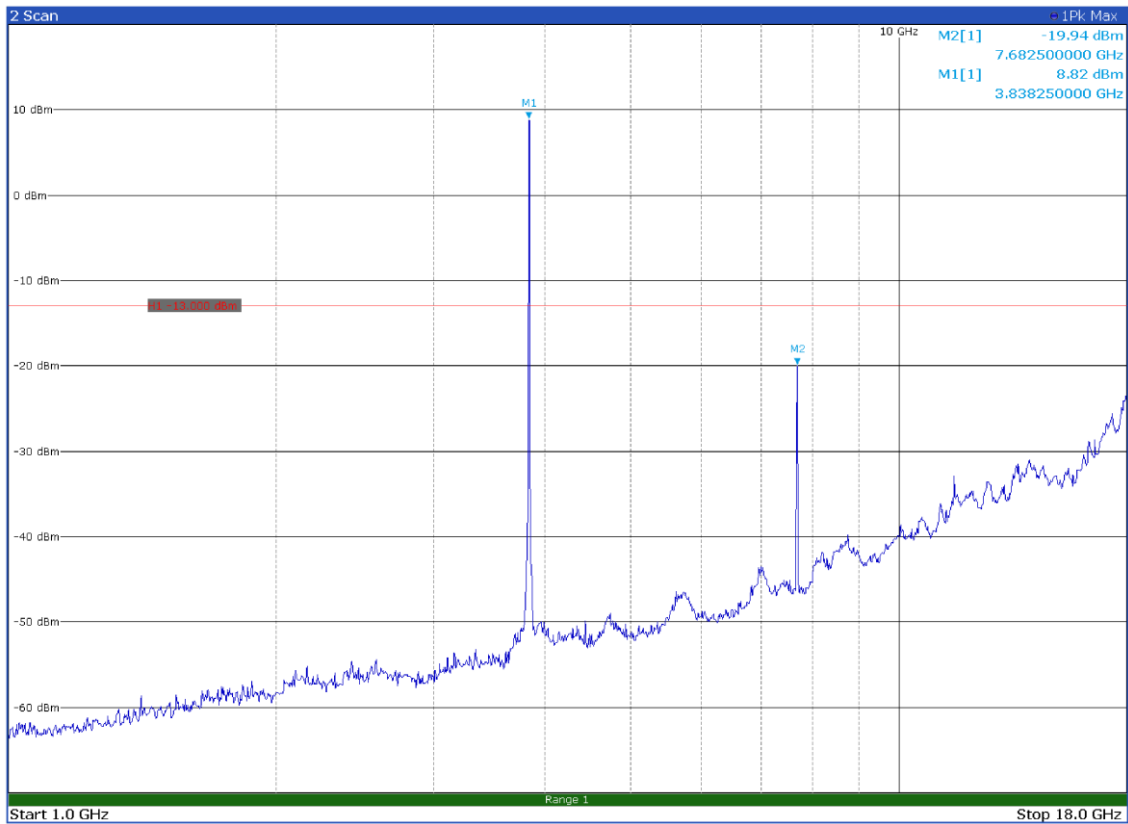
10 MHz signal, Bottom Channel, 18GHz - 40GHz, V Pol



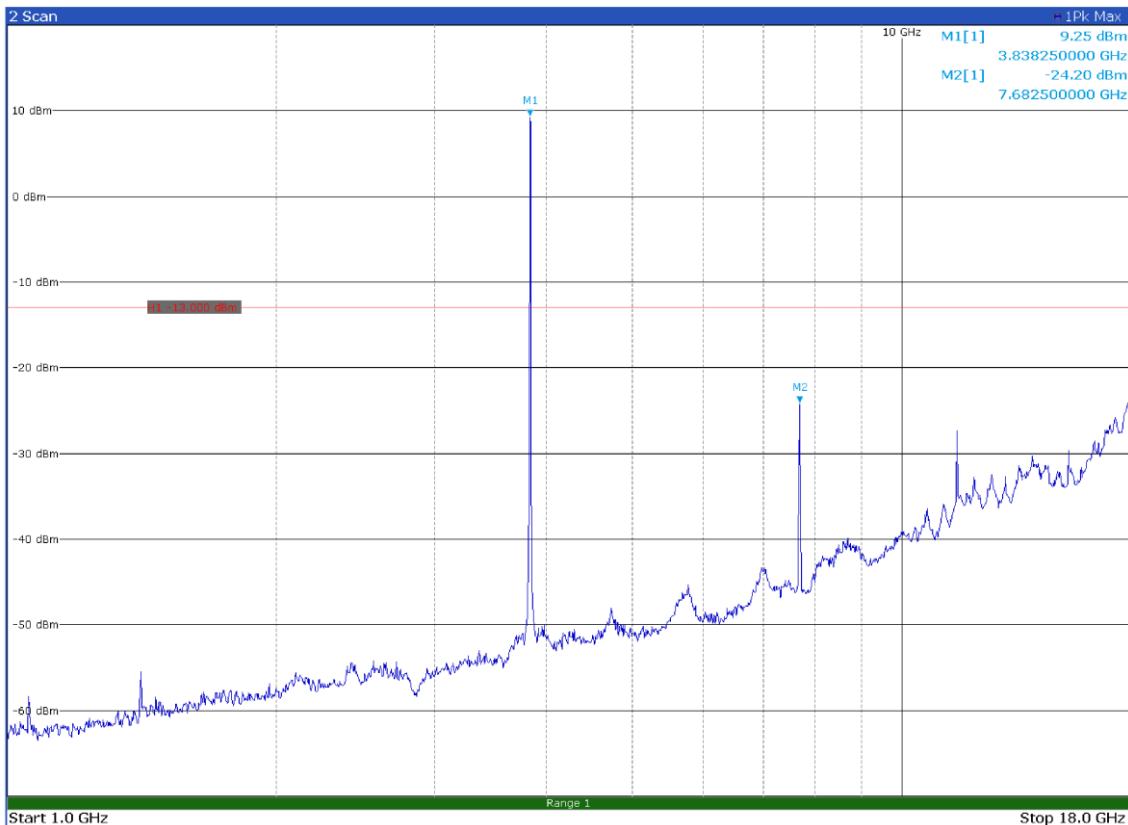
10 MHz signal, Middle Channel, 30MHz - 1GHz, H Pol



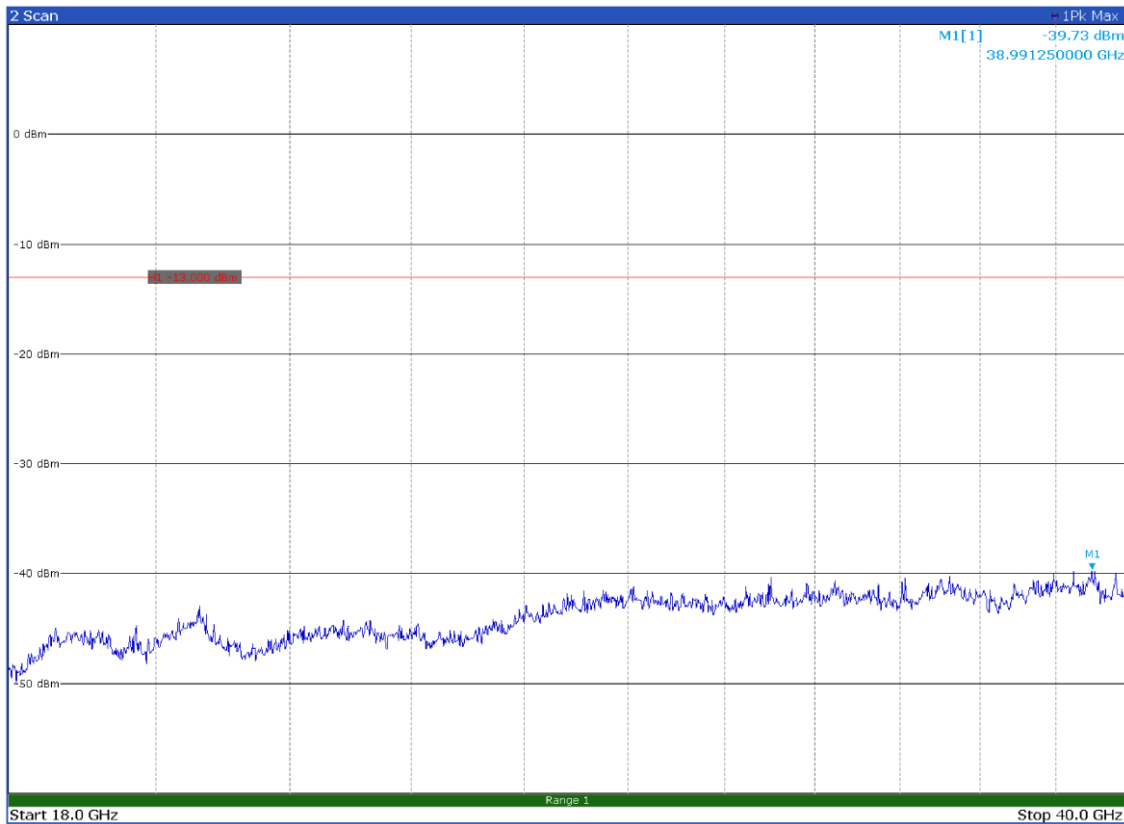
10 MHz signal, Middle Channel, 30MHz - 1GHz, V Pol



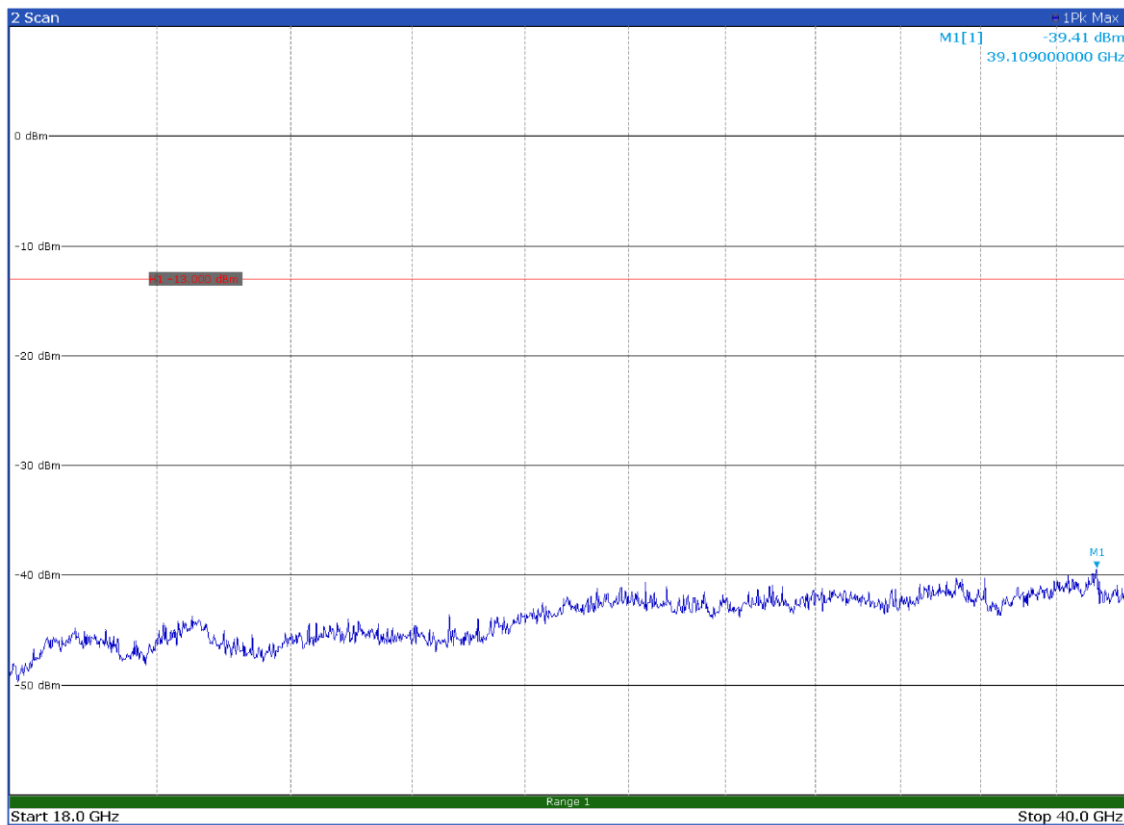
10 MHz signal, Middle Channel, 1GHz - 18GHz, H Pol



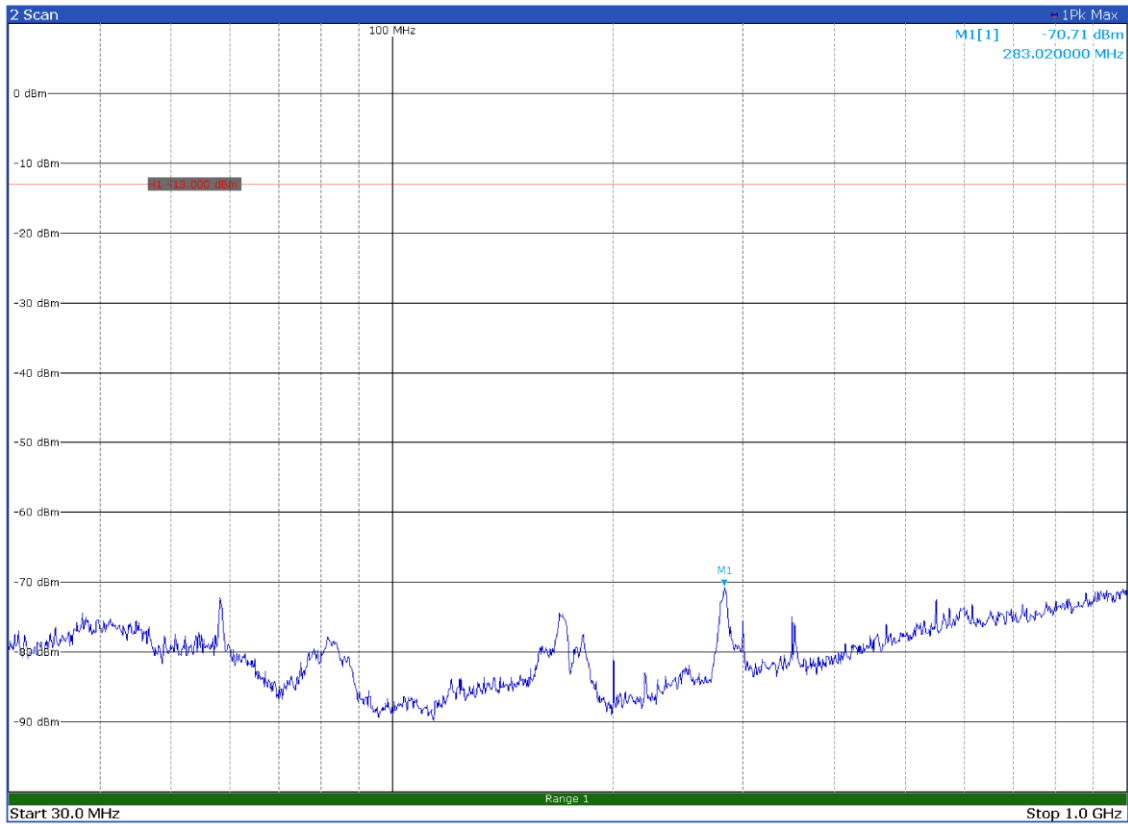
10 MHz signal, Middle Channel, 1GHz - 18GHz, V Pol



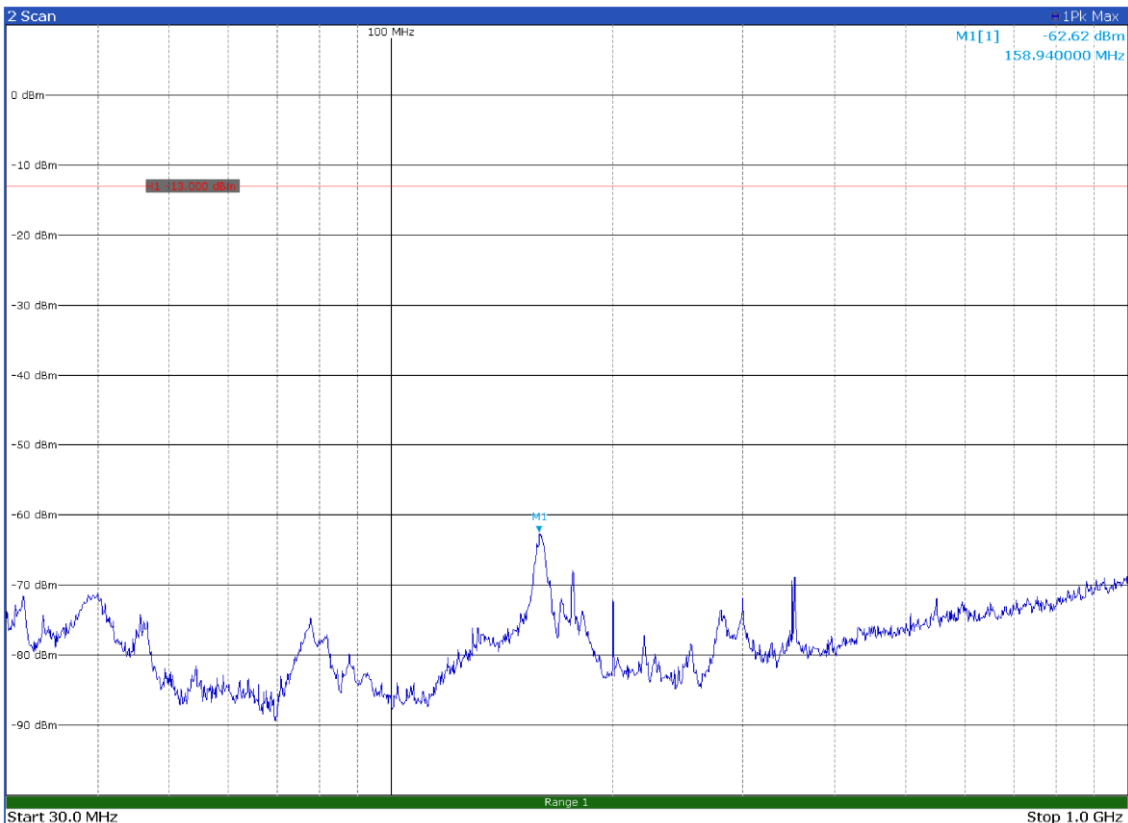
10 MHz signal, Middle Channel, 18GHz - 40GHz, H Pol



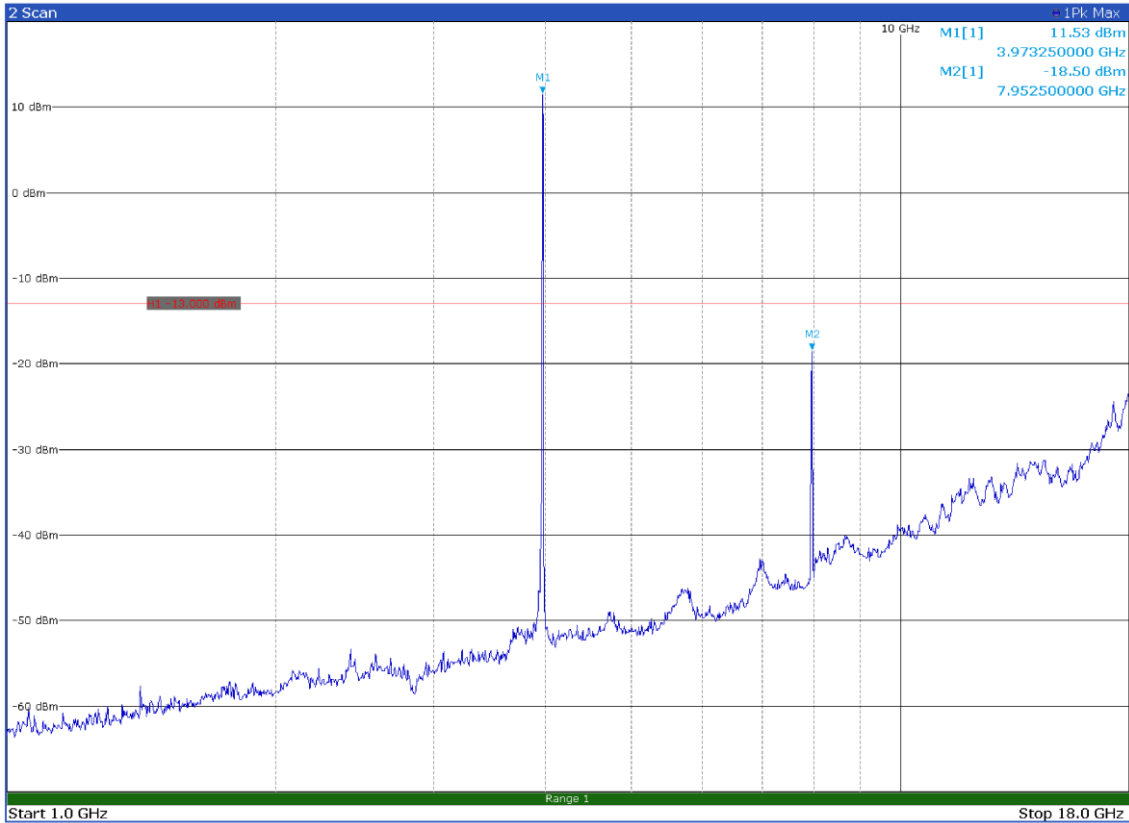
10 MHz signal, Middle Channel, 18GHz - 40GHz, V Pol



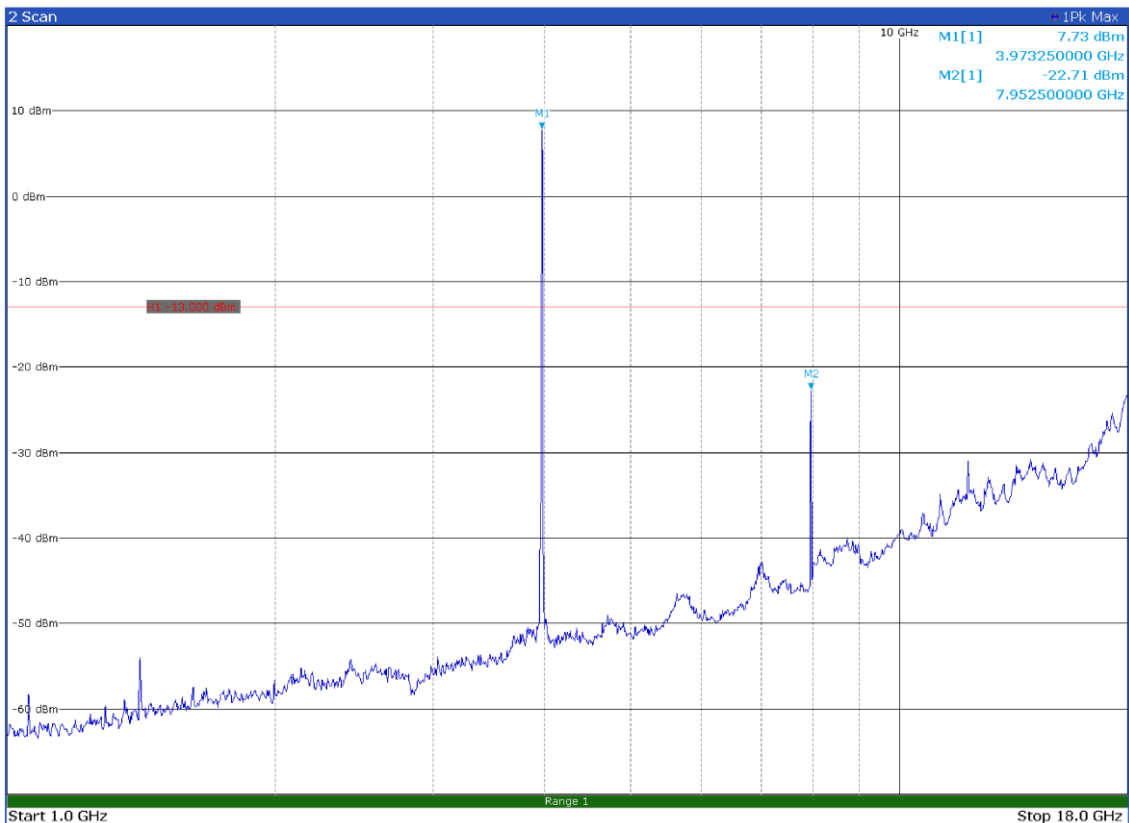
10 MHz signal, Top Channel, 30MHz - 1GHz, H Pol



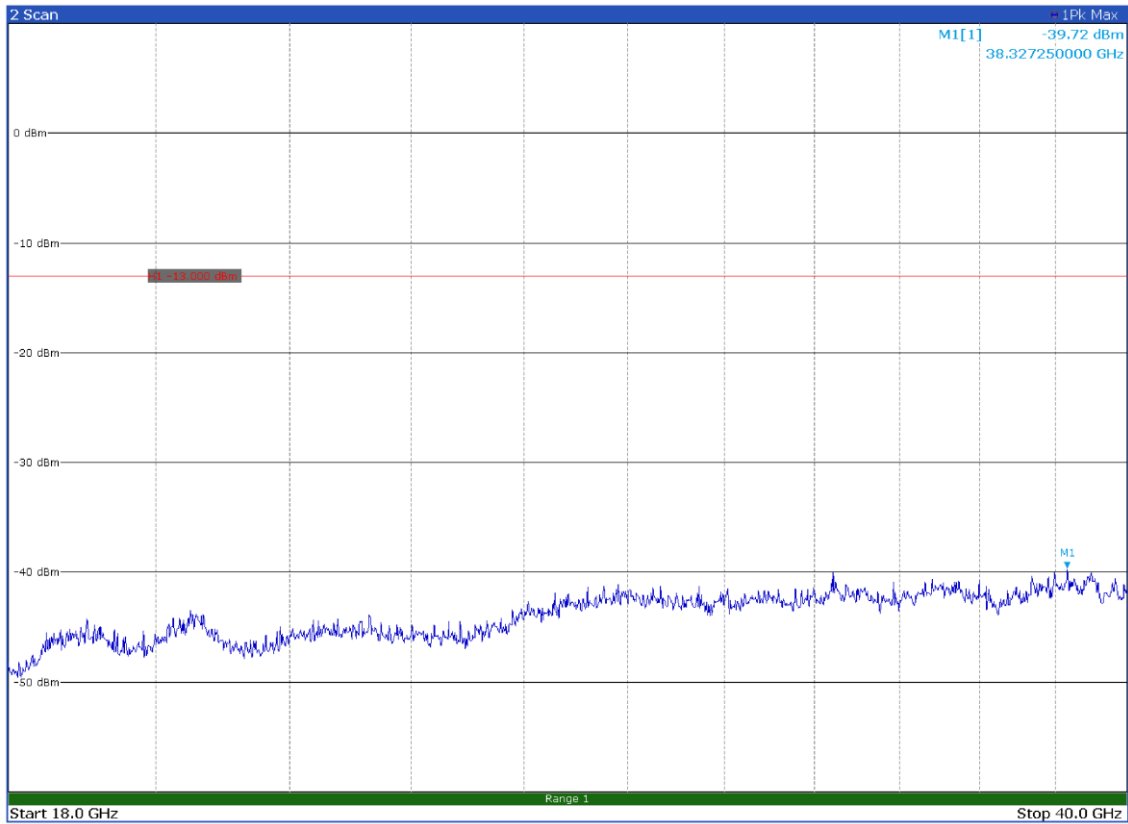
10 MHz signal, Top Channel, 30MHz - 1GHz, V Pol



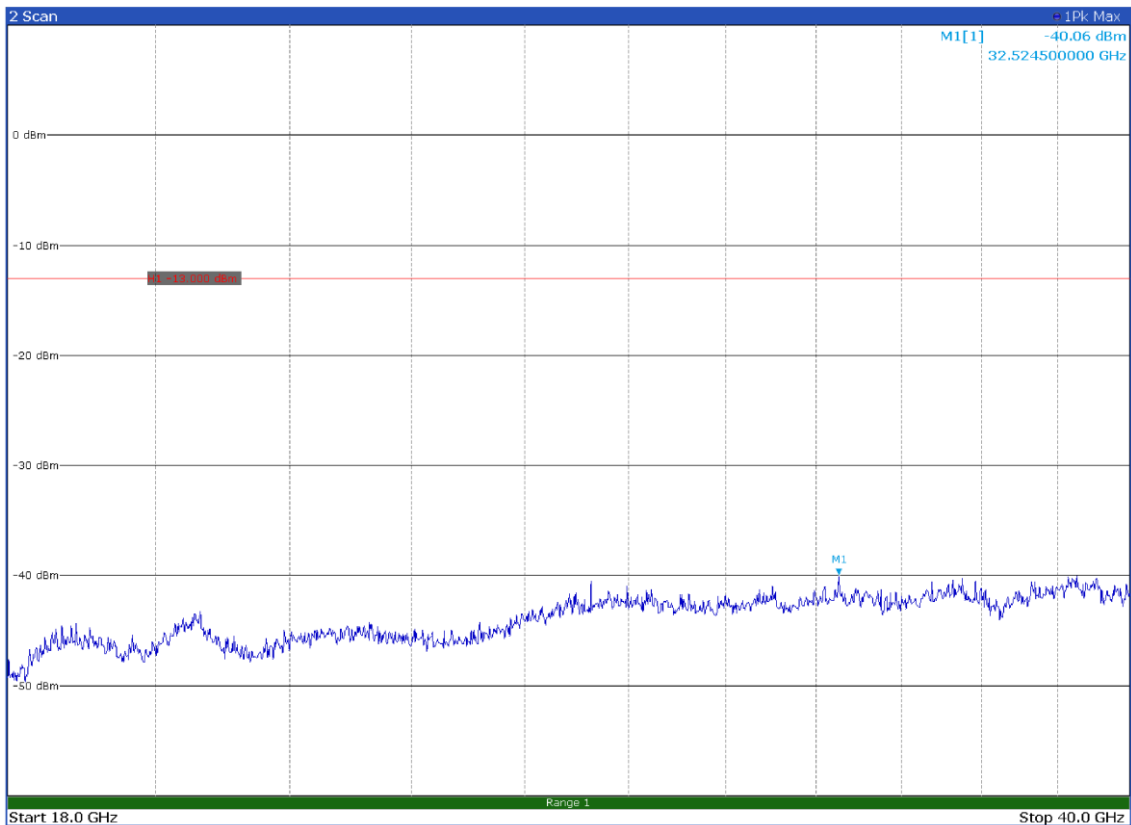
10 MHz signal, Top Channel, 1GHz - 18GHz, H Pol



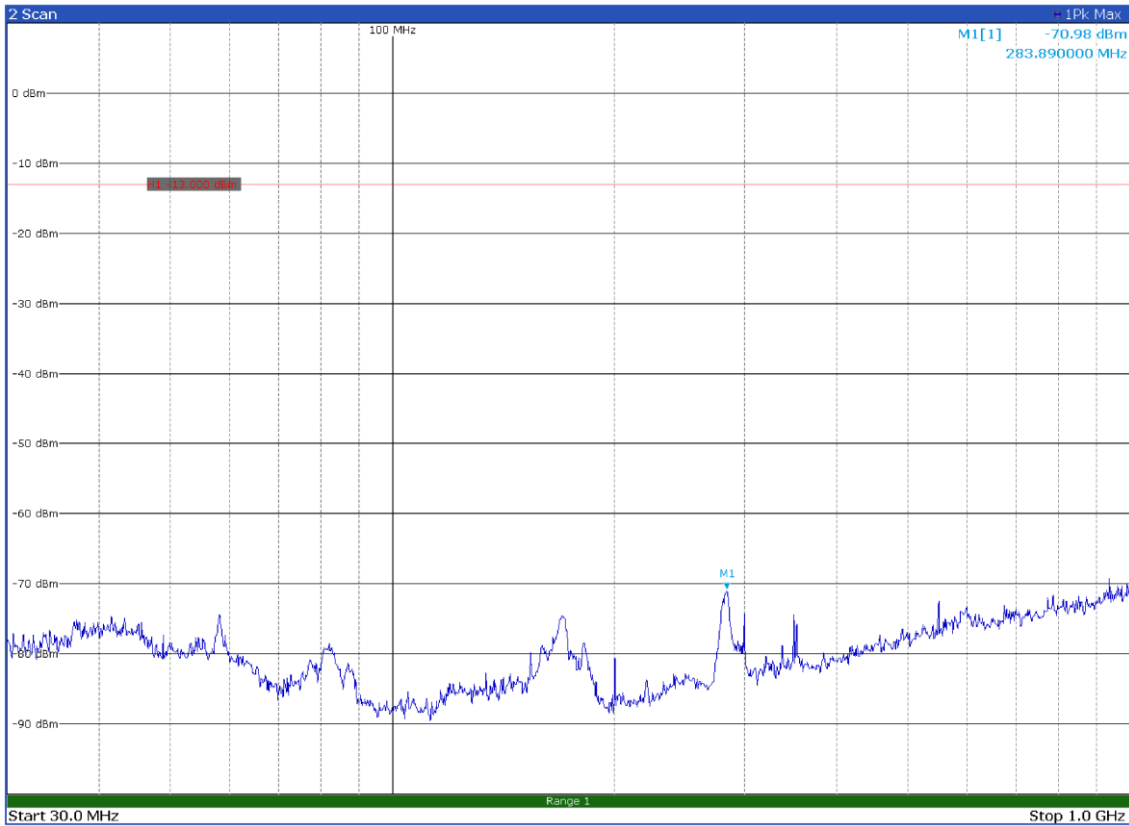
10 MHz signal, Top Channel, 1GHz - 18GHz, V Pol



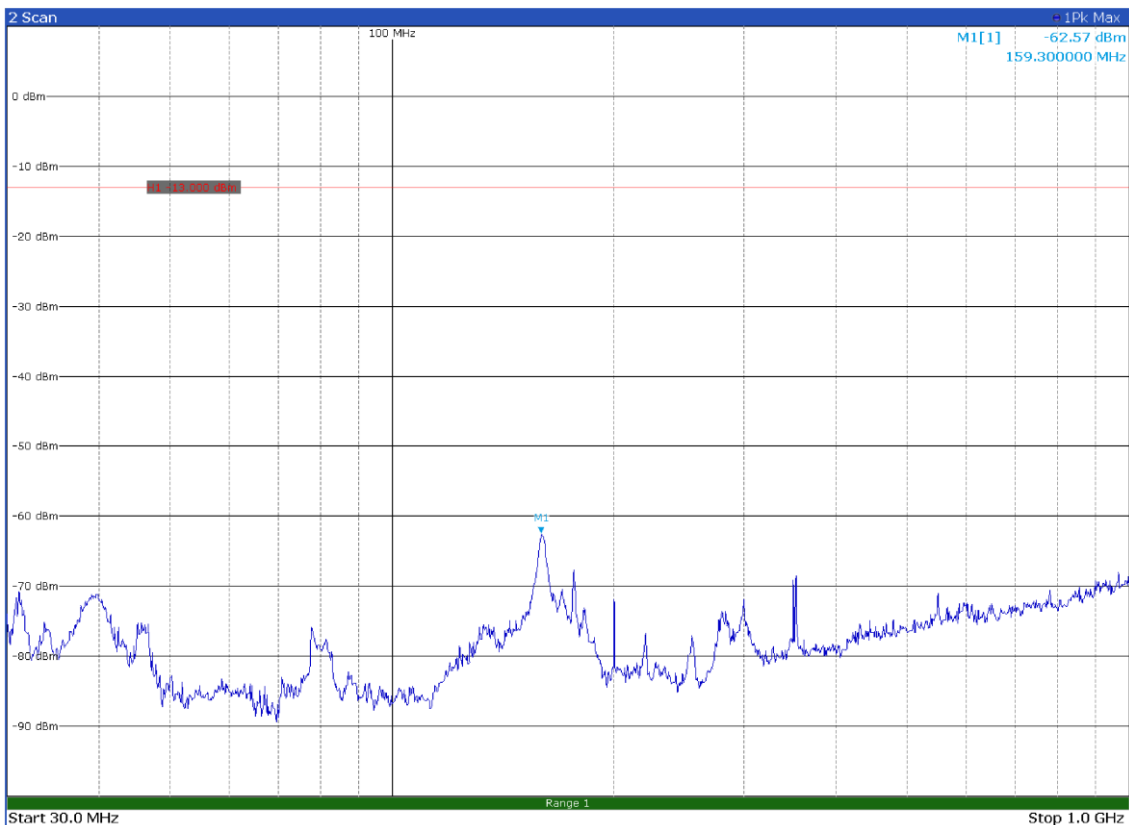
10 MHz signal, Top Channel, 18GHz - 40GHz, H Pol



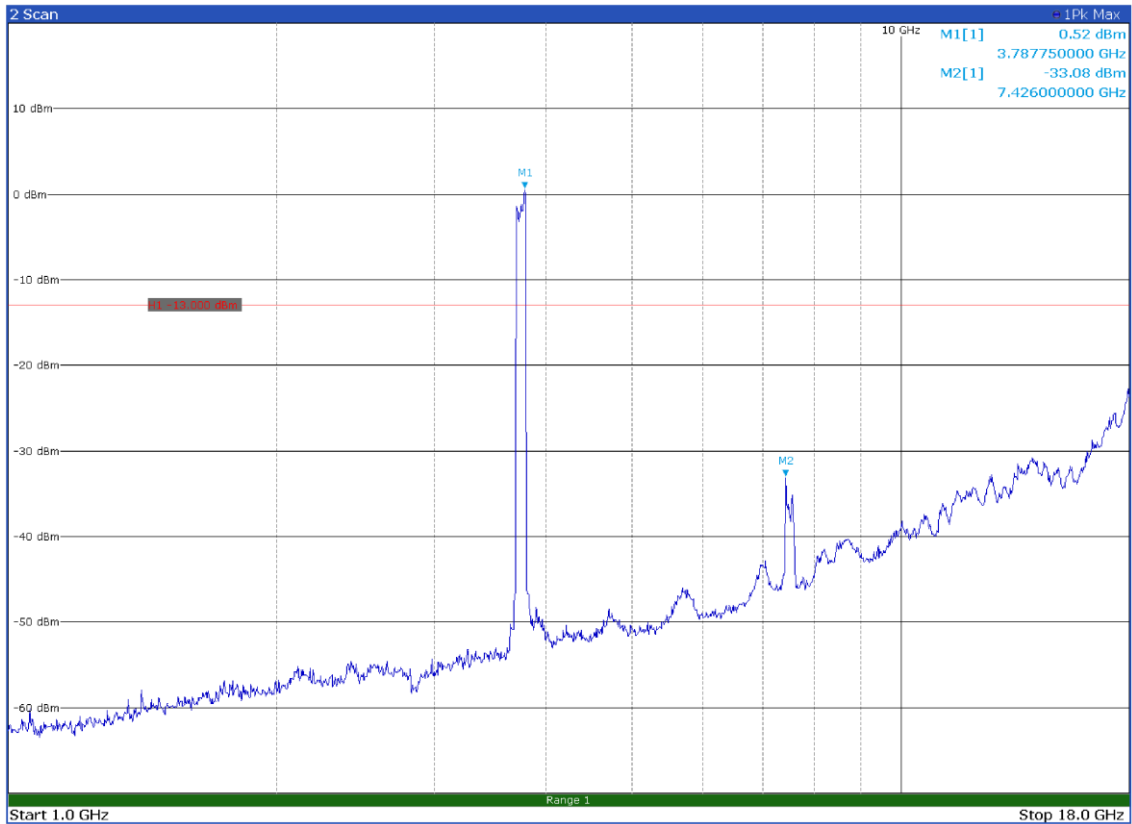
10 MHz signal, Top Channel, 18GHz - 40GHz, V Pol



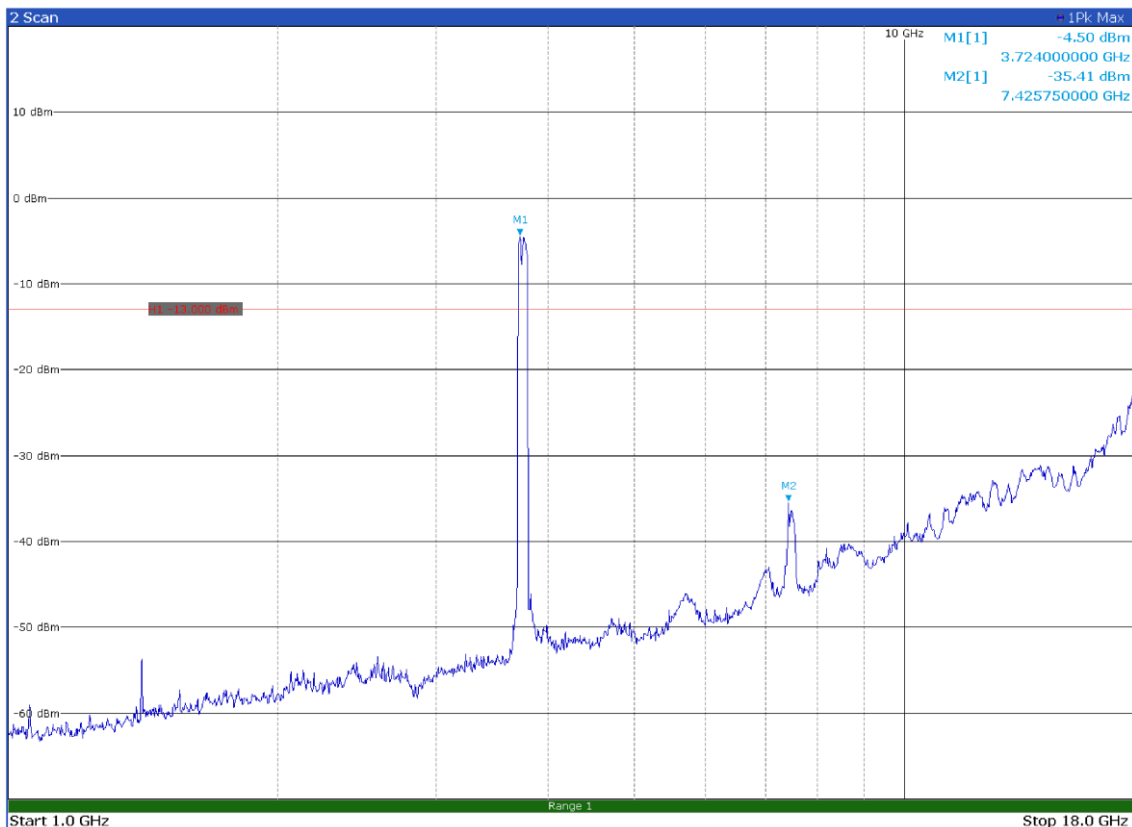
100 MHz signal, Bottom Channel, 30MHz - 1GHz, H Pol



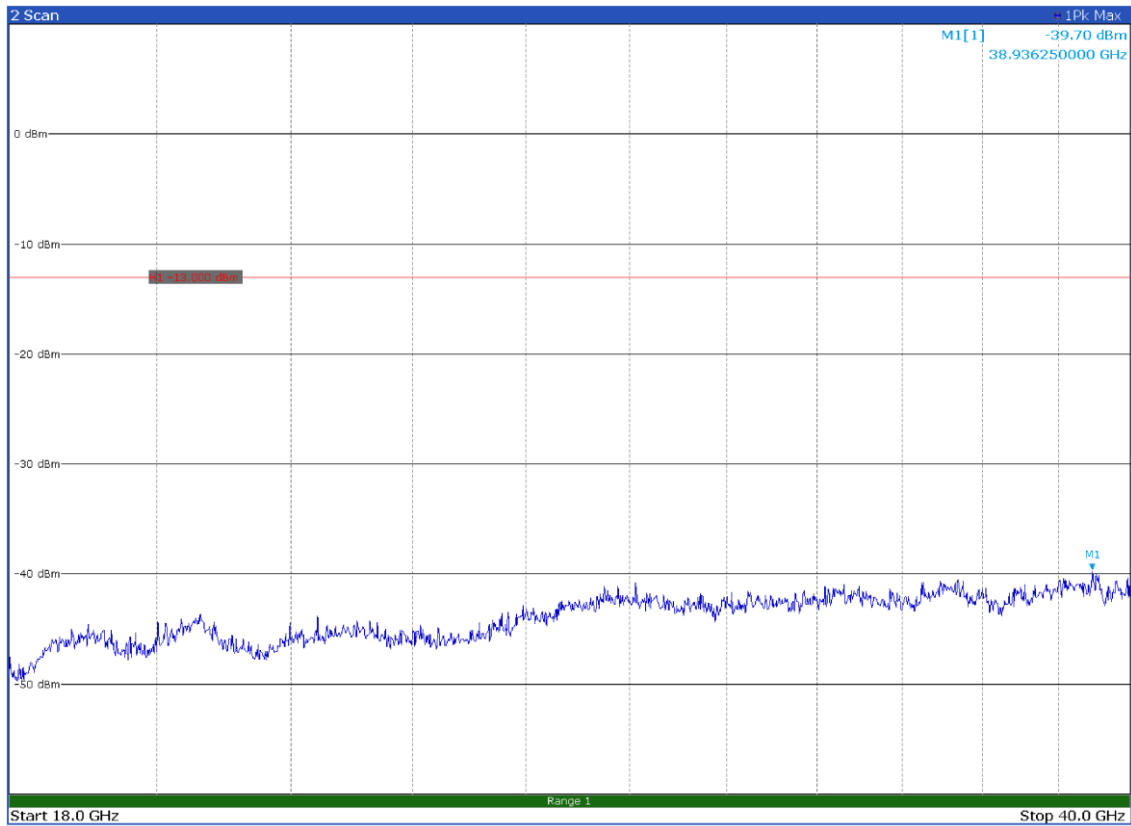
100 MHz signal, Bottom Channel, 30MHz - 1GHz, V Pol



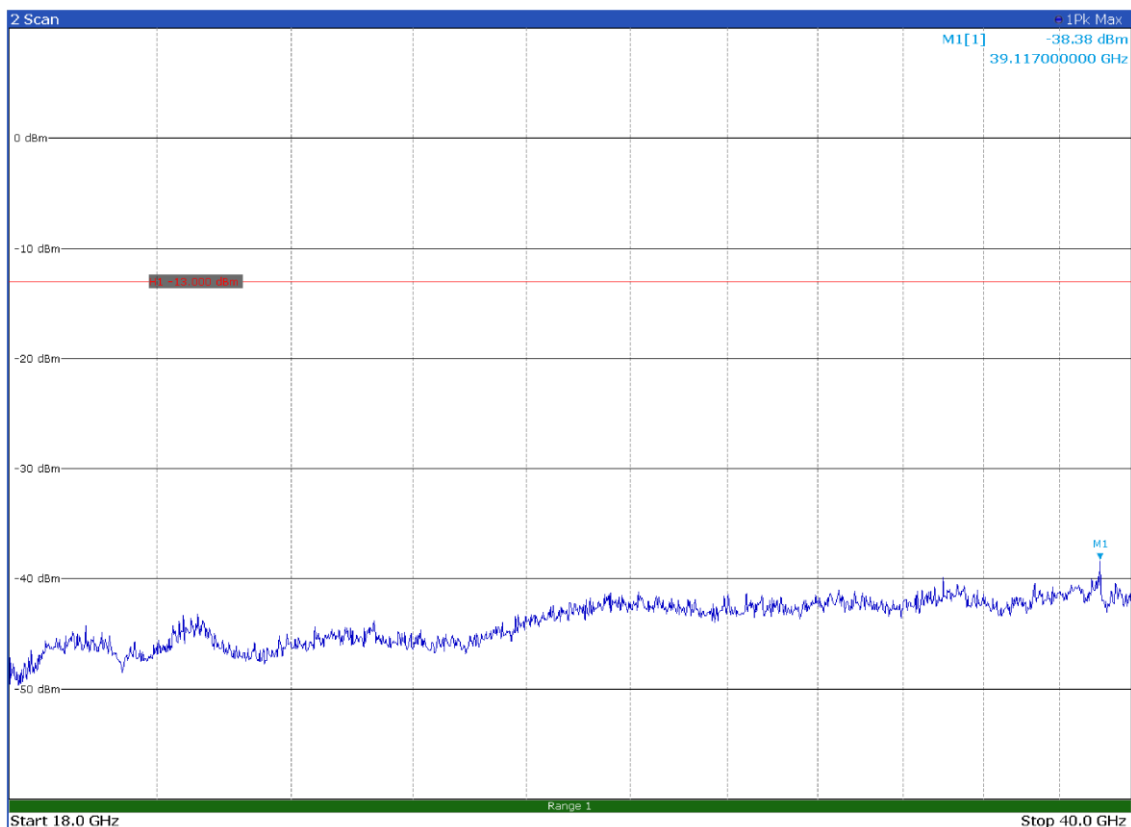
100 MHz signal, Bottom Channel, 1GHz - 18GHz, H Pol



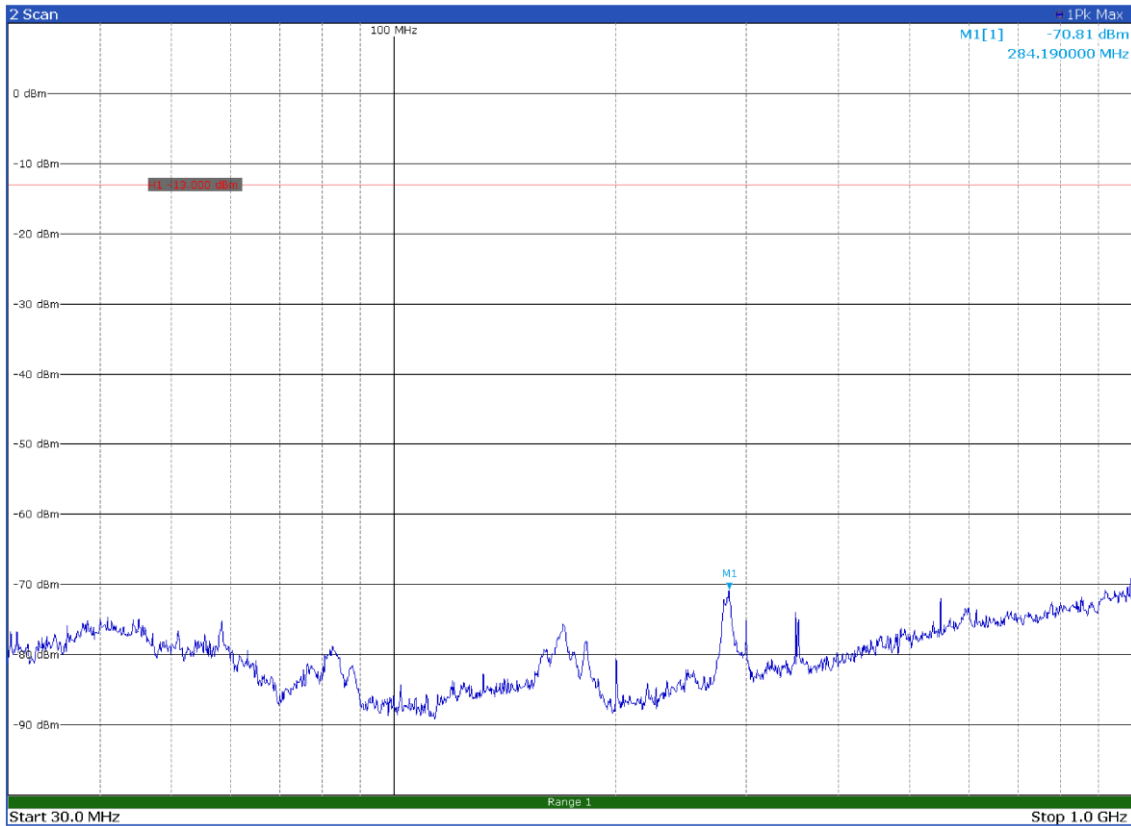
100 MHz signal, Bottom Channel, 1GHz - 18GHz, V Pol



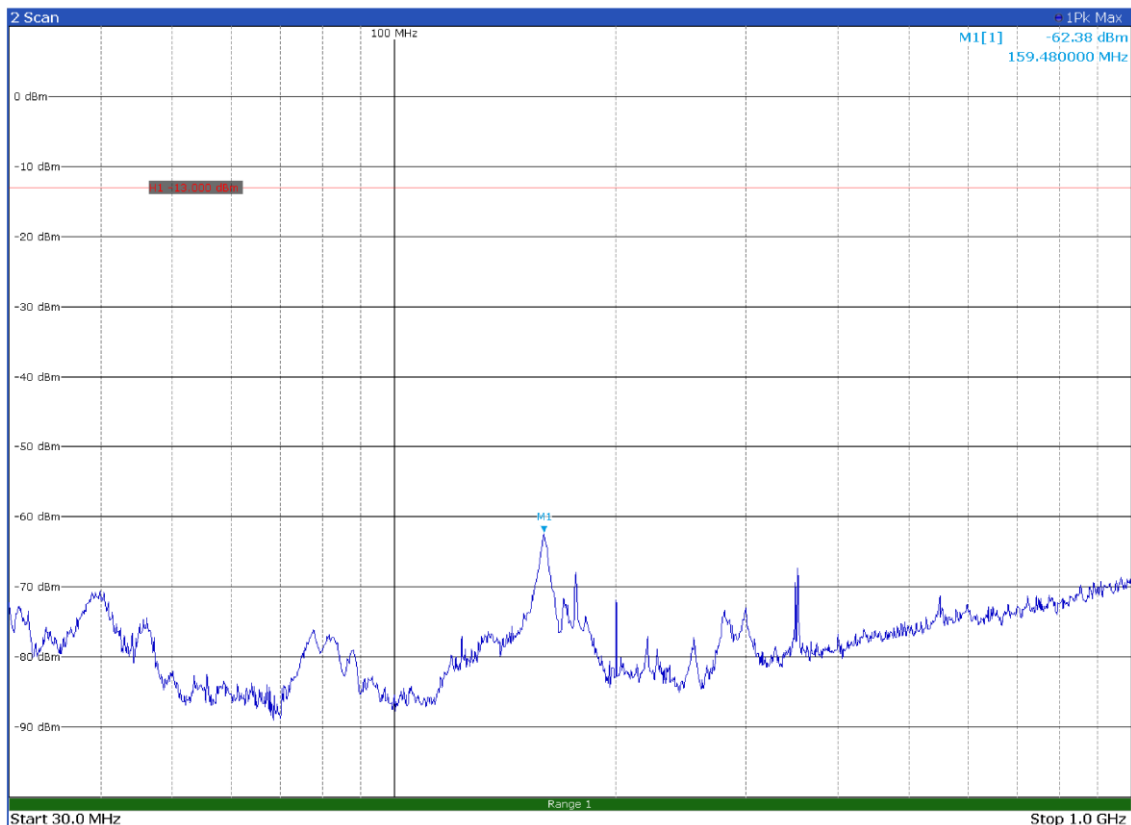
100 MHz signal, Bottom Channel, 18GHz - 40GHz, H Pol



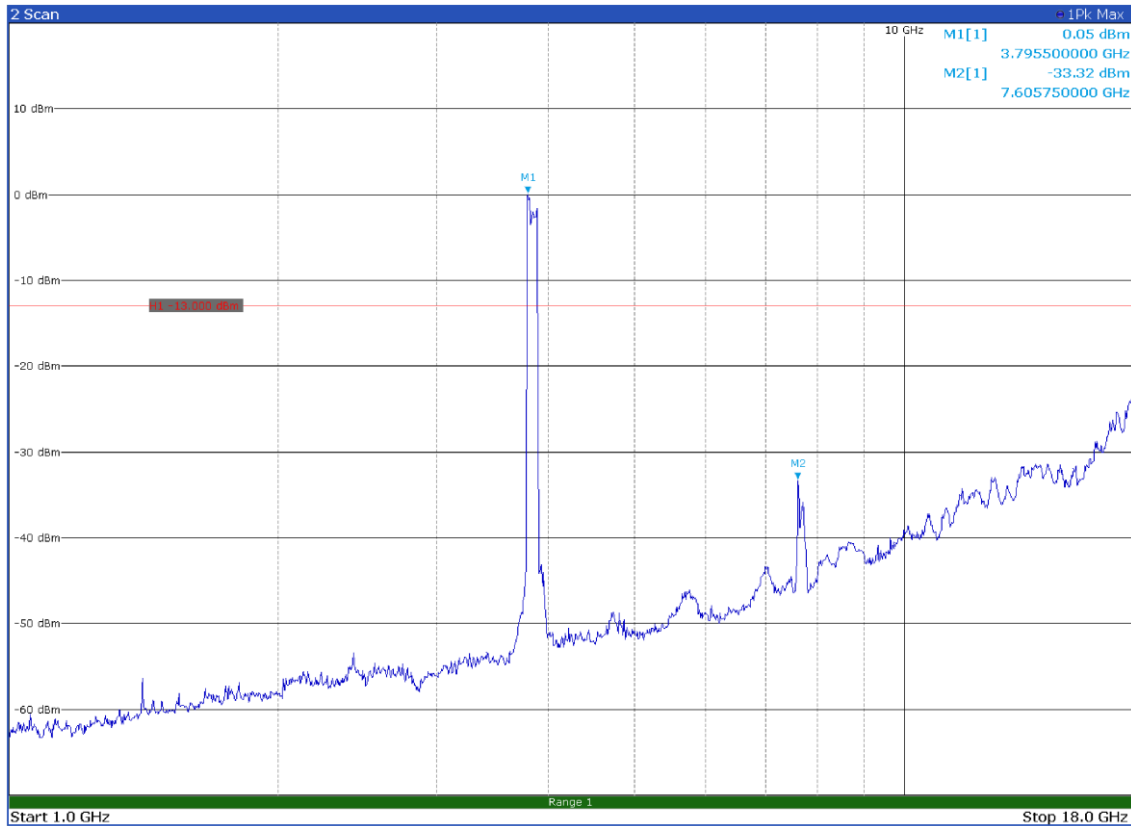
100 MHz signal, Bottom Channel, 18GHz - 40GHz, V Pol



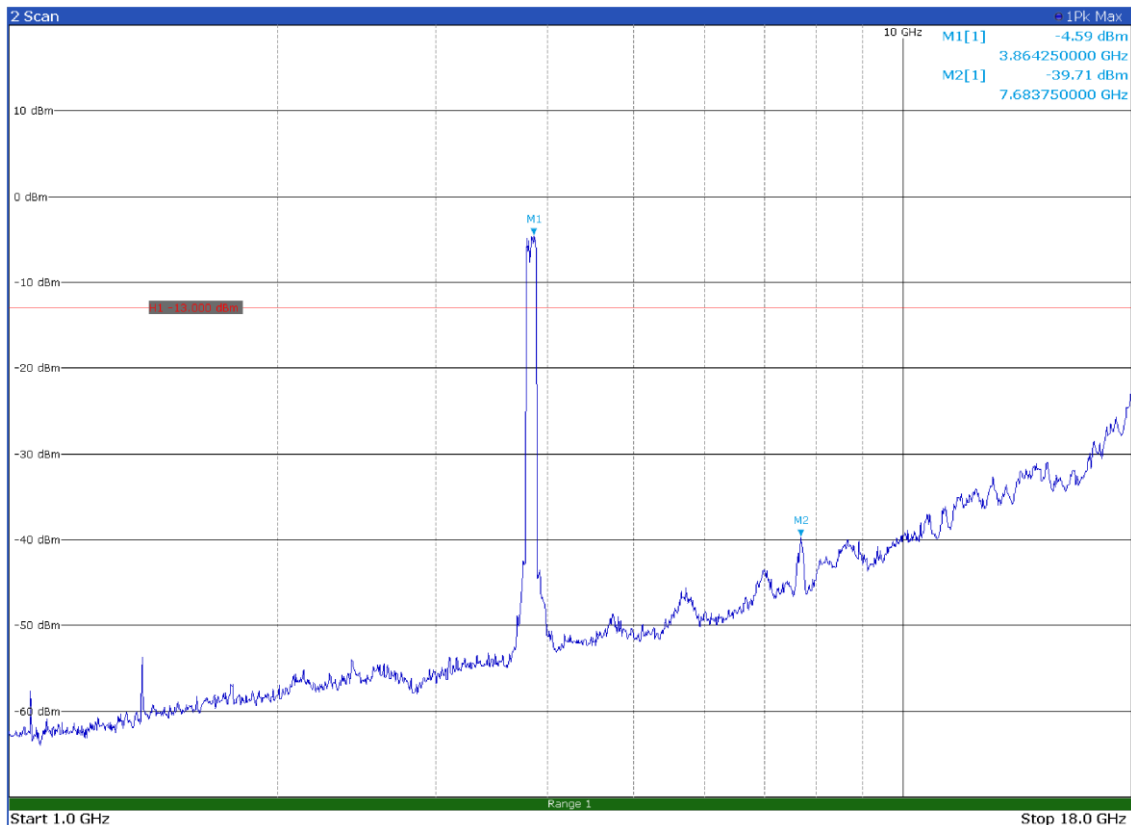
100 MHz signal, Middle Channel, 30MHz - 1GHz, H Pol



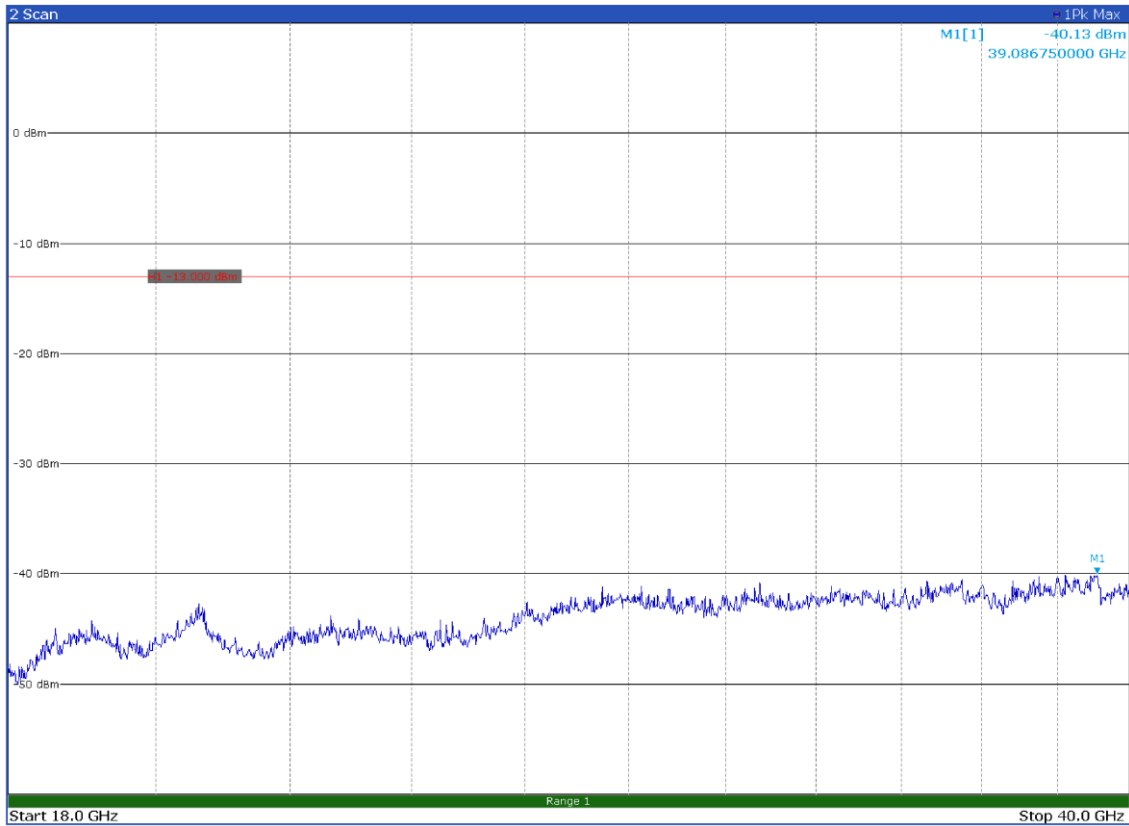
100 MHz signal, Middle Channel, 30MHz - 1GHz, V Pol



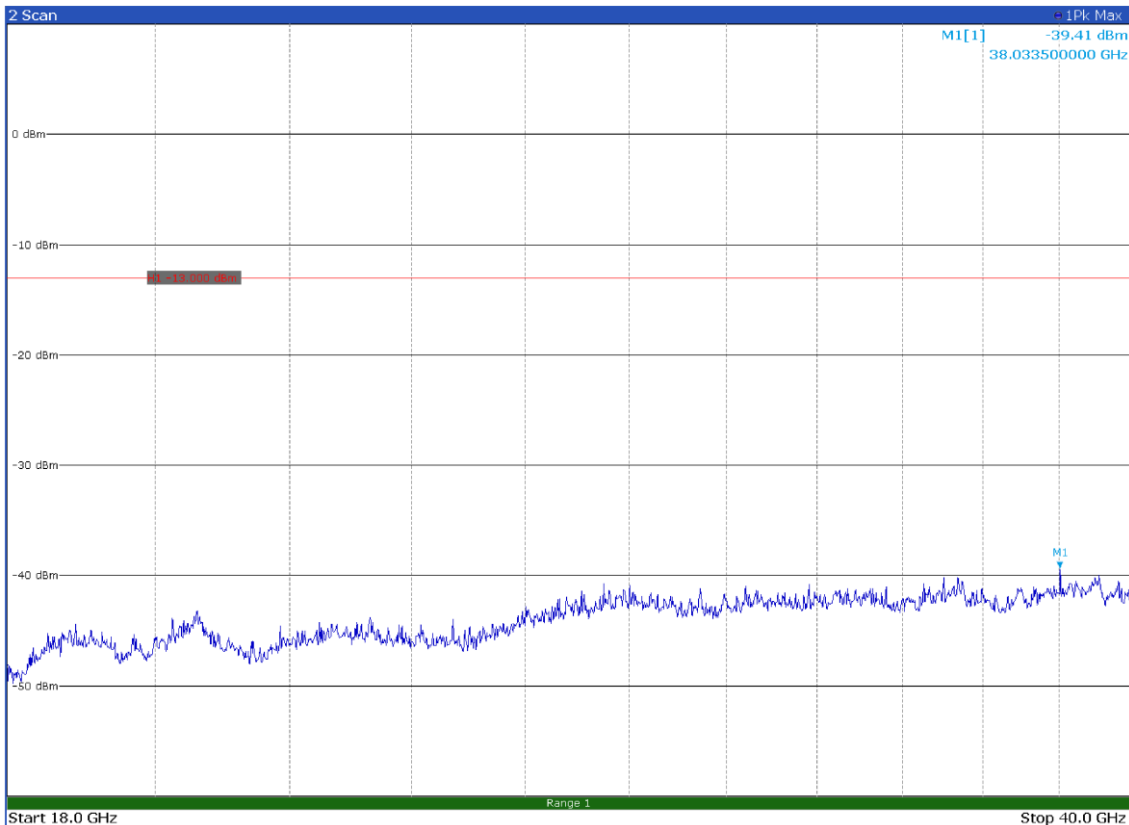
100 MHz signal, Middle Channel, 1GHz - 18GHz, H Pol



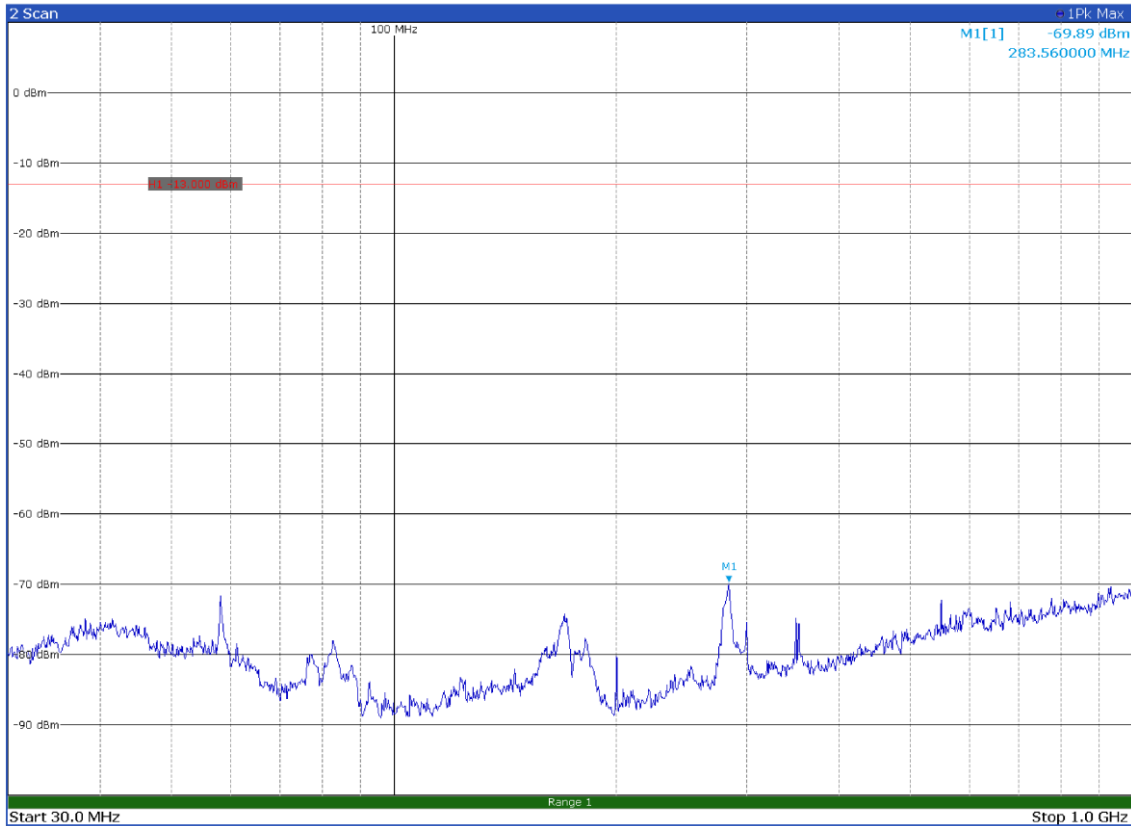
100 MHz signal, Middle Channel, 1GHz - 18GHz, V Pol



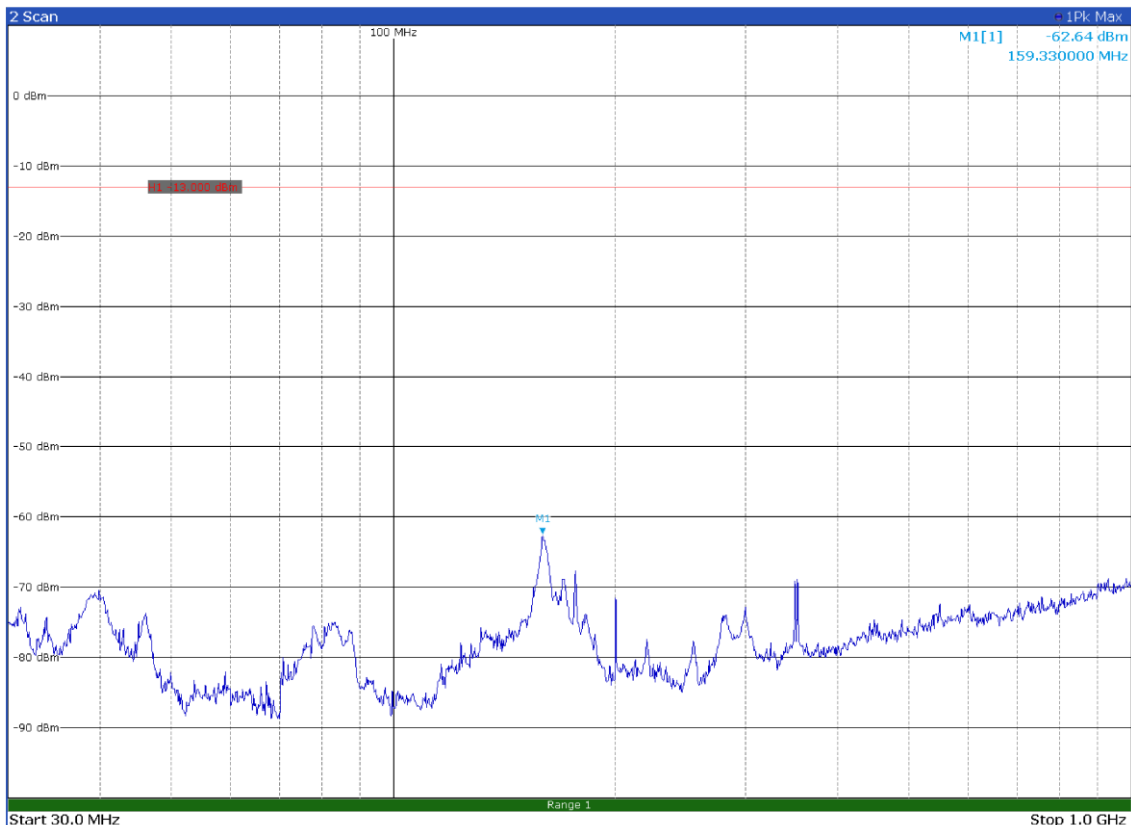
100 MHz signal, Middle Channel, 18GHz - 40GHz, H Pol



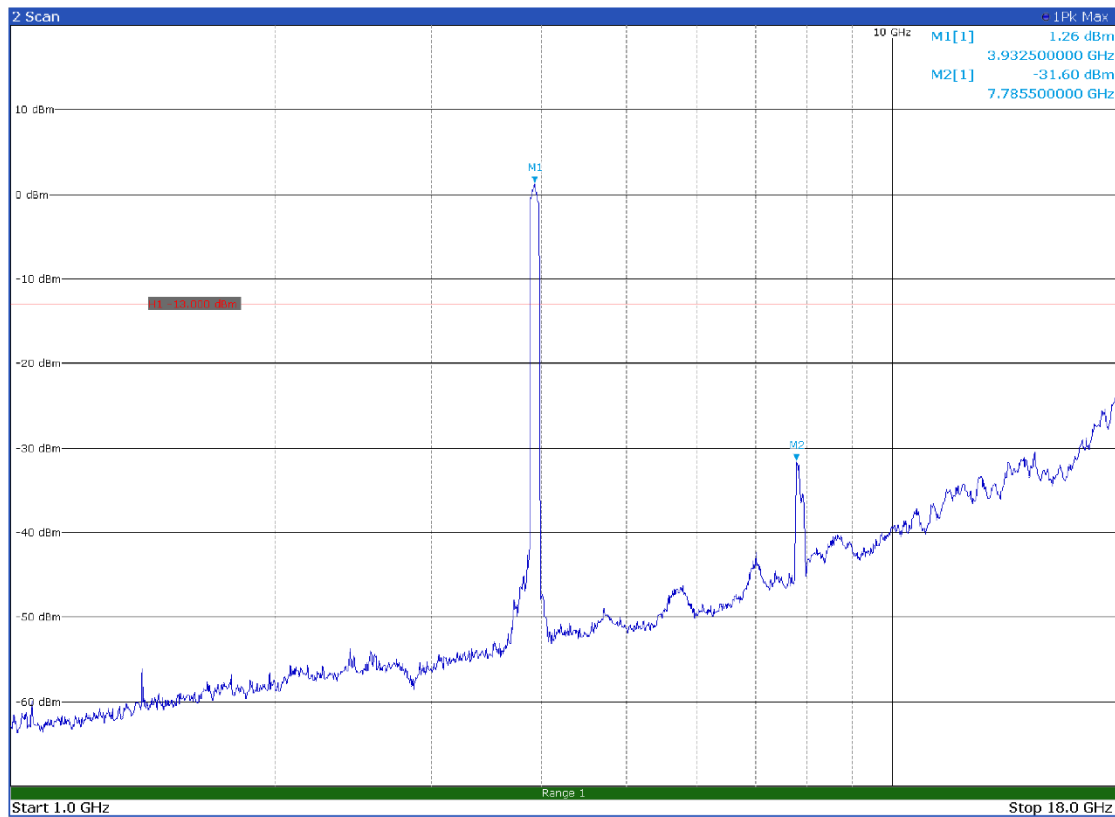
100 MHz signal, Middle Channel, 18GHz - 40GHz, V Pol



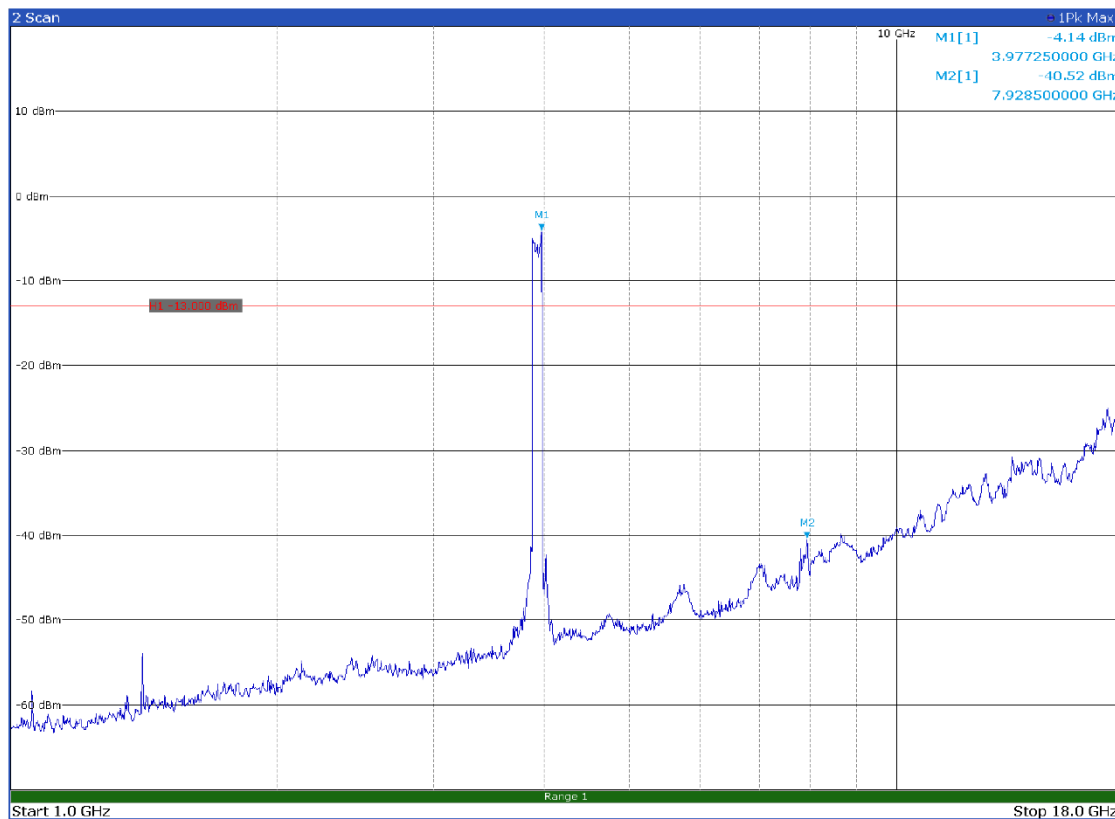
100 MHz signal, Top Channel, 30MHz - 1GHz, H Pol



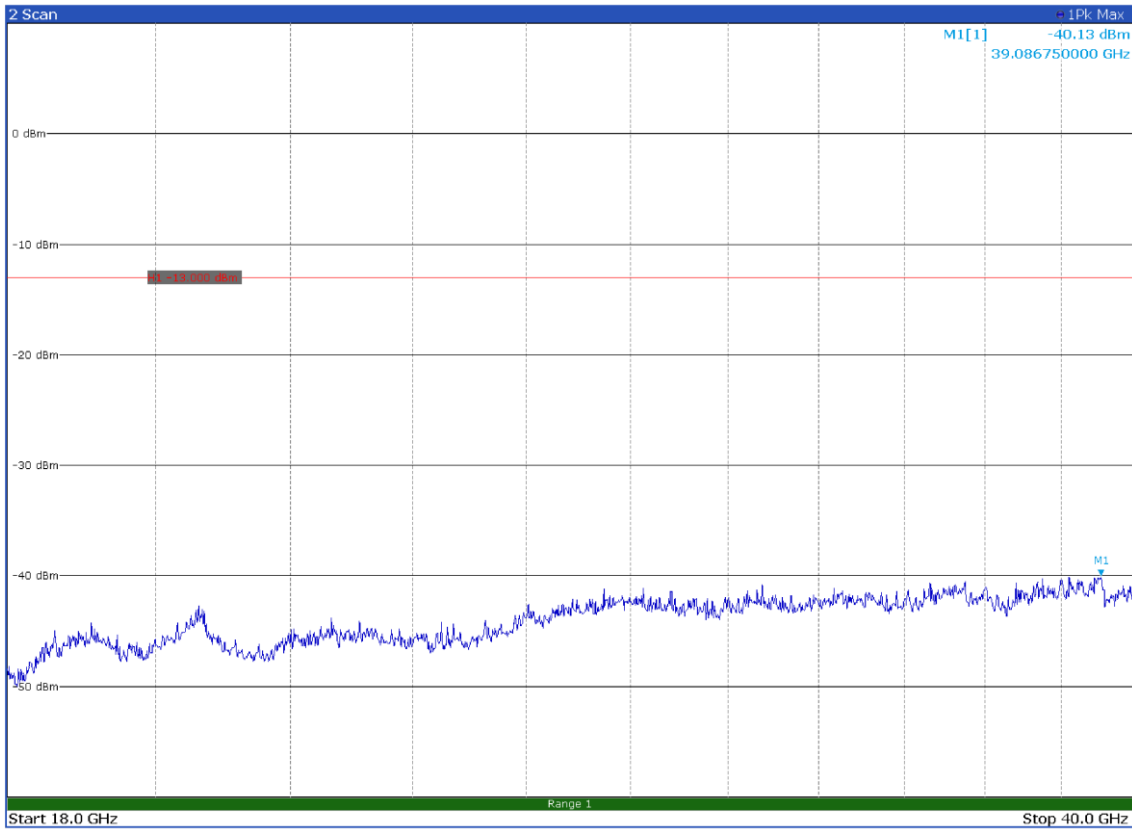
100 MHz signal, Top Channel, 30MHz - 1GHz, V Pol



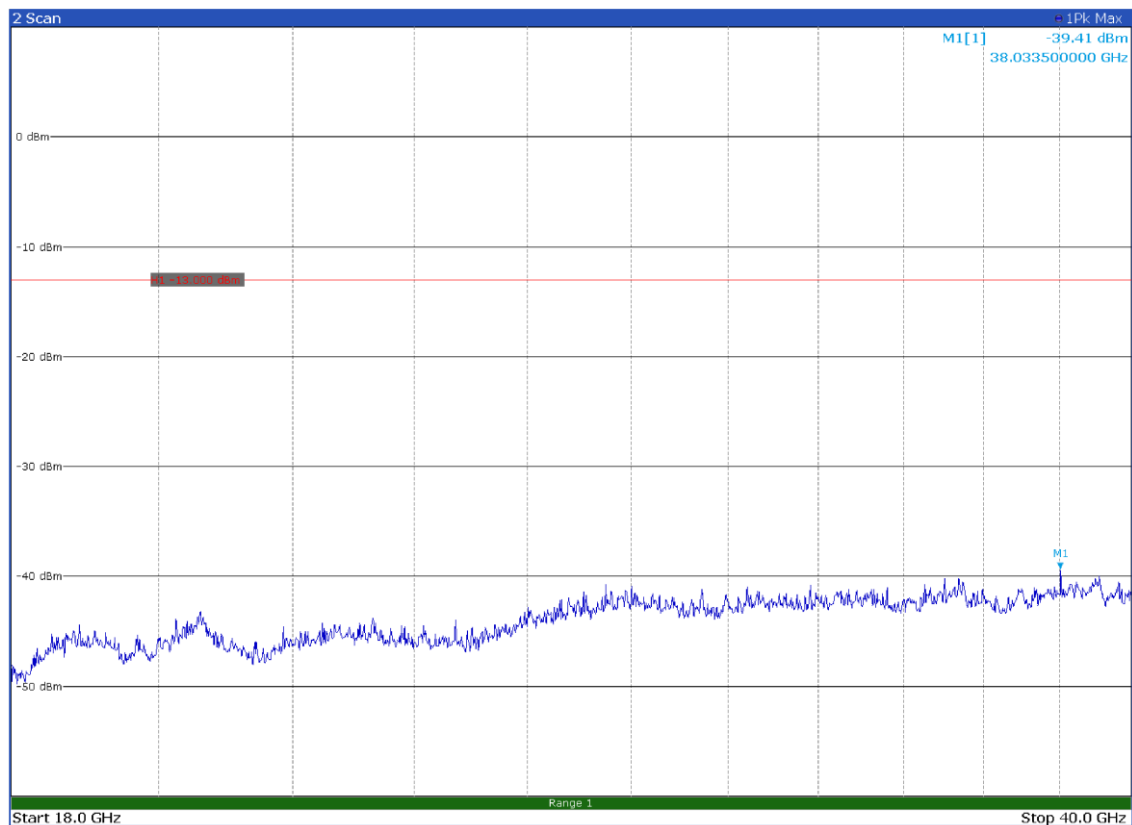
100 MHz signal, Top Channel, 1GHz - 18GHz, H Pol



100 MHz signal, Top Channel, 1GHz - 18GHz, V Pol



100 MHz signal, Top Channel, 18GHz - 40GHz, H Pol



100 MHz signal, Top Channel, 18GHz - 40GHz, V Pol

Clause 27.54 Frequency stability

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test date: 2022-11-11 to 2022-11-25

Test results: Pass

Special notes

Test are performed at 85% (90Vac) and 115% (264Vac) of the primary supply voltage and the same result was found.

Test equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.
Vector Signal Generator	Keysight	N5182B MXG	MY59100262	2025-07
Spectrum Analyzer	Keysight	N9030B PXA	MY61330632	2023-04
Climatic Chambre	Angelantoni	ACS-Hygros 600	7237	2023-11

Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use
 (*) Equipment supplied by manufacturer's

Test data

RF PORT 1

Temperature = -30°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-33.14	Hz
MIDDLE	5G 10 MHz	-34.67	Hz
TOP	5G 10 MHz	-35.81	Hz
BOTTOM	5G 100 MHz	-33.09	Hz
MIDDLE	5G 100 MHz	-34.10	Hz
TOP	5G 100 MHz	-34.54	Hz

Temperature = -20°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-32.66	Hz
MIDDLE	5G 10 MHz	-34.16	Hz
TOP	5G 10 MHz	-35.24	Hz
BOTTOM	5G 100 MHz	-32.34	Hz
MIDDLE	5G 100 MHz	-33.20	Hz
TOP	5G 100 MHz	-33.71	Hz

Temperature = -10°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-33.38	Hz
MIDDLE	5G 10 MHz	-33.24	Hz
TOP	5G 10 MHz	-33.02	Hz
BOTTOM	5G 100 MHz	-33.75	Hz
MIDDLE	5G 100 MHz	-33.22	Hz
TOP	5G 100 MHz	-33.56	Hz

Temperature = 0°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-32.82	Hz
MIDDLE	5G 10 MHz	-31.26	Hz
TOP	5G 10 MHz	-32.53	Hz
BOTTOM	5G 100 MHz	-31.57	Hz
MIDDLE	5G 100 MHz	-32.39	Hz
TOP	5G 100 MHz	-32.09	Hz

Temperature = 10°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-30.30	Hz
MIDDLE	5G 10 MHz	-31.53	Hz
TOP	5G 10 MHz	-32.73	Hz
BOTTOM	5G 100 MHz	-30.30	Hz
MIDDLE	5G 100 MHz	-30.93	Hz
TOP	5G 100 MHz	-31.75	Hz

Temperature = 20°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-30.76	Hz
MIDDLE	5G 10 MHz	-31.90	Hz
TOP	5G 10 MHz	-33.13	Hz
BOTTOM	5G 100 MHz	-30.72	Hz
MIDDLE	5G 100 MHz	-31.72	Hz
TOP	5G 100 MHz	-32.42	Hz

Temperature = 30°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-31.13	Hz
MIDDLE	5G 10 MHz	-32.32	Hz
TOP	5G 10 MHz	-33.71	Hz
BOTTOM	5G 100 MHz	-31.30	Hz
MIDDLE	5G 100 MHz	-31.98	Hz
TOP	5G 100 MHz	-32.69	Hz

Temperature = 40°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-31.23	Hz
MIDDLE	5G 10 MHz	-32.61	Hz
TOP	5G 10 MHz	-33.87	Hz
BOTTOM	5G 100 MHz	-31.60	Hz
MIDDLE	5G 100 MHz	-32.21	Hz
TOP	5G 100 MHz	-33.11	Hz

Temperature = 50°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-31.61	Hz
MIDDLE	5G 10 MHz	-32.67	Hz
TOP	5G 10 MHz	-33.90	Hz
BOTTOM	5G 100 MHz	-31.60	Hz
MIDDLE	5G 100 MHz	-32.48	Hz
TOP	5G 100 MHz	-33.39	Hz

RF PORT 2

Temperature = -30°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-32.97	Hz
MIDDLE	5G 10 MHz	-34.35	Hz
TOP	5G 10 MHz	-35.66	Hz
BOTTOM	5G 100 MHz	-32.82	Hz
MIDDLE	5G 100 MHz	-33.77	Hz
TOP	5G 100 MHz	-34.28	Hz

Temperature = -20°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-32.49	Hz
MIDDLE	5G 10 MHz	-33.80	Hz
TOP	5G 10 MHz	-34.71	Hz
BOTTOM	5G 100 MHz	-32.42	Hz
MIDDLE	5G 100 MHz	-33.18	Hz
TOP	5G 100 MHz	-33.80	Hz

Temperature = -10°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-32.96	Hz
MIDDLE	5G 10 MHz	-32.57	Hz
TOP	5G 10 MHz	-33.52	Hz
BOTTOM	5G 100 MHz	-32.43	Hz
MIDDLE	5G 100 MHz	-32.50	Hz
TOP	5G 100 MHz	-33.40	Hz

Temperature = 0°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-32.14	Hz
MIDDLE	5G 10 MHz	-32.41	Hz
TOP	5G 10 MHz	-32.40	Hz
BOTTOM	5G 100 MHz	-32.09	Hz
MIDDLE	5G 100 MHz	-32.25	Hz
TOP	5G 100 MHz	-32.07	Hz

Temperature = 10°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-30.71	Hz
MIDDLE	5G 10 MHz	-31.92	Hz
TOP	5G 10 MHz	-33.10	Hz
BOTTOM	5G 100 MHz	-30.84	Hz
MIDDLE	5G 100 MHz	-31.33	Hz
TOP	5G 100 MHz	-32.32	Hz

Temperature = 20°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-30.52	Hz
MIDDLE	5G 10 MHz	-31.81	Hz
TOP	5G 10 MHz	-32.88	Hz
BOTTOM	5G 100 MHz	-30.60	Hz
MIDDLE	5G 100 MHz	-31.12	Hz
TOP	5G 100 MHz	-32.37	Hz

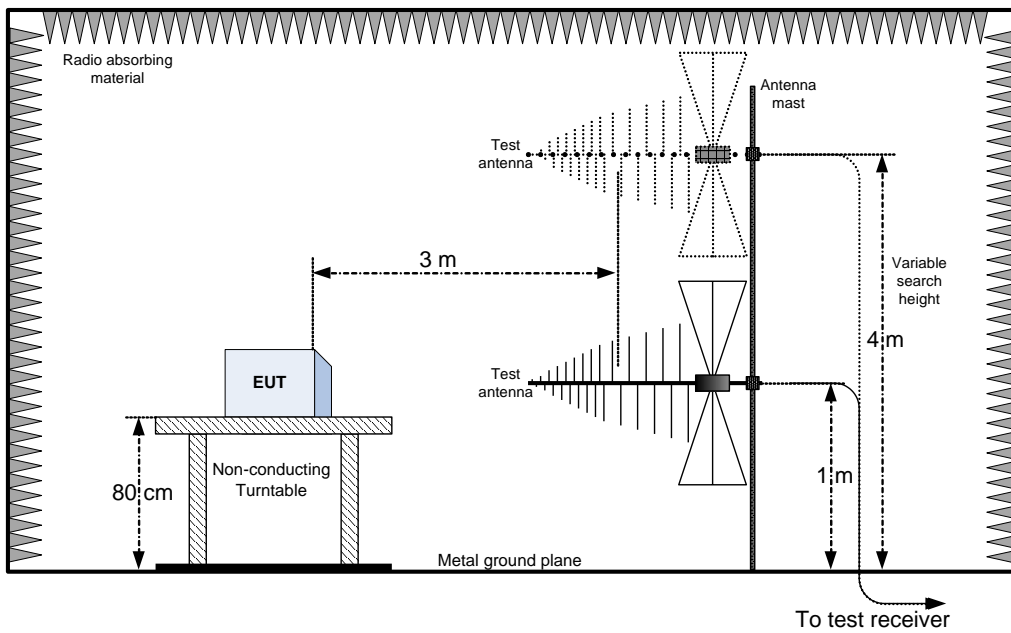
Temperature = 30°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-31.22	Hz
MIDDLE	5G 10 MHz	-32.26	Hz
TOP	5G 10 MHz	-33.46	Hz
BOTTOM	5G 100 MHz	-31.02	Hz
MIDDLE	5G 100 MHz	-31.90	Hz
TOP	5G 100 MHz	-32.51	Hz

Temperature = 40°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-31.50	Hz
MIDDLE	5G 10 MHz	-32.33	Hz
TOP	5G 10 MHz	-33.75	Hz
BOTTOM	5G 100 MHz	-31.32	Hz
MIDDLE	5G 100 MHz	-32.14	Hz
TOP	5G 100 MHz	-32.81	Hz

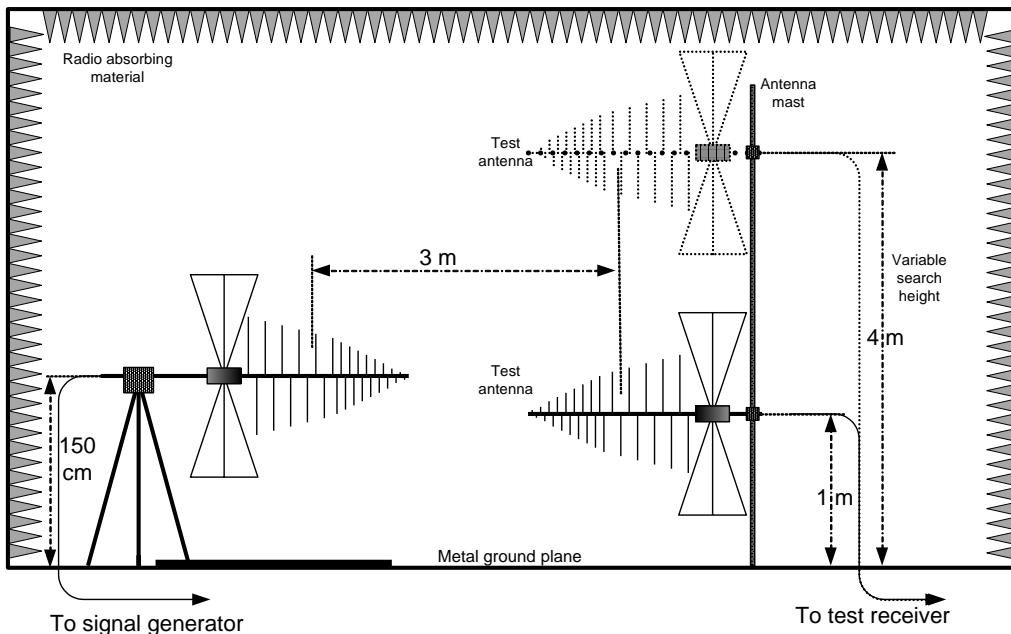
Temperature = 50°C			
Channel	Signal	Frequency Error	Measurement unit
BOTTOM	5G 10 MHz	-31.74	Hz
MIDDLE	5G 10 MHz	-33.00	Hz
TOP	5G 10 MHz	-34.40	Hz
BOTTOM	5G 100 MHz	-31.85	Hz
MIDDLE	5G 100 MHz	-32.77	Hz
TOP	5G 100 MHz	-33.55	Hz

Appendix B: Block diagrams of test set-ups

Radiated emissions set-up

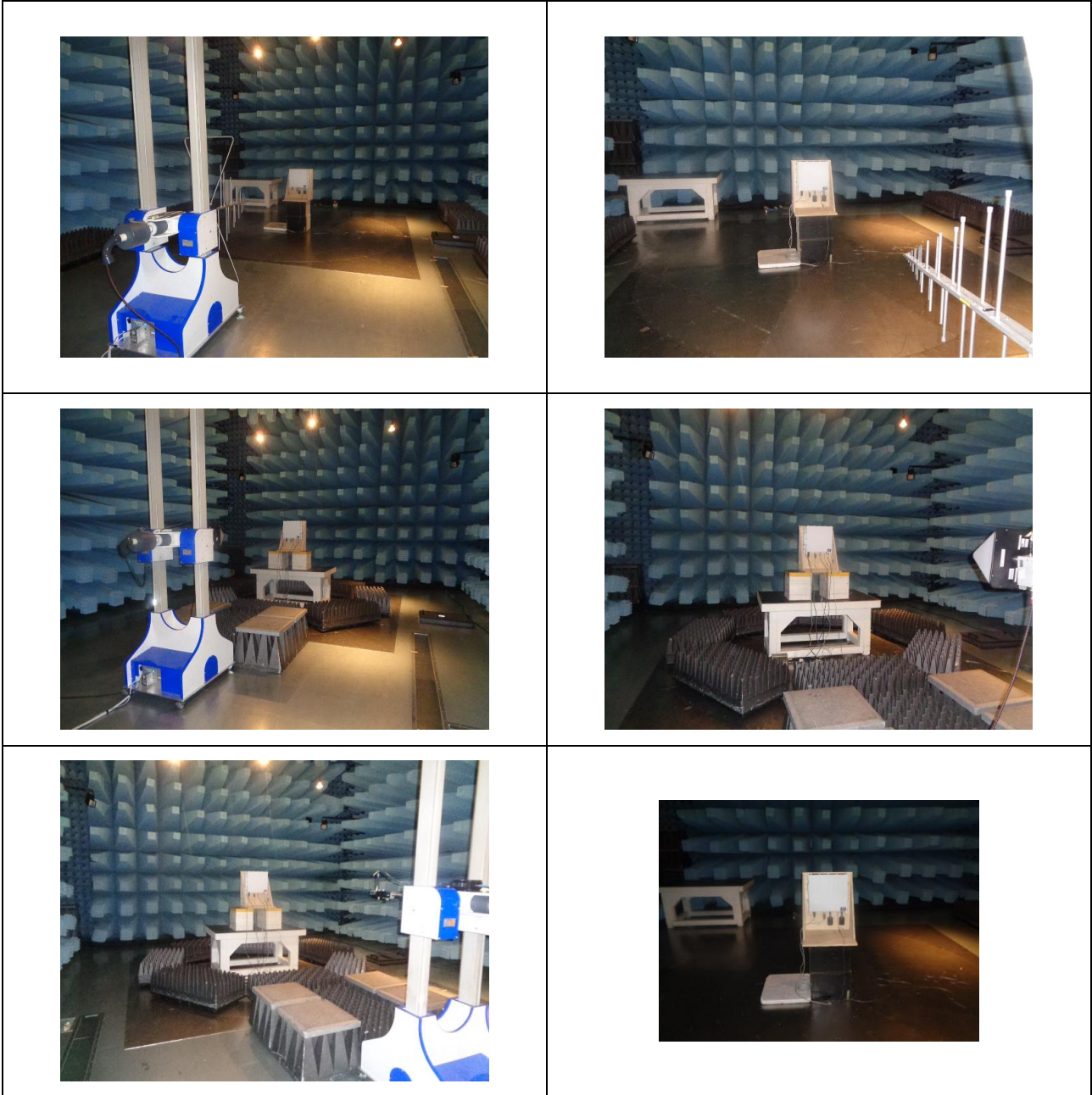


Substitution method set-up



Appendix C: EUT Photos

Photo Set up



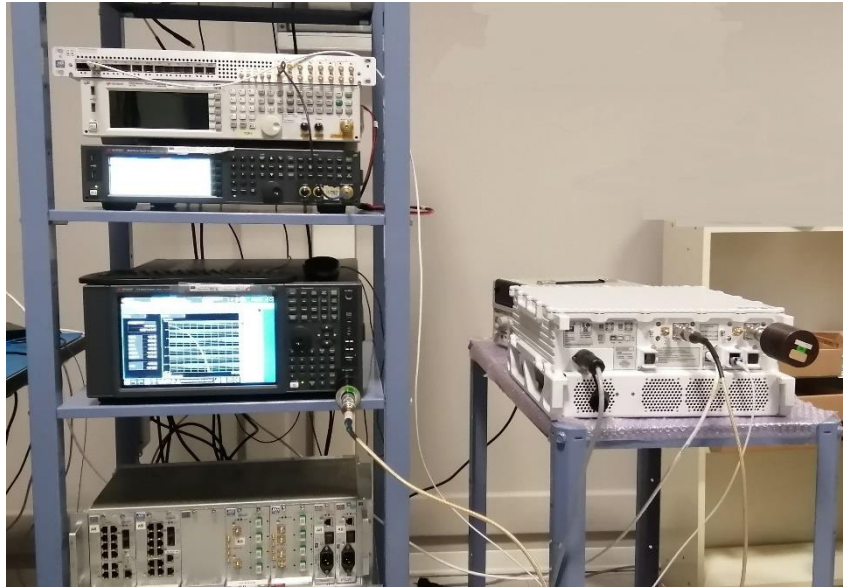
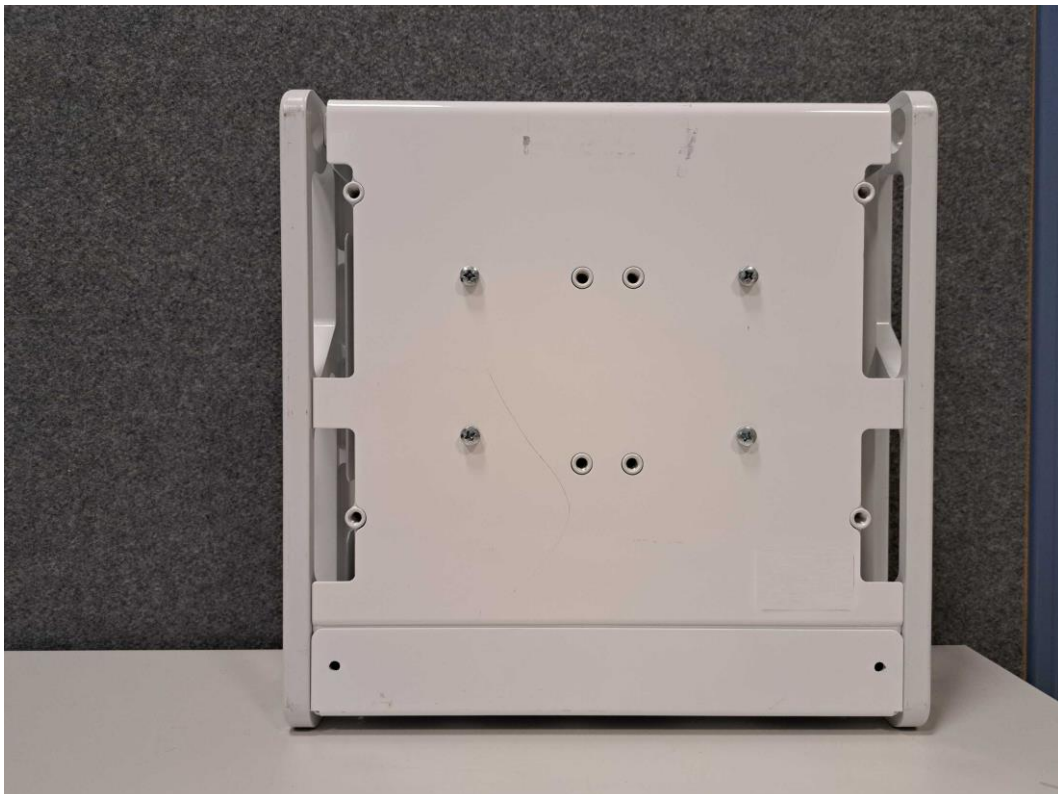
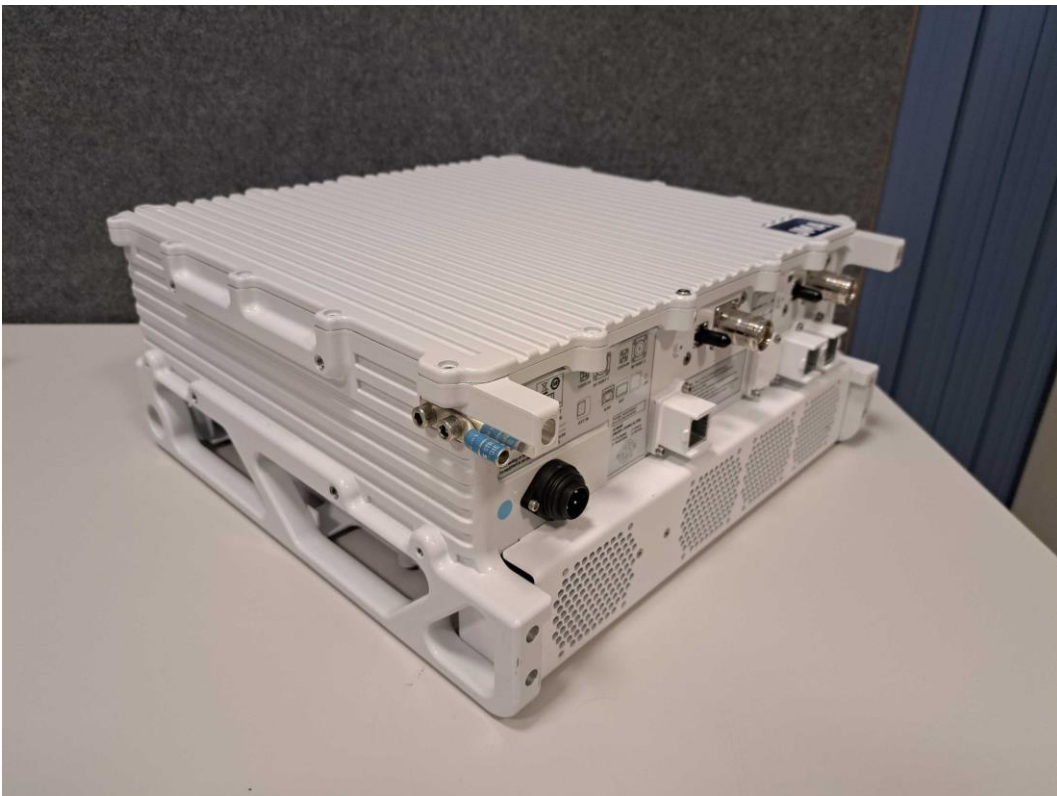
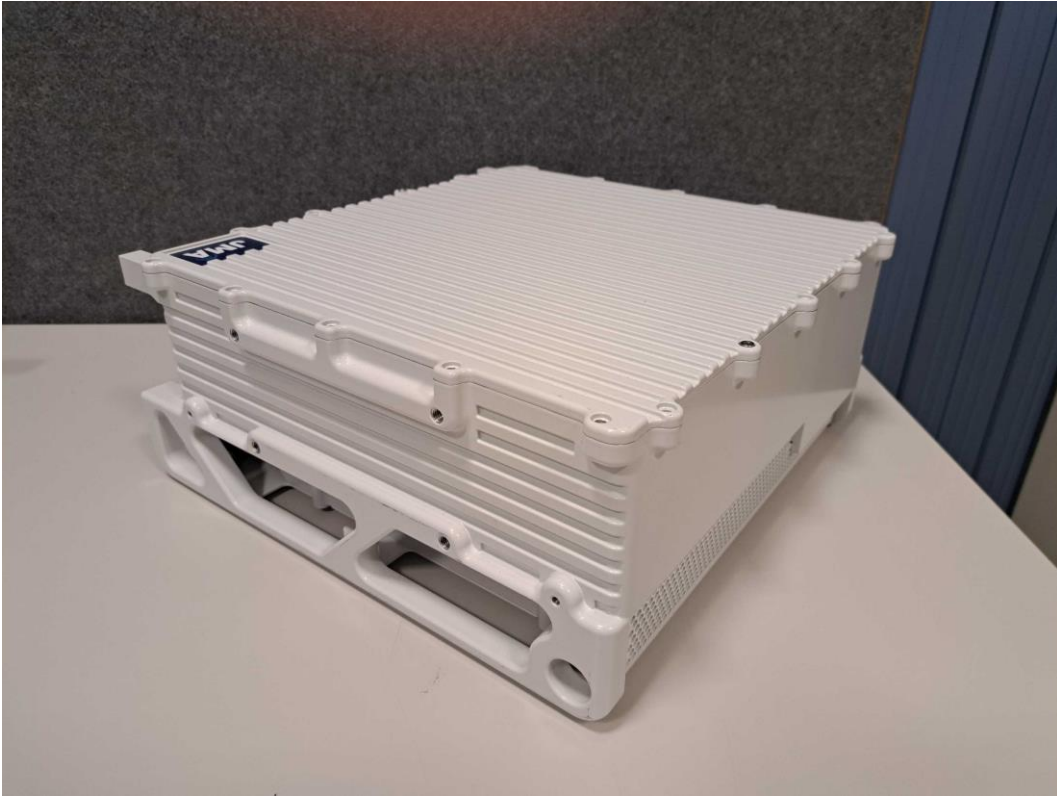
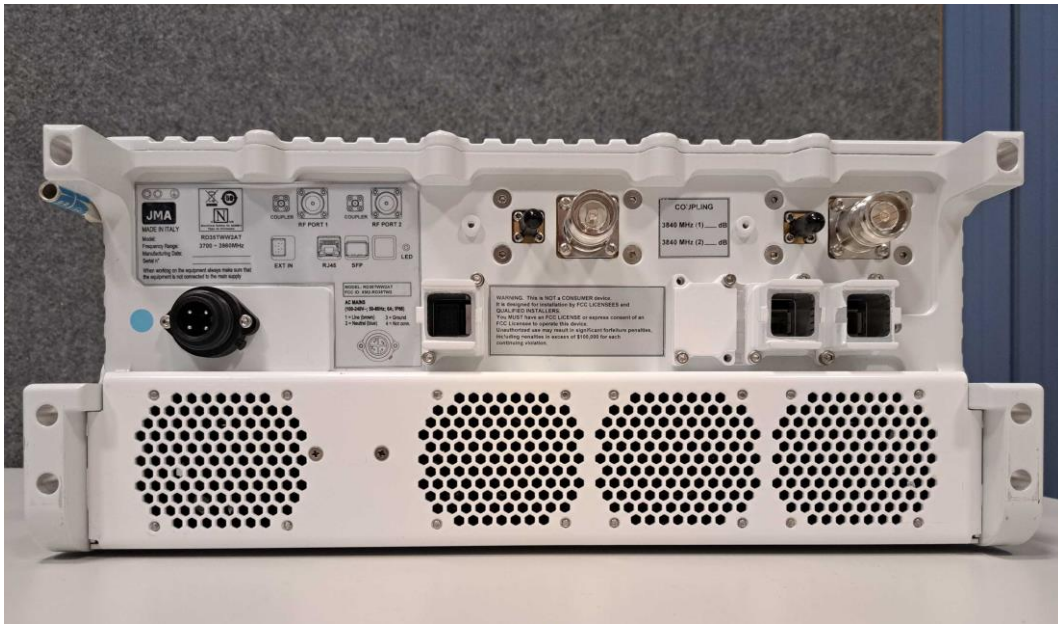


Photo EUT







- END OF REPORT -