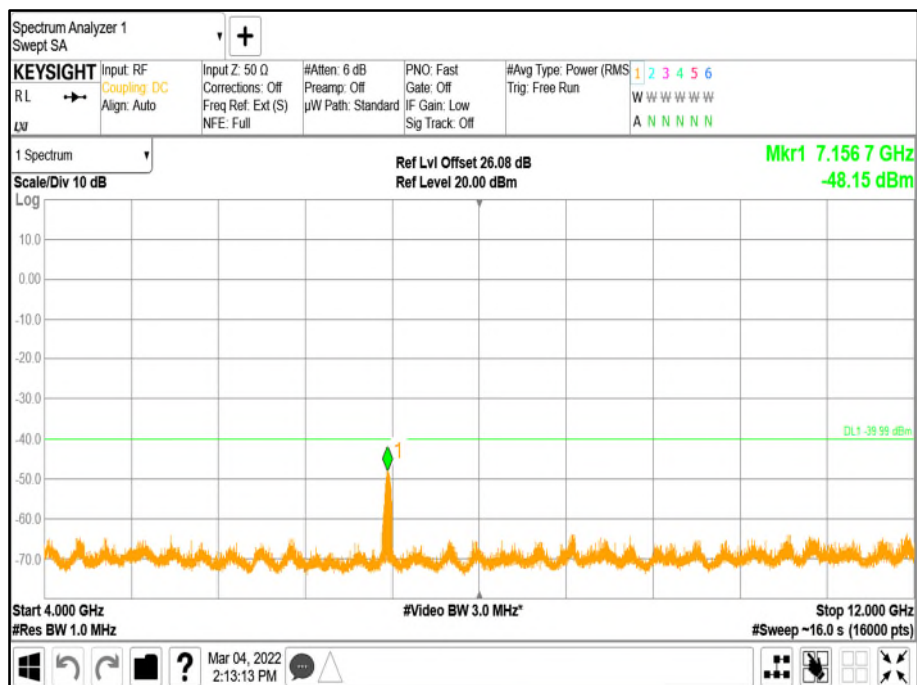
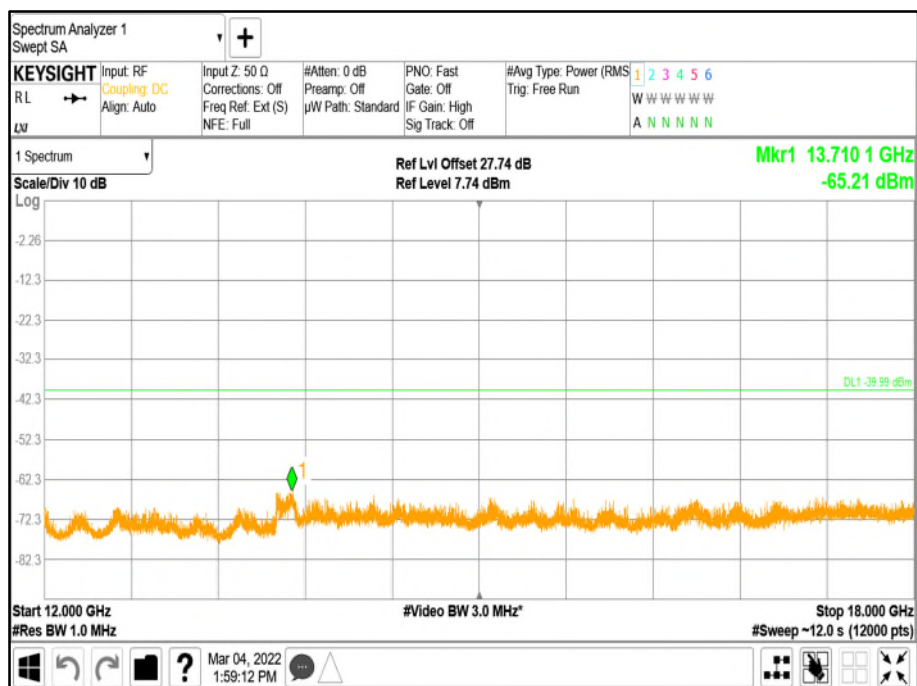


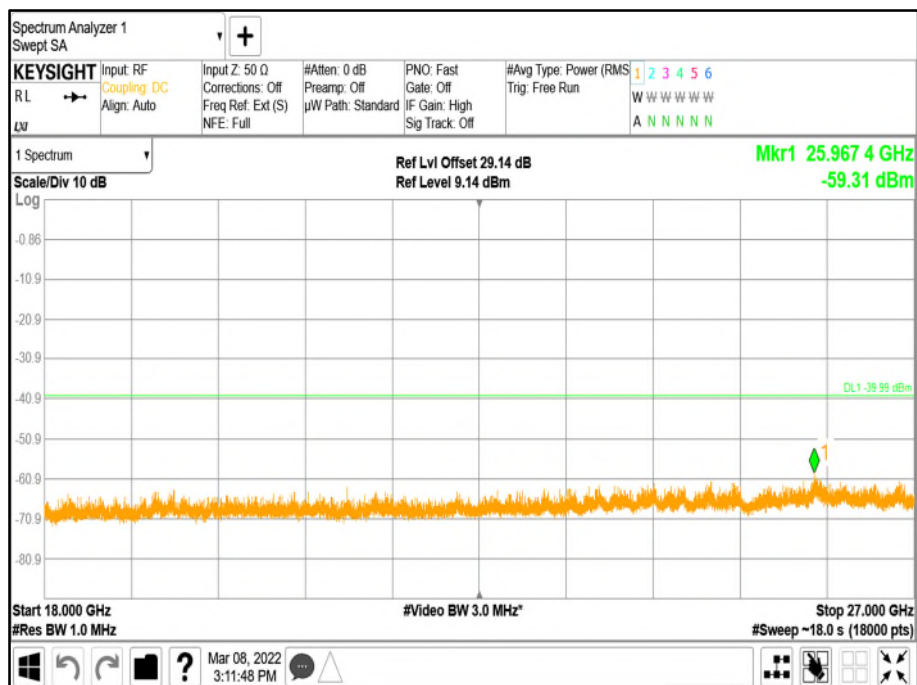
Antenna B - Modulation NR: QPSK - Carrier Bandwidth NR: 50.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz



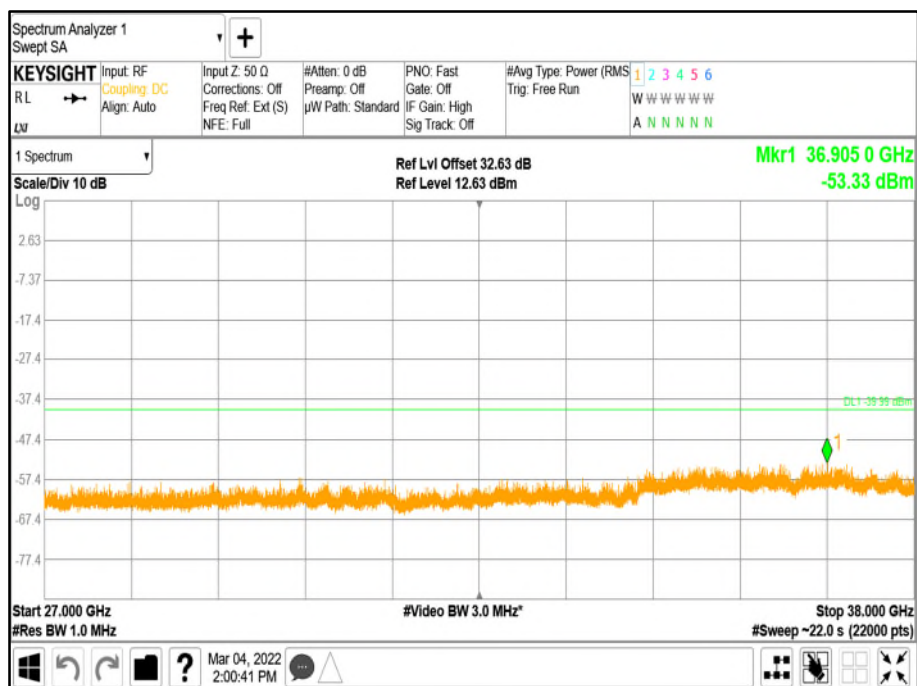
Antenna B - Modulation NR: QPSK - Carrier Bandwidth NR: 50.0 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



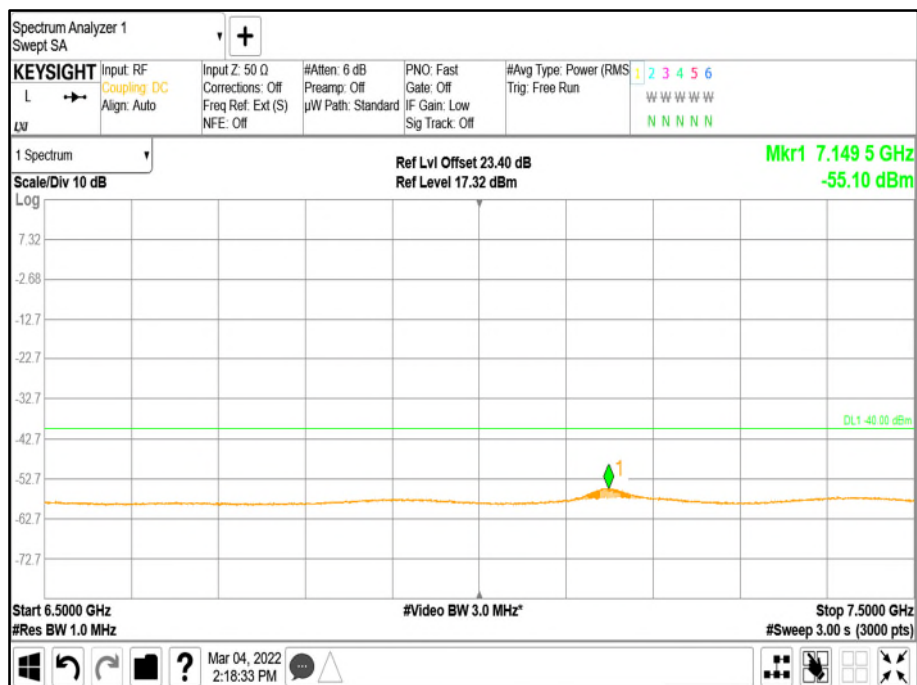
Antenna B - Modulation NR: QPSK - Carrier Bandwidth NR: 50.0 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz



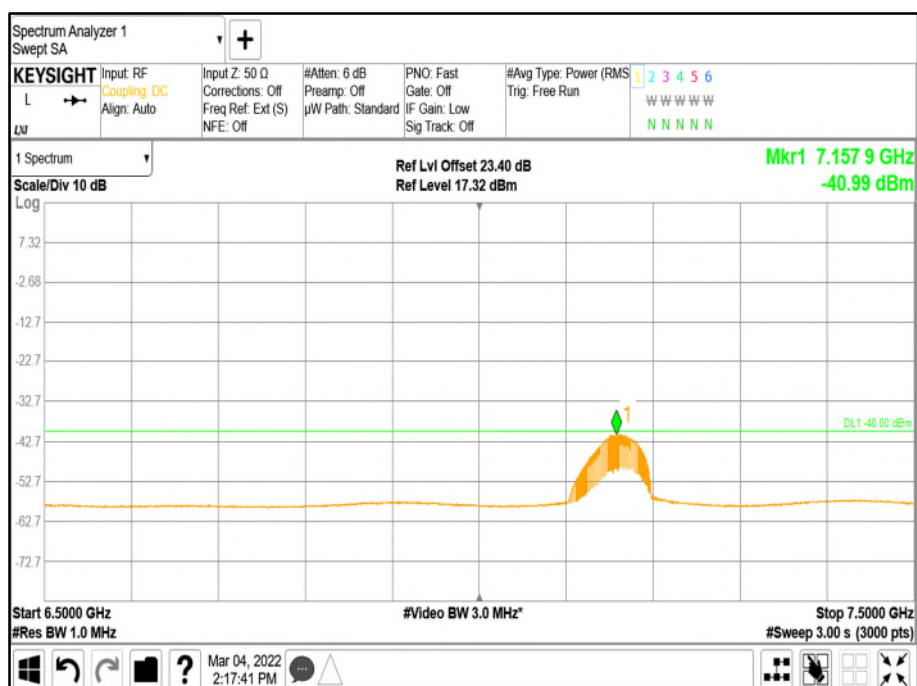
Antenna B - Modulation NR: QPSK - Carrier Bandwidth NR: 50.0 MHz - Channel Position B - Band 5 - Range 27000 to 38000 MHz



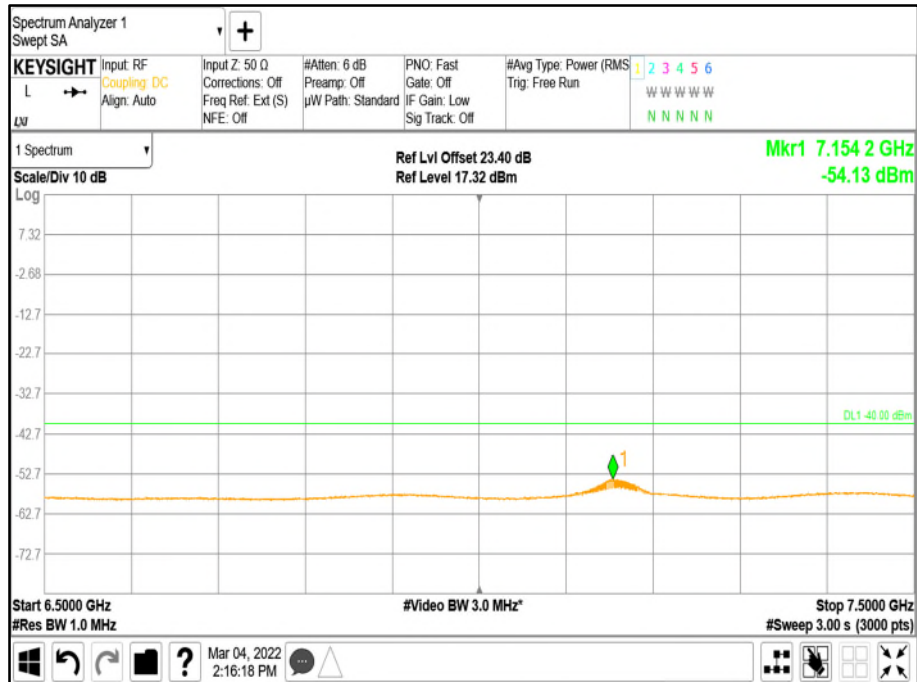
Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 50.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port A



Antenna B - Modulation NR: QPSK - Carrier Bandwidth NR: 50.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port B



Antenna C - Modulation NR: QPSK - Carrier Bandwidth NR: 50.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port C

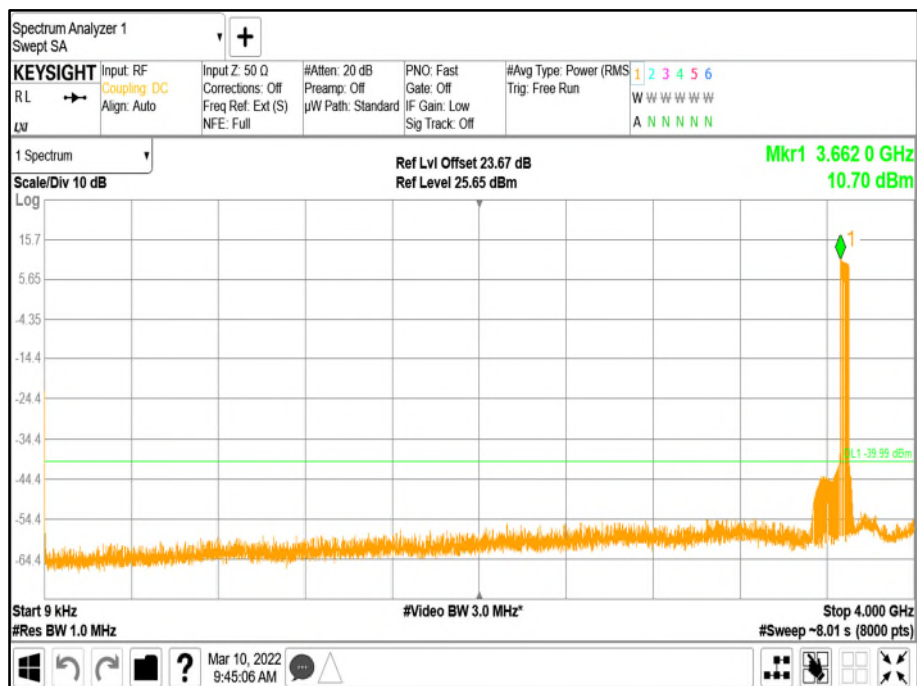


Antenna D - Modulation NR: QPSK - Carrier Bandwidth NR: 50.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port D

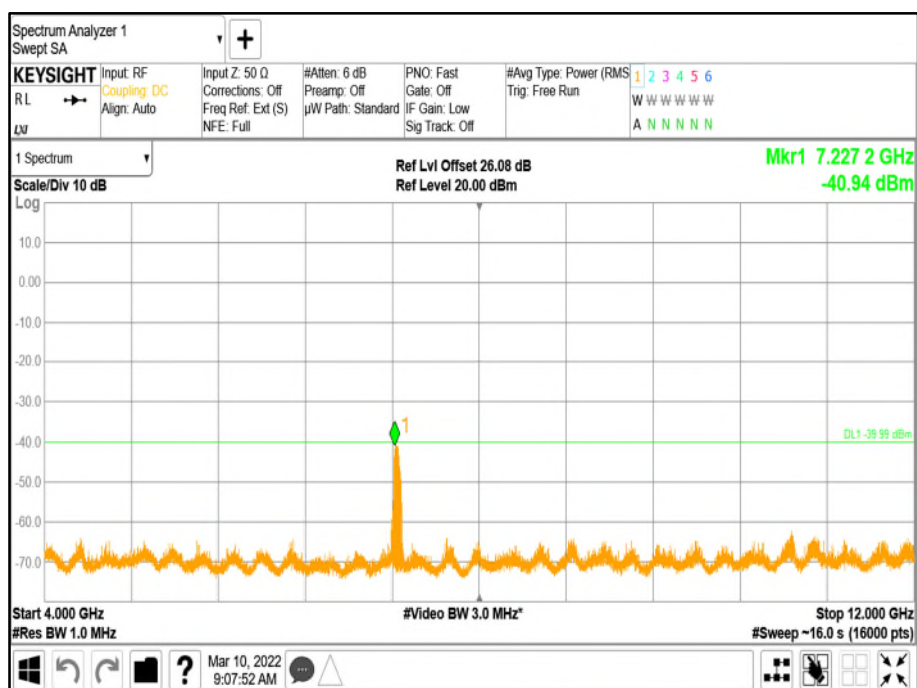


Configuration B

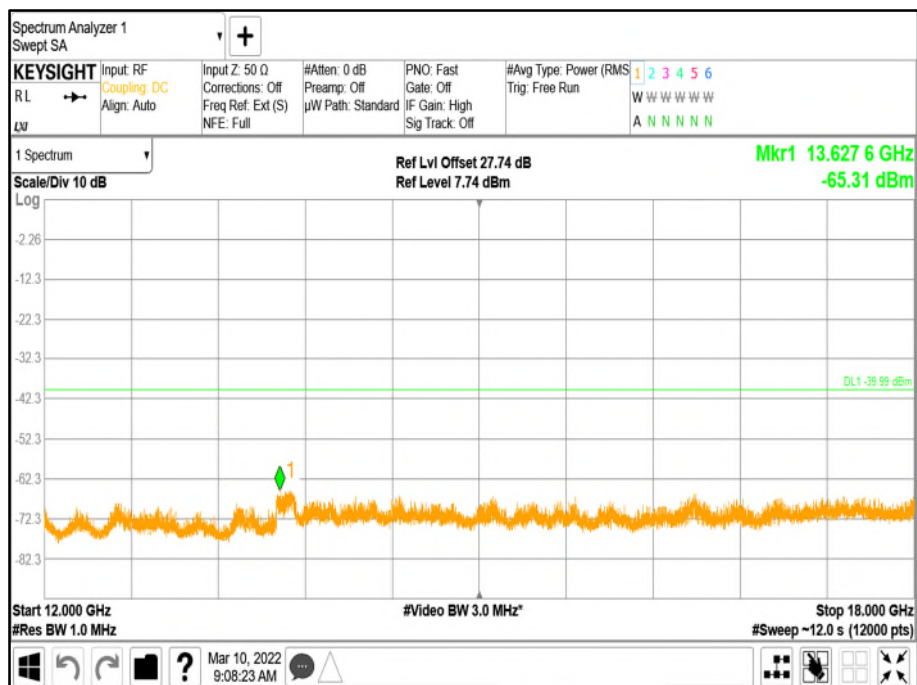
Antenna B - Modulation LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 1.00 - Range 0.009 to 4000 MHz



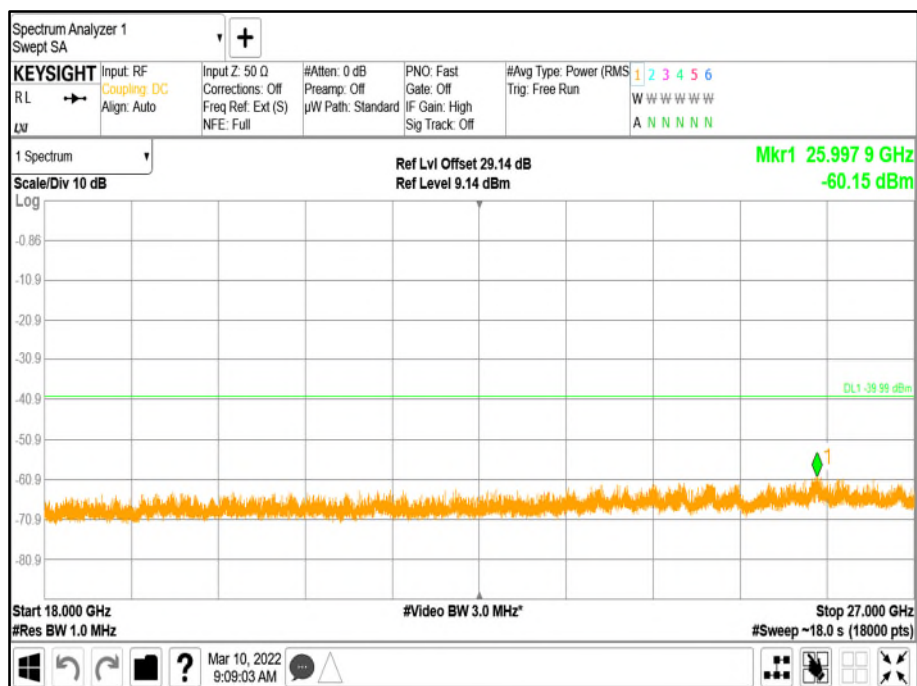
Antenna B - Modulation LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 2 - Range 4000 to 12000 MHz



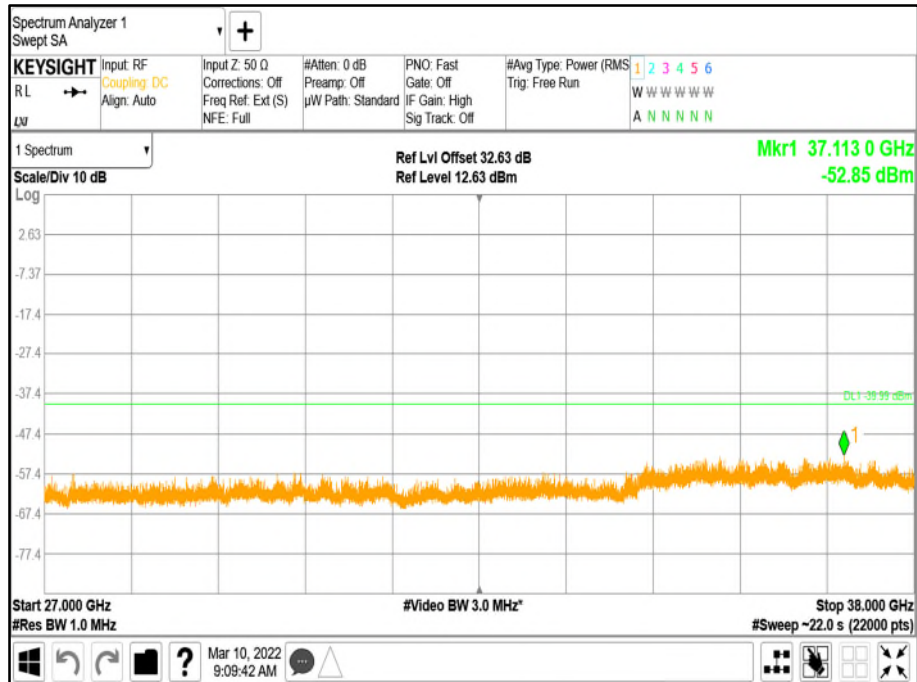
Antenna B - Modulation LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 3 - Range 12000 to 18000 MHz



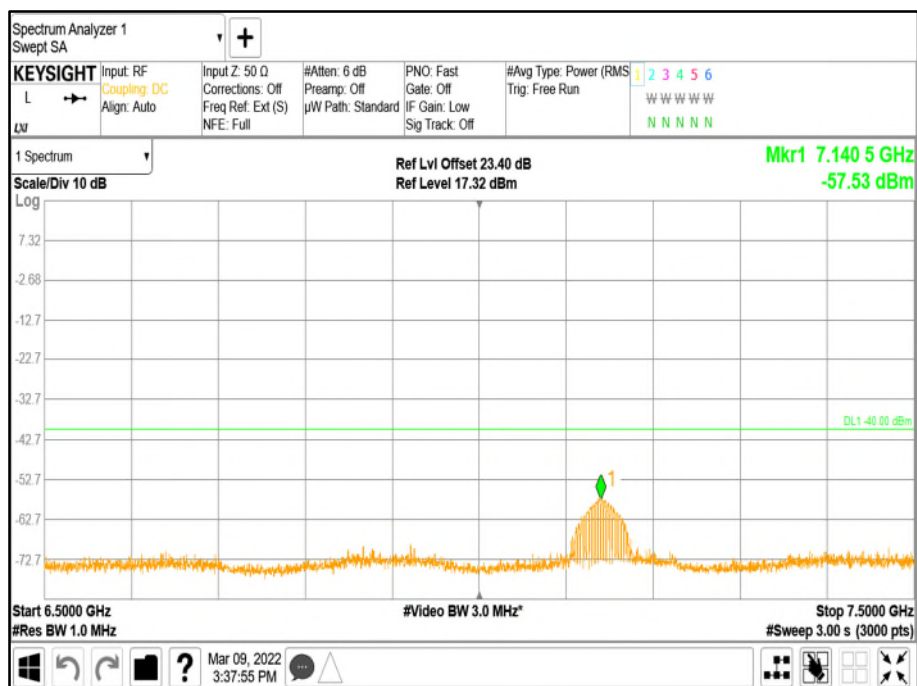
Antenna B - Modulation LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 4 - Range 18000 to 27000 MHz



Antenna B - Modulation LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 5 - Range 27000 to 38000 MHz

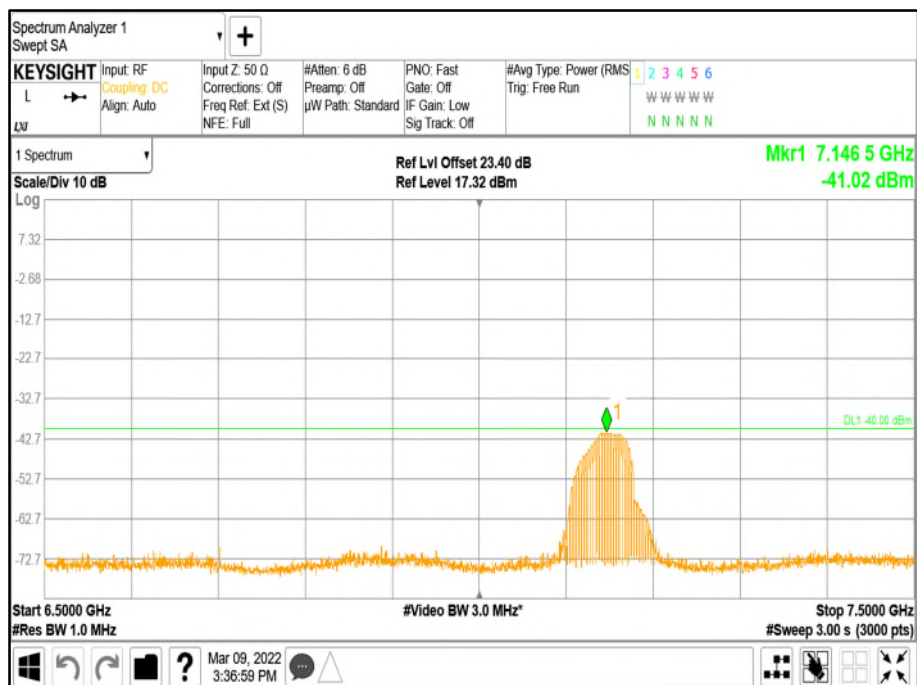


Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 2 - Range 7 GHz Spurious Port A

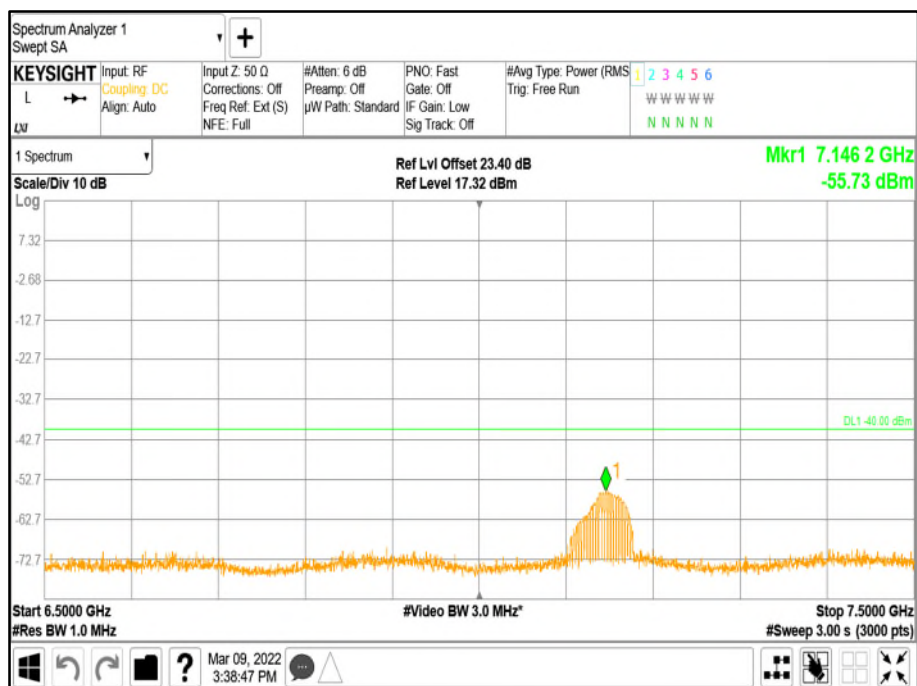




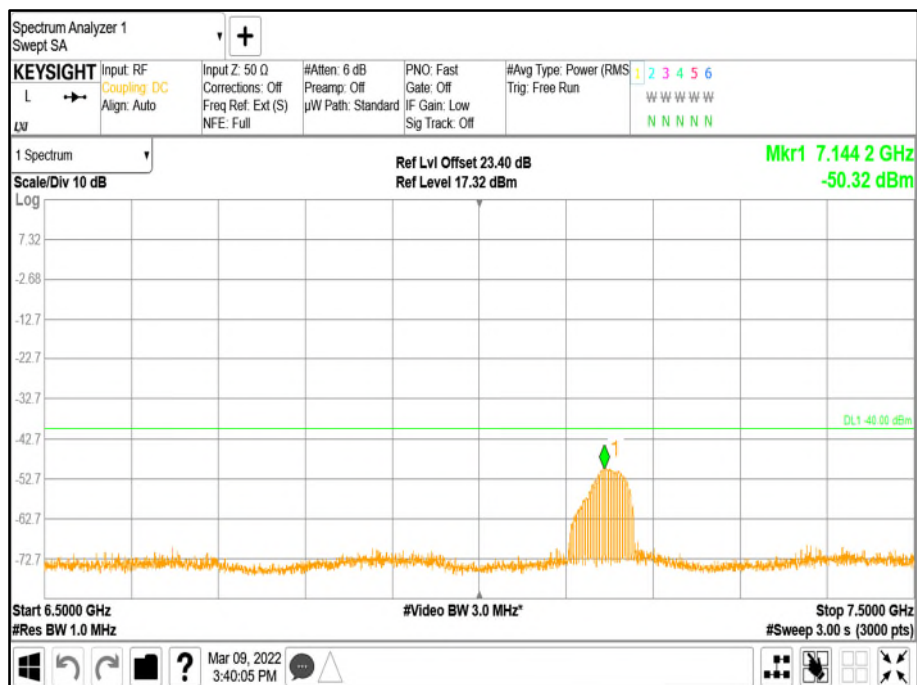
Antenna B - Modulation LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 2 - Range 7 GHz Spurious Port B



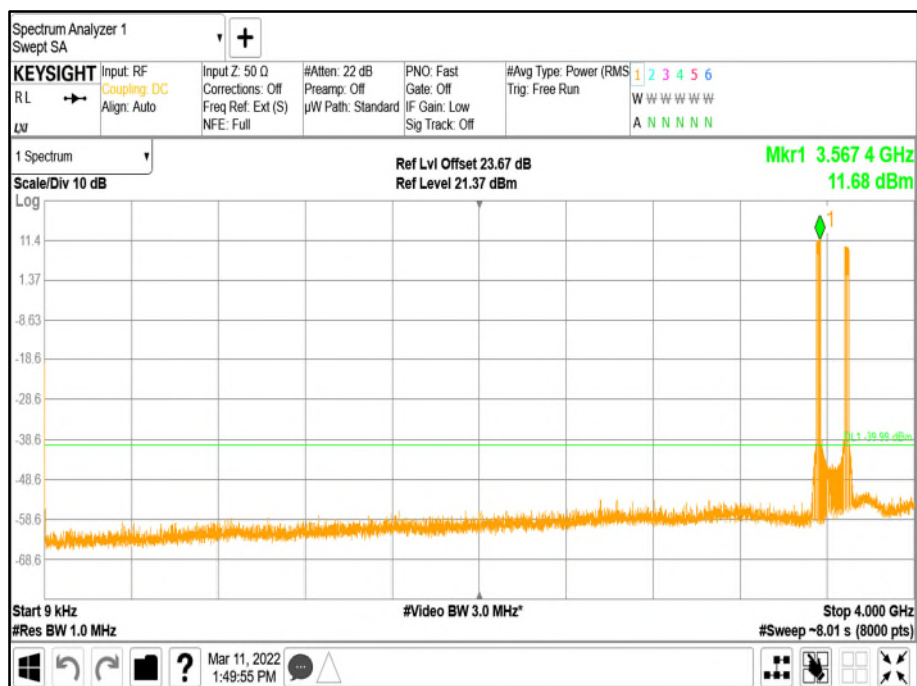
Antenna C - Modulation LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 2 - Range 7 GHz Spurious Port C



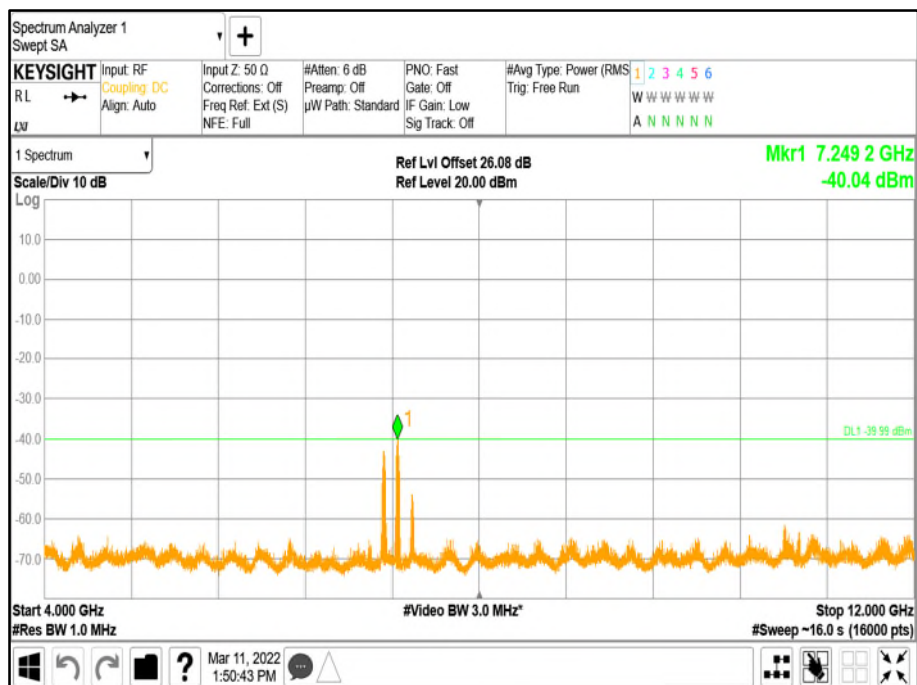
Antenna D - Modulation LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 2 - Range 7 GHz Spurious Port D



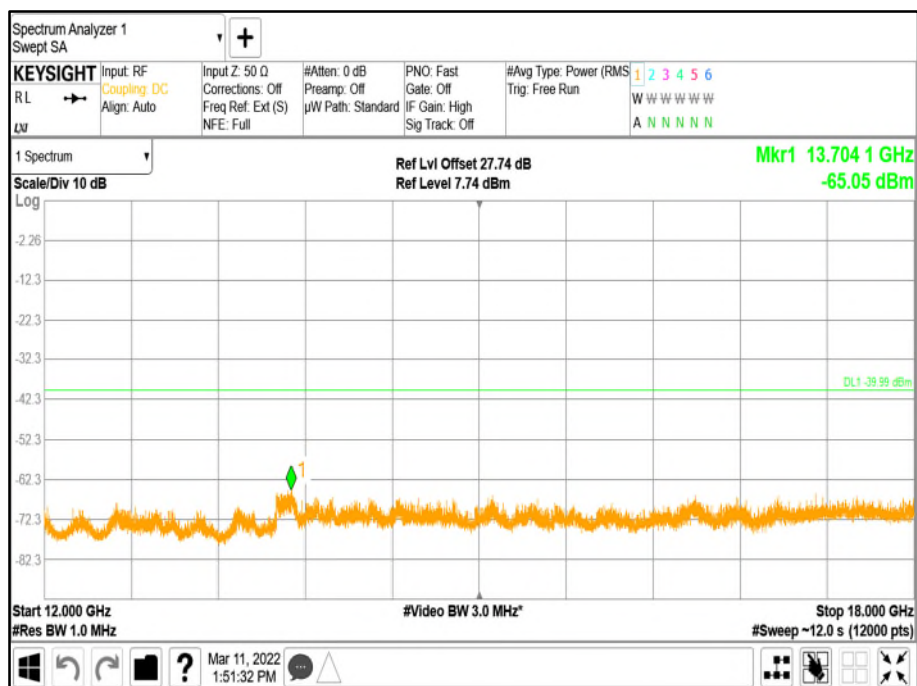
Antenna B - Modulation *LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 1.00 - Range 0.009 to 4000 MHz



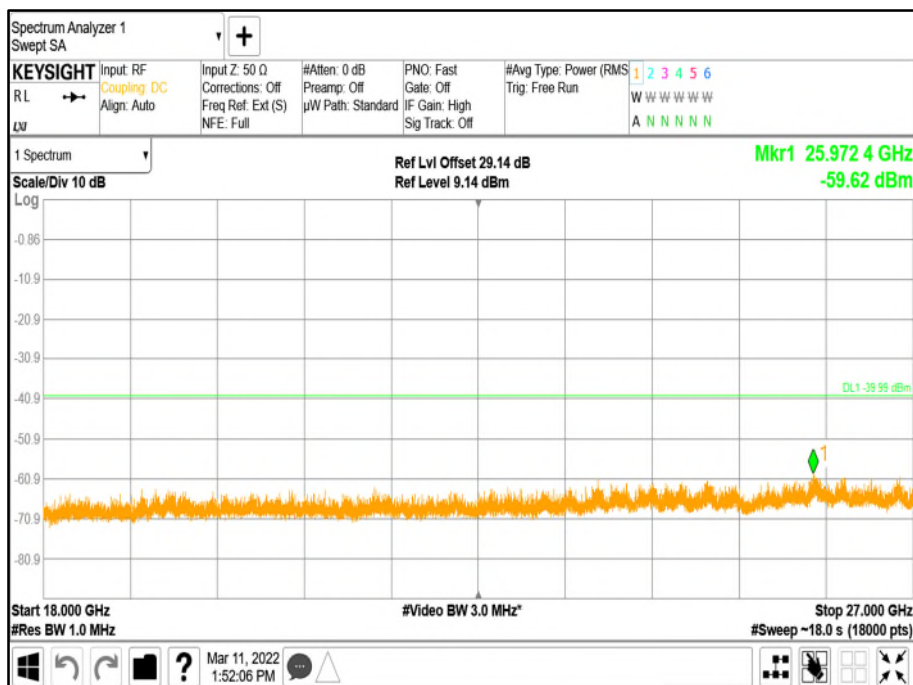
Antenna B - Modulation *LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 2 - Range 4000 to 12000 MHz



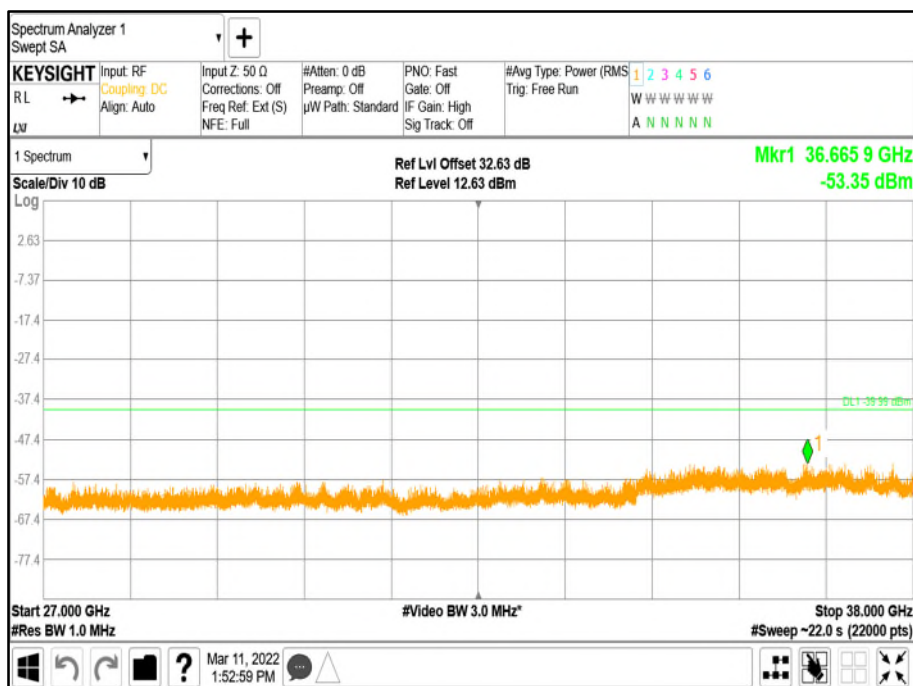
Antenna B - Modulation *LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 3 - Range 12000 to 18000 MHz



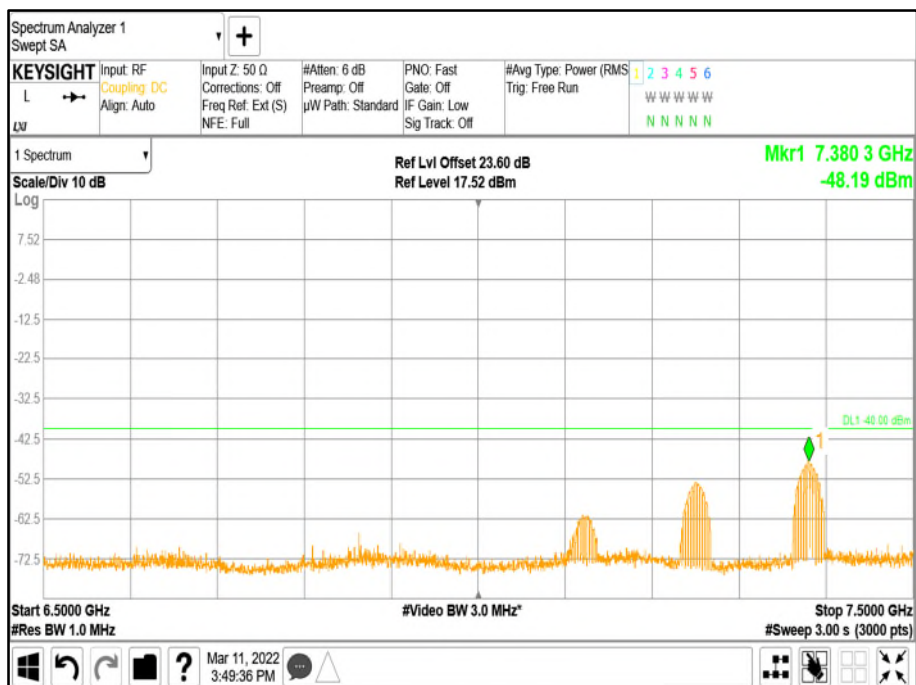
Antenna B - Modulation *LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 4 - Range 18000 to 27000 MHz



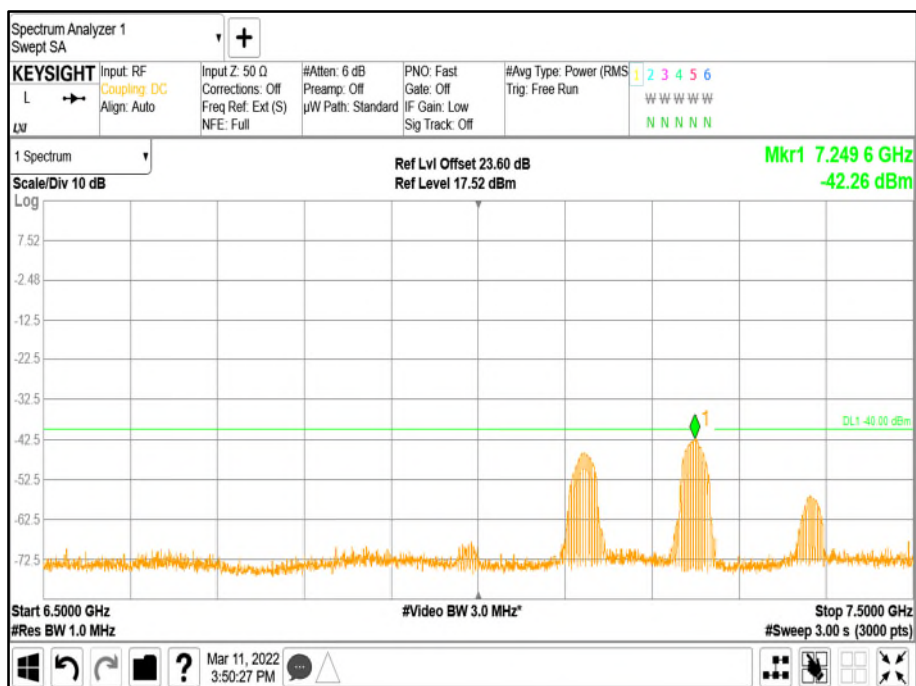
Antenna B - Modulation *LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 5 - Range 27000 to 38000 MHz



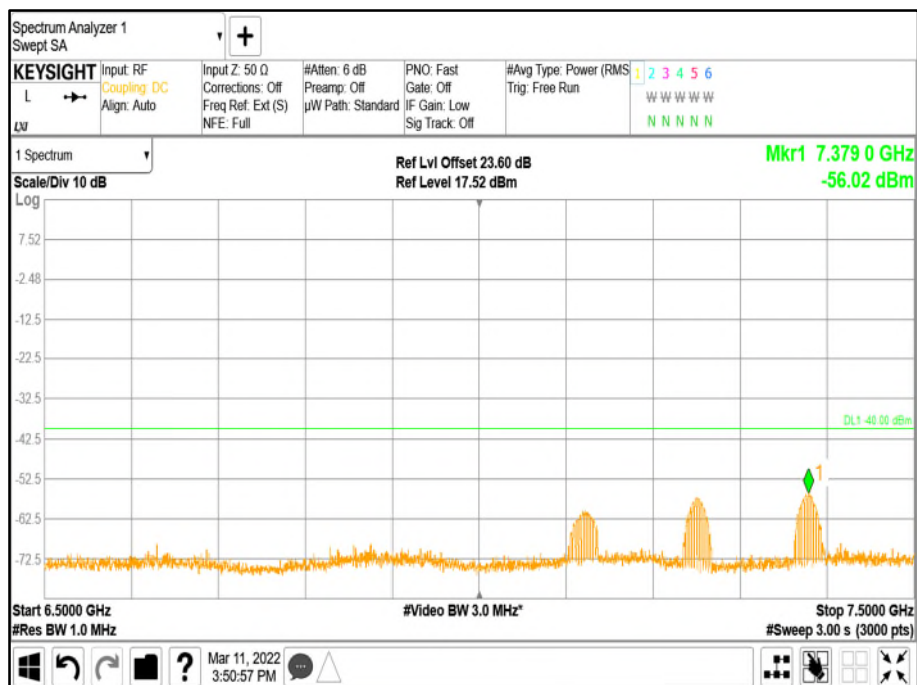
Antenna A - Modulation *LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 2 - Range 7 GHz Spurious Port A



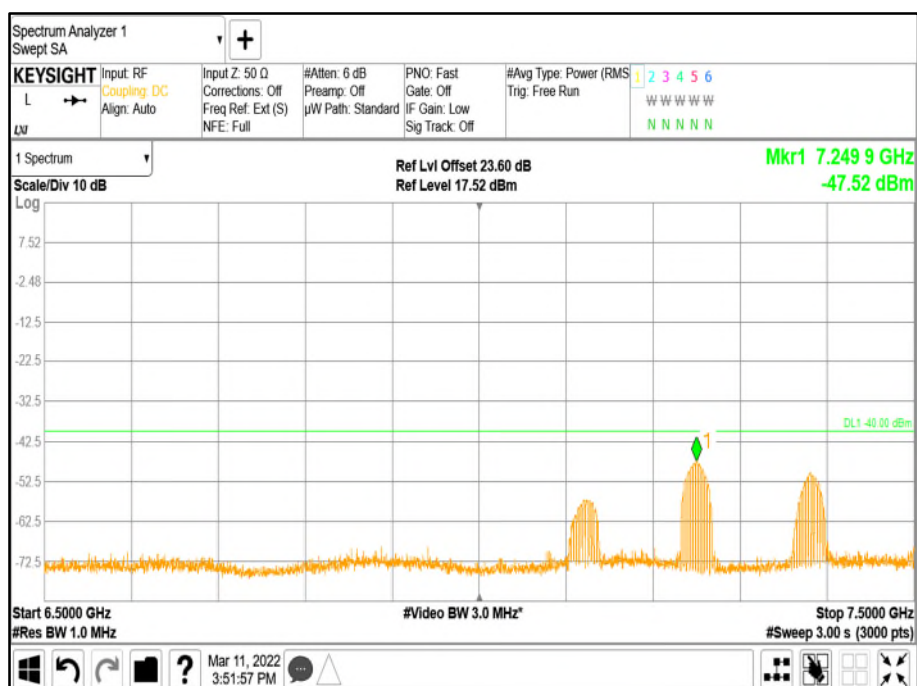
Antenna B - Modulation *LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 2 - Range 7 GHz Spurious Port B



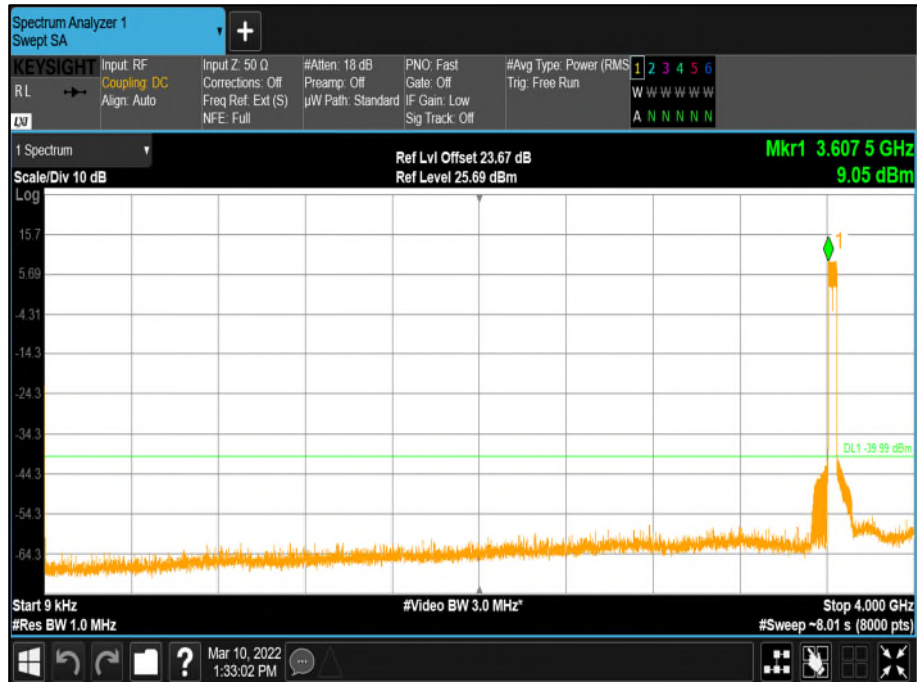
Antenna C - Modulation *LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 2 - Range 7 GHz Spurious Port C



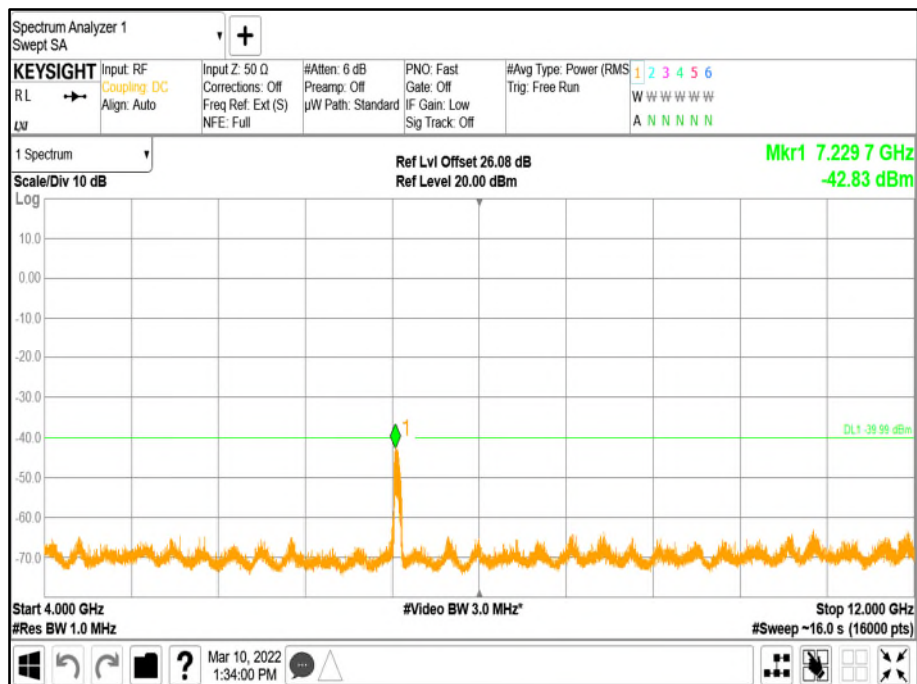
Antenna D - Modulation *LTE: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position M - Band 2 - Range 7 GHz Spurious Port D



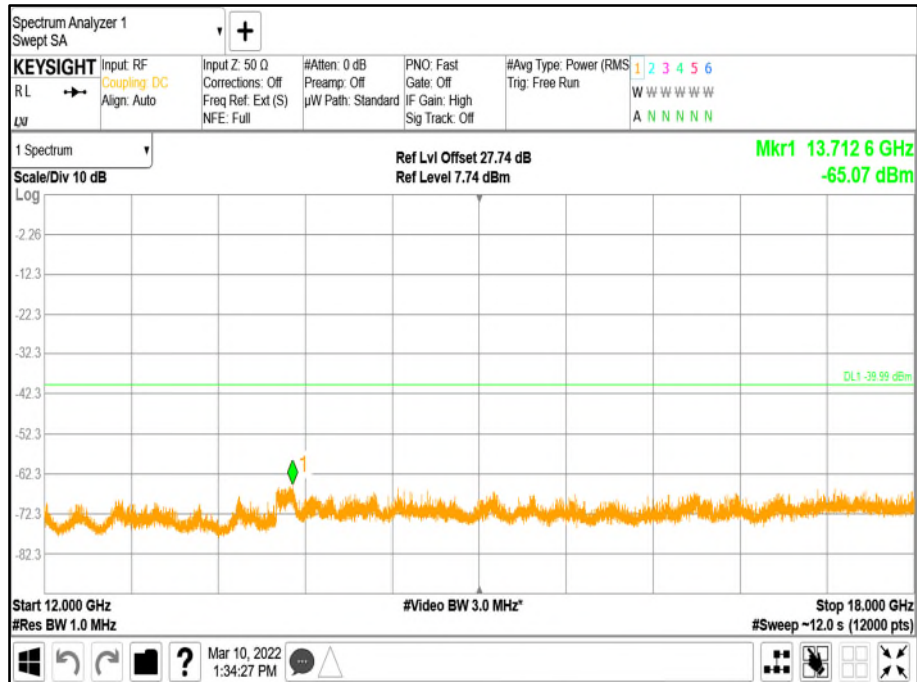
Antenna B - Modulation NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 1.00 - Range 0.009 to 4000 MHz



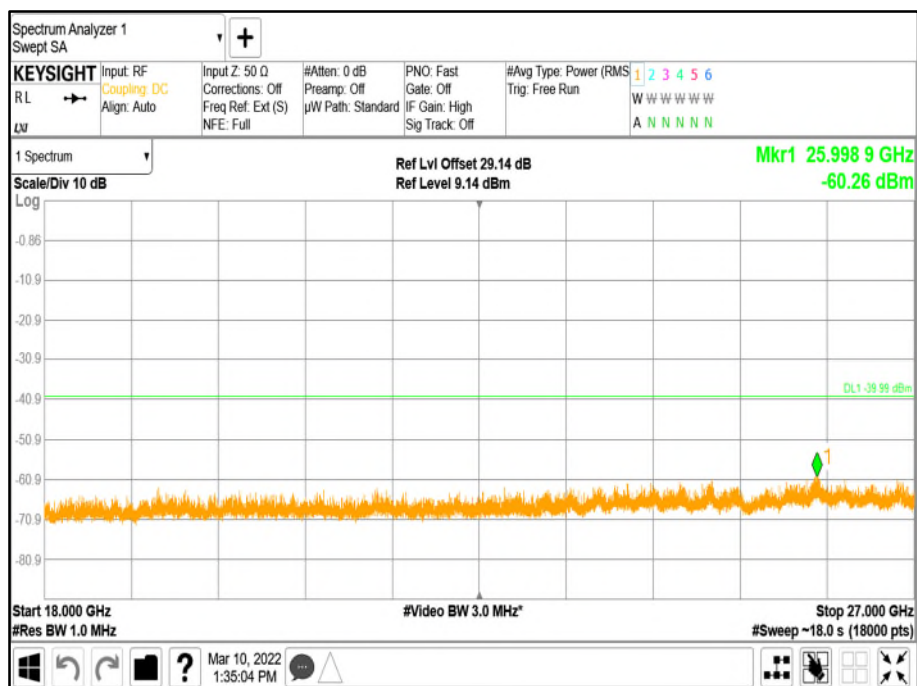
Antenna B - Modulation NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz



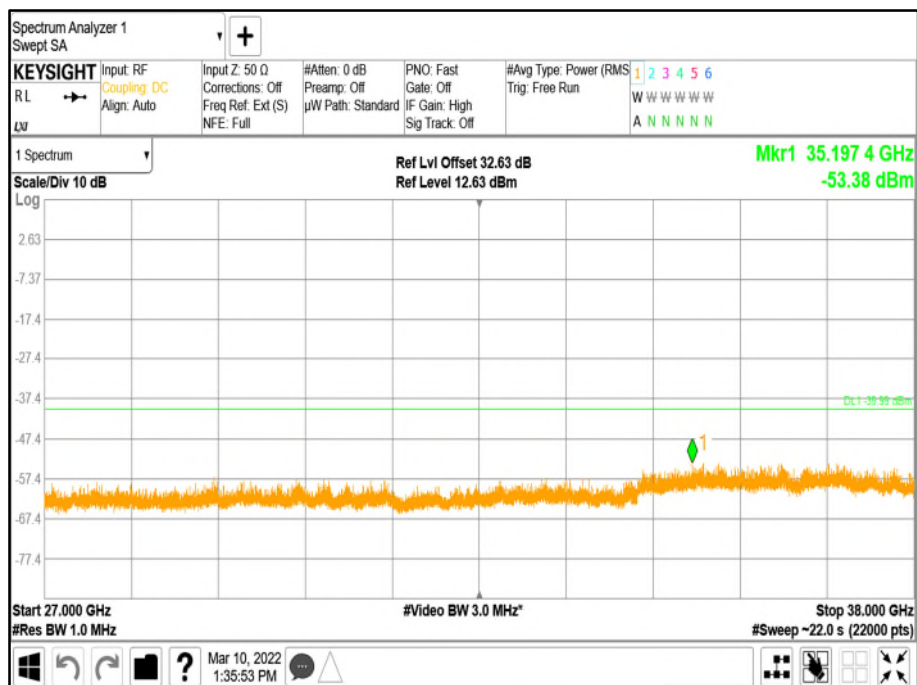
Antenna B - Modulation NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



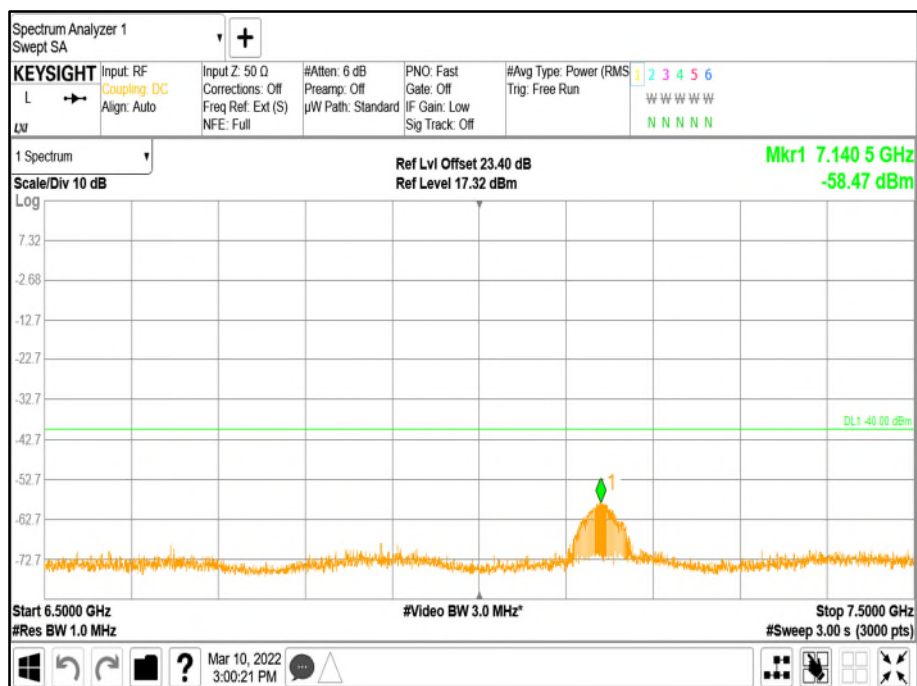
Antenna B - Modulation NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz



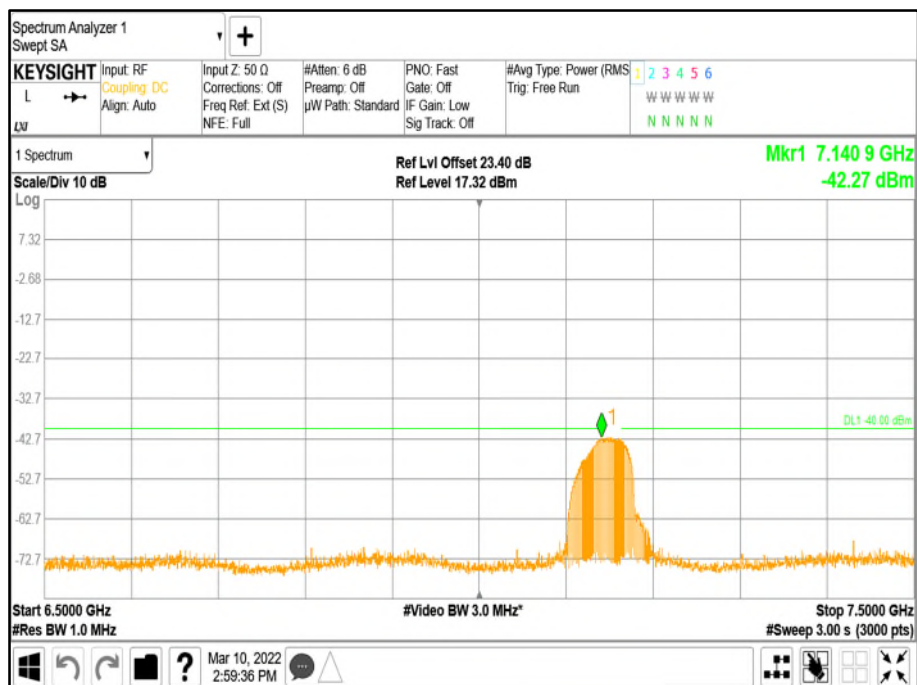
Antenna B - Modulation NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 5 - Range 27000 to 38000 MHz



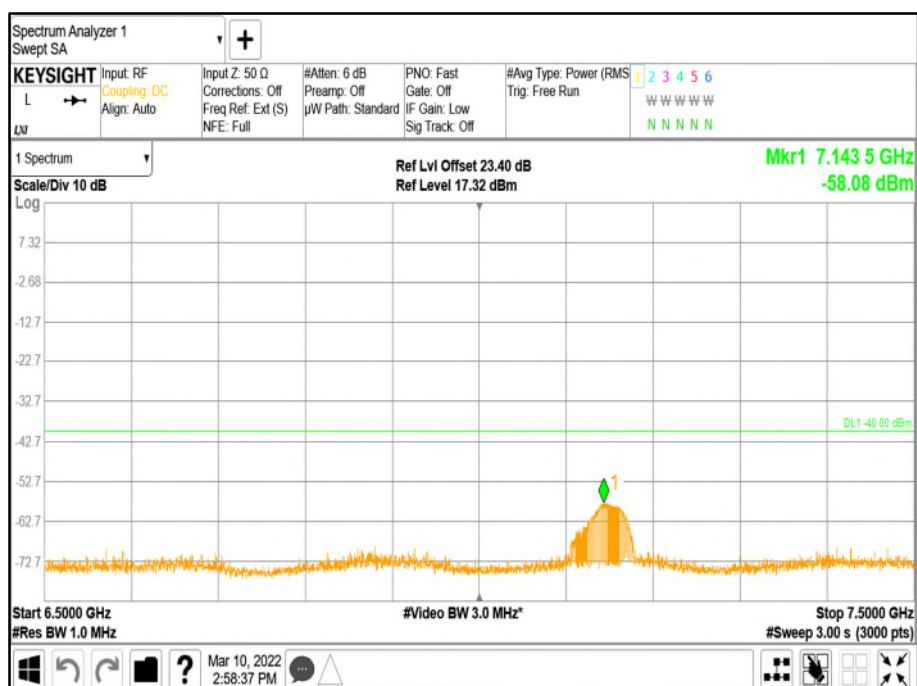
Antenna A - Modulation NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port A



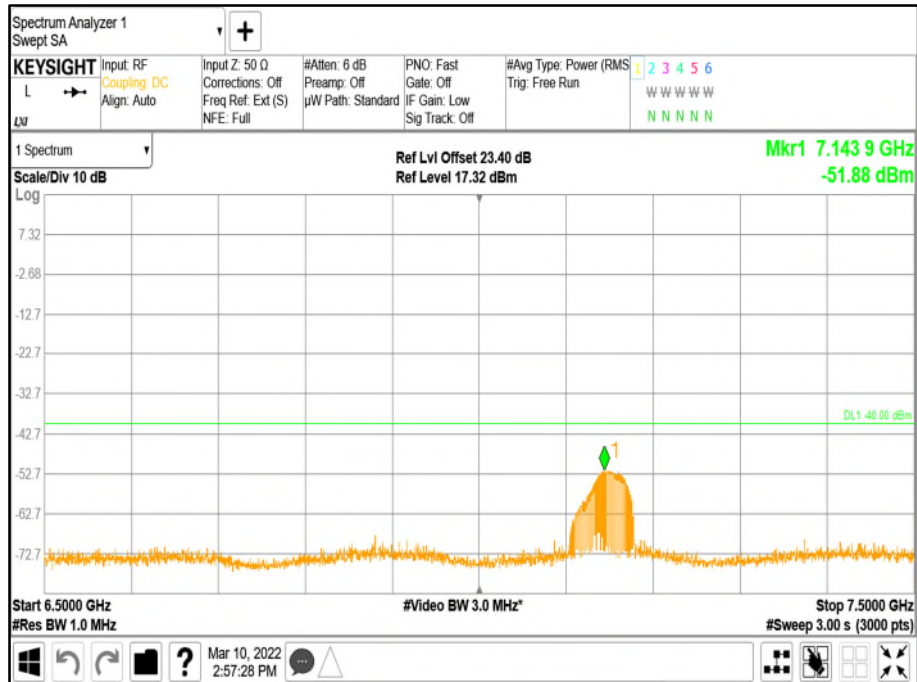
Antenna B - Modulation NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port B



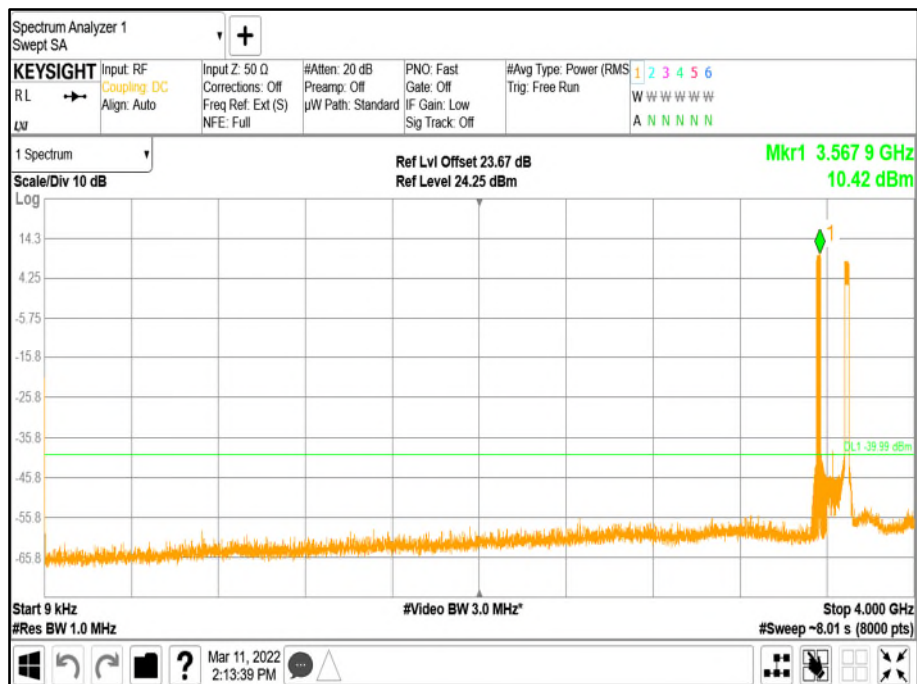
Antenna C - Modulation NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port C



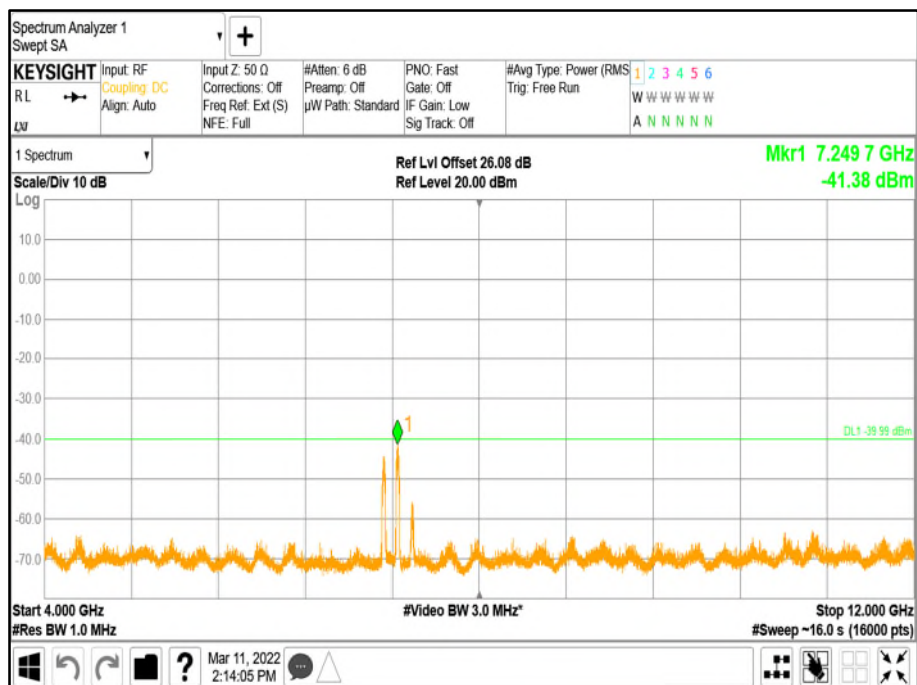
Antenna D - Modulation NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port D



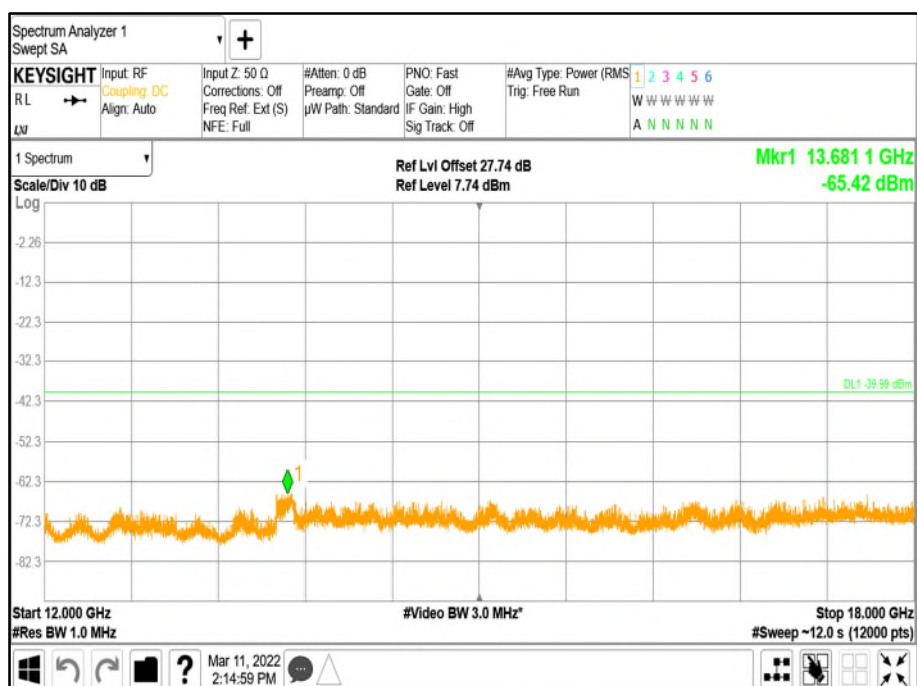
Antenna B - Modulation *NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 1.00 - Range 0.009 to 4000 MHz



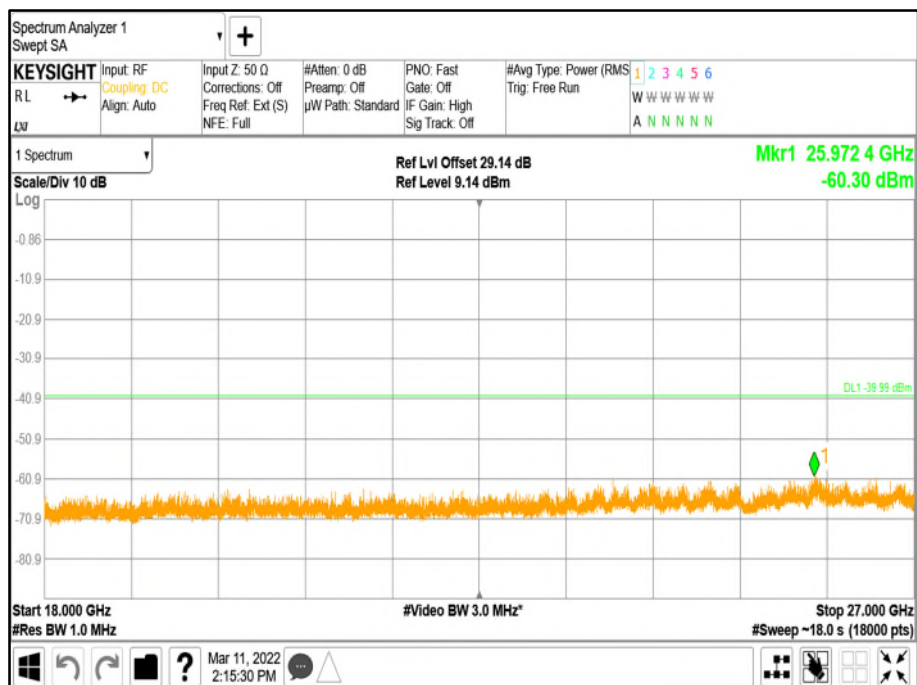
Antenna B - Modulation *NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz



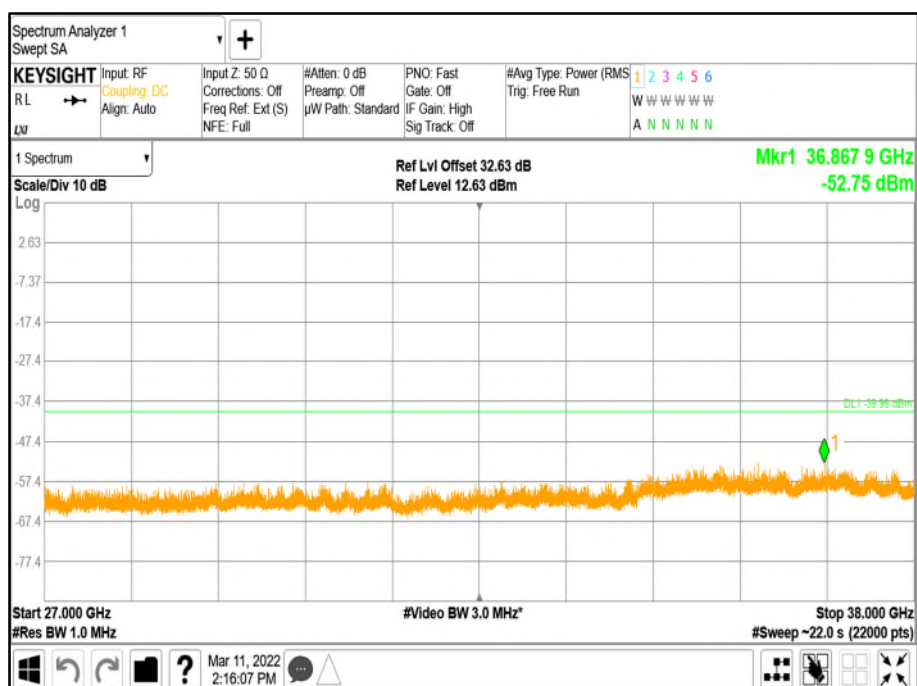
Antenna B - Modulation *NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



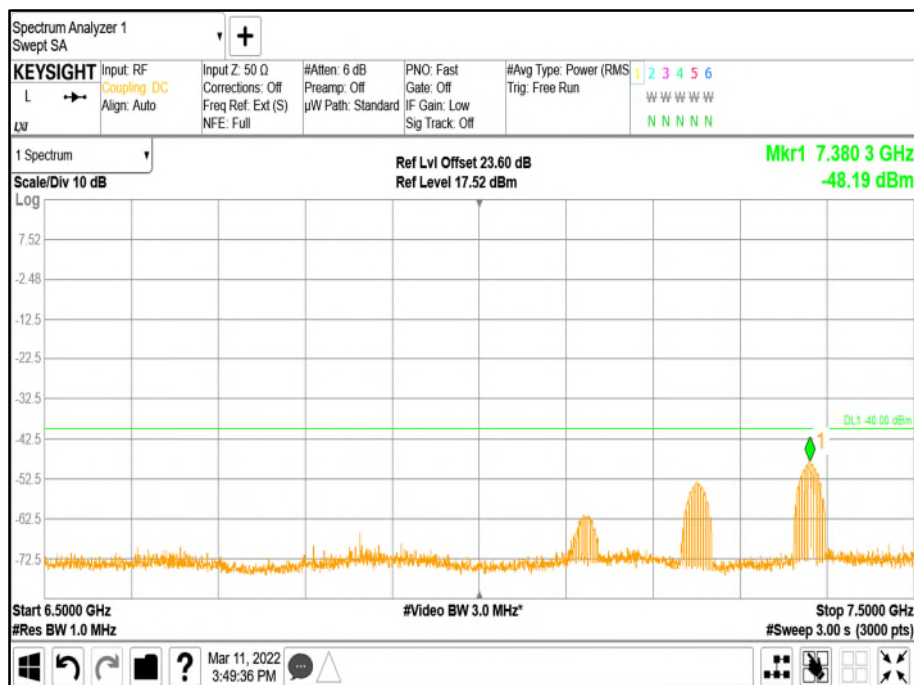
Antenna B - Modulation *NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz



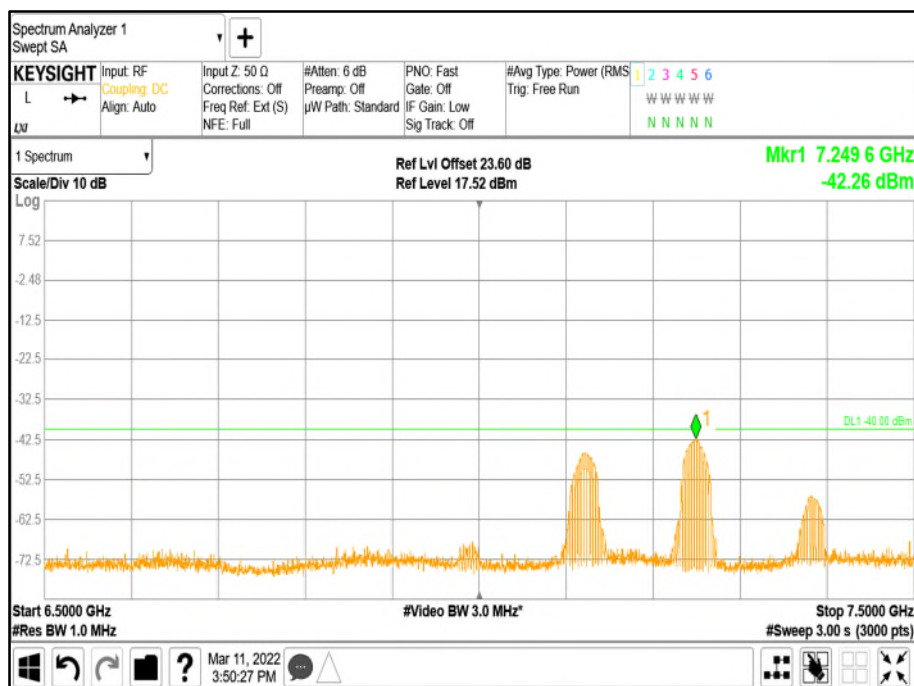
Antenna B - Modulation *NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 5 - Range 27000 to 38000 MHz



Antenna A - Modulation *NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port A

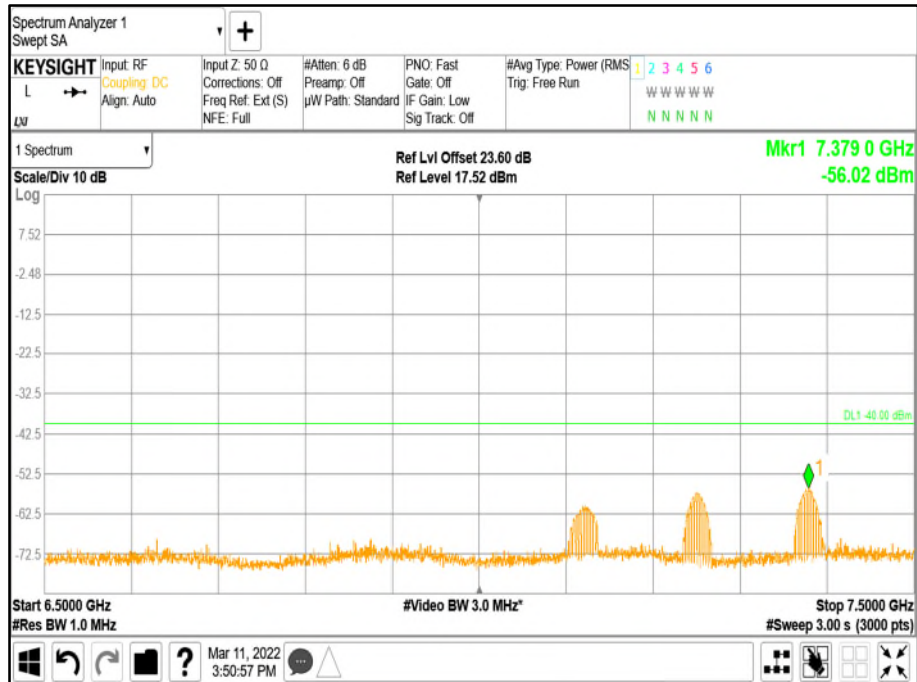


Antenna B - Modulation *NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port B

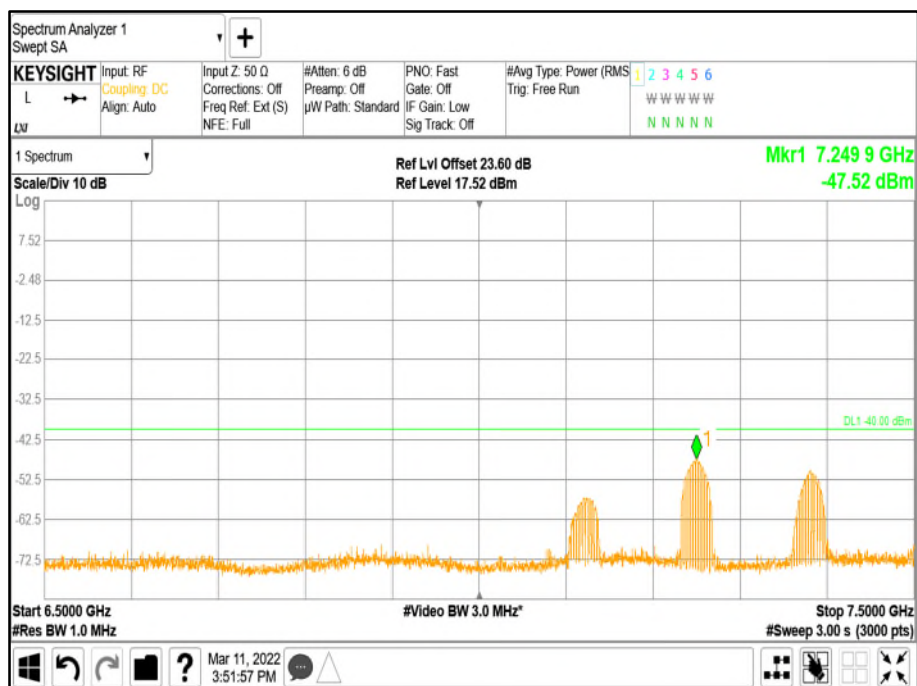




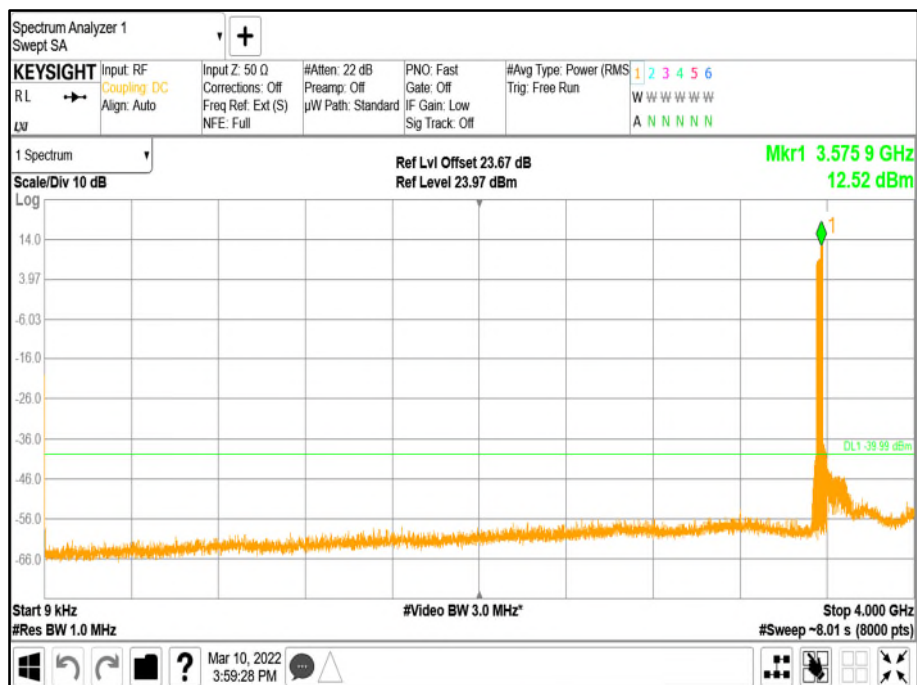
Antenna C - Modulation *NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port C



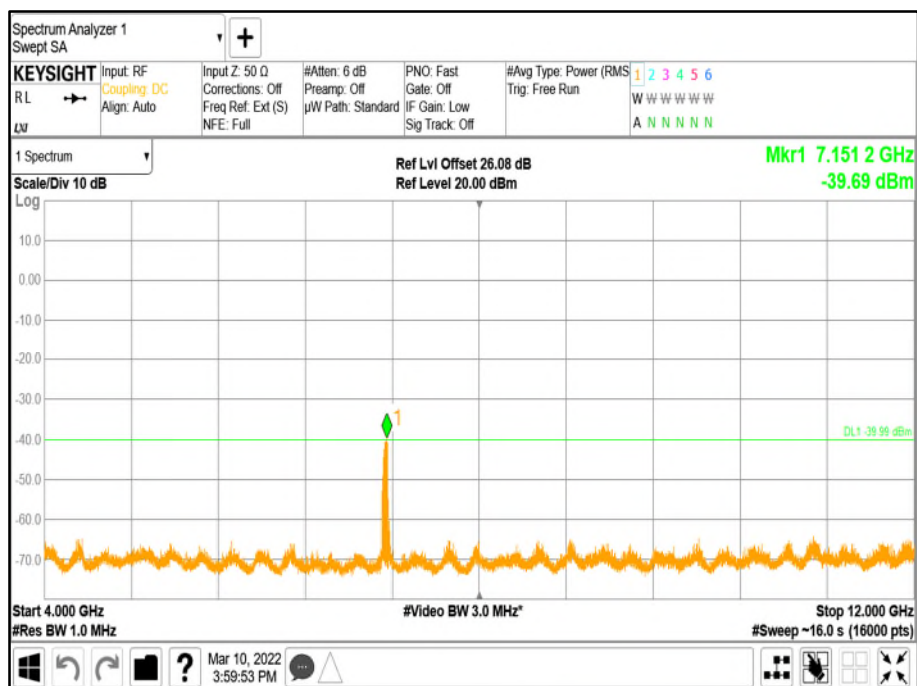
Antenna D - Modulation *NR: QPSK - Carrier Bandwidth 20.0+20.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port D



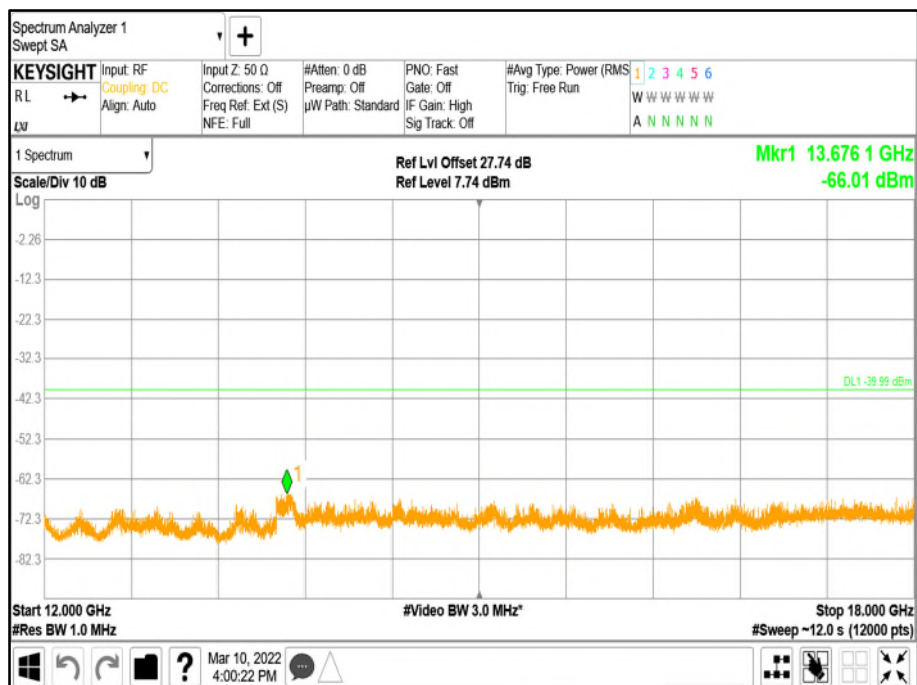
Antenna B - Modulation NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 1.00 - Range 0.009 to 4000 MHz



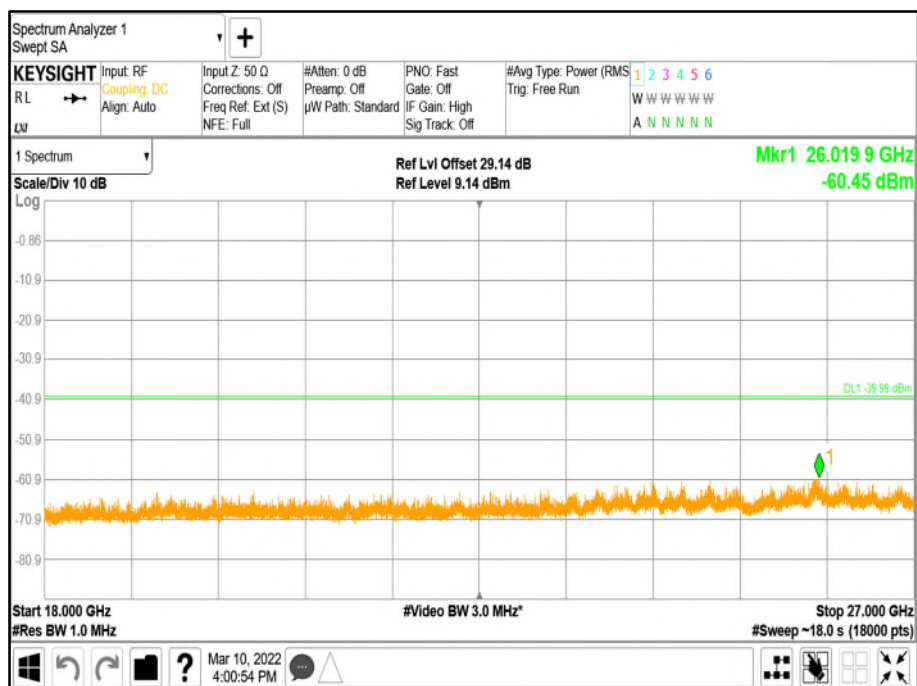
Antenna B - Modulation NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz



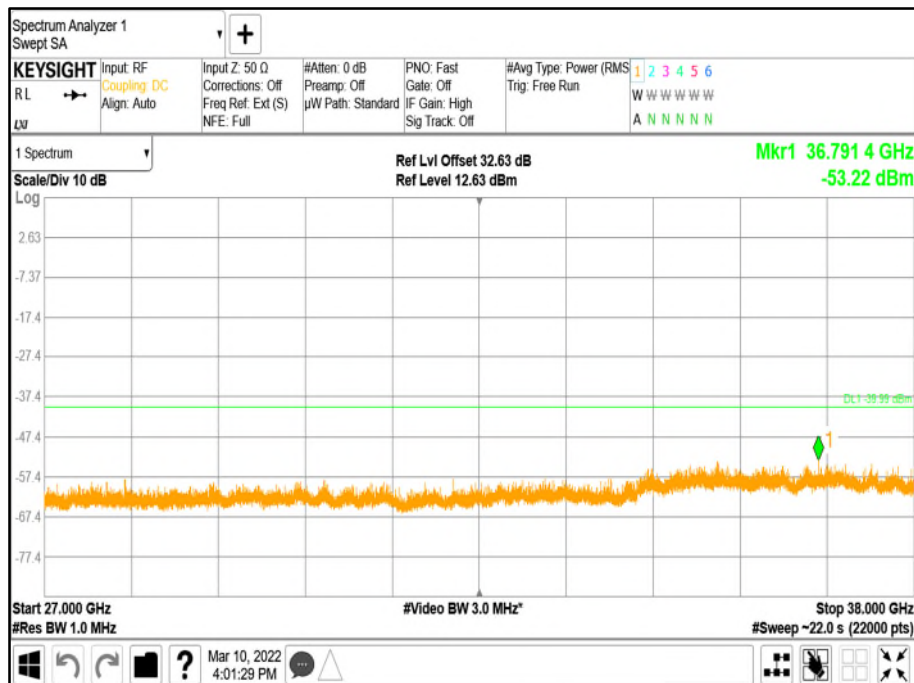
Antenna B - Modulation NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



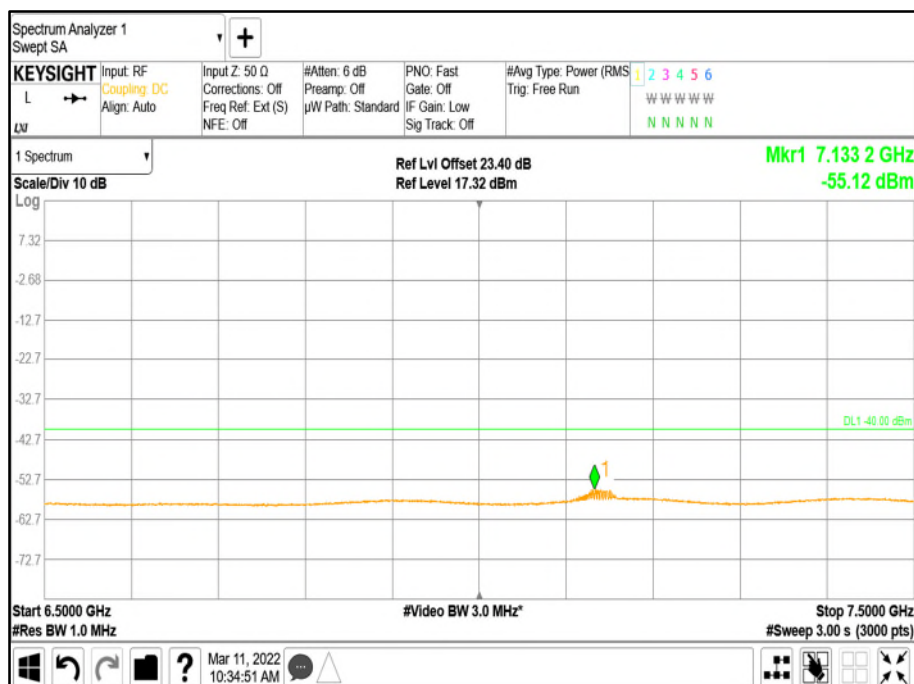
Antenna B - Modulation NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz



Antenna B - Modulation NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 5 - Range 27000 to 38000 MHz



Antenna A - Modulation NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port A

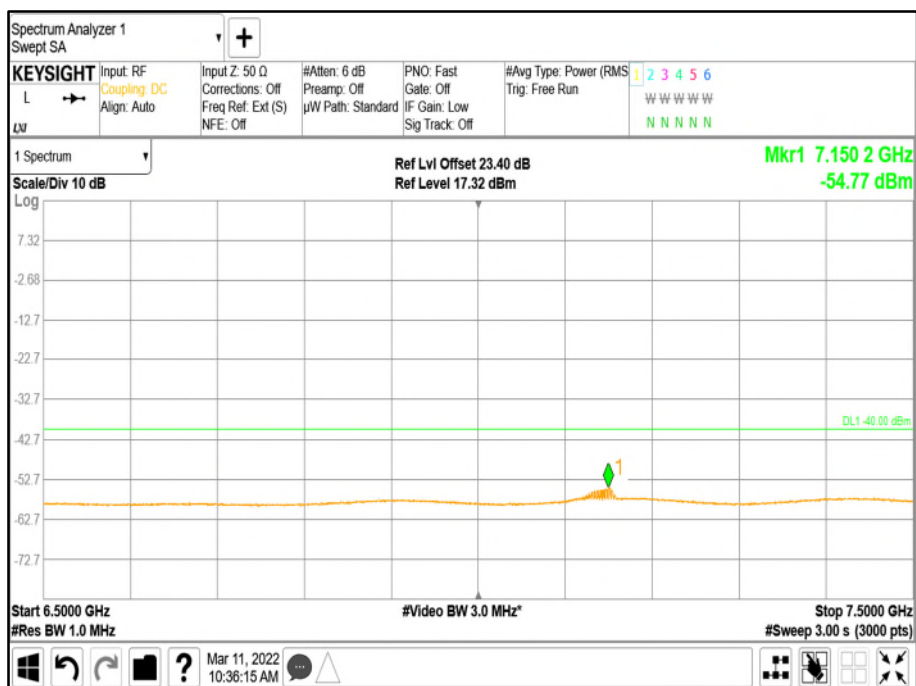




Antenna B - Modulation NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port B



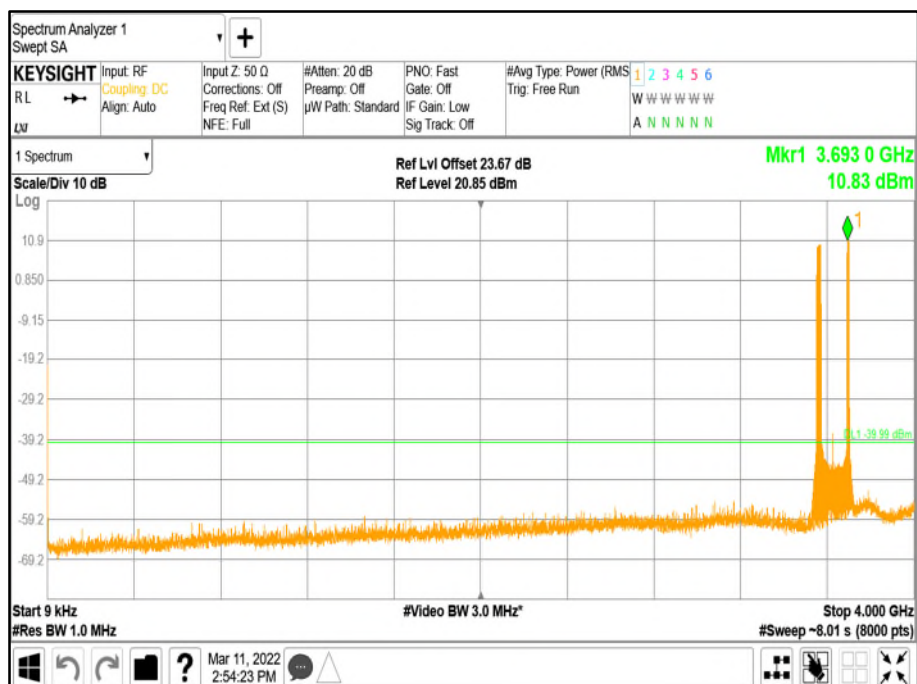
Antenna C - Modulation NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port C



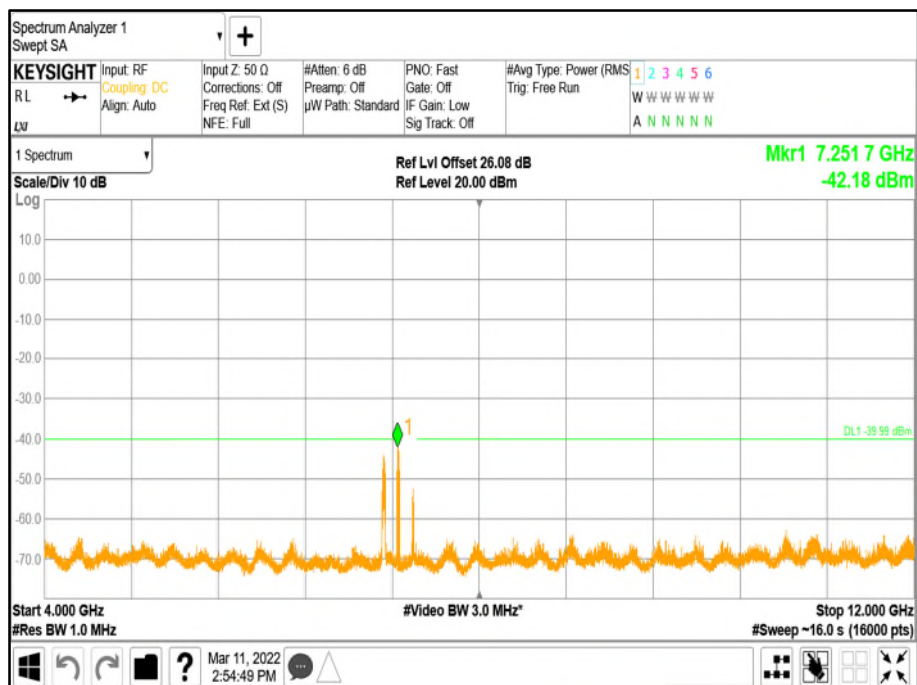
Antenna D - Modulation NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port D



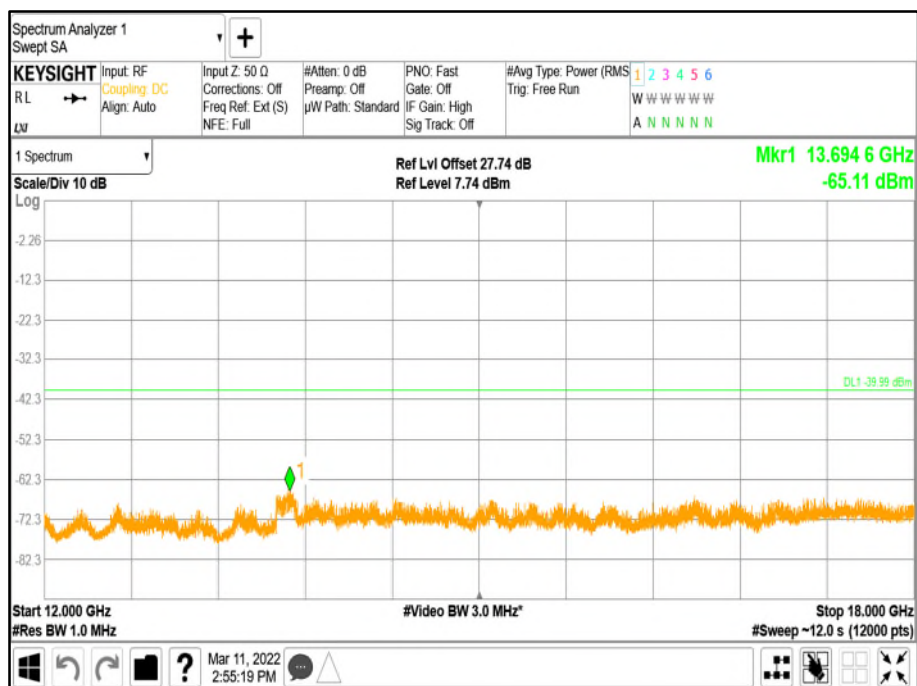
Antenna B - Modulation *NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 1.00 - Range 0.009 to 4000 MHz



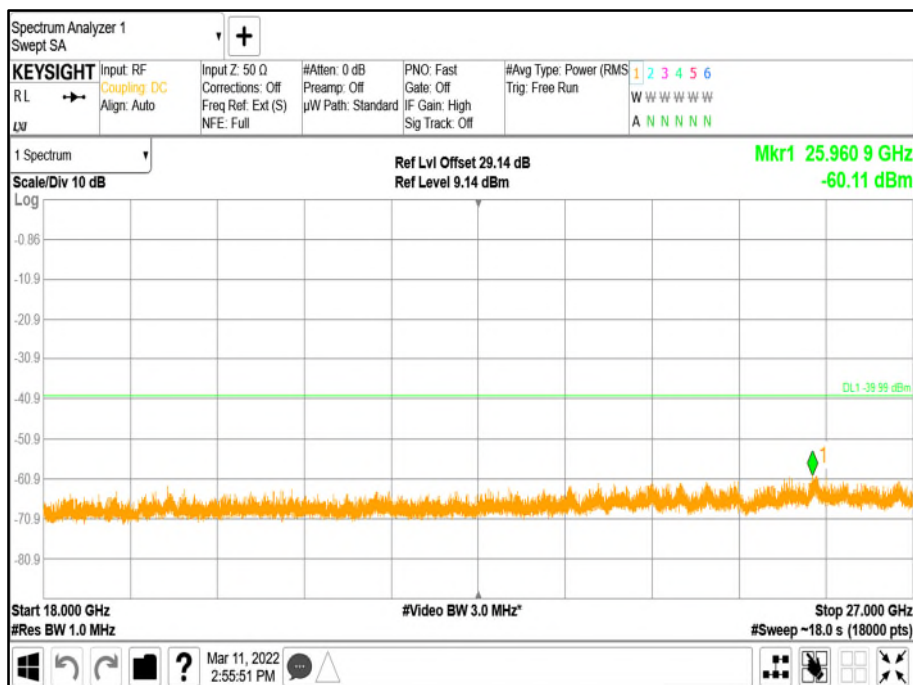
Antenna B - Modulation *NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz



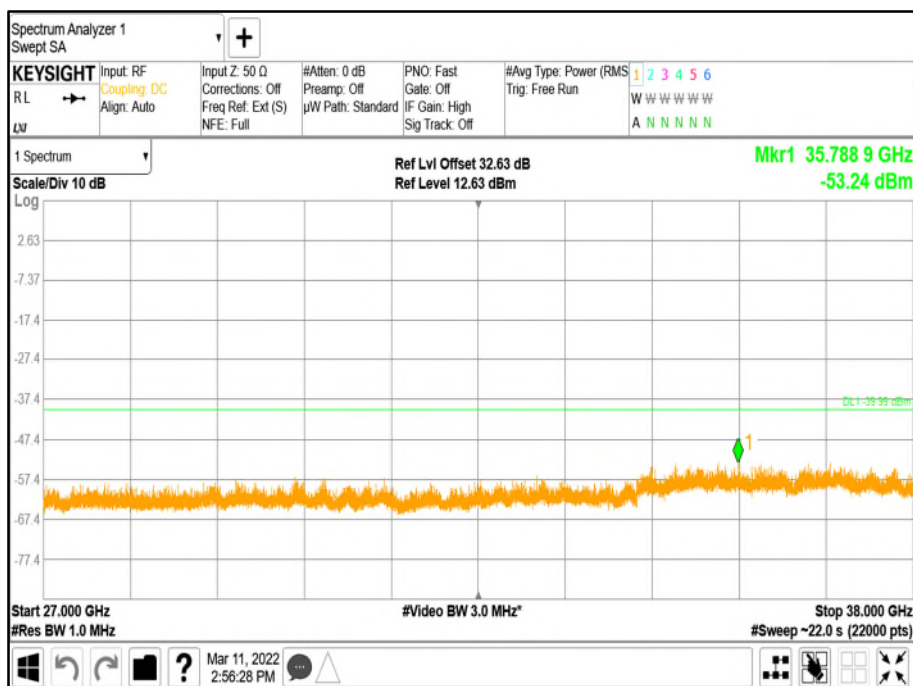
Antenna B - Modulation *NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



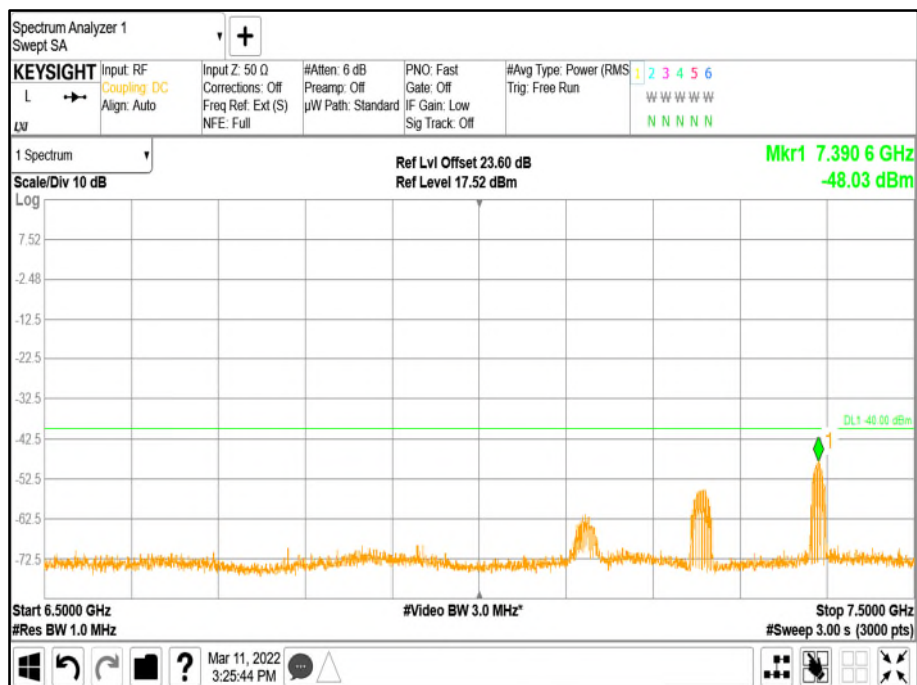
Antenna B - Modulation *NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel
Position B - Band 4 - Range 18000 to 27000 MHz



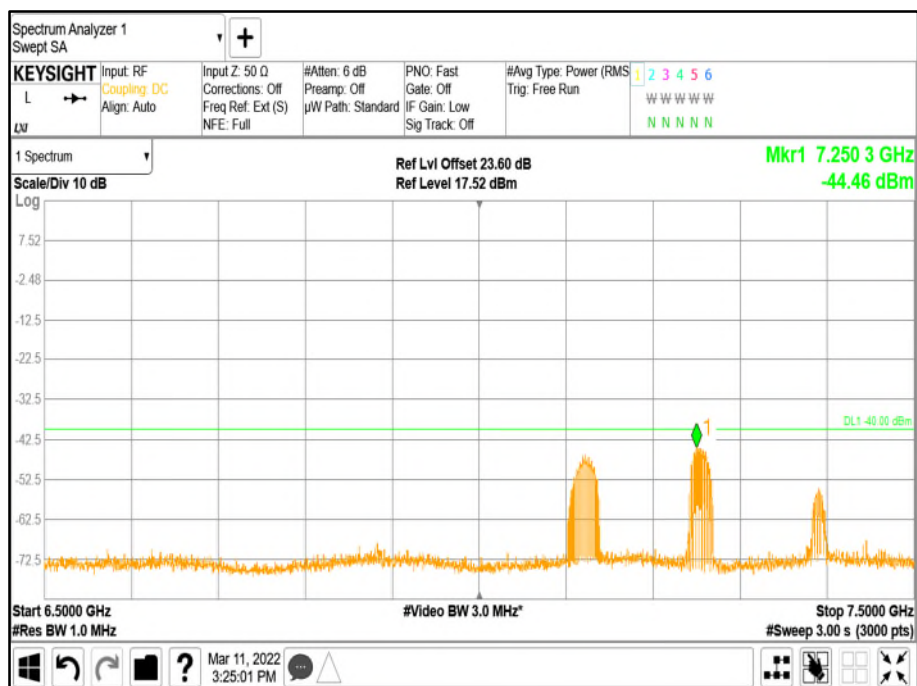
Antenna B - Modulation *NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel
Position B - Band 5 - Range 27000 to 38000 MHz



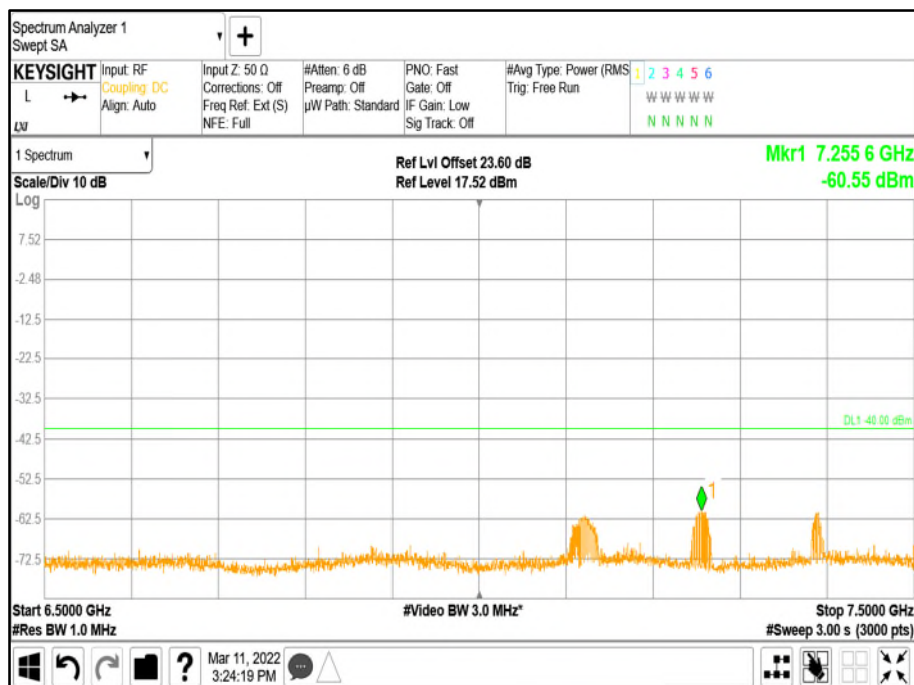
Antenna A - Modulation *NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port A



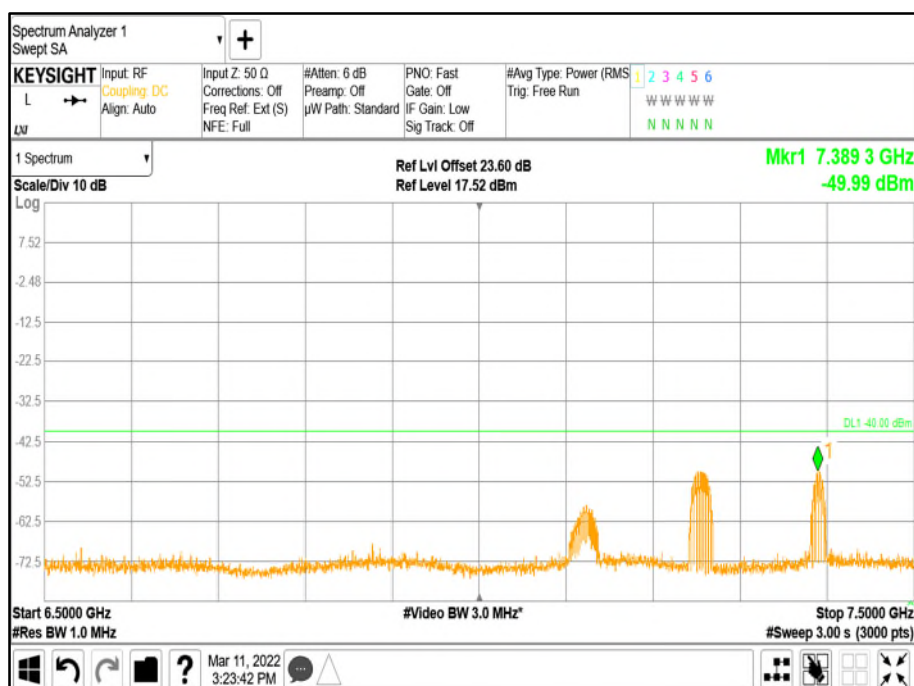
Antenna B - Modulation *NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port B



Antenna C - Modulation *NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port C



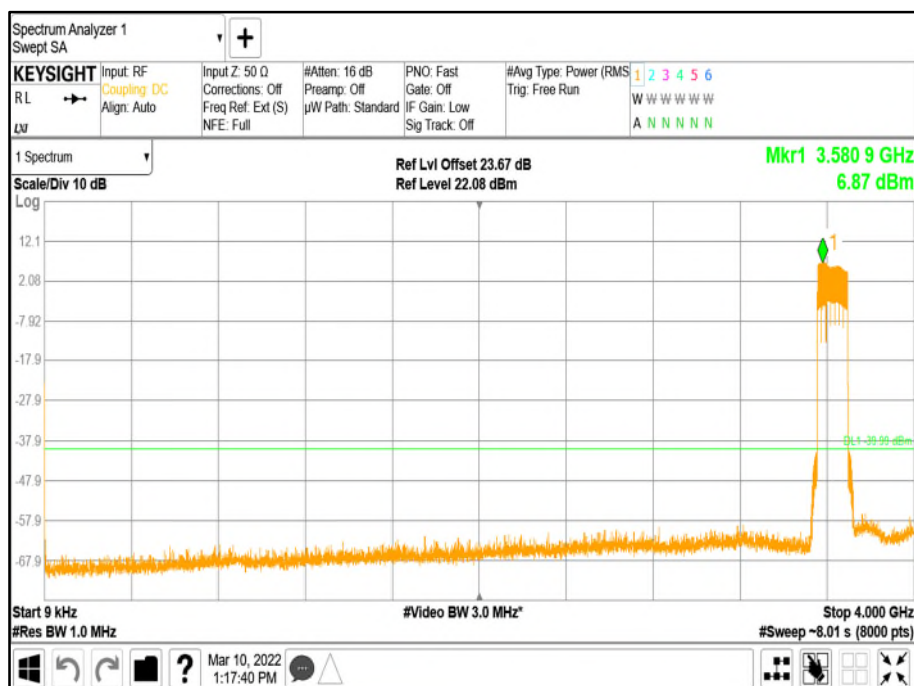
Antenna D - Modulation *NR+LTE: QPSK - Carrier Bandwidth 20.0+10.0 MHz - Channel Position B - Band 2 - Range 7 GHz Spurious Port D



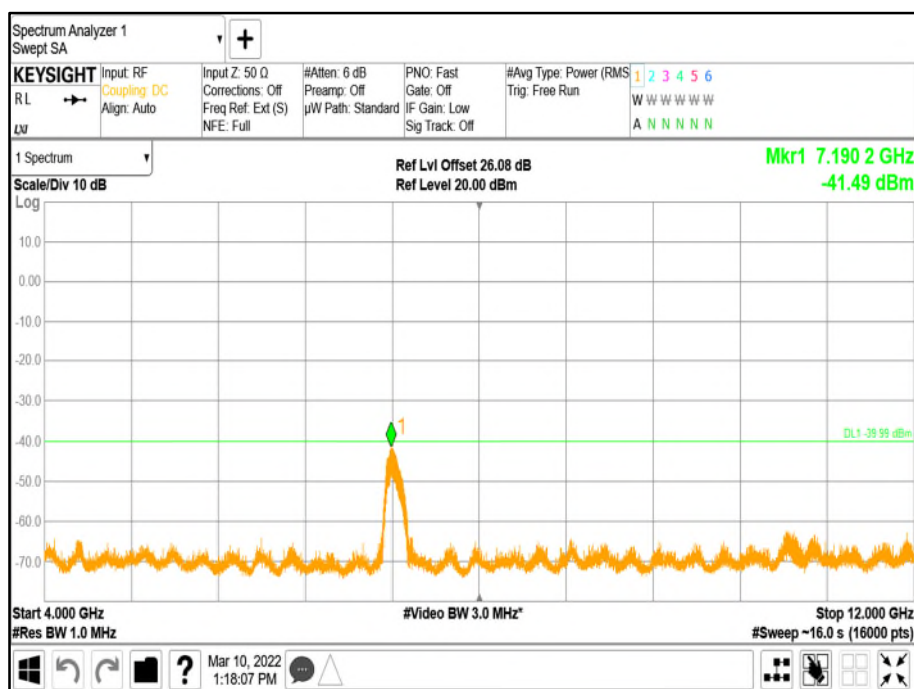
Configuration C

Maximum Output Power dBm

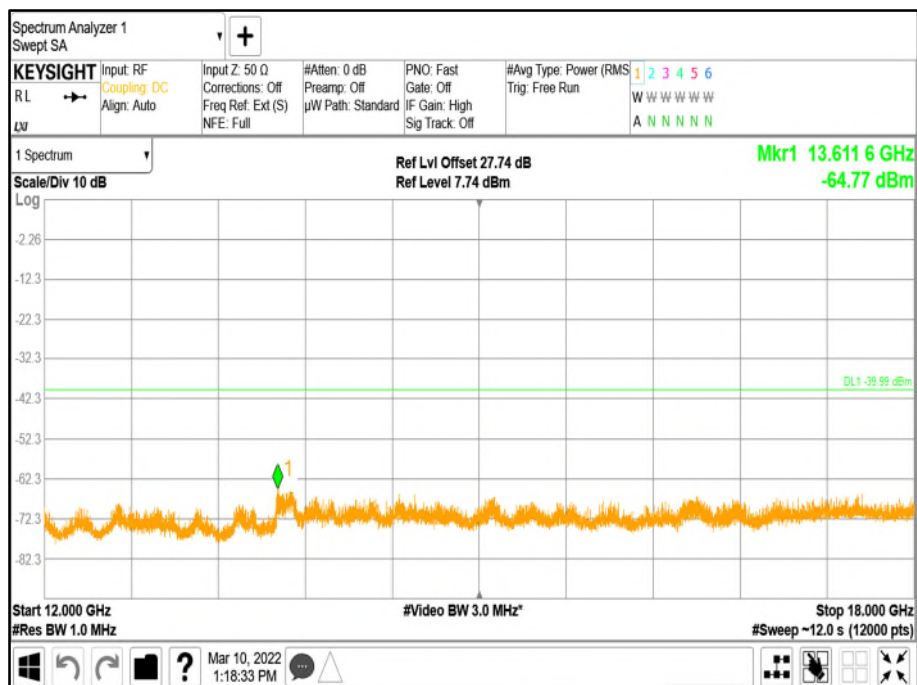
Antenna B - Modulation NR20: QPSK - Carrier Bandwidth 20+20+20+20+20+20+20 MHz -
Channel Position M - Band 1.00 - Range 0.009 to 4000 MHz



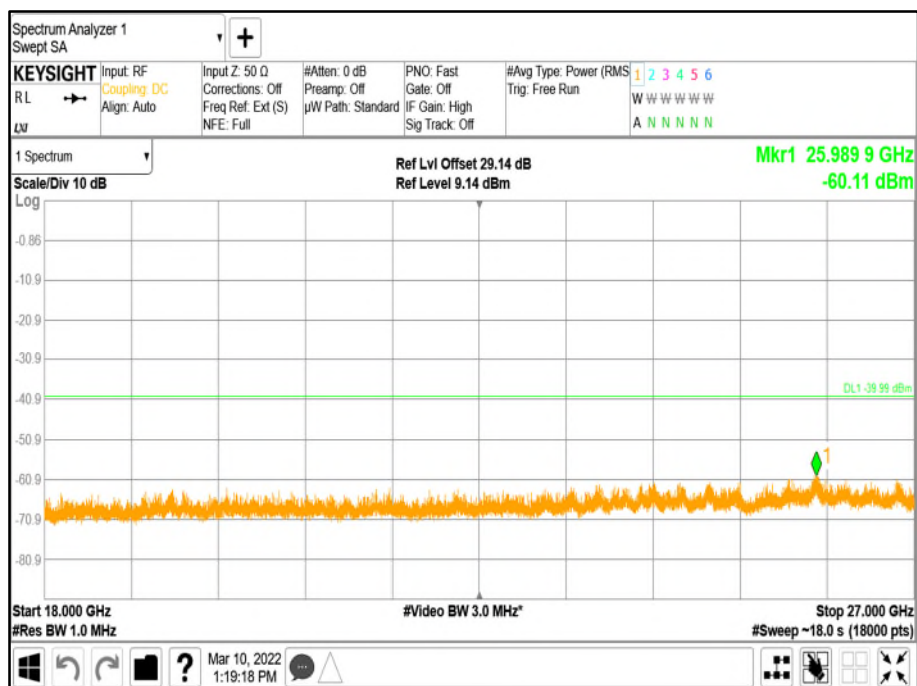
Antenna B - Modulation NR20: QPSK - Carrier Bandwidth 20+20+20+20+20+20+20 MHz -
Channel Position M - Band 2 - Range 4000 to 12000 MHz



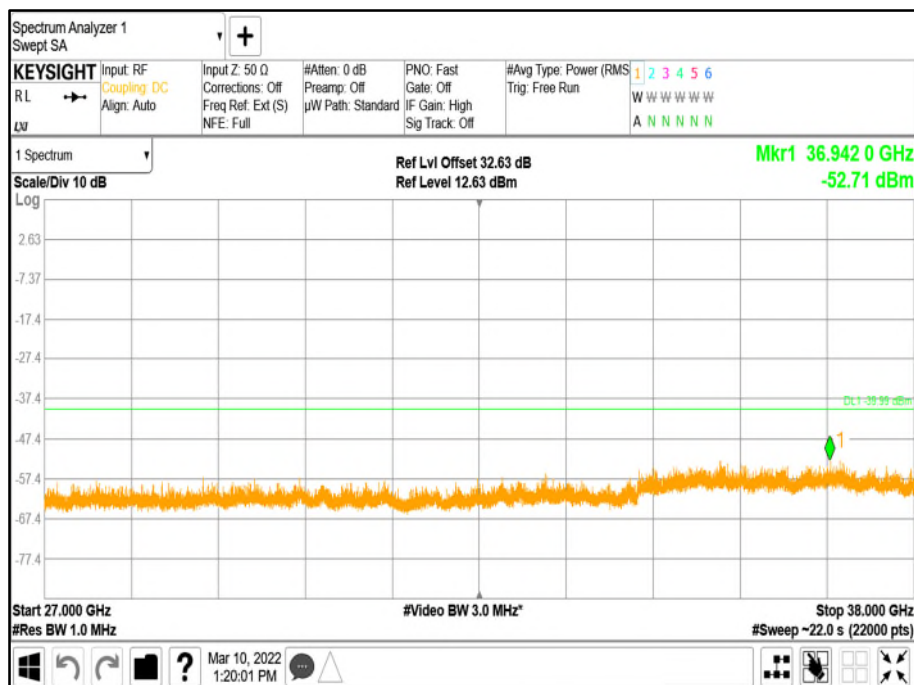
Antenna B - Modulation NR20: QPSK - Carrier Bandwidth 20+20+20+20+20+20+20 MHz -
Channel Position M - Band 3 - Range 12000 to 18000 MHz



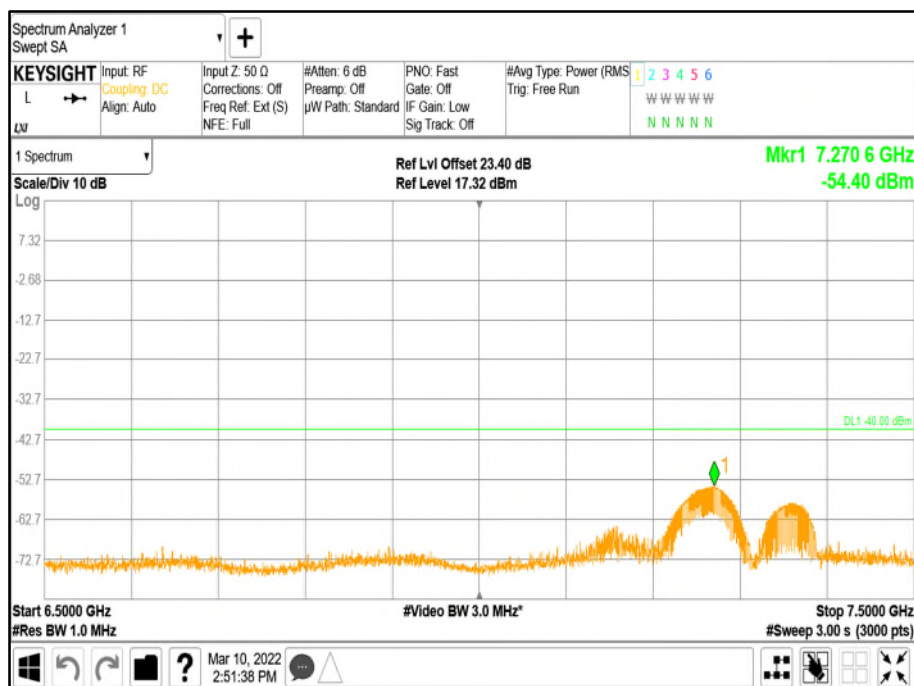
Antenna B - Modulation NR20: QPSK - Carrier Bandwidth 20+20+20+20+20+20+20 MHz -
Channel Position M - Band 4 - Range 18000 to 27000 MHz



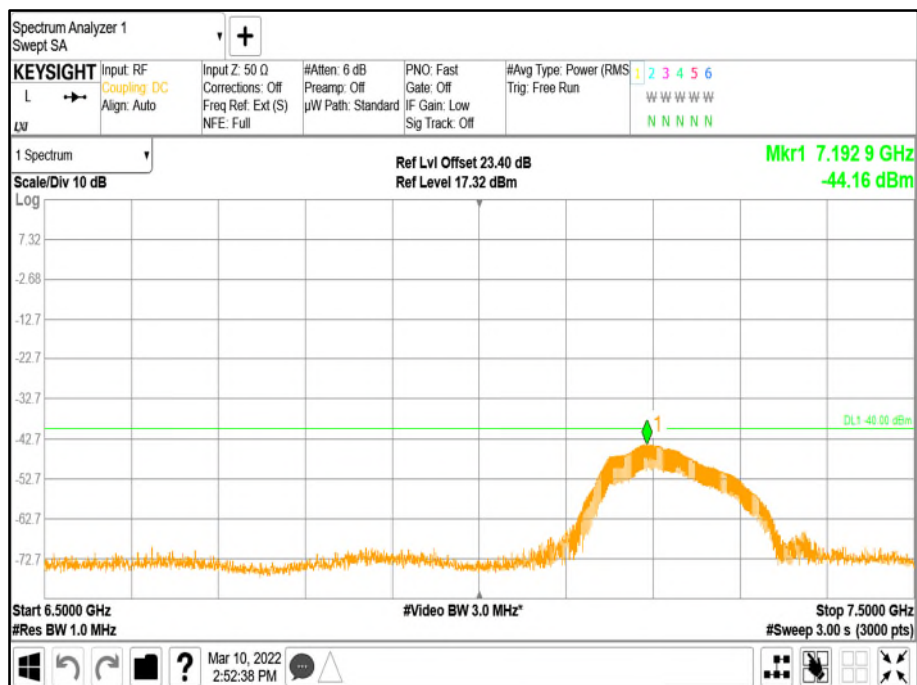
Antenna B - Modulation NR20: QPSK - Carrier Bandwidth 20+20+20+20+20+20+20 MHz -
Channel Position M - Band 5 - Range 27000 to 38000 MHz



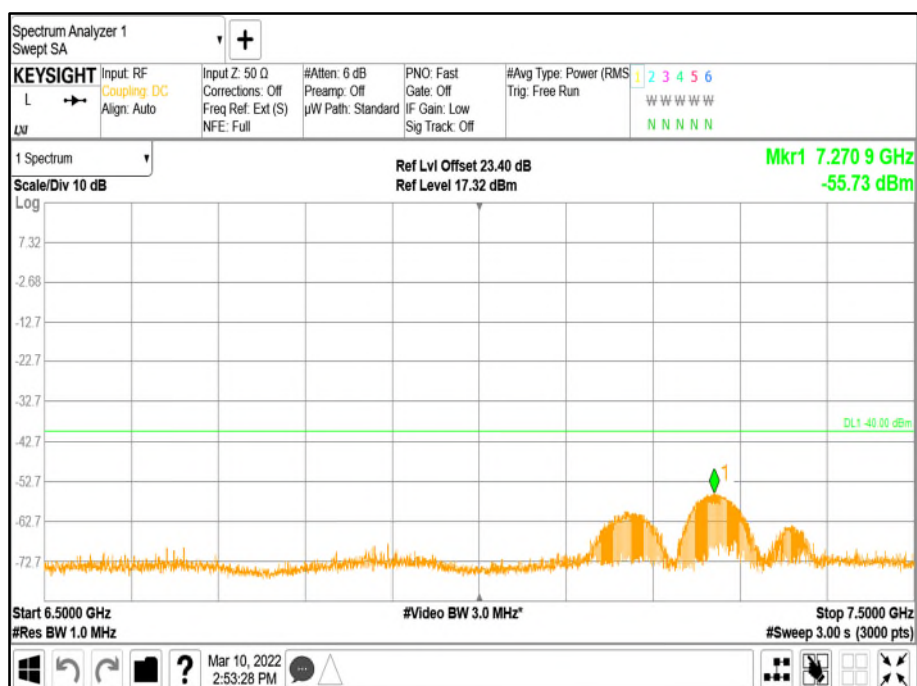
Antenna A - Modulation NR20: QPSK - Carrier Bandwidth 20+20+20+20+20+20+20 MHz -
Channel Position M - Band 2 - Range 7 GHz Spurious Port A



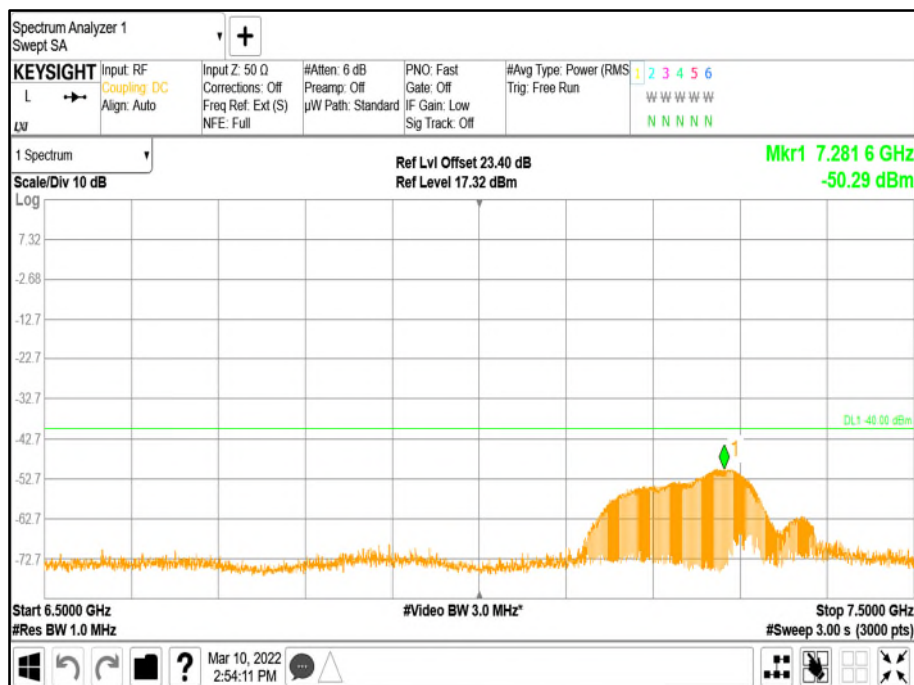
Antenna B - Modulation NR20: QPSK - Carrier Bandwidth 20+20+20+20+20+20+20 MHz -
Channel Position M - Band 2 - Range 7 GHz Spurious Port B



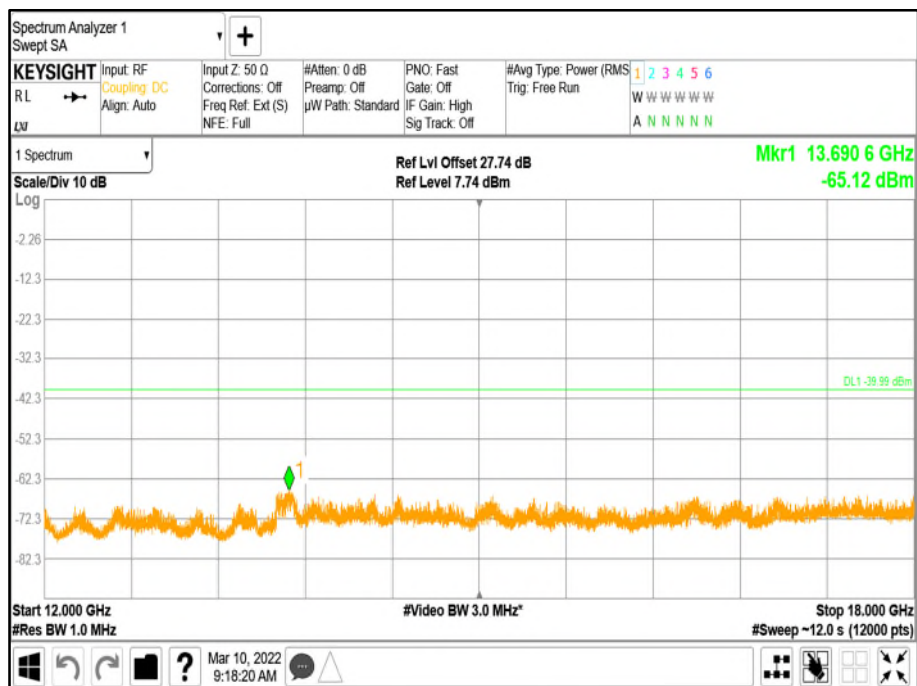
Antenna C - Modulation NR20: QPSK - Carrier Bandwidth 20+20+20+20+20+20+20 MHz -
Channel Position M - Band 2 - Range 7 GHz Spurious Port C



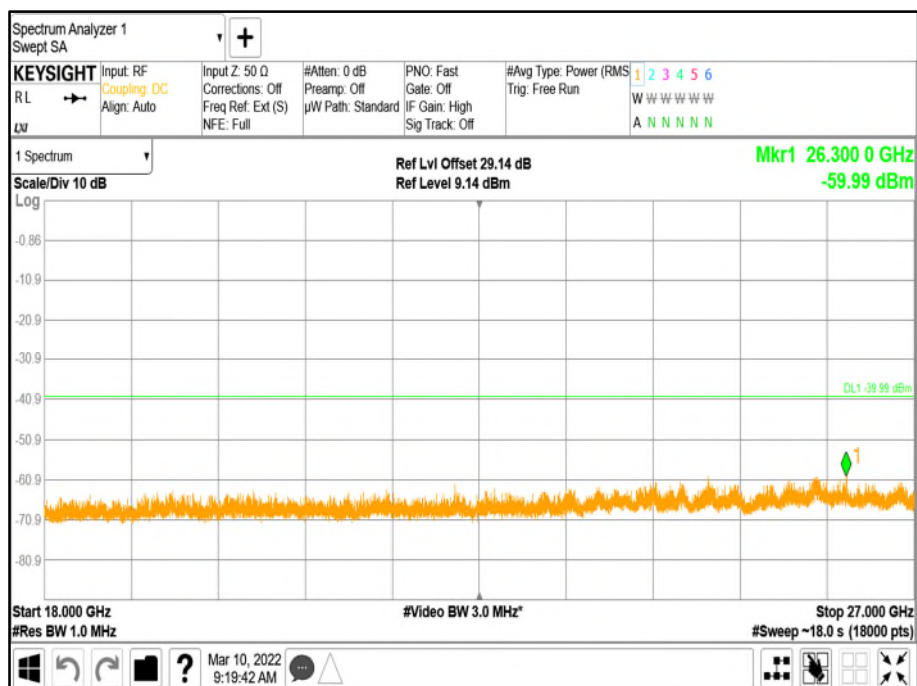
Antenna D - Modulation NR20: QPSK - Carrier Bandwidth 20+20+20+20+20+20+20 MHz -
Channel Position M - Band 2 - Range 7 GHz Spurious Port D

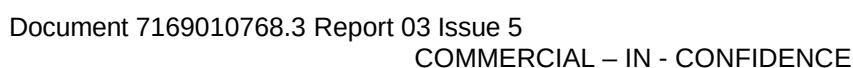
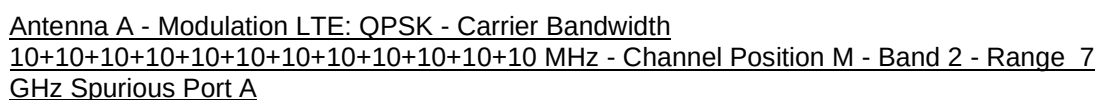
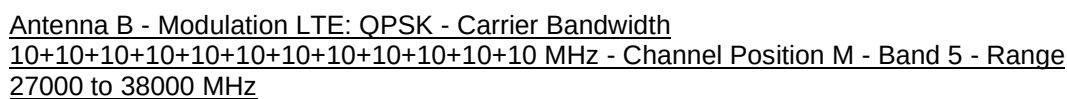


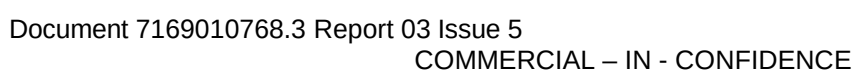
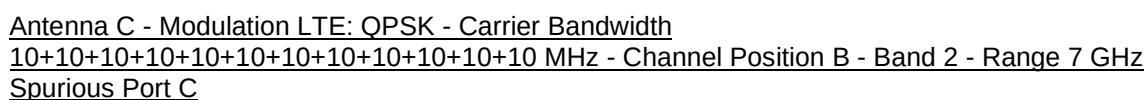
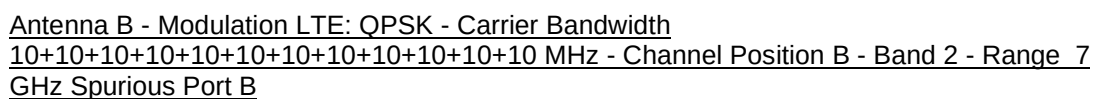
Antenna B - Modulation LTE: QPSK - Carrier Bandwidth
10+10+10+10+10+10+10+10+10+10+10+10 MHz - Channel Position M - Band 3 - Range
12000 to 18000 MHz

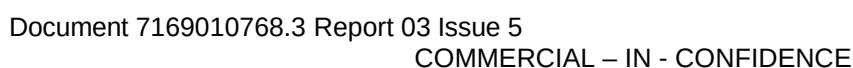
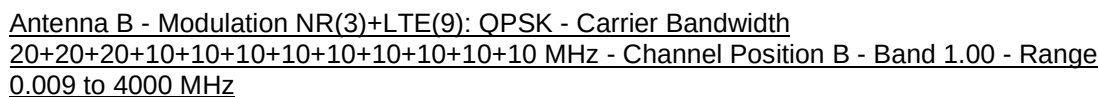
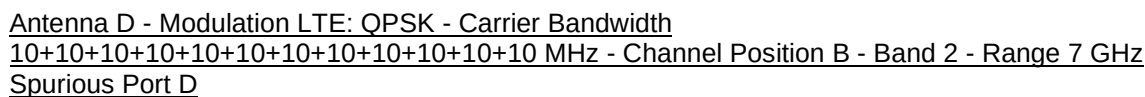


Antenna B - Modulation LTE: QPSK - Carrier Bandwidth
10+10+10+10+10+10+10+10+10+10+10+10 MHz - Channel Position M - Band 4 - Range
18000 to 27000 MHz

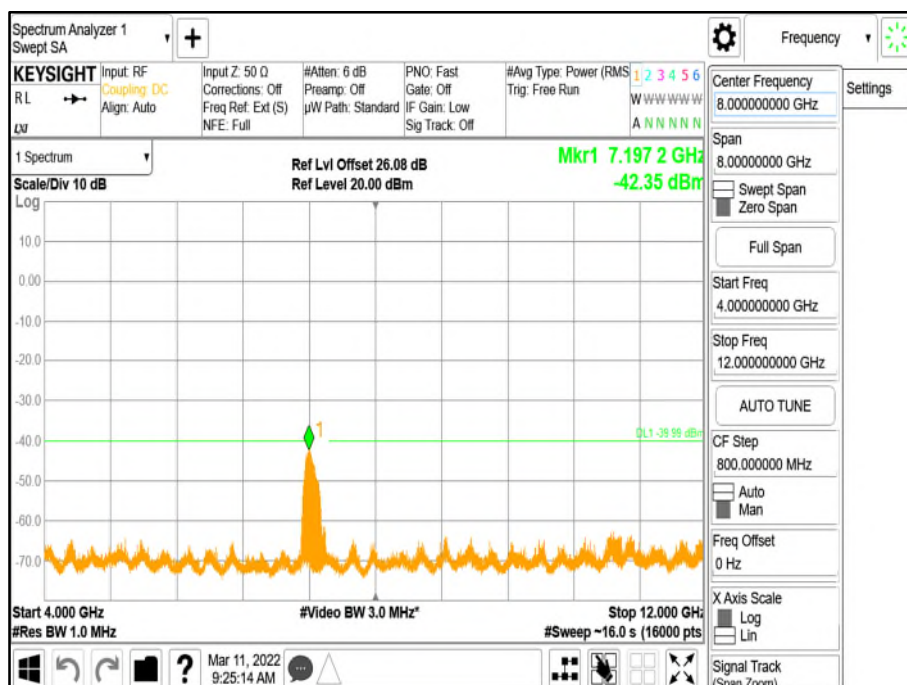




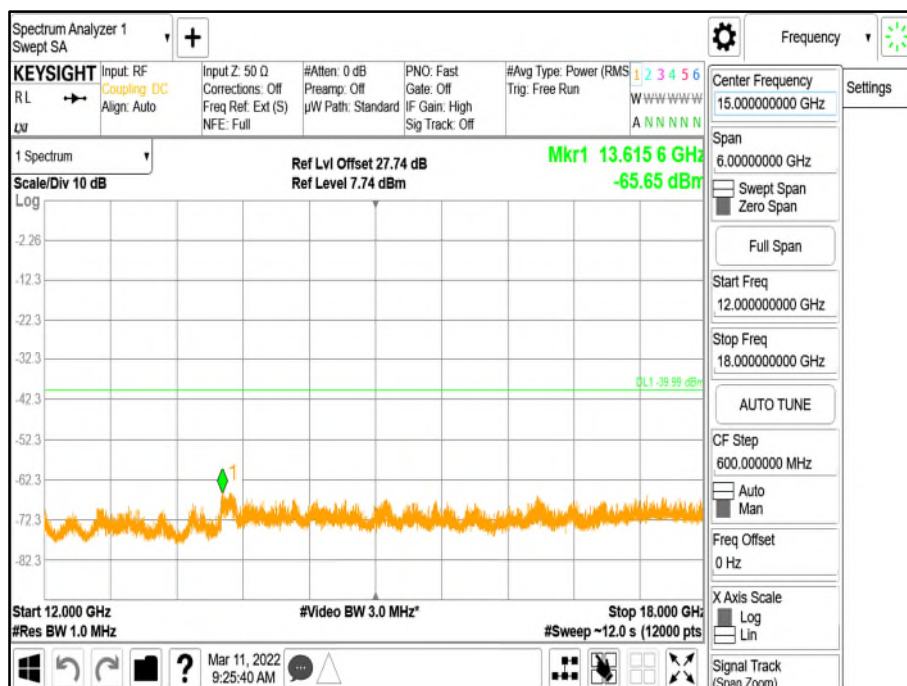


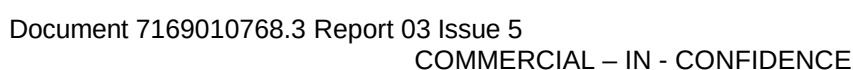
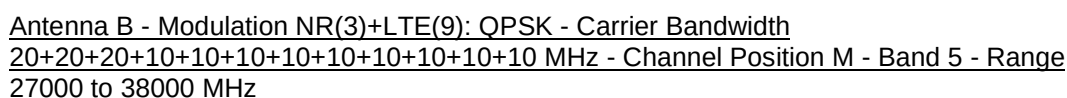
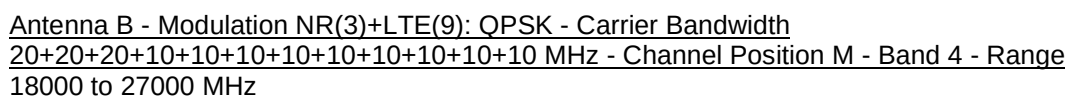


Antenna B - Modulation NR(3)+LTE(9): QPSK - Carrier Bandwidth
20+20+20+10+10+10+10+10+10+10+10+10+10+10+10 MHz - Channel Position M - Band 2 - Range 4000
to 12000 MHz



Antenna B - Modulation NR(3)+LTE(9): QPSK - Carrier Bandwidth
20+20+20+10+10+10+10+10+10+10+10+10+10+10+10 MHz - Channel Position M - Band 3 - Range
12000 to 18000 MHz

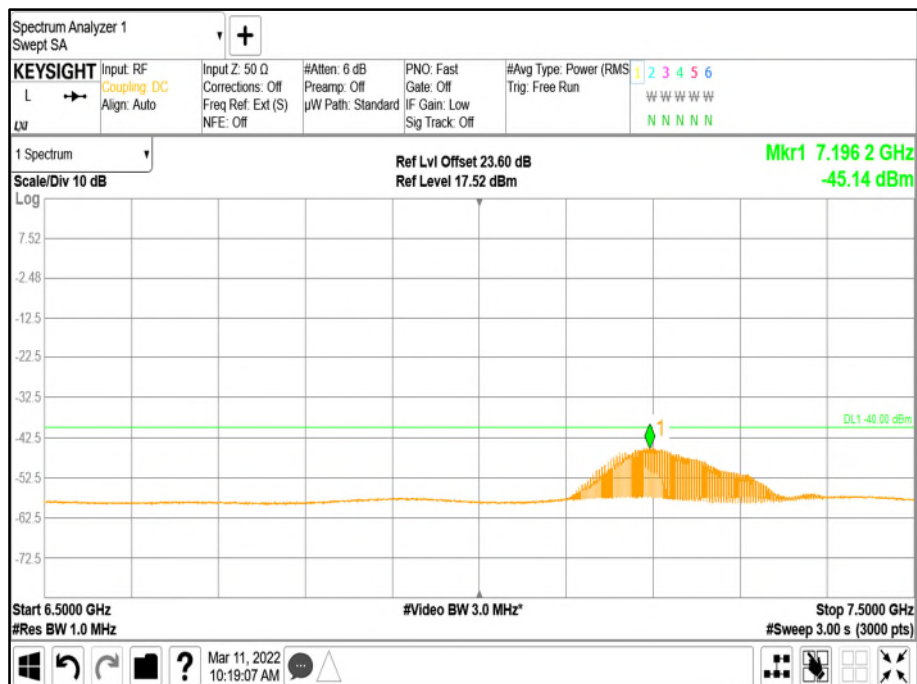




Antenna A - Modulation NR(3)+LTE(9): QPSK - Carrier Bandwidth
20+20+20+10+10+10+10+10+10+10+10+10 MHz - Channel Position M - Band 2 - Range 7
GHz Spurious Port A



Antenna B - Modulation NR(3)+LTE(9): QPSK - Carrier Bandwidth
20+20+20+10+10+10+10+10+10+10+10+10 MHz - Channel Position M - Band 2 - Range 7
GHz Spurious Port B

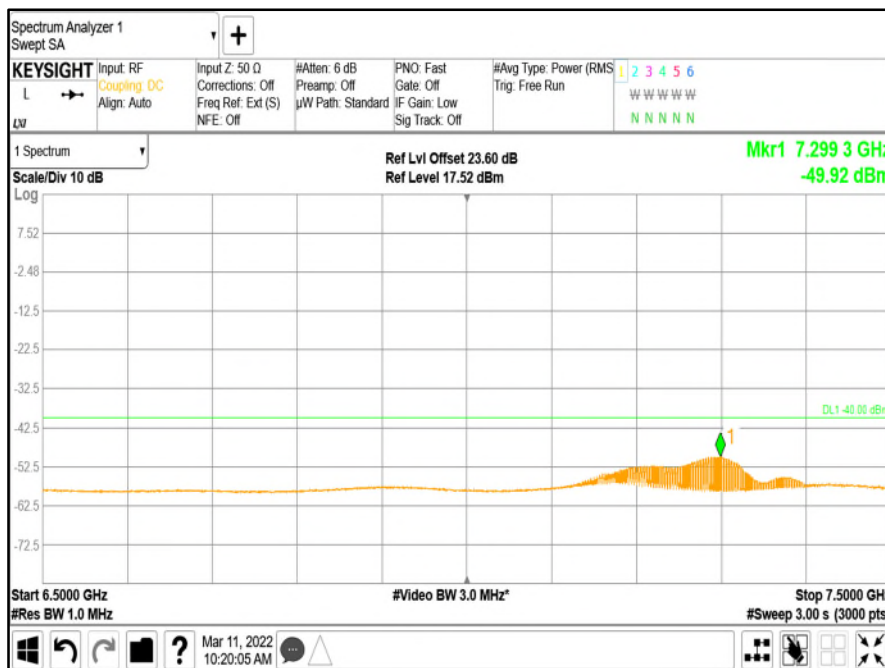




Antenna C - Modulation NR(3)+LTE(9): QPSK - Carrier Bandwidth
20+20+20+10+10+10+10+10+10+10+10+10+10+10+10 MHz - Channel Position M - Band 2 - Range 7
GHz Spurious Port C



Antenna D - Modulation NR(3)+LTE(9): QPSK - Carrier Bandwidth
20+20+20+10+10+10+10+10+10+10+10+10+10+10+10 MHz - Channel Position M - Band 2 - Range 7
GHz Spurious Port D



Limit	-40 dBm/MHz
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2.5 FREQUENCY STABILITY

2.5.1 Specification Reference

FCC CFR 47 Part 2, Clause 2.1055

2.5.2 Date of Test and Modification State

09-Apr-2022 - Modification State 0

2.5.3 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.5.4 Environmental Conditions

Ambient Temperature 25.0°C
Relative Humidity 25.9%

2.5.5 Test Method

All measurements were made in accordance with FCC KDB 971168 D01, Clause 9 and ANSI C63.26 Clause 5.6

2.5.6 Test Results

Configuration A

Temperature	Voltage	B48 Frequency Error (Hz)
		Channel Position M (3 625 000 000 Hz)
-30°C	-48.0 V DC	Shuts down
-20°C	-48.0 V DC	Shuts down
-10°C	-48.0 V DC	1.3279
0°C	-48.0 V DC	-2.0187
+10°C	-48.0 V DC	2.2672
+20°C	-40.5 V DC	-2.6609
+20°C	-48.0 V DC	1.8689
+20°C	-57.5 V DC	-1.8604
+30°C	-48.0 V DC	2.0827
+40°C	-48.0 V DC	-2.5835
+50°C	-48.0 V DC	2.9518
		Worst case deviation = 0.000814 ppm



Limit	The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.
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SECTION 3

TEST EQUIPMENT USED



3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Spectrum Analyzer	Keysight	PXA N9030B	MY57144347	24	24-Apr-2022
Thermometer / Refrigeration	VWR	89094-746	210697579	24	13-Aug-2023
Digital Multimeter	Fluke	23	SSG012027	12	22-Oct-2022
PSU	Xantrex	XKW60-50	E00109862	-	O/P Mon
Attenuator (20dB)	Mini-Circuits	BW-K10-2W44+	-	-	O/P Mon
Climate Chamber	Burnsco	RTC-37P-3-3	-07-07	-	O/P Mon

N/A – Not Applicable

O/P Mon – Output Monitored with Calibrated Equipment

Feb 28, 2023 – PSD retesting

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Spectrum Analyzer	Rohde & Schwarz	ESU40	SSG013672	24	2024-01-14
Coaxial Cable (Receiver) AFC Control	Huber & Suhner	104PEA	SSG012041	12	2024-01-24
Coaxial Cable (1-18 GHz) [Preamp]	Micro-Coax	UFA 210B-1-1500-504504	SSG012376	12	2024-01-27
Double Ridged Horn Antenna	Emco	3115	SSG012298	2022-04-01	2023-04-01
Pre-Amplifier (1-18GHz) (A7)	BNR	LNA	SSG012594	2022-05-16	2023-05-16



3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

Test Discipline	Frequency / Parameter		MU
Conducted Maximum Peak Output Power	30 MHz to 20 GHz Amplitude		± 0.7 dB
Conducted Emissions	30 MHz to 20 GHz Amplitude		± 2.1 dB
Frequency Stability	30 MHz to 2 GHz		± 5.0 Hz
Occupied Bandwidth	Up to 20 MHz Bandwidth	5 MHz Bandwidth	± 11547 Hz
		10 MHz Bandwidth	± 23094 Hz
		15 MHz Bandwidth	± 34641 Hz
		20 MHz Bandwidth	± 46188 Hz
Band Edge	30 MHz to 20 GHz Amplitude		± 0.8 dB
Radiated Spurious Emissions	30 MHz to 1 GHz		± 5.2 dB
	1 GHz to 40GHz		± 6.3 dB

Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2007, Clause 4.4.3 and 4.5.1. (Procedure 2). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8



3.3 MEASUREMENT SOFTWARE USED

List of measurement software versions used for testing.

Instrument	Manufacturer	Type No.	TE No.	Software Version
PXA Signal Analyser	Keysight	N9030B	MY57144347	A 24.56
HP-VEE Software	TUV SUD	HP_VEE	N/A	V3.28



SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT



4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



Certificate #2955.19

This report relates only to the actual item/items tested.

Our A2LA Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our A2LA Accreditation.

Results of tests not covered by our A2LA Accreditation Schedule are marked NUA (Not A2LA Accredited).

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TUV SUD Canada, 1280 Teron Rd., Kanata On. K2K 2C1

ANNEX A

MODULE LIST

Configuration A/B/C/D – Contiguous			
Product	Product No	R-State	Serial No
Dot 41Kr B48 (EUT)	KRY 901 516/4	R1A	On file
CT11	LPC 102 494/1	R2A	T01G495060
IRU 1648	KRC 161 842/1	R1D	TD3F105259
Software:	CXP2030045/26	Revision:	R12A108
Configuration B/C/D – Non-contiguous			
Product	Product No	R-State	Serial No
Dot 4469 B48 (EUT)	KRY 901 516/2	R1A	TD3W213282
CT11	LPC 102 494/1	R2A	T01G495060
IRU 1649	KRC 161 842/2	R1E	TD3F109016
Software:	CXP2030045/26	Revision:	R12A108
PSD retest			
Dot 44Kr B48 (EUT)	KRY 901 516/3	R1A	TD3W262402
CT11	LPC 102 494/1	R2A	T01G99655
IRU 1648	KRC 161 842/1	R1D	TD3F105259
Software:	CXP2030045/26	Revision:	R12A108

