



FCC RADIO TEST REPORT

FCC ID : 2AWNP-AP24-48-77
Equipment : 5G Small cell
Brand Name : CELONA
Model Name : AP24-48|77|78H
Applicant : Celona Inc.,
900 East Hamilton Ave, Suite 200, Campbell, CA, 95008
Manufacturer : ASKEY COMPUTER CORPORATION
10F, No.119, Jiankang Rd., Zhonghe Dist., New Taipei City, Taiwan
Standard : FCC 47 CFR Part 2

The product was received on Sep. 11, 2025 and testing was performed from Oct. 01, 2025 to Nov. 05, 2025. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issue Date
FG581931A	01	Initial issue of report	Nov. 13, 2025



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Pass	-
	§27.50 (j)(3)	Equivalent Isotropic Radiated Power (n77)	Pass	
	§27.50 (k)(3)	Equivalent Isotropic Radiated Power (n77)		
3.3	-	Peak-to-Average Ratio	Reporting only	-
3.4	§2.1049	Occupied Bandwidth	Pass	-
3.5	§2.1051 §27.53 (l)(2)	Conducted Band Edge Measurement (n77) (n78)	Pass	-
	§2.1051 §27.53 (n)(2)	Conducted Band Edge Measurement (n77) (n78)		
3.6	§2.1051 §27.53 (l)(2)	Conducted Spurious Emission (n77) (n78)	Pass	-
	§2.1051 §27.53 (n)(2)	Conducted Spurious Emission (n77) (n78)		
3.7	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Pass	-
4.2	§2.1053 §27.53 (l)(2)	Radiated Spurious Emission (n77) (n78)	Pass	-
	§2.1053 §27.53 (n)(2)	Radiated Spurious Emission (n77) (n78)		

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Steve Chen**Report Producer: Freda Wu**



1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature
General Specs 5G NR and GNSS
Antenna Type WWAN: Omni Antenna

Remark:

1. The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.
2. The maximum allowable antenna gain is determined by the manufacturer.

1.2 Modification of EUT

No modifications made to the EUT during the testing.



1.3 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. TH02-HY
Test Engineer	Qiao Tan
Temperature (°C)	22.3~25.2
Relative Humidity (%)	45.3~58.8

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. 03CH12-HY (TAF Code: 3786)
Test Engineer	Gerry Wei, Tim Lee and Wilson Wu
Temperature (°C)	20~25
Relative Humidity (%)	50~60
Remark	The Radiated Spurious Emission test item subcontracted to Sporton International Inc. Wensan Laboratory.

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: TW1190 and TW3786

1.4 Applicable Standards

According to the specifications declared by the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ ANSI C63.26-2015
- ♦ FCC 47 CFR Part 2, 27
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. The TAF code is not including all the FCC KDB listed without accreditation.



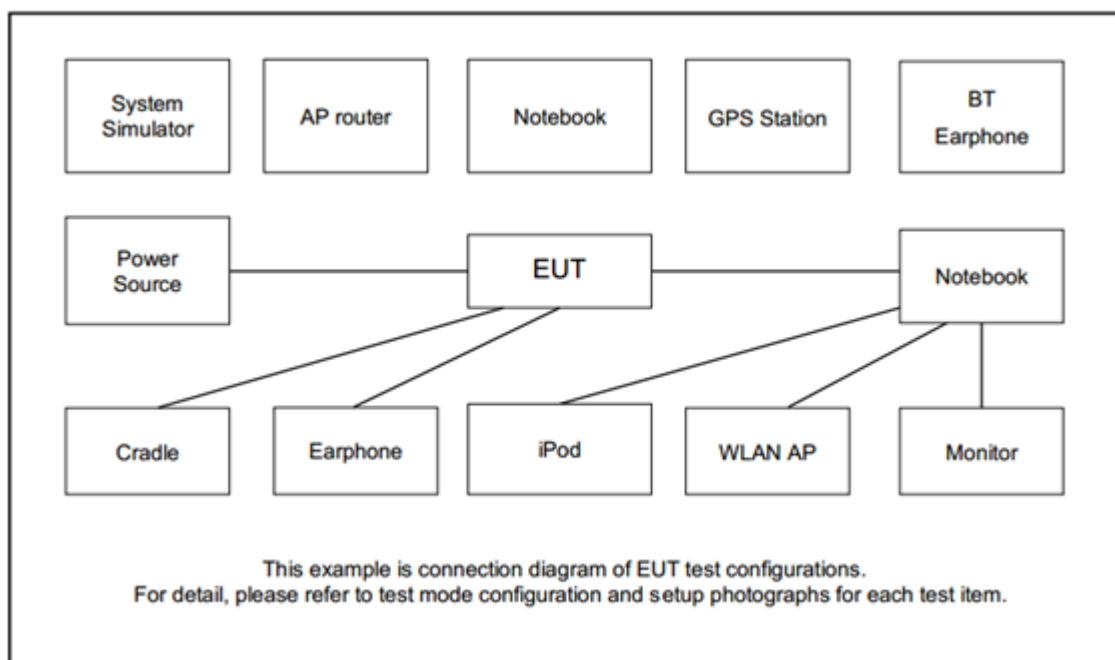
2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in two config (Ant. Horizontal and Ant. Vertical), and adjusting the measurement antenna orientation, following C63.26 exploratory test procedures and only the worst case emissions were reported in this report.

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Notebook	Acer	N16Q1	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

$$= 4.2 + 10 = 14.2 \text{ (dB)}$$



2.5 Frequency List of Low/Middle/High Channels

5G NR Band n77 (Part27O) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	650000	656000	662000
	Frequency	3750	3840	3930
90	Channel	649668	656000	662332
	Frequency	3745.02	3840	3934.98
80	Channel	649334	656000	662666
	Frequency	3740.01	3840	3939.99
70	Channel	649000	656000	663000
	Frequency	3735	3840	3945
60	Channel	648668	656000	663332
	Frequency	3730.02	3840	3949.98
50	Channel	648334	656000	663666
	Frequency	3725.01	3840	3954.99
40	Channel	648000	656000	664000
	Frequency	3720	3840	3960
30	Channel	647668	656000	664332
	Frequency	3715.02	3840	3965
20	Channel	647334	656000	664666
	Frequency	3710.01	3840	3969.99
15	Channel	647168	656000	664832
	Frequency	3707.52	3840	3972.48
10	Channel	647000	656000	665000
	Frequency	3705	3840	3975

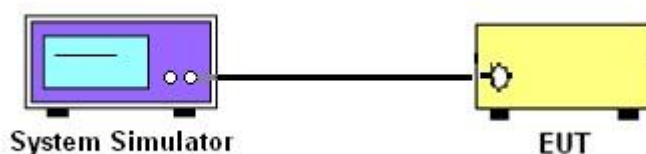
3 Conducted Test Items

3.1 Measuring Instruments

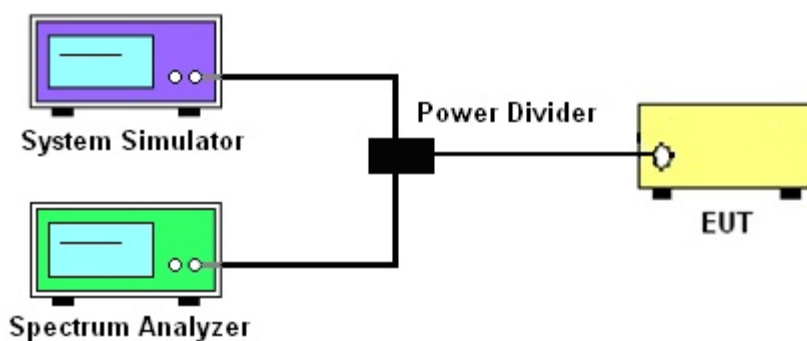
See list of measuring instruments of this test report.

3.1.1 Test Setup

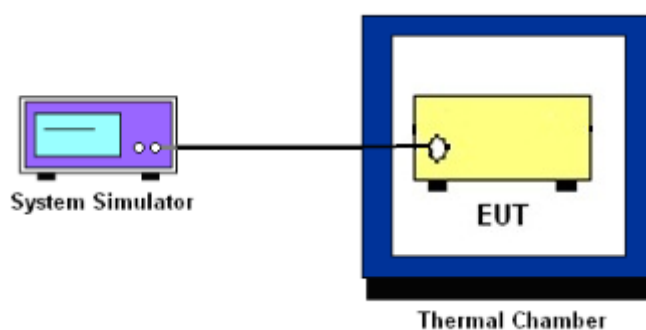
3.1.2 Conducted Output Power



3.1.3 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge and Conducted Spurious Emission



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.



3.2 Conducted Output Power and

3.2.1 Description of the Conducted Output Power Measurement and Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The EIRP of mobile transmitters must not exceed 1 Watts for n77, n78

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.2.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.



3.3 Peak-to-Average Ratio

3.3.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.3.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.2.6

1. The EUT was connected to spectrum and system simulator via a power divider.
2. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
3. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
4. Record the deviation as Peak to Average Ratio.



3.4 Occupied Bandwidth

3.4.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.4.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.4.3 (26dB) and Section 5.4.4 (99OB)

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
3. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
4. Set the detection mode to peak, and the trace mode to max hold.
5. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.
(this is the reference value)
6. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
7. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
8. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.



3.5 Conducted Band Edge

3.5.1 Description of Conducted Band Edge Measurement

27.53 (l)(2)

For mobile 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)(2) 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, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. 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.

27.53 (n)(2)

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (n)(2) 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, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. 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.



3.5.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. Set RBW $\geq$ 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
5. Set spectrum analyzer with RMS detector.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. Checked that all the results comply with the emission limit line.
The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
8. For MIMO mode, add additional MIMO factor $10\log(NTX=2) = 3.01$ dB into the spectrum analyzer offset.



3.6 Conducted Spurious Emission

3.6.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The conducted spurious emission for the whole frequency range was taken.
4. Make the measurement with the spectrum analyzer's RBW = 100 kHz if the authorized frequency band/block is at or below 1 GHz and 1 MHz if the authorized frequency band/block is above 1 GHz, VBW = 3 * RBW.
5. Set spectrum analyzer with RMS detector.
6. Taking the record of maximum spurious emission.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
9. For MIMO mode, add additional MIMO factor $10\log(NTX=2) = 3.01$ dB into the spectrum analyzer offset.



3.7 Frequency Stability

3.7.1 Description of Frequency Stability Measurement

27.54

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

3.7.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.7.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was placed in a temperature chamber at 20±5° C and connected with the system simulator.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

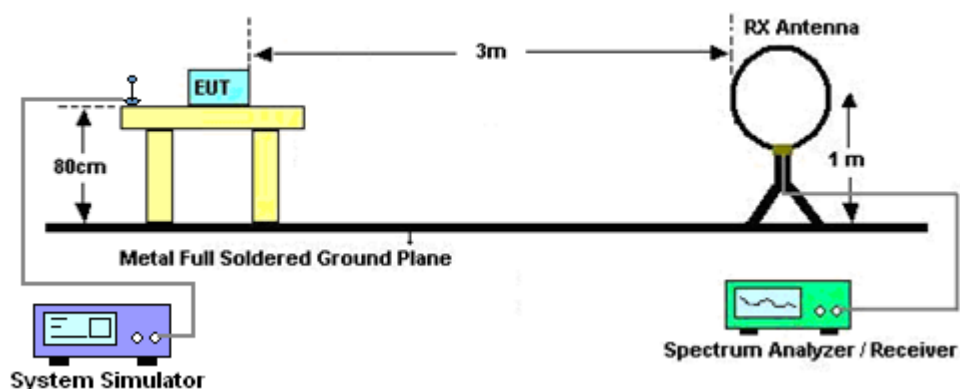
4 Radiated Test Items

4.1 Measuring Instruments

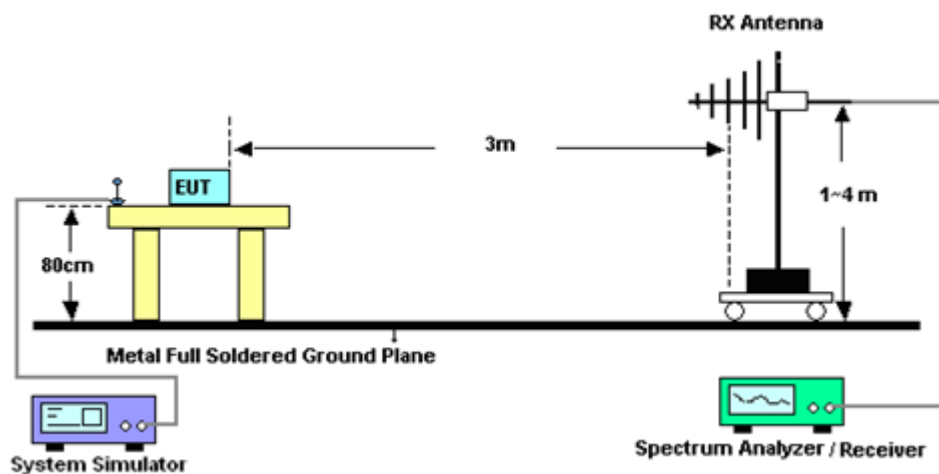
See list of measuring instruments of this test report.

4.1.1 Test Setup

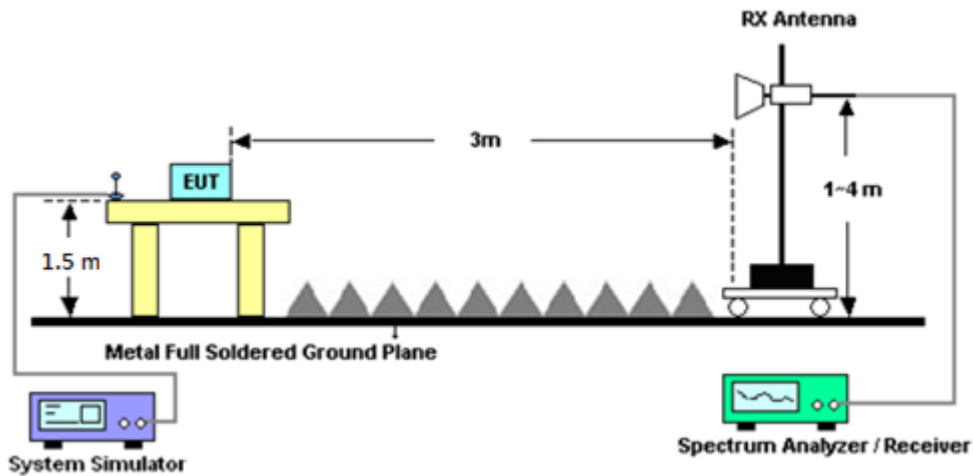
For radiated test below 30MHz



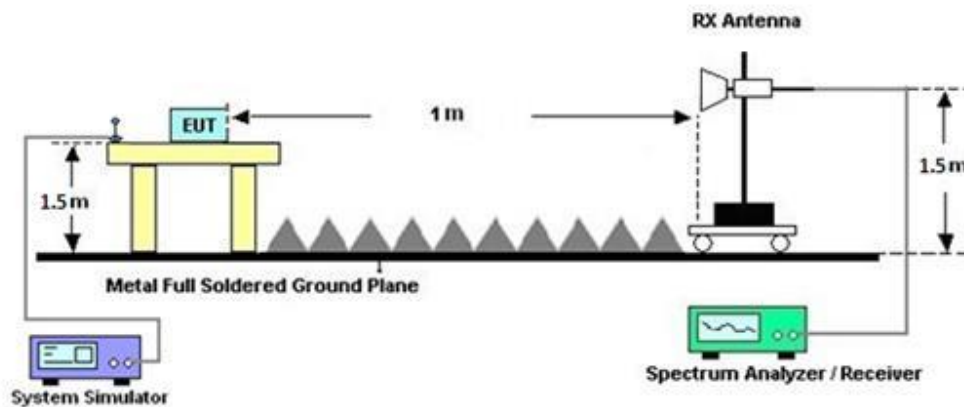
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

Note:

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.



4.2 Radiated Spurious Emission Measurement

4.2.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI C63.26-2015.

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.2.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI C63.26-2015 section 5.5.4 Radiated measurement using the field strength method.

1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. To convert spectrum reading E(dBuV/m) to EIRP(dBm)
$$\text{EIRP(dBm)} = \text{Level (dBuV/m)} + 20\log(d) - 104.77,$$
where d is the distance at which field strength limit is specified in the rules
7.
$$\text{Field Strength Level (dBm)} = \text{Spectrum Reading (dBm)} + \text{Antenna Factor} + \text{Cable Loss} + \text{Read Level} - \text{Preamp Factor}.$$
8.
$$\text{ERP (dBm)} = \text{EIRP (dBm)} - 2.15$$
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)



5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2E	101108	9 kHz~30 MHz	Dec. 18, 2024	Oct. 15, 2025~ Oct. 17, 2025	Dec. 17, 2025	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	37059 & 01	30MHz~1GHz	Nov. 27, 2024	Oct. 15, 2025~ Oct. 17, 2025	Nov. 26, 2025	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02114	1GHz~18GHz	Jul. 02, 2025	Oct. 15, 2025~ Oct. 17, 2025	Jul. 01, 2026	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1223	18GHz~40GHz	Jul. 02, 2025	Oct. 15, 2025~ Oct. 17, 2025	Jul. 01, 2026	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 19, 2025	Oct. 15, 2025~ Oct. 17, 2025	Mar. 18, 2026	Radiation (03CH12-HY)
Preamplifier	Agilent	8449B	3008A02375	1GHz~26.5GHz	Feb. 07, 2025	Oct. 15, 2025~ Oct. 17, 2025	Feb. 06, 2026	Radiation (03CH12-HY)
Preamplifier	E-INSTRUMENT TECH LTD.	ERA-100M-18 G-56-01-A70	EC1900269	1GHz~18GHz	Dec. 19, 2024	Oct. 15, 2025~ Oct. 17, 2025	Dec. 18, 2025	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 02, 2024	Oct. 15, 2025~ Oct. 17, 2025	Dec. 01, 2025	Radiation (03CH12-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Sep. 09, 2025	Oct. 15, 2025~ Oct. 17, 2025	Sep. 08, 2026	Radiation (03CH12-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290053	20Hz~26.5GHz	Sep. 08, 2025	Oct. 15, 2025~ Oct. 17, 2025	Sep. 07, 2026	Radiation (03CH12-HY)
Notch Filter	Wainwright	WLKS1200-12SS	SN2	1.2GHz Low Pass Filter	Mar. 12, 2025	Oct. 15, 2025~ Oct. 17, 2025	Mar. 11, 2026	Radiation (03CH12-HY)
Notch Filter	Wainwright	WHKX8-5872. 5-6750-18000-40ST	SN2	6.75GHz High Pass Filter	Mar. 12, 2025	Oct. 15, 2025~ Oct. 17, 2025	Mar. 11, 2026	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Dec. 19, 2024	Oct. 15, 2025~ Oct. 17, 2025	Dec. 18, 2025	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803955/2	30MHz~40GHz	Nov. 01, 2024	Oct. 15, 2025~ Oct. 17, 2025	Oct. 31, 2025	Radiation (03CH12-HY)
RF Cable	EMCI	EMC101Y-KM-KM-100	240907	30MHz~40GHz	Nov. 14, 2024	Oct. 15, 2025~ Oct. 17, 2025	Nov. 13, 2025	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP210090	N/A	Aug. 26, 2025	Oct. 15, 2025~ Oct. 17, 2025	Aug. 25, 2026	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Oct. 15, 2025~ Oct. 17, 2025	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Oct. 15, 2025~ Oct. 17, 2025	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Oct. 15, 2025~ Oct. 17, 2025	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Oct. 15, 2025~ Oct. 17, 2025	N/A	Radiation (03CH12-HY)
Signal Analyzer	Rohde & Schwarz	FSV3044	101356	10Hz~44GHz	Aug. 11, 2025	Oct. 01, 2025~ Nov. 05, 2025	Aug. 10, 2026	Conducted (TH02-HY)
Thermal Chamber	ESPEC	SH-641	92013720	-40℃ ~90℃	Sep. 10, 2025	Oct. 01, 2025~ Nov. 05, 2025	Sep. 09, 2026	Conducted (TH02-HY)
Hygrometer	TECPEL	DTM-303B	TP200886	Temperature & Humidity	Mar. 03, 2025	Oct. 01, 2025~ Nov. 05, 2025	Mar. 02, 2025	Conducted (TH02-HY)
AC Power Source	AC POWER	AFC-11003G	F319090099	50Hz~60Hz	N/A	Oct. 01, 2025~ Nov. 05, 2025	N/A	Conducted (TH02-HY)

6 Measurement Uncertainty

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	6.3 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 6 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.7 dB
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Uncertainty of Radiated Emission Measurement (6 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0 dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1 dB
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Appendix A. Test Results of Conducted Test

QPSK	Average Burst Power (dBm)														
	Low Channel					Middle Channel					High Channel				
	ANT1	ANT2	SUM	EIRP	Limit	ANT1	ANT2	SUM	EIRP	Limit	ANT1	ANT2	SUM	EIRP	Limit
10MHz	23.98	23.49	26.75	32.95	62.15	23.97	24.34	27.17	33.37	62.15	23.85	24.36	27.12	33.32	62.15
20MHz	23.75	23.84	26.81	33.01	62.15	24.28	23.94	27.12	33.32	62.15	24.55	24.41	27.49	33.69	62.15
30MHz	23.98	24.07	27.04	33.24	62.15	24.41	24.14	27.29	33.49	62.15	24.18	23.91	27.06	33.26	62.15
40MHz	24.08	24.23	27.17	33.37	62.15	24.37	24.24	27.32	33.52	62.15	24.28	24.46	27.38	33.58	62.15
50MHz	24.04	24.09	27.08	33.28	62.15	24.12	24.05	27.10	33.30	62.15	24.15	24.19	27.18	33.38	62.15
60MHz	24.39	24.10	27.26	33.46	62.15	24.50	24.33	27.43	33.63	62.15	23.88	24.17	27.04	33.24	62.15
70MHz	24.11	24.07	27.10	33.30	62.15	24.28	24.34	27.32	33.52	62.15	23.96	24.48	27.24	33.44	62.15
80MHz	24.05	24.15	27.11	33.31	62.15	24.38	24.29	27.35	33.55	62.15	24.17	24.08	27.14	33.34	62.15
90MHz	24.21	23.87	27.05	33.25	62.15	24.52	24.37	27.46	33.66	62.15	23.75	24.12	26.95	33.15	62.15
100MHz	24.22	23.97	27.11	33.31	62.15	24.35	24.23	27.30	33.50	62.15	24.23	24.62	27.44	33.64	62.15
Test Result	Pass					Pass					Pass				

64QAM	Average Burst Power (dBm)														
	Low Channel					Middle Channel					High Channel				
	ANT1	ANT2	SUM	EIRP	Limit	ANT1	ANT2	SUM	EIRP	Limit	ANT1	ANT2	SUM	EIRP	Limit
10MHz	23.93	24.26	27.11	33.31	62.15	23.88	23.81	26.86	33.06	62.15	24.10	24.07	27.10	33.30	62.15
20MHz	24.09	23.28	26.71	32.91	62.15	24.04	23.99	27.03	33.23	62.15	24.38	24.18	27.29	33.49	62.15
30MHz	24.29	24.08	27.20	33.40	62.15	24.33	24.60	27.48	33.68	62.15	24.11	23.90	27.02	33.22	62.15
40MHz	24.20	24.14	27.18	33.38	62.15	24.42	25.07	27.77	33.97	62.15	24.09	24.08	27.10	33.30	62.15
50MHz	24.25	24.56	27.42	33.62	62.15	24.11	24.90	27.53	33.73	62.15	23.91	24.00	26.97	33.17	62.15
60MHz	24.34	24.72	27.54	33.74	62.15	24.53	24.85	27.70	33.90	62.15	24.07	24.11	27.10	33.30	62.15
70MHz	24.12	24.34	27.24	33.44	62.15	24.34	24.41	27.39	33.59	62.15	24.78	24.39	27.60	33.80	62.15
80MHz	24.24	23.82	27.05	33.25	62.15	24.30	24.71	27.52	33.72	62.15	24.38	24.30	27.35	33.55	62.15
90MHz	24.43	24.16	27.31	33.51	62.15	24.60	24.54	27.58	33.78	62.15	24.02	23.75	26.90	33.10	62.15
100MHz	24.17	23.93	27.06	33.26	62.15	24.26	24.31	27.30	33.50	62.15	24.12	24.25	27.20	33.40	62.15
Test Result	Pass					Pass					Pass				

256QAM	Average Burst Power (dBm)														
	Low Channel					Middle Channel					High Channel				
	ANT1	ANT2	SUM	EIRP	Limit	ANT1	ANT2	SUM	EIRP	Limit	ANT1	ANT2	SUM	EIRP	Limit
10MHz	23.87	24.10	27.00	33.20	62.15	23.82	23.69	26.77	32.97	62.15	24.03	24.15	27.10	33.30	62.15
20MHz	23.98	23.43	26.72	32.92	62.15	24.00	23.95	26.99	33.19	62.15	24.31	24.15	27.24	33.44	62.15
30MHz	24.24	24.28	27.27	33.47	62.15	24.30	24.47	27.40	33.60	62.15	23.99	24.00	27.01	33.21	62.15
40MHz	24.19	24.62	27.42	33.62	62.15	24.31	25.18	27.78	33.98	62.15	24.33	24.30	27.33	33.53	62.15
50MHz	24.16	24.51	27.35	33.55	62.15	23.98	24.88	27.46	33.66	62.15	23.85	23.93	26.90	33.10	62.15
60MHz	24.62	24.31	27.48	33.68	62.15	24.39	24.75	27.58	33.78	62.15	23.98	24.19	27.10	33.30	62.15
70MHz	24.05	24.14	27.11	33.31	62.15	24.26	24.96	27.63	33.83	62.15	24.26	24.41	27.35	33.55	62.15
80MHz	24.12	24.00	27.07	33.27	62.15	24.44	24.89	27.68	33.88	62.15	24.30	24.26	27.29	33.49	62.15
90MHz	24.60	23.89	27.27	33.47	62.15	24.57	24.53	27.56	33.76	62.15	23.98	23.76	26.88	33.08	62.15
100MHz	24.21	23.83	27.03	33.23	62.15	24.25	24.37	27.32	33.52	62.15	24.04	24.26	27.16	33.36	62.15
Test Result	Pass					Pass					Pass				

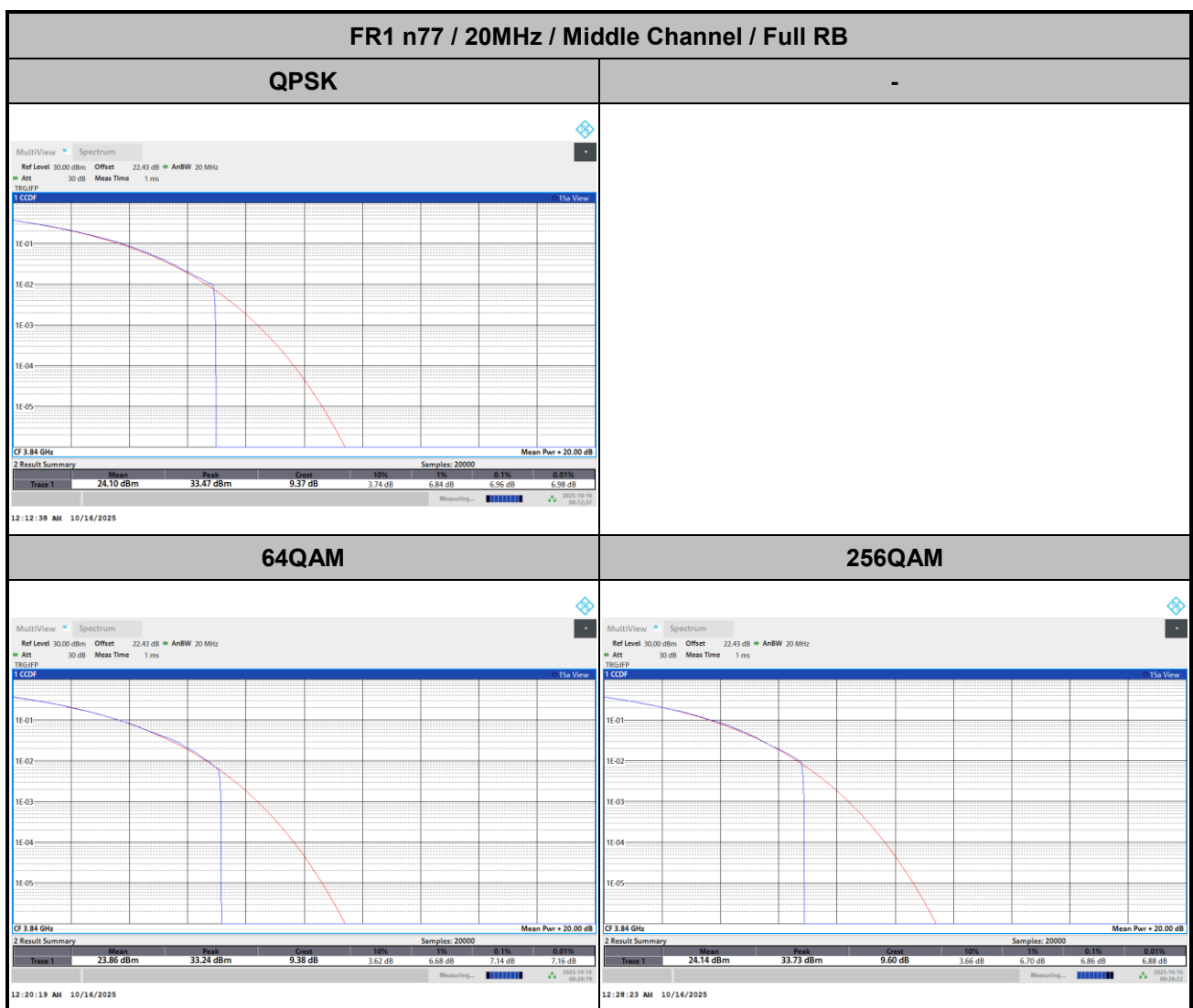


FR1 n77

<Ant. 1>

Peak-to-Average Ratio

Mode	FR1 n77 / 20MHz dB				
Mod.	QPSK	-	64QAM	256QAM	Limit: 13dB
RB Size	Full RB	-	Full RB	Full RB	Result
Middle CH	6.96	-	7.14	6.86	PASS



**26dB Bandwidth**

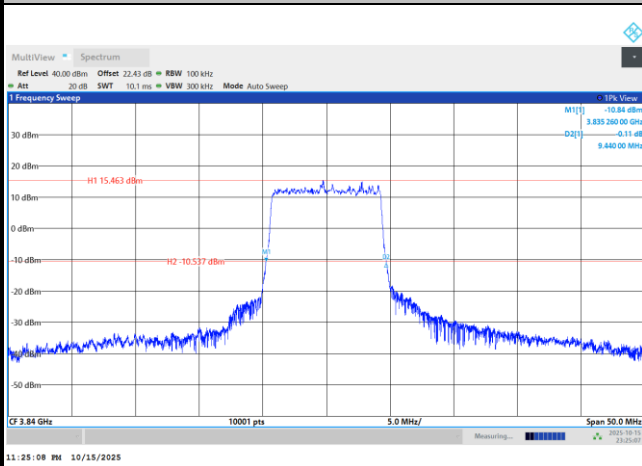
Mode	FR1 n77 : 26dB BW(MHz)							
BW	10MHz		20MHz		30MHz		40MHz	
Mod.	QPSK	-	QPSK	-	QPSK	-	QPSK	-
Middle CH	9.44	-	19.81	-	29.80	-	39.96	-
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	9.42	9.55	19.57	19.41	29.45	29.52	39.78	40.30
BW	50MHz		60MHz		70MHz		80MHz	
Mod.	QPSK	-	QPSK	-	QPSK	-	QPSK	-
Middle CH	49.67	-	61.08	-	72.53	-	80.63	-
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	49.72	49.77	61.08	62.17	70.99	70.82	80.61	82.95
BW	90MHz		100MHz					
Mod.	QPSK	-	QPSK	-				
Middle CH	90.86	-	100.90	-				
Mod.	64QAM	256QAM	64QAM	256QAM				
Middle CH	90.84	94.18	101.01	101.52				



FR1 n77 / 10MHz / Middle Channel / Full RB

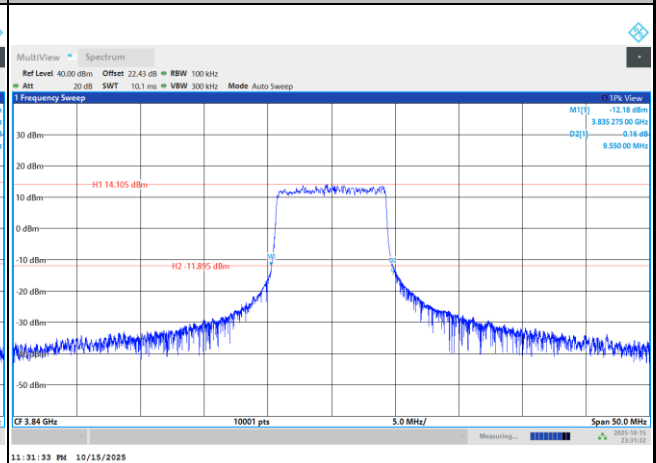
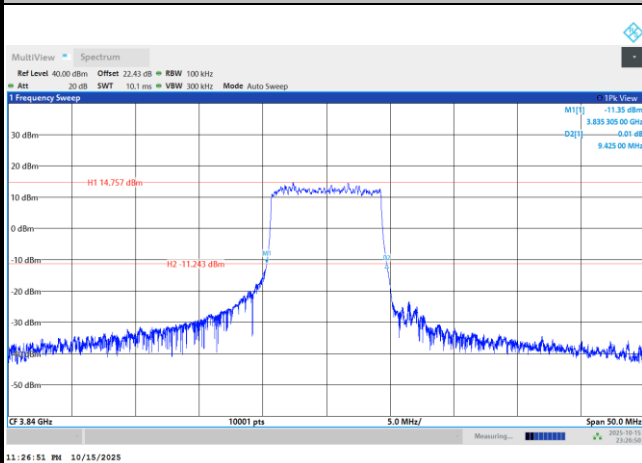
QPSK

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64QAM

256QAM

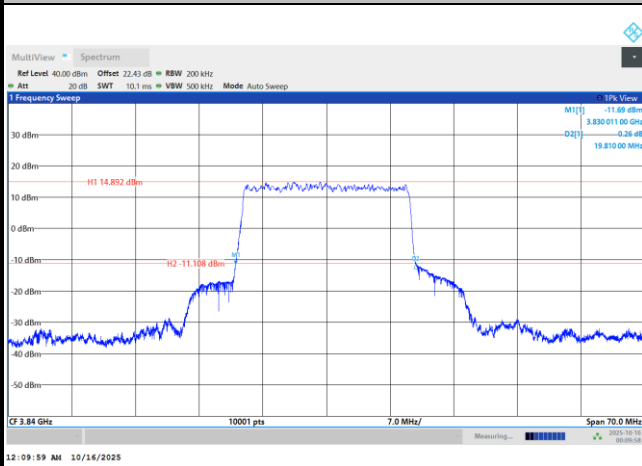




FR1 n77 / 20MHz / Middle Channel / Full RB

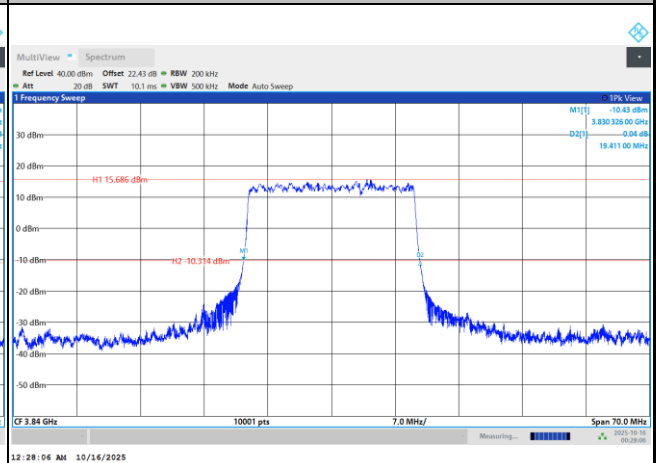
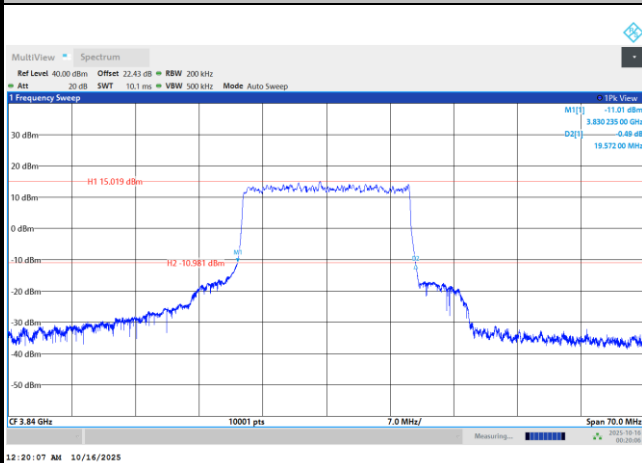
QPSK

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64QAM

256QAM

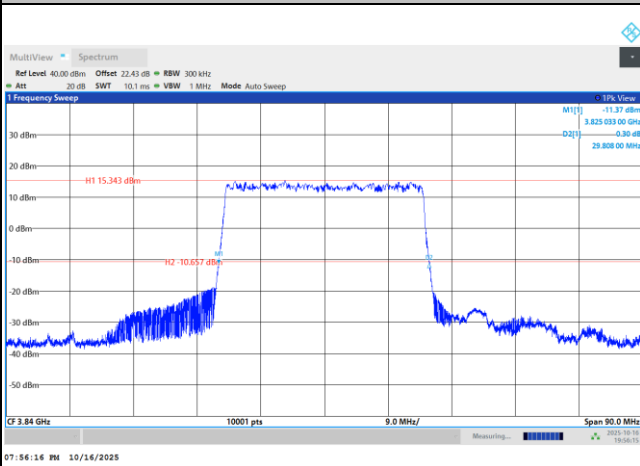




FR1 n77 / 30MHz / Middle Channel / Full RB

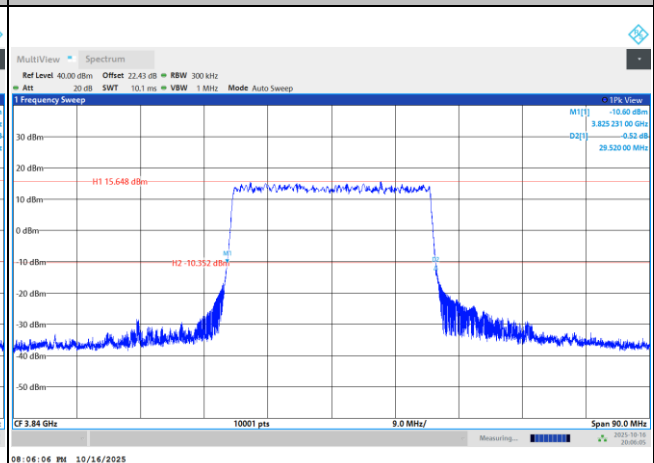
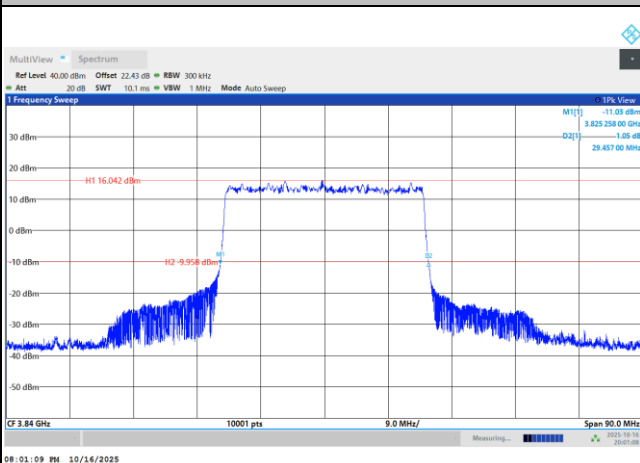
QPSK

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64QAM

256QAM

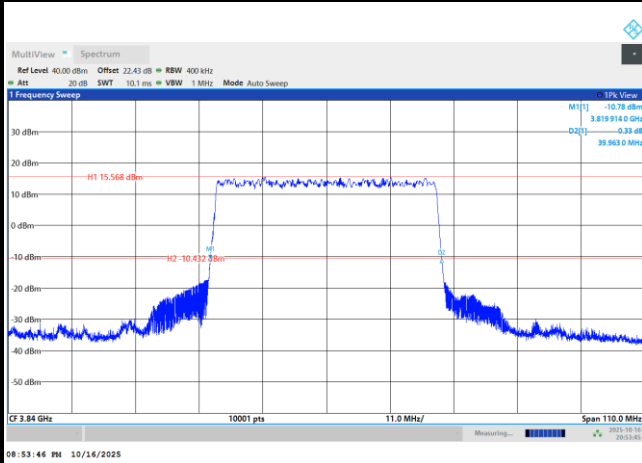




FR1 n77 / 40MHz / Middle Channel / Full RB

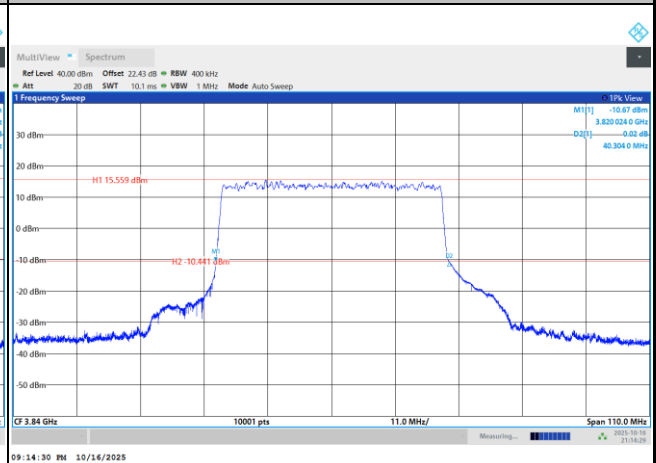
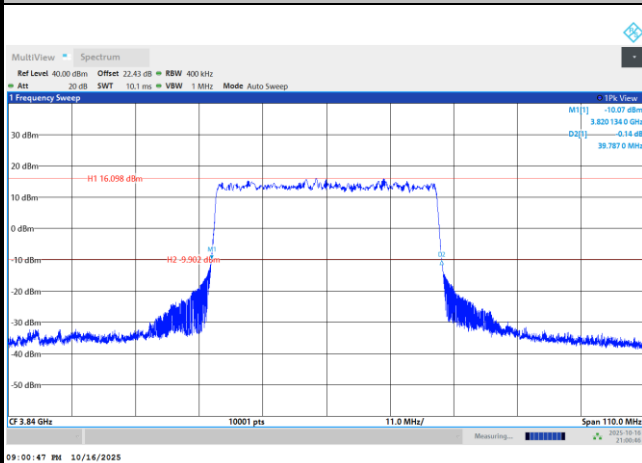
QPSK

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64QAM

256QAM

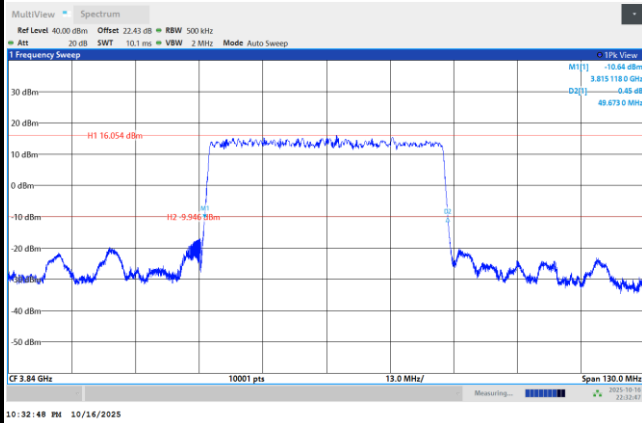




FR1 n77 / 50MHz / Middle Channel / Full RB

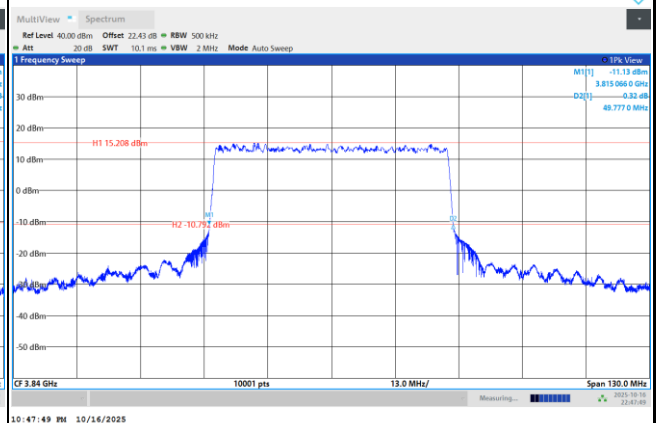
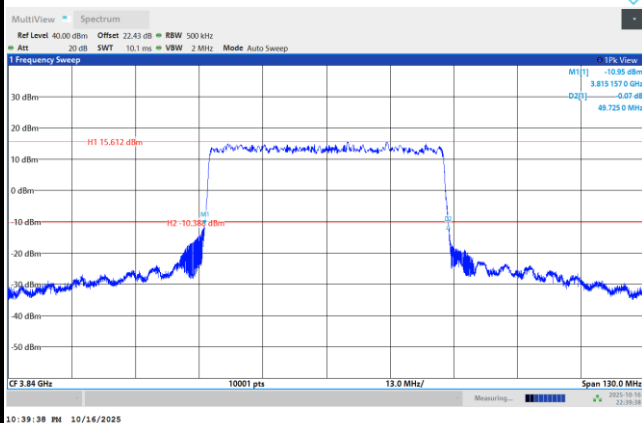
QPSK

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64QAM

256QAM

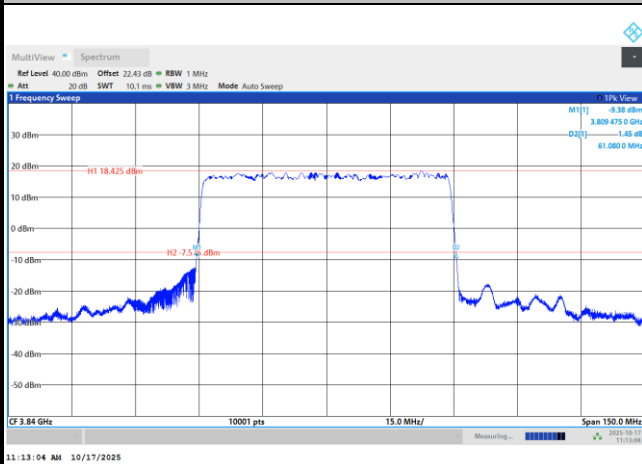




FR1 n77 / 60MHz / Middle Channel / Full RB

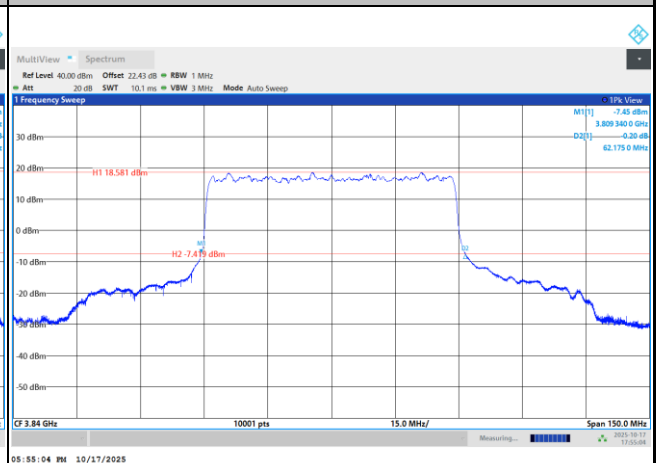
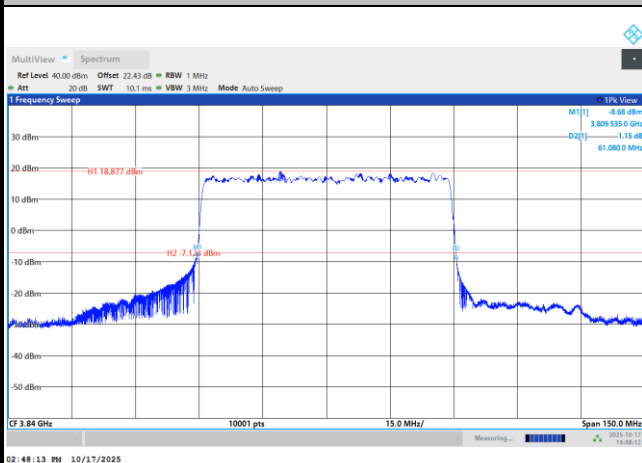
QPSK

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64QAM

256QAM

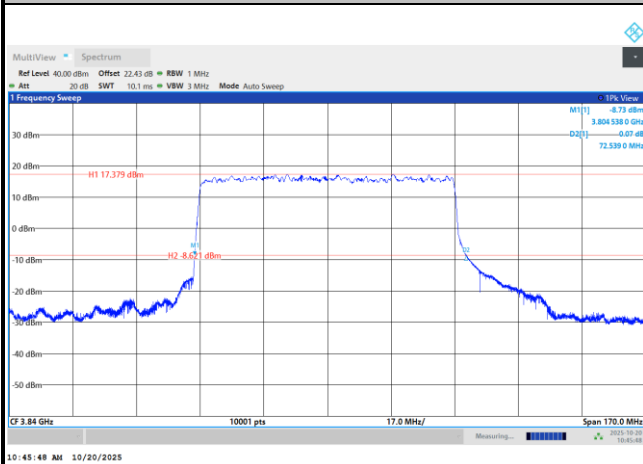




FR1 n77 / 70MHz / Middle Channel / Full RB

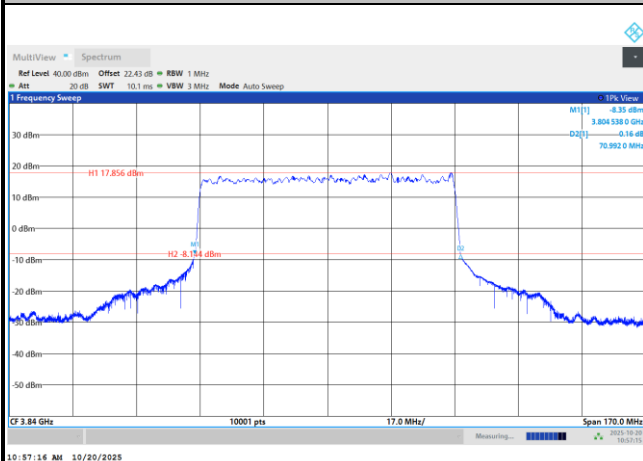
QPSK

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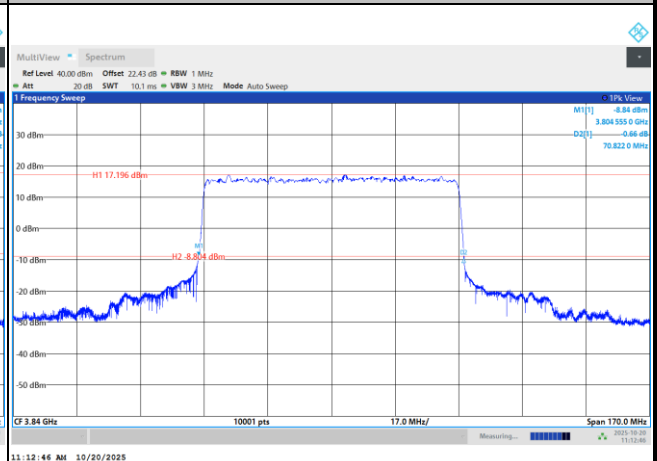
10:45:48 AM 10/20/2025

64QAM



10:57:14 AM 10/20/2025

256QAM



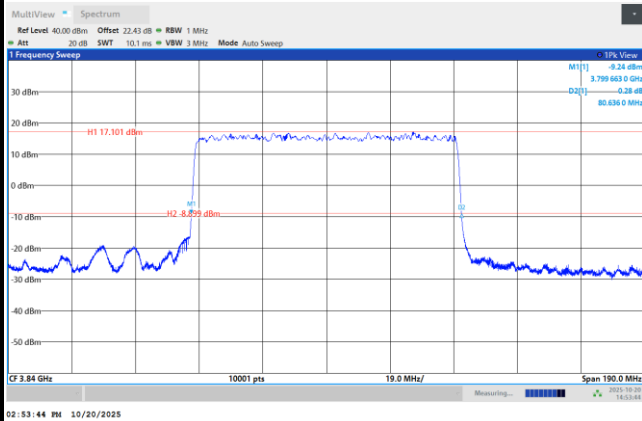
11:12:46 AM 10/20/2025



FR1 n77 / 80MHz / Middle Channel / Full RB

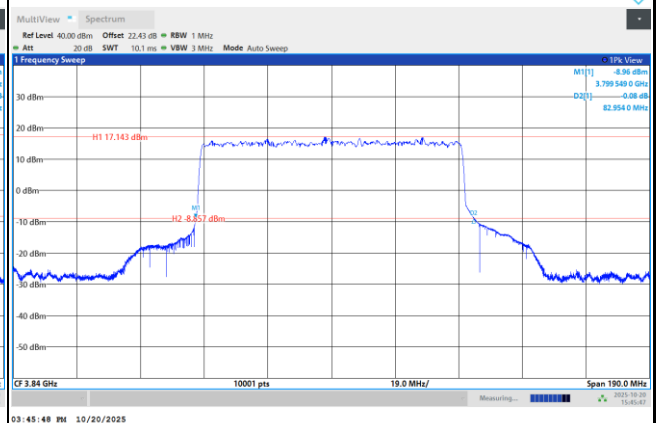
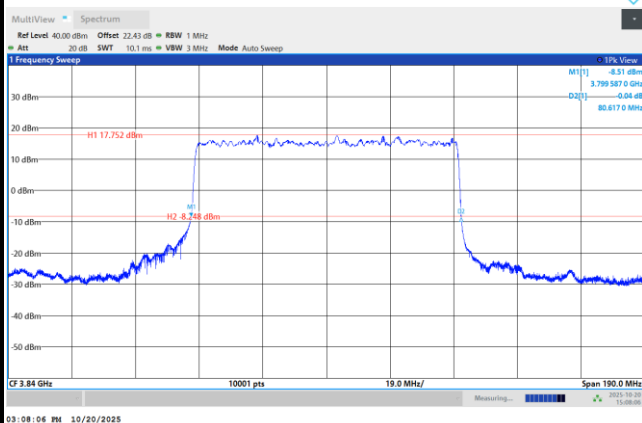
QPSK

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64QAM

256QAM

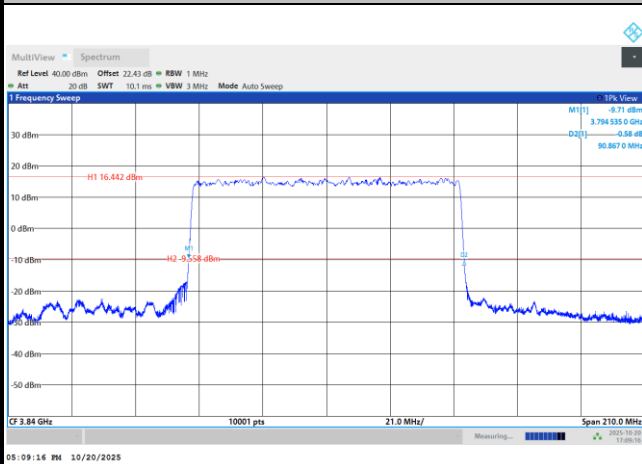




FR1 n77 / 90MHz / Middle Channel / Full RB

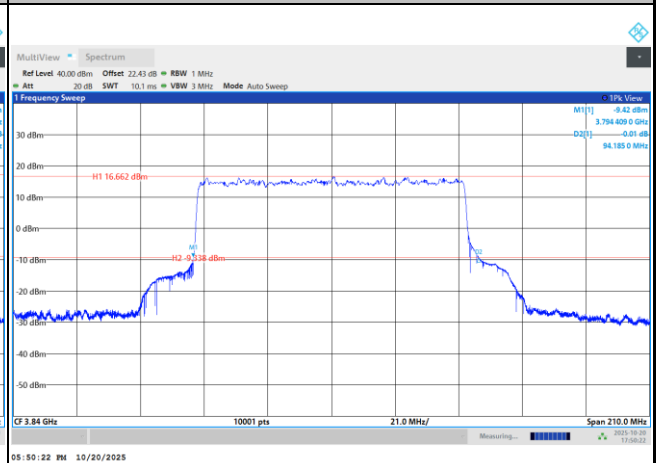
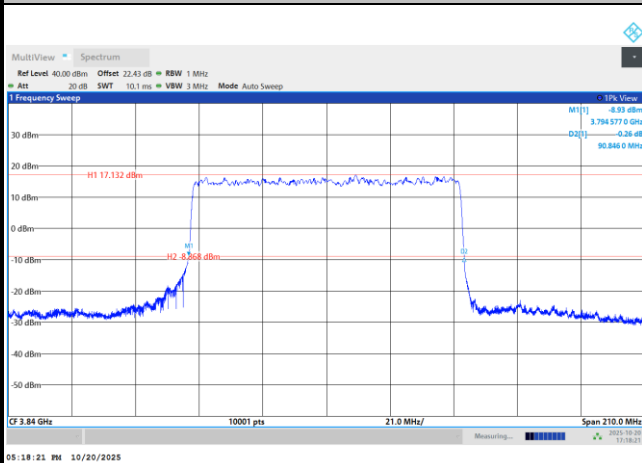
QPSK

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64QAM

256QAM

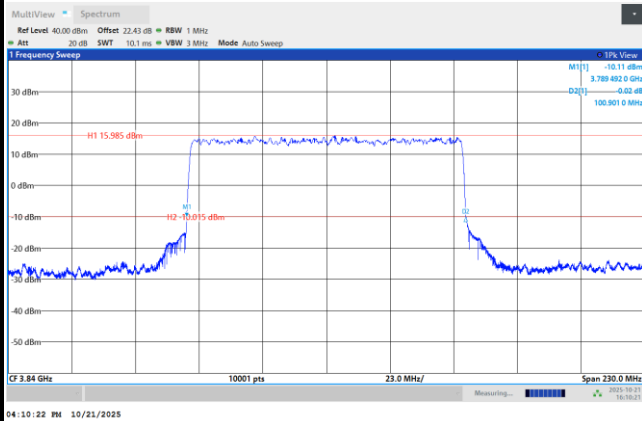




FR1 n77 / 100MHz / Middle Channel / Full RB

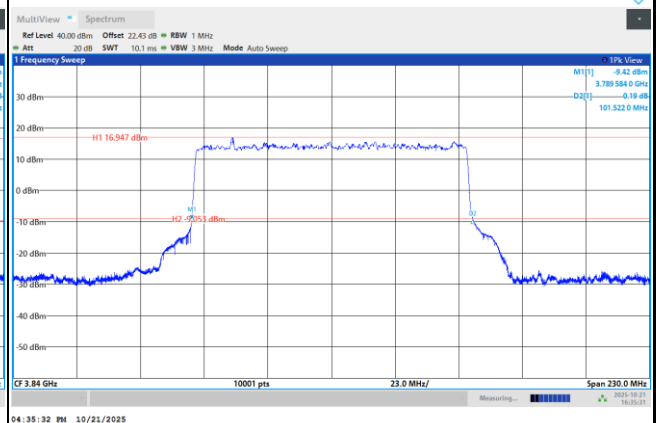
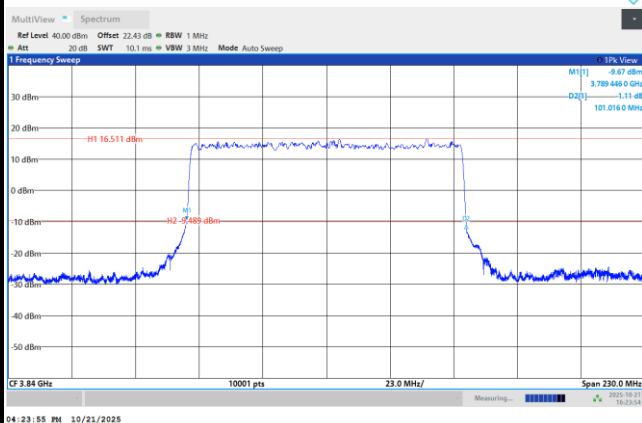
QPSK

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64QAM

256QAM



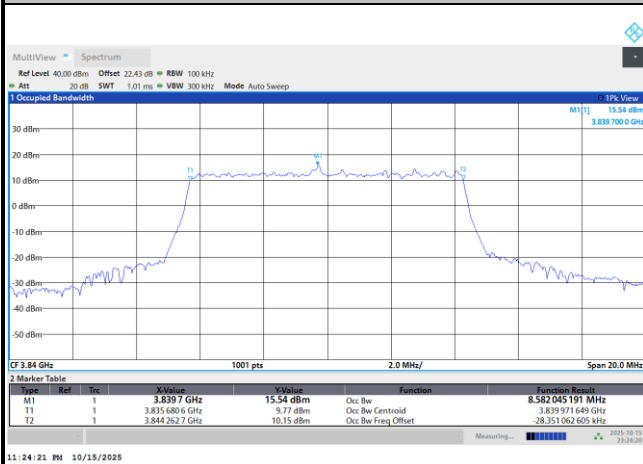
**Occupied Bandwidth**

Mode	FR1 n77 : OB BW(MHz)							
BW	10MHz		20MHz		30MHz		40MHz	
Mod.	QPSK	-	QPSK	-	QPSK	-	QPSK	-
Middle CH	8.58	-	18.20	-	27.84	-	37.85	-
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	8.58	8.55	18.23	18.15	27.86	27.83	37.85	37.82
BW	50MHz		60MHz		70MHz		80MHz	
Mod.	QPSK	-	QPSK	-	QPSK	-	QPSK	-
Middle CH	47.47	-	57.86	-	67.52	-	77.44	-
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	47.46	47.39	57.93	57.90	67.51	67.51	77.53	77.44
BW	90MHz		100MHz					
Mod.	QPSK	-	QPSK	-				
Middle CH	87.56	-	97.40	-				
Mod.	64QAM	256QAM	64QAM	256QAM				
Middle CH	87.40	87.41	97.31	97.33				

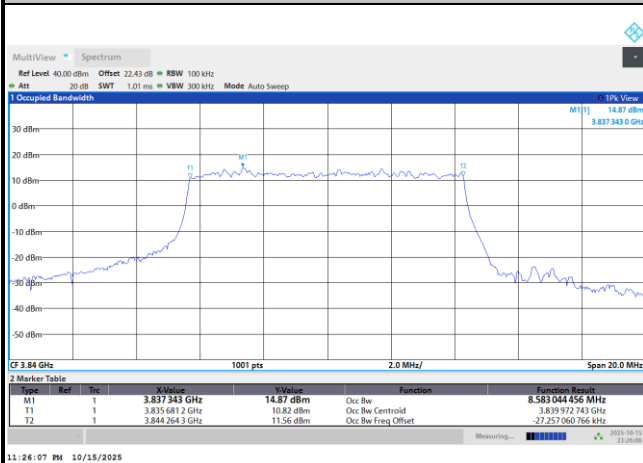


FR1 n77 / 10MHz / Middle Channel / Full RB

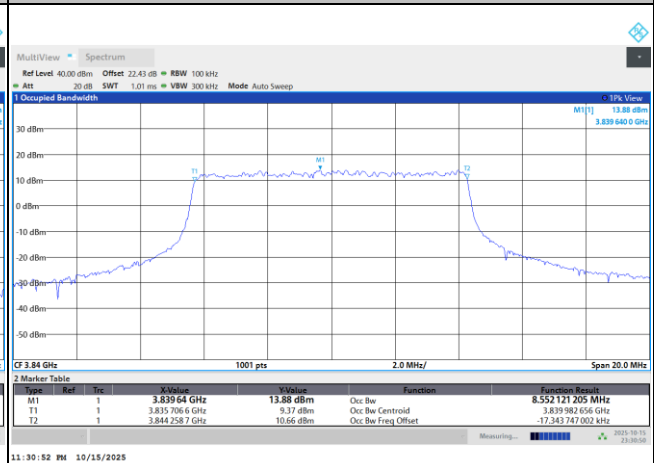
QPSK



64QAM



256QAM

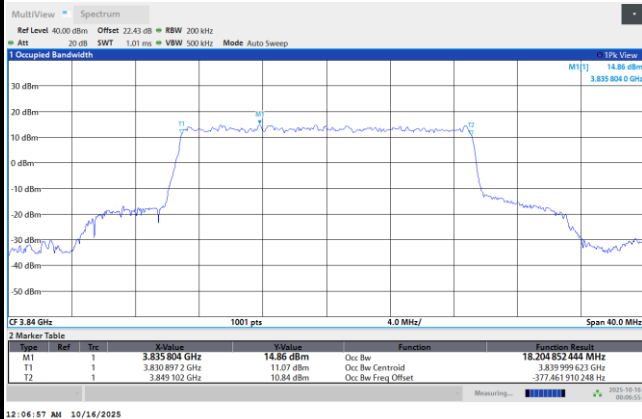




FR1 n77 / 20MHz / Middle Channel / Full RB

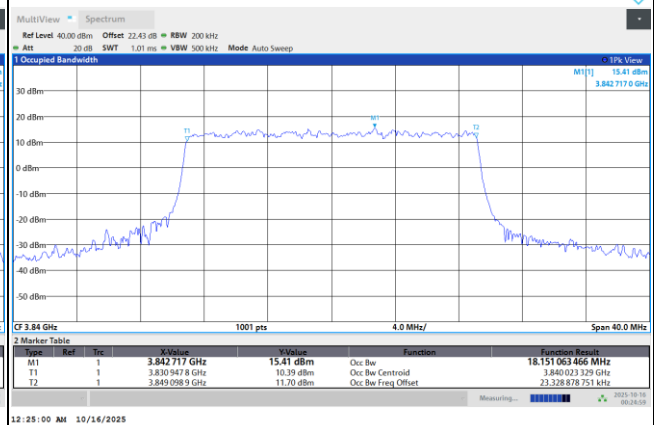
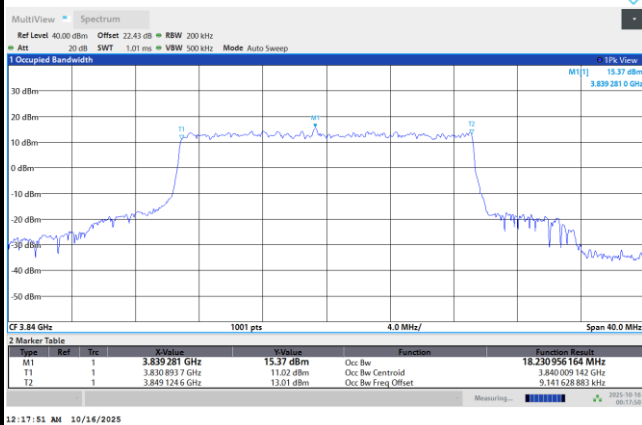
QPSK

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64QAM

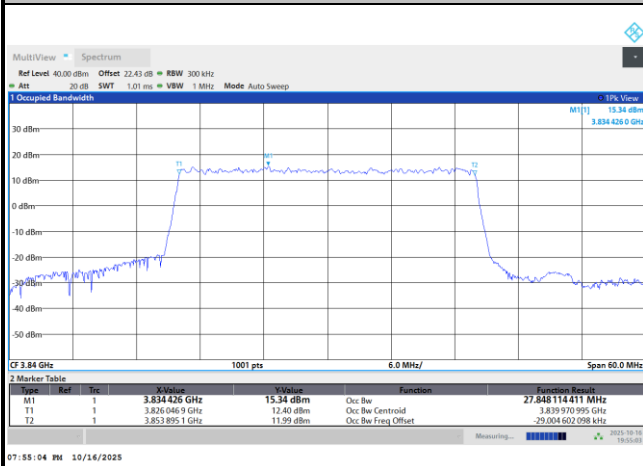
256QAM



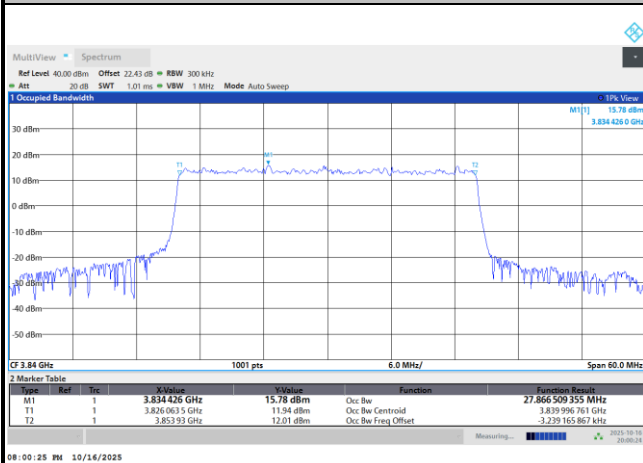


FR1 n77 / 30MHz / Middle Channel / Full RB

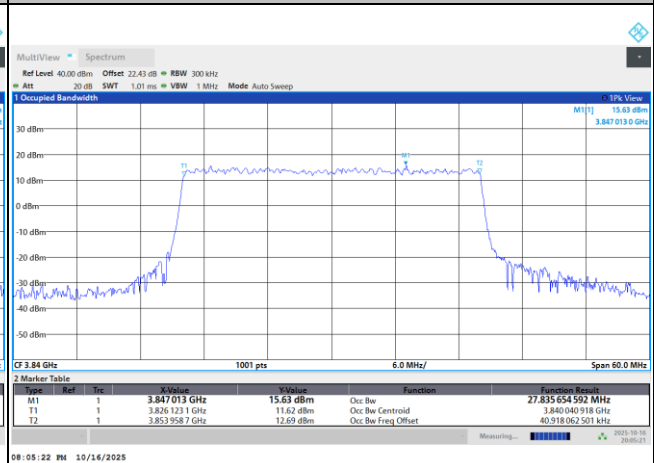
QPSK



64QAM



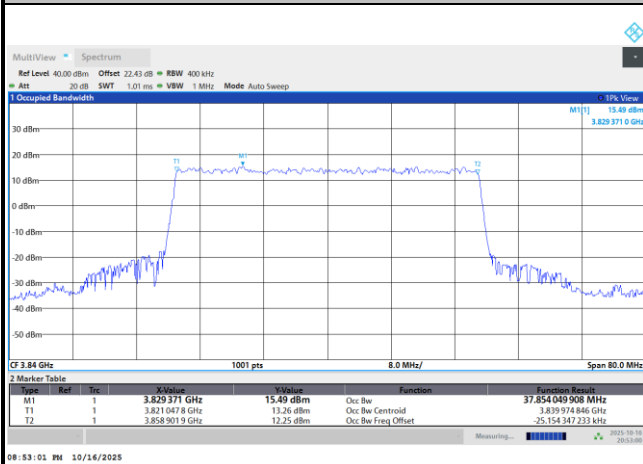
256QAM



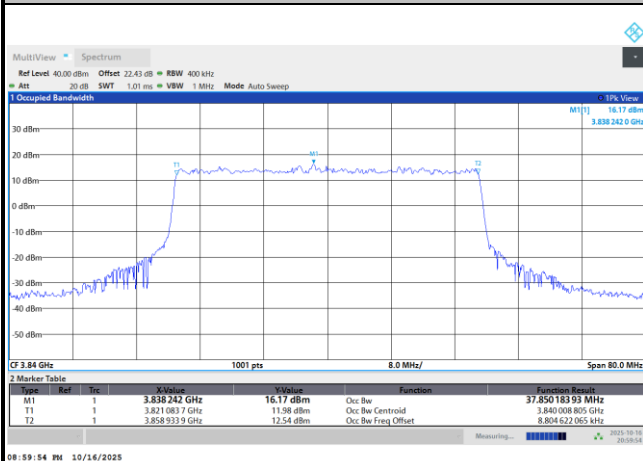


FR1 n77 / 40MHz / Middle Channel / Full RB

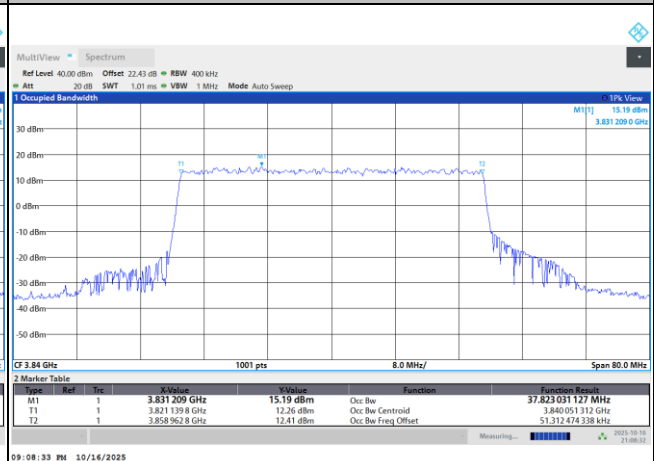
QPSK



64QAM



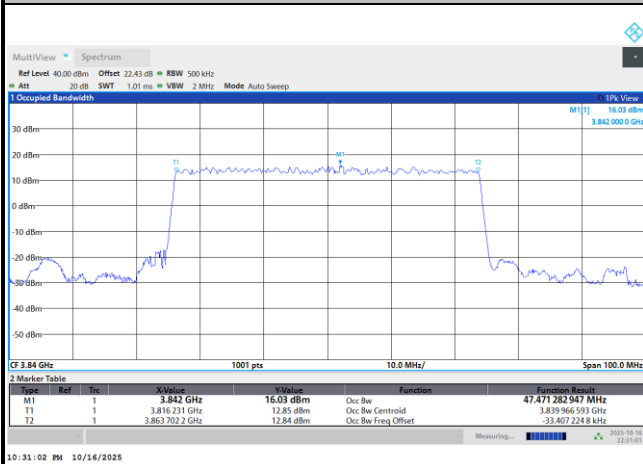
256QAM



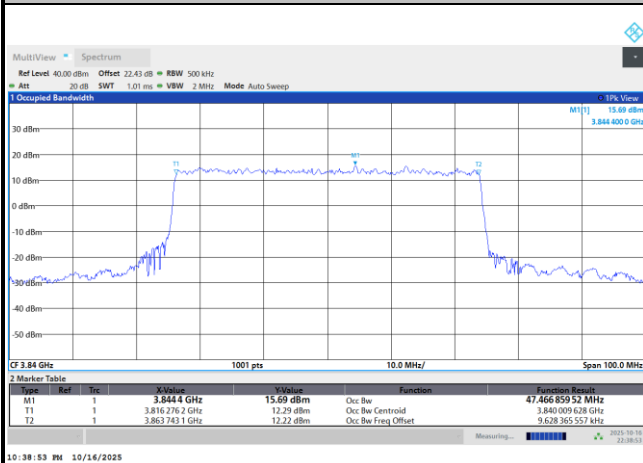


FR1 n77 / 50MHz / Middle Channel / Full RB

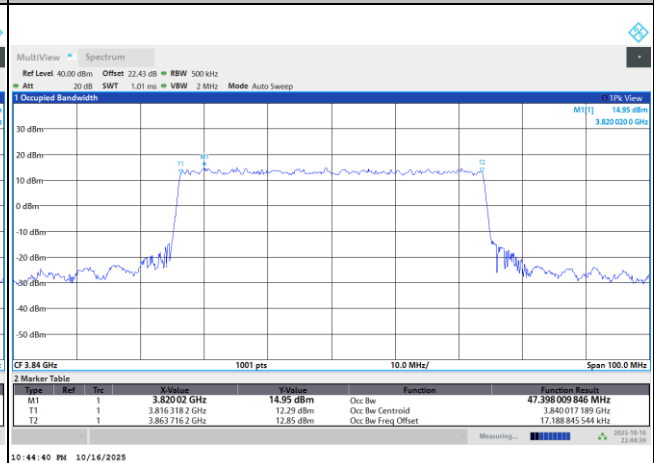
QPSK



64QAM



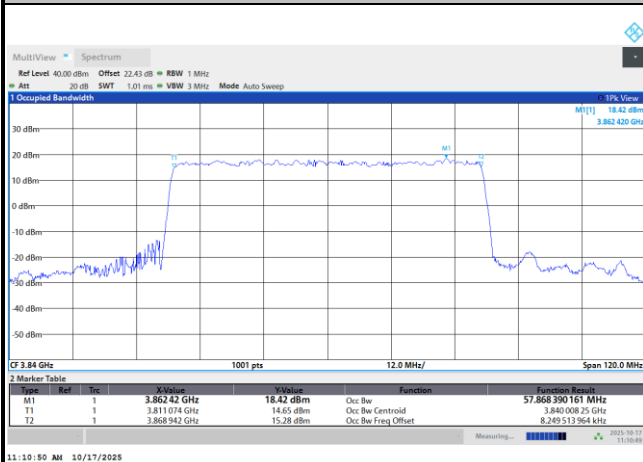
256QAM



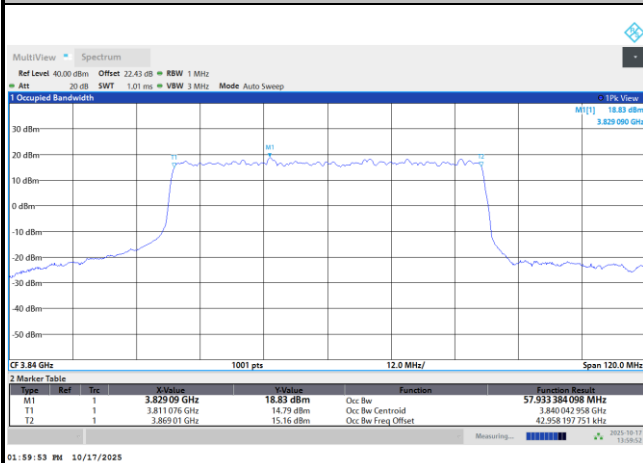


FR1 n77 / 60MHz / Middle Channel / Full RB

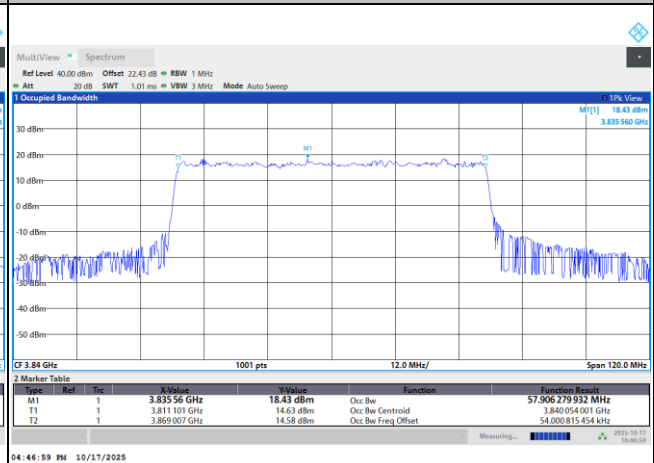
QPSK



64QAM



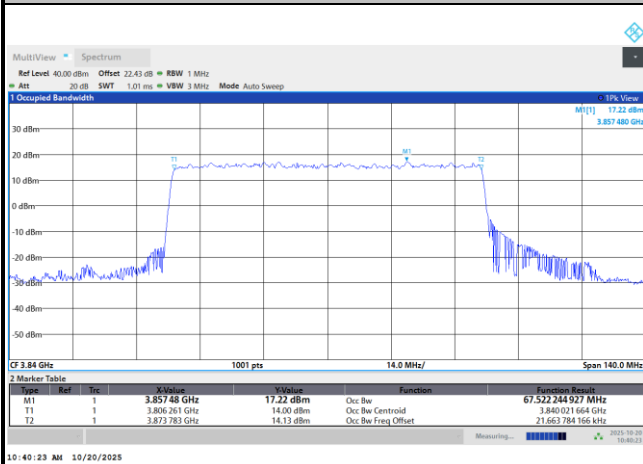
256QAM



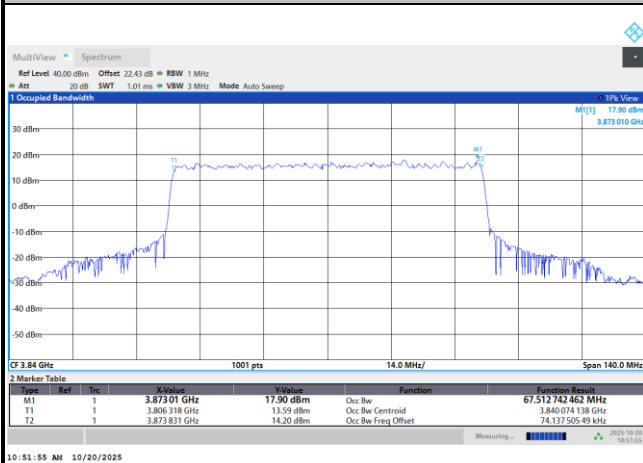


FR1 n77 / 70MHz / Middle Channel / Full RB

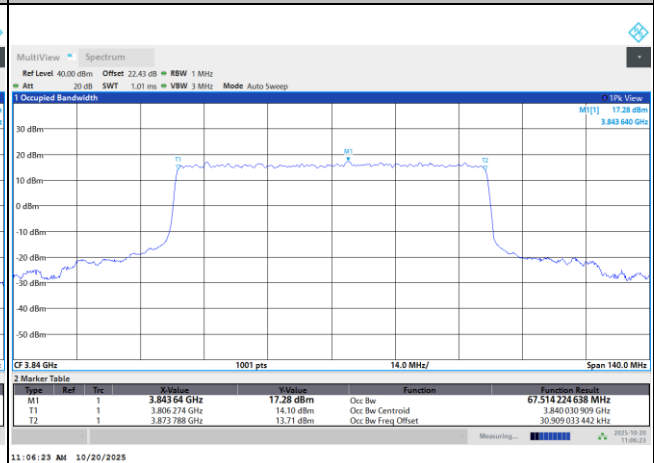
QPSK



64QAM



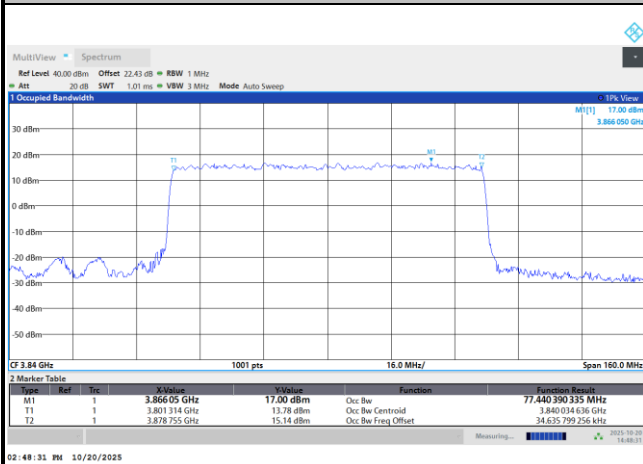
256QAM



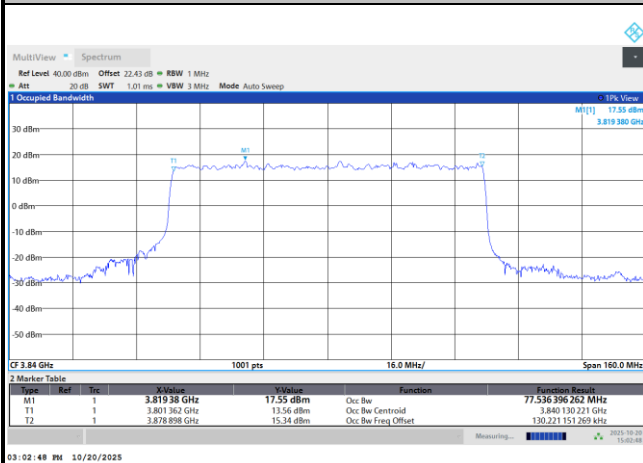


FR1 n77 / 80MHz / Middle Channel / Full RB

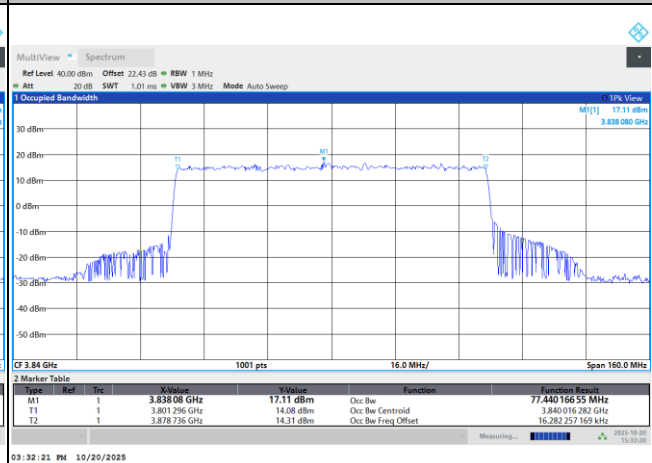
QPSK



64QAM



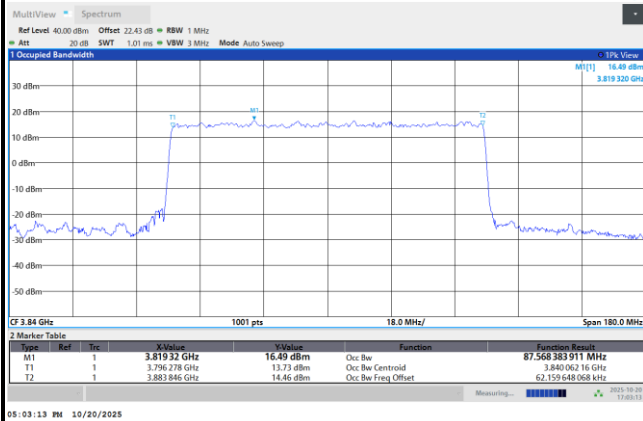
256QAM



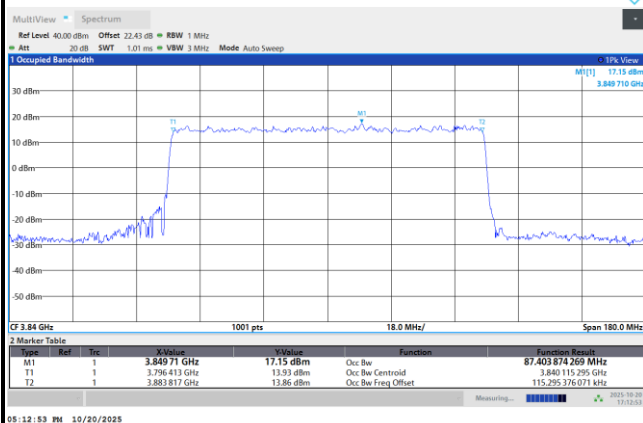


FR1 n77 / 90MHz / Middle Channel / Full RB

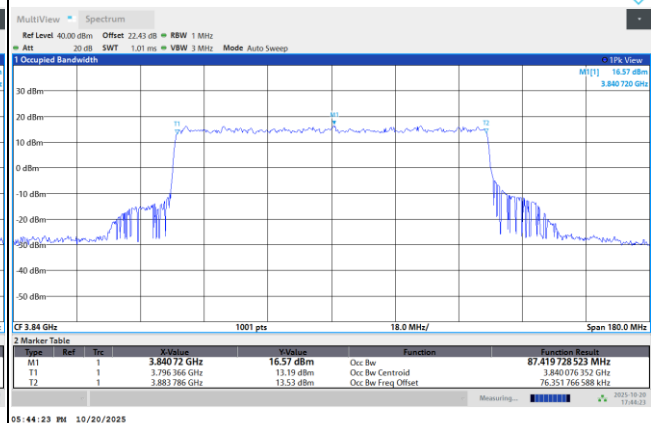
QPSK



64QAM



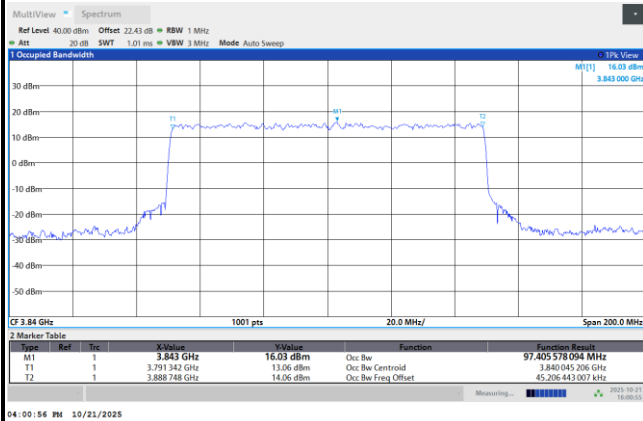
256QAM



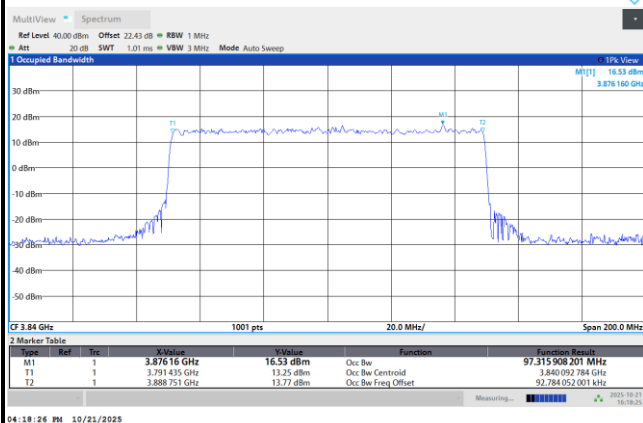


FR1 n77 / 100MHz / Middle Channel / Full RB

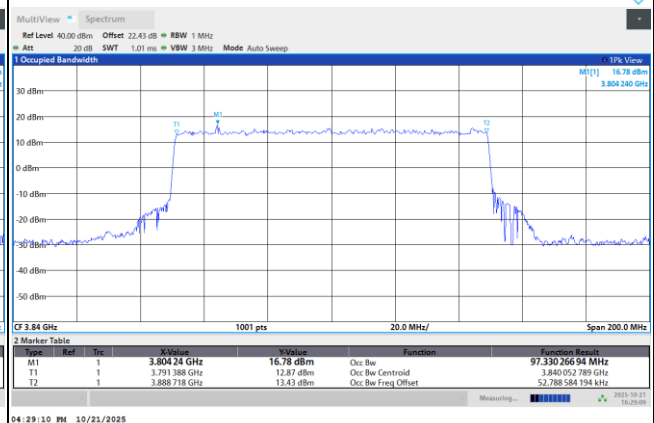
QPSK

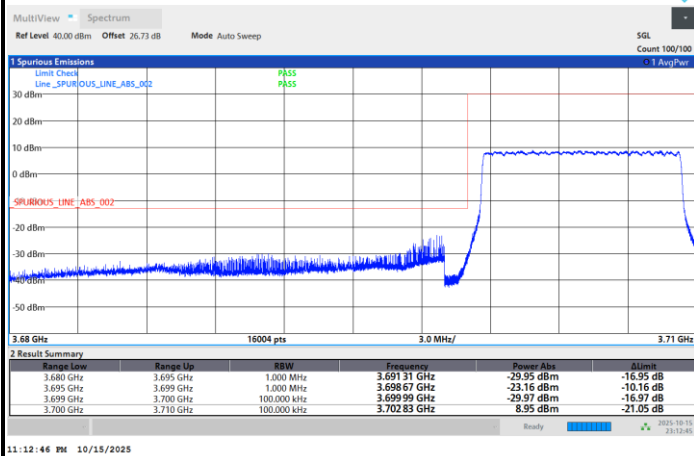
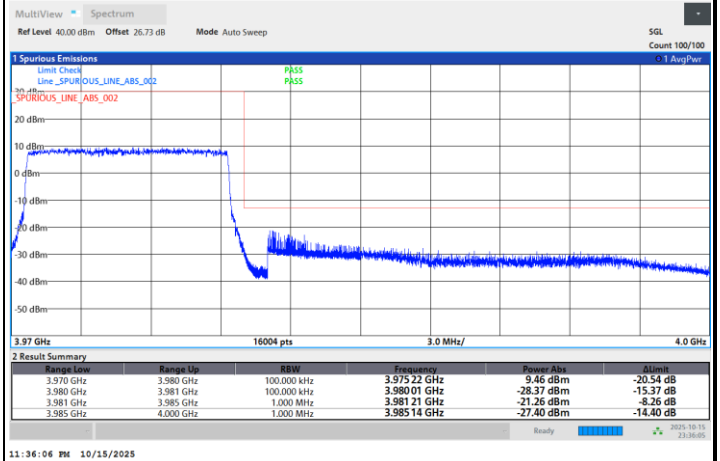
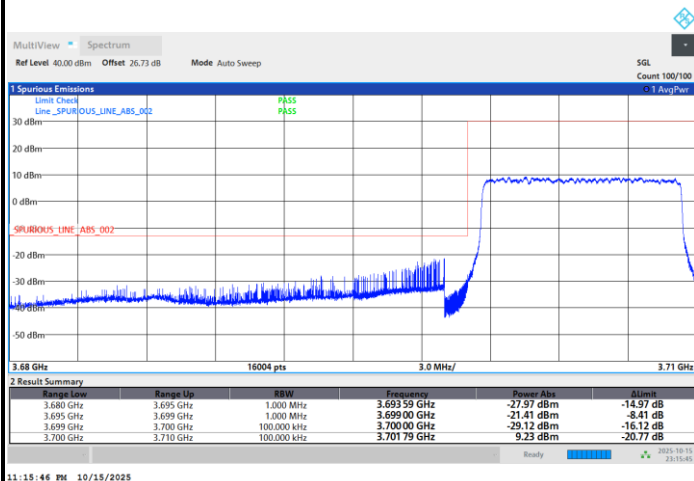
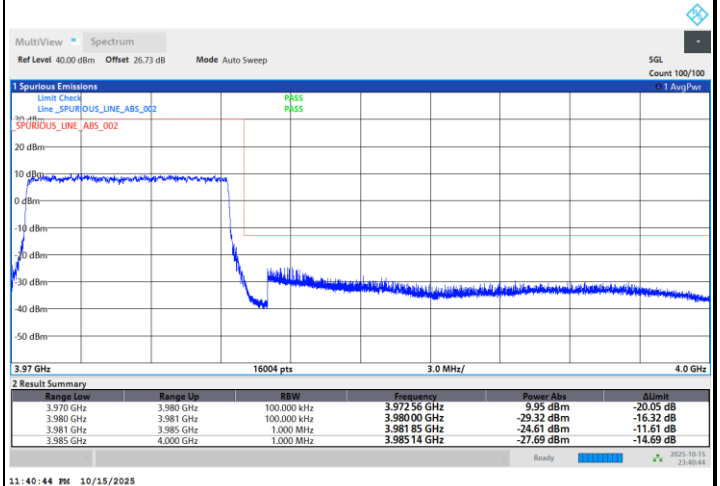


64QAM



256QAM



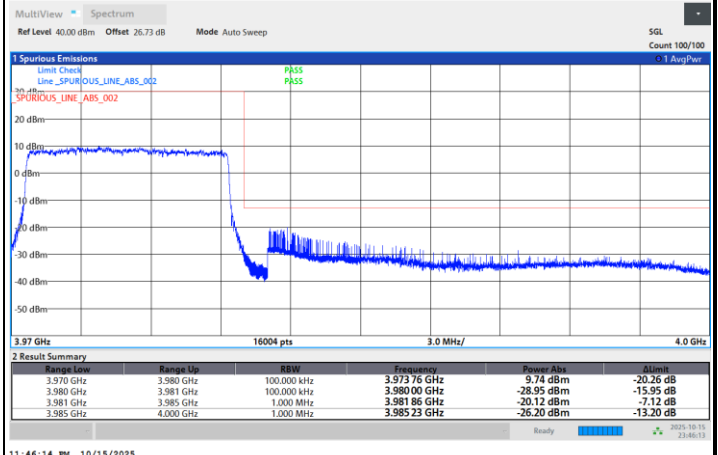
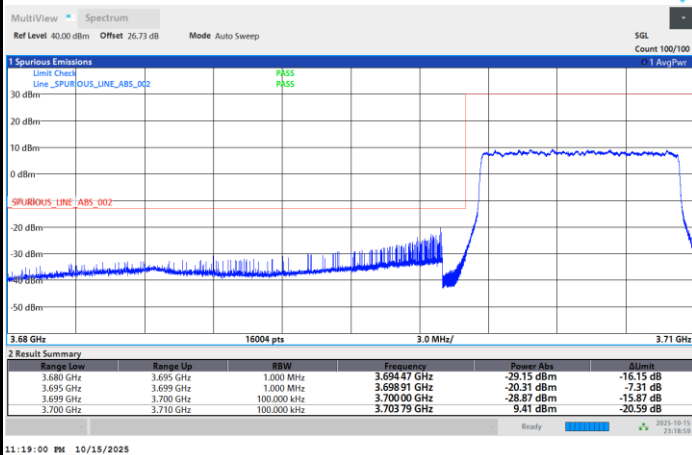
**Conducted Band Edge****FR1 n77 / 10MHz / QPSK****Lowest Band Edge / Full RB****Highest Band Edge / Full RB****FR1 n77 / 10MHz / 64QAM****Lowest Band Edge / Full RB****Highest Band Edge / Full RB**



FR1 n77 / 10MHz / 256QAM

Lowest Band Edge / Full RB

Highest Band Edge / Full RB

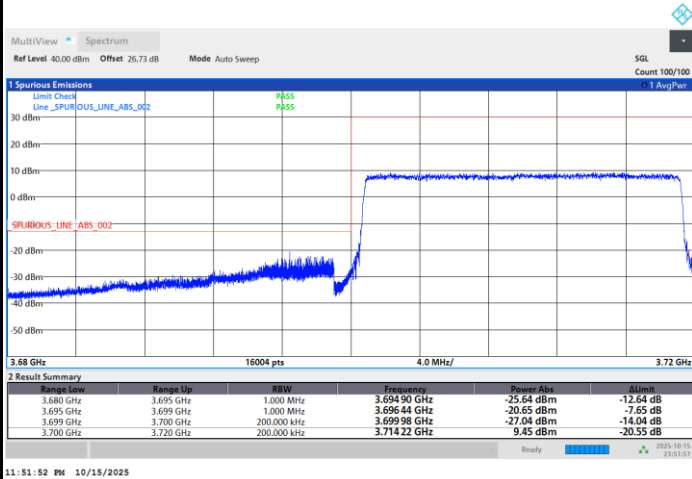




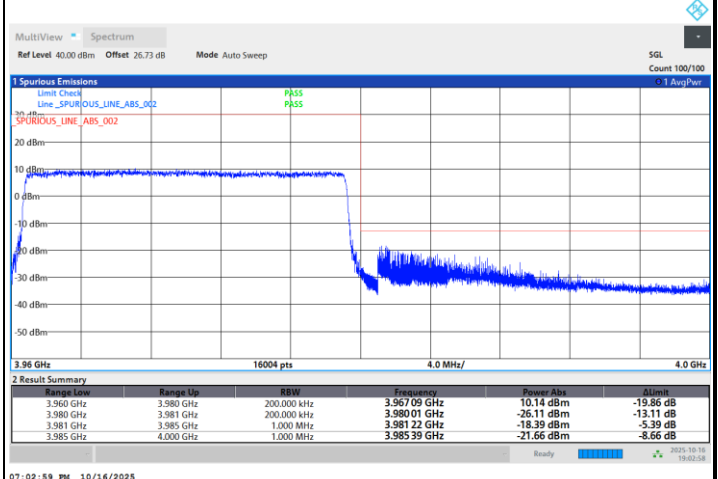
FR1 n77 / 20MHz / QPSK

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



11:51:52 PM 10/15/2025

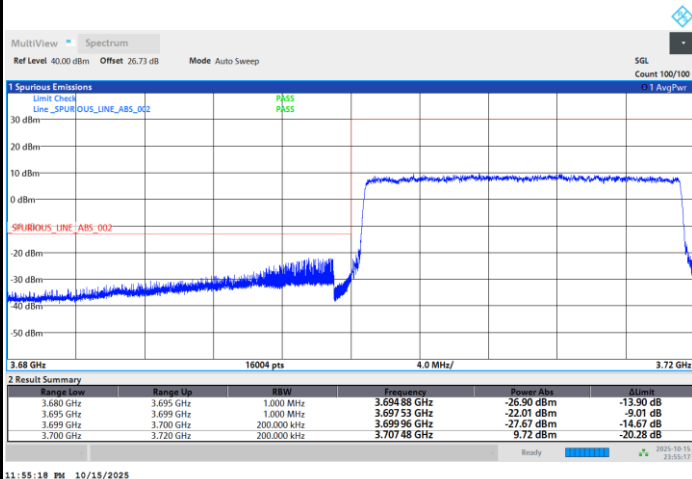


07:02:59 PM 10/16/2025

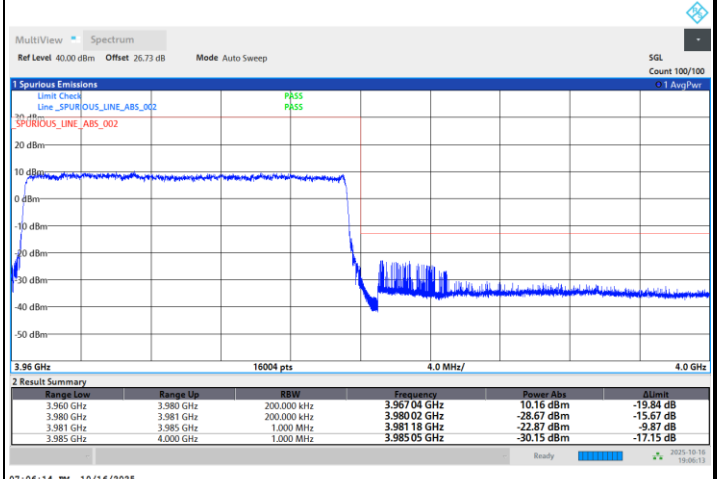
FR1 n77 / 20MHz / 64QAM

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



11:55:18 PM 10/15/2025

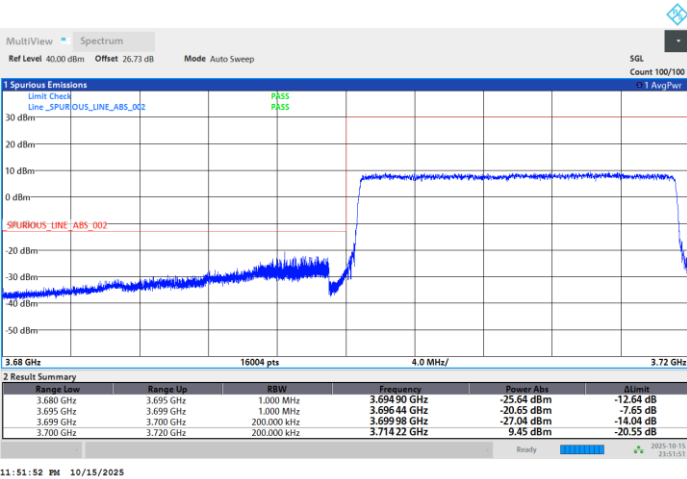


07:06:14 PM 10/16/2025

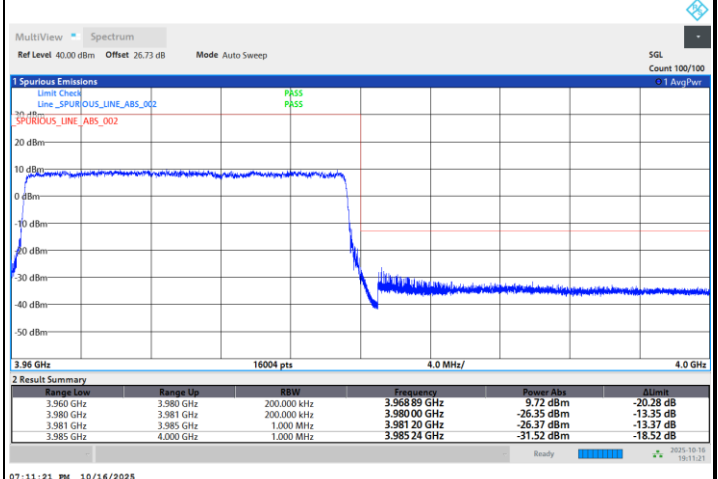


FR1 n77 / 20MHz / 256QAM

Lowest Band Edge / Full RB



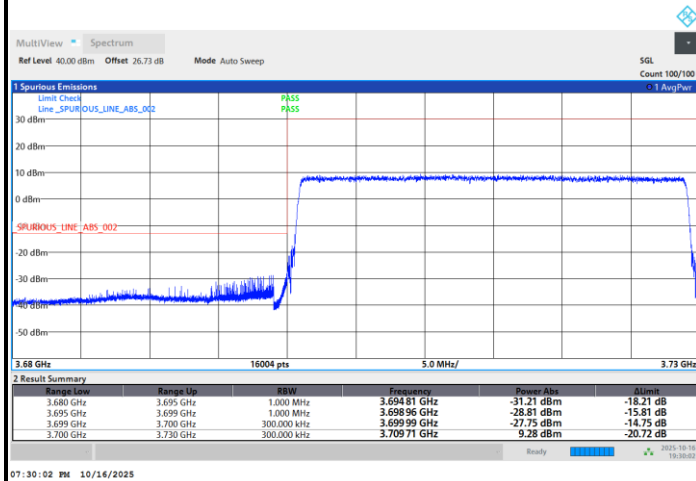
Highest Band Edge / Full RB



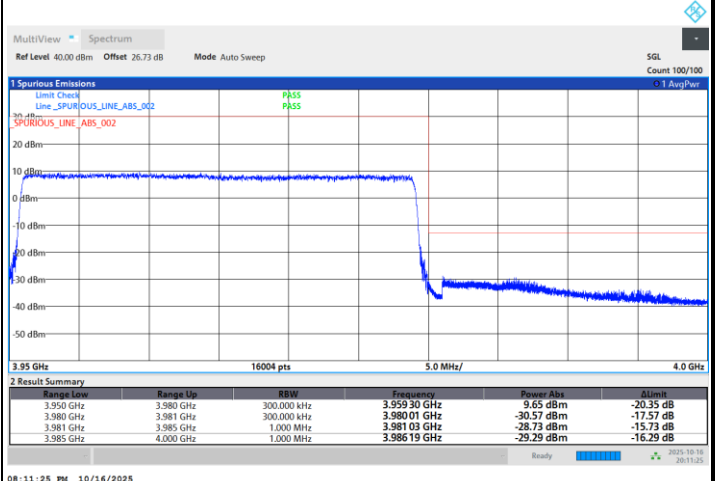


FR1 n77 / 30MHz / QPSK

Lowest Band Edge / Full RB

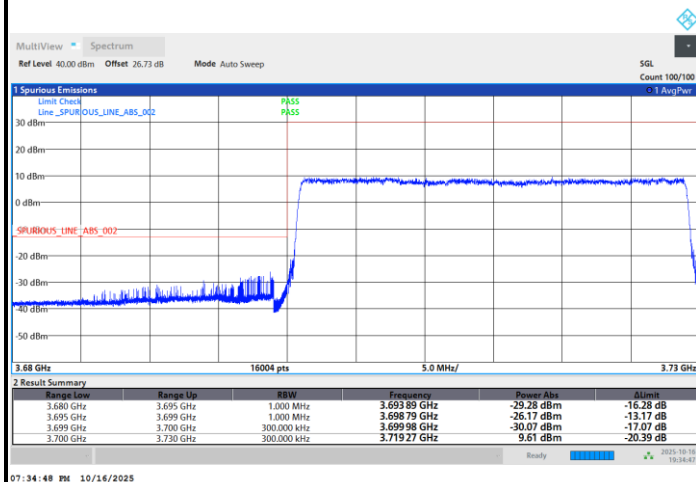


Highest Band Edge / Full RB

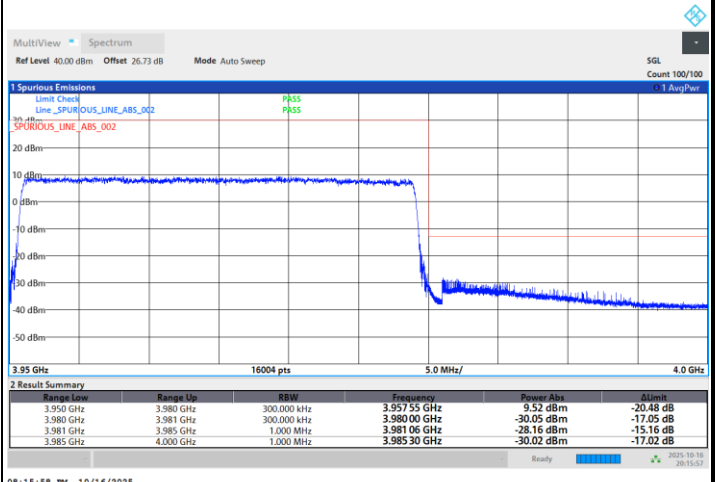


FR1 n77 / 30MHz / 64QAM

Lowest Band Edge / Full RB



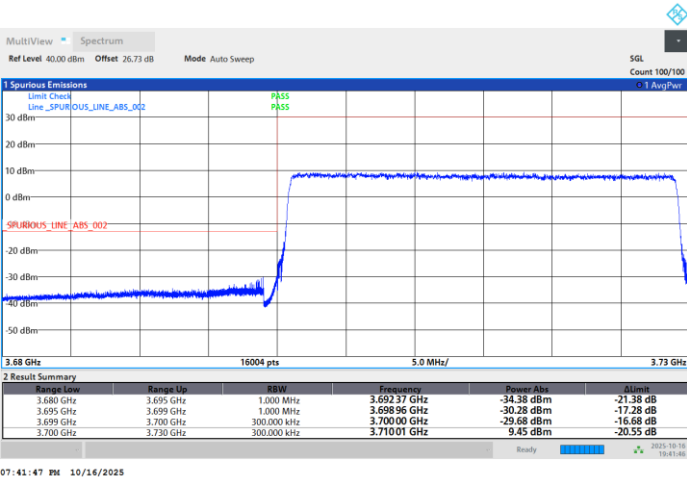
Highest Band Edge / Full RB





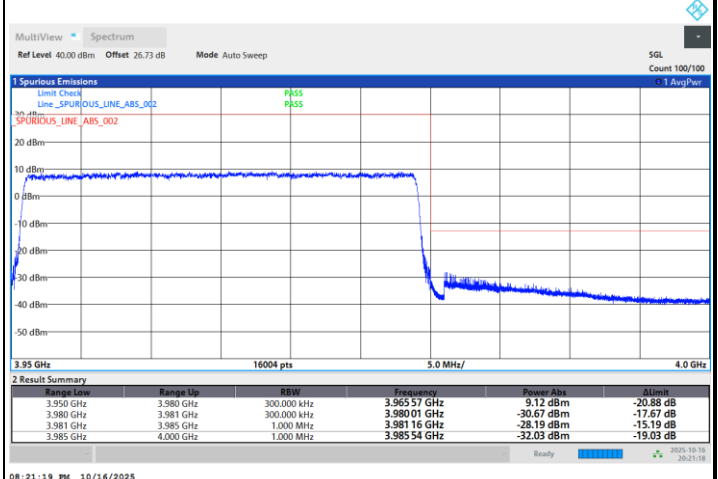
FR1 n77 / 30MHz / 256QAM

Lowest Band Edge / Full RB



07:41:47 PM 10/16/2025

Highest Band Edge / Full RB

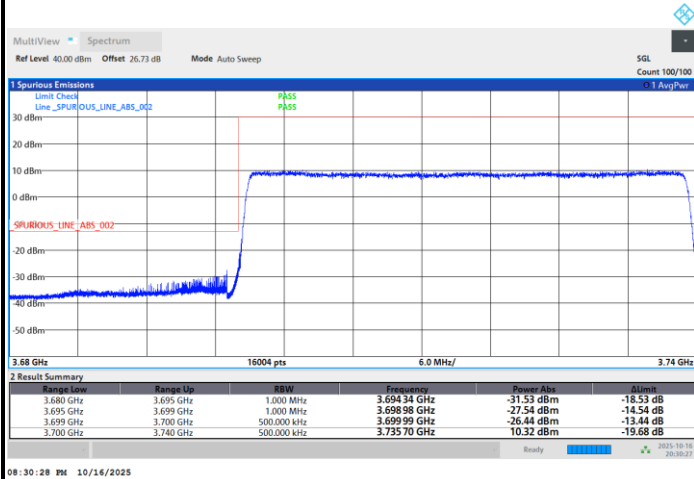


08:21:19 PM 10/16/2025



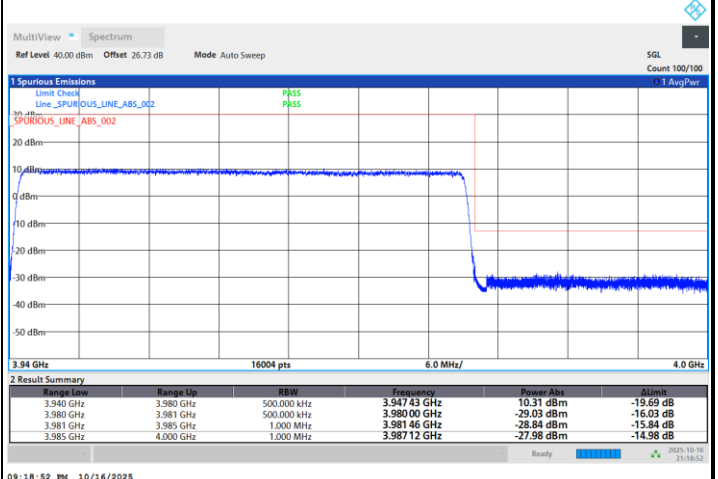
FR1 n77 / 40MHz / QPSK

Lowest Band Edge / Full RB



08:30:28 PM 10/16/2025

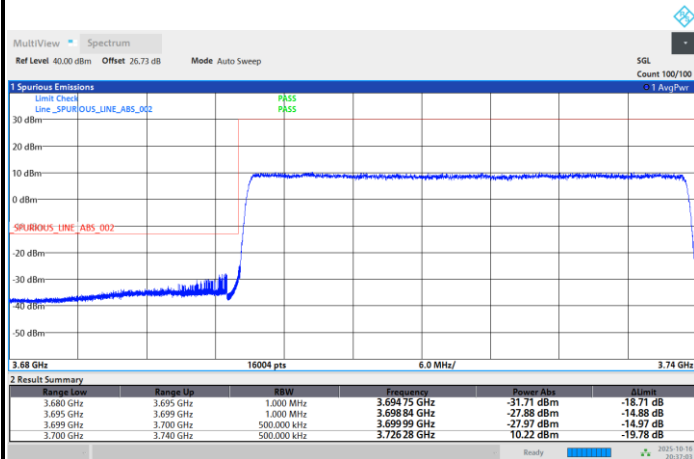
Highest Band Edge / Full RB



09:18:52 PM 10/16/2025

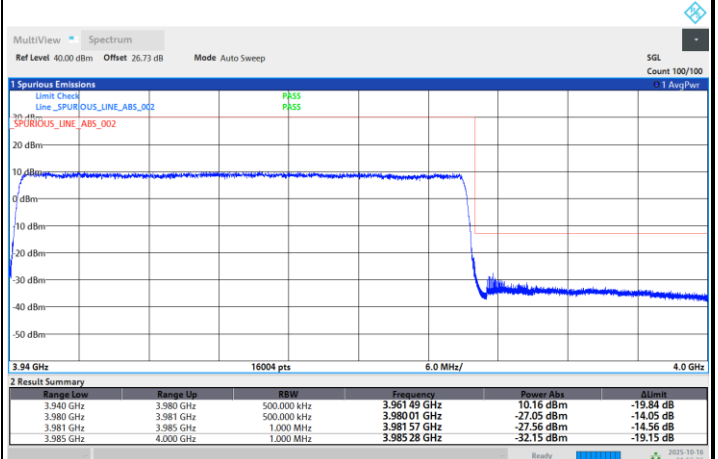
FR1 n77 / 40MHz / 64QAM

Lowest Band Edge / Full RB



08:37:04 PM 10/16/2025

Highest Band Edge / Full RB



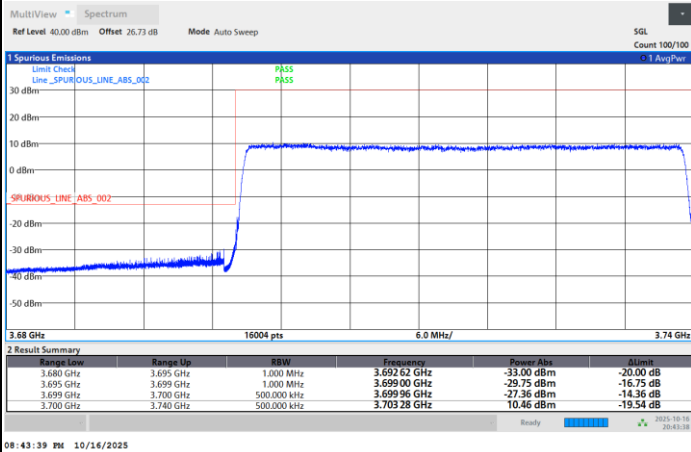
09:56:37 PM 10/16/2025



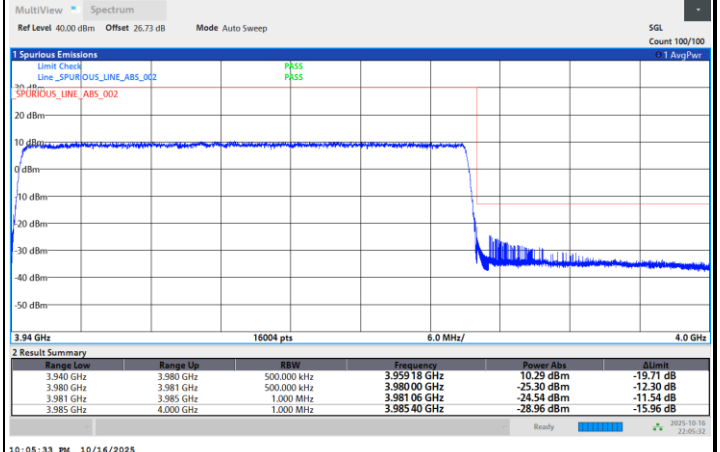
FR1 n77 / 40MHz / 256QAM

Lowest Band Edge / Full RB

Highest Band Edge / Full RB



08:43:39 PM 10/16/2025



10:05:33 PM 10/16/2025