



FCC RADIO TEST REPORT

FCC ID : PY322300575
Equipment : NightHawk M6 5G Mobile Hotspot
Brand Name : Netgear
Model Name : MR6550
Applicant : Netgear Inc
350 E. Plumeria Drive, San Jose, CA
95134, United States
Manufacturer : Netgear Inc
350 E. Plumeria Drive, San Jose, CA
95134, United States
Standard : FCC 47 CFR Part 2, 22(H), 24(E), 27

The product was received on Dec. 26, 2022 and testing was performed from Jan. 06, 2023 to Mar. 03, 2023. 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 variant 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
FG190614-07A	01	Initial issue of report	Mar. 24, 2023



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Reporting only	-
	§22.913 (a)(5)	Effective Radiated Power (n5)	Pass	
	§27.50 (b)(10) §27.50 (c)(10)	Effective Radiated Power (n12) (n71)		
	§24.232 (c) §27.50 (h)(2)	Equivalent Isotropic Radiated Power (n2) (n25) (n41) (n7) (n38)		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (n66)		
3.3	§24.232 (d) §27.50 (d)(5)	Peak-to-Average Ratio	Pass	-
3.4	§2.1049	Occupied Bandwidth	Reporting only	-
3.5	§2.1051 §22.917 (a) §24.238 (a) §27.53 (c)(2)(4) §27.53 (g) §27.53 (h)	Conducted Band Edge Measurement (n2) (n5) (n12) (n25) (n66) (n71)	Pass	-
	§2.1051 §27.53 (m)(4)	Conducted Band Edge Measurement (n7) (n38) (n41)		
3.6	§2.1051 §22.917 (a) §24.238 (a) §27.53 (c)(2) §27.53 (g) §27.53 (h)	Conducted Spurious Emission (n2) (n5) (n12) (n25) (n66) (n71)	Pass	-
	§2.1051 §27.53 (m)(4)	Conducted Spurious Emission (n7) (n38) (n41)		
3.7	§2.1055 §22.355 §24.235 §27.54	Frequency Stability Temperature & Voltage	Pass	-



Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
4.2	§2.1053 §22.917 (a) §24.238 (a) §27.53 (c)(2) §27.53 (f) §27.53 (g) §27.53 (h)	Radiated Spurious Emission (n2) (n5) (n12) (n25) (n66) (n71)	Pass	10.87 dB under the limit at 10105.000 MHz
	§2.1051 §27.53 (m)(4)	Radiated Spurious Emission (n7) (n38) (n41)		

Remark: This is a variant report by changing Equipment Name and adding 5G NR n78_HPUE, n77 MIMO, n78 MIMO band via software . All the test cases were performed on original report which can be referred to Sporton Report Number 190614-06. Based on the original report, the test cases were verified.

Declaration of Conformity:

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
- The measurement uncertainty please refer to report "Uncertainty of Evaluation".

Comments and Explanations:

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

Reviewed by: Avis Chuang

Report Producer: Dewi Huang



1 General Description

1.1 Product Feature of Equipment Under Test

LTE/5G NR, Wi-Fi 2.4GHz 802.11b/g/n/ac/ax, Wi-Fi 5GHz 802.11a/n/ac/ax, Wi-Fi 6GHz 802.11a/ax, and GPS

Product Feature	
Antenna Type	WWAN: <Ant. 1>: Monopole Antenna <Ant. 2>: Monopole Antenna WLAN: <Ant. 3>: Monopole Antenna <Ant. 4>: Monopole Antenna GPS: PIFA Antenna

Remark: The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

Antenna Information	
Internal Antenna Gain	<Ant. 1>: 5G NR n2: 0.67 dBi 5G NR n5: -0.88 dBi 5G NR n7: 0.39 dBi 5G NR n12: -0.83 dBi 5G NR n38: 0.39 dBi 5G NR n66: 0.67 dBi <Ant. 2>: 5G NR n2: 0.45 dBi 5G NR n5: -1.60 dBi 5G NR n7: -0.53 dBi 5G NR n38: -0.53 dBi 5G NR n66: 0.54 dBi
External Antenna Gain	<Ant. 1>: 5G NR n2: 4.00 dBi 5G NR n5: 4.00 dBi 5G NR n7: 4.00 dBi 5G NR n12: 4.00 dBi 5G NR n38: 4.00 dBi 5G NR n66: 4.00 dBi <Ant. 2>: 5G NR n2: 4.00 dBi 5G NR n5: 4.00 dBi 5G NR n7: 4.00 dBi 5G NR n38: 4.00 dBi 5G NR n66: 4.00 dBi
External Connector	TS9

Remark:

1. TS9 connector is for the external antennas, while the external antennas are connected, RF outputs are switched from internal antenna 1/2 to the external one.
2. The maximum antenna gain allowed for the external antenna is limited by the numbers in the table, and also illustrated in the user manual.



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. TH03-HY
Test Engineer	Luffy Lin and Ivy Yeh
Temperature (°C)	23.5~24.1°C
Relative Humidity (%)	48~52%

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	Jack Cheng, Wilson Wu, Jesse Fan and Tim Lee
Temperature (°C)	20~25°C
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
- ♦ ANSI / TIA-603-E
- ♦ FCC 47 CFR Part 2, 22(H), 24(E), 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.

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. 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.

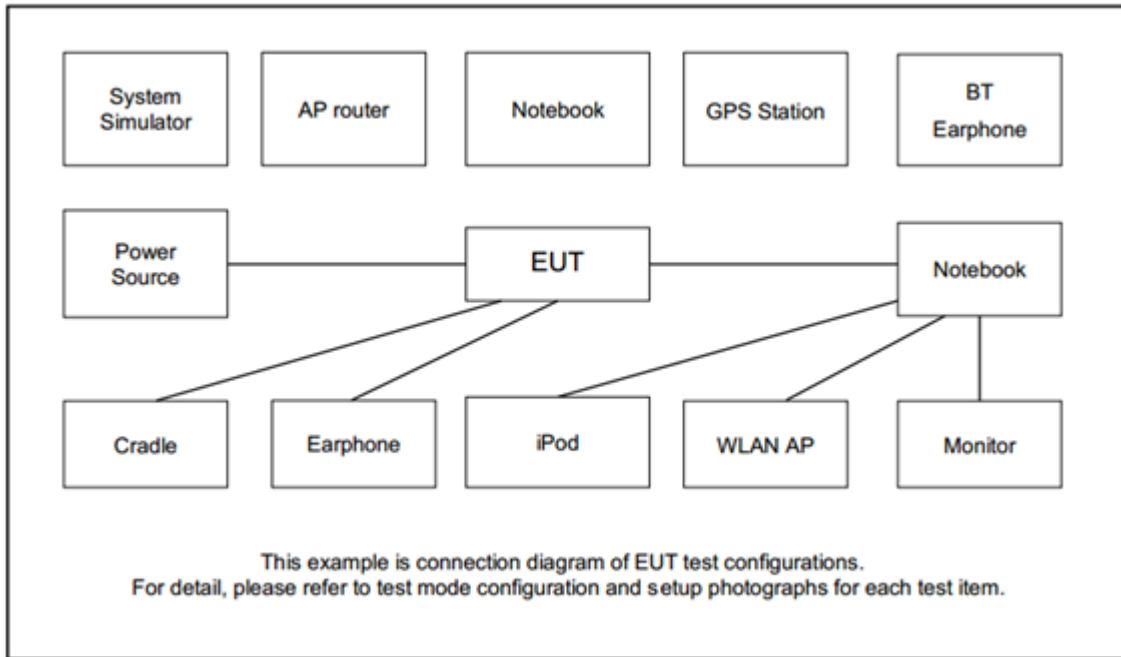
For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.26 exploratory test procedures and only the worst case emissions were reported in this report.

Test Items	NR Band	Bandwidth (MHz)												Modulation					RB #			Test Channel		
		5	10	15	20	25	30	40	50	60	80	90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
Max. Output Power	n7	v	v	v	v	v	v	v	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
	n38	-	v	v	v	-	v	v	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	n7				v	v	-	-	-	-	-	-	v	v	v	v	v			v		v		
	n38	-			v	-			-	-	-	-	v	v	v	v	v			v		v		
26dB and 99% Bandwidth	n7	v	v	v	v	v	v	v	-	-	-	-	v	v	v	v	v			v		v		
	n38	-	v	v	v	-	v	v	-	-	-	-	v	v	v	v	v			v		v		
Conducted Band Edge	n7	v	v	v	v	v	v	v	-	-	-	-	v	v	v	v	v	v		v	v		v	
	n38	-	v	v	v	-	v	v	-	-	-	-	v	v	v	v	v	v		v	v		v	
Conducted Spurious Emission	n7	v				v	-	-	-	-	-	-		v				v			v	v	v	
	n38	-				-			-	-	-	-		v				v			v	v	v	
Frequency Stability	n7				v	v	-	-	-	-	-	-	v							v		v		
	n38	-			v	-			-	-	-	-	v							v		v		



Test Items	NR Band	Bandwidth (MHz)												Modulation					RB #			Test Channel		
		5	10	15	20	25	30	40	50	60	80	90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
E.R.P / E.I.R.P	n7	v	v	v	v	v	v	v	-	-	-	-	-	v	v	v	v	v	Max Power					
	n38	-	v	v	v	-	v	v	-	-	-	-	-	v	v	v	v	v						
Radiated Spurious Emission	n7	Worst Case																		v	v	v		
	n38	Worst Case																			v			
Remark	<ol style="list-style-type: none"> The mark "v" means that this configuration is chosen for testing The mark "-" means that this bandwidth is not supported. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. For radiated measurement, pre-scanned in two modes, DFT-s OFDM and CP OFDM. The worst cases (DFT-s OFDM) were recorded in this report, and the worst modes of FR1 and LTE for simultaneous transmission were verified and compliant. One representative bandwidth is selected to perform PAR and frequency stability. 																							

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.	System Simulator	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	Anritsu	MT8000A	N/A	N/A	Unshielded, 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 :

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\ &= 4.2 + 10 = 14.2 \text{ (dB)} \end{aligned}$$



2.5 Frequency List of Low/Middle/High Channels

5G NR n7 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
40	Channel	504000	507000	510000
	Frequency	2520	2535	2550
30	Channel	503000	507000	511000
	Frequency	2515	2535	2555
25	Channel	502500	507000	511500
	Frequency	2512.5	2535	2557.5
20	Channel	502000	507000	512000
	Frequency	2510	2535	2560
15	Channel	501500	507000	512500
	Frequency	2507.5	2535	2562.5
10	Channel	501000	507000	513000
	Frequency	2505	2535	2565
5	Channel	500500	507000	513500
	Frequency	2502.5	2535	2567.5

5G NR n38 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
40	Channel	518000	519000	520000
	Frequency	2590	2595	2600
30	Channel	517000	519000	521000
	Frequency	2585	2595	2605
20	Channel	516000	519000	522000
	Frequency	2580	2595	2610
15	Channel	515500	519000	522500
	Frequency	2577.5	2595	2612.5
10	Channel	515000	519000	523000
	Frequency	2575	2595	2615

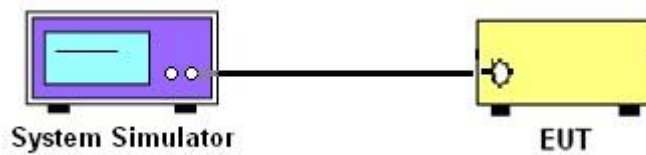
3 Conducted Test Items

3.1 Measuring Instruments

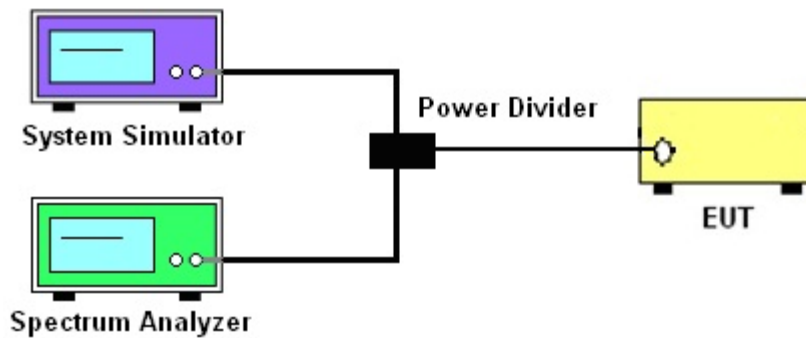
See list of measuring instruments of this test report.

3.1.1 Test Setup

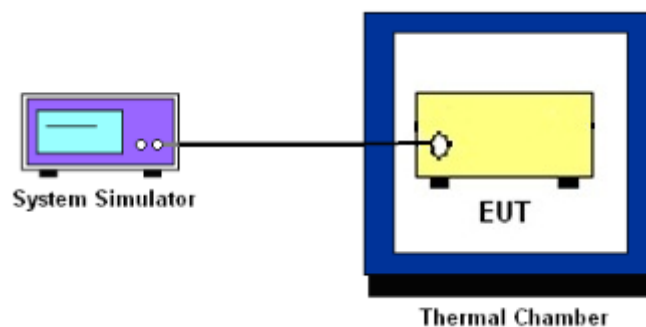
3.1.2 Conducted Output Power



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 ERP/EIRP

3.2.1 Description of the Conducted Output Power Measurement and ERP/EIRP 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 2 Watts for 5G NR n7 and n38

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

22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100kHz bandwidth. However, in the 1MHz 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.

24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53 (c)

For operations in the 776-788 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100 kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. In addition, the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least $65 + 10 \log_{10} p(\text{watts})$, dB, for mobile and portable equipment.

27.53 (g)

For operations in the 600MHz band and 698-746 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

27.53 (h)

For operations in the 1710 – 1755 MHz band, 1755-1780 MHz, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ in a 1 MHz bandwidth. However, in the 1MHz 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.

**27.53(m)(4)**

For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

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)

For 5G NR n7, n38

The other 40 dB, and 55 dB have additionally applied same calculation above.



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.

For 5G NR n7, n38

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 $55 + 10 \log (P)$ 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 middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
6. Set spectrum analyzer with RMS detector.
7. Taking the record of maximum spurious emission.
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
For 5G NR n7, n38
The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)



3.7 Frequency Stability

3.7.1 Description of Frequency Stability Measurement

22.355

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.

24.235 & 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 $20\pm 5^{\circ}\text{C}$ 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

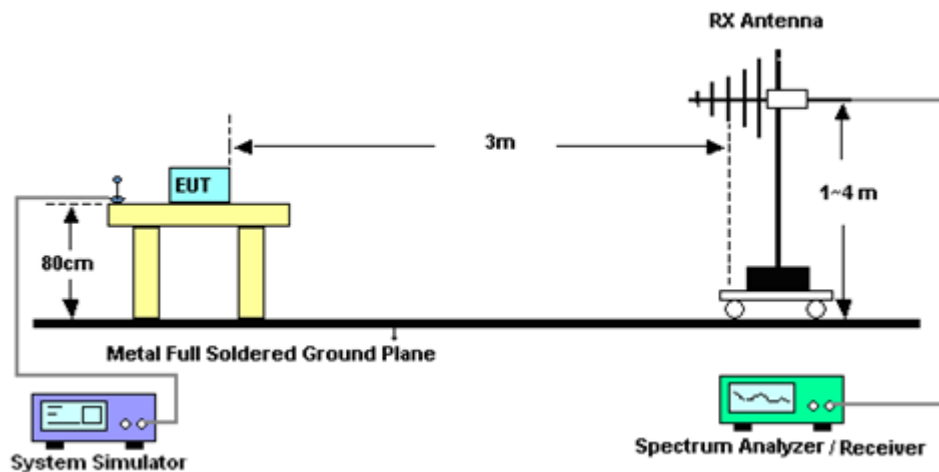
See list of measuring instruments of this test report.

4.1.1 Test Setup

For radiated test below 30MHz



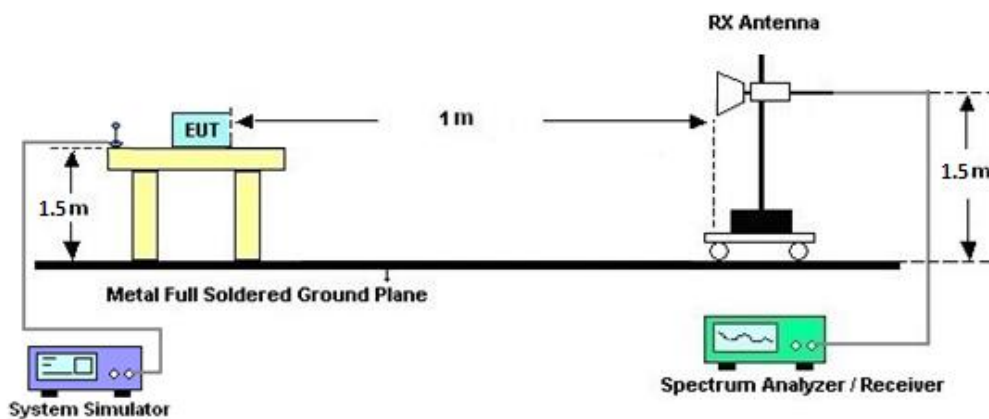
For radiated test from 30MHz to 1GHz



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 / TIA-603-E. 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.

For 5G NR n7, n38

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 $55 + 10 \log (P)$ 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 / TIA-603-E Section 2.2.12.

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. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. 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)

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The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)

EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain

ERP (dBm) = EIRP - 2.15



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-Z2	100488	9 kHz~30 MHz	Sep. 20, 2022	Jan. 08, 2023~ Mar. 03, 2023	Sep. 19, 2023	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02114	1GHz~18GHz	Aug. 09, 2022	Jan. 08, 2023~ Mar. 03, 2023	Aug. 08, 2023	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	40103 & 07	30MHz~1GHz	Apr. 24, 2022	Jan. 08, 2023~ Mar. 03, 2023	Apr. 23, 2023	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 08, 2022	Jan. 08, 2023~ Mar. 03, 2023	Oct. 07, 2023	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1212	1GHz~18GHz	Mar. 10, 2022	Jan. 08, 2023~ Mar. 03, 2023	Mar. 09, 2023	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917025 1	18GHz~40GHz	Nov. 24, 2022	Jan. 08, 2023~ Mar. 03, 2023	Nov. 23, 2023	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917057 6	18GHz~40GHz	May 14, 2022	Jan. 08, 2023~ Mar. 03, 2023	May 13, 2023	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 23, 2022	Jan. 08, 2023~ Mar. 03, 2023	Mar. 22, 2023	Radiation (03CH12-HY)
Preamplifier	Aglient	8449B	3008A02375	1GHz~26.5GHz	May 24, 2022	Jan. 08, 2023~ Mar. 03, 2023	May 23, 2023	Radiation (03CH12-HY)
Preamplifier	E-INSTRUMENT TECH LTD.	ERA-100M-18 G-56-01-A70	EC1900249	1GHz-18GHz	Dec. 21, 2022	Jan. 08, 2023~ Mar. 03, 2023	Dec. 20, 2023	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 07, 2022	Jan. 08, 2023~ Mar. 03, 2023	Dec. 06, 2023	Radiation (03CH12-HY)
Signal Analyzer	Keysight	N9010B	MY60241055	10Hz~44GHz	Jul. 22, 2022	Jan. 08, 2023~ Mar. 03, 2023	Jul. 21, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz~30MHz	Mar. 10, 2022	Jan. 08, 2023~ Mar. 03, 2023	Mar. 09, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY15539/4	30MHz~18GHz	Dec. 20, 2022	Jan. 08, 2023~ Mar. 03, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30MHz~18GHz	Dec. 20, 2022	Jan. 08, 2023~ Mar. 03, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Dec. 20, 2022	Jan. 08, 2023~ Mar. 03, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803953/2	30MHz~40GHz	Dec. 20, 2022	Jan. 08, 2023~ Mar. 03, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
Filter	Wainwright	WHKX8-5872. 5-6750-18000-40ST	SN2	6.75GHz High Pass Filter	Mar. 15, 2022	Jan. 08, 2023~ Mar. 03, 2023	Mar. 14, 2023	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-2700 -3000-18000-60ST	SN2	3GHz High Pass Filter	Jul. 11, 2022	Jan. 08, 2023~ Mar. 03, 2023	Jul. 10, 2023	Radiation (03CH12-HY)
Hygrometer	TECEPEL	DTM-303B	TP140325	N/A	Nov. 07, 2022	Jan. 08, 2023~ Mar. 03, 2023	Nov. 06, 2023	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Jan. 08, 2023~ Mar. 03, 2023	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jan. 08, 2023~ Mar. 03, 2023	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jan. 08, 2023~ Mar. 03, 2023	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Jan. 08, 2023~ Mar. 03, 2023	N/A	Radiation (03CH12-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Programmable Power Supply	GW Instek	PSS-2005	EL890001	0V~64V ;0A~6A	Sep. 29, 2022	Jan. 06, 2023~ Feb. 23, 2023	Sep. 28, 2023	Conducted (TH03-HY)
Hygrometer	Testo	608-H11	34893241	NA	Mar. 18, 2022	Jan. 06, 2023~ Feb. 23, 2023	Mar. 17, 2023	Conducted (TH03-HY)
Signal Analyzer	Rohde & Schwarz	FSV3044	101048	10Hz~44GHz	May 05, 2022	Jan. 06, 2023~ Feb. 23, 2023	May 04, 2023	Conducted (TH03-HY)
Temperature Chamber	ESPEC	SH-641	92013720	-40°C ~90°C	Sep. 07, 2022	Jan. 06, 2023~ Feb. 23, 2023	Sep. 06, 2023	Conducted (TH03-HY)
Base Station (Measure)	Anritsu	MT8821C	6262116730	LTE	Jun. 15, 2022	Jan. 06, 2023~ Feb. 23, 2023	Jun. 14, 2023	Conducted (TH03-HY)
Base Station (Measure)	Anritsu	MT8000A	6262134933	FR1	Jun. 13, 2022	Jan. 06, 2023~ Feb. 23, 2023	Jun. 22, 2023	Conducted (TH03-HY)



6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.31 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.25 dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.81 dB
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power) and EIRP

NR n7 Maximum Average Power [dBm] (GT - LC = 0.39 dB)										
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)		
5	1	1	PI/2 BPSK	22.12	22.09	22.50	23.00	0.1995		
5	1	23		22.16	22.19	22.61				
5	12	6		22.20	22.10	22.54				
5	1	0		21.64	21.66	21.98				
5	1	24		21.66	21.76	22.05				
5	25	0		21.69	21.61	22.04				
5	1	1	QPSK	22.18	22.06	22.54			21.84	0.1528
5	1	23		22.20	22.18	22.60				
5	12	6		22.17	22.10	22.52				
5	1	0		21.16	21.10	21.50				
5	1	24		21.17	21.21	21.59				
5	25	0		21.16	21.12	21.56				
5	1	1	16-QAM	21.07	21.08	21.45	21.84	0.1528		
5	1	1	64-QAM	19.88	19.79	20.21				
5	1	1	256-QAM	17.18	17.10	17.52				
Limit	EIRP < 2W			Result			Pass			

NR n7 Maximum Average Power [dBm] (GT - LC = 0.39 dB)										
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)		
10	1	1	PI/2 BPSK	22.00	22.09	22.36	22.96	0.1977		
10	1	50		22.02	22.25	22.57				
10	25	12		22.02	22.14	22.55				
10	1	0		21.46	21.71	21.94				
10	1	51		21.53	21.69	22.02				
10	50	0		21.52	21.58	22.00				
10	1	1	QPSK	22.00	22.09	22.36			21.70	0.1479
10	1	50		22.10	22.23	22.50				
10	25	12		22.07	22.11	22.54				
10	1	0		20.98	21.12	21.49				
10	1	51		21.10	21.24	21.47				
10	50	0		21.10	21.11	21.48				
10	1	1	16-QAM	21.00	20.99	21.31	21.70	0.1479		
10	1	1	64-QAM	19.72	19.80	20.12				
10	1	1	256-QAM	17.03	17.06	17.44				
Limit	EIRP < 2W			Result			Pass			



NR n7 Maximum Average Power [dBm] (GT - LC = 0.39 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
15	1	1	PI/2 BPSK	22.23	22.30	22.55	23.18	0.2080
15	1	77		22.27	22.35	22.77		
15	36	18		22.18	22.41	22.64		
15	1	0		21.83	21.87	22.10		
15	1	78		21.78	21.79	22.28		
15	75	0		21.68	21.87	22.18		
15	1	1	QPSK	22.26	22.31	22.58		
15	1	77		22.30	22.34	22.79		
15	36	18		22.22	22.38	22.65		
15	1	0		21.24	21.39	21.66		
15	1	78		21.29	21.33	21.81		
15	75	0		21.23	21.38	21.70		
15	1	1	16-QAM	21.15	21.27	21.52	21.91	0.1552
15	1	1	64-QAM	19.92	19.95	20.19		
15	1	1	256-QAM	17.17	17.38	17.56		
Limit	EIRP < 2W			Result			Pass	

NR n7 Maximum Average Power [dBm] (GT - LC = 0.39 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
20	1	1	PI/2 BPSK	22.26	22.32	22.49	23.13	0.2056
20	1	104		22.44	22.35	22.66		
20	50	25		22.33	22.33	22.66		
20	1	0		21.86	21.89	22.08		
20	1	105		21.88	21.82	22.19		
20	100	0		21.88	21.89	22.10		
20	1	1	QPSK	22.24	22.31	22.52		
20	1	104		22.43	22.40	22.74		
20	50	25		22.38	22.39	22.59		
20	1	0		21.42	21.45	21.57		
20	1	105		21.43	21.33	21.71		
20	100	0		21.35	21.39	21.63		
20	1	1	16-QAM	21.23	21.26	21.47	21.86	0.1535
20	1	1	64-QAM	19.98	20.04	20.16		
20	1	1	256-QAM	17.29	17.33	17.49		
Limit	EIRP < 2W			Result			Pass	



NR n7 Maximum Average Power [dBm] (GT - LC = 0.39 dB)										
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)		
25	1	1	PI/2 BPSK	22.31	22.29	22.48	23.12	0.2051		
25	1	131		22.47	22.40	22.71				
25	64	32		22.45	22.43	22.55				
25	1	0		21.76	21.95	22.07				
25	1	132		21.96	21.85	22.13				
25	128	0		21.87	21.83	22.07				
25	1	1	QPSK	22.32	22.31	22.44			23.12	0.2051
25	1	131		22.50	22.39	22.73				
25	64	32		22.41	22.36	22.53				
25	1	0		21.43	21.46	21.59				
25	1	132		21.48	21.37	21.68				
25	128	0		21.42	21.37	21.51				
25	1	1	16-QAM	21.25	21.35	21.43	21.82	0.1521		
25	1	1	64-QAM	20.04	20.05	20.22				
25	1	1	256-QAM	17.30	17.29	17.49				
Limit	EIRP < 2W			Result			Pass			

NR n7 Maximum Average Power [dBm] (GT - LC = 0.39 dB)										
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)		
30	1	1	PI/2 BPSK	22.22	22.39	22.46	23.13	0.2056		
30	1	158		22.41	22.44	22.72				
30	80	40		22.26	22.32	22.51				
30	1	0		21.84	21.92	22.05				
30	1	159		21.94	21.98	22.23				
30	160	0		21.80	21.87	22.06				
30	1	1	QPSK	22.26	22.37	22.49			23.13	0.2056
30	1	158		22.30	22.44	22.74				
30	80	40		22.29	22.37	22.55				
30	1	0		21.39	21.48	21.53				
30	1	159		21.42	21.52	21.76				
30	160	0		21.35	21.39	21.58				
30	1	1	16-QAM	21.19	21.32	21.43	21.82	0.1521		
30	1	1	64-QAM	19.92	20.02	20.18				
30	1	1	256-QAM	17.21	17.36	17.49				
Limit	EIRP < 2W			Result			Pass			



NR n7 Maximum Average Power [dBm] (GT - LC = 0.39 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
40	1	1	PI/2 BPSK	22.30	22.27	22.42	23.26	0.2118
40	1	214		22.43	22.55	22.84		
40	108	54		22.39	22.40	22.59		
40	1	0		21.98	22.09	22.16		
40	1	215		22.05	22.04	22.30		
40	216	0		21.87	21.91	22.16		
40	1	1	QPSK	22.21	22.26	22.46		
40	1	214		22.58	22.59	22.87		
40	108	54		22.50	22.44	22.69		
40	1	0		21.53	21.55	21.61		
40	1	215		21.50	21.58	21.87		
40	216	0		21.44	21.43	21.66		
40	1	1	16-QAM	21.19	21.26	21.40	21.79	0.1510
40	1	1	64-QAM	19.98	19.97	20.11		
40	1	1	256-QAM	17.36	17.32	17.49		
Limit	EIRP < 2W			Result			Pass	



NR n38 Maximum Average Power [dBm] (GT - LC = 0.39 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
10	1	1	PI/2 BPSK	22.69	22.84	22.97	23.37	0.2173
10	1	22		22.78	22.86	22.92		
10	12	6		22.72	22.84	22.95		
10	1	0		22.19	22.31	22.44		
10	1	23		22.20	22.39	22.41		
10	24	0		22.21	22.34	22.45		
10	1	1	QPSK	22.65	22.98	22.95		
10	1	22		22.75	22.83	22.84		
10	12	6		22.76	22.82	22.93		
10	1	0		21.57	21.75	21.86		
10	1	23		21.66	21.83	21.87		
10	24	0		21.75	21.84	21.94		
10	1	1	16-QAM	21.56	21.69	21.78	22.17	0.1648
10	1	1	64-QAM	20.17	20.36	20.54		
10	1	1	256-QAM	18.23	18.35	18.49		
Limit	EIRP < 2W			Result			Pass	

NR n38 Maximum Average Power [dBm] (GT - LC = 0.39 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
15	1	1	PI/2 BPSK	22.96	22.97	22.68	23.62	0.2301
15	1	36		23.04	22.96	23.23		
15	18	9		22.95	23.01	23.19		
15	1	0		22.42	22.56	22.73		
15	1	37		22.49	22.45	22.69		
15	36	0		22.45	22.46	22.72		
15	1	1	QPSK	22.87	22.92	23.06		
15	1	36		22.94	23.04	23.15		
15	18	9		22.95	23.01	23.21		
15	1	0		21.86	21.95	22.17		
15	1	37		21.92	22.01	22.13		
15	36	0		21.94	22.04	22.16		
15	1	1	16-QAM	21.74	21.79	22.01	22.40	0.1738
15	1	1	64-QAM	20.34	20.45	20.56		
15	1	1	256-QAM	18.45	18.65	18.63		
Limit	EIRP < 2W			Result			Pass	



NR n38 Maximum Average Power [dBm] (GT - LC = 0.39 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
20	1	1	PI/2 BPSK	22.92	22.41	22.92	23.49	0.2234
20	1	49		23.01	22.98	23.10		
20	25	12		23.02	22.97	23.06		
20	1	0		22.43	22.45	22.75		
20	1	50		22.51	22.39	22.61		
20	50	0		22.45	22.36	22.54		
20	1	1	QPSK	22.92	22.95	22.91		
20	1	49		22.96	22.83	23.01		
20	25	12		22.95	22.94	23.02		
20	1	0		21.98	21.87	22.03		
20	1	50		21.93	21.83	22.01		
20	50	0		21.99	21.93	22.01		
20	1	1	16-QAM	21.79	21.75	21.83	22.22	0.1667
20	1	1	64-QAM	20.41	20.35	20.54		
20	1	1	256-QAM	18.45	18.46	18.54		
Limit	EIRP < 2W			Result			Pass	

NR n38 Maximum Average Power [dBm] (GT - LC = 0.39 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
30	1	1	PI/2 BPSK	22.63	22.63	22.75	23.34	0.2159
30	1	76		22.86	22.95	22.86		
30	36	18		22.64	22.69	22.78		
30	1	0		22.27	22.26	22.45		
30	1	77		22.41	22.36	22.38		
30	75	0		22.17	22.24	22.27		
30	1	1	QPSK	22.60	22.62	22.67		
30	1	76		22.86	22.83	22.84		
30	36	18		22.66	22.72	22.79		
30	1	0		21.69	21.68	21.89		
30	1	77		21.87	21.82	21.84		
30	75	0		21.66	21.73	21.76		
30	1	1	16-QAM	21.68	21.75	21.84	22.23	0.1671
30	1	1	64-QAM	20.15	20.19	20.24		
30	1	1	256-QAM	17.85	17.95	18.08		
Limit	EIRP < 2W			Result			Pass	



NR n38 Maximum Average Power [dBm] (GT - LC = 0.39 dB)										
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)		
40	1	1	PI/2 BPSK	22.75	22.59	22.80	23.34	0.2159		
40	1	104		22.95	22.85	22.94				
40	50	25		22.90	22.73	22.92				
40	1	0		22.47	22.34	22.51				
40	1	105		22.45	22.42	22.46				
40	100	0		22.34	22.28	22.41				
40	1	1	QPSK	22.76	22.55	22.69			23.34	0.2159
40	1	104		22.94	22.84	22.94				
40	50	25		22.95	22.72	22.95				
40	1	0		21.86	21.75	21.99				
40	1	105		21.95	21.86	21.96				
40	100	0		21.92	21.79	21.95				
40	1	1	16-QAM	21.77	21.74	21.87	22.26	0.1683		
40	1	1	64-QAM	20.28	20.12	20.35				
40	1	1	256-QAM	18.07	17.89	18.05				
Limit	EIRP < 2W			Result			Pass			



FR1 n7

Peak-to-Average Ratio

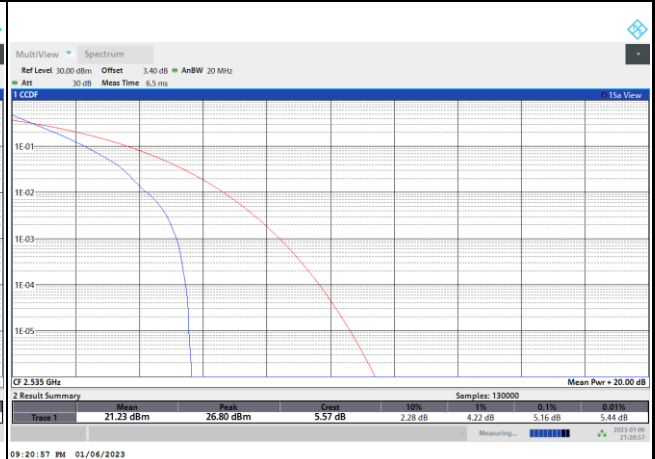
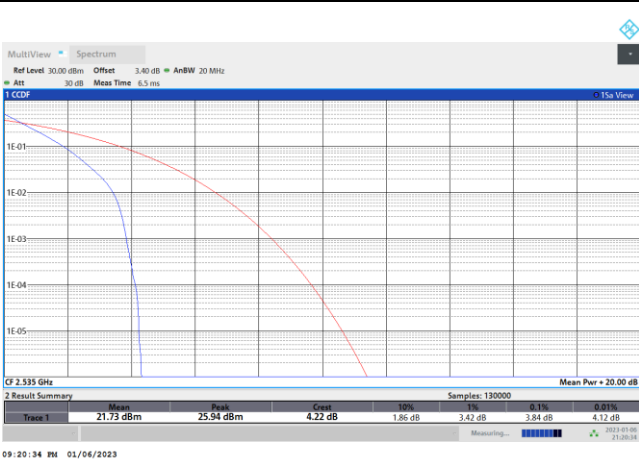
Mode	FR1 n7 / 20MHz / DFT-S OFDM				
Mod.	PI/2 BPSK	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	3.84	5.16	6.20	6.28	PASS
Mode	FR1 n7 / 20MHz / DFT-S OFDM				
Mod.	256QAM				Limit: 13dB
RB Size	Full RB				Result
Middle CH	6.68				PASS



FR1 n7 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

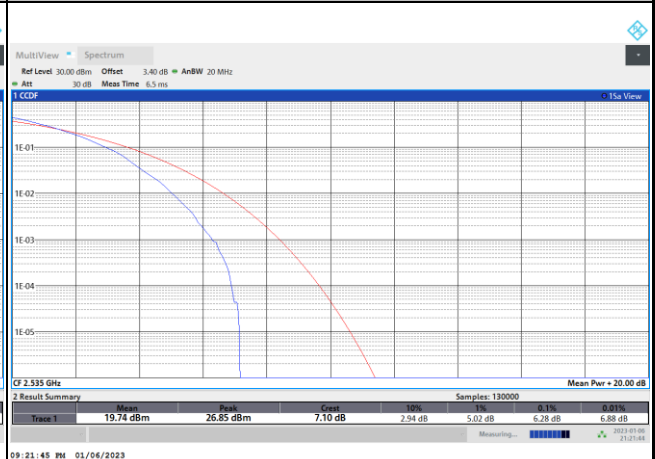
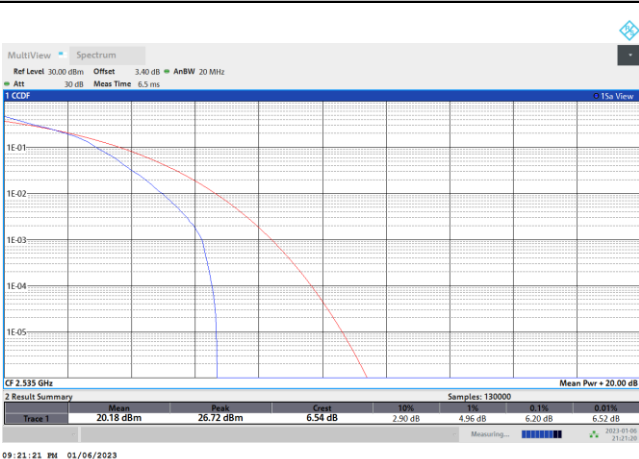
PI/2 BPSK

QPSK

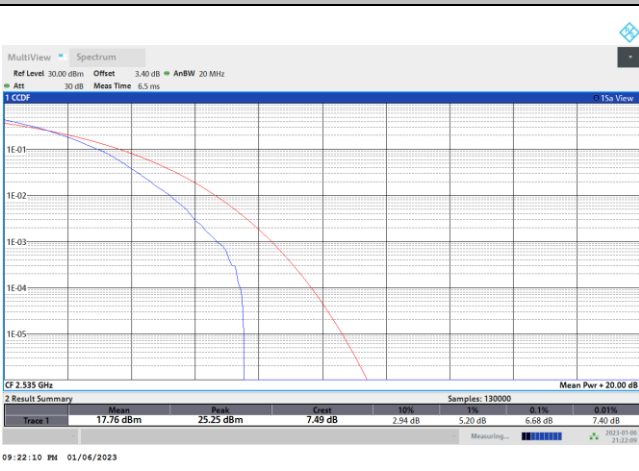


16QAM

64QAM



256QAM





26dB Bandwidth

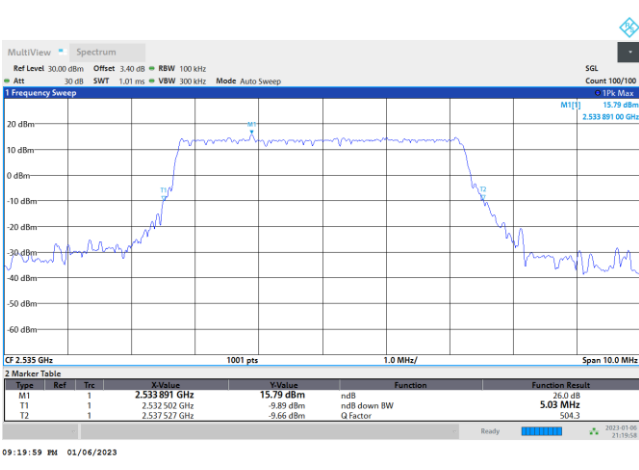
Mode	FR1 n7 : 26dB BW(MHz) / DFT-S OFDM							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	PI/2 BPSK		PI/2 BPSK		PI/2 BPSK		PI/2 BPSK	
Middle CH	5.03		9.51		14.33		18.98	
BW	25MHz		30MHz		40MHz		50MHz	
Mod.	PI/2 BPSK		PI/2 BPSK		PI/2 BPSK		PI/2 BPSK	
Middle CH	24.08		29.61		41.16		-	

Mode	FR1 n7 : 26dB BW(MHz) / CP OFDM							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	5.11	5.11	9.97	9.99	15.05	15.08	19.98	19.94
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	5.20	5.10	9.79	10.01	15.08	15.05	19.94	19.94
BW	25MHz		30MHz		40MHz		50MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	24.83	24.78	29.73	29.67	41.08	41.08	-	-
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	24.78	24.83	29.79	29.85	41.16	41.00	-	-



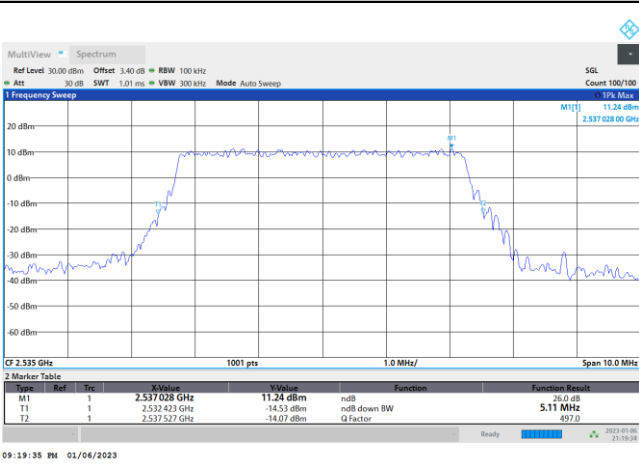
FR1 n7 / 5MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

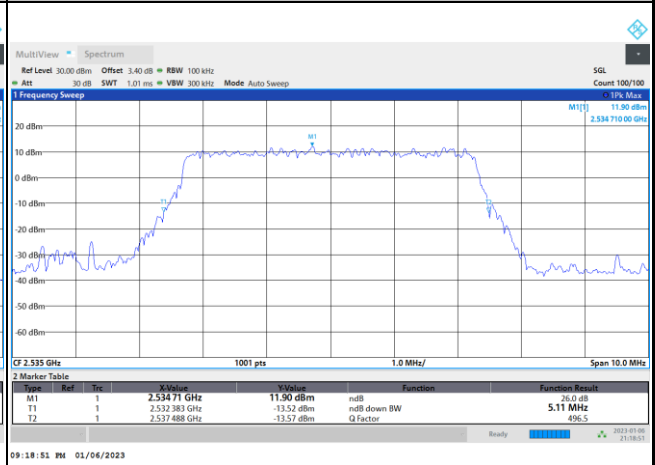


FR1 n7 / 5MHz / CP OFDM / Middle Channel / Full RB

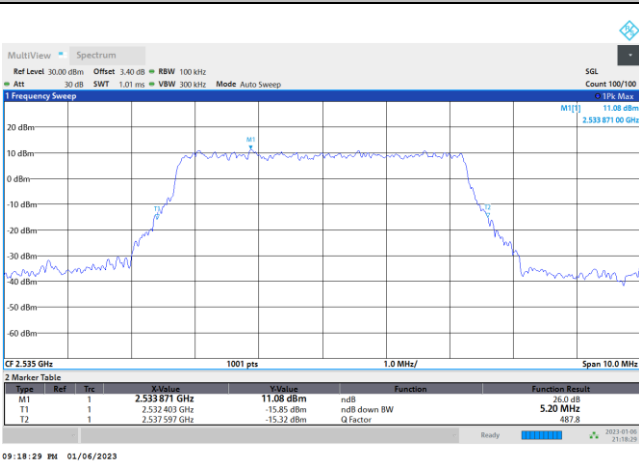
QPSK



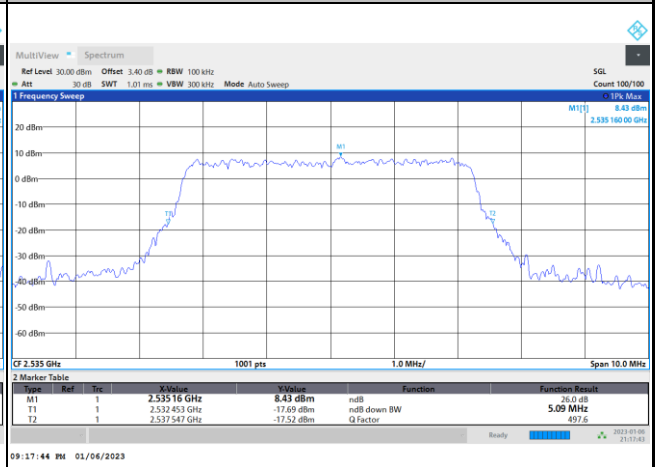
16QAM



64QAM



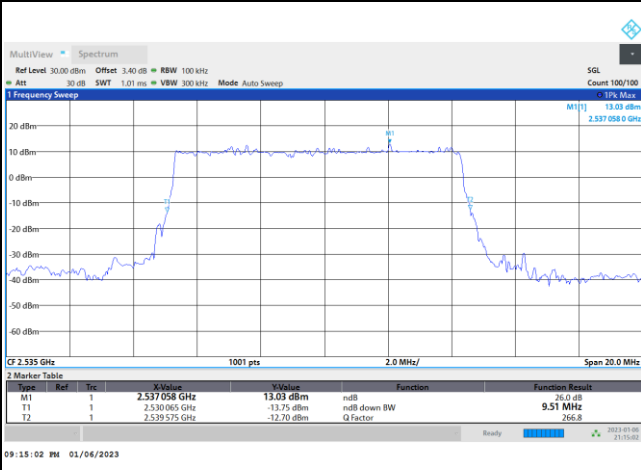
256QAM





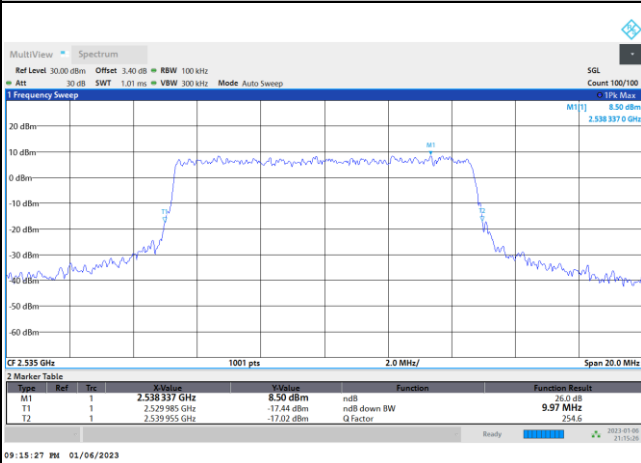
FR1 n7 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

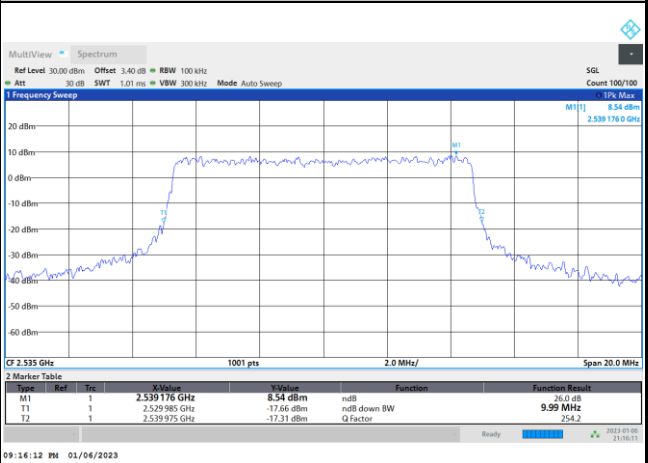


FR1 n7 / 10MHz / CP OFDM / Middle Channel / Full RB

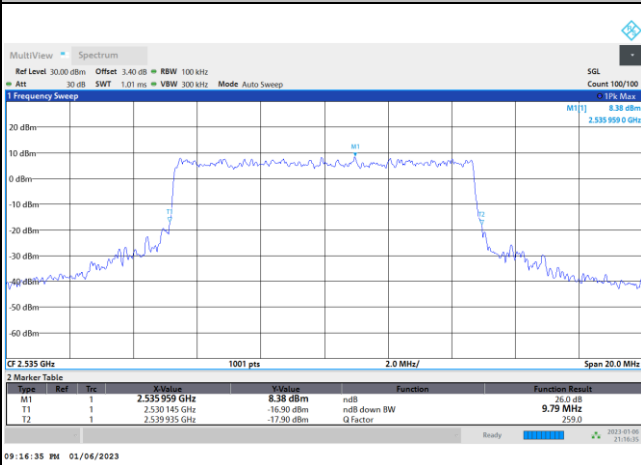
QPSK



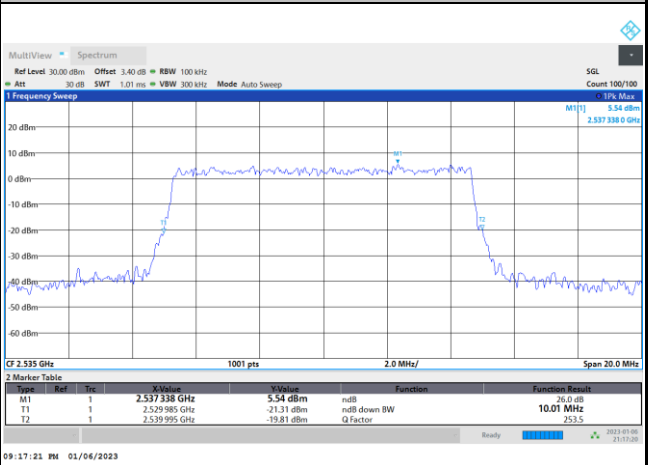
16QAM



64QAM



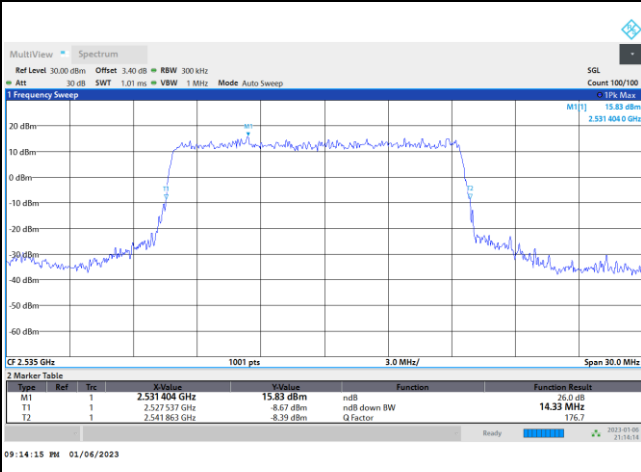
256QAM





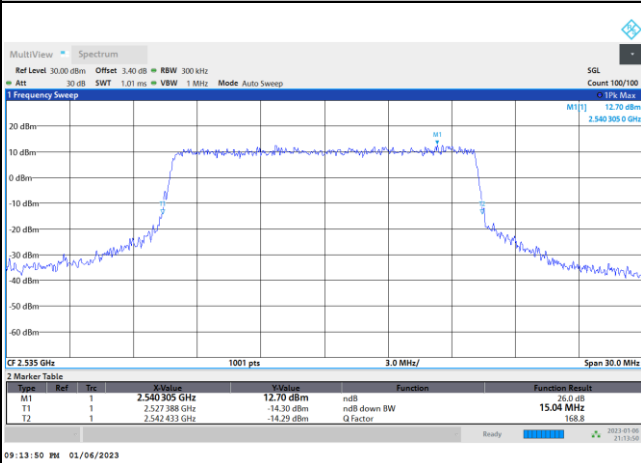
FR1 n7 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

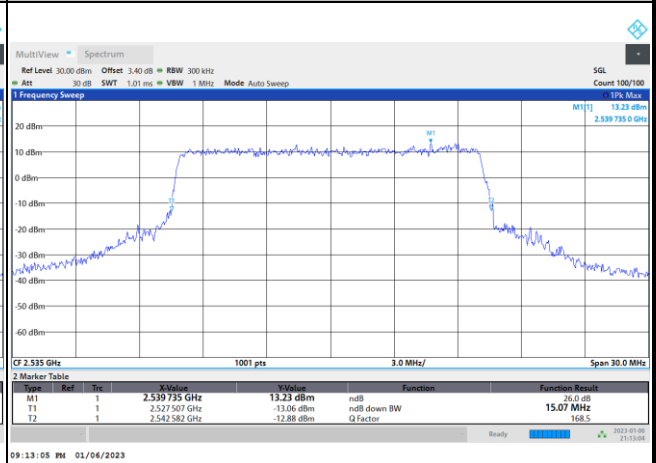


FR1 n7 / 15MHz / CP OFDM / Middle Channel / Full RB

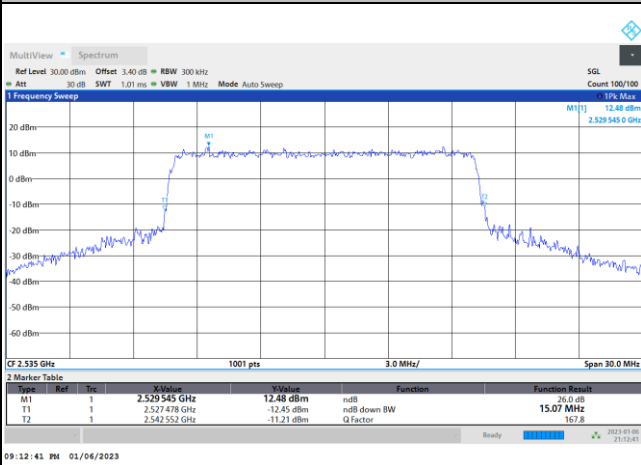
QPSK



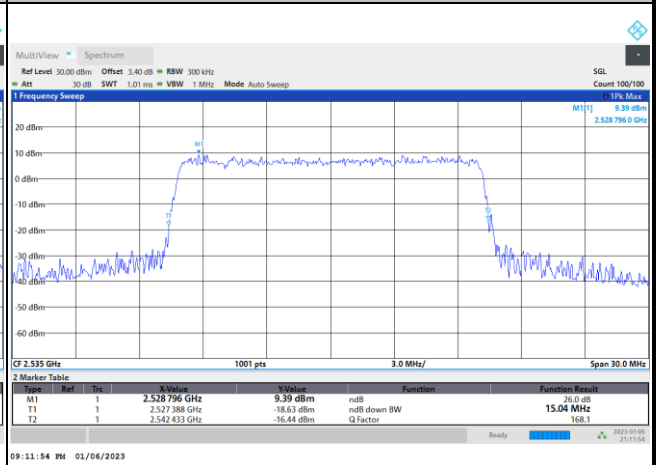
16QAM



64QAM



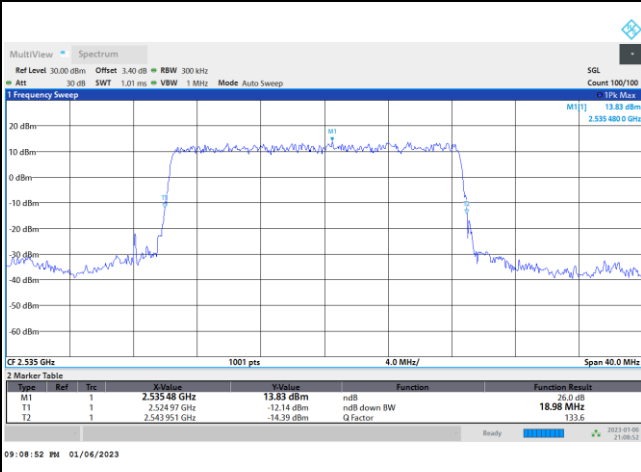
256QAM





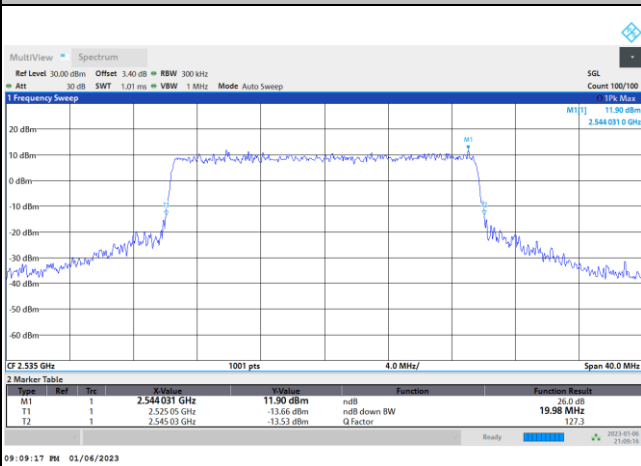
FR1 n7 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

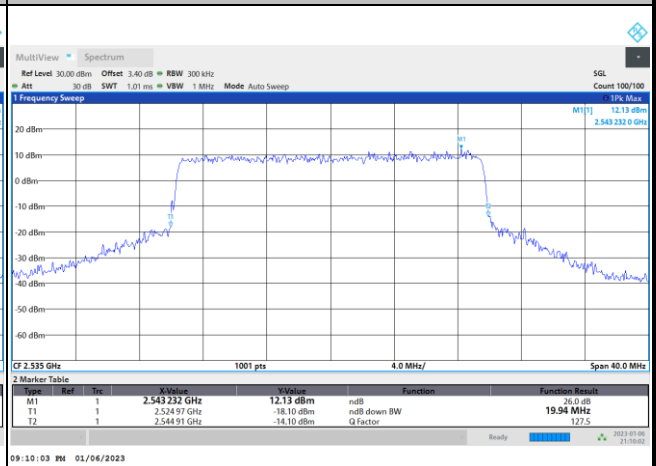


FR1 n7 / 20MHz / CP OFDM / Middle Channel / Full RB

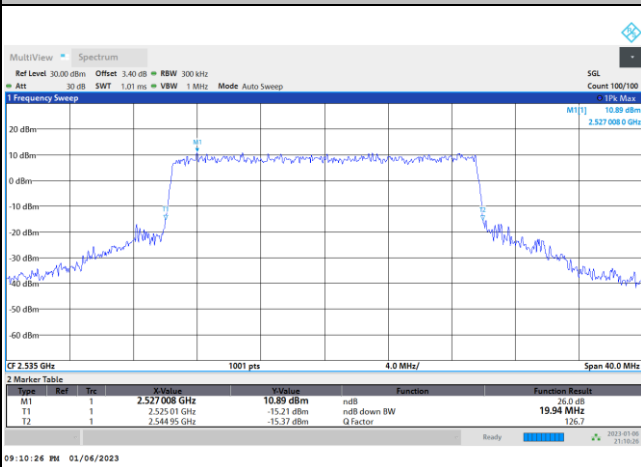
QPSK



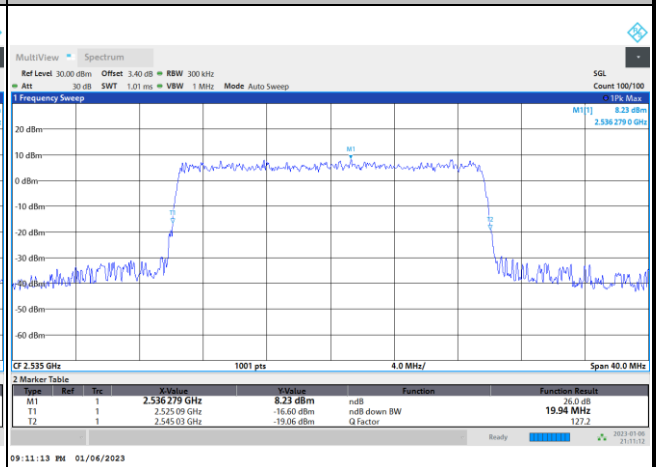
16QAM



64QAM



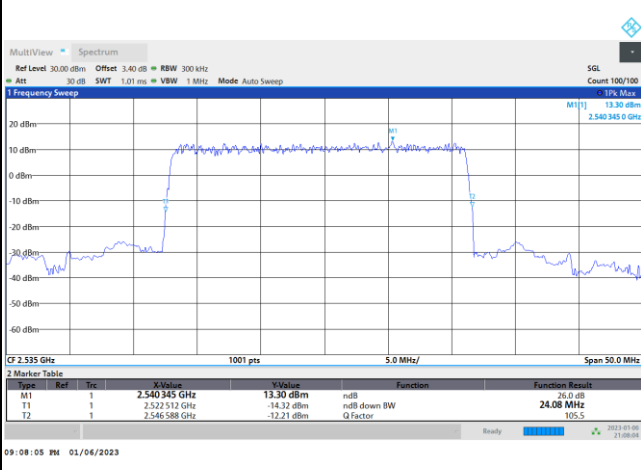
256QAM





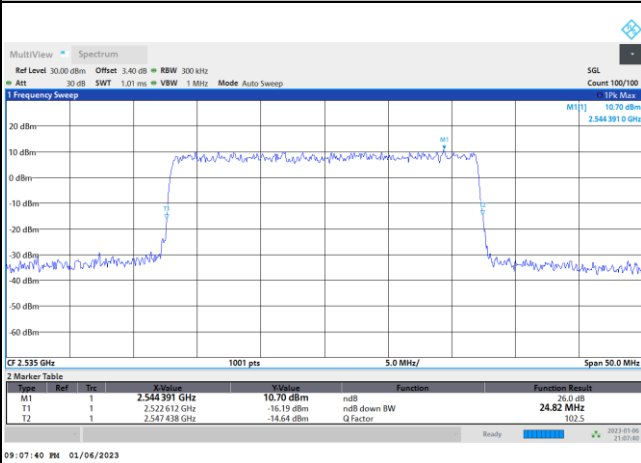
FR1 n7 / 25MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

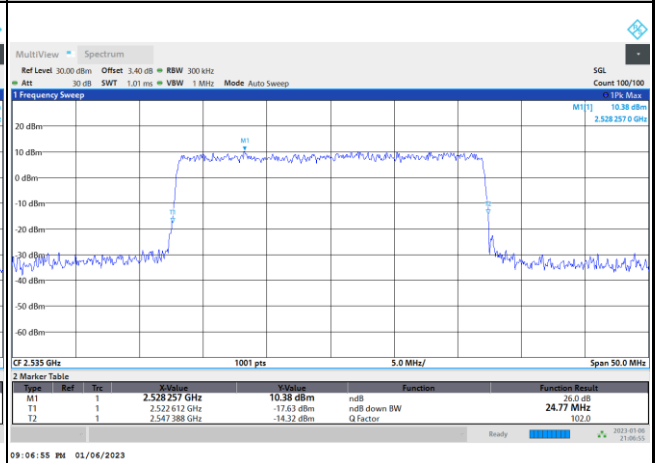


FR1 n7 / 25MHz / CP OFDM / Middle Channel / Full RB

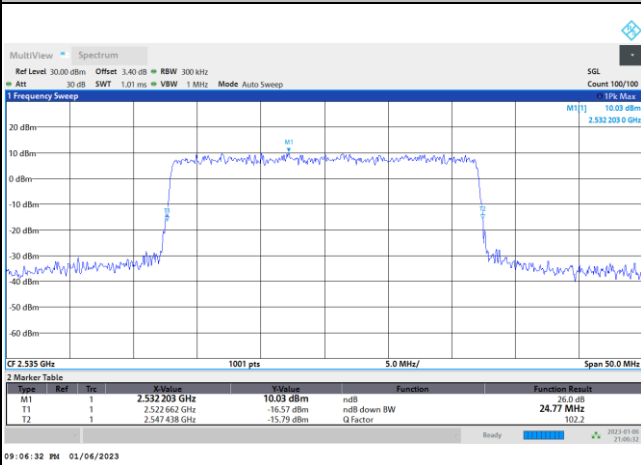
QPSK



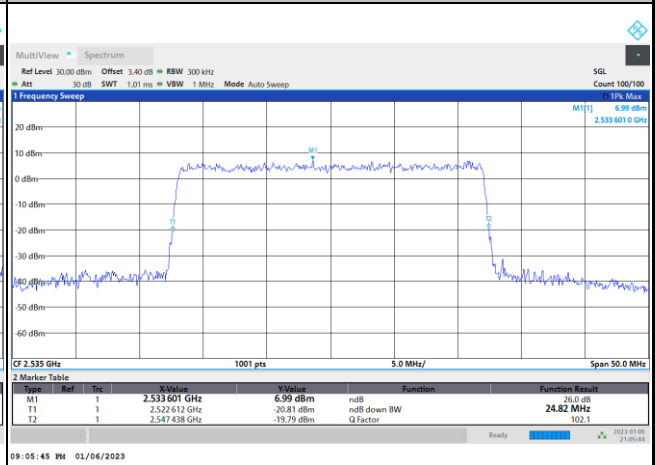
16QAM



64QAM



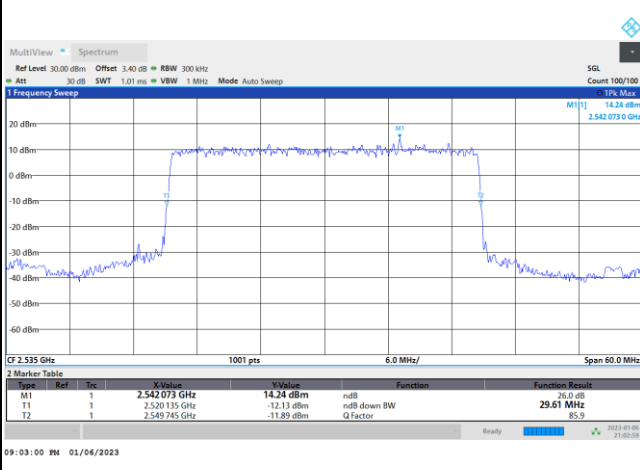
256QAM





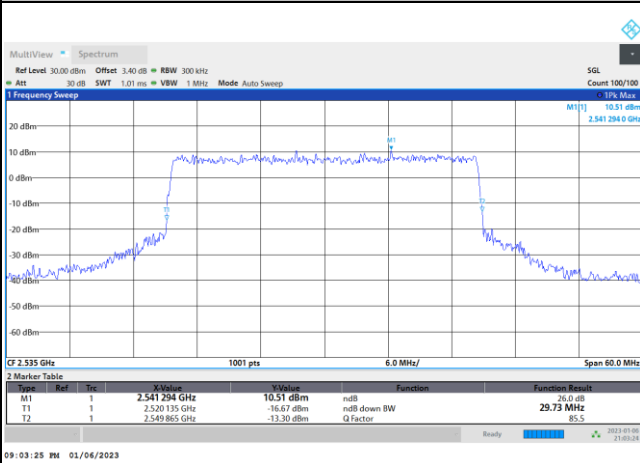
FR1 n7 / 30MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

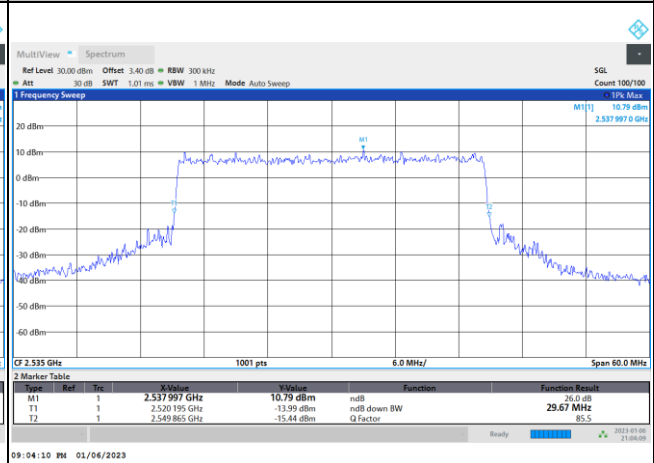


FR1 n7 / 30MHz / CP OFDM / Middle Channel / Full RB

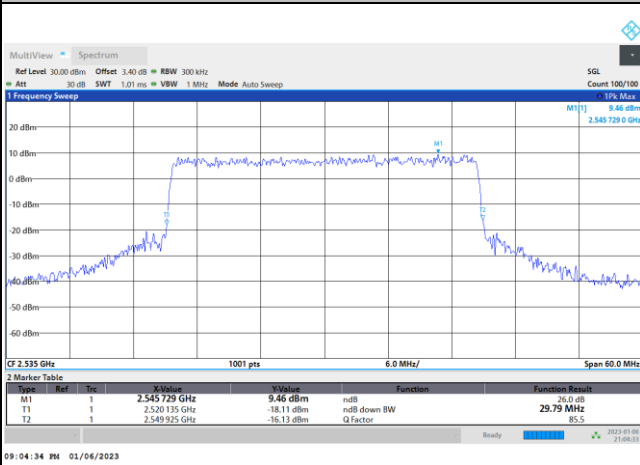
QPSK



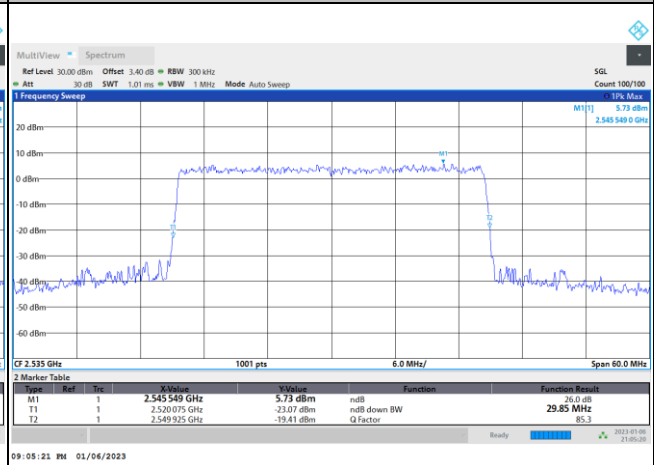
16QAM



64QAM



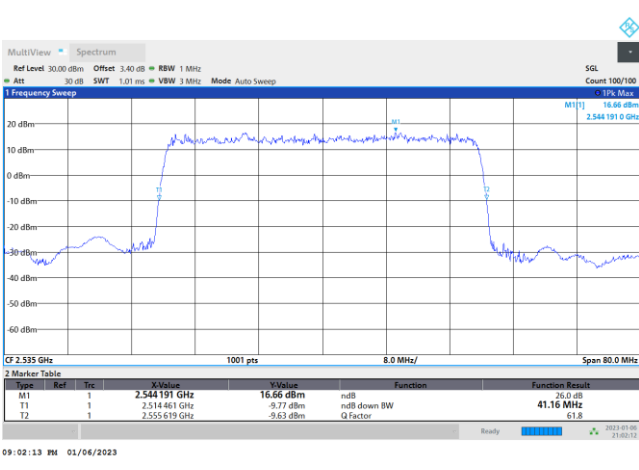
256QAM





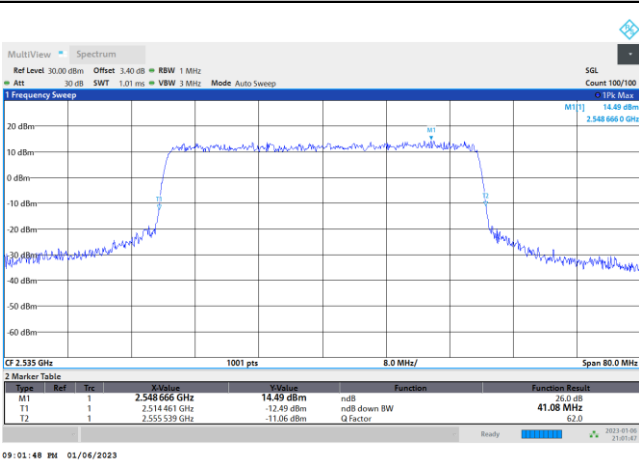
FR1 n7 / 40MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

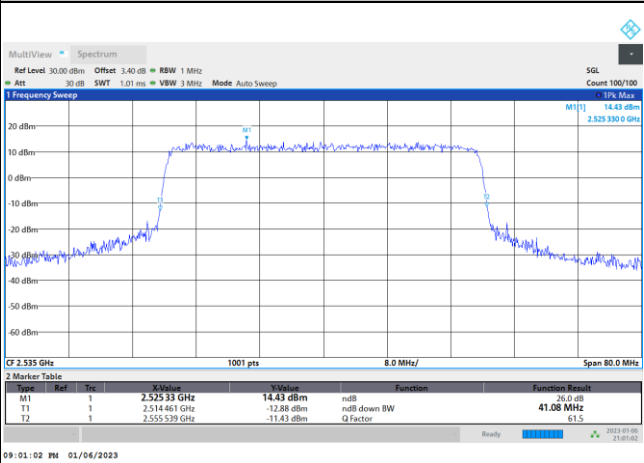


FR1 n7 / 40MHz / CP OFDM / Middle Channel / Full RB

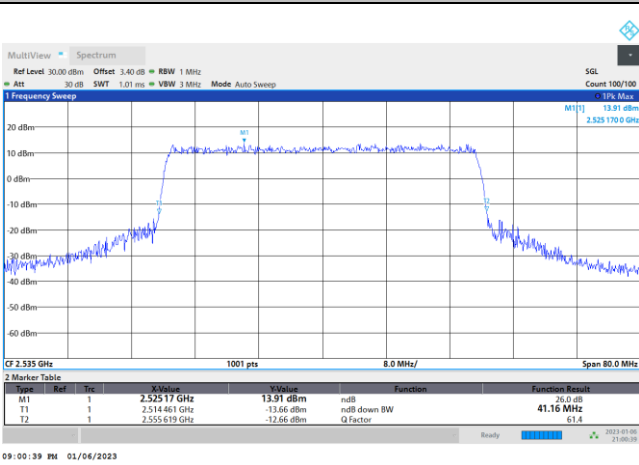
QPSK



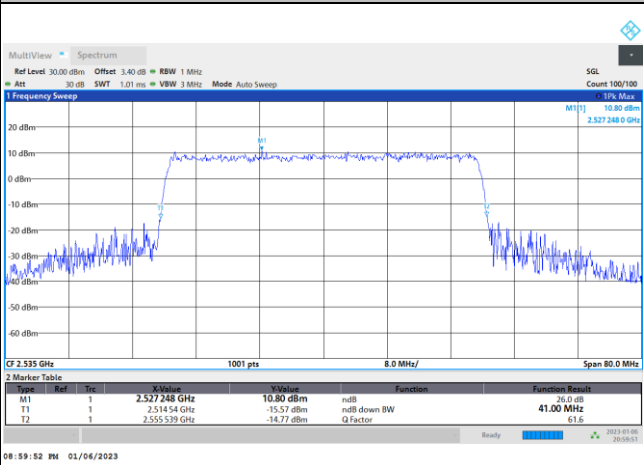
16QAM



64QAM



256QAM





Occupied Bandwidth

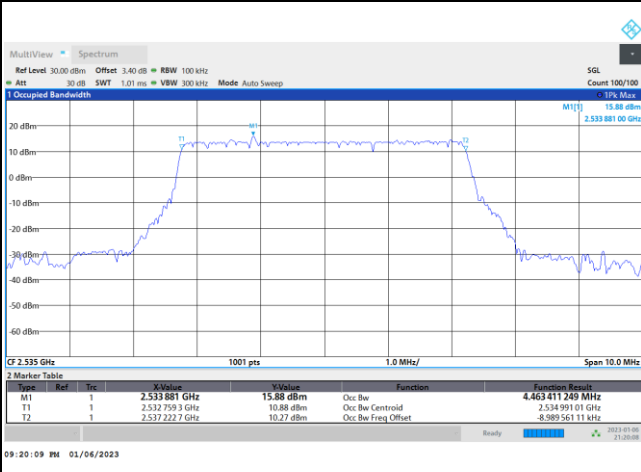
Mode	FR1 n7 : 99%OBW(MHz) / DFT-S OFDM							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	PI/2 BPSK		PI/2 BPSK		PI/2 BPSK		PI/2 BPSK	
Middle CH	4.46		8.92		13.48		17.92	
BW	25MHz		30MHz		40MHz		50MHz	
Mod.	PI/2 BPSK		PI/2 BPSK		PI/2 BPSK		PI/2 BPSK	
Middle CH	22.89		28.56		38.70		-	

Mode	FR1 n7 : 99%OBW (MHz) / CP OFDM							
BW	5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	4.51	4.52	9.27	9.28	14.13	14.20	18.91	18.96
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	4.50	4.49	9.28	9.30	14.17	14.12	18.99	19.00
BW	25MHz		30MHz		40MHz		50MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	23.74	23.77	28.57	28.60	38.70	38.61	-	-
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	23.77	23.76	28.52	28.56	38.78	38.69	-	-



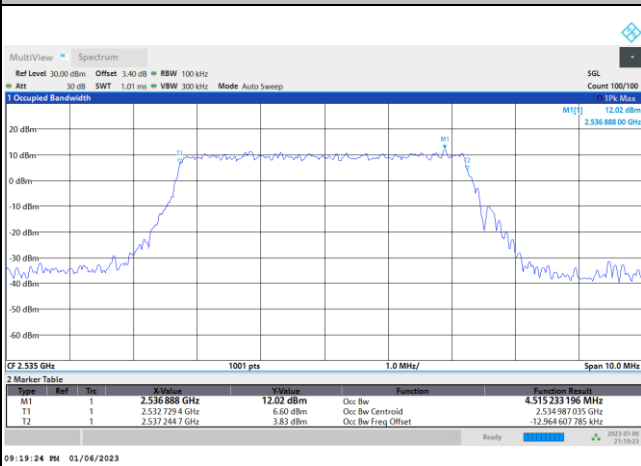
FR1 n7 / 5MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

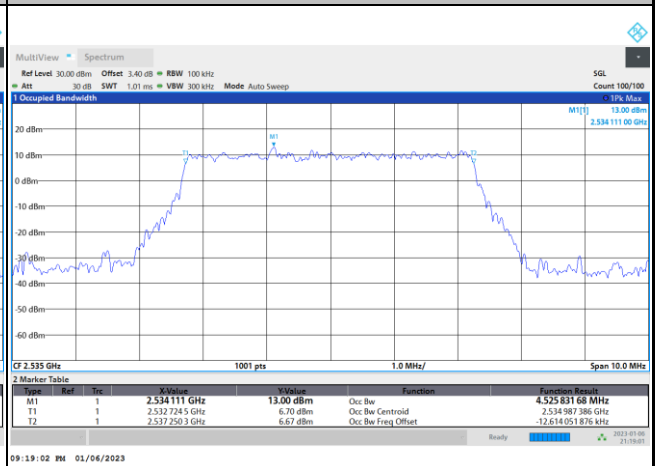


FR1 n7 / 5MHz / CP OFDM / Middle Channel / Full RB

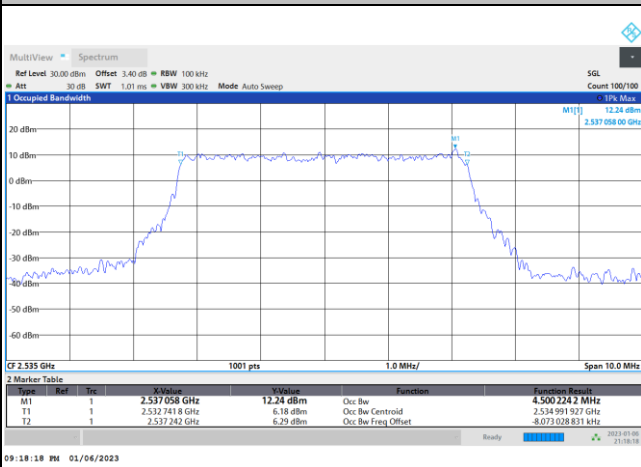
QPSK



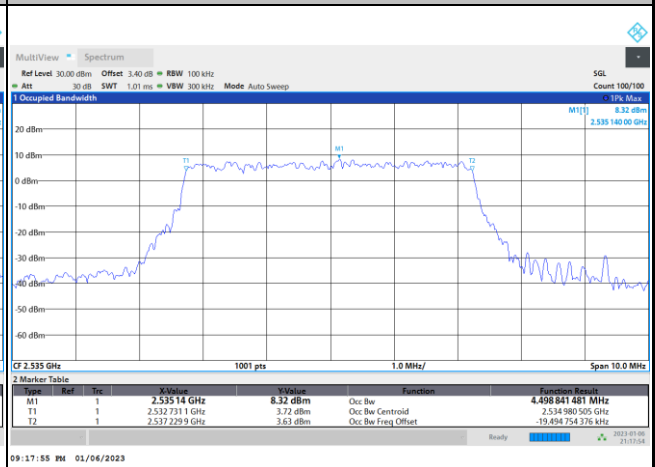
16QAM



64QAM



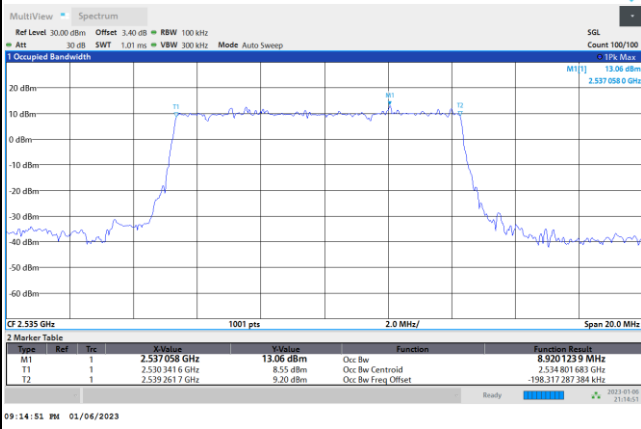
256QAM





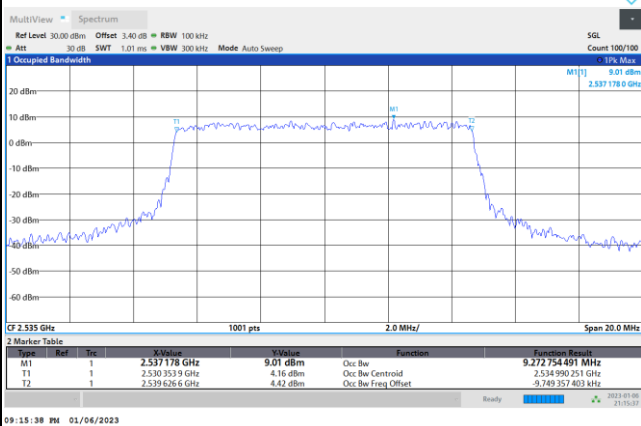
FR1 n7 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

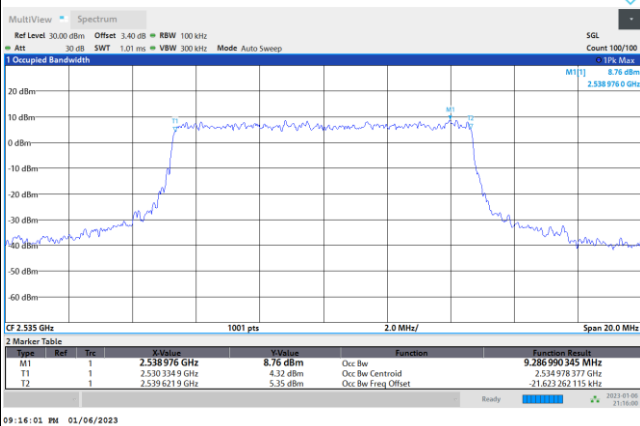


FR1 n7 / 10MHz / CP OFDM / Middle Channel / Full RB

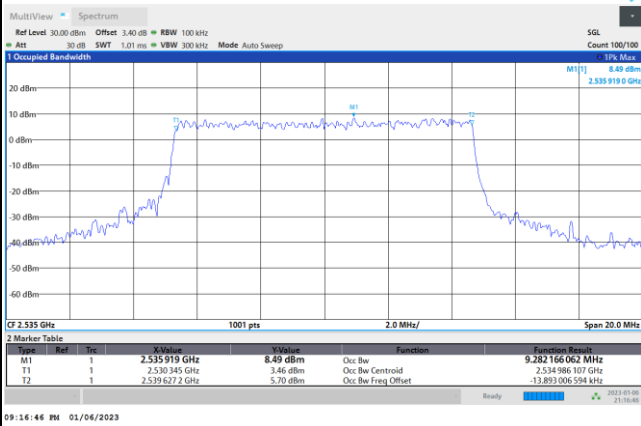
QPSK



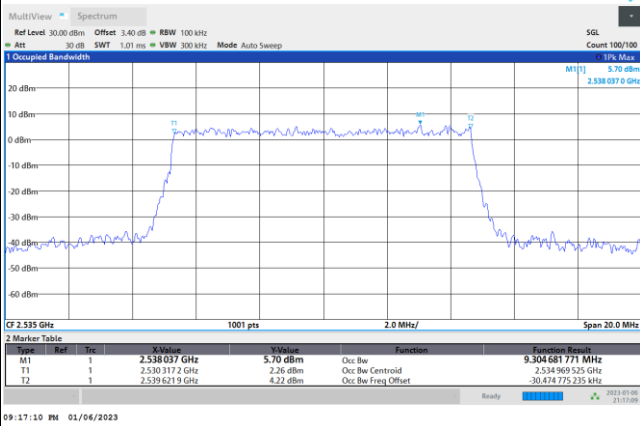
16QAM



64QAM



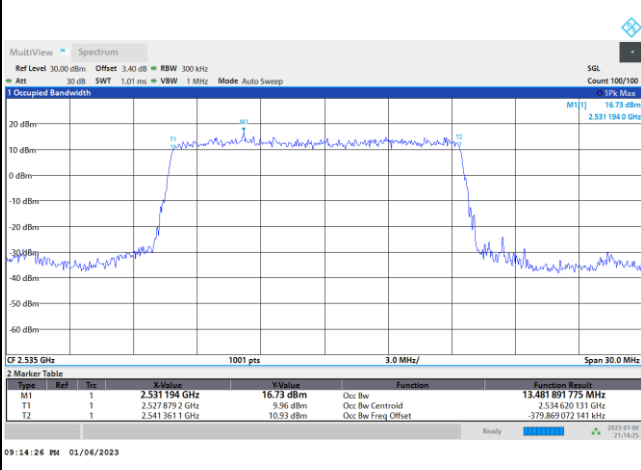
256QAM





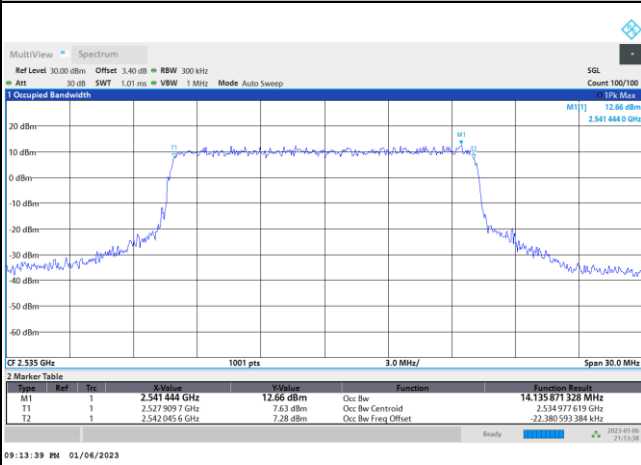
FR1 n7 / 15MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

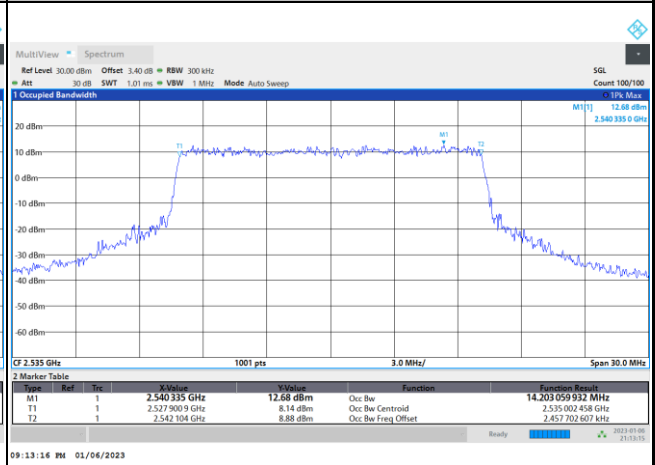


FR1 n7 / 15MHz / CP OFDM / Middle Channel / Full RB

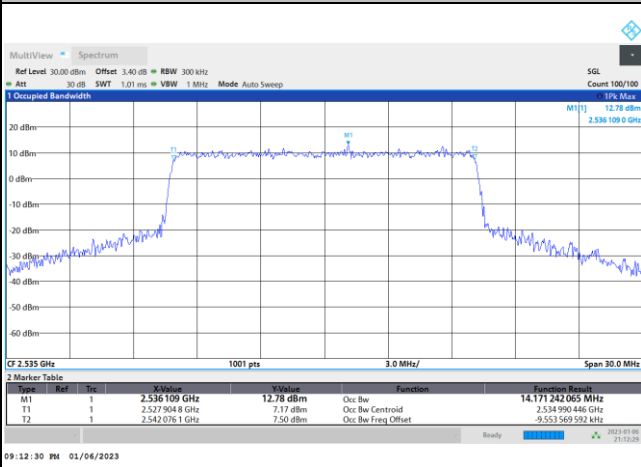
QPSK



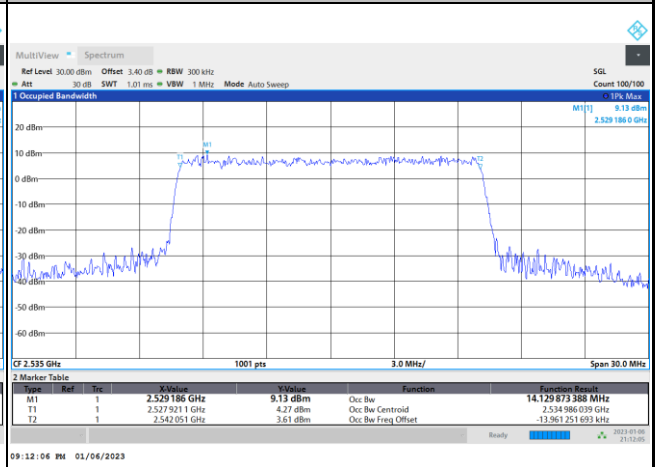
16QAM



64QAM



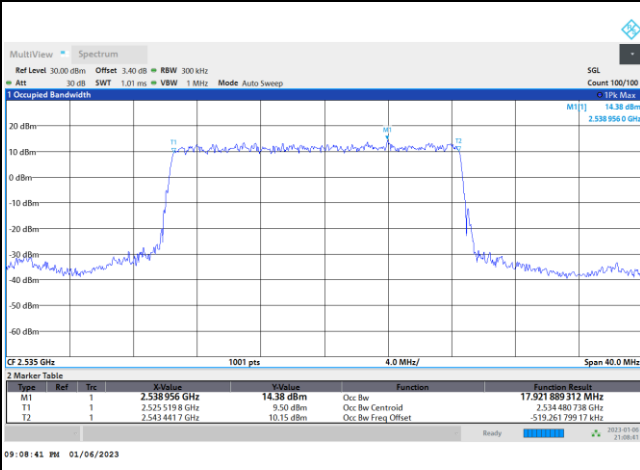
256QAM





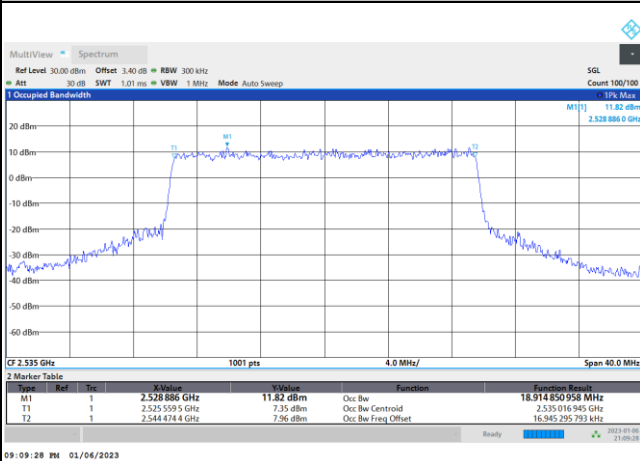
FR1 n7 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

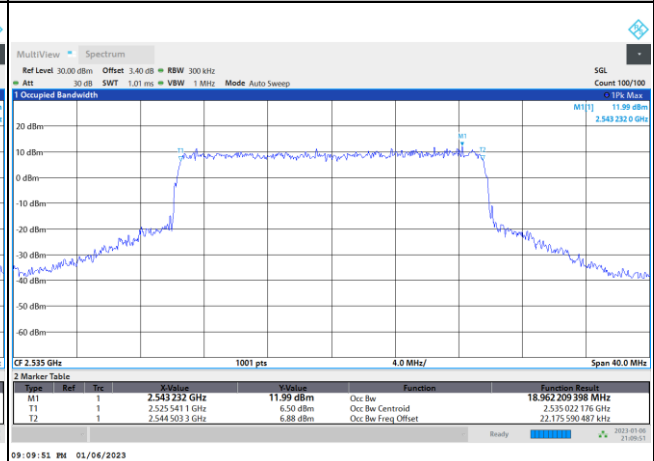


FR1 n7 / 20MHz / CP OFDM / Middle Channel / Full RB

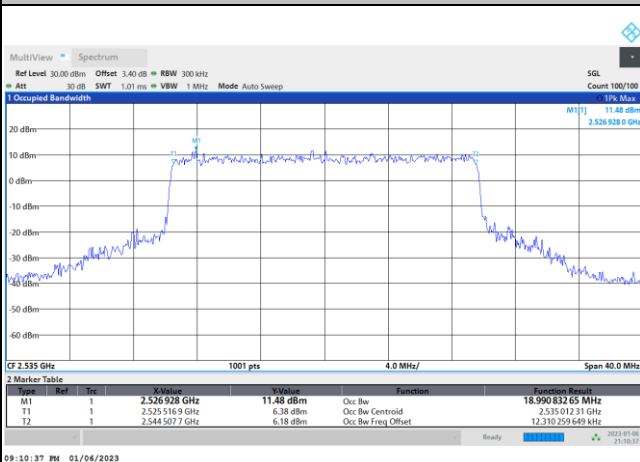
QPSK



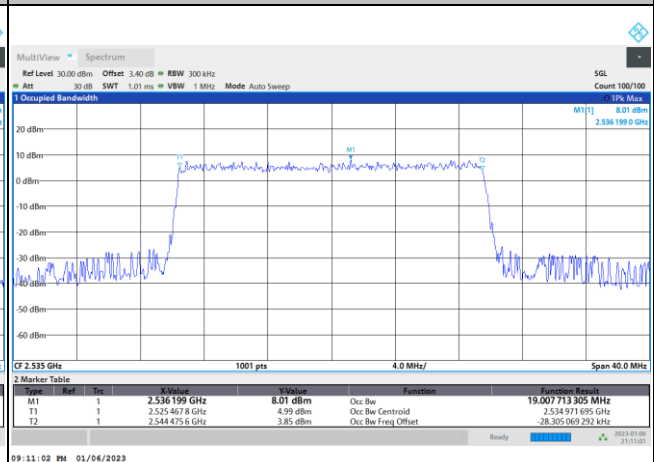
16QAM



64QAM



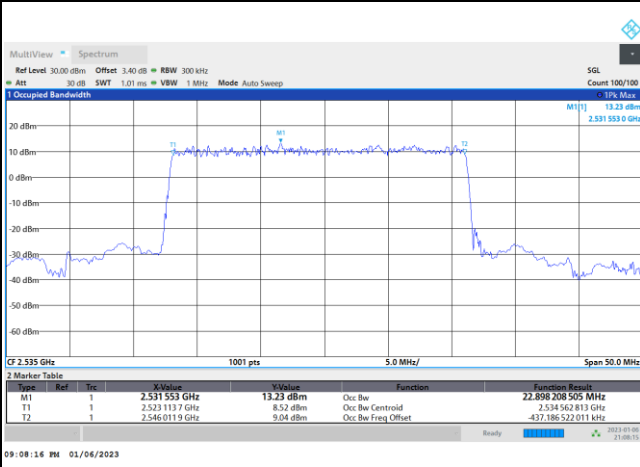
256QAM





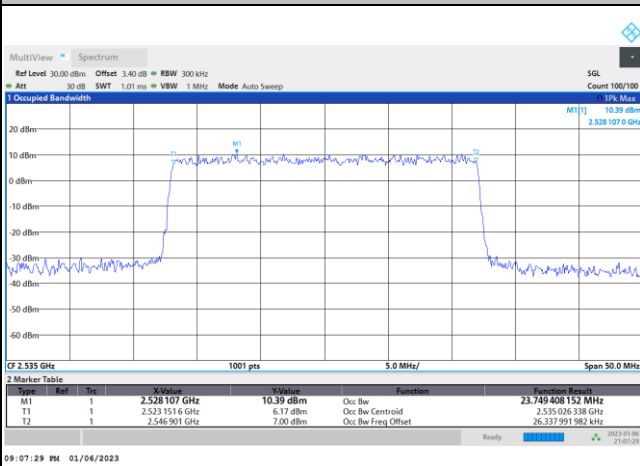
FR1 n7 / 25MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

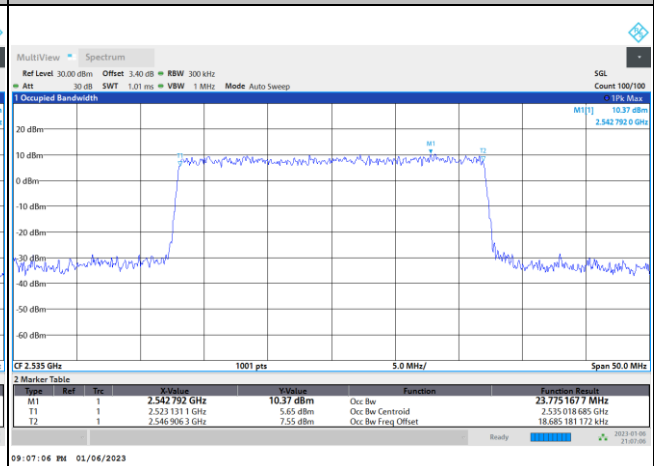


FR1 n7 / 25MHz / CP OFDM / Middle Channel / Full RB

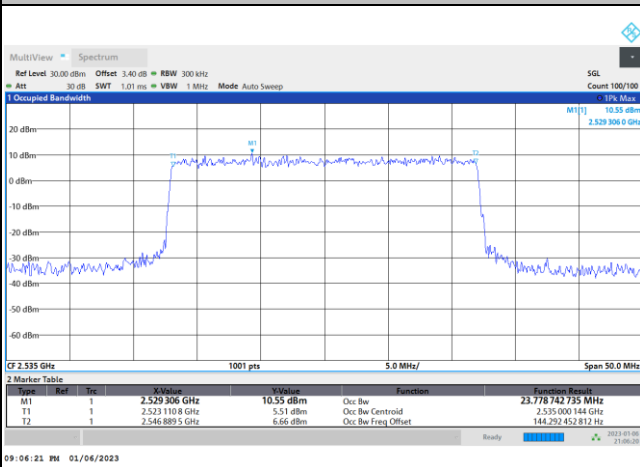
QPSK



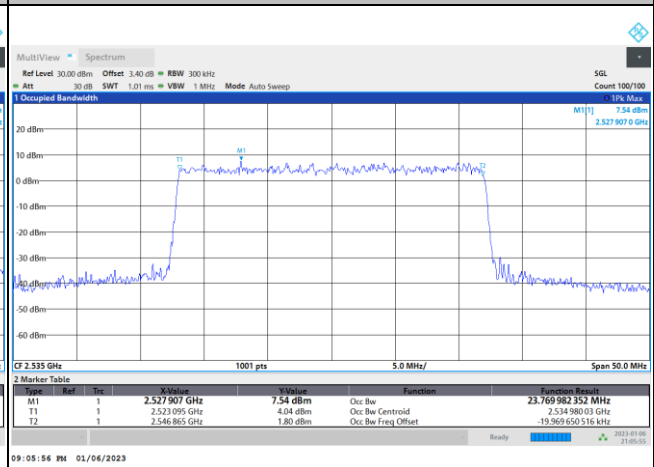
16QAM



64QAM



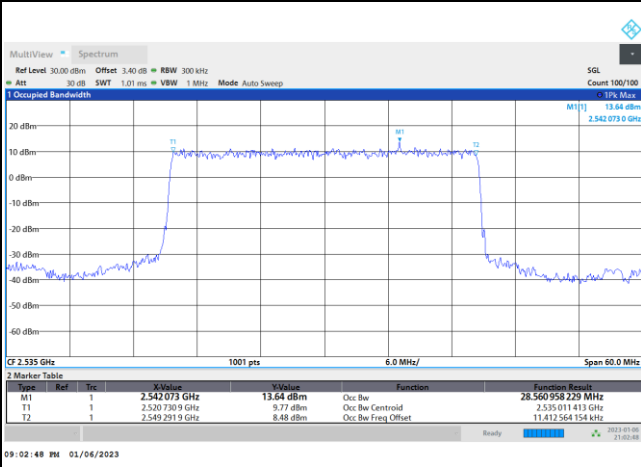
256QAM





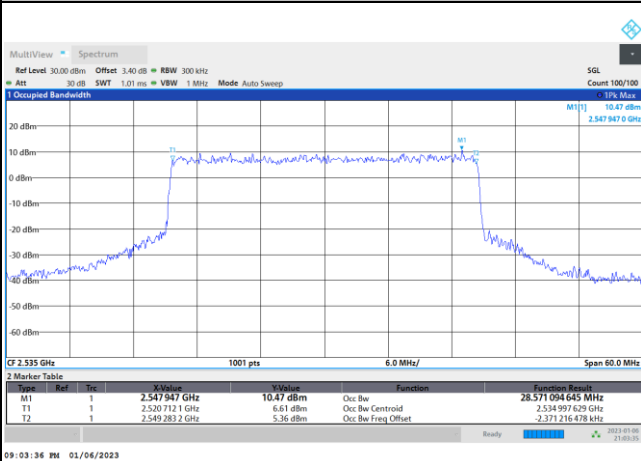
FR1 n7 / 30MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

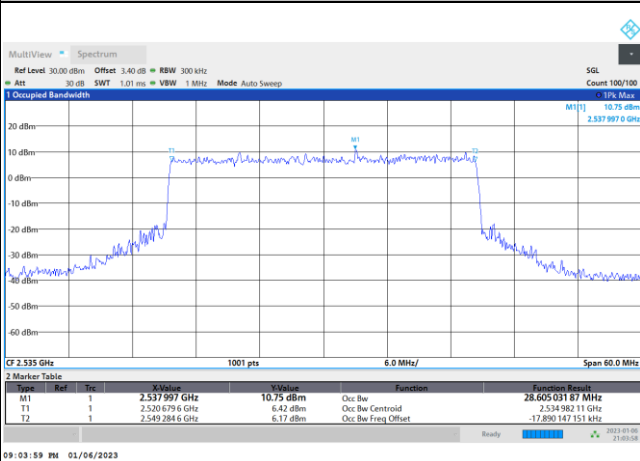


FR1 n7 / 30MHz / CP OFDM / Middle Channel / Full RB

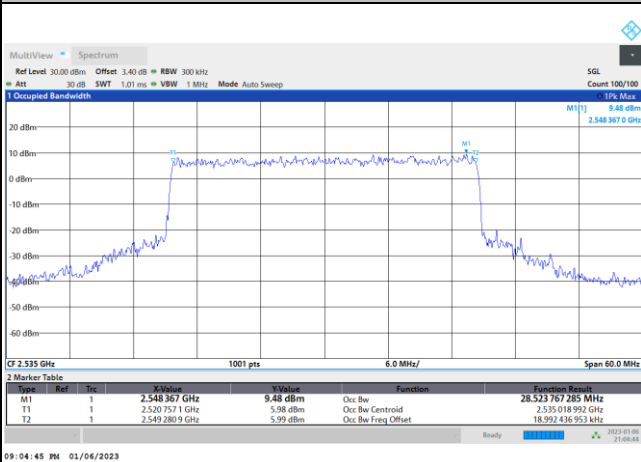
QPSK



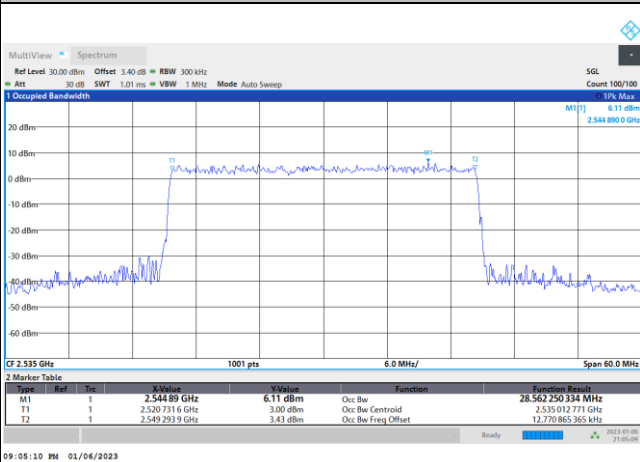
16QAM



64QAM



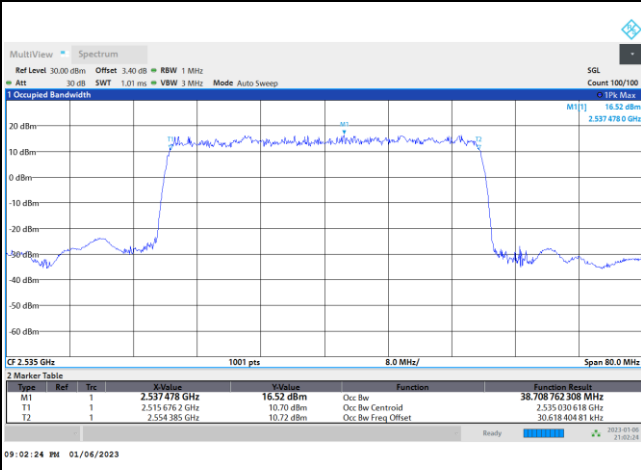
256QAM





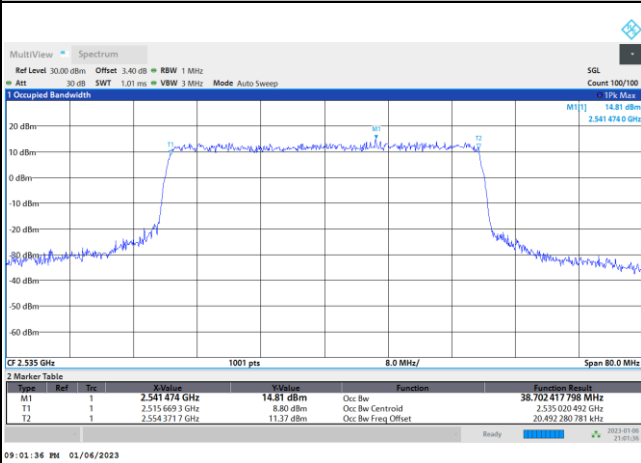
FR1 n7 / 40MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK

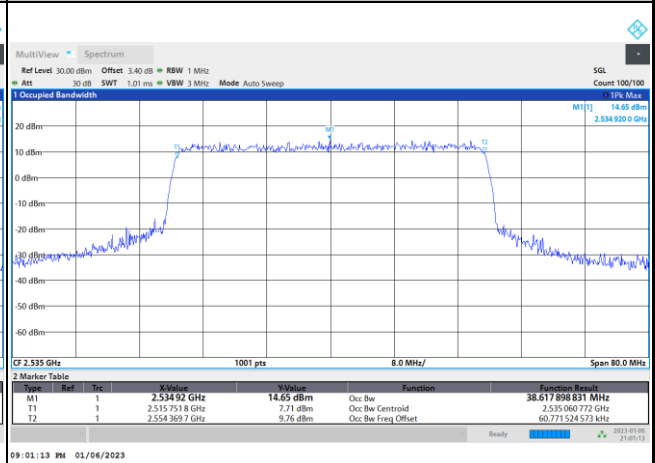


FR1 n7 / 40MHz / CP OFDM / Middle Channel / Full RB

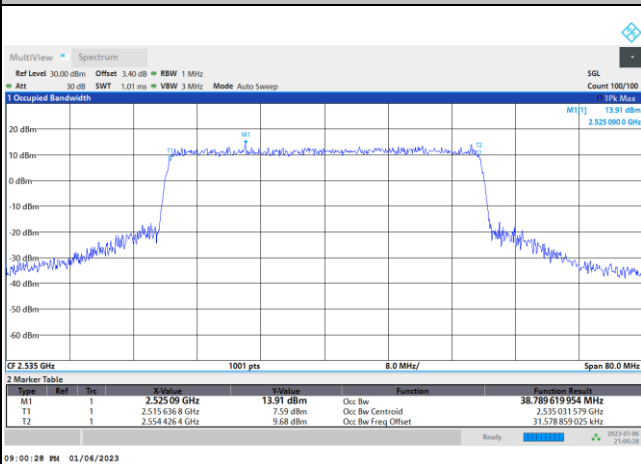
QPSK



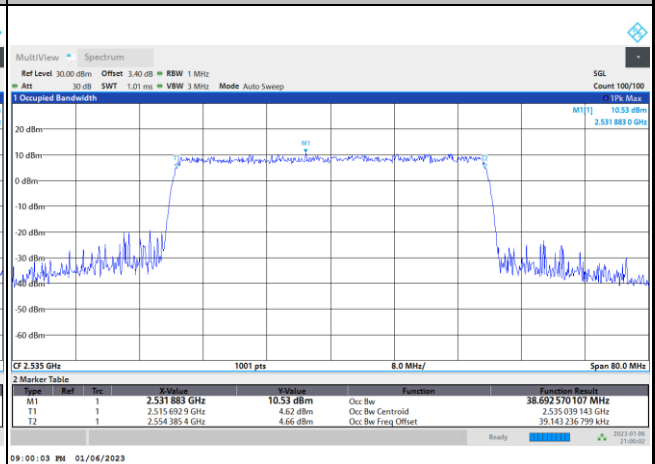
16QAM



64QAM



256QAM



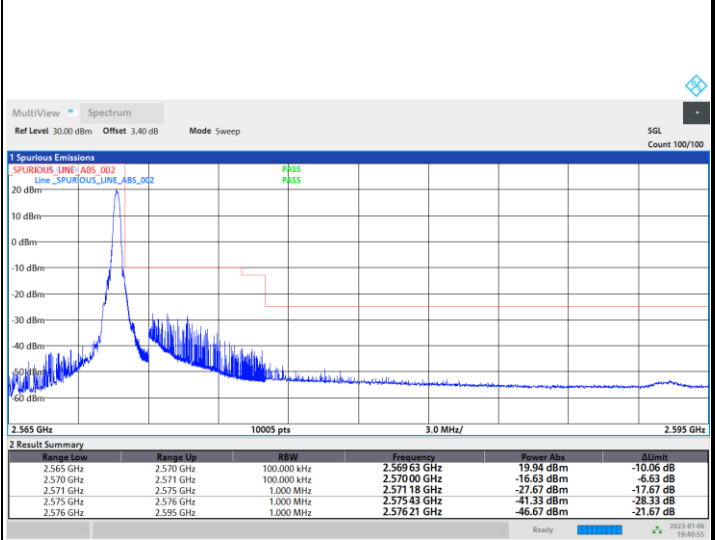
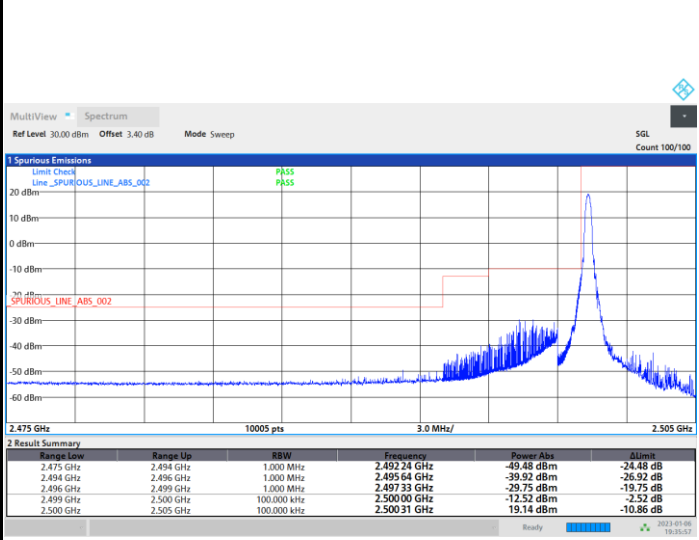


Conducted Band Edge

FR1 n7 / 5MHz / DFT-S OFDM / PI/2 BPSK

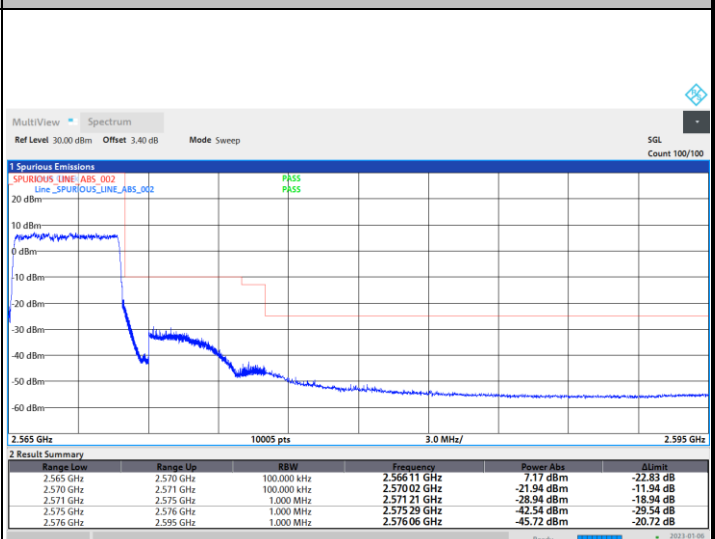
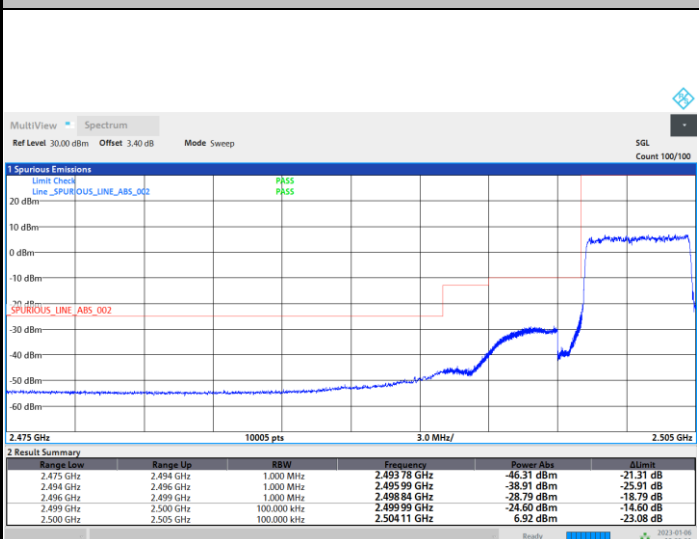
Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax



Lowest Band Edge / Full RB

Highest Band Edge / Full RB

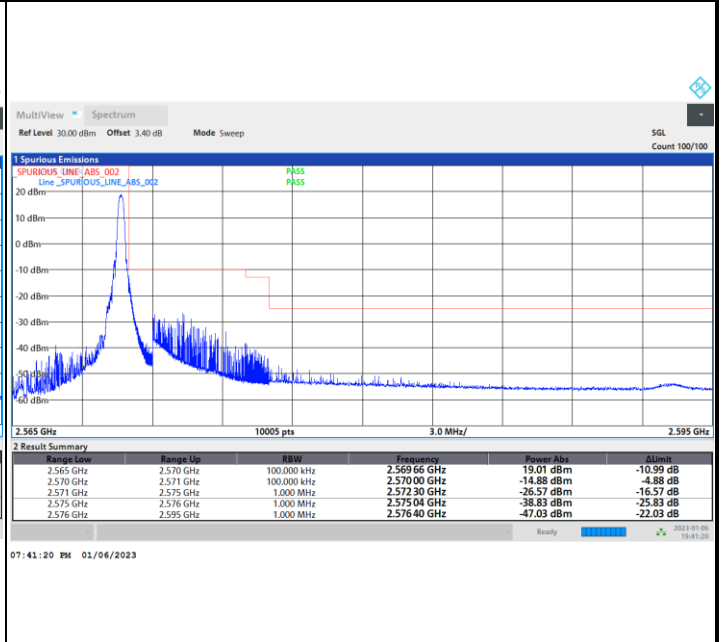
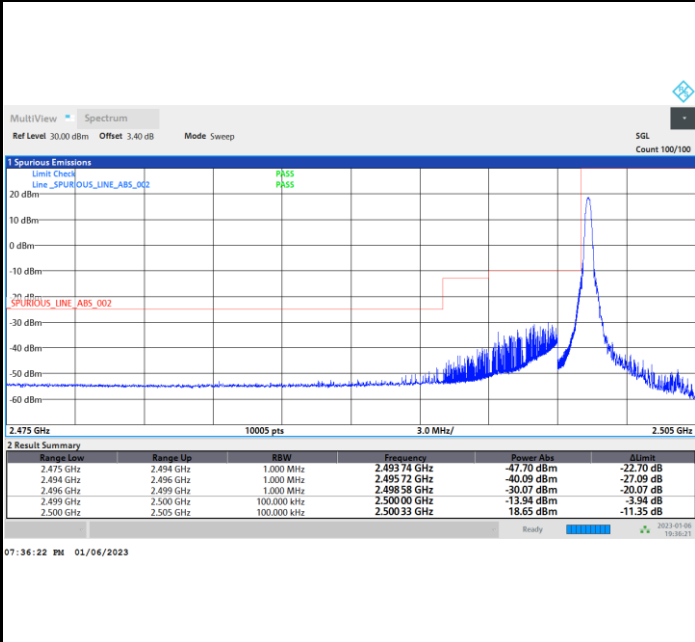




FR1 n7 / 5MHz / DFT-S OFDM / QPSK

Lowest Band Edge / 1RB0

Highest Band Edge / 1RBmax



Lowest Band Edge / Full RB

Highest Band Edge / Full RB

