The following test report with report number FG5N0815-01N is an addendum to the RF spot check test report for FCC ID: A4RGM45K variant model GM45K.
It contains test data from FCC ID: A4RG7SWN reference model G7SWN that is referenced in the variant model GM45K RF spot check report.

FCC RADIO TEST REPORT

FCC ID	:	**A4RG7SWN**
Equipment	:	**Phone**
Model Name	:	**G7SWN**
Applicant	:	**Google LLC** **1600 Amphitheatre Parkway,** **Mountain View, CA, 94043 USA**
Standard	:	**FCC 47 CFR Part 2, Part 90(R), Part 90(S)**

The product was received on Nov. 14, 2025 and testing was performed from Nov. 14, 2025 to May 27, 2026. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures 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. Wensan Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory
No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)

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Appendix A Conducted Test Result Page No. Information								
NR Band	Appendix	PAR	26dB BW	OBW	CBE	MASK	CSE	FS
n14	An14	An14-1	An14-4	An14-7	An14-10	An14-13	An14-20	An14-21
n26_90S	An26L	An26L-1	An26L-4	An26L-7	N/A	An26L-10	An26L-13	An26L-14
n26_90S Straddle	An26S	An26S-1	An26S-5	An26S-10	N/A	N/A	An26S-15	An26S-16

History of this test report

Report No.	Version	Description	Issue Date
FG5N0815-01N	01	Initial issue of report	Apr. 22, 2026
FG5N0815-01N	02	Remove Part 22H frequency list	May 14, 2026
FG5N0815-01N	03	Add PAR Full Bandwidth test data	May 29, 2026

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Pass	-
	§22.913 (a)(5) §90.635	Effective Radiated Power (n26)	Pass	
	§90.542 (a)(7)	Effective Radiated Power (n14)		
3.3	N/A	Peak-to-Average Ratio	Reporting only	-
3.4	§2.1049	Occupied Bandwidth	Pass	-
3.5	§2.1051 §22.917 (a)	Conducted Band Edge Measurement (n26)	Pass	-
	§2.1051 §90.543 (e)(2)	Conducted Band Edge Measuremen (n14)		
3.6	§2.1051 §90.210 (n)	Emission Mask (n14)	Pass	-
	§2.1051 §90.691	Emission masks (n26)		
3.7	§2.1051 §22.917 (a)§90.691	Conducted Spurious Emission (n26)	Pass	-
	§2.1051 §90.543 (e)(3)	Conducted Spurious Emission (n14)		
3.8	§2.1055 §22.355 §90.539 (e) §90.213	Frequency Stability Temperature & Voltage	Pass	-
4.2	§2.1053 §22.917 (a)§90.691	Radiated Spurious Emission (n26)	Pass	-
	§2.1053 §90.543 (e)(3) §90.543 (f)	Radiated Spurious Emission (n14)		

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/manufacturer 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: William Chen

Report Producer: Julia Chang

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature
General Specs GSM/WCDMA/LTE/5G NR/NTN , Bluetooth, BLE, BLE channel sounding, Wi-Fi 802.11ax, NFC, WPC Rx and GNSS Rx. **Antenna Type** WWAN: **<Ant. 0>:** ILA Antenna **<Ant. 1>:** ILA Antenna **<Ant. 2>:** IFA Antenna **<Ant. 5>:** IFA Antenna

EUT Information List	
S/N	Performed Test Item
5B041FDDW0000W	Conducted Measurement EIRP/ERP
5B111FDDQ0000B	Radiated Spurious Emission

Support band and evaluated information	
Supported band	n14, n26
Evaluated and Tested band	n14, n26

Antenna information						
Band	**Ant0**	**Ant1**	**Ant2**	**Ant5**	**Main Ant. #**	**Sub Ant. #**
n14	-4	-6.3			0	1
n26	-4.7	-6.3			0	1

Remark:

1. The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.
2. For Test Items, Main Ant. means Tx0 and Sub Ant. means Tx1.
3. After preliminary scan, the main antenna Ant 0 for Low band is selected as the worst mode to be reported for conducted test.

1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

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.	
	TH05-HY	03CH20-HY
Test Engineer	Kelvin Lu / Mike Yeh / Ching Chen / Luffy Lin / Hank Chen / George Chen	John Chuang、David Dai、Sam Chou
Temperature (℃)	20.2~22.2	18.3~22.8
Relative Humidity (%)	50.1~55.3	63.7~71.1

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

FCC Designation No.: 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, Part 90(R), Part 90(S)
- 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. 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 accessory (Adapter or Earphone), and adjusting the measurement antenna orientation, following C63.26 exploratory test procedures and find the worst plane as following table.

Plane	Main Antenna	Sub Antenna
n14	X with Adaptor	X with Adaptor
n26	Z with Adaptor	Z with Adaptor

Modulation Type	Modulation	Modulation Type	Modulation
A	DFT-s-OFDM PI/2 BPSK	N/A	N/A
B	DFT-s-OFDM QPSK	F	CP-OFDM QPSK
C	DFT-s-OFDM 16QAM	G	CP-OFDM 16QAM
D	DFT-s-OFDM 64QAM	H	CP-OFDM 64QAM
E	DFT-s-OFDM 256QAM	I	CP-OFDM 256QAM

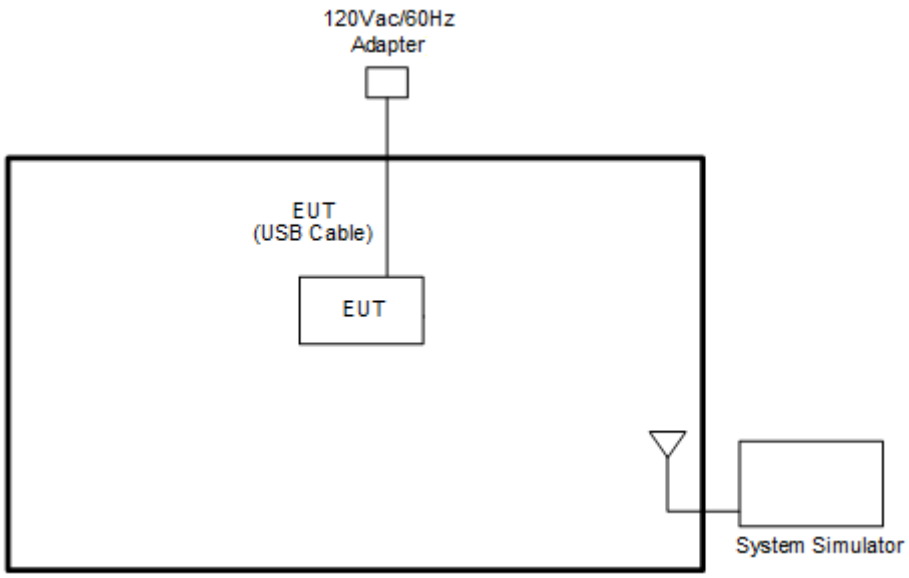
Test Item	Modulation Type	Bandwidth	RB Size	Channel
Conducted Power EIRP	A, B, C, D, E (SISO) A, B, C (TxD) F, G, H, I (MIMO)	All	1, Half, Full	L, M, H
PAR	A, B, C, D, E, F, G, H, I (SISO) F, G, H, I (MIMO)	All	Outer_Full	M
Bandwidth	A, F, G, H, I (SISO) F, G, H, I (MIMO)	All	Outer_Full	M
CBE	A, B, C, D, E (SISO) F, G, H, I (MIMO)	Minimum BW	Outer_1RB	L, H
		All	Outer_Full	
	F (SISO) A, B, C (TxD)	All	Outer_Full	
	A, B, C (TxD)	All	Inner_Full	
CSE	B (SISO, TxD) F (MIMO)	Minimum BW	Inner_1RB	L, M, H
Frequency Stability	A (SISO) F (MIMO)	20 MHz or less	Outer_Full	M
RSE	A or B (SISO, TxD)	20 MHz or less	Inner_1RB	L, M, H

Remark:

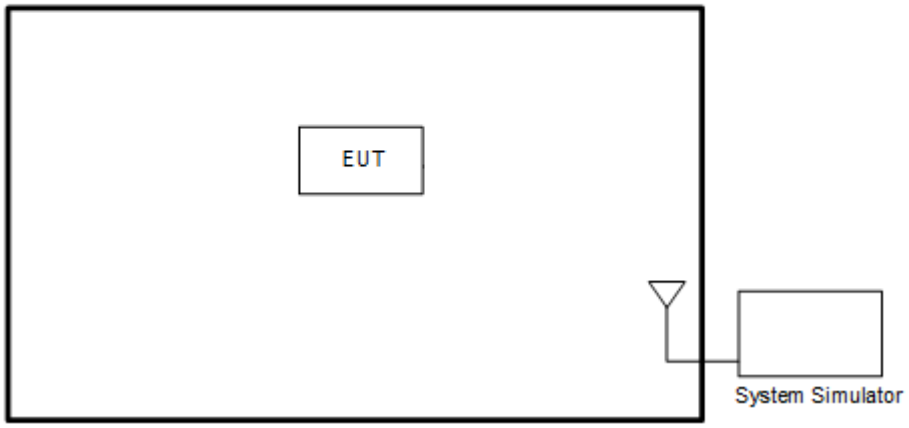
1. Evaluated all the transmitter signal and reporting worst-case configuration among all modulation types.
2. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst-case emissions are reported.
3. During the RSE preliminary test, the standalone mode and charging modes (Adapter mode and WPC Rx mode) were verified. It is determined that standalone and adapter mode is the worst case for the official test.

2.2 Connection Diagram of Test System

<EUT with Adapter>



<EUT without Accessory>



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	MT8000A	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
3.	AC Adapter	N/A	GW8L7	N/A	N/A	N/A

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 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G NR n14 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	158600	-
	Frequency	-	793	-
5	Channel	158100	158600	159100
	Frequency	790.5	793	795.5

5G NR n26 Channel and Frequency List (Part90S)				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	163800	-
	Frequency	-	819	-
5	Channel	163300	163800	164300
	Frequency	816.5	819	821.5

5G NR n26 Straddle Channel and Frequency List (Part 90S)				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	-	164800	-
	Frequency	-	824	-
15	Channel	-	164800	-
	Frequency	-	824	-
10	Channel	-	164800	-
	Frequency	-	824	-
5	Channel	-	164800	-
	Frequency	-	824	-

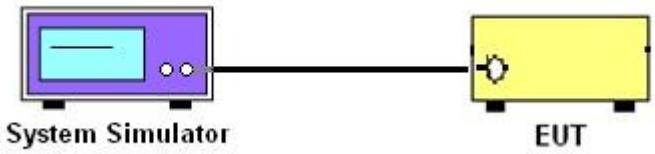
3 Conducted Test Items

3.1 Measuring Instruments

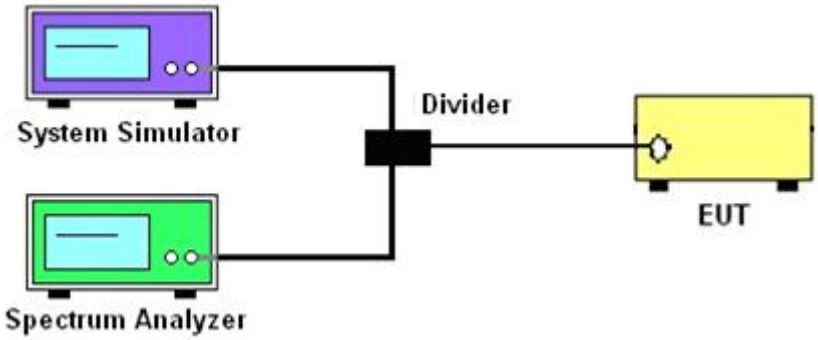
See list of measuring instruments of this test report.

3.1.1 Test Setup

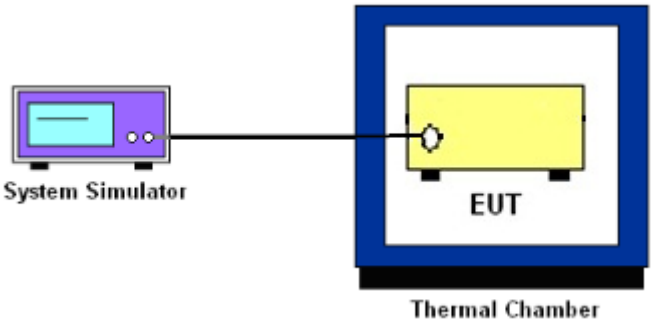
3.1.2 Conducted Output Power



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



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to section 3.2 and Appendix A.

3.2 Conducted Output Power and ERP

3.2.1 Description of the Conducted Output Power Measurement and ERP 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 ERP of mobile transmitters must not exceed 7 Watts for 5G NR n26 (Part 22H)

The power of mobile transmitters must not exceed 100 Watts for 5G NR n26 (Part 90S)

The ERP of mobile transmitters must not exceed 3 Watts for 5G NR n14

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.

3.2.3 Test Result of the Conducted Output Power and ERP/EIRP Measurement

<NR n14 ANT 0>

NR n14 Maximum Average Power [dBm] (GT - LC = -4 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP(W)
5	1	1	PI/2 BPSK	24.31	24.20	24.31	18.21	0.0662
5	1	23		24.29	24.25	24.28		
5	12	6		24.13	24.11	24.17		
5	1	0		23.77	23.70	23.81		
5	1	24		23.76	23.74	23.81		
5	25	0		23.78	23.76	23.82		
5	1	1	QPSK	24.26	24.28	24.36		
5	1	23		24.35	24.28	24.28		
5	12	6		24.30	24.25	24.35		
5	1	0		23.28	23.24	23.40		
5	1	24		23.36	23.33	23.37		
5	25	0		23.32	23.30	23.36		
5	1	1	16-QAM	23.37	23.34	23.39	17.24	0.0530
5	1	1	64-QAM	21.85	21.80	21.92		
5	1	1	256-QAM	19.65	19.64	19.74		
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP(W)
10	1	1	PI/2 BPSK	-	24.27	-	18.16	0.0655
10	1	50		-	24.31	-		
10	25	12		-	24.23	-		
10	1	0		-	23.89	-		
10	1	51		-	23.77	-		
10	50	0		-	23.75	-		
10	1	1	QPSK	-	24.27	-		
10	1	50		-	24.27	-		
10	25	12		-	24.23	-		
10	1	0		-	23.36	-		
10	1	51		-	23.32	-		
10	50	0		-	23.32	-		
10	1	1	16-QAM	-	23.29	-	17.14	0.0518
10	1	1	64-QAM	-	21.77	-		
10	1	1	256-QAM	-	19.64	-		
Limit	ERP < 3W			Result			Pass	

<NR n14 ANT 1>

NR n14 Maximum Average Power [dBm] (GT - LC = -6.3 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP(W)
5	1	1	PI/2 BPSK	24.08	24.20	24.19	15.84	0.0384
5	1	23		24.15	24.17	24.29		
5	12	6		23.96	23.92	23.92		
5	1	0		23.56	23.55	23.57		
5	1	24		23.67	23.70	23.63		
5	25	0		23.56	23.58	23.61		
5	1	1	QPSK	23.94	24.03	24.08		
5	1	23		24.03	24.06	24.15		
5	12	6		24.06	24.06	24.08		
5	1	0		22.93	23.10	23.06		
5	1	24		23.03	23.06	23.14		
5	25	0		23.05	23.08	23.13		
5	1	1	16-QAM	23.08	23.21	23.16	14.76	0.0299
5	1	1	64-QAM	21.61	21.67	21.67		
5	1	1	256-QAM	19.45	19.56	19.56		
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP(W)
10	1	1	PI/2 BPSK	-	24.10	-	15.81	0.0381
10	1	50		-	24.26	-		
10	25	12		-	24.04	-		
10	1	0		-	23.62	-		
10	1	51		-	23.77	-		
10	50	0		-	23.52	-		
10	1	1	QPSK	-	23.98	-		
10	1	50		-	24.16	-		
10	25	12		-	24.08	-		
10	1	0		-	23.01	-		
10	1	51		-	23.16	-		
10	50	0		-	23.06	-		
10	1	1	16-QAM	-	23.08	-	14.63	0.0290
10	1	1	64-QAM	-	21.60	-		
10	1	1	256-QAM	-	19.43	-		
Limit	ERP < 3W			Result			Pass	

<NR n26 ANT 0>

Part90s NR n26 Maximum Average Power [dBm] (GT - LC = -4.7 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP
5	1	1	PI/2 BPSK	24.20	24.16	24.13	17.47	0.0558
5	1	23		24.18	24.17	24.10		
5	12	6		24.10	24.05	24.02		
5	1	0		23.69	23.68	23.68		
5	1	24		23.71	23.67	23.64		
5	25	0		23.76	23.71	23.66		
5	1	1	QPSK	24.19	24.20	24.20		
5	1	23		24.32	24.18	24.16		
5	12	6		24.26	24.19	24.17		
5	1	0		23.20	23.24	23.19		
5	1	24		23.25	23.19	23.14		
5	25	0		23.33	23.24	23.17		
5	1	1	16-QAM	23.28	23.38	23.16	16.53	0.0450
5	1	1	64-QAM	21.72	21.76	21.71		
5	1	1	256-QAM	19.71	19.58	19.57		
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP
10	1	1	PI/2 BPSK	-	24.20	-	17.35	0.0543
10	1	50		-	24.12	-		
10	25	12		-	24.17	-		
10	1	0		-	23.70	-		
10	1	51		-	23.63	-		
10	50	0		-	23.73	-		
10	1	1	QPSK	-	24.16	-		
10	1	50		-	24.17	-		
10	25	12		-	24.15	-		
10	1	0		-	23.20	-		
10	1	51		-	23.16	-		
10	50	0		-	23.21	-		
10	1	1	16-QAM	-	23.29	-	16.44	0.0441
10	1	1	64-QAM	-	21.83	-		
10	1	1	256-QAM	-	19.67	-		
Limit	Power < 100W			Result			Pass	

NR n26 Straddle Channel Maximum Average Power [dBm] (GT - LC = -4.7 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP
5	1	1	PI/2 BPSK	-	24.11	-	17.34	0.0542
5	1	23		-	24.17	-		
5	12	6		-	24.00	-		
5	1	0		-	23.59	-		
5	1	24		-	23.70	-		
5	25	0		-	23.63	-		
5	1	1	QPSK	-	24.14	-		
5	1	23		-	24.19	-		
5	12	6		-	24.15	-		
5	1	0		-	23.11	-		
5	1	24		-	23.23	-		
5	25	0		-	23.17	-		
5	1	1	16-QAM	-	23.07	-	16.22	0.0419
5	1	1	64-QAM	-	21.53	-		
5	1	1	256-QAM	-	19.52	-		
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP
10	1	1	PI/2 BPSK	-	24.12	-	17.37	0.0546
10	1	50		-	24.20	-		
10	25	12		-	24.13	-		
10	1	0		-	23.65	-		
10	1	51		-	23.71	-		
10	50	0		-	23.64	-		
10	1	1	QPSK	-	24.12	-		
10	1	50		-	24.22	-		
10	25	12		-	24.13	-		
10	1	0		-	23.13	-		
10	1	51		-	23.22	-		
10	50	0		-	23.14	-		
10	1	1	16-QAM	-	23.14	-	16.29	0.0426
10	1	1	64-QAM	-	21.66	-		
10	1	1	256-QAM	-	19.54	-		
Limit	EIRP < 7W			Result			Pass	

NR n26 Straddle Channel Maximum Average Power [dBm] (GT - LC = -4.7 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP
15	1	1	PI/2 BPSK	-	24.16	-	17.39	0.0548
15	1	77		-	24.22	-		
15	36	18		-	24.06	-		
15	1	0		-	23.65	-		
15	1	78		-	23.70	-		
15	75	0		-	23.64	-		
15	1	1	QPSK	-	24.18	-		
15	1	77		-	24.24	-		
15	36	18		-	24.16	-		
15	1	0		-	23.24	-		
15	1	78		-	23.23	-		
15	75	0		-	23.15	-		
15	1	1	16-QAM	-	23.28	-	16.43	0.0440
15	1	1	64-QAM	-	21.75	-		
15	1	1	256-QAM	-	19.52	-		
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP
20	1	1	PI/2 BPSK	-	24.37	-	17.77	0.0598
20	1	104		-	24.62	-		
20	50	25		-	24.54	-		
20	1	0		-	23.87	-		
20	1	105		-	24.11	-		
20	100	0		-	24.03	-		
20	1	1	QPSK	-	24.37	-		
20	1	104		-	24.61	-		
20	50	25		-	24.50	-		
20	1	0		-	23.37	-		
20	1	105		-	23.62	-		
20	100	0		-	23.54	-		
20	1	1	16-QAM	-	23.46	-	16.61	0.0458
20	1	1	64-QAM	-	22.09	-		
20	1	1	256-QAM	-	19.78	-		
Limit	EIRP < 7W			Result			Pass	

<NR n26 ANT 1>

Part90s NR n26 Maximum Average Power [dBm] (GT - LC = -6.3 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP
5	1	1	PI/2 BPSK	24.08	24.09	24.07	15.72	0.0373
5	1	23		24.11	24.08	24.10		
5	12	6		24.00	23.98	23.94		
5	1	0		23.59	23.55	23.57		
5	1	24		23.60	23.59	23.62		
5	25	0		23.66	23.63	23.62		
5	1	1	QPSK	24.06	24.13	24.12		
5	1	23		24.15	24.07	24.17		
5	12	6		24.10	24.13	24.08		
5	1	0		23.13	23.09	23.09		
5	1	24		23.15	23.10	23.14		
5	25	0		23.19	23.18	23.16		
5	1	1	16-QAM	23.20	23.21	23.18	14.76	0.0299
5	1	1	64-QAM	21.62	21.62	21.66		
5	1	1	256-QAM	19.41	19.43	19.46		
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP
10	1	1	PI/2 BPSK	-	24.07	-	15.7	0.0372
10	1	50		-	24.11	-		
10	25	12		-	24.05	-		
10	1	0		-	23.54	-		
10	1	51		-	23.63	-		
10	50	0		-	23.60	-		
10	1	1	QPSK	-	24.10	-		
10	1	50		-	24.15	-		
10	25	12		-	24.12	-		
10	1	0		-	23.10	-		
10	1	51		-	23.20	-		
10	50	0		-	23.12	-		
10	1	1	16-QAM	-	23.17	-	14.72	0.0296
10	1	1	64-QAM	-	21.65	-		
10	1	1	256-QAM	-	19.44	-		
Limit	Power < 100W			Result			Pass	

NR n26 Straddle Channel Maximum Average Power [dBm] (GT - LC = -6.3 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP
5	1	1	PI/2 BPSK	-	24.03	-	15.7	0.0372
5	1	23		-	24.13	-		
5	12	6		-	24.01	-		
5	1	0		-	23.54	-		
5	1	24		-	23.60	-		
5	25	0		-	23.61	-		
5	1	1	QPSK	-	24.09	-		
5	1	23		-	24.14	-		
5	12	6		-	24.15	-		
5	1	0		-	23.23	-		
5	1	24		-	23.15	-		
5	25	0		-	23.20	-		
5	1	1	16-QAM	-	23.17	-	14.72	0.0296
5	1	1	64-QAM	-	21.63	-		
5	1	1	256-QAM	-	19.53	-		
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP
10	1	1	PI/2 BPSK	-	24.10	-	15.72	0.0373
10	1	50		-	24.17	-		
10	25	12		-	24.09	-		
10	1	0		-	23.61	-		
10	1	51		-	23.66	-		
10	50	0		-	23.65	-		
10	1	1	QPSK	-	24.05	-		
10	1	50		-	24.15	-		
10	25	12		-	24.13	-		
10	1	0		-	23.12	-		
10	1	51		-	23.20	-		
10	50	0		-	23.13	-		
10	1	1	16-QAM	-	23.14	-	14.69	0.0294
10	1	1	64-QAM	-	21.70	-		
10	1	1	256-QAM	-	19.46	-		
Limit	EIRP < 7W			Result			Pass	

NR n26 Straddle Channel Maximum Average Power [dBm] (GT - LC = -6.3 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP
15	1	1	PI/2 BPSK	-	24.08	-	15.81	0.0381
15	1	77		-	24.17	-		
15	36	18		-	24.02	-		
15	1	0		-	23.56	-		
15	1	78		-	23.87	-		
15	75	0		-	23.60	-		
15	1	1	QPSK	-	24.13	-		
15	1	77		-	24.26	-		
15	36	18		-	24.08	-		
15	1	0		-	23.09	-		
15	1	78		-	23.27	-		
15	75	0		-	23.13	-		
15	1	1	16-QAM	-	23.14	-	14.69	0.0294
15	1	1	64-QAM	-	21.68	-		
15	1	1	256-QAM	-	19.40	-		
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	ERP (dBm)	ERP
20	1	1	PI/2 BPSK	-	24.06	-	15.82	0.0382
20	1	104		-	24.27	-		
20	50	25		-	24.16	-		
20	1	0		-	23.59	-		
20	1	105		-	23.81	-		
20	100	0		-	23.67	-		
20	1	1	QPSK	-	24.03	-		
20	1	104		-	24.22	-		
20	50	25		-	24.12	-		
20	1	0		-	23.02	-		
20	1	105		-	23.30	-		
20	100	0		-	23.12	-		
20	1	1	16-QAM	-	23.14	-	14.69	0.0294
20	1	1	64-QAM	-	21.60	-		
20	1	1	256-QAM	-	19.43	-		
Limit	EIRP < 7W			Result			Pass	

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 + 10log10(P[Watts]) dB below the transmitter power P(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.

90.543(e)

(1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

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 >= 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 + 10log(P)dB below the transmitter power P(Watts)
8. For MIMO mode, add additional MIMO factor 10log(NTX=2) = 3.01dB into the spectrum analyzer offset.

3.6 Emission Mask

3.6.1 Description of Emissions Mask Measurement

For 5G NR n14

Transmitters designed must meet the emission mask comply with the emission mask provisions of FCC Part 90.210(n).

For 5G NR n26

Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of FCC Part 90.691

(a) Out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

3.6.2 Test Procedures

For 5G NR n14

The testing follows FCC KDB 971168 D01 v03r01 Section 6.0.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The power of the modulated signal was measured on a spectrum analyzer using an RMS and 10 second sweep time in order to maximize the level.
3. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

For 5G NR n26

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The emissions mask of low and high channels for the highest RF powers were measured.
3. Set RBW and VBW 3 times of RBW to make the measurement with the spectrum analyzer's, and according to KDB 971168 D02 Misc Rev Approve License Devices v02r01 standards, set RBW = 300 Hz to make offsets less than 37.5 kHz from a channel edge , RBW = 100 kHz to make offsets greater than 37.5 kHz, that is allowed.
4. The test results were shown below plots with a correction offset factor including cable loss, insertion loss of power divider.

3.7 Conducted Spurious Emission

3.7.1 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.

3.7.2 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 GH, 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 + 10log(P)dB below the transmitter power P(Watts)

9. For MIMO mode, add additional MIMO factor 10log(NTX=2) = 3.01dB into the spectrum analyzer offset.

3.8 Frequency Stability

3.8.1 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 ±0.00025% (±2.5ppm) of the center frequency.

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

3.8.2 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.

3.8.3 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.

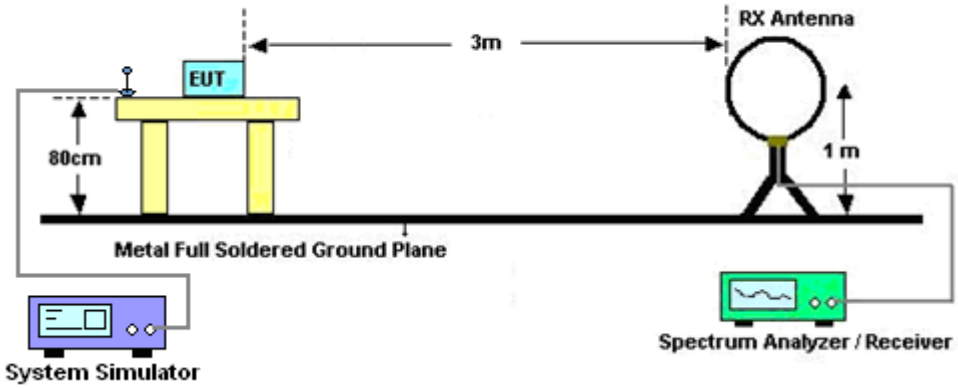
4 Radiated Test Items

4.1 Measuring Instruments

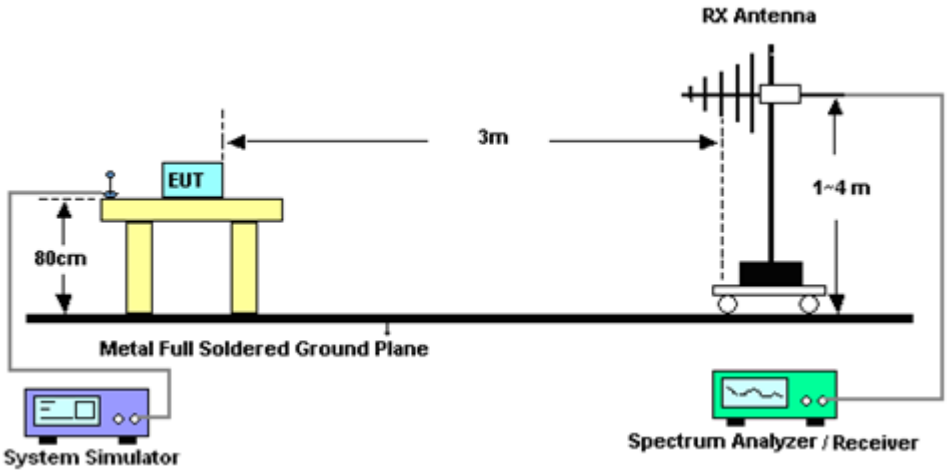
See list of measuring instruments of this test report.

4.1.1 Test Setup

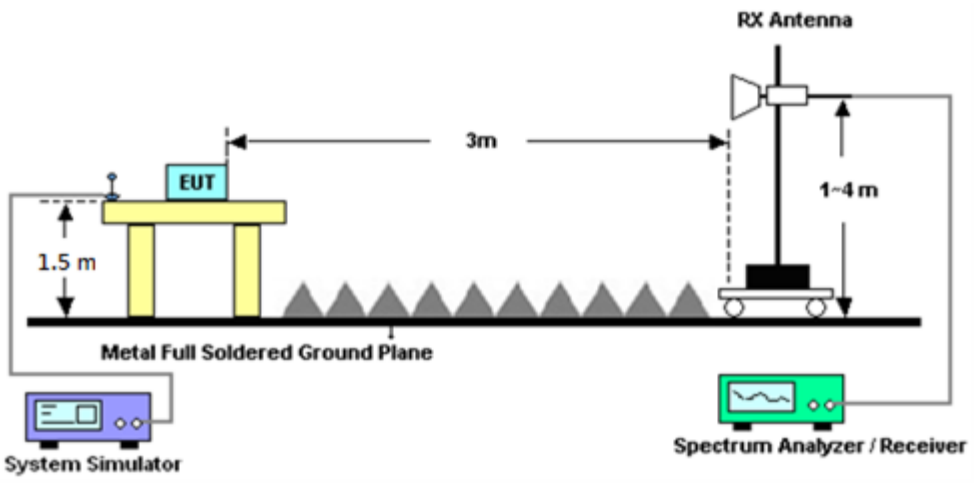
For radiated test below 30MHz



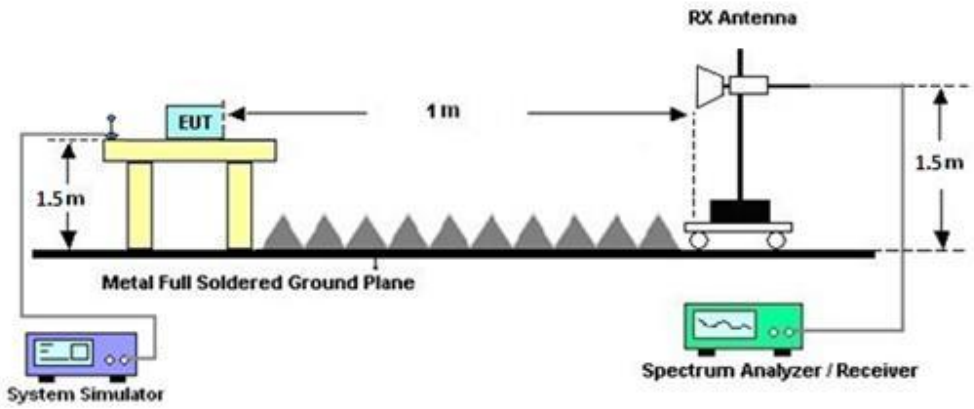
For radiated test from 30MHz to 1GHz



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

For 5G NR n14

For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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)

   EIRP(dBm) = Level (dBuV/m) + 20log(d) -104.77,

   where d is the distance at which filed strength limit is specified in the rules
7. Field Strength Level (dBm) = Spectrum Reading (dBm) + Antenna Factor + Cable Loss + Read Level - Preamp Factor.
8. ERP (dBm) = EIRP (dBm) - 2.15
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Keysight	N9038B	MY62210111	N/A	Aug. 29, 2025	Dec. 05, 2025~ Mar. 24, 2026	Aug. 28, 2026	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2E	101108	9 kHz~30 MHz	Dec. 18, 2024	Dec. 05, 2025~ Dec. 10, 2025	Dec. 17, 2025	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2E	101108	9 kHz~30 MHz	Dec. 11, 2025	Dec. 11, 2025~ Mar. 24, 2026	Dec. 10, 2026	Radiation (03CH20-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	May. 26, 2025	Dec. 05, 2025~ Mar. 24, 2026	May. 25, 2026	Radiation (03CH20-HY)
Preamplifier	EMEC	EM18G40G	060871	18GHz~40GHz	Aug. 25, 2025	Dec. 05, 2025~ Mar. 24, 2026	Aug. 24, 2026	Radiation (03CH20-HY)
Controller	ChainTek	3000-1	N/A	Control Turn table & Ant Mast	N/A	Dec. 05, 2025~ Mar. 24, 2026	N/A	Radiation (03CH20-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Dec. 05, 2025~ Mar. 24, 2026	N/A	Radiation (03CH20-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Dec. 05, 2025~ Mar. 24, 2026	N/A	Radiation (03CH20-HY)
Signal Analyzer	Keysight	N9010B	MY54200485	N/A	Aug. 27, 2025	Dec. 05, 2025~ Dec. 09, 2026	Aug. 26, 2026	Radiation (03CH20-HY)
Signal Analyzer	Keysight	N9010B	MY60240520	N/A	Dec. 10, 2025	Dec. 10, 2025~ Mar. 24, 2026	Dec. 09, 2026	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800N1D01N-06	55606 & 08	30MHz~1GHz	Nov. 26, 2025	Dec. 05, 2025~ Mar. 24, 2026	Nov. 25, 2026	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	02360	1GHz-18GHz	Nov. 05, 2025	Dec. 05, 2025~ Mar. 24, 2026	Nov. 04, 2026	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1223	18GHz-40GHz	Jul. 02, 2025	Dec. 05, 2025~ Mar. 24, 2026	Jul. 01, 2026	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1224	18GHz-40GHz	Jul. 02, 2025	Dec. 05, 2025~ Mar. 24, 2026	Jul. 01, 2026	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Dec. 31, 2024	Dec. 05, 2025~ Dec. 29, 2025	Dec. 30, 2025	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Dec. 30, 2025	Dec. 30, 2025~ Mar. 24, 2026	Dec. 29, 2026	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45SE	980792	N/A	Nov. 11, 2025	Dec. 05, 2025~ Mar. 24, 2026	Nov. 10, 2026	Radiation (03CH20-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1223	18GHz-40GHz	Jul. 02, 2025	Dec. 05, 2025~ Mar. 24, 2026	Jul. 01, 2026	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1224	18GHz-40GHz	Jul. 02, 2025	Dec. 05, 2025~ Mar. 24, 2026	Jul. 01, 2026	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Dec. 31, 2024	Dec. 05, 2025~ Dec. 29, 2025	Dec. 30, 2025	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Dec. 30, 2025	Dec. 30, 2025~ Mar. 24, 2026	Dec. 29, 2026	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45SE	980792	N/A	Nov. 11, 2025	Dec. 05, 2025~ Mar. 24, 2026	Nov. 10, 2026	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,804015/2,804027/2	N/A	Jan. 16, 2025	Dec. 05, 2025~ Jan. 14, 2026	Jan. 15, 2026	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,804015/2,804027/2	N/A	Jan. 15, 2026	Jan. 15, 2025~ Mar. 24, 2026	Jan. 14, 2027	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303A	TP211568	N/A	Oct. 21, 2025	Dec. 05, 2025~ Mar. 24, 2026	Oct. 20, 2026	Radiation (03CH20-HY)
Software	Audix	N/A	RK-002156	N/A	N/A	Dec. 05, 2025~ Mar. 24, 2026	N/A	Radiation (03CH20-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
DC Power Supply	GW Instek	GPE-2323	GEU871221	0V~64V ;0A~6A	Apr. 14, 2025	Nov. 14, 2025 ~ Apr. 10, 2026	Apr. 13, 2026	Conducted (TH05-HY)
DC Power Supply	GW Instek	GPE-2323	GEU871221	0V~64V ;0A~6A	Apr. 17, 2026	May. 25, 2026 ~ May. 27, 2026	Apr. 16, 2027	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV3044	101544	10Hz~44GHz	Aug. 18, 2025	Nov. 14, 2025 ~ May. 27, 2026	Aug. 17, 2026	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SH-641	92003713	-30℃ ~95℃	May. 12, 2025	Nov. 14, 2025 ~ Apr. 10, 2026	May. 11, 2026	Conducted (TH05-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	NA	Nov. 04, 2025	Nov. 14, 2025 ~ May. 27, 2026	Nov. 03, 2026	Conducted (TH05-HY)
Base Station (Measure)	Anritsu	MT8000A	6262012917	FR1	Jul. 04, 2025	Nov. 14, 2025 ~ May. 27, 2026	Jul. 03, 2026	Conducted (TH05-HY)
Power divider	Anritsu	K241C	2143398	9KHz~40GHz	Jun. 13, 2025	Nov. 14, 2025 ~ May. 27, 2026	Jun. 13, 2026	Conducted (TH05-HY)
RF Cable	MVE	MCBL-LL403P.50	E80002C	9KHz~40GHz	Aug. 01, 2025	Nov. 14, 2025 ~ May. 27, 2026	Jul. 31, 2026	Conducted (TH05-HY)
Software 1	Sporton	FCC 5GNR_FSV3044_20231106	N/A	Conducted Test Item	N/A	Nov. 14, 2025 ~ May. 27, 2026	N/A	Conducted (TH05-HY)

6 Measurement Uncertainty

<03CH20-HY>

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	6.50 dB

Uncertainty of Radiated Emission Measurement (1 GHz ~ 6 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.70 dB

Uncertainty of Radiated Emission Measurement (6 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.70 dB

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.20 dB

FR1 n14

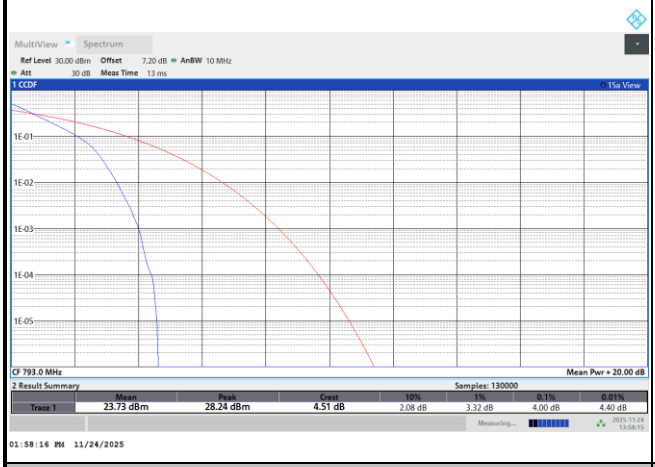
<SISO Mode>

Peak-to-Average Ratio

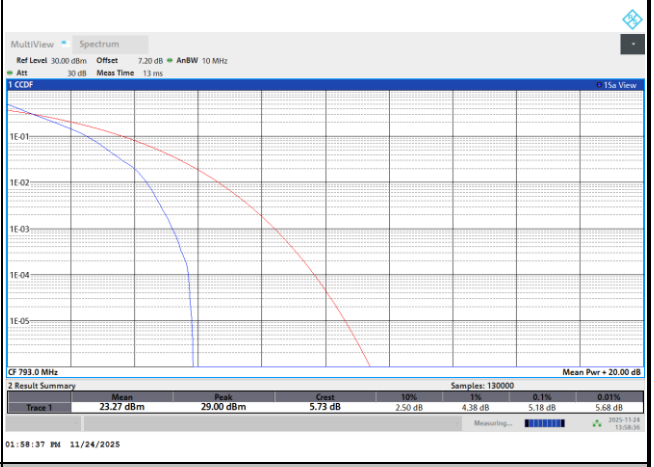
Mode	FR1 n14 / 10MHz / DFT-S OFDM				
Mod.	PI/2 BPSK	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	4.00	5.18	5.90	6.34	PASS
Mod.	256QAM				Limit: 13dB
RB Size	Full RB				Result
Middle CH	6.70				PASS

FR1 n14 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

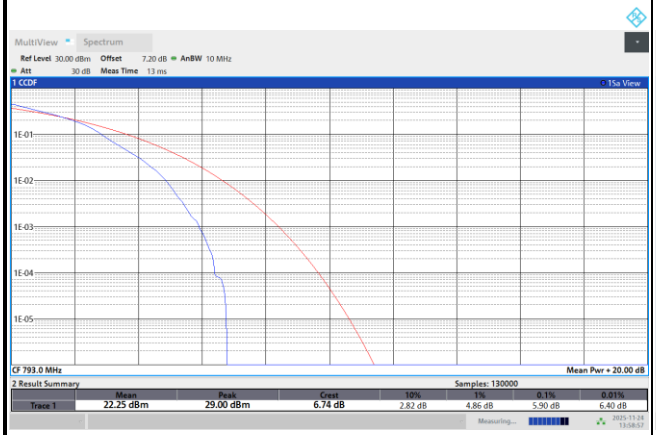
PI/2 BPSK



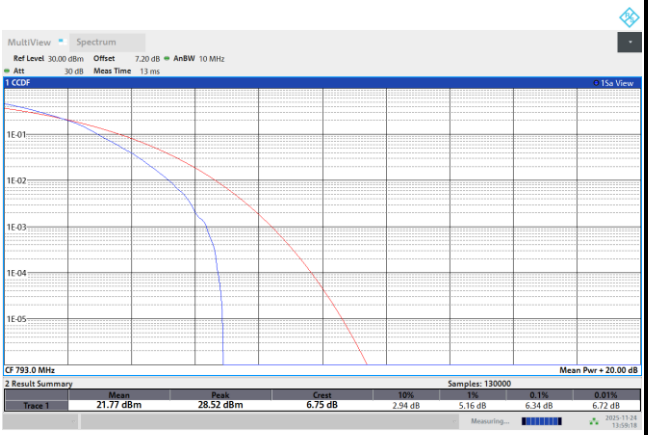
QPSK



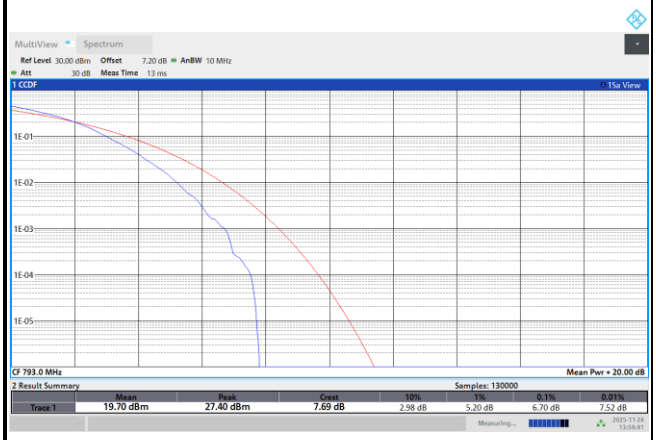
16QAM



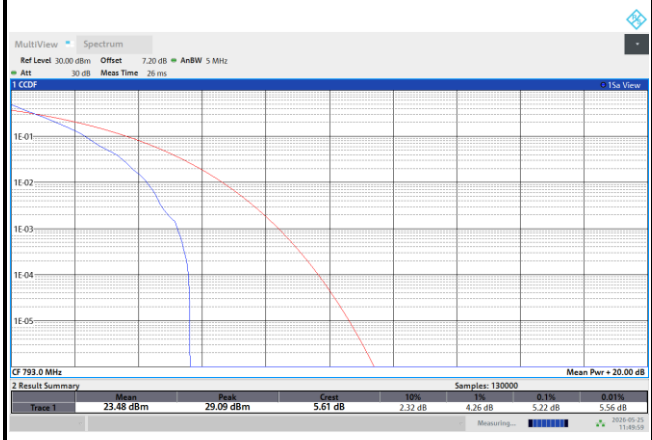
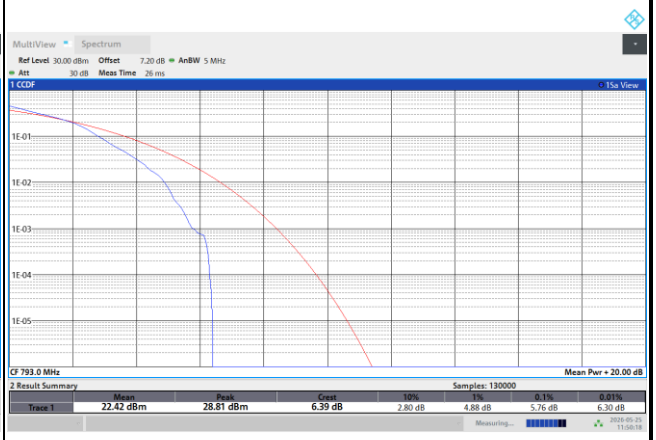
64QAM



256QAM

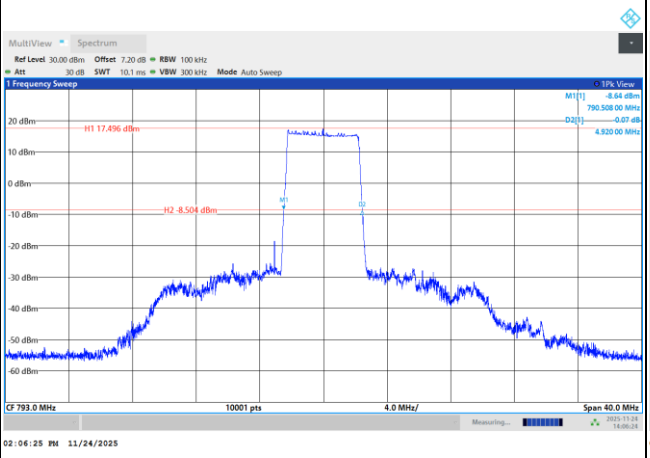
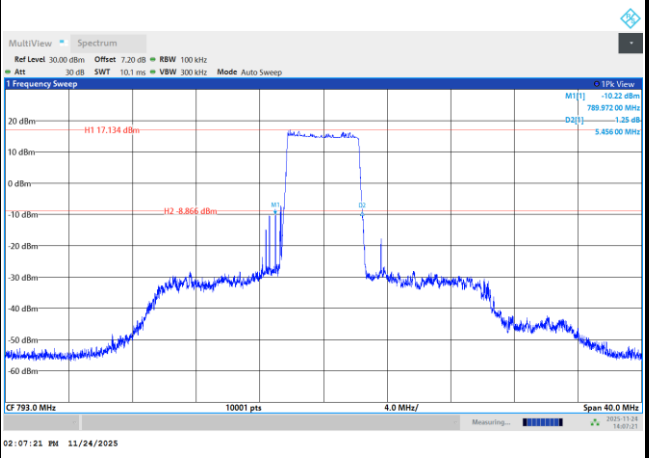
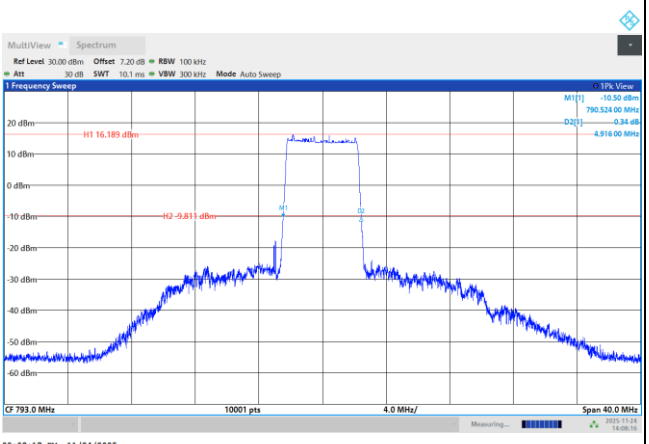


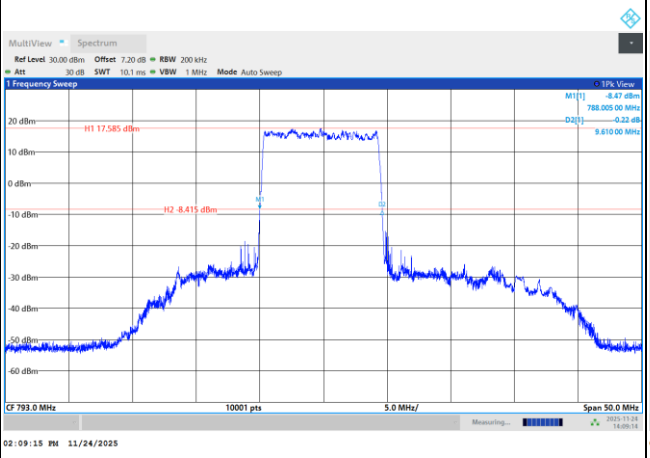
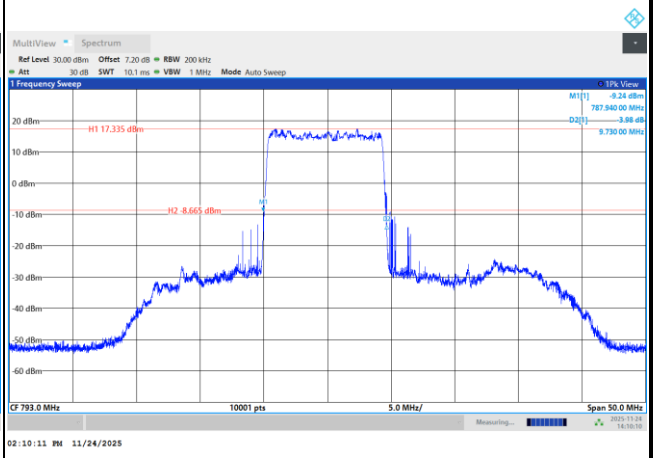
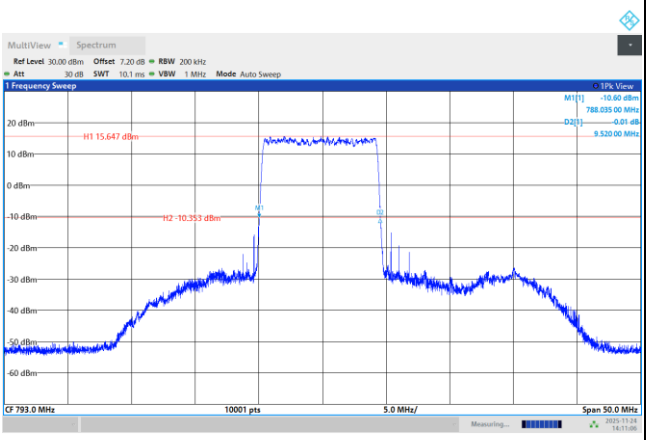
Mode	FR1 n14 / 5MHz / DFT-S OFDM		
Mod.	QPSK	16QAM	Limit: 13dB
RB Size	Full RB	Full RB	Result
Middle CH	5.22	5.76	PASS

FR1 n14 / 5MHz / DFTs OFDM / Middle Channel / Full RB	
QPSK	16QAM
	

26dB Bandwidth

Mode	FR1 n14 : 26dB BW(MHz) / DFT-S OFDM							
BW	5MHz		10MHz					
Mod.	PI/2 BPSK	QPSK	PI/2 BPSK	QPSK				
Middle CH	4.92	5.45	9.61	9.73				
Mod.	16QAM		16QAM					
Middle CH	4.91		9.52					

FR1 n14 / 5MHz / DFT-S OFDM / Middle Channel / Full RB	
PI/2 BPSK	QPSK
	
16QAM	
	

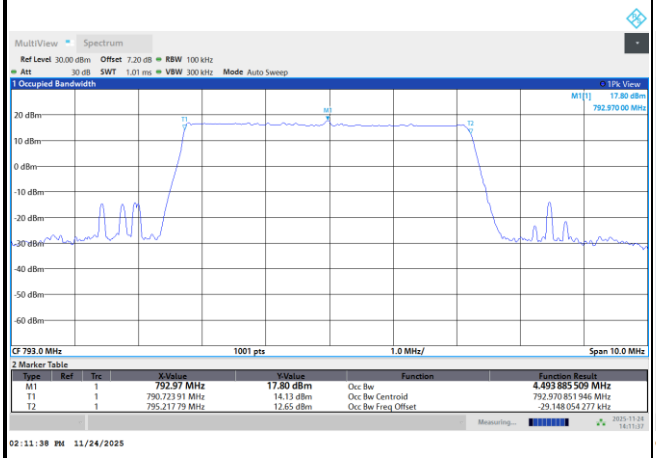
FR1 n14 / 10MHz / DFT-S OFDM / Middle Channel / Full RB	
PI/2 BPSK	**QPSK**
	
16QAM	
	

Occupied Bandwidth

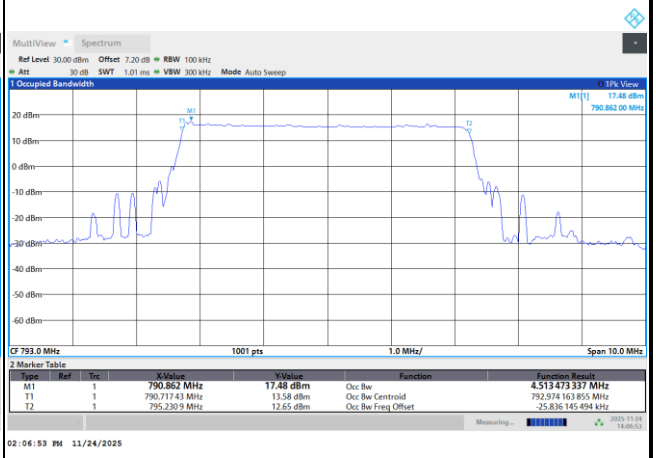
Mode	FR1 n14 : 99%OBW(MHz) / DFT-S OFDM							
BW	5MHz		10MHz					
Mod.	PI/2 BPSK	QPSK	PI/2 BPSK	QPSK				
Middle CH	4.49	4.51	9.02	8.96				
Mod.	16QAM		16QAM					
Middle CH	4.49		8.95					

FR1 n14 / 5MHz / DFT-S OFDM / Middle Channel / Full RB

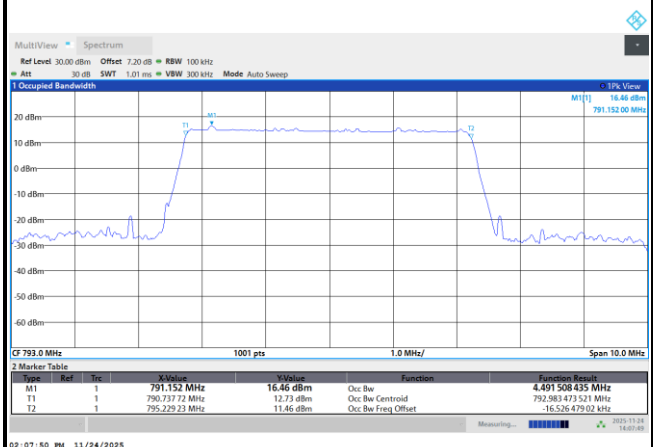
PI/2 BPSK



QPSK

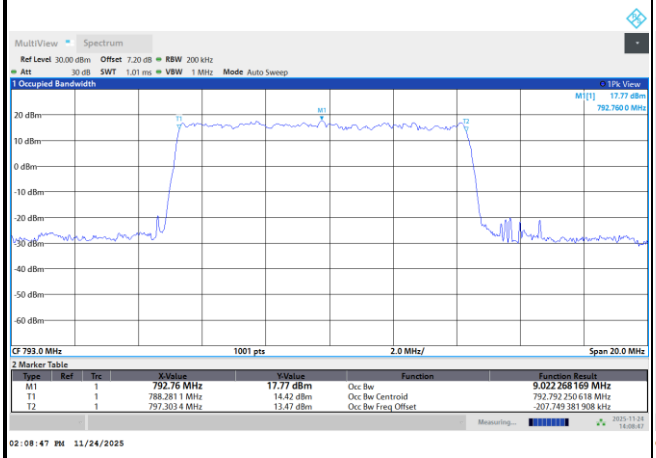


16QAM

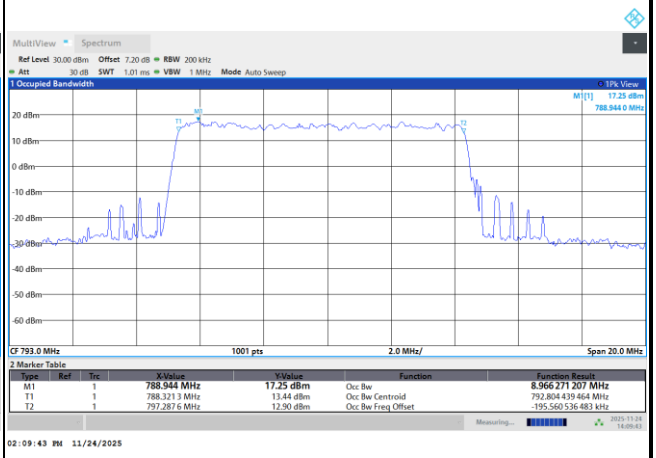


FR1 n14 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

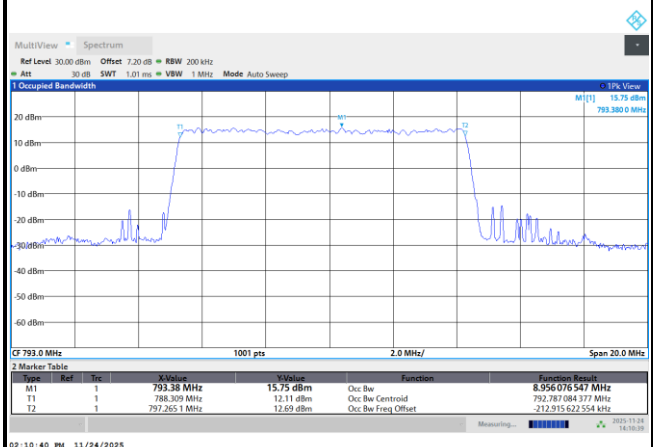
PI/2 BPSK



QPSK



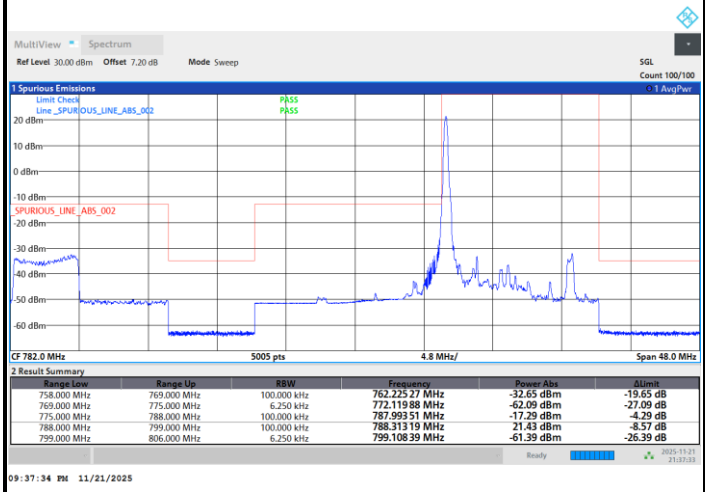
16QAM



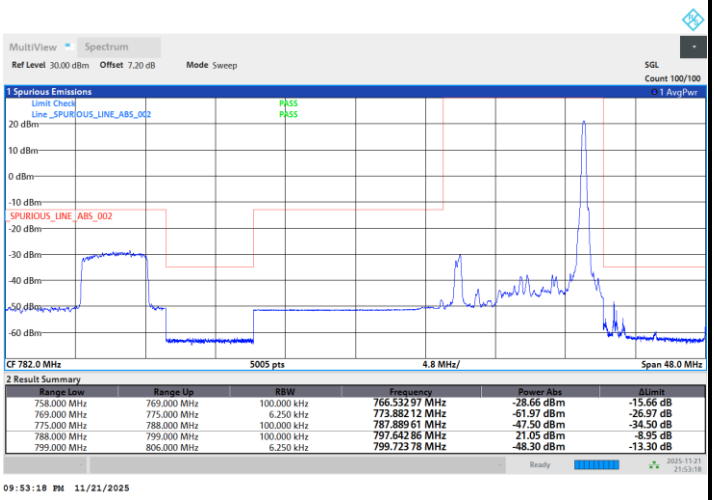
Conducted Band Edge

FR1 n14 / 5MHz / DFT-S OFDM / PI/2 BPSK

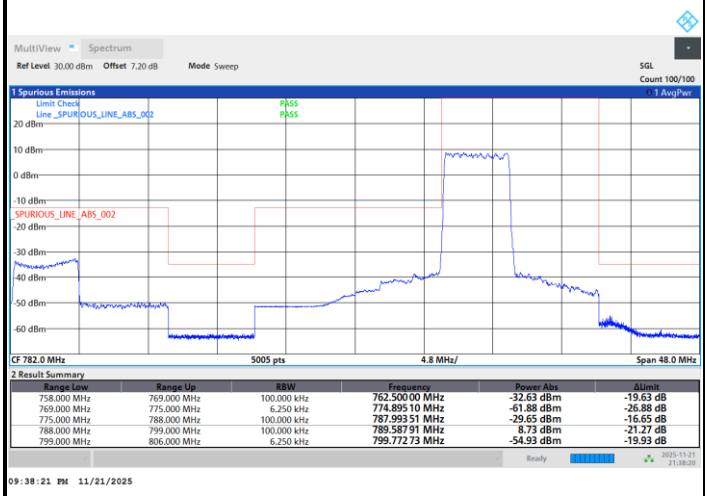
Lowest Band Edge / 1RB0



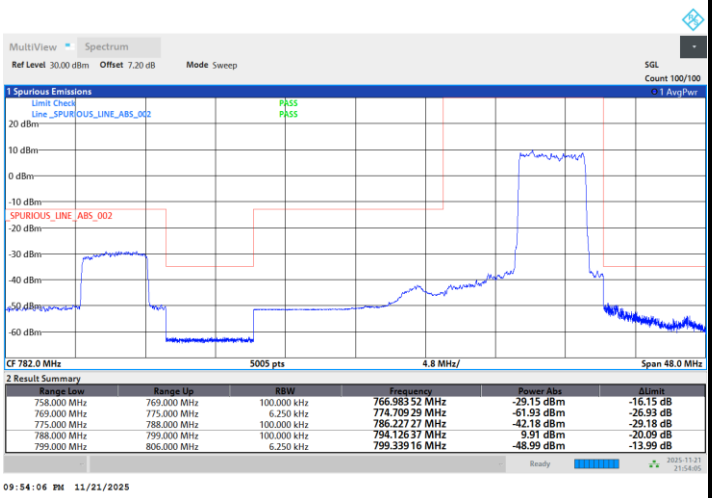
Highest Band Edge / 1RBmax



Lowest Band Edge / Full RB

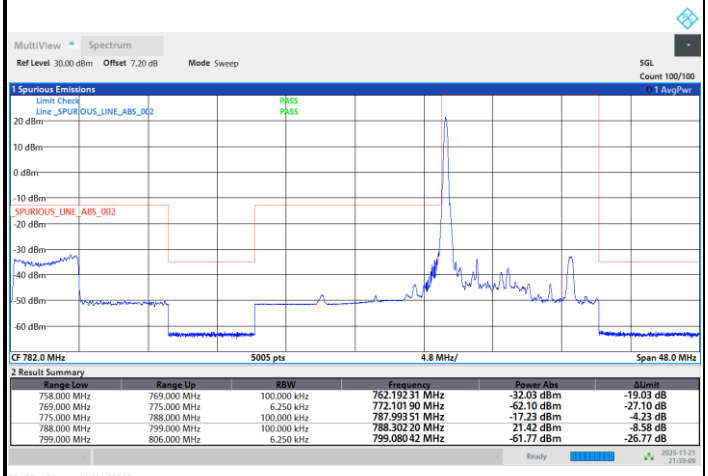


Highest Band Edge / Full RB

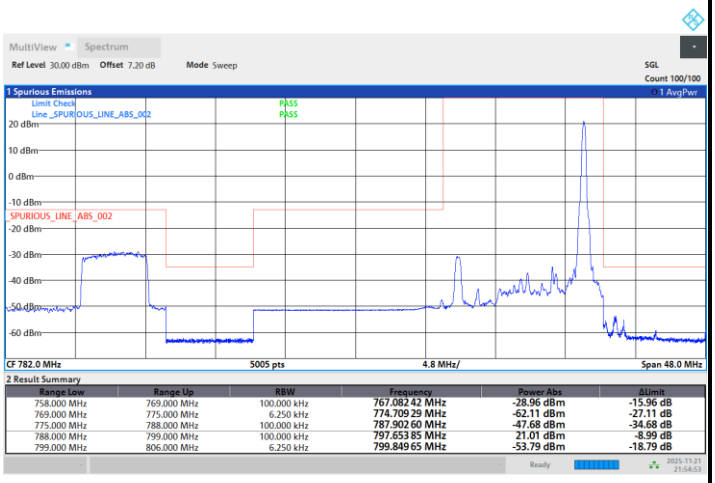


FR1 n14 / 5MHz / DFT-S OFDM / QPSK

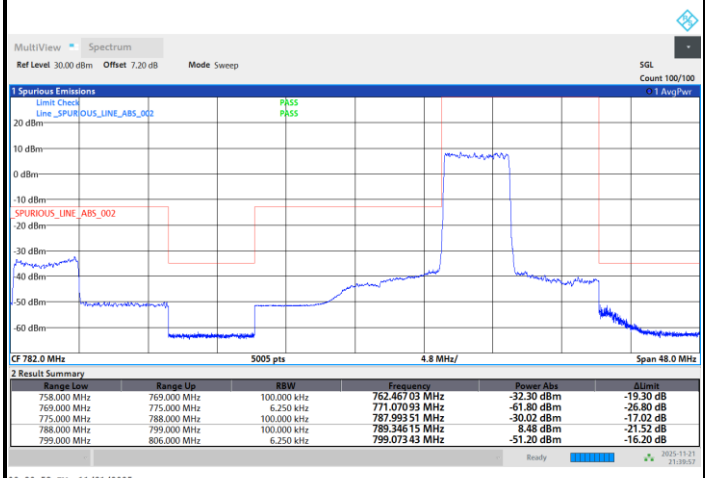
Lowest Band Edge / 1RB0



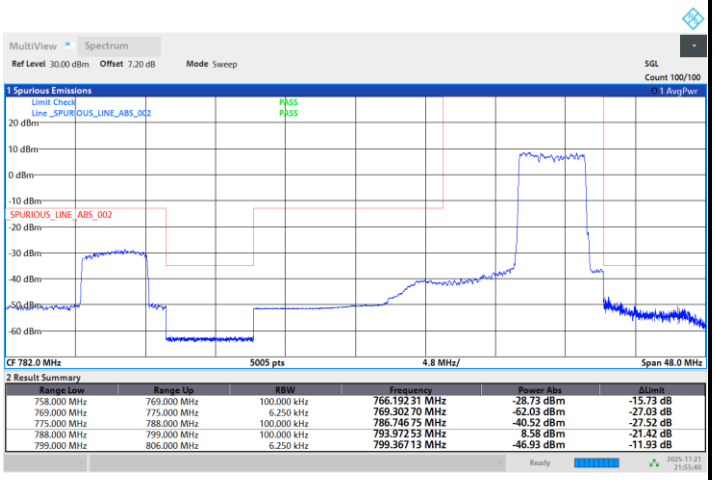
Highest Band Edge / 1RBmax



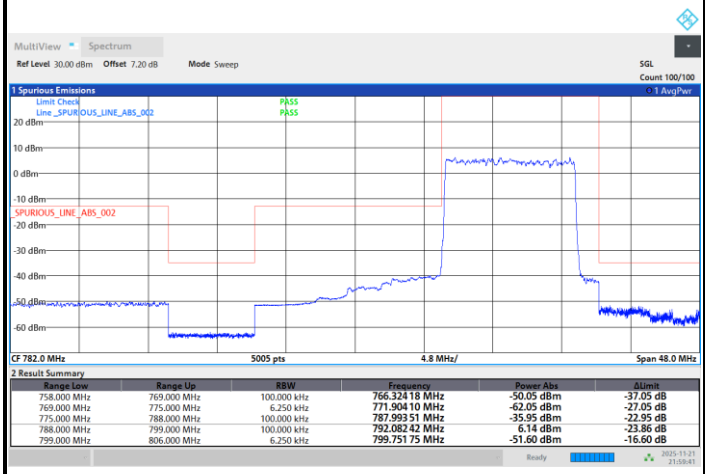
Lowest Band Edge / Full RB



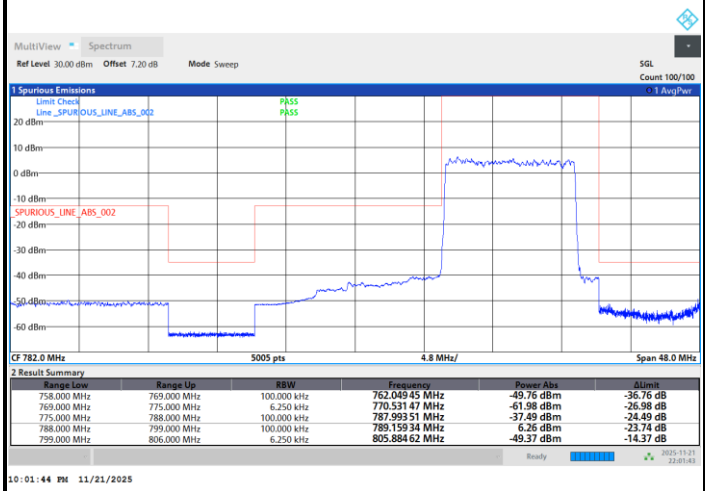
Highest Band Edge / Full RB



FR1 n14 / 10MHz / DFT-s-OFDM / PI/2 BPSK	
Middle Band Edge / Full RB	



FR1 n14 / 10MHz / DFT-s-OFDM / QPSK	
Middle Band Edge / Full RB	

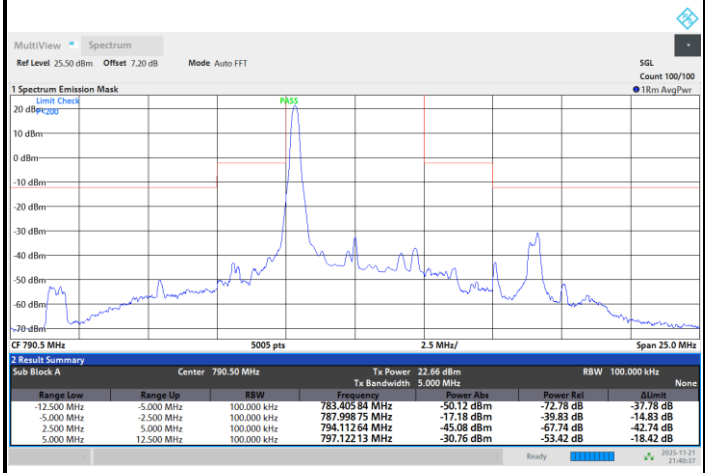


Unwanted Emission (MASK)

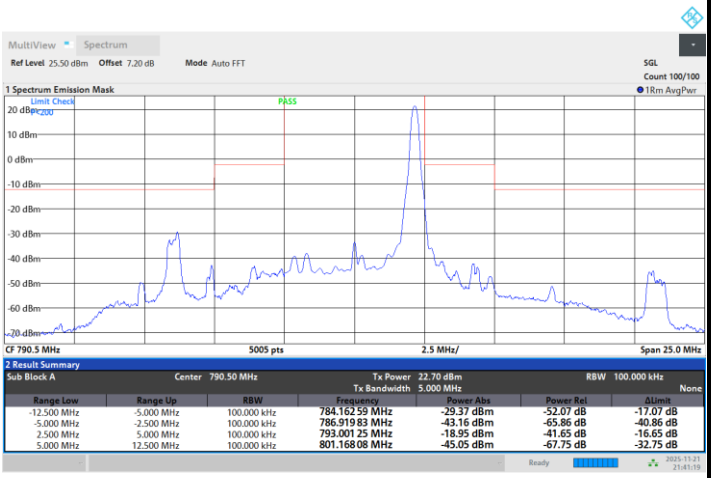
FR1 n14 / 5MHz / DFT-S OFDM / PI/2 BPSK

Lowest Channel

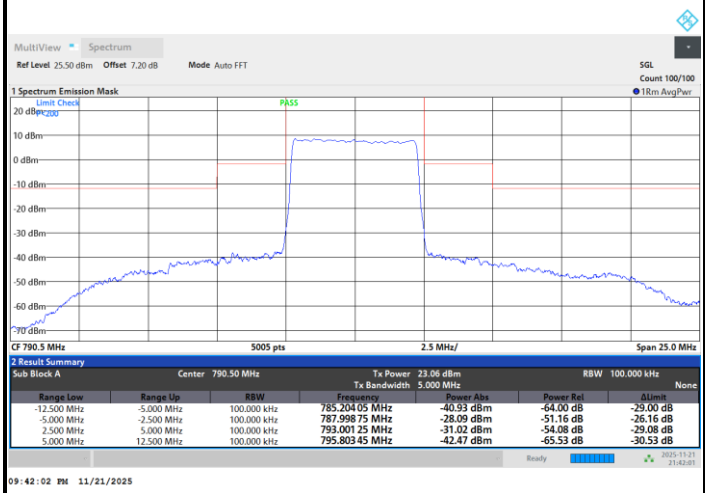
1RB0



1RBmax



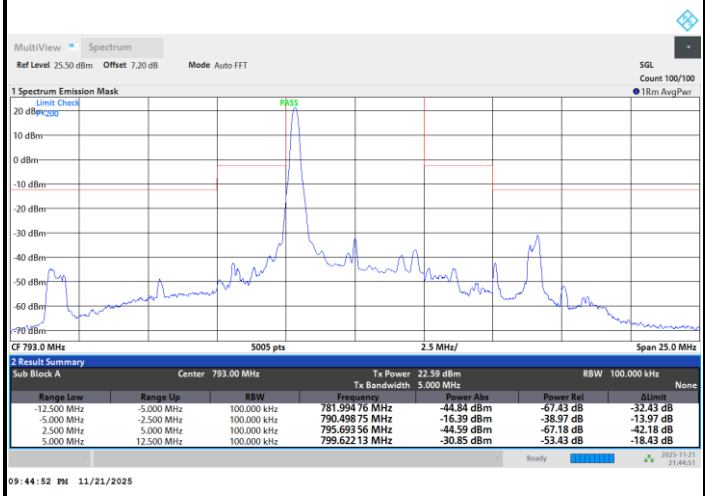
Full RB



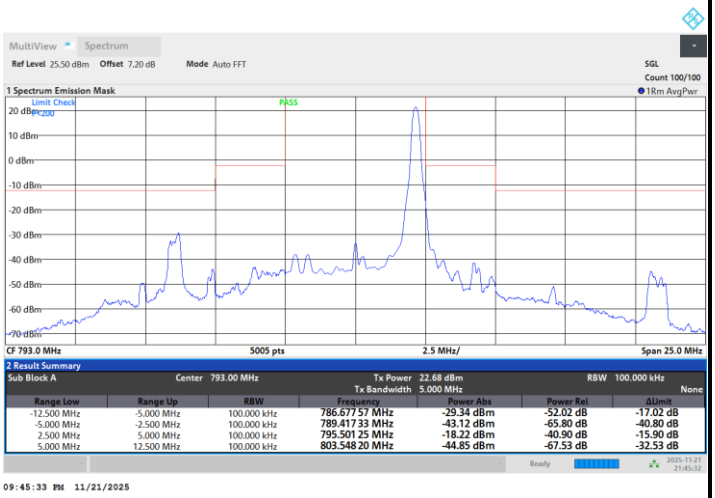
FR1 n14 / 5MHz / DFT-S OFDM / PI/2 BPSK

Middle Channel

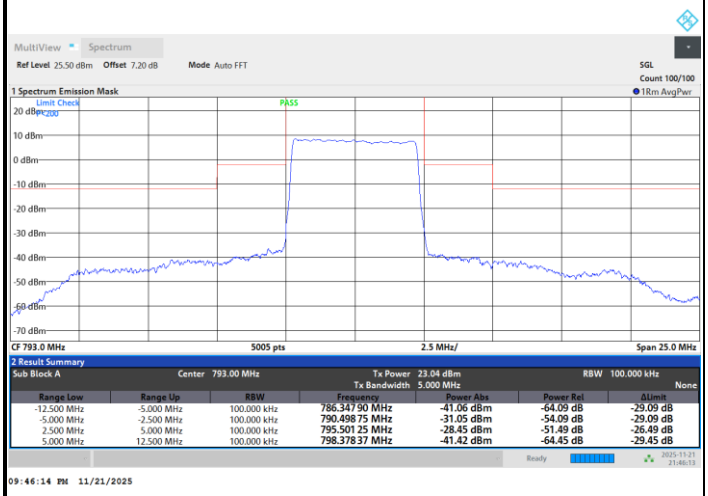
1RB0



1RBmax



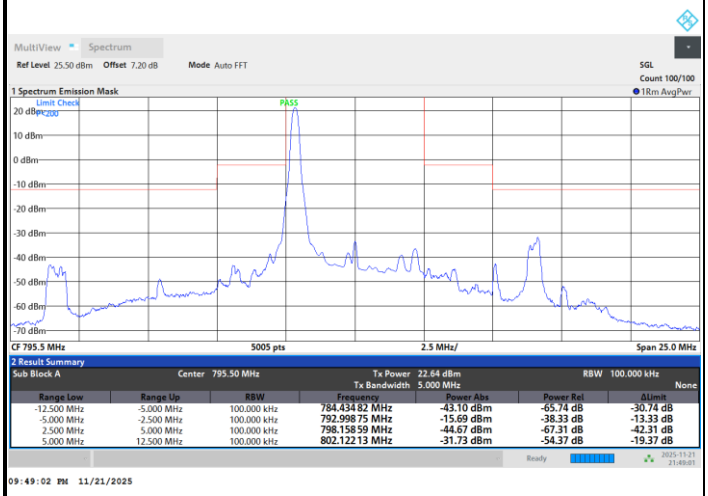
Full RB



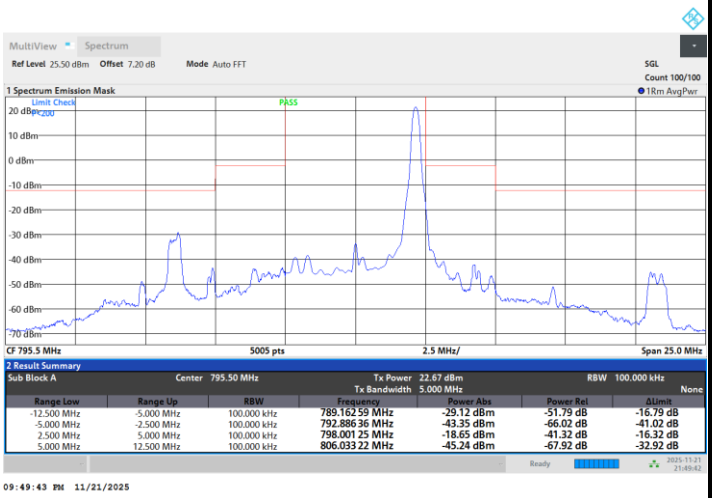
FR1 n14 / 5MHz / DFT-S OFDM / PI/2 BPSK

Highest Channel

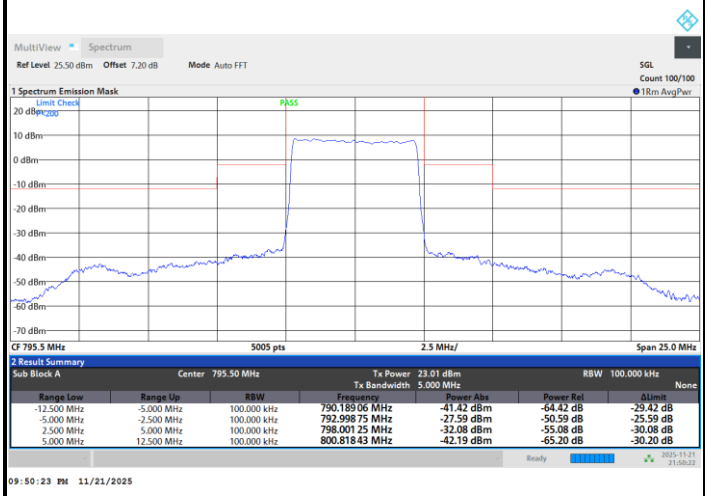
1RB0



1RBmax



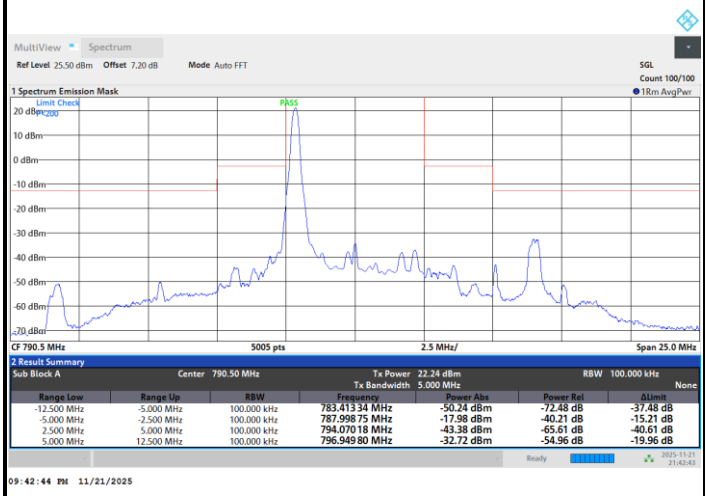
Full RB



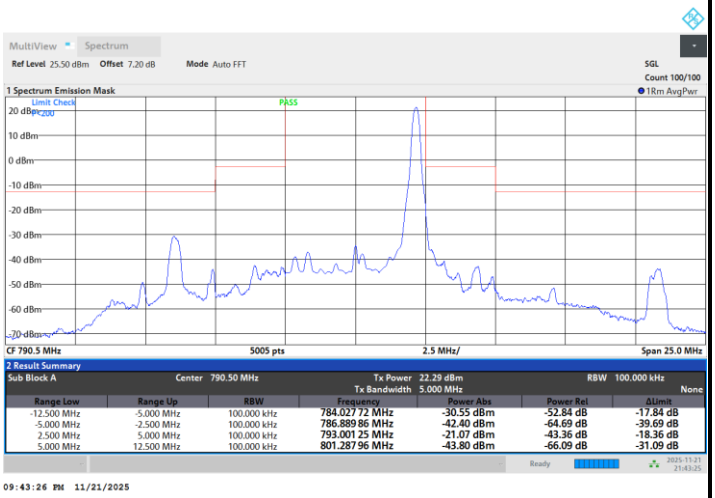
FR1 n14 / 5MHz / DFT-S OFDM / QPSK

Lowest Channel

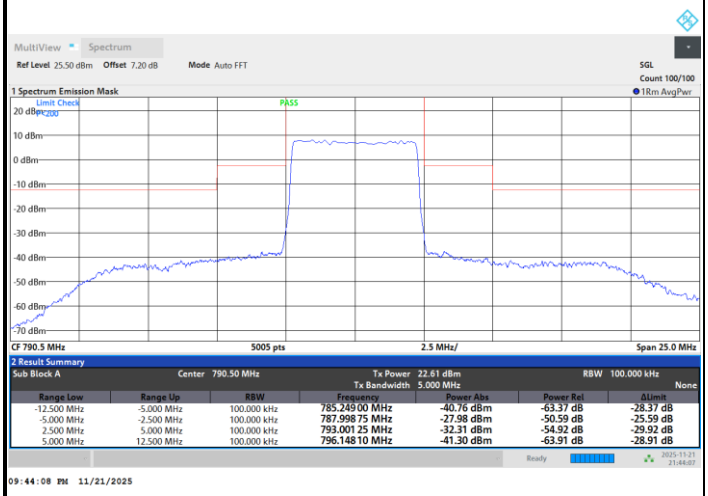
1RB0



1RBmax



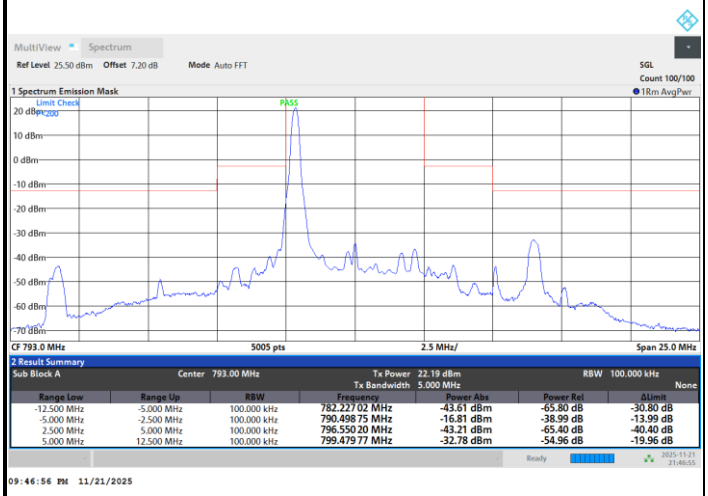
Full RB



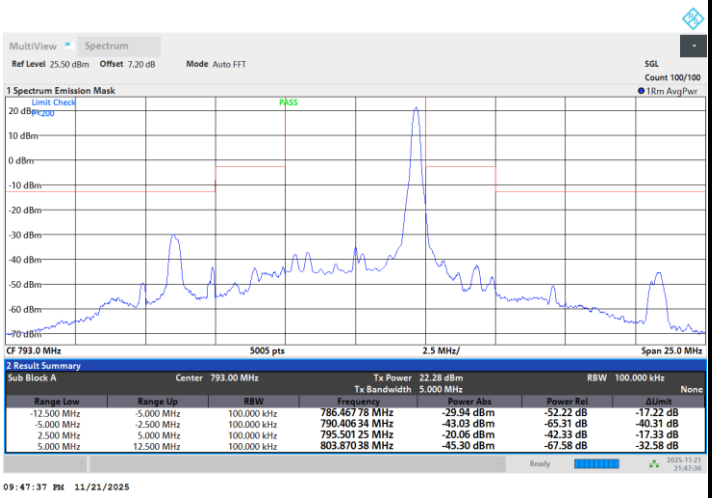
FR1 n14 / 5MHz / DFT-S OFDM / QPSK

Middle Channel

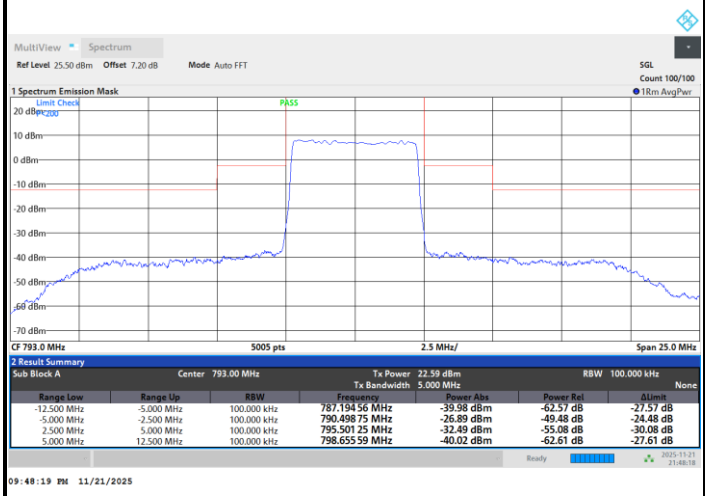
1RB0



1RBmax



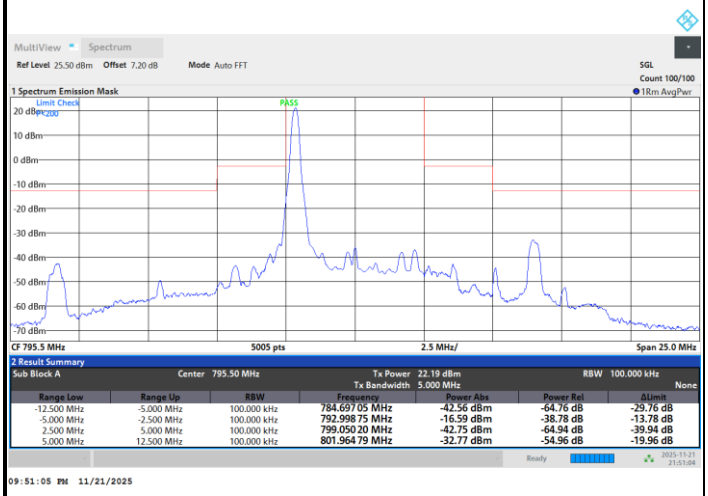
Full RB



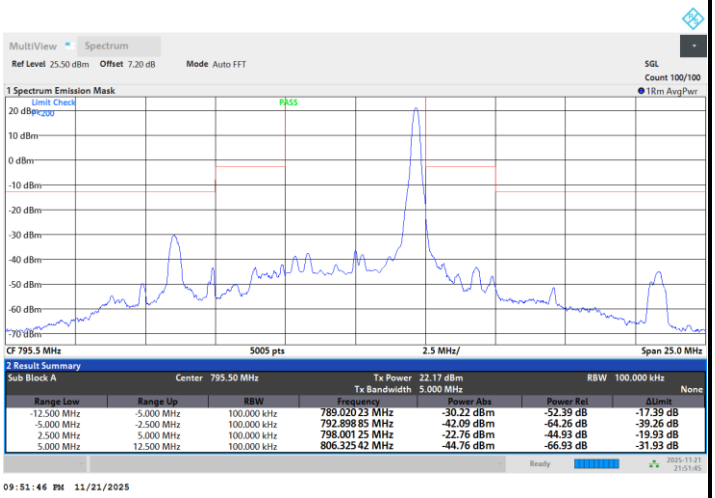
FR1 n14 / 5MHz / DFT-S OFDM / QPSK

Highest Channel

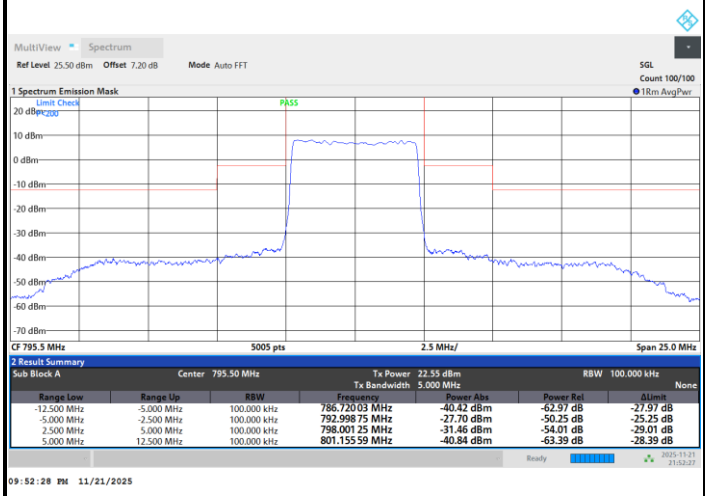
1RB0

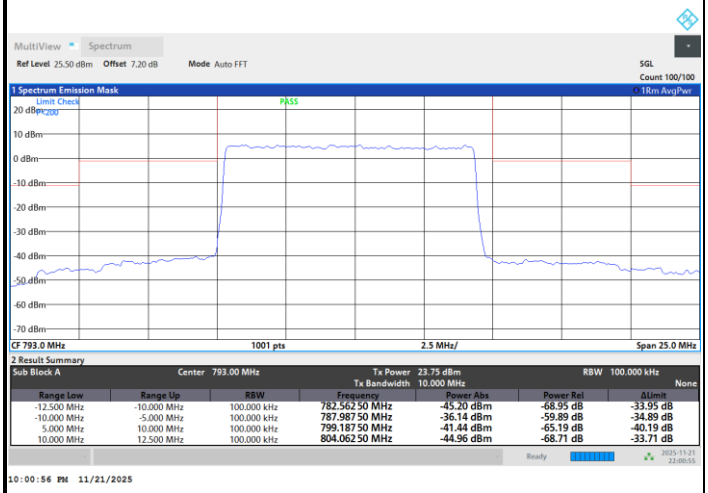


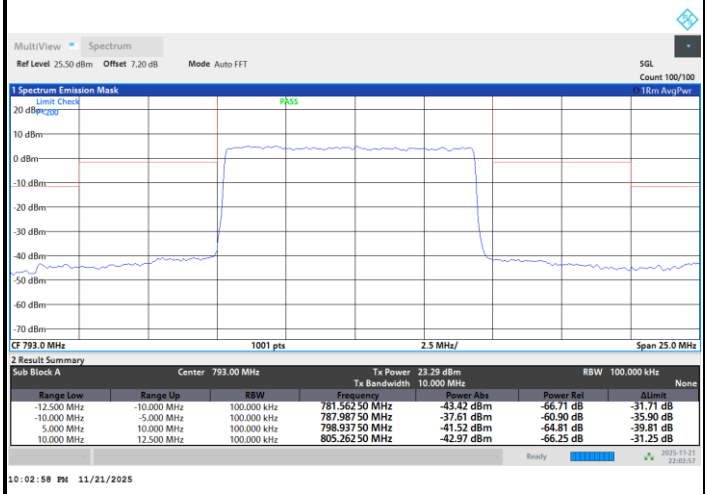
1RBmax



Full RB



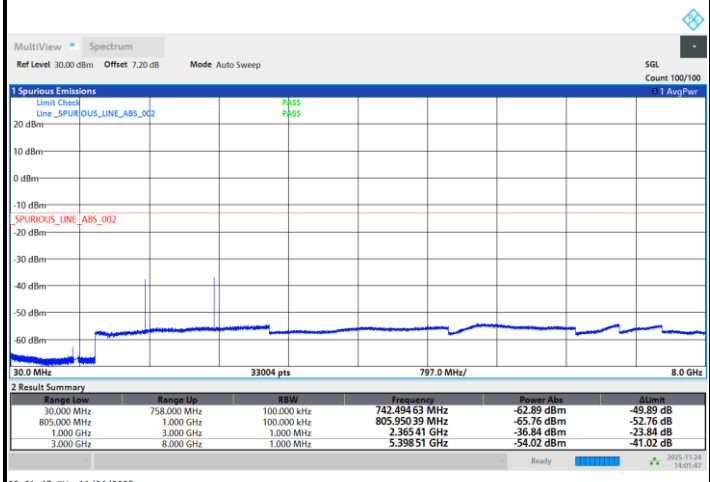
FR1 n14 / 10MHz / DFT-S OFDM / BPSK	
Middle Channel	
Full RB	
	

FR1 n14 / 10MHz / DFT-S OFDM / QPSK	
Middle Channel	
Full RB	
	

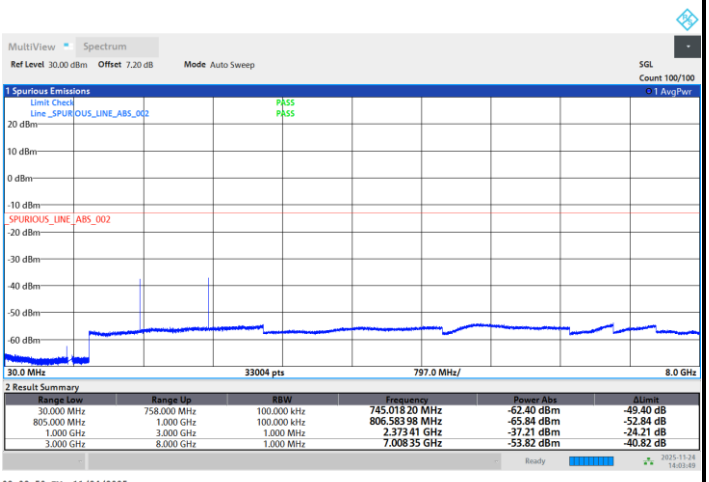
Conducted Spurious Emission

FR1 n14 / 5MHz / DFT-S OFDM / QPSK / 1RB1

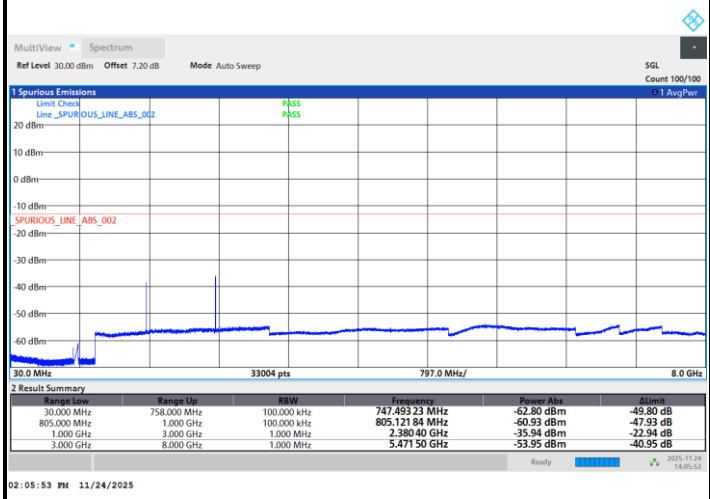
Lowest Channel



Middle Channel



Highest Channel



Frequency Stability

Test Conditions		FR1 n14 (BPSK) / Middle Channel 5M			
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Frequency Offset (△f) (Hz)	Within Authorized Frequency Block(Hz)	Result
50	Normal Voltage	0.0045	-3.6	Yes	PASS
40	Normal Voltage	0.0242	-19.2	Yes	
30	Normal Voltage	0.0025	-2	Yes	
20(Ref.)	Normal Voltage	0.0000	0	Yes	
10	Normal Voltage	0.0158	-12.5	Yes	
0	Normal Voltage	0.0247	-19.6	Yes	
-10	Normal Voltage	0.0160	-12.7	Yes	
-20	Normal Voltage	0.0224	-17.8	Yes	
-30	Normal Voltage	0.0233	-18.5	Yes	
20	Maximum Voltage	0.0093	-7.4	Yes	
20	Normal Voltage	0.0137	-10.9	Yes	
20	Minimum Voltage	0.0141	-11.2	Yes	

|MAX(△f)| = 19.6Hz

Frequency Stability	Frequency (MHz)	Limit Line	Result
f_L – |MAX(△f)|	788.119980	≧ 788 MHz	PASS
f_H + |MAX(△f)|	797.898020	≦ 799 MHz	

Note:

1. Normal Voltage = 3.9 V.；Minimum Voltage = 3.6 V.；Maximum Voltage = 4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.
3. The frequency variation is sufficient to ensure that the occupied bandwidth of all operation channels stay within the operating frequency block or frequency block group.

Test Conditions		FR1 n14 (BPSK) / Middle Channel 10M			
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Frequency Offset (△f) (Hz)	Within Authorized Frequency Block(Hz)	Result
50	Normal Voltage	0.0021	-1.7	Yes	PASS
40	Normal Voltage	0.0038	3	Yes	
30	Normal Voltage	0.0077	6.1	Yes	
20(Ref.)	Normal Voltage	0.0000	0	Yes	
10	Normal Voltage	0.0034	2.7	Yes	
0	Normal Voltage	0.0044	3.5	Yes	
-10	Normal Voltage	0.0165	13.1	Yes	
-20	Normal Voltage	0.0050	4	Yes	
-30	Normal Voltage	0.0124	9.8	Yes	
20	Maximum Voltage	0.0021	1.7	Yes	
20	Normal Voltage	0.0177	14	Yes	
20	Minimum Voltage	0.0025	2	Yes	

|MAX(△f)| = 14Hz

Frequency Stability	Frequency (MHz)	Limit Line	Result
f_L – |MAX(△f)|	788.199986	≧ 788 MHz	PASS
f_H + |MAX(△f)|	797.456014	≦ 799 MHz	

Note:

1. Normal Voltage = 3.9 V.；Minimum Voltage = 3.6 V.；Maximum Voltage = 4.4 V.
2. The frequency fundamental emissions stay within the authorized frequency block.
3. The frequency variation is sufficient to ensure that the occupied bandwidth of all operation channels stay within the operating frequency block or frequency block group.

FR1 n26

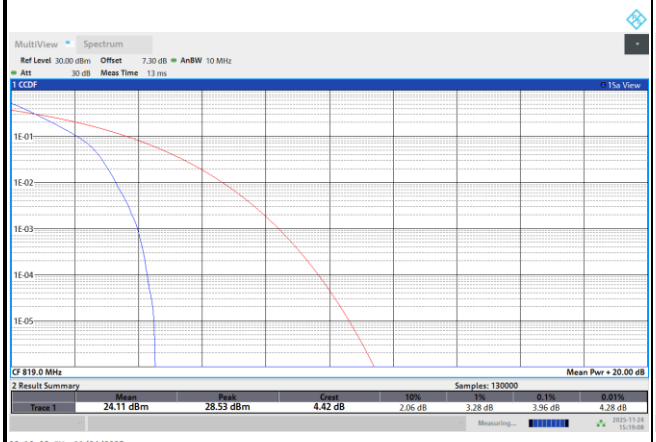
<SISO Mode>

Peak-to-Average Ratio

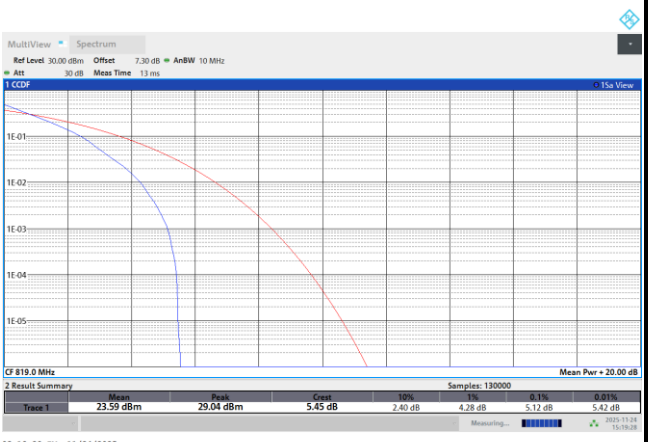
Mode	FR1 n26 / 10MHz / DFT-S OFDM				
Mod.	PI/2 BPSK	QPSK	16QAM	64QAM	Limit: 13dB
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	3.96	5.12	5.82	6.36	PASS
Mode	FR1 n26 / 10MHz / DFT-S OFDM				
Mod.	256QAM				Limit: 13dB
RB Size	Full RB				Result
Middle CH	6.48				PASS

FR1 n26 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

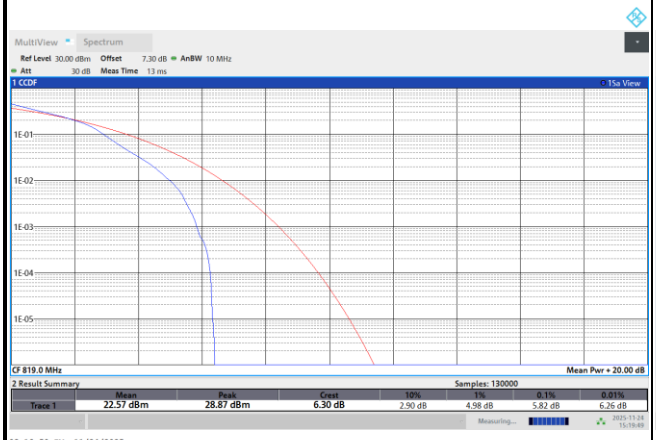
PI/2 BPSK



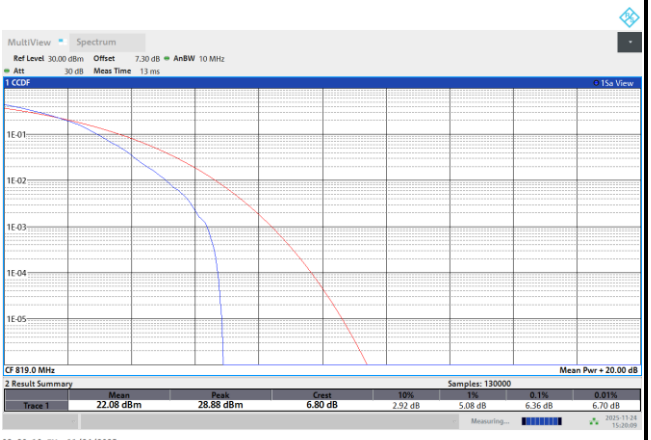
QPSK



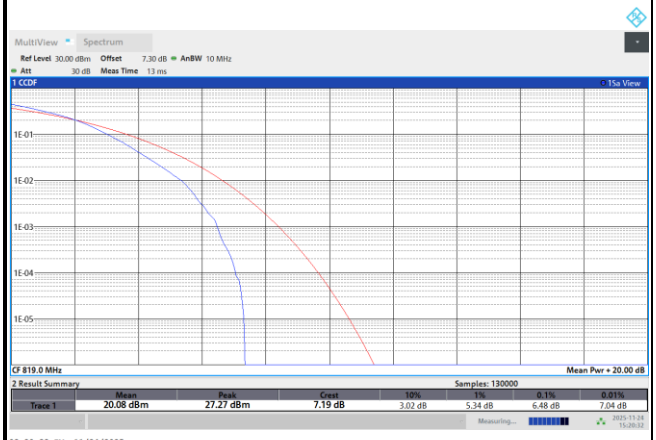
16QAM



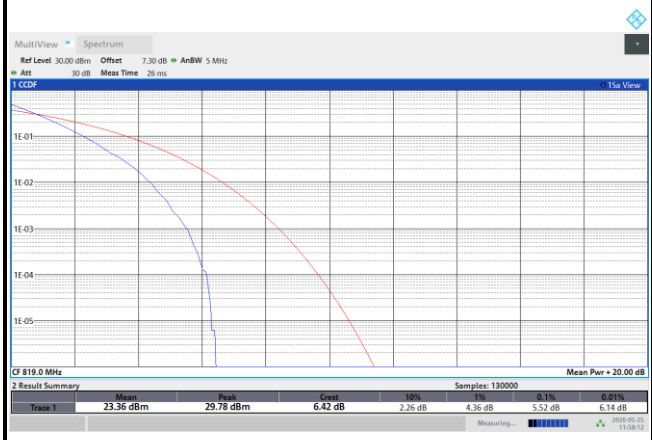
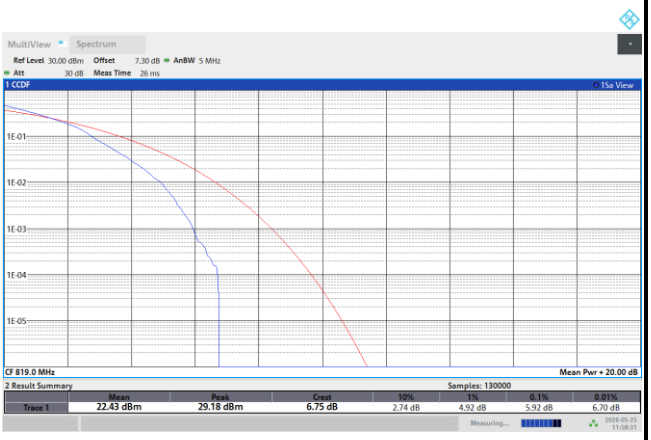
64QAM



256QAM

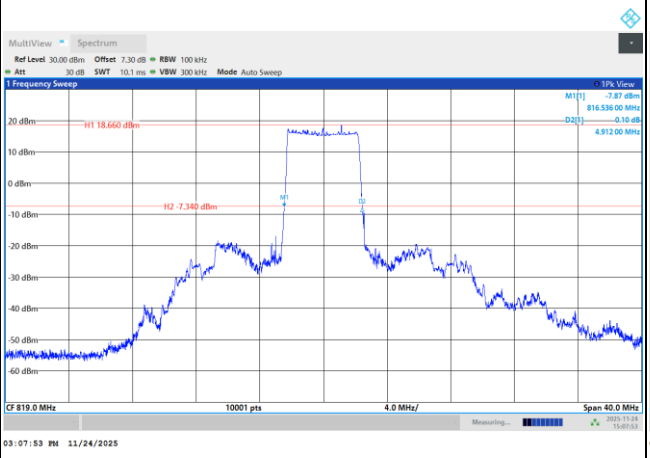
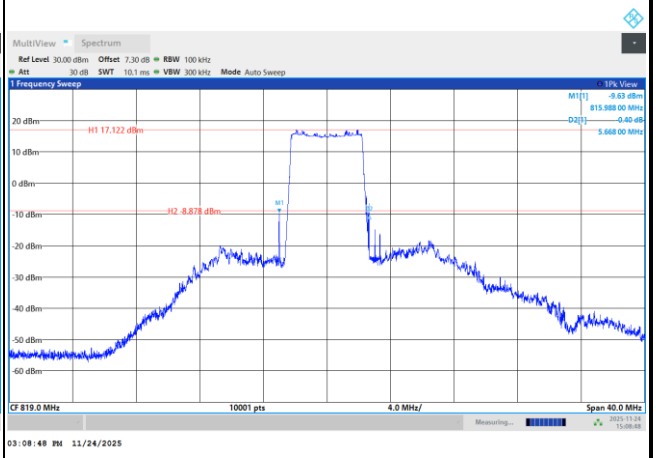
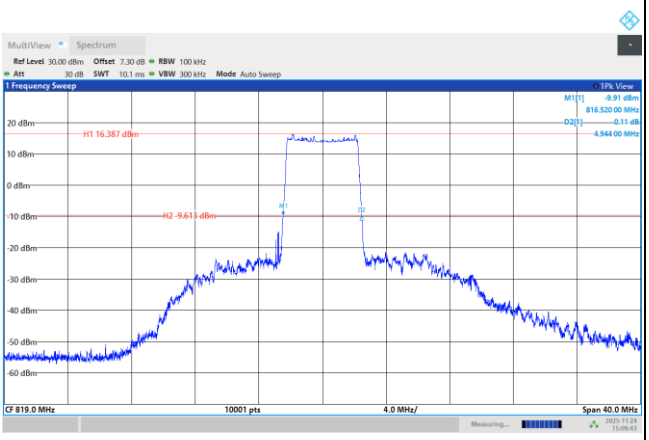


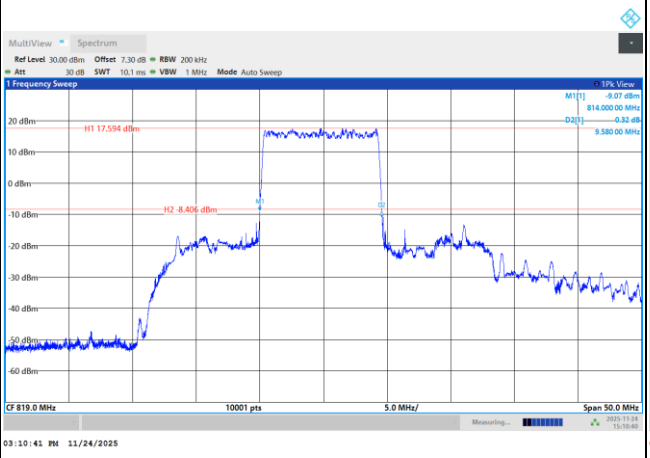
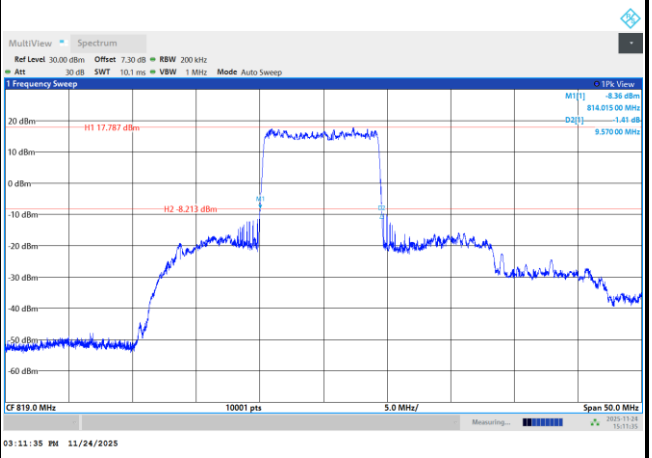
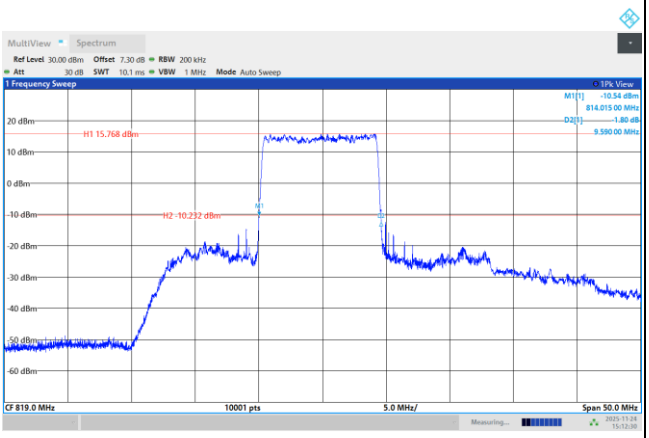
Mode	FR1 n26 / 5MHz / DFT-S OFDM		
Mod.	QPSK	16QAM	Limit: 13dB
RB Size	Full RB	Full RB	Result
Middle CH	5.52	5.92	PASS

FR1 n26 / 5MHz / DFTs OFDM / Middle Channel / Full RB	
QPSK	16QAM
	

26dB Bandwidth

Mode	FR1 n26 : 26dB BW(MHz) / DFT-S OFDM							
BW	5MHz		10MHz					
Mod.	PI/2 BPSK	QPSK	PI/2 BPSK	QPSK				
Middle CH	4.91	5.66	9.58	9.57				
Mod.	16QAM		16QAM					
Middle CH	4.94		9.59					

FR1 n26 / 5MHz / DFT-S OFDM / Middle Channel / Full RB	
PI/2 BPSK	QPSK
	
16QAM	
	

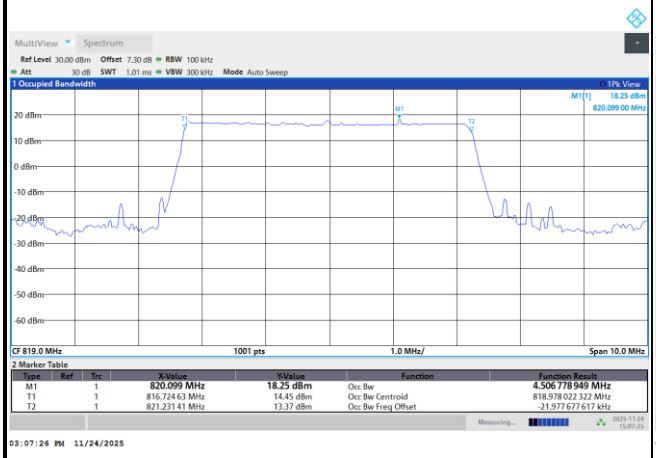
FR1 n26 / 10MHz / DFT-S OFDM / Middle Channel / Full RB	
PI/2 BPSK	QPSK
	
16QAM	
	

Occupied Bandwidth

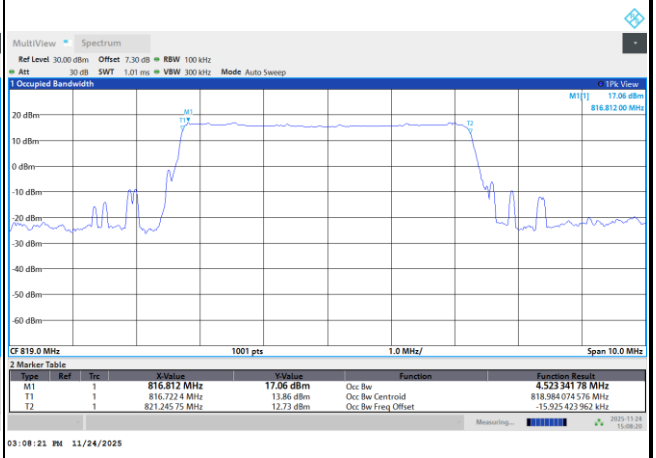
Mode	FR1 n26 : 99%OBW(MHz) / DFT-S OFDM							
BW	5MHz		10MHz					
Mod.	PI/2 BPSK	QPSK	PI/2 BPSK	QPSK				
Middle CH	4.50	4.52	9.01	8.97				
Mod.	16QAM		16QAM					
Middle CH	4.49		8.95					

FR1 n26 / 5MHz / DFT-S OFDM / Middle Channel / Full RB

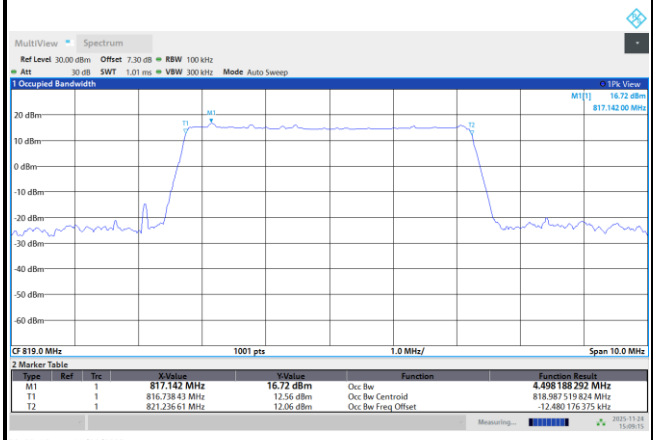
PI/2 BPSK



QPSK

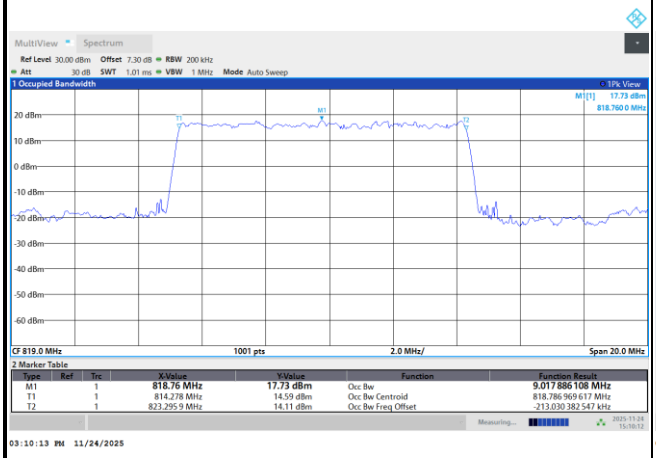


16QAM

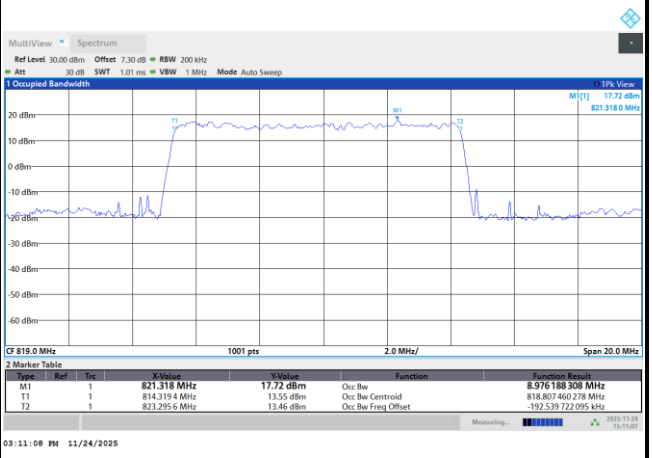
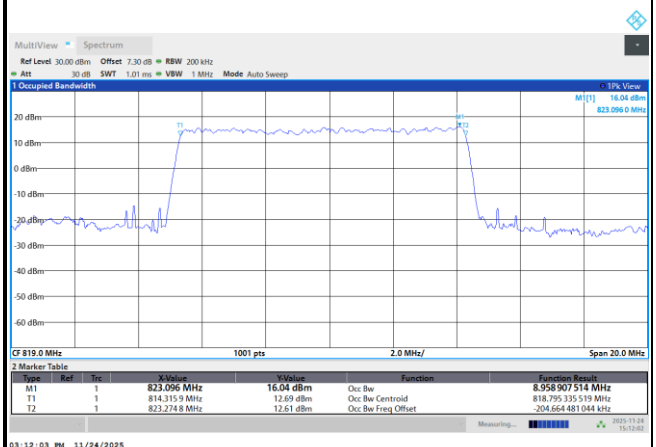


FR1 n26 / 10MHz / DFT-S OFDM / Middle Channel / Full RB

PI/2 BPSK



QPSK



16QAM