

FCC TEST REPORT

Name of Sample: Mobile Cellular Phone
Model of Sample: XT2529-2
Applicant: Motorola Mobility LLC
Issue Date: 2025-05-09



ADR TEST AND CERTIFICATION CENTER
Motorola Mobility LLC, a Lenovo Company

Add: No. 19, Gao Xin 4th Road Wuhan, People's Republic of China 430205

Phone: (86) 13696970830

E-mail: suyj3@motorola.com

Name of Client	Motorola Mobility LLC		
Address of Client	222 W, Merchandise Mart Plaza, Chicago IL 60654 USA		
Trademark	Motorola	Type Name or ID	FCC ID: IHDT56AV2
Applicant No.	RF192237	Sample No.	1#: N4BE240104 (1 st Source) 2#: N4BE240117 (1 st Source) 3#: N4BE410153 (1 st Source) 4#: N4BE4Y0102 (2 nd Source) 5#: N4BE240116 (3 rd Source)
Delivering Date	2025-02-18	Test Date	2025-02-18 to 2025-05-09
Sample Illustration	None		
Standard	47 CFR Part 2; 47 CFR Part 27;		
Conclusion	Pass		
Remarks	N/A		

Editor: Wangzhenyu

Reviewer: Hexiaolin

Signatory: HuangshengLin

Wangzhenyu

Hexiaolin

Eric Lin

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Revision History

Report No.	Version	Description	Issued Date
TR-25ADRTCC7011	Rev.01	Initial issue of report	2025-05-08
TR-25ADRTCC7011	Rev.02	1, Add n38 5MHz data 2, Updated description information on page 5	2025-05-09

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1. Test Summary

1.1. 5G NR Band n38

Test Item	Rule No.	Requirements	Test Result	Verdict
Conducted Power	§2.1046	Report Only	Section 1 of Appendix B	Pass
Effective Isotropic Radiated Power	§27.50(h) (2)	EIRP < 2W		
Peak-Average Ratio	§27.50(a)	<13 dB	Section 2 of Appendix B	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass
Occupied Bandwidth	§2.1049	No limit	Section 4 of Appendix B	Pass
26dB Emission Bandwidth		No limit		
Conducted Band Edges	§2.1051 §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	Section 5 of Appendix B	Pass
Conducted Spurious Emission	§2.1051 §27.53(m) (4)	< -25 dBm/MHz for outside Band Edge Range	Section 6 of Appendix B	Pass
Frequency Stability	§27.54	Within authorized bands	Section 7 of Appendix B	Pass

Note:

This is a variant report for XT2529-1. The difference between current and previous is as below:

- Add 5G NR n38 bandwidth 5MHz (SCS 15KHz only) .

Since the conducted power is less than the original report. Only the n38 bandwidth 5MHz was tested for conducted, all the other test results refer to the original report 25ADRTCC7005.

2. General Information

2.1. General Description of EUT

EUT Description:	Mobile Cellular Phone
Brand Name:	Motorola
Model Name:	XT2529-2
FCC ID:	IHDT56AV2
IMEI Code:	1#: 351971360022013/351971360022021 (Conducted); 2#: 351971360022138/351971360022146 (Conducted); 3#: 351971360015678/351971360015686 (Conducted); 4#: 351971360039256/351971360039264 (Conducted); 5#: 351971360024993/351971360025008 (Conducted);
Hardware Version:	DVT2
Software Version:	V2VO35.42
NR Modulation:	DFT-s-OFDM: <input checked="" type="checkbox"/> Pi/2BPSK; <input checked="" type="checkbox"/> QPSK; <input checked="" type="checkbox"/> 16QAM; <input checked="" type="checkbox"/> 64QAM; <input checked="" type="checkbox"/> 256QAM; CP-OFDM: <input checked="" type="checkbox"/> QPSK; <input checked="" type="checkbox"/> 16QAM; <input checked="" type="checkbox"/> 64QAM; <input checked="" type="checkbox"/> 256QAM;
Sample Type:	<input checked="" type="checkbox"/> Portable Device, <input type="checkbox"/> Module
Antenna Type:	<input type="checkbox"/> External, <input checked="" type="checkbox"/> Integrated
Antenna Gain:	n38 (2570-2620): -3.90dBi (Ant1); -4.10dBi (Ant4);

Remark

1, The information above was declared by manufacture. Please refer to the specifications or user manual for more

detailed description.

3. Maximum Effective Radiated (Isotropic) Power and Emission Designator

3.1. NR System

3.1.1. NR Band n38 (2570-2620)

5G NR SA (n38)		PI/2 BPSK / QPSK		16QAM/64QAM/256QAM	
Bandwidth	Frequency Range (MHz)	Maximum EIRP (W)	Emission Designator (99% OBW)	Maximum EIRP (W)	Emission Designator (99% OBW)
5MHz	2572.5-2617.5	0.088308	4M48G7D	0.071450	4M47W7D

4. Test Configuration of Equipment Under Test

4.1. Test Mode for NR Configuration

Test Case	5G NR	SCS		Bandwidth	Modulation					Channel			RB	
		15KHz	30KHz		PI/2BPSK	QPSK	16QAM	64QAM	256QAM	LCH	MCH	HCH	1	Full
Effective Isotropic Radiated Power	N38 (2570-2620)	●	○	5MHz	●	●	●	●	●	●	●	●	●	●
Peak-Average Ratio	N38 (2570-2620)	●	○	5MHz	●	●	○	○	○	●	●	●	○	●
Modulation Characteristics	N38 (2570-2620)	●	○	5MHz	●	●	●	●	●	○	●	○	○	●
Occupied Bandwidth & 26dB Emission Bandwidth	N38 (2570-2620)	●	○	5MHz	●	●	●	●	●	○	●	○	○	●
Conducted Band Edges	N38 (2570-2620)	●	○	5MHz	●	●	○	○	○	●	○	●	●	●
Conducted Spurious Emission	N38 (2570-2620)	●	○	5MHz	●	●	○	○	○	●	●	●	●	○
Frequency Stability	N38 (2570-2620)	●	○	5MHz	○	●	○	○	○	○	●	○	○	●

Remark:

- the mark “●” means this configuration was chosen for testing, mark “○” means not selected, and the mark “✖” means not applicable.
- All Supported BW means all supported bandwidth for selected SCS configuration.

4.2. Test Frequencies

5.2.1 5G NR System

4.2.1.1. NR Band n38 (2570-2620)

4.2.1.1.1. SCS=15KHz

Bandwidth	LCH		MCH		HCH	
	Arfcn	Freq	Arfcn	Freq	Arfcn	Freq
5MHz	514500	2572.5	519000	2595.0	523500	2617.5

5. Description of Tests

5.1. Conducted Output Power Measurement

5.1.1. Description of Conducted Output Power Measurement

A base station simulator was used to establish communication with the EUT, Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals shall be reported.

5.1.2. Test Procedures

- 1, The testing follows ANSI C63.26 Section 5.2.
- 2, The transmitter output port was connected to the system simulator.
- 3, Set EUT at maximum power through the system simulator.
- 4, Select lowest, Middle, Highest channels for each band and each modulation.
- 5, Record the reading power from the system simulator.

5.2. Effective (Isotropic) Radiated Power

Measurement Procedure: ANSI C63.26

Calculate power in dBm by the following formula:

ERP (dBm) = Conducted Power (dBm) + antenna gain (dBd)

EIRP (dBm) = Conducted Power (dBm) + antenna gain (dBi)

EIRP=ERP+2.15dB

6. List of Measuring Equipment

Equipment	Model	Manufacture	Device No.	Cal Date	Cal Due
Radio Communication Analyzer	MT8000A	Anritsu	6272427164	2024-11-15	2025-11-14
	MT8000A	Anritsu	6272478367	2024-07-03	2025-07-02
	MT8821C	Anritsu	6272374630	2024-11-15	2025-11-14
Spectrum Analyzer (50Hz-40GHz)	FSV	R&S	101046	2024-11-15	2025-11-14
Spectrum Analyzer (50Hz-40GHz)	FSV	R&S	101334	2024-11-15	2025-11-14
Power Supply	2036	Keithley	4058748	2024-11-15	2025-11-14
Temperature Chamber	C/64/40/3	Weiss	56246017780020	2025-03-24	2026-03-25
Power Divider	-	WOKEN	0120A04051801O	NCR	
Power Divider	-	WOKEN	0120A02051801M	NCR	

Remark:

- 1, For equipment listed above that has a calibration date or calibration due date that falls within the test date range, and the equipment was used after calibrate date and before calibrate due date.
- 2, "NCR" means no calibration required.

7. Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26. All the measurement uncertainties value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be directly to specified limit to determine compliance.

7.1. Uncertainty of Conducted Measurement

Contribution	Expanded Uncertainty
Conducted Power	± 1.09 dB
Peak-to-Average Ratio	± 2.28 dB
Channel Bandwidth	$\pm 0.15\%$ MHz
Conducted Emission (f <1GHz)	± 2.23 dB
Conducted Emission (1GHz < f <18GHz)	± 2.24 dB
Conducted Emission (18GHz < f <40GHz)	± 2.11 dB
Frequency	± 0.02 KHz

The End

**Appendix
for
n38A
(2570-2620)**

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1. Effective Isotropic Radiated Power

1.1. Test Results @ Ant1 (Antenna Gain=-3.90dBi)

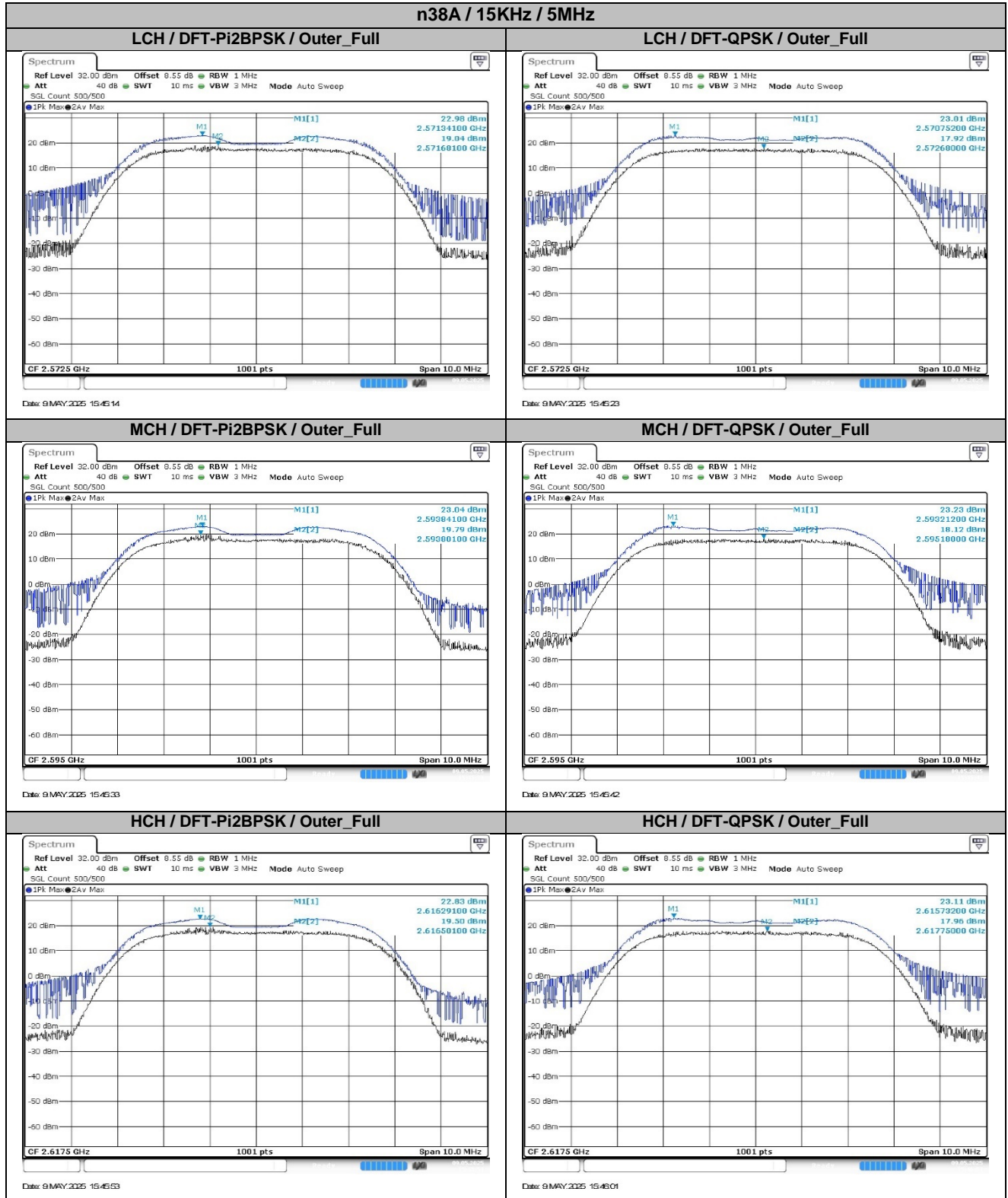
SCS	Bandwidth	Channel	Modulation	Conducted Result (dBm)			Max EIRP (dBm)	Limit (dBm)	Verdict
				Inner_1RB_Left	Inner_1RB_Right	Inner_Full			
15KHz	5MHz	LCH	DFT-Pi2BPSK	23.22	23.09	23.21	19.32	33.00	Pass
15KHz	5MHz	LCH	DFT-QPSK	23.28	23.19	23.30	19.40	33.00	Pass
15KHz	5MHz	LCH	DFT-16QAM	22.10	22.06	22.27	18.37	33.00	Pass
15KHz	5MHz	LCH	DFT-64QAM	20.71	20.68	20.88	16.98	33.00	Pass
15KHz	5MHz	LCH	DFT-256QAM	19.12	19.04	18.81	15.22	33.00	Pass
15KHz	5MHz	LCH	CP-QPSK	21.94	21.84	21.93	18.04	33.00	Pass
15KHz	5MHz	MCH	DFT-Pi2BPSK	23.05	23.13	23.36	19.46	33.00	Pass
15KHz	5MHz	MCH	DFT-QPSK	23.35	23.34	23.34	19.45	33.00	Pass
15KHz	5MHz	MCH	DFT-16QAM	22.20	22.23	22.44	18.54	33.00	Pass
15KHz	5MHz	MCH	DFT-64QAM	21.07	21.07	21.08	17.18	33.00	Pass
15KHz	5MHz	MCH	DFT-256QAM	19.13	19.16	18.95	15.26	33.00	Pass
15KHz	5MHz	MCH	CP-QPSK	21.98	22.01	22.02	18.12	33.00	Pass
15KHz	5MHz	HCH	DFT-Pi2BPSK	23.02	23.17	23.17	19.27	33.00	Pass
15KHz	5MHz	HCH	DFT-QPSK	23.06	23.13	23.19	19.29	33.00	Pass
15KHz	5MHz	HCH	DFT-16QAM	22.06	22.12	22.13	18.23	33.00	Pass
15KHz	5MHz	HCH	DFT-64QAM	20.93	20.98	20.92	17.08	33.00	Pass
15KHz	5MHz	HCH	DFT-256QAM	18.84	18.95	18.83	15.05	33.00	Pass
15KHz	5MHz	HCH	CP-QPSK	21.87	21.89	21.87	17.99	33.00	Pass

2. Peak-to-Average Ratio

2.1. Test Results

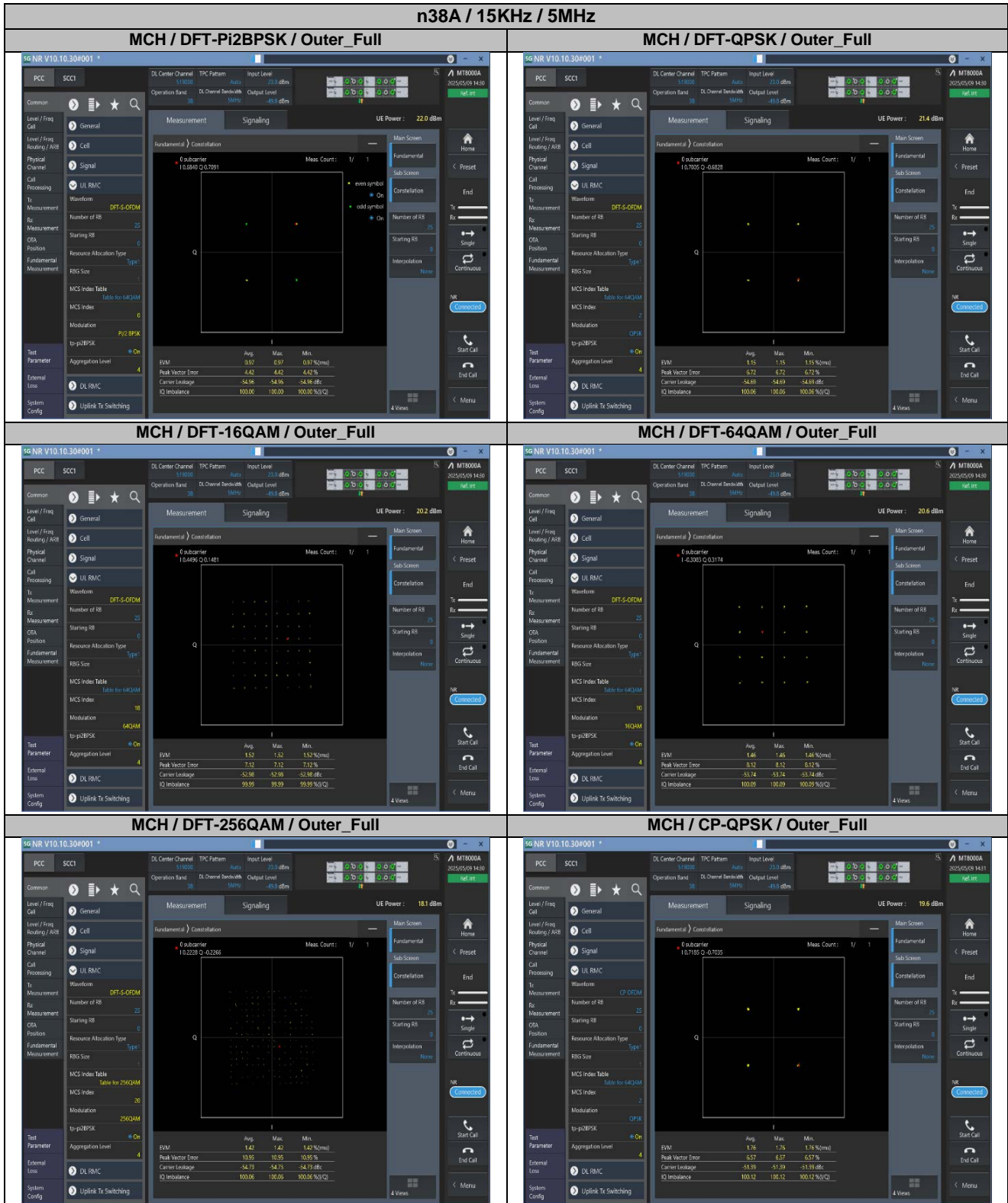
SCS	Bandwidth	Channel	RB	Result (dB)		Limit (dB)	Verdict
				DFT-Pi2BPSK	DFT-QPSK		
15KHz	5MHz	LCH	Outer_Full	3.94	5.09	13.00	Pass
15KHz	5MHz	MCH	Outer_Full	3.25	5.11	13.00	Pass
15KHz	5MHz	HCH	Outer_Full	3.33	5.15	13.00	Pass

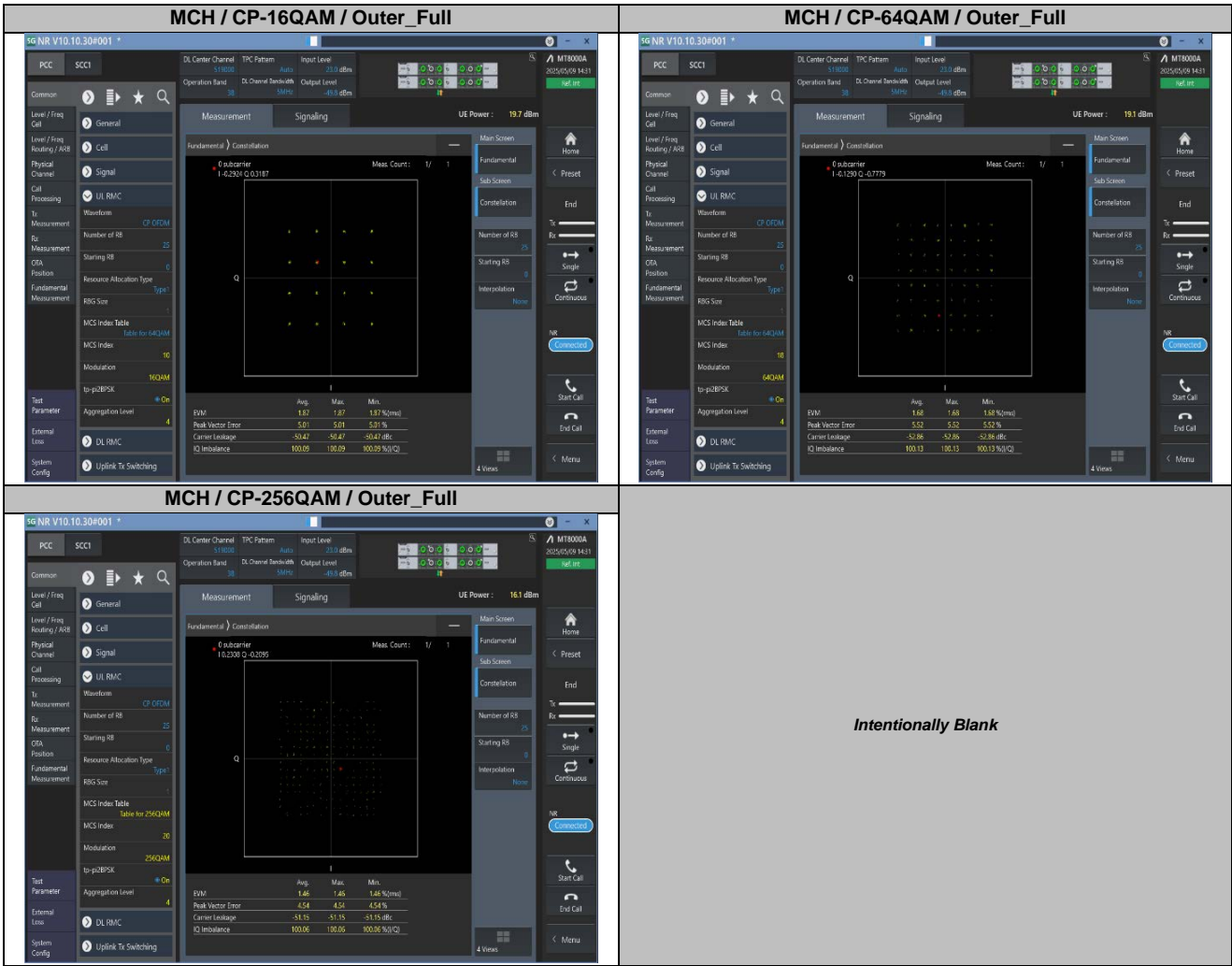
2.2. Test Plots for SCS=15KHz



3. Modulation Characteristics

3.1. Test Plots for SCS=15KHz



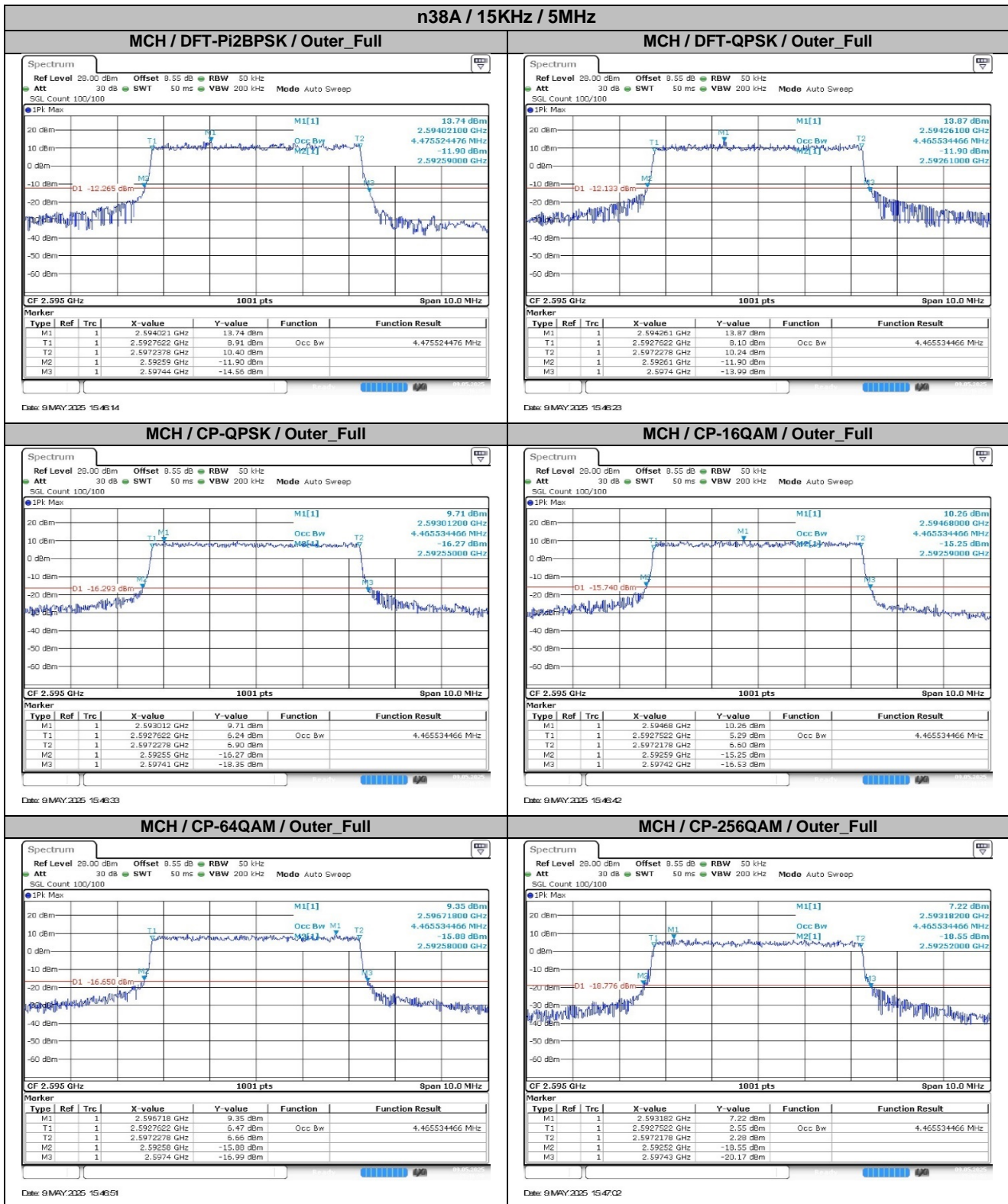


4. 99% Occupied Bandwidth & 26dB Emission Bandwidth

4.1. Test Results

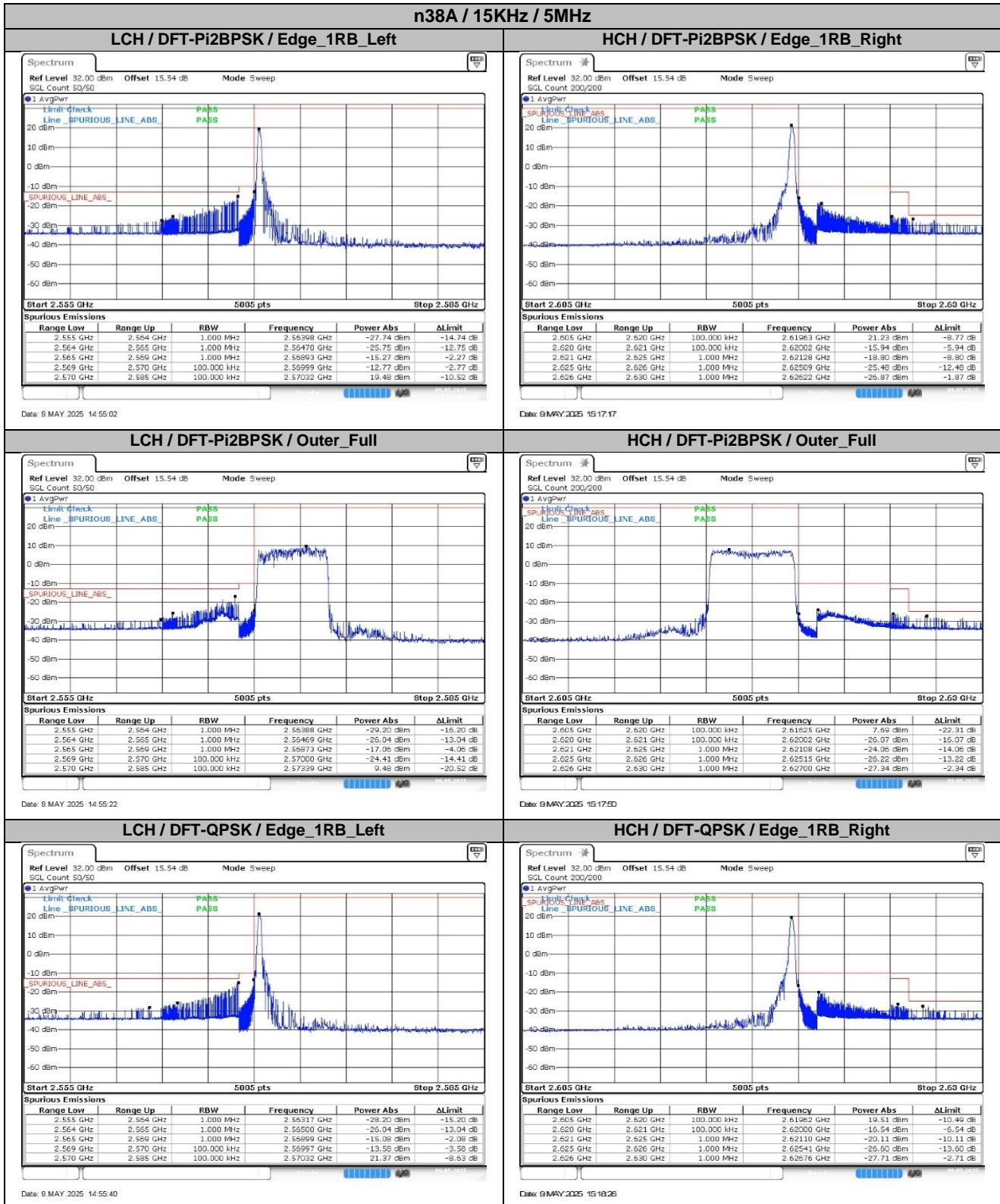
SCS	Bandwidth	Modulation	RB	99% Occupied Bandwidth (MHz)	26dB Emission Bandwidth (MHz)	Verdict
15KHz	5MHz	DFT-Pi2BPSK	Outer_Full	4.48	4.85	Pass
15KHz	5MHz	DFT-QPSK	Outer_Full	4.47	4.79	Pass
15KHz	5MHz	CP-QPSK	Outer_Full	4.47	4.86	Pass
15KHz	5MHz	CP-16QAM	Outer_Full	4.46	4.83	Pass
15KHz	5MHz	CP-64QAM	Outer_Full	4.47	4.82	Pass
15KHz	5MHz	CP-256QAM	Outer_Full	4.47	4.91	Pass

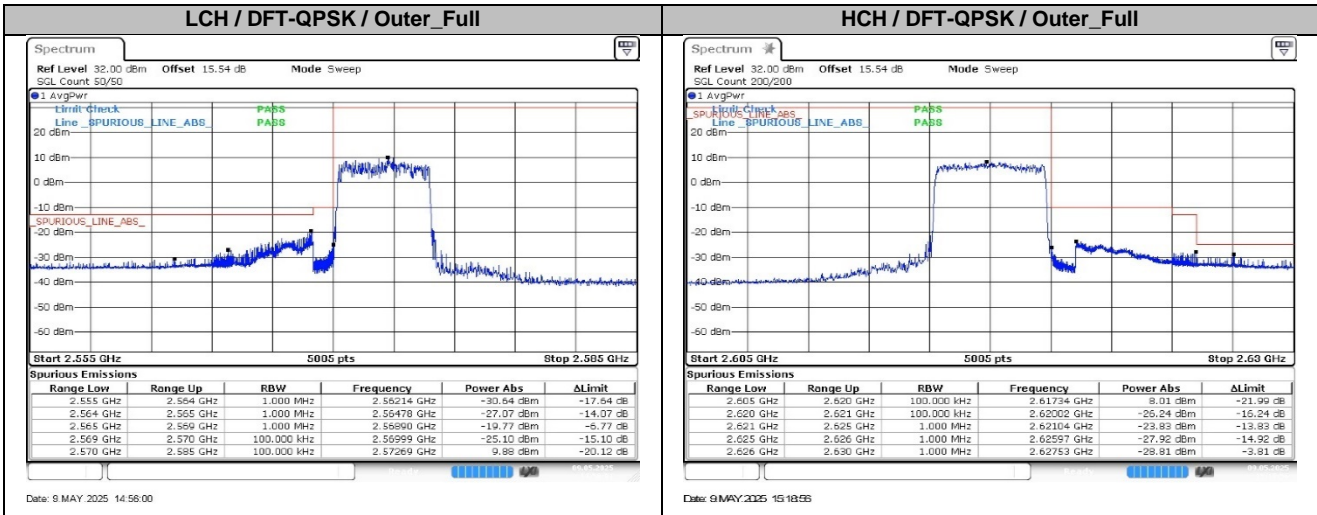
4.2. Test Plots for SCS=15KHz



5. Conducted Band Edges

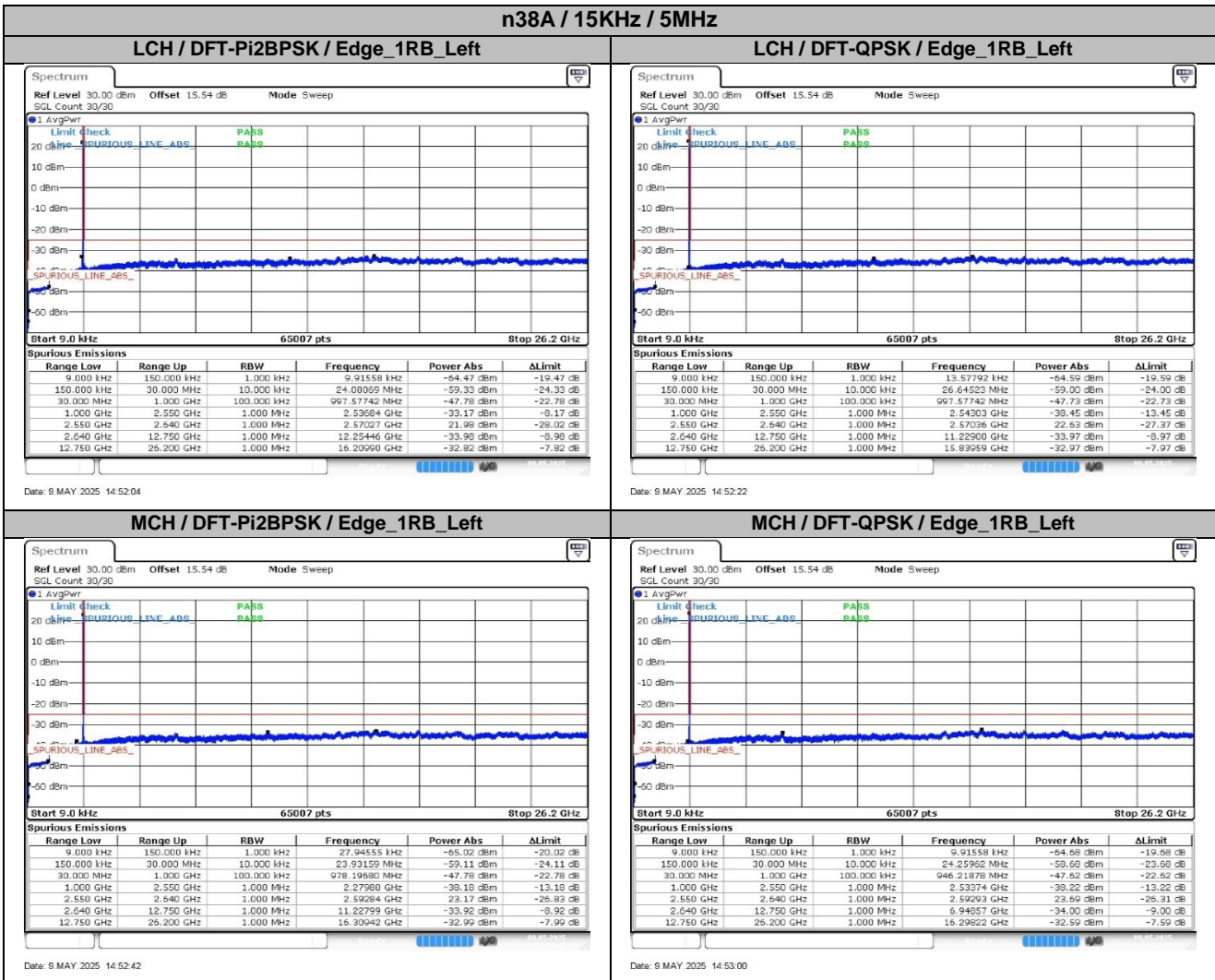
5.1. Test Plots for SCS=15KHz

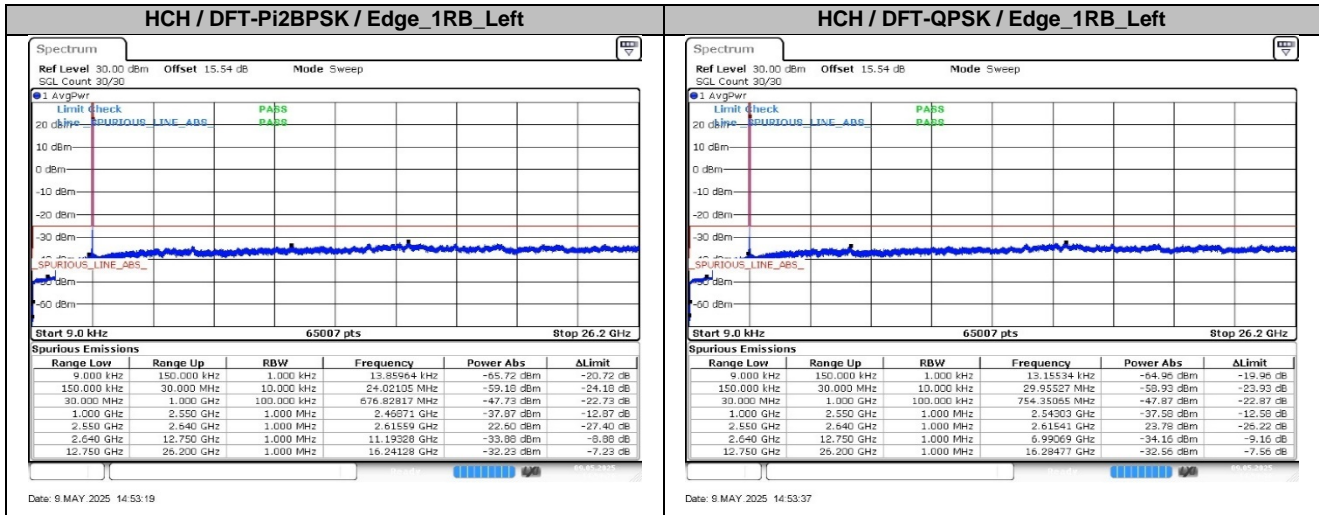




6. Conducted Spurious Emission

6.1. Test Plots for SCS=15KHz





7. Frequency Stability

7.1. Test Results

7.1.1. Frequency Error Vs Voltage

SCS	Bandwidth	Channel	RB Config	Modulation	Temperature	Voltage	Deviation Result		Verdict
							(Hz)	(ppm)	
15KHz	5MHz	MCH	Outer_Full	DFT-QPSK	NT	LV	-5.40	-0.002081	Pass
15KHz	5MHz	MCH	Outer_Full	DFT-QPSK	NT	NV	-7.90	-0.003044	Pass
15KHz	5MHz	MCH	Outer_Full	DFT-QPSK	NT	HV	-7.30	-0.002813	Pass

7.1.2. Frequency Error Vs Temperature

SCS	Bandwidth	Channel	RB Config	Modulation	Temperature	Voltage	Deviation Result		Verdict
							(Hz)	(ppm)	
15KHz	5MHz	MCH	Outer_Full	DFT-QPSK	-30°C	NV	-7.00	-0.002697	Pass
15KHz	5MHz	MCH	Outer_Full	DFT-QPSK	-20°C	NV	-8.50	-0.003276	Pass
15KHz	5MHz	MCH	Outer_Full	DFT-QPSK	-10°C	NV	-5.40	-0.002081	Pass
15KHz	5MHz	MCH	Outer_Full	DFT-QPSK	0°C	NV	-8.00	-0.003083	Pass
15KHz	5MHz	MCH	Outer_Full	DFT-QPSK	10°C	NV	-6.60	-0.002543	Pass
15KHz	5MHz	MCH	Outer_Full	DFT-QPSK	20°C	NV	-8.60	-0.003314	Pass
15KHz	5MHz	MCH	Outer_Full	DFT-QPSK	30°C	NV	-7.90	-0.003044	Pass
15KHz	5MHz	MCH	Outer_Full	DFT-QPSK	40°C	NV	-7.50	-0.002890	Pass
15KHz	5MHz	MCH	Outer_Full	DFT-QPSK	50°C	NV	-8.40	-0.003237	Pass

The End