

TEST REPORT

Report Number: 15496224-E25V3

Applicant : APPLE, INC
1 APPLE PARK WAY
CUPERTINO, CA 95014, U.S.A

Model : A3256

Brand : APPLE

FCC ID : BCG-E8949A

IC : 579C-E8949A

EUT Description : SMARTPHONE

Test Standard(s) : FCC 47 CFR PART 2, PART 25
ISED RSS-GEN ISSUE 5 + A1 + A2, RSS-170 ISSUE 4

Date Of Issue:
2025-08-15

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538, U.S.A.
TEL: (510) 319-4000
FAX: (510) 661-0888



Revision History

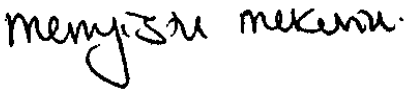
Rev.	Issue Date	Revisions	Revised By
V1	2025-07-03	Initial Review	--
V2	2025-07-10	Updated Section 6	Eric Ting
V3	2025-08-15	Revise section 6.5	Mengistu Mekuria

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	5
2. SUMMARY OF TEST RESULTS	6
3. TEST METHODOLOGY	7
4. FACILITIES AND ACCREDITATION	7
5. DECISION RULES AND MEASUREMENT UNCERTAINTY	8
5.1. METROLOGICAL TRACEABILITY	8
5.2. DECISION RULES	8
5.3. MEASUREMENT UNCERTAINTY	8
5.4. SAMPLE CALCULATION.....	8
6. EQUIPMENT UNDER TEST	9
6.1. DESCRIPTION OF EUT.....	9
6.2. MAXIMUM OUTPUT POWER.....	9
6.3. SOFTWARE AND FIRMWARE	11
6.4. MAXIMUM ANTENNA GAIN AND MAXIMUM ALLOWED OUTPUT POWER	11
6.5. WORST-CASE CONFIGURATION AND MODE	12
6.6. DESCRIPTION OF TEST SETUP.....	13
7. TEST AND MEASUREMENT EQUIPMENT	14
8. RF OUTPUT POWER MEASUREMENTS	15
8.1. LTE BAND 53.....	16
8.2. 5G NR n53	18
9. CONDUCTED TEST RESULTS.....	19
9.1. ON TIME AND DUTY CYCLE	19
9.2. OCCUPIED BANDWIDTH.....	21
9.2.1. LTE BAND 53.....	22
9.2.2. 5G NR n53	23
9.3. MAXIMUM POWER SPECTRAL DENSITY	24
9.3.1. LTE BAND 53.....	26
9.3.2. 5G NR n53	27
9.4. 6dB BANDWIDTH	28
9.4.1. LTE BAND 53.....	30

9.4.2.	5G NR n53	31
9.5.	BANDEDGE AND EIRP DENSITY	32
9.5.1.	LTE BAND 53.....	34
9.5.2	5G NR n53	39
9.6.	OUT OF BAND EMISSIONS.....	41
9.6.1.	LTE BAND 53.....	42
9.6.2.	5G NR 53	43
9.7.	FREQUENCY STABILITY	44
9.7.1.	LTE BAND 53 QPSK (10MHz BANDWIDTH)	45
9.7.2.	5G NR n53 BPSK (10MHz BANDWIDTH)	45
10.	RADIATED TEST RESULTS	46
10.1.	FIELD STRENGTH OF SPURIOUS RADIATION, ANT 3	50
10.1.1.	LTE BAND 53	51
10.1.2.	5G NR n53.....	53
10.2.	FIELD STRENGTH OF SPURIOUS RADIATION, ANT 4	55
10.2.1.	LTE BAND 53	55
10.2.2.	5G NR n53.....	57
11.	SETUP PHOTOS.....	59

1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	APPLE, INC 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A	
Model	A3256	
Brand	APPLE	
FCC ID	BCG-E8949A	
IC	579C-E8949A	
EUT Description	Smartphone	
Serial Number	RADIATED: N4QD07QXJ9, CP2H9NGP6C CONDUCTED: C07HG80000L0000WGT, C07HG80000T0000WGT	
Sample Receipt Date	2024-11-25	
Date Tested	2024-11-25 to 2025-06-03	
Applicable Standards	FCC 47 CFR PART 2, PART 25 ISED RSS-GEN ISSUE 5 + A1 + A2, RSS-170 ISSUE 4	
Test Results	COMPLIES	
UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document.		
Approved & Released By:	Reviewed By:	Prepared By:
		
Mengistu Mekuria Staff Laboratory Engineer UL Verification Services Inc.	Eric Ting Senior Test Engineer UL Verification Services Inc.	Carlos D. Caudana Laboratory Engineer UL Verification Services Inc.

2. SUMMARY OF TEST RESULTS

This report contains data provided by the customer, which can impact the validity of the results. UL Verification Services Inc. is only responsible for correctly integrating customer-provided data with measurements performed by UL Verification Services Inc.

Below is a list of the data provided by the customer:

1. Antenna gain and type (see section 6.4)

Requirement Description	Requirement Clause Number (FCC)	Requirement Clause Number (ISED)	Result	Remarks
RF Conducted Output Power	25.149 (c)(4)(iii)	RSS-170§ 5.4; SMSE-009-20 Annex A 9.d	Complies	
Equivalent Isotropic Radiated	25.149 (c)(4)(iii)	RSS-170§ 5.4; SMSE-009-20 Annex A 9.e	Complies	
Maximum Power Spectral Density	25.149 (c)(4)(iv)	SMSE-009-20 Annex A 9.f	Complies	
Duty Cycle	Reporting purpose	Reporting purpose	Complies	
Occupied Bandwidth	2.1049	RSS-Gen	Complies	
6 dB Bandwidth	25.149 (c)(4) (ii)	SMSE-009-20 Annex A 9.c	Complies	
Bandedge and EIRP Density	2.1051, 25.149 (c) (4) (v), (vi)	RSS-170§ 5.7.3; SMSE-009-20 Annex A 9.g and h	Complies	
Out of Band Emissions	2.1051, 25.149 (c) (4) (v), (vi)	RSS-170§ 5.7.3; SMSE-009-20 Annex A 9.g, h, and i	Complies	
Frequency Stability	25.202 (d)	RSS-170§ 5.3	Complies	
Field Strength of Spurious Radiation	2.1053, 25.149 (c) (4) (v), (vi)	RSS-170§ 5.7.3; SMSE-009-20 Annex A 9.g, h, and i	Complies	

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following.

FCC published lists of [measurement procedures](#) for compliance testing.

ISED published lists of [normative test standards and acceptable alternatives procedures](#).

- ANSI C63.26:2015
- ANSI/TIA-603-E (2016)
- FCC 47 CFR Part 2, Part 25
- [FCC KDB 971168 D01](#): Power Meas License Digital Systems (ISED acceptable alternative procedure)
- [FCC KDB 971168 D02](#): Misc Rev Approv License Devices
- [FCC KDB 412172 D01](#): Determining ERP and EIRP
- ISED RSS-GEN ISSUE 5 + A1 + A2, RSS-170 ISSUE 4, SMSE-009-20

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☒	Building 3: 843 Auburn Court, Fremont, CA 94538, USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538, USA			
☒	Building 5: 47670 Kato Rd, Fremont, CA 94538, USA			

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	U _{Lab}
Conducted Antenna Port Emission Measurement	1.940 dB
Power Spectral Density	2.466 dB
Time Domain Measurements Using SA	3.39 %
RF Power Measurement Direct Method Using Power Meter	0.450 dB Ave. 1.300 dB Peak
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB

Uncertainty figures are valid to a confidence level of 95%.

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

The Apple iPhone is a smartphone with cellular GSM, GPRS, EGPRS, WCDMA, LTE, 5G NR1, 5G NR2, IEEE 802.11a/b/g/n/ac/ax/be, Bluetooth (BT), Ultra-Wideband (UWB), Global Positioning System (GPS), Near-Field Communication (NFC), Narrow-Band (NB) UNII, 802.15.4, 802.15.4ab-Narrow Band (NB), Wireless Power Transfer (WPT) and Mobile Satellite Service (MSS) technologies. The rechargeable battery is not user accessible. This device is not user-serviceable and requires special tools to disassemble.

6.2. MAXIMUM OUTPUT POWER

LIMITS

FCC: §25.149 (c)(4) (iii): The maximum transmit power is no more than 1 W (30dBm) with a peak EIRP of no more than 6 dBW (36dBm or 3.98W).

ISED: SMSE-009-20 Annex A 9.d: Transmitter output power shall not exceed 0 dBW (30dBm).

ISED: SMSE-009-20 Annex A 9.e: The maximum equivalent isotropically radiated power (e.i.r.p.) shall not exceed 6 dBW (36dBm or 3.98W).

EIRP/ERP TEST PROCEDURE

ANSI C63.26:2015
KDB 971168 D01 Section 5.6

$$\text{ERP/EIRP} = \text{PMeas} + \text{GT} - \text{LC}$$

where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);

PMeas = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted and peak EIRP output powers as follows:

LTE BAND 53

FCC Part 25/ RSS-170									
Peak EIRP Limit (W)		3.98							
Conducted Average Limit (W)		1.00							
Antenna Gain (dBi) (ANT3)		-1.40							
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (MHz)	99% BW (kHz)	Emission Designator
1.4	QPSK	2484.2	2494.3	20.70	19.30	0.085	1.084	1084	1M08G7W
	16QAM			20.70	19.30	0.085	1.082	1082	1M08D7W
3.0	QPSK	2485.0	2493.5	20.70	19.30	0.085	2.687	2687	2M69G7W
	16QAM			20.70	19.30	0.085	2.699	2699	2M70D7W
5.0	QPSK	2486.0	2492.5	20.70	19.30	0.085	4.477	4477	4M48G7W
	16QAM			20.70	19.30	0.085	4.477	4477	4M48D7W
10.0	QPSK	2488.5	2490.0	20.70	19.30	0.085	8.941	8941	8M94G7W
	16QAM			20.70	19.30	0.085	8.934	8934	8M93D7W

5G NR n53

FCC Part 25 / RSS-170									
Peak EIRP Limit (W)		3.98							
Conducted Average Limit (W)		1.00							
Antenna Gain (dBi) (ANT3)		-1.40							
Bandwidth (MHz)	Modulation	Low Frequency (MHz)	Upper Frequency (MHz)	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Average (W)	99% BW (MHz)	99% BW (kHz)	Emission Designator
10.0	BPSK	2488.5	2490.0	20.70	19.30	0.085	8.644	8644	8M64G7W
	QPSK			20.70	19.30	0.085	8.633	8633	8M63G7W
	16QAM			20.70	19.30	0.085	8.658	8658	8M66D7W

6.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 0.08.00

6.4. MAXIMUM ANTENNA GAIN AND MAXIMUM ALLOWED OUTPUT POWER

The IFA antenna(s) gain/ allowed output power as provided by the manufacturer' are as follows:

Bands	Frequency Range (MHz)	Antenna	Gain (dBi)	Max Allowed Conducted Output Power (dBm)	ERP/EIRP (dBm)
LTE BAND 53 / 5G NR n53	2483.5 - 2495	ANT1			
		ANT2			
		ANT3	-1.40	20.70	19.30
		ANT4	-2.30	20.70	18.40

6.5. WORST-CASE CONFIGURATION AND MODE

This report covers the following technologies:

- LTE Band 53, 5G NR n53

BPSK modulation applied only for 5G NR frequencies and has the same tune up power as QPSK modulations.

The DFT-s-OFDM and CP-OFDM waveforms were investigated, and DFT-s-OFDM was found to be the worst case.

The worst-case scenario for all measurements is based on an engineering evaluation made on different modulations. All modulations had the same target power for the worst-case antenna, so QPSK and BPSK were used to represent the worst mode for LTE bands and 5G NR bands respectively and were set for all conducted and radiated tests. Output power measurements were measured on BPSK, QPSK, 16QAM, 64QAM, and 256QAM modulations. For testing purposes emissions on section 9 were measured while QPSK/BPSK was set at or above target power for all bands. Conducted tests were performed on the worst-case antenna because it has the highest conducted power. The worst-case antenna is shown in the table below.

LTE and 5G NR Bands	Worst case Antenna Port
LTE Band 53 and 5G NR n53	Ant 3

The EUT was investigated in three orthogonal orientations X/Y/Z on all available antennas to determine the worst-case orientation. The full tests of the EUT have made upon the orientations shown in the table below.

ANT3	ANT4
X	Y

Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 18GHz. There were no emissions found with less than 20dB of margin from 9kHz to 30MHz, 30MHz-1GHz and above 18GHz.

For simultaneous transmission of multiple channels in the 2.4GHz/5GHz WLAN, UWB, and Cellular bands, tests were conducted for various configurations having the highest power, least separation in frequencies and widest operation bandwidths. No noticeable new emission was found.

6.6. DESCRIPTION OF TEST SETUP

Refer to Appendix A for a description of the test setup.

7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment were utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Wideband Communication Test Set, Call Box	R&S GmbH & Co.	CMW500	230297	2026-02-28
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	169936	2026-02-28
Antenna, Horn 1-18GHz	ETS Lindgren	3117	200897	2026-04-30
RF Filter Box, 1-18GHz, 12 Port	UL-FR1	Frankenstein	217255	2026-01-31
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	223460	2026-02-28
RF Filter Box, 1-18GHz, 17 Port	UL-FR1	RATS 2	236726	2025-10-31
Antenna, Horn 1-18GHz	ETS Lindgren	3117	80403	2026-08-31
Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	171863	2026-11-30
Amplifier 9 KHz - 1 GHz	SONOMA INSTRUMENT	310N	224490	2026-05-06
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	170013	2025-07-31
Antenna, Passive Loop 100KHz - 30MHz	ELECTRO-METRICS	EM-6872	170015	2025-07-31
PXA Signal Analyzer	Keysight Technologies Inc	N9030B	262735	2026-03-30
PXA Signal Analyzer	Keysight Technologies Inc	N9030B	231912	2026-04-30
PXA Signal Analyzer	Keysight Technologies Inc	N9030B	259079	2026-02-28
PXA Signal Analyzer	Keysight Technologies Inc	N9030B	262734	2026-04-30
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	172353	2025-08-31
Link File, RF Amplifier Assembly, 18-26.5GHz, 60dB Gain	AMPLICAL	AMP18G26.5-60	220194	2026-04-29
Antenna, Horn 26.5-40GHz	A.R.A.	MWH-2640/B	81105	2025-08-31
Link File, RF Amplifier Assembly, 26.5-40GHz, 65dB Gain	Amplical	AMP26G40-65	220193	2026-04-30
Wideband Communication Call Box	Rohde & Schwarz	CMW500	230298	2026-02-28
Wideband Communication Call Box	Rohde & Schwarz	CMW500	85943	2026-02-28
Wideband Communication Call Box	Rohde & Schwarz	CMW500	262742	2027-02-11
Wideband Communication Call Box	Rohde & Schwarz	CMW500	262741	2027-02-11
Conducted Switch Box	N/A	CSB	221008	2026-04-30
Conducted Switch Box	N/A	CSB	262354	2026-04-30
Filter, BRF 3400-3800MHz, 18GHz max	Micro-Tronics	BRM50711	217364	2025-09-30
Filter, BRF 2305-2315	Micro-Tronics	BRC20553	224186	2026-06-29
Directional Coupler	KRYTAR	152610	254457	2025-10-31
Directional Coupler	KRYTAR	101040010K	254458	2025-10-30
Power Meter, P-series single channel	Keysight Technologies Inc	N1911A	90718	2026-03-31
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	257704	2026-03-31
Chamber, Environmental	Cincinnati Sub Zero	ZPHS-8-3.5-SCT/WC	89097	2025-10-31
UL AUTOMATION SOFTWARE				
Conducted Software	UL	CLT	Ver.2023 11.21.0 & .2024.3.20.0	
Conducted Software	UL	Power Measurement	Ver 2023.08.14	
Conducted Software	UL	Antenna Port	Ver.2022.8.16 & 2021.5.13	
Conducted Software	UL	Station Tool	Ver. 5.0 & 5.3	
Radiated Software	UL	UL EMC	Ver 9.5, May 1, 2023	

8. RF OUTPUT POWER MEASUREMENTS

LIMITS

FCC: §25.149 (c)(4) (iii): The maximum transmit power is no more than 1 W (30dBm) with a peak EIRP of no more than 6 dBW (36dBm or 3.98W).

ISED: SMSE-009-20 Annex A 9.d: Transmitter output power shall not exceed 0 dBW (30dBm).

ISED: SMSE-009-20 Annex A 9.e: The maximum equivalent isotropically radiated power (e.i.r.p.) shall not exceed 6 dBW (36dBm or 3.98W).

AVERAGE OUTPUT POWER TEST PROCEDURE

The transmitter output is connected to a power meter.

The power output was measured on the EUT antenna port using SMA cable with directional coupler connected to a power meter via wideband average power sensor. Gated average output power was read directly from power meter.

PEAK OUTPUT POWER TEST PROCEDURE

The transmitter output is connected to a power meter.

The power output was measured on the EUT antenna port using SMA cable with directional coupler connected to a power meter via wideband peak power sensor. Peak output power was read directly from power meter.

RESULTS

The EUT has different power levels for head use configuration and body use configuration. All measurements are made with the device operating at the highest average conducted output powers.

8.1. LTE BAND 53

Test Engineer ID:	39004	Test Date:	2024-12-12
-------------------	-------	------------	------------

OUTPUT POWER FOR LTE BAND 53 (1.4 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Ant 3			Ant 4		
				Conducted Average (dBm)			Conducted Average (dBm)		
				60147	60195	60248	60147	60195	60248
				2484.2 MHz	2489.0 MHz	2494.3 MHz	2484.2 MHz	2489.0 MHz	2494.3 MHz
1.4	QPSK	1	0	20.68	20.70	20.68	20.70	20.70	20.70
		1	2	20.70	20.70	20.70	20.70	20.70	20.70
		1	5	20.70	20.69	20.70	20.70	20.64	20.69
		3	0	20.56	20.55	20.70	20.70	20.70	20.70
		3	1	20.69	20.70	20.66	20.64	20.65	20.67
		3	2	20.70	20.70	20.64	20.66	20.65	20.66
	16QAM	6	0	20.70	20.67	20.54	20.61	20.61	20.63
		1	0	20.70	20.70	20.70	20.70	20.70	20.68
		1	2	20.70	20.70	20.70	20.70	20.70	20.70
		1	5	20.51	20.70	20.69	20.68	20.69	20.70
		3	0	19.68	19.60	20.67	20.70	20.68	20.66
		3	1	20.69	20.70	20.69	20.64	20.70	20.70
	64QAM	3	2	20.70	20.69	20.70	20.67	20.67	20.62
		6	0	20.69	20.64	19.68	20.36	20.40	20.32
		1	0	20.70	20.70	20.66	20.62	20.70	20.70
		1	2	20.70	20.70	20.70	20.70	20.70	20.70
		1	5	20.68	20.54	20.70	20.70	20.62	20.63
		3	0	20.56	20.70	20.70	20.69	20.66	20.68
	256QAM	3	1	20.62	20.45	20.61	20.69	20.66	20.70
		3	2	20.62	20.52	20.64	20.70	20.70	20.68
		6	0	20.70	20.48	19.63	20.54	20.52	20.56
		1	0	20.70	20.70	20.70	20.63	20.70	20.70
		1	2	20.70	20.70	20.70	20.70	20.70	20.70
		1	5	20.67	20.55	20.67	20.70	20.69	20.68
	256QAM	3	0	20.65	20.26	20.70	20.65	20.70	20.70
		3	1	20.68	20.70	20.68	20.70	20.68	20.68
		3	2	20.70	20.39	20.64	20.70	20.63	20.65
		6	0	20.67	20.35	20.58	20.59	20.70	20.59

OUTPUT POWER FOR LTE BAND 53 (3.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Ant 3			Ant 4		
				Conducted Average (dBm)			Conducted Average (dBm)		
				60155	60195	60240	60155	60195	60240
				2485.0 MHz	2489.0 MHz	2493.5 MHz	2485.0 MHz	2489.0 MHz	2493.5 MHz
3.0	QPSK	1	0	20.70	20.70	20.70	20.70	20.70	20.70
		1	7	20.70	20.70	20.70	20.70	20.70	20.70
		1	14	20.64	20.68	20.56	20.70	20.68	20.64
		8	0	20.70	20.70	20.70	20.68	20.70	20.70
		8	4	20.65	20.69	20.67	20.68	20.70	20.66
		8	7	20.67	20.69	20.68	20.70	20.69	20.67
	16QAM	15	0	20.70	20.70	20.68	20.65	20.67	20.67
		1	0	20.70	20.70	20.70	20.70	20.70	20.69
		1	7	20.70	20.70	20.70	20.70	20.70	20.70
		1	14	20.58	20.60	20.67	20.61	20.59	20.70
		8	0	20.69	20.70	20.70	20.70	20.70	20.68
		8	4	20.68	20.69	20.69	20.65	20.70	20.69
	64QAM	8	7	20.70	20.69	20.68	20.66	20.69	20.70
		15	0	20.64	20.65	20.62	20.65	20.64	20.66
		1	0	20.70	20.62	20.70	20.70	20.70	20.70
		1	7	20.70	20.70	20.70	20.70	20.70	20.70
		1	14	20.62	20.70	20.60	20.66	20.68	20.62
		8	0	20.70	20.70	20.68	20.70	20.68	20.67
	256QAM	8	4	20.69	20.69	20.70	20.67	20.70	20.70
		8	7	20.67	20.68	20.70	20.66	20.67	20.69
		15	0	20.62	20.63	20.63	20.63	20.63	20.63
		1	0	20.70	20.70	20.70	20.65	20.70	20.70
		1	7	20.70	20.70	20.70	20.70	20.70	20.70
		1	14	20.63	20.61	20.64	20.70	20.66	20.64
	256QAM	8	0	20.70	20.65	20.67	20.69	20.70	20.70
		8	4	20.68	20.65	20.70	20.70	20.70	20.67
		8	7	20.67	20.70	20.64	20.69	20.70	20.70
		15	0	20.64	20.64	20.63	20.66	20.68	20.63

OUTPUT POWER FOR LTE BAND 53 (5.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Ant 3			Ant 4		
				Conducted Average (dBm)			Conducted Average (dBm)		
				60165 2486.0 MHz	60195 2489.0 MHz	60230 2492.5 MHz	60165 2486.0 MHz	60195 2489.0 MHz	60230 2492.5 MHz
5.0	QPSK	1	0	20.70	20.70	20.70	20.70	20.70	20.70
		1	12	20.70	20.70	20.70	20.70	20.70	20.70
		1	24	20.56	20.56	20.59	20.64	20.64	20.64
		12	0	20.70	20.68	20.70	20.67	20.70	20.67
		12	6	20.64	20.70	20.69	20.70	20.67	20.70
		12	11	20.56	20.67	20.64	20.64	20.66	20.67
	16QAM	25	0	20.59	20.66	20.65	20.63	20.65	20.65
		1	0	20.70	20.70	20.70	20.70	20.70	20.70
		1	12	20.70	20.70	20.70	20.70	20.70	20.70
		1	24	20.62	20.51	20.55	20.57	20.67	20.59
		12	0	20.70	20.69	20.70	20.69	20.70	20.68
		12	6	20.59	20.70	20.70	20.70	20.70	20.70
	64QAM	12	11	20.60	20.66	20.64	20.68	20.67	20.68
		25	0	20.56	20.64	20.60	20.63	20.67	20.65
		1	0	20.70	20.70	20.70	20.70	20.70	20.70
		1	12	20.70	20.70	20.70	20.70	20.70	20.70
		1	24	20.54	20.56	20.58	20.61	20.62	20.66
		12	0	20.70	20.70	20.69	20.69	20.68	20.70
	256QAM	12	6	20.62	20.69	20.66	20.70	20.70	20.69
		12	11	20.58	20.67	20.70	20.62	20.67	20.65
		25	0	20.60	20.65	20.68	20.70	20.70	20.70
		1	0	20.70	20.70	20.70	20.70	20.70	20.70
		1	12	20.70	20.70	20.70	18.83	18.89	18.82
		1	24	20.55	20.60	20.68	20.70	20.65	20.65
	256QAM	12	0	20.70	20.70	20.70	20.67	20.69	20.65
		12	6	20.62	20.70	20.69	20.67	20.70	20.70
		12	11	20.57	20.62	20.65	20.61	20.66	20.63
		25	0	20.58	20.67	20.65	20.50	20.55	20.69

OUTPUT POWER FOR LTE BAND 53 (10.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Ant 3			Ant 4		
				Conducted Average (dBm)			Conducted Average (dBm)		
				60190 2488.5 MHz	60195 2489.0 MHz	60205 2490.0 MHz	60190 2488.5 MHz	60195 2489.0 MHz	60205 2490.0 MHz
10.0	QPSK	1	0	20.70	20.70	20.70	20.70	20.70	20.70
		1	24	20.70	20.70	20.70	20.70	20.70	20.70
		1	49	20.58	20.58	20.58	20.62	20.62	20.54
		25	0	20.70	20.69	20.69	20.69	20.61	20.70
		25	12	20.63	20.70	20.70	20.70	20.70	20.70
		25	24	20.59	20.67	20.69	20.68	20.62	20.65
	16QAM	50	0	20.58	20.68	20.69	20.68	20.65	20.67
		1	0	20.70	20.70	20.70	20.70	20.70	20.70
		1	24	20.70	20.70	20.70	20.70	20.70	20.70
		1	49	20.52	20.52	20.49	20.66	20.59	20.44
		25	0	20.70	20.70	20.68	20.70	20.65	20.69
		25	12	20.63	20.66	20.70	20.70	20.70	20.70
	64QAM	25	24	20.59	20.63	20.65	20.67	20.68	20.68
		50	0	20.59	20.64	20.66	20.68	20.68	20.65
		1	0	20.70	20.70	20.70	20.70	20.70	20.70
		1	24	20.70	20.70	20.70	20.70	20.70	20.70
		1	49	20.55	20.65	20.54	20.50	20.67	20.60
		25	0	20.70	20.70	20.70	20.70	20.63	20.70
	256QAM	25	12	20.67	20.69	20.70	20.69	20.70	20.68
		25	24	20.64	20.64	20.65	20.67	20.67	20.65
		50	0	20.60	20.68	20.64	20.66	20.68	20.68
		1	0	20.70	20.70	20.70	20.70	20.70	20.70
		1	24	20.70	20.70	20.70	20.70	20.70	20.70
		1	49	20.48	20.58	20.54	20.67	20.60	20.68
	256QAM	25	0	20.70	20.70	20.70	20.70	20.64	20.68
		25	12	20.67	20.67	20.69	20.70	20.70	20.70
		25	24	20.57	20.67	20.67	20.67	20.65	20.63
		50	0	20.62	20.67	20.67	20.67	20.69	20.66

8.2. 5G NR n53

Test Engineer ID:	27342	Test Date:	2025-02-24
-------------------	-------	------------	------------

OUTPUT POWER FOR 5G NR n53 (10.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Ant 3			Ant 4		
				Conducted Average (dBm)			Conducted Average (dBm)		
				497700 2488.5 MHz	497800 2489.0 MHz	498000 2490.0 MHz	497700 2488.5 MHz	497800 2489.0 MHz	498000 2490.0 MHz
10.0	BPSK	1	0	20.62	20.57	20.52	20.26	20.23	20.32
		1	1	20.53	20.59	20.45	20.30	20.22	20.35
		1	22	20.70	20.70	20.70	20.70	20.70	20.70
		1	23	20.70	20.70	20.70	20.70	20.70	20.70
		12	6	20.70	20.70	20.70	20.70	20.70	20.70
	QPSK	24	0	20.45	20.44	20.55	20.50	20.48	20.49
		1	0	20.58	20.55	20.60	20.29	20.28	20.28
		1	1	20.61	20.58	20.58	20.48	20.30	20.32
		1	22	20.70	20.70	20.70	20.70	20.70	20.70
		1	23	20.70	20.70	20.70	20.70	20.70	20.70
	16QAM	12	6	20.70	20.70	20.70	20.70	20.70	20.70
		24	0	20.56	20.67	20.61	20.52	20.68	20.47
		1	0	20.70	20.64	20.50	20.29	20.35	20.31
		1	1	20.70	20.56	20.58	20.42	20.27	20.35
		1	22	20.67	20.70	20.70	20.70	20.70	20.70
	64QAM	1	23	20.70	20.70	20.70	20.70	20.70	20.70
		12	6	20.70	20.67	20.66	20.70	20.70	20.70
		24	0	20.67	20.70	20.70	20.67	20.65	20.64
		1	0	20.62	20.45	20.60	20.35	20.36	20.32
		1	1	20.51	20.64	20.57	20.27	20.32	20.27
	256QAM	1	22	20.70	20.70	20.70	20.70	20.70	20.70
		1	23	20.70	20.70	20.70	20.70	20.70	20.70
		12	6	20.61	20.70	20.67	20.67	20.70	20.64
		24	0	20.70	20.68	20.70	20.70	20.61	20.70
		1	0	20.47	20.55	20.49	20.39	20.48	20.22
		1	1	20.52	20.69	20.36	20.42	20.41	20.28
		1	22	20.70	20.70	20.70	20.70	20.70	20.70
		1	23	20.70	20.70	20.70	20.70	20.70	20.70
		12	6	20.70	20.70	20.70	20.70	20.70	20.70
		24	0	20.68	20.70	20.70	20.69	20.62	20.66

9. CONDUCTED TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

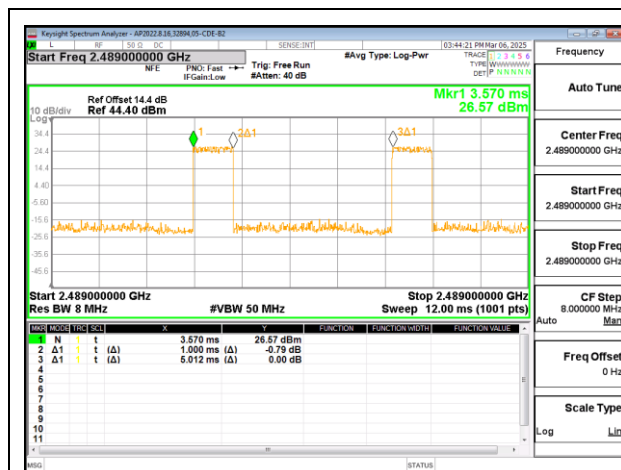
None; for reporting purposes only.

PROCEDURE

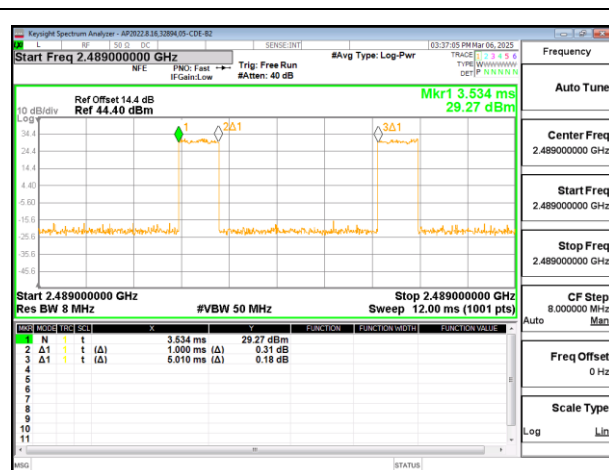
Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

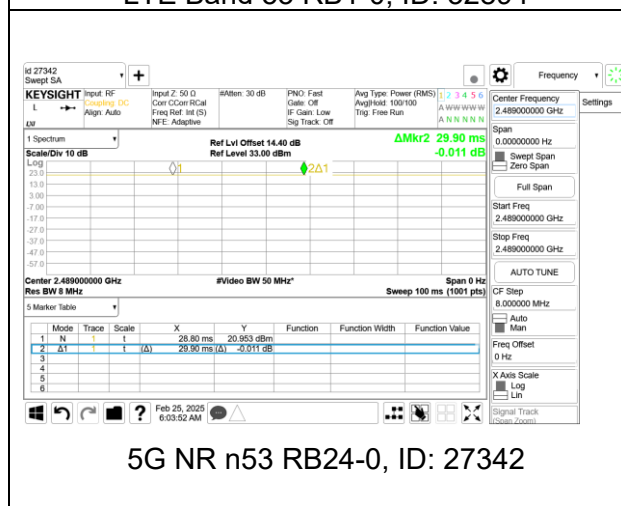
Band	RB Allocation / Offset	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
LTE Band 53	1 / 0	1.000	5.012	0.20	19.95	7.00
LTE Band 53	50 / 0	1.000	5.010	0.20	19.96	7.00
5G NR n53	1 / 1	N.A.	N.A.	1.00	100.00	0.00
5G NR n53	24 / 0	N.A.	N.A.	1.00	100.00	0.00



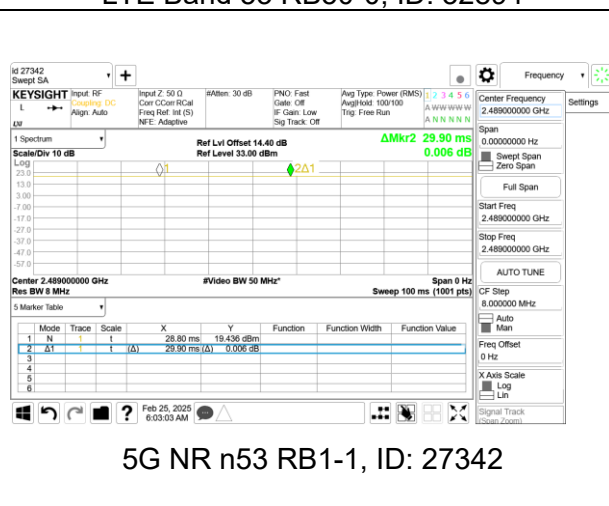
LTE Band 53 RB1-0, ID: 32894



LTE Band 53 RB50-0, ID: 32894



5G NR n53 RB24-0, ID: 27342



5G NR n53 RB1-1, ID: 27342

9.2. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only.

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the middle channel in each band. The 99% and -26dB bandwidths were also measured and recorded.

RESULTS

There is no limit required, and power is the same for low, middle, and high channel; therefore, only the middle channel was tested. Worst-case plots (highest bandwidth) are reported only.

Test Engineer ID:	32894	Test Date:	2025-03-05
-------------------	-------	------------	------------

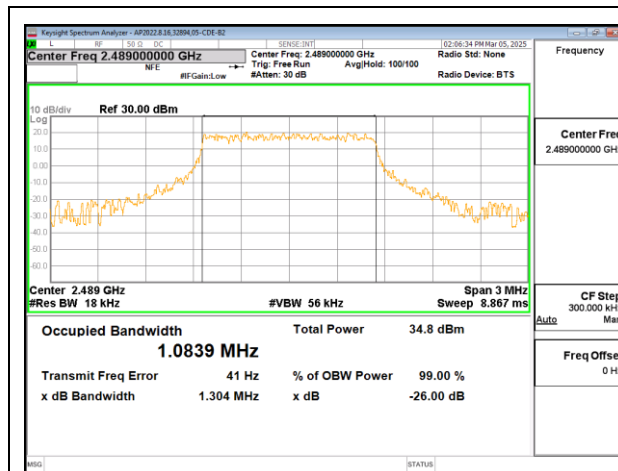
LTE BAND 53

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE BAND 53	1.4MHz, QPSK	6/0	2489.0	1.084	1.30
	1.4MHz,16QAM			1.082	1.36
	3MHz, QPSK	15/0		2.687	2.93
	3MHz, 16QAM			2.699	3.06
	5MHz, QPSK	25/0		4.477	5.22
	5MHz, 16QAM			4.477	4.97
	10MHz, QPSK	50/0		8.941	9.63
	10MHz, 16QAM			8.934	9.80
	10MHz. QPSK	1/0		0.240	0.40

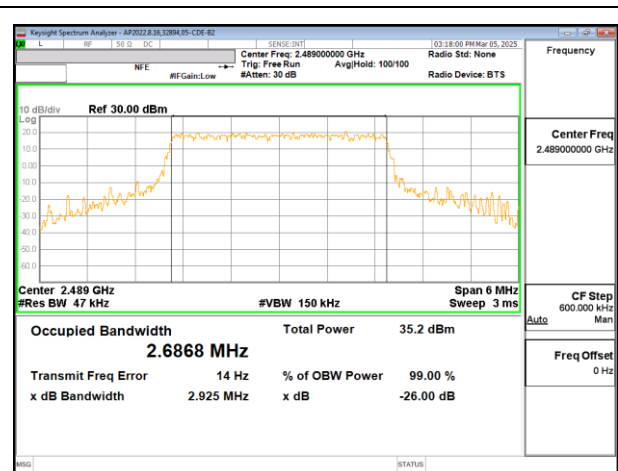
5G NR n53

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
5G NR n53	10MHz, BPSK	24/0	2489.0	8.644	9.97
	10MHz, QPSK			8.633	9.98
	10MHz, 16QAM			8.658	9.93
	10MHz, BPSK	1/0		0.497	0.80

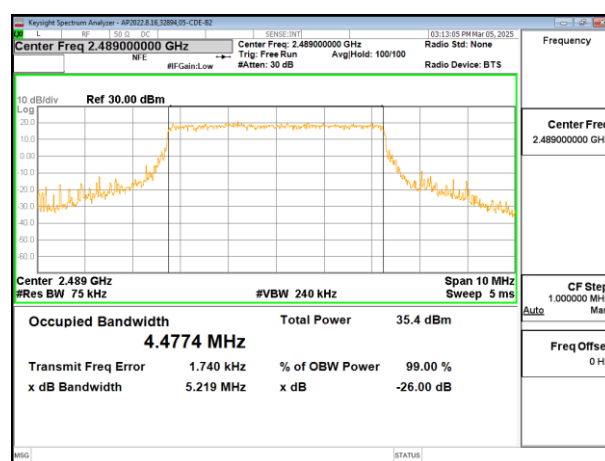
9.2.1. LTE BAND 53



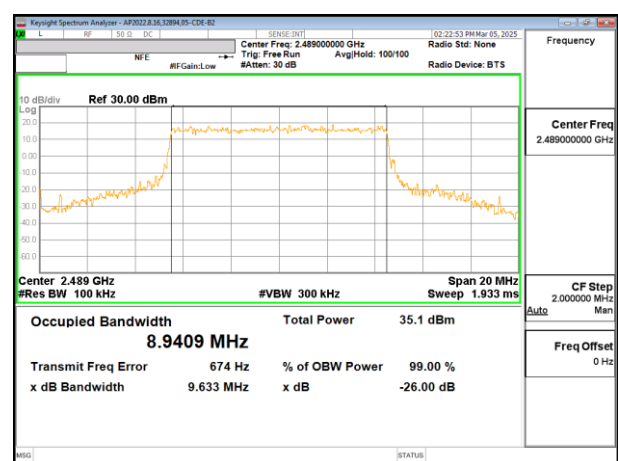
LTE B53 1.4MHz QPSK Middle Channel RB6-0



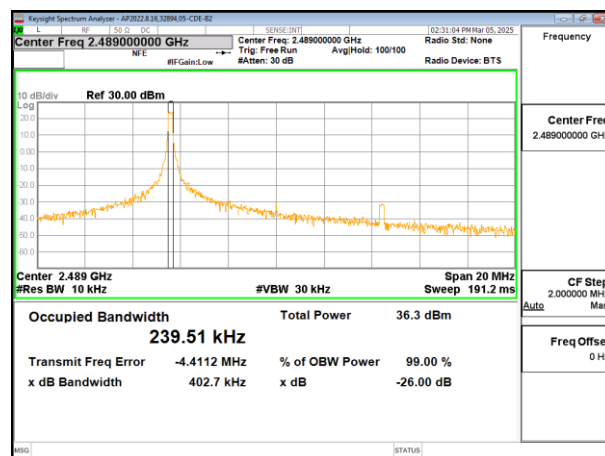
LTE B53 3MHz QPSK Middle Channel RB15-0



LTE B53 5MHz QPSK Middle Channel RB25-0



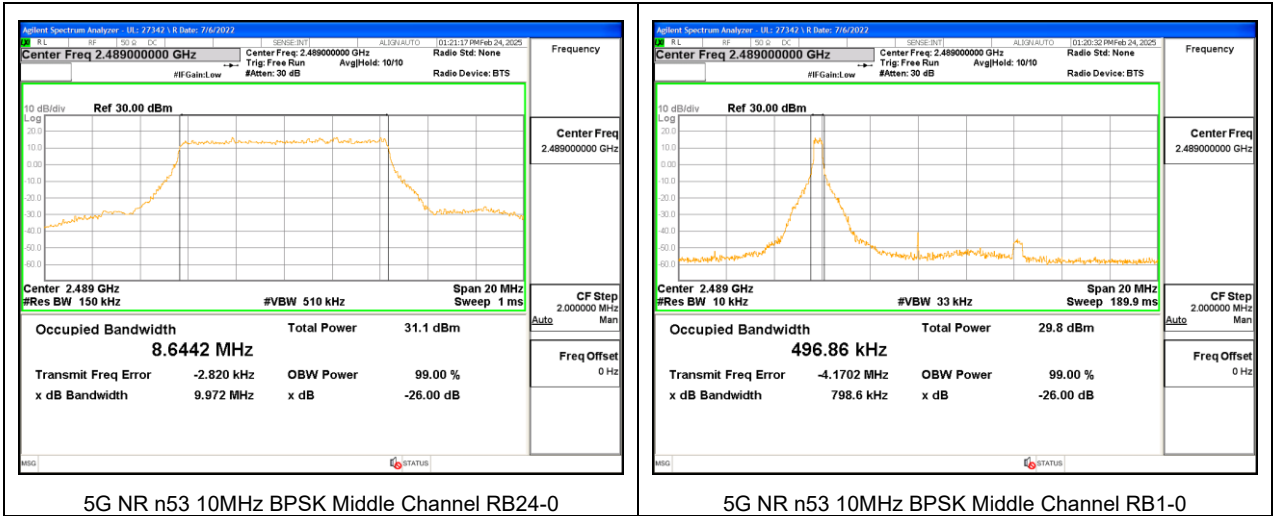
LTE B53 10MHz QPSK Middle Channel RB50-0



LTE B53 10MHz QPSK Middle Channel RB1-0

Intentionally Blank

9.2.2. 5G NR n53



9.3. MAXIMUM POWER SPECTRAL DENSITY

LIMITS

FCC: §25.149 (c)(4) (iv): The maximum power spectral density conducted to the antenna is not greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

ISED: SMSE-009-20 Annex A 9.f: The equipment's maximum power spectral density conducted to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The PSD was measured with the spectrum analyzer at the low/ middle/high channel in each band where RBW=3kHz, VBW $\geq 3 * \text{RBW}$, detector= RMS (power averaging).

RESULTS

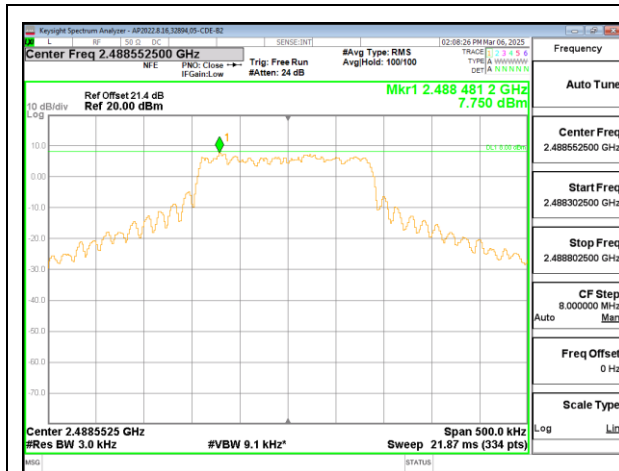
LTE BAND 53

Band	Mode	RB Allocation/RB Offset	f(MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)
LTE BAND 53	1.4MHz, QPSK	1/0	2484.2	7.032	8.0
			2489.0	7.750	
			2494.3	7.418	
	3MHz, QPSK	1/0	2485.0	7.524	
			2489.0	7.369	
			2493.5	7.497	
	5MHz, QPSK	1/0	2486.0	7.472	
			2489.0	7.590	
			2492.5	7.460	
	10MHz, QPSK	1/0	2488.5	7.417	
			2489.0	7.426	
			2490.0	7.760	
		50/0	2488.5	-6.565	
			2489.0	-6.090	
			2490.0	-6.964	

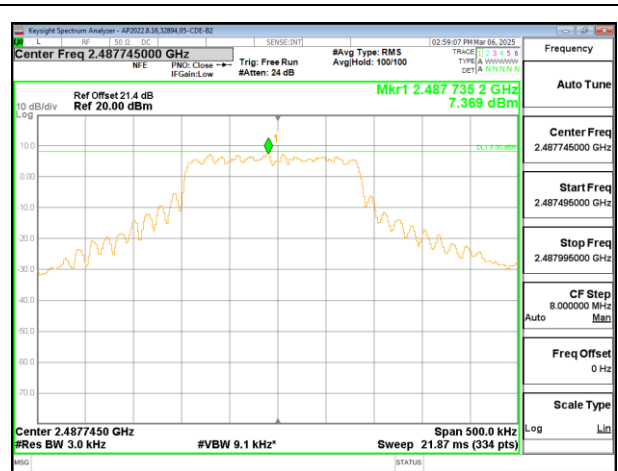
5G NR n53

Band	Mode	RB Allocation/RB Offset	f(MHz)	PSD (dBm/3kHz)	PSD Limit (dBm/3kHz)
5G NR n53	10MHz, BPSK	1/1	2488.5	4.123	8.0
			2489.0	4.384	
			2490.0	4.068	
		24/0	2488.5	-9.045	
			2489.0	-8.797	
			2490.0	-8.792	

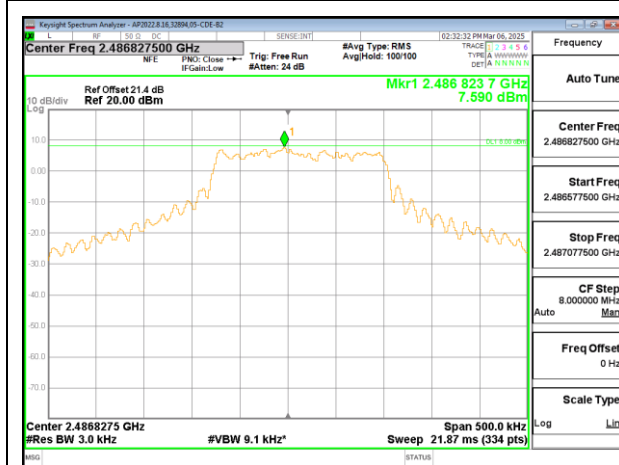
9.3.1. LTE BAND 53



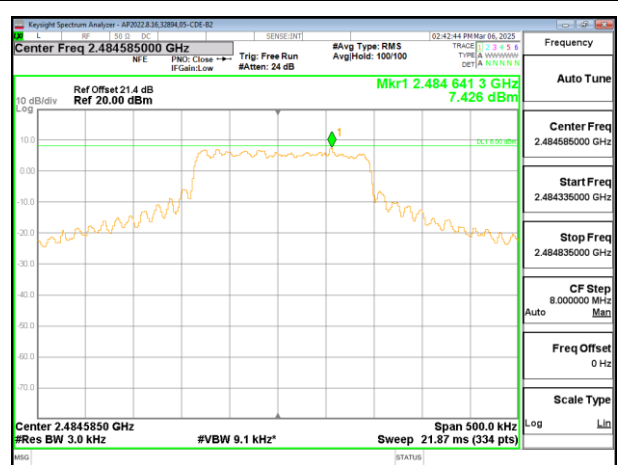
LTE B53 1.4MHz QPSK Middle Channel RB1-0



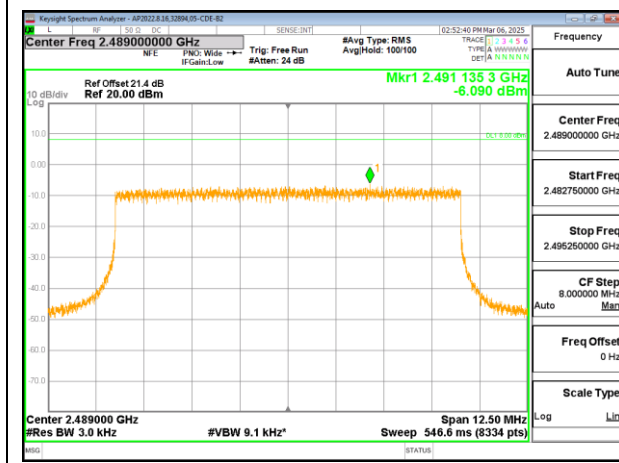
LTE B53 3MHz QPSK Middle Channel RB1-0



LTE B53 5MHz QPSK Middle Channel RB1-0



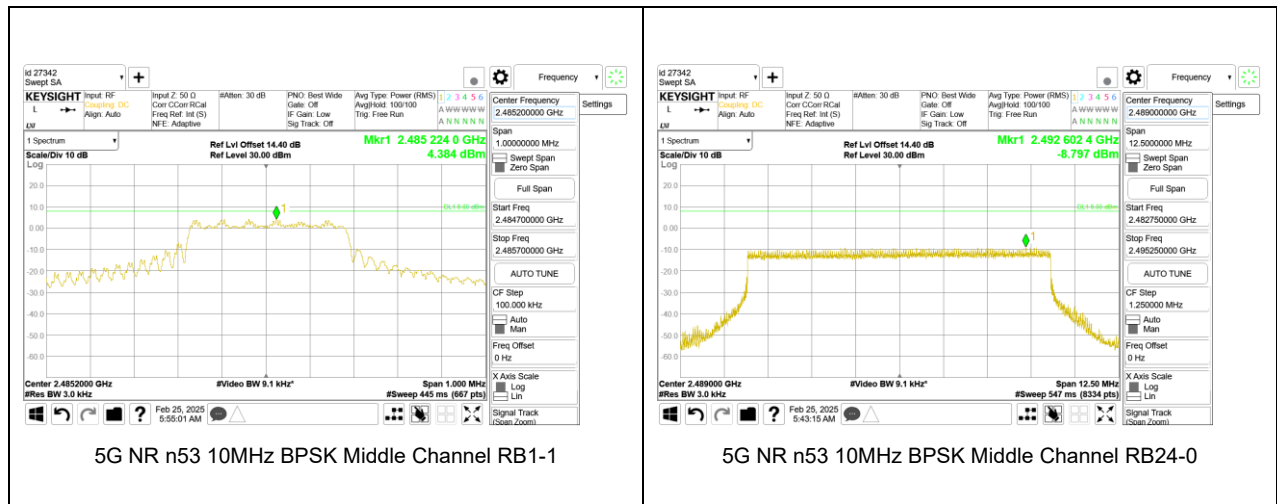
LTE B53 10MHz QPSK Middle Channel RB1-0



LTE B53 10MHz QPSK Middle Channel RB50-0

Intentionally Blank

9.3.2. 5G NR n53



9.4. 6dB BANDWIDTH

LIMITS

FCC: §25.149 (c)(4) (ii): The 6 dB bandwidth is at least 500 kHz.

ISED: SMSE-009-20 Annex A 9.c: The 6 dB bandwidth shall be at least 500 kHz.

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The 6dB bandwidth was measured with the spectrum analyzer at the low/ middle/high channel in each band where RBW is 1%-5% of EBW, VBW $\geq 3 * RBW$, Peak detector and max hold.

RESULTS

LTE BAND 53

Band	Mode	RB Allocation/RB Offset	f(MHz)	6dB BW (MHz)	6dB BW Minimum Limit (MHz)
LTE BAND 53	1.4MHz, QPSK	6/0	2489.0	1.089	0.5
	1.4MHz, 16QAM			1.082	
	3MHz, QPSK	15/0		2.703	
	3MHz, 16QAM			2.710	
	5MHz, QPSK	25/0		4.499	
	5MHz, 16QAM			4.520	
	10MHz, QPSK	50/0		9.007	
	10MHz, 16QAM			9.020	

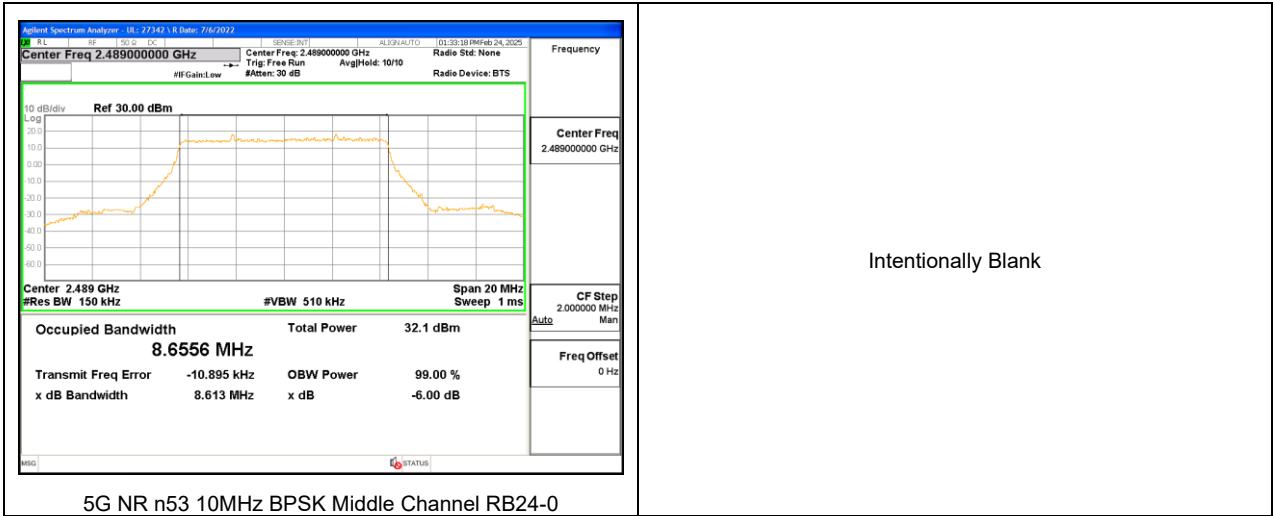
5G NR n53

Band	Mode	RB Allocation/RB Offset	f(MHz)	6dB BW (MHz)	6dB BW Minimum Limit (MHz)
5G NR n53	10MHz, BPSK	24/0	2489.0	8.613	0.5
	10MHz, QPSK	24/0		8.686	
	10MHz, 16QAM	24/0		8.685	

9.4.1. LTE BAND 53



9.4.2. 5G NR n53



9.5. BANEDGE AND EIRP DENSITY

LIMITS

FCC: §25.149

(c) Equipment certification. (4) Applications for equipment authorization of terrestrial low-power system equipment that will operate in the 2483.5-2495 MHz band shall demonstrate the following:

- (v) Emissions below 2483.5 MHz are attenuated below the transmitter power (P) measured in watts by a factor of at least $40 + 10 \log(P)$ dB at the channel edge at 2483.5 MHz, $43 + 10 \log(P)$ dB at 5 MHz from the channel edge, and $55 + 10 \log(P)$ dB at X MHz from the channel edge where X is the greater of 6 MHz or the actual emission bandwidth.
- (vi) Emissions above 2495 MHz are attenuated below the transmitter power (P) measured in watts by a factor of at least $43 + 10 \log(P)$ dB on all frequencies between the channel edge at 2495 MHz and X MHz from this channel edge and $55 + 10 \log(P)$ dB on all frequencies more than X MHz from this channel edge, where X is the greater of 6 MHz or the actual emission bandwidth;

ISED: SMSE-900-20 Annex A 9:

(g) For the unwanted emission below 2483.5 MHz, the ATC system's transmitter power, P (Watt), shall be attenuated by at least:

- i. $40 + 10 \log(P)$ dB at the channel edge at 2483.5 MHz
- ii. $43 + 10 \log(P)$ dB at 5 MHz from the channel edge
- iii. $55 + 10 \log(P)$ dB at X MHz from the channel edge

where X is the greater of 6 MHz or the actual emission bandwidth.

(h) For the unwanted emission above 2495 MHz, the ATC system's transmitter power, P (Watt), shall be attenuated by at least:

- i. $43 + 10 \log(P)$ dB on all frequencies between the channel edge at 2495 MHz and X MHz from this channel edge
- ii. $55 + 10 \log(P)$ dB on all frequencies more than X MHz from this channel edge

where X is the greater of 6 MHz or the actual emission bandwidth.

Notwithstanding the above requirements, the e.i.r.p. density of the ATC system's unwanted emission shall not exceed:

- i. -44.1 dBW/30 kHz measured from the edge of the equipment channel bandwidth.
- ii. -70 dBW/MHz for broadband emissions and -80 dBW/kHz for discrete emissions in the band 1559-1610 MHz

TEST PROCEDURE FOR UNWANTED EMISSIONS

The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each Emission Mask measurement:

1. Set the spectrum analyzer span to include the block edge frequency.
2. Set the Spectrum Emission Mask to cover all frequencies at their respective limits
3. Set the Spectrum Emission Mask to use the required Measurement Bandwidth
4. Set resolution bandwidth to at least 1% of emission bandwidth.

TEST PROCEDURE For EIRP DENSITY LIMIT

The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each Emission Mask measurement:

1. Set the Spectrum analyzer span to include the block edge frequency.
2. Set the Spectrum Emission Mask to cover all frequencies at their respective limits
3. Set the Spectrum Emission Mask to use the Measurement Bandwidth of 30kHz

RESULTS

9.5.1. LTE BAND 53

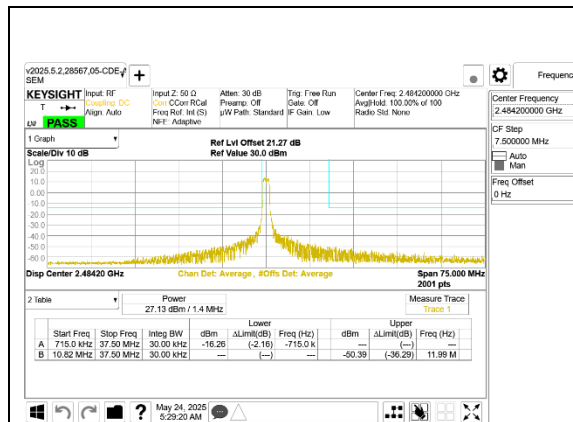
LTE BAND 53 BANDEGE



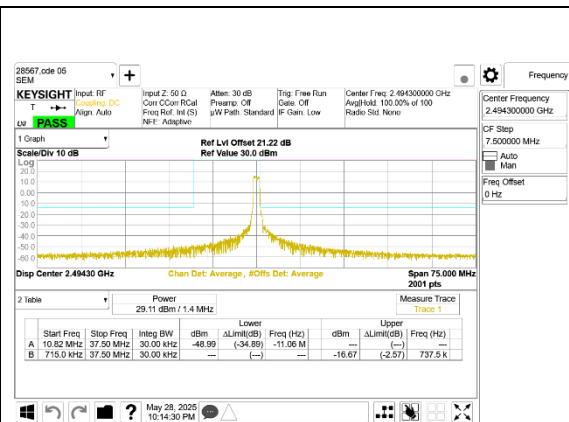


LTE BAND 53 EIRP DENSITY

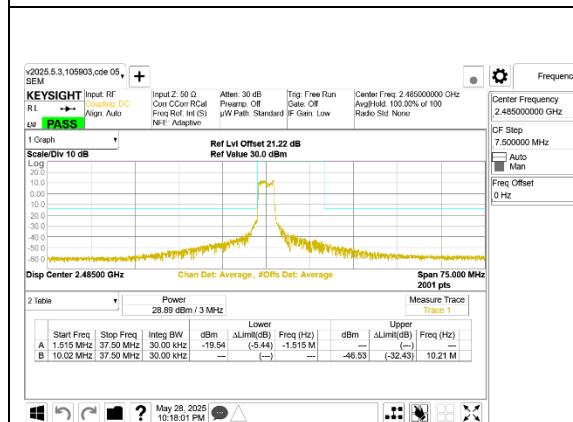
Band	Mode	RB Allocation/ RB Offset	Freq (MHz)	Highest Cond Power Density (dBm/30kHz)	Highest Antenna Gain (dBi)	Highest EIRP Density (dBm/30kHz)	EIRP Density Limit (dBm/30kHz)
LTE Band 53	1.4MHz, QPSK	1/0	2484.2	-17.34	-1.4	-18.74	-14.1
		6/0	2484.2	-16.26		-17.66	
		1/5	2494.3	-17.41		-18.81	
		6/0	2494.3	-16.67		-18.07	
	3MHz, QPSK	1/0	2485.0	-15.49		-16.89	
		15/0	2485.0	-19.54		-20.94	
		1/14	2493.5	-16.08		-17.48	
		15/0	2493.5	-18.32		-19.72	
	5MHz, QPSK	1/0	2486.0	-16.79		-18.19	
		25/0	2486.0	-19.85		-21.25	
		1/24	2492.5	-18.20		-19.60	
		25/0	2492.5	-18.77		-20.17	
	10MHz, QPSK	1/0	2488.5	-23.65		-25.05	
		50/0	2488.5	-27.14		-28.54	
		1/49	2490.0	-24.54		-25.94	
		50/0	2490.0	-25.92		-27.32	



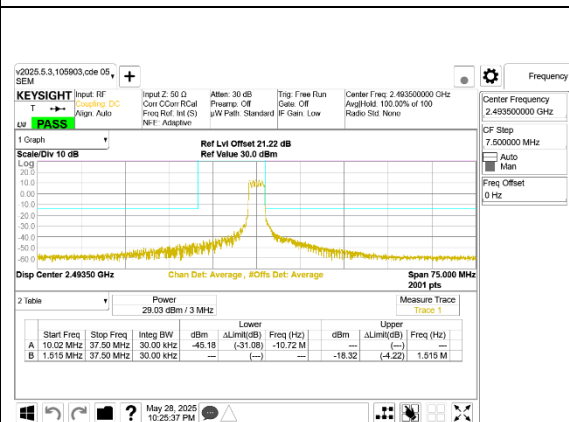
LTE B53 1.4MHz QPSK Low Channel RB6-0



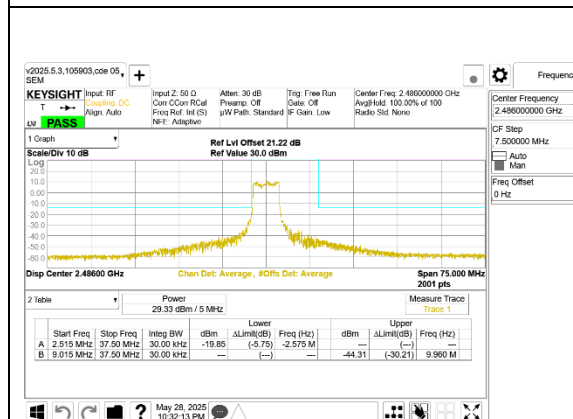
LTE B53 1.4MHz QPSK High Channel RB6-0



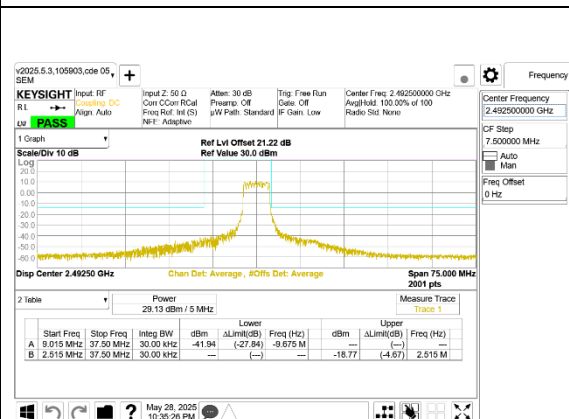
LTE B53 3MHz QPSK Low Channel RB15-0



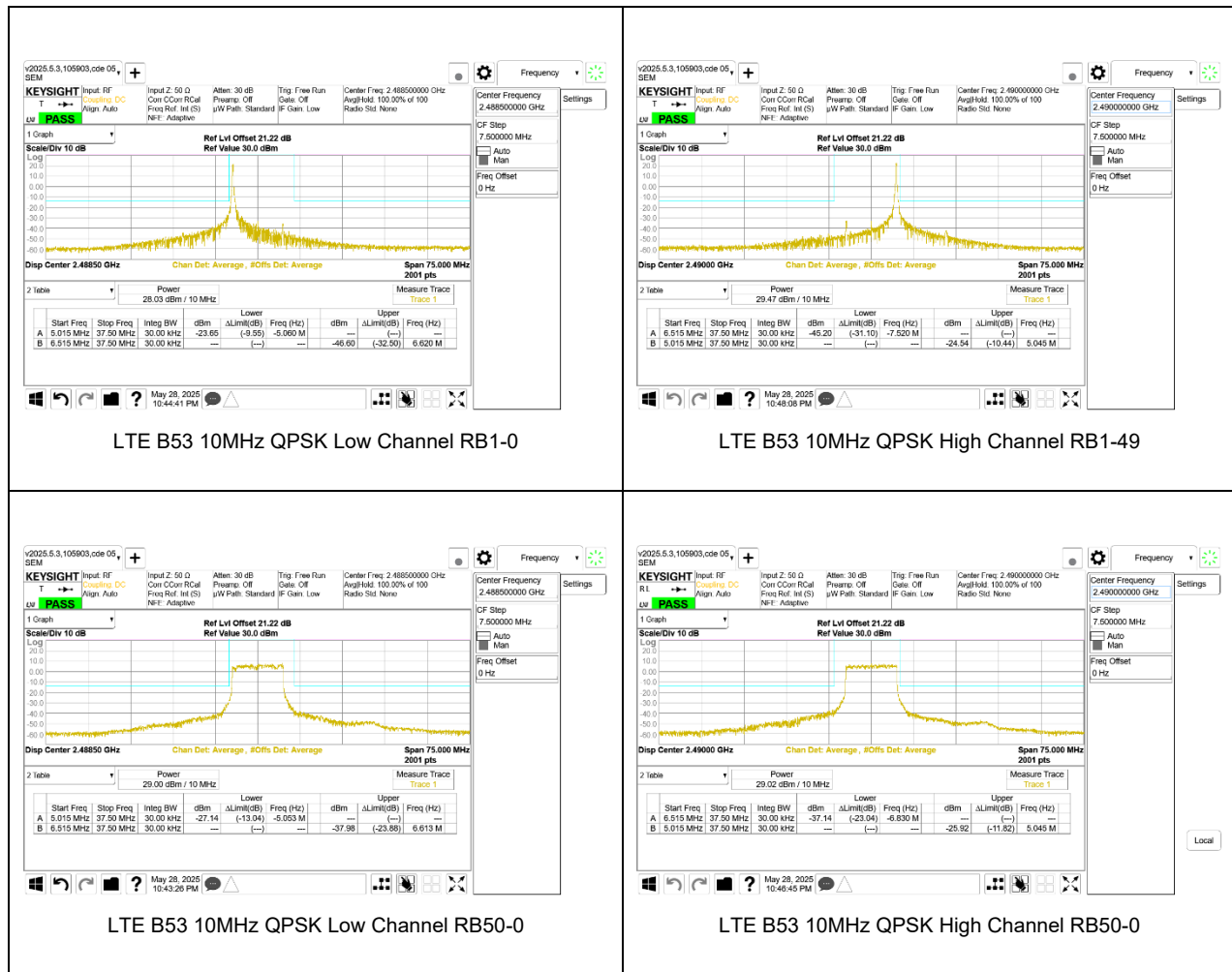
LTE B53 3MHz QPSK High Channel RB15-0



LTE B53 5MHz QPSK Low Channel RB25-0

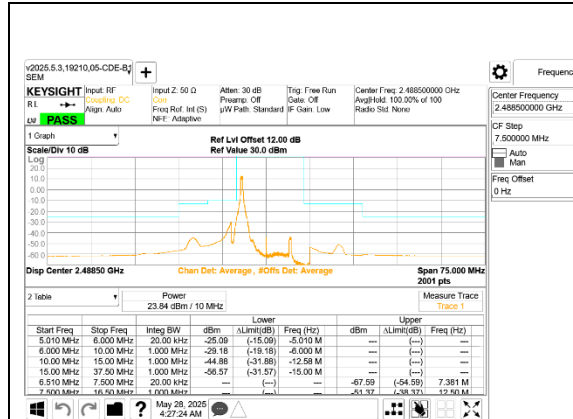


LTE B53 5MHz QPSK High Channel RB25-0

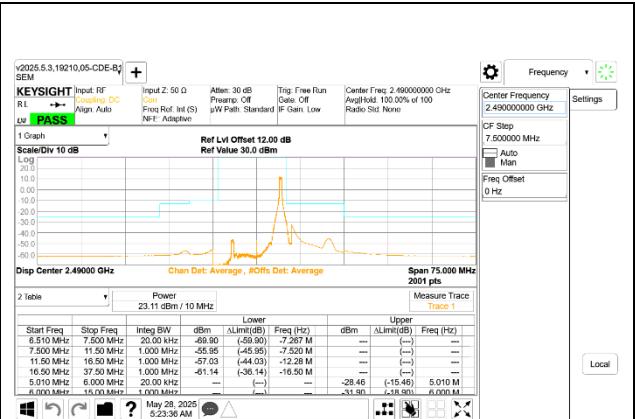


9.5.2 5G NR n53

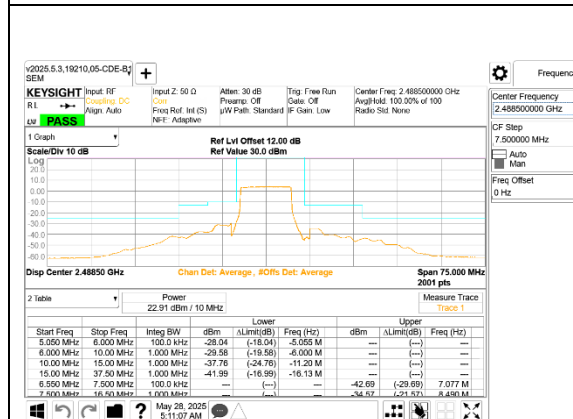
5G NR n53 BANDEDGE



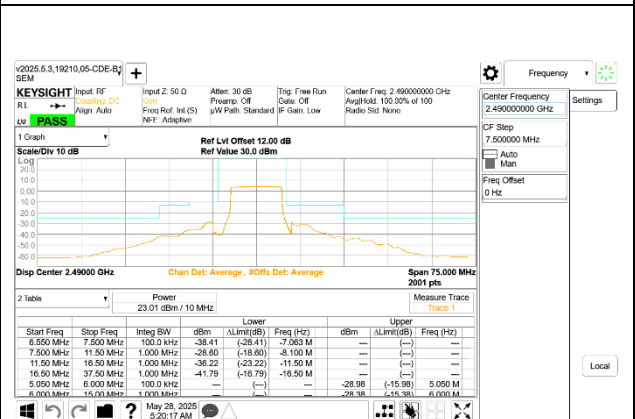
5G NR n53 10MHz BPSK Low Channel RB1-0



5G NR n53 10MHz BPSK High Channel RB1-23



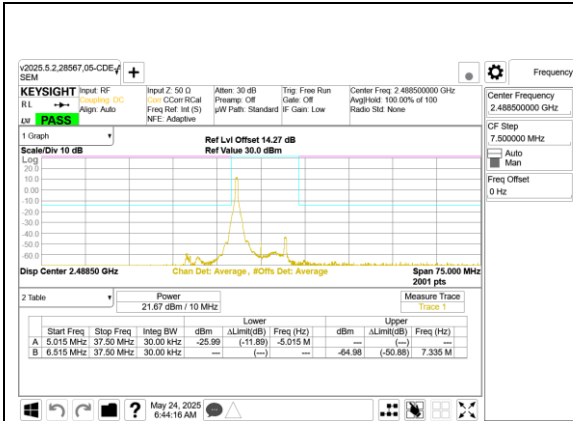
5G NR n53 10MHz BPSK Low Channel RB24-0



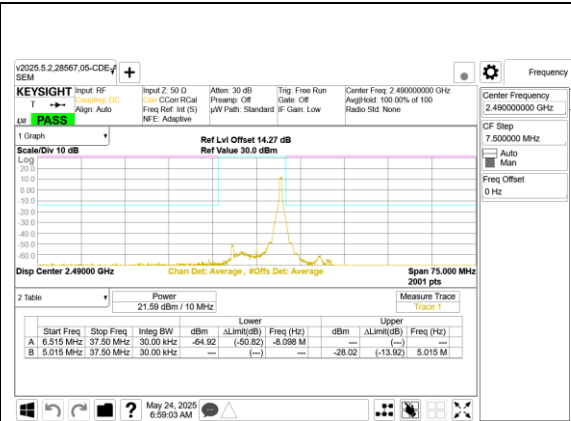
5G NR n53 10MHz BPSK High Channel RB24-0

5G NR n53 EIRP DENSITY

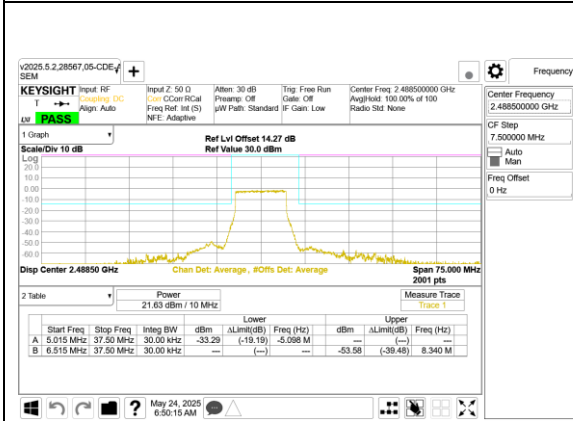
Band	Mode	RB Allocation/ RB Offset	Freq (MHz)	Highest Cond Power Density (dBm/30kHz)	Highest Antenna Gain (dBi)	Highest ERP Density (dBm/30kHz)	EIRP Density Limit (dBm/30kHz)
5G NR n53	10MHz, BPSK	1/0	2488.5	-25.99	-1.4	-27.39	-14.1
		24/0	2488.5	-33.29		-34.69	
		1/23	2490.0	-28.02		-29.42	
		24/0	2490.0	-33.31		-34.71	



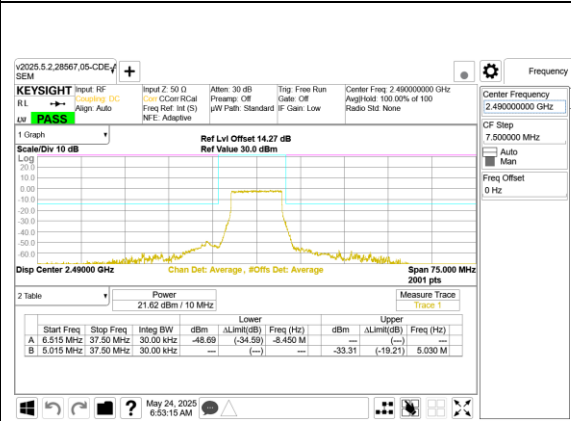
5G NR n53 10MHz BPSK Low Channel RB1-0



5G NR n53 10MHz BPSK High Channel RB1-23



5G NR n53 10MHz BPSK Low Channel RB24-0



5G NR n53 10MHz BPSK High Channel RB24-0

9.6. OUT OF BAND EMISSIONS

LIMITS

FCC: §25.149 (c)(4)

The minimum permissible attenuation level of any spurious emissions is $55 + 10 \log (P)$ dB where transmitting power (P) in Watts.

ISED: SMSE-900-20 Annex A 9.g, h

The minimum permissible attenuation level of any spurious emissions is $55 + 10 \log (P)$ dB where transmitting power (P) in Watts.

TEST PROCEDURE

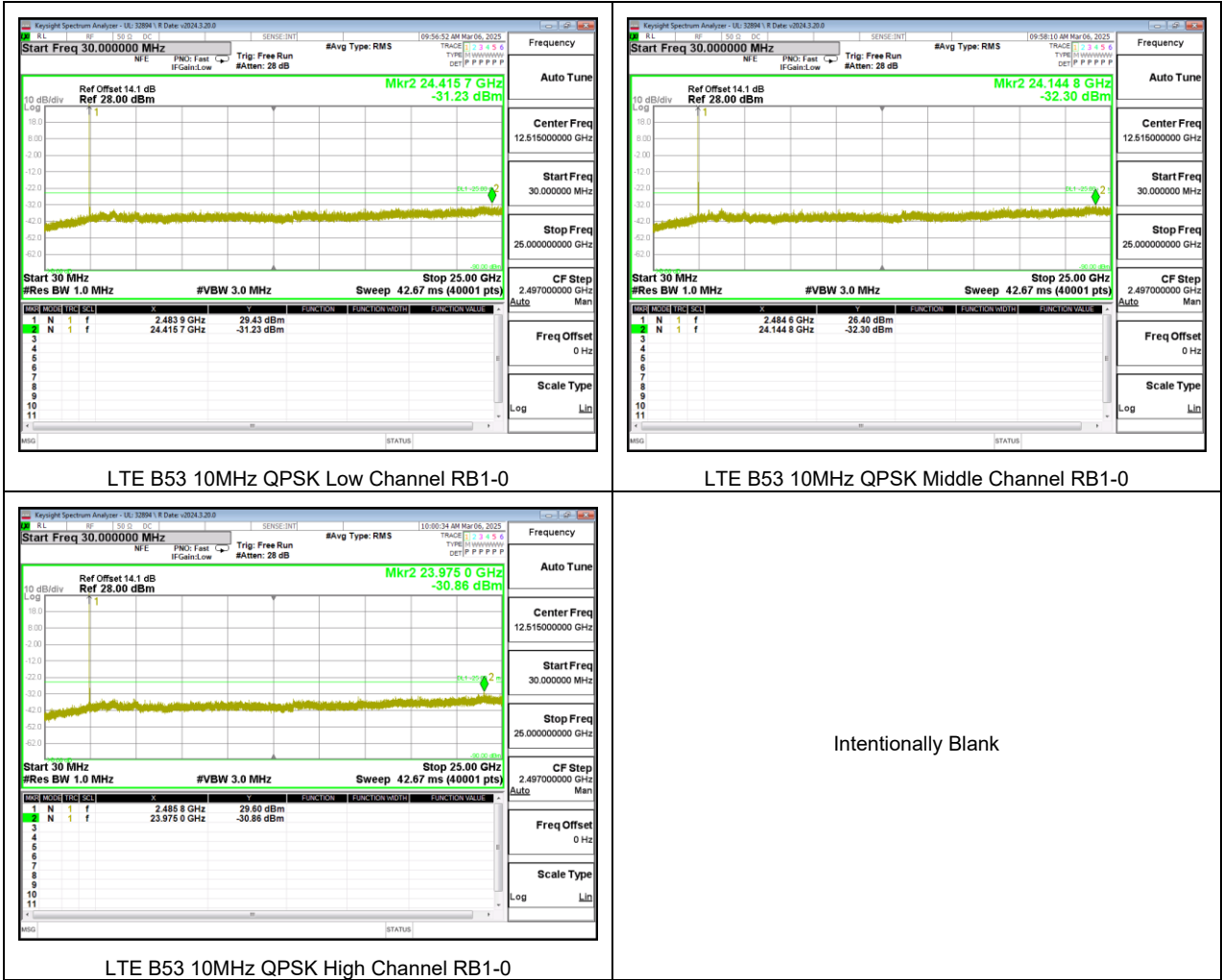
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

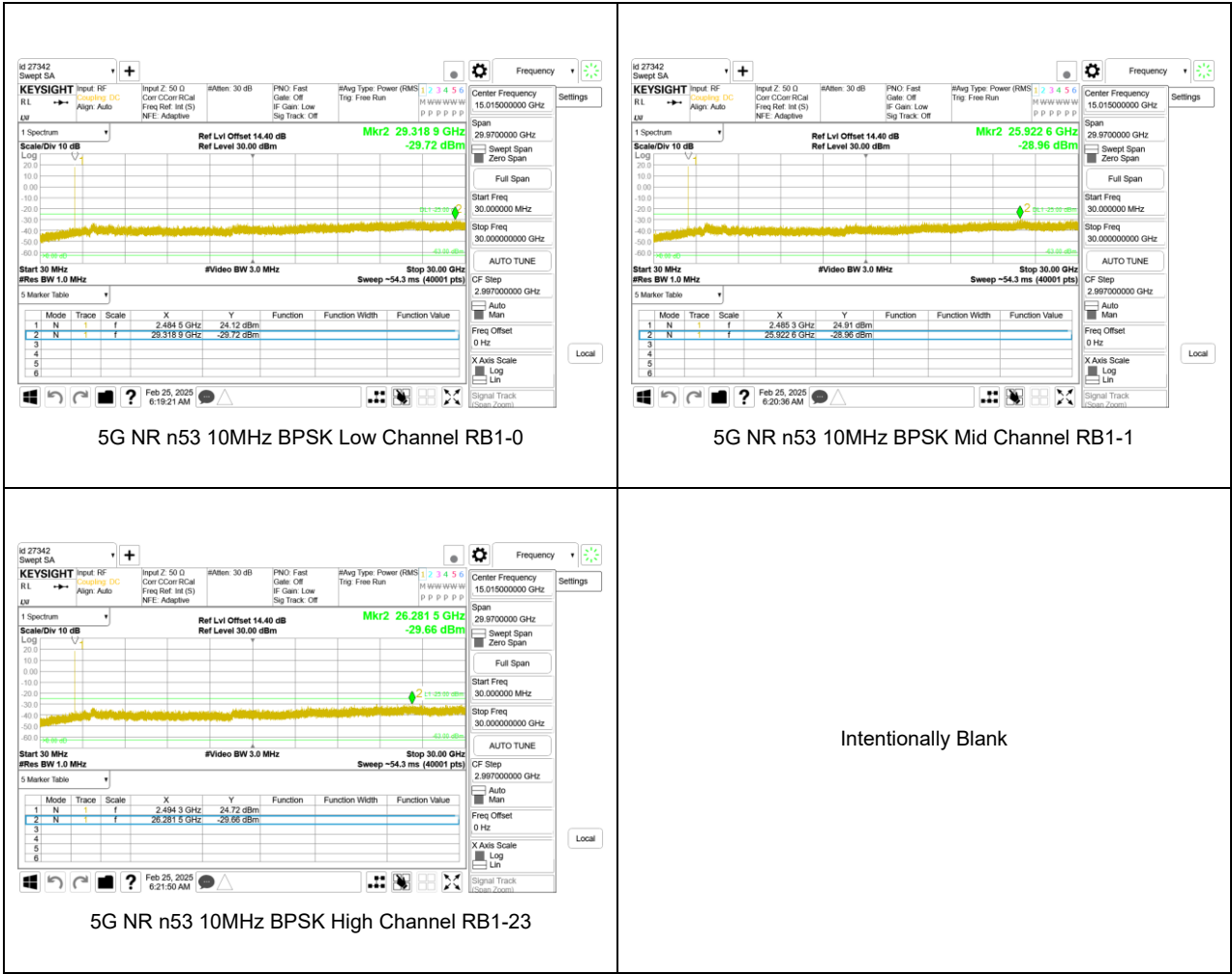
- Set display line at -25dBm according to the band Limit
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.
(NOTE: Worst case set RBW/VBW to 1MHz/3MHz)

RESULTS

9.6.1. LTE BAND 53



9.6.2. 5G NR 53



9.7. FREQUENCY STABILITY

LIMITS

FCC: §25.202 (d)

(d) Frequency tolerance, Earth stations. The carrier frequency of each earth station transmitter authorized in these services shall be maintained within 0.001 percent of the reference frequency.

ISED: RSS 170§ 5.3

For all other ATC equipment, the carrier frequency shall not drift from the reference frequency in excess of ± 2.5 ppm for mobile equipment.

TEST PROCEDURE

Use CMW 500 with Frequency Error measurement capability.

- Temp. = -30°C to $+50^{\circ}\text{C}$
- Voltage = (85% - 115%)

Low voltage, 3.23VDC, Normal, 3.8VDC and High voltage, 4.37VDC.

End Voltage, 2.90VDC.

Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to 20°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until $+50^{\circ}\text{C}$ is reached.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

RESULTS

See the following pages.

9.7.1. LTE BAND 53 QPSK (10MHz BANDWIDTH)

Test Engineer ID:	27700	Test Date:	2025-03-14
-------------------	-------	------------	------------

Band	53	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2483.5	2495		10	
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	2483.9357	2494.6120			
Extreme (50°C)		2483.9357	2494.6120	5.2	0.002	Yes
Extreme (40°C)		2483.9357	2494.6120	-1.1	0.000	Yes
Extreme (30°C)		2483.9357	2494.6120	1.6	0.001	Yes
Extreme (10°C)		2483.9357	2494.6120	3.2	0.001	Yes
Extreme (0°C)		2483.9357	2494.6120	0.1	0.000	Yes
Extreme (-10°C)		2483.9357	2494.6120	0.5	0.000	Yes
Extreme (-20°C)		2483.9357	2494.6120	2.7	0.001	Yes
Extreme (-30°C)		2483.9357	2494.6120	-1.7	-0.001	Yes
20°C	15%	2483.9357	2494.6120	0.1	0.000	Yes
	-15%	2483.9357	2494.6120	0.5	0.000	Yes
	End Point Voltage	2483.9357	2494.6120	0.7	0.000	Yes

9.7.2. 5G NR n53 BPSK (10MHz BANDWIDTH)

Test Engineer ID:	27700	Test Date:	2025-03-07
-------------------	-------	------------	------------

Band	53	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2483.5	2495		10	
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	2484.1932	2494.2731			
Extreme (50°C)		2484.1932	2494.2731	-3.62	-0.001	Yes
Extreme (40°C)		2484.1932	2494.2731	-2.14	-0.001	Yes
Extreme (30°C)		2484.1932	2494.2731	-5.18	-0.002	Yes
Extreme (10°C)		2484.1932	2494.2731	-4.89	-0.002	Yes
Extreme (0°C)		2484.1932	2494.2731	-4.21	-0.002	Yes
Extreme (-10°C)		2484.1932	2494.2731	-5.71	-0.002	Yes
Extreme (-20°C)		2484.1932	2494.2731	-2.08	-0.001	Yes
Extreme (-30°C)		2484.1932	2494.2731	-3.08	-0.001	Yes
20°C	15%	2484.1932	2494.2731	-4.98	-0.002	Yes
	-15%	2484.1932	2494.2731	-2.41	-0.001	Yes
	End Point Voltage	2484.1932	2494.2731	-3.77	-0.002	Yes

10. RADIATED TEST RESULTS

LIMITS

FCC: §25.149 (c)(4)

The minimum permissible attenuation level of any spurious emissions is $55 + 10 \log (P)$ dB where transmitting power (P) in Watts.

ISED: SMSE-900-20 Annex A 9.g, h

The minimum permissible attenuation level of any spurious emissions is $55 + 10 \log (P)$ dB where transmitting power (P) in Watts.

ISED: SMSE-900-20 Annex A 9.i

(ii) -70 dBW/MHz for broadband emissions and -80 dBW/kHz for discrete emissions in the band 1559-1610 MHz.

Radiated measurement using the Field Strength Method

Using the test configuration shown in Figure 6 below, the radiated emissions is measured directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits. As stated in 5.5.1 of ANSI C63.26-2015, the field strength measurement method using a test site validated to the requirements of ANSI C63.4 is an alternative to the substitution measurement.

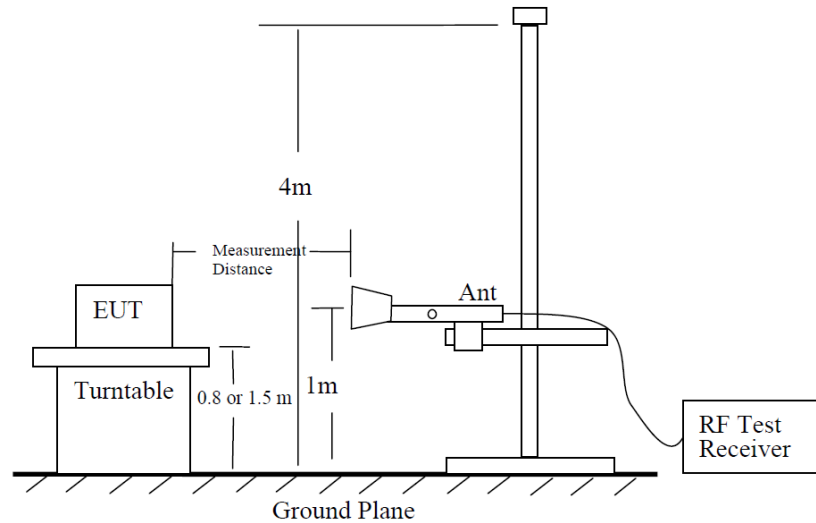


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

Radiated Power Measurement Calculation According to ANSI C63.26-2015

- a) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$.
- b) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$.
- c) $E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20\log(D) + 104.8$; where D is the measurement distance (in the far field region) in m.
- d) $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.

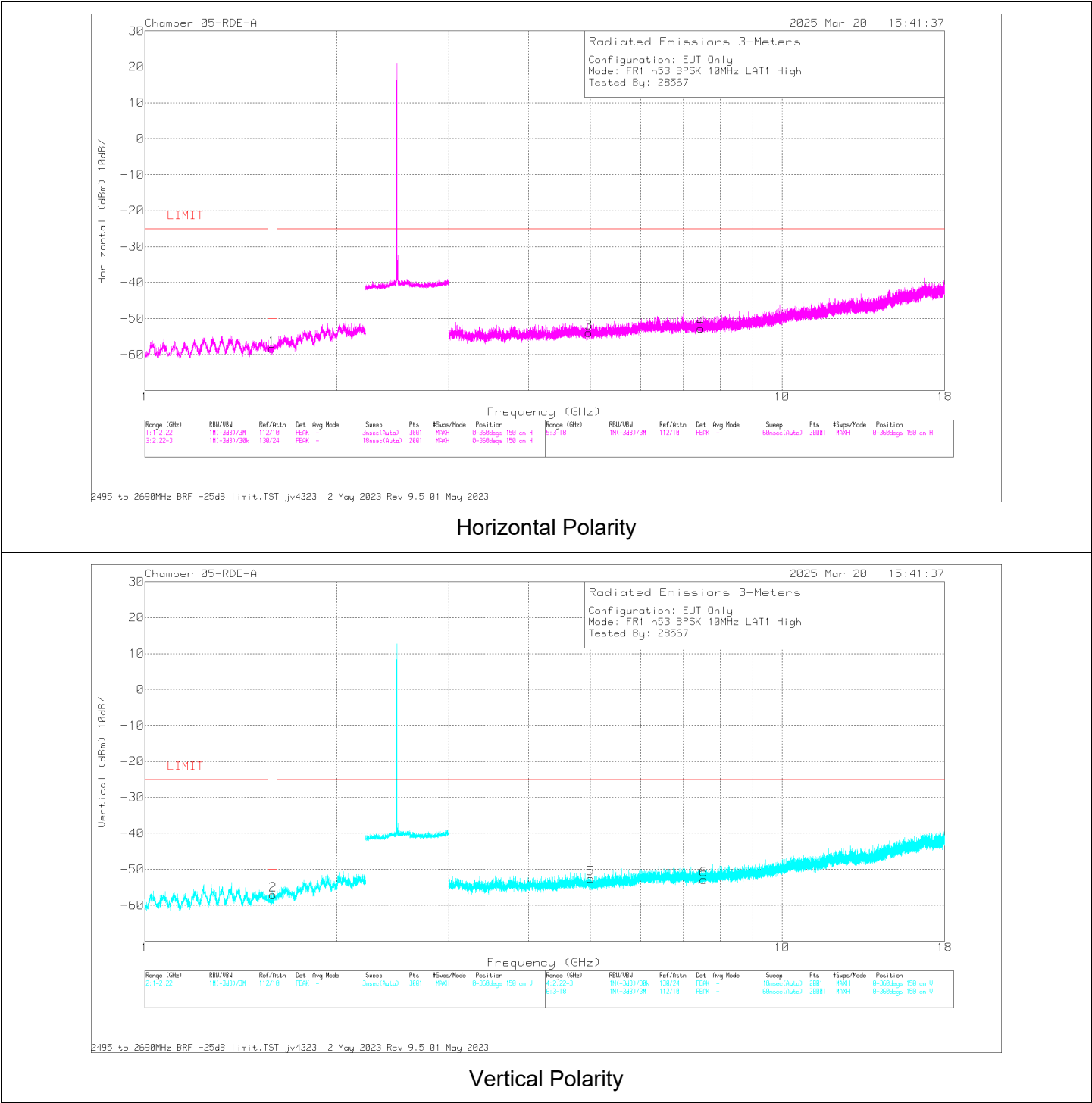
So, from d)

The measuring distance is usually at 3m, then $20 \cdot \log(3) = 9.5424$

Then, $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 9.5424 - 104.8 = E \text{ (dB}\mu\text{V/m)} - 95.2576$

Note: Confidence check of each chamber is performed daily to see if any degradation from expected/normal reading reference data. Ambient check of each chamber is performed monthly.

Example Plot



Trace Markers

Frequency (GHz)	Meter Reading (dBuV)	Det	80403 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT (dBm)	Margin (dB)	Polarity
1.583567	57.23	Pk	28	-95.2	-48.31	-58.28	-50	-8.28	H
1.588854	58.35	Pk	28.1	-95.2	-48.39	-57.14	-50	-7.14	V
4.976000	54.16	Pk	34.3	-95.2	-47.20	-53.94	-25	-28.94	H
5.010000	55.72	Pk	34.3	-95.2	-47.40	-52.58	-25	-27.58	V
7.461000	51.90	Pk	35.6	-95.2	-45.10	-52.80	-25	-27.80	H
7.538500	51.27	Pk	35.7	-95.2	-44.65	-52.88	-25	-27.88	V

10.1. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 3

TEST PROCEDURE

KDB 971168 D01 /D02

All tests above 1GHz were done with a Resolution Bandwidth of 1MHz, and a Video Bandwidth of 3MHz.

The transmitter output was connected to a CMW500Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

FCC: §25.149 (c)(4)

(vii) Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately above and adjacent to the 2495 MHz a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. If 1 percent of the emission bandwidth of the fundamental emission is less than 1 MHz, the power measured must be integrated over the required measurement bandwidth of 1 MHz. A resolution bandwidth narrower than 1 MHz is permitted to improve measurement accuracy, provided the measured power is integrated over the full required measurement bandwidth (*i.e.*, 1 MHz). The emission bandwidth of the fundamental emission of a transmitter is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

ISED: SMSE-009-20 Annex A 9

j. Compliance with this limit may be based on the use of a measurement resolution bandwidth of at least 1% of the occupied bandwidth. If 1% of the occupied bandwidth is less than 1 MHz, the power measured shall be integrated over the required measurement bandwidth of 1 MHz.

RESULTS

10.1.1. LTE BAND 53

QPSK LTE BAND 53 (10.0MHZ BANDWIDTH), 1 RB

Date:	2025-03-21
Test Engineer:	25196
Configuration:	EUT Only
Mode:	LTE B53 QPSK 10MHz
Chamber #:	05-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	80403 ACF (dB/m)	EIRP CF	Amp/Cbl (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)	Polarity
Low Channel, 2488.5MHz									
1.586007	57.75	Pk	28.0	-95.2	-48.30	-57.75	-50	-7.75	H
1.584380	57.72	Pk	28.0	-95.2	-48.36	-57.84	-50	-7.84	V
4.976500	55.14	Pk	34.3	-95.2	-47.20	-52.96	-25	-27.96	H
4.978000	55.16	Pk	34.3	-95.2	-47.20	-52.94	-25	-27.94	V
7.473000	53.54	Pk	35.6	-95.2	-45.30	-51.36	-25	-26.36	H
7.472500	53.11	Pk	35.6	-95.2	-45.25	-51.74	-25	-26.74	V
Mid Channel, 2489MHz									
1.587634	57.81	Pk	28.1	-95.2	-48.30	-57.59	-50	-7.59	H
1.587227	57.70	Pk	28.1	-95.2	-48.30	-57.70	-50	-7.70	V
4.977000	55.45	Pk	34.3	-95.2	-47.20	-52.65	-25	-27.65	H
4.978000	55.52	Pk	34.3	-95.2	-47.20	-52.58	-25	-27.58	V
7.437000	55.86	Pk	35.6	-95.2	-45.10	-48.84	-25	-23.84	H
7.435000	54.04	Pk	35.6	-95.2	-45.10	-50.66	-25	-25.66	V
High Channel, 2490MHz									
1.581127	57.49	Pk	28.0	-95.2	-48.20	-57.91	-50	-7.91	H
1.582347	57.14	Pk	28.0	-95.2	-48.20	-58.26	-50	-8.26	V
4.977500	54.65	Pk	34.3	-95.2	-47.20	-53.45	-25	-28.45	H
4.975000	55.16	Pk	34.3	-95.2	-47.20	-52.94	-25	-27.94	V
7.474000	53.24	Pk	35.6	-95.2	-45.20	-51.56	-25	-26.56	H
7.474500	53.45	Pk	35.6	-95.2	-45.20	-51.35	-25	-26.35	V

QPSK LTE BAND 53 (10.0MHZ BANDWIDTH), 50 RB

Date:	2025-03-21
Test Engineer:	25196
Configuration:	EUT Only
Mode:	LTE B53 QPSK 10MHz
Chamber #:	05-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	80403 ACF (dB/m)	EIRP CF	Amp/Cbl (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)	Polarity
Low Channel, 2488.5MHz									
1.587634	57.84	Pk	28.1	-95.2	-48.30	-57.56	-50	-7.56	H
1.584380	57.43	Pk	28.0	-95.2	-48.36	-58.13	-50	-8.13	V
4.974000	55.64	Pk	34.3	-95.2	-47.30	-52.56	-25	-27.56	H
4.978000	55.53	Pk	34.3	-95.2	-47.20	-52.57	-25	-27.57	V
7.461500	53.86	Pk	35.6	-95.2	-45.10	-50.84	-25	-25.84	H
7.459000	53.48	Pk	35.6	-95.2	-45.10	-51.22	-25	-26.22	V
Mid Channel, 2489MHz									
1.587227	57.29	Pk	28.1	-95.2	-48.30	-58.11	-50	-8.11	H
1.587227	58.32	Pk	28.1	-95.2	-48.30	-57.08	-50	-7.08	V
4.982000	54.77	Pk	34.3	-95.2	-47.20	-53.33	-25	-28.33	H
4.984000	55.57	Pk	34.3	-95.2	-47.30	-52.63	-25	-27.63	V
7.461500	53.48	Pk	35.6	-95.2	-45.10	-51.22	-25	-26.22	H
7.458500	53.59	Pk	35.6	-95.2	-45.15	-51.16	-25	-26.16	V
High Channel, 2490MHz									
1.588447	58.00	Pk	28.1	-95.2	-48.34	-57.44	-50	-7.44	H
1.588447	57.57	Pk	28.1	-95.2	-48.34	-57.87	-50	-7.87	V
4.967000	56.35	Pk	34.3	-95.2	-47.30	-51.85	-25	-26.85	H
4.965000	55.48	Pk	34.3	-95.2	-47.30	-52.72	-25	-27.72	V
7.473500	53.44	Pk	35.6	-95.2	-45.25	-51.41	-25	-26.41	H
7.475000	52.95	Pk	35.6	-95.2	-45.20	-51.85	-25	-26.85	V

10.1.2. 5G NR n53

BPSK 5G NR n53 (10.0MHZ BANDWIDTH), 1 RB

Date:	2025-03-20
Test Engineer:	28567
Configuration:	EUT Only
Mode:	5G NR n53 BPSK 10MHz
Chamber #:	05-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	80403 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)	Polarity
Low Channel, 2488.5MHz									
1.564047	58.37	Pk	28.0	-95.2	-48.10	-56.93	-50	-6.93	H
1.571774	56.64	Pk	28.0	-95.2	-48.10	-58.66	-50	-8.66	V
4.977000	55.38	Pk	34.3	-95.2	-47.20	-52.72	-25	-27.72	H
4.992500	57.46	Pk	34.3	-95.2	-47.40	-50.84	-25	-25.84	V
7.454000	53.76	Pk	35.6	-95.2	-45.30	-51.14	-25	-26.14	H
7.510500	53.97	Pk	35.7	-95.2	-45.05	-50.58	-25	-25.58	V
Mid Channel, 2489MHz									
1.580720	56.94	Pk	28.0	-95.2	-48.17	-58.43	-50	-8.43	H
1.583567	57.17	Pk	28.0	-95.2	-48.31	-58.34	-50	-8.34	V
4.967500	53.28	Pk	34.3	-95.2	-47.30	-54.92	-25	-29.92	H
4.976000	53.58	Pk	34.3	-95.2	-47.20	-54.52	-25	-29.52	V
7.468500	50.95	Pk	35.6	-95.2	-45.25	-53.90	-25	-28.90	H
7.487000	53.10	Pk	35.6	-95.2	-45.20	-51.70	-25	-26.70	V
High Channel, 2490MHz									
1.583567	57.23	Pk	28.0	-95.2	-48.31	-58.28	-50	-8.28	H
1.588854	58.35	Pk	28.1	-95.2	-48.39	-57.14	-50	-7.14	V
4.976000	54.16	Pk	34.3	-95.2	-47.20	-53.94	-25	-28.94	H
5.010000	55.72	Pk	34.3	-95.2	-47.40	-52.58	-25	-27.58	V
7.461000	51.90	Pk	35.6	-95.2	-45.10	-52.80	-25	-27.80	H
7.538500	51.27	Pk	35.7	-95.2	-44.65	-52.88	-25	-27.88	V

BPSK 5G NR n53 (10.0MHZ BANDWIDTH), 24 RB

Date:	2025-06-23
Test Engineer:	45258
Configuration:	EUT Only
Mode:	5G NR n53 BPSK 10MHz
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	80403 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)	Polarity
Low Channel, 2488.5MHz									
1.577874	59.19	Pk	28.2	-95.2	-49.7	-57.51	-50	-7.51	H
1.574214	59.25	Pk	28.1	-95.2	-49.68	-57.53	-50	-7.53	V
4.973500	57.90	Pk	33.9	-95.2	-49.2	-52.60	-25	-27.60	H
4.979000	56.74	Pk	33.9	-95.2	-49.3	-53.86	-25	-28.86	V
7.465000	55.38	Pk	35.7	-95.2	-48.1	-52.22	-25	-27.22	H
7.465000	54.56	Pk	35.7	-95.2	-48.1	-53.04	-25	-28.04	V
Mid Channel, 2489MHz									
1.592514	59.42	Pk	28.3	-95.2	-49.7	-57.18	-50	-7.18	H
1.594954	59.24	Pk	28.3	-95.2	-49.8	-57.46	-50	-7.46	V
4.980500	56.42	Pk	33.9	-95.2	-49.3	-54.18	-25	-29.18	H
4.978500	55.59	Pk	33.9	-95.2	-49.25	-54.96	-25	-29.96	V
7.466000	55.11	Pk	35.7	-95.2	-48.1	-52.49	-25	-27.49	H
7.466000	55.07	Pk	35.7	-95.2	-48.1	-52.53	-25	-27.53	V
High Channel, 2490MHz									
1.602680	59.95	Pk	28.4	-95.2	-49.8	-56.65	-50	-6.65	H
1.574620	60.11	Pk	28.1	-95.2	-49.64	-56.63	-50	-6.63	V
4.980000	55.33	Pk	33.9	-95.2	-49.3	-55.27	-25	-30.27	H
4.981500	56.38	Pk	33.9	-95.2	-49.3	-54.22	-25	-29.22	V
7.468500	55.21	Pk	35.7	-95.2	-48.1	-52.39	-25	-27.39	H
7.468500	54.97	Pk	35.7	-95.2	-48.1	-52.63	-25	-27.63	V

10.2. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 4

10.2.1. LTE BAND 53

QPSK LTE BAND 53 (10.0MHZ BANDWIDTH), 1 RB

Date:	2025-03-24
Test Engineer:	25019
Configuration:	EUT Only
Mode:	LTE B53 10MHz QPSK
Chamber #:	04-RDE-P

Frequency (GHz)	Meter Reading (dBuV)	Det	20897 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)	Polarity
Low Channel, 2488.5MHz									
1.570147	56.49	Pk	28.4	-95.2	-48.96	-59.27	-50	-9.27	H
1.570147	57.29	Pk	28.4	-95.2	-48.96	-58.47	-50	-8.47	V
4.990500	53.84	Pk	33.8	-95.2	-48.14	-55.7	-25	-30.7	H
4.990500	54.13	Pk	33.8	-95.2	-48.14	-55.41	-25	-30.41	V
7.512500	53.17	Pk	35.7	-95.2	-46.29	-52.62	-25	-27.62	H
7.512500	52.3	Pk	35.7	-95.2	-46.29	-53.49	-25	-28.49	V
Mid Channel, 2489MHz									
1.579907	56.74	Pk	28.4	-95.2	-48.89	-58.95	-50	-8.95	H
1.579907	56.17	Pk	28.4	-95.2	-48.89	-59.52	-50	-9.52	V
4.992500	53.2	Pk	33.8	-95.2	-48.03	-56.23	-25	-31.23	H
4.992500	54.27	Pk	33.8	-95.2	-48.03	-55.16	-25	-30.16	V
7.499500	52.46	Pk	35.7	-95.2	-46.23	-53.27	-25	-28.27	H
7.499500	53.17	Pk	35.7	-95.2	-46.23	-52.56	-25	-27.56	V
High Channel, 2490MHz									
1.586414	58.59	Pk	28.4	-95.2	-48.92	-57.13	-50	-7.13	H
1.586414	58.04	Pk	28.4	-95.2	-48.92	-57.68	-50	-7.68	V
4.9995 00	53.65	Pk	33.9	-95.2	-48.17	-55.82	-25	-30.82	H
4.9995 00	53.08	Pk	33.9	-95.2	-48.17	-56.39	-25	-31.39	V
7.518000	51.54	Pk	35.7	-95.2	-46.16	-54.12	-25	-29.12	H
7.518000	54.63	Pk	35.7	-95.2	-46.16	-51.03	-25	-26.03	V

QPSK LTE BAND 53 (10.0MHZ BANDWIDTH), 50 RB

Date:	2025-03-24
Test Engineer:	25019
Configuration:	EUT Only
Mode:	LTE B53 10MHz QPSK FRB
Chamber #:	04-RDE-P

Frequency (GHz)	Meter Reading (dBuV)	Det	20897 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)	Polarity
Low Channel, 2488.5MHz									
1.579094	57.01	Pk	28.4	-95.2	-48.94	-58.73	-50	-8.73	H
1.579094	56.50	Pk	28.4	-95.2	-48.94	-59.24	-50	-9.24	V
4.992500	53.79	Pk	33.8	-95.2	-48.03	-55.64	-25	-30.64	H
4.992500	55.46	Pk	33.8	-95.2	-48.03	-53.97	-25	-28.97	V
7.502000	52.76	Pk	35.7	-95.2	-46.26	-53.00	-25	-28.00	H
7.502000	52.49	Pk	35.7	-95.2	-46.26	-53.27	-25	-28.27	V
Mid Channel, 2489MHz									
1.578280	57.42	Pk	28.4	-95.2	-48.97	-58.35	-40	-8.35	H
1.578280	57.43	Pk	28.4	-95.2	-48.97	-58.34	-40	-8.34	V
4.999000	54.32	Pk	33.9	-95.2	-48.18	-55.16	-25	-30.16	H
4.999000	53.79	Pk	33.9	-95.2	-48.18	-55.69	-25	-30.69	V
7.500000	53.09	Pk	35.7	-95.2	-46.17	-52.58	-25	-27.58	H
7.500000	51.58	Pk	35.7	-95.2	-46.17	-54.09	-25	-29.09	V
High Channel, 2490MHz									
1.581940	57.13	Pk	28.4	-95.2	-48.92	-58.59	-40	-8.59	H
1.581940	56.27	Pk	28.4	-95.2	-48.92	-59.45	-40	-9.45	V
4.992500	54.89	Pk	33.8	-95.2	-48.03	-54.54	-25	-29.54	H
4.992500	53.43	Pk	33.8	-95.2	-48.03	-56.00	-25	-31.00	V
7.500000	52.98	Pk	35.7	-95.2	-46.17	-52.69	-25	-27.69	H
7.500000	51.39	Pk	35.7	-95.2	-46.17	-54.28	-25	-29.28	V

10.2.2. 5G NR n53

BPSK 5G NR n53 (10.0MHZ BANDWIDTH), 1 RB

Date:	2025-03-20
Test Engineer:	28567
Configuration:	EUT Only
Mode:	5G NR n53 BPSK 10MHz
Chamber #:	05-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	80403 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)	Polarity
Low Channel, 2488.5MHz									
1.578687	57.64	Pk	28.0	-95.2	-48.20	-57.76	-50	-7.76	H
1.588854	58.53	Pk	28.1	-95.2	-48.39	-56.96	-50	-6.96	V
4.963500	55.30	Pk	34.3	-95.2	-47.30	-52.90	-25	-27.90	H
4.978000	55.88	Pk	34.3	-95.2	-47.20	-52.22	-25	-27.22	V
7.484500	53.87	Pk	35.6	-95.2	-45.20	-50.93	-25	-25.93	H
7.505000	54.60	Pk	35.7	-95.2	-45.10	-50.00	-25	-25.00	V
Mid Channel, 2489MHz									
1.573400	60.39	Pk	28.0	-95.2	-48.14	-54.95	-50	-4.95	H
1.577060	55.93	Pk	28.0	-95.2	-48.20	-59.47	-50	-9.47	V
4.976000	54.71	Pk	34.3	-95.2	-47.20	-53.39	-25	-28.39	H
5.010000	53.88	Pk	34.3	-95.2	-47.40	-54.42	-25	-29.42	V
7.474000	51.99	Pk	35.6	-95.2	-45.20	-52.81	-25	-27.81	H
7.499500	51.67	Pk	35.7	-95.2	-45.20	-53.03	-25	-28.03	V
High Channel, 2490MHz									
1.564860	57.76	Pk	28.0	-95.2	-48.01	-57.45	-50	-7.45	H
1.578280	57.12	Pk	28.0	-95.2	-48.20	-58.28	-50	-8.28	V
4.976000	54.83	Pk	34.3	-95.2	-47.20	-53.27	-25	-28.27	H
5.001500	56.93	Pk	34.2	-95.2	-47.20	-51.27	-25	-26.27	V
7.461000	52.77	Pk	35.6	-95.2	-45.10	-51.93	-25	-26.93	H
7.499500	51.37	Pk	35.7	-95.2	-45.20	-53.33	-25	-28.33	V

BPSK 5G NR n53 (10.0MHZ BANDWIDTH), 24 RB

Date:	2025-06-23
Test Engineer:	45258
Configuration:	EUT Only
Mode:	5G NR n53 BPSK 10MHz
Chamber #:	03-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	223084 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)	Polarity
Low Channel, 2488.5MHz									
1.606341	58.74	Pk	28.5	-95.2	-49.8	-57.76	-50	-7.76	H
1.579500	59.62	Pk	28.2	-95.2	-49.7	-57.08	-50	-7.08	V
4.975000	56.44	Pk	33.9	-95.2	-49.2	-54.06	-25	-29.06	H
4.978000	55.60	Pk	33.9	-95.2	-49.2	-54.90	-25	-29.90	V
7.460000	55.57	Pk	35.7	-95.2	-48.1	-52.03	-25	-27.03	H
7.465000	55.08	Pk	35.7	-95.2	-48.1	-52.52	-25	-27.52	V
Mid Channel, 2489MHz									
1.588040	59.39	Pk	28.3	-95.2	-49.8	-57.31	-50	-7.31	H
1.586007	58.88	Pk	28.2	-95.2	-49.7	-57.82	-50	-7.82	V
4.979000	56.49	Pk	33.9	-95.2	-49.3	-54.11	-25	-29.11	H
4.978500	55.74	Pk	33.9	-95.2	-49.25	-54.81	-25	-29.81	V
7.468500	55.89	Pk	35.7	-95.2	-48.1	-51.71	-25	-26.71	H
7.466000	56.31	Pk	35.7	-95.2	-48.1	-51.29	-25	-26.29	V
High Channel, 2490MHz									
1.603087	59.37	Pk	28.4	-95.2	-49.81	-57.24	-50	-7.24	H
1.602274	60.11	Pk	28.4	-95.2	-49.8	-56.49	-50	-6.49	V
5.981000	54.18	Pk	35.2	-95.2	-47.9	-53.72	-25	-28.72	H
5.981500	54.43	Pk	35.2	-95.2	-47.85	-53.42	-25	-28.42	V
7.474500	55.30	Pk	35.7	-95.2	-48.05	-52.25	-25	-27.25	H
7.475000	56.56	Pk	35.7	-95.2	-48.1	-51.04	-25	-26.04	V

11. SETUP PHOTOS

Refer to 15496224-EP1V1 for setup photos.

END OF REPORT