

TEST REPORT

Report Number: 15941282-E17V2

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

Model : A3575

Brand : APPLE

FCC ID : BCG-E9145A

IC : 579C-E9145A

EUT Description : SMARTPHONE

Test Standard(s) : FCC 47 CFR PART 2, PART 27
ISED RSS-GEN ISSUE 5 + A1 + A2, RSS-195 ISSUE 2

Date Of Issue:
2025-12-26

Prepared by:
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Revision History

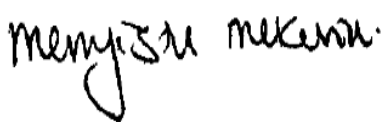
Rev.	Issue Date	Revisions	Revised By
V1	2025-12-17	Initial Review	--
V2	2025-12-26	Addressed TCB feedback and updated sections 6.5 and 9.2.4	Binod Sitaula

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	15
8. RF OUTPUT POWER MEASUREMENTS	16
8.1. LTE BAND 30.....	17
8.2. 5G NR n30	19
9. CONDUCTED TEST RESULTS.....	20
9.1. OCCUPIED BANDWIDTH.....	20
9.1.1. LTE BAND 30.....	21
9.1.2. 5G NR n30	22
9.2. EMISSION MASK AND ADJACENT CHANNEL POWER	23
9.2.1. LTE BAND 30 EMISSION MASK.....	25
9.2.2. LTE BAND 30 ADJACENT CHANNEL POWER.....	28
9.2.3. 5G NR n30 EMISSION MASK	30
9.2.4. 5G NR n30 ADJACENT CHANNEL POWER	33
9.3. OUT OF BAND EMISSIONS.....	35

9.3.1.	LTE BAND 30.....	36
9.3.2.	5G NR n30	36
9.4.	FREQUENCY STABILITY	37
9.4.1.	LTE BAND 30 (QPSK 10MHz BANDWIDTH)	38
9.4.2.	5G NR n30 (BPSK 10MHz BANDWIDTH)	38
9.5.	PEAK-TO-AVERAGE POWER RATIO	39
9.5.1.	LTE BAND 30.....	40
9.5.2.	5G NR n30	40
10.	RADIATED TEST RESULTS	41
10.1.1.	LTE BAND 30	45
10.1.2.	5G NR n30.....	47
11.	SETUP PHOTOS.....	49

1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	APPLE INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.	
Model	A3575	
Brand	APPLE	
FCC ID	BCG-E9145A	
IC	579C-E9145A	
EUT Description	SMARTPHONE	
Serial Number	RADIATED: D7R2GJDX6N. LC6LHVFKXR CONDUCTED: C07HJ00001H00016M2, C07HM3000MK00016LY, C07HM3000Q500016LY	
Sample Receipt Date	2025-07-29	
Date Tested	2025-07-29 to 2025-12-04	
Applicable Standards	FCC 47 CFR PART 2, PART 27 ISED RSS-GEN ISSUE 5 + A1 + A2, RSS-195 ISSUE 2	
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 Engineer UL Verification Services Inc.	Tewodros Woldemichael Laboratory Engineer UL Verification Services Inc.	Matthew Wu 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 results. UL Verification Services Inc. is only responsible for correctly integrating customer-provided data with measurements performed by UL Verification Services Inc.

Below is the list of 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
Equivalent Isotropic Radiated Power	27.50 (a) (3)	RSS195§5.5	Complies	
Occupied Bandwidth	2.1049	RSS-GEN§6.7, RSS195	Complies	
Band Edge and Emission Mask	2.1051, 27.53(a)	RSS195§5.6 & §5.6.2	Complies	
Out of Band Emissions	2.1051, 27.53(a)	RSS195§5.6.2	Complies	
Frequency Stability	2.1055, 27.54	RSS195§5.4	Complies	
Peak-to-Average Ratio	-	-	Complies	
Field Strength of Spurious Radiation	2.1053, 27.53(a)	RSS195§5.6 & §5.6.2	Complies	

3. TEST METHODOLOGY

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

- ANSI C63.26:2015
- ANSI/TIA-603-E (2016)
- FCC 47 CFR Part 2, Part 27
- [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-195 Issue 2.

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 GSM, GPRS, EGPRS, WCDMA, LTE, 5G NR1, IEEE 802.11a/b/g/n/ac/ax, Bluetooth (BT), Global Positioning System (GPS), Near-Field Communication (NFC) 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

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 tables below contain the highest of all configurations average conducted and peak EIRP output powers as follows:

LTE BAND 30

Part 27 / RSS 195									
EIRP Limit (W)		0.25							
Antenna Gain (dBi) ANT3		-1.90							
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
5.0	QPSK	2307.5	2312.5	25.00	23.10	0.204	4.522	4522	4M52G7W
	16QAM			24.00	22.10	0.162	4.512	4512	4M51D7W
10.0	QPSK	2310.0	2310.0	25.00	23.10	0.204	8.991	8991	8M99G7W
	16QAM			24.00	22.10	0.162	9.011	9011	9M01D7W

5G NR n30

Part 27 / RSS 195									
EIRP Limit (W)		0.25							
Antenna Gain (dBi) ANT3		-1.90							
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
5.0	BPSK	2307.5	2312.5	25.00	23.10	0.204	4.506	4506	4M51G7W
	QPSK			24.97	23.07	0.203	4.478	4478	4M48G7W
	16QAM			24.00	22.10	0.162	4.486	4486	4M49D7W
10.0	BPSK	2310.0	2310.0	25.00	23.10	0.204	8.978	8978	8M98G7W
	QPSK			24.96	23.06	0.202	8.964	8964	8M96G7W
	16QAM			24.04	22.14	0.164	8.991	8991	8M99D7W

6.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was version 2.00.60-7.

6.4. MAXIMUM ANTENNA GAIN AND MAXIMUM ALLOWED OUTPUT POWER

The IFA antenna(s) gain, as provided by the manufacturer' are as follows:

Bands	Frequency Range (MHz)	Antenna Gain (dBi)				Max Allowed Conducted Output Power (dBm)				ERP/EIRP (dBm)			
		ANT1	ANT2	ANT3	ANT4	ANT1	ANT2	ANT3	ANT4	ANT1	ANT2	ANT3	ANT4
LTE Band 30	2305 – 2315	-2.90	-2.40	-1.90	-1.80	25.70	23.20	25.00	23.20	22.80	20.80	23.10	21.40
5G NR n30		-2.90	-2.40	-1.90	-1.80	25.70	23.20	25.00	23.20	22.80	20.80	23.10	21.40

6.5. WORST-CASE CONFIGURATION AND MODE

This report covers the following technologies:

- LTE Band 30, 5G NR n30

For 5G NRs, conducted spurious emission tests were conducted on wider bandwidth with inner 1RB since this is the worst bandwidth and the highest output power.

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. Then, QPSK and BPSK were observed as the worst mode to LTE bands and 5G NR bands respectively and set for all conducted and radiated. 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 port because it has the highest conducted power. The worst-case antenna port is shown in the table below.

LTE and 5G NR Bands	Worst case Antenna Port
LTE Band 30, 5G NR n30	Ant1

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

Frequency Range	ANT1	ANT2	ANT3	ANT4
2300 – 2700 MHz	Y	X	X	Y

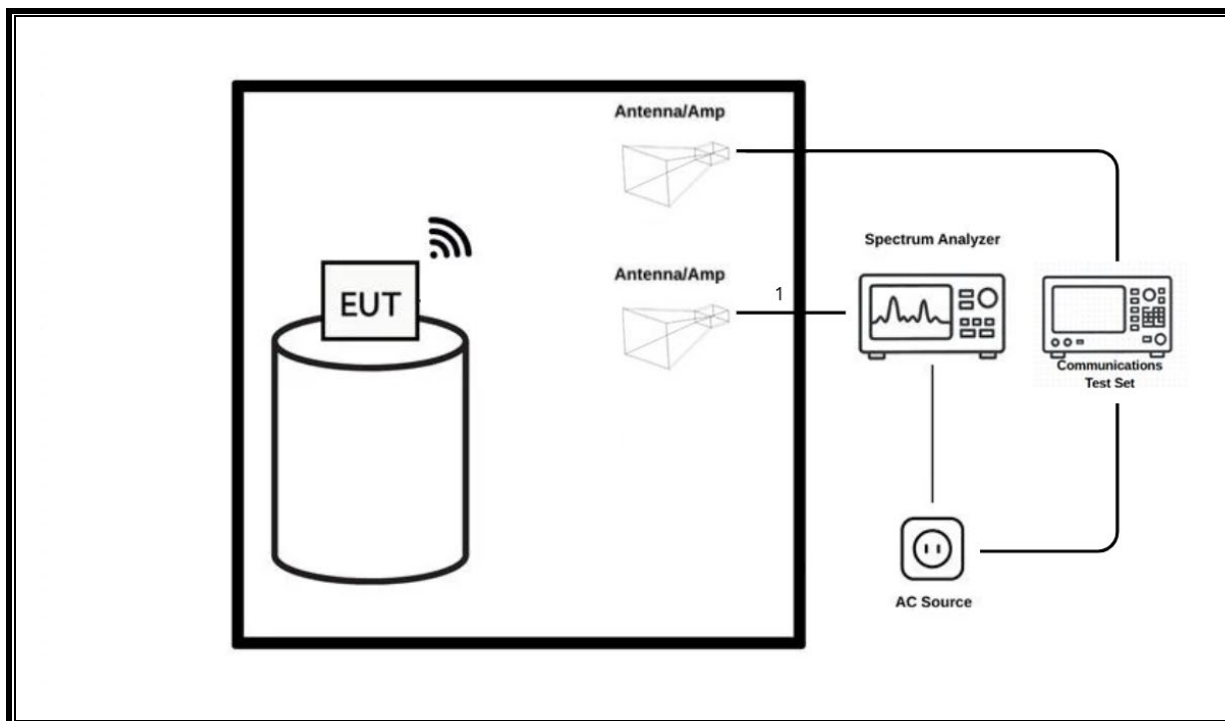
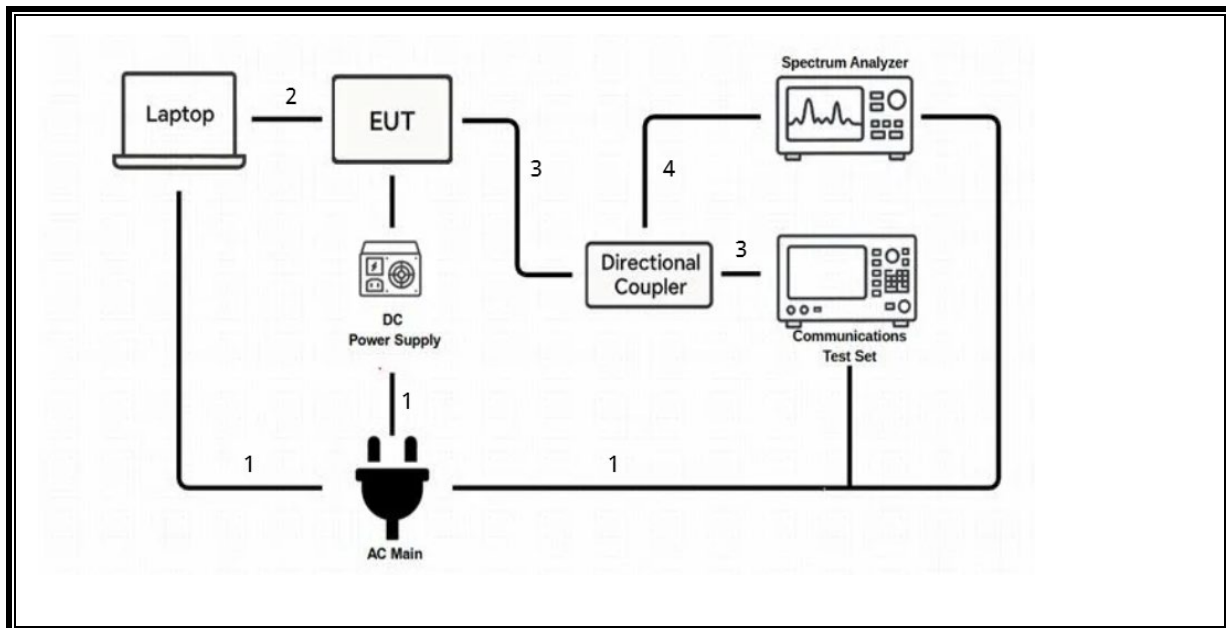
Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. There were no emissions found with less than 20dB of margin from 9kHz to 30MHz, 30MHz-1GHz and above 18GHz.

For simultaneous transmission of multiple channels in the 2.4GHz/5GHz WLAN 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

SUPPORT TEST EQUIPMENT						
Description		Manufacturer	Model	Serial Number	FCC ID/ DoC	Description
Laptop		Apple	MacBook Pro	F5JJ42D7R9	BCGA1708	Laptop
Laptop		Apple	MacBook Pro	JWV2QWM0DT	BCGA2338	Laptop
Laptop		Apple	MacBook Pro	FG6Q9RW54Y	BCGA2338	Laptop
Laptop		Apple	MacBook Pro	XC2KF6F2D7	BCGA2338	Laptop
Laptop		Apple	MacBook Pro	YWCT4V933R	BCGA2338	Laptop
Laptop		Apple	MacBook Pro	HRP127004	BCGA2338	Laptop
AC/DC adapter		Apple	A1718	C4H64450HH3GN8RA6	--	AC/DC adapter
AC/DC adapter		Apple	A2130	F16H69002MD000000P	--	AC/DC adapter
AC/DC adapter		Apple	A1555 P	XQ76XLCJ2D	--	AC/DC adapter
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable No.	Port
1	AC	3	US 115V	Un-shielded	1	AC
2	USB	1	DC	Shielded	2	USB
3	RF In/Out	2	SMA	Shielded	3	RF In/Out
4	RF In/Out	1	Barrel	Shielded	4	RF In/Out
I/O CABLES (RF RADIATED TEST)						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable No.	Port
1	RF In/Out	1	SMA	Shielded	1	RF In/Out

CONDUCTED SETUP



RADIATED STUP

7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was 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	2026-09-30
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	2026-09-30
Antenna, Passive Loop 100KHz - 30MHz	ELECTRO-METRICS	EM-6872	170015	2026-09-30
Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	172353	2026-07-31
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	2027-10-31
Link File, RF Amplifier Assembly, 26.5-40GHz, 65dB Gain	Ampical	AMP26G40-65	220193	2026-04-30
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
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	2026-11-24
Filter, BRF 2305-2315	Micro-Tronics	BRC20553	224186	2026-06-29
Directional Coupler	KRYTAR	152610	254457	2026-09-04
Directional Coupler	KRYTAR	101040010K	254458	2026-09-04
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	2026-05-31
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	
Conducted Software	UL	Station Tool	Ver. 6.0,7.1, 10.1	
Radiated Software	UL	UL EMC	Ver 9.5, May 1, 2023	

NOTES:

- * Testing is completed before equipment expiration date.

8. RF OUTPUT POWER MEASUREMENTS

CONDUCTED OUTPUT POWER MEASUREMENT PROCEDURE

All bands conducted average power is obtained from the base station simulator.

The following tests were conducted according to the test requirements outlined in ANSI C63.26 Section 5.2.

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 30

Test Engineer ID:	32546	Test Date:	2025-08-11
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OUTPUT POWER FOR LTE BAND 30 (5.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)											
				ANT 1			ANT 2			ANT 3			ANT 4		
				27685	27710	27735	27685	27710	27735	27685	27710	27735	27685	27710	27735
5.0	QPSK	1	0	25.14	25.12	25.12	22.99	23.13	23.02	24.45	24.34	24.25	22.67	22.74	22.67
		1	12	25.14	25.07	25.11	22.97	23.03	23.09	24.43	24.34	24.25	22.73	22.56	22.66
		1	24	25.09	25.08	25.04	23.03	23.15	23.05	24.49	24.34	24.24	22.65	22.66	22.58
		2	0	25.69	25.67	25.70	23.20	23.11	23.12	24.96	24.90	24.75	23.20	23.20	23.16
		2	23	25.63	25.63	25.61	23.07	23.08	23.08	25.00	24.90	24.73	23.16	23.17	23.12
		12	0	24.63	24.60	24.62	22.60	22.52	22.55	23.95	23.83	23.72	22.23	22.19	22.13
		12	6	24.63	24.56	24.61	22.54	22.52	22.61	23.85	23.91	23.70	22.22	22.11	22.19
		12	11	24.56	24.55	24.60	22.51	22.54	22.55	23.86	23.83	23.70	22.21	22.11	22.11
		25	0	24.67	24.59	24.66	22.59	22.56	22.64	23.94	23.90	23.78	22.25	22.13	22.21
	16QAM	1	0	24.27	24.31	24.27	22.01	22.14	22.11	23.53	23.58	23.27	21.72	21.79	21.81
		1	12	24.21	24.26	24.24	22.13	22.02	22.18	23.45	23.50	23.24	21.70	21.73	21.80
		1	24	24.14	24.24	24.20	22.15	22.20	22.07	23.53	23.50	23.25	21.66	21.78	21.72
		2	0	24.68	24.70	24.70	22.20	22.08	22.12	23.95	23.83	23.86	22.20	22.20	22.12
		2	23	24.68	24.59	24.55	22.16	22.10	22.10	24.00	23.87	23.80	22.15	22.12	22.06
		12	0	23.52	23.48	23.49	21.46	21.41	21.51	22.85	22.71	22.57	21.09	21.06	21.00
		12	6	23.49	23.49	23.50	21.51	21.47	21.60	22.75	22.77	22.54	21.07	20.98	21.06
		12	11	23.42	23.48	23.50	21.44	21.49	21.51	22.74	22.67	22.55	21.07	20.97	20.97
		25	0	23.50	23.51	23.54	21.53	21.48	21.58	22.81	22.76	22.71	21.11	21.00	21.08
	64QAM	1	0	23.21	23.34	23.14	21.00	21.15	21.07	22.52	22.53	22.32	20.70	20.77	20.78
		1	12	23.16	23.18	23.12	20.95	21.04	21.17	22.47	22.52	22.34	20.66	20.62	20.80
		1	24	23.12	23.13	23.05	21.06	21.20	21.05	22.57	22.56	22.35	20.62	20.73	20.66
		2	0	23.67	23.70	23.63	21.02	21.09	21.09	23.00	22.90	22.73	21.12	21.20	21.17
		2	23	23.59	23.61	23.56	21.01	21.01	21.08	22.96	22.91	22.73	21.08	21.20	21.09
		12	0	22.55	22.47	22.53	20.47	20.39	20.44	21.95	21.84	21.71	20.10	20.08	20.04
		12	6	22.54	22.46	22.53	20.40	20.40	20.50	21.86	21.90	21.70	20.07	19.99	20.09
		12	11	22.42	22.46	22.52	20.37	20.41	20.42	21.84	21.81	21.69	20.06	20.00	20.00
		25	0	22.51	22.54	22.54	20.43	20.42	20.51	21.90	21.87	21.76	20.09	20.01	20.10
	256QAM	1	0	20.83	20.85	20.80	18.31	18.44	18.43	20.65	20.63	20.45	18.16	18.26	18.16
		1	12	20.82	20.78	20.77	18.40	18.43	18.53	20.56	20.55	20.45	18.18	18.10	18.18
		1	24	20.67	20.71	20.75	18.47	18.51	18.43	20.69	20.58	20.44	18.15	18.18	18.12
		2	0	21.28	21.33	21.25	18.46	18.48	18.50	21.08	21.00	20.91	18.67	18.76	18.69
		2	23	21.22	21.22	21.18	18.49	18.43	18.46	21.13	20.98	20.89	18.62	18.72	18.63
		12	0	21.17	21.13	21.14	18.79	18.73	18.77	20.95	20.84	20.80	18.57	18.57	18.49
		12	6	21.17	21.11	21.11	18.76	18.74	18.83	20.86	20.91	20.78	18.62	18.54	18.64
		12	11	21.10	21.09	21.10	18.70	18.74	18.79	20.85	20.83	20.75	18.62	18.53	18.56
		25	0	21.20	21.14	21.13	18.78	18.72	18.83	20.90	20.87	20.81	18.63	18.55	18.64

OUTPUT POWER FOR LTE BAND 30 (10.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)											
				ANT 1			ANT 2			ANT 3			ANT 4		
				N/A N/A	27710 2310.0	N/A N/A	N/A N/A	27710 2310.0	N/A N/A	N/A N/A	27710 2310.0	N/A N/A	N/A N/A	27710 2310.0	N/A N/A
10.0	QPSK	1	0		20.61			21.92			19.74			17.97	
		1	24		24.65			21.94			23.83			22.00	
		1	49		20.52			21.95			19.63			17.92	
		2	0		25.53			23.11			25.00			23.20	
		2	48		25.70			23.20			24.71			22.87	
		25	0		24.14			21.47			23.23			21.48	
		25	12		24.11			21.42			23.29			21.38	
		25	24		24.10			21.46			23.22			21.45	
	16QAM	50	0		21.14			21.42			20.29			18.46	
		1	0		19.64			20.91			18.83			16.95	
		1	24		23.61			20.98			22.81			20.94	
		1	49		19.50			20.89			18.70			16.86	
		2	0		24.48			22.16			24.00			22.20	
		2	48		24.70			22.20			23.72			21.88	
		25	0		23.01			20.35			22.10			20.33	
		25	12		22.93			20.30			22.07			20.24	
	64QAM	25	24		22.92			20.40			22.00			20.30	
		50	0		19.98			20.35			19.10			17.29	
		1	0		18.70			19.99			18.02			16.02	
		1	24		22.65			20.01			21.89			20.00	
		1	49		18.63			20.06			17.92			15.99	
		2	0		23.46			21.13			23.00			21.20	
		2	48		23.70			21.20			22.82			20.86	
		25	0		22.05			19.38			21.18			19.42	
	256QAM	25	12		22.00			19.33			21.22			19.34	
		25	24		22.00			19.44			21.15			19.32	
		50	0		18.97			19.41			18.25			16.39	
		1	0		16.85			18.46			16.50			14.22	
		1	24		20.85			18.44			20.52			18.25	
		1	49		16.79			18.47			16.44			14.21	
		2	0		21.71			19.50			21.62			19.42	
		2	48		21.84			19.58			21.40			19.10	
		25	0		21.24			18.76			20.83			18.64	
		25	12		21.17			18.71			20.89			18.54	
		25	24		21.16			18.80			20.80			18.60	
		50	0		18.21			18.76			17.93			15.62	

8.2. 5G NR n30

Test Engineer ID:	39004	Test Date:	2025-08-27
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OUTPUT POWER FOR 5G NR n30 (5.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)											
				ANT 1			ANT 2			ANT 3			ANT 4		
				461500	462000	462500	461500	462000	462500	461500	462000	462500	461500	462000	462500
5.0	BPSK	1	0	2307.5	2310.0	2312.5	2307.5	2310.0	2312.5	2307.5	2310.0	2312.5	2307.5	2310.0	2312.5
		1	1	24.26	24.72	24.53	22.31	22.09	22.03	23.53	23.95	23.77	22.15	22.13	22.13
		1	1	25.08	25.09	25.03	22.48	22.48	22.55	24.23	24.41	24.45	22.58	22.70	22.56
		1	23	25.32	25.10	25.02	22.52	22.57	22.55	24.56	24.33	24.14	22.58	22.61	22.55
		1	24	24.67	24.62	24.67	22.12	22.15	22.08	23.89	23.93	23.74	22.09	22.17	22.16
		12	6	25.70	25.66	25.64	23.14	23.12	23.09	24.95	25.00	24.89	23.16	23.19	23.11
	QPSK	25	0	25.27	25.29	25.24	22.71	22.73	22.67	24.49	24.65	24.48	22.74	22.76	22.75
		1	0	24.24	24.24	24.21	21.66	21.70	21.70	23.37	23.59	23.37	21.73	21.77	21.74
		1	1	25.21	25.22	25.16	22.65	22.65	22.66	24.36	24.54	24.43	22.66	22.68	22.67
		1	23	25.23	25.20	25.14	22.67	22.69	22.68	24.45	24.27	24.33	22.64	22.73	22.69
		1	24	24.27	24.22	24.22	21.72	21.73	21.68	23.51	23.59	23.24	21.74	21.75	21.68
		12	6	25.70	25.69	25.69	23.17	23.19	23.17	24.93	24.93	24.97	23.20	23.20	23.19
	16QAM	25	0	24.83	24.78	24.77	22.28	22.16	22.23	24.10	24.11	24.08	22.30	22.34	22.32
		1	0	23.01	23.07	23.11	20.48	20.56	20.49	22.32	22.29	22.30	20.54	20.50	20.53
		1	1	24.08	23.94	23.97	21.40	21.55	21.48	23.20	23.18	23.13	21.51	21.59	21.52
		1	23	24.02	24.06	23.86	21.43	21.54	21.44	23.28	23.23	23.18	21.52	21.47	21.51
		1	24	22.99	23.00	23.02	20.46	20.51	20.41	22.29	22.34	22.22	20.40	20.52	20.37
		12	6	24.78	24.81	24.79	22.25	22.19	22.19	23.90	24.00	23.85	22.32	22.29	22.31
	64QAM	25	0	23.77	23.74	23.75	21.23	21.17	21.23	23.06	23.07	23.01	21.26	21.29	21.27
		1	0	22.78	22.63	22.66	20.26	20.14	20.07	21.83	21.97	22.02	20.27	20.13	20.18
		1	1	22.57	22.62	22.49	20.06	20.20	20.05	21.74	21.87	22.05	20.21	20.18	20.17
		1	23	22.72	22.57	22.69	20.05	20.08	20.08	21.76	21.89	21.94	20.23	20.11	20.07
		1	24	22.74	22.76	22.67	20.18	20.06	20.07	22.07	22.01	21.66	20.00	20.12	20.05
		12	6	23.27	23.24	23.29	20.75	20.66	20.69	22.35	22.38	22.53	20.72	20.73	20.75
	256QAM	25	0	23.28	23.25	23.27	20.78	20.75	20.70	22.53	22.60	22.50	20.75	20.78	20.75
		1	0	20.87	20.81	20.87	18.39	18.42	18.29	19.98	20.17	20.18	18.47	18.28	18.29
		1	1	20.73	20.90	20.86	18.23	18.23	18.22	19.82	20.06	19.94	18.36	18.34	18.27
		1	23	20.87	20.80	20.68	18.27	18.28	18.26	20.07	19.93	19.85	18.30	18.37	18.39
		1	24	20.90	20.85	20.81	18.25	18.29	18.18	19.93	20.06	20.00	18.31	18.34	18.35
		12	6	21.34	21.29	21.33	18.81	18.75	18.77	20.46	20.38	20.42	18.82	18.79	18.79
		25	0	21.32	21.32	21.31	18.77	18.79	18.78	20.42	20.55	20.36	18.78	18.79	18.78

OUTPUT POWER FOR 5G NR n30 (10.0 MHz)

Bandwidth (MHz)	Modulation	RB Allocation	RB Offset	Conducted Average (dBm)											
				ANT 1			ANT 2			ANT 3			ANT 4		
				N/A	462000	N/A	N/A	462000	N/A	N/A	462000	N/A	N/A	462000	N/A
10.0	BPSK	1	0	N/A	2310.0	N/A	N/A	2310.0	N/A	N/A	2310.0	N/A	N/A	2310.0	N/A
		1	1		24.65			22.07			23.71			22.15	
		1	1		25.16			22.63			24.40			22.50	
		1	50		25.04			22.56			24.43			22.61	
		1	51		24.67			22.01			24.05			22.11	
		25	12		25.68			23.20			25.00			23.20	
	QPSK	50	0		25.34			22.70			24.60			22.77	
		1	0		24.34			21.74			23.40			21.78	
		1	1		25.36			22.68			24.37			22.59	
		1	50		25.13			22.56			24.52			22.67	
		1	51		24.06			21.72			23.65			21.71	
		25	12		25.70			23.20			24.96			23.20	
	16QAM	50	0		24.90			22.22			24.16			22.30	
		1	0		23.14			20.49			22.35			20.51	
		1	1		23.88			21.49			23.25			21.36	
		1	50		24.10			21.50			23.17			21.44	
		1	51		22.93			20.51			22.38			20.44	
		25	12		24.80			22.21			24.04			22.20	
	64QAM	50	0		23.86			21.29			23.15			21.30	
		1	0		22.76			20.14			21.88			20.11	
		1	1		22.74			20.03			22.09			20.12	
		1	50		22.68			20.15			21.76			20.02	
		1	51		22.51			20.19			21.95			20.09	
		25	12		23.28			20.74			22.56			20.72	
	256QAM	50	0		23.32			20.72			22.53			20.70	
		1	0		20.88			18.27			20.01			18.30	
		1	1		20.70			18.38			20.06			18.31	
		1	50		20.85			18.21			20.11			18.27	
		1	51		20.81			18.34			20.17			18.34	
		25	12		21.28			18.74			20.49			18.78	
		50	0		21.35			18.78			20.62			18.82	

9. CONDUCTED TEST RESULTS

9.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049
ISED: RSS195

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 was also measured and recorded.

RESULTS

There is no limit required and power is the same for low, middle and high channel; therefore, only middle channel was teste.

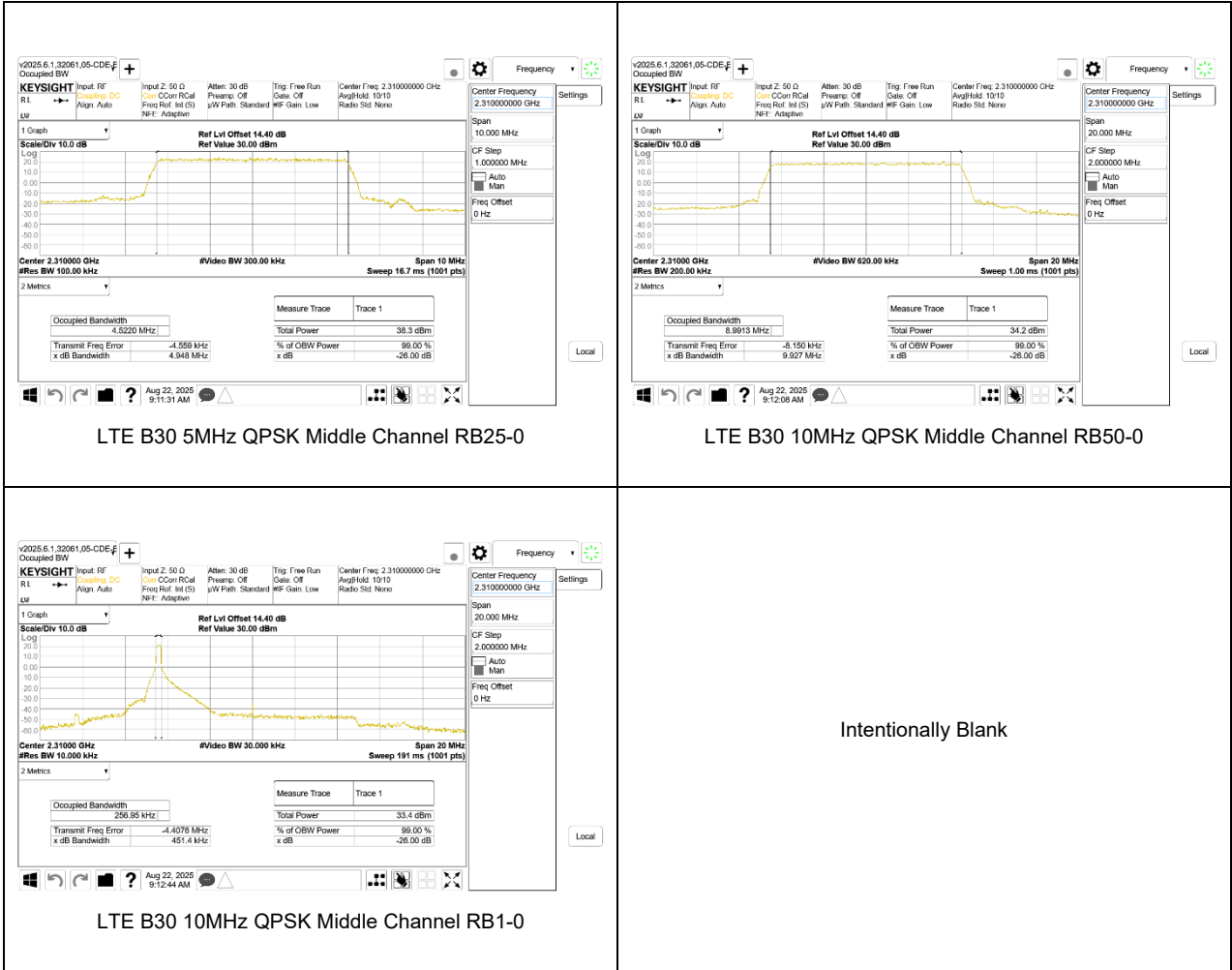
LTE BAND 30

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE BAND 30	5MHz, QPSK	25/0	2310.0	4.522	4.95
	5MHz, 16QAM			4.512	4.97
	10MHz, QPSK	50/0		8.991	9.93
	10MHz, 16QAM			9.011	9.88
	10MHz, QPSK	1/0		0.256	0.45

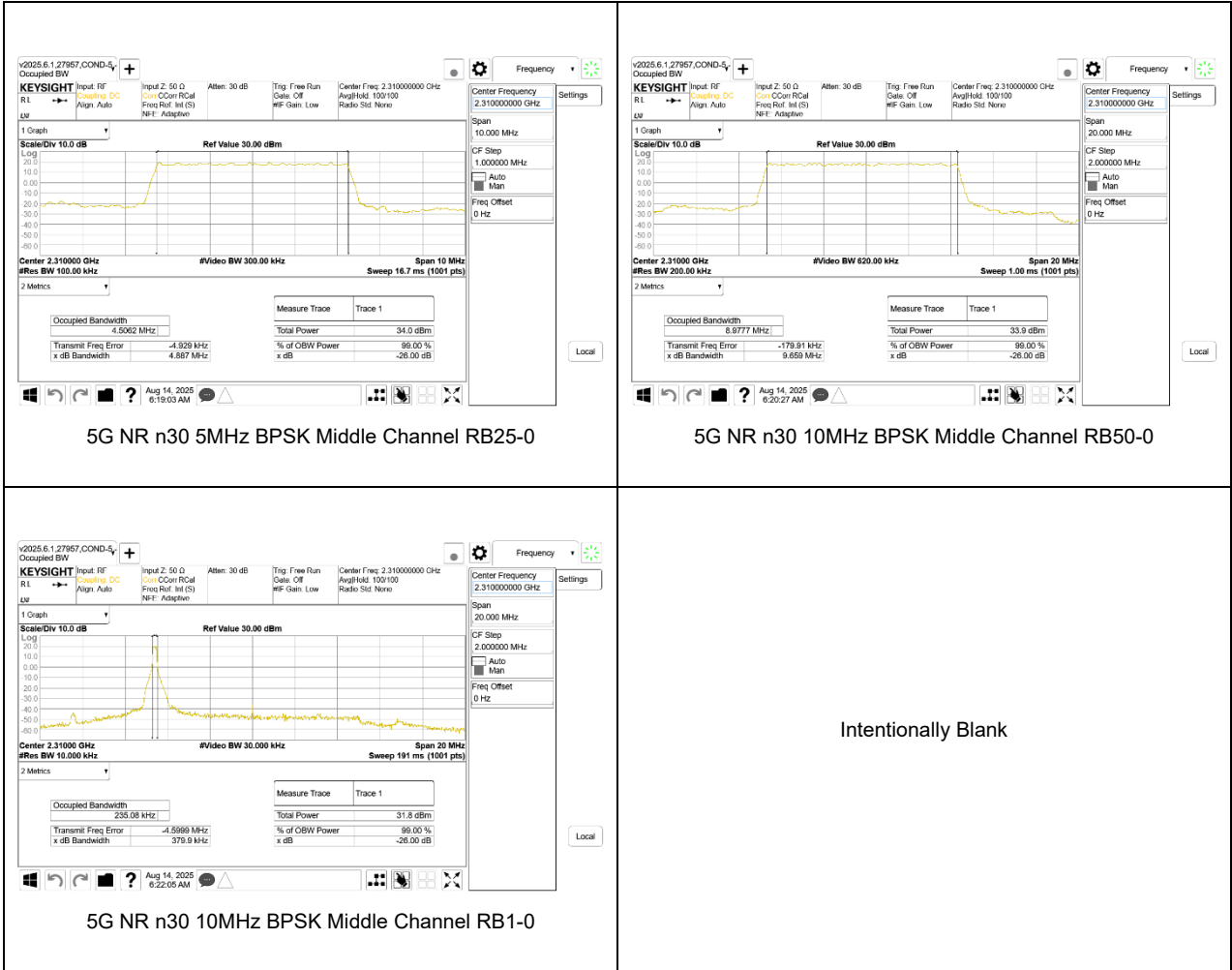
5G NR n30

Band	Mode	RB Allocation/RB Offset	f(MHz)	99% BW (MHz)	-26dB BW (MHz)
5G NR n30	5MHz, BPSK	25/0	2310.0	4.506	4.89
	5MHz, QPSK			4.478	4.86
	5MHz, 16QAM			4.486	4.86
	10MHz, BPSK	50/0		8.978	9.66
	10MHz, QPSK			8.964	9.65
	10MHz, 16QAM			8.991	9.63
	10MHz, BPSK	1/0		0.235	0.38

9.1.1. LTE BAND 30



9.1.2. 5G NR n30



9.2. EMISSION MASK AND ADJACENT CHANNEL POWER

LIMITS

FCC: §27.53

(a) For operations in the 2305-2320 MHz band and the 2345-2360 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power P (with averaging performed only during periods of transmission) within the licensed band(s) of operation, in watts, by the following amounts:

(4) For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

(i) By a factor of not less than: $43 + 10 \log (P)$ dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than $55 + 10 \log (P)$ dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than $61 + 10 \log (P)$ dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than $67 + 10 \log (P)$ dB on all frequencies between 2328 and 2337 MHz;

(ii) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2300 and 2305 MHz, $55 + 10 \log (P)$ dB on all frequencies between 2296 and 2300 MHz, $61 + 10 \log (P)$ dB on all frequencies between 2292 and 2296 MHz, $67 + 10 \log (P)$ dB on all frequencies between 2288 and 2292 MHz, and $70 + 10 \log (P)$ dB below 2288 MHz;

(iii) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2360 and 2365 MHz, and not less than $70 + 10 \log (P)$ dB above 2365 MHz.

ISED: RSS195§5.6

The transmitter unwanted emissions shall be measured with a resolution bandwidth of 1 MHz. A smaller resolution bandwidth is permitted provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz. However, in the 1 MHz bands immediately adjacent to the edges of the frequency range(s) in which the equipment is allowed to operate, a resolution bandwidth of as close as possible to, without being less than 1% of the occupied bandwidth, shall be employed provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz.

RSS195§5.6.2 Mobile, Portable and Low-Power Fixed Subscriber Equipment

The power of any emission outside the frequency range(s) in which the equipment operates shall be attenuated below the transmitter power, P(dBW), by the amount indicated in Table 2 and graphically represented in Figure 2, where p is the transmitter output power measured in watts.

According to [Notice 2022-CEB001](#) In order to demonstrate compliance with the unwanted emission limit of -13 dBm/MHz, the power level measured within the first 1 MHz immediately adjacent to the channel edges shall be integrated over the full 1 MHz bandwidth with a resolution as close as possible to 1% (no less than 1%) of the occupied bandwidth.

TEST PROCEDURE

For Spectrum Emission Mask plots, the spectrum analyzer is configured to sweep with a moving integration window, the width of which can be adjusted to different sizes across the sweep. The window width is configured to be greater than or equal to the required reference bandwidth. The center frequencies of the integration window for the different integration windows was set such that the upper and lower edges of the windows are aligned with the transition points in the reference bandwidths. This is achieved by setting the start / stop frequencies of the window with an offset equal to the reference bandwidth / 2 from the transition point.

The transmitter output was connected to a base station simulator 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 band edge measurement:

1. Set the spectrum analyzer span to include the block edge frequency.
2. Set a marker to point the corresponding band edge frequency in each test case.
3. Set display line at -13 dBm
4. Set resolution bandwidth to at least 1% of emission bandwidth.

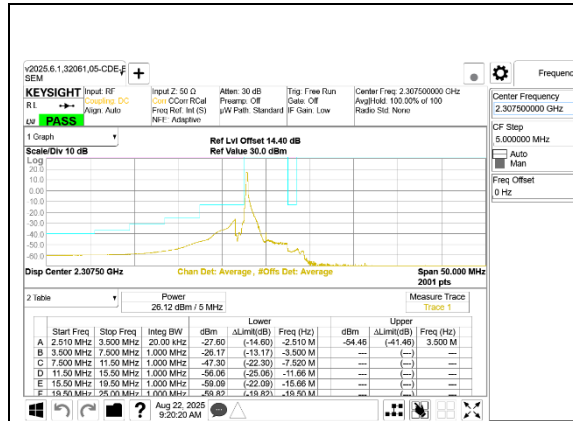
TEST PROCEDURE (BAND 30)

(5) Measurement procedure. 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 outside and adjacent to the channel blocks at 2305, 2310, 2315, 2320, 2345, 2350, 2355, and 2360 MHz, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (*i.e.*, 1 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

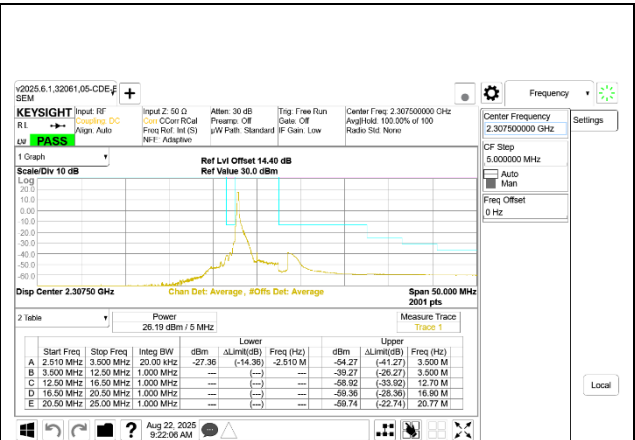
To show compliance with this requirement the spectrum analyzer is configured to measure the adjacent channel power for the frequency blocks adjacent to the channel edge. The integration of power is performed over a bandwidth > 1MHz and if the measurement is less than -13dBm when measured over more than 1MHz then the power must be less than -13dBm/MHz.

RESULTS

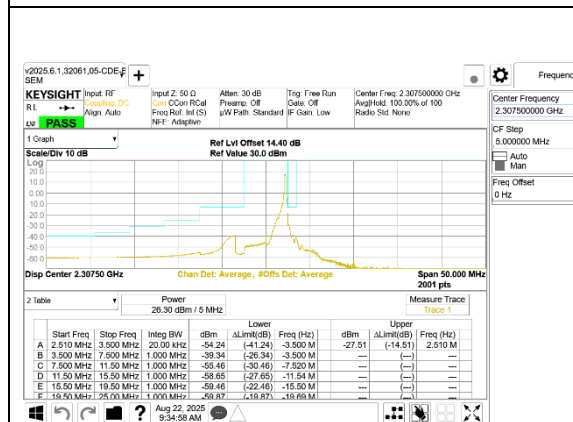
9.2.1. LTE BAND 30 EMISSION MASK



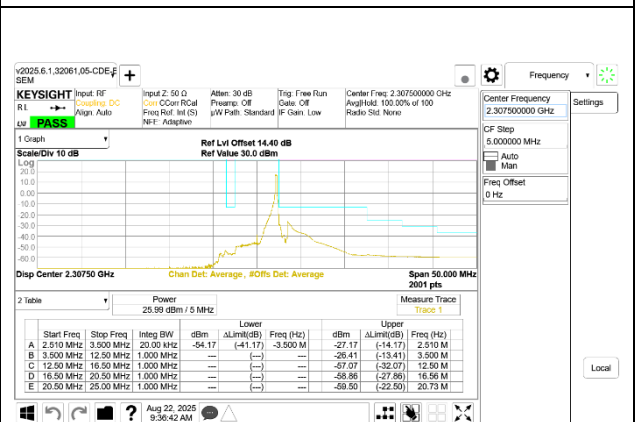
LTE B30 5MHz QPSK Low Channel RB1-0 (Low side)



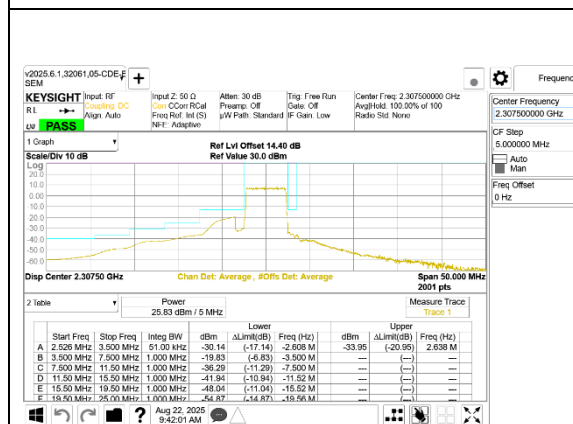
LTE B30 5MHz QPSK Low Channel RB1-0 (High side)



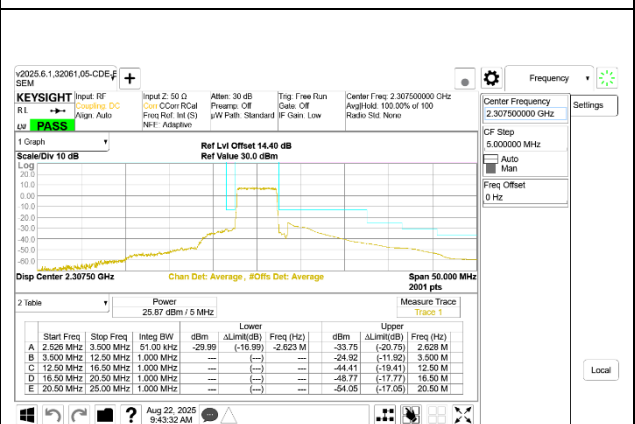
LTE B30 5MHz QPSK Low Channel RB1-24 (Low side)



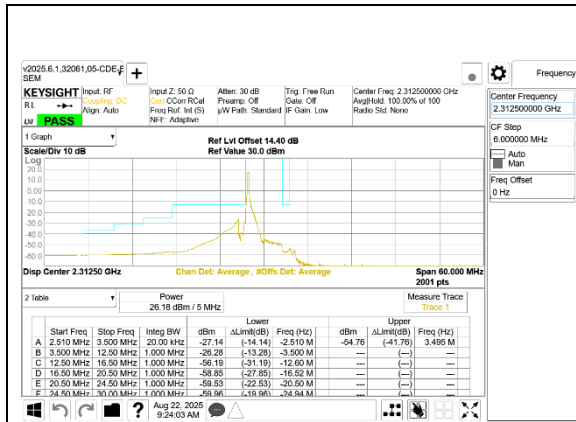
LTE B30 5MHz QPSK Low Channel RB1-24 (High side)



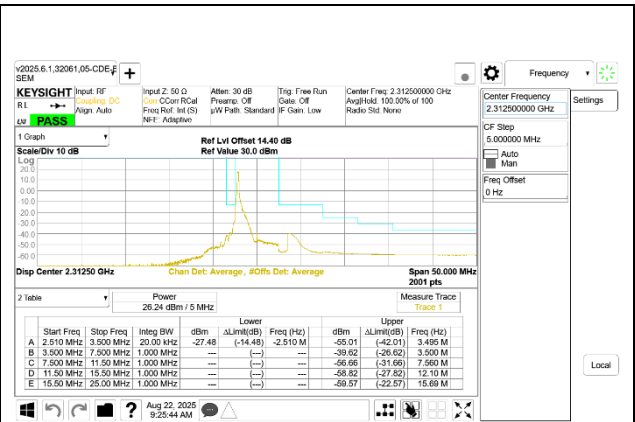
LTE B30 5MHz QPSK Low Channel RB25-0 (Low side)



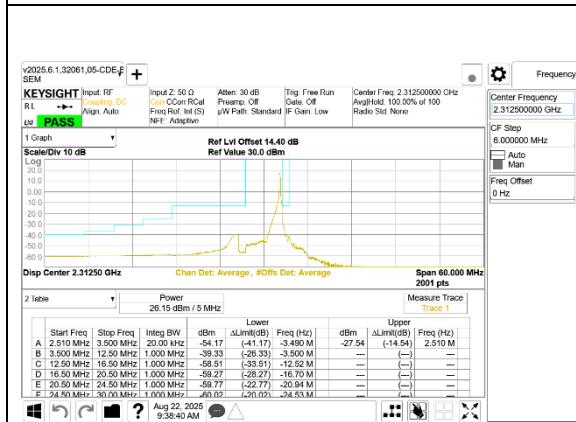
LTE B30 5MHz QPSK Low Channel RB25-0 (High side)



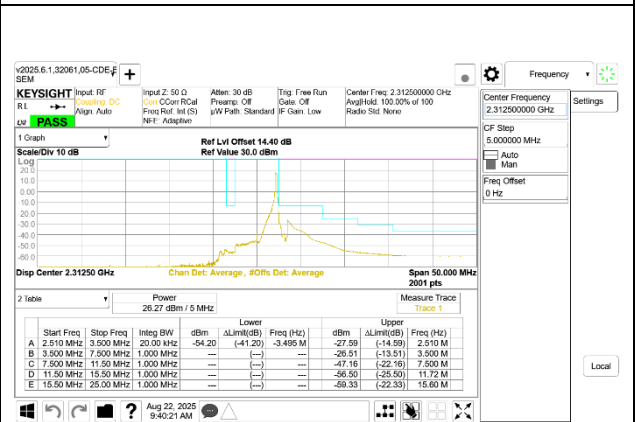
LTE B30 5MHz QPSK High Channel RB1-0 (Low side)



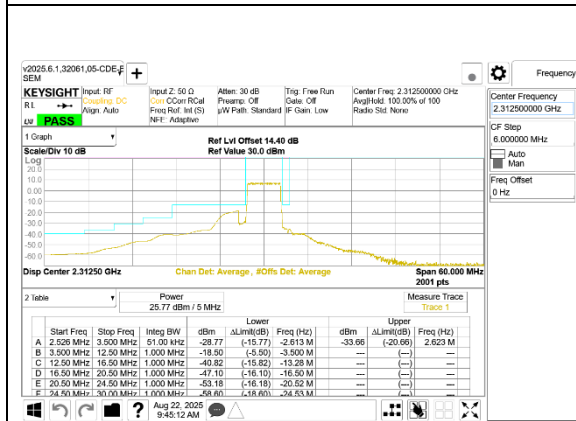
LTE B30 5MHz QPSK High Channel RB1-0 (High side)



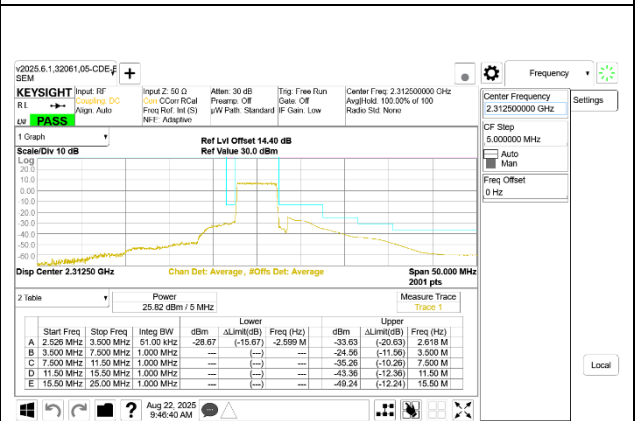
LTE B30 5MHz QPSK High Channel RB1-24 (Low side)



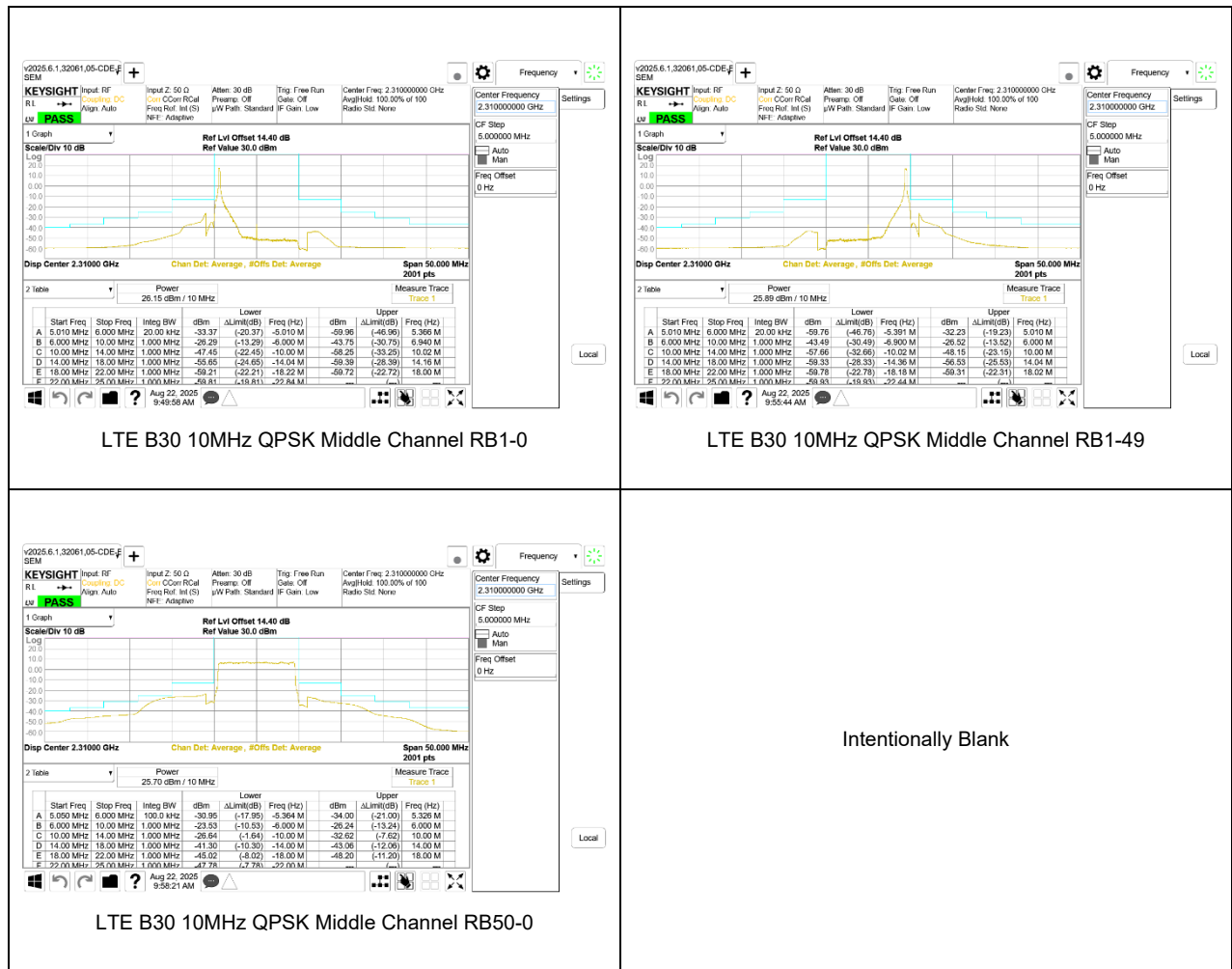
LTE B30 5MHz QPSK High Channel RB1-24 (High side)



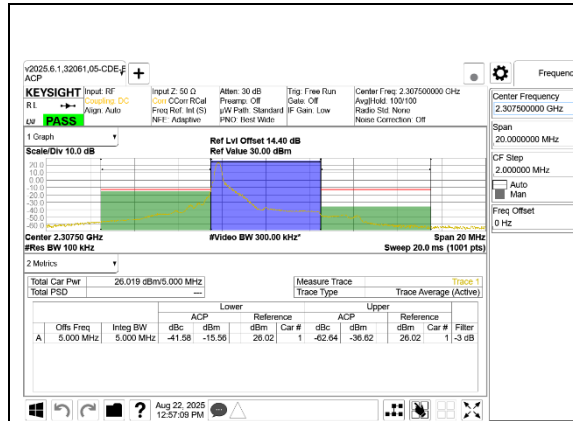
LTE B30 5MHz QPSK High Channel RB25-0 (Low side)



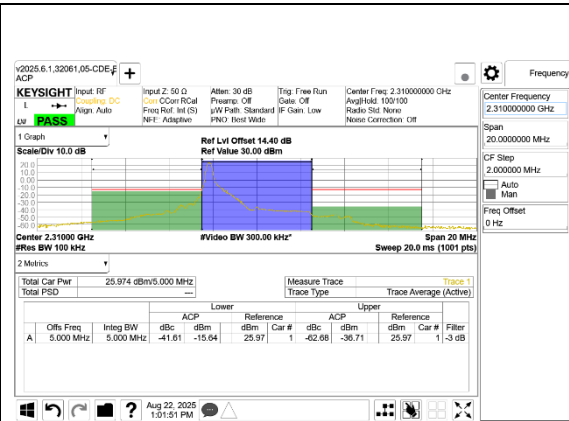
LTE B30 5MHz QPSK High Channel RB25-0 (High side)



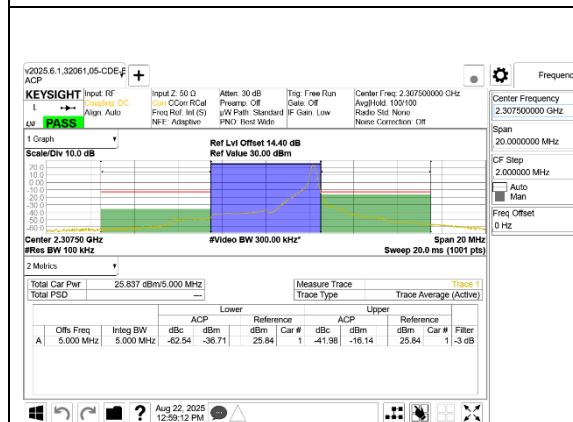
9.2.2. LTE BAND 30 ADJACENT CHANNEL POWER



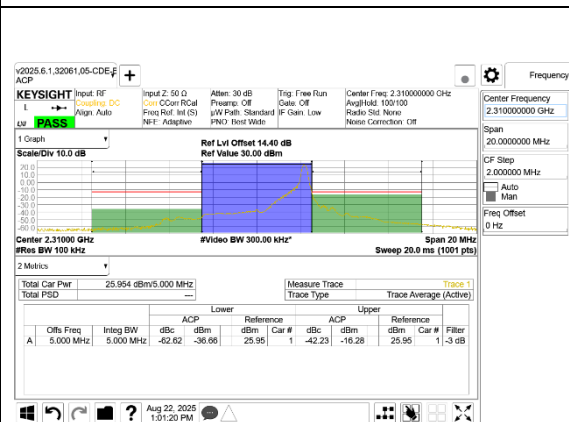
LTE B30 5MHz QPSK Low Channel RB1-0



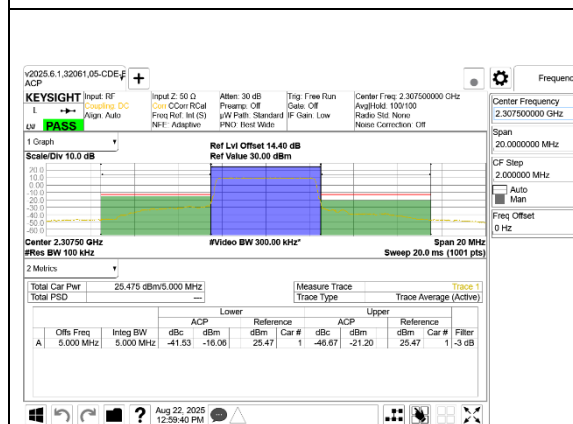
LTE B30 5MHz QPSK Middle Channel RB1-0



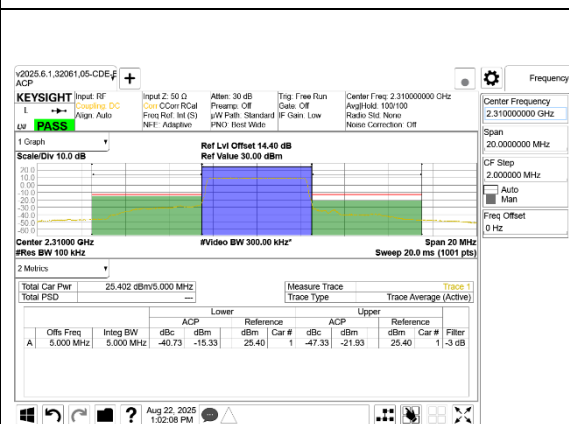
LTE B30 5MHz QPSK Low Channel RB1-24



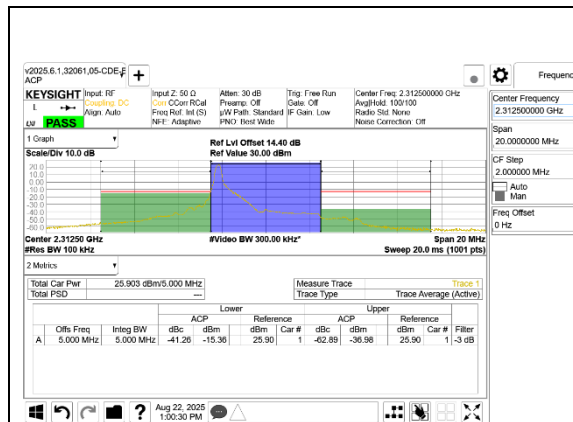
LTE B30 5MHz QPSK Middle Channel RB1-24



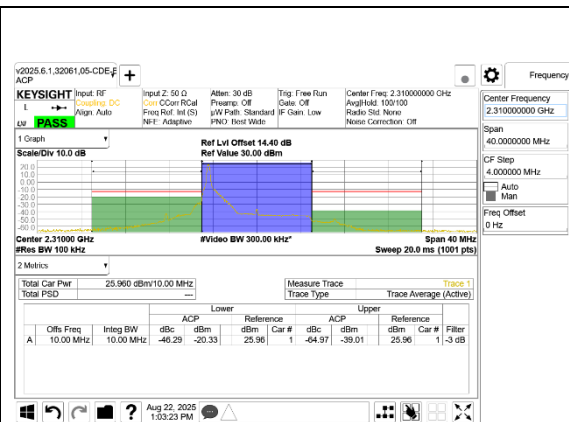
LTE B30 5MHz QPSK Low Channel RB25-0



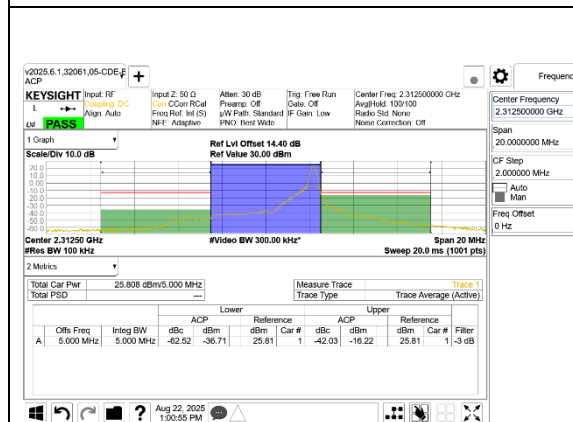
LTE B30 5MHz QPSK Middle Channel RB25-0



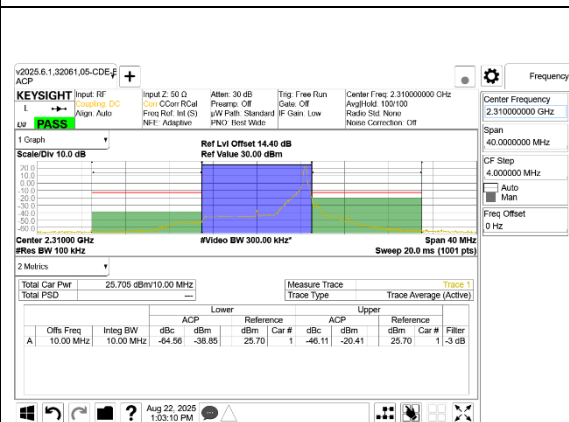
LTE B30 5MHz QPSK High Channel RB1-0



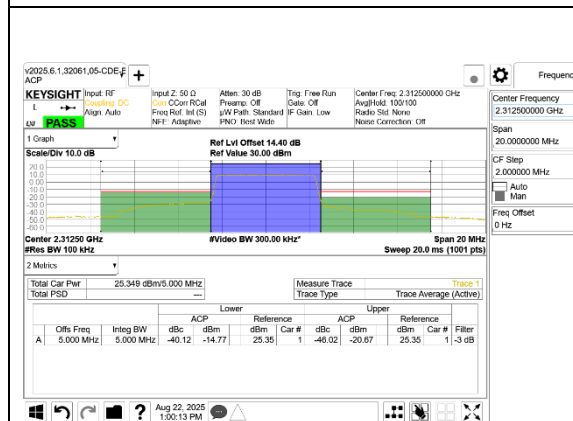
LTE B30 10MHz QPSK Middle Channel RB1-0



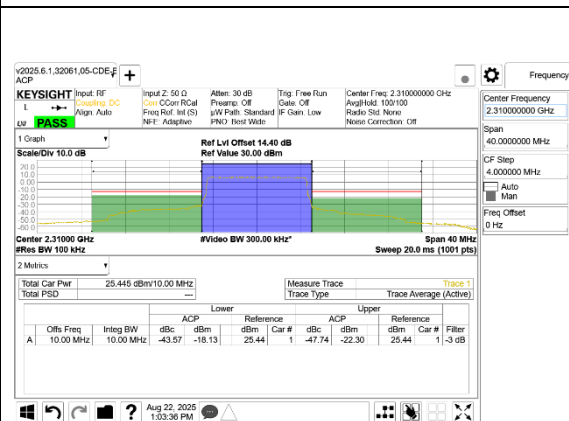
LTE B30 5MHz QPSK High Channel RB1-24



LTE B30 10MHz QPSK High Channel RB1-49

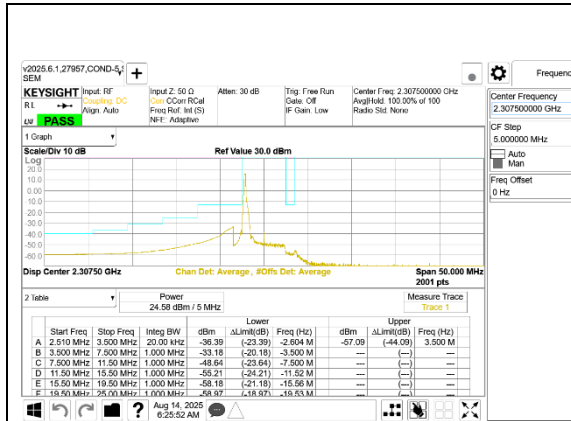


LTE B30 5MHz QPSK High Channel RB25-0

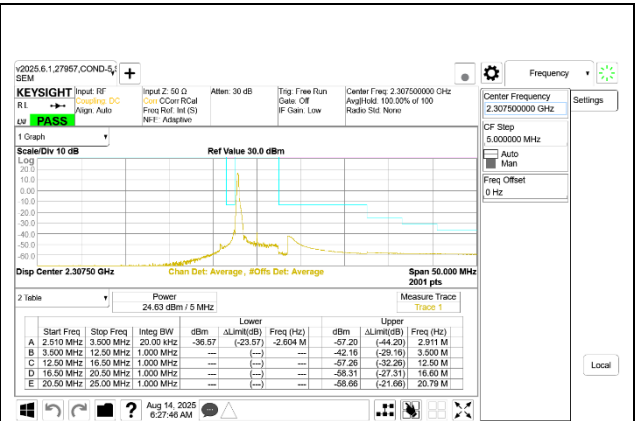


LTE B30 10MHz QPSK Middle Channel RB50-0

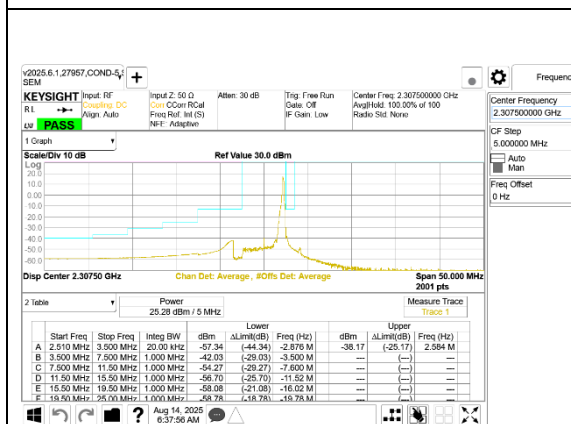
9.2.3. 5G NR n30 EMISSION MASK



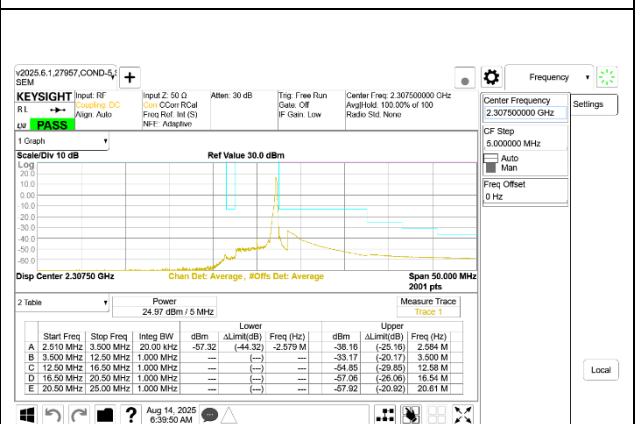
5G NR n30 5MHz BPSK Low Channel RB1-0 (Low side)



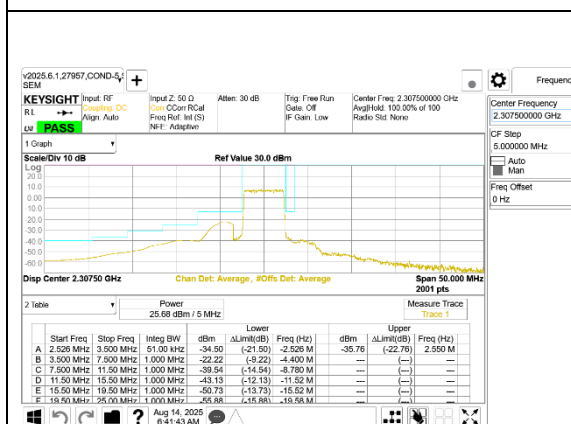
5G NR n30 5MHz BPSK Low Channel RB1-0 (High side)



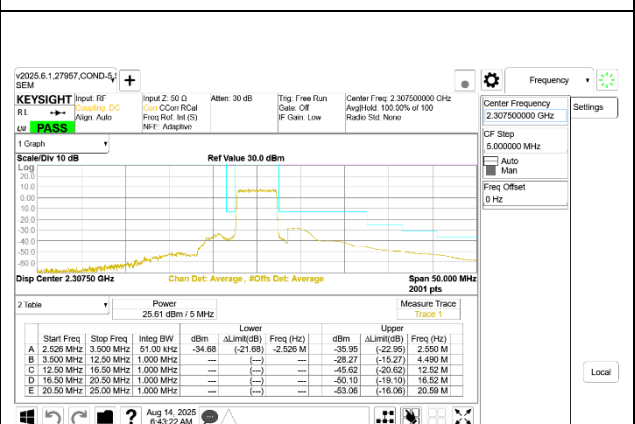
5G NR n30 5MHz BPSK Low Channel RB1-24 (Low side)



5G NR n30 5MHz BPSK Low Channel RB1-24 (High side)

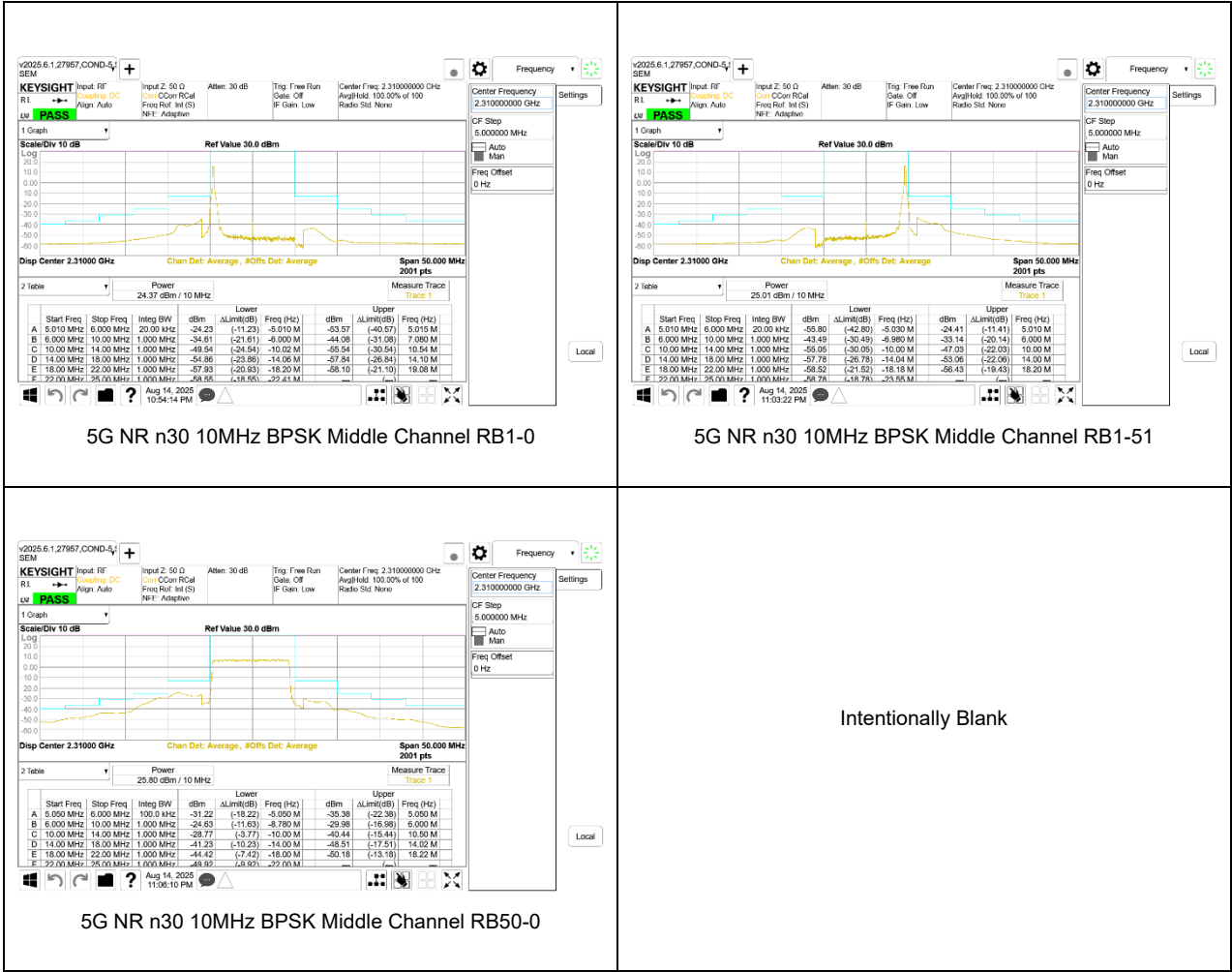


5G NR n30 5MHz BPSK Low Channel RB25-0 (Low side)

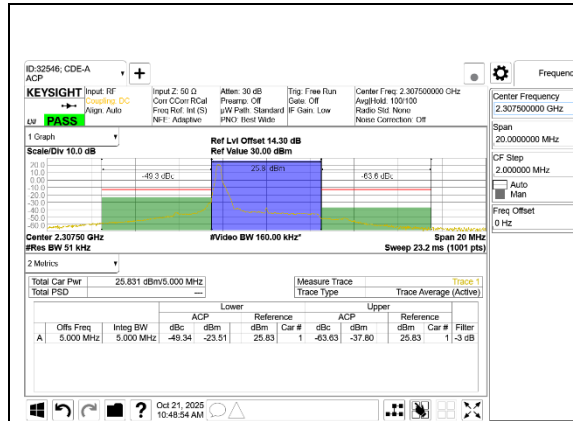


5G NR n30 5MHz BPSK Low Channel RB25-0 (High side)

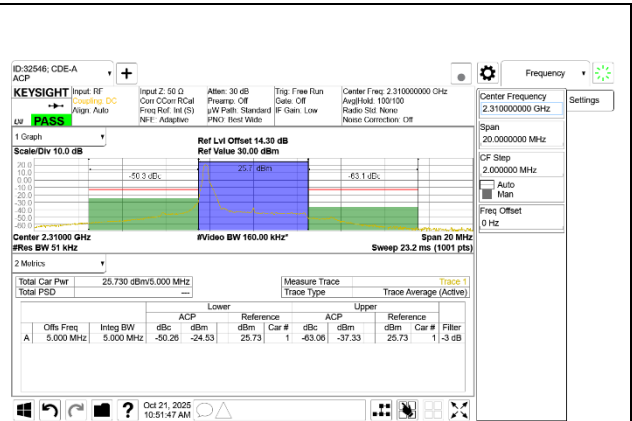




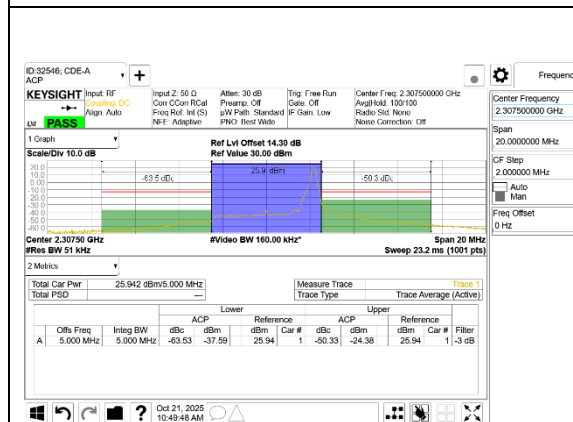
9.2.4. 5G NR n30 ADJACENT CHANNEL POWER



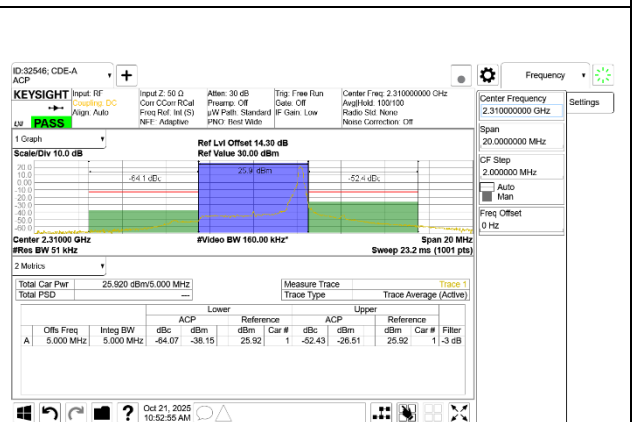
5G NR n30 5MHz BPSK Low Channel RB1-0



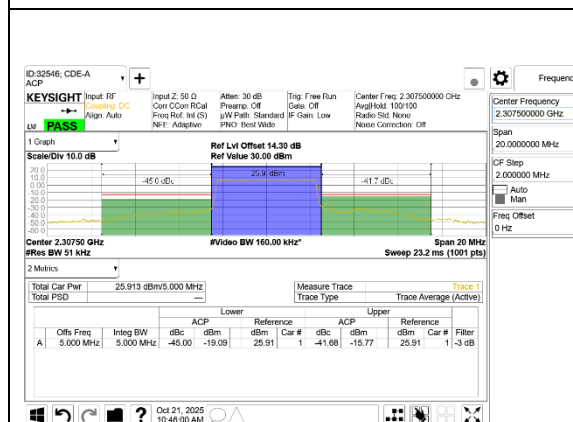
5G NR n30 5MHz BPSK Middle Channel RB1-0



5G NR n30 5MHz BPSK Low Channel RB1-24



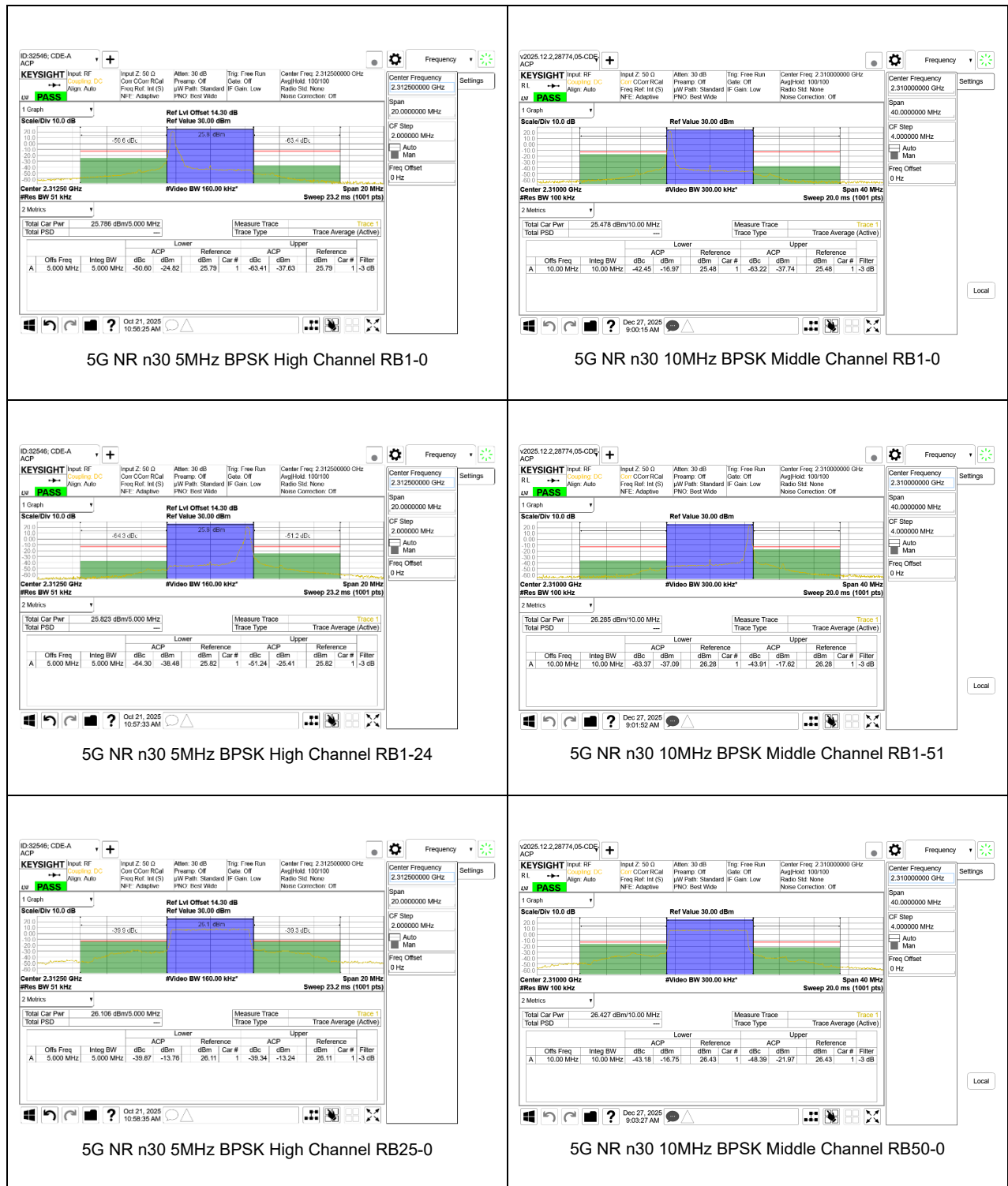
5G NR n30 5MHz BPSK Middle Channel RB1-24



5G NR n30 5MHz BPSK Low Channel RB25-0



5G NR n30 5MHz BPSK Middle Channel RB25-0



9.3. OUT OF BAND EMISSIONS

LIMITS

FCC: §27.53 (a)

The minimum permissible attenuation level of any spurious emissions is $70 + 10 \log (P)$ dB where transmitting power (P) in Watts.

RSS195§5.6.2

The minimum permissible attenuation level of any spurious emissions is $70 + 10 \log (P)$ dB where transmitting power (P) in Watts.

TEST PROCEDURE

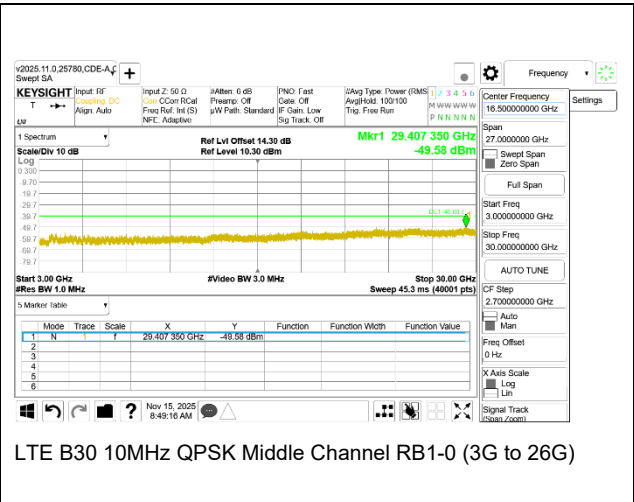
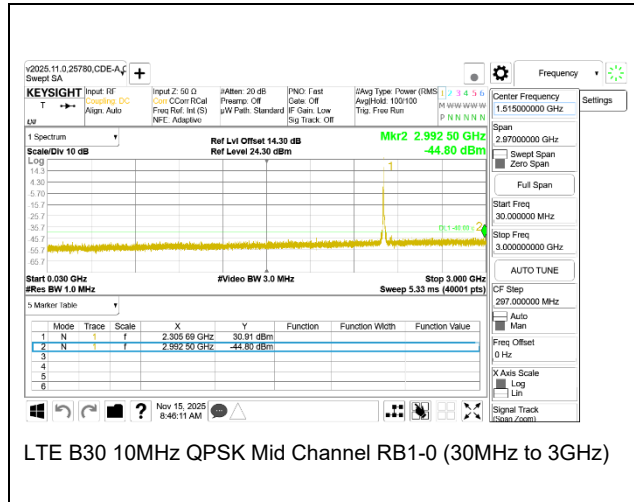
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case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

For each out of band emissions measurement:

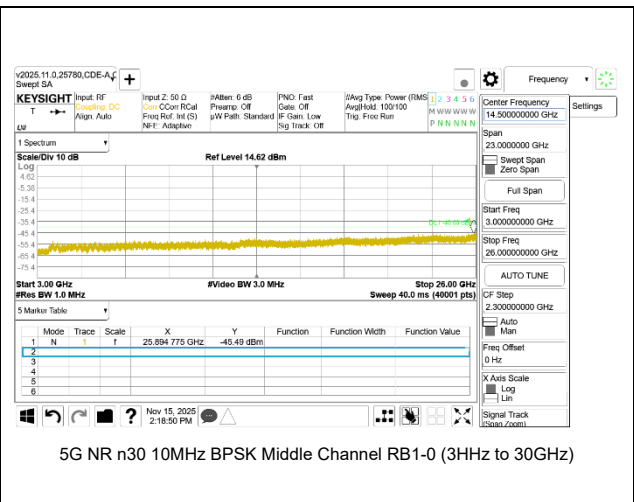
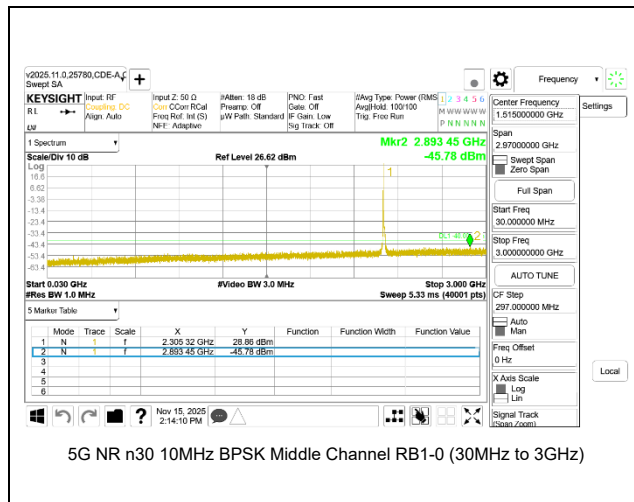
- Set display line at required limit.
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.
(NOTE: Worst case set RBW/VBW to 1MHz/3MHz)

RESULTS

9.3.1. LTE BAND 30



9.3.2. 5G NR n30



9.4. FREQUENCY STABILITY

LIMITS

FCC: §27.54

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

ISED: RSS195§5.4

The applicant shall ensure frequency stability by showing that the occupied bandwidth is maintained within the range of the operating frequency blocks when testing under the temperature and supply voltage variations specified for the frequency stability measurement in RSS-Gen.

TEST PROCEDURE

Use base station simulator with Frequency Error measurement capability.

- Temp. = -30°C to +50°C
- Voltage = (85% - 115%)
Low voltage, 3.23VDC, Normal, 3.8VDC and High voltage, 4.37VDC.
End Voltage, 3.2VDC.

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°C is reached.

Frequency Stability vs Voltage:

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

RESULTS

See the following pages.

9.4.1. LTE BAND 30 (QPSK 10MHz BANDWIDTH)

Test Engineer ID:	32188	Test Date:	9/10/2025
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Band	30	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2305	2315			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	2305.5180	2314.4674			
Extreme (50°C)		2305.5180	2314.4674	-0.9	0.000	Yes
Extreme (40°C)		2305.5180	2314.4674	0.2	0.000	Yes
Extreme (30°C)		2305.5180	2314.4674	-0.9	0.000	Yes
Extreme (10°C)		2305.5180	2314.4674	-0.2	0.000	Yes
Extreme (0°C)		2305.5180	2314.4674	0.3	0.000	Yes
Extreme (-10°C)		2305.5180	2314.4674	1.1	0.000	Yes
Extreme (-20°C)		2305.5180	2314.4674	0.1	0.000	Yes
Extreme (-30°C)		2305.5180	2314.4674	-0.2	0.000	Yes
20°C	15%	2305.5180	2314.4674	0.4	0.000	Yes
	-15%	2305.5180	2314.4674	-1.5	-0.001	Yes
	End Point Voltage	2305.5180	2314.4674	1.0	0.000	Yes

9.4.2. 5G NR n30 (BPSK 10MHz BANDWIDTH)

Test Engineer ID:	32188	Test Date:	9/12/2025
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Band	30	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2305	2315			
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	Within Authorized Frequency Block (Hz)
Temperature	Voltage					
Normal (20°C)	Normal	2305.3405	2314.2888			
Extreme (50°C)		2305.3405	2314.2888	-5.2	-0.002	Yes
Extreme (40°C)		2305.3405	2314.2888	-3.8	-0.002	Yes
Extreme (30°C)		2305.3405	2314.2888	-3.1	-0.001	Yes
Extreme (10°C)		2305.3405	2314.2888	-2.0	-0.001	Yes
Extreme (0°C)		2305.3405	2314.2888	-4.1	-0.002	Yes
Extreme (-10°C)		2305.3405	2314.2888	-2.0	-0.001	Yes
Extreme (-20°C)		2305.3405	2314.2888	-4.2	-0.002	Yes
Extreme (-30°C)		2305.3405	2314.2888	-6.1	-0.003	Yes
20°C	15%	2305.3405	2314.2888	1.1	0.000	Yes
	-15%	2305.3405	2314.2888	-1.2	0.000	Yes
	End Point Voltage	2305.3405	2314.2888	1.5	0.001	Yes

9.5. PEAK-TO-AVERAGE POWER RATIO

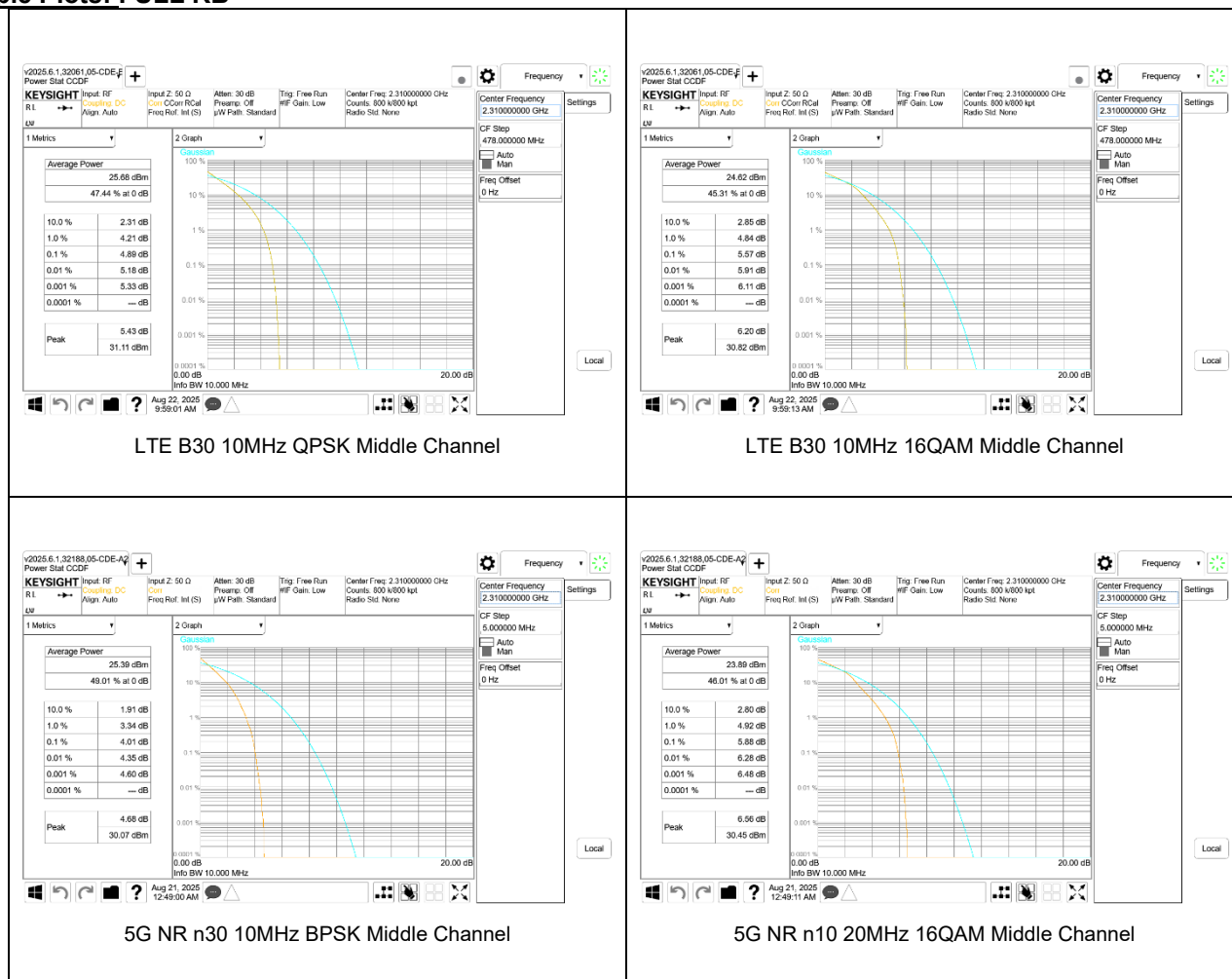
LIMIT

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

RESULT

The worst-case antenna port for conducted power shown in section 6.5. was used to measure as the worst case; full resource block (FRB) for each bandwidth was used to measure as the worst case. The results from all CCDF measurements are passed with 13dB peak-to-average power ratio criteria.

Example Plots: FULL RB



9.5.1. LTE BAND 30

Test Engineer ID:	32188	Test Date:	2025-08-20
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Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
LTE Band 30	5MHz	2310.0	25	0	QPSK	31.1	25.67	5.43
				16QAM	30.88	24.61	6.27	
	10MHz	50	0	QPSK	31.11	25.68	5.43	
				16QAM	30.82	24.62	6.20	
Duty Cycle Correction Factor (dB) =			0.00					
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

9.5.2. 5G NR n30

Test Engineer ID:	32188	Test Date:	2025-08-20
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Band	Bandwidth (MHz)	Frequency (MHz)	RB Allocation	RB OffSet	Modulation	Conducted Power (dBm)		Peak-to-Average Power Ratio (dB)
						Peak	Average	
5G NR n30	5MHz	2310.0	25	0	BPSK	29.84	25.32	4.52
				16QAM	30.10	23.83	6.27	
	10MHz	50	0	BPSK	30.07	25.39	4.68	
				16QAM	30.45	23.89	6.56	
Duty Cycle Correction Factor (dB) =			0.00					
Peak-to-Average Power Ratio= Peak Reading - Average Reading - Duty Cycle Correction Factor								

10. RADIATED TEST RESULTS

LIMITS

FCC: §27.53 (a)

For mobile and portable stations operating in the 2305-2315 MHz: by a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2360 and 2365 MHz, and not less than $70 + 10 \log (P)$ dB above 2365 MHz.

RSS195§5.6

The transmitter unwanted emissions shall be measured with a resolution bandwidth of 1 MHz. A smaller resolution bandwidth is permitted provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz. However, in the 1 MHz bands immediately adjacent to the edges of the frequency range(s) in which the equipment is allowed to operate, a resolution bandwidth of as close as possible to, without being less than 1% of the occupied bandwidth, shall be employed provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz.

RSS195§5.6.2 Mobile, Portable and Low-Power Fixed Subscriber Equipment

The power of any emission outside the frequency range(s) in which the equipment operates shall be attenuated below the transmitter power, $P(\text{dBW})$, by the amount indicated in Table 2 and graphically represented in Figure 2, where p is the transmitter output power measured in watts.

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.

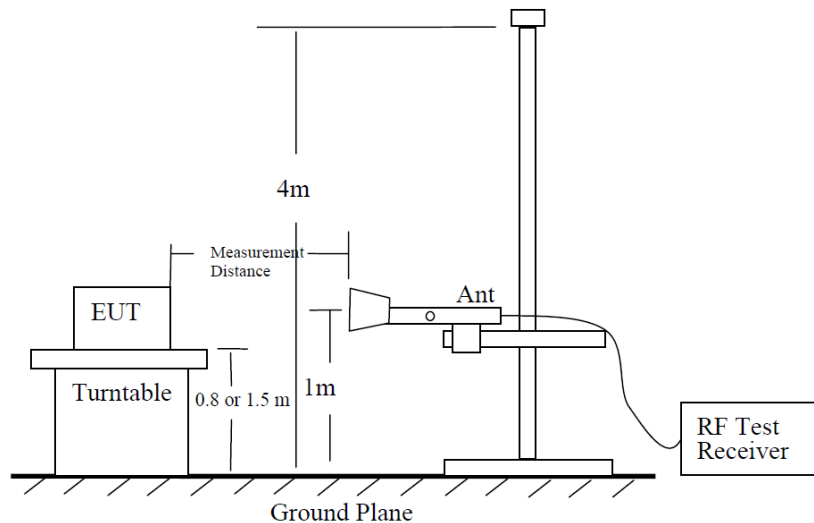


Figure 6 —Test site-up for radiated ERP and/or EIRP measurements

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.

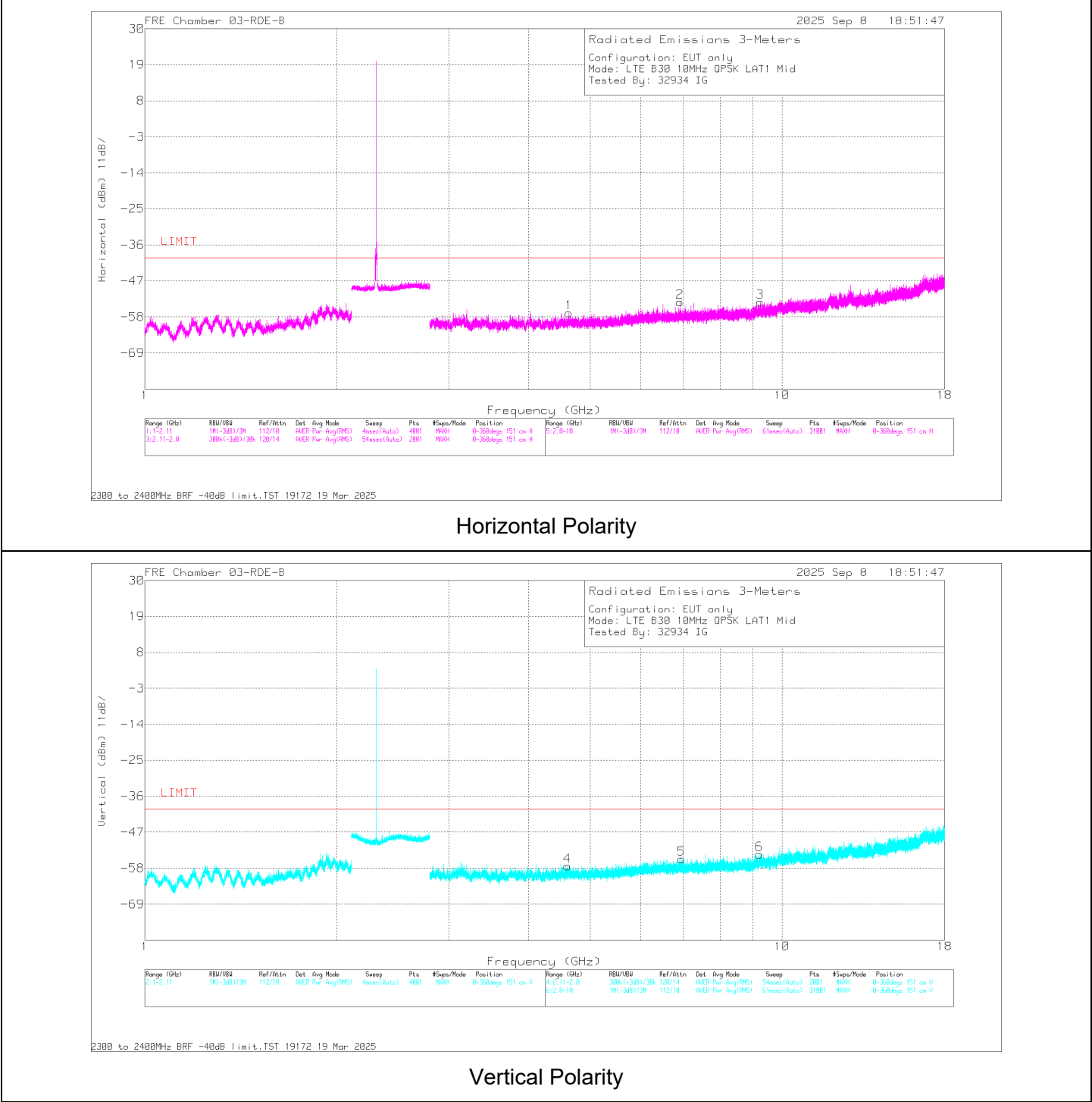
So, from d)

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

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	223084 ACF (dB/m)	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT (dBm)	Margin (dB)	Polarity
1	4.627434	53.45	RMS	33.9	-95.2	-49.00	-56.85	-40	-16.85	H
4	4.603898	53.10	RMS	33.8	-95.2	-49.09	-57.39	-40	-17.39	V
2	6.916827	52.16	RMS	35.6	-95.2	-47.20	-54.64	-40	-14.64	H
5	6.955978	51.91	RMS	35.6	-95.2	-47.50	-55.19	-40	-15.19	V
3	9.247747	52.06	RMS	36.4	-95.2	-46.77	-53.51	-40	-13.51	H
6	9.217347	51.60	RMS	36.3	-95.2	-46.40	-53.70	-40	-13.70	V

10.1.1. LTE BAND 30

LTE BAND 30 (QPSK 10.0MHZ BANDWIDTH, ANT 1)

Project #:	15941282
Date:	2025-09-08
Test Engineer:	32934
Configuration:	EUT Only
Mode	LTE B30 QPSK 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
Mid Channel, 2310MHz									
4.627434	53.45	RMS	33.9	-95.2	-49.00	-56.85	-40	-16.85	H
4.603898	53.10	RMS	33.8	-95.2	-49.09	-57.39	-40	-17.39	V
6.916827	52.16	RMS	35.6	-95.2	-47.20	-54.64	-40	-14.64	H
6.955978	51.91	RMS	35.6	-95.2	-47.50	-55.19	-40	-15.19	V
9.247747	52.06	RMS	36.4	-95.2	-46.77	-53.51	-40	-13.51	H
9.217347	51.60	RMS	36.3	-95.2	-46.40	-53.70	-40	-13.70	V

LTE BAND 30 (QPSK 10.0MHZ BANDWIDTH, ANT 2)

Project #:	115941282
Date:	2025-11-13
Test Engineer:	111411
Configuration:	EUT Only
Mode	LTE B30 QPSK 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
Mid Channel, 2310MHz									
4.633318	52.59	RMS	33.9	-95.2	-49.17	-57.88	-40	-17.88	H
4.629885	52.87	RMS	33.9	-95.2	-48.99	-57.42	-40	-17.42	V
6.912829	50.17	RMS	35.6	-95.2	-47.20	-56.63	-40	-16.63	H
6.890274	50.13	RMS	35.6	-95.2	-47.20	-56.67	-40	-16.67	V
9.213425	50.47	RMS	36.3	-95.2	-46.14	-54.57	-40	-14.57	H
9.205580	50.55	RMS	36.3	-95.2	-46.26	-54.61	-40	-14.61	V

LTE BAND 30 (QPSK 10.0MHZ BANDWIDTH, ANT 3)

Project #:	115941282
Date:	2025-09-19
Test Engineer:	32934
Configuration:	EUT Only
Mode	LTE B30 QPSK 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
Mid Channel, 2310MHz									
4.625963	51.94	RMS	33.9	-95.2	-49.00	-58.36	-40	-18.36	H
4.617137	52.78	RMS	33.8	-95.2	-49.07	-57.69	-40	-17.69	V
6.930971	50.68	RMS	35.6	-95.2	-47.20	-56.12	-40	-16.12	H
6.925087	51.61	RMS	35.6	-95.2	-47.20	-55.19	-40	-15.19	V
9.256083	50.71	RMS	36.4	-95.2	-46.60	-54.69	-40	-14.69	H
9.254122	51.50	RMS	36.4	-95.2	-46.59	-53.89	-40	-13.89	V

LTE BAND 30 (QPSK 10.0MHZ BANDWIDTH, ANT 4)

Project #:	115941282
Date:	2025-09-19
Test Engineer:	32934
Configuration:	EUT Only
Mode	LTE B30 QPSK 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
Mid Channel, 2310MHz									
4.628905	52.30	RMS	33.9	-95.2	-48.91	-57.91	-40	-17.91	H
4.606840	52.38	RMS	33.8	-95.2	-49.00	-58.02	-40	-18.02	V
6.918223	52.15	RMS	35.6	-95.2	-47.20	-54.65	-40	-14.65	H
6.898610	50.73	RMS	35.6	-95.2	-47.14	-56.01	-40	-16.01	V
9.243335	51.25	RMS	36.4	-95.2	-46.53	-54.08	-40	-14.08	H
9.241864	51.38	RMS	36.4	-95.2	-46.50	-53.92	-40	-13.92	V

10.1.2. 5G NR n30

5G NR n30 (BPSK 10.0MHZ BANDWIDTH, ANT 1)

Project #:	15841282
Date:	2025-11-14
Test Engineer:	111411
Configuration:	EUT Only
Mode	5G NR n30 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
Mid Channel, 2310MHz									
4.618118	50.28	RMS	33.8	-95.2	-48.92	-60.04	-40	-20.04	V
4.618118	49.57	RMS	33.8	-95.2	-48.92	-60.75	-40	-20.75	H
6.928029	48.58	RMS	35.6	-95.2	-47.20	-58.22	-40	-18.22	V
6.928029	48.74	RMS	35.6	-95.2	-47.20	-58.06	-40	-18.06	H
9.243825	48.28	RMS	36.4	-95.2	-46.58	-57.10	-40	-17.10	V
9.243825	48.50	RMS	36.4	-95.2	-46.58	-56.88	-40	-16.88	H

5G NR n30 (BPSK 10.0MHZ BANDWIDTH, ANT 2)

Project #:	15841282
Date:	2025-11-14
Test Engineer:	111411
Configuration:	EUT Only
Mode	5G NR n30 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
Mid Channel, 2310MHz									
4.623021	49.80	RMS	33.9	-95.2	-49.20	-60.70	-40	-20.70	H
4.623021	51.50	RMS	33.9	-95.2	-49.20	-59.00	-40	-19.00	V
6.935384	48.70	RMS	35.6	-95.2	-47.40	-58.30	-40	-18.30	H
6.935384	47.90	RMS	35.6	-95.2	-47.40	-59.10	-40	-19.10	V
9.243825	47.49	RMS	36.4	-95.2	-46.58	-57.89	-40	-17.89	H
9.243825	48.10	RMS	36.4	-95.2	-46.58	-57.28	-40	-17.28	V

5G NR n30 (BPSK 10.0MHZ BANDWIDTH, ANT 3)

Project #:	15941282
Date:	2025-11-14
Test Engineer:	111411
Configuration:	EUT Only
Mode	5G NR n30 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
Mid Channel, 2310MHz									
4.623021	50.86	RMS	33.9	-95.2	-49.20	-59.64	-40	-19.64	H
6.920184	49.90	RMS	35.6	-95.2	-47.20	-56.90	-40	-16.90	H
9.240883	49.03	RMS	36.4	-95.2	-46.49	-56.26	-40	-16.26	H
4.613214	50.33	RMS	33.8	-95.2	-48.82	-59.89	-40	-19.89	V
6.889784	48.37	RMS	35.6	-95.2	-47.22	-58.45	-40	-18.45	V
9.243825	48.58	RMS	36.4	-95.2	-46.58	-56.80	-40	-16.80	V

5G NR n30 (BPSK 10.0MHZ BANDWIDTH, ANT 4)

Project #:	15941282
Date:	2025-11-14
Test Engineer:	111411
Configuration:	EUT Only
Mode	5G NR n30 BPSK 10MHz
Chamber #:	05-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
Mid Channel, 2310MHz									
4.622040	51.05	RMS	33.9	-95.2	-49.20	-59.45	-40	-19.45	H
4.622040	52.34	RMS	33.9	-95.2	-49.20	-58.16	-40	-18.16	V
6.930481	47.52	RMS	35.6	-95.2	-47.20	-59.28	-40	-19.28	H
6.930481	48.34	RMS	35.6	-95.2	-47.20	-58.46	-40	-18.46	V
9.246767	48.56	RMS	36.4	-95.2	-46.70	-56.94	-40	-16.94	H
9.246767	48.07	RMS	36.4	-95.2	-46.70	-57.43	-40	-17.43	V

11. SETUP PHOTOS

Refer to 15941282-EP1 for setup photos.

END OF REPORT