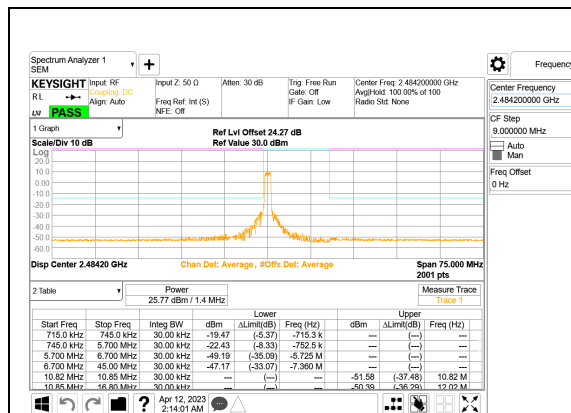
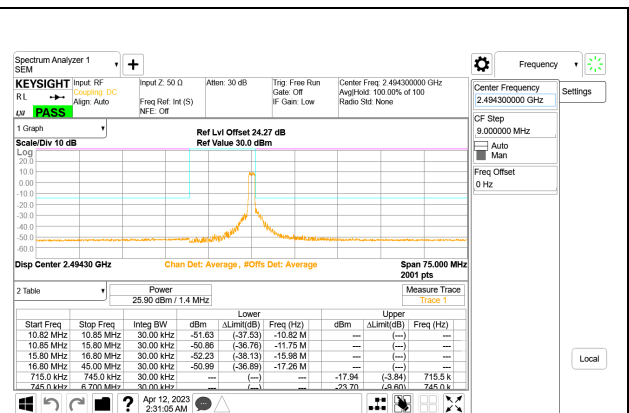


LTE BAND 53 EIRP DENSITY

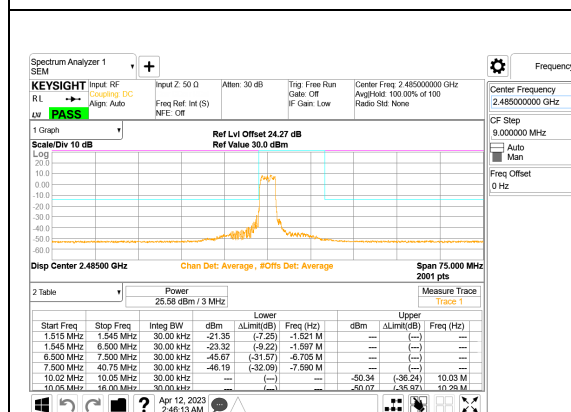
Band	Mode	RB Allocation/ RB Offset	f (MHz)	Highest Cond Power Density (dBm/30kHz)	Highest Antenna Gain (dBi)	Highest EIRP Density (dBm/30kHz)	EIRP Density Limit (dBm/30kHz)
LTE BAND 53	1.4MHz, QPSK	1/0	2484.2	-14.32	0.0	-14.32	-14.1
		6/0	2484.2	-19.47		-19.47	
		1/5	2494.3	-14.85		-14.85	
		6/0	2494.3	-17.94		-17.94	
	3MHz, QPSK	1/0	2485.0	-17.34		-17.34	
		15/0	2485.0	-21.35		-21.35	
		1/14	2493.5	-17.66		-17.66	
		15/0	2493.5	-21.38		-21.38	
	5MHz, QPSK	1/0	2486.0	-19.31		-19.31	
		25/0	2486.0	-24.30		-24.30	
		1/24	2492.5	-18.89		-18.89	
		25/0	2492.5	-21.43		-21.43	
	10MHz, QPSK	1/0	2488.5	-25.42		-25.42	
		50/0	2488.5	-31.28		-31.28	
		1/49	2490.0	-37.87		-37.87	
		50/0	2490.0	-27.21		-27.21	



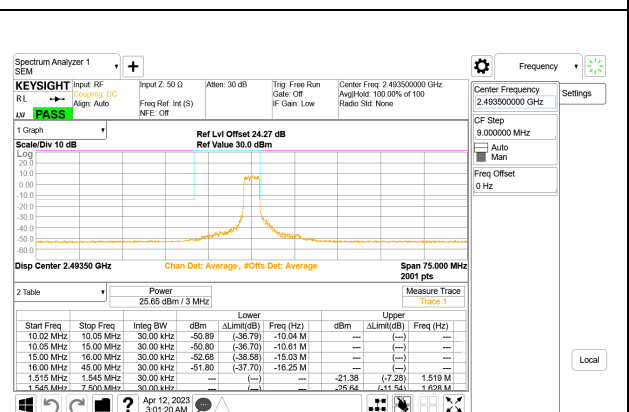
LTE B53 1.4MHz QPSK Low Channel RB6-0 ID: 39004



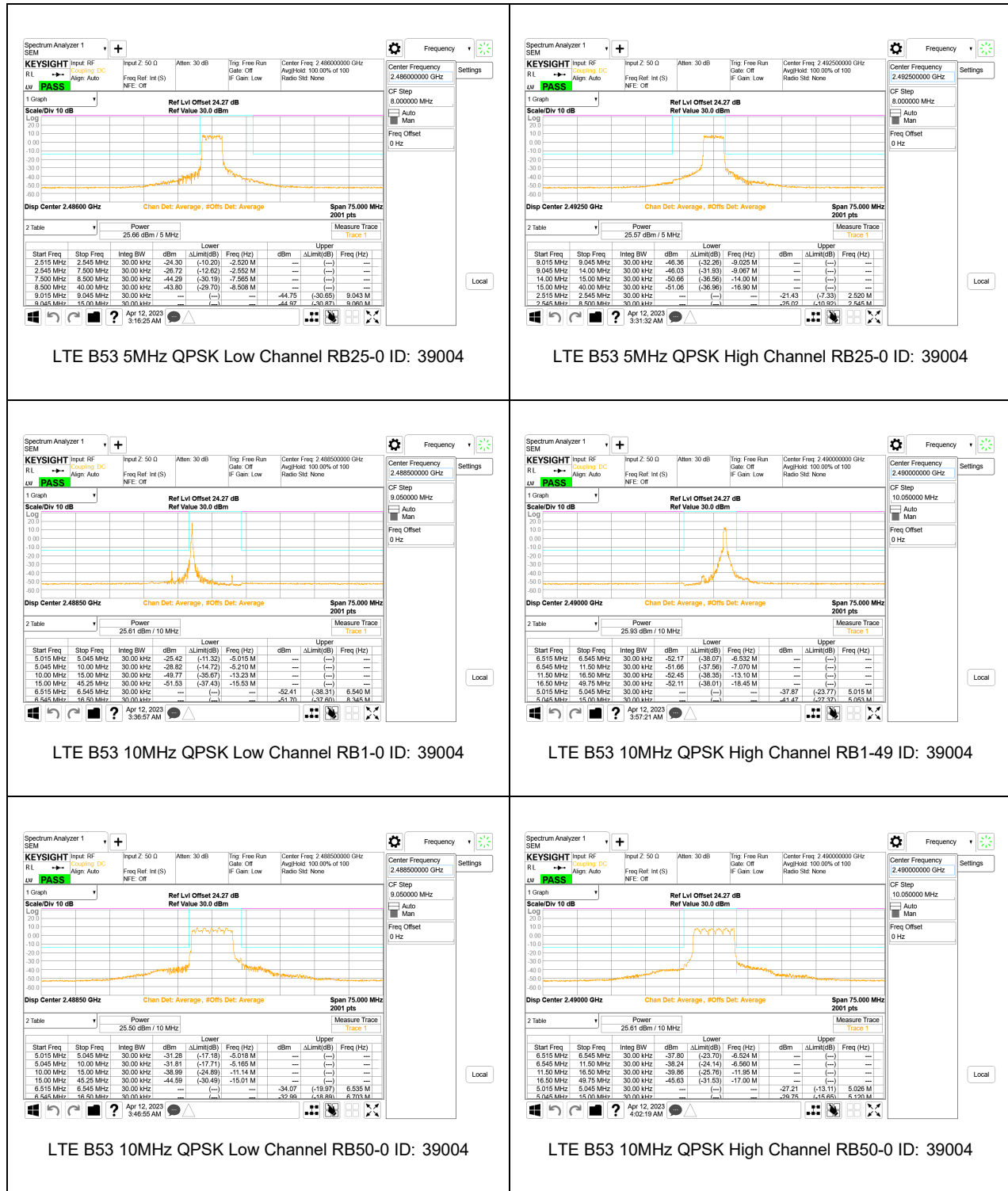
LTE B53 1.4MHz QPSK High Channel RB6-0 ID: 39004



LTE B53 3MHz QPSK Low Channel RB15-0 ID: 39004

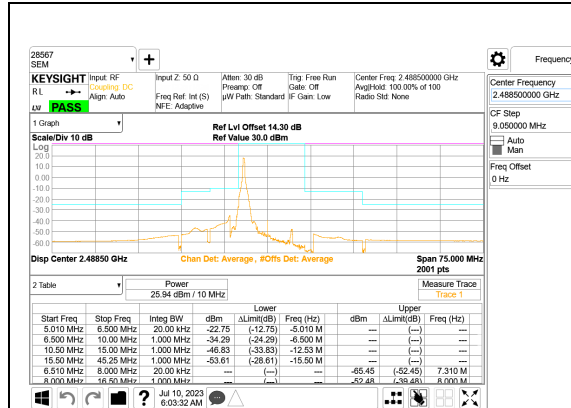


LTE B53 3MHz QPSK High Channel RB15-0 ID: 39004

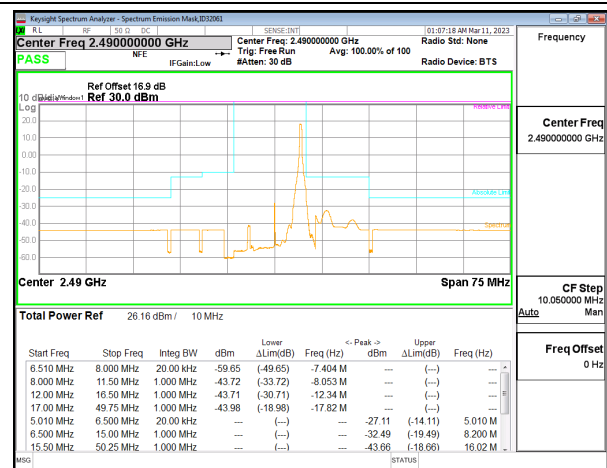


9.5.2. 5G NR n53

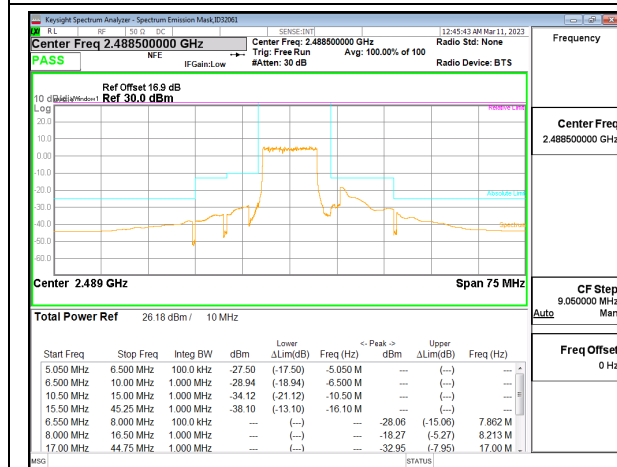
5G NR n53 BANDEDGE



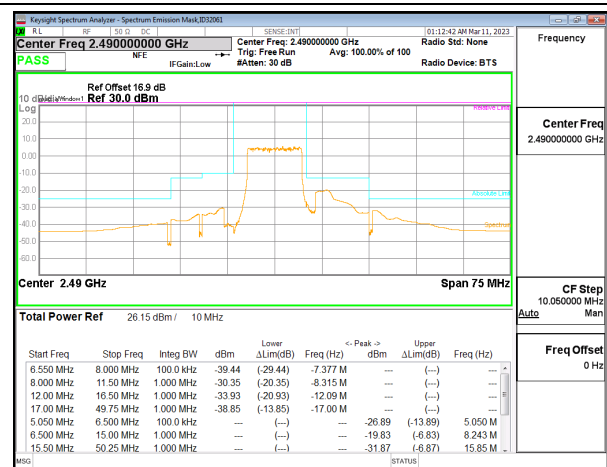
5G NR n53 10MHz BPSK Low Channel RB1-0



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



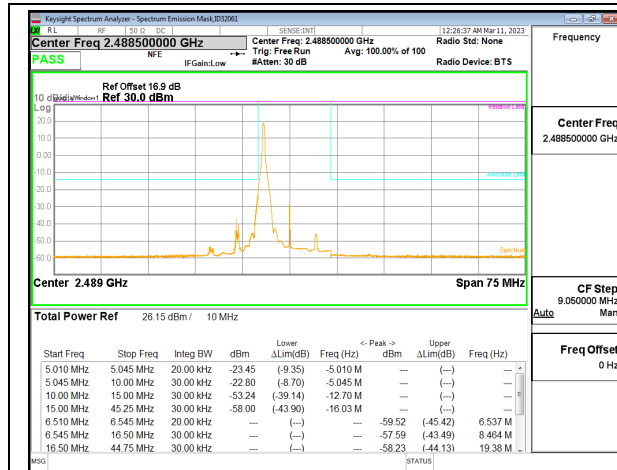
5G NR n53 10MHz BPSK Low Channel RB24-0



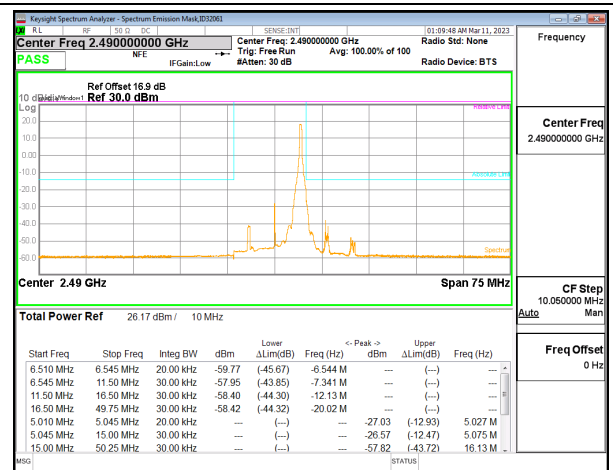
5G NR n53 10MHz BPSK High Channel RB24-0

5G NR n53 EIRP DENSITY

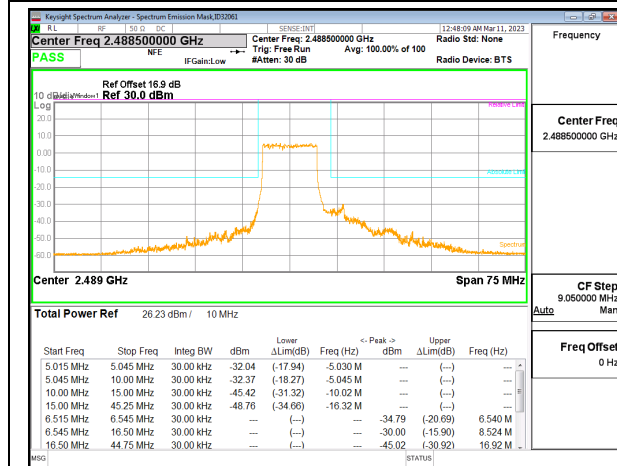
Band	Mode	RB Allocation/ RB Offset	f (MHz)	Highest Cond Power Density (dBm/30kHz)	Highest Antenna Gain (dBi)	Highest EIRP Density (dBm/30kHz)	EIRP Density Limit (dBm/30kHz)
5G NR n53	10MHz, BPSK	1/0	2488.5	-22.80	0.0	-22.80	-14.1
		24/0	2488.5	-30.00		-30.00	
		1/23	2490.0	-26.57		-26.57	
		24/0	2490.0	-31.09		-31.09	



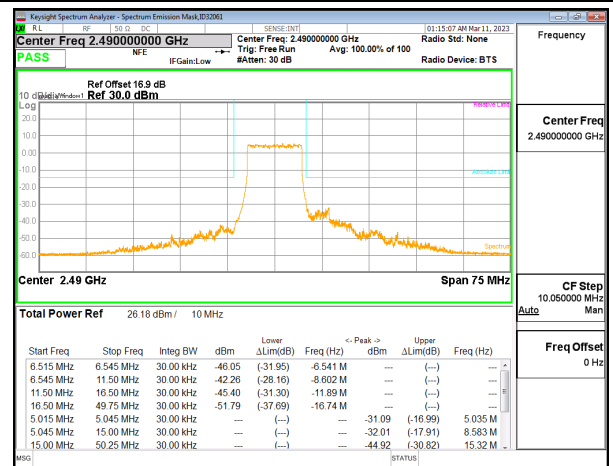
5G NR n53 10MHz BPSK Low Channel RB1-0



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-009-20 Annex A 9.g

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

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

Note: Radiated data in section 10 confirms a compliance for the emissions in GPS 1559-1610 MHz band were both wideband and discrete emissions therefore the -50dBm/MHz limit was used.

TEST PROCEDURE

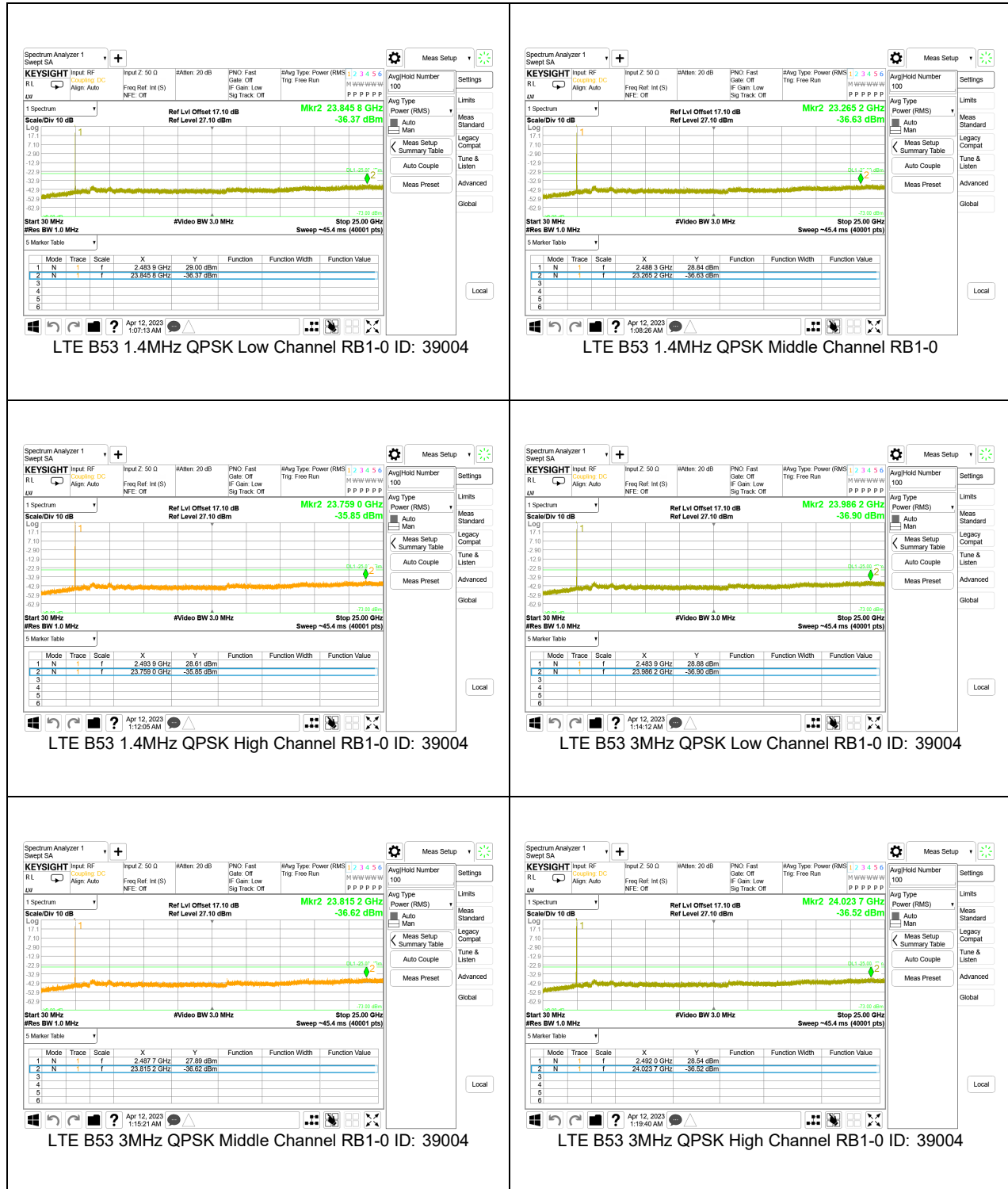
The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case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

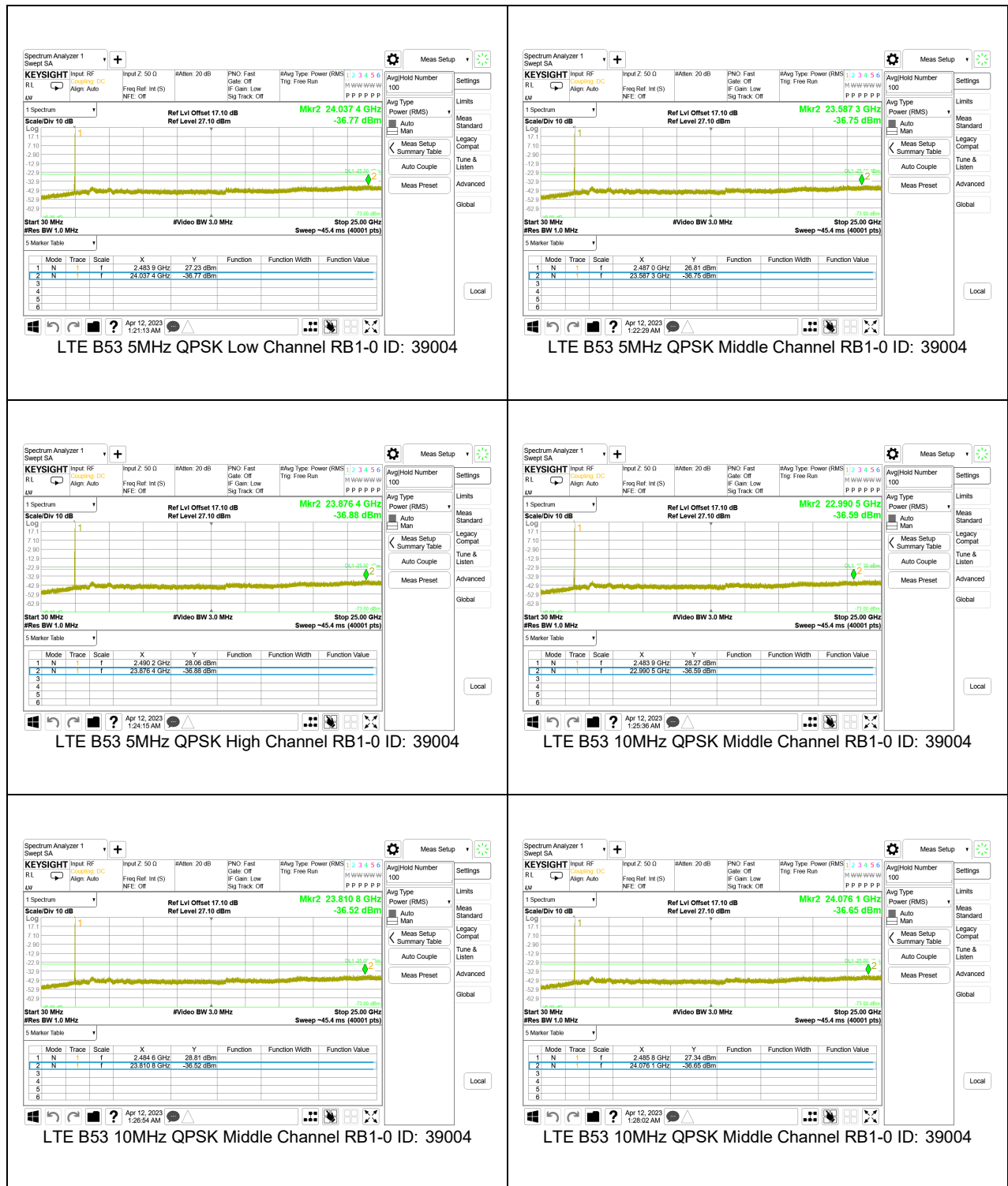
For each out of band emissions measurement:

- 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)

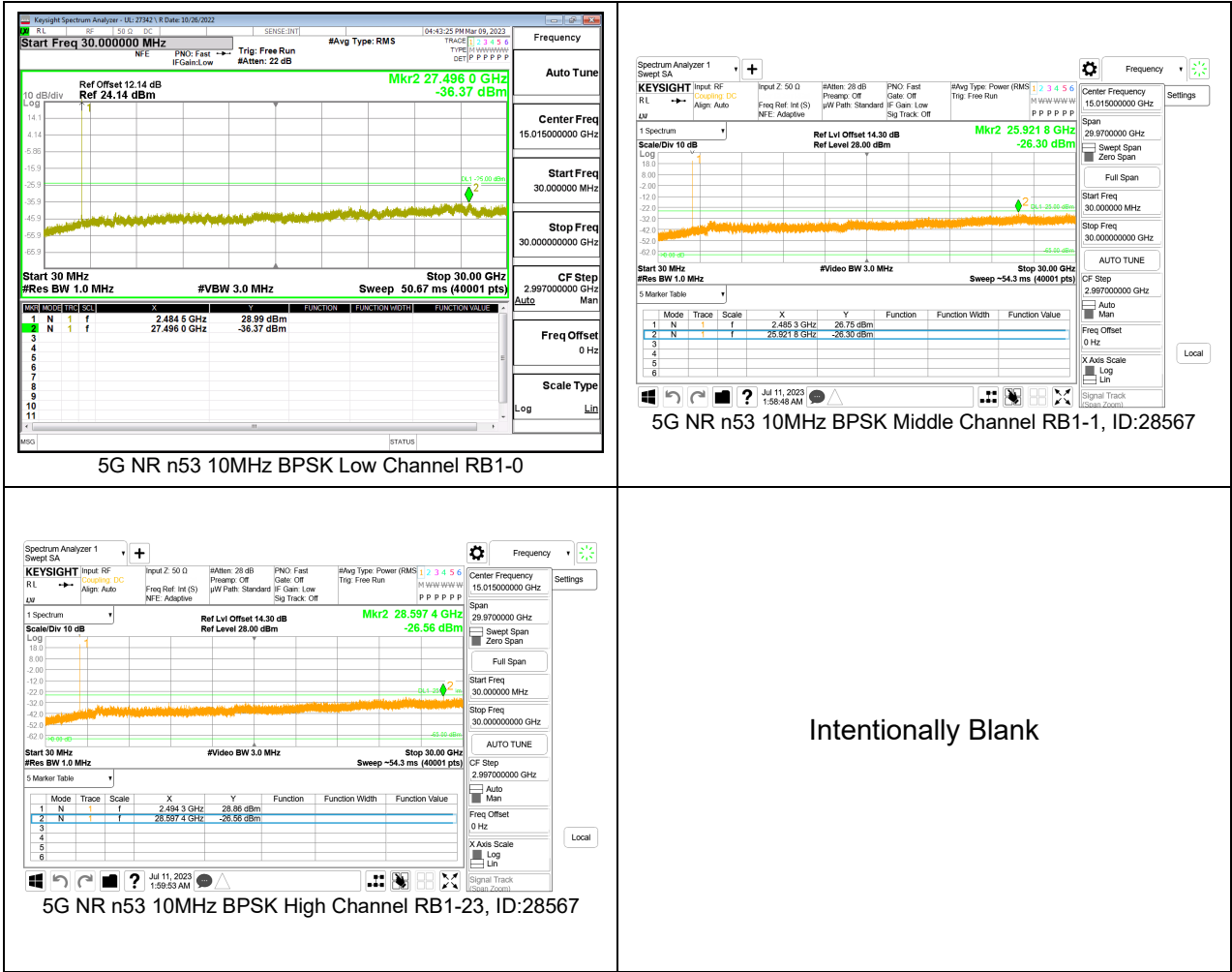
RESULTS

9.6.1. LTE BAND 53





9.6.2. 5G NR n53



9.7. FREQUENCY STABILITY

TEST PROCEDURE

Use CMW 500 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, 2.95VDC.

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).

LIMITS

FCC: §25.202 (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 and ±1.5 ppm for base station equipment.

RESULTS

9.7.1. LTE BAND 53

LTE BAND 53 QPSK (10MHz BANDWIDTH)

Test Engineer ID:	39004	Test Date:	5/8/2023
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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	2483.9207	2494.6013			
Extreme (50°C)		2483.9207	2494.6013	-0.1	0.000	Yes
Extreme (40°C)		2483.9207	2494.6013	1.4	0.001	Yes
Extreme (30°C)		2483.9207	2494.6013	2.5	0.001	Yes
Extreme (10°C)		2483.9207	2494.6013	2.3	0.001	Yes
Extreme (0°C)		2483.9207	2494.6013	-1.9	-0.001	Yes
Extreme (-10°C)		2483.9207	2494.6013	-1.9	-0.001	Yes
Extreme (-20°C)		2483.9207	2494.6013	-4.1	-0.002	Yes
Extreme (-30°C)		2483.9207	2494.6013	-3.6	-0.001	Yes
20°C	15%	2483.9207	2494.6013	1.0	0.000	Yes
	-15%	2483.9207	2494.6013	0.5	0.000	Yes
	End Point Voltage	2483.9207	2494.6013	-1.6	-0.001	Yes

9.7.2. 5G NR n53

5G NR n53 BPSK (10MHz BANDWIDTH)

Test Engineer ID:	39004	Test Date:	5/8/2023
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Band	53	Frequency Range		Frequency Error Reading (Hz)	Limit	
Condition		2483.5	2495		10	Within Authorized Frequency Block (Hz)
		Freq Reading @ Low End (MHz)	Freq Reading @ High End (MHz)		Frequency Stability (ppm)	
Temperature	Voltage					
Normal (20°C)	Normal	2484.0375	2494.4650			
Extreme (50°C)		2484.0375	2494.4650	-3.46	-0.001	Yes
Extreme (40°C)		2484.0375	2494.4650	-3.6	-0.001	Yes
Extreme (30°C)		2484.0375	2494.4650	2.25	0.001	Yes
Extreme (10°C)		2484.0375	2494.4650	-1.94	-0.001	Yes
Extreme (0°C)		2484.0375	2494.4650	2.52	0.001	Yes
Extreme (-10°C)		2484.0375	2494.4650	-2.11	-0.001	Yes
Extreme (-20°C)		2484.0375	2494.4650	-6.95	-0.003	Yes
Extreme (-30°C)		2484.0375	2494.4650	1.58	0.001	Yes
20°C	15%	2484.0375	2494.4650	-3.74	-0.002	Yes
	-15%	2484.0375	2494.4650	-7.47	-0.003	Yes
	End Point Voltage	2484.0375	2494.4650	-3.68	-0.001	Yes

10. RADIATED TEST RESULTS

Radiated measurement using the Field Strength Method

Using the test configuration shown in Figure 6 below, we measure the radiated emissions 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 method.

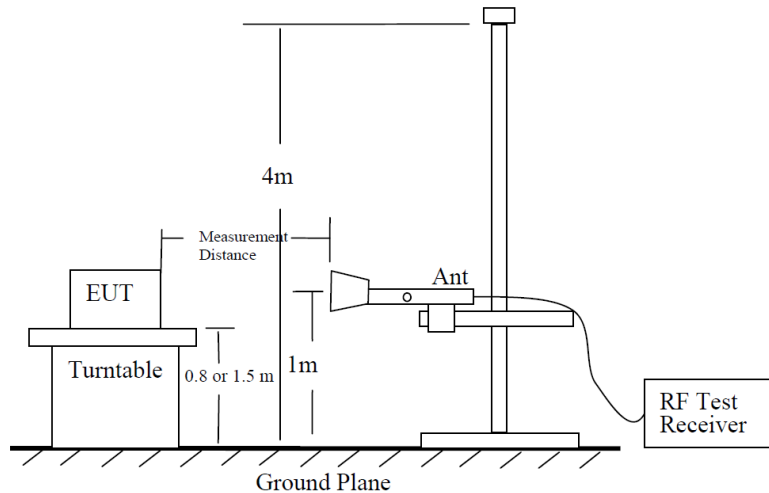


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

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

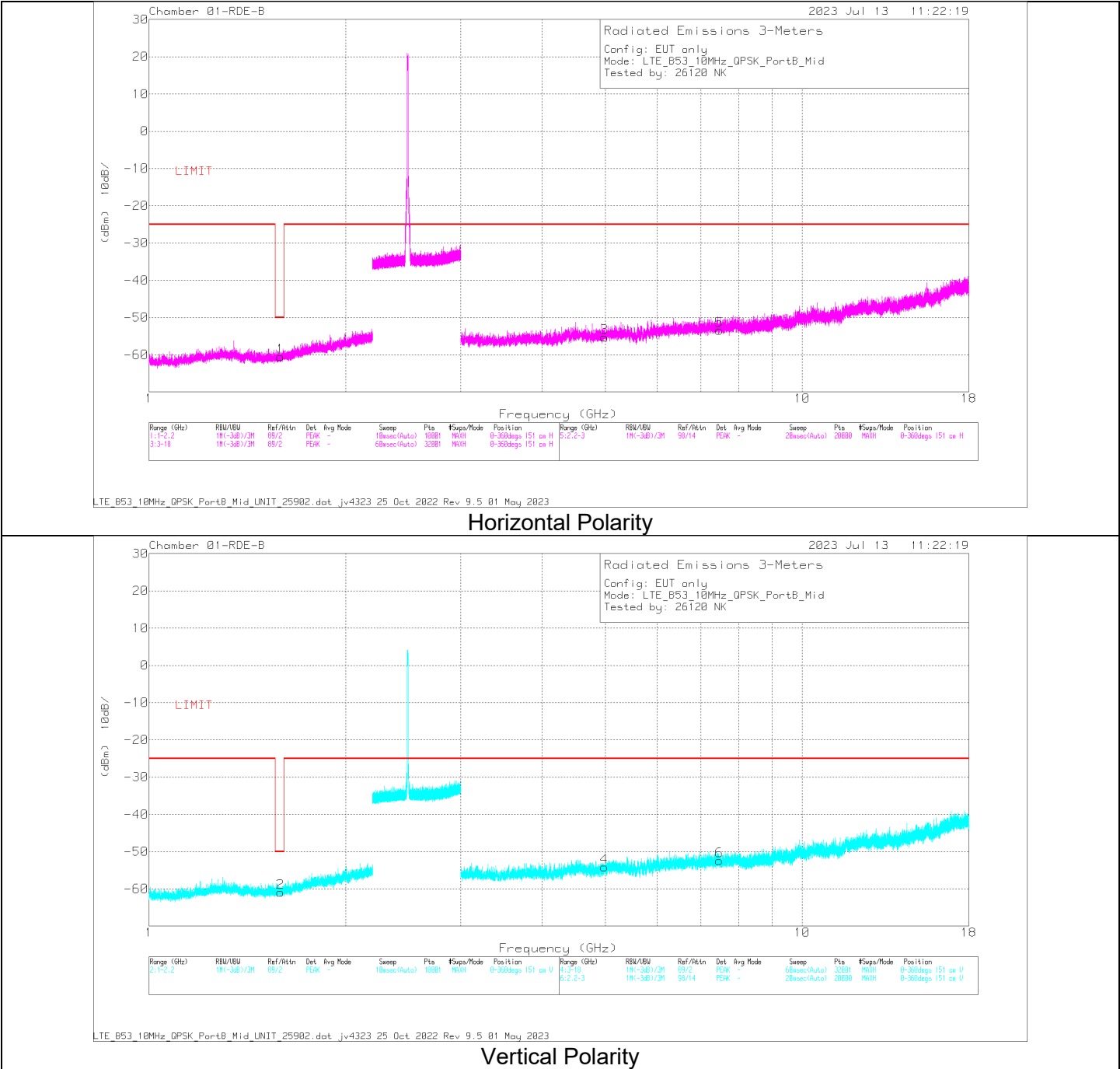
- a) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}.$
 - b) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}.$
 - c) $E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20\log(D) + 104.8$; 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 Above 1GHz



Trace Markers

Frequency (GHz)	Meter Reading (dBuV)	Det	200786 ACF (dB/m)	BRF 2.4-2.5GHz T1786 1-18GHz	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
1.588840	41.6	Pk	27.8	.5	-95.2	-35.2	-60.50	-50	-10.50	H
1.588840	41.18	Pk	27.8	.5	-95.2	-35.2	-60.92	-50	-10.92	V
4.978125	36.37	Pk	34.3	.3	-95.2	-31.09	-55.32	-25	-30.32	H
4.978125	37.51	Pk	34.3	.3	-95.2	-31.09	-54.18	-25	-29.18	V
7.467656	32.28	Pk	35.9	.4	-95.2	-26.84	-53.46	-25	-28.46	H
7.468125	33.38	Pk	35.9	.4	-95.2	-26.84	-52.36	-25	-27.36	V

TEST PROCEDURE

KDB 971168 D01 v03r01/D02 v02r02

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. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 1

10.1.1. LTE BAND 53

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

Project #:	4790592295
Date:	04/20/2023
Test Engineer:	12491
Configuration:	EUT Only
Mode	LTE_B53_10MHz_QPSK_1RB
Chamber #:	04-RDE-T

Frequency (GHz)	Meter Reading (dBuV)	Det	200786 ACF (dB/m)	BRF 2.4-2.5GHz T1786 1-18GHz	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2488.5MHz										
1.587040	42.62	Pk	27.8	0.5	-95.2	-35.26	-59.54	-50	-9.54	H
1.584280	40.89	Pk	27.8	0.5	-95.2	-35.03	-61.04	-50	-11.04	V
4.977656	37.87	Pk	34.3	0.3	-95.2	-31.11	-53.84	-25	-28.84	H
4.977656	38.42	Pk	34.3	0.3	-95.2	-31.11	-53.29	-25	-28.29	V
7.465313	32.38	Pk	35.9	0.4	-95.2	-26.93	-53.45	-25	-28.45	H
7.465313	33.64	Pk	35.9	0.4	-95.2	-26.93	-52.19	-25	-27.19	V
Mid Channel, 2489MHz										
1.592440	40.35	Pk	27.8	0.6	-95.2	-35.09	-61.54	-50	-11.54	H
1.584280	41.44	Pk	27.8	0.5	-95.2	-35.03	-60.49	-50	-10.49	V
4.978594	36.08	Pk	34.3	0.3	-95.2	-31.10	-55.62	-25	-30.62	H
4.979063	38.14	Pk	34.3	0.3	-95.2	-31.12	-53.58	-25	-28.58	V
7.467656	33.1	Pk	35.9	0.4	-95.2	-26.84	-52.64	-25	-27.64	H
7.467188	33.62	Pk	35.9	0.4	-95.2	-26.83	-52.11	-25	-27.11	V
High Channel, 2490MHz										
1.589800	43.31	Pk	27.8	0.6	-95.2	-35.11	-58.60	-50	-8.60	H
1.592440	41.75	Pk	27.8	0.6	-95.2	-35.09	-60.14	-50	-10.14	V
4.980469	38.04	Pk	34.3	0.3	-95.2	-31.08	-53.64	-25	-28.64	H
4.979531	37.47	Pk	34.3	0.3	-95.2	-31.11	-54.24	-25	-29.24	V
7.470469	33.48	Pk	35.9	0.4	-95.2	-26.88	-52.30	-25	-27.30	H
7.470938	33.77	Pk	35.9	0.4	-95.2	-26.92	-52.05	-25	-27.05	V

* Emissions in the GPS band were wideband and discrete emissions therefore the -50dBm/MHz limit was used.

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

Project #:	4790592295
Date:	07/13/2023
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE_B53_10MHz_QPSK_50RB
Chamber #:	01-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	200786 ACF (dB/m)	BRF 2.4-2.5GHz T1786 1-18GHz	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2488.5MHz										
1.589320	41.45	Pk	27.8	.6	-95.2	-35.17	-60.52	-50	-10.52	H
1.589320	40.20	Pk	27.8	.6	-95.2	-35.17	-61.77	-50	-11.77	V
4.977188	37.1	Pk	34.3	.3	-95.2	-31.15	-54.65	-25	-29.65	H
4.977188	37.42	Pk	34.3	.3	-95.2	-31.15	-54.33	-25	-29.33	V
7.464844	32.17	Pk	35.9	.4	-95.2	-26.88	-53.61	-25	-28.61	H
7.464844	32.85	Pk	35.9	.4	-95.2	-26.88	-52.93	-25	-27.93	V
Mid Channel, 2489MHz										
1.580080	41.42	Pk	27.8	.5	-95.2	-35.19	-60.67	-50	-10.67	H
1.580080	41.34	Pk	27.8	.5	-95.2	-35.19	-60.75	-50	-10.75	V
4.978125	36.87	Pk	34.3	.3	-95.2	-31.09	-54.82	-25	-29.82	H
4.978125	37.59	Pk	34.3	.3	-95.2	-31.09	-54.10	-25	-29.10	V
7.467188	33.75	Pk	35.9	.4	-95.2	-26.83	-51.98	-25	-26.98	H
7.467188	32.65	Pk	35.9	.4	-95.2	-26.83	-53.08	-25	-28.08	V
High Channel, 2490MHz										
1.586200	41.77	Pk	27.8	0.5	-95.2	-35.15	-60.28	-50	-10.28	H
1.586200	40.60	Pk	27.8	0.5	-95.2	-35.15	-61.45	-50	-11.45	V
4.980469	37.66	Pk	34.3	0.3	-95.2	-31.08	-54.02	-25	-29.02	H
4.980938	36.48	Pk	34.3	0.3	-95.2	-31.05	-55.17	-25	-30.17	V
7.470469	34.39	Pk	35.9	0.4	-95.2	-26.88	-51.39	-25	-26.39	H
7.469531	32.98	Pk	35.9	0.4	-95.2	-26.82	-52.74	-25	-27.74	V

* Emissions in the GPS band were wideband and discrete emissions therefore the -50dBm/MHz limit was used.

10.1.2. 5G NR n53

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

Project #:	4790592295
Date:	07/11/2023
Test Engineer:	32186
Configuration:	EUT Only
Mode	FR1_n53_10MHz_BPSK_1RB
Chamber #:	04-RDE-Q

Frequency (GHz)	Meter Reading (dBuV)	Det	200786 ACF (dB/m)	BRF 2.4-2.5GHz T1786 1-18GHz	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2488.5MHz										
1.587040	41.38	Pk	27.8	0.5	-95.2	-35.26	-60.78	-50	-10.78	H
1.584280	39.79	Pk	27.8	0.5	-95.2	-35.03	-62.14	-50	-12.14	V
4.977188	36.49	Pk	34.3	0.3	-95.2	-31.15	-55.26	-25	-30.26	H
4.977188	36.47	Pk	34.3	0.3	-95.2	-31.15	-55.28	-25	-30.28	V
7.464844	32.81	Pk	35.9	0.4	-95.2	-26.88	-52.97	-25	-27.97	H
7.464375	32.95	Pk	35.9	0.4	-95.2	-26.87	-52.82	-25	-27.82	V
Mid Channel, 2489MHz										
1.587160	41.54	Pk	27.8	0.5	-95.2	-35.24	-60.60	-50	-10.60	H
1.587160	41.66	Pk	27.8	0.5	-95.2	-35.24	-60.48	-50	-10.48	V
4.978125	38.35	Pk	34.3	0.3	-95.2	-31.09	-53.34	-25	-28.34	H
4.978125	35.61	Pk	34.3	0.3	-95.2	-31.09	-56.08	-25	-31.08	V
7.467188	32.34	Pk	35.9	0.4	-95.2	-26.83	-53.39	-25	-28.39	H
7.467188	32.50	Pk	35.9	0.4	-95.2	-26.83	-53.23	-25	-28.23	V
High Channel, 2490MHz										
1.59244	41.24	Pk	27.8	0.6	-95.2	-35.09	-60.65	-50	-10.65	H
1.59244	41.62	Pk	27.8	0.6	-95.2	-35.09	-60.27	-50	-10.27	V
4.980469	38.26	Pk	34.3	0.3	-95.2	-31.08	-53.42	-25	-28.42	H
4.980469	38.78	Pk	34.3	0.3	-95.2	-31.08	-52.90	-25	-27.90	V
7.470469	33.48	Pk	35.9	0.4	-95.2	-26.88	-52.30	-25	-27.30	H
7.470469	34.48	Pk	35.9	0.4	-95.2	-26.88	-51.30	-25	-26.30	V

* Emissions in the GPS band were wideband and discrete emissions therefore the -50dBm/MHz limit was used.

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

Project #:	4790592295
Date:	07/13/2023
Test Engineer:	32545
Configuration:	EUT Only
Mode	FR1_n53_10MHz_BPSK_24RB
Chamber #:	01-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB) 3mH	BRF 2.4-2.5GHz T1786 1-18GHz	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2488.5MHz										
1.603480	38.11	Pk	28.4	0.6	-95.2	-28.93	-57.02	-50	-7.02	H
1.586920	38.65	Pk	28.3	0.5	-95.2	-28.99	-56.74	-50	-6.74	V
4.967344	32.58	Pk	34.2	0.3	-95.2	-23.90	-52.02	-25	-27.02	H
4.966406	33.69	Pk	34.2	0.3	-95.2	-23.89	-50.90	-25	-25.90	V
7.450313	30.79	Pk	35.6	0.4	-95.2	-19.59	-48.00	-25	-23.00	H
7.449844	31.39	Pk	35.6	0.4	-95.2	-19.59	-47.40	-25	-22.40	V
Mid Channel, 2489MHz										
1.580680	39.88	Pk	28.3	0.5	-95.2	-29.00	-55.52	-50	-5.52	H
1.578760	39.08	Pk	28.3	0.5	-95.2	-29.04	-56.36	-50	-6.36	V
4.979063	32.47	Pk	34.2	0.3	-95.2	-23.80	-52.03	-25	-27.03	H
4.979063	31.95	Pk	34.2	0.3	-95.2	-23.80	-52.55	-25	-27.55	V
7.467656	29.07	Pk	35.6	0.4	-95.2	-19.41	-49.54	-25	-24.54	H
7.467656	28.42	Pk	35.6	0.4	-95.2	-19.41	-50.19	-25	-25.19	V
High Channel, 2490MHz										
1.564720	39.5	Pk	28.2	0.5	-95.2	-28.90	-55.9	-50	-5.90	H
1.577080	40.26	Pk	28.3	0.5	-95.2	-29.09	-55.23	-50	-5.23	V
4.991719	33.66	Pk	34.2	0.4	-95.2	-23.81	-50.75	-25	-25.75	H
4.990313	32.98	Pk	34.2	0.4	-95.2	-23.80	-51.42	-25	-26.42	V
7.485000	28.73	Pk	35.6	0.4	-95.2	-19.47	-49.94	-25	-24.94	H
7.485000	29.25	Pk	35.6	0.4	-95.2	-19.47	-49.42	-25	-24.42	V

* Emissions in the GPS band were wideband and discrete emissions therefore the -50dBm/MHz limit was used.

10.2. FIELD STRENGTH OF SPURIOUS RADIATION, ANT 2

10.2.1. LTE BAND 53

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

Project #:	4790592295
Date:	07/11/2023
Test Engineer:	32186
Configuration:	EUT Only
Mode	LTE_B53_10MHz_QPSK_1RB
Chamber #:	04-RDE-Q

Frequency (GHz)	Meter Reading (dBuV)	Det	200786 ACF (dB/m)	BRF 2.4-2.5GHz T1786 1-18GHz	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2488.5MHz										
1.59268	41.13	Pk	27.8	0.6	-95.2	-35.08	-60.75	-50	-10.75	H
1.59268	41.54	Pk	27.8	0.6	-95.2	-35.08	-60.34	-50	-10.34	V
4.977656	36.28	Pk	34.3	0.3	-95.2	-31.11	-55.43	-25	-30.43	H
4.977656	36.33	Pk	34.3	0.3	-95.2	-31.11	-55.38	-25	-30.38	V
7.467656	34.15	Pk	35.9	0.4	-95.2	-26.84	-51.59	-25	-26.59	H
7.467656	33.77	Pk	35.9	0.4	-95.2	-26.84	-51.97	-25	-26.97	V
Mid Channel, 2489MHz										
1.58584	42.58	Pk	27.8	0.5	-95.2	-35.12	-59.44	-50	-9.44	H
1.58584	40.93	Pk	27.8	0.5	-95.2	-35.12	-61.09	-50	-11.09	V
4.977188	36.04	Pk	34.3	0.3	-95.2	-31.15	-55.71	-25	-30.71	H
4.977188	35.69	Pk	34.3	0.3	-95.2	-31.15	-56.06	-25	-31.06	V
7.465313	33.14	Pk	35.9	0.4	-95.2	-26.93	-52.69	-25	-27.69	H
7.465313	34.1	Pk	35.9	0.4	-95.2	-26.93	-51.73	-25	-26.73	V
High Channel, 2490MHz										
1.5862	41.79	Pk	27.8	0.5	-95.2	-35.15	-60.26	-50	-10.26	H
1.5862	41.15	Pk	27.8	0.5	-95.2	-35.15	-60.9	-50	-10.90	V
4.980469	36.01	Pk	34.3	0.3	-95.2	-31.08	-55.67	-25	-30.67	H
4.980469	36.68	Pk	34.3	0.3	-95.2	-31.08	-55.00	-25	-30.00	V
7.470469	33.77	Pk	35.9	0.4	-95.2	-26.88	-52.01	-25	-27.01	H
7.470469	32.7	Pk	35.9	0.4	-95.2	-26.88	-53.08	-25	-28.08	V

* Emissions in the GPS band were wideband and discrete emissions therefore the -50dBm/MHz limit was used.

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

Project #:	4790592295
Date:	07/13/2023
Test Engineer:	26120
Configuration:	EUT Only
Mode	LTE_B53_10MHz_QPSK_50RB
Chamber #:	01-RDE-B

Frequency (GHz)	Meter Reading (dBuV)	Det	200786 ACF (dB/m)	BRF 2.4-2.5GHz T1786 1-18GHz	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2488.5MHz										
1.58788	42.16	Pk	27.8	.5	-95.2	-35.17	-59.91	-50	-9.91	H
1.58788	41.3	Pk	27.8	.5	-95.2	-35.17	-60.77	-50	-10.77	V
4.977188	36.97	Pk	34.3	.3	-95.2	-31.15	-54.78	-25	-29.78	H
4.977656	38.21	Pk	34.3	.3	-95.2	-31.11	-53.50	-25	-28.50	V
7.465313	33.52	Pk	35.9	.4	-95.2	-26.93	-52.31	-25	-27.31	H
7.465313	32.03	Pk	35.9	.4	-95.2	-26.93	-53.80	-25	-28.80	V
Mid Channel, 2489MHz										
1.58884	41.6	Pk	27.8	.5	-95.2	-35.2	-60.50	-50	-10.50	H
1.58884	41.18	Pk	27.8	.5	-95.2	-35.2	-60.92	-50	-10.92	V
4.978125	36.37	Pk	34.3	.3	-95.2	-31.09	-55.32	-25	-30.32	H
4.978125	37.51	Pk	34.3	.3	-95.2	-31.09	-54.18	-25	-29.18	V
7.467656	32.28	Pk	35.9	.4	-95.2	-26.84	-53.46	-25	-28.46	H
7.468125	33.38	Pk	35.9	.4	-95.2	-26.84	-52.36	-25	-27.36	V
High Channel, 2490MHz										
1.5838	41.63	Pk	27.8	0.5	-95.2	-35.01	-60.28	-50	-10.28	H
1.5838	40.96	Pk	27.8	0.5	-95.2	-35.01	-60.95	-50	-10.95	V
4.98	38.77	Pk	34.3	0.3	-95.2	-31.11	-52.94	-25	-27.94	H
4.98	36.6	Pk	34.3	0.3	-95.2	-31.11	-55.11	-25	-30.11	V
7.47	32.55	Pk	35.9	0.4	-95.2	-26.84	-53.19	-25	-28.19	H
7.47	31.96	Pk	35.9	0.4	-95.2	-26.84	-53.78	-25	-28.78	V

* Emissions in the GPS band were wideband and discrete emissions therefore the -50dBm/MHz limit was used.

10.2.2. 5G NR n53

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

Project #:	4790592295
Date:	05/1/2023
Test Engineer:	32186
Configuration:	EUT Only
Mode	FR1_n53_10MHz_BPSK_1RB
Chamber #:	04-RDE-Q

Frequency (GHz)	Meter Reading (dBuV)	Det	84796 ACF (dB) - 3mH	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2488.5MHz									
1.590480	54.89	Pk	27.9	-95.2	-47.54	-59.95	-50	-9.95	H
1.581534	55.47	Pk	27.8	-95.2	-47.36	-59.29	-50	-9.29	V
4.515000	54.77	Pk	34	-95.2	-46.49	-52.92	-25	-27.92	H
4.515000	53.64	Pk	34	-95.2	-46.49	-54.05	-25	-29.05	V
7.453500	51.81	Pk	35.4	-95.2	-45.00	-52.99	-25	-27.99	H
7.453500	54.81	Pk	35.4	-95.2	-45.00	-49.99	-25	-24.99	V
Mid Channel, 2489MHz									
1.592514	56.35	Pk	27.9	-95.2	-47.54	-58.49	-50	-8.49	H
1.59536	55.65	Pk	28	-95.2	-47.60	-59.15	-50	-9.15	V
4.968500	52.17	Pk	34.3	-95.2	-46.63	-55.36	-25	-30.36	H
4.968000	51.17	Pk	34.3	-95.2	-46.65	-56.38	-25	-31.38	V
7.452000	50.41	Pk	35.4	-95.2	-44.98	-54.37	-25	-29.37	H
7.451500	51.54	Pk	35.4	-95.2	-44.98	-53.24	-25	-28.24	V
High Channel, 2490MHz									
1.592514	55.54	Pk	27.9	-95.2	-47.54	-59.30	-50	-9.30	H
1.583160	55.69	Pk	27.8	-95.2	-47.41	-59.12	-50	-9.12	V
4.970000	52.19	Pk	34.3	-95.2	-46.53	-55.24	-25	-30.24	H
4.970000	53.48	Pk	34.3	-95.2	-46.53	-53.95	-25	-28.95	V
7.455000	51.56	Pk	35.4	-95.2	-44.99	-53.23	-25	-28.23	H
7.454500	50.2	Pk	35.4	-95.2	-45.00	-54.60	-25	-29.60	V

* Emissions in the GPS band were wideband and discrete emissions therefore the -50dBm/MHz limit was used.

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

Project #:	4790592295
Date:	07/13/2023
Test Engineer:	32545
Configuration:	EUT Only
Mode	FR1_n53_10MHz_BPSK_24RB
Chamber #:	01-RDE-A

Frequency (GHz)	Meter Reading (dBuV)	Det	81886 ACF (dB) 3mH	BRF 2.4-2.5GHz T1786 1-18GHz	EIRP CF	Gain/Loss (dB)	Corrected Reading (dBm)	LIMIT	Margin (dB)	Polarity
Low Channel, 2488.5MHz										
1.58476	40.08	Pk	28.3	0.5	-95.2	-29.11	-55.43	-50	-5.43	H
1.58512	37.94	Pk	28.3	0.5	-95.2	-29.10	-57.56	-50	-7.56	V
4.968281	34.35	Pk	34.2	0.3	-95.2	-23.90	-50.25	-25	-25.25	H
4.967813	32.85	Pk	34.2	0.3	-95.2	-23.91	-51.76	-25	-26.76	V
7.449844	31.03	Pk	35.6	0.4	-95.2	-19.59	-47.76	-25	-22.76	H
7.449844	29.75	Pk	35.6	0.4	-95.2	-19.59	-49.04	-25	-24.04	V
Mid Channel, 2489MHz										
1.561360	40.19	Pk	28.1	0.5	-95.2	-29.01	-55.42	-50	-5.42	H
1.561840	39.11	Pk	28.1	0.5	-95.2	-29.04	-56.53	-50	-6.53	V
4.978594	32.97	Pk	34.2	0.3	-95.2	-23.81	-51.54	-25	-26.54	H
4.978125	33.05	Pk	34.2	0.3	-95.2	-23.83	-51.48	-25	-26.48	V
7.468125	30.83	Pk	35.6	0.4	-95.2	-19.40	-47.77	-25	-22.77	H
7.468125	29.58	Pk	35.6	0.4	-95.2	-19.40	-49.02	-25	-24.02	V
High Channel, 2490MHz										
1.585600	38.92	Pk	28.3	0.5	-95.2	-29.08	-56.56	-50	-6.56	H
1.586080	38.88	Pk	28.3	0.5	-95.2	-29.05	-56.57	-50	-6.57	V
4.989609	32.42	Pk	34.2	0.4	-95.2	-23.8	-51.98	-25	-26.98	H
4.989844	32.96	Pk	34.2	0.4	-95.2	-23.8	-51.44	-25	-26.44	V
7.485469	29.39	Pk	35.6	0.4	-95.2	-19.47	-49.28	-25	-24.28	H
7.485938	29.56	Pk	35.6	0.4	-95.2	-19.47	-49.11	-25	-24.11	V

* Emissions in the GPS band were wideband and discrete emissions therefore the -50dBm/MHz limit was used.

11. SETUP PHOTOS

Please refer to 14523772-EP1V1 Setup Photo Report for setup photos

END OF REPORT