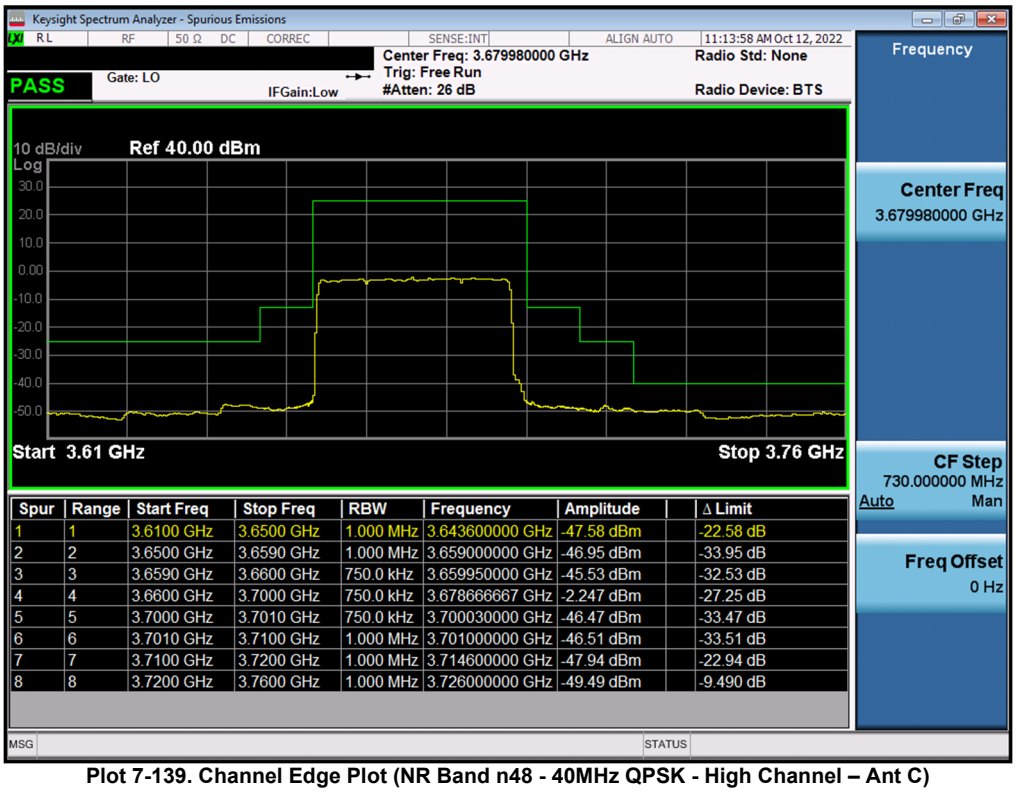
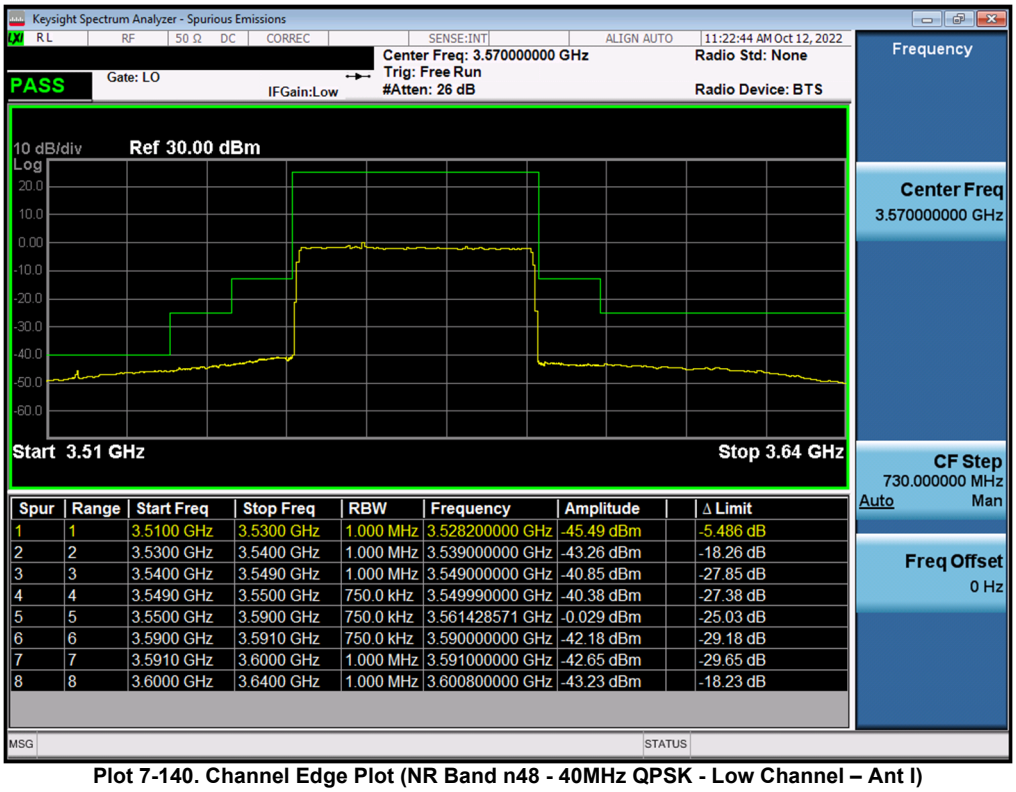


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.6100 GHz	3.6500 GHz	1.000 MHz	3.643600000 GHz	-47.58 dBm	-22.58 dB
2	2	3.6500 GHz	3.6590 GHz	1.000 MHz	3.659000000 GHz	-46.95 dBm	-33.95 dB
3	3	3.6590 GHz	3.6600 GHz	750.0 kHz	3.659950000 GHz	-45.53 dBm	-32.53 dB
4	4	3.6600 GHz	3.7000 GHz	750.0 kHz	3.678666667 GHz	-2.247 dBm	-27.25 dB
5	5	3.7000 GHz	3.7010 GHz	750.0 kHz	3.700030000 GHz	-46.47 dBm	-33.47 dB
6	6	3.7010 GHz	3.7100 GHz	1.000 MHz	3.701000000 GHz	-46.51 dBm	-33.51 dB
7	7	3.7100 GHz	3.7200 GHz	1.000 MHz	3.714600000 GHz	-47.94 dBm	-22.94 dB
8	8	3.7200 GHz	3.7600 GHz	1.000 MHz	3.726000000 GHz	-49.49 dBm	-9.490 dB

Plot 7-139. Channel Edge Plot (NR Band n48 - 40MHz QPSK - High Channel – Ant C)

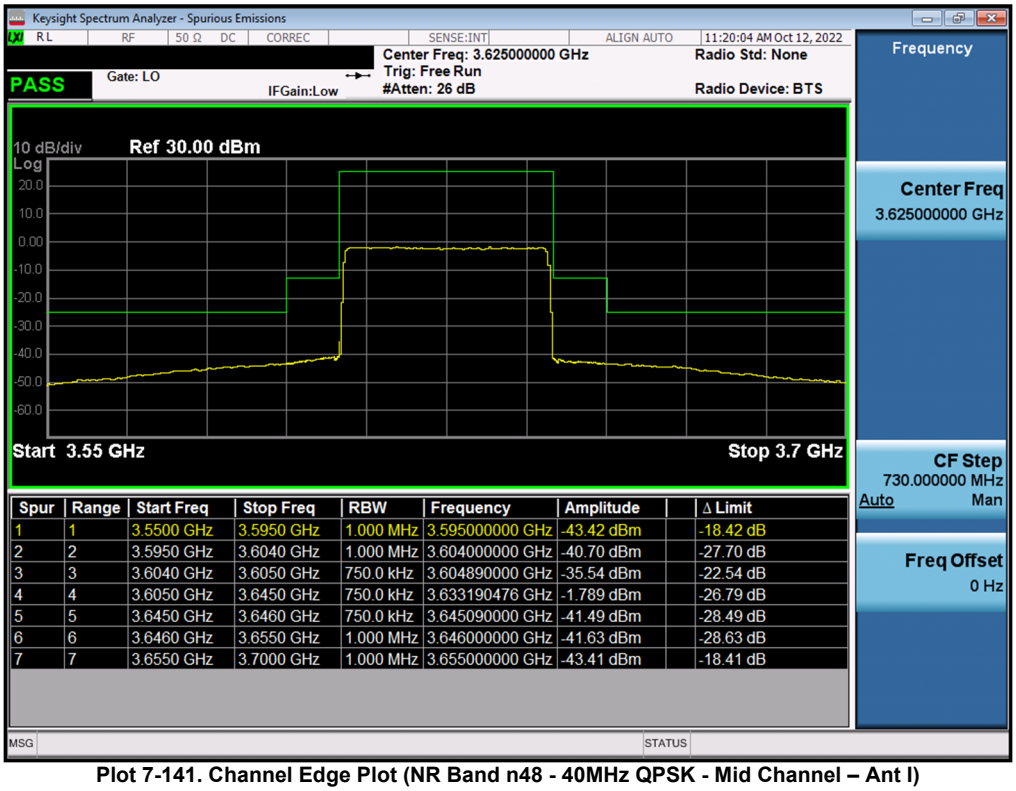
© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

NR Band n48 – Ant I



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5100 GHz	3.5300 GHz	1.000 MHz	3.528200000 GHz	-45.49 dBm	-5.486 dB
2	2	3.5300 GHz	3.5400 GHz	1.000 MHz	3.539000000 GHz	-43.26 dBm	-18.26 dB
3	3	3.5400 GHz	3.5490 GHz	1.000 MHz	3.549000000 GHz	-40.85 dBm	-27.85 dB
4	4	3.5490 GHz	3.5500 GHz	750.0 kHz	3.549990000 GHz	-40.38 dBm	-27.38 dB
5	5	3.5500 GHz	3.5900 GHz	750.0 kHz	3.561428571 GHz	-0.029 dBm	-25.03 dB
6	6	3.5900 GHz	3.5910 GHz	750.0 kHz	3.590000000 GHz	-42.18 dBm	-29.18 dB
7	7	3.5910 GHz	3.6000 GHz	1.000 MHz	3.591000000 GHz	-42.65 dBm	-29.65 dB
8	8	3.6000 GHz	3.6400 GHz	1.000 MHz	3.600800000 GHz	-43.23 dBm	-18.23 dB

Plot 7-140. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Low Channel – Ant I)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5500 GHz	3.5950 GHz	1.000 MHz	3.595000000 GHz	-43.42 dBm	-18.42 dB
2	2	3.5950 GHz	3.6040 GHz	1.000 MHz	3.604000000 GHz	-40.70 dBm	-27.70 dB
3	3	3.6040 GHz	3.6050 GHz	750.0 kHz	3.604890000 GHz	-35.54 dBm	-22.54 dB
4	4	3.6050 GHz	3.6450 GHz	750.0 kHz	3.633190476 GHz	-1.789 dBm	-26.79 dB
5	5	3.6450 GHz	3.6460 GHz	750.0 kHz	3.645090000 GHz	-41.49 dBm	-28.49 dB
6	6	3.6460 GHz	3.6550 GHz	1.000 MHz	3.646000000 GHz	-41.63 dBm	-28.63 dB
7	7	3.6550 GHz	3.7000 GHz	1.000 MHz	3.655000000 GHz	-43.41 dBm	-18.41 dB

Plot 7-141. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Mid Channel – Ant I)

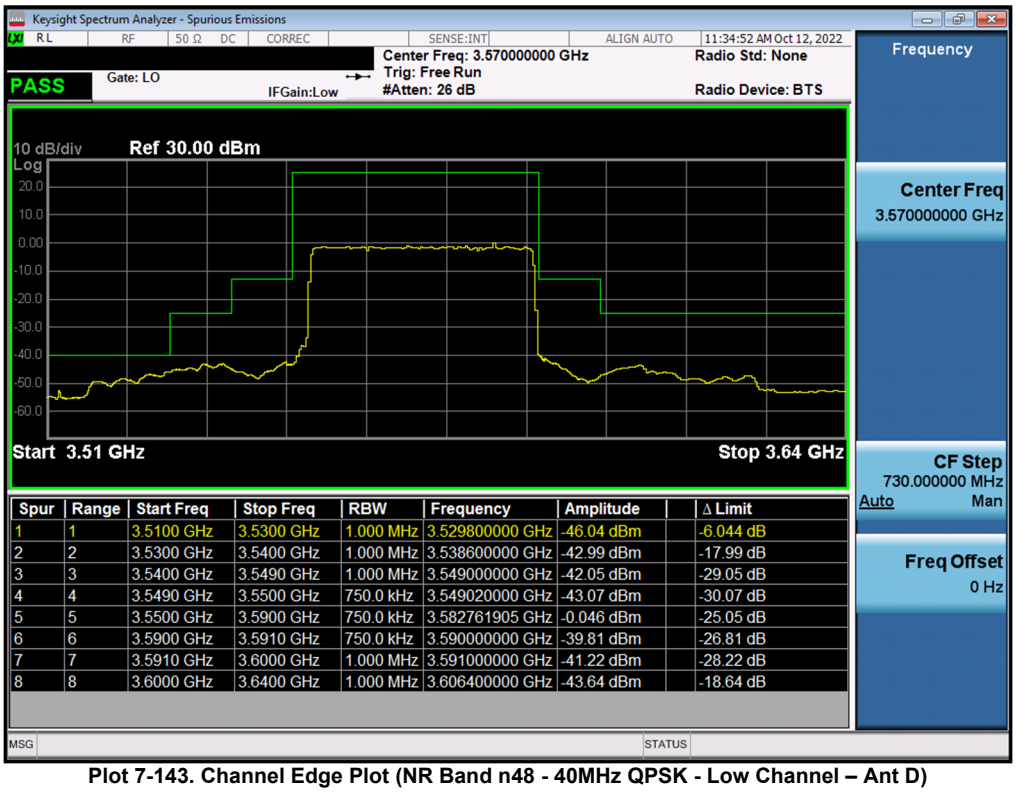
© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.6100 GHz	3.6500 GHz	1.000 MHz	3.647200000 GHz	-42.56 dBm	-17.56 dB
2	2	3.6500 GHz	3.6590 GHz	1.000 MHz	3.658820000 GHz	-40.37 dBm	-27.37 dB
3	3	3.6590 GHz	3.6600 GHz	750.0 kHz	3.659990000 GHz	-40.10 dBm	-27.10 dB
4	4	3.6600 GHz	3.7000 GHz	750.0 kHz	3.678666667 GHz	-2.095 dBm	-27.10 dB
5	5	3.7000 GHz	3.7010 GHz	750.0 kHz	3.700070000 GHz	-40.29 dBm	-27.29 dB
6	6	3.7010 GHz	3.7100 GHz	1.000 MHz	3.702260000 GHz	-40.43 dBm	-27.43 dB
7	7	3.7100 GHz	3.7200 GHz	1.000 MHz	3.712100000 GHz	-42.53 dBm	-17.53 dB
8	8	3.7200 GHz	3.7600 GHz	1.000 MHz	3.720800000 GHz	-44.19 dBm	-4.187 dB

Plot 7-142. Channel Edge Plot (NR Band n48 - 40MHz QPSK - High Channel – Ant I)

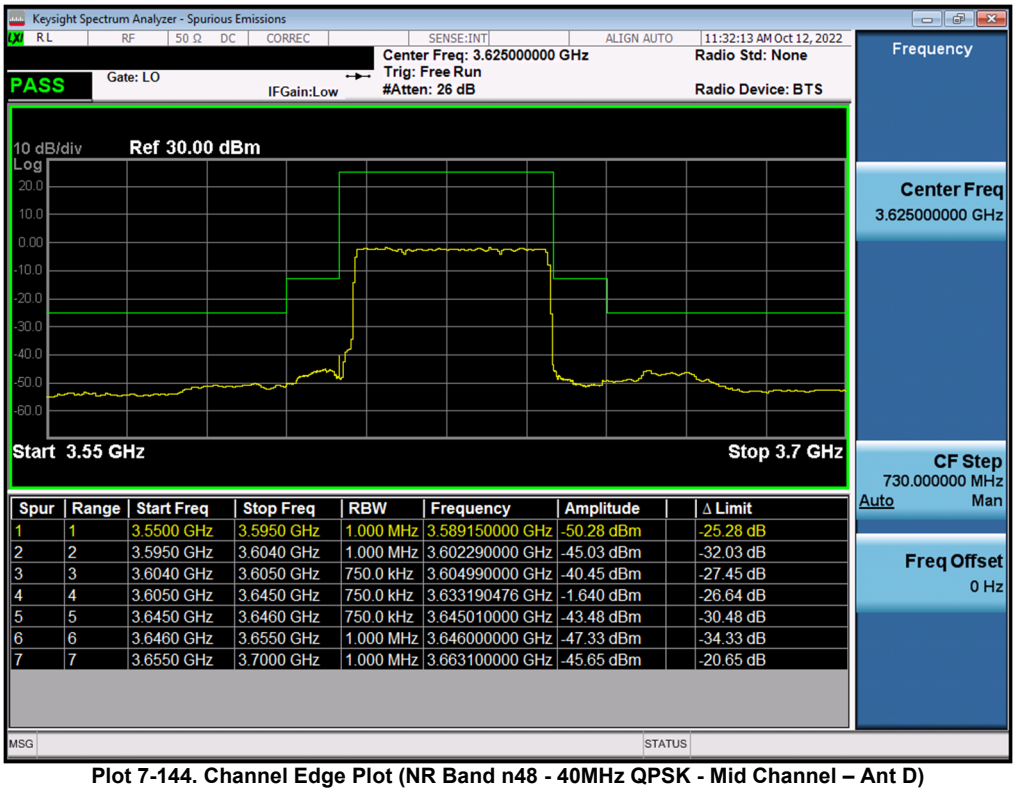
© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

NR Band n48 – Ant D



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5100 GHz	3.5300 GHz	1.000 MHz	3.529800000 GHz	-46.04 dBm	-6.044 dB
2	2	3.5300 GHz	3.5400 GHz	1.000 MHz	3.538600000 GHz	-42.99 dBm	-17.99 dB
3	3	3.5400 GHz	3.5490 GHz	1.000 MHz	3.549000000 GHz	-42.05 dBm	-29.05 dB
4	4	3.5490 GHz	3.5500 GHz	750.0 kHz	3.549020000 GHz	-43.07 dBm	-30.07 dB
5	5	3.5500 GHz	3.5900 GHz	750.0 kHz	3.582761905 GHz	-0.046 dBm	-25.05 dB
6	6	3.5900 GHz	3.5910 GHz	750.0 kHz	3.590000000 GHz	-39.81 dBm	-26.81 dB
7	7	3.5910 GHz	3.6000 GHz	1.000 MHz	3.591000000 GHz	-41.22 dBm	-28.22 dB
8	8	3.6000 GHz	3.6400 GHz	1.000 MHz	3.606400000 GHz	-43.64 dBm	-18.64 dB

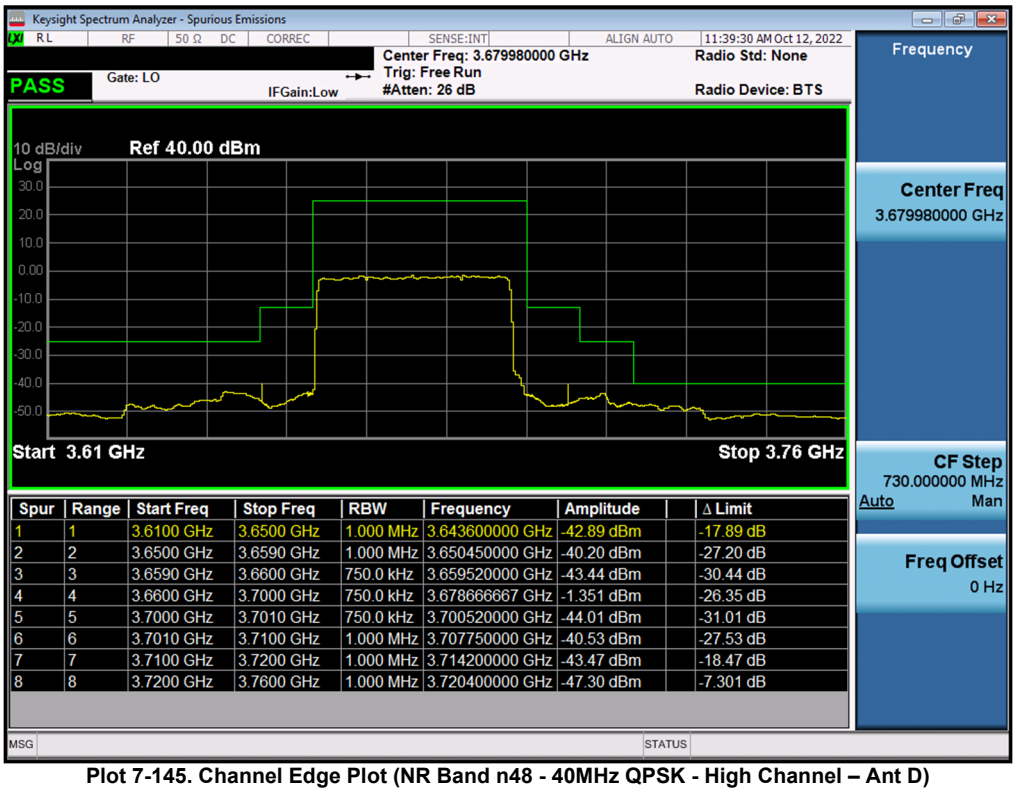
Plot 7-143. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Low Channel – Ant D)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5500 GHz	3.5950 GHz	1.000 MHz	3.589150000 GHz	-50.28 dBm	-25.28 dB
2	2	3.5950 GHz	3.6040 GHz	1.000 MHz	3.602290000 GHz	-45.03 dBm	-32.03 dB
3	3	3.6040 GHz	3.6050 GHz	750.0 kHz	3.604990000 GHz	-40.45 dBm	-27.45 dB
4	4	3.6050 GHz	3.6450 GHz	750.0 kHz	3.633190476 GHz	-1.640 dBm	-26.64 dB
5	5	3.6450 GHz	3.6460 GHz	750.0 kHz	3.645010000 GHz	-43.48 dBm	-30.48 dB
6	6	3.6460 GHz	3.6550 GHz	1.000 MHz	3.646000000 GHz	-47.33 dBm	-34.33 dB
7	7	3.6550 GHz	3.7000 GHz	1.000 MHz	3.663100000 GHz	-45.65 dBm	-20.65 dB

Plot 7-144. Channel Edge Plot (NR Band n48 - 40MHz QPSK - Mid Channel – Ant D)

© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.6100 GHz	3.6500 GHz	1.000 MHz	3.643600000 GHz	-42.89 dBm	-17.89 dB
2	2	3.6500 GHz	3.6590 GHz	1.000 MHz	3.650450000 GHz	-40.20 dBm	-27.20 dB
3	3	3.6590 GHz	3.6600 GHz	750.0 kHz	3.659520000 GHz	-43.44 dBm	-30.44 dB
4	4	3.6600 GHz	3.7000 GHz	750.0 kHz	3.678666667 GHz	-1.351 dBm	-26.35 dB
5	5	3.7000 GHz	3.7010 GHz	750.0 kHz	3.700520000 GHz	-44.01 dBm	-31.01 dB
6	6	3.7010 GHz	3.7100 GHz	1.000 MHz	3.707750000 GHz	-40.53 dBm	-27.53 dB
7	7	3.7100 GHz	3.7200 GHz	1.000 MHz	3.714200000 GHz	-43.47 dBm	-18.47 dB
8	8	3.7200 GHz	3.7600 GHz	1.000 MHz	3.720400000 GHz	-47.30 dBm	-7.301 dB

Plot 7-145. Channel Edge Plot (NR Band n48 - 40MHz QPSK - High Channel – Ant D)

© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

7.6 Radiated Power (EIRP)

Test Overview

Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

ANSI C63.26-2015 – Section 5.2.4.4

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5% of the expected OBW
3. VBW ≥ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points ≥ 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto". Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration.
8. The integration bandwidth was set equal to 10MHz. For signals with burst transmission, the "gating" function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize.

© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

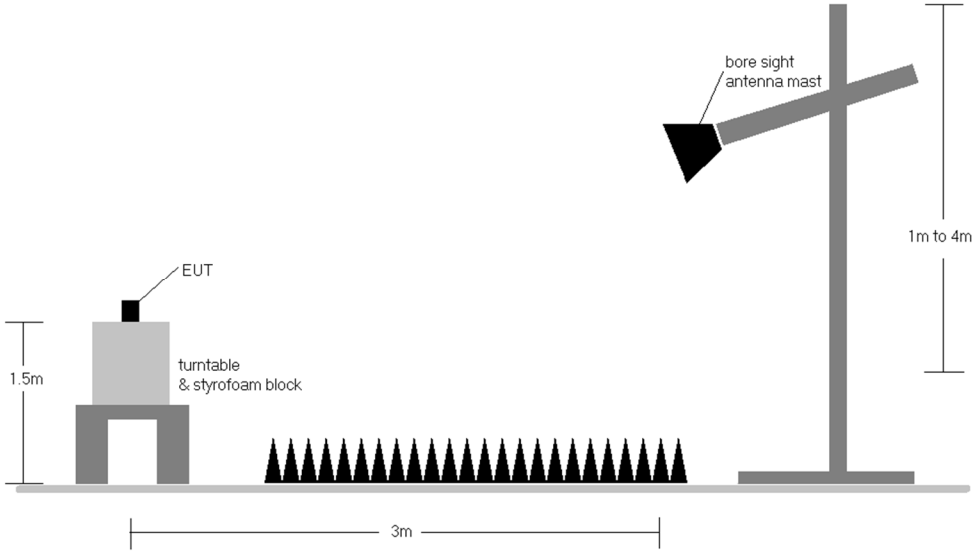


Figure 7-5. Radiated Test Setup >1GHz

Test Notes

1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

2) This unit was tested with its standard battery.

3) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

4) The worst case EIRP shown in this section is found with LTE operating only using 1RB. As such, the EIRP/10MHz and full channel EIRP values will be identical since 1RB is fully contained within all available channel bandwidths for LTE Band 48 (i.e. 5, 10, 15, 20MHz).

© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm/10MHz]	EIRP [Watts/10MHz]	EIRP Limit [dBm/10MHz]	Margin [dB]
20 MHz	QPSK	3560.00	H	102	167	7.37	1 / 50	11.50	**18.87**	**0.077**	23.00	-4.13
	QPSK	3625.00	H	104	174	6.77	1 / 50	11.09	17.86	0.061	23.00	-5.14
	QPSK	3690.00	H	102	167	6.15	1 / 50	10.82	16.97	0.050	23.00	-6.03
	16-QAM	3560.00	H	102	167	7.37	1 / 50	11.03	18.40	0.069	23.00	-4.60
15 MHz	QPSK	3557.50	H	102	167	7.40	1 / 19	11.20	**18.60**	**0.072**	23.00	-4.40
	QPSK	3625.00	H	104	174	6.77	1 / 19	9.86	16.63	0.046	23.00	-6.37
	QPSK	3692.50	H	102	167	6.12	1 / 19	11.23	17.34	0.054	23.00	-5.66
	16-QAM	3557.50	H	102	167	7.40	1 / 19	10.92	18.32	0.068	23.00	-4.68
10 MHz	QPSK	3555.00	H	102	167	7.43	1 / 17	11.17	**18.60**	**0.072**	23.00	-4.40
	QPSK	3625.00	H	104	174	6.77	1 / 17	10.88	17.65	0.058	23.00	-5.35
	QPSK	3695.00	H	102	167	6.09	1 / 6	11.85	17.94	0.062	23.00	-5.06
	16-QAM	3625.00	H	104	174	6.77	1 / 17	11.59	18.35	0.068	23.00	-4.65
5 MHz	QPSK	3552.50	H	102	167	7.45	1 / 5	11.37	**18.83**	**0.076**	23.00	-4.17
	QPSK	3625.00	H	104	174	6.77	1 / 5	10.90	17.67	0.058	23.00	-5.33
	QPSK	3697.50	H	102	167	6.06	1 / 5	11.91	17.98	0.063	23.00	-5.02
	16-QAM	3552.50	H	102	167	7.45	1 / 5	11.29	18.74	0.075	23.00	-4.26
20 MHz	QPSK (Opposite Pol.)	3560.00	V	116	265	7.15	1/50	10.16	**17.31**	**0.054**	23.00	-5.69
	QPSK (WCP)	3560.00	H	118	318	7.37	1/50	4.62	11.99	0.016	23.00	-11.01

Table 7-10. EIRP Data (LTE Band 48)

Bandwidth	Modulation	PCC			SCC			Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degrees]	Ant. Gain [dBi]	Substitute Level [dBm]	EIRP [dBm/10MHz]	EIRP [Watts/10MHz]	EIRP Limit [dBm/10MHz]	Margin [dB]
		Bandwidth [MHz]	Frequency [MHz]	RB / Offset	Bandwidth [MHz]	Frequency [MHz]	RB / Offset									
40 MHz	QPSK	20	3560.0	1 / 99	20	3579.8	1 / 0	V	108	286	7.15	11.77	18.92	0.078	23.00	-4.08
		20	3625.0	1 / 99	20	3644.8	1 / 0	V	104	275	6.91	13.09	20.00	0.100	23.00	-3.00
		20	3690.0	1 / 0	20	3670.2	1 / 99	V	102	274	6.60	10.83	17.43	0.055	23.00	-5.57
	16-QAM	20	3560.0	1 / 99	20	3579.8	1 / 0	V	108	286	7.15	10.94	18.09	0.064	23.00	-4.91
		20	3625.0	1 / 99	20	3644.8	1 / 0	V	104	275	6.91	12.53	19.44	0.088	23.00	-3.56
		20	3690.0	1 / 0	20	3670.2	1 / 99	V	102	274	6.60	10.5	17.10	0.051	23.00	-5.90
35 MHz	QPSK	20	3557.5	1 / 99	15	3577.1	1 / 0	V	108	286	7.15	11.42	18.57	0.072	23.00	-4.43
		20	3625.0	1 / 99	15	3642.1	1 / 0	V	104	275	6.91	12.47	19.38	0.087	23.00	-3.62
		20	3692.5	1 / 0	15	3672.9	1 / 74	V	102	274	6.60	10.48	17.08	0.051	23.00	-5.92
	16-QAM	20	3557.5	1 / 99	15	3577.1	1 / 0	V	108	286	7.15	10.55	17.70	0.059	23.00	-5.30
		20	3625.0	1 / 99	15	3642.1	1 / 0	V	104	275	6.91	11.90	18.81	0.076	23.00	-4.19
		20	3692.5	1 / 0	15	3672.9	1 / 74	V	102	274	6.60	10.10	16.70	0.047	23.00	-6.30
30 MHz	QPSK	20	3555.0	1 / 99	10	3574.4	1 / 0	V	108	286	7.15	11.77	18.92	0.078	23.00	-4.08
		20	3625.0	1 / 99	10	3639.4	1 / 0	V	104	275	6.91	12.93	19.84	0.096	23.00	-3.16
		20	3695.0	1 / 0	10	3678.3	1 / 49	V	102	274	6.59	10.84	17.43	0.055	23.00	-5.57
	16-QAM	20	3555.0	1 / 99	10	3574.4	1 / 0	V	108	286	7.15	10.95	18.10	0.065	23.00	-4.90
		20	3625.0	1 / 99	10	3639.4	1 / 0	V	104	275	6.91	12.22	19.13	0.082	23.00	-3.87
		20	3695.0	1 / 0	10	3678.3	1 / 49	V	102	274	6.59	10.31	16.90	0.049	23.00	-6.10
25 MHz	QPSK	20	3552.5	1 / 99	5	3571.7	1 / 0	V	108	286	7.16	11.41	18.57	0.072	23.00	-4.43
		20	3625.0	1 / 99	5	3636.7	1 / 0	V	104	275	6.91	12.78	19.69	0.093	23.00	-3.31
		20	3697.5	1 / 0	5	3678.3	1 / 24	V	102	274	6.59	10.95	17.54	0.057	23.00	-5.46
	16-QAM	20	3552.5	1 / 99	5	3571.7	1 / 0	V	108	286	7.16	10.83	17.99	0.063	23.00	-5.01
		20	3625.0	1 / 99	5	3636.7	1 / 0	V	104	275	6.91	12.09	19.00	0.079	23.00	-4.00
		20	3697.5	1 / 0	5	3678.3	1 / 24	V	102	274	6.59	10.05	16.64	0.046	23.00	-6.36

Table 7-11. EIRP Data (ULCA Band 48)

© 2022 ELEMENT V11.0 9/14/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm/10MHz]	EIRP [Watts/10MHz]	EIRP Limit [dBm/10MHz]	Margin [dB]
40 MHz	π/2 BPSK	3570.00	H	112	148	7.27	1 / 79	12.08	**19.35**	**0.086**	23.00	-3.65
	π/2 BPSK	3625.00	H	102	149	6.77	1 / 79	11.17	17.94	0.062	23.00	-5.06
	π/2 BPSK	3680.00	H	103	151	6.25	1 / 79	10.78	17.03	0.051	23.00	-5.97
	QPSK	3570.00	H	112	148	7.27	1 / 79	11.62	18.89	0.077	23.00	-4.11
	QPSK	3625.00	H	102	149	6.77	1 / 79	11.29	18.06	0.064	23.00	-4.94
	QPSK	3680.00	H	103	151	6.25	1 / 79	10.74	16.99	0.050	23.00	-6.01
	16-QAM	3625.00	H	102	149	6.77	1 / 79	10.73	17.50	0.056	23.00	-5.50
30 MHz	π/2 BPSK	3565.00	H	112	148	7.32	1 / 19	10.54	17.86	**0.061**	23.00	-5.14
	π/2 BPSK	3625.00	H	102	149	6.77	1 / 39	10.47	17.24	0.053	23.00	-5.76
	π/2 BPSK	3685.00	H	103	151	6.20	1 / 58	11.56	17.76	0.060	23.00	-5.24
	QPSK	3565.00	H	112	148	7.32	1 / 19	9.61	16.93	0.049	23.00	-6.07
	QPSK	3625.00	H	102	149	6.77	1 / 39	10.56	17.32	0.054	23.00	-5.68
	QPSK	3685.00	H	103	151	6.20	1 / 58	10.55	16.75	0.047	23.00	-6.25
	16-QAM	3565.00	H	112	148	7.32	1 / 19	8.50	15.82	0.038	23.00	-7.18
20 MHz	π/2 BPSK	3560.00	H	112	148	7.37	1 / 13	11.65	19.03	**0.080**	23.00	-3.97
	π/2 BPSK	3625.00	H	102	149	6.77	1 / 37	11.14	17.91	0.062	23.00	-5.09
	π/2 BPSK	3690.00	H	103	151	6.15	1 / 37	10.80	16.95	0.050	23.00	-6.05
	QPSK	3560.00	H	112	148	7.37	1 / 37	10.28	17.66	0.058	23.00	-5.34
	QPSK	3625.00	H	102	149	6.77	1 / 37	11.27	18.03	0.064	23.00	-4.97
	QPSK	3690.00	H	103	151	6.15	1 / 37	11.23	17.37	0.055	23.00	-5.63
	16-QAM	3625.00	H	102	149	6.77	1 / 37	11.01	17.78	0.060	23.00	-5.22
15 MHz	π/2 BPSK	3557.50	H	112	148	7.40	1 / 28	11.17	18.57	**0.072**	23.00	-4.43
	π/2 BPSK	3625.00	H	102	149	6.77	1 / 28	10.87	17.63	0.058	23.00	-5.37
	π/2 BPSK	3692.50	H	103	151	6.12	1 / 19	10.20	16.32	0.043	23.00	-6.68
	QPSK	3557.50	H	112	148	7.40	1 / 28	10.23	17.63	0.058	23.00	-5.37
	QPSK	3625.00	H	102	149	6.77	1 / 28	10.46	17.22	0.053	23.00	-5.78
	QPSK	3692.50	H	103	151	6.12	1 / 19	9.80	15.92	0.039	23.00	-7.08
	16-QAM	3692.50	H	103	151	6.12	1 / 19	9.54	15.65	0.037	23.00	-7.35
10 MHz	π/2 BPSK	3555.00	H	112	148	7.43	1 / 17	11.57	**18.99**	**0.079**	23.00	-4.01
	π/2 BPSK	3625.00	H	102	149	6.77	1 / 17	9.75	16.52	0.045	23.00	-6.48
	π/2 BPSK	3695.00	H	103	151	6.09	1 / 17	11.00	17.09	0.051	23.00	-5.91
	QPSK	3555.00	H	112	148	7.43	1 / 17	10.72	18.14	0.065	23.00	-4.86
	QPSK	3625.00	H	102	149	6.77	1 / 17	9.47	16.24	0.042	23.00	-6.76
	QPSK	3695.00	H	103	151	6.09	1 / 17	10.52	16.61	0.046	23.00	-6.39
	16-QAM	3695.00	H	103	151	6.09	1 / 17	10.16	16.25	0.042	23.00	-6.75
40 MHz	QPSK (CP-OFDM)	3570.00	H	112	148	7.27	1/53	10.45	**17.72**	**0.059**	23.00	-5.28
	QPSK (Opposite Pol.)	3570.00	V	110	278	7.14	1/26	9.32	16.46	0.044	23.00	-6.54
	QPSK (WCP)	3570.00	H	276	295	7.27	1/53	-5.26	2.01	0.002	23.00	-20.99

Table 7-12. EIRP Data (NR Band n48 – Ant G)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm/10MHz]	EIRP [Watts/10MHz]	EIRP Limit [dBm/10MHz]	Margin [dB]
40 MHz	π/2 BPSK	3570.00	H	105	331	7.27	1 / 26	3.80	**11.07**	**0.013**	23.00	-11.93
	π/2 BPSK	3625.00	H	107	340	6.77	1 / 53	2.46	9.23	0.008	23.00	-13.77
	π/2 BPSK	3680.00	H	105	333	6.25	1 / 26	2.28	8.53	0.007	23.00	-14.47
	QPSK	3570.00	H	105	331	7.27	1 / 26	3.61	10.88	0.012	23.00	-12.12
	QPSK	3625.00	H	107	340	6.77	1 / 53	2.19	8.96	0.008	23.00	-14.04
	QPSK	3680.00	H	105	333	6.25	1 / 26	2.22	8.47	0.007	23.00	-14.53
	16-QAM	3570.00	H	105	331	7.27	1 / 26	3.45	10.72	0.012	23.00	-12.28
	16-QAM	3625.00	H	107	340	6.77	1 / 53	1.68	8.45	0.007	23.00	-14.55
	16-QAM	3680.00	H	105	333	6.25	1 / 26	1.58	7.83	0.006	23.00	-15.17
40 MHz	QPSK (CP-OFDM)	3570.00	H	105	333	7.27	1/26	3.14	**10.41**	**0.011**	23.00	-12.59
	QPSK (Opposite Pol.)	3570.00	V	110	96	7.14	1/26	1.19	8.33	0.007	23.00	-14.67

Table 7-13. EIRP Data (NR Band n48 – Ant C)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm/10MHz]	EIRP [Watts/10MHz]	EIRP Limit [dBm/10MHz]	Margin [dB]
40 MHz	π/2 BPSK	3570.00	V	400	336	7.14	1 / 79	10.13	17.27	0.053	23.00	-5.73
	π/2 BPSK	3625.00	V	400	340	6.91	1 / 79	10.54	**17.45**	**0.056**	23.00	-5.55
	π/2 BPSK	3680.00	V	390	330	6.63	1 / 26	9.29	15.92	0.039	23.00	-7.08
	QPSK	3570.00	V	400	336	7.14	1 / 79	10.25	17.39	0.055	23.00	-5.61
	QPSK	3625.00	V	400	340	6.91	1 / 79	10.15	17.06	0.051	23.00	-5.94
	QPSK	3680.00	V	390	330	6.63	1 / 26	9.39	16.02	0.040	23.00	-6.98
	16-QAM	3570.00	V	400	336	7.14	1 / 79	9.66	16.80	0.048	23.00	-6.20
	16-QAM	3625.00	V	400	340	6.91	1 / 79	9.78	16.69	0.047	23.00	-6.31
	16-QAM	3680.00	V	390	330	6.63	1 / 26	8.88	15.51	0.036	23.00	-7.49
40 MHz	QPSK (CP-OFDM)	3625.00	V	400	340	6.91	1/53	10.09	**17.00**	**0.050**	23.00	-6.00
	QPSK (Opposite Pol.)	3625.00	H	259	309	6.77	1/26	9.27	16.04	0.040	23.00	-6.96

Table 7-14. EIRP Data (NR Band n48 – Ant I)

© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm/10MHz]	EIRP [Watts/10MHz]	EIRP Limit [dBm/10MHz]	Margin [dB]
40 MHz	π/2 BPSK	3570.00	V	114	356	7.14	1 / 79	-0.09	7.05	0.005	23.00	-15.95
	π/2 BPSK	3625.00	V	103	360	6.91	1 / 79	1.90	8.81	0.008	23.00	-14.19
	π/2 BPSK	3680.00	V	112	352	6.63	1 / 79	3.02	**9.65**	**0.009**	23.00	-13.35
	QPSK	3570.00	V	114	356	7.14	1 / 79	-0.40	6.74	0.005	23.00	-16.26
	QPSK	3625.00	V	103	360	6.91	1 / 79	1.30	8.21	0.007	23.00	-14.79
	QPSK	3680.00	V	112	352	6.63	1 / 79	2.69	9.32	0.009	23.00	-13.68
	16-QAM	3570.00	V	114	356	7.14	1 / 79	-0.90	6.24	0.004	23.00	-16.76
	16-QAM	3625.00	V	103	360	6.91	1 / 79	1.10	8.01	0.006	23.00	-14.99
	16-QAM	3680.00	V	112	352	6.63	1 / 79	2.12	8.75	0.007	23.00	-14.25
40 MHz	QPSK (CP-OFDM)	3680.00	V	112	352	6.63	1/53	2.67	**9.30**	**0.009**	23.00	-13.70
	QPSK (Opposite Pol.)	3680.00	H	114	263	6.77	1/79	-4.22	2.55	0.002	23.00	-20.45

Table 7-15. EIRP Data (NR Band n48 – Ant D)

© 2022 ELEMENT V11.0 9/14/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

7.7 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the field strength conversion method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using hybrid (biconical/log) antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

ANSI C63.26-2015 – Section 5.5.4

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points ≥ 2 x span / RBW
5. Detector = RMS
6. Trace mode = Max Hold (In cases where the level is within 2dB of the limit, the final measurement is taken using triggering/gating and trace averaging.)
7. The trace was allowed to stabilize

© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

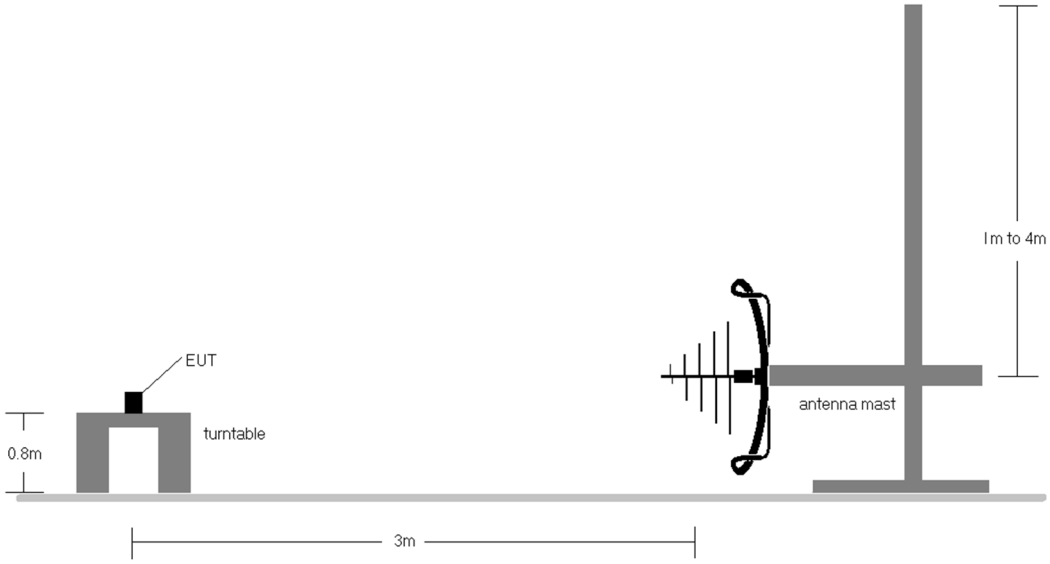


Figure 7-6. Test Instrument & Measurement Setup < 1GHz

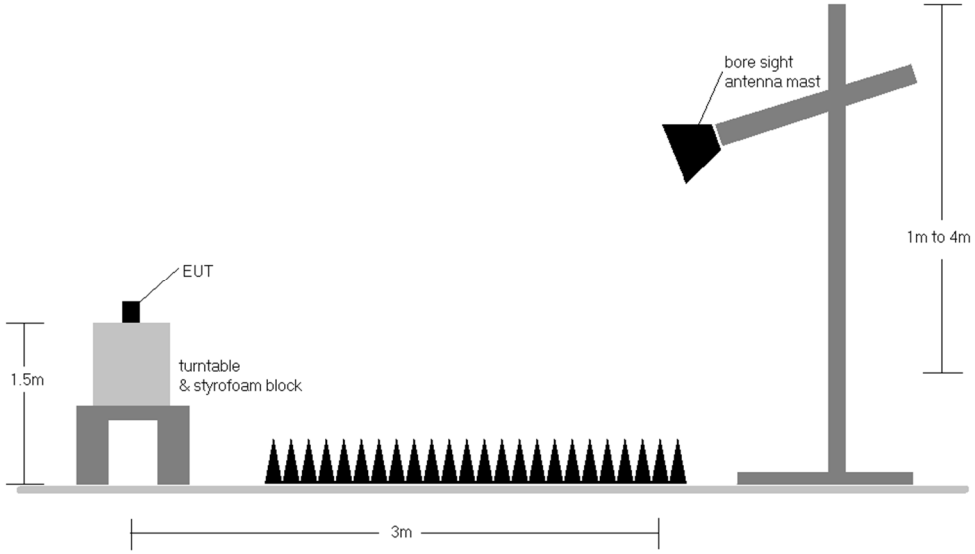


Figure 7-7. Test Instrument & Measurement Setup >1 GHz

© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Test Notes

1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
   a) E(dBµV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m)
   b) EIRP (dBm) = E(dBµV/m) + 20logD – 104.8; where D is the measurement distance in meters.

2) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

3) This unit was tested with its standard battery.

4) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.

5) Emissions below 18GHz were measured at a 3-meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

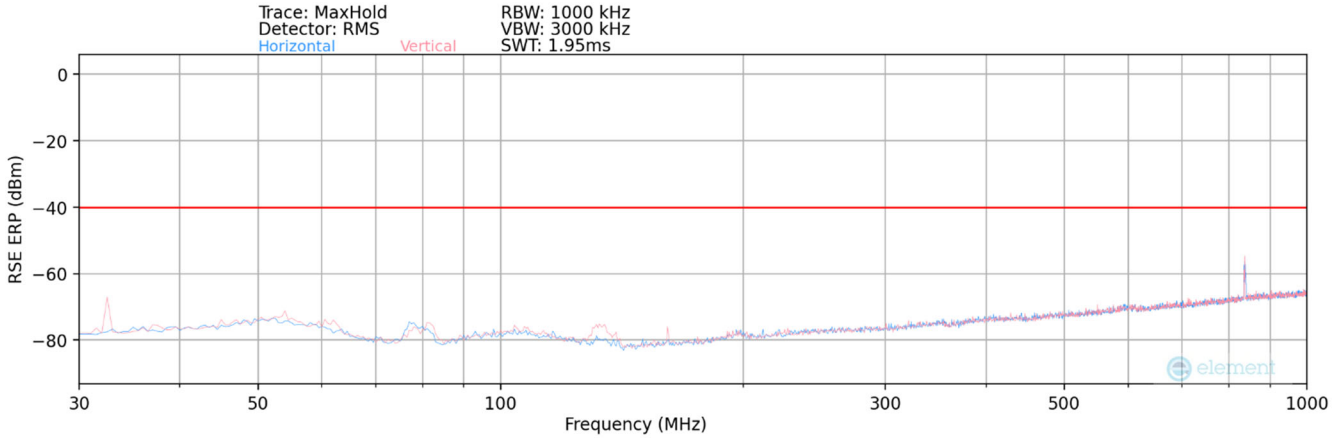
6) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

7) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

8) Spurious emissions shown in this section are measured while operating in EN-DC mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor). Spurious emissions from the NR carrier device are subject to the rules under which the NR carrier operates. Spurious emissions caused by the LTE carrier must meet the requirements of the rules under which the LTE carrier operates.

© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

LTE Band 48



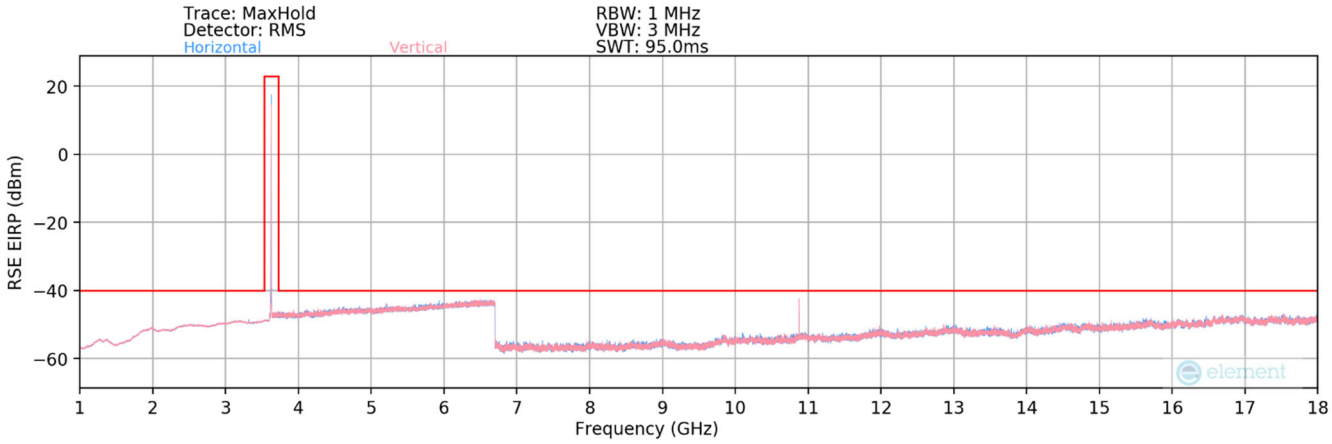
Plot 7-146. Radiated Spurious Plot 30MHz-1GHz (LTE Band 48)

Bandwidth (MHz):	20
Frequency (MHz):	3625.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 50

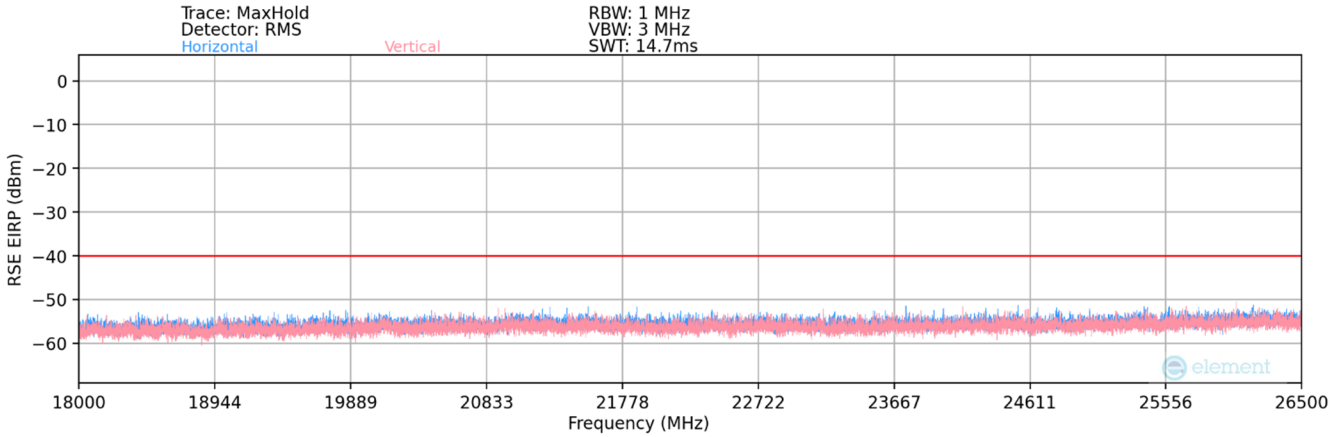
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
80.57	V	250	69	-70.03	-21.60	15.37	-82.04	-40.00	-42.04
823.18	V	-	-	-78.30	-4.98	23.72	-73.69	-40.00	-33.69

Table 7-16. Radiated Spurious Data 30MHz-1GHz (LTE Band 48 – Mid Channel)

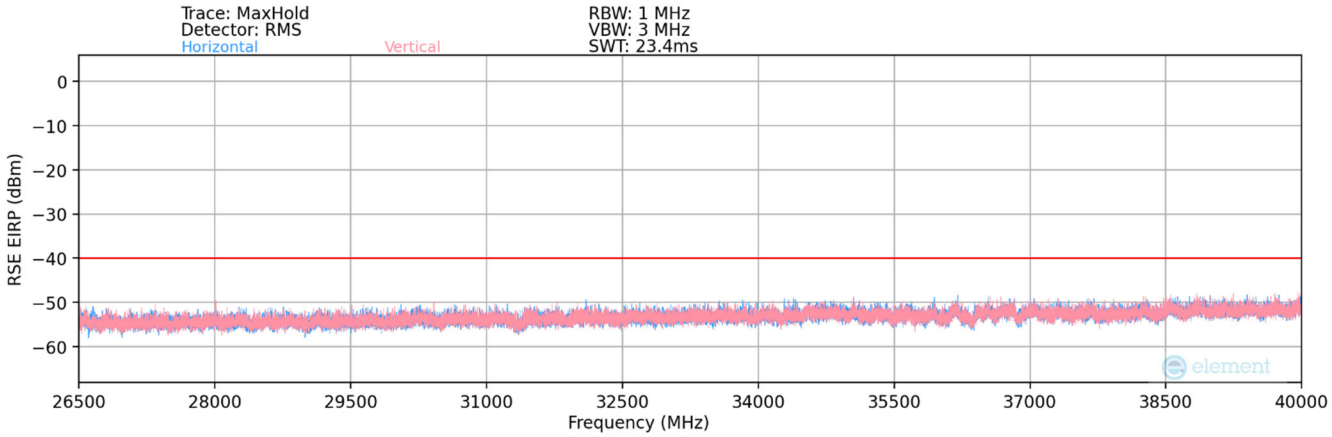
© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



Plot 7-147. Radiated Spurious Plot 1-18GHz (LTE Band 48)



Plot 7-148. Radiated Spurious Plot 18-26.5GHz (LTE Band 48)



Plot 7-149. Radiated Spurious Plot 26.5-40GHz (LTE Band 48)

© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Bandwidth (MHz):	20
Frequency (MHz):	3560.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
7120.00	V	139	207	-76.38	8.09	38.71	-56.55	-40.00	-16.55
10680.00	V	168	234	-74.98	12.21	44.23	-51.03	-40.00	-11.03
14240.00	V	-	-	-79.79	14.87	42.08	-53.18	-40.00	-13.18
17800.00	V	-	-	-79.95	17.58	44.63	-50.62	-40.00	-10.62
21360.00	V	-	-	-58.95	3.81	51.86	-52.94	-40.00	-12.94

Table 7-17. Radiated Spurious Data (LTE Band 48 – Low Channel)

Bandwidth (MHz):	20
Frequency (MHz):	3625.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
7250.00	V	-	-	-77.50	7.59	37.09	-58.17	-40.00	-18.17
10875.00	V	137	185	-68.35	11.86	50.51	-44.74	-40.00	-4.74
14500.00	V	-	-	-80.20	15.32	42.12	-53.14	-40.00	-13.14
18125.00	V	-	-	-55.76	1.42	52.66	-52.14	-40.00	-12.14
21750.00	V	-	-	-57.64	3.83	53.19	-51.61	-40.00	-11.61

Table 7-18. Radiated Spurious Data (LTE Band 48 – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	3690.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
7380.00	V	190	321	-76.97	8.05	38.08	-57.18	-40.00	-17.18
11070.00	V	123	184	-70.37	12.18	48.81	-46.45	-40.00	-6.45
14760.00	V	-	-	-79.94	15.89	42.95	-52.31	-40.00	-12.31
18450.00	V	-	-	-57.54	1.74	51.20	-53.60	-40.00	-13.60
22140.00	V	-	-	-58.42	3.71	52.29	-52.51	-40.00	-12.51

Table 7-19. Radiated Spurious Data (LTE Band 48 – High Channel)

© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

Case:	w/ Wireless Charging Pad
Bandwidth (MHz):	20
Frequency (MHz):	3625.0
Modulation Signal:	QPSK
RB Config (Size / Offset):	1 / 50
Detector / Trace Mode:	RMS / Max Hold
RBW / VBW:	1MHz / 3MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
7250.00	V	-	-	-77.33	7.59	37.26	-58.00	-40.00	-18.00
10875.00	V	214	214	-70.50	11.86	48.36	-46.89	-40.00	-6.89
14500.00	V	-	-	-80.06	15.32	42.26	-53.00	-40.00	-13.00

Table 7-20. Radiated Spurious Data with WCP (LTE Band 48)

© 2022 ELEMENT V11.0 9/14/2022
Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.