

7.4 Band Edge Emissions at Antenna Terminal

\$2.1051, \$27.53(a), \$27.53(m)

Test Overview

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power, and at the appropriate frequencies. All data rates 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.


For LTE Bands 7, 41, and NR FR1 Band n41 the minimum permissible attenuation level is noted in the Test Notes on the following page.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 6.0

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW \geq 1% of the emission bandwidth
4. VBW \geq 3 x RBW
5. Detector = RMS
6. Number of sweep points \geq 2 x Span/RBW
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch
		Page 62 of 112

V2.2 09/07/2023

Test Setup

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

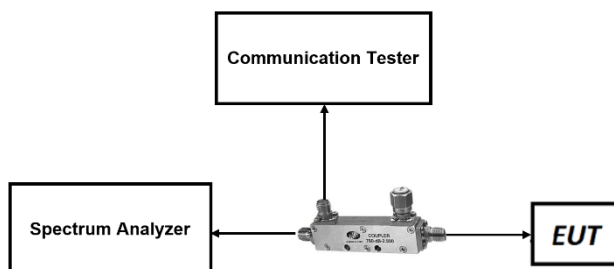


Figure 7-5. LTE Test Instrument & Measurement Setup

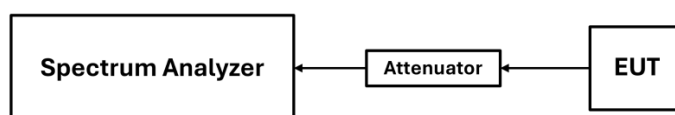



Figure 7-6. FR1 Test Instrument & Measurement Setup

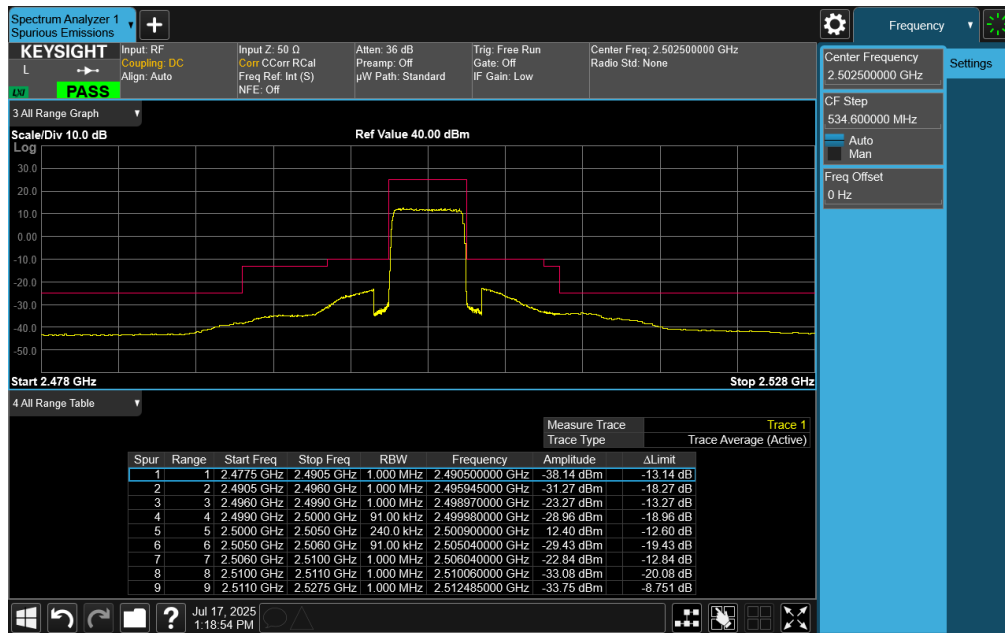
Test Notes

1. Per 27.53(h), in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. 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 emission are attenuated at least 26 dB below the transmitter power.
2. Per 27.53(m) for operations in the BRS/EBS bands, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz.
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.

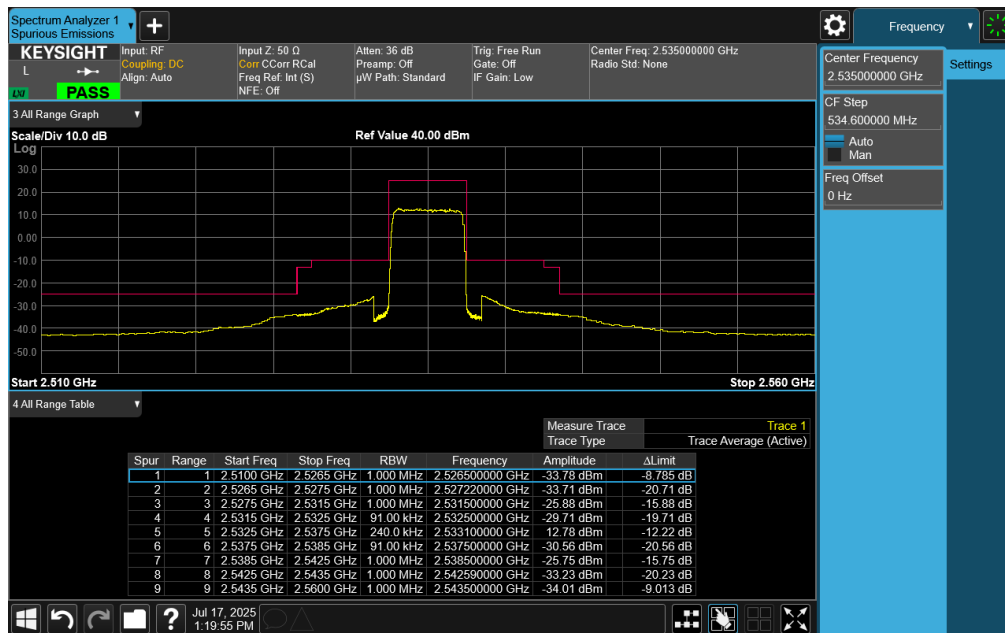
FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch
		Page 63 of 112

V2.2 09/07/2023

LTE Band 7



Plot 7-84. Lower ACP Plot (LTE Band 7 - 5MHz QPSK – Full RB)

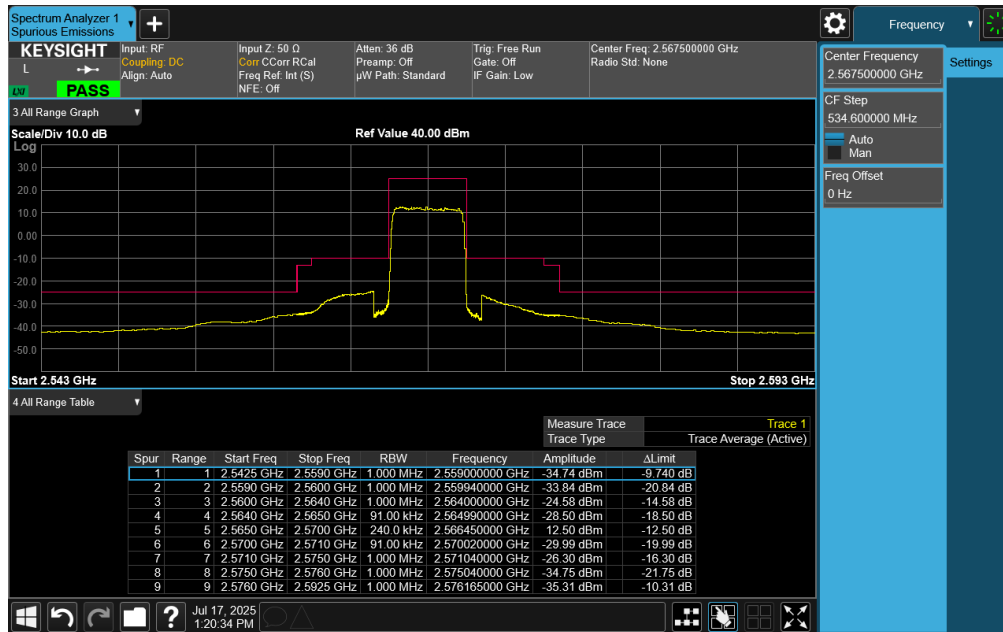


Plot 7-85. Middle ACP Plot (LTE Band 7 - 5MHz QPSK – Full RB)

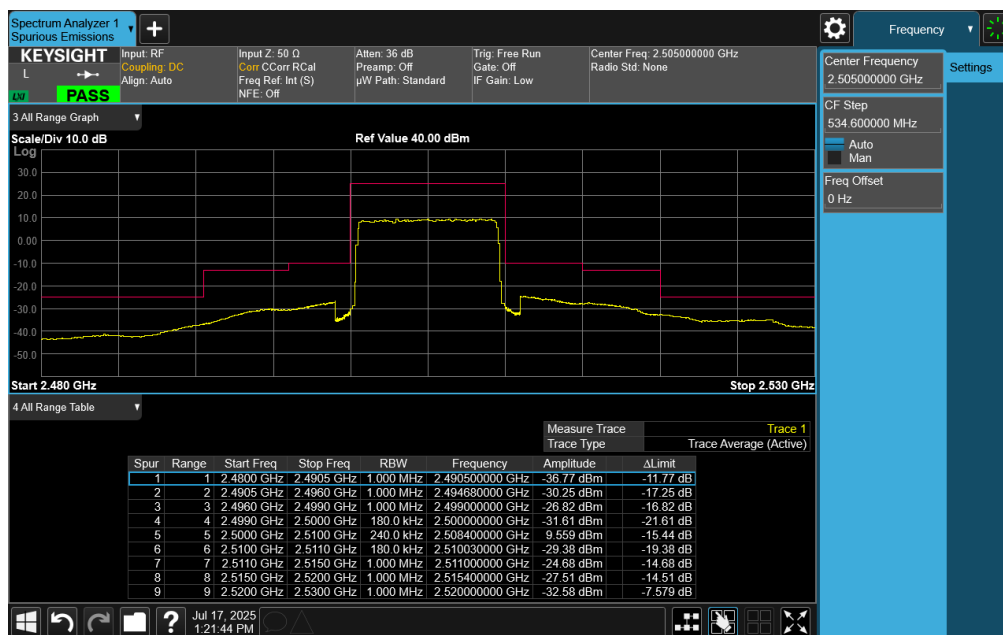
FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 64 of 112

V2.2 09/07/2023

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 Materials Technology. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



Plot 7-86. Upper ACP Plot (LTE Band 7 - 5MHz QPSK – Full RB)

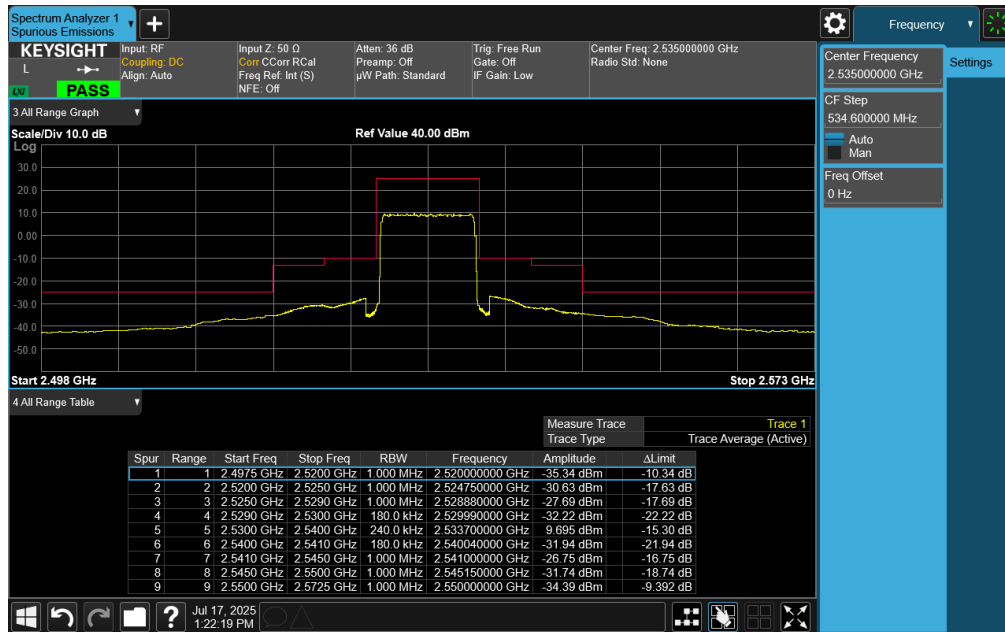


Plot 7-87. Lower ACP Plot (LTE Band 7 - 10MHz QPSK – Full RB)

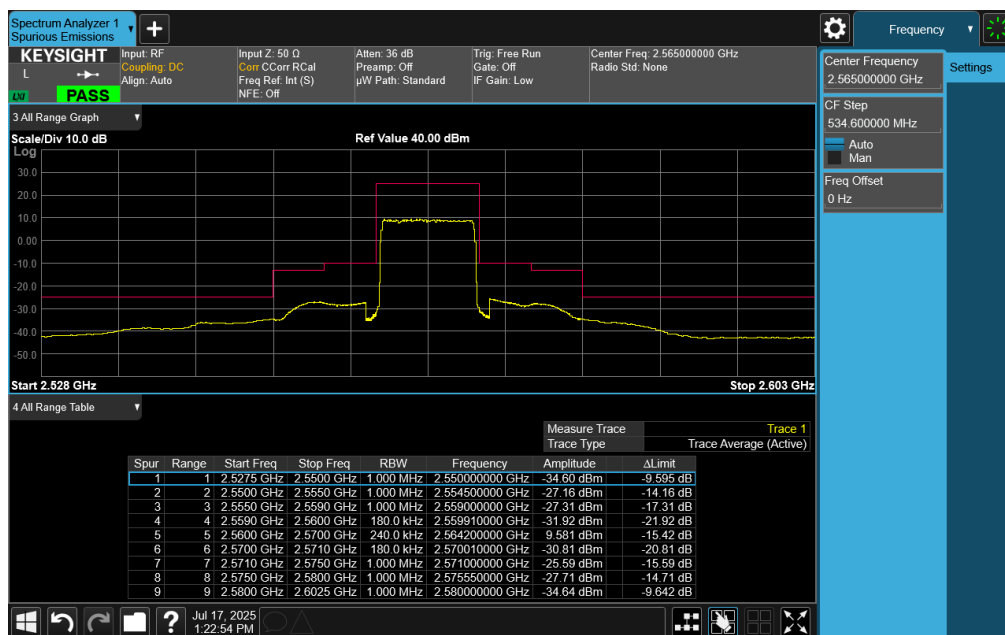
FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 65 of 112

V2.2 09/07/2023

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 Materials Technology. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

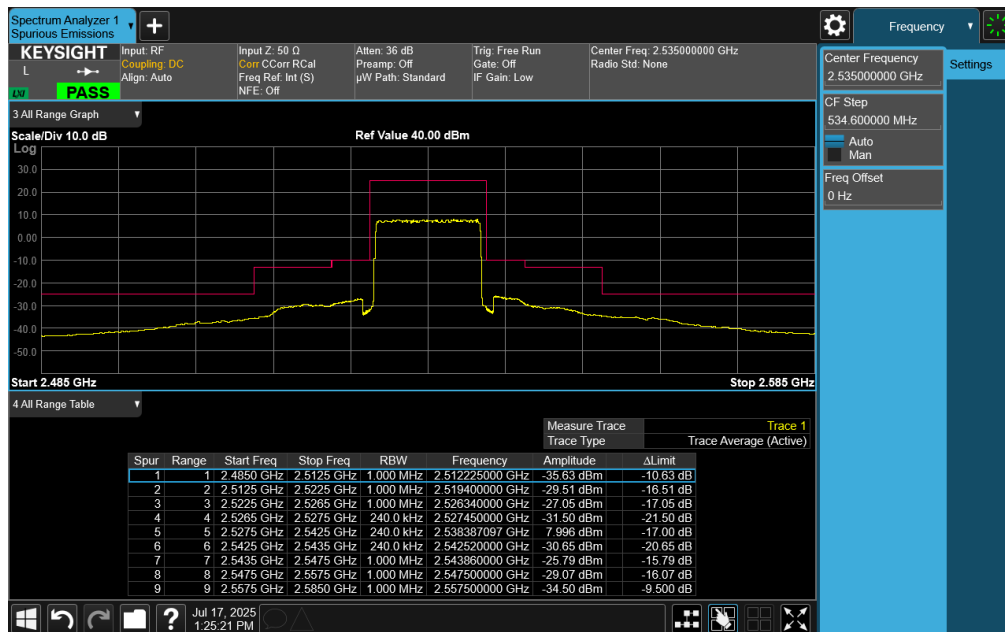
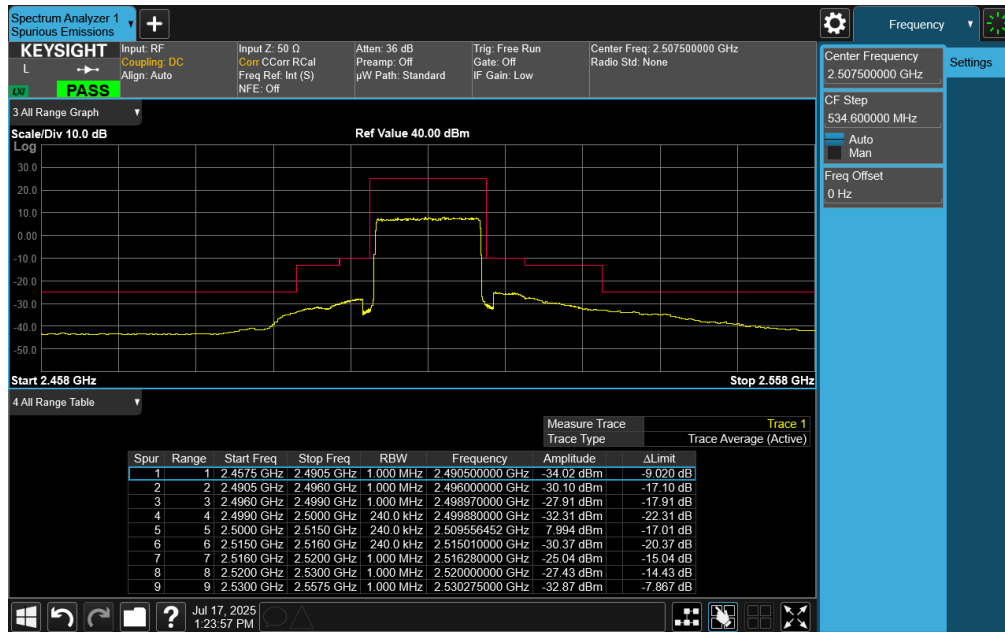


Plot 7-88. Middle ACP Plot (LTE Band 7 - 10MHz QPSK – Full RB)

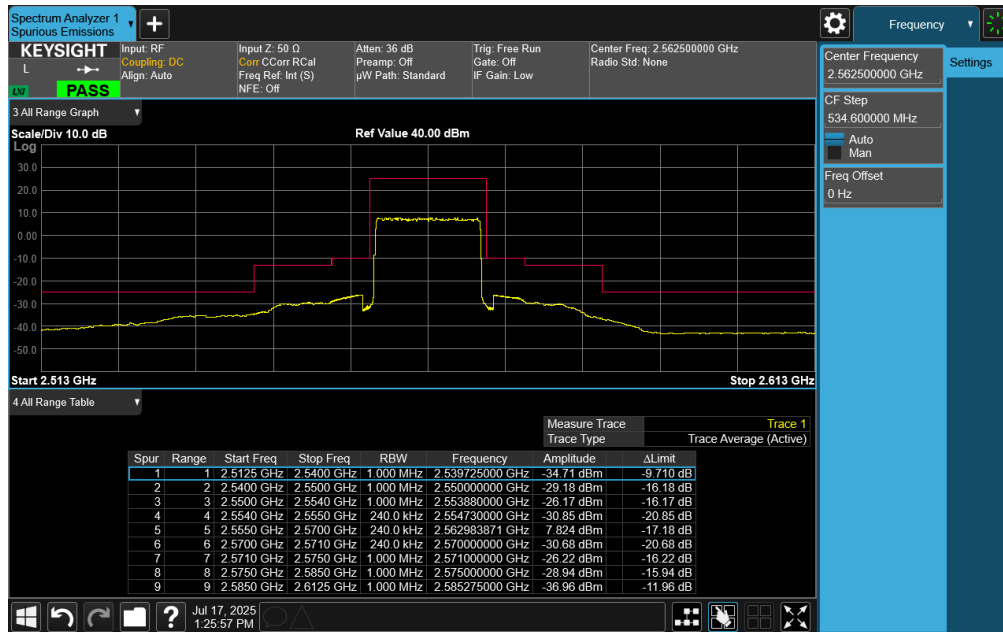


Plot 7-89. Upper ACP Plot (LTE Band 7 - 10MHz QPSK – Full RB)

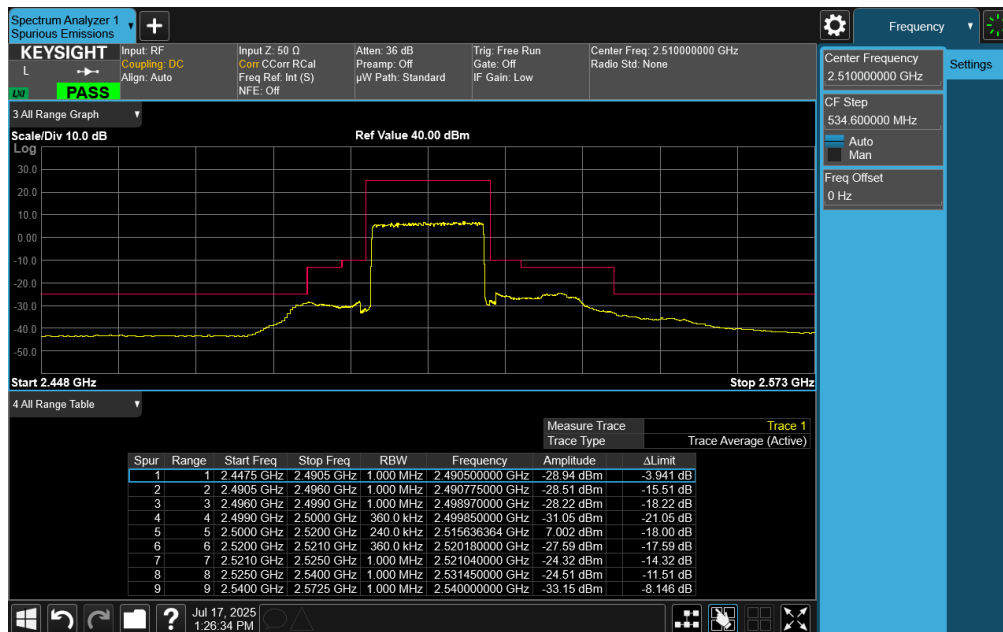
FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 66 of 112



FCC ID: BCG-A3281	element	PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 67 of 112

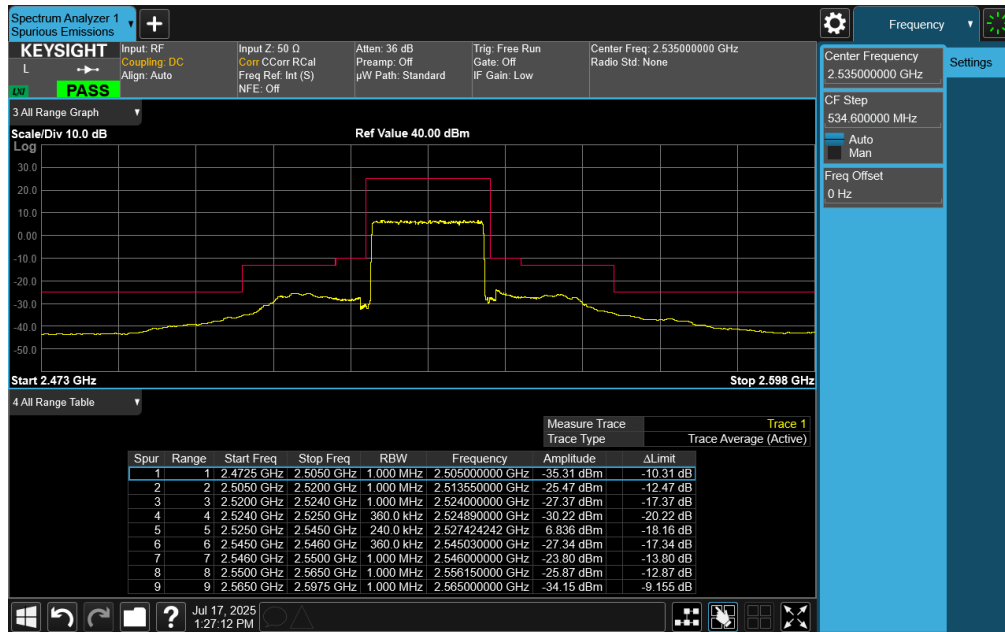


Plot 7-92. Upper ACP Plot (LTE Band 7 - 15MHz QPSK – Full RB)

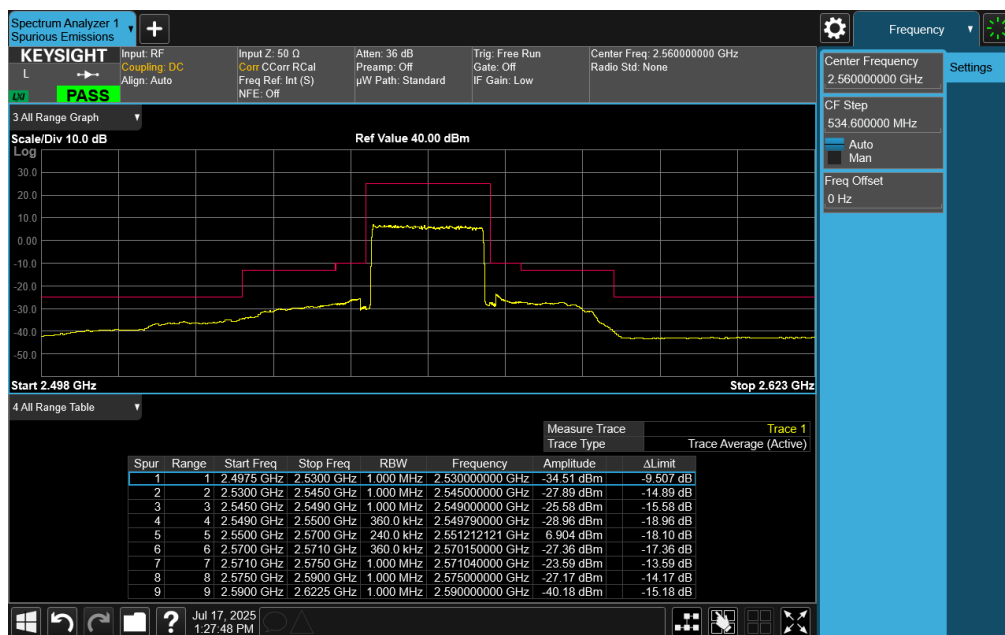


Plot 7-93. Lower ACP Plot (LTE Band 7 - 20MHz QPSK – Full RB)

FCC ID: BCG-A3281	element	PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 68 of 112



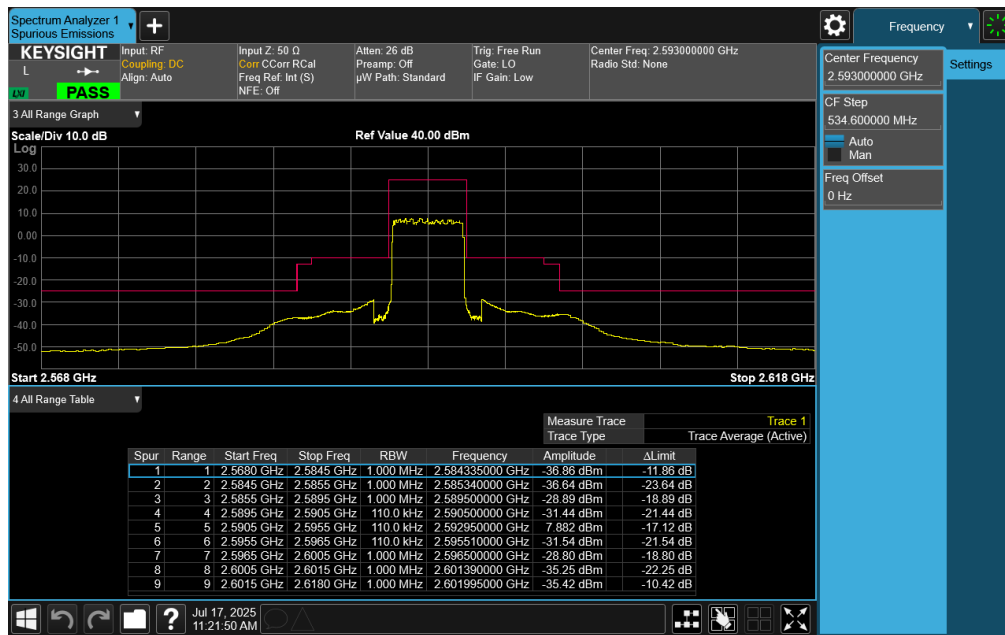
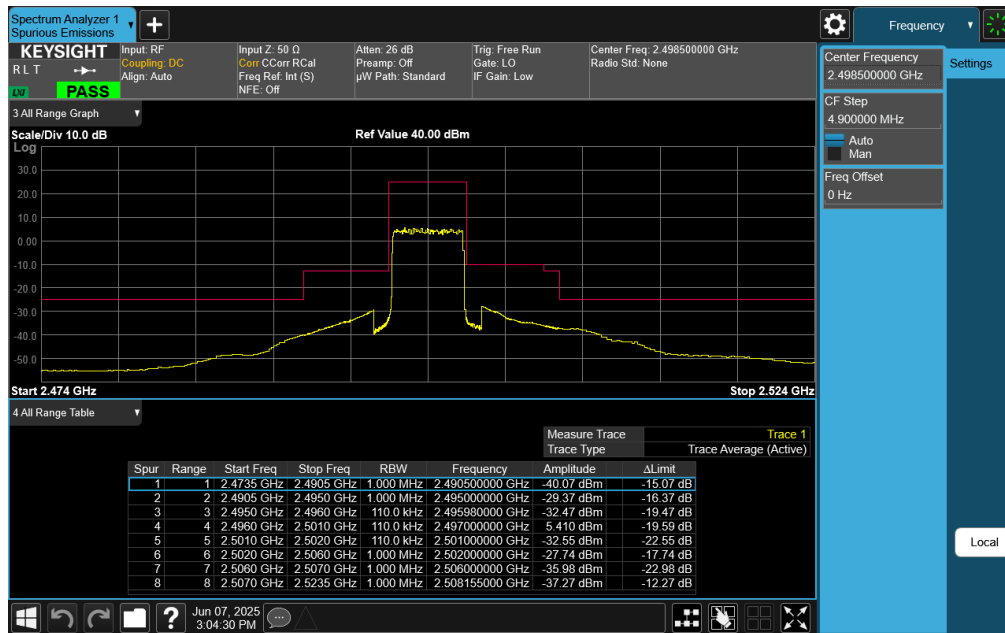
Plot 7-94. Middle ACP Plot (LTE Band 7 - 20MHz QPSK – Full RB)



Plot 7-95. Upper ACP Plot (LTE Band 7 - 20MHz QPSK – Full RB)

FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 69 of 112

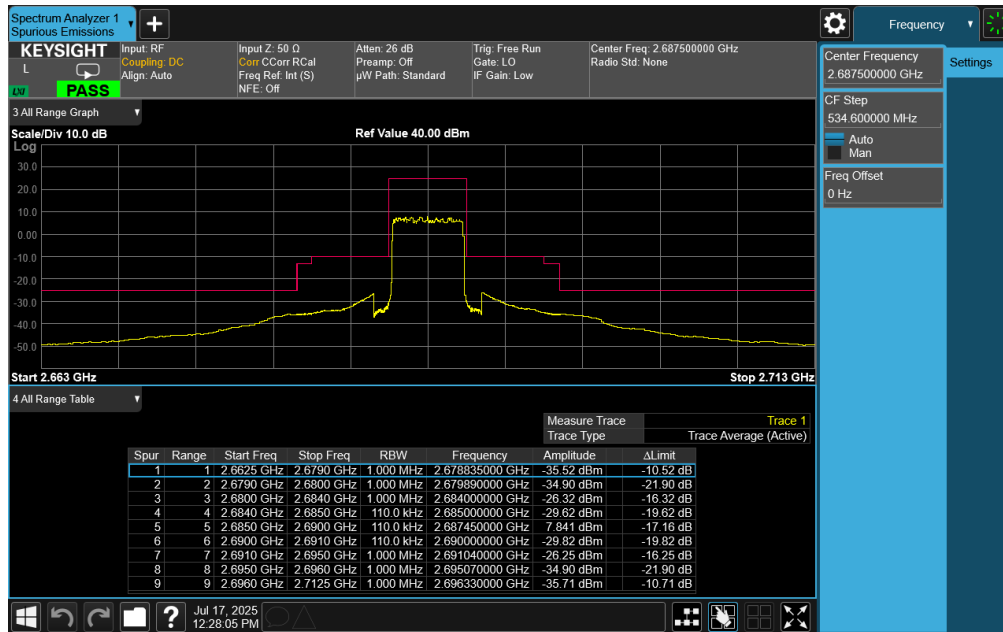
LTE Band 41



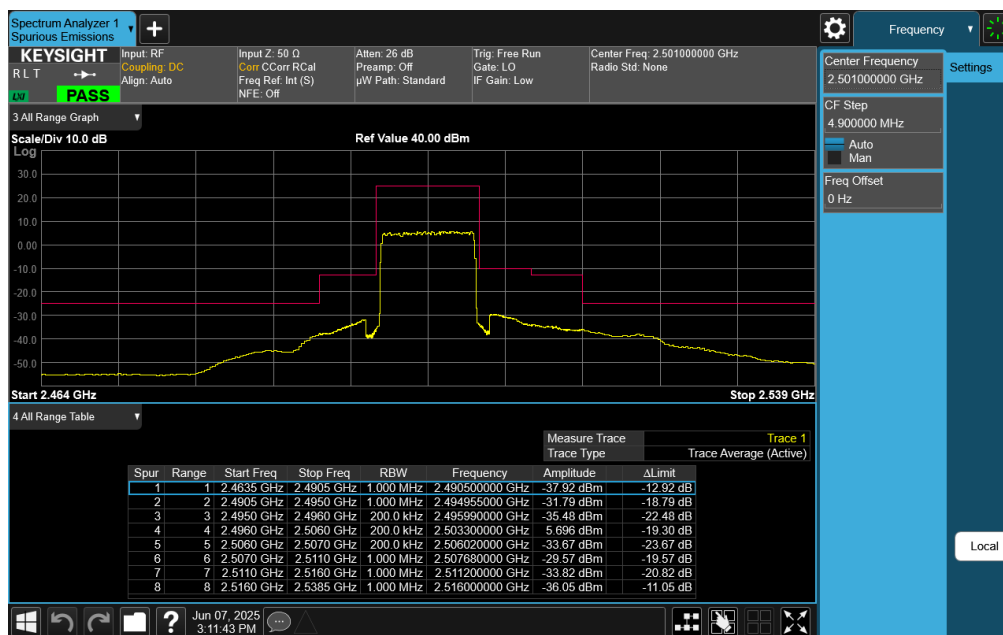
FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 70 of 112

V2.2 09/07/2023

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 Materials Technology. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

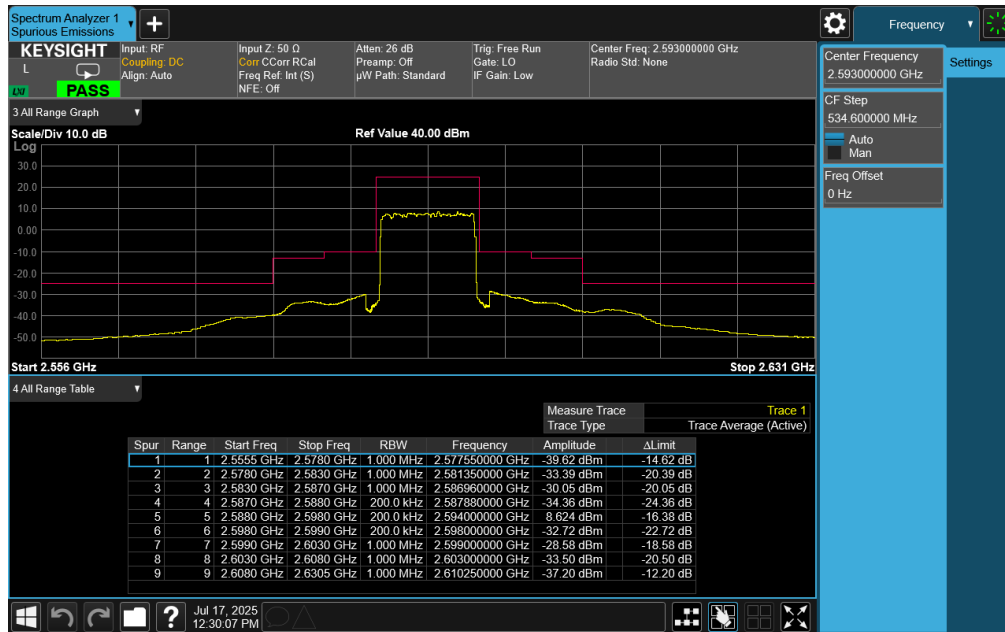


Plot 7-98. Upper ACP Plot (LTE Band 41 - 5MHz QPSK – Full RB)

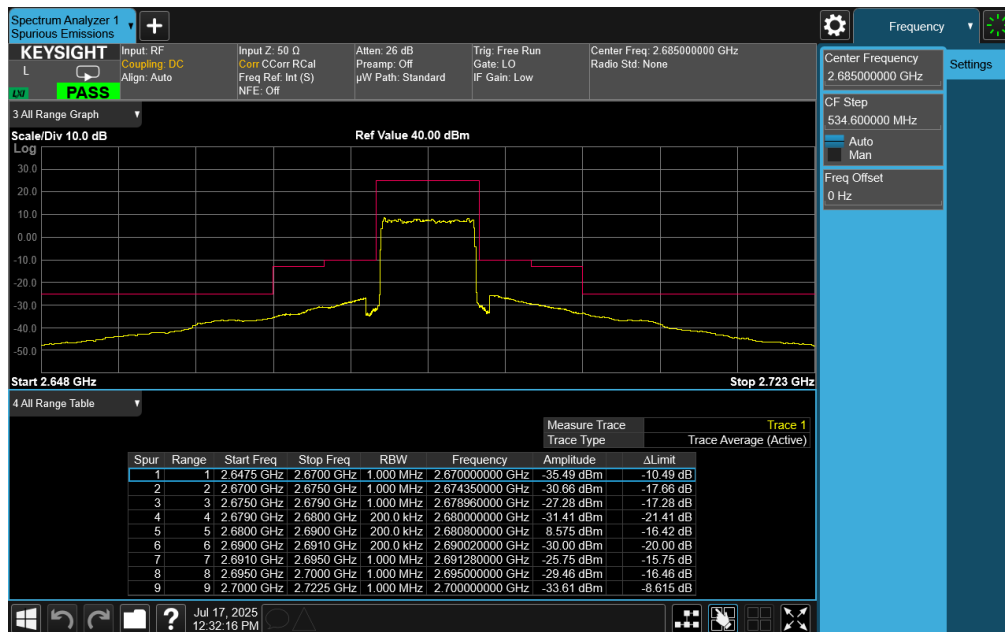


Plot 7-99. Lower ACP Plot (LTE Band 41 - 10MHz QPSK – Full RB)

FCC ID: BCG-A3281	element	PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 71 of 112

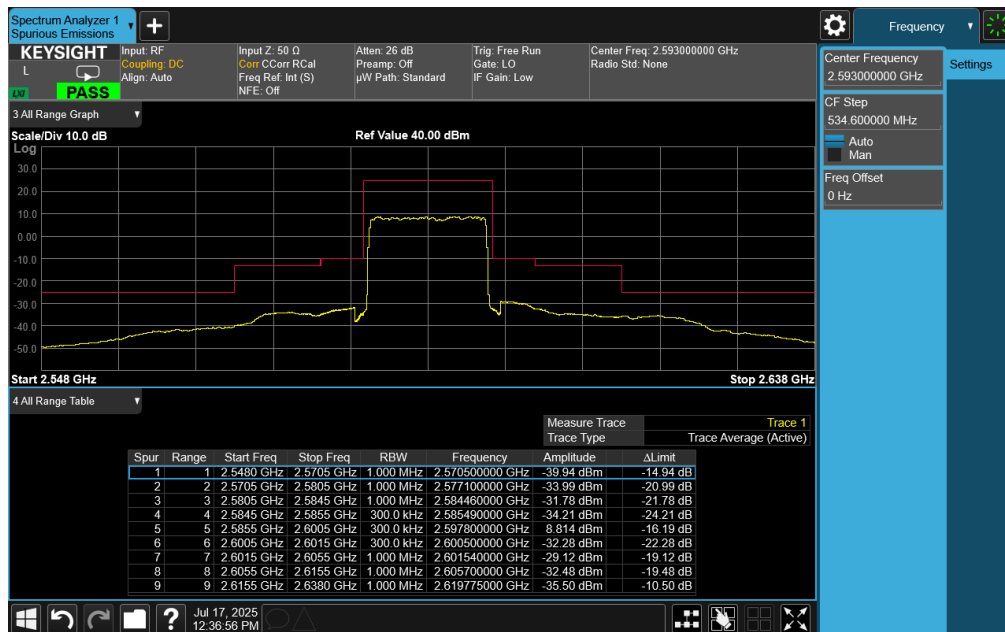
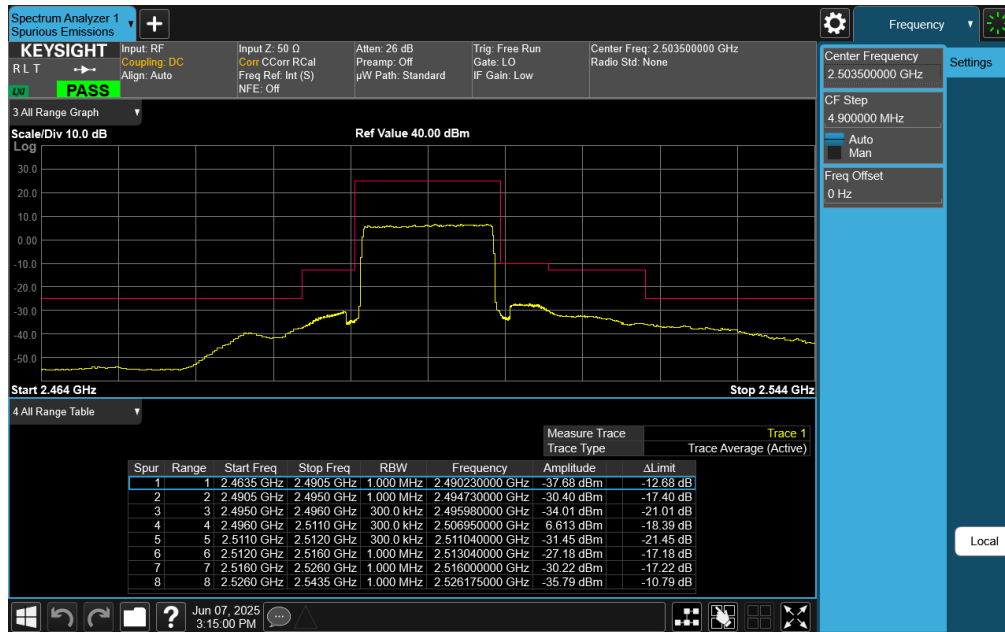


Plot 7-100. Middle ACP Plot (LTE Band 41 - 10MHz QPSK – Full RB)

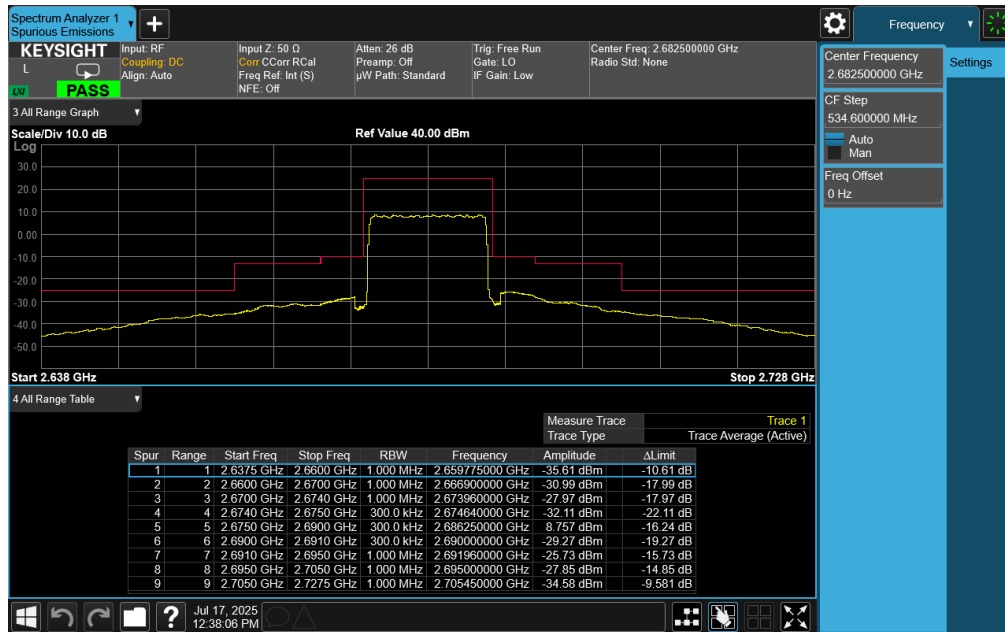


Plot 7-101. Upper ACP Plot (LTE Band 41 - 10MHz QPSK – Full RB)

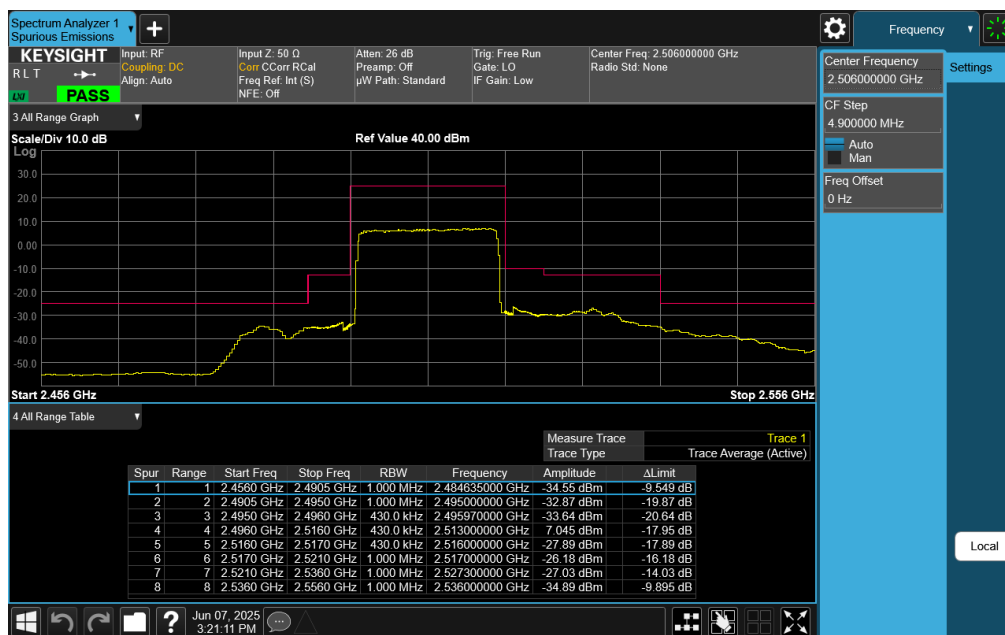
FCC ID: BCG-A3281	element	PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 72 of 112



FCC ID: BCG-A3281	element	PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 73 of 112

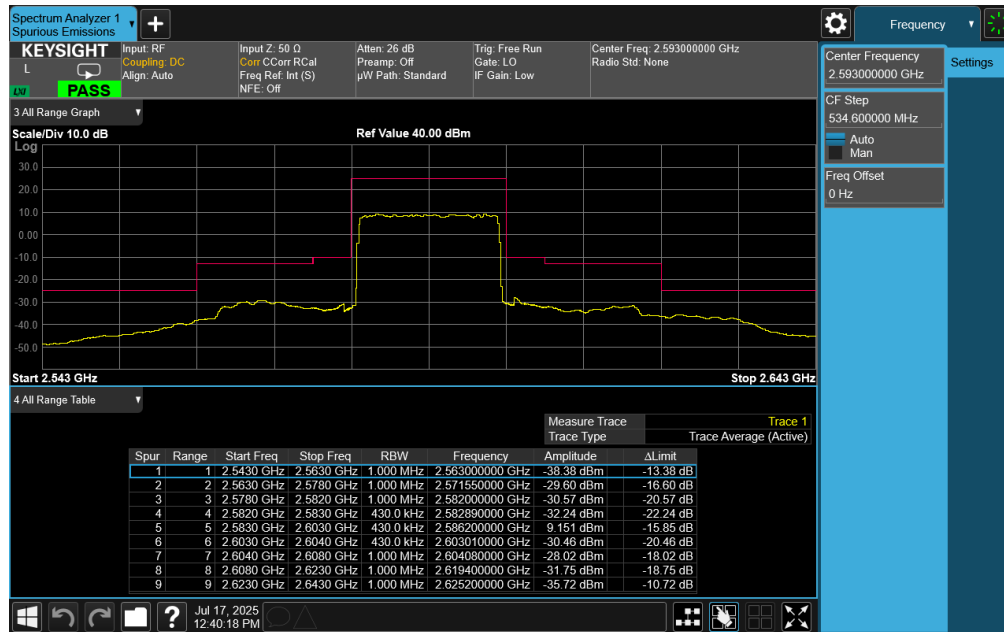


Plot 7-104. Upper ACP Plot (LTE Band 41 - 15MHz QPSK – Full RB)

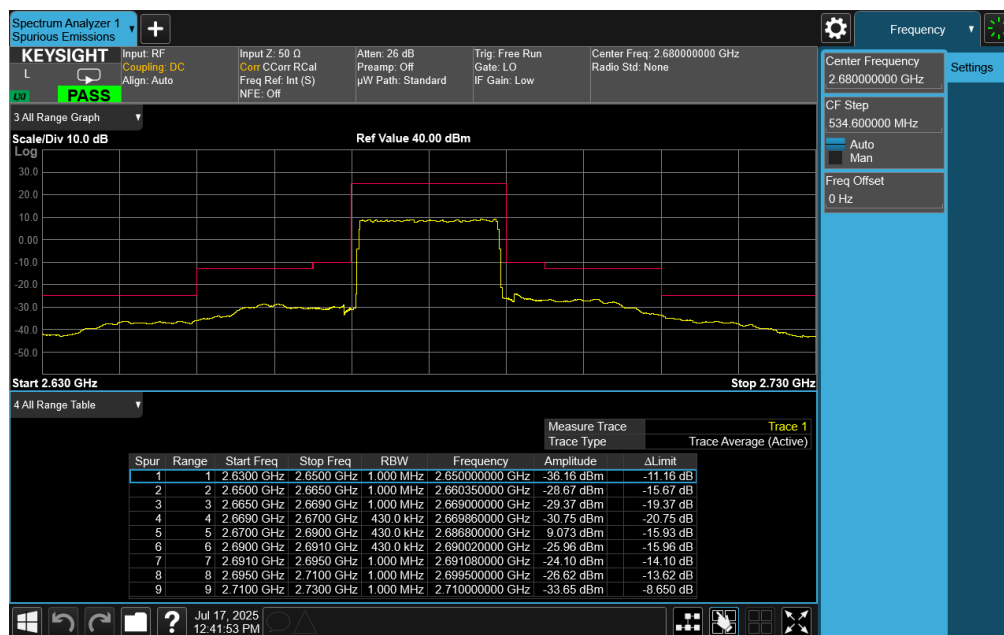


Plot 7-105. Lower ACP Plot (LTE Band 41 - 20MHz QPSK – Full RB)

FCC ID: BCG-A3281	element	PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 74 of 112



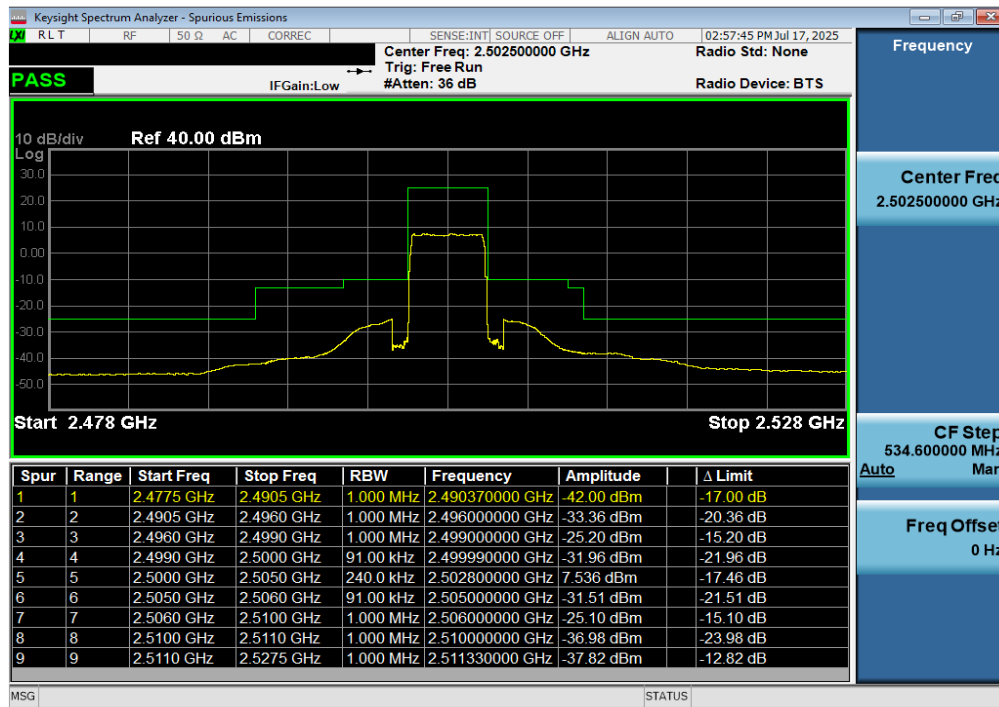
Plot 7-106. Middle ACP Plot (LTE Band 41 - 20MHz QPSK – Full RB)



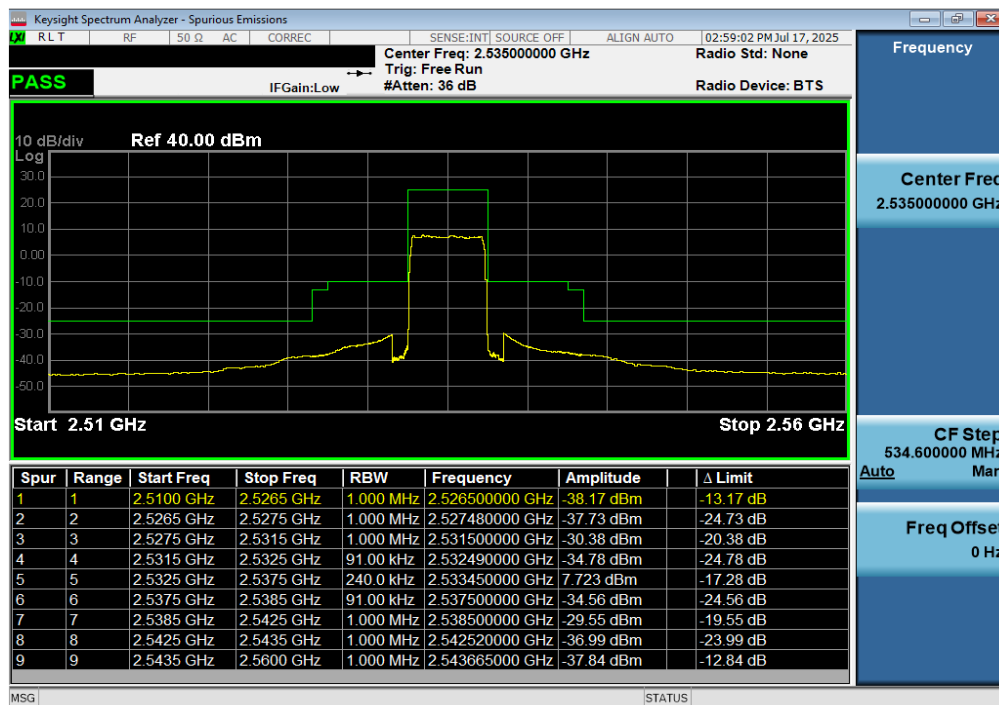
Plot 7-107. Upper ACP Plot (LTE Band 41 - 20MHz QPSK – Full RB)

FCC ID: BCG-A3281	element	PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 75 of 112

NR Band n7



Plot 7-108. Lower ACP Plot (NR Band n7 - 5MHz DFT-s-OFDM QPSK – Full RB)

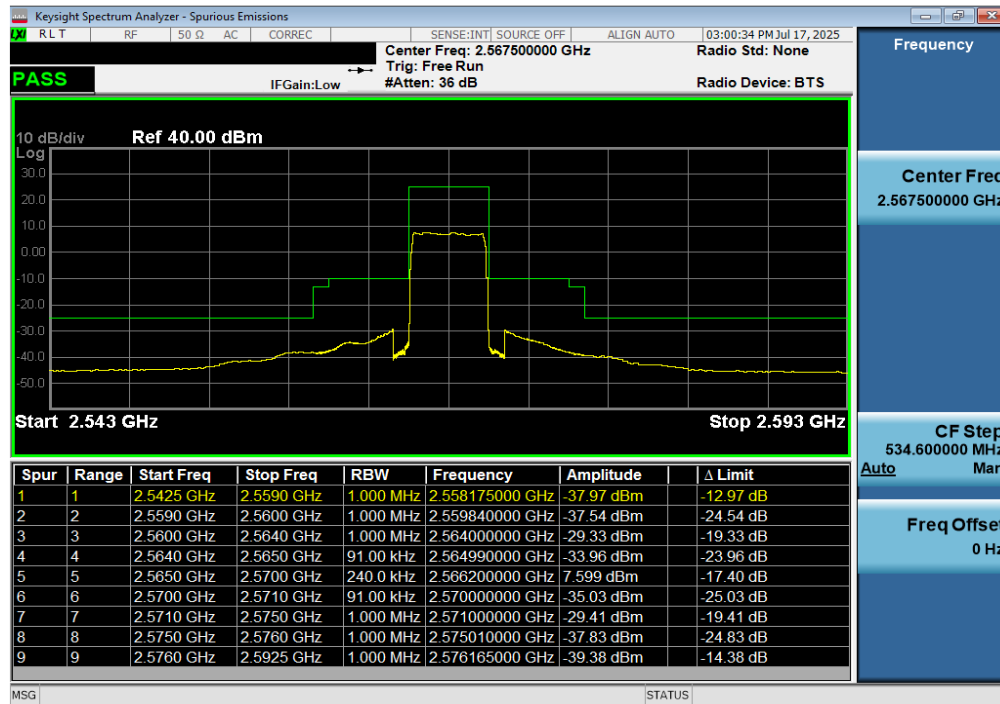


Plot 7-109. Middle ACP Plot (NR Band n7 - 5MHz DFT-s-OFDM QPSK – Full RB)

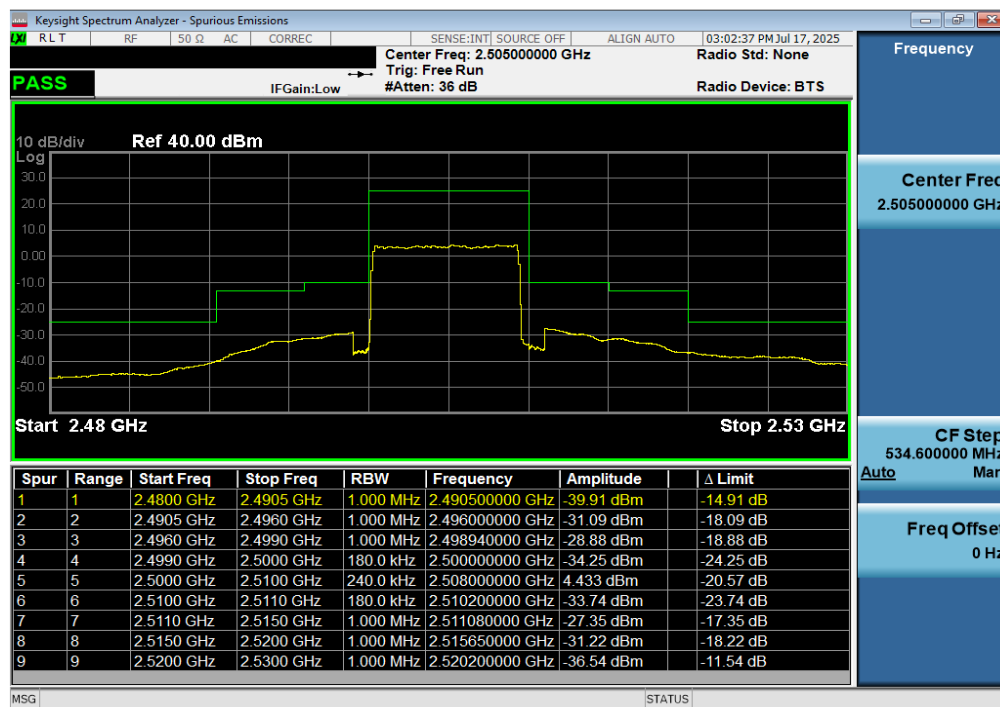
FCC ID: BCG-A3281	element	PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 76 of 112

V2.2 09/07/2023

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 Materials Technology. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



Plot 7-110. Upper ACP Plot (NR Band n7 - 5MHz DFT-s-OFDM QPSK – Full RB)

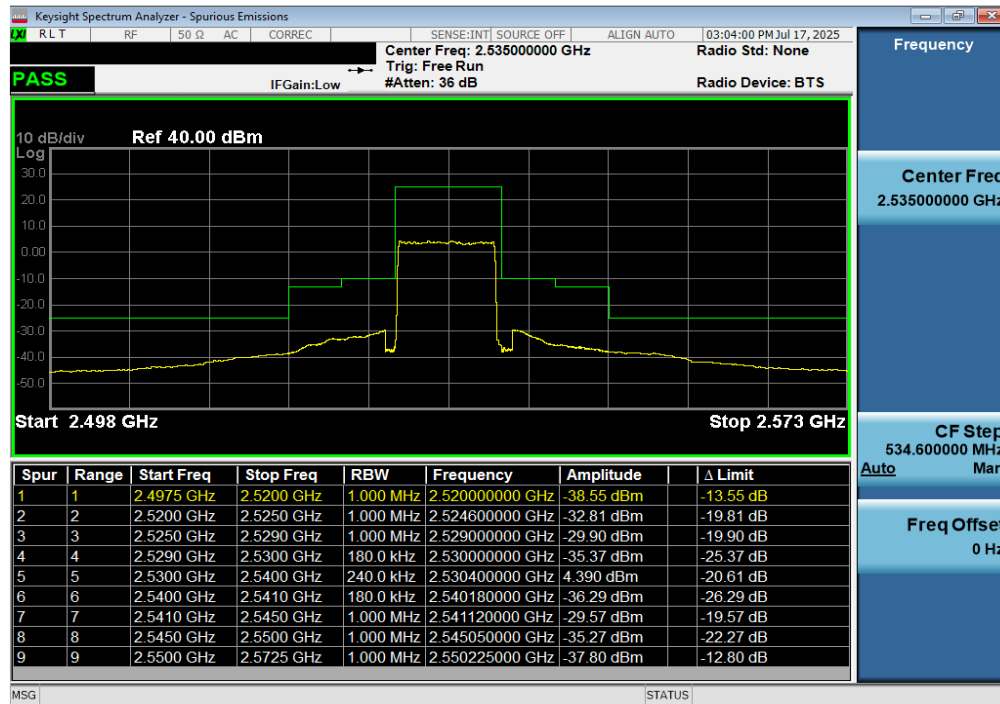


Plot 7-111. Lower ACP Plot (NR Band n7 - 10MHz DFT-s-OFDM QPSK – Full RB)

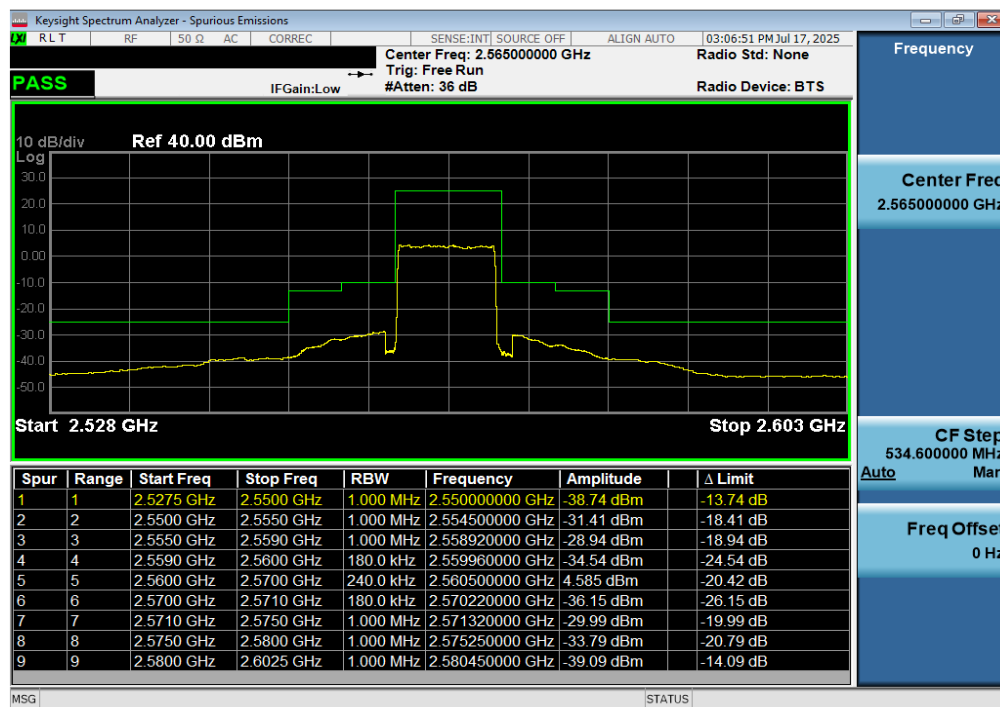
FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 77 of 112

V2.2 09/07/2023

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 Materials Technology. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



Plot 7-112. Middle ACP Plot (NR Band n7 - 10MHz DFT-s-OFDM QPSK – Full RB)

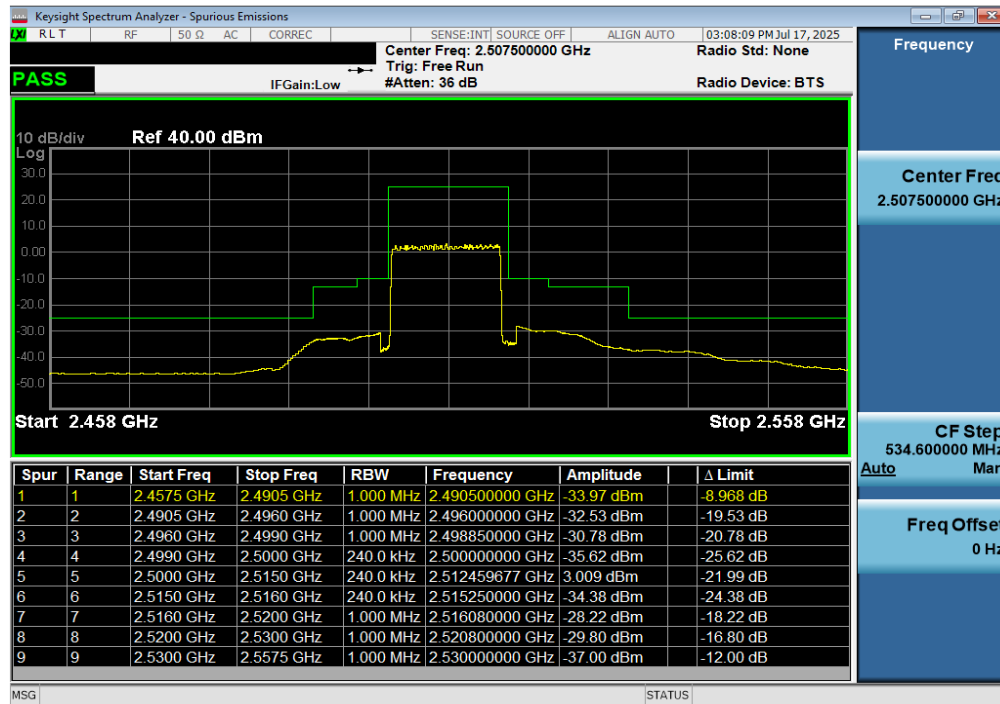


Plot 7-113. Upper ACP Plot (NR Band n7 - 10MHz DFT-s-OFDM QPSK – Full RB)

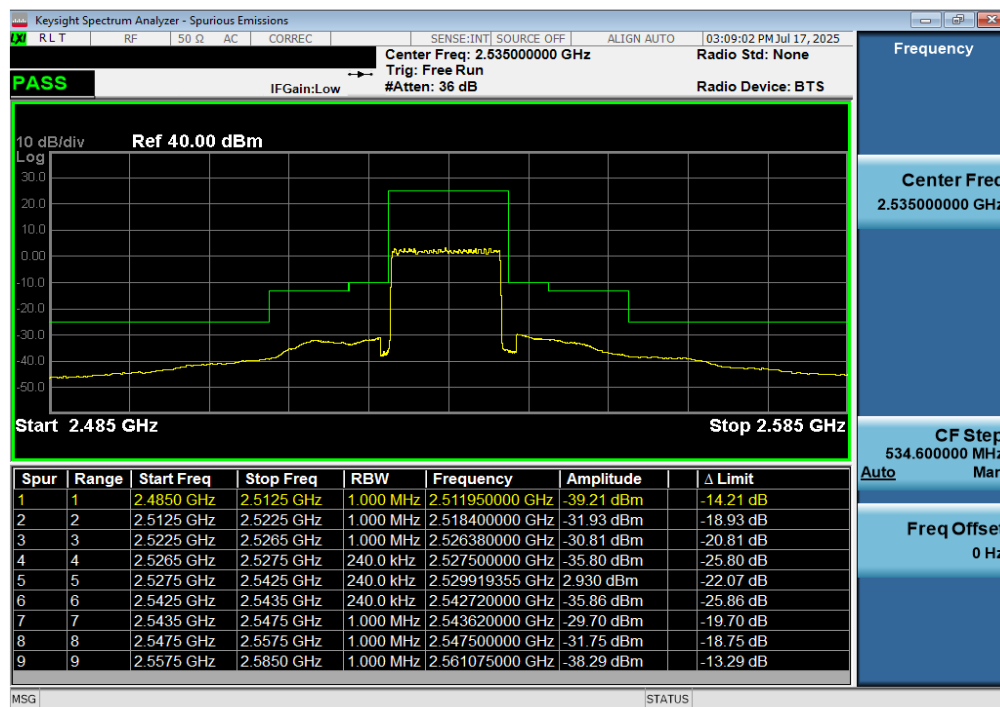
FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 78 of 112

V2.2 09/07/2023

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 Materials Technology. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

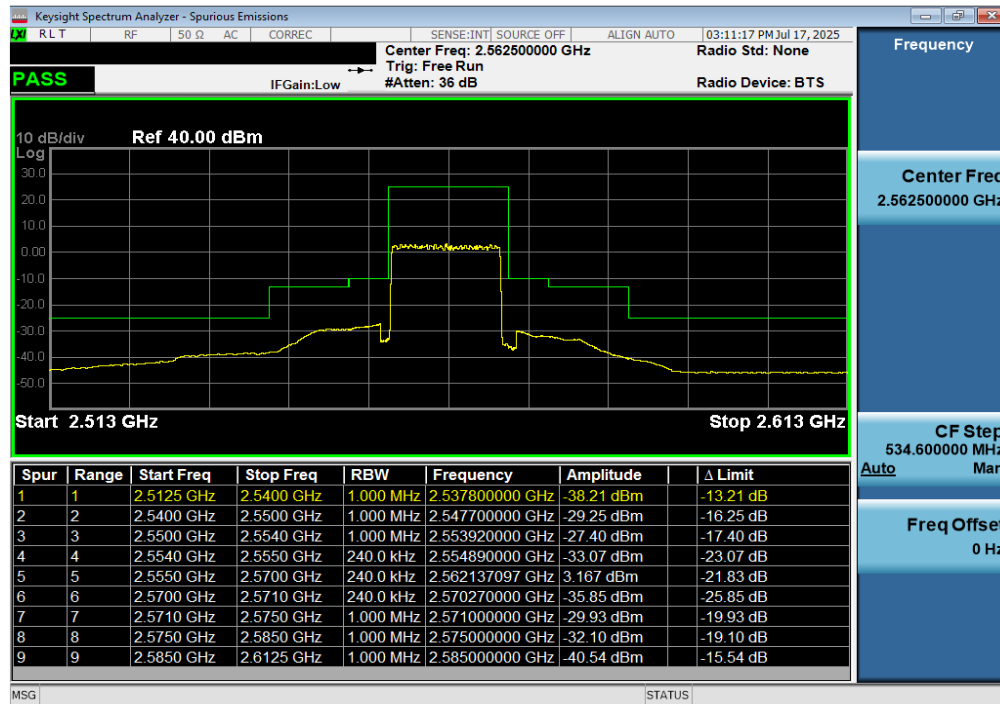


Plot 7-114. Lower ACP Plot (NR Band n7 - 15MHz DFT-s-OFDM QPSK - Full RB)

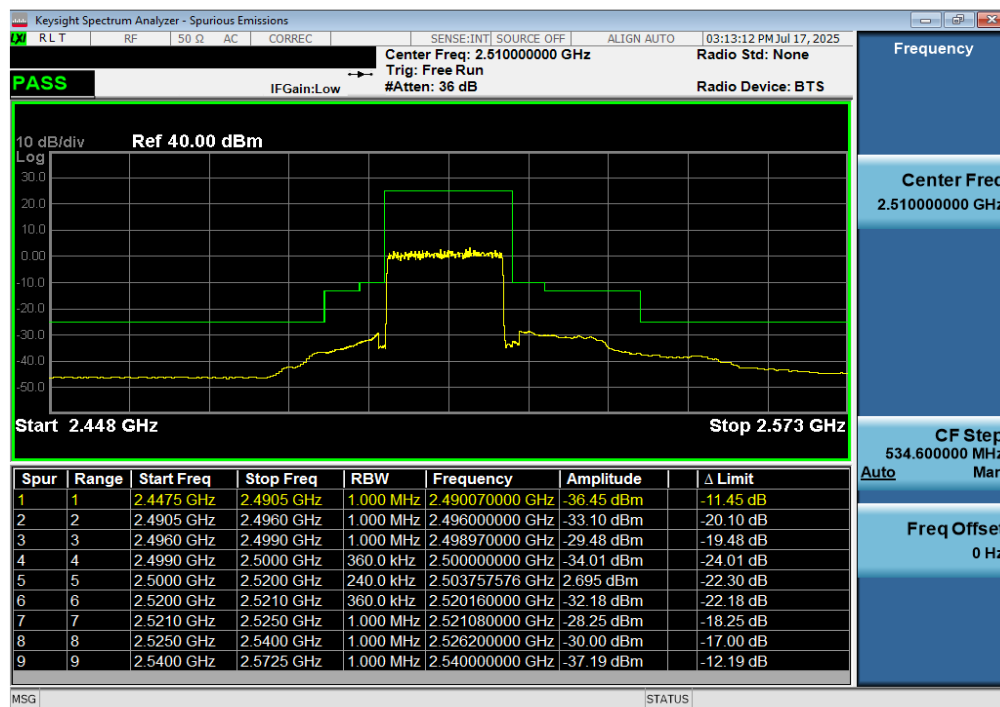


Plot 7-115. Middle ACP Plot (NR Band n7 - 15MHz DFT-s-OFDM QPSK - Full RB)

FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 79 of 112

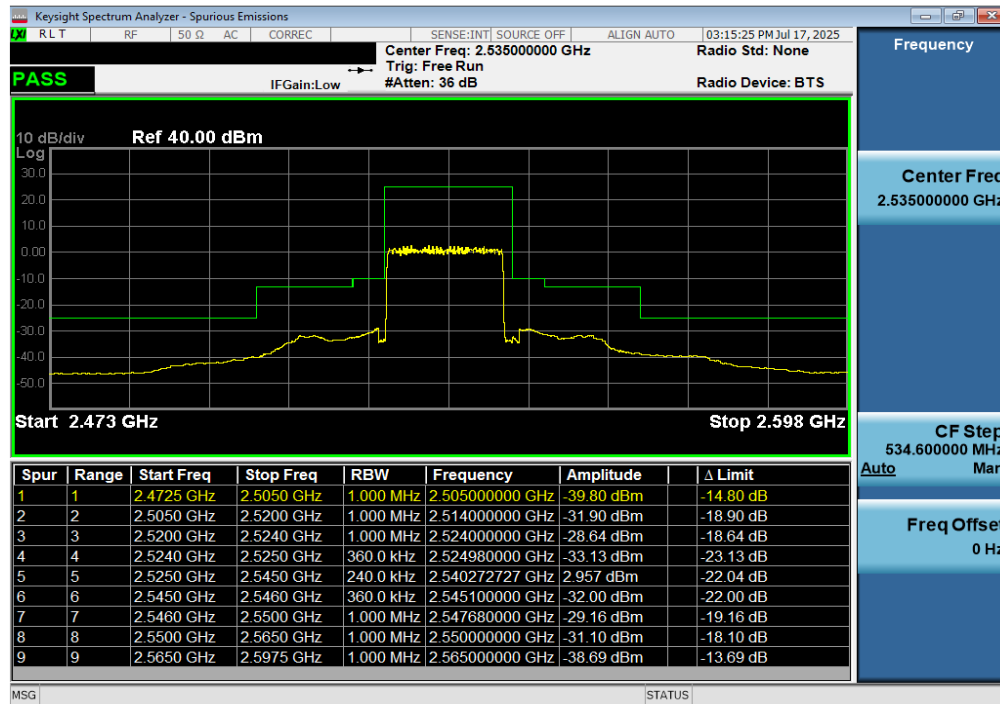


Plot 7-116. Upper ACP Plot (NR Band n7 - 15MHz DFT-s-OFDM QPSK - Full RB)

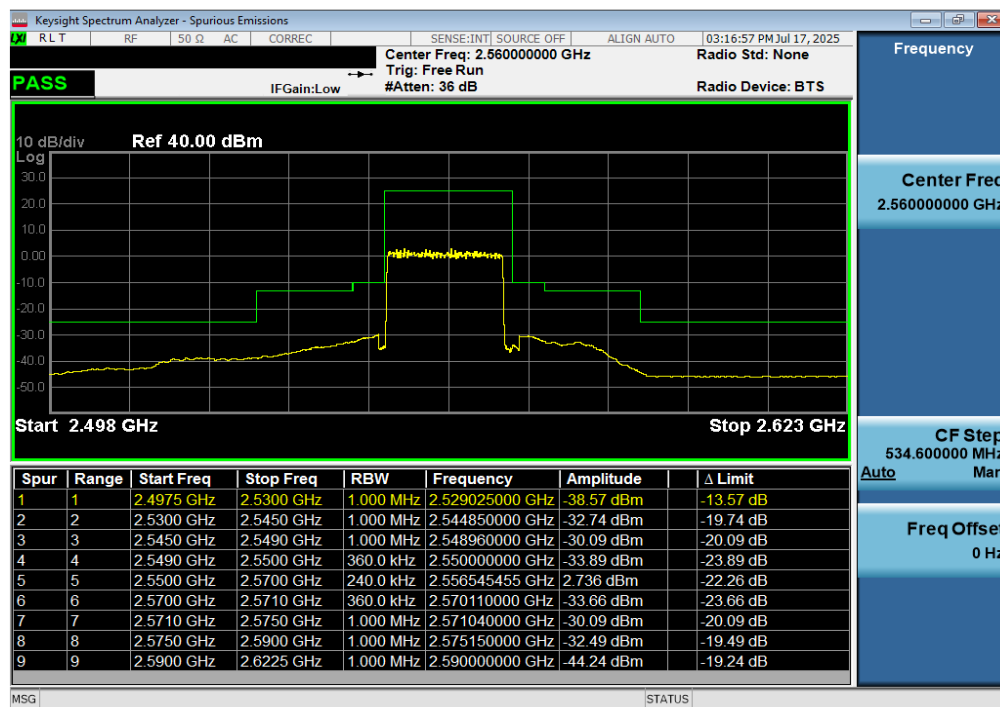


Plot 7-117. Lower ACP Plot (NR Band n7 - 20MHz DFT-s-OFDM QPSK - Full RB)

FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 80 of 112



Plot 7-118. Middle ACP Plot (NR Band n7 - 20MHz DFT-s-OFDM QPSK – Full RB)



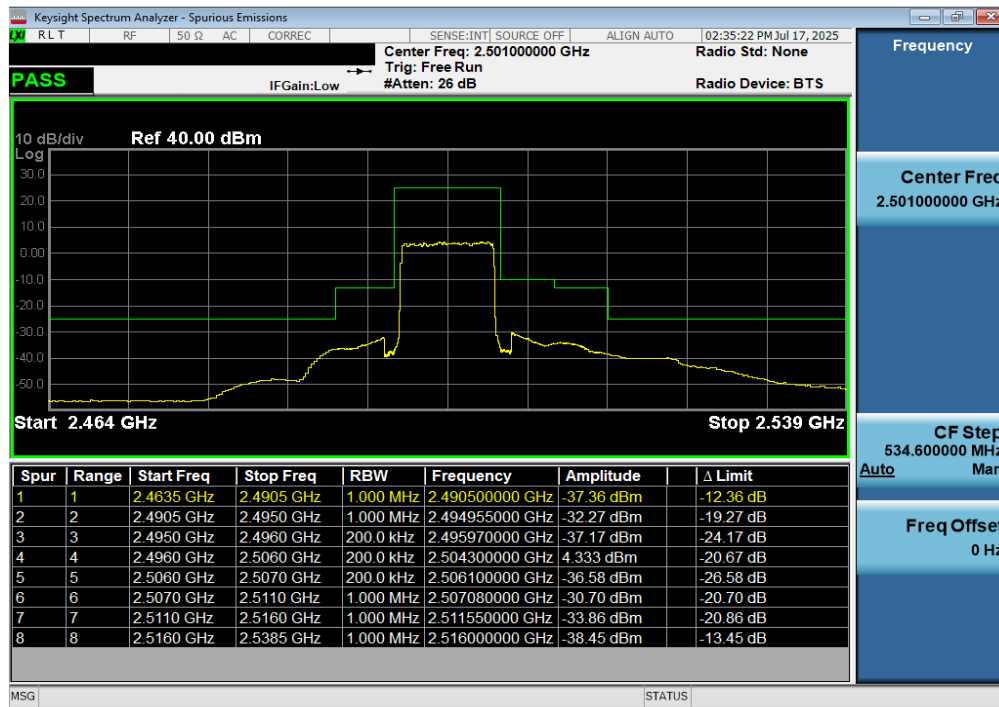
Plot 7-119. Upper ACP Plot (NR Band n7 - 20MHz DFT-s-OFDM QPSK – Full RB)

FCC ID: BCG-A3281	element	PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 81 of 112

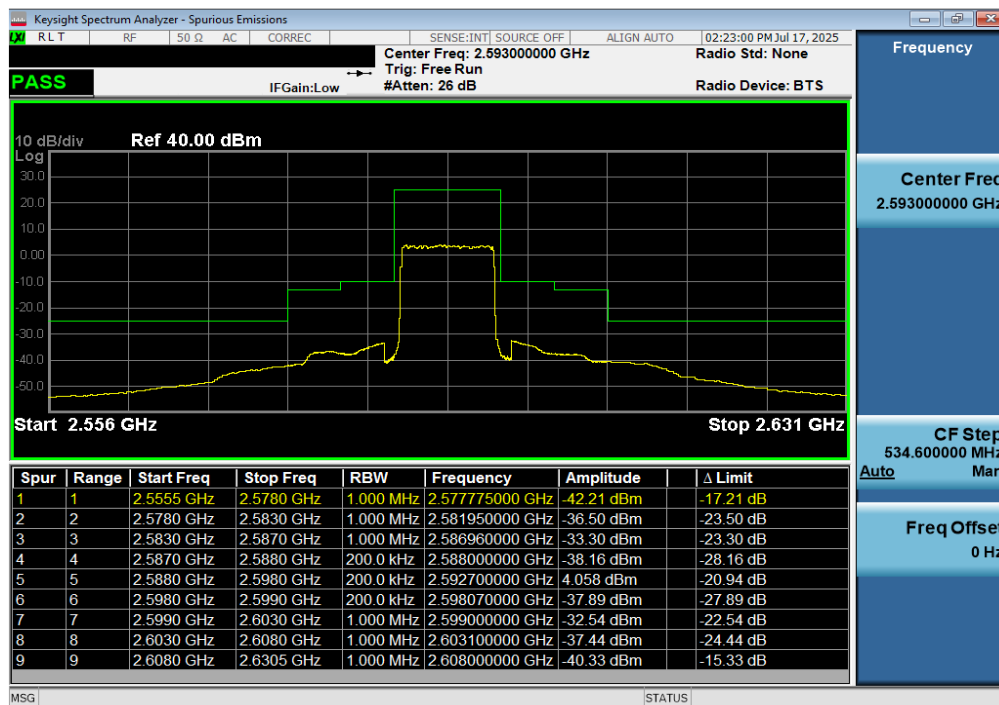
V2.2 09/07/2023

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 Materials Technology. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

NR Band n41



Plot 7-120. Lower ACP Plot (NR Band n41 - 10MHz DFT-s-OFDM QPSK – Full RB)

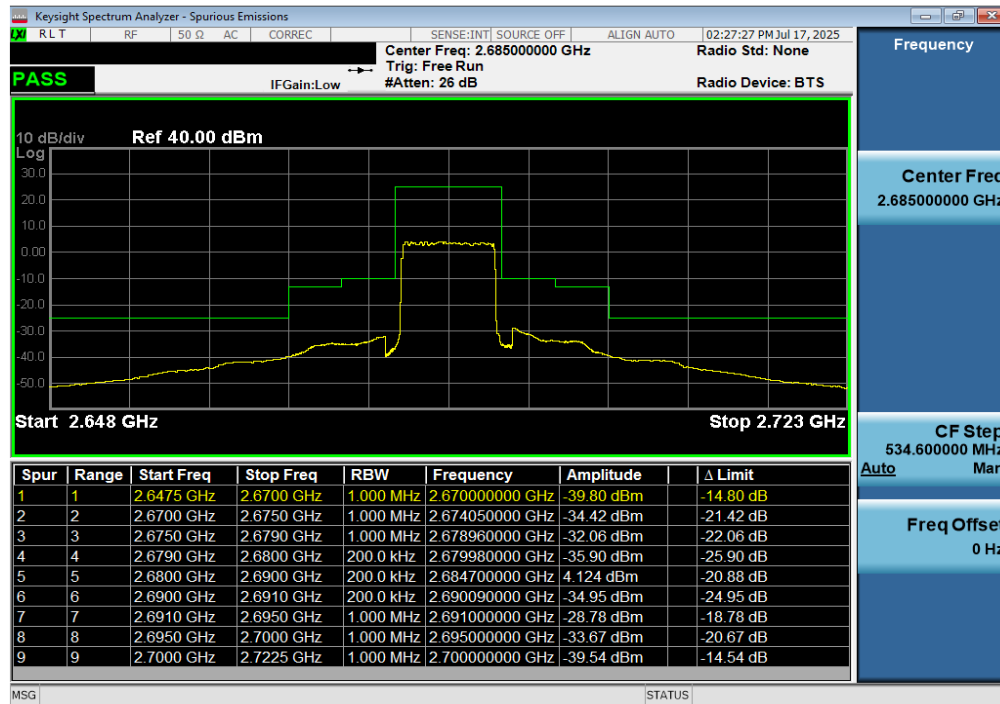


Plot 7-121. Middle ACP Plot (NR Band n41 - 10MHz DFT-s-OFDM QPSK – Full RB)

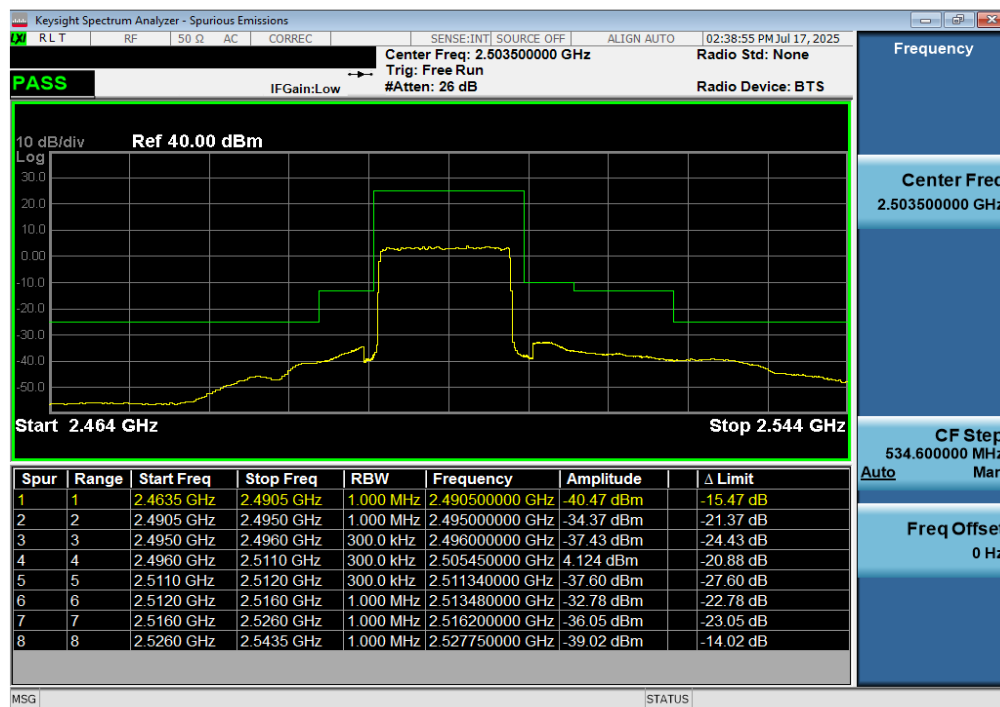
FCC ID: BCG-A3281	<p>element</p> <p>PART 27 MEASUREMENT REPORT</p>		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 82 of 112

V2.2 09/07/2023

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 Materials Technology. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



Plot 7-122. Upper ACP Plot (NR Band n41 - 10MHz DFT-s-OFDM QPSK – Full RB)

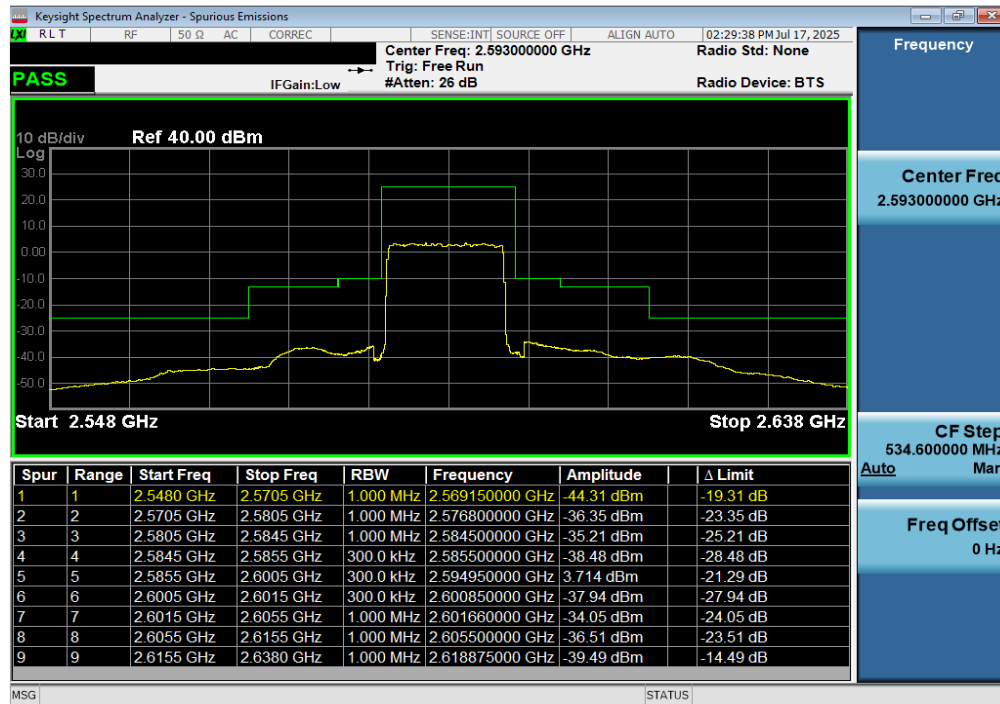


Plot 7-123. Lower ACP Plot (NR Band n41 - 15MHz DFT-s-OFDM QPSK – Full RB)

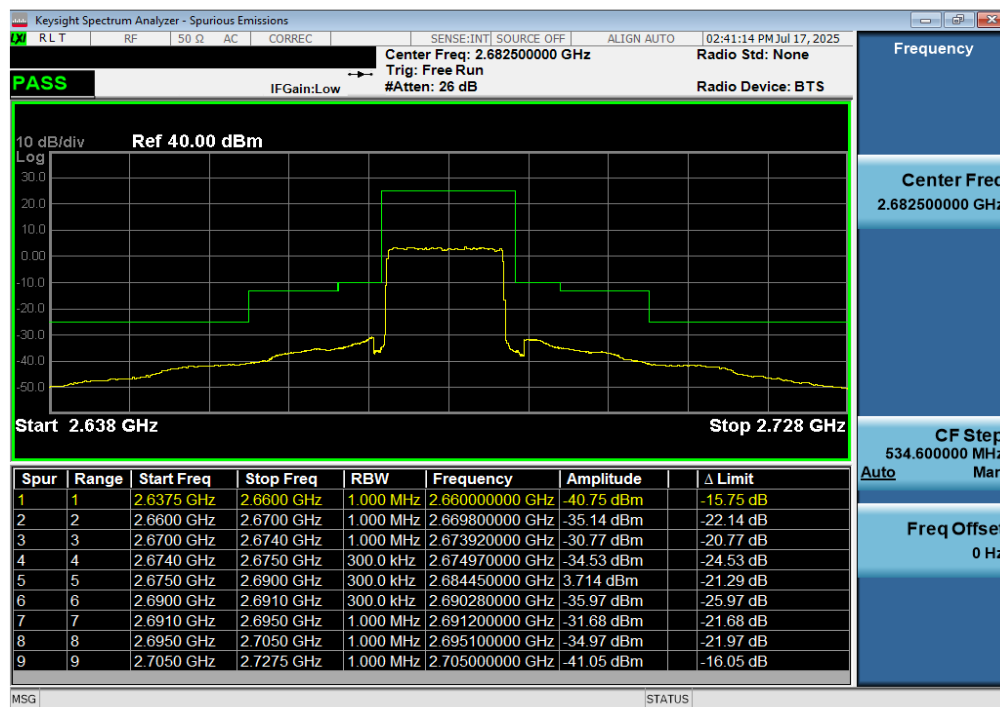
FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 83 of 112

V2.2 09/07/2023

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 Materials Technology. If you have any questions about this or have an enquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.

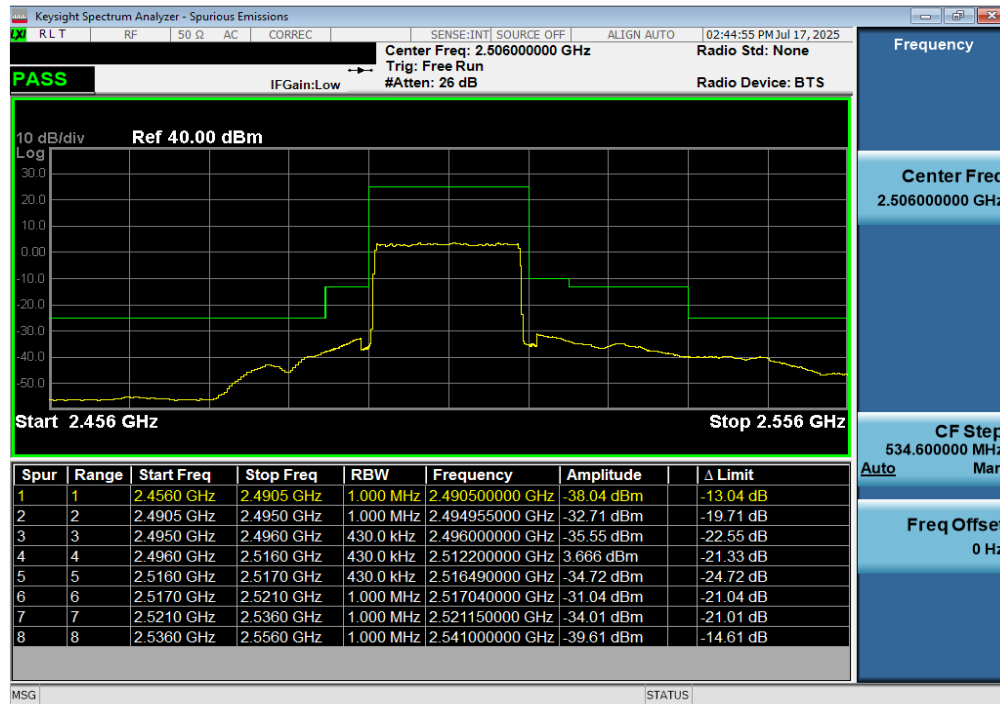


Plot 7-124. Middle ACP Plot (NR Band n41 - 15MHz DFT-s-OFDM QPSK - Full RB)

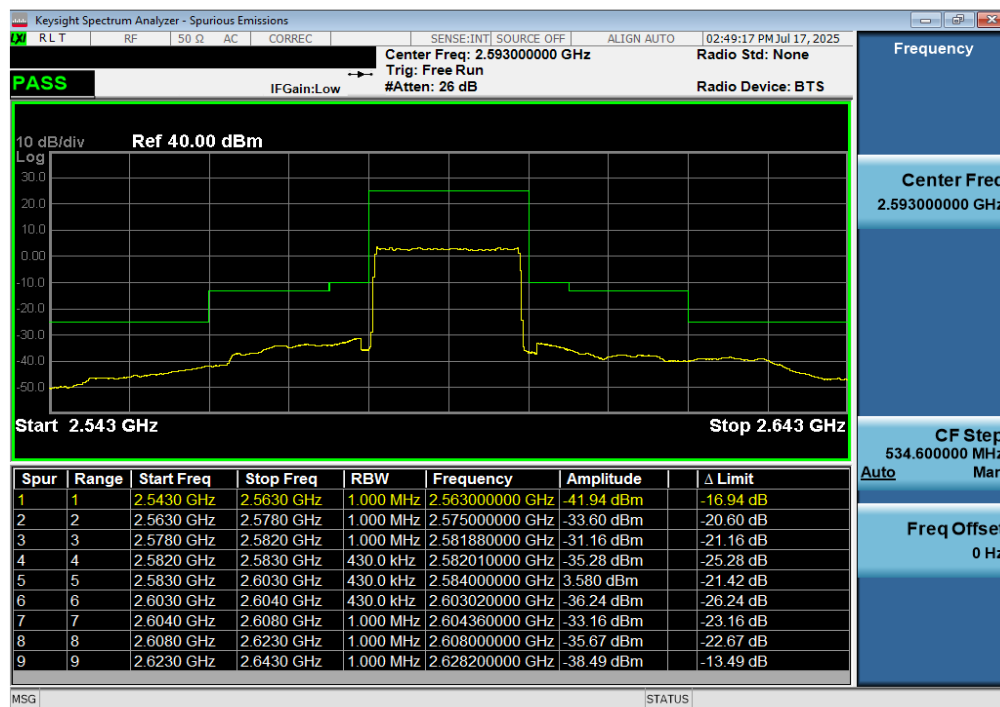


Plot 7-125. Upper ACP Plot (NR Band n41 - 15MHz DFT-s-OFDM QPSK - Full RB)

FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 84 of 112

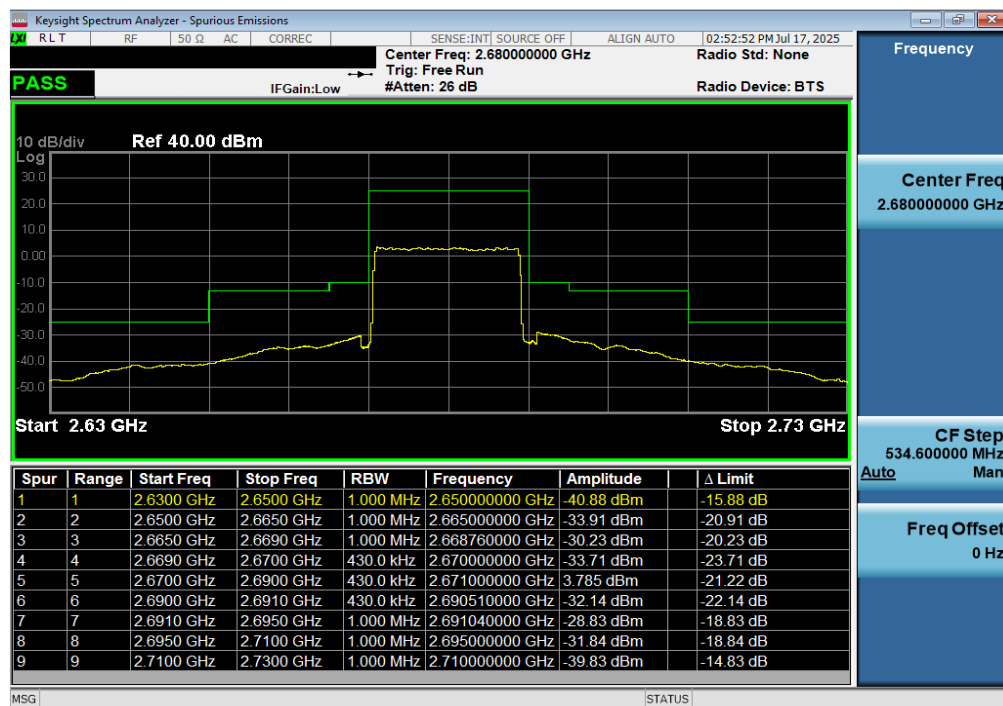


Plot 7-126. Lower ACP Plot (NR Band n41 - 20MHz DFT-s-OFDM QPSK – Full RB)



Plot 7-127. Middle ACP Plot (NR Band n41 - 20MHz DFT-s-OFDM QPSK – Full RB)

FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 85 of 112



Plot 7-128. Upper ACP Plot (NR Band n41 - 20MHz DFT-s-OFDM QPSK – Full RB)

FCC ID: BCG-A3281	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 86 of 112

V2.2 09/07/2023

7.5 Radiated Power (EIRP)

§27.50(a)(3), §27.50(h)(2)

Test Overview

Equivalent Isotropic Radiated Power (EIRP) measurements are calculated by adding highest antenna gain to maximum measured conducted output power. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI C63.26-2015 – Section 5.2.5.5

Test Settings

The relevant equation for determining the ERP or EIRP from the conducted RF output power measured is:

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

Where:

EIRP = Equivalent Isotropic Radiated Power (expressed in the same units as PMeas, typically dBW or dBm)

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

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

GT = gain of the transmitting antenna, in dBi (EIRP)

Test Setup

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

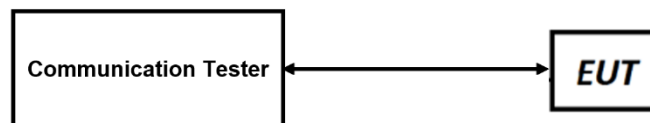


Figure 7-7. LTE EIRP Measurement Setup

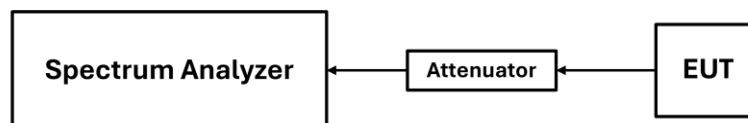




Figure 7-8. FR1 EIRP Measurement Setup

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 87 of 112

V2.2 09/07/2023

Test Notes

1. The EUT was tested in all possible test configurations. The worst case emissions are reported with the EUT modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
2. This unit was tested with its standard battery.
3. The Level (dBm) readings in the table were taken with a correction table loaded into the base station simulator. The correction table was used to account for the signal attenuation in the connecting cable between the transmitter and antenna.
4. 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.

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 88 of 112


V2.2 09/07/2023

7.5.1 Antenna FCM EIRP Data

LTE Band 7

Bandwidth	Mod.	Frequency [MHz]	Ant. Gain [dBi]	RB Size/Offset	Conducted Power [dBm]	EIRP [dBm]	EIRP [mW]	EIRP Limit [dBm]	Margin [dB]
5 MHz	QPSK	2502.5	-1.65	1 / 12	24.91	23.26	211.836	33.01	-9.75
		2535.0	-1.65	1 / 0	25.05	23.40	218.776	33.01	-9.61
		2567.5	-1.65	1 / 24	24.95	23.30	213.796	33.01	-9.71
	16-QAM	2535.0	-1.65	1 / 12	24.17	22.52	178.649	33.01	-10.49
10 MHz	QPSK	2505.0	-1.65	1 / 25	25.11	23.46	221.820	33.01	-9.55
		2535.0	-1.65	1 / 49	25.19	23.54	225.944	33.01	-9.47
		2565.0	-1.65	1 / 0	25.17	23.52	224.905	33.01	-9.49
	16-QAM	2565.0	-1.65	1 / 49	24.16	22.51	178.238	33.01	-10.50
15 MHz	QPSK	2507.5	-1.65	1 / 0	25.12	23.47	222.331	33.01	-9.54
		2535.0	-1.65	1 / 37	25.20	23.55	226.464	33.01	-9.46
		2562.5	-1.65	1 / 37	25.17	23.52	224.905	33.01	-9.49
	16-QAM	2507.5	-1.65	1 / 37	24.10	22.45	175.792	33.01	-10.56
20 MHz	QPSK	2510.0	-1.65	1 / 50	25.13	23.48	222.844	33.01	-9.53
		2535.0	-1.65	1 / 50	25.15	23.50	223.872	33.01	-9.51
		2560.0	-1.65	1 / 50	25.14	23.49	223.357	33.01	-9.52
	16-QAM	2560.0	-1.65	1 / 0	24.22	22.57	180.717	33.01	-10.44

Table 7-2. Antenna FCM EIRP Data (LTE Band 7)


FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 89 of 112

V2.2 09/07/2023

LTE Band 41

Bandwidth	Mod.	Frequency [MHz]	Ant. Gain [dBi]	RB Size/Offset	Conducted Power [dBm]	EIRP [dBm]	EIRP [mW]	EIRP Limit [dBm]	Margin [dB]
5 MHz	QPSK	2498.5	-1.92	1 / 24	25.20	23.28	212.814	33.01	-9.73
		2593.0	-1.92	1 / 12	24.92	23.00	199.526	33.01	-10.01
		2687.5	-1.92	1 / 0	25.09	23.17	207.491	33.01	-9.84
	16-QAM	2498.5	-1.92	1 / 0	24.22	22.30	169.824	33.01	-10.71
10 MHz	QPSK	2501.0	-1.92	1 / 0	25.01	23.09	203.704	33.01	-9.92
		2593.0	-1.92	1 / 49	25.20	23.28	212.814	33.01	-9.73
		2685.0	-1.92	1 / 0	25.02	23.10	204.174	33.01	-9.91
	16-QAM	2685.0	-1.92	1 / 0	24.15	22.23	167.109	33.01	-10.78
15 MHz	QPSK	2503.5	-1.92	1 / 74	25.15	23.23	210.378	33.01	-9.78
		2593.0	-1.92	1 / 0	25.20	23.28	212.814	33.01	-9.73
		2682.5	-1.92	1 / 37	24.98	23.06	202.302	33.01	-9.95
	16-QAM	2503.5	-1.92	1 / 37	24.24	22.32	170.608	33.01	-10.69
20 MHz	QPSK	2506.0	-1.92	1 / 50	25.19	23.27	212.324	33.01	-9.74
		2593.0	-1.92	1 / 50	24.97	23.05	201.837	33.01	-9.96
		2680.0	-1.92	1 / 0	25.20	23.28	212.814	33.01	-9.73
	16-QAM	2593.0	-1.92	1 / 99	24.20	22.28	169.044	33.01	-10.73

Table 7-3. Antenna FCM EIRP Data (LTE Band 41)


FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 90 of 112

V2.2 09/07/2023

NR Band n7

Bandwidth	Mod.	Frequency [MHz]	Ant. Gain [dBi]	RB Size/Offset	Conducted Power [dBm]	EIRP [dBm]	EIRP [mW]	EIRP Limit [dBm]	Margin [dB]
5 MHz	$\pi/2$ BPSK	2502.5	-1.65	1 / 1	25.12	23.47	222.331	33.01	-9.54
		2535.0	-1.65	1 / 1	25.12	23.47	222.331	33.01	-9.54
		2567.5	-1.65	1 / 23	25.11	23.46	221.820	33.01	-9.55
	QPSK	2502.5	-1.65	1 / 23	25.18	23.53	225.424	33.01	-9.48
		2535.0	-1.65	1 / 12	25.11	23.46	221.820	33.01	-9.55
		2567.5	-1.65	1 / 12	25.20	23.55	226.464	33.01	-9.46
	16-QAM	2502.5	-1.65	1 / 1	24.18	22.53	179.061	33.01	-10.48
	64-QAM	2535.0	-1.65	1 / 23	23.17	21.52	141.906	33.01	-11.49
10 MHz	$\pi/2$ BPSK	2505.0	-1.65	1 / 50	25.14	23.49	223.357	33.01	-9.52
		2535.0	-1.65	1 / 1	25.20	23.55	226.464	33.01	-9.46
		2565.0	-1.65	1 / 1	25.17	23.52	224.905	33.01	-9.49
	QPSK	2505.0	-1.65	1 / 50	25.18	23.53	225.424	33.01	-9.48
		2535.0	-1.65	1 / 50	24.87	23.22	209.894	33.01	-9.79
		2565.0	-1.65	1 / 1	25.14	23.49	223.357	33.01	-9.52
	16-QAM	2535.0	-1.65	1 / 25	24.20	22.55	179.887	33.01	-10.46
	64-QAM	2505.0	-1.65	1 / 25	23.19	21.54	142.561	33.01	-11.47
15 MHz	$\pi/2$ BPSK	2507.5	-1.65	1 / 73	25.20	23.55	226.464	33.01	-9.46
		2535.0	-1.65	1 / 1	25.10	23.45	221.309	33.01	-9.56
		2562.5	-1.65	1 / 1	24.82	23.17	207.491	33.01	-9.84
	QPSK	2507.5	-1.65	1 / 73	25.17	23.52	224.905	33.01	-9.49
		2535.0	-1.65	1 / 1	24.94	23.29	213.304	33.01	-9.72
		2562.5	-1.65	1 / 37	24.91	23.26	211.836	33.01	-9.75
	16-QAM	2562.5	-1.65	1 / 1	24.17	22.52	178.649	33.01	-10.49
	64-QAM	2535.0	-1.65	1 / 1	23.07	21.42	138.676	33.01	-11.59
20 MHz	$\pi/2$ BPSK	2510.0	-1.65	1 / 98	25.09	23.44	220.800	33.01	-9.57
		2535.0	-1.65	1 / 98	25.20	23.55	226.464	33.01	-9.46
		2560.0	-1.65	1 / 98	25.13	23.48	222.844	33.01	-9.53
	QPSK	2510.0	-1.65	1 / 50	25.19	23.54	225.944	33.01	-9.47
		2535.0	-1.65	1 / 1	25.14	23.49	223.357	33.01	-9.52
		2560.0	-1.65	1 / 98	24.77	23.12	205.116	33.01	-9.89
	16-QAM	2510.0	-1.65	1 / 50	24.10	22.45	175.792	33.01	-10.56
	64-QAM	2510.0	-1.65	1 / 1	23.15	21.50	141.254	33.01	-11.51

Table 7-4. Antenna FCM EIRP Data (NR Band n7)


FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 91 of 112

V2.2 09/07/2023

NR Band n41

Bandwidth	Mod.	Frequency [MHz]	Ant. Gain [dBi]	RB Size/Offset	Conducted Power [dBm]	EIRP [dBm]	EIRP [mW]	EIRP Limit [dBm]	Margin [dB]
10MHz	$\pi/2$ BPSK	2501.0	-1.92	1 / 25	25.07	23.15	206.538	33.01	-9.86
		2593.0	-1.92	1 / 25	25.05	23.13	205.589	33.01	-9.88
		2685.0	-1.92	1 / 49	25.18	23.26	211.836	33.01	-9.75
	QPSK	2501.0	-1.92	1 / 1	25.16	23.24	210.863	33.01	-9.77
		2593.0	-1.92	1 / 25	25.20	23.28	212.814	33.01	-9.73
		2685.0	-1.92	1 / 1	25.02	23.10	204.174	33.01	-9.91
	16-QAM	2685.0	-1.92	1 / 25	24.09	22.17	164.816	33.01	-10.84
	64-QAM	2501.0	-1.92	1 / 25	23.14	21.22	132.434	33.01	-11.79
15MHz	$\pi/2$ BPSK	2503.5	-1.92	1 / 76	25.20	23.28	212.814	33.01	-9.73
		2593.0	-1.92	1 / 76	25.09	23.17	207.491	33.01	-9.84
		2682.5	-1.92	1 / 76	25.18	23.26	211.836	33.01	-9.75
	QPSK	2503.5	-1.92	1 / 76	25.16	23.24	210.863	33.01	-9.77
		2593.0	-1.92	1 / 39	25.15	23.23	210.378	33.01	-9.78
		2682.5	-1.92	1 / 76	25.11	23.19	208.449	33.01	-9.82
	16-QAM	2503.5	-1.92	1 / 76	24.29	22.37	172.584	33.01	-10.64
	64-QAM	2593.0	-1.92	1 / 76	23.24	21.32	135.519	33.01	-11.69
20MHz	$\pi/2$ BPSK	2506.0	-1.92	1 / 104	25.00	23.08	203.236	33.01	-9.93
		2593.0	-1.92	1 / 1	25.14	23.22	209.894	33.01	-9.79
		2680.0	-1.92	1 / 53	25.00	23.08	203.236	33.01	-9.93
	QPSK	2506.0	-1.92	1 / 53	25.16	23.24	210.863	33.01	-9.77
		2593.0	-1.92	1 / 53	24.97	23.05	201.837	33.01	-9.96
		2680.0	-1.92	1 / 1	25.20	23.28	212.814	33.01	-9.73
	16-QAM	2680.0	-1.92	1 / 104	24.16	22.24	167.494	33.01	-10.77
	64-QAM	2680.0	-1.92	1 / 104	23.18	21.26	133.660	33.01	-11.75

Table 7-5. Antenna FCM EIRP Data (NR Band n41)

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 92 of 112

V2.2 09/07/2023

7.6 Radiated Spurious Emissions

§2.1053, 27.53(a), 27.53(m)

Test Overview


Radiated spurious emissions measurements are performed using the field strength conversion method described in KDB 971168 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using horizontally and vertically polarized broadband hybrid antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed while the EUT is operating at maximum power and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW $\geq 3 \times$ RBW
3. Span = 1.5 times the OBW
4. No. of sweep points $\geq 2 \times$ span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 93 of 112

V2.2 09/07/2023

Test Setup

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

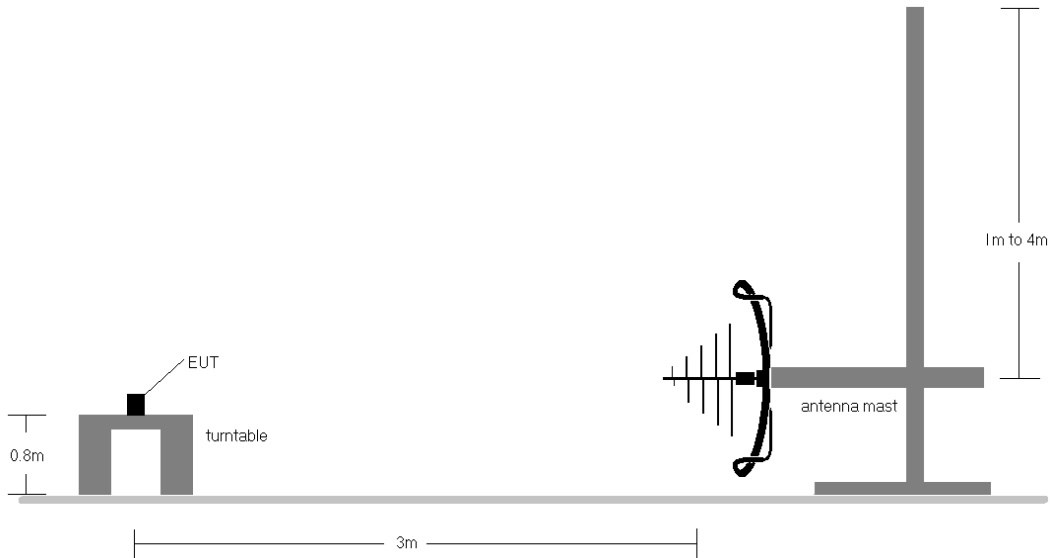


Figure 7-9. Test Instrument & Measurement Setup < 1GHz

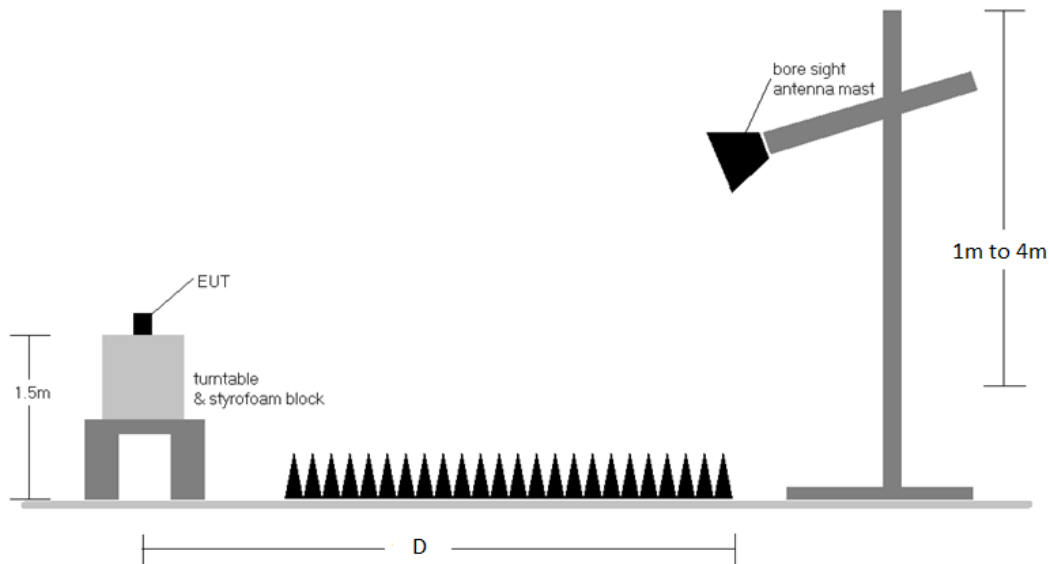




Figure 7-10. Test Instrument & Measurement Setup >1 GHz

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 94 of 112

V2.2 09/07/2023

Test Notes

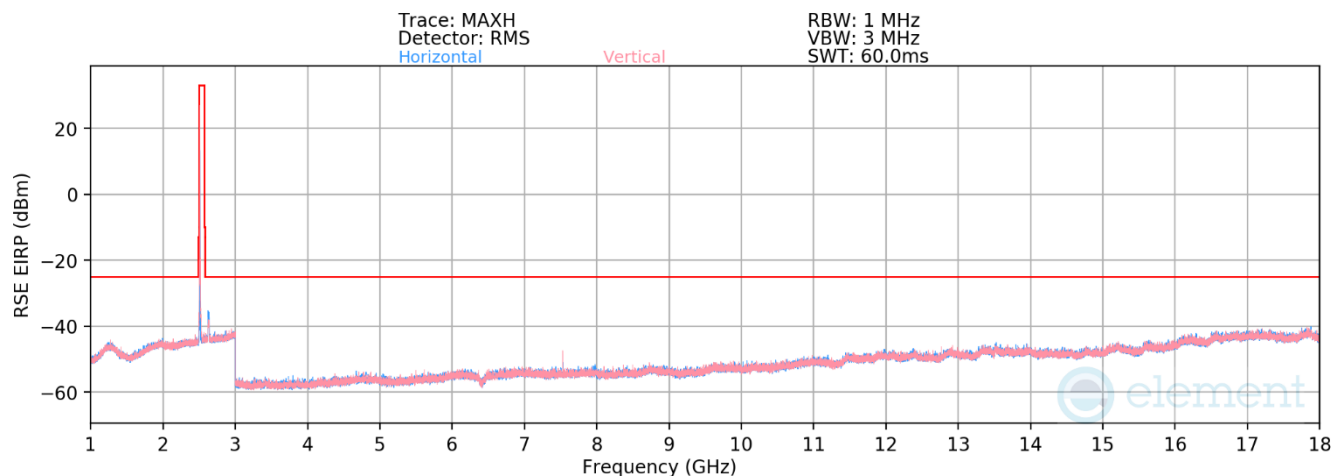
1. Field strengths are calculated using the Measurement quantity conversions in KDB 971168 v03r01 Section 5.8.4.
 - a. $E(\text{dB}\mu\text{V/m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
 - b. $\text{EIRP (dBm)} = E(\text{dB}\mu\text{V/m}) + 20\log D - 104.8$; 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.

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 95 of 112

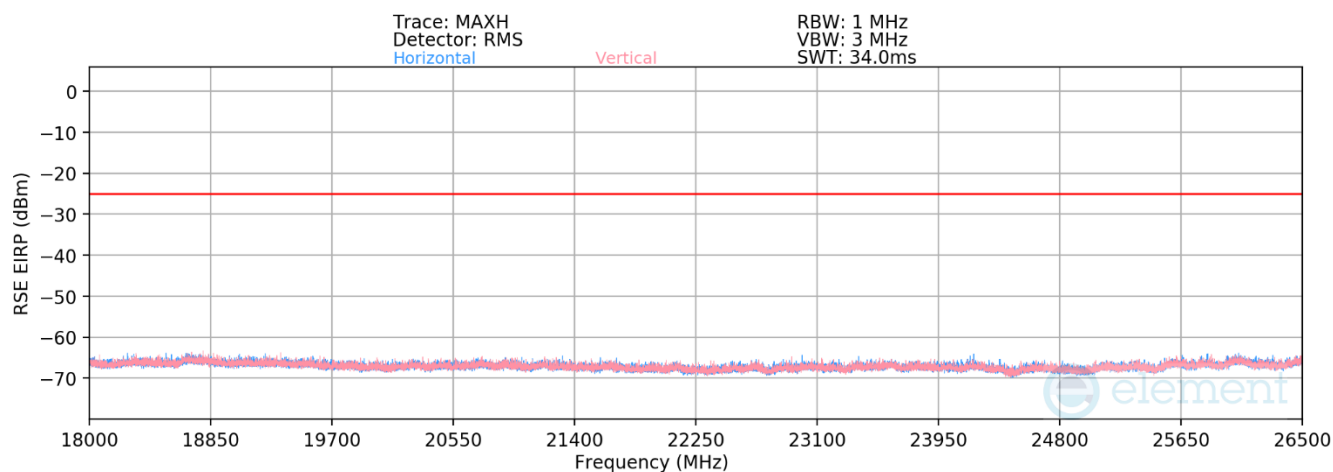
V2.2 09/07/2023

7.6.1 Antenna FCM Radiated Spurious Emission Measurements


LTE Band 7



Plot 7-129. Antenna FCM Radiated Spurious Emission above 1GHz (LTE Band 7)



Plot 7-130. Antenna FCM Radiated Spurious Emission above 18GHz (LTE Band 7)

FCC ID: BCG-A3281		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 96 of 112

V2.2 09/07/2023

Bandwidth (MHz):	20
Frequency (MHz):	2510.0
RB / 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]
5020.0	V	-	-	-79.16	5.63	33.47	-61.79	-25.00	-36.79
7530.0	V	248	339	-74.30	8.40	41.11	-54.15	-25.00	-29.15
10040.0	V	-	-	-80.87	10.80	36.93	-58.33	-25.00	-33.33
12550.0	V	-	-	-82.49	15.80	40.31	-54.95	-25.00	-29.95
15060.0	V	-	-	-82.54	17.95	42.41	-52.85	-25.00	-27.85

Table 7-6. Radiated Spurious Data (LTE Band 7 – Low Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2535.0
RB / 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]
5070.0	V	-	-	-79.35	5.70	33.36	-61.90	-25.00	-36.90
7605.0	V	248	339	-75.90	8.88	39.98	-55.28	-25.00	-30.28
10140.0	V	-	-	-80.95	11.29	37.34	-57.92	-25.00	-32.92
12675.0	V	-	-	-82.48	16.20	40.72	-54.54	-25.00	-29.54
15210.0	V	-	-	-82.85	19.24	43.40	-51.86	-25.00	-26.86

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

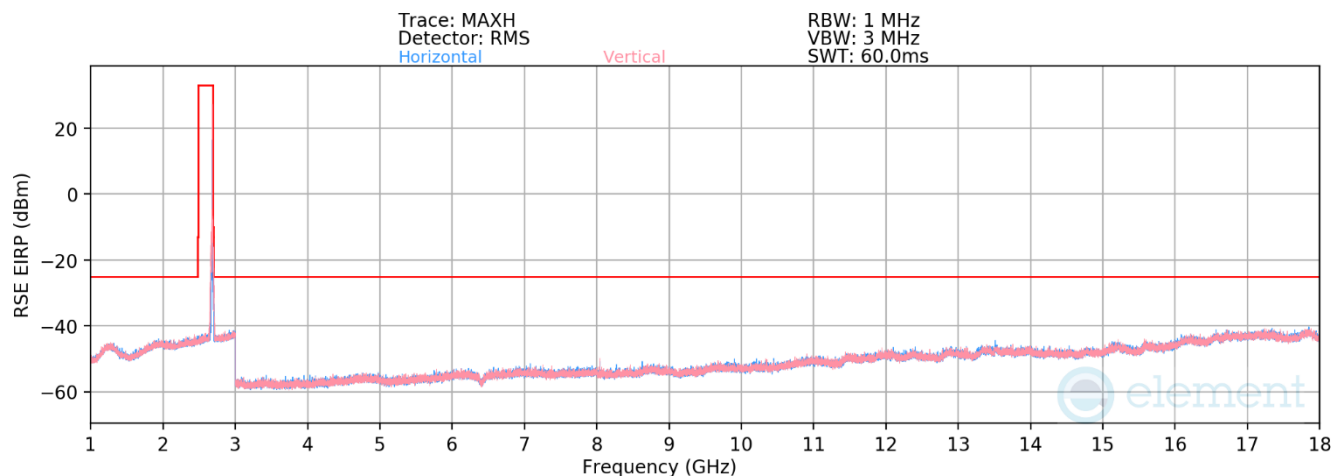
Bandwidth (MHz):	20
Frequency (MHz):	2560.0
RB / Offset:	1 / 50

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]
5120.00	V	-	-	-79.56	5.81	33.25	-62.01	-25.00	-37.01
7680.00	V	342	341	-80.50	9.21	35.71	-59.55	-25.00	-34.55
10240.00	V	-	-	-80.75	11.23	37.48	-57.78	-25.00	-32.78
12800.00	V	-	-	-82.55	16.22	40.67	-54.59	-25.00	-29.59
15360.00	V	-	-	-83.41	18.78	42.37	-52.88	-25.00	-27.88

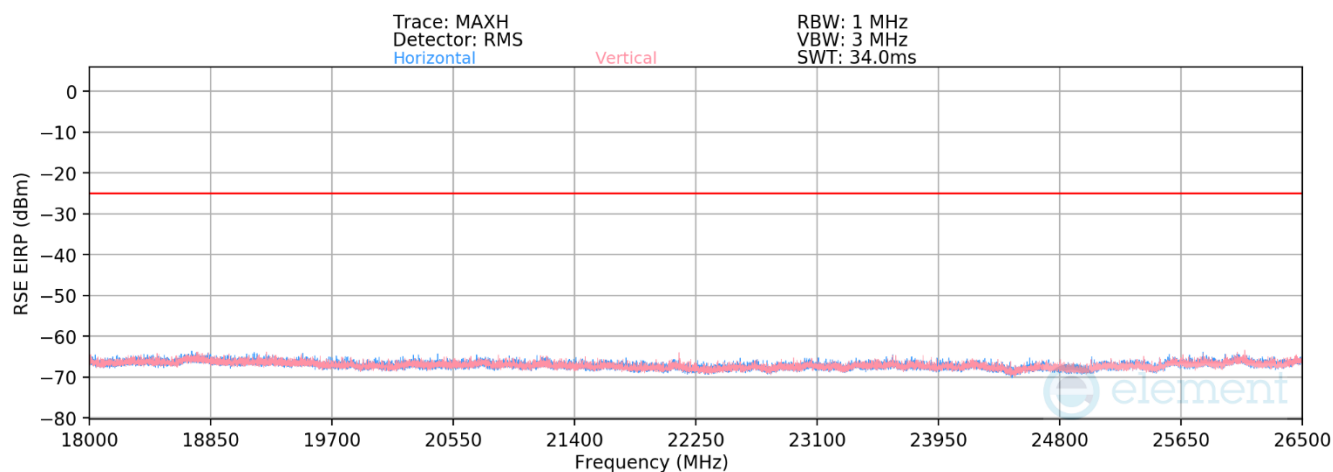
Table 7-8. Radiated Spurious Data (LTE Band 7 – High Channel)

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 97 of 112


LTE Band 41



Plot 7-131. Antenna FCM Radiated Spurious Emission above 1GHz (LTE Band 41)



Plot 7-132. Antenna FCM Radiated Spurious Emission above 19GHz (LTE Band 41)

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 98 of 112

V2.2 09/07/2023

Bandwidth (MHz):	20
Frequency (MHz):	2506.0
RB / 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]
5012.0	V	-	-	-78.64	5.64	34.00	-61.25	-25.00	-36.25
7518.0	V	250	347	-76.43	8.91	39.49	-55.77	-25.00	-30.77
10024.0	V	-	-	-80.32	10.81	37.49	-57.77	-25.00	-32.77
12530.0	V	-	-	-82.11	15.64	40.53	-54.73	-25.00	-29.73
15036.0	V	-	-	-82.33	18.00	42.67	-52.59	-25.00	-27.59

Table 7-9. Radiated Spurious Data (LTE Band 41 – Low Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2593.0
RB / 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]
5186.0	V	-	-	-79.04	5.86	33.82	-61.44	-25.00	-36.44
7779.0	V	252	347	-74.65	8.70	41.05	-54.21	-25.00	-29.21
10372.0	V	-	-	-80.89	11.74	37.84	-57.41	-25.00	-32.41
12965.0	V	-	-	-82.69	16.73	41.05	-54.21	-25.00	-29.21
15558.0	V	-	-	-82.80	19.53	43.73	-51.52	-25.00	-26.52

Table 7-10. Radiated Spurious Data (LTE Band 41 – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2680.0
RB / Offset:	1 / 50

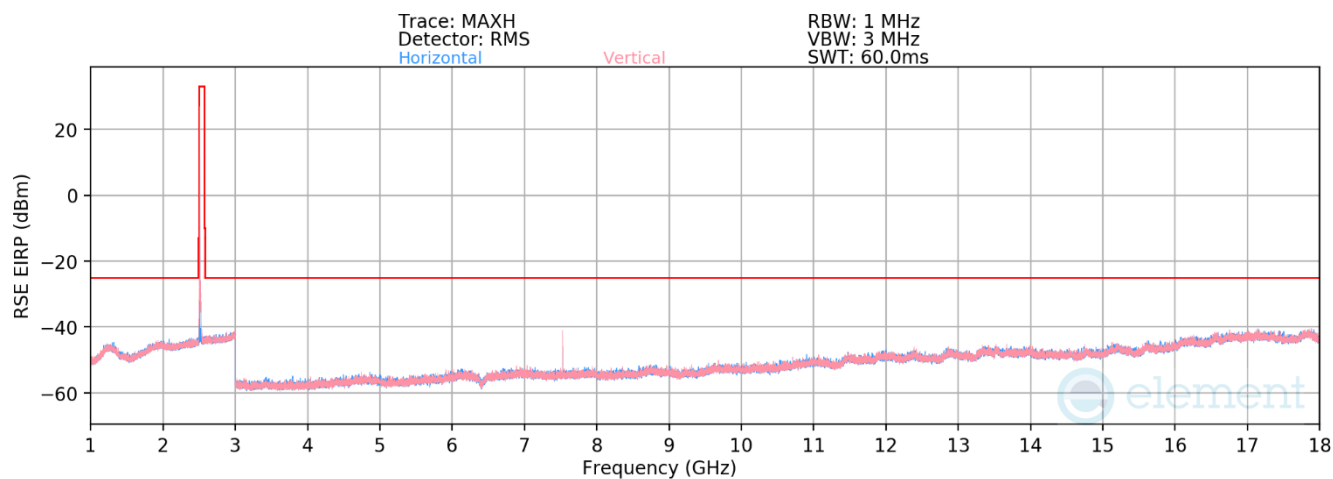
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5360.0	V	-	-	-78.80	5.93	34.12	-61.13	-25.00	-36.13
8040.0	V	112	336	-73.31	8.66	42.35	-52.91	-25.00	-27.91
10720.0	V	218	10	-79.50	12.32	39.82	-55.44	-25.00	-30.44
13400.0	V	-	-	-82.83	17.31	41.49	-53.77	-25.00	-28.77
16080.0	V	-	-	-82.91	21.03	45.12	-50.14	-25.00	-25.14

Table 7-11. Radiated Spurious Data (LTE Band 41 – High Channel)

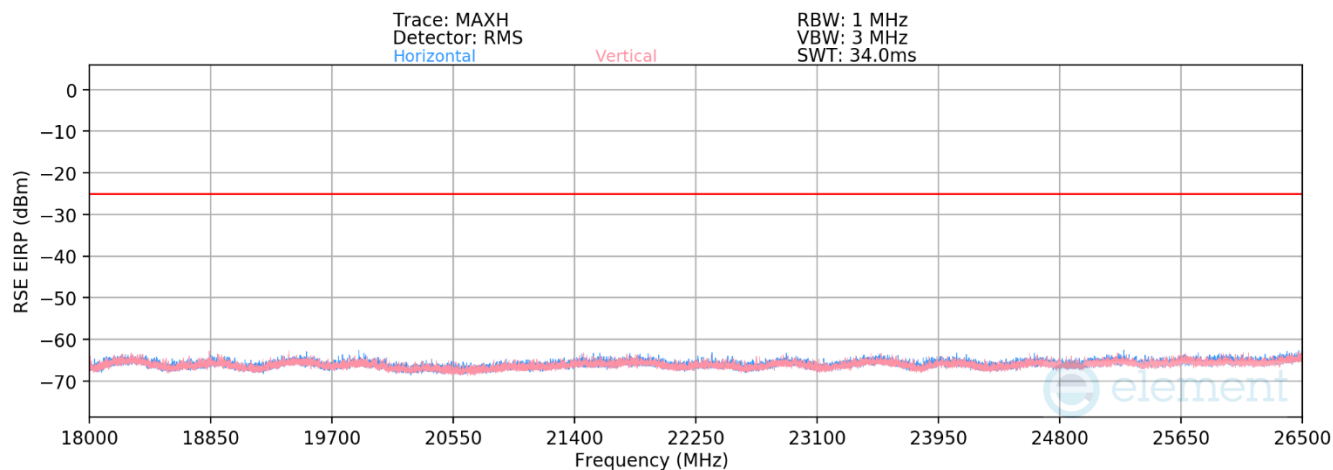
FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 99 of 112

V2.2 09/07/2023


NR Band n7



Plot 7-133. Antenna FCM Radiated Spurious Plot 1GHz – 18GHz (NR Band n7)



Plot 7-134. Antenna FCM Radiated Spurious Emission above 18GHz (NR Band n7)

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 100 of 112

V2.2 09/07/2023

Bandwidth (MHz):	20
Frequency (MHz):	2510.0
RB / 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]
5020.0	V	-	-	-79.08	5.63	33.55	-61.71	-25.00	-36.71
7530.0	V	264	11	-67.24	8.40	48.16	-47.09	-25.00	-22.09
10040.0	V	-	-	-80.97	10.84	36.87	-58.39	-25.00	-33.39
12550.0	V	-	-	-82.49	15.80	40.30	-54.95	-25.00	-29.95
15060.0	V	-	-	-82.88	18.16	42.28	-52.97	-25.00	-27.97

Table 7-12. Radiated Spurious Data (NR Band n7 – Low Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2535.0
RB / 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]
5070.0	V	-	-	-79.10	5.70	33.60	-61.66	-25.00	-36.66
7605.0	V	119	158	-74.53	8.88	41.35	-53.91	-25.00	-28.91
10140.0	V	-	-	-81.22	11.29	37.07	-58.19	-25.00	-33.19
12675.0	V	-	-	-82.49	16.20	40.72	-54.54	-25.00	-29.54
15210.0	V	-	-	-82.99	19.24	43.25	-52.01	-25.00	-27.01

Table 7-13. Radiated Spurious Data (NR Band n7 – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2560.0
RB / Offset:	1 / 50

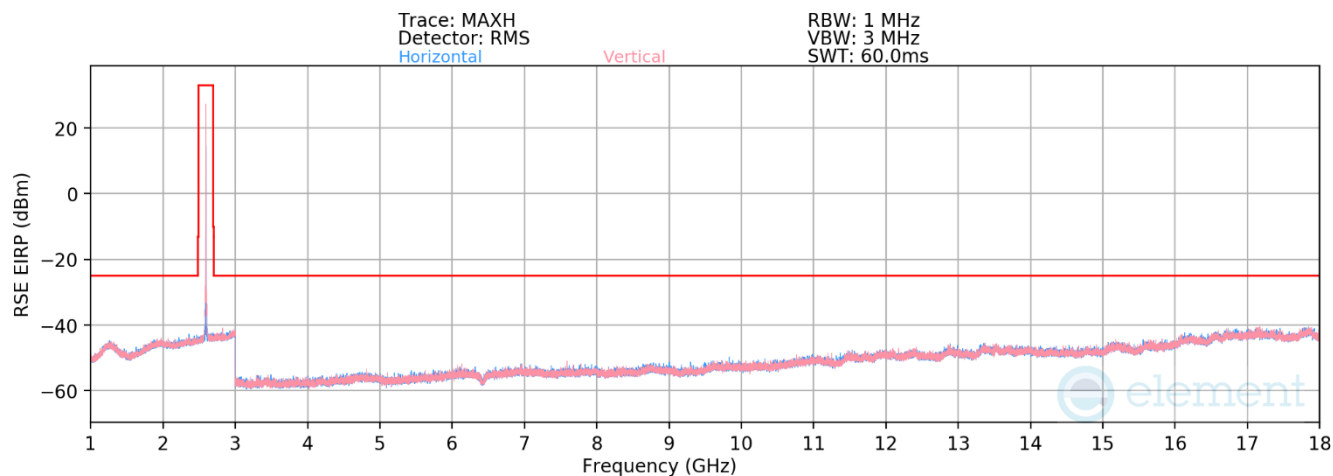
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5120.0	V	-	-	-79.77	5.77	33.01	-62.25	-25.00	-37.25
7680.0	V	268	352	-70.80	9.26	45.47	-49.79	-25.00	-24.79
10240.0	V	-	-	-81.02	11.46	37.44	-57.82	-25.00	-32.82
12800.0	V	-	-	-82.65	16.21	40.57	-54.69	-25.00	-29.69
15360.0	V	-	-	-83.50	18.77	42.27	-52.99	-25.00	-27.99

Table 7-14. Radiated Spurious Data (NR Band n7 – High Channel)

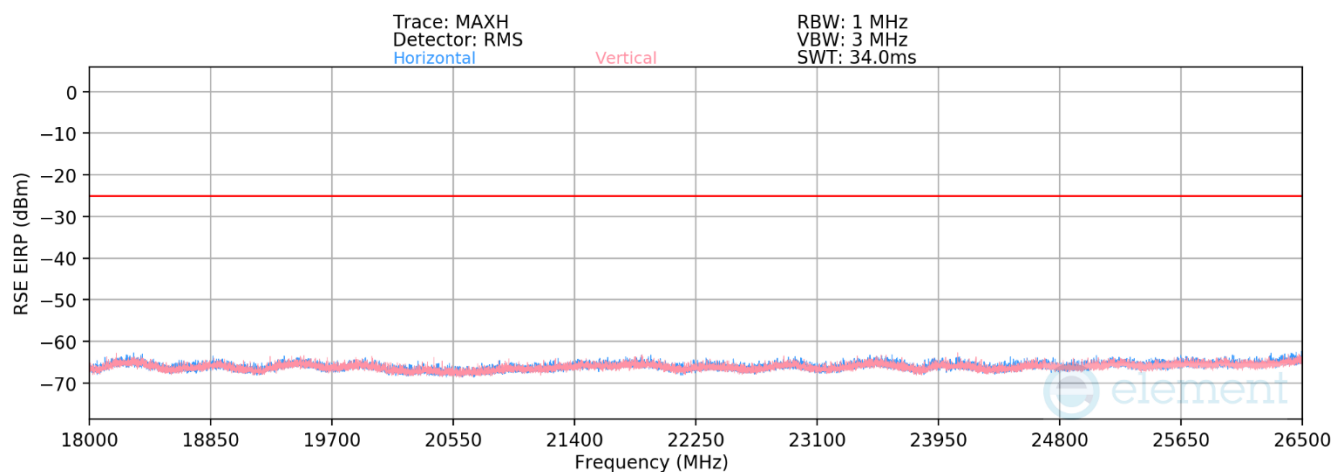
FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 101 of 112

V2.2 09/07/2023


NR Band n41



Plot 7-135. Antenna FCM Radiated Spurious Plot 1GHz – 18GHz (NR Band n41)



Plot 7-136. Antenna FCM Radiated Spurious Emission above 18GHz (NR Band n41)

FCC ID: BCG-A3281		PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 102 of 112

V2.2 09/07/2023

Bandwidth (MHz):	20
Frequency (MHz):	2506.0
RB / 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]
5012.0	V	-	-	-78.71	5.78	34.06	-61.19	-25.00	-36.19
7518.0	V	272	322	-75.54	8.71	40.17	-55.09	-25.00	-30.09
10024.0	V	-	-	-80.45	10.82	37.36	-57.89	-25.00	-32.89
12530.0	V	-	-	-82.06	15.68	40.62	-54.64	-25.00	-29.64
15036.0	V	-	-	-82.14	18.04	42.89	-52.37	-25.00	-27.37

Table 7-15. Radiated Spurious Data (NR Band n41 – Low Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2593.0
RB / 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]
5186.0	V	-	-	-78.78	5.79	34.01	-61.25	-25.00	-36.25
7779.0	V	103	346	-73.34	8.63	42.28	-52.97	-25.00	-27.97
10372.0	V	-	-	-80.87	11.72	37.85	-57.41	-25.00	-32.41
12965.0	V	-	-	-82.46	16.66	41.20	-54.05	-25.00	-29.05
15558.0	V	-	-	-82.77	19.38	43.60	-51.66	-25.00	-26.66

Table 7-16. Radiated Spurious Data (NR Band n41 – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2680.0
RB / 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]
5360.0	V	-	-	-79.02	6.00	33.98	-61.28	-25.00	-36.28
8040.0	V	253	333	-73.42	8.65	42.23	-53.03	-25.00	-28.03
10720.0	V	206	356	-80.28	12.34	39.05	-56.20	-25.00	-31.20
13400.0	V	-	-	-82.83	17.26	41.43	-53.83	-25.00	-28.83
16080.0	V	-	-	-82.97	21.01	45.04	-50.21	-25.00	-25.21

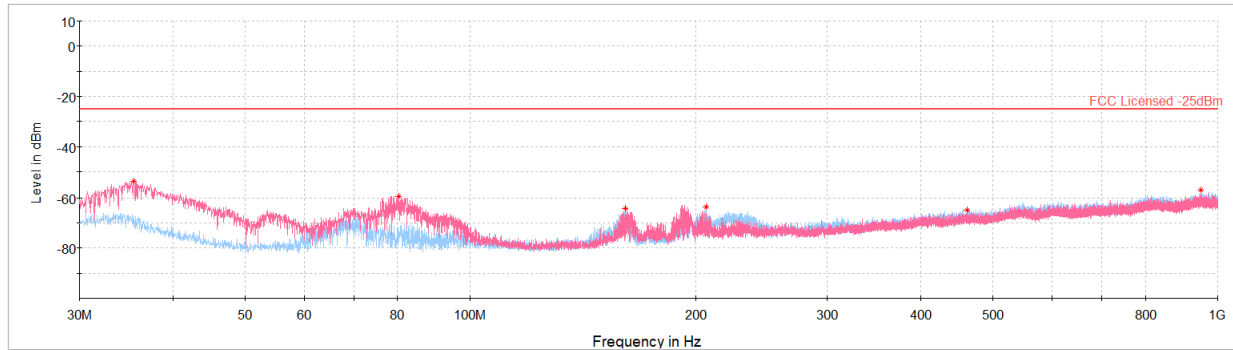
Table 7-17. Radiated Spurious Data (NR Band n41 – High Channel)

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 103 of 112

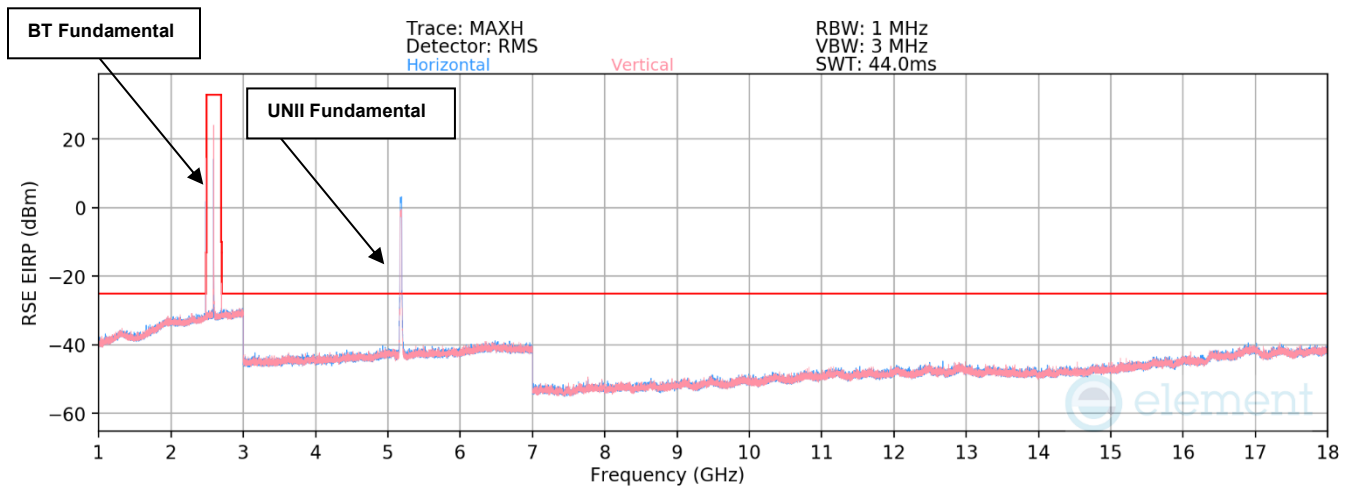
7.6.2 Simultaneous Tx Radiated Spurious Emissions Measurements

Description	Bluetooth	FR1 (Band n41)	UNII
Antenna	FCM	FCM	FCM
Channel	78	518598	36
Operating Frequency (MHz)	2480	2592.99	5180
Mode/Modulation	GFSK ePA	QPSK/1RB/10MHz	802.11n


Table 7-18. Worst Case Simultaneous Transmission Configuration



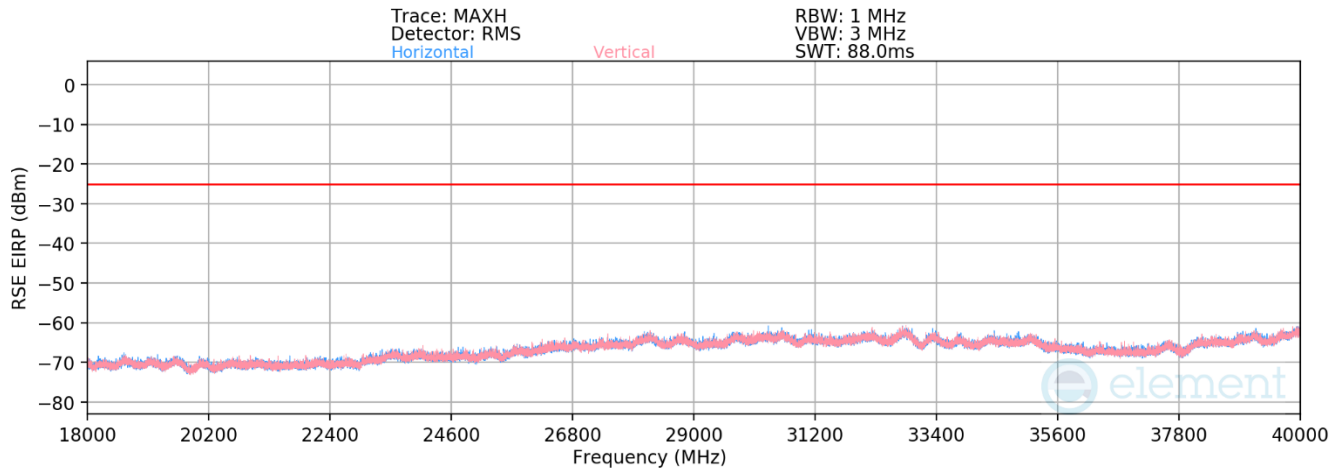
Plot 7-137. Radiated Spurious Emissions - Simultaneous Transmission 30MHz – 1GHz



Plot 7-138. Radiated Spurious Emissions - Simultaneous Transmission 1GHz – 18GHz

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch
		Page 104 of 112

V2.2 09/07/2023




Plot 7-139. Radiated Spurious Emissions - Simultaneous Transmission Above 18GHz

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
4960.00	Peak	H	-	-	-69.34	15.88	53.54	73.98	-20.44
7440.00	Peak	H	234	111	-73.51	13.10	46.59	73.98	-27.39
12400.00	Peak	H	-	-	-75.43	19.93	51.50	73.98	-22.48
10360.00	Peak	H	-	-	-74.26	16.41	49.15	68.20	-19.05
15540.00	Avg	H	-	-	-88.15	24.76	43.61	53.98	-10.37
15540.00	Peak	H	-	-	-77.13	24.76	54.63	73.98	-19.35

Table 7-19. Antenna FCM BT and UNII Harmonics Emissions Measurements in Simultaneous Transmission Mode

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]
7767.0	V	240	146	-74.38	13.38	46.00	-49.26	-25.00	-24.26
10356.0	-	-	-	-84.74	16.35	38.61	-56.65	-25.00	-31.65
12945.0	-	-	-	-86.50	21.14	41.64	-53.62	-25.00	-28.62
15534.0	-	-	-	-86.76	24.76	45.00	-50.25	-25.00	-25.25
2371.0	-	-	-	-77.84	10.81	39.97	-55.29	-25.00	-30.29
2698.0	V	109	152	-63.57	19.17	62.60	-32.66	-25.00	-7.66

Table 7-20. Antenna FCM FR1 n41 Harmonics and Intermodulation(*) Emissions Measurements in Simultaneous Transmission Mode

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 105 of 112

V2.2 09/07/2023

7.7 Frequency Stability / Temperature Variation

\$2.1055, \$27.54

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015 and TIA-603-E-2016. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.


Test Procedure Used

ANSI C63.26-2015

TIA-603-E-2016

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 106 of 112

V2.2 09/07/2023

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber. For LTE testing, in addition, the EUT was connected to a communication tester via an attenuated RF coupler.

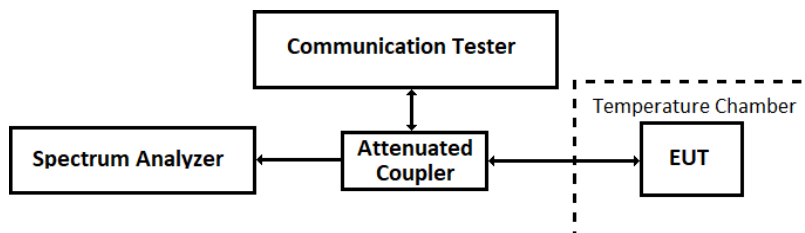


Figure 7-11. LTE Test Instrument & Measurement Setup

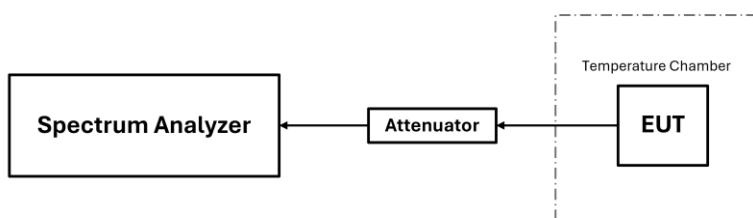



Figure 7-12. FR1 Test Instrument & Measurement Setup

Test Notes

None

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 107 of 112

V2.2 09/07/2023


Frequency Stability / Temperature Variation

LTE Band 7				
Operating Band Lower Boundary (GHz)			2.500	
Ref. Voltage (VDC):			3.80	
Voltage (%)	Power (VDC)	Temp (°C)	Measured Freq. (GHz)	Freq. Delta from Operating Range (GHz)
100 %	3.80	- 30	2.5004352	-0.0004352
		- 20	2.5001727	-0.0001727
		- 10	2.5007961	-0.0007961
		0	2.5004361	-0.0004361
		+ 10	2.5008920	-0.0008920
		+ 20 (Ref)	2.5007489	-0.0007489
		+ 30	2.5007610	-0.0007610
		+ 40	2.5003556	-0.0003556
		+ 50	2.5008599	-0.0008599
Battery Endpoint	3.40	+ 20	2.5008826	-0.0008826

Table 7-21. Lower Boundary LTE Band 7 Frequency Stability Data

LTE Band 7				
Operating Band Upper Boundary (GHz)			2.570	
Ref. Voltage (VDC):			3.80	
Voltage (%)	Power (VDC)	Temp (°C)	Measured Freq. (GHz)	Freq. Delta from Operating Range (GHz)
100 %	3.80	- 30	2.5695277	-0.0004723
		- 20	2.5695157	-0.0004843
		- 10	2.5698081	-0.0001919
		0	2.5693104	-0.0006896
		+ 10	2.5693972	-0.0006028
		+ 20 (Ref)	2.5694744	-0.0005256
		+ 30	2.5694025	-0.0005975
		+ 40	2.5695264	-0.0004736
		+ 50	2.5698984	-0.0001016
Battery Endpoint	3.40	+ 20	2.5692884	-0.0007116

Table 7-22. Upper Boundary LTE Band 7 Frequency Stability Data

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 108 of 112

V2.2 09/07/2023


Frequency Stability / Temperature Variation

LTE Band 41				
Operating Band Lower Boundary (GHz)			2.496	
Ref. Voltage (VDC):			3.80	
Voltage (%)	Power (VDC)	Temp (°C)	Measured Freq. (GHz)	Freq. Delta from Operating Range (GHz)
100 %	3.80	- 30	2.4963318	-0.0003318
		- 20	2.4968081	-0.0008081
		- 10	2.4969742	-0.0009742
		0	2.4962594	-0.0002594
		+ 10	2.4966489	-0.0006489
		+ 20 (Ref)	2.4965238	-0.0005238
		+ 30	2.4963024	-0.0003024
		+ 40	2.4964114	-0.0004114
		+ 50	2.4963904	-0.0003904
Battery Endpoint	3.40	+ 20	2.4966359	-0.0006359

Table 7-23. Lower Boundary LTE Band 41 Frequency Stability Data

LTE Band 41				
Operating Band Upper Boundary (GHz)			2.690	
Ref. Voltage (VDC):			3.80	
Voltage (%)	Power (VDC)	Temp (°C)	Measured Freq. (GHz)	Freq. Delta from Operating Range (GHz)
100 %	3.80	- 30	2.6895029	-0.0004971
		- 20	2.6893238	-0.0006762
		- 10	2.6898326	-0.0001674
		0	2.6891406	-0.0008594
		+ 10	2.6891524	-0.0008476
		+ 20 (Ref)	2.6892965	-0.0007035
		+ 30	2.6891381	-0.0008619
		+ 40	2.6895871	-0.0004129
		+ 50	2.6894249	-0.0005751
Battery Endpoint	3.40	+ 20	2.6894961	-0.0005039

Table 7-24. Upper Boundary LTE Band 41 Frequency Stability Data

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 109 of 112

V2.2 09/07/2023


Frequency Stability / Temperature Variation

NR Band n7				
Operating Band Lower Boundary (GHz)			2.500	
Ref. Voltage (VDC):			3.80	
Voltage (%)	Power (VDC)	Temp (°C)	Measured Freq. (GHz)	Freq. Delta from Operating Range (GHz)
100 %	3.80	- 30	2.5007134	-0.0007134
		- 20	2.5008123	-0.0008123
		- 10	2.5006530	-0.0006530
		0	2.5009416	-0.0009416
		+ 10	2.5003838	-0.0003838
		+ 20 (Ref)	2.5008676	-0.0008676
		+ 30	2.5001239	-0.0001239
		+ 40	2.5004413	-0.0004413
		+ 50	2.5008972	-0.0008972
Battery Endpoint	3.40	+ 20	2.5005294	-0.0005294

Table 7-25. Lower Boundary NR Band n7 Frequency Stability Data

NR Band n7				
Operating Band Upper Boundary (GHz)			2.570	
Ref. Voltage (VDC):			3.80	
Voltage (%)	Power (VDC)	Temp (°C)	Measured Freq. (GHz)	Freq. Delta from Operating Range (GHz)
100 %	3.80	- 30	2.5693768	-0.0006232
		- 20	2.5697743	-0.0002257
		- 10	2.5696728	-0.0003272
		0	2.5691998	-0.0008002
		+ 10	2.5692327	-0.0007673
		+ 20 (Ref)	2.5694446	-0.0005554
		+ 30	2.5693526	-0.0006474
		+ 40	2.5694996	-0.0005004
		+ 50	2.5692859	-0.0007141
Battery Endpoint	3.40	+ 20	2.5694681	-0.0005319

Table 7-26. Upper Boundary NR Band n7 Frequency Stability Data

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 110 of 112

V2.2 09/07/2023


Frequency Stability / Temperature Variation

NR Band n41				
		Operating Band Lower Boundary (GHz)	2.496	
		Ref. Voltage (VDC):	3.80	
Voltage (%)	Power (VDC)	Temp (°C)	Measured Freq. (GHz)	Freq. Delta from Operating Range (GHz)
100 %	3.80	- 30	2.4963673	-0.0003673
		- 20	2.4963272	-0.0003272
		- 10	2.4965745	-0.0005745
		0	2.4966142	-0.0006142
		+ 10	2.4968935	-0.0008935
		+ 20 (Ref)	2.4963396	-0.0003396
		+ 30	2.4966342	-0.0006342
		+ 40	2.4961785	-0.0001785
		+ 50	2.4965117	-0.0005117
Battery Endpoint	3.40	+ 20	2.4967765	-0.0007765

Table 7-27. Lower Boundary NR Band n41 Frequency Stability Data

NR Band n41				
		Operating Band Upper Boundary (GHz)	2.690	
		Ref. Voltage (VDC):	3.80	
Voltage (%)	Power (VDC)	Temp (°C)	Measured Freq. (GHz)	Freq. Delta from Operating Range (GHz)
100 %	3.80	- 30	2.6895377	-0.0004623
		- 20	2.6898766	-0.0001234
		- 10	2.6892788	-0.0007212
		0	2.6895046	-0.0004954
		+ 10	2.6891406	-0.0008594
		+ 20 (Ref)	2.6891007	-0.0008993
		+ 30	2.6890459	-0.0009541
		+ 40	2.6890416	-0.0009584
		+ 50	2.6893212	-0.0006788
Battery Endpoint	3.40	+ 20	2.6897103	-0.0002897


Table 7-28. Upper Boundary NR Band n41 Frequency Stability Data

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch	Page 111 of 112

V2.2 09/07/2023

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the Apple **Watch** **FCC ID: BCG-A3281** complies with all the requirements of Part 27 of the FCC rules.

FCC ID: BCG-A3281	 PART 27 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1C2503270029-06.BCG	Test Dates: 01/17/2025 - 07/31/2025	EUT Type: Watch
		Page 112 of 112

V2.2 09/07/2023