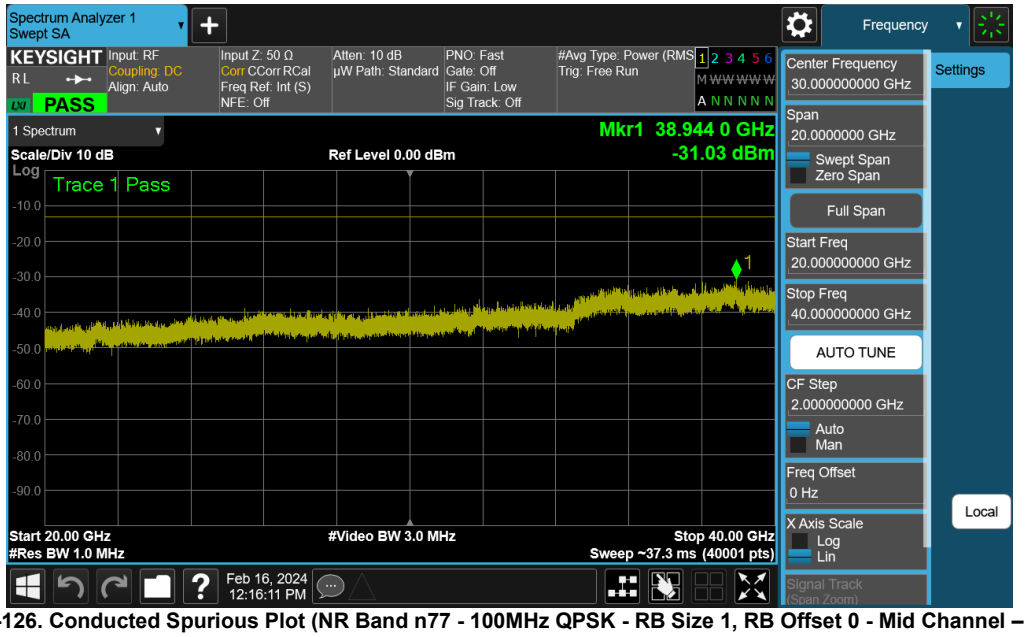
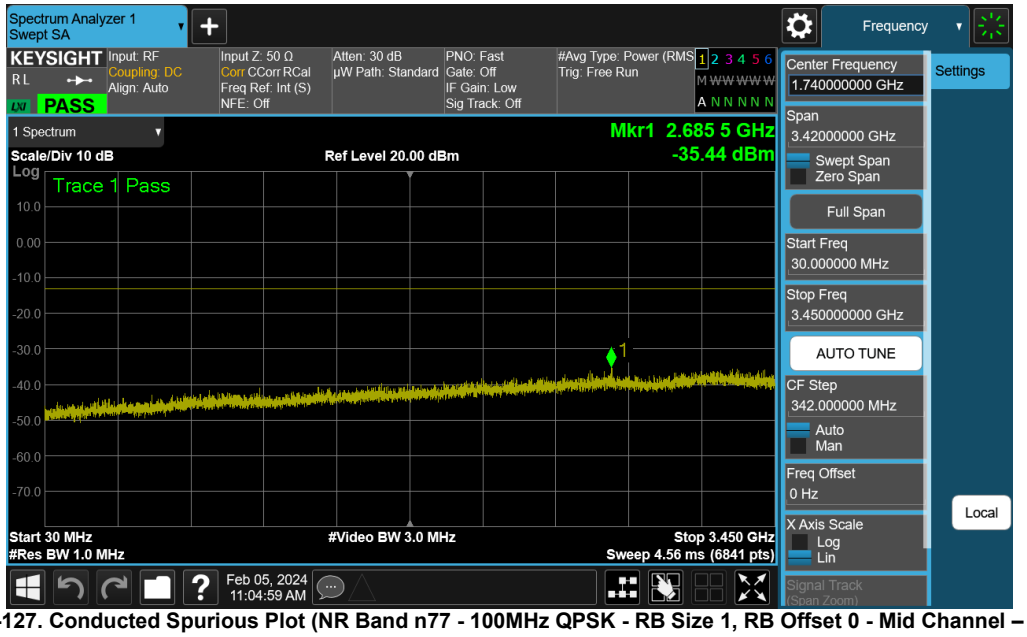


Plot 7-126. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel – Ant5)

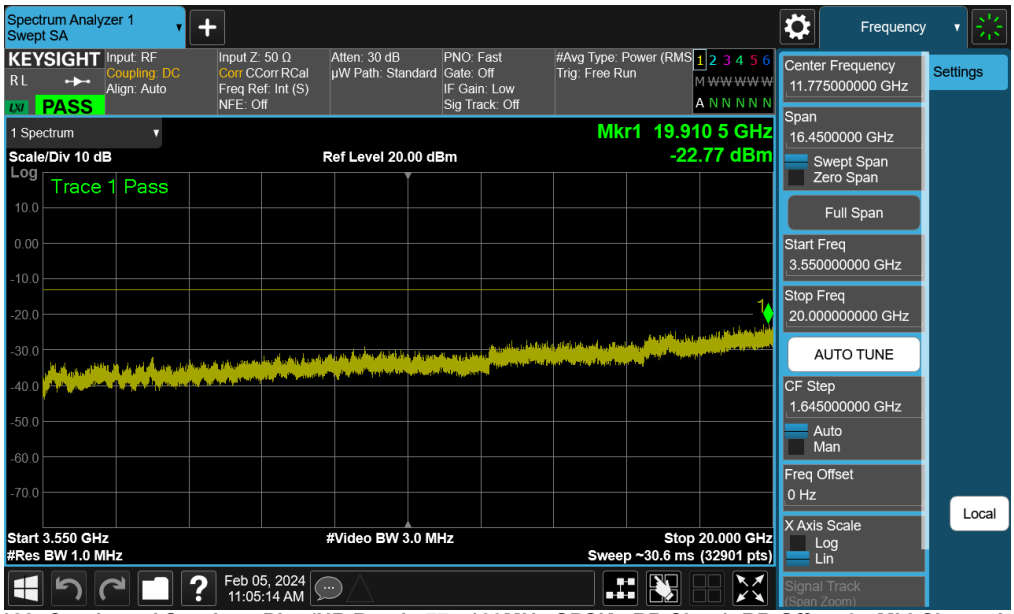
Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
NR-n77 PC2 DoD Band	100MHz	Mid	30.0 - 3450.0	-35.44	-13	-22.44
		Mid	3550.0 - 20000.0	-22.77	-13	-9.77
		Mid	20000.0 - 40000.0	-31.36	-13	-18.36
NR-n77 PC2 C Band	100MHz	Low	30.0 - 3700.0	-35.39	-13	-22.39
		Low	3980.0 - 20000.0	-22.11	-13	-9.11
		Low	20000.0 - 40000.0	-30.13	-13	-17.13
		Mid	30.0 - 3700.0	-34.61	-13	-21.61
		Mid	3980.0 - 20000.0	-22.17	-13	-9.17
		Mid	20000.0 - 40000.0	-30.66	-13	-17.66
		High	30.0 - 3700.0	-35.95	-13	-22.95
		High	3980.0 - 20000.0	-22.88	-13	-9.88
		High	20000.0 - 40000.0	-30.64	-13	-17.63

Table 7-13. Conducted Emission Test Results – Ant8

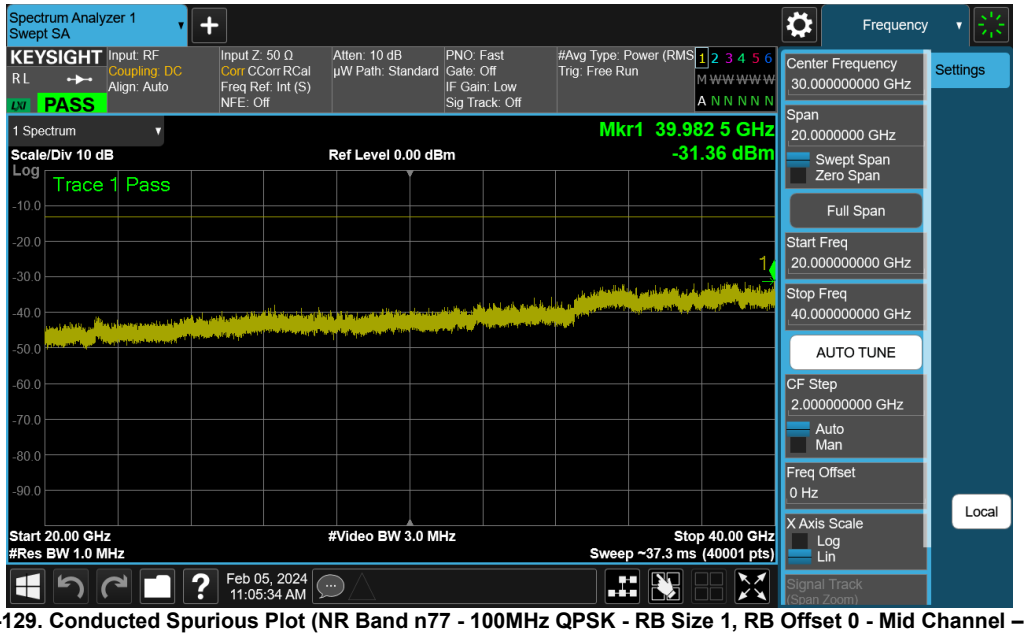
NR Band n77 DoD Band – Ant8



Plot 7-127. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel – Ant8)

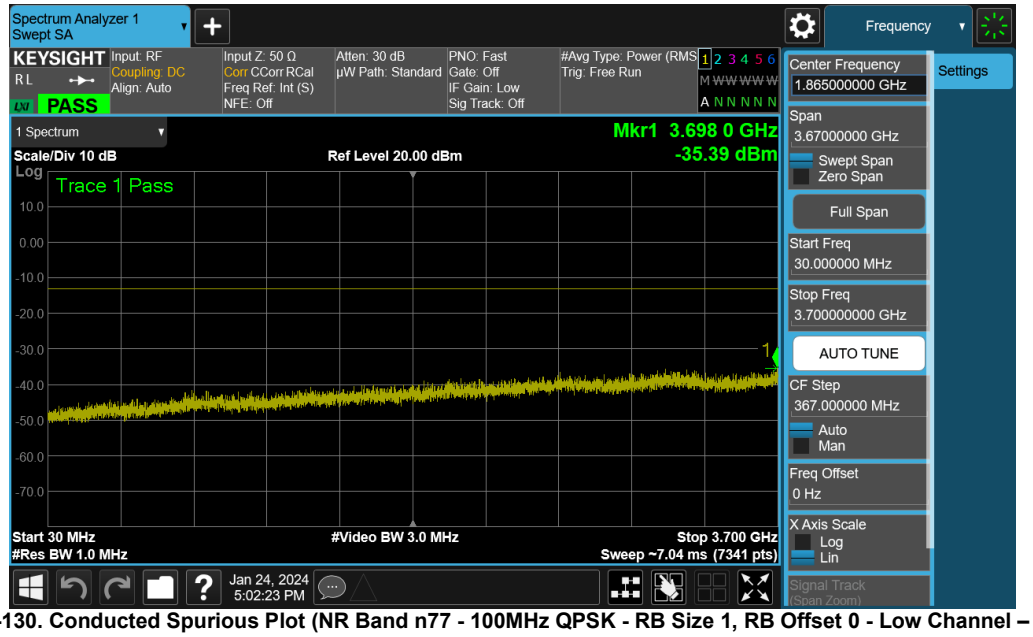


Plot 7-128. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel – Ant8)

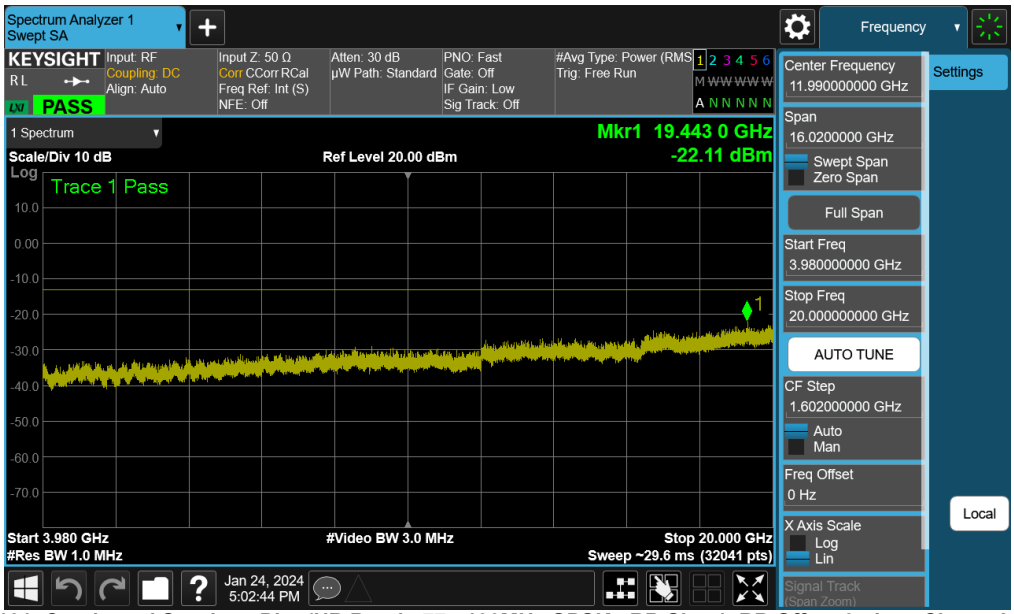


Plot 7-129. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel – Ant8)

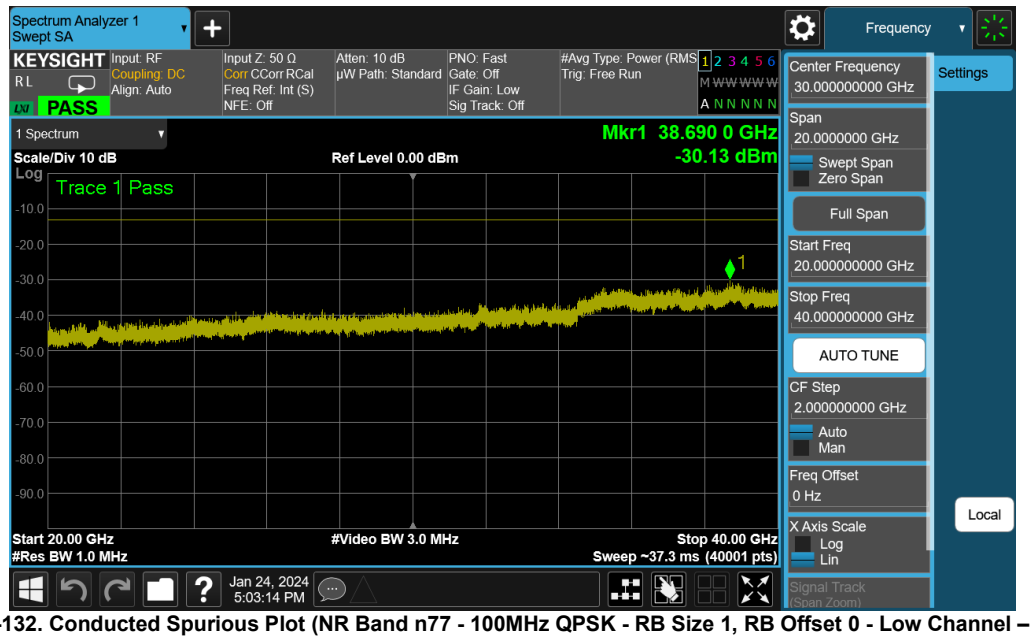
NR Band n77 C Band – Ant8



Plot 7-130. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - Low Channel – Ant8)



Plot 7-131. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - Low Channel – Ant8)



Plot 7-132. Conducted Spurious Plot (NR Band n77 - 100MHz QPSK - RB Size 1, RB Offset 0 - Low Channel – Ant8)

7.5 Band Edge Emissions at Antenna Terminal

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 operations in the 3700 – 3980MHz band and the 3450 – 3550MHz band, the maximum permissible conducted power level of any out-of-band emission is -13dBm/MHz.

Test Procedure Used

ANSI C63.26-2015 – Section 5.7.3

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 ≥ 1% of the emission bandwidth
4. VBW ≥ 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 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

Test Setup

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

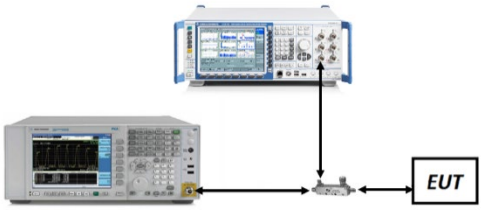


Figure 7-4. Test Instrument & Measurement Setup

Test Notes

1. Per Part 27.53(l), compliance with the -13dBm/MHz conducted power limit for out-of-band emissions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.

2. Per Part 27.53(n), compliance with the -13dBm/MHz conducted power limit for out-of-band emissions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.

3. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

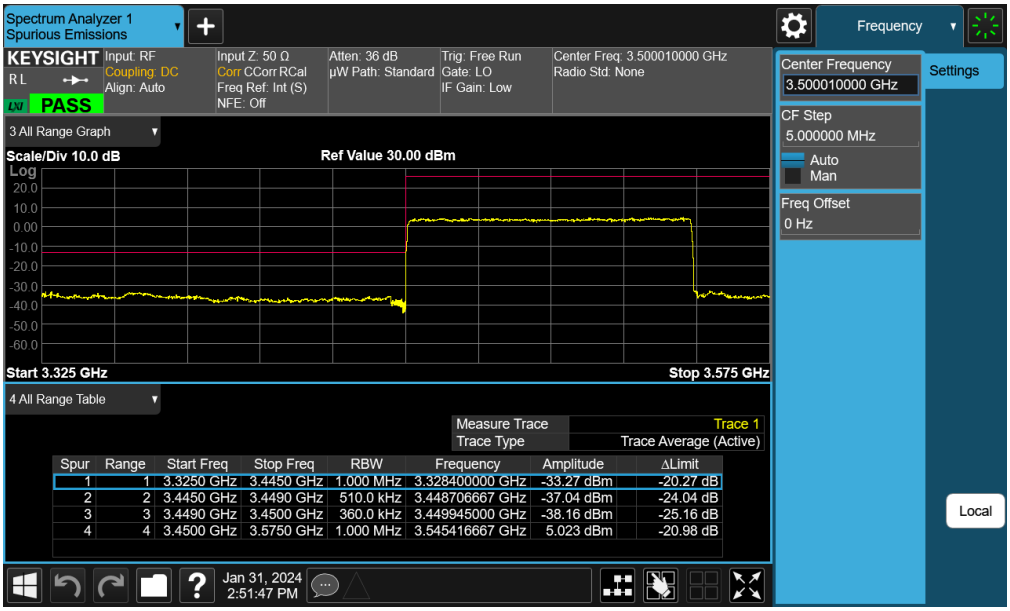
4. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

5. Since standalone targets of Ant2 and Ant3 have higher targets than UL-MIMO n77 data is not included in the report. Also, UL-MIMO n77 conducted band edge has been checked and was found not to be the worst case.

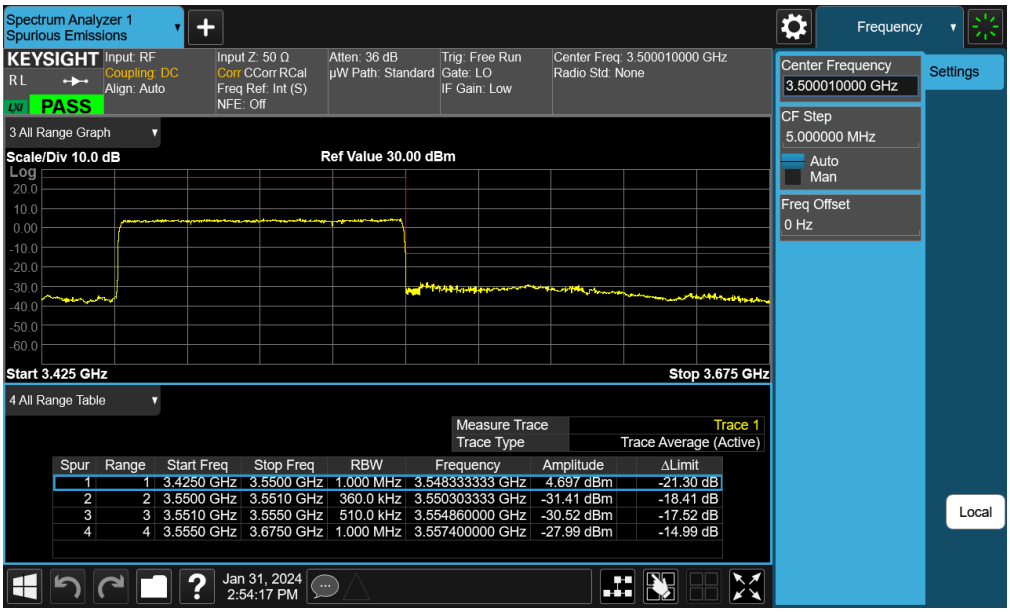
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
NR-n77 PC2 DoD Band	100MHz	Low	Band Edge	-33.27	-13	-20.27
		High	Band Edge	-27.99	-13	-14.99
	90MHz	Low	Band Edge	-33.07	-13	-20.07
		High	Band Edge	-28.86	-13	-15.86
	80MHz	Low	Band Edge	-33.84	-13	-20.84
		High	Band Edge	-30.44	-13	-17.44
	70MHz	Low	Band Edge	-32.29	-13	-19.29
		High	Band Edge	-28.02	-13	-15.02
	60MHz	Low	Band Edge	-32.79	-13	-19.79
		High	Band Edge	-33.46	-13	-20.46
	50MHz	Low	Band Edge	-34.06	-13	-21.06
		High	Band Edge	-32.08	-13	-19.08
	40MHz	Low	Band Edge	-34.09	-13	-21.09
		High	Band Edge	-33.79	-13	-20.79
	30MHz	Low	Band Edge	-29.73	-13	-16.73
		High	Band Edge	-30.29	-13	-17.29
	20MHz	Low	Band Edge	-28.58	-13	-15.58
		High	Band Edge	-28.83	-13	-15.83

Table 7-14. Conducted Band Edge Test Results – DoD Band – Ant2

NR Band n77 DoD Band – Ant2



Plot 7-133. Lower ACP Plot (NR Band n77 - 100MHz DFT-s-OFDM-QPSK – Full RB - Ant2)

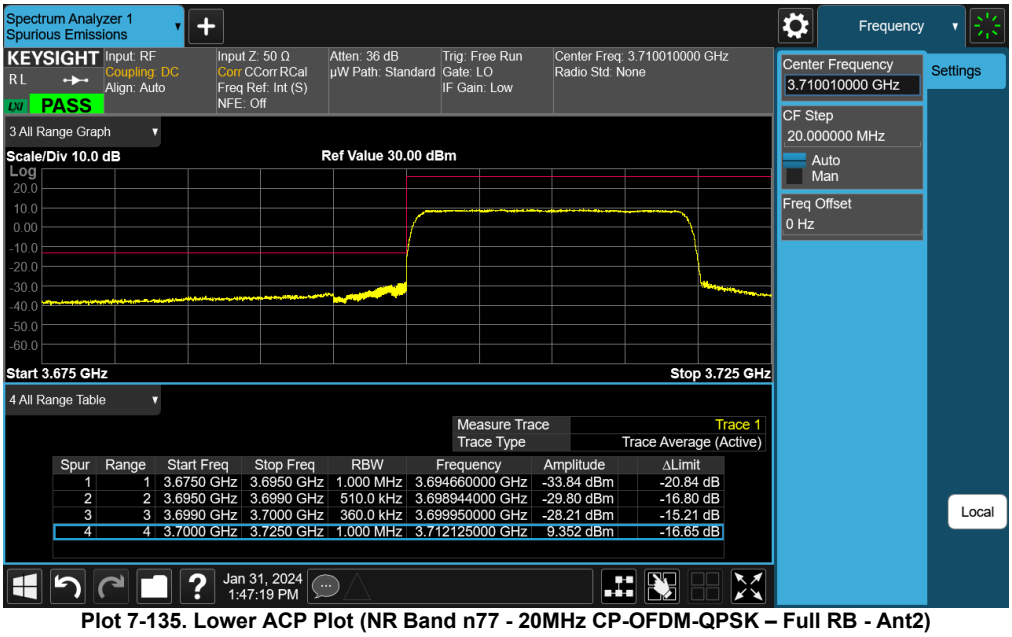


Plot 7-134. Upper ACP Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB - Ant2)

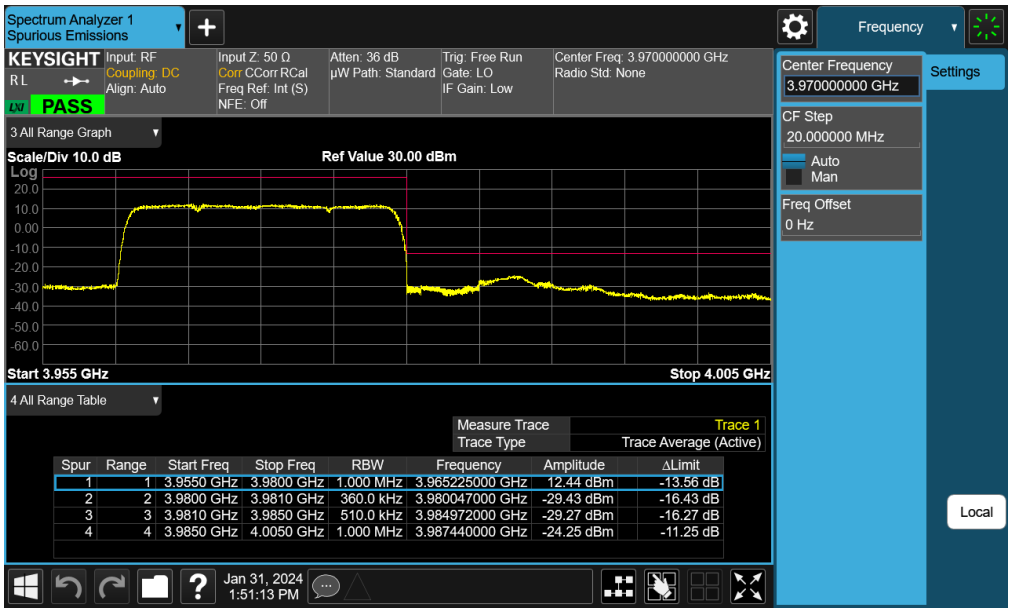
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
NR-n77 PC2 C Band	100MHz	Low	Band Edge	-28.84	-13	-15.84
		High	Band Edge	-26.14	-13	-13.14
	90MHz	Low	Band Edge	-31.47	-13	-18.47
		High	Band Edge	-27.90	-13	-14.90
	80MHz	Low	Band Edge	-30.83	-13	-17.83
		High	Band Edge	-28.53	-13	-15.53
	70MHz	Low	Band Edge	-30.42	-13	-17.42
		High	Band Edge	-33.30	-13	-20.30
	60MHz	Low	Band Edge	-33.39	-13	-20.39
		High	Band Edge	-32.87	-13	-19.87
	50MHz	Low	Band Edge	-33.05	-13	-20.05
		High	Band Edge	-30.30	-13	-17.30
	40MHz	Low	Band Edge	-33.19	-13	-20.19
		High	Band Edge	-32.30	-13	-19.30
	30MHz	Low	Band Edge	-29.47	-13	-16.47
		High	Band Edge	-30.24	-13	-17.24
	20MHz	Low	Band Edge	-28.21	-13	-15.21
		High	Band Edge	-24.25	-13	-11.25

Table 7-15. Conducted Band Edge Test Results – C Band – Ant2

NR Band n77 C Band – Ant2



Plot 7-135. Lower ACP Plot (NR Band n77 - 20MHz CP-OFDM-QPSK – Full RB - Ant2)

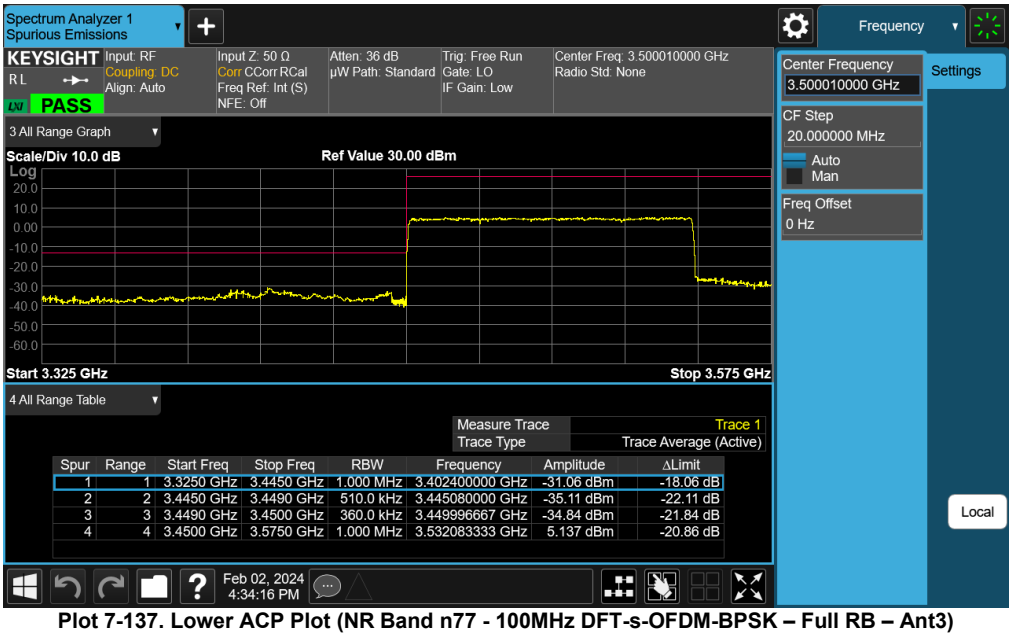


Plot 7-136. Upper ACP Plot (NR Band n77 - 20MHz DFT-s-OFDM-BPSK – Full RB - Ant2)

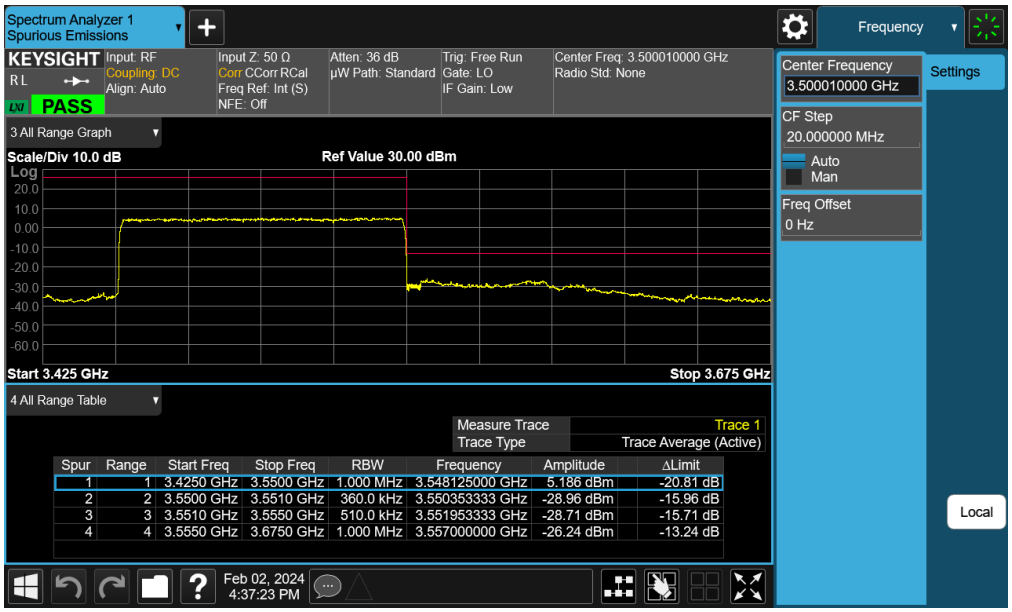
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
NR-n77 PC2 DoD Band	100MHz	Low	Band Edge	-31.06	-13	-18.06
		High	Band Edge	-26.24	-13	-13.24
	90MHz	Low	Band Edge	-33.11	-13	-20.11
		High	Band Edge	-27.34	-13	-14.34
	80MHz	Low	Band Edge	-31.31	-13	-18.31
		High	Band Edge	-30.85	-13	-17.85
	70MHz	Low	Band Edge	-34.12	-13	-21.12
		High	Band Edge	-32.61	-13	-19.61
	60MHz	Low	Band Edge	-34.66	-13	-21.66
		High	Band Edge	-32.08	-13	-19.08
	50MHz	Low	Band Edge	-34.84	-13	-21.84
		High	Band Edge	-33.06	-13	-20.06
	40MHz	Low	Band Edge	-33.76	-13	-20.76
		High	Band Edge	-34.45	-13	-21.45
	30MHz	Low	Band Edge	-30.69	-13	-17.69
		High	Band Edge	-31.38	-13	-18.38
	20MHz	Low	Band Edge	-28.29	-13	-15.29
		High	Band Edge	-29.32	-13	-16.32

Table 7-16. Conducted Band Edge Test Results – DoD Band – Ant3

NR Band n77 DoD Band – Ant3



Plot 7-137. Lower ACP Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB – Ant3)

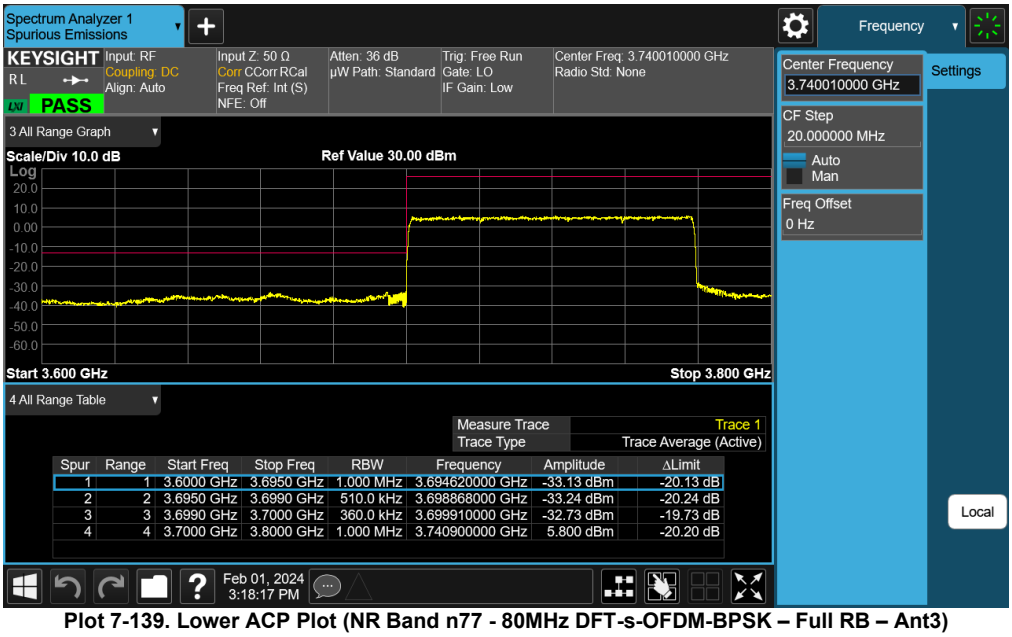


Plot 7-138. Upper ACP Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB – Ant3)

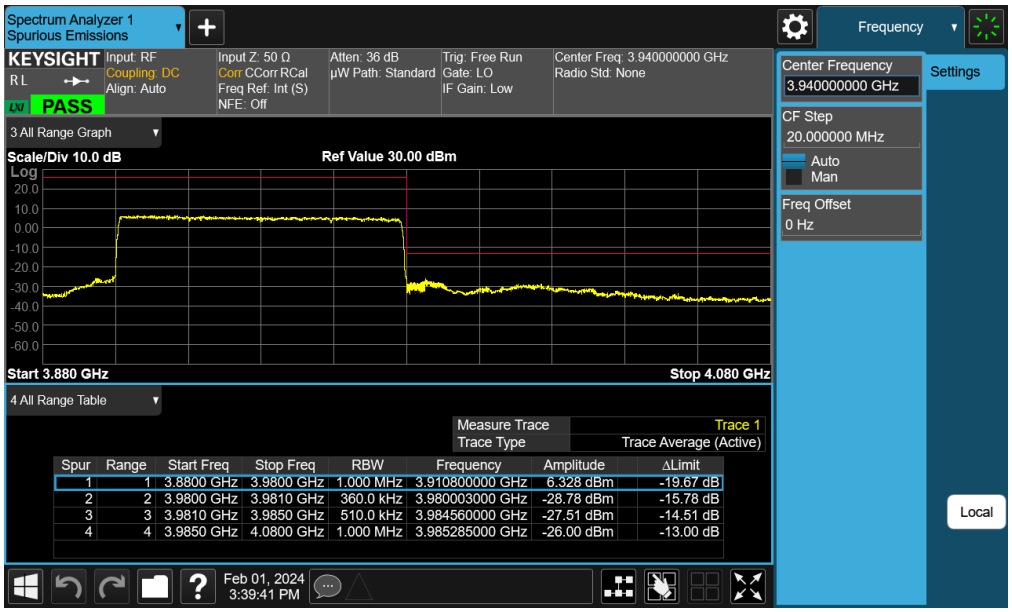
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
NR-n77 PC2 C Band	100MHz	Low	Band Edge	-32.44	-13	-19.44
		High	Band Edge	-28.21	-13	-15.21
	90MHz	Low	Band Edge	-34.17	-13	-21.17
		High	Band Edge	-27.23	-13	-14.23
	80MHz	Low	Band Edge	-32.73	-13	-19.73
		High	Band Edge	-26.00	-13	-13.00
	70MHz	Low	Band Edge	-27.15	-13	-14.15
		High	Band Edge	-29.14	-13	-16.14
	60MHz	Low	Band Edge	-33.88	-13	-20.88
		High	Band Edge	-32.09	-13	-19.09
	50MHz	Low	Band Edge	-32.57	-13	-19.57
		High	Band Edge	-31.46	-13	-18.46
	40MHz	Low	Band Edge	-32.66	-13	-19.66
		High	Band Edge	-32.59	-13	-19.59
	30MHz	Low	Band Edge	-30.21	-13	-17.21
		High	Band Edge	-28.21	-13	-15.21
	20MHz	Low	Band Edge	-28.65	-13	-15.65
		High	Band Edge	-28.24	-13	-15.24

Table 7-17. Conducted Band Edge Test Results – C Band – Ant3

NR Band n77 C Band – Ant3



Plot 7-139. Lower ACP Plot (NR Band n77 - 80MHz DFT-s-OFDM-BPSK – Full RB – Ant3)

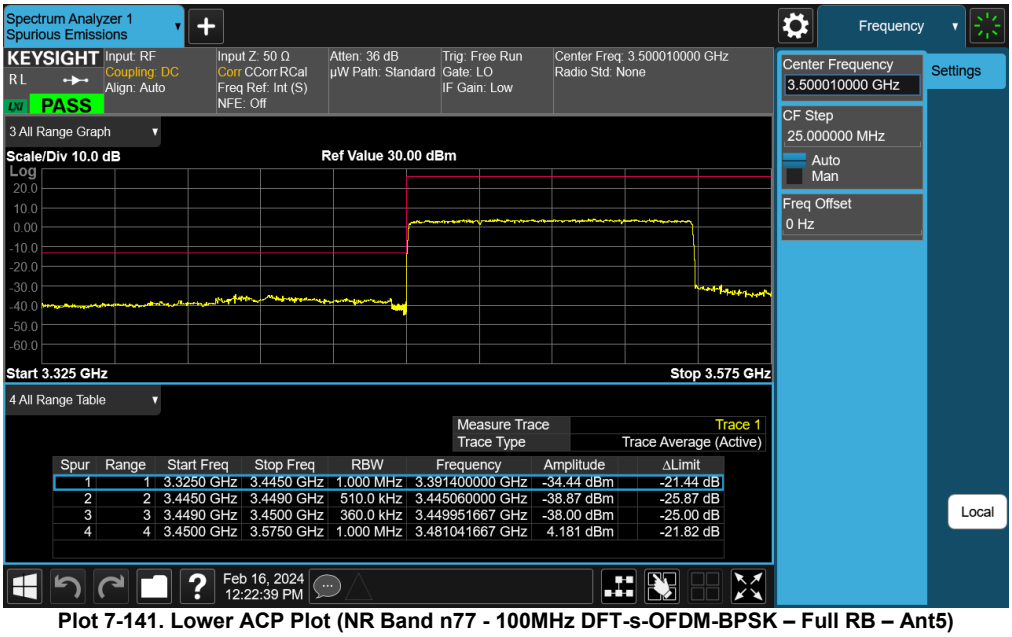


Plot 7-140. Upper ACP Plot (NR Band n77 - 80MHz DFT-s-OFDM-BPSK – Full RB – Ant3)

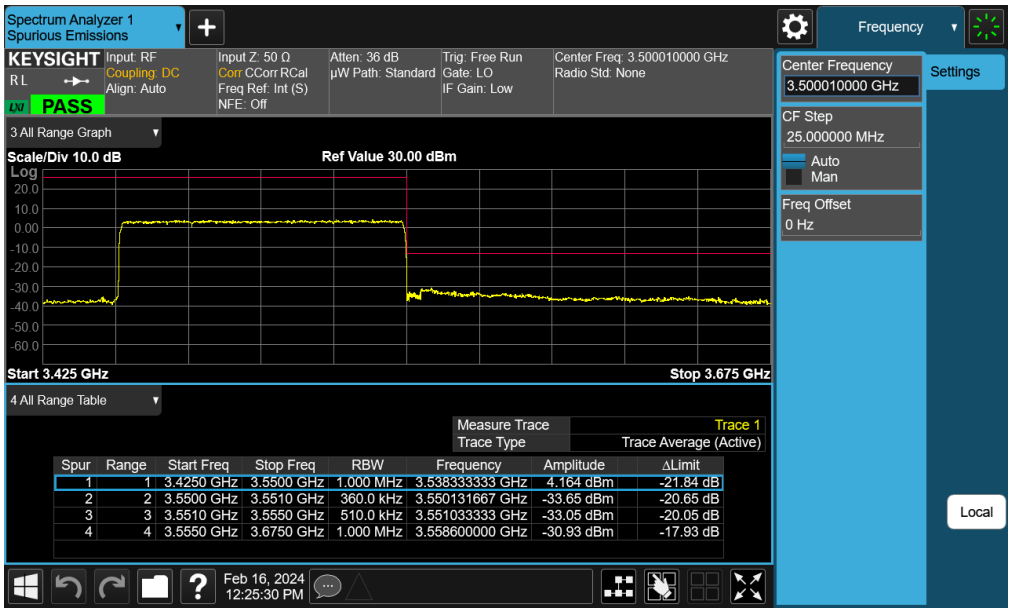
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
NR-n77 PC2 DoD Band	100MHz	Low	Band Edge	-34.44	-13	-21.44
		High	Band Edge	-30.93	-13	-17.93
NR-n77 PC2 C Band	100MHz	Low	Band Edge	-30.68	-13	-17.68
		High	Band Edge	-26.52	-13	-13.52

Table 7-18. Conducted Band Edge Test Results – Ant5

NR Band n77 DoD Band – Ant5

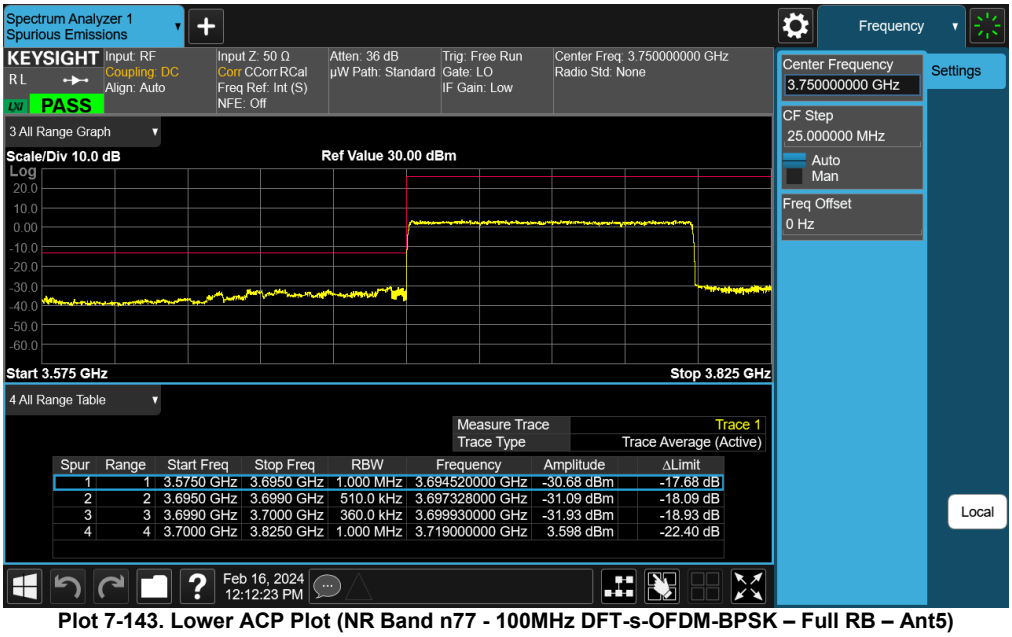


Plot 7-141. Lower ACP Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB – Ant5)

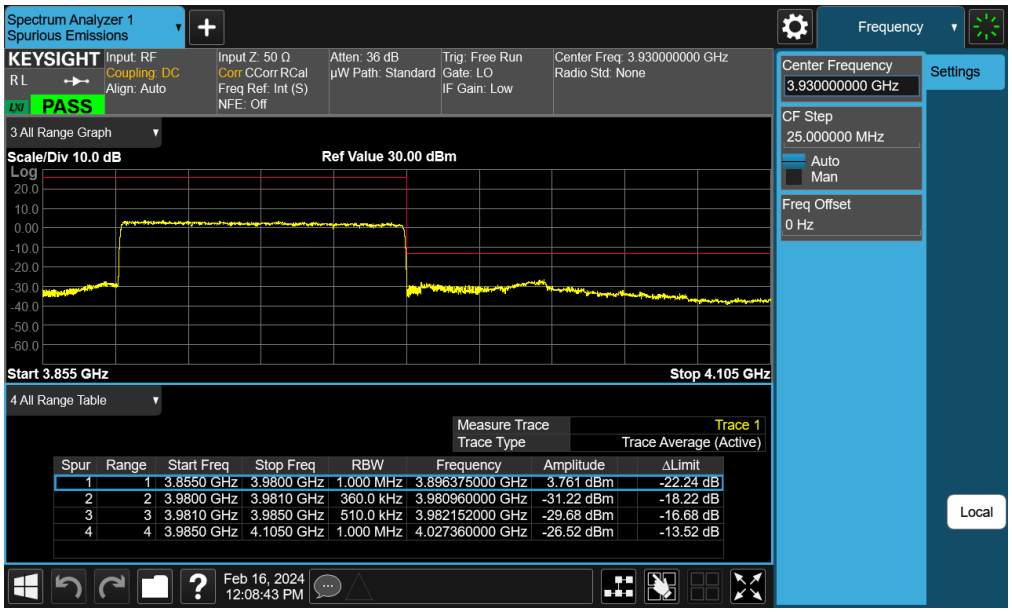


Plot 7-142. Upper ACP Plot (NR Band n77 - 100MHz CP-OFDM-QPSK – Full RB – Ant5)

NR Band n77 C Band – Ant5



Plot 7-143. Lower ACP Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB – Ant5)

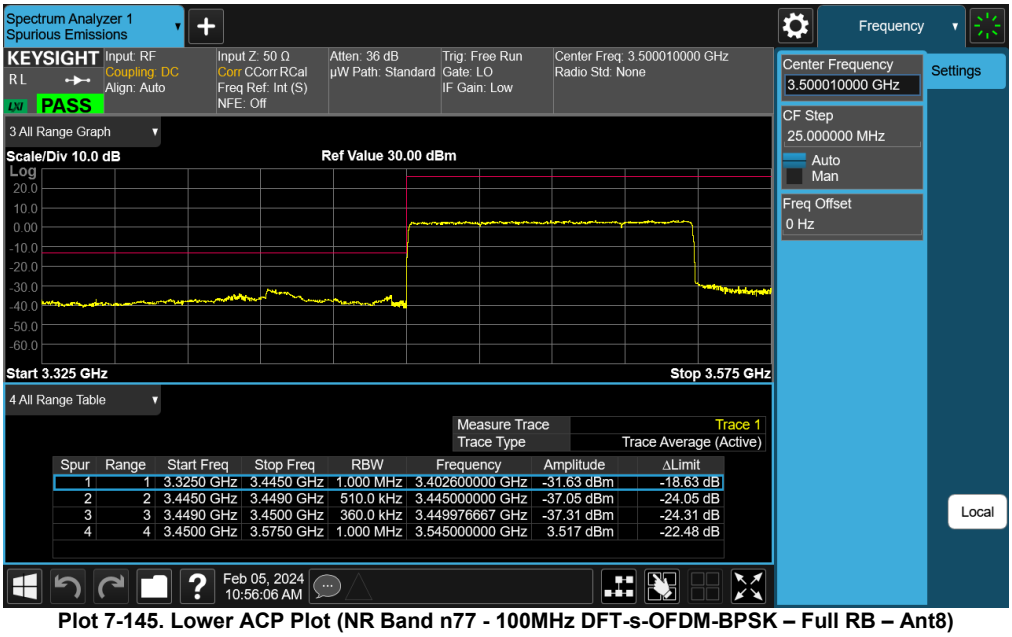


Plot 7-144. Upper ACP Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB – Ant5)

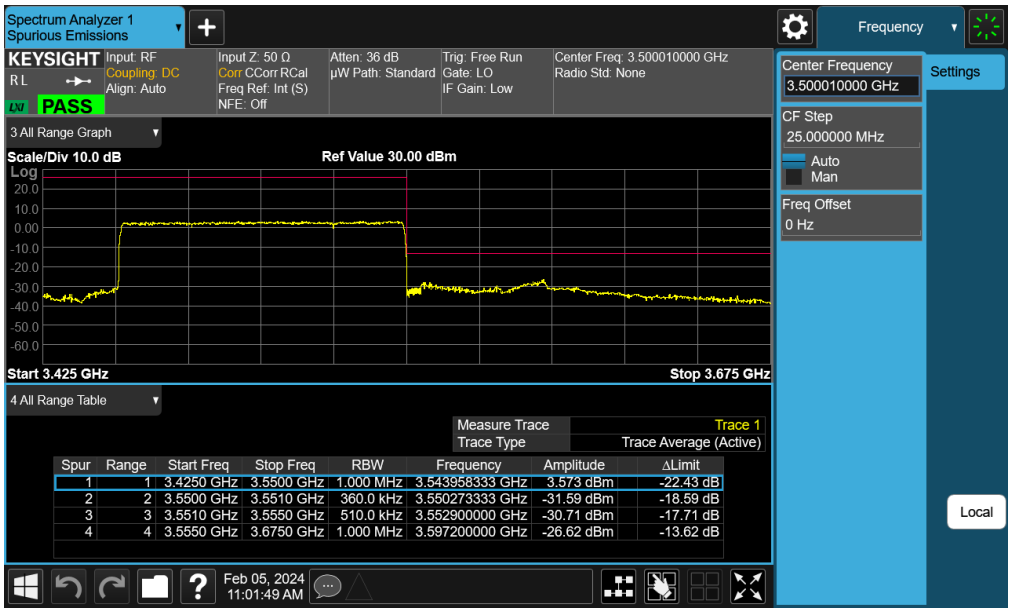
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
NR-n77 PC2 DoD Band	100MHz	Low	Band Edge	-31.63	-13	-18.63
		High	Band Edge	-26.62	-13	-13.62
NR-n77 PC2 C Band	100MHz	Low	Band Edge	-32.80	-13	-19.80
		High	Band Edge	-29.13	-13	-16.13

Table 7-19. Conducted Band Edge Test Results – Ant8

NR Band n77 DoD Band – Ant8

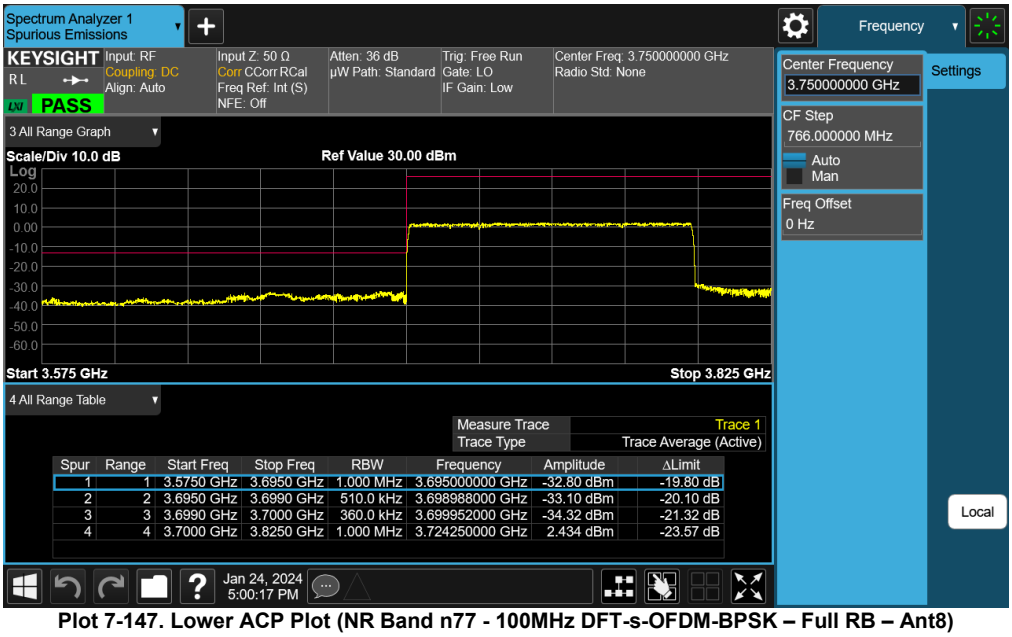


Plot 7-145. Lower ACP Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB – Ant8)

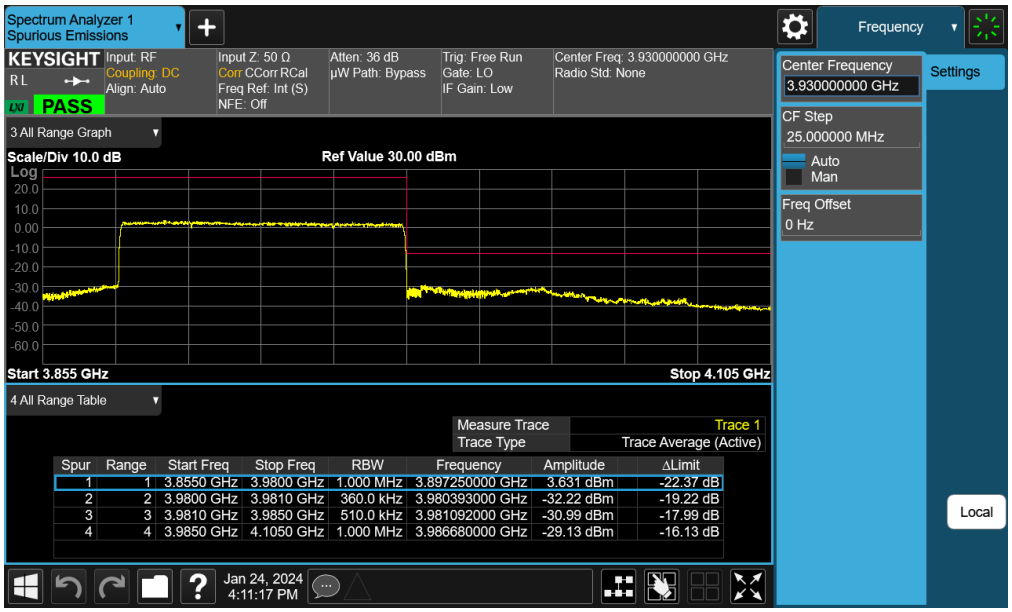


Plot 7-146. Upper ACP Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB – Ant8)

NR Band n77 C Band – Ant8



Plot 7-147. Lower ACP Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB – Ant8)



Plot 7-148. Upper ACP Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB – Ant8)

7.6 Peak-Average Ratio

Test Overview

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2.3.4

Test Settings

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW ≥ OBW or specified reference bandwidth
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Test Setup

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

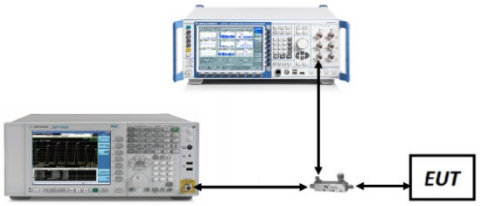


Figure 7-5. Test Instrument & Measurement Setup

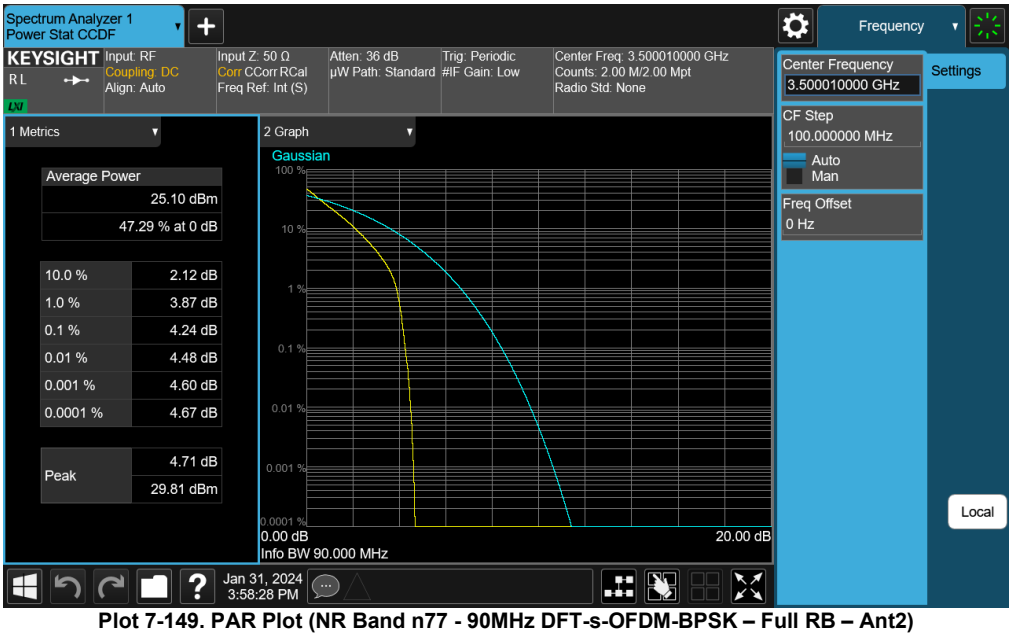
Test Notes

For the QAM modulations, 256QAM was found to have the worst-case peak-to-average ratio so it is the only QAM measurement included in this section.

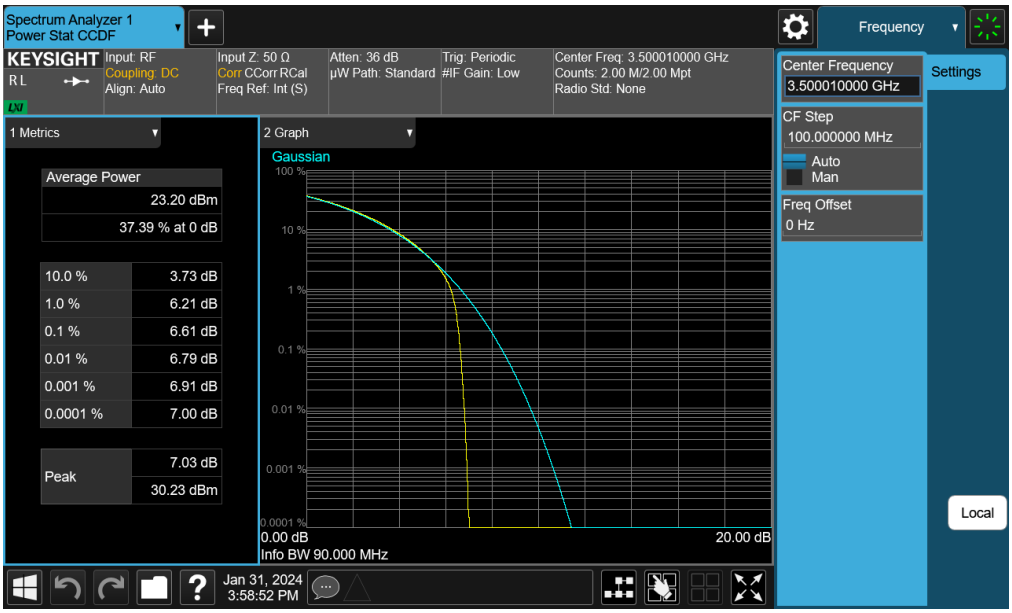
Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dB]	Margin [dB]
NR-n77 PC2 DoD Band	100MHz	π/2 BPSK	25.12	4.22	13	-8.78
		QPSK	23.22	6.66	13	-6.34
		256QAM	19.62	8.57	13	-4.43
	90MHz	π/2 BPSK	25.10	4.24	13	-8.76
		QPSK	23.20	6.61	13	-6.39
		256QAM	19.68	8.59	13	-4.41
	80MHz	π/2 BPSK	25.13	4.08	13	-8.92
		QPSK	23.13	6.52	13	-6.48
		256QAM	19.65	8.51	13	-4.49
	70MHz	π/2 BPSK	25.11	4.18	13	-8.82
		QPSK	23.17	6.70	13	-6.30
		256QAM	19.61	8.55	13	-4.45
	60MHz	π/2 BPSK	25.27	4.11	13	-8.89
		QPSK	23.30	6.53	13	-6.47
		256QAM	19.84	8.50	13	-4.50
	50MHz	π/2 BPSK	25.24	3.98	13	-9.02
		QPSK	23.23	6.46	13	-6.54
		256QAM	19.76	8.54	13	-4.46
	40MHz	π/2 BPSK	25.43	3.98	13	-9.02
		QPSK	23.55	6.50	13	-6.50
		256QAM	20.02	8.25	13	-4.75
	30MHz	π/2 BPSK	25.56	3.98	13	-9.02
		QPSK	23.63	6.60	13	-6.40
		256QAM	20.14	8.51	13	-4.49
	20MHz	π/2 BPSK	26.20	4.04	13	-8.96
		QPSK	24.27	6.51	13	-6.49
		256QAM	20.75	8.33	13	-4.67

Table 7-20. PAR Test Results – DoD Band – Ant2

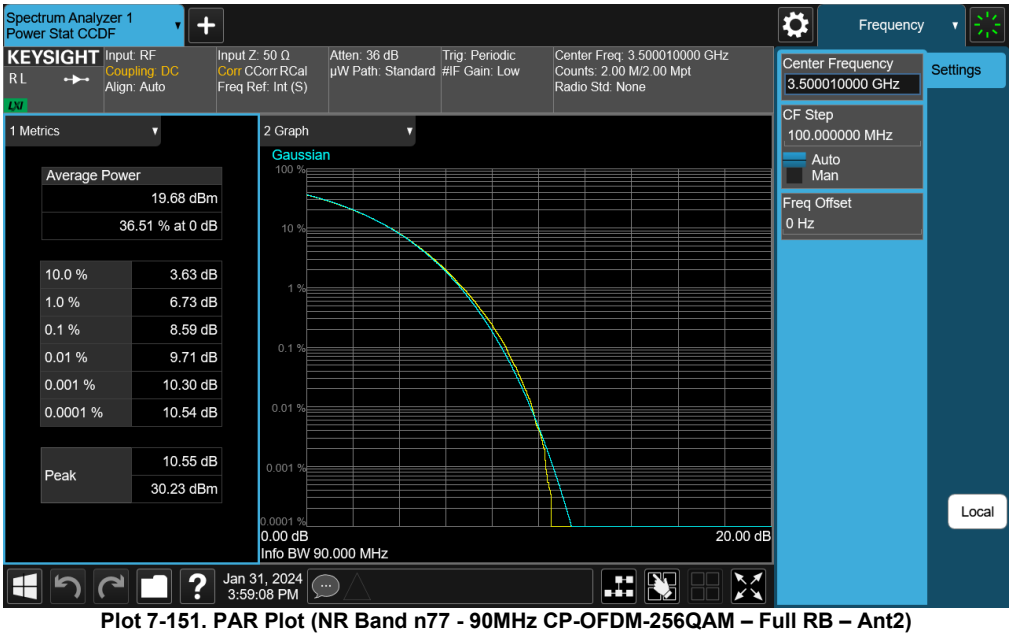
NR Band n77 DoD Band – Ant2



Plot 7-149. PAR Plot (NR Band n77 - 90MHz DFT-s-OFDM-BPSK – Full RB – Ant2)



Plot 7-150. PAR Plot (NR Band n77 - 90MHz CP-OFDM-QPSK – Full RB – Ant2)

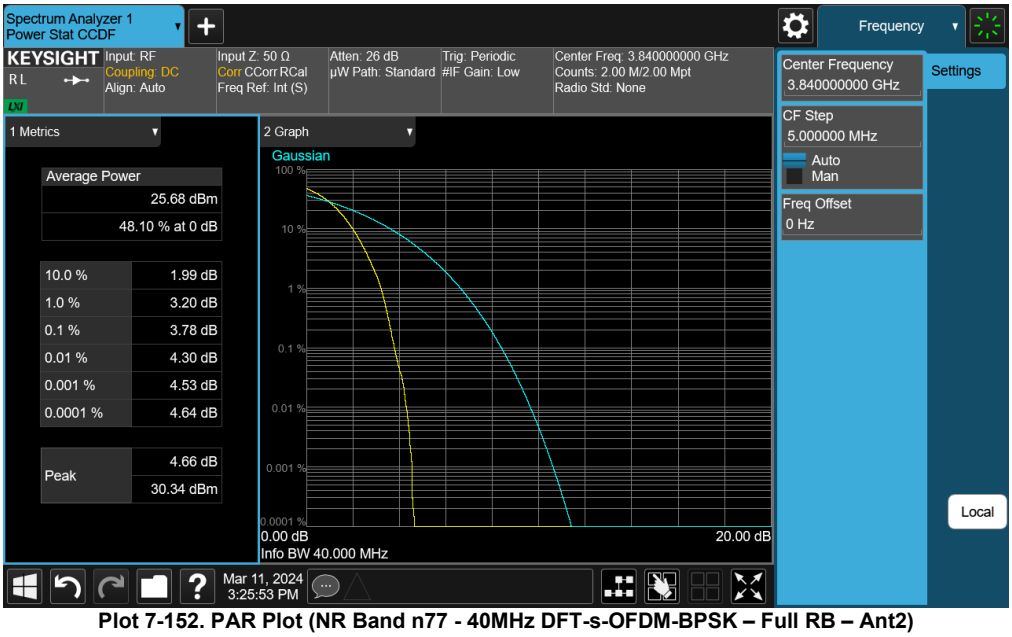


Plot 7-151. PAR Plot (NR Band n77 - 90MHz CP-OFDM-256QAM – Full RB – Ant2)

Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dB]	Margin [dB]
NR-n77 PC2 C Band	100MHz	π/2 BPSK	26.25	4.06	13	-8.94
		QPSK	24.00	6.62	13	-6.38
		256QAM	20.44	8.34	13	-4.66
	90MHz	π/2 BPSK	26.28	4.15	13	-8.85
		QPSK	23.85	6.57	13	-6.43
		256QAM	20.32	8.39	13	-4.61
	80MHz	π/2 BPSK	26.33	4.08	13	-8.92
		QPSK	23.83	6.54	13	-6.46
		256QAM	20.30	8.35	13	-4.65
	70MHz	π/2 BPSK	26.33	4.10	13	-8.90
		QPSK	23.85	6.66	13	-6.34
		256QAM	20.29	8.40	13	-4.60
	60MHz	π/2 BPSK	26.19	4.05	13	-8.95
		QPSK	23.82	6.54	13	-6.46
		256QAM	20.29	8.37	13	-4.63
	50MHz	π/2 BPSK	26.38	3.90	13	-9.10
		QPSK	23.85	6.40	13	-6.60
		256QAM	20.36	8.35	13	-4.65
	40MHz	π/2 BPSK	25.68	3.78	13	-9.22
		QPSK	23.04	7.04	13	-5.96
		256QAM	19.50	8.43	13	-4.57
	30MHz	π/2 BPSK	25.96	4.04	13	-8.96
		QPSK	23.37	6.89	13	-6.11
		256QAM	19.85	8.42	13	-4.58
	20MHz	π/2 BPSK	25.68	3.83	13	-9.17
		QPSK	23.11	6.61	13	-6.39
		256QAM	19.64	8.37	13	-4.63

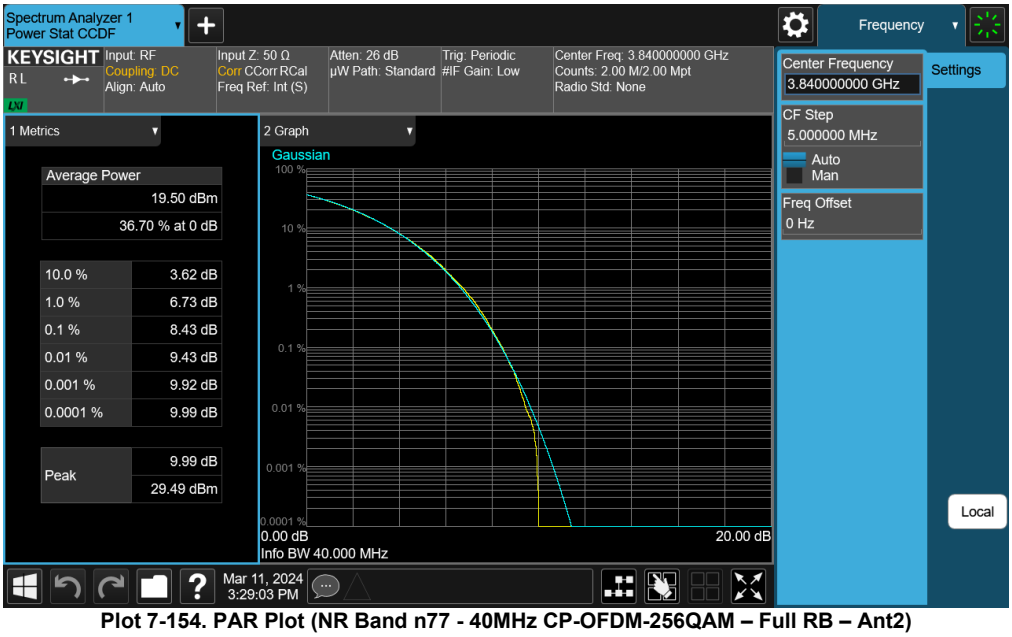
Table 7-21. PAR Test Results – C Band – Ant2

NR Band n77 C Band – Ant2



Plot 7-152. PAR Plot (NR Band n77 - 40MHz DFT-s-OFDM-BPSK – Full RB – Ant2)

Plot 7-153. PAR Plot (NR Band n77 - 40MHz CP-OFDM-QPSK – Full RB – Ant2)

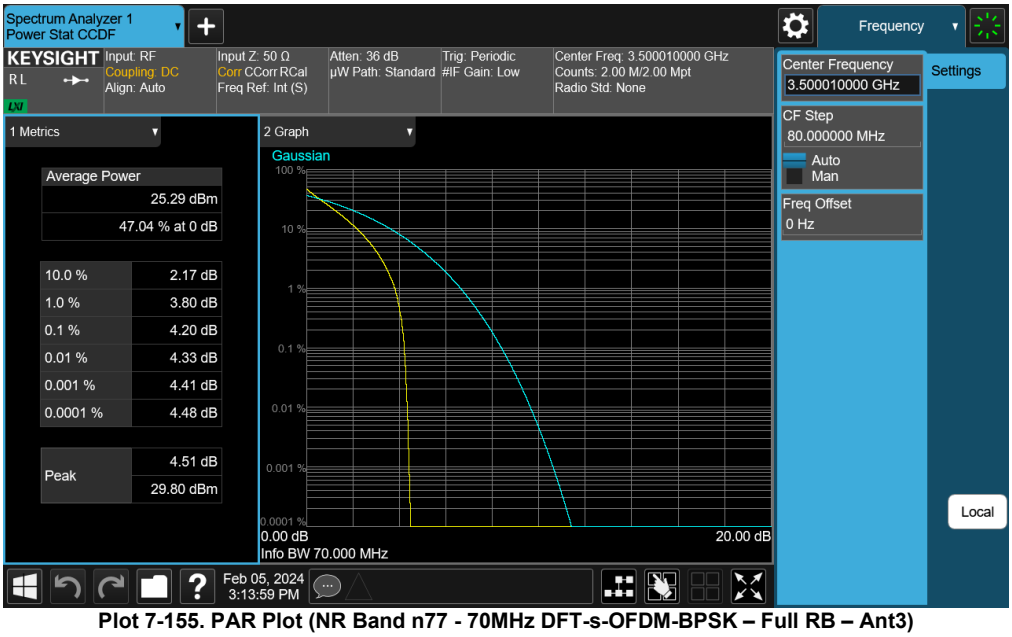


Plot 7-154. PAR Plot (NR Band n77 - 40MHz CP-OFDM-256QAM – Full RB – Ant2)

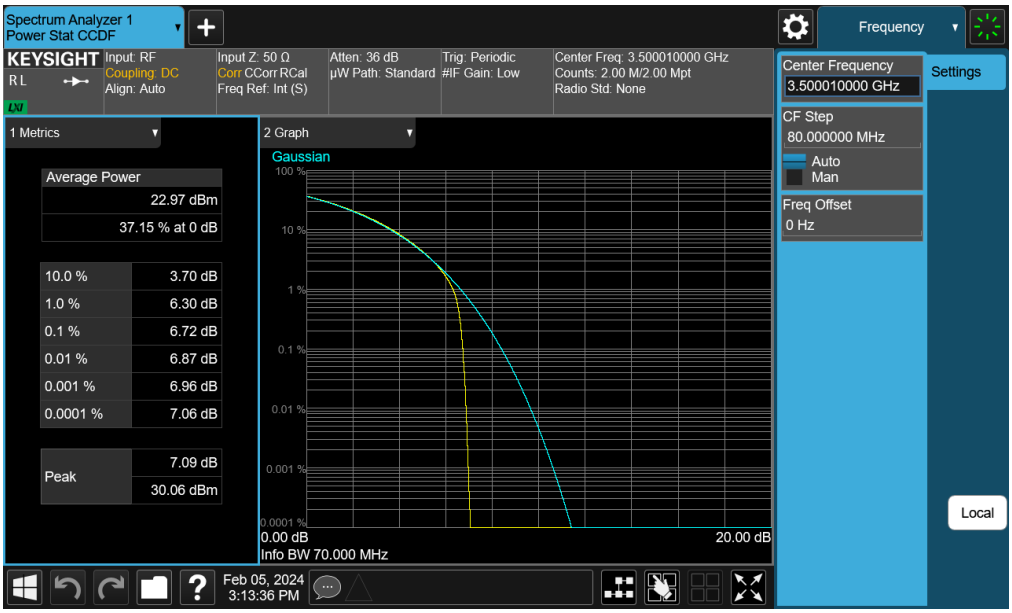
Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dB]	Margin [dB]
NR-n77 PC2 DoD Band	100MHz	π/2 BPSK	25.72	4.19	13	-8.81
		QPSK	23.30	6.68	13	-6.32
		256QAM	19.74	8.48	13	-4.52
	90MHz	π/2 BPSK	25.37	4.21	13	-8.79
		QPSK	23.00	6.64	13	-6.36
		256QAM	19.52	8.42	13	-4.58
	80MHz	π/2 BPSK	25.45	4.11	13	-8.89
		QPSK	23.02	6.54	13	-6.46
		256QAM	19.47	8.49	13	-4.51
	70MHz	π/2 BPSK	25.29	4.20	13	-8.80
		QPSK	22.97	6.72	13	-6.28
		256QAM	19.42	8.50	13	-4.50
	60MHz	π/2 BPSK	25.51	4.11	13	-8.89
		QPSK	23.08	6.55	13	-6.45
		256QAM	19.57	8.42	13	-4.58
	50MHz	π/2 BPSK	25.09	3.96	13	-9.04
		QPSK	23.19	6.44	13	-6.56
		256QAM	19.62	8.41	13	-4.59
	40MHz	π/2 BPSK	25.52	3.91	13	-9.09
		QPSK	23.56	6.49	13	-6.51
		256QAM	20.02	8.48	13	-4.52
	30MHz	π/2 BPSK	25.36	3.96	13	-9.04
		QPSK	23.44	6.60	13	-6.40
		256QAM	20.02	8.44	13	-4.56
	20MHz	π/2 BPSK	25.53	3.96	13	-9.04
		QPSK	24.13	6.49	13	-6.51
		256QAM	20.63	8.48	13	-4.52

Table 7-22. PAR Test Results – DoD Band – Ant3

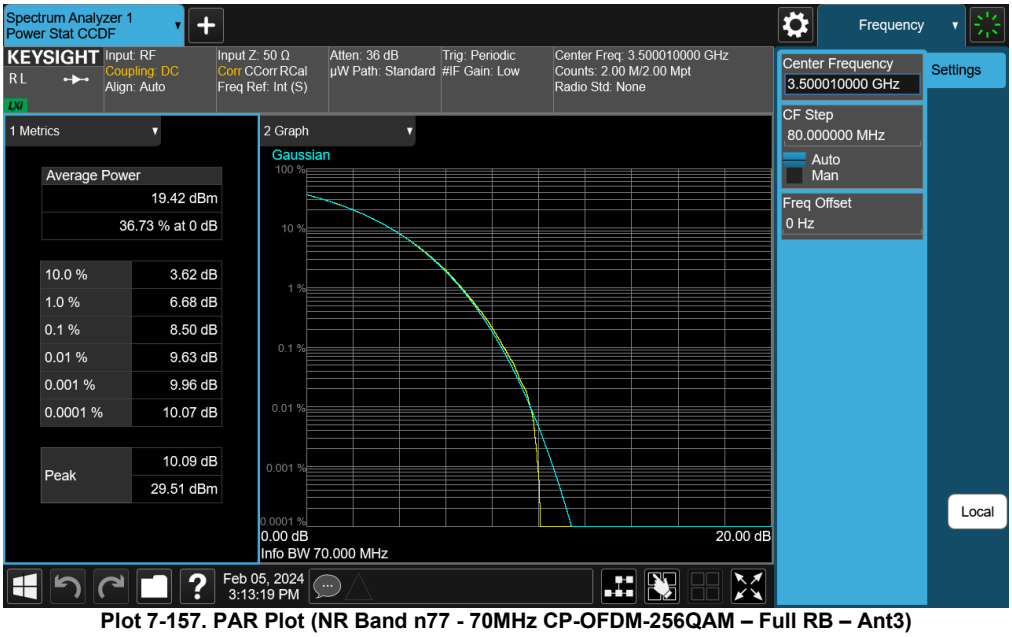
NR Band n77 DoD Band – Ant3



Plot 7-155. PAR Plot (NR Band n77 - 70MHz DFT-s-OFDM-BPSK – Full RB – Ant3)



Plot 7-156. PAR Plot (NR Band n77 - 70MHz CP-OFDM-QPSK – Full RB – Ant3)

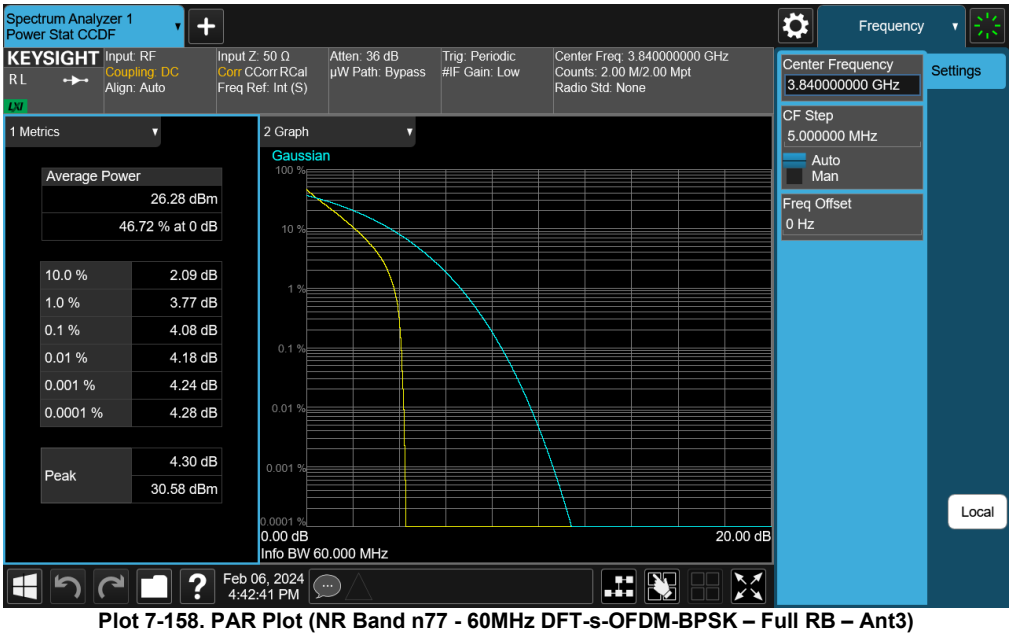


Plot 7-157. PAR Plot (NR Band n77 - 70MHz CP-OFDM-256QAM – Full RB – Ant3)

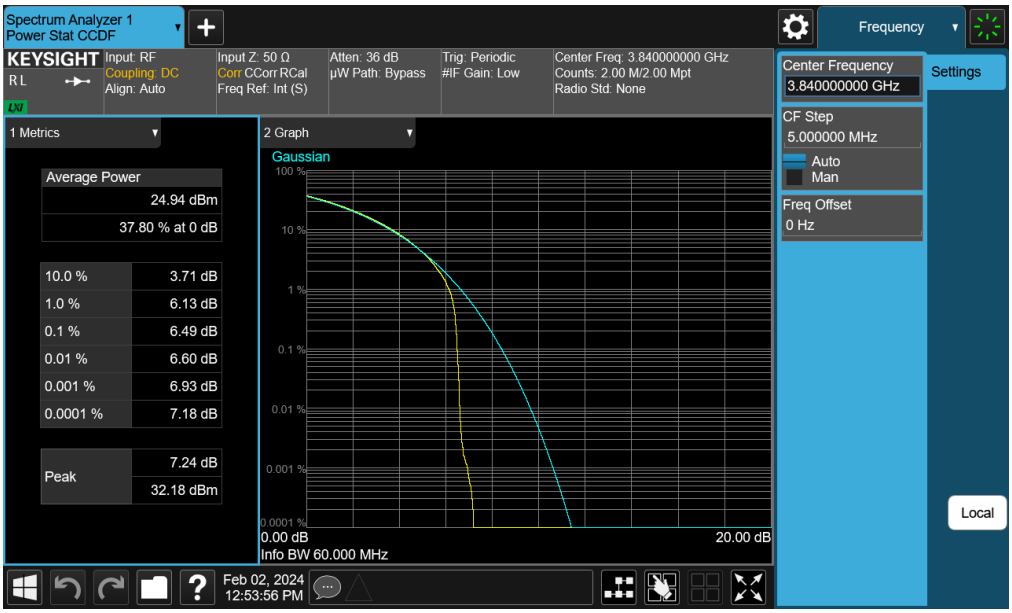
Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dB]	Margin [dB]
NR-n77 PC2 C Band	100MHz	π/2 BPSK	26.10	4.04	13	-8.96
		QPSK	24.67	6.64	13	-6.36
		256QAM	21.17	8.43	13	-4.57
	90MHz	π/2 BPSK	26.10	4.12	13	-8.88
		QPSK	24.77	6.56	13	-6.44
		256QAM	21.21	8.33	13	-4.67
	80MHz	π/2 BPSK	26.15	4.04	13	-8.96
		QPSK	24.77	6.55	13	-6.45
		256QAM	21.25	8.31	13	-4.69
	70MHz	π/2 BPSK	26.13	4.11	13	-8.89
		QPSK	24.78	6.68	13	-6.32
		256QAM	21.23	8.38	13	-4.62
	60MHz	π/2 BPSK	26.28	4.08	13	-8.92
		QPSK	24.94	6.49	13	-6.51
		256QAM	21.40	8.44	13	-4.56
	50MHz	π/2 BPSK	26.28	3.94	13	-9.06
		QPSK	24.95	6.45	13	-6.55
		256QAM	21.41	8.42	13	-4.58
	40MHz	π/2 BPSK	26.47	3.92	13	-9.08
		QPSK	24.08	7.03	13	-5.98
		256QAM	20.55	8.38	13	-4.62
	30MHz	π/2 BPSK	26.38	4.02	13	-8.98
		QPSK	24.35	6.89	13	-6.11
		256QAM	20.79	8.33	13	-4.67
	20MHz	π/2 BPSK	25.89	4.00	13	-9.00
		QPSK	24.10	6.57	13	-6.43
		256QAM	20.57	8.02	13	-4.98

Table 7-23. PAR Test Results – C Band – Ant3

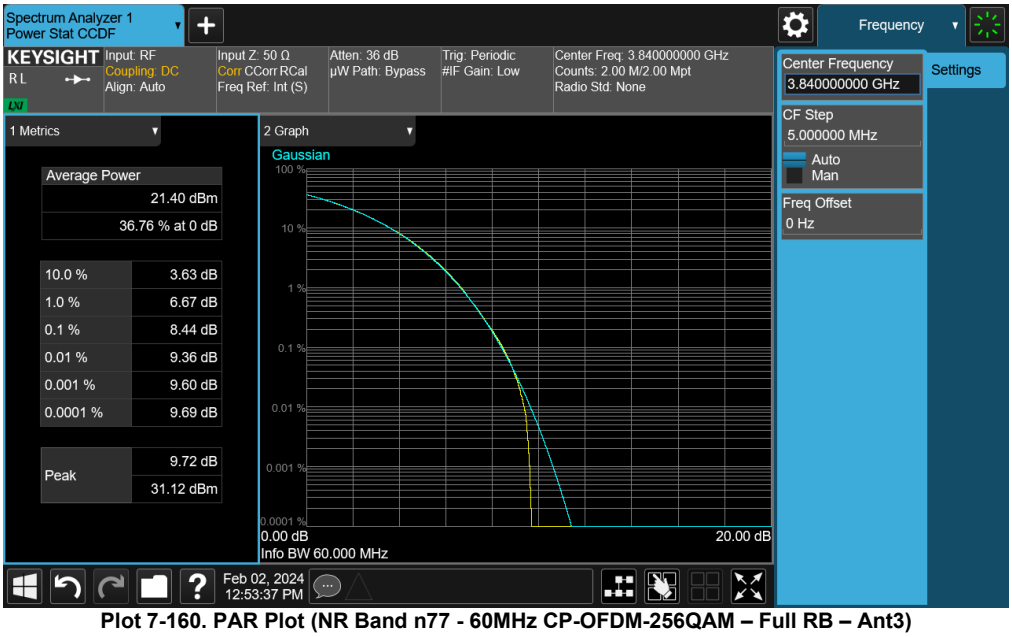
NR Band n77 C Band – Ant3



Plot 7-158. PAR Plot (NR Band n77 - 60MHz DFT-s-OFDM-BPSK – Full RB – Ant3)



Plot 7-159. PAR Plot (NR Band n77 - 60MHz CP-OFDM-QPSK – Full RB – Ant3)



Plot 7-160. PAR Plot (NR Band n77 - 60MHz CP-OFDM-256QAM – Full RB – Ant3)

7.7 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. For signals with burst transmission, the signal analyzer's "time domain power" measurement capability is used
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
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 roughly set equal to the measured OBW of the signal for signals with continuous operation. 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.

Test Setup

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

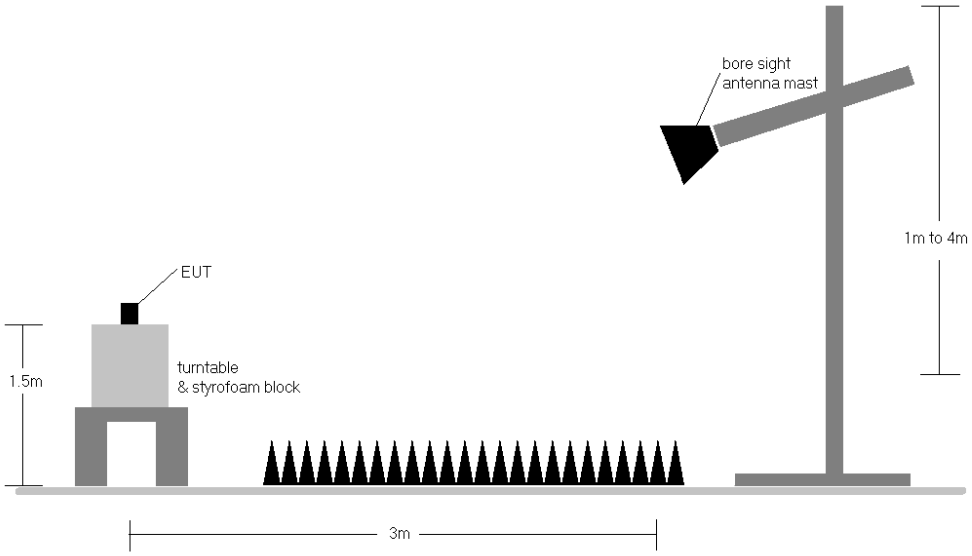


Figure 7-6. Radiated Test Setup >1GHz

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.

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]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
100 MHz	π/2 BPSK	3500.01	H	110	307	9.71	1 / 1	15.03	24.74	0.298	30.00	-5.26
	QPSK	3500.01	H	110	307	9.71	1 / 1	15.26	**24.97**	0.314	30.00	-5.03
	16-QAM	3500.01	H	110	307	9.71	1 / 1	14.78	24.49	0.281	30.00	-5.51
90 MHz	π/2 BPSK	3495.00	H	110	307	9.71	1 / 243	14.89	24.60	0.288	30.00	-5.40
	π/2 BPSK	3500.01	H	110	307	9.71	1 / 243	14.91	24.62	0.290	30.00	-5.38
	π/2 BPSK	3504.99	H	110	307	9.71	1 / 243	14.95	24.66	0.293	30.00	-5.34
	QPSK	3495.00	H	110	307	9.71	1 / 243	15.27	24.98	0.315	30.00	-5.02
	QPSK	3500.01	H	110	307	9.71	1 / 243	15.33	25.04	0.319	30.00	-4.96
	QPSK	3504.99	H	110	307	9.71	1 / 243	15.36	**25.07**	0.322	30.00	-4.93
	16-QAM	3504.99	H	110	307	9.71	1 / 243	15.20	24.91	0.309	30.00	-5.09
80 MHz	π/2 BPSK	3490.02	H	110	307	9.72	1 / 215	14.89	24.61	0.289	30.00	-5.39
	π/2 BPSK	3500.01	H	110	307	9.71	1 / 215	14.85	24.56	0.286	30.00	-5.44
	π/2 BPSK	3510.00	H	110	307	9.71	1 / 215	14.97	24.68	0.294	30.00	-5.32
	QPSK	3490.02	H	110	307	9.72	1 / 215	15.13	24.85	0.305	30.00	-5.15
	QPSK	3500.01	H	110	307	9.71	1 / 215	15.26	24.97	0.314	30.00	-5.03
	QPSK	3510.00	H	110	307	9.71	1 / 215	15.41	**25.12**	0.325	30.00	-4.88
	16-QAM	3510.00	H	110	307	9.71	1 / 215	15.12	24.83	0.304	30.00	-5.17
70 MHz	π/2 BPSK	3485.01	H	110	307	9.72	1 / 187	14.90	24.62	0.290	30.00	-5.38
	π/2 BPSK	3500.01	H	110	307	9.71	1 / 187	14.92	24.63	0.290	30.00	-5.37
	π/2 BPSK	3514.98	H	110	307	9.71	1 / 187	15.00	24.71	0.296	30.00	-5.29
	QPSK	3485.01	H	110	307	9.72	1 / 187	15.34	25.06	0.320	30.00	-4.94
	QPSK	3500.01	H	110	307	9.71	1 / 187	15.32	25.03	0.318	30.00	-4.97
	QPSK	3514.98	H	110	307	9.71	1 / 187	15.44	**25.15**	0.327	30.00	-4.85
	16-QAM	3514.98	H	110	307	9.71	1 / 187	15.10	24.80	0.302	30.00	-5.20
60 MHz	π/2 BPSK	3480.00	H	110	307	9.72	1 / 81	15.05	24.78	0.300	30.00	-5.22
	π/2 BPSK	3500.01	H	110	307	9.71	1 / 160	15.07	24.79	0.301	30.00	-5.21
	π/2 BPSK	3519.99	H	110	307	9.70	1 / 160	15.12	24.82	0.304	30.00	-5.18
	QPSK	3480.00	H	110	307	9.72	1 / 81	15.43	25.15	0.327	30.00	-4.85
	QPSK	3500.01	H	110	307	9.71	1 / 160	15.46	**25.17**	0.329	30.00	-4.83
	QPSK	3519.99	H	110	307	9.70	1 / 160	15.47	25.17	0.329	30.00	-4.83
	16-QAM	3480.00	H	110	307	9.72	1 / 81	15.25	24.97	0.314	30.00	-5.03
50 MHz	π/2 BPSK	3475.02	H	110	307	9.73	1 / 1	15.06	24.79	0.301	30.00	-5.21
	π/2 BPSK	3500.01	H	110	307	9.71	1 / 131	15.04	24.75	0.298	30.00	-5.25
	π/2 BPSK	3525.00	H	110	307	9.70	1 / 131	15.13	24.83	0.304	30.00	-5.17
	QPSK	3475.02	H	110	307	9.73	1 / 1	15.49	**25.21**	0.332	30.00	-4.79
	QPSK	3500.01	H	110	307	9.71	1 / 131	15.40	25.11	0.324	30.00	-4.89
	QPSK	3525.00	H	110	307	9.70	1 / 131	15.37	25.07	0.321	30.00	-4.93
	16-QAM	3525.00	H	110	307	9.70	1 / 131	15.26	24.96	0.314	30.00	-5.04
40 MHz	π/2 BPSK	3470.01	H	110	307	9.73	1 / 1	15.29	25.03	0.318	30.00	-4.97
	π/2 BPSK	3500.01	H	110	307	9.71	1 / 1	15.34	25.05	0.320	30.00	-4.95
	π/2 BPSK	3529.98	H	110	307	9.70	1 / 1	15.34	25.04	0.319	30.00	-4.96
	QPSK	3470.01	H	110	307	9.73	1 / 1	15.71	25.44	0.350	30.00	-4.56
	QPSK	3500.01	H	110	307	9.71	1 / 1	15.72	25.43	0.349	30.00	-4.57
	QPSK	3529.98	H	110	307	9.70	1 / 1	15.80	**25.51**	0.355	30.00	-4.49
	16-QAM	3529.98	H	110	307	9.70	1 / 1	15.46	25.16	0.328	30.00	-4.84
30 MHz	π/2 BPSK	3465.00	H	110	307	9.73	1 / 1	15.29	25.02	0.318	30.00	-4.98
	π/2 BPSK	3500.01	H	110	307	9.71	1 / 1	15.40	25.11	0.324	30.00	-4.89
	π/2 BPSK	3534.99	H	110	307	9.70	1 / 1	15.35	25.05	0.320	30.00	-4.95
	QPSK	3465.00	H	110	307	9.73	1 / 1	15.72	25.45	0.351	30.00	-4.55
	QPSK	3500.01	H	110	307	9.71	1 / 1	15.77	**25.48**	0.353	30.00	-4.52
	QPSK	3534.99	H	110	307	9.70	1 / 1	15.74	25.44	0.350	30.00	-4.56
	16-QAM	3500.01	H	110	307	9.71	1 / 1	15.51	25.22	0.333	30.00	-4.78
20 MHz	π/2 BPSK	3460.02	H	110	307	9.74	1 / 1	15.32	25.05	0.320	30.00	-4.95
	π/2 BPSK	3500.01	H	110	307	9.71	1 / 1	15.34	25.05	0.320	30.00	-4.95
	π/2 BPSK	3540.00	H	110	307	9.70	1 / 1	15.42	25.12	0.325	30.00	-4.88
	QPSK	3460.02	H	110	307	9.74	1 / 1	15.65	25.39	0.346	30.00	-4.61
	QPSK	3500.01	H	110	307	9.71	1 / 1	15.84	**25.55**	0.359	30.00	-4.45
	QPSK	3540.00	H	110	307	9.70	1 / 1	15.71	25.41	0.347	30.00	-4.59
	16-QAM	3540.00	H	110	307	9.70	1 / 1	15.59	25.29	0.338	30.00	-4.71
100 MHz	QPSK (CP-OFDM)	3500.0	H	109	309	9.71	1 / 1	14.39	24.10	0.257	30.00	-5.90
	QPSK (Opposite Pol.)	3500.0	V	278	235	9.71	1 / 1	13.92	23.63	0.231	30.00	-6.37

Table 7-24. EIRP Data (NR Band n77 (DoD) – Ant2)