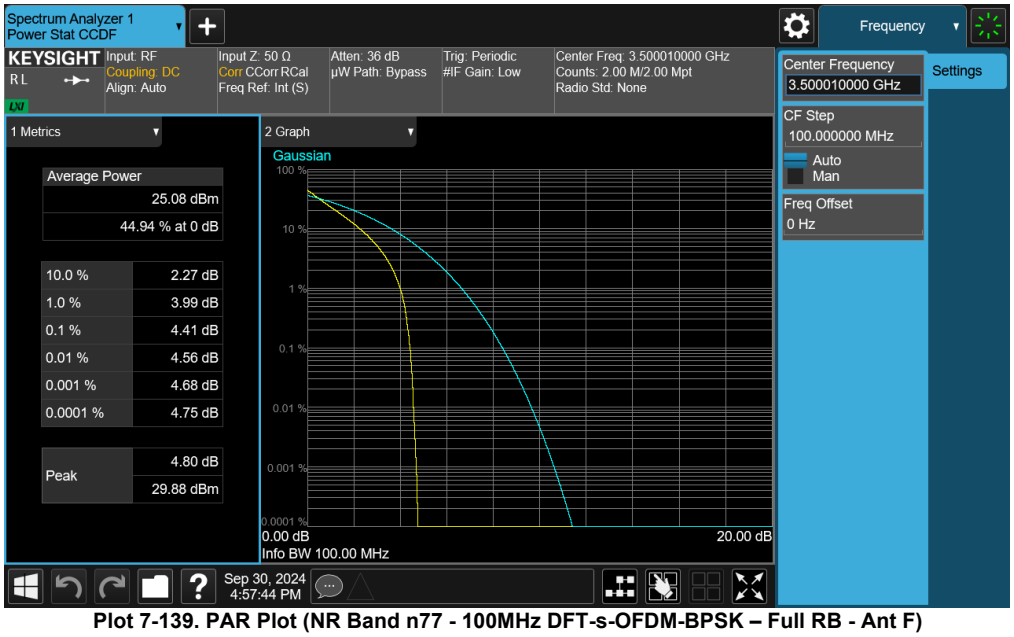
Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dB]	Margin [dB]
NR-n77PC2	100MHz	π/2 BPSK	26.82	4.34	13	-8.66
		QPSK	24.26	6.92	13	-6.08
		256QAM	20.80	8.53	13	-4.47
	90MHz	π/2 BPSK	26.48	4.18	13	-8.82
		QPSK	24.25	6.76	13	-6.24
		256QAM	20.70	8.52	13	-4.48
	80MHz	π/2 BPSK	26.62	4.28	13	-8.72
		QPSK	24.23	6.82	13	-6.18
		256QAM	20.73	8.47	13	-4.53
	70MHz	π/2 BPSK	26.63	4.17	13	-8.83
		QPSK	24.21	6.78	13	-6.22
		256QAM	20.70	8.51	13	-4.49
	60MHz	π/2 BPSK	26.54	4.15	13	-8.85
		QPSK	24.08	6.78	13	-6.22
		256QAM	20.62	8.52	13	-4.48
	50MHz	π/2 BPSK	26.59	4.07	13	-8.93
		QPSK	24.34	6.68	13	-6.32
		256QAM	20.77	8.49	13	-4.51
	40MHz	π/2 BPSK	25.31	3.60	13	-9.40
		QPSK	23.24	6.63	13	-6.37
		256QAM	19.72	8.46	13	-4.54
	30MHz	π/2 BPSK	25.56	4.01	13	-8.99
		QPSK	23.17	6.69	13	-6.31
		256QAM	19.71	8.46	13	-4.54
	25MHz	π/2 BPSK	25.87	4.03	13	-8.97
		QPSK	23.29	6.77	13	-6.23
		256QAM	19.80	8.46	13	-4.54
	20MHz	π/2 BPSK	25.80	3.95	13	-9.05
		QPSK	23.29	6.61	13	-6.39
		256QAM	19.72	8.47	13	-4.53
	15MHz	π/2 BPSK	25.34	4.10	13	-8.90
		QPSK	23.00	6.60	13	-6.40
		256QAM	19.50	8.45	13	-4.55
	10MHz	π/2 BPSK	25.44	4.06	13	-8.94
		QPSK	23.15	6.63	13	-6.37
		256QAM	19.63	8.44	13	-4.56

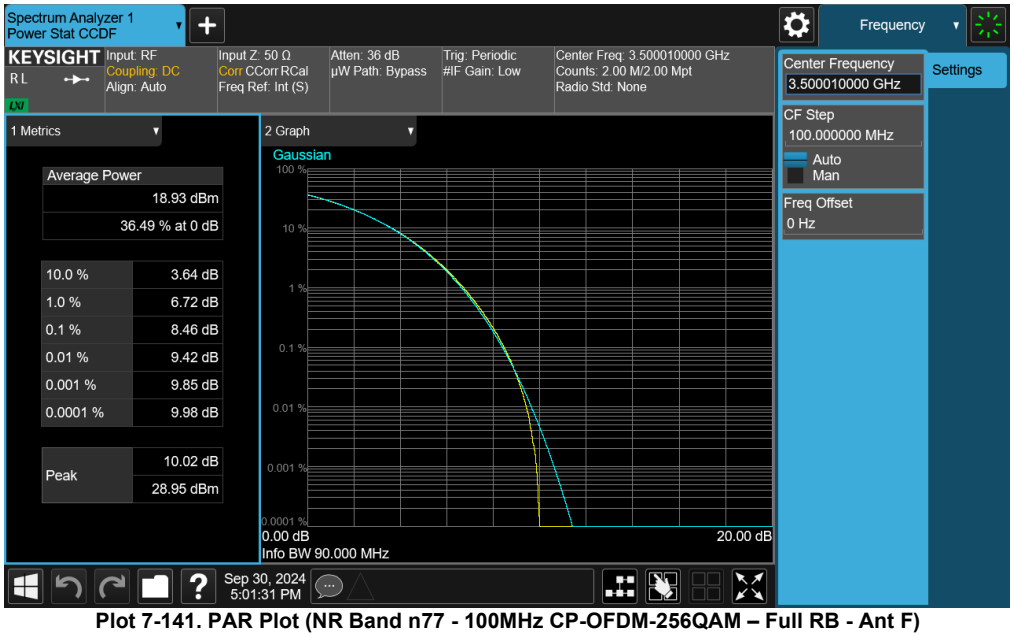
Table 7-16. PAR Test Results – NR Band n77 C-band – Ant F

NR Band n77 DoD – Ant F



Plot 7-139. PAR Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB - Ant F)

Plot 7-140. PAR Plot (NR Band n77 - 100MHz CP-OFDM-QPSK – Full RB - Ant F)

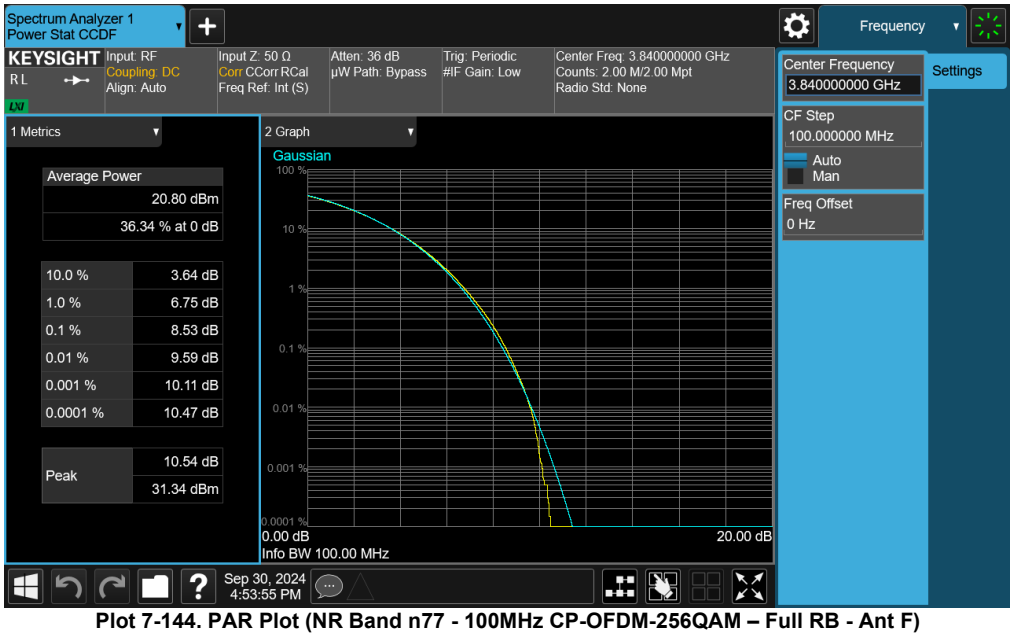


Plot 7-141. PAR Plot (NR Band n77 - 100MHz CP-OFDM-256QAM – Full RB - Ant F)

NR Band n77 C-band – Ant F

Plot 7-142. PAR Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB - Ant F)

Plot 7-143. PAR Plot (NR Band n77 - 100MHz CP-OFDM-QPSK – Full RB - Ant F)



Plot 7-144. PAR Plot (NR Band n77 - 100MHz CP-OFDM-256QAM – Full RB - Ant F)

Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dB]	Margin [dB]
NR-n77PC2-R1	100MHz	π/2 BPSK	19.79	4.49	13	-8.51
		QPSK	17.23	6.94	13	-6.06
		256QAM	13.79	8.48	13	-4.52
NR-n77PC2	100MHz	π/2 BPSK	21.28	4.48	13	-8.52
		QPSK	18.96	6.93	13	-6.07
		256QAM	15.49	8.46	13	-4.54

Table 7-17. PAR Test Results – NR Band n77 – Ant C

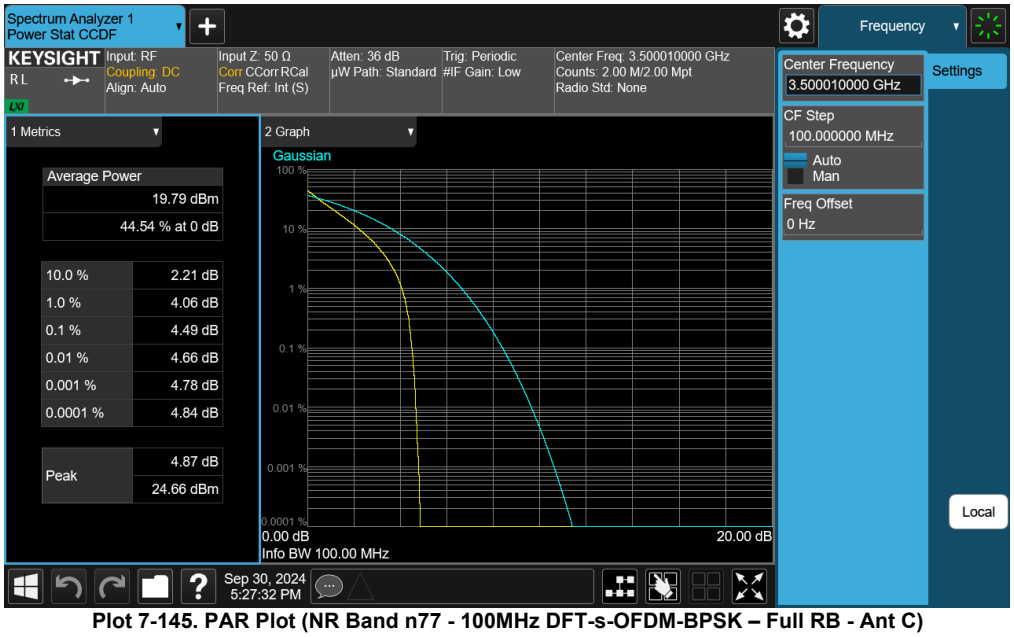
Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dB]	Margin [dB]
NR-n77PC2-R1	100MHz	π/2 BPSK	24.52	2.63	13	-10.37
		QPSK	20.97	6.93	13	-6.07
		256QAM	17.81	8.53	13	-4.47
NR-n77PC2	100MHz	π/2 BPSK	26.18	4.53	13	-8.47
		QPSK	23.54	6.98	13	-6.02
		256QAM	20.01	8.49	13	-4.51

Table 7-18. PAR Test Results – NR Band n77 – Ant I

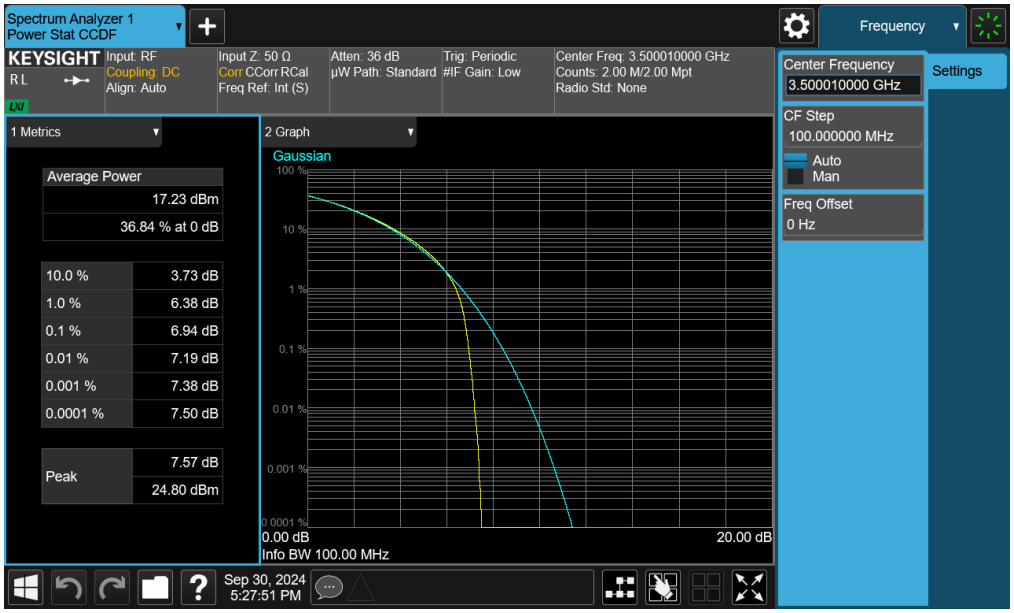
Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dB]	Margin [dB]
NR-n77PC2-R1	100MHz	π/2 BPSK	19.15	4.50	13	-8.50
		QPSK	16.63	6.99	13	-6.01
		256QAM	13.12	8.49	13	-4.51
NR-n77PC2	100MHz	π/2 BPSK	19.87	4.46	13	-8.54
		QPSK	17.51	6.92	13	-6.08
		256QAM	14.52	8.48	13	-4.52

Table 7-19. PAR Test Results – NR Band n77 – Ant D

NR Band n77 DoD – Ant C



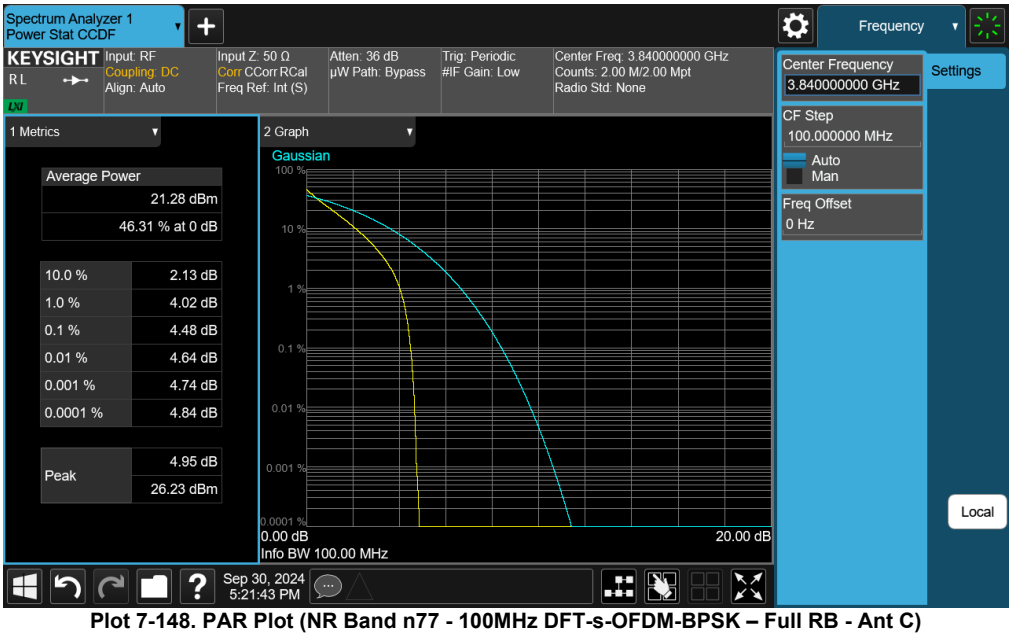
Plot 7-145. PAR Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB - Ant C)



Plot 7-146. PAR Plot (NR Band n77 - 100MHz CP-OFDM-QPSK – Full RB - Ant C)

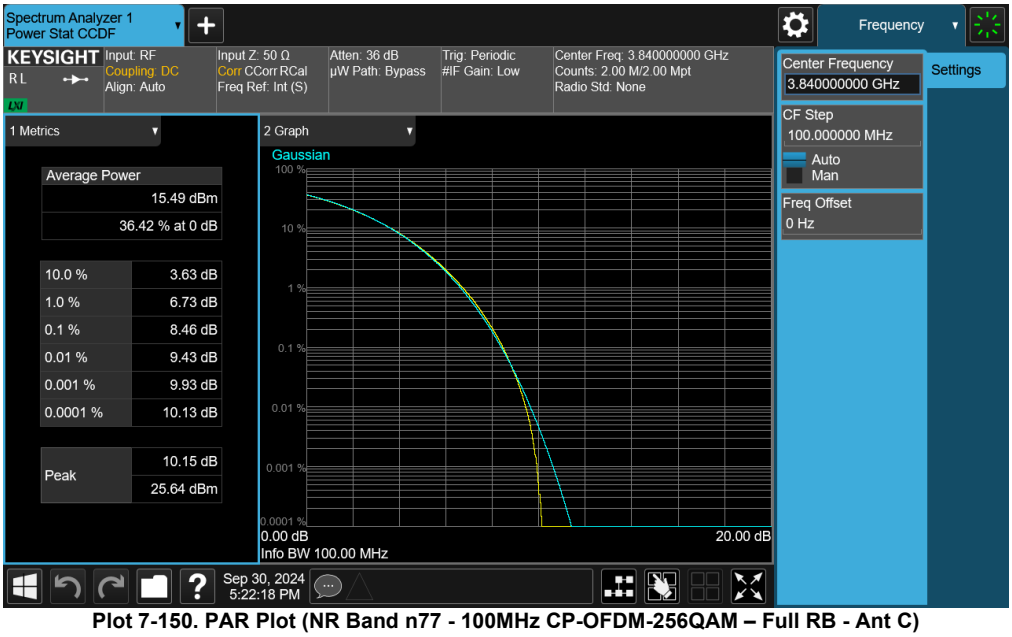
Plot 7-147. PAR Plot (NR Band n77 - 100MHz CP-OFDM-256QAM – Full RB - Ant C)

NR Band n77 C-band – Ant C



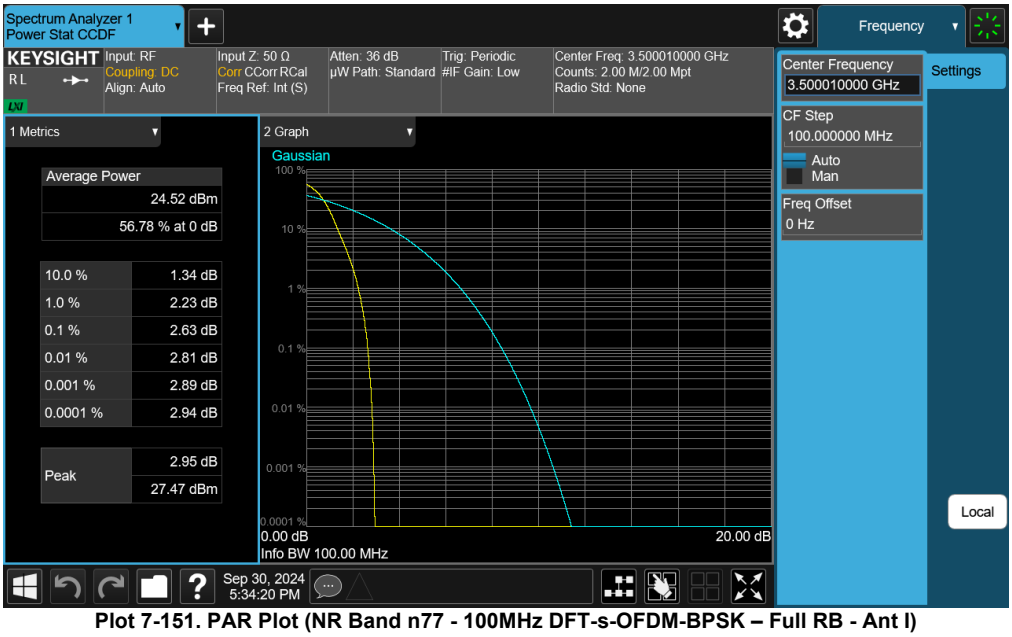
Plot 7-148. PAR Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB - Ant C)

Plot 7-149. PAR Plot (NR Band n77 - 100MHz CP-OFDM-QPSK – Full RB - Ant C)

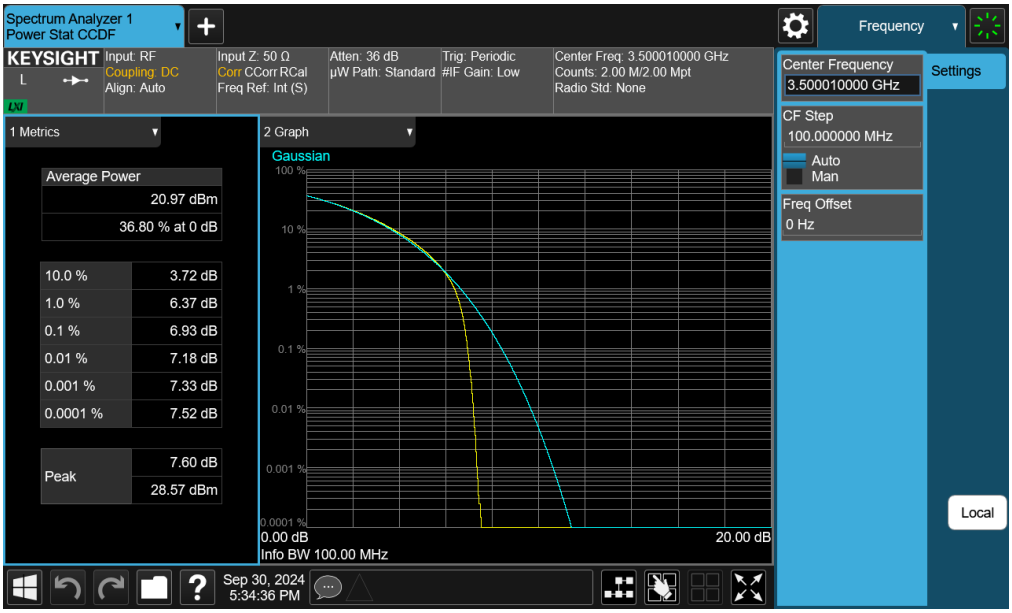


Plot 7-150. PAR Plot (NR Band n77 - 100MHz CP-OFDM-256QAM – Full RB - Ant C)

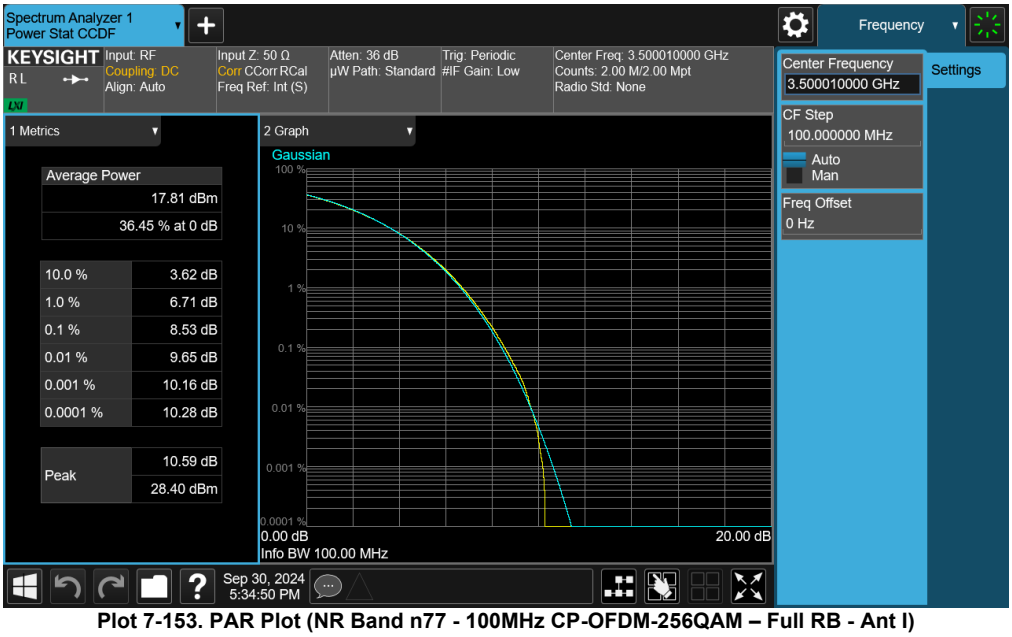
NR Band n77 DoD – Ant I



Plot 7-151. PAR Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB - Ant I)



Plot 7-152. PAR Plot (NR Band n77 - 100MHz CP-OFDM-QPSK – Full RB - Ant I)

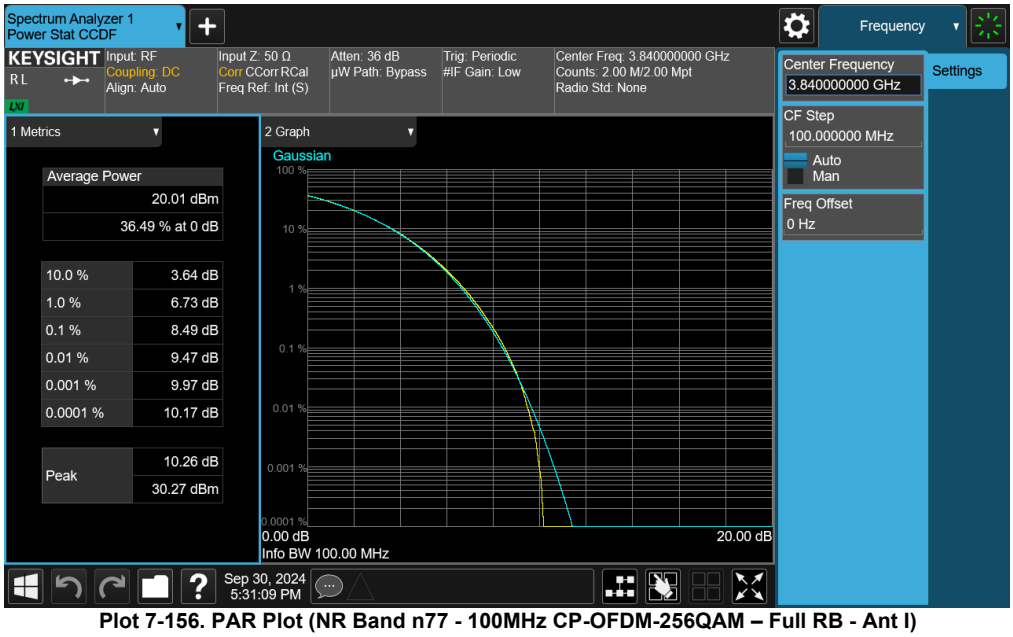


Plot 7-153. PAR Plot (NR Band n77 - 100MHz CP-OFDM-256QAM – Full RB - Ant I)

NR Band n77 C-band – Ant I

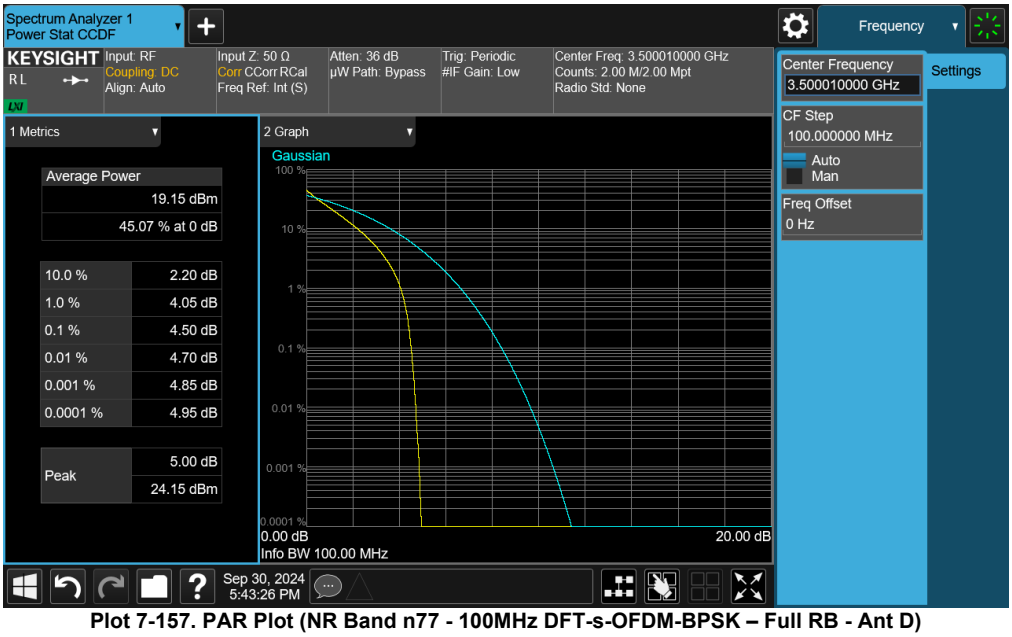
Plot 7-154. PAR Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB - Ant I)

Plot 7-155. PAR Plot (NR Band n77 - 100MHz CP-OFDM-QPSK – Full RB - Ant I)

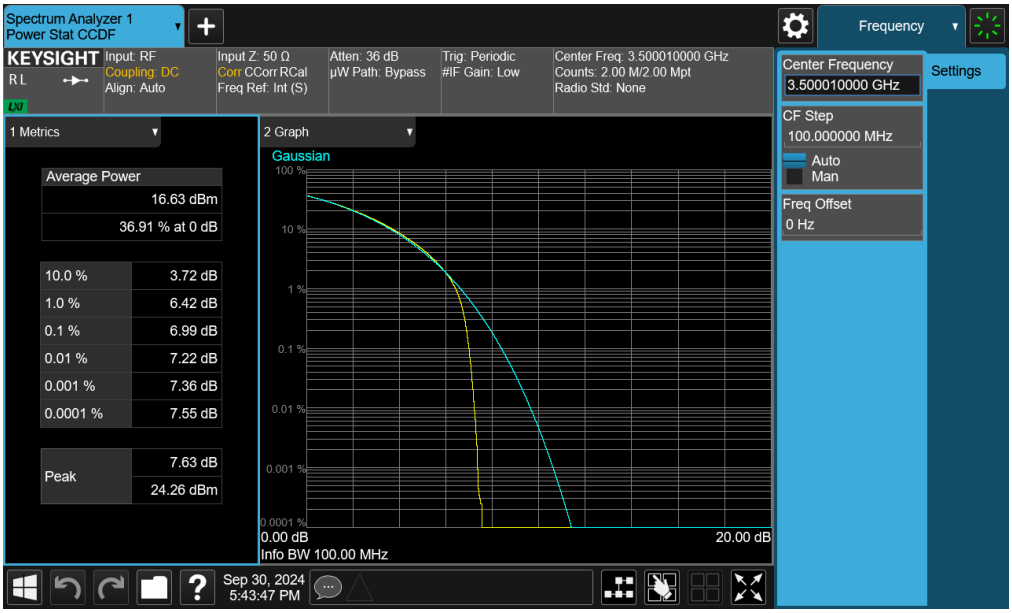


Plot 7-156. PAR Plot (NR Band n77 - 100MHz CP-OFDM-256QAM – Full RB - Ant I)

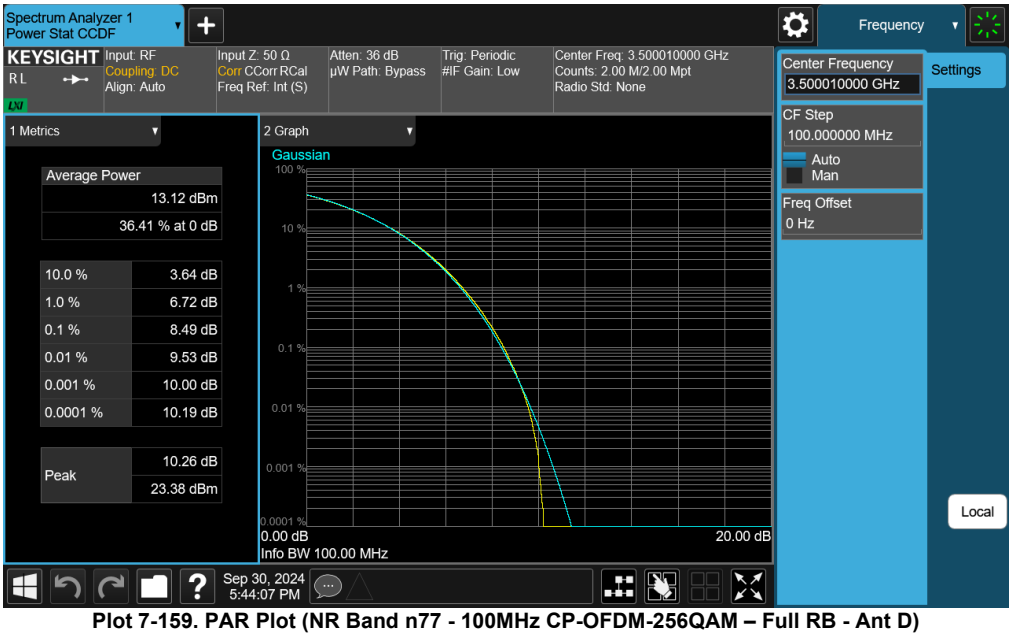
NR Band n77 DoD – Ant D



Plot 7-157. PAR Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB - Ant D)

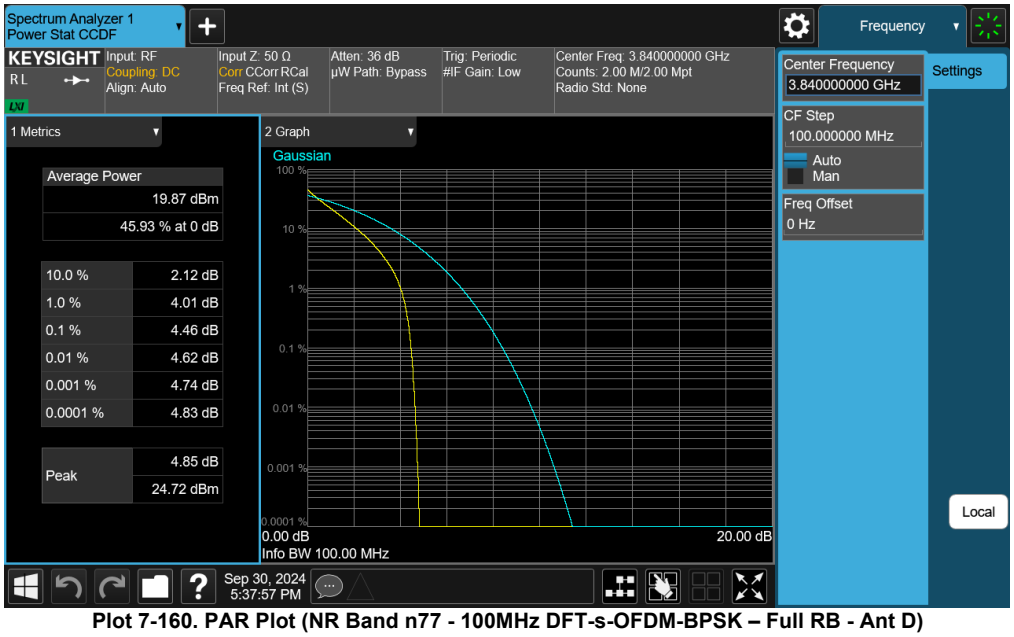


Plot 7-158. PAR Plot (NR Band n77 - 100MHz CP-OFDM-QPSK – Full RB - Ant D)



Plot 7-159. PAR Plot (NR Band n77 - 100MHz CP-OFDM-256QAM – Full RB - Ant D)

NR Band n77 C-band – Ant D



Plot 7-160. PAR Plot (NR Band n77 - 100MHz DFT-s-OFDM-BPSK – Full RB - Ant D)

Plot 7-161. PAR Plot (NR Band n77 - 100MHz CP-OFDM-QPSK – Full RB - Ant D)

Plot 7-162. PAR Plot (NR Band n77 - 100MHz CP-OFDM-256QAM – Full RB - Ant D)

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.

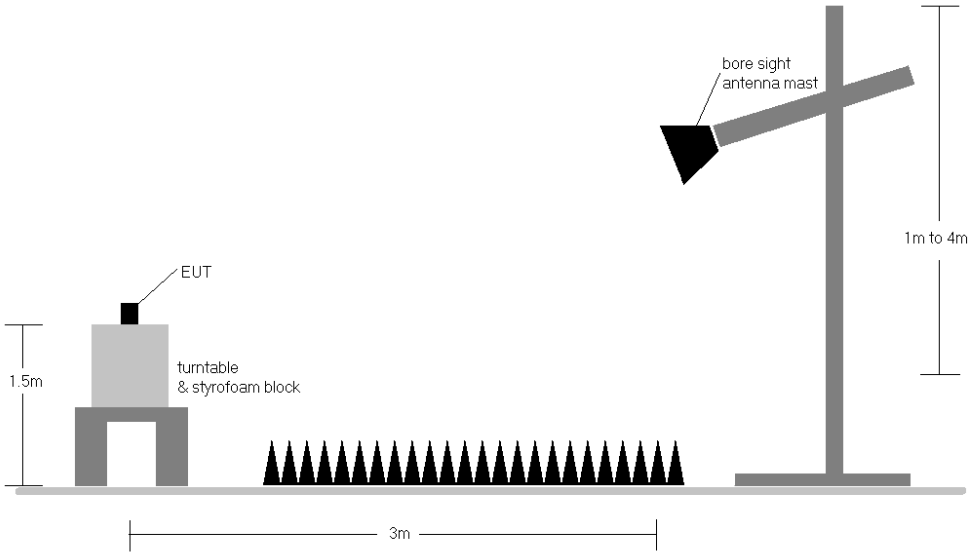


Figure 7-6. Radiated Test Setup >1GHz

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	157	341	9.71	1 / 271	15.58	**25.29**	0.338	30.00	-4.71
	QPSK	3500.01	H	157	341	9.71	1 / 271	15.56	25.27	0.337	30.00	-4.73
	16-QAM	3500.01	H	157	341	9.71	1 / 271	14.50	24.21	0.264	30.00	-5.79
90 MHz	π/2 BPSK	3495.00	H	157	341	9.71	1 / 243	15.63	25.34	0.342	30.00	-4.66
	π/2 BPSK	3500.01	H	157	341	9.71	1 / 122	15.64	25.35	0.343	30.00	-4.65
	π/2 BPSK	3504.99	H	157	341	9.71	1 / 122	15.57	25.28	0.337	30.00	-4.72
	QPSK	3495.00	H	157	341	9.71	1 / 243	15.71	25.42	0.349	30.00	-4.58
	QPSK	3500.01	H	157	341	9.71	1 / 122	15.67	25.39	0.346	30.00	-4.61
	QPSK	3504.99	H	157	341	9.71	1 / 122	15.74	**25.45**	0.351	30.00	-4.55
	16-QAM	3504.99	H	157	341	9.71	1 / 122	14.67	24.38	0.274	30.00	-5.62
80 MHz	π/2 BPSK	3490.02	H	157	341	9.72	1 / 215	15.59	25.30	0.339	30.00	-4.70
	π/2 BPSK	3500.01	H	157	341	9.71	1 / 215	15.62	25.33	0.341	30.00	-4.67
	π/2 BPSK	3510.00	H	157	341	9.71	1 / 108	15.59	25.30	0.339	30.00	-4.70
	QPSK	3490.02	H	157	341	9.72	1 / 215	15.76	25.47	0.353	30.00	-4.53
	QPSK	3500.01	H	157	341	9.71	1 / 215	15.77	**25.48**	0.354	30.00	-4.52
	QPSK	3510.00	H	157	341	9.71	1 / 108	15.72	25.43	0.349	30.00	-4.57
	16-QAM	3490.02	H	157	341	9.72	1 / 215	14.73	24.45	0.278	30.00	-5.55
70 MHz	π/2 BPSK	3485.01	H	157	341	9.72	1 / 187	15.60	25.32	0.341	30.00	-4.68
	π/2 BPSK	3500.01	H	157	341	9.71	1 / 94	15.64	25.35	0.343	30.00	-4.65
	π/2 BPSK	3514.98	H	157	341	9.71	1 / 187	15.61	25.32	0.340	30.00	-4.68
	QPSK	3485.01	H	157	341	9.72	1 / 187	15.76	**25.48**	0.354	30.00	-4.52
	QPSK	3500.01	H	157	341	9.71	1 / 94	15.64	25.35	0.342	30.00	-4.65
	QPSK	3514.98	H	157	341	9.71	1 / 187	15.73	25.43	0.349	30.00	-4.57
	16-QAM	3514.98	H	157	341	9.71	1 / 187	14.76	24.46	0.280	30.00	-5.54
60 MHz	π/2 BPSK	3480.00	H	157	341	9.72	1 / 160	15.48	25.21	0.332	30.00	-4.79
	π/2 BPSK	3500.01	H	157	341	9.71	1 / 160	15.48	25.19	0.330	30.00	-4.81
	π/2 BPSK	3519.99	H	157	341	9.70	1 / 160	15.56	25.27	0.336	30.00	-4.73
	QPSK	3480.00	H	157	341	9.72	1 / 160	15.60	25.33	0.341	30.00	-4.67
	QPSK	3500.01	H	157	341	9.71	1 / 160	15.62	25.33	0.341	30.00	-4.67
	QPSK	3519.99	H	157	341	9.70	1 / 160	15.72	**25.42**	0.349	30.00	-4.58
	16-QAM	3519.99	H	157	341	9.70	1 / 160	14.64	24.35	0.272	30.00	-5.65
50 MHz	π/2 BPSK	3475.02	H	157	341	9.73	1 / 131	15.58	25.31	0.339	30.00	-4.69
	π/2 BPSK	3500.01	H	157	341	9.71	1 / 1	15.61	25.32	0.341	30.00	-4.68
	π/2 BPSK	3525.00	H	157	341	9.70	1 / 131	15.64	25.34	0.342	30.00	-4.66
	QPSK	3475.02	H	157	341	9.73	1 / 131	15.55	25.28	0.337	30.00	-4.72
	QPSK	3500.01	H	157	341	9.71	1 / 131	15.72	25.43	0.349	30.00	-4.57
	QPSK	3525.00	H	157	341	9.70	1 / 131	15.75	**25.45**	0.351	30.00	-4.55
	16-QAM	3525.00	H	157	341	9.70	1 / 131	14.71	24.42	0.276	30.00	-5.58
40 MHz	π/2 BPSK	3470.01	H	157	341	9.73	1 / 1	15.50	25.23	0.333	30.00	-4.77
	π/2 BPSK	3500.01	H	157	341	9.71	1 / 53	15.62	25.33	0.341	30.00	-4.67
	π/2 BPSK	3529.98	H	157	341	9.70	1 / 53	15.65	25.35	0.343	30.00	-4.65
	QPSK	3470.01	H	157	341	9.73	1 / 1	15.57	25.30	0.339	30.00	-4.70
	QPSK	3500.01	H	157	341	9.71	1 / 53	15.72	25.43	0.350	30.00	-4.57
	QPSK	3529.98	H	157	341	9.70	1 / 53	15.79	**25.49**	0.354	30.00	-4.51
	16-QAM	3529.98	H	157	341	9.70	1 / 53	14.64	24.34	0.272	30.00	-5.66
	256-QAM	3529.98	H	157	341	9.70	1 / 53	11.42	21.12	0.130	30.00	-8.88
30 MHz	π/2 BPSK	3465.00	H	157	341	9.73	1 / 39	15.59	25.32	0.340	30.00	-4.68
	π/2 BPSK	3500.01	H	157	341	9.71	1 / 39	15.61	25.32	0.340	30.00	-4.68
	π/2 BPSK	3534.99	H	157	341	9.70	1 / 76	15.61	25.31	0.339	30.00	-4.69
	QPSK	3465.00	H	157	341	9.73	1 / 39	15.75	**25.49**	0.354	30.00	-4.51
	QPSK	3500.01	H	157	341	9.71	1 / 39	15.58	25.29	0.338	30.00	-4.71
	QPSK	3534.99	H	157	341	9.70	1 / 76	15.70	25.40	0.347	30.00	-4.60
	16-QAM	3465.00	H	157	341	9.73	1 / 39	14.64	24.37	0.274	30.00	-5.63
25 MHz	π/2 BPSK	3462.51	H	157	341	9.74	65 / 0	15.01	24.74	0.298	30.00	-5.26
	π/2 BPSK	3500.01	H	157	341	9.71	65 / 0	15.20	24.91	0.309	30.00	-5.09
	π/2 BPSK	3537.48	H	157	341	9.70	65 / 0	15.31	**25.01**	0.317	30.00	-4.99
	QPSK	3462.51	H	157	341	9.74	1 / 63	15.14	24.87	0.307	30.00	-5.13
	QPSK	3500.01	H	157	341	9.71	65 / 0	14.76	24.47	0.280	30.00	-5.53
	QPSK	3537.48	H	157	341	9.70	65 / 0	14.97	24.67	0.293	30.00	-5.33
	16-QAM	3462.51	H	157	341	9.74	1 / 63	14.31	24.04	0.254	30.00	-5.96
20 MHz	π/2 BPSK	3460.02	H	157	341	9.74	1 / 49	15.13	24.87	0.307	30.00	-5.13
	π/2 BPSK	3500.01	H	157	341	9.71	1 / 49	15.62	25.33	0.341	30.00	-4.67
	π/2 BPSK	3540.00	H	157	341	9.70	1 / 49	15.61	25.31	0.340	30.00	-4.69
	QPSK	3460.02	H	157	341	9.74	1 / 49	15.39	25.13	0.326	30.00	-4.87
	QPSK	3500.01	H	157	341	9.71	1 / 49	15.72	**25.44**	0.350	30.00	-4.56
	QPSK	3540.00	H	157	341	9.70	1 / 49	15.68	25.37	0.345	30.00	-4.63
	16-QAM	3540.00	H	157	341	9.70	1 / 49	14.38	24.08	0.256	30.00	-5.92
15 MHz	π/2 BPSK	3457.50	H	157	341	9.74	1 / 36	15.49	25.23	0.333	30.00	-4.77
	π/2 BPSK	3500.01	H	157	341	9.71	1 / 19	15.59	25.30	0.339	30.00	-4.70
	π/2 BPSK	3542.49	H	157	341	9.70	1 / 36	15.63	25.33	0.341	30.00	-4.67
	QPSK	3457.50	H	157	341	9.74	1 / 36	15.57	25.31	0.340	30.00	-4.69
	QPSK	3500.01	H	157	341	9.71	1 / 19	15.59	25.30	0.339	30.00	-4.70
	QPSK	3542.49	H	157	341	9.70	1 / 36	15.77	**25.47**	0.352	30.00	-4.53
	16-QAM	3542.49	H	157	341	9.70	1 / 36	15.05	24.74	0.298	30.00	-5.26
10 MHz	π/2 BPSK	3455.01	H	157	341	9.74	1 / 12	15.57	25.31	0.340	30.00	-4.69
	π/2 BPSK	3500.01	H	157	341	9.71	1 / 12	15.62	25.33	0.341	30.00	-4.67
	π/2 BPSK	3544.98	H	157	341	9.70	1 / 22	15.63	25.33	0.341	30.00	-4.67
	QPSK	3455.01	H	157	341	9.74	1 / 12	15.50	25.24	0.334	30.00	-4.76
	QPSK	3500.01	H	157	341	9.71	1 / 12	15.65	25.36	0.343	30.00	-4.64
	QPSK	3544.98	H	157	341	9.70	1 / 22	15.77	**25.47**	0.353	30.00	-4.53
	16-QAM	3544.98	H	157	341	9.70	1 / 22	14.72	24.42	0.277	30.00	-5.58
100 MHz	QPSK (CP-OFDM)	3500.0	H	161	339	9.71	1 / 271	14.14	23.85	0.243	30.00	-6.15
	QPSK (Opposite Pol.)	3500.0	V	304	356	9.71	1 / 271	14.85	24.56	0.286	30.00	-5.44
	QPSK (WCP)	3500.0	H	165	338	9.71	1 / 271	12.74	22.45	0.176	30.00	-7.55

Table 7-20. EIRP Data (NR Band n77 DoD – Ant F)

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	3750.00	H	160	336	9.64	1 / 1	15.98	25.60	0.363	30.00	-4.40
	π/2 BPSK	3840.00	H	168	330	9.61	1 / 1	16.74	26.35	0.432	30.00	-3.65
	π/2 BPSK	3930.00	H	159	333	9.59	1 / 136	16.46	26.05	0.403	30.00	-3.95
	QPSK	3750.00	H	160	336	9.64	1 / 1	15.98	25.62	0.365	30.00	-4.38
	QPSK	3840.00	H	168	330	9.61	1 / 1	16.75	**26.36**	0.433	30.00	-3.64
	QPSK	3930.00	H	159	333	9.59	1 / 136	16.39	25.98	0.396	30.00	-4.02
	16-QAM	3840.00	H	168	330	9.61	1 / 1	15.61	25.22	0.333	30.00	-4.78
90 MHz	π/2 BPSK	3745.02	H	160	336	9.64	1 / 122	15.90	25.54	0.358	30.00	-4.46
	π/2 BPSK	3840.00	H	168	330	9.61	1 / 243	16.56	**26.17**	0.414	30.00	-3.83
	π/2 BPSK	3934.98	H	159	333	9.59	1 / 122	16.34	25.93	0.391	30.00	-4.07
	QPSK	3745.02	H	160	336	9.64	1 / 122	16.01	25.65	0.367	30.00	-4.35
	QPSK	3840.00	H	168	330	9.61	1 / 243	16.42	26.03	0.401	30.00	-3.97
	QPSK	3934.98	H	159	333	9.59	1 / 122	16.45	26.03	0.401	30.00	-3.97
	16-QAM	3934.98	H	159	333	9.59	1 / 122	15.28	24.87	0.307	30.00	-5.13
80 MHz	π/2 BPSK	3740.01	H	160	336	9.64	1 / 108	16.76	26.40	0.437	30.00	-3.60
	π/2 BPSK	3840.00	H	168	330	9.61	1 / 1	16.99	26.60	0.457	30.00	-3.40
	π/2 BPSK	3939.99	H	159	333	9.59	1 / 215	16.03	25.62	0.365	30.00	-4.38
	QPSK	3740.01	H	160	336	9.64	1 / 108	16.73	26.37	0.434	30.00	-3.63
	QPSK	3840.00	H	168	330	9.61	1 / 1	17.03	**26.64**	0.461	30.00	-3.36
	QPSK	3939.99	H	159	333	9.59	1 / 215	16.26	25.85	0.385	30.00	-4.15
	16-QAM	3840.00	H	168	330	9.61	1 / 1	15.96	25.57	0.361	30.00	-4.43
70 MHz	π/2 BPSK	3735.00	H	160	336	9.64	1 / 94	16.40	26.04	0.402	30.00	-3.96
	π/2 BPSK	3840.00	H	168	330	9.61	1 / 1	16.96	26.57	0.454	30.00	-3.43
	π/2 BPSK	3945.00	H	159	333	9.59	1 / 187	16.26	25.85	0.384	30.00	-4.15
	QPSK	3735.00	H	160	336	9.64	1 / 94	16.47	26.12	0.409	30.00	-3.88
	QPSK	3840.00	H	168	330	9.61	1 / 1	17.03	**26.64**	0.461	30.00	-3.36
	QPSK	3945.00	H	159	333	9.59	1 / 187	16.36	25.95	0.393	30.00	-4.05
	16-QAM	3840.00	H	168	330	9.61	1 / 1	15.50	25.12	0.325	30.00	-4.88
60 MHz	π/2 BPSK	3730.02	H	160	336	9.64	1 / 160	16.16	25.81	0.381	30.00	-4.19
	π/2 BPSK	3840.00	H	168	330	9.61	1 / 81	17.00	**26.62**	0.459	30.00	-3.38
	π/2 BPSK	3949.98	H	159	333	9.58	1 / 1	15.91	25.50	0.355	30.00	-4.50
	QPSK	3730.02	H	160	336	9.64	1 / 160	16.11	25.76	0.376	30.00	-4.24
	QPSK	3840.00	H	168	330	9.61	1 / 81	16.96	26.57	0.454	30.00	-3.43
	QPSK	3949.98	H	159	333	9.58	1 / 1	16.00	25.59	0.362	30.00	-4.41
	16-QAM	3840.00	H	168	330	9.61	1 / 81	15.71	25.32	0.341	30.00	-4.68
50 MHz	π/2 BPSK	3725.01	H	160	336	9.65	1 / 66	16.63	26.28	0.424	30.00	-3.72
	π/2 BPSK	3840.00	H	168	330	9.61	1 / 1	17.18	26.79	0.477	30.00	-3.21
	π/2 BPSK	3954.99	H	159	333	9.58	1 / 1	16.10	25.69	0.370	30.00	-4.31
	QPSK	3725.01	H	160	336	9.65	1 / 66	16.40	26.05	0.403	30.00	-3.95
	QPSK	3840.00	H	168	330	9.61	1 / 1	17.42	**27.04**	0.505	30.00	-2.96
	QPSK	3954.99	H	159	333	9.58	1 / 1	16.13	25.71	0.372	30.00	-4.29
	16-QAM	3840.00	H	168	330	9.61	1 / 1	16.24	25.85	0.385	30.00	-4.15
40 MHz	π/2 BPSK	3720.00	H	160	336	9.65	1 / 104	16.65	26.30	0.426	30.00	-3.70
	π/2 BPSK	3840.00	H	168	330	9.61	1 / 1	16.91	26.52	0.449	30.00	-3.48
	π/2 BPSK	3960.00	H	159	333	9.58	1 / 53	16.14	25.72	0.373	30.00	-4.28
	QPSK	3720.00	H	160	336	9.65	1 / 104	16.64	26.29	0.425	30.00	-3.71
	QPSK	3840.00	H	168	330	9.61	1 / 1	16.93	**26.54**	0.451	30.00	-3.46
	QPSK	3960.00	H	159	333	9.58	1 / 53	16.24	25.82	0.382	30.00	-4.18
	16-QAM	3840.00	H	168	330	9.61	1 / 1	15.66	25.27	0.337	30.00	-4.73
30 MHz	π/2 BPSK	3715.02	H	160	336	9.65	1 / 76	16.22	25.86	0.386	30.00	-4.14
	π/2 BPSK	3840.00	H	168	330	9.61	1 / 1	17.11	**26.72**	0.470	30.00	-3.28
	π/2 BPSK	3964.98	H	159	333	9.58	1 / 76	16.07	25.65	0.368	30.00	-4.35
	QPSK	3715.02	H	160	336	9.65	1 / 76	16.36	26.01	0.399	30.00	-3.99
	QPSK	3840.00	H	168	330	9.61	1 / 1	16.98	26.58	0.455	30.00	-3.42
	QPSK	3964.98	H	159	333	9.58	1 / 76	15.53	25.11	0.325	30.00	-4.89
	16-QAM	3840.00	H	168	330	9.61	1 / 1	15.79	25.40	0.347	30.00	-4.60
25 MHz	π/2 BPSK	3712.50	H	157	341	9.65	1 / 1	15.91	25.56	0.360	30.00	-4.44
	π/2 BPSK	3840.00	H	157	341	9.61	1 / 1	16.71	**26.33**	0.429	30.00	-3.67
	π/2 BPSK	3967.50	H	157	341	9.58	1 / 1	16.11	25.69	0.371	30.00	-4.31
	QPSK	3712.50	H	157	341	9.65	1 / 1	15.86	25.51	0.356	30.00	-4.49
	QPSK	3840.00	H	157	341	9.61	1 / 1	16.61	26.22	0.419	30.00	-3.78
	QPSK	3967.50	H	157	341	9.58	1 / 1	15.69	25.26	0.336	30.00	-4.74
	16-QAM	3840.00	H	157	341	9.61	1 / 1	15.48	25.09	0.323	30.00	-4.91
20 MHz	π/2 BPSK	3710.01	H	160	336	9.65	1 / 1	15.94	25.59	0.362	30.00	-4.41
	π/2 BPSK	3840.00	H	168	330	9.61	1 / 25	16.94	**26.55**	0.452	30.00	-3.45
	π/2 BPSK	3969.99	H	159	333	9.58	1 / 1	15.91	25.49	0.354	30.00	-4.51
	QPSK	3710.01	H	160	336	9.65	1 / 1	16.16	25.81	0.381	30.00	-4.19
	QPSK	3840.00	H	168	330	9.61	1 / 25	16.72	26.33	0.429	30.00	-3.67
	QPSK	3969.99	H	159	333	9.58	1 / 1	15.74	25.31	0.340	30.00	-4.69
	16-QAM	3840.00	H	168	330	9.61	1 / 25	15.66	25.27	0.337	30.00	-4.73
15 MHz	π/2 BPSK	3707.52	H	160	336	9.65	1 / 1	15.94	25.59	0.363	30.00	-4.41
	π/2 BPSK	3840.00	H	168	330	9.61	1 / 19	17.05	**26.67**	0.464	30.00	-3.33
	π/2 BPSK	3972.48	H	159	333	9.58	1 / 1	15.90	25.48	0.353	30.00	-4.52
	QPSK	3707.52	H	160	336	9.65	1 / 1	15.60	25.25	0.335	30.00	-4.75
	QPSK	3840.00	H	168	330	9.61	1 / 19	16.74	26.36	0.432	30.00	-3.64
	QPSK	3972.48	H	159	333	9.58	1 / 1	15.97	25.55	0.359	30.00	-4.45
	16-QAM	3840.00	H	168	330	9.61	1 / 19	15.54	25.15	0.327	30.00	-4.85
10 MHz	π/2 BPSK	3705.00	H	160	336	9.65	1 / 1	16.48	26.13	0.410	30.00	-3.87
	π/2 BPSK	3840.00	H	168	330	9.61	1 / 1	16.80	**26.41**	0.438	30.00	-3.59
	π/2 BPSK	3975.00	H	159	333	9.58	1 / 22	15.58	25.16	0.328	30.00	-4.84
	QPSK	3705.00	H	160	336	9.65	1 / 1	16.30	25.95	0.394	30.00	-4.05
	QPSK	3840.00	H	168	330	9.61	1 / 1	16.73	26.35	0.431	30.00	-3.65
	QPSK	3975.00	H	159	333	9.58	1 / 22	15.20	24.78	0.300	30.00	-5.22
	16-QAM	3840.00	H	168	330	9.61	1 / 1	15.56	25.17	0.329	30.00	-4.83
100 MHz	QPSK (CP-OFDM)	3840.00	H	143	337	9.61	1 / 1	15.86	25.47	0.353	30.00	-4.53
	QPSK (Opposite Pol.)	3840.00	V	307	355	9.61	1 / 1	16.47	26.08	0.406	30.00	-3.92
	QPSK (WCP)	3840.00	H	143	339	9.61	1 / 1	14.18	23.79	0.240	30.00	-6.21

Table 7-21. EIRP Data (NR Band n77 C-band – Ant F)

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	101	323	9.71	1 / 68	12.57	22.28	0.169	30.00	-7.72
	QPSK	3500.01	H	101	323	9.71	1 / 68	12.77	**22.48**	0.177	30.00	-7.52
	16-QAM	3500.01	H	101	323	9.71	1 / 68	11.44	21.15	0.130	30.00	-8.85
100 MHz	QPSK (CP-OFDM)	3500.0	H	100	318	9.71	1 / 68	11.16	20.87	0.122	30.00	-9.13
	QPSK (Opposite Pol.)	3500.0	V	376	95	9.71	1 / 68	10.15	19.86	0.097	30.00	-10.14

Table 7-22. EIRP Data (NR Band n77 DoD – Ant C)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
100 MHz	π/2 BPSK	3750.00	H	100	322	9.64	1 / 68	12.87	22.51	0.178	30.00	-7.49
	π/2 BPSK	3840.00	H	105	327	9.61	1 / 68	13.61	23.22	0.210	30.00	-6.78
	π/2 BPSK	3930.00	H	107	323	9.59	1 / 204	14.89	**24.48**	0.280	30.00	-5.52
	QPSK	3750.00	H	100	322	9.64	1 / 68	12.90	22.54	0.179	30.00	-7.46
	QPSK	3840.00	H	105	327	9.61	1 / 68	13.55	23.16	0.207	30.00	-6.84
	QPSK	3930.00	H	107	323	9.59	1 / 204	14.87	24.46	0.279	30.00	-5.54
	16-QAM	3930.00	H	107	323	9.59	1 / 204	13.76	23.35	0.216	30.00	-6.65
100 MHz	QPSK (CP-OFDM)	3930.0	H	107	323	9.59	1 / 204	13.45	23.04	0.201	30.00	-6.96
	QPSK (Opposite Pol.)	3930.0	V	380	91	9.59	1 / 204	12.21	21.80	0.151	30.00	-8.20

Table 7-23. EIRP Data (NR Band n77 C-band – Ant C)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
100 MHz	π/2 BPSK	3500.01	H	201	318	9.71	1 / 68	12.62	**22.33**	0.171	30.00	-7.67
	QPSK	3500.01	H	201	318	9.71	1 / 68	12.58	22.29	0.169	30.00	-7.71
	16-QAM	3500.01	H	201	318	9.71	1 / 68	12.46	22.17	0.165	30.00	-7.83
100 MHz	QPSK (CP-OFDM)	3500.0	H	215	320	9.71	1 / 204	12.54	22.25	0.168	30.00	-7.75
	QPSK (Opposite Pol.)	3500.0	V	112	350	9.71	1 / 68	10.76	20.47	0.111	30.00	-9.53

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

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	3750.00	H	210	306	9.64	1 / 68	15.25	24.89	0.308	30.00	-5.11
	π/2 BPSK	3840.00	H	208	311	9.61	1 / 68	16.19	**25.80**	0.380	30.00	-4.20
	π/2 BPSK	3930.00	H	202	310	9.59	1 / 68	15.81	25.40	0.347	30.00	-4.60
	QPSK	3750.00	H	210	306	9.64	1 / 68	15.23	24.87	0.307	30.00	-5.13
	QPSK	3840.00	H	208	311	9.61	1 / 68	16.18	25.79	0.380	30.00	-4.21
	QPSK	3930.00	H	202	310	9.59	1 / 68	15.79	25.38	0.345	30.00	-4.62
	16-QAM	3840.00	H	208	311	9.61	1 / 68	16.08	25.69	0.371	30.00	-4.31
100 MHz	QPSK (CP-OFDM)	3840.0	H	207	304	9.61	1 / 68	15.94	25.55	0.359	30.00	-4.45
	QPSK (Opposite Pol.)	3840.0	V	110	347	9.61	1 / 68	14.39	24.00	0.251	30.00	-6.00

Table 7-25. EIRP Data (NR Band n77 C-band – Ant I)

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	109	345	9.71	1 / 68	8.05	**17.76**	0.060	30.00	-12.24
	QPSK	3500.01	H	109	345	9.71	1 / 68	8.04	17.75	0.060	30.00	-12.25
	16-QAM	3500.01	H	109	345	9.71	1 / 68	7.97	17.68	0.059	30.00	-12.32
100 MHz	QPSK (CP-OFDM)	3500.0	V	107	357	9.71	1 / 68	7.87	17.58	0.057	30.00	-12.42
	QPSK (Opposite Pol.)	3500.0	H	116	349	9.71	1 / 68	7.34	17.05	0.051	30.00	-12.95

Table 7-26. EIRP Data (NR Band n77 DoD – Ant D)

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	3750.00	V	119	350	9.64	1 / 204	7.15	16.79	0.048	30.00	-13.21
	π/2 BPSK	3840.00	V	108	349	9.61	270 / 0	8.47	18.08	0.064	30.00	-11.92
	π/2 BPSK	3930.00	V	118	351	9.59	1 / 68	9.23	**18.82**	0.076	30.00	-11.18
	QPSK	3750.00	V	119	350	9.64	1 / 204	7.17	16.81	0.048	30.00	-13.19
	QPSK	3840.00	V	108	349	9.61	1 / 136	8.42	18.03	0.064	30.00	-11.97
	QPSK	3930.00	V	118	351	9.59	1 / 68	9.19	18.78	0.075	30.00	-11.22
	16-QAM	3930.00	V	118	351	9.59	1 / 68	9.13	18.72	0.074	30.00	-11.28
100 MHz	QPSK (CP-OFDM)	3930.0	V	119	349	9.59	1 / 68	8.90	18.49	0.071	30.00	-11.51
	QPSK (Opposite Pol.)	3930.0	H	117	348	9.61	1 / 68	8.87	18.48	0.070	30.00	-11.52

Table 7-27. EIRP Data (NR Band n77 C-band – Ant D)

7.8 Radiated Spurious Emissions Measurements

Test Overview

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

Test Procedures Used

ANSI C63.26-2015 – Section 5.5.4

Test Settings

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

Test Setup

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

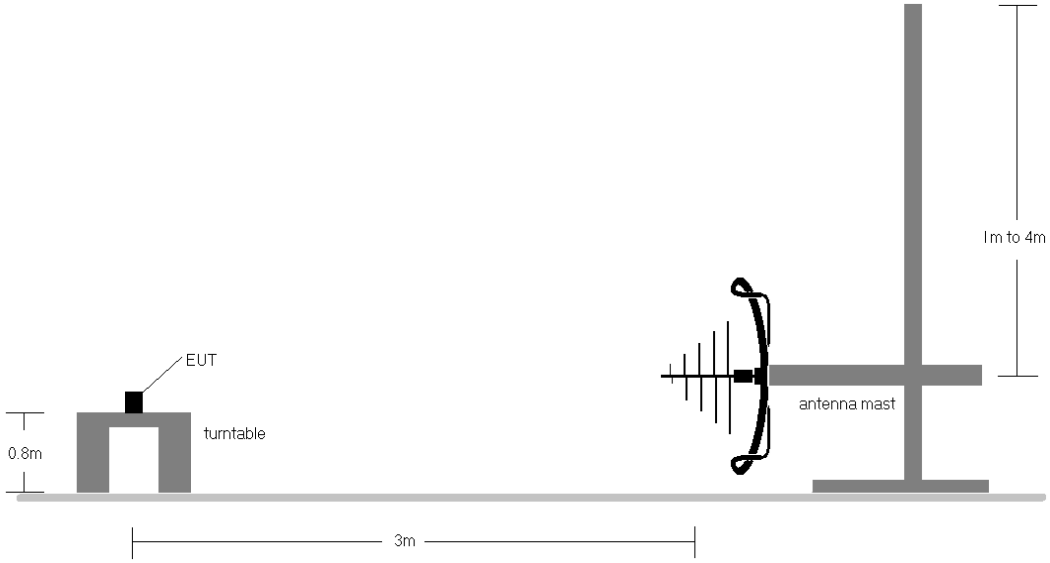


Figure 7-7. Test Instrument & Measurement Setup < 1GHz

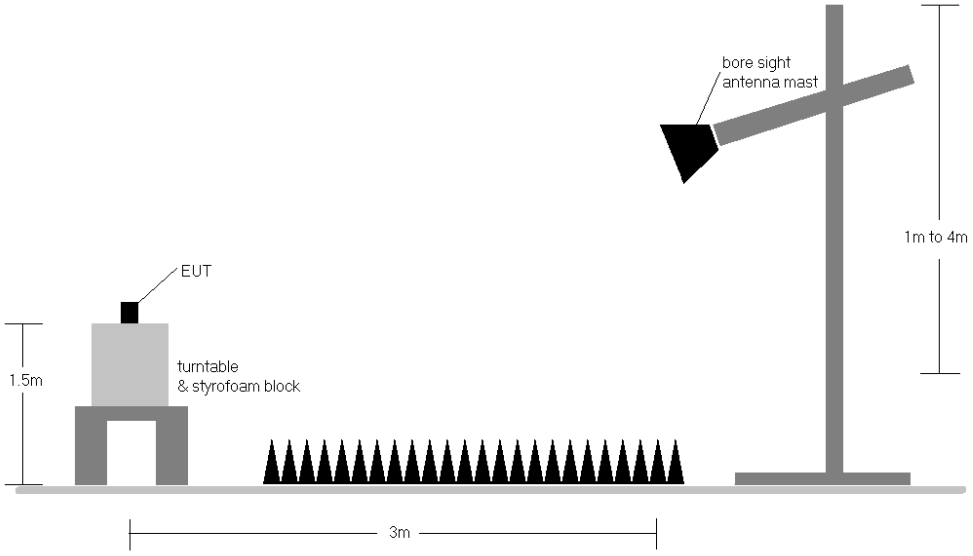


Figure 7-8. Test Instrument & Measurement Setup >1 GHz

Test Notes

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

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

3) This unit was tested with its standard battery.

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

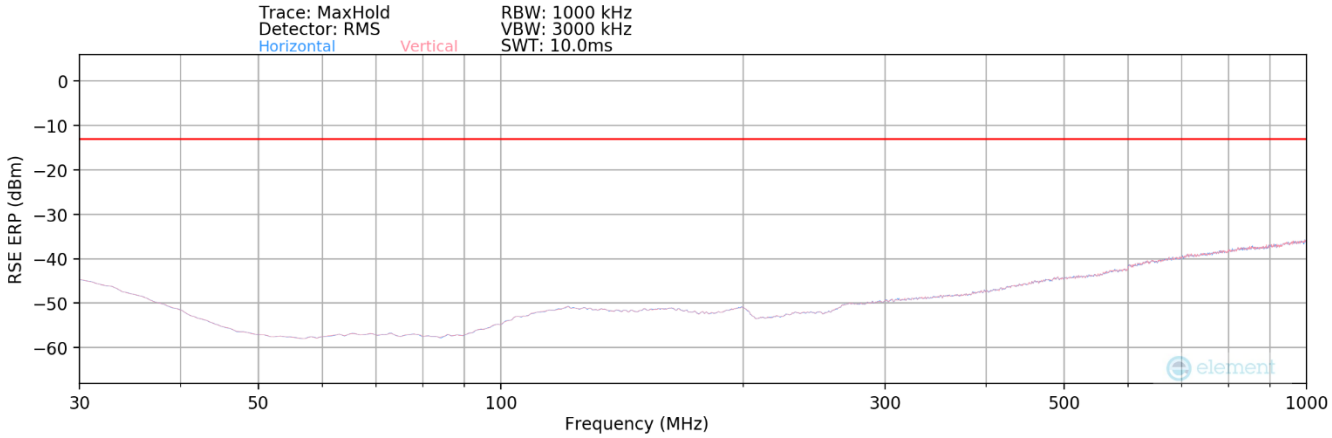
5) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

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

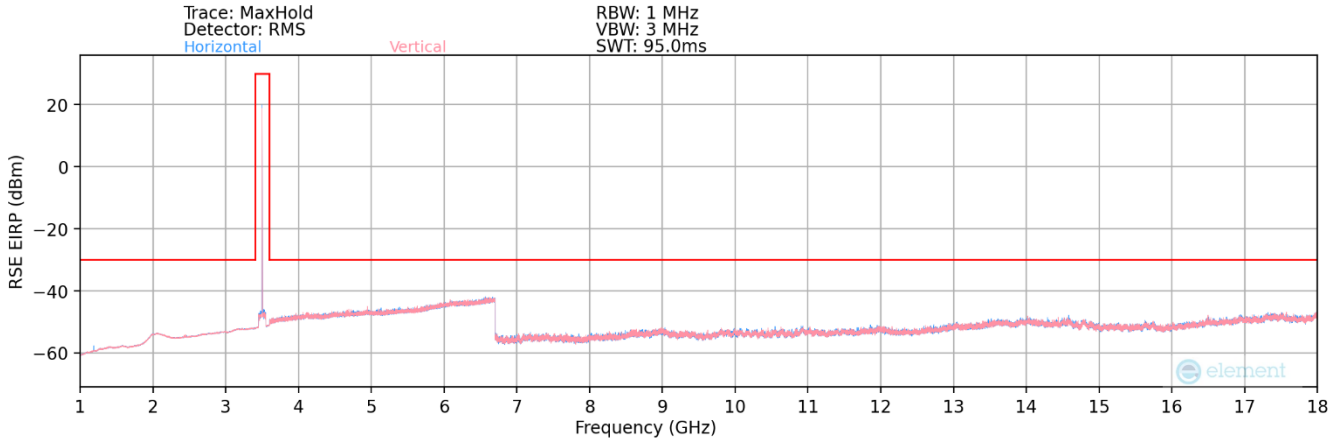
7) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

8) Spurious emission in EN-DC Operating mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor) has been checked and was found to not to be the worst case. Spurious emissions from the NR carrier device are subject to the rules under which the NR carrier operates. Spurious emissions caused by the LTE carrier must meet the requirements of the rules under which the LTE carrier operates.

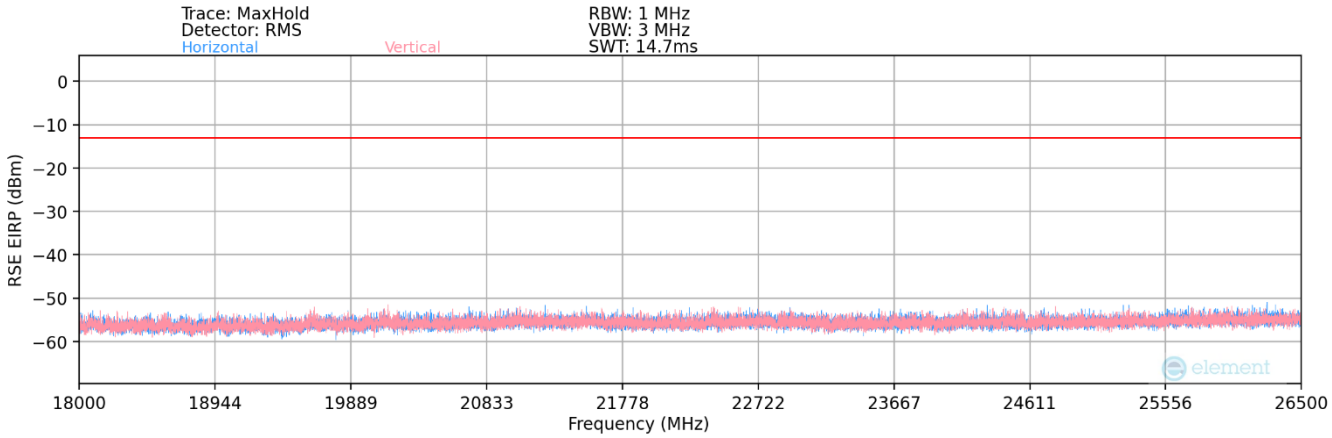
NR Band n77 DoD – Ant F



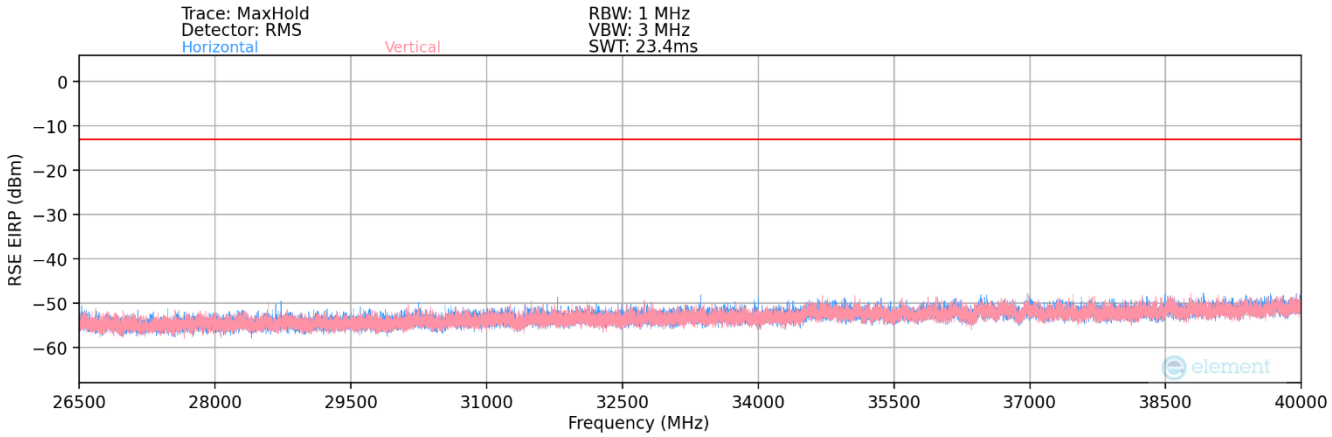
Plot 7-163. Radiated Spurious Plot (NR Band n77 – Ant F)



Plot 7-164. Radiated Spurious Plot (NR Band n77 – Ant F)



Plot 7-165. Radiated Spurious Plot (NR Band n77 – Ant F)



Plot 7-166. Radiated Spurious Plot (NR Band n77 – Ant F)

Bandwidth (MHz):	100
Frequency (MHz):	3500.01
RB / Offset:	1/136

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
143.24	H	-	-	-73.99	19.79	52.80	-44.61	-13.00	-31.61

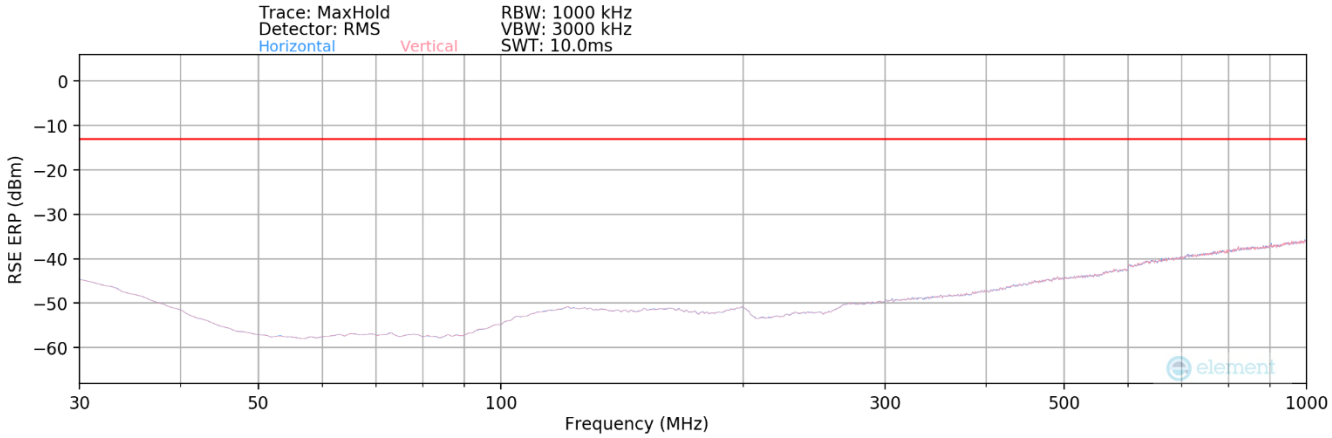
Table 7-28. Radiated Spurious Data (NR Band n77 – Mid Channel – Ant F)

Bandwidth (MHz):	100
Frequency (MHz):	3500.01
RB / Offset:	1/136

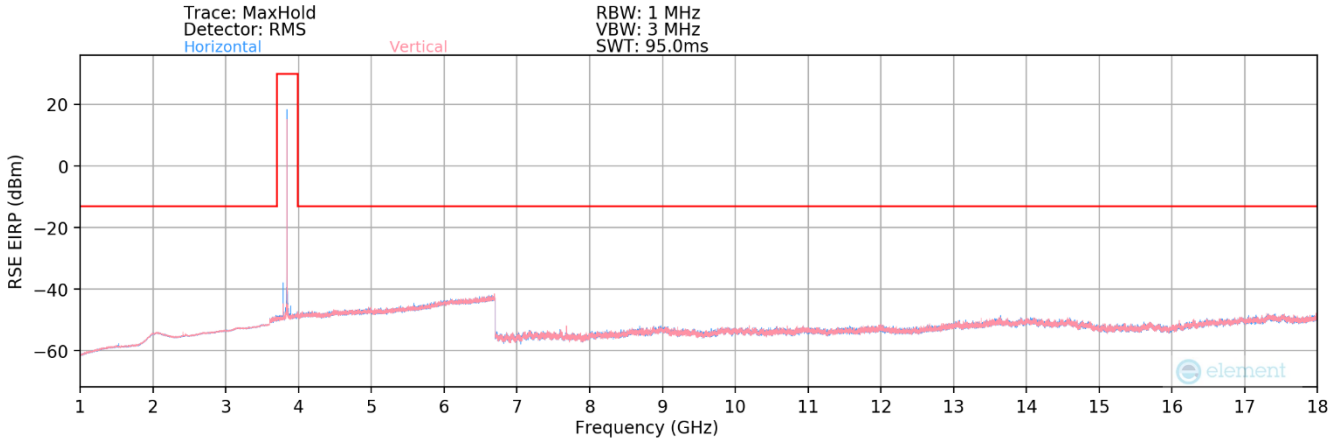
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
7000.02	V	128	214	-74.16	9.04	41.88	-53.37	-13.00	-40.37
10500.03	V	-	-	-82.48	12.41	36.93	-58.33	-13.00	-45.33
14000.04	V	-	-	-82.66	16.06	40.40	-54.86	-13.00	-41.86
17500.05	V	-	-	-82.81	16.98	41.17	-54.08	-13.00	-41.08

Table 7-29. Radiated Spurious Data (NR Band n77 – Mid Channel – Ant F)

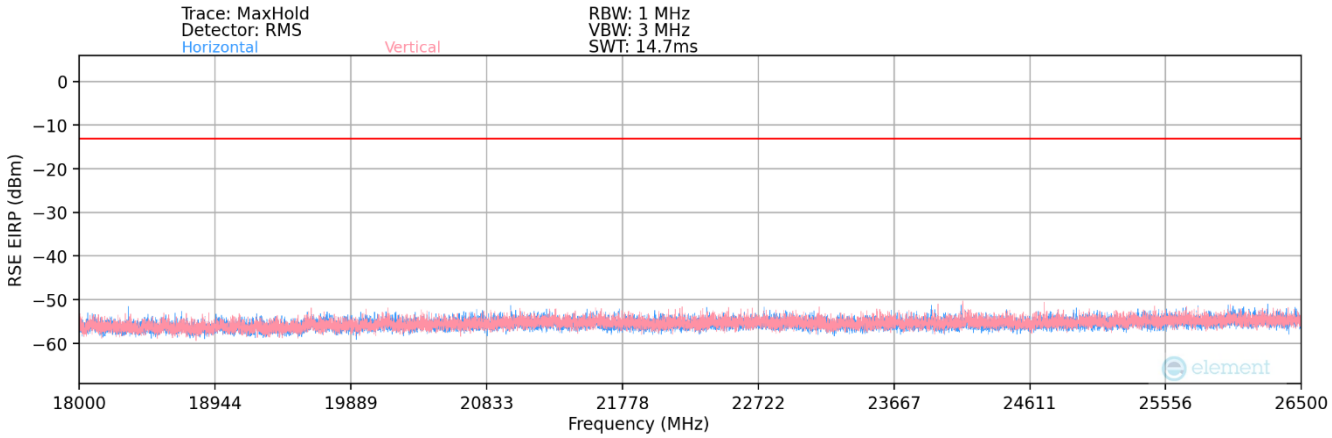
NR Band n77 C-band – Ant F



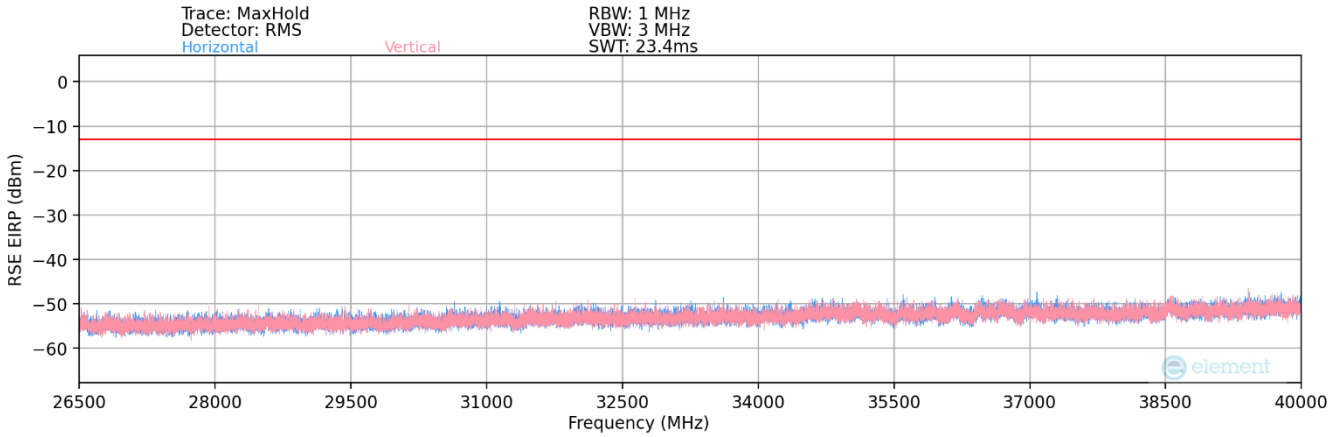
Plot 7-167. Radiated Spurious Plot (NR Band n77 – Ant F)



Plot 7-168. Radiated Spurious Plot (NR Band n77 – Ant F)



Plot 7-169. Radiated Spurious Plot (NR Band n77 – Ant F)



Plot 7-170. Radiated Spurious Plot (NR Band n77 – Ant F)

Bandwidth (MHz):	100
Frequency (MHz):	3840.00
RB / Offset:	1/271

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
142.82	V	-	-	-75.08	19.89	51.81	-45.60	-13.00	-32.60

Table 7-30. Radiated Spurious Data (NR Band n77 – Mid Channel – Ant F)

Bandwidth (MHz):	100
Frequency (MHz):	3750.00
RB / Offset:	1/136

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]
7500.00	V	127	206	-75.80	10.14	41.34	-53.92	-13.00	-40.92
11250.00	V	-	-	-81.99	12.60	37.61	-57.64	-13.00	-44.64
15000.00	V	-	-	-82.88	14.06	38.18	-57.07	-13.00	-44.07

Table 7-31. Radiated Spurious Data (NR Band n77 – Low Channel – Ant F)

Bandwidth (MHz):	100
Frequency (MHz):	3840.00
RB / Offset:	1/136

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]
7680.00	V	120	224	-73.66	8.95	42.29	-52.97	-13.00	-39.97
11520.00	V	-	-	-82.71	13.02	37.31	-57.95	-13.00	-44.95
15360.00	V	-	-	-82.17	14.05	38.88	-56.38	-13.00	-43.38

Table 7-32. Radiated Spurious Data (NR Band n77 – Mid Channel – Ant F)

Bandwidth (MHz):	100
Frequency (MHz):	3930.00
RB / Offset:	1/136

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]
7860.00	V	127	214	-75.30	9.45	41.15	-54.11	-13.00	-41.11
11790.00	V	-	-	-82.23	13.33	38.10	-57.16	-13.00	-44.16
15720.00	V	-	-	-83.01	15.23	39.22	-56.04	-13.00	-43.04

Table 7-33. Radiated Spurious Data (NR Band n77 – High Channel – Ant F)