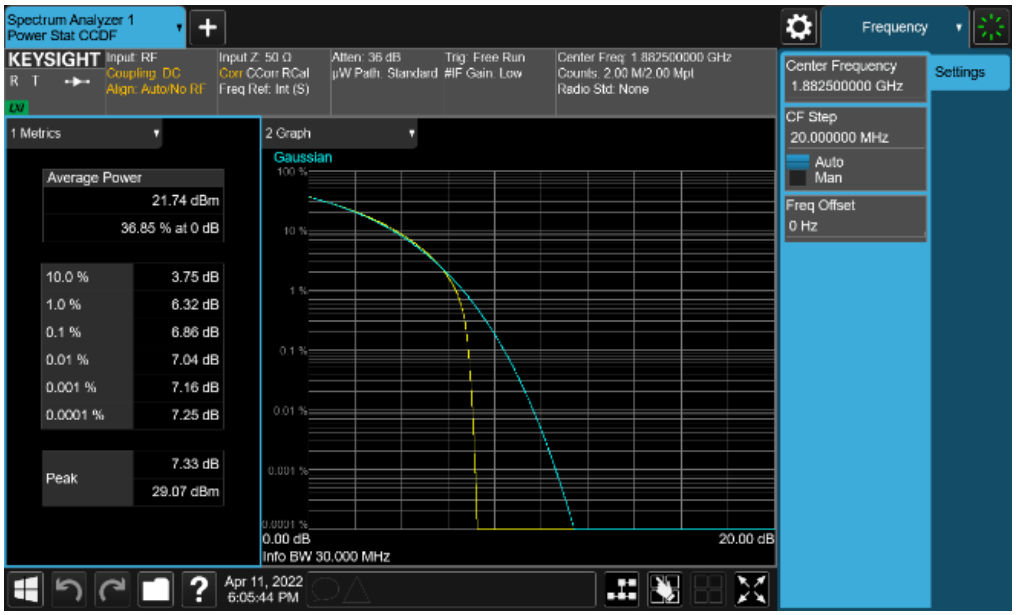
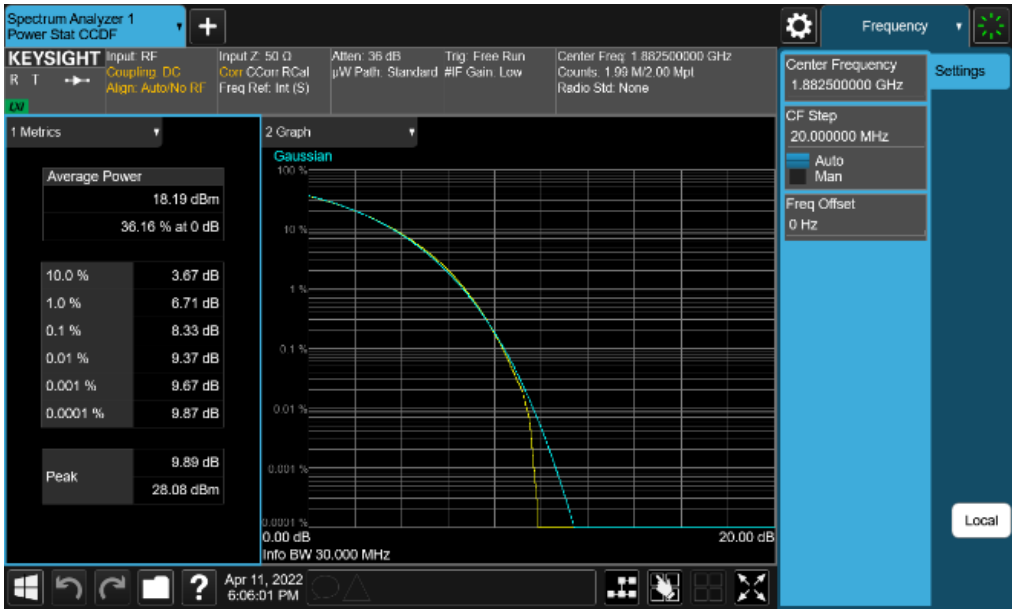
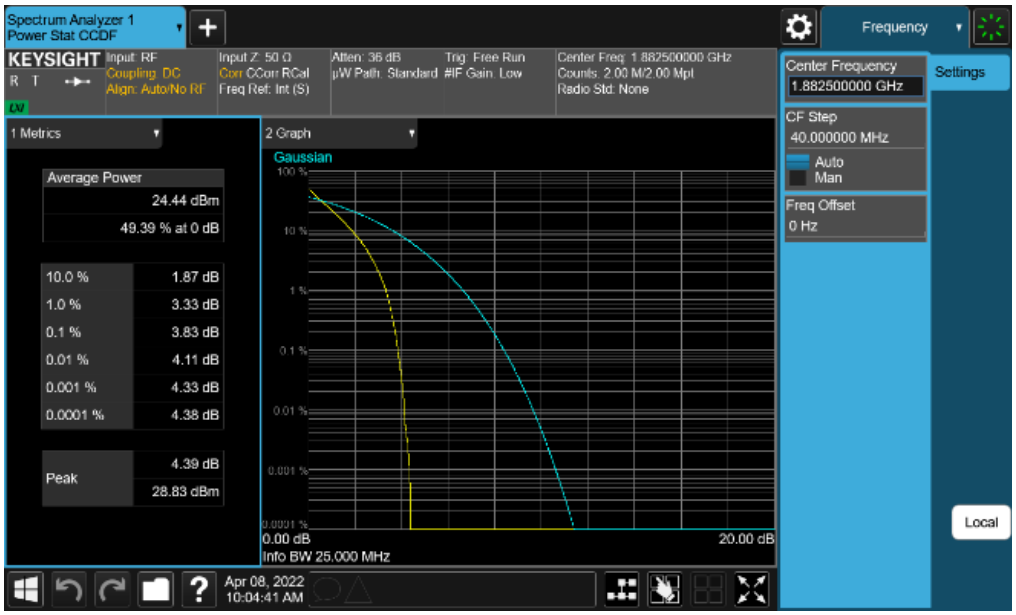


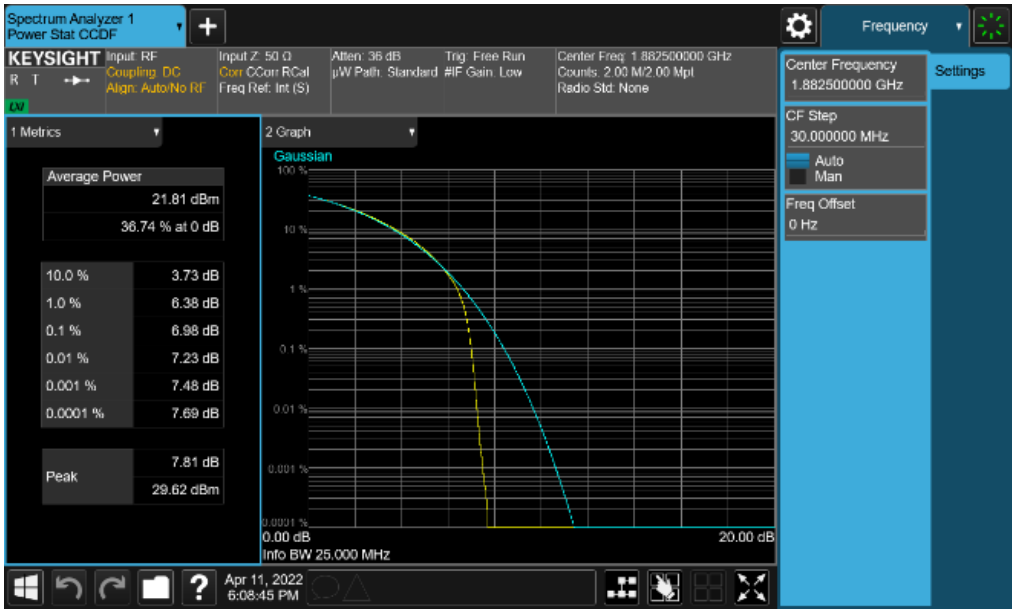
Plot 7-235. PAR Plot (NR Band n25 - 30.0MHz CP-OFDM QPSK - Full RB)



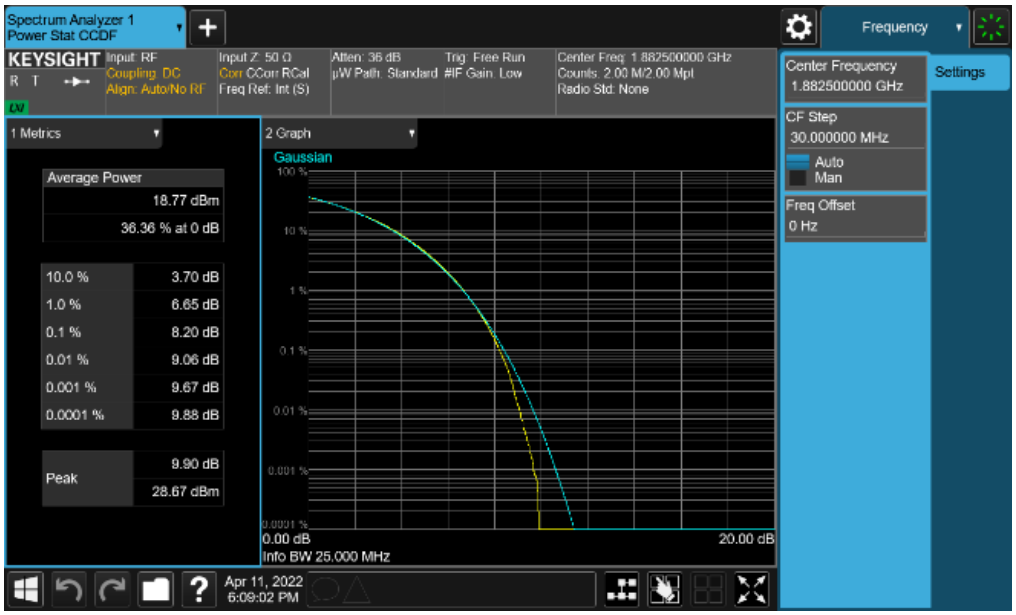
Plot 7-236. PAR Plot (NR Band n25 - 30.0MHz CP-OFDM 256-QAM - Full RB)



Plot 7-237. PAR Plot (NR Band n25 - 25.0MHz DFT-s-OFDM BPSK - Full RB)

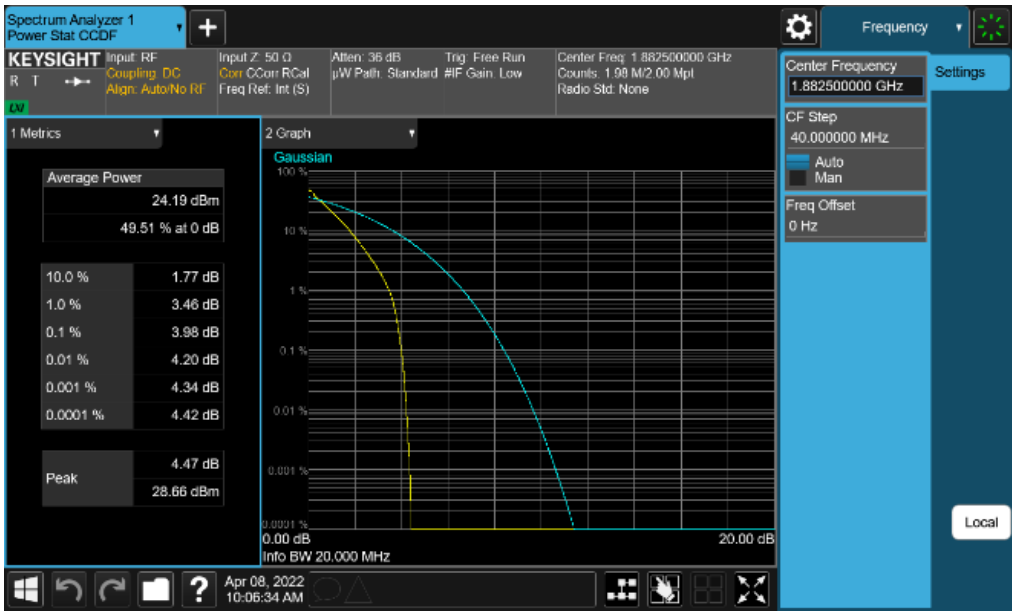


Plot 7-238. PAR Plot (NR Band n25 - 25.0MHz CP-OFDM QPSK - Full RB)

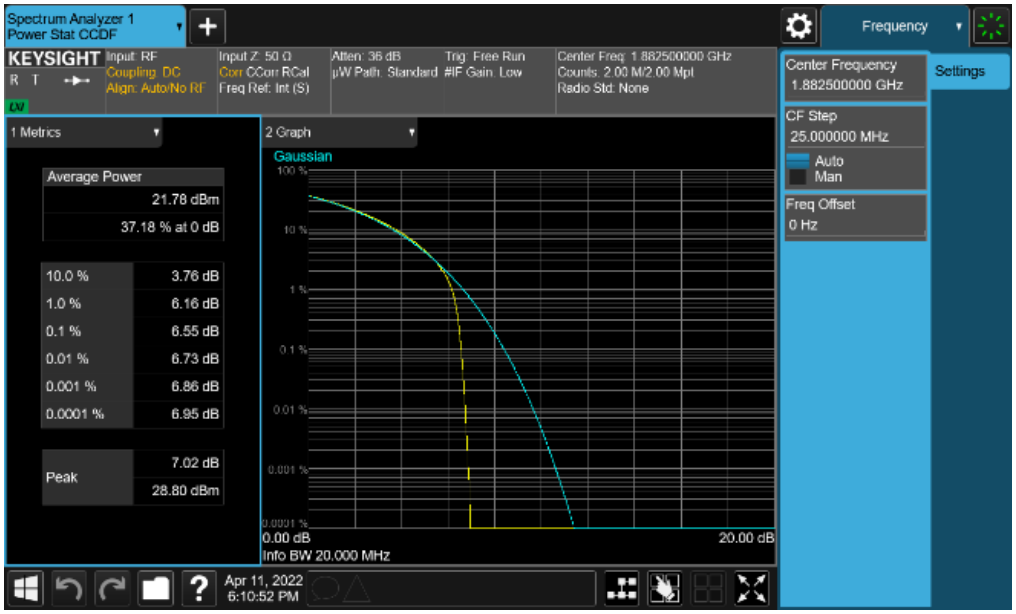


Plot 7-239. PAR Plot (NR Band n25 – 25.0MHz CP-OFDM 256-QAM - Full RB)

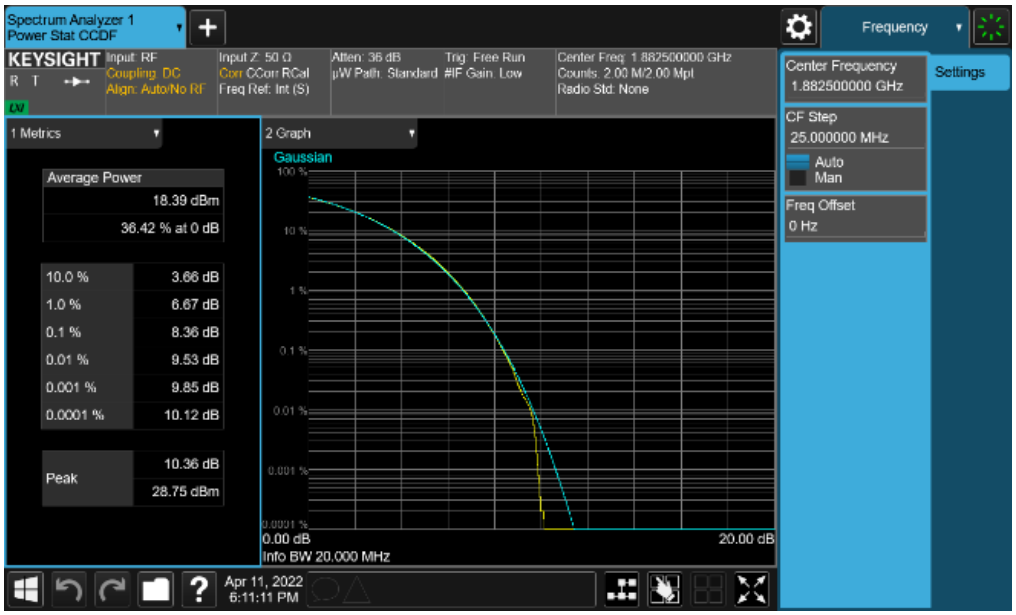
NR Band n25 – Ant A



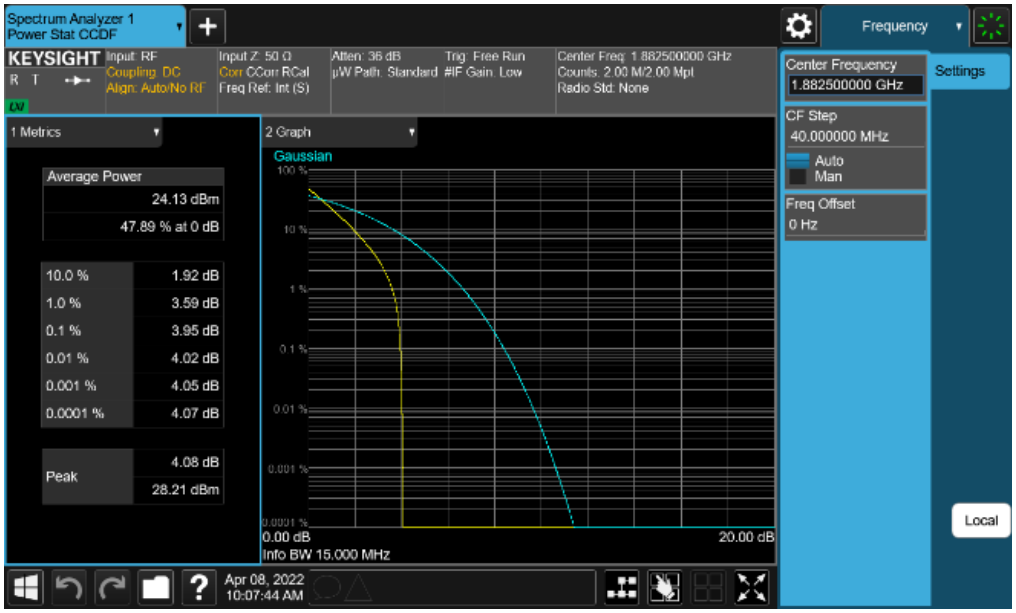
Plot 7-240. PAR Plot (NR Band n25/2 - 20.0MHz DFT-s-OFDM BPSK - Full RB)



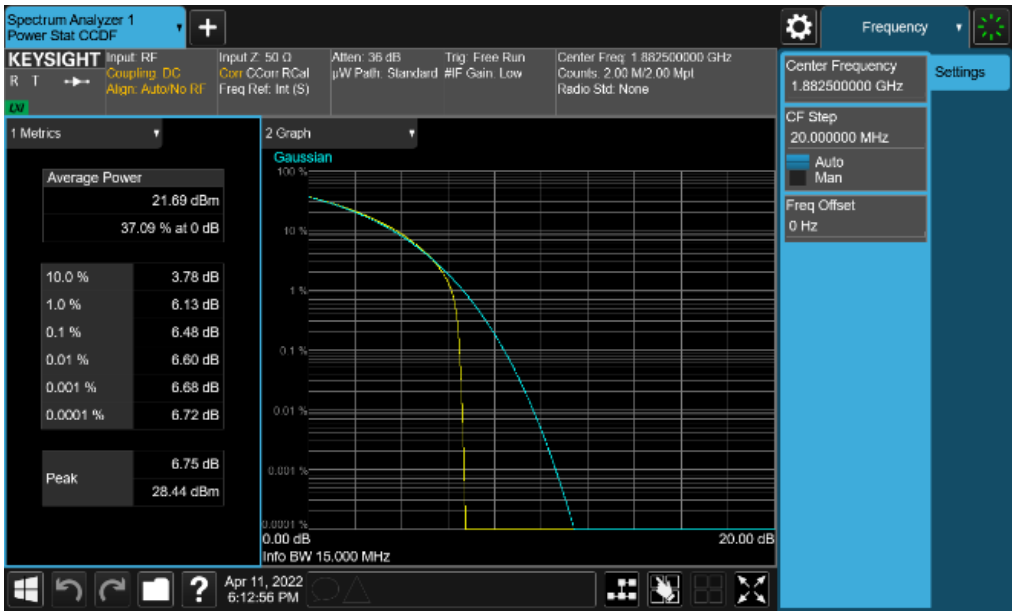
Plot 7-241. PAR Plot (NR Band n25/2 - 20.0MHz CP-OFDM QPSK - Full RB)



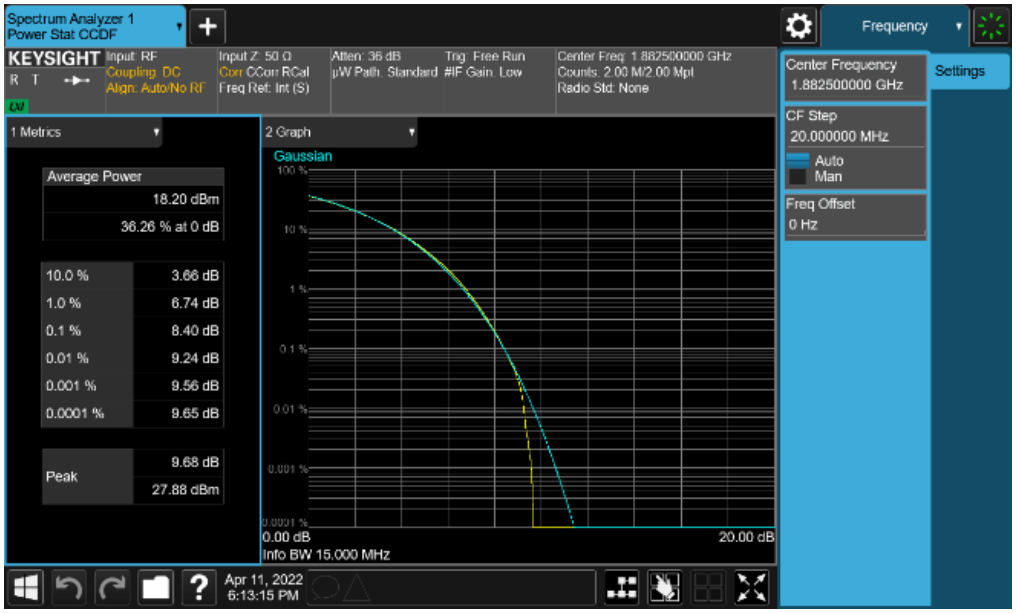
Plot 7-242. PAR Plot (NR Band n25/2 - 20.0MHz CP-OFDM 256-QAM - Full RB)



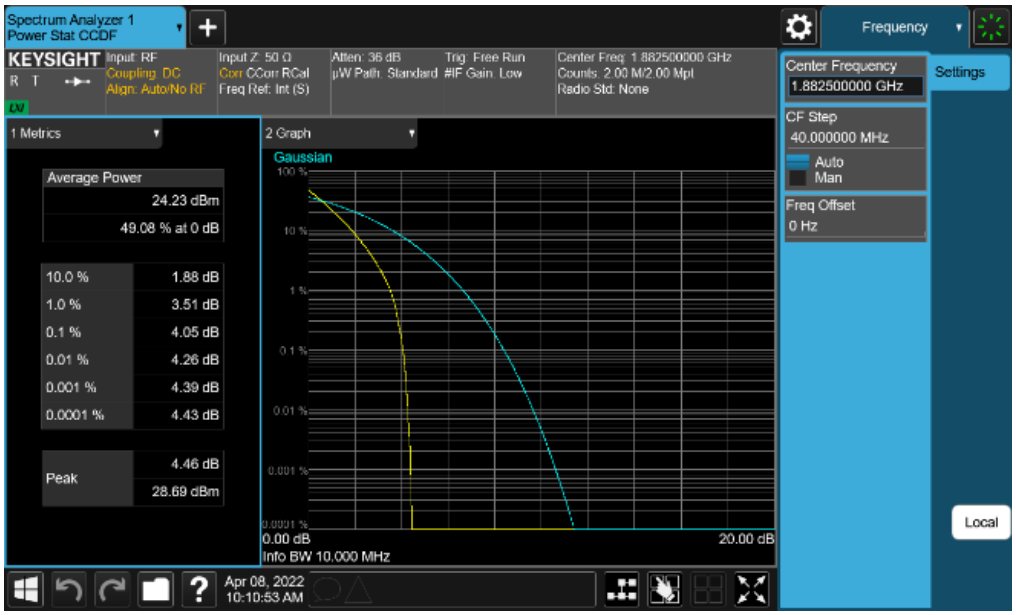
Plot 7-243. PAR Plot (NR Band n25/2 - 15.0MHz DFT-s-OFDM BPSK - Full RB)



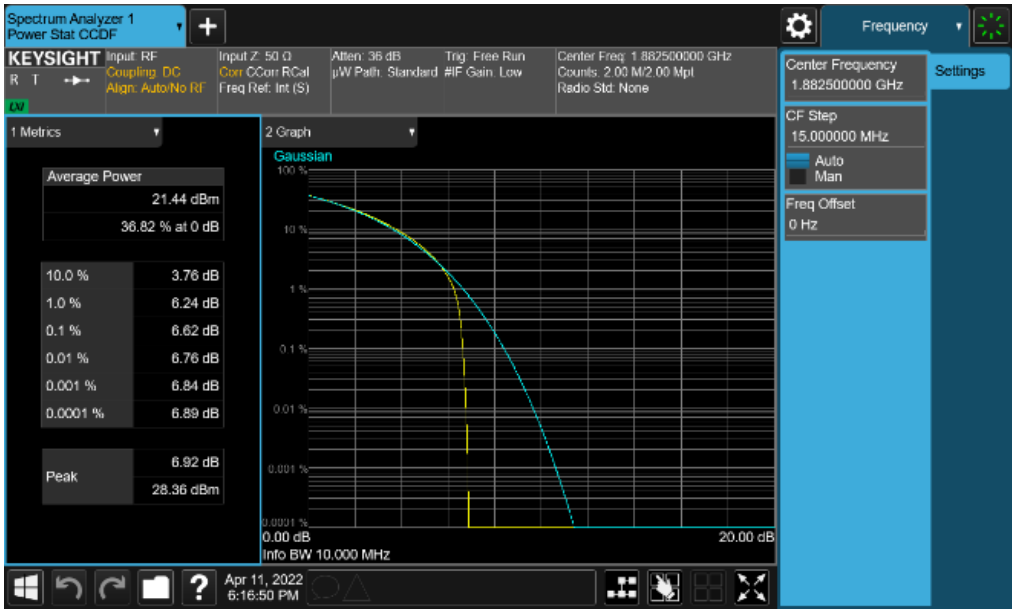
Plot 7-244. PAR Plot (NR Band n25/2 - 15.0MHz CP-OFDM QPSK - Full RB)



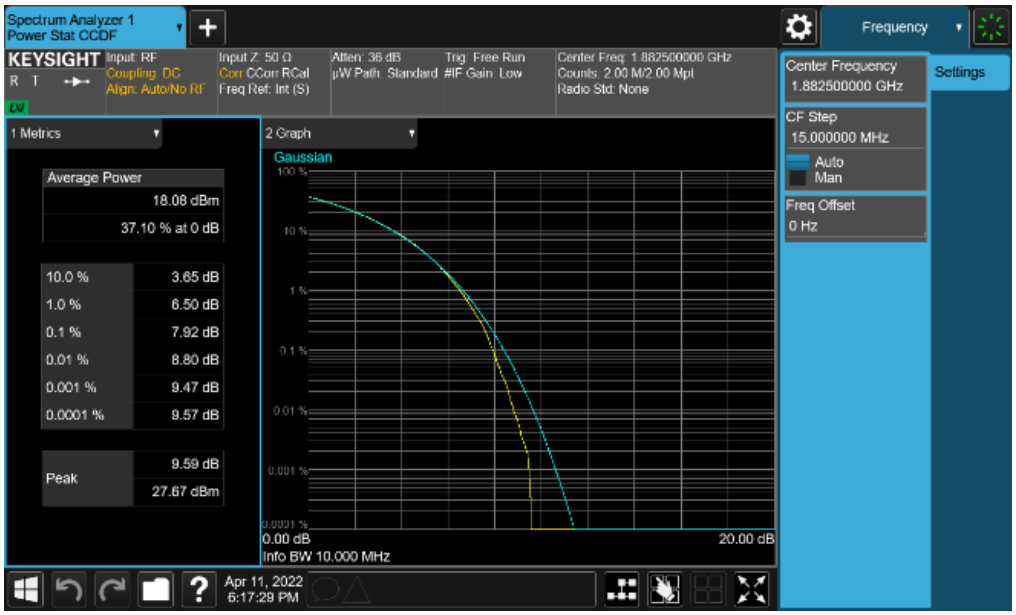
Plot 7-245. PAR Plot (NR Band n25/2 - 15.0MHz CP-OFDM 256-QAM - Full RB)



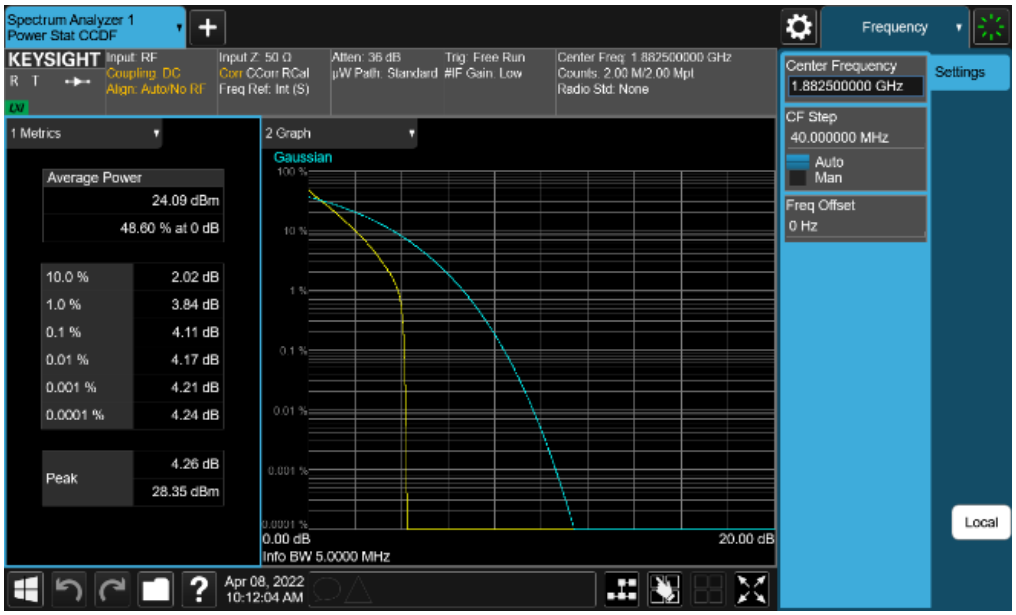
Plot 7-246. PAR Plot (NR Band n25/2 - 10.0MHz DFT-s-OFDM BPSK - Full RB)



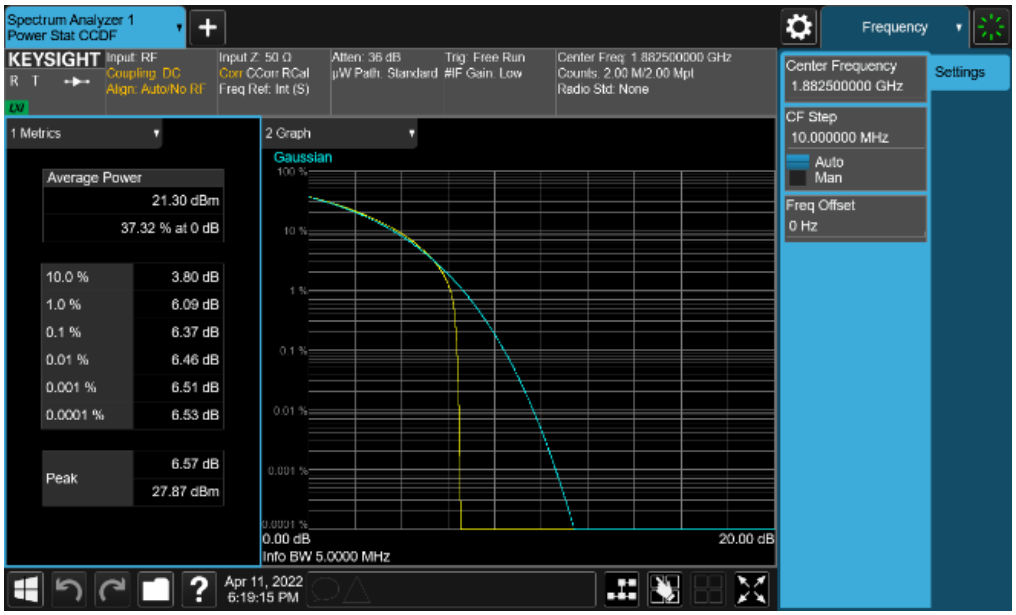
Plot 7-247. PAR Plot (NR Band n25/2 - 10.0MHz CP-OFDM QPSK - Full RB)



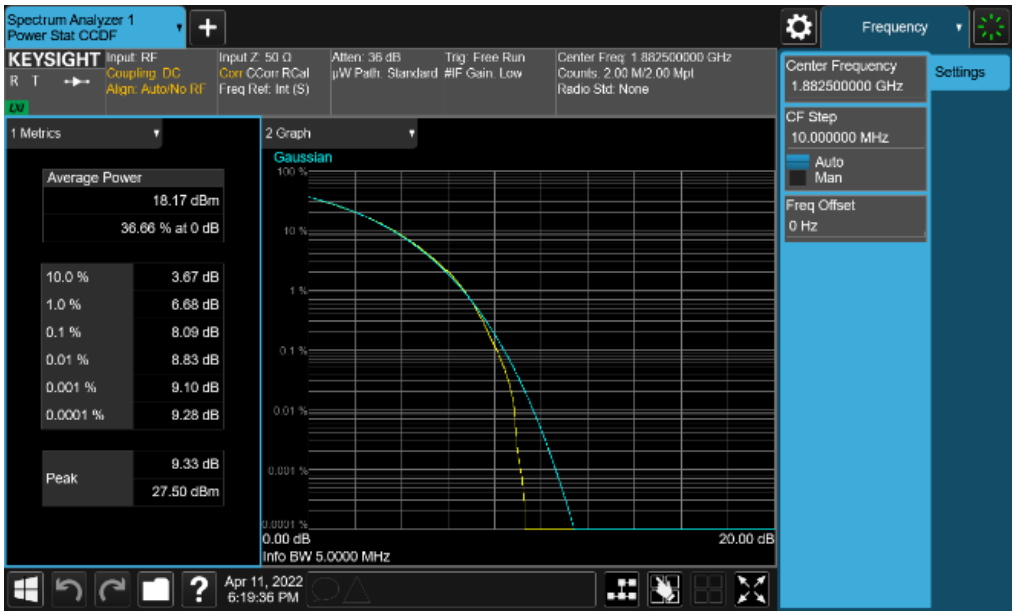
Plot 7-248. PAR Plot (NR Band n25/2 - 10.0MHz CP-OFDM 256-QAM - Full RB)



Plot 7-249. PAR Plot (NR Band n25/2 - 5.0MHz DFT-s-OFDM BPSK - Full RB)

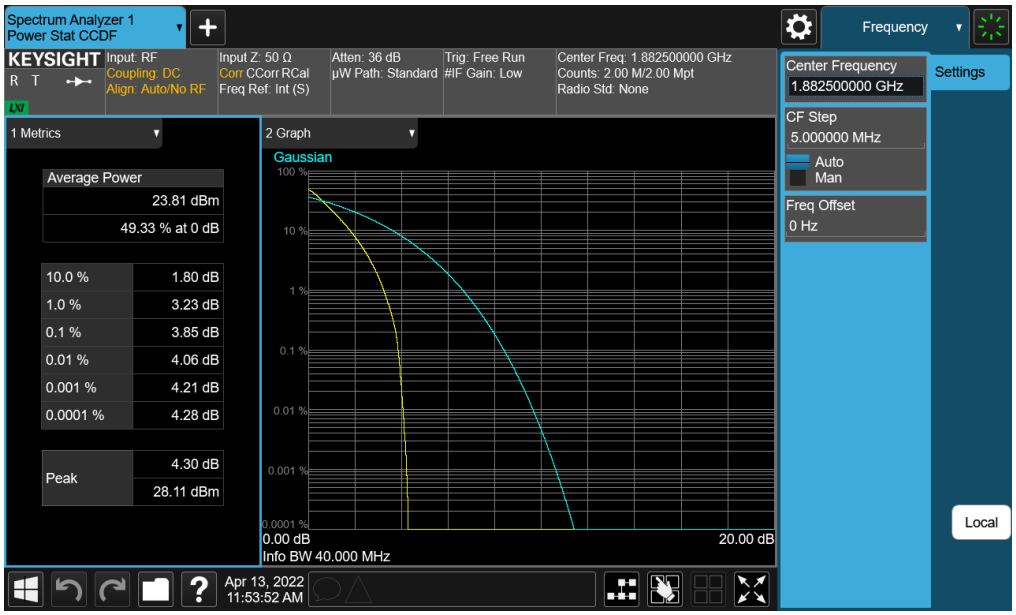


Plot 7-250. PAR Plot (NR Band n25/2 - 5.0MHz CP-OFDM QPSK - Full RB)



Plot 7-251. PAR Plot (NR Band n25/2 - 5.0MHz CP-OFDM 256-QAM - Full RB)

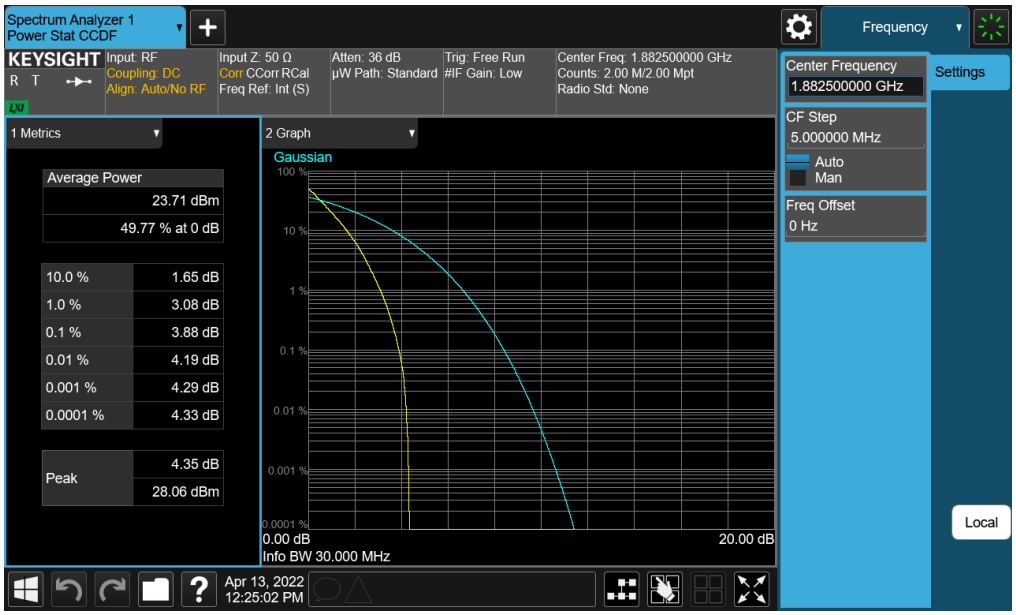
NR Band n25 – Ant I



Plot 7-252. PAR Plot (NR Band n25 - 40.0MHz DFT-s-OFDM BPSK - Full RB)

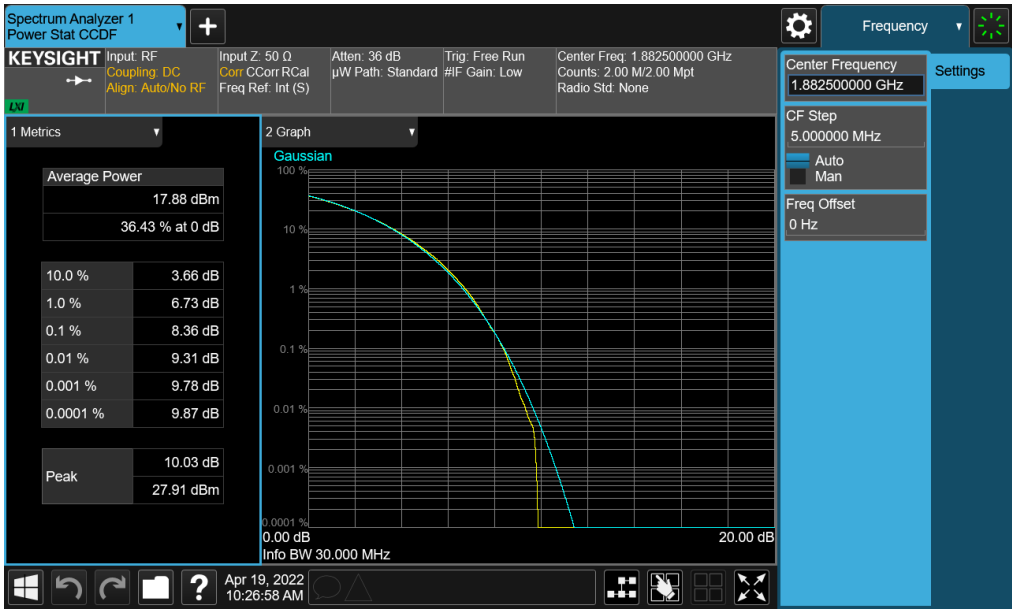
Plot 7-253. PAR Plot (NR Band n25 - 40.0MHz CP-OFDM QPSK - Full RB)

Plot 7-254. PAR Plot (NR Band n25 - 40.0MHz CP-OFDM 256-QAM - Full RB)

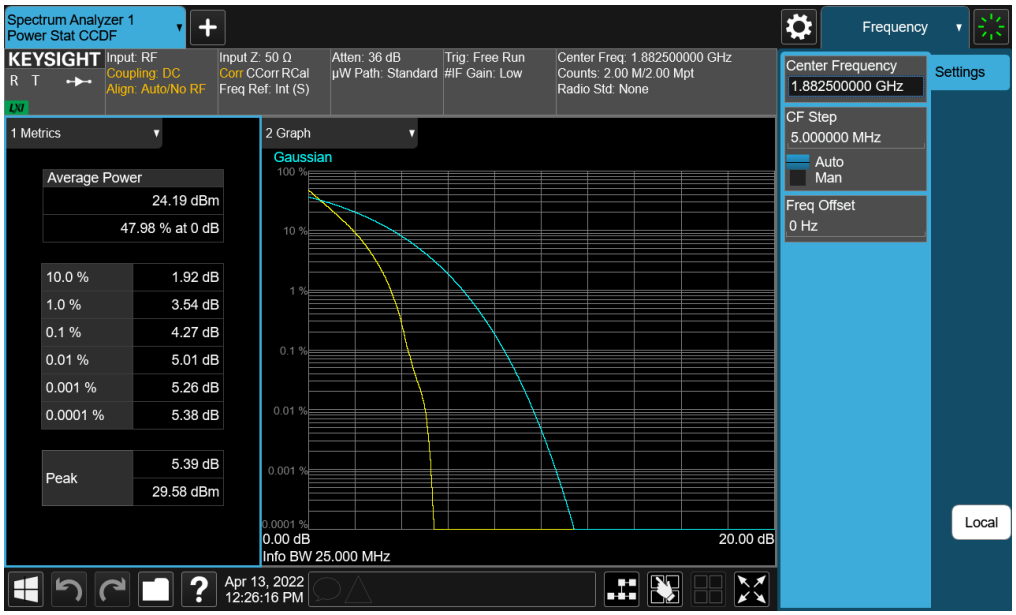


Plot 7-255. PAR Plot (NR Band n25 - 30.0MHz DFT-s-OFDM BPSK - Full RB)

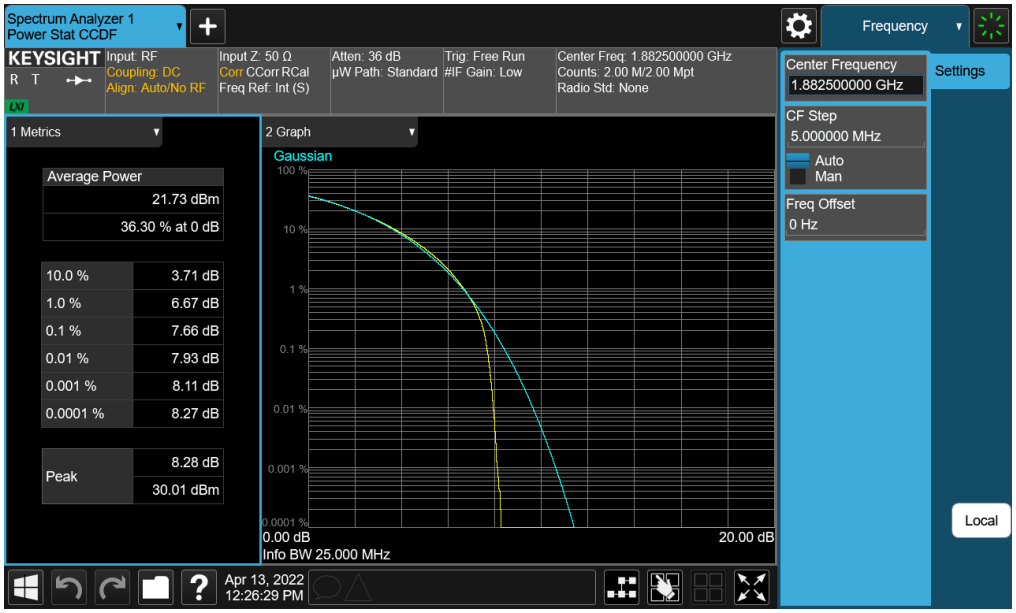
Plot 7-256. PAR Plot (NR Band n25 - 30.0MHz CP-OFDM QPSK - Full RB)



Plot 7-257. PAR Plot (NR Band n25 - 30.0MHz CP-OFDM 256-QAM - Full RB)



Plot 7-258. PAR Plot (NR Band n25 - 25.0MHz DFT-s-OFDM BPSK - Full RB)

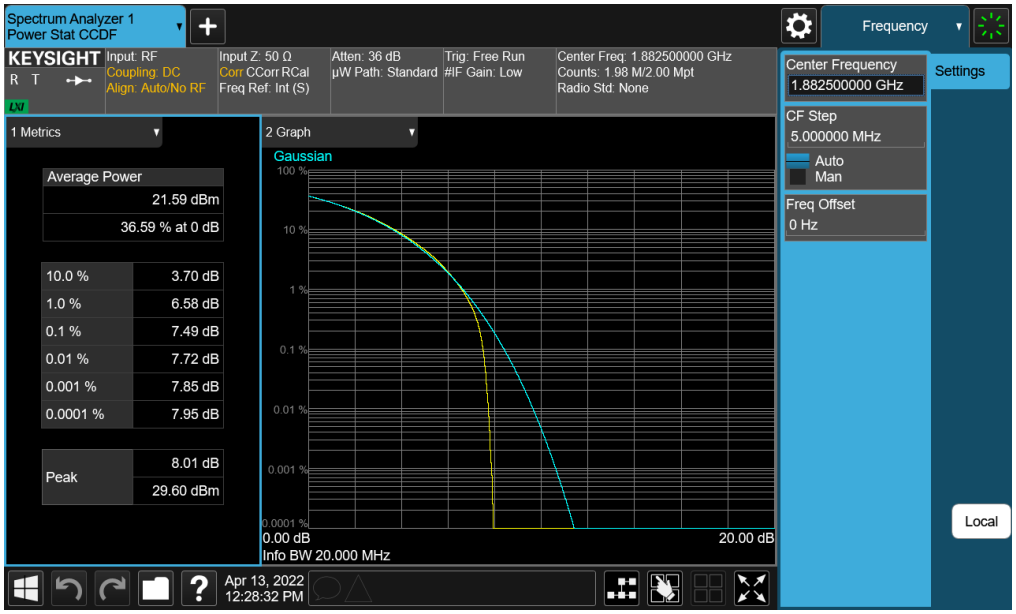


Plot 7-259. PAR Plot (NR Band n25 - 25.0MHz CP-OFDM QPSK - Full RB)

Plot 7-260. PAR Plot (NR Band n25 – 25.0MHz CP-OFDM 256-QAM - Full RB)

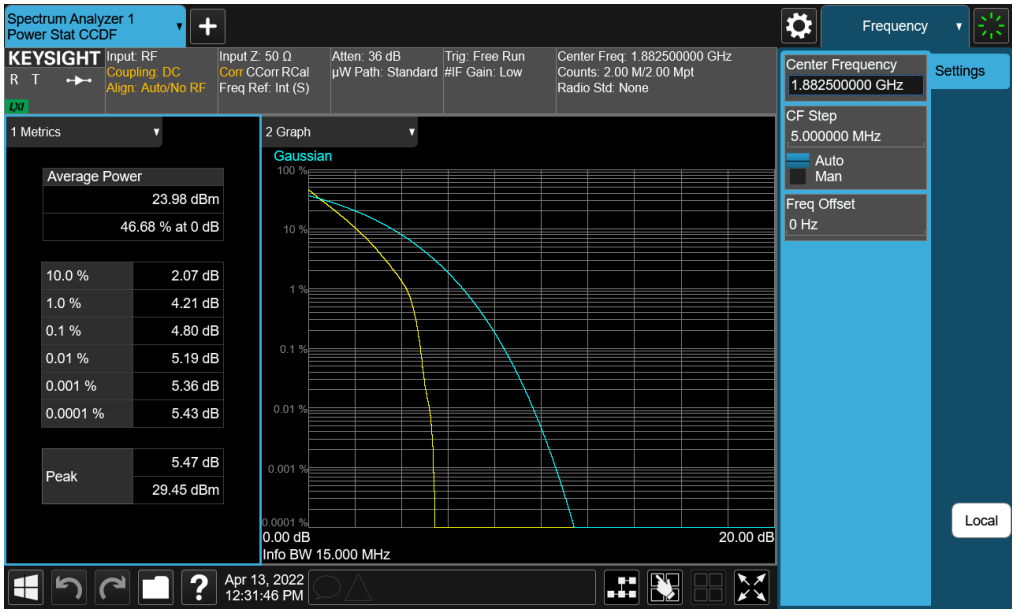
NR Band n25 – Ant A

Plot 7-261. PAR Plot (NR Band n25/2 - 20.0MHz DFT-s-OFDM BPSK - Full RB)



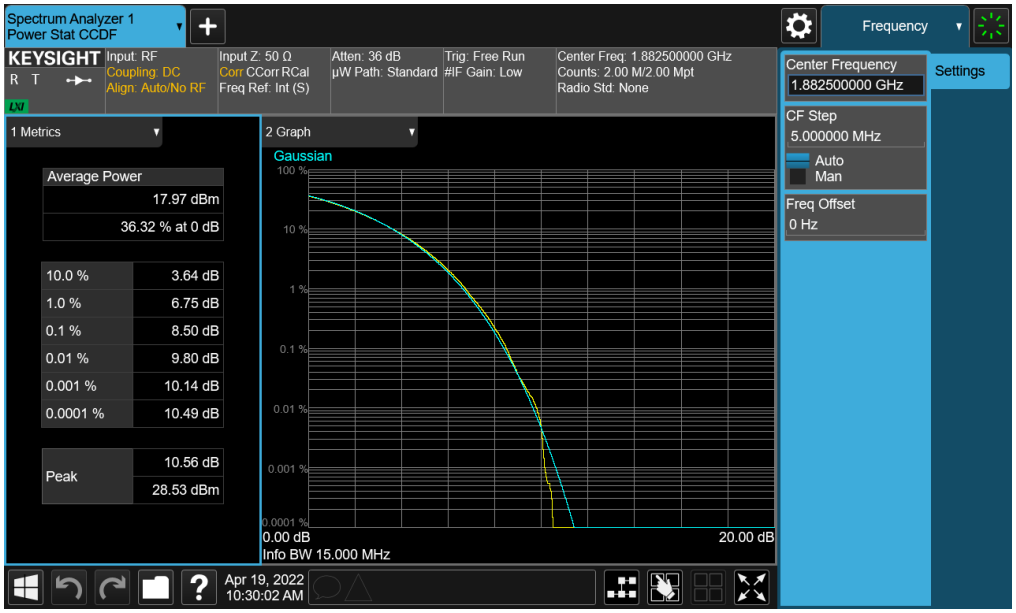
Plot 7-262. PAR Plot (NR Band n25/2 - 20.0MHz CP-OFDM QPSK - Full RB)

Plot 7-263. PAR Plot (NR Band n25/2 - 20.0MHz CP-OFDM 256-QAM - Full RB)

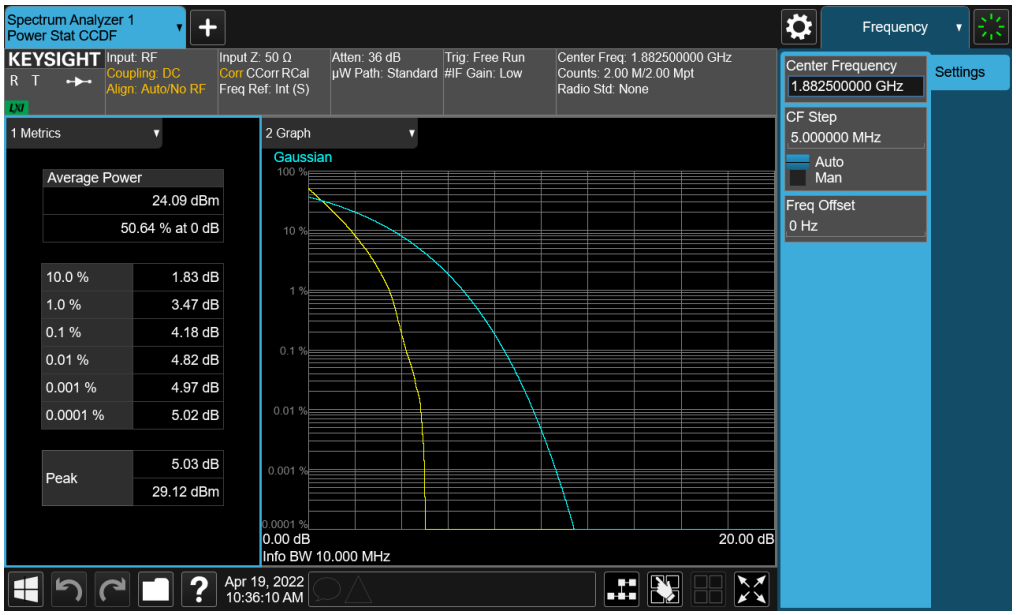


Plot 7-264. PAR Plot (NR Band n25/2 - 15.0MHz DFT-s-OFDM BPSK - Full RB)

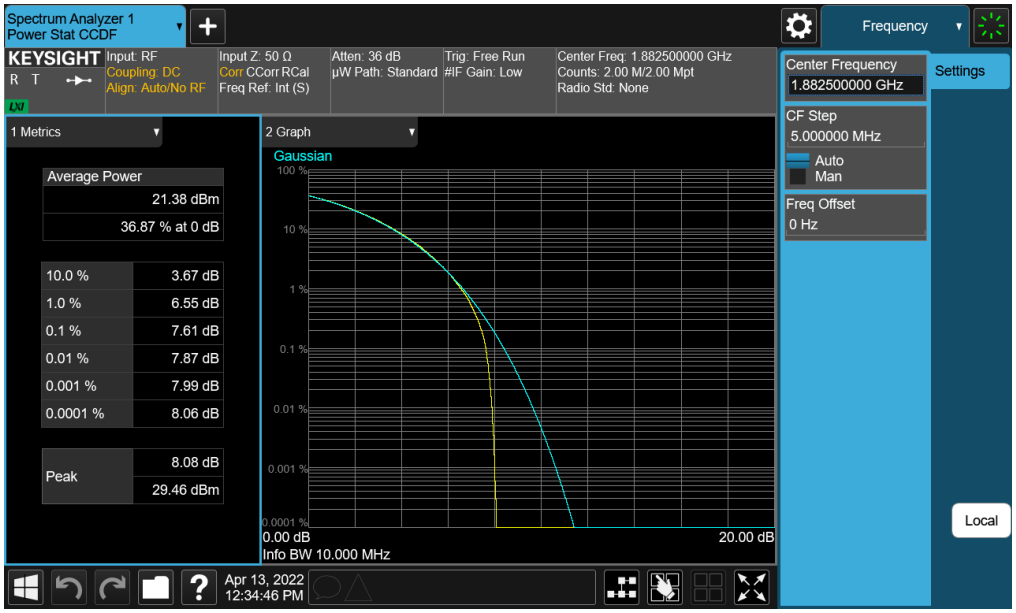
Plot 7-265. PAR Plot (NR Band n25/2 - 15.0MHz CP-OFDM QPSK - Full RB)



Plot 7-266. PAR Plot (NR Band n25/2 - 15.0MHz CP-OFDM 256-QAM - Full RB)



Plot 7-267. PAR Plot (NR Band n25/2 - 10.0MHz DFT-s-OFDM BPSK - Full RB)



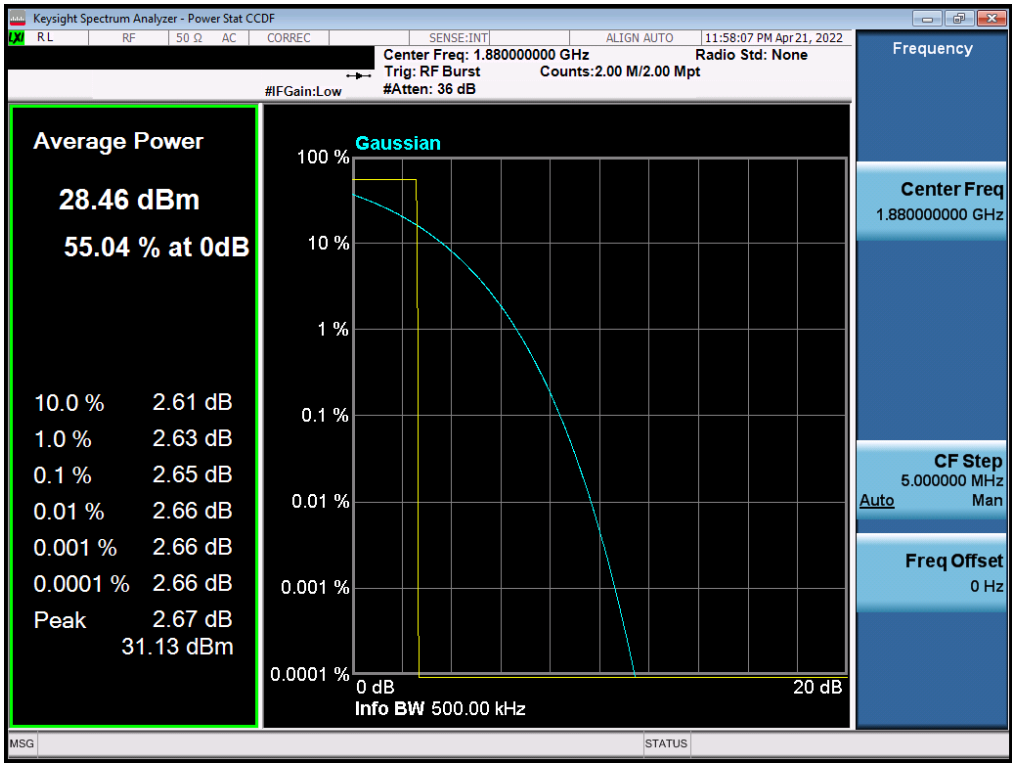
Plot 7-268. PAR Plot (NR Band n25/2 - 10.0MHz CP-OFDM QPSK - Full RB)

Plot 7-269. PAR Plot (NR Band n25/2 - 10.0MHz CP-OFDM 256-QAM - Full RB)

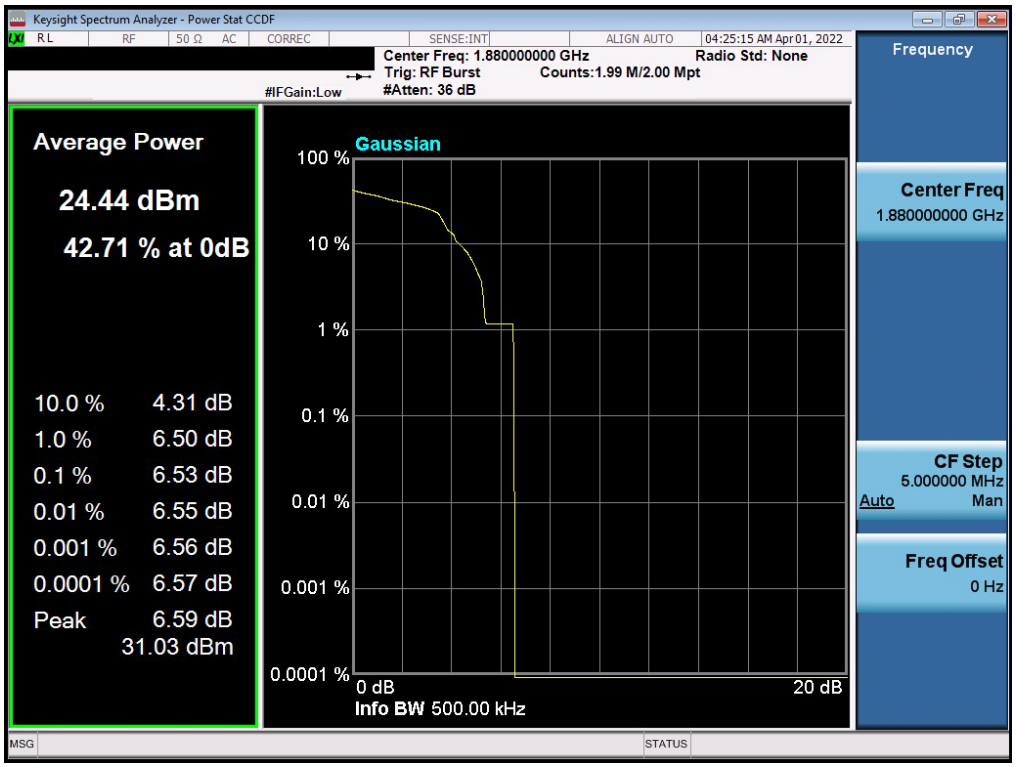
Plot 7-270. PAR Plot (NR Band n25/2 - 5.0MHz DFT-s-OFDM BPSK - Full RB)

Plot 7-271. PAR Plot (NR Band n25/2 - 5.0MHz CP-OFDM QPSK - Full RB)

Plot 7-272. PAR Plot (NR Band n25/2 - 5.0MHz CP-OFDM 256-QAM - Full RB)

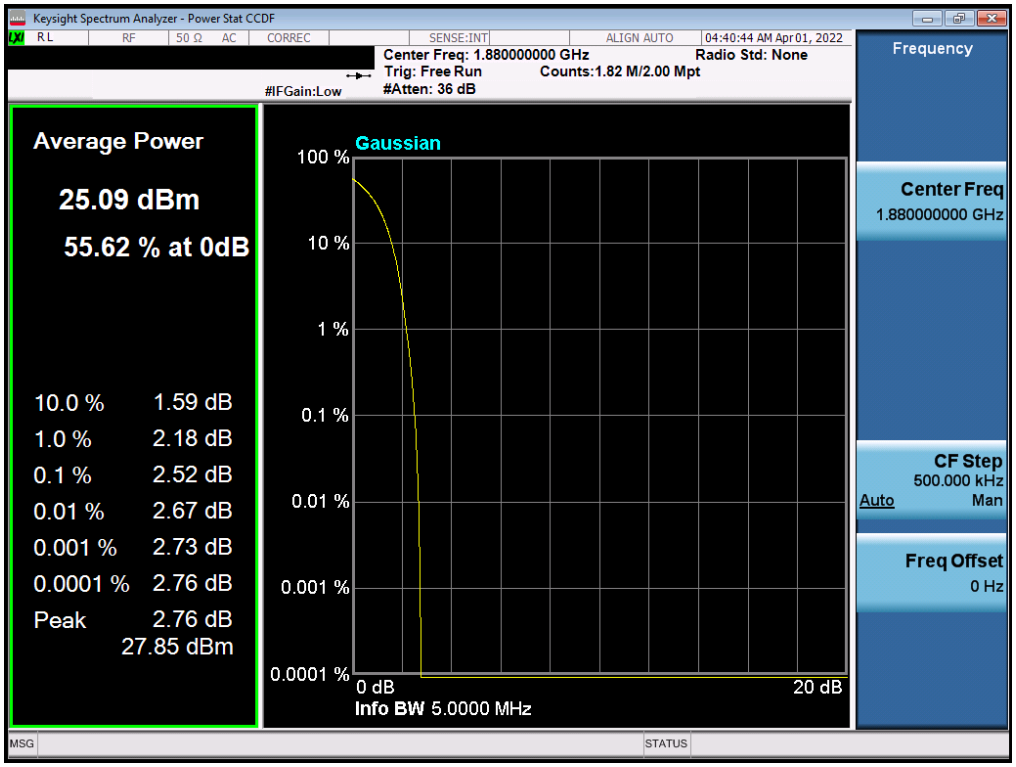


Plot 7-273. PAR Plot (GPRS, Ch. 661)



Plot 7-274. PAR Plot (EDGE, Ch. 661)

WCDMA PCS



Plot 7-275. PAR Plot (WCDMA, Ch. 9400)

7.7 Radiated Power (ERP/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.

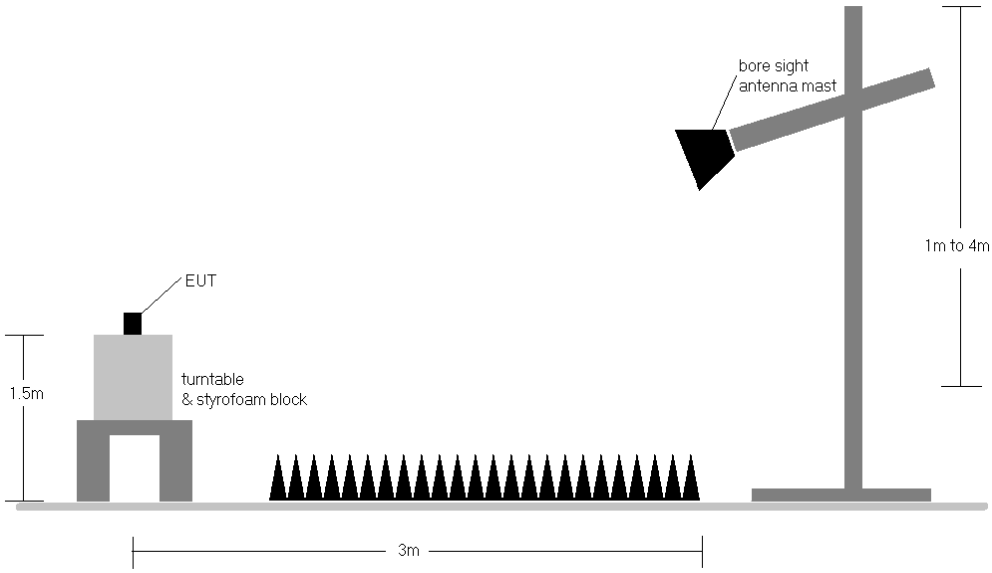


Figure 7-6. Radiated Test Setup >1GHz

Test Notes

1) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest powers is reported in GPRS mode while transmitting with one slot active.

2) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to “1”.

3) 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.

4) This unit was tested with its standard battery.

5) 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]
20 MHz	QPSK	1860.0	V	125	337	8.72	1 / 0	15.37	**24.09**	0.257	33.01	-8.92
	QPSK	1882.5	V	125	328	8.73	1 / 50	14.66	23.39	0.218	33.01	-9.62
	QPSK	1905.0	V	116	335	8.73	1 / 50	14.90	23.63	0.231	33.01	-9.38
	16-QAM	1860.0	V	125	337	8.72	1 / 0	14.59	23.31	0.215	33.01	-9.70
15 MHz	QPSK	1857.5	V	125	337	8.72	1 / 37	15.32	**24.04**	0.254	33.01	-8.97
	QPSK	1882.5	V	125	328	8.73	1 / 37	14.66	23.39	0.218	33.01	-9.62
	QPSK	1907.5	V	116	335	8.73	1 / 74	14.86	23.59	0.229	33.01	-9.42
	16-QAM	1857.5	V	125	337	8.72	1 / 37	14.46	23.18	0.208	33.01	-9.83
10 MHz	QPSK	1855.0	V	125	337	8.72	1 / 25	15.36	**24.08**	0.256	33.01	-8.93
	QPSK	1882.5	V	125	328	8.73	1 / 25	14.67	23.40	0.219	33.01	-9.61
	QPSK	1910.0	V	116	335	8.73	1 / 25	14.94	23.67	0.233	33.01	-9.34
	16-QAM	1855.0	V	125	337	8.72	1 / 25	14.44	23.16	0.207	33.01	-9.85
5 MHz	QPSK	1852.5	V	125	337	8.72	1 / 24	15.44	**24.16**	0.261	33.01	-8.85
	QPSK	1882.5	V	125	328	8.73	1 / 24	14.59	23.32	0.215	33.01	-9.69
	QPSK	1912.5	V	116	335	8.73	1 / 12	14.81	23.54	0.226	33.01	-9.47
	16-QAM	1852.5	V	125	337	8.72	1 / 24	14.49	23.21	0.210	33.01	-9.80
3 MHz	QPSK	1851.5	V	125	337	8.72	1 / 14	15.38	**24.10**	0.257	33.01	-8.91
	QPSK	1882.5	V	125	328	8.73	1 / 14	14.65	23.38	0.218	33.01	-9.63
	QPSK	1913.5	V	116	335	8.73	1 / 7	14.87	23.60	0.229	33.01	-9.41
	16-QAM	1851.5	V	125	337	8.72	1 / 14	14.60	23.32	0.215	33.01	-9.69
1.4 MHz	QPSK	1850.7	V	125	337	8.72	1 / 5	15.45	**24.17**	0.262	33.01	-8.84
	QPSK	1882.5	V	125	328	8.73	1 / 0	14.59	23.32	0.215	33.01	-9.69
	QPSK	1914.3	V	116	335	8.73	1 / 0	14.66	23.39	0.218	33.01	-9.62
	16-QAM	1850.7	V	125	337	8.72	1 / 5	14.62	23.34	0.216	33.01	-9.67
1.4 MHz	QPSK (Opposite Pol.)	1850.7	H	146	136	8.72	1 / 5	13.32	22.04	0.160	33.01	-10.97
	QPSK (WCP)	1850.7	V	147	216	8.72	1 / 0	14.96	23.68	0.234	33.01	-9.33
10 MHz	QPSK (Half Open)	1882.5	V	147	268	8.73	1 / 25	15.09	23.82	0.241	33.01	-9.19

Table 7-8. EIRP Data (LTE Band 25/2) – OPEN

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]
40 MHz	π/2 BPSK	1870.0	V	153	273	8.73	1 / 1	16.07	24.80	0.302	33.01	-8.21
	π/2 BPSK	1882.5	V	154	267	8.73	1 / 1	15.41	24.14	0.259	33.01	-8.87
	π/2 BPSK	1895.0	V	149	274	8.73	1 / 108	15.46	24.19	0.263	33.01	-8.82
	QPSK	1870.0	V	153	273	8.73	1 / 1	16.18	**24.91**	0.310	33.01	-8.10
	QPSK	1882.5	V	154	267	8.73	1 / 1	15.35	24.08	0.256	33.01	-8.93
	QPSK	1895.0	V	149	274	8.73	1 / 108	15.52	24.25	0.266	33.01	-8.76
	16-QAM	1870.0	V	153	273	8.73	1 / 1	15.34	24.07	0.255	33.01	-8.94
30 MHz	π/2 BPSK	1865.0	V	153	273	8.73	1 / 119	16.21	24.93	0.311	33.01	-8.08
	π/2 BPSK	1882.5	V	154	267	8.73	1 / 80	15.43	24.16	0.261	33.01	-8.85
	π/2 BPSK	1900.0	V	149	274	8.73	1 / 119	15.53	24.26	0.267	33.01	-8.75
	QPSK	1865.0	V	153	273	8.73	1 / 80	16.36	**25.09**	0.323	33.01	-7.92
	QPSK	1882.5	V	154	267	8.73	1 / 119	15.46	24.19	0.263	33.01	-8.82
	QPSK	1900.0	V	149	274	8.73	1 / 119	15.64	24.37	0.273	33.01	-8.64
	16-QAM	1865.0	V	153	273	8.73	1 / 119	15.62	24.35	0.272	33.01	-8.66
25 MHz	π/2 BPSK	1862.5	V	153	273	8.73	1 / 99	16.02	24.74	0.298	33.01	-8.27
	π/2 BPSK	1882.5	V	154	267	8.73	1 / 99	15.26	23.99	0.250	33.01	-9.02
	π/2 BPSK	1902.5	V	149	274	8.73	1 / 66	15.36	24.09	0.256	33.01	-8.92
	QPSK	1862.5	V	153	273	8.73	1 / 99	16.19	**24.92**	0.310	33.01	-8.09
	QPSK	1882.5	V	154	267	8.73	1 / 33	15.22	23.95	0.248	33.01	-9.06
	QPSK	1902.5	V	149	274	8.73	1 / 33	15.61	24.35	0.272	33.01	-8.66
	16-QAM	1862.5	V	153	273	8.73	1 / 99	15.40	24.13	0.259	33.01	-8.88
30 MHz	QPSK (CP-OFDM)	1865.0	V	155	272	8.73	1 / 1	14.58	23.31	0.214	33.01	-9.70
	QPSK (Opposite Pol.)	1865.0	H	151	351	8.73	1 / 1	15.45	24.18	0.262	33.01	-8.83
	QPSK (WCP)	1865.0	V	116	191	8.73	1 / 119	15.59	24.32	0.270	33.01	-8.69
30 MHz	QPSK (Open)	1900.0	V	111	312	8.73	1 / 119	15.62	24.35	0.272	33.01	-8.66

Table 7-9. EIRP Data (NR Band n25 – Ant A) – HALF OPEN

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]
20 MHz	π/2 BPSK	1860.0	V	153	273	8.72	1 / 79	15.72	24.45	0.278	33.01	-8.56
	π/2 BPSK	1882.5	V	154	267	8.73	1 / 26	15.03	23.76	0.238	33.01	-9.25
	π/2 BPSK	1905.0	V	149	274	8.73	1 / 53	15.38	24.11	0.258	33.01	-8.90
	QPSK	1860.0	V	153	273	8.72	1 / 79	15.88	**24.60**	0.288	33.01	-8.41
	QPSK	1882.5	V	154	267	8.73	1 / 26	15.04	23.77	0.238	33.01	-9.24
	QPSK	1905.0	V	149	274	8.73	1 / 53	15.40	24.13	0.259	33.01	-8.88
	16-QAM	1860.0	V	153	273	8.72	1 / 79	15.33	24.05	0.254	33.01	-8.96
15 MHz	π/2 BPSK	1857.5	V	153	273	8.72	1 / 58	15.75	24.47	0.280	33.01	-8.54
	π/2 BPSK	1882.5	V	154	267	8.73	1 / 20	15.05	23.77	0.238	33.01	-9.24
	π/2 BPSK	1907.5	V	149	274	8.73	1 / 39	14.96	23.69	0.234	33.01	-9.32
	QPSK	1857.5	V	153	273	8.72	1 / 58	15.91	**24.64**	0.291	33.01	-8.37
	QPSK	1882.5	V	154	267	8.73	1 / 20	15.07	23.80	0.240	33.01	-9.21
	QPSK	1907.5	V	149	274	8.73	1 / 39	15.13	23.87	0.244	33.01	-9.14
	16-QAM	1857.5	V	153	273	8.72	1 / 58	15.42	24.15	0.260	33.01	-8.86
10 MHz	π/2 BPSK	1855.0	V	153	273	8.72	1 / 38	15.55	**24.27**	0.268	33.01	-8.74
	π/2 BPSK	1882.5	V	154	267	8.73	1 / 26	14.88	23.61	0.230	33.01	-9.40
	π/2 BPSK	1910.0	V	149	274	8.73	1 / 13	15.09	23.83	0.241	33.01	-9.18
	QPSK	1855.0	V	153	273	8.72	1 / 26	15.47	24.19	0.263	33.01	-8.82
	QPSK	1882.5	V	154	267	8.73	52 / 0	14.82	23.55	0.227	33.01	-9.46
	QPSK	1910.0	V	149	274	8.73	1 / 13	15.08	23.81	0.241	33.01	-9.20
	16-QAM	1855.0	V	153	273	8.72	1 / 13	14.96	23.68	0.234	33.01	-9.33
5 MHz	π/2 BPSK	1852.5	V	153	273	8.72	1 / 6	15.54	24.26	0.267	33.01	-8.75
	π/2 BPSK	1882.5	V	154	267	8.73	1 / 6	14.87	23.59	0.229	33.01	-9.42
	π/2 BPSK	1912.5	V	149	274	8.73	25 / 0	14.80	23.54	0.226	33.01	-9.47
	QPSK	1852.5	V	153	273	8.72	1 / 6	15.63	**24.35**	0.272	33.01	-8.66
	QPSK	1882.5	V	154	267	8.73	1 / 6	15.10	23.82	0.241	33.01	-9.19
	QPSK	1912.5	V	149	274	8.73	1 / 6	15.00	23.73	0.236	33.01	-9.28
	16-QAM	1852.5	V	153	273	8.72	1 / 6	14.74	23.46	0.222	33.01	-9.55

Table 7-10. EIRP Data (NR Band n25/2 – Ant A) – HALF OPEN

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]
40 MHz	π/2 BPSK	1870.0	H	150	208	8.73	1 / 108	12.59	21.32	0.135	33.01	-11.69
	π/2 BPSK	1882.5	H	150	209	8.73	1 / 108	12.84	21.57	0.144	33.01	-11.44
	π/2 BPSK	1895.0	H	145	207	8.73	1 / 214	13.16	**21.89**	0.155	33.01	-11.12
	QPSK	1870.0	H	150	208	8.73	1 / 108	12.64	21.37	0.137	33.01	-11.64
	QPSK	1882.5	H	150	209	8.73	1 / 108	12.75	21.48	0.141	33.01	-11.53
	QPSK	1895.0	H	145	207	8.73	1 / 214	12.98	21.71	0.148	33.01	-11.30
	16-QAM	1895.0	H	145	207	8.73	1 / 214	12.13	20.86	0.122	33.01	-12.15
30 MHz	π/2 BPSK	1865.0	H	150	208	8.73	1 / 119	13.03	21.75	0.150	33.01	-11.26
	π/2 BPSK	1882.5	H	150	209	8.73	1 / 80	13.53	**22.26**	0.168	33.01	-10.75
	π/2 BPSK	1900.0	H	145	207	8.73	1 / 119	13.26	22.00	0.158	33.01	-11.01
	QPSK	1865.0	H	150	208	8.73	1 / 119	12.95	21.68	0.147	33.01	-11.33
	QPSK	1882.5	H	150	209	8.73	1 / 119	13.34	22.07	0.161	33.01	-10.94
	QPSK	1900.0	H	145	207	8.73	1 / 80	12.83	21.56	0.143	33.01	-11.45
	16-QAM	1882.5	H	150	209	8.73	1 / 80	12.15	20.88	0.122	33.01	-12.13
25 MHz	π/2 BPSK	1862.5	H	150	208	8.73	1 / 99	13.27	22.00	0.158	33.01	-11.01
	π/2 BPSK	1882.5	H	150	209	8.73	1 / 99	13.75	22.48	0.177	33.01	-10.53
	π/2 BPSK	1902.5	H	145	207	8.73	1 / 66	13.45	22.18	0.165	33.01	-10.83
	QPSK	1862.5	H	150	208	8.73	1 / 99	13.22	21.94	0.156	33.01	-11.07
	QPSK	1882.5	H	150	209	8.73	1 / 99	13.77	**22.49**	0.178	33.01	-10.52
	QPSK	1902.5	H	145	207	8.73	1 / 33	13.11	21.85	0.153	33.01	-11.16
	16-QAM	1862.5	H	150	208	8.73	1 / 99	12.33	21.05	0.127	33.01	-11.96
25 MHz	QPSK (CP-OFDM)	1882.5	H	149	205	8.73	1 / 99	11.76	20.49	0.112	33.01	-12.52
	QPSK (Opposite Pol.)	1882.5	V	113	90	8.73	1 / 1	10.59	19.32	0.086	33.01	-13.69
	QPSK (WCP)	1882.5	H	123	194	8.73	1 / 99	11.32	20.05	0.101	33.01	-12.96
25 MHz	QPSK (Half Open)	1882.5	V	109	329	8.73	1 / 99	12.63	21.35	0.137	33.01	-11.66

Table 7-11. EIRP Data (NR Band n25 – Ant I) – OPEN