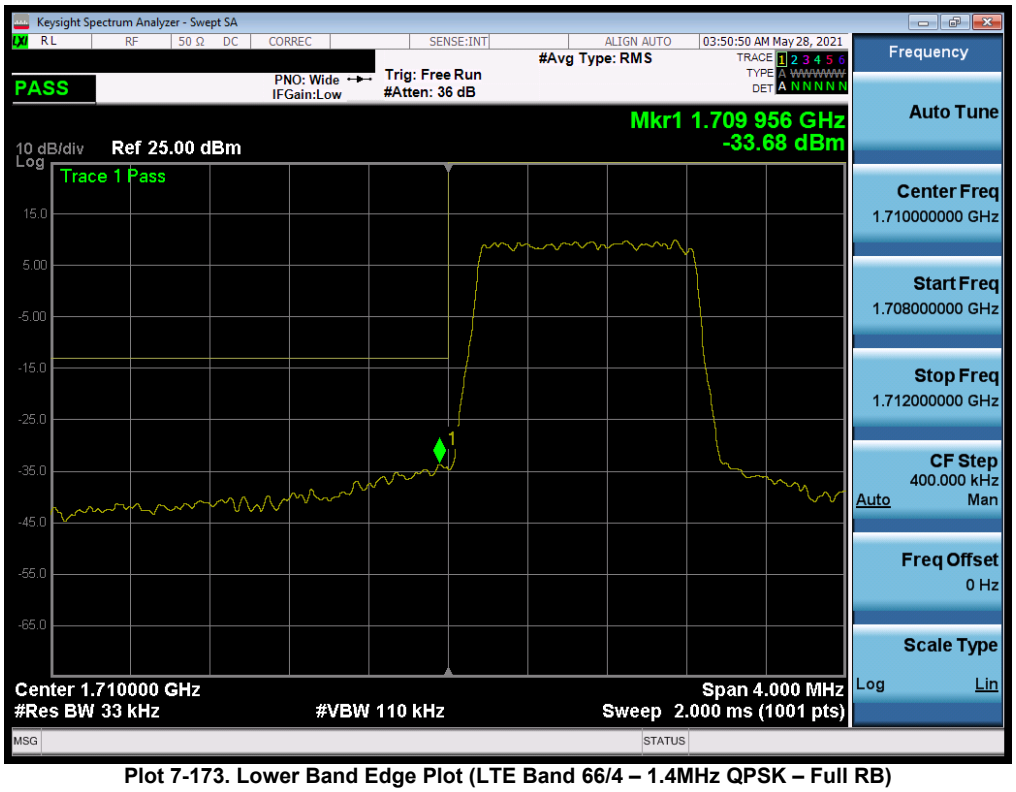
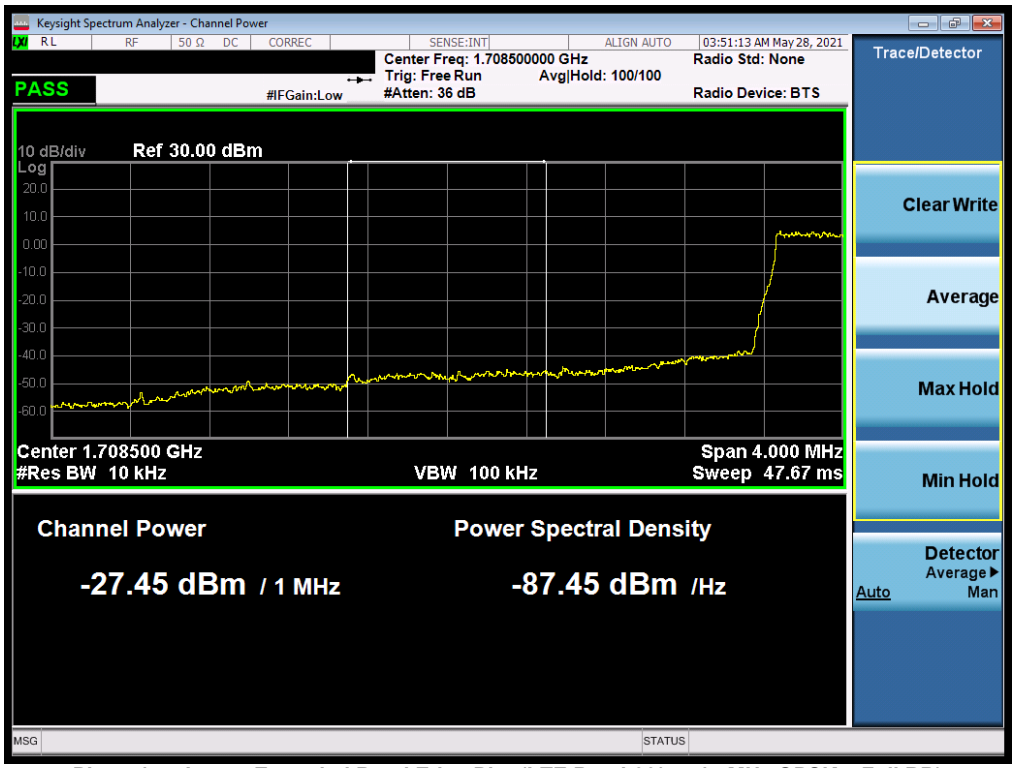
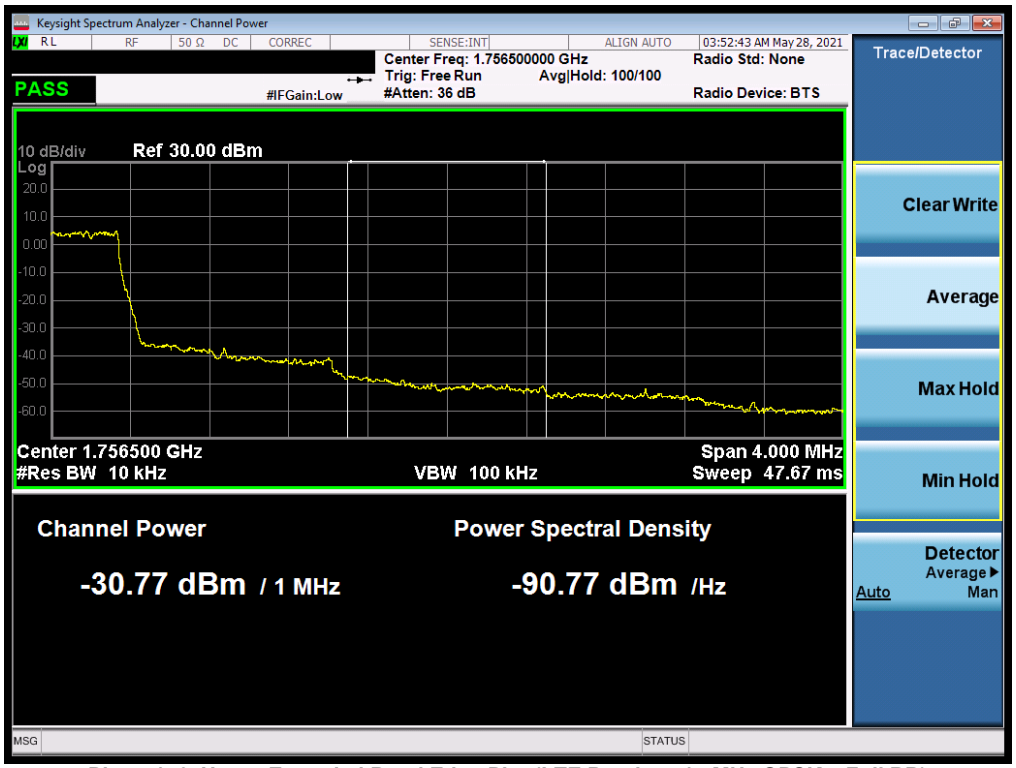


Plot 7-173. Lower Band Edge Plot (LTE Band 66/4 – 1.4MHz QPSK – Full RB)



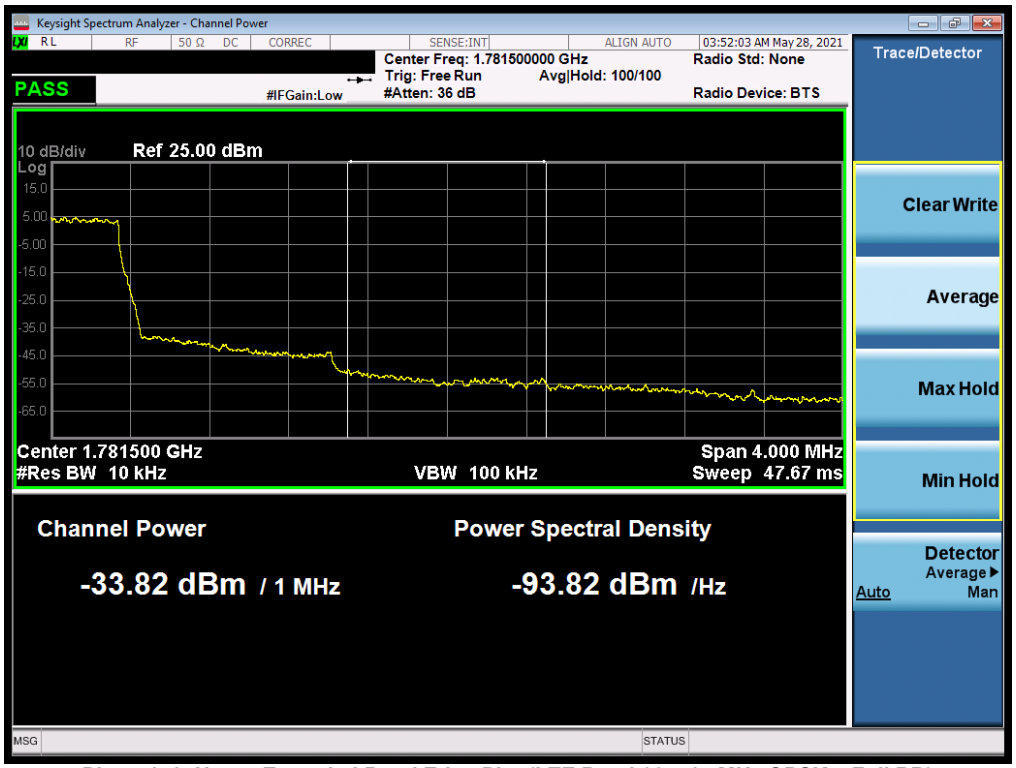
Plot 7-174. Lower Extended Band Edge Plot (LTE Band 66/4 – 1.4MHz QPSK – Full RB)

Plot 7-175. Upper Band Edge Plot (LTE Band 4 – 1.4MHz QPSK – Full RB)



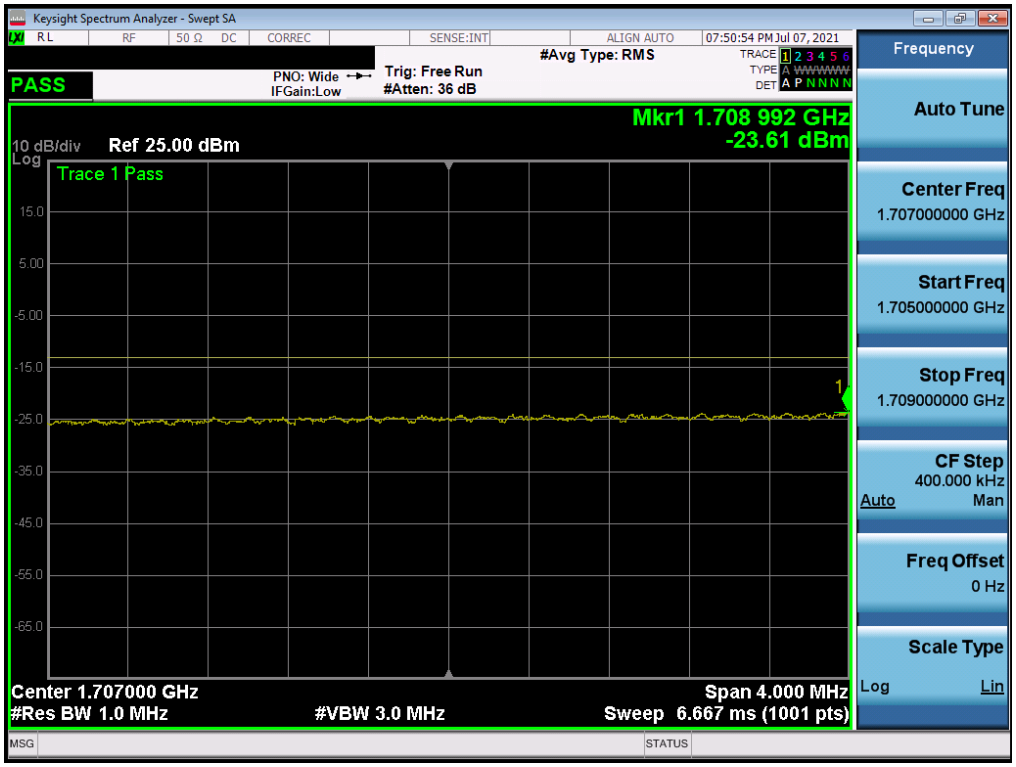
Plot 7-176. Upper Extended Band Edge Plot (LTE Band 4 – 1.4MHz QPSK – Full RB)

Plot 7-177. Upper Band Edge Plot (LTE Band 66 – 1.4MHz QPSK – Full RB)



Plot 7-178. Upper Extended Band Edge Plot (LTE Band 66 – 1.4MHz QPSK – Full RB)

Plot 7-179. Lower Band Edge Plot (NR Band n66 – 40.0MHz - Full RB)



Plot 7-180. Lower Extended Band Edge Plot (NR Band n66 – 40.0MHz - Full RB)

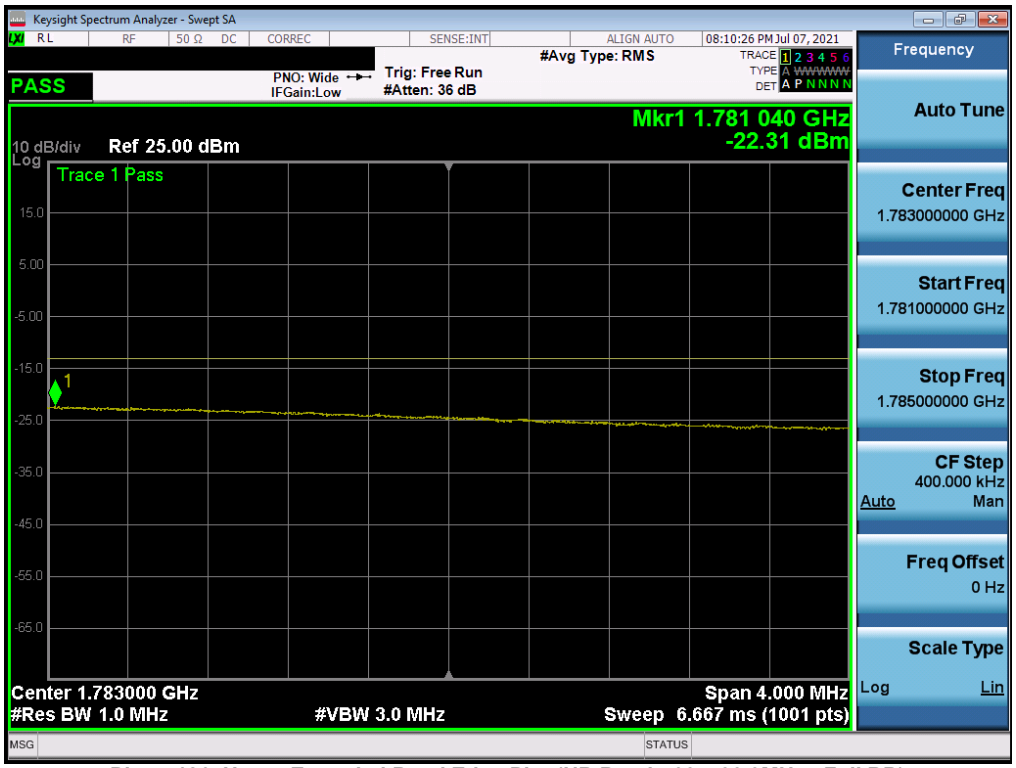
Plot 7-181. Upper Band Edge Plot (NR Band n66 – 40.0MHz - Full RB)

Plot 7-182. Upper Extended Band Edge Plot (NR Band n66 – 40.0MHz - Full RB)

Plot 7-183. Lower Band Edge Plot (NR Band n66 – 30.0MHz - Full RB)

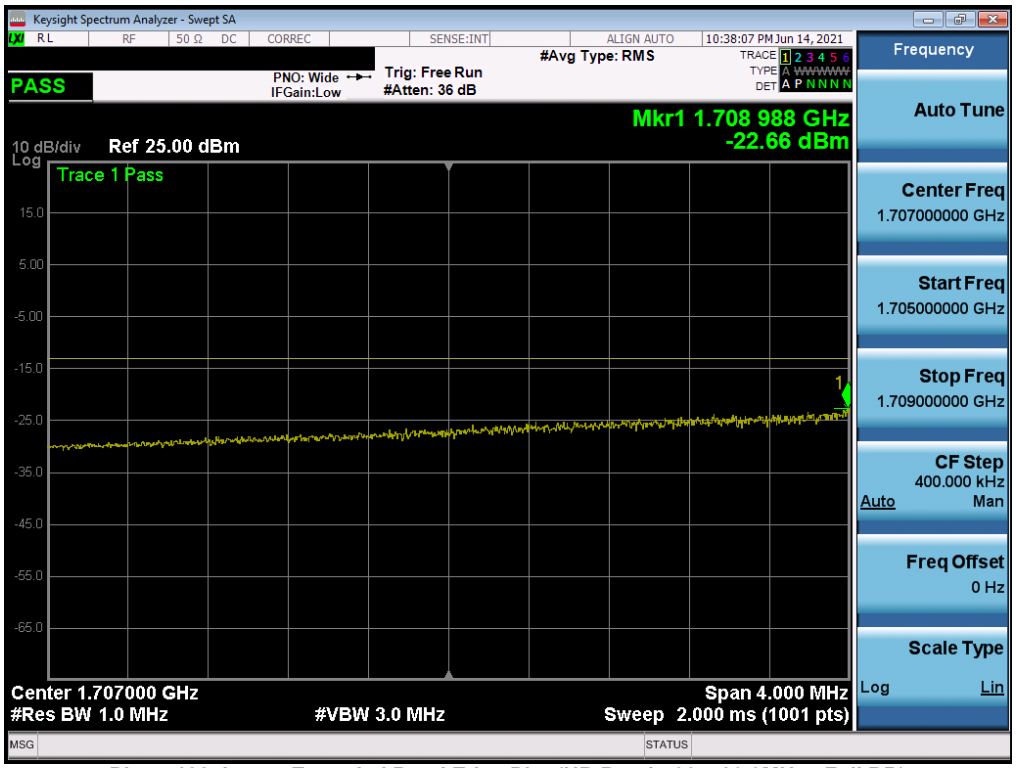
Plot 7-184. Lower Extended Band Edge Plot (NR Band n66 – 30.0MHz - Full RB)

Plot 7-185. Upper Band Edge Plot (NR Band n66 – 30.0MHz - Full RB)



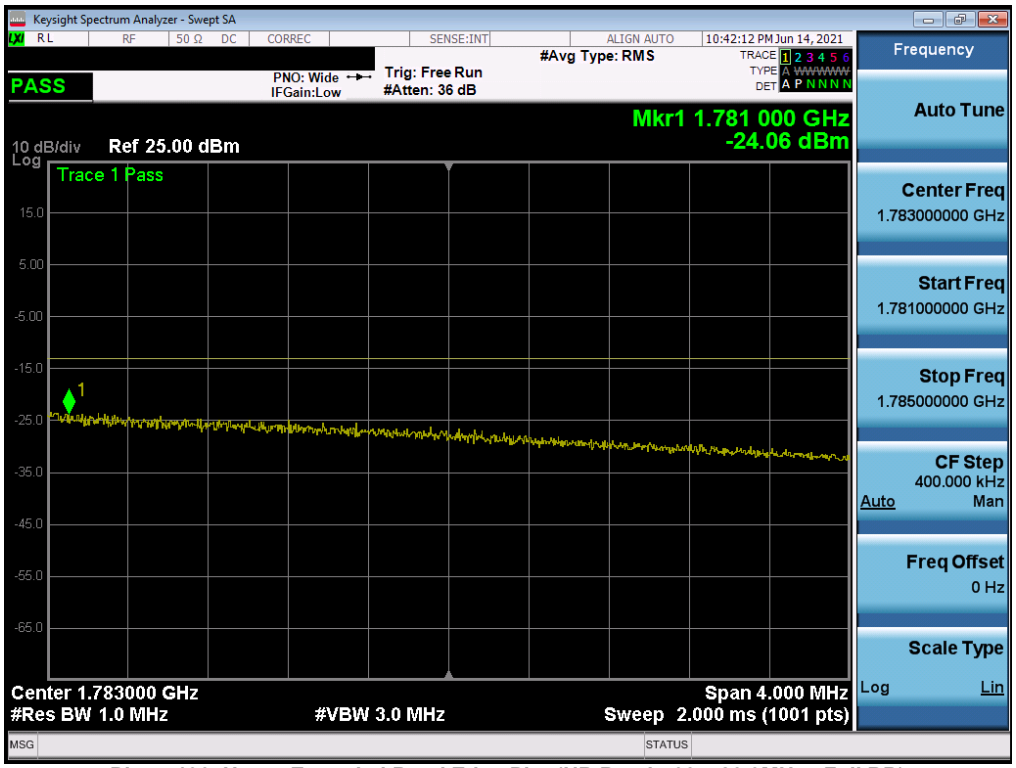
Plot 7-186. Upper Extended Band Edge Plot (NR Band n66 – 30.0MHz - Full RB)

Plot 7-187. Lower Band Edge Plot (NR Band n66 – 20.0MHz - Full RB)

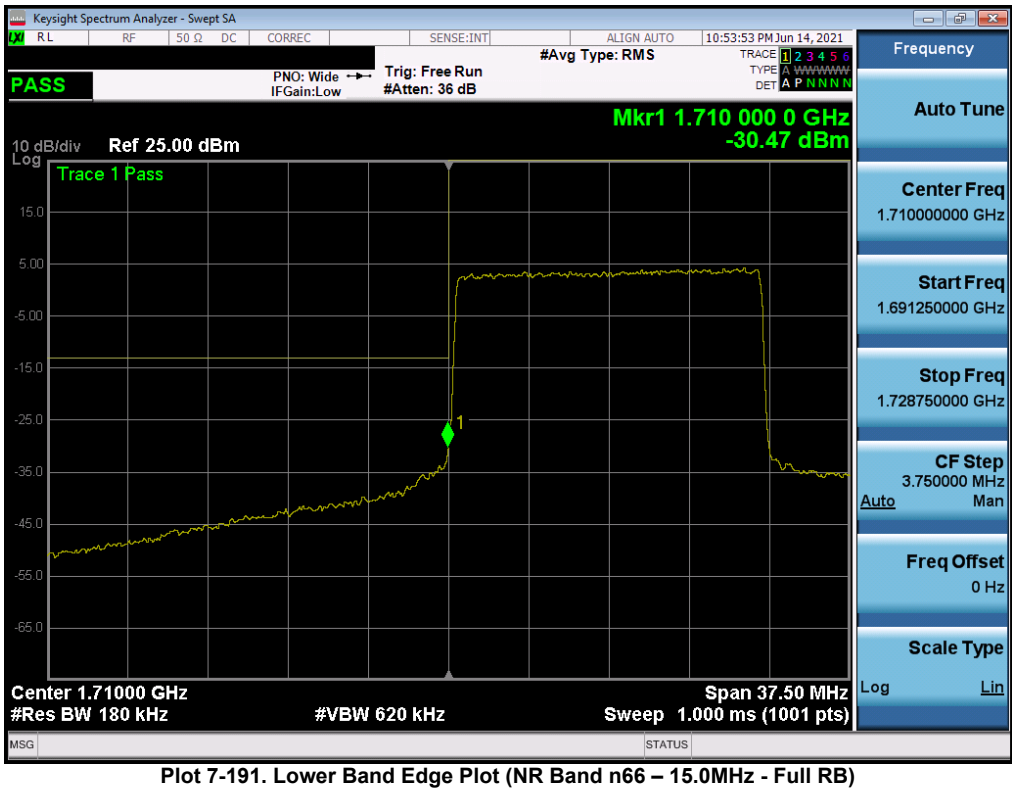


Plot 7-188. Lower Extended Band Edge Plot (NR Band n66 – 20.0MHz - Full RB)

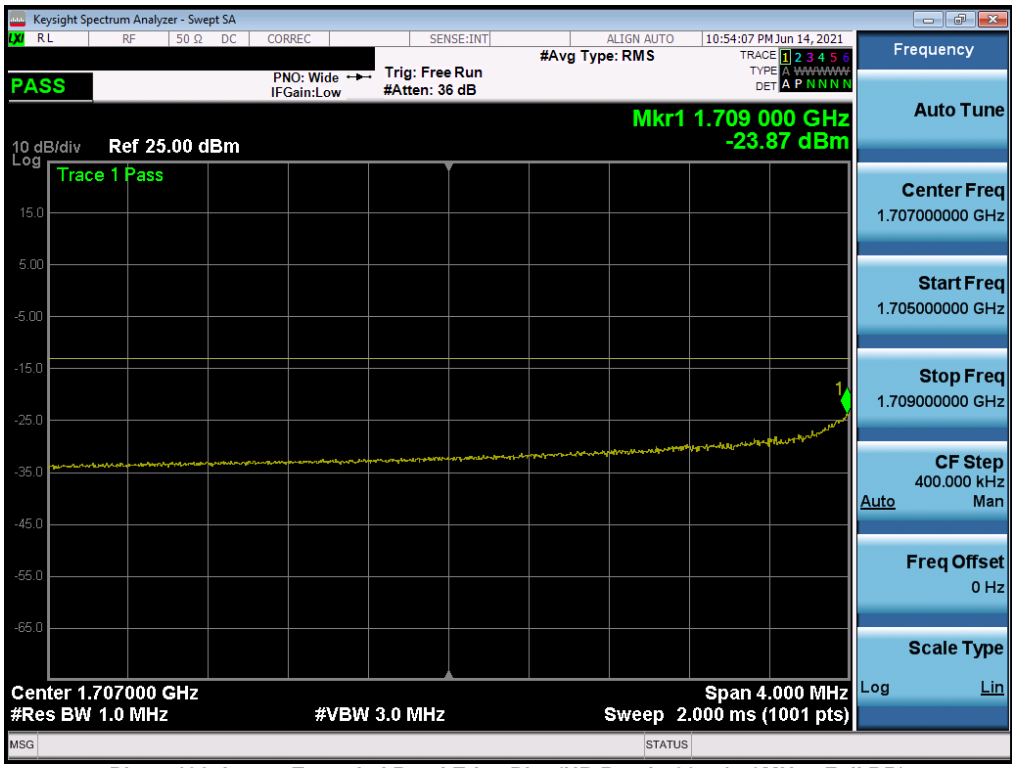
Plot 7-189. Upper Band Edge Plot (NR Band n66 – 20.0MHz - Full RB)



Plot 7-190. Upper Extended Band Edge Plot (NR Band n66 – 20.0MHz - Full RB)

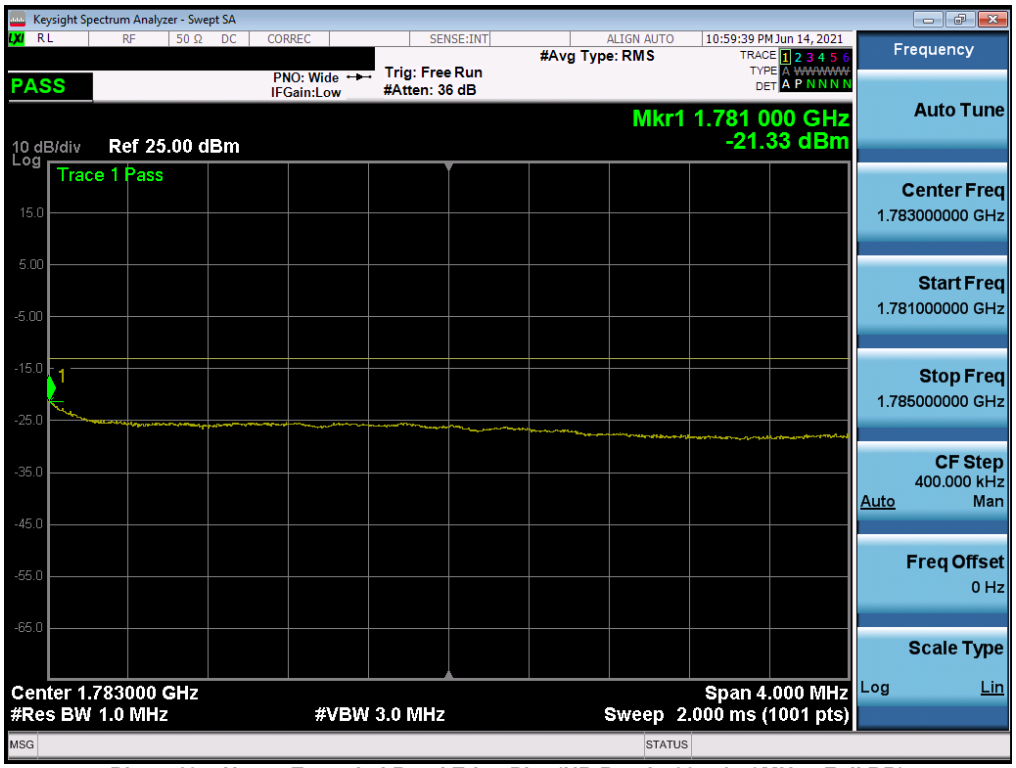


Plot 7-191. Lower Band Edge Plot (NR Band n66 – 15.0MHz - Full RB)

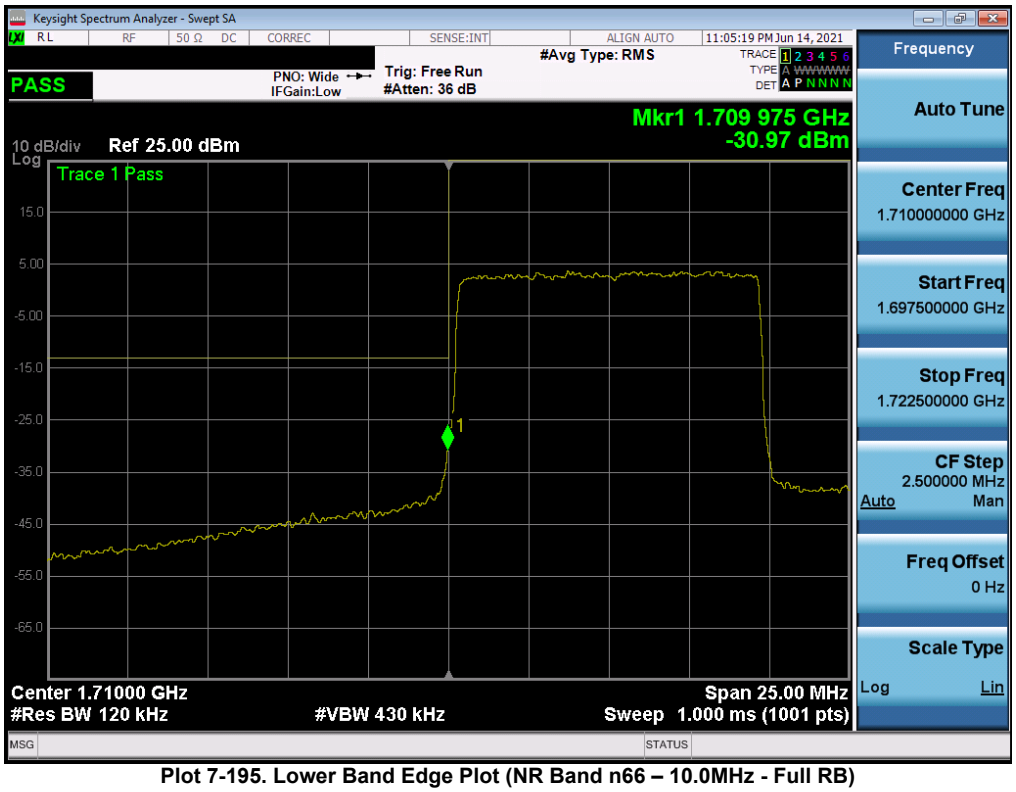


Plot 7-192. Lower Extended Band Edge Plot (NR Band n66 – 15.0MHz - Full RB)

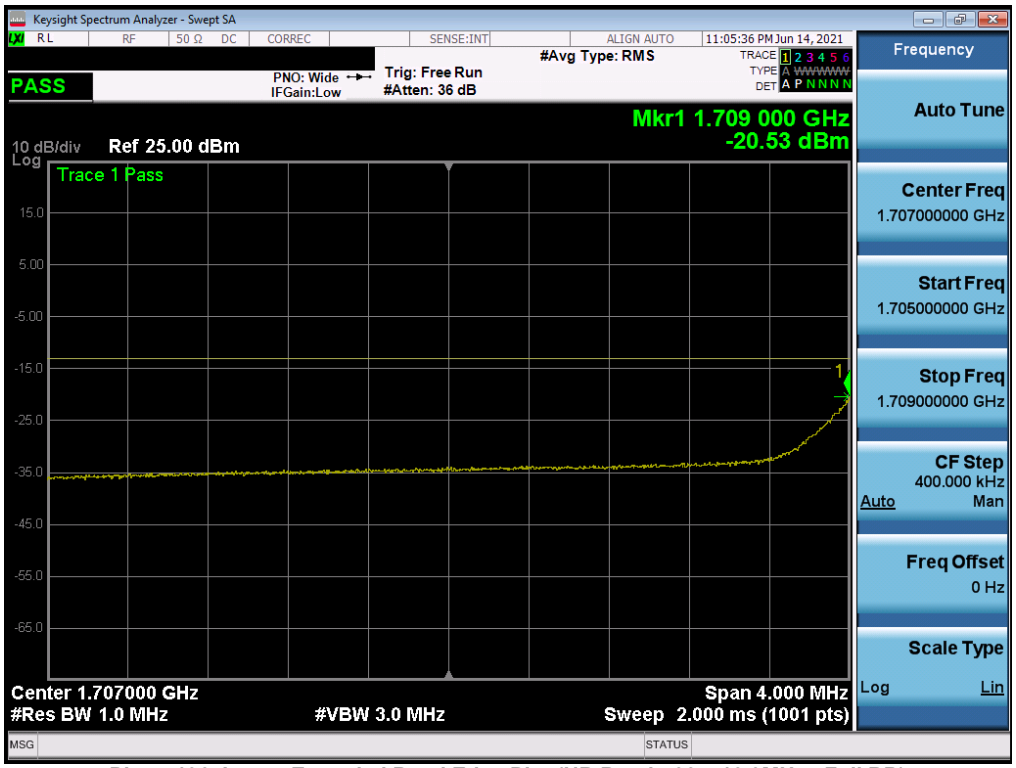
Plot 7-193. Upper Band Edge Plot (NR Band n66 – 15.0MHz - Full RB)



Plot 7-194. Upper Extended Band Edge Plot (NR Band n66 – 15.0MHz - Full RB)

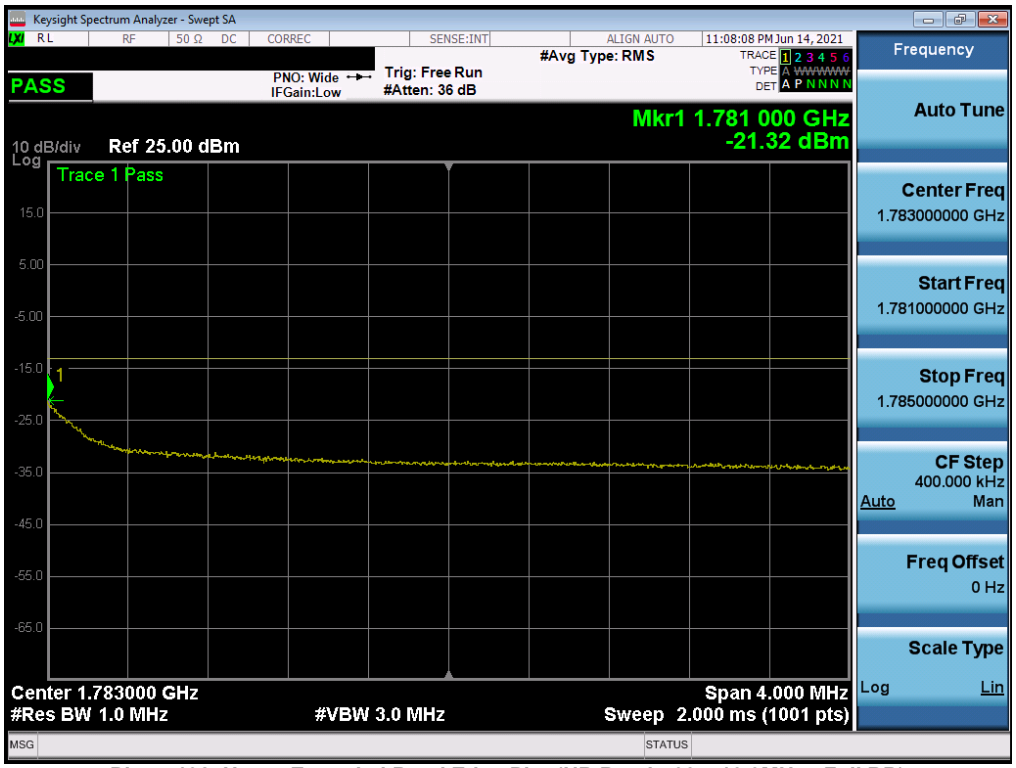


Plot 7-195. Lower Band Edge Plot (NR Band n66 – 10.0MHz - Full RB)



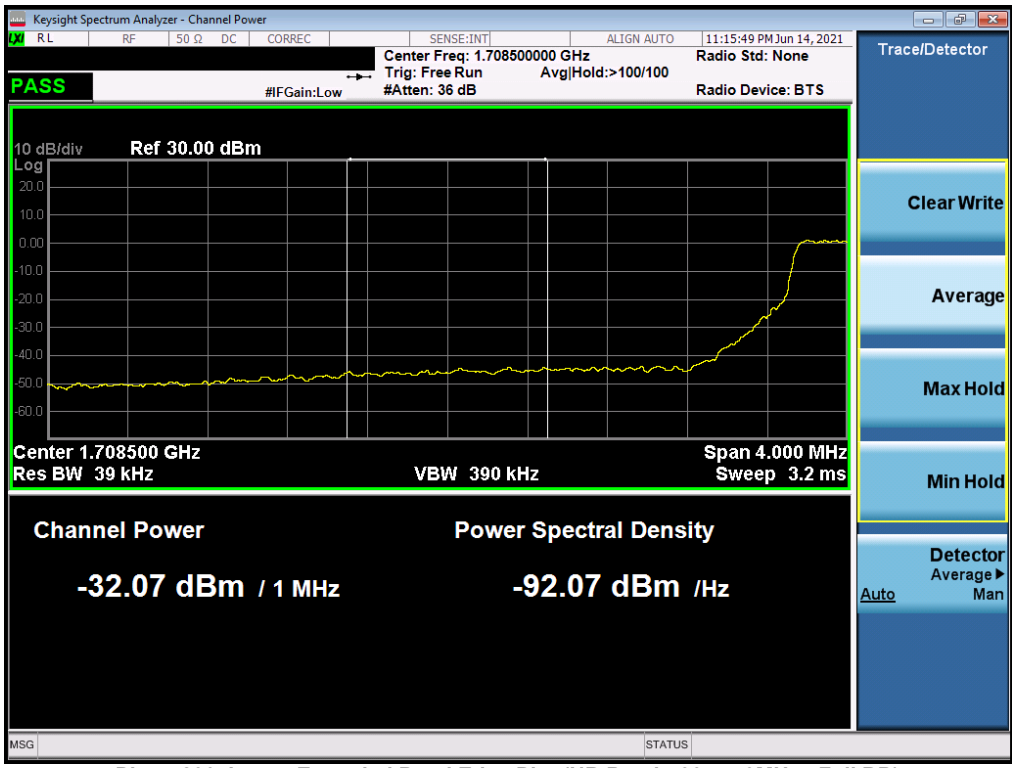
Plot 7-196. Lower Extended Band Edge Plot (NR Band n66 – 10.0MHz - Full RB)

Plot 7-197. Upper Band Edge Plot (NR Band n66 – 10.0MHz - Full RB)



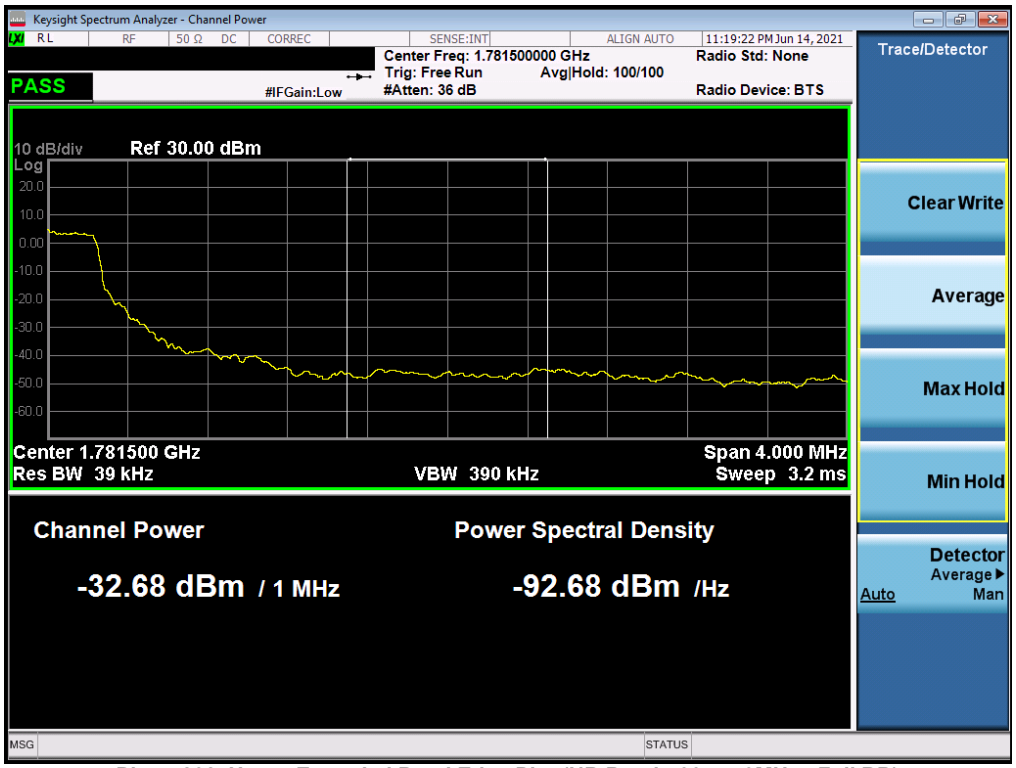
Plot 7-198. Upper Extended Band Edge Plot (NR Band n66 – 10.0MHz - Full RB)

Plot 7-199. Lower Band Edge Plot (NR Band n66 – 5.0MHz - Full RB)



Plot 7-200. Lower Extended Band Edge Plot (NR Band n66 – 5.0MHz - Full RB)

Plot 7-201. Upper Band Edge Plot (NR Band n66 – 5.0MHz - Full RB)



Plot 7-202. Upper Extended Band Edge Plot (NR Band n66 – 5.0MHz - Full RB)

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.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 5.7.1

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.

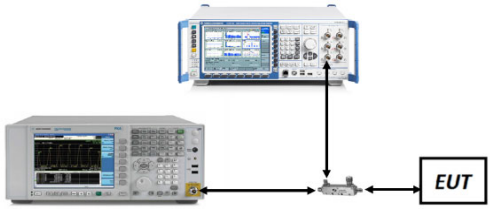
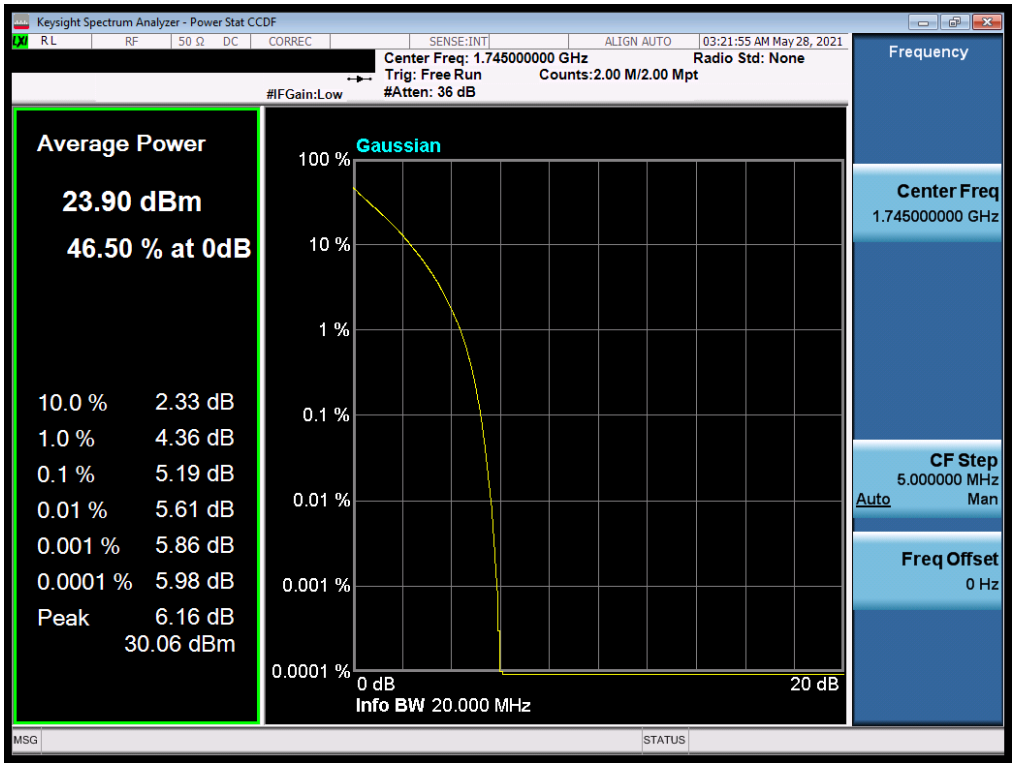


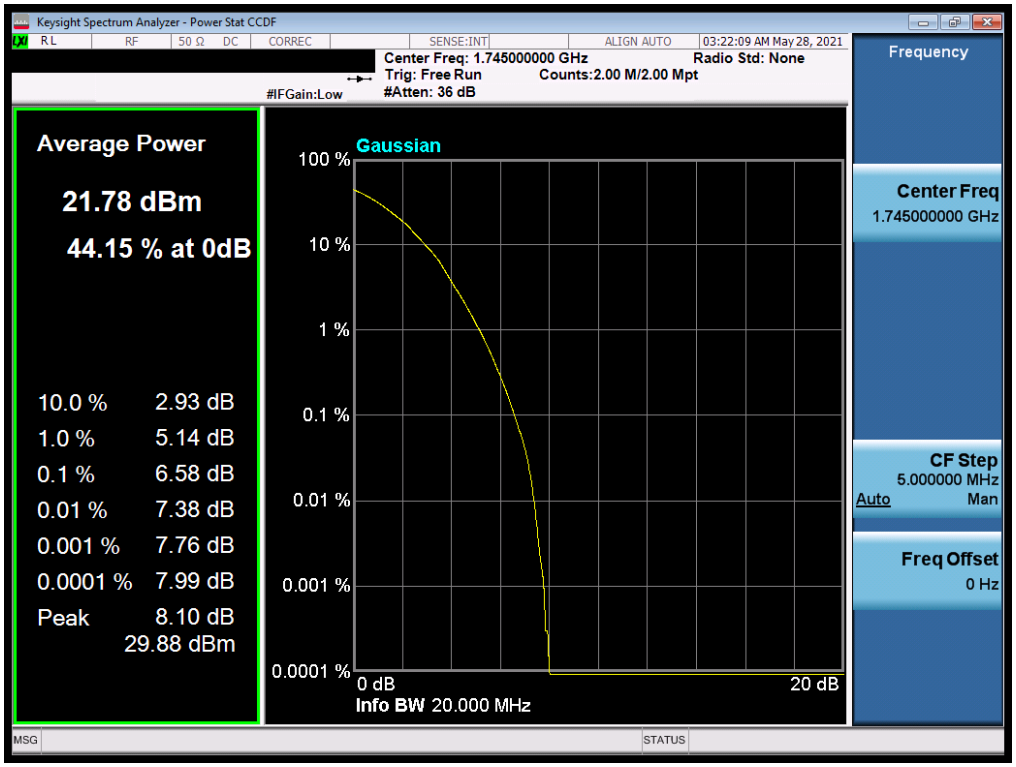
Figure 7-5. Test Instrument & Measurement Setup

Test Notes

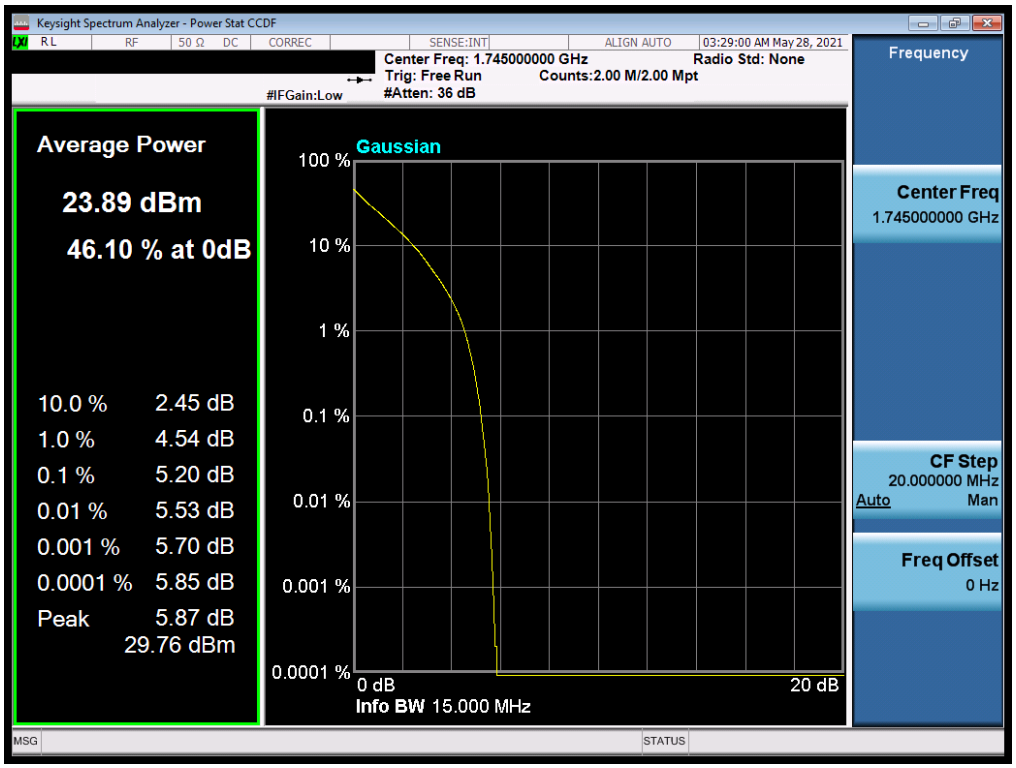
None.



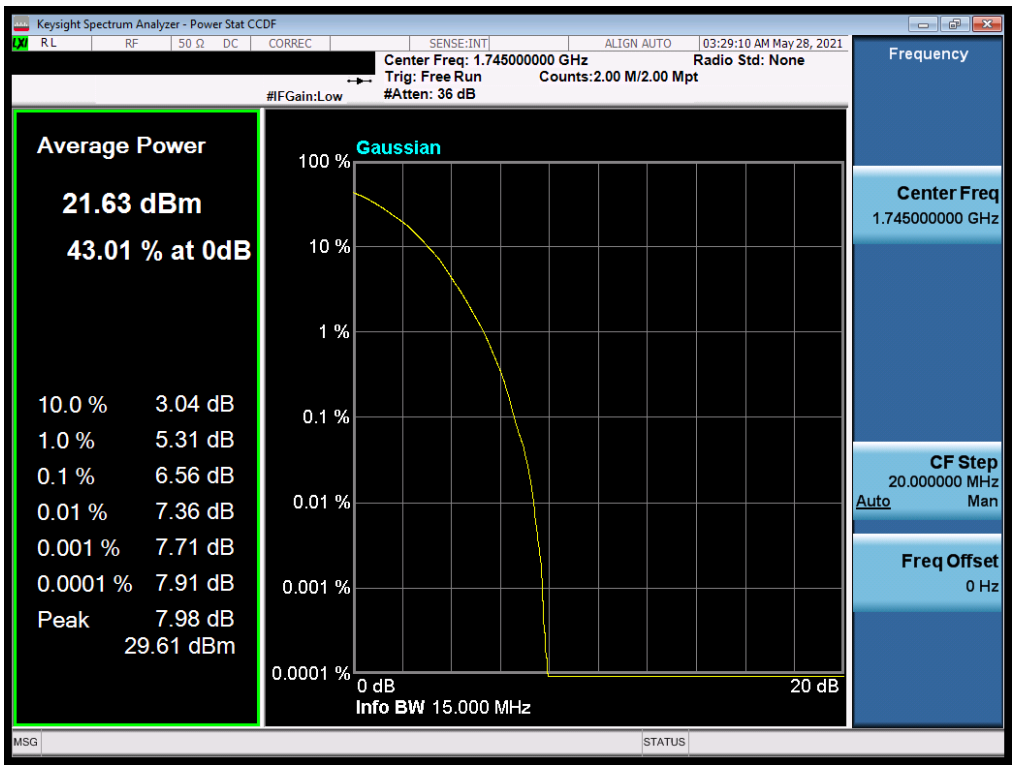
Plot 7-203. PAR Plot (LTE Band 66/4 - 20MHz QPSK - Full RB)



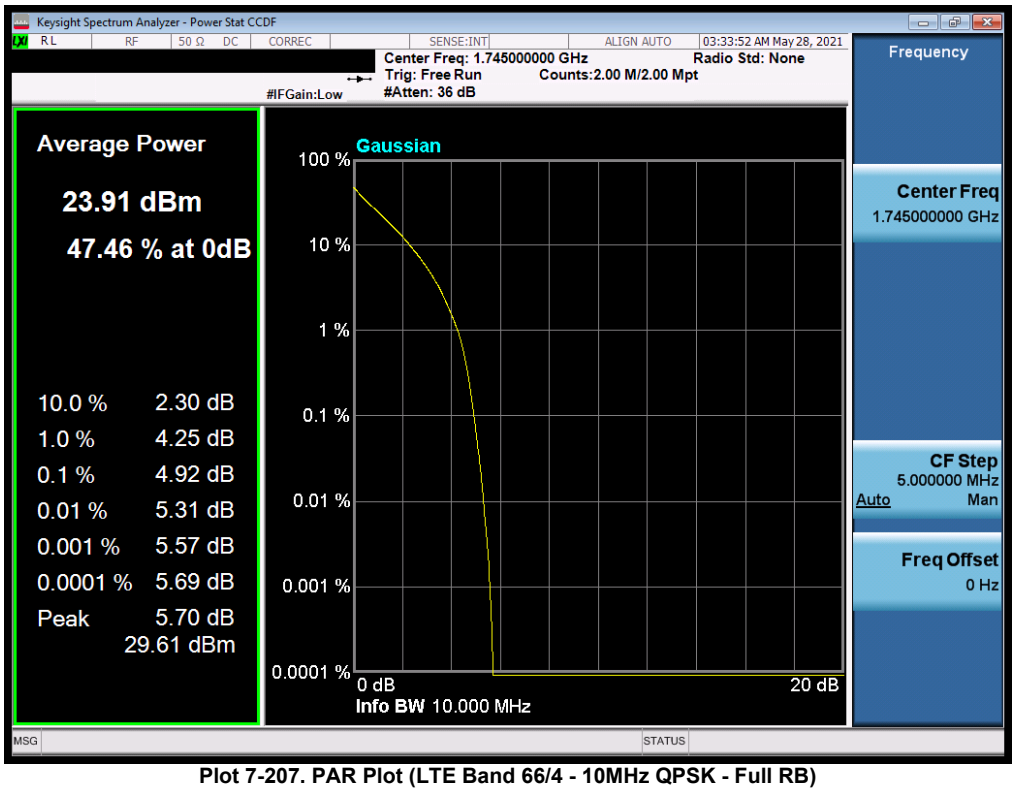
Plot 7-204. PAR Plot (LTE Band 66/4 - 20MHz 64-QAM - Full RB)



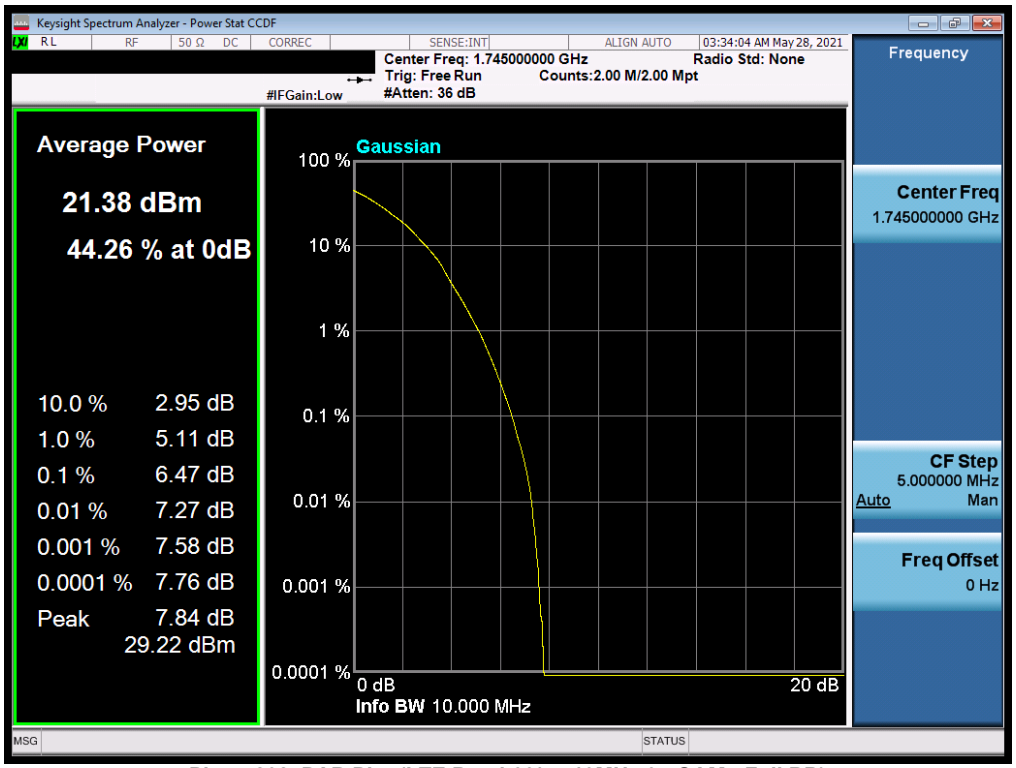
Plot 7-205. PAR Plot (LTE Band 66/4 - 15MHz QPSK - Full RB)



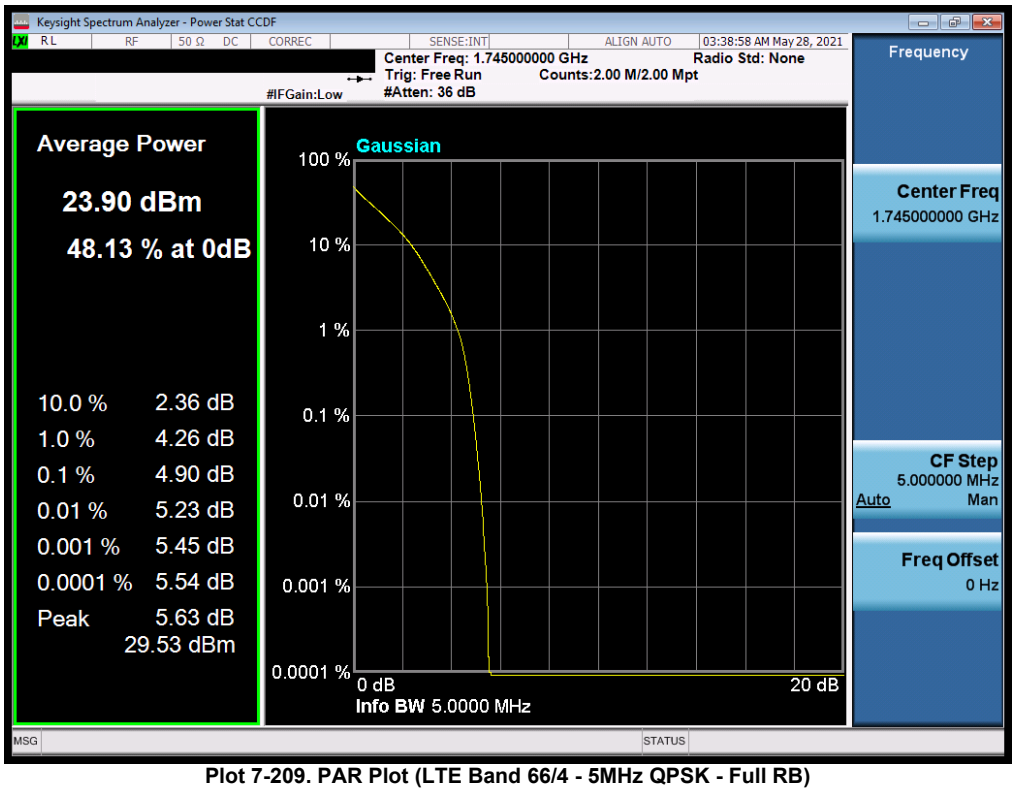
Plot 7-206. PAR Plot (LTE Band 66/4 - 15MHz 64-QAM - Full RB)



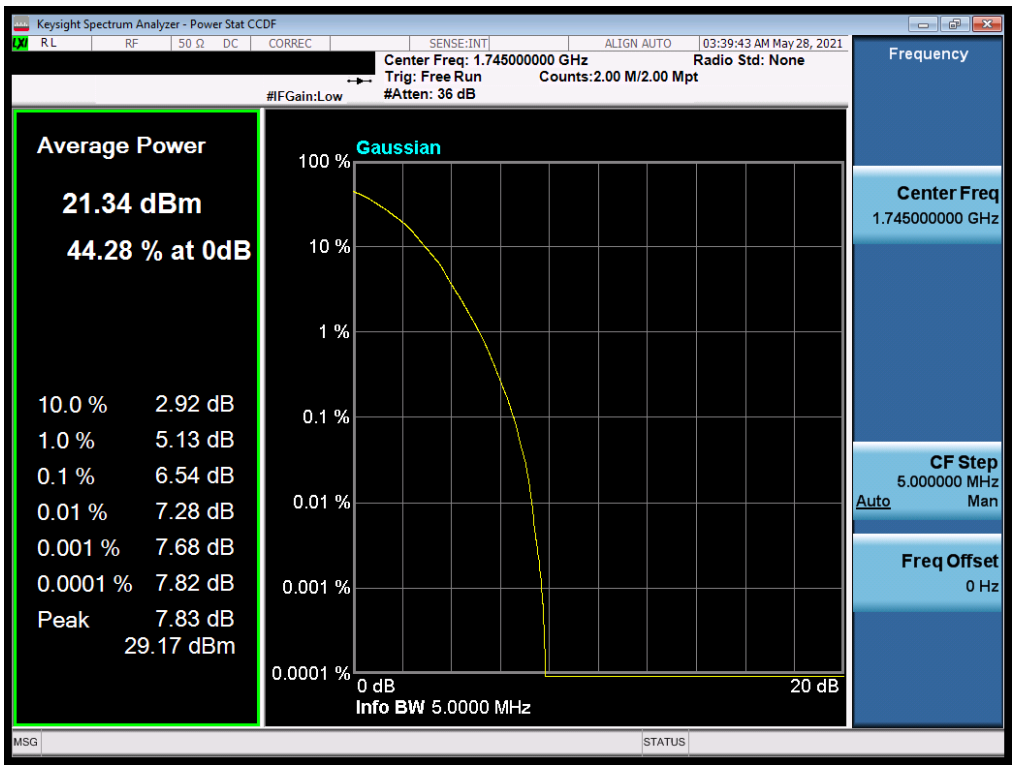
Plot 7-207. PAR Plot (LTE Band 66/4 - 10MHz QPSK - Full RB)



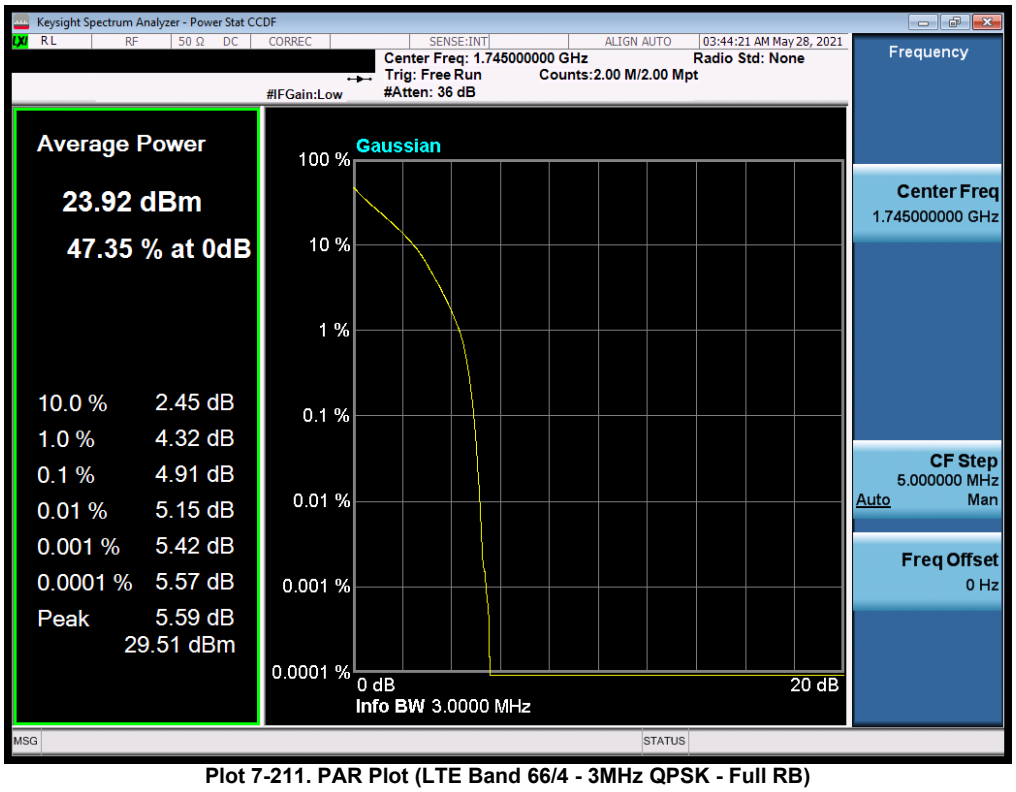
Plot 7-208. PAR Plot (LTE Band 66/4 - 10MHz 64-QAM - Full RB)



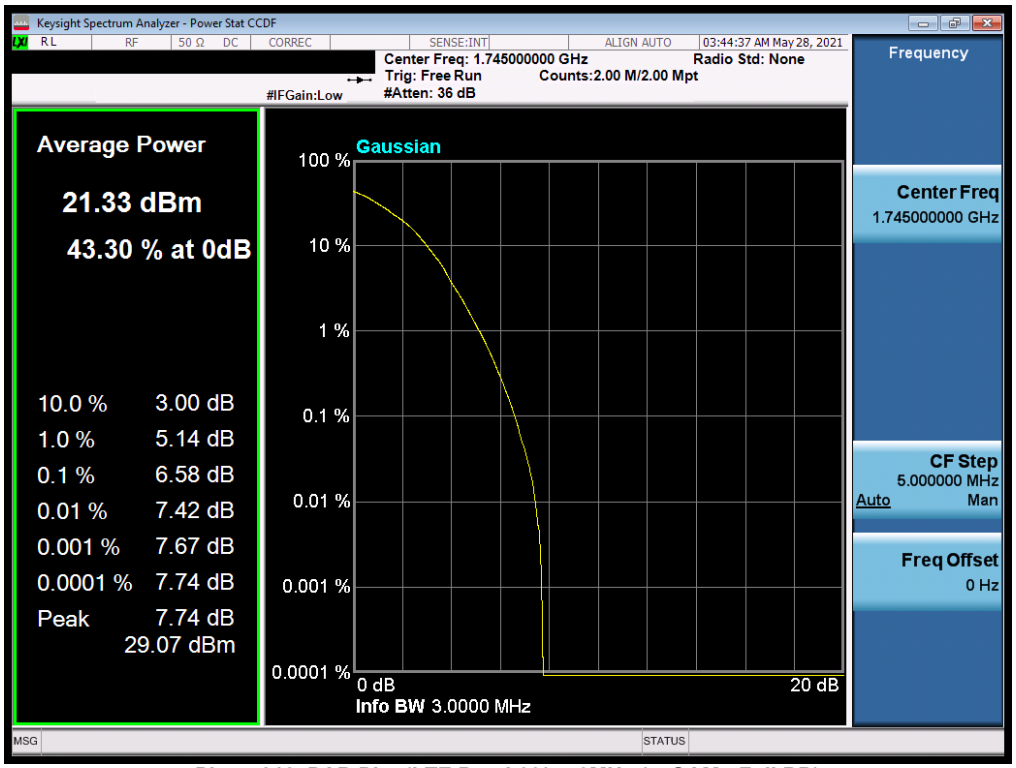
Plot 7-209. PAR Plot (LTE Band 66/4 - 5MHz QPSK - Full RB)



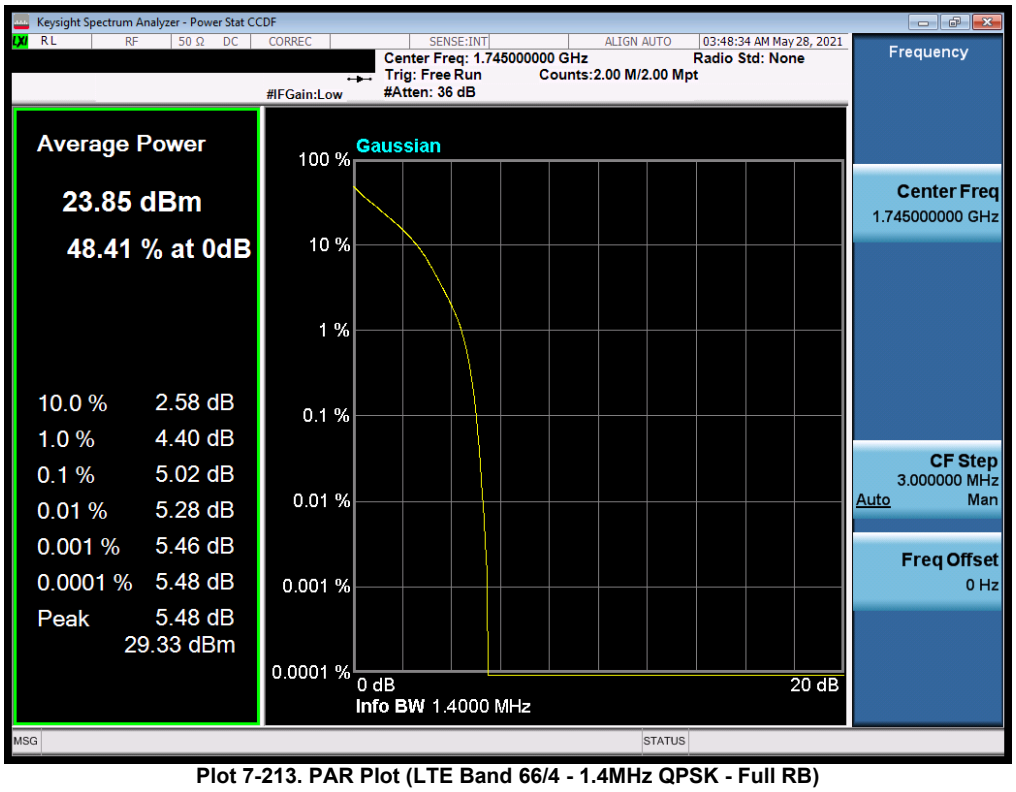
Plot 7-210. PAR Plot (LTE Band 66/4 - 5MHz 64-QAM - Full RB)



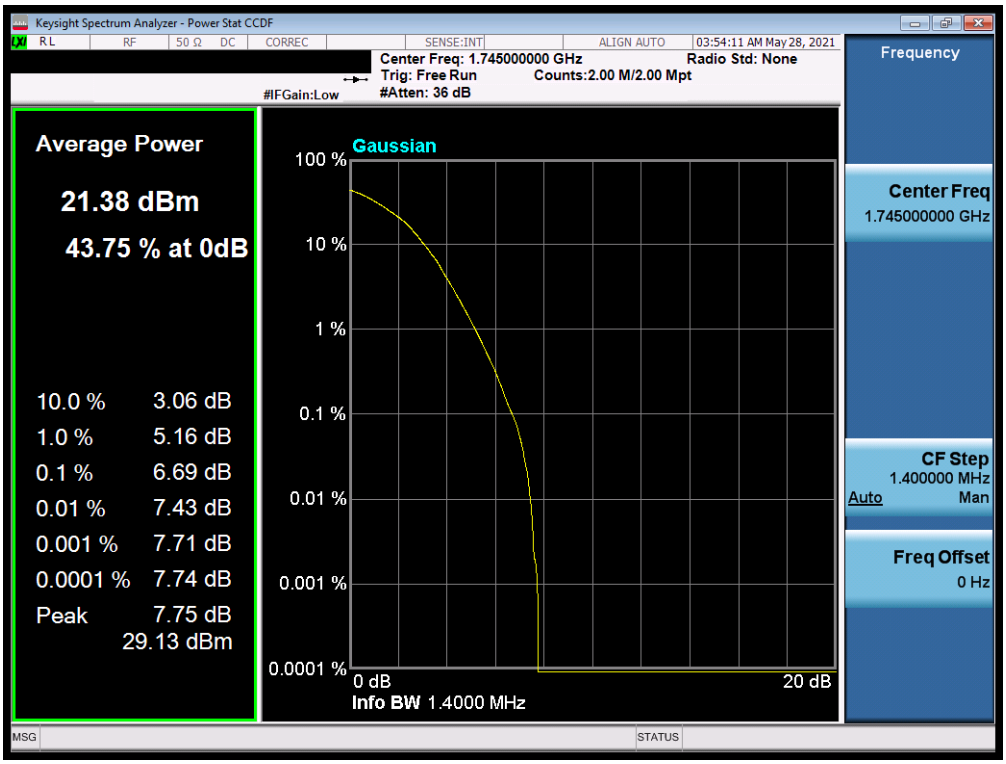
Plot 7-211. PAR Plot (LTE Band 66/4 - 3MHz QPSK - Full RB)



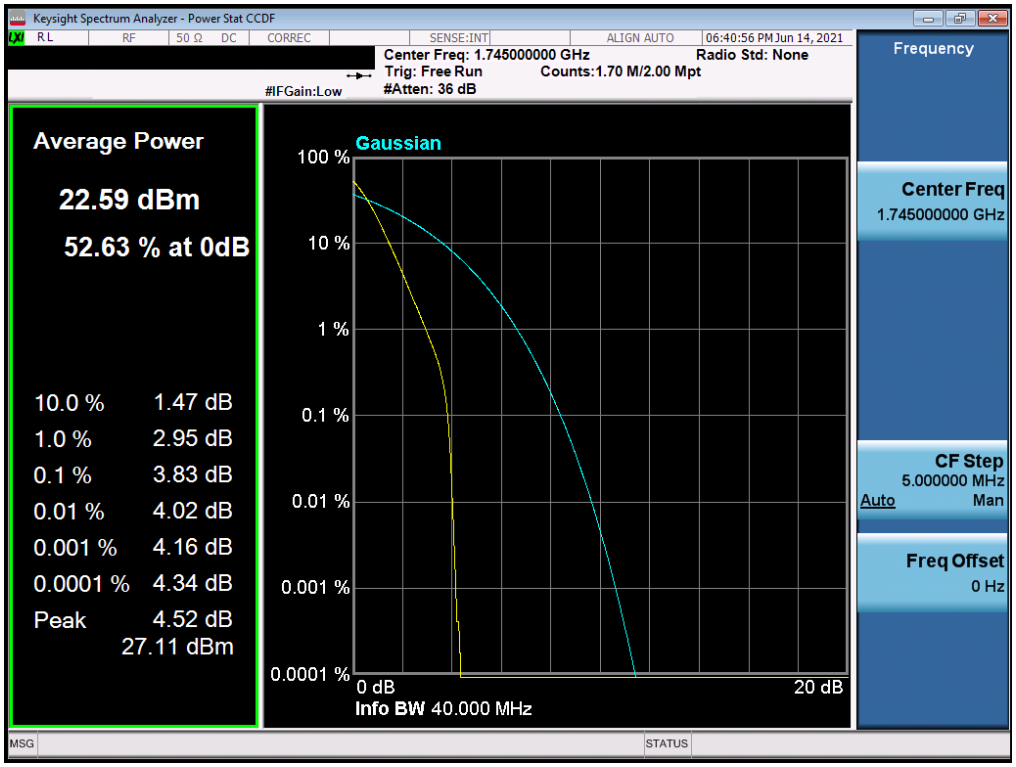
Plot 7-212. PAR Plot (LTE Band 66/4 - 3MHz 64-QAM - Full RB)



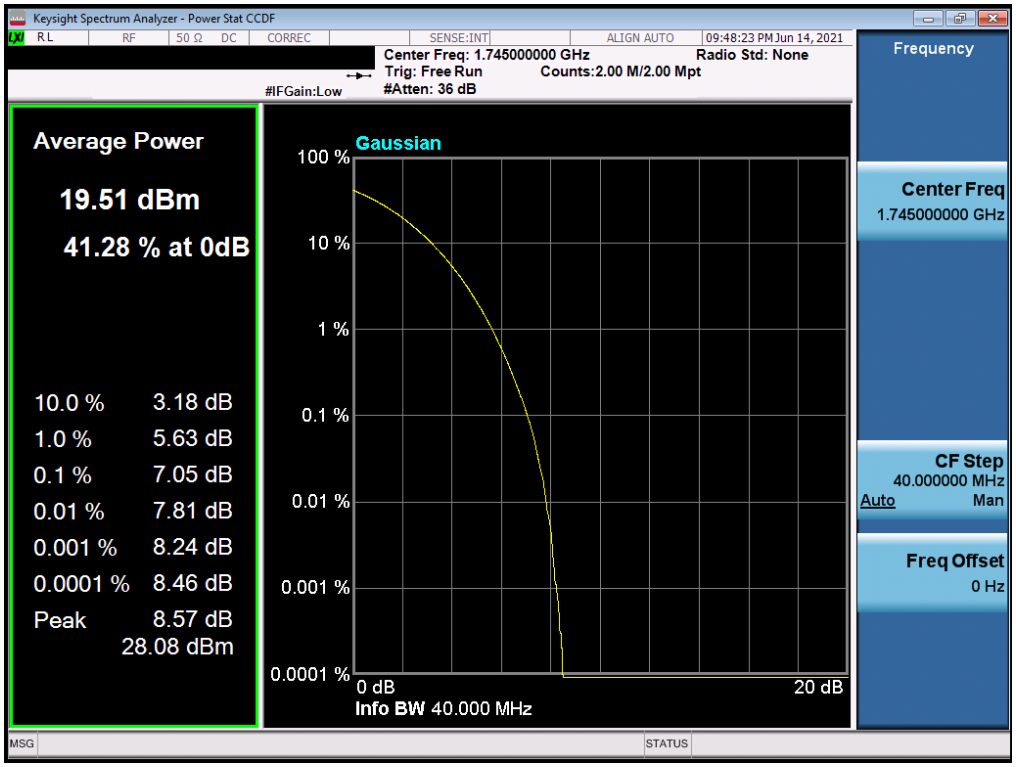
Plot 7-213. PAR Plot (LTE Band 66/4 - 1.4MHz QPSK - Full RB)



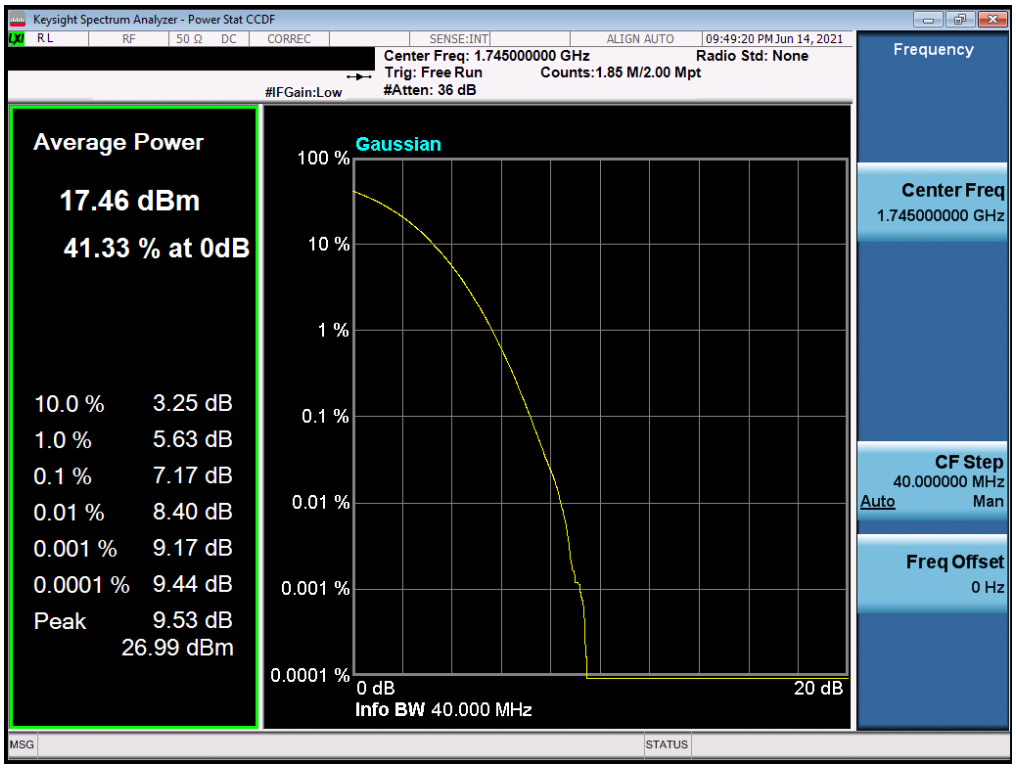
Plot 7-214. PAR Plot (LTE Band 66/4 - 1.4MHz 64-QAM - Full RB)



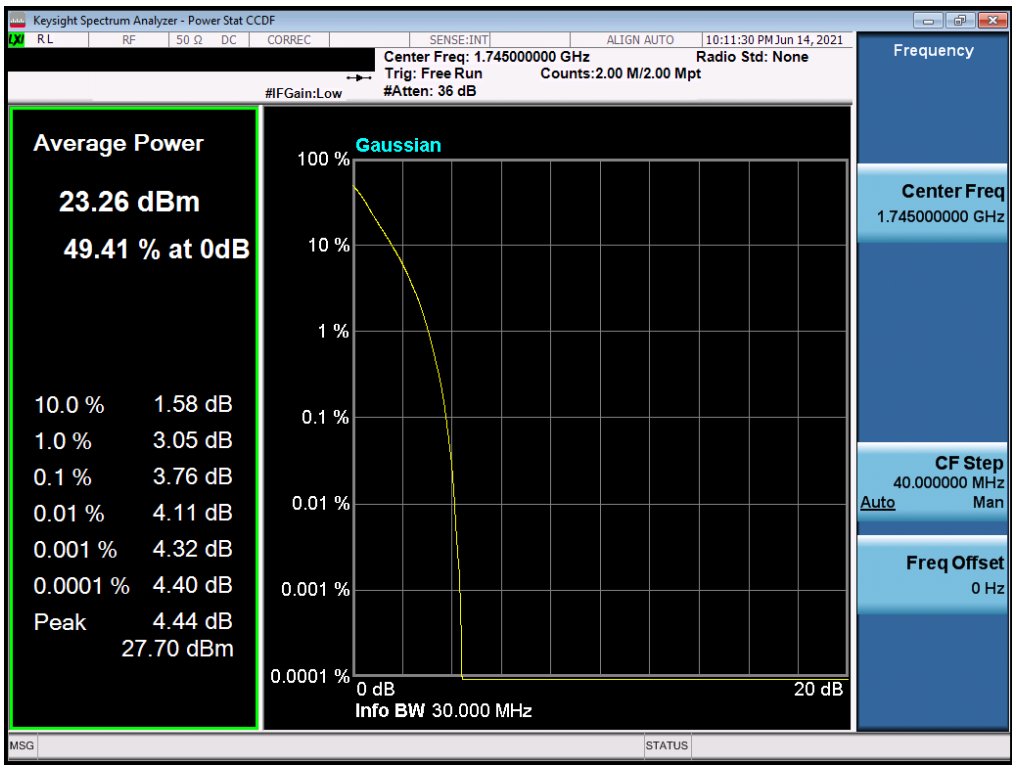
Plot 7-215. PAR Plot (NR Band n66 - 40.0MHz DFT-s-OFDM BPSK - Full RB)



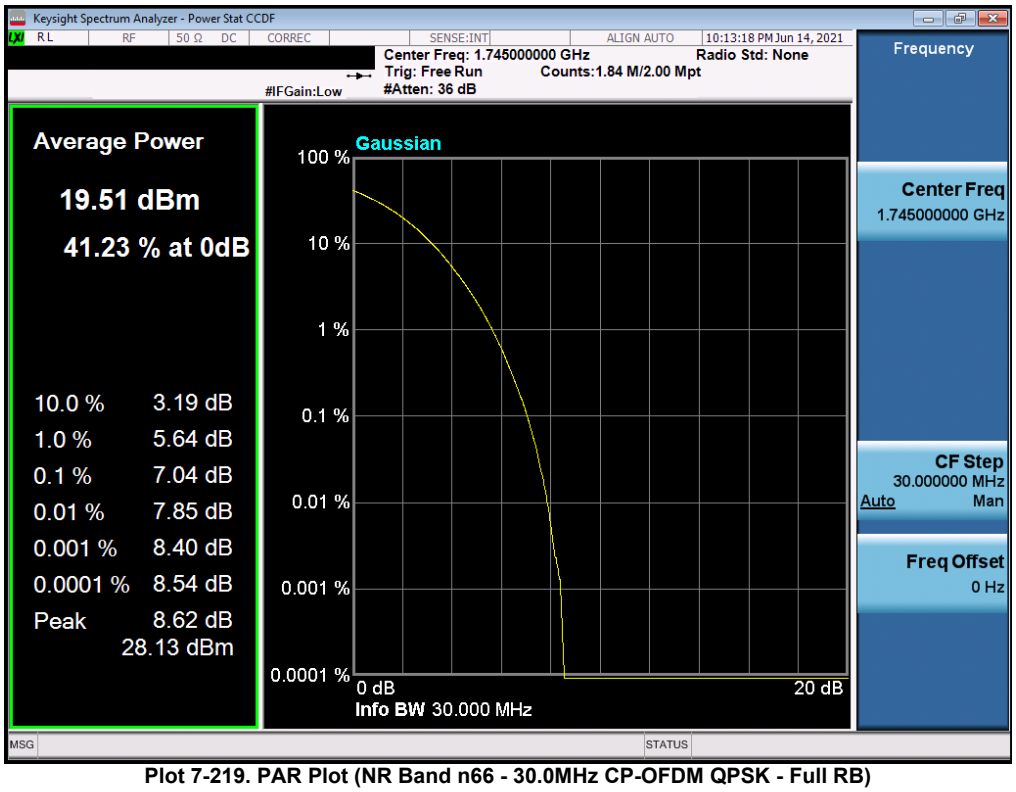
Plot 7-216. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM QPSK - Full RB)



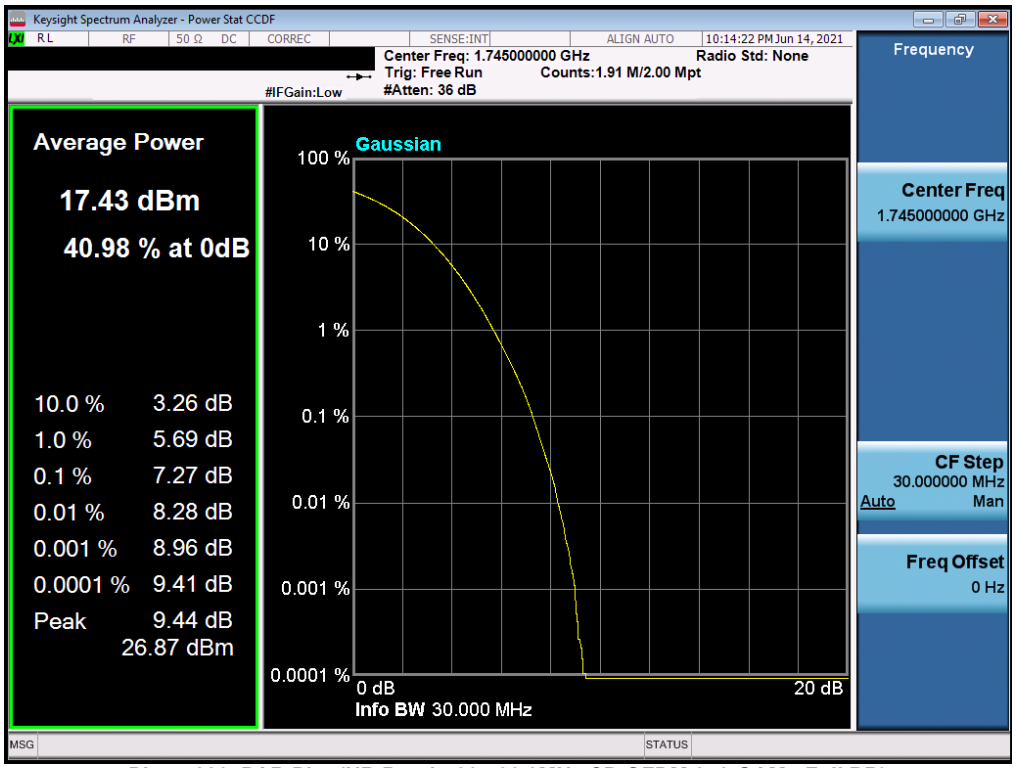
Plot 7-217. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM 256-QAM - Full RB)



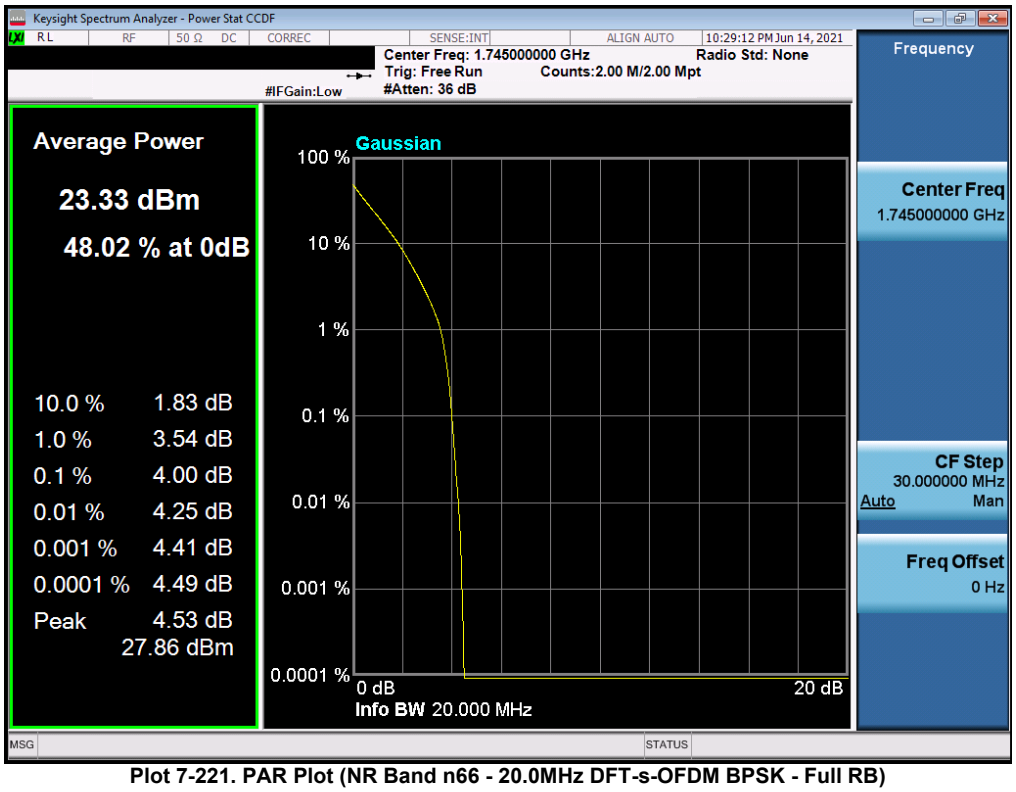
Plot 7-218. PAR Plot (NR Band n66 - 30.0MHz DFT-s-OFDM BPSK - Full RB)



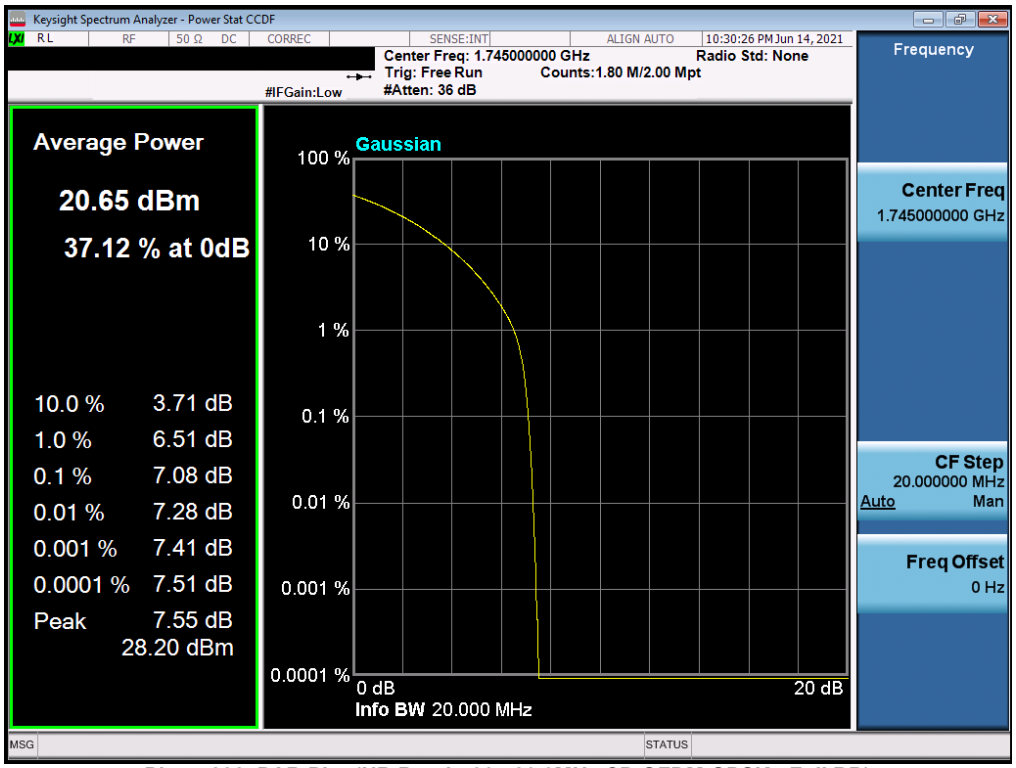
Plot 7-219. PAR Plot (NR Band n66 - 30.0MHz CP-OFDM QPSK - Full RB)



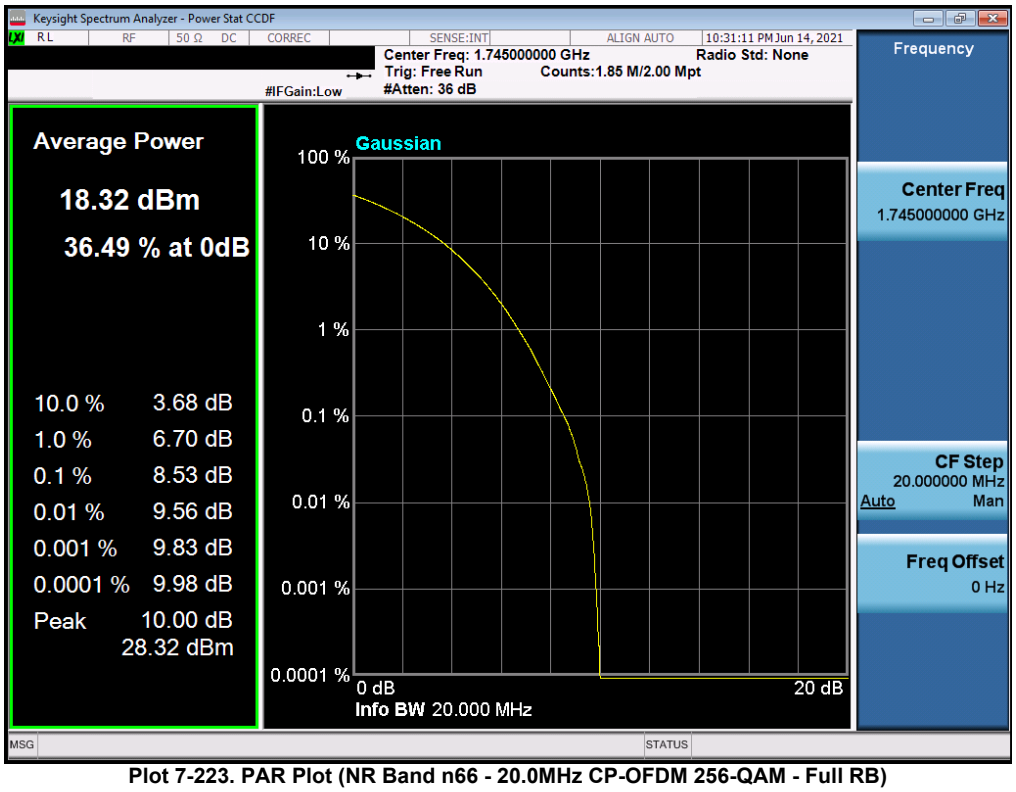
Plot 7-220. PAR Plot (NR Band n66 - 30.0MHz CP-OFDM 256-QAM - Full RB)



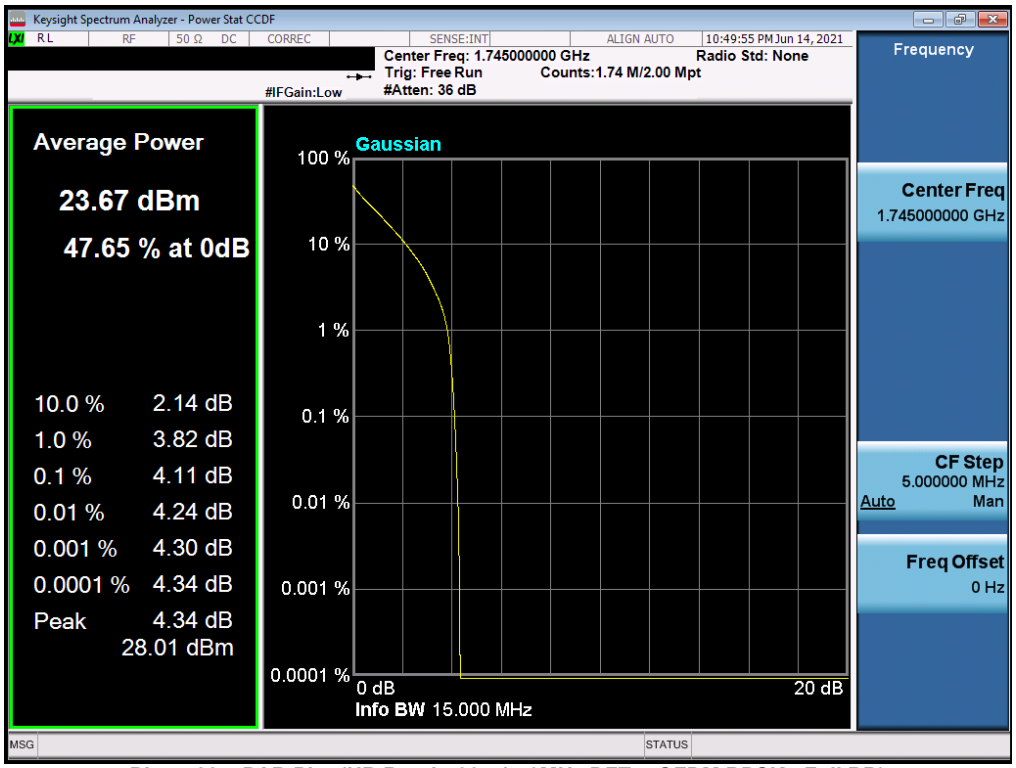
Plot 7-221. PAR Plot (NR Band n66 - 20.0MHz DFT-s-OFDM BPSK - Full RB)



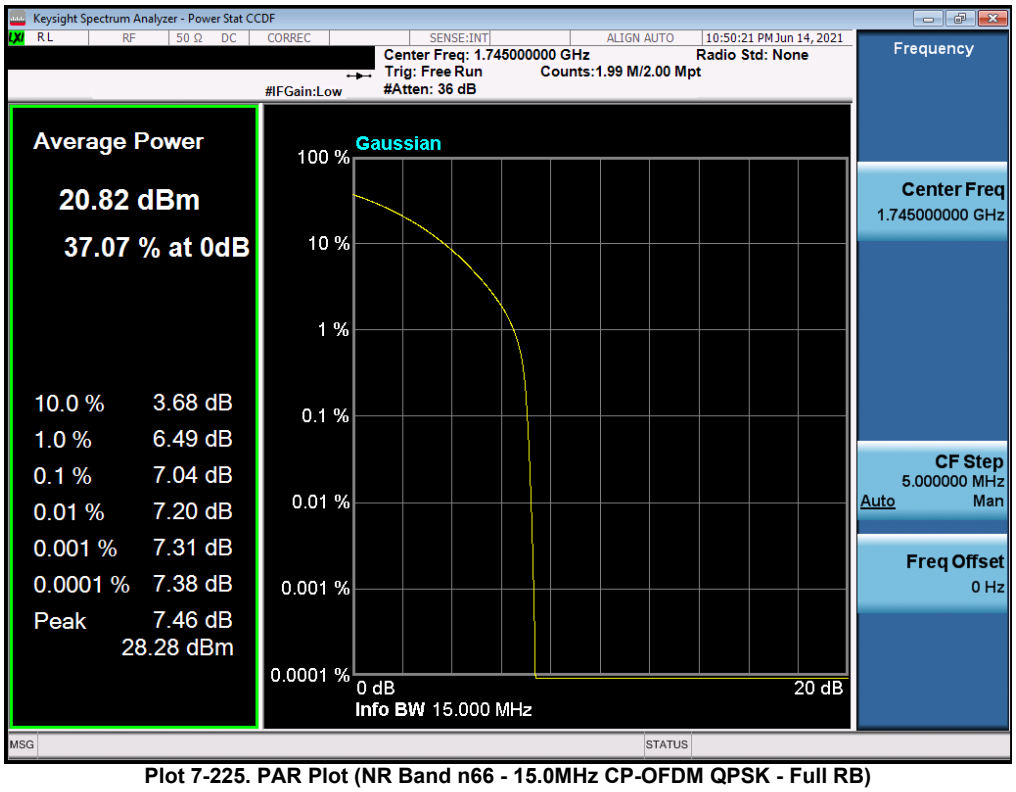
Plot 7-222. PAR Plot (NR Band n66 - 20.0MHz CP-OFDM QPSK - Full RB)



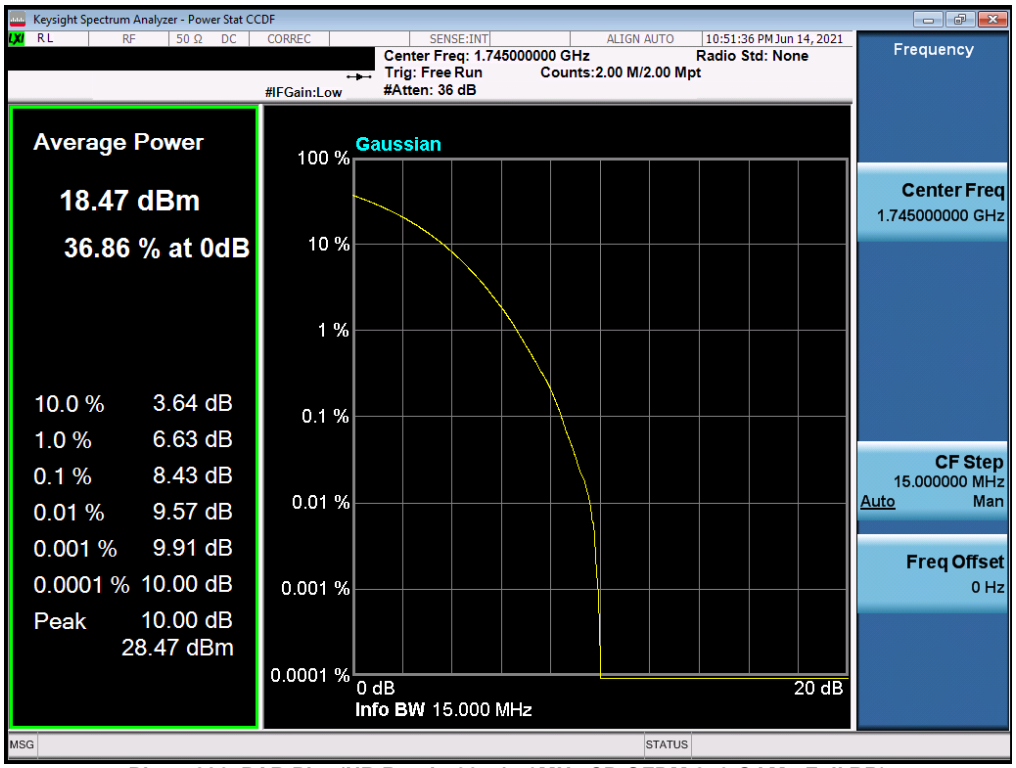
Plot 7-223. PAR Plot (NR Band n66 - 20.0MHz CP-OFDM 256-QAM - Full RB)



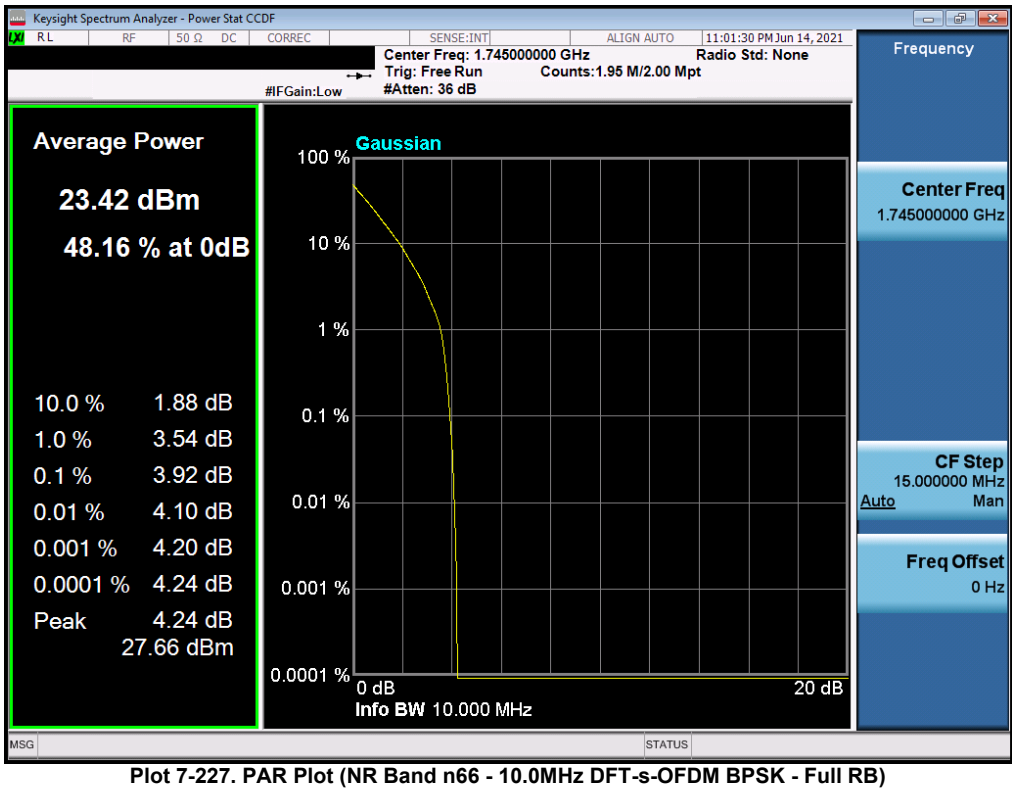
Plot 7-224. PAR Plot (NR Band n66 - 15.0MHz DFT-s-OFDM BPSK - Full RB)



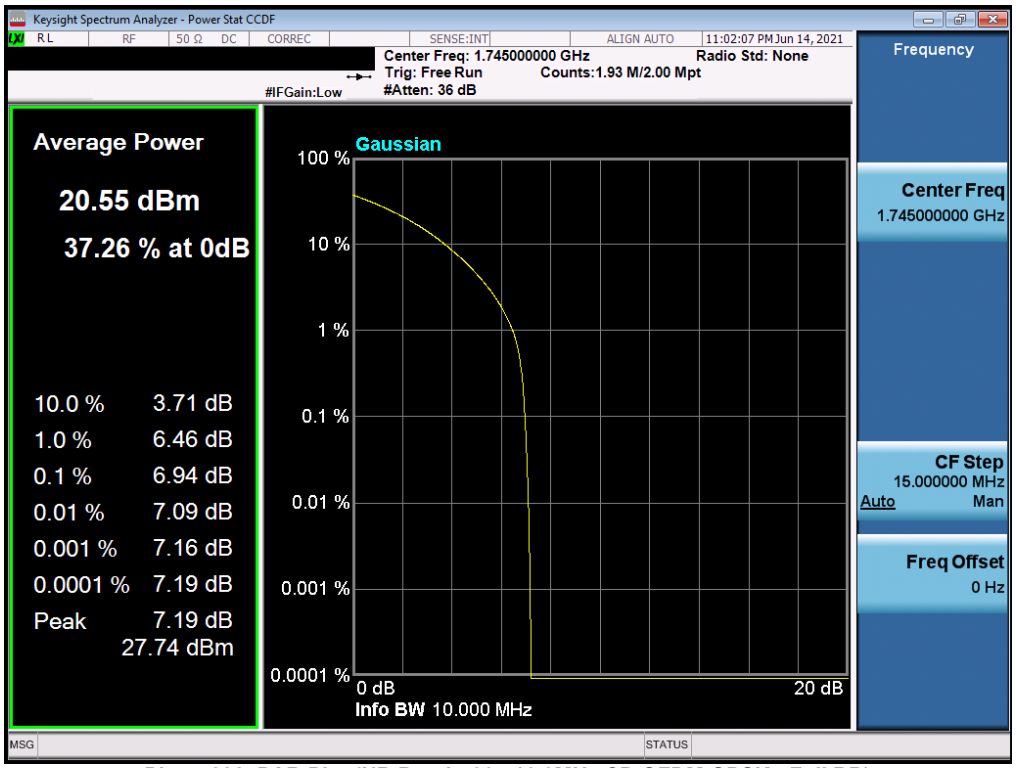
Plot 7-225. PAR Plot (NR Band n66 - 15.0MHz CP-OFDM QPSK - Full RB)



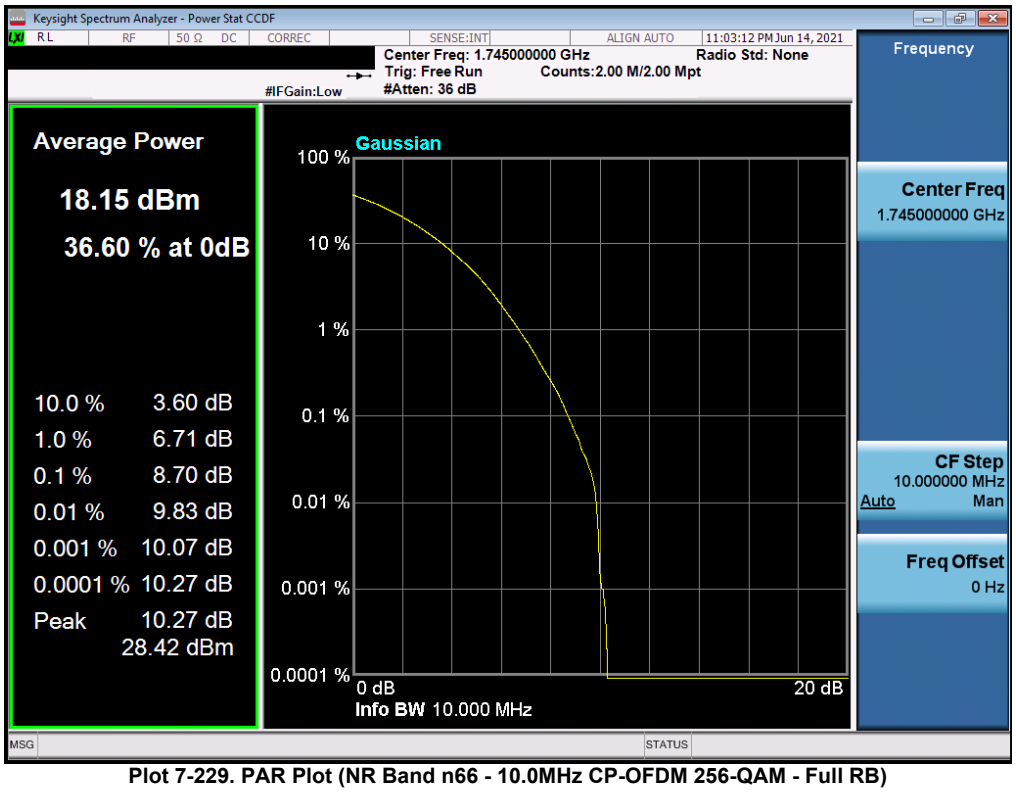
Plot 7-226. PAR Plot (NR Band n66 - 15.0MHz CP-OFDM 256-QAM - Full RB)



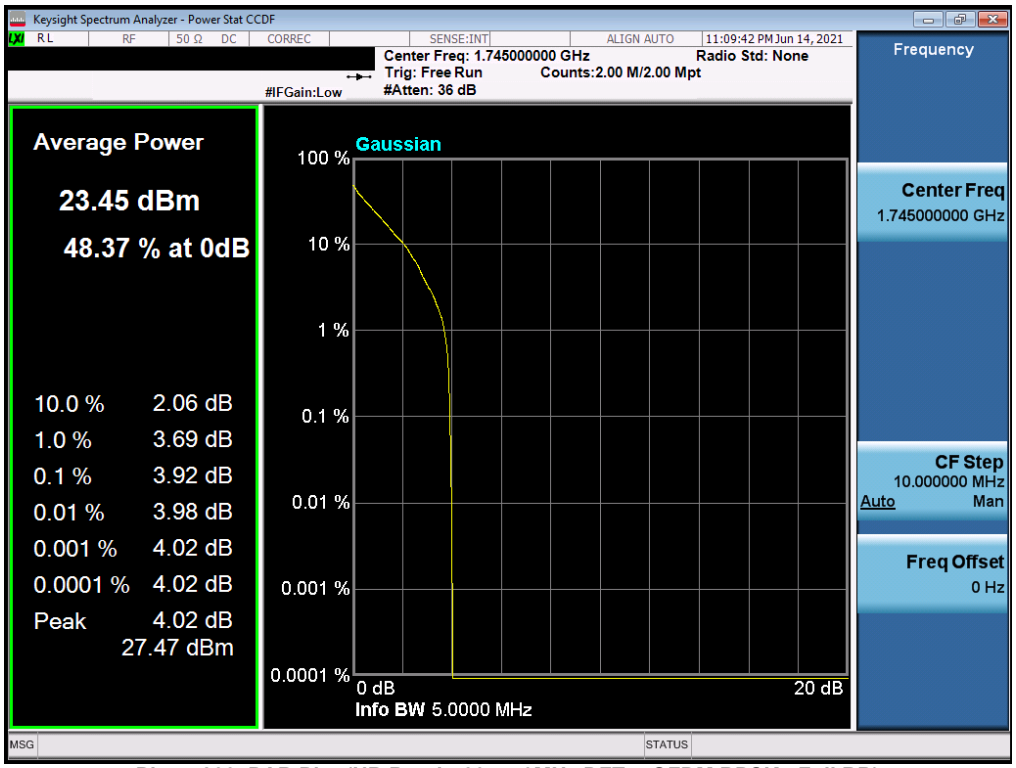
Plot 7-227. PAR Plot (NR Band n66 - 10.0MHz DFT-s-OFDM BPSK - Full RB)



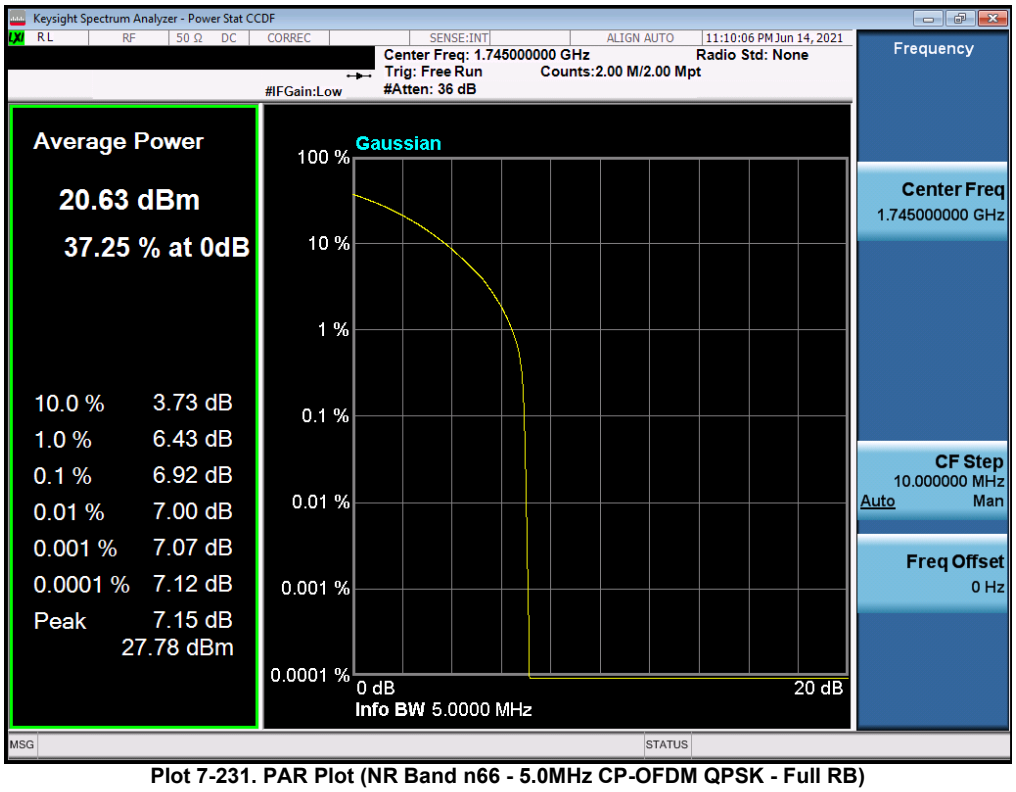
Plot 7-228. PAR Plot (NR Band n66 - 10.0MHz CP-OFDM QPSK - Full RB)



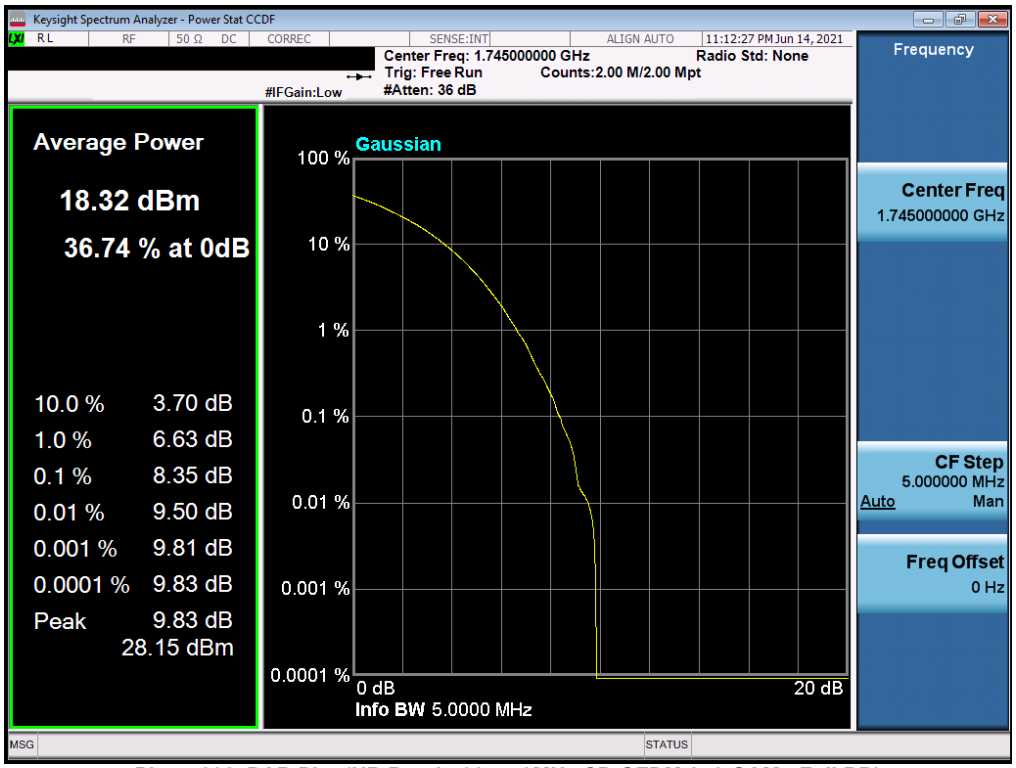
Plot 7-229. PAR Plot (NR Band n66 - 10.0MHz CP-OFDM 256-QAM - Full RB)



Plot 7-230. PAR Plot (NR Band n66 - 5.0MHz DFT-s-OFDM BPSK - Full RB)



Plot 7-231. PAR Plot (NR Band n66 - 5.0MHz CP-OFDM QPSK - Full RB)



Plot 7-232. PAR Plot (NR Band n66 - 5.0MHz CP-OFDM 256-QAM - Full RB)

7.7 Uplink Carrier Aggregation Radiated Measurements

Test Overview

The EUT is set up to transmit two contiguous LTE channels. Conducted power and spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device. The worst case (highest) powers were found while operating with QPSK modulation with both carriers set to transmit using 1RB.

Test Setup

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

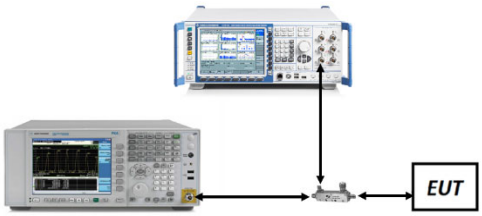
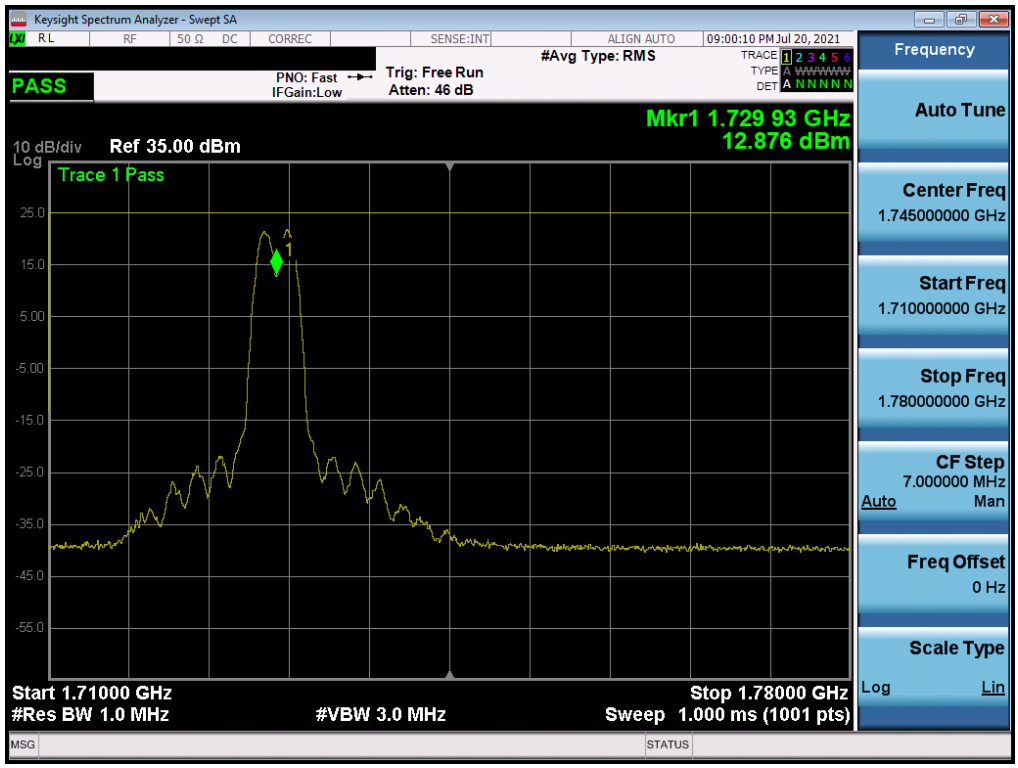


Figure 7-6. Test Instrument & Measurement Setup

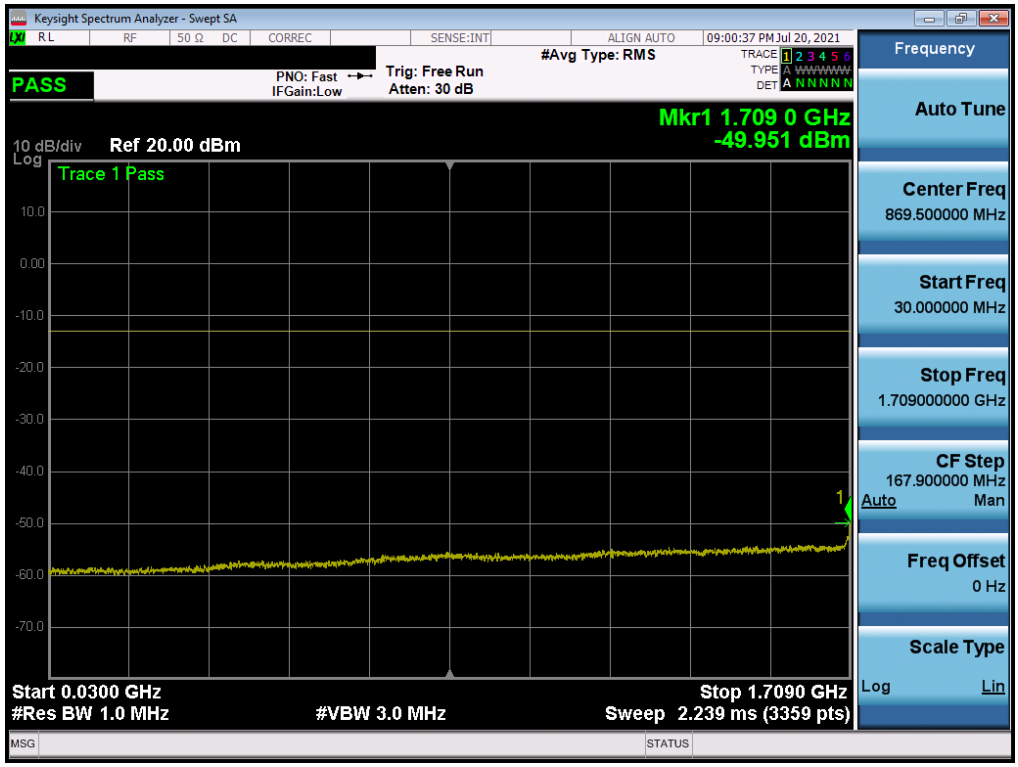
Power State	Band	Bandwidth (PCC + SCC)	PCC					SCC					ULCA Tx. Power [dBm]
			Modulation	UL Channel	UL Frequency	UL # RB	UL RB Offset	Modulation	UL Channel	UL Frequency	UL # RB	UL RB Offset	
Max	LTE B66	20MHz + 20MHz	QPSK	132072	1720.0	1	99	QPSK	132270	1739.8	1	0	24.02
				132322	1745.0	1	99		132520	1764.8	1	0	24.37
				132572	1770.0	1	0		132374	1750.2	1	99	24.28
			QPSK	132322	1745	100	0	QPSK	132520	1764.8	100	0	23.9
			16-QAM	132322	1745	100	0	16-QAM	132520	1764.8	100	0	22.89
			64-QAM	132322	1745	100	0	64-QAM	132520	1764.8	100	0	21.98

Table 7-4. Conducted Powers (Uplink CA LTE Band 66B/C)

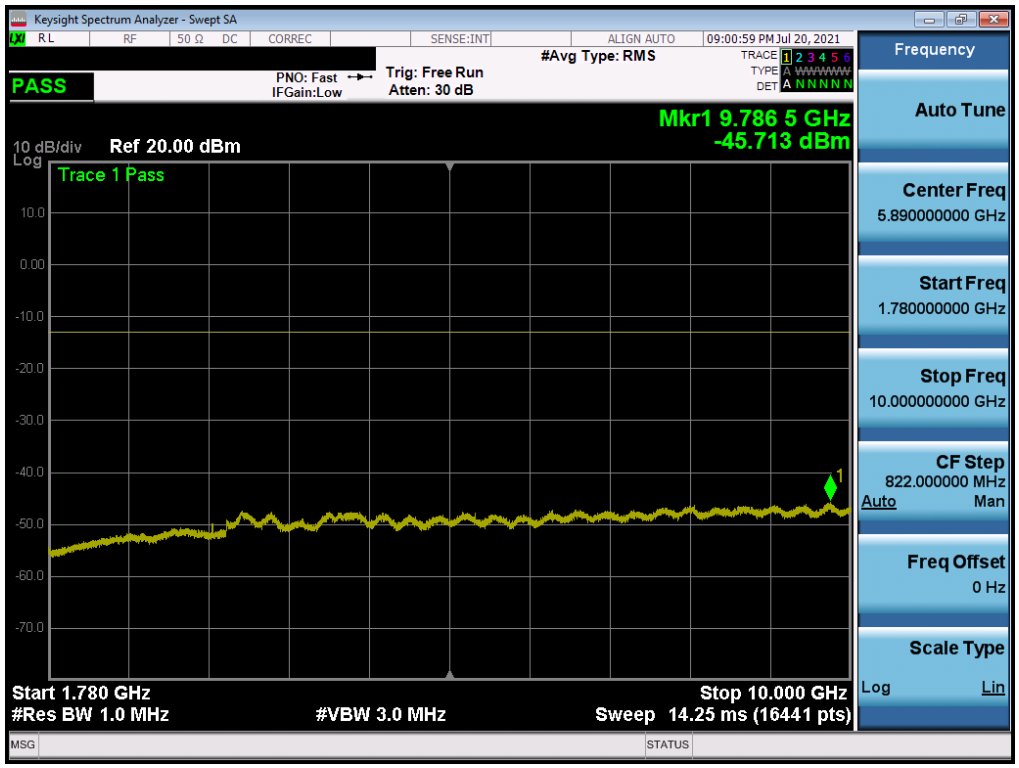
Uplink CA LTE Band 66B/C



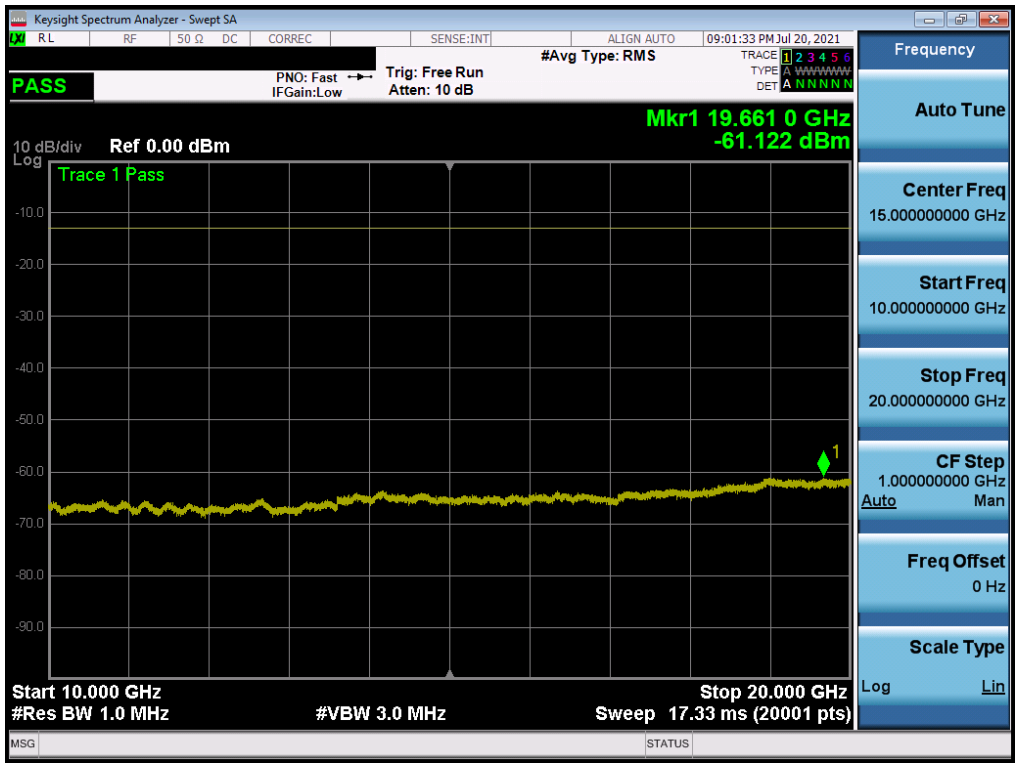
Plot 7-233. Conducted Spurious Plot (ULCA LTE Band 66 Low Channel)



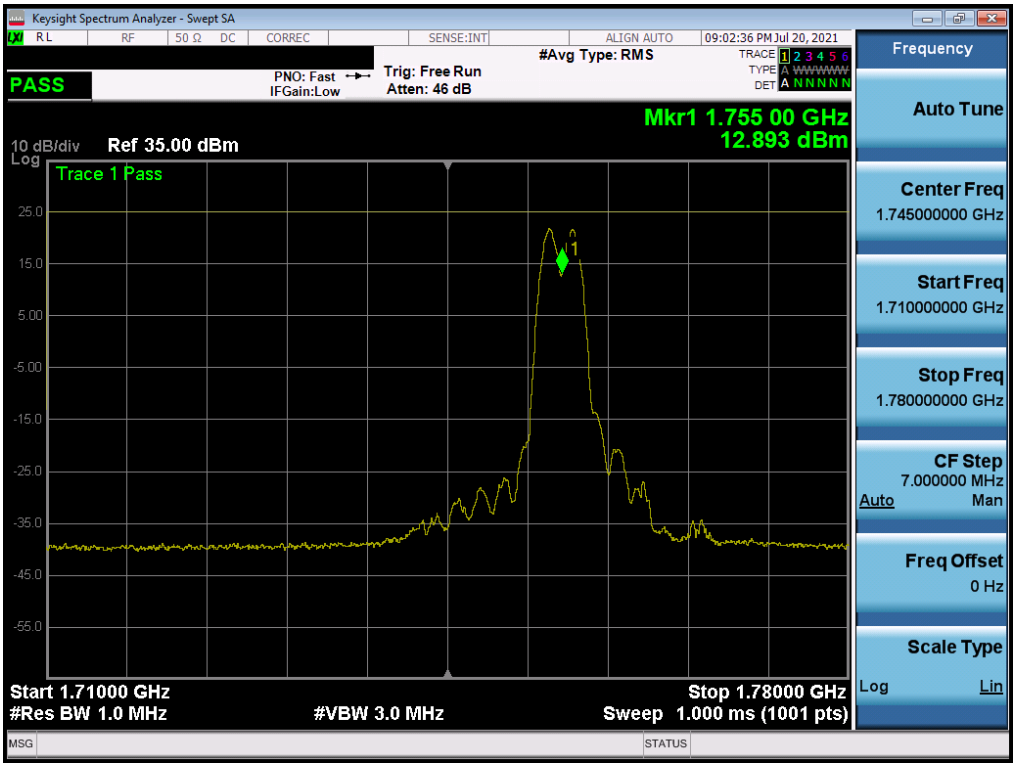
Plot 7-234. Conducted Spurious Plot (ULCA LTE Band 66 Low Channel)



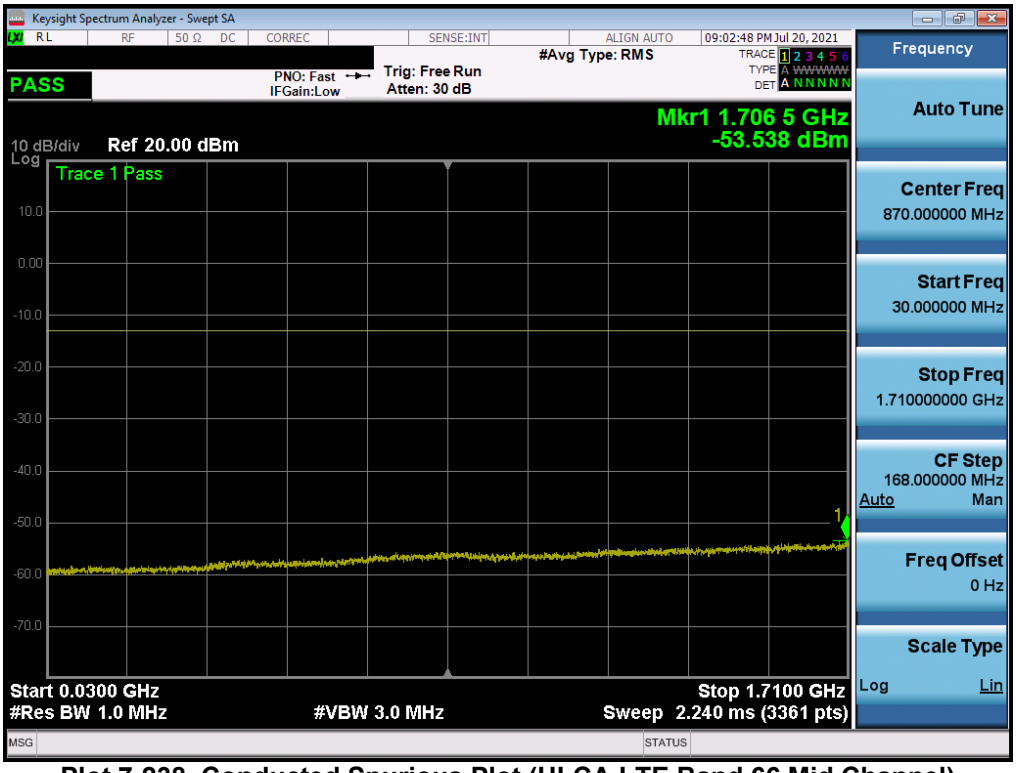
Plot 7-235. Conducted Spurious Plot (ULCA LTE Band 66 Low Channel)



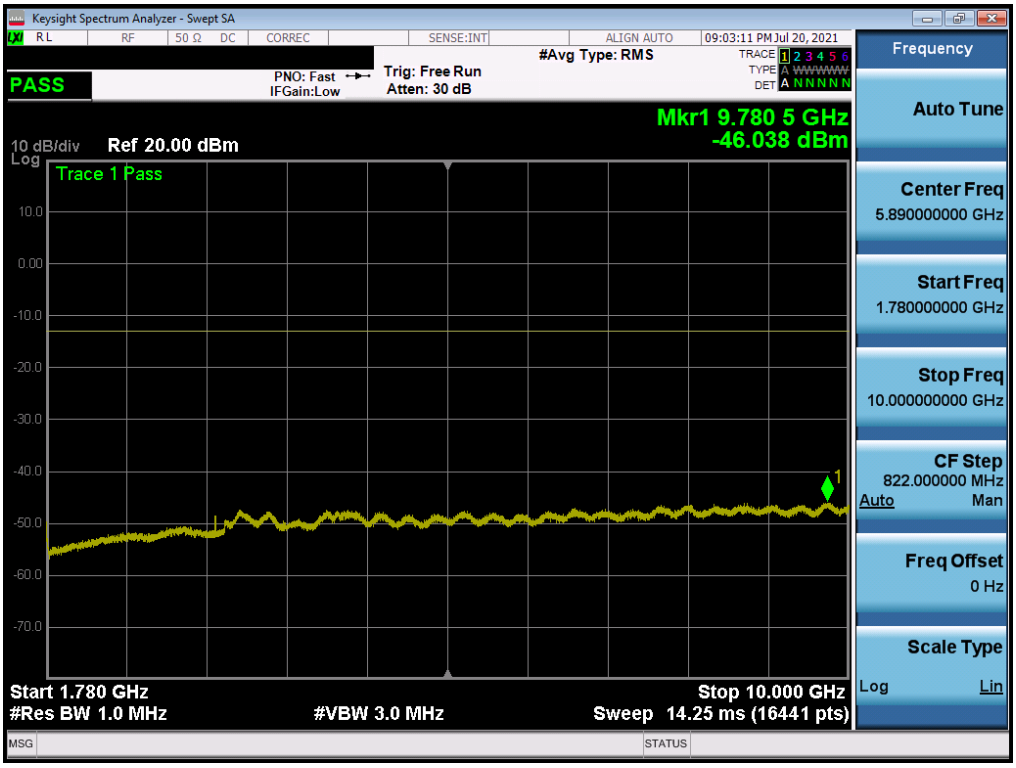
Plot 7-236. Conducted Spurious Plot (ULCA LTE Band 66 Low Channel)



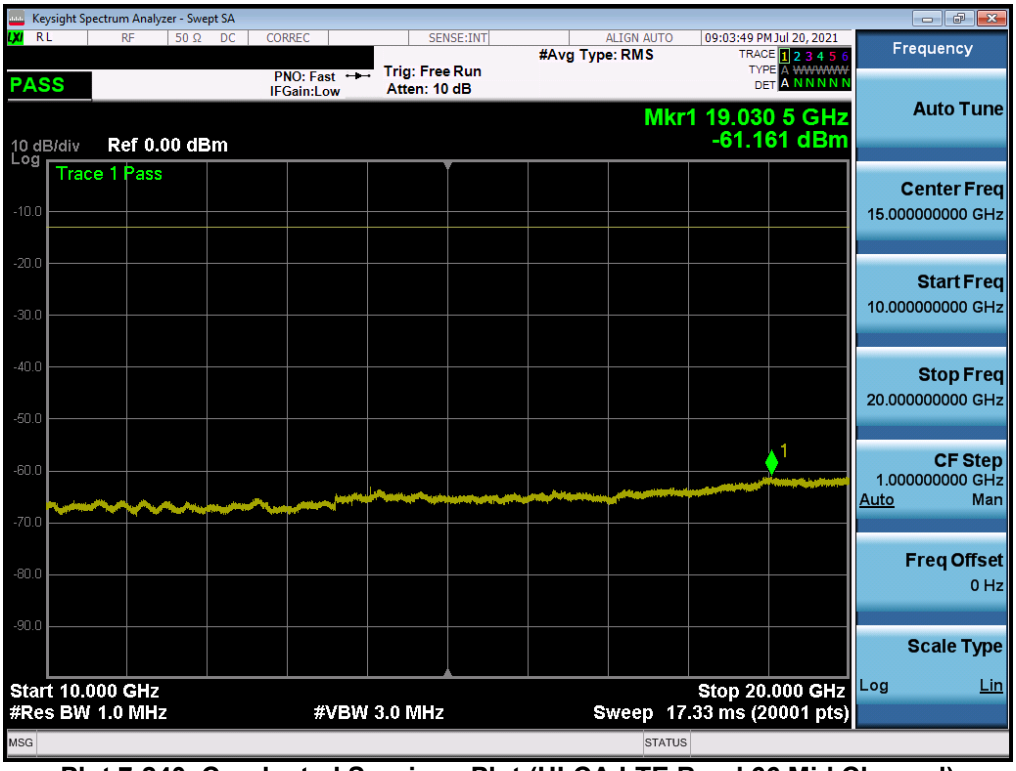
Plot 7-237. Conducted Spurious Plot (ULCA LTE Band 66 Mid Channel)



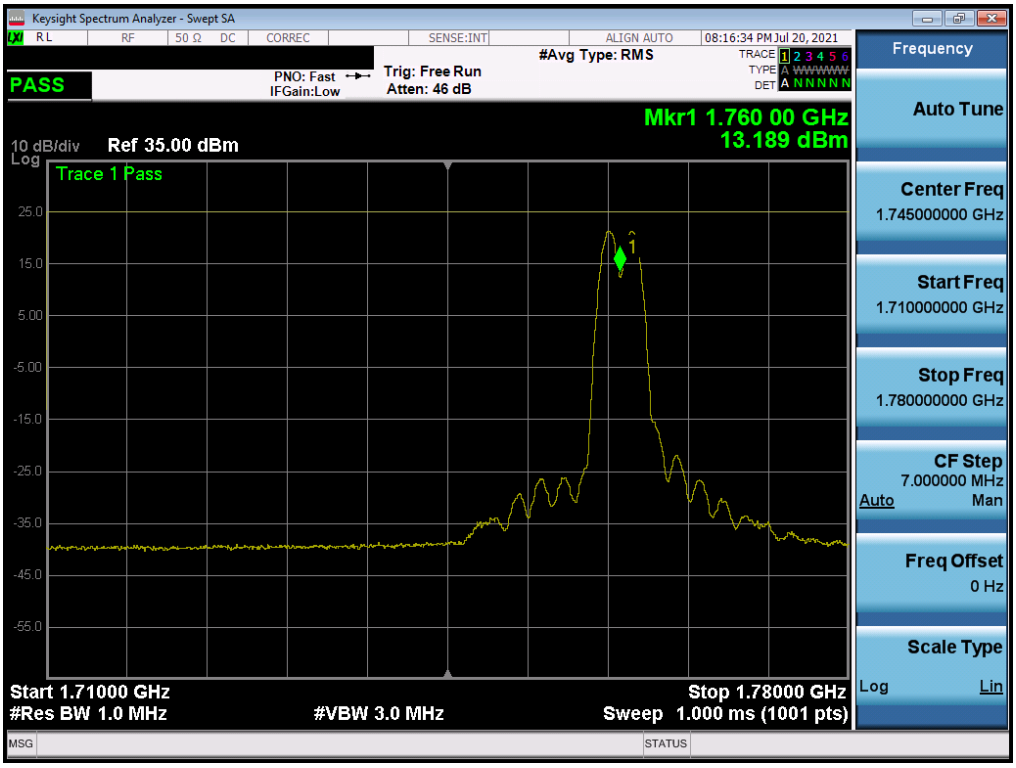
Plot 7-238. Conducted Spurious Plot (ULCA LTE Band 66 Mid Channel)



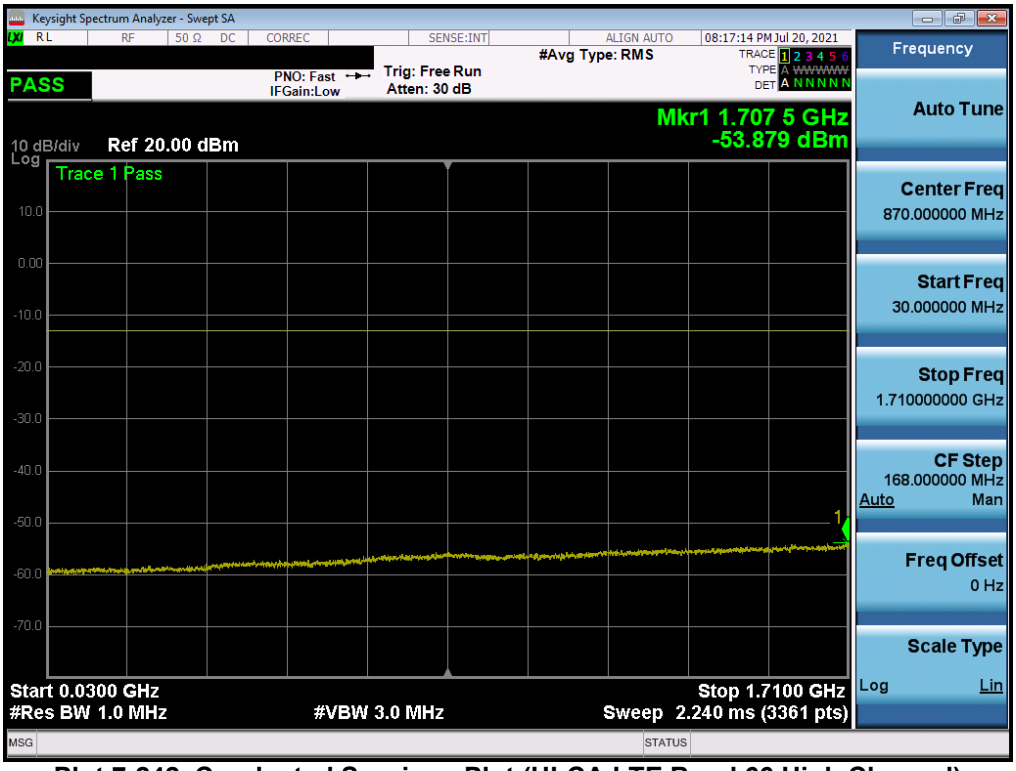
Plot 7-239. Conducted Spurious Plot (ULCA LTE Band 66 Mid Channel)



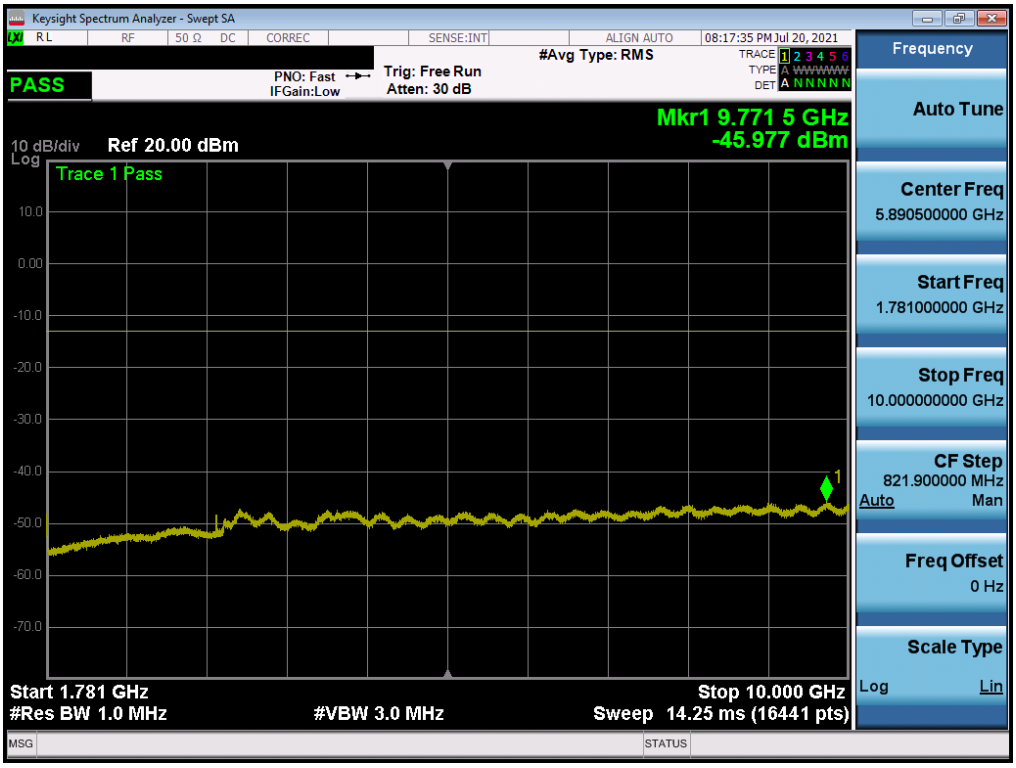
Plot 7-240. Conducted Spurious Plot (ULCA LTE Band 66 Mid Channel)



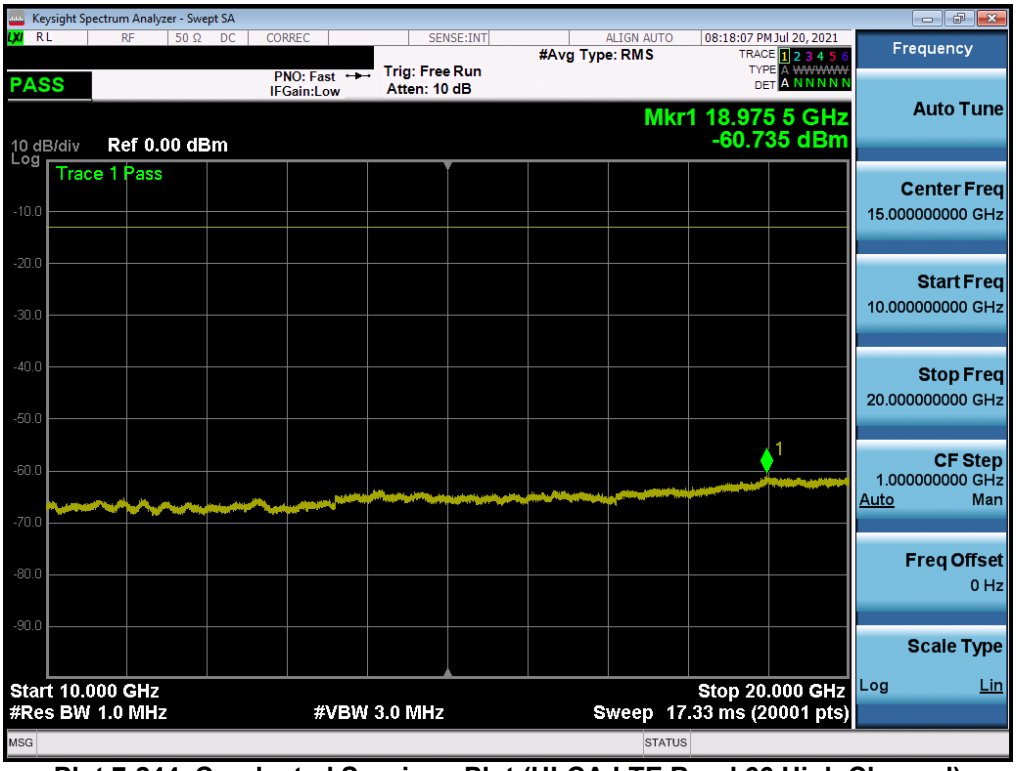
Plot 7-241. Conducted Spurious Plot (ULCA LTE Band 66 High Channel)



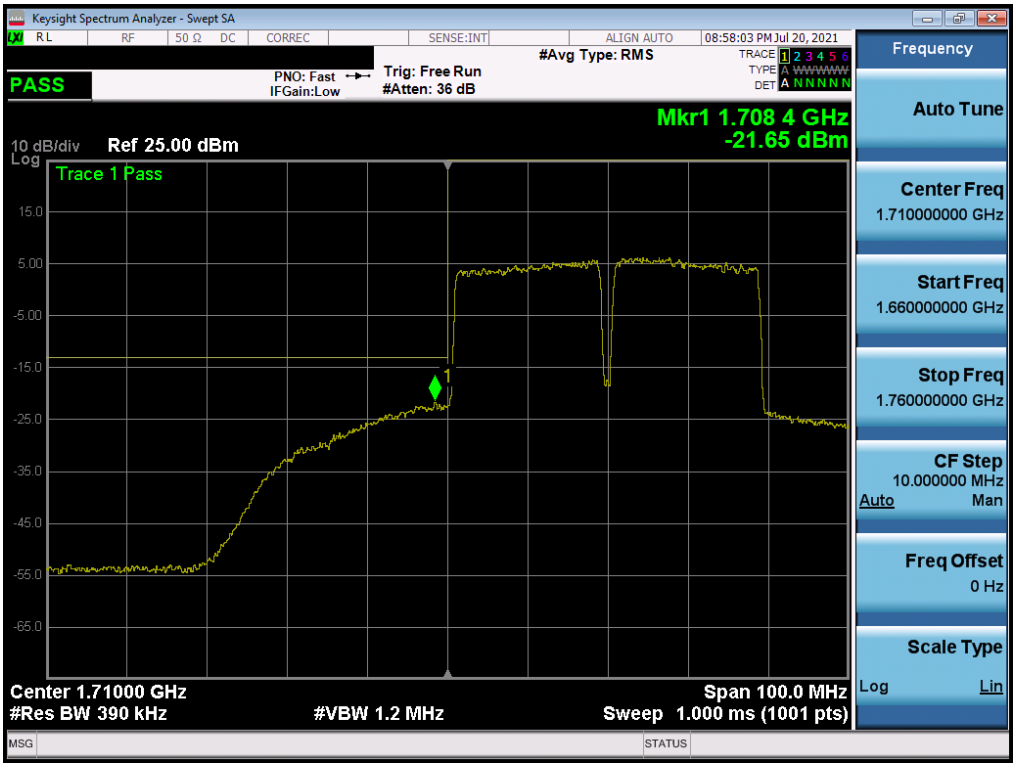
Plot 7-242. Conducted Spurious Plot (ULCA LTE Band 66 High Channel)



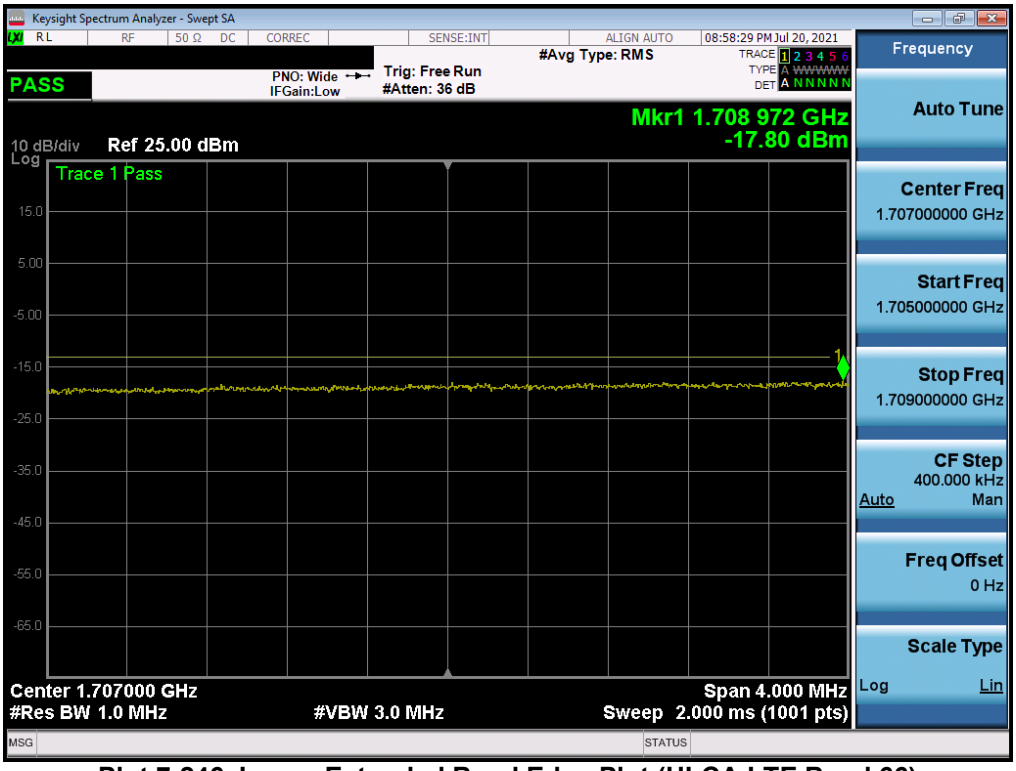
Plot 7-243. Conducted Spurious Plot (ULCA LTE Band 66 High Channel)



Plot 7-244. Conducted Spurious Plot (ULCA LTE Band 66 High Channel)

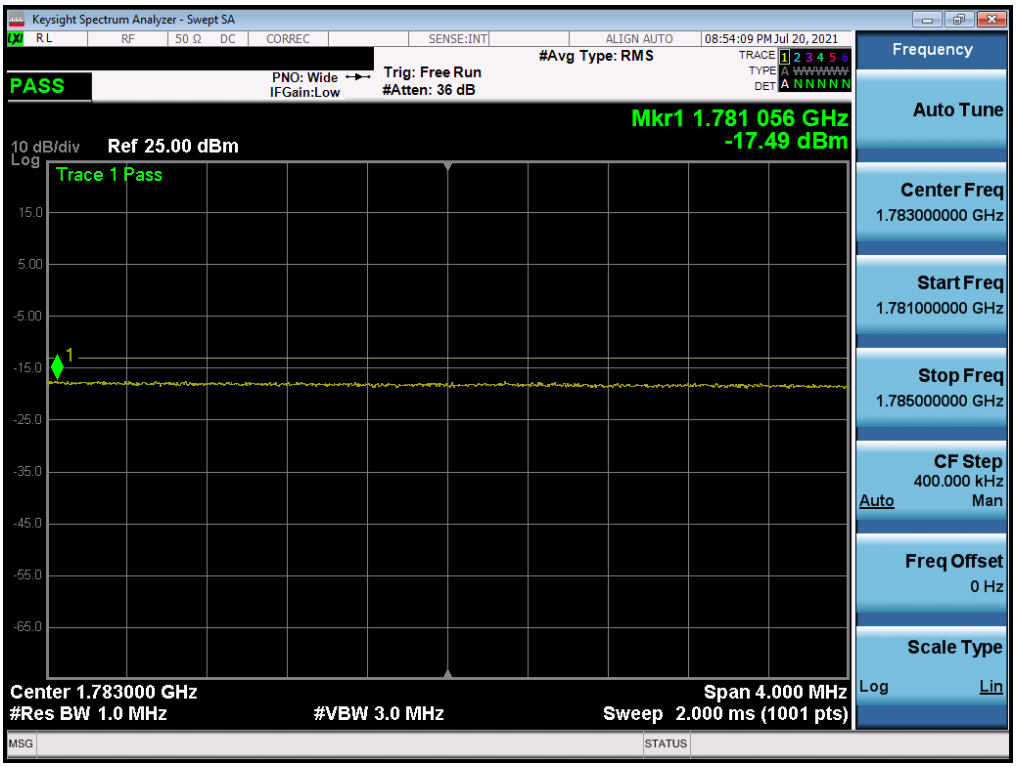


Plot 7-245. Lower Band Edge Plot (ULCA LTE Band 66)



Plot 7-246. Lower Extended Band Edge Plot (ULCA LTE Band 66)

Plot 7-247. Upper Band Edge Plot (ULCA LTE Band 66)



Plot 7-248. Upper Extended Band Edge Plot (ULCA LTE Band 66)

7.8 Radiated Power (ERP/EIRP)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz 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

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5% of the expected OBW, 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".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
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.

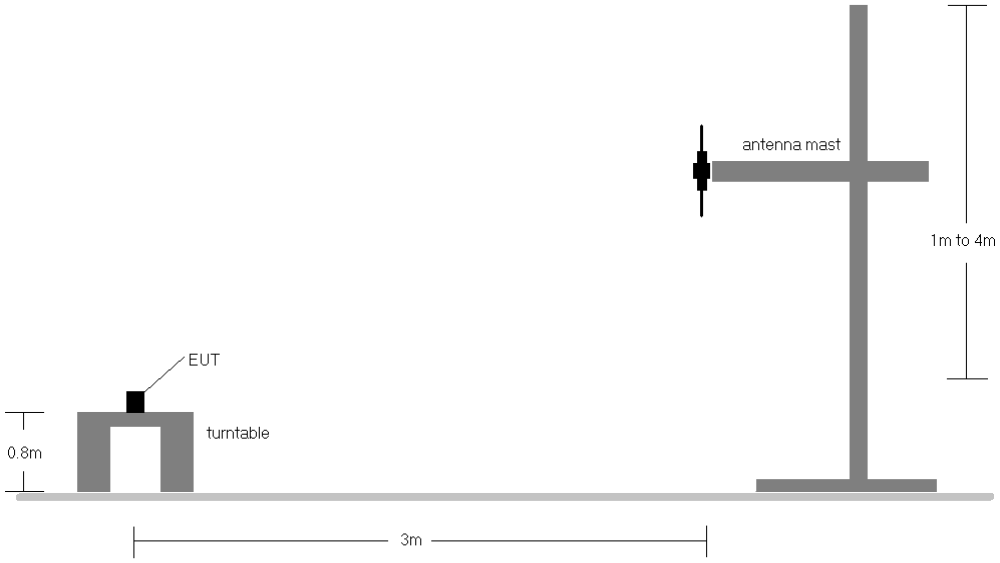


Figure 7-7. Radiated Test Setup <1GHz

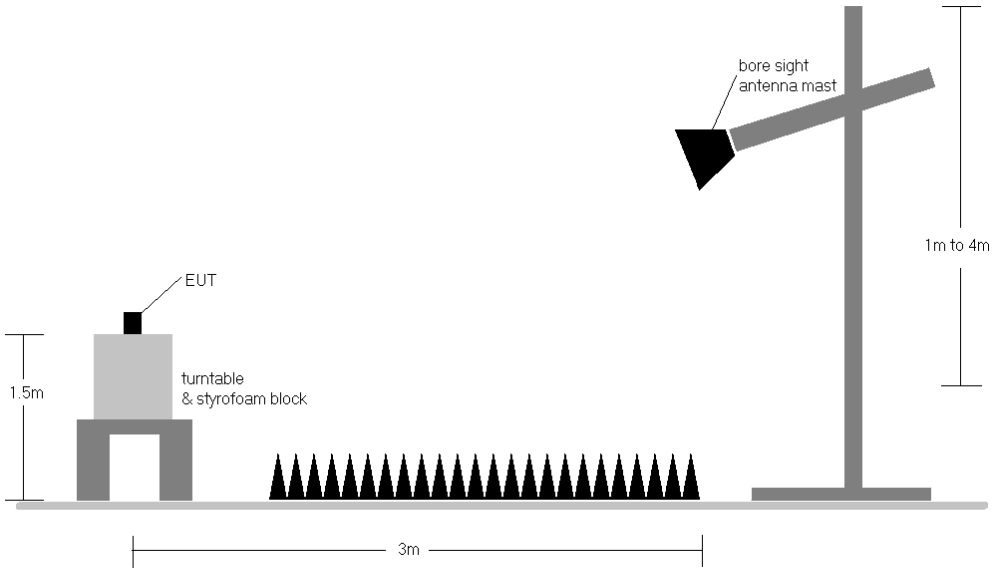


Figure 7-8. Radiated Test Setup >1GHz

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) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case setup is reported in the tables below.

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.

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]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
20 MHz	QPSK	673.0	H	159	70	2.99	1 / 50	18.65	21.64	0.146	36.99	-15.35	19.49	0.089	34.77	-15.28
		680.5	H	135	74	3.09	1 / 99	19.08	22.17	0.165	36.99	-14.82	20.02	0.100	34.77	-14.76
		688.0	H	140	76	3.08	1 / 50	19.34	**22.42**	0.175	36.99	-14.57	**20.27**	0.106	34.77	-14.50
	16-QAM	688.0	H	140	76	3.08	1 / 50	18.57	21.65	0.146	36.99	-15.34	19.50	0.089	34.77	-15.27
15 MHz	QPSK	670.5	H	159	70	2.96	1 / 0	18.65	21.61	0.145	36.99	-15.38	19.46	0.088	34.77	-15.32
		680.5	H	135	74	3.09	1 / 0	18.67	21.76	0.150	36.99	-15.23	19.61	0.091	34.77	-15.16
		690.5	H	140	76	3.11	1 / 37	19.17	**22.28**	0.169	36.99	-14.71	**20.13**	0.103	34.77	-14.64
	16-QAM	680.5	H	135	74	3.09	1 / 0	18.55	21.63	0.146	36.99	-15.36	19.48	0.089	34.77	-15.29
10 MHz	QPSK	668.0	H	159	70	2.92	1 / 0	18.79	21.71	0.148	36.99	-15.28	19.56	0.090	34.77	-15.21
		680.5	H	135	74	3.09	1 / 25	18.74	21.83	0.152	36.99	-15.16	19.68	0.093	34.77	-15.10
		693.0	H	140	76	3.14	1 / 49	19.30	**22.45**	0.176	36.99	-14.54	**20.30**	0.107	34.77	-14.48
	16-QAM	693.0	H	140	76	3.14	1 / 49	18.33	21.47	0.140	36.99	-15.52	19.32	0.085	34.77	-15.45
5 MHz	QPSK	665.5	H	159	70	2.94	1 / 0	18.73	21.67	0.147	36.99	-15.32	19.52	0.090	34.77	-15.25
		680.5	H	135	74	3.09	1 / 0	18.93	22.01	0.159	36.99	-14.98	19.86	0.097	34.77	-14.91
		695.5	H	140	76	3.18	1 / 0	19.25	**22.42**	0.175	36.99	-14.57	**20.27**	0.106	34.77	-14.50
	16-QAM	695.5	H	140	76	3.18	1 / 0	18.75	21.92	0.156	36.99	-15.07	19.77	0.095	34.77	-15.00
20 MHz	QPSK(Opposite Pol.)	688.0	V	106	86	3.08	1/99	17.65	20.73	0.118	36.99	-16.26	18.58	0.072	34.77	-16.19
	QPSK(Half)	688.0	H	145	79	3.08	1/50	17.86	20.94	0.124	36.99	-16.05	18.79	0.076	34.77	-15.98

Table 7-5. ERP Data (LTE Band 71 – North - 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]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
20 MHz	QPSK	673.0	H	137	116	2.99	1 / 99	18.50	21.49	0.141	36.99	-15.50	19.34	0.086	34.77	-15.43
		680.5	H	135	111	3.09	1 / 99	18.62	21.71	0.148	36.99	-15.28	19.56	0.090	34.77	-15.22
		688.0	H	147	112	3.08	1 / 50	19.19	**22.27**	0.169	36.99	-14.72	**20.12**	0.103	34.77	-14.65
	16-QAM	688.0	H	147	112	3.08	1 / 99	18.41	21.49	0.141	36.99	-15.50	19.34	0.086	34.77	-15.43
15 MHz	QPSK	670.5	H	137	116	2.96	1 / 37	18.49	21.45	0.139	36.99	-15.54	19.30	0.085	34.77	-15.48
		680.5	H	135	111	3.09	1 / 0	18.50	21.59	0.144	36.99	-15.40	19.44	0.088	34.77	-15.34
		690.5	H	147	112	3.11	1 / 74	19.20	**22.31**	0.170	36.99	-14.68	**20.16**	0.104	34.77	-14.61
	16-QAM	690.5	H	147	112	3.11	1 / 0	18.19	21.30	0.135	36.99	-15.69	19.15	0.082	34.77	-15.62
10 MHz	QPSK	668.0	H	137	116	2.92	1 / 25	18.65	21.57	0.144	36.99	-15.42	19.42	0.088	34.77	-15.35
		680.5	H	135	111	3.09	1 / 0	18.38	21.47	0.140	36.99	-15.52	19.32	0.085	34.77	-15.45
		693.0	H	147	112	3.14	1 / 49	19.14	**22.29**	0.169	36.99	-14.70	**20.14**	0.103	34.77	-14.63
	16-QAM	693.0	H	147	112	3.14	1 / 25	18.02	21.16	0.131	36.99	-15.83	19.01	0.080	34.77	-15.76
5 MHz	QPSK	665.5	H	137	116	2.94	1 / 0	18.55	21.49	0.141	36.99	-15.50	19.34	0.086	34.77	-15.43
		680.5	H	135	111	3.09	1 / 0	18.59	21.68	0.147	36.99	-15.31	19.53	0.090	34.77	-15.24
		695.5	H	147	112	3.18	1 / 24	19.15	**22.32**	0.171	36.99	-14.66	**20.17**	0.104	34.77	-14.60
	16-QAM	695.5	H	147	112	3.18	1 / 0	18.26	21.44	0.139	36.99	-15.55	19.29	0.085	34.77	-15.49
20 MHz	QPSK(Opposite Pol.)	688.0	V	100	29	3.08	1/50	17.28	20.36	0.109	36.99	-16.63	18.21	0.066	34.77	-16.56
	QPSK(Half)	688.0	H	131	108	3.08	1/0	17.36	20.44	0.111	36.99	-16.55	18.29	0.067	34.77	-16.48

Table 7-6. ERP Data (LTE Band 71 – South - 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]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
10 MHz	QPSK	704.0	H	140	116	3.48	1 / 0	17.98	21.46	0.140	36.99	-15.53	19.31	0.085	34.77	-15.46
		707.5	H	126	104	3.52	1 / 25	18.15	**21.67**	0.147	36.99	-15.32	**19.52**	0.090	34.77	-15.25
		711.0	H	129	110	3.57	1 / 25	17.52	21.09	0.128	36.99	-15.90	18.94	0.078	34.77	-15.83
	16-QAM	707.5	H	126	104	3.52	1 / 25	17.54	21.06	0.128	36.99	-15.93	18.91	0.078	34.77	-15.86
5 MHz	QPSK	701.5	H	140	116	3.45	1 / 12	18.19	21.64	0.146	36.99	-15.35	19.49	0.089	34.77	-15.28
		707.5	H	126	104	3.52	1 / 0	18.25	**21.77**	0.150	36.99	-15.22	**19.62**	0.092	34.77	-15.15
		713.5	H	129	110	3.70	1 / 0	17.34	21.03	0.127	36.99	-15.96	18.88	0.077	34.77	-15.89
	16-QAM	707.5	H	126	104	3.52	1 / 12	17.60	21.12	0.129	36.99	-15.87	18.97	0.079	34.77	-15.80
3 MHz	QPSK	700.5	H	140	116	3.39	1 / 14	18.19	21.58	0.144	36.99	-15.41	19.43	0.088	34.77	-15.34
		707.5	H	126	104	3.52	1 / 0	18.30	**21.83**	0.152	36.99	-15.16	**19.68**	0.093	34.77	-15.10
		714.5	H	129	110	3.71	1 / 0	17.37	21.08	0.128	36.99	-15.91	18.93	0.078	34.77	-15.84
	16-QAM	707.5	H	126	104	3.52	1 / 14	17.44	20.96	0.125	36.99	-16.03	18.81	0.076	34.77	-15.96
1.4 MHz	QPSK	699.7	H	140	116	3.33	1 / 3	17.89	21.22	0.132	36.99	-15.77	19.07	0.081	34.77	-15.71
		707.5	H	126	104	3.52	1 / 3	18.03	**21.55**	0.143	36.99	-15.44	**19.40**	0.087	34.77	-15.37
		715.3	H	129	110	3.72	1 / 5	17.02	20.74	0.119	36.99	-16.25	18.59	0.072	34.77	-16.18
	16-QAM	699.7	H	140	116	3.33	1 / 5	17.50	20.83	0.121	36.99	-16.16	18.68	0.074	34.77	-16.09
10 MHz	QPSK(Opposite Pol.)	707.5	V	100	151	3.62	1 / 0	16.43	20.05	0.101	36.99	-16.94	17.90	0.062	34.77	-16.87
	QPSK(Half)	707.5	H	132	112	3.52	1 / 49	17.20	20.72	0.118	36.99	-16.27	18.57	0.072	34.77	-16.20

Table 7-7. ERP Data (LTE Band 12 – North - 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]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
10 MHz	QPSK	704.0	H	159	112	3.48	1 / 25	17.76	21.24	0.133	36.99	-15.75	19.09	0.081	34.77	-15.68
		707.5	H	127	101	3.52	1 / 25	17.93	**21.45**	0.140	36.99	-15.54	**19.30**	0.085	34.77	-15.47
		711.0	H	134	107	3.57	1 / 25	17.01	20.58	0.114	36.99	-16.41	18.43	0.070	34.77	-16.34
	16-QAM	707.5	H	127	101	3.52	1 / 25	16.93	20.45	0.111	36.99	-16.54	18.30	0.068	34.77	-16.47
5 MHz	QPSK	701.5	H	159	112	3.45	1 / 12	17.76	21.20	0.132	36.99	-15.78	19.05	0.080	34.77	-15.72
		707.5	H	127	101	3.52	1 / 0	17.97	**21.50**	0.141	36.99	-15.49	**19.35**	0.086	34.77	-15.42
		713.5	H	134	107	3.70	1 / 0	17.03	20.73	0.118	36.99	-16.26	18.58	0.072	34.77	-16.19
	16-QAM	701.5	H	159	112	3.45	1 / 12	17.12	20.57	0.114	36.99	-16.42	18.42	0.070	34.77	-16.35
3 MHz	QPSK	700.5	H	159	112	3.39	1 / 7	17.65	21.04	0.127	36.99	-15.95	18.89	0.077	34.77	-15.88
		707.5	H	127	101	3.52	1 / 7	17.93	**21.45**	0.140	36.99	-15.54	**19.30**	0.085	34.77	-15.47
		714.5	H	134	107	3.71	1 / 7	16.87	20.58	0.114	36.99	-16.41	18.43	0.070	34.77	-16.34
	16-QAM	707.5	H	127	101	3.52	1 / 14	16.92	20.45	0.111	36.99	-16.54	18.30	0.068	34.77	-16.47
1.4 MHz	QPSK	699.7	H	159	112	3.33	1 / 5	17.53	20.86	0.122	36.99	-16.13	18.71	0.074	34.77	-16.06
		707.5	H	127	101	3.52	1 / 3	17.92	**21.44**	0.139	36.99	-15.55	**19.29**	0.085	34.77	-15.48
		715.3	H	134	107	3.72	1 / 3	16.72	20.44	0.111	36.99	-16.55	18.29	0.067	34.77	-16.48
	16-QAM	707.5	H	127	101	3.52	1 / 3	16.75	20.28	0.107	36.99	-16.71	18.13	0.065	34.77	-16.64
10 MHz	QPSK(Opposite Pol.)	707.5	V	100	144	3.62	1/49	16.39	20.01	0.100	36.99	-16.98	17.86	0.061	34.77	-16.91
	QPSK(Half)	707.5	H	131	108	3.52	1/49	17.38	20.90	0.123	36.99	-16.09	18.75	0.075	34.77	-16.02

Table 7-8. ERP Data (LTE Band 12 – South - 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]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
10 MHz	QPSK	782.0	H	252	88	6.09	1 / 25	18.89	**24.98**	0.315	36.99	-12.01	**22.83**	0.192	34.77	-11.94
	16-QAM	782.0	H	252	88	6.09	1 / 25	17.53	23.62	0.230	36.99	-13.37	21.47	0.140	34.77	-13.30
5 MHz	QPSK	779.5	H	240	86	5.97	1 / 24	18.18	24.15	0.260	36.99	-12.84	22.00	0.158	34.77	-12.78
		782.0	H	246	87	6.09	1 / 24	18.16	24.25	0.266	36.99	-12.74	22.10	0.162	34.77	-12.67
		784.5	H	244	80	6.17	1 / 24	18.37	**24.54**	0.285	36.99	-12.45	**22.39**	0.173	34.77	-12.38
	16-QAM	784.5	H	244	80	6.17	1 / 12	17.78	23.95	0.248	36.99	-13.04	21.80	0.151	34.77	-12.97
10 MHz	QPSK(Opposite Pol.)	782.0	V	144	132	5.99	1 / 24	17.47	23.46	0.222	36.99	-13.53	21.31	0.135	34.77	-13.46
	QPSK(Half)	782.0	H	103	92	6.09	1 / 12	16.62	22.71	0.187	36.99	-14.28	20.56	0.114	34.77	-14.21

Table 7-9. ERP Data (LTE Band 13 – North -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]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
10 MHz	QPSK	782.0	H	236	112	6.09	1 / 25	18.05	**24.14**	0.260	36.99	-12.85	**21.99**	0.158	34.77	-12.78
	16-QAM	782.0	H	236	112	6.09	1 / 25	17.16	23.25	0.212	36.99	-13.74	21.10	0.129	34.77	-13.67
5 MHz	QPSK	779.5	H	236	112	5.97	1 / 24	18.02	23.98	0.250	36.99	-13.01	21.83	0.153	34.77	-12.94
		782.0	H	236	112	6.09	1 / 12	17.82	23.91	0.246	36.99	-13.08	21.76	0.150	34.77	-13.01
		784.5	H	236	112	6.17	1 / 12	17.87	**24.04**	0.254	36.99	-12.95	**21.89**	0.155	34.77	-12.88
	16-QAM	782.0	H	236	112	6.09	1 / 12	17.42	23.51	0.224	36.99	-13.48	21.36	0.137	34.77	-13.41
10 MHz	QPSK(Opposite Pol.)	782.0	V	145	129	5.99	1/25	16.95	22.94	0.197	36.99	-14.05	20.79	0.120	34.77	-13.98
	QPSK(Half)	782.0	H	100	112	6.09	1/25	17.01	23.10	0.204	36.99	-13.89	20.95	0.125	34.77	-13.82

Table 7-10. ERP Data (LTE Band 13 – South -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]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
20 MHz	π/2 BPSK	673.0	H	144	67	2.99	1 / 79	14.81	17.80	0.060	36.99	-19.19	15.65	0.037	34.77	-19.12
		680.5	H	142	62	3.09	1 / 26	14.97	18.06	0.064	36.99	-18.93	15.91	0.039	34.77	-18.87
		688.0	H	142	65	3.08	1 / 79	15.19	**18.27**	0.067	36.99	-18.72	**16.12**	0.041	34.77	-18.65
	QPSK	673.0	H	144	67	2.99	1 / 79	14.77	17.76	0.060	36.99	-19.23	15.61	0.036	34.77	-19.16
		680.5	H	142	62	3.09	1 / 26	14.97	18.06	0.064	36.99	-18.93	15.91	0.039	34.77	-18.87
		688.0	H	142	65	3.08	1 / 79	15.13	18.21	0.066	36.99	-18.78	16.06	0.040	34.77	-18.71
	16-QAM	688.0	H	142	65	3.08	1 / 79	14.53	17.61	0.058	36.99	-19.38	15.46	0.035	34.77	-19.31
15 MHz	π/2 BPSK	670.5	H	144	67	2.96	1 / 39	14.83	17.79	0.060	36.99	-19.20	15.64	0.037	34.77	-19.14
		680.5	H	142	62	3.09	1 / 20	14.98	18.06	0.064	36.99	-18.93	15.91	0.039	34.77	-18.86
		690.5	H	142	65	3.11	1 / 58	15.20	**18.31**	0.068	36.99	-18.68	**16.16**	0.041	34.77	-18.61
	QPSK	670.5	H	144	67	2.96	1 / 39	14.55	17.51	0.056	36.99	-19.48	15.36	0.034	34.77	-19.41
		680.5	H	142	62	3.09	1 / 20	15.09	18.18	0.066	36.99	-18.81	16.03	0.040	34.77	-18.74
		690.5	H	142	65	3.11	1 / 58	15.09	18.21	0.066	36.99	-18.78	16.06	0.040	34.77	-18.72
	16-QAM	690.5	H	142	65	3.11	1 / 58	14.74	17.85	0.061	36.99	-19.14	15.70	0.037	34.77	-19.07
10 MHz	π/2 BPSK	668.0	H	144	67	2.92	1 / 26	14.68	17.60	0.058	36.99	-19.39	15.45	0.035	34.77	-19.32
		680.5	H	142	62	3.09	1 / 13	15.10	18.19	0.066	36.99	-18.80	16.04	0.040	34.77	-18.74
		693.0	H	142	65	3.14	1 / 38	15.22	**18.36**	0.069	36.99	-18.63	**16.21**	0.042	34.77	-18.56
	QPSK	668.0	H	144	67	2.92	1 / 26	14.80	17.73	0.059	36.99	-19.26	15.58	0.036	34.77	-19.19
		680.5	H	142	62	3.09	1 / 13	15.04	18.12	0.065	36.99	-18.87	15.97	0.040	34.77	-18.80
		693.0	H	142	65	3.14	1 / 38	15.15	18.29	0.067	36.99	-18.70	16.14	0.041	34.77	-18.63
	16-QAM	693.0	H	142	65	3.14	1 / 38	14.70	17.84	0.061	36.99	-19.15	15.69	0.037	34.77	-19.08
5 MHz	π/2 BPSK	665.5	H	144	67	2.94	1 / 6	14.82	17.76	0.060	36.99	-19.22	15.61	0.036	34.77	-19.16
		680.5	H	142	62	3.09	1 / 6	14.96	18.05	0.064	36.99	-18.94	15.90	0.039	34.77	-18.87
		695.5	H	142	65	3.18	1 / 6	15.31	**18.49**	0.071	36.99	-18.50	**16.34**	0.043	34.77	-18.43
	QPSK	665.5	H	144	67	2.94	1 / 6	14.93	17.87	0.061	36.99	-19.12	15.72	0.037	34.77	-19.05
		680.5	H	142	62	3.09	1 / 6	15.00	18.09	0.064	36.99	-18.90	15.94	0.039	34.77	-18.83
		695.5	H	142	65	3.18	1 / 6	15.18	18.36	0.068	36.99	-18.63	16.21	0.042	34.77	-18.56
	16-QAM	695.5	H	142	65	3.18	1 / 6	14.63	17.81	0.060	36.99	-19.18	15.66	0.037	34.77	-19.11
20 MHz	QPSK (CP-OFDM)	688.0	H	142	64	3.08	1/79	14.52	17.60	0.058	36.99	-19.39	15.45	0.035	34.77	-19.32
	QPSK (Opposite Pol.)	688.0	V	100	67	3.28	1/53	14.79	18.07	0.064	36.99	-18.92	15.92	0.039	34.77	-18.85
	QPSK (HALF-OPEN)	688.0	V	100	77	3.28	1/79	14.49	17.77	0.060	36.99	-19.22	15.62	0.036	34.77	-19.15

Table 7-11. EIRP Data (NR Band n71 – North -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]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
20 MHz	π/2 BPSK	673.0	H	147	100	2.99	1 / 79	13.15	16.14	0.041	36.99	-20.85	13.99	0.025	34.77	-20.78
		680.5	H	148	96	3.09	1 / 79	13.66	16.75	0.047	36.99	-20.24	14.60	0.029	34.77	-20.18
		688.0	H	145	99	3.08	1 / 79	14.11	**17.19**	0.052	36.99	-19.80	**15.04**	0.032	34.77	-19.73
	QPSK	673.0	H	147	100	2.99	1 / 79	13.18	16.17	0.041	36.99	-20.82	14.02	0.025	34.77	-20.75
		680.5	H	148	96	3.09	1 / 79	13.69	16.78	0.048	36.99	-20.21	14.63	0.029	34.77	-20.15
		688.0	H	145	99	3.08	1 / 79	14.06	17.14	0.052	36.99	-19.85	14.99	0.032	34.77	-19.78
	16-QAM	688.0	H	145	99	3.08	1 / 79	13.74	16.82	0.048	36.99	-20.17	14.67	0.029	34.77	-20.10
15 MHz	π/2 BPSK	670.5	H	147	100	2.96	1 / 39	13.40	16.36	0.043	36.99	-20.63	14.21	0.026	34.77	-20.56
		680.5	H	148	96	3.09	1 / 20	13.84	16.92	0.049	36.99	-20.06	14.77	0.030	34.77	-20.00
		690.5	H	145	99	3.11	1 / 58	14.02	17.14	0.052	36.99	-19.85	14.99	0.032	34.77	-19.78
	QPSK	670.5	H	147	100	2.96	1 / 39	13.32	16.28	0.042	36.99	-20.71	14.13	0.026	34.77	-20.64
		680.5	H	148	96	3.09	1 / 20	13.43	16.51	0.045	36.99	-20.48	14.36	0.027	34.77	-20.41
		690.5	H	145	99	3.11	1 / 58	14.05	**17.16**	0.052	36.99	-19.83	**15.01**	0.032	34.77	-19.76
	16-QAM	690.5	H	145	99	3.11	1 / 58	13.86	16.97	0.050	36.99	-20.02	14.82	0.030	34.77	-19.95
10 MHz	π/2 BPSK	668.0	H	147	100	2.92	1 / 38	13.19	16.12	0.041	36.99	-20.87	13.97	0.025	34.77	-20.80
		680.5	H	148	96	3.09	1 / 26	13.50	16.59	0.046	36.99	-20.40	14.44	0.028	34.77	-20.33
		693.0	H	145	99	3.14	1 / 26	14.02	17.16	0.052	36.99	-19.83	15.01	0.032	34.77	-19.76
	QPSK	668.0	H	147	100	2.92	1 / 38	13.09	16.02	0.040	36.99	-20.97	13.87	0.024	34.77	-20.90
		680.5	H	148	96	3.09	1 / 26	13.28	16.37	0.043	36.99	-20.62	14.22	0.026	34.77	-20.55
		693.0	H	145	99	3.14	1 / 26	14.11	**17.26**	0.053	36.99	-19.73	**15.11**	0.032	34.77	-19.66
	16-QAM	693.0	H	145	99	3.14	1 / 26	13.83	16.98	0.050	36.99	-20.01	14.83	0.030	34.77	-19.94
5 MHz	π/2 BPSK	665.5	H	147	100	2.94	1 / 6	13.25	16.20	0.042	36.99	-20.79	14.05	0.025	34.77	-20.73
		680.5	H	148	96	3.09	1 / 6	13.49	16.58	0.045	36.99	-20.41	14.43	0.028	34.77	-20.34
		695.5	H	145	99	3.18	1 / 6	14.02	**17.20**	0.052	36.99	-19.79	**15.05**	0.032	34.77	-19.72
	QPSK	665.5	H	147	100	2.94	1 / 6	13.28	16.22	0.042	36.99	-20.77	14.07	0.026	34.77	-20.70
		680.5	H	148	96	3.09	1 / 6	13.59	16.67	0.046	36.99	-20.32	14.52	0.028	34.77	-20.25
		695.5	H	145	99	3.18	1 / 6	13.93	17.11	0.051	36.99	-19.88	14.96	0.031	34.77	-19.81
	16-QAM	695.5	H	145	99	3.18	1 / 6	13.81	16.99	0.050	36.99	-20.00	14.84	0.030	34.77	-19.93
20 MHz	QPSK (CP-OFDM)	688.0	H	149	100	2.89	1 / 53	12.01	14.90	0.031	36.99	-22.09	12.75	0.019	34.77	-22.02
	QPSK (Half-Open)	688.0	H	116	105	2.89	1 / 53	13.76	16.65	0.046	36.99	-20.34	14.50	0.028	34.77	-20.27
	QPSK (Opposite Pol.)	688.0	V	169	38	2.89	1 / 53	13.44	16.33	0.043	36.99	-20.66	14.18	0.026	34.77	-20.59

Table 7-12. EIRP Data (NR Band n71 – South -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	QPSK	1720.0	H	137	211	9.47	1 / 0	15.54	**25.01**	0.317	30.00	-4.99
		1745.0	H	216	212	9.48	1 / 50	14.48	23.96	0.249	30.00	-6.04
		1770.0	H	162	225	9.39	1 / 50	14.34	23.73	0.236	30.00	-6.27
	16-QAM	1720.0	H	137	211	9.47	1 / 0	14.79	24.26	0.267	30.00	-5.74
15 MHz	QPSK	1717.5	H	137	211	9.49	1 / 0	15.60	**25.10**	0.323	30.00	-4.90
		1745.0	H	216	212	9.48	1 / 74	14.61	24.09	0.257	30.00	-5.91
		1772.5	H	162	225	9.36	1 / 0	14.38	23.75	0.237	30.00	-6.25
	16-QAM	1717.5	H	137	211	9.49	1 / 0	14.99	24.48	0.281	30.00	-5.52
10 MHz	QPSK	1715.0	H	137	211	9.52	1 / 0	15.50	**25.02**	0.318	30.00	-4.98
		1745.0	H	216	212	9.48	1 / 0	14.62	24.10	0.257	30.00	-5.90
		1775.0	H	162	225	9.34	1 / 25	14.33	23.67	0.233	30.00	-6.33
	16-QAM	1715.0	H	137	211	9.52	1 / 0	14.84	24.36	0.273	30.00	-5.64
5 MHz	QPSK	1712.5	H	137	211	9.54	1 / 24	15.49	**25.03**	0.319	30.00	-4.97
		1745.0	H	216	212	9.48	1 / 24	14.73	24.21	0.264	30.00	-5.79
		1777.5	H	162	225	9.31	1 / 0	14.62	23.93	0.247	30.00	-6.07
	16-QAM	1712.5	H	137	211	9.54	1 / 24	14.73	24.27	0.267	30.00	-5.73
3 MHz	QPSK	1711.5	H	137	211	9.55	1 / 7	15.60	**25.15**	0.327	30.00	-4.85
		1745.0	H	216	212	9.48	1 / 7	14.48	23.96	0.249	30.00	-6.04
		1778.5	H	162	225	9.30	1 / 14	14.48	23.78	0.239	30.00	-6.22
	16-QAM	1711.5	H	137	211	9.55	1 / 7	14.73	24.29	0.268	30.00	-5.71
1.4 MHz	QPSK	1710.7	H	137	211	9.56	1 / 0	15.46	**25.03**	0.318	30.00	-4.97
		1745.0	H	216	212	9.48	1 / 3	14.44	23.92	0.246	30.00	-6.08
		1779.3	H	162	225	9.29	1 / 0	14.58	23.87	0.244	30.00	-6.13
	16-QAM	1710.7	H	137	211	9.56	1 / 0	14.63	24.19	0.262	30.00	-5.81
20 MHz	QPSK(Opposite Pol.)	1720.0	V	342	263	9.03	1/50	15.00	24.03	0.253	30.00	-5.97
	QPSK(Half)	1720.0	H	235	359	9.48	1/0	14.24	23.72	0.236	30.00	-6.28

Table 7-13. EIRP Data (LTE Band 66/4 –North - 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	QPSK	1720.0	H	181	208	9.47	1 / 0	16.11	**25.58**	0.361	30.00	-4.42
		1745.0	H	133	211	9.48	1 / 50	15.01	24.49	0.281	30.00	-5.51
		1770.0	H	168	213	9.39	1 / 50	15.19	24.58	0.287	30.00	-5.42
	16-QAM	1720.0	H	181	208	9.47	1 / 0	15.54	25.01	0.317	30.00	-4.99
15 MHz	QPSK	1717.5	H	181	208	9.49	1 / 37	16.16	**25.65**	0.367	30.00	-4.35
		1745.0	H	133	211	9.48	1 / 37	15.12	24.60	0.289	30.00	-5.40
		1772.5	H	168	213	9.36	1 / 0	15.36	24.73	0.297	30.00	-5.27
	16-QAM	1717.5	H	181	208	9.49	1 / 74	15.52	25.02	0.317	30.00	-4.98
10 MHz	QPSK	1715.0	H	181	208	9.52	1 / 0	15.97	**25.49**	0.354	30.00	-4.51
		1745.0	H	133	211	9.48	1 / 25	15.04	24.52	0.283	30.00	-5.48
		1775.0	H	168	213	9.34	1 / 25	15.33	24.66	0.293	30.00	-5.34
	16-QAM	1715.0	H	181	208	9.52	1 / 0	15.60	25.11	0.325	30.00	-4.89
5 MHz	QPSK	1712.5	H	181	208	9.54	1 / 12	16.11	**25.65**	0.367	30.00	-4.35
		1745.0	H	133	211	9.48	1 / 12	15.01	24.49	0.281	30.00	-5.51
		1777.5	H	168	213	9.31	1 / 12	15.48	24.80	0.302	30.00	-5.20
	16-QAM	1712.5	H	181	208	9.54	1 / 24	15.76	25.30	0.339	30.00	-4.70
3 MHz	QPSK	1711.5	H	181	208	9.55	1 / 7	16.27	**25.82**	0.382	30.00	-4.18
		1745.0	H	133	211	9.48	1 / 0	15.06	24.54	0.285	30.00	-5.46
		1778.5	H	168	213	9.30	1 / 7	15.38	24.68	0.294	30.00	-5.32
	16-QAM	1711.5	H	181	208	9.55	1 / 7	15.35	24.90	0.309	30.00	-5.10
1.4 MHz	QPSK	1710.7	H	181	208	9.56	1 / 0	15.93	**25.49**	0.354	30.00	-4.51
		1745.0	H	133	211	9.48	1 / 5	14.99	24.47	0.280	30.00	-5.53
		1779.3	H	168	213	9.29	1 / 5	15.20	24.49	0.281	30.00	-5.51
	16-QAM	1710.7	H	181	208	9.56	1 / 3	15.43	24.99	0.316	30.00	-5.01
20 MHz	QPSK(Opposite Pol.)	1720.0	V	361	310	9.33	1/0	14.89	24.22	0.264	30.00	-5.78
	QPSK(Half)	1720.0	H	135	208	9.47	1/0	15.80	25.27	0.336	30.00	-4.73

Table 7-14. EIRP Data (LTE Band 66/4 –South - 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	1730.0	H	174	324	9.48	1 / 161	15.66	25.14	0.327	30.00	-4.86
		1745.0	H	180	320	9.48	1 / 161	15.77	25.25	0.335	30.00	-4.75
		1760.0	H	171	320	9.44	1 / 108	15.58	25.02	0.318	30.00	-4.98
	QPSK	1730.0	H	174	324	9.48	1 / 161	15.67	25.15	0.328	30.00	-4.85
		1745.0	H	180	320	9.48	1 / 161	15.79	**25.27**	0.337	30.00	-4.73
		1760.0	H	171	320	9.44	1 / 108	15.67	25.11	0.325	30.00	-4.89
	16-QAM	1745.0	H	180	320	9.48	1 / 161	15.22	24.70	0.295	30.00	-5.30
30 MHz	π/2 BPSK	1725.0	H	174	324	9.48	1 / 40	15.86	25.34	0.342	30.00	-4.66
		1745.0	H	180	320	9.48	1 / 119	16.04	**25.52**	0.356	30.00	-4.48
		1765.0	H	171	320	9.42	1 / 40	15.62	25.03	0.319	30.00	-4.97
	QPSK	1725.0	H	174	324	9.48	1 / 40	15.11	24.59	0.288	30.00	-5.41
		1745.0	H	180	320	9.48	1 / 40	15.29	24.77	0.300	30.00	-5.23
		1765.0	H	171	320	9.42	1 / 40	16.10	25.51	0.356	30.00	-4.49
	16-QAM	1765.0	H	171	320	9.42	1 / 40	15.34	24.76	0.299	30.00	-5.24
20 MHz	π/2 BPSK	1720.0	H	174	324	9.47	1 / 26	15.79	25.25	0.335	30.00	-4.75
		1745.0	H	180	320	9.48	1 / 79	15.90	25.38	0.345	30.00	-4.62
		1770.0	H	171	320	9.39	1 / 26	14.89	24.27	0.268	30.00	-5.73
	QPSK	1720.0	H	174	324	9.47	1 / 26	14.92	24.39	0.275	30.00	-5.61
		1745.0	H	180	320	9.48	1 / 79	16.33	**25.81**	0.381	30.00	-4.19
		1770.0	H	171	320	9.39	1 / 26	15.19	24.57	0.287	30.00	-5.43
	16-QAM	1745.0	H	180	320	9.48	1 / 79	15.95	25.43	0.349	30.00	-4.57
15 MHz	π/2 BPSK	1717.5	H	174	324	9.49	1 / 58	15.79	25.28	0.337	30.00	-4.72
		1745.0	H	180	320	9.48	1 / 58	16.19	25.67	0.369	30.00	-4.33
		1772.5	H	171	320	9.36	1 / 58	15.14	24.51	0.282	30.00	-5.49
	QPSK	1717.5	H	174	324	9.49	1 / 58	15.62	25.11	0.325	30.00	-4.89
		1745.0	H	180	320	9.48	1 / 58	16.40	**25.88**	0.387	30.00	-4.12
		1772.5	H	171	320	9.36	1 / 58	15.36	24.72	0.297	30.00	-5.28
	16-QAM	1745.0	H	180	320	9.48	1 / 58	15.92	25.40	0.347	30.00	-4.60
10 MHz	π/2 BPSK	1715.0	H	174	324	9.52	1 / 26	15.83	25.34	0.342	30.00	-4.66
		1745.0	H	180	320	9.48	1 / 38	15.64	25.12	0.325	30.00	-4.88
		1775.0	H	171	320	9.34	1 / 38	15.16	24.50	0.282	30.00	-5.50
	QPSK	1715.0	H	174	324	9.52	1 / 26	14.59	24.11	0.258	30.00	-5.89
		1745.0	H	180	320	9.48	1 / 38	15.89	**25.37**	0.344	30.00	-4.63
		1775.0	H	171	320	9.34	1 / 38	15.47	24.81	0.302	30.00	-5.19
	16-QAM	1745.0	H	180	320	9.48	1 / 38	15.13	24.61	0.289	30.00	-5.39
5 MHz	π/2 BPSK	1712.5	H	174	324	9.54	1 / 18	15.78	**25.32**	0.341	30.00	-4.68
		1745.0	H	180	320	9.48	1 / 12	15.58	25.06	0.320	30.00	-4.94
		1777.5	H	171	320	9.31	1 / 18	15.61	24.92	0.311	30.00	-5.08
	QPSK	1712.5	H	174	324	9.54	1 / 18	14.89	24.44	0.278	30.00	-5.56
		1745.0	H	180	320	9.48	1 / 12	15.80	25.28	0.337	30.00	-4.72
		1777.5	H	171	320	9.31	1 / 18	15.73	25.05	0.320	30.00	-4.95
	16-QAM	1745.0	H	180	320	9.48	1 / 12	15.31	24.79	0.301	30.00	-5.21
40 MHz	QPSK (CP-OFDM)	1745.0	H	177	318	9.48	1/108	14.70	24.18	0.262	30.00	-5.82
	QPSK (Opposite Pol.)	1745.0	V	297	92	9.03	1/54	13.20	22.23	0.167	30.00	-7.77
	QPSK (HALF-OPEN)	1745.0	H	180	335	9.48	1/161	13.45	22.93	0.196	30.00	-7.07

Table 7-15. EIRP Data (NR Band n66 – North - 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	1730.0	H	177	299	9.48	1 / 161	13.77	23.25	0.212	30.00	-6.75
		1745.0	H	180	313	9.48	1 / 108	13.97	23.45	0.221	30.00	-6.55
		1760.0	H	180	315	9.44	1 / 54	13.86	23.30	0.214	30.00	-6.70
	QPSK	1730.0	H	177	299	9.48	1 / 161	13.77	23.25	0.212	30.00	-6.75
		1745.0	H	180	313	9.48	1 / 108	13.99	**23.47**	0.222	30.00	-6.53
		1760.0	H	180	315	9.44	1 / 54	13.84	23.28	0.213	30.00	-6.72
	16-QAM	1745.0	H	180	313	9.48	1 / 108	13.44	22.92	0.196	30.00	-7.08
30 MHz	π/2 BPSK	1725.0	H	177	299	9.48	1 / 119	13.94	23.42	0.220	30.00	-6.58
		1745.0	H	180	313	9.48	1 / 119	13.98	23.46	0.222	30.00	-6.54
		1765.0	H	180	315	9.42	1 / 80	13.93	23.34	0.216	30.00	-6.66
	QPSK	1725.0	H	177	299	9.48	1 / 119	13.69	23.17	0.208	30.00	-6.83
		1745.0	H	180	313	9.48	1 / 119	14.41	**23.89**	0.245	30.00	-6.11
		1765.0	H	180	315	9.42	1 / 80	13.75	23.16	0.207	30.00	-6.84
	16-QAM	1745.0	H	180	313	9.48	1 / 119	13.68	23.16	0.207	30.00	-6.84
20 MHz	π/2 BPSK	1720.0	H	177	299	9.47	1 / 79	14.00	23.47	0.223	30.00	-6.53
		1745.0	H	180	313	9.48	1 / 79	14.09	**23.57**	0.227	30.00	-6.43
		1770.0	H	180	315	9.39	1 / 26	13.72	23.11	0.205	30.00	-6.89
	QPSK	1720.0	H	177	299	9.47	1 / 79	14.04	23.51	0.225	30.00	-6.49
		1745.0	H	180	313	9.48	1 / 53	12.96	22.44	0.175	30.00	-7.56
		1770.0	H	180	315	9.39	1 / 26	13.51	22.90	0.195	30.00	-7.10
	16-QAM	1720.0	H	177	299	9.47	1 / 79	13.37	22.84	0.192	30.00	-7.16
15 MHz	π/2 BPSK	1717.5	H	177	299	9.49	1 / 20	14.01	**23.50**	0.224	30.00	-6.50
		1745.0	H	180	313	9.48	1 / 58	13.95	23.43	0.220	30.00	-6.57
		1772.5	H	180	315	9.36	1 / 58	13.88	23.25	0.211	30.00	-6.75
	QPSK	1717.5	H	177	299	9.49	1 / 20	13.78	23.27	0.212	30.00	-6.73
		1745.0	H	180	313	9.48	1 / 58	13.94	23.42	0.220	30.00	-6.58
		1772.5	H	180	315	9.36	1 / 58	13.09	22.45	0.176	30.00	-7.55
	16-QAM	1717.5	H	177	299	9.49	1 / 20	13.41	22.90	0.195	30.00	-7.10
10 MHz	π/2 BPSK	1715.0	H	177	299	9.52	1 / 13	13.92	23.44	0.221	30.00	-6.56
		1745.0	H	180	313	9.48	1 / 38	13.93	23.41	0.219	30.00	-6.59
		1775.0	H	180	315	9.34	1 / 38	14.13	**23.47**	0.222	30.00	-6.53
	QPSK	1715.0	H	177	299	9.52	1 / 13	13.32	22.83	0.192	30.00	-7.17
		1745.0	H	180	313	9.48	1 / 38	13.40	22.88	0.194	30.00	-7.12
		1775.0	H	180	315	9.34	1 / 38	13.27	22.61	0.182	30.00	-7.39
	16-QAM	1715.0	H	177	299	9.52	1 / 13	13.01	22.53	0.179	30.00	-7.47
5 MHz	π/2 BPSK	1712.5	H	177	299	9.54	1 / 12	13.94	23.48	0.223	30.00	-6.52
		1745.0	H	180	313	9.48	1 / 18	13.89	23.37	0.217	30.00	-6.63
		1777.5	H	180	315	9.31	1 / 12	14.23	**23.54**	0.226	30.00	-6.46
	QPSK	1712.5	H	177	299	9.54	1 / 12	13.17	22.71	0.187	30.00	-7.29
		1745.0	H	180	313	9.48	1 / 18	13.31	22.79	0.190	30.00	-7.21
		1777.5	H	180	315	9.31	1 / 12	13.18	22.49	0.177	30.00	-7.51
	16-QAM	1712.5	H	177	299	9.54	1 / 12	12.76	22.31	0.170	30.00	-7.69
40 MHz	QPSK (CP-OFDM)	1745.0	H	182	312	9.48	1 / 108	12.91	22.39	0.173	30.00	-7.61
	QPSK (Opposite Pol.)	1745.0	V	177	88	9.03	1 / 54	12.21	21.24	0.133	30.00	-8.76
	QPSK (Half)	1745.0	H	101	307	9.48	1 / 108	13.34	22.82	0.191	30.00	-7.18

Table 7-16. EIRP Data (NR Band n66 – South - Open)

7.9 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using horizontally and vertically polarized tuned dipole 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

KDB 971168 D01 v03r01 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

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.

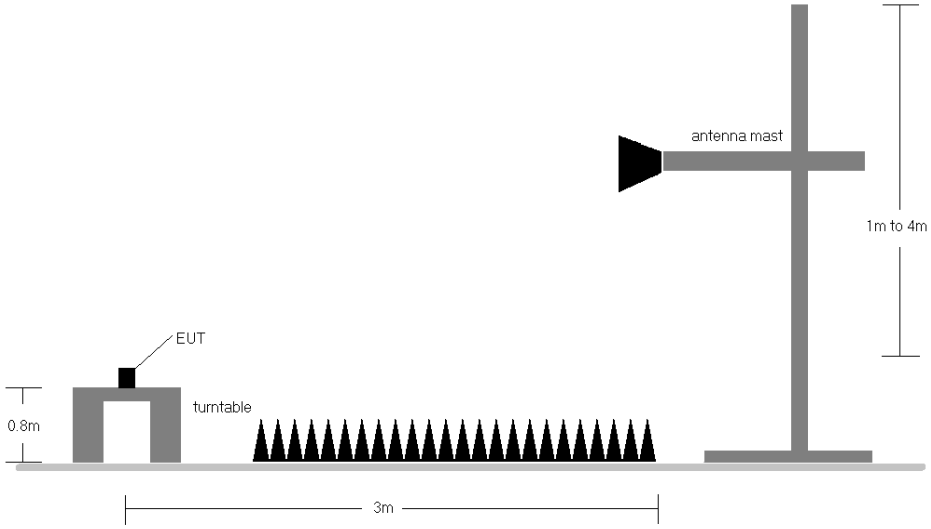


Figure 7-9. Test Instrument & Measurement Setup

Test Notes

1) Field strengths are calculated using the Measurement quantity conversions in KDB 971168 Section 5.8.4.
   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.

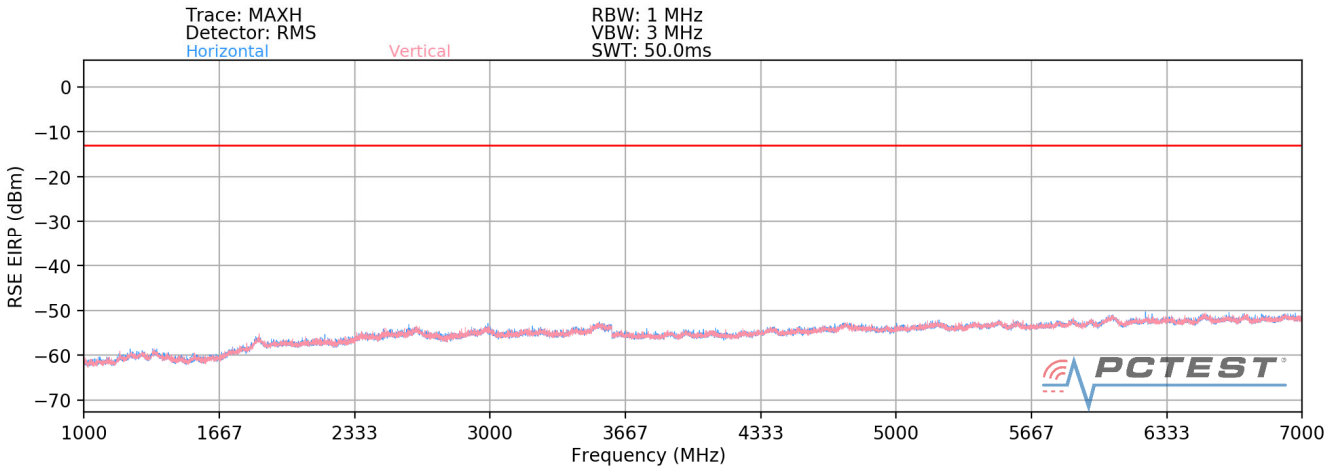
5) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

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

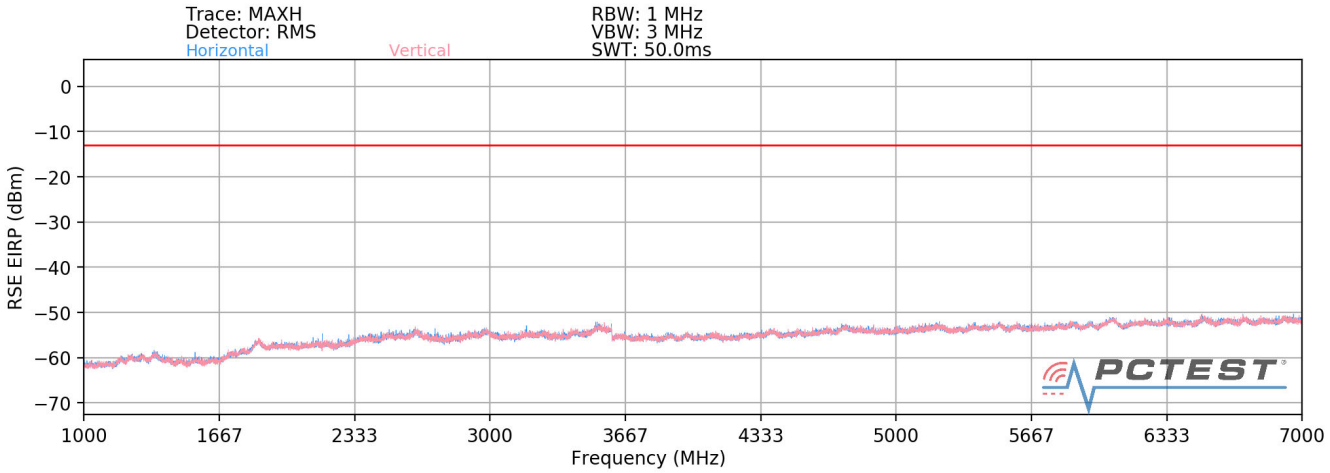
7) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

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

LTE Band 71 – North



Plot 7-249. Radiated Spurious Plot (LTE Band 71 – North -Closed)



Plot 7-250. Radiated Spurious Plot (LTE Band 71 – North -Open)

Bandwidth (MHz):	20
Frequency (MHz):	673.0
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]
1346.0	H	229	354	-75.89	-1.14	29.97	-65.28	-13.00	-52.28
2019.0	H	188	332	-76.47	0.78	31.31	-63.95	-13.00	-50.95
2692.0	H	-	-	-77.63	2.22	31.59	-63.67	-13.00	-50.67
3365.0	H	-	-	-77.87	2.32	31.45	-63.80	-13.00	-50.80

Table 7-17. Radiated Spurious Data (LTE Band 71 – Low Channel – North -Closed)

Bandwidth (MHz):	20
Frequency (MHz):	680.5
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]
1361.0	H	306	4	-75.75	-1.52	29.73	-65.53	-13.00	-52.53
2041.5	H	-	-	-77.52	0.71	30.19	-65.07	-13.00	-52.07
2722.0	H	-	-	-77.55	2.02	31.47	-63.79	-13.00	-50.79

Table 7-18. Radiated Spurious Data (LTE Band 71 – Mid Channel – North -Closed)

Bandwidth (MHz):	20
Frequency (MHz):	688.0
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]
1376.0	H	328	244	-76.70	-1.74	28.56	-66.69	-13.00	-53.69
2064.0	H	-	-	-77.49	0.46	29.97	-65.28	-13.00	-52.28
2752.0	H	-	-	-77.51	1.61	31.10	-64.16	-13.00	-51.16

Table 7-19. Radiated Spurious Data (LTE Band 71 – High Channel – North -Closed)