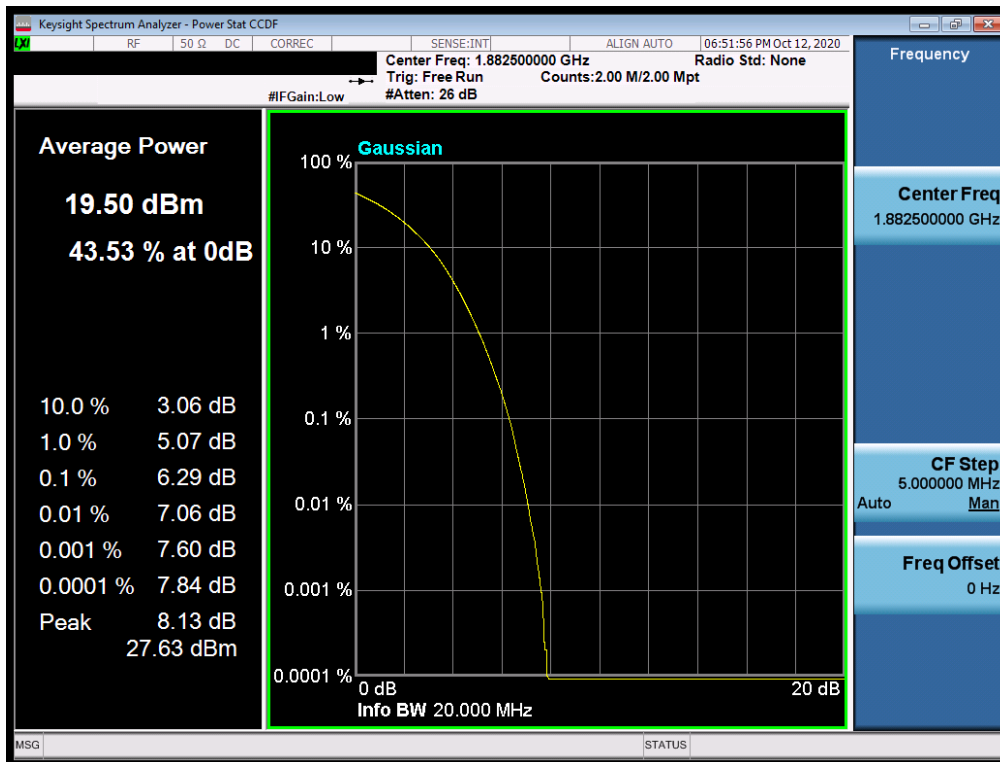


Plot 7-101. PAR Plot (LTE Band 25/2 - 20MHz 64-QAM - Full RB Configuration)

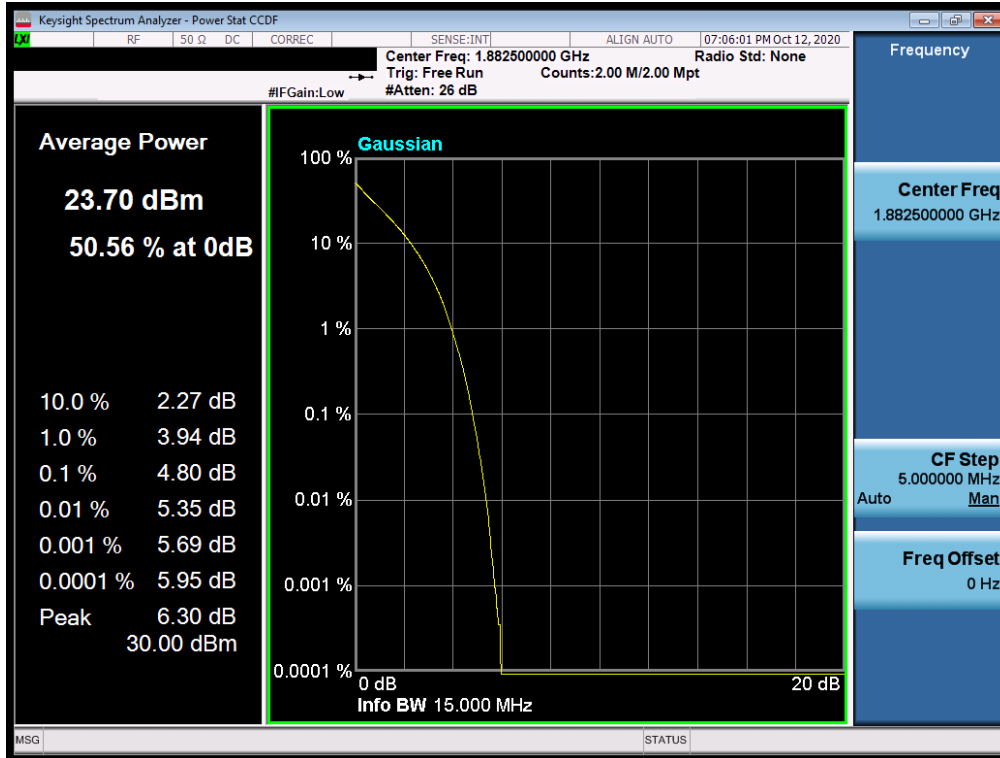


Plot 7-102. PAR Plot (LTE Band 25/2 - 20MHz 256-QAM - Full RB Configuration)

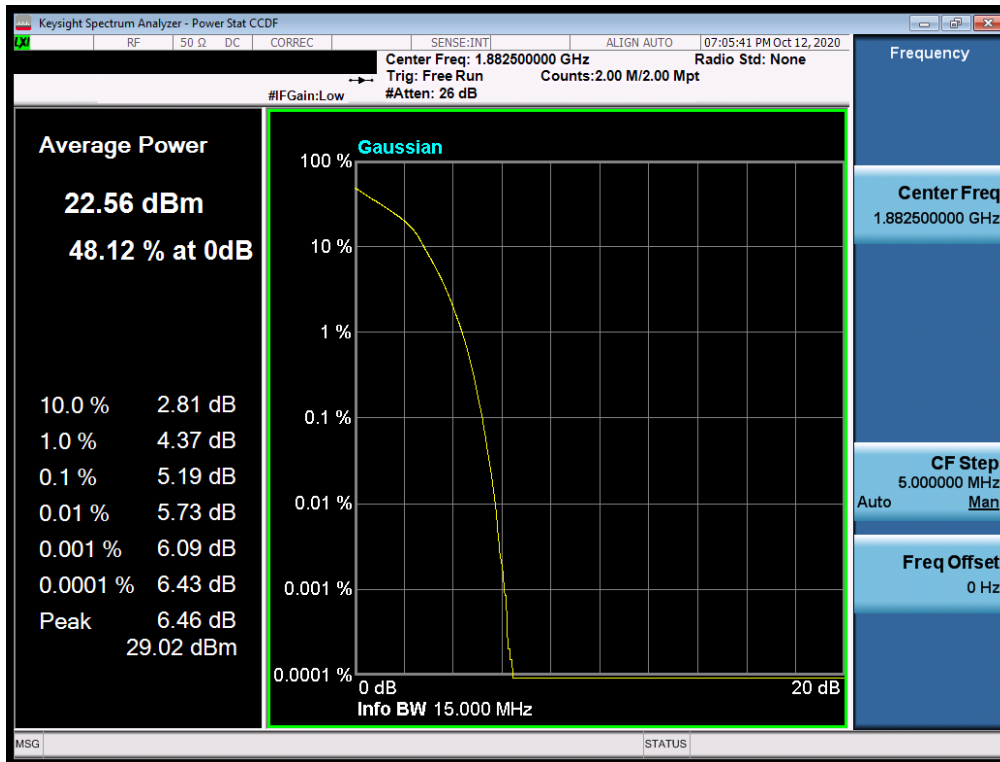
FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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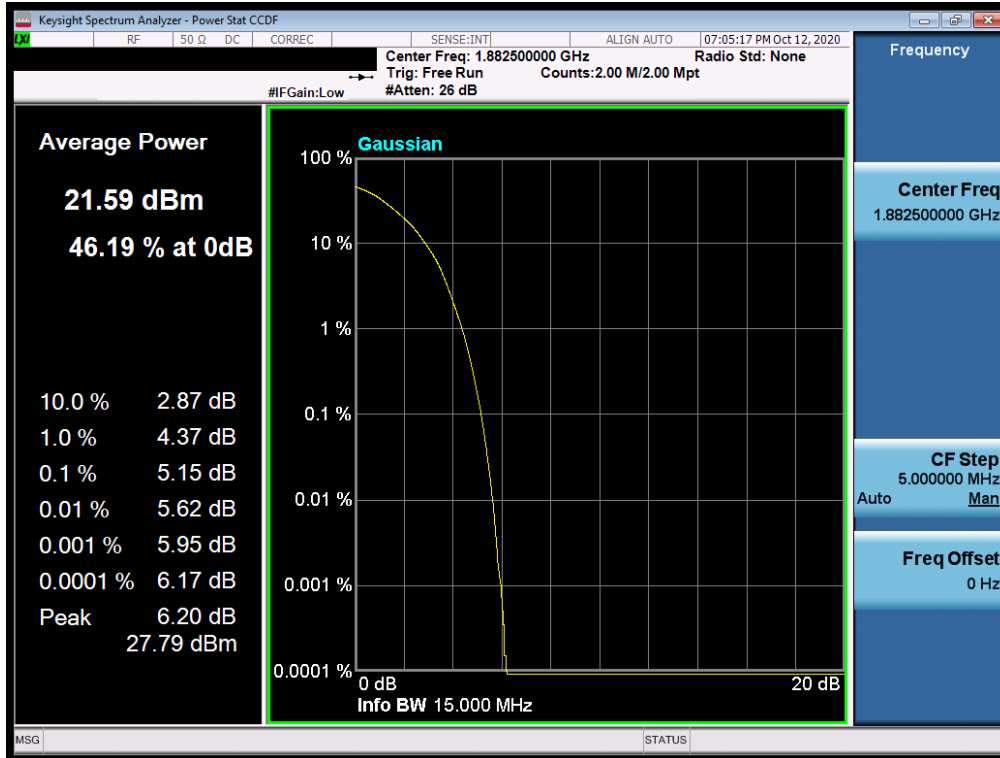


Plot 7-103. PAR Plot (LTE Band 25/2 - 15MHz QPSK - Full RB Configuration)

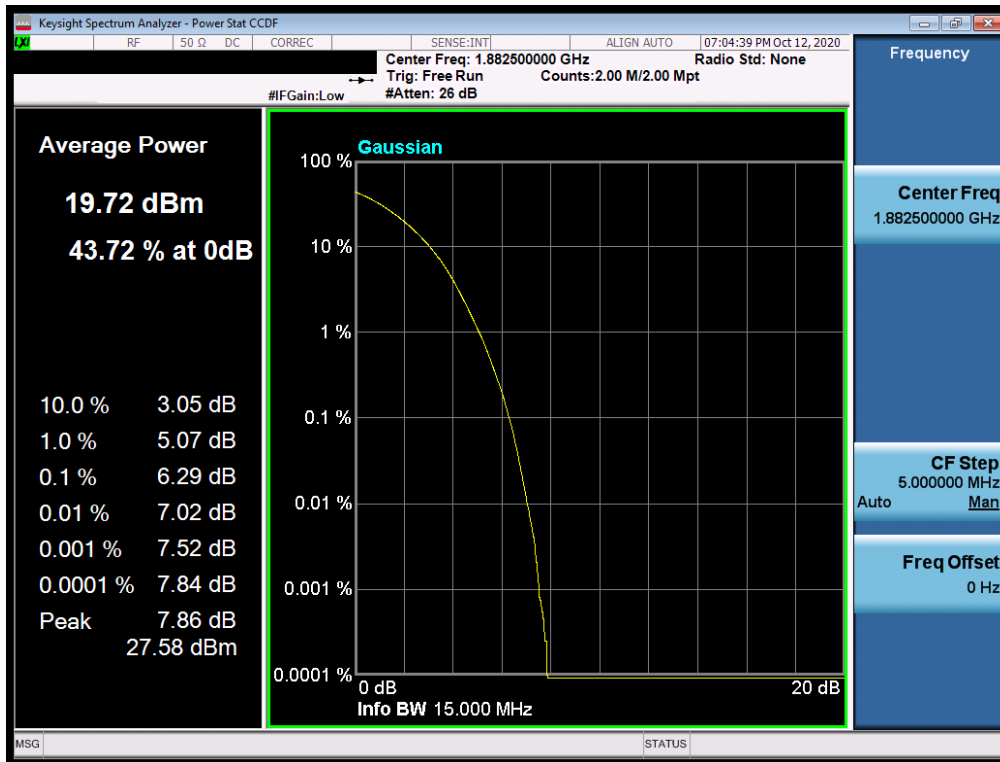


Plot 7-104. PAR Plot (LTE Band 25/2 - 15MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
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Plot 7-105. PAR Plot (LTE Band 25/2 - 15MHz 64-QAM - Full RB Configuration)

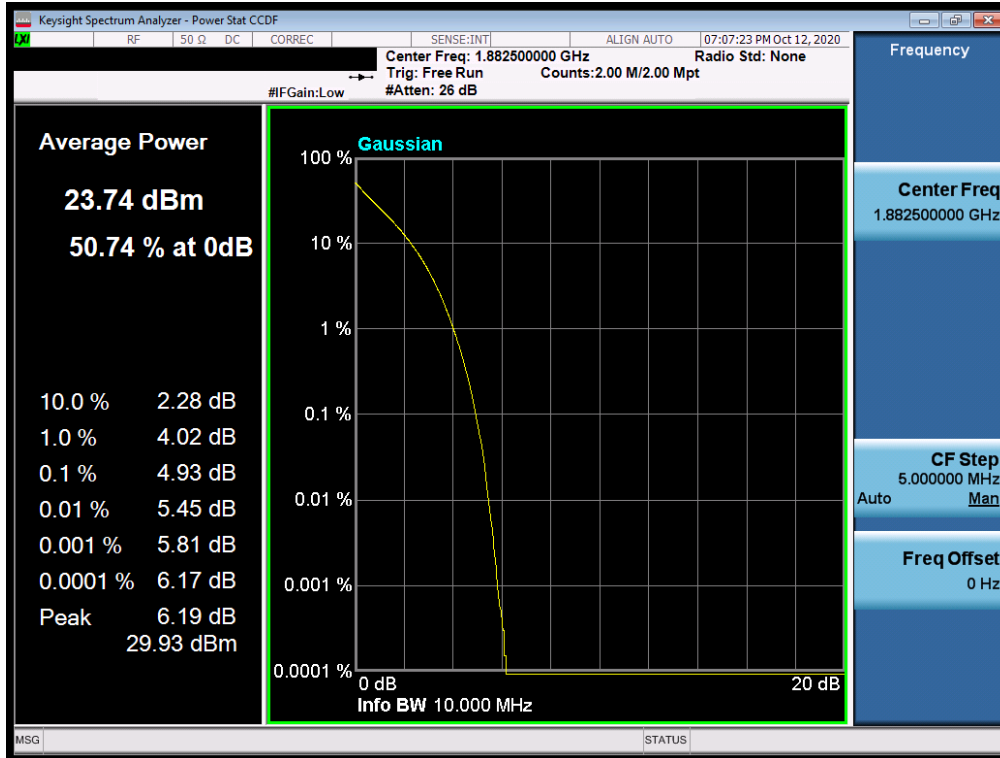


Plot 7-106. PAR Plot (LTE Band 25/2 - 15MHz 256-QAM - Full RB Configuration)

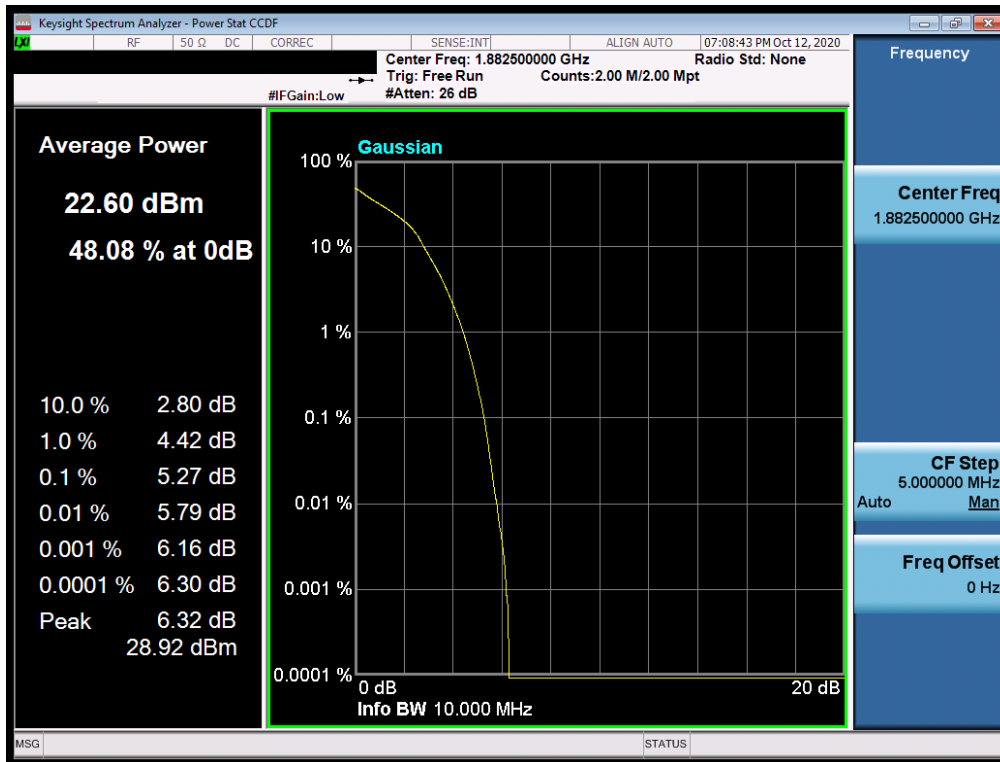
FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2009280154-20.A3L	Test Dates: 9/28/2020 - 11/20/2020	EUT Type: Portable Handset	Page 71 of 98

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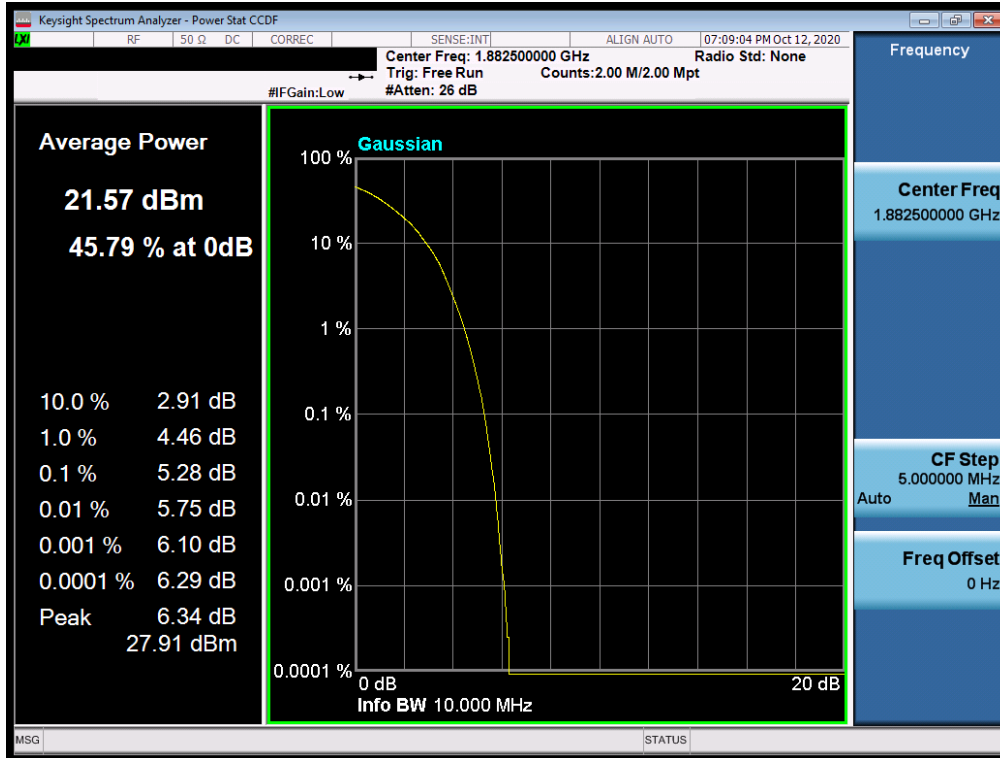


Plot 7-107. PAR Plot (LTE Band 25/2 - 10MHz QPSK - Full RB Configuration)

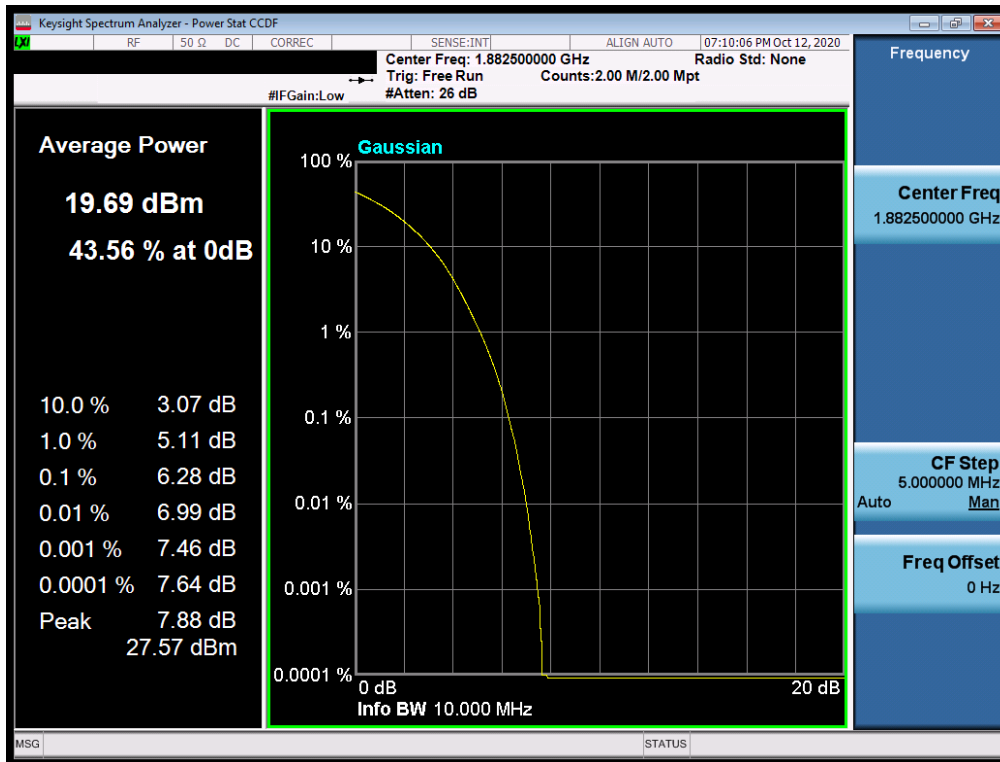


Plot 7-108. PAR Plot (LTE Band 25/2 - 10MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
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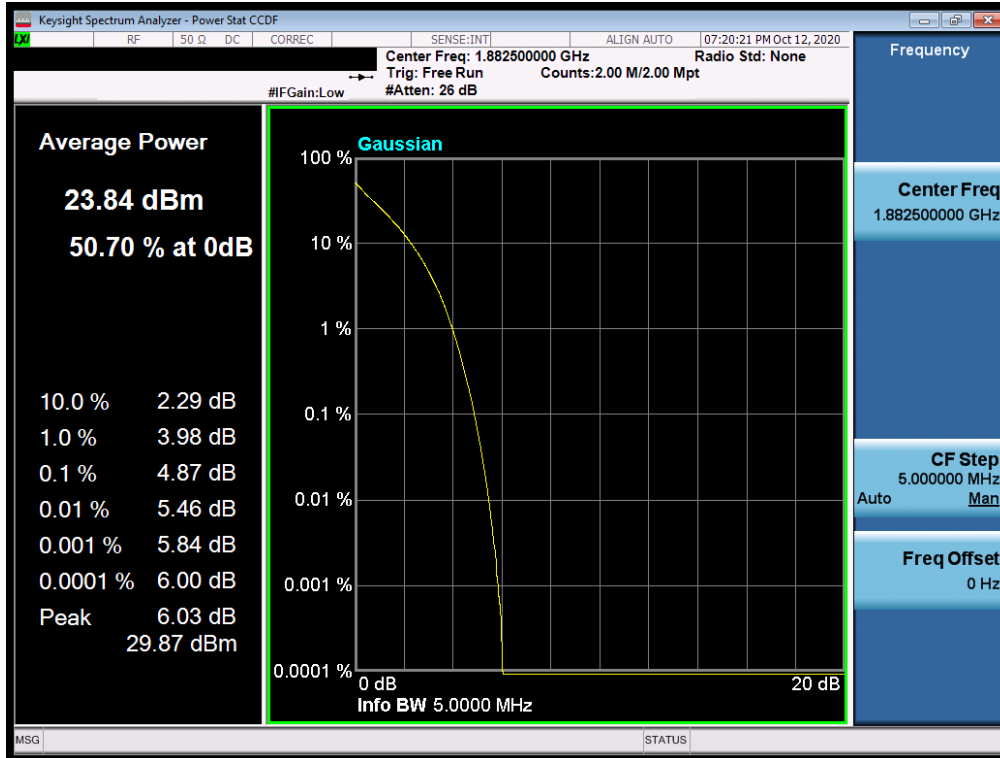


Plot 7-109. PAR Plot (LTE Band 25/2 - 10MHz 64-QAM - Full RB Configuration)

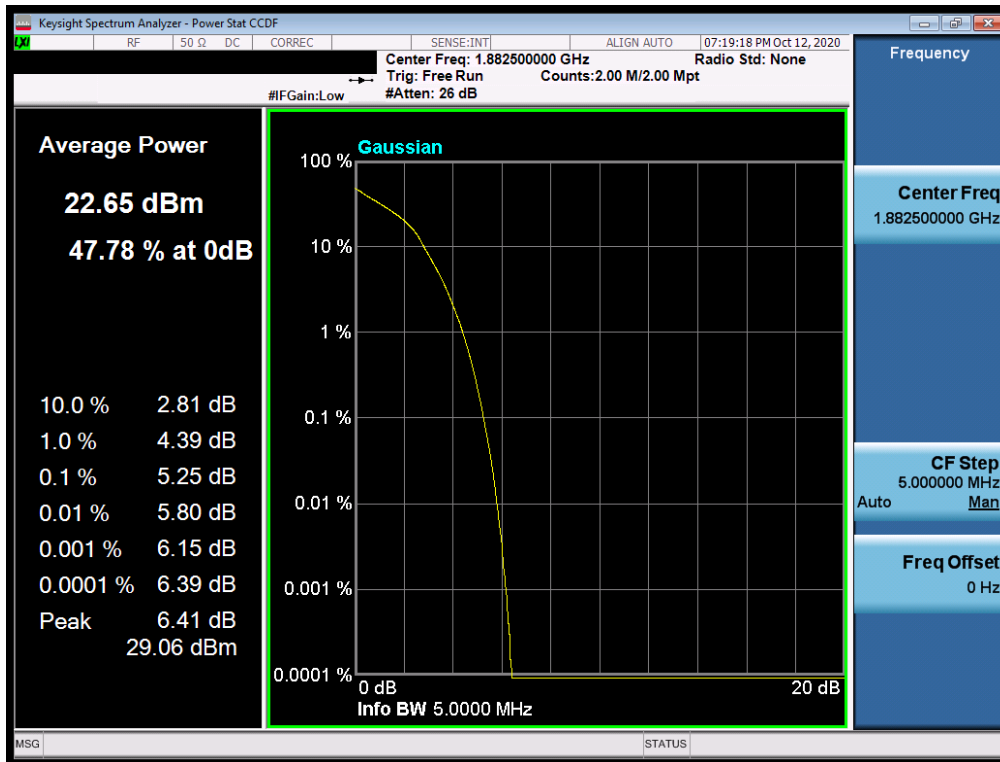


Plot 7-110. PAR Plot (LTE Band 25/2 - 10MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
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Plot 7-111. PAR Plot (LTE Band 25/2 - 5MHz QPSK - Full RB Configuration)

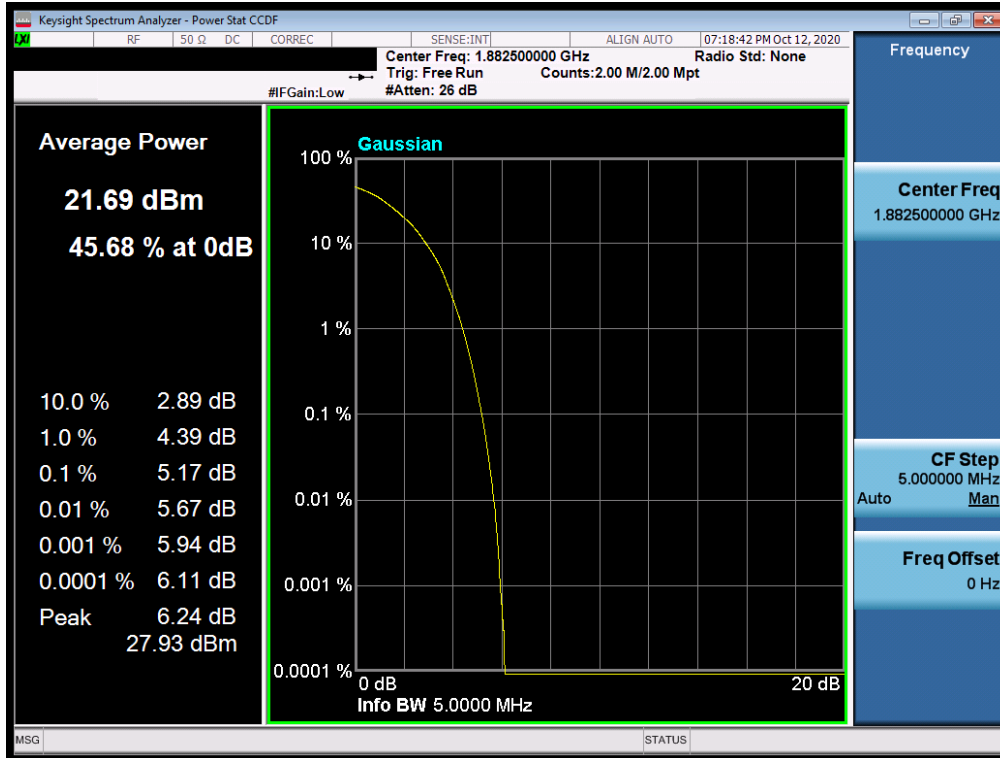


Plot 7-112. PAR Plot (LTE Band 25/2 - 5MHz 16-QAM - Full RB Configuration)

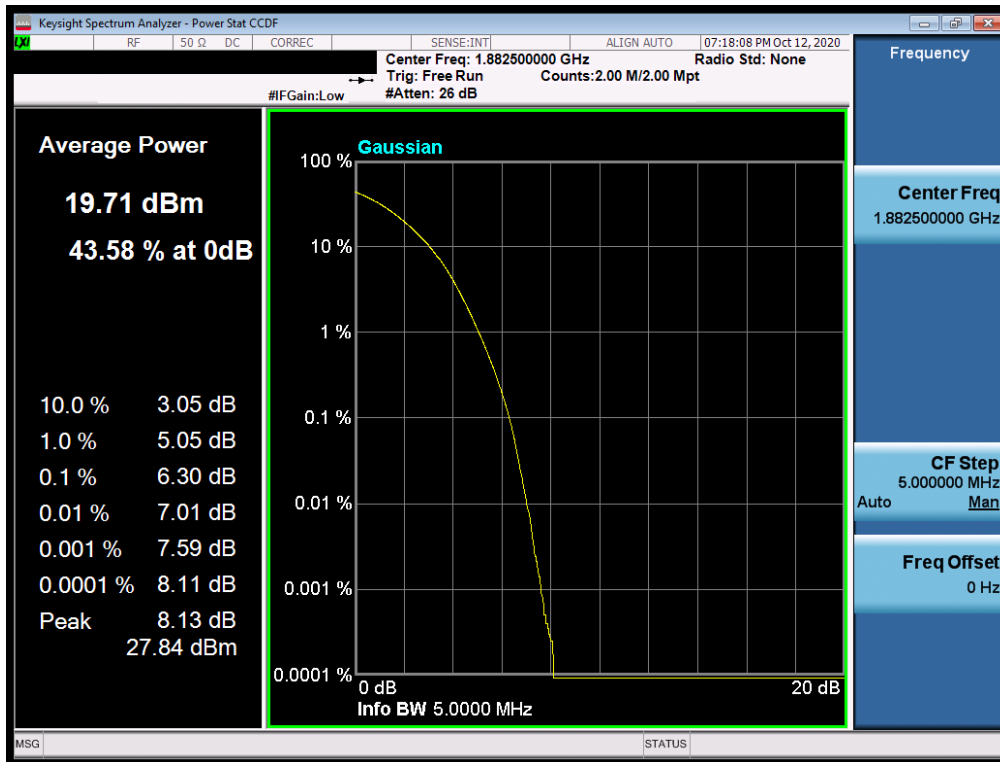
FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N: 1M2009280154-20.A3L	Test Dates: 9/28/2020 - 11/20/2020	EUT Type: Portable Handset	Page 74 of 98

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Plot 7-113. PAR Plot (LTE Band 25/2 - 5MHz 64-QAM - Full RB Configuration)

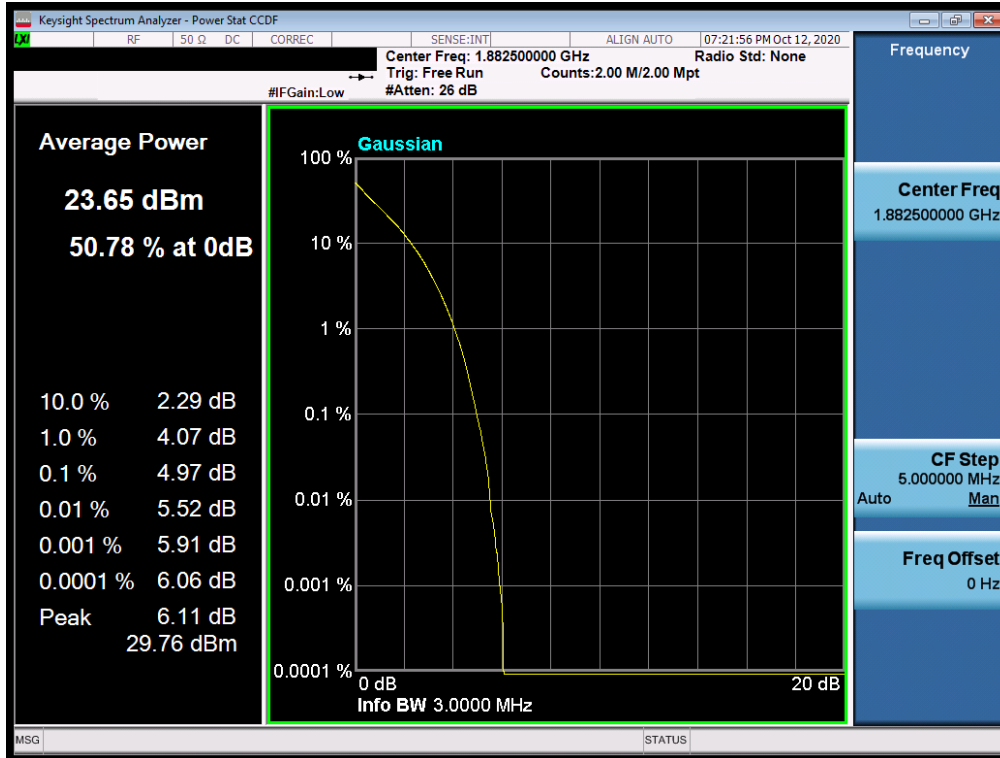


Plot 7-114. PAR Plot (LTE Band 25/2 - 5MHz 256-QAM - Full RB Configuration)

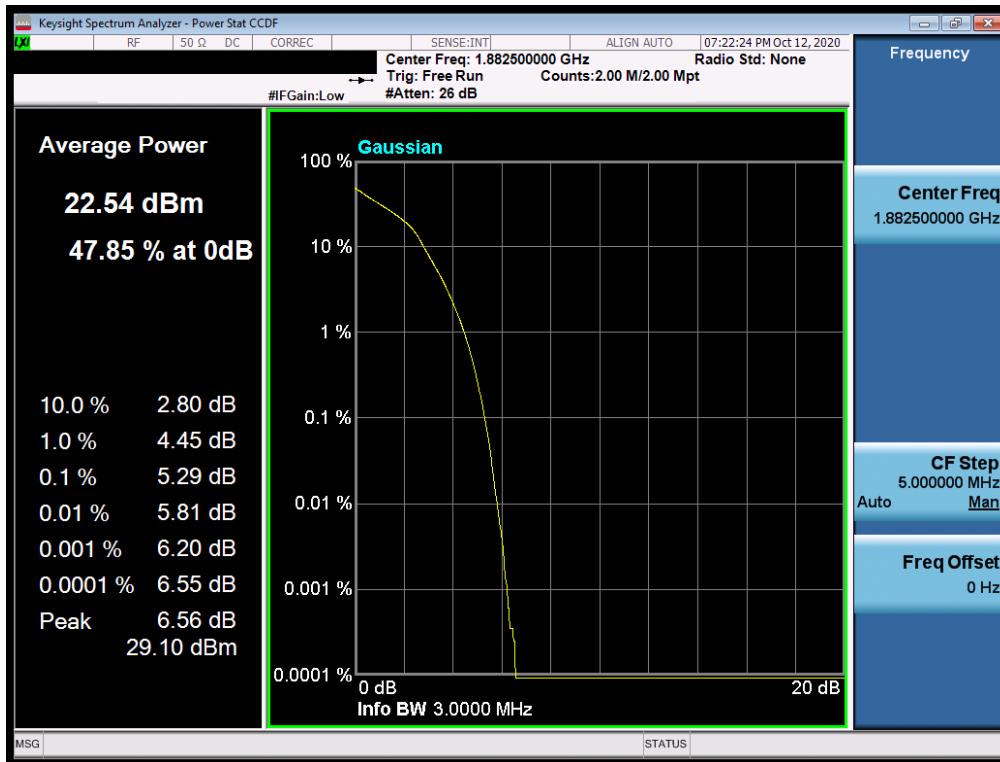
FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
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Plot 7-115. PAR Plot (LTE Band 25/2 - 3MHz QPSK - Full RB Configuration)

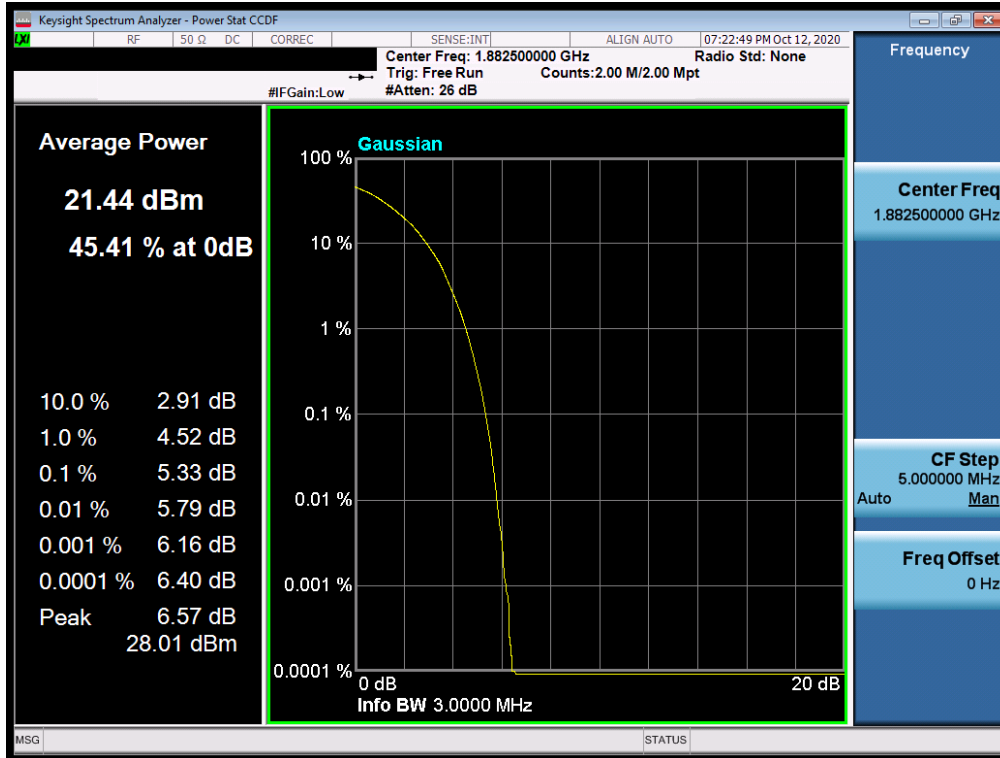


Plot 7-116. PAR Plot (LTE Band 25/2 - 3MHz 16-QAM - Full RB Configuration)

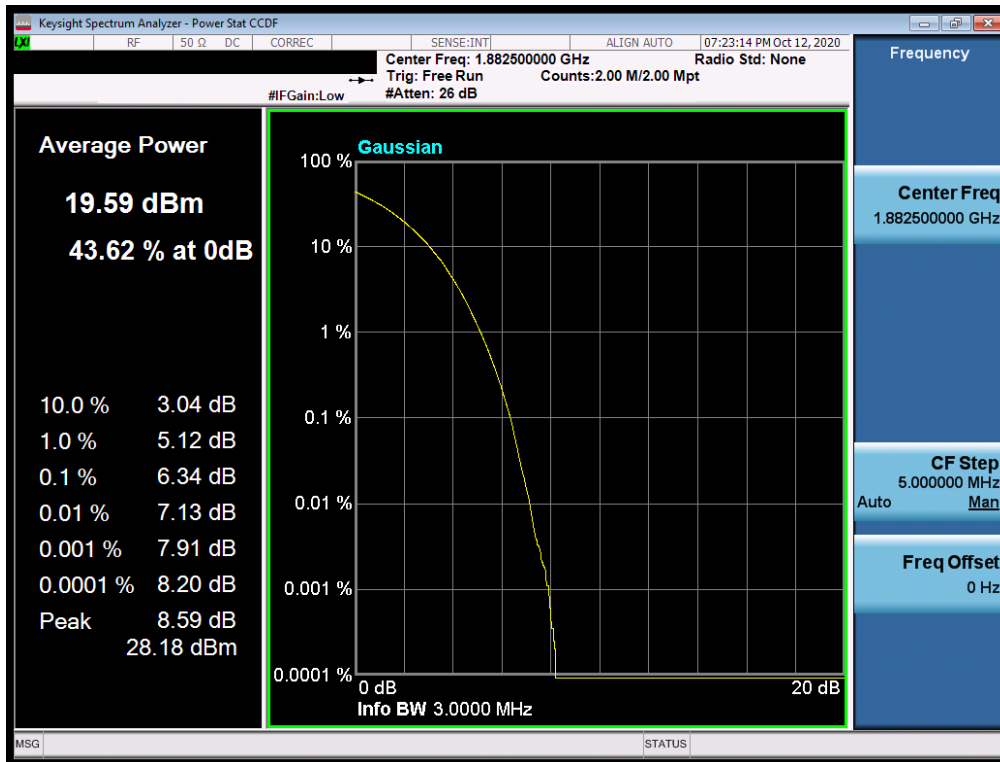
FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
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Plot 7-117. PAR Plot (LTE Band 25/2 - 3MHz 64-QAM - Full RB Configuration)

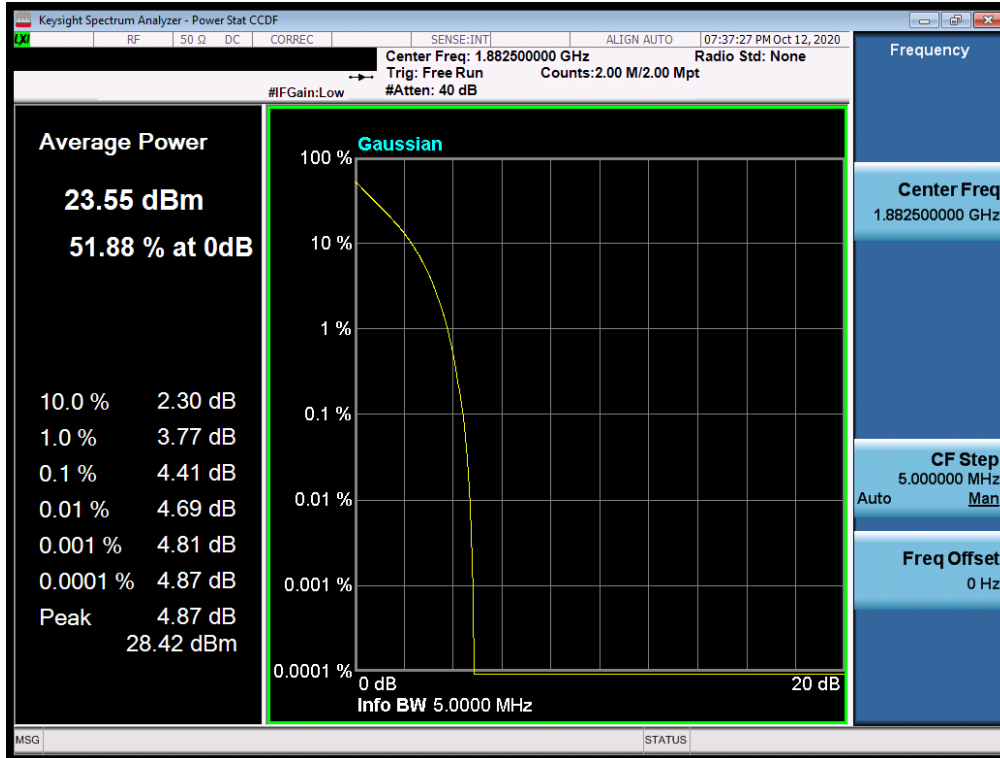


Plot 7-118. PAR Plot (LTE Band 25/2 - 3MHz 256-QAM - Full RB Configuration)

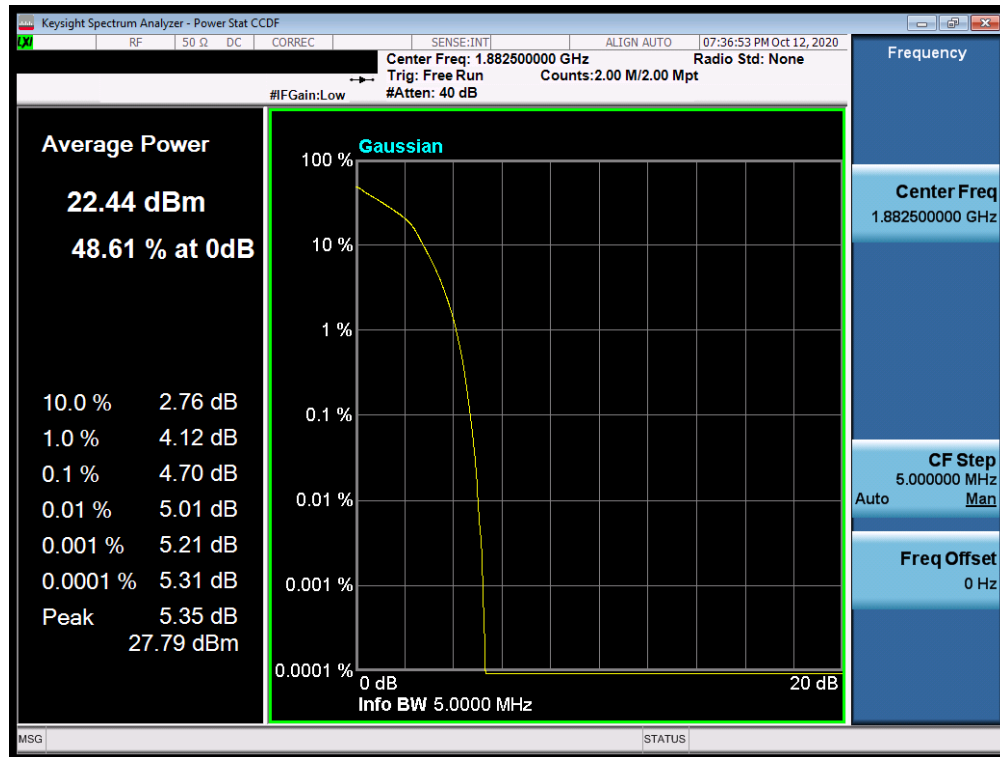
FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	SAMSUNG	Approved by: Technical Manager
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Plot 7-119. PAR Plot (LTE Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

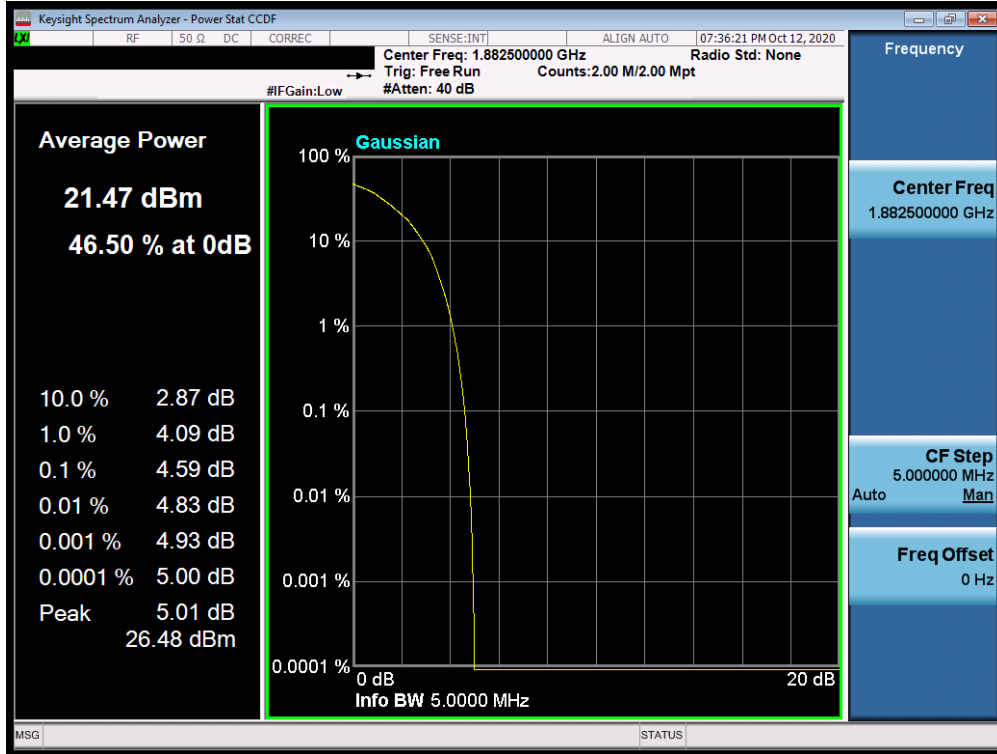


Plot 7-120. PAR Plot (LTE Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)

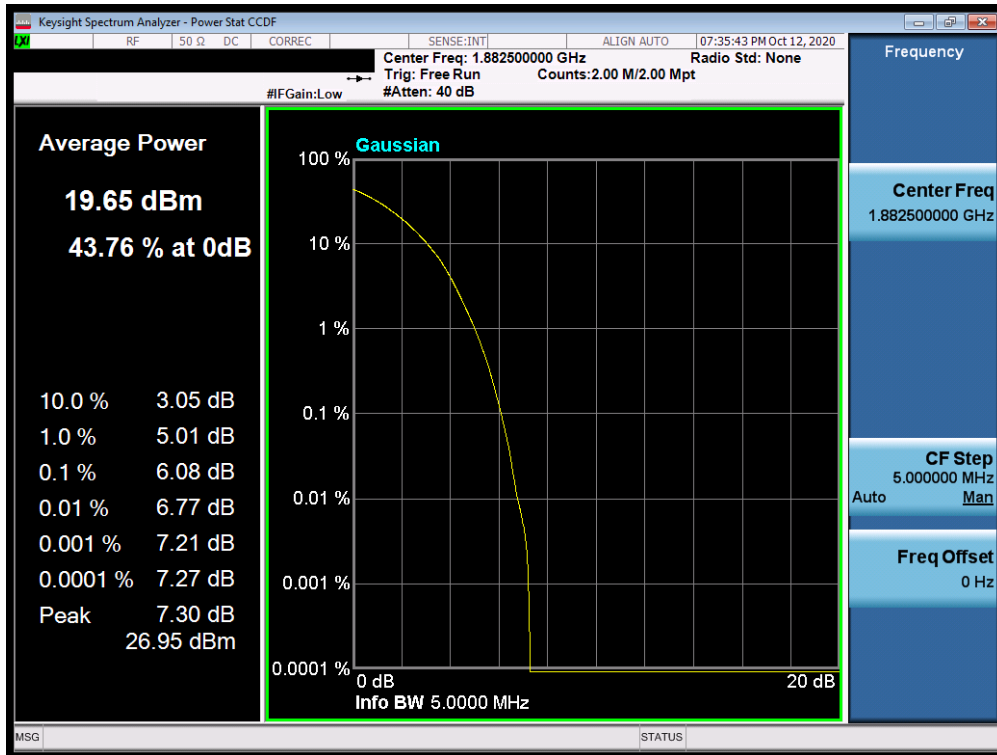
FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
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Plot 7-121. PAR Plot (LTE Band 25/2 - 1.4MHz 64-QAM - Full RB Configuration)



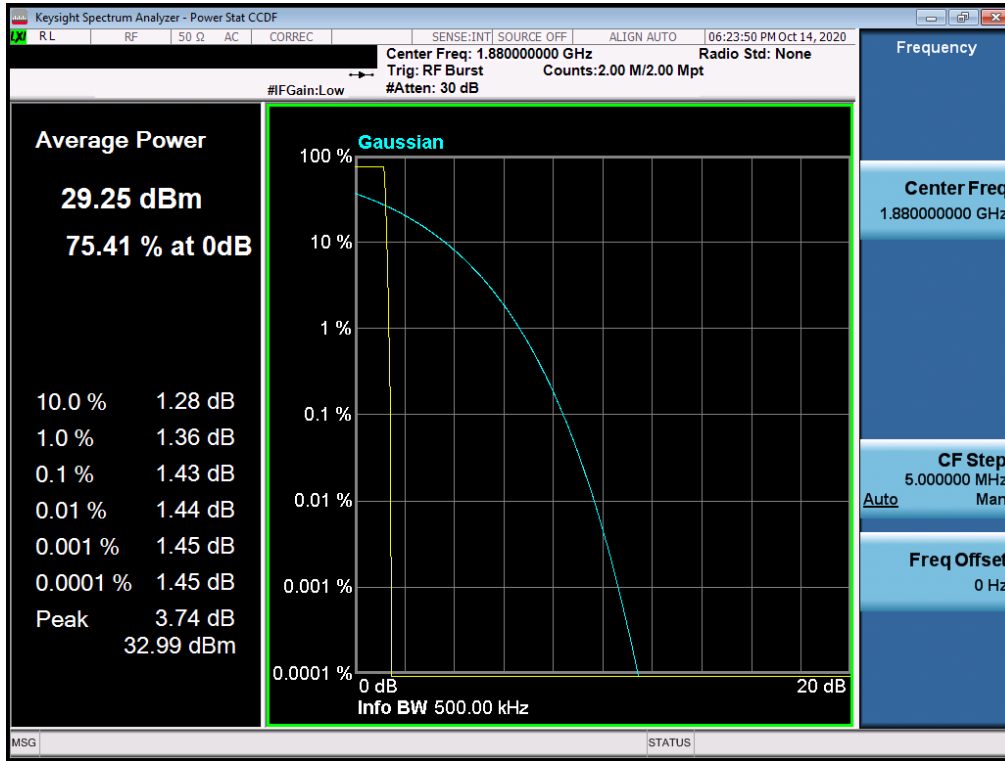
Plot 7-122. PAR Plot (LTE Band 25/2 - 1.4MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
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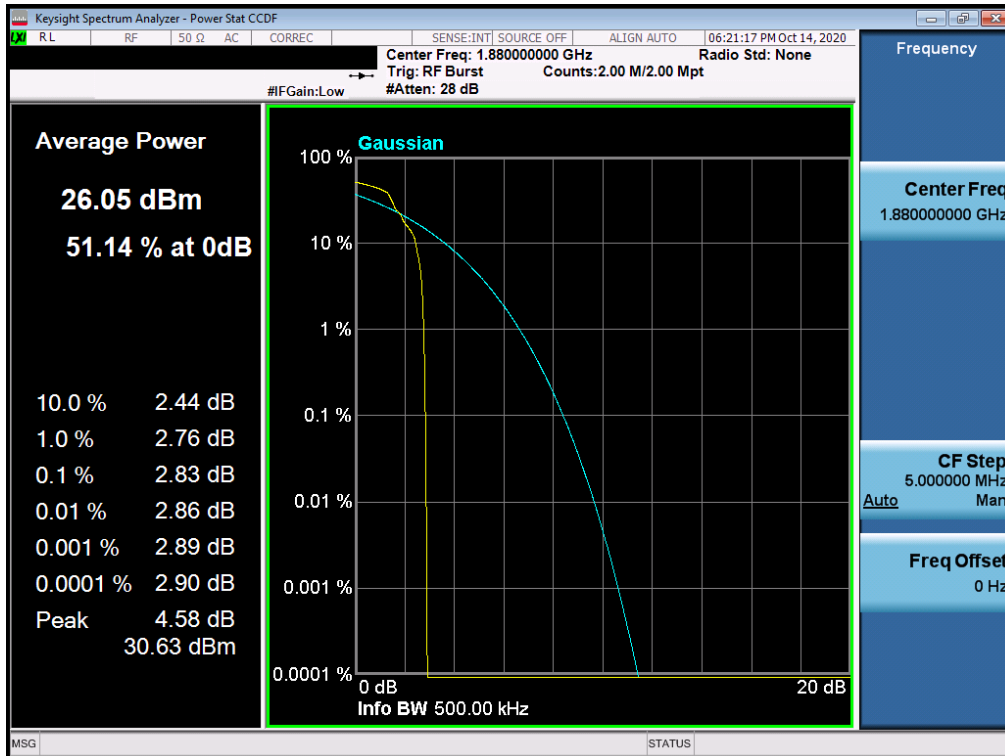
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GSM/GPRS PCS



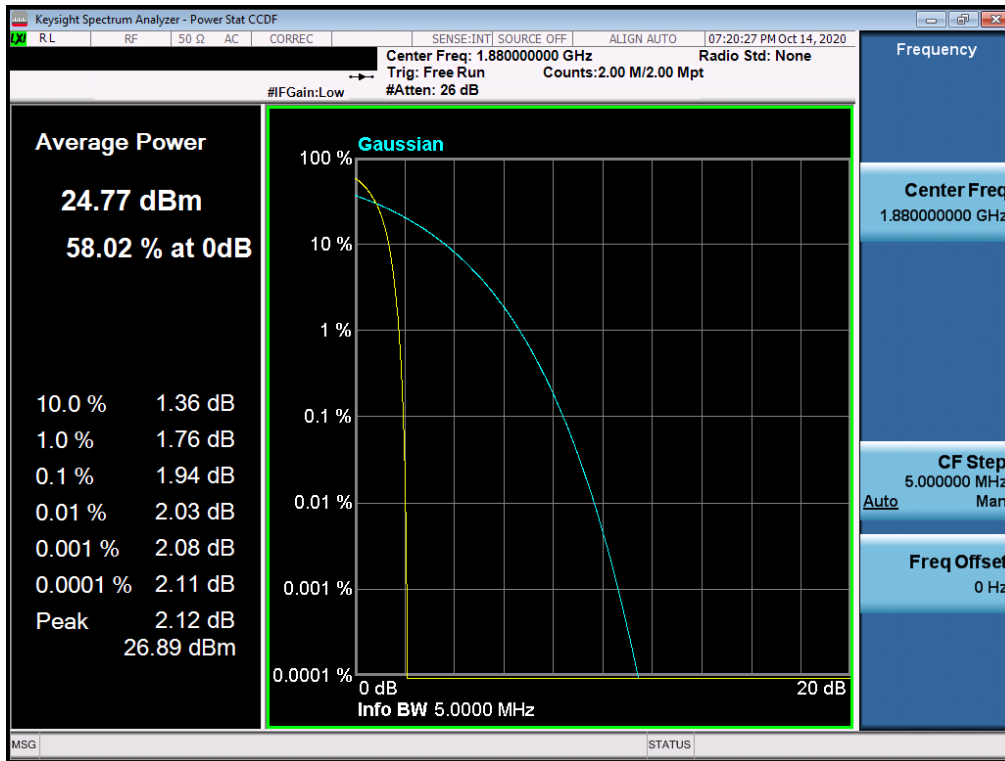
Plot 7-123. PAR Plot (GPRS, Ch. 661)



Plot 7-124. PAR Plot (EDGE, Ch. 661)

FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
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WCDMA PCS



Plot 7-125. PAR Plot (WCDMA, Ch. 9400)

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7.6 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. 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 \geq 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points \geq 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

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Test Setup

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

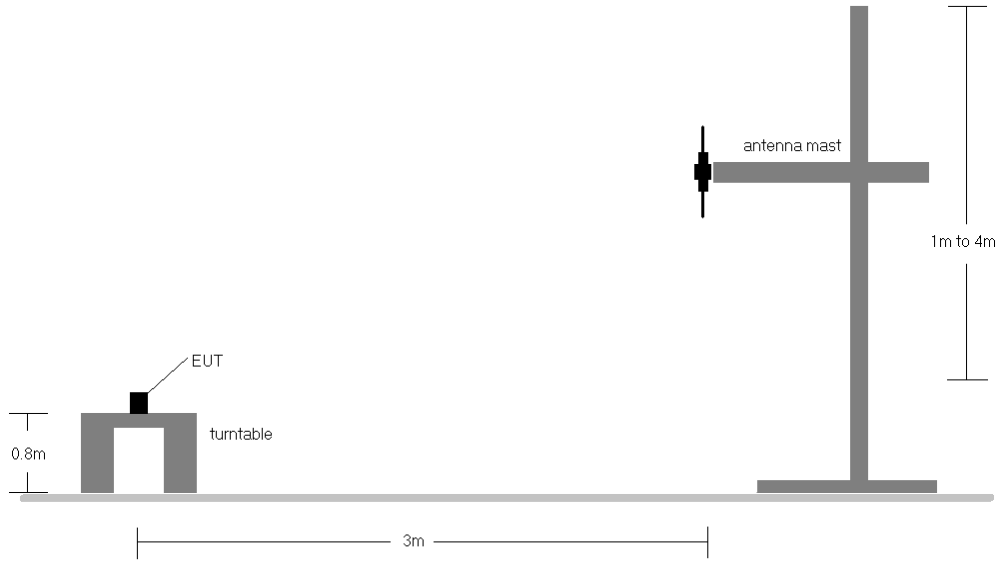


Figure 7-5. Radiated Test Setup <1GHz

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) 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.

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Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	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	Y	105.0	37.0	9.64	1 / 50	8.01	17.65	0.058	33.01	-15.36
		1882.5	V	Y	119.0	37.0	9.93	1 / 50	7.62	17.55	0.057	33.01	-15.46
		1905.0	V	Y	117.0	37.0	10.20	1 / 50	5.79	15.99	0.040	33.01	-17.02
	16-QAM	1860.0	V	Y	105.0	37.0	9.64	1 / 50	6.46	16.10	0.041	33.01	-16.91
		1882.5	V	Y	119.0	37.0	9.93	1 / 50	5.45	15.38	0.035	33.01	-17.63
256-QAM	1860.0	V	Y	105.0	37.0	9.64	1 / 50	2.91	12.55	0.018	33.01	-20.46	
15 MHz	QPSK	1857.5	V	Y	105.0	37.0	9.61	1/74	8.40	18.01	0.063	33.01	-15.00
		1882.5	V	Y	119.0	37.0	9.96	1/74	7.97	17.93	0.062	33.01	-15.08
		1907.5	V	Y	117.0	37.0	10.26	1/0	5.87	16.13	0.041	33.01	-16.88
	16-QAM	1857.5	V	Y	105.0	37.0	9.61	1/74	6.83	16.44	0.044	33.01	-16.57
	64-QAM	1882.5	V	Y	119.0	37.0	9.96	1/74	5.65	15.61	0.036	33.01	-17.40
256-QAM	1857.5	V	Y	105.0	37.0	9.61	1/74	3.24	12.85	0.019	33.01	-20.16	
10 MHz	QPSK	1855.0	V	Y	105.0	37.0	9.57	1/49	8.44	18.01	0.063	33.01	-15.00
		1882.5	V	Y	119.0	37.0	9.96	1/49	8.04	18.00	0.063	33.01	-15.01
		1910.0	V	Y	117.0	37.0	10.28	1/49	5.92	16.20	0.042	33.01	-16.81
	16-QAM	1855.0	V	Y	105.0	37.0	9.57	1/49	6.81	16.38	0.043	33.01	-16.63
	64-QAM	1882.5	V	Y	119.0	37.0	9.96	1/0	5.79	15.75	0.038	33.01	-17.26
256-QAM	1855.0	V	Y	105.0	37.0	9.57	1/49	3.28	12.85	0.019	33.01	-20.16	
5 MHz	QPSK	1852.5	V	Y	105.0	37.0	9.54	1/24	8.66	18.20	0.066	33.01	-14.81
		1882.5	V	Y	119.0	37.0	9.96	1/24	8.14	18.10	0.065	33.01	-14.91
		1912.5	V	Y	117.0	37.0	10.30	1/24	5.93	16.23	0.042	33.01	-16.78
	16-QAM	1852.5	V	Y	105.0	37.0	9.54	1/24	7.13	16.67	0.046	33.01	-16.34
	64-QAM	1882.5	V	Y	119.0	37.0	9.96	1/24	5.76	15.72	0.037	33.01	-17.29
256-QAM	1852.5	V	Y	105.0	37.0	9.54	1/24	3.45	12.99	0.020	33.01	-20.02	
3 MHz	QPSK	1851.5	V	Y	105.0	37.0	9.52	1/14	8.61	18.13	0.065	33.01	-14.88
		1882.5	V	Y	119.0	37.0	9.96	1/14	8.12	18.08	0.064	33.01	-14.93
		1913.5	V	Y	117.0	37.0	10.31	1/0	5.95	16.26	0.042	33.01	-16.75
	16-QAM	1851.5	V	Y	105.0	37.0	9.52	1/14	7.22	16.74	0.047	33.01	-16.27
	64-QAM	1882.5	V	Y	119.0	37.0	9.96	1/14	5.62	15.58	0.036	33.01	-17.43
256-QAM	1851.5	V	Y	105.0	37.0	9.52	1/14	3.47	12.99	0.020	33.01	-20.02	
1.4 MHz	QPSK	1850.7	V	Y	105.0	37.0	9.51	1/0	8.76	18.27	0.067	33.01	-14.74
		1882.5	V	Y	119.0	37.0	9.96	1/0	8.20	18.16	0.065	33.01	-14.85
		1914.3	V	Y	117.0	37.0	10.32	1/0	6.16	16.48	0.044	33.01	-16.53
	16-QAM	1850.7	V	Y	105.0	37.0	9.51	1/5	7.10	16.61	0.046	33.01	-16.40
	64-QAM	1882.5	V	Y	119.0	37.0	9.96	3/2	5.64	15.60	0.036	33.01	-17.41
256-QAM	1850.7	V	Y	105.0	37.0	9.51	1/5	3.52	13.03	0.020	33.01	-19.98	
Opposite Pol.	1860.0	H	Z	371.0	37.0	10.13	1 / 50	2.65	12.78	0.019	33.01	-20.23	
WCP	1860.0	V	WCP	142.0	128.0	10.13	1 / 50	4.18	14.31	0.027	33.01	-18.70	



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

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.20	GPRS1900	V	136	206	14.49	9.90	24.39	0.275	33.01	-8.62
1880.00	GPRS1900	V	122	202	16.35	10.13	26.48	0.445	33.01	-6.53
1909.80	GPRS1900	V	122	216	14.92	10.34	25.26	0.336	33.01	-7.75
1880.00	GPRS1900	H	102	202	14.78	10.13	24.91	0.310	33.01	-8.10
1880.00	EDGE1900	V	122	202	12.69	10.13	22.82	0.192	33.01	-10.19
1880.00	GPRS1900 (WCP)	H	103	216	12.43	10.13	22.56	0.180	33.01	-10.45

Table 7-3. EIRP Data (GPRS PCS)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1852.40	WCDMA1900	H	104	4	9.24	9.54	18.78	0.075	33.01	-14.23
1880.00	WCDMA1900	H	104	16	9.01	9.93	18.94	0.078	33.01	-14.07
1907.60	WCDMA1900	H	101	9	8.59	10.26	18.85	0.077	33.01	-14.16
1880.00	WCDMA1900	V	109	342	9.15	9.93	19.08	0.081	33.01	-13.93
1880.00	WCDMA1900 (WCP)	H	150	212	8.33	9.93	18.26	0.067	33.01	-14.75

Table 7-4. EIRP Data (WCDMA PCS)

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7.7 Radiated Spurious Emissions Measurements

Test Overview



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

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

Test Settings

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

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Test Setup

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

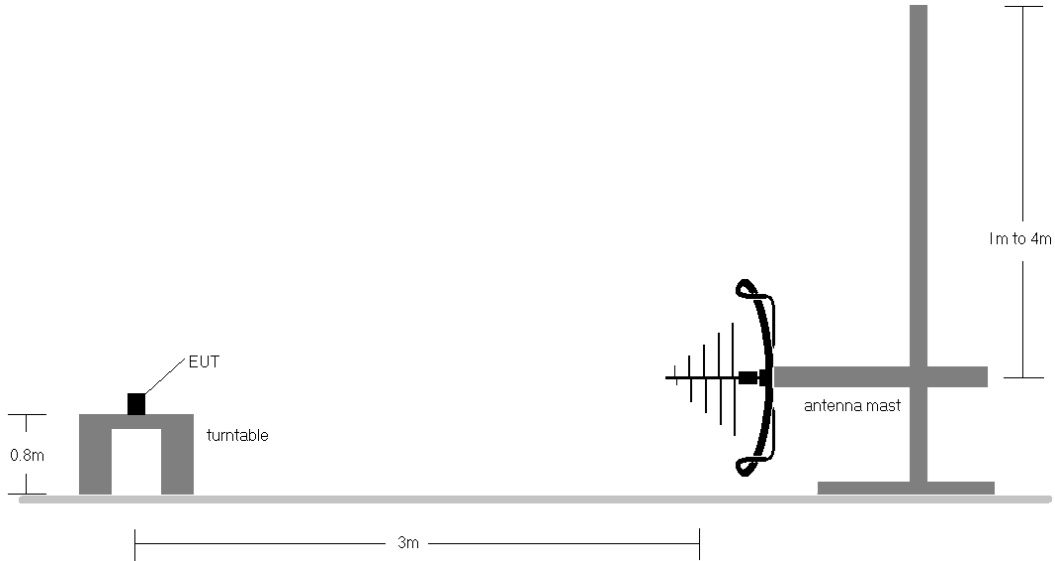


Figure 7-6. Test Instrument & Measurement Setup < 1GHz

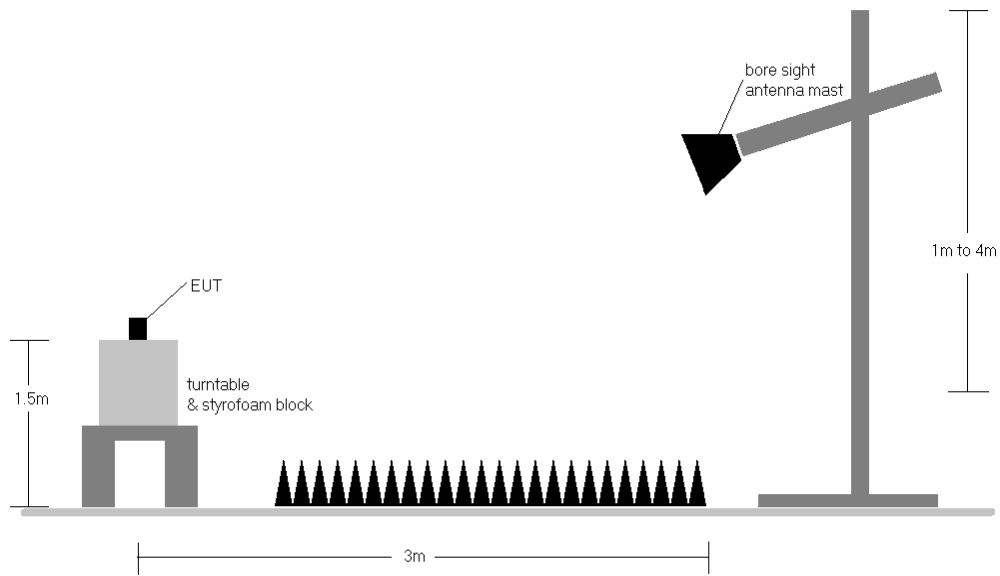




Figure 7-7. Test Instrument & Measurement Setup >1 GHz

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Test Notes

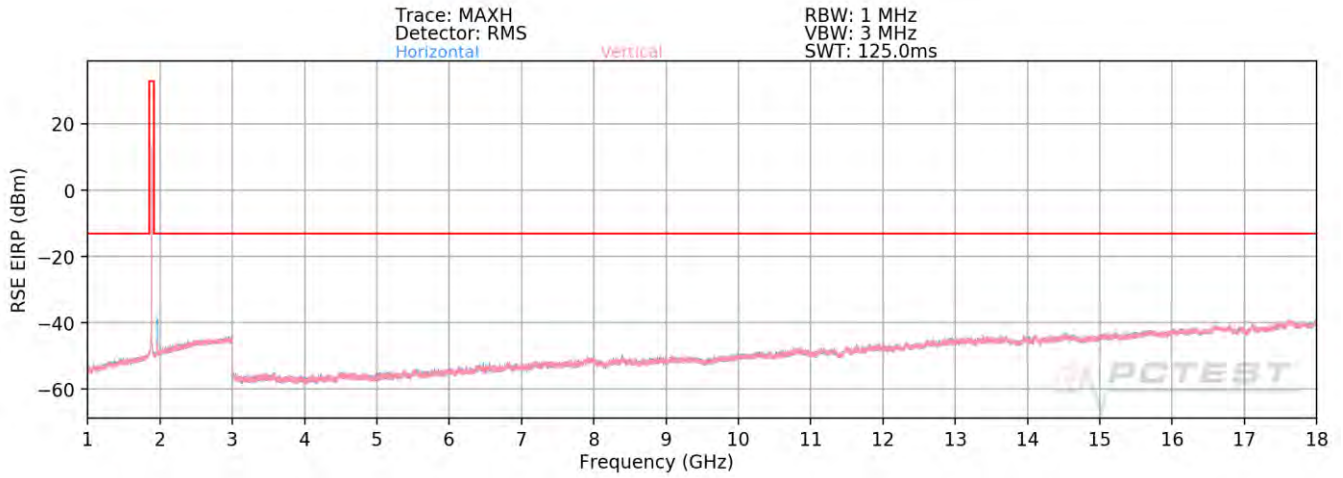
- 1) Field strengths are calculated using the Measurement quantity conversions in KDB 971168 Section 5.8.4.
 - b) $E(\text{dB}\mu\text{V}/\text{m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
 - d) $\text{EIRP (dBm)} = E(\text{dB}\mu\text{V}/\text{m}) + 20\log D - 104.8$; where D is the measurement distance in meters.
- 2) 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.
- 3) 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".
- 4) 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.
- 5) This unit was tested with its standard battery.
- 6) 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.
- 7) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 8) 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.
- 9) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

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LTE Band 25/2



Plot 7-126. Radiated Spurious Plot (LTE Band 25/2)

Bandwidth (MHz):	20
Frequency (MHz):	1860.0
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]
3720.0	V	-	-	-79.06	5.54	33.48	-61.78	-13.00	-48.78
5580.0	V	-	-	-79.41	7.96	35.55	-59.71	-13.00	-46.71
7440.0	V	-	-	-81.04	12.53	38.49	-56.76	-13.00	-43.76

Table 7-5. Radiated Spurious Data (LTE Band 25/2 – Low Channel)

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Bandwidth (MHz):	20
Frequency (MHz):	1882.5
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]
3765.0	V	-	-	-79.53	6.48	33.95	-61.31	-13.00	-48.31
5647.5	V	-	-	-80.27	8.28	35.01	-60.25	-13.00	-47.25
7530.0	V	-	-	-80.95	12.13	38.18	-57.08	-13.00	-44.08

Table 7-6. Radiated Spurious Data (LTE Band 25/2 – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	1905.0
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]
3810.00	V	-	-	-79.17	6.33	34.16	-61.10	-13.00	-48.10
5715.00	V	-	-	-79.84	8.32	35.48	-59.78	-13.00	-46.78
7620.00	V	-	-	-80.93	12.47	38.54	-56.72	-13.00	-43.72

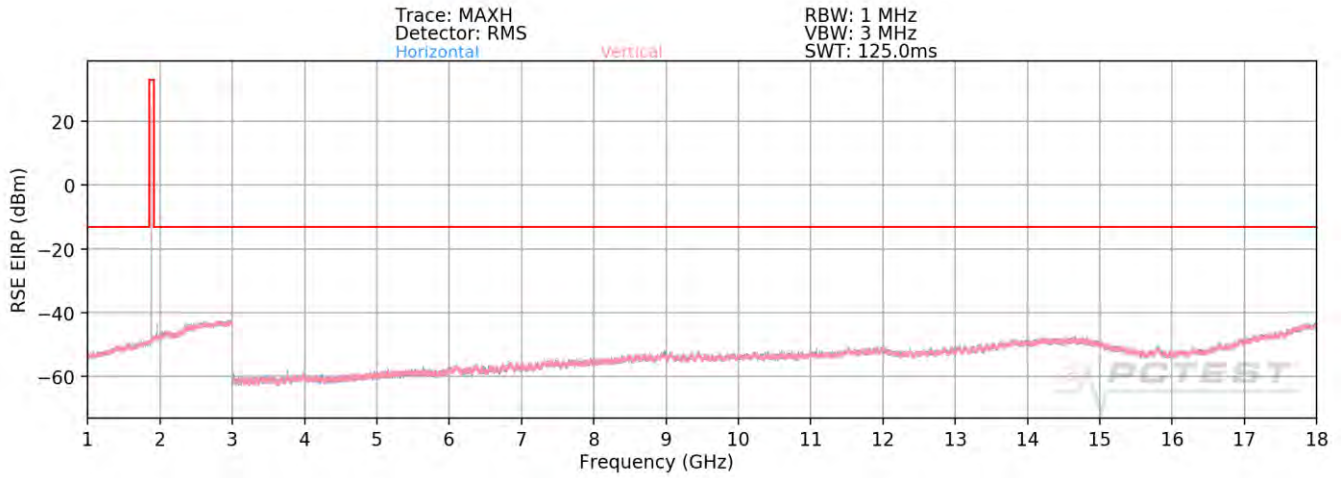
Table 7-7. Radiated Spurious Data (LTE Band 25/2 – High Channel)

FCC ID: A3LSMG998B	 PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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GSM/GPRS PCS



Plot 7-127. Radiated Spurious Plot (GPRS PCS)

Mode:	GPRS 1 Tx Slot
Channel:	512
Frequency (MHz):	1850.2

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]
3700.4	H	176	1	-73.09	2.50	36.41	-58.85	-13.00	-45.85
5550.6	H	223	307	-76.33	4.75	35.42	-59.84	-13.00	-46.84
7400.8	H	116	352	-77.05	8.61	38.56	-56.70	-13.00	-43.70
9251.0	H	-	-	-77.40	10.94	40.54	-54.72	-13.00	-41.72
11101.2	H	-	-	-78.93	12.25	40.32	-54.94	-13.00	-41.94
12951.4	H	-	-	-80.11	14.14	41.03	-54.23	-13.00	-41.23

Table 7-8. Radiated Spurious Data (GPRS PCS – Low Channel)

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Mode:	GPRS 1 Tx Slot
Channel:	661
Frequency (MHz):	1880



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]
3760.0	H	219	320	-65.92	2.64	43.72	-51.54	-13.00	-38.54
5640.0	H	275	43	-70.03	5.07	42.04	-53.22	-13.00	-40.22
7520.0	H	118	340	-75.38	8.86	40.48	-54.78	-13.00	-41.78
9400.0	H	-	-	-79.15	11.77	39.62	-55.64	-13.00	-42.64
11280.0	H	-	-	-78.79	12.27	40.48	-54.77	-13.00	-41.77
13160.0	H	-	-	-80.40	14.52	41.12	-54.14	-13.00	-41.14

Table 7-9. Radiated Spurious Data (GPRS PCS – Mid Channel)

Mode:	GPRS 1 Tx Slot
Channel:	810
Frequency (MHz):	1909.8

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]
3819.6	H	254	310	-65.62	2.39	43.77	-51.49	-13.00	-38.49
5729.4	H	179	292	-72.68	4.69	39.01	-56.25	-13.00	-43.25
7639.2	H	7	341	-73.47	9.22	42.75	-52.51	-13.00	-39.51
9549.0	H	-	-	-71.28	11.51	47.23	-48.03	-13.00	-35.03
11458.8	H	-	-	-78.81	13.01	41.20	-54.06	-13.00	-41.06
13368.6	H	-	-	-80.52	14.68	41.16	-54.10	-13.00	-41.10

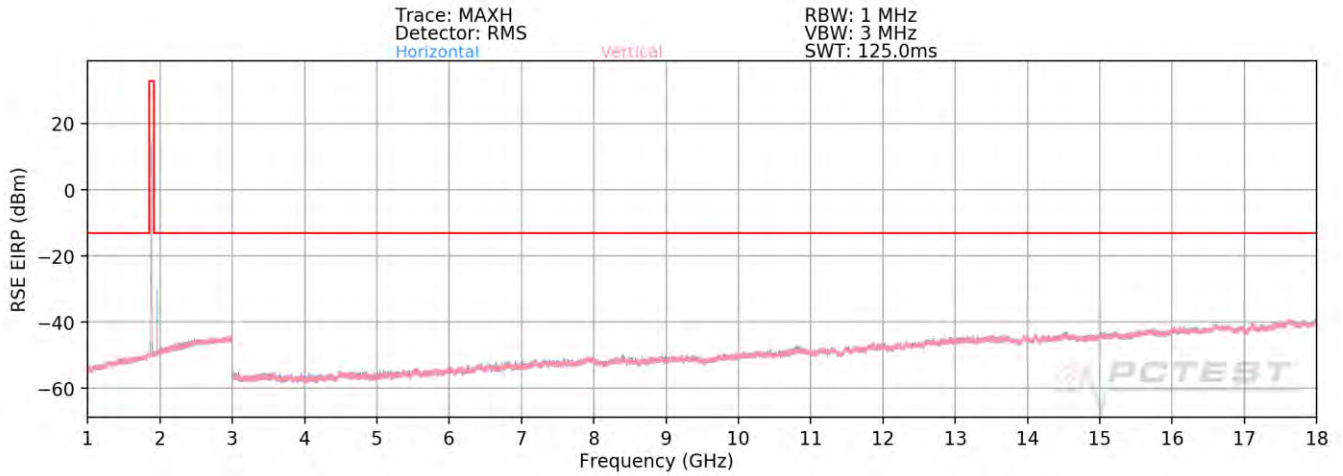
Table 7-10. Radiated Spurious Data (GPRS PCS – High Channel)

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WCDMA PCS



Plot 7-128. Radiated Spurious Plot (WCDMA PCS)

Mode:	WCDMA RMC
Channel:	9262
Frequency (MHz):	1852.4

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]
3704.8	V	-	-	-79.02	5.35	33.33	-61.93	-13.00	-48.93
5557.2	V	-	-	-79.65	8.58	35.93	-59.32	-13.00	-46.32
7409.6	V	-	-	-80.89	12.34	38.45	-56.81	-13.00	-43.81

Table 7-11. Radiated Spurious Data (WCDMA PCS – Low Channel)

FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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Mode:	WCDMA RMC
Channel:	9400
Frequency (MHz):	1880



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]
3760.0	V	-	-	-79.59	6.37	33.78	-61.48	-13.00	-48.48
5640.0	V	-	-	-80.23	8.38	35.15	-60.11	-13.00	-47.11
7520.0	V	-	-	-80.80	12.20	38.40	-56.86	-13.00	-43.86

Table 7-12. Radiated Spurious Data (WCDMA PCS – Mid Channel)

Mode:	WCDMA RMC
Channel:	9538
Frequency (MHz):	1907.6

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]
3815.2	V	-	-	-79.19	6.23	34.04	-61.22	-13.00	-48.22
5722.8	V	-	-	-80.33	8.25	34.92	-60.34	-13.00	-47.34
7630.4	V	-	-	-81.01	12.24	38.23	-57.02	-13.00	-44.02

Table 7-13. Radiated Spurious Data (WCDMA PCS – High Channel)

FCC ID: A3LSMG998B	 PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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7.8 Frequency Stability / Temperature Variation

Test Overview and Limit

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

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

Test Procedure Used

ANSI/TIA-603-E-2016

Test Settings



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

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

None

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LTE Band 25/2

LTE Band 25/2					
Operating Frequency (Hz):		1,882,500,000			
Ref. Voltage (VDC):		4.37			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.37	- 30	1,882,500,044	44	0.0000023
		- 20	1,882,499,996	-4	-0.0000002
		- 10	1,882,500,055	55	0.0000029
		0	1,882,500,089	89	0.0000047
		+ 10	1,882,499,895	-105	-0.0000056
		+ 20 (Ref)	1,882,499,955	-45	-0.0000024
		+ 30	1,882,499,767	-233	-0.0000124
		+ 40	1,882,500,052	52	0.0000028
Battery Endpoint	3.35	+ 20	1,882,499,866	-134	-0.0000071

Table 7-9. LTE Band 25/2 Frequency Stability Data

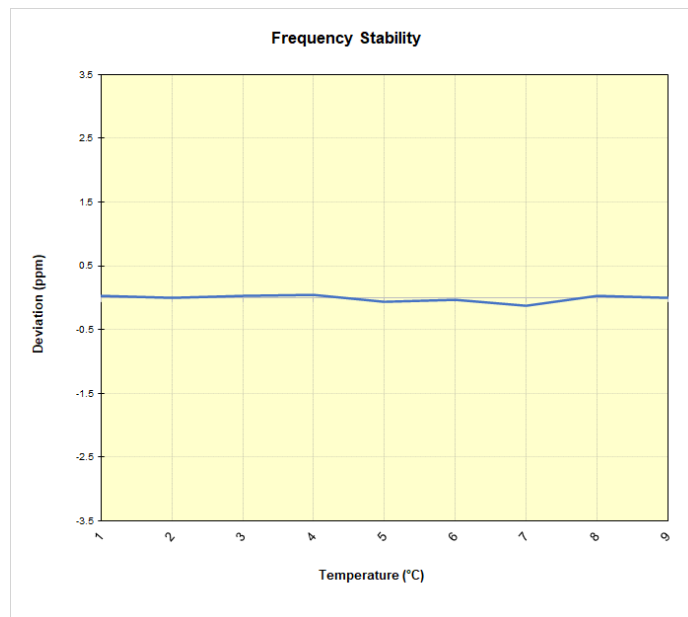


Table 7-9. LTE Band 25/2 Frequency Stability Chart

FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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GSM/GPRS PCS

GSM/GPRS PCS					
Operating Frequency (Hz):		1,880,000,000			
Ref. Voltage (VDC):		4.37			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.37	- 30	1,879,999,982	-18	-0.0000010
		- 20	1,880,000,042	42	0.0000022
		- 10	1,880,000,014	14	0.0000007
		0	1,879,999,946	-54	-0.0000029
		+ 10	1,879,999,833	-167	-0.0000089
		+ 20 (Ref)	1,879,999,653	-347	-0.0000185
		+ 30	1,880,000,217	217	0.0000115
		+ 40	1,880,000,137	137	0.0000073
Battery Endpoint	3.35	+ 20	1,880,000,173	173	0.0000092

Table 7-9. GSM/GPRS PCS Frequency Stability Data

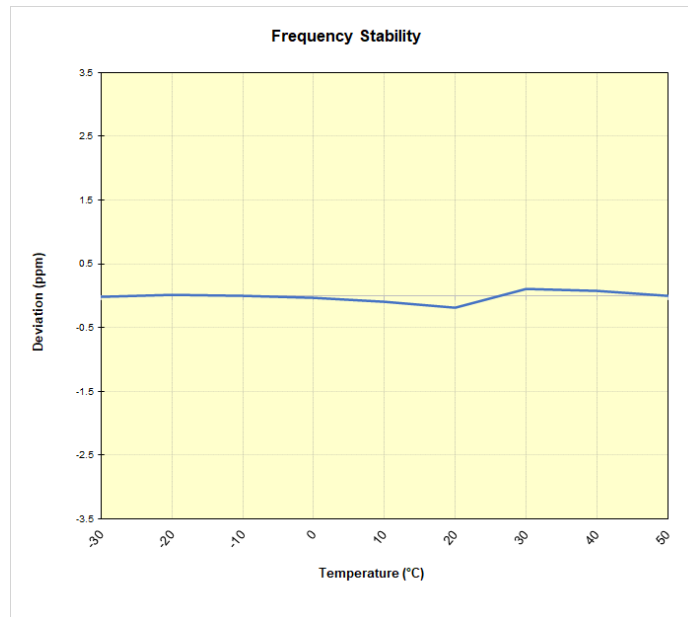


Table 7-9. GSM/GPRS PCS Frequency Stability Chart

FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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WCDMA PCS

WCDMA PCS					
Operating Frequency (Hz):		1,880,000,000			
Ref. Voltage (VDC):		4.37			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.37	- 30	1,880,000,172	172	0.0000091
		- 20	1,879,999,831	-169	-0.0000090
		- 10	1,879,999,988	-12	-0.0000006
		0	1,879,999,793	-207	-0.0000110
		+ 10	1,880,000,135	135	0.0000072
		+ 20 (Ref)	1,879,999,974	-26	-0.0000014
		+ 30	1,879,999,746	-254	-0.0000135
		+ 40	1,879,999,989	-11	-0.0000006
Battery Endpoint	3.35	+ 20	1,879,999,586	-414	-0.0000220

Table 7-9. WCDMA PCS Frequency Stability Data

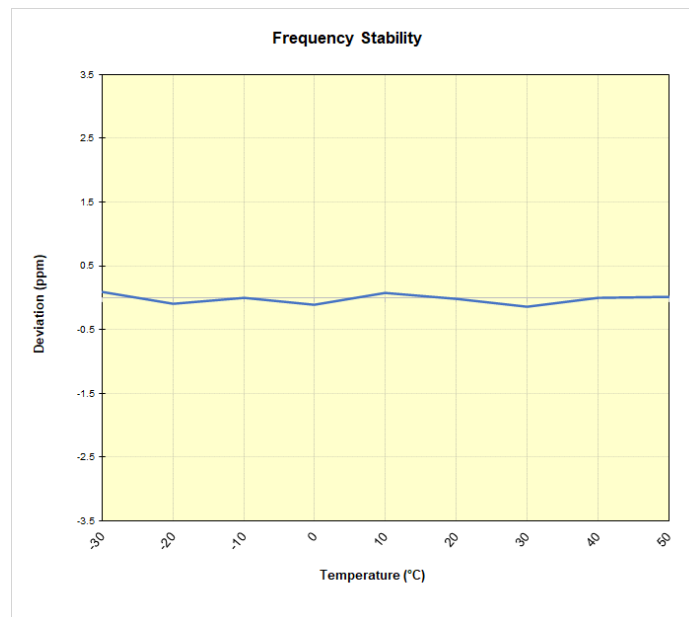


Table 7-9. WCDMA PCS Frequency Stability Chart



FCC ID: A3LSMG998B	PCTEST Proud to be part of element	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2009280154-20.A3L	Test Dates: 9/28/2020 - 11/20/2020	EUT Type: Portable Handset		Page 97 of 98

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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the Samsung **Portable Handset** **FCC ID: A3LSMG998B** complies with all the requirements of Part 24 of the FCC rules.

FCC ID: A3LSMG998B	 PART 24 MEASUREMENT REPORT 		Approved by: Technical Manager
Test Report S/N: 1M2009280154-20.A3L	Test Dates: 9/28/2020 - 11/20/2020	EUT Type: Portable Handset	Page 98 of 98