

7.5 Peak-Average Ratio

§24.232(d)

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 v02r02 – Section 5.7.1

Test Settings

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW > Emission bandwidth of signal
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.

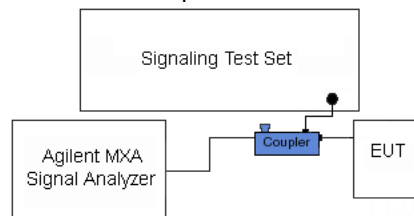
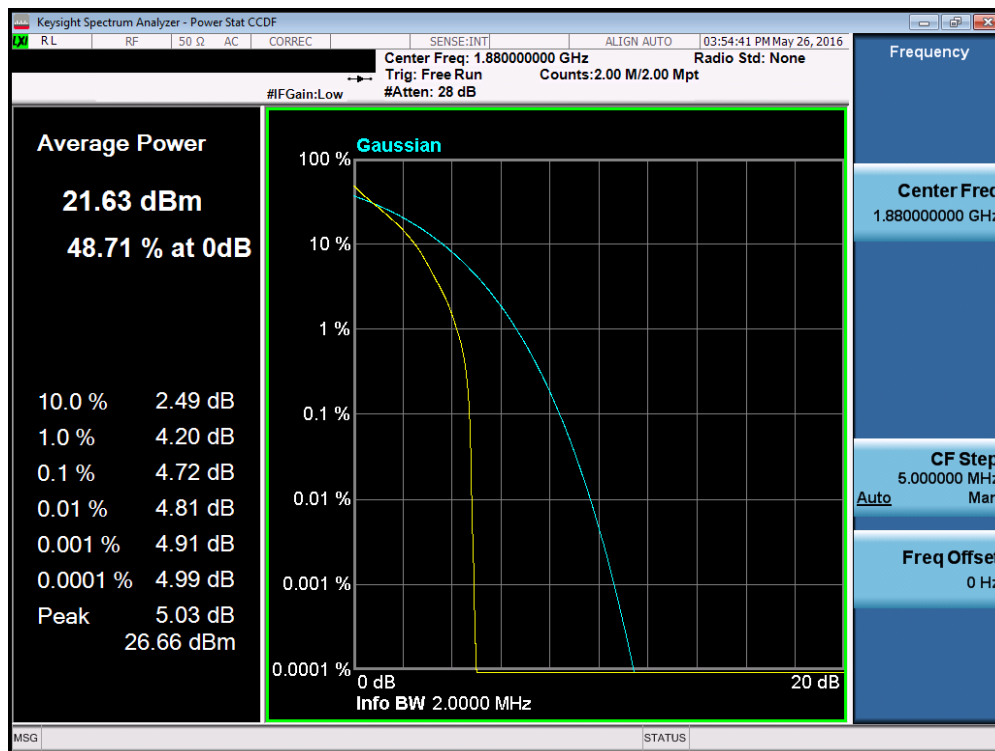


Figure 7-4. Test Instrument & Measurement Setup

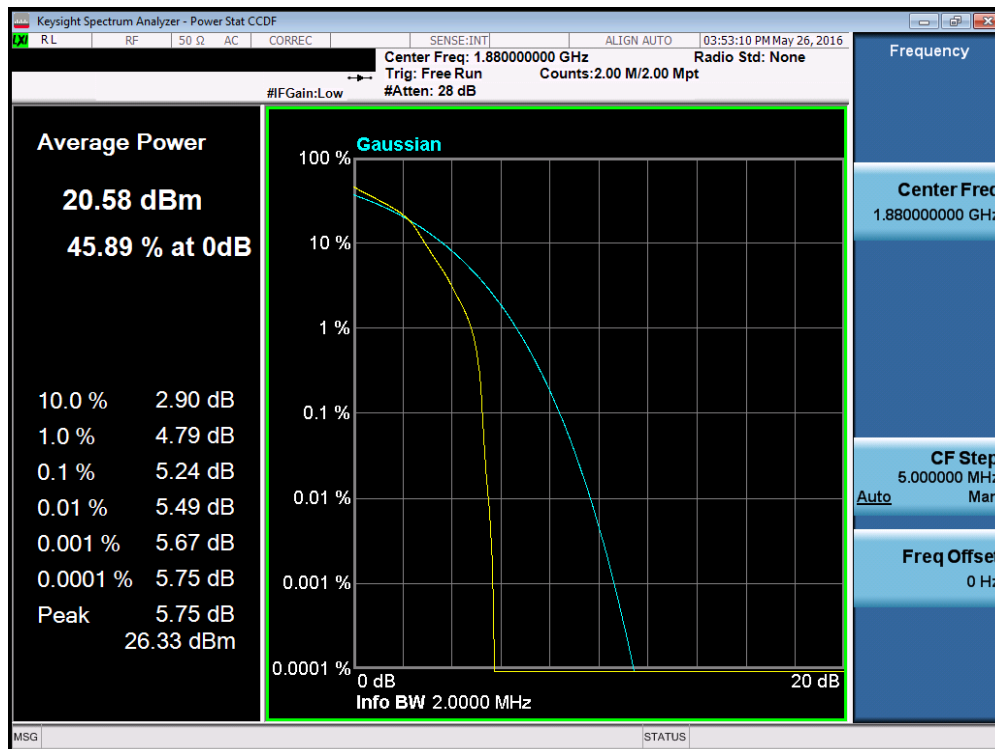
Test Notes

None.

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 154 of 213

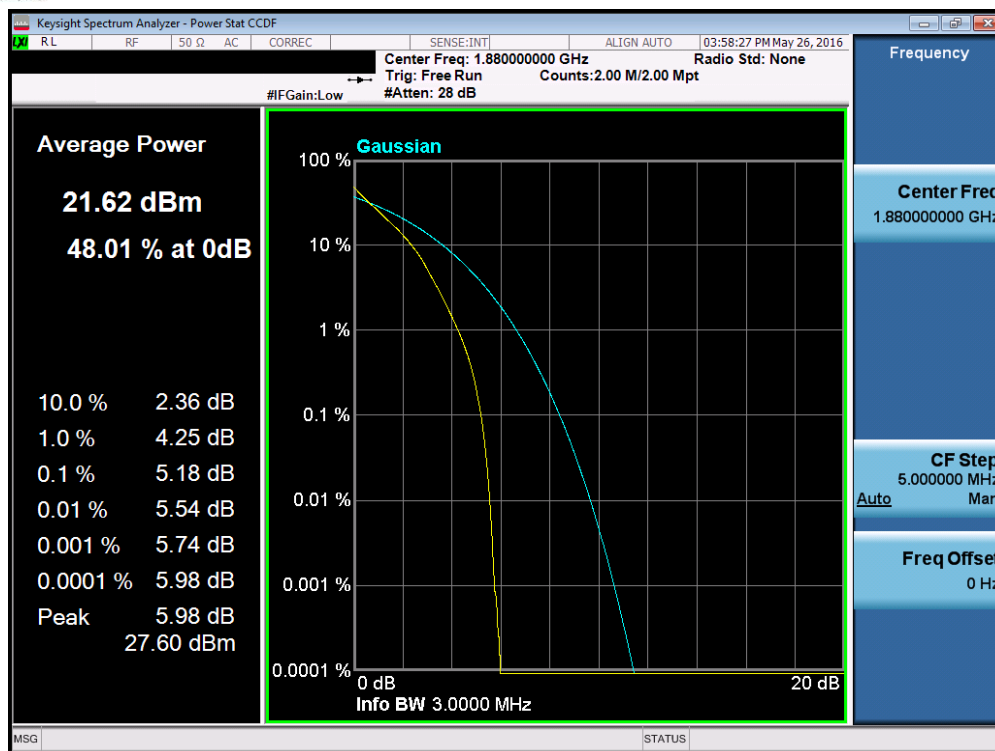


Plot 7-272. PAR Plot (Band 2 – 1.4MHz QPSK – RB Size 6)

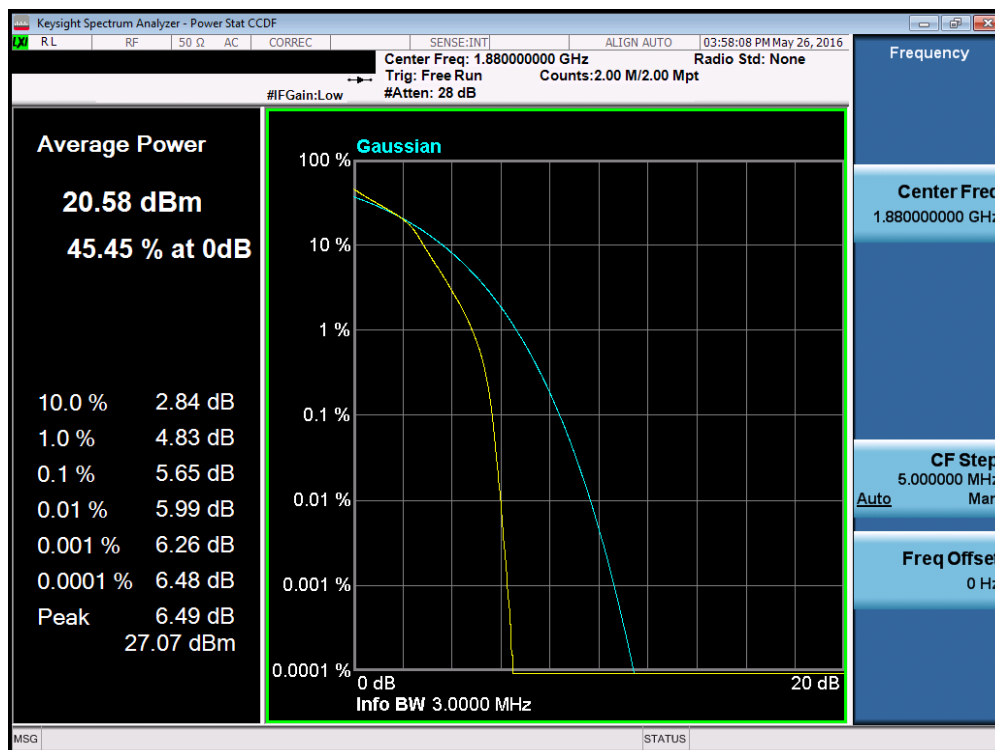


Plot 7-273. PAR Plot (Band 2 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 155 of 213

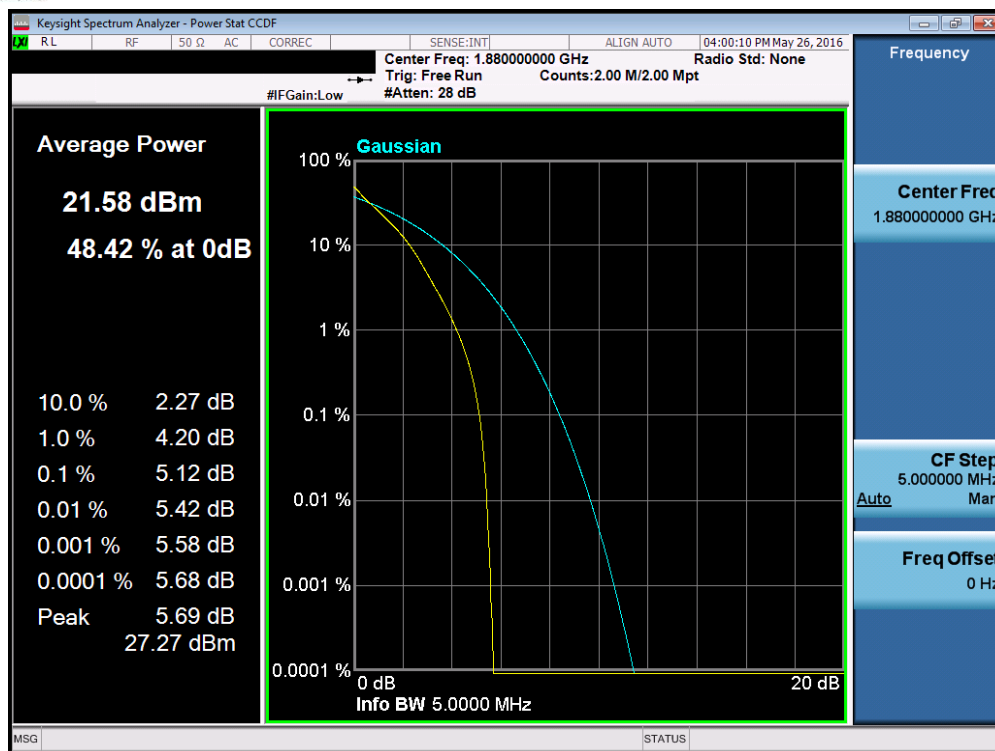


Plot 7-274. PAR Plot (Band 2 – 3.0MHz QPSK – RB Size 15)

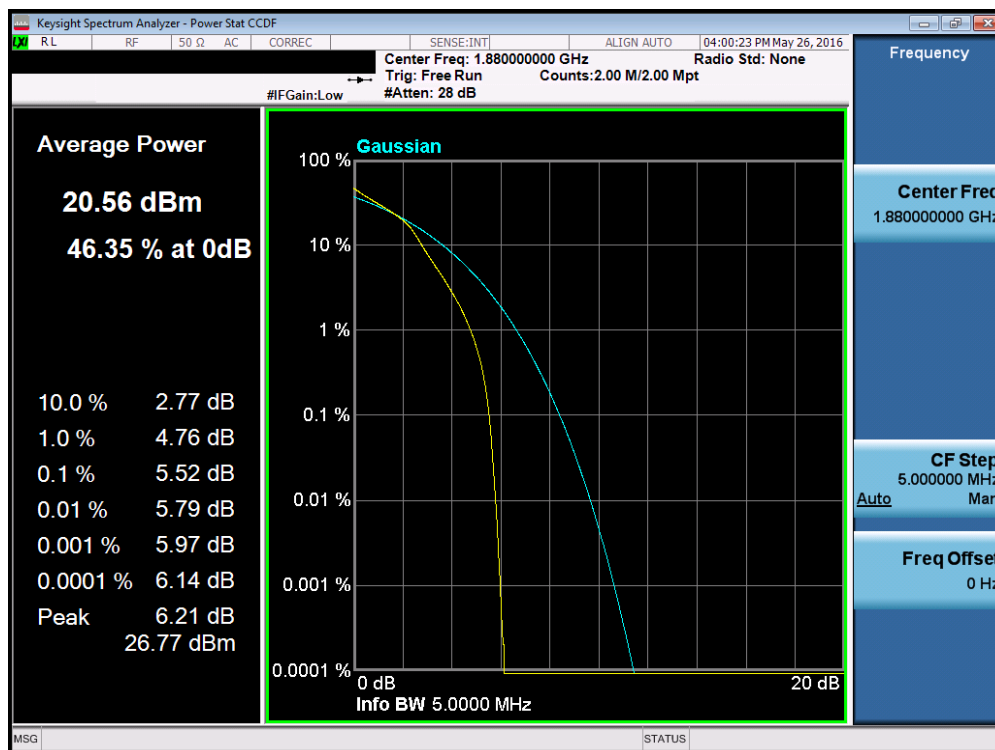


Plot 7-275. PAR Plot (Band 2 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 156 of 213

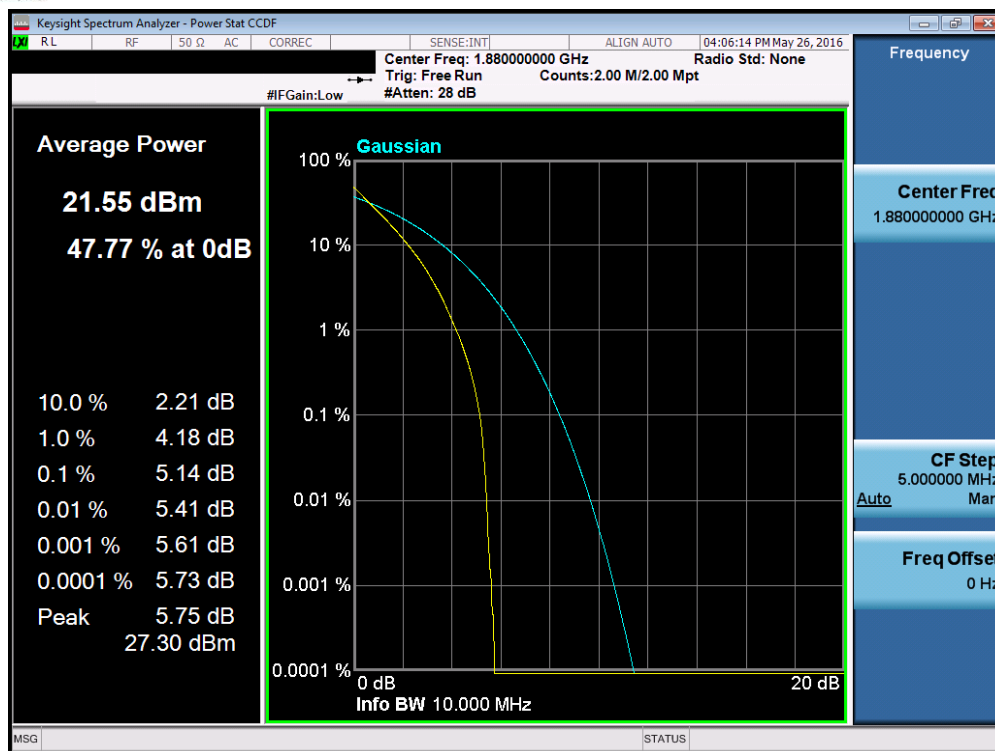


Plot 7-276. PAR Plot (Band 2 – 5.0MHz QPSK – RB Size 25)

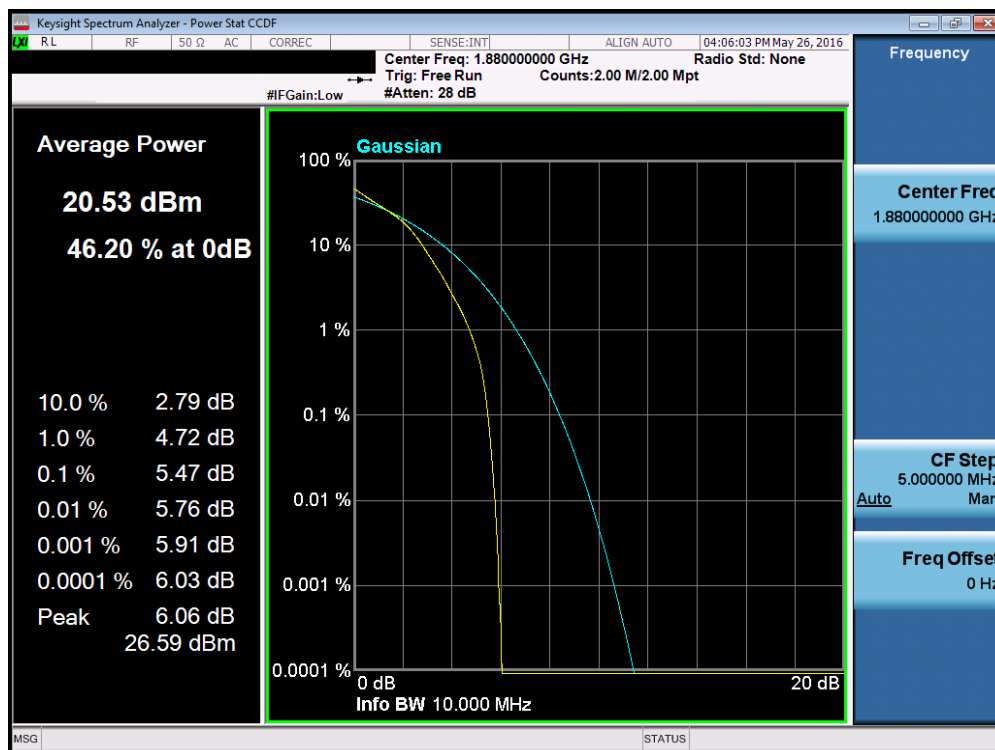


Plot 7-277. PAR Plot (Band 2 – 5.0MHz 16-QAM – RB Size 25)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 157 of 213

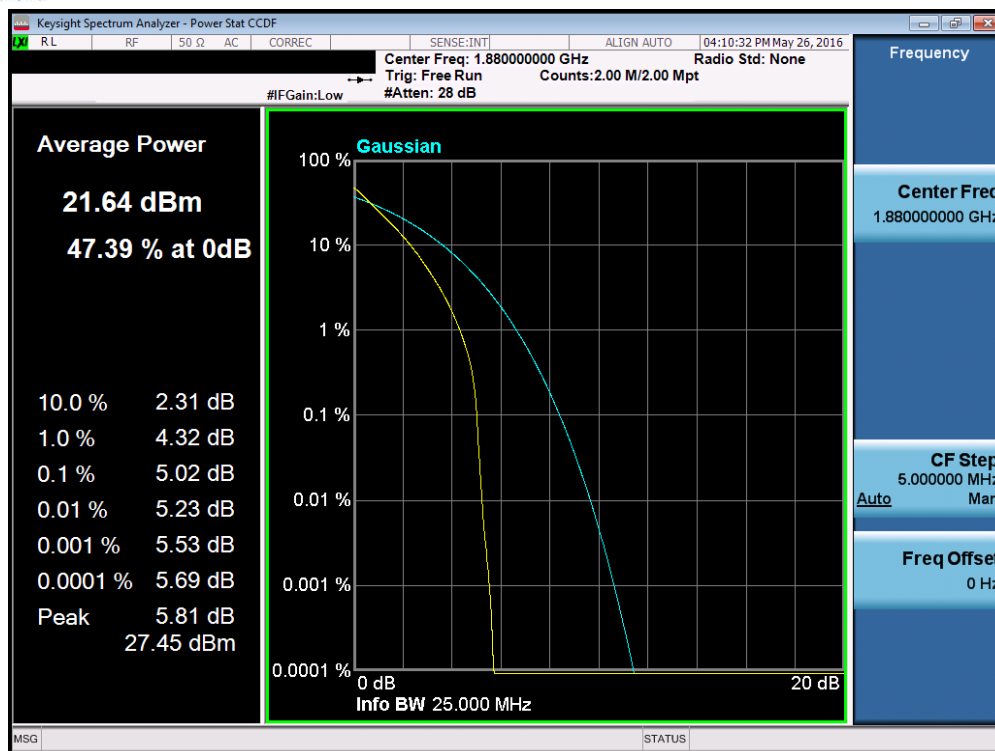


Plot 7-278. PAR Plot (Band 2 – 10.0MHz QPSK – RB Size 50)

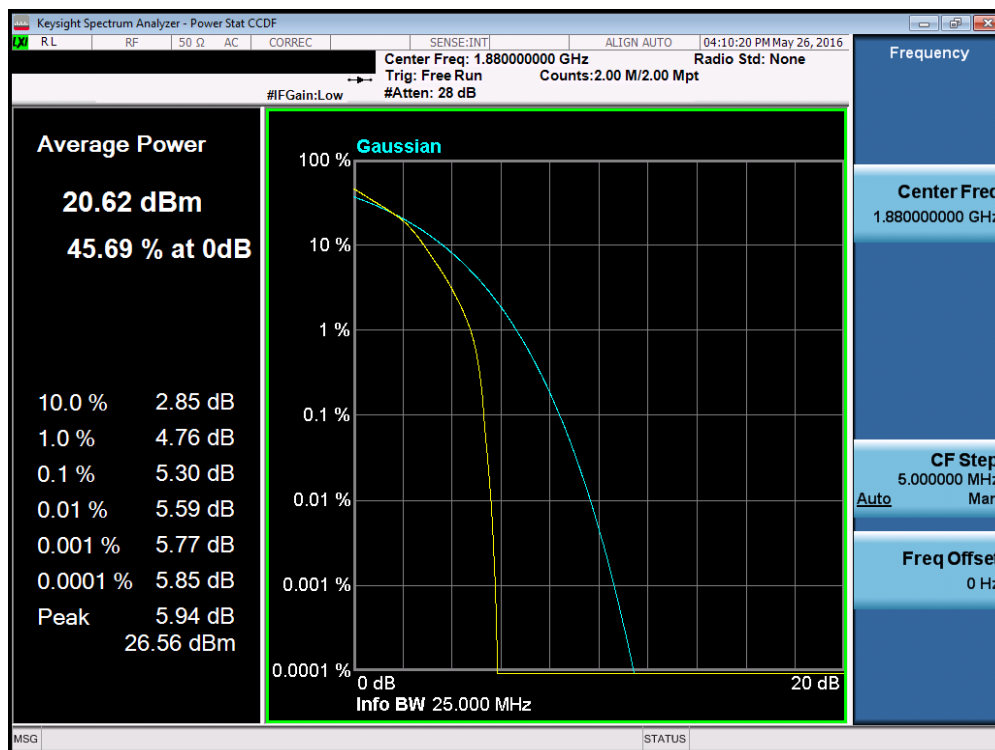


Plot 7-279. PAR Plot (Band 2 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 158 of 213

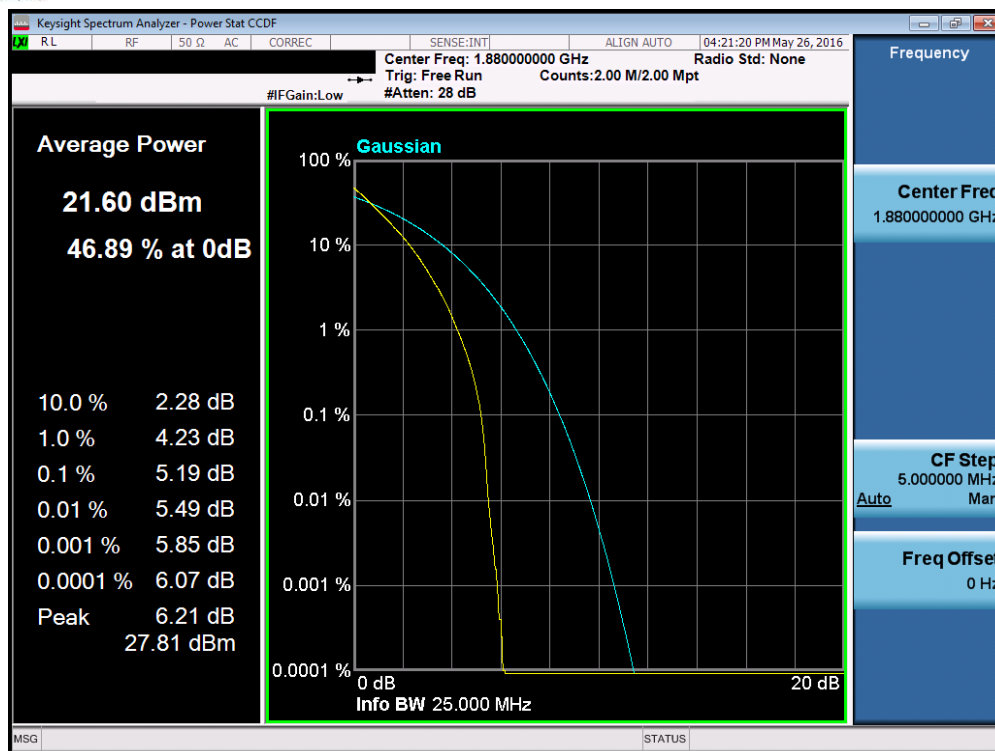


Plot 7-280. PAR Plot (Band 2 – 15.0MHz QPSK – RB Size 75)

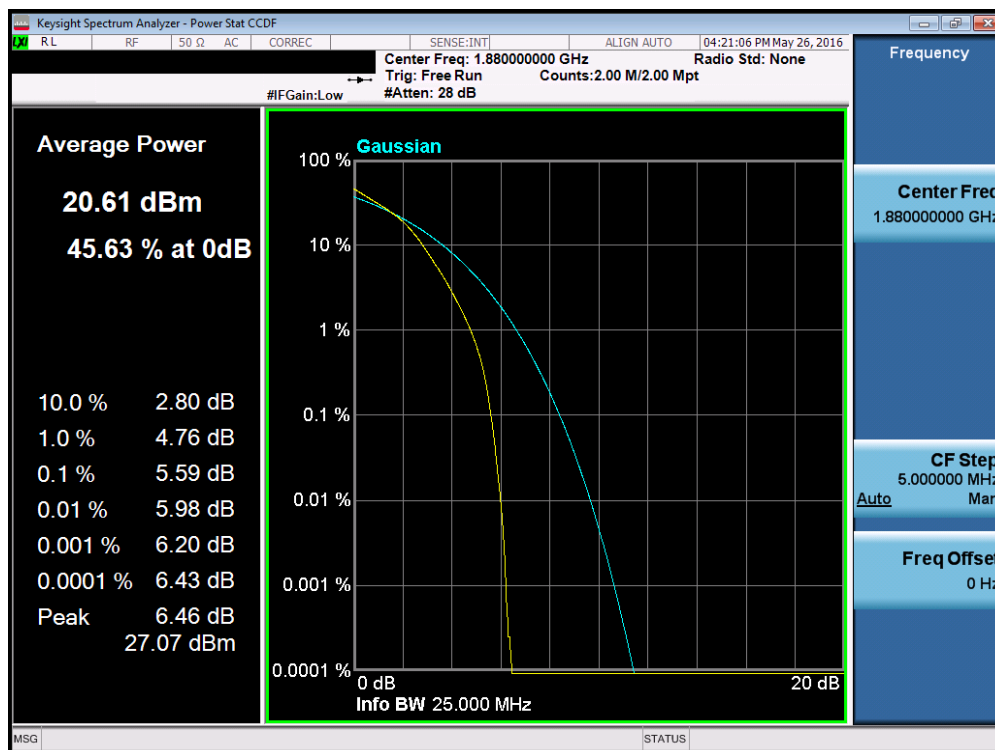


Plot 7-281. PAR Plot (Band 2 – 15.0MHz 16-QAM – RB Size 75)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 159 of 213

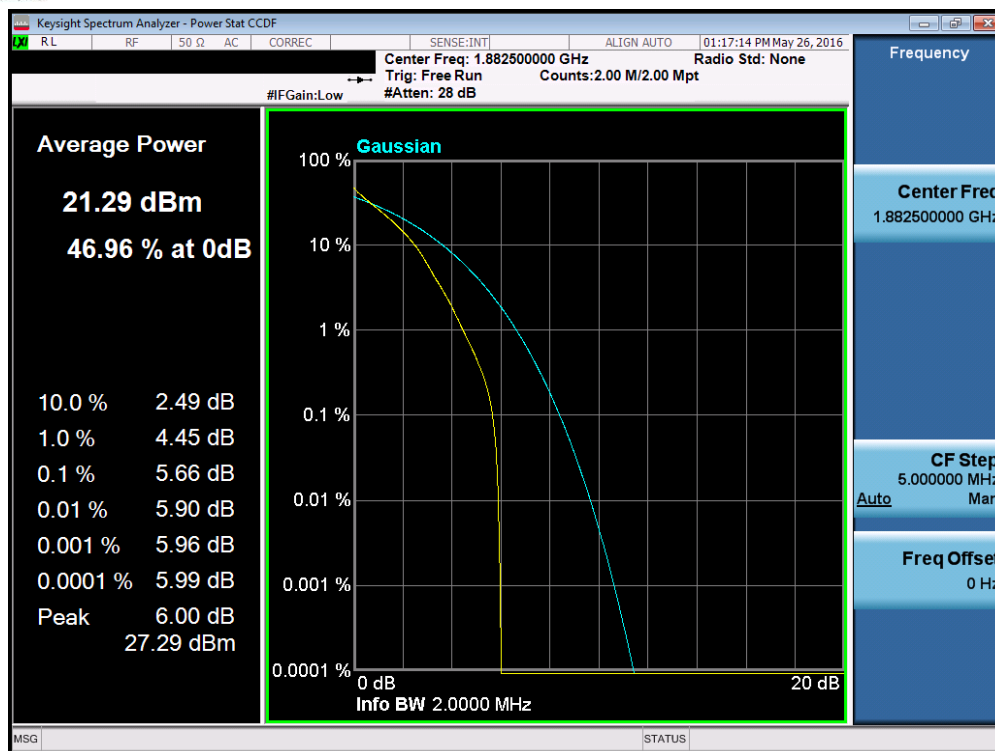


Plot 7-282. PAR Plot (Band 2 – 20.0MHz QPSK – RB Size 100)

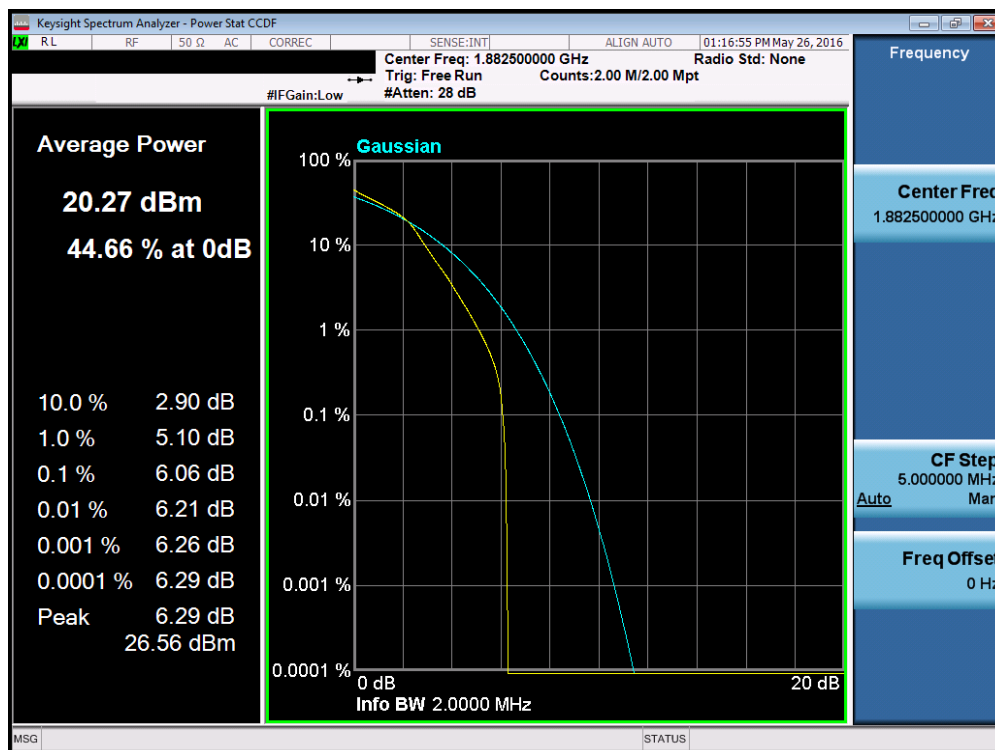


Plot 7-283. PAR Plot (Band 2 – 20.0MHz 16-QAM – RB Size 100)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 160 of 213

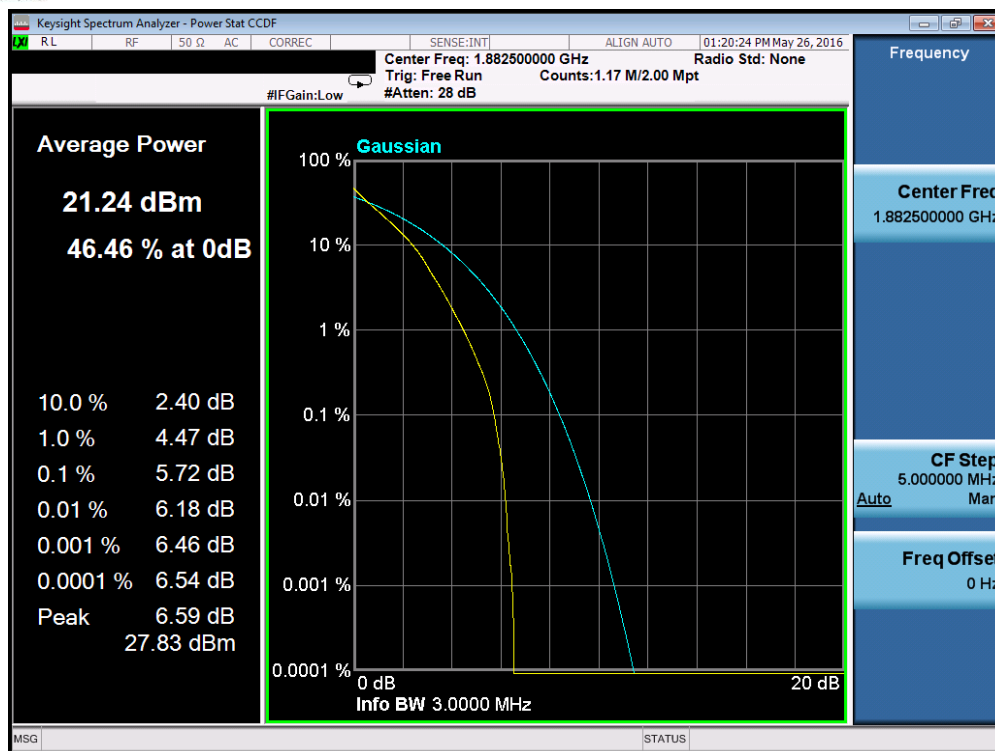


Plot 7-284. PAR Plot (Band 25 – 1.4MHz QPSK – RB Size 6)

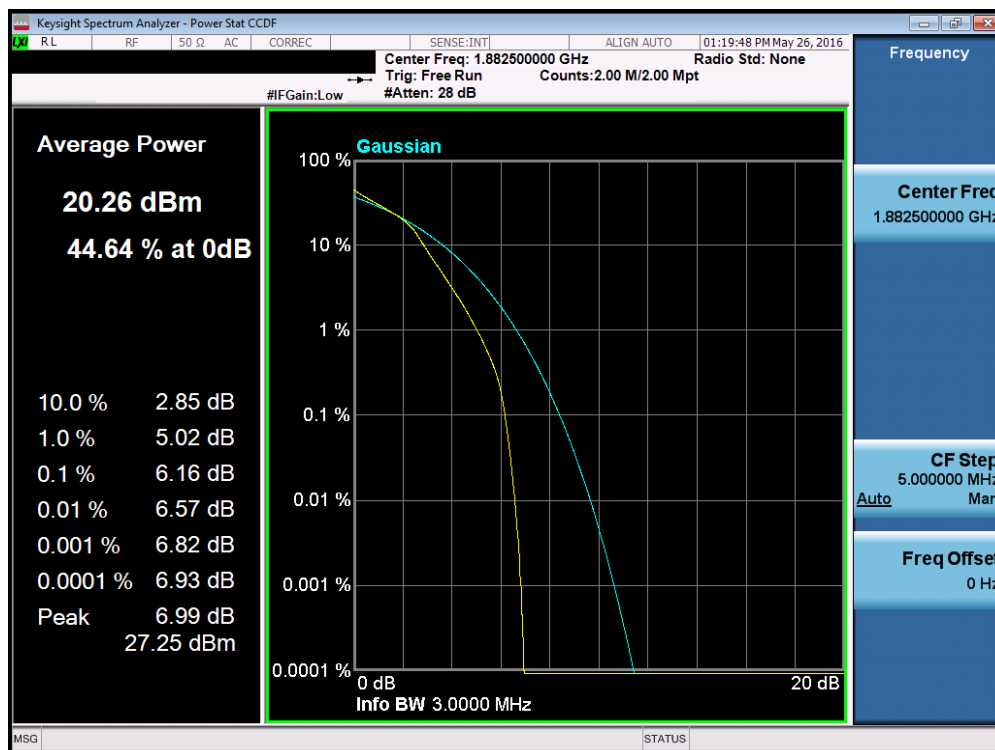


Plot 7-285. PAR Plot (Band 25 – 1.4MHz 16-QAM – RB Size 6)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 161 of 213

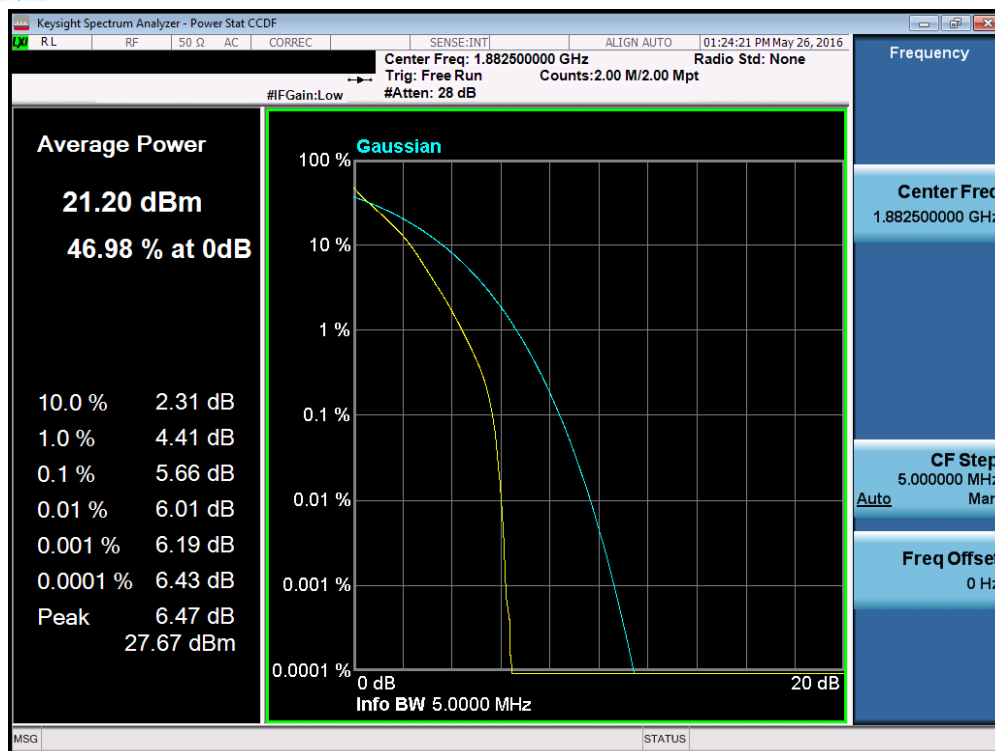


Plot 7-286. PAR Plot (Band 25 – 3.0MHz QPSK – RB Size 15)

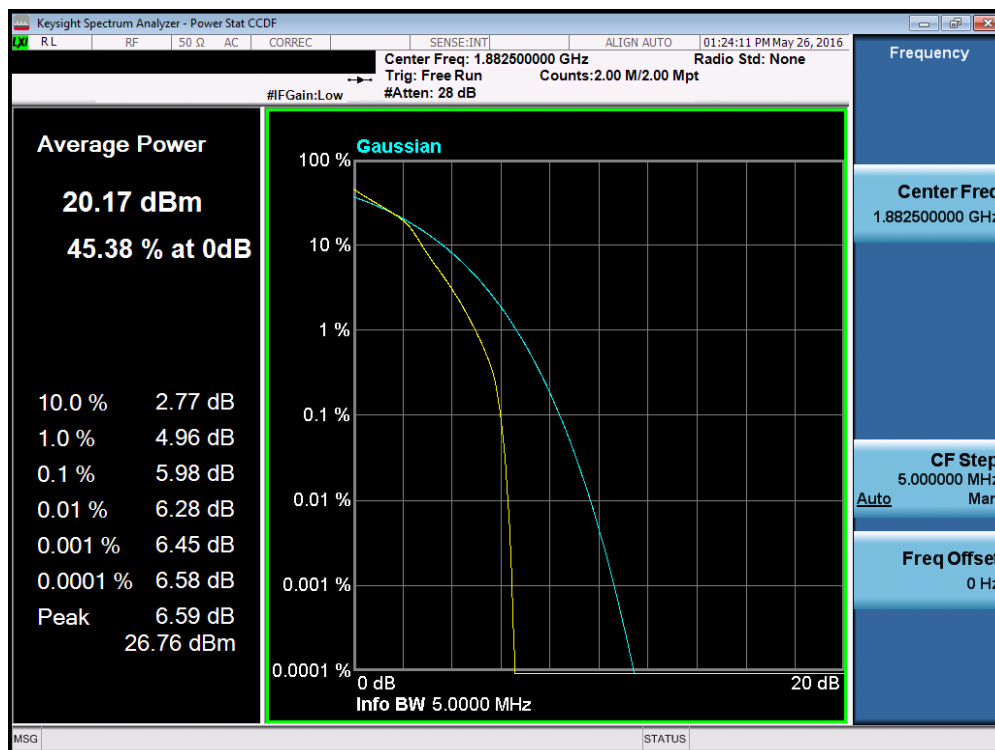


Plot 7-287. PAR Plot (Band 25 – 3.0MHz 16-QAM – RB Size 15)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 162 of 213

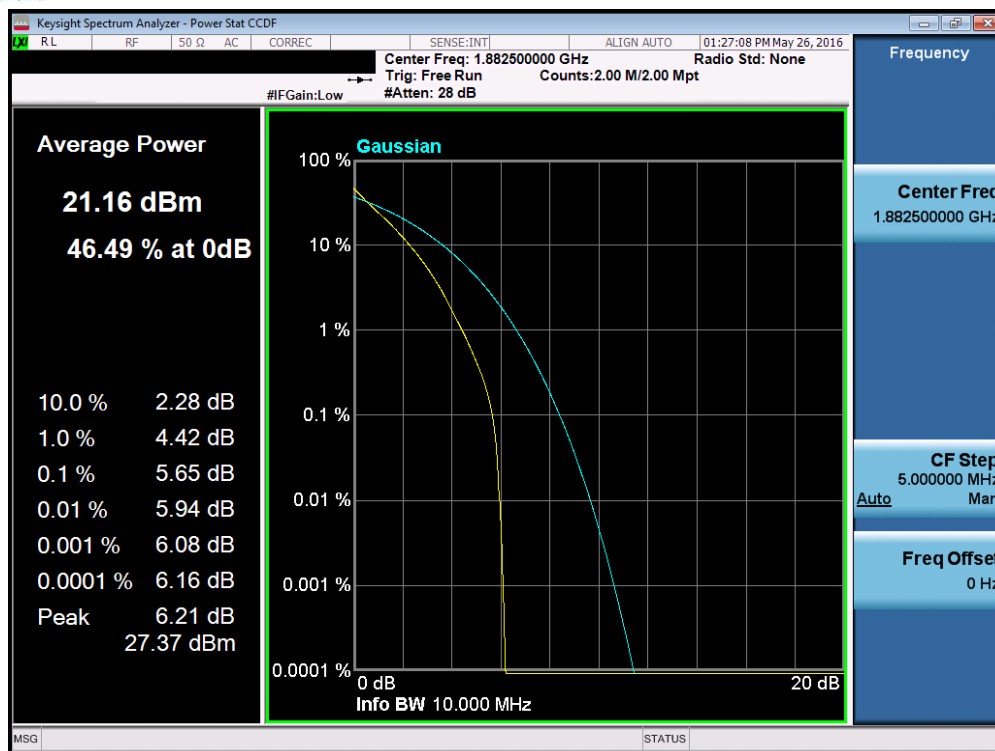


Plot 7-288. PAR Plot (Band 25 – 5.0MHz QPSK – RB Size 25)

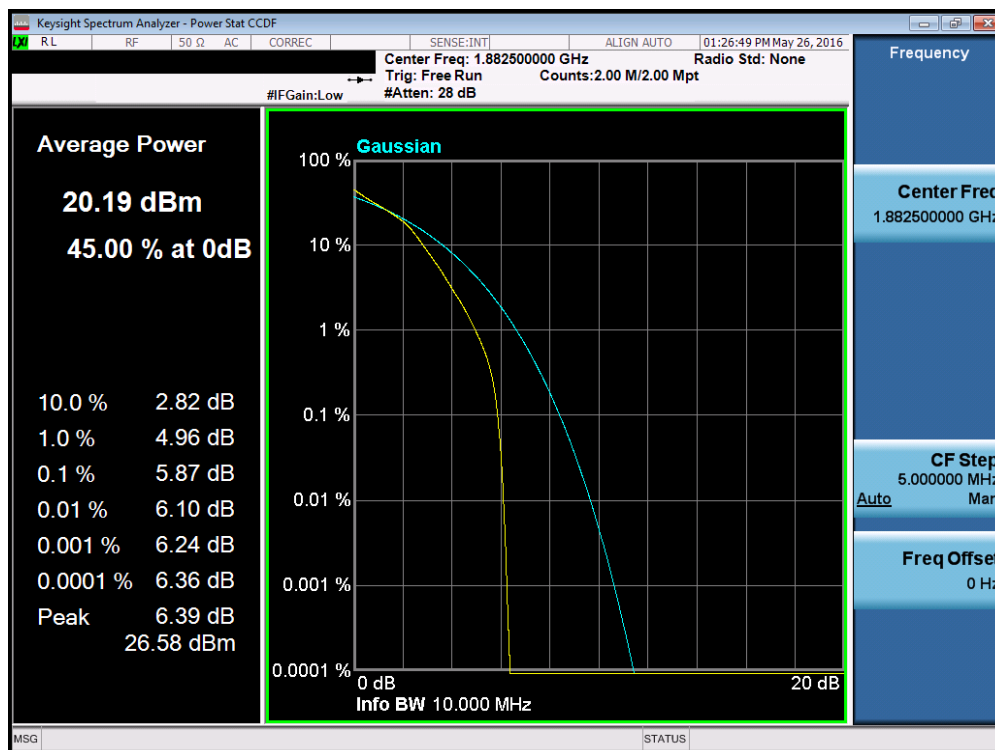


Plot 7-289. PAR Plot (Band 25 – 5.0MHz 16-QAM – RB Size 25)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 163 of 213

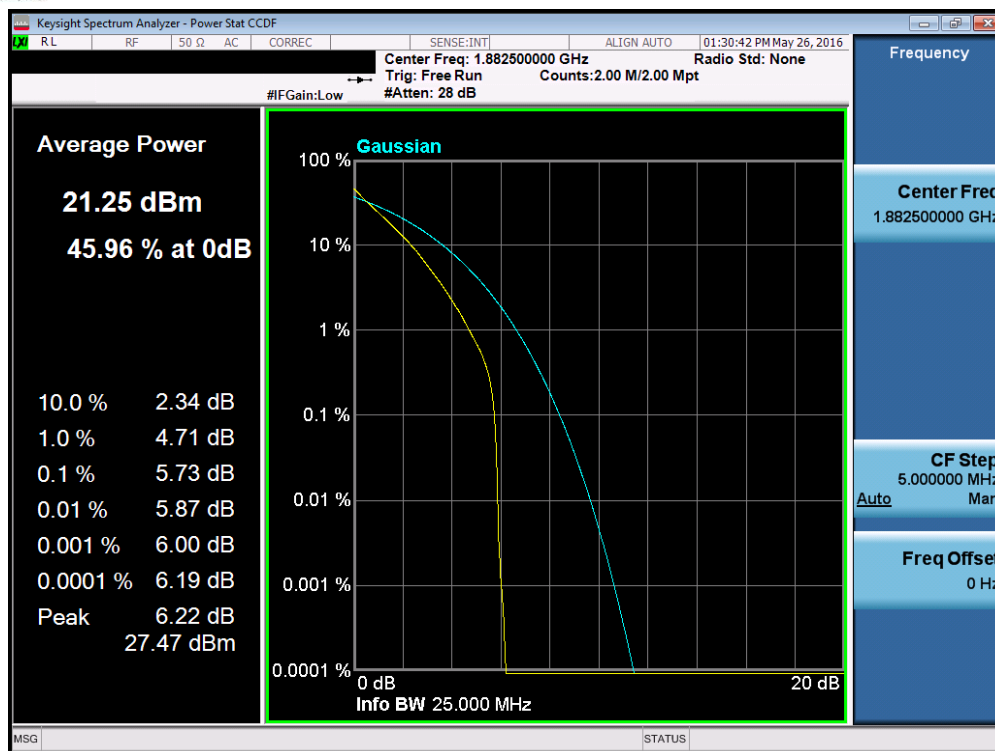


Plot 7-290. PAR Plot (Band 25 – 10.0MHz QPSK – RB Size 50)

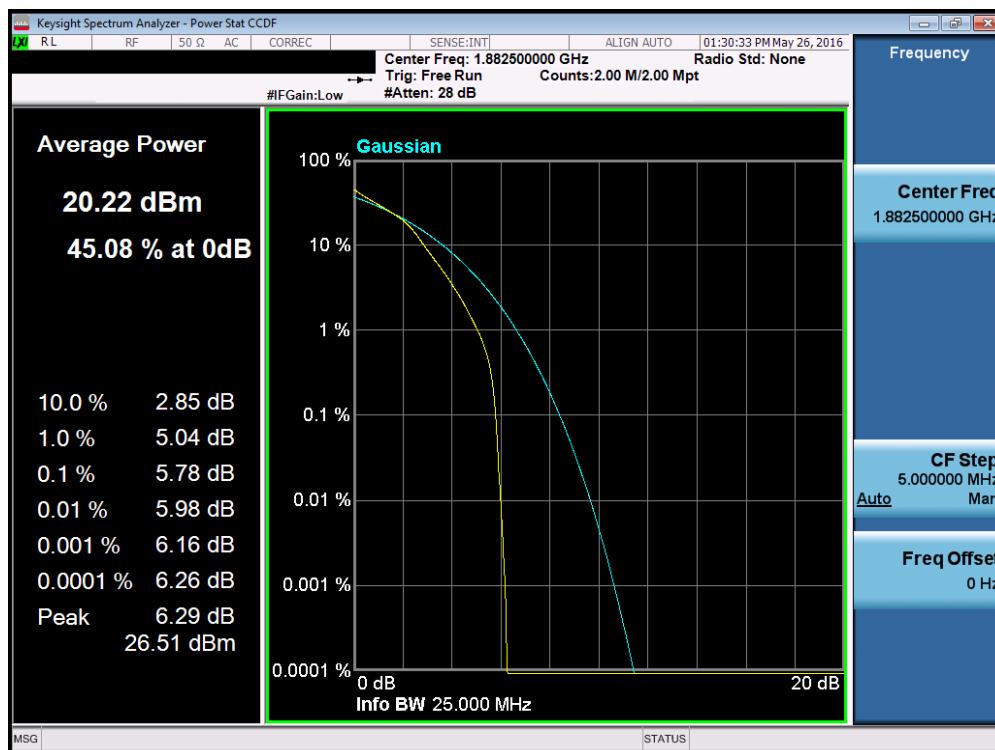


Plot 7-291. PAR Plot (Band 25 – 10.0MHz 16-QAM – RB Size 50)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 164 of 213

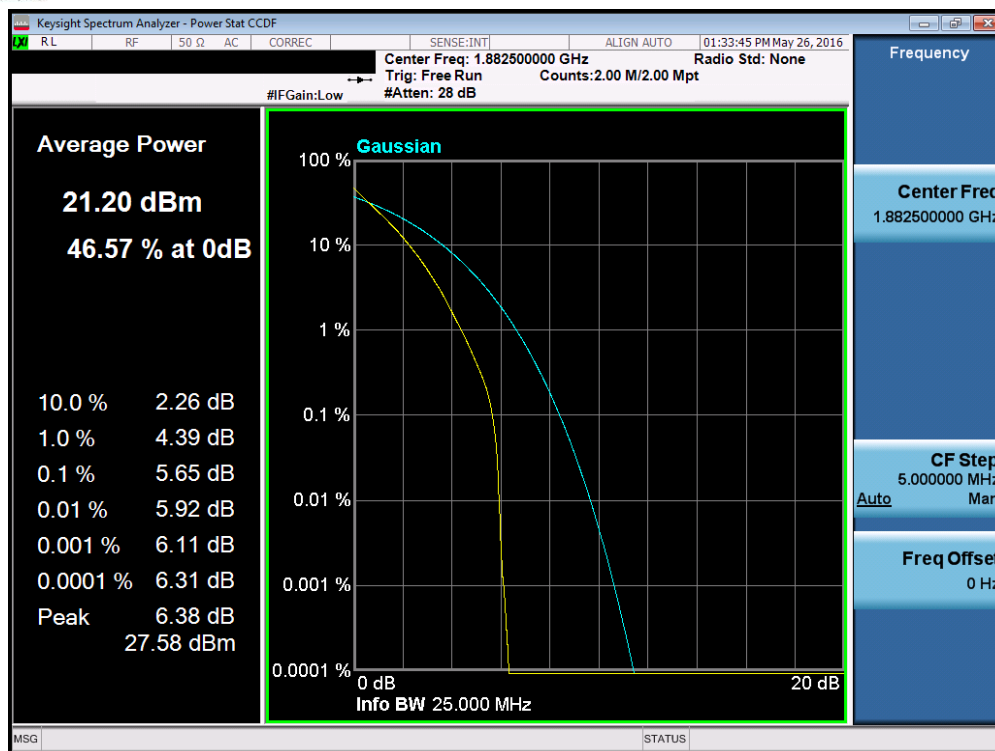


Plot 7-292. PAR Plot (Band 25 – 15.0MHz QPSK – RB Size 75)

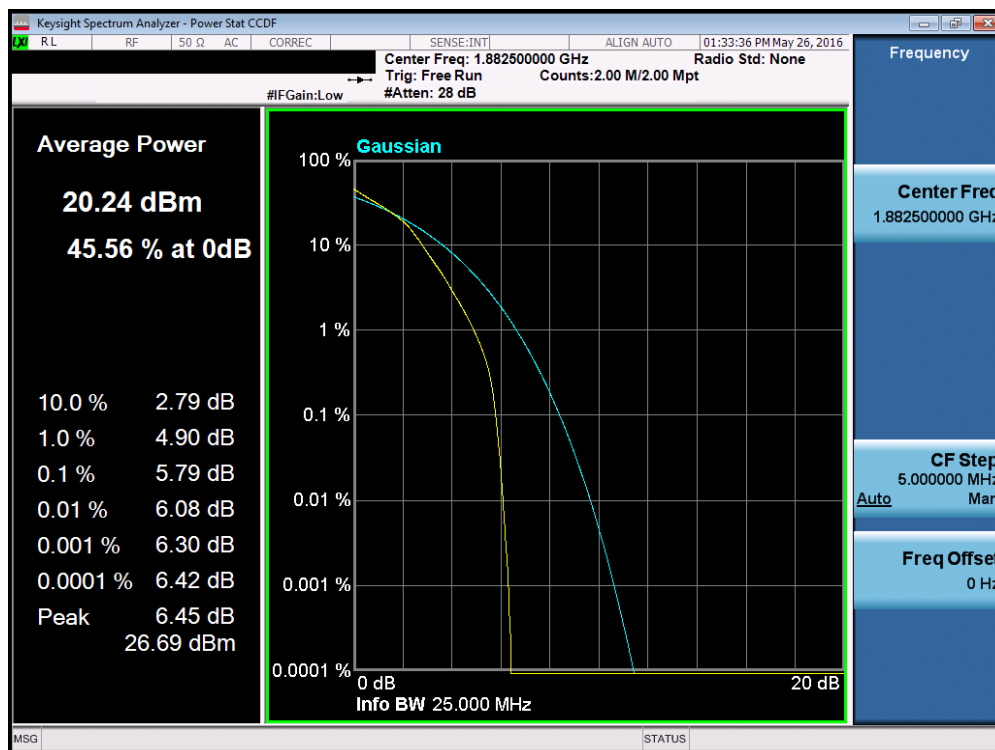


Plot 7-293. PAR Plot (Band 25 – 15.0MHz 16-QAM – RB Size 75)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 165 of 213



Plot 7-294. PAR Plot (Band 25 – 20.0MHz QPSK – RB Size 100)



Plot 7-295. PAR Plot (Band 25 – 20.0MHz 16-QAM – RB Size 100)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 166 of 213

7.6 Radiated Power (ERP/EIRP)

§22.913(a.2) §24.232(c.2) §27.50(h.2) §27.50(b.10) §27.50(c.10) §27.50(d.4)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-D-2010 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 its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v02r02 – Section 5.2.1

ANSI/TIA-603-D-2010 – 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 $\geq 3 \times$ RBW
4. Span = 1.5 times the OBW
5. No. of sweep points $\geq 2 \times$ 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

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 167 of 213

Test Setup

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

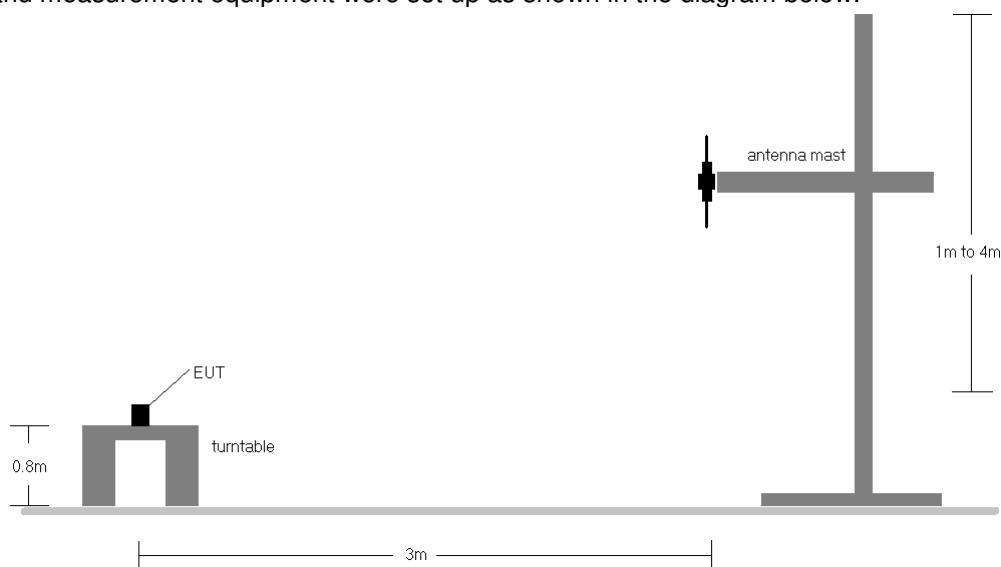


Figure 7-5. Radiated Test Setup <1GHz

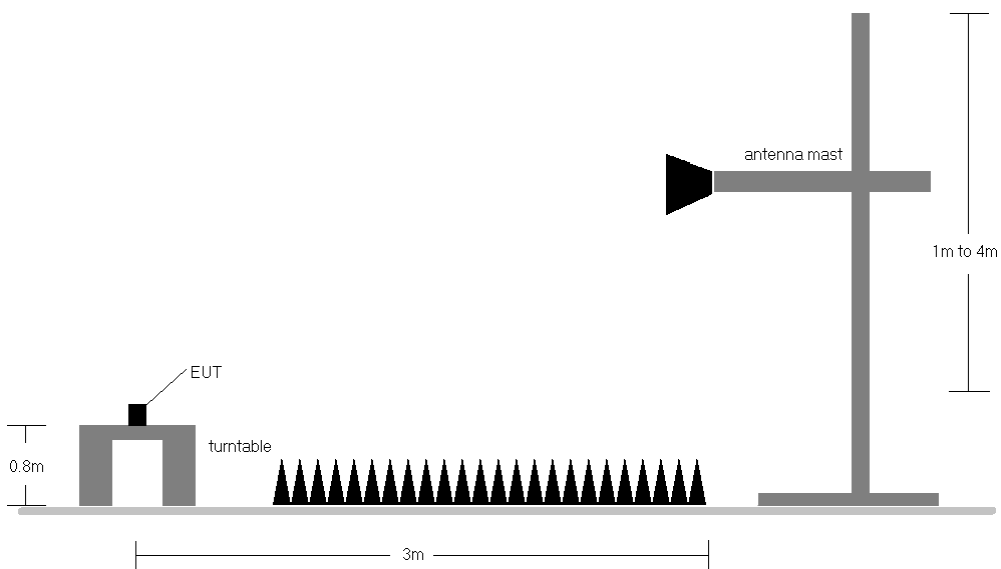


Figure 7-6. Radiated Test Setup >1GHz

Test Notes

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

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 168 of 213

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	V	153	267	1 / 5	14.74	2.72	17.46	34.77	-17.31
707.50	1.4	QPSK	V	159	281	3 / 2	15.78	2.88	18.66	34.77	-16.11
715.30	1.4	QPSK	V	468	244	3 / 2	15.93	3.06	18.98	34.77	-15.79
699.70	1.4	16-QAM	V	153	267	1 / 5	13.63	2.72	16.36	34.77	-18.41
707.50	1.4	16-QAM	V	159	281	3 / 2	14.73	2.88	17.61	34.77	-17.16
715.30	1.4	16-QAM	V	468	244	3 / 2	14.79	3.06	17.85	34.77	-16.92
700.50	3	QPSK	V	158	263	1 / 14	14.96	2.72	17.68	34.77	-17.09
707.50	3	QPSK	V	156	269	1 / 14	16.49	2.88	19.37	34.77	-15.40
714.50	3	QPSK	V	163	251	1 / 14	16.36	3.04	19.39	34.77	-15.38
700.50	3	16-QAM	V	158	263	1 / 14	14.52	2.72	17.24	34.77	-17.53
707.50	3	16-QAM	V	156	269	1 / 14	15.38	2.88	18.26	34.77	-16.51
714.50	3	16-QAM	V	163	251	1 / 14	15.28	3.04	18.32	34.77	-16.45

Table 7-2. ERP Data (Band 12)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
701.50	5	QPSK	V	163	79	1 / 24	14.33	2.75	17.07	34.77	-17.70
707.50	5	QPSK	V	160	80	1 / 24	16.31	2.88	19.19	34.77	-15.58
713.50	5	QPSK	V	165	82	1 / 24	16.83	3.02	19.84	34.77	-14.93
701.50	5	16-QAM	V	163	79	1 / 24	13.68	2.75	16.43	34.77	-18.34
707.50	5	16-QAM	V	160	80	1 / 24	15.71	2.88	18.60	34.77	-16.18
713.50	5	16-QAM	V	165	82	1 / 24	15.91	3.02	18.93	34.77	-15.84
704.00	10	QPSK	V	162	82	1 / 49	15.78	2.80	18.58	34.77	-16.19
707.50	10	QPSK	V	164	80	1 / 49	16.33	2.88	19.21	34.77	-15.56
711.00	10	QPSK	V	162	77	1 / 49	16.73	2.96	19.69	34.77	-15.08
704.00	10	16-QAM	V	162	82	1 / 49	14.92	2.80	17.72	34.77	-17.05
707.50	10	16-QAM	V	164	80	1 / 49	15.49	2.88	18.37	34.77	-16.40
711.00	10	16-QAM	V	162	77	1 / 49	15.69	2.96	18.65	34.77	-16.12
713.50	5	QPSK	H	165	82	1 / 74	11.14	3.04	14.18	34.77	-20.59
713.50	5 (WCP)	QPSK	H	165	82	1 / 74	7.95	3.04	10.99	34.77	-23.78

Table 7-3. ERP Data (Band 12/17)

FCC ID: A3LSMN930F	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION) 				Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset			Page 169 of 213

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
779.50	5	QPSK	V	136	244	1 / 24	14.04	4.42	18.46	34.77	-16.31
782.00	5	QPSK	V	141	267	1 / 24	13.71	4.47	18.18	34.77	-16.59
784.50	5	QPSK	V	141	257	1 / 0	14.20	4.52	18.72	34.77	-16.05
779.50	5	16QAM	V	136	244	1 / 24	13.10	4.42	17.53	34.77	-17.25
782.00	5	16QAM	V	141	267	1 / 0	12.84	4.47	17.31	34.77	-17.46
784.50	5	16QAM	V	141	257	1 / 0	13.32	4.52	17.85	34.77	-16.92
782.00	10	QPSK	V	134	252	1 / 0	13.81	4.47	18.28	34.77	-16.49
782.00	10	16QAM	V	134	252	1 / 0	11.68	4.47	16.16	34.77	-18.62
784.50	5	QPSK	H	100	27	1 / 74	13.96	4.52	18.48	34.77	-16.29
784.50	5 (WCP)	QPSK	H	100	27	1 / 49	10.97	4.52	15.49	34.77	-19.28

Table 7-4. ERP Data (Band 13)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 170 of 213	

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	V	145	282	1 / 0	16.62	4.95	21.57	38.45	-16.88
836.50	1.4	QPSK	V	147	287	1 / 0	16.19	5.00	21.19	38.45	-17.26
848.30	1.4	QPSK	V	141	285	1 / 0	16.23	5.05	21.28	38.45	-17.17
824.70	1.4	16-QAM	V	145	282	1 / 0	15.73	4.95	20.67	38.45	-17.78
836.50	1.4	16-QAM	V	147	287	1 / 0	15.02	5.00	20.02	38.45	-18.43
848.30	1.4	16-QAM	V	141	285	1 / 0	15.21	5.05	20.26	38.45	-18.19
825.50	3	QPSK	V	147	285	1 / 0	16.77	4.95	21.71	38.45	-16.74
836.50	3	QPSK	V	140	284	1 / 0	16.59	5.00	21.59	38.45	-16.86
847.50	3	QPSK	V	144	280	1 / 0	16.51	5.05	21.56	38.45	-16.89
825.50	3	16-QAM	V	147	285	1 / 0	15.71	4.95	20.66	38.45	-17.79
836.50	3	16-QAM	V	140	284	1 / 0	15.24	5.00	20.24	38.45	-18.21
847.50	3	16-QAM	V	144	280	1 / 0	15.58	5.05	20.63	38.45	-17.82
826.50	5	QPSK	V	150	283	1 / 0	15.88	4.95	20.83	38.45	-17.62
836.50	5	QPSK	V	145	274	1 / 0	16.62	5.00	21.62	38.45	-16.83
846.50	5	QPSK	V	144	289	1 / 24	15.09	5.04	20.13	38.45	-18.32
826.50	5	16-QAM	V	150	283	1 / 0	16.33	4.95	21.28	38.45	-17.17
836.50	5	16-QAM	V	145	274	1 / 0	13.65	5.00	18.65	38.45	-19.81
846.50	5	16-QAM	V	144	289	1 / 24	13.20	5.04	18.24	38.45	-20.21
829.00	10	QPSK	V	154	278	1 / 0	16.67	4.96	21.63	38.45	-16.82
836.50	10	QPSK	V	137	278	1 / 0	15.96	5.00	20.96	38.45	-17.49
844.00	10	QPSK	V	142	287	1 / 49	16.12	5.03	21.15	38.45	-17.30
829.00	10	16-QAM	V	154	278	1 / 0	15.55	4.96	20.51	38.45	-17.94
836.50	10	16-QAM	V	137	278	1 / 0	14.84	5.00	19.84	38.45	-18.61
844.00	10	16-QAM	V	142	287	1 / 49	15.08	5.03	20.11	38.45	-18.34
825.50	3	QPSK	H	166	273	1 / 0	16.03	4.95	20.98	38.45	-17.47
825.50	3 (WCP)	QPSK	H	147	285	1 / 0	12.92	4.95	17.86	38.45	-20.59

Table 7-5. ERP Data (Band 5)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 171 of 213	

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBd]	ERP [dBm]	ERP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	V	125	251	3 / 2	15.21	4.95	20.16	38.45	-18.29
836.50	1.4	QPSK	V	127	237	3 / 2	15.66	5.00	20.66	38.45	-17.79
848.30	1.4	QPSK	V	129	240	3 / 2	14.21	5.05	19.26	38.45	-19.19
824.70	1.4	16-QAM	V	125	251	1 / 5	13.93	4.95	18.87	38.45	-19.58
836.50	1.4	16-QAM	V	127	237	3 / 2	14.46	5.00	19.46	38.45	-18.99
848.30	1.4	16-QAM	V	129	240	3 / 2	13.06	5.05	18.11	38.45	-20.34
825.50	3	QPSK	V	135	293	1 / 0	15.31	4.95	20.26	38.45	-18.19
836.50	3	QPSK	V	132	243	1 / 0	15.96	5.00	20.96	38.45	-17.49
847.50	3	QPSK	V	133	288	1 / 0	13.98	5.05	19.03	38.45	-19.42
825.50	3	16-QAM	V	135	293	1 / 0	14.40	4.95	19.35	38.45	-19.10
836.50	3	16-QAM	V	132	243	1 / 14	14.82	5.00	19.82	38.45	-18.63
847.50	3	16-QAM	V	133	288	1 / 0	12.99	5.05	18.03	38.45	-20.42
826.50	5	QPSK	V	128	284	1 / 0	15.52	4.95	20.48	38.45	-17.97
836.50	5	QPSK	V	133	286	1 / 0	15.62	5.00	20.62	38.45	-17.83
846.50	5	QPSK	V	135	243	1 / 0	14.92	5.04	19.96	38.45	-18.49
826.50	5	16-QAM	V	128	284	1 / 0	14.46	4.95	19.41	38.45	-19.04
836.50	5	16-QAM	V	133	286	1 / 0	14.68	5.00	19.68	38.45	-18.78
846.50	5	16-QAM	V	135	243	1 / 0	13.97	5.04	19.01	38.45	-19.44
829.00	10	QPSK	V	130	240	1 / 49	15.73	4.96	20.69	38.45	-17.76
836.50	10	QPSK	V	130	240	1 / 0	15.73	5.00	20.73	38.45	-17.72
844.00	10	QPSK	V	136	238	1 / 0	15.24	5.03	20.27	38.45	-18.18
829.00	10	16-QAM	V	130	240	1 / 49	14.87	4.96	19.83	38.45	-18.62
836.50	10	16-QAM	V	130	240	1 / 0	14.71	5.00	19.70	38.45	-18.75
844.00	10	16-QAM	V	136	238	1 / 0	14.35	5.03	19.38	38.45	-19.07
831.50	15	QPSK	V	131	241	1 / 74	15.32	4.98	20.29	38.45	-18.16
836.50	15	QPSK	V	129	243	1 / 0	15.49	5.00	20.49	38.45	-17.96
841.50	15	QPSK	V	134	244	1 / 0	15.76	5.02	20.78	38.45	-17.67
831.50	15	16-QAM	V	131	241	1 / 74	14.28	4.98	19.25	38.45	-19.20
836.50	15	16-QAM	V	129	243	1 / 0	14.49	5.00	19.49	38.45	-18.96
841.50	15	16-QAM	V	134	244	1 / 0	14.74	5.02	19.76	38.45	-18.69
836.50	3	QPSK	H	132	243	1 / 74	15.53	5.00	20.53	38.45	-17.92
836.50	3	QPSK	H	132	243	1 / 99	14.49	5.00	19.49	38.45	-18.96

Table 7-6. ERP Data (Band 26)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 172 of 213	

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	H	109	303	1 / 5	12.04	9.67	21.71	30.00	-8.29
1732.50	1.4	QPSK	H	109	296	1 / 5	12.10	9.53	21.63	30.00	-8.37
1754.30	1.4	QPSK	H	110	302	1 / 0	13.09	9.39	22.48	30.00	-7.52
1710.70	1.4	16-QAM	H	109	303	1 / 5	10.60	9.67	20.27	30.00	-9.73
1732.50	1.4	16-QAM	H	109	296	1 / 5	10.73	9.53	20.26	30.00	-9.74
1754.30	1.4	16-QAM	H	110	302	1 / 0	11.75	9.39	21.14	30.00	-8.86
1711.50	3	QPSK	H	124	270	1 / 0	13.27	9.67	22.94	30.00	-7.06
1732.50	3	QPSK	H	110	290	1 / 14	12.20	9.53	21.73	30.00	-8.27
1753.50	3	QPSK	H	110	297	1 / 0	13.19	9.40	22.59	30.00	-7.41
1711.50	3	16-QAM	H	124	270	1 / 0	11.76	9.67	21.43	30.00	-8.57
1732.50	3	16-QAM	H	110	290	1 / 14	10.85	9.53	20.38	30.00	-9.62
1753.50	3	16-QAM	H	110	297	1 / 0	11.86	9.40	21.26	30.00	-8.74
1712.50	5	QPSK	H	121	271	1 / 0	13.20	9.66	22.86	30.00	-7.14
1732.50	5	QPSK	H	110	290	1 / 24	12.49	9.53	22.02	30.00	-7.98
1752.50	5	QPSK	H	110	302	1 / 0	13.27	9.40	22.67	30.00	-7.33
1712.50	5	16-QAM	H	121	271	1 / 0	11.88	9.66	21.54	30.00	-8.46
1732.50	5	16-QAM	H	110	290	1 / 24	11.12	9.53	20.65	30.00	-9.35
1752.50	5	16-QAM	H	110	302	1 / 0	11.81	9.40	21.21	30.00	-8.79
1715.00	10	QPSK	H	127	269	1 / 0	12.60	9.64	22.24	30.00	-7.76
1732.50	10	QPSK	H	110	292	1 / 49	12.33	9.53	21.86	30.00	-8.14
1750.00	10	QPSK	H	110	299	1 / 49	12.70	9.42	22.12	30.00	-7.88
1715.00	10	16-QAM	H	127	269	1 / 0	11.29	9.64	20.93	30.00	-9.07
1732.50	10	16-QAM	H	110	292	1 / 49	11.07	9.53	20.60	30.00	-9.40
1750.00	10	16-QAM	H	110	299	1 / 49	11.41	9.42	20.83	30.00	-9.17
1717.50	15	QPSK	H	110	305	1 / 0	11.32	9.63	20.95	30.00	-9.05
1732.50	15	QPSK	H	110	267	1 / 74	12.61	9.53	22.14	30.00	-7.86
1747.50	15	QPSK	H	110	297	1 / 0	12.75	9.43	22.18	30.00	-7.82
1717.50	15	16-QAM	H	110	305	1 / 0	10.11	9.63	19.74	30.00	-10.26
1732.50	15	16-QAM	H	110	267	1 / 74	11.51	9.53	21.04	30.00	-8.96
1747.50	15	16-QAM	H	110	297	1 / 0	11.60	9.43	21.03	30.00	-8.97
1720.00	20	QPSK	H	121	272	1 / 0	12.84	9.61	22.45	30.00	-7.55
1732.50	20	QPSK	H	110	302	1 / 99	12.81	9.53	22.34	30.00	-7.66
1745.00	20	QPSK	H	110	303	1 / 99	12.80	9.45	22.25	30.00	-7.75
1720.00	20	16-QAM	H	121	272	1 / 0	11.61	9.61	21.22	30.00	-8.78
1732.50	20	16-QAM	H	110	302	1 / 99	11.50	9.53	21.03	30.00	-8.97
1745.00	20	16-QAM	H	110	303	1 / 99	11.49	9.45	20.94	30.00	-9.06
1711.50	3	QPSK	V	124	270	1 / 0	11.66	9.67	21.33	30.00	-8.67
1711.50	3 (WCP)	QPSK	H	110	305	1 / 99	12.77	9.67	22.44	30.00	-7.56

Table 7-7. EIRP Data (Band 4)

FCC ID: A3LSMN930F	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION) 				Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset			Page 173 of 213

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	H	110	306	3 / 2	12.42	9.21	21.63	33.01	-11.38
1880.00	1.4	QPSK	H	110	269	1 / 5	12.72	9.27	21.99	33.01	-11.02
1909.30	1.4	QPSK	H	307	306	3 / 2	12.95	9.36	22.31	33.01	-10.70
1850.70	1.4	16-QAM	H	110	306	3 / 2	11.22	9.21	20.43	33.01	-12.58
1880.00	1.4	16-QAM	H	110	269	1 / 5	11.48	9.27	20.75	33.01	-12.26
1909.30	1.4	16-QAM	H	307	306	3 / 2	11.88	9.36	21.24	33.01	-11.77
1851.50	3	QPSK	H	110	307	1 / 14	12.95	9.21	22.16	33.01	-10.85
1880.00	3	QPSK	H	110	269	1 / 14	12.51	9.27	21.78	33.01	-11.23
1908.50	3	QPSK	H	110	304	1 / 14	10.90	9.36	20.26	33.01	-12.75
1851.50	3	16-QAM	H	110	307	1 / 14	11.81	9.21	21.02	33.01	-11.99
1880.00	3	16-QAM	H	110	269	1 / 14	11.32	9.27	20.59	33.01	-12.42
1908.50	3	16-QAM	H	110	304	1 / 14	9.79	9.36	19.15	33.01	-13.86
1852.50	5	QPSK	H	110	308	1 / 24	12.95	9.22	22.17	33.01	-10.84
1880.00	5	QPSK	H	110	269	1 / 24	11.92	9.27	21.19	33.01	-11.82
1907.50	5	QPSK	H	110	304	1 / 24	11.95	9.35	21.30	33.01	-11.71
1852.50	5	16-QAM	H	110	308	1 / 24	10.87	9.22	20.09	33.01	-12.92
1880.00	5	16-QAM	H	110	269	1 / 24	11.80	9.27	21.07	33.01	-11.94
1907.50	5	16-QAM	H	110	304	1 / 24	10.86	9.35	20.21	33.01	-12.80
1855.00	10	QPSK	H	110	308	1 / 0	12.11	9.22	21.33	33.01	-11.68
1880.00	10	QPSK	H	110	271	1 / 0	12.17	9.27	21.44	33.01	-11.57
1905.00	10	QPSK	H	110	303	1 / 0	11.35	9.34	20.69	33.01	-12.32
1855.00	10	16-QAM	H	110	308	1 / 0	10.95	9.22	20.17	33.01	-12.84
1880.00	10	16-QAM	H	110	271	1 / 0	11.05	9.27	20.32	33.01	-12.69
1905.00	10	16-QAM	H	110	303	1 / 0	10.23	9.34	19.57	33.01	-13.44
1857.50	15	QPSK	H	110	268	1 / 0	12.58	9.23	21.81	33.01	-11.20
1880.00	15	QPSK	H	110	270	1 / 74	12.28	9.27	21.55	33.01	-11.46
1902.50	15	QPSK	H	110	300	1 / 0	10.15	9.33	19.48	33.01	-13.53
1857.50	15	16-QAM	H	110	268	1 / 0	11.47	9.23	20.70	33.01	-12.31
1880.00	15	16-QAM	H	110	270	1 / 74	11.18	9.27	20.45	33.01	-12.56
1902.50	15	16-QAM	H	110	300	1 / 0	9.07	9.33	18.40	33.01	-14.61
1860.00	20	QPSK	H	110	303	1 / 0	12.79	9.23	22.02	33.01	-10.99
1880.00	20	QPSK	H	110	303	1 / 0	12.11	9.27	21.38	33.01	-11.63
1900.00	20	QPSK	H	110	268	1 / 0	11.55	9.31	20.86	33.01	-12.15
1860.00	20	16-QAM	H	110	303	1 / 0	11.54	9.23	20.77	33.01	-12.24
1880.00	20	16-QAM	H	110	303	1 / 0	10.88	9.27	20.15	33.01	-12.86
1900.00	20	16-QAM	H	110	268	1 / 0	10.28	9.31	19.59	33.01	-13.42
1909.30	1.4	QPSK	V	307	330	1 / 99	12.16	9.36	21.52	33.01	-11.49
1909.30	1.4 (WCP)	QPSK	H	307	306	1 / 99	12.69	9.36	22.05	33.01	-10.96

Table 7-8. EIRP Data (Band 2)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 174 of 213

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	H	110	301	3 / 2	11.85	9.21	21.06	33.01	-11.95
1882.50	1.4	QPSK	H	110	81	1 / 5	11.63	9.28	20.91	33.01	-12.10
1914.30	1.4	QPSK	H	134	300	3 / 2	10.10	9.39	19.49	33.01	-13.52
1850.70	1.4	16-QAM	H	110	301	3 / 2	10.73	9.21	19.94	33.01	-13.07
1882.50	1.4	16-QAM	H	110	81	1 / 5	10.38	9.28	19.66	33.01	-13.35
1914.30	1.4	16-QAM	H	134	300	1 / 0	9.25	9.39	18.64	33.01	-14.37
1851.50	3	QPSK	H	110	300	1 / 14	11.89	9.21	21.10	33.01	-11.91
1882.50	3	QPSK	H	110	268	1 / 0	10.85	9.28	20.13	33.01	-12.88
1913.50	3	QPSK	H	110	301	1 / 0	9.75	9.39	19.14	33.01	-13.87
1851.50	3	16-QAM	H	110	300	1 / 14	10.81	9.21	20.02	33.01	-12.99
1882.50	3	16-QAM	H	110	268	1 / 0	9.53	9.28	18.81	33.01	-14.20
1913.50	3	16-QAM	H	110	301	1 / 0	8.61	9.39	18.00	33.01	-15.01
1852.50	5	QPSK	H	110	301	1 / 24	11.88	9.22	21.10	33.01	-11.91
1882.50	5	QPSK	H	110	309	1 / 0	11.99	9.28	21.27	33.01	-11.74
1912.50	5	QPSK	H	110	299	1 / 24	9.85	9.38	19.23	33.01	-13.78
1852.50	5	16-QAM	H	110	301	1 / 24	10.77	9.22	19.99	33.01	-13.02
1882.50	5	16-QAM	H	110	309	1 / 0	10.85	9.28	20.13	33.01	-12.88
1912.50	5	16-QAM	H	110	299	1 / 24	8.72	9.38	18.10	33.01	-14.91
1855.00	10	QPSK	H	110	302	1 / 0	11.30	9.22	20.52	33.01	-12.49
1882.50	10	QPSK	H	110	310	1 / 0	11.31	9.28	20.59	33.01	-12.42
1910.00	10	QPSK	H	110	274	1 / 49	9.12	9.37	18.49	33.01	-14.52
1855.00	10	16-QAM	H	110	302	1 / 0	10.28	9.22	19.50	33.01	-13.51
1882.50	10	16-QAM	H	110	310	1 / 0	10.28	9.28	19.56	33.01	-13.45
1910.00	10	16-QAM	H	110	274	1 / 49	7.98	9.37	17.35	33.01	-15.66
1857.50	15	QPSK	H	110	302	1 / 0	11.27	9.23	20.50	33.01	-12.51
1882.50	15	QPSK	H	110	306	1 / 0	11.41	9.28	20.69	33.01	-12.32
1907.50	15	QPSK	H	110	272	1 / 0	10.40	9.35	19.75	33.01	-13.26
1857.50	15	16-QAM	H	110	302	1 / 0	10.08	9.23	19.31	33.01	-13.70
1882.50	15	16-QAM	H	110	306	1 / 0	10.29	9.28	19.57	33.01	-13.44
1907.50	15	16-QAM	H	110	272	1 / 0	9.15	9.35	18.50	33.01	-14.51
1860.00	20	QPSK	H	110	299	1 / 0	11.52	9.23	20.75	33.01	-12.26
1882.50	20	QPSK	H	110	308	1 / 0	11.85	9.28	21.13	33.01	-11.88
1905.00	20	QPSK	H	110	270	1 / 0	9.92	9.34	19.26	33.01	-13.75
1860.00	20	16-QAM	H	110	299	1 / 0	10.25	9.23	19.48	33.01	-13.53
1882.50	20	16-QAM	H	110	308	1 / 0	10.52	9.28	19.80	33.01	-13.21
1905.00	20	16-QAM	H	110	270	1 / 0	8.67	9.34	18.01	33.01	-15.00
1882.50	5	QPSK	V	117	328	1 / 0	11.03	9.28	20.31	33.01	-12.70
1882.50	5 (WCP)	QPSK	H	110	307	1 / 0	11.10	9.28	20.38	33.01	-12.63

Table 7-9. EIRP Data (Band 25)

FCC ID: A3LSMN930F	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION) 				Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset			Page 175 of 213

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Margin [dB]
2498.50	5	QPSK	V	129	213	1 / 0	10.25	8.51	18.76	33.01	-14.25
2593.00	5	QPSK	V	110	212	1 / 24	10.29	8.78	19.07	33.01	-13.94
2687.50	5	QPSK	V	145	214	1 / 0	9.00	8.93	17.93	33.01	-15.08
2498.50	5	16-QAM	V	129	213	1 / 0	8.35	8.51	16.86	33.01	-16.15
2593.00	5	16-QAM	V	110	212	1 / 24	9.45	8.78	18.23	33.01	-14.78
2687.50	5	16-QAM	V	145	214	1 / 0	8.60	8.93	17.53	33.01	-15.48
2501.00	10	QPSK	V	129	317	1 / 0	9.43	8.50	17.93	33.01	-15.08
2593.00	10	QPSK	V	118	316	1 / 49	11.26	8.78	20.04	33.01	-12.97
2685.00	10	QPSK	V	112	318	1 / 0	9.41	8.93	18.34	33.01	-14.67
2501.00	10	16-QAM	V	129	317	1 / 0	8.40	8.50	16.90	33.01	-16.11
2593.00	10	16-QAM	V	118	316	1 / 49	9.56	8.78	18.34	33.01	-14.67
2685.00	10	16-QAM	V	112	318	1 / 0	8.69	8.93	17.62	33.01	-15.39
2503.50	15	QPSK	V	146	316	1 / 74	10.27	8.51	18.78	33.01	-14.23
2593.00	15	QPSK	V	110	318	1 / 74	11.56	8.78	20.34	33.01	-12.67
2682.50	15	QPSK	V	146	309	1 / 0	10.83	8.92	19.75	33.01	-13.26
2503.50	15	16-QAM	V	146	316	1 / 74	9.26	8.51	17.77	33.01	-15.24
2593.00	15	16-QAM	V	110	318	1 / 74	9.90	8.78	18.68	33.01	-14.33
2682.50	15	16-QAM	V	146	309	1 / 0	9.76	8.92	18.68	33.01	-14.33
2506.00	20	QPSK	V	125	250	1 / 99	9.57	8.52	18.09	33.01	-14.92
2593.00	20	QPSK	V	124	319	1 / 99	12.12	8.78	20.90	33.01	-12.11
2680.00	20	QPSK	V	150	364	1 / 0	9.37	8.92	18.29	33.01	-14.72
2506.00	20	16-QAM	V	125	250	1 / 99	8.37	8.52	16.89	33.01	-16.12
2593.00	20	16-QAM	V	124	319	1 / 99	10.50	8.78	19.28	33.01	-13.73
2680.00	20	16-QAM	V	150	364	1 / 0	9.04	8.92	17.96	33.01	-15.05
2593.00	20	QPSK	H	124	267	1 / 0	11.11	8.78	19.89	33.01	-13.12
2593.00	20 (WCP)	QPSK	H	319	267	1 / 99	8.52	8.78	17.30	33.01	-15.71

Table 7-10. EIRP Data (Band 41)

FCC ID: A3LSMN930F	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION) 			Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 176 of 213

7.7 Radiated Spurious Emissions Measurements

§2.1053 §22.917(a) §24.238(a) §27.53(c) §27.53(f) §27.53(g) §27.53(h) §27.53(m)

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-D-2010 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 peak measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v02r02 – Section 5.8

ANSI/TIA-603-D-2010 – Section 2.2.12

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW $\geq 3 \times$ RBW
3. Span = 1.5 times the OBW
4. No. of sweep points $\geq 2 \times$ span / RBW
5. Detector = Peak
6. Trace mode = max hold
7. The trace was allowed to stabilize

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 177 of 213	

Test Setup

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

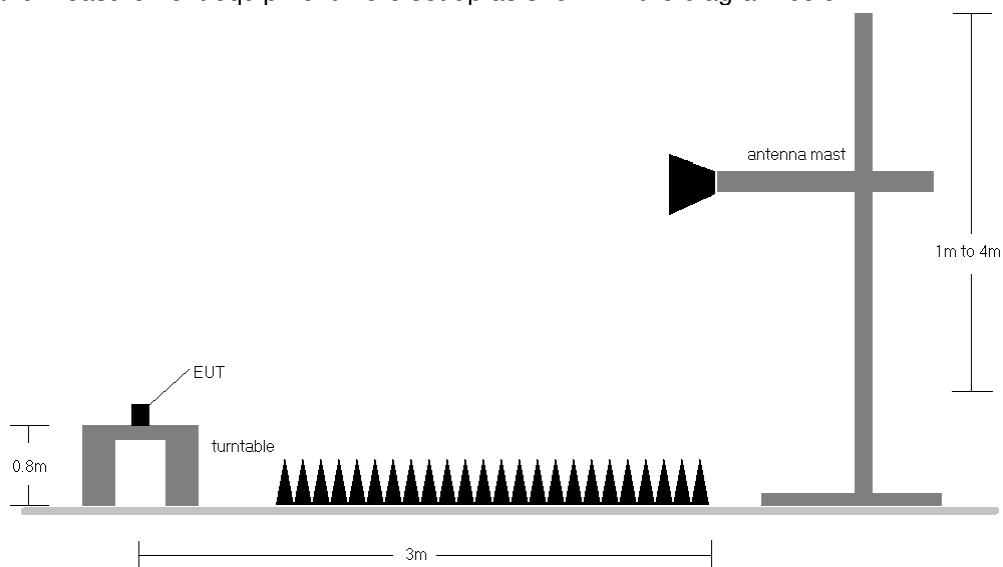


Figure 7-7. Test Instrument & Measurement Setup

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 spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 4) 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.
- 5) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 178 of 213

OPERATING FREQUENCY: 701.50 MHz
 CHANNEL: 23035
 MEASURED OUTPUT POWER: 17.07 dBm = 0.051 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 30.07 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1403.00	H	110	249	-59.22	5.60	-53.62	70.7
2104.50	H	110	296	-51.33	6.67	-44.65	61.7
2806.00	H	110	268	-61.98	7.92	-54.06	71.1
3507.50	H	-	-	-59.79	7.80	-51.99	69.1

Table 7-11. Radiated Spurious Data with WCP (Band 12/17 – Low Channel)

OPERATING FREQUENCY: 707.50 MHz
 CHANNEL: 23095
 MEASURED OUTPUT POWER: 19.19 dBm = 0.083 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 32.19 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1415.00	H	110	282	-58.91	5.69	-53.21	72.4
2122.50	H	110	290	-48.75	6.75	-42.00	61.2
2830.00	H	134	273	-62.38	7.90	-54.48	73.7
3537.50	H	-	-	-60.08	7.81	-52.27	71.5

Table 7-12. Radiated Spurious Data with WCP (Band 12/17 – Mid Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 179 of 213

OPERATING FREQUENCY: 713.50 MHz
 CHANNEL: 23155
 MEASURED OUTPUT POWER: 19.84 dBm = 0.096 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 32.84 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1427.00	H	110	283	-54.34	5.79	-48.55	68.4
2140.50	H	110	284	-52.65	6.82	-45.83	65.7
2854.00	H	110	275	-62.11	7.88	-54.23	74.1
3567.50	H	-	-	-59.82	7.82	-52.01	71.9

Table 7-13. Radiated Spurious Data with WCP (Band 12/17 – High Channel)

OPERATING FREQUENCY: 713.50 MHz
 CHANNEL: 23155
 MEASURED OUTPUT POWER: 10.99 dBm = 0.013 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 23.99 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1427.00	H	110	283	-63.18	5.79	-57.39	68.4
2140.50	H	110	137	-62.62	6.82	-55.80	66.8
2854.00	H	-	-	-64.54	7.88	-56.66	67.6

Table 7-14. Radiated Spurious Data (Band 12/17 – High Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 180 of 213

OPERATING FREQUENCY: 779.50 MHz
 CHANNEL: 23205
 MEASURED OUTPUT POWER: 18.46 dBm = 0.070 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 31.46 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
2338.50	H	149	333	-55.70	7.35	-48.36	66.8
3118.00	H	-	-	-62.40	7.19	-55.21	73.7

Table 7-15. Radiated Spurious Data (Band 13 – Low Channel)

OPERATING FREQUENCY: 782.00 MHz
 CHANNEL: 23230
 MEASURED OUTPUT POWER: 18.18 dBm = 0.066 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 31.18 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
2346.00	H	136	356	-54.65	7.33	-47.33	65.5
3128.00	H	-	-	-61.07	7.20	-53.87	72.1

Table 7-16. Radiated Spurious Data (Band 13 – Mid Channel)

OPERATING FREQUENCY: 784.50 MHz
 CHANNEL: 23255
 MEASURED OUTPUT POWER: 18.72 dBm = 0.074 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) =$ 31.72 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
2353.50	H	145	217	-49.84	7.30	-42.54	61.3
3138.00	H	-	-	-61.00	7.21	-53.79	72.5

Table 7-17. Radiated Spurious Data (Band 13 – High Channel)

MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.00 MHz
 DISTANCE: 3 meters
 NARROWBAND EMISSION LIMIT: -50 dBm
 WIDEBAND EMISSION LIMIT: -40 dBm/MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	Margin [dB]
1559.00	H	137	266	-58.24	6.55	-51.69	-11.7
1564.00	H	136	264	-59.43	6.57	-52.86	-12.9
1569.00	H	144	133	-58.36	6.59	-51.77	-11.8

Table 7-18. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 182 of 213

OPERATING FREQUENCY: 784.50 MHz
 CHANNEL: 23255
 MEASURED OUTPUT POWER: 15.49 dBm = 0.035 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) =$ 28.49 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
2353.50	G	122	243	-59.91	7.30	-52.61	68.1
3138.00	G	-	-	-60.03	7.21	-52.82	68.3

Table 7-19. Radiated Spurious Data with WCP (Band 13 – High Channel)

OPERATING FREQUENCY: 825.50 MHz
 CHANNEL: 20415
 MEASURED OUTPUT POWER: 21.71 dBm = 0.148 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10}(W) =$ 34.71 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1651.00	H	110	241	-42.14	6.70	-35.45	57.2
2476.50	H	110	210	-46.13	7.53	-38.60	60.3
3302.00	H	110	237	-58.77	7.37	-51.40	73.1
4127.50	H	-	-	-57.80	8.09	-49.71	71.4

Table 7-20. Radiated Spurious Data (Band 5 – Low Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 183 of 213

OPERATING FREQUENCY: 836.50 MHz
 CHANNEL: 20525
 MEASURED OUTPUT POWER: 21.59 dBm = 0.144 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 34.59 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1673.00	H	110	245	-37.92	6.70	-31.22	52.8
2509.50	H	110	209	-46.19	7.63	-38.56	60.2
3346.00	H	110	0	-60.45	7.51	-52.93	74.5
4182.50	H	-	-	-57.92	8.23	-49.69	71.3

Table 7-21. Radiated Spurious Data (Band 5 – Mid Channel)

OPERATING FREQUENCY: 847.50 MHz
 CHANNEL: 20635
 MEASURED OUTPUT POWER: 21.56 dBm = 0.143 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 34.56 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1695.00	H	110	242	-44.11	6.70	-37.41	59.0
2542.50	H	110	208	-53.03	7.60	-45.43	67.0
3390.00	H	-	-	-60.66	7.66	-53.00	74.6

Table 7-22. Radiated Spurious Data (Band 5 – High Channel)

OPERATING FREQUENCY: 825.50 MHz
 CHANNEL: 20415
 MEASURED OUTPUT POWER: 17.86 dBm = 0.061 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 30.86 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1651.00	H	123	206	-43.35	6.70	-36.66	54.5
2476.50	H	110	157	-46.16	7.53	-38.63	56.5
3302.00	H	115	169	-58.07	7.37	-50.70	68.6
4127.50	H	-	-	-58.50	8.09	-50.41	68.3

Table 7-23. Radiated Spurious Data with WCP (Band 5 – Low Channel)

OPERATING FREQUENCY: 825.50 MHz
 CHANNEL: 26805
 MEASURED OUTPUT POWER: 20.26 dBm = 0.106 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 33.26 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
1651.00	H	117	266	-41.05	6.70	-34.36	54.6
2476.50	H	117	4	-52.45	7.53	-44.92	65.2
3302.00	H	-	-	-62.19	7.37	-54.82	75.1

Table 7-24. Radiated Spurious Data (Band 26 – Low Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 185 of 213

OPERATING FREQUENCY: 836.50 MHz
 CHANNEL: 26915
 MEASURED OUTPUT POWER: 20.96 dBm = 0.125 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 33.96 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1673.00	H	121	254	-41.74	6.70	-35.04	56.0
2509.50	H	110	0	-51.86	7.63	-44.23	65.2
3346.00	H	-	-	-63.01	7.51	-55.49	76.5

Table 7-25. Radiated Spurious Data (Band 26 – Mid Channel)

OPERATING FREQUENCY: 847.50 MHz
 CHANNEL: 27025
 MEASURED OUTPUT POWER: 19.03 dBm = 0.080 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 32.03 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1695.00	H	118	236	-45.23	6.70	-38.53	57.6
2542.50	H	128	210	-52.50	7.60	-44.90	63.9
3390.00	H	-	-	-61.95	7.66	-54.29	73.3

Table 7-26. Radiated Spurious Data (Band 26 – High Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 186 of 213

OPERATING FREQUENCY: 836.50 MHz
 CHANNEL: 26915
 MEASURED OUTPUT POWER: 19.49 dBm = 0.089 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 32.49 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBd]	Spurious Emission Level [dBm]	[dBc]
1673.00	H	110	269	-49.15	6.70	-42.45	61.9
2509.50	H	110	283	-54.06	7.63	-46.43	65.9
3346.00	H	-	-	-63.12	7.51	-55.60	75.1

Table 7-27. Radiated Spurious Data with WCP (Band 26 – Mid Channel)

OPERATING FREQUENCY: 1711.50 MHz
 CHANNEL: 19965
 MEASURED OUTPUT POWER: 22.94 dBm = 0.197 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 35.94 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
3423.00	H	110	96	-55.76	9.87	-45.89	68.8
5134.50	H	110	128	-56.39	10.76	-45.63	68.6
6846.00	H	-	-	-56.58	11.67	-44.92	67.9

Table 7-28. Radiated Spurious Data (Band 4 – Low Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 187 of 213

OPERATING FREQUENCY: 1732.50 MHz
 CHANNEL: 20175
 MEASURED OUTPUT POWER: 21.73 dBm = 0.149 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 34.73 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
3465.00	H	110	283	-59.31	9.91	-49.40	71.1
5197.50	H	110	144	-55.49	10.75	-44.75	66.5
6930.00	H	-	-	-56.01	11.76	-44.25	66.0

Table 7-29. Radiated Spurious Data (Band 4 – Mid Channel)

OPERATING FREQUENCY: 1753.50 MHz
 CHANNEL: 20385
 MEASURED OUTPUT POWER: 22.59 dBm = 0.181 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 35.59 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
3507.00	H	110	251	-56.93	9.95	-46.98	69.6
5260.50	H	110	95	-54.79	10.71	-44.09	66.7
7014.00	H	-	-	-56.78	11.83	-44.95	67.5

Table 7-30. Radiated Spurious Data (Band 4 – High Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 188 of 213

OPERATING FREQUENCY: 1711.50 MHz
 CHANNEL: 19965
 MEASURED OUTPUT POWER: 22.44 dBm = 0.175 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 35.44 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
3423.00	H	110	99	-55.16	9.87	-45.29	67.7
5134.50	H	110	131	-55.90	10.76	-45.14	67.6
6846.00	H	-	-	-55.85	11.67	-44.19	66.6

Table 7-31. Radiated Spurious Data with WCP (Band 4 – Low Channel)

OPERATING FREQUENCY: 1850.70 MHz
 CHANNEL: 18607
 MEASURED OUTPUT POWER: 21.63 dBm = 0.146 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 34.63 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
3701.40	H	162	115	-51.49	9.52	-41.97	63.6
5552.10	H	-	-	-57.21	11.03	-46.18	67.8
7402.80	H	-	-	-53.73	10.95	-42.78	64.4

Table 7-32. Radiated Spurious Data (Band 2 – Low Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 189 of 213

OPERATING FREQUENCY: 1880.00 MHz
 CHANNEL: 18900
 MEASURED OUTPUT POWER: 21.99 dBm = 0.158 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 34.99 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
3760.00	H	159	282	-50.66	9.39	-41.28	63.3
5640.00	H	165	310	-56.04	11.22	-44.81	66.8
7520.00	H	-	-	-54.25	11.10	-43.15	65.1

Table 7-33. Radiated Spurious Data (Band 2 – Mid Channel)

OPERATING FREQUENCY: 1909.30 MHz
 CHANNEL: 19193
 MEASURED OUTPUT POWER: 22.31 dBm = 0.170 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 35.31 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
3818.60	H	110	214	-51.92	9.32	-42.60	64.9
5727.90	H	109	305	-56.33	11.35	-44.98	67.3
7637.20	H	-	-	-53.77	11.32	-42.45	64.8

Table 7-34. Radiated Spurious Data (Band 2 – High Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 190 of 213

OPERATING FREQUENCY: 1909.30 MHz
 CHANNEL: 19193
 MEASURED OUTPUT POWER: 22.05 dBm = 0.160 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 35.05 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
3818.60	H	109	218	-51.89	9.39	-42.51	64.6
5727.90	H	152	282	-56.33	11.22	-45.10	67.2
7637.20	H	-	-	-54.18	11.10	-43.08	65.1

Table 7-35. Radiated Spurious Data with WCP (Band 2 – High Channel)

OPERATING FREQUENCY: 1852.50 MHz
 CHANNEL: 26065
 MEASURED OUTPUT POWER: 21.10 dBm = 0.129 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 34.10 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
3705.00	H	110	62	-51.65	9.52	-42.13	63.2
5557.50	H	110	107	-55.70	11.03	-44.67	65.8
7410.00	H	-	-	-53.77	10.95	-42.82	63.9

Table 7-36. Radiated Spurious Data (Band 25 – Low Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 191 of 213

OPERATING FREQUENCY: 1882.50 MHz
 CHANNEL: 26365
 MEASURED OUTPUT POWER: 21.27 dBm = 0.134 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 34.27 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
3765.00	H	110	105	-52.43	9.37	-43.06	64.3
5647.50	H	110	102	-56.08	11.23	-44.85	66.1
7530.00	H	-	-	-53.88	11.13	-42.75	64.0

Table 7-37. Radiated Spurious Data (Band 25 – Mid Channel)

OPERATING FREQUENCY: 1912.50 MHz
 CHANNEL: 26665
 MEASURED OUTPUT POWER: 19.23 dBm = 0.084 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 32.23 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
3825.00	H	110	107	-49.70	9.33	-40.36	59.6
5737.50	H	110	264	-55.31	11.39	-43.92	63.2
7650.00	H	-	-	-53.99	11.34	-42.65	61.9

Table 7-38. Radiated Spurious Data (Band 25 – High Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 192 of 213

OPERATING FREQUENCY: 1882.50 MHz
 CHANNEL: 26365
 MEASURED OUTPUT POWER: 20.38 dBm = 0.109 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: $43 + 10 \log_{10} (W) =$ 33.38 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
3765.00	H	110	58	-52.12	9.37	-42.75	63.1
5647.50	H	110	106	-55.63	11.23	-44.40	64.8
7530.00	H	-	-	-53.28	11.13	-42.15	62.5

Table 7-39. Radiated Spurious Data with WCP (Band 25 – Mid Channel)

OPERATING FREQUENCY: 2506.00 MHz
 CHANNEL: 39750
 MEASURED OUTPUT POWER: 18.09 dBm = 0.064 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: $55 + 10 \log_{10} (W) =$ 43.09 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
5012.00	V	110	255	-57.60	10.91	-46.68	64.8
7518.00	V	155	273	-51.47	11.10	-40.37	58.5
10024.00	V	-	-	-55.11	12.07	-43.04	61.1

Table 7-40. Radiated Spurious Data with WCP (Band 41 – Low Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 193 of 213

OPERATING FREQUENCY: 2593.00 MHz
 CHANNEL: 40620
 MEASURED OUTPUT POWER: 17.30 dBm = 0.054 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: $55 + 10 \log_{10}(W)$ 42.30 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
5186.00	H	197	81	-47.38	10.75	-36.63	53.9
7779.00	H	135	148	-54.35	11.40	-42.95	60.2
10372.00	H	-	-	-55.31	12.59	-42.72	60.0

Table 7-41. Radiated Spurious Data with WCP (Band 41 – Mid Channel)

OPERATING FREQUENCY: 2680.00 MHz
 CHANNEL: 41490
 MEASURED OUTPUT POWER: 18.29 dBm = 0.067 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: $55 + 10 \log_{10}(W)$ 43.29 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
5360.00	V	166	252	-48.48	10.74	-37.74	56.0
8040.00	V	166	309	-51.77	11.14	-40.63	58.9
10720.00	V	-	-	-55.29	12.77	-42.52	60.8

Table 7-42. Radiated Spurious Data with WCP (Band 41 – High Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 194 of 213

OPERATING FREQUENCY: 2593.00 MHz
 CHANNEL: 40620
 MEASURED OUTPUT POWER: 20.90 dBm = 0.123 W
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: $55 + 10 \log_{10} (W)$ 45.90 dBc

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	[dBc]
5186.00	V	143	308	-55.35	10.75	-44.60	65.5
7779.00	V	110	278	-54.58	11.40	-43.18	64.1
10372.00	V	-	-	-56.02	12.59	-43.43	64.3

Table 7-43. Radiated Spurious Data (Band 41 – Mid Channel)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 195 of 213

7.8 Frequency Stability / Temperature Variation

\$2.1055 \$22.355 \$24.235 \$27.54

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-D-2010. 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.

For Part 22, the frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency. For Part 24 and Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure Used

ANSI/TIA-603-D-2010

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

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 196 of 213

Band 12/17 Frequency Stability Measurements

§2.1055 §27.54

OPERATING FREQUENCY: 707,500,000 Hz
 CHANNEL: 23790
 REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	707,499,666	-334	-0.0000472
100 %		- 30	707,500,196	196	0.0000277
100 %		- 20	707,499,925	-75	-0.0000106
100 %		- 10	707,500,199	199	0.0000281
100 %		0	707,500,108	108	0.0000153
100 %		+ 10	707,499,970	-30	-0.0000042
100 %		+ 20	707,499,853	-147	-0.0000208
100 %		+ 30	707,499,956	-44	-0.0000062
100 %		+ 40	707,500,098	98	0.0000139
100 %		+ 50	707,499,825	-175	-0.0000247
BATT. ENDPOINT	3.45	+ 20	707,499,797	-203	-0.0000287

Table 7-44. Frequency Stability Data (Band 12/17)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)			Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset			Page 197 of 213

Band 12/17 Frequency Stability Measurements **§2.1055 §27.54**

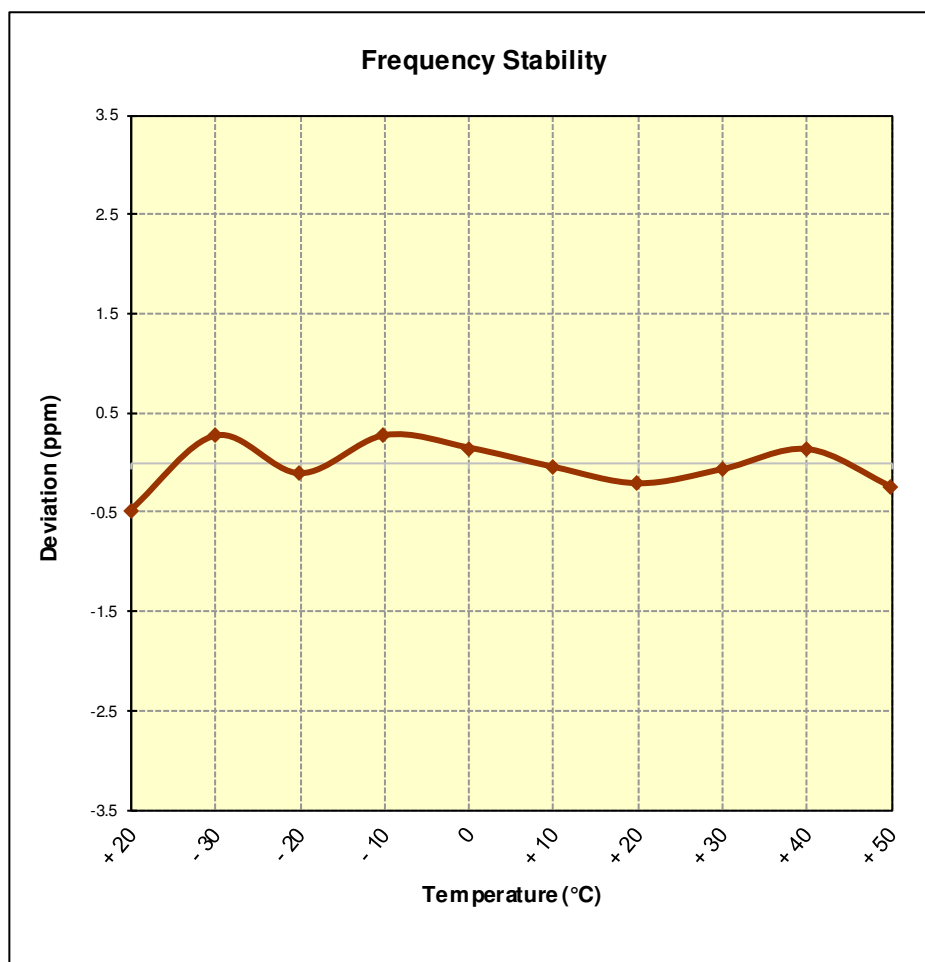


Figure 7-8. Frequency Stability Graph (Band 12/17)

FCC ID: A3LSMN930F	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 198 of 213

Band 13 Frequency Stability Measurements

§2.1055 §27.54

OPERATING FREQUENCY: 782,000,000 Hz
 CHANNEL: 23230
 REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	782,000,088	88	0.0000113
100 %		- 30	781,999,723	-277	-0.0000354
100 %		- 20	782,000,187	187	0.0000239
100 %		- 10	782,000,164	164	0.0000210
100 %		0	782,000,093	93	0.0000119
100 %		+ 10	781,999,946	-54	-0.0000069
100 %		+ 20	781,999,905	-95	-0.0000121
100 %		+ 30	781,999,967	-33	-0.0000042
100 %		+ 40	781,999,979	-21	-0.0000027
100 %		+ 50	782,000,186	186	0.0000238
BATT. ENDPOINT	3.45	+ 20	782,000,044	44	0.0000056

Table 7-45. Frequency Stability Data (Band 13)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)			Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset			Page 199 of 213

Band 13 Frequency Stability Measurements

§2.1055 §27.54

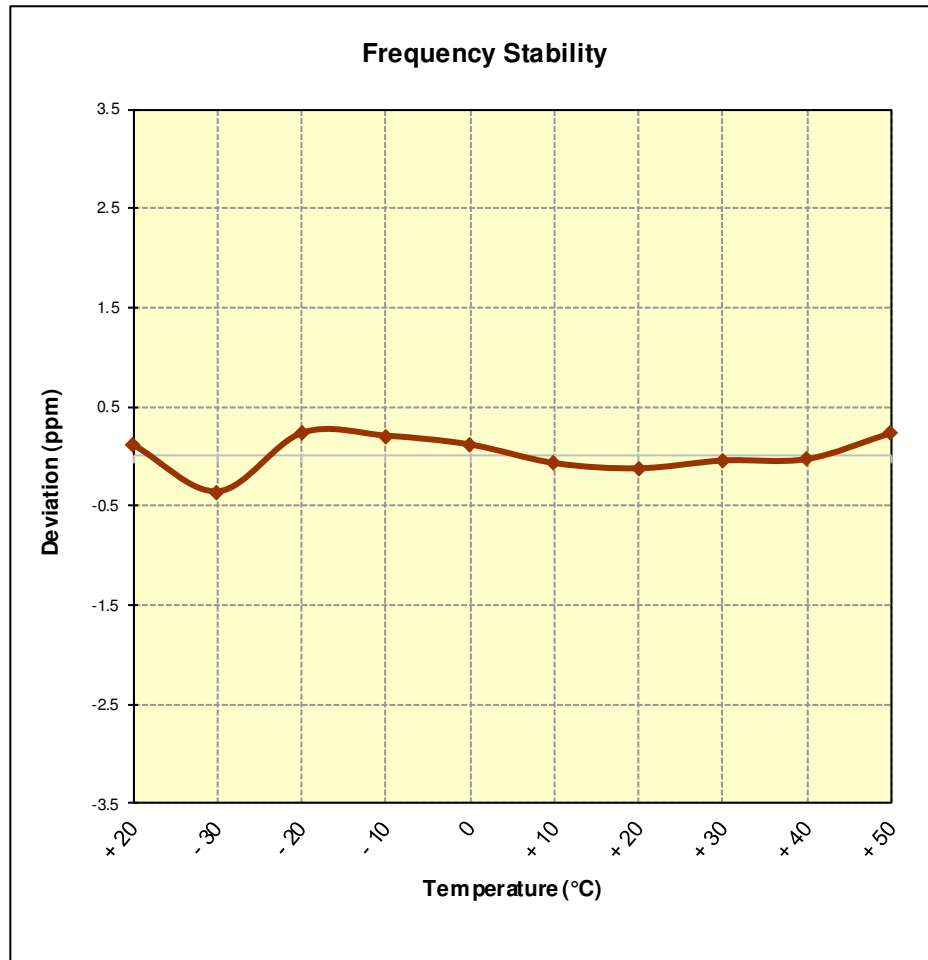


Figure 7-9. Frequency Stability Graph (Band 13)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 200 of 213	

Band 5 Frequency Stability Measurements

§2.1055 §22.355

OPERATING FREQUENCY: 836,500,000 Hz

CHANNEL: 20525

REFERENCE VOLTAGE: 3.85 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	836,499,973	-27	-0.0000032
100 %		- 30	836,499,888	-112	-0.0000134
100 %		- 20	836,500,083	83	0.0000099
100 %		- 10	836,500,168	168	0.0000201
100 %		0	836,500,155	155	0.0000185
100 %		+ 10	836,500,027	27	0.0000032
100 %		+ 20	836,500,364	364	0.0000435
100 %		+ 30	836,500,282	282	0.0000337
100 %		+ 40	836,499,874	-126	-0.0000151
100 %		+ 50	836,500,050	50	0.0000060
BATT. ENDPOINT	3.45	+ 20	836,500,274	274	0.0000328

Table 7-46. Frequency Stability Data (Band 5)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)			Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset			Page 201 of 213

Band 5 Frequency Stability Measurements

§2.1055 §22.355

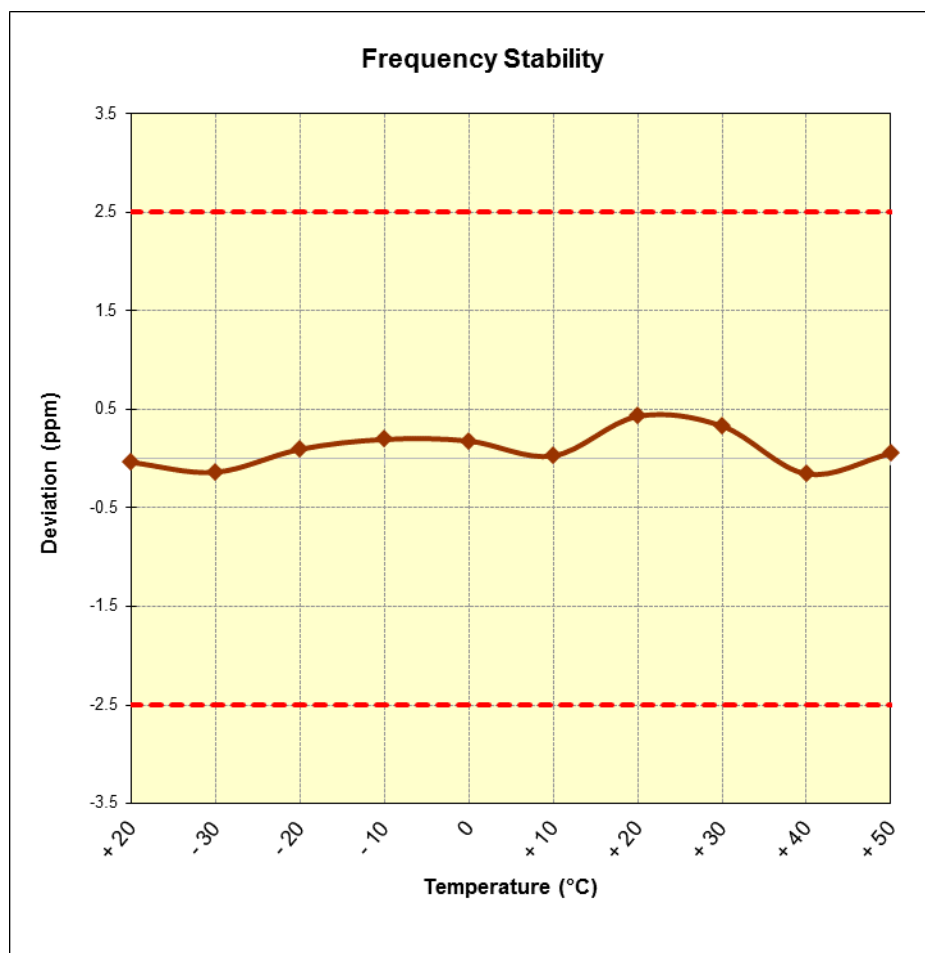


Figure 7-10. Frequency Stability Graph (Band 5)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 202 of 213	

Band 26 Frequency Stability Measurements

§2.1055 §22.355

OPERATING FREQUENCY: 831,500,000 Hz

CHANNEL: 26865

REFERENCE VOLTAGE: 3.85 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	831,500,379	379	0.0000456
100 %		- 30	831,499,915	-85	-0.0000102
100 %		- 20	831,500,194	194	0.0000233
100 %		- 10	831,500,240	240	0.0000289
100 %		0	831,500,045	45	0.0000054
100 %		+ 10	831,500,035	35	0.0000042
100 %		+ 20	831,500,132	132	0.0000159
100 %		+ 30	831,499,865	-135	-0.0000162
100 %		+ 40	831,499,945	-55	-0.0000066
100 %		+ 50	831,499,975	-25	-0.0000030
BATT. ENDPOINT	3.45	+ 20	831,499,717	-283	-0.0000340

Table 7-47. Frequency Stability Data (Band 26)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)			Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset			Page 203 of 213

Band 26 Frequency Stability Measurements

§2.1055 §22.355

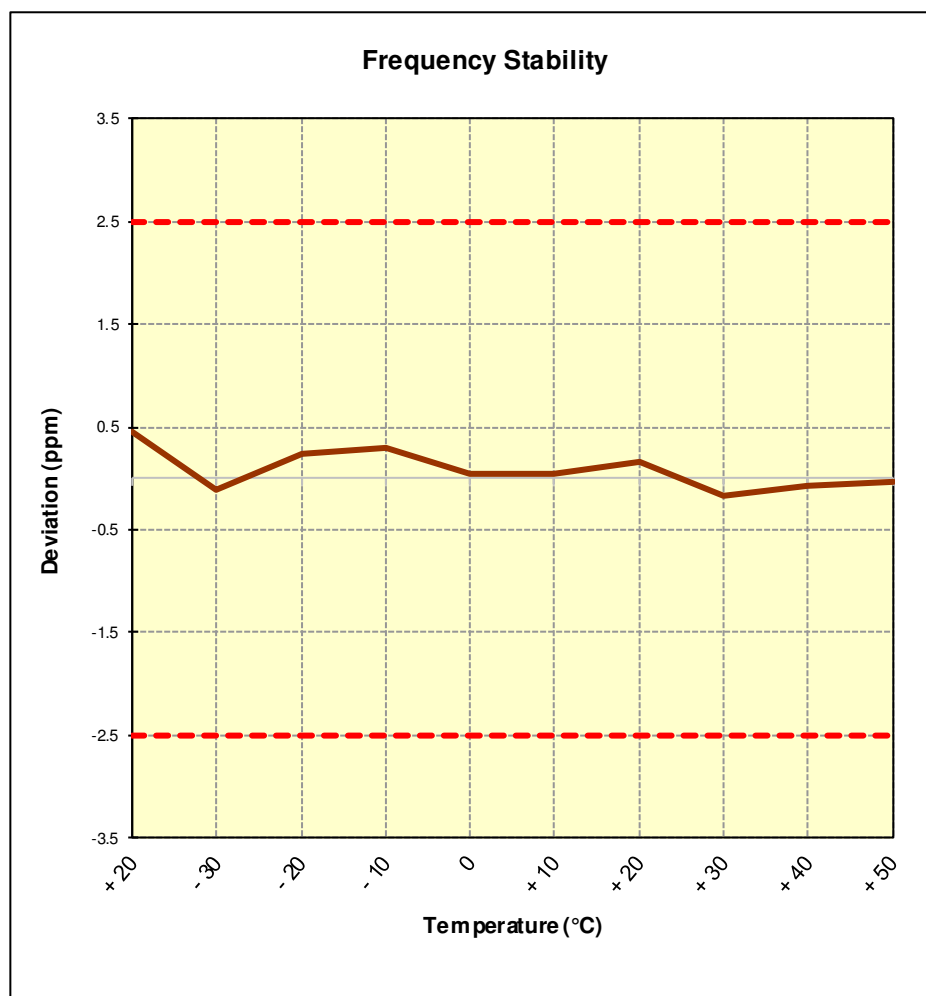


Figure 7-11. Frequency Stability Graph (Band 26)

FCC ID: A3LSMN930F			FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset			Page 204 of 213

Band 4 Frequency Stability Measurements

§2.1055 §§27.54

OPERATING FREQUENCY: 1,732,500,000 Hz
 CHANNEL: 20175
 REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	1,732,500,175	175	0.0000101
100 %		- 30	1,732,499,895	-105	-0.0000061
100 %		- 20	1,732,499,753	-247	-0.0000143
100 %		- 10	1,732,499,892	-108	-0.0000062
100 %		0	1,732,500,008	8	0.0000005
100 %		+ 10	1,732,500,135	135	0.0000078
100 %		+ 20	1,732,499,932	-68	-0.0000039
100 %		+ 30	1,732,499,747	-253	-0.0000146
100 %		+ 40	1,732,500,052	52	0.0000030
100 %		+ 50	1,732,499,857	-143	-0.0000083
BATT. ENDPOINT	3.45	+ 20	1,732,499,966	-34	-0.0000020

Table 7-48. Frequency Stability Data (Band 4)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 205 of 213	

Band 4 Frequency Stability Measurements

§2.1055 §§27.54

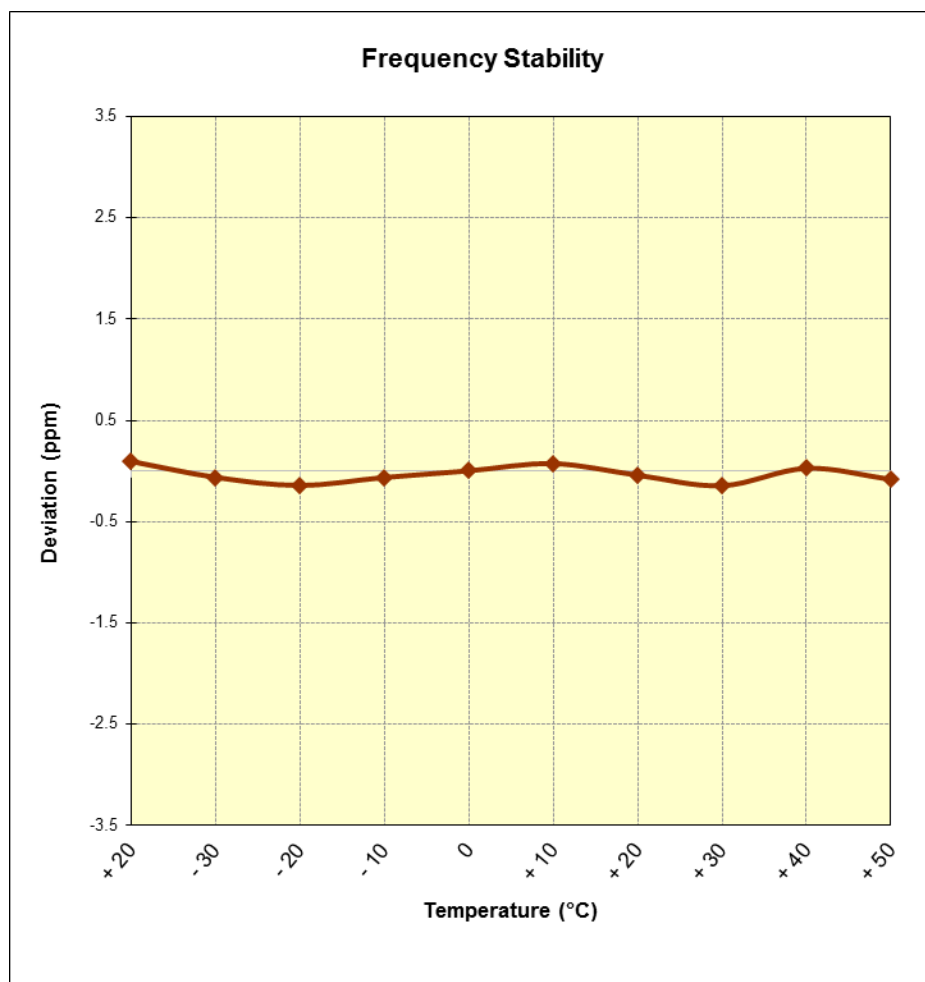


Figure 7-12. Frequency Stability Graph (Band 4)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 206 of 213

Band 25 Frequency Stability Measurements

§2.1055 §24.235

OPERATING FREQUENCY: 1,882,500,000 Hz
 CHANNEL: 26365
 REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	1,882,499,798	-202	-0.0000107
100 %		- 30	1,882,500,074	74	0.0000039
100 %		- 20	1,882,500,100	100	0.0000053
100 %		- 10	1,882,500,112	112	0.0000059
100 %		0	1,882,500,129	129	0.0000069
100 %		+ 10	1,882,500,058	58	0.0000031
100 %		+ 20	1,882,500,141	141	0.0000075
100 %		+ 30	1,882,499,967	-33	-0.0000018
100 %		+ 40	1,882,499,960	-40	-0.0000021
100 %		+ 50	1,882,499,992	-8	-0.0000004
BATT. ENDPOINT	3.45	+ 20	1,882,499,647	-353	-0.0000188

Table 7-49. Frequency Stability Data (Band 25)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMN930F	 FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION) 		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 207 of 213

Band 25 Frequency Stability Measurements

§2.1055 §24.235

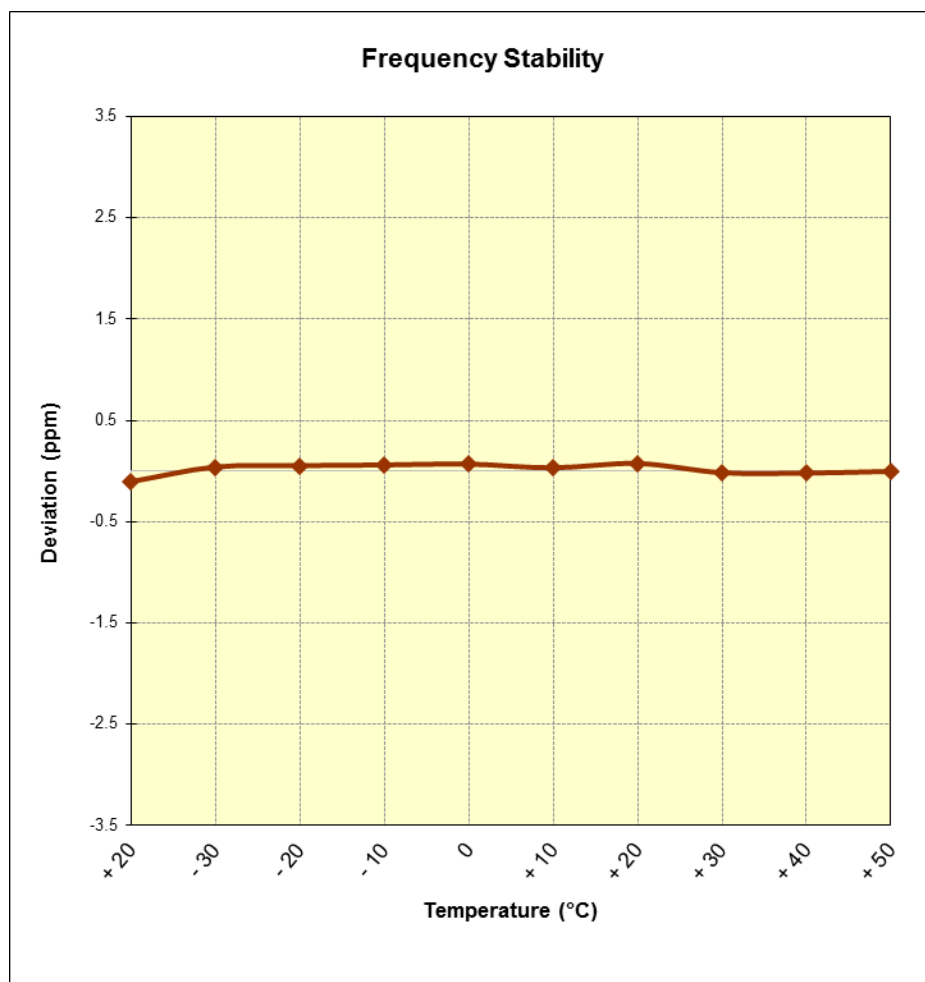


Figure 7-13. Frequency Stability Graph (Band 25)

FCC ID: A3LSMN930F	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset		Page 208 of 213

Band 2 Frequency Stability Measurements

§2.1055 §27.54

OPERATING FREQUENCY: 1,880,000,000 Hz
 CHANNEL: 18900
 REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	1,879,999,754	-246	-0.0000131
100 %		- 30	1,879,999,991	-9	-0.0000005
100 %		- 20	1,880,000,283	283	0.0000151
100 %		- 10	1,879,999,745	-255	-0.0000136
100 %		0	1,879,999,876	-124	-0.0000066
100 %		+ 10	1,879,999,799	-201	-0.0000107
100 %		+ 20	1,879,999,909	-91	-0.0000048
100 %		+ 30	1,879,999,880	-120	-0.0000064
100 %		+ 40	1,879,999,700	-300	-0.0000160
100 %		+ 50	1,880,000,002	2	0.0000001
BATT. ENDPOINT	3.45	+ 20	1,880,000,206	206	0.0000110

Table 7-50. Frequency Stability Data (Band 2)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)			Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset			Page 209 of 213

Band 2 Frequency Stability Measurements

§2.1055 §27.54

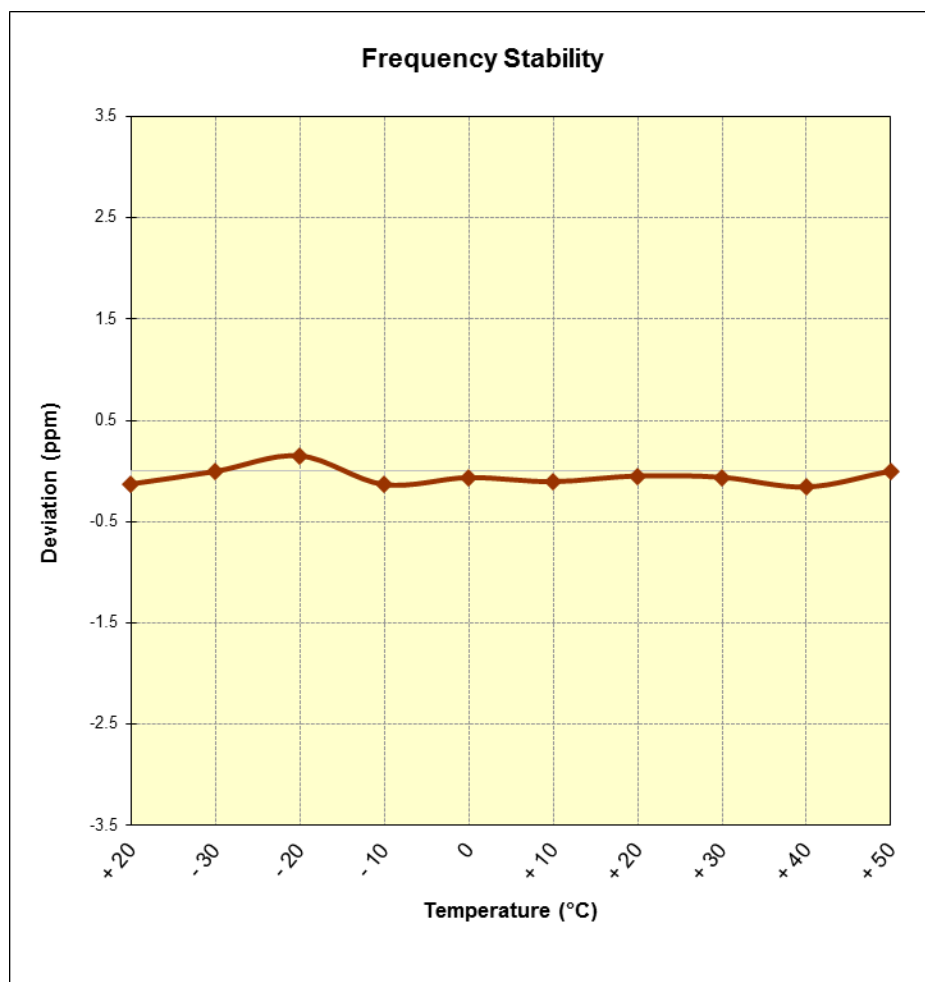


Figure 7-14. Frequency Stability Graph (Band 2)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 210 of 213	

Band 41 Frequency Stability Measurements

§2.1055 §27.54

OPERATING FREQUENCY: 2,593,000,000 Hz
 CHANNEL: 40620
 REFERENCE VOLTAGE: 3.85 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	+ 20 (Ref)	2,592,999,746	-254	-0.0000098
100 %		- 30	2,592,999,978	-22	-0.0000008
100 %		- 20	2,593,000,143	143	0.0000055
100 %		- 10	2,593,000,170	170	0.0000066
100 %		0	2,593,000,106	106	0.0000041
100 %		+ 10	2,593,000,256	256	0.0000099
100 %		+ 20	2,593,000,297	297	0.0000115
100 %		+ 30	2,593,000,336	336	0.0000130
100 %		+ 40	2,593,000,168	168	0.0000065
100 %		+ 50	2,592,999,730	-270	-0.0000104
BATT. ENDPOINT	3.45	+ 20	2,592,999,961	-39	-0.0000015

Table 7-51. Frequency Stability Data (Band 41)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 211 of 213	

Band 41 Frequency Stability Measurements **§2.1055 §27.54**

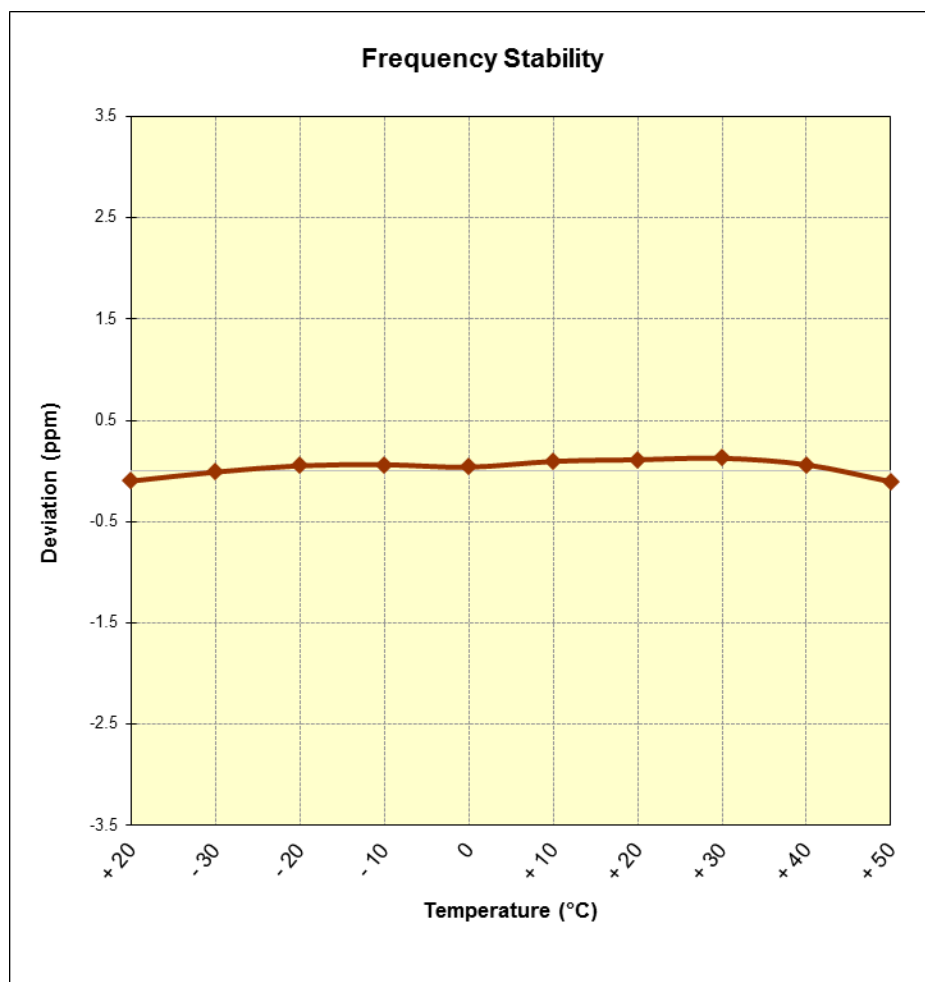


Figure 7-15. Frequency Stability Graph (Band 41)

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 212 of 213	

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMN930F** complies with all the requirements of Parts 22, 24, & 27 of the FCC rules for LTE operation only.

FCC ID: A3LSMN930F		FCC Pt. 22, 24, & 27 LTE MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1605250970.A3L	Test Dates: 5/25-6/16/2016	EUT Type: Portable Handset	Page 213 of 213	