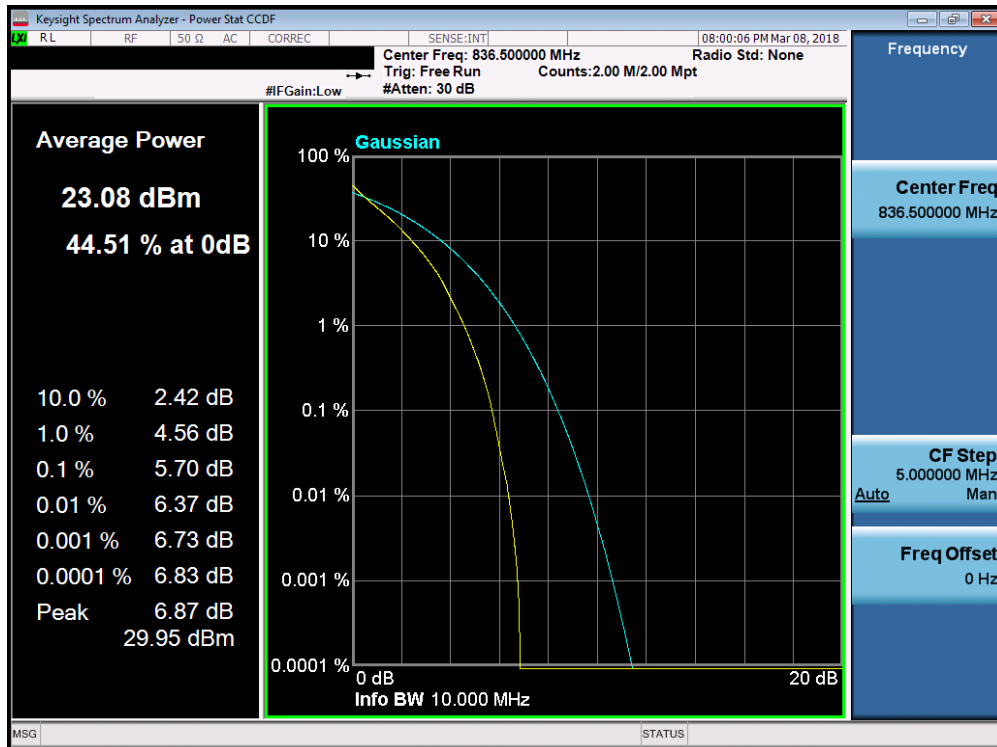
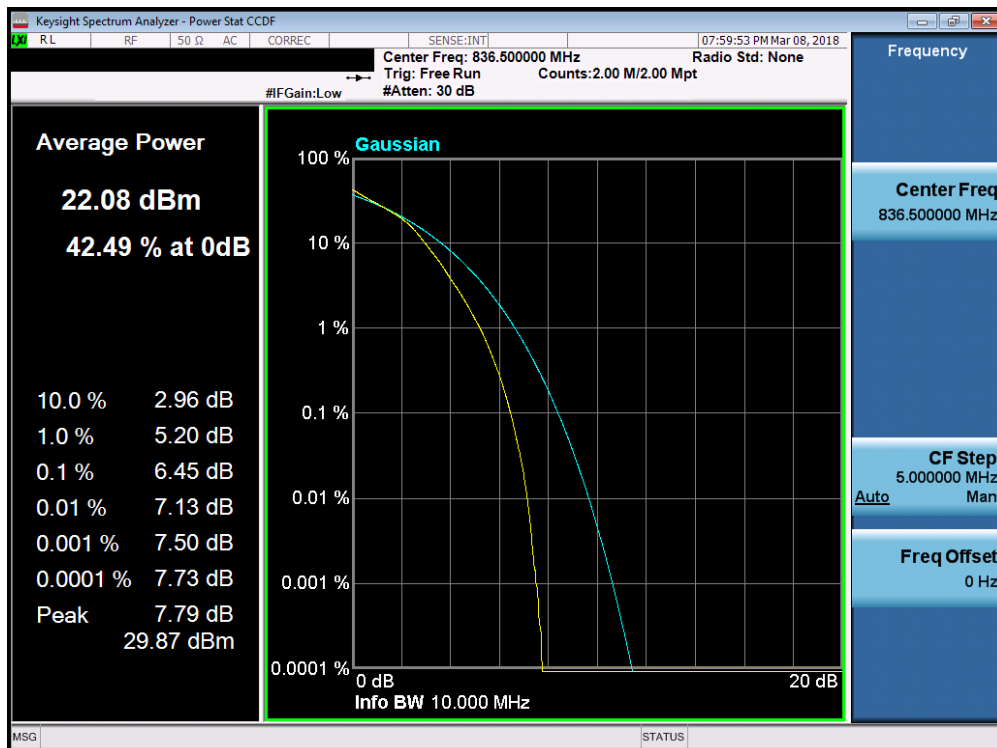




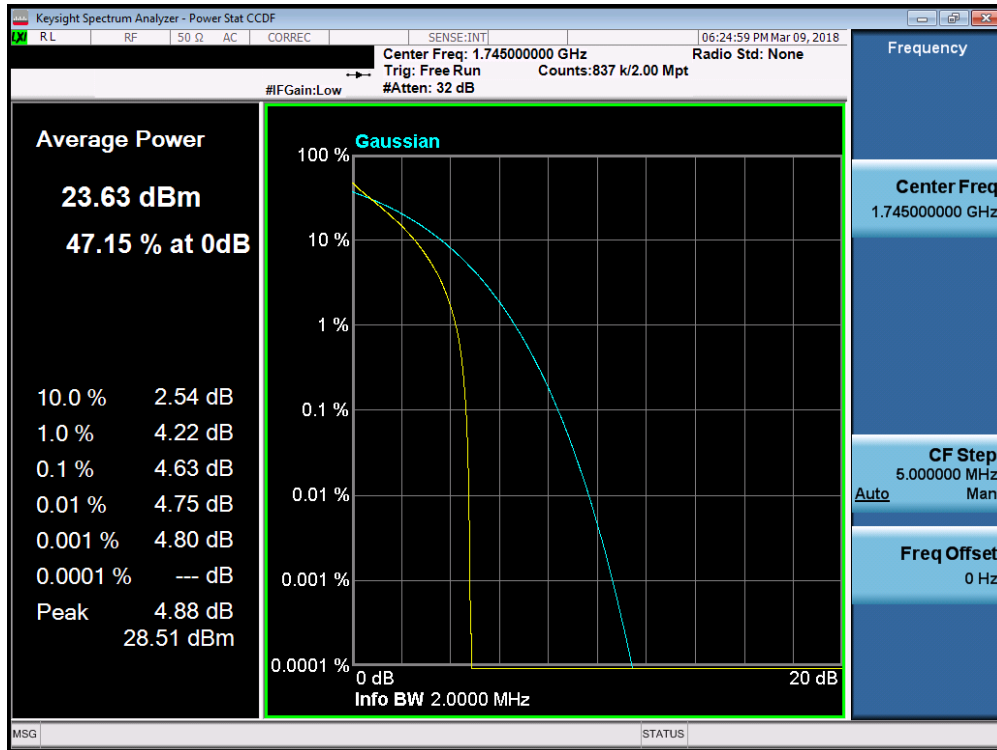
Plot 7-220. PAR Plot (Band 5 - 10.0MHz QPSK - Full RB Configuration)



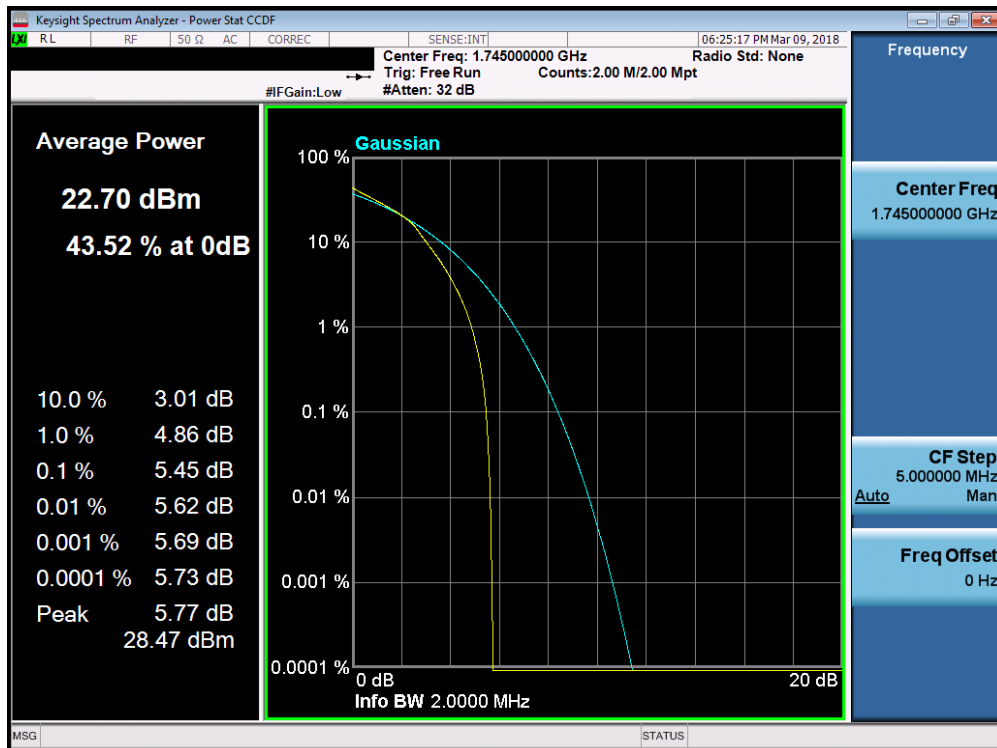
Plot 7-221. PAR Plot (Band 5 - 10.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset	Page 134 of 186

Band 66/4

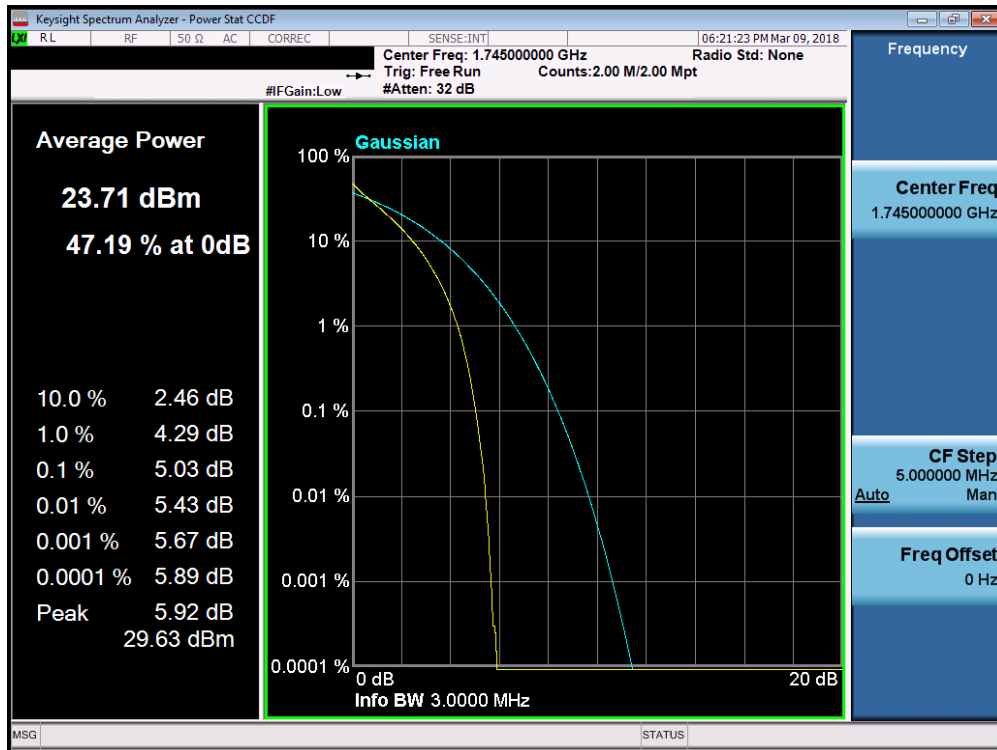


Plot 7-222. PAR Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)

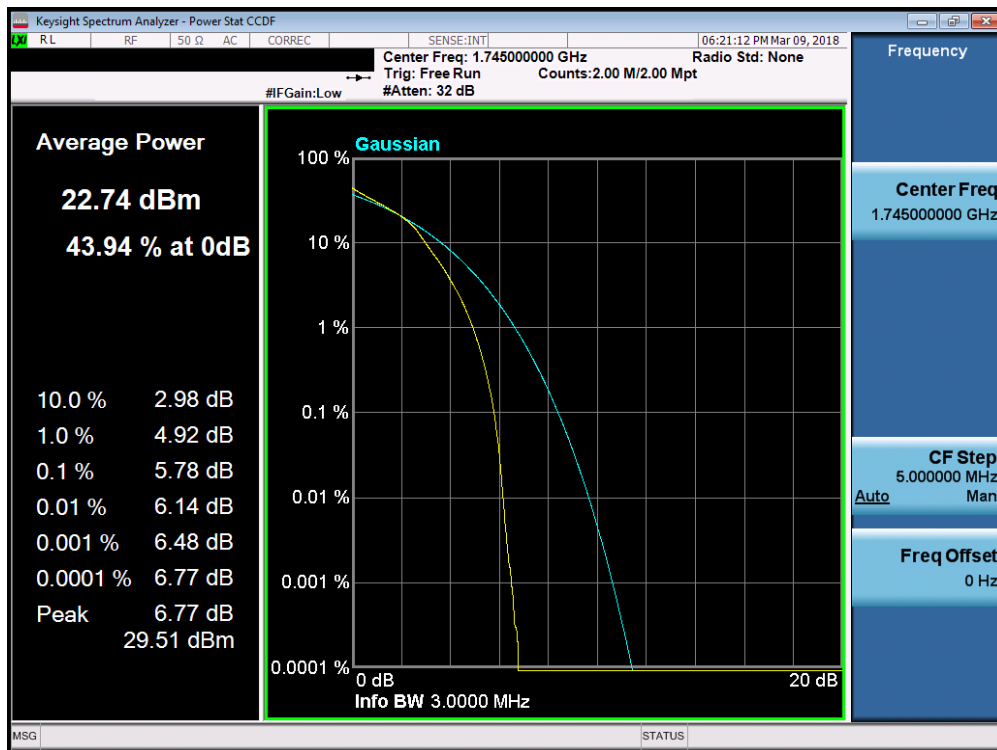


Plot 7-223. PAR Plot (Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 135 of 186

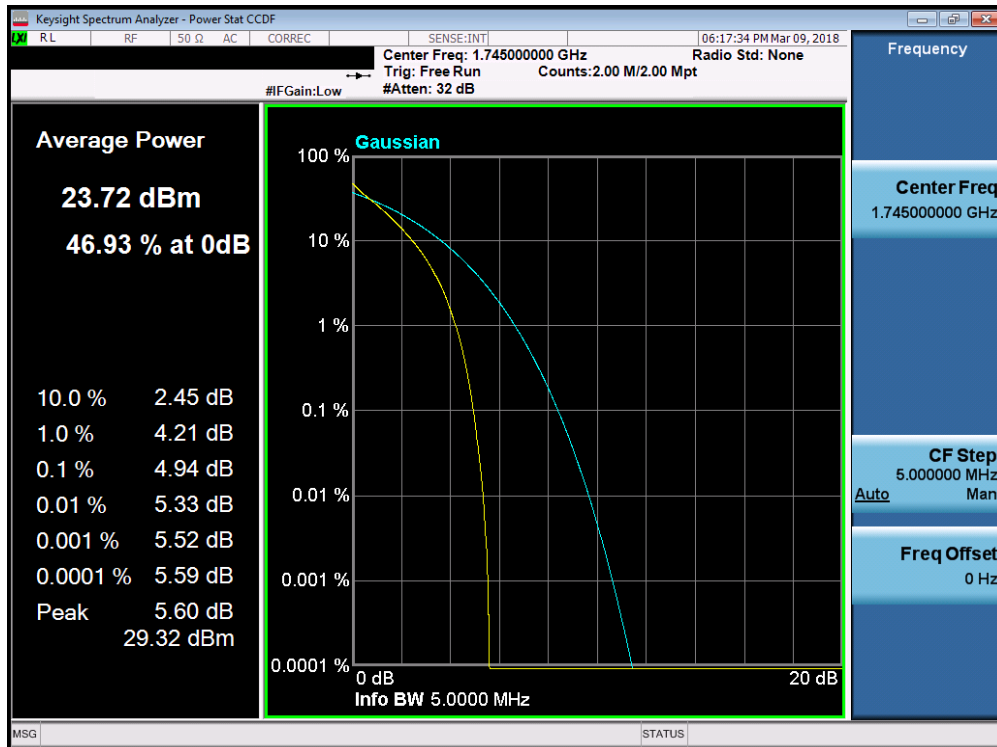


Plot 7-224. PAR Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

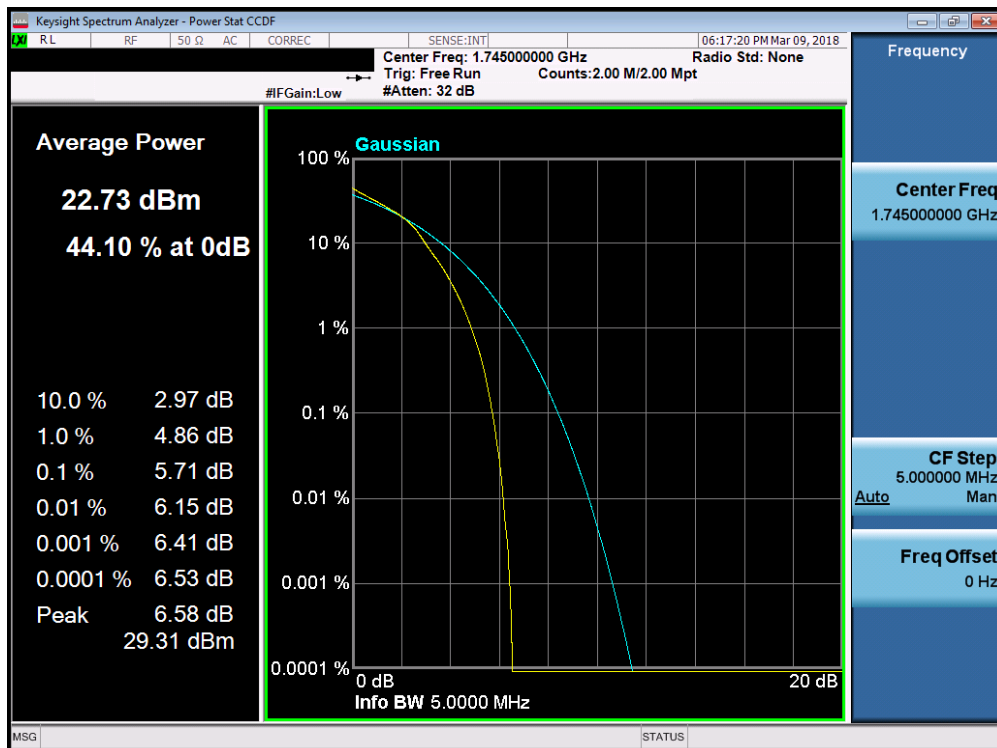


Plot 7-225. PAR Plot (Band 66/4 - 3.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset	Page 136 of 186	

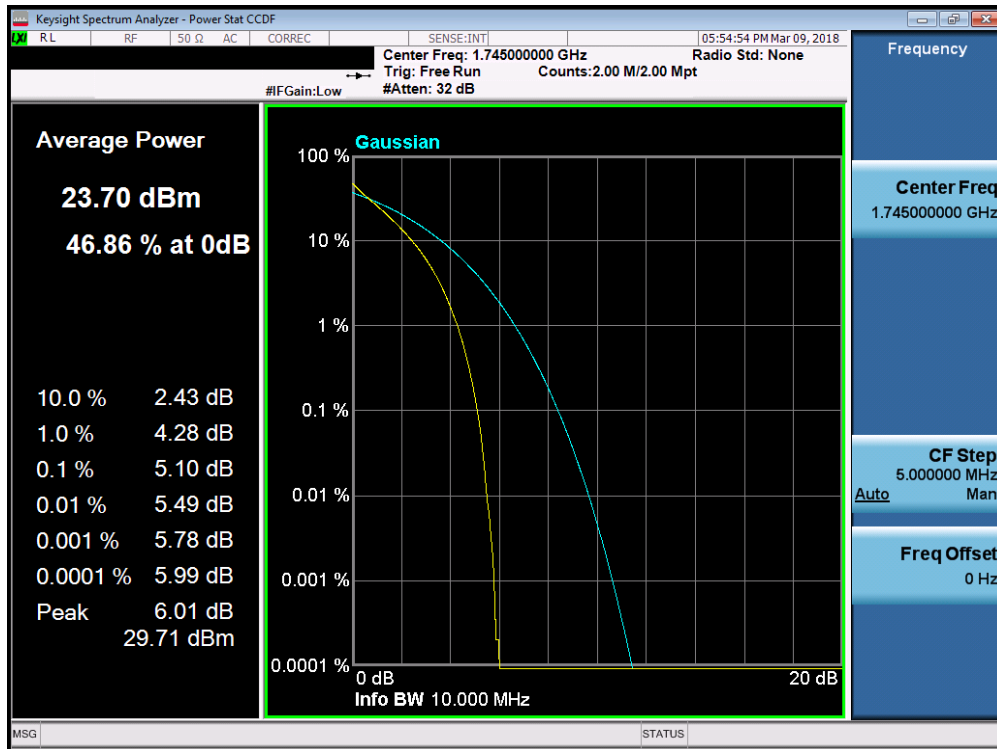


Plot 7-226. PAR Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

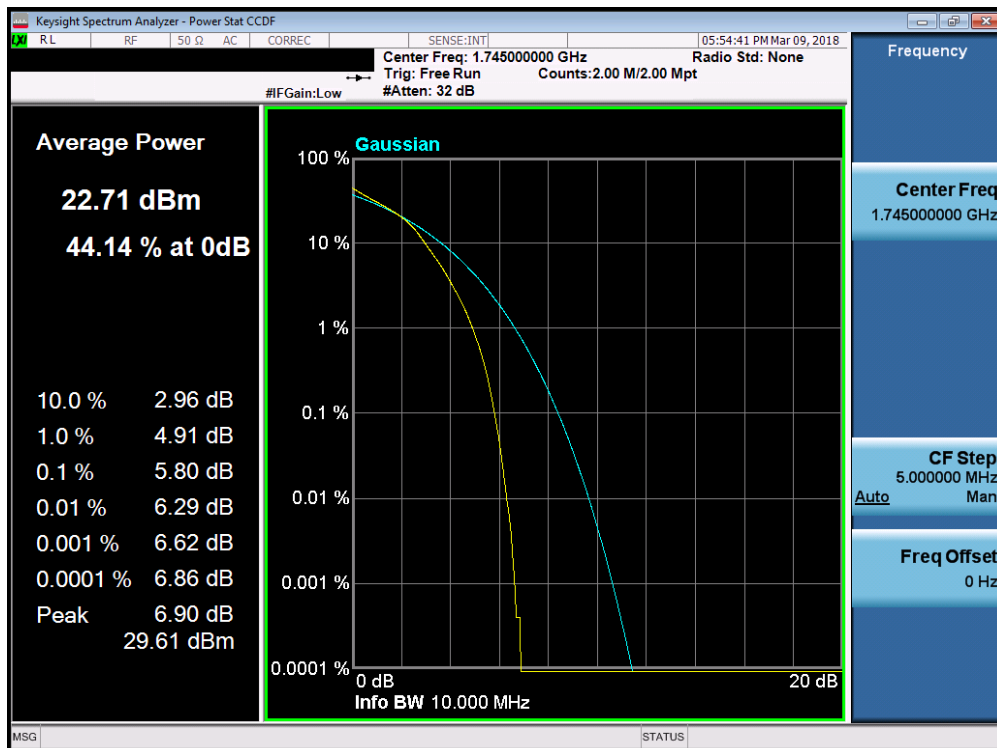


Plot 7-227. PAR Plot (Band 66/4 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 137 of 186

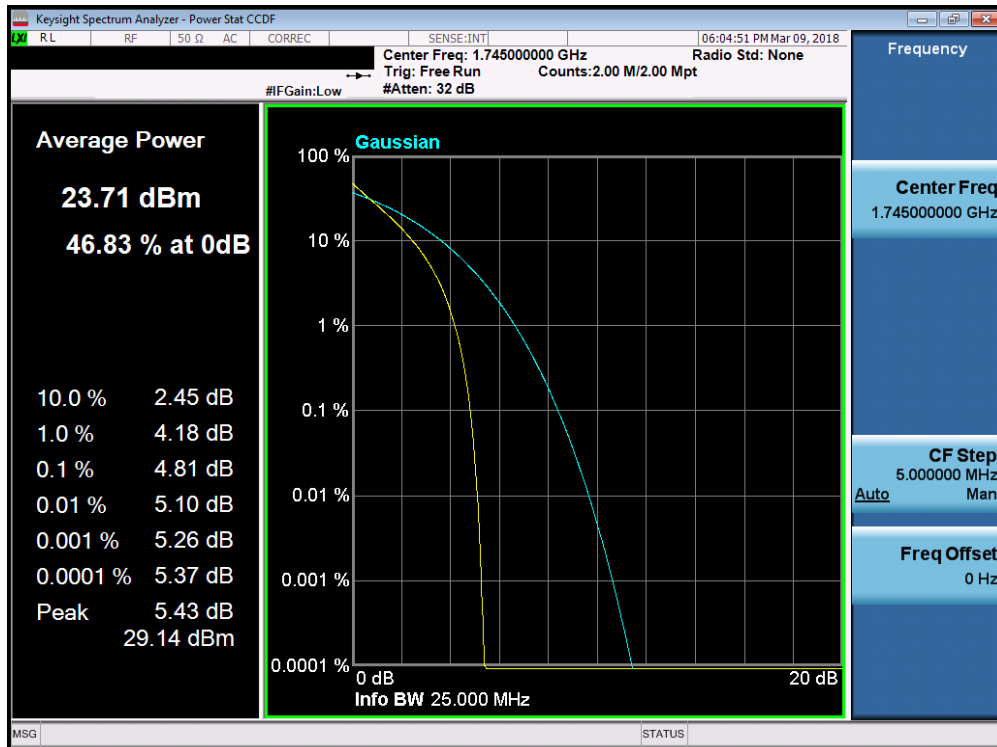


Plot 7-228. PAR Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

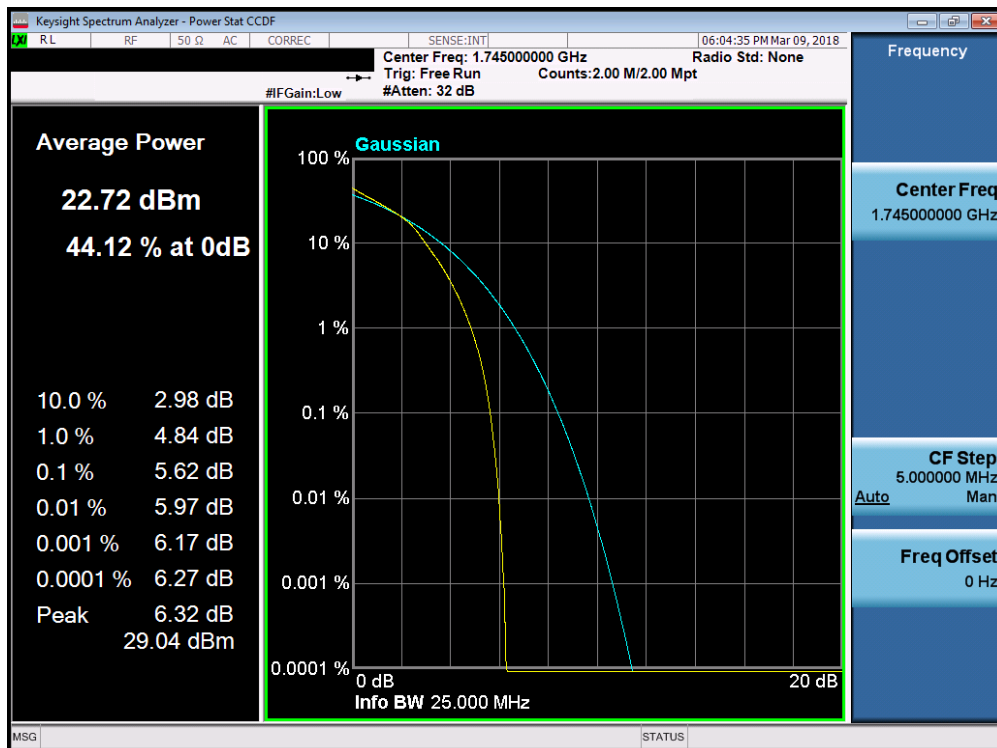


Plot 7-229. PAR Plot (Band 66/4 - 10.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset	Page 138 of 186

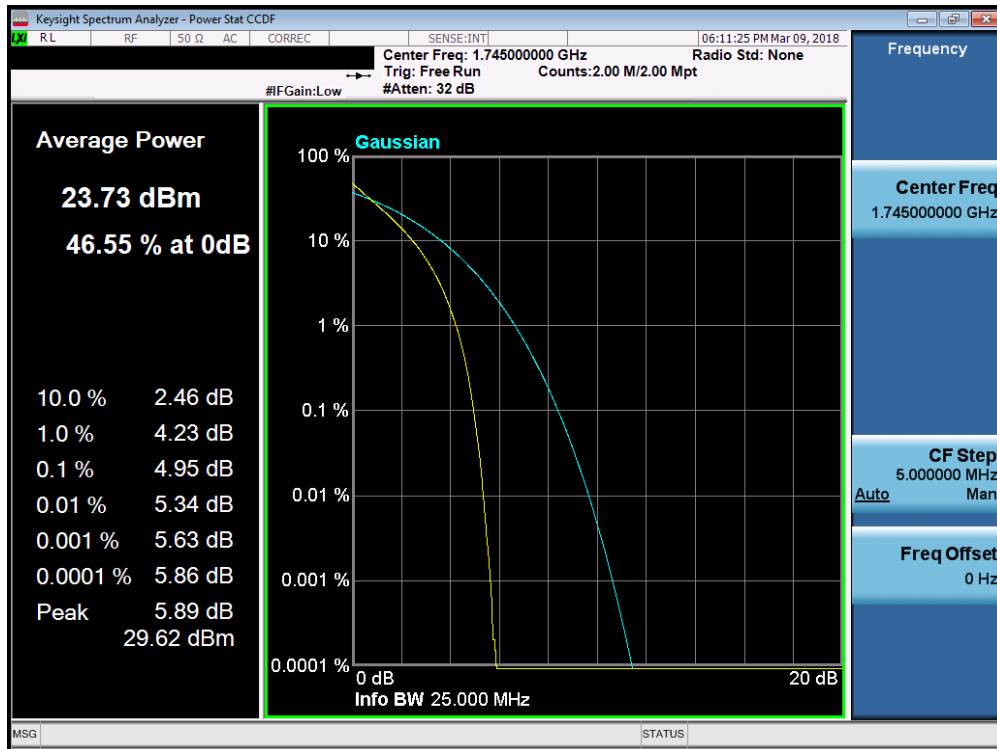


Plot 7-230. PAR Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

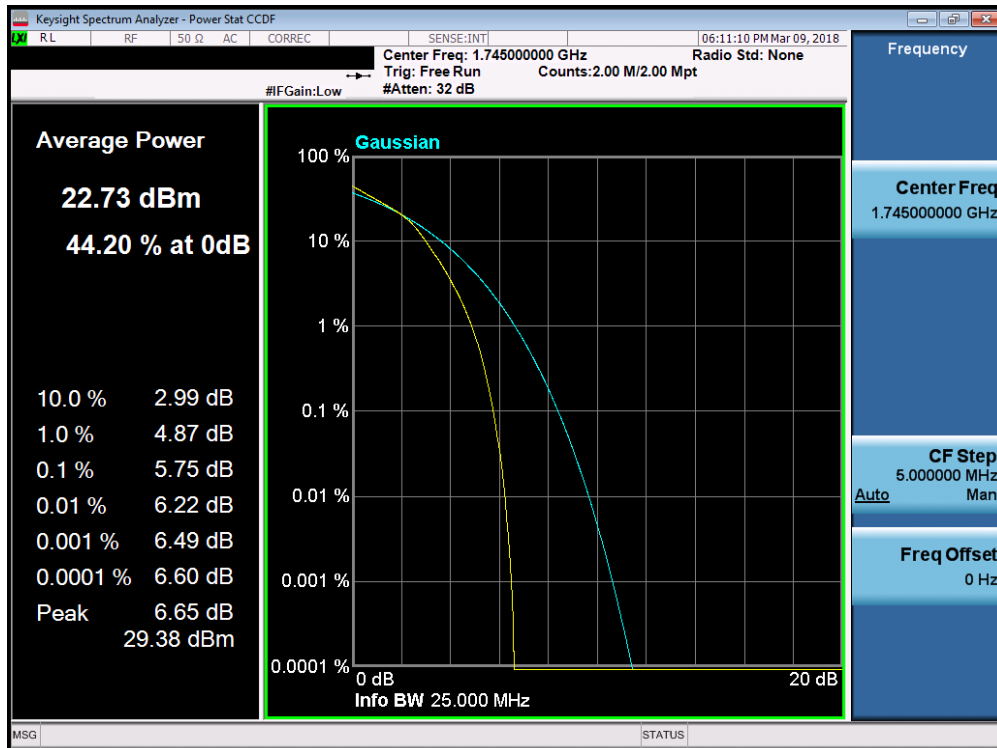


Plot 7-231. PAR Plot (Band 66/4 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 139 of 186



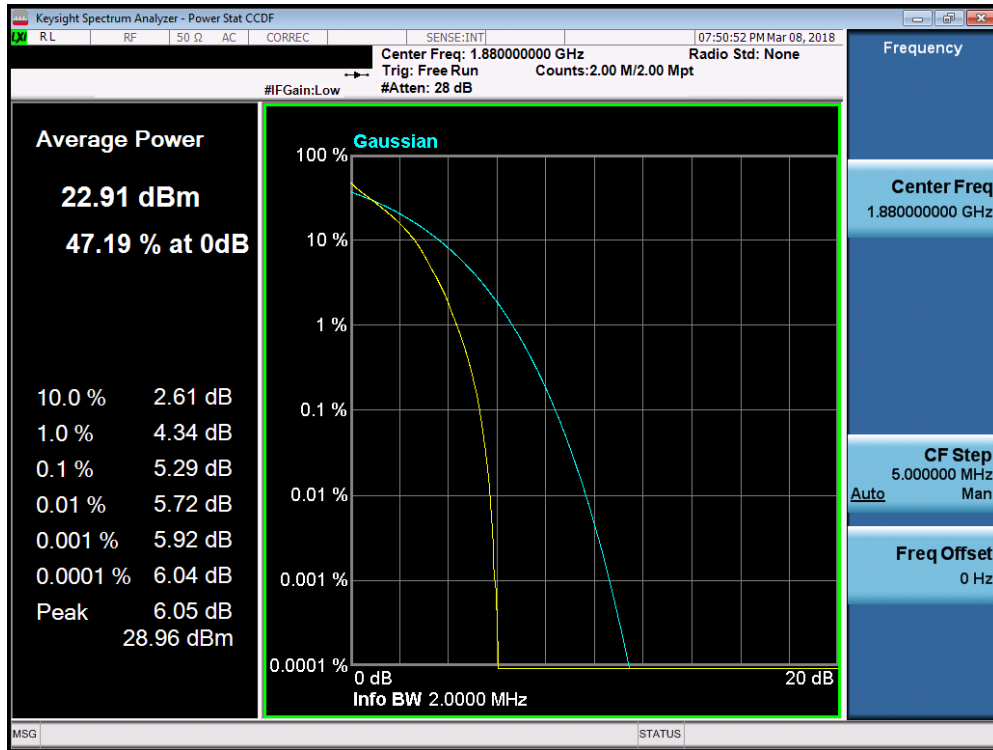
Plot 7-232. PAR Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)



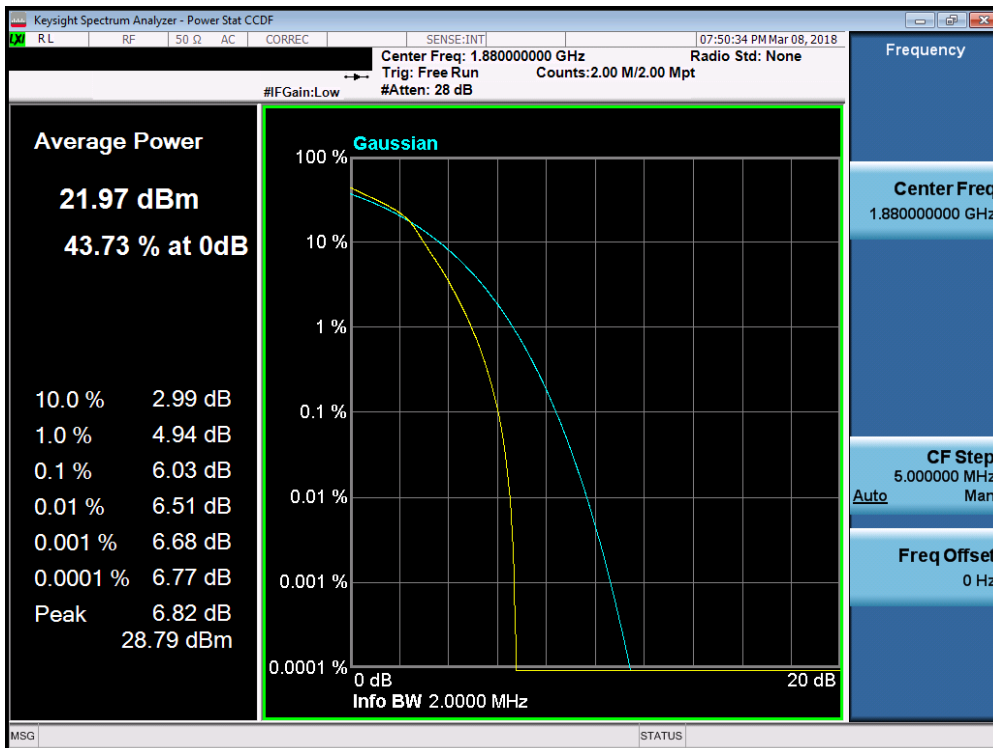
Plot 7-233. PAR Plot (Band 66/4 - 20.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset	Page 140 of 186

Band 2

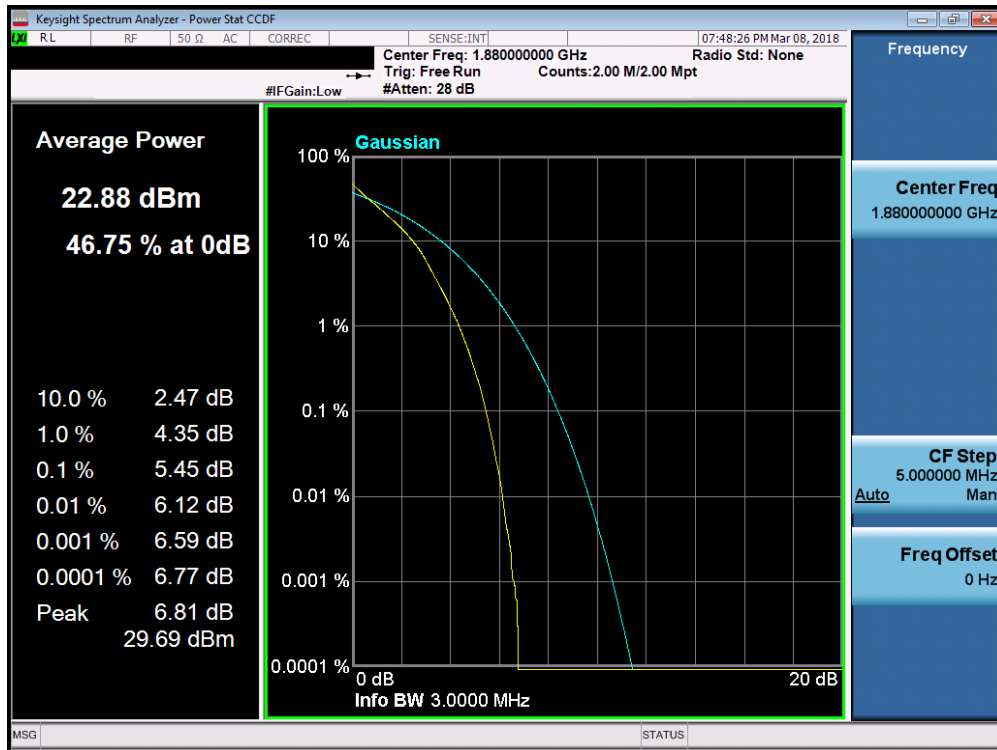


Plot 7-234. PAR Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

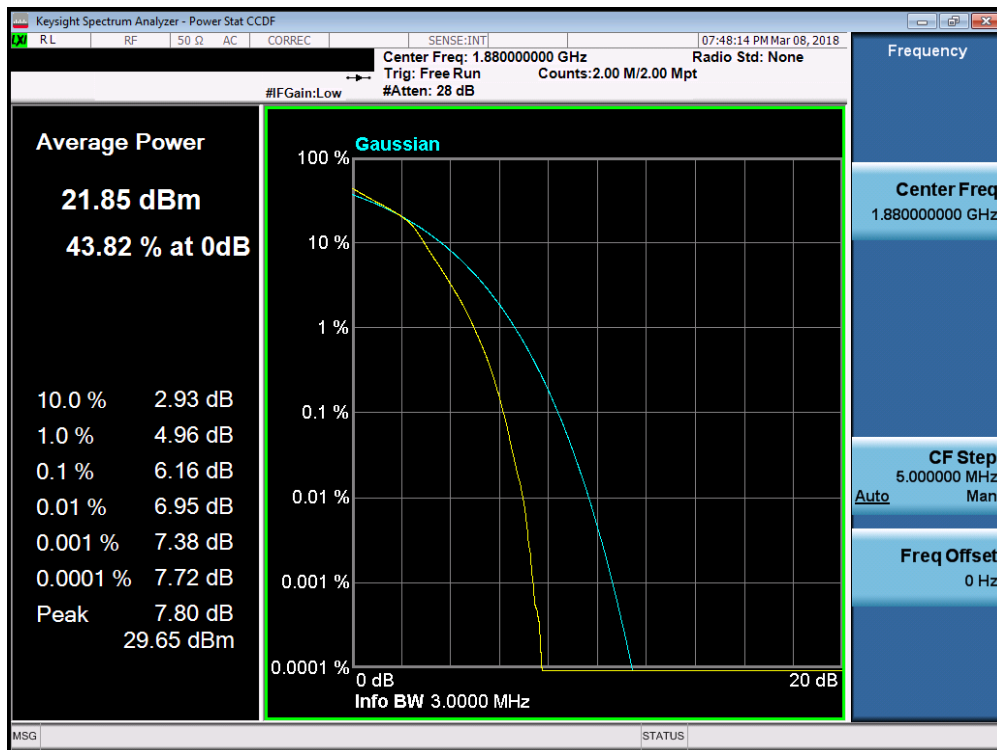


Plot 7-235. PAR Plot (Band 2 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 141 of 186

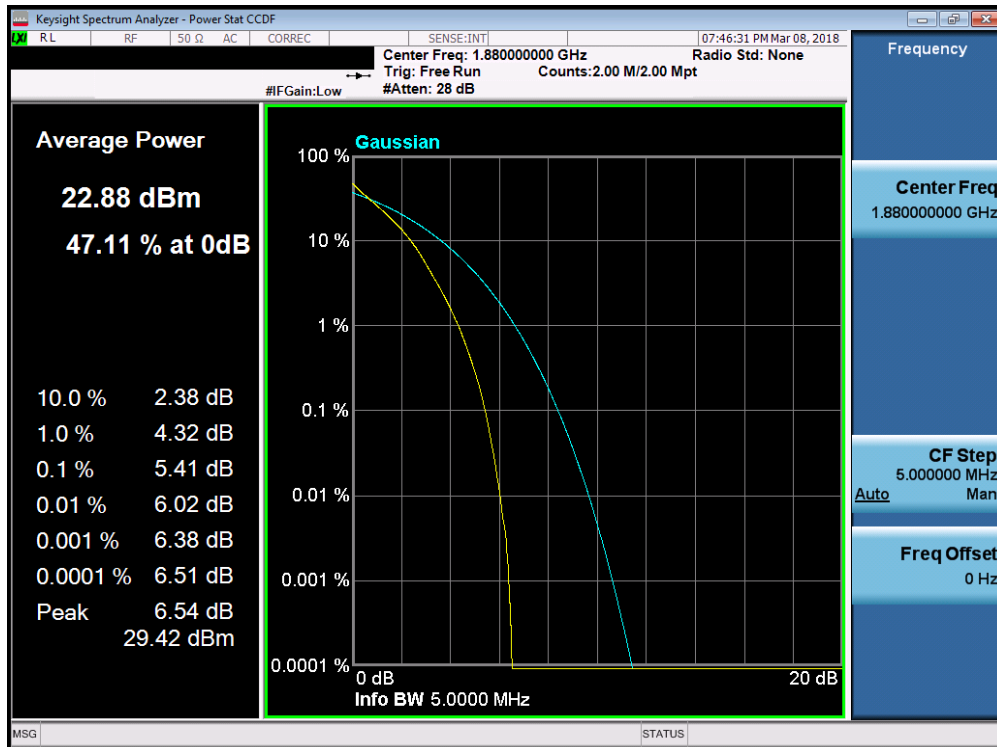


Plot 7-236. PAR Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

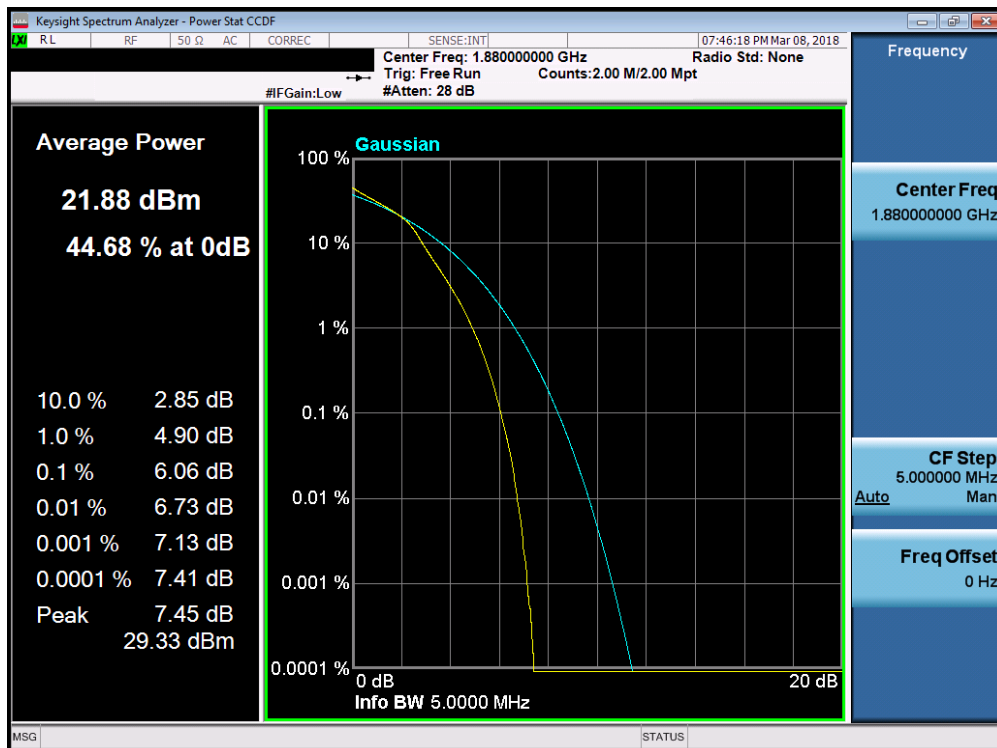


Plot 7-237. PAR Plot (Band 2 - 3.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 142 of 186

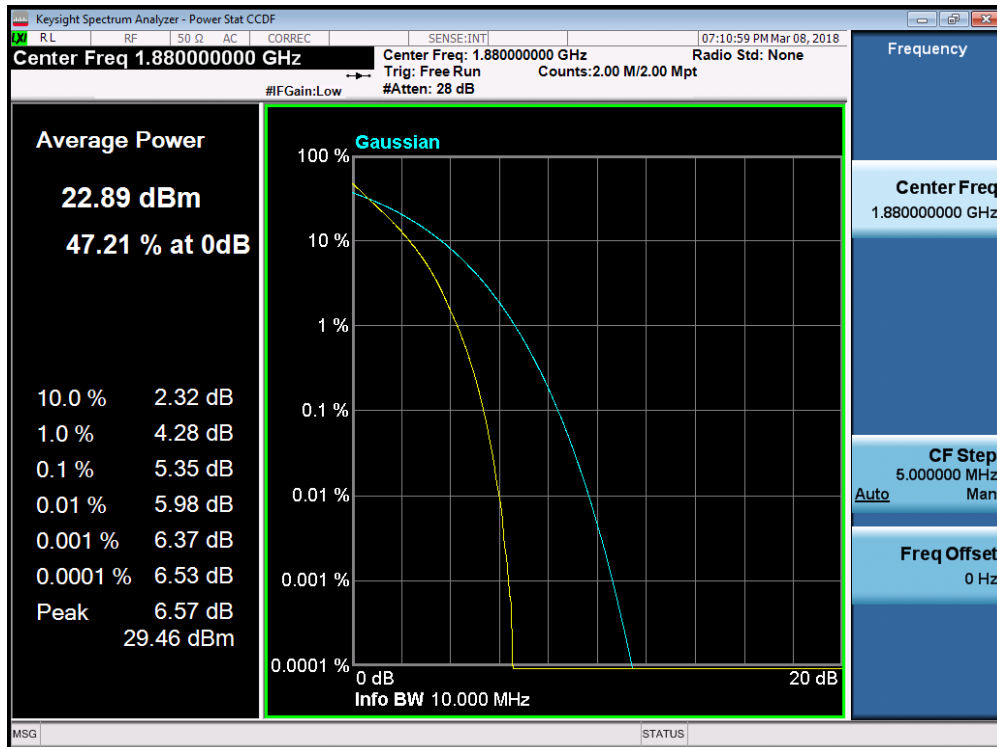


Plot 7-238. PAR Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

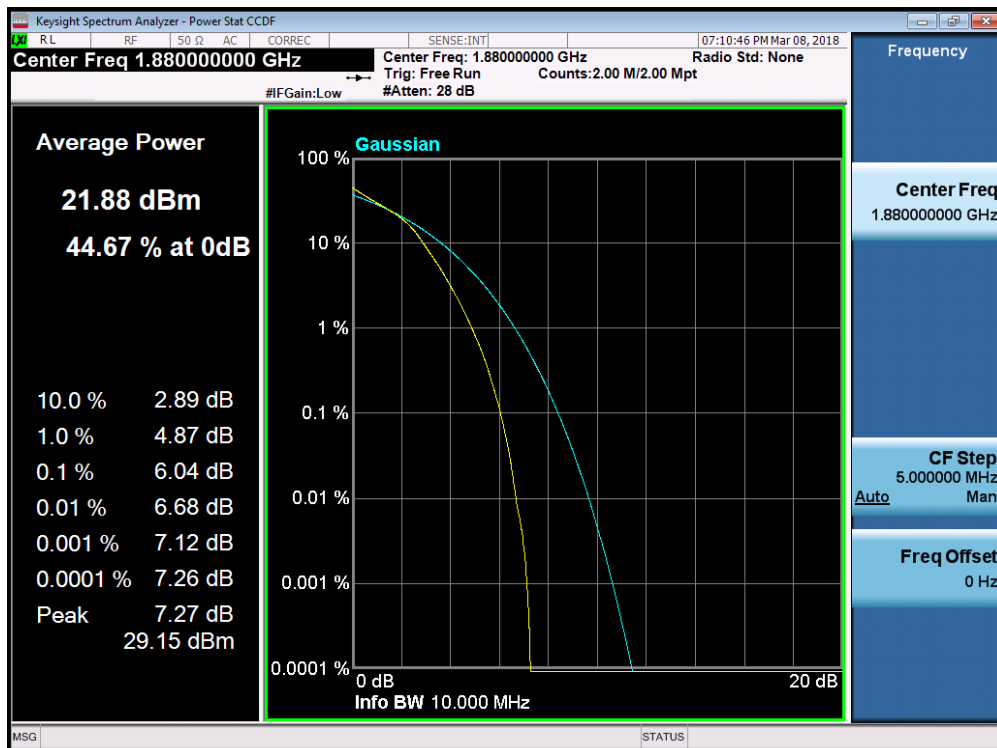


Plot 7-239. PAR Plot (Band 2 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1-A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset	Page 143 of 186

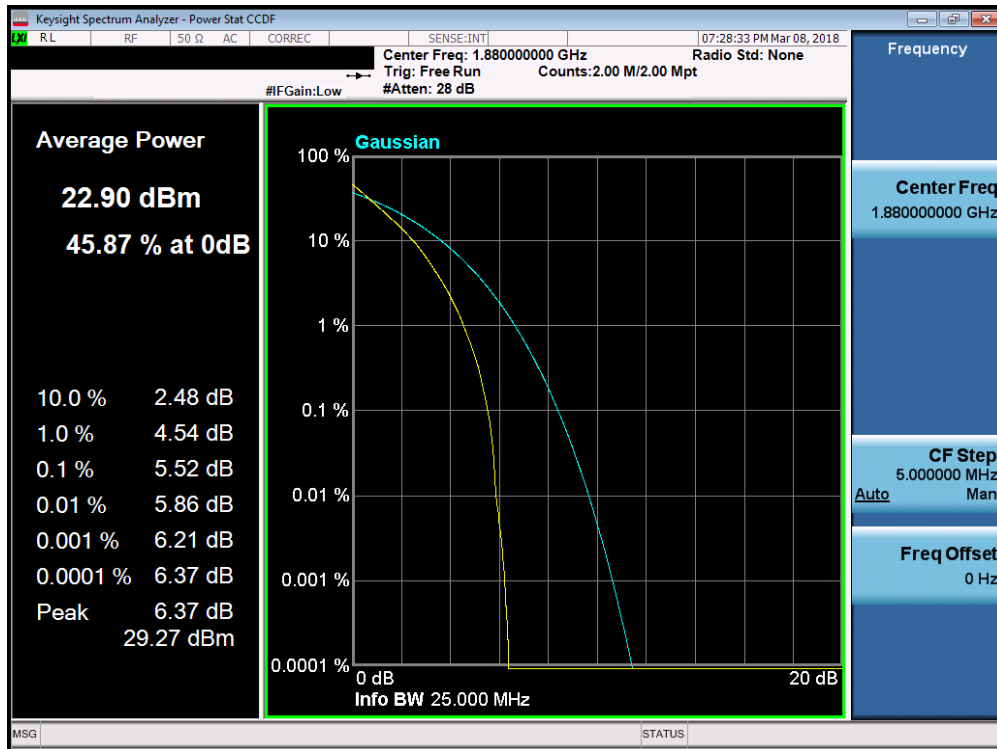


Plot 7-240. PAR Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

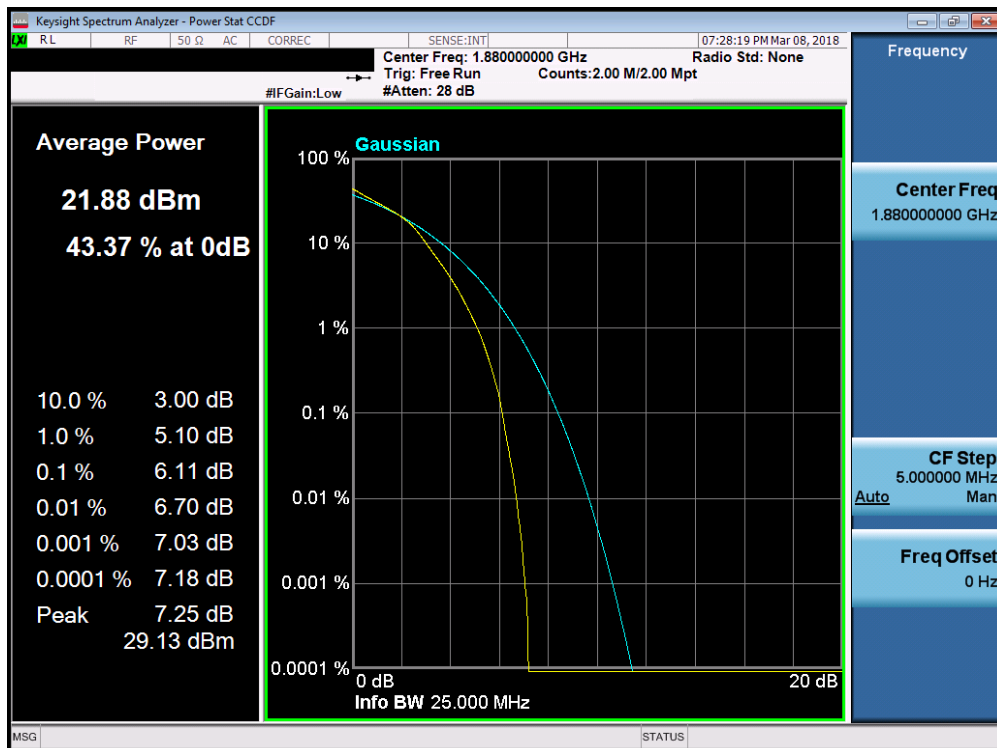


Plot 7-241. PAR Plot (Band 2 - 10.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1-A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 144 of 186

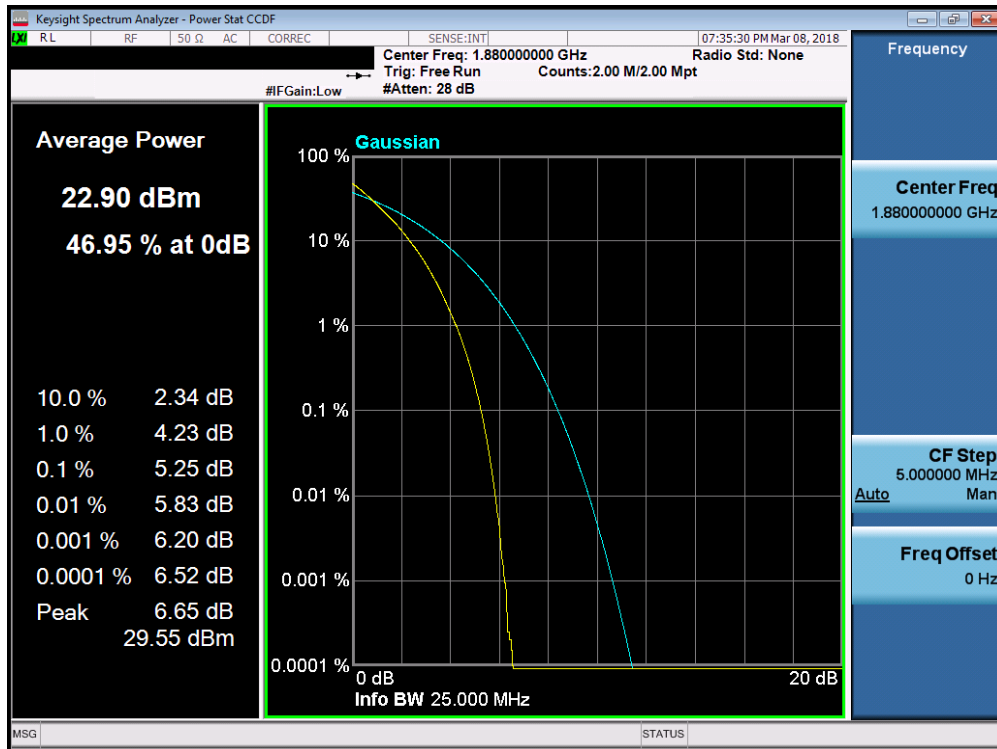


Plot 7-242. PAR Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

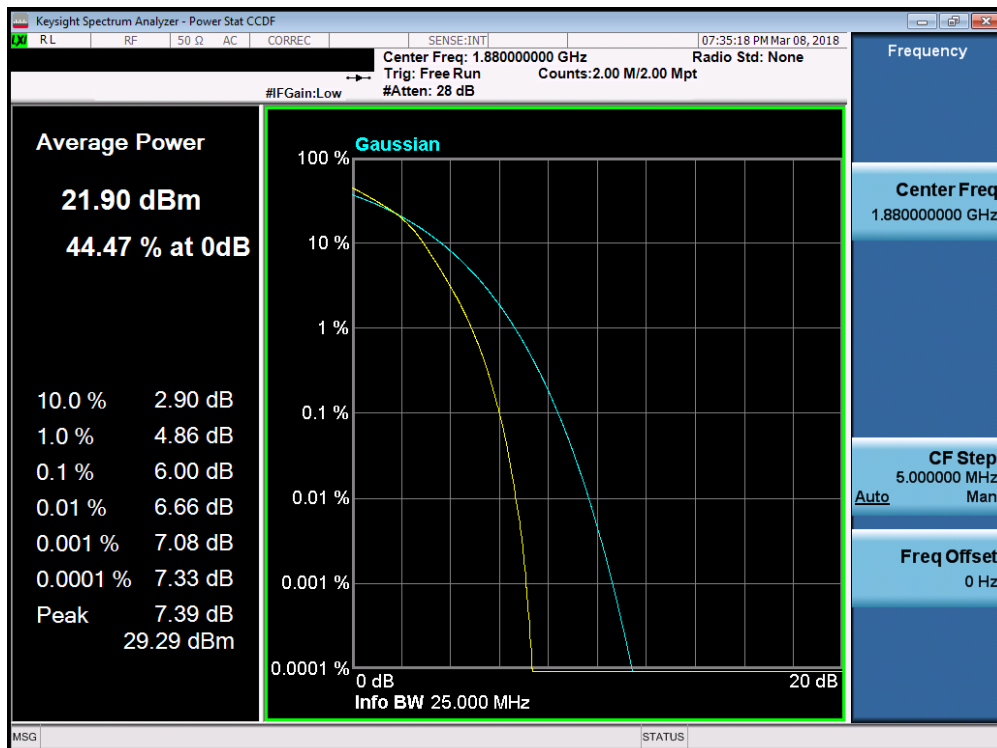


Plot 7-243. PAR Plot (Band 2 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1-A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset	Page 145 of 186



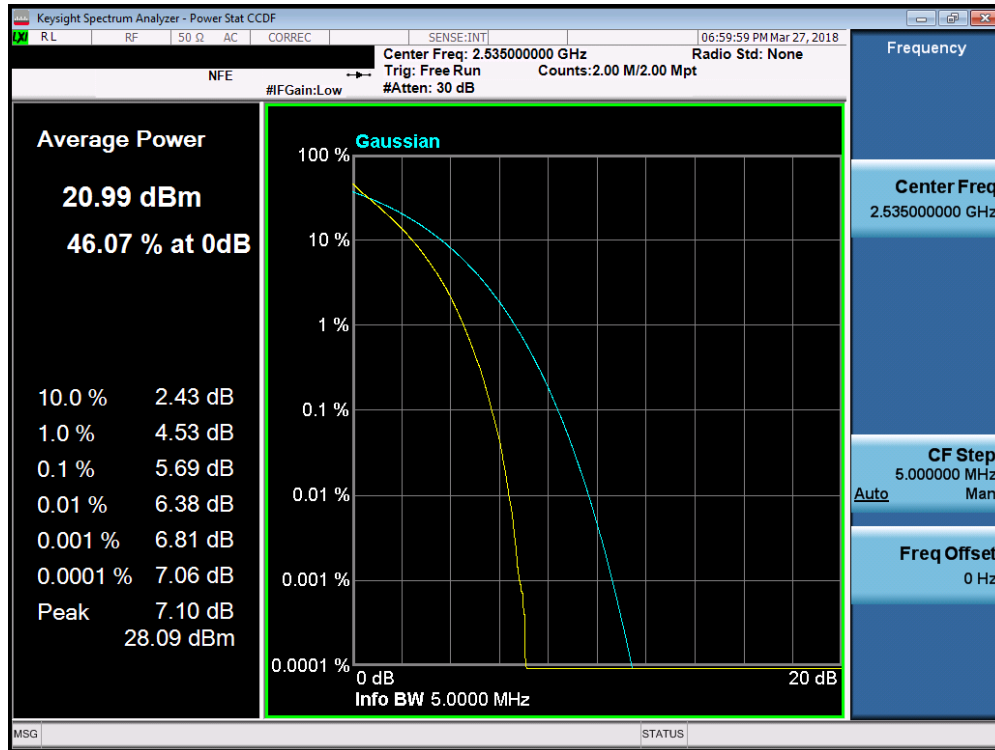
Plot 7-244. PAR Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)



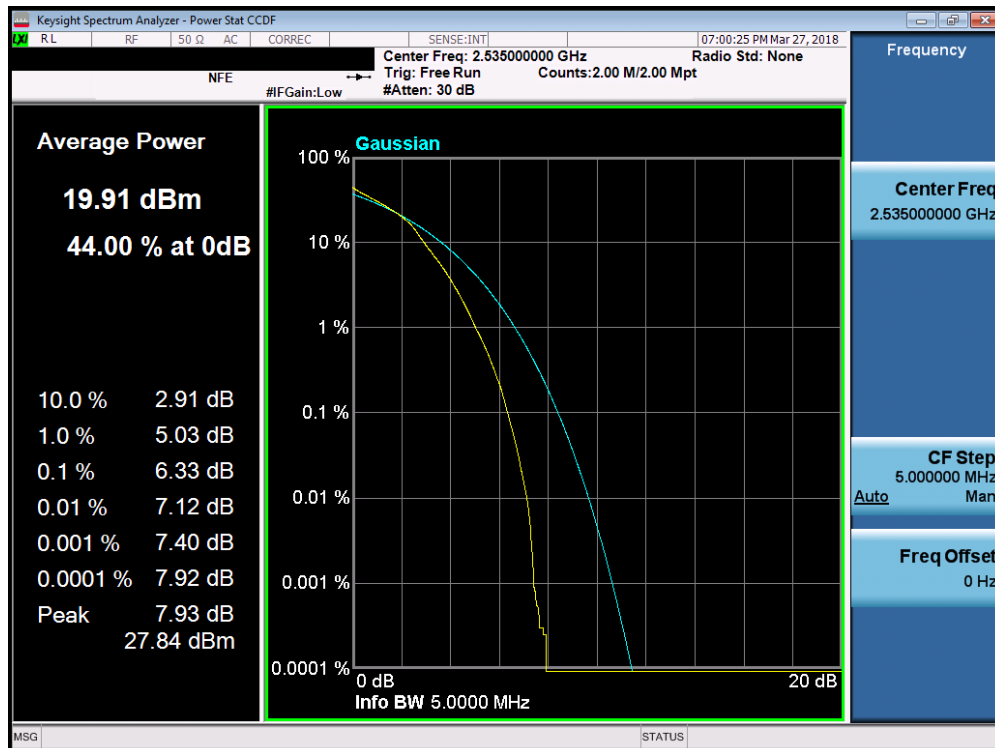
Plot 7-245. PAR Plot (Band 2 - 20.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1-A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 146 of 186

Band 7

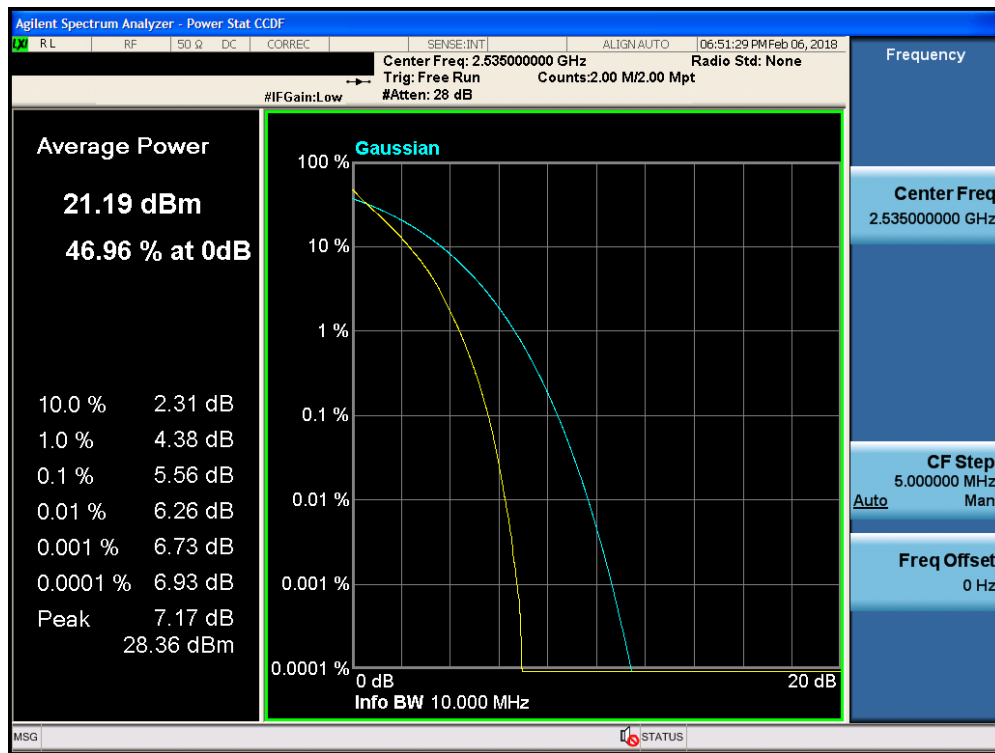


Plot 7-246. PAR Plot (Band 7 - 5.0MHz QPSK - Full RB Configuration)

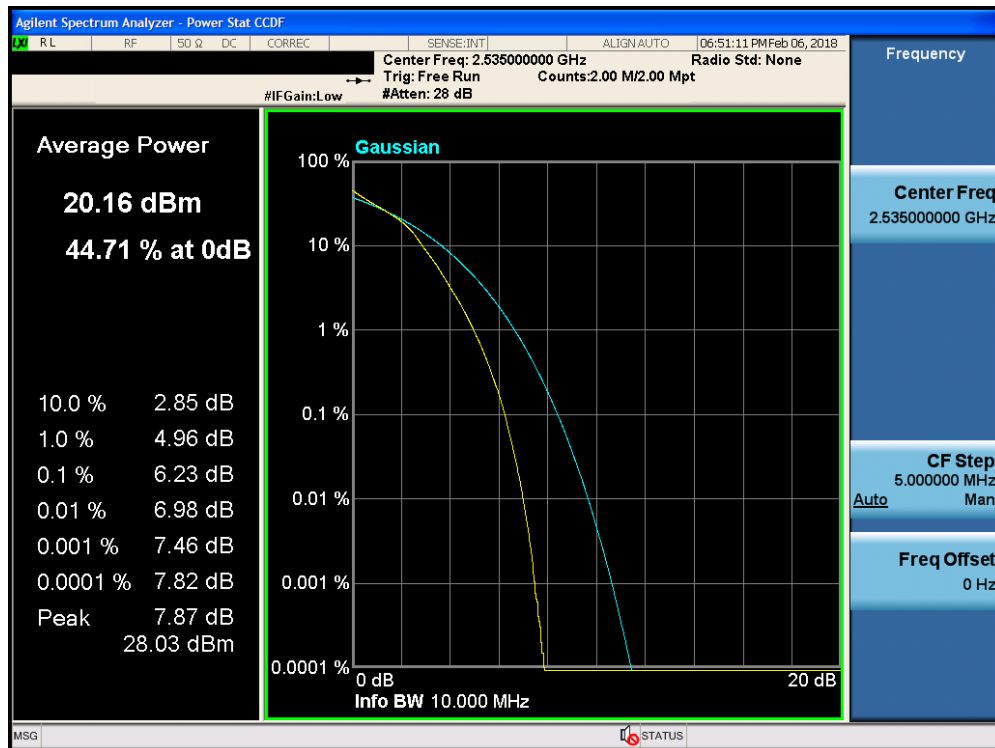


Plot 7-247. PAR Plot (Band 7 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 147 of 186

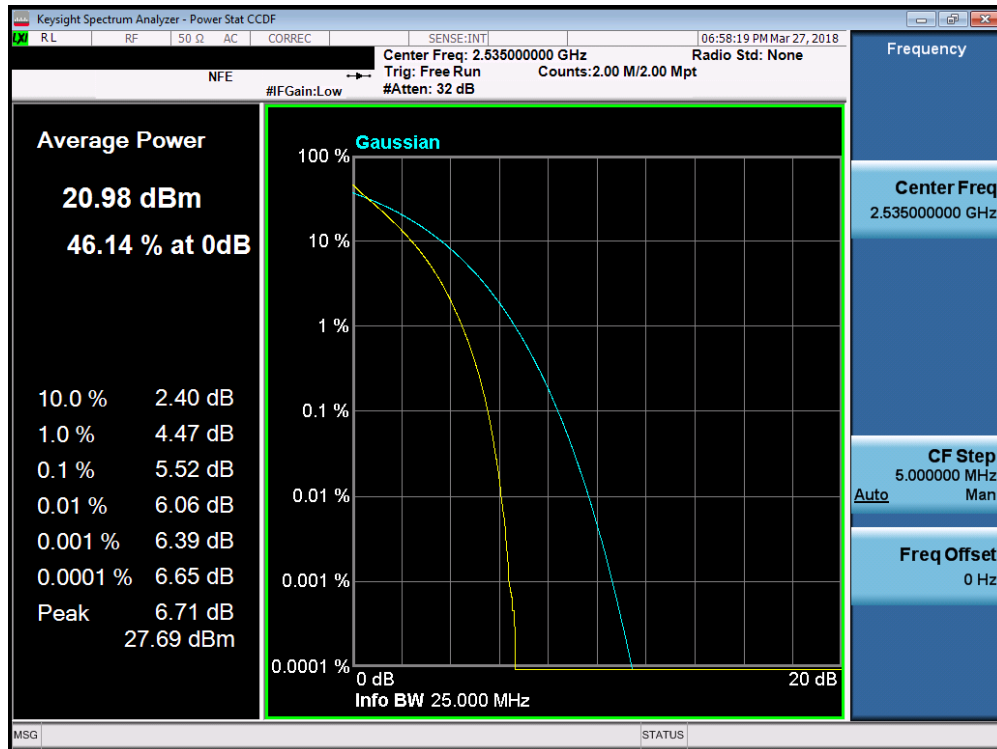


Plot 7-248. PAR Plot (Band 7 - 10.0MHz QPSK - Full RB Configuration)

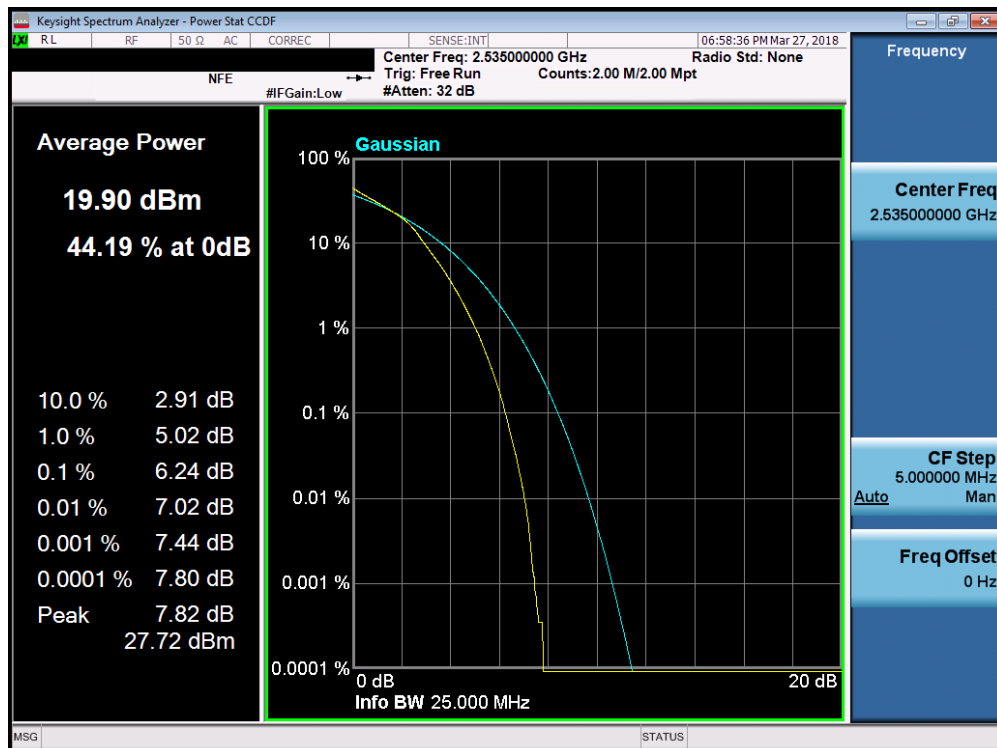


Plot 7-249. PAR Plot (Band 7 - 10.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 148 of 186

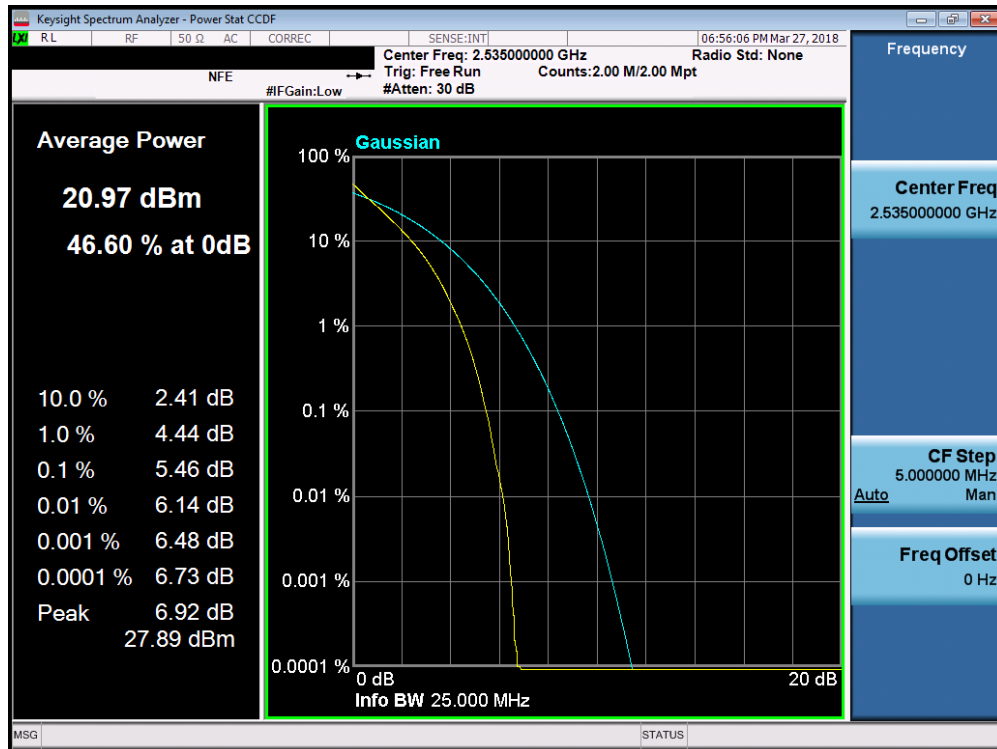


Plot 7-250. PAR Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)

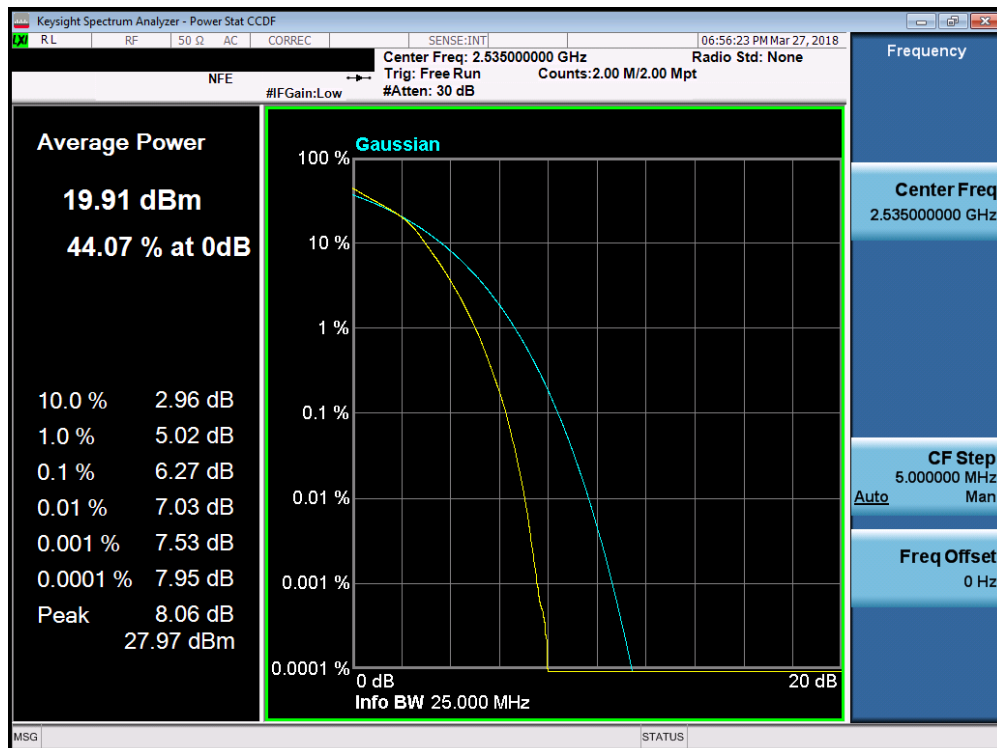


Plot 7-251. PAR Plot (Band 7 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1-A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 149 of 186



Plot 7-252. PAR Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-253. PAR Plot (Band 7 - 20.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMJ337T	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 150 of 186

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 its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW $\geq 3 \times$ 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".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Test Setup

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

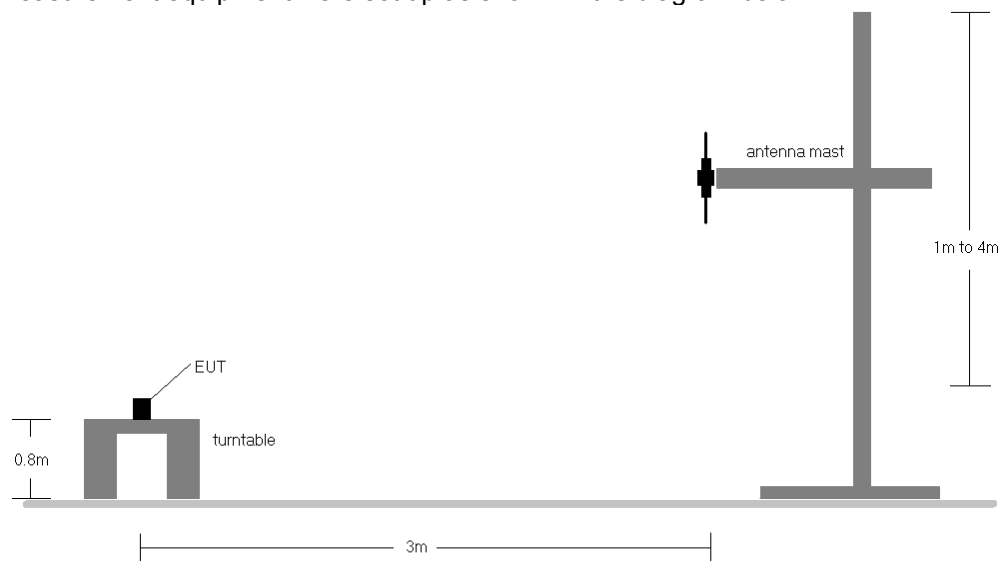


Figure 7-5. Radiated Test Setup <1GHz

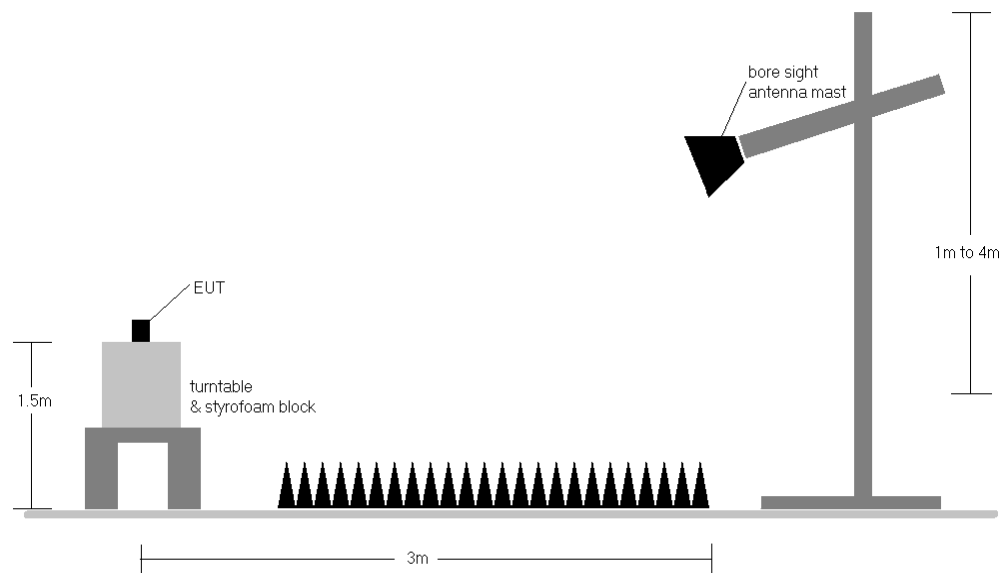


Figure 7-6. Radiated Test Setup >1GHz

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: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 152 of 186

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]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
665.50	5	QPSK	H	330	50	1 / 24	16.00	4.00	17.85	0.061	34.77	-16.92
680.50	5	QPSK	H	330	45	1 / 24	17.89	4.00	19.74	0.094	34.77	-15.03
695.50	5	QPSK	H	330	50	1 / 24	17.15	4.00	19.00	0.079	34.77	-15.77
680.50	5	16-QAM	H	330	45	1 / 24	16.04	4.00	17.89	0.062	34.77	-16.88
668.00	10	QPSK	H	330	52	1 / 49	16.86	4.00	18.71	0.074	34.77	-16.06
680.50	10	QPSK	H	330	52	1 / 49	17.70	4.00	19.55	0.090	34.77	-15.22
693.00	10	QPSK	H	330	52	1 / 49	16.75	4.00	18.60	0.072	34.77	-16.17
680.50	10	16-QAM	H	330	52	1 / 49	15.98	4.00	17.83	0.061	34.77	-16.94
670.50	15	QPSK	H	330	47	1 / 74	17.33	4.00	19.18	0.083	34.77	-15.59
680.50	15	QPSK	H	330	47	1 / 74	17.26	4.00	19.11	0.081	34.77	-15.66
690.50	15	QPSK	H	330	47	1 / 74	16.99	4.00	18.84	0.077	34.77	-15.93
670.50	15	16-QAM	H	330	47	1 / 74	15.94	4.00	17.79	0.060	34.77	-16.98
673.00	20	QPSK	H	330	51	1 / 99	17.66	4.00	19.51	0.089	34.77	-15.26
680.50	20	QPSK	H	330	51	1 / 99	17.93	4.00	19.78	0.095	34.77	-14.99
688.00	20	QPSK	H	330	51	1 / 99	17.17	4.00	19.02	0.080	34.77	-15.75
680.50	20	16-QAM	H	330	51	1 / 99	16.67	4.00	18.52	0.071	34.77	-16.25
680.50	20	QPSK	V	300	100	1 / 99	16.47	4.00	18.32	0.068	34.77	-16.45

Table 7-3. ERP/EIRP Data (Band 71)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset	Page 153 of 186	

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]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	V	150	184	1 / 0	20.49	1.10	19.44	0.088	34.77	-15.33	21.59	0.144	36.99	-15.40
707.50	1.4	QPSK	V	150	179	1 / 0	20.95	1.13	19.93	0.098	34.77	-14.84	22.08	0.161	36.99	-14.91
715.30	1.4	QPSK	V	150	178	1 / 0	20.28	1.16	19.29	0.085	34.77	-15.48	21.44	0.139	36.99	-15.55
707.50	1.4	16-QAM	V	150	179	1 / 0	19.48	1.13	18.46	0.070	34.77	-16.31	20.61	0.115	36.99	-16.38
700.50	3	QPSK	V	150	173	1 / 0	22.67	1.10	21.62	0.145	34.77	-13.15	23.77	0.238	36.99	-13.22
707.50	3	QPSK	V	150	193	1 / 0	22.25	1.13	21.23	0.133	34.77	-13.54	23.38	0.218	36.99	-13.61
714.50	3	QPSK	V	150	164	1 / 0	22.67	1.16	21.68	0.147	34.77	-13.09	23.83	0.241	36.99	-13.16
714.50	3	16-QAM	V	150	164	1 / 0	21.42	1.16	20.43	0.110	34.77	-14.34	22.58	0.181	36.99	-14.41
701.50	5	QPSK	V	150	130	1 / 0	18.01	1.11	16.97	0.050	34.77	-17.81	19.12	0.082	36.99	-17.87
707.50	5	QPSK	V	150	140	1 / 0	20.56	1.13	19.54	0.090	34.77	-15.23	21.69	0.148	36.99	-15.30
713.50	5	QPSK	V	150	133	1 / 0	18.47	1.15	17.47	0.056	34.77	-17.30	19.62	0.092	36.99	-17.37
707.50	5	16-QAM	V	150	140	1 / 0	19.31	1.13	18.29	0.067	34.77	-16.48	20.44	0.111	36.99	-16.55
704.00	10	QPSK	V	150	163	1 / 0	22.22	1.12	21.19	0.131	34.77	-13.58	23.34	0.216	36.99	-13.65
707.50	10	QPSK	V	150	148	1 / 0	21.01	1.13	19.99	0.100	34.77	-14.78	22.14	0.164	36.99	-14.85
711.00	10	QPSK	V	150	178	1 / 0	22.32	1.14	21.31	0.135	34.77	-13.46	23.46	0.222	36.99	-13.53
704.00	10	16-QAM	V	150	163	1 / 0	21.08	1.12	20.05	0.101	34.77	-14.72	22.20	0.166	36.99	-14.79
714.50	3	QPSK	H	150	0	1 / 0	19.60	1.16	18.61	0.073	34.77	-16.16	20.76	0.119	36.99	-16.23

Table 7-4. ERP/EIRP Data (Band 12)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 154 of 186

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]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	V	150	10	1 / 0	20.94	1.50	20.29	0.107	38.45	-18.16	22.44	0.175	40.61	-18.17
836.50	1.4	QPSK	V	150	5	1 / 0	21.34	1.50	20.69	0.117	38.45	-17.76	22.84	0.192	40.61	-17.77
848.30	1.4	QPSK	V	150	10	1 / 0	21.40	1.50	20.75	0.119	38.45	-17.70	22.90	0.195	40.61	-17.71
836.50	1.4	16-QAM	V	150	5	1 / 0	20.05	1.50	19.40	0.087	38.45	-19.05	21.55	0.143	40.61	-19.06
825.50	3	QPSK	V	150	9	1 / 0	21.21	1.50	20.56	0.114	38.45	-17.89	22.71	0.187	40.61	-17.90
836.50	3	QPSK	V	150	1	1 / 0	21.23	1.50	20.58	0.114	38.45	-17.87	22.73	0.187	40.61	-17.88
847.50	3	QPSK	V	150	7	1 / 0	21.19	1.50	20.54	0.113	38.45	-17.91	22.69	0.186	40.61	-17.92
825.50	3	16-QAM	V	150	9	1 / 0	20.12	1.50	19.47	0.089	38.45	-18.98	21.62	0.145	40.61	-18.99
826.50	5	QPSK	V	150	8	1 / 0	21.38	1.50	20.73	0.118	38.45	-17.72	22.88	0.194	40.61	-17.73
836.50	5	QPSK	V	150	3	1 / 0	21.47	1.50	20.82	0.121	38.45	-17.63	22.97	0.198	40.61	-17.64
846.50	5	QPSK	V	150	3	1 / 0	21.33	1.50	20.68	0.117	38.45	-17.77	22.83	0.192	40.61	-17.78
846.50	5	16-QAM	V	150	3	1 / 0	20.28	1.50	19.63	0.092	38.45	-18.82	21.78	0.151	40.61	-18.83
829.00	10	QPSK	V	150	354	1 / 0	21.49	1.50	20.84	0.121	38.45	-17.61	22.99	0.199	40.61	-17.62
836.50	10	QPSK	V	150	355	1 / 0	21.56	1.50	20.91	0.123	38.45	-17.54	23.06	0.202	40.61	-17.55
844.00	10	QPSK	V	150	5	1 / 0	21.37	1.50	20.72	0.118	38.45	-17.73	22.87	0.194	40.61	-17.74
836.50	10	16-QAM	V	150	355	1 / 0	20.40	1.50	19.75	0.094	38.45	-18.70	21.90	0.155	40.61	-18.71
836.50	10	QPSK	H	150	359	1 / 74	19.87	1.50	19.22	0.084	38.45	-19.23	21.37	0.137	40.61	-19.24

Table 7-5. ERP/EIRP Data (Band 5)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset	Page 155 of 186	

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 [Watts]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	V	150	261	1 / 5	20.12	5.65	25.77	0.377	30.00	-4.23
1745.00	1.4	QPSK	V	150	263	1 / 5	20.66	5.27	25.93	0.392	30.00	-4.07
1779.30	1.4	QPSK	V	150	263	1 / 5	20.04	4.90	24.94	0.312	30.00	-5.06
1710.70	1.4	16-QAM	V	150	261	1 / 5	19.13	5.65	24.78	0.300	30.00	-5.22
1711.50	3	QPSK	V	150	260	1 / 14	20.31	5.64	25.95	0.393	30.00	-4.05
1745.00	3	QPSK	V	150	262	1 / 14	20.41	5.27	25.68	0.370	30.00	-4.32
1778.50	3	QPSK	V	150	265	1 / 14	19.98	4.91	24.89	0.308	30.00	-5.11
1711.50	3	16-QAM	V	150	260	1 / 14	19.11	5.64	24.75	0.298	30.00	-5.25
1712.50	5	QPSK	V	150	259	1 / 24	19.88	5.63	25.51	0.355	30.00	-4.49
1745.00	5	QPSK	V	150	268	1 / 24	19.94	5.27	25.21	0.332	30.00	-4.79
1777.50	5	QPSK	V	150	264	1 / 24	20.05	4.92	24.97	0.314	30.00	-5.03
1712.50	5	16-QAM	V	150	259	1 / 24	18.75	5.63	24.38	0.274	30.00	-5.62
1715.00	10	QPSK	V	150	259	1 / 49	20.17	5.60	25.77	0.377	30.00	-4.23
1745.00	10	QPSK	V	150	264	1 / 49	20.38	5.27	25.65	0.367	30.00	-4.35
1775.00	10	QPSK	V	150	261	1 / 49	20.19	4.95	25.14	0.326	30.00	-4.86
1715.00	10	16-QAM	V	150	259	1 / 49	19.07	5.60	24.67	0.293	30.00	-5.33
1717.50	15	QPSK	V	150	258	1 / 74	20.48	5.57	26.05	0.403	30.00	-3.95
1745.00	15	QPSK	V	150	263	1 / 74	19.85	5.27	25.12	0.325	30.00	-4.88
1772.50	15	QPSK	V	150	263	1 / 74	19.94	4.97	24.91	0.310	30.00	-5.09
1717.50	15	16-QAM	V	150	258	1 / 74	19.25	5.57	24.82	0.303	30.00	-5.18
1720.00	20	QPSK	V	150	262	1 / 99	20.45	5.54	25.99	0.397	30.00	-4.01
1745.00	20	QPSK	V	150	264	1 / 99	19.58	5.27	24.85	0.306	30.00	-5.15
1770.00	20	QPSK	V	150	263	1 / 99	19.82	5.00	24.82	0.303	30.00	-5.18
1720.00	20	16-QAM	V	150	262	1 / 99	19.29	5.54	24.83	0.304	30.00	-5.17
1717.50	15	QPSK	H	150	175	1 / 99	20.10	5.51	25.61	0.364	30.00	-4.39

Table 7-6. EIRP Data (Band 66/4)

FCC ID: A3LSMJ337T	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset	Page 156 of 186

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 [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	H	150	77	1 / 0	19.30	4.82	24.12	0.258	33.01	-8.89
1880.00	1.4	QPSK	H	150	75	1 / 0	18.33	4.74	23.07	0.203	33.01	-9.94
1909.30	1.4	QPSK	H	150	72	1 / 0	18.11	4.68	22.79	0.190	33.01	-10.22
1850.70	1.4	16-QAM	H	150	77	1 / 0	18.04	4.82	22.86	0.193	33.01	-10.15
1851.50	3	QPSK	H	150	72	1 / 0	19.21	4.82	24.03	0.253	33.01	-8.98
1880.00	3	QPSK	H	150	69	1 / 0	18.06	4.74	22.80	0.191	33.01	-10.21
1908.50	3	QPSK	H	150	70	1 / 0	17.97	4.68	22.65	0.184	33.01	-10.36
1851.50	3	16-QAM	H	150	72	1 / 0	17.76	4.82	22.58	0.181	33.01	-10.43
1852.50	5	QPSK	H	150	76	1 / 0	19.04	4.81	23.85	0.243	33.01	-9.16
1880.00	5	QPSK	H	150	74	1 / 0	18.04	4.74	22.78	0.190	33.01	-10.23
1907.50	5	QPSK	H	150	71	1 / 0	17.89	4.68	22.57	0.181	33.01	-10.44
1852.50	5	16-QAM	H	150	76	1 / 0	17.29	4.81	22.10	0.162	33.01	-10.91
1855.00	10	QPSK	H	150	72	1 / 0	19.21	4.81	24.02	0.252	33.01	-8.99
1880.00	10	QPSK	H	150	74	1 / 0	18.58	4.74	23.32	0.215	33.01	-9.69
1905.00	10	QPSK	H	150	70	1 / 0	17.68	4.68	22.36	0.172	33.01	-10.65
1855.00	10	16-QAM	H	150	72	1 / 0	17.93	4.81	22.74	0.188	33.01	-10.27
1857.50	15	QPSK	H	150	73	1 / 0	19.21	4.80	24.01	0.252	33.01	-9.00
1880.00	15	QPSK	H	150	72	1 / 0	18.31	4.74	23.05	0.202	33.01	-9.96
1902.50	15	QPSK	H	150	68	1 / 0	17.81	4.69	22.50	0.178	33.01	-10.51
1857.50	15	16-QAM	H	150	73	1 / 0	17.65	4.80	22.45	0.176	33.01	-10.56
1860.00	20	QPSK	H	150	71	1 / 0	19.01	4.79	23.80	0.240	33.01	-9.21
1880.00	20	QPSK	H	150	73	1 / 0	18.53	4.74	23.27	0.212	33.01	-9.74
1900.00	20	QPSK	H	150	69	1 / 0	17.81	4.69	22.50	0.178	33.01	-10.51
1860.00	20	16-QAM	H	150	71	1 / 0	17.44	4.79	22.23	0.167	33.01	-10.78
1850.70	1.4	QPSK	V	150	71	1 / 99	18.56	4.74	23.30	0.214	33.01	-9.71

Table 7-7. EIRP Data (Band 2)

FCC ID: A3LSMJ337T	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset	Page 157 of 186

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 [Watts]	EIRP Limit [dBm]	Margin [dB]
2502.50	5	QPSK	H	150	329	1 / 24	15.06	5.74	20.80	0.120	33.01	-12.21
2535.00	5	QPSK	H	150	331	1 / 24	16.62	5.86	22.48	0.177	33.01	-10.53
2567.50	5	QPSK	H	150	331	1 / 24	18.25	5.98	24.23	0.265	33.01	-8.78
2567.50	5	16-QAM	H	150	331	1 / 24	17.30	5.98	23.28	0.213	33.01	-9.73
2505.00	10	QPSK	H	150	326	1 / 49	15.61	5.75	21.36	0.137	33.01	-11.65
2535.00	10	QPSK	H	150	331	1 / 49	17.53	5.86	23.39	0.218	33.01	-9.62
2565.00	10	QPSK	H	150	330	1 / 49	18.76	5.97	24.73	0.297	33.01	-8.28
2565.00	10	16-QAM	H	150	330	1 / 49	17.71	5.97	23.68	0.233	33.01	-9.33
2507.50	15	QPSK	H	150	326	1 / 74	16.19	5.76	21.95	0.157	33.01	-11.06
2535.00	15	QPSK	H	150	331	1 / 74	17.76	5.86	23.62	0.230	33.01	-9.39
2562.50	15	QPSK	H	150	331	1 / 74	18.50	5.96	24.46	0.279	33.01	-8.55
2562.50	15	16-QAM	H	150	331	1 / 74	17.27	5.96	23.23	0.210	33.01	-9.78
2510.00	20	QPSK	H	150	330	1 / 99	16.73	5.77	22.50	0.178	33.01	-10.51
2535.00	20	QPSK	H	150	329	1 / 99	17.72	5.86	23.58	0.228	33.01	-9.43
2560.00	20	QPSK	H	150	328	1 / 99	18.70	5.95	24.65	0.292	33.01	-8.36
2560.00	20	16-QAM	H	150	328	1 / 99	17.38	5.95	23.33	0.215	33.01	-9.68
2565.00	10	QPSK	V	150	71	1 / 0	16.42	5.97	22.39	0.173	33.01	-10.62

Table 7-8. EIRP Data (Band 7)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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7.7 Radiated Spurious Emissions Measurements

Test Overview

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

Test Procedures Used

KDB 971168 D01 v03 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

Test Settings

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

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Test Setup

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

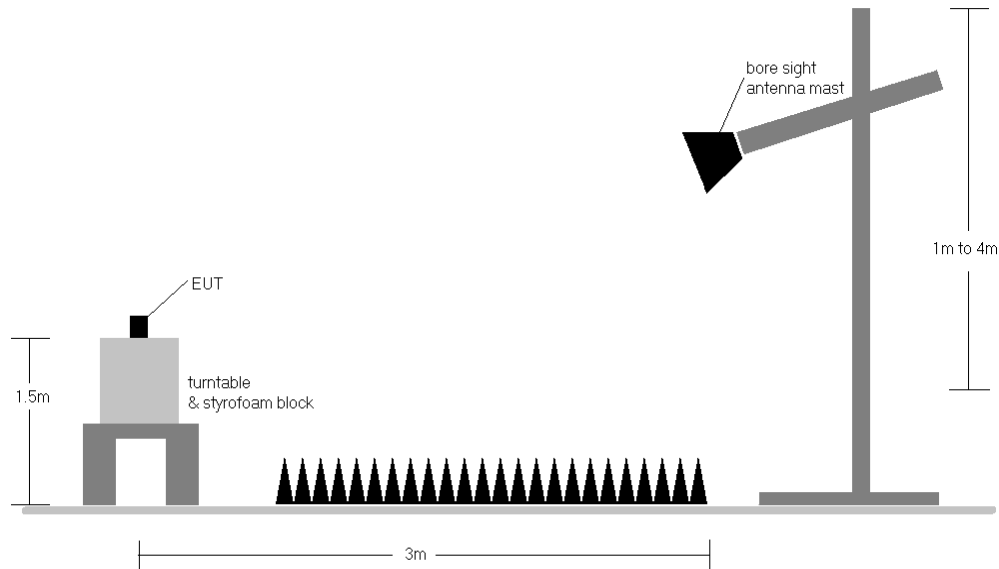


Figure 7-7. Test Instrument & Measurement Setup

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: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 71

OPERATING FREQUENCY: 673.00 MHz
 CHANNEL: 18075
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
1346.00	H	150	302	-67.57	3.92	-63.65	-50.6
2019.00	H	-	-	-67.57	4.75	-62.82	-49.8

Table 7-9. Radiated Spurious Data (Band 71 – Low Channel)

OPERATING FREQUENCY: 680.50 MHz
 CHANNEL: 18150
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
1361.00	H	150	12	-66.87	3.90	-62.97	-50.0
2041.50	H	-	-	-66.36	4.78	-61.58	-48.6

Table 7-10. Radiated Spurious Data (Band 71 – Mid Channel)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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OPERATING FREQUENCY: 688.00 MHz
 CHANNEL: 18225
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
1376.00	H	150	92	-44.31	3.85	-40.46	-27.5
2064.00	H	-	-	-53.46	4.79	-48.67	-35.7

Table 7-11. Radiated Spurious Data (Band 71 – High Channel)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 12

OPERATING FREQUENCY: 700.50 MHz
 CHANNEL: 23025
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
1401.00	H	393	356	-46.19	4.35	-41.84	-28.8
2101.50	H	148	17	-66.43	5.25	-61.18	-48.2
2802.00	H	-	-	-71.69	6.97	-64.72	-51.7

Table 7-12. Radiated Spurious Data (Band 12 – Low Channel)

OPERATING FREQUENCY: 707.50 MHz
 CHANNEL: 23095
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
1415.00	H	395	3	-46.56	4.56	-42.00	-29.0
2122.50	H	110	16	-68.09	5.31	-62.79	-49.8
2830.00	H	-	-	-71.49	7.02	-64.47	-51.5

Table 7-13. Radiated Spurious Data (Band 12 – Mid Channel)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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OPERATING FREQUENCY: 714.50 MHz
 CHANNEL: 23165
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
1429.00	H	142	162	-49.53	4.77	-44.76	-31.8
2143.50	H	265	165	-64.39	5.36	-59.03	-46.0
2858.00	H	-	-	-71.26	7.06	-64.20	-51.2

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

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 5

OPERATING FREQUENCY: 829.00 MHz
 CHANNEL: 20450
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
1658.00	V	244	277	-73.11	8.80	-64.31	-51.3
2487.00	V	113	37	-70.98	9.21	-61.77	-48.8
3316.00	V	-	-	-74.75	9.40	-65.35	-52.4

Table 7-15. Radiated Spurious Data (Band 5 – Low Channel)

OPERATING FREQUENCY: 836.50 MHz
 CHANNEL: 20525
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
1673.00	V	113	46	-72.97	8.71	-64.26	-51.3
2509.50	V	100	22	-75.86	9.24	-66.62	-53.6
3346.00	V	-	-	-75.91	9.34	-66.57	-53.6

Table 7-16. Radiated Spurious Data (Band 5 – Mid Channel)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 165 of 186

OPERATING FREQUENCY: 844.00 MHz
 CHANNEL: 20600
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
1688.00	V	288	46	-73.12	8.61	-64.51	-51.5
2532.00	V	101	23	-77.53	9.21	-68.31	-55.3
3376.00	V	-	-	-74.96	9.40	-65.56	-52.6

Table 7-17. Radiated Spurious Data (Band 5 – High Channel)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 166 of 186

Band 66/4

OPERATING FREQUENCY: 1717.50 MHz
 CHANNEL: 132047
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
3435.00	V	104	97	-64.31	9.51	-54.80	-41.8
5152.50	V	164	267	-58.20	10.71	-47.49	-34.5
6870.00	V	100	348	-59.90	10.82	-49.08	-36.1
8587.50	V	141	104	-63.49	11.66	-51.83	-38.8
10305.00	V	336	7	-65.05	12.48	-52.57	-39.6
12022.50	V	-	-	-67.03	12.25	-54.78	-41.8

Table 7-18. Radiated Spurious Data (Band 66/4 – Low Channel)

OPERATING FREQUENCY: 1745.00 MHz
 CHANNEL: 132322
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
3490.00	V	104	105	-65.00	9.62	-55.39	-42.4
5235.00	V	104	254	-69.62	10.90	-58.72	-45.7
6980.00	V	123	340	-63.04	10.90	-52.14	-39.1
8725.00	V	100	31	-61.32	11.84	-49.48	-36.5
10470.00	V	104	360	-66.72	12.59	-54.14	-41.1
12215.00	V	-	-	-66.38	12.45	-53.93	-40.9

Table 7-19. Radiated Spurious Data (Band 66/4 – Mid Channel)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 167 of 186

OPERATING FREQUENCY: 1772.50 MHz
 CHANNEL: 132597
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
3545.00	V	104	103	-64.39	9.75	-54.64	-41.6
5317.50	V	104	65	-70.22	11.01	-59.21	-46.2
7090.00	V	221	349	-61.28	10.97	-50.31	-37.3
8862.50	V	105	26	-55.90	11.97	-43.94	-30.9
10635.00	V	104	357	-63.68	12.71	-50.97	-38.0
12407.50	V	-	-	-67.52	12.61	-54.90	-41.9

Table 7-20. Radiated Spurious Data (Band 66/4 – High Channel)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 168 of 186

Band 2

OPERATING FREQUENCY: 1850.70 MHz
 CHANNEL: 18607
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
3701.40	V	104	88	-48.34	9.82	-38.52	-25.5
5552.10	V	100	321	-57.66	10.97	-46.69	-33.7
7402.80	V	-	-	-68.18	10.72	-57.46	-44.5

Table 7-21. Radiated Spurious Data (Band 2 – Low Channel)

OPERATING FREQUENCY: 1880.00 MHz
 CHANNEL: 18900
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
3760.00	V	100	93	-53.26	9.62	-43.64	-30.6
5640.00	V	109	37	-67.54	11.12	-56.42	-43.4
7520.00	V	-	-	-69.49	11.00	-58.49	-45.5

Table 7-22. Radiated Spurious Data (Band 2 – Mid Channel)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1802070017-05-R1.A3L	Test Dates: 2/1/2018 - 3/27/2018	EUT Type: Portable Handset		Page 169 of 186

OPERATING FREQUENCY: 1909.30 MHz
 CHANNEL: 19193
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]	Margin [dB]
3818.60	V	100	91	-55.58	9.24	-46.34	-33.3
5727.90	V	100	321	-61.24	11.29	-49.96	-37.0
7637.20	V	166	116	-69.91	11.29	-58.62	-45.6
9546.50	V	-	-	-68.52	12.21	-56.30	-43.3

Table 7-23. Radiated Spurious Data (Band 2 – High Channel)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 7

OPERATING FREQUENCY: 2505.00 MHz
 CHANNEL: 20800
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

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]	Margin [dB]
5010.00	V	116	10	-67.30	10.12	-57.17	-32.2
7515.00	V	110	220	-67.66	12.17	-55.49	-30.5
10020.00	V	110	29	-69.58	13.18	-56.40	-31.4
12525.00	V	-	-	-68.16	13.23	-54.93	-29.9

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

OPERATING FREQUENCY: 2535.00 MHz
 CHANNEL: 21100
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

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]	Margin [dB]
5070.00	V	113	258	-68.80	10.27	-58.53	-33.5
7605.00	V	112	320	-67.44	12.22	-55.22	-30.2
10140.00	V	112	26	-68.25	13.07	-55.17	-30.2
12675.00	V	-	-	-67.75	13.27	-54.48	-29.5

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

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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OPERATING FREQUENCY: 2565.00 MHz
 CHANNEL: 21400
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -25 dBm

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]	Margin [dB]
5130.00	V	185	93	-64.11	10.32	-53.79	-28.8
7695.00	V	113	356	-66.24	12.34	-53.90	-28.9
10260.00	V	110	249	-68.56	13.11	-55.45	-30.5

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

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality 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.

For Part 22, RSS-132, RSS-133, the frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency. For Part 24, Part 27, RSS-130, RSS-139, RSS-199, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

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

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 71 Frequency Stability Measurements

OPERATING FREQUENCY: 680,500,000 Hz
 CHANNEL: 18150
 REFERENCE VOLTAGE: 4.35 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	+ 20 (Ref)	680,499,894	-106	-0.0000156
100 %		- 30	680,499,821	-179	-0.0000263
100 %		- 20	680,499,939	-61	-0.0000090
100 %		- 10	680,499,821	-179	-0.0000264
100 %		0	680,499,957	-43	-0.0000063
100 %		+ 10	680,499,855	-145	-0.0000214
100 %		+ 20	680,499,942	-58	-0.0000085
100 %		+ 30	680,499,968	-32	-0.0000047
100 %		+ 40	680,499,941	-59	-0.0000087
100 %		+ 50	680,499,939	-61	-0.0000089
BATT. ENDPOINT	3.40	+ 20	680,499,810	-190	-0.0000279

Table 7-27. Frequency Stability Data (Band 71)

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: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 71 Frequency Stability Measurements

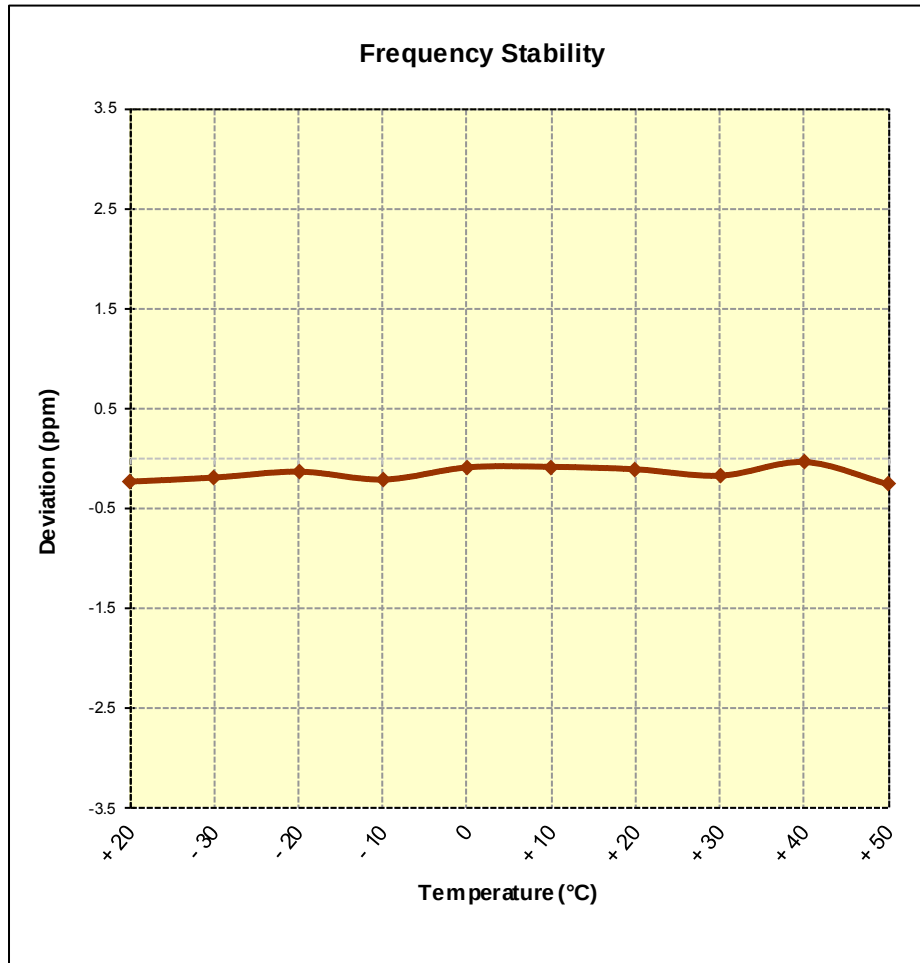


Figure 7-8. Frequency Stability Graph (Band 71)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 12 Frequency Stability Measurements

OPERATING FREQUENCY: 707,500,000 Hz
 CHANNEL: 23790
 REFERENCE VOLTAGE: 4.35 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	+ 20 (Ref)	707,499,837	-163	-0.0000230
100 %		- 30	707,499,865	-135	-0.0000191
100 %		- 20	707,499,905	-95	-0.0000134
100 %		- 10	707,499,851	-149	-0.0000211
100 %		0	707,499,935	-65	-0.0000093
100 %		+ 10	707,499,938	-62	-0.0000088
100 %		+ 20	707,499,921	-79	-0.0000112
100 %		+ 30	707,499,878	-122	-0.0000173
100 %		+ 40	707,499,971	-29	-0.0000042
100 %		+ 50	707,499,817	-183	-0.0000259
BATT. ENDPOINT	3.40	+ 20	707,499,812	-188	-0.0000266

Table 7-28. Frequency Stability Data (Band 12)

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: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 12 Frequency Stability Measurements

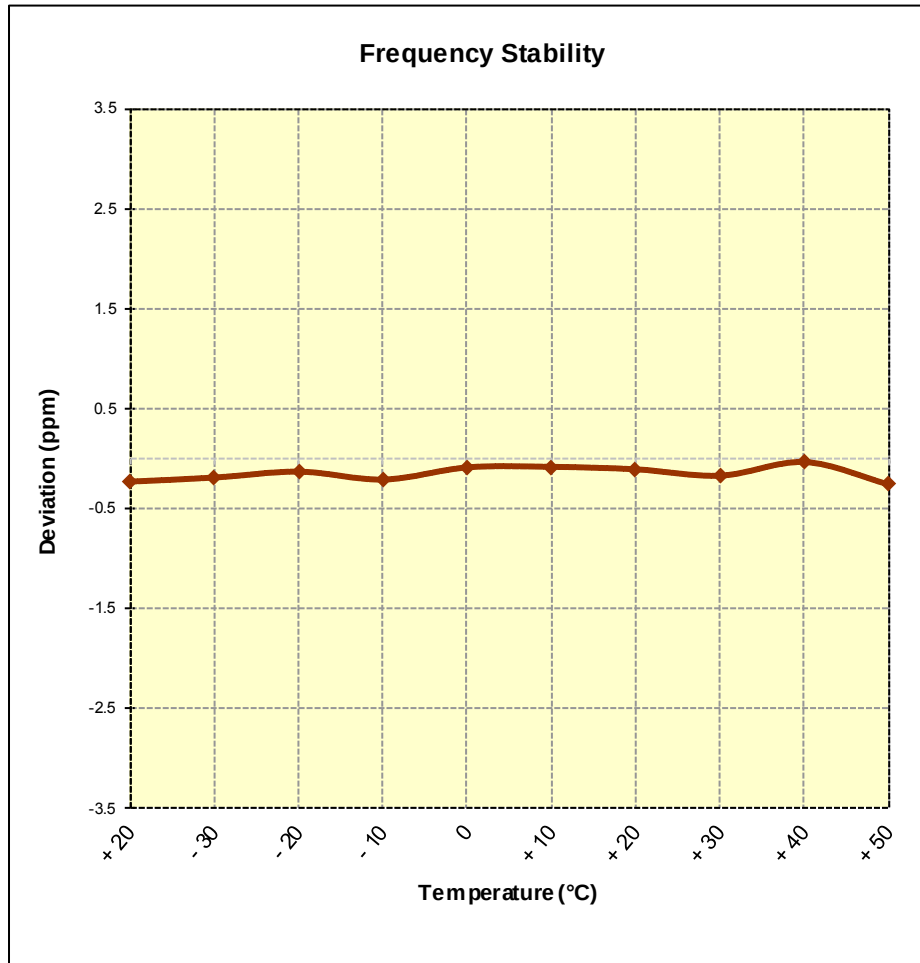


Figure 7-9. Frequency Stability Graph (Band 12)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 5 Frequency Stability Measurements

OPERATING FREQUENCY: 836,500,000 Hz
 CHANNEL: 20525
 REFERENCE VOLTAGE: 4.35 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	+ 20 (Ref)	836,499,877	-123	-0.0000147
100 %		- 30	836,499,927	-73	-0.0000087
100 %		- 20	836,499,895	-105	-0.0000125
100 %		- 10	836,499,893	-107	-0.0000128
100 %		0	836,499,862	-138	-0.0000165
100 %		+ 10	836,499,822	-178	-0.0000213
100 %		+ 20	836,499,991	-9	-0.0000011
100 %		+ 30	836,499,972	-28	-0.0000034
100 %		+ 40	836,499,804	-196	-0.0000235
100 %		+ 50	836,500,000	0	0.0000000
BATT. ENDPOINT	3.40	+ 20	836,499,920	-80	-0.0000095

Table 7-29. Frequency Stability Data (Band 5)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 5 Frequency Stability Measurements

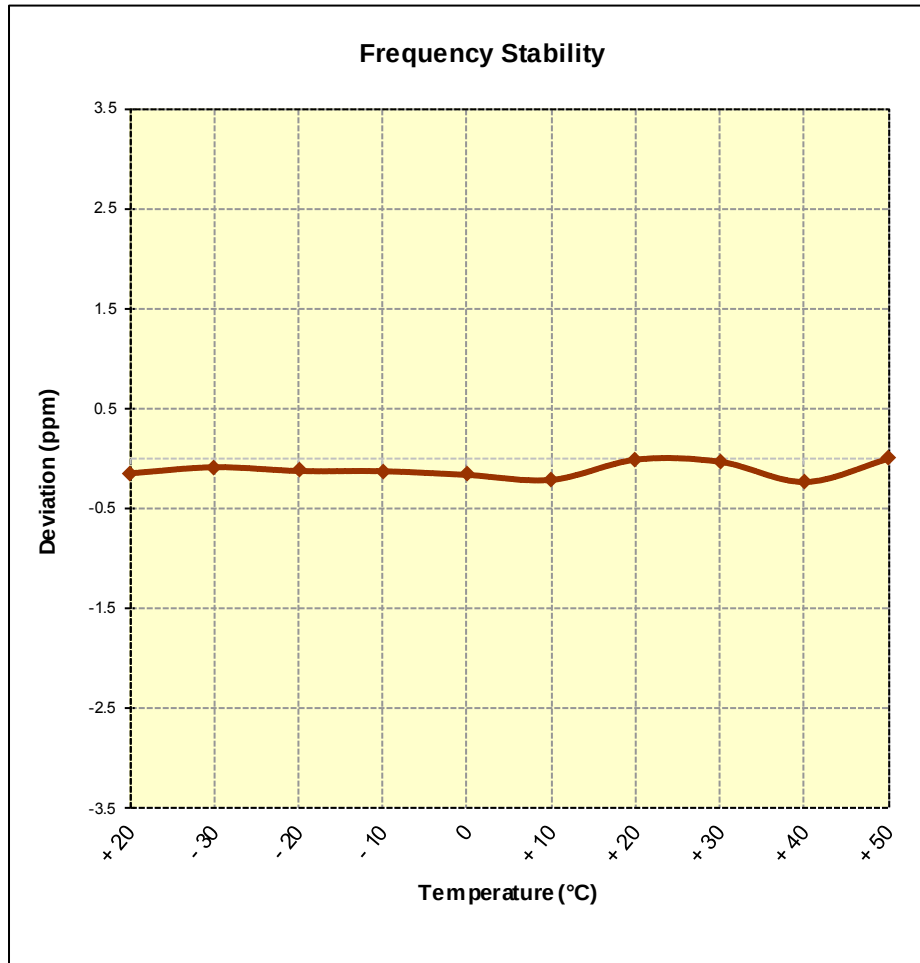


Figure 7-10. Frequency Stability Graph (Band 5)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 66/4 Frequency Stability Measurements

OPERATING FREQUENCY: 1,745,000,000 Hz
 CHANNEL: 132322
 REFERENCE VOLTAGE: 4.35 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	+ 20 (Ref)	1,744,999,800	-200	-0.0000115
100 %		- 30	1,744,999,988	-12	-0.0000007
100 %		- 20	1,744,999,933	-67	-0.0000039
100 %		- 10	1,744,999,835	-165	-0.0000094
100 %		0	1,744,999,872	-128	-0.0000074
100 %		+ 10	1,744,999,955	-45	-0.0000026
100 %		+ 20	1,744,999,945	-55	-0.0000032
100 %		+ 30	1,744,999,874	-126	-0.0000072
100 %		+ 40	1,744,999,918	-82	-0.0000047
100 %		+ 50	1,744,999,983	-17	-0.0000010
BATT. ENDPOINT	3.40	+ 20	1,744,999,870	-130	-0.0000075

Table 7-30. Frequency Stability Data (Band 66/4)

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: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 66/4 Frequency Stability Measurements

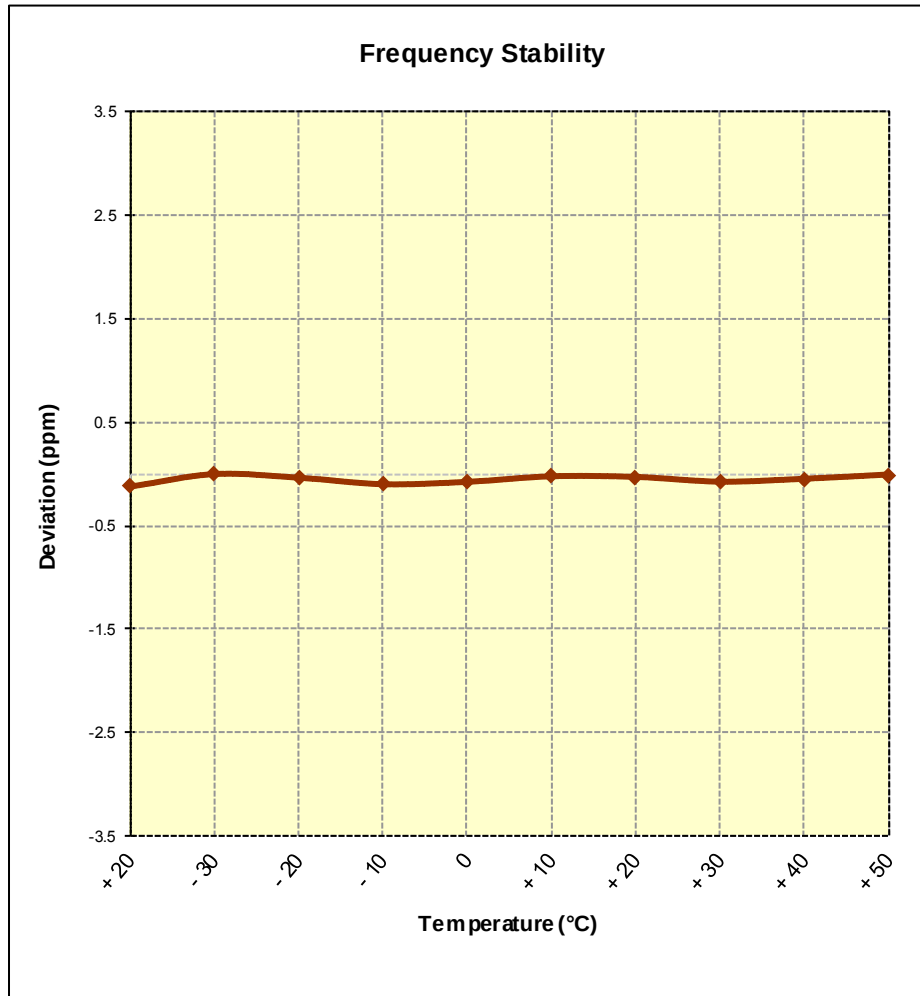


Figure 7-11. Frequency Stability Graph (Band 66/4)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 2 Frequency Stability Measurements

OPERATING FREQUENCY: 1,880,000,000 Hz
 CHANNEL: 18900
 REFERENCE VOLTAGE: 4.35 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	+ 20 (Ref)	1,879,999,931	-69	-0.0000037
100 %		- 30	1,879,999,895	-105	-0.0000056
100 %		- 20	1,879,999,846	-154	-0.0000082
100 %		- 10	1,879,999,817	-183	-0.0000097
100 %		0	1,879,999,911	-89	-0.0000047
100 %		+ 10	1,879,999,912	-88	-0.0000047
100 %		+ 20	1,879,999,908	-92	-0.0000049
100 %		+ 30	1,879,999,875	-125	-0.0000066
100 %		+ 40	1,879,999,935	-65	-0.0000034
100 %		+ 50	1,879,999,926	-74	-0.0000039
BATT. ENDPOINT	3.40	+ 20	1,879,999,828	-172	-0.0000091

Table 7-31. Frequency Stability Data (Band 2)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 2 Frequency Stability Measurements

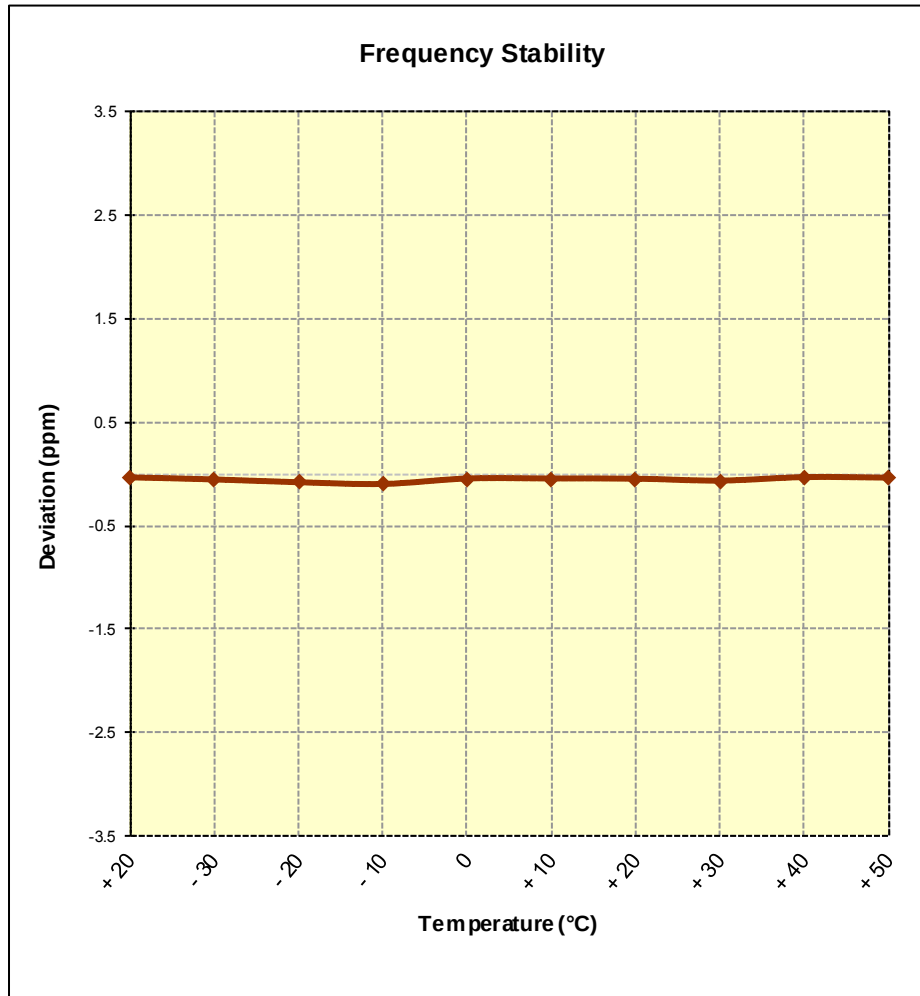


Figure 7-12. Frequency Stability Graph (Band 2)

FCC ID: A3LSMJ337T		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 7 Frequency Stability Measurements

OPERATING FREQUENCY: 2,535,000,000 Hz
 CHANNEL: 21100
 REFERENCE VOLTAGE: 4.35 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.35	+ 20 (Ref)	2,534,999,944	-56	-0.0000022
100 %		- 30	2,534,999,906	-94	-0.0000037
100 %		- 20	2,534,999,826	-174	-0.0000069
100 %		- 10	2,534,999,994	-6	-0.0000002
100 %		0	2,534,999,884	-116	-0.0000046
100 %		+ 10	2,534,999,971	-29	-0.0000012
100 %		+ 20	2,534,999,805	-195	-0.0000077
100 %		+ 30	2,534,999,953	-47	-0.0000018
100 %		+ 40	2,534,999,922	-78	-0.0000031
100 %		+ 50	2,534,999,878	-122	-0.0000048
BATT. ENDPOINT	3.40	+ 20	2,534,999,943	-57	-0.0000023

Table 7-32. Frequency Stability Data (Band 7)

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.

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Band 7 Frequency Stability Measurements

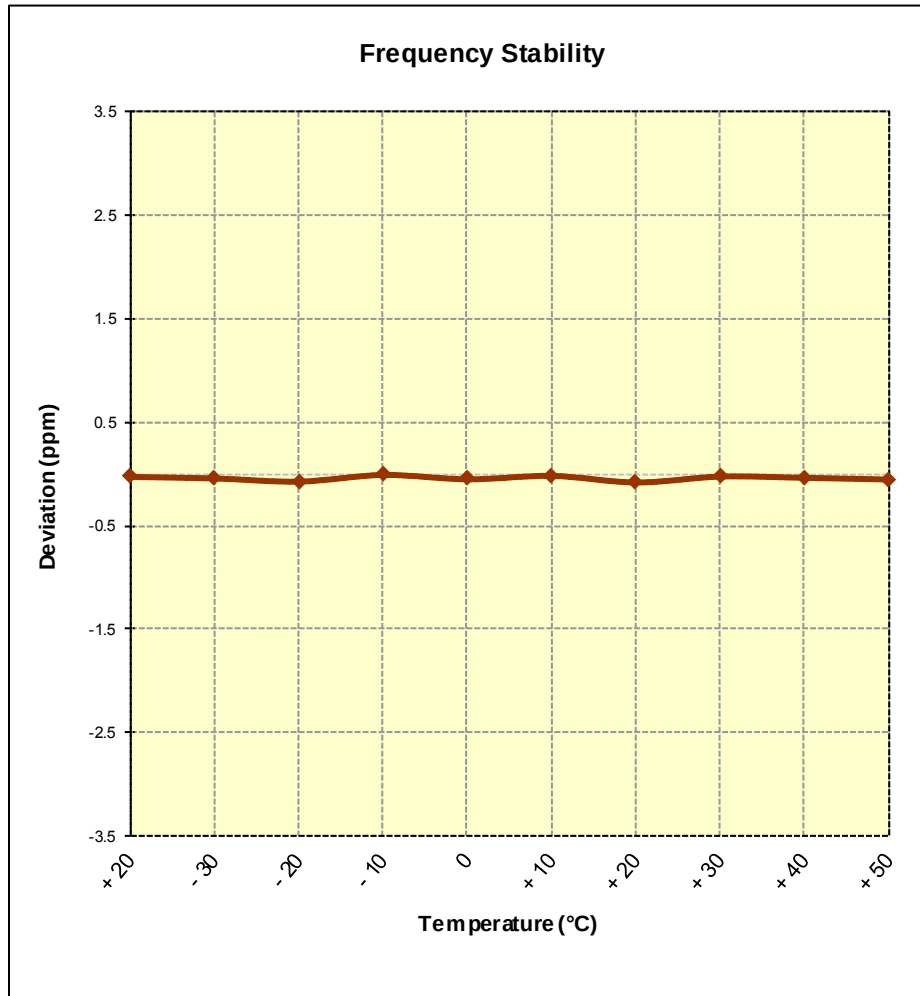


Figure 7-13. Frequency Stability Graph (Band 7)

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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: A3LSMJ337T** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

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