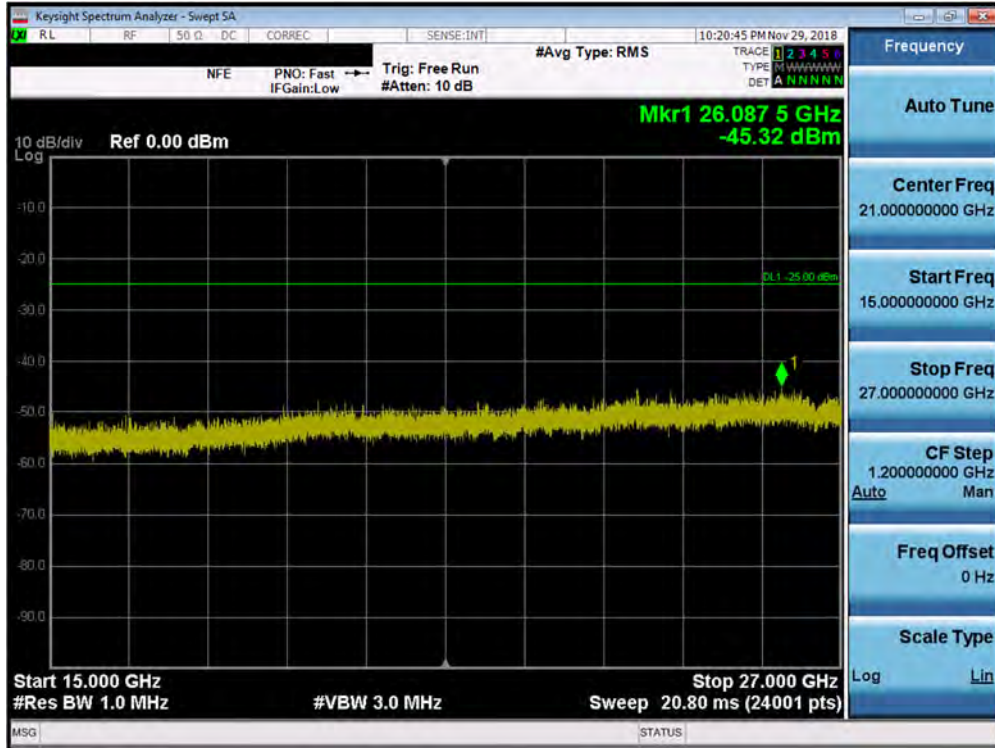
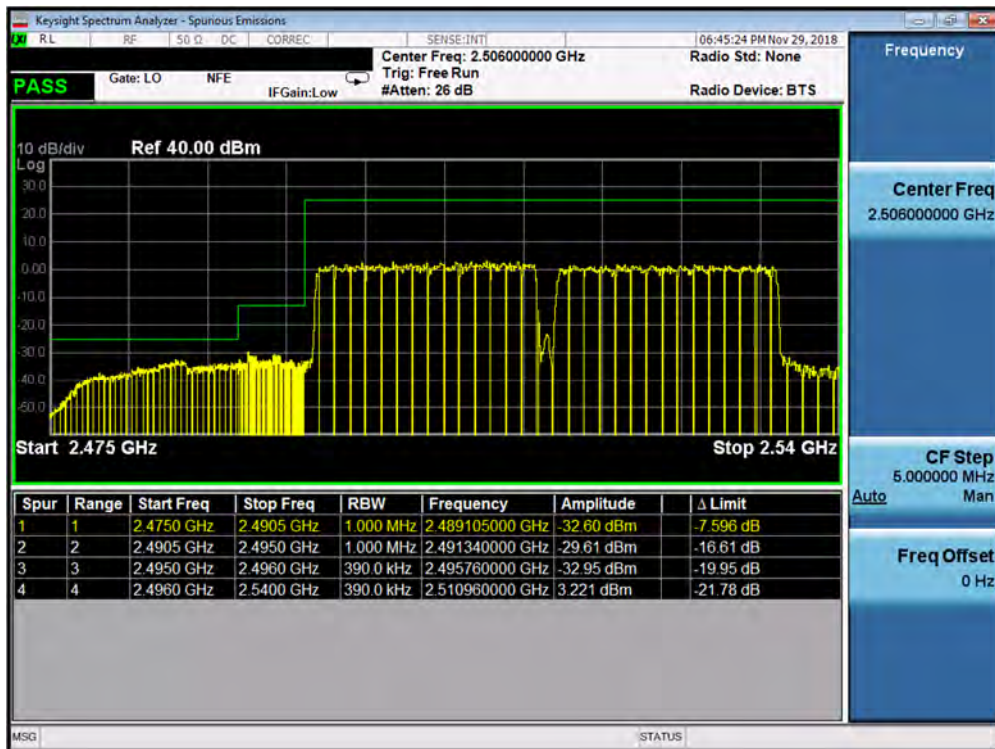


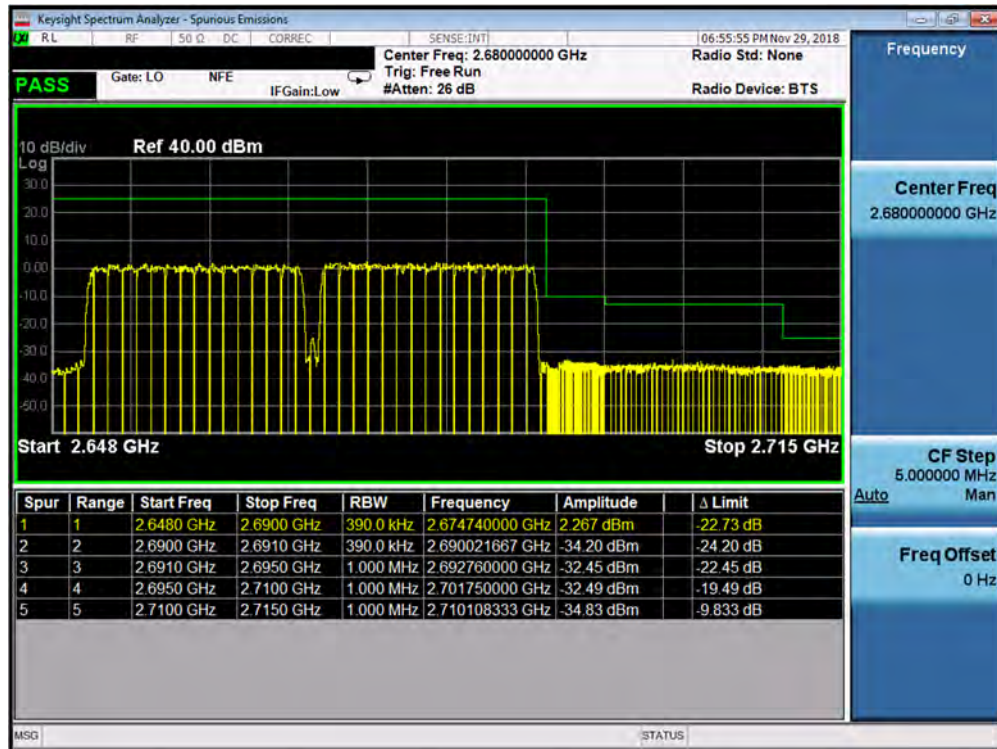


Plot 7-267. Conducted Spurious Plot (Band 41 – 20.0MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)



Plot 7-268. Lower Band Edge Plot (Band 41 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)

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Plot 7-269. Upper Band Edge Plot (Band 41 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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7.7 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 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW $\geq 3 \times$ 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: A3LSMG9700		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.

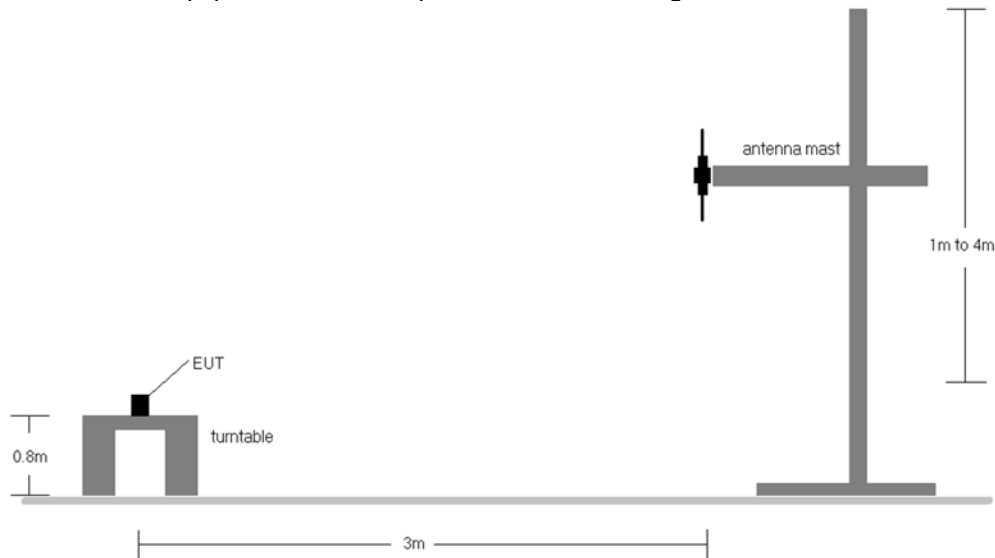


Figure 7-6. Radiated Test Setup <1GHz

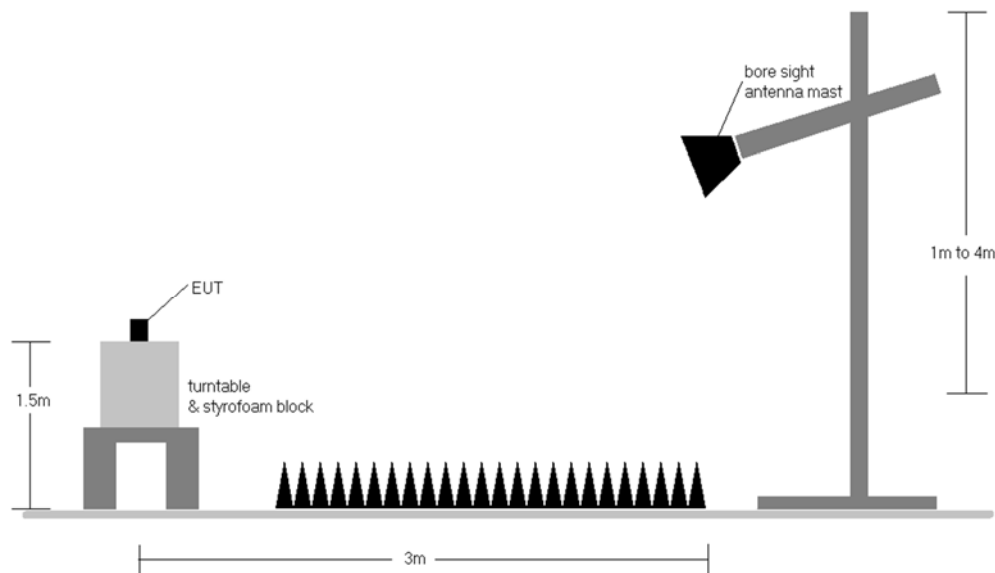


Figure 7-7. Radiated Test Setup >1GHz

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: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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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]
699.70	1.4	QPSK	H	150	16	1 / 5	20.67	1.10	19.62	0.092	34.77	-15.15
707.50	1.4	QPSK	H	150	57	1 / 5	21.29	1.13	20.27	0.106	34.77	-14.50
715.30	1.4	QPSK	H	150	31	1 / 0	20.68	1.16	19.69	0.093	34.77	-15.08
707.50	1.4	16-QAM	H	150	57	1 / 5	20.19	1.13	19.17	0.083	34.77	-15.60
707.50	1.4	64-QAM	H	150	57	1 / 5	19.31	1.13	18.29	0.067	34.77	-16.48
700.50	3	QPSK	H	150	54	1 / 0	20.54	1.10	19.49	0.089	34.77	-15.28
707.50	3	QPSK	H	150	54	1 / 14	21.04	1.13	20.02	0.100	34.77	-14.75
714.50	3	QPSK	H	150	54	1 / 0	21.05	1.16	20.06	0.101	34.77	-14.71
707.50	3	16-QAM	H	150	54	1 / 14	20.05	1.13	19.03	0.080	34.77	-15.74
707.50	3	64-QAM	H	150	54	1 / 14	18.93	1.13	17.91	0.062	34.77	-16.86
701.50	5	QPSK	H	150	349	1 / 0	20.44	1.11	19.40	0.087	34.77	-15.38
707.50	5	QPSK	H	150	19	1 / 0	20.76	1.13	19.74	0.094	34.77	-15.03
713.50	5	QPSK	H	150	51	1 / 0	20.06	1.15	19.06	0.081	34.77	-15.71
707.50	5	16-QAM	H	150	19	1 / 0	19.83	1.13	18.81	0.076	34.77	-15.96
707.50	5	64-QAM	H	150	19	1 / 0	18.80	1.13	17.78	0.060	34.77	-16.99
704.00	10	QPSK	H	150	1	1 / 49	20.06	1.12	19.03	0.080	34.77	-15.74
707.50	10	QPSK	H	150	1	1 / 49	20.93	1.13	19.91	0.098	34.77	-14.86
711.00	10	QPSK	H	150	10	1 / 49	21.04	1.14	20.03	0.101	34.77	-14.74
707.50	10	16-QAM	H	150	1	1 / 49	19.87	1.13	18.85	0.077	34.77	-15.92
707.50	10	64-QAM	H	150	1	1 / 49	18.90	1.13	17.88	0.061	34.77	-16.89
707.50	1.4	QPSK	V	150	92	1 / 5	19.07	1.13	18.05	0.064	34.77	-16.72
707.50	1.4 (WCP)	QPSK	H	234	79	1 / 5	15.02	4.22	17.09	0.051	34.77	-17.68

Table 7-5. ERP Data (Band 12)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 166 of 212

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]
779.50	5	QPSK	H	150	3	1 / 24	21.01	1.72	20.58	0.114	34.77	-14.19
782.00	5	QPSK	H	150	363	1 / 24	21.00	1.73	20.58	0.114	34.77	-14.19
784.50	5	QPSK	H	150	3	1 / 24	21.32	1.74	20.91	0.123	34.77	-13.86
784.50	5	16-QAM	H	150	3	1 / 24	20.61	1.74	20.20	0.105	34.77	-14.57
784.50	5	64-QAM	H	150	3	1 / 24	19.25	1.74	18.84	0.077	34.77	-15.93
782.00	10	QPSK	H	150	351	1 / 49	21.22	1.73	20.80	0.120	34.77	-13.97
782.00	10	16-QAM	H	150	351	1 / 49	20.29	1.73	19.87	0.097	34.77	-14.90
782.00	10	64-QAM	H	150	351	1 / 49	19.43	1.73	19.01	0.080	34.77	-15.76
784.50	5	QPSK	V	150	284	1 / 24	20.16	1.74	19.75	0.094	34.77	-15.02
784.50	5 (WCP)	QPSK	H	150	353	1 / 24	20.89	1.74	20.48	0.112	34.77	-14.29

Table 7-6. ERP Data (Band 13)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 167 of 212

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]
824.70	1.4	QPSK	H	150	354	1 / 5	20.97	1.65	20.46	0.111	38.45	-17.99
836.50	1.4	QPSK	H	150	354	1 / 0	21.27	1.57	20.69	0.117	38.45	-17.76
848.30	1.4	QPSK	H	150	354	1 / 0	19.70	1.50	19.05	0.080	38.45	-19.40
836.50	1.4	16-QAM	H	150	354	1 / 5	20.41	1.57	19.83	0.096	38.45	-18.62
836.50	1.4	64-QAM	H	150	354	1 / 5	19.47	1.57	18.89	0.078	38.45	-19.56
825.50	3	QPSK	H	150	358	1 / 14	20.82	1.64	20.31	0.107	38.45	-18.14
836.50	3	QPSK	H	150	358	1 / 14	21.23	1.57	20.65	0.116	38.45	-17.80
847.50	3	QPSK	H	150	358	1 / 0	20.33	1.51	19.69	0.093	38.45	-18.76
836.50	3	16-QAM	H	150	358	1 / 14	20.41	1.57	19.83	0.096	38.45	-18.62
836.50	3	64-QAM	H	150	358	1 / 14	19.50	1.57	18.92	0.078	38.45	-19.53
826.50	5	QPSK	H	150	0	1 / 24	20.96	1.63	20.44	0.111	38.45	-18.01
836.50	5	QPSK	H	150	0	1 / 24	21.43	1.57	20.85	0.122	38.45	-17.60
846.50	5	QPSK	H	150	0	1 / 0	20.93	1.51	20.29	0.107	38.45	-18.16
836.50	5	16-QAM	H	150	0	1 / 24	20.62	1.57	20.04	0.101	38.45	-18.41
836.50	5	64-QAM	H	150	0	1 / 24	19.31	1.57	18.73	0.075	38.45	-19.72
829.00	10	QPSK	H	150	184	1 / 49	21.50	1.62	20.97	0.125	38.45	-17.48
836.50	10	QPSK	H	150	184	1 / 0	21.66	1.57	21.09	0.128	38.45	-17.36
844.00	10	QPSK	H	150	184	1 / 0	21.61	1.53	20.98	0.125	38.45	-17.47
829.00	10	16-QAM	H	150	184	1 / 49	20.81	1.62	20.28	0.107	38.45	-18.17
836.50	10	64-QAM	H	150	184	1 / 49	19.38	1.57	18.81	0.076	38.45	-19.64
836.50	10	QPSK	V	150	102	1 / 0	19.83	1.57	19.25	0.084	38.45	-19.20
836.50	10 (WCP)	QPSK	H	150	353	1 / 0	21.62	1.57	21.04	0.127	38.45	-17.41

Table 7-7. ERP Data (Band 26/5)

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]
831.50	15	QPSK	H	150	3	1 / 74	21.45	1.60	20.90	0.123	38.45	-17.55
836.50	15	QPSK	H	150	3	1 / 0	21.31	1.57	20.73	0.118	38.45	-17.72
841.50	15	QPSK	H	150	3	1 / 0	21.49	1.54	20.88	0.122	38.45	-17.57
841.50	15	16-QAM	H	150	3	1 / 0	20.74	1.54	20.13	0.103	38.45	-18.32
841.50	15	64-QAM	H	150	3	1 / 74	19.40	1.54	18.79	0.076	38.45	-19.66

Table 7-8. ERP Data (Band 26)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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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	H	130	34	1 / 0	14.33	8.16	22.49	0.177	30.00	-7.51
1732.50	1.4	QPSK	H	130	34	1 / 0	14.81	8.18	22.99	0.199	30.00	-7.01
1754.30	1.4	QPSK	H	130	34	1 / 0	14.67	8.21	22.88	0.194	30.00	-7.12
1732.50	1.4	16-QAM	H	130	34	1 / 0	14.19	8.18	22.37	0.173	30.00	-7.63
1732.50	1.4	64-QAM	H	130	34	1 / 0	12.62	8.18	20.80	0.120	30.00	-9.20
1711.50	3	QPSK	H	130	161	1 / 0	14.39	8.16	22.55	0.180	30.00	-7.45
1732.50	3	QPSK	H	130	161	1 / 0	14.33	8.18	22.51	0.178	30.00	-7.49
1753.50	3	QPSK	H	130	161	1 / 0	14.26	8.21	22.47	0.176	30.00	-7.53
1711.50	3	16-QAM	H	130	161	1 / 0	14.24	8.16	22.40	0.174	30.00	-7.60
1711.50	3	64-QAM	H	130	161	1 / 0	12.69	8.16	20.85	0.122	30.00	-9.15
1712.50	5	QPSK	H	128	24	1 / 0	14.13	8.16	22.29	0.169	30.00	-7.71
1732.50	5	QPSK	H	128	24	1 / 24	14.07	8.18	22.25	0.168	30.00	-7.75
1752.50	5	QPSK	H	166	28	1 / 24	14.33	8.20	22.53	0.179	30.00	-7.47
1752.50	5	16-QAM	H	166	28	1 / 24	13.26	8.20	21.46	0.140	30.00	-8.54
1752.50	5	64-QAM	H	166	28	1 / 24	12.63	8.20	20.83	0.121	30.00	-9.17
1715.00	10	QPSK	H	133	117	1 / 0	14.07	8.16	22.23	0.167	30.00	-7.77
1732.50	10	QPSK	H	133	117	1 / 49	14.27	8.18	22.45	0.176	30.00	-7.55
1750.00	10	QPSK	H	133	117	1 / 49	14.50	8.20	22.70	0.186	30.00	-7.30
1750.00	10	16-QAM	H	133	117	1 / 49	13.67	8.20	21.87	0.154	30.00	-8.13
1750.00	10	64-QAM	H	133	117	1 / 49	13.00	8.20	21.20	0.132	30.00	-8.80
1717.50	15	QPSK	H	113	219	1 / 0	14.42	8.16	22.58	0.181	30.00	-7.42
1732.50	15	QPSK	H	113	219	1 / 74	13.60	8.18	21.78	0.151	30.00	-8.22
1747.50	15	QPSK	H	113	219	1 / 74	14.54	8.20	22.74	0.188	30.00	-7.26
1717.50	15	16-QAM	H	113	219	1 / 0	14.28	8.16	22.44	0.176	30.00	-7.56
1747.50	15	64-QAM	H	113	219	1 / 74	12.84	8.20	21.04	0.127	30.00	-8.96
1720.00	20	QPSK	H	127	204	1 / 99	13.29	8.17	21.46	0.140	30.00	-8.54
1732.50	20	QPSK	H	127	204	1 / 99	13.41	8.18	21.59	0.144	30.00	-8.41
1745.00	20	QPSK	H	127	204	1 / 99	14.23	8.19	22.42	0.175	30.00	-7.58
1745.00	20	16-QAM	H	127	204	1 / 99	13.17	8.19	21.36	0.137	30.00	-8.64
1745.00	20	64-QAM	H	127	204	1 / 99	12.53	8.19	20.72	0.118	30.00	-9.28
1732.50	1	QPSK	V	133	216	1 / 0	14.70	8.18	22.88	0.194	30.00	-7.12
1732.50	1.4 (WCP)	QPSK	H	127	21	1 / 0	14.24	8.18	22.42	0.175	30.00	-7.58

Table 7-9. EIRP Data (Band 4)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 169 of 212

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	V	150	255	1 / 5	13.68	8.37	22.05	0.160	33.01	-10.96
1882.50	1.4	QPSK	V	150	255	1 / 5	13.96	8.41	22.37	0.173	33.01	-10.64
1914.30	1.4	QPSK	V	150	255	1 / 0	12.93	8.46	21.39	0.138	33.01	-11.62
1882.50	1.4	16-QAM	V	150	255	1 / 5	13.05	8.41	21.46	0.140	33.01	-11.55
1882.50	1.4	64-QAM	V	150	255	1 / 5	12.41	8.41	20.82	0.121	33.01	-12.19
1851.50	3	QPSK	V	153	256	1 / 0	13.60	8.37	21.97	0.157	33.01	-11.04
1882.50	3	QPSK	V	150	256	1 / 14	13.72	8.41	22.13	0.163	33.01	-10.88
1913.50	3	QPSK	V	150	256	1 / 0	12.60	8.46	21.06	0.128	33.01	-11.95
1882.50	3	16-QAM	V	150	256	1 / 14	12.93	8.41	21.34	0.136	33.01	-11.67
1882.50	3	64-QAM	V	150	256	1 / 14	12.22	8.41	20.63	0.116	33.01	-12.38
1852.50	5	QPSK	V	153	255	1 / 0	13.84	8.37	22.21	0.166	33.01	-10.80
1882.50	5	QPSK	V	153	255	1 / 24	13.72	8.41	22.13	0.163	33.01	-10.88
1912.50	5	QPSK	V	153	255	1 / 0	12.72	8.46	21.18	0.131	33.01	-11.83
1852.50	5	16-QAM	V	153	255	1 / 0	13.04	8.37	21.41	0.138	33.01	-11.60
1882.50	5	64-QAM	V	153	255	1 / 24	12.17	8.41	20.58	0.114	33.01	-12.43
1855.00	10	QPSK	V	153	260	1 / 0	13.35	8.37	21.72	0.149	33.01	-11.29
1882.50	10	QPSK	V	153	260	1 / 49	13.97	8.41	22.38	0.173	33.01	-10.63
1910.00	10	QPSK	V	153	260	1 / 0	13.32	8.45	21.77	0.150	33.01	-11.24
1882.50	10	16-QAM	V	153	260	1 / 49	13.13	8.41	21.54	0.143	33.01	-11.47
1882.50	10	64-QAM	V	153	260	1 / 49	12.42	8.41	20.83	0.121	33.01	-12.18
1857.50	15	QPSK	V	147	234	1 / 0	13.36	8.38	21.74	0.149	33.01	-11.27
1882.50	15	QPSK	V	147	234	1 / 74	14.41	8.41	22.82	0.192	33.01	-10.19
1907.50	15	QPSK	V	147	234	1 / 0	13.42	8.45	21.87	0.154	33.01	-11.14
1882.50	15	16-QAM	V	147	234	1 / 74	13.57	8.41	21.98	0.158	33.01	-11.03
1882.50	15	64-QAM	V	147	234	1 / 74	12.86	8.41	21.27	0.134	33.01	-11.74
1860.00	20	QPSK	V	147	233	1 / 99	14.05	8.38	22.43	0.175	33.01	-10.58
1882.50	20	QPSK	V	147	233	1 / 99	14.18	8.41	22.59	0.182	33.01	-10.42
1905.00	20	QPSK	V	147	233	1 / 99	14.05	8.45	22.50	0.178	33.01	-10.51
1882.50	20	16-QAM	V	147	233	1 / 99	13.43	8.41	21.84	0.153	33.01	-11.17
1882.50	20	64-QAM	V	147	233	1 / 99	12.68	8.41	21.09	0.129	33.01	-11.92
1882.50	15	QPSK	H	147	234	1 / 74	13.68	8.41	22.09	0.162	33.01	-10.92
1882.50	15 (WCP)	QPSK	H	148	7	1 / 74	7.10	8.41	15.51	0.036	33.01	-17.50

Table 7-10. EIRP Data (Band 25/2)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 170 of 212

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	117	156	1 / 0	13.70	8.52	22.22	0.167	33.01	-10.79
2593.00	5	QPSK	H	117	156	1 / 24	13.60	8.54	22.14	0.164	33.01	-10.87
2687.50	5	QPSK	H	101	144	1 / 0	14.07	8.83	22.90	0.195	33.01	-10.11
2687.50	5	16-QAM	H	101	144	1 / 0	13.33	8.83	22.16	0.164	33.01	-10.85
2502.50	5	64-QAM	H	117	156	1 / 0	11.57	8.52	20.09	0.102	33.01	-12.92
2505.00	10	QPSK	H	147	143	1 / 49	13.29	8.51	21.80	0.151	33.01	-11.21
2593.00	10	QPSK	H	147	143	1 / 49	14.29	8.54	22.83	0.192	33.01	-10.18
2685.00	10	QPSK	H	101	143	1 / 0	14.30	8.82	23.12	0.205	33.01	-9.89
2593.00	10	16-QAM	H	147	143	1 / 49	13.44	8.54	21.98	0.158	33.01	-11.03
2593.00	10	64-QAM	H	147	143	1 / 0	12.57	8.54	21.11	0.129	33.01	-11.90
2507.50	15	QPSK	H	142	144	1 / 74	13.99	8.50	22.49	0.178	33.01	-10.52
2593.00	15	QPSK	H	152	148	1 / 0	14.21	8.54	22.75	0.188	33.01	-10.26
2682.50	15	QPSK	H	145	122	1 / 0	13.50	8.82	22.32	0.171	33.01	-10.69
2507.50	15	16-QAM	H	142	144	1 / 74	13.33	8.50	21.83	0.153	33.01	-11.18
2593.00	15	64-QAM	H	152	148	1 / 0	12.40	8.54	20.94	0.124	33.01	-12.07
2510.00	20	QPSK	H	145	165	1 / 0	12.59	8.50	21.09	0.129	33.01	-11.92
2593.00	20	QPSK	H	141	155	1 / 0	13.75	8.54	22.29	0.170	33.01	-10.72
2680.00	20	QPSK	H	137	167	1 / 0	12.67	8.82	21.49	0.141	33.01	-11.53
2593.00	20	16-QAM	H	141	155	1 / 0	12.98	8.54	21.52	0.142	33.01	-11.49
2593.00	20	64-QAM	H	141	155	1 / 0	12.04	8.54	20.58	0.114	33.01	-12.43
2685.00	10	QPSK	V	182	200	1 / 0	12.00	8.54	20.54	0.113	33.01	-12.47
2685.00	10 (WCP)	QPSK	H	150	356	1 / 0	11.10	8.54	19.64	0.092	33.01	-13.37

Table 7-11. EIRP Data (Band 41 PC3)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 171 of 212

7.8 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 v03r01 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW $\geq 3 \times$ 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: A3LSMG9700		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.

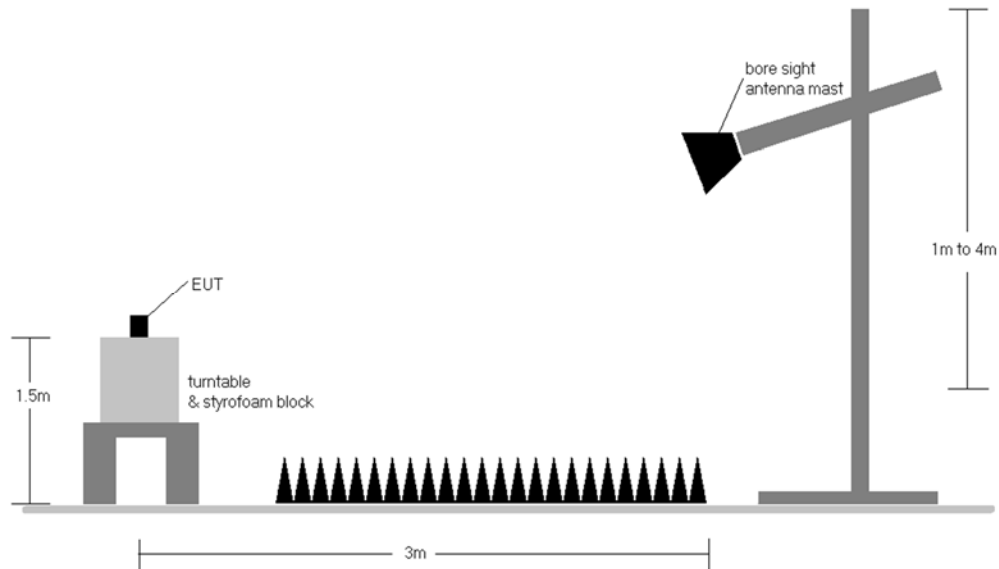


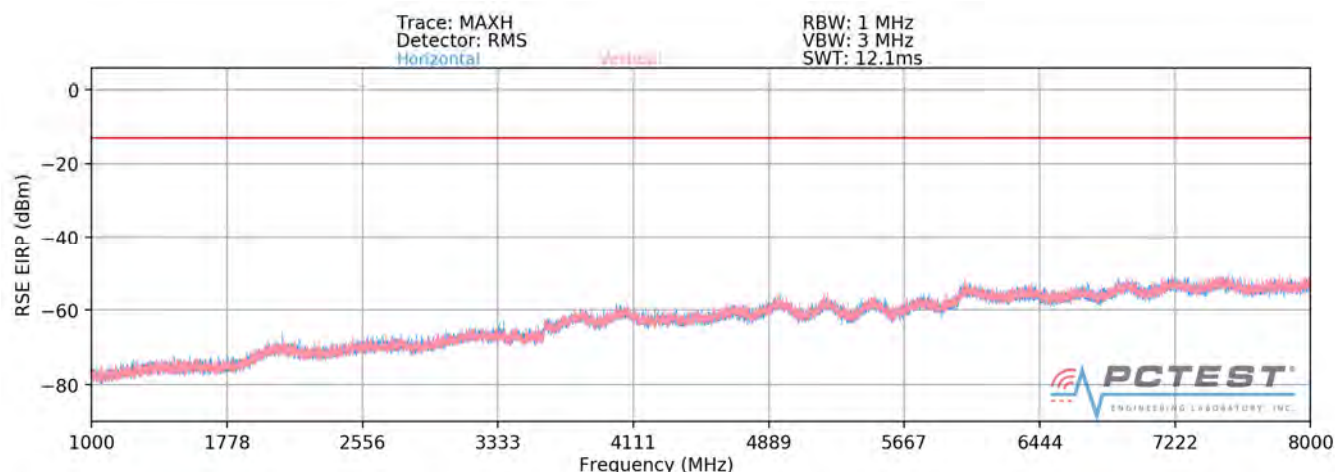
Figure 7-8. Test Instrument & Measurement Setup

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: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 12



Plot 7-270. Radiated Spurious Plot above 1GHz (Band 12)

OPERATING FREQUENCY: 699.70 MHz
CHANNEL: 23017
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]
1399.40	H	220	168	-68.22	7.44	-60.79	-47.8
2099.10	H	204	161	-69.64	8.83	-60.81	-47.8
2798.80	H	-	-	-76.22	10.15	-66.08	-53.1
3498.50	H	-	-	-73.62	9.92	-63.70	-50.7

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

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 174 of 212

OPERATING FREQUENCY: 707.50 MHz
 CHANNEL: 23095
 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]
1415.00	H	295	175	-70.58	7.63	-62.95	-49.9
2122.50	H	155	185	-70.54	8.86	-61.68	-48.7
2830.00	H	-	-	-76.32	10.10	-66.23	-53.2
3537.50	H	-	-	-73.27	9.90	-63.37	-50.4

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

OPERATING FREQUENCY: 715.30 MHz
 CHANNEL: 23173
 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]
1430.60	H	152	178	-68.46	7.83	-60.63	-47.6
2145.90	H	149	138	-71.42	8.89	-62.53	-49.5
2861.20	H	-	-	-75.75	10.04	-65.71	-52.7
3576.50	H	-	-	-72.95	9.93	-63.02	-50.0

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

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 175 of 212

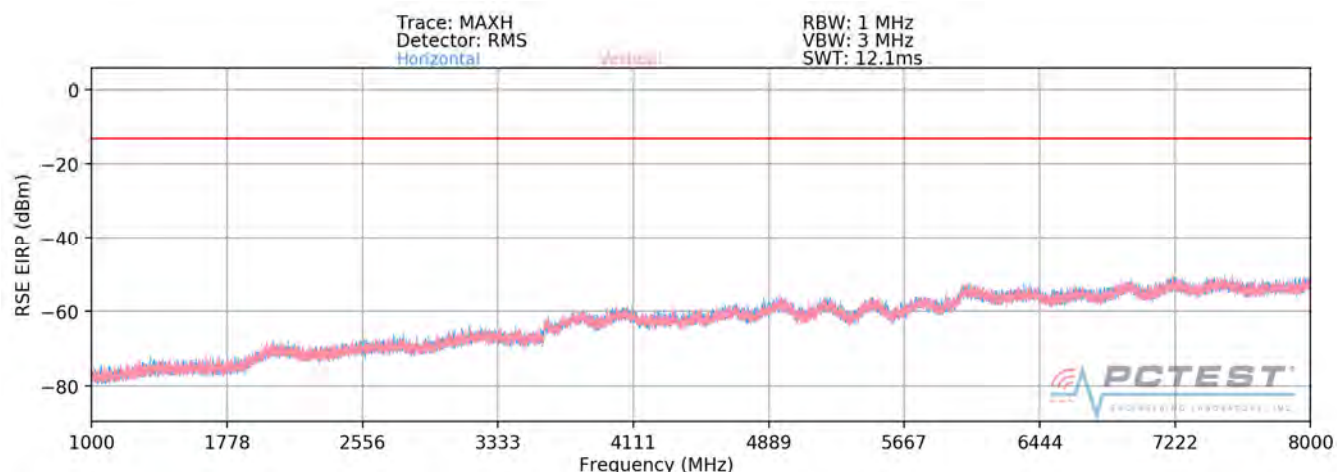
OPERATING FREQUENCY: 715.30 MHz
 CHANNEL: 23173
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
1430.60	H	140	172	-70.82	7.83	-62.99	-50.0
2145.90	H	-	-	-76.16	8.89	-67.27	-54.3
2861.20	H	-	-	-75.73	10.04	-65.69	-52.7

Table 7-15. Radiated Spurious Data with WCP (Band 12 –High Channel)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 176 of 212

Band 13



Plot 7-271. Radiated Spurious Plot above 1GHz (Band 13)

OPERATING FREQUENCY: 779.50 MHz
CHANNEL: 23205
MODULATION SIGNAL: QPSK
BANDWIDTH: 5.0 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]
2338.50	H	195	119	-76.49	9.47	-67.02	-54.0
3118.00	H	-	-	-73.85	9.35	-64.49	-51.5
3897.50	H	-	-	-71.72	9.35	-62.37	-49.4

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

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 177 of 212

OPERATING FREQUENCY: 782.00 MHz
 CHANNEL: 23230
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 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]
2346.00	H	115	130	-75.38	9.43	-65.95	-52.9
3128.00	H	-	-	-73.80	9.34	-64.46	-51.5
3910.00	H	-	-	-72.04	9.37	-62.67	-49.7

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

OPERATING FREQUENCY: 784.50 MHz
 CHANNEL: 23255
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 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]
2353.50	H	151	125	-74.92	9.41	-65.51	-52.5
3138.00	H	-	-	-73.63	9.33	-64.30	-51.3
3922.50	H	-	-	-72.14	9.40	-62.74	-49.7

Table 7-18. Radiated Spurious Data (Band 13 – High Channel)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 178 of 212

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 [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1559.00	H	124	182	-73.69	8.51	-65.18	-25.2
1564.00	H	118	174	-74.47	8.53	-65.94	-25.9
1569.00	H	197	179	-78.27	8.55	-69.72	-29.7

Table 7-19. Radiated Spurious Data (Band 13 – 1559 -1610MHz Band)

OPERATING FREQUENCY: 779.50 MHz
 CHANNEL: 23205
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 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]
2338.50	H	-	-	-74.93	9.47	-65.46	-52.5
3118.00	H	-	-	-73.55	9.35	-64.19	-51.2

Table 7-20. Radiated Spurious Data with WCP (Band 13 – Low Channel)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 179 of 212

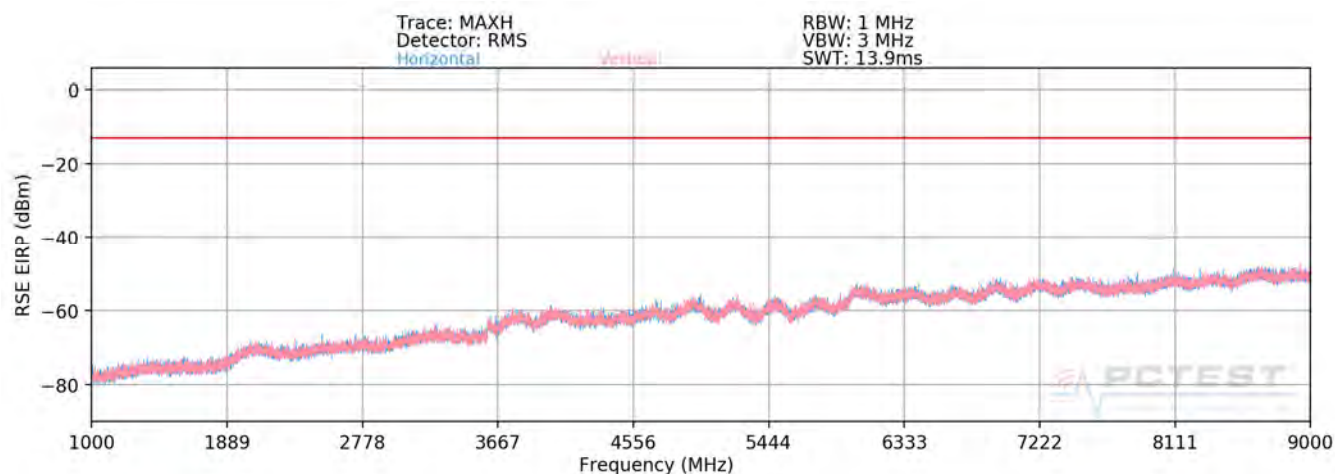
MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.00 MHz
 DISTANCE: 3 meters
 NARROWBAND EMISSION LIMIT: -50 dBm
 WIDEBAND EMISSION LIMIT: -40 dBm/MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1559.00	H	125	199	-77.80	8.51	-69.29	-29.3

Table 7-21. Radiated Spurious Data with WCP (Band 13 – 1559 -1610MHz Band)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 180 of 212

Band 26/5



Plot 7-272. Radiated Spurious Plot above 1GHz (Band 26/5)

OPERATING FREQUENCY: 829.00 MHz
CHANNEL: 26840
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	H	226	187	-63.57	8.95	-54.62	-41.6
2487.00	H	-	-	-61.38	9.70	-51.68	-38.7
3316.00	H	-	-	-62.14	9.59	-52.55	-39.5

Table 7-22. Radiated Spurious Data (Band 26/5 – Low Channel)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 181 of 212

OPERATING FREQUENCY: 836.50 MHz
 CHANNEL: 26915
 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	H	226	194	-64.59	8.95	-55.63	-42.6
2509.50	H	-	-	-63.17	9.75	-53.42	-40.4

Table 7-23. Radiated Spurious Data (Band 26/5 – Mid Channel)

OPERATING FREQUENCY: 844.00 MHz
 CHANNEL: 26990
 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	H	174	200	-64.18	8.95	-55.23	-42.2
2532.00	H	-	-	-63.07	9.75	-53.32	-40.3

Table 7-24. Radiated Spurious Data (Band 26/5 – High Channel)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 182 of 212

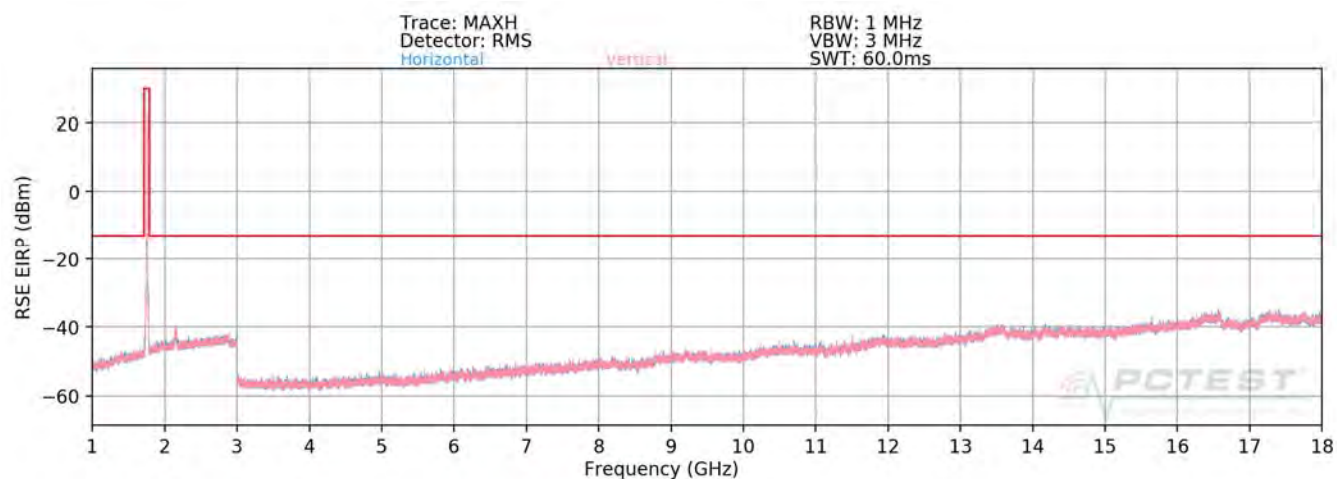
OPERATING FREQUENCY: 836.50 MHz
 CHANNEL: 26915
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	H	-	-	-63.77	8.95	-54.81	-41.8
2509.50	H	-	-	-60.06	9.75	-50.31	-37.3
3346.00	H	-	-	-57.19	9.60	-47.58	-34.6

Table 7-25. Radiated Spurious Data with WCP (Band 26/5 – Mid Channel)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 183 of 212

Band 4



Plot 7-273. Radiated Spurious Plot above 1GHz (Band 4)

OPERATING FREQUENCY: 1710.70 MHz
CHANNEL: 19957
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]
3421.40	H	138	205	-60.83	9.82	-51.01	-38.0
5132.10	H	-	-	-62.93	10.69	-52.24	-39.2
6842.80	H	-	-	-59.46	11.64	-47.82	-34.8

Table 7-26. Radiated Spurious Data (Band 4 – Low Channel)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 184 of 212

OPERATING FREQUENCY: 1732.50 MHz
 CHANNEL: 20175
 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]
3465.00	H	-	-	-61.82	9.88	-51.95	-38.9
5197.50	H	-	-	-62.76	10.76	-52.00	-39.0
6930.00	H	-	-	-60.37	11.74	-48.63	-35.6

Table 7-27. Radiated Spurious Data (Band 4 – Mid Channel)

OPERATING FREQUENCY: 1754.30 MHz
 CHANNEL: 20393
 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]
3508.60	H	-	-	-62.04	9.92	-52.12	-39.1
5262.90	H	-	-	-62.77	10.71	-52.06	-39.1

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

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 185 of 212

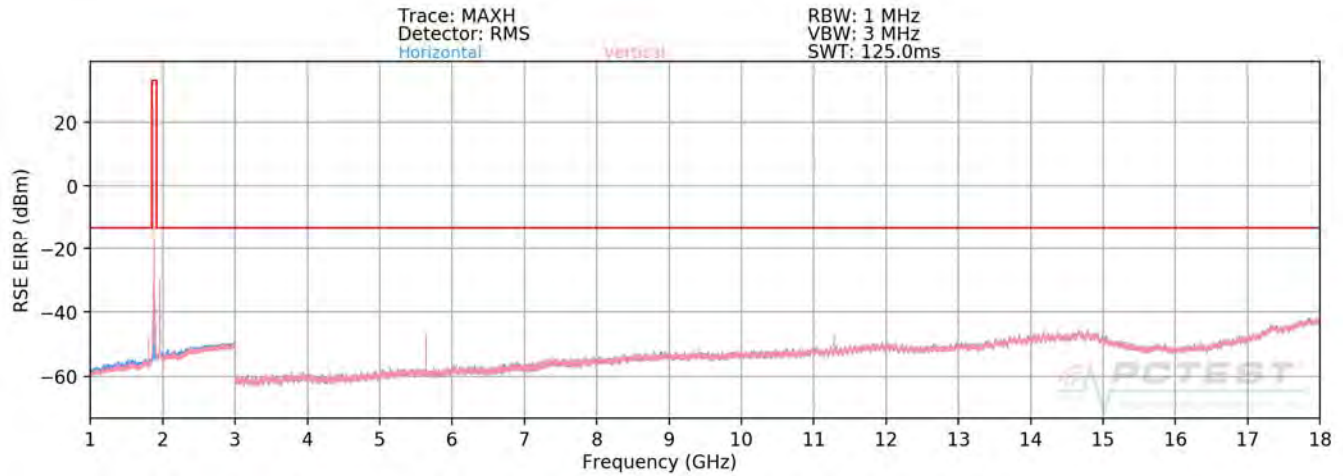
OPERATING FREQUENCY: 1732.50 MHz
 CHANNEL: 20175
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
3465.00	H	198	196	-52.45	9.88	-42.58	-29.6
5197.50	H	-	-	-61.31	10.76	-50.55	-37.5
6930.00	H	-	-	-58.10	11.74	-46.36	-33.4

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

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 186 of 212

Band 25/2



Plot 7-274. Radiated Spurious Plot above 1GHz (Band 25/2)

OPERATING FREQUENCY: 1857.50 MHz
CHANNEL: 26115
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]
3715.00	H	-	-	-71.72	9.53	-62.19	-49.2
5572.50	H	111	42	-69.90	10.97	-58.92	-45.9
7430.00	H	123	336	-67.48	10.98	-56.50	-43.5
9287.50	H	116	45	-66.73	11.61	-55.12	-42.1
11145.00	H	243	359	-63.88	12.73	-51.15	-38.1
13002.50	H	-	-	-64.46	13.24	-51.23	-38.2
14860.00	H	-	-	-61.49	12.57	-48.92	-35.9

Table 7-30. Radiated Spurious Data (Band 25/2 – Low Channel)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset			Page 187 of 212

OPERATING FREQUENCY: 1882.50 MHz
 CHANNEL: 26365
 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]
3765.00	H	-	-	-65.47	9.37	-56.10	-43.1
5647.50	H	117	176	-57.46	11.17	-46.29	-33.3
7530.00	H	-	-	-61.03	11.11	-49.92	-36.9
9412.50	H	101	143	-57.74	11.57	-46.17	-33.2
11295.00	H	232	172	-53.02	12.72	-40.30	-27.3
13177.50	H	-	-	-56.03	13.15	-42.88	-29.9

Table 7-31. Radiated Spurious Data (Band 25/2 – Mid Channel)

OPERATING FREQUENCY: 1907.50 MHz
 CHANNEL: 26615
 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]
3815.00	H	-	-	-64.86	9.29	-55.58	-42.6
5722.50	H	131	172	-63.12	11.33	-51.79	-38.8
7630.00	H	-	-	-61.29	11.26	-50.03	-37.0
9537.50	H	114	179	-59.66	11.70	-47.96	-35.0
11445.00	H	-	-	-58.26	12.84	-45.43	-32.4
13352.50	H	-	-	-55.83	12.81	-43.02	-30.0

Table 7-32. Radiated Spurious Data (Band 25/2 – High Channel)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 188 of 212

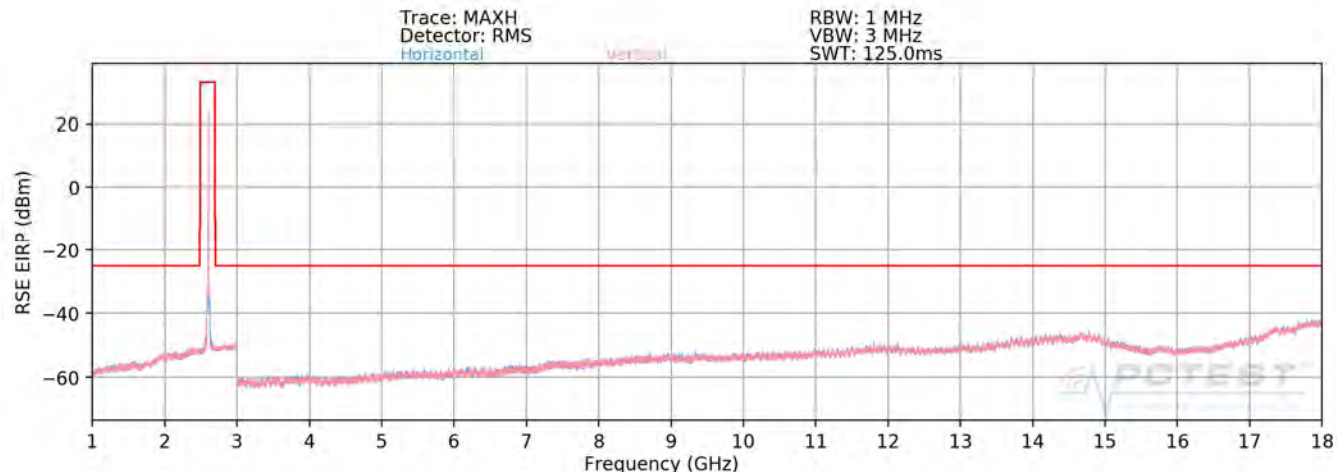
OPERATING FREQUENCY: 1882.50 MHz
 CHANNEL: 26365
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
3765.00	H	126	49	-60.09	9.37	-50.72	-37.7
5647.50	H	-	-	-60.48	11.17	-49.31	-36.3
7530.00	H	-	-	-55.81	11.11	-44.70	-31.7
9412.50	H	190	192	-54.73	11.57	-43.16	-30.2
11295.00	H	188	165	-52.29	12.72	-39.57	-26.6
13177.50	H	-	-	-50.72	13.15	-37.57	-24.6

Table 7-33. Radiated Spurious Data with WCP (Band 25/2 – Mid Channel)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 189 of 212

Band 41 (PC3)



Plot 7-275. Radiated Spurious Plot above 1GHz (Band 41 PC3)

OPERATING FREQUENCY: 2510.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 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]
5020.00	H	-	-	-64.34	10.88	-53.46	-28.5
7530.00	H	116	35	-59.09	11.13	-47.96	-23.0
10040.00	H	-	-	-56.45	11.99	-44.47	-19.5

Table 7-34. Radiated Spurious Data (Band 41 PC3 – Low Channel)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 190 of 212

OPERATING FREQUENCY: 2593.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 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]
5186.00	H	-	-	-64.34	10.74	-53.60	-28.6
7779.00	H	-	-	-58.87	11.44	-47.43	-22.4
10372.00	H	-	-	-56.11	12.42	-43.69	-18.7

Table 7-35. Radiated Spurious Data (Band 41 PC3 – Mid Channel)

OPERATING FREQUENCY: 2680.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 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]
5360.00	H	-	-	-63.29	10.70	-52.59	-27.6
8040.00	H	-	-	-58.98	11.16	-47.82	-22.8
10720.00	H	-	-	-57.14	12.59	-44.54	-19.5

Table 7-36. Radiated Spurious Data (Band 41 PC3 – High Channel)

FCC ID: A3LSMG9700			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset			Page 191 of 212

OPERATING FREQUENCY: 2510.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 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]
5020.00	H	181	39	-67.47	10.88	-56.59	-31.6
7530.00	H	131	342	-62.41	11.13	-51.28	-26.3
10040.00	H	139	5	-63.91	11.99	-51.93	-26.9
12550.00	H	-	-	-64.68	13.56	-51.12	-26.1
15060.00	H	-	-	-62.94	13.58	-49.37	-24.4

Table 7-37. Radiated Spurious Data with WCP (Band 41 PC3 – Low Channel)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 192 of 212

7.9 Uplink Carrier Aggregation Radiated Measurements

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. No. of sweep points $\geq 2 \times$ span / RBW
4. Detector = RMS
5. Trace mode = trace average for continuous emissions, max hold for pulse emissions
6. The trace was allowed to stabilize

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 193 of 212

Test Setup

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

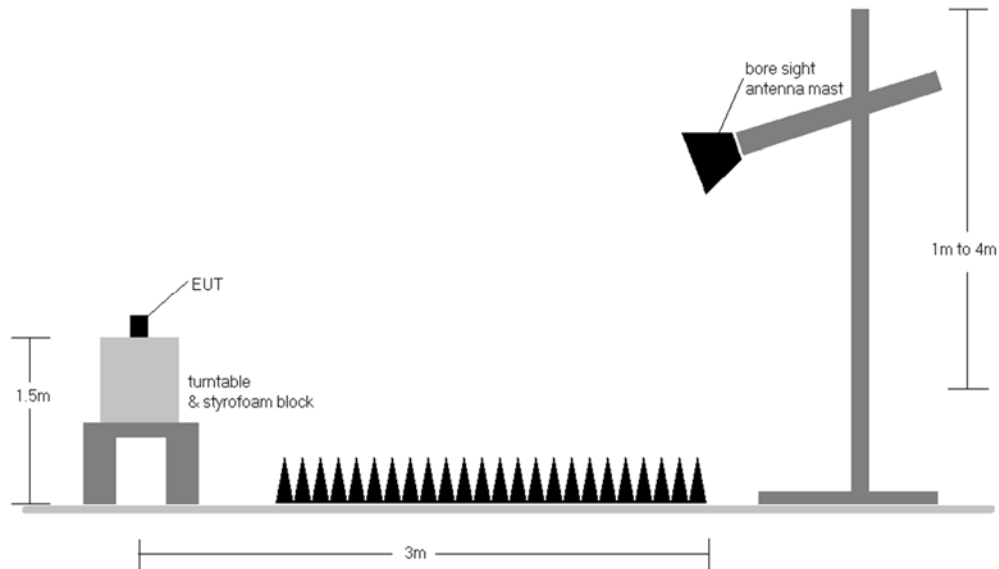


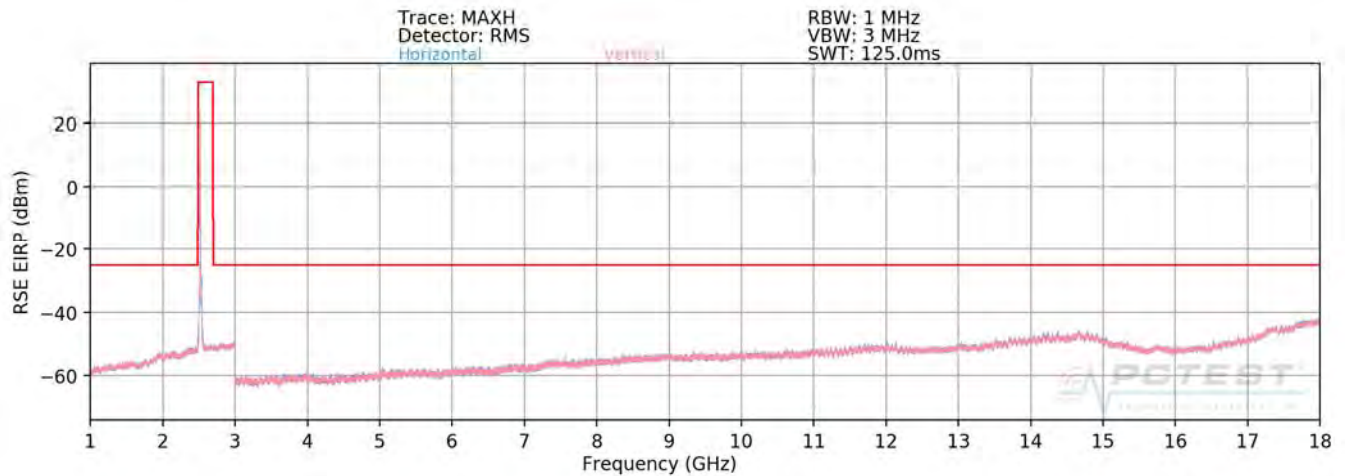
Figure 7-9. Test Instrument & Measurement Setup

Test Notes

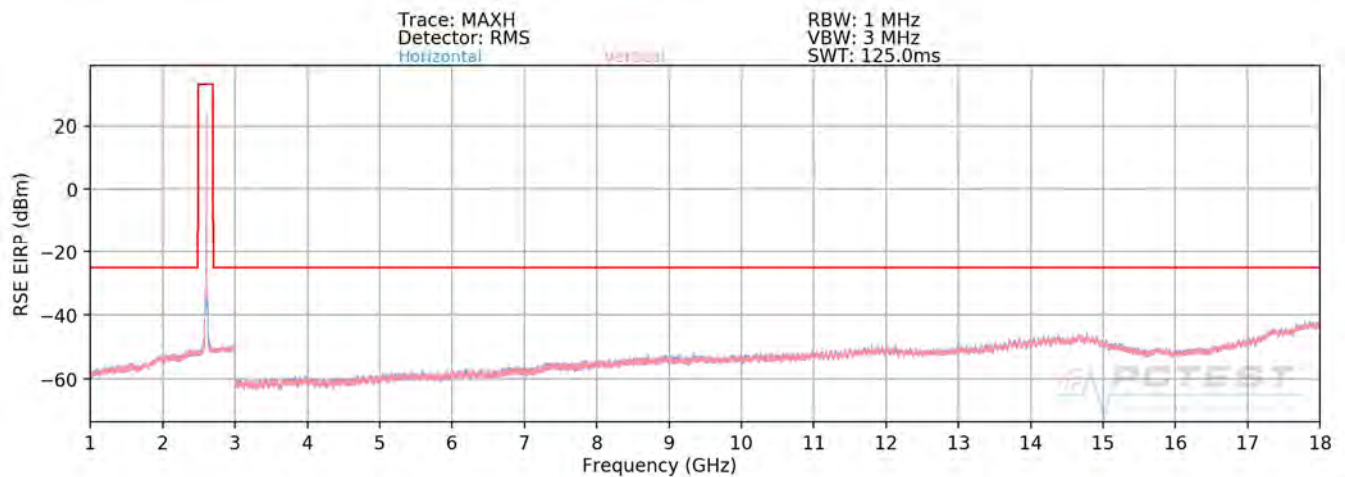
- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) Radiated spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. The worst case (highest) emissions were found while operating with QPSK modulation with both carriers set to transmit using 1RB.
- 4) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 5) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 194 of 212

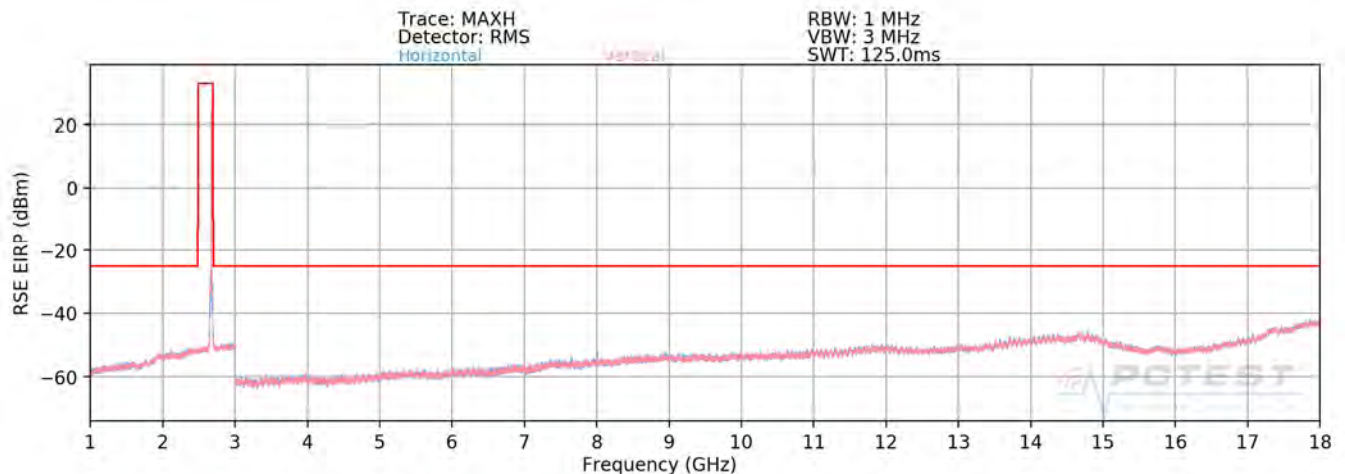
Uplink CA Configuration 41C



Plot 7-276. Radiated Spurious Plot (ULCA B41 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

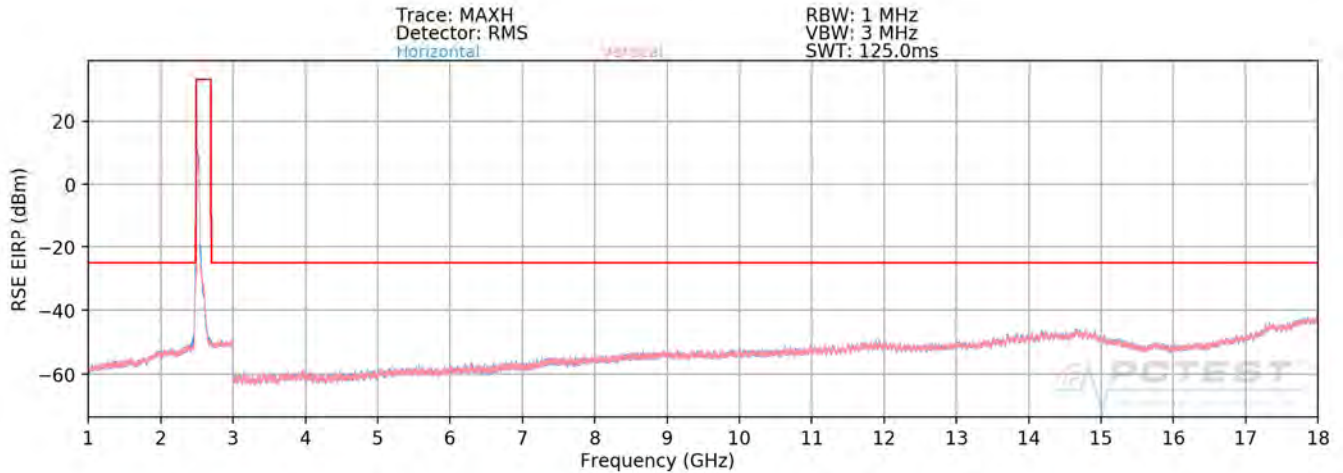


Plot 7-277. Radiated Spurious Plot (ULCA B41 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

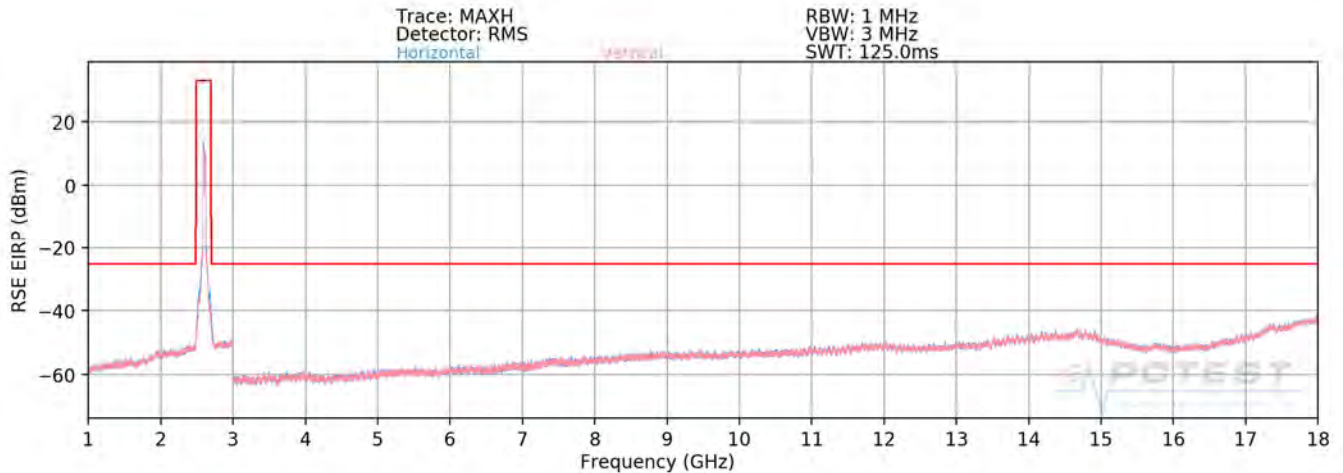


Plot 7-278. Radiated Spurious Plot (ULCA B41 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

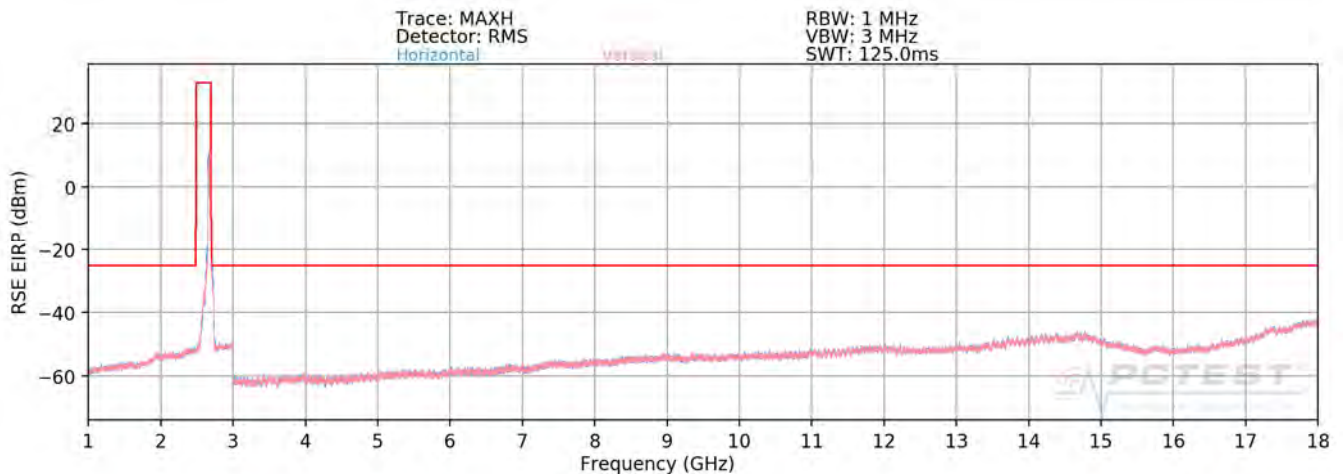
FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 195 of 212



Plot 7-279. Radiated Spurious Plot (ULCA B41 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Low Channel)



Plot 7-280. Radiated Spurious Plot (ULCA B41 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – Mid Channel)



Plot 7-281. Radiated Spurious Plot (ULCA B41 PCC: RB 100 Offset 0, SCC: RB 100 Offset 0 – High Channel)

FCC ID: A3LSMG9700	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 196 of 212

OPERATING FREQUENCY (PCC): 2510.00 MHz
 OPERATING FREQUENCY (SCC): 2598.80
 CHANNEL (PCC): 39790
 CHANNEL (SCC): 39988
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 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]
5020.00	H	100	7	-64.61	8.56	-56.05	-31.0
7530.00	H	209	349	-58.51	8.46	-50.06	-25.1
10040.00	H	-	-	-60.91	9.85	-51.06	-26.1
12550.00	H	-	-	-57.45	9.06	-48.40	-23.4

Table 7-38. Radiated Spurious Data (ULCA B41 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Low Channel)

OPERATING FREQUENCY (PCC): 2593.00 MHz
 OPERATING FREQUENCY (SCC): 2612.80
 CHANNEL (PCC): 40620
 CHANNEL (SCC): 40818
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 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]
5186.00	H	163	326	-62.90	8.70	-54.20	-29.2
7779.00	H	154	345	-60.84	8.69	-52.16	-27.2
10372.00	H	-	-	-61.02	9.62	-51.39	-26.4
12965.00	H	-	-	-56.21	8.99	-47.22	-22.2

Table 7-39. Radiated Spurious Data (ULCA B41 PCC: RB 1 Offset 99, SCC: RB 1 Offset 0 – Mid Channel)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 197 of 212

OPERATING FREQUENCY (PCC): _____ 2680.00 _____ MHz
 OPERATING FREQUENCY (SCC): _____ 2660.20 _____
 CHANNEL (PCC): _____ 41490 _____
 CHANNEL (SCC): _____ 41292 _____
 MODULATION SIGNAL: _____ QPSK _____
 BANDWIDTH: _____ 20.0 _____ 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]
5360.00	H	171	352	-63.78	8.70	-55.08	-30.1
8040.00	H	105	355	-56.38	8.95	-47.42	-22.4
10720.00	H	-	-	-59.40	9.32	-50.08	-25.1
13400.00	H	-	-	-55.90	8.77	-47.12	-22.1

Table 7-40. Radiated Spurious Data (ULCA B41 PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – High Channel)

OPERATING FREQUENCY (PCC): _____ 2680.00 _____ MHz
 OPERATING FREQUENCY (SCC): _____ 2660.20 _____
 CHANNEL (PCC): _____ 41490 _____
 CHANNEL (SCC): _____ 41292 _____
 MODULATION SIGNAL: _____ QPSK _____
 BANDWIDTH: _____ 20.0 _____ 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]
5360.00	H	144	329	-64.53	8.70	-55.83	-30.8
8040.00	H	111	31	-57.44	8.95	-48.48	-23.5
10720.00	H	-	-	-59.48	9.32	-50.16	-25.2
13400.00	H	-	-	-55.79	8.77	-47.01	-22.0

Table 7-41. Radiated Spurious Data with WCP (ULCA B41 PCC: RB 1 Offset 0, SCC: RB 99 Offset 0 – High Channel)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 198 of 212

7.10 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, 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, 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: A3LSMG9700		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: 4.34 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.34	+ 20 (Ref)	707,500,112	0	0.0000000
100 %		- 30	707,500,385	273	0.0000386
100 %		- 20	707,499,883	-229	-0.0000324
100 %		- 10	707,499,963	-149	-0.0000211
100 %		0	707,500,025	-87	-0.0000123
100 %		+ 10	707,500,135	23	0.0000033
100 %		+ 20	707,500,275	163	0.0000230
100 %		+ 30	707,500,176	64	0.0000090
100 %		+ 40	707,500,231	119	0.0000168
100 %		+ 50	707,499,582	-530	-0.0000749
BATT. ENDPOINT	3.49	+ 20	707,499,701	-411	-0.0000581

Table 7-42. 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: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 200 of 212	

Band 12 Frequency Stability Measurements

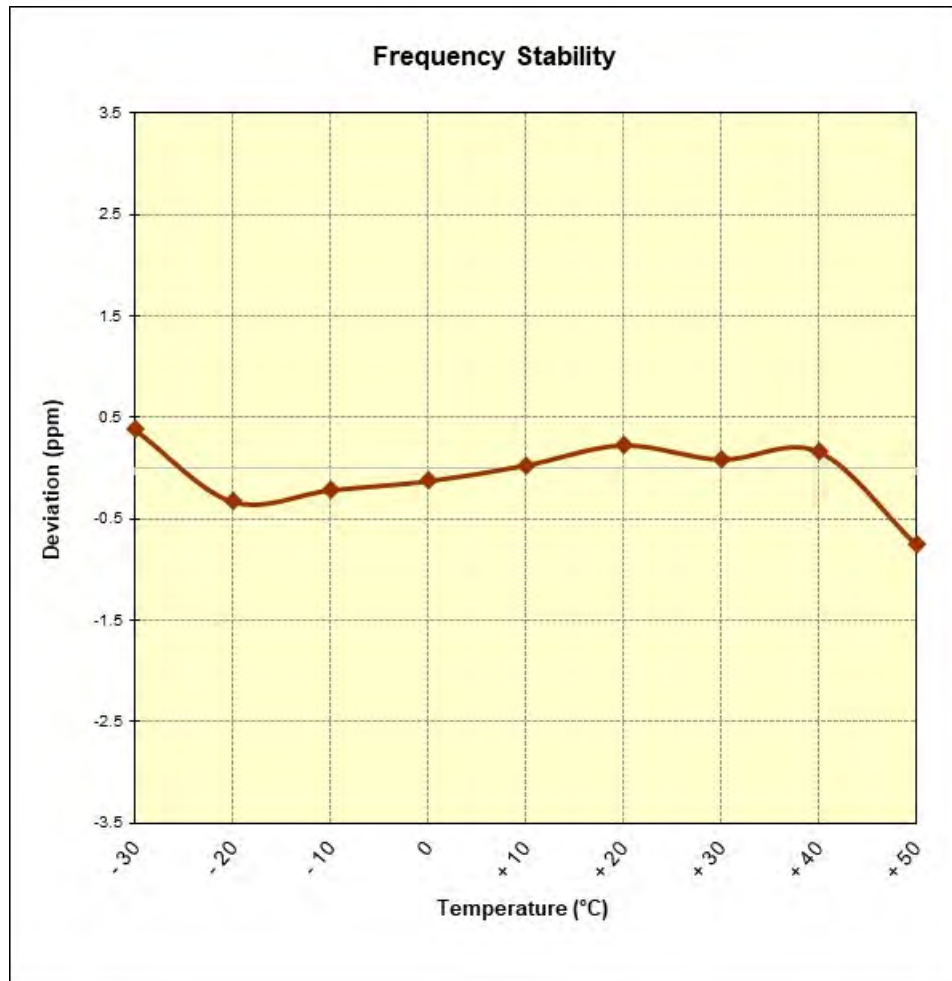


Figure 7-10. Frequency Stability Graph (Band 12)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 201 of 212

Band 13 Frequency Stability Measurements

OPERATING FREQUENCY: 782,000,000 Hz
 CHANNEL: 23230
 REFERENCE VOLTAGE: 4.34 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.34	+ 20 (Ref)	782,000,339	0	0.0000000
100 %		- 30	782,000,169	-170	-0.0000217
100 %		- 20	781,999,905	-434	-0.0000555
100 %		- 10	782,000,263	-76	-0.0000097
100 %		0	781,999,926	-413	-0.0000528
100 %		+ 10	781,999,791	-548	-0.0000701
100 %		+ 20	781,999,977	-362	-0.0000463
100 %		+ 30	781,999,898	-441	-0.0000564
100 %		+ 40	781,999,969	-370	-0.0000473
100 %		+ 50	781,999,891	-448	-0.0000573
BATT. ENDPOINT	3.49	+ 20	782,000,138	-201	-0.0000257

Table 7-43. Frequency Stability Data (Band 13)

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: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	
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Band 13 Frequency Stability Measurements

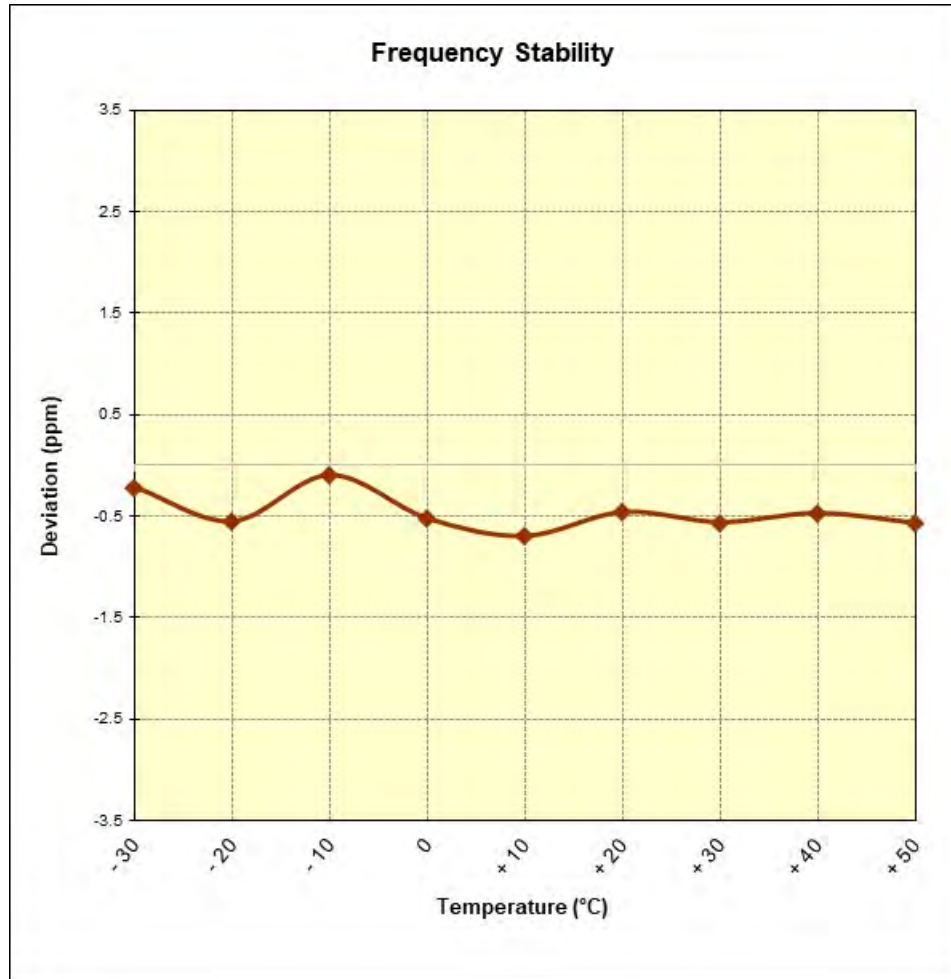


Figure 7-11. Frequency Stability Graph (Band 13)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 203 of 212

Band 26/5 Frequency Stability Measurements

OPERATING FREQUENCY: 836,500,000 Hz
 CHANNEL: 20525
 REFERENCE VOLTAGE: 4.34 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.34	+ 20 (Ref)	836,500,100	0	0.0000000
100 %		- 30	836,500,140	40	0.0000048
100 %		- 20	836,500,004	-96	-0.0000115
100 %		- 10	836,499,943	-157	-0.0000188
100 %		0	836,499,964	-136	-0.0000163
100 %		+ 10	836,499,881	-219	-0.0000262
100 %		+ 20	836,499,725	-375	-0.0000448
100 %		+ 30	836,500,472	372	0.0000445
100 %		+ 40	836,500,273	173	0.0000207
100 %		+ 50	836,499,930	-170	-0.0000203
BATT. ENDPOINT	3.49	+ 20	836,499,942	-158	-0.0000189

Table 7-44. Frequency Stability Data (Band 26/5)

FCC ID: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 204 of 212

Band 26/5 Frequency Stability Measurements

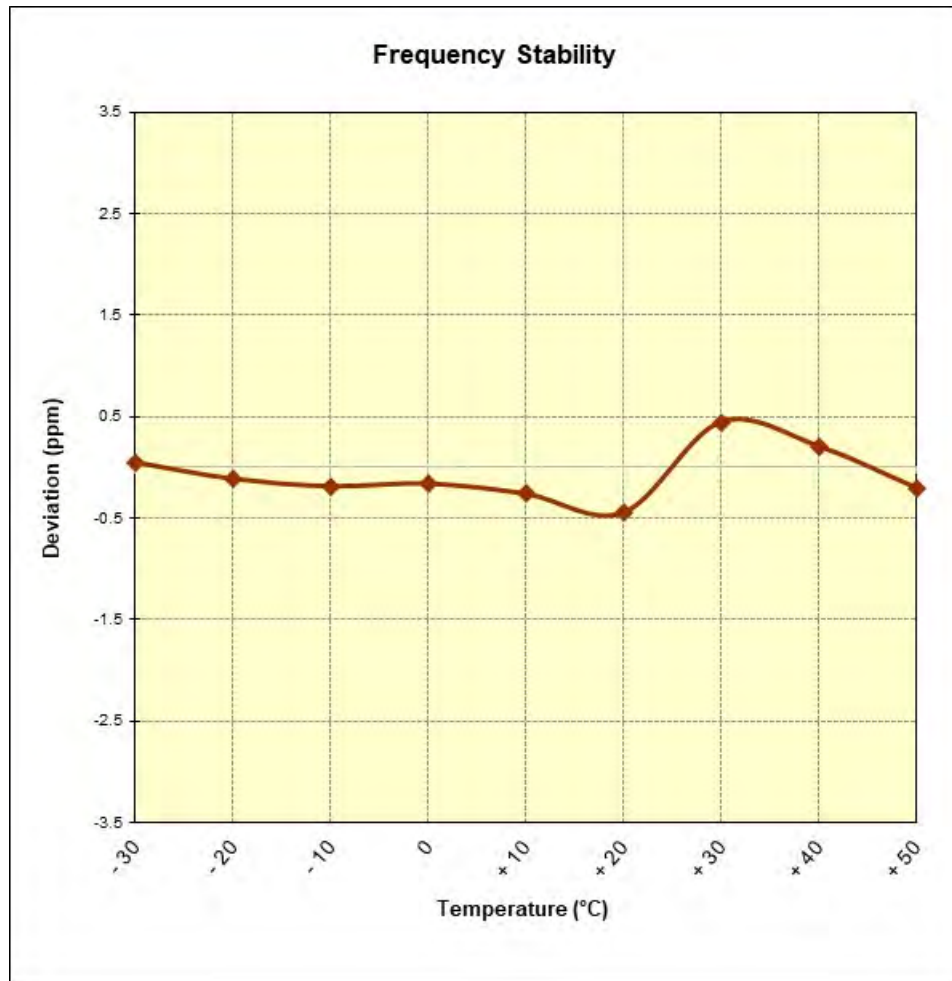


Figure 7-12. Frequency Stability Graph (Band 26/5)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 205 of 212

Band 4 Frequency Stability Measurements

OPERATING FREQUENCY: 1,745,000,000 Hz
 CHANNEL: 132322
 REFERENCE VOLTAGE: 4.34 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.34	+ 20 (Ref)	1,745,000,264	0	0.0000000
100 %		- 30	1,745,000,101	-163	-0.0000093
100 %		- 20	1,744,999,875	-389	-0.0000223
100 %		- 10	1,744,999,809	-455	-0.0000261
100 %		0	1,744,999,932	-332	-0.0000190
100 %		+ 10	1,745,000,103	-161	-0.0000092
100 %		+ 20	1,745,000,040	-224	-0.0000128
100 %		+ 30	1,745,000,192	-72	-0.0000041
100 %		+ 40	1,744,999,994	-270	-0.0000155
100 %		+ 50	1,744,999,961	-303	-0.0000174
BATT. ENDPOINT	3.49	+ 20	1,745,000,166	-98	-0.0000056

Table 7-45. 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: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 206 of 212

Band 4 Frequency Stability Measurements

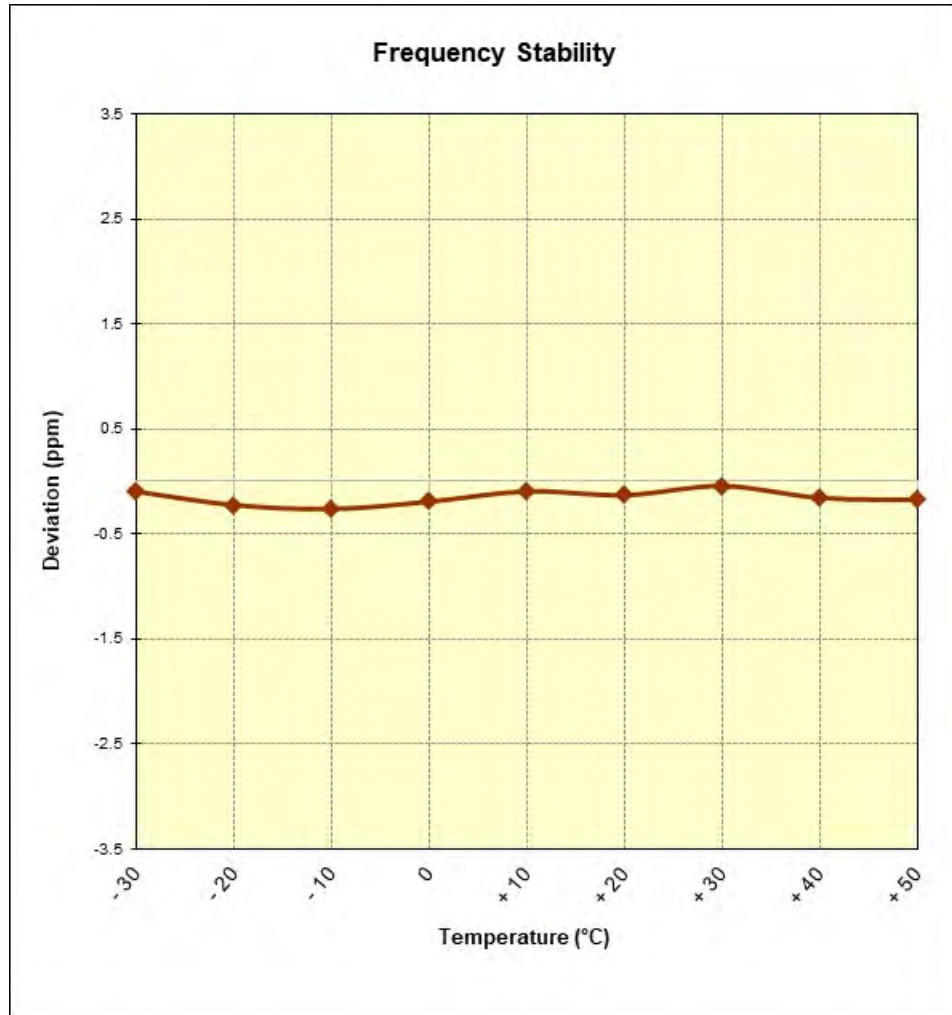


Figure 7-13. Frequency Stability Graph (Band 4)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 207 of 212

Band 25/2 Frequency Stability Measurements

OPERATING FREQUENCY: 1,882,500,000 Hz
 CHANNEL: 26365
 REFERENCE VOLTAGE: 4.34 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.34	+ 20 (Ref)	1,882,499,786	0	0.0000000
100 %		- 30	1,882,499,926	140	0.0000074
100 %		- 20	1,882,499,874	88	0.0000047
100 %		- 10	1,882,500,037	251	0.0000133
100 %		0	1,882,500,008	222	0.0000118
100 %		+ 10	1,882,500,274	488	0.0000259
100 %		+ 20	1,882,500,009	223	0.0000118
100 %		+ 30	1,882,499,852	66	0.0000035
100 %		+ 40	1,882,499,961	175	0.0000093
100 %		+ 50	1,882,499,779	-7	-0.0000004
BATT. ENDPOINT	3.49	+ 20	1,882,499,826	40	0.0000021

Table 7-46. Frequency Stability Data (Band 25/2)

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: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 208 of 212

Band 25/2 Frequency Stability Measurements

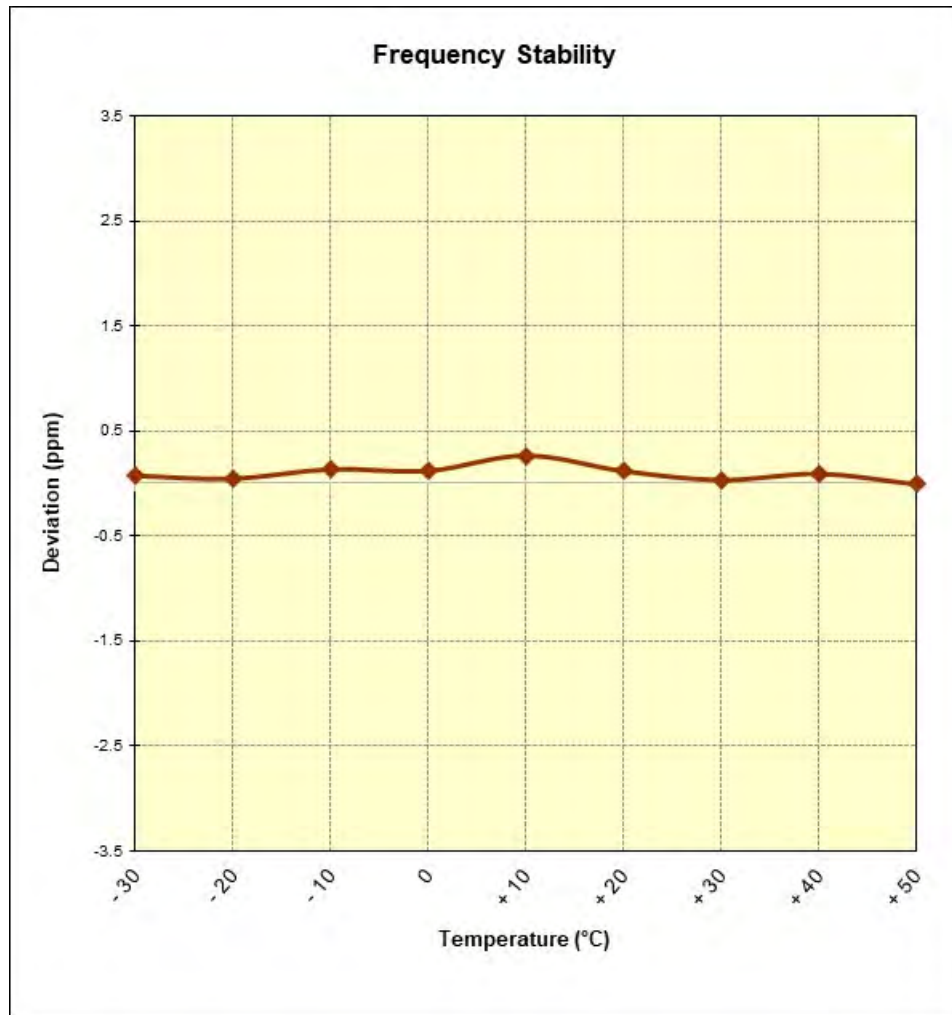


Figure 7-14. Frequency Stability Graph (Band 25/2)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 41 Frequency Stability Measurements

OPERATING FREQUENCY: 2,593,000,000 Hz
 CHANNEL: 40620
 REFERENCE VOLTAGE: 4.34 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.34	+ 20 (Ref)	2,593,000,049	0	0.0000000
100 %		- 30	2,593,000,028	-21	-0.0000008
100 %		- 20	2,593,000,213	164	0.0000063
100 %		- 10	2,593,000,341	292	0.0000113
100 %		0	2,593,000,177	128	0.0000049
100 %		+ 10	2,593,000,078	29	0.0000011
100 %		+ 20	2,593,000,279	230	0.0000089
100 %		+ 30	2,592,999,706	-343	-0.0000132
100 %		+ 40	2,593,000,019	-30	-0.0000012
100 %		+ 50	2,592,999,842	-207	-0.0000080
BATT. ENDPOINT	3.49	+ 20	2,592,999,927	-122	-0.0000047

Table 7-47. 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: A3LSMG9700	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset	Page 210 of 212

Band 41 Frequency Stability Measurements

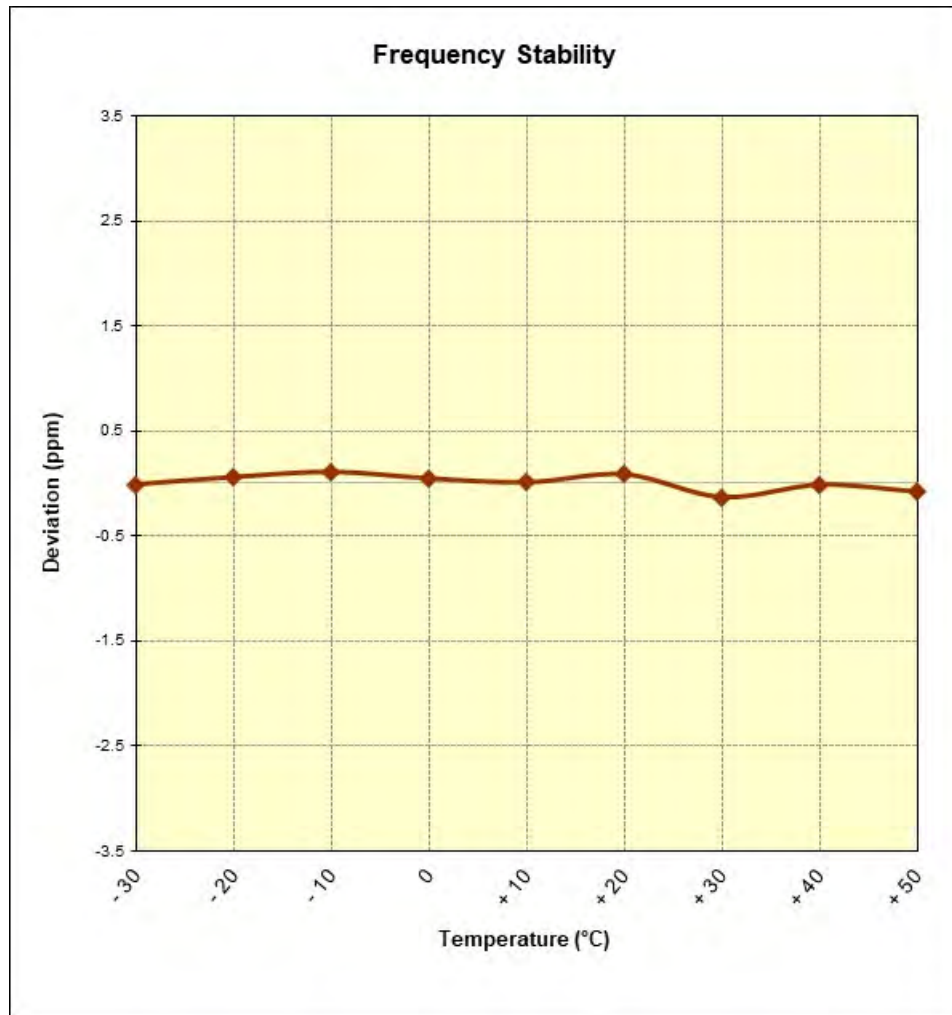


Figure 7-15. Frequency Stability Graph (Band 41)

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 211 of 212

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMG9700** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

FCC ID: A3LSMG9700		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1811260212-03.A3L	Test Dates: 10/23/2018 - 1/3/2019	EUT Type: Portable Handset		Page 212 of 212