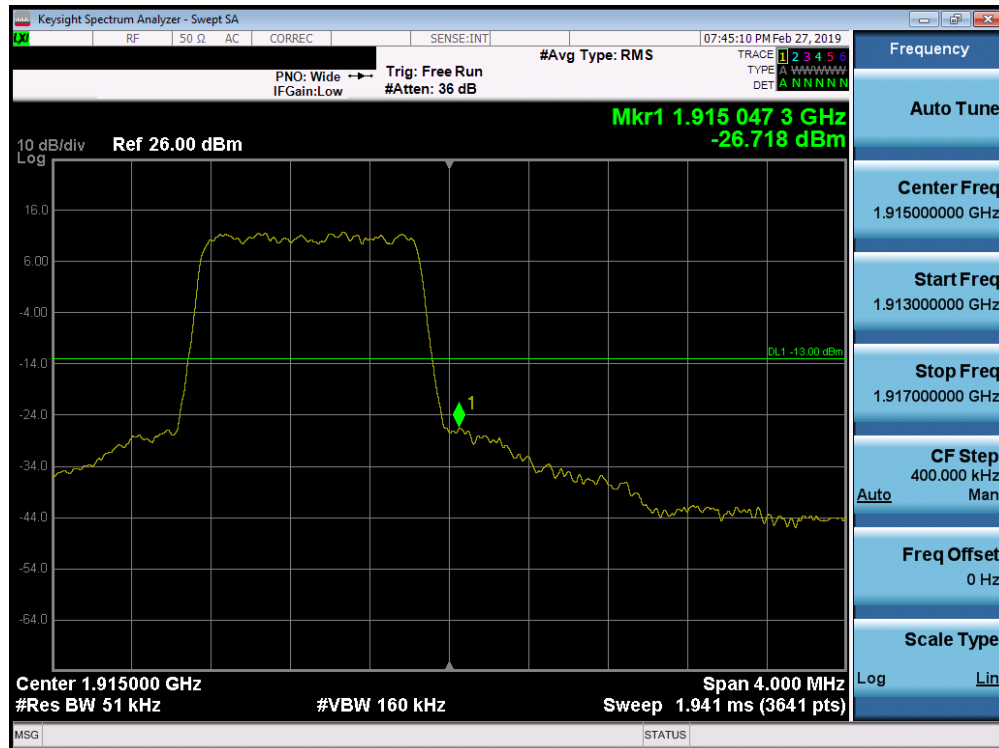
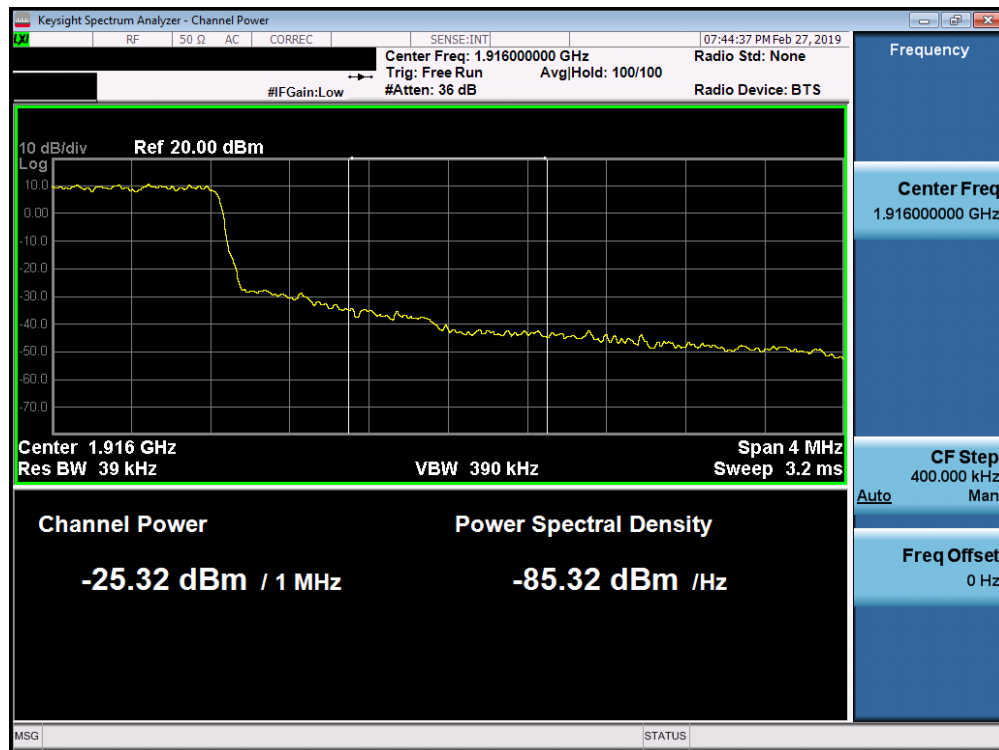


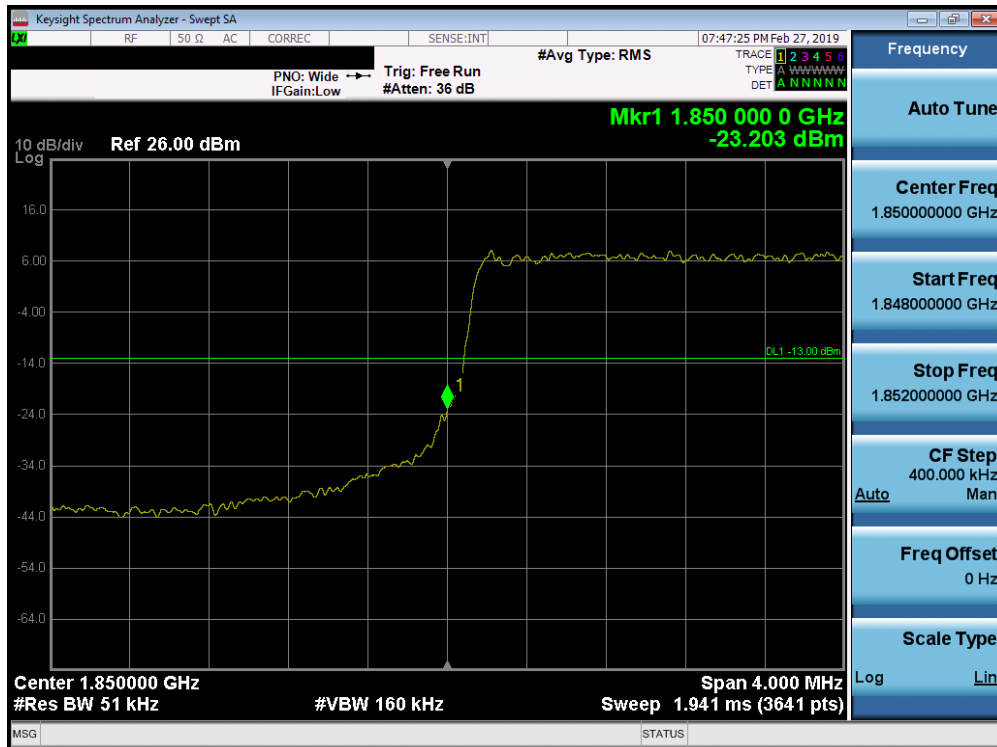


Plot 7-202. Upper Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

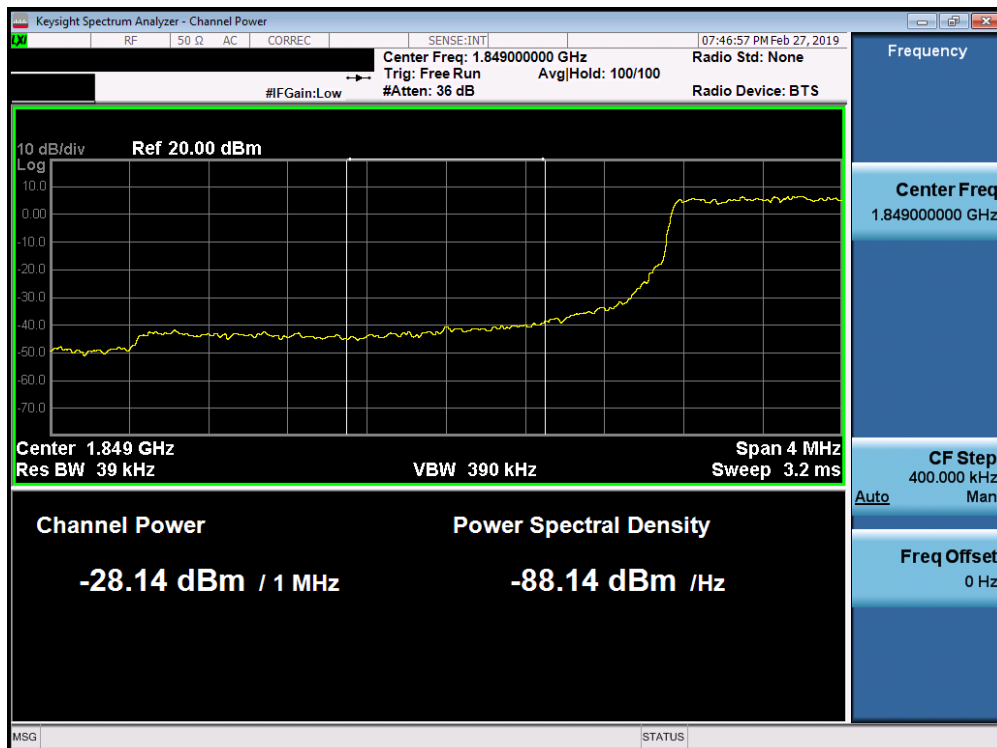


Plot 7-203. Upper Extended Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 125 of 206



Plot 7-204. Lower Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

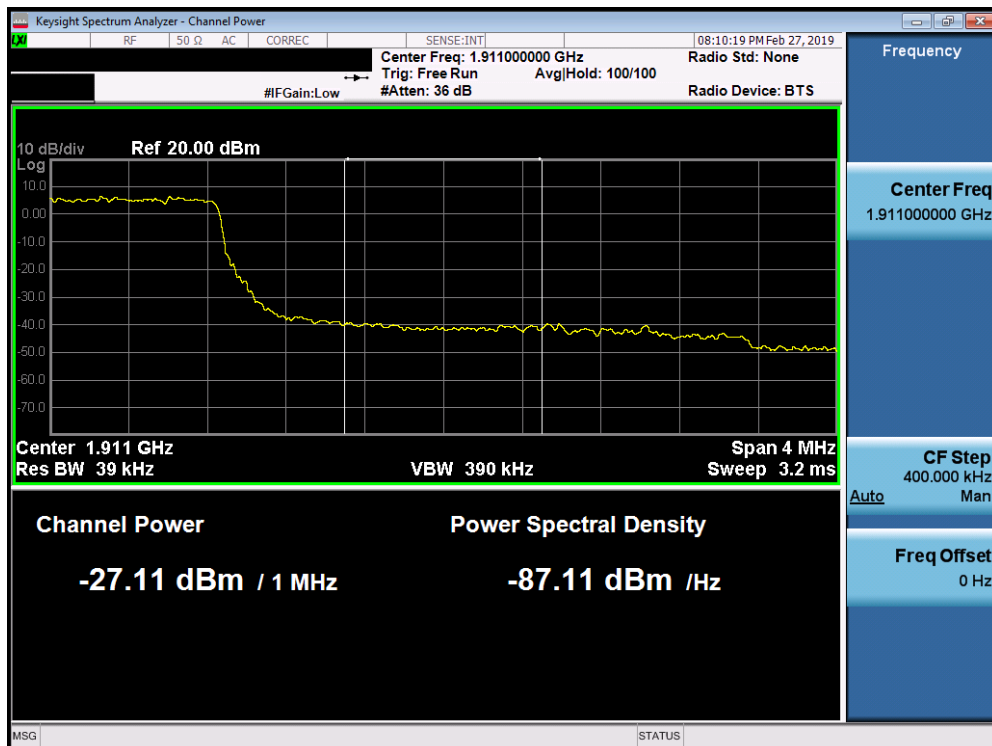


Plot 7-205. Lower Extended Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 126 of 206

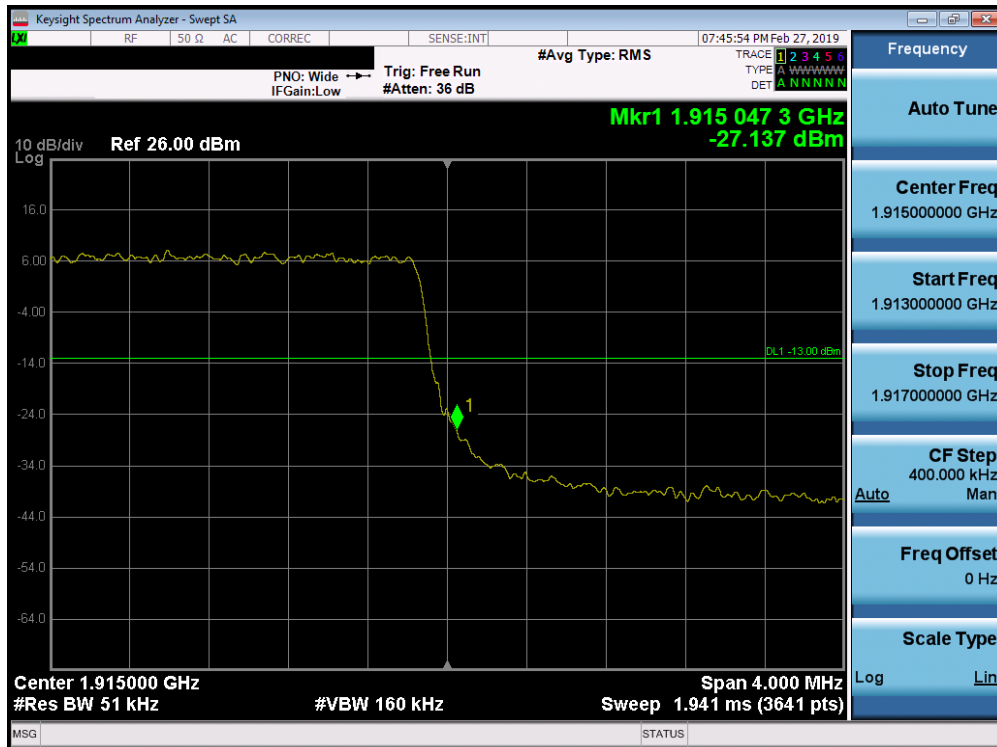


Plot 7-206. Upper Band Edge Plot (Band 2 – 3.0MHz QPSK - Full RB Configuration)

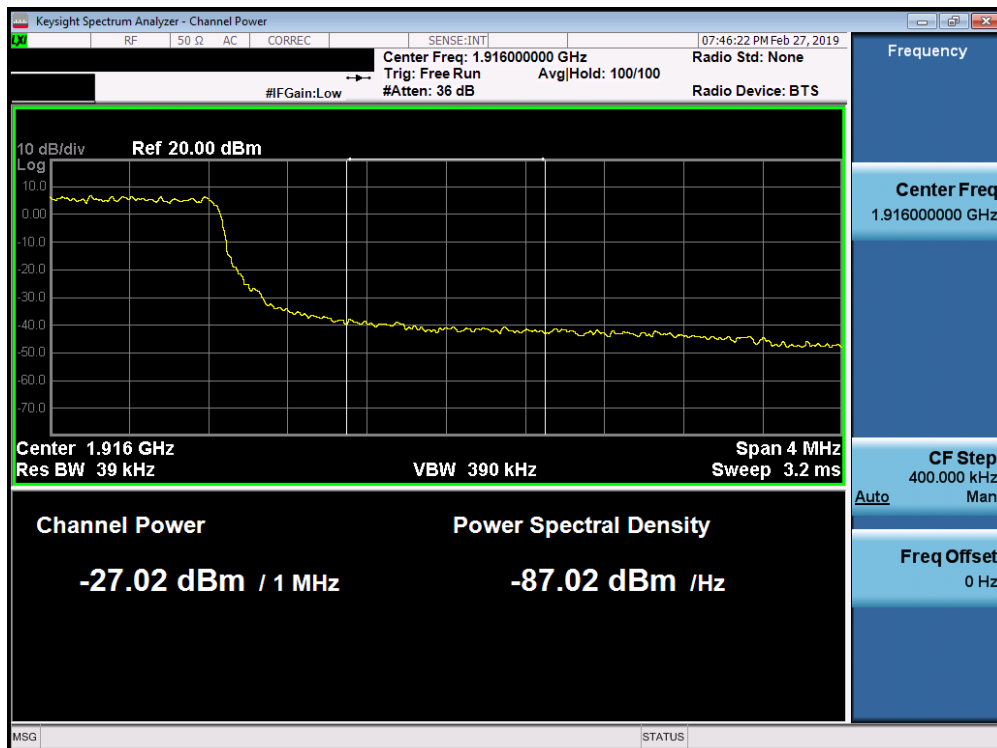


Plot 7-207. Upper Extended Band Edge Plot (Band 2 – 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 127 of 206

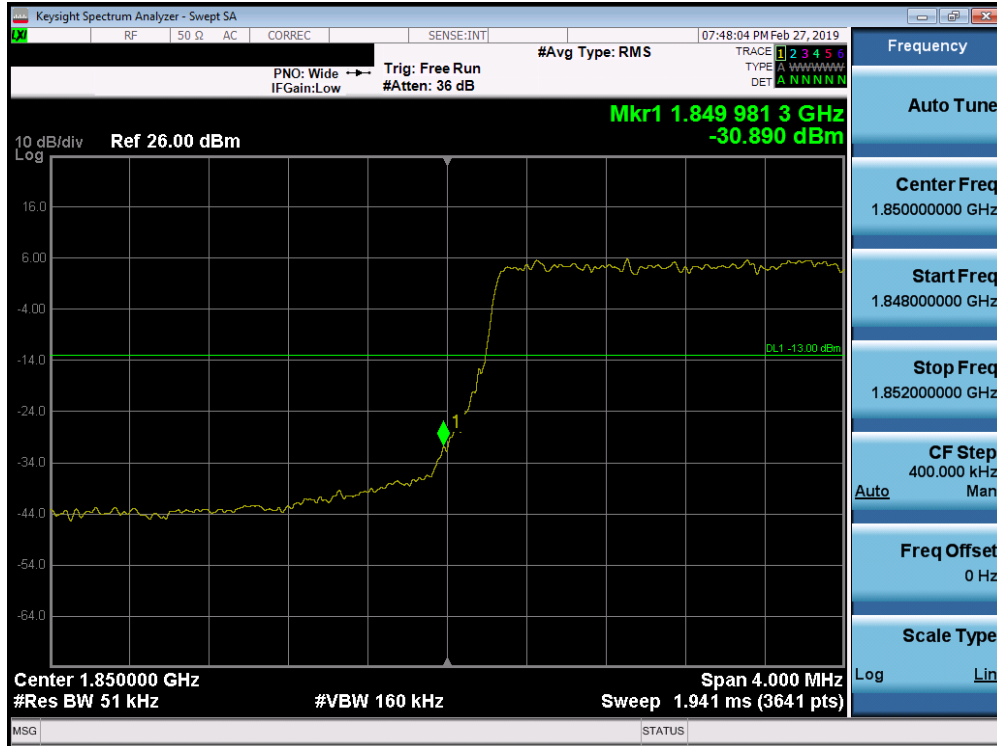


Plot 7-208. Upper Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

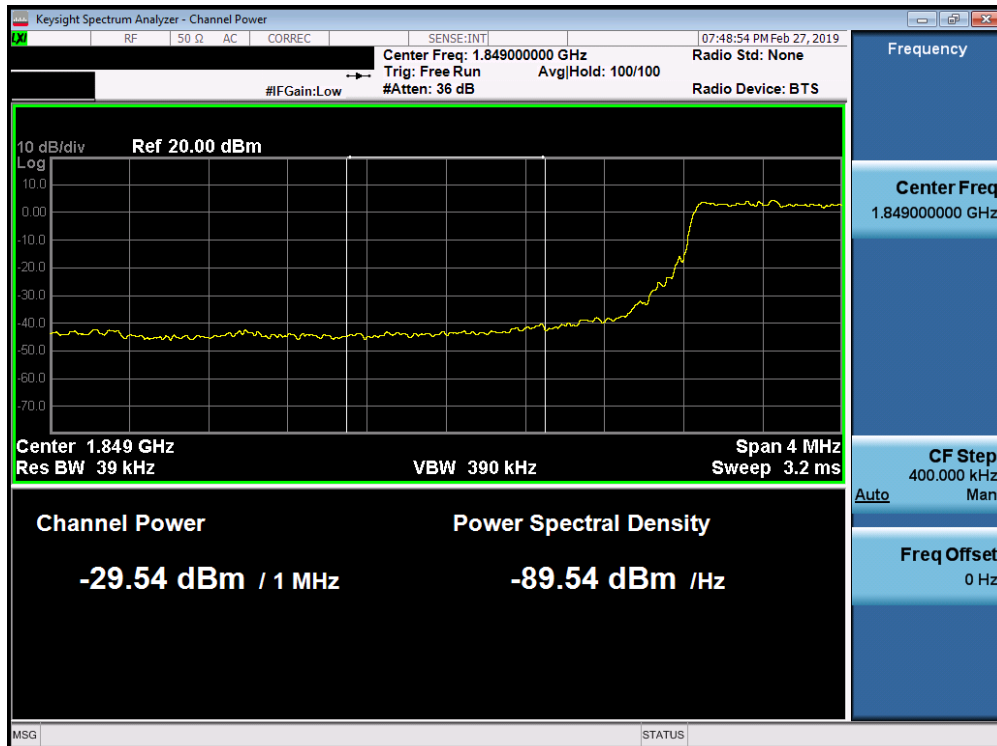


Plot 7-209. Upper Extended Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 128 of 206



Plot 7-210. Lower Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

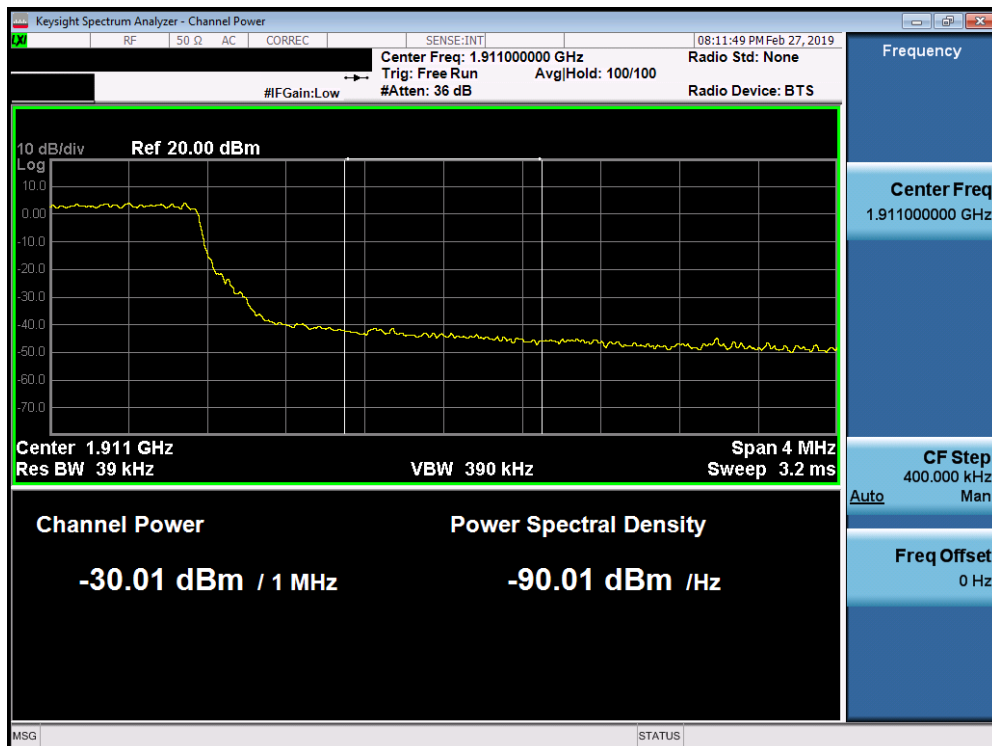


Plot 7-211. Lower Extended Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 129 of 206



Plot 7-212. Upper Band Edge Plot (Band 2 – 5.0MHz QPSK - Full RB Configuration)

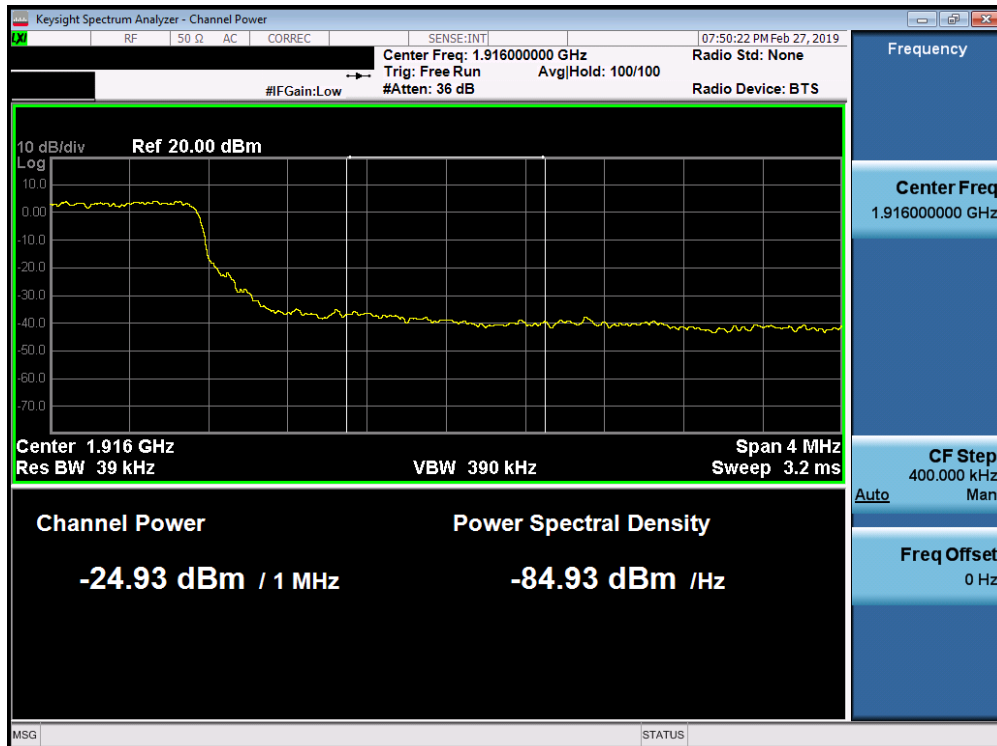


Plot 7-213. Upper Extended Band Edge Plot (Band 2 – 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 130 of 206

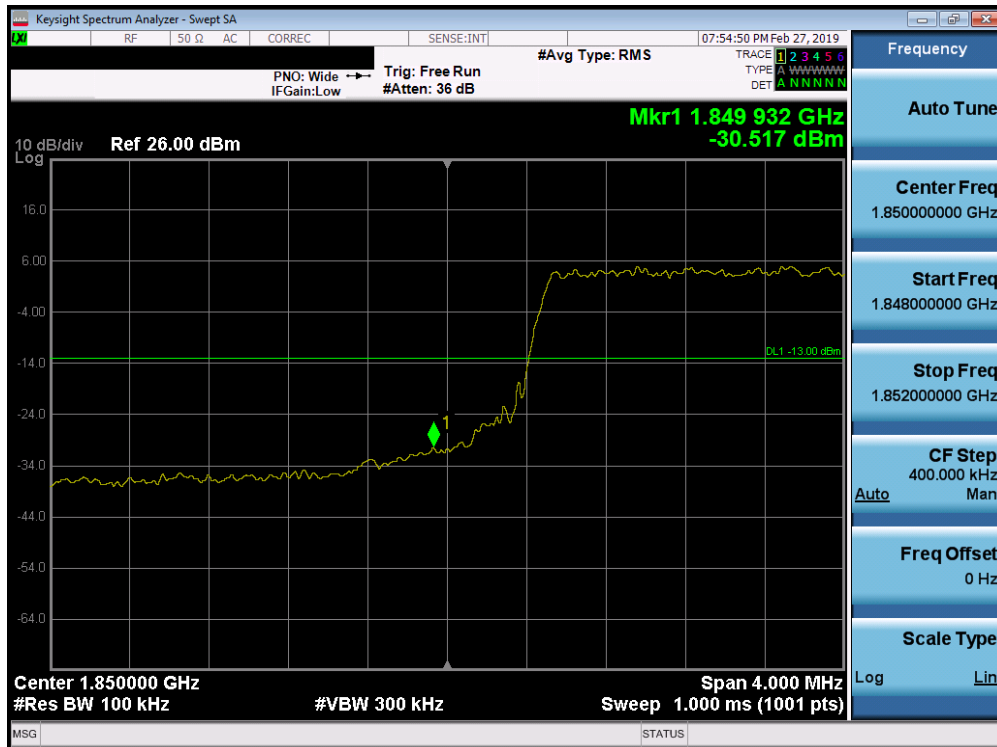


Plot 7-214. Upper Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

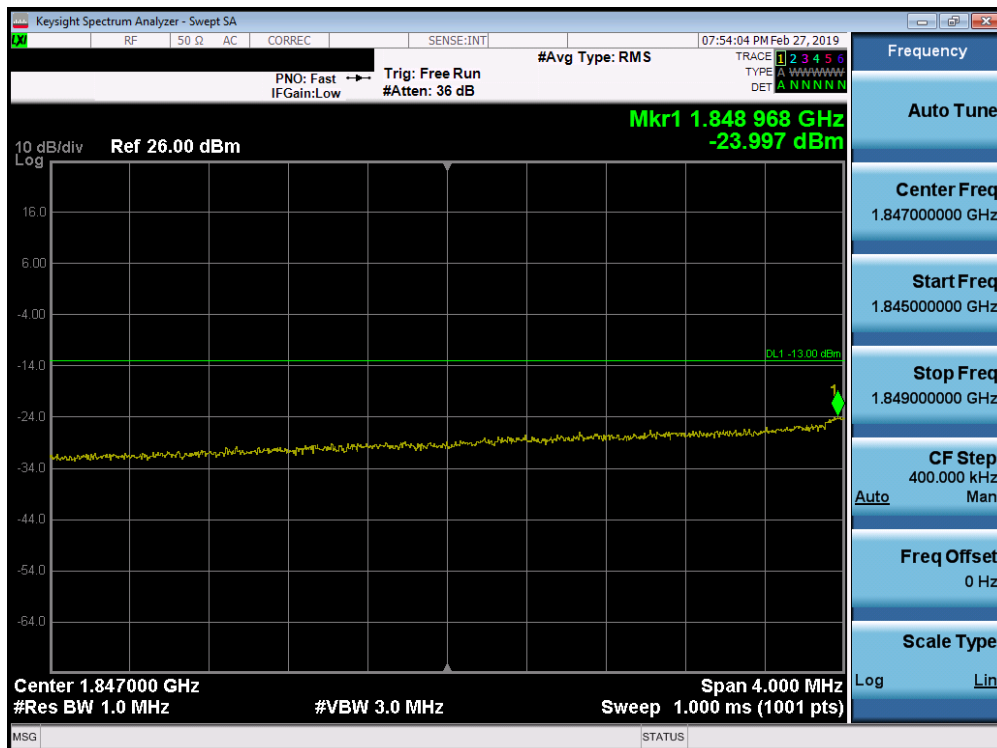


Plot 7-215. Upper Extended Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 131 of 206

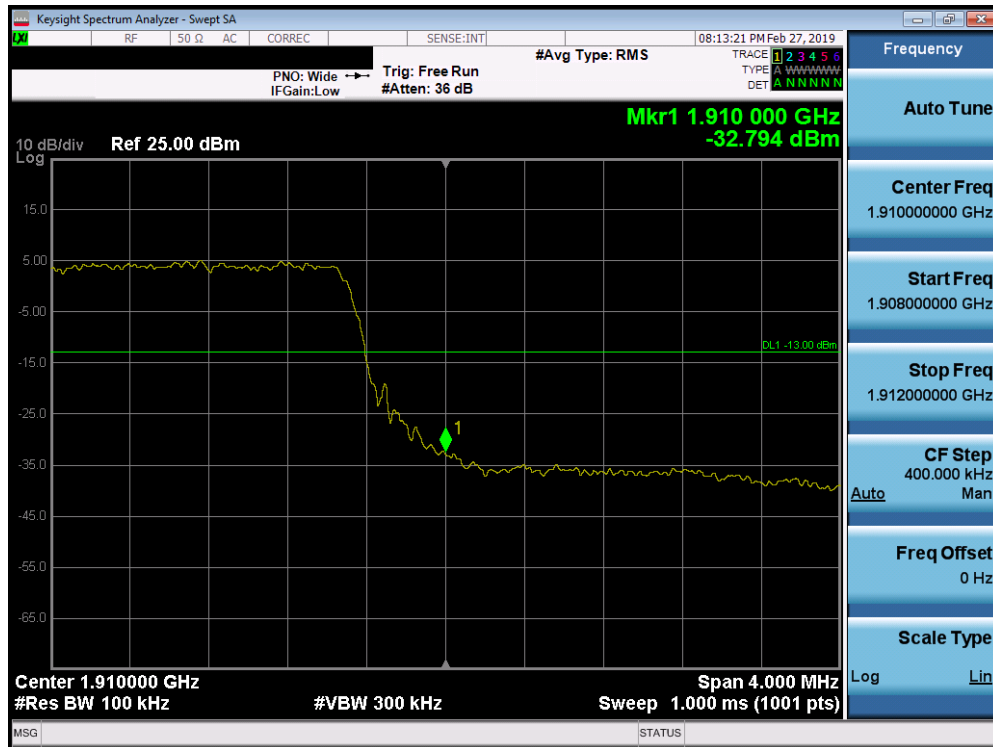


Plot 7-216. Lower Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

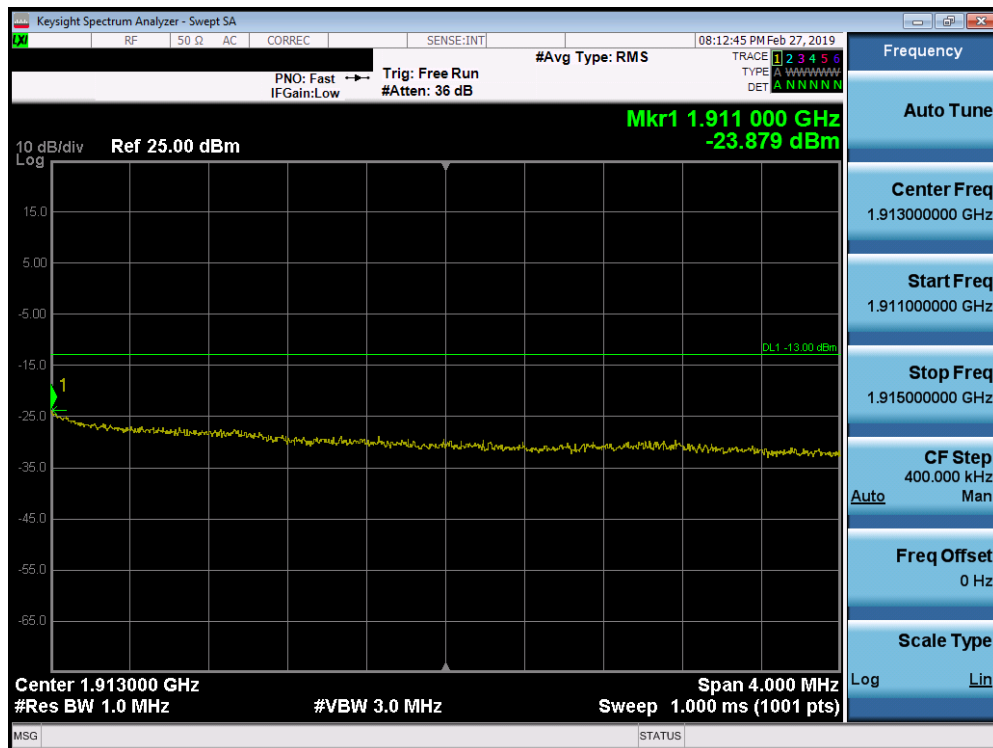


Plot 7-217. Lower Extended Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 132 of 206

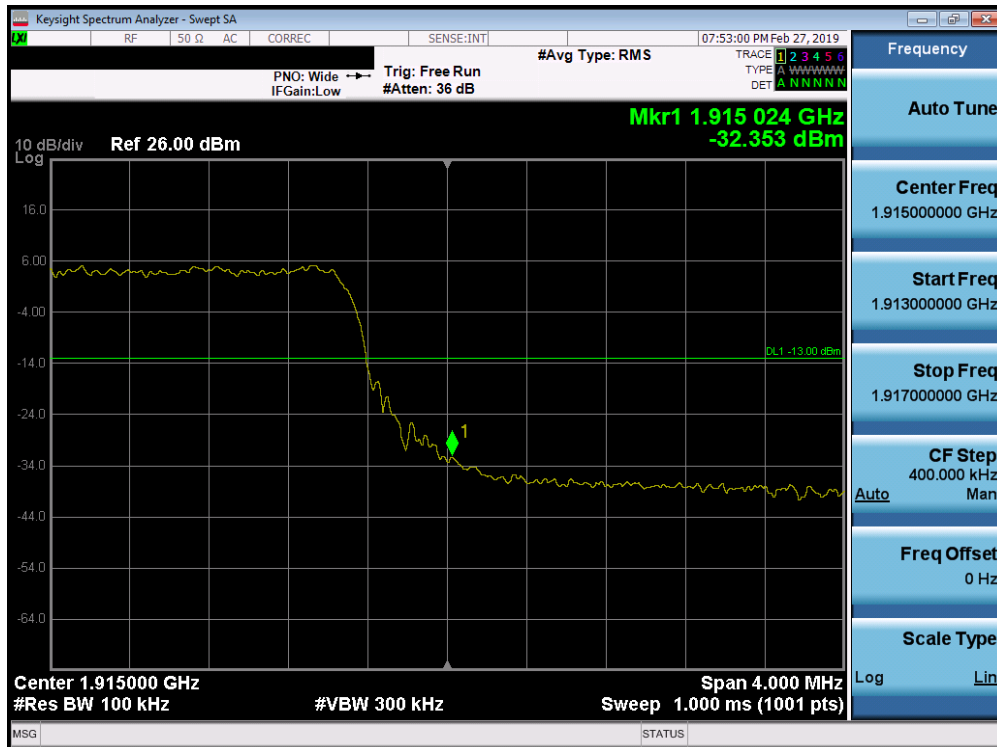


Plot 7-218. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

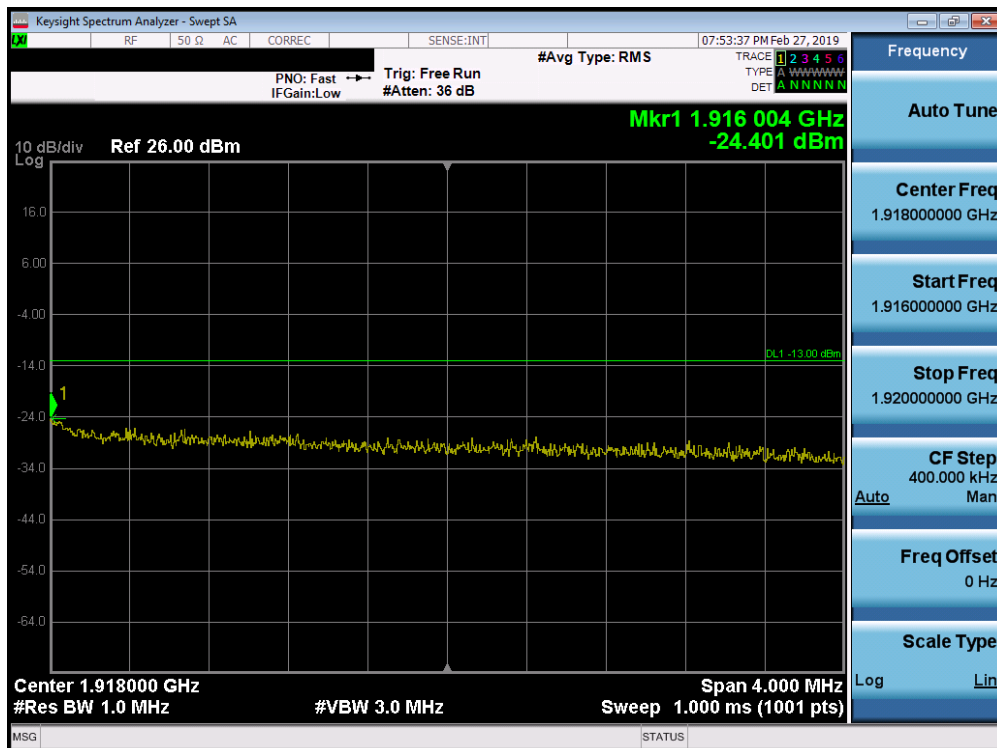


Plot 7-219. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 133 of 206

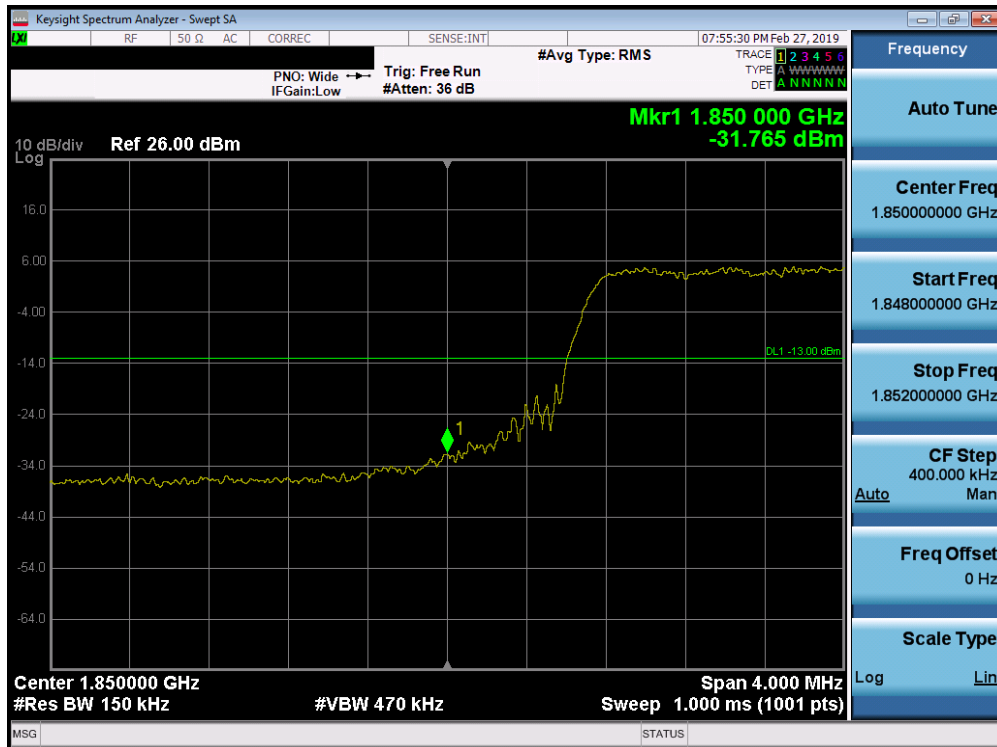


Plot 7-220. Upper Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

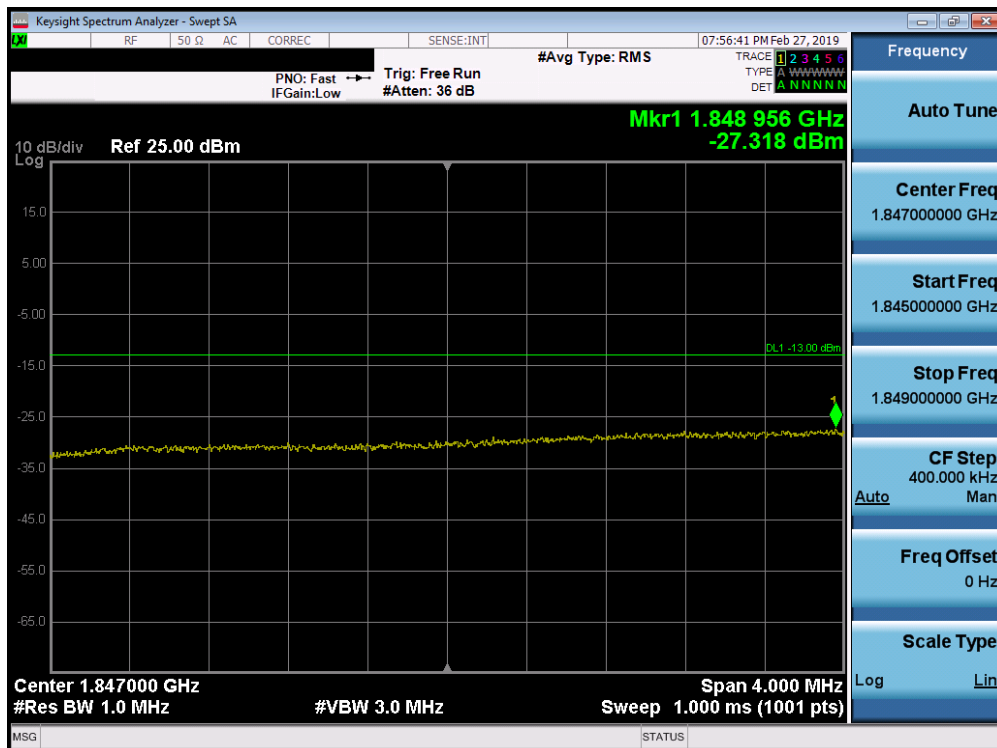


Plot 7-221. Upper Extended Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 134 of 206

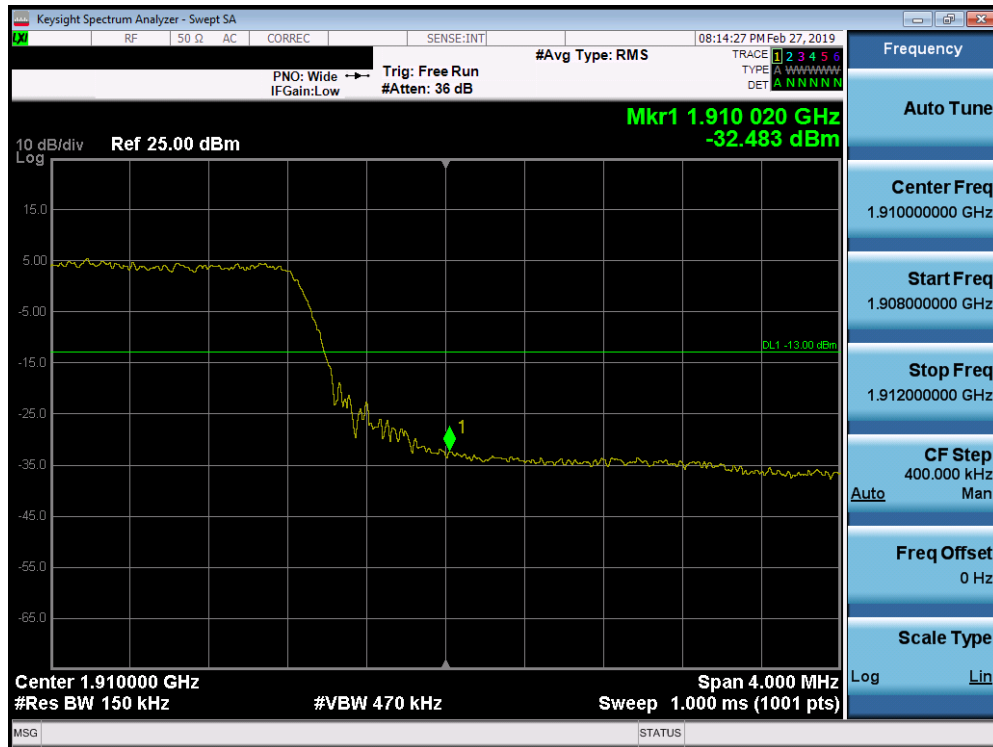


Plot 7-222. Lower Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

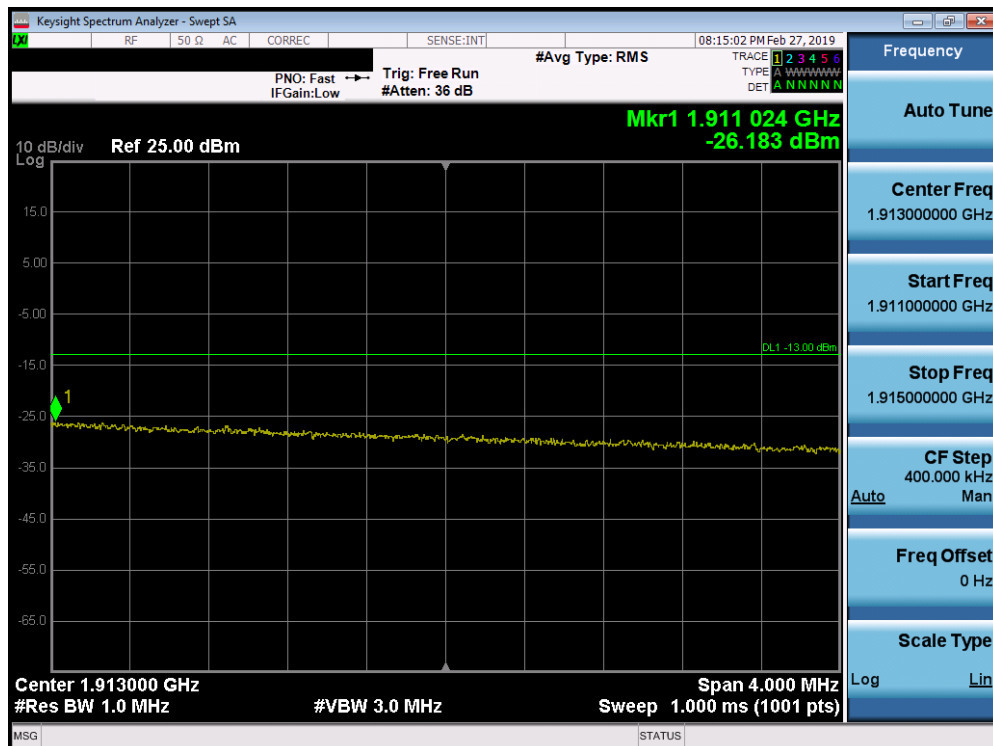


Plot 7-223. Lower Extended Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 135 of 206



Plot 7-224. Upper Band Edge Plot (Band 2 – 15.0MHz QPSK - Full RB Configuration)

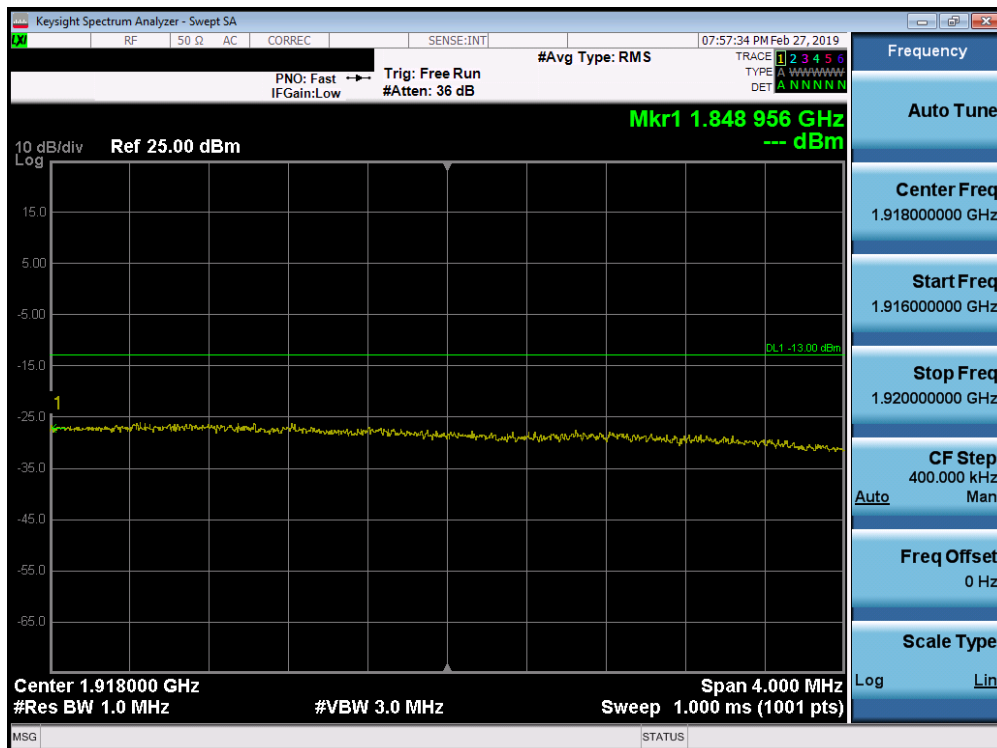


Plot 7-225. Upper Extended Band Edge Plot (Band 2 – 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 136 of 206

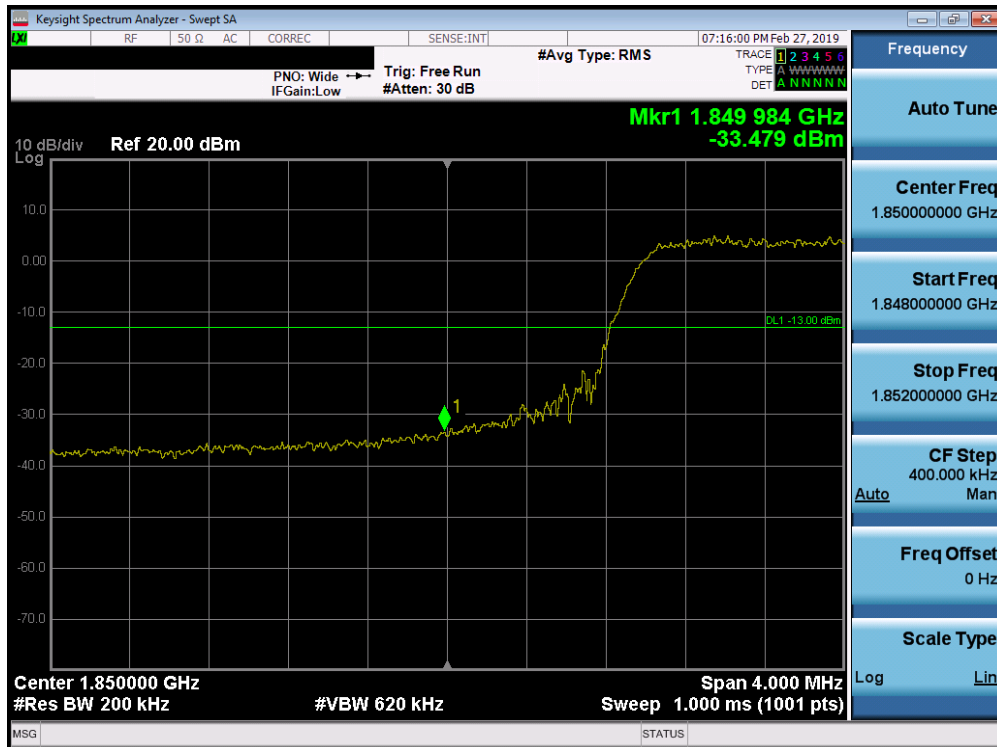


Plot 7-226. Upper Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

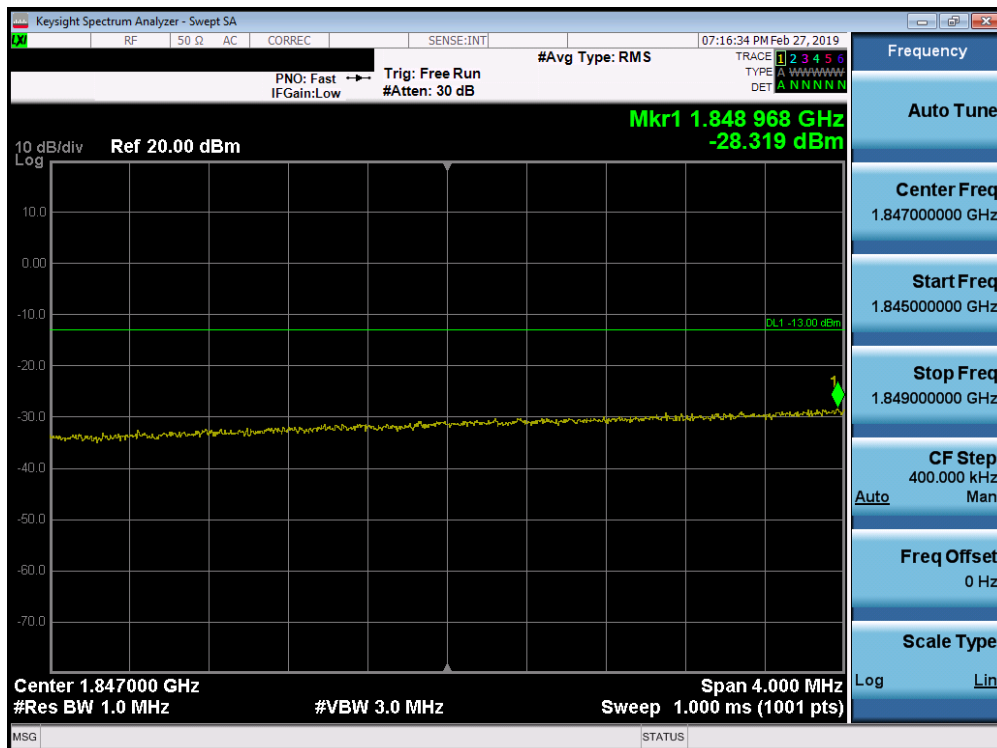


Plot 7-227. Upper Extended Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 137 of 206

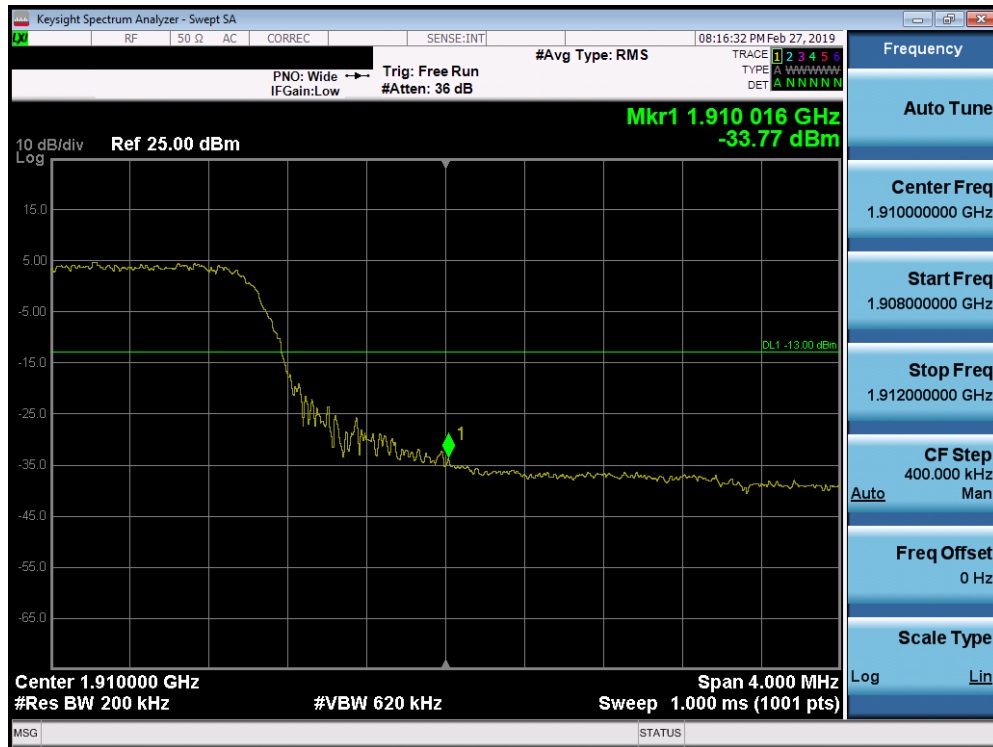


Plot 7-228. Lower Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

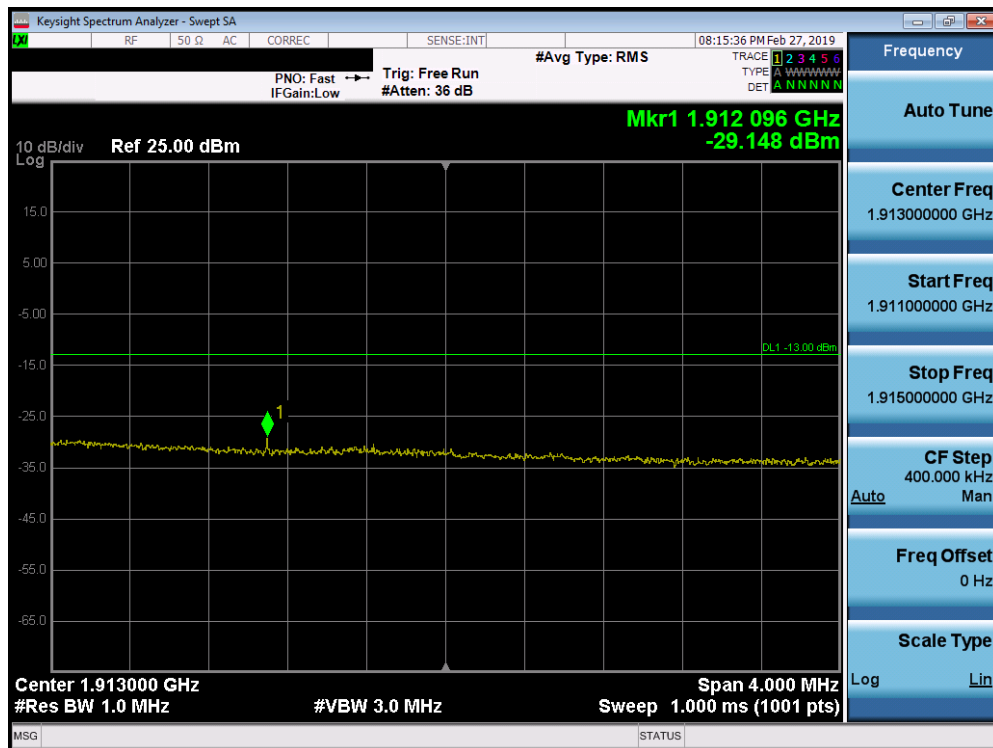


Plot 7-229. Lower Extended Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 138 of 206

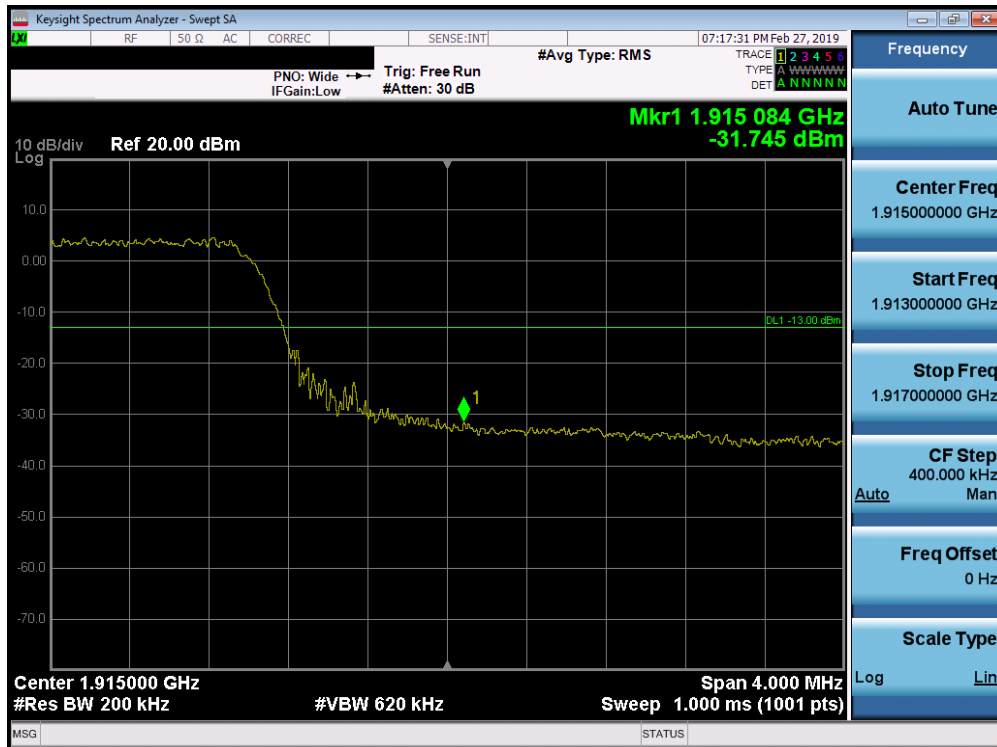


Plot 7-230. Upper Band Edge Plot (Band 2 – 20.0MHz QPSK - Full RB Configuration)

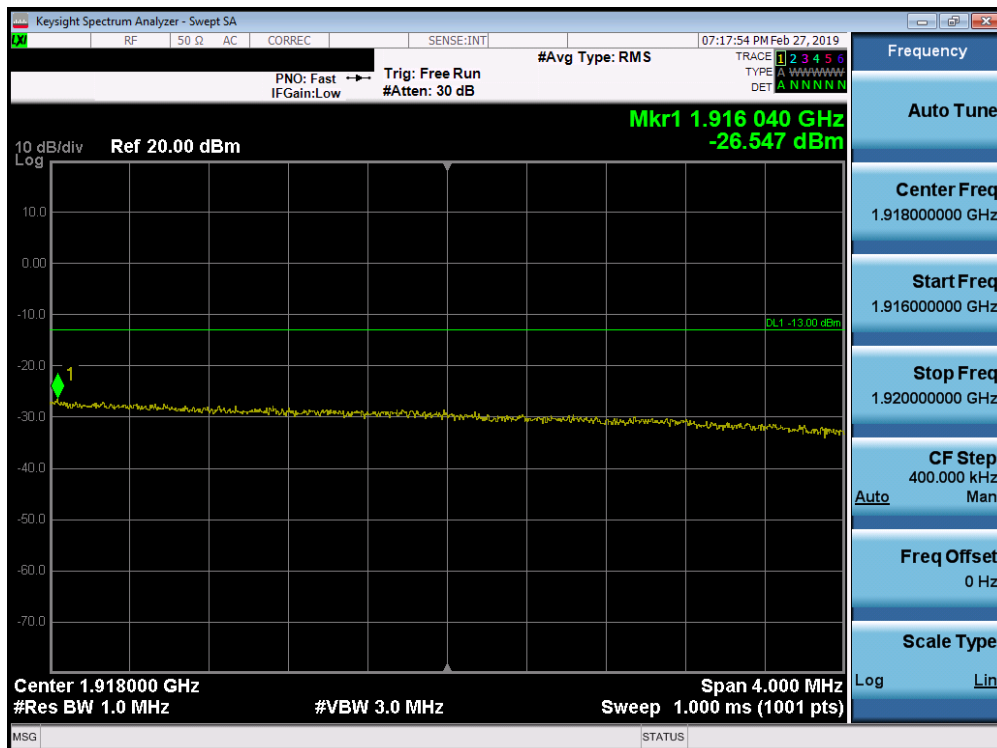


Plot 7-231. Upper Extended Band Edge Plot (Band 2 – 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 139 of 206



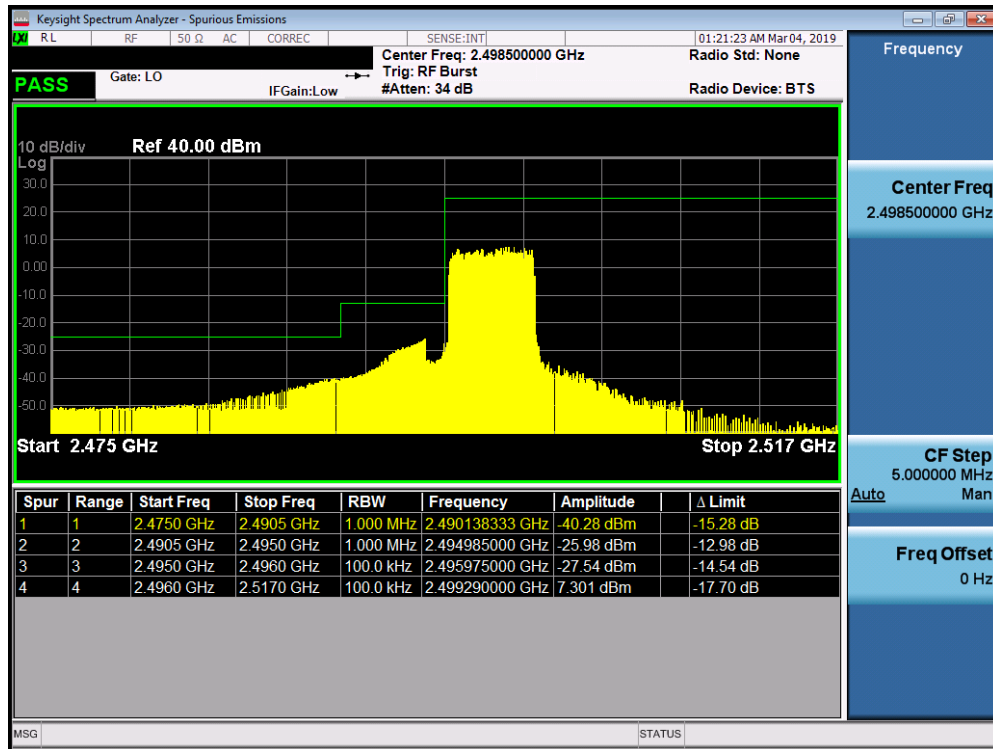
Plot 7-232. Upper Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)



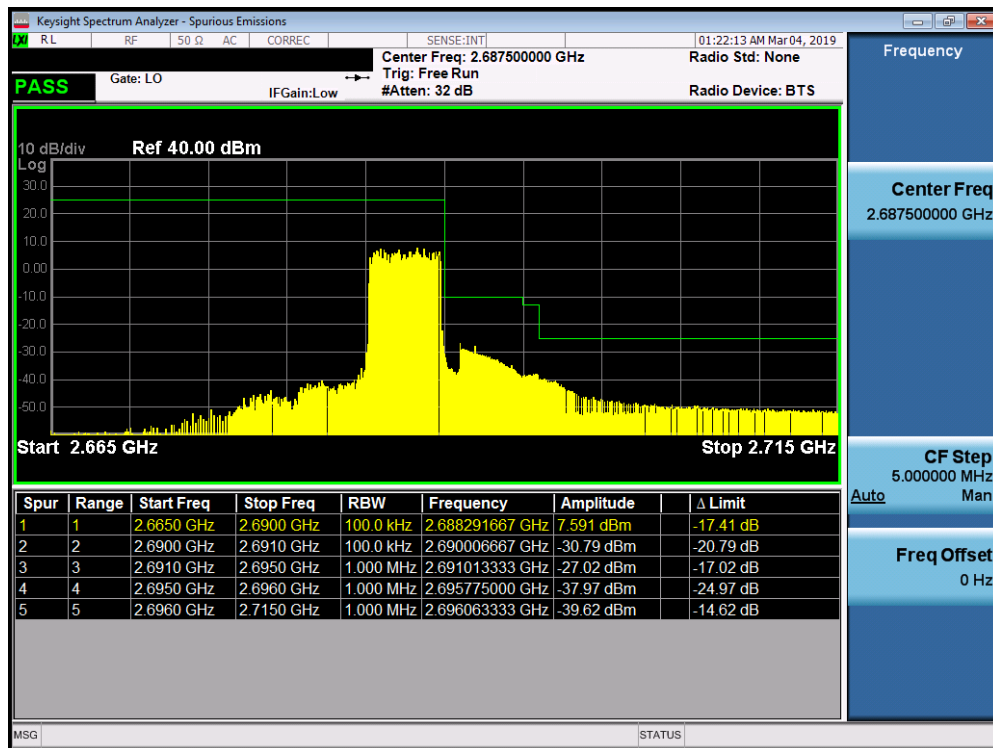
Plot 7-233. Upper Extended Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 140 of 206

Band 41 PC3

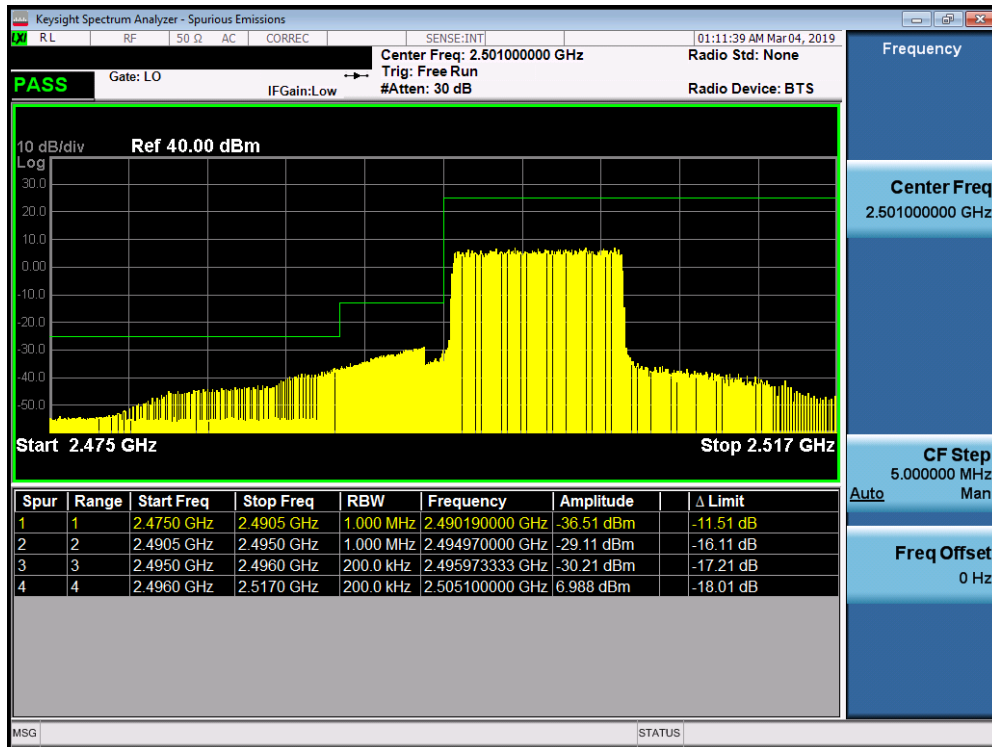


Plot 7-234. Lower ACP Plot at 2496 MHz (Band 41 PC3 - 5.0MHz QPSK - Full RB Configuration)

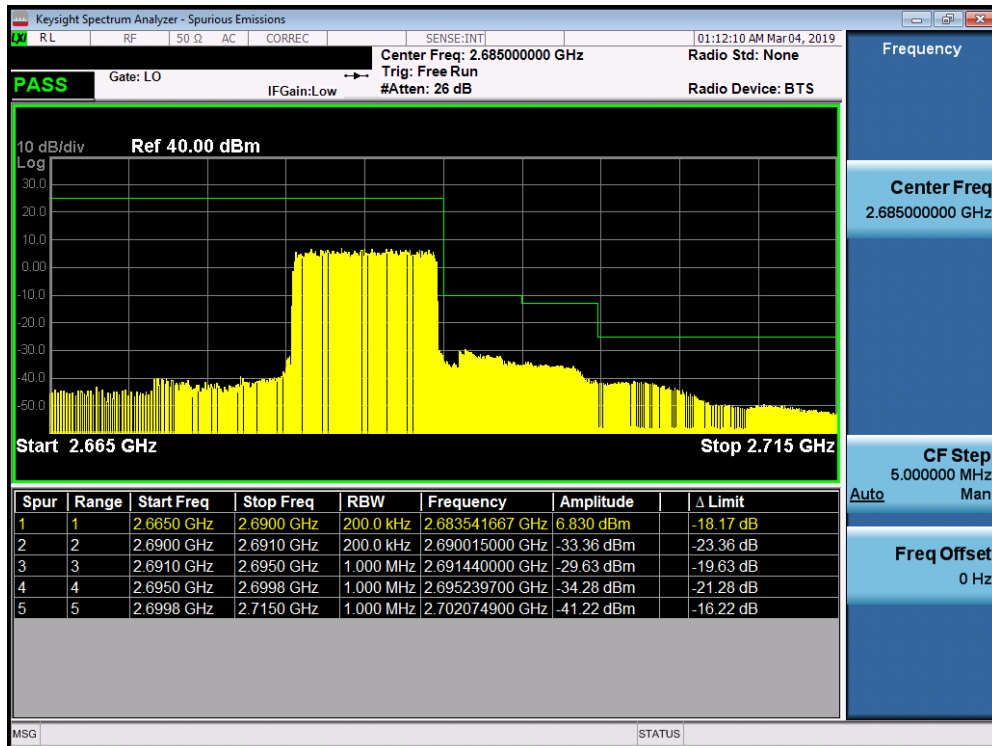


Plot 7-235. Upper ACP Plot (Band 41 PC3 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset			Page 141 of 206

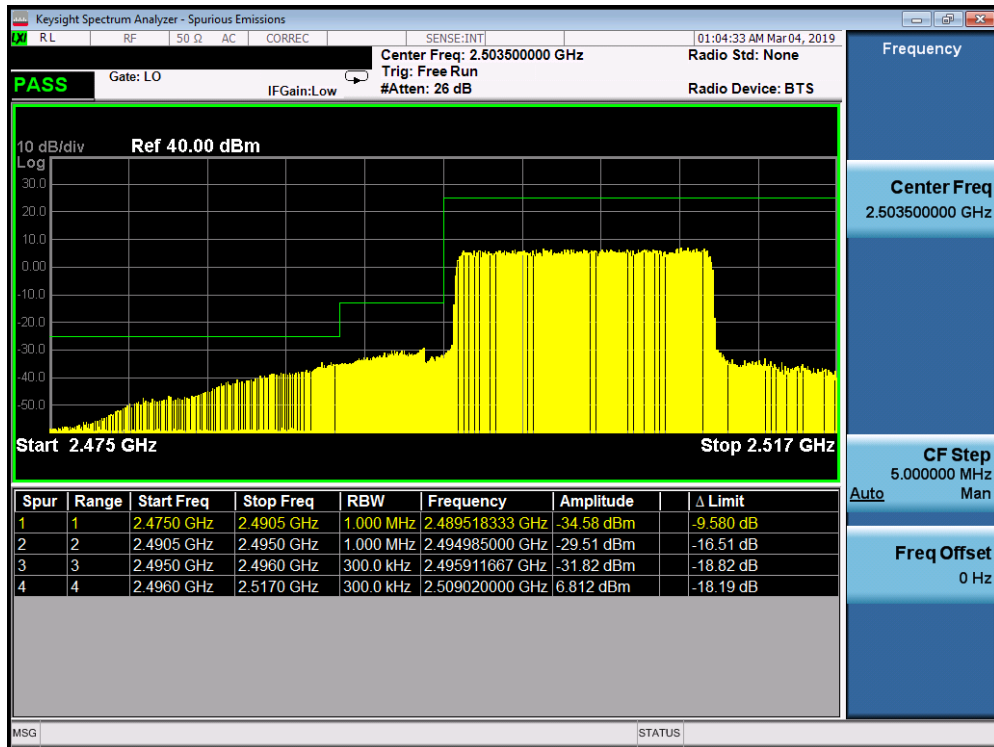


Plot 7-236. Lower ACP Plot at 2496 MHz (Band 41 PC3 - 10.0MHz QPSK - Full RB Configuration)

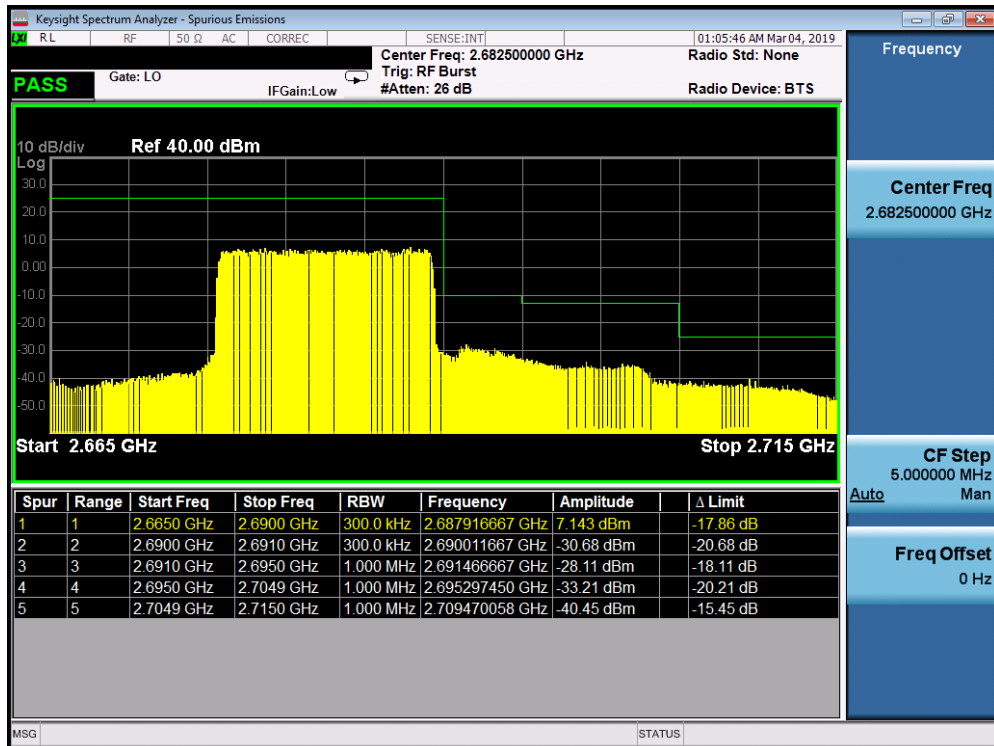


Plot 7-237. Upper ACP Plot (Band 41 PC3 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 142 of 206

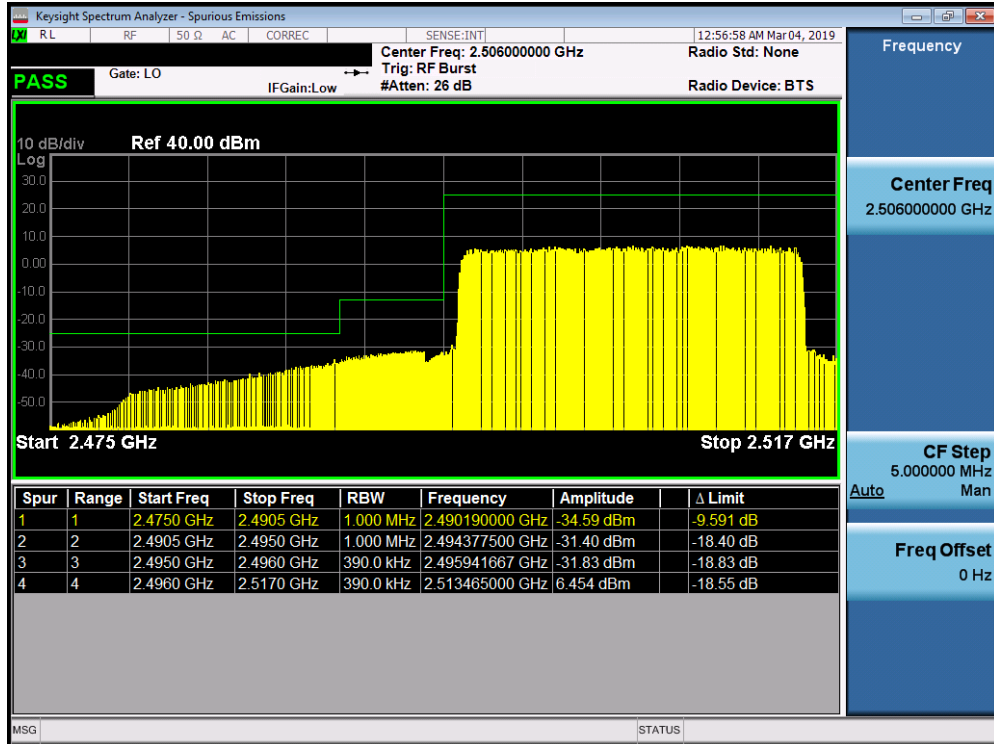


Plot 7-238. Lower ACP Plot at 2496 MHz (Band 41 PC3 - 15.0MHz QPSK - Full RB Configuration)

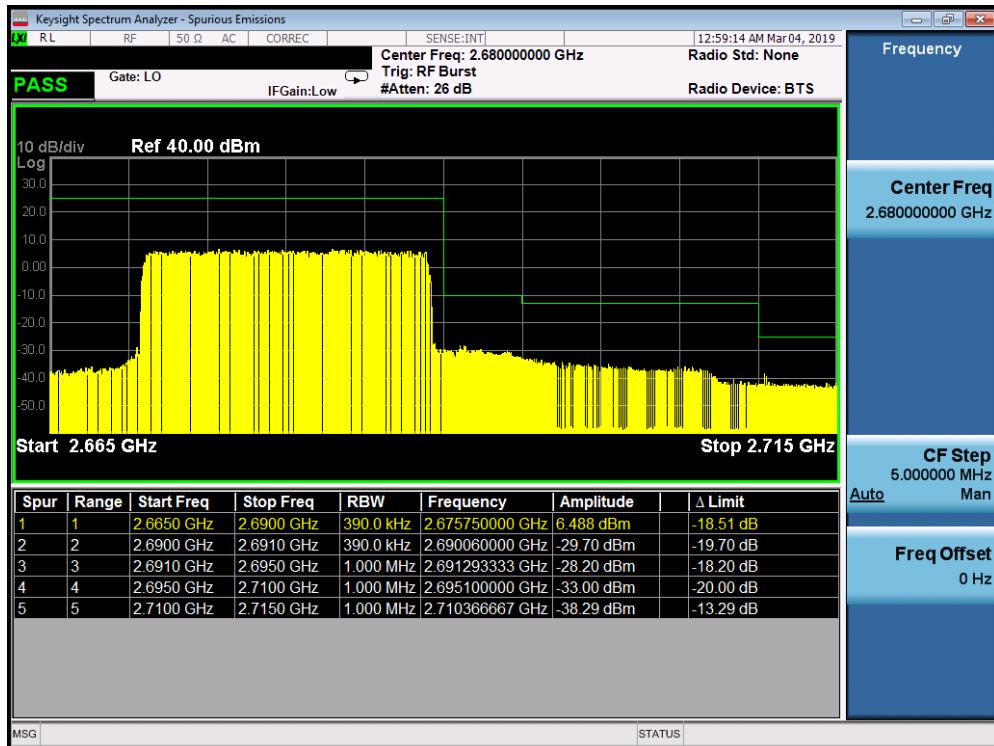


Plot 7-239. Upper ACP Plot (Band 41 PC3 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 143 of 206



Plot 7-240. Lower ACP Plot at 2496 MHz (Band 41 PC3 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-241. Upper ACP Plot (Band 41 PC3 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 144 of 206

7.5 Peak-Average Ratio

Test Overview

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 5.7.1

Test Settings

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW $\geq$ OBW or specified reference bandwidth
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Test Setup

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

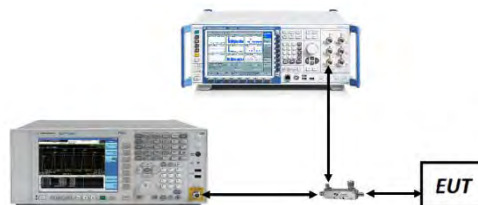


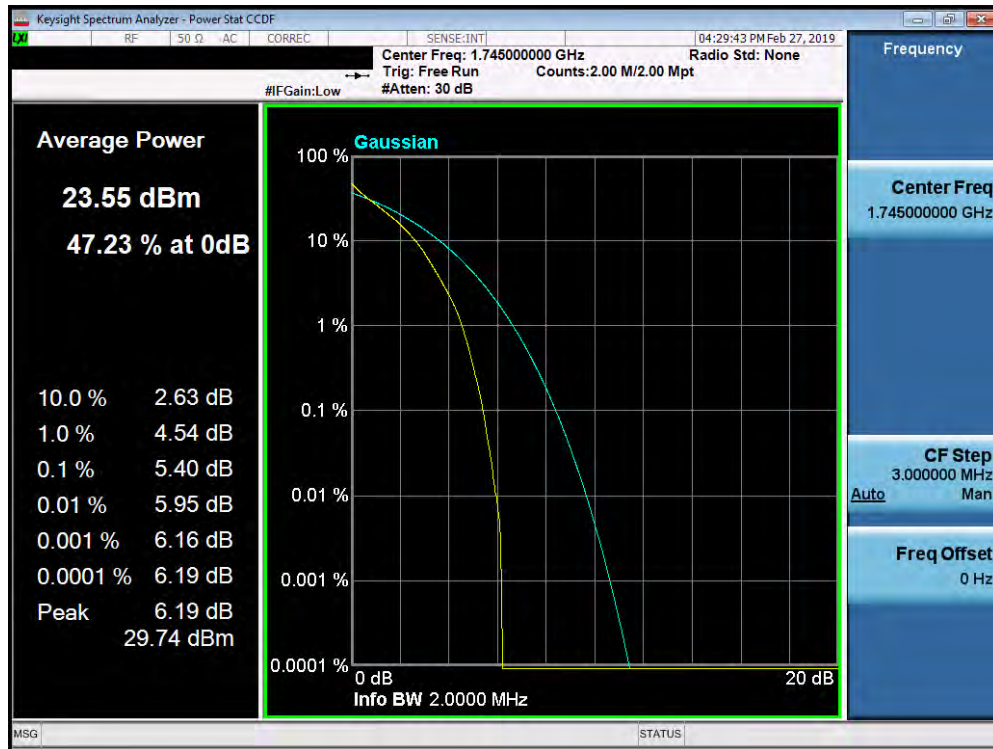
Figure 7-4. Test Instrument & Measurement Setup

Test Notes

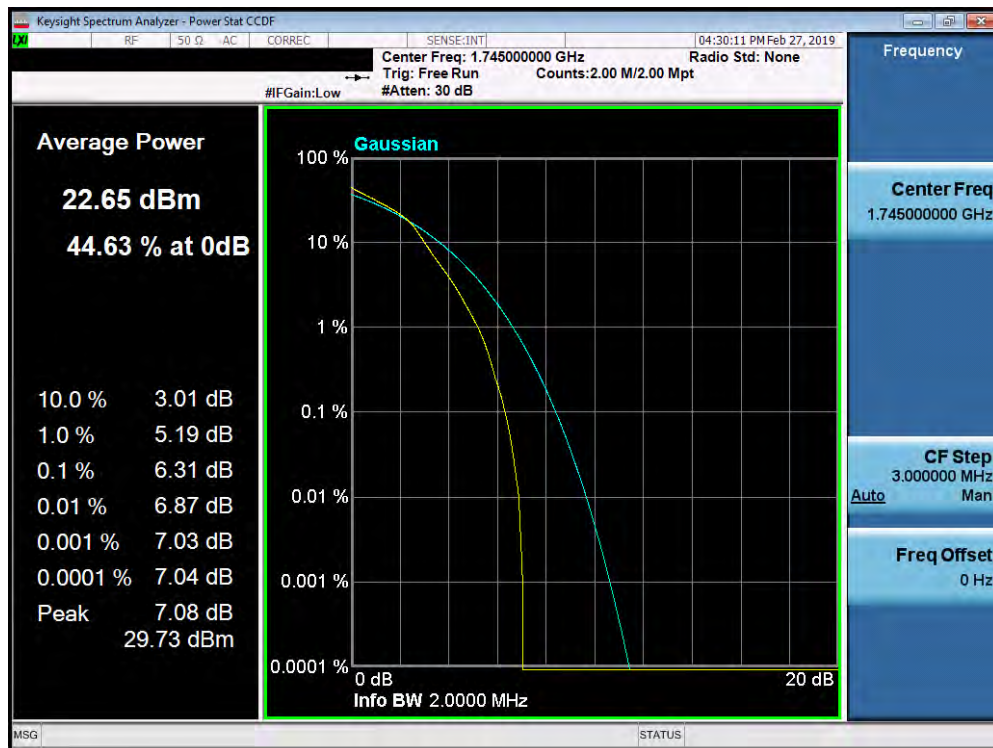
None.

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 145 of 206

Band 66/4

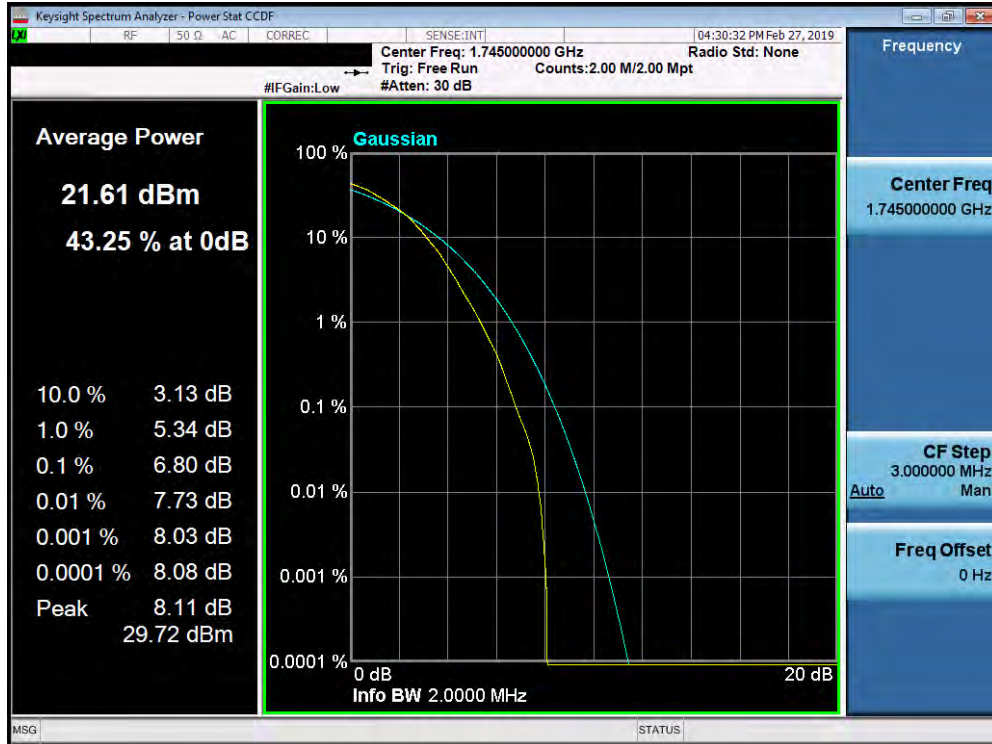


Plot 7-242. PAR Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)

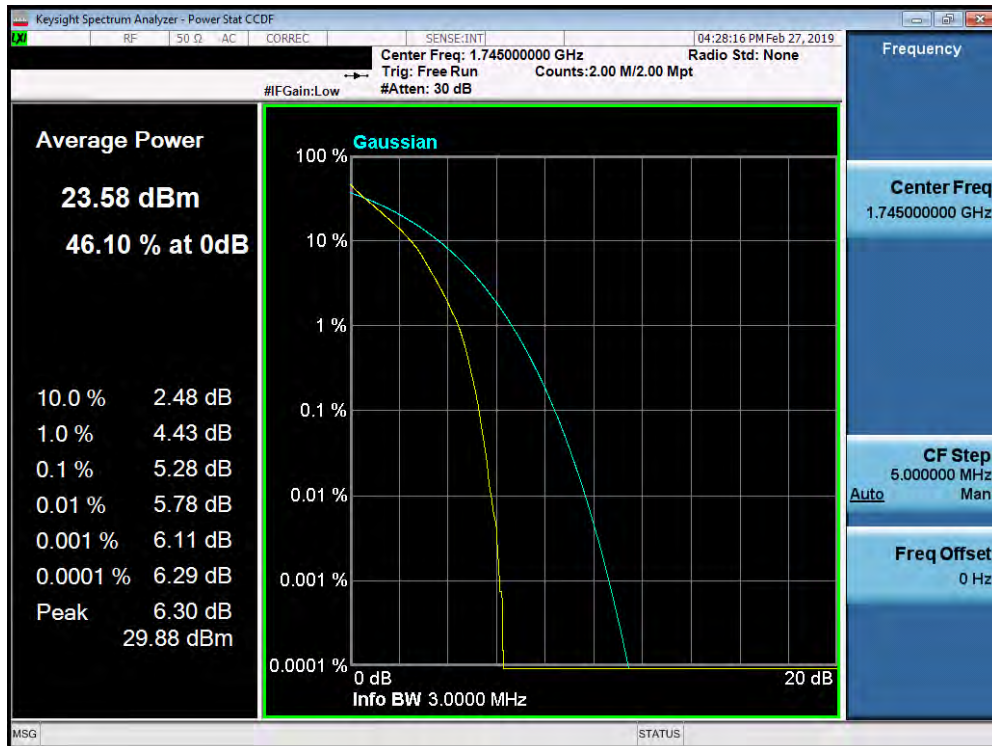


Plot 7-243. PAR Plot (Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 146 of 206

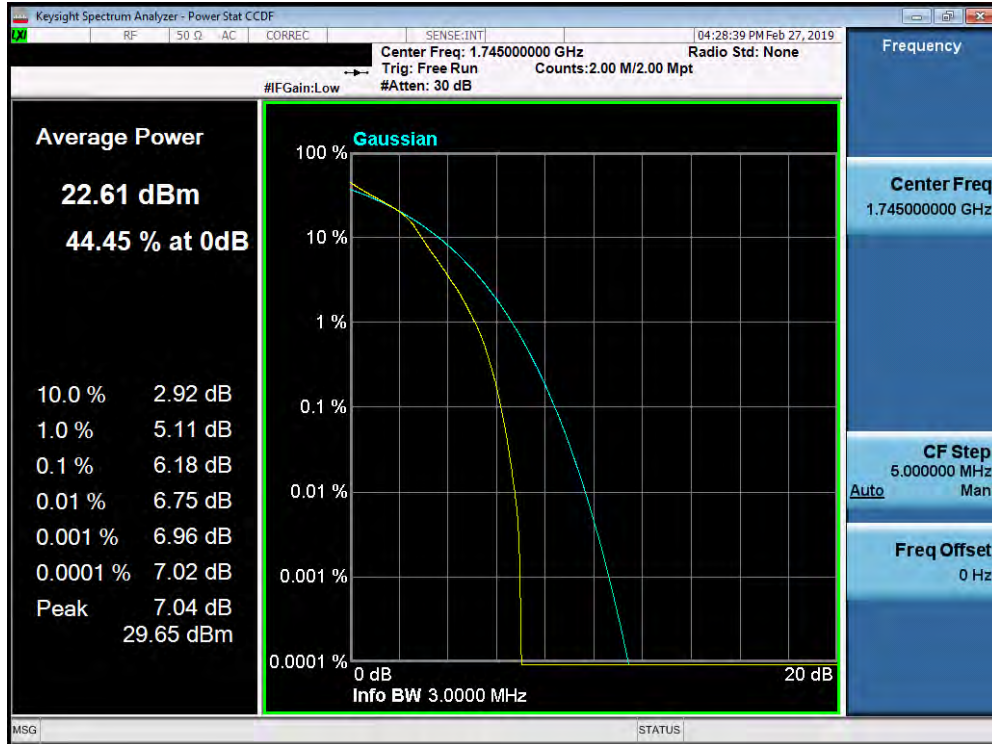


Plot 7-244. PAR Plot (Band 66/4 - 1.4MHz 64-QAM - Full RB Configuration)

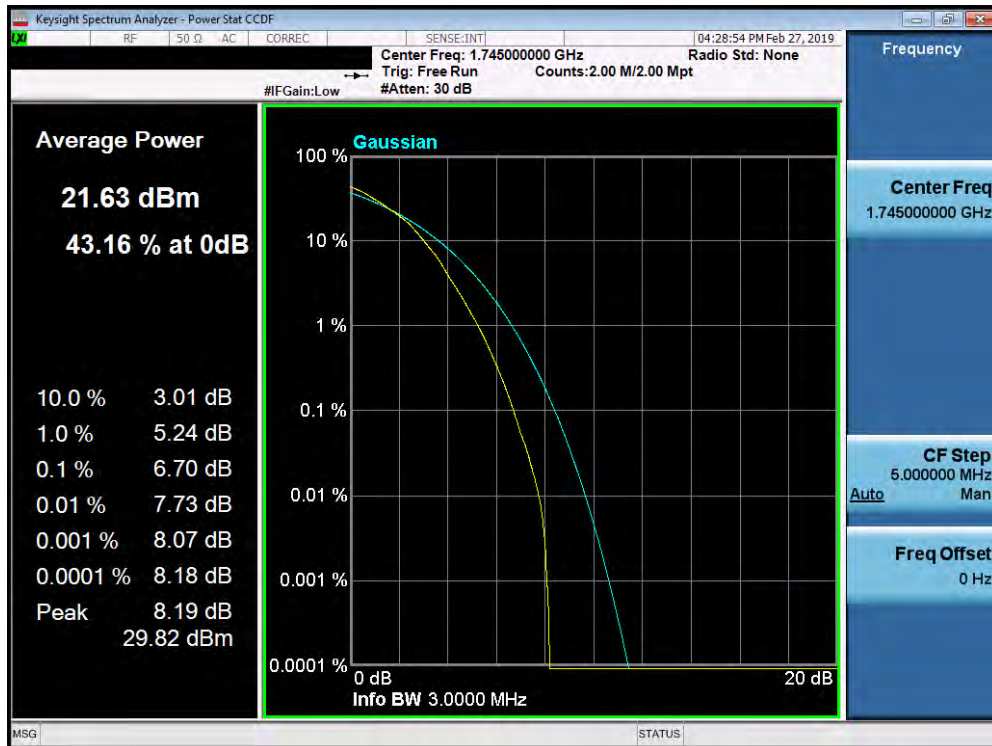


Plot 7-245. PAR Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 147 of 206

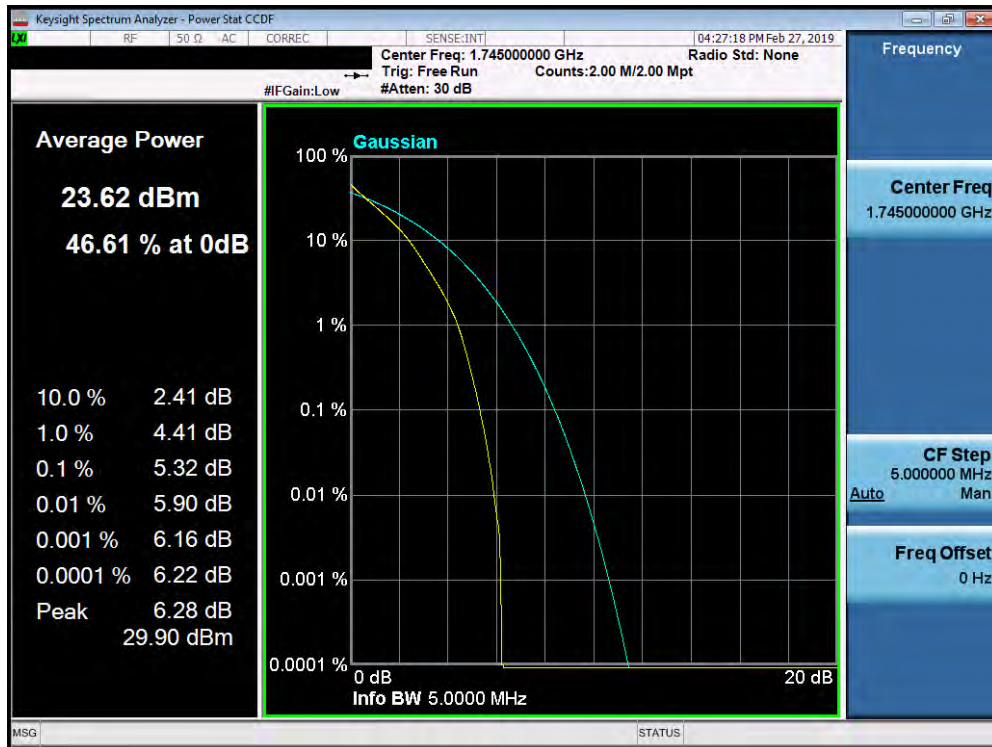


Plot 7-246. PAR Plot (Band 66/4 - 3.0MHz 16-QAM - Full RB Configuration)

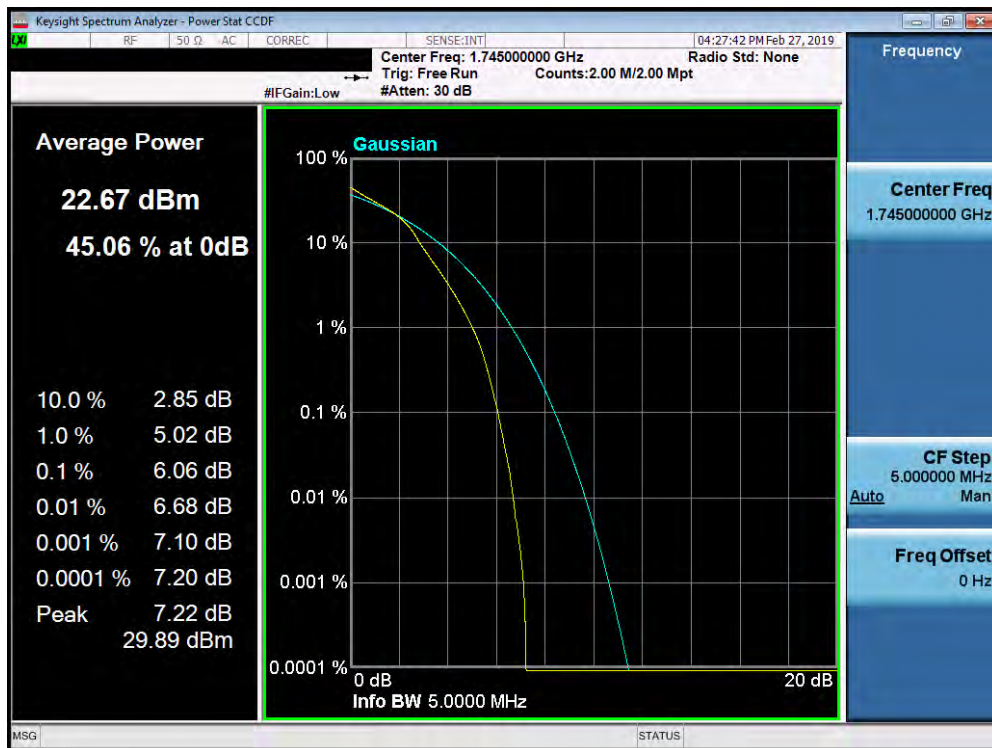


Plot 7-247. PAR Plot (Band 66/4 - 3.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMF907N	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 148 of 206

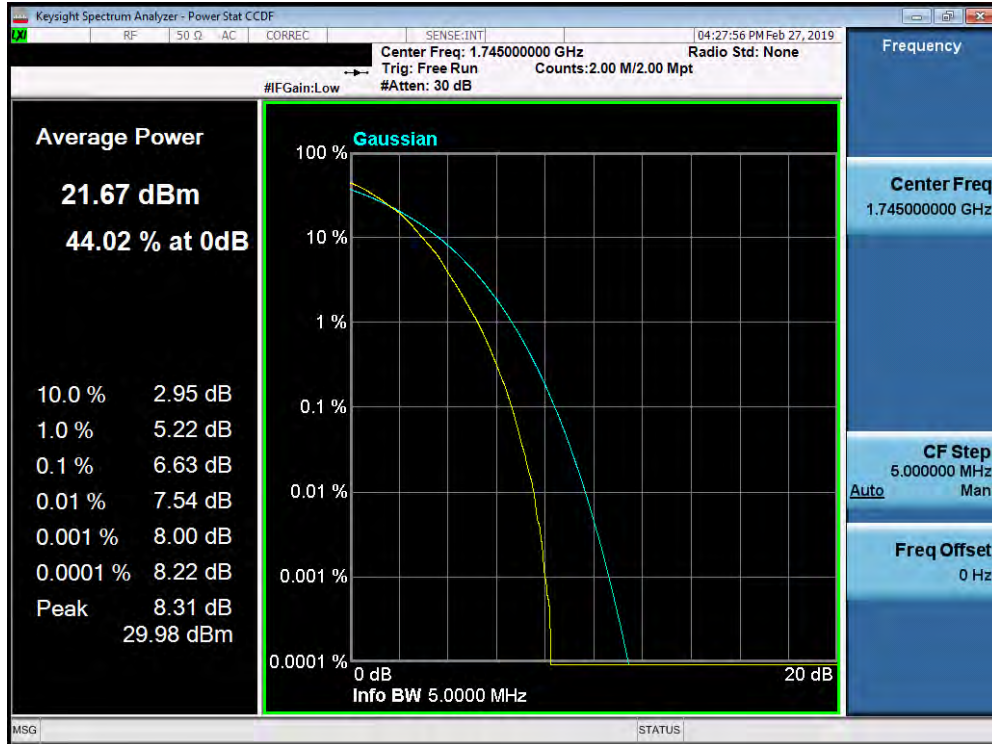


Plot 7-248. PAR Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

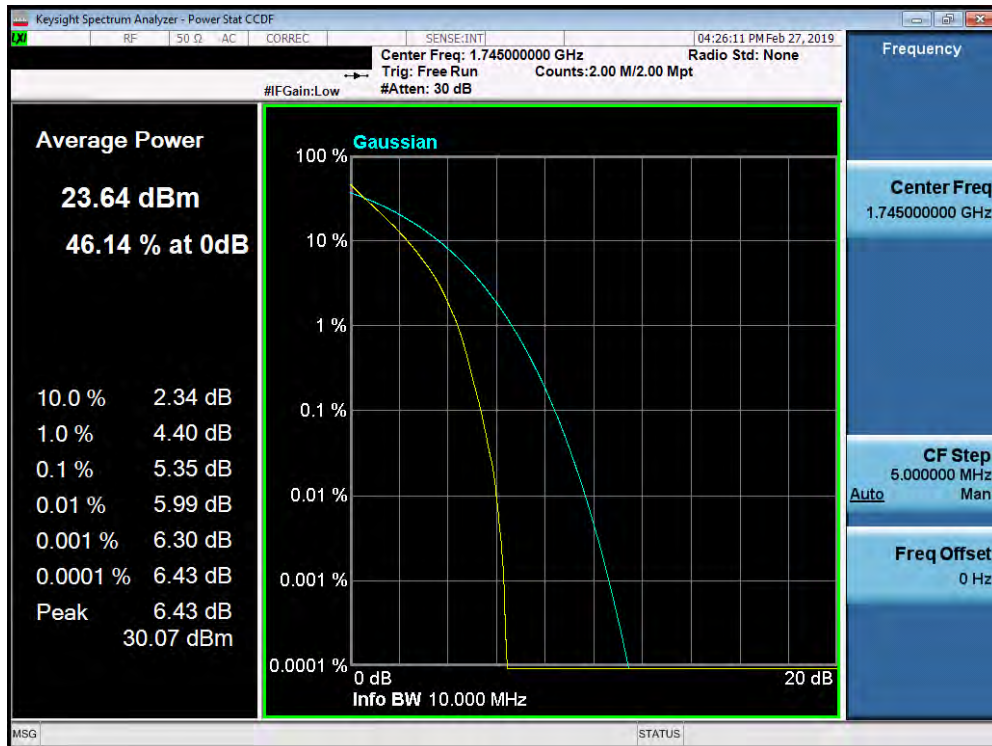


Plot 7-249. PAR Plot (Band 66/4 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 149 of 206

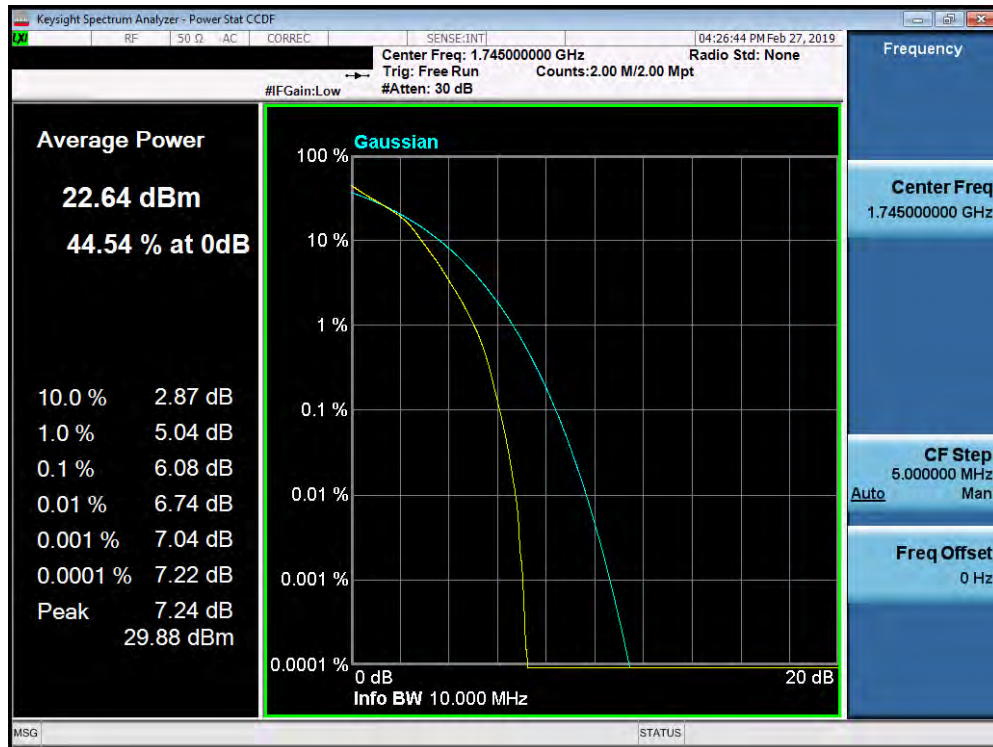


Plot 7-250. PAR Plot (Band 66/4 - 5.0MHz 64-QAM - Full RB Configuration)

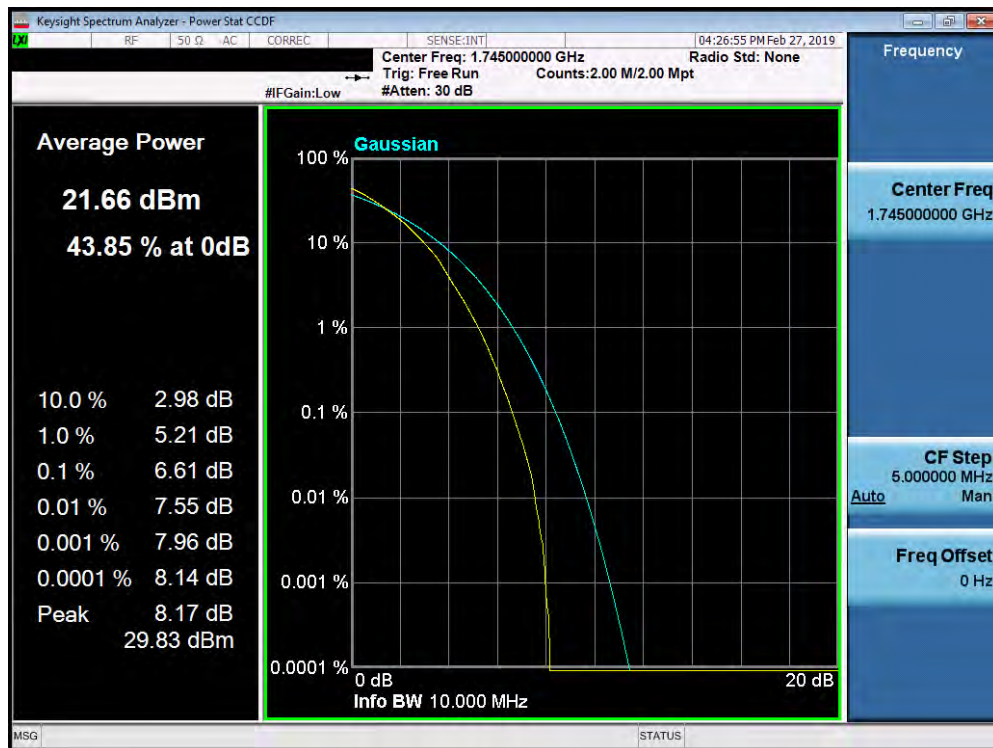


Plot 7-251. PAR Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 150 of 206

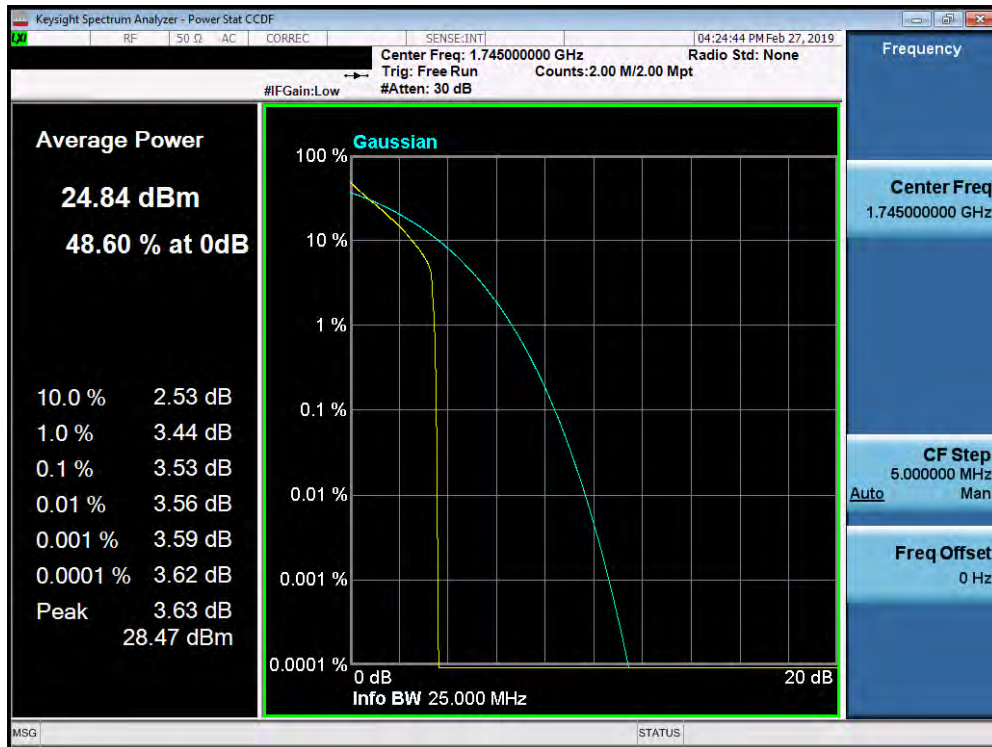


Plot 7-252. PAR Plot (Band 66/4 - 10.0MHz 16-QAM - Full RB Configuration)

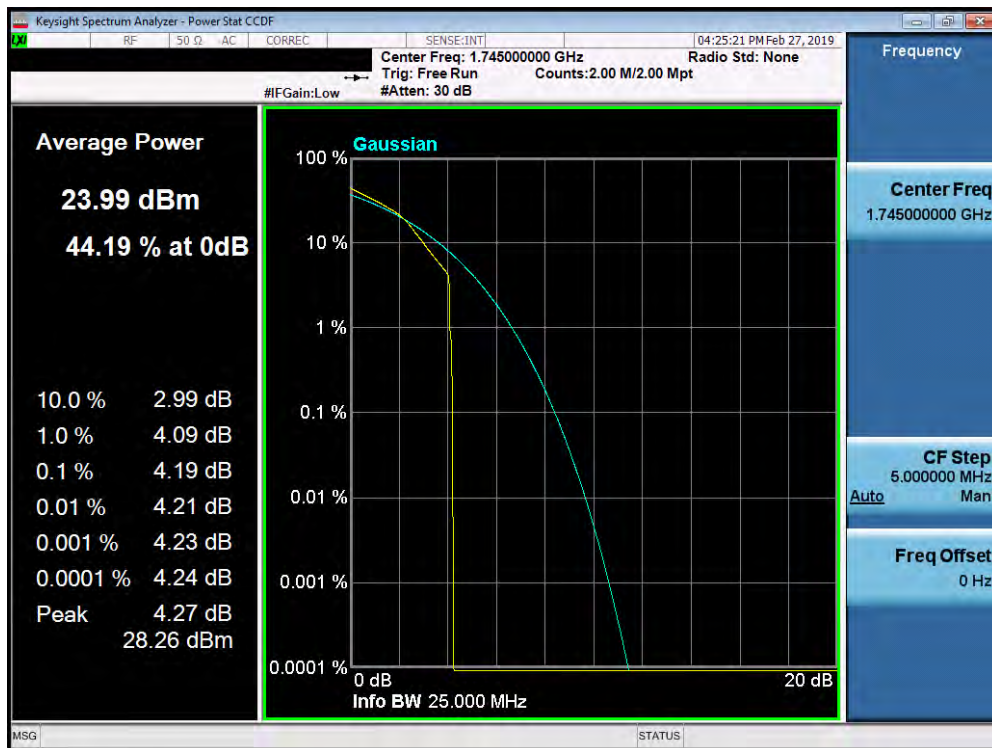


Plot 7-253. PAR Plot (Band 66/4 - 10.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMF907N	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 151 of 206

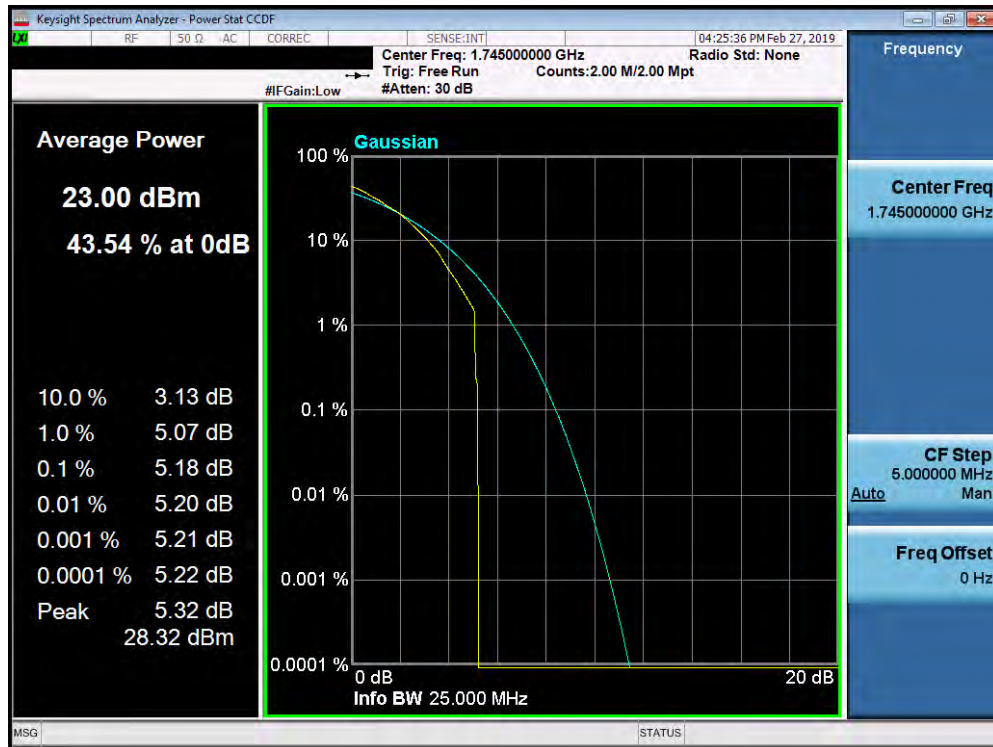


Plot 7-254. PAR Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

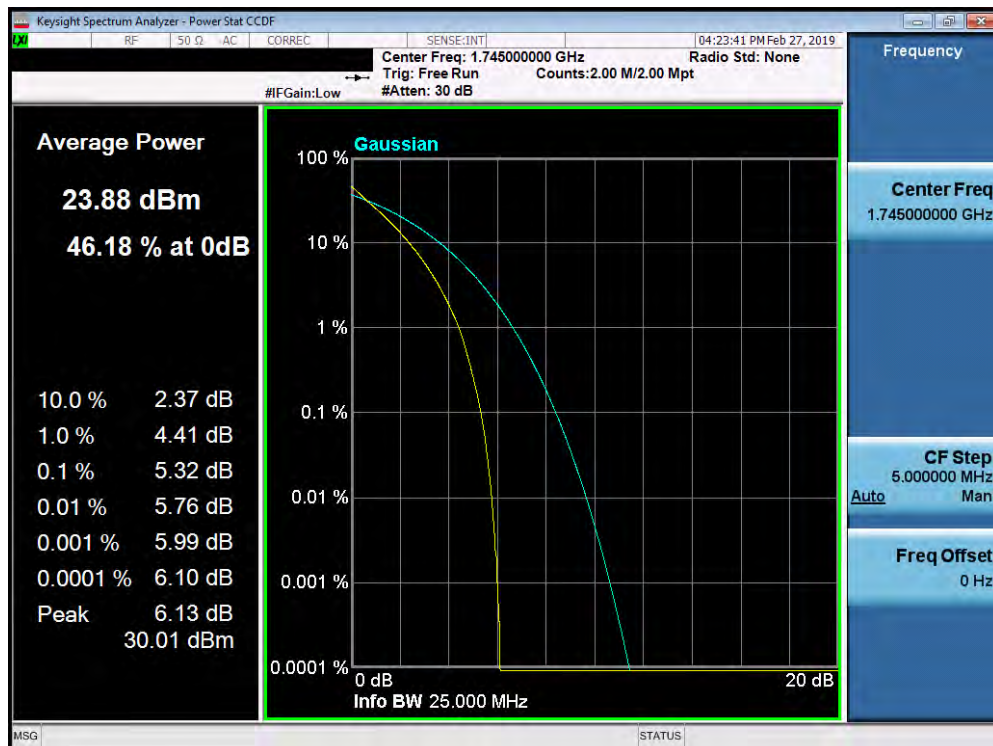


Plot 7-255. PAR Plot (Band 66/4 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 152 of 206

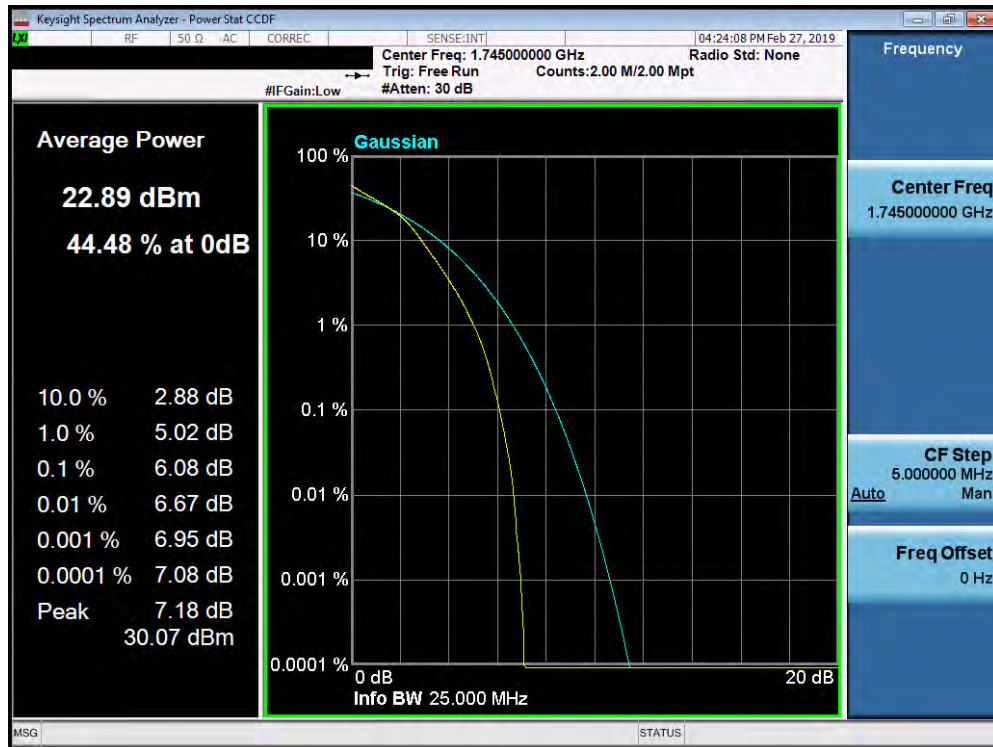


Plot 7-256. PAR Plot (Band 66/4 - 15.0MHz 64-QAM - Full RB Configuration)

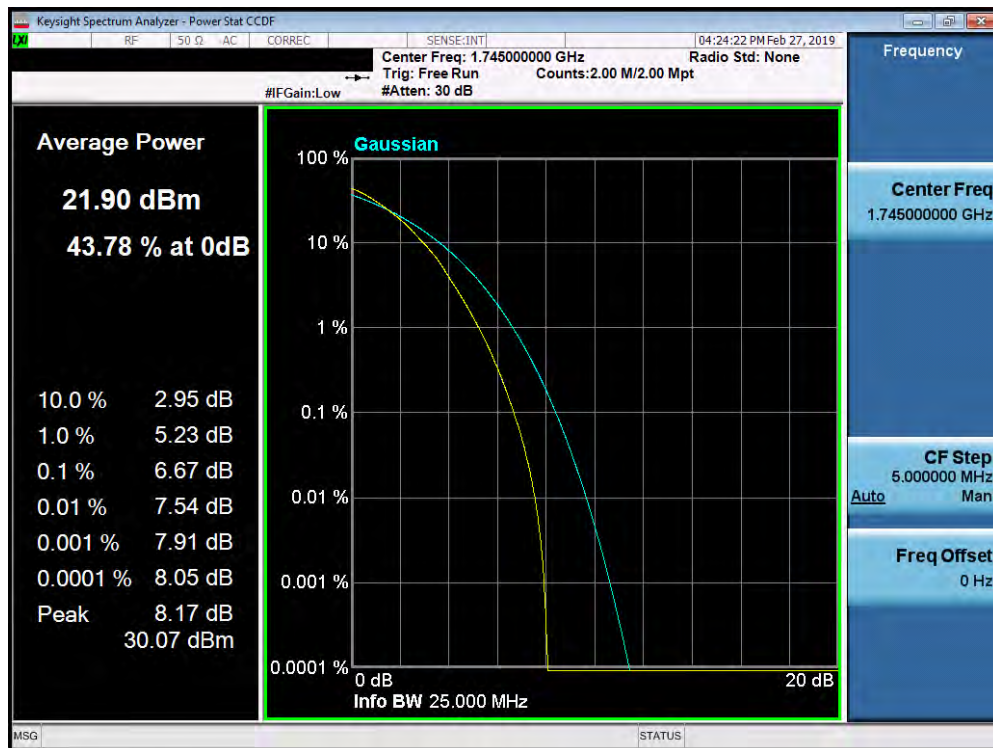


Plot 7-257. PAR Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 153 of 206



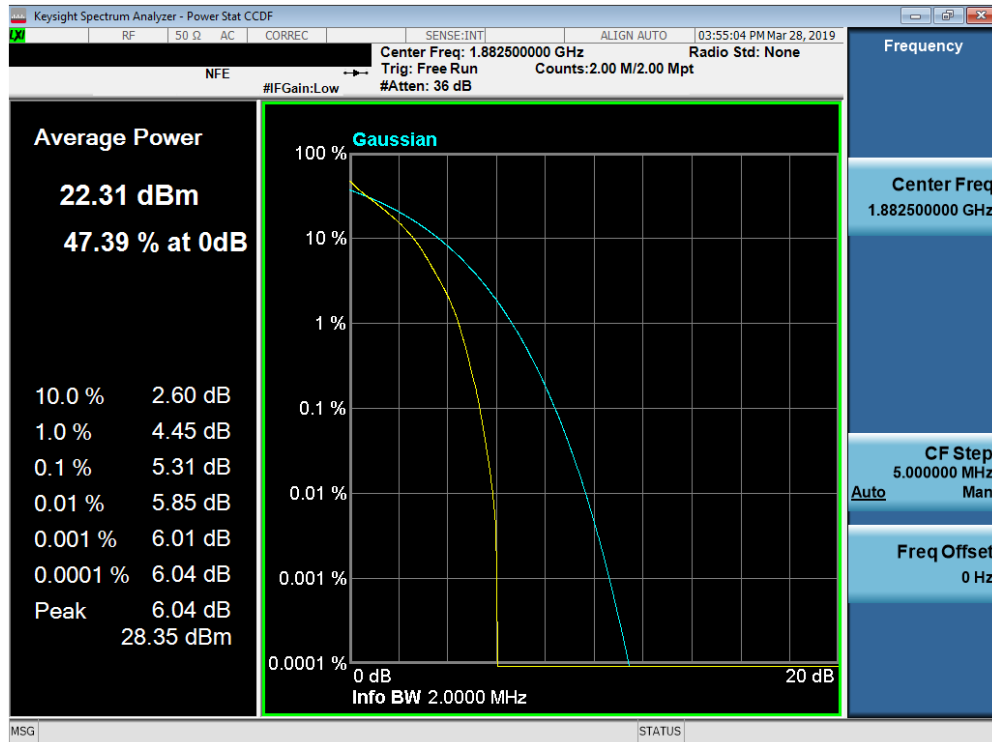
Plot 7-258. PAR Plot (Band 66/4 - 20.0MHz 16-QAM - Full RB Configuration)



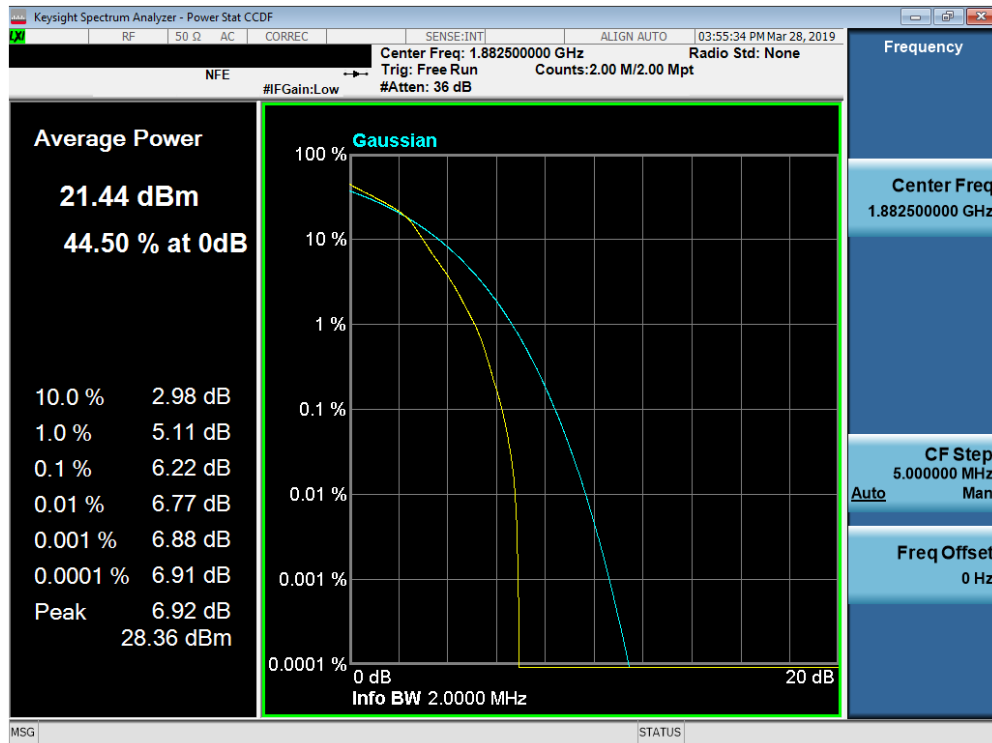
Plot 7-259. PAR Plot (Band 66/4 - 20.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 154 of 206

Band 25/2

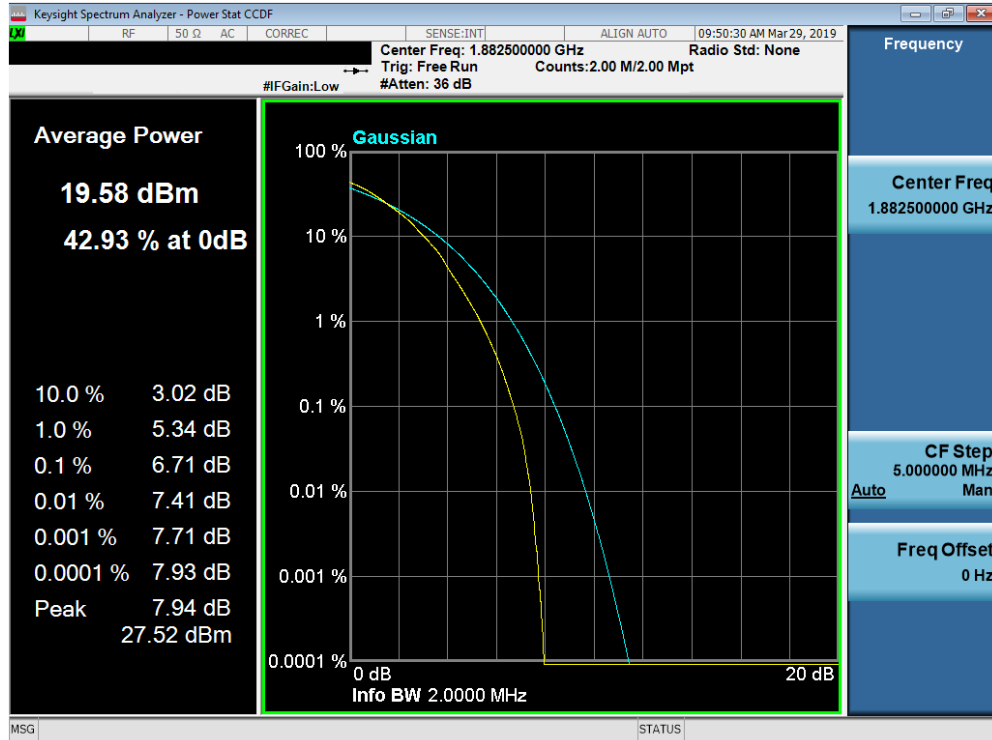


Plot 7-260. PAR Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

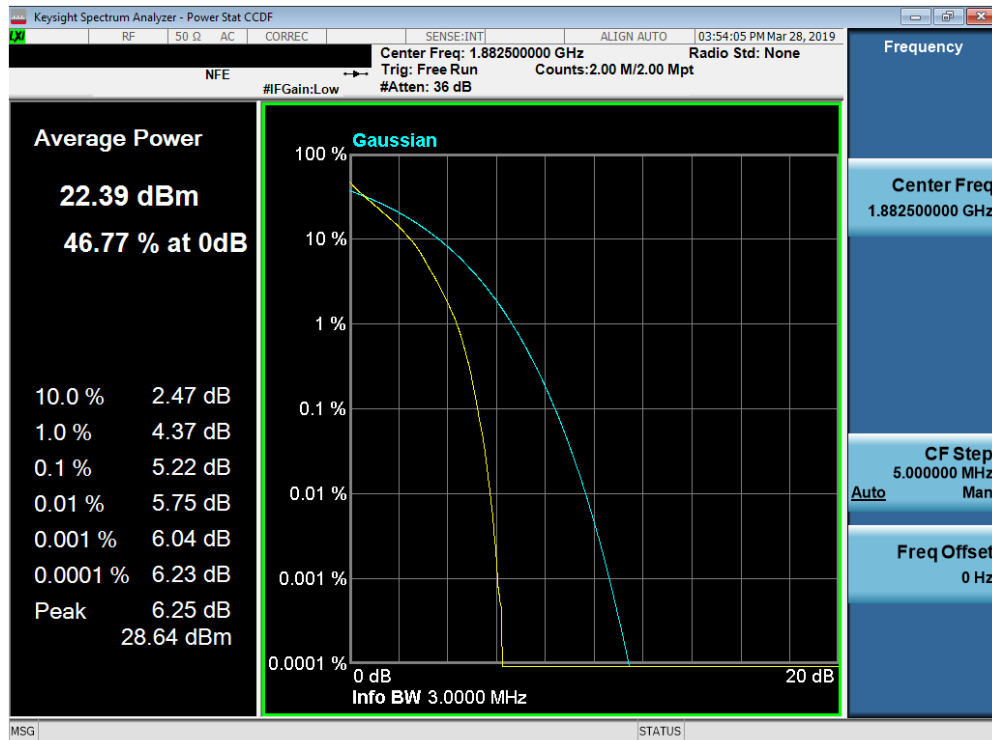


Plot 7-261. PAR Plot (Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 155 of 206

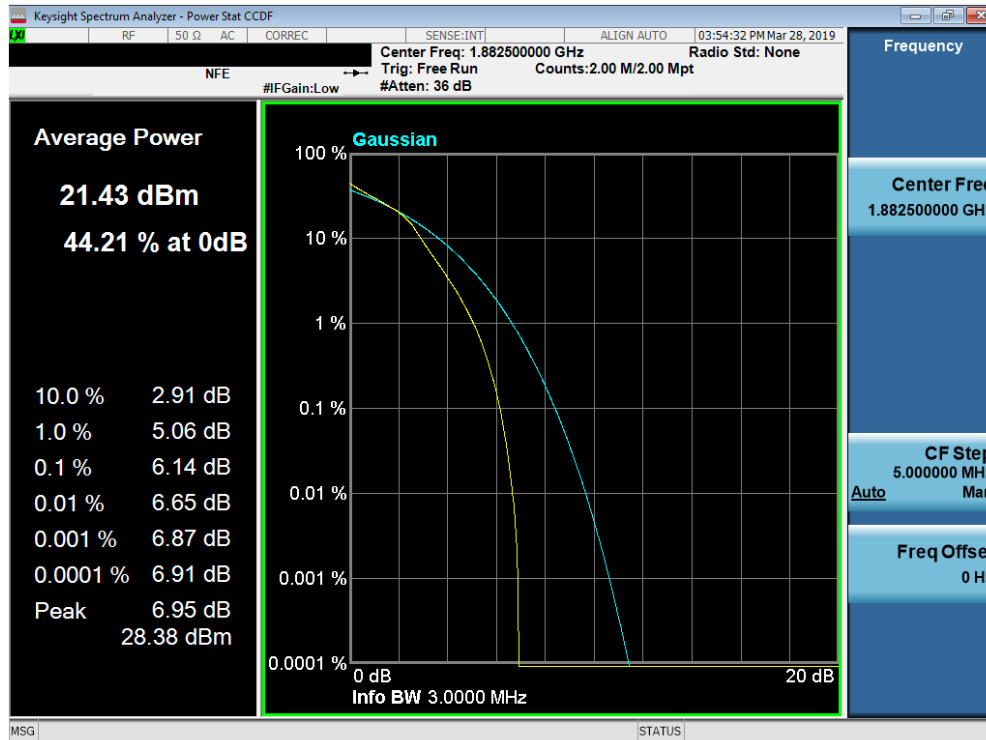


Plot 7-262. PAR Plot (Band 25/2 - 1.4MHz 64-QAM - Full RB Configuration)

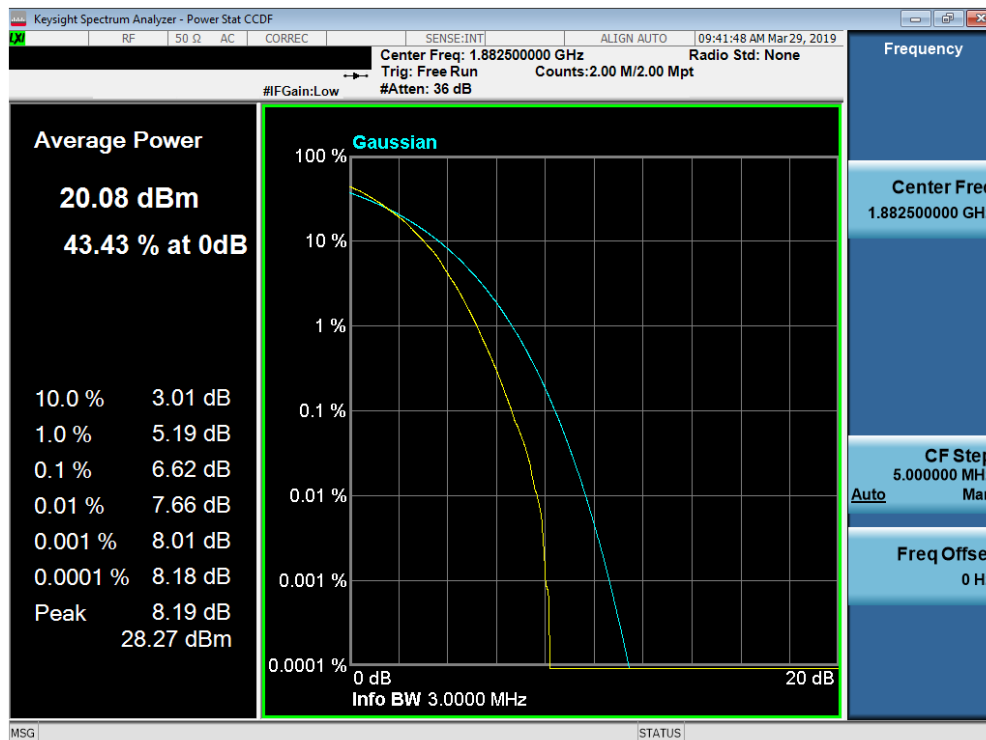


Plot 7-263. PAR Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 156 of 206

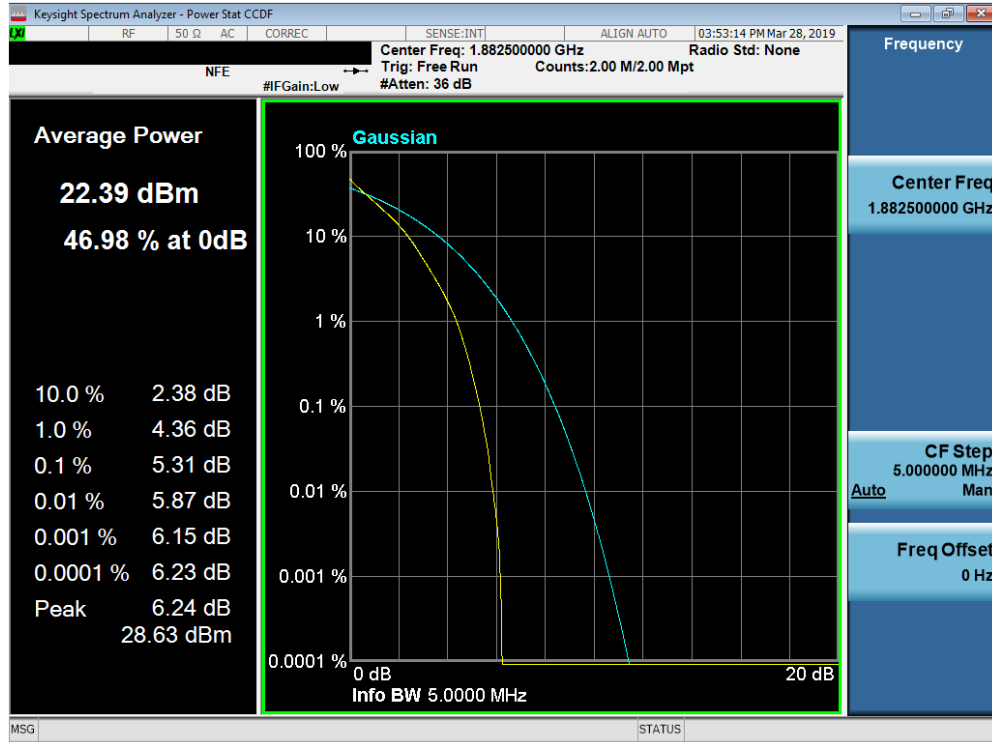


Plot 7-264. PAR Plot (Band 25/2 - 3.0MHz 16-QAM - Full RB Configuration)

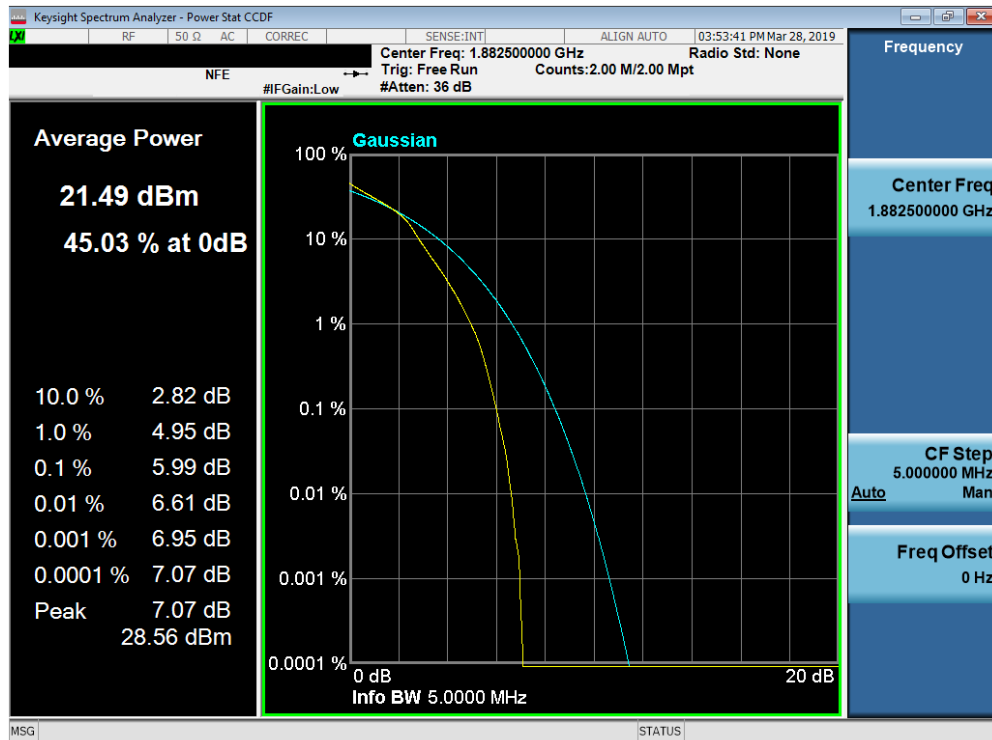


Plot 7-265. PAR Plot (Band 25/2 - 3.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMF907N	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 157 of 206

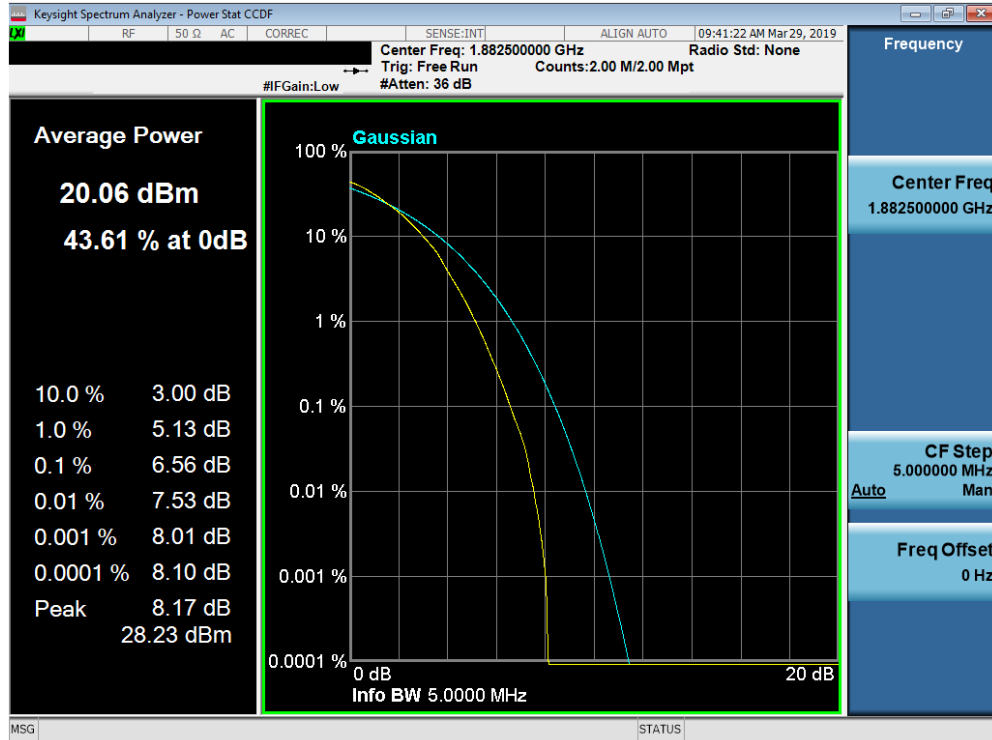


Plot 7-266. PAR Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

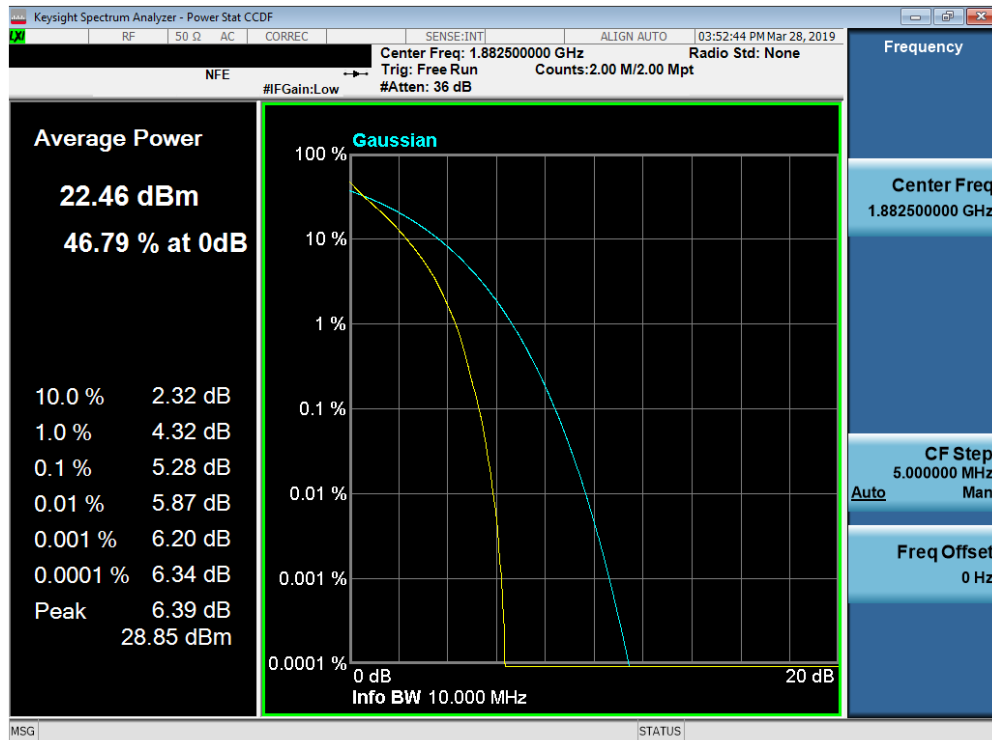


Plot 7-267. PAR Plot (Band 25/2 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMF907N	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 158 of 206

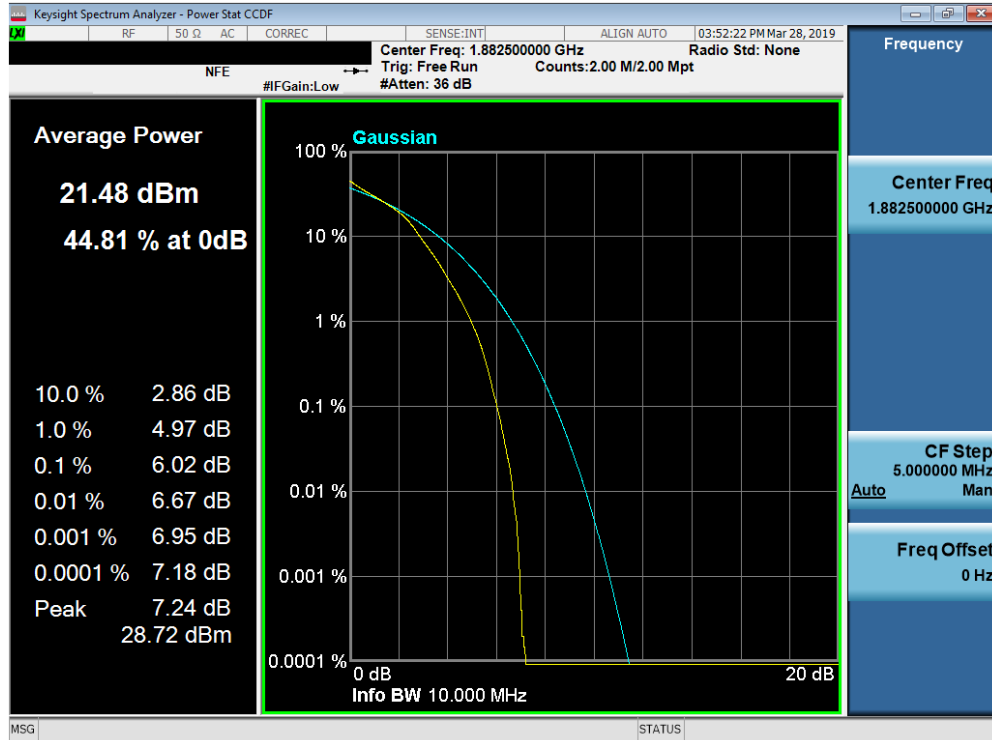


Plot 7-268. PAR Plot (Band 25/2 - 5.0MHz 64-QAM - Full RB Configuration)

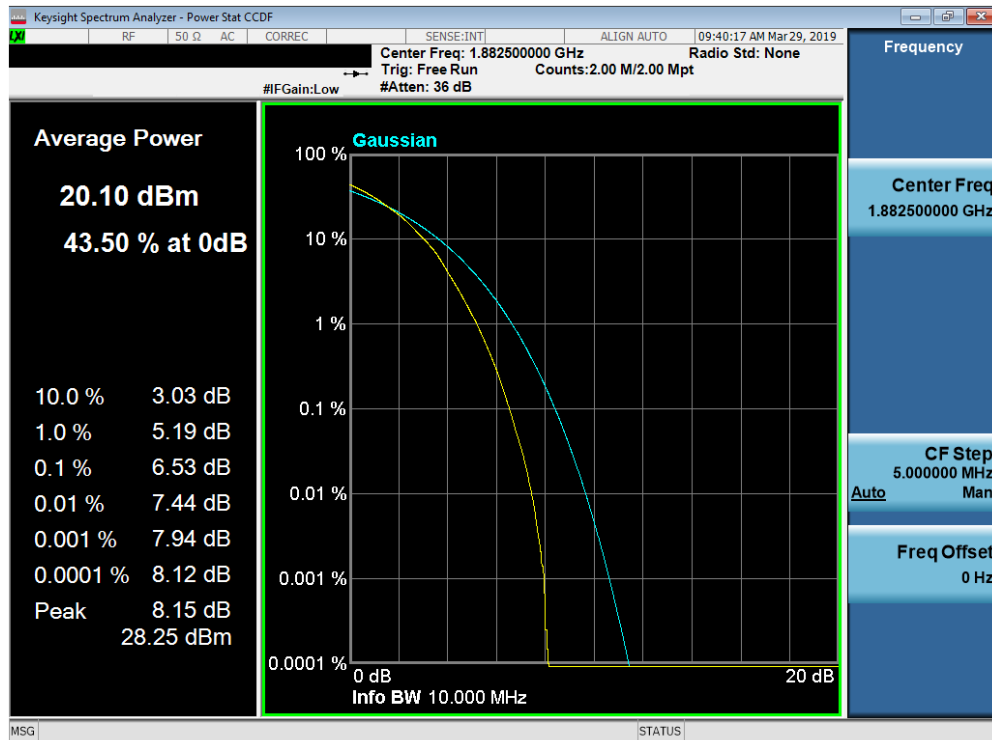


Plot 7-269. PAR Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 159 of 206

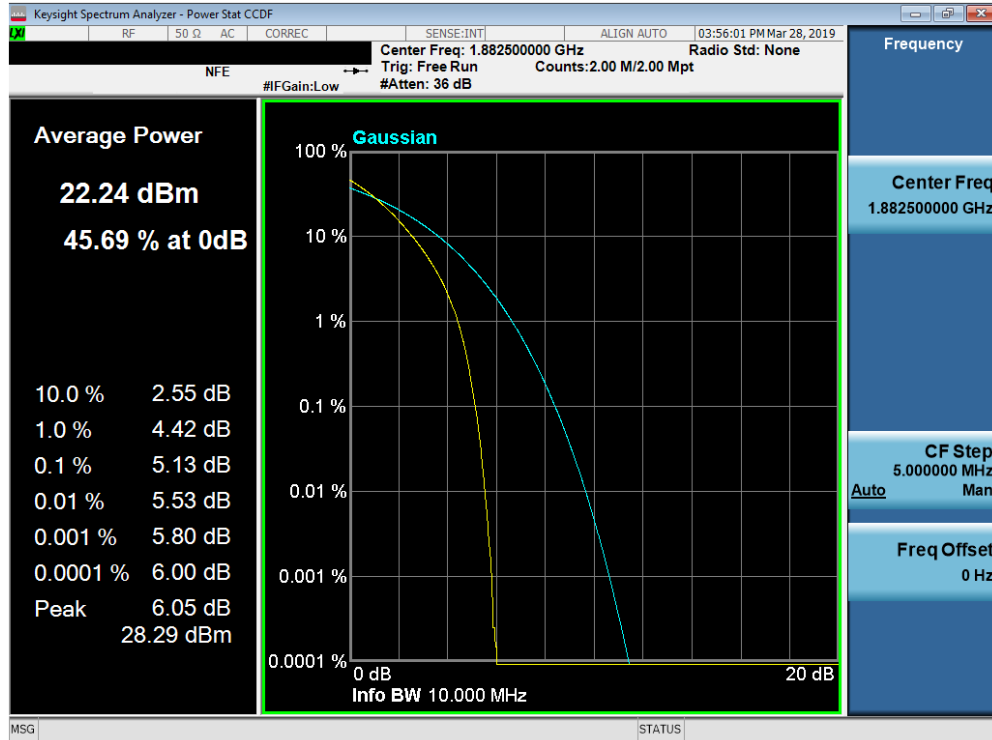


Plot 7-270. PAR Plot (Band 25/2 - 10.0MHz 16-QAM - Full RB Configuration)

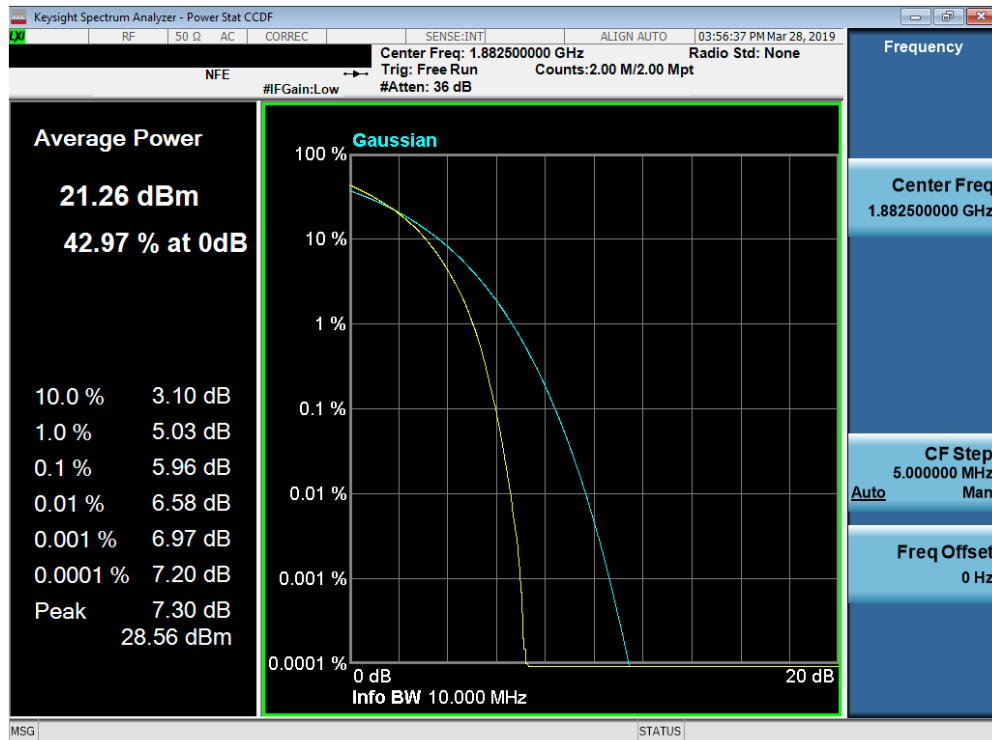


Plot 7-271. PAR Plot (Band 25/2 - 10.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMF907N	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 160 of 206

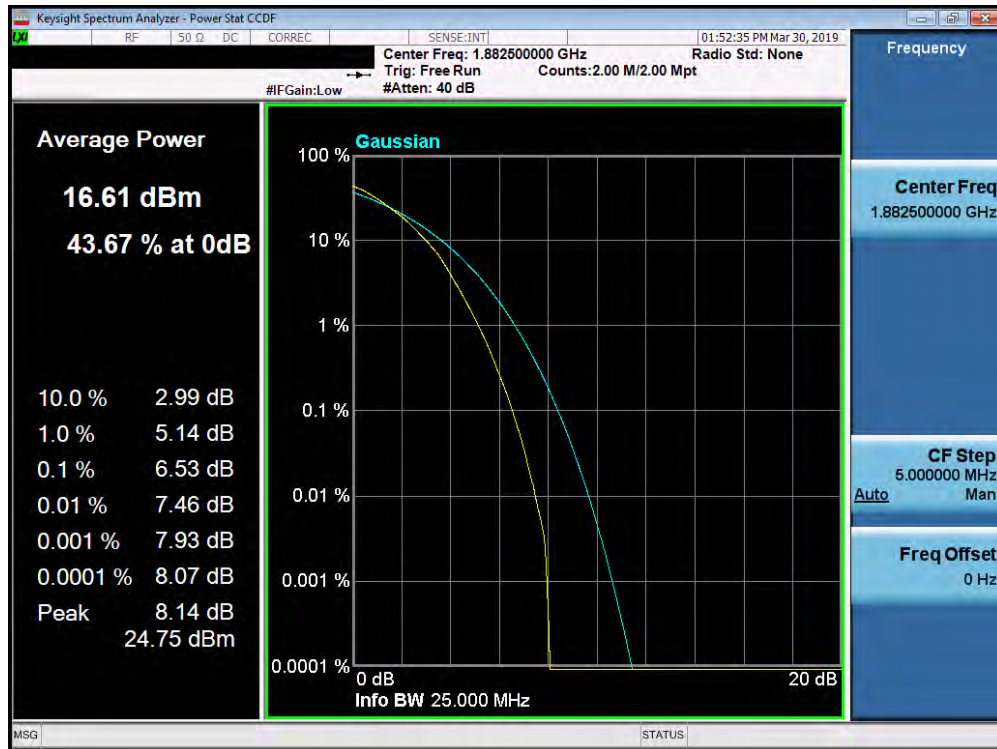


Plot 7-272. PAR Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

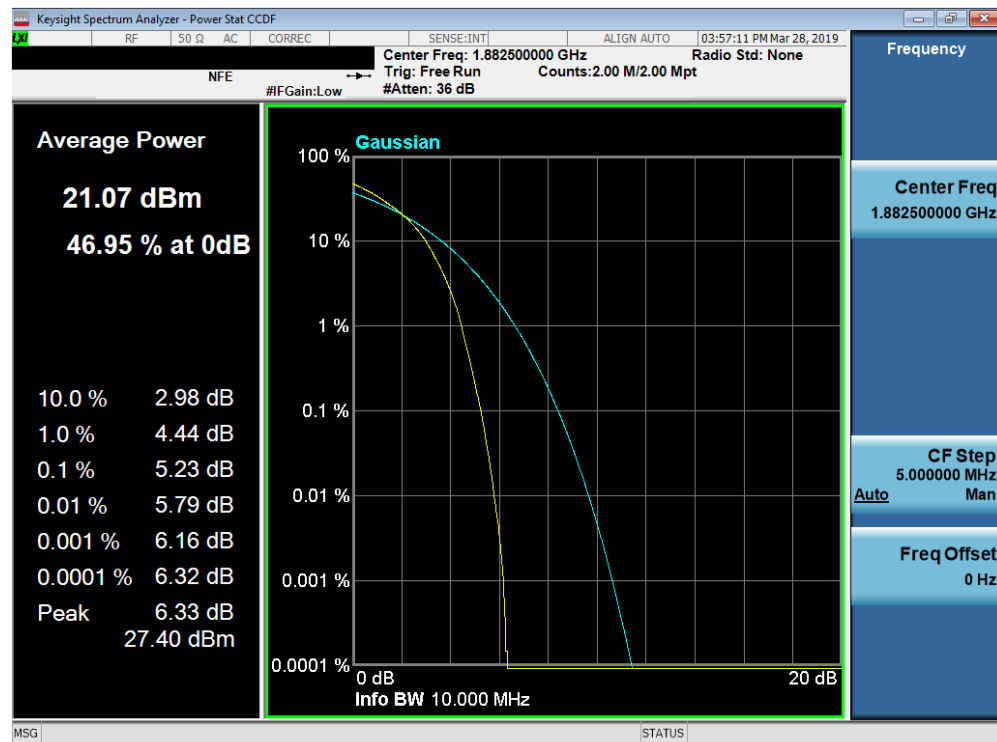


Plot 7-273. PAR Plot (Band 25/2 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMF907N	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 161 of 206

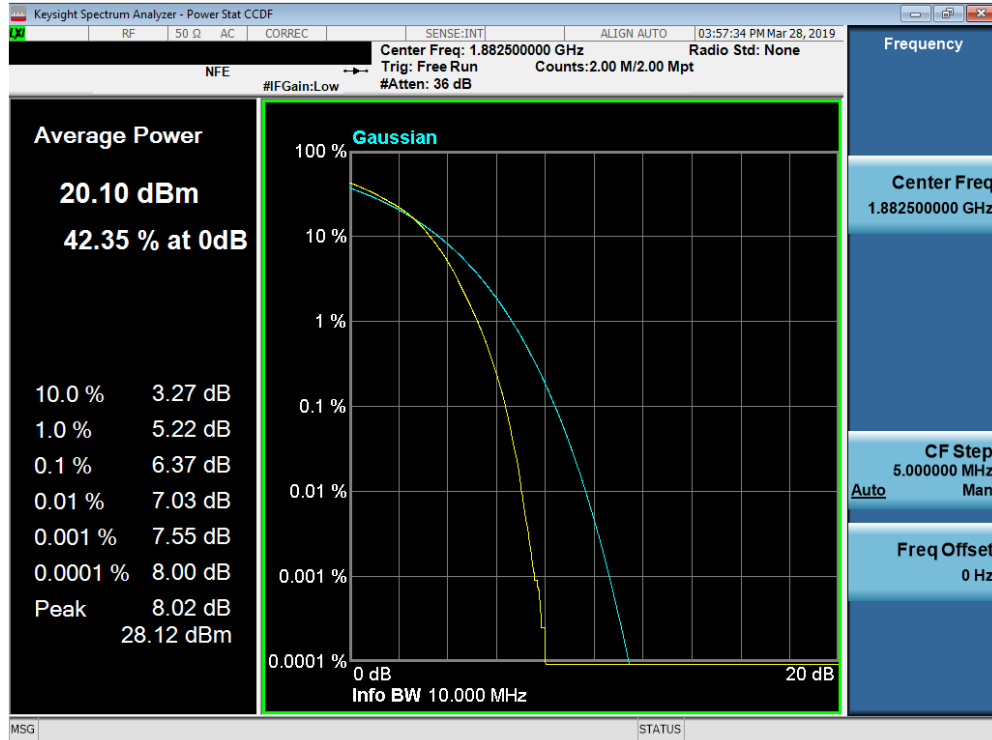


Plot 7-274. PAR Plot (Band 25/2 - 15.0MHz 64-QAM - Full RB Configuration)

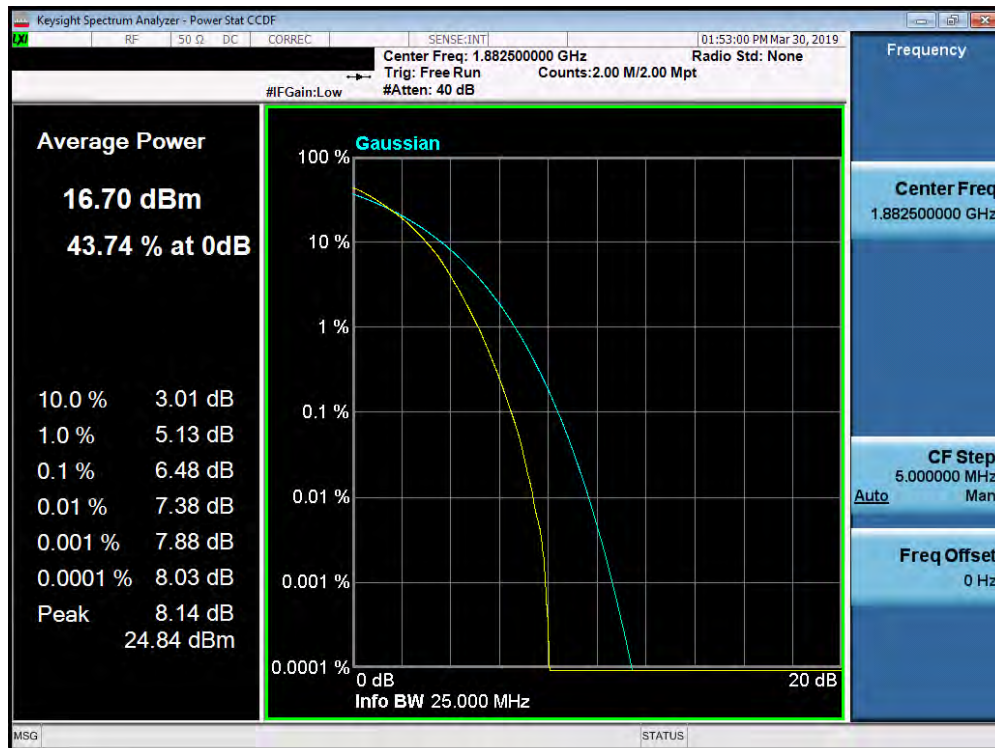


Plot 7-275. PAR Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMF907N	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Plot 7-276. PAR Plot (Band 25/2 - 20.0MHz 16-QAM - Full RB Configuration)



Plot 7-277. PAR Plot (Band 25/2 - 20.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMF907N	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 163 of 206

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 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer's "time domain power" measurement capability is used
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW $\geq 3 \times$ RBW
4. Span = 1.5 times the OBW
5. No. of sweep points $\geq 2 \times$ span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto". Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the "gating" function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

FCC ID: A3LSMF907N		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.

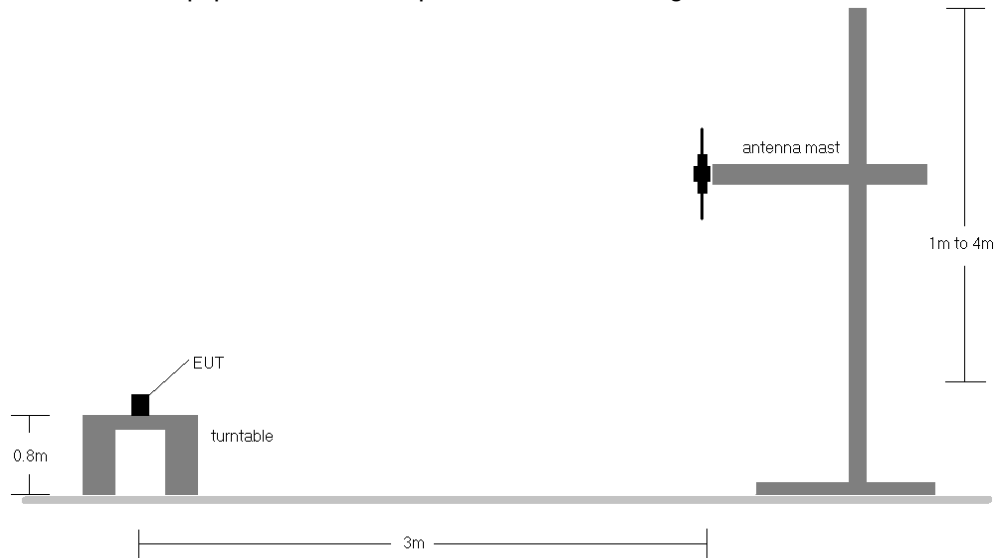


Figure 7-5. Radiated Test Setup <1GHz

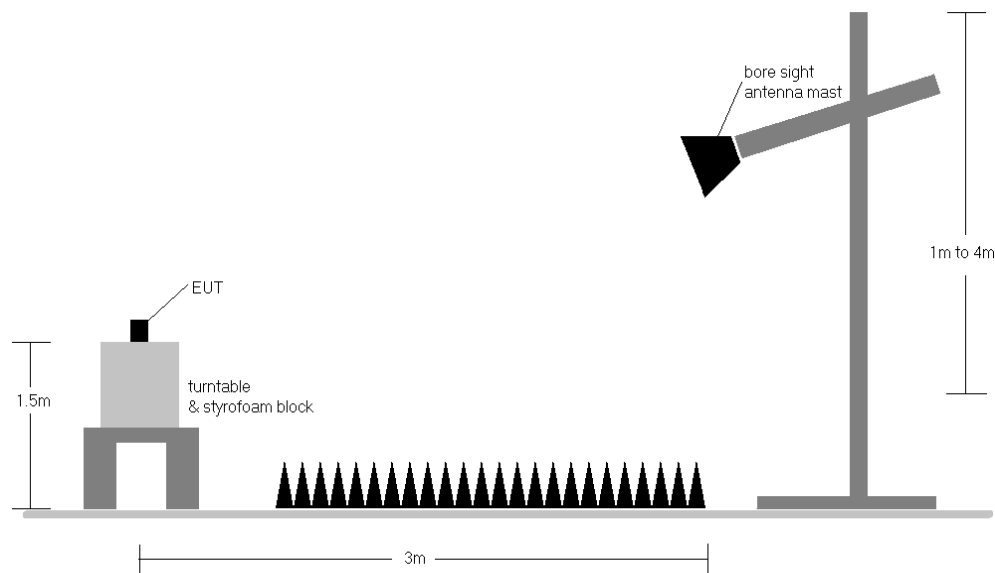


Figure 7-6. Radiated Test Setup >1GHz

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: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	EUT Config.	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	Closed	H	296	271	1 / 0	14.29	5.19	17.33	0.054	34.77	-17.44	19.48	0.089	36.99	-17.51
707.50	1.4	QPSK	Closed	H	308	292	1 / 5	14.88	5.19	17.92	0.062	34.77	-16.85	20.07	0.102	36.99	-16.92
715.30	1.4	QPSK	Closed	H	308	273	1 / 5	15.44	5.26	18.55	0.072	34.77	-16.23	20.70	0.117	36.99	-16.29
715.30	1.4	16-QAM	Closed	H	308	273	1 / 5	14.69	5.26	17.80	0.060	34.77	-16.98	19.95	0.099	36.99	-17.04
707.50	1.4	64-QAM	Closed	H	308	292	1 / 5	13.16	5.19	16.20	0.042	34.77	-18.57	18.35	0.068	36.99	-18.64
700.50	3	QPSK	Closed	H	336	281	1 / 14	13.89	5.14	16.88	0.049	34.77	-17.89	19.03	0.080	36.99	-17.96
707.50	3	QPSK	Closed	H	346	285	1 / 14	13.68	5.19	16.72	0.047	34.77	-18.05	18.87	0.077	36.99	-18.12
714.50	3	QPSK	Closed	H	321	293	1 / 0	14.58	5.25	17.68	0.059	34.77	-17.09	19.83	0.096	36.99	-17.16
714.50	3	16-QAM	Closed	H	321	293	1 / 14	13.88	5.25	16.98	0.050	34.77	-17.79	19.13	0.082	36.99	-17.86
714.50	3	64-QAM	Closed	H	321	293	1 / 0	11.96	5.25	15.06	0.032	34.77	-19.71	17.21	0.053	36.99	-19.78
701.50	5	QPSK	Closed	H	314	277	1 / 24	14.08	5.15	17.08	0.051	34.77	-17.69	19.23	0.084	36.99	-17.76
707.50	5	QPSK	Closed	H	305	280	1 / 24	14.94	5.19	17.98	0.063	34.77	-16.79	20.13	0.103	36.99	-16.86
713.50	5	QPSK	Closed	H	315	279	1 / 24	15.15	5.24	18.24	0.067	34.77	-16.53	20.39	0.109	36.99	-16.60
713.50	5	16-QAM	Closed	H	315	279	1 / 24	14.48	5.24	17.57	0.057	34.77	-17.20	19.72	0.094	36.99	-17.27
707.50	5	64-QAM	Closed	H	305	280	1 / 24	13.29	5.19	16.33	0.043	34.77	-18.44	18.48	0.071	36.99	-18.51
704.00	10	QPSK	Closed	H	297	283	1 / 49	14.38	5.17	17.40	0.055	34.77	-17.37	19.55	0.090	36.99	-17.44
707.50	10	QPSK	Closed	H	302	286	1 / 49	14.69	5.19	17.73	0.059	34.77	-17.04	19.88	0.097	36.99	-17.11
711.00	10	QPSK	Closed	H	295	270	1 / 0	14.76	5.22	17.83	0.061	34.77	-16.94	19.98	0.100	36.99	-17.01
711.00	10	16-QAM	Closed	H	295	270	1 / 0	14.29	5.22	17.36	0.054	34.77	-17.41	19.51	0.089	36.99	-17.48
711.00	10	64-QAM	Closed	H	295	270	1 / 0	13.00	5.22	16.07	0.040	34.77	-18.70	18.22	0.066	36.99	-18.77
715.30	1.4	QPSK	Closed	V	212	207	1 / 5	5.66	5.26	8.77	0.008	34.77	-26.00	10.92	0.012	36.99	-26.07
715.30	1.4 (WCP)	QPSK	Closed	H	337	127	1 / 5	6.68	5.26	9.79	0.010	34.77	-24.98	11.94	0.016	36.99	-25.05
715.30	1.4	QPSK	Open	H	308	273	3 / 2	15.40	5.26	18.51	0.071	34.77	-16.27	20.66	0.116	36.99	-16.33

Table 7-3. ERP Data (Band 12)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	EUT Config.	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]
779.50	5	QPSK	Open	H	160	113	1 / 24	14.56	6.09	18.50	0.071	34.77	-16.27	20.65	0.116	36.99	-16.34
782.00	5	QPSK	Open	H	157	126	1 / 24	14.25	6.13	18.23	0.067	34.77	-16.54	20.38	0.109	36.99	-16.60
784.50	5	QPSK	Open	H	150	118	1 / 0	14.47	6.18	18.50	0.071	34.77	-16.27	20.65	0.116	36.99	-16.34
782.00	5	16-QAM	Open	H	157	126	1 / 24	13.69	6.13	17.67	0.059	34.77	-17.10	19.82	0.096	36.99	-17.16
779.50	5	64-QAM	Open	H	160	113	1 / 24	12.75	6.09	16.69	0.047	34.77	-18.08	18.84	0.077	36.99	-18.15
782.00	10	QPSK	Open	H	162	129	1 / 49	13.90	6.13	17.88	0.061	34.77	-16.89	20.03	0.101	36.99	-16.95
782.00	10	16-QAM	Open	H	162	129	1 / 49	13.20	6.13	17.18	0.052	34.77	-17.59	19.33	0.086	36.99	-17.65
782.00	10	64-QAM	Open	H	162	129	1 / 49	12.15	6.13	16.13	0.041	34.77	-18.64	18.28	0.067	36.99	-18.70
784.50	5	QPSK	Open	V	124	185	1 / 0	11.68	6.18	15.71	0.037	34.77	-19.06	17.86	0.061	36.99	-19.13
784.50	5 (WCP)	QPSK	Open	H	122	176	1 / 0	0.79	6.18	4.82	0.003	34.77	-29.95	6.97	0.005	36.99	-30.02
784.50	5	QPSK	Closed	H	150	118	1 / 24	14.35	6.18	18.38	0.069	34.77	-16.39	20.53	0.113	36.99	-16.46

Table 7-4. ERP Data (Band 13)

FCC ID: A3LSMF907N		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 166 of 206

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	EUT Config.	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	Open	V	129	328	1 / 5	13.39	7.12	18.36	0.069	38.45	-20.09	20.51	0.112	40.61	-20.10
836.50	1.4	QPSK	Open	V	129	328	1 / 0	13.41	7.34	18.60	0.072	38.45	-19.85	20.75	0.119	40.61	-19.86
848.30	1.4	QPSK	Open	V	125	325	1 / 0	13.01	7.55	18.41	0.069	38.45	-20.04	20.56	0.114	40.61	-20.04
836.50	1.4	16-QAM	Open	V	129	328	1 / 0	12.66	7.34	17.85	0.061	38.45	-20.60	20.00	0.100	40.61	-20.61
836.50	1.4	64-QAM	Open	V	129	328	1 / 0	11.30	7.34	16.49	0.045	38.45	-21.96	18.64	0.073	40.61	-21.97
825.50	3	QPSK	Open	V	135	332	1 / 0	14.12	7.13	19.10	0.081	38.45	-19.35	21.25	0.133	40.61	-19.35
836.50	3	QPSK	Open	V	134	331	1 / 0	14.16	7.34	19.35	0.086	38.45	-19.10	21.50	0.141	40.61	-19.11
847.50	3	QPSK	Open	V	136	330	1 / 0	13.86	7.54	19.25	0.084	38.45	-19.20	21.40	0.138	40.61	-19.21
847.50	3	16-QAM	Open	V	136	330	1 / 0	12.72	7.54	18.11	0.065	38.45	-20.34	20.26	0.106	40.61	-20.35
847.50	3	64-QAM	Open	V	136	330	1 / 0	11.46	7.54	16.85	0.048	38.45	-21.60	19.00	0.079	40.61	-21.61
826.50	5	QPSK	Open	V	131	332	1 / 24	14.66	7.15	19.66	0.093	38.45	-18.79	21.81	0.152	40.61	-18.79
836.50	5	QPSK	Open	V	131	332	1 / 0	14.67	7.34	19.86	0.097	38.45	-18.59	22.01	0.159	40.61	-18.60
846.50	5	QPSK	Open	V	130	335	1 / 0	14.04	7.52	19.41	0.087	38.45	-19.04	21.56	0.143	40.61	-19.05
836.50	5	16-QAM	Open	V	131	332	1 / 0	13.62	7.34	18.81	0.076	38.45	-19.64	20.96	0.125	40.61	-19.65
836.50	5	64-QAM	Open	V	131	332	1 / 0	12.34	7.34	17.53	0.057	38.45	-20.92	19.68	0.093	40.61	-20.93
829.00	10	QPSK	Open	V	133	326	1 / 0	14.82	7.20	19.87	0.097	38.45	-18.58	22.02	0.159	40.61	-18.59
836.50	10	QPSK	Open	V	135	325	1 / 0	15.17	7.34	20.36	0.109	38.45	-18.09	22.51	0.178	40.61	-18.10
844.00	10	QPSK	Open	V	134	320	1 / 0	13.99	7.47	19.31	0.085	38.45	-19.14	21.46	0.140	40.61	-19.14
829.00	10	16-QAM	Open	V	133	326	1 / 49	13.68	7.20	18.73	0.075	38.45	-19.72	20.88	0.122	40.61	-19.73
829.00	10	64-QAM	Open	V	133	326	1 / 49	12.34	7.20	17.39	0.055	38.45	-21.06	19.54	0.090	40.61	-21.07
836.50	10	QPSK	Open	H	109	23	1 / 0	13.18	7.17	18.20	0.066	38.45	-20.25	20.35	0.108	40.61	-20.26
836.50	10 (WCP)	QPSK	Open	V	105	235	1 / 0	9.44	7.43	14.72	0.030	38.45	-23.73	16.87	0.049	40.61	-23.74
836.50	10	QPSK	Closed	V	138	299	1 / 0	13.06	7.34	18.25	0.067	38.45	-20.20	20.40	0.110	40.61	-20.21

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

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	EUT Config.	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]
831.50	15	QPSK	Open	V	127	330	1 / 0	15.04	7.24	20.13	0.103	38.45	-18.32	22.28	0.169	40.61	-18.32
836.50	15	QPSK	Open	V	138	335	1 / 0	15.16	7.34	20.35	0.108	38.45	-18.10	22.50	0.178	40.61	-18.11
841.50	15	QPSK	Open	V	133	327	1 / 0	14.72	7.43	20.00	0.100	38.45	-18.45	22.15	0.164	40.61	-18.46
841.50	15	16-QAM	Open	V	133	327	1 / 0	14.16	7.43	19.44	0.088	38.45	-19.01	21.59	0.144	40.61	-19.02
841.50	15	64-QAM	Open	V	133	327	1 / 0	12.82	7.43	18.10	0.065	38.45	-20.35	20.25	0.106	40.61	-20.36

Table 7-6. ERP Data (Band 26)

FCC ID: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 167 of 206

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	EUT Config.	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	Open	H	148	317	1 / 0	11.76	9.63	21.39	0.138	30.00	-8.61
1745.00	1.4	QPSK	Open	H	147	315	1 / 5	12.40	9.49	21.89	0.154	30.00	-8.11
1779.30	1.4	QPSK	Open	H	133	314	1 / 5	12.37	9.35	21.72	0.149	30.00	-8.28
1745.00	1.4	16-QAM	Open	H	147	315	1 / 5	11.55	9.49	21.04	0.127	30.00	-8.96
1745.00	1.4	64-QAM	Open	H	147	315	1 / 5	10.65	9.49	20.14	0.103	30.00	-9.86
1711.50	3	QPSK	Open	H	100	319	1 / 14	12.31	9.62	21.93	0.156	30.00	-8.07
1745.00	3	QPSK	Open	H	100	309	1 / 14	13.19	9.49	22.68	0.185	30.00	-7.32
1778.50	3	QPSK	Open	H	127	318	1 / 0	12.65	9.35	22.00	0.159	30.00	-8.00
1745.00	3	16-QAM	Open	H	100	309	1 / 14	12.16	9.49	21.65	0.146	30.00	-8.35
1745.00	3	64-QAM	Open	H	100	309	1 / 14	11.32	9.49	20.81	0.120	30.00	-9.19
1712.50	5	QPSK	Open	H	102	318	1 / 24	13.10	9.62	22.72	0.187	30.00	-7.28
1745.00	5	QPSK	Open	H	100	314	1 / 24	14.16	9.49	23.65	0.231	30.00	-6.35
1777.50	5	QPSK	Open	H	119	306	1 / 0	12.53	9.36	21.89	0.154	30.00	-8.11
1745.00	5	16-QAM	Open	H	100	314	1 / 24	13.19	9.49	22.68	0.185	30.00	-7.32
1745.00	5	64-QAM	Open	H	100	314	1 / 24	12.14	9.49	21.63	0.145	30.00	-8.37
1715.00	10	QPSK	Open	H	102	315	1 / 49	13.21	9.61	22.82	0.191	30.00	-7.18
1745.00	10	QPSK	Open	H	100	313	1 / 49	14.33	9.49	23.82	0.241	30.00	-6.18
1775.00	10	QPSK	Open	H	100	304	1 / 0	13.03	9.37	22.40	0.174	30.00	-7.60
1745.00	10	16-QAM	Open	H	100	313	1 / 49	13.33	9.49	22.82	0.191	30.00	-7.18
1745.00	10	64-QAM	Open	H	100	313	1 / 49	12.21	9.49	21.70	0.148	30.00	-8.30
1717.50	15	QPSK	Open	H	100	316	1 / 0	13.55	9.60	23.15	0.206	30.00	-6.85
1745.00	15	QPSK	Open	H	102	316	1 / 74	14.45	9.49	23.94	0.247	30.00	-6.06
1772.50	15	QPSK	Open	H	102	313	1 / 0	14.10	9.38	23.48	0.223	30.00	-6.52
1745.00	15	16-QAM	Open	H	102	316	1 / 74	13.57	9.49	23.06	0.202	30.00	-6.94
1745.00	15	64-QAM	Open	H	102	316	1 / 74	12.59	9.49	22.08	0.161	30.00	-7.92
1720.00	20	QPSK	Open	H	102	315	1 / 99	14.37	9.59	23.96	0.249	30.00	-6.04
1745.00	20	QPSK	Open	H	102	313	1 / 99	14.48	9.49	23.97	0.249	30.00	-6.03
1770.00	20	QPSK	Open	H	102	312	1 / 0	14.54	9.39	23.93	0.247	30.00	-6.07
1745.00	20	16-QAM	Open	H	102	313	1 / 99	13.82	9.49	23.31	0.214	30.00	-6.69
1745.00	20	64-QAM	Open	H	102	313	1 / 99	12.80	9.49	22.29	0.169	30.00	-7.71
1745.00	20	QPSK	Open	V	351	221	1 / 99	11.52	9.49	21.01	0.126	30.00	-8.99
1745.00	20 (WCP)	QPSK	Open	H	100	318	1 / 99	12.63	9.49	22.12	0.163	30.00	-7.88
1745.00	20	QPSK	Closed	H	121	144	1 / 0	12.59	9.49	22.08	0.161	30.00	-7.92

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

FCC ID: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 168 of 206

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	EUT Config.	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	Open	H	101	315	1 / 0	14.01	9.07	23.08	0.203	33.01	-9.94
1882.50	1.4	QPSK	Open	H	186	321	3 / 2	12.31	9.16	21.47	0.140	33.01	-11.55
1914.30	1.4	QPSK	Open	H	134	306	1 / 0	12.56	9.31	21.87	0.154	33.01	-11.14
1850.70	1.4	16-QAM	Open	H	101	315	1 / 5	13.16	9.07	22.23	0.167	33.01	-10.79
1850.70	1.4	64-QAM	Open	H	101	315	1 / 0	12.16	9.07	21.23	0.133	33.01	-11.79
1851.50	3	QPSK	Open	H	153	307	1 / 0	13.68	9.07	22.75	0.188	33.01	-10.26
1882.50	3	QPSK	Open	H	188	319	1 / 0	12.50	9.16	21.66	0.146	33.01	-11.36
1913.50	3	QPSK	Open	H	134	315	1 / 14	12.56	9.30	21.86	0.153	33.01	-11.15
1851.50	3	16-QAM	Open	H	153	307	1 / 14	13.00	9.07	22.07	0.161	33.01	-10.94
1851.50	3	64-QAM	Open	H	153	307	1 / 14	11.82	9.07	20.89	0.123	33.01	-12.12
1852.50	5	QPSK	Open	H	101	302	1 / 0	13.83	9.07	22.90	0.195	33.01	-10.11
1882.50	5	QPSK	Open	H	133	315	1 / 0	12.51	9.16	21.67	0.147	33.01	-11.35
1912.50	5	QPSK	Open	H	100	312	1 / 0	12.16	9.29	21.45	0.140	33.01	-11.56
1852.50	5	16-QAM	Open	H	101	302	1 / 0	13.05	9.07	22.12	0.163	33.01	-10.89
1852.50	5	64-QAM	Open	H	101	302	1 / 0	11.99	9.07	21.06	0.128	33.01	-11.95
1855.00	10	QPSK	Open	H	101	301	1 / 0	13.69	9.08	22.77	0.189	33.01	-10.24
1882.50	10	QPSK	Open	H	184	312	1 / 0	12.57	9.16	21.73	0.149	33.01	-11.29
1910.00	10	QPSK	Open	H	133	309	1 / 49	12.56	9.27	21.83	0.153	33.01	-11.18
1855.00	10	16-QAM	Open	H	101	301	1 / 0	12.81	9.08	21.89	0.154	33.01	-11.12
1855.00	10	64-QAM	Open	H	101	301	1 / 0	12.00	9.08	21.08	0.128	33.01	-11.93
1857.50	15	QPSK	Open	H	186	320	1 / 0	12.71	9.08	21.79	0.151	33.01	-11.22
1882.50	15	QPSK	Open	H	186	306	1 / 0	12.90	9.16	22.06	0.161	33.01	-10.96
1907.50	15	QPSK	Open	H	175	308	1 / 0	12.39	9.26	21.65	0.146	33.01	-11.36
1882.50	15	16-QAM	Open	H	186	306	1 / 0	12.20	9.16	21.36	0.137	33.01	-11.66
1882.50	15	64-QAM	Open	H	186	306	1 / 0	11.19	9.16	20.35	0.108	33.01	-12.67
1860.00	20	QPSK	Open	H	104	313	1 / 0	14.06	9.09	23.15	0.207	33.01	-9.86
1882.50	20	QPSK	Open	H	189	313	1 / 0	12.78	9.16	21.94	0.156	33.01	-11.08
1905.00	20	QPSK	Open	H	146	305	1 / 0	12.40	9.24	21.64	0.146	33.01	-11.37
1860.00	20	16-QAM	Open	H	104	313	1 / 0	13.27	9.09	22.36	0.172	33.01	-10.65
1860.00	20	64-QAM	Open	H	104	313	1 / 0	12.48	9.09	21.57	0.144	33.01	-11.44
1860.00	20	QPSK	Open	V	270	275	9.09	9.33	9.09	18.42	0.070	33.01	-14.59
1860.00	20 (WCP)	QPSK	Open	H	111	145	9.09	12.11	9.09	21.20	0.132	33.01	-11.81
1860.00	20	QPSK	Closed	H	131	304	1 / 0	12.37	9.09	21.46	0.140	33.01	-11.55

Table 7-8. EIRP Data (Band 25/2)

FCC ID: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 169 of 206

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	EUT Config.	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	Closed	H	100	35	1 / 0	12.26	8.34	20.60	0.115	33.01	-12.41
2593.00	5	QPSK	Closed	H	100	29	1 / 0	13.29	8.04	21.33	0.136	33.01	-11.68
2687.50	5	QPSK	Closed	H	100	41	1 / 24	12.51	7.94	20.45	0.111	33.01	-12.56
2502.50	5	16-QAM	Closed	H	100	35	1 / 0	11.78	8.34	20.12	0.103	33.01	-12.89
2502.50	5	64-QAM	Closed	H	100	35	1 / 0	10.45	8.34	18.79	0.076	33.01	-14.22
2505.00	10	QPSK	Closed	H	100	45	1 / 0	14.05	8.33	22.38	0.173	33.01	-10.63
2593.00	10	QPSK	Closed	H	100	42	1 / 49	13.70	8.04	21.74	0.149	33.01	-11.27
2685.00	10	QPSK	Closed	H	110	38	1 / 0	12.63	7.93	20.56	0.114	33.01	-12.45
2505.00	10	16-QAM	Closed	H	100	45	1 / 0	12.91	8.33	21.24	0.133	33.01	-11.77
2505.00	10	64-QAM	Closed	H	100	45	1 / 0	11.50	8.33	19.83	0.096	33.01	-13.18
2507.50	15	QPSK	Closed	H	100	48	1 / 0	14.23	8.33	22.56	0.180	33.01	-10.45
2593.00	15	QPSK	Closed	H	100	34	1 / 0	13.27	8.04	21.31	0.135	33.01	-11.70
2682.50	15	QPSK	Closed	H	102	35	1 / 0	13.32	7.92	21.24	0.133	33.01	-11.77
2507.50	15	16-QAM	Closed	H	100	48	1 / 74	13.97	8.33	22.30	0.170	33.01	-10.71
2507.50	15	64-QAM	Closed	H	100	48	1 / 74	12.59	8.33	20.92	0.124	33.01	-12.09
2510.00	20	QPSK	Closed	H	100	232	1 / 99	14.83	8.33	23.16	0.207	33.01	-9.85
2593.00	20	QPSK	Closed	H	378	133	1 / 99	14.13	8.04	22.17	0.165	33.01	-10.84
2680.00	20	QPSK	Closed	H	100	218	1 / 0	12.51	7.91	20.42	0.110	33.01	-12.59
2593.00	20	16-QAM	Closed	H	378	133	1 / 99	13.10	8.04	21.14	0.130	33.01	-11.87
2593.00	20	64-QAM	Closed	H	378	133	1 / 99	11.87	8.04	19.91	0.098	33.01	-13.10
2510.00	20	QPSK	Closed	V	124	196	1 / 99	12.94	8.33	21.27	0.134	33.01	-11.74
2510.00	20 (WCP)	QPSK	Closed	H	155	210	1 / 99	8.70	8.33	17.03	0.050	33.01	-15.98
2510.00	20	QPSK	Open	H	100	102	1 / 99	13.20	8.33	21.53	0.142	33.01	-11.48

Table 7-9. EIRP Data (Band 41 PC3)

FCC ID: A3LSMF907N	 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 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: A3LSMF907N	 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.

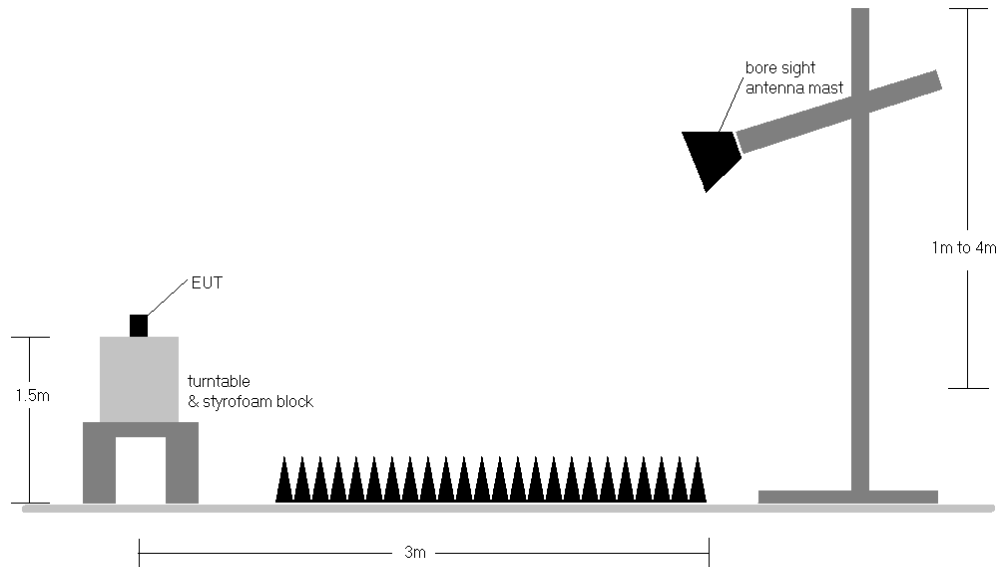


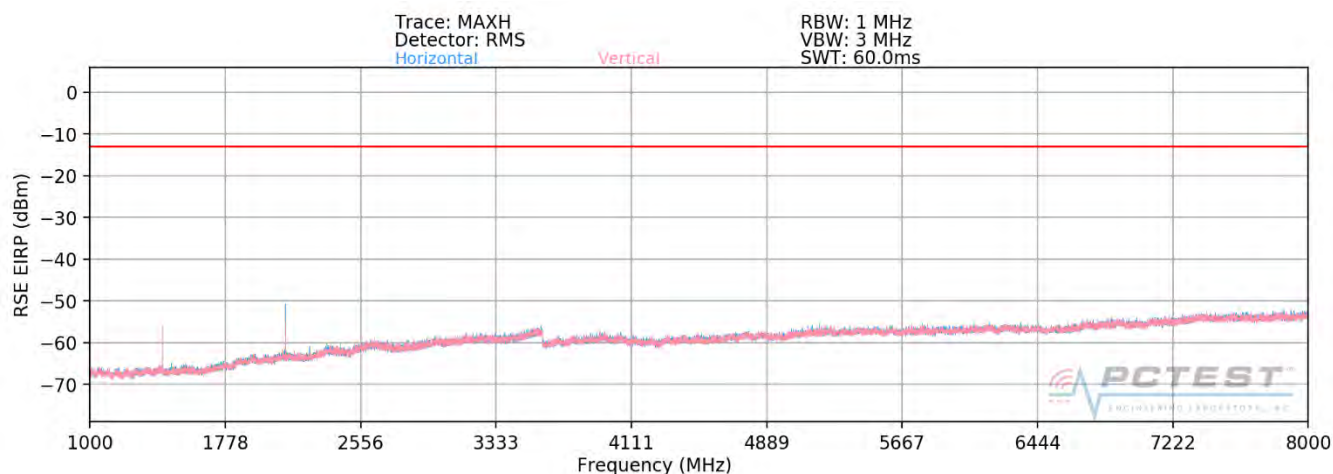
Figure 7-7. Test Instrument & Measurement Setup

Test Notes

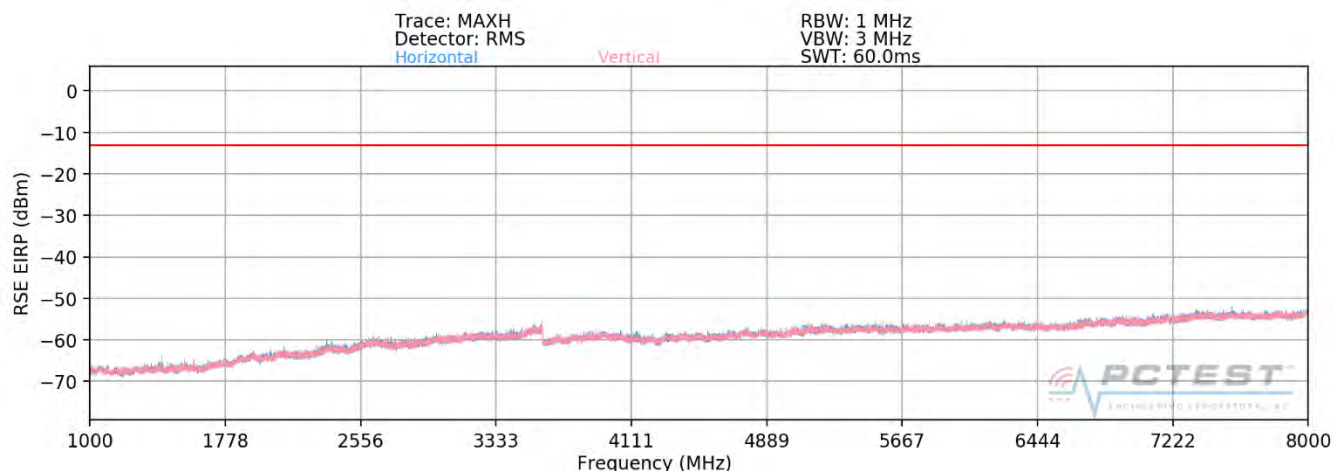
- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with 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: A3LSMF907N		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 12



Plot 7-278. Radiated Spurious Plot above 1GHz (Band 12 - CLOSED)



Plot 7-279. Radiated Spurious Plot above 1GHz (Band 12 - OPEN)

OPERATING FREQUENCY: 699.70 MHz

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	V	154	147	-70.14	7.44	-62.70	-49.7
2099.10	V	-	-	-74.94	8.83	-66.11	-53.1
2798.80	V	-	-	-74.76	10.15	-64.62	-51.6

Table 7-10. Radiated Spurious Data (Band 12 – Low Channel - CLOSED)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 173 of 206

OPERATING FREQUENCY: 707.50 MHz
 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	V	152	251	-67.89	7.63	-60.25	-47.3
2122.50	V	-	-	-76.32	8.86	-67.46	-54.5
2830.00	V	-	-	-75.27	10.10	-65.18	-52.2

Table 7-11. Radiated Spurious Data (Band 12 – Mid Channel - CLOSED)

OPERATING FREQUENCY: 715.30 MHz
 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	V	310	243	-73.22	7.83	-65.39	-52.4
2145.90	V	-	-	-74.72	8.89	-65.83	-52.8
2861.20	V	-	-	-74.19	10.04	-64.15	-51.2

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

FCC ID: A3LSMF907N		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 174 of 206

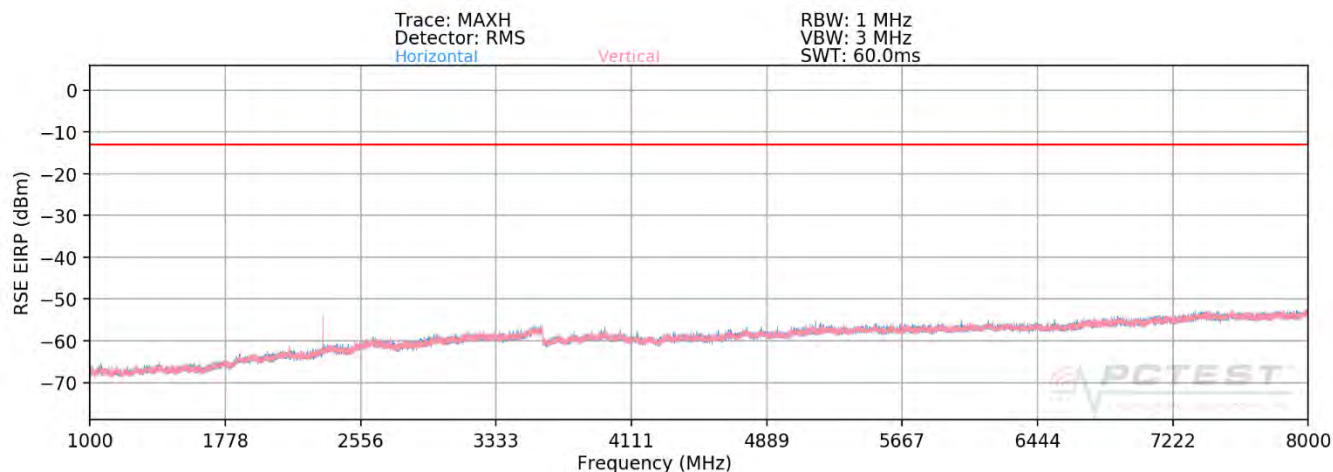
OPERATING FREQUENCY: 715.30 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 1.4 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	V	310	243	-73.22	7.83	-65.39	-52.4
2145.90	V	-	-	-74.72	8.89	-65.83	-52.8
2861.20	V	-	-	-74.19	10.04	-64.15	-51.2

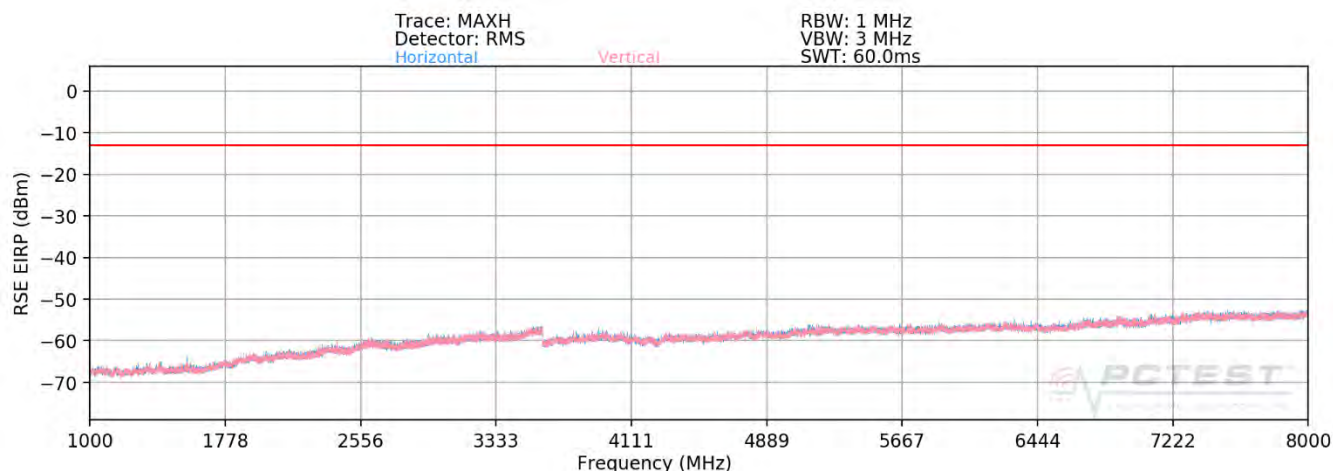
Table 7-13. Radiated Spurious Data with WCP (Band 12 – High Channel - CLOSED)

FCC ID: A3LSMF907N		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 175 of 206

Band 13



Plot 7-280. Radiated Spurious Plot above 1GHz (Band 13 - CLOSED)



Plot 7-281. Radiated Spurious Plot above 1GHz (Band 13 - OPEN)

OPERATING FREQUENCY: 779.50 MHz

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	V	117	311	-68.76	9.47	-59.29	-46.3
3118.00	V	-	-	-72.11	9.35	-62.76	-49.8
3897.50	V	-	-	-70.09	9.35	-60.74	-47.7

Table 7-14. Radiated Spurious Data (Band 13 – Low Channel - CLOSED)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset			Page 176 of 206

OPERATING FREQUENCY: 782.00 MHz
 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	V	115	312	-69.59	9.43	-60.15	-47.2
3128.00	V	-	-	-72.06	9.34	-62.72	-49.7
3910.00	V	-	-	-69.97	9.37	-60.60	-47.6

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

OPERATING FREQUENCY: 784.50 MHz
 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	V	149	313	-73.13	9.41	-63.72	-50.7
3138.00	V	-	-	-71.96	9.33	-62.63	-49.6
3922.50	V	-	-	-68.95	9.40	-59.55	-46.6

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

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	V	112	92	-75.68	8.51	-67.17	-27.2
1564.00	V	140	98	-75.46	8.53	-66.93	-26.9
1569.00	V	154	101	-76.28	8.55	-67.73	-27.7

Table 7-17. Radiated Spurious Data (Band 13 – 1559-1610MHz Band - CLOSED)

FCC ID: A3LSMF907N		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 177 of 206

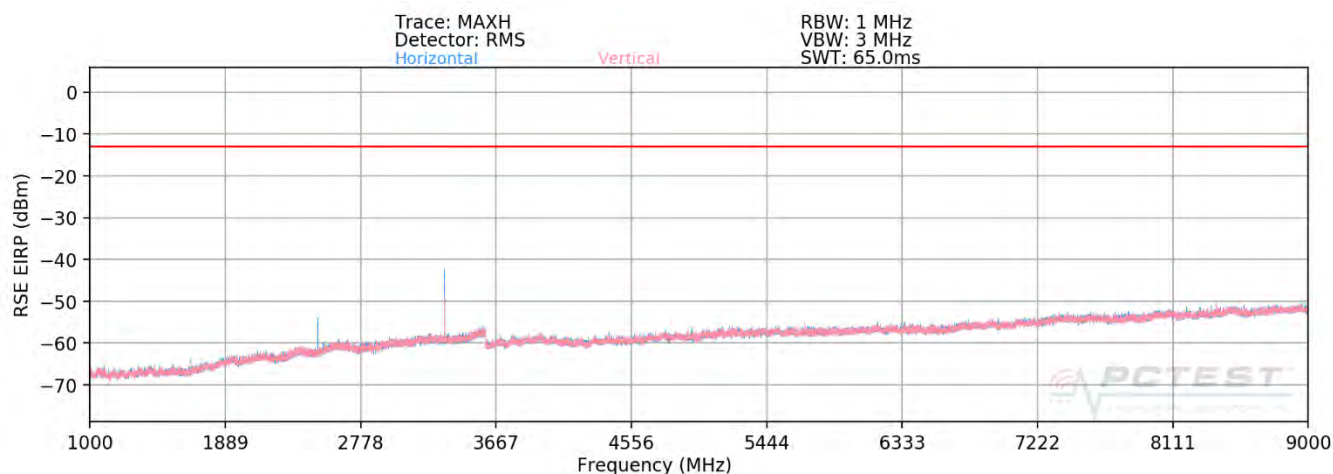
OPERATING FREQUENCY: 784.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 5.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	V	400	71	-59.19	3.66	-55.53	-42.5
3138.00	V	-	-	-58.37	5.76	-52.61	-39.6
3922.50	V	-	-	-59.64	7.26	-52.38	-39.4

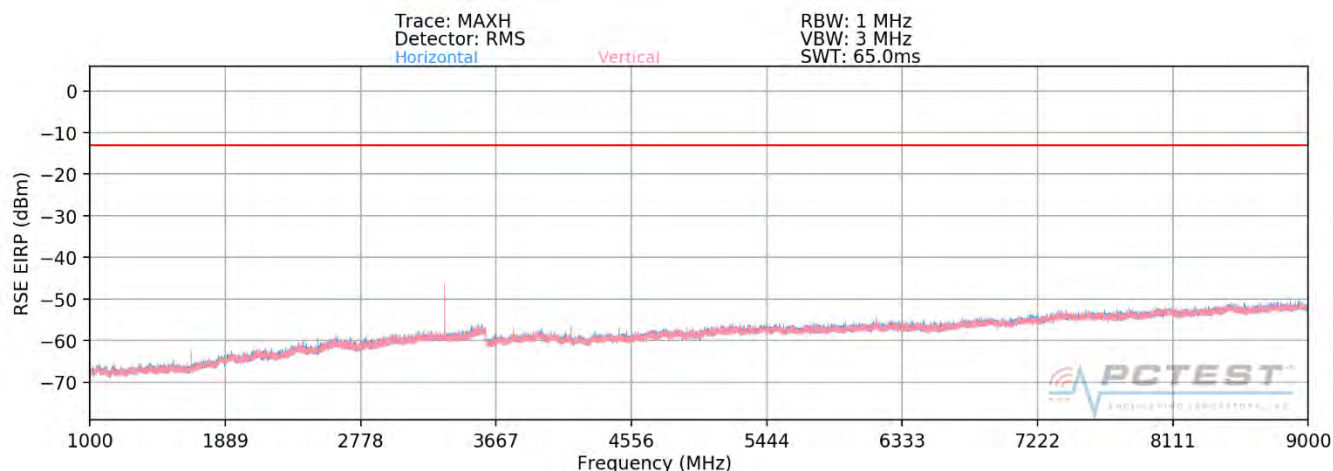
Table 7-18. Radiated Spurious Data with WCP (Band 13 – High Channel - CLOSED)

FCC ID: A3LSMF907N		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 178 of 206

Band 26/5



Plot 7-282. Radiated Spurious Plot above 1GHz (Band 26 - CLOSED)



Plot 7-283. Radiated Spurious Plot above 1GHz (Band 26 - OPEN)

OPERATING FREQUENCY: 829.00 MHz
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	-	-	-69.85	3.61	-66.24	-53.2
2487.00	H	-	-	-67.72	4.25	-63.47	-50.5
3316.00	H	105	237	-61.58	5.83	-55.75	-42.7
4145.00	H	-	-	-69.37	7.66	-61.70	-48.7
4974.00	H	-	-	-69.83	8.56	-61.27	-48.3

Table 7-19. Radiated Spurious Data (Band 26/5 – Low Channel - CLOSED)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 179 of 206

OPERATING FREQUENCY: 836.50 MHz
 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	-	-	-69.84	3.62	-66.22	-53.2
2509.50	H	-	-	-67.72	4.33	-63.39	-50.4
3346.00	H	105	229	-57.21	5.92	-51.30	-38.3
4182.50	H	-	-	-69.10	7.69	-61.41	-48.4
5019.00	H	-	-	-70.09	8.56	-61.53	-48.5

Table 7-20. Radiated Spurious Data (Band 26/5 – Mid Channel - CLOSED)

OPERATING FREQUENCY: 844.00 MHz
 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	-	-	-69.54	3.63	-65.91	-52.9
2532.00	H	-	-	-67.57	4.47	-63.10	-50.1
3376.00	H	102	235	-58.98	6.05	-52.93	-39.9
4220.00	H	-	-	-69.28	7.75	-61.53	-48.5
5064.00	H	-	-	-69.63	8.59	-61.04	-48.0

Table 7-21. Radiated Spurious Data (Band 26/5 – High Channel - CLOSED)

FCC ID: A3LSMF907N		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 180 of 206

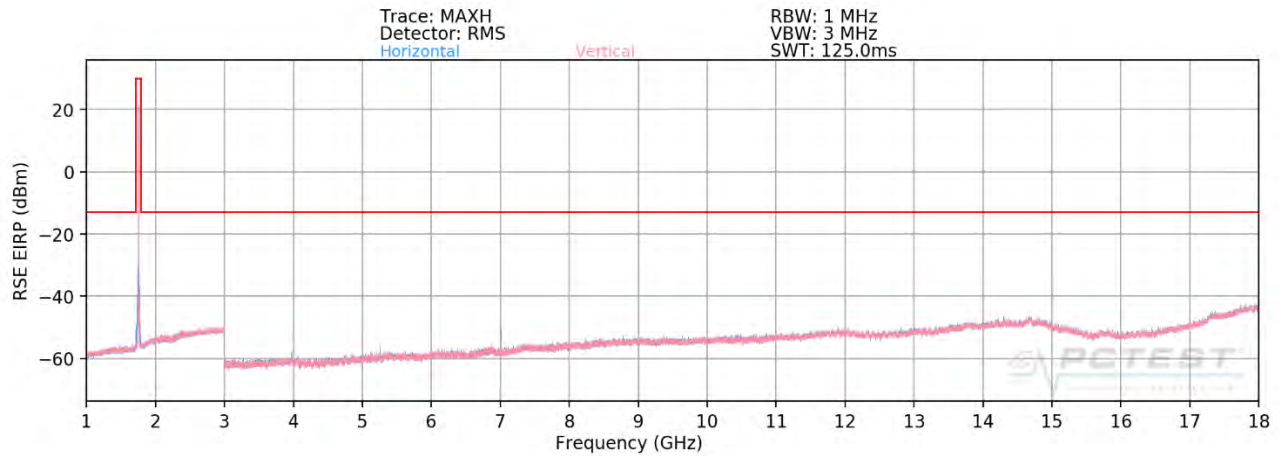
OPERATING FREQUENCY: 836.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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	134	341	-59.34	3.10	-56.24	-43.2
2509.50	H	-	-	-58.43	4.02	-54.41	-41.4
3346.00	H	149	55	-51.96	6.03	-45.93	-32.9
4182.50	H	-	-	-59.41	0.00	-59.41	-46.4
5019.00	H	-	-	-58.38	0.00	-58.38	-45.4

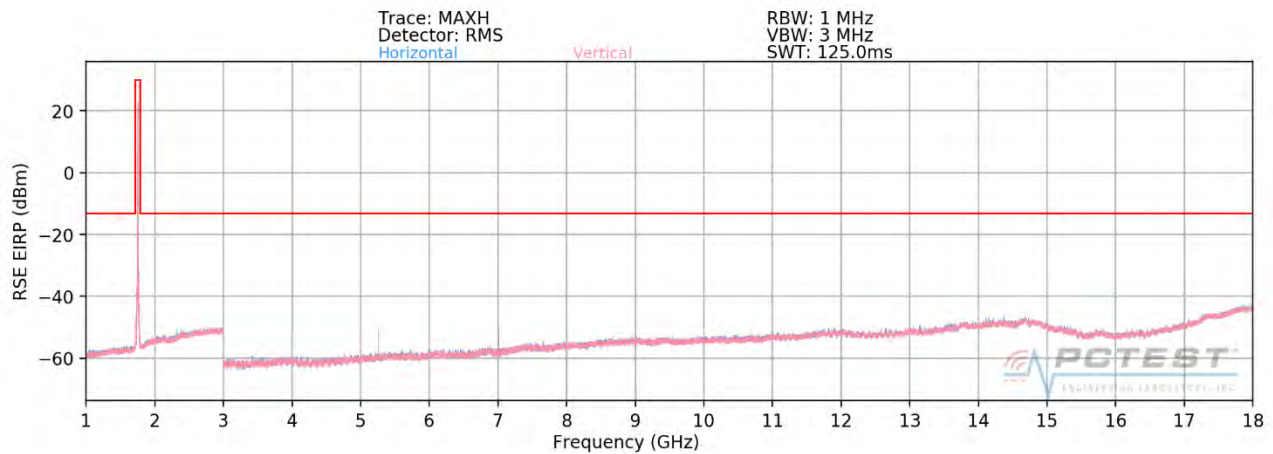
Table 7-22. Radiated Spurious Data with WCP (Band 26/5 – Mid Channel - CLOSED)

FCC ID: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 181 of 206

Band 66/4



Plot 7-284. Radiated Spurious Plot above 1GHz (Band 66/4 - CLOSED)



Plot 7-285. Radiated Spurious Plot above 1GHz (Band 66/4 - OPEN)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 182 of 206

OPERATING FREQUENCY: 1720.00 MHz
 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]
3440.00	H	209	95	-67.38	6.28	-61.10	-48.1
5160.00	H	-	-	-69.49	8.98	-60.51	-47.5
6880.00	H	192	353	-65.34	9.42	-55.92	-42.9
8600.00	H	-	-	-64.89	9.62	-55.27	-42.3
10320.00	H	-	-	-62.58	9.56	-53.01	-40.0

Table 7-23. Radiated Spurious Data (Band 66/4 – Low Channel - OPEN)

OPERATING FREQUENCY: 1745.00 MHz
 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]
3490.00	H	341	149	-68.27	6.47	-61.81	-48.8
5235.00	H	-	-	-69.54	8.97	-60.58	-47.6
6980.00	H	178	3	-66.49	9.23	-57.26	-44.3
8725.00	H	-	-	-65.13	9.59	-55.53	-42.5
10470.00	H	-	-	-62.08	9.43	-52.65	-39.6

Table 7-24. Radiated Spurious Data (Band 66/4 – Mid Channel - OPEN)

FCC ID: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 183 of 206

OPERATING FREQUENCY: 1770.00 MHz
 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]
3540.00	H	-	-	-67.88	6.45	-61.43	-48.4
5310.00	H	-	-	-69.87	9.09	-60.78	-47.8
7080.00	H	224	7	-65.50	9.17	-56.33	-43.3
8850.00	H	-	-	-64.44	9.57	-54.87	-41.9
10620.00	H	-	-	-61.77	9.55	-52.22	-39.2

Table 7-25. Radiated Spurious Data (Band 66/4 – High Channel - OPEN)

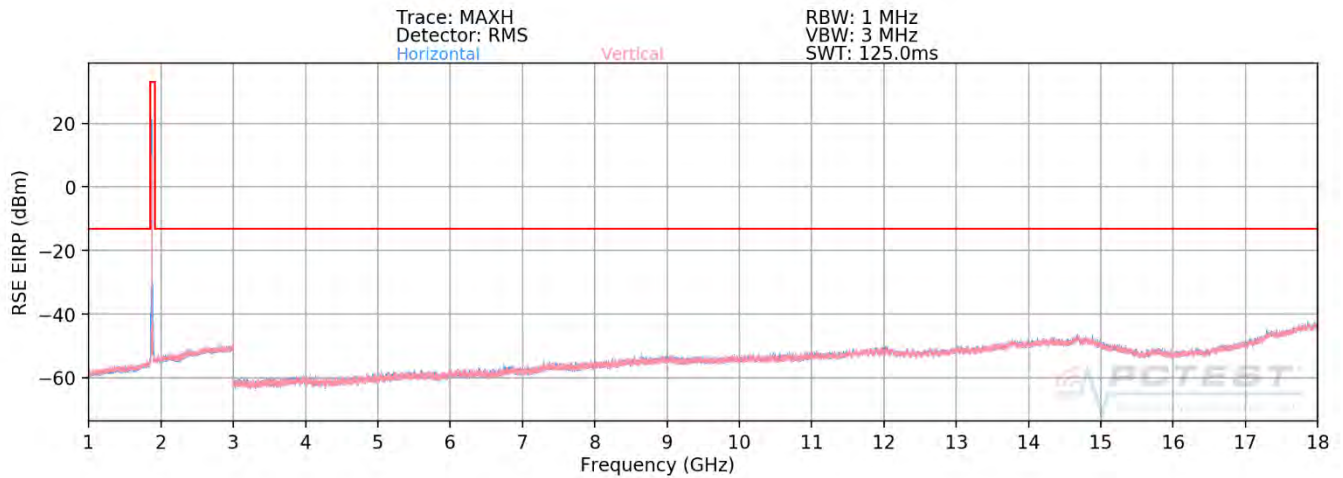
OPERATING FREQUENCY: 1770.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
3540.00	H	-	-	-67.88	6.45	-61.43	-48.4
5310.00	H	-	-	-69.87	9.09	-60.78	-47.8
7080.00	H	224	7	-65.50	9.17	-56.33	-43.3
8850.00	H	-	-	-64.44	9.57	-54.87	-41.9
10620.00	H	-	-	-61.77	9.55	-52.22	-39.2

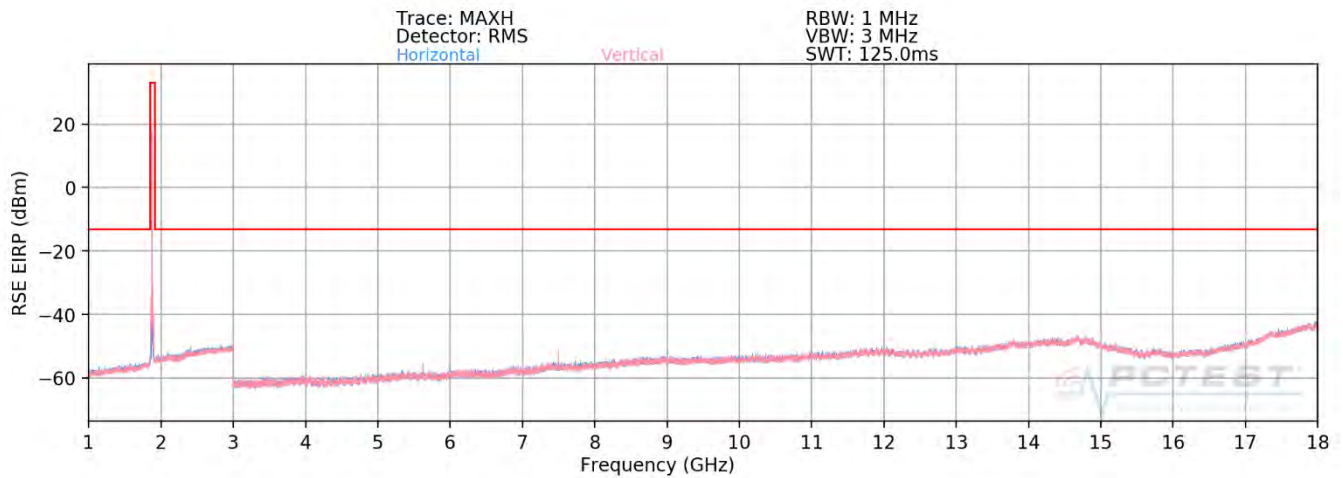
Table 7-26. Radiated Spurious Data with WCP (Band 66/4 – High Channel - OPEN)

FCC ID: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 184 of 206

Band 25/2



Plot 7-286. Radiated Spurious Plot above 1GHz (Band 25/2 - CLOSED)



Plot 7-287. Radiated Spurious Plot above 1GHz (Band 25/2 - OPEN)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 185 of 206

OPERATING FREQUENCY: 1860.00 MHz
 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]
3720.00	V	-	-	-68.50	6.90	-61.60	-48.6
5580.00	V	-	-	-69.37	9.06	-60.31	-47.3
7440.00	V	151	73	-66.17	9.26	-56.91	-43.9
9300.00	V	-	-	-63.28	9.40	-53.88	-40.9
11160.00	V	-	-	-62.13	9.46	-52.66	-39.7

Table 7-27. Radiated Spurious Data (Band 25/2 – Low Channel - OPEN)

OPERATING FREQUENCY: 1882.50 MHz
 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]
3765.00	V	327	294	-68.86	6.94	-61.91	-48.9
5647.50	V	-	-	-69.56	9.17	-60.40	-47.4
7530.00	V	259	23	-64.53	9.31	-55.22	-42.2
9412.50	V	-	-	-63.09	9.50	-53.59	-40.6
11295.00	V	-	-	-60.54	9.49	-51.05	-38.1

Table 7-28. Radiated Spurious Data (Band 25/2 – Mid Channel - OPEN)

FCC ID: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 186 of 206

OPERATING FREQUENCY: 1905.00 MHz
 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]
3810.00	V	-	-	-68.46	7.07	-61.39	-48.4
5715.00	V	-	-	-69.28	9.04	-60.24	-47.2

Table 7-29. Radiated Spurious Data (Band 25/2 – High Channel - OPEN)

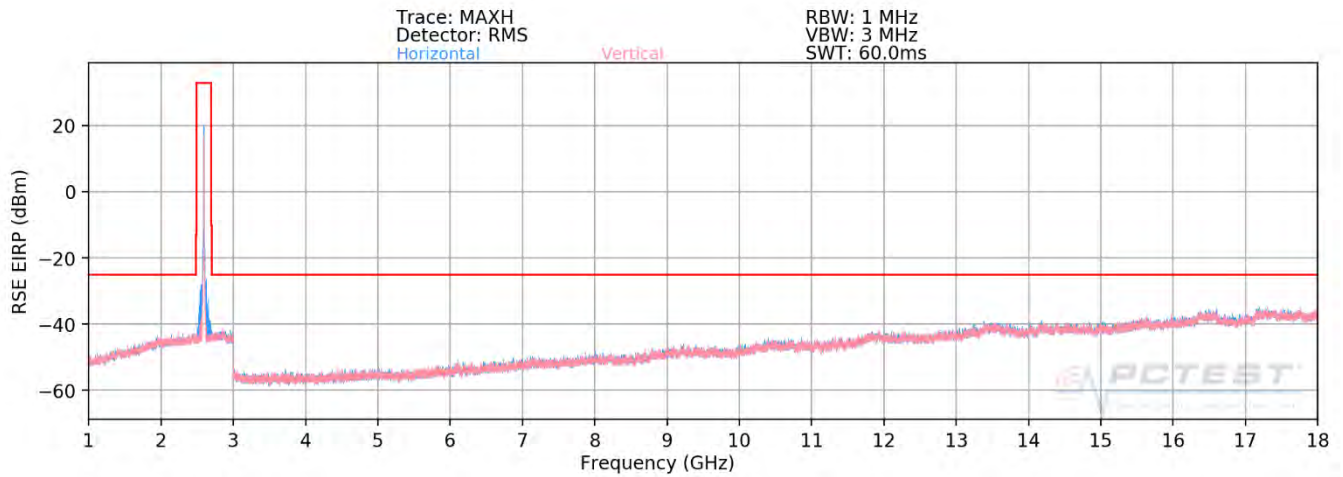
OPERATING FREQUENCY: 1860.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

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]
3720.00	V	-	-	-58.51	6.90	-51.61	-38.6
5580.00	V	-	-	-60.37	9.06	-51.31	-38.3

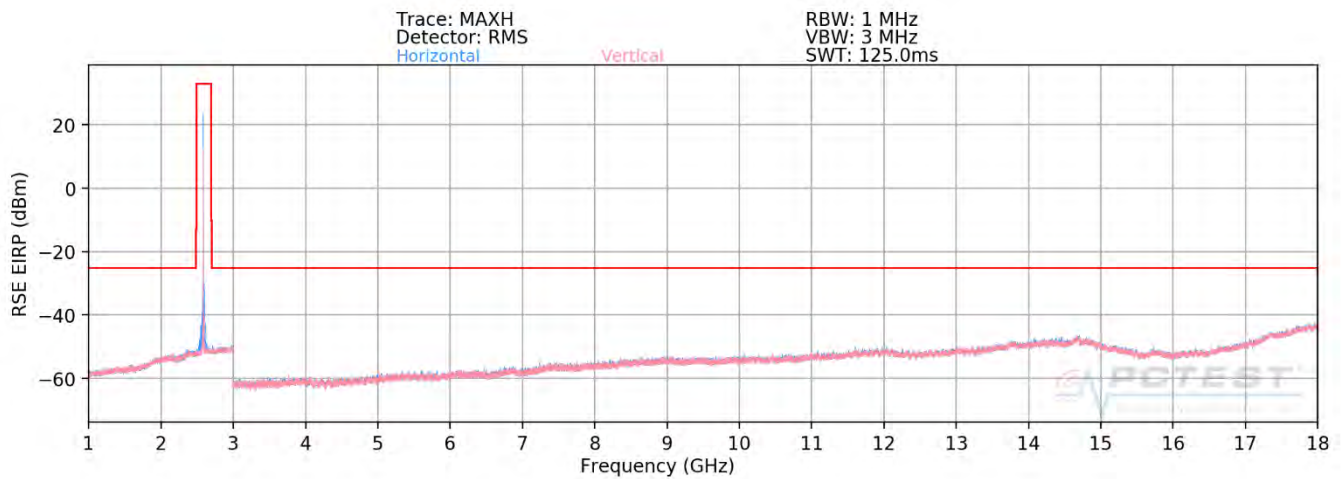
Table 7-30. Radiated Spurious Data with WCP (Band 25/2 – Low Channel - OPEN)

FCC ID: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset	Page 187 of 206

Band 41 PC3

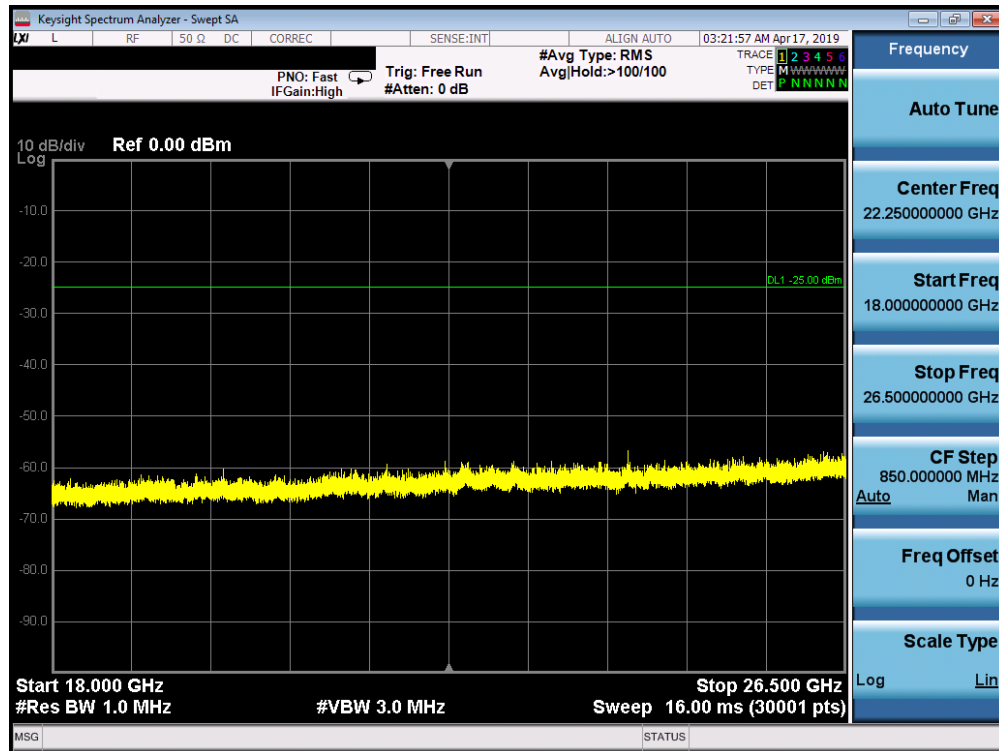


Plot 7-288. Radiated Spurious Plot 1GHz - 18GHz (Band 41 PC3 - CLOSED)

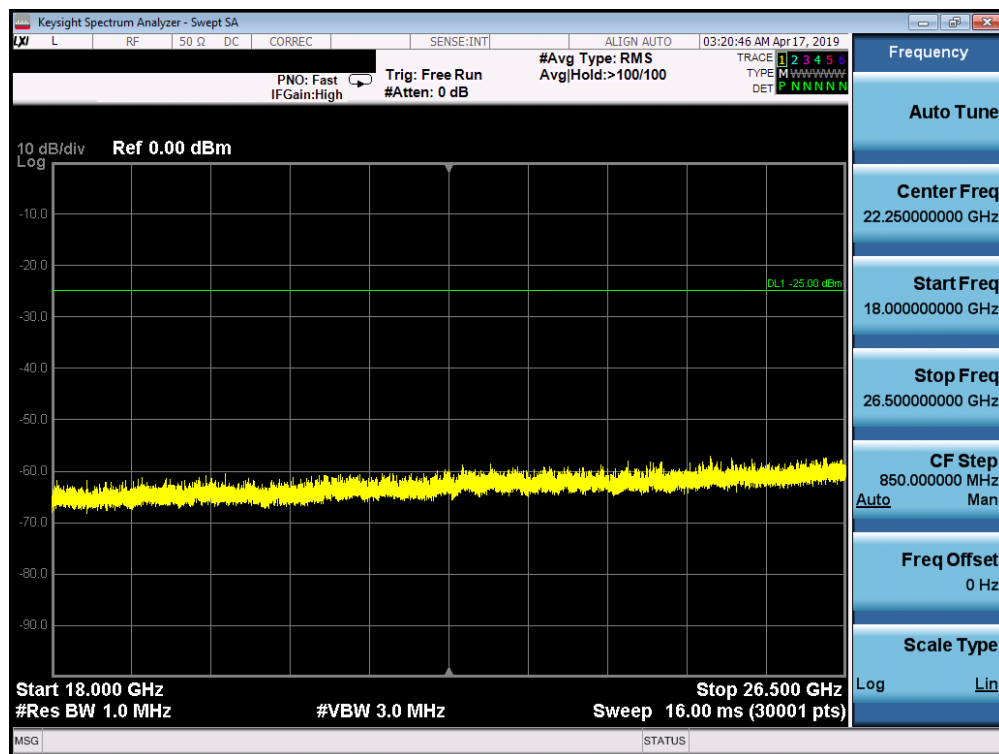


Plot 7-289. Radiated Spurious Plot 1GHz - 18GHz (Band 41 PC3 - OPEN)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1902200029-03.A3L	Test Dates: 01/22- 04/05/2019	EUT Type: Portable Handset		Page 188 of 206

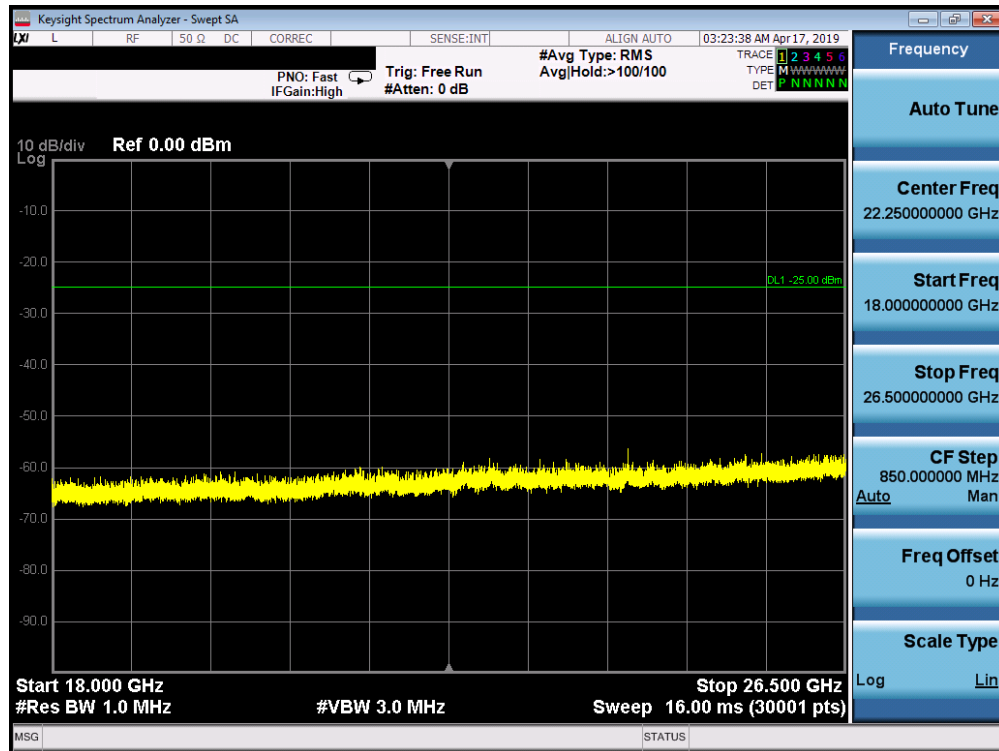


Plot 7-290. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41 PC3 – H - CLOSED)

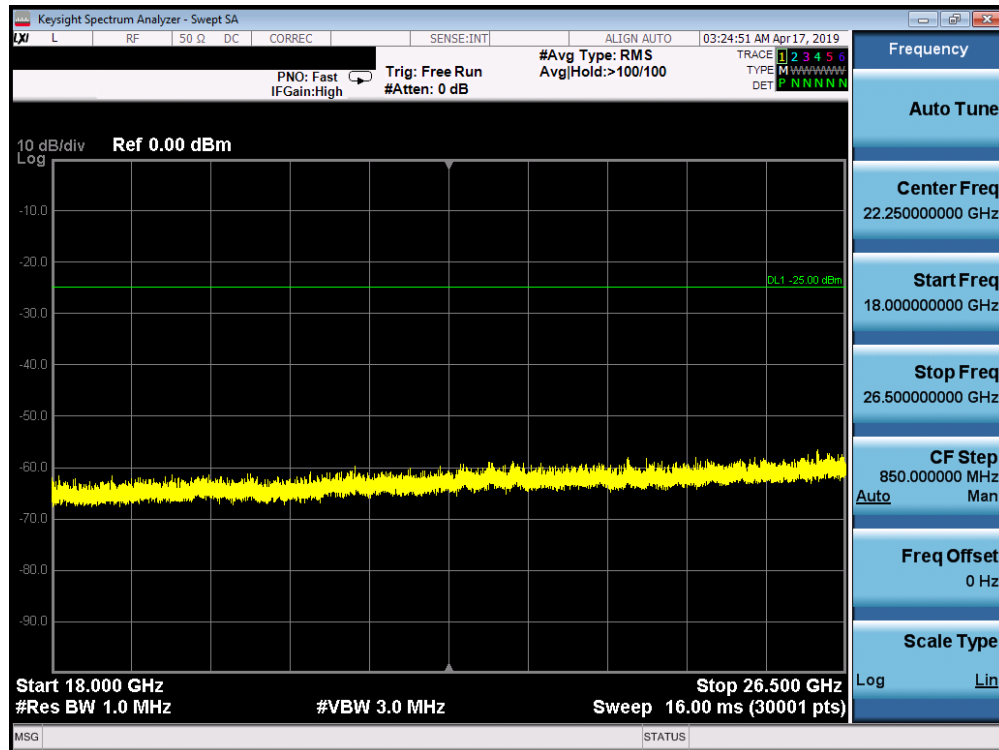


Plot 7-291. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41 PC3 – V - CLOSED)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-292. Radiated Spurious Plot 18GHz - 26.5GHz (Band 41 PC3 - H - OPEN)



Plot 7-293. Radiated Spurious Plot 18GHz - 26.5GHz (Band 41 PC3 - V - OPEN)

FCC ID: A3LSMF907N	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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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	312	203	-72.82	10.88	-61.94	-36.9
7530.00	H	-	-	-69.32	11.13	-58.19	-33.2
10040.00	H	-	-	-68.56	11.99	-56.57	-31.6

Table 7-31. Radiated Spurious Data (Band 41 PC3 – Low Channel - OPEN)

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	-	-	-73.05	10.74	-62.31	-37.3
7779.00	H	-	-	-69.47	11.44	-58.03	-33.0

Table 7-32. Radiated Spurious Data (Band 41 PC3 – Mid Channel - OPEN)

FCC ID: A3LSMF907N		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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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	335	36	-71.54	10.70	-60.84	-35.8
8040.00	H	-	-	-69.62	11.16	-58.46	-33.5
10720.00	H	-	-	-69.35	12.59	-56.75	-31.8

Table 7-33. Radiated Spurious Data (Band 41 PC3 – High Channel - OPEN)

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	335	36	-71.54	10.70	-60.84	-35.8
8040.00	H	-	-	-69.62	11.16	-58.46	-33.5
10720.00	H	-	-	-69.35	12.59	-56.75	-31.8

Table 7-34. Radiated Spurious Data with WCP (Band 41 PC3 – High Channel - OPEN)

FCC ID: A3LSMF907N		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, 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

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Band 12 Frequency Stability Measurements

OPERATING FREQUENCY: 707,500,000 Hz
 CHANNEL: 23790
 REFERENCE VOLTAGE: 4.27 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.27	- 30	707,500,282	282	0.0000399
100 %		- 20	707,500,246	246	0.0000348
100 %		- 10	707,500,014	14	0.0000020
100 %		0	707,499,940	-60	-0.0000085
100 %		+ 10	707,499,988	-12	-0.0000017
100 %		+ 20	707,499,918	-82	-0.0000116
100 %		+ 30	707,500,007	7	0.0000010
100 %		+ 40	707,499,769	-231	-0.0000327
100 %		+ 50	707,499,863	-137	-0.0000194
BATT. ENDPOINT	3.45	+ 20	707,500,196	196	0.0000277

Table 7-35. 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: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Band 12 Frequency Stability Measurements

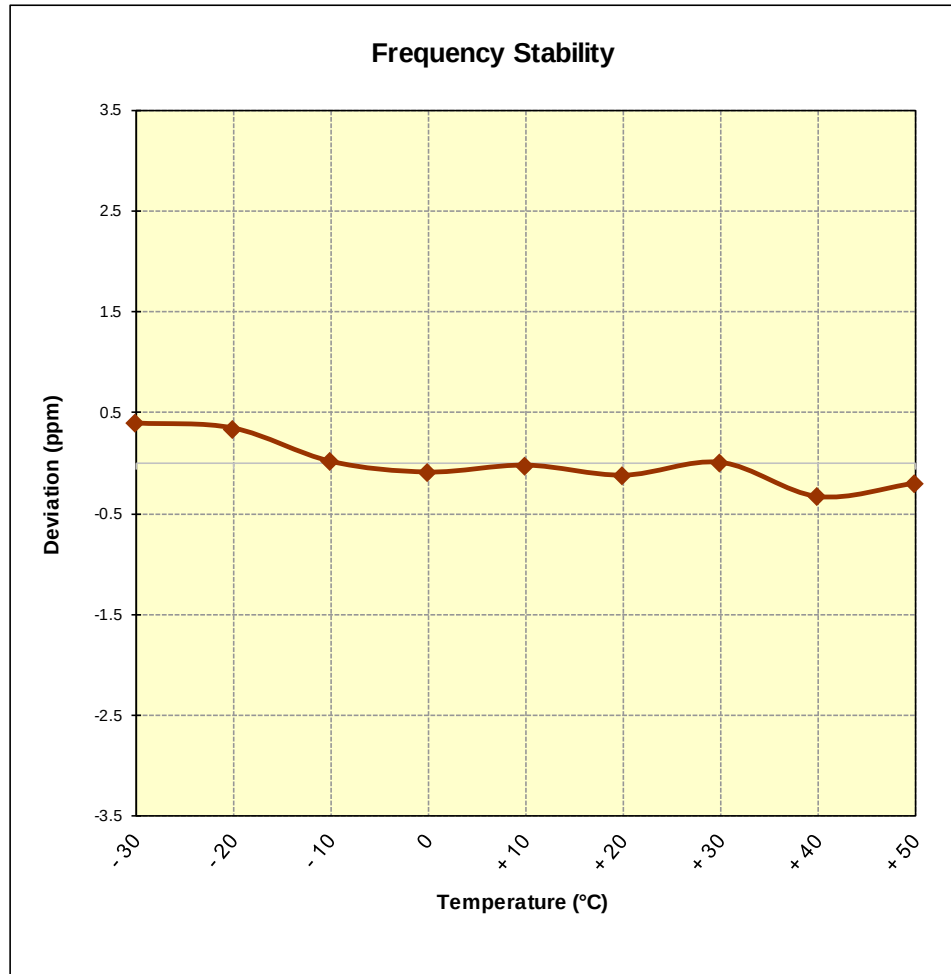


Figure 7-8. Frequency Stability Graph (Band 12)

FCC ID: A3LSMF907N		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 13 Frequency Stability Measurements

OPERATING FREQUENCY: 782,000,000 Hz
 CHANNEL: 23230
 REFERENCE VOLTAGE: 4.27 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.27	- 30	781,999,848	-152	-0.0000194
100 %		- 20	782,000,201	201	0.0000257
100 %		- 10	782,000,136	136	0.0000174
100 %		0	781,999,833	-167	-0.0000214
100 %		+ 10	782,000,106	106	0.0000136
100 %		+ 20	781,999,981	-19	-0.0000024
100 %		+ 30	781,999,817	-183	-0.0000234
100 %		+ 40	781,999,727	-273	-0.0000349
100 %		+ 50	781,999,587	-413	-0.0000528
BATT. ENDPOINT	3.45	+ 20	781,999,970	-30	-0.0000038

Table 7-36. 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: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Band 13 Frequency Stability Measurements

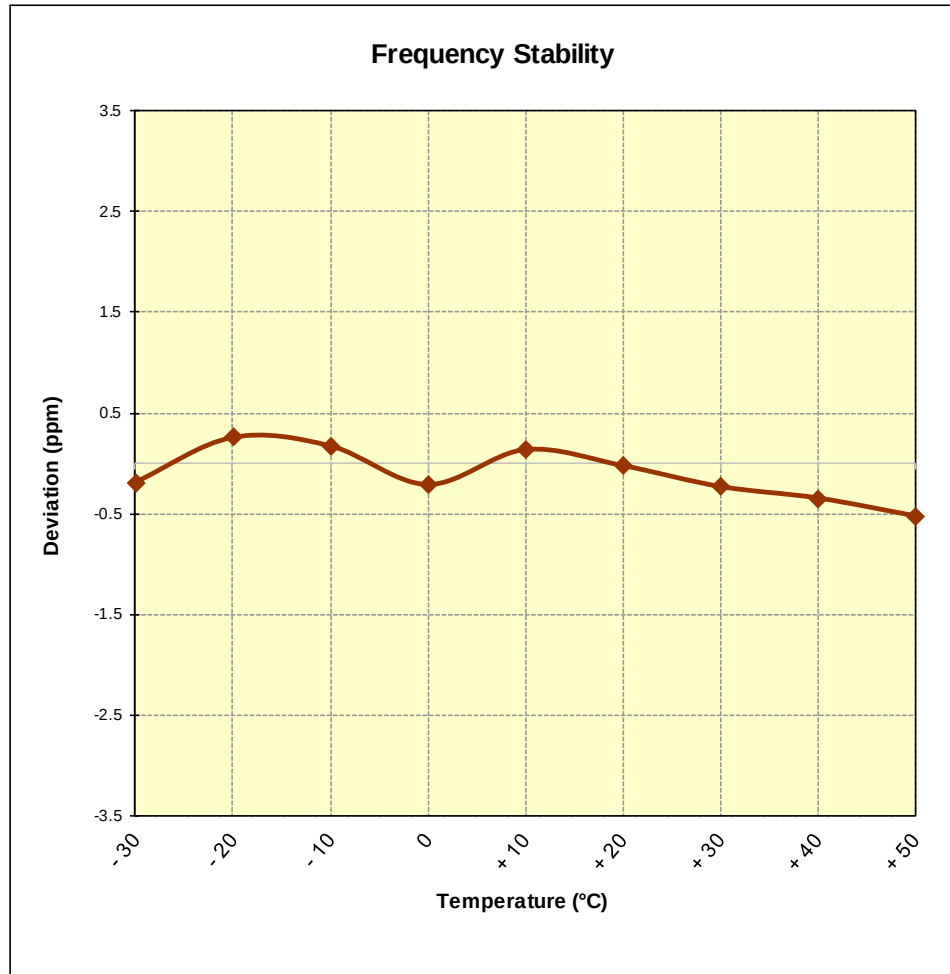


Figure 7-9. Frequency Stability Graph (Band 13)

FCC ID: A3LSMF907N		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 26/5 Frequency Stability Measurements

OPERATING FREQUENCY: 831,500,000 Hz
 CHANNEL: 26865
 REFERENCE VOLTAGE: 4.27 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.27	- 30	831,500,270	270	0.0000325
100 %		- 20	831,500,222	222	0.0000267
100 %		- 10	831,499,864	-136	-0.0000164
100 %		0	831,500,015	15	0.0000018
100 %		+ 10	831,499,857	-143	-0.0000172
100 %		+ 20	831,499,852	-148	-0.0000178
100 %		+ 30	831,500,042	42	0.0000051
100 %		+ 40	831,499,903	-97	-0.0000117
100 %		+ 50	831,499,991	-9	-0.0000011
BATT. ENDPOINT	3.45	+ 20	831,500,053	53	0.0000064

Table 7-37. Frequency Stability Data (Band 26/5)

FCC ID: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Band 26/5 Frequency Stability Measurements

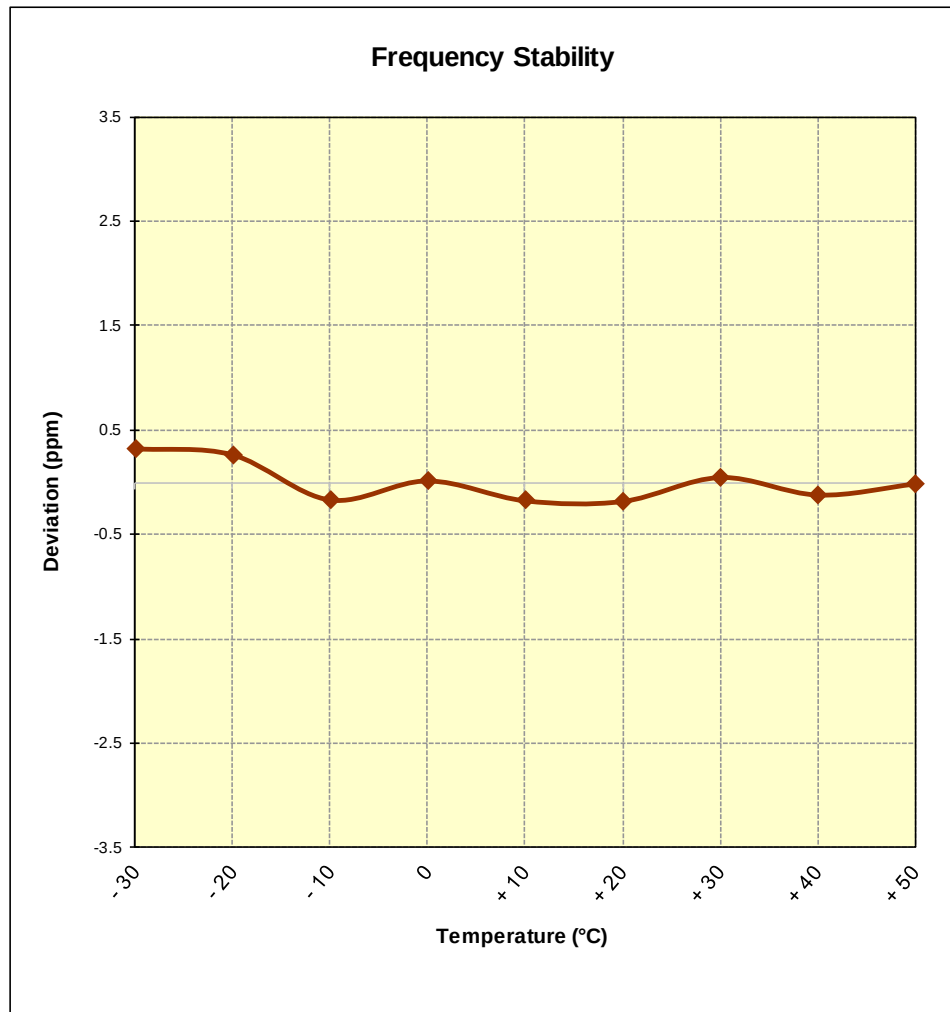


Figure 7-10. Frequency Stability Graph (Band 26/5)

FCC ID: A3LSMF907N		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: 4.27 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.27	- 30	1,745,000,067	67	0.0000038
100 %		- 20	1,745,000,097	97	0.0000056
100 %		- 10	1,744,999,983	-17	-0.0000010
100 %		0	1,744,999,979	-21	-0.0000012
100 %		+ 10	1,745,000,347	347	0.0000199
100 %		+ 20	1,745,000,162	162	0.0000093
100 %		+ 30	1,744,999,932	-68	-0.0000039
100 %		+ 40	1,745,000,038	38	0.0000022
100 %		+ 50	1,744,999,786	-214	-0.0000123
BATT. ENDPOINT	3.45	+ 20	1,744,999,569	-431	-0.0000247

Table 7-38. 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: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Band 66/4 Frequency Stability Measurements

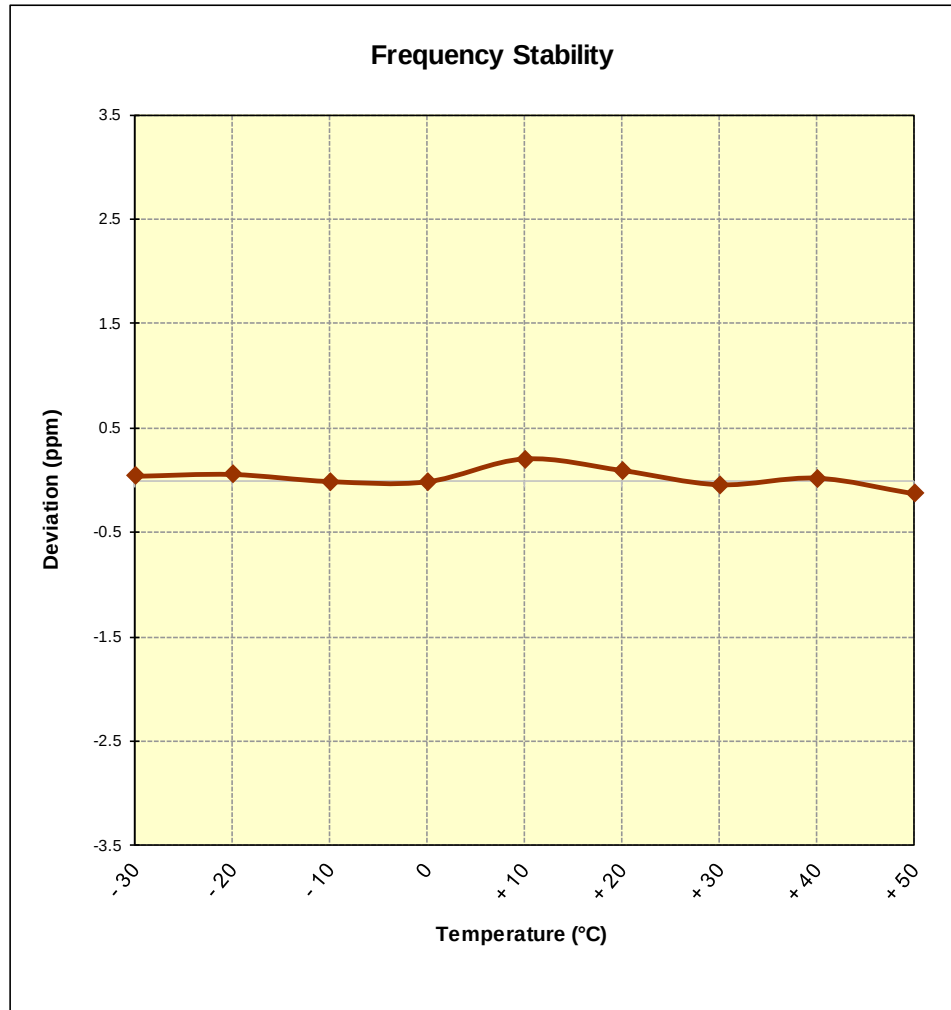


Figure 7-11. Frequency Stability Graph (Band 66/4)

FCC ID: A3LSMF907N		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Band 25/2 Frequency Stability Measurements

OPERATING FREQUENCY: 1,882,500,000 Hz
 CHANNEL: 26365
 REFERENCE VOLTAGE: 4.27 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.27	- 30	1,882,499,839	-161	-0.0000086
100 %		- 20	1,882,499,897	-103	-0.0000055
100 %		- 10	1,882,500,056	56	0.0000030
100 %		0	1,882,500,181	181	0.0000096
100 %		+ 10	1,882,500,192	192	0.0000102
100 %		+ 20	1,882,499,955	-45	-0.0000024
100 %		+ 30	1,882,500,051	51	0.0000027
100 %		+ 40	1,882,500,067	67	0.0000036
100 %		+ 50	1,882,500,057	57	0.0000030
BATT. ENDPOINT	3.45	+ 20	1,882,499,962	-38	-0.0000020

Table 7-39. Frequency Stability Data (Band 25/2)

FCC ID: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Band 25/2 Frequency Stability Measurements

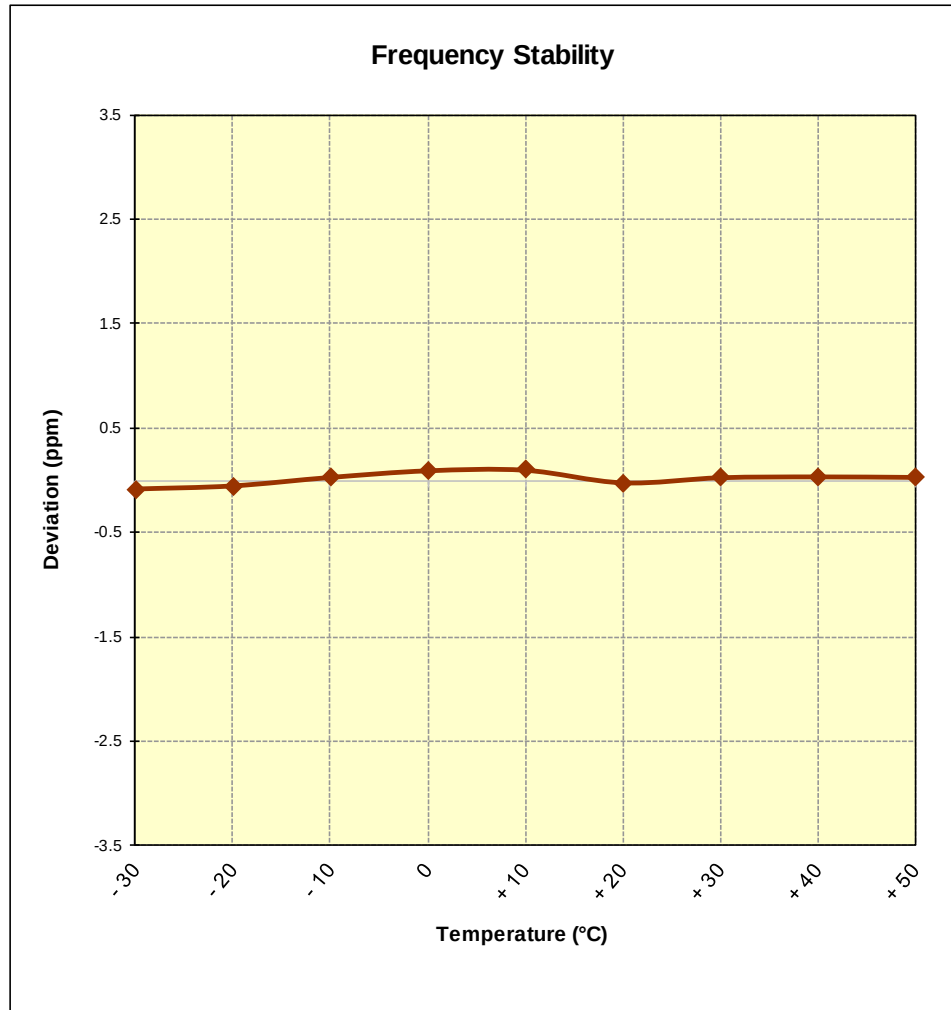


Figure 7-12. Frequency Stability Graph (Band 25/2)

FCC ID: A3LSMF907N		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: 4.27 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.27	- 30	2,593,000,166	166	0.0000064
100 %		- 20	2,593,000,280	280	0.0000108
100 %		- 10	2,592,999,853	-147	-0.0000057
100 %		0	2,593,000,123	123	0.0000047
100 %		+ 10	2,592,999,808	-192	-0.0000074
100 %		+ 20	2,593,000,020	20	0.0000008
100 %		+ 30	2,593,000,086	86	0.0000033
100 %		+ 40	2,592,999,929	-71	-0.0000027
100 %		+ 50	2,593,000,420	420	0.0000162
BATT. ENDPOINT	3.45	+ 20	2,592,999,779	-221	-0.0000085

Table 7-40. 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: A3LSMF907N	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
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Band 41 Frequency Stability Measurements

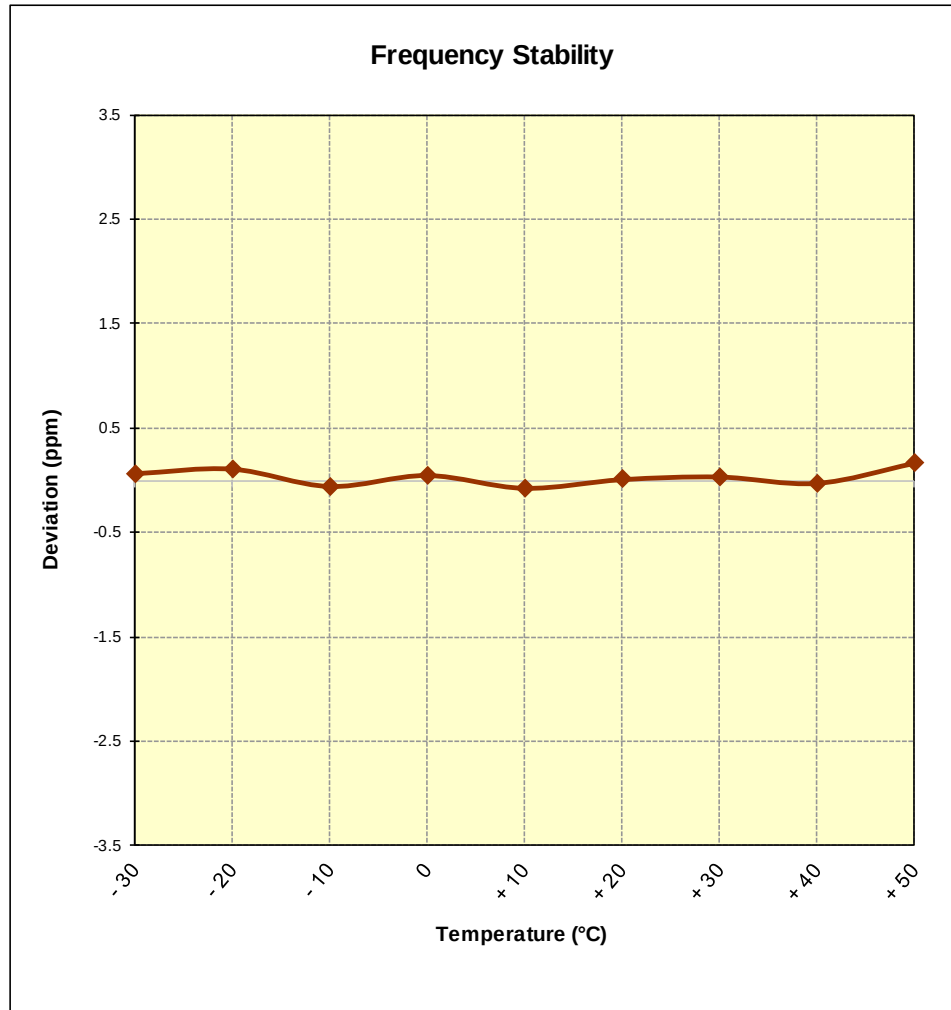


Figure 7-13. Frequency Stability Graph (Band 41)

FCC ID: A3LSMF907N		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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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: A3LSMF907N** complies with all the requirements of Part of the FCC Rules for LTE operation only.

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