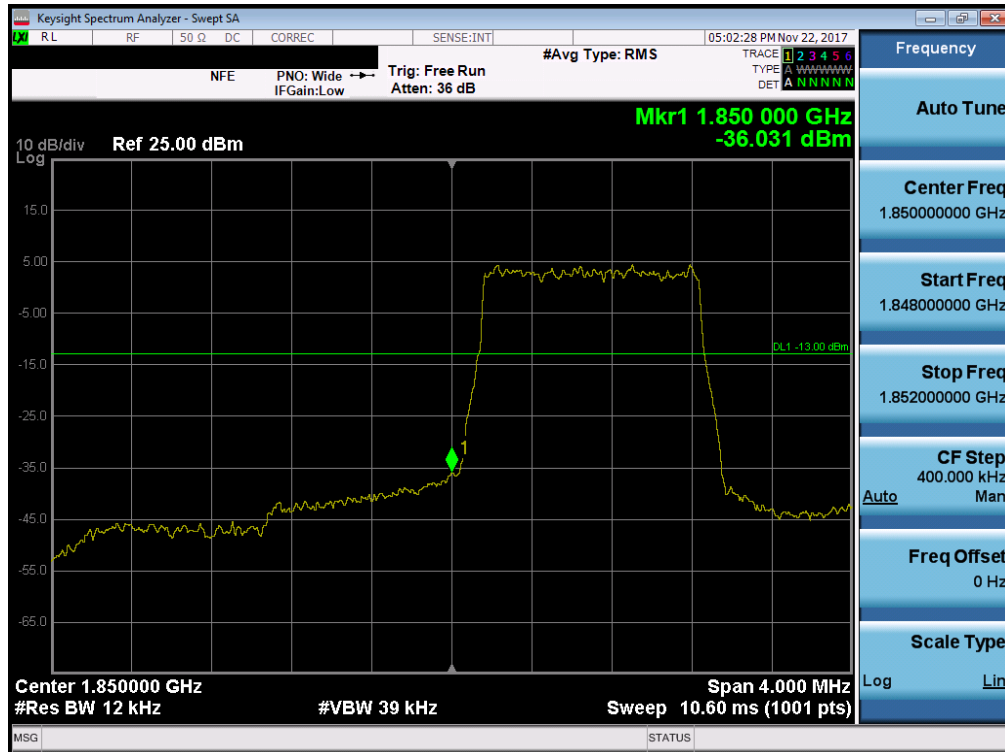
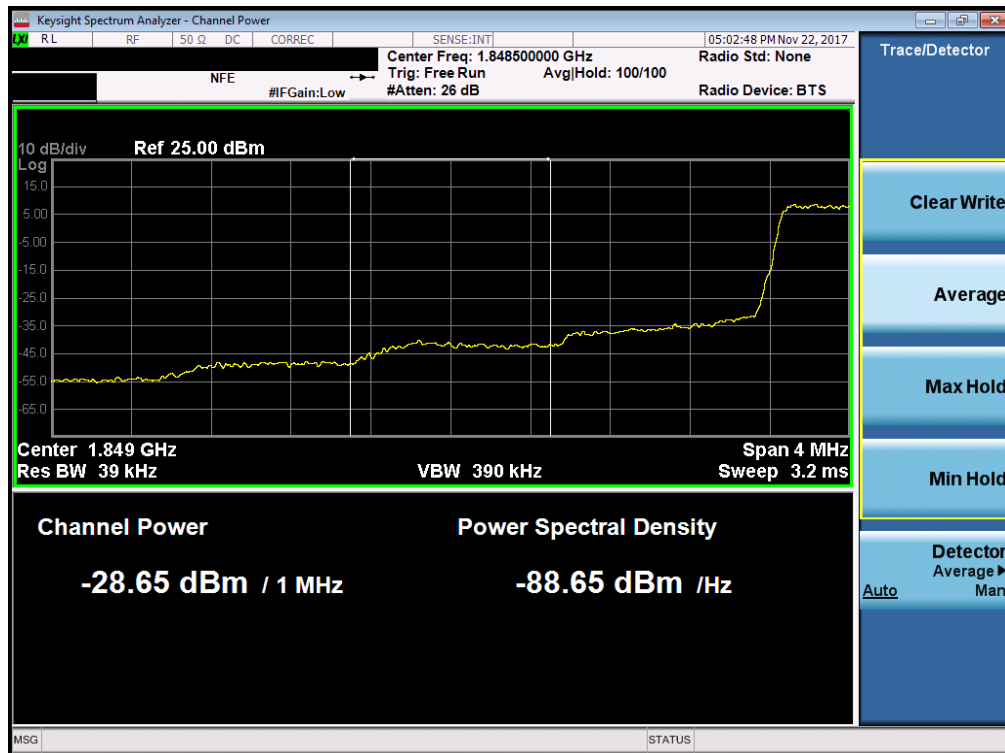


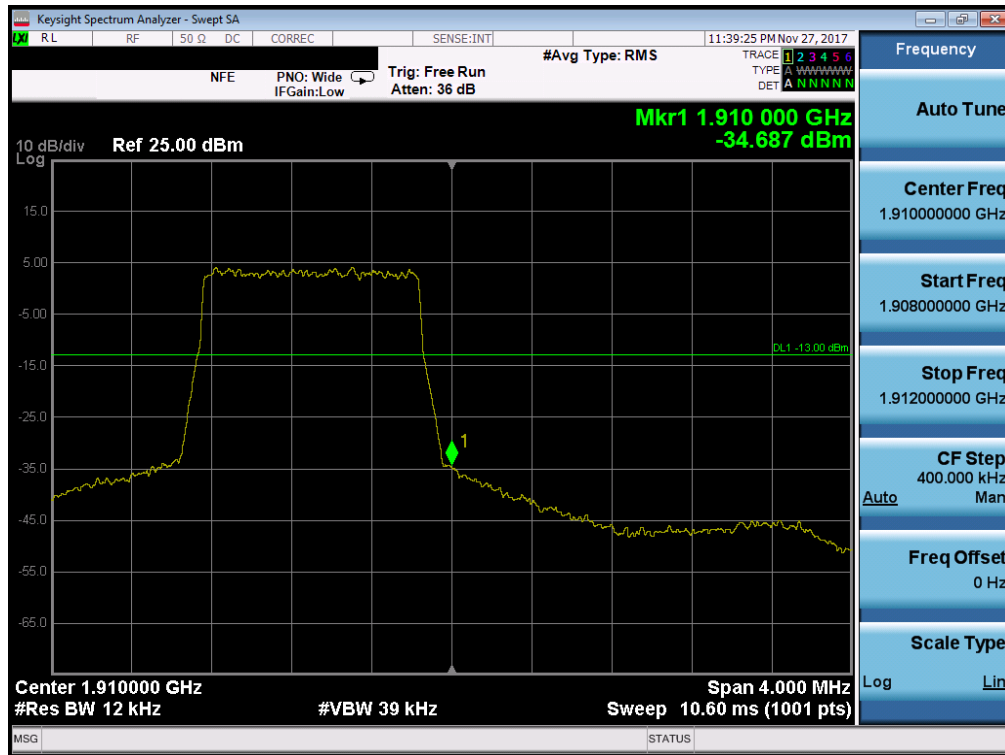


Plot 7-194. Lower Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

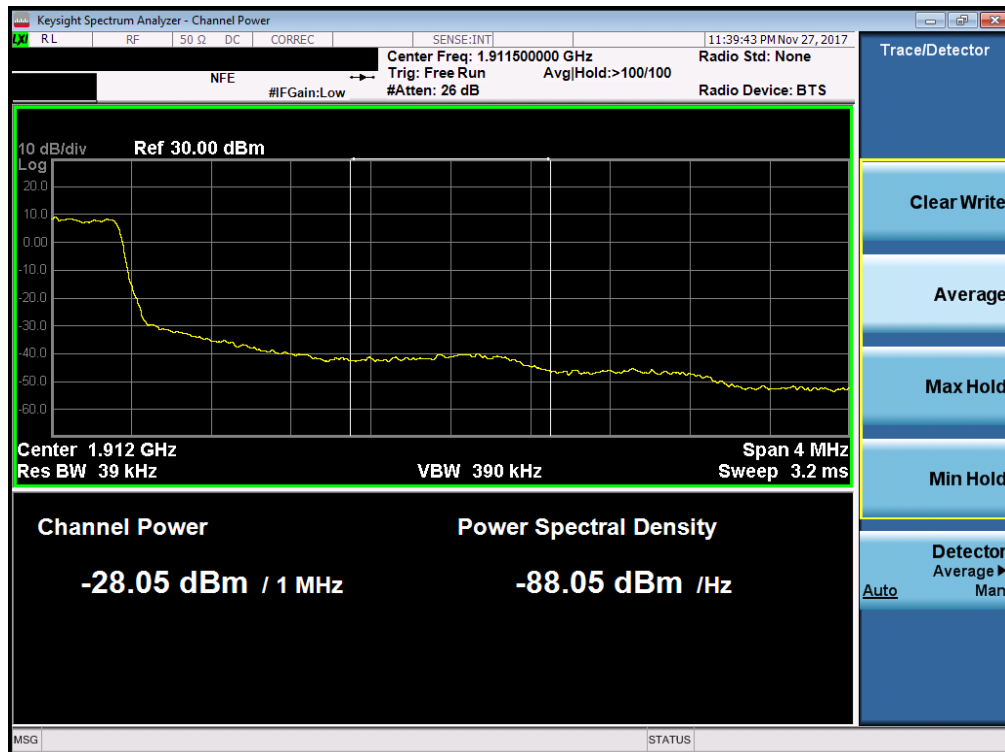


FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 120 of 204

Plot 7-195. Lower Extended Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

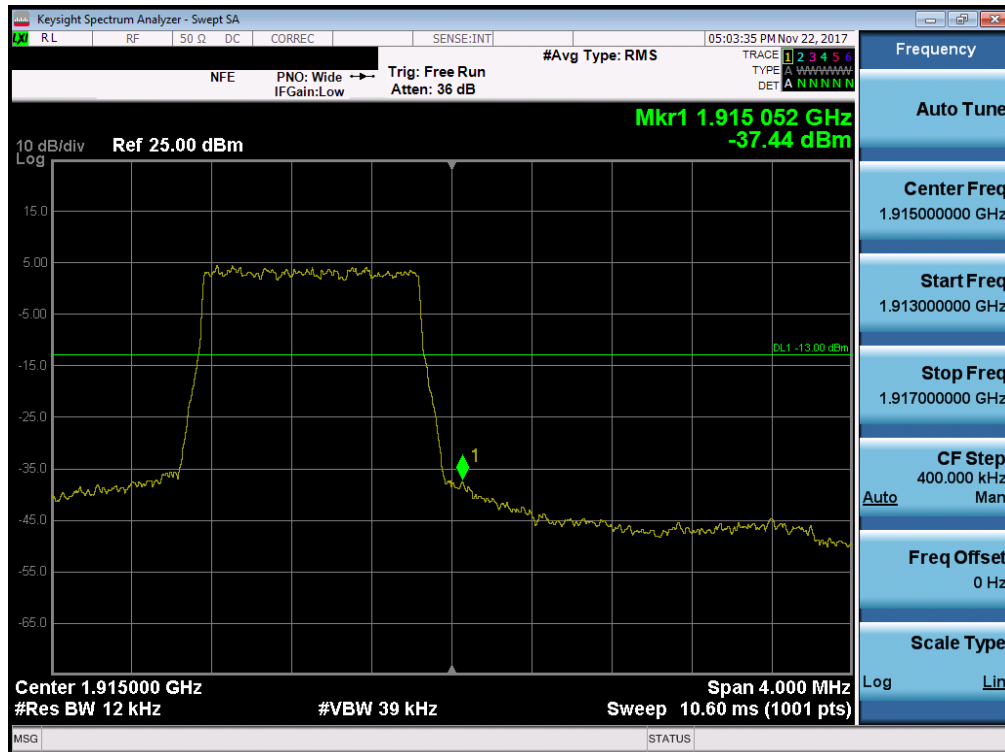


Plot 7-196. Upper Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

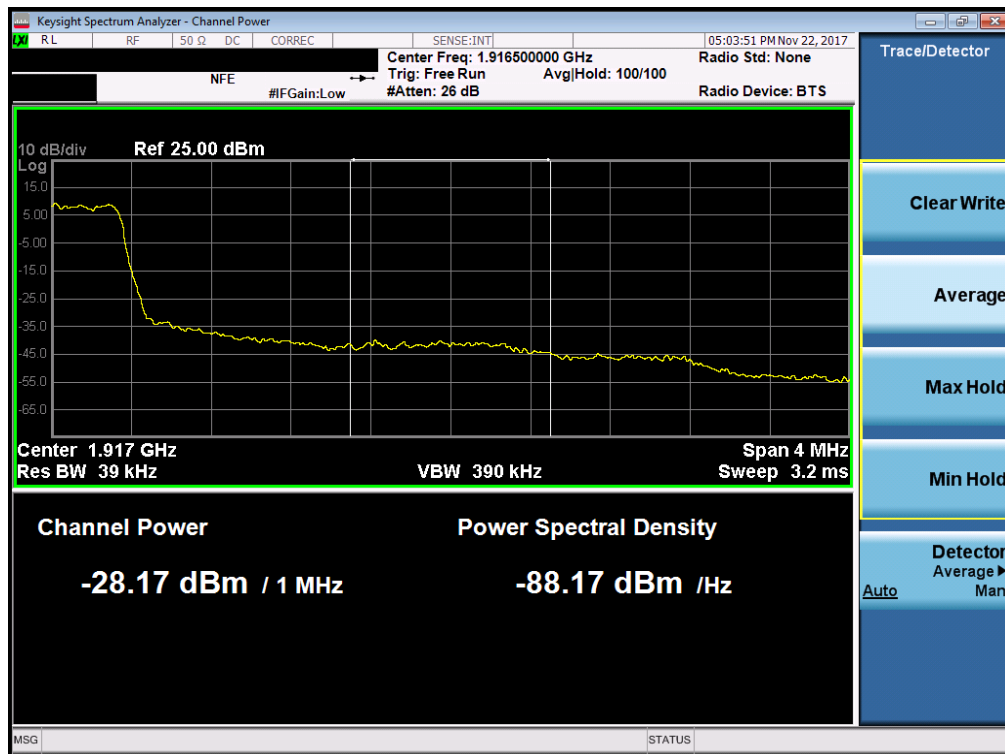


Plot 7-197. Upper Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 121 of 204

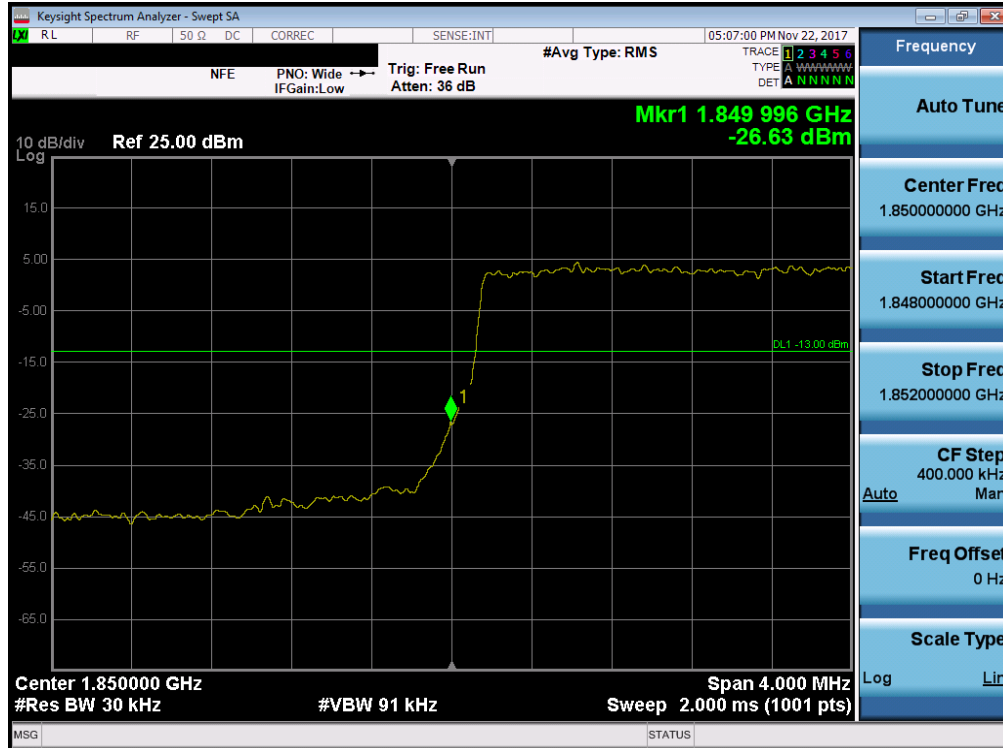


Plot 7-198. Upper Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

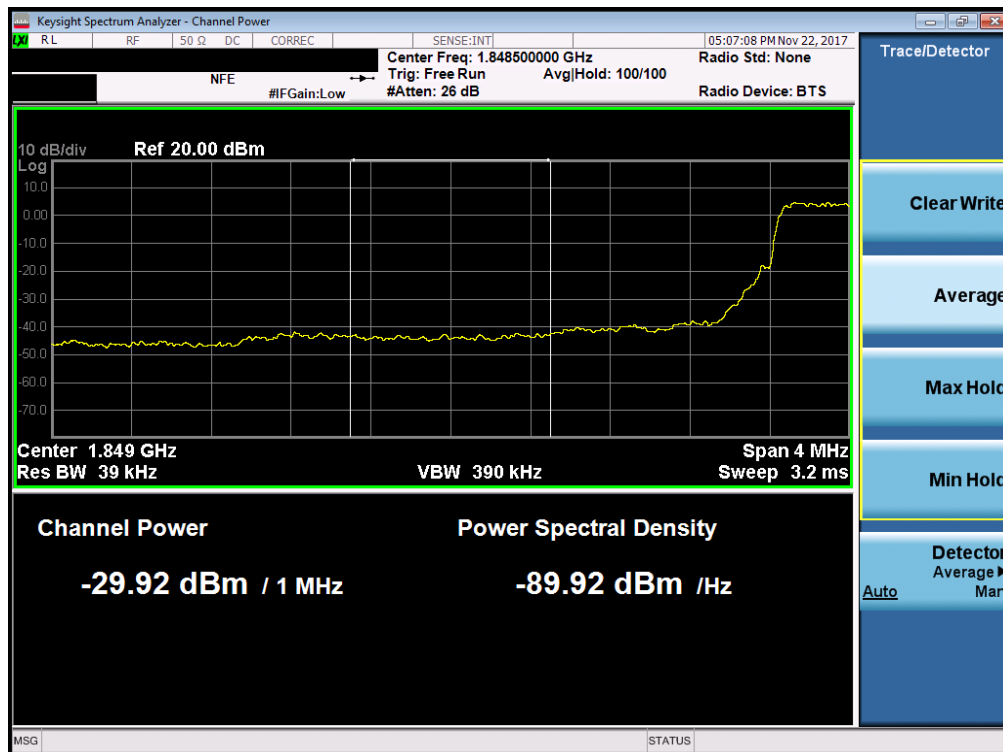


Plot 7-199. Upper Extended Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 122 of 204

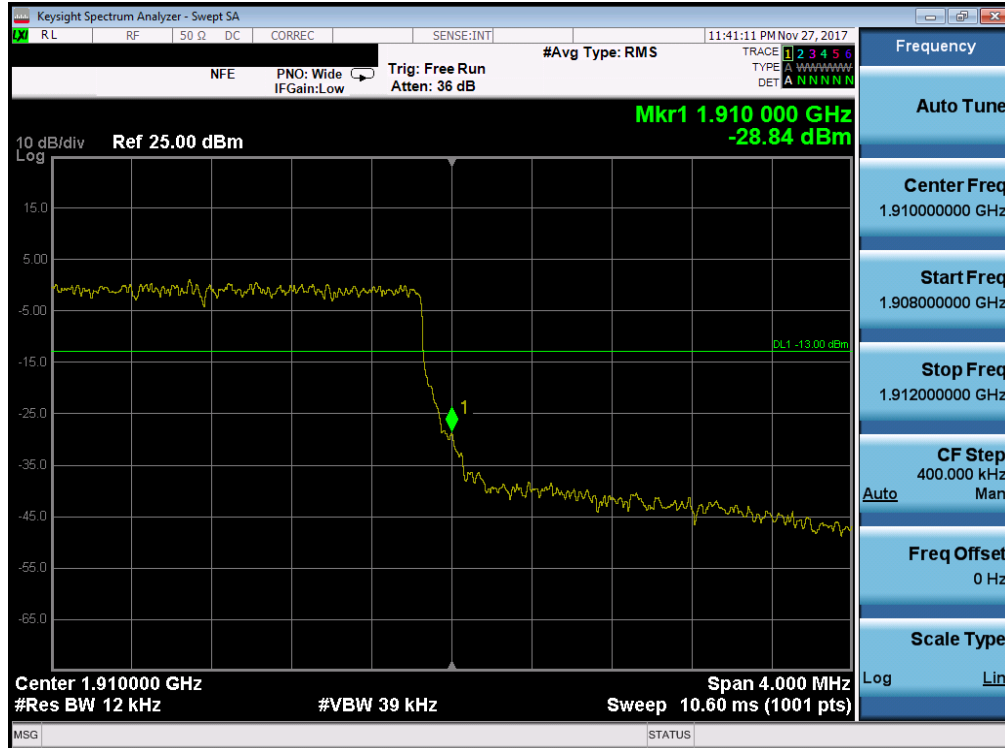


Plot 7-200. Lower Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

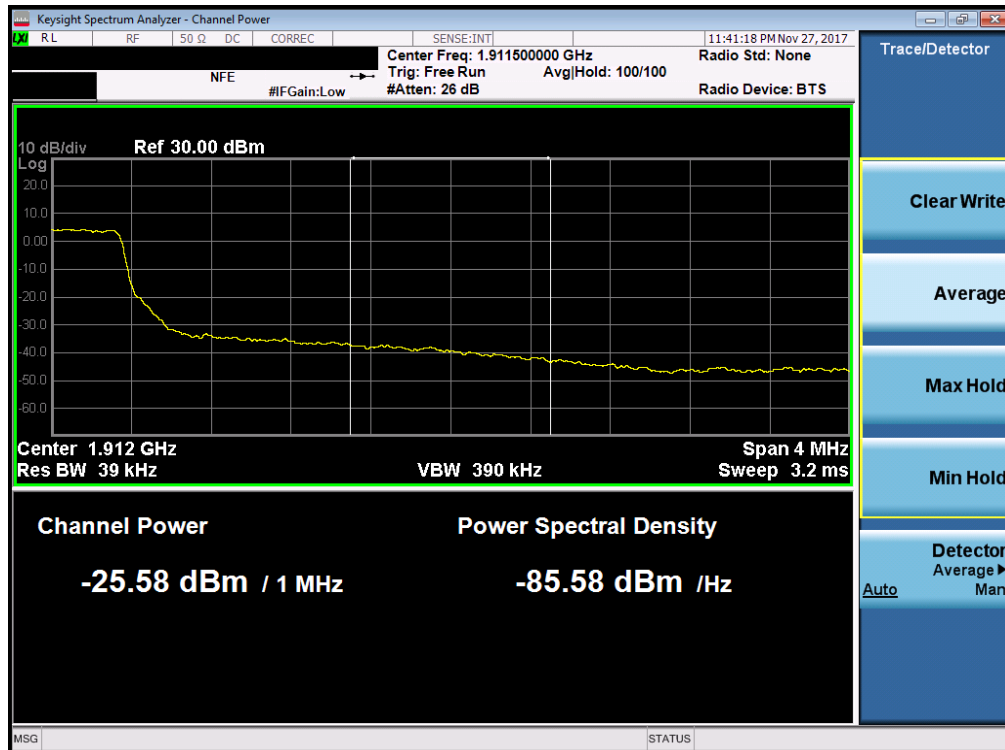


Plot 7-201. Lower Extended Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 123 of 204	



Plot 7-202. Upper Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

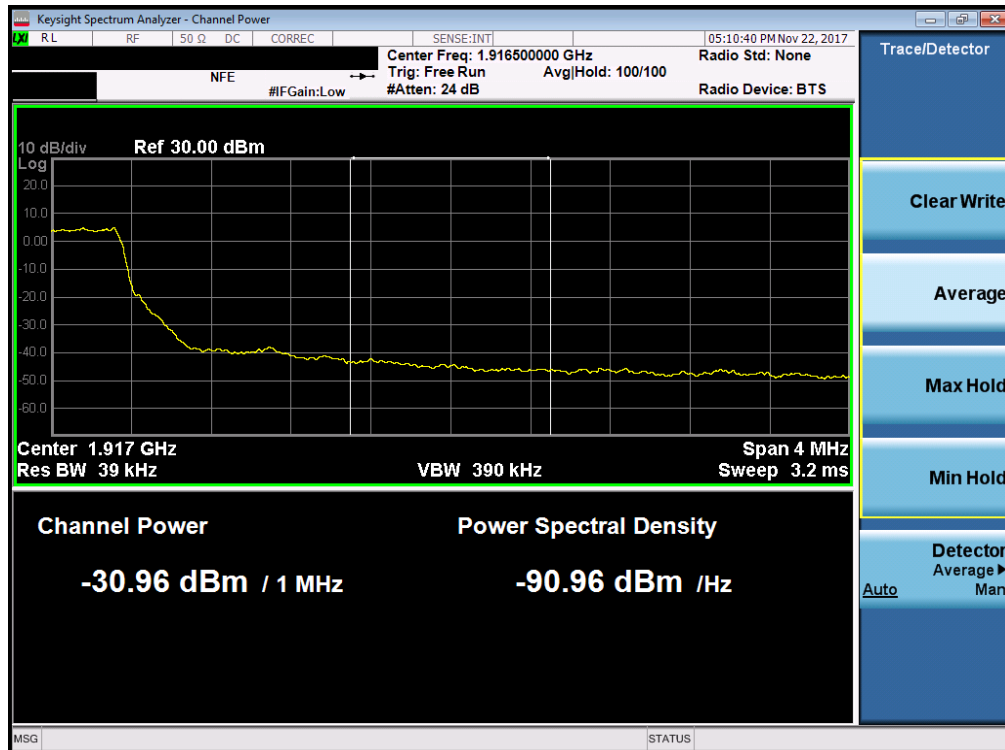


Plot 7-203. Upper Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 124 of 204

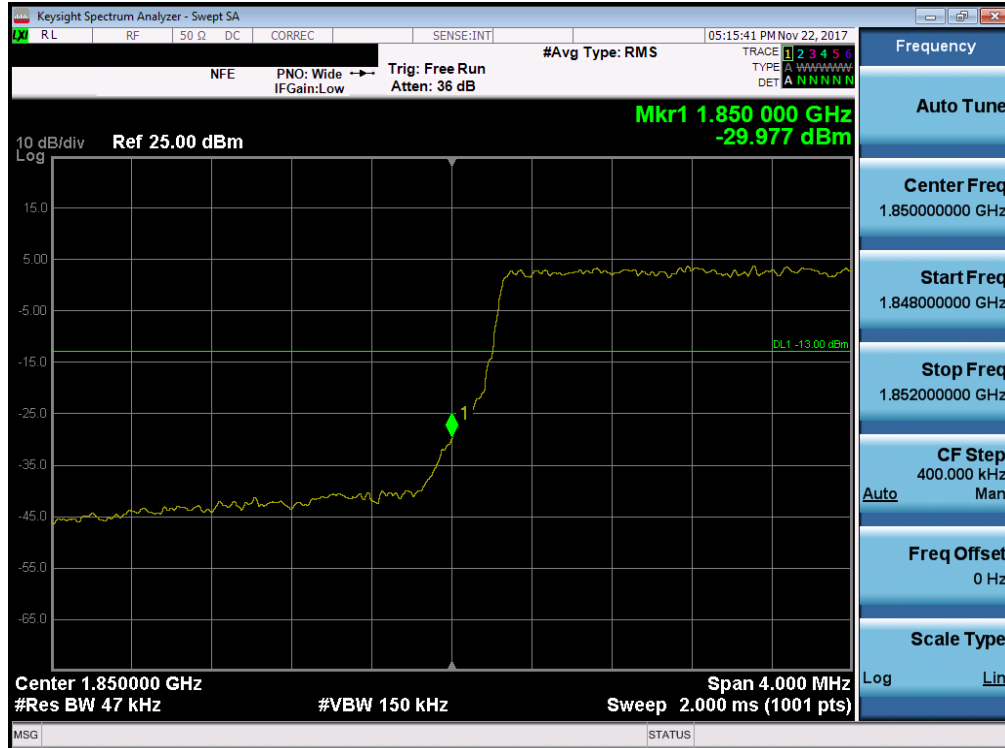


Plot 7-204. Upper Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

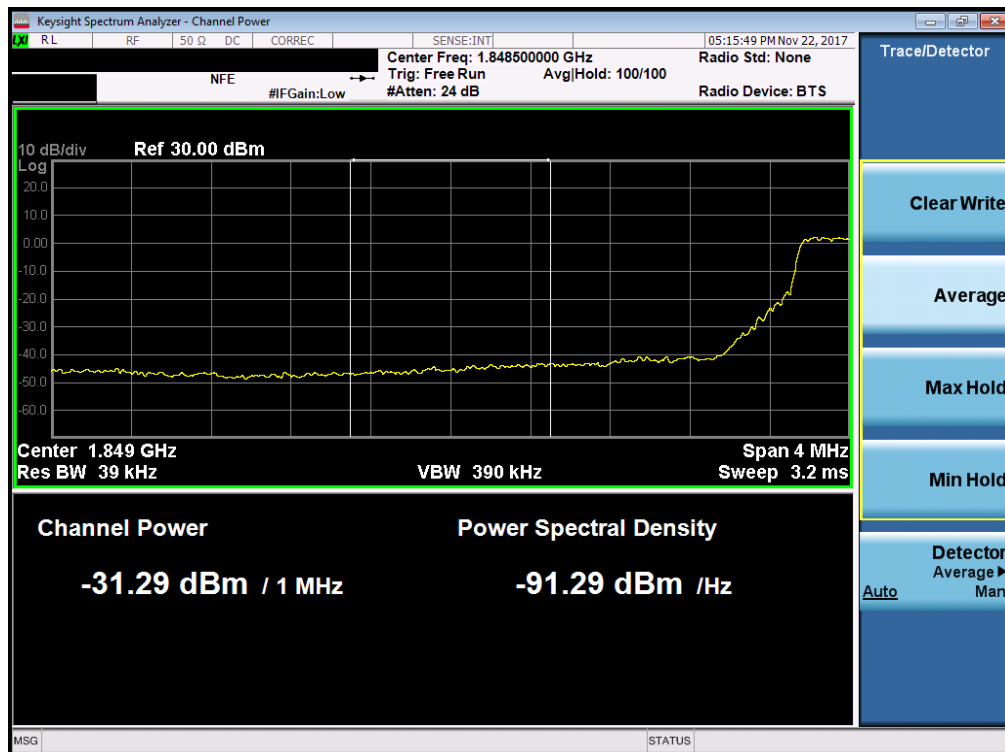


Plot 7-205. Upper Extended Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 125 of 204

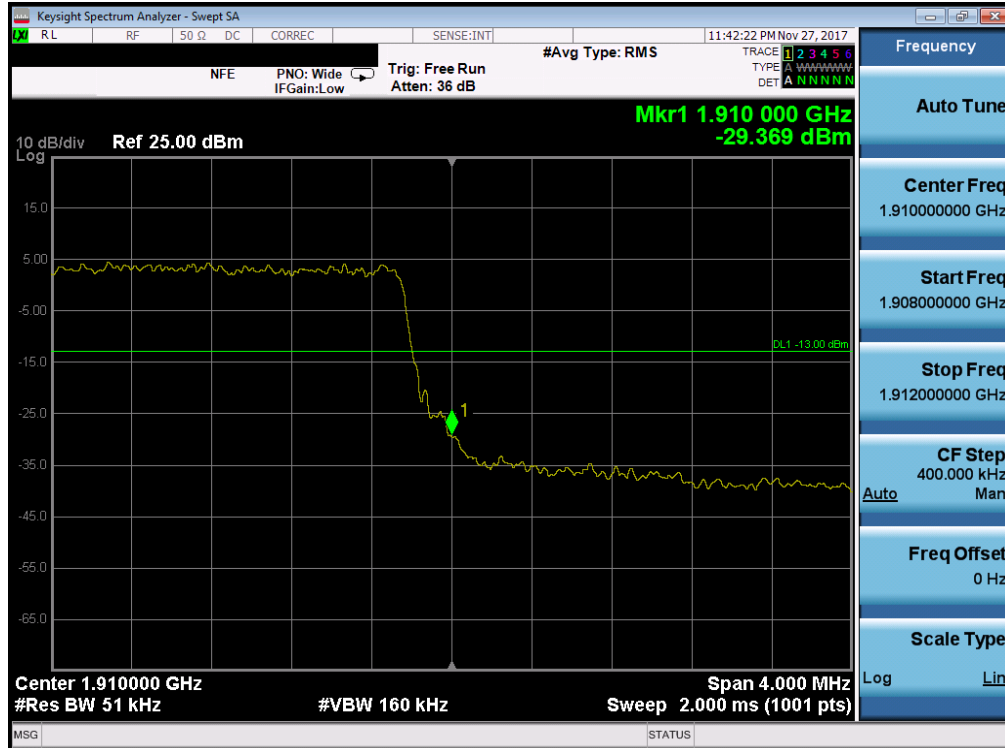


Plot 7-206. Lower Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

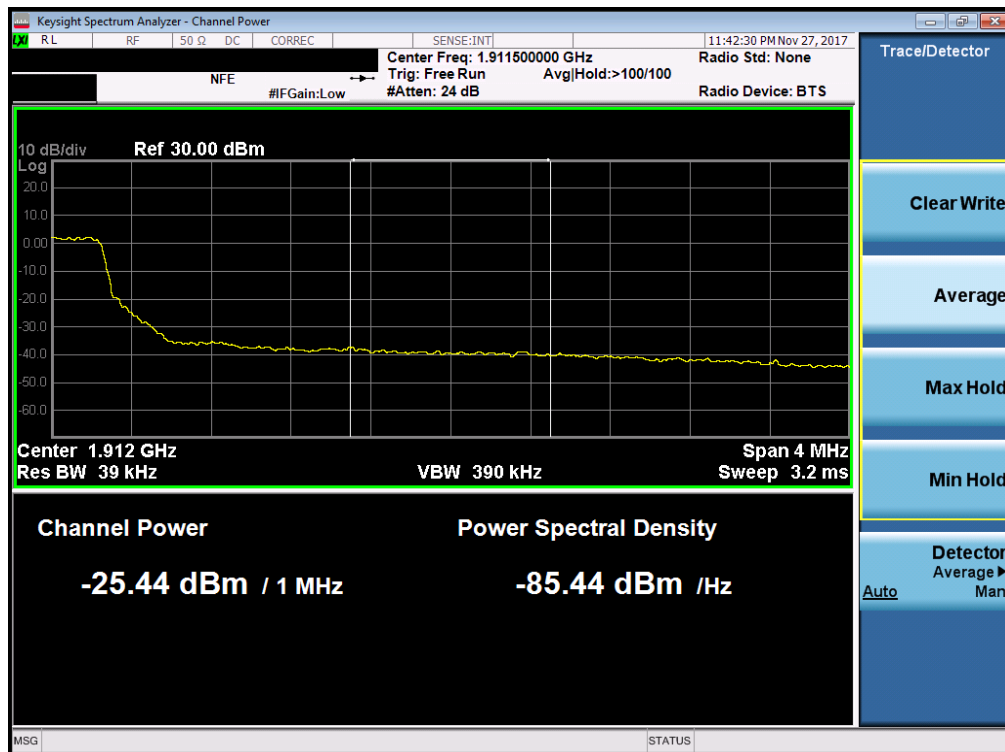


Plot 7-207. Lower Extended Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 126 of 204

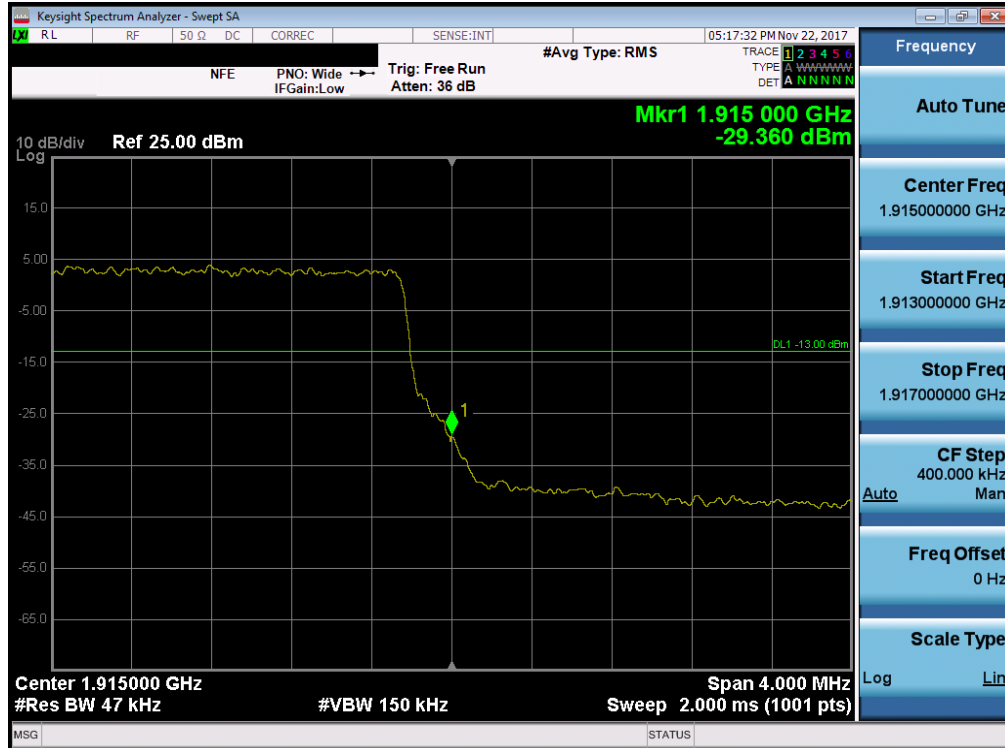


Plot 7-208. Upper Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

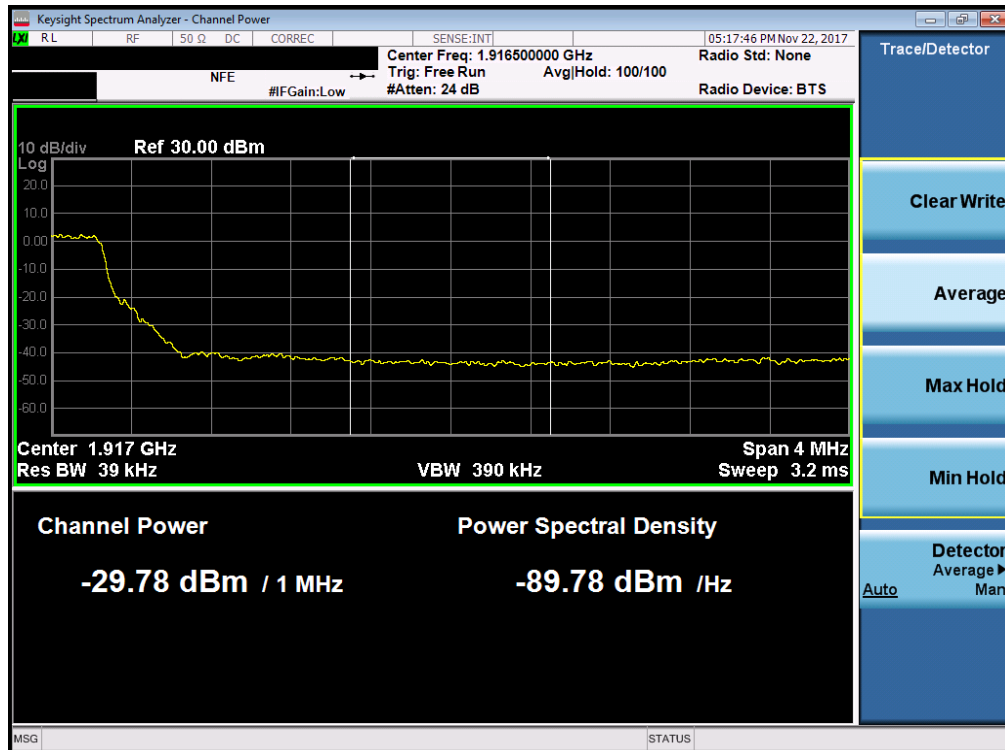


Plot 7-209. Upper Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 127 of 204

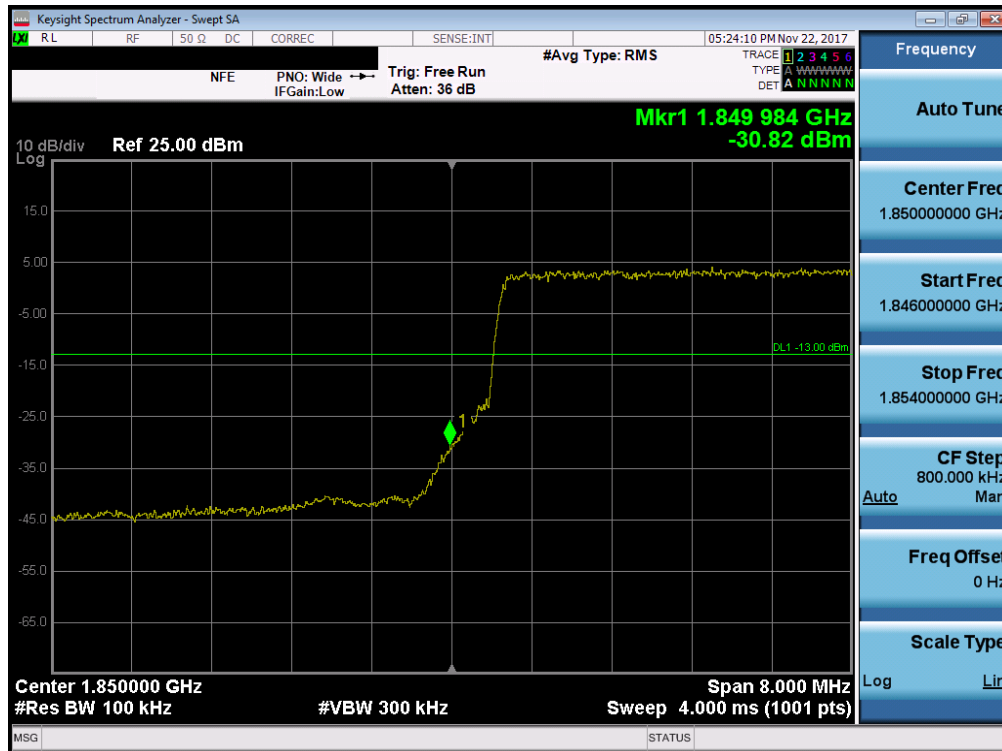


Plot 7-210. Upper Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

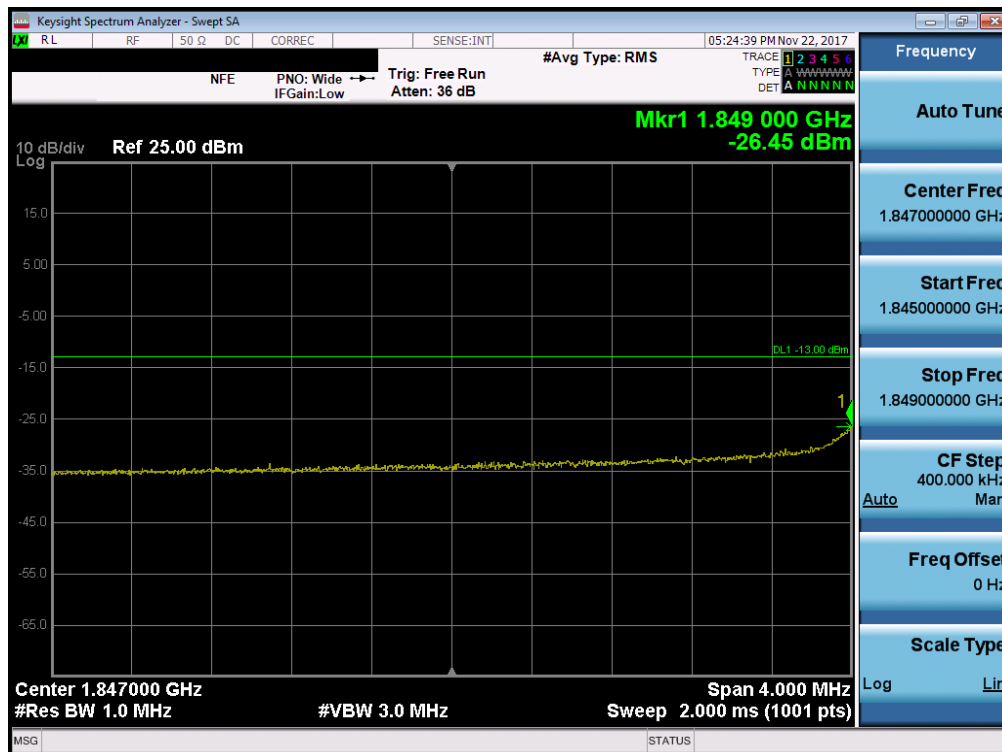


Plot 7-211. Upper Extended Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 128 of 204

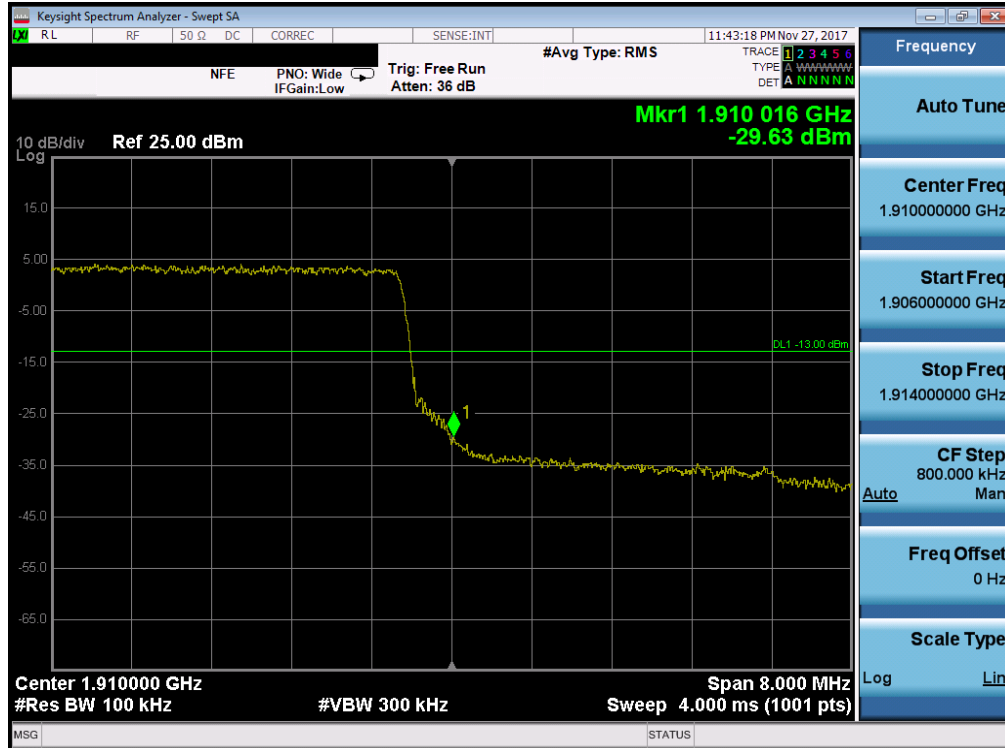


Plot 7-212. Lower Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

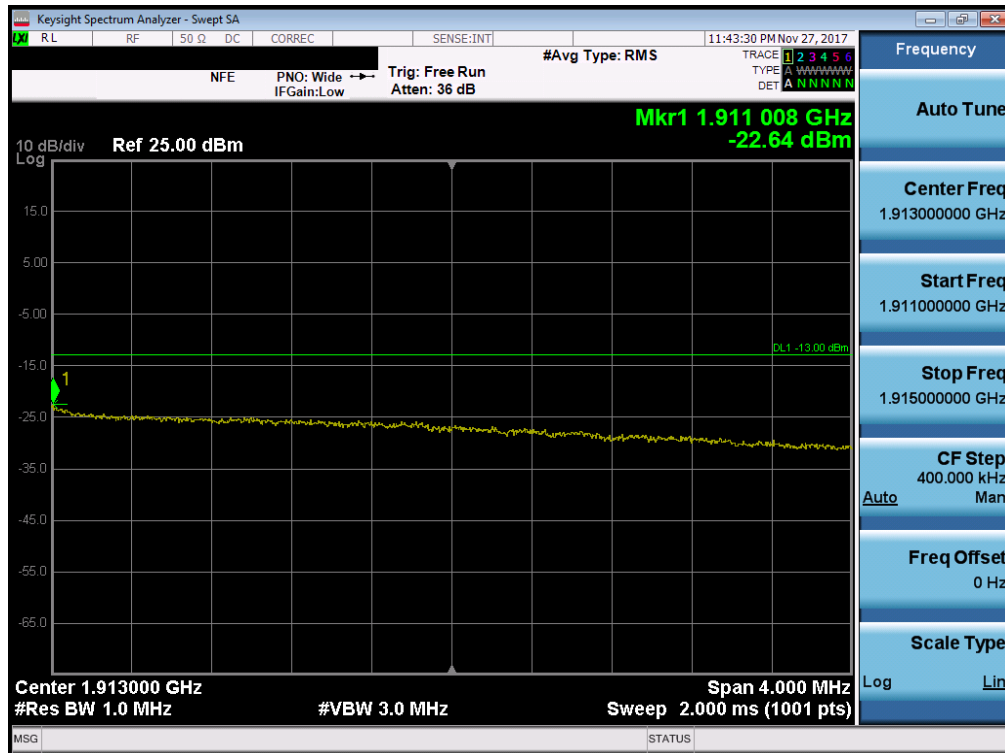


Plot 7-213. Lower Extended Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 129 of 204



Plot 7-214. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-215. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 130 of 204

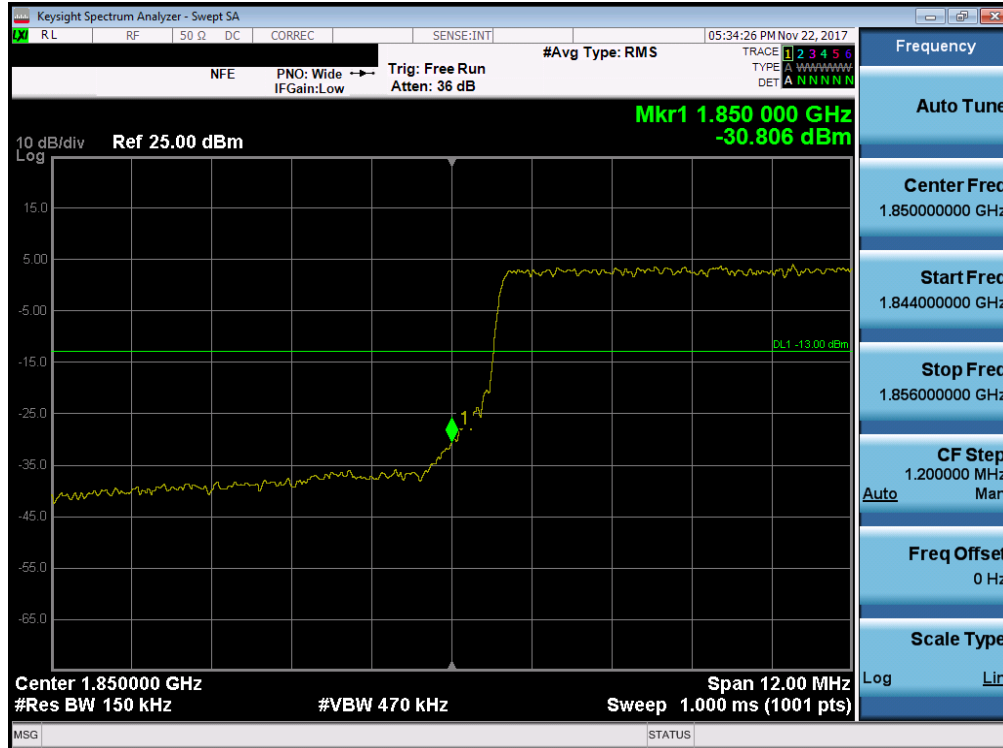


Plot 7-216. Upper Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

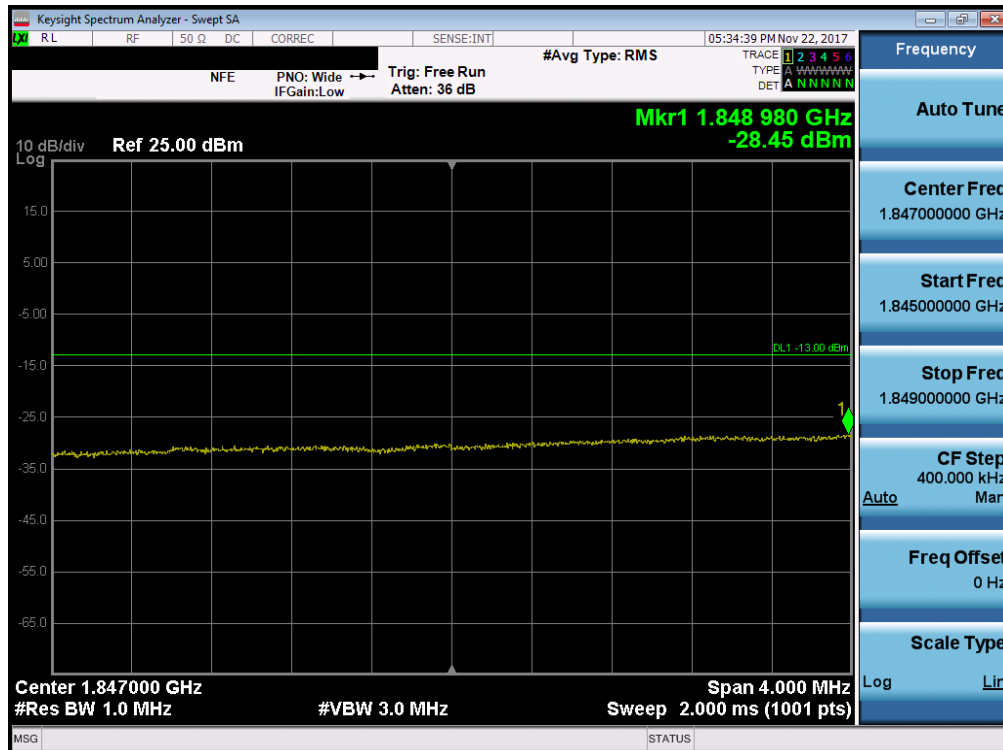


Plot 7-217. Upper Extended Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 131 of 204	

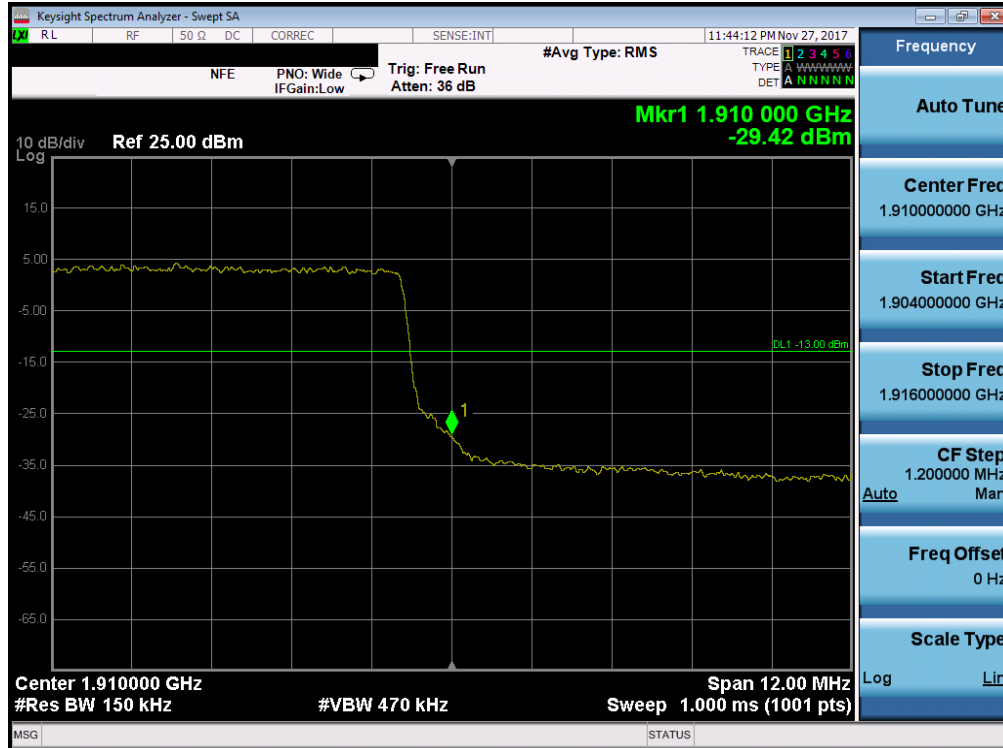


Plot 7-218. Lower Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

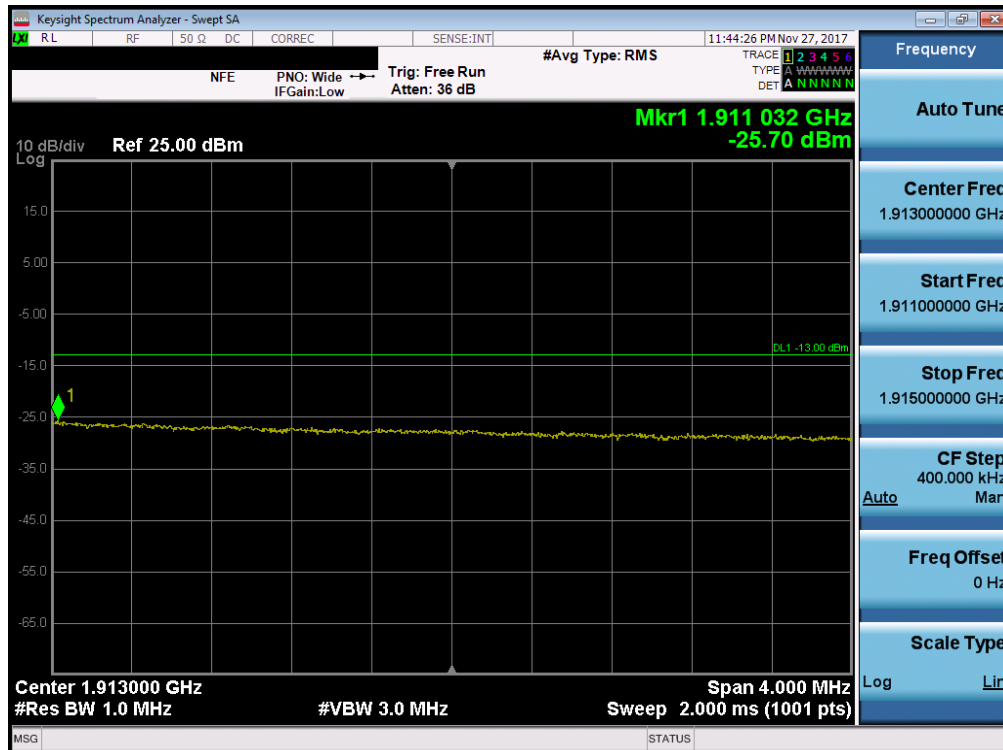


Plot 7-219. Lower Extended Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 132 of 204	



Plot 7-220. Upper Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-221. Upper Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 133 of 204	

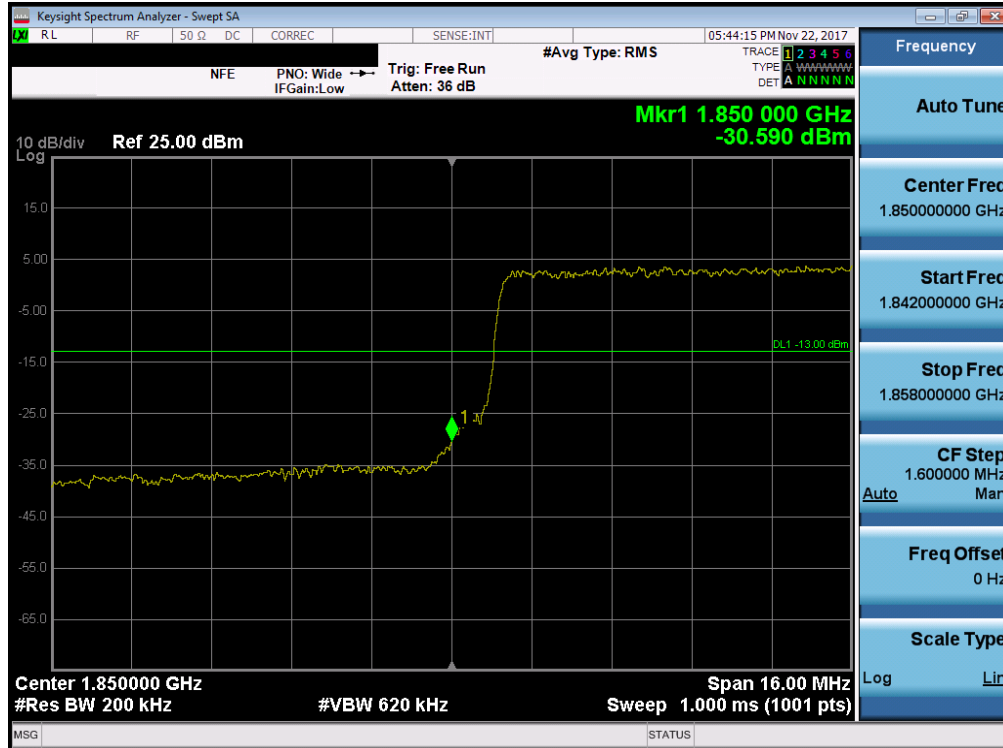


Plot 7-222. Upper Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

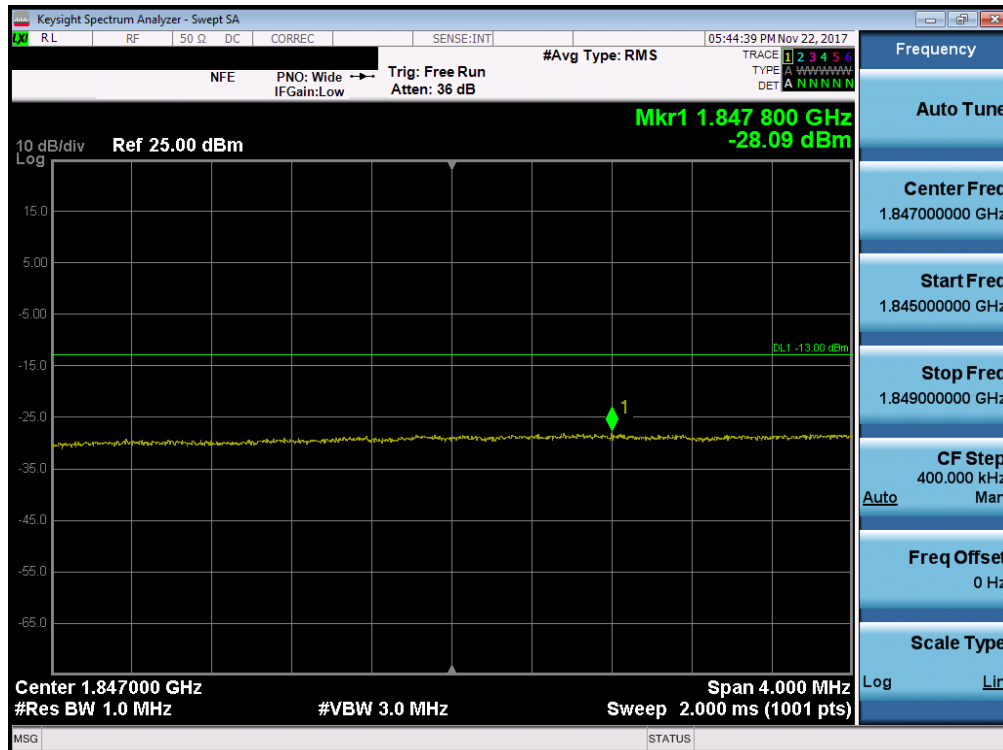


Plot 7-223. Upper Extended Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 134 of 204

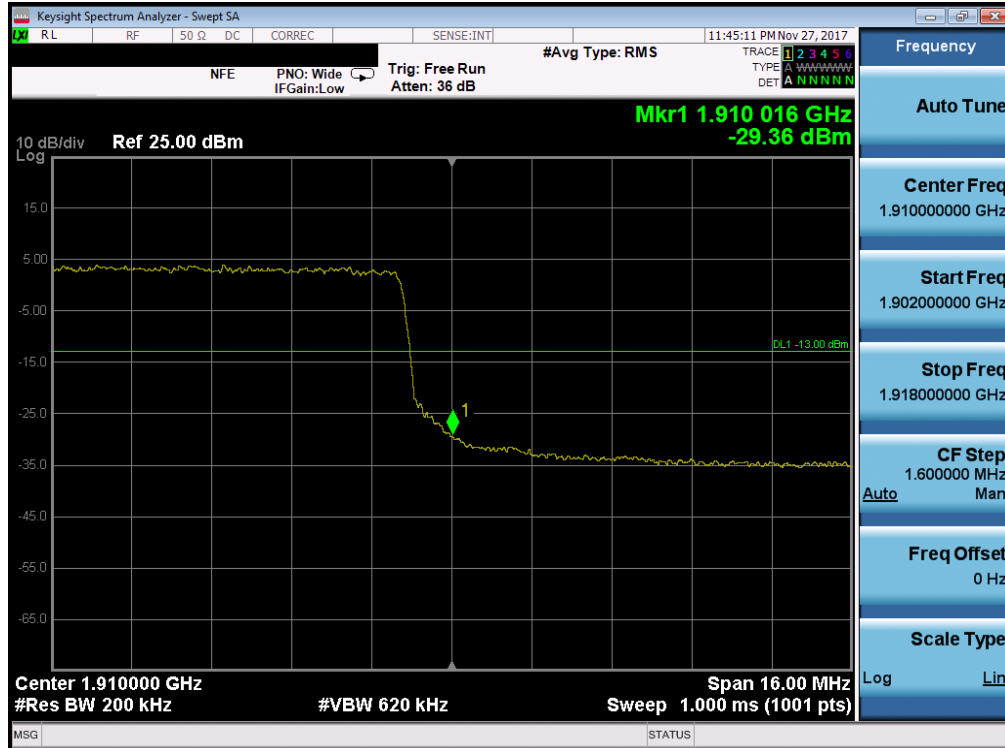


Plot 7-224. Lower Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-225. Lower Extended Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 135 of 204



Plot 7-226. Upper Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-227. Upper Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 136 of 204	

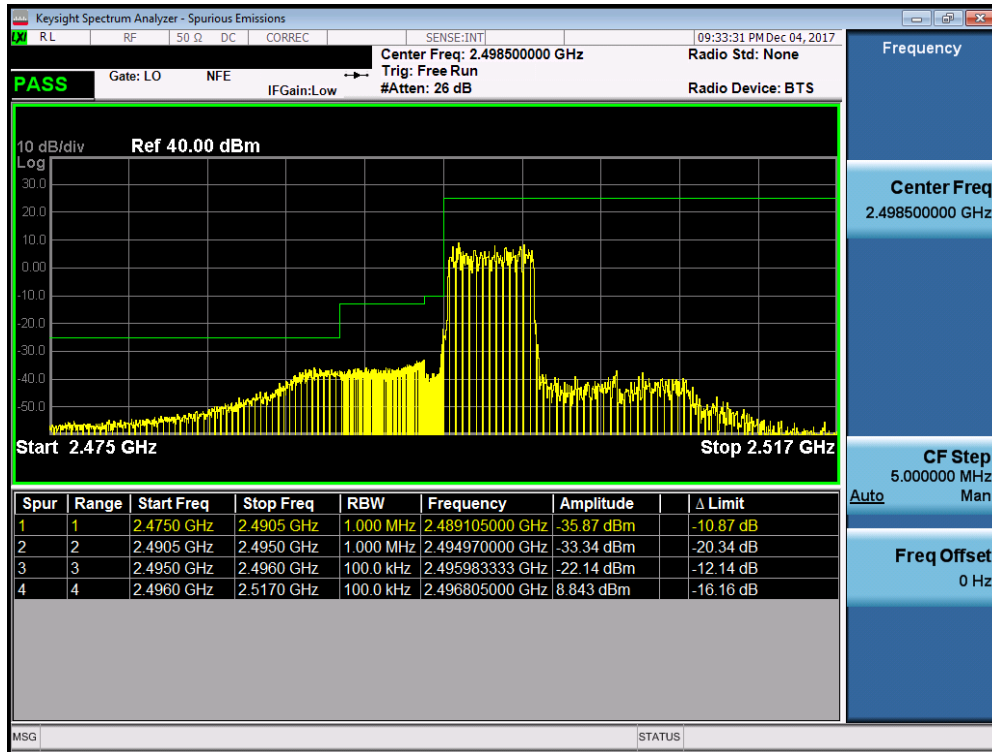


Plot 7-228. Upper Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

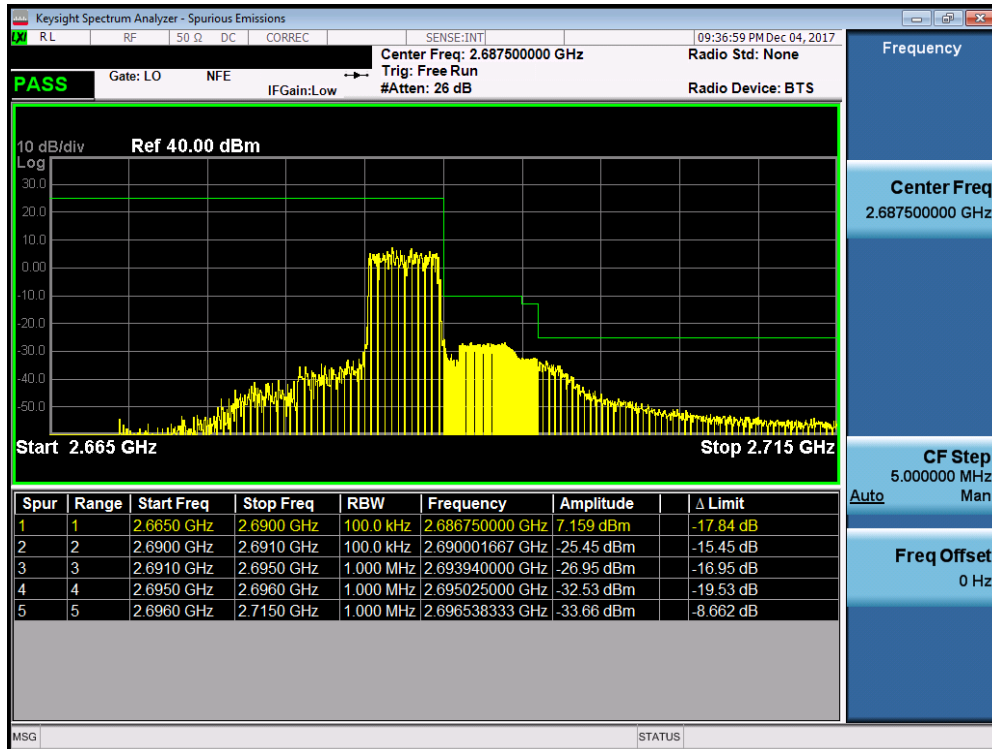


Plot 7-229. Upper Extended Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 137 of 204

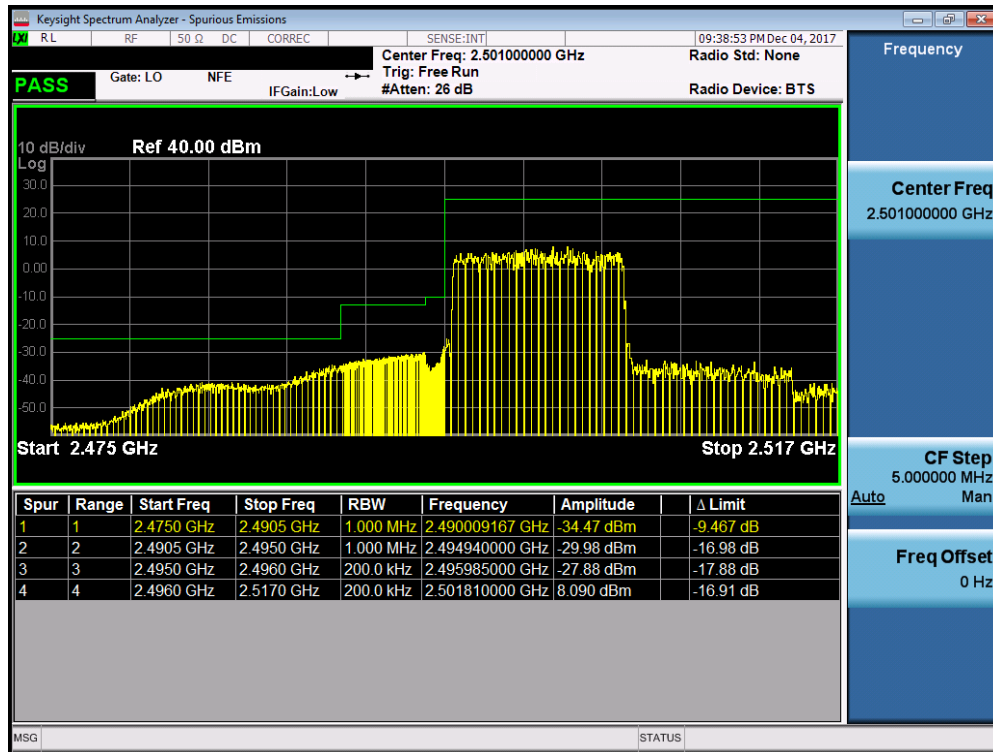


Plot 7-230. Lower ACP Plot at 2496 MHz (Band 41 - 5.0MHz QPSK - RB Size 25)

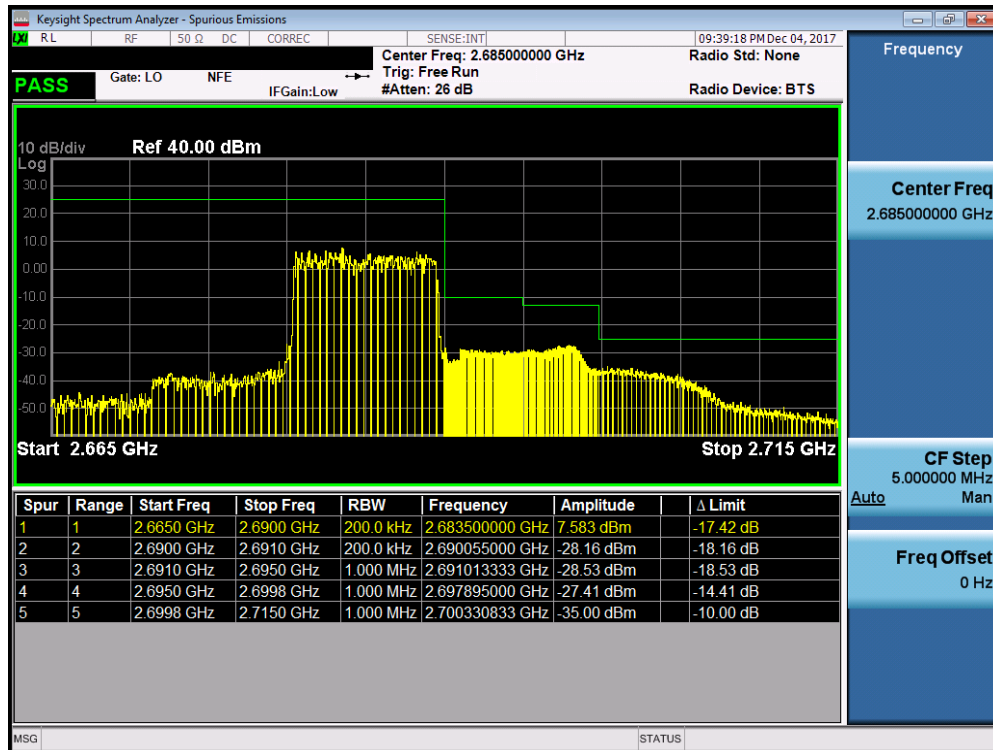


Plot 7-231. Lower ACP Plot (Band 41 – 5.0MHz QPSK – RB Size 25)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 138 of 204

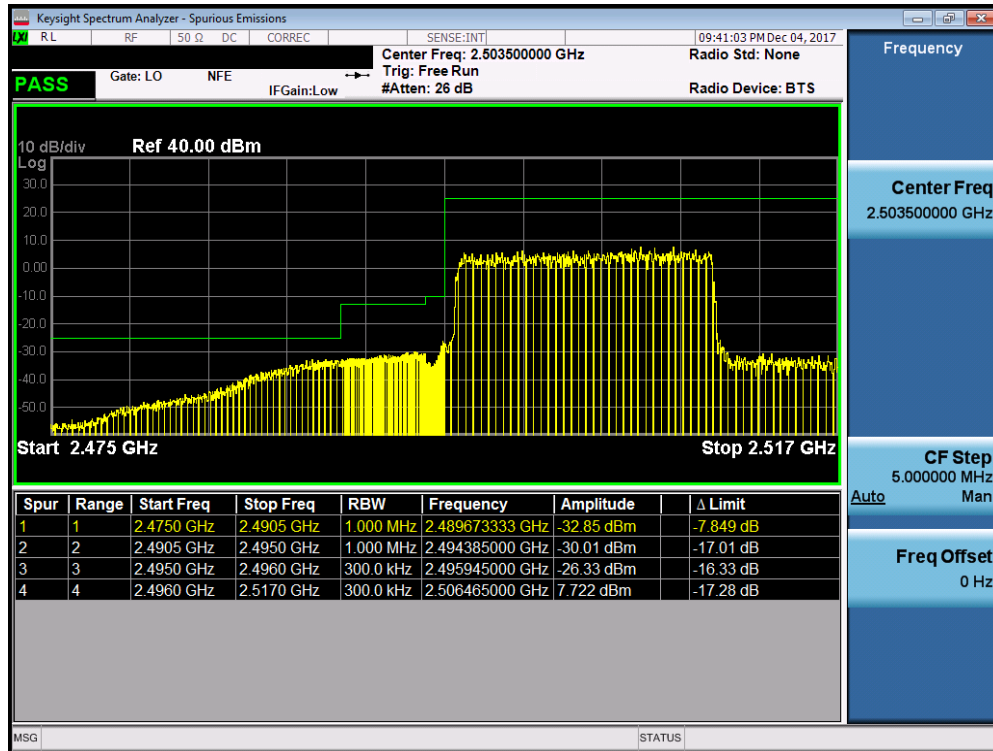


Plot 7-232. Upper ACP Plot (Band 41 – 10.0MHz QPSK – RB Size 50)

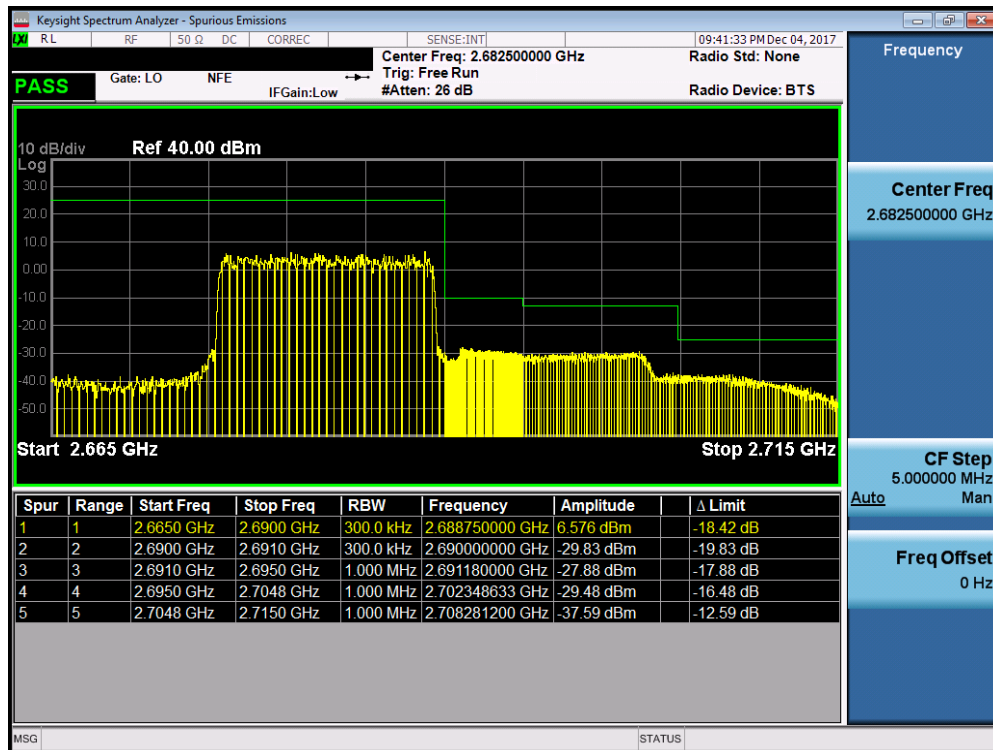


Plot 7-233. Lower ACP Plot (Band 41 - 10.0MHz QPSK - RB Size 50)

FCC ID: A3LSMG9650			MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset				Page 139 of 204

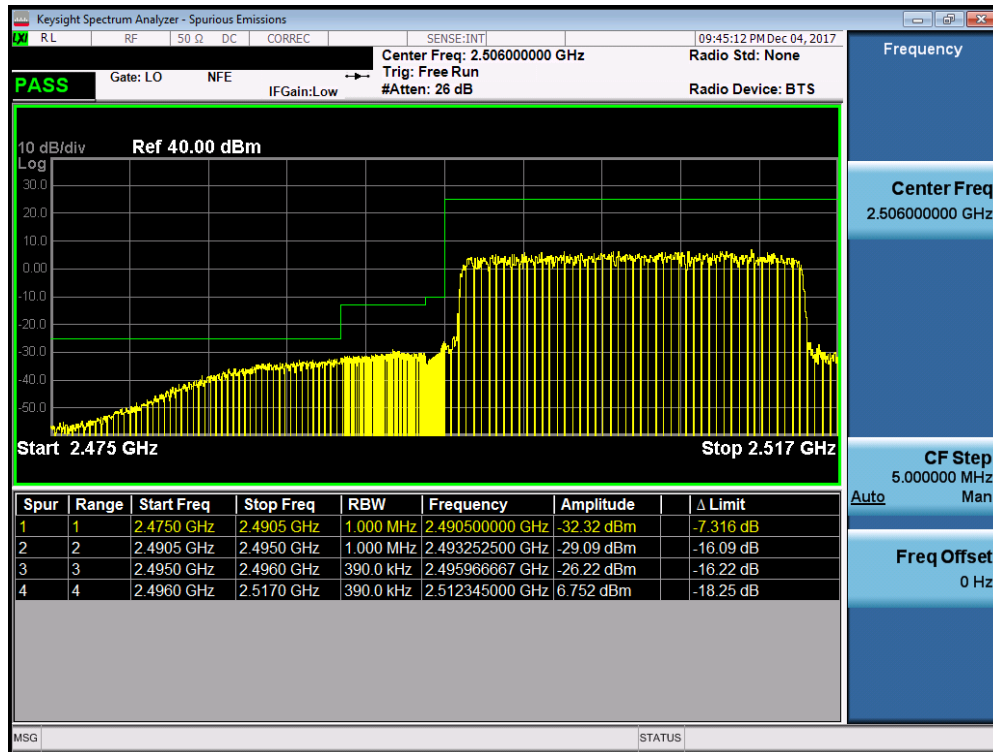


Plot 7-234. Lower ACP Plot (Band 41 – 15.0MHz QPSK – RB Size 75)

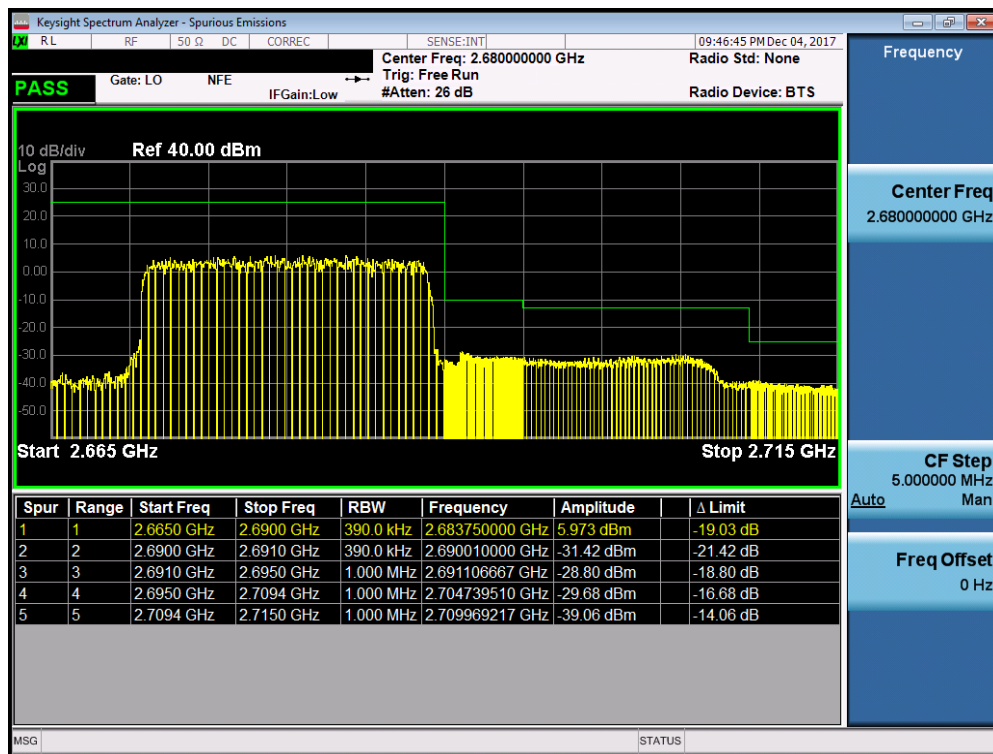


Plot 7-235. Upper ACP Plot (Band 41 – 15.0MHz QPSK – RB Size 75)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 140 of 204	



Plot 7-236. Lower ACP Plot (Band 41 – 20.0MHz QPSK – RB Size 100)



Plot 7-237. Upper ACP Plot (Band 41 – 20.0MHz QPSK – RB Size 100)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 141 of 204

7.5 Peak-Average Ratio

§24.232(d) RSS-130(4.4) RSS-132(5.4) RSS-133(6.4) RSS-139(6.5)

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 v03 – Section 5.7.1

Test Settings

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

Test Setup

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

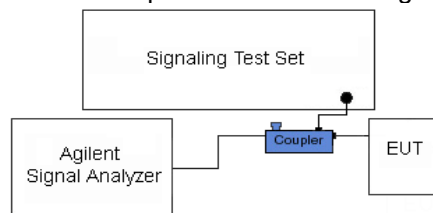
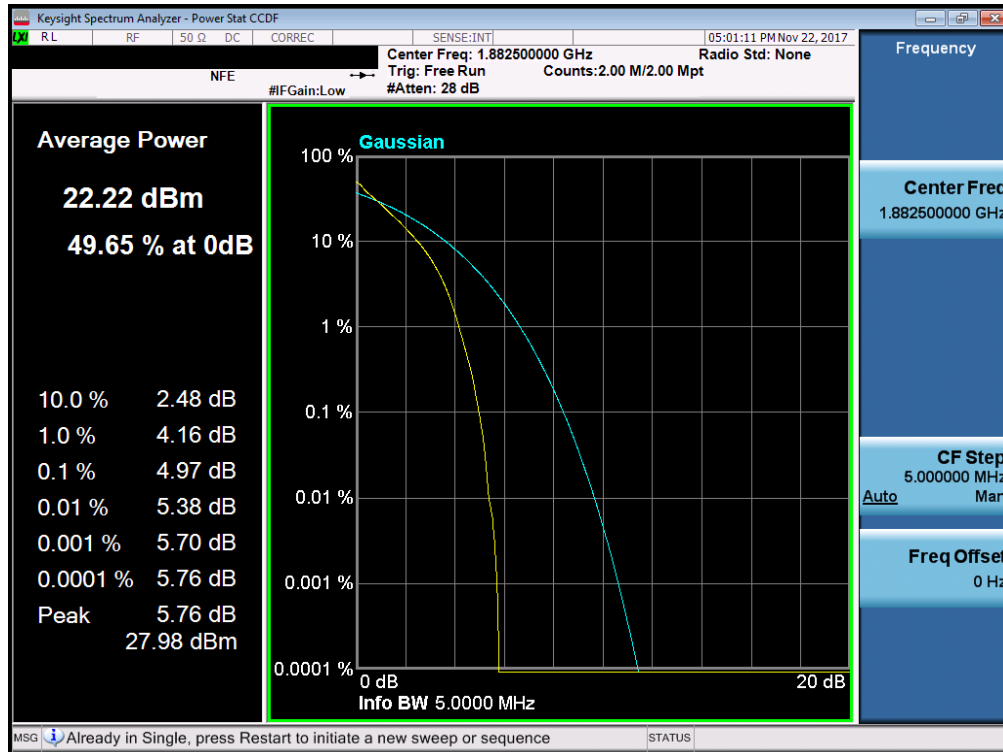


Figure 7-4. Test Instrument & Measurement Setup

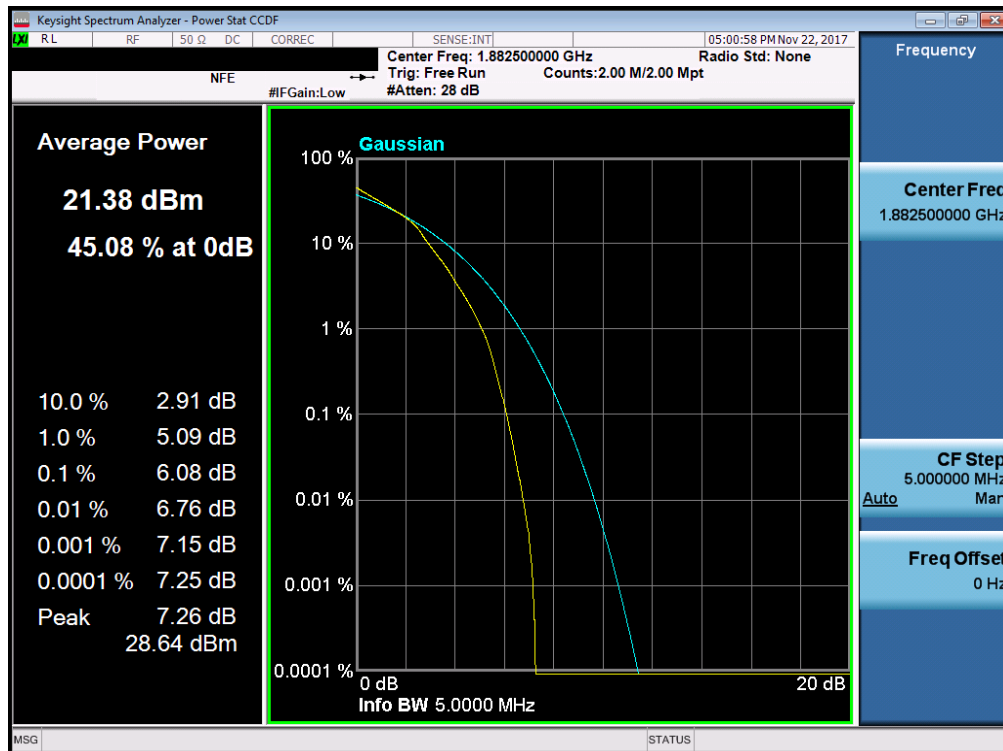
Test Notes

None.

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 142 of 204

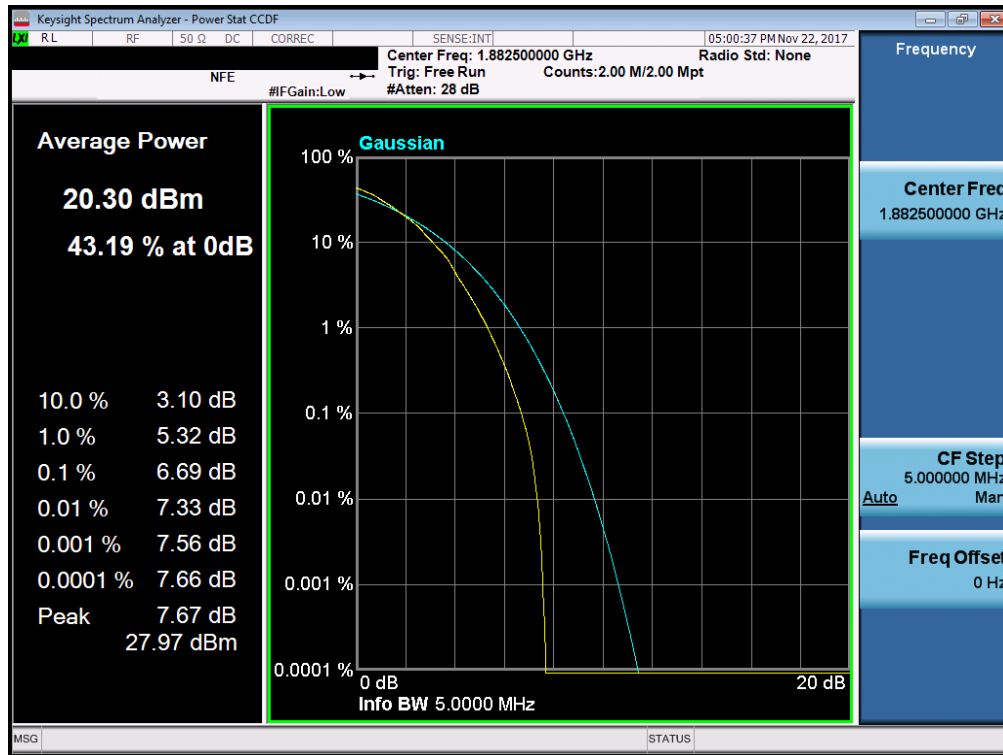


Plot 7-238. PAR Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

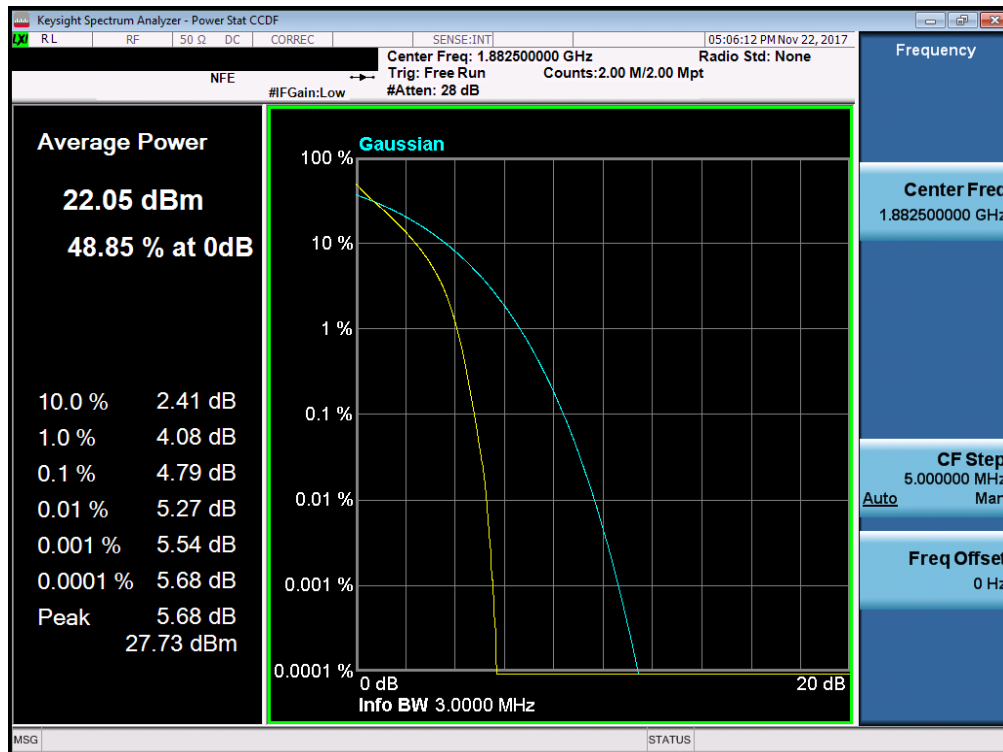


FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 143 of 204

Plot 7-239. PAR Plot (Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)

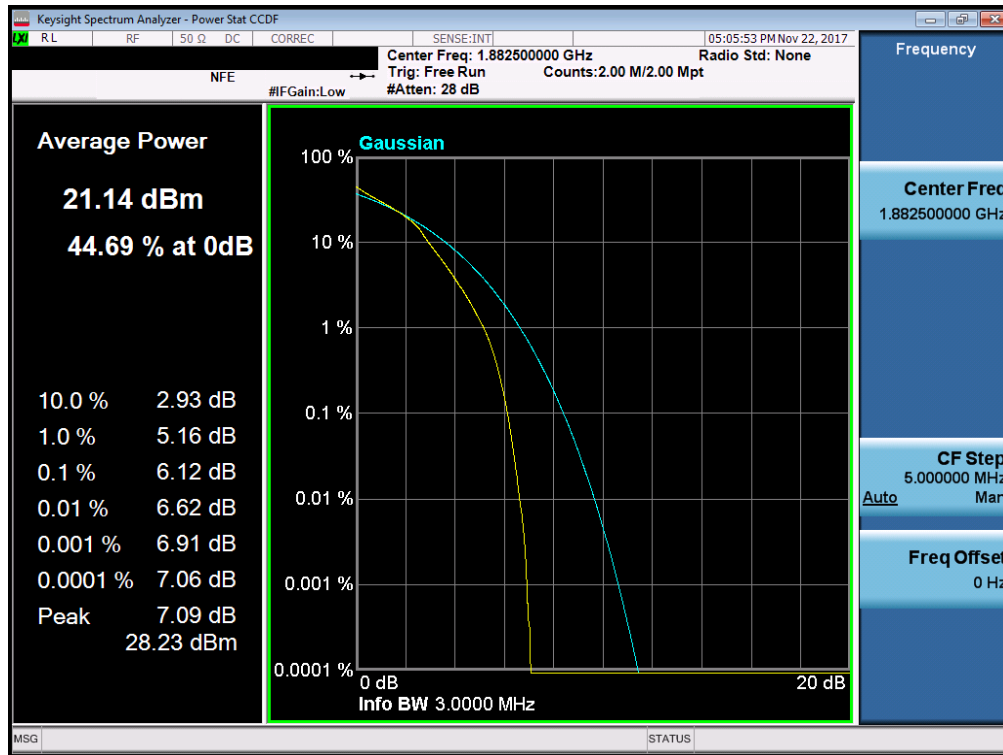


Plot 7-240. PAR Plot (Band 25/2 - 1.4MHz 64-QAM - Full RB Configuration)

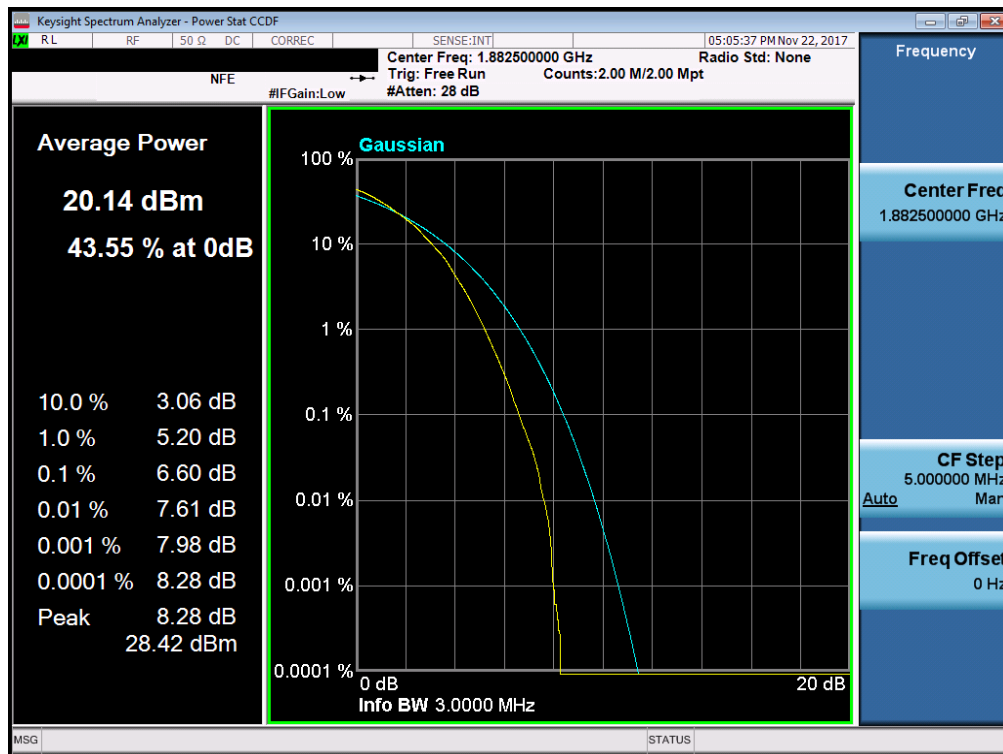


Plot 7-241. PAR Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 144 of 204

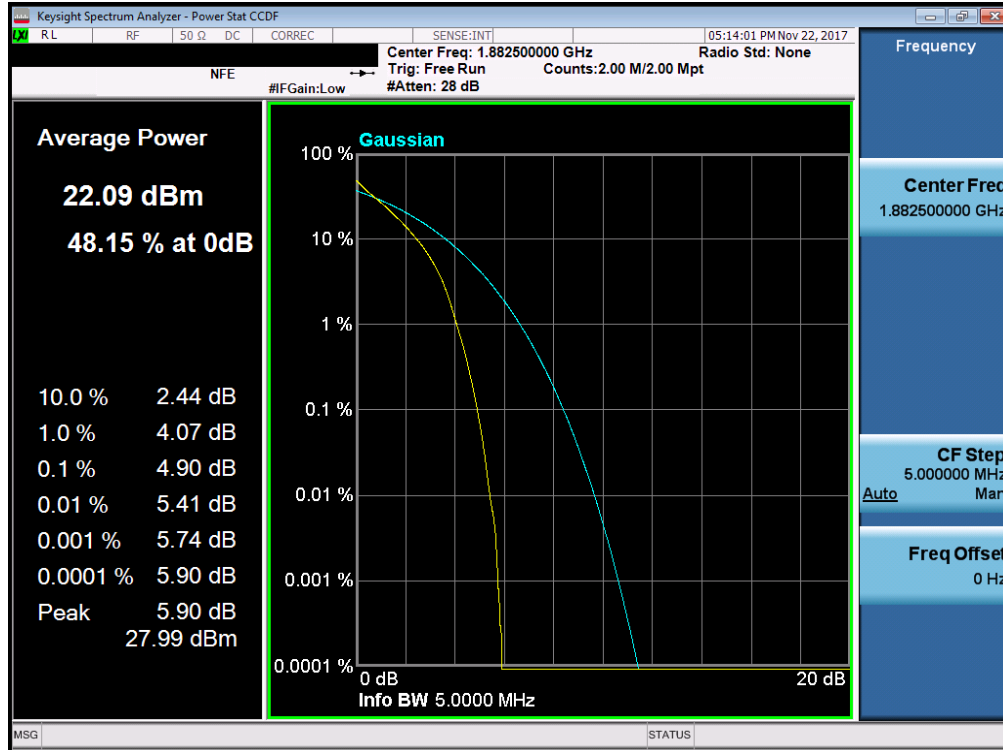


Plot 7-242. PAR Plot (Band 25/2 - 3.0MHz 16-QAM - Full RB Configuration)

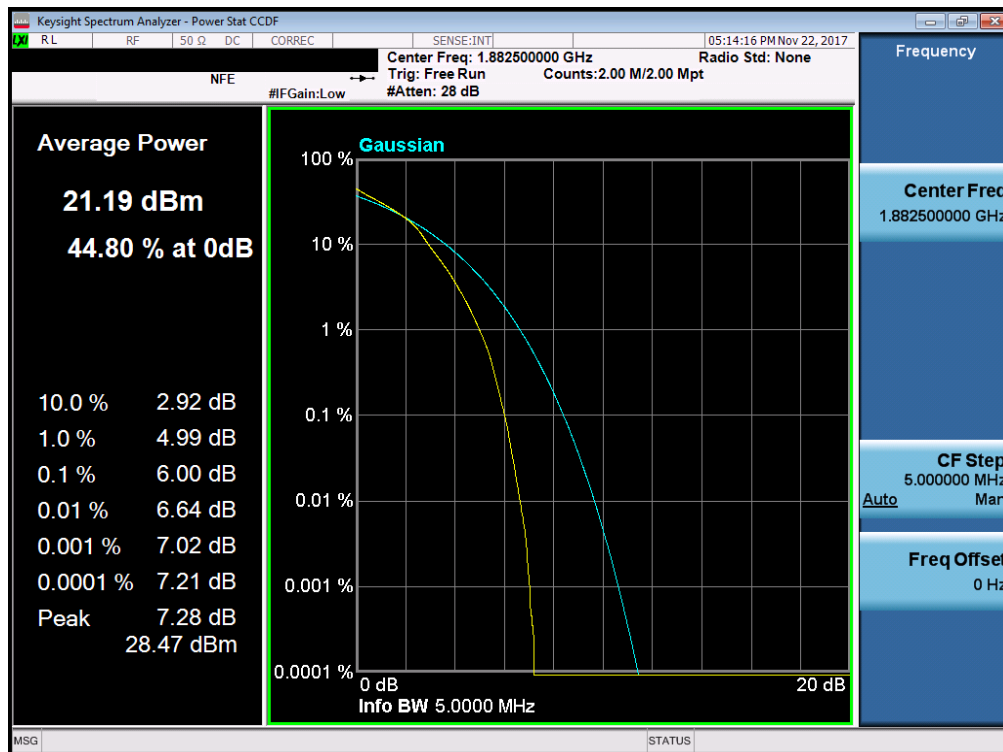


Plot 7-243. PAR Plot (Band 25/2 - 3.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 145 of 204

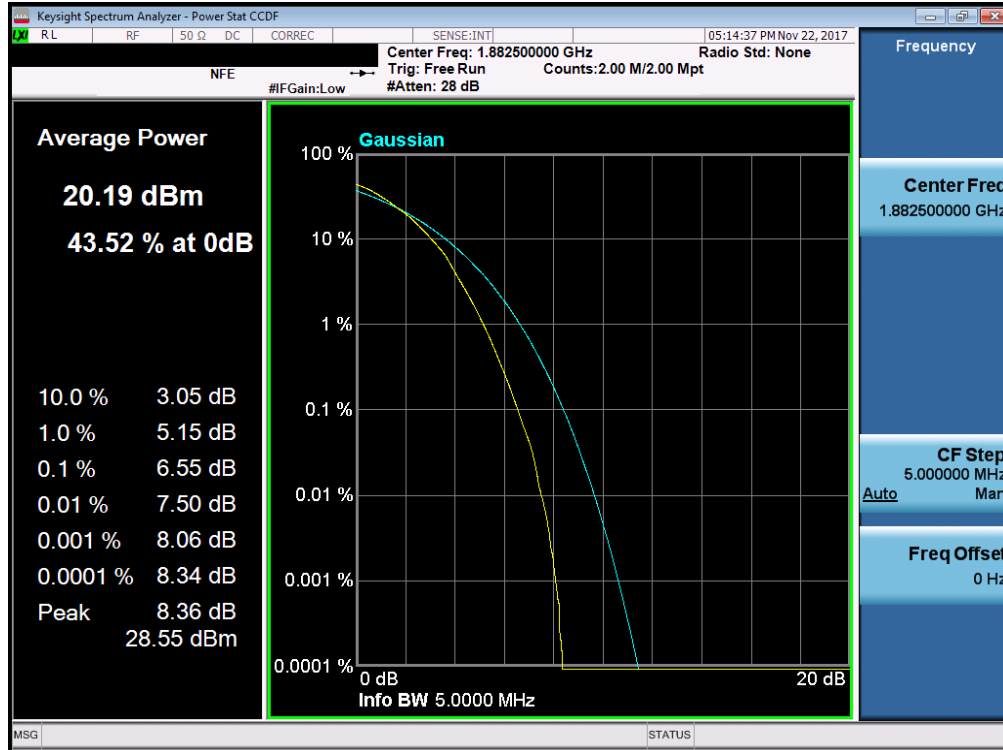


Plot 7-244. PAR Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

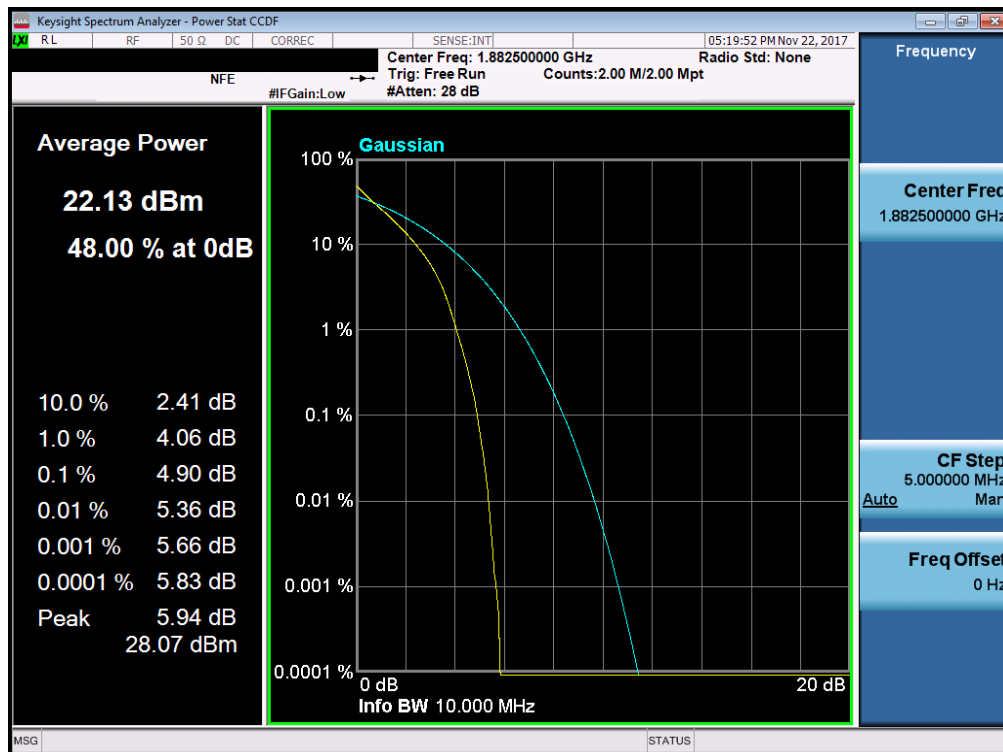


Plot 7-245. PAR Plot (Band 25/2 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 146 of 204

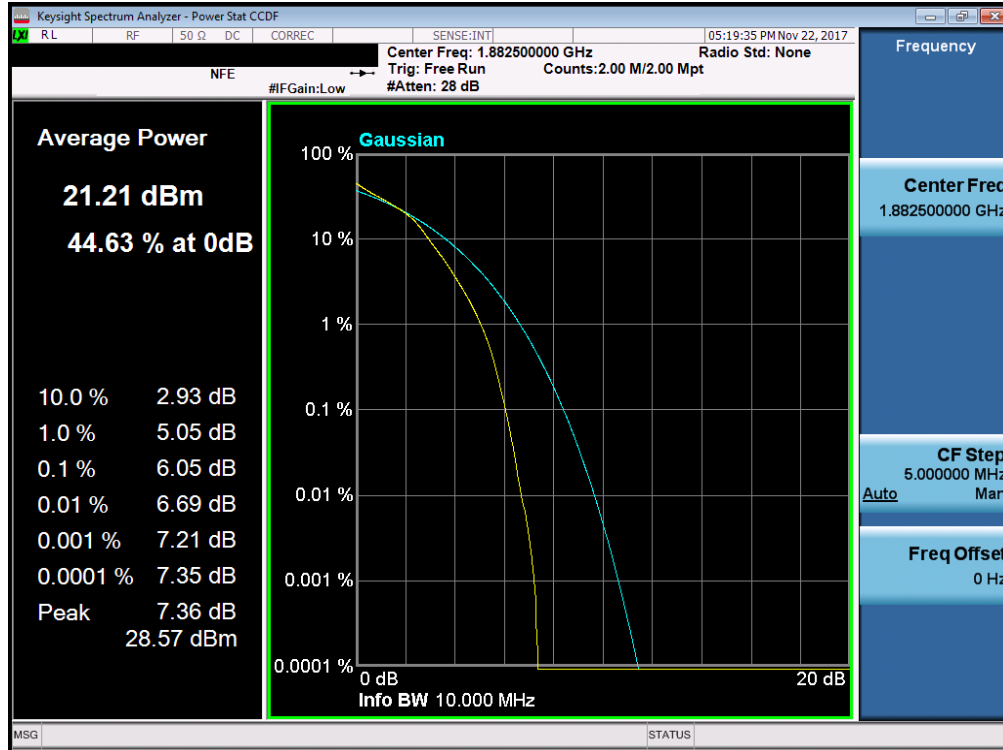


Plot 7-246. PAR Plot (Band 25/2 - 5.0MHz 64-QAM - Full RB Configuration)

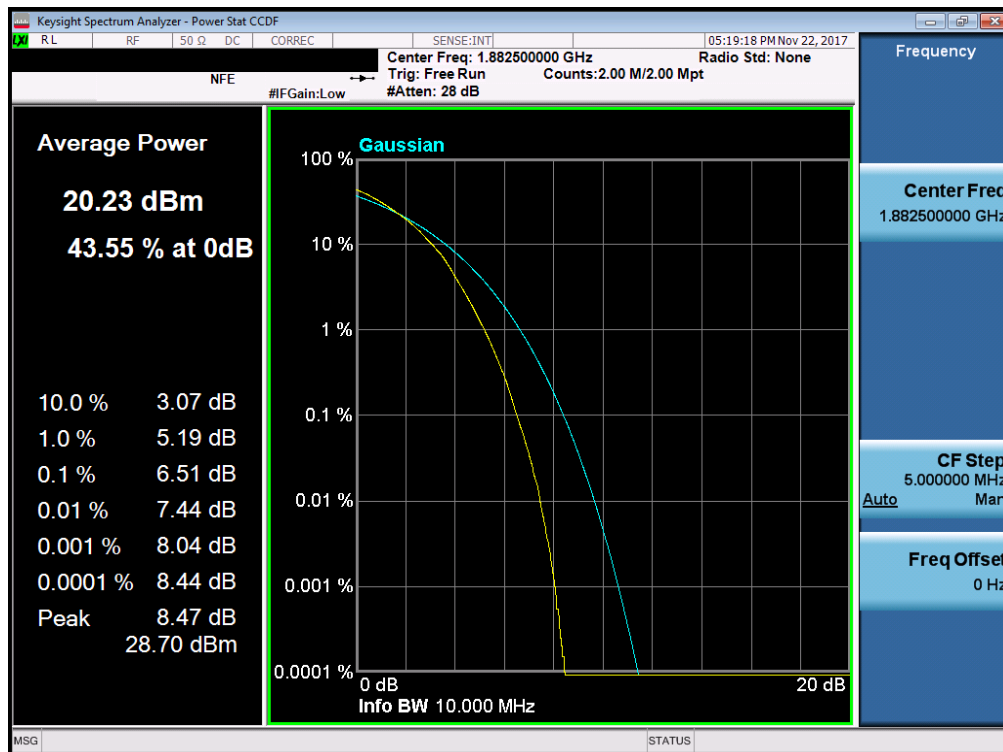


Plot 7-247. PAR Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 147 of 204

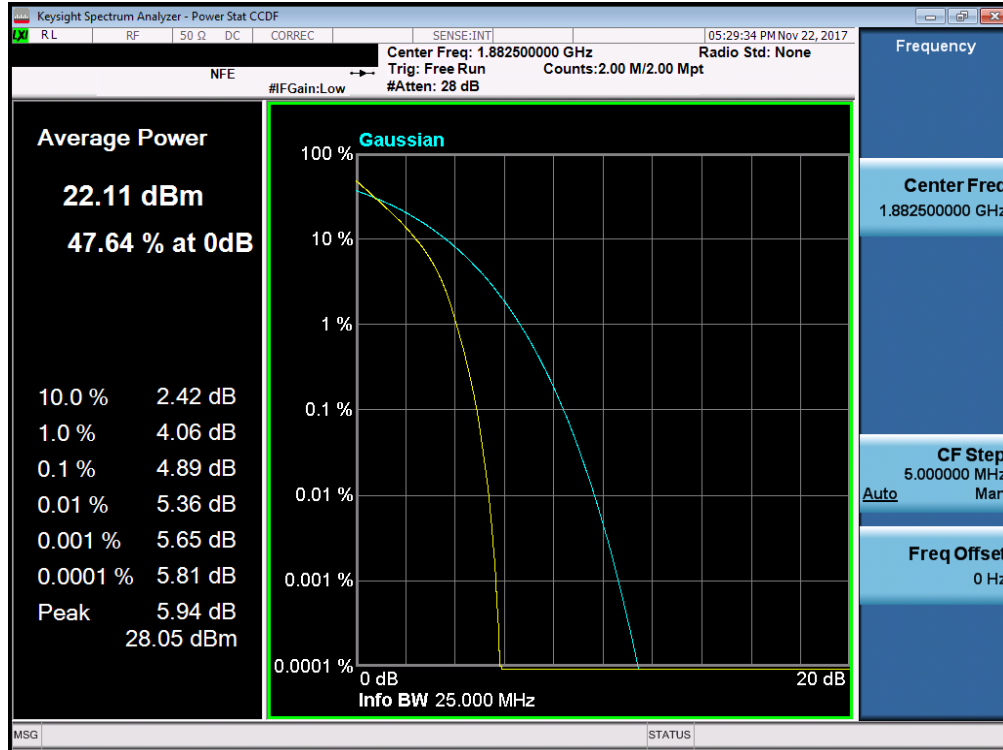


Plot 7-248. PAR Plot (Band 25/2 - 10.0MHz 16-QAM - Full RB Configuration)

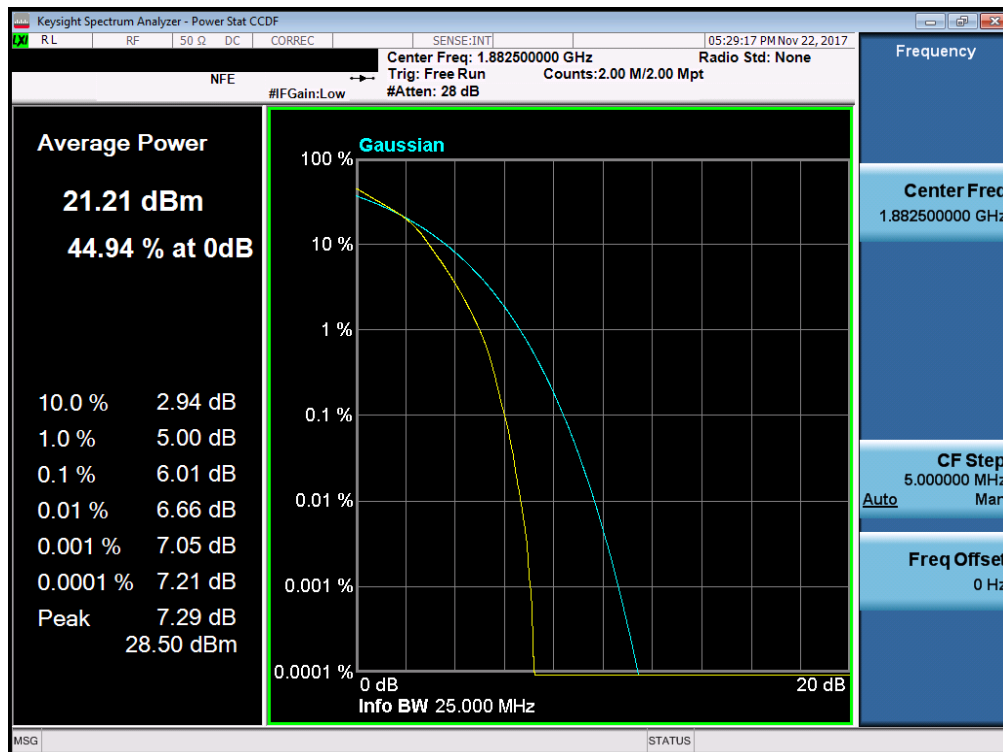


Plot 7-249. PAR Plot (Band 25/2 - 10.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 148 of 204

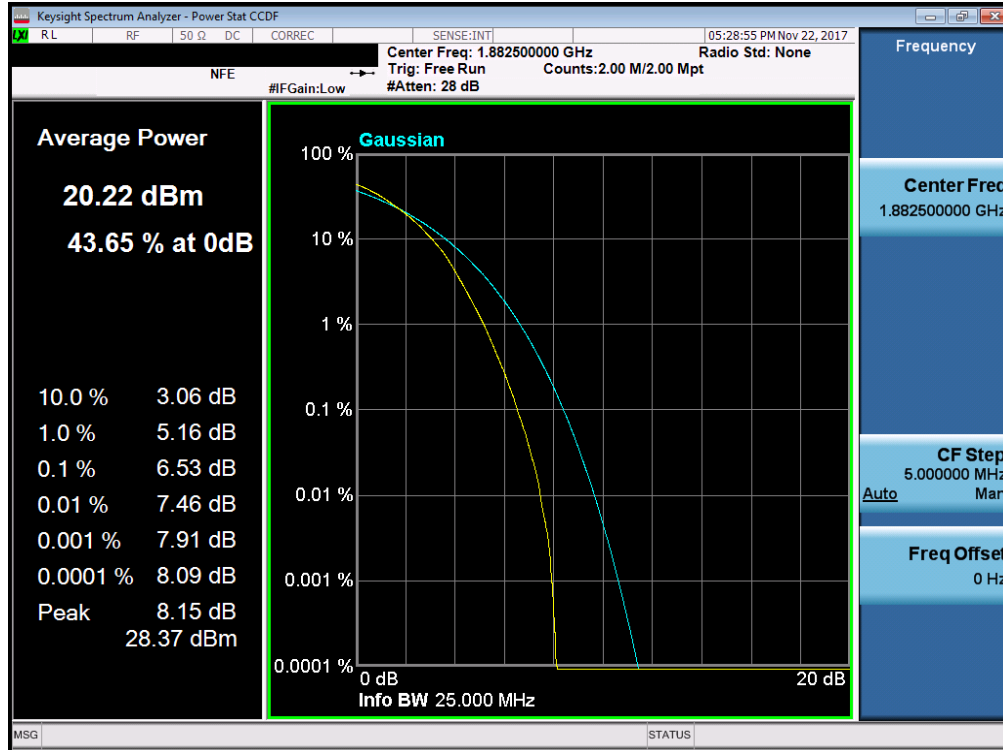


Plot 7-250. PAR Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

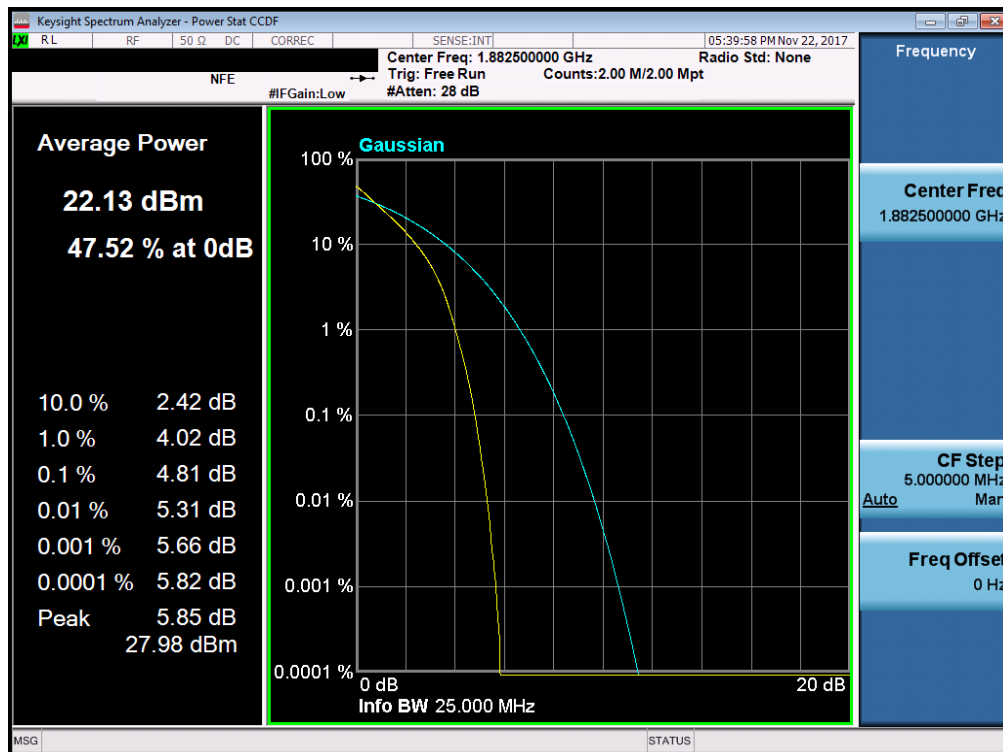


Plot 7-251. PAR Plot (Band 25/2 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 149 of 204

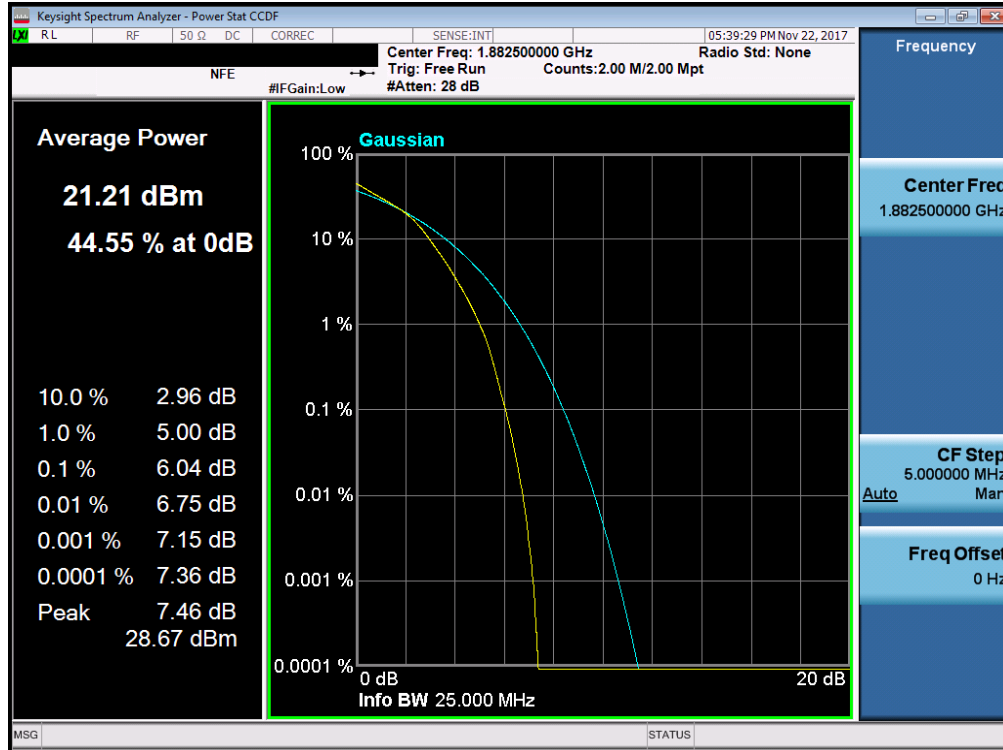


Plot 7-252. PAR Plot (Band 25/2 - 15.0MHz 64-QAM - Full RB Configuration)

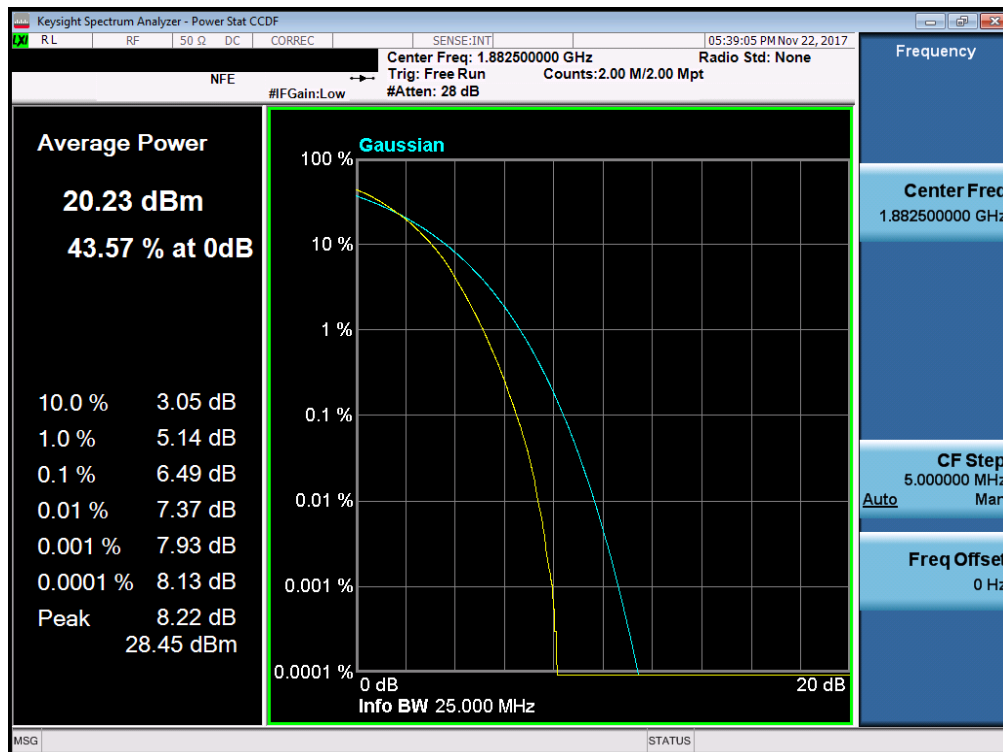


Plot 7-253. PAR Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 150 of 204



Plot 7-254. PAR Plot (Band 25/2 - 20.0MHz 16-QAM - Full RB Configuration)



Plot 7-255. PAR Plot (Band 25/2 - 20.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 151 of 204

7.6 Uplink Carrier Aggregation

§27.53(m)

Test Overview

The EUT is set up to transmit two contiguous LTE channels. The power level of both carriers and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

For Band 41, the minimum permissible attenuation level of any spurious emission is $55 + \log_{10}(P_{\text{Watts}})$.

Test Procedure Used

KDB 971168 D01 v02r02 – Section 6.0

Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to at least 10 * the fundamental frequency (separated into at least two plots per channel)
2. Detector = RMS
3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
4. Sweep time = auto couple
5. The trace was allowed to stabilize
6. Please see test notes below for RBW and VBW settings

Test Setup

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

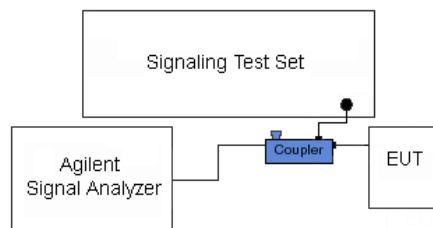


Figure 7-5. Test Instrument & Measurement Setup

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 152 of 204

1. Uplink carrier aggregation is only supported in this EUT while operating in Power Class 3.
2. Conducted power and spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device. The worst case (highest) powers were found while operating with QPSK modulation, as shown in Table 7-3 and Table 7-4 below, with both carriers set to transmit using 1RB.
3. Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than 1 GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.
4. Conducted spurious emissions measurements were performed on the worst case 20MHz + 20MHz mode with 1 RB and all RBs active.

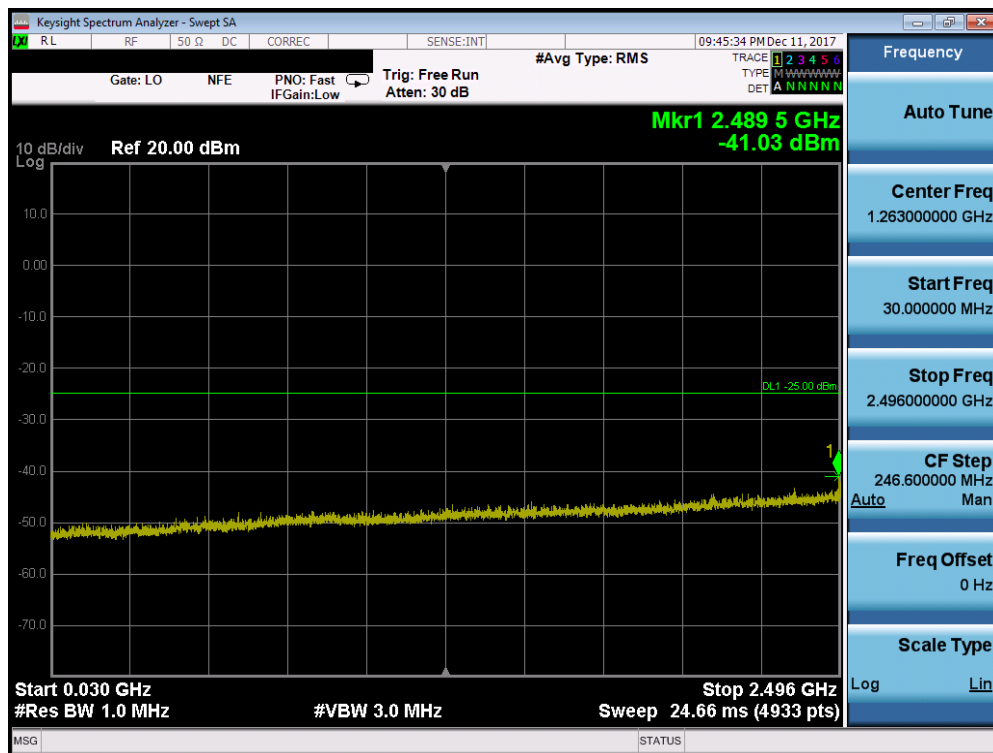
Power State	PCC							SCC							Power ULCA Tx Power (dBm)
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	
Max	LTE B41	10	39700	2501	QPSK	1	49	LTE B41	20	39844	2515.4	QPSK	1	0	22.82
Max	LTE B41	10	40620	2593	QPSK	1	49	LTE B41	20	40764	2607.4	QPSK	1	0	23.00
Max	LTE B41	20	41396	2670.6	QPSK	1	99	LTE B41	10	41540	2685	QPSK	1	0	22.86
Max	LTE B41	15	39725	2503.5	QPSK	1	74	LTE B41	15	39875	2518.5	QPSK	1	0	22.93
Max	LTE B41	15	39725	2503.5	QPSK	1	74	LTE B41	20	39896	2520.6	QPSK	1	0	22.84
Max	LTE B41	15	40620	2593	QPSK	1	74	LTE B41	15	40770	2608	QPSK	1	0	22.70
Max	LTE B41	15	40620	2593	QPSK	1	74	LTE B41	20	40791	2610.1	QPSK	1	0	22.74
Max	LTE B41	15	41365	2667.5	QPSK	1	74	LTE B41	15	41515	2682.5	QPSK	1	0	23.07
Max	LTE B41	20	41344	2665.4	QPSK	1	99	LTE B41	15	41515	2682.5	QPSK	1	0	23.02
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	10	39894	2520.4	QPSK	1	0	22.95
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	15	39921	2523.1	QPSK	1	0	22.91
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	0	22.90
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	10	40764	2607.4	QPSK	1	0	23.02
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	15	40791	2610.1	QPSK	1	0	23.01
Max	LTE B41	20	40620	2593	QPSK	1	99	LTE B41	20	40818	2612.8	QPSK	1	0	23.08
Max	LTE B41	10	41346	2665.6	QPSK	1	49	LTE B41	20	41490	2680	QPSK	1	0	23.02
Max	LTE B41	15	41319	2662.9	QPSK	1	74	LTE B41	20	41490	2680	QPSK	1	0	23.01
Max	LTE B41	20	41292	2660.2	QPSK	1	99	LTE B41	20	41490	2680	QPSK	1	0	23.03

Table 7-3. Conducted Powers (B41 – PCC: RB Size 1 Offset Max SCC: RB Size 1 Offset 0)

FCC ID: A3LSMG9650		 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L		Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 153 of 204

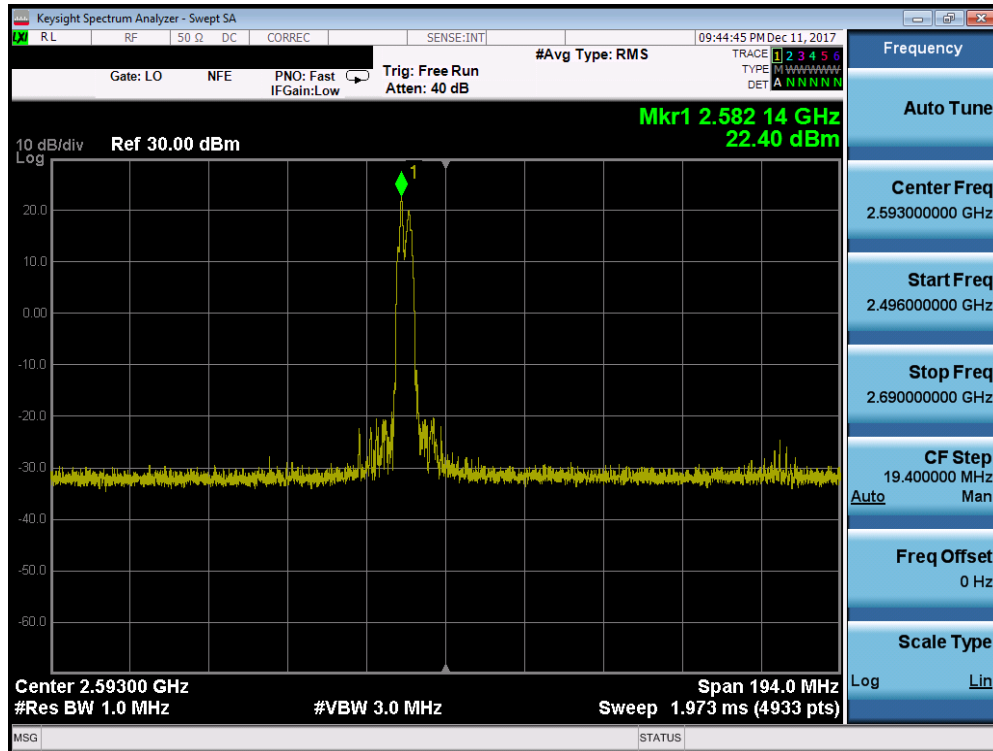
Power State	PCC							SCC							Power
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	ULCA Tx.Power (dBm)
Max	LTE B41	20	39750	2506	QPSK	1	0	LTE B41	20	39948	2525.8	QPSK	1	0	18.61
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	99	18.74
Max	LTE B41	20	39750	2506	QPSK	1	0	LTE B41	20	39948	2525.8	QPSK	1	99	14.64
Max	LTE B41	20	39750	2506	QPSK	1	50	LTE B41	20	39948	2525.8	QPSK	1	50	18.83
Max	LTE B41	20	39750	2506	QPSK	1	99	LTE B41	20	39948	2525.8	QPSK	1	0	22.90
Max	LTE B41	20	39750	2506	QPSK	100	0	LTE B41	20	39948	2525.8	QPSK	100	0	21.48
Max	LTE B41	20	39750	2506	16-QAM	100	0	LTE B41	20	39948	2525.8	16-QAM	100	0	20.51
Max	LTE B41	20	39750	2506	64-QAM	100	0	LTE B41	20	39948	2525.8	64-QAM	100	0	20.30

Table 7-4. Conducted Powers (B41 with Various Combinations for 20MHz + 20MHz Channel Bandwidth)

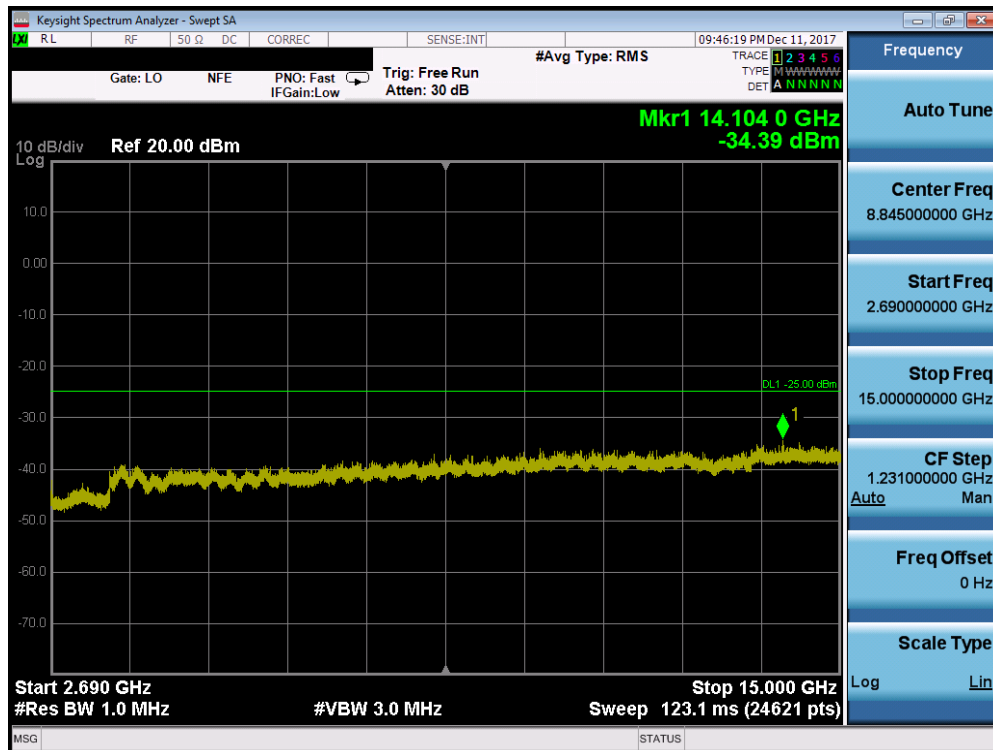


Plot7-256. Conducted Spurious Plot (Band 41 – 20MHz + 20MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

FCC ID: A3LSMG9650			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset			Page 154 of 204

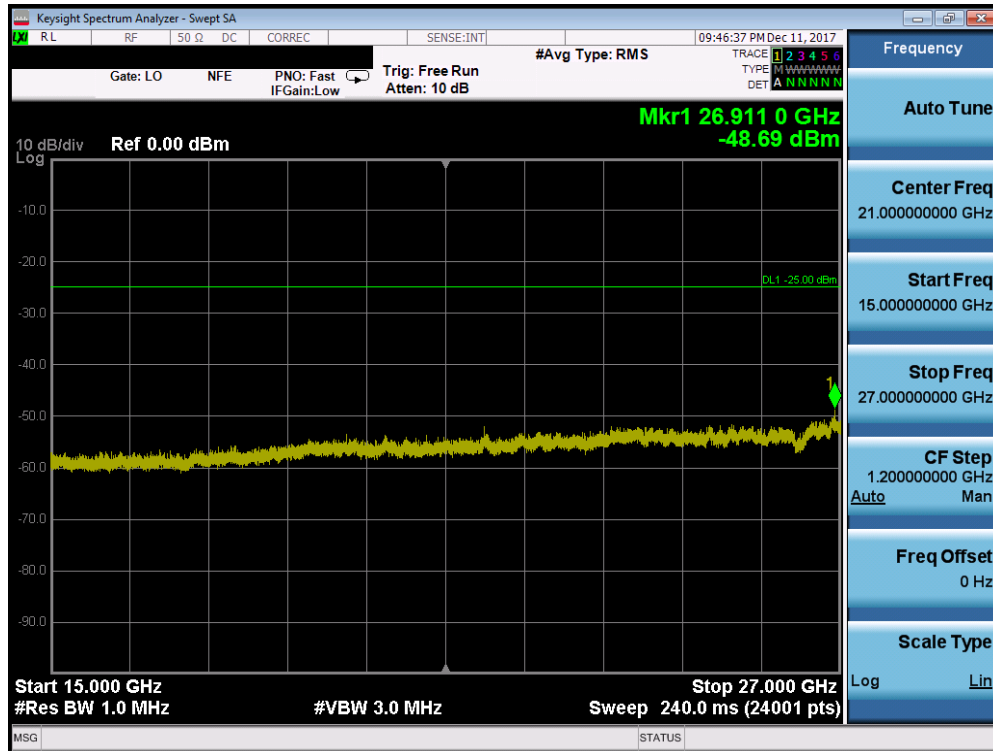


Plot7-257. Conducted Spurious Plot (Band 41 – 20MHz + 20MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

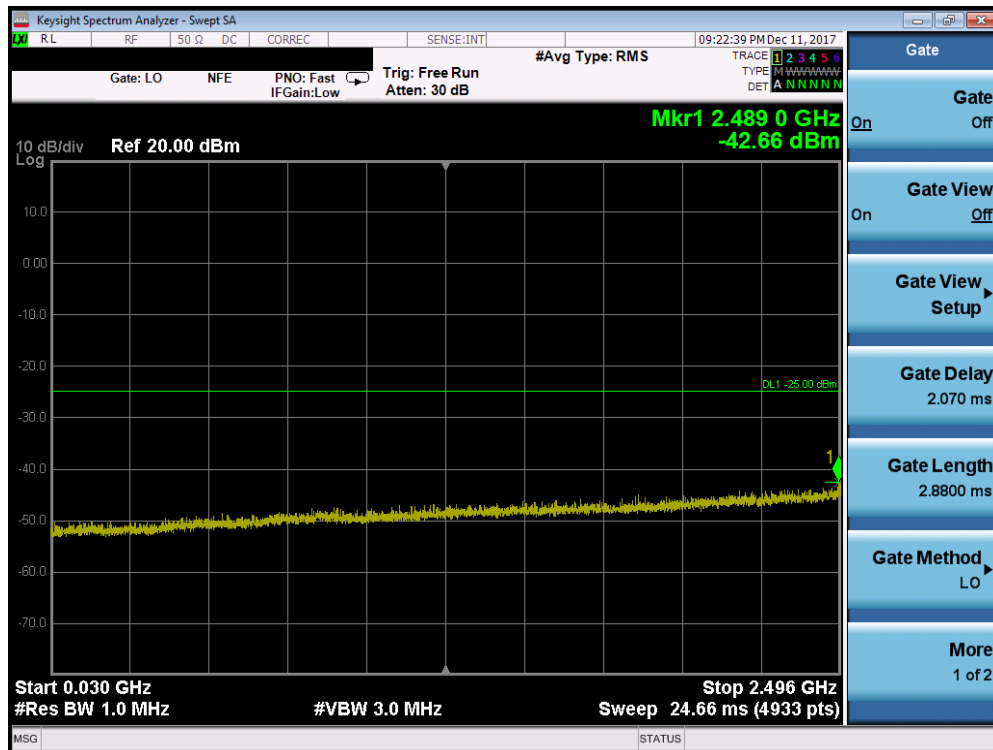


Plot7-258. Conducted Spurious Plot (Band 41 – 20MHz + 20MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 155 of 204

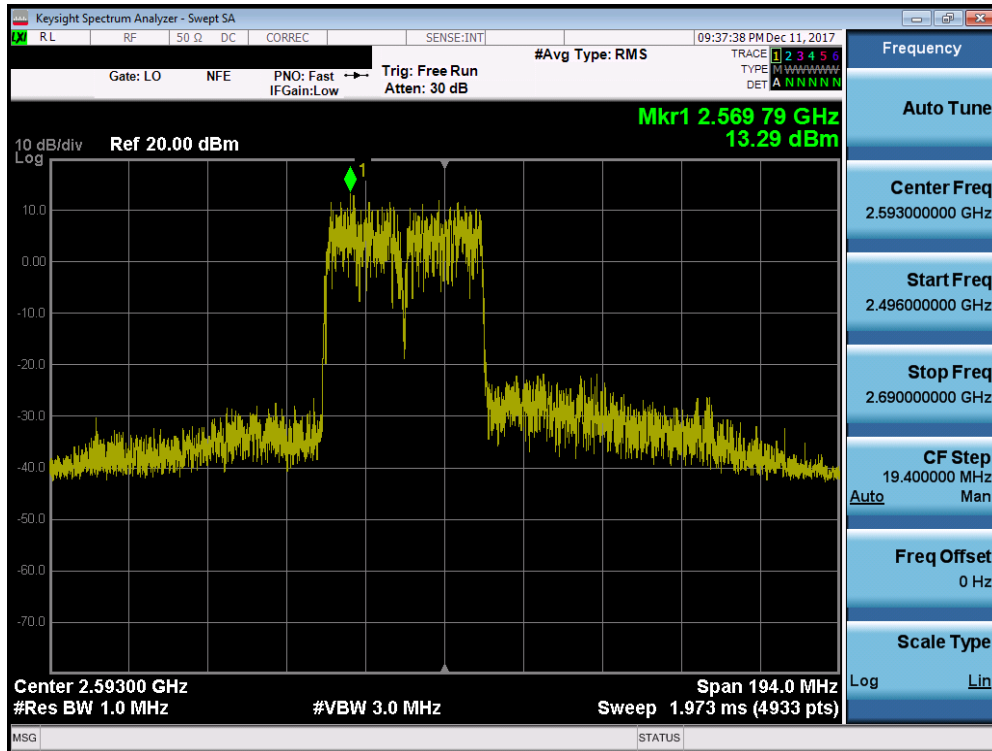


Plot7-259. Conducted Spurious Plot (Band 41 – 20MHz + 20MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

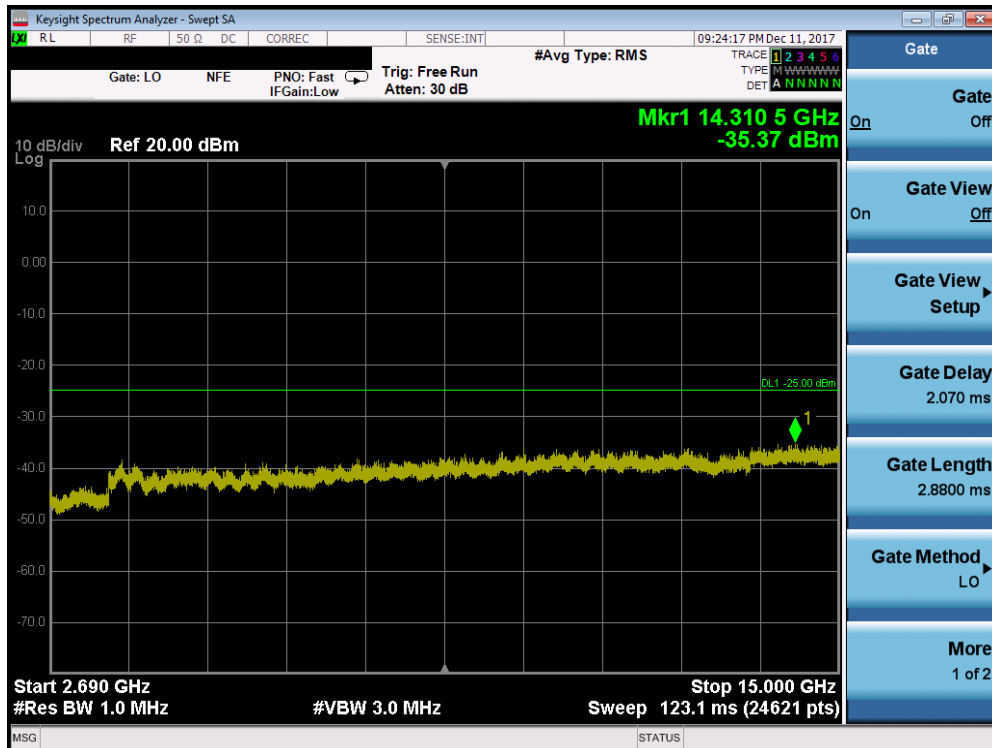


Plot7-260. Conducted Spurious Plot (Band 41 – 20MHz + 20MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 156 of 204

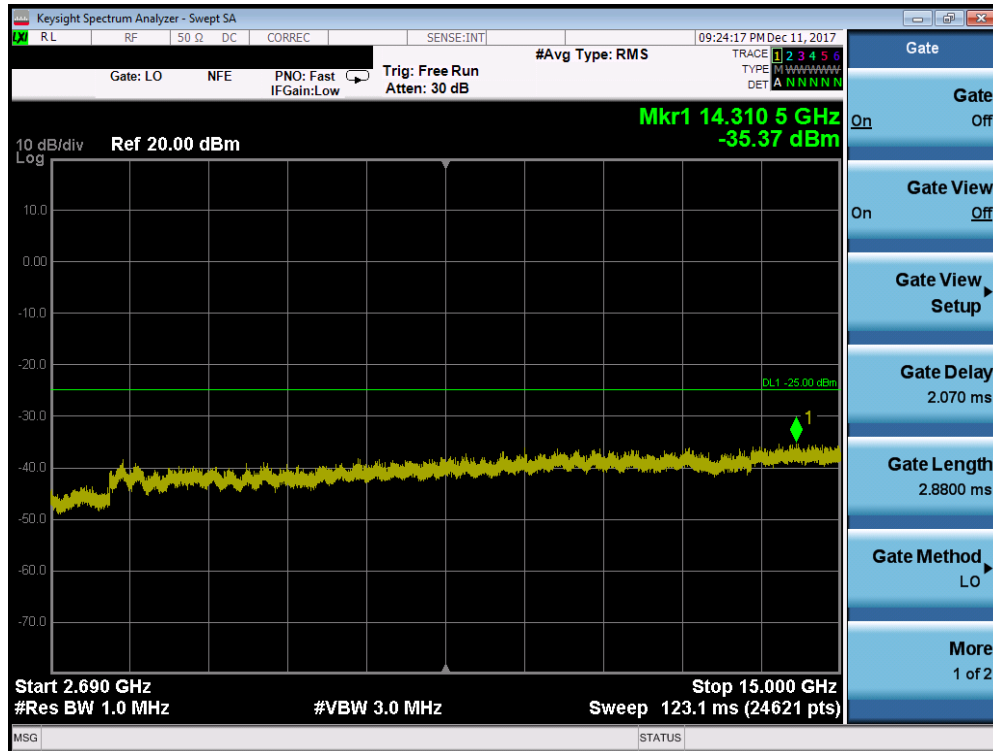


Plot7-261. Conducted Spurious Plot (Band 41 – 20MHz + 20MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

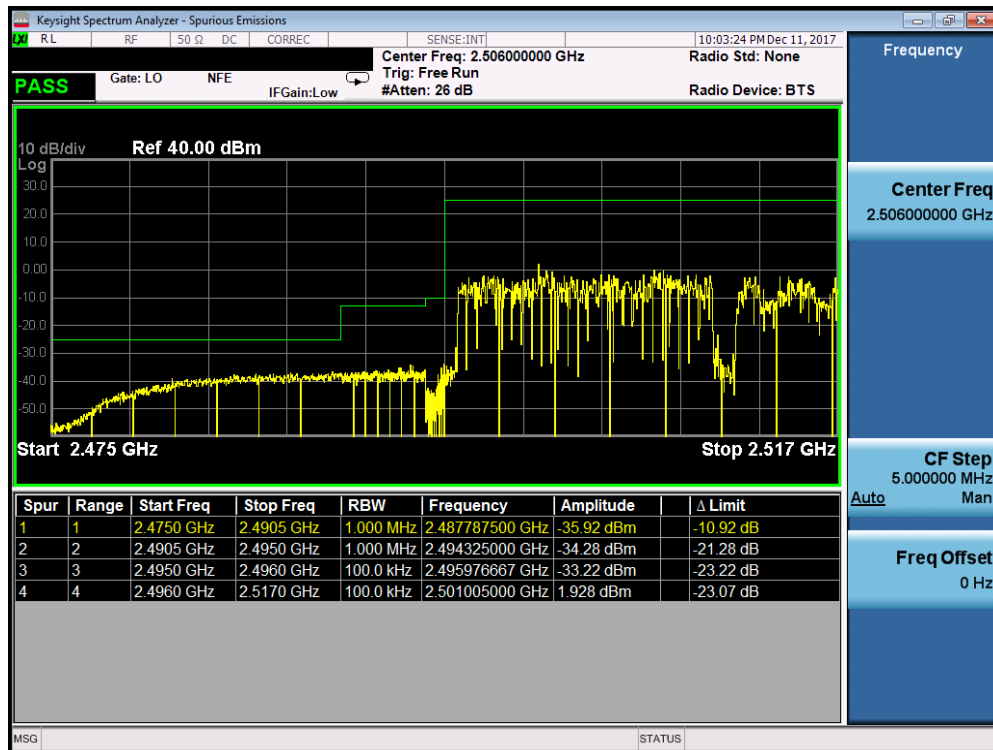


Plot7-262. Conducted Spurious Plot (Band 41 – 20MHz + 20MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 157 of 204

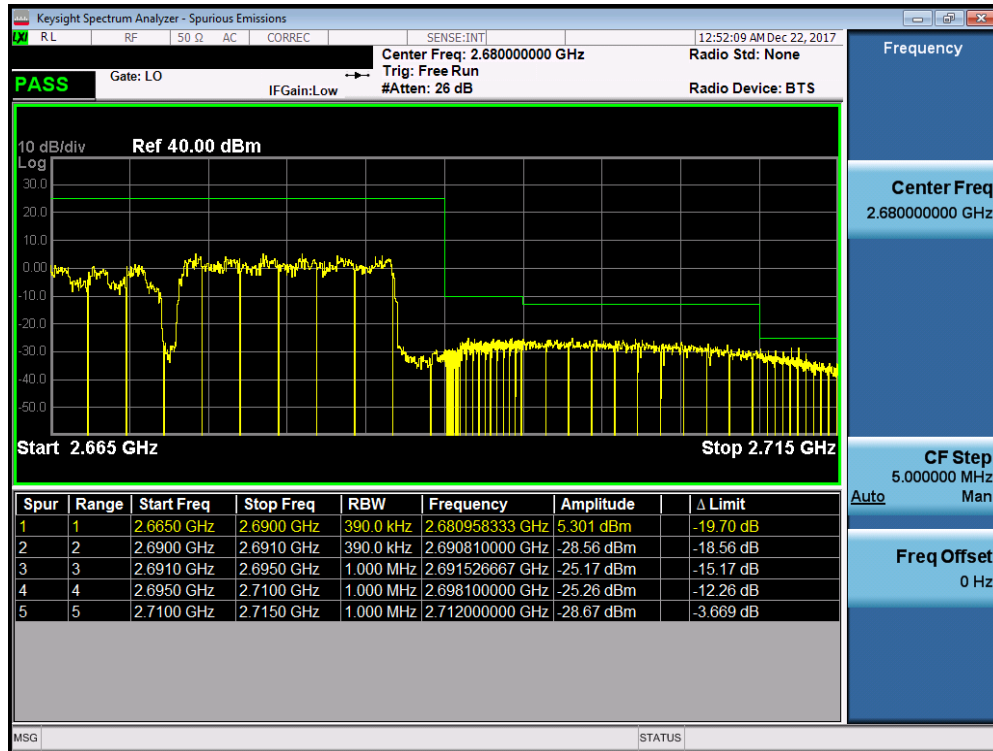


Plot7-263. Conducted Spurious Plot (Band 41 – 20MHz + 20MHz QPSK – PCC 100/0 SCC 100/0 – Mid Channel)

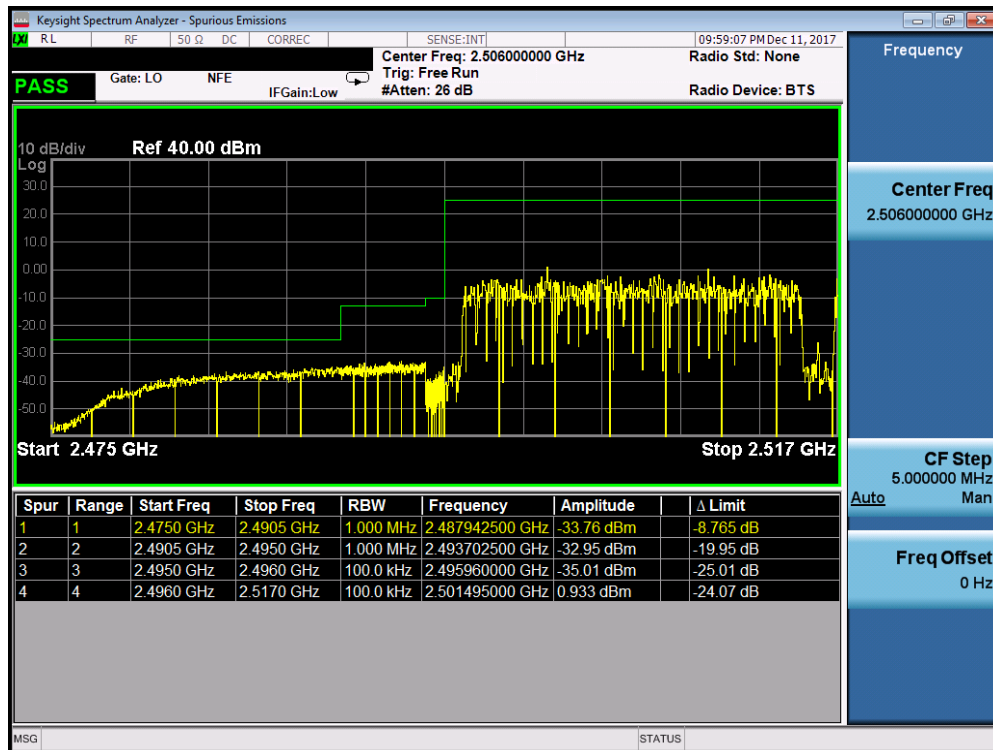


Plot7-264. Lower ACP Plot (Band 41 QPSK – PCC:15 MHz SCC:20 MHz – Full RB)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 158 of 204

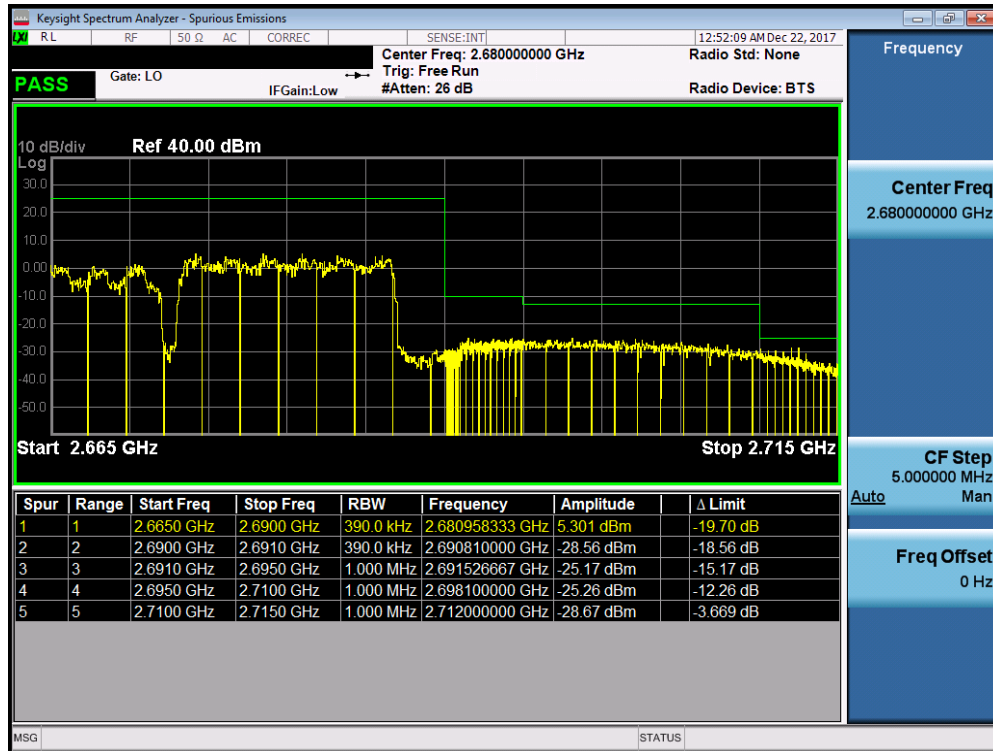


Plot7-265. Upper ACP Plot (Band 41 QPSK – PCC:15 MHz SCC:20 MHz – Full RB)



Plot7-266. Lower ACP Plot (Band 41 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 159 of 204



Plot7-267. Upper ACP Plot (Band 41 QPSK – PCC:20 MHz SCC:20 MHz – Full RB)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 160 of 204

7.7 Uplink Carrier Aggregation Radiated Measurements

\$2.1053, \$27.53(m)

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. 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-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. No. of sweep points $\geq 2 \times$ span / RBW
4. Detector = RMS
5. Trace mode = Max Hold
6. The trace was allowed to stabilize

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 161 of 204

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

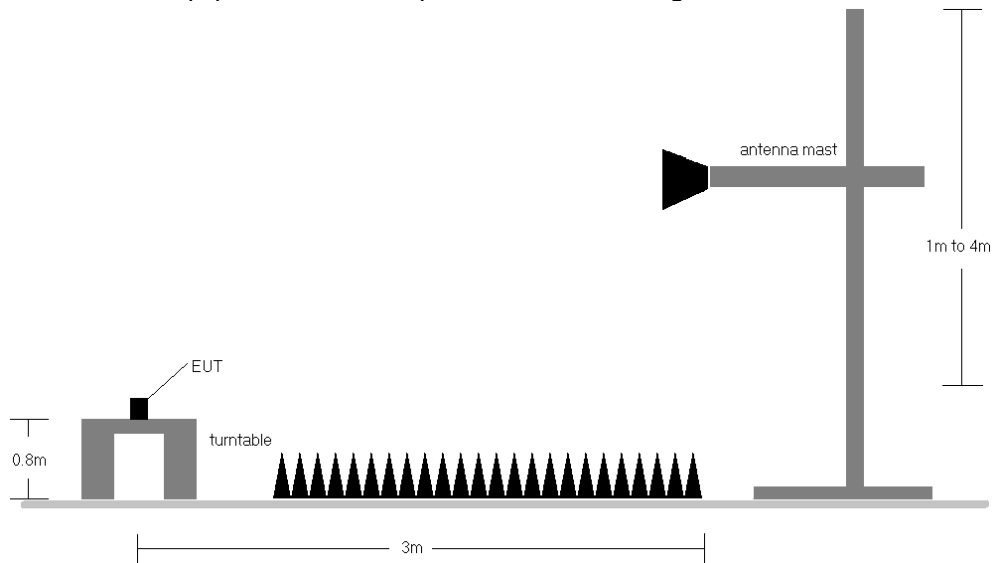
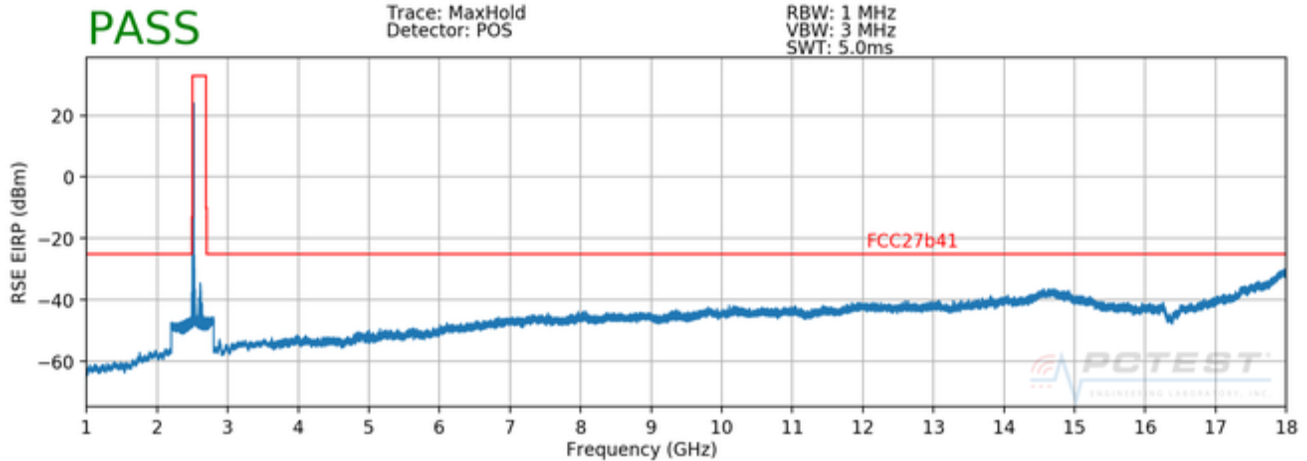


Figure 7-6. Test Instrument & Measurement Setup

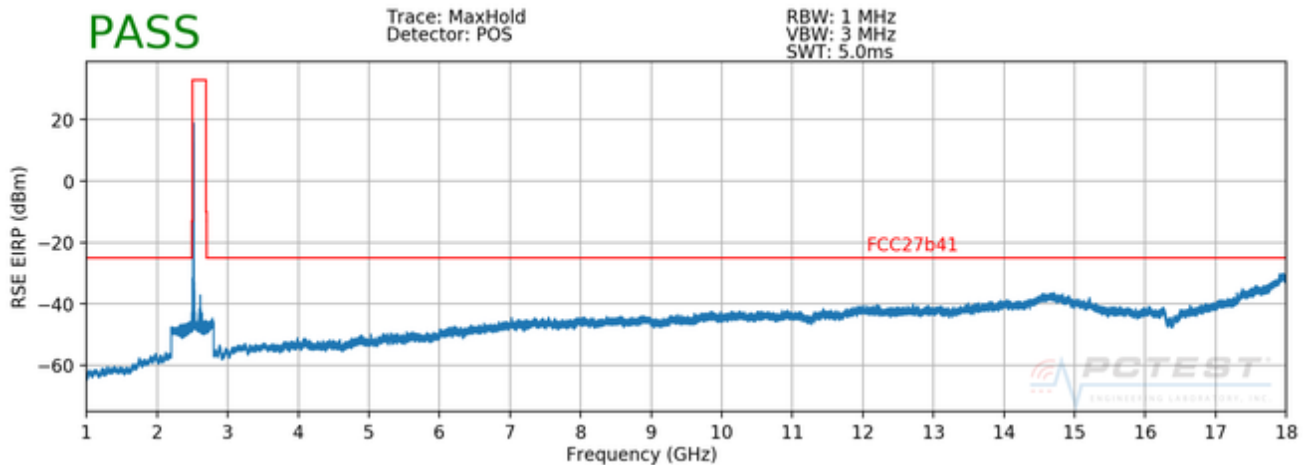
Test Notes

- 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.
- 6) No significant emissions were found as a result of two uplink carriers operating contiguously.
- 7) Radiated spurious emissions measurements were performed on the worst case 20MHz + 20MHz mode for all channels with 1 RB and all RBs active.

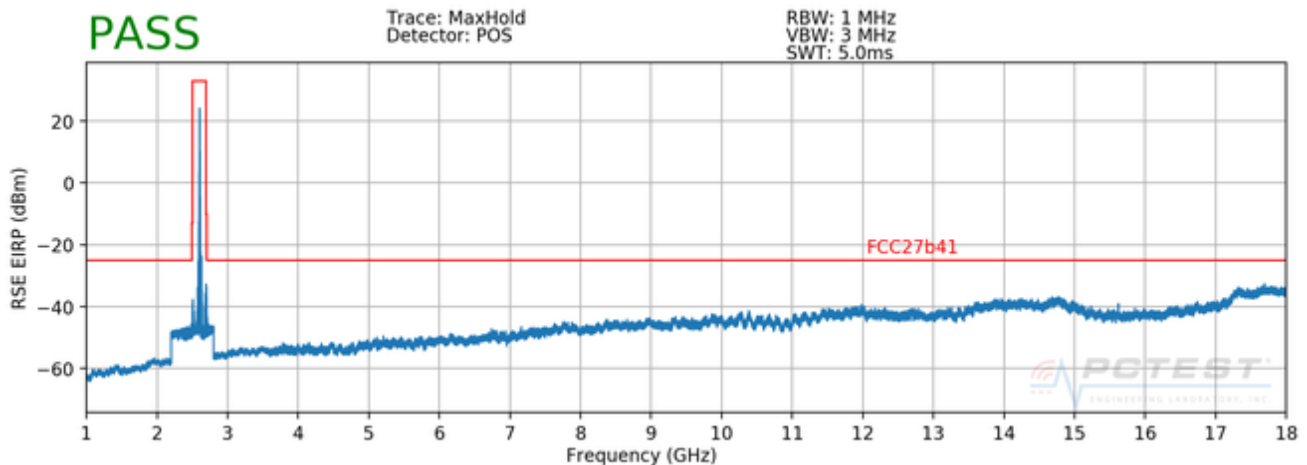
FCC ID: A3LSMG9650		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 162 of 204



Plot 7-268. Radiated Spurious Plot (ULCA B41 – 20MHz + 20MHz QPSK – PCC 1/99 SCC 1/0, Ant.Pol. H – Low Channel)

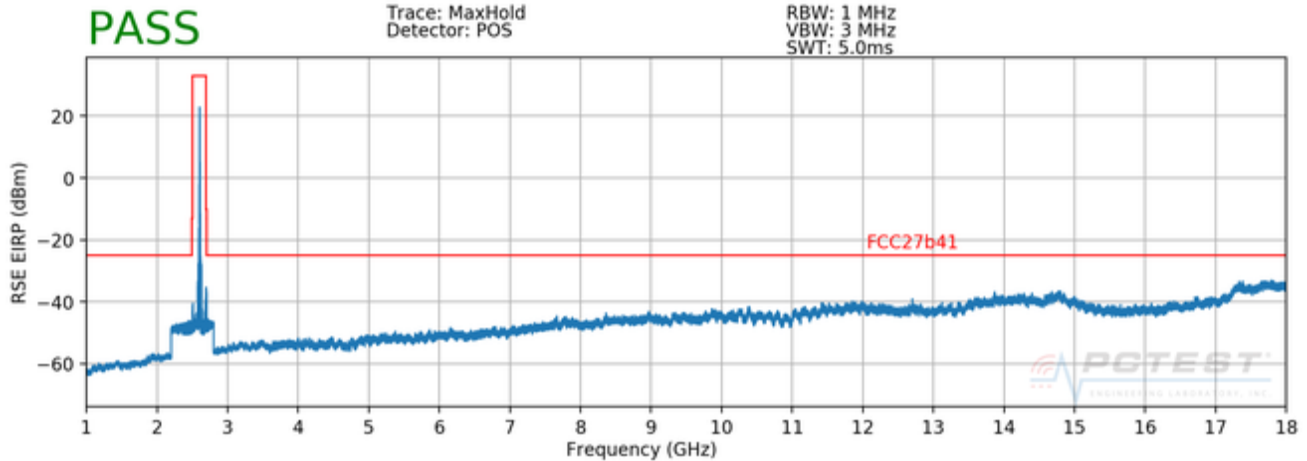


Plot 7-269. Radiated Spurious Plot (ULCA B41 – 20MHz + 20MHz QPSK – PCC 1/99 SCC 1/0, Ant.Pol. V – Low Channel)

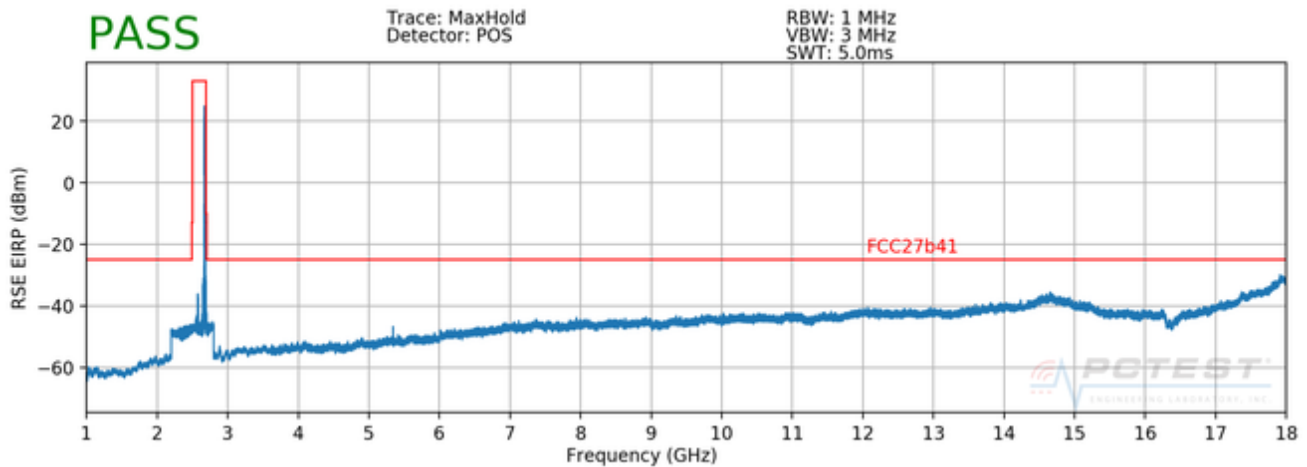


Plot 7-270. Radiated Spurious Plot (ULCA B41 – 20MHz + 20MHz QPSK – PCC 1/99 SCC 1/0, Ant.Pol. H – Mid Channel)

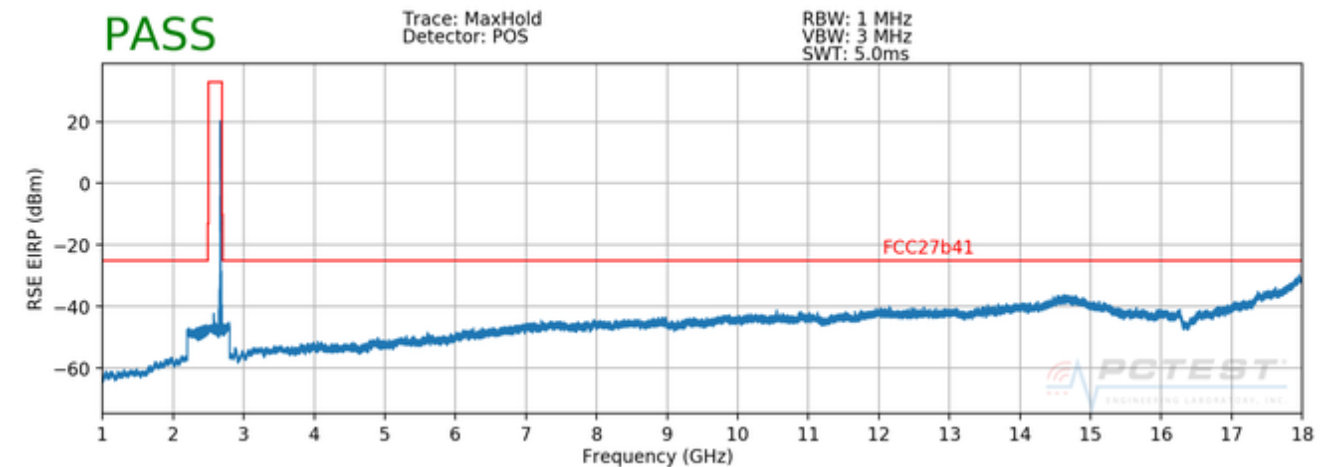
FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 163 of 204



Plot 7-271. Radiated Spurious Plot (ULCA B41 – 20MHz + 20MHz QPSK – PCC 1/99 SCC 1/0, Ant.Pol. V – Mid Channel)

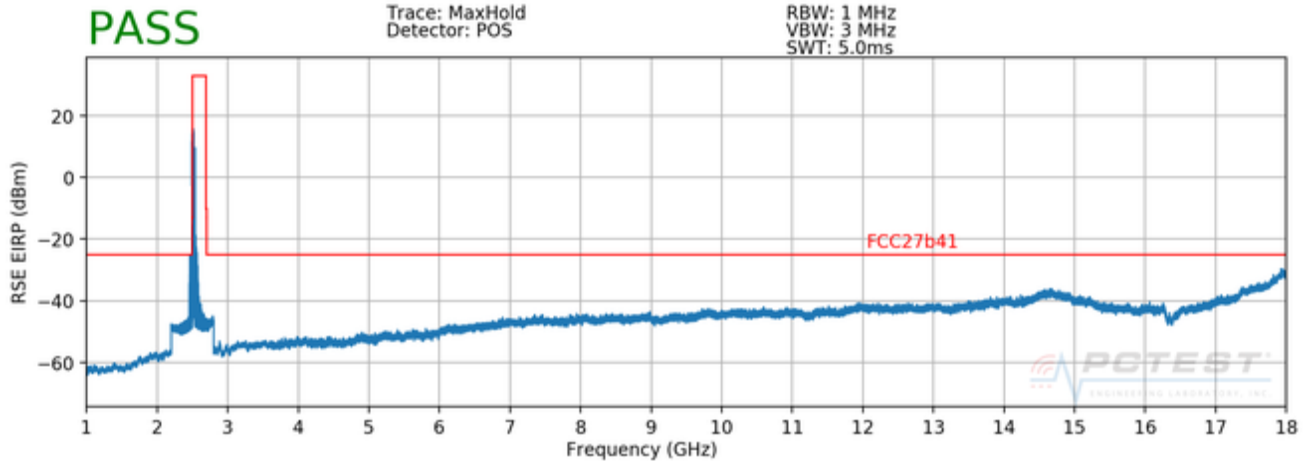


Plot 7-272. Radiated Spurious Plot (ULCA B41 – 20MHz + 20MHz QPSK – PCC 1/99 SCC 1/0, Ant.Pol.H – High Channel)

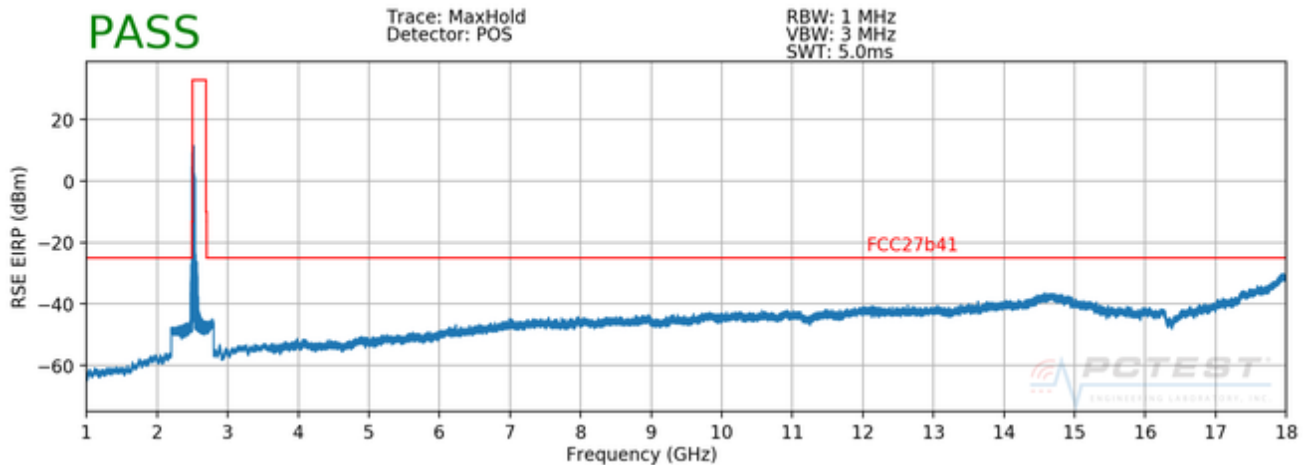


Plot 7-273. Radiated Spurious Plot (ULCA B41 – 20MHz + 20MHz QPSK – PCC 1/99 SCC 1/0, Ant.Pol.V – High Channel)

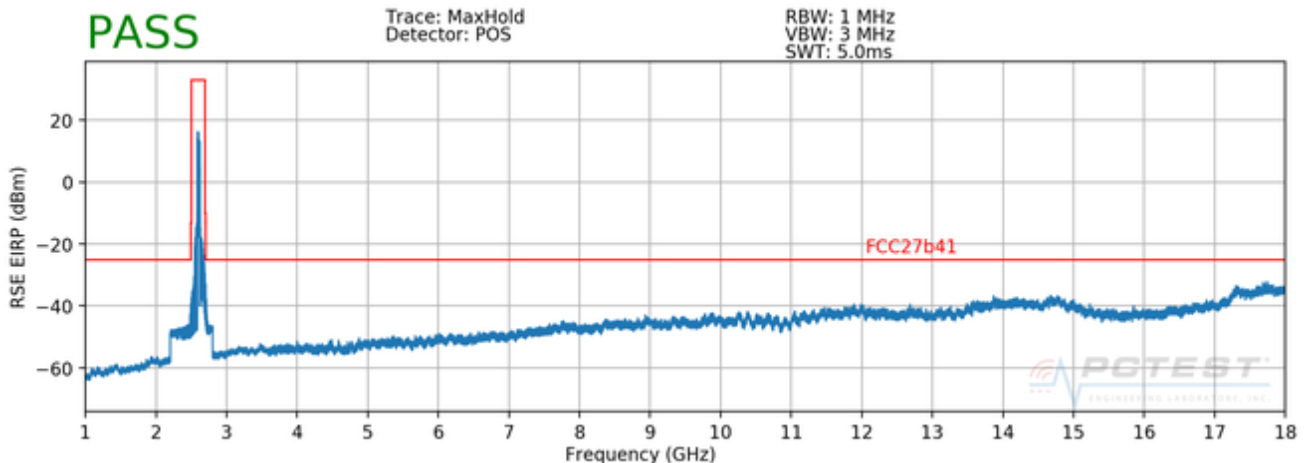
FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 164 of 204



Plot 7-274.Radiated Spurious Plot (ULCA B41- 20MHz + 20MHz QPSK - PCC 100/0 SCC 100/0, Ant.Pol.H- Low Channel)

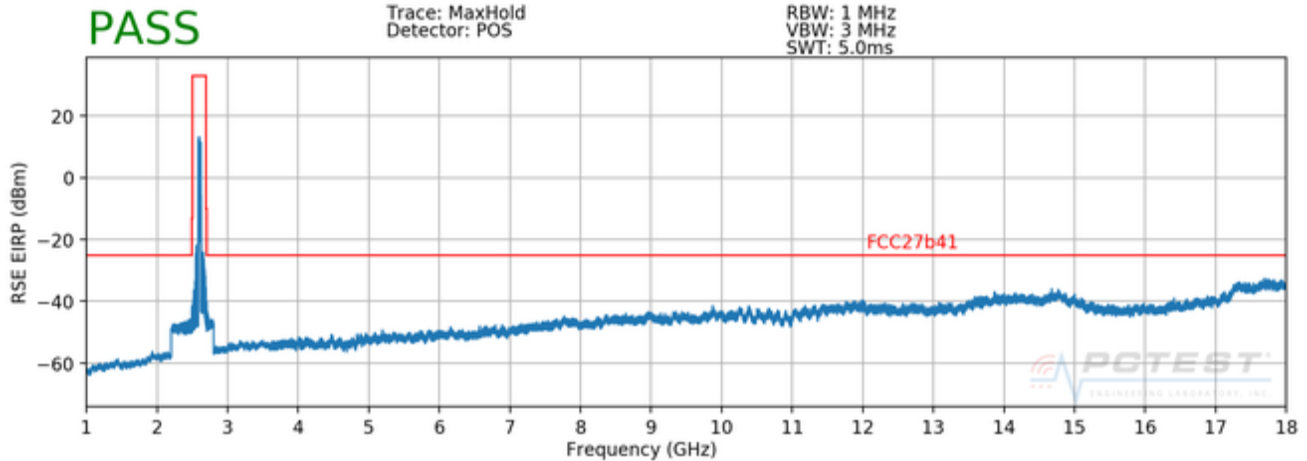


Plot 7-275.Radiated Spurious Plot (ULCA B41- 20MHz + 20MHz QPSK - PCC 100/0 SCC 100/0, Ant.Pol.V- Low Channel)

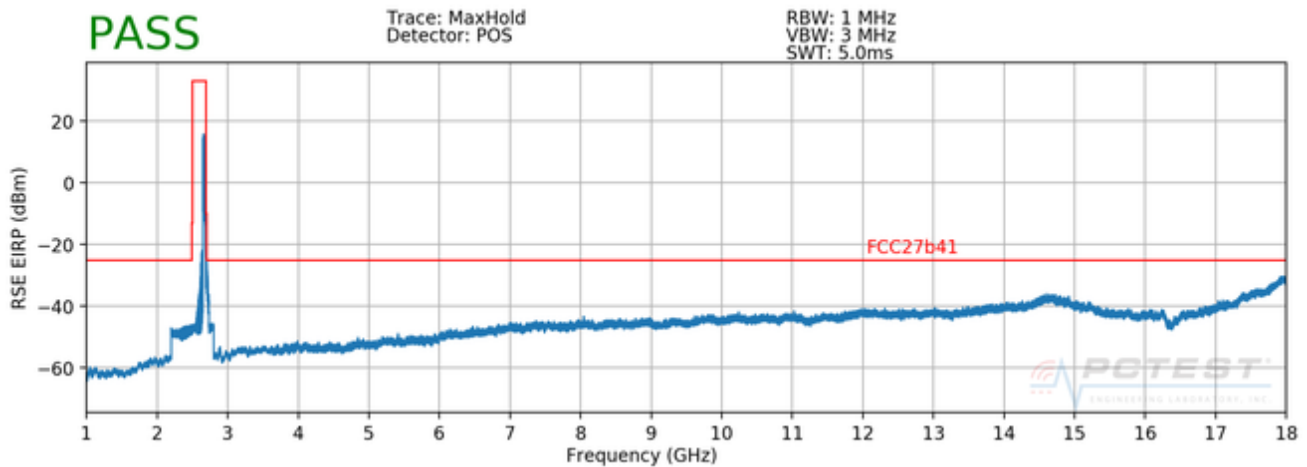


Plot 7-276.Radiated Spurious Plot (ULCA B41- 20MHz + 20MHz QPSK- PCC 100/0 SCC 100/0, Ant.Pol.H- Mid Channel)

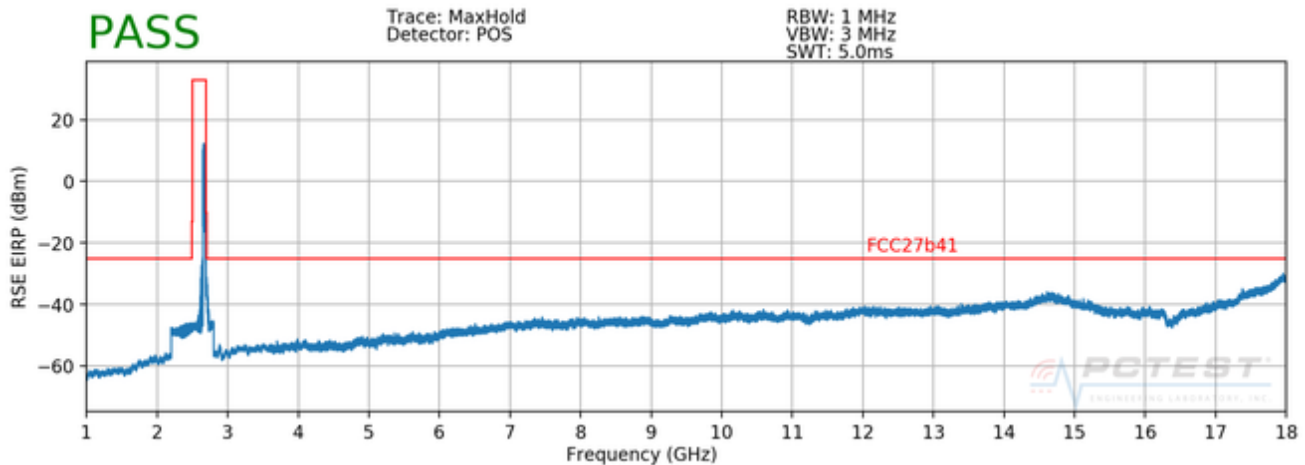
FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 165 of 204



Plot 7-277.Radiated Spurious Plot (ULCA B41- 20MHz + 20MHz QPSK- PCC 100/0 SCC 100/0, Ant.Pol.V- Mid Channel)



Plot 7-278.Radiated Spurious Plot (ULCA B41- 20MHz + 20MHz QPSK- PCC 100/0 SCC 100/0, Ant.Pol.H- High Channel)



Plot 7-279.Radiated Spurious Plot (ULCA B41- 20MHz + 20MHz QPSK- PCC 100/0 SCC 100/0, Ant.Pol.V- High Channel)

FCC ID: A3LSMG9650	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 166 of 204

OPERATING FREQUENCY (PCC): 2506.00 MHz
 OPERATING FREQUENCY (SCC): 2525.80
 CHANNEL (PCC): 39750
 CHANNEL (SCC): 39948
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20 + 20 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]
5012.00	H	150	224	-64.91	11.13	-53.78	-28.8
7518.00	H	247	78	-61.70	11.02	-50.68	-25.7
10024.00	H	-	-	-62.28	12.16	-50.12	-25.1

Table 7-5. (ULCA B41 - PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – Low Channel)

OPERATING FREQUENCY (PCC): 2593.00 MHz
 OPERATING FREQUENCY (SCC): 2573.00
 CHANNEL (PCC): 40620
 CHANNEL (SCC): 40422
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20 + 20 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	151	296	-67.14	10.75	-56.39	-31.4
7779.00	H	246	90	-51.46	11.40	-40.06	-15.1
10372.00	H	-	-	-64.93	12.59	-52.34	-27.3

Table 7-6. (ULCA B41 - PCC: RB 1 Offset 0, SCC: RB 1 Offset 99 – Mid Channel)

FCC ID: A3LSMG9650			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset			Page 167 of 204

OPERATING FREQUENCY (SCC): 2680.00 MHz
 OPERATING FREQUENCY (PCC): 2660.20
 CHANNEL (SCC): 41490
 CHANNEL (PCC): 41292
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20 + 20 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	150	224	-56.36	11.02	-45.33	-20.3
8040.00	H	191	189	-48.42	11.39	-37.03	-12.0
10720.00	H	-	-	-62.66	12.82	-49.84	-24.8

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

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 168 of 204

7.8 Radiated Power (ERP/EIRP)

§22.913(a)(2) §24.232(c.2) §27.50(h)(2) §27.50(b)(10) §27.50(c)(10) §27.50(d)(4) RSS-130(4.4) RSS-132(5.4) RSS-133(6.4) RSS-139(6.5) RSS-199(4.4)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation. 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: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 169 of 204

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

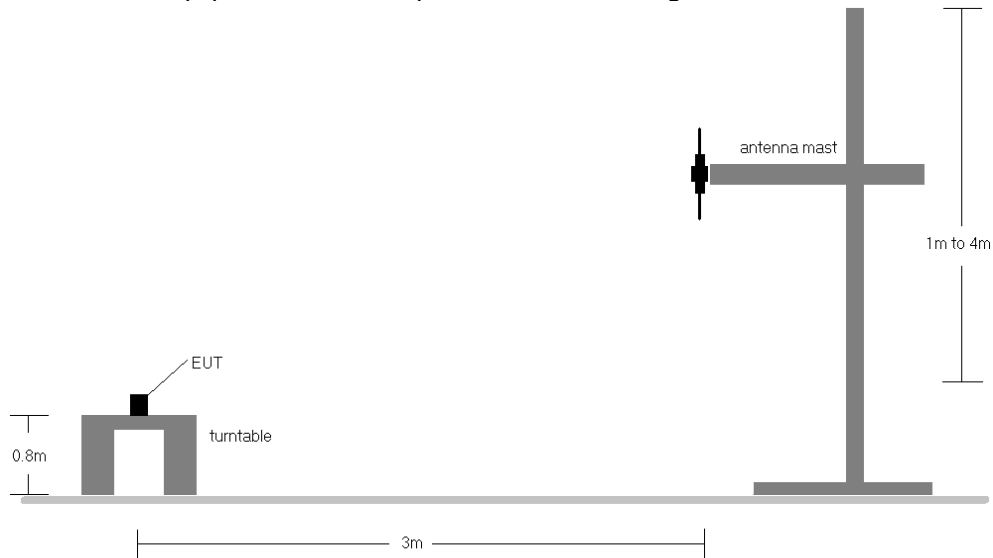


Figure 7-7. Radiated Test Setup <1GHz

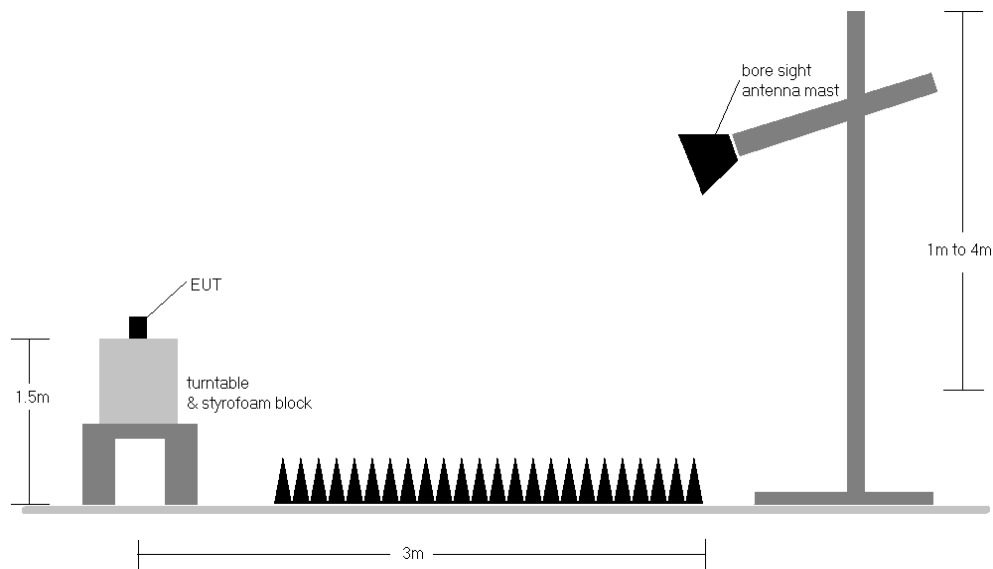


Figure 7-8. Radiated Test Setup >1GHz

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: A3LSMG9650	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 170 of 204

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	V	150	258	3 / 2	19.24	1.10	18.19	0.066	34.77	-16.58	20.34	0.108	36.99	-16.65
707.50	1.4	QPSK	V	150	256	3 / 2	19.73	1.13	18.71	0.074	34.77	-16.06	20.86	0.122	36.99	-16.13
715.30	1.4	QPSK	V	150	256	1 / 5	20.15	1.16	19.16	0.082	34.77	-15.61	21.31	0.135	36.99	-15.68
715.30	1.4	16-QAM	V	150	256	1 / 5	19.24	1.16	18.25	0.067	34.77	-16.52	20.40	0.110	36.99	-16.59
715.30	1.4	64-QAM	V	150	256	1 / 5	18.55	1.16	17.56	0.057	34.77	-17.21	19.71	0.094	36.99	-17.28
700.50	3	QPSK	V	150	241	1 / 7	19.12	1.10	18.07	0.064	34.77	-16.70	20.22	0.105	36.99	-16.77
707.50	3	QPSK	V	150	251	1 / 14	19.87	1.13	18.85	0.077	34.77	-15.92	21.00	0.126	36.99	-15.99
714.50	3	QPSK	V	150	267	1 / 7	20.03	1.16	19.04	0.080	34.77	-15.73	21.19	0.131	36.99	-15.80
714.50	3	16-QAM	V	150	267	1 / 7	19.50	1.16	18.51	0.071	34.77	-16.26	20.66	0.116	36.99	-16.33
714.50	3	64-QAM	V	150	267	1 / 7	18.47	1.16	17.48	0.056	34.77	-17.29	19.63	0.092	36.99	-17.36
715.30	1.4	QPSK	H	150	303	3 / 2	18.33	1.16	17.34	0.054	34.77	-17.43	19.49	0.089	36.99	-17.50
715.30	1.4 (WCP)	QPSK	V	150	332	1 / 5	18.12	1.16	17.13	0.052	34.77	-17.64	19.28	0.085	36.99	-17.71

Table 7-8. ERP/EIRP Data (Band 12)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
701.50	5	QPSK	V	150	270	1 / 24	19.46	1.11	18.42	0.069	34.77	-16.36	20.57	0.114	36.99	-16.42
707.50	5	QPSK	V	150	247	1 / 24	19.98	1.13	18.96	0.079	34.77	-15.81	21.11	0.129	36.99	-15.88
713.50	5	QPSK	V	150	252	1 / 0	19.97	1.15	18.97	0.079	34.77	-15.80	21.12	0.130	36.99	-15.87
713.50	5	16-QAM	V	150	252	1 / 0	19.20	1.15	18.20	0.066	34.77	-16.57	20.35	0.109	36.99	-16.64
713.50	5	64-QAM	V	150	252	1 / 0	18.22	1.15	17.22	0.053	34.77	-17.55	19.37	0.087	36.99	-17.62
704.00	10	QPSK	V	150	252	1 / 49	19.77	1.12	18.74	0.075	34.77	-16.03	20.89	0.123	36.99	-16.10
707.50	10	QPSK	V	150	265	1 / 49	19.88	1.13	18.86	0.077	34.77	-15.91	21.01	0.126	36.99	-15.98
711.00	10	QPSK	V	150	276	1 / 49	19.56	1.14	18.55	0.072	34.77	-16.22	20.70	0.118	36.99	-16.29
707.50	10	16-QAM	V	150	265	1 / 49	18.99	1.13	17.97	0.063	34.77	-16.80	20.12	0.103	36.99	-16.87
707.50	10	64-QAM	V	150	265	1 / 49	18.28	1.13	17.26	0.053	34.77	-17.51	19.41	0.087	36.99	-17.58

Table 7-9. ERP/EIRP Data (Band 12/17)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 171 of 204

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
779.50	5	QPSK	H	150	296	1 / 24	19.26	1.32	18.43	0.070	34.77	-16.34	20.58	0.114	36.99	-16.41
782.00	5	QPSK	H	150	290	1 / 24	19.23	1.33	18.41	0.069	34.77	-16.36	20.56	0.114	36.99	-16.43
784.50	5	QPSK	H	150	296	1 / 24	19.48	1.34	18.67	0.074	34.77	-16.10	20.82	0.121	36.99	-16.17
784.50	5	16-QAM	H	150	296	1 / 24	18.85	1.34	18.04	0.064	34.77	-16.73	20.19	0.104	36.99	-16.80
784.50	5	64-QAM	H	150	296	1 / 24	17.76	1.34	16.95	0.050	34.77	-17.82	19.10	0.081	36.99	-17.89
782.00	10	QPSK	H	150	293	1 / 49	19.53	1.33	18.71	0.074	34.77	-16.06	20.86	0.122	36.99	-16.13
782.00	10	16-QAM	H	150	293	1 / 49	18.96	1.33	18.14	0.065	34.77	-16.63	20.29	0.107	36.99	-16.70
782.00	10	64-QAM	H	150	293	1 / 49	17.97	1.33	17.15	0.052	34.77	-17.62	19.30	0.085	36.99	-17.69
782.00	10	QPSK	V	150	253	1 / 0	17.44	1.33	16.62	0.046	34.77	-18.15	18.77	0.075	36.99	-18.22
782.00	10 (WCP)	QPSK	H	150	7	1 / 0	17.20	1.33	16.38	0.043	34.77	-18.39	18.53	0.071	36.99	-18.46

Table 7-10. ERP/EIRP Data (Band 13)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	H	150	114	1 / 5	20.18	1.50	19.53	0.090	38.45	-18.92	21.68	0.147	40.61	-18.93
836.50	1.4	QPSK	H	150	111	1 / 5	20.97	1.50	20.32	0.108	38.45	-18.13	22.47	0.177	40.61	-18.14
848.30	1.4	QPSK	H	150	109	1 / 5	20.95	1.50	20.30	0.107	38.45	-18.15	22.45	0.176	40.61	-18.16
848.30	1.4	16-QAM	H	150	109	1 / 5	20.13	1.50	19.48	0.089	38.45	-18.97	21.63	0.146	40.61	-18.98
836.50	1.4	64-QAM	H	150	111	1 / 5	19.15	1.50	18.50	0.071	38.45	-19.95	20.65	0.116	40.61	-19.96
825.50	3	QPSK	H	150	109	1 / 14	20.28	1.50	19.63	0.092	38.45	-18.82	21.78	0.151	40.61	-18.83
836.50	3	QPSK	H	150	104	1 / 14	20.44	1.50	19.79	0.095	38.45	-18.66	21.94	0.156	40.61	-18.67
847.50	3	QPSK	H	150	109	1 / 14	20.79	1.50	20.14	0.103	38.45	-18.31	22.29	0.169	40.61	-18.32
847.50	3	16-QAM	H	150	109	1 / 14	19.90	1.50	19.25	0.084	38.45	-19.20	21.40	0.138	40.61	-19.21
836.50	3	64-QAM	H	150	104	1 / 14	18.94	1.50	18.29	0.067	38.45	-20.16	20.44	0.111	40.61	-20.17
826.50	5	QPSK	H	150	305	1 / 24	20.36	1.50	19.71	0.094	38.45	-18.74	21.86	0.153	40.61	-18.75
836.50	5	QPSK	H	150	307	1 / 0	20.17	1.50	19.52	0.090	38.45	-18.93	21.67	0.147	40.61	-18.94
846.50	5	QPSK	H	150	305	1 / 0	20.28	1.50	19.63	0.092	38.45	-18.82	21.78	0.151	40.61	-18.83
846.50	5	16-QAM	H	150	305	1 / 0	19.72	1.50	19.07	0.081	38.45	-19.38	21.22	0.132	40.61	-19.39
846.50	5	64-QAM	H	150	305	1 / 0	18.75	1.50	18.10	0.065	38.45	-20.35	20.25	0.106	40.61	-20.36
829.00	10	QPSK	H	150	303	1 / 0	20.21	1.50	19.56	0.090	38.45	-18.89	21.71	0.148	40.61	-18.90
836.50	10	QPSK	H	150	305	1 / 0	20.23	1.50	19.58	0.091	38.45	-18.87	21.73	0.149	40.61	-18.88
844.00	10	QPSK	H	150	302	1 / 0	20.54	1.50	19.89	0.097	38.45	-18.56	22.04	0.160	40.61	-18.57
844.00	10	16-QAM	H	150	302	1 / 0	19.78	1.50	19.13	0.082	38.45	-19.32	21.28	0.134	40.61	-19.33
844.00	10	64-QAM	H	150	302	1 / 0	18.82	1.50	18.17	0.066	38.45	-20.28	20.32	0.108	40.61	-20.29
836.50	1.4	QPSK	V	150	267	3 / 2	19.79	1.50	19.14	0.082	38.45	-19.31	21.29	0.135	40.61	-19.32
836.50	1.4 (WCP)	QPSK	H	150	17	1 / 5	19.61	1.50	18.96	0.079	38.45	-19.49	21.11	0.129	40.61	-19.50

Table 7-11. ERP/EIRP Data (Band 5/26)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 172 of 204

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	302	1 / 74	20.17	1.50	19.52	0.090	38.45	-18.93
836.50	15	QPSK	H	150	307	1 / 74	20.11	1.50	19.46	0.088	38.45	-18.99
841.50	15	QPSK	H	150	311	1 / 0	20.25	1.50	19.60	0.091	38.45	-18.85
841.50	15	16-QAM	H	150	311	1 / 0	19.41	1.50	18.76	0.075	38.45	-19.69
841.50	15	64-QAM	H	150	311	1 / 0	18.26	1.50	17.61	0.058	38.45	-20.84

Table 7-12. ERP/EIRP Data (Band 26)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 173 of 204

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	150	13	1 / 5	16.85	5.56	22.41	0.174	30.00	-7.59
1745.00	1.4	QPSK	H	150	9	1 / 5	17.39	5.32	22.71	0.187	30.00	-7.29
1779.30	1.4	QPSK	H	150	10	1 / 5	17.74	5.09	22.83	0.192	30.00	-7.17
1779.30	1.4	16-QAM	H	150	10	1 / 5	16.85	5.09	21.94	0.156	30.00	-8.06
1779.30	1.4	64-QAM	H	150	10	1 / 5	16.02	5.09	21.11	0.129	30.00	-8.89
1711.50	3	QPSK	H	150	18	1 / 14	17.65	5.55	23.20	0.209	30.00	-6.80
1745.00	3	QPSK	H	150	15	1 / 14	17.53	5.32	22.85	0.193	30.00	-7.15
1778.50	3	QPSK	H	150	13	1 / 14	18.00	5.10	23.10	0.204	30.00	-6.90
1711.50	3	16-QAM	H	150	18	1 / 14	16.74	5.55	22.29	0.170	30.00	-7.71
1778.50	3	64-QAM	H	150	13	1 / 14	16.31	5.10	21.41	0.138	30.00	-8.59
1712.50	5	QPSK	H	150	8	1 / 24	17.31	5.55	22.86	0.193	30.00	-7.14
1745.00	5	QPSK	H	150	13	1 / 24	17.44	5.32	22.76	0.189	30.00	-7.24
1777.50	5	QPSK	H	150	10	1 / 24	17.99	5.10	23.09	0.204	30.00	-6.91
1777.50	5	16-QAM	H	150	10	1 / 24	17.14	5.10	22.24	0.168	30.00	-7.76
1777.50	5	64-QAM	H	150	10	1 / 24	16.18	5.10	21.28	0.134	30.00	-8.72
1715.00	10	QPSK	H	150	5	1 / 49	17.17	5.53	22.70	0.186	30.00	-7.30
1745.00	10	QPSK	H	150	5	1 / 49	17.19	5.32	22.51	0.178	30.00	-7.49
1775.00	10	QPSK	H	150	13	1 / 49	17.97	5.12	23.09	0.204	30.00	-6.91
1775.00	10	16-QAM	H	150	13	1 / 49	17.09	5.12	22.21	0.166	30.00	-7.79
1775.00	10	64-QAM	H	150	13	1 / 49	16.23	5.12	21.35	0.136	30.00	-8.65
1717.50	15	QPSK	H	150	10	1 / 74	17.27	5.51	22.78	0.190	30.00	-7.22
1745.00	15	QPSK	H	150	8	1 / 74	17.67	5.32	22.99	0.199	30.00	-7.01
1772.50	15	QPSK	H	150	13	1 / 74	18.14	5.14	23.28	0.213	30.00	-6.72
1772.50	15	16-QAM	H	150	13	1 / 74	17.15	5.14	22.29	0.169	30.00	-7.71
1772.50	15	64-QAM	H	150	13	1 / 74	16.24	5.14	21.38	0.137	30.00	-8.62
1720.00	20	QPSK	H	150	9	1 / 99	17.12	5.49	22.61	0.183	30.00	-7.39
1745.00	20	QPSK	H	150	14	1 / 99	17.55	5.32	22.87	0.194	30.00	-7.13
1770.00	20	QPSK	H	150	9	1 / 99	17.80	5.15	22.95	0.197	30.00	-7.05
1770.00	20	16-QAM	H	150	9	1 / 99	16.96	5.15	22.11	0.163	30.00	-7.89
1770.00	20	64-QAM	H	150	9	1 / 99	16.00	5.15	21.15	0.130	30.00	-8.85
1772.50	15	QPSK	V	150	152	1 / 99	16.02	4.97	20.99	0.126	30.00	-9.01
1772.50	15 (WCP)	QPSK	H	150	215	1 / 74	18.07	5.14	23.21	0.209	30.00	-6.79

Table 7-13. EIRP Data (Band 4/66)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 174 of 204

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	H	150	10	3 / 2	18.76	4.82	23.58	0.228	33.01	-9.43
1882.50	1.4	QPSK	H	150	10	1 / 0	18.65	4.73	23.38	0.218	33.01	-9.63
1914.30	1.4	QPSK	H	150	2	3 / 2	17.28	4.68	21.96	0.157	33.01	-11.05
1850.70	1.4	16-QAM	H	150	10	1 / 0	17.81	4.82	22.63	0.183	33.01	-10.38
1850.70	1.4	64-QAM	H	150	10	3 / 2	16.95	4.82	21.77	0.150	33.01	-11.24
1851.50	3	QPSK	H	150	11	1 / 0	18.80	4.82	23.62	0.230	33.01	-9.39
1882.50	3	QPSK	H	150	13	1 / 0	18.39	4.73	23.12	0.205	33.01	-9.89
1913.50	3	QPSK	H	150	14	1 / 0	17.33	4.68	22.01	0.159	33.01	-11.00
1851.50	3	16-QAM	H	150	11	1 / 0	18.23	4.82	23.05	0.202	33.01	-9.96
1851.50	3	64-QAM	H	150	11	1 / 0	17.02	4.82	21.84	0.153	33.01	-11.17
1852.50	5	QPSK	H	150	10	1 / 0	18.84	4.81	23.65	0.232	33.01	-9.36
1882.50	5	QPSK	H	150	12	1 / 0	18.37	4.73	23.10	0.204	33.01	-9.91
1912.50	5	QPSK	H	150	5	1 / 0	17.38	4.68	22.06	0.161	33.01	-10.95
1852.50	5	16-QAM	H	150	10	1 / 0	18.10	4.81	22.91	0.196	33.01	-10.10
1852.50	5	64-QAM	H	150	10	1 / 0	17.10	4.81	21.91	0.155	33.01	-11.10
1855.00	10	QPSK	H	150	8	1 / 0	19.09	4.81	23.90	0.245	33.01	-9.11
1882.50	10	QPSK	H	150	13	1 / 0	18.68	4.73	23.41	0.219	33.01	-9.60
1910.00	10	QPSK	H	150	8	1 / 0	17.62	4.68	22.30	0.170	33.01	-10.71
1855.00	10	16-QAM	H	150	8	1 / 0	18.22	4.81	23.03	0.201	33.01	-9.98
1855.00	10	64-QAM	H	150	8	1 / 0	17.48	4.81	22.29	0.169	33.01	-10.72
1857.50	15	QPSK	H	150	9	1 / 0	18.86	4.80	23.66	0.232	33.01	-9.35
1882.50	15	QPSK	H	150	6	1 / 0	18.83	4.73	23.56	0.227	33.01	-9.45
1907.50	15	QPSK	H	150	9	1 / 0	17.75	4.68	22.43	0.175	33.01	-10.58
1857.50	15	16-QAM	H	150	9	1 / 0	18.53	4.80	23.33	0.215	33.01	-9.68
1857.50	15	64-QAM	H	150	9	1 / 0	17.25	4.80	22.05	0.160	33.01	-10.96
1860.00	20	QPSK	H	150	12	1 / 0	19.19	4.79	23.98	0.250	33.01	-9.03
1882.50	20	QPSK	H	150	9	1 / 0	19.04	4.73	23.77	0.238	33.01	-9.24
1905.00	20	QPSK	H	150	10	1 / 0	17.72	4.68	22.40	0.174	33.01	-10.61
1860.00	20	16-QAM	H	150	12	1 / 0	18.82	4.79	23.61	0.230	33.01	-9.40
1860.00	20	64-QAM	H	150	12	1 / 0	17.50	4.79	22.29	0.170	33.01	-10.72
1860.00	20	QPSK	V	150	311	1 / 0	18.12	4.73	22.85	0.193	33.01	-10.16
1860.00	20 (WCP)	QPSK	H	150	0	1 / 0	18.83	4.79	23.62	0.230	33.01	-9.39

Table 7-14. EIRP Data (Band 2/25)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 175 of 204

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]
2498.50	5	QPSK	V	150	285	1 / 12	15.70	5.59	21.29	0.135	33.01	-11.72
2593.00	5	QPSK	V	150	292	1 / 12	17.38	6.27	23.65	0.232	33.01	-9.36
2687.50	5	QPSK	V	150	292	1 / 12	17.95	6.47	24.42	0.277	33.01	-8.59
2687.50	5	16-QAM	V	150	292	1 / 12	17.37	6.47	23.84	0.242	33.01	-9.17
2687.50	5	64-QAM	V	150	292	1 / 12	17.04	6.47	23.51	0.224	33.01	-9.50
2501.00	10	QPSK	V	150	290	1 / 49	14.56	5.60	20.16	0.104	33.01	-12.85
2593.00	10	QPSK	V	150	300	1 / 0	16.48	6.27	22.75	0.189	33.01	-10.26
2685.00	10	QPSK	V	150	300	1 / 0	16.98	6.46	23.44	0.221	33.01	-9.57
2685.00	10	16-QAM	V	150	300	1 / 0	16.38	6.46	22.84	0.193	33.01	-10.17
2685.00	10	64-QAM	V	150	300	1 / 0	15.68	6.46	22.14	0.164	33.01	-10.87
2503.50	15	QPSK	V	150	281	1 / 74	14.11	5.61	19.72	0.094	33.01	-13.29
2593.00	15	QPSK	V	150	270	1 / 74	16.82	6.27	23.09	0.204	33.01	-9.92
2682.50	15	QPSK	V	150	283	1 / 0	18.29	6.46	24.75	0.299	33.01	-8.26
2682.50	15	16-QAM	V	150	283	1 / 0	17.53	6.46	23.99	0.251	33.01	-9.02
2682.50	15	64-QAM	V	150	283	1 / 0	17.10	6.46	23.56	0.227	33.01	-9.45
2506.00	20	QPSK	V	150	297	1 / 99	15.74	5.63	21.37	0.137	33.01	-11.64
2593.00	20	QPSK	V	150	294	1 / 0	15.60	6.27	21.87	0.154	33.01	-11.14
2680.00	20	QPSK	V	150	294	1 / 50	16.32	6.46	22.78	0.190	33.01	-10.23
2680.00	20	16-QAM	V	150	294	1 / 50	15.65	6.46	22.11	0.162	33.01	-10.90
2680.00	20	64-QAM	V	150	294	1 / 50	15.16	6.46	21.62	0.145	33.01	-11.39
2682.50	15	QPSK	H	150	234	1 / 0	16.62	6.46	23.08	0.203	33.01	-9.93
2682.50	15 (WCP)	QPSK	V	150	297	1 / 0	17.92	6.46	24.38	0.274	33.01	-8.63

Table 7-15. EIRP Data (Band 41)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 176 of 204

7.9 Radiated Spurious Emissions Measurements

§2.1053 §22.917(a) §24.238(a) §27.53(c) §27.53(f) §27.53(g) §27.53(h) §27.53(m) RSS-130(4.6) RSS-132(5.5) RSS-133(6.5) RSS-139(6.6) RSS-199(4.5)

Test Overview

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

Test Procedures Used

KDB 971168 D01 v03 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

Test Settings

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

FCC ID: A3LSMG9650		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 177 of 204

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

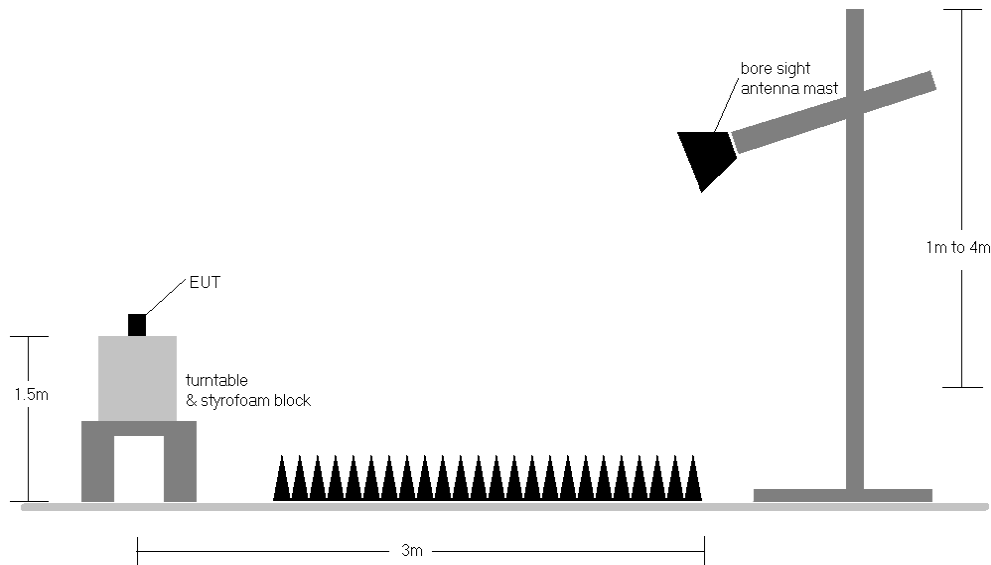


Figure 7-9. Test Instrument & Measurement Setup

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) 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: A3LSMG9650		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 178 of 204	

Band 12/17

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	151	169	-60.40	7.91	-52.49	-39.5
2099.10	H	137	208	-74.05	8.91	-65.14	-52.1
2798.80	H	-	-	-73.27	10.05	-63.21	-50.2
3498.50	H	-	-	-69.92	9.66	-60.25	-47.3

Table 7-16. Radiated Spurious Data (Band 12/17 – Low Channel)

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	-	-	-76.79	8.09	-68.70	-55.7
2122.50	H	-	-	-73.84	8.88	-64.96	-52.0

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

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 179 of 204

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	147	172	-65.10	8.27	-56.83	-43.8
2145.90	H	-	-	-73.87	8.85	-65.02	-52.0
2861.20	H	-	-	-73.69	10.18	-63.50	-50.5

Table 7-18. Radiated Spurious Data (Band 12/17 – High 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	154	350	-72.72	8.27	-64.45	-51.4
2145.90	h	-	-	-73.72	8.85	-64.87	-51.9
2861.20	h	-	-	-73.79	10.18	-63.60	-50.6

Table 7-19. Radiated Spurious Data with WCP (Band 12/17 – 23173 Channel)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 180 of 204

Band 13

OPERATING FREQUENCY: 782.00 MHz
 CHANNEL: 23230
 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]
2346.00	H	-	-	-69.90	5.72	-64.17	-51.2
3128.00	H	-	-	-69.82	6.93	-62.89	-49.9

Table 7-20. Radiated Spurious Data (Band 13 – Mid Channel)

MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.00 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]
1564.00	H	-	-	-74.04	5.88	-68.16	-28.2

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

FCC ID: A3LSMG9650		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 181 of 204

OPERATING FREQUENCY: 782.00 MHz
 CHANNEL: 23230
 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]
2346.00	H	127	72	-68.65	5.72	-62.92	-49.9
3128.00	H	-	-	-69.74	6.93	-62.81	-49.8
3910.00	H	-	-	-69.41	8.60	-60.81	-47.8

Table 7-22. Radiated Spurious Data with WCP (Band 13 – 23230 Channel)

MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.00 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]
1564.00	H	135	342	-71.13	5.88	-65.25	-25.3

Table 7-23. Radiated Spurious Data with WCP (Band 13 – 1559-1610MHz Band)

FCC ID: A3LSMG9650			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset			Page 182 of 204

Band 5/26

OPERATING FREQUENCY: 824.70 MHz
 CHANNEL: 26797
 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]
1649.40	V	148	37	-76.04	8.85	-67.18	-54.2
2474.10	V	-	-	-72.05	9.18	-62.87	-49.9
3298.80	V	-	-	-70.58	9.43	-61.15	-48.2

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

OPERATING FREQUENCY: 836.50 MHz
 CHANNEL: 26915
 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]
1673.00	V	-	-	-76.16	8.71	-67.45	-54.4
2509.50	V	-	-	-73.27	9.24	-64.03	-51.0

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

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 183 of 204

OPERATING FREQUENCY: 848.30 MHz
CHANNEL: 27033
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]
1696.60	V	115	231	-74.30	8.56	-65.75	-52.7
2544.90	V	349	243	-71.97	9.20	-62.77	-49.8
3393.20	V	-	-	-69.59	9.44	-60.15	-47.1
4241.50	V	-	-	-69.63	10.49	-59.15	-46.1

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

OPERATING FREQUENCY: 836.50 MHz
CHANNEL: 26915
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]
1673.00	H	100	360	-75.12	8.85	-66.27	-53.3
2509.50	H	-	-	-73.10	9.17	-63.93	-50.9
3346.00	H	-	-	-70.69	9.36	-61.33	-48.3

Table 7-27. Radiated Spurious Data with WCP (Band 5/26 – 26915 Channel)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 184 of 204

Band 4/66

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3435.00	H	150	23	-63.84	6.50	-57.34	-44.3
5152.50	H	-	-	-64.50	8.44	-56.06	-43.1

Table 7-28. Radiated Spurious Data (Band 4/66 – Low Channel)

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	H	150	180	-63.97	6.59	-57.38	-44.4
5235.00	H	-	-	-63.79	8.42	-55.37	-42.4

Table 7-29. Radiated Spurious Data (Band 4/66 – Mid Channel)

FCC ID: A3LSMG9650		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 185 of 204

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3545.00	H	150	19	-63.16	6.53	-56.62	-43.6
5317.50	H	-	-	-65.36	8.41	-56.95	-44.0

Table 7-30. Radiated Spurious Data (Band 4/66 – High Channel)

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3545.00	H	106	345	-64.23	6.53	-57.70	-44.7
5317.50	H	-	-	-66.97	8.41	-58.56	-45.6
7090.00	H	-	-	-63.37	8.48	-54.89	-41.9

Table 7-31. Radiated Spurious Data with WCP (Band 4/66 – 132597 Channel)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 186 of 204

Band 2/25

OPERATING FREQUENCY: 1860.00 MHz
 CHANNEL: 26140
 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	H	-	-	-64.26	6.78	-57.48	-44.5
5580.00	H	-	-	-64.14	8.45	-55.69	-42.7

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

OPERATING FREQUENCY: 1882.50 MHz
 CHANNEL: 26365
 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	H	-	-	-66.54	6.85	-59.69	-46.7
5647.50	H	-	-	-65.75	8.53	-57.22	-44.2

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

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 187 of 204

OPERATING FREQUENCY: 1905.00 MHz
 CHANNEL: 26590
 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	H	-	-	-65.19	6.97	-58.22	-45.2
5715.00	H	-	-	-64.48	8.57	-55.90	-42.9

Table 7-34. Radiated Spurious Data (Band 2/25 – High Channel)

OPERATING FREQUENCY: 1860.00 MHz
 CHANNEL: 26140
 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	106	99	-64.92	6.78	-58.14	-45.1
5580.00	V	-	-	-65.33	8.45	-56.88	-43.9
7440.00	V	-	-	-62.63	8.33	-54.30	-41.3

Table 7-35. Radiated Spurious Data with WCP (Band 2/25 – 26140 Channel)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 188 of 204

Band 41

OPERATING FREQUENCY: 2507.50 MHz
CHANNEL: 39765
MODULATION SIGNAL: QPSK
BANDWIDTH: 15.0 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]
5015.00	V	150	284	-51.16	8.33	-42.83	-17.8
7522.50	V	150	61	-53.02	8.43	-44.59	-19.6
10030.00	V	-	-	-52.84	9.88	-42.96	-18.0

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

OPERATING FREQUENCY: 2593.00 MHz
CHANNEL: 40620
MODULATION SIGNAL: QPSK
BANDWIDTH: 15.0 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	V	150	300	-54.72	8.45	-46.27	-21.3
7779.00	V	150	320	-54.21	8.75	-45.46	-20.5
10372.00	V	-	-	-53.40	9.73	-43.67	-18.7

Table 7-37. Radiated Spurious Data (Band 41 – Mid Channel)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 189 of 204

OPERATING FREQUENCY: 2682.50 MHz
CHANNEL: 41515
MODULATION SIGNAL: QPSK
BANDWIDTH: 15.0 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]
5365.00	V	150	288	-57.36	8.41	-48.95	-24.0
8047.50	V	150	49	-54.35	9.22	-45.14	-20.1
10730.00	V	-	-	-50.98	9.51	-41.47	-16.5

Table 7-38. Radiated Spurious Data (Band 41 – High Channel)

OPERATING FREQUENCY: 2507.50 MHz
CHANNEL: 39765
MODULATION SIGNAL: QPSK
BANDWIDTH: 15.0 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]
5015.00	V	150	102	-63.20	10.88	-52.33	-27.3
7522.50	V	150	333	-62.90	11.12	-51.78	-26.8
10030.00	V	-	-	-66.43	12.06	-54.37	-29.4

Table 7-39. Radiated Spurious Data with WCP (Band 41 – 39765 Channel)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 190 of 204

7.10 Frequency Stability / Temperature Variation

\$2.1055 \$22.355 \$24.235 \$27.54 RSS-130(4.3) RSS-132(5.3) RSS-133(6.3) RSS-139(6.3) RSS-195(5.4) RSS-199(4.3)

Test Overview and Limit

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

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

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

Test Procedure Used

ANSI/TIA-603-E-2016

Test Settings

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

Test Setup

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

Test Notes

None

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 191 of 204

Band 12/17 Frequency Stability Measurements **§2.1055 §27.54 RSS-130(4.3)**

OPERATING FREQUENCY: 707,500,000 Hz
CHANNEL: 23790
REFERENCE VOLTAGE: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	707,500,021	21	0.0000030
100 %		- 30	707,499,750	-250	-0.0000353
100 %		- 20	707,500,142	142	0.0000201
100 %		- 10	707,499,955	-45	-0.0000064
100 %		0	707,499,945	-55	-0.0000078
100 %		+ 10	707,499,963	-37	-0.0000052
100 %		+ 20	707,500,036	36	0.0000051
100 %		+ 30	707,499,880	-120	-0.0000170
100 %		+ 40	707,500,097	97	0.0000137
100 %		+ 50	707,500,384	384	0.0000543
BATT. ENDPOINT	3.45	+ 20	707,499,948	-52	-0.0000073

Table 7-40. Frequency Stability Data (Band 12/17)

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: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 192 of 204

Band 12/17 Frequency Stability Measurements
§2.1055 §27.54 RSS-130(4.3)

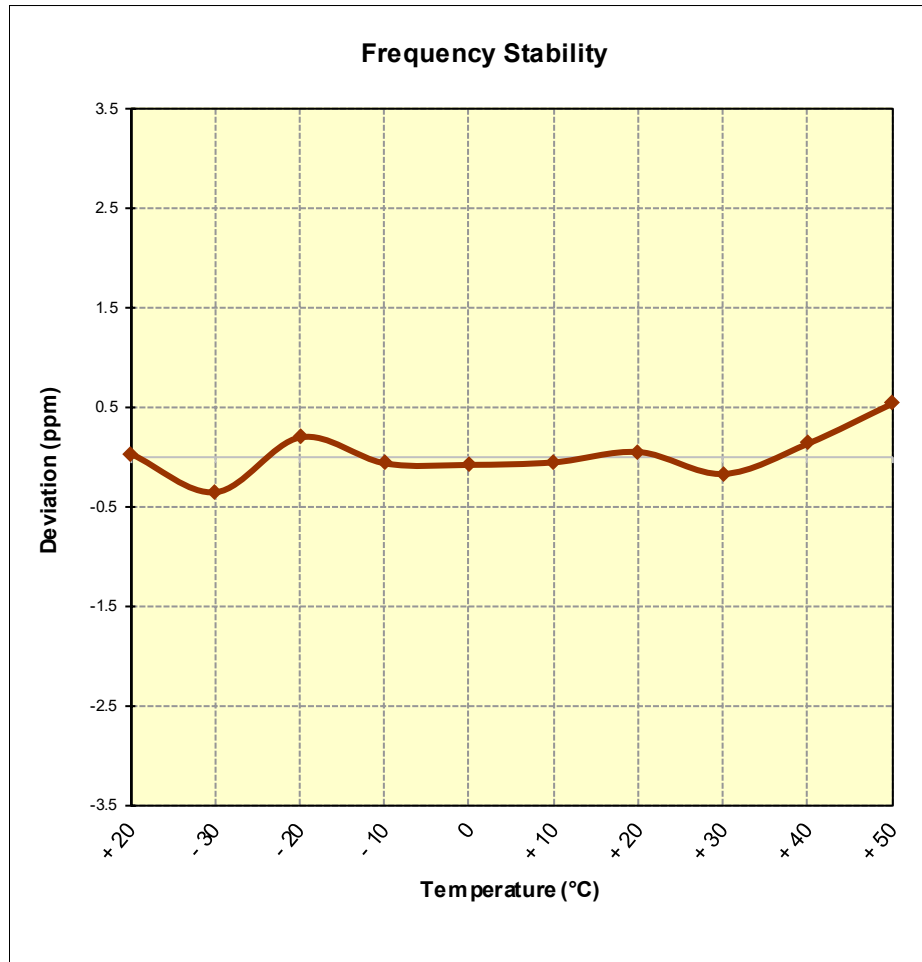


Figure 7-10. Frequency Stability Graph (Band 12/17)

FCC ID: A3LSMG9650			MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset				Page 193 of 204

Band 13 Frequency Stability Measurements

§2.1055 §27.54 RSS-130(4.3)

OPERATING FREQUENCY: 782,000,000 Hz
 CHANNEL: 23230
 REFERENCE VOLTAGE: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	781,999,852	-148	-0.0000189
100 %		- 30	782,000,082	82	0.0000105
100 %		- 20	782,000,004	4	0.0000005
100 %		- 10	782,000,150	150	0.0000192
100 %		0	781,999,925	-75	-0.0000096
100 %		+ 10	782,000,128	128	0.0000164
100 %		+ 20	781,999,711	-289	-0.0000370
100 %		+ 30	782,000,051	51	0.0000065
100 %		+ 40	781,999,786	-214	-0.0000274
100 %		+ 50	781,999,734	-266	-0.0000340
BATT. ENDPOINT	3.45	+ 20	781,999,774	-226	-0.0000289

Table 7-41. 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: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 194 of 204

Band 13 Frequency Stability Measurements
\$2.1055 \$27.54 RSS-130(4.3)

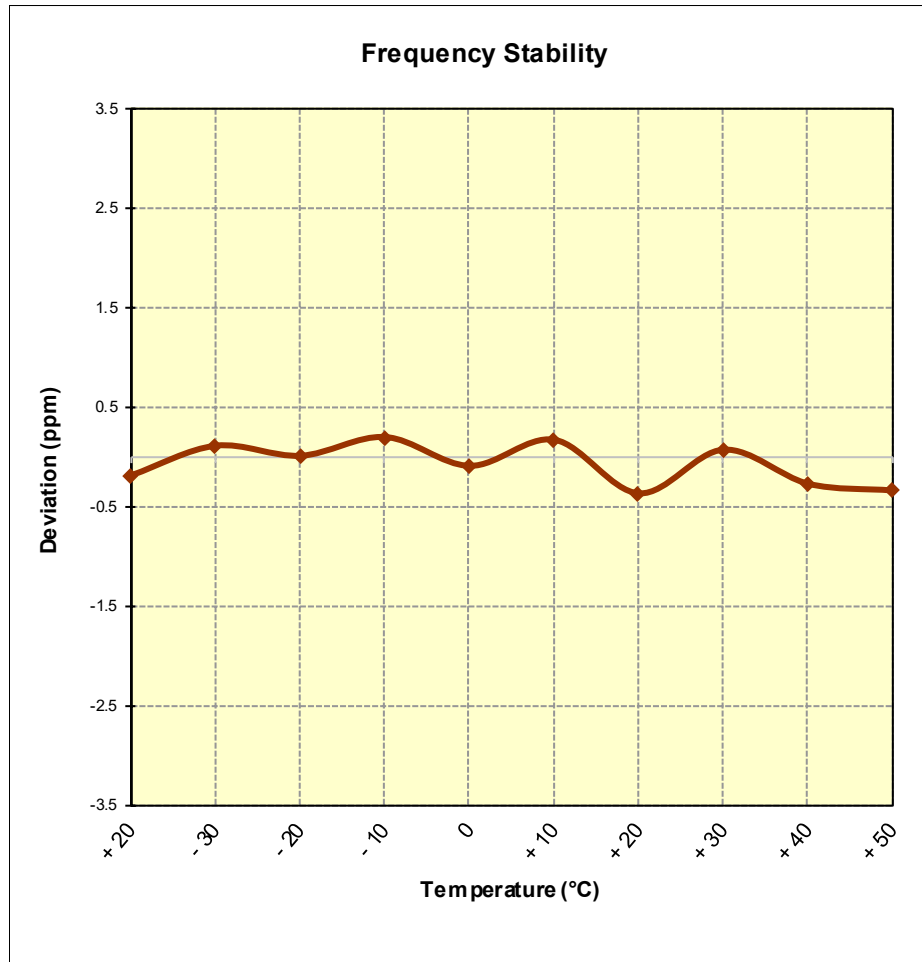


Figure 7-11. Frequency Stability Graph (Band 13)

FCC ID: A3LSMG9650			MEASUREMENT REPORT (CERTIFICATION)		 Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 195 of 204	

Band 26/5 Frequency Stability Measurements **§2.1055 §22.355 RSS-132(5.3)**

OPERATING FREQUENCY: 831,500,000 Hz
CHANNEL: 26865
REFERENCE VOLTAGE: 3.80 VDC
DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	831,499,997	-3	-0.0000004
100 %		- 30	831,499,990	-10	-0.0000012
100 %		- 20	831,500,032	32	0.0000038
100 %		- 10	831,500,057	57	0.0000069
100 %		0	831,499,663	-337	-0.0000405
100 %		+ 10	831,500,068	68	0.0000082
100 %		+ 20	831,500,107	107	0.0000129
100 %		+ 30	831,499,877	-123	-0.0000148
100 %		+ 40	831,500,193	193	0.0000232
100 %		+ 50	831,500,035	35	0.0000042
BATT. ENDPOINT	3.45	+ 20	831,500,003	3	0.0000004

Table 7-42. Frequency Stability Data (Band 26/5)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 196 of 204

Band 26/5 Frequency Stability Measurements
§2.1055 §22.355 RSS-132(5.3)

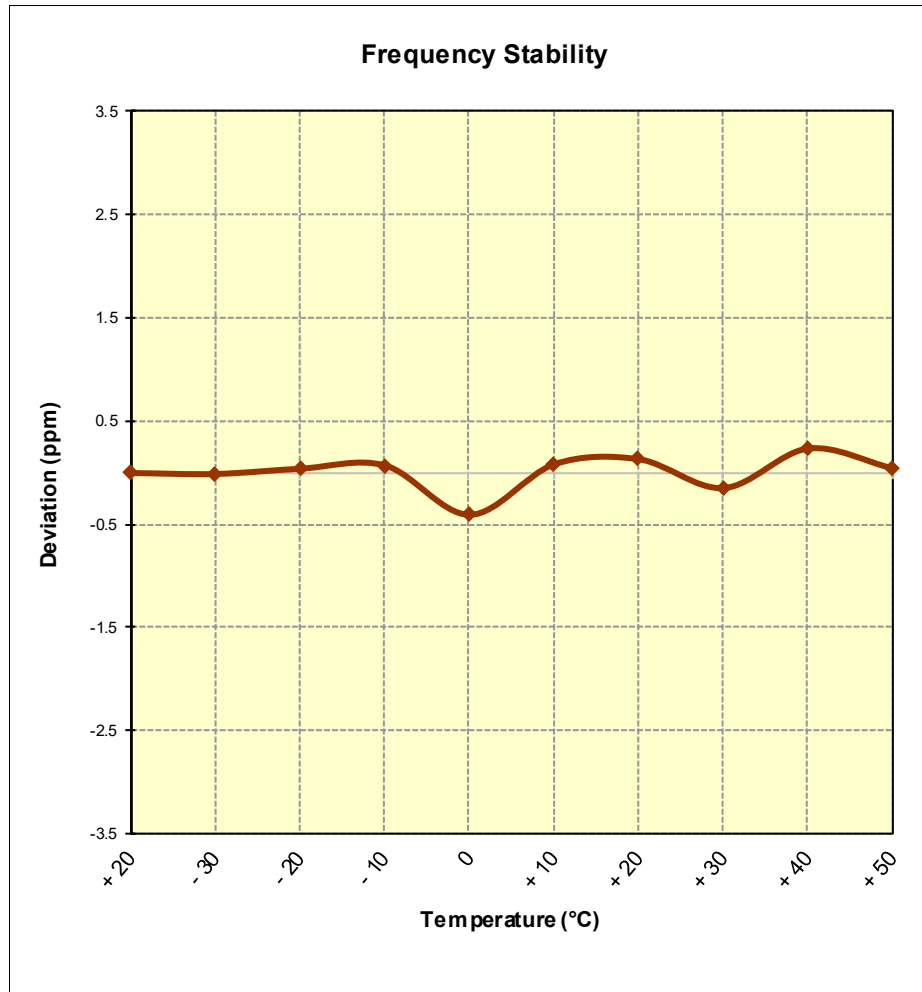


Figure 7-12. Frequency Stability Graph (Band 26/5)

FCC ID: A3LSMG9650			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 197 of 204	

Band 66/4 Frequency Stability Measurements

§2.1055 §§27.54 RSS-139(6.4)

OPERATING FREQUENCY: 1,745,000,000 Hz
 CHANNEL: 132322
 REFERENCE VOLTAGE: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	1,745,000,005	5	0.0000003
100 %		- 30	1,744,999,723	-277	-0.0000159
100 %		- 20	1,744,999,943	-57	-0.0000033
100 %		- 10	1,744,999,852	-148	-0.0000085
100 %		0	1,744,999,657	-343	-0.0000197
100 %		+ 10	1,745,000,305	305	0.0000175
100 %		+ 20	1,744,999,970	-30	-0.0000017
100 %		+ 30	1,745,000,101	101	0.0000058
100 %		+ 40	1,745,000,019	19	0.0000011
100 %		+ 50	1,744,999,812	-188	-0.0000108
BATT. ENDPOINT	3.45	+ 20	1,745,000,178	178	0.0000102

Table 7-43. 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: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 198 of 204

Band 66/4 Frequency Stability Measurements
§2.1055 §§27.54 RSS-139(6.4)

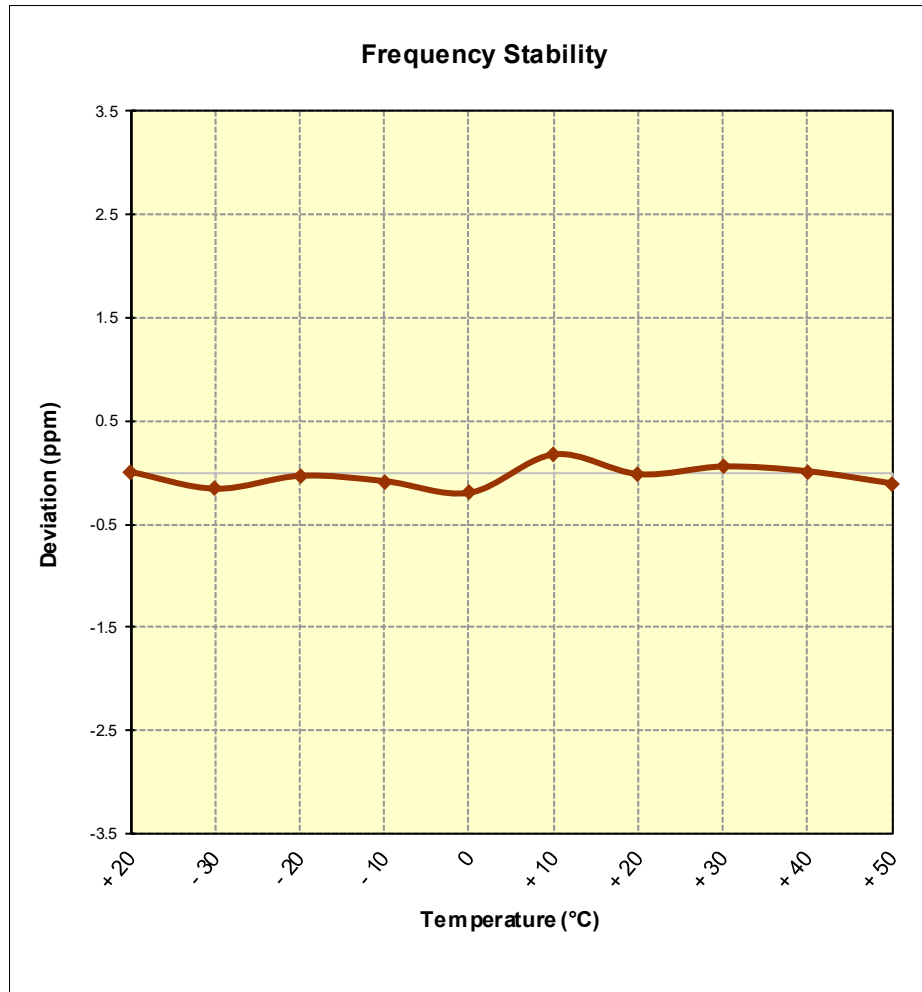


Figure 7-13. Frequency Stability Graph (Band 66/4)

FCC ID: A3LSMG9650			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset		Page 199 of 204	

Band 25/2 Frequency Stability Measurements **§2.1055 §24.235 RSS-133(6.3)**

OPERATING FREQUENCY: 1,882,500,000 Hz
CHANNEL: 26365
REFERENCE VOLTAGE: 3.80 VDC
DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	1,882,500,266	266	0.0000141
100 %		- 30	1,882,499,682	-318	-0.0000169
100 %		- 20	1,882,499,766	-234	-0.0000124
100 %		- 10	1,882,499,979	-21	-0.0000011
100 %		0	1,882,500,296	296	0.0000157
100 %		+ 10	1,882,500,049	49	0.0000026
100 %		+ 20	1,882,499,928	-72	-0.0000038
100 %		+ 30	1,882,499,678	-322	-0.0000171
100 %		+ 40	1,882,500,281	281	0.0000149
100 %		+ 50	1,882,500,368	368	0.0000195
BATT. ENDPOINT	3.45	+ 20	1,882,500,084	84	0.0000045

Table 7-44. Frequency Stability Data (Band 25/2)

FCC ID: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 200 of 204

Band 25/2 Frequency Stability Measurements
§2.1055 §24.235 RSS-133(6.3)

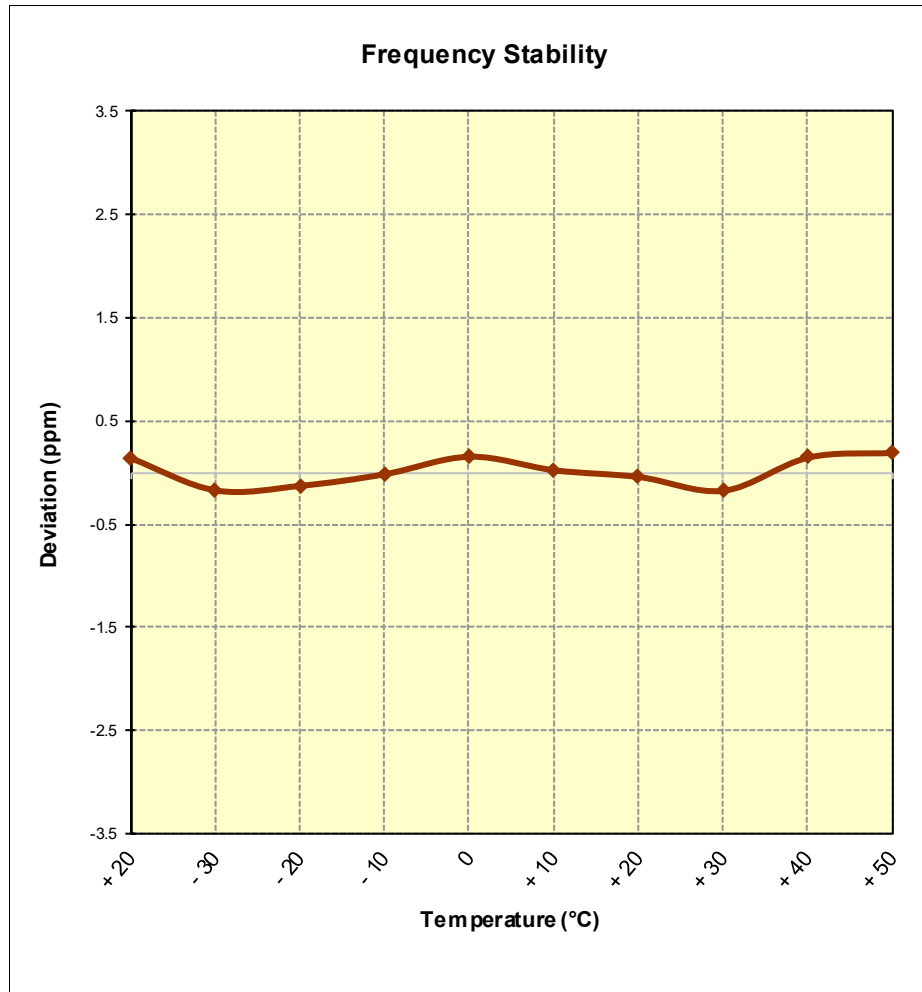


Figure 7-14. Frequency Stability Graph (Band 25/2)

FCC ID: A3LSMG9650			MEASUREMENT REPORT (CERTIFICATION) 	Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 201 of 204	

Band 41 Frequency Stability Measurements

§2.1055 §27.54 RSS-199(4.3)

OPERATING FREQUENCY: 2,593,000,000 Hz
 CHANNEL: 40620
 REFERENCE VOLTAGE: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	2,592,999,880	-120	-0.0000046
100 %		- 30	2,592,999,641	-359	-0.0000138
100 %		- 20	2,593,000,026	26	0.0000010
100 %		- 10	2,593,000,009	9	0.0000003
100 %		0	2,592,999,939	-61	-0.0000024
100 %		+ 10	2,592,999,993	-7	-0.0000003
100 %		+ 20	2,593,000,103	103	0.0000040
100 %		+ 30	2,593,000,479	479	0.0000185
100 %		+ 40	2,593,000,012	12	0.0000005
100 %		+ 50	2,593,000,203	203	0.0000078
BATT. ENDPOINT	3.45	+ 20	2,593,000,002	2	0.0000001

Table 7-45. 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: A3LSMG9650	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset	Page 202 of 204

Band 41 Frequency Stability Measurements
§2.1055 §27.54 RSS-199(4.3)

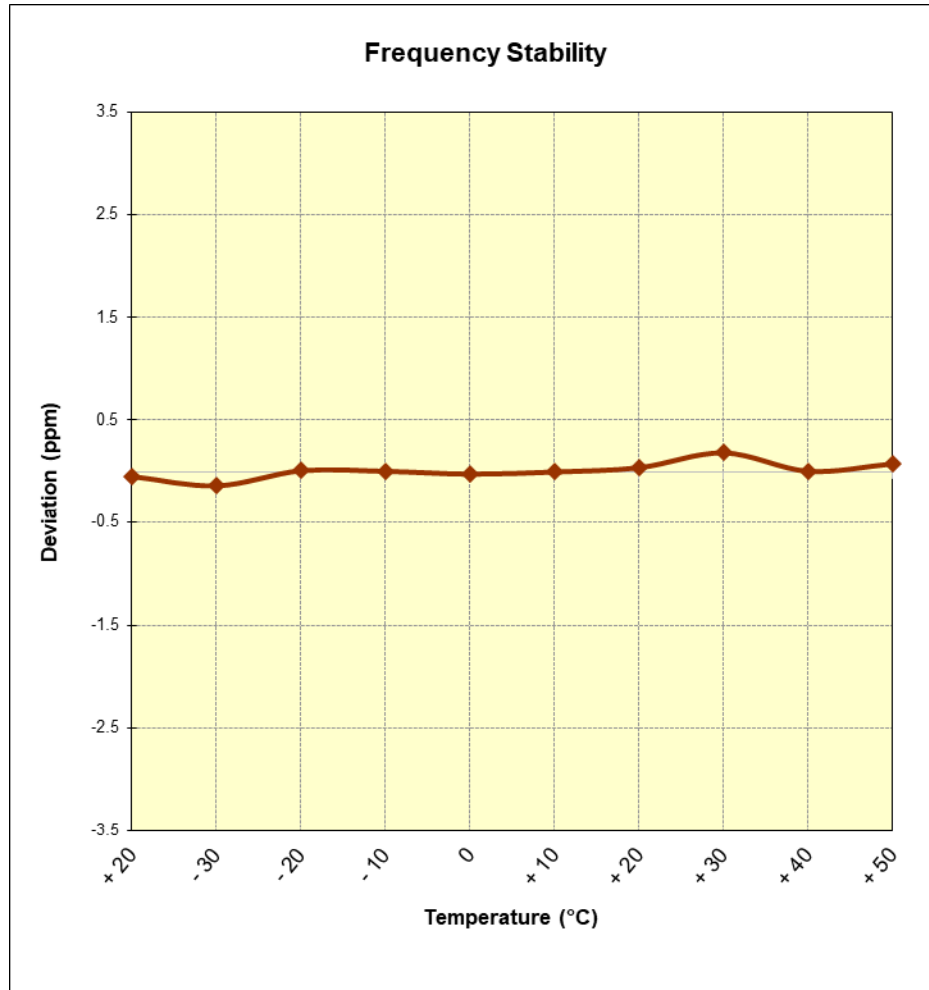


Figure 7-15. Frequency Stability Graph (Band 41)

FCC ID: A3LSMG9650			MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1711150299-03-R2.A3L	Test Dates: 11/13/2017-1/10/2018	EUT Type: Portable Handset				Page 203 of 204

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMG9650** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

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