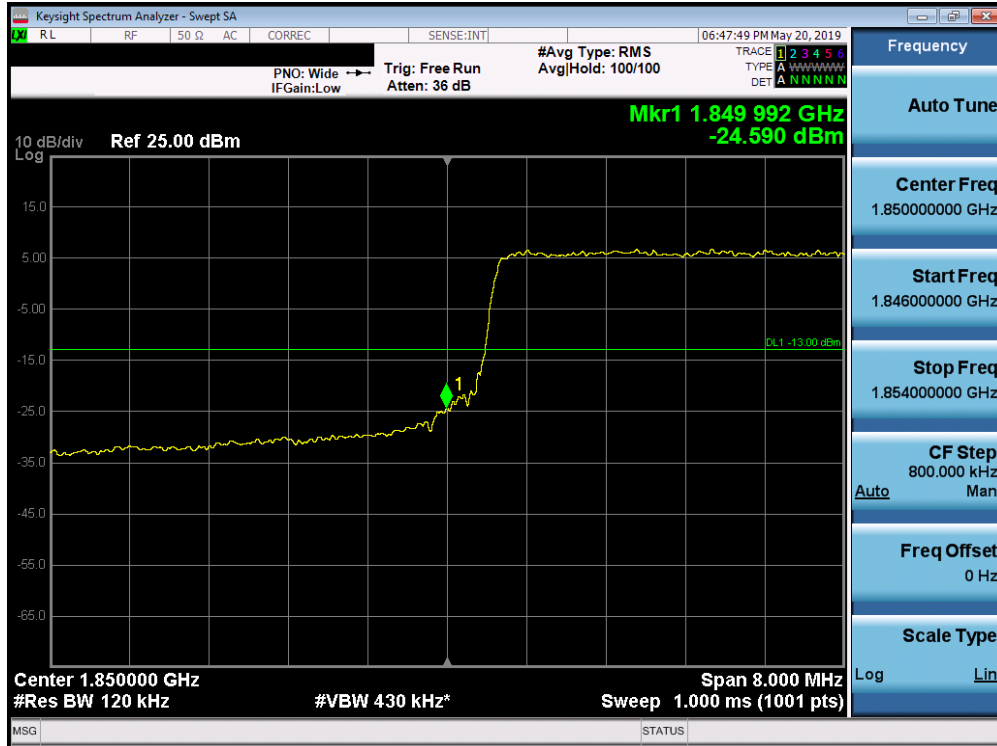


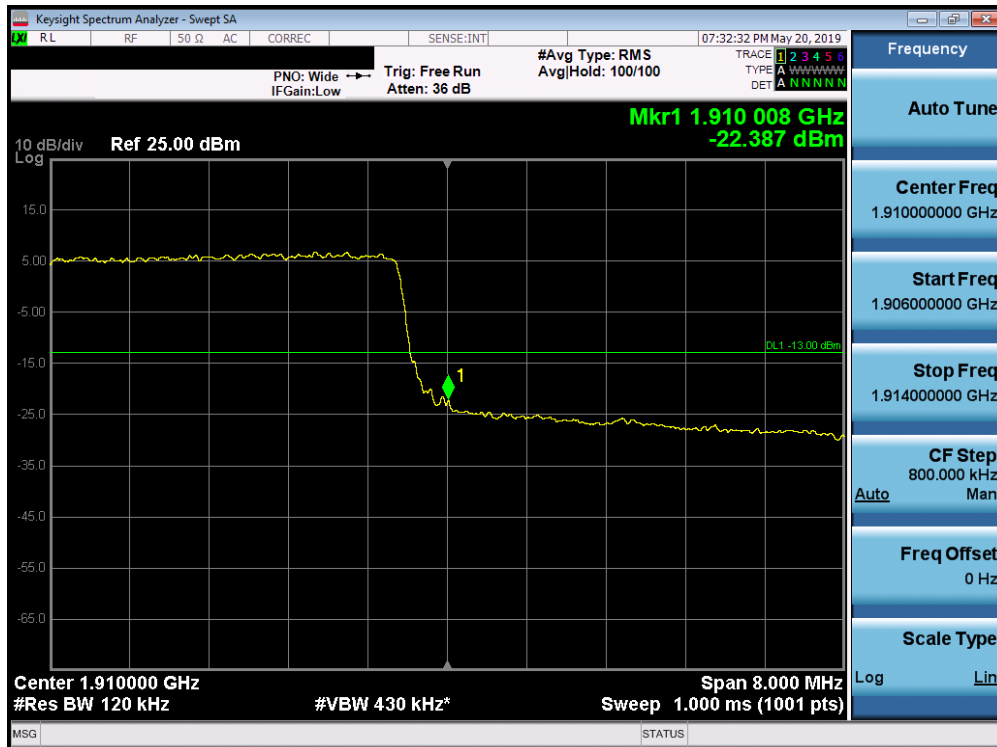


Plot 7-280. Lower Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

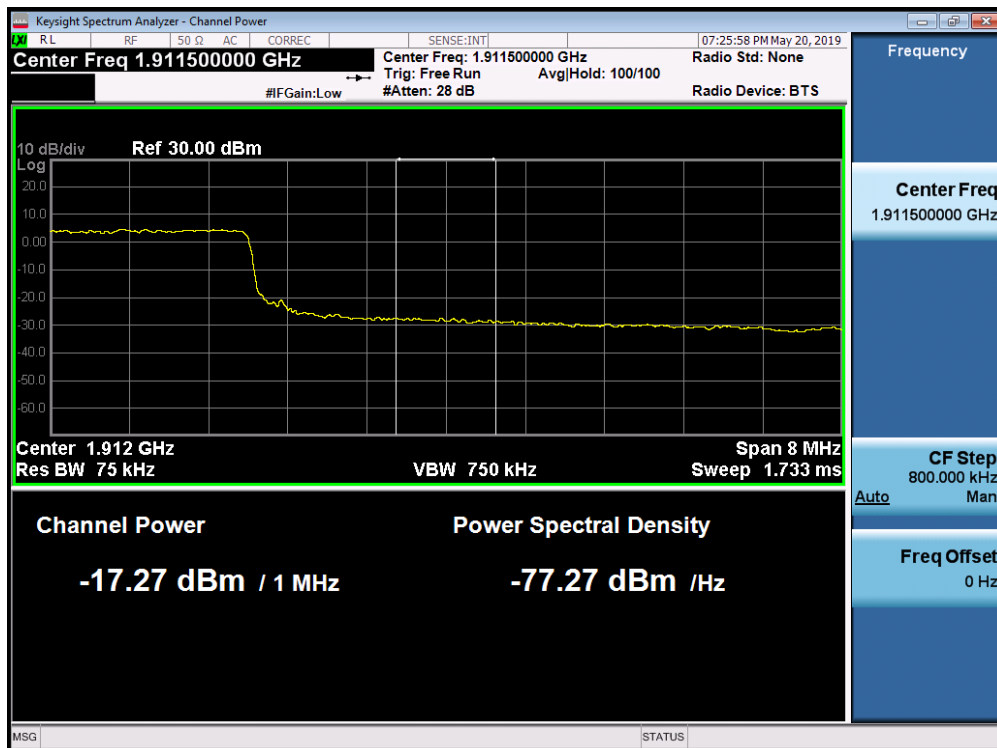


Plot 7-281. Lower Extended Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 164 of 252

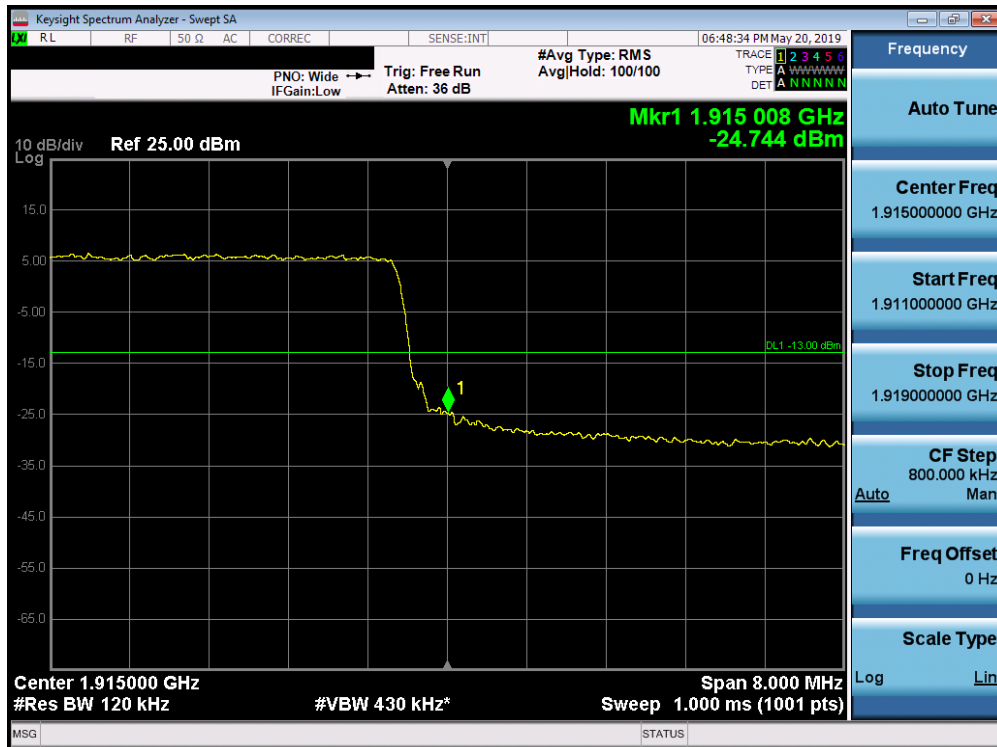


Plot 7-282. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

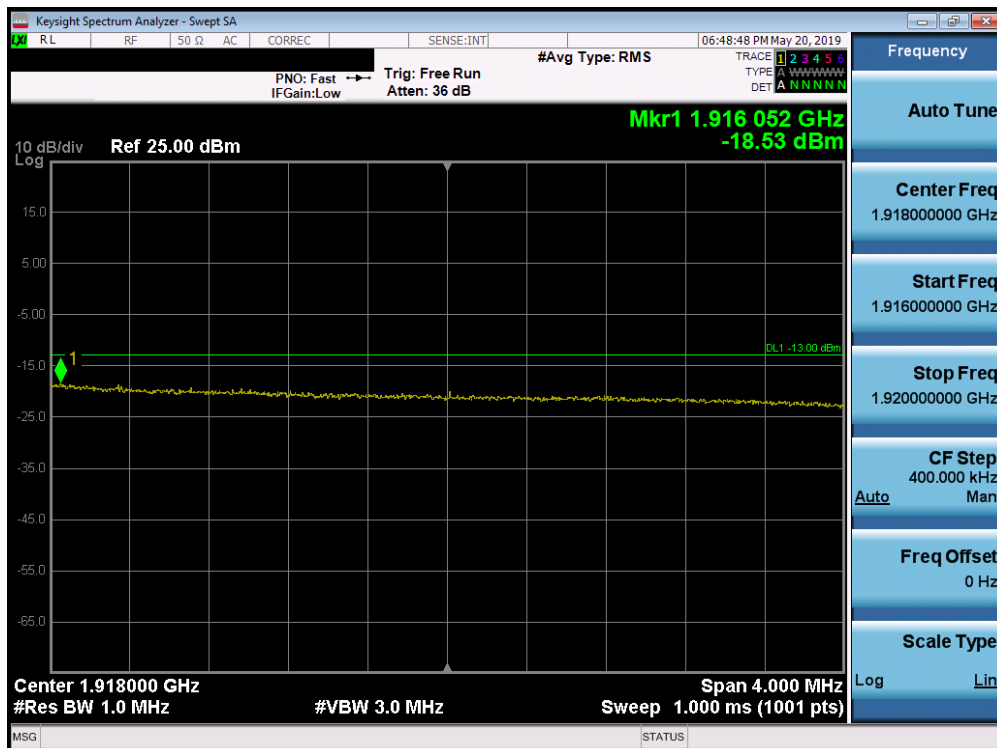


Plot 7-283. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 165 of 252

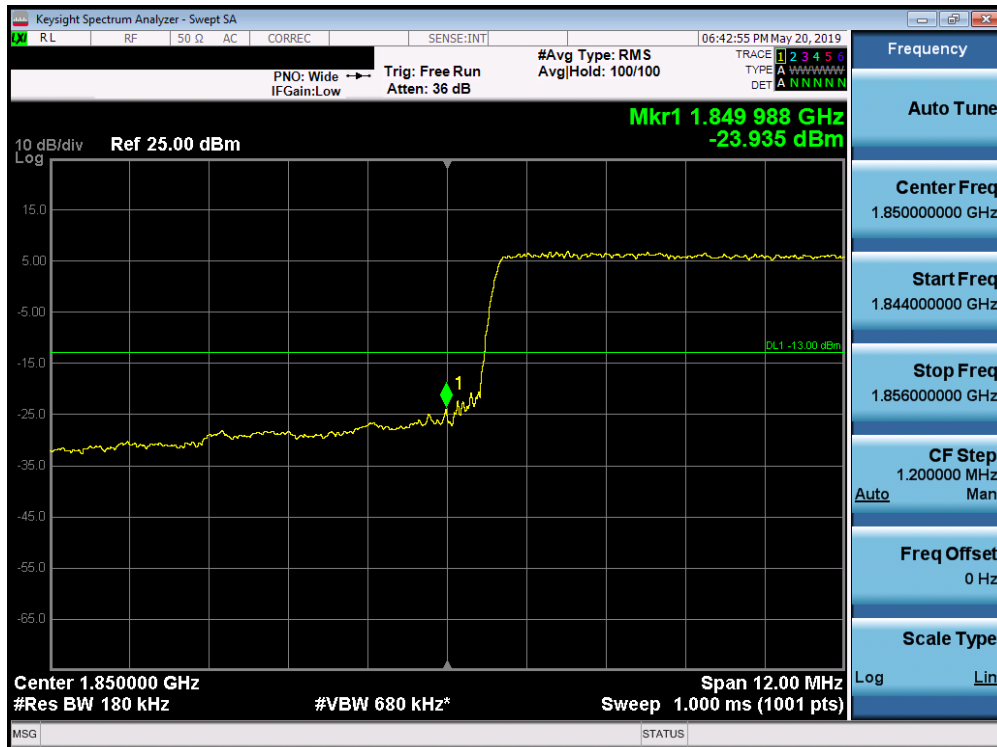


Plot 7-284. Upper Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-285. Upper Extended Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 166 of 252

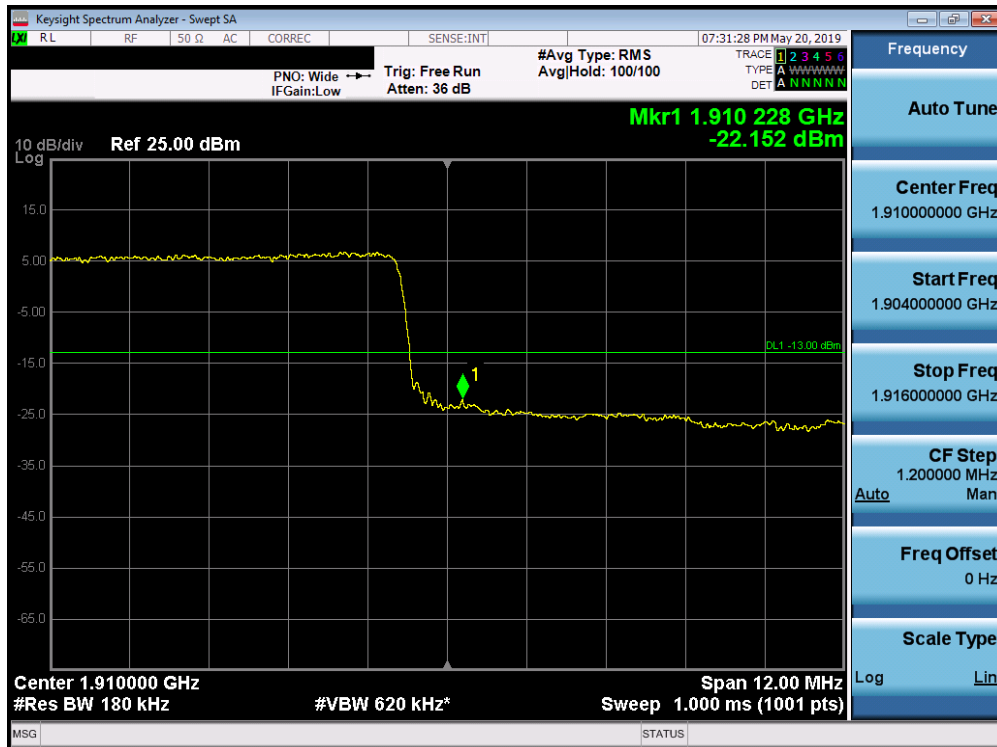


Plot 7-286. Lower Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

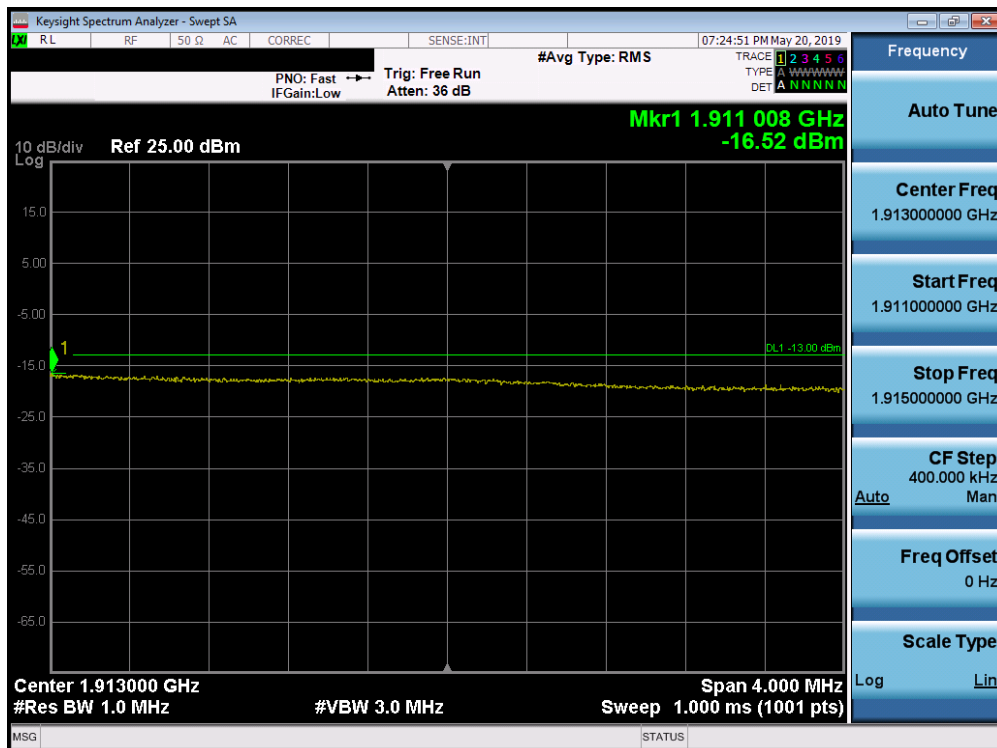


Plot 7-287. Lower Extended Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 167 of 252

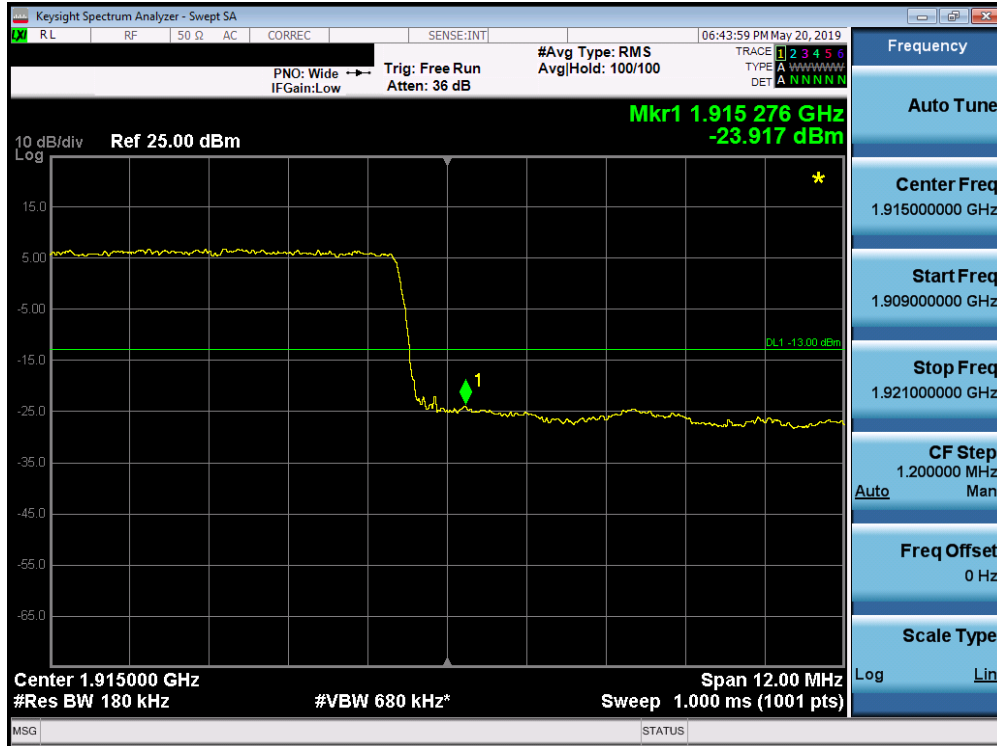


Plot 7-288. Upper Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

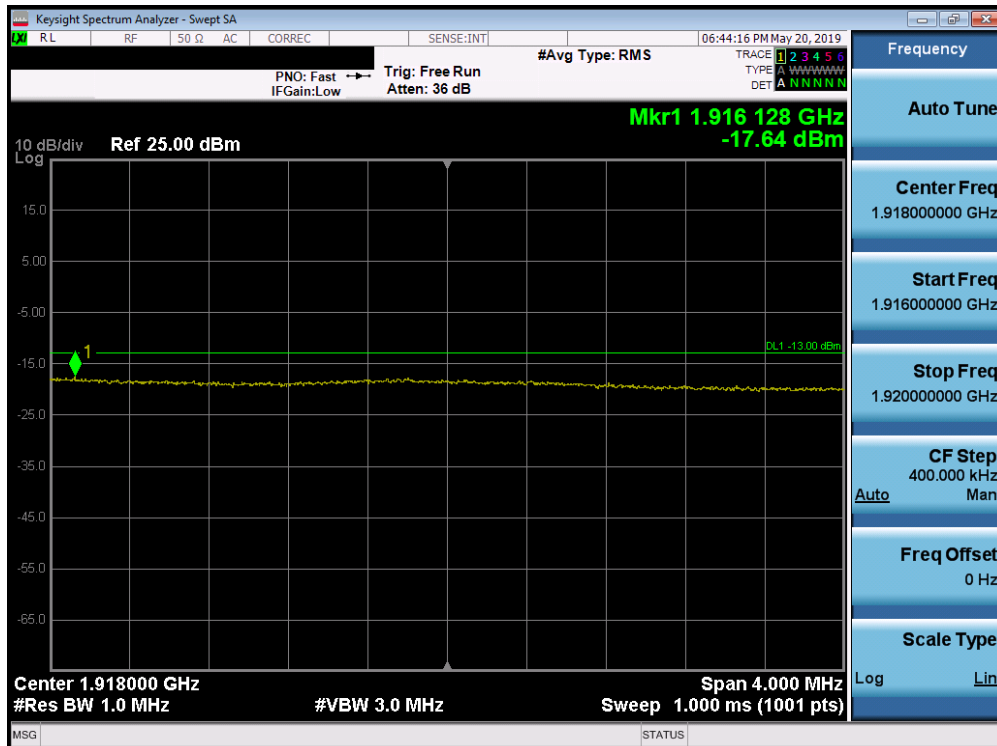


Plot 7-289. Upper Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 168 of 252

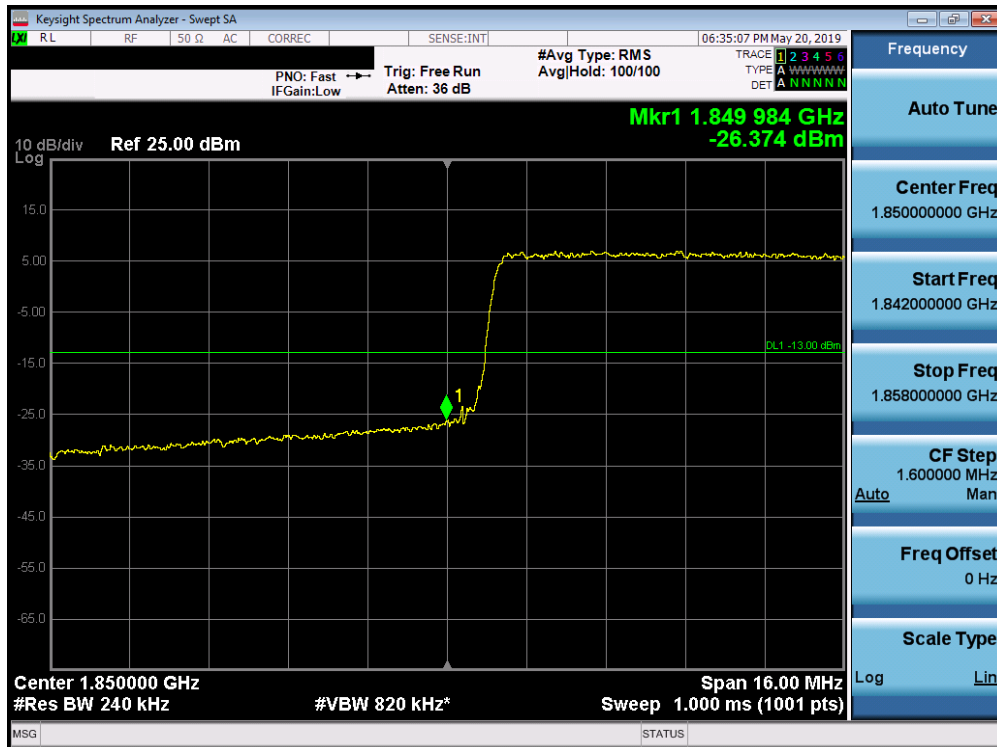


Plot 7-290. Upper Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

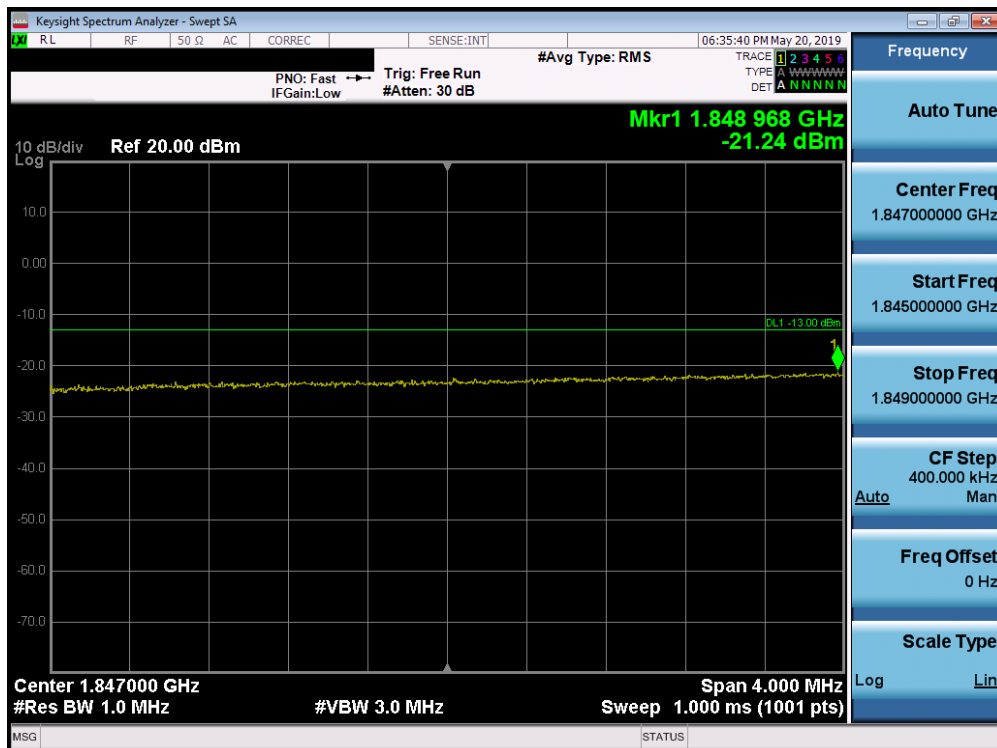


Plot 7-291. Upper Extended Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 169 of 252

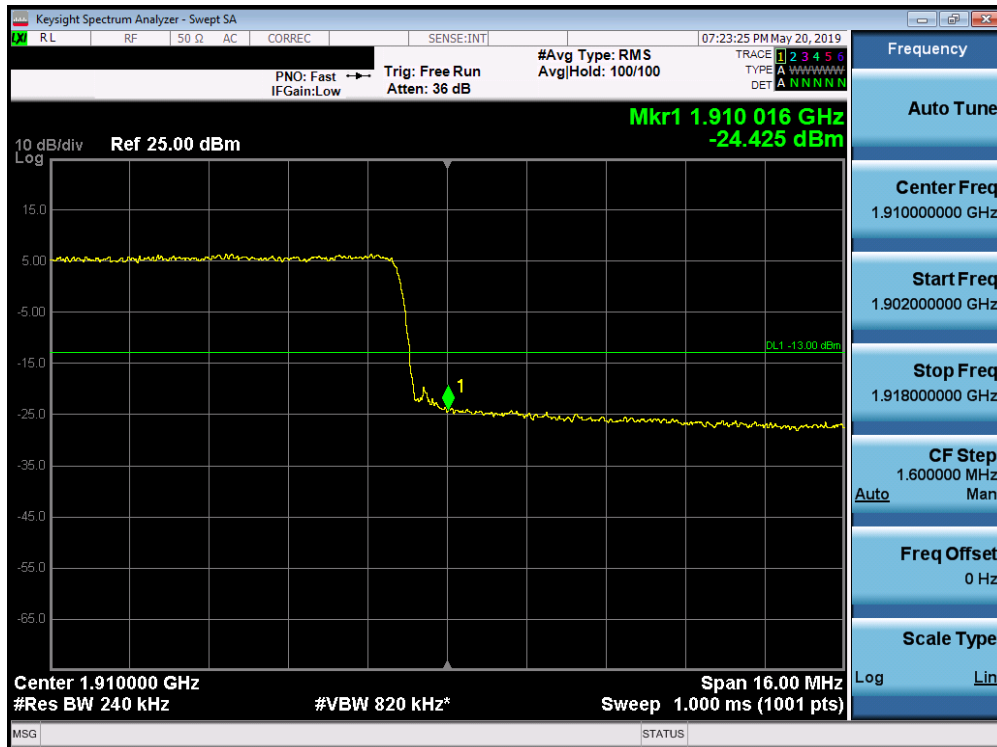


Plot 7-292. Lower Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

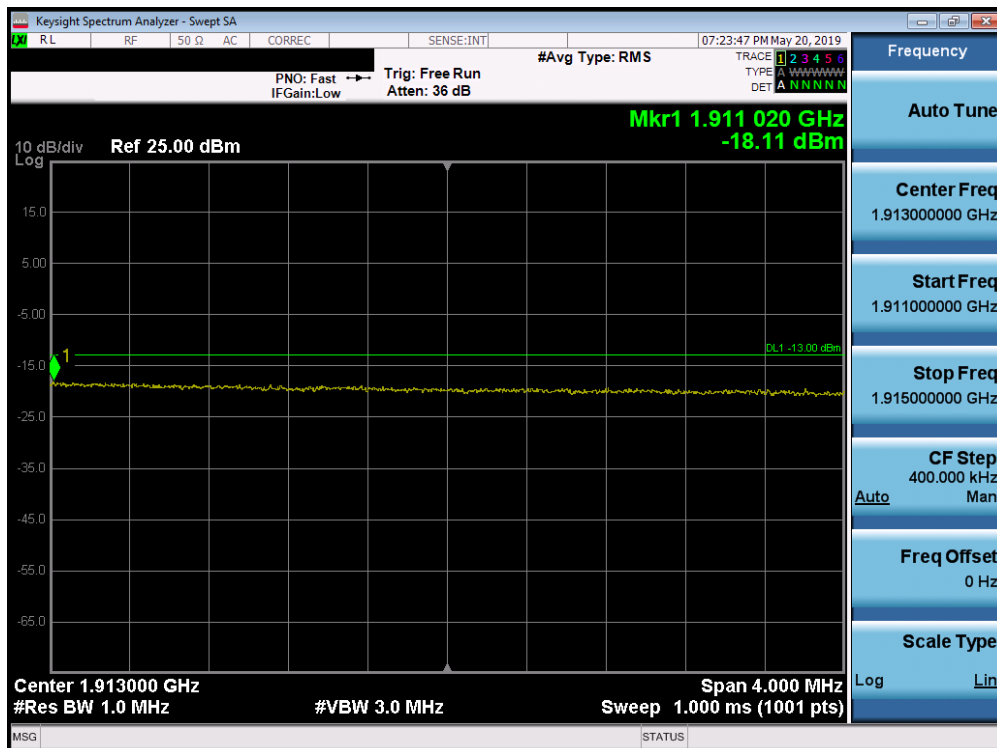


Plot 7-293. Lower Extended Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 170 of 252



Plot 7-294. Upper Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

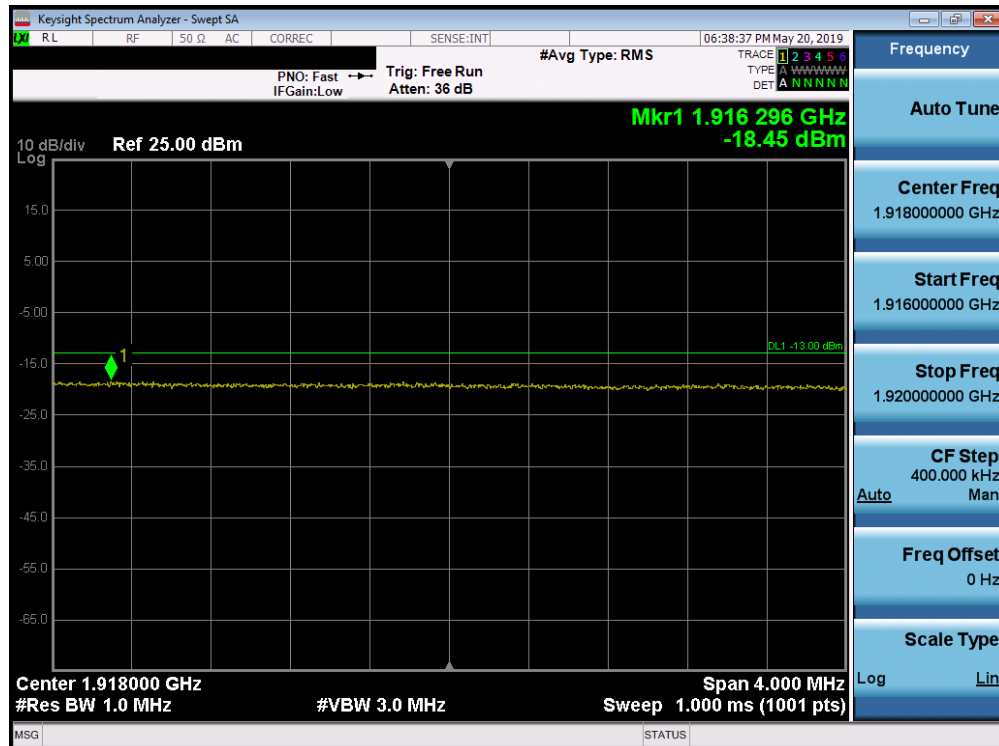


Plot 7-295. Upper Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 171 of 252



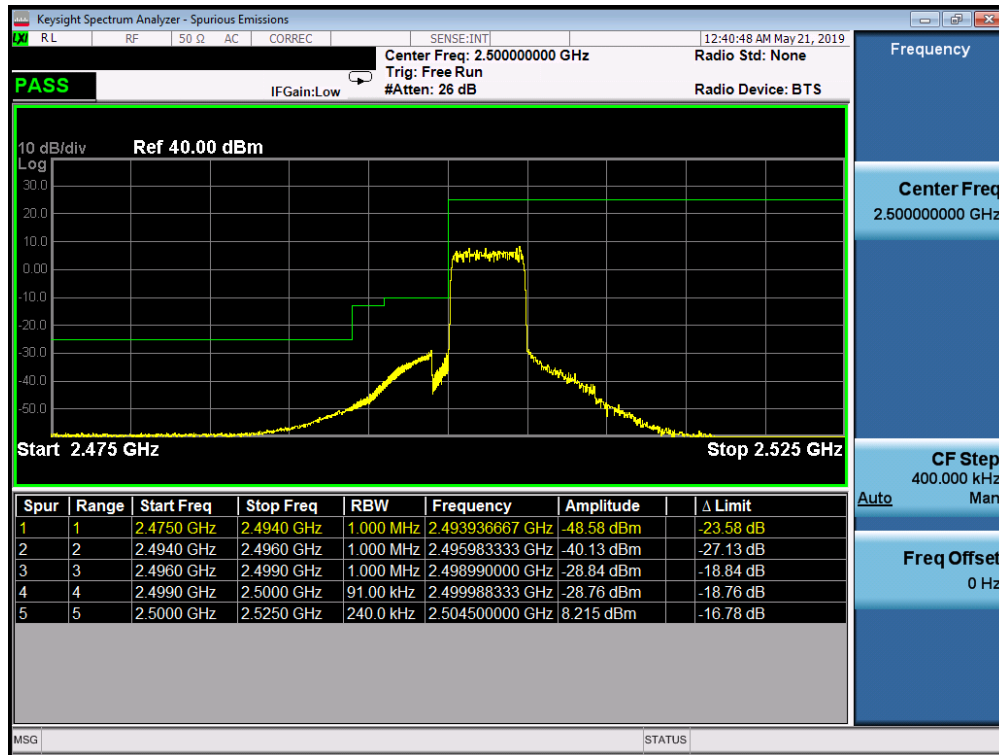
Plot 7-296. Upper Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)



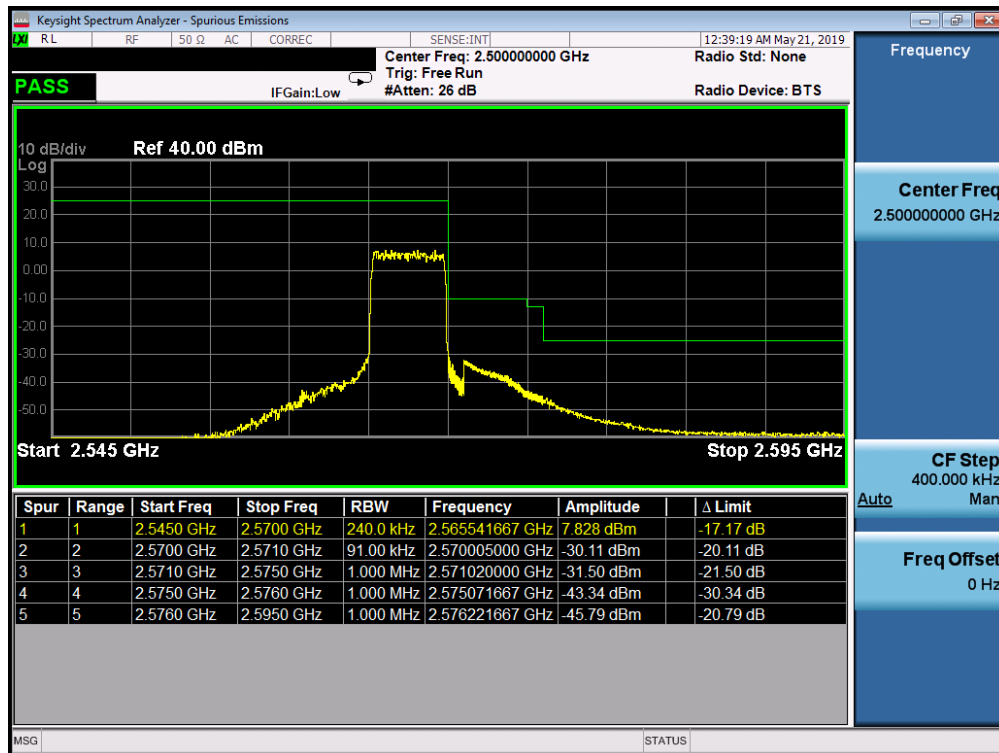
Plot 7-297. Upper Extended Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 172 of 252

Band 7

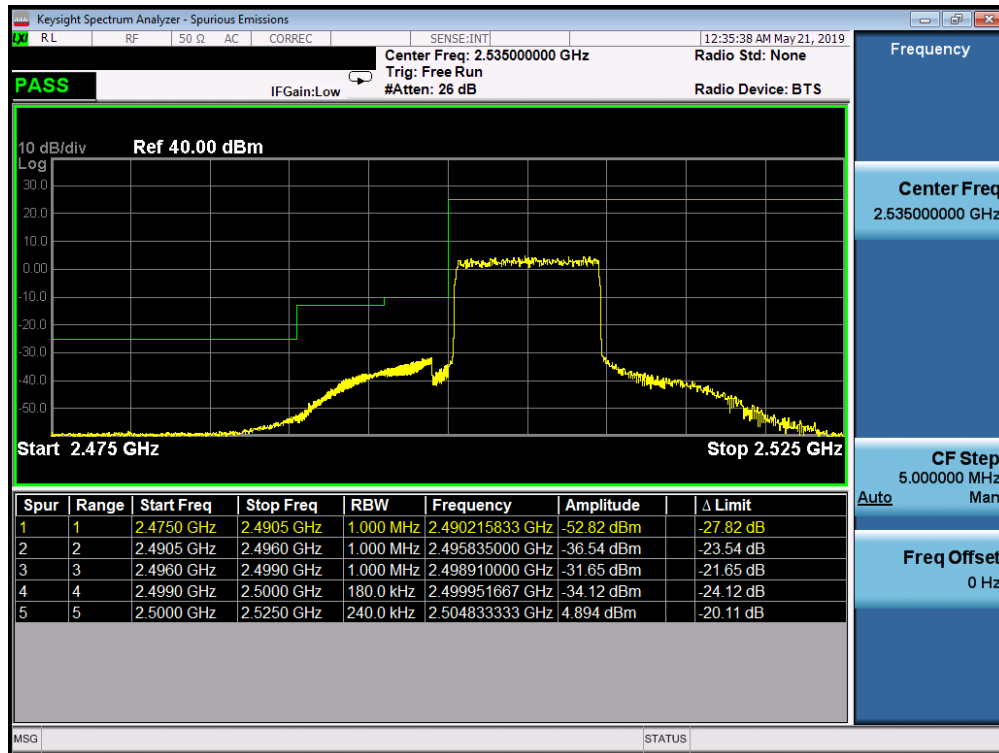


Plot 7-298. Lower ACP Plot (Band 7 - 5.0MHz QPSK - Full RB Configuration)

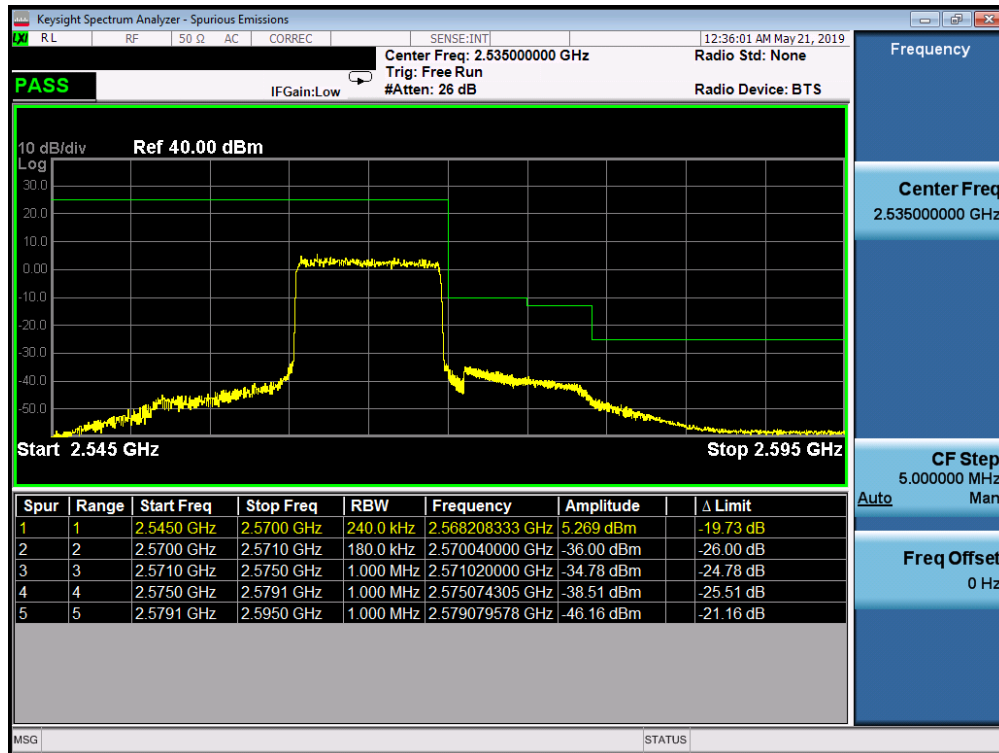


Plot 7-299. Upper ACP Plot (Band 7 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 173 of 252

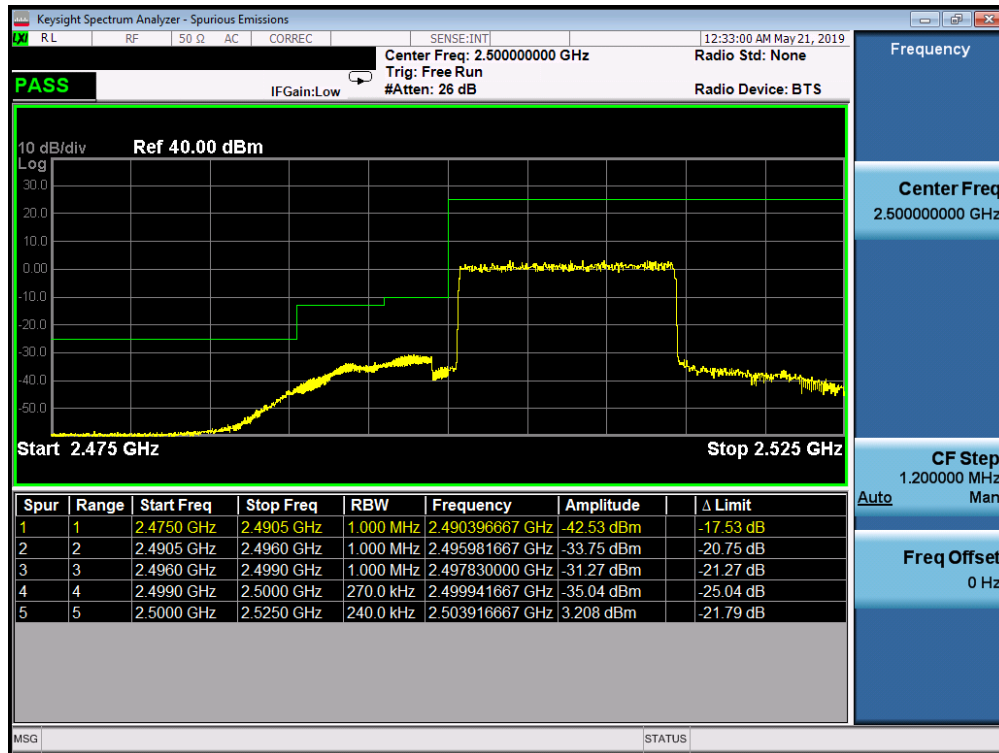


Plot 7-300. Lower ACP Plot (Band 7 - 10.0MHz QPSK - Full RB Configuration)

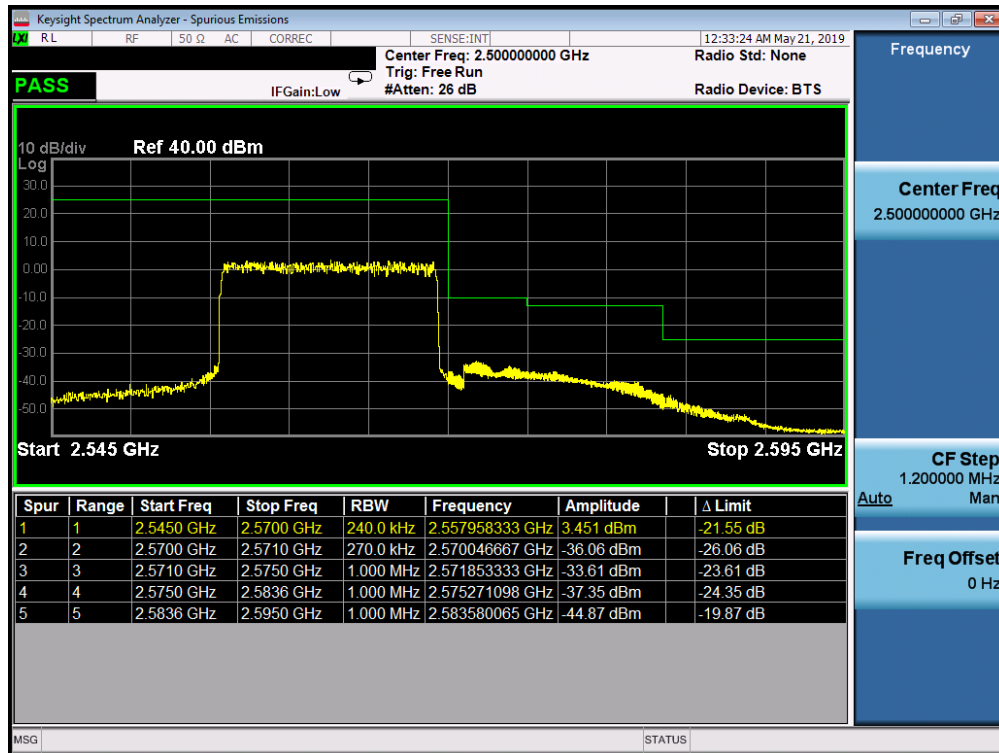


Plot 7-301. Upper ACP Plot (Band 7 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 174 of 252

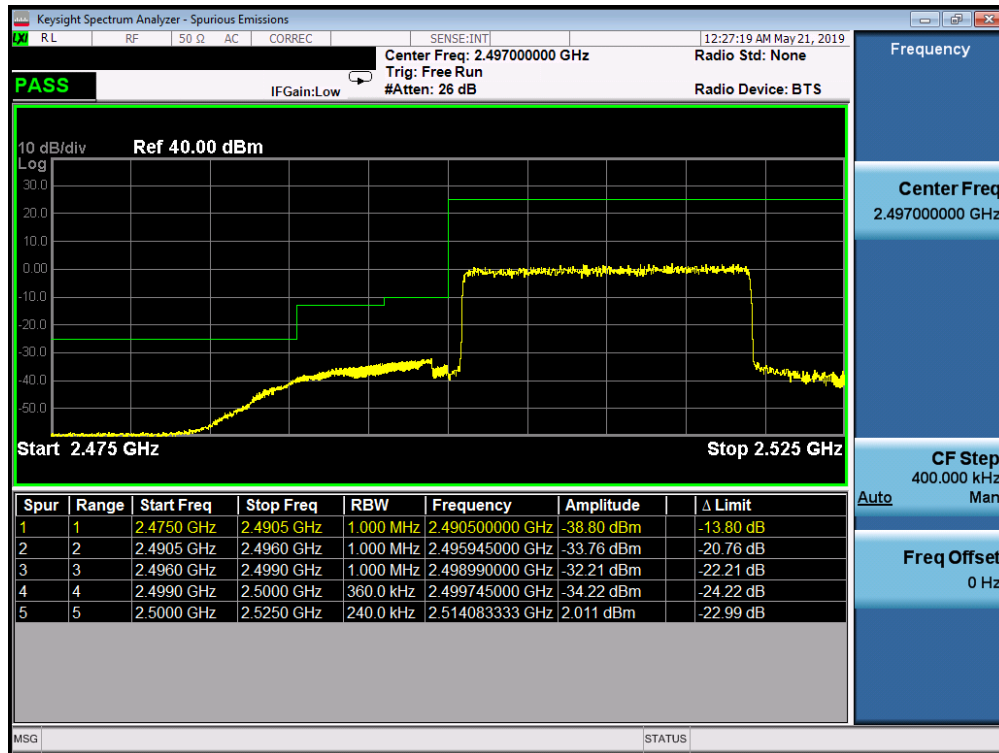


Plot 7-302. Lower ACP Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)

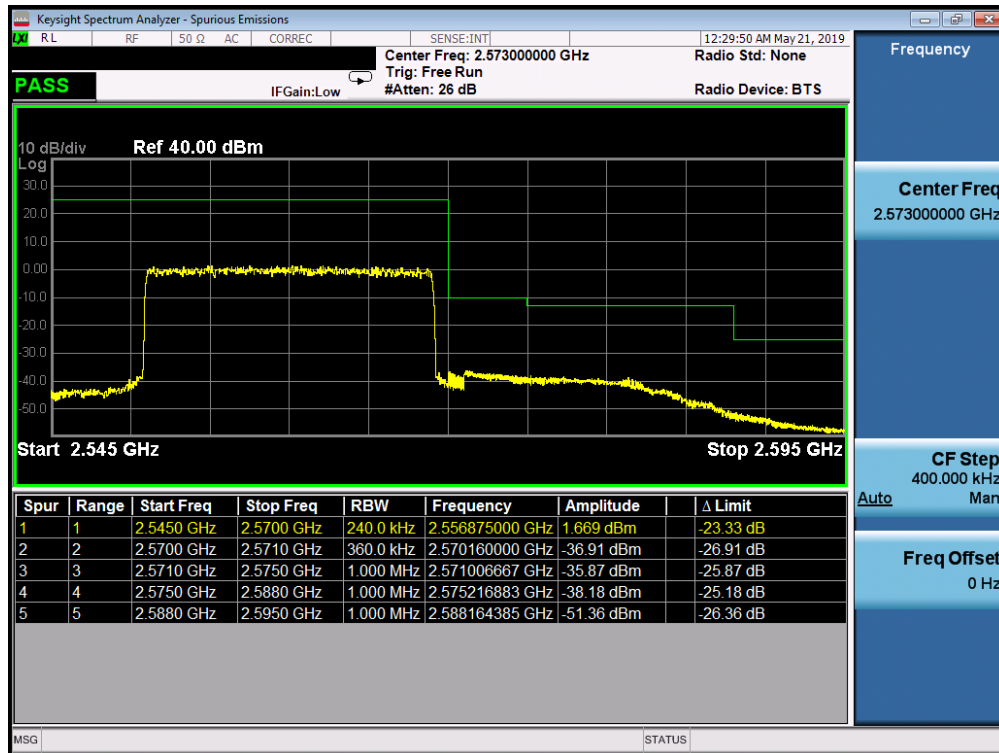


Plot 7-303. Upper ACP Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset			Page 175 of 252



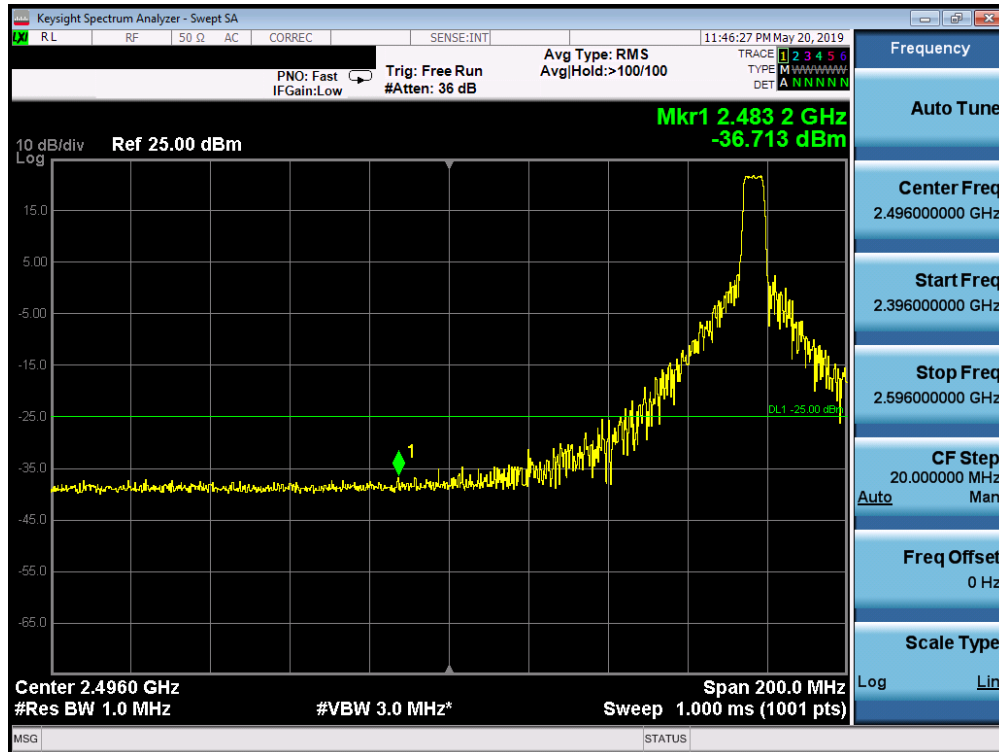
Plot 7-304. Lower ACP Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)



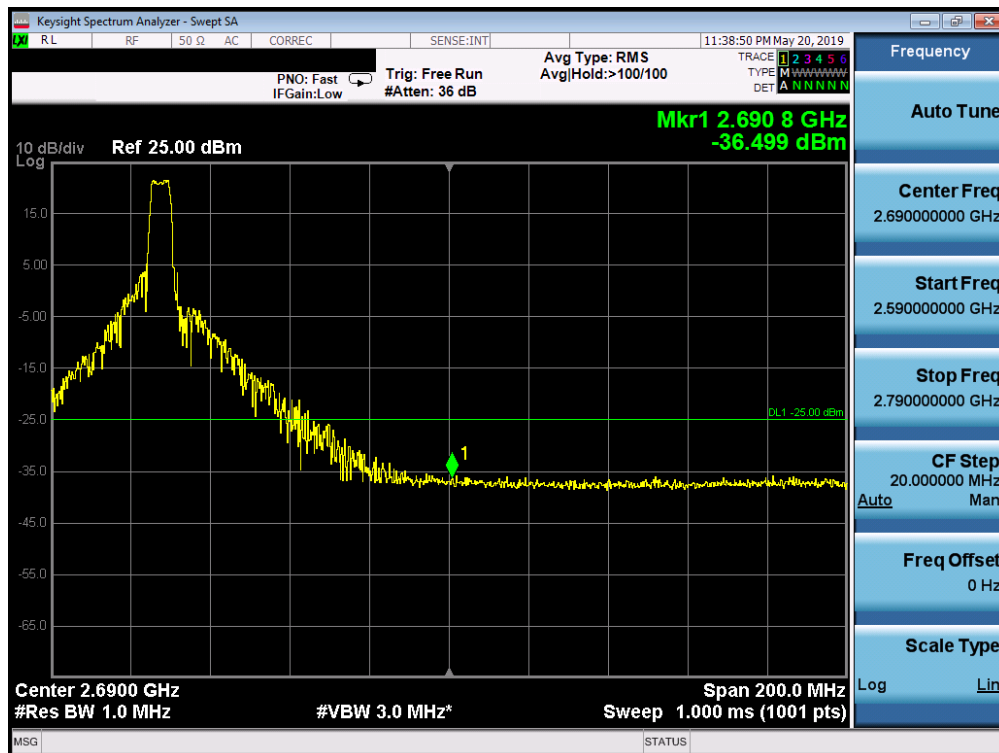
Plot 7-305. Upper ACP Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 176 of 252

Band 38

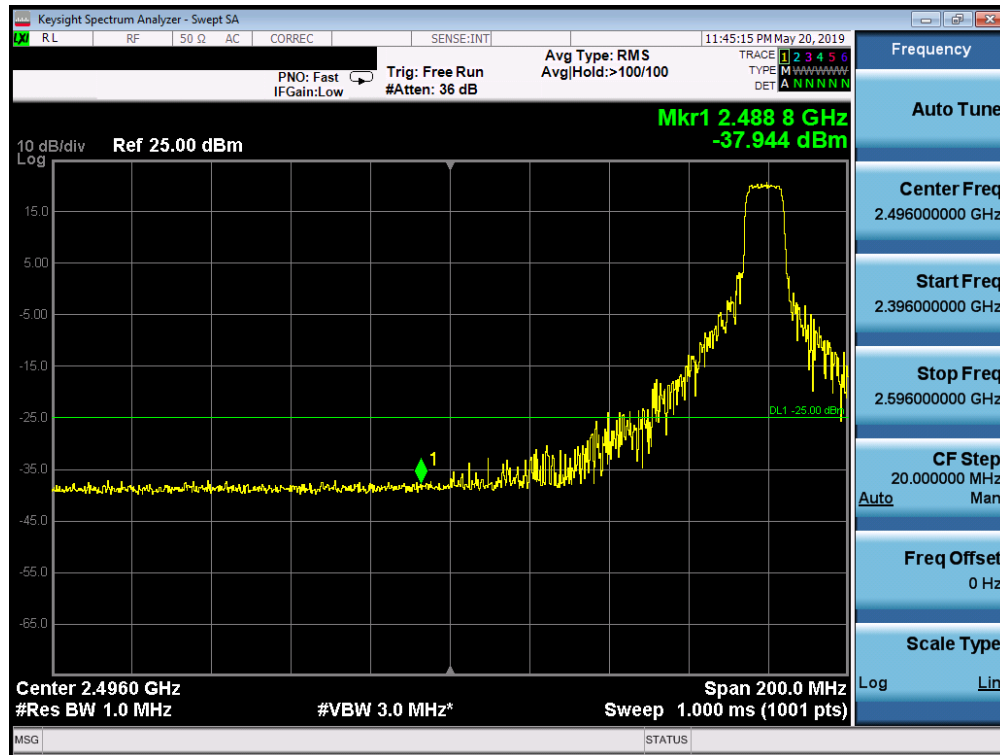


Plot 7-306. Lower Band Edge Plot (Band 38 - 5.0MHz QPSK - Full RB Configuration)

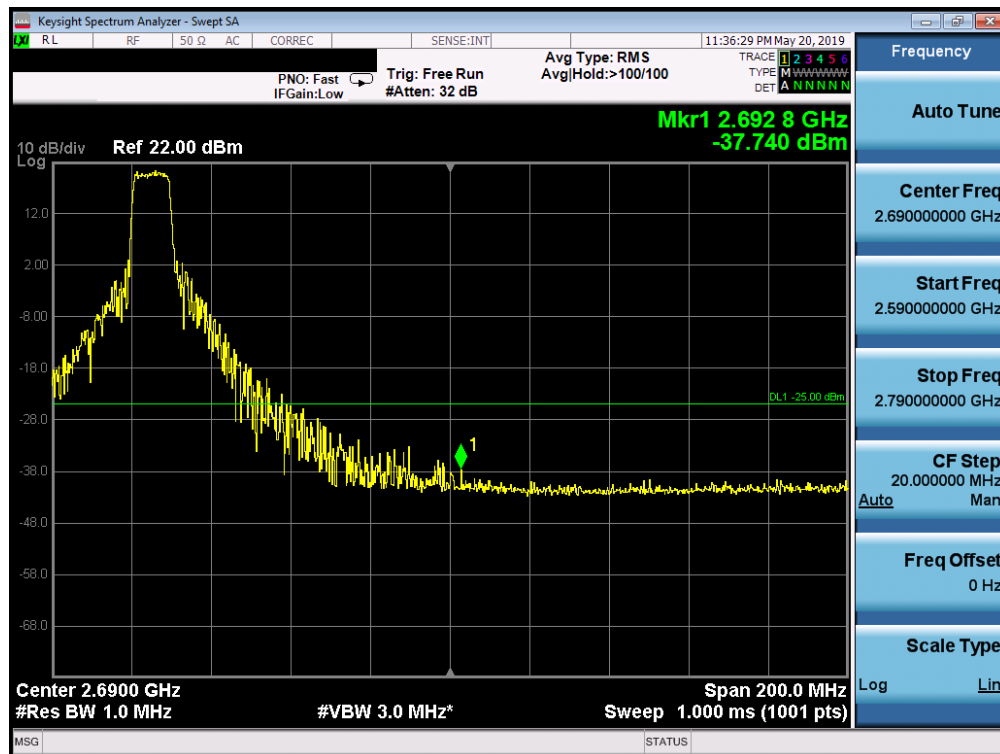


Plot 7-307. Upper Band Edge Plot (Band 38 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 177 of 252

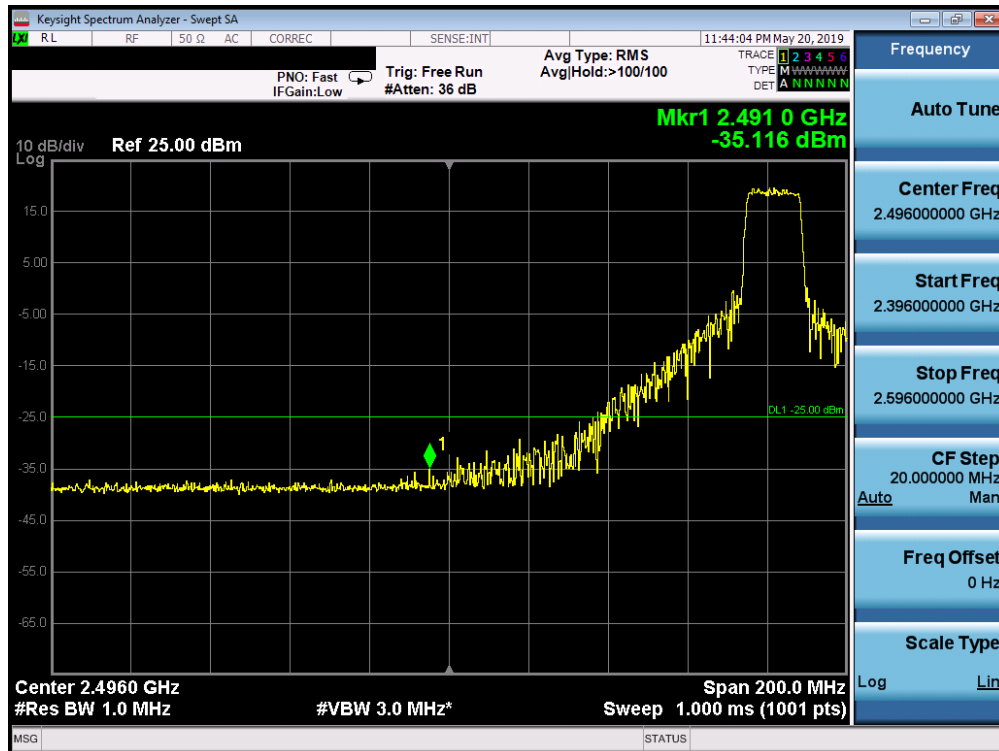


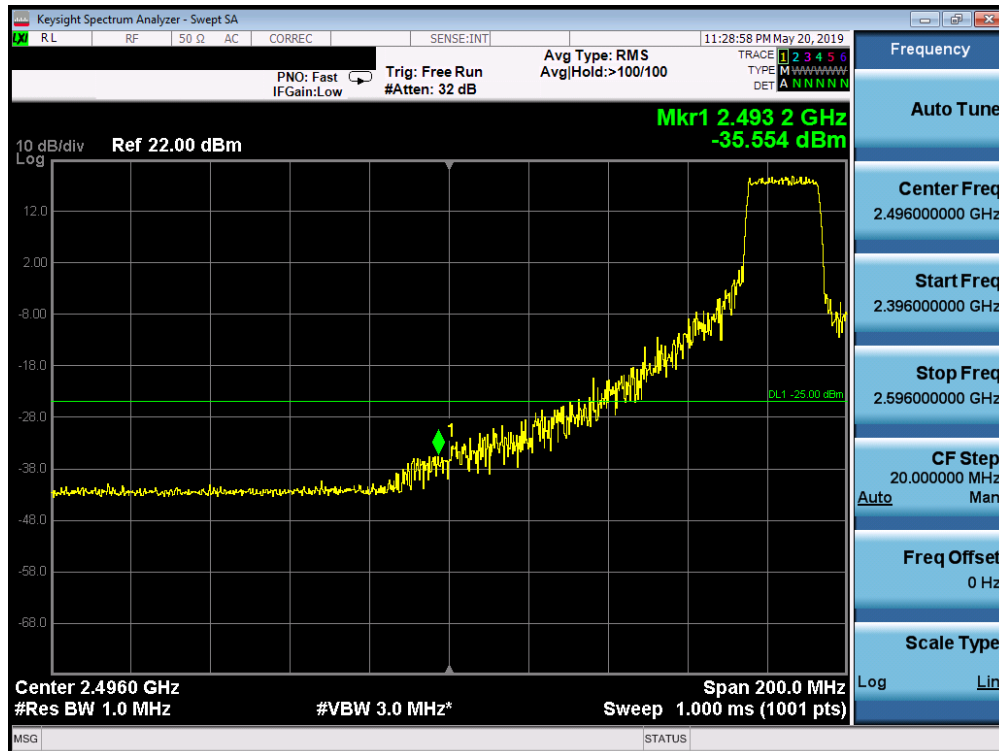
Plot 7-308. Lower Band Edge Plot (Band 38 - 10.0MHz QPSK - Full RB Configuration)



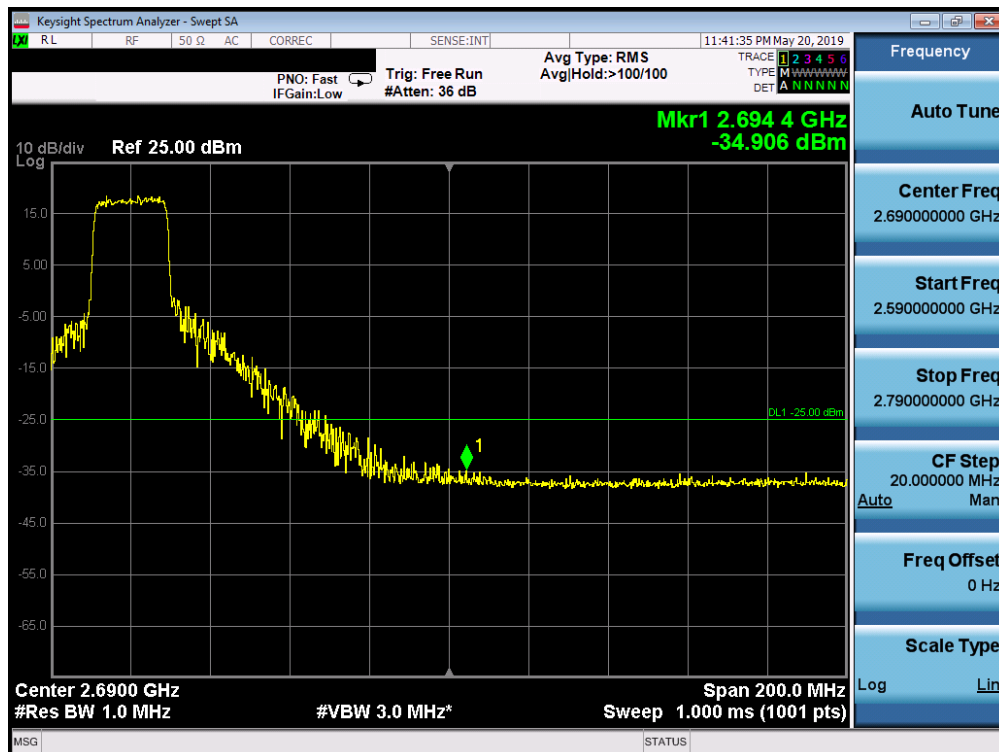
Plot 7-309. Upper Band Edge Plot (Band 38 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 178 of 252





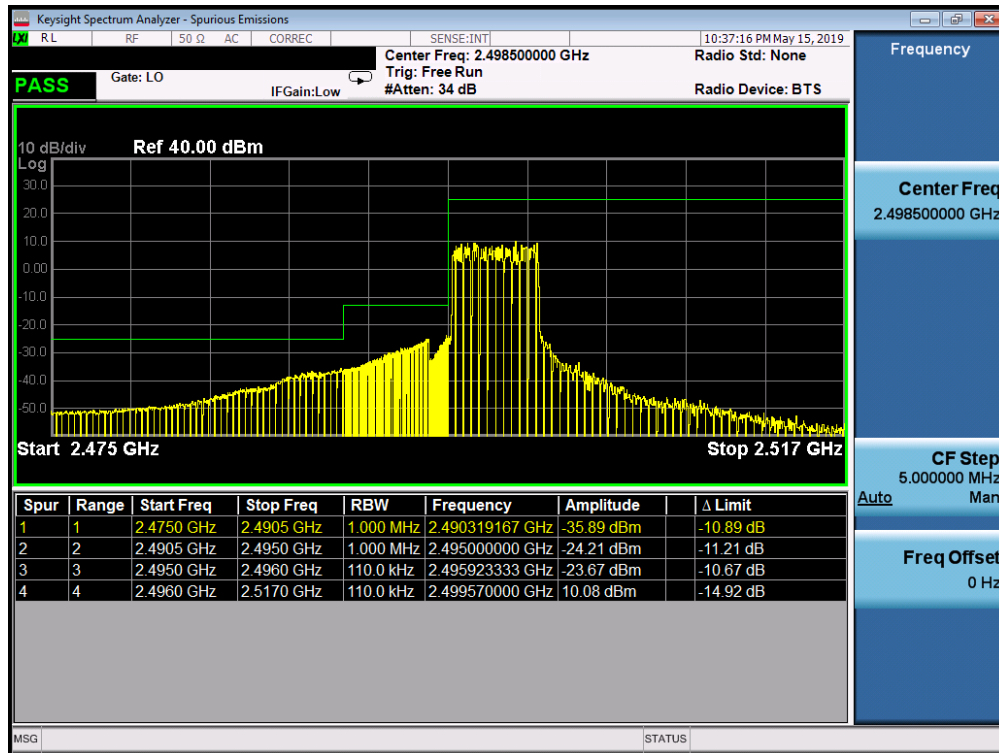
Plot 7-312. Lower Band Edge Plot (Band 38 - 20.0MHz QPSK - Full RB Configuration)



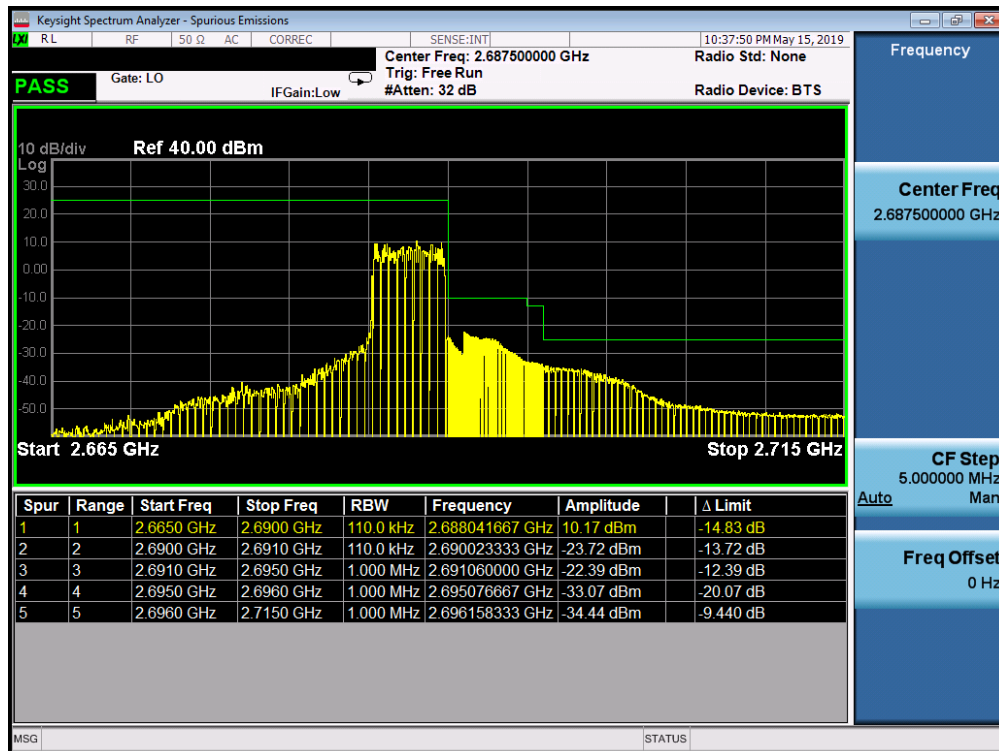
Plot 7-313. Upper Band Edge Plot (Band 38 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 180 of 252

Band 41 PC2

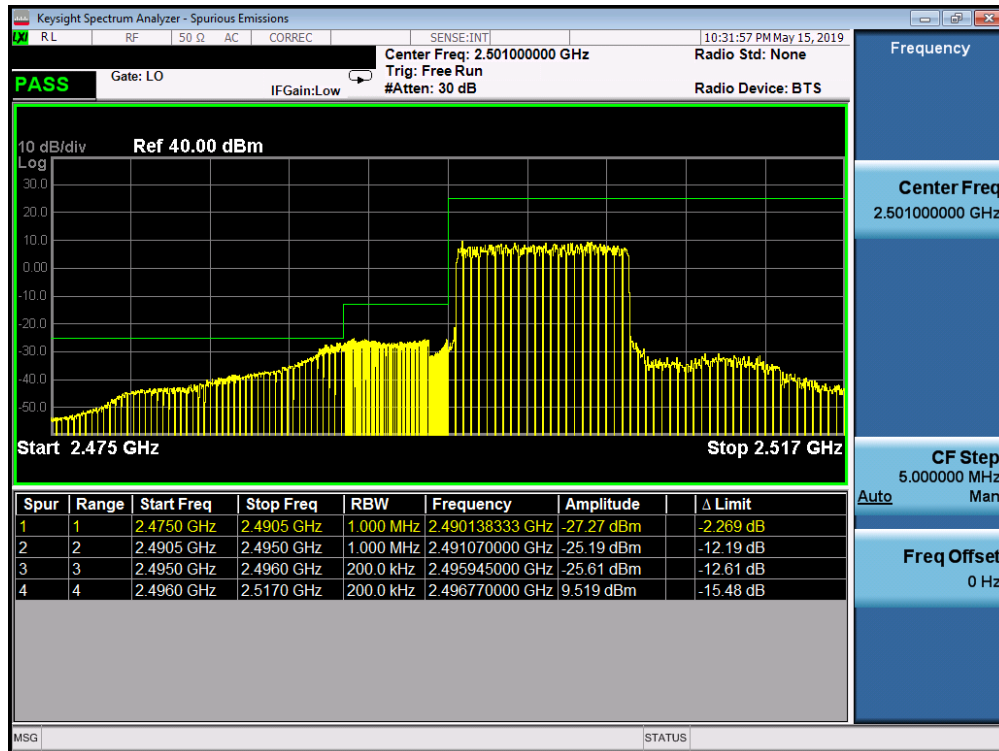


Plot 7-314. Lower ACP Plot at 2496MHz (Band 41 PC2 - 5.0MHz QPSK - Full RB Configuration)

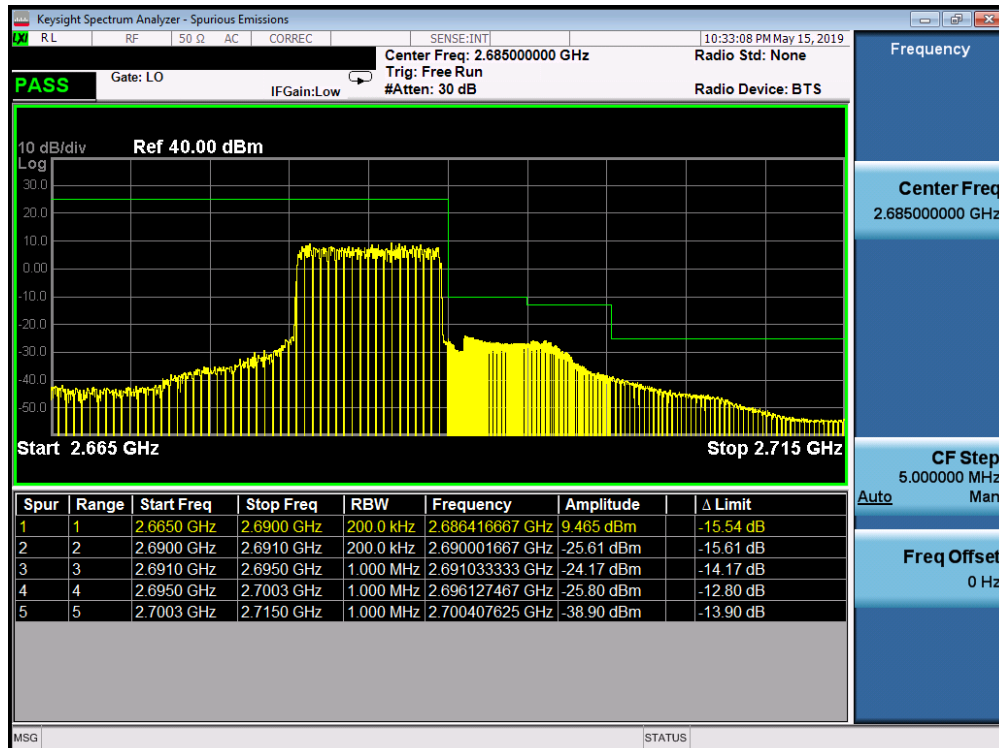


Plot 7-315. Upper ACP Plot (Band 41 PC2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset			Page 181 of 252

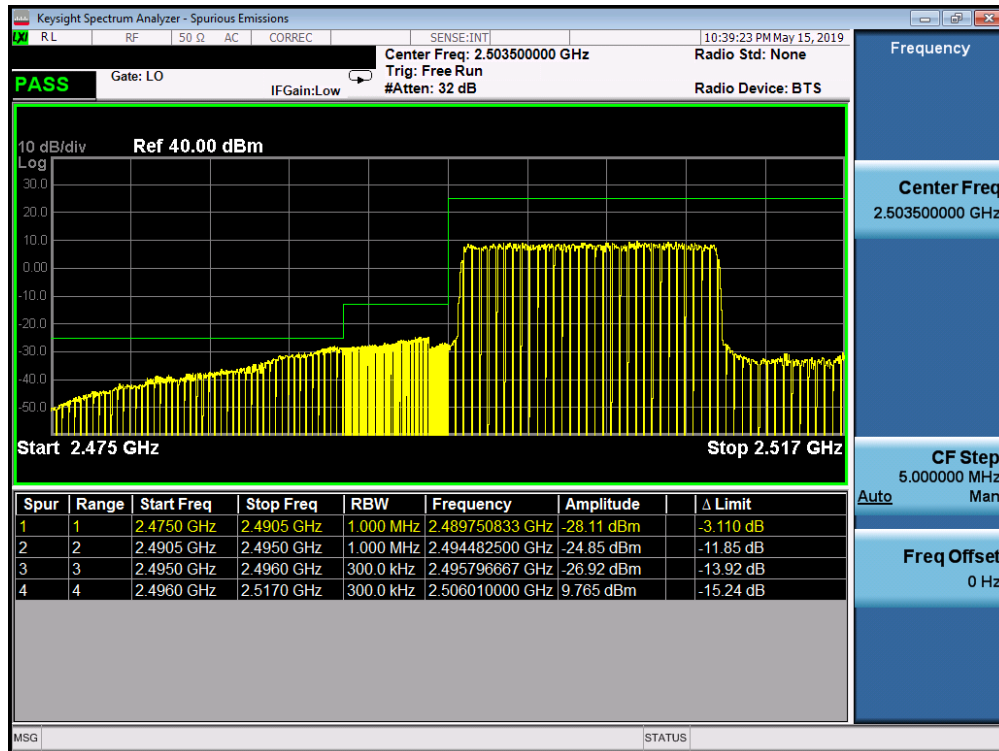


Plot 7-316. Lower ACP Plot at 2496MHz (Band 41 PC2 - 10.0MHz QPSK - Full RB Configuration)

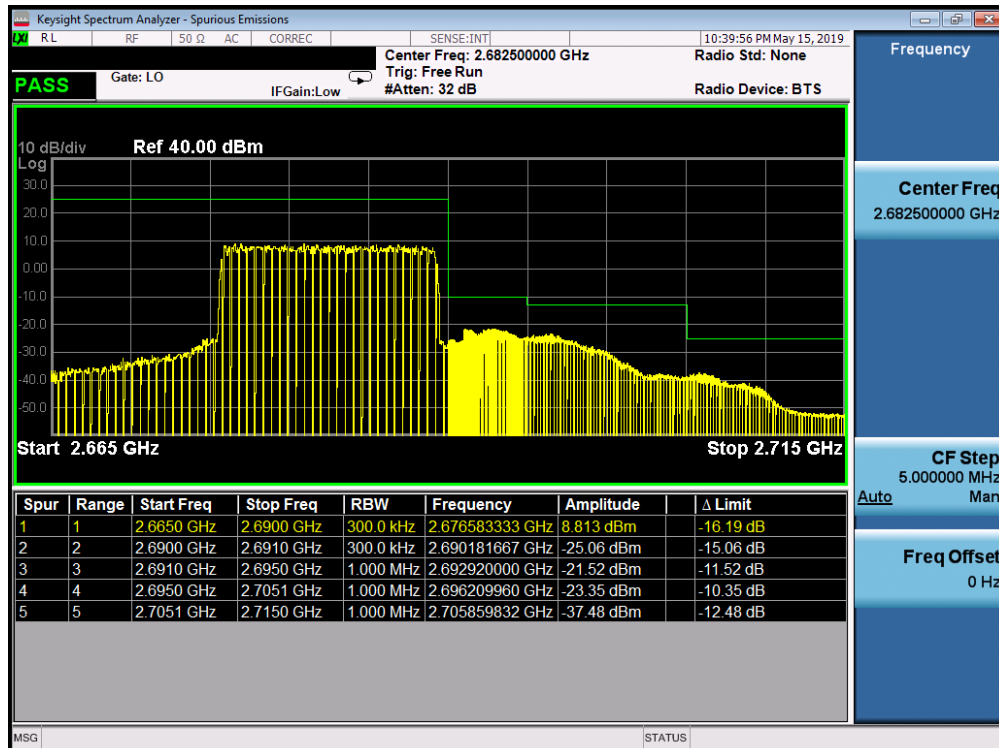


Plot 7-317. Upper ACP Plot (Band 41 PC2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 182 of 252

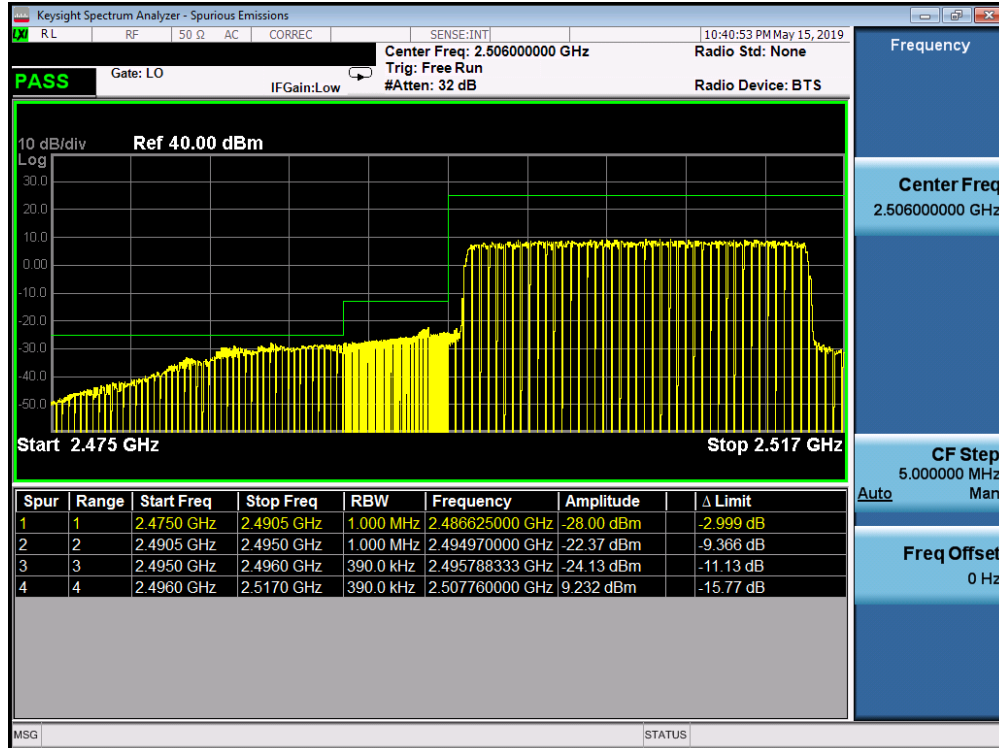


Plot 7-318. Lower ACP Plot at 2496MHz (Band 41 PC2 - 15.0MHz QPSK - Full RB Configuration)

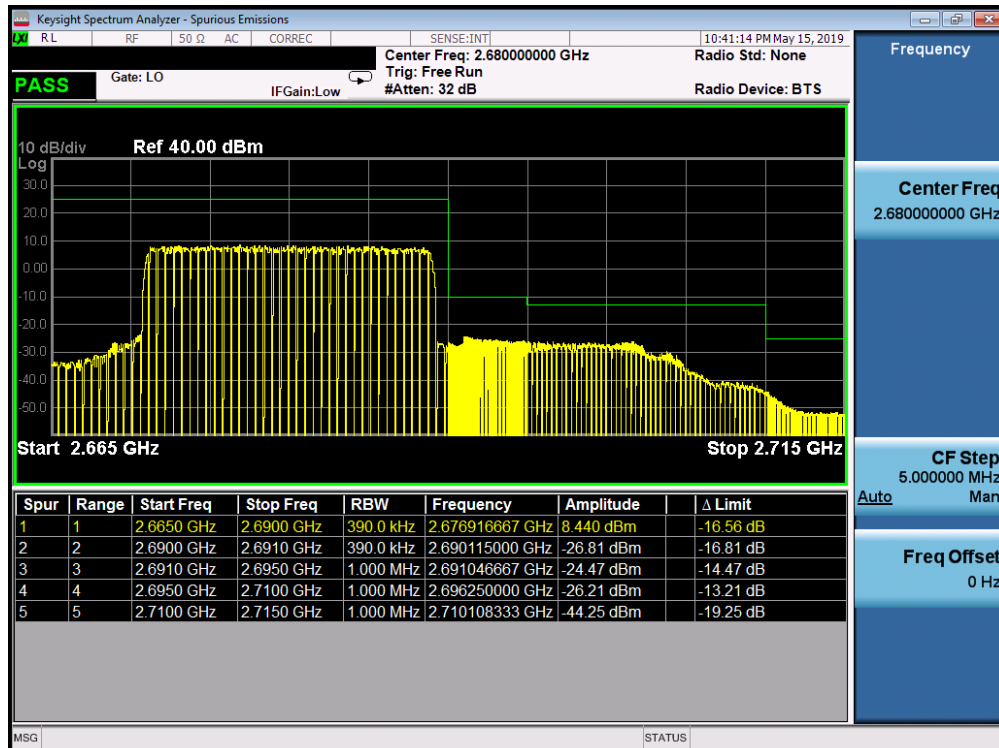


Plot 7-319. Upper ACP Plot (Band 41 PC2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 183 of 252



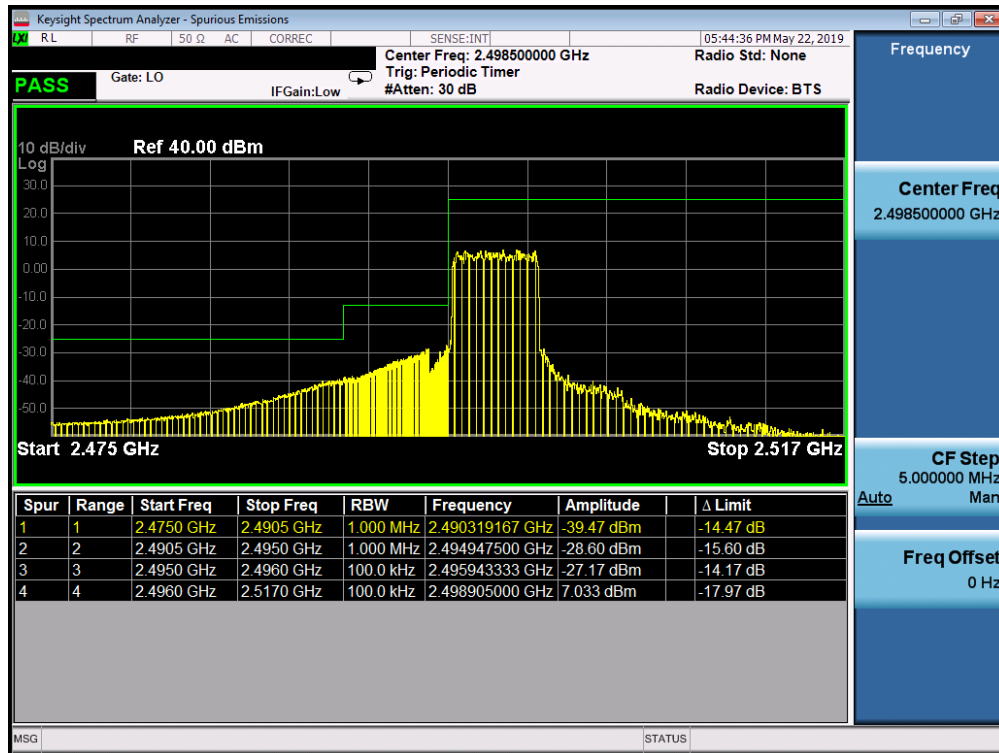
Plot 7-320. Lower ACP Plot at 2496MHz (Band 41 PC2 - 20.0MHz QPSK - Full RB Configuration)



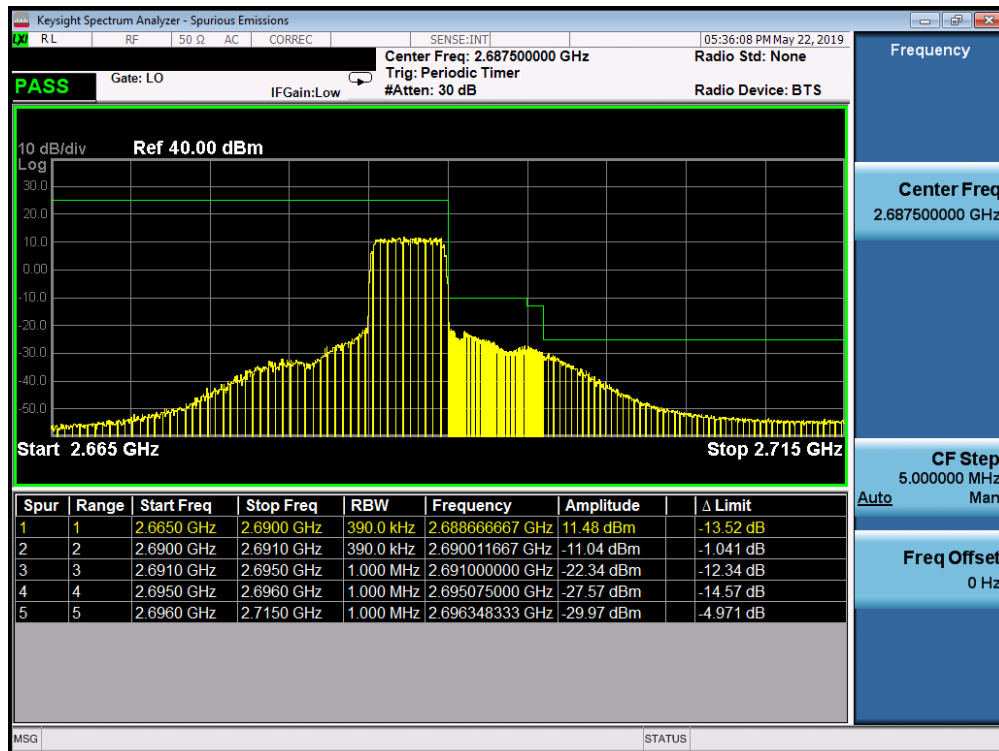
Plot 7-321. Upper ACP Plot (Band 41 PC2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 184 of 252

Band 41 PC3

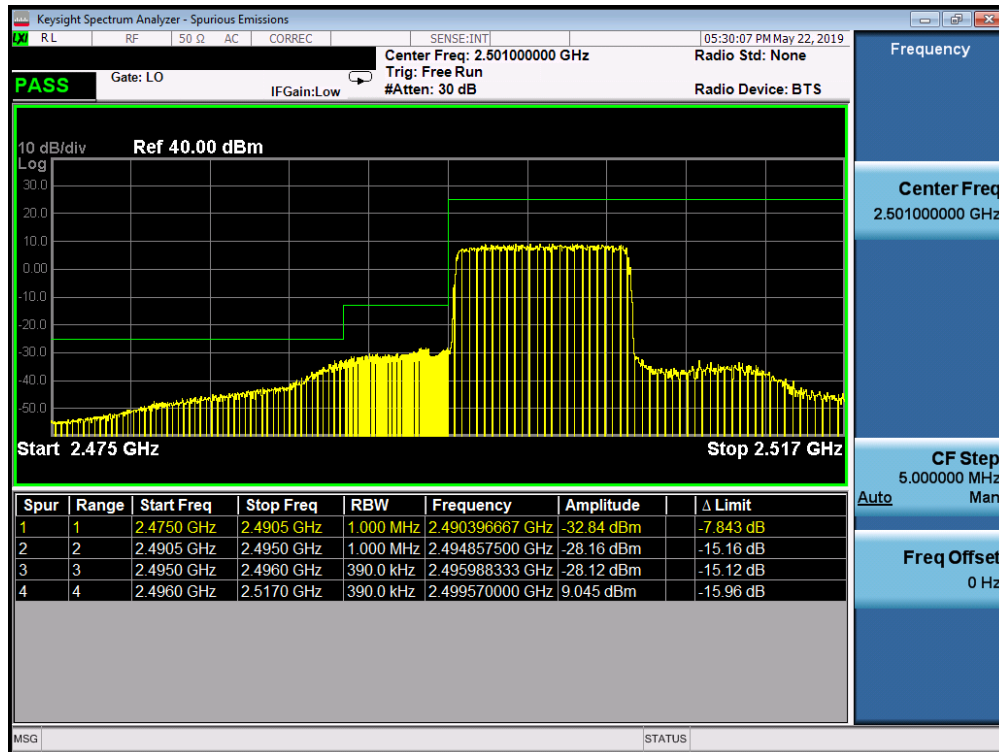


Plot 7-322. Lower ACP Plot at 2496MHz (Band 41 PC3 - 5.0MHz QPSK - Full RB Configuration)

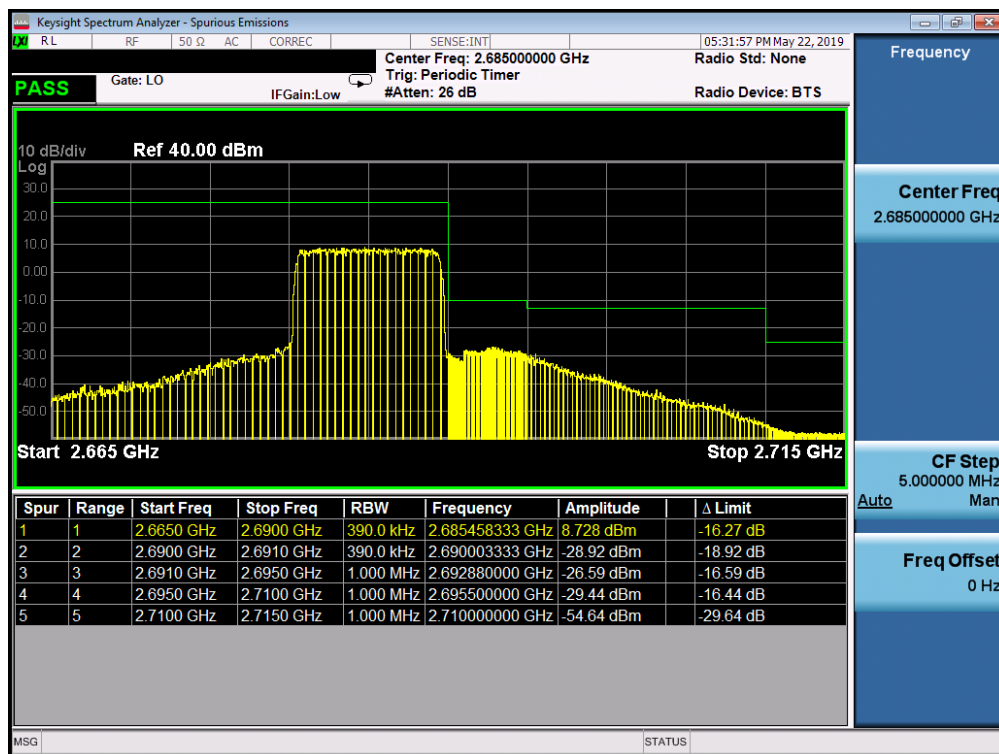


Plot 7-323. Upper ACP Plot (Band 41 PC3 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 185 of 252

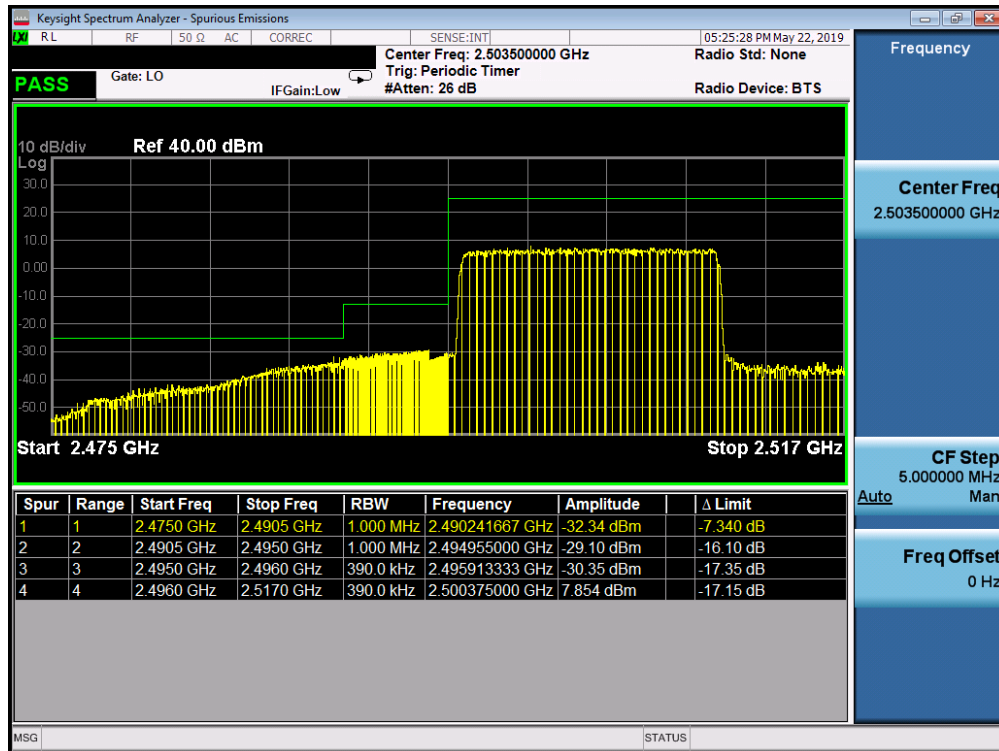


Plot 7-324. Lower ACP Plot at 2496MHz (Band 41 PC3 - 10.0MHz QPSK - Full RB Configuration)

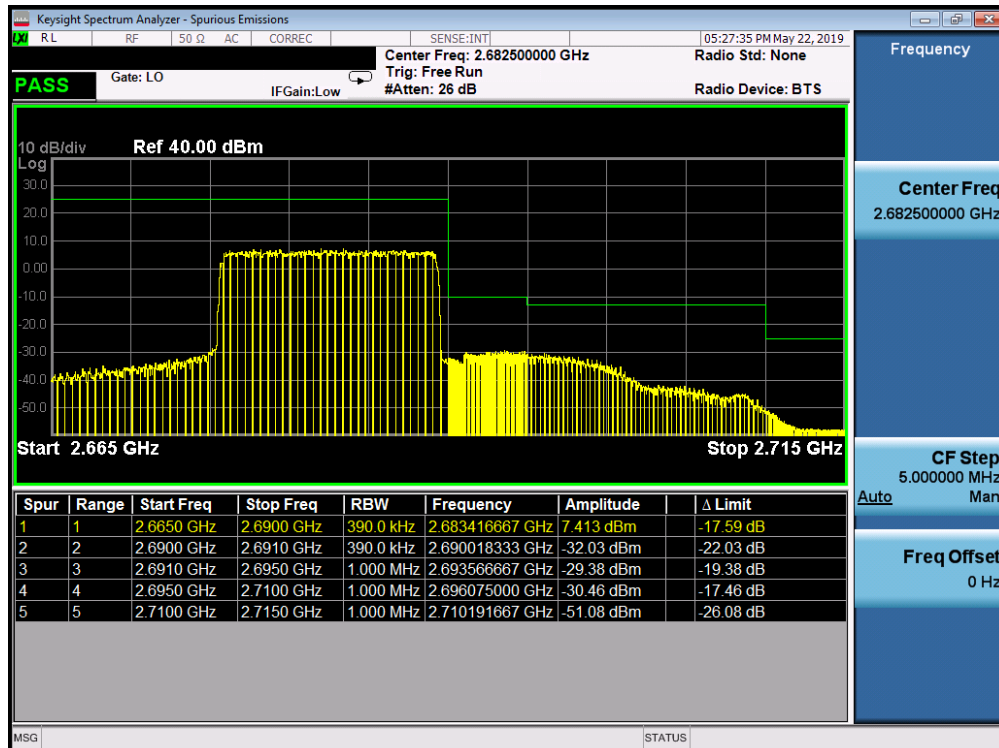


Plot 7-325. Upper ACP Plot (Band 41 PC3 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 186 of 252

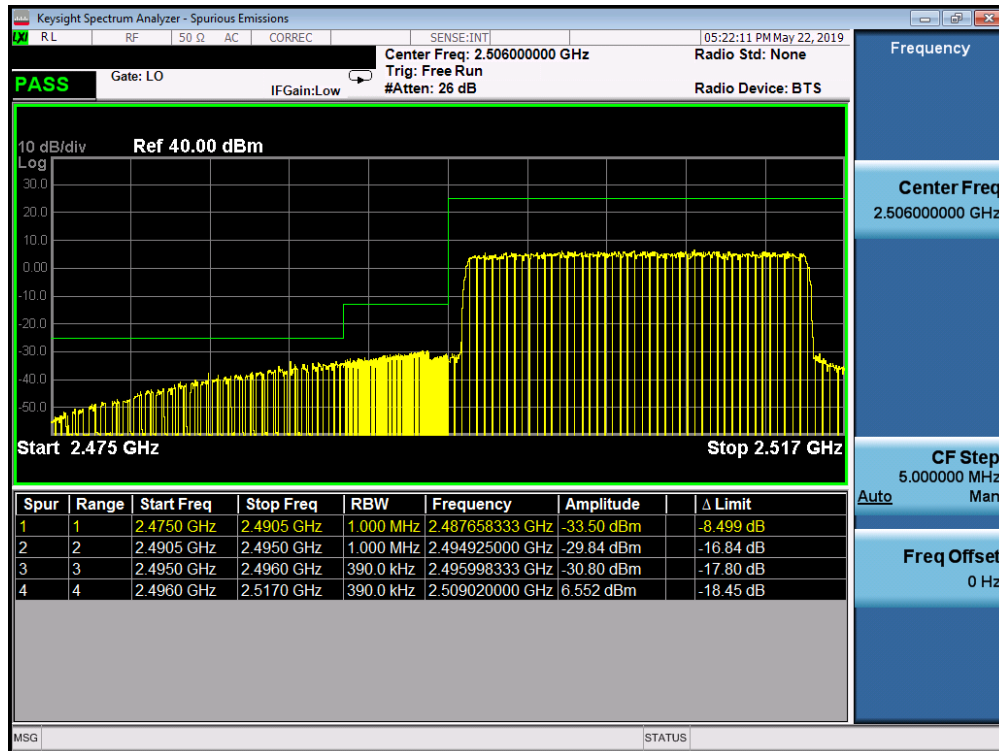


Plot 7-326. Lower ACP Plot at 2496MHz (Band 41 PC3 - 15.0MHz QPSK - Full RB Configuration)

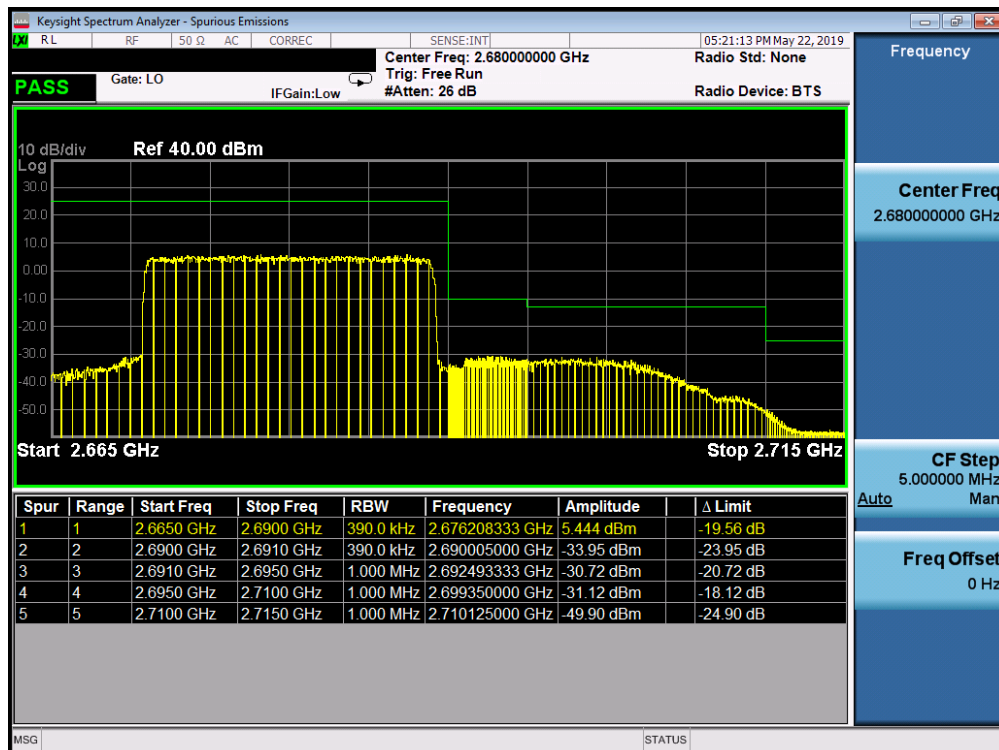


Plot 7-327. Upper ACP Plot (Band 41 PC3 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 187 of 252



Plot 7-328. Lower ACP Plot at 2496MHz (Band 41 PC3 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-329. Upper ACP Plot (Band 41 PC3 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset			Page 188 of 252

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.

Test Setup

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

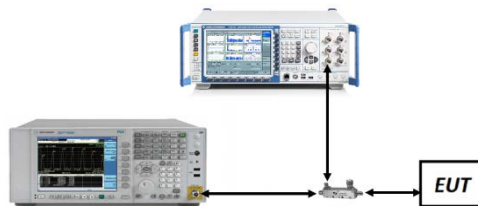


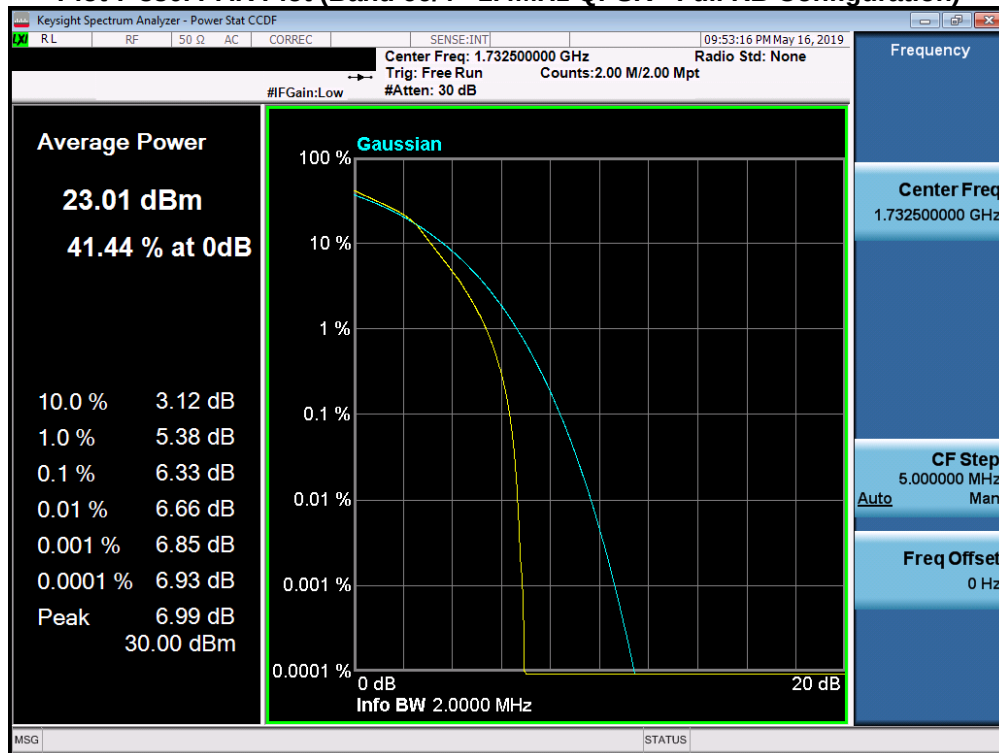
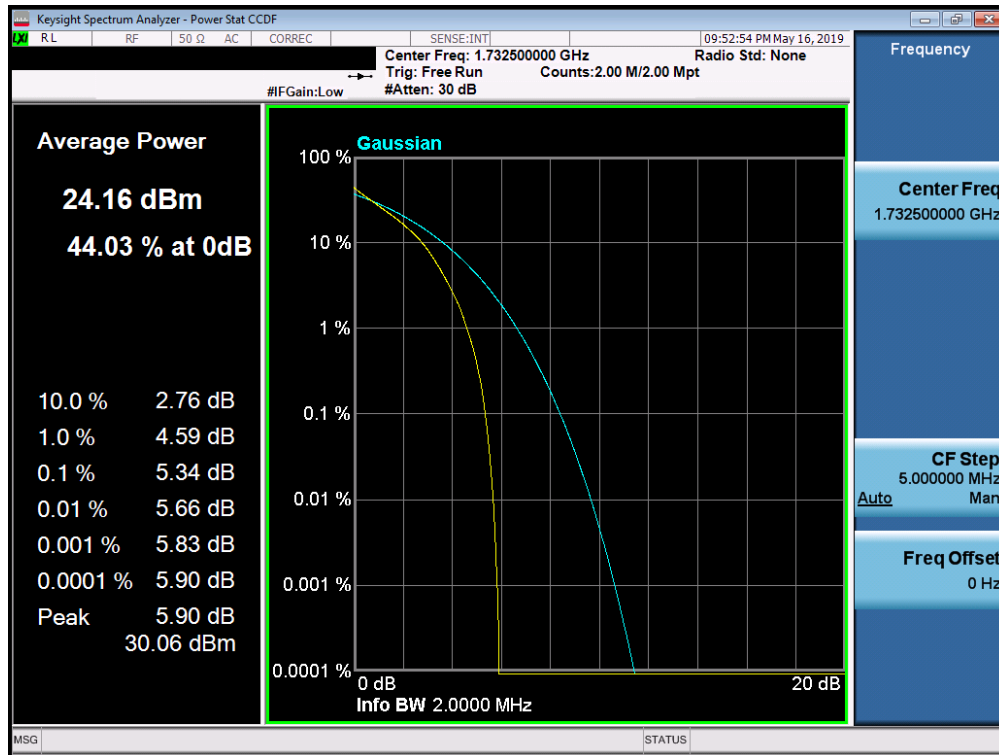
Figure 7-4. Test Instrument & Measurement Setup

Test Notes

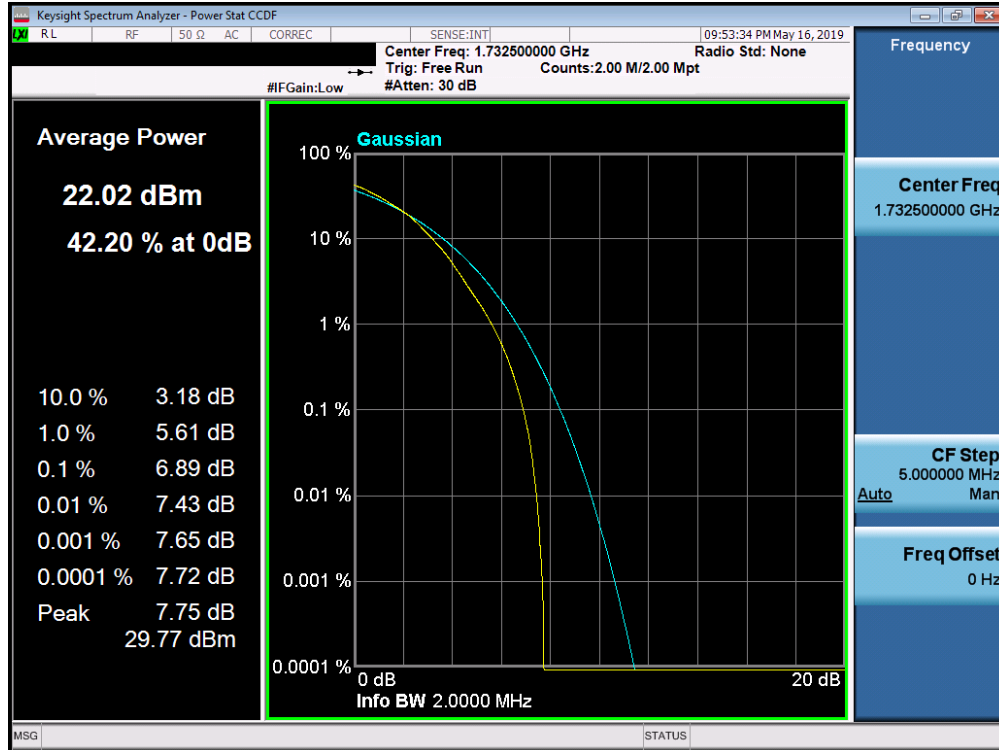
None.

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 189 of 252

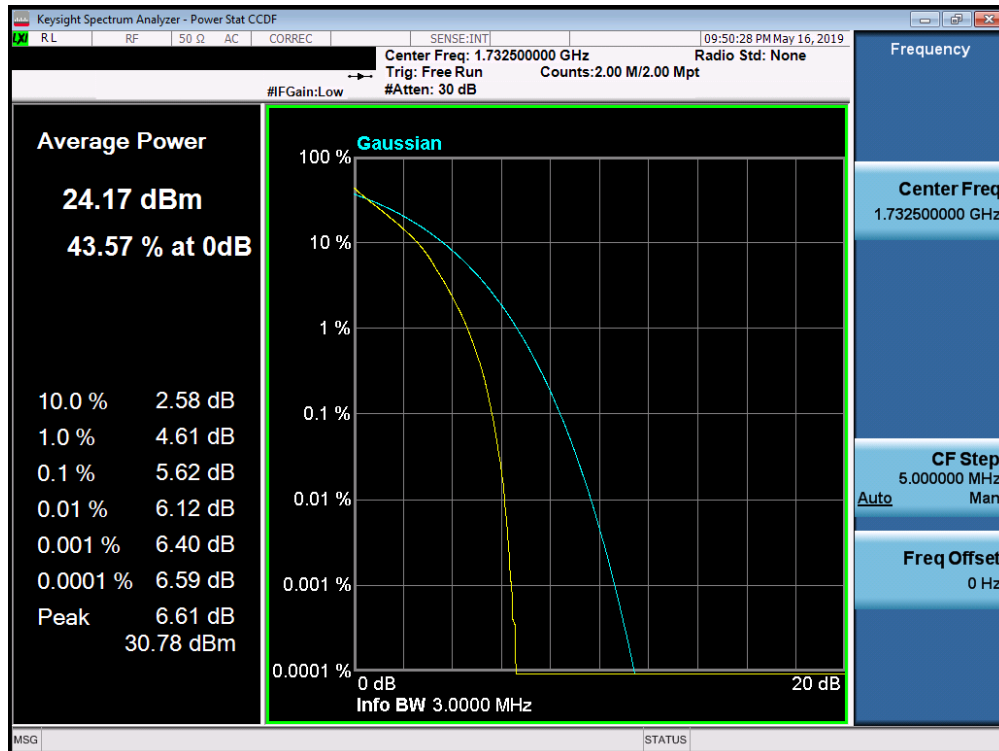
Band 66/4



FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 190 of 252

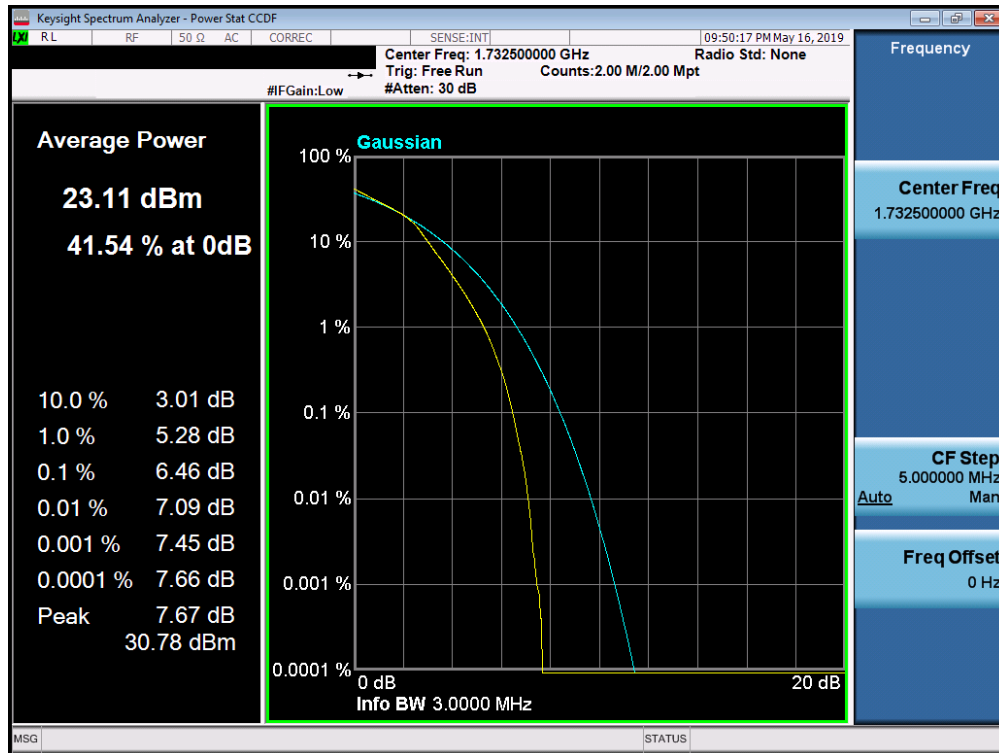


Plot 7-332. PAR Plot (Band 66/4 - 1.4MHz 64-QAM - Full RB Configuration)

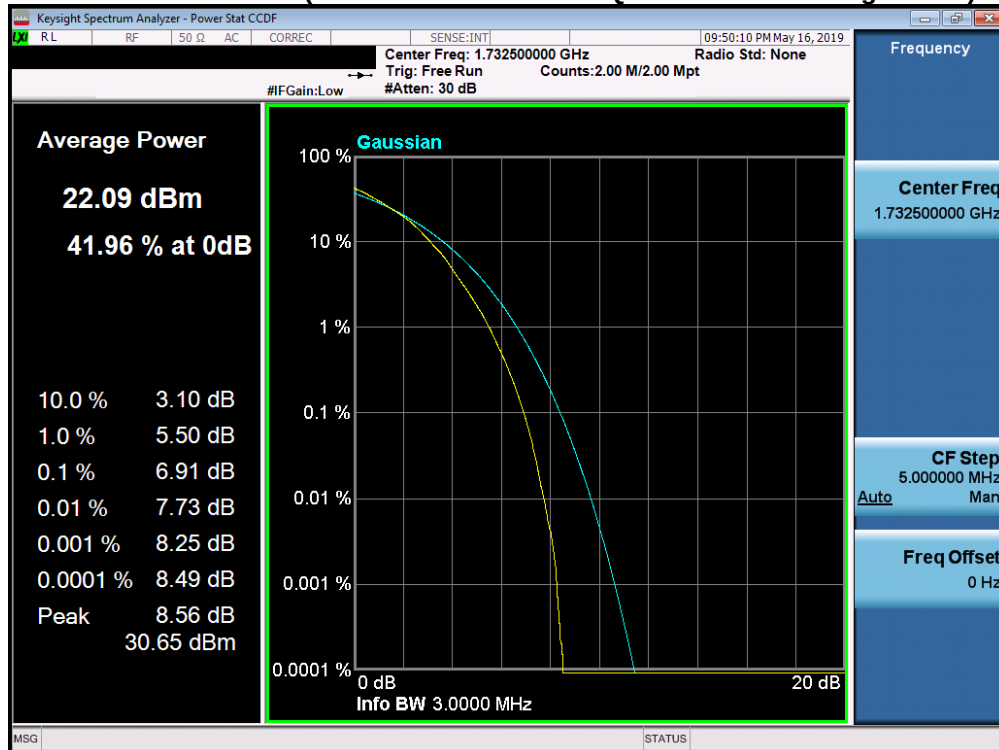


Plot 7-333. PAR Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 191 of 252

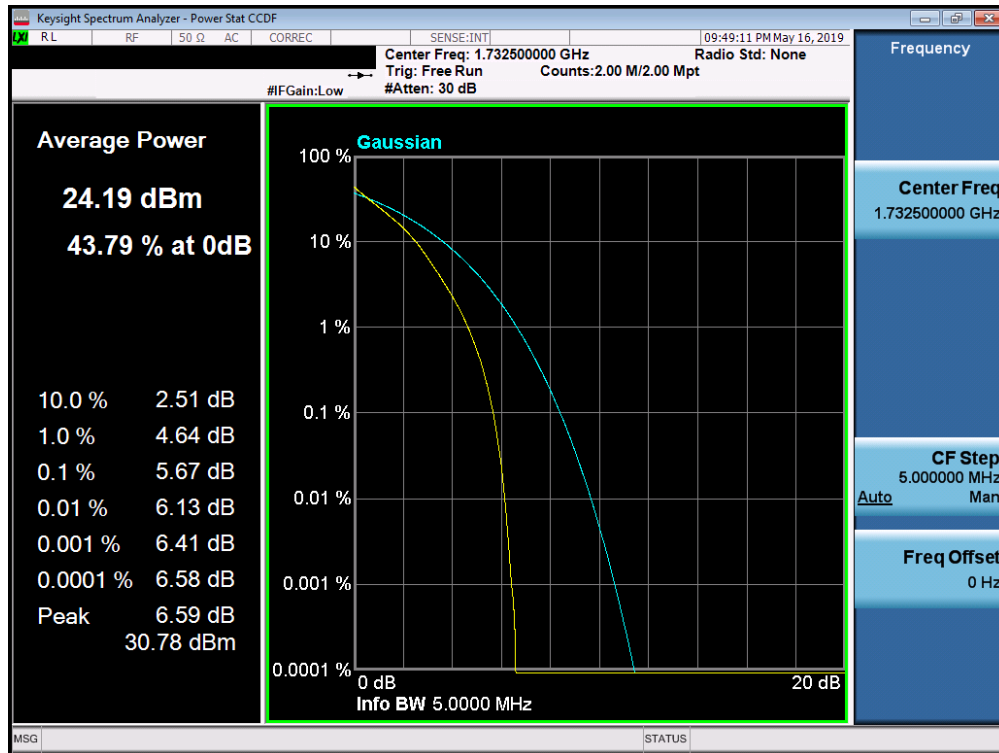


Plot 7-334. PAR Plot (Band 66/4 – 3.0MHz 16-QAM - Full RB Configuration)

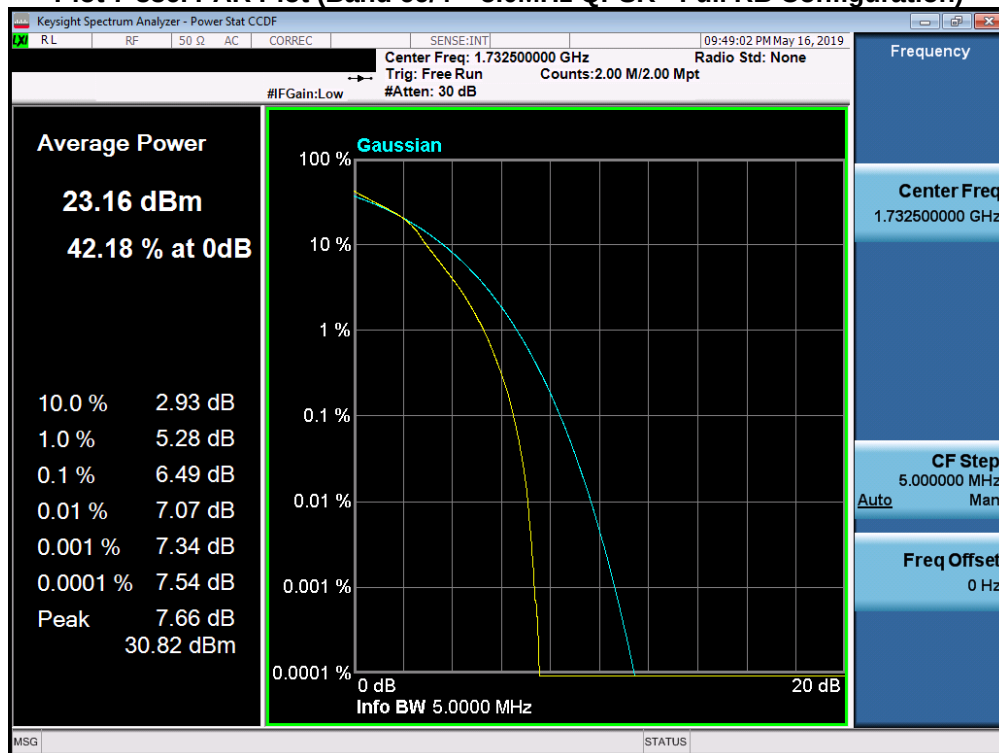


Plot 7-335. PAR Plot (Band 66/4 – 3.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMA205U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset	Page 192 of 252

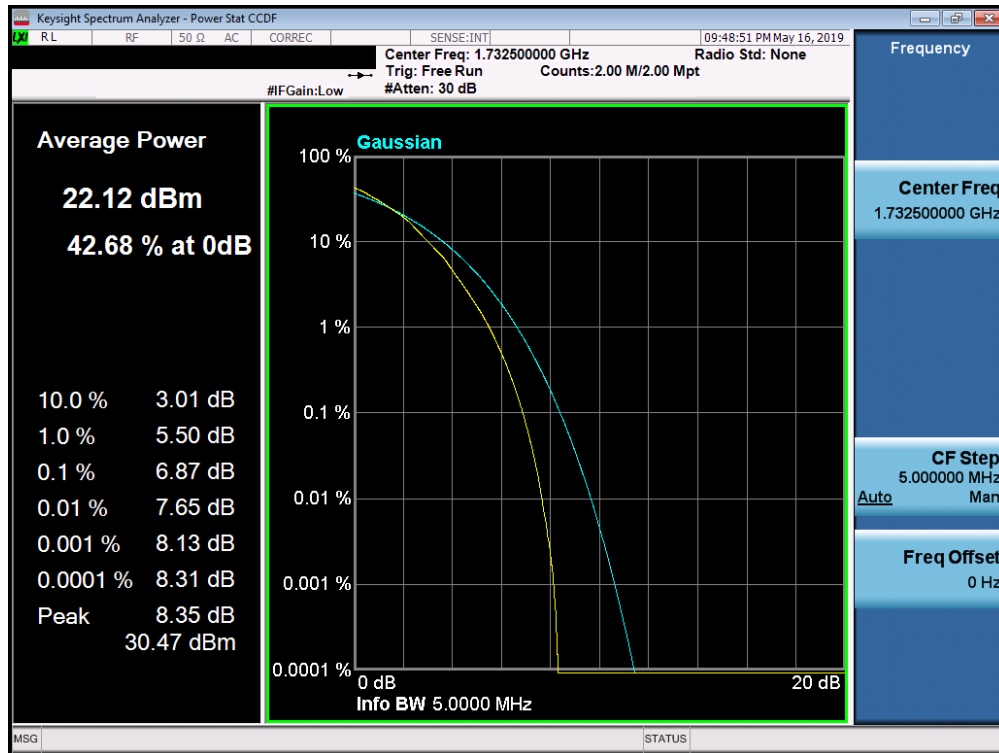


Plot 7-336. PAR Plot (Band 66/4 – 5.0MHz QPSK - Full RB Configuration)

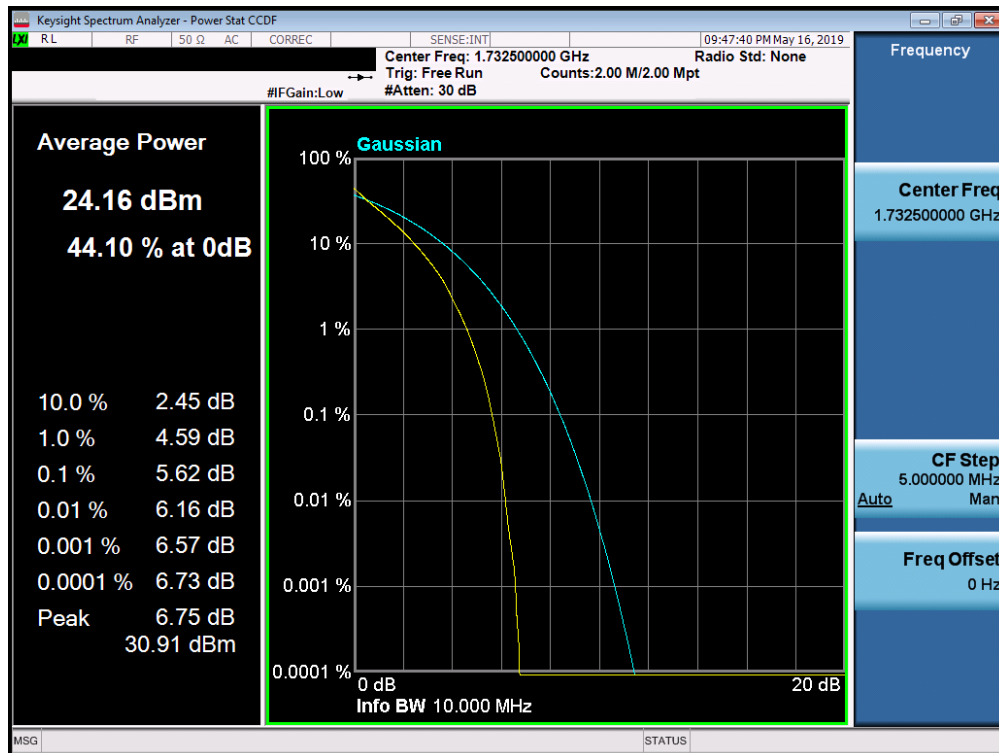


Plot 7-337. PAR Plot (Band 66/4 – 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMA205U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset	Page 193 of 252

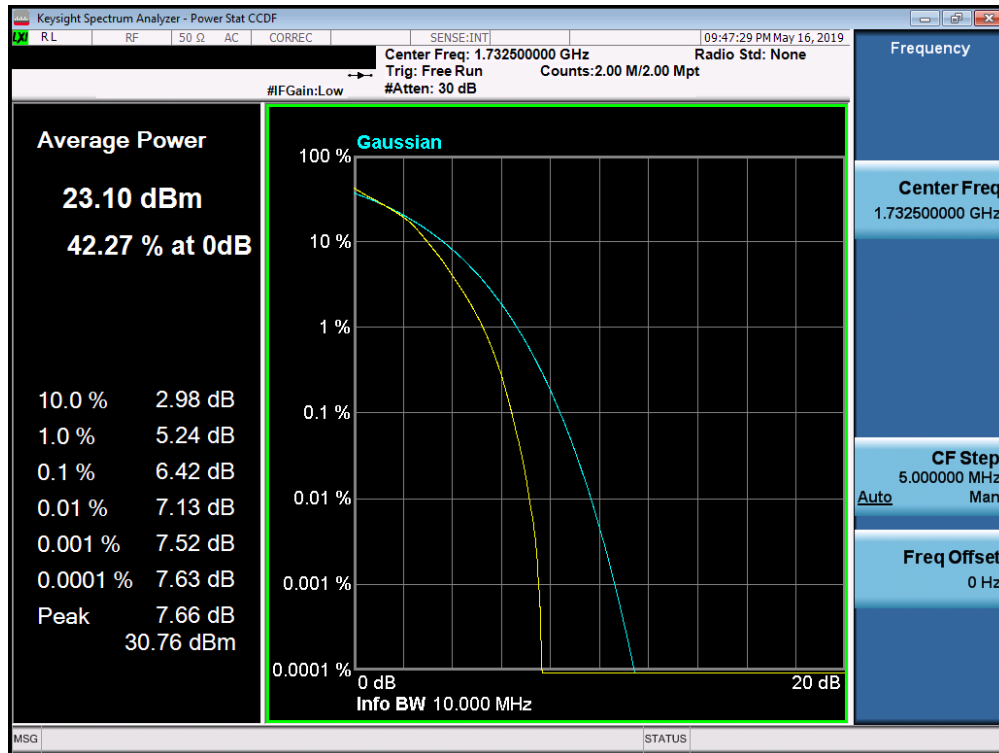


Plot 7-338. PAR Plot (Band 66/4 – 5.0MHz 64-QAM - Full RB Configuration)

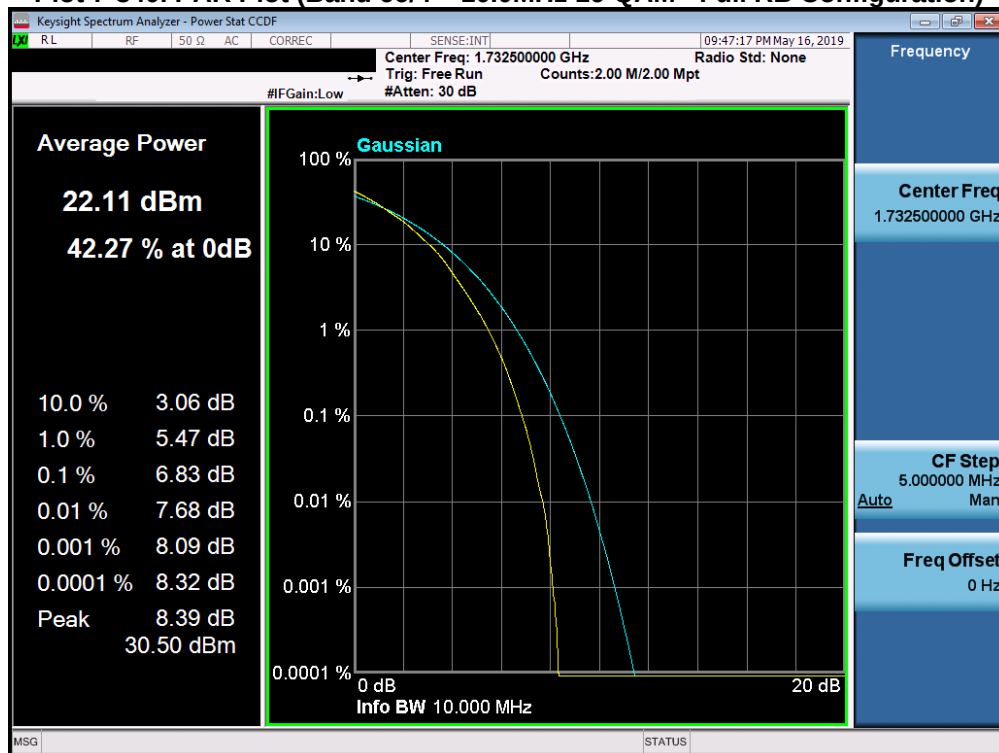


Plot 7-339. PAR Plot (Band 66/4 – 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 194 of 252

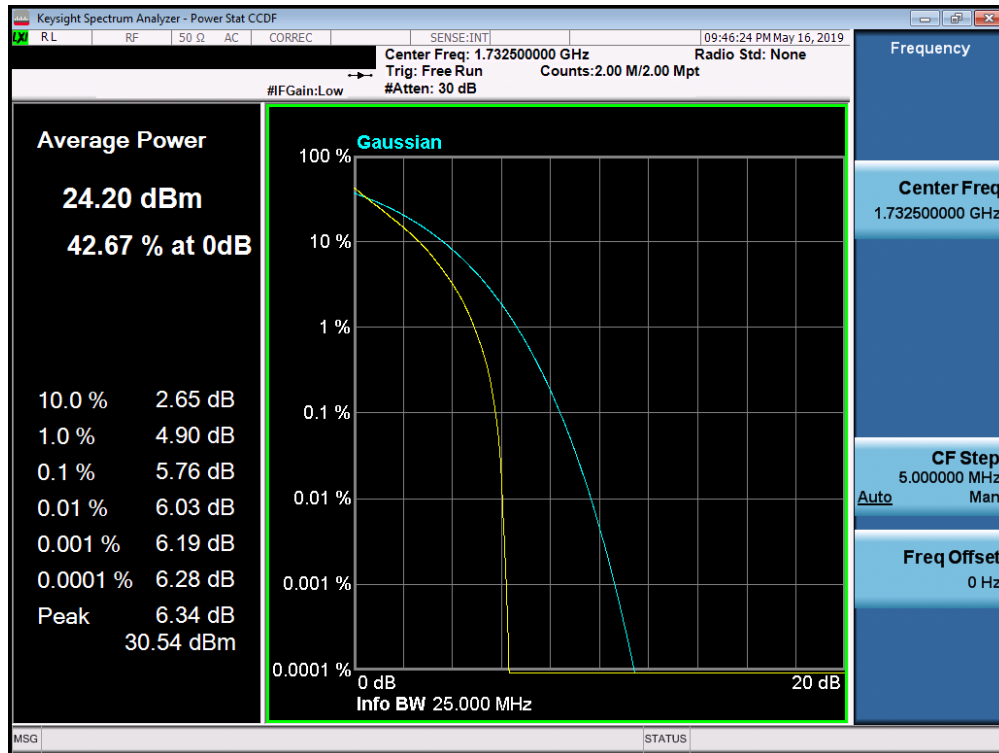


Plot 7-340. PAR Plot (Band 66/4 – 10.0MHz 16-QAM - Full RB Configuration)

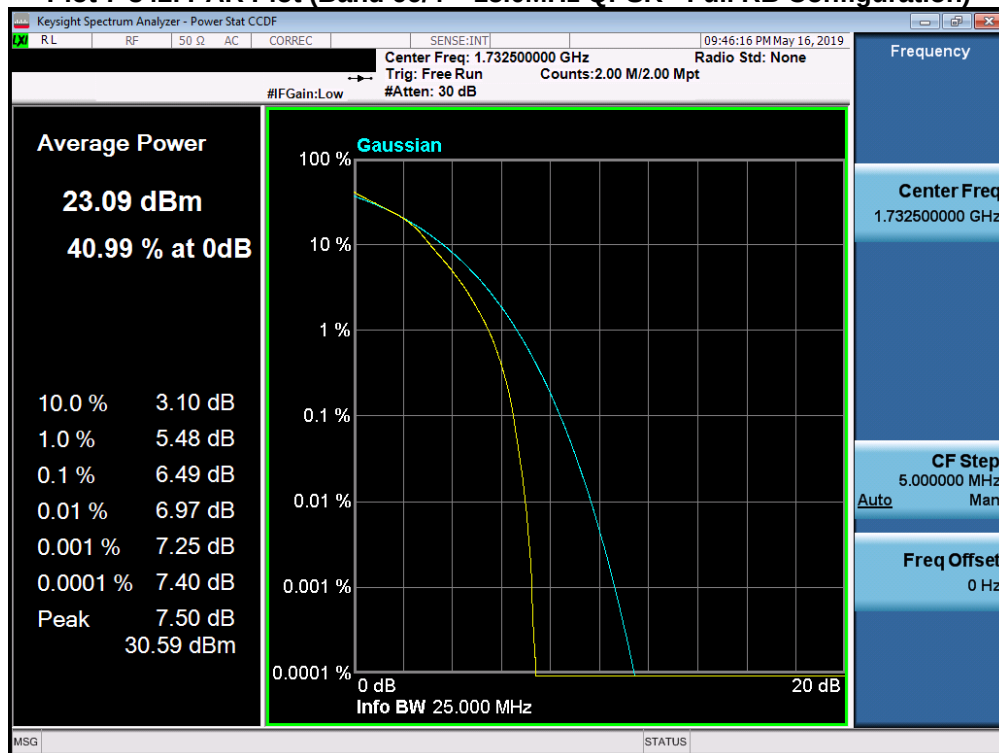


Plot 7-341. PAR Plot (Band 66/4 – 10.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMA205U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset	Page 195 of 252

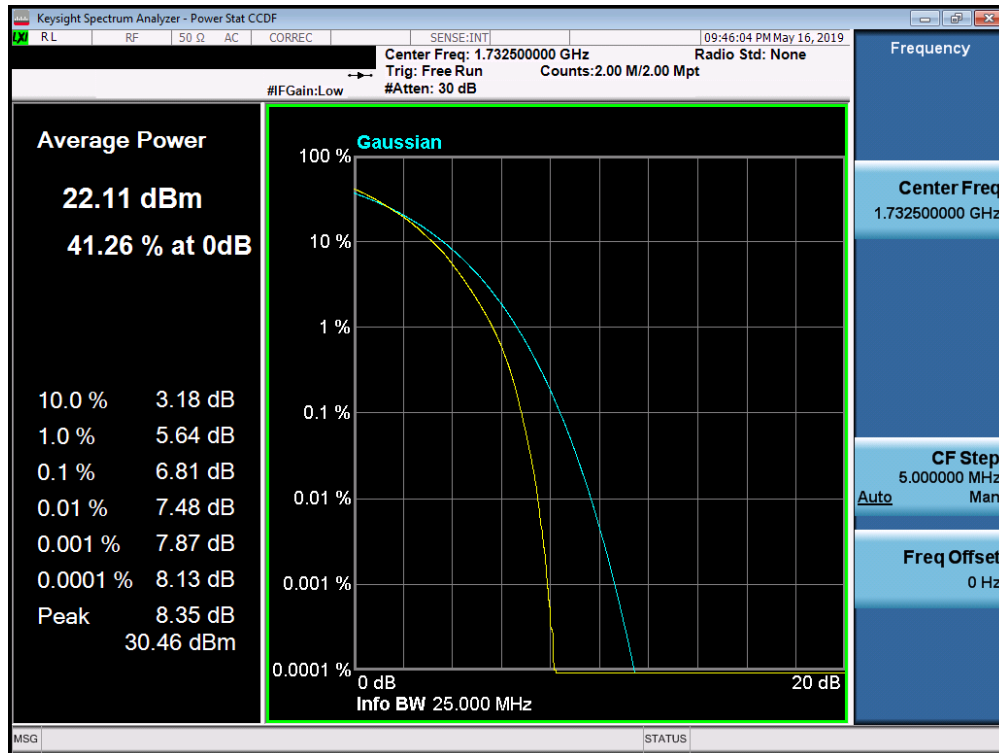


Plot 7-342. PAR Plot (Band 66/4 – 15.0MHz QPSK - Full RB Configuration)

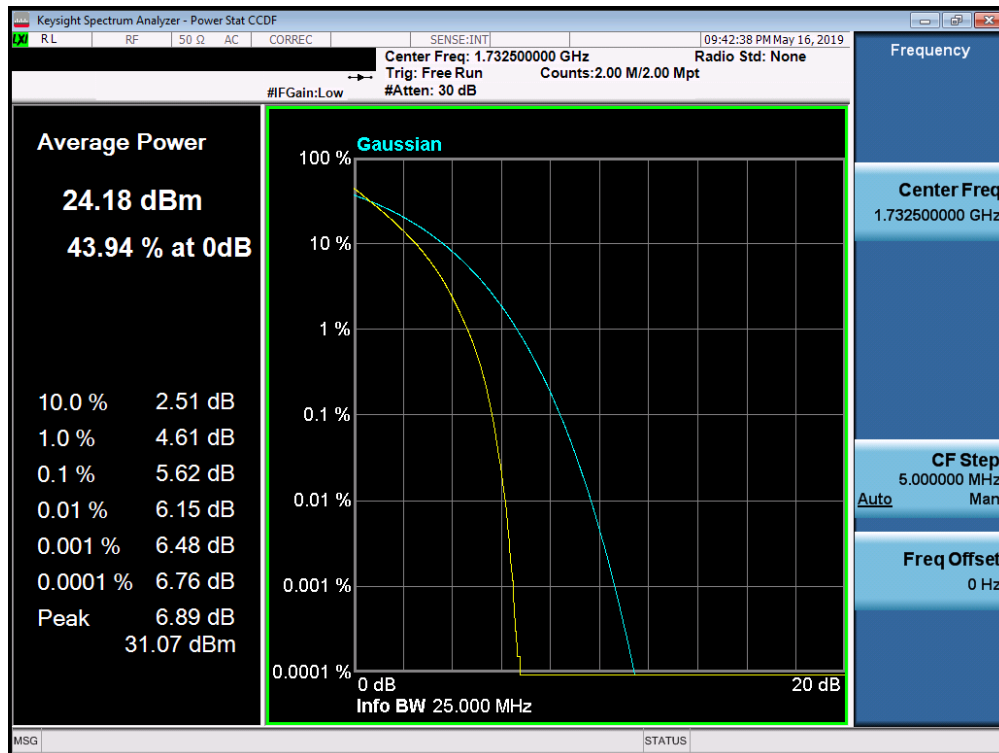


Plot 7-343. PAR Plot (Band 66/4 – 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMA205U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset	Page 196 of 252

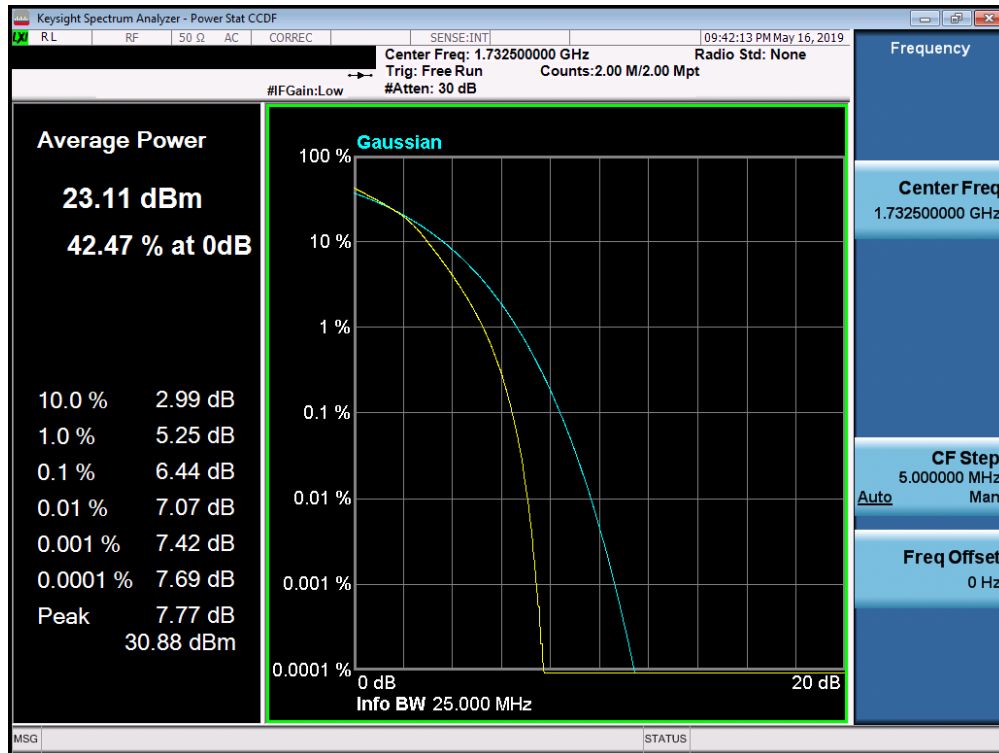


Plot 7-344. PAR Plot (Band 66/4 – 15.0MHz 64-QAM - Full RB Configuration)

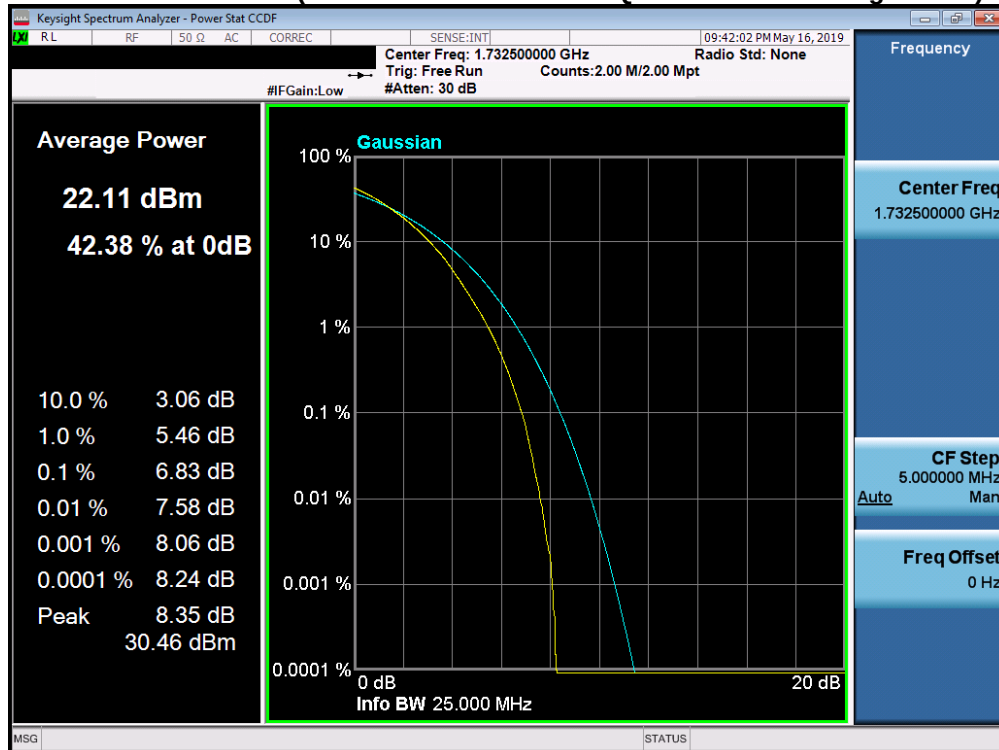


Plot 7-345. PAR Plot (Band 66/4 – 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 197 of 252



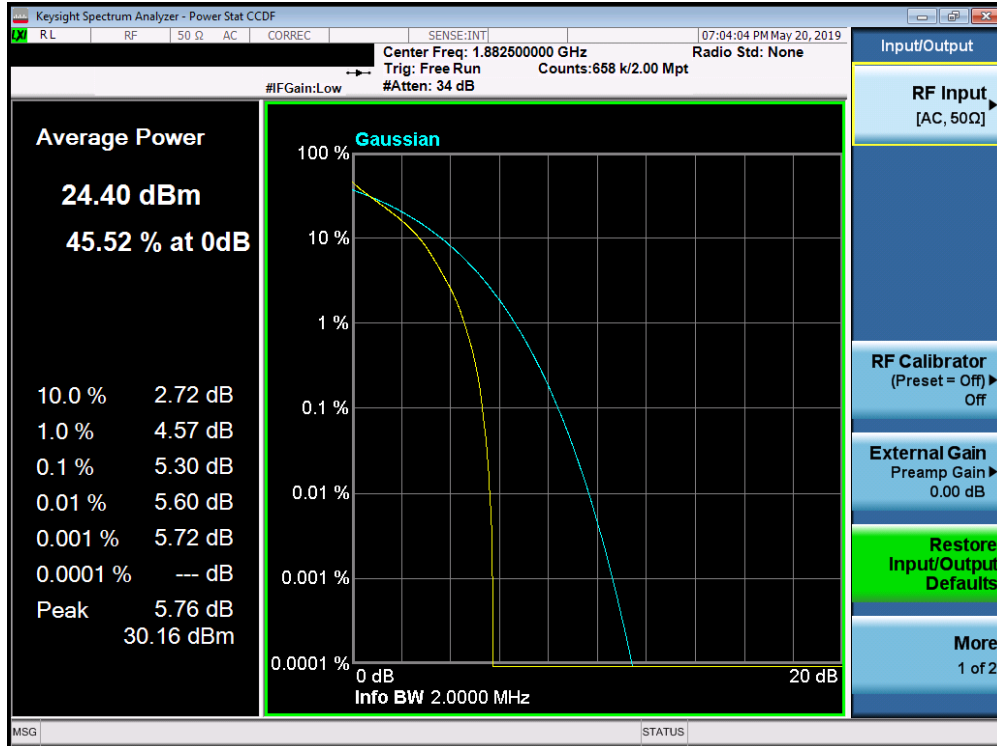
Plot 7-346. PAR Plot (Band 66/4 – 20.0MHz 16-QAM - Full RB Configuration)



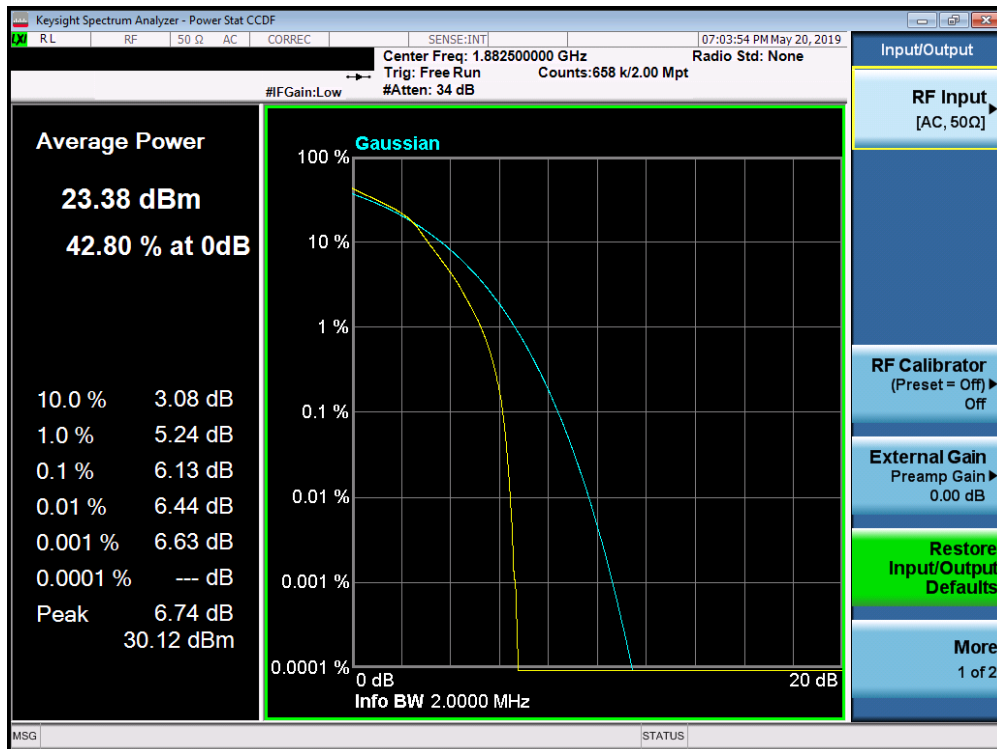
Plot 7-347. PAR Plot (Band 66/4 – 20.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMA205U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset	Page 198 of 252

Band 25/2

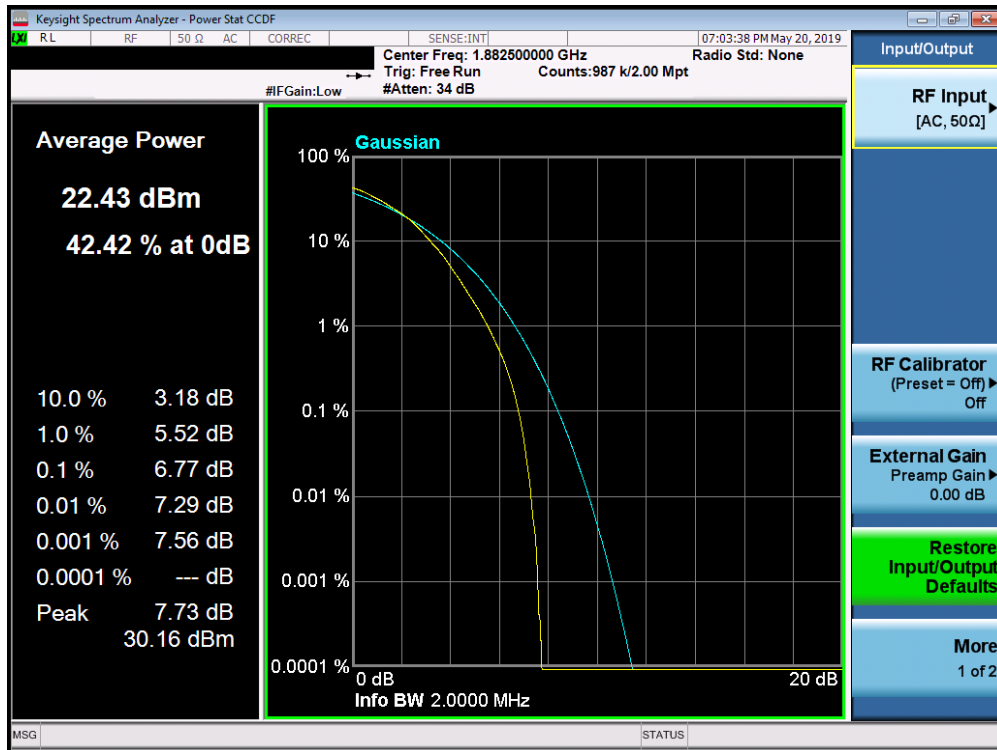


Plot 7-348. PAR Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

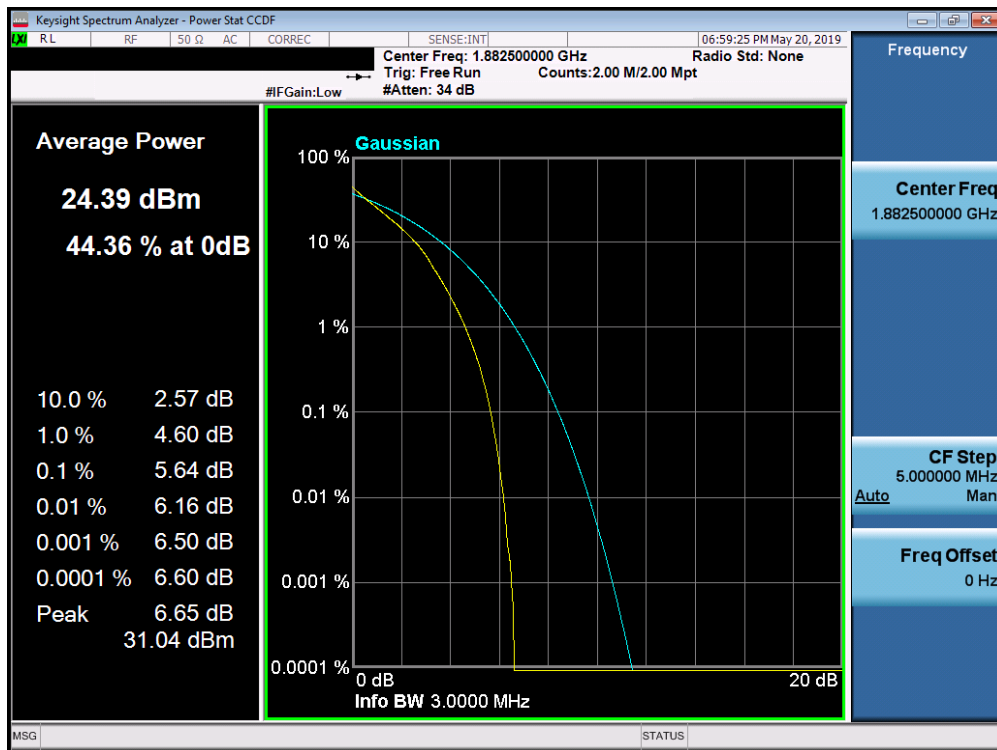


Plot 7-349. PAR Plot (Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMA205U	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 199 of 252

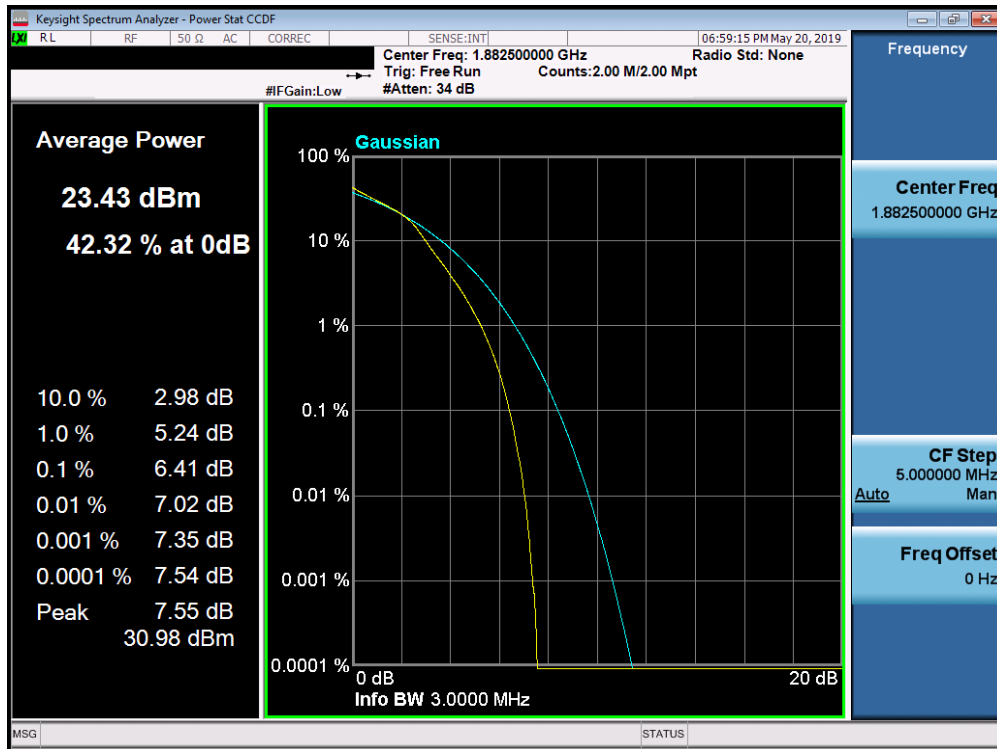


Plot 7-350. PAR Plot (Band 25/2 - 1.4MHz 64-QAM - Full RB Configuration)

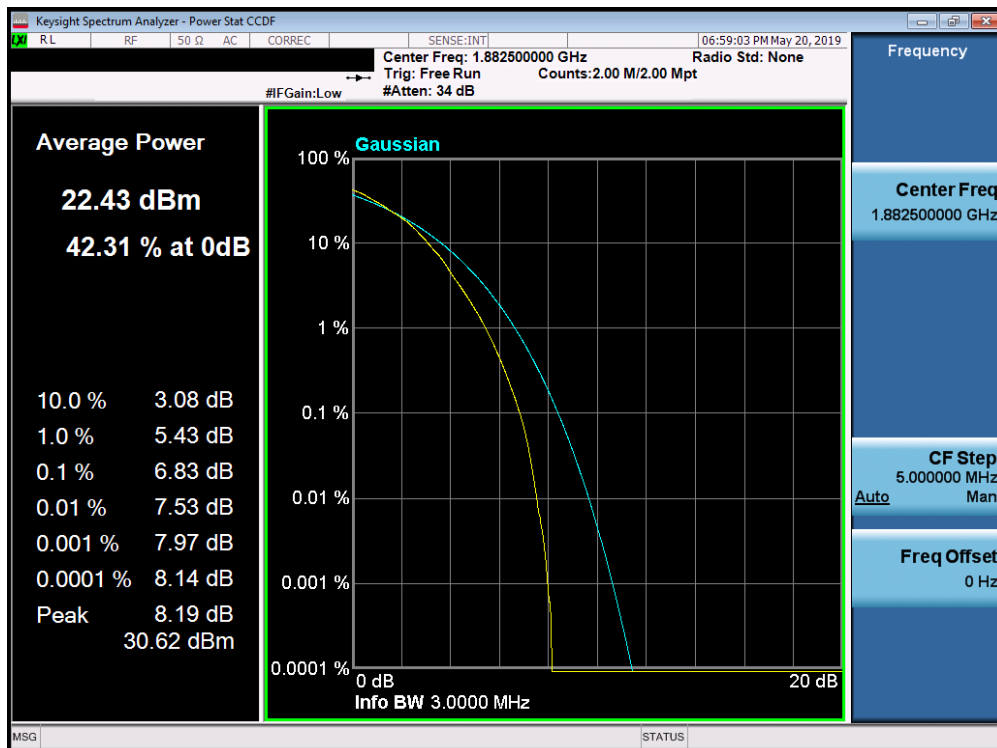


Plot 7-351. PAR Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 200 of 252

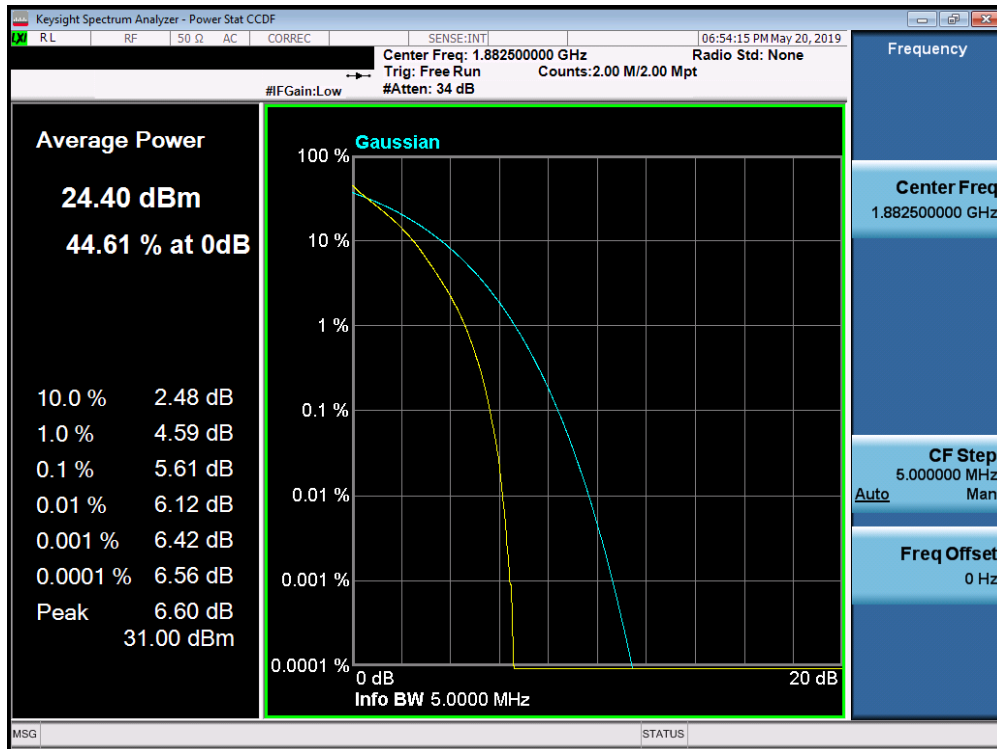


Plot 7-352. PAR Plot (Band 25/2 - 3.0MHz 16-QAM - Full RB Configuration)

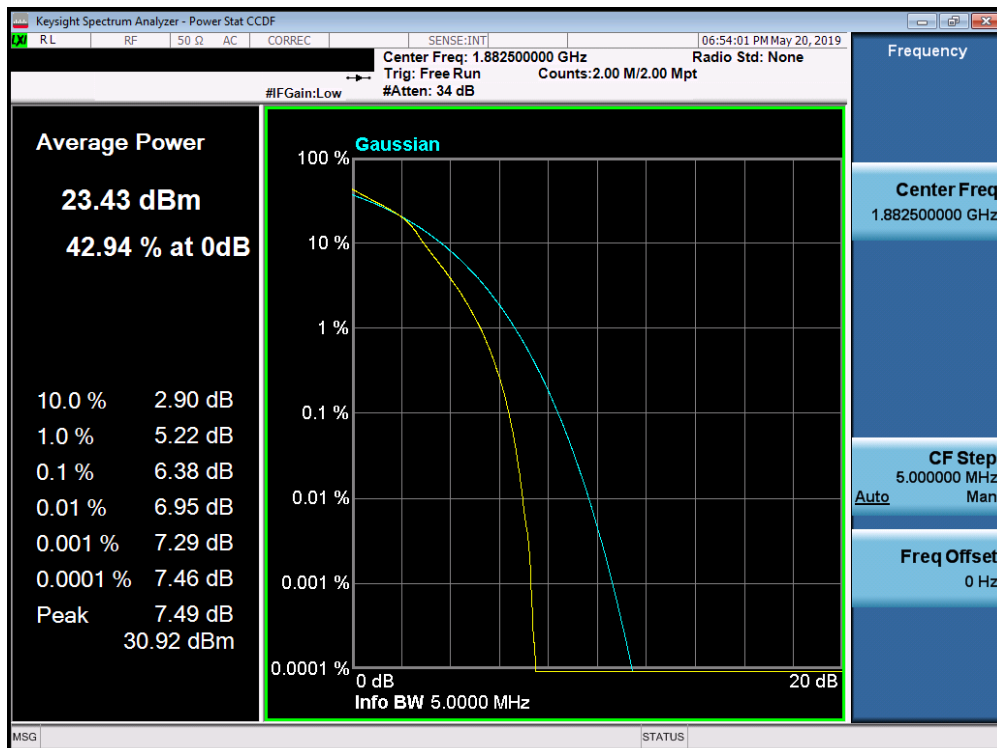


Plot 7-353. PAR Plot (Band 25/2 - 3.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 201 of 252

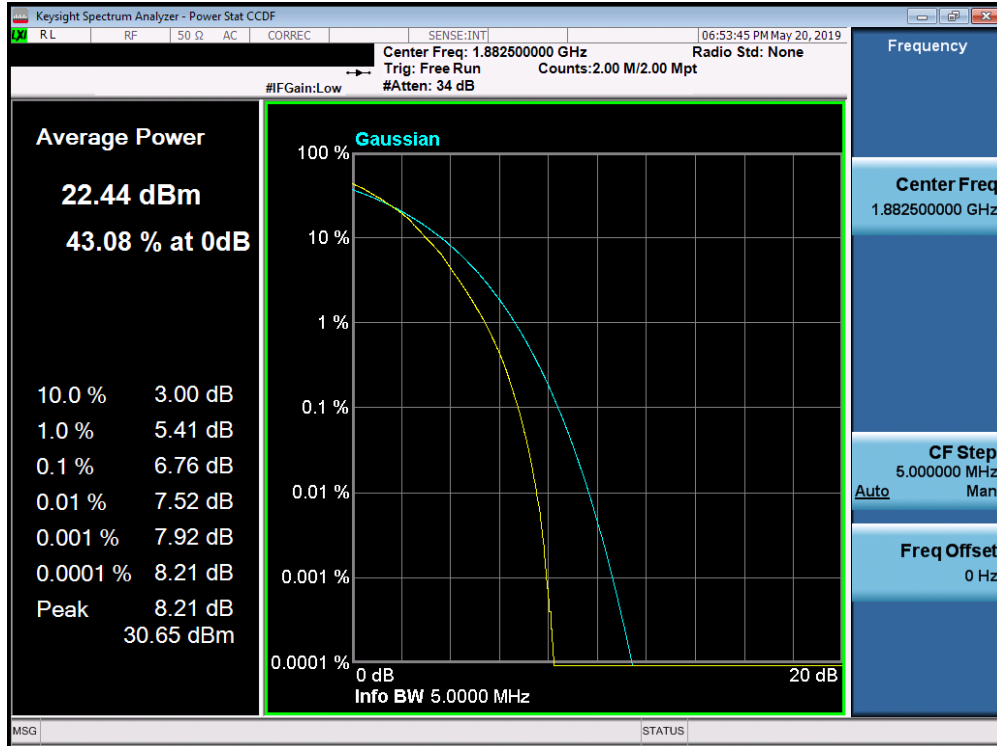


Plot 7-354. PAR Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

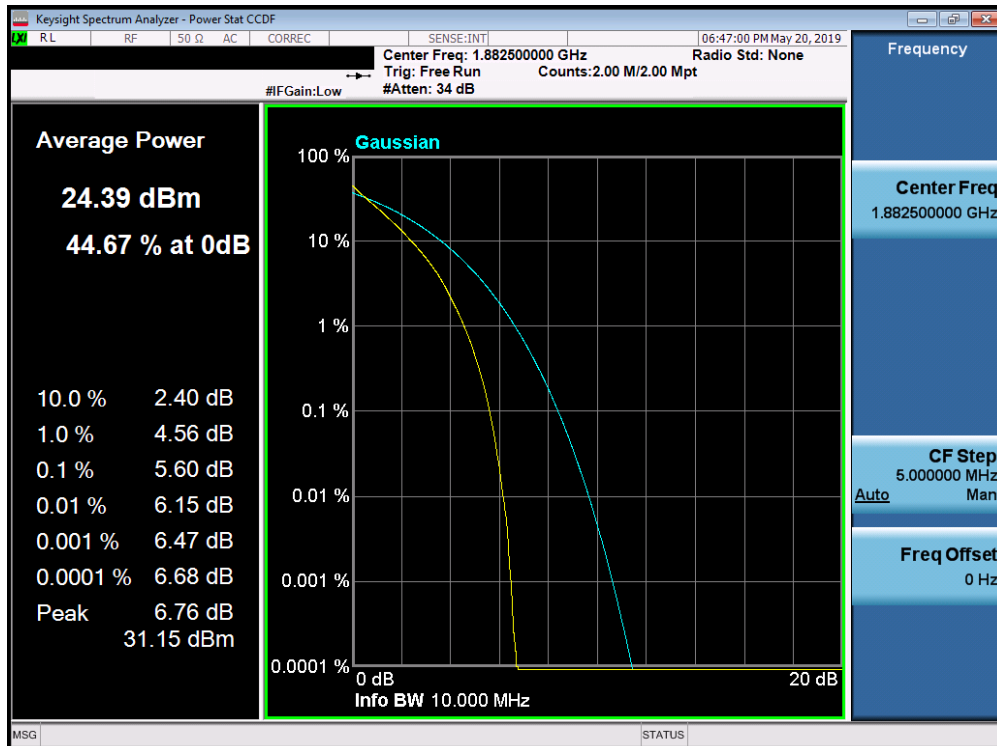


Plot 7-355. PAR Plot (Band 25/2 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 202 of 252

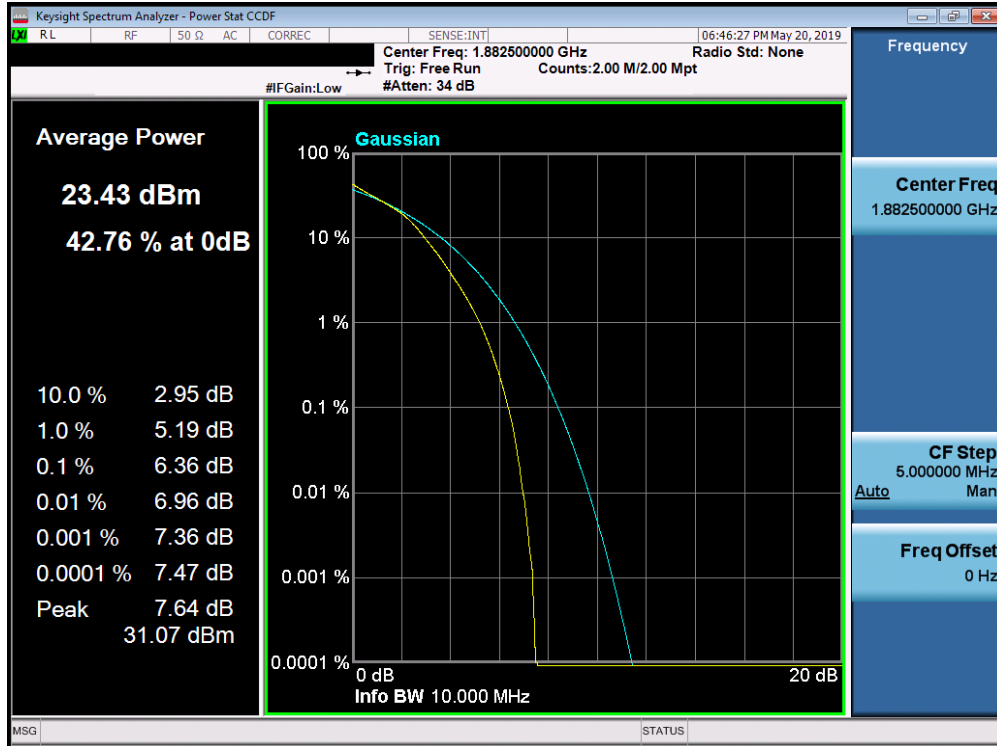


Plot 7-356. PAR Plot (Band 25/2 - 5.0MHz 64-QAM - Full RB Configuration)

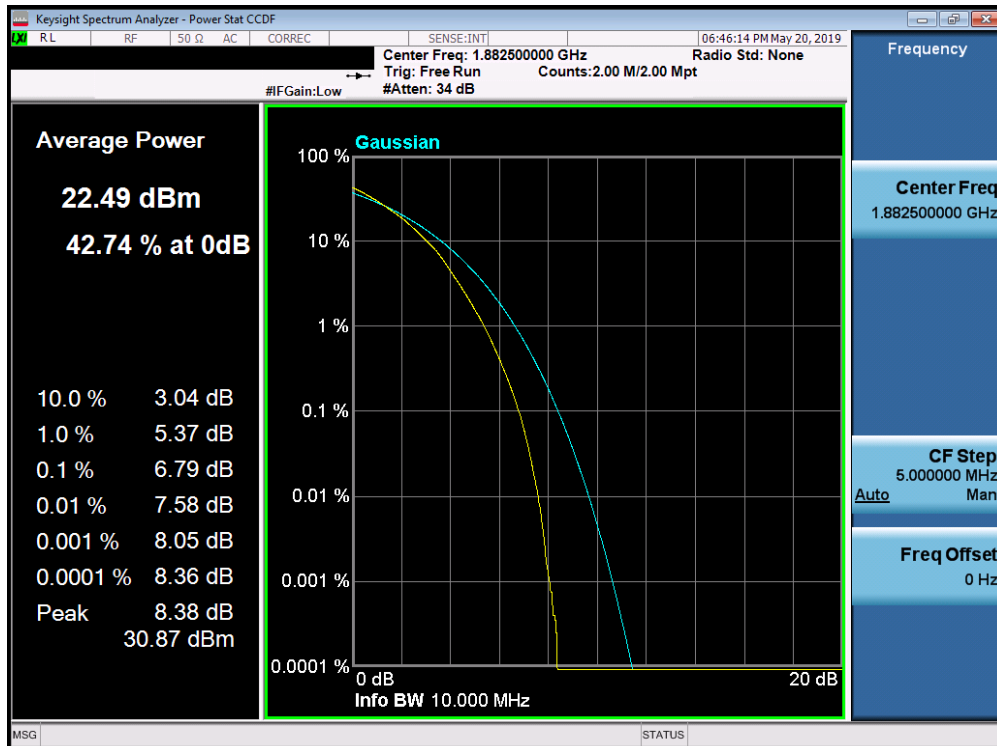


Plot 7-357. PAR Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 203 of 252

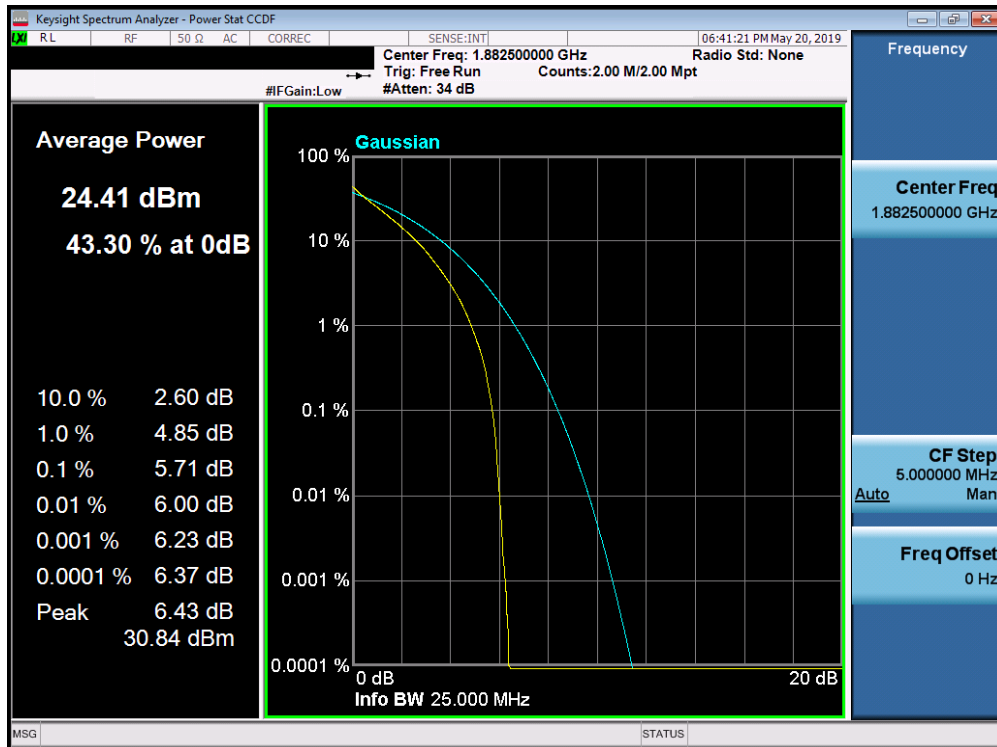


Plot 7-358. PAR Plot (Band 25/2 - 10.0MHz 16-QAM - Full RB Configuration)

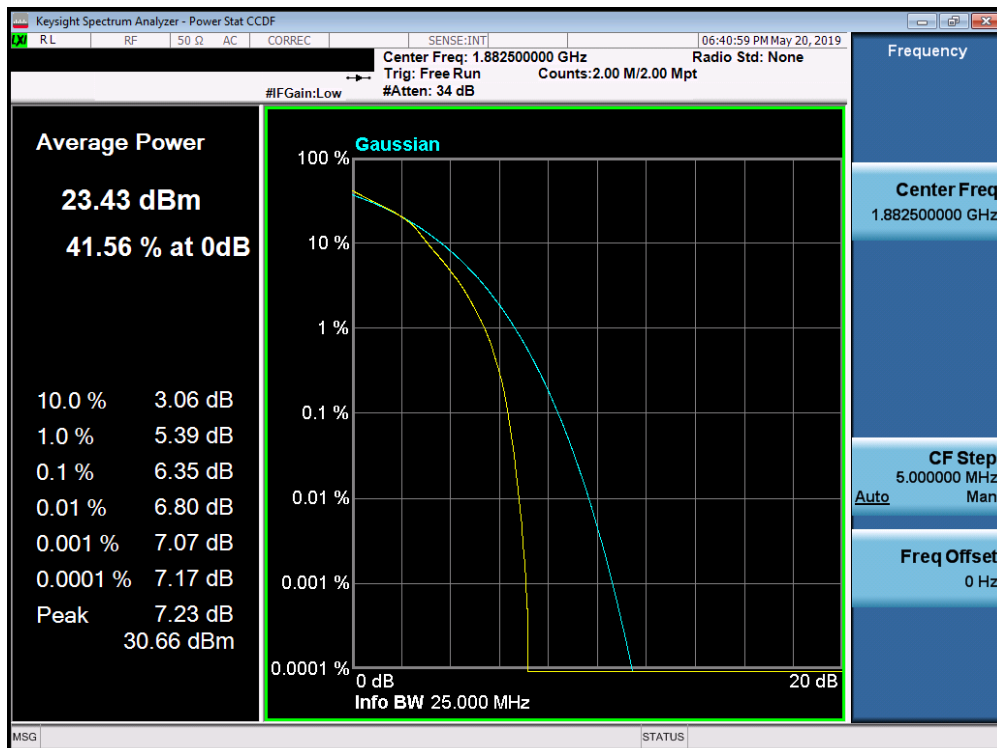


Plot 7-359. PAR Plot (Band 25/2 - 10.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 204 of 252

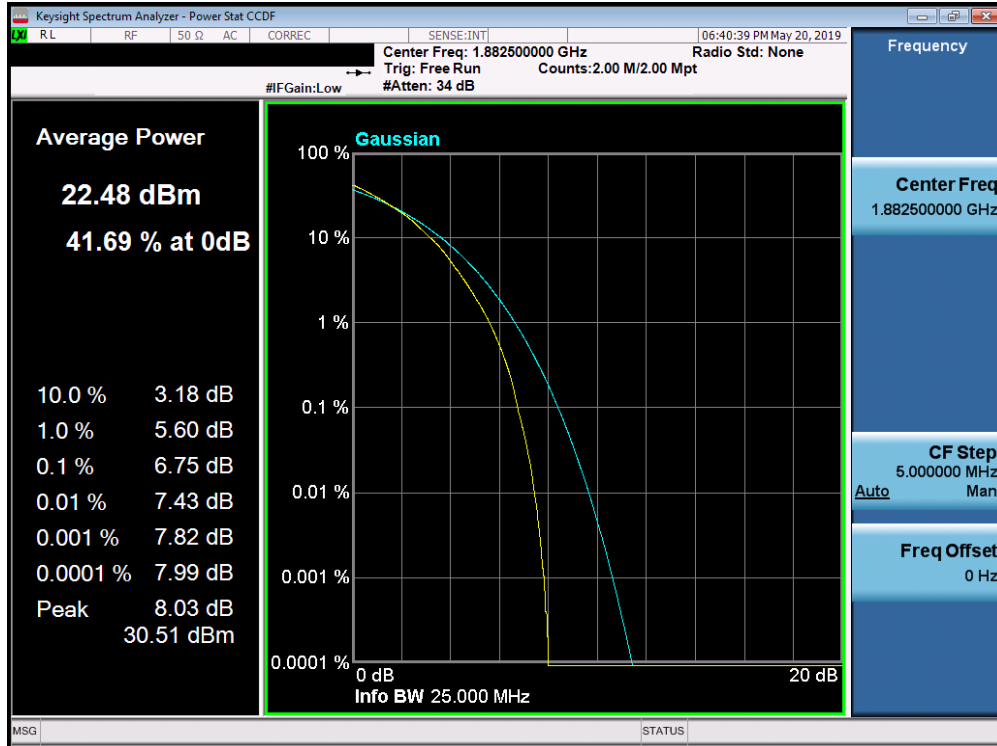


Plot 7-360. PAR Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

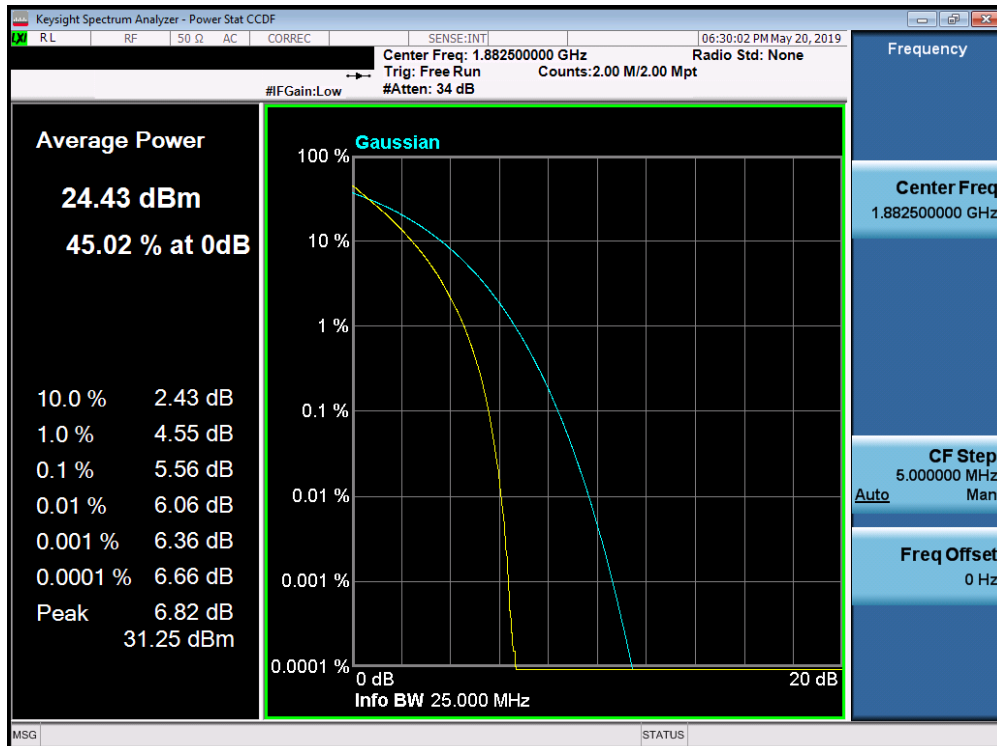


Plot 7-361. PAR Plot (Band 25/2 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMA205U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset	Page 205 of 252

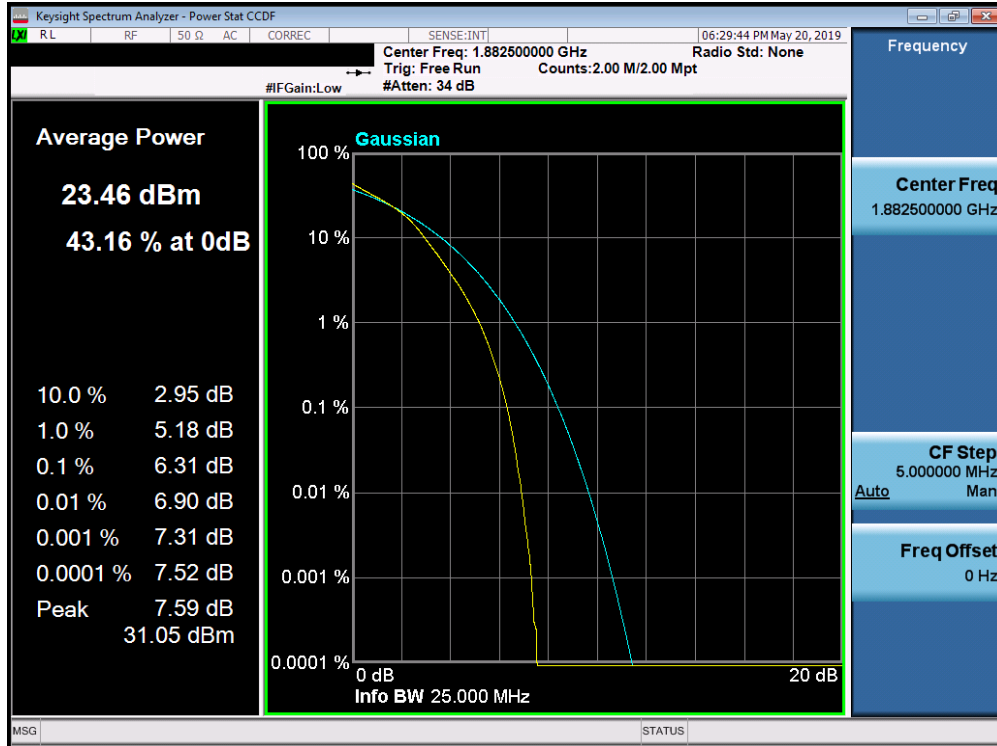


Plot 7-362. PAR Plot (Band 25/2 - 15.0MHz 64-QAM - Full RB Configuration)

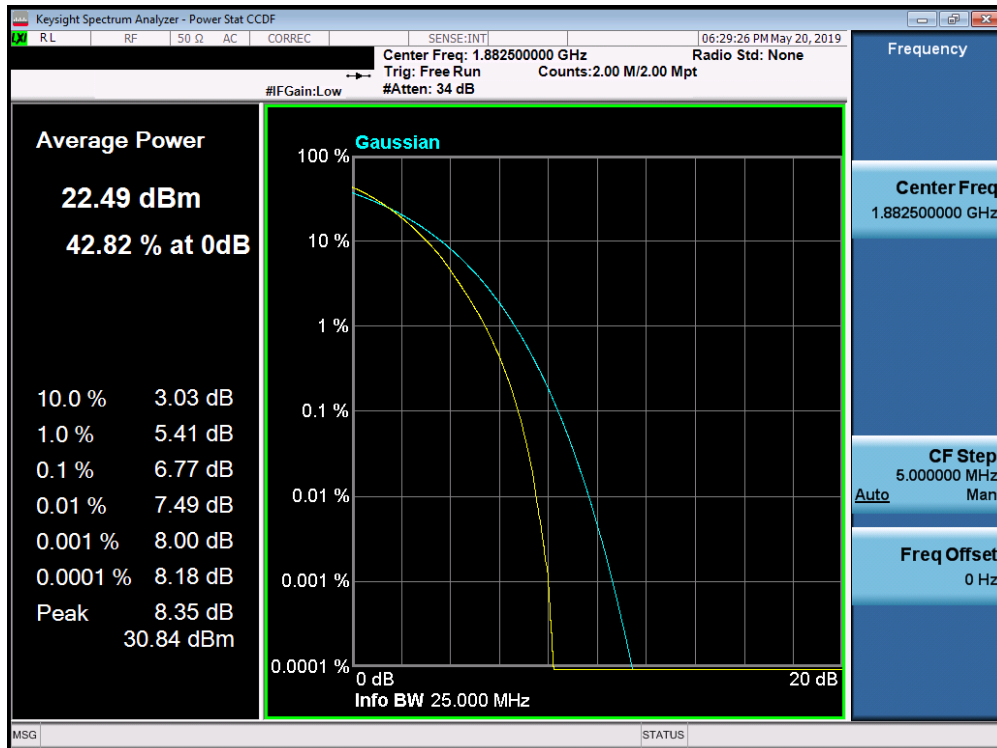


Plot 7-363. PAR Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-364. PAR Plot (Band 25/2 - 20.0MHz 16-QAM - Full RB Configuration)



Plot 7-365. PAR Plot (Band 25/2 - 20.0MHz 64-QAM - Full RB Configuration)

FCC ID: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 207 of 252

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.
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW $\geq 3 \times$ RBW
4. Span = 1.5 times the OBW
5. No. of sweep points $\geq 2 \times$ span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

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Test Setup

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

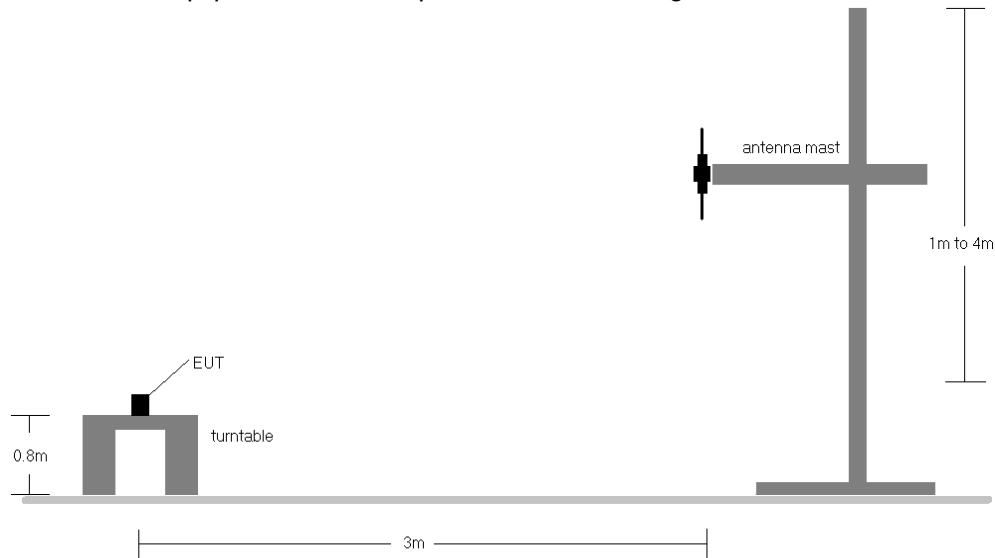


Figure 7-5. Radiated Test Setup <1GHz

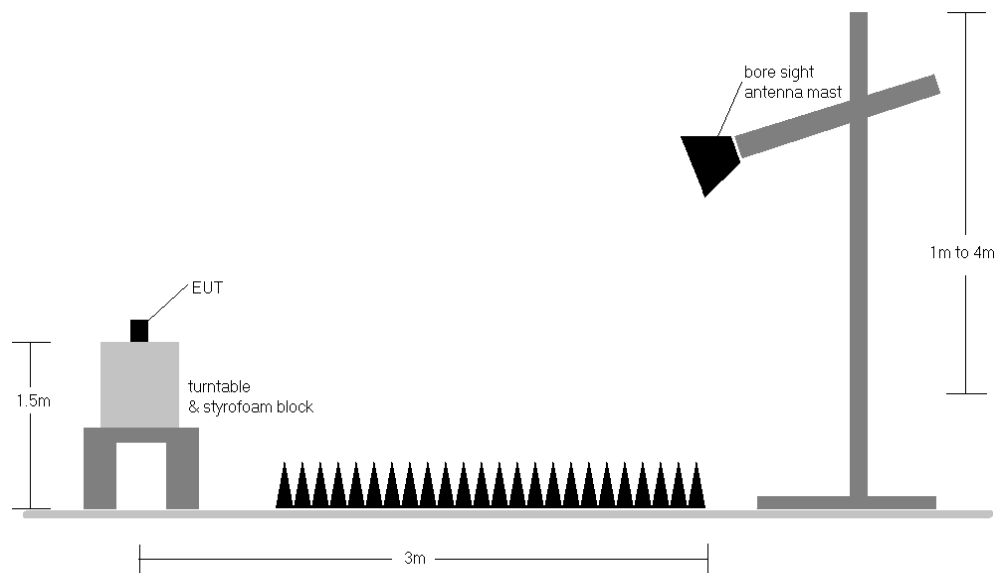


Figure 7-6. Radiated Test Setup >1GHz

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: A3LSMA205U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Quality Manager
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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
665.50	5	QPSK	H	203	242	1 / 24	17.84	1.66	17.35	0.054	34.77	-17.42
680.50	5	QPSK	H	203	245	1 / 24	18.89	1.79	18.53	0.071	34.77	-16.24
695.50	5	QPSK	H	179	242	1 / 0	19.38	1.62	18.85	0.077	34.77	-15.92
680.50	5	16-QAM	H	203	245	1 / 24	18.66	1.79	18.30	0.068	34.77	-16.47
680.50	5	64-QAM	H	203	245	1 / 0	17.15	1.79	16.79	0.048	34.77	-17.98
668.00	10	QPSK	H	102	46	1 / 49	15.83	1.69	15.37	0.034	34.77	-19.41
680.50	10	QPSK	H	207	242	1 / 49	18.45	1.79	18.09	0.064	34.77	-16.68
693.00	10	QPSK	H	174	248	1 / 0	19.33	1.75	18.93	0.078	34.77	-15.84
693.00	10	16-QAM	H	174	248	1 / 49	18.68	1.75	18.28	0.067	34.77	-16.49
693.00	10	64-QAM	H	174	248	1 / 49	18.72	1.75	18.32	0.068	34.77	-16.45
670.50	15	QPSK	H	195	242	1 / 74	17.16	1.70	16.71	0.047	34.77	-18.06
680.50	15	QPSK	H	199	242	1 / 74	18.38	1.79	18.02	0.063	34.77	-16.75
690.50	15	QPSK	H	178	248	1 / 74	19.06	1.80	18.71	0.074	34.77	-16.06
690.50	15	16-QAM	H	178	248	1 / 74	18.31	1.80	17.96	0.063	34.77	-16.81
690.50	15	64-QAM	H	178	248	1 / 74	17.37	1.80	17.02	0.050	34.77	-17.75
673.00	20	QPSK	H	191	55	50 / 25	16.60	1.70	16.15	0.041	34.77	-18.62
680.50	20	QPSK	H	191	67	100 / 0	17.89	1.79	17.53	0.057	34.77	-17.24
688.00	20	QPSK	H	207	242	100 / 0	18.08	1.78	17.71	0.059	34.77	-17.06
688.00	20	16-QAM	H	207	242	1 / 0	17.04	1.78	16.67	0.046	34.77	-18.10
688.00	20	64-QAM	H	207	242	1 / 0	16.18	1.78	15.81	0.038	34.77	-18.96
693.00	10	QPSK	V	207	242	19.33	18.90	1.75	18.50	0.071	34.77	-16.27

Table 7-3. ERP Data (Band 71)

FCC ID: A3LSMA205U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset	Page 210 of 252

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	V	179	248	1 / 0	19.40	1.51	18.76	0.075	34.77	-16.02
707.50	1.4	QPSK	V	289	245	1 / 5	19.16	1.46	18.47	0.070	34.77	-16.30
715.30	1.4	QPSK	V	162	251	1 / 5	18.06	1.71	17.62	0.058	34.77	-17.15
707.50	1.4	16-QAM	V	289	245	1 / 0	18.44	1.46	17.75	0.060	34.77	-17.02
707.50	1.4	64-QAM	V	289	245	1 / 0	17.43	1.46	16.74	0.047	34.77	-18.03
700.50	3	QPSK	V	175	248	1 / 0	19.54	1.51	18.90	0.078	34.77	-15.87
707.50	3	QPSK	V	154	251	1 / 14	19.40	1.46	18.71	0.074	34.77	-16.06
714.50	3	QPSK	V	150	248	1 / 0	18.09	1.67	17.61	0.058	34.77	-17.16
700.50	3	16-QAM	V	175	248	1 / 0	18.47	1.51	17.83	0.061	34.77	-16.94
700.50	3	64-QAM	V	175	248	1 / 0	17.70	1.51	17.06	0.051	34.77	-17.71

Table 7-4. ERP Data (Band 12)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
701.50	5	QPSK	V	171	245	1 / 0	20.14	1.52	19.51	0.089	34.77	-15.26
707.50	5	QPSK	V	297	233	1 / 24	19.24	1.46	18.55	0.072	34.77	-16.22
713.50	5	QPSK	V	297	242	1 / 0	18.23	1.61	17.69	0.059	34.77	-17.09
701.50	5	16-QAM	V	171	245	1 / 0	18.66	1.52	18.03	0.064	34.77	-16.74
701.50	5	64-QAM	V	171	245	1 / 0	17.95	1.52	17.32	0.054	34.77	-17.45
704.00	10	QPSK	V	175	245	1 / 0	20.67	1.53	20.05	0.101	34.77	-14.72
707.50	10	QPSK	V	182	245	1 / 49	18.65	1.46	17.96	0.063	34.77	-16.81
711.00	10	QPSK	V	293	236	25 / 12	18.52	1.47	17.84	0.061	34.77	-16.93
704.00	10	16-QAM	V	175	245	1 / 0	19.60	1.53	18.98	0.079	34.77	-15.79
704.00	10	64-QAM	V	175	245	1 / 0	18.69	1.53	18.07	0.064	34.77	-16.70
704.00	10	QPSK	H	293	236	20.67	18.31	1.53	17.69	0.059	34.77	-17.08

Table 7-5. ERP Data (Band 12/17)

FCC ID: A3LSMA205U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset	Page 211 of 252

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
779.50	5	QPSK	V	158	266	1 / 24	18.10	1.87	17.82	0.060	34.77	-16.96
782.00	5	QPSK	V	158	248	1 / 24	19.20	1.87	18.92	0.078	34.77	-15.85
784.50	5	QPSK	V	256	245	1 / 0	18.18	1.91	17.94	0.062	34.77	-16.83
782.00	5	16-QAM	V	158	248	1 / 24	18.60	1.87	18.32	0.068	34.77	-16.45
782.00	5	64-QAM	V	158	248	1 / 24	17.72	1.87	17.44	0.056	34.77	-17.33
782.00	10	QPSK	V	252	257	1 / 0	18.19	1.87	17.91	0.062	34.77	-16.86
782.00	10	16-QAM	V	252	257	1 / 49	17.62	1.87	17.34	0.054	34.77	-17.43
782.00	10	64-QAM	V	252	257	1 / 49	17.32	1.87	17.04	0.051	34.77	-17.73
5.00	QPSK	QPSK	H	252	257	19.20	16.98	1.87	16.70	0.047	34.77	-18.07

Table 7-6. ERP Data (Band 13)

FCC ID: A3LSMA205U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset		Page 212 of 252

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	V	350	260	1 / 0	18.10	2.13	18.08	0.064	38.45	-20.37
836.50	1.4	QPSK	V	138	251	1 / 5	19.32	2.40	19.57	0.090	38.45	-18.88
848.30	1.4	QPSK	V	134	248	1 / 0	18.41	2.38	18.64	0.073	38.45	-19.81
836.50	1.4	16-QAM	V	138	251	1 / 5	18.49	2.40	18.74	0.075	38.45	-19.71
836.50	1.4	64-QAM	V	138	251	1 / 5	17.03	2.40	17.28	0.053	38.45	-21.17
825.50	3	QPSK	V	211	263	1 / 14	17.76	2.14	17.75	0.060	38.45	-20.70
836.50	3	QPSK	V	259	268	1 / 0	18.54	2.40	18.79	0.076	38.45	-19.66
847.50	3	QPSK	V	126	250	1 / 0	18.35	2.38	18.58	0.072	38.45	-19.87
836.50	3	16-QAM	V	259	268	1 / 0	17.57	2.40	17.82	0.060	38.45	-20.63
836.50	3	64-QAM	V	259	268	1 / 14	17.05	2.40	17.30	0.054	38.45	-21.15
826.50	5	QPSK	V	350	254	1 / 0	18.02	2.16	18.03	0.064	38.45	-20.42
836.50	5	QPSK	V	350	257	1 / 0	19.49	2.40	19.74	0.094	38.45	-18.71
846.50	5	QPSK	V	129	248	1 / 0	18.16	2.38	18.39	0.069	38.45	-20.06
836.50	5	16-QAM	V	350	257	1 / 0	18.43	2.40	18.68	0.074	38.45	-19.77
836.50	5	64-QAM	V	350	257	1 / 0	17.45	2.40	17.70	0.059	38.45	-20.75
829.00	10	QPSK	V	346	257	1 / 49	19.00	2.22	19.07	0.081	38.45	-19.38
836.50	10	QPSK	V	203	245	1 / 0	18.81	2.40	19.06	0.080	38.45	-19.39
844.00	10	QPSK	V	126	254	1 / 0	19.19	2.38	19.42	0.087	38.45	-19.04
844.00	10	16-QAM	V	126	254	1 / 0	18.39	2.38	18.62	0.073	38.45	-19.84
844.00	10	64-QAM	V	126	254	1 / 0	17.12	2.38	17.35	0.054	38.45	-21.11
836.50	5	QPSK	H	218	264	19.49	17.78	2.40	18.03	0.063	38.45	-20.42

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

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
831.50	15	QPSK	V	130	254	1 / 74	18.37	2.31	18.53	0.071	38.45	-19.92
836.50	15	QPSK	V	218	264	1 / 0	17.65	2.40	17.90	0.062	38.45	-20.55
841.50	15	QPSK	V	350	251	1 / 0	18.31	2.36	18.52	0.071	38.45	-19.93
831.50	15	16-QAM	V	130	254	1 / 74	16.95	2.31	17.11	0.051	38.45	-21.34
831.50	15	64-QAM	V	130	254	1 / 74	16.06	2.31	16.22	0.042	38.45	-22.23

Table 7-8. ERP Data (Band 26)

FCC ID: A3LSMA205U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset	Page 213 of 252

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	100	180	1 / 0	18.36	5.35	23.71	0.235	30.00	-6.29
1745.00	1.4	QPSK	H	100	185	1 / 0	17.85	4.92	22.77	0.189	30.00	-7.23
1779.30	1.4	QPSK	H	100	184	1 / 0	14.83	4.87	19.70	0.093	30.00	-10.30
1710.70	1.4	16-QAM	H	100	180	1 / 0	17.20	5.35	22.55	0.180	30.00	-7.45
1710.70	1.4	64-QAM	H	100	180	1 / 0	16.08	5.35	21.43	0.139	30.00	-8.57
1711.50	3	QPSK	H	100	178	1 / 0	18.55	5.34	23.89	0.245	30.00	-6.11
1745.00	3	QPSK	H	100	187	1 / 14	17.87	4.92	22.79	0.190	30.00	-7.21
1778.50	3	QPSK	H	100	182	1 / 0	15.44	4.87	20.31	0.107	30.00	-9.69
1711.50	3	16-QAM	H	100	178	1 / 14	17.67	5.34	23.01	0.200	30.00	-6.99
1711.50	3	64-QAM	H	100	178	1 / 0	16.33	5.34	21.67	0.147	30.00	-8.33
1712.50	5	QPSK	H	100	183	1 / 24	18.92	5.33	24.25	0.266	30.00	-5.75
1745.00	5	QPSK	H	100	186	1 / 24	17.96	4.92	22.88	0.194	30.00	-7.12
1777.50	5	QPSK	H	100	183	1 / 24	15.46	4.88	20.34	0.108	30.00	-9.66
1712.50	5	16-QAM	H	100	183	1 / 0	17.77	5.33	23.10	0.204	30.00	-6.90
1712.50	5	64-QAM	H	100	183	1 / 0	16.76	5.33	22.09	0.162	30.00	-7.91
1715.00	10	QPSK	H	100	183	1 / 49	19.81	5.30	25.11	0.324	30.00	-4.89
1745.00	10	QPSK	H	100	187	1 / 49	18.00	4.92	22.92	0.196	30.00	-7.08
1775.00	10	QPSK	H	100	180	1 / 0	15.88	4.89	20.77	0.119	30.00	-9.23
1715.00	10	16-QAM	H	100	183	1 / 49	18.78	5.30	24.08	0.256	30.00	-5.92
1715.00	10	64-QAM	H	100	183	1 / 49	17.57	5.30	22.87	0.194	30.00	-7.13
1717.50	15	QPSK	H	100	184	1 / 74	19.50	5.27	24.77	0.300	30.00	-5.23
1745.00	15	QPSK	H	100	189	1 / 74	18.19	4.92	23.11	0.205	30.00	-6.89
1772.50	15	QPSK	H	100	183	1 / 74	16.29	4.91	21.20	0.132	30.00	-8.80
1717.50	15	16-QAM	H	100	184	1 / 74	18.60	5.27	23.87	0.244	30.00	-6.13
1717.50	15	64-QAM	H	100	184	1 / 74	17.17	5.27	22.44	0.175	30.00	-7.56
1720.00	20	QPSK	H	100	184	1 / 99	18.45	5.24	23.69	0.234	30.00	-6.31
1745.00	20	QPSK	H	100	184	1 / 99	18.24	4.92	23.16	0.207	30.00	-6.84
1770.00	20	QPSK	H	100	175	1 / 0	16.10	4.93	21.03	0.127	30.00	-8.97
1720.00	20	16-QAM	H	100	184	1 / 99	17.81	5.24	23.05	0.202	30.00	-6.95
1720.00	20	64-QAM	H	100	184	1 / 99	16.58	5.24	21.82	0.152	30.00	-8.18
1715.00	10	QPSK	V	100	190	19.81	17.56	5.30	22.86	0.193	30.00	-7.14

Table 7-9. EIRP Data (Band 66/4)

FCC ID: A3LSMA205U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset	Page 214 of 252

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	183	15	1 / 5	18.29	4.40	22.69	0.186	33.01	-10.32
1882.50	1.4	QPSK	H	181	8	1 / 5	18.58	4.20	22.78	0.190	33.01	-10.23
1914.30	1.4	QPSK	H	180	11	1 / 5	17.43	4.20	21.63	0.146	33.01	-11.38
1882.50	1.4	16-QAM	H	181	8	1 / 5	17.40	4.20	21.60	0.145	33.01	-11.41
1882.50	1.4	64-QAM	H	181	8	1 / 0	16.49	4.20	20.69	0.117	33.01	-12.32
1851.50	3	QPSK	H	178	359	1 / 14	19.08	4.40	23.48	0.223	33.01	-9.53
1882.50	3	QPSK	H	178	7	1 / 0	19.01	4.20	23.21	0.210	33.01	-9.80
1913.50	3	QPSK	H	179	356	1 / 0	18.40	4.21	22.61	0.182	33.01	-10.40
1882.50	3	16-QAM	H	178	7	1 / 0	17.93	4.20	22.13	0.163	33.01	-10.88
1882.50	3	64-QAM	H	178	7	1 / 0	16.59	4.20	20.79	0.120	33.01	-12.22
1852.50	5	QPSK	H	178	0	1 / 24	19.04	4.40	23.44	0.221	33.01	-9.57
1882.50	5	QPSK	H	181	7	1 / 0	19.47	4.20	23.67	0.233	33.01	-9.34
1912.50	5	QPSK	H	178	7	1 / 0	18.73	4.21	22.94	0.197	33.01	-10.07
1882.50	5	16-QAM	H	181	7	1 / 0	18.31	4.20	22.51	0.178	33.01	-10.50
1882.50	5	64-QAM	H	181	7	1 / 24	16.86	4.20	21.06	0.128	33.01	-11.95
1855.00	10	QPSK	H	181	359	1 / 0	19.51	4.40	23.91	0.246	33.01	-9.10
1882.50	10	QPSK	H	178	9	1 / 49	19.75	4.20	23.95	0.249	33.01	-9.06
1910.00	10	QPSK	H	185	4	1 / 0	19.31	4.22	23.53	0.225	33.01	-9.48
1882.50	10	16-QAM	H	178	9	1 / 49	18.46	4.20	22.66	0.185	33.01	-10.35
1882.50	10	64-QAM	H	178	9	1 / 49	17.46	4.20	21.66	0.147	33.01	-11.35
1857.50	15	QPSK	H	187	5	1 / 0	20.00	4.40	24.40	0.275	33.01	-8.61
1882.50	15	QPSK	H	180	15	1 / 74	19.88	4.20	24.08	0.256	33.01	-8.93
1907.50	15	QPSK	H	174	5	1 / 0	19.33	4.22	23.55	0.226	33.01	-9.46
1857.50	15	16-QAM	H	187	5	1 / 0	18.47	4.40	22.87	0.194	33.01	-10.14
1857.50	15	64-QAM	H	187	5	1 / 0	17.32	4.40	21.72	0.149	33.01	-11.29
1860.00	20	QPSK	H	183	18	1 / 99	19.38	4.40	23.78	0.239	33.01	-9.23
1882.50	20	QPSK	H	184	7	1 / 0	19.94	4.20	24.14	0.260	33.01	-8.87
1905.00	20	QPSK	H	180	11	1 / 0	19.51	4.21	23.72	0.236	33.01	-9.29
1905.00	20	16-QAM	H	180	11	1 / 0	18.35	4.21	22.56	0.180	33.01	-10.45
1860.00	20	64-QAM	H	183	18	1 / 0	17.21	4.40	21.61	0.145	33.01	-11.40
1857.50	15	QPSK	V	187	5	1 / 0	18.86	4.40	23.26	0.212	33.01	-9.75

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

FCC ID: A3LSMA205U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset	Page 215 of 252

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2502.50	5	QPSK	H	100	196	1 / 0	14.21	5.92	20.13	0.103	33.01	-12.88
2535.00	5	QPSK	H	100	199	1 / 24	14.85	5.95	20.80	0.120	33.01	-12.21
2567.50	5	QPSK	H	100	163	1 / 0	14.25	6.08	20.33	0.108	33.01	-12.68
2535.00	5	16-QAM	H	100	199	1 / 24	13.53	5.95	19.48	0.089	33.01	-13.53
2535.00	5	64-QAM	H	100	199	1 / 0	12.72	5.95	18.67	0.074	33.01	-14.34
2505.00	10	QPSK	H	100	202	1 / 49	13.70	5.92	19.62	0.092	33.01	-13.39
2535.00	10	QPSK	H	100	199	1 / 49	13.59	5.95	19.54	0.090	33.01	-13.47
2565.00	10	QPSK	H	100	201	1 / 49	14.86	6.09	20.95	0.124	33.01	-12.06
2565.00	10	16-QAM	H	100	201	1 / 49	13.61	6.09	19.70	0.093	33.01	-13.31
2565.00	10	64-QAM	H	100	201	1 / 0	12.52	6.09	18.61	0.073	33.01	-14.40
2507.50	15	QPSK	H	100	199	1 / 74	13.56	5.91	19.47	0.088	33.01	-13.54
2535.00	15	QPSK	H	100	199	1 / 74	13.59	5.95	19.54	0.090	33.01	-13.47
2562.50	15	QPSK	H	100	163	1 / 0	15.22	6.09	21.31	0.135	33.01	-11.70
2562.50	15	16-QAM	H	100	163	1 / 0	13.73	6.09	19.82	0.096	33.01	-13.19
2562.50	15	64-QAM	H	100	163	1 / 0	13.02	6.09	19.11	0.081	33.01	-13.90
2510.00	20	QPSK	H	100	153	1 / 0	14.31	5.90	20.21	0.105	33.01	-12.80
2535.00	20	QPSK	H	100	166	1 / 0	13.93	5.95	19.88	0.097	33.01	-13.13
2560.00	20	QPSK	H	100	168	1 / 0	13.97	6.10	20.07	0.102	33.01	-12.94
2560.00	20	16-QAM	H	100	168	1 / 0	12.77	6.10	18.87	0.077	33.01	-14.14
2560.00	20	64-QAM	H	100	168	1 / 0	11.49	6.10	17.59	0.057	33.01	-15.42
2562.50	15	QPSK	V	100	150	1 / 0	13.60	6.09	19.69	0.093	33.01	-13.32

Table 7-11. EIRP Data (Band 7)

FCC ID: A3LSMA205U	 MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1904240065-03.A3L	Test Dates: 04/26/2019-05/29/2019	EUT Type: Portable Handset	Page 216 of 252

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	H	159	22	1 / 24	21.00	5.93	26.93	0.493	33.01	-6.08
2593.00	5	QPSK	H	159	22	1 / 24	20.73	6.25	26.98	0.499	33.01	-6.03
2687.50	5	QPSK	H	159	22	1 / 24	20.27	6.51	26.78	0.476	33.01	-6.23
2593.00	5	16-QAM	H	159	22	1 / 24	20.09	6.25	26.34	0.431	33.01	-6.67
2593.00	5	64-QAM	H	159	22	1 / 24	19.16	6.25	25.41	0.348	33.01	-7.60
2501.00	10	QPSK	H	159	18	1 / 49	20.82	5.93	26.75	0.473	33.01	-6.26
2593.00	10	QPSK	H	159	18	1 / 49	20.68	6.25	26.93	0.493	33.01	-6.08
2685.00	10	QPSK	H	159	18	1 / 49	20.00	6.50	26.50	0.446	33.01	-6.51
2593.00	10	16-QAM	H	159	18	1 / 49	19.75	6.25	26.00	0.398	33.01	-7.01
2501.00	10	64-QAM	H	159	18	1 / 49	19.28	5.93	25.21	0.332	33.01	-7.80
2503.50	15	QPSK	H	162	9	1 / 0	20.32	5.92	26.24	0.421	33.01	-6.77
2593.00	15	QPSK	H	162	9	1 / 74	20.42	6.25	26.67	0.465	33.01	-6.34
2682.50	15	QPSK	H	162	9	1 / 0	19.41	6.49	25.90	0.389	33.01	-7.11
2503.50	15	16-QAM	H	162	9	1 / 0	19.95	5.92	25.87	0.386	33.01	-7.14
2593.00	15	64-QAM	H	162	9	1 / 74	18.77	6.25	25.02	0.318	33.01	-7.99
2506.00	20	QPSK	H	181	18	1 / 0	19.77	5.91	25.68	0.370	33.01	-7.33
2593.00	20	QPSK	H	169	22	1 / 0	19.21	6.25	25.46	0.352	33.01	-7.55
2680.00	20	QPSK	H	179	22	1 / 0	18.87	6.47	25.35	0.342	33.01	-7.67
2593.00	20	16-QAM	H	169	22	1 / 0	18.98	6.25	25.23	0.334	33.01	-7.78
2593.00	20	64-QAM	H	169	22	1 / 0	18.78	6.25	25.03	0.319	33.01	-7.98
2593.00	5	QPSK	V	181	18	1 / 24	17.02	6.25	23.27	0.212	33.01	-9.74

Table 7-12. EIRP Data (Band 41 PC2)

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Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2498.50	5	QPSK	H	160	22	1 / 0	12.89	5.93	18.82	0.076	33.01	-14.19
2593.00	5	QPSK	H	149	22	1 / 0	13.04	6.25	19.29	0.085	33.01	-13.72
2687.50	5	QPSK	H	164	35	1 / 0	15.47	6.51	21.98	0.158	33.01	-11.03
2687.50	5	16-QAM	H	164	35	1 / 0	13.96	6.51	20.47	0.111	33.01	-12.54
2498.50	5	64-QAM	H	160	22	1 / 0	11.73	5.93	17.66	0.058	33.01	-15.35
2501.00	10	QPSK	H	334	59	1 / 0	14.51	5.93	20.44	0.111	33.01	-12.57
2593.00	10	QPSK	H	329	35	1 / 0	15.31	6.25	21.56	0.143	33.01	-11.45
2685.00	10	QPSK	H	351	41	1 / 0	16.03	6.50	22.53	0.179	33.01	-10.48
2685.00	10	16-QAM	H	351	41	1 / 0	15.11	6.50	21.61	0.145	33.01	-11.40
2685.00	10	64-QAM	H	351	41	1 / 0	13.33	6.50	19.83	0.096	33.01	-13.18
2503.50	15	QPSK	H	160	22	1 / 0	17.23	5.92	23.15	0.207	33.01	-9.86
2593.00	15	QPSK	H	164	25	1 / 0	13.21	6.25	19.46	0.088	33.01	-13.55
2682.50	15	QPSK	H	332	55	1 / 0	16.47	6.49	22.96	0.198	33.01	-10.05
2682.50	15	16-QAM	H	332	55	1 / 0	16.14	6.49	22.63	0.183	33.01	-10.38
2593.00	15	64-QAM	H	164	25	1 / 0	11.80	6.25	18.05	0.064	33.01	-14.96
2506.00	20	QPSK	H	158	33	1 / 0	18.45	5.91	24.36	0.273	33.01	-8.65
2593.00	20	QPSK	H	162	29	1 / 0	17.87	6.25	24.12	0.258	33.01	-8.89
2680.00	20	QPSK	H	155	41	1 / 0	16.23	6.47	22.71	0.186	33.01	-10.31
2506.00	20	16-QAM	H	158	33	1 / 0	17.21	5.91	23.12	0.205	33.01	-9.89
2593.00	20	64-QAM	H	162	29	1 / 0	16.79	6.25	23.04	0.201	33.01	-9.97
2506.00	QPSK	H	V	160	22	1 / 0	14.74	5.91	20.65	0.116	33.01	-12.36

Table 7-13. EIRP Data (Band 41 PC3)

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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

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Test Setup

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

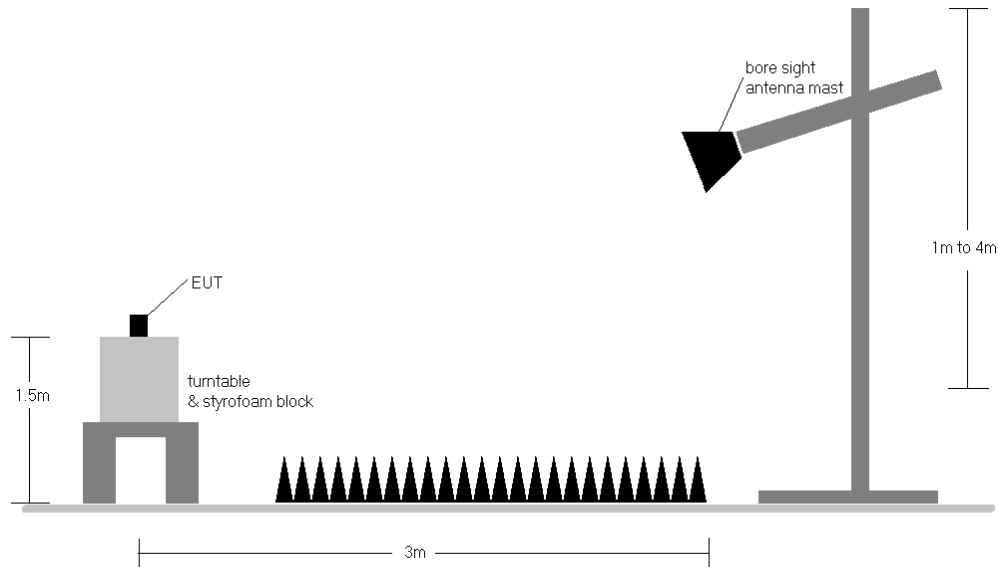


Figure 7-7. Test Instrument & Measurement Setup

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.

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