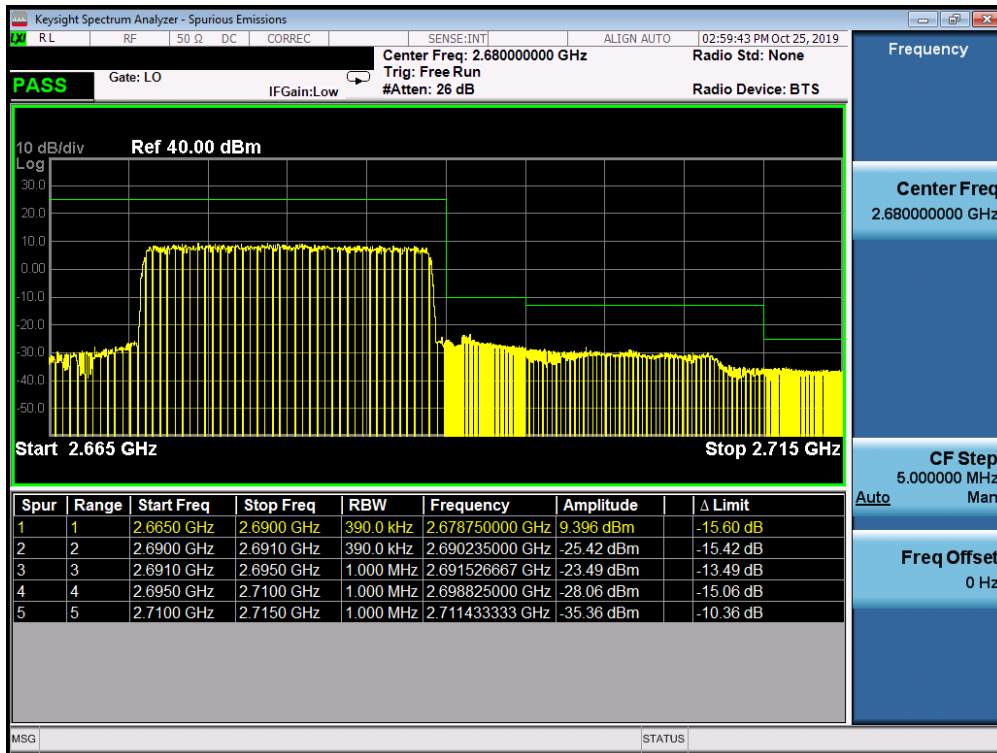


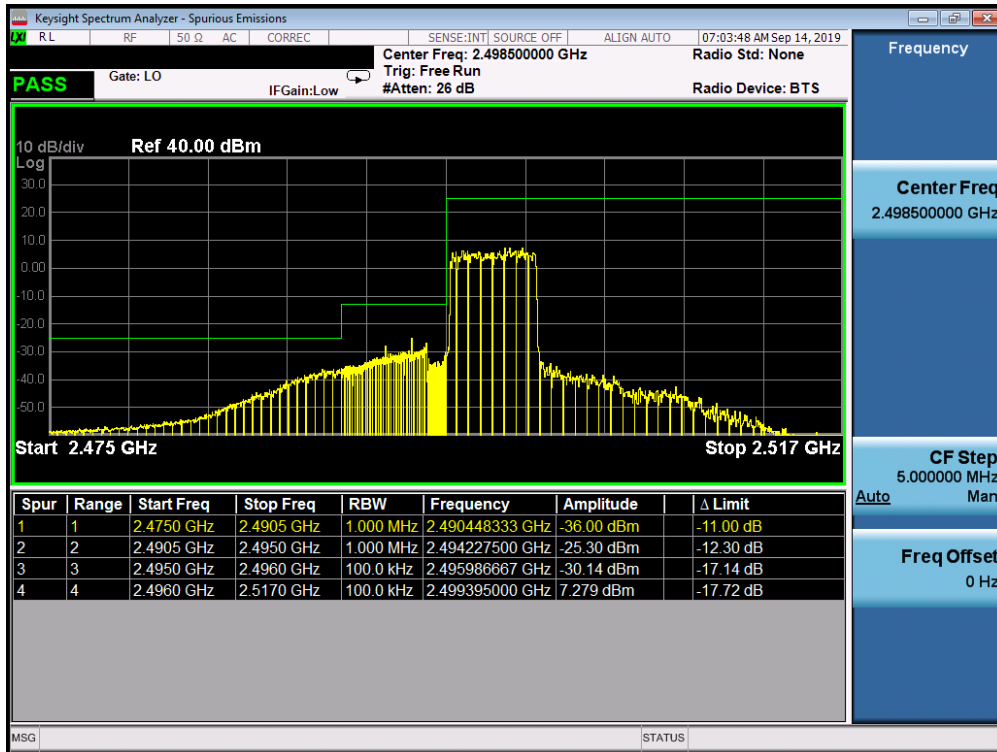
Plot 7-359. Lower ACP Plot at 2496 MHz (Band 41 - 20.0MHz QPSK - Full RB Configuration)



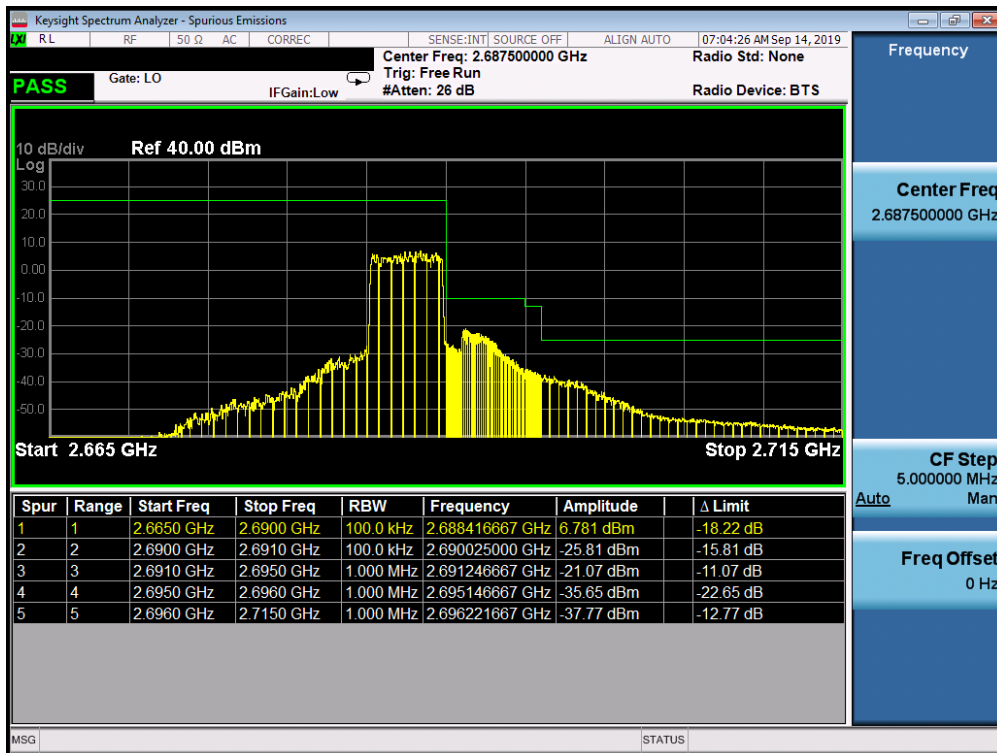
Plot 7-360. Upper ACP Plot (Band 41 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 207 of 348

**Band 41 PC3**

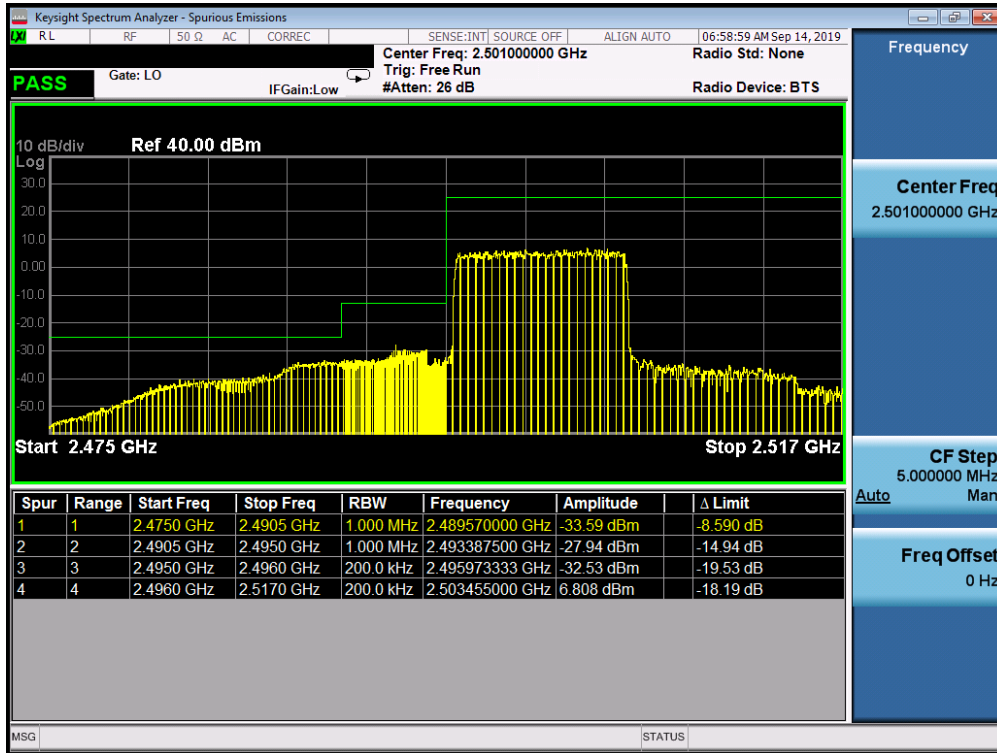


**Plot 7-361. Lower ACP Plot at 2496 MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)**

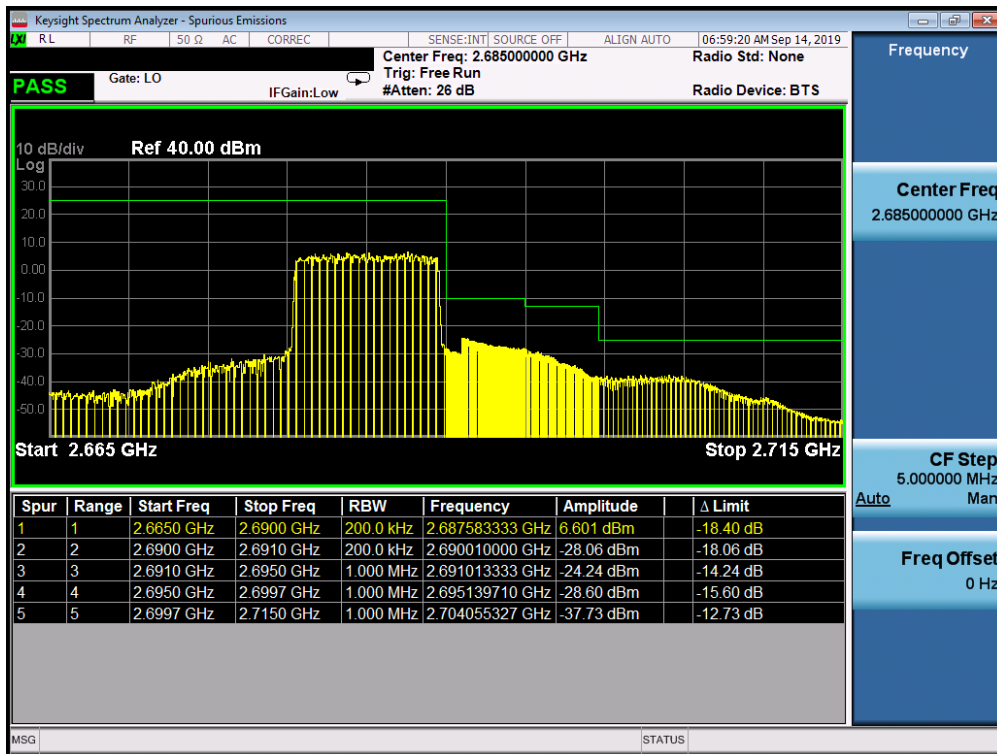


**Plot 7-362. Upper ACP Plot (Band 41 - 5.0MHz QPSK - Full RB Configuration)**

FCC ID: A3LSMN976U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 208 of 348

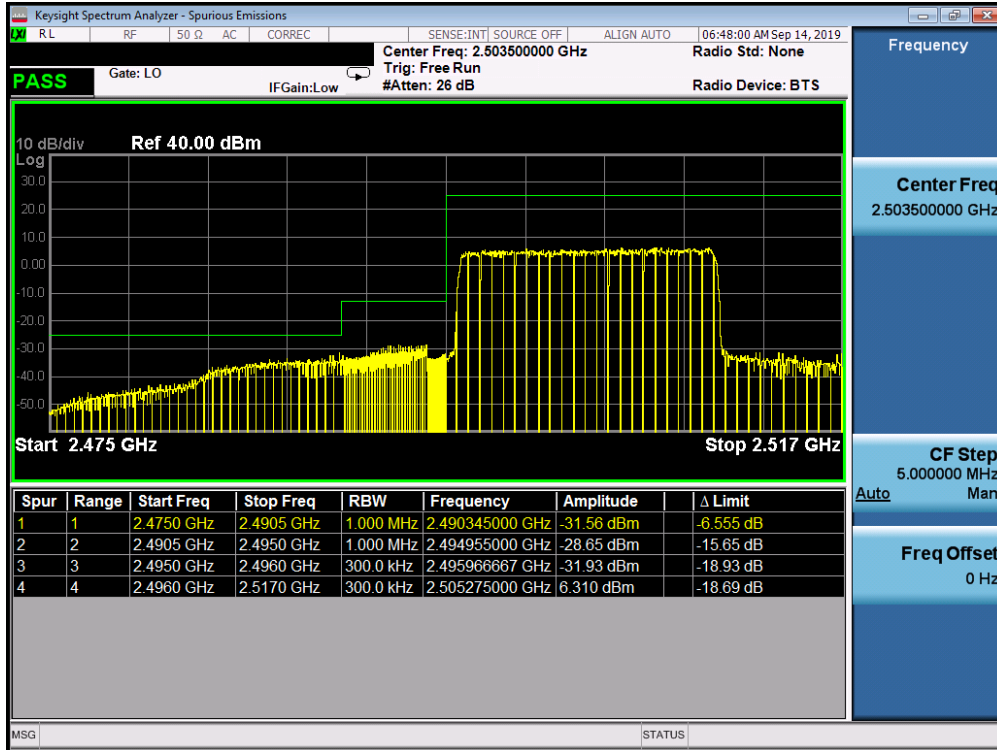


Plot 7-363. Lower ACP Plot at 2496 MHz (Band 41 - 10.0MHz QPSK - Full RB Configuration)

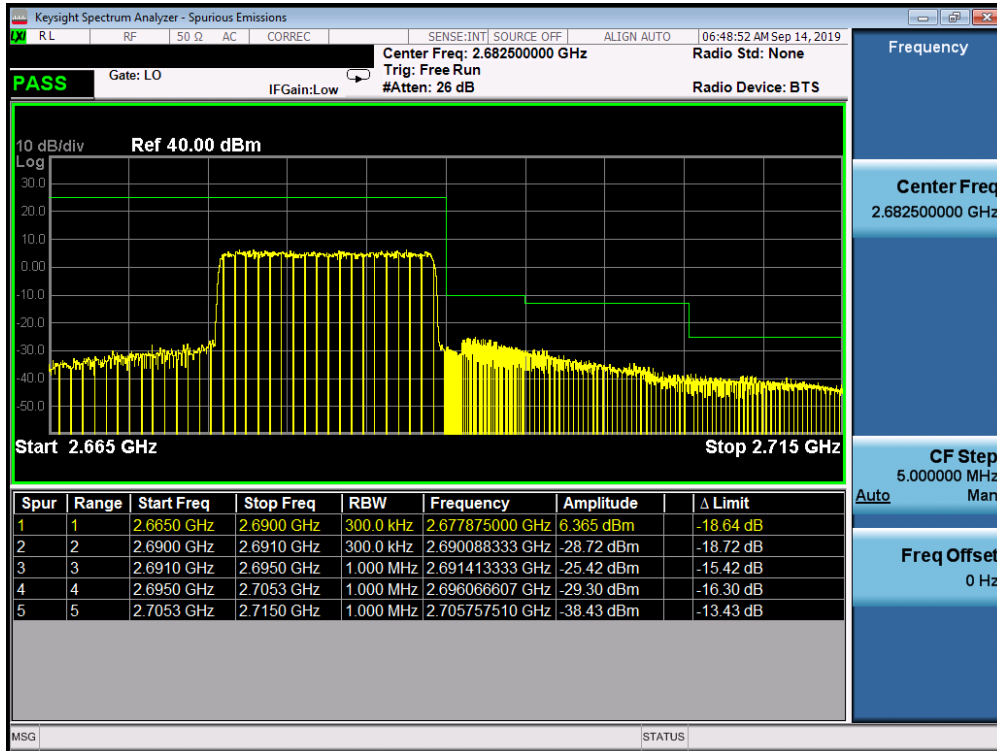


Plot 7-364. Upper ACP Plot (Band 41 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 209 of 348

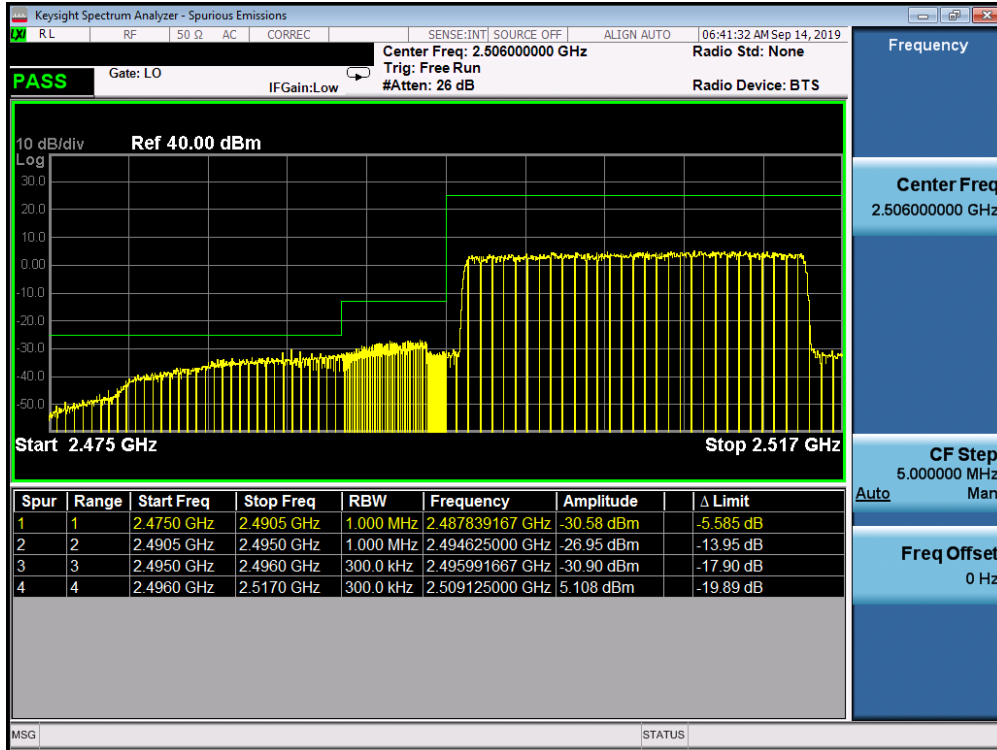


Plot 7-365. Lower ACP Plot at 2496 MHz (Band 41 - 15.0MHz QPSK - Full RB Configuration)

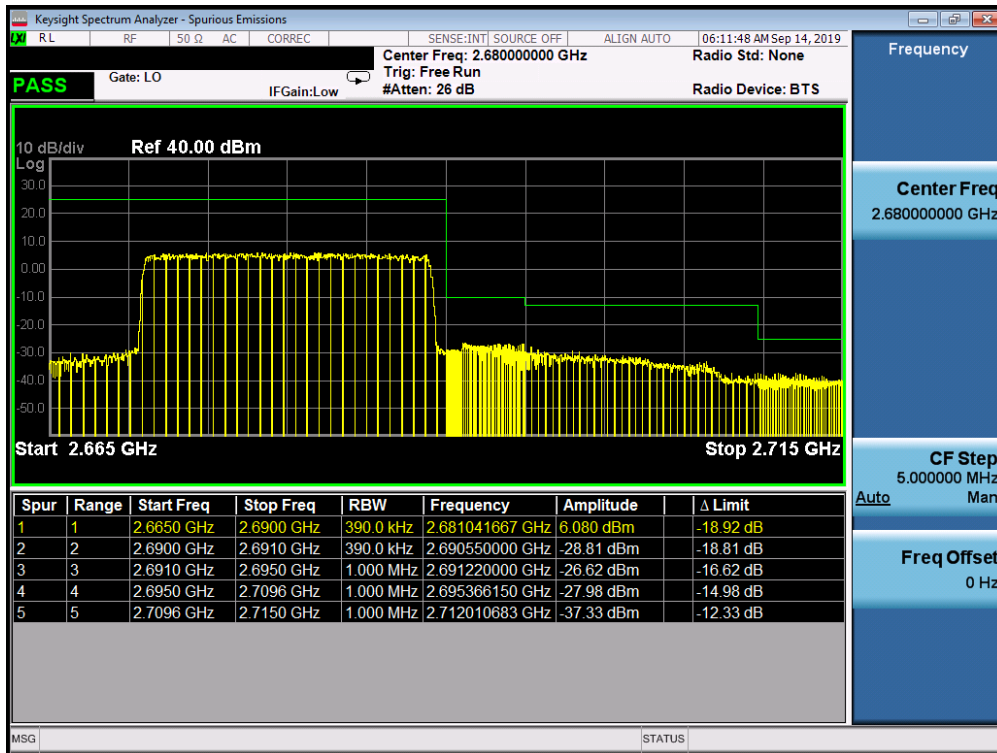


Plot 7-366. Upper ACP Plot (Band 41 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 210 of 348



Plot 7-367. Lower ACP Plot at 2496 MHz (Band 41 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-368. Upper ACP Plot (Band 41 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 211 of 348

## 7.5 Peak-Average Ratio

### Test Overview

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

### Test Procedure Used

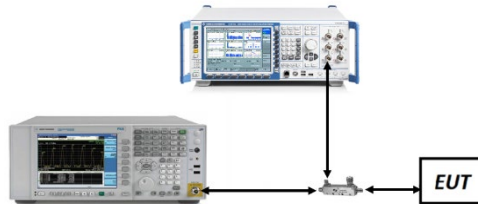
KDB 971168 D01 v03r01 – Section 5.7.1

### Test Settings

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

### Test Setup

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



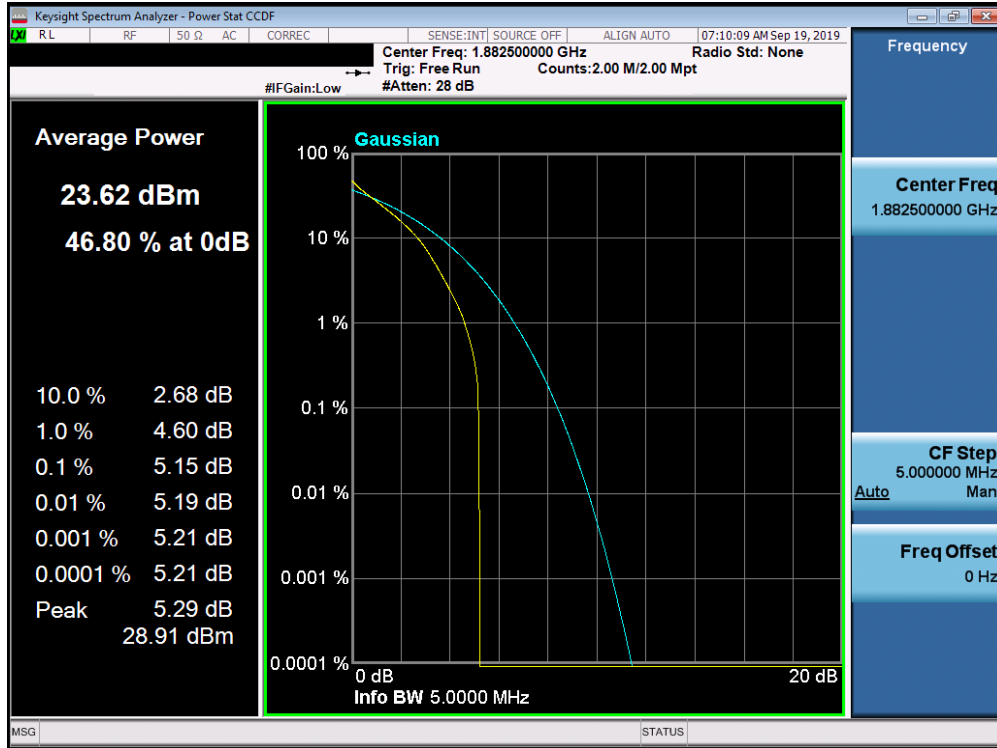
**Figure 7-4. Test Instrument & Measurement Setup**

### Test Notes

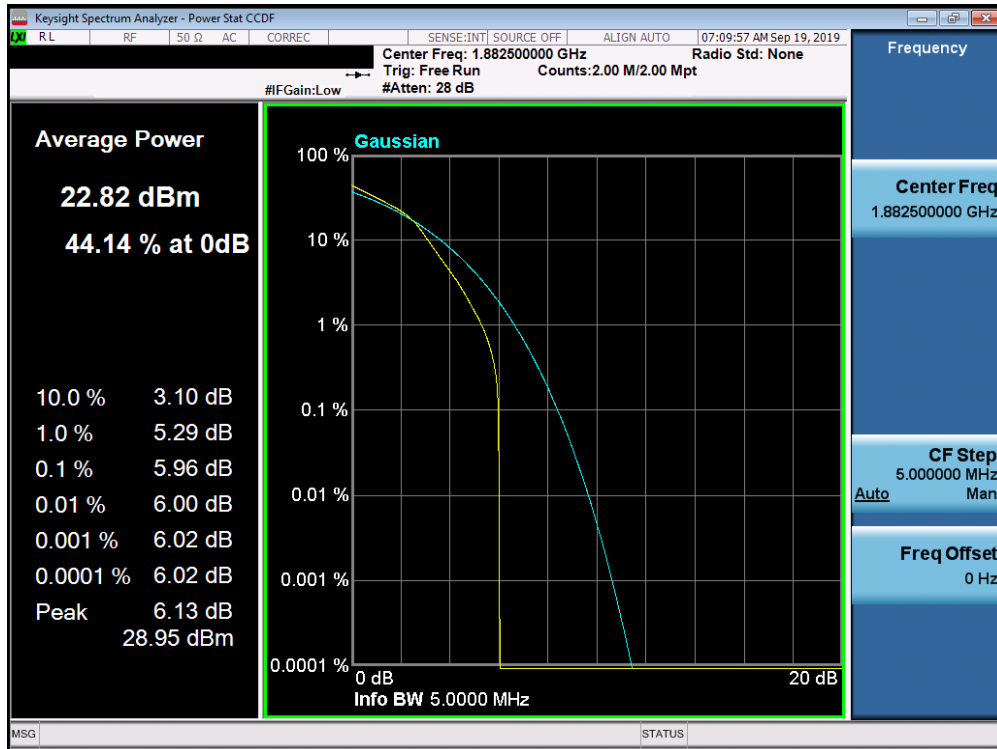
None.

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 212 of 348

**Band 25/2**

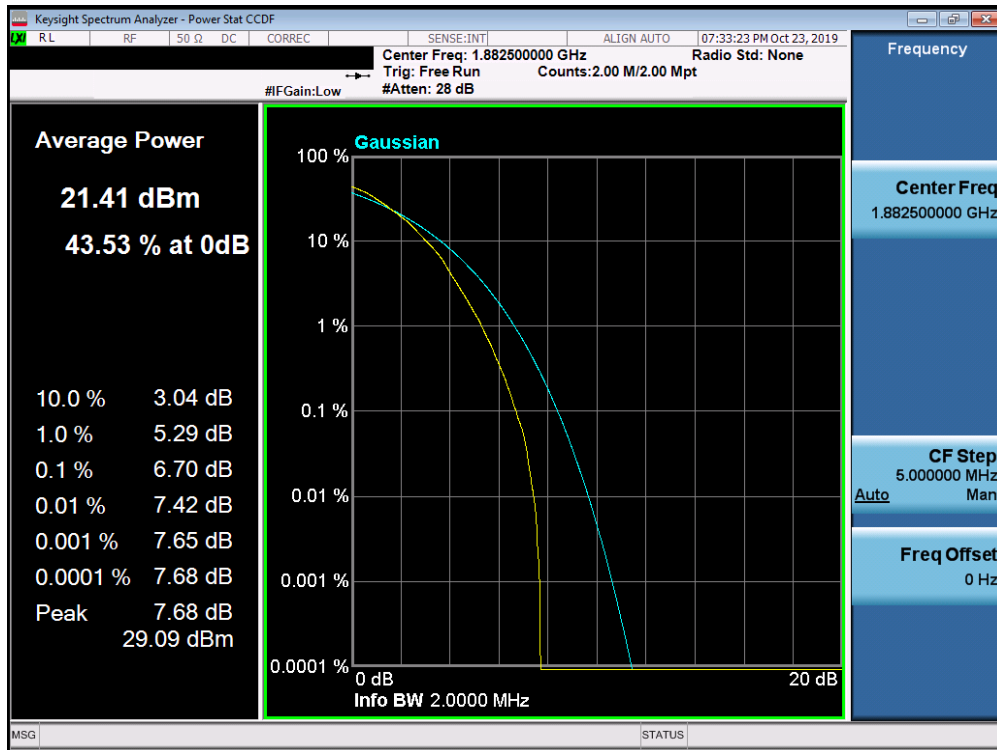


**Plot 7-369. PAR Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)**

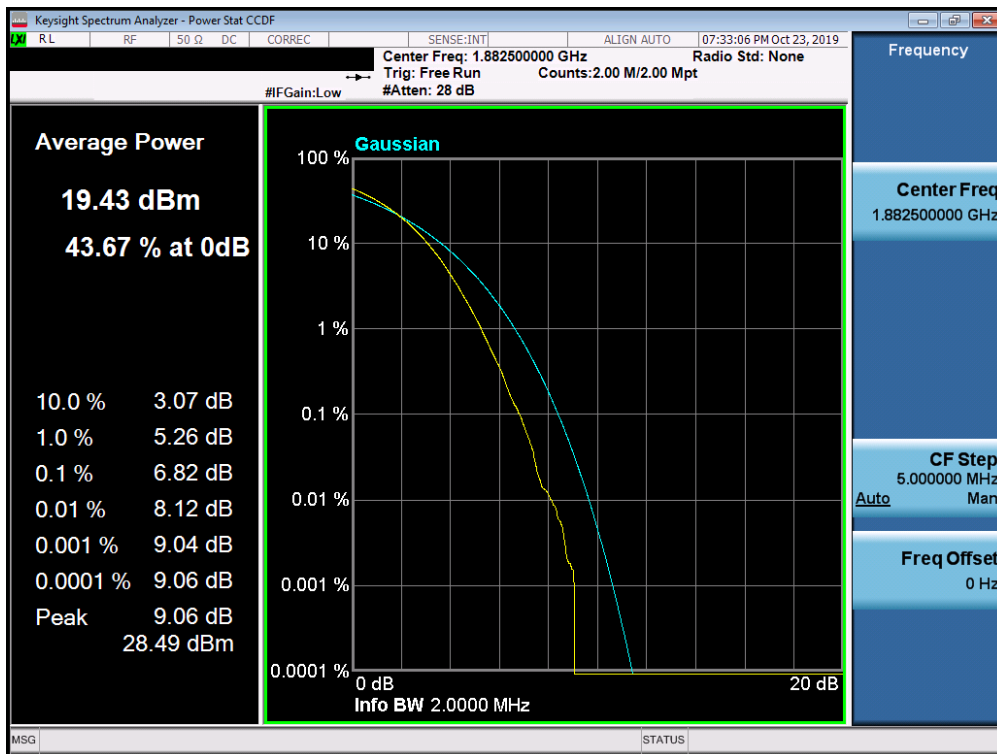


**Plot 7-370. PAR Plot (Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)**

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 213 of 348

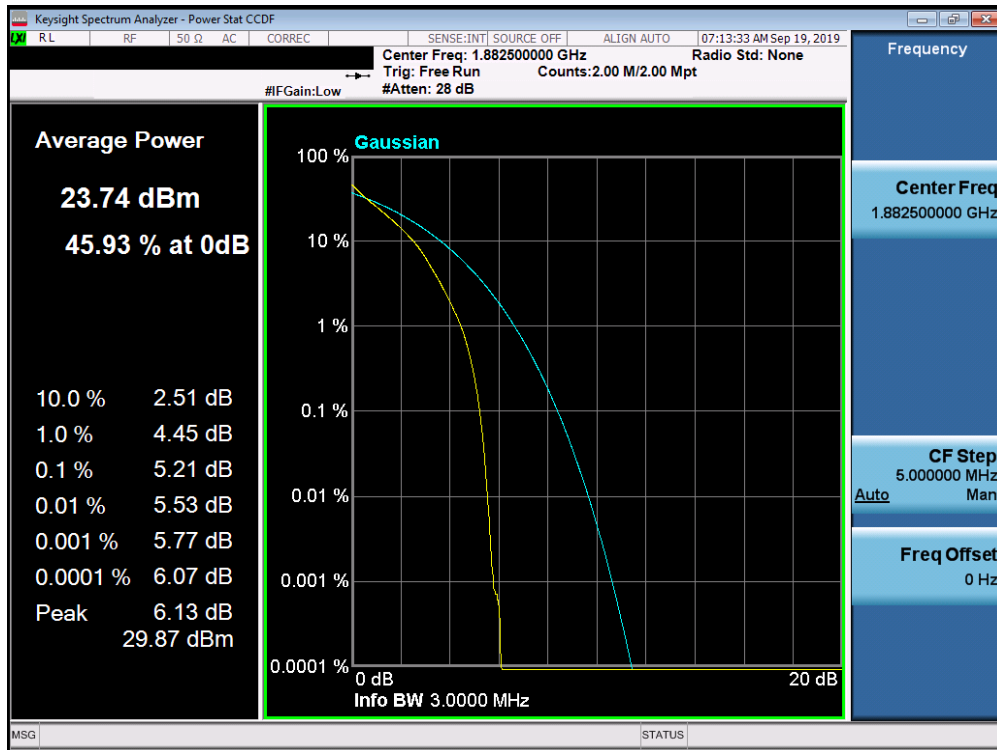


Plot 7-371. PAR Plot (Band 25/2 - 1.4MHz 64-QAM - Full RB Configuration)

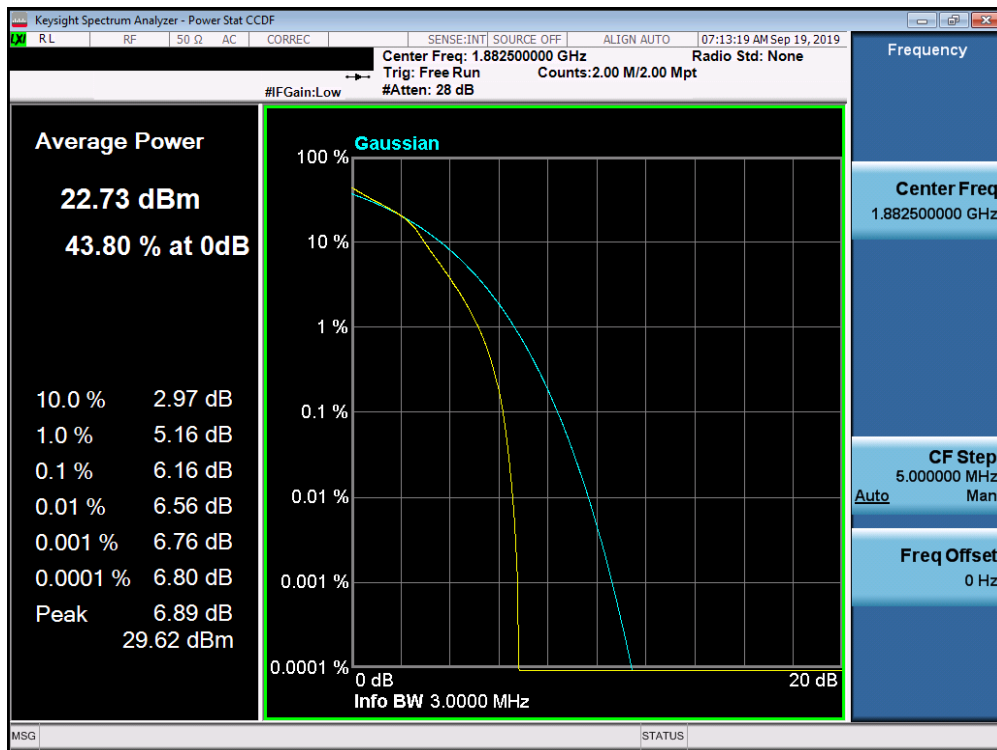


Plot 7-372. PAR Plot (Band 25/2 - 1.4MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 214 of 348

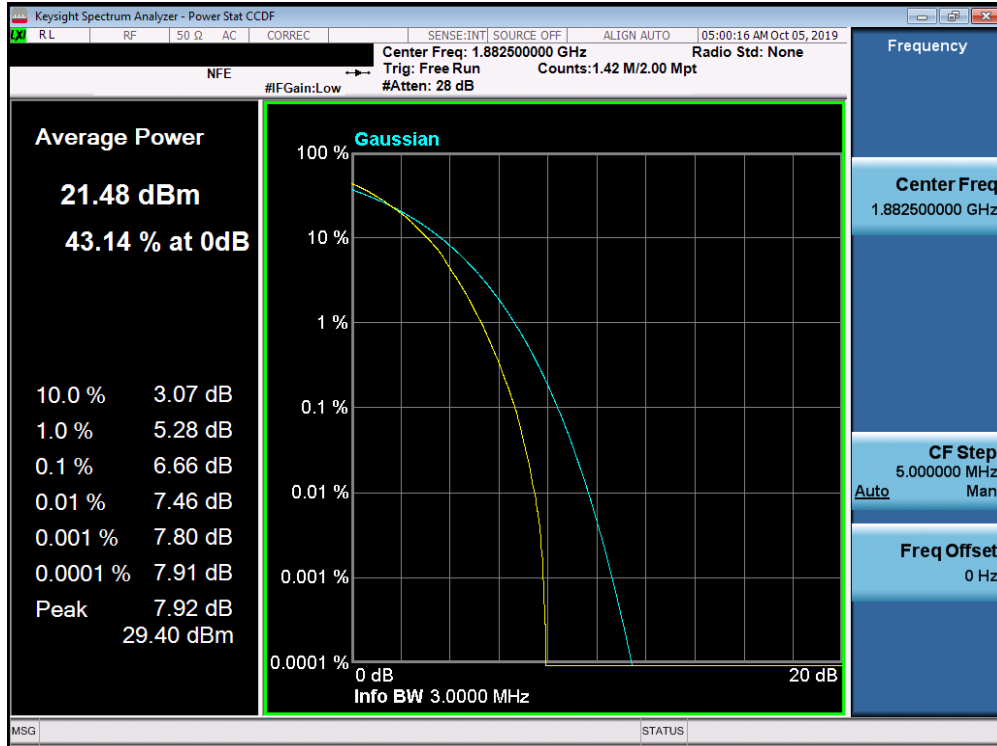


**Plot 7-373. PAR Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)**

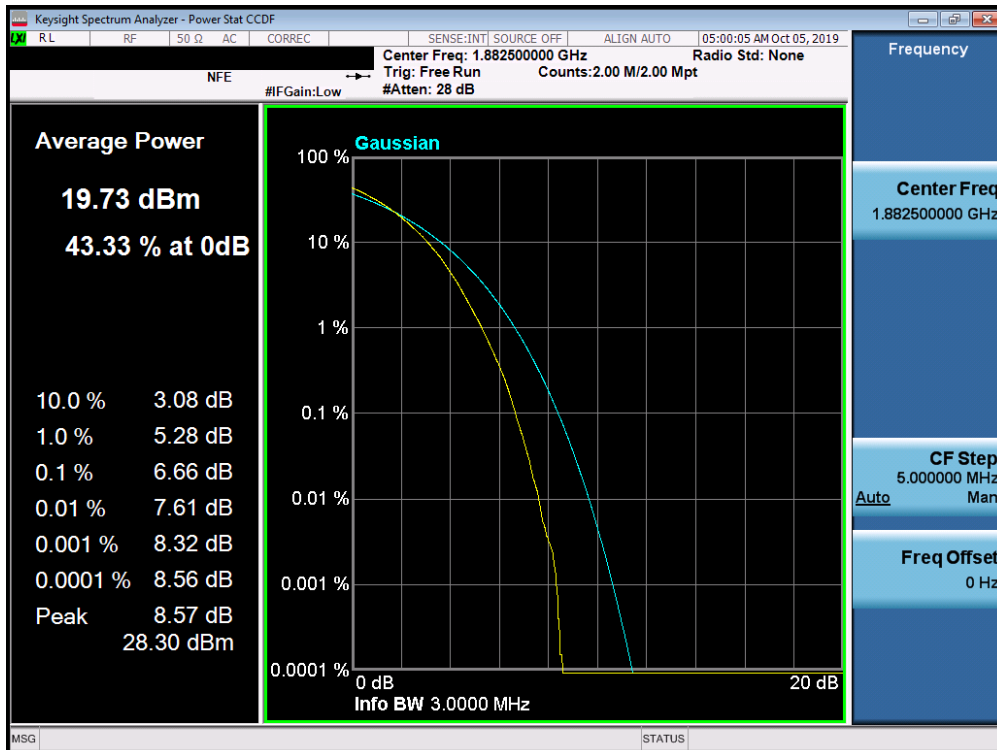


**Plot 7-374. PAR Plot (Band 25/2 - 3.0MHz 16-QAM - Full RB Configuration)**

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 215 of 348

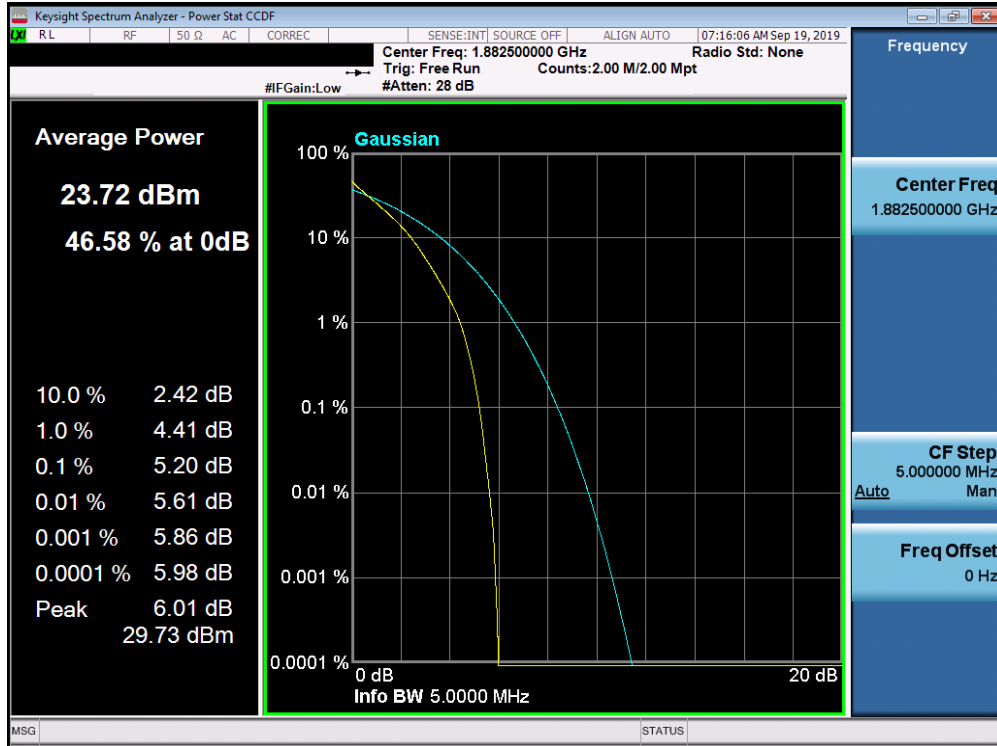


Plot 7-375. PAR Plot (Band 25/2 - 3.0MHz 64-QAM - Full RB Configuration)

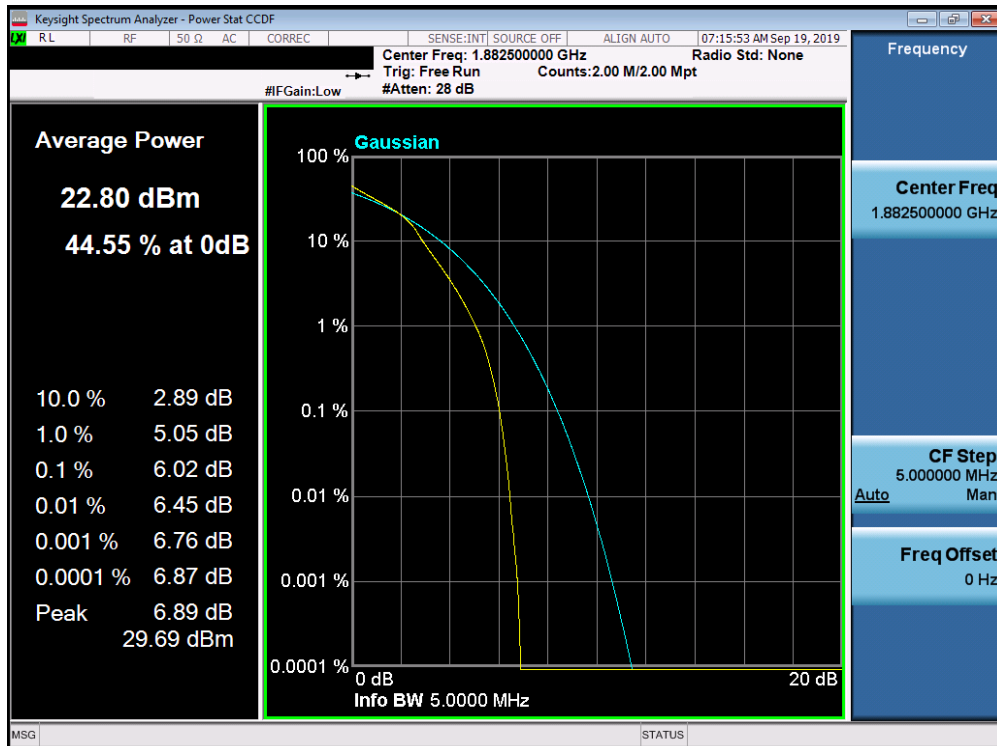


Plot 7-376. PAR Plot (Band 25/2 - 3.0MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 216 of 348

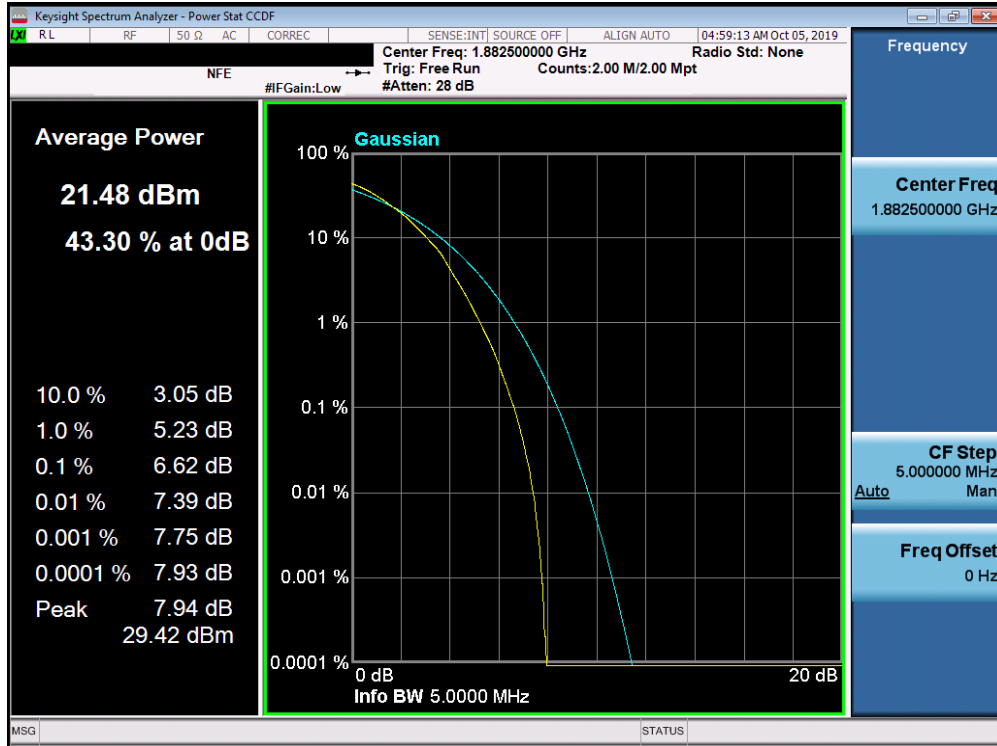


Plot 7-377. PAR Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

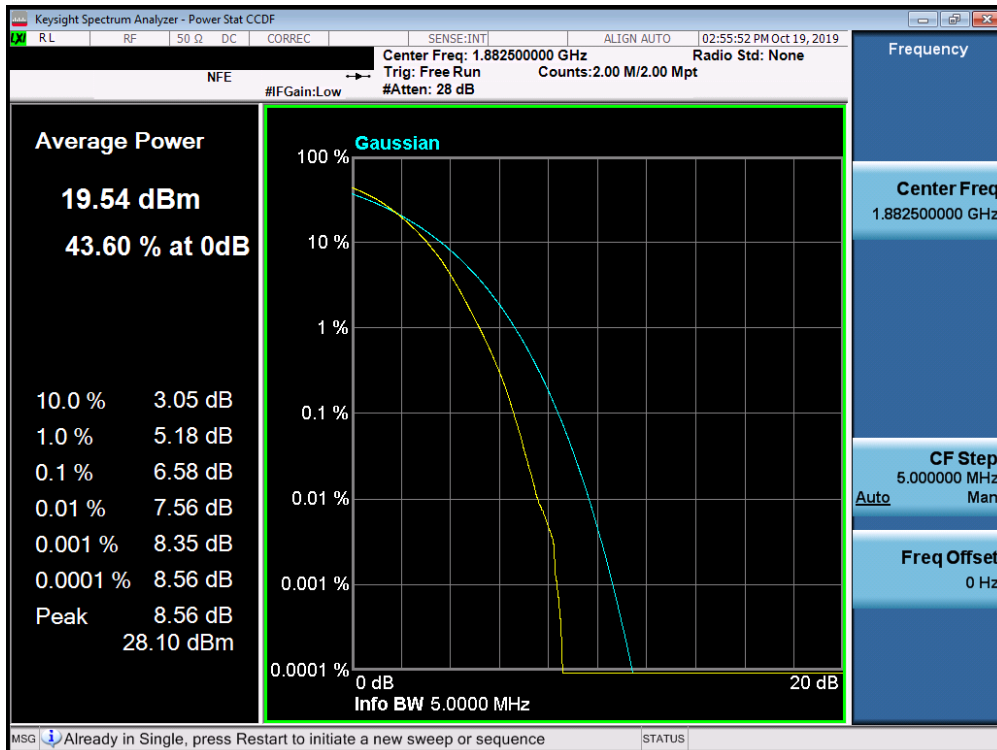


Plot 7-378. PAR Plot (Band 25/2 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 - 11/05/2019	EUT Type: Portable Handset		Page 217 of 348

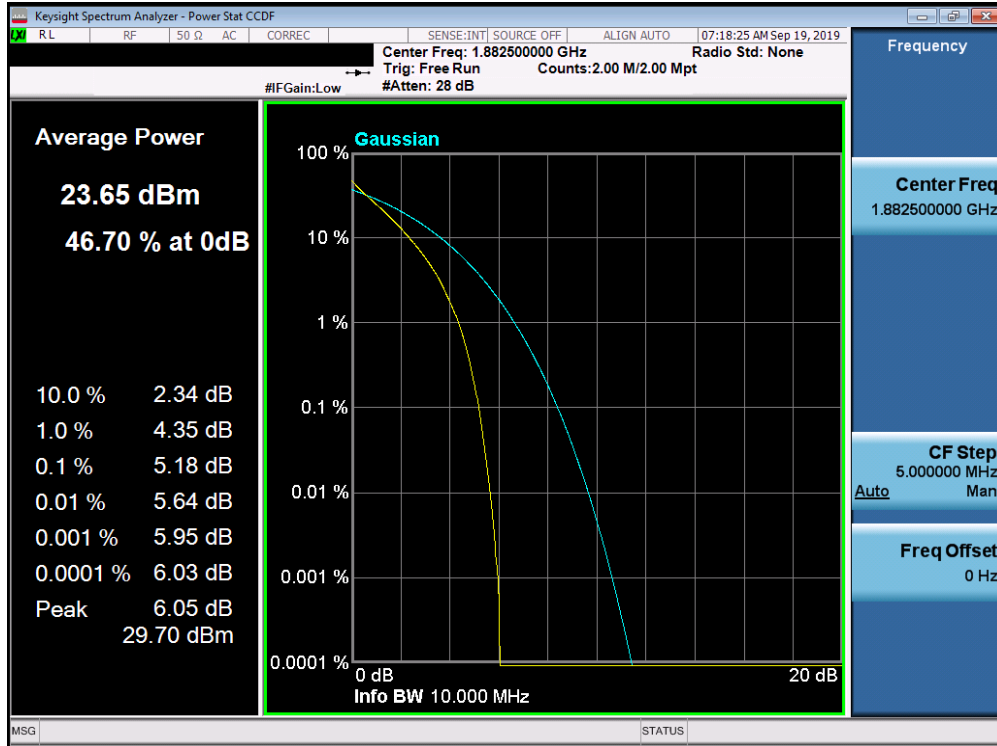


Plot 7-379. PAR Plot (Band 25/2 - 5.0MHz 64-QAM - Full RB Configuration)

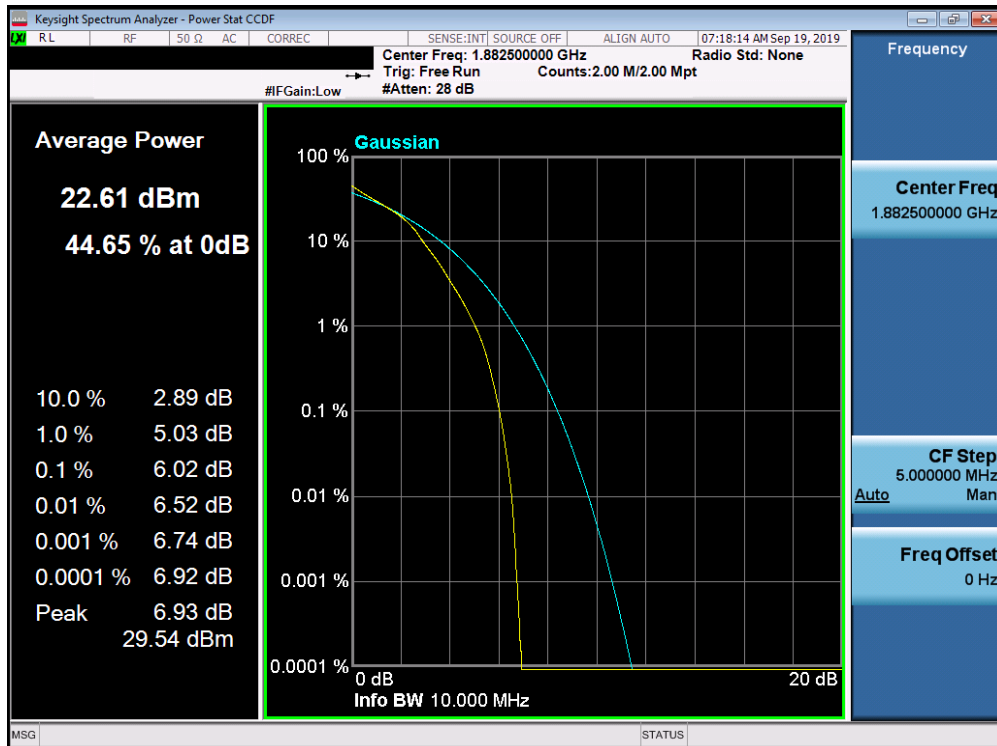


Plot 7-380. PAR Plot (Band 25/2 - 5.0MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMN976U	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	<b>MEASUREMENT REPORT (CERTIFICATION)</b>	<b>SAMSUNG</b>	Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 218 of 348

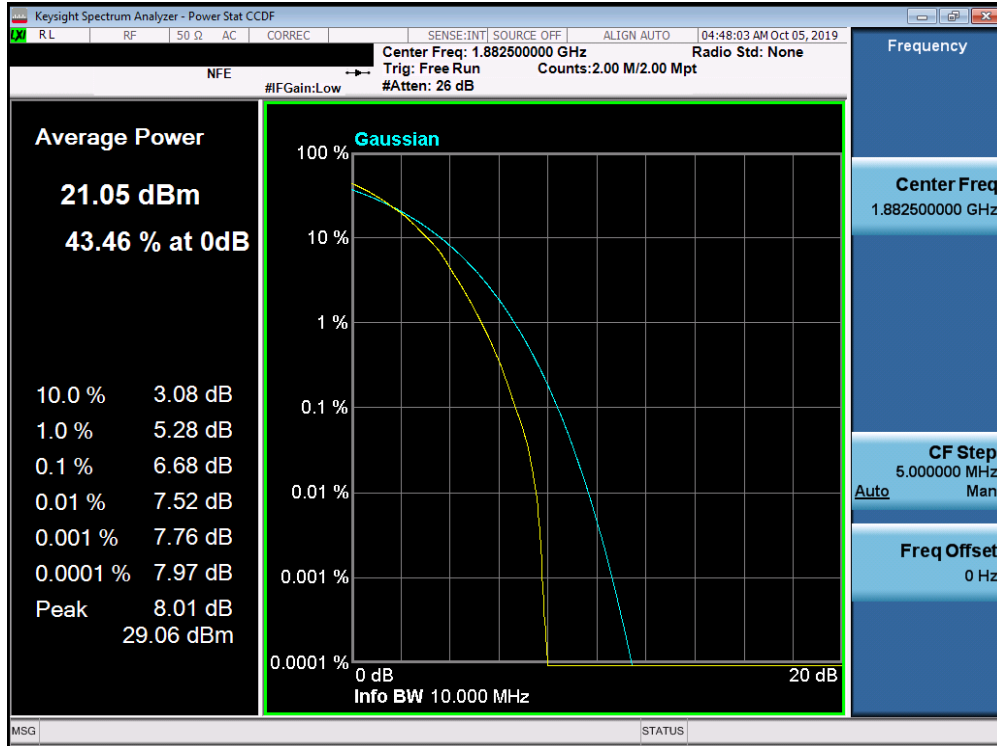


Plot 7-381. PAR Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

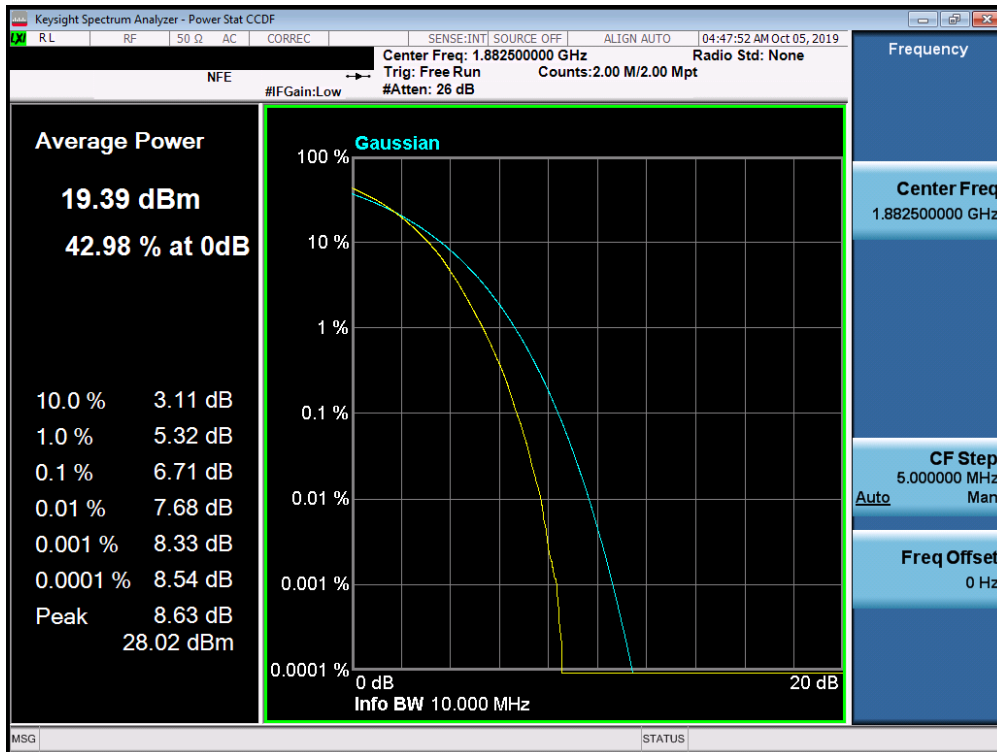


Plot 7-382. PAR Plot (Band 25/2 - 10.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 - 11/05/2019	EUT Type: Portable Handset		Page 219 of 348

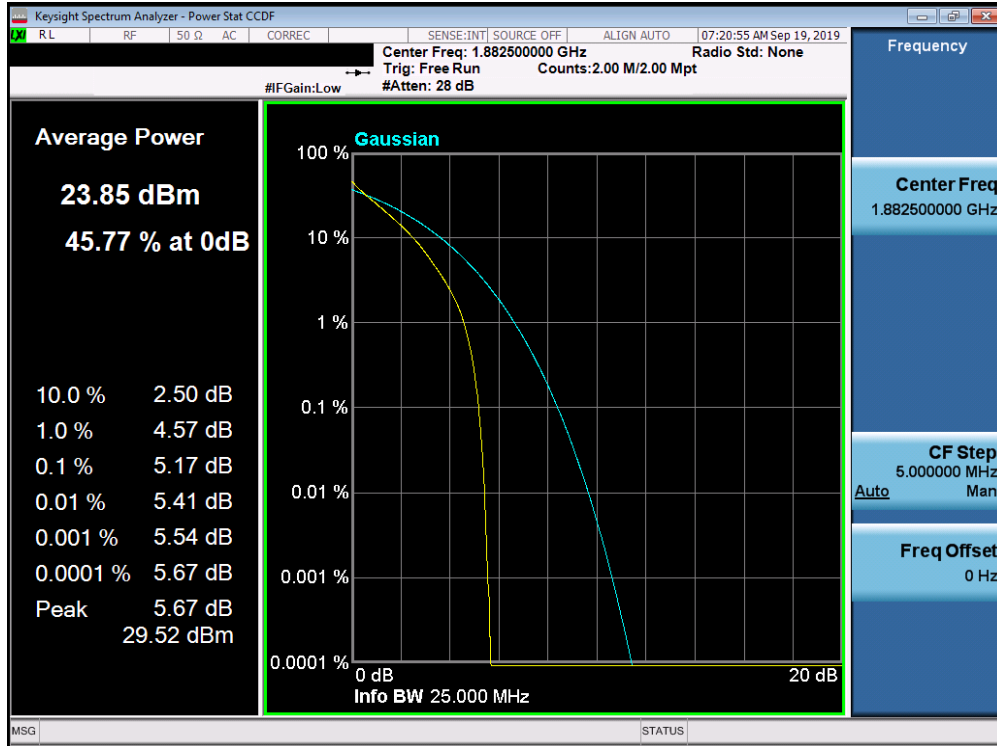


Plot 7-383. PAR Plot (Band 25/2 - 10.0MHz 64-QAM - Full RB Configuration)

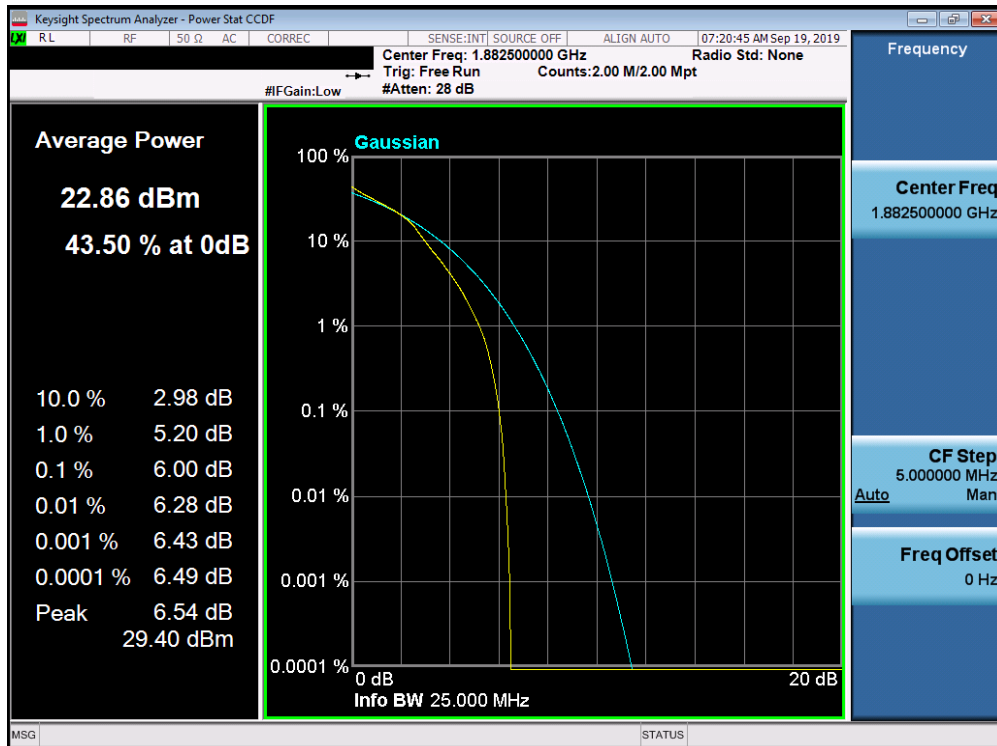


Plot 7-384. PAR Plot (Band 25/2 - 10.0MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 220 of 348

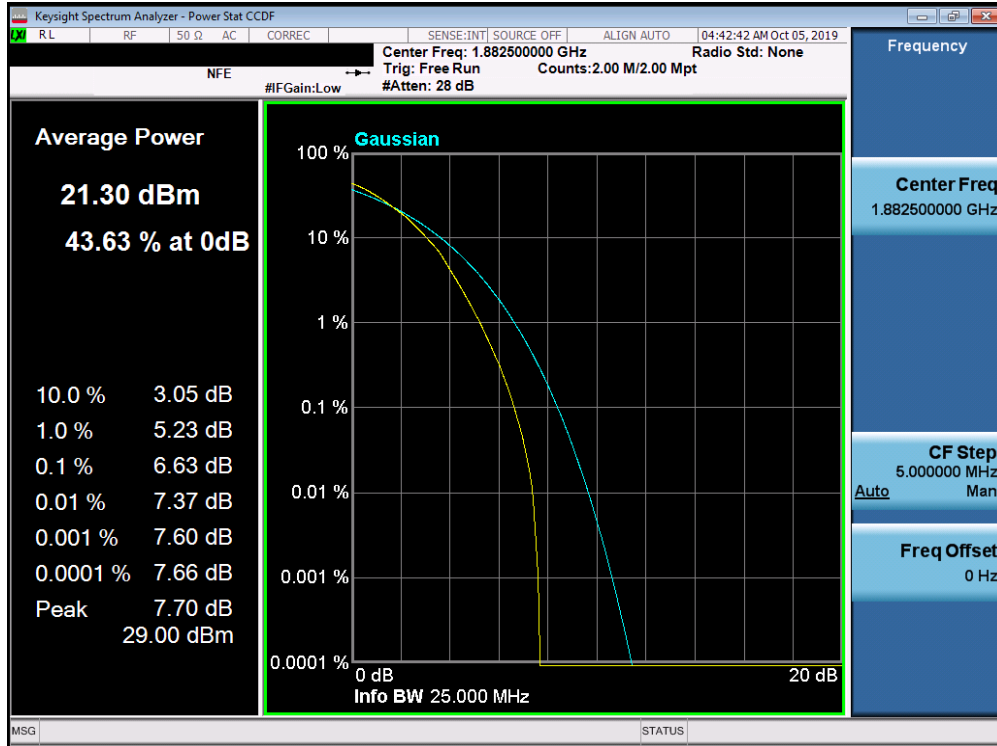


Plot 7-385. PAR Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

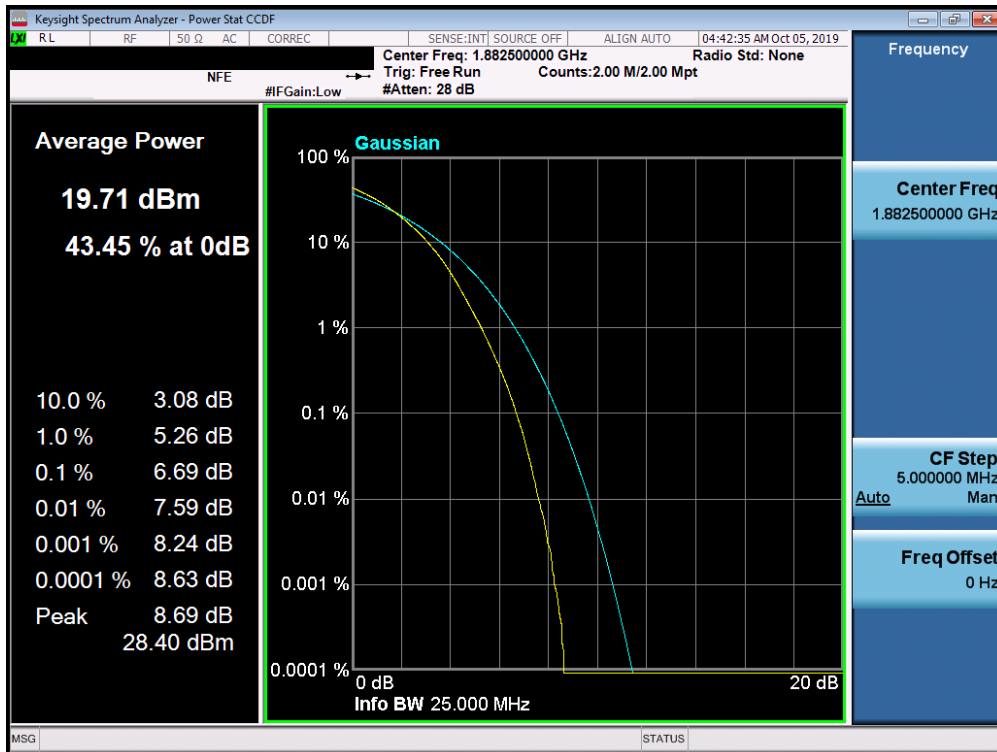


Plot 7-386. PAR Plot (Band 25/2 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 - 11/05/2019	EUT Type: Portable Handset		Page 221 of 348

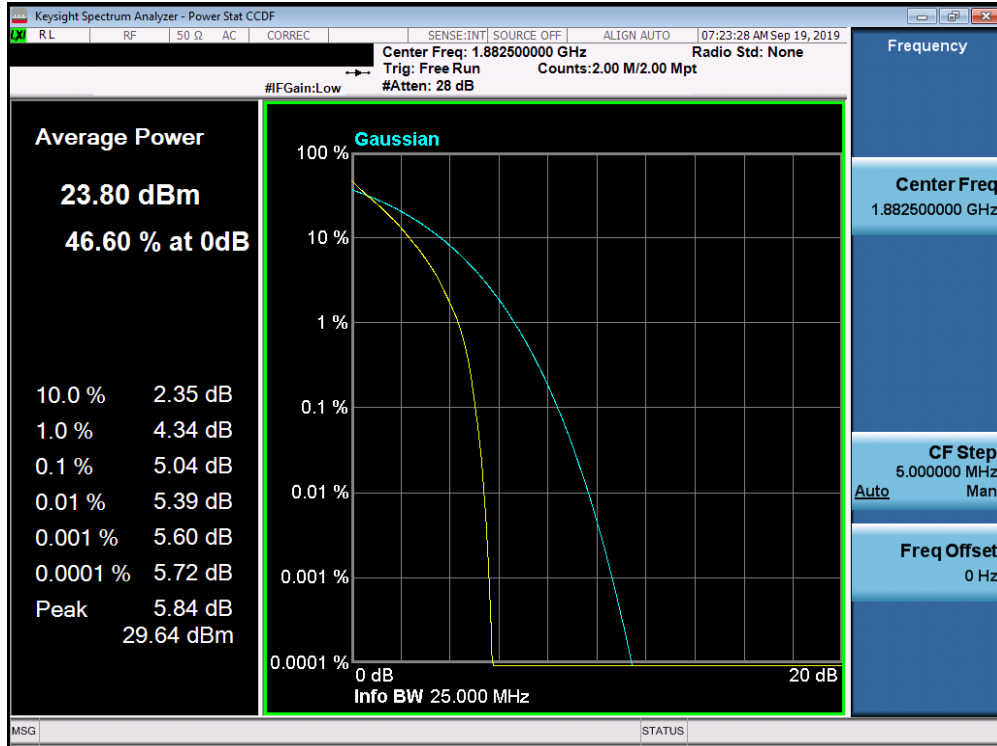


Plot 7-387. PAR Plot (Band 25/2 - 15.0MHz 64-QAM - Full RB Configuration)

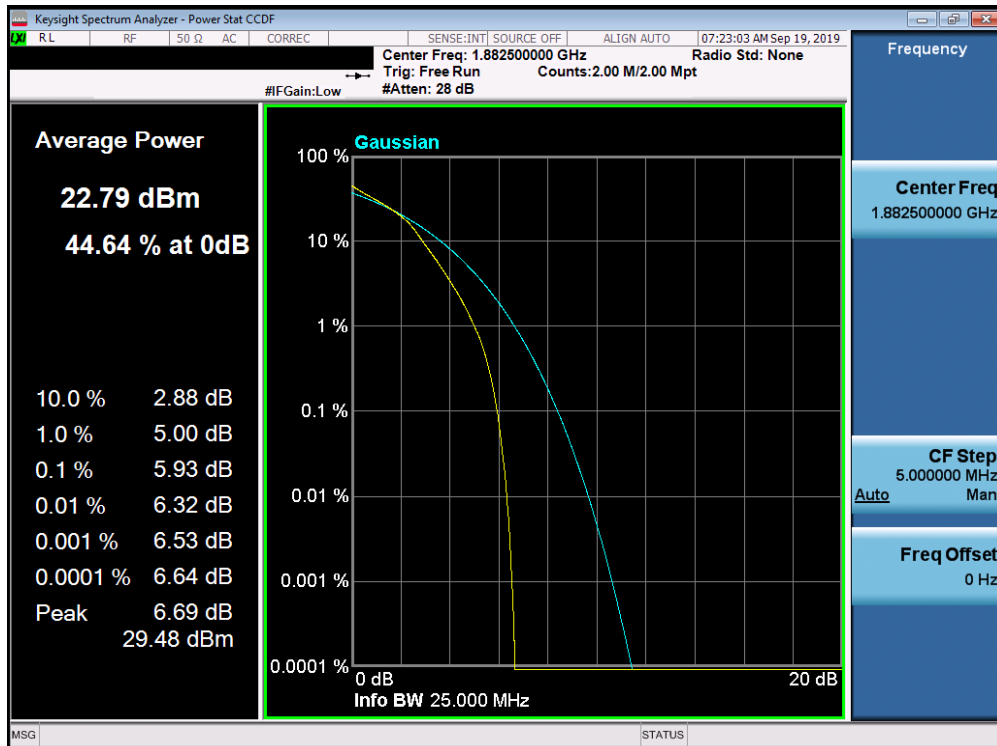


Plot 7-388. PAR Plot (Band 25/2 - 15.0MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 - 11/05/2019	EUT Type: Portable Handset		Page 222 of 348

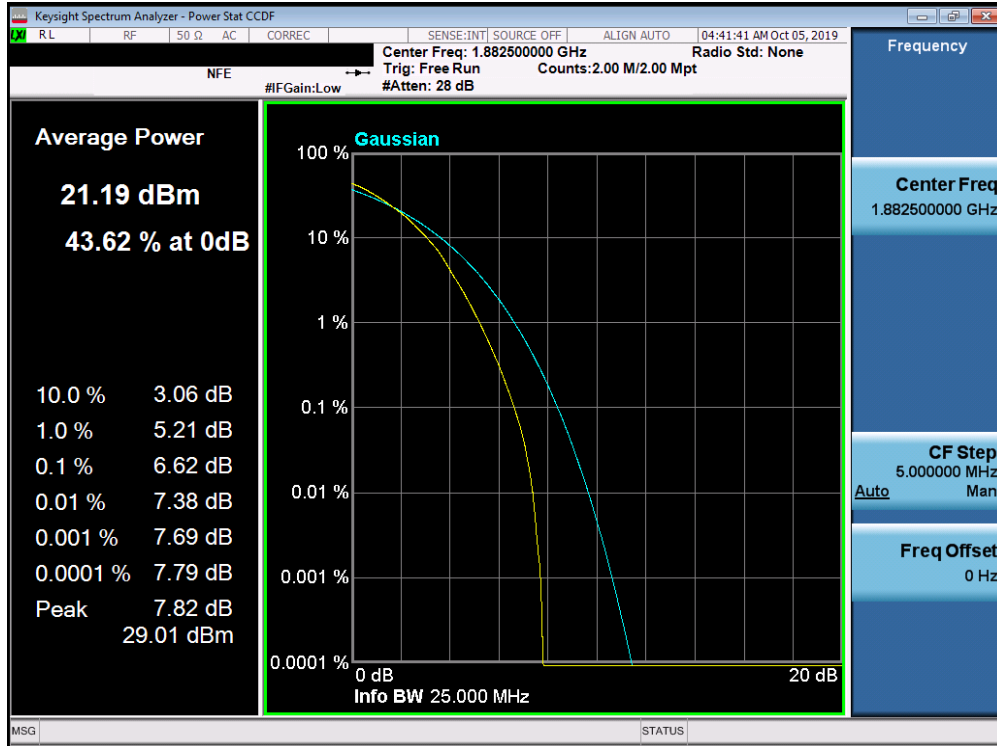


Plot 7-389. PAR Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

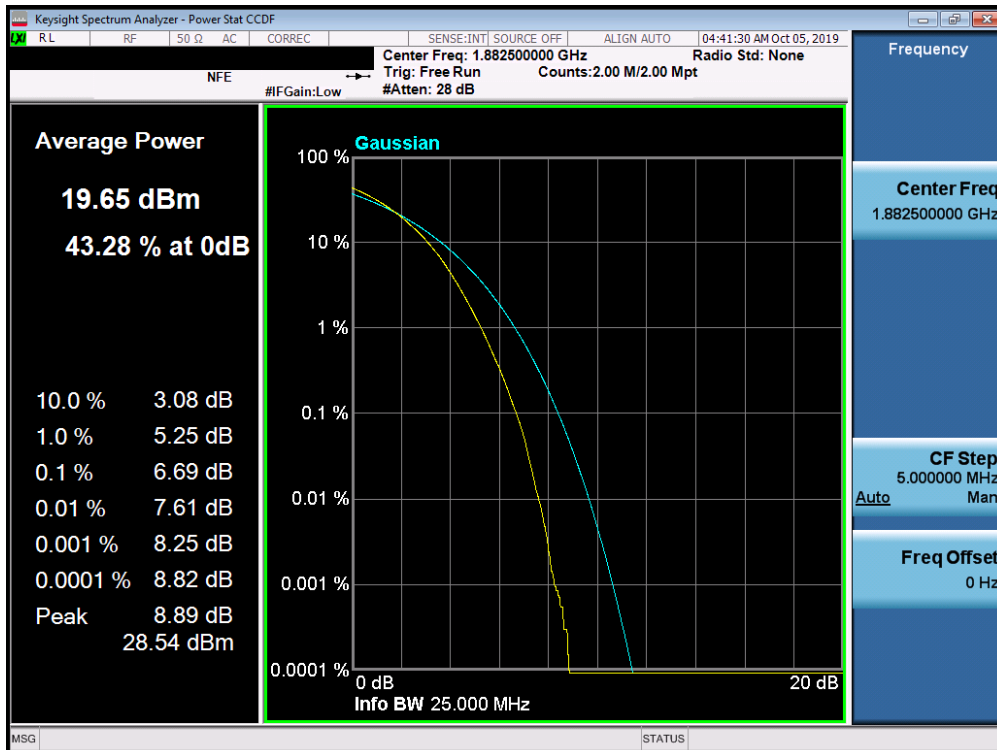


Plot 7-390. PAR Plot (Band 25/2 - 20.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 - 11/05/2019	EUT Type: Portable Handset		Page 223 of 348



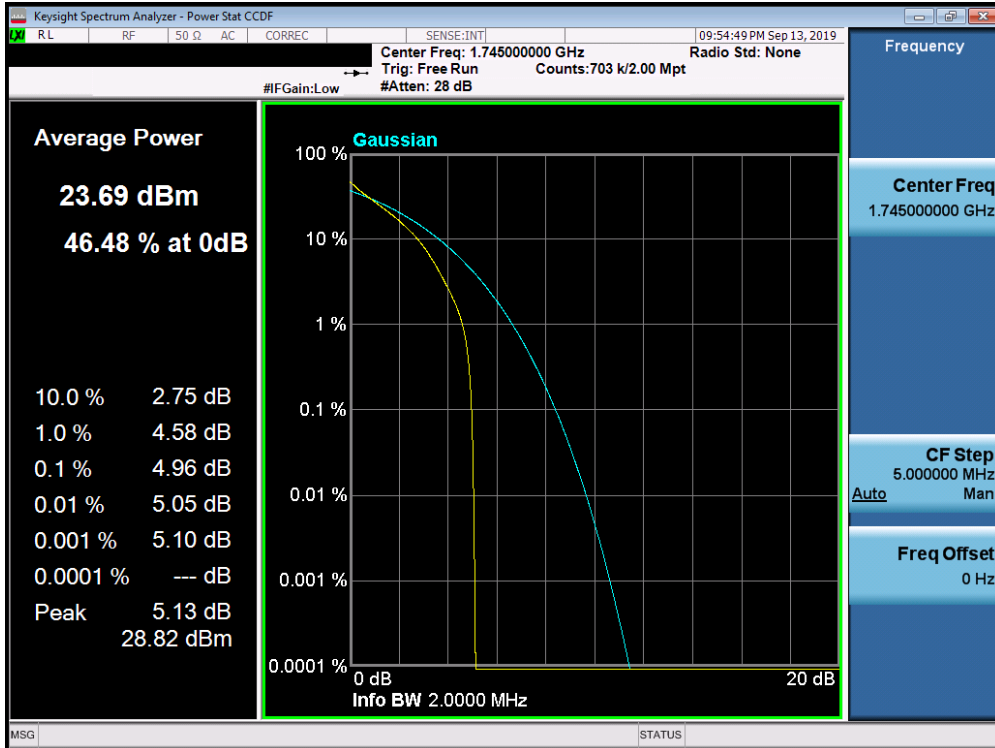
Plot 7-391. PAR Plot (Band 25/2 - 20.0MHz 64-QAM - Full RB Configuration)



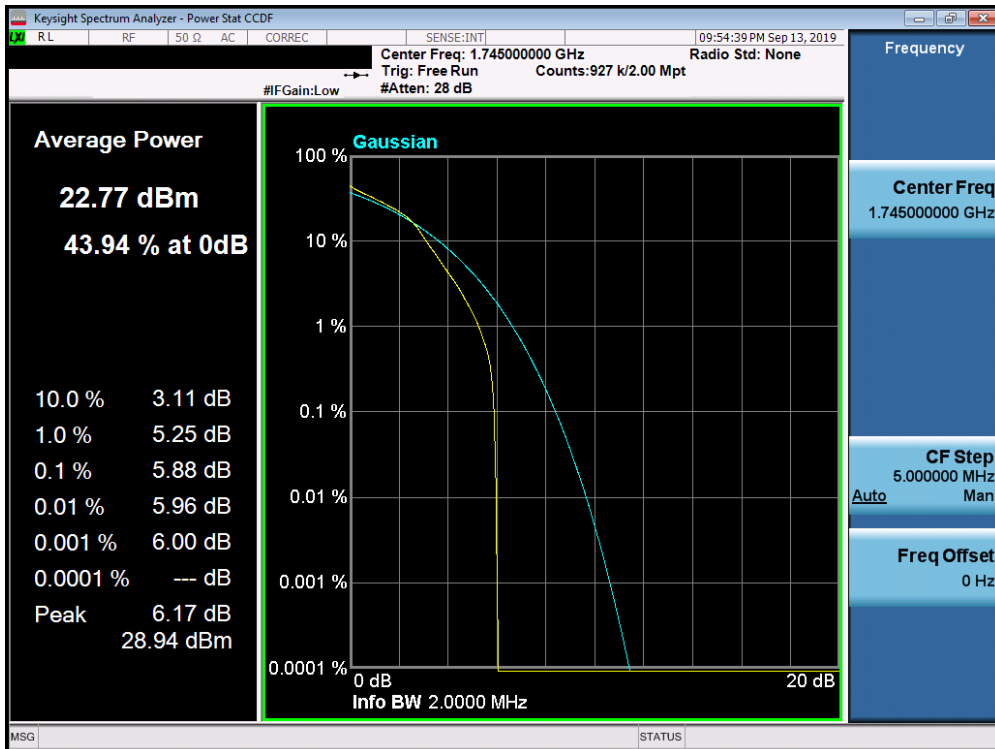
Plot 7-392. PAR Plot (Band 25/2 - 20.0MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 - 11/05/2019	EUT Type: Portable Handset		Page 224 of 348

**Band 66/4**

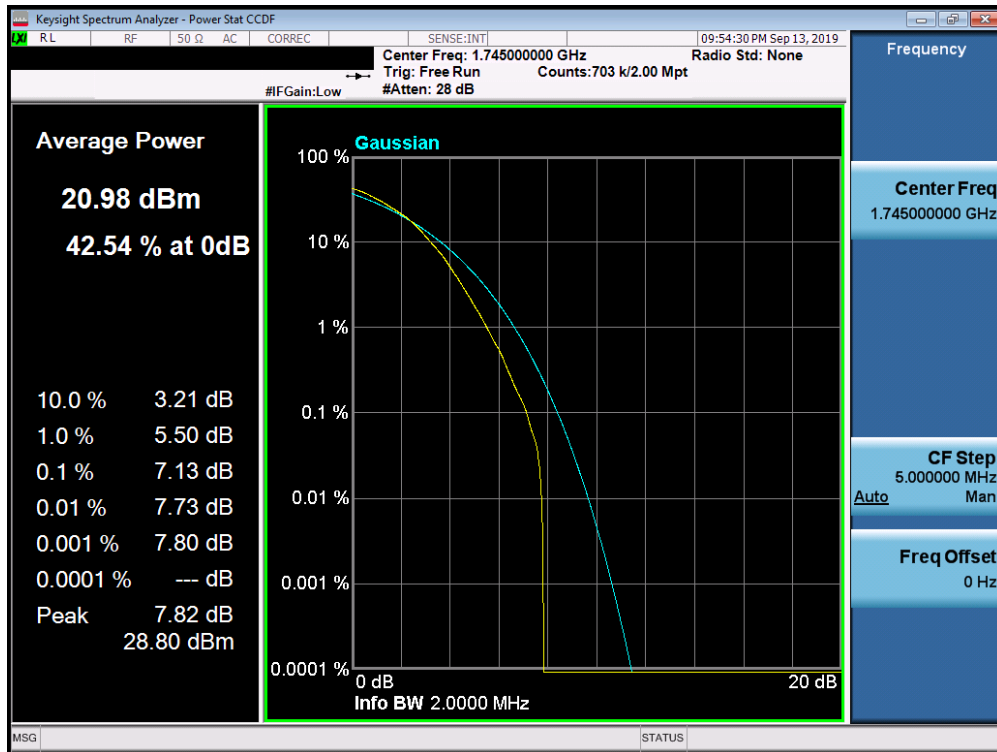


**Plot 7-393. PAR Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)**

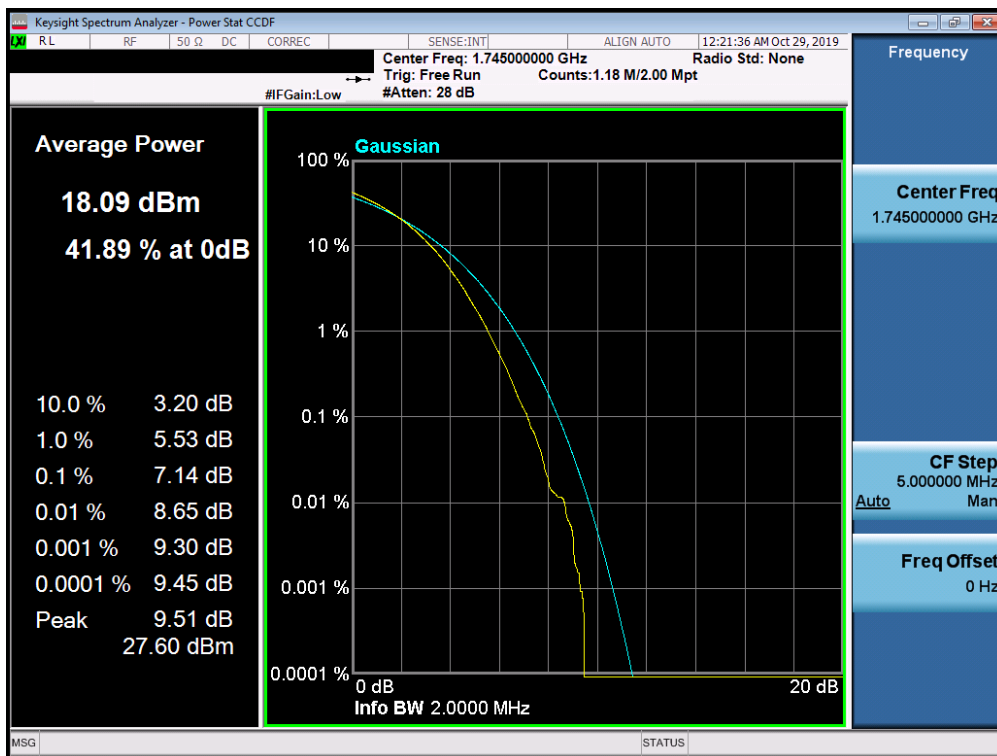


**Plot 7-394. PAR Plot (Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)**

FCC ID: A3LSMN976U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 225 of 348

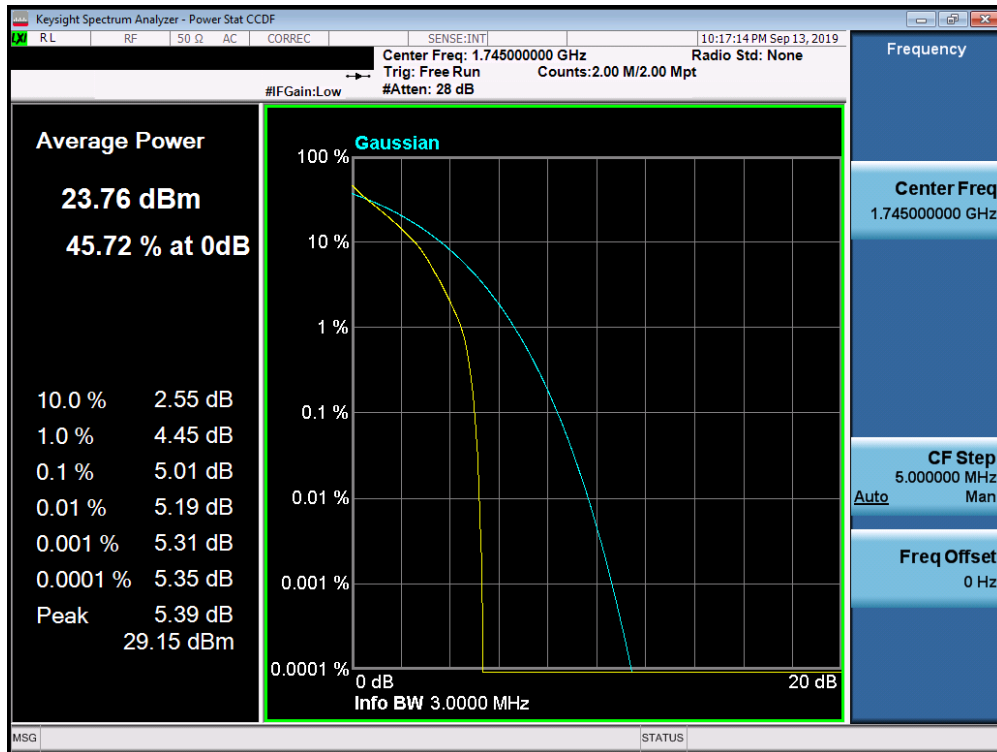


Plot 7-395. PAR Plot (Band 66/4 - 1.4MHz 64-QAM - Full RB Configuration)

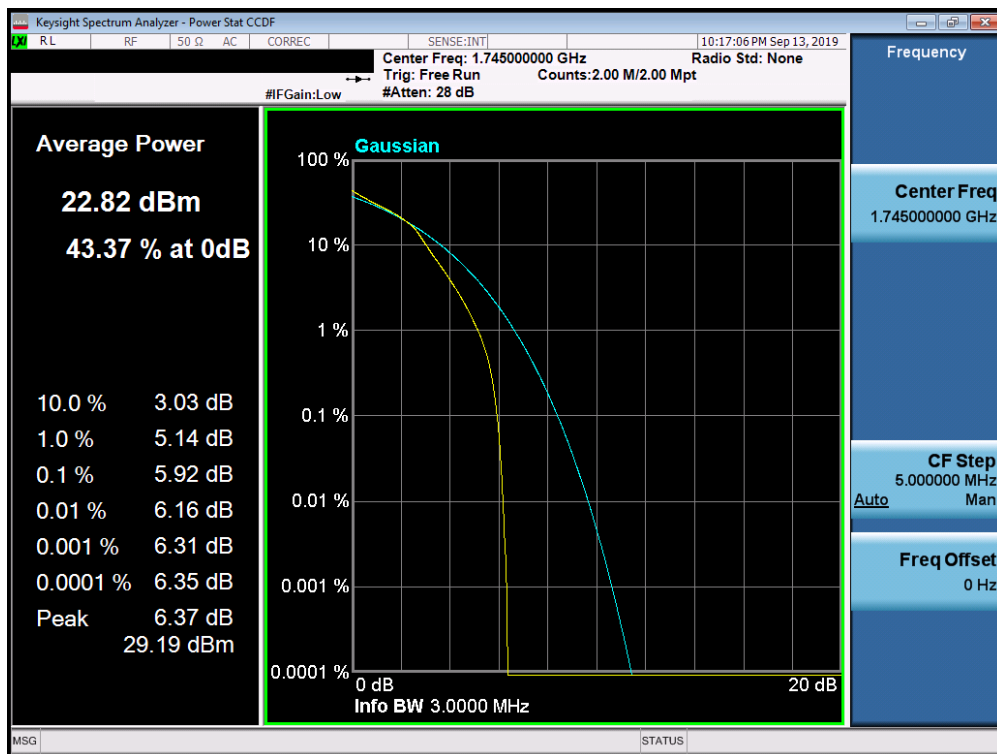


Plot 7-396. PAR Plot (Band 66/4 - 1.4MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 226 of 348

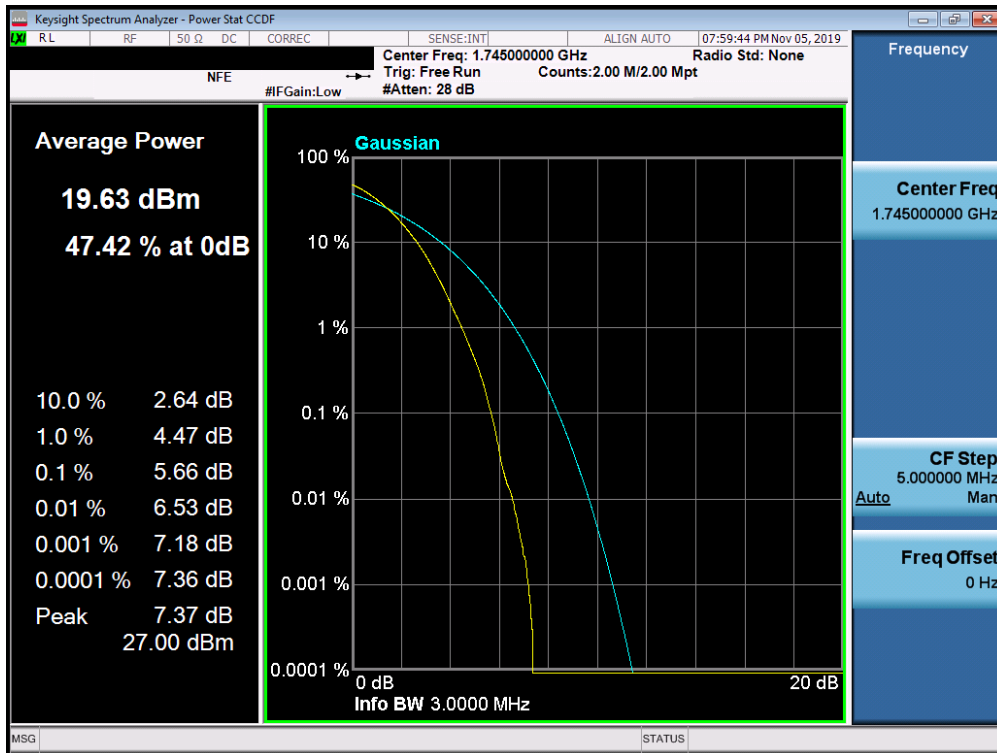
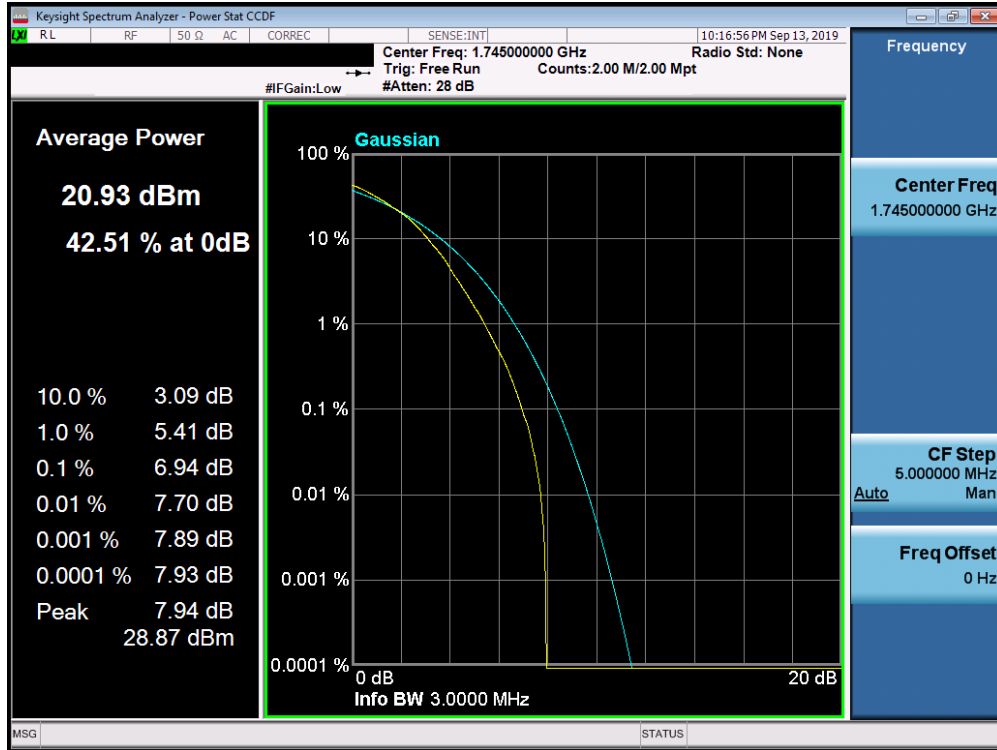


**Plot 7-397. PAR Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)**

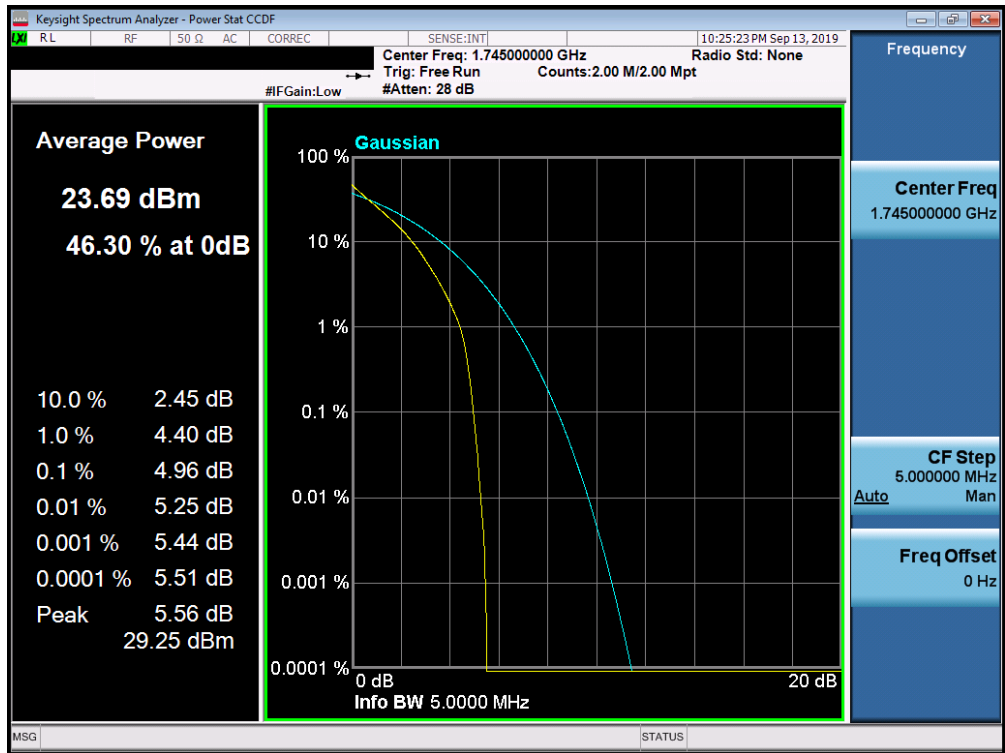


**Plot 7-398. PAR Plot (Band 66/4 - 3.0MHz 16-QAM - Full RB Configuration)**

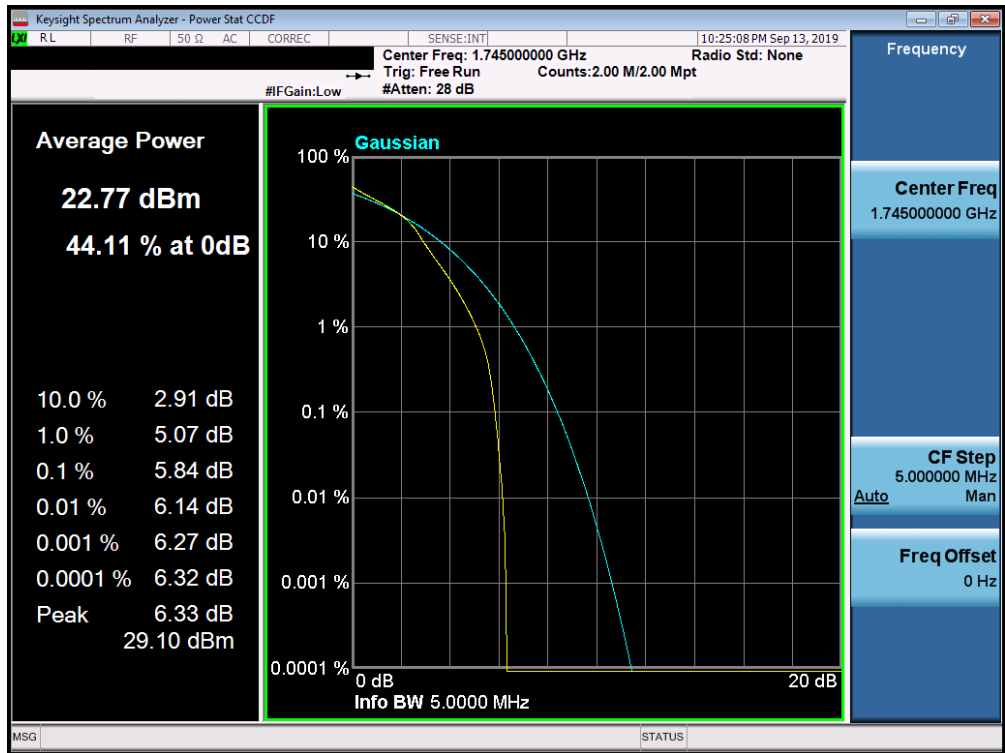
FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 227 of 348



FCC ID: A3LSMN976U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 228 of 348

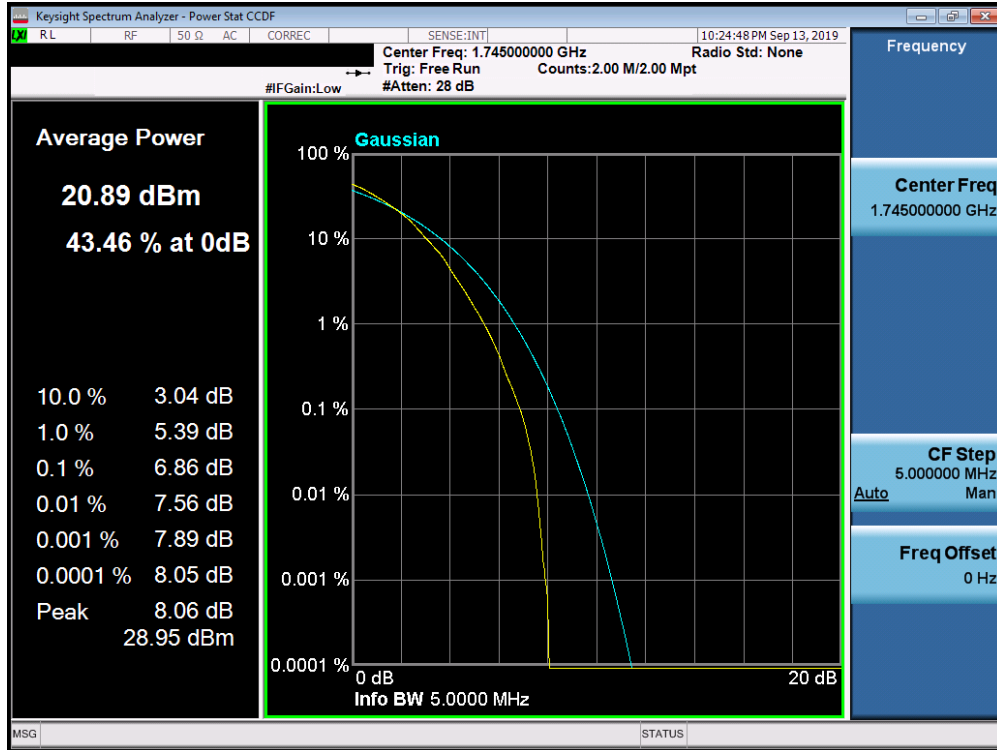


Plot 7-401. PAR Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

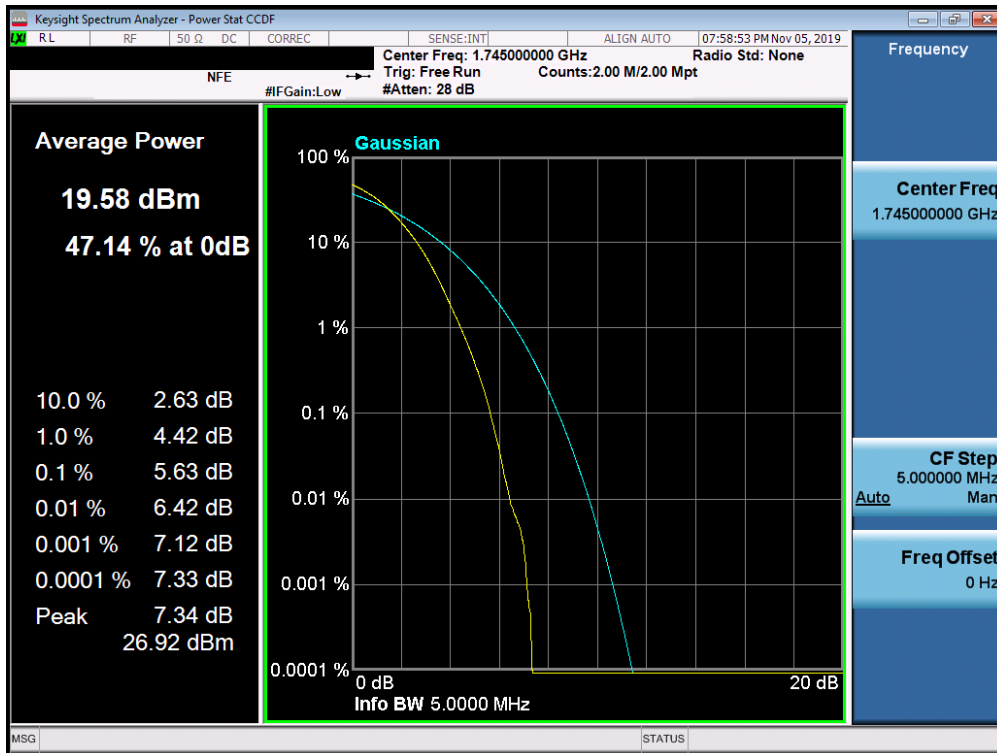


Plot 7-402. PAR Plot (Band 66/4 - 5.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 229 of 348

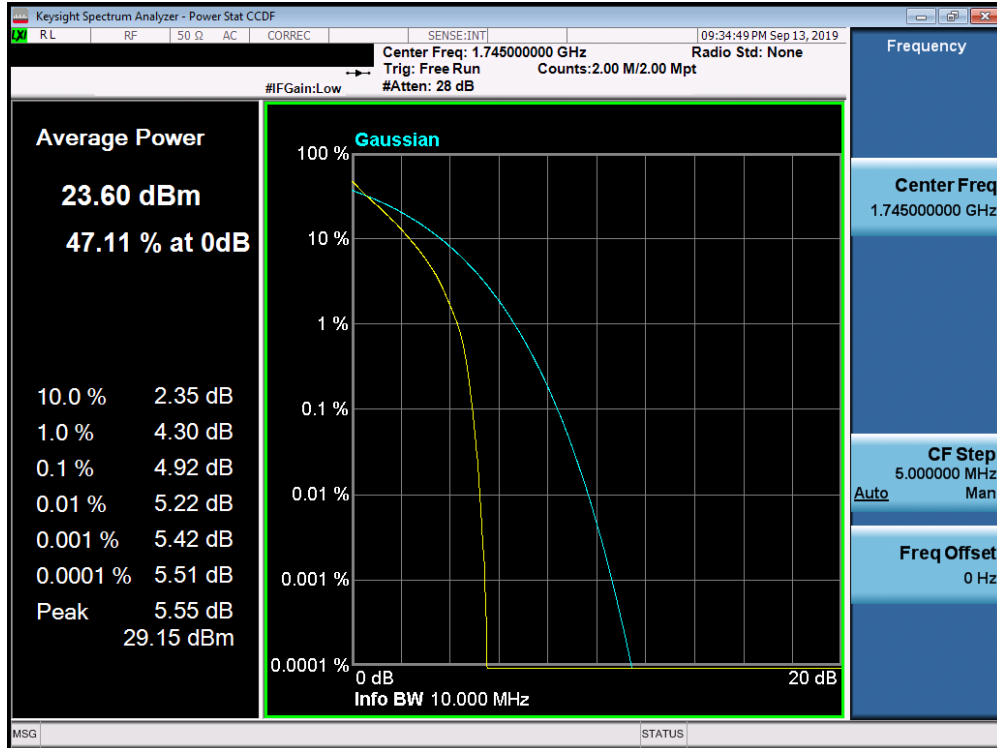


**Plot 7-403. PAR Plot (Band 66/4 - 5.0MHz 64-QAM - Full RB Configuration)**

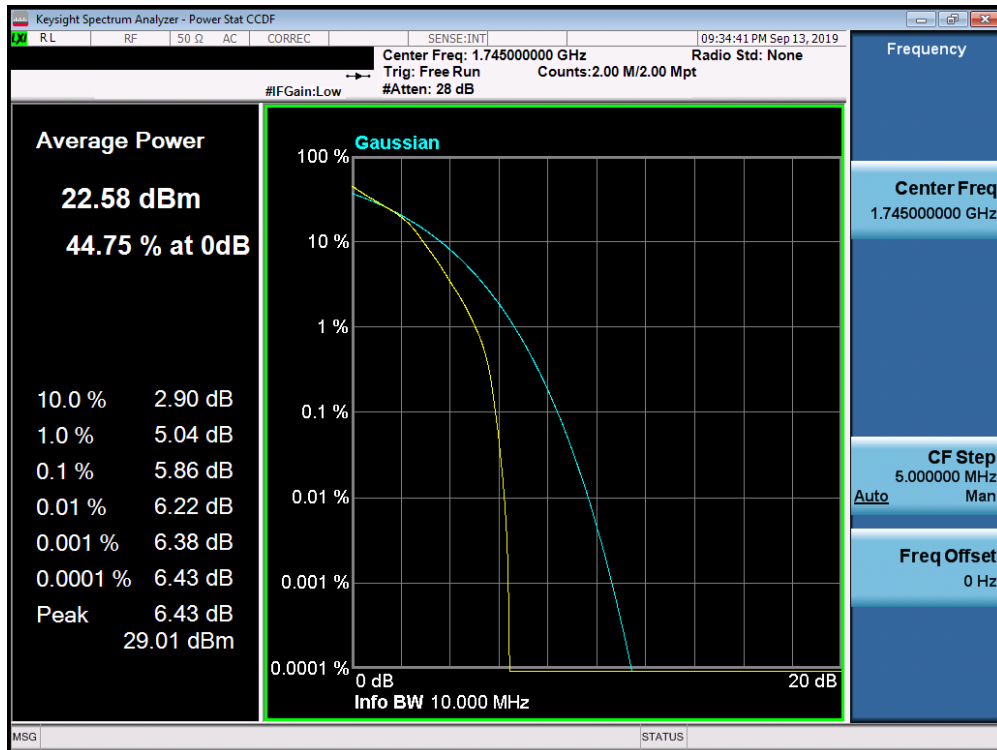


**Plot 7-404. PAR Plot (Band 66/4 - 5.0MHz 256-QAM - Full RB Configuration)**

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 230 of 348

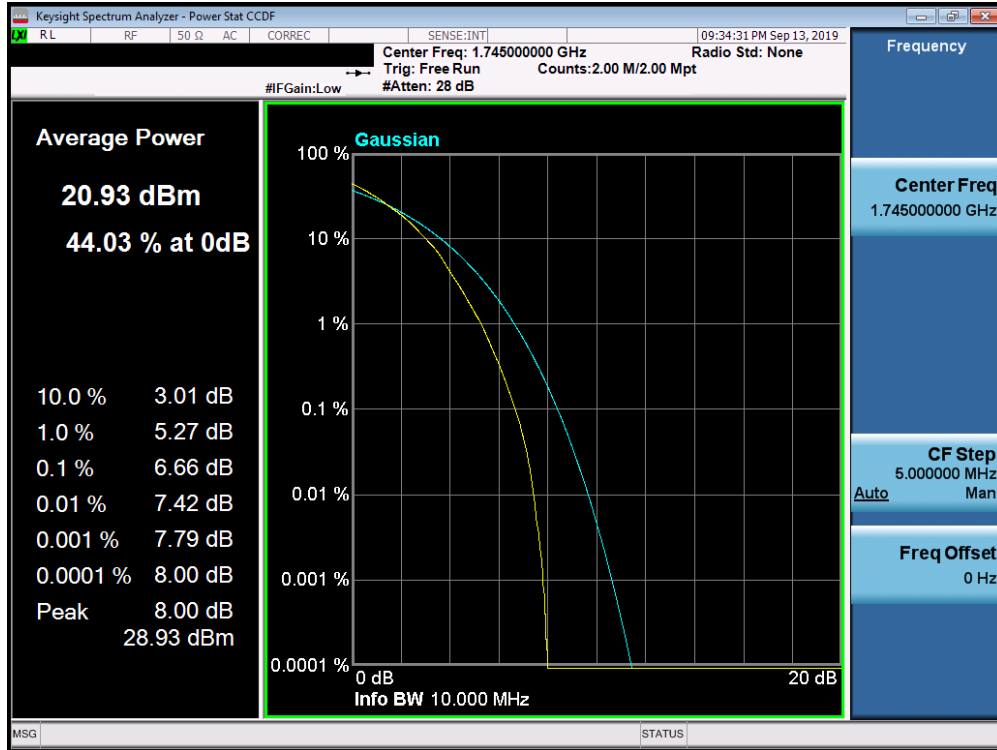


**Plot 7-405. PAR Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)**

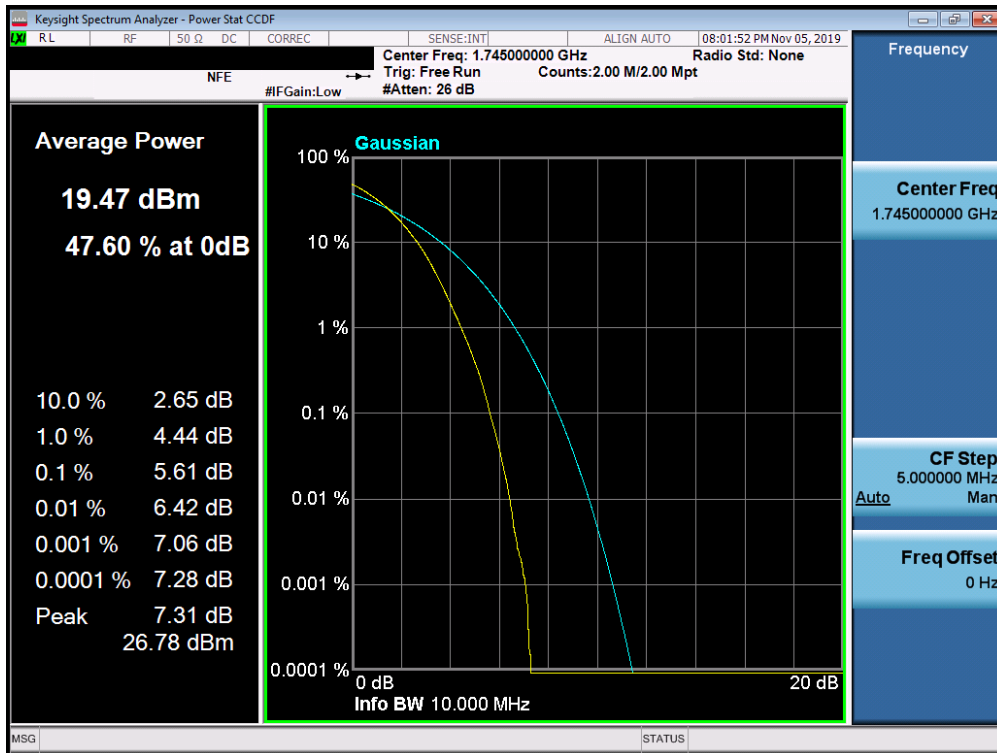


**Plot 7-406. PAR Plot (Band 66/4 - 10.0MHz 16-QAM - Full RB Configuration)**

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 231 of 348

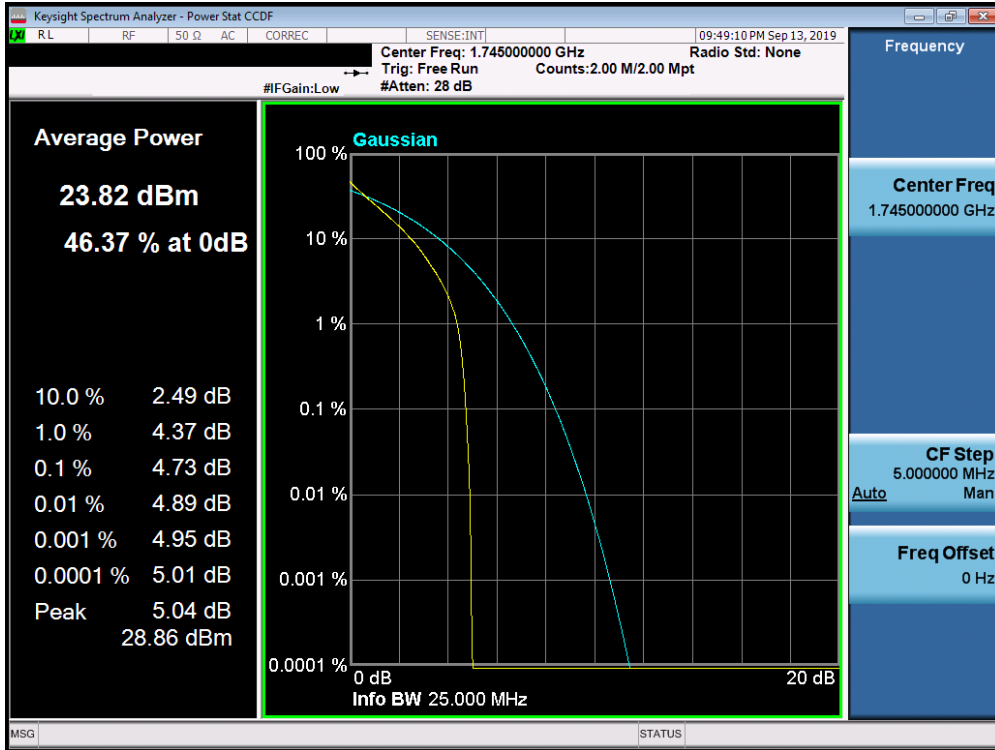


**Plot 7-407. PAR Plot (Band 66/4 - 10.0MHz 64-QAM - Full RB Configuration)**

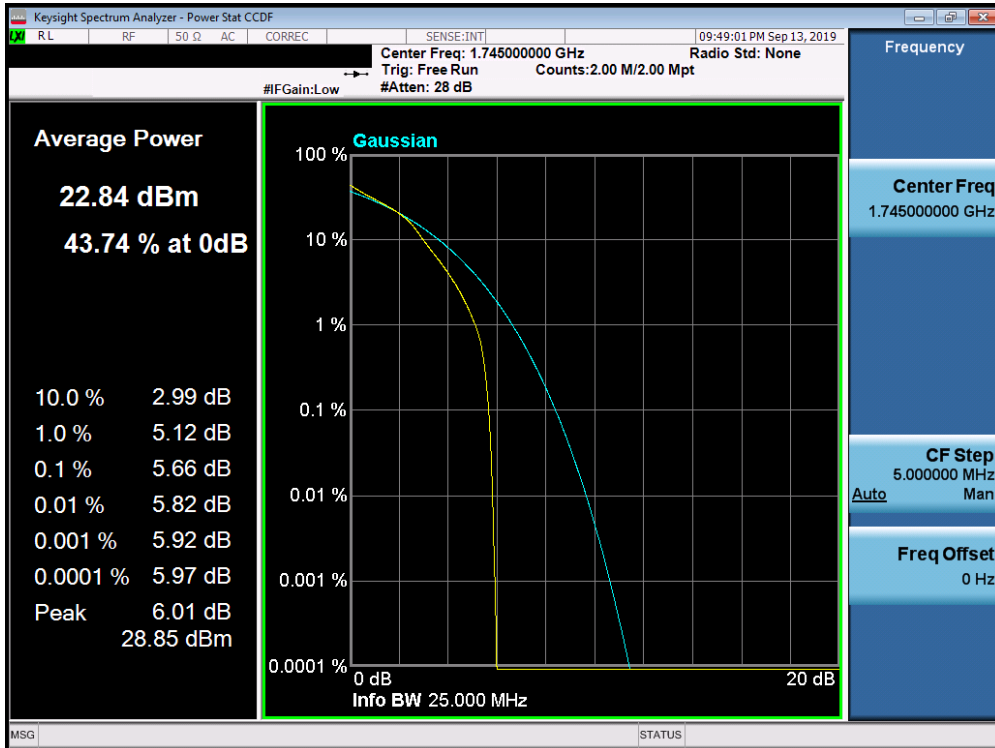


**Plot 7-408. PAR Plot (Band 66/4 - 10.0MHz 256-QAM - Full RB Configuration)**

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 232 of 348

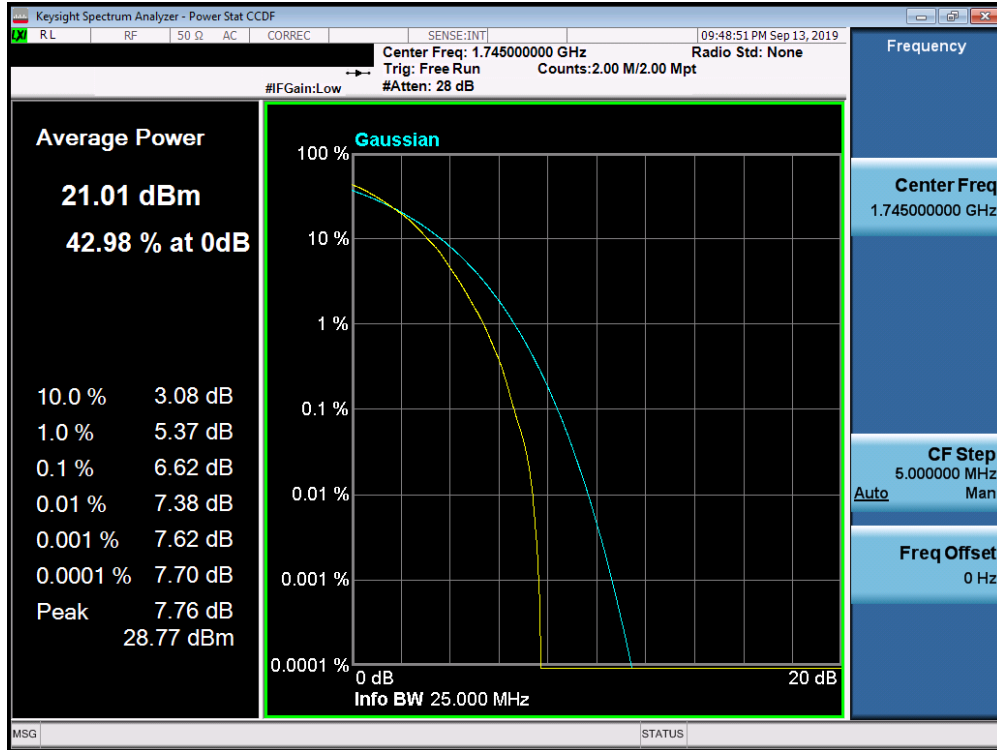


Plot 7-409. PAR Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

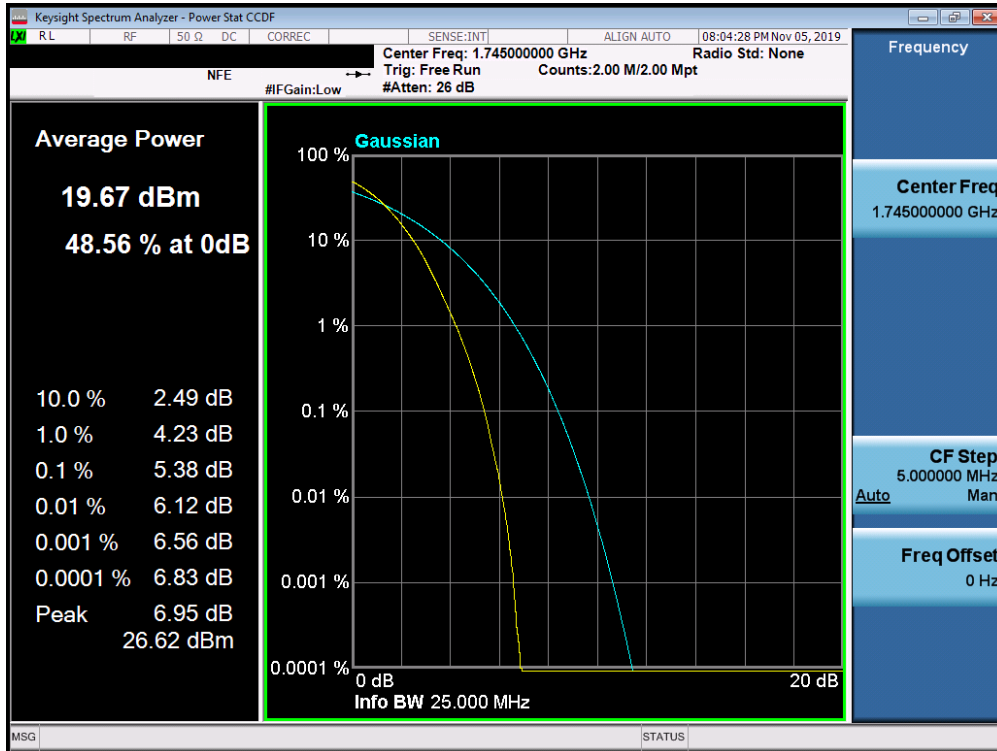


Plot 7-410. PAR Plot (Band 66/4 - 15.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 233 of 348

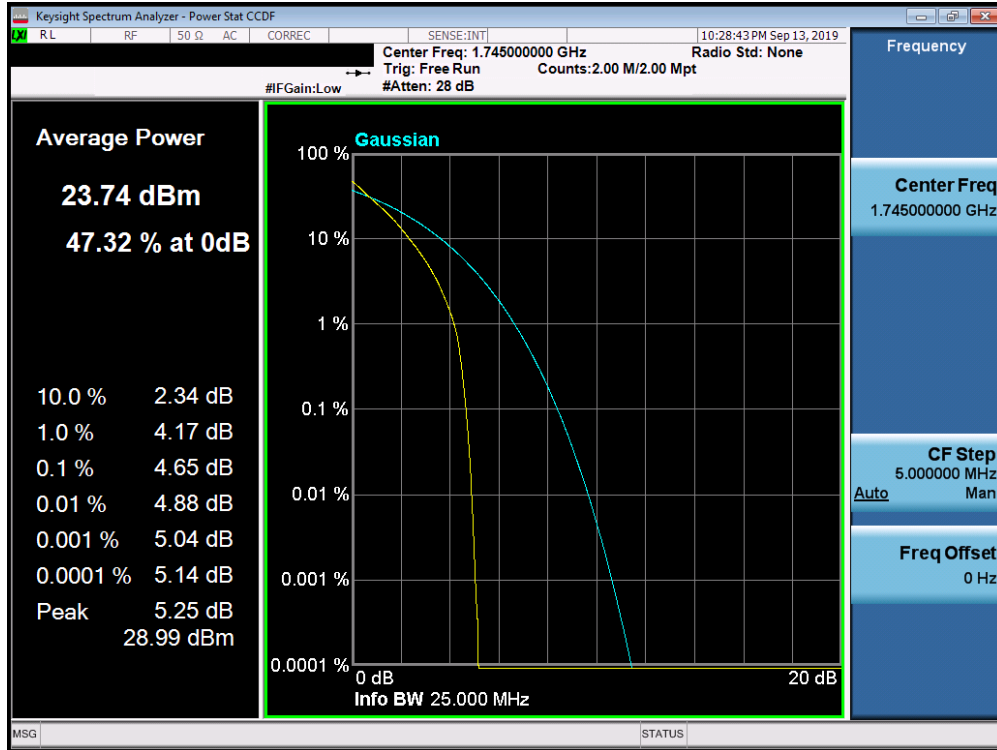


Plot 7-411. PAR Plot (Band 66/4 - 15.0MHz 64-QAM - Full RB Configuration)

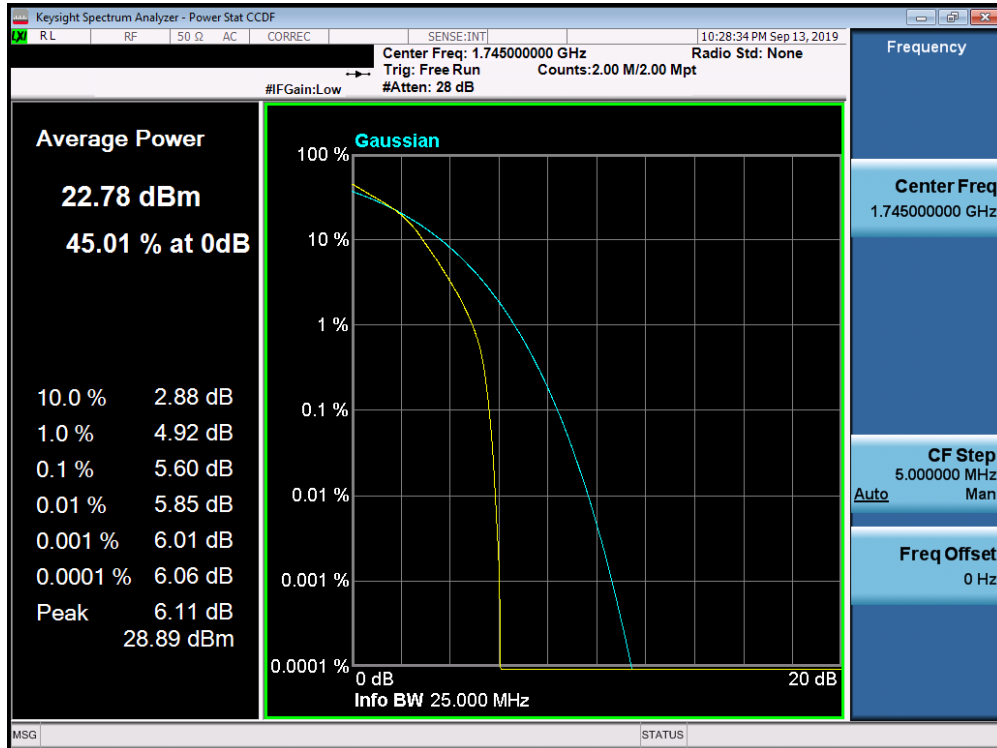


Plot 7-412. PAR Plot (Band 66/4 - 15.0MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMN976U	<b>PCTEST</b> ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	<b>SAMSUNG</b>	Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 234 of 348

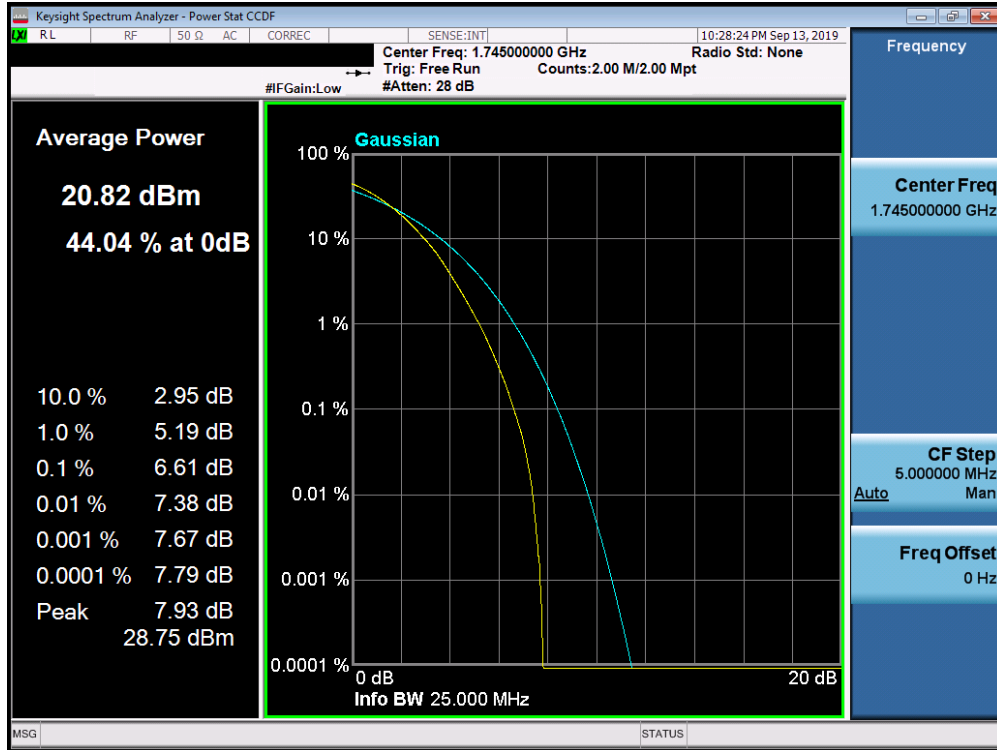


Plot 7-413. PAR Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

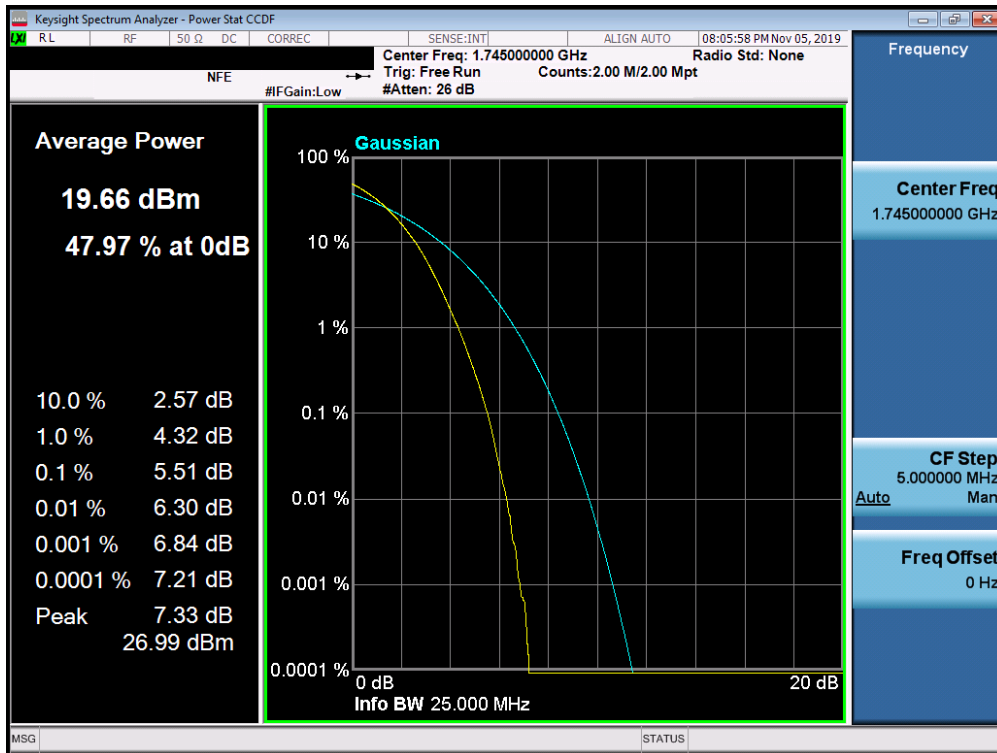


Plot 7-414. PAR Plot (Band 66/4 - 20.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 235 of 348



Plot 7-415. PAR Plot (Band 66/4 - 20.0MHz 64-QAM - Full RB Configuration)



Plot 7-416. PAR Plot (Band 66/4 - 20.0MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 236 of 348

## 7.6 Uplink Carrier Aggregation

### 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 10<sup>th</sup> 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 5, the minimum permissible attenuation level of any spurious emission is  $43 + 10\log_{10}(P_{[Watts]})$ .***

### Test Procedure Used

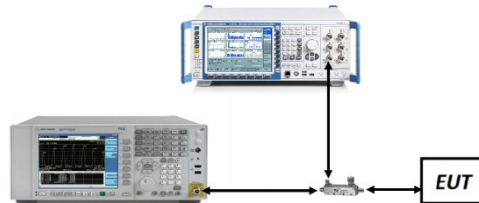
KDB 971168 D01 v03r01 – Section 6.0

### 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: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 237 of 348

### Test Notes

1. Uplink carrier aggregation is only supported in this EUT for LTE Band 5.
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 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.

<b>FCC ID:</b> A3LSMN976U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Quality Manager
<b>Test Report S/N:</b> 1M1909040147-03.A3L	<b>Test Dates:</b> 9/09 – 11/05/2019	<b>EUT Type:</b> Portable Handset	Page 238 of 348	

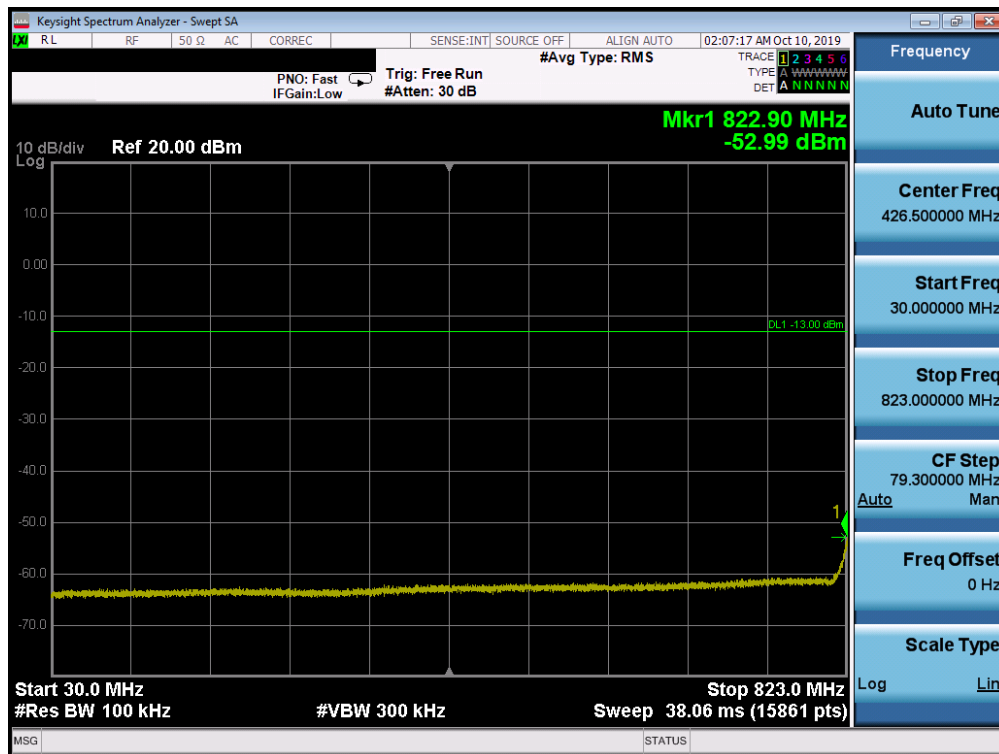
## Uplink CA Configuration 5B

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 B5	10	20450	829	QPSK	1	49	LTE B5	10	20549	838.9	QPSK	1	0	25.31
Max	LTE B5	10	20525	836.5	QPSK	1	49	LTE B5	5	20597	843.7	QPSK	1	0	25.24
Max	LTE B5	10	20600	844	QPSK	1	0	LTE B5	10	20501	834.1	QPSK	1	49	25.26

Table 7-3. Conducted Powers (B5 – PCC: RB Size 1 Offset Max SCC: RB Size 1 Offset 0)

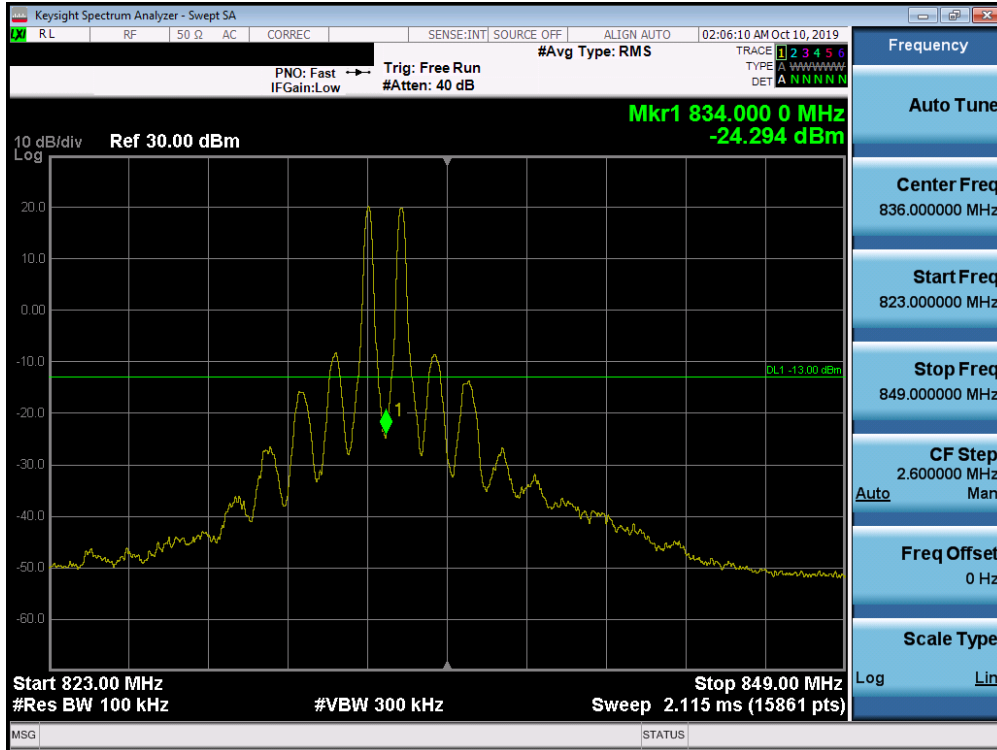
Power State	PCC							SCC							Power ULCA Tx.Power (dBm)
	PCC Band	PCC Bandwidth [MHz]	PCC (UL) Channel	PCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL) Channel	SCC (UL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	
Max	LTE B5	10	20450	829	QPSK	50	0	LTE B5	10	20549	838.9	QPSK	50	0	23.21
Max	LTE B5	10	20450	829	16-QAM	50	0	LTE B5	10	20549	838.9	16-QAM	50	0	22.66
Max	LTE B5	10	20450	829	64-QAM	50	0	LTE B5	10	20549	838.9	64-QAM	50	0	21.89
Max	LTE B5	10	20450	829	256-QAM	50	0	LTE B5	10	20549	838.9	256-QAM	50	0	20.39

Table 7-4. Conducted Powers (B5 with Various Combinations for 10MHz Channel Bandwidth)

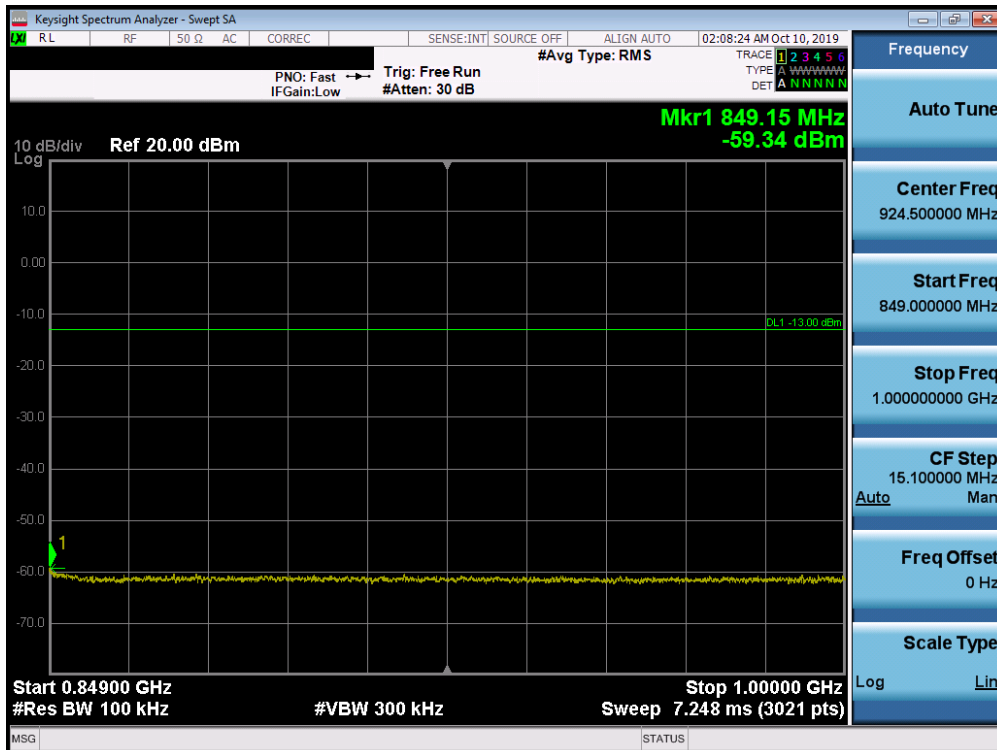


Plot 7-417. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – PCC 1/49 SCC 1/0 – Low Channel)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 239 of 348

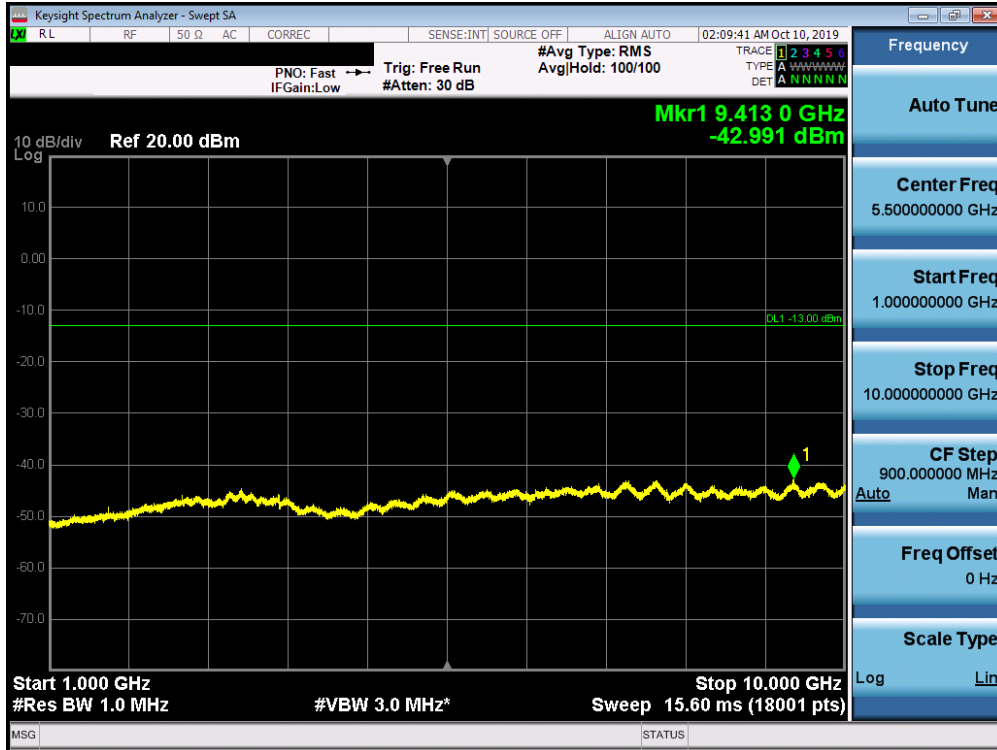


Plot 7-418. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – PCC 1/49 SCC 1/0 – Low Channel)

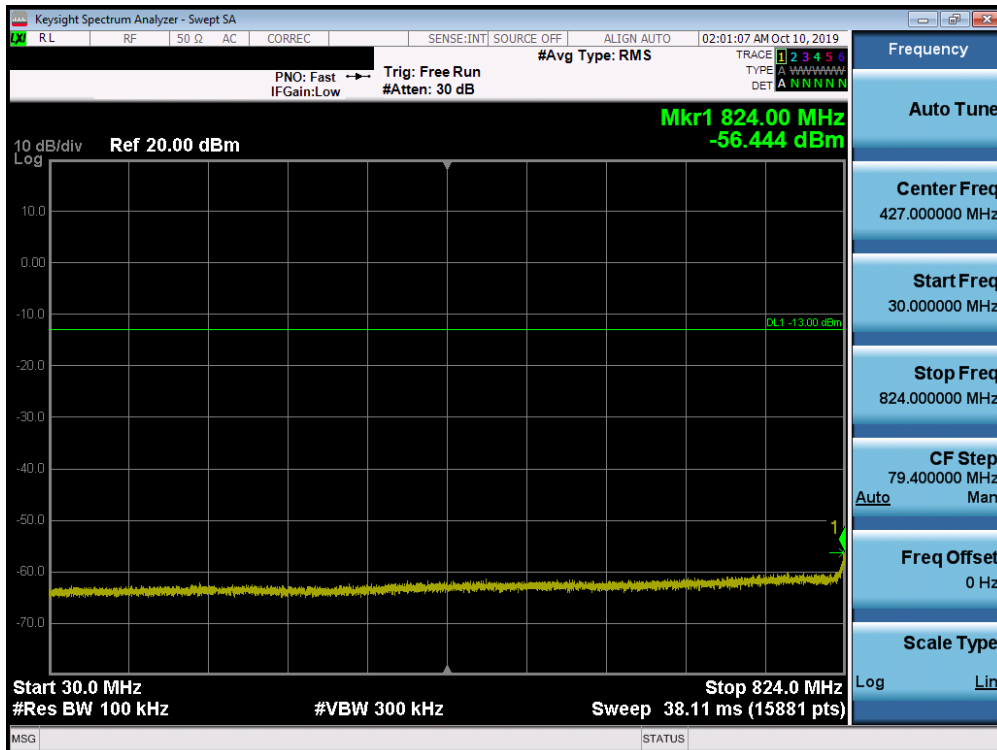


Plot 7-419. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – PCC 1/49 SCC 1/0 – Low Channel)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 240 of 348



Plot 7-420. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – PCC 1/49 SCC 1/0 – Low Channel)

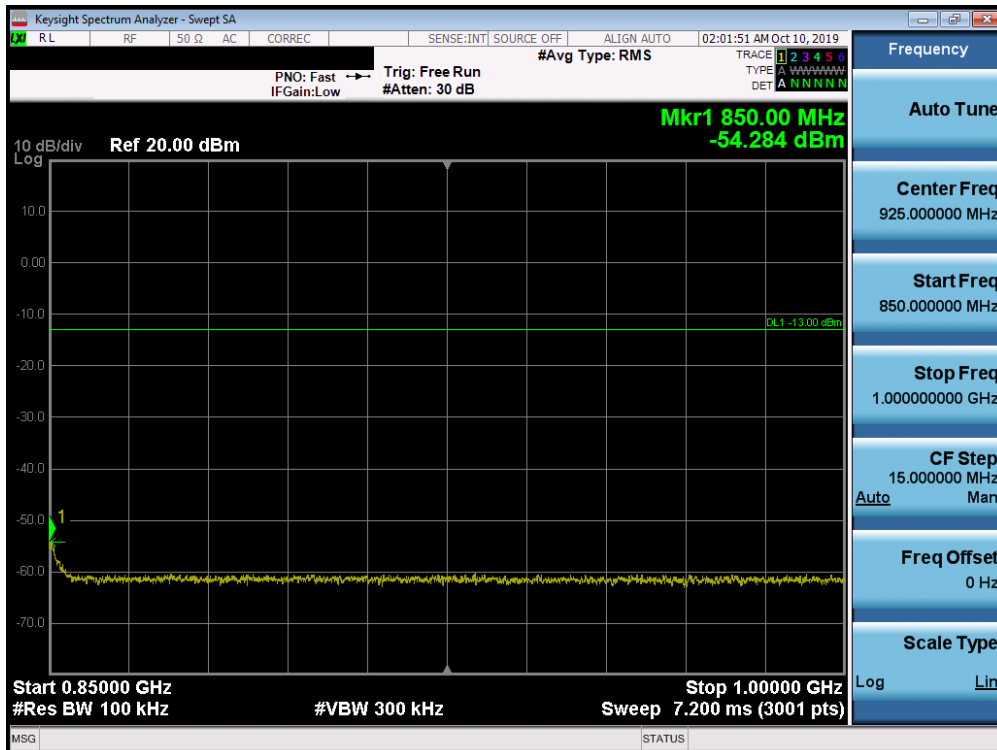


Plot 7-421. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – PCC 1/0 SCC 1/49 – High Channel)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 241 of 348

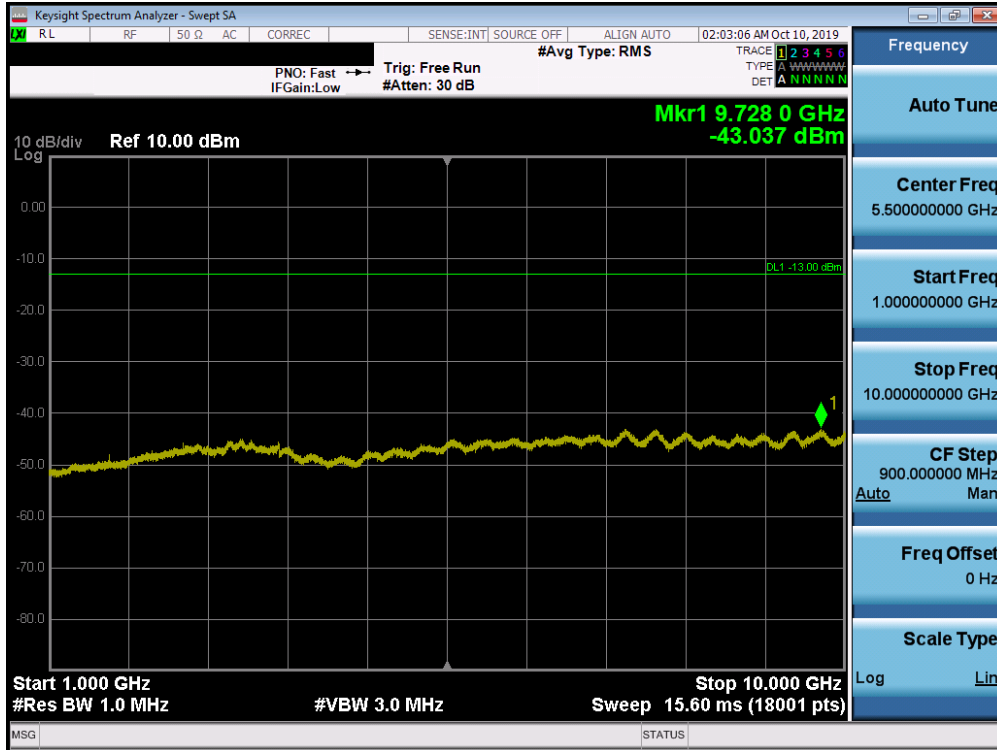


Plot 7-422. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – PCC 1/0 SCC 1/49 – High Channel)

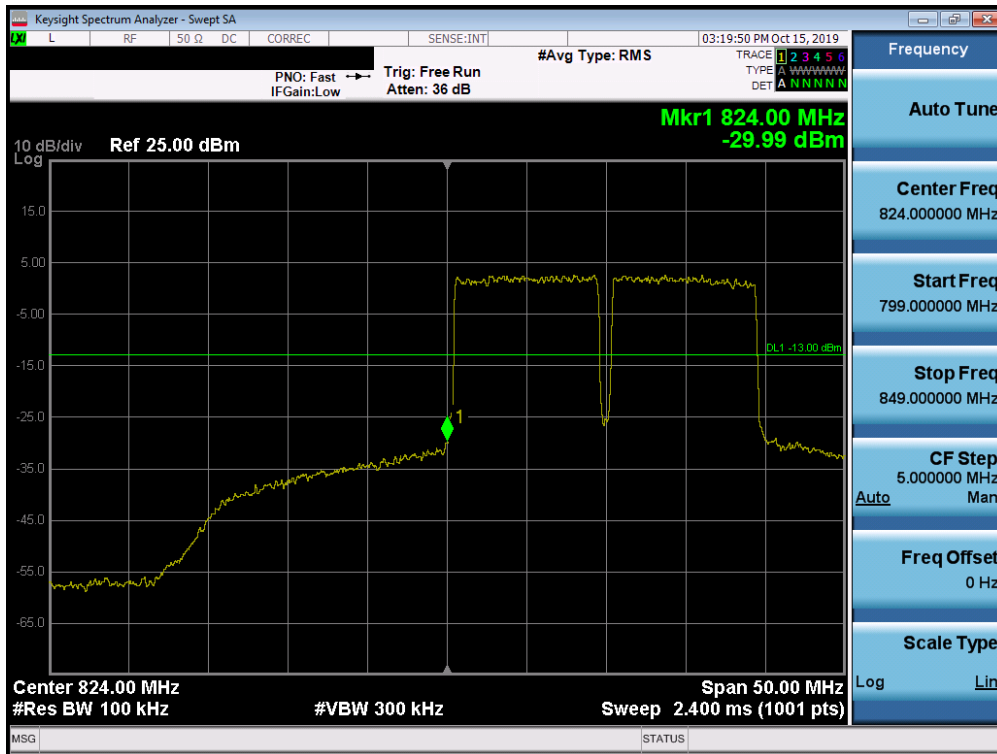


Plot 7-423. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – PCC 1/0 SCC 1/49 – High Channel)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 242 of 348

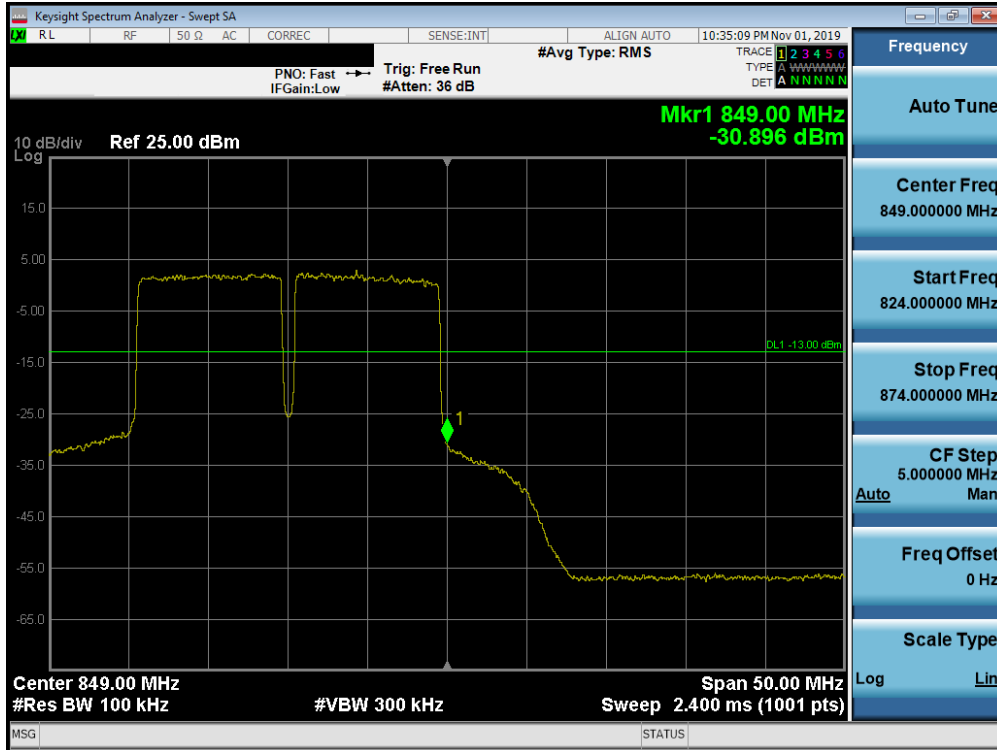


Plot 7-424. Conducted Spurious Plot (Band 5 – 10.0MHz QPSK – PCC 1/0 SCC 1/49 – High Channel)



Plot 7-425. Lower Band Edge Plot (Band 5 QPSK – PCC:10 MHz SCC:10 MHz – Full RB)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 243 of 348



Plot 7-426. Upper Band Edge Plot (Band 5 QPSK – PCC:10 MHz SCC:10 MHz – Full RB)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 244 of 348

## 7.7 Radiated Power (ERP/EIRP)

### Test Overview

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

### Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

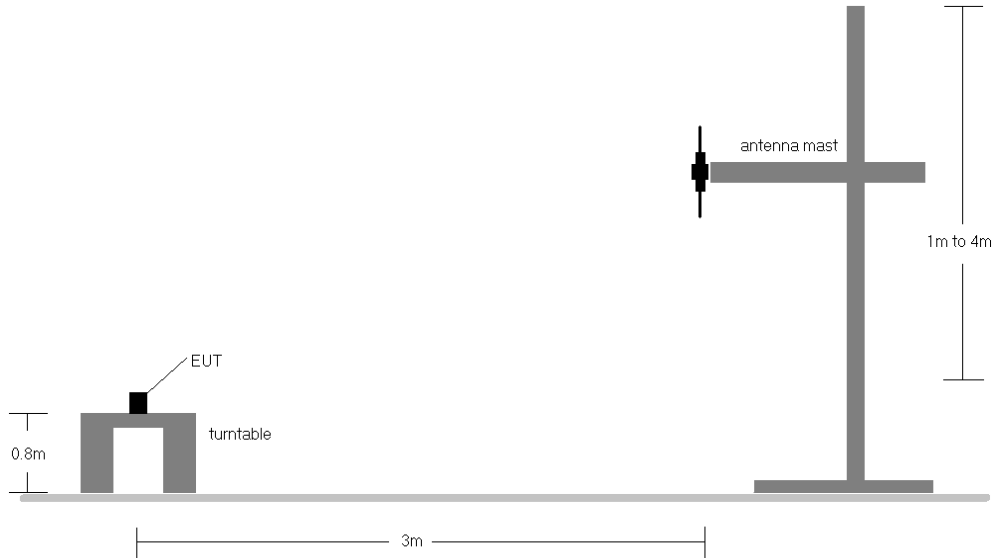
### Test Settings

1. Radiated power measurements are performed using the signal analyzer’s “channel power” measurement capability for signals with continuous operation. 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 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points  $\geq$  2 x 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

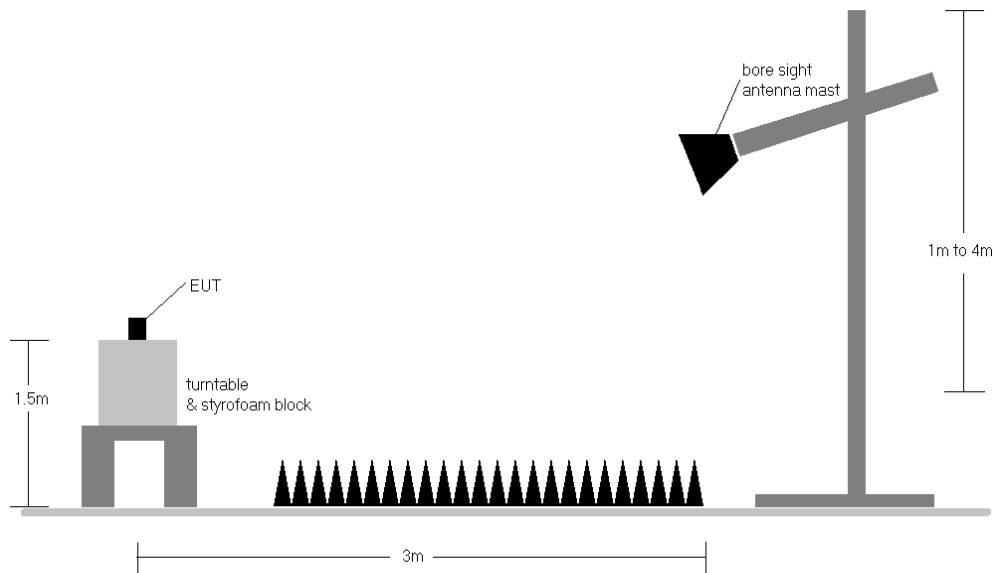
FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 245 of 348

**Test Setup**

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



**Figure 7-6. Radiated Test Setup <1GHz**



**Figure 7-7. Radiated Test Setup >1GHz**

**Test Notes**

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 246 of 348

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	182	311	1 / 24	14.53	3.75	<b>18.28</b>	<b>0.067</b>	34.77	-16.49
680.50	5	QPSK	H	176	324	1 / 24	13.93	4.20	18.13	0.065	34.77	-16.64
695.50	5	QPSK	H	190	277	1 / 24	13.28	4.50	17.78	0.060	34.77	-16.99
665.50	5	16-QAM	H	182	311	1 / 24	13.84	3.75	<b>17.59</b>	0.057	34.77	-17.18
665.50	5	64-QAM	H	182	311	1 / 24	12.29	3.75	<b>16.04</b>	0.040	34.77	-18.73
665.50	5	256-QAM	H	182	311	1 / 24	9.91	3.75	<b>13.66</b>	0.023	34.77	-21.11
668.00	10	QPSK	H	181	277	1 / 49	14.30	3.80	<b>18.10</b>	0.065	34.77	-16.67
680.50	10	QPSK	H	159	280	1 / 49	13.69	4.20	17.89	0.062	34.77	-16.88
693.00	10	QPSK	H	174	259	1 / 49	13.39	4.40	17.79	0.060	34.77	-16.98
668.00	10	16-QAM	H	181	277	1 / 49	12.98	3.80	<b>16.78</b>	0.048	34.77	-17.99
668.00	10	64-QAM	H	181	277	1 / 49	12.33	3.80	<b>16.13</b>	0.041	34.77	-18.64
668.00	10	256-QAM	H	181	277	1 / 49	9.95	3.80	<b>13.75</b>	<b>0.024</b>	34.77	-21.02
670.50	15	QPSK	H	174	282	1 / 74	13.54	3.90	17.44	0.055	34.77	-17.33
680.50	15	QPSK	H	156	265	1 / 74	13.80	4.20	<b>18.00</b>	0.063	34.77	-16.77
690.50	15	QPSK	H	190	271	1 / 74	12.80	4.40	17.20	0.052	34.77	-17.57
680.50	15	16-QAM	H	156	265	1 / 74	13.03	4.20	<b>17.23</b>	0.053	34.77	-17.54
680.50	15	64-QAM	H	156	265	1 / 74	11.92	4.20	<b>16.12</b>	0.041	34.77	-18.65
680.50	15	256-QAM	H	156	265	1 / 74	9.54	4.20	<b>13.74</b>	<b>0.024</b>	34.77	-21.03
673.00	20	QPSK	H	182	291	1 / 99	15.59	4.00	17.44	0.055	34.77	-17.33
680.50	20	QPSK	H	188	284	1 / 99	15.72	4.20	<b>17.77</b>	0.060	34.77	-17.00
688.00	20	QPSK	H	187	287	1 / 99	14.72	4.40	16.97	0.050	34.77	-17.80
680.50	20	16-QAM	H	188	284	1 / 99	14.67	4.20	<b>16.72</b>	0.047	34.77	-18.05
680.50	20	64-QAM	H	188	284	1 / 99	13.19	4.20	<b>15.24</b>	0.033	34.77	-19.53
680.50	20	256-QAM	H	135	289	1 / 99	8.66	4.20	<b>10.71</b>	<b>0.012</b>	34.77	-24.06
680.50	5	QPSK	V	106	266	1 / 24	14.06	4.20	16.11	0.041	34.77	-18.66
680.50	5 (WCP)	QPSK	V	182	49	1 / 24	9.73	3.75	11.33	0.014	34.77	-23.44

**Table 7-5. ERP Data (Band 71)**

FCC ID: A3LSMN976U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 247 of 348	

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	H	116	301	1 / 0	14.71	3.40	15.96	0.039	34.77	-18.81	18.11	0.065	36.99	-18.88
707.50	1.4	QPSK	H	136	279	1 / 5	14.56	3.65	<b>16.06</b>	<b>0.040</b>	34.77	-18.71	<b>18.21</b>	0.066	36.99	-18.78
715.30	1.4	QPSK	H	154	216	1 / 0	14.32	3.70	15.87	0.039	34.77	-18.90	18.02	0.063	36.99	-18.97
707.50	1.4	16-QAM	H	136	279	1 / 5	13.69	3.65	<b>15.19</b>	<b>0.033</b>	34.77	-19.58	<b>17.34</b>	0.054	36.99	-19.65
707.50	1.4	64-QAM	H	136	279	1 / 5	12.54	3.65	<b>14.04</b>	0.025	34.77	-20.73	<b>16.19</b>	0.042	36.99	-20.80
707.50	1.4	256-QAM	H	136	279	1 / 5	9.65	3.65	<b>11.15</b>	<b>0.013</b>	34.77	-23.62	<b>13.30</b>	<b>0.021</b>	36.99	-23.69
700.50	3	QPSK	H	130	248	1 / 0	14.83	3.40	16.08	0.041	34.77	-18.69	18.23	0.067	36.99	-18.76
707.50	3	QPSK	H	138	277	1 / 0	14.66	3.65	<b>16.16</b>	<b>0.041</b>	34.77	-18.61	<b>18.31</b>	0.068	36.99	-18.68
714.50	3	QPSK	H	132	251	1 / 0	14.57	3.70	16.12	0.041	34.77	-18.65	18.27	0.067	36.99	-18.72
707.50	3	16-QAM	H	138	277	1 / 0	13.94	3.65	<b>15.44</b>	<b>0.035</b>	34.77	-19.33	<b>17.59</b>	0.057	36.99	-19.40
707.50	3	64-QAM	H	138	277	1 / 0	10.20	3.65	<b>13.85</b>	0.024	34.77	-20.92	<b>16.00</b>	0.040	36.99	-20.99
707.50	3	256-QAM	H	138	277	1 / 0	9.46	3.65	<b>10.96</b>	<b>0.012</b>	34.77	-23.81	<b>13.11</b>	<b>0.020</b>	36.99	-23.88
701.50	5	QPSK	H	140	274	1 / 0	14.91	3.40	16.16	0.041	34.77	-18.61	18.31	0.068	36.99	-18.68
707.50	5	QPSK	H	138	277	1 / 24	14.95	3.65	<b>16.45</b>	<b>0.044</b>	34.77	-18.32	<b>18.60</b>	<b>0.072</b>	36.99	-18.39
713.50	5	QPSK	H	151	281	1 / 0	14.62	3.70	16.17	0.041	34.77	-18.60	18.32	0.068	36.99	-18.67
707.50	5	16-QAM	H	138	277	1 / 49	13.80	3.65	<b>15.30</b>	<b>0.034</b>	34.77	-19.47	<b>17.45</b>	0.056	36.99	-19.54
707.50	5	64-QAM	H	138	277	1 / 49	12.80	3.65	<b>14.30</b>	0.027	34.77	-20.47	<b>16.45</b>	0.044	36.99	-20.54
707.50	5	256-QAM	H	138	277	1 / 49	9.91	3.65	<b>11.41</b>	<b>0.014</b>	34.77	-23.36	<b>13.56</b>	<b>0.023</b>	36.99	-23.43
704.00	10	QPSK	H	190	270	1 / 0	13.98	3.50	15.33	0.034	34.77	-19.44	17.48	0.056	36.99	-19.51
707.50	10	QPSK	H	175	284	1 / 49	14.77	3.65	<b>16.27</b>	<b>0.042</b>	34.77	-18.50	<b>18.42</b>	<b>0.070</b>	36.99	-18.57
711.00	10	QPSK	H	177	283	1 / 0	14.25	3.70	15.80	0.038	34.77	-18.97	17.95	0.062	36.99	-19.04
707.50	10	16-QAM	H	175	284	1 / 49	14.04	3.65	<b>15.54</b>	0.036	34.77	-19.23	<b>17.69</b>	0.059	36.99	-19.30
707.50	10	64-QAM	H	175	284	1 / 49	12.35	3.65	<b>13.85</b>	0.024	34.77	-20.92	<b>16.00</b>	0.040	36.99	-20.99
707.50	10	256-QAM	H	175	284	1 / 49	7.46	3.65	<b>8.96</b>	<b>0.008</b>	34.77	-25.81	<b>11.11</b>	<b>0.013</b>	36.99	-25.88
707.50	5	QPSK	V	176	324	1 / 24	14.36	3.65	15.86	0.039	34.77	-18.91	18.01	0.063	36.99	-18.98
707.50	5 (WCP)	QPSK	H	152	351	1 / 24	9.62	3.65	11.12	0.013	34.77	-23.65	13.27	0.021	36.99	-23.72

**Table 7-6. ERP Data (Band 12)**

FCC ID: A3LSMN976U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset	Page 248 of 348	

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	V	154	120	1 / 24	14.62	5.70	18.17	0.066	34.77	-16.60	20.32	0.108	36.99	-16.67
782.00	5	QPSK	V	160	87	1 / 0	15.04	5.80	<b>18.74</b>	<b>0.075</b>	34.77	-16.03	<b>20.89</b>	<b>0.123</b>	36.99	-16.10
784.50	5	QPSK	V	190	136	1 / 24	14.35	5.80	18.00	0.063	34.77	-16.77	20.15	0.104	36.99	-16.84
782.00	5	16-QAM	V	160	87	1 / 0	14.37	5.80	<b>18.02</b>	<b>0.063</b>	34.77	-16.75	<b>20.17</b>	0.104	36.99	-16.82
782.00	5	64-QAM	V	160	87	1 / 0	13.32	5.80	<b>16.97</b>	<b>0.050</b>	34.77	-17.80	<b>19.12</b>	0.082	36.99	-17.87
782.00	5	256-QAM	V	160	87	1 / 24	7.01	5.80	<b>10.66</b>	<b>0.012</b>	34.77	-24.11	<b>12.81</b>	<b>0.019</b>	36.99	-24.18
782.00	10	QPSK	V	163	108	1 / 0	14.99	5.80	<b>18.64</b>	<b>0.073</b>	34.77	-16.13	<b>20.79</b>	0.120	36.99	-16.20
782.00	10	16-QAM	V	163	108	1 / 49	12.24	5.80	<b>15.89</b>	0.039	34.77	-18.88	<b>18.04</b>	0.064	36.99	-18.95
782.00	10	64-QAM	V	163	108	1 / 49	11.29	5.80	<b>14.94</b>	0.031	34.77	-19.83	<b>17.09</b>	0.051	36.99	-19.90
782.00	10	256-QAM	V	163	108	1 / 49	6.39	5.80	<b>10.04</b>	<b>0.010</b>	34.77	-24.73	<b>12.19</b>	<b>0.017</b>	36.99	-24.80
782.00	5	QPSK	H	163	108	1 / 0	13.06	5.80	16.71	0.047	34.77	-18.06	18.86	0.077	36.99	-18.13
782.00	5 (WCP)	QPSK	V	134	271	1 / 0	8.25	5.80	11.90	0.015	34.77	-22.87	14.05	0.025	36.99	-22.94

Table 7-7. ERP 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	V	121	245	1 / 0	13.13	6.30	<b>17.28</b>	0.053	38.45	-21.17	<b>19.43</b>	0.088	40.61	-21.18
836.50	1.4	QPSK	V	129	263	1 / 0	12.94	6.40	17.19	0.052	38.45	-21.26	19.34	0.086	40.61	-21.27
848.30	1.4	QPSK	V	136	243	1 / 0	12.82	6.50	17.17	0.052	38.45	-21.28	19.32	0.086	40.61	-21.29
824.70	1.4	16-QAM	V	121	245	1 / 0	12.17	6.30	<b>16.32</b>	0.043	38.45	-22.13	<b>18.47</b>	0.070	40.61	-22.14
824.70	1.4	64-QAM	V	121	245	1 / 0	11.08	6.30	<b>15.23</b>	0.033	38.45	-23.22	<b>17.38</b>	0.055	40.61	-23.23
824.70	1.4	256-QAM	V	121	245	1 / 0	8.14	6.30	<b>12.29</b>	<b>0.017</b>	38.45	-26.16	<b>14.44</b>	<b>0.028</b>	40.61	-26.17
825.50	3	QPSK	V	114	238	1 / 0	13.06	6.30	17.21	0.053	38.45	-21.24	19.36	0.086	40.61	-21.25
836.50	3	QPSK	V	130	258	1 / 0	12.99	6.40	17.24	0.053	38.45	-21.21	19.39	0.087	40.61	-21.22
847.50	3	QPSK	V	128	245	1 / 0	12.91	6.50	<b>17.26</b>	0.053	38.45	-21.19	<b>19.41</b>	0.087	40.61	-21.20
847.50	3	16-QAM	V	128	245	1 / 0	11.79	6.50	<b>16.14</b>	0.041	38.45	-22.31	<b>18.29</b>	0.067	40.61	-22.32
847.50	3	64-QAM	V	128	245	1 / 0	10.68	6.50	<b>15.03</b>	0.032	38.45	-23.42	<b>17.18</b>	0.052	40.61	-23.43
847.50	3	256-QAM	V	128	245	1 / 0	7.92	6.50	<b>12.27</b>	<b>0.017</b>	38.45	-26.18	<b>14.42</b>	<b>0.028</b>	40.61	-26.19
826.50	5	QPSK	V	111	241	1 / 0	12.86	6.30	17.01	0.050	38.45	-21.44	19.16	0.082	40.61	-21.45
836.50	5	QPSK	V	109	253	1 / 0	12.79	6.40	17.04	0.051	38.45	-21.41	19.19	0.083	40.61	-21.42
846.50	5	QPSK	V	119	235	1 / 0	12.71	6.50	<b>17.06</b>	0.051	38.45	-21.39	<b>19.21</b>	0.083	40.61	-21.40
846.50	5	16-QAM	V	119	235	1 / 0	11.59	6.50	<b>15.94</b>	0.039	38.45	-22.51	<b>18.09</b>	0.064	40.61	-22.52
846.50	5	64-QAM	V	119	235	1 / 0	10.13	6.50	<b>14.48</b>	0.028	38.45	-23.97	<b>16.63</b>	0.046	40.61	-23.98
846.50	5	256-QAM	V	119	235	1 / 0	7.72	6.50	<b>12.07</b>	<b>0.016</b>	38.45	-26.38	<b>14.22</b>	<b>0.026</b>	40.61	-26.39
829.00	10	QPSK	V	106	233	1 / 0	13.09	6.30	<b>17.24</b>	0.053	38.45	-21.21	<b>19.39</b>	0.087	40.61	-21.22
836.50	10	QPSK	V	110	237	1 / 0	12.74	6.40	16.99	0.050	38.45	-21.46	19.14	0.082	40.61	-21.47
844.00	10	QPSK	V	107	245	1 / 0	12.82	6.40	17.07	0.051	38.45	-21.38	19.22	0.084	40.61	-21.39
829.00	10	16-QAM	V	106	233	1 / 0	12.36	6.30	<b>16.51</b>	0.045	38.45	-21.94	<b>18.66</b>	0.073	40.61	-21.95
829.00	10	64-QAM	V	106	233	1 / 0	10.68	6.30	<b>14.83</b>	0.030	38.45	-23.62	<b>16.98</b>	0.050	40.61	-23.63
829.00	10	256-QAM	V	106	233	1 / 0	8.10	6.30	<b>12.25</b>	<b>0.017</b>	38.45	-26.20	<b>14.40</b>	<b>0.028</b>	40.61	-26.21

Table 7-8. ERP Data (Band 26/5)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset	Page 249 of 348	

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]
831.50	15	QPSK	V	160	104	1 / 0	13.55	6.70	<b>18.16</b>	<b>0.065</b>	38.45	-20.29	<b>20.31</b>	<b>0.107</b>	40.61	-20.30
836.50	15	QPSK	V	211	114	1 / 0	12.33	6.70	16.88	0.049	38.45	-21.57	19.03	0.080	40.61	-21.58
841.50	15	QPSK	V	220	117	1 / 0	11.62	6.60	16.07	0.040	38.45	-22.38	18.22	0.066	40.61	-22.39
831.50	15	16-QAM	V	160	104	1 / 0	13.30	6.70	<b>17.85</b>	0.061	38.45	-20.60	<b>20.00</b>	0.100	40.61	-20.61
831.50	15	64-QAM	V	160	104	1 / 0	11.74	6.35	<b>15.94</b>	0.039	38.45	-22.51	<b>18.09</b>	0.064	40.61	-22.52
831.50	15	256-QAM	V	160	104	1 / 0	6.15	6.35	<b>10.35</b>	<b>0.011</b>	38.45	-28.10	<b>12.50</b>	<b>0.018</b>	40.61	-28.11
15.00	15	QPSK	H	250	241	1 / 0	12.06	6.40	16.31	0.043	38.45	-22.14	18.46	0.070	40.61	-22.15
831.50	15 (WCP)	QPSK	V	185	300	1 / 0	8.69	6.40	12.94	0.020	38.45	-25.51	15.09	0.032	40.61	-25.52

**Table 7-9. ERP Data (Band 26)**

FCC ID: A3LSMN976U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 250 of 348	

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	153	197	1 / 5	13.94	9.35	<b>23.29</b>	0.213	30.00	-6.71
1745.00	1.4	QPSK	H	148	213	1 / 5	14.12	9.11	23.23	0.210	30.00	-6.77
1779.30	1.4	QPSK	H	169	201	1 / 5	13.77	9.17	22.94	0.197	30.00	-7.06
1710.70	1.4	16-QAM	H	153	197	1 / 5	12.86	9.35	<b>22.21</b>	0.166	30.00	-7.79
1710.70	1.4	64-QAM	H	153	197	1 / 5	11.53	9.35	<b>20.88</b>	0.122	30.00	-9.12
1745.00	1.4	256-QAM	H	148	213	1 / 5	8.49	9.11	<b>17.60</b>	<b>0.058</b>	30.00	-12.40
1711.50	3	QPSK	H	143	146	1 / 14	13.79	9.34	23.13	0.206	30.00	-6.87
1745.00	3	QPSK	H	149	176	1 / 14	14.23	9.11	<b>23.34</b>	0.216	30.00	-6.66
1778.50	3	QPSK	H	131	186	1 / 14	13.65	9.17	22.82	0.191	30.00	-7.18
1745.00	3	16-QAM	H	149	176	1 / 14	13.06	9.11	<b>22.17</b>	0.165	30.00	-7.83
1745.00	3	64-QAM	H	149	176	1 / 14	11.87	9.11	<b>20.98</b>	0.125	30.00	-9.02
1745.00	3	256-QAM	H	149	176	1 / 14	9.74	9.11	<b>18.85</b>	<b>0.077</b>	30.00	-11.15
1712.50	5	QPSK	H	126	189	1 / 24	13.65	9.34	22.99	0.199	30.00	-7.01
1745.00	5	QPSK	H	156	167	1 / 24	14.19	9.11	<b>23.30</b>	0.214	30.00	-6.70
1777.50	5	QPSK	H	138	190	1 / 24	13.46	9.16	22.62	0.183	30.00	-7.38
1745.00	5	16-QAM	H	156	167	1 / 24	13.48	9.11	<b>22.59</b>	0.182	30.00	-7.41
1745.00	5	64-QAM	H	156	167	1 / 24	12.57	9.11	<b>21.68</b>	0.147	30.00	-8.32
1745.00	5	256-QAM	H	156	167	1 / 24	9.72	9.11	<b>18.83</b>	<b>0.076</b>	30.00	-11.17
1715.00	10	QPSK	H	119	173	1 / 49	13.46	9.32	22.78	0.190	30.00	-7.22
1745.00	10	QPSK	H	153	147	1 / 49	14.20	9.11	<b>23.31</b>	0.214	30.00	-6.69
1775.00	10	QPSK	H	141	149	1 / 49	13.81	9.16	22.97	0.198	30.00	-7.03
1745.00	10	16-QAM	H	153	147	1 / 49	12.90	9.11	<b>22.01</b>	0.159	30.00	-7.99
1745.00	10	64-QAM	H	153	147	1 / 49	11.83	9.11	<b>20.94</b>	0.124	30.00	-9.06
1745.00	10	256-QAM	H	153	147	1 / 49	8.94	9.11	<b>18.05</b>	<b>0.064</b>	30.00	-11.95
1717.50	15	QPSK	H	123	167	1 / 74	13.43	9.30	22.73	0.187	30.00	-7.27
1745.00	15	QPSK	H	140	154	1 / 74	14.29	9.11	<b>23.40</b>	<b>0.219</b>	30.00	-6.60
1772.50	15	QPSK	H	136	169	1 / 74	13.96	9.15	23.11	0.205	30.00	-6.89
1745.00	15	16-QAM	H	140	154	1 / 74	12.99	9.11	<b>22.10</b>	0.162	30.00	-7.90
1745.00	15	64-QAM	H	140	154	1 / 74	11.92	9.11	<b>21.03</b>	0.127	30.00	-8.97
1745.00	15	256-QAM	H	140	154	1 / 74	9.74	9.11	<b>18.85</b>	<b>0.077</b>	30.00	-11.15
1720.00	20	QPSK	H	117	170	1 / 99	13.55	9.28	<b>22.83</b>	0.192	30.00	-7.17
1745.00	20	QPSK	H	123	172	1 / 99	13.18	9.23	22.41	0.174	30.00	-7.59
1770.00	20	QPSK	H	117	170	1 / 99	13.08	9.14	22.22	0.167	30.00	-7.78
1745.00	20	16-QAM	H	123	172	1 / 99	12.48	9.11	<b>21.59</b>	0.144	30.00	-8.41
1745.00	20	64-QAM	H	123	172	1 / 99	10.78	9.11	<b>19.89</b>	0.097	30.00	-10.11
1745.00	20	256-QAM	H	123	172	1 / 99	7.57	9.11	<b>16.68</b>	<b>0.047</b>	30.00	-13.32
1745.00	15	QPSK	V	127	339	1 / 74	13.47	9.11	22.58	0.181	30.00	-7.42
1745.00	15 (WCP)	QPSK	H	174	165	1 / 74	10.56	9.11	19.67	0.093	30.00	-10.33

**Table 7-10. EIRP Data (Band 66/4)**

FCC ID: A3LSMN976U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset	Page 251 of 348	

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	162	42	1 / 5	14.17	9.88	24.05	0.254	33.01	-8.96
1882.50	1.4	QPSK	H	159	34	1 / 5	13.86	10.12	23.98	0.250	33.01	-9.03
1914.30	1.4	QPSK	H	106	36	1 / 0	13.90	10.34	<b>24.24</b>	0.265	33.01	-8.77
1914.30	1.4	16-QAM	H	106	36	1 / 0	12.67	10.34	<b>23.01</b>	0.200	33.01	-10.00
1914.30	1.4	64-QAM	H	106	36	1 / 0	11.76	10.34	<b>22.10</b>	0.162	33.01	-10.91
1914.30	1.4	256-QAM	H	106	36	1 / 0	11.76	10.34	<b>19.15</b>	<b>0.082</b>	33.01	-13.86
1851.50	3	QPSK	H	146	39	1 / 14	14.31	9.88	<b>24.19</b>	0.262	33.01	-8.82
1882.50	3	QPSK	H	156	26	1 / 14	13.83	10.12	23.95	0.248	33.01	-9.06
1913.50	3	QPSK	H	104	2	1 / 0	13.80	10.33	24.13	0.259	33.01	-8.88
1851.50	3	16-QAM	H	146	39	1 / 14	13.43	9.88	<b>23.31</b>	0.214	33.01	-9.70
1851.50	3	64-QAM	H	146	39	1 / 14	12.20	9.88	<b>22.08</b>	0.161	33.01	-10.93
1851.50	3	256-QAM	H	146	39	1 / 14	9.44	9.88	<b>19.32</b>	<b>0.086</b>	33.01	-13.69
1852.50	5	QPSK	H	136	23	1 / 24	14.44	9.89	<b>24.33</b>	0.271	33.01	-8.68
1882.50	5	QPSK	H	142	14	1 / 24	13.98	10.12	24.10	0.257	33.01	-8.91
1912.50	5	QPSK	H	136	350	1 / 0	13.68	10.33	24.01	0.252	33.01	-9.00
1852.50	5	16-QAM	H	136	23	1 / 24	13.63	9.89	<b>23.52</b>	0.225	33.01	-9.49
1852.50	5	64-QAM	H	136	23	1 / 24	11.94	9.89	<b>21.83</b>	0.152	33.01	-11.18
1852.50	5	256-QAM	H	136	23	1 / 24	9.24	9.89	<b>19.13</b>	<b>0.082</b>	33.01	-13.88
1855.00	10	QPSK	H	140	12	1 / 49	14.29	9.91	24.20	0.263	33.01	-8.81
1882.50	10	QPSK	H	156	9	1 / 49	13.67	10.12	23.79	0.239	33.01	-9.22
1910.00	10	QPSK	H	123	251	1 / 0	13.97	10.31	<b>24.28</b>	0.268	33.01	-8.73
1910.00	10	16-QAM	H	123	251	1 / 0	13.12	10.31	<b>23.43</b>	0.220	33.01	-9.58
1910.00	10	64-QAM	H	123	251	1 / 0	11.85	10.31	<b>22.16</b>	0.164	33.01	-10.85
1910.00	10	256-QAM	H	123	251	1 / 0	9.12	10.31	<b>19.43</b>	<b>0.088</b>	33.01	-13.58
1857.50	15	QPSK	H	131	8	1 / 74	14.21	9.93	24.14	0.259	33.01	-8.87
1882.50	15	QPSK	H	147	33	1 / 74	14.26	10.12	<b>24.38</b>	<b>0.274</b>	33.01	-8.63
1907.50	15	QPSK	H	110	258	1 / 0	13.94	10.30	24.24	0.265	33.01	-8.77
1882.50	15	16-QAM	H	147	33	1 / 74	13.45	10.12	<b>23.57</b>	0.228	33.01	-9.44
1882.50	15	64-QAM	H	147	33	1 / 74	12.81	10.12	<b>22.93</b>	0.196	33.01	-10.08
1882.50	15	256-QAM	H	147	33	1 / 74	9.53	10.12	<b>19.65</b>	<b>0.092</b>	33.01	-13.36
1860.00	20	QPSK	H	120	359	1 / 99	14.19	9.95	<b>24.14</b>	0.259	33.01	-8.87
1882.50	20	QPSK	H	150	1	1 / 99	13.85	10.12	23.97	0.250	33.01	-9.04
1905.00	20	QPSK	H	107	360	1 / 0	12.61	10.28	22.89	0.195	33.01	-10.12
1860.00	20	16-QAM	H	120	359	1 / 99	13.68	9.95	<b>23.63</b>	0.231	33.01	-9.38
1882.50	20	64-QAM	H	150	1	1 / 99	12.47	10.12	<b>22.59</b>	0.182	33.01	-10.42
1860.00	20	256-QAM	H	120	359	1 / 99	9.92	9.95	<b>19.87</b>	<b>0.097</b>	33.01	-13.14
1882.50	15	QPSK	V	107	335	1 / 74	12.70	10.12	22.82	0.192	33.01	-10.19
1882.50	15 (WCP)	QPSK	H	113	209	1 / 74	11.00	10.12	21.12	0.130	33.01	-11.89

**Table 7-11. EIRP Data (Band 25/2)**

FCC ID: A3LSMN976U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 252 of 348	

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]
2307.50	5	QPSK	H	174	211	1 / 0	12.08	10.31	<b>22.39</b>	0.173	23.98	-1.59
2312.50	5	QPSK	H	189	212	1 / 0	11.99	10.31	22.30	0.170	23.98	-1.68
2307.50	5	16-QAM	H	174	211	1 / 0	11.42	10.31	21.73	0.149	23.98	-2.25
2307.50	5	64-QAM	H	174	211	1 / 0	9.83	10.31	<b>20.14</b>	0.103	23.98	-3.84
2307.50	5	64-QAM	H	174	211	1 / 0	7.27	10.31	<b>17.58</b>	<b>0.057</b>	23.98	-6.40
2310.00	10	QPSK	H	181	204	1 / 0	12.11	10.31	<b>22.42</b>	<b>0.175</b>	23.98	-1.56
2310.00	10	16-QAM	H	181	204	1 / 0	11.62	10.31	21.93	0.156	23.98	-2.05
2310.00	10	64-QAM	H	181	204	1 / 0	10.90	10.31	21.21	0.132	23.98	-2.77
2310.00	10	256-QAM	H	181	204	1 / 0	10.64	10.31	<b>20.95</b>	<b>0.124</b>	23.98	-3.03
2310.00	10	QPSK	V	150	320	1 / 0	11.82	10.31	22.13	0.163	23.98	-1.85
2310.00	10 (WCP)	QPSK	H	156	176	1 / 0	8.61	10.31	18.92	0.078	23.98	-5.06

**Table 7-12. EIRP Data (Band 30)**

FCC ID: A3LSMN976U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 253 of 348	

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	V	140	276	1 / 24	11.44	9.40	<b>20.84</b>	0.121	33.01	-12.17
2535.00	5	QPSK	V	162	312	1 / 0	11.31	9.38	20.69	0.117	33.01	-12.32
2567.50	5	QPSK	V	128	12	1 / 0	10.83	9.45	20.28	0.107	33.01	-12.73
2502.50	5	16-QAM	V	140	276	1 / 24	10.65	9.40	<b>20.05</b>	0.101	33.01	-12.96
2502.50	5	64-QAM	V	140	276	1 / 24	9.83	9.40	<b>19.23</b>	0.084	33.01	-13.78
2502.50	5	256-QAM	V	140	276	1 / 24	6.67	9.40	<b>16.07</b>	<b>0.040</b>	33.01	-16.94
2505.00	10	QPSK	V	136	269	1 / 49	11.29	9.39	<b>20.68</b>	0.117	33.01	-12.33
2535.00	10	QPSK	V	146	306	1 / 0	11.21	9.38	20.59	0.115	33.01	-12.42
2565.00	10	QPSK	V	161	0	1 / 0	11.22	9.44	20.66	0.116	33.01	-12.35
2505.00	10	16-QAM	V	136	269	1 / 49	10.71	9.39	<b>20.10</b>	0.102	33.01	-12.91
2505.00	10	64-QAM	V	136	269	1 / 49	9.33	9.39	<b>18.72</b>	0.074	33.01	-14.29
2505.00	10	256-QAM	V	136	269	1 / 49	6.17	9.39	<b>15.56</b>	<b>0.036</b>	33.01	-17.45
2507.50	15	QPSK	V	121	270	1 / 74	11.89	9.39	<b>21.28</b>	<b>0.134</b>	33.01	-11.73
2535.00	15	QPSK	V	136	301	1 / 0	11.49	9.38	20.87	0.122	33.01	-12.14
2562.50	15	QPSK	V	159	286	1 / 0	11.25	9.43	20.68	0.117	33.01	-12.33
2507.50	15	16-QAM	V	121	270	1 / 74	10.91	9.39	<b>20.30</b>	0.107	33.01	-12.71
2507.50	15	64-QAM	V	121	270	1 / 74	9.85	9.39	<b>19.24</b>	0.084	33.01	-13.77
2507.50	15	256-QAM	V	121	270	1 / 74	6.69	9.39	<b>16.08</b>	<b>0.041</b>	33.01	-16.93
2510.00	20	QPSK	V	115	278	1 / 99	11.58	9.39	<b>20.97</b>	0.125	33.01	-12.04
2535.00	20	QPSK	V	122	322	1 / 0	11.08	9.38	20.46	0.111	33.01	-12.55
2560.00	20	QPSK	V	127	306	1 / 0	10.99	9.42	20.41	0.110	33.01	-12.60
2510.00	20	16-QAM	V	115	278	1 / 99	11.10	9.39	<b>20.49</b>	0.112	33.01	-12.52
2510.00	20	64-QAM	V	115	278	1 / 99	10.19	9.39	<b>19.58</b>	0.091	33.01	-13.43
2510.00	20	256-QAM	V	115	278	1 / 99	8.00	9.39	<b>17.39</b>	<b>0.055</b>	33.01	-15.62
2507.50	15	QPSK	H	106	223	1 / 74	10.06	9.39	19.45	0.088	33.01	-13.56
2507.50	10 (WCP)	QPSK	V	146	323	1 / 74	9.97	9.39	19.36	0.086	33.01	-13.65

**Table 7-13. EIRP Data (Band 7)**

FCC ID: A3LSMN976U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset	Page 254 of 348	

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	121	291	1 / 24	16.07	9.40	25.47	0.352	33.01	-7.54
2593.00	5	QPSK	V	140	276	1 / 24	16.41	9.56	<b>25.97</b>	0.395	33.01	-7.04
2687.50	5	QPSK	V	114	277	1 / 24	16.12	9.69	25.81	0.381	33.01	-7.20
2593.00	5	16-QAM	V	140	276	1 / 24	15.57	9.56	<b>25.13</b>	0.326	33.01	-7.88
2593.00	5	64-QAM	V	140	276	1 / 24	14.38	9.56	<b>23.94</b>	0.248	33.01	-9.07
2593.00	5	256-QAM	V	140	276	1 / 24	11.47	9.56	<b>21.03</b>	<b>0.127</b>	33.01	-11.98
2501.00	10	QPSK	V	104	291	1 / 49	16.07	9.40	25.47	0.352	33.01	-7.54
2593.00	10	QPSK	V	140	276	1 / 49	16.41	9.56	<b>25.97</b>	0.395	33.01	-7.04
2685.00	10	QPSK	V	114	277	1 / 49	16.13	9.68	25.81	0.381	33.01	-7.20
2593.00	10	16-QAM	V	140	276	1 / 49	15.57	9.56	<b>25.13</b>	0.326	33.01	-7.88
2593.00	10	64-QAM	V	140	276	1 / 49	14.38	9.56	<b>23.94</b>	0.248	33.01	-9.07
2593.00	10	256-QAM	V	140	276	1 / 49	11.47	9.56	<b>21.03</b>	<b>0.127</b>	33.01	-11.98
2503.50	15	QPSK	V	112	284	1 / 74	16.51	9.39	25.90	0.389	33.01	-7.11
2593.00	15	QPSK	V	138	251	1 / 74	16.41	9.56	25.97	0.395	33.01	-7.04
2682.50	15	QPSK	V	117	261	1 / 74	16.32	9.68	<b>26.00</b>	0.398	33.01	-7.01
2682.50	15	16-QAM	V	117	261	1 / 74	15.48	9.68	<b>25.16</b>	0.328	33.01	-7.85
2682.50	15	64-QAM	V	117	261	1 / 74	14.29	9.68	<b>23.97</b>	0.249	33.01	-9.04
2682.50	15	256-QAM	V	117	261	1 / 74	11.38	9.68	<b>21.06</b>	<b>0.128</b>	33.01	-11.95
2506.00	20	QPSK	V	115	282	1 / 99	14.83	9.39	24.22	0.264	33.01	-8.79
2510.00	20	QPSK	V	101	271	1 / 99	14.60	9.39	23.99	0.251	33.01	-9.02
2593.00	20	QPSK	V	102	281	1 / 99	16.26	9.56	25.82	0.382	33.01	-7.19
2680.00	20	QPSK	V	100	277	1 / 99	16.35	9.68	<b>26.03</b>	<b>0.401</b>	33.01	-6.98
2680.00	20	16-QAM	V	100	277	1 / 99	13.05	9.68	22.73	0.188	33.01	-10.28
2680.00	20	64-QAM	V	100	277	1 / 99	12.02	9.68	<b>21.70</b>	0.148	33.01	-11.31
2680.00	20	256-QAM	V	100	277	1 / 99	3.63	9.68	<b>13.31</b>	<b>0.021</b>	33.01	-19.70
2680.00	20	QPSK	H	112	322	1 / 99	12.06	9.68	21.74	0.149	33.01	-11.27
2680.00	20 (WCP)	QPSK	V	136	270	1 / 99	13.00	9.68	22.68	0.185	33.01	-10.33

**Table 7-14. EIRP Data (Band 41 – PC2)**

FCC ID: A3LSMN976U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset	Page 255 of 348	

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	117	282	1 / 24	14.01	9.40	23.41	0.219	33.01	-9.60
2593.00	5	QPSK	V	111	280	1 / 24	13.60	9.56	23.16	0.207	33.01	-9.85
2687.50	5	QPSK	V	117	276	1 / 24	13.75	9.69	<b>23.44</b>	0.221	33.01	-9.57
2687.50	5	16-QAM	V	117	276	1 / 24	13.08	9.69	<b>22.77</b>	0.189	33.01	-10.24
2687.50	5	64-QAM	V	117	276	1 / 24	12.29	9.69	<b>21.98</b>	0.158	33.01	-11.03
2687.50	5	256-QAM	V	117	276	1 / 24	9.81	9.69	<b>19.50</b>	<b>0.089</b>	33.01	-13.51
2501.00	10	QPSK	V	117	282	1 / 49	13.97	9.40	<b>23.37</b>	0.217	33.01	-9.64
2593.00	10	QPSK	V	111	280	1 / 49	13.42	9.56	22.98	0.199	33.01	-10.03
2685.00	10	QPSK	V	117	276	1 / 49	13.65	9.68	23.33	0.215	33.01	-9.68
2501.00	10	16-QAM	V	117	282	1 / 49	13.29	9.40	<b>22.69</b>	0.186	33.01	-10.32
2501.00	10	64-QAM	V	117	282	1 / 49	12.27	9.40	<b>21.67</b>	0.147	33.01	-11.34
2501.00	10	256-QAM	V	117	282	1 / 49	9.23	9.40	<b>18.63</b>	<b>0.073</b>	33.01	-14.38
2503.50	15	QPSK	V	121	310	1 / 74	14.16	9.39	<b>23.55</b>	0.226	33.01	-9.46
2593.00	15	QPSK	V	116	271	1 / 74	13.64	9.56	23.20	0.209	33.01	-9.81
2682.50	15	QPSK	V	135	276	1 / 74	13.80	9.68	23.48	0.223	33.01	-9.53
2503.50	15	16-QAM	V	121	310	1 / 74	13.48	9.39	<b>22.87</b>	0.194	33.01	-10.14
2503.50	15	64-QAM	V	121	310	1 / 74	12.46	9.39	<b>21.85</b>	0.153	33.01	-11.16
2593.00	15	256-QAM	V	116	271	1 / 74	8.71	9.56	<b>18.27</b>	<b>0.067</b>	33.01	-14.74
2506.00	20	QPSK	V	118	278	1 / 99	13.85	9.39	23.24	0.211	33.01	-9.77
2593.00	20	QPSK	V	123	268	1 / 99	14.00	9.56	<b>23.56</b>	<b>0.227</b>	33.01	-9.45
2680.00	20	QPSK	V	164	245	1 / 99	13.35	9.68	23.03	0.201	33.01	-9.98
2593.00	20	16-QAM	V	123	268	1 / 99	13.10	9.56	<b>22.66</b>	0.184	33.01	-10.35
2593.00	20	64-QAM	V	123	268	1 / 99	11.97	9.56	<b>21.53</b>	0.142	33.01	-11.48
2593.00	20	256-QAM	V	123	268	1 / 99	7.01	9.56	<b>16.57</b>	<b>0.045</b>	33.01	-16.44
2593.00	20	QPSK	H	120	340	1 / 99	12.17	9.56	21.73	0.149	33.01	-11.28
2593.00	20 (WCP)	QPSK	V	115	307	1 / 99	11.31	9.56	20.87	0.122	33.01	-12.14

Table 7-15. EIRP Data (Band 41 – PC3)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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## 7.8 Radiated Spurious Emissions Measurements

### Test Overview

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

### Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

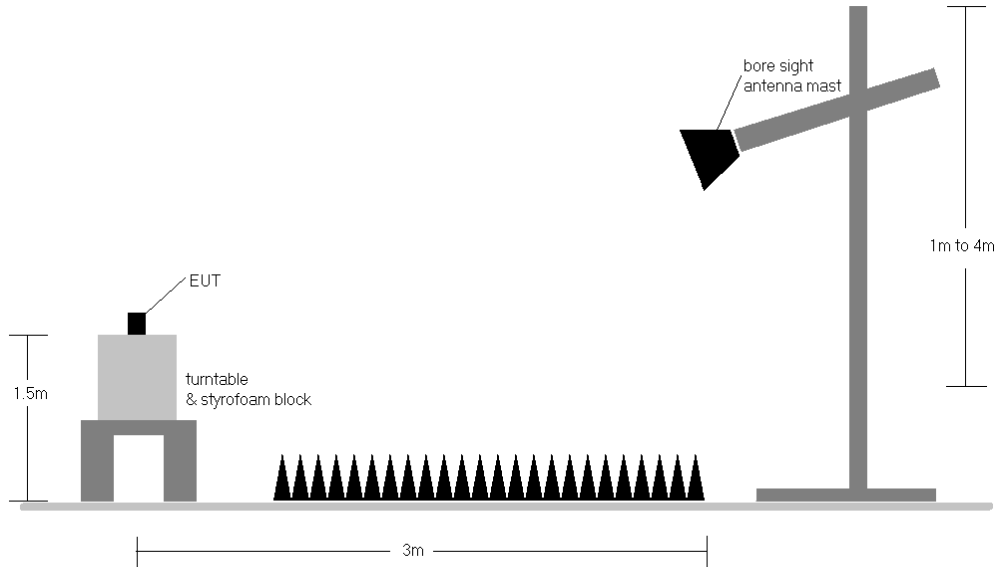
### Test Settings

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

<b>FCC ID:</b> A3LSMN976U		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Quality Manager
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**Test Setup**

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



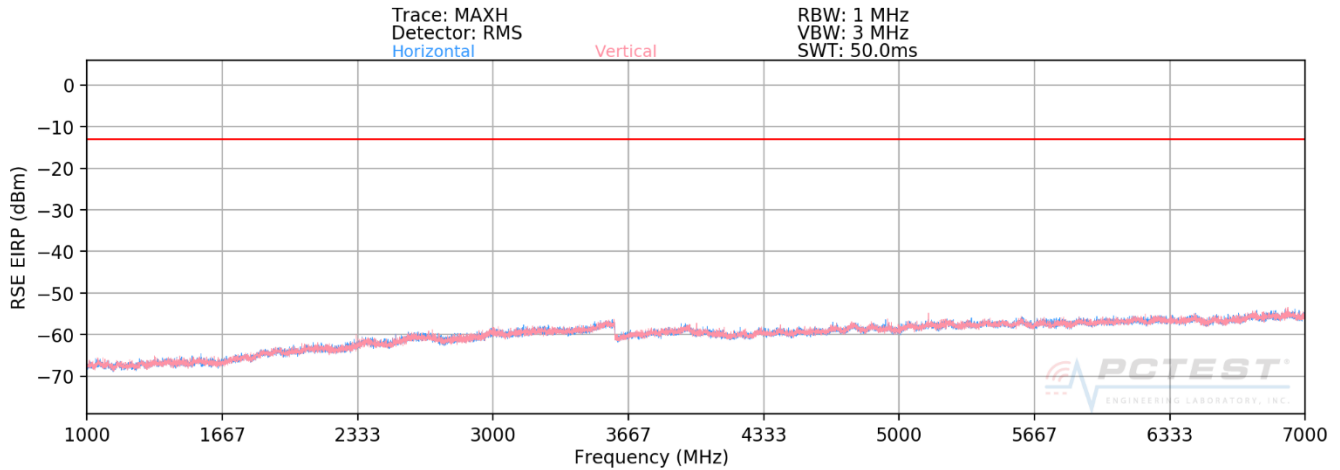
**Figure 7-8. Test Instrument & Measurement Setup**

**Test Notes**

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 4) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 5) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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# Band 71



**Plot 7-427. Radiated Spurious Plot above 1GHz (Band 71)**

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1346.00	V	350	143	-60.41	2.91	-57.50	-44.5
2019.00	V	-	-	-55.40	2.82	-52.58	-39.6
2692.00	V	-	-	-55.77	4.53	-51.24	-38.2
3365.00	V	-	-	-56.86	6.10	-50.76	-37.8
4038.00	V	-	-	-57.06	7.45	-49.61	-36.6
4711.00	V	-	-	-56.62	8.47	-48.15	-35.1

**Table 7-16. Radiated Spurious Data (Band 71 – Low Channel)**

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 259 of 348	

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1361.00	V	167	8	-60.77	2.88	-57.90	-44.9
2041.50	V	-	-	-56.24	2.73	-53.52	-40.5
2722.00	V	-	-	-57.12	4.63	-52.49	-39.5
3402.50	V	-	-	-58.10	6.26	-51.84	-38.8
4083.00	V	-	-	-60.27	7.55	-52.72	-39.7
4763.50	V	-	-	-59.91	8.46	-51.45	-38.5
5444.00	V	-	-	-59.57	9.14	-50.43	-37.4

Table 7-17. Radiated Spurious Data (Band 71 – Mid Channel)

OPERATING FREQUENCY: 688.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1376.00	V	106	184	-58.93	2.64	-56.29	-43.3
2064.00	V	-	-	-55.12	2.82	-52.30	-39.3
2752.00	V	-	-	-55.51	4.60	-50.91	-37.9
3440.00	V	-	-	-57.18	6.28	-50.90	-37.9
4128.00	V	-	-	-57.26	7.70	-49.56	-36.6
4816.00	V	-	-	-56.75	8.52	-48.24	-35.2
5504.00	V	-	-	-56.54	9.13	-47.41	-34.4

Table 7-18. Radiated Spurious Data (Band 71 – High Channel)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 260 of 348	

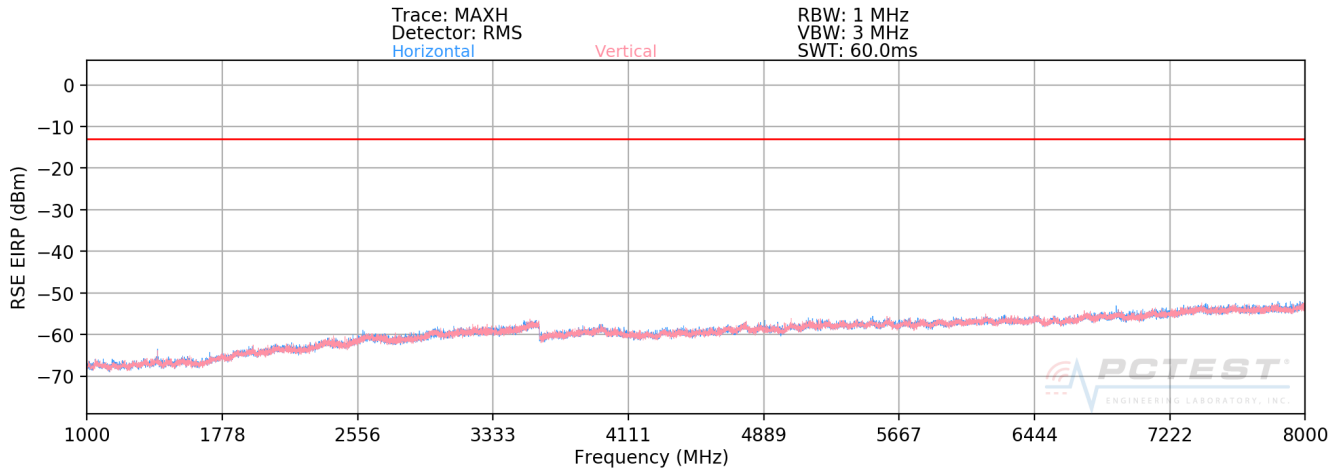
OPERATING FREQUENCY: 680.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1361.00	H	-	-	-74.15	7.48	-66.66	-53.7
2041.50	H	-	-	-72.26	8.76	-63.50	-50.5

**Table 7-19. Radiated Spurious Data with WCP (Band 71 – Mid Channel)**

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 261 of 348

## Band 12



**Plot 7-428. Radiated Spurious Plot above 1GHz (Band 12)**

OPERATING FREQUENCY: 704.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1408.00	H	314	165	-68.28	7.54	-60.74	-47.7
2112.00	H	113	276	-69.09	8.85	-60.24	-47.2
2816.00	H	-	-	-72.45	10.12	-62.33	-49.3
3520.00	H	-	-	-68.99	9.91	-59.08	-46.1

**Table 7-20. Radiated Spurious Data (Band 12 – Low Channel)**

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 262 of 348	

OPERATING FREQUENCY: 707.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1415.00	H	156	166	-67.31	7.63	-59.68	-46.7
2122.50	H	188	292	-69.45	8.86	-60.58	-47.6
2830.00	H	-	-	-72.99	10.10	-62.89	-49.9
3537.50	H	-	-	-68.43	9.90	-58.53	-45.5

Table 7-21. Radiated Spurious Data (Band 12 – Mid Channel)

OPERATING FREQUENCY: 711.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1422.00	H	158	157	-65.37	7.72	-57.65	-44.7
2133.00	H	119	122	-71.92	8.87	-63.05	-50.0
2844.00	H	-	-	-72.40	10.07	-62.33	-49.3
3555.00	H	-	-	-68.82	9.89	-58.92	-45.9

Table 7-22. Radiated Spurious Data (Band 12 – High Channel)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset			Page 263 of 348

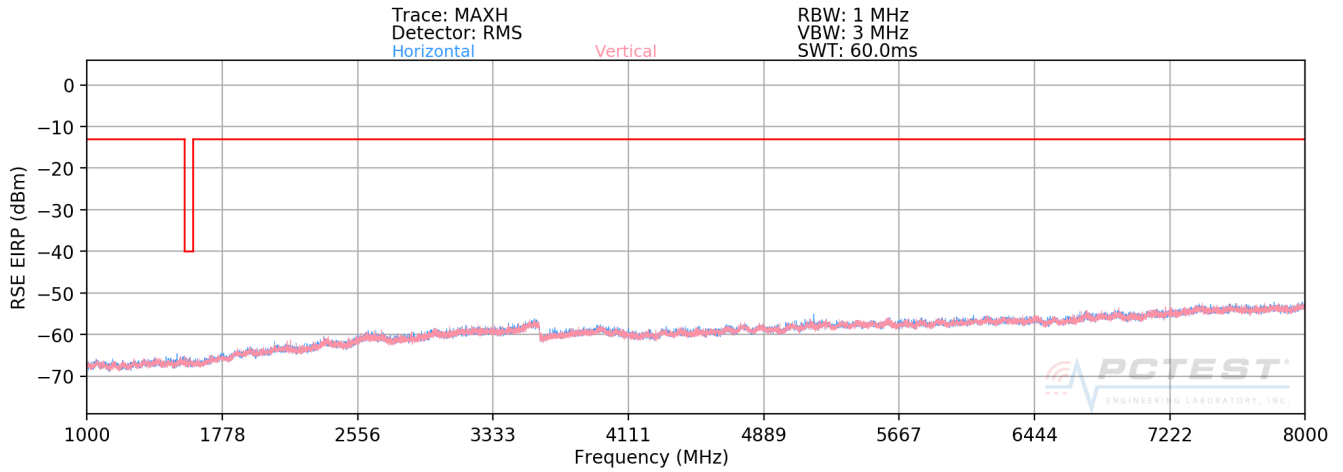
OPERATING FREQUENCY: 707.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1415.00	H	138	95	-67.26	2.80	-64.46	-51.5
2122.50	H	113	272	-66.87	3.57	-63.29	-50.3
2830.00	H	-	-	-67.02	5.02	-62.00	-49.0

Table 7-23. Radiated Spurious Data with WCP (Band 12 – Mid Channel)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 264 of 348

### Band 13



**Plot 7-429. Radiated Spurious Plot above 1GHz (Band 13)**

OPERATING FREQUENCY: 782.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2346.00	H	125	309	-63.60	9.43	-54.17	-41.2
3128.00	H	-	-	-69.55	9.34	-60.21	-47.2
3910.00	H	-	-	-71.46	9.37	-62.09	-49.1

**Table 7-24. Radiated Spurious Data (Band 13 – Mid Channel)**

FCC ID: A3LSMN976U			MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 265 of 348	

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	116	172	-72.94	8.53	-64.41	-24.4

**Table 7-25. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)**

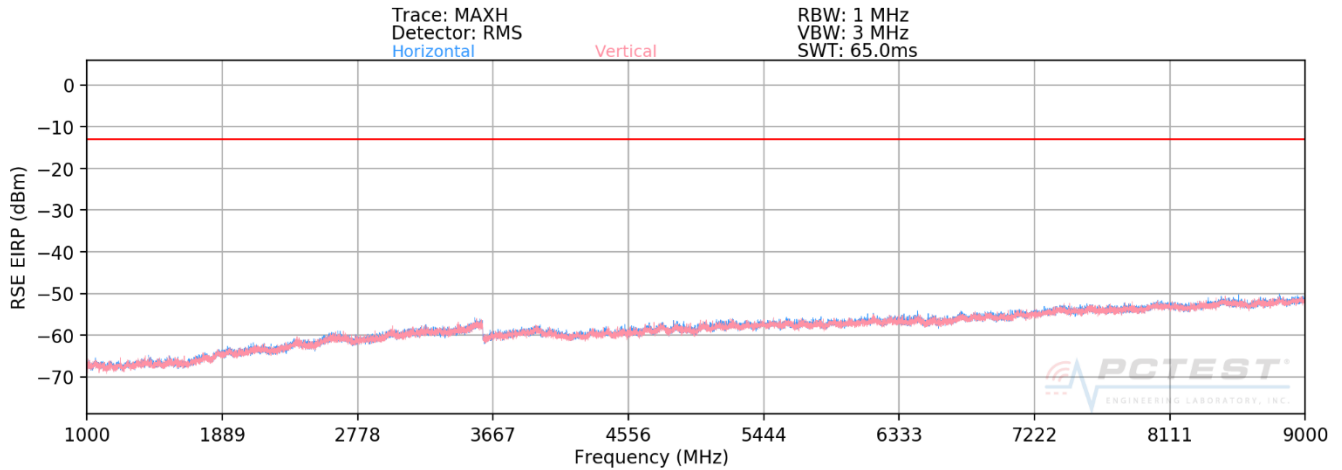
OPERATING FREQUENCY: 782.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2346.00	H	-	-	-66.99	4.00	-62.98	-50.0
3128.00	H	-	-	-67.02	5.38	-61.64	-48.6

**Table 7-26. Radiated Spurious Data with WCP (Band 13 –Mid Channel)**

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 266 of 348	

### Band 26/5



**Plot 7-430. Radiated Spurious Plot above 1GHz (Band 26/5)**

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1658.00	H	157	357	-70.64	8.95	-61.69	-48.7
2487.00	H	144	346	-68.49	9.73	-58.76	-45.8
3316.00	H	-	-	-69.65	9.59	-60.05	-47.1
4145.00	H	-	-	-72.23	10.25	-61.98	-49.0

**Table 7-27. Radiated Spurious Data (Band 26/5 – Low Channel)**

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 267 of 348	

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	H	149	370	-69.66	8.95	-60.71	-47.7
2509.50	H	238	287	-68.68	9.75	-58.93	-45.9
3346.00	H	-	-	-70.26	9.60	-60.66	-47.7
4182.50	H	-	-	-72.50	10.34	-62.16	-49.2

Table 7-28. Radiated Spurious Data (Band 26/5 – Mid Channel)

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1688.00	H	138	359	-68.66	8.95	-59.71	-46.7
2532.00	H	153	360	-64.34	9.75	-54.59	-41.6
3376.00	H	-	-	-70.11	9.67	-60.44	-47.4
4220.00	H	-	-	-72.29	10.44	-61.86	-48.9

Table 7-29. Radiated Spurious Data (Band 26/5 – High Channel)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 268 of 348	

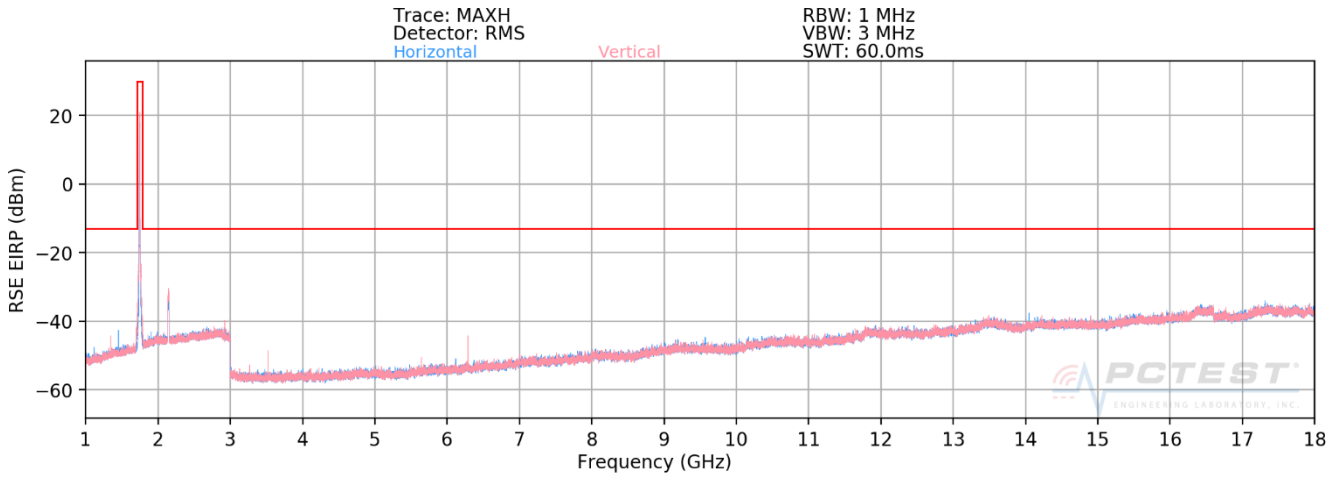
OPERATING FREQUENCY: 836.50 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 10.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	V	-	-	-79.99	8.95	-71.04	-58.0
2509.50	V	-	-	-78.35	9.75	-68.60	-55.6

Table 7-30. Radiated Spurious Data with WCP (Band 26/5 – Mid Channel)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 269 of 348

**Band 66/4**



**Plot 7-431. Radiated Spurious Plot above 1GHz (Band 66/4)**

OPERATING FREQUENCY: 1720.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3440.00	H	-	-	-69.07	9.84	-59.22	-46.2
5160.00	H	-	-	-71.42	10.71	-60.71	-47.7
6880.00	H	-	-	-69.70	11.68	-58.02	-45.0

**Table 7-31. Radiated Spurious Data (Band 66/4 – Low Channel)**

FCC ID: A3LSMN976U	 <b>MEASUREMENT REPORT (CERTIFICATION)</b> 		Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset	Page 270 of 348

OPERATING FREQUENCY: 1745.00 MHz  
 MODULATION SIGNAL: QPSK  
 BANDWIDTH: 20.0 MHz  
 DISTANCE: 3 meters  
 LIMIT: -13 dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	H	-	-	-68.92	9.91	-59.00	-46.0
5235.00	H	-	-	-70.54	10.73	-59.81	-46.8
6980.00	H	-	-	-70.94	11.82	-59.12	-46.1

Table 7-32. Radiated Spurious Data (Band 66/4 – Mid Channel)

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

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3540.00	H	-	-	-68.76	9.89	-58.87	-45.9
5310.00	H	-	-	-70.69	10.69	-60.01	-47.0
7080.00	H	-	-	-70.73	11.79	-58.95	-45.9

Table 7-33. Radiated Spurious Data (Band 66/4 – High Channel)

FCC ID: A3LSMN976U		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1909040147-03.A3L	Test Dates: 9/09 – 11/05/2019	EUT Type: Portable Handset		Page 271 of 348	