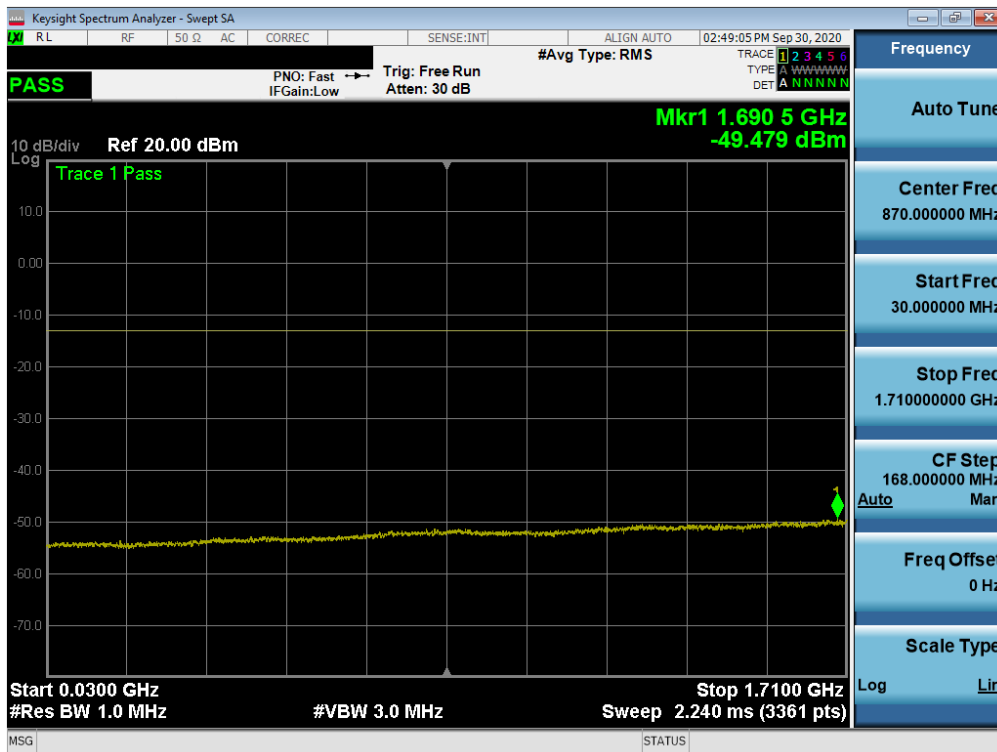


Plot 7-329. Conducted Spurious Plot (NR Band n66 - 20.0MHz - RB Size 1, RB Offset 0 - Low Channel)

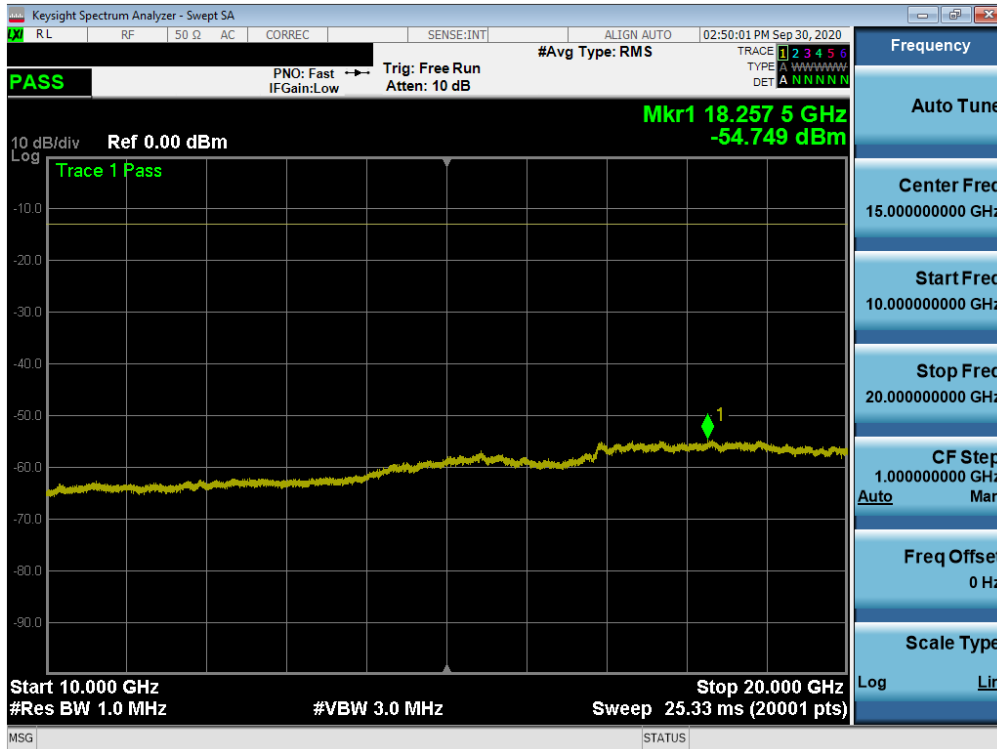


Plot 7-330. Conducted Spurious Plot (NR Band n66 - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 188 of 297

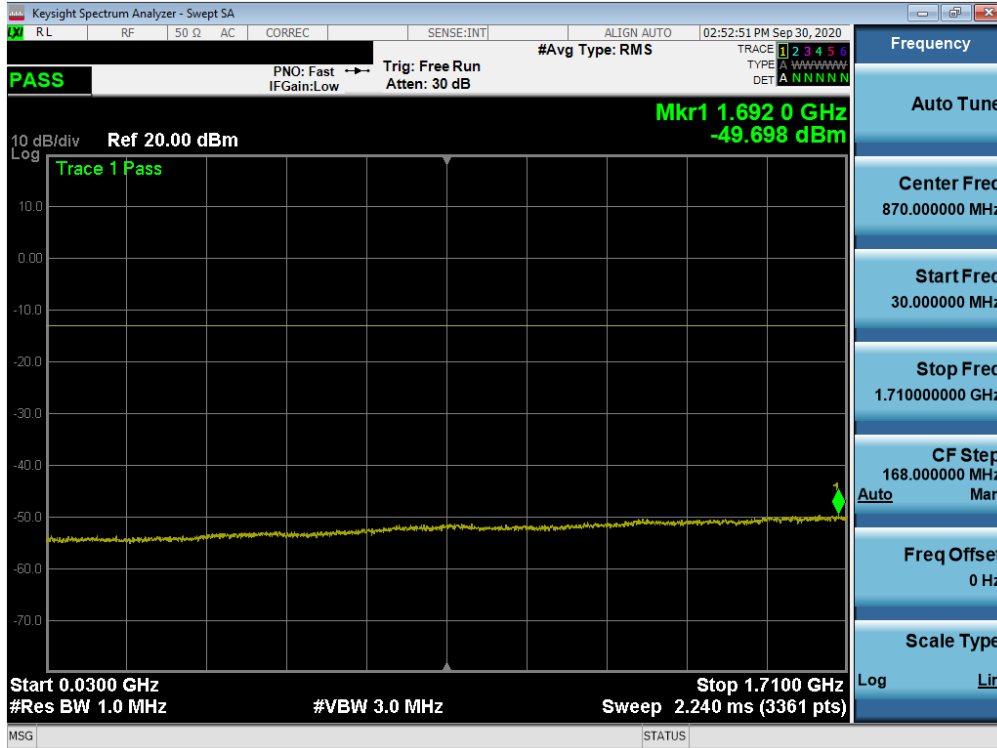


Plot 7-331. Conducted Spurious Plot (NR Band n66 - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

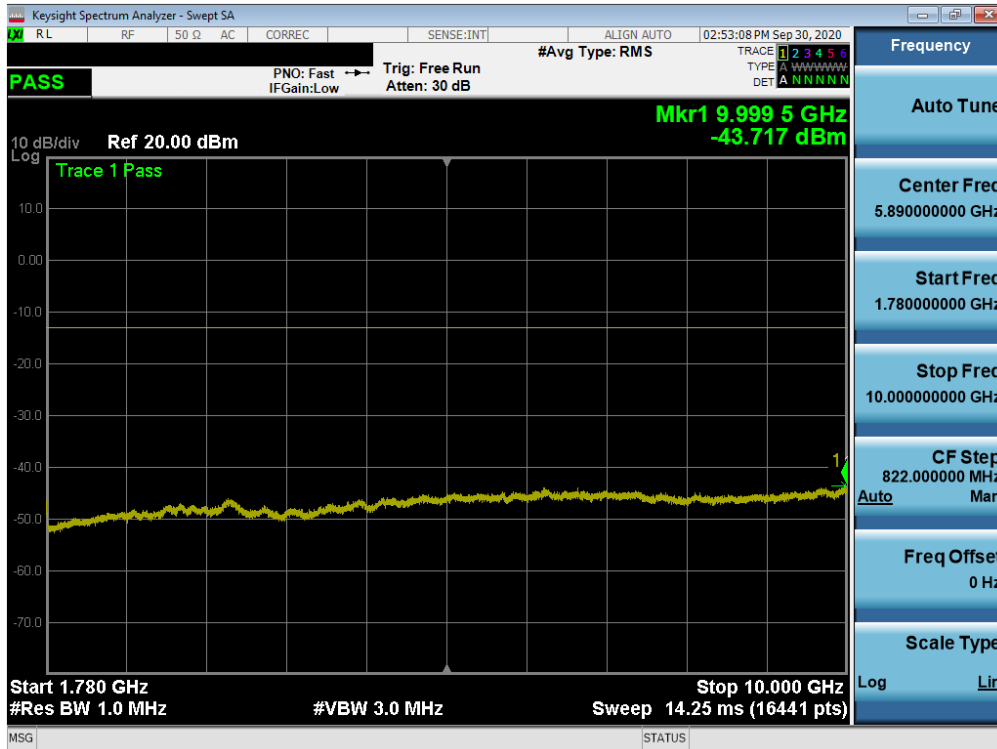


Plot 7-332. Conducted Spurious Plot (NR Band n66 - 20.0MHz - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 189 of 297

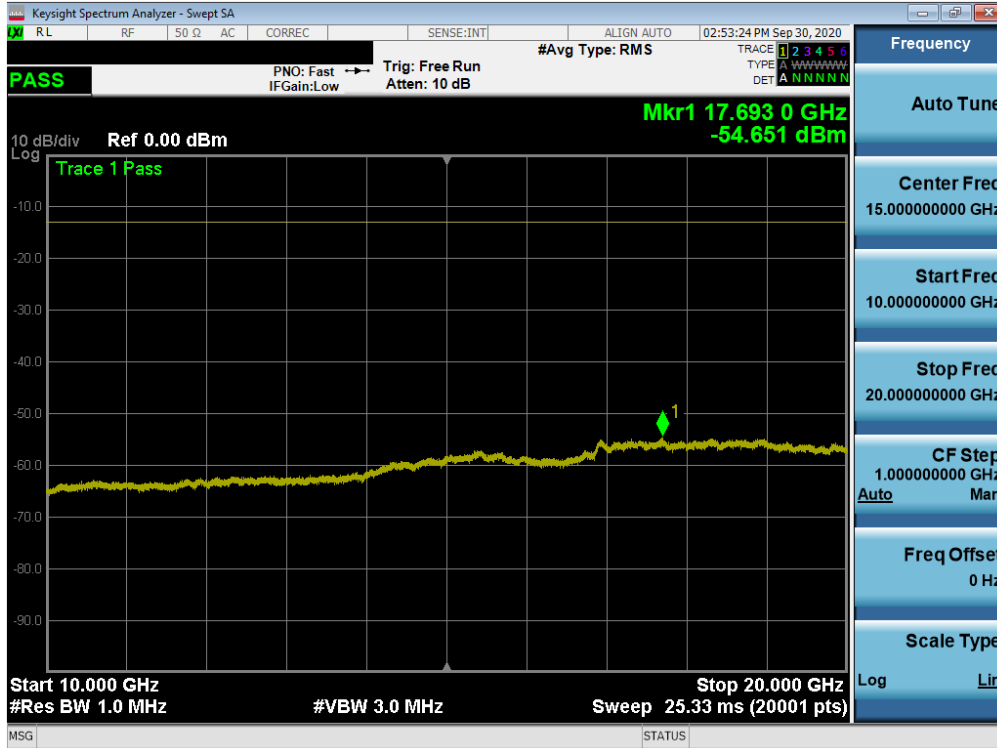


Plot 7-333. Conducted Spurious Plot (NR Band n66 - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)



Plot 7-334. Conducted Spurious Plot (NR Band n66 - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 190 of 297



Plot 7-335. Conducted Spurious Plot (NR Band n66 - 20.0MHz - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 191 of 297

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.

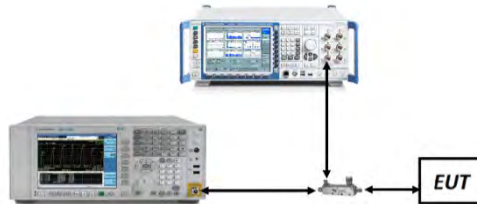


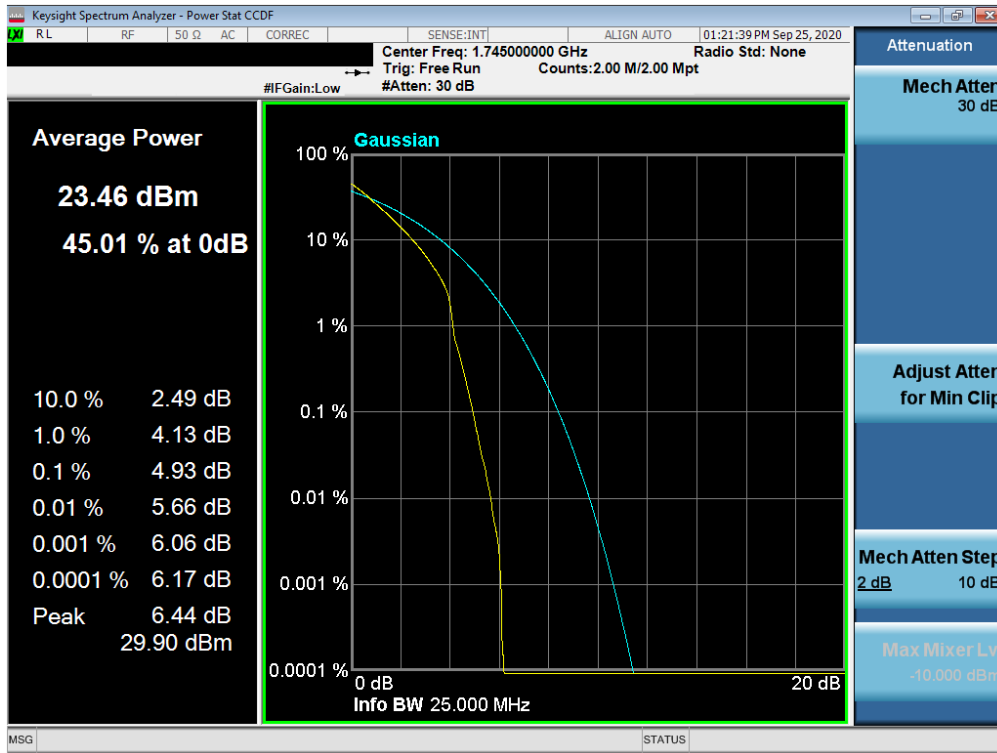
Figure 7-4. Test Instrument & Measurement Setup

Test Notes

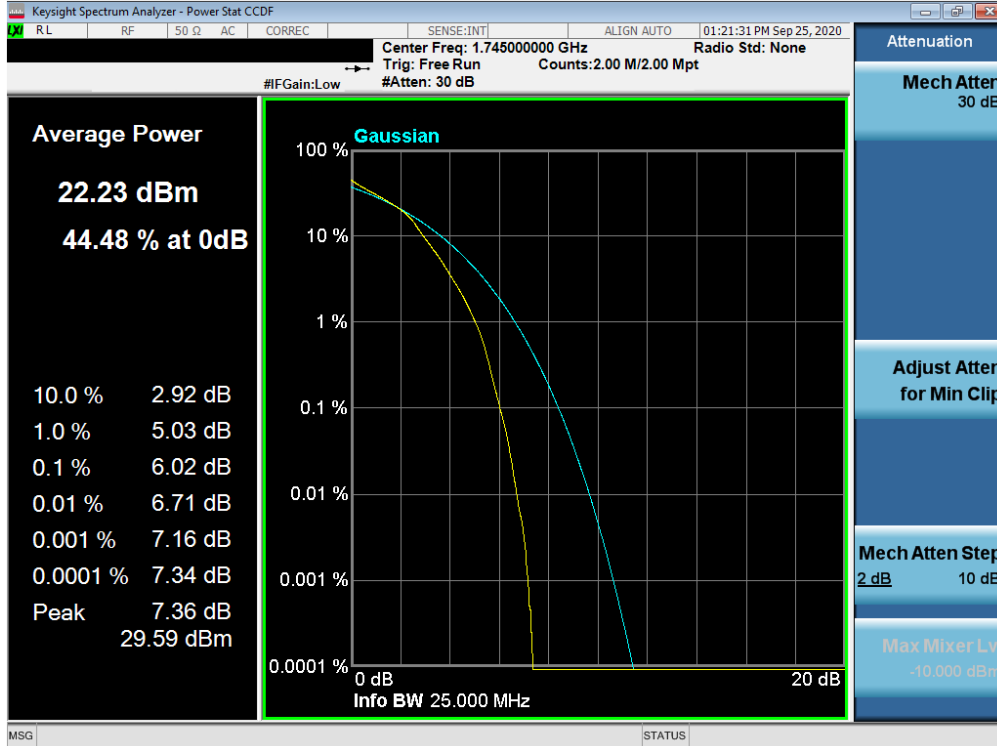
None.

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 – 12/10/2020	EUT Type: Portable Handset		Page 192 of 297

LTE Band 66/4

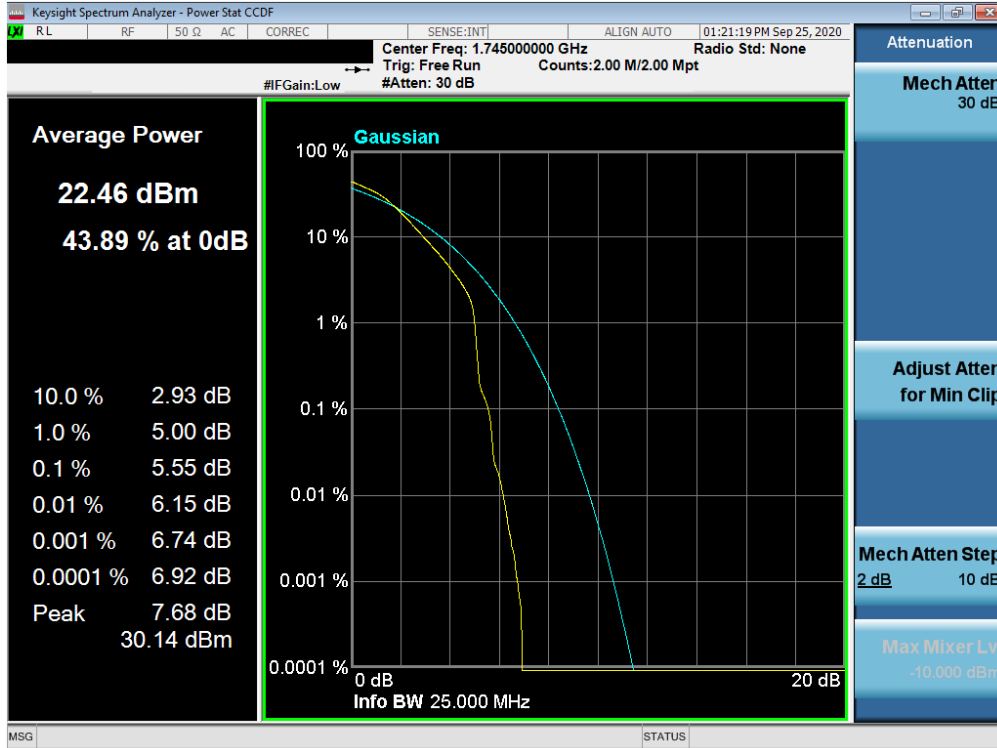


Plot 7-336. PAR Plot (LTE Band 66/4 - 20MHz QPSK - Full RB Configuration)

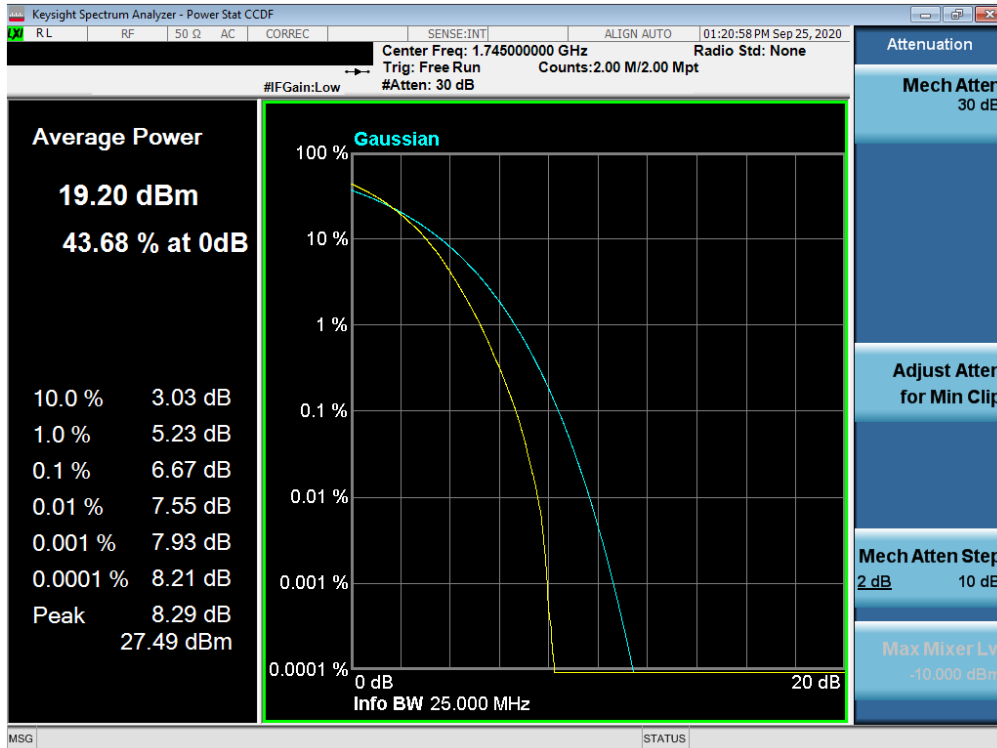


Plot 7-337. PAR Plot (LTE Band 66/4 - 20MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 193 of 297

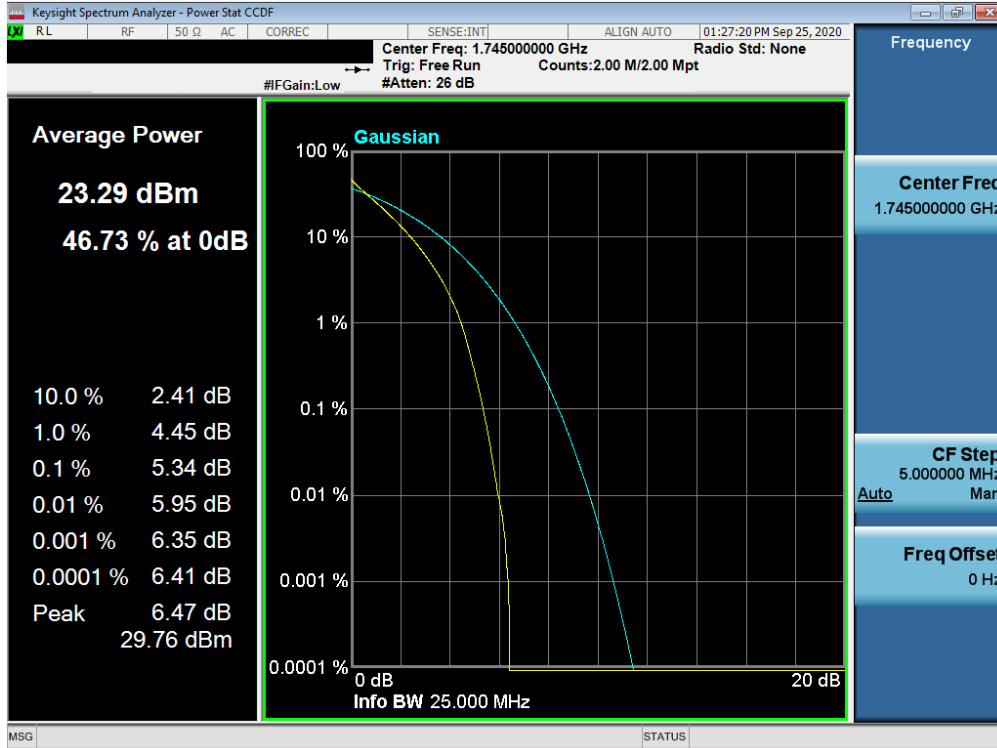


Plot 7-338. PAR Plot (LTE Band 66/4 - 20MHz 64-QAM - Full RB Configuration)

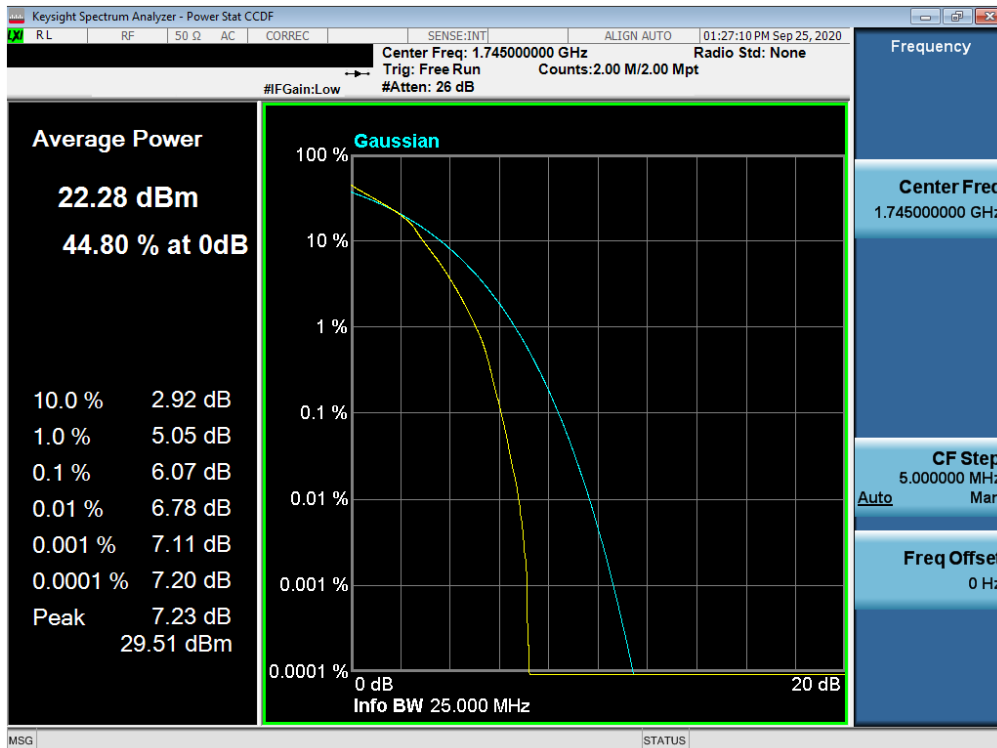


Plot 7-339. PAR Plot (LTE Band 66/4 - 20MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 194 of 297

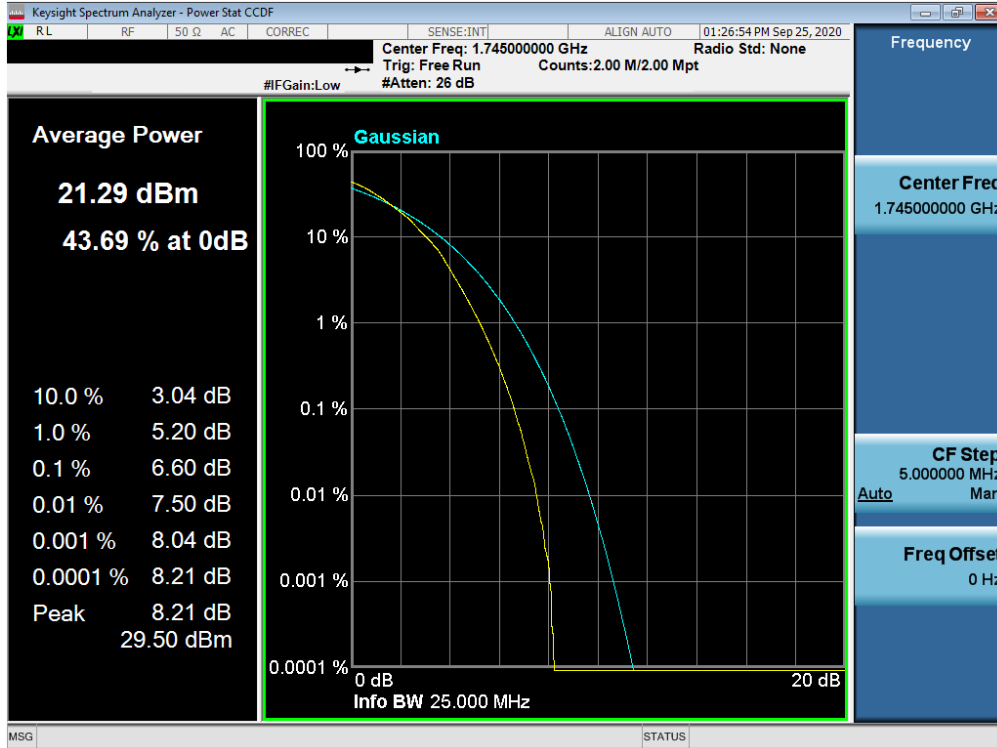


Plot 7-340. PAR Plot (LTE Band 66/4 - 15MHz QPSK - Full RB Configuration)

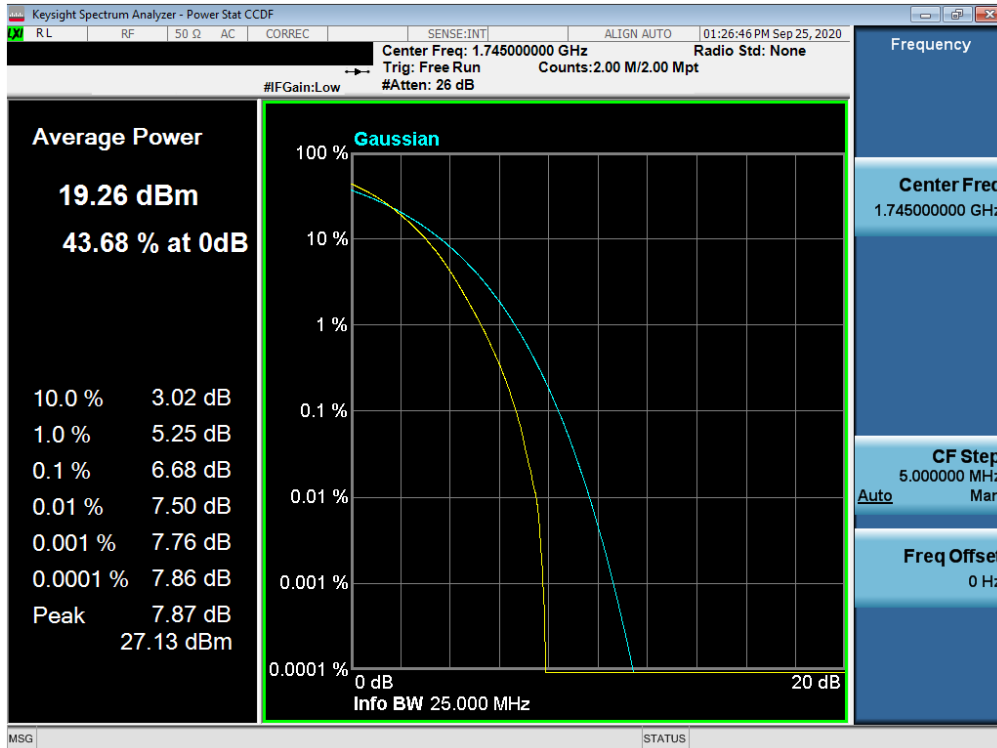


Plot 7-341. PAR Plot (LTE Band 66/4 - 15MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 195 of 297

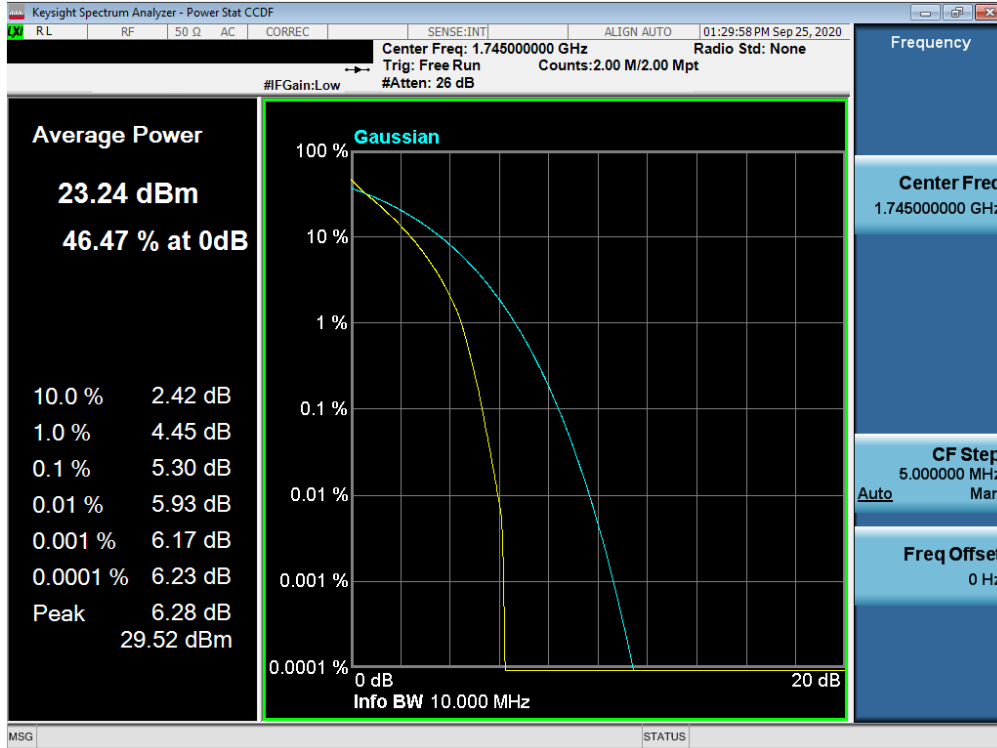


Plot 7-342. PAR Plot (LTE Band 66/4 - 15MHz 64-QAM - Full RB Configuration)

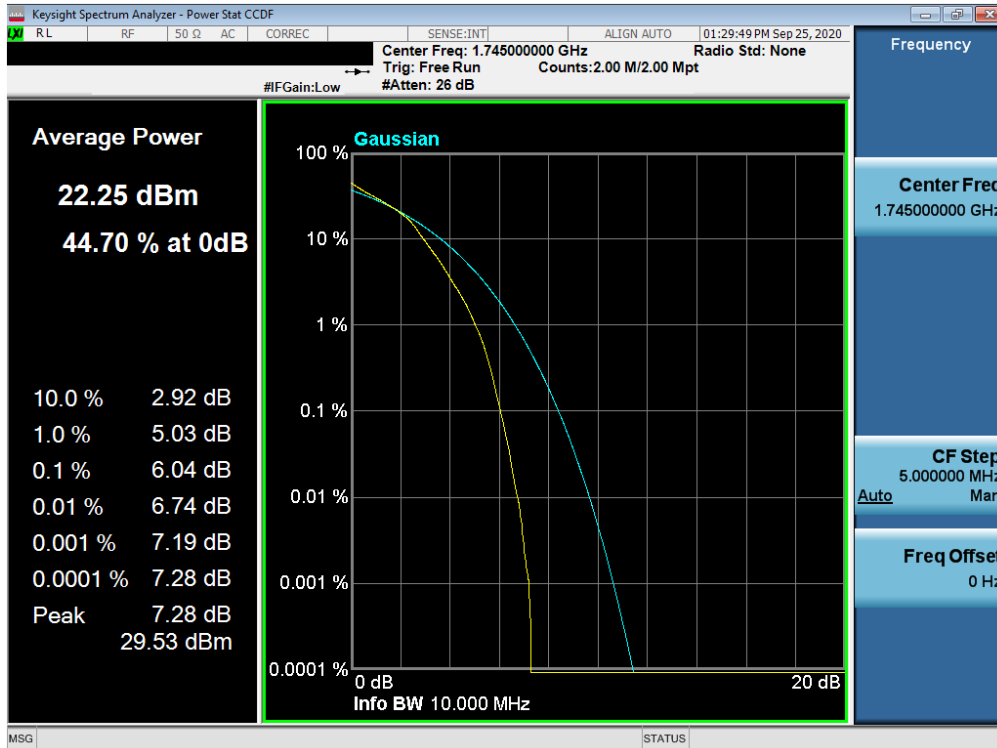


Plot 7-343. PAR Plot (LTE Band 66/4 - 15MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 196 of 297

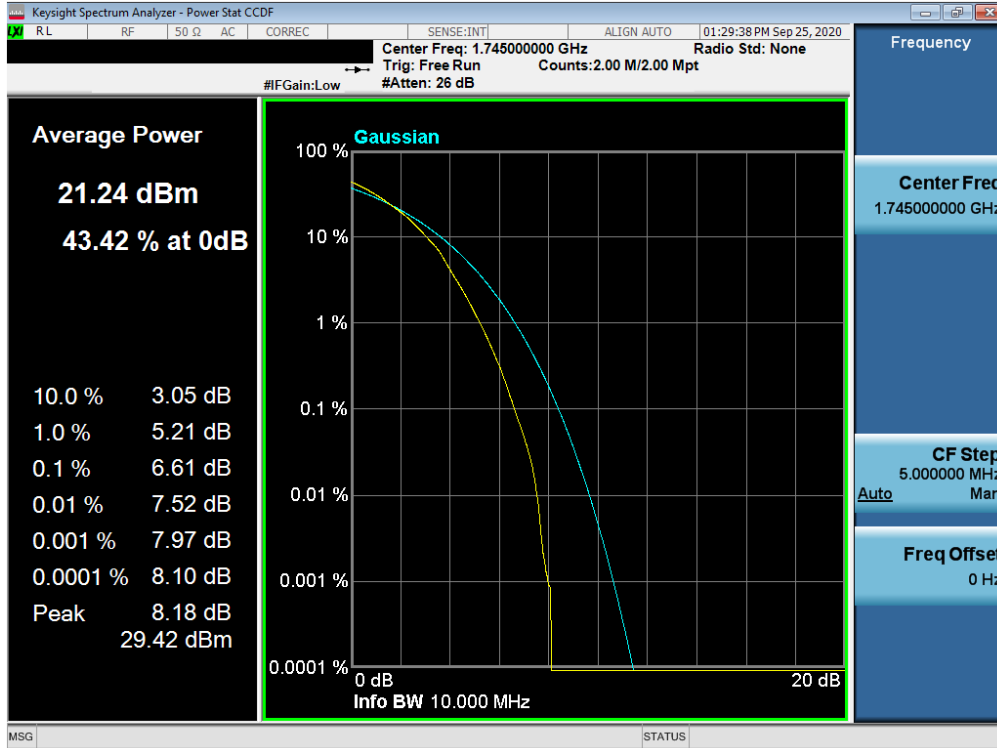


Plot 7-344. PAR Plot (LTE Band 66/4 - 10MHz QPSK - Full RB Configuration)

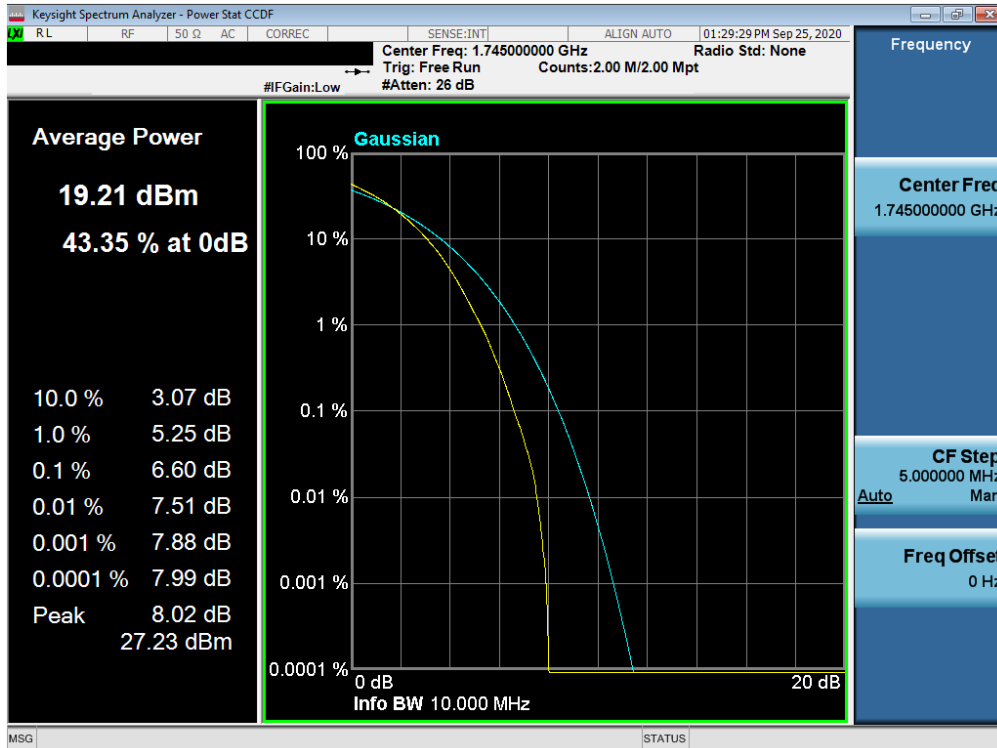


Plot 7-345. PAR Plot (LTE Band 66/4 - 10MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 197 of 297

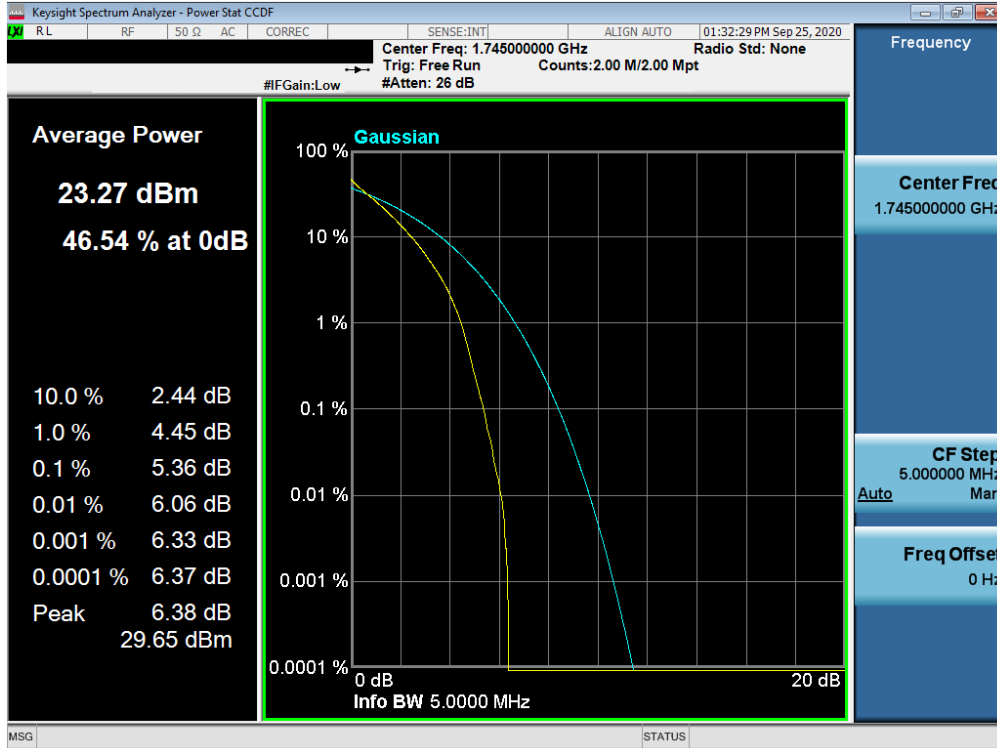


Plot 7-346. PAR Plot (LTE Band 66/4 - 10MHz 64-QAM - Full RB Configuration)

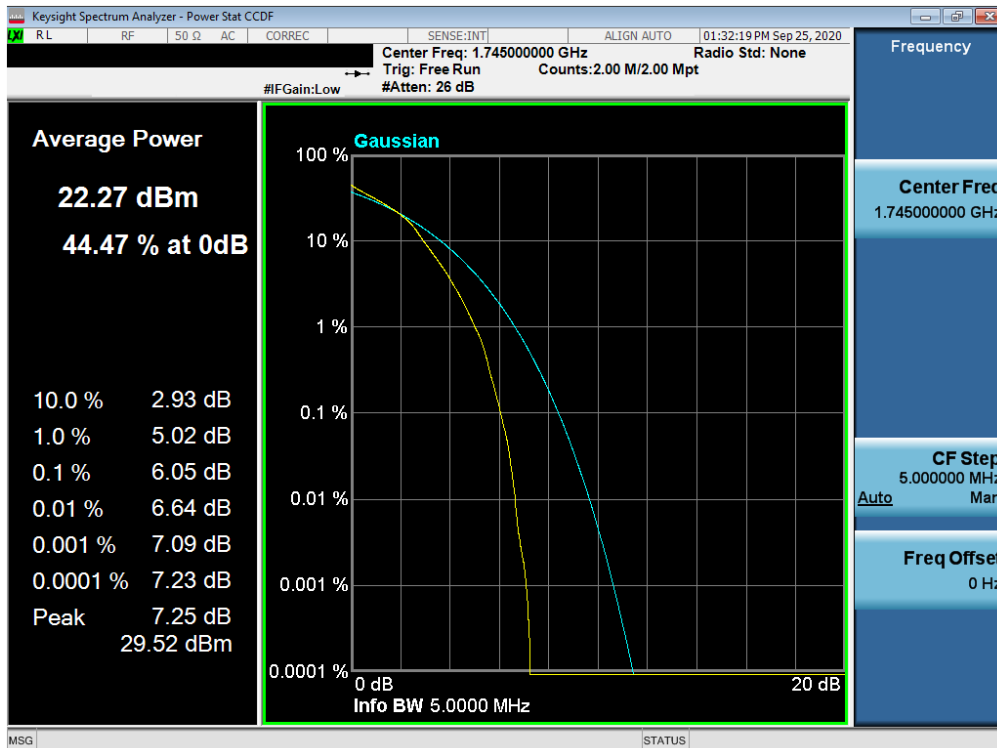


Plot 7-347. PAR Plot (LTE Band 66/4 - 10MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 198 of 297

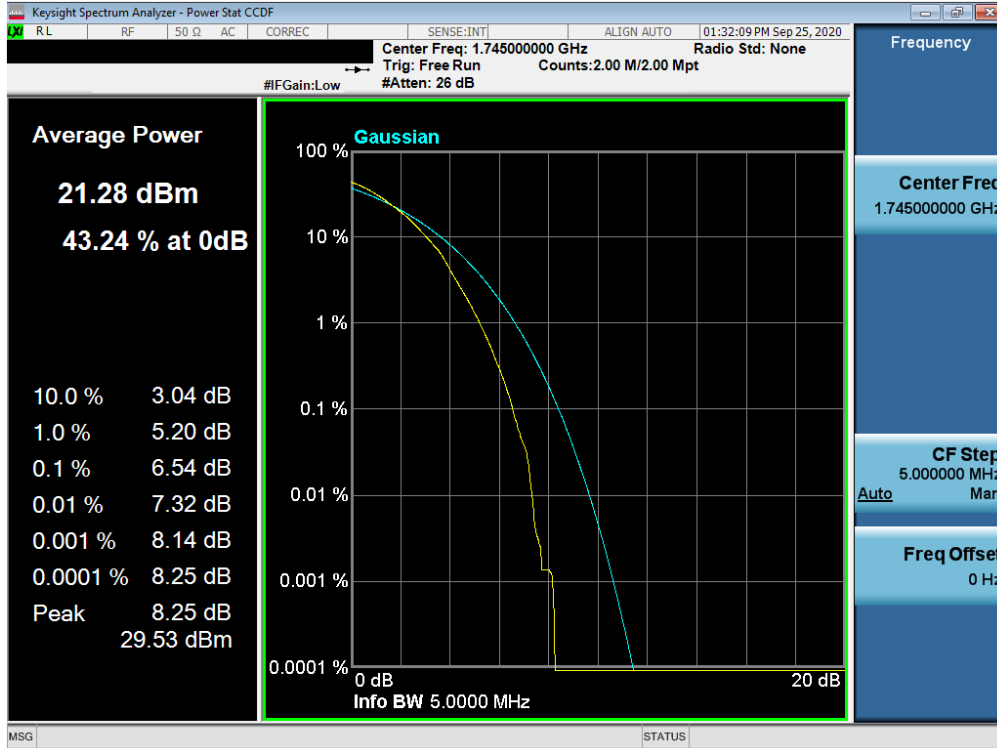


Plot 7-348. PAR Plot (LTE Band 66/4 - 5MHz QPSK - Full RB Configuration)

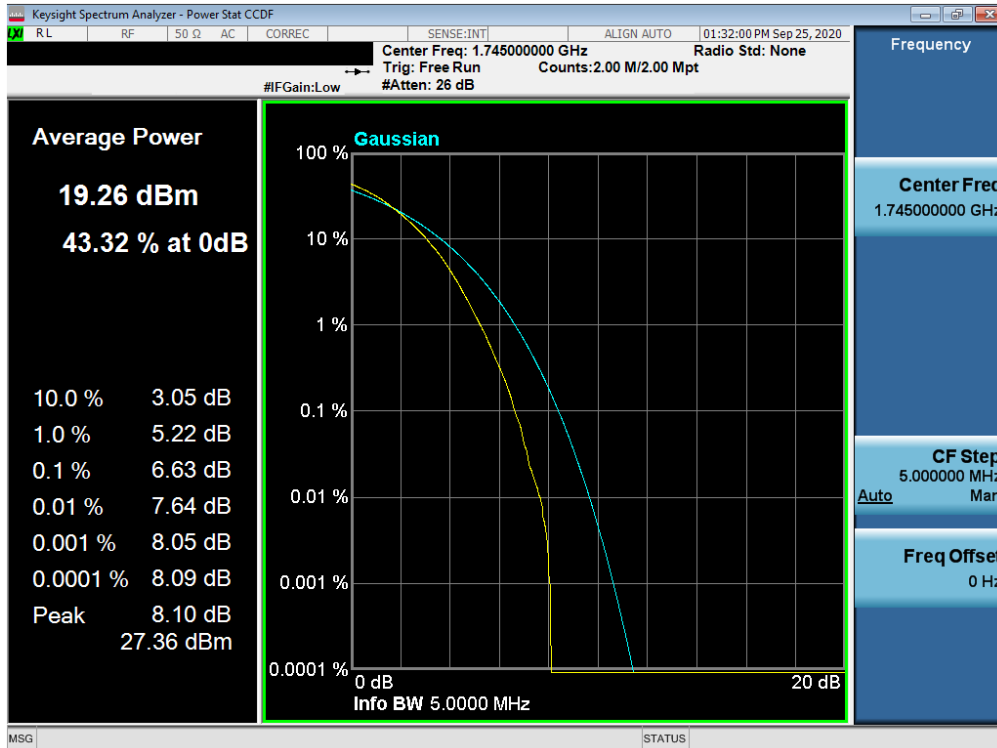


Plot 7-349. PAR Plot (LTE Band 66/4 - 5MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 199 of 297

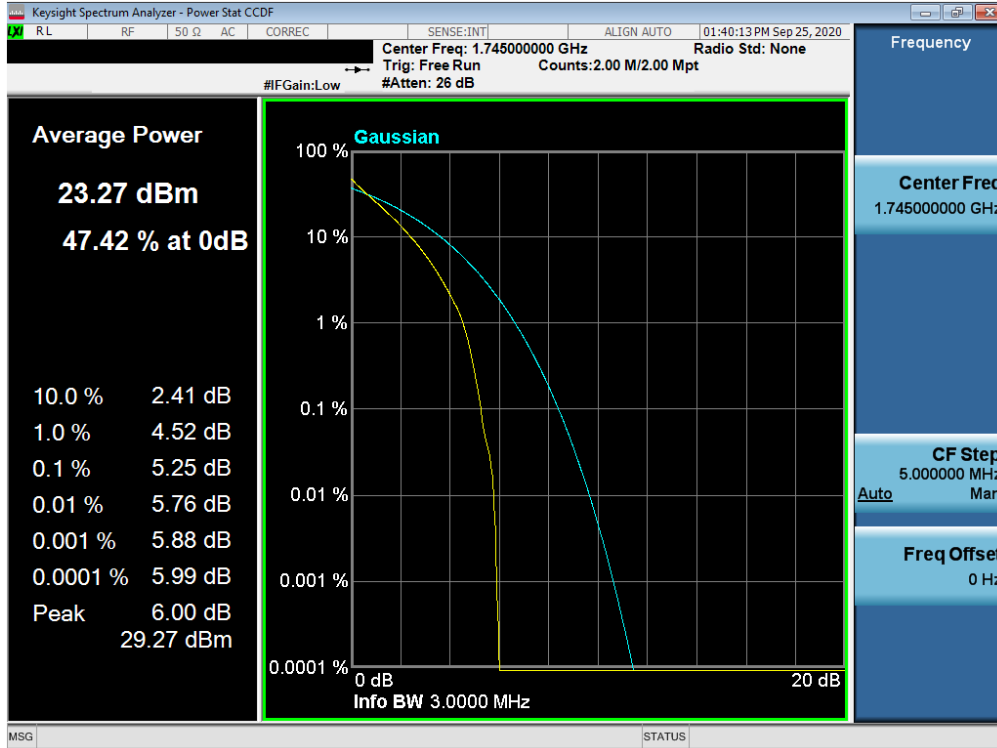


Plot 7-350. PAR Plot (LTE Band 66/4 - 5MHz 64-QAM - Full RB Configuration)

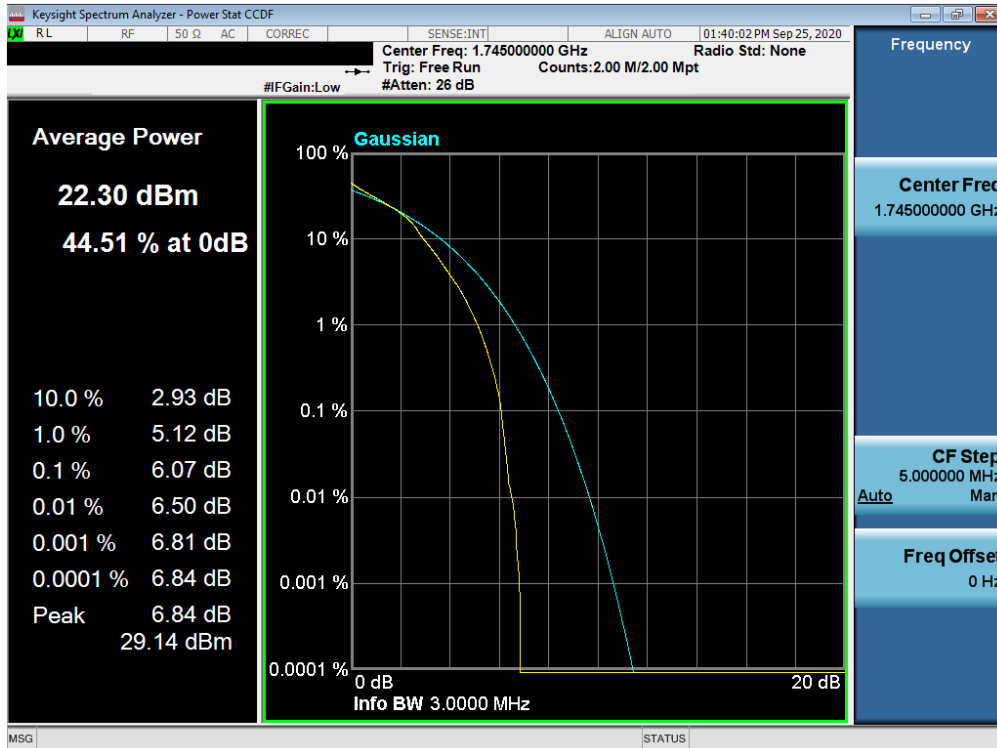


Plot 7-351. PAR Plot (LTE Band 66/4 - 5MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 200 of 297

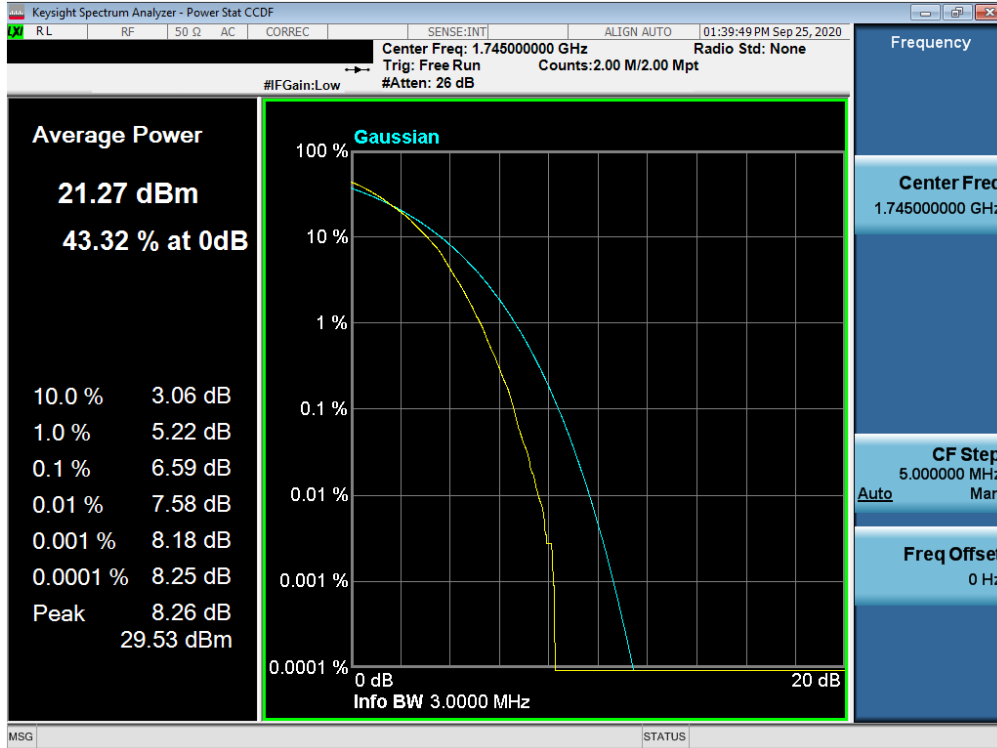


Plot 7-352. PAR Plot (LTE Band 66/4 - 3MHz QPSK - Full RB Configuration)

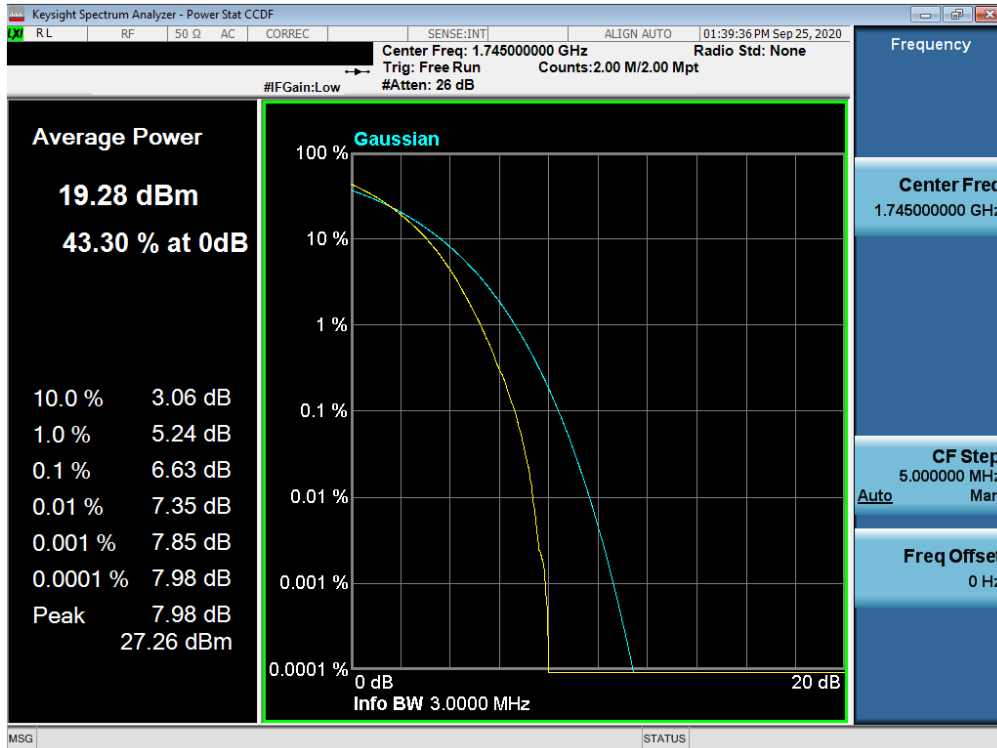


Plot 7-353. PAR Plot (LTE Band 66/4 - 3MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 201 of 297

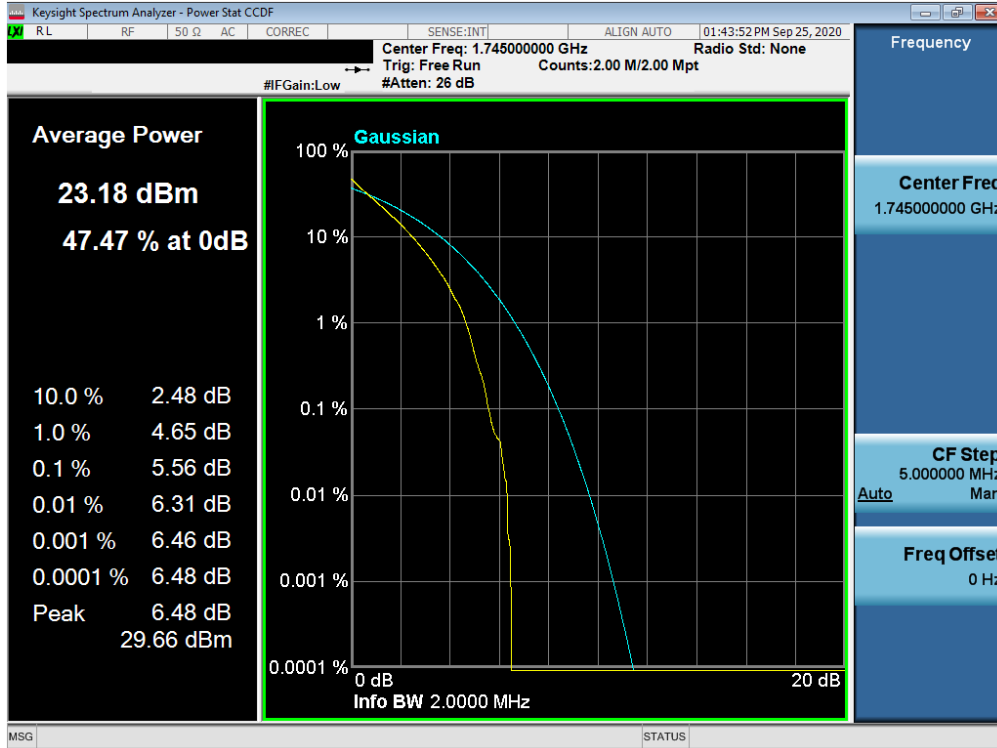


Plot 7-354. PAR Plot (LTE Band 66/4 - 3MHz 64-QAM - Full RB Configuration)

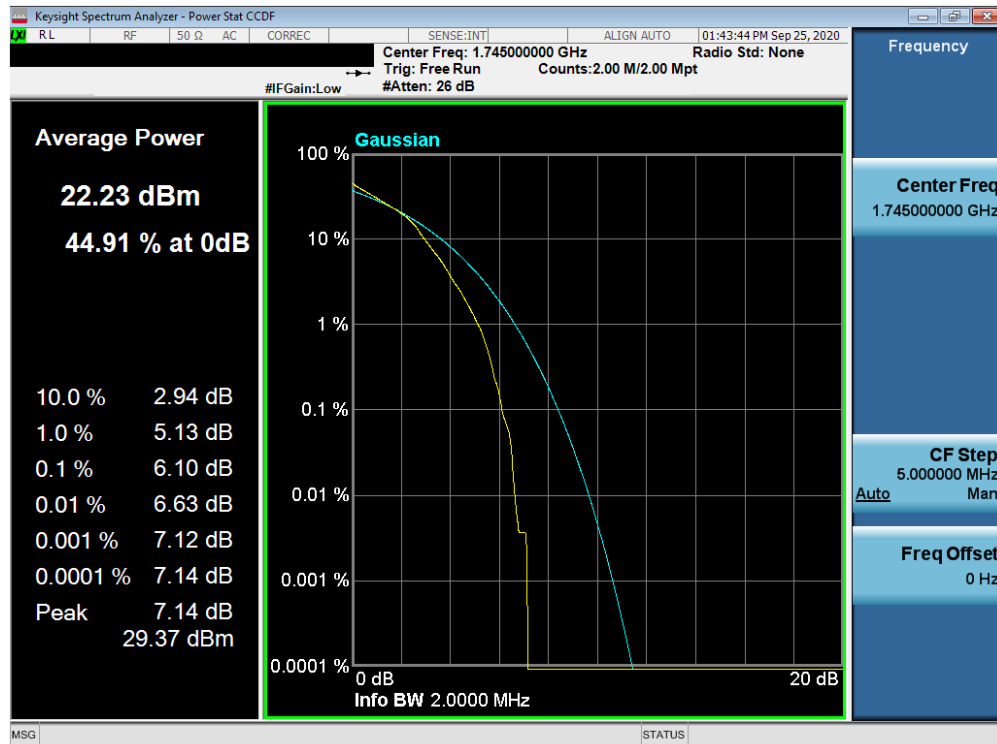


Plot 7-355. PAR Plot (LTE Band 66/4 - 3MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 202 of 297

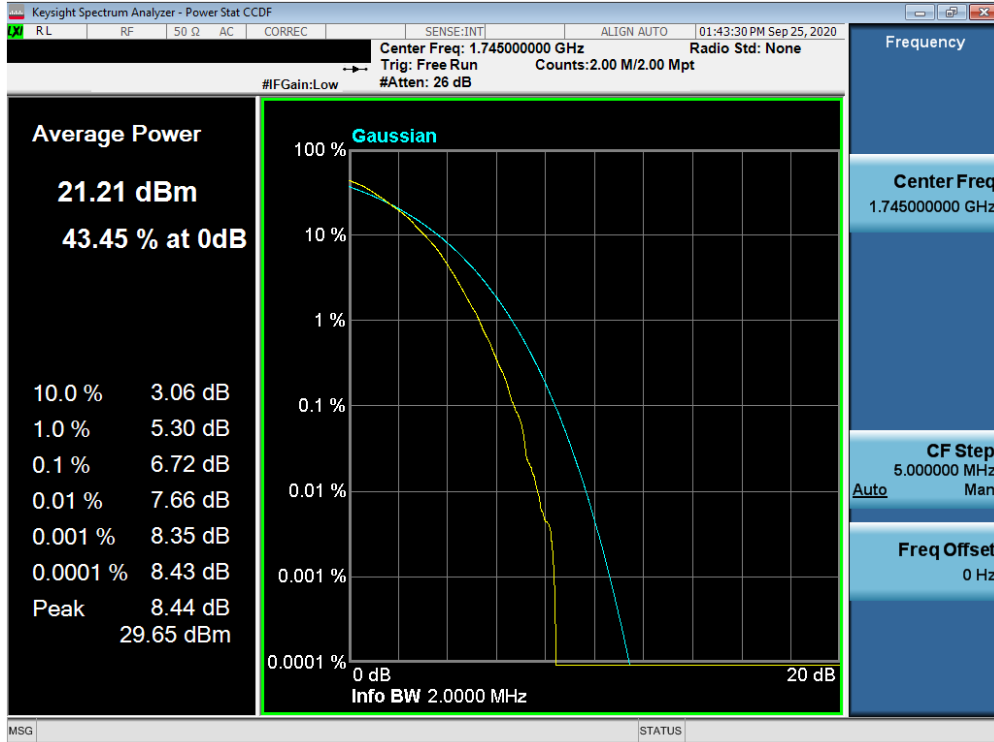


Plot 7-356. PAR Plot (LTE Band 66/4 - 1.4MHz QPSK - Full RB Configuration)

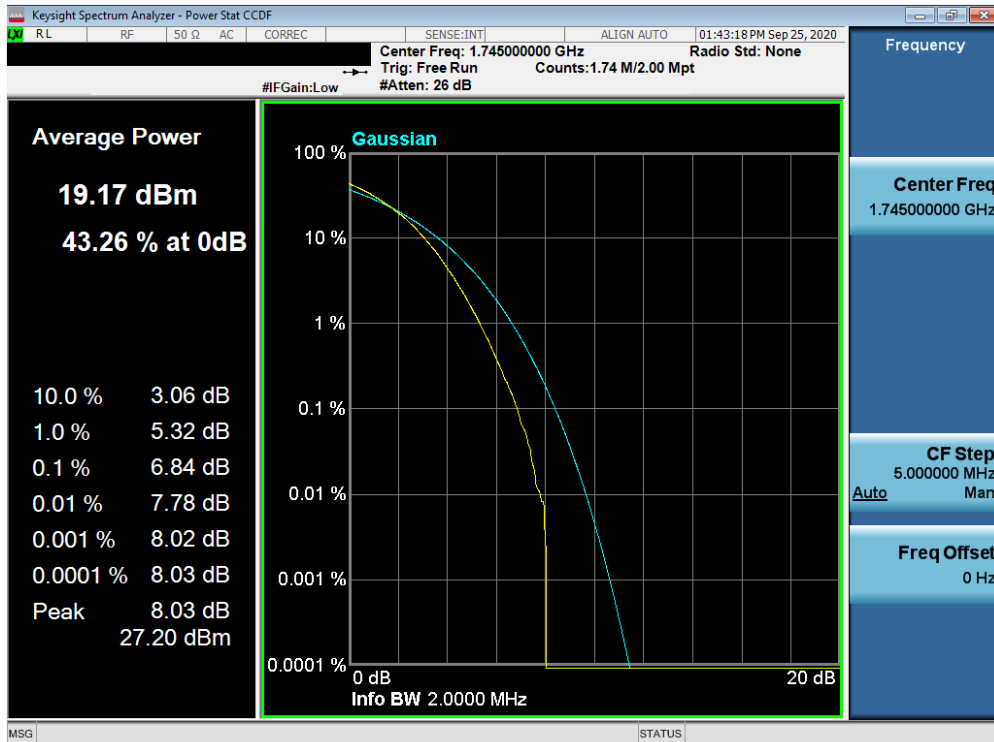


Plot 7-357. PAR Plot (LTE Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 203 of 297



Plot 7-358. PAR Plot (LTE Band 66/4 - 1.4MHz 64-QAM - Full RB Configuration)



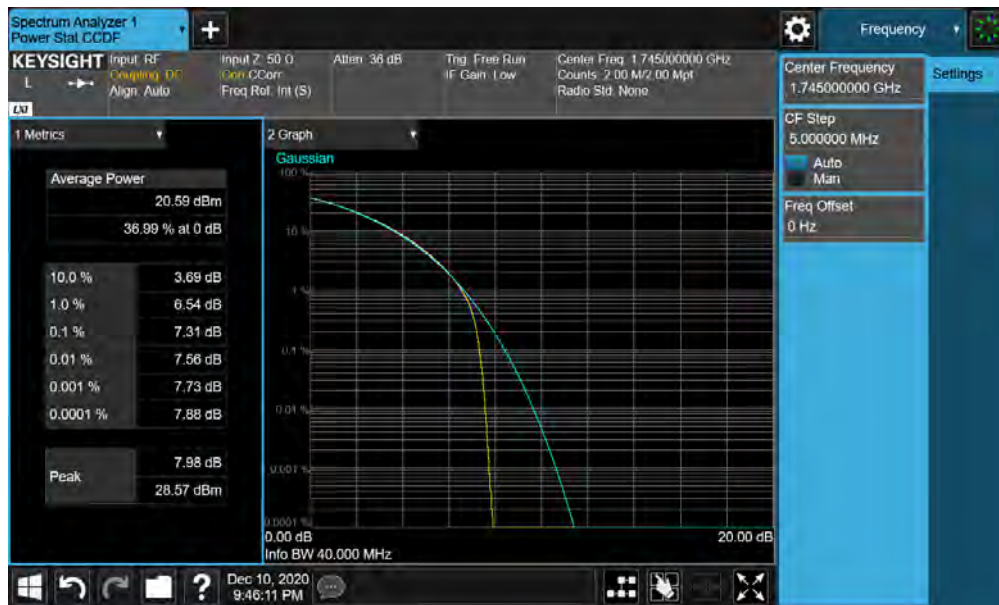
Plot 7-359. PAR Plot (LTE Band 66/4 - 1.4MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 204 of 297

NR Band n66 Antenna A



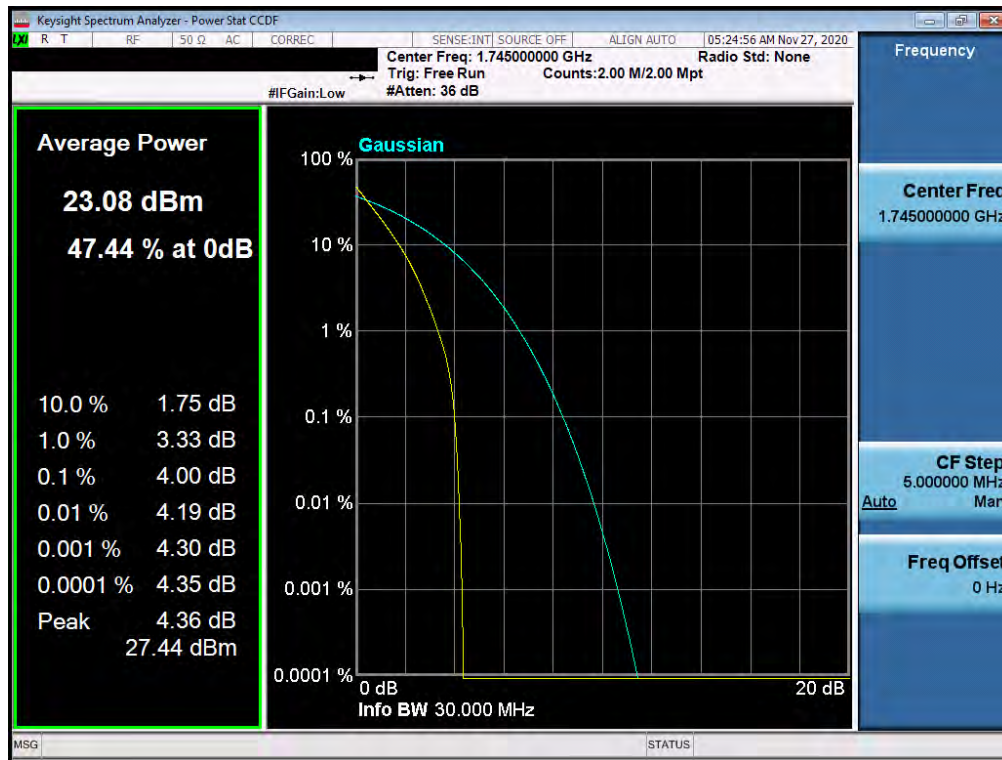
FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 – 12/10/2020	EUT Type: Portable Handset		Page 205 of 297



FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 206 of 297

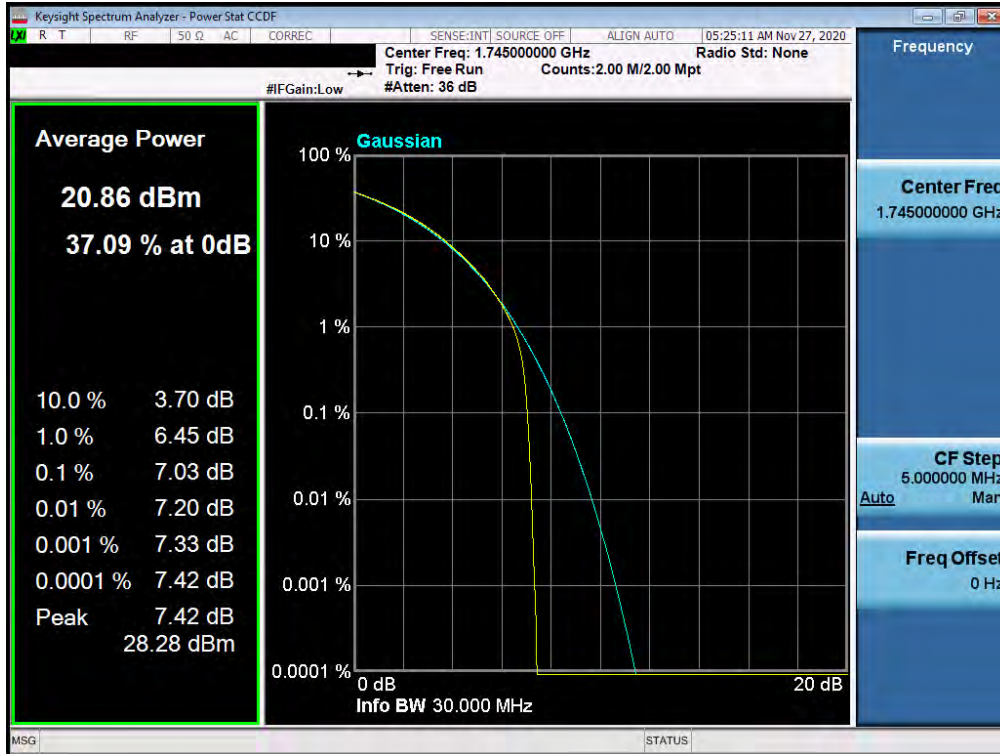


Plot 7-364. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM 256-QAM - Full RB)

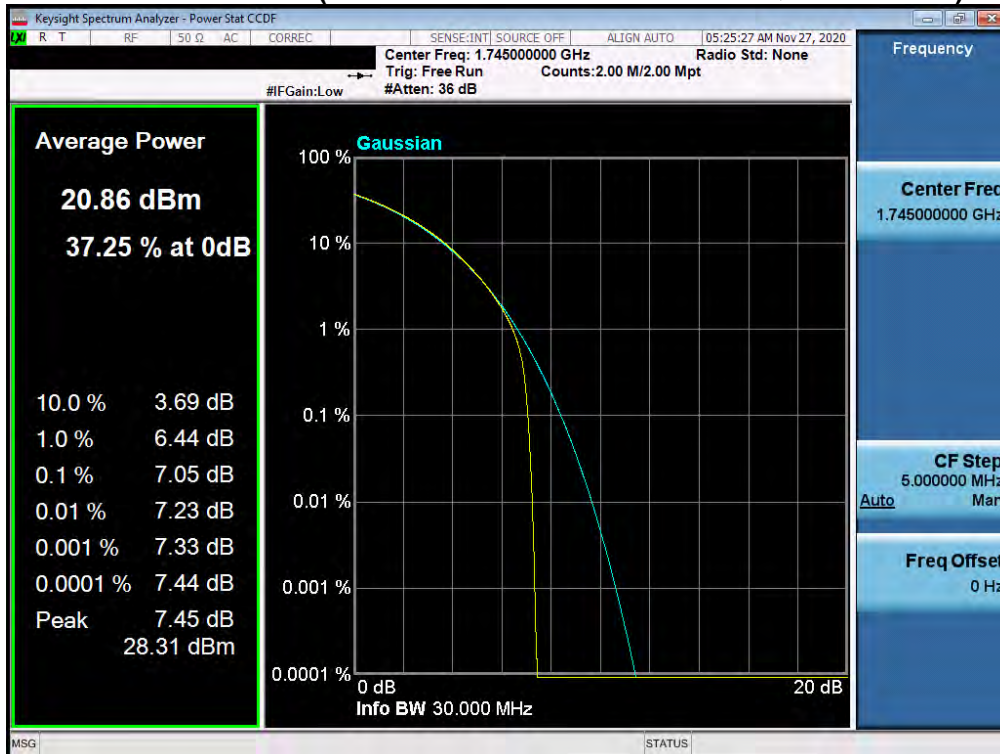


Plot 7-365. PAR Plot (NR Band n66 - 30.0MHz DFT-s-OFDM BPSK - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 207 of 297

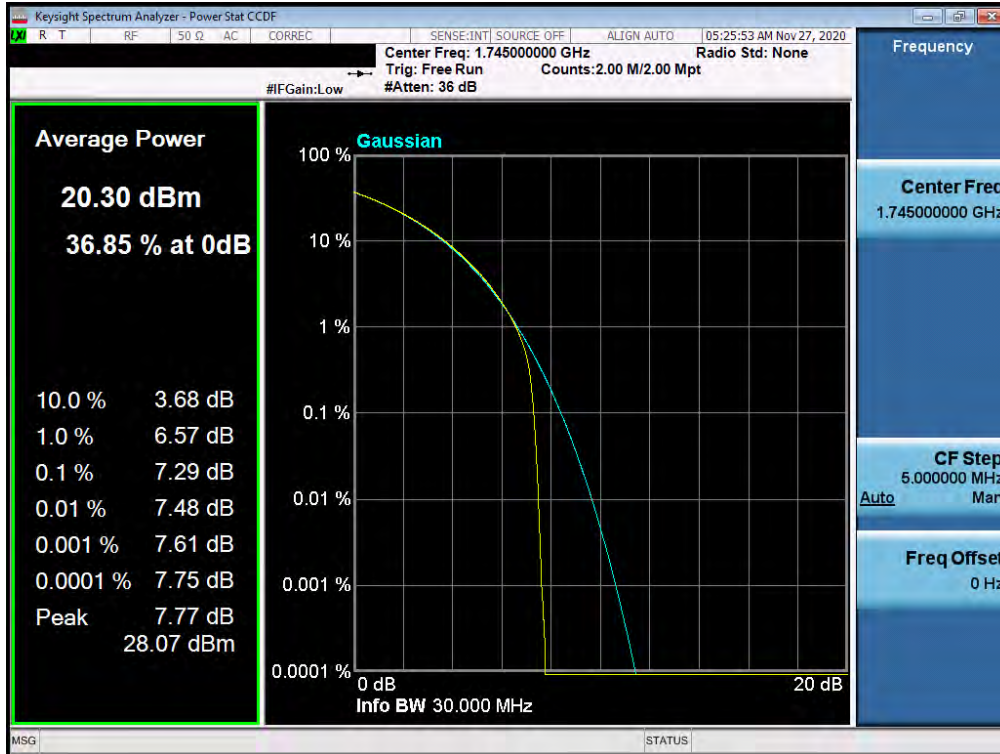


Plot 7-366. PAR Plot (NR Band n66 - 30.0MHz CP-OFDM QPSK - Full RB)

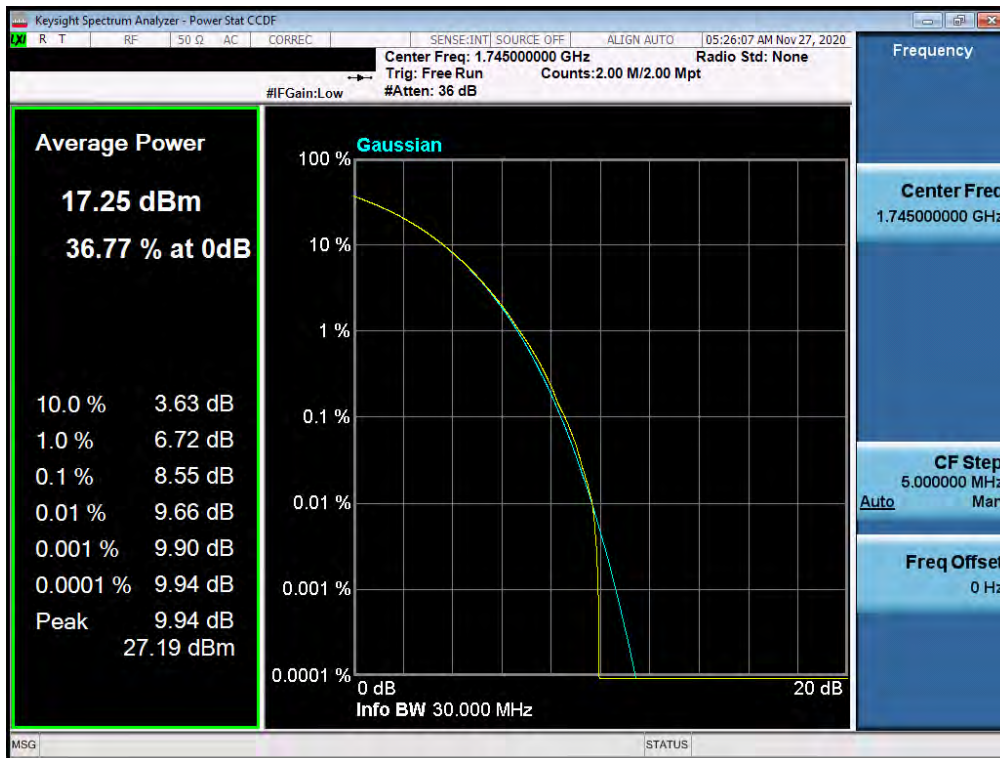


Plot 7-367. PAR Plot (NR Band n66 - 30.0MHz CP-OFDM 16-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 208 of 297

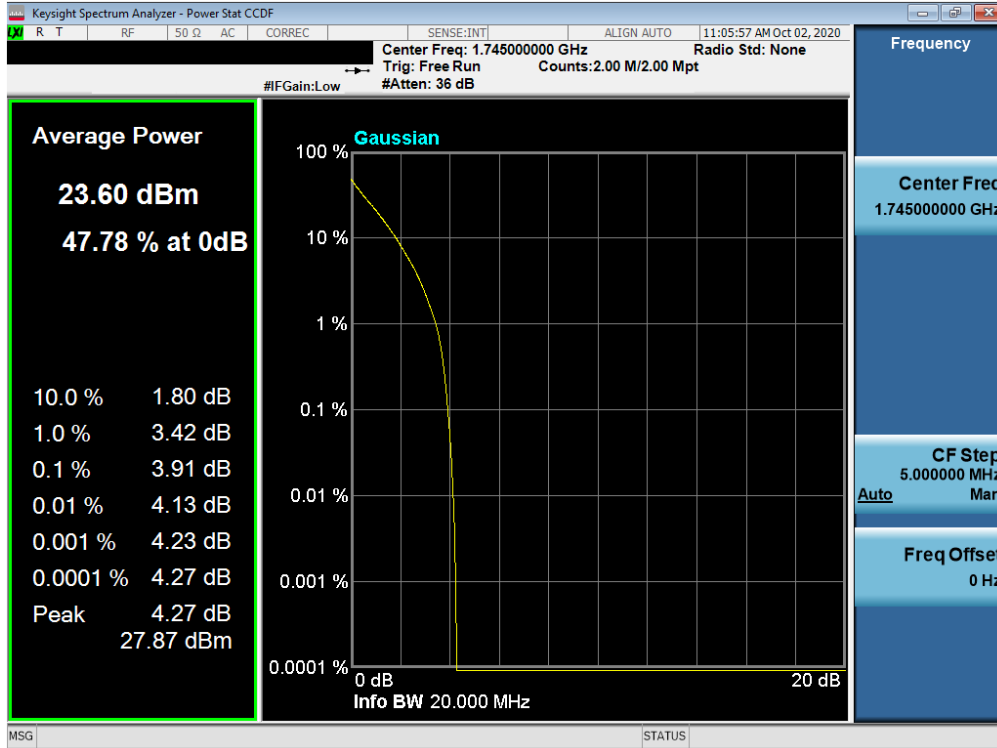


Plot 7-368. PAR Plot (NR Band n66 - 30.0MHz CP-OFDM 64-QAM - Full RB)

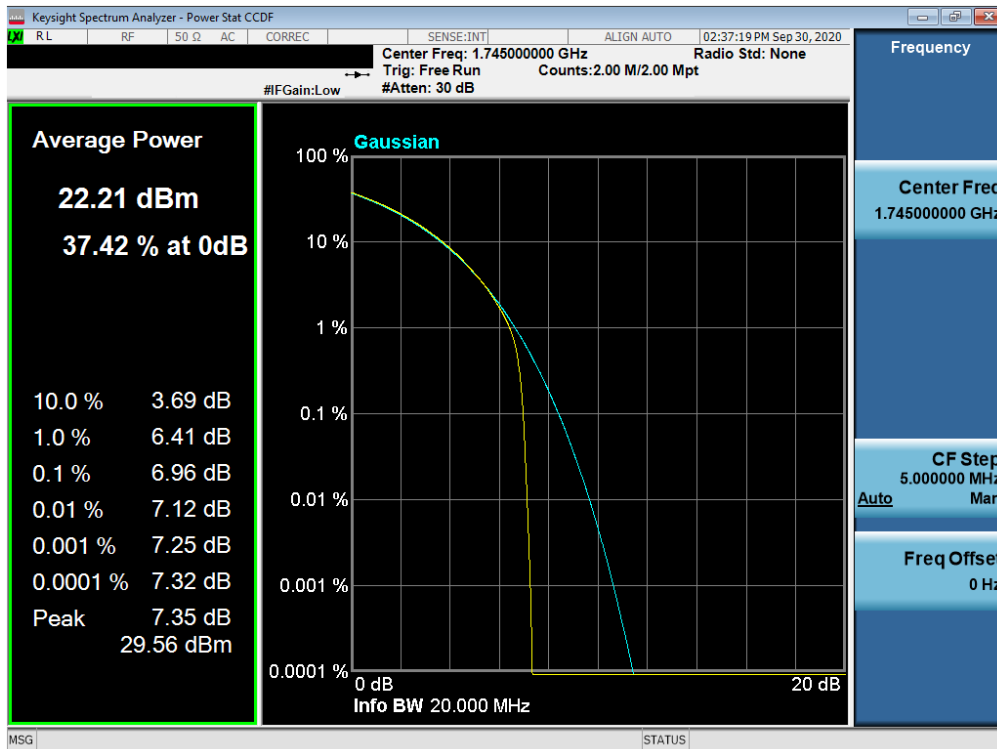


Plot 7-369. PAR Plot (NR Band n66 - 30.0MHz CP-OFDM 256-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 209 of 297

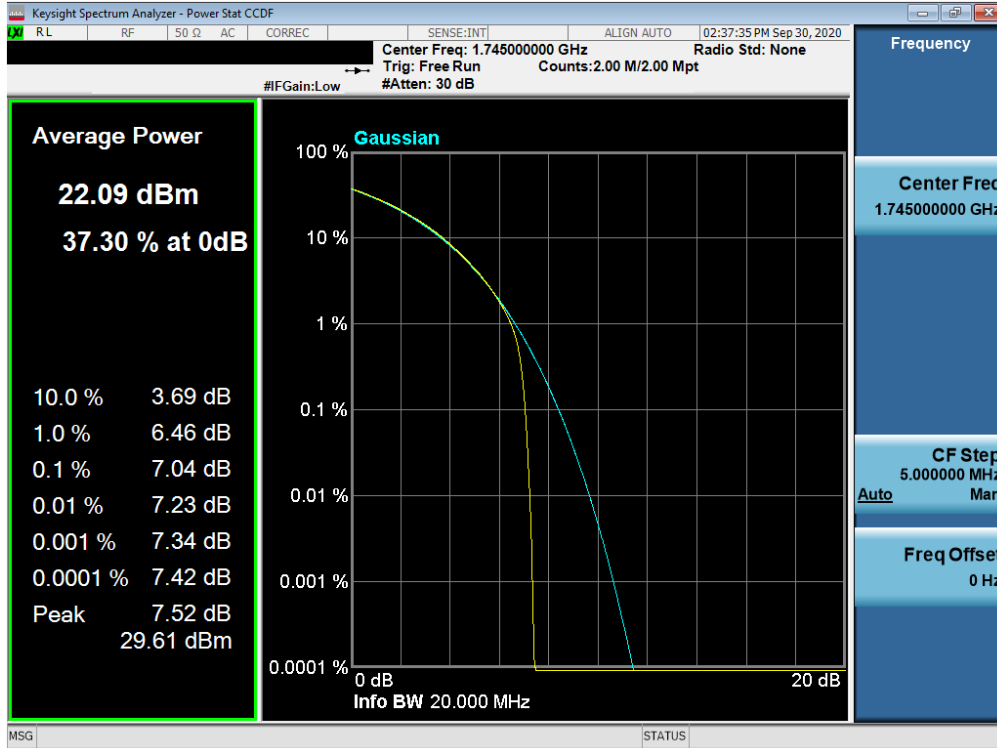


Plot 7-370. PAR Plot (NR Band n66 - 20.0MHz DFT-s-OFDM BPSK - Full RB)

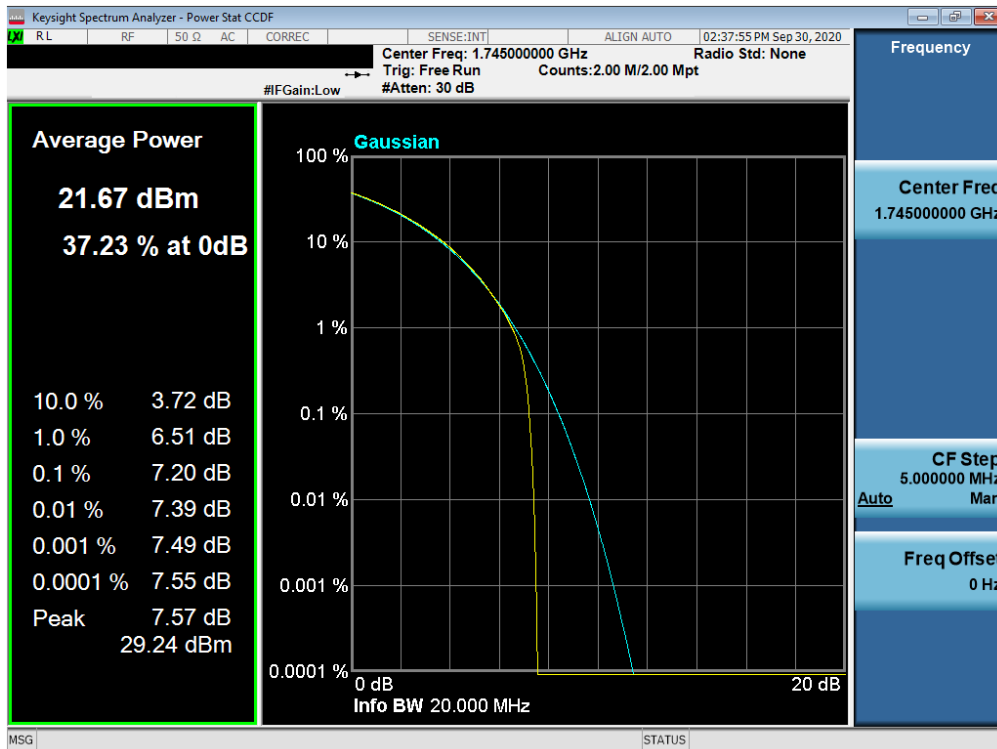


Plot 7-371. PAR Plot (NR Band n66 - 20.0MHz CP-OFDM QPSK - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 210 of 297

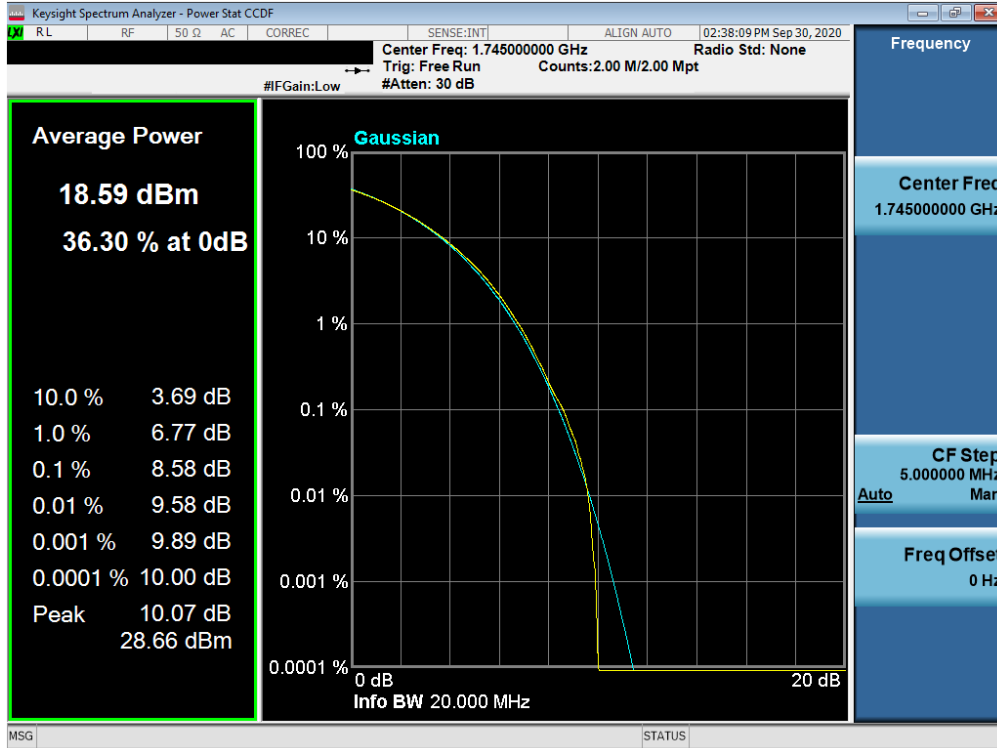


Plot 7-372. PAR Plot (NR Band n66 - 20.0MHz CP-OFDM 16-QAM - Full RB)

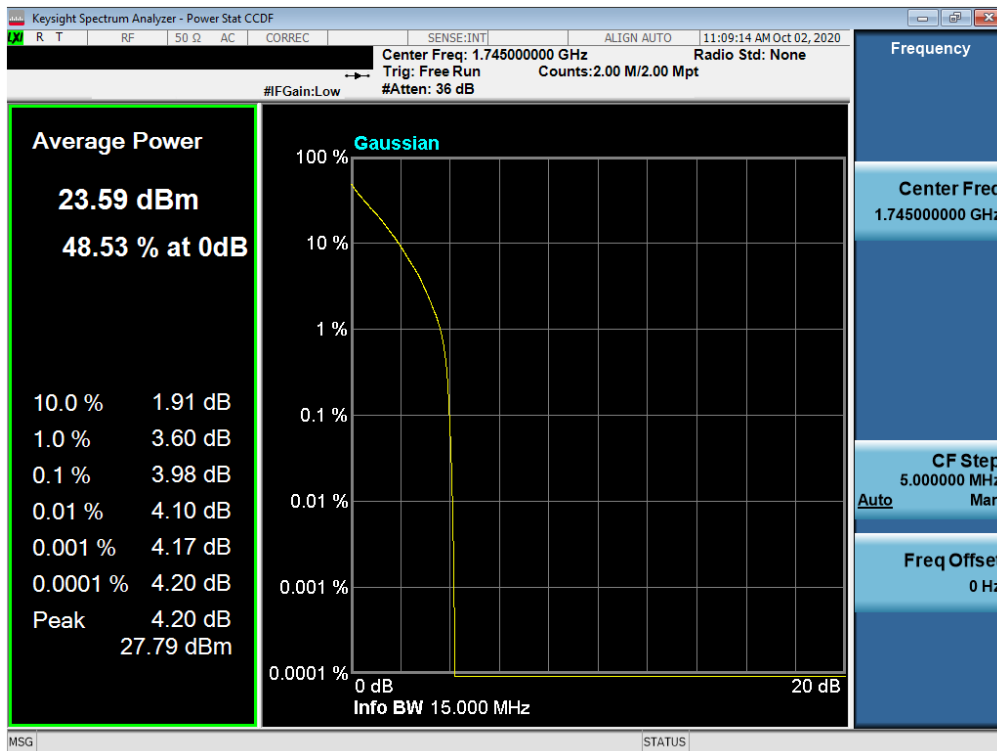


Plot 7-373. PAR Plot (NR Band n66 - 20.0MHz CP-OFDM 64-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 211 of 297

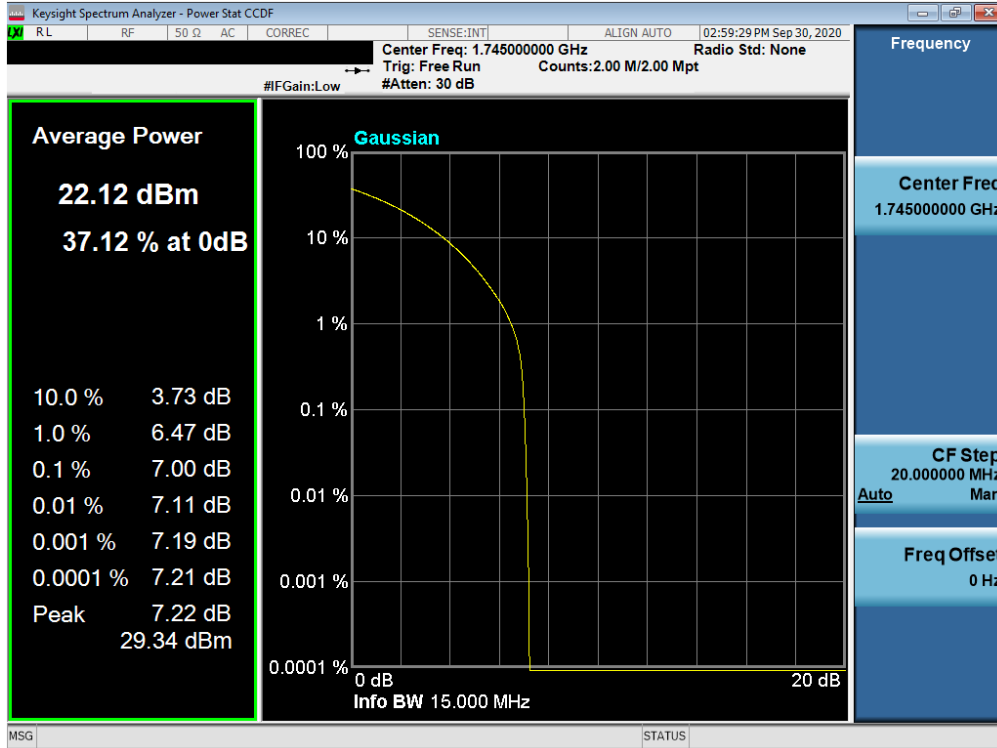


Plot 7-374. PAR Plot (NR Band n66 - 20.0MHz CP-OFDM 256-QAM - Full RB)

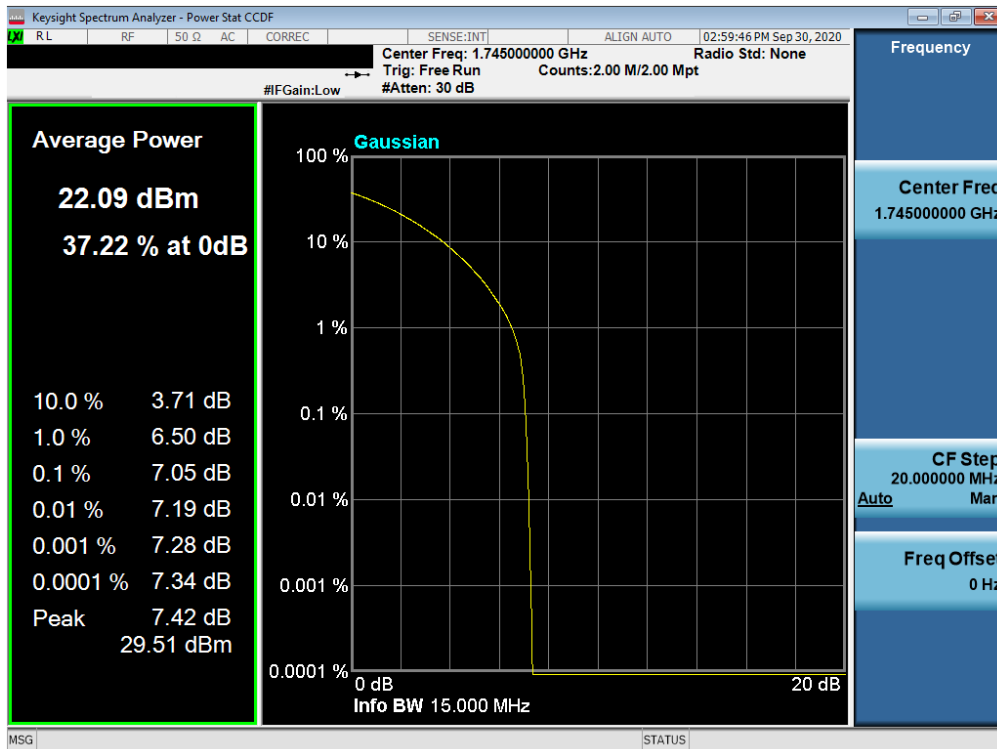


Plot 7-375. PAR Plot (NR Band n66 - 15.0MHz DFT-s-OFDM BPSK - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 212 of 297

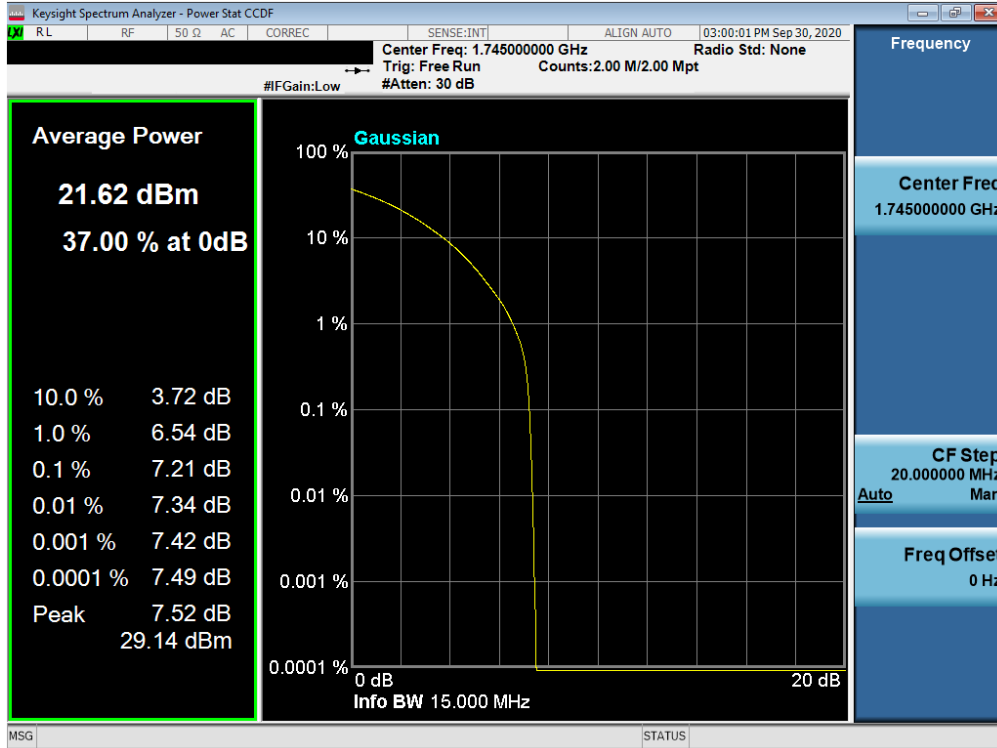


Plot 7-376. PAR Plot (NR Band n66 - 15.0MHz CP-OFDM QPSK - Full RB)

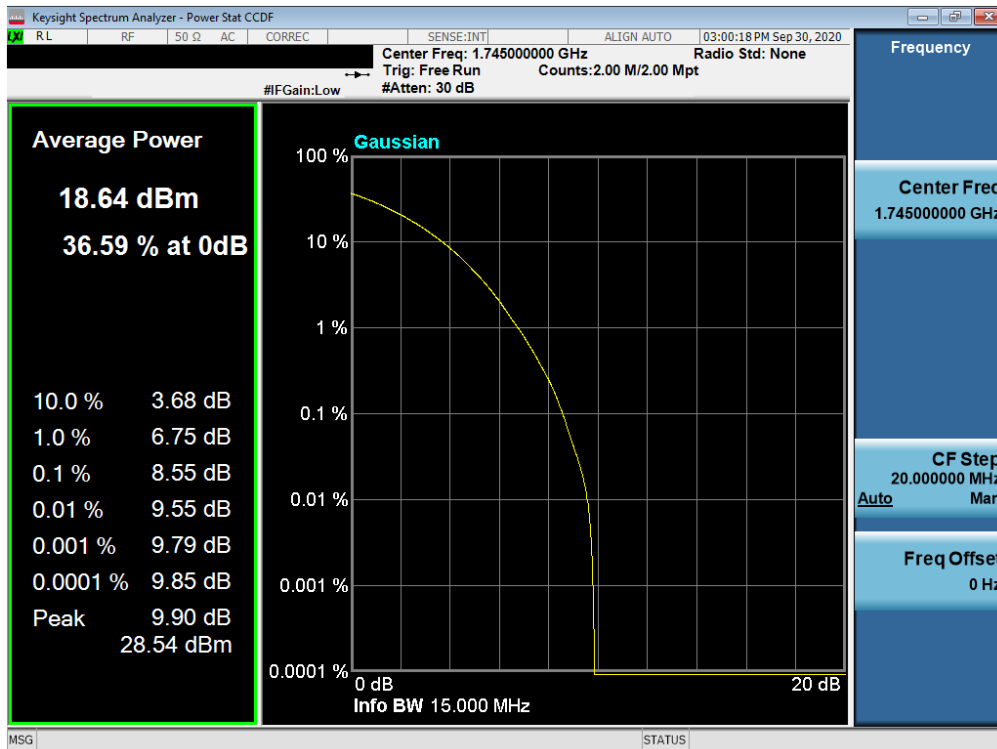


Plot 7-377. PAR Plot (NR Band n66 - 15.0MHz CP-OFDM 16-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 213 of 297

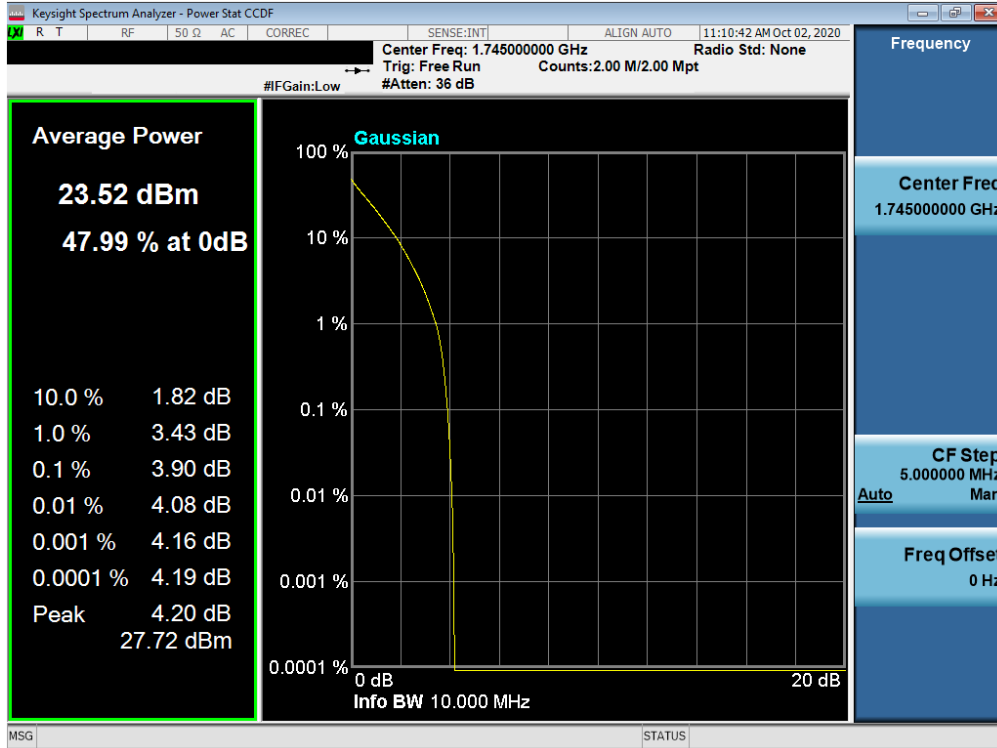


Plot 7-378. PAR Plot (NR Band n66 - 15.0MHz CP-OFDM 64-QAM - Full RB)

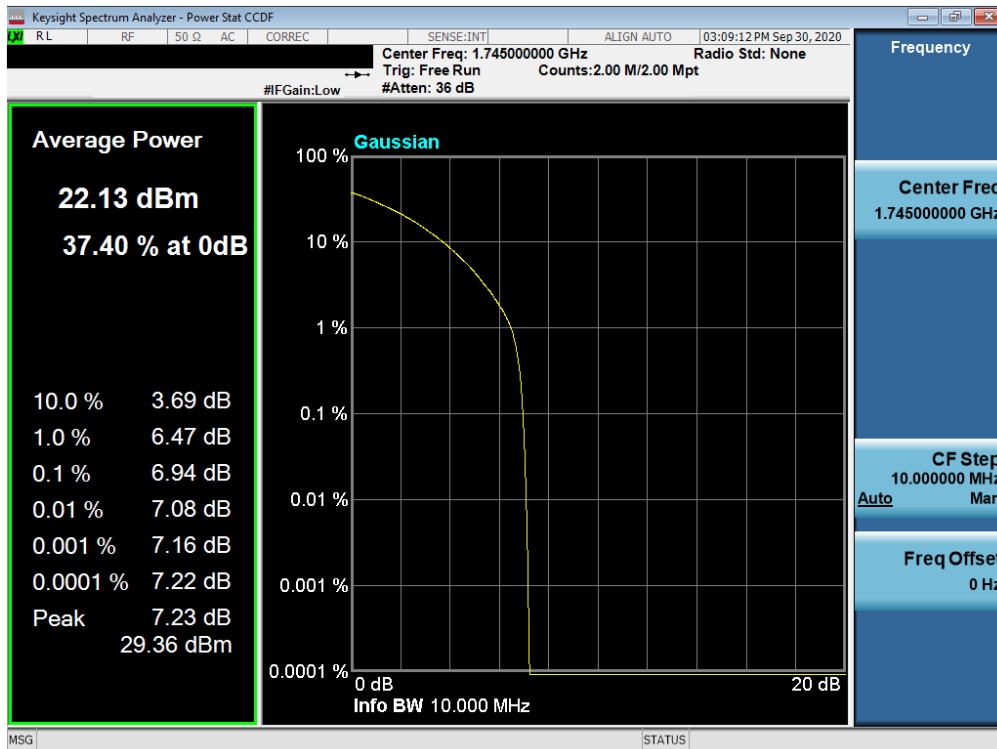


Plot 7-379. PAR Plot (NR Band n66 - 15.0MHz CP-OFDM 256-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 214 of 297

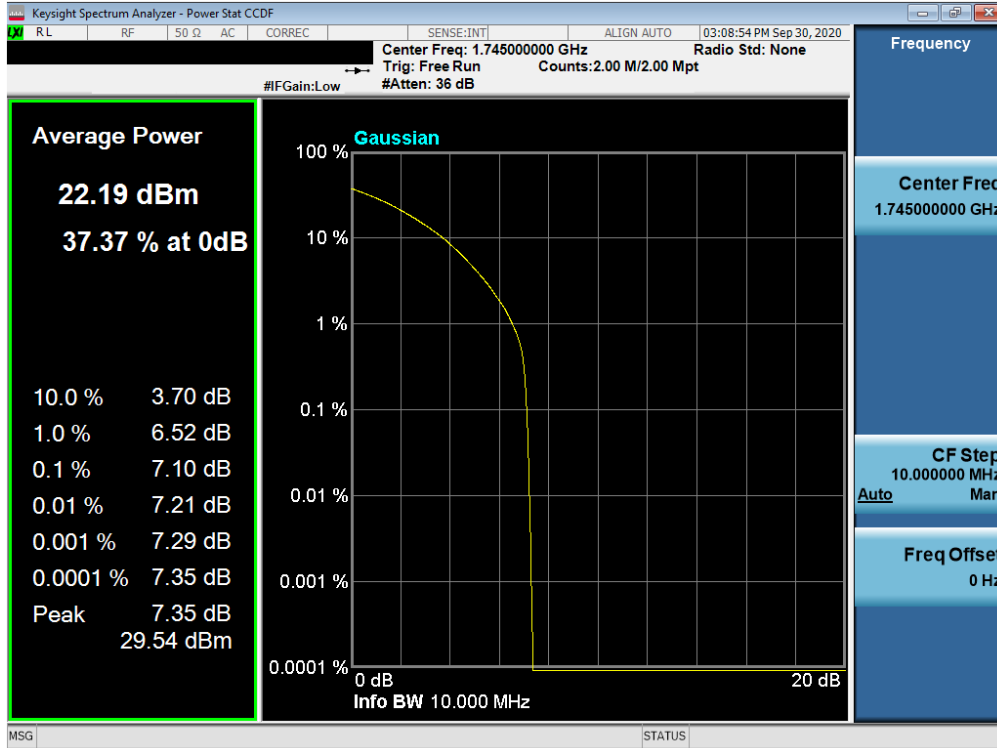


Plot 7-380. PAR Plot (NR Band n66 - 10.0MHz DFT-s-OFDM BPSK - Full RB)

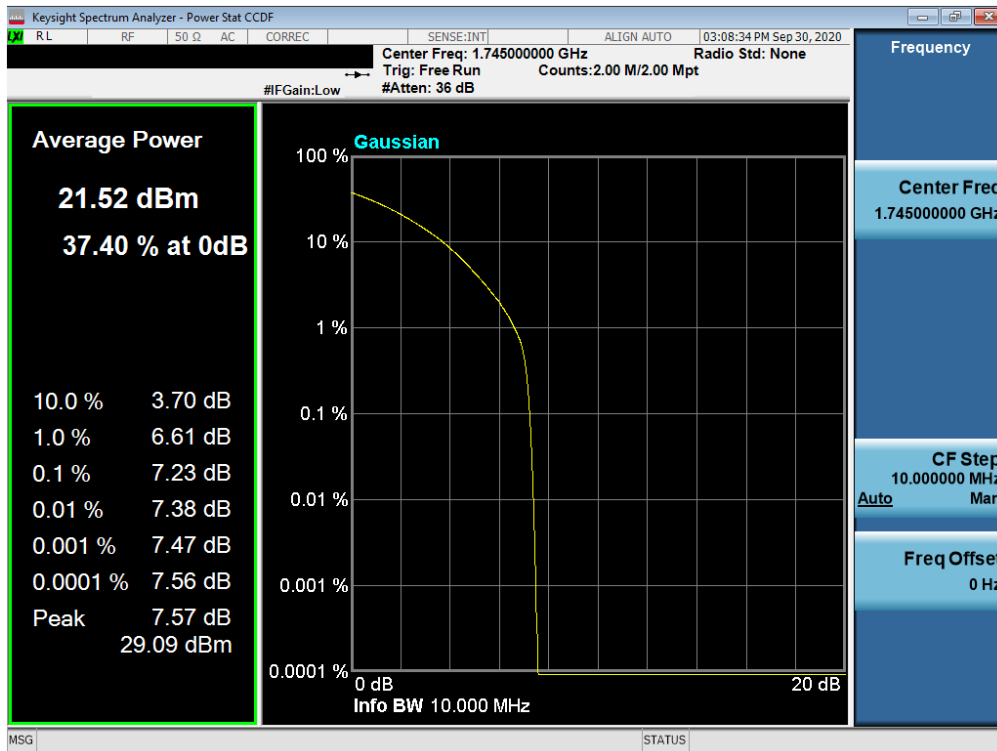


Plot 7-381. PAR Plot (NR Band n66 - 10.0MHz CP-OFDM QPSK - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 215 of 297

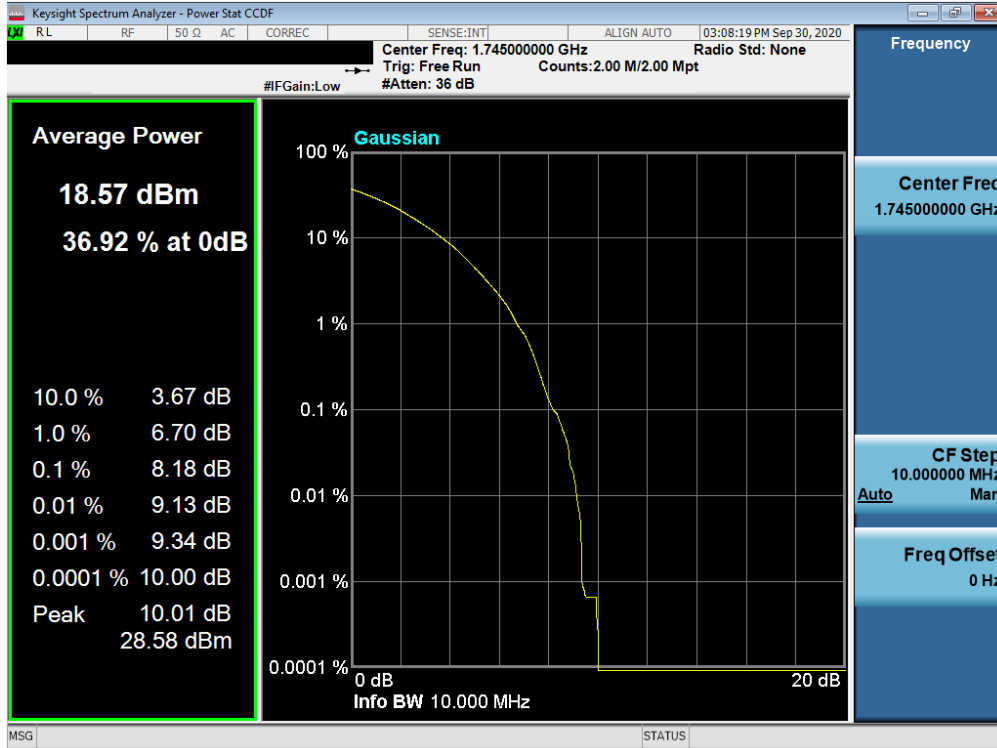


Plot 7-382. PAR Plot (NR Band n66 - 10.0MHz CP-OFDM 16-QAM - Full RB)

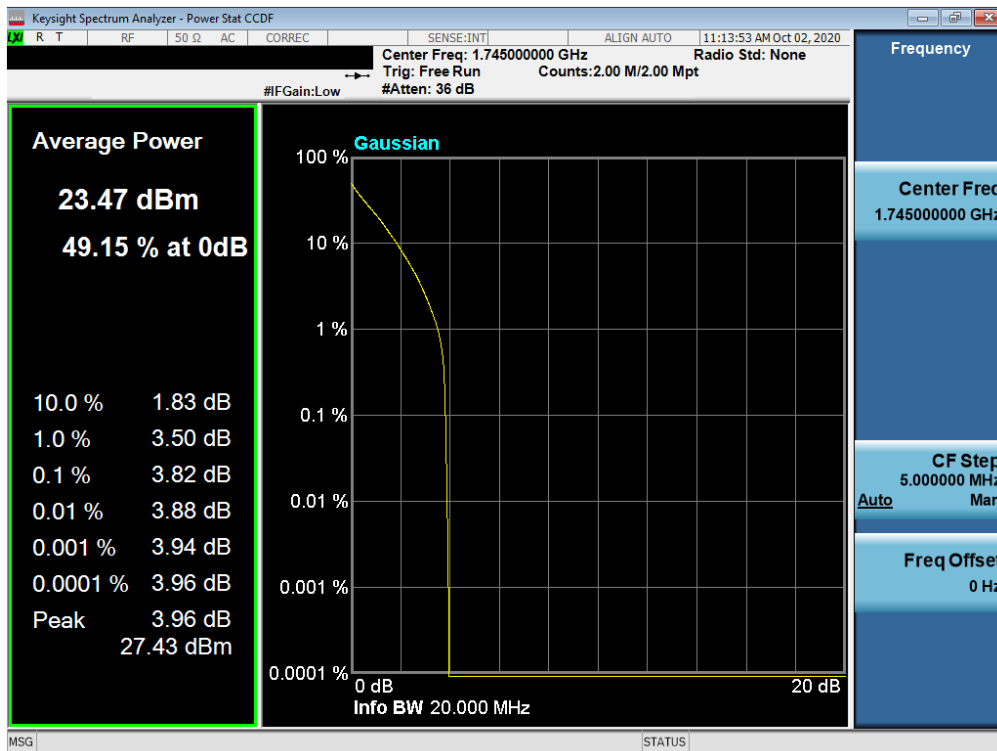


Plot 7-383. PAR Plot (NR Band n66 - 10.0MHz CP-OFDM 64-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 216 of 297

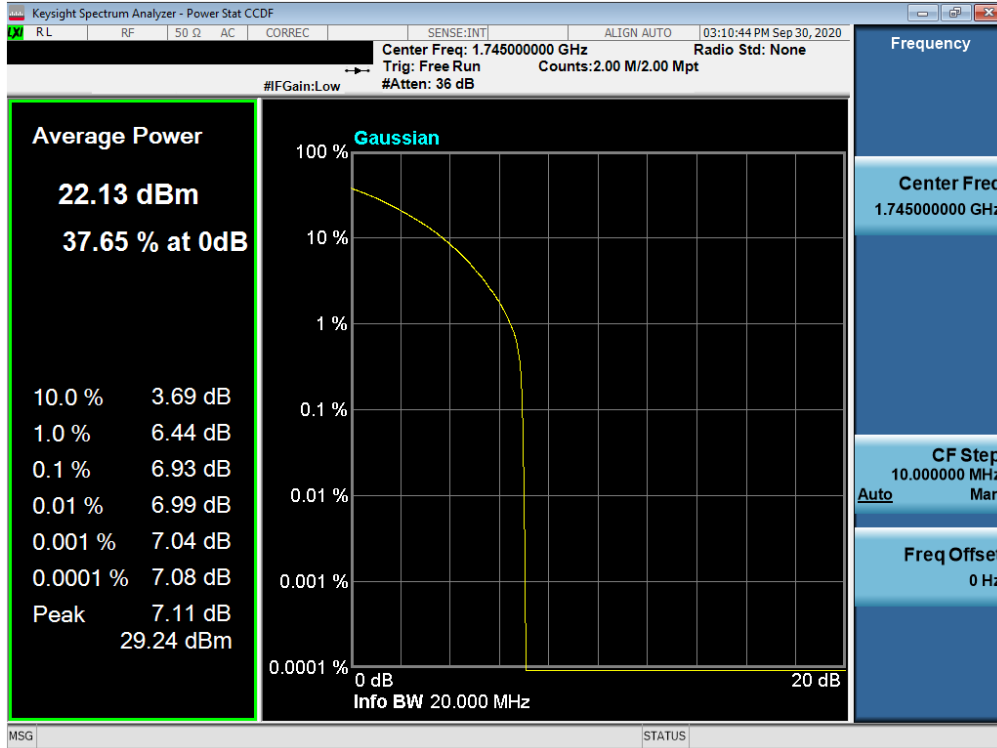


Plot 7-384. PAR Plot (NR Band n66 - 10.0MHz CP-OFDM 256-QAM - Full RB)

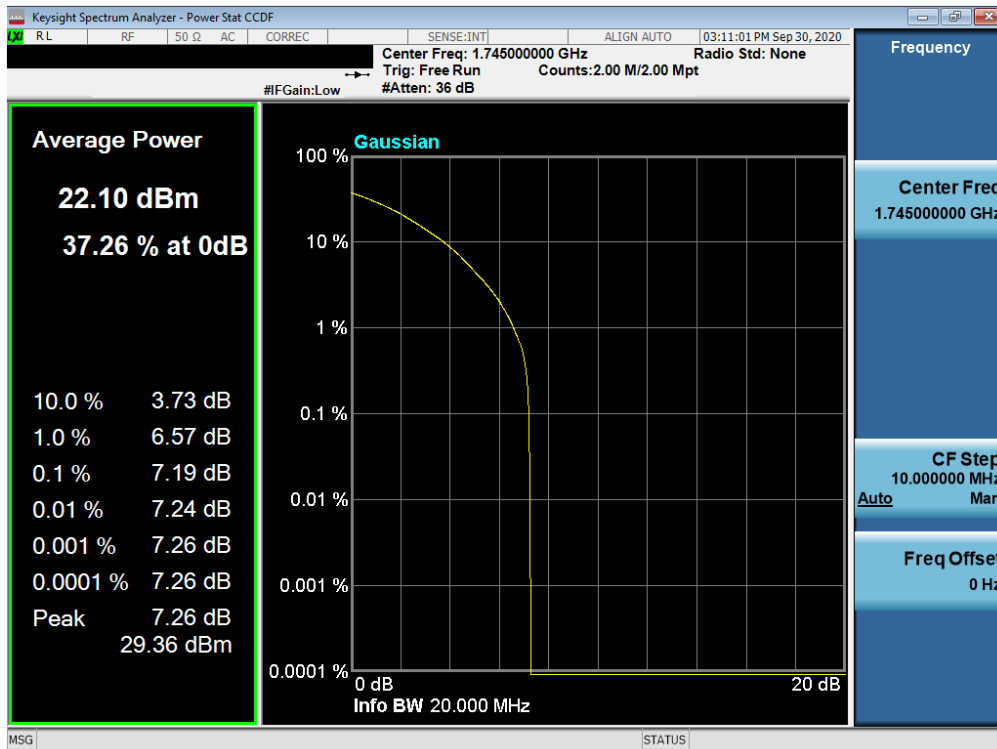


Plot 7-385. PAR Plot (NR Band n66 - 5.0MHz DFT-s-OFDM BPSK - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 217 of 297

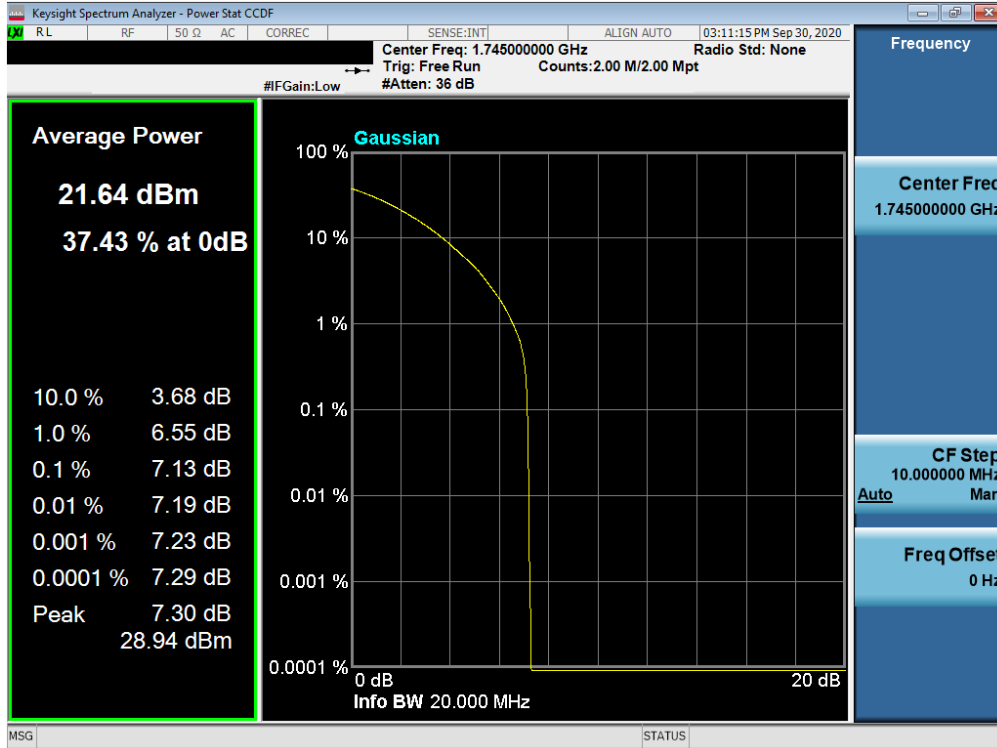


Plot 7-386. PAR Plot (NR Band n66 - 5.0MHz CP-OFDM QPSK - Full RB)

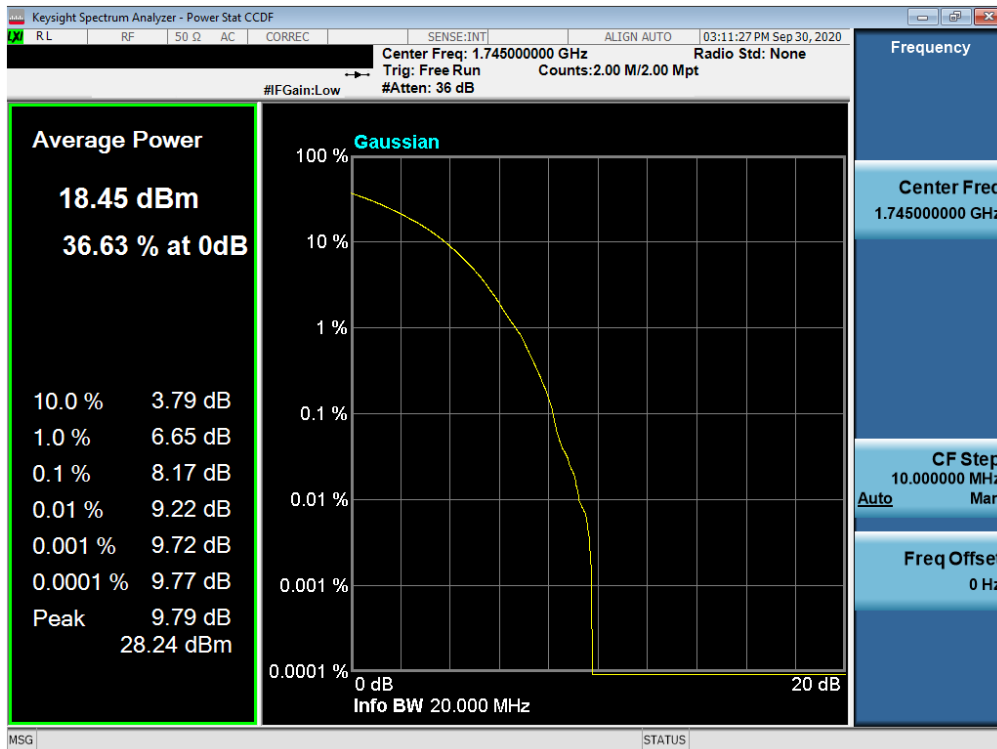


Plot 7-387. PAR Plot (NR Band n66 - 5.0MHz CP-OFDM 16-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 218 of 297



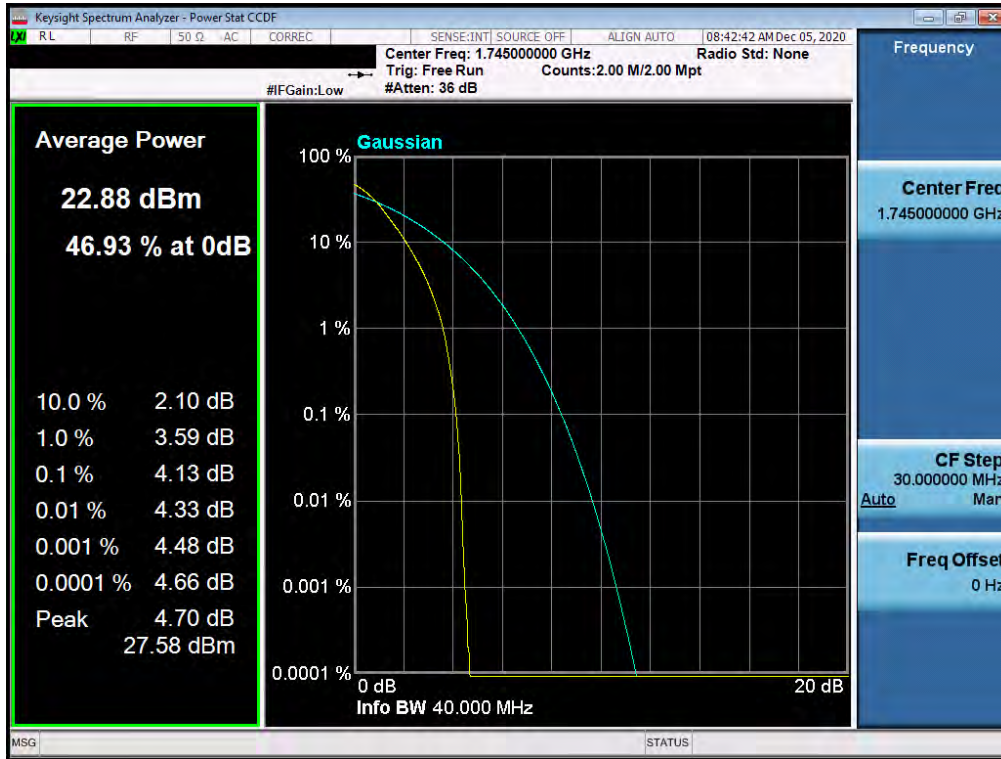
Plot 7-388. PAR Plot (NR Band n66 - 5.0MHz CP-OFDM 64-QAM - Full RB)



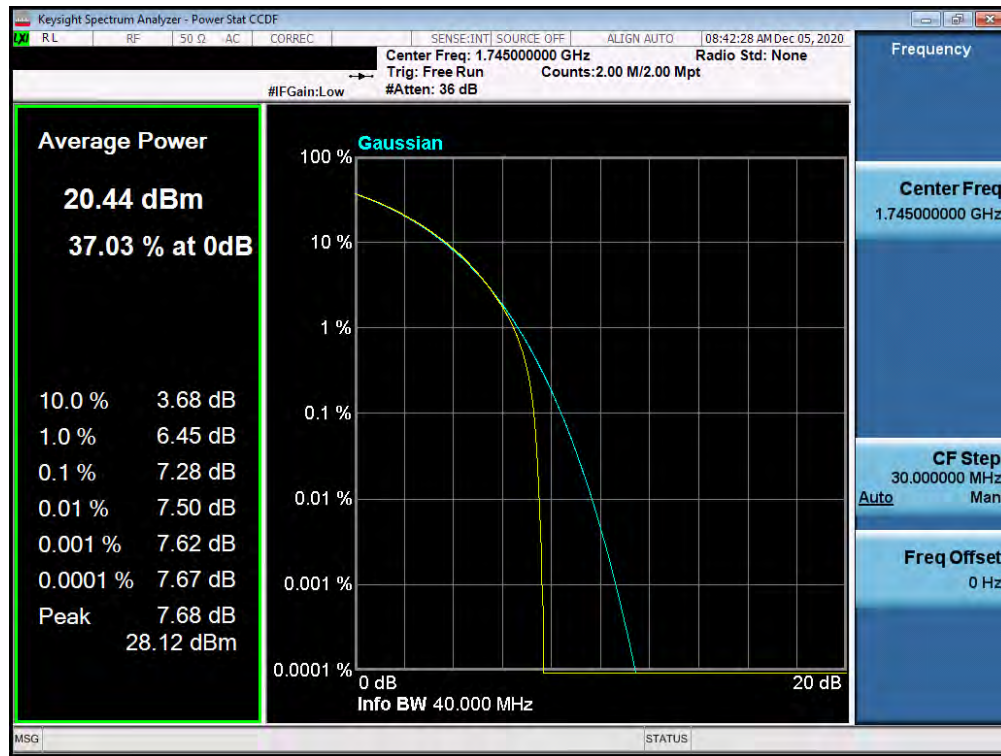
Plot 7-389. PAR Plot (NR Band n66 - 5.0MHz CP-OFDM 256-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 219 of 297

NR Band n66 – Antenna E

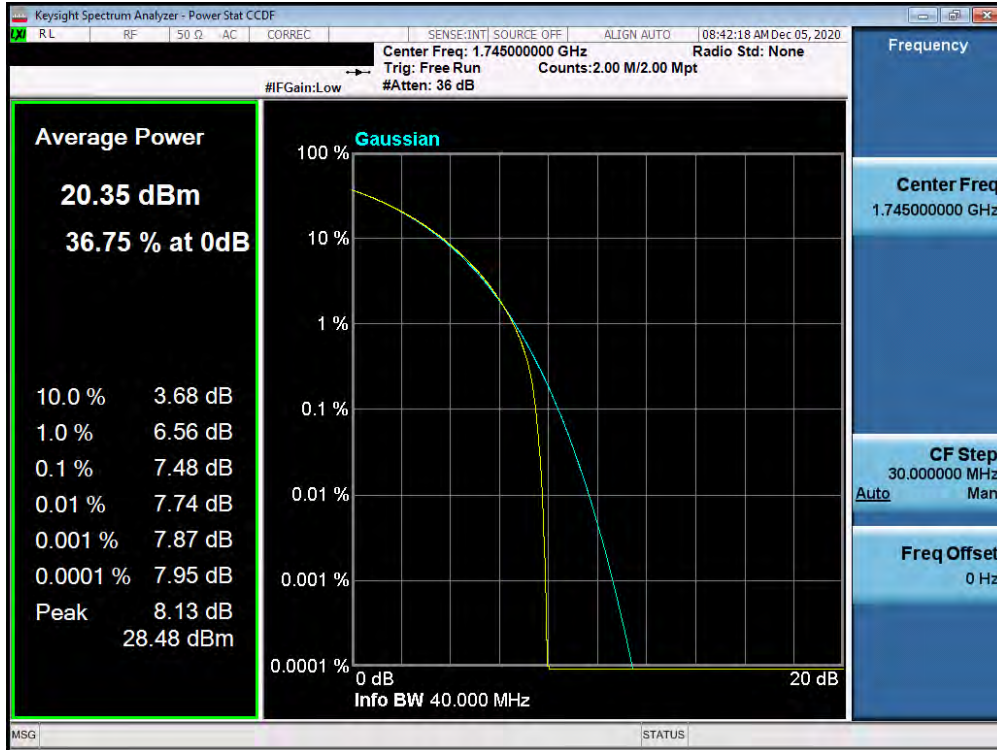


Plot 7-390. PAR Plot (NR Band n66 - 40.0MHz DFT-s-OFDM BPSK - Full RB)

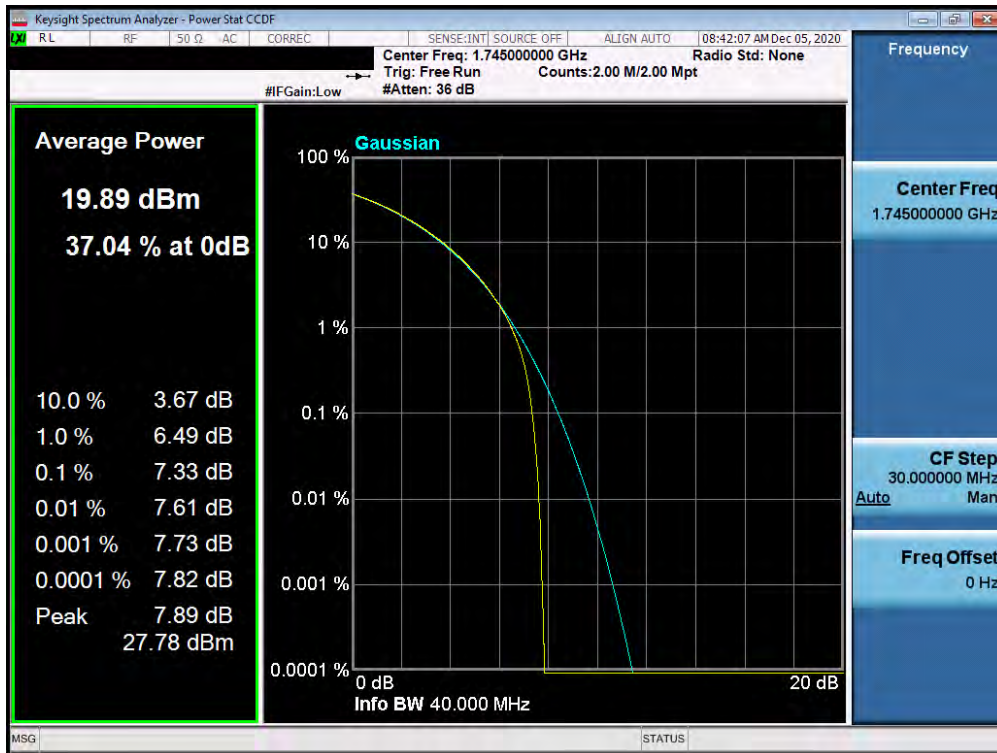


Plot 7-391. PAR Plot (NR Band n66 – 40.0MHz CP-OFDM QPSK – Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 – 12/10/2020	EUT Type: Portable Handset		Page 220 of 297

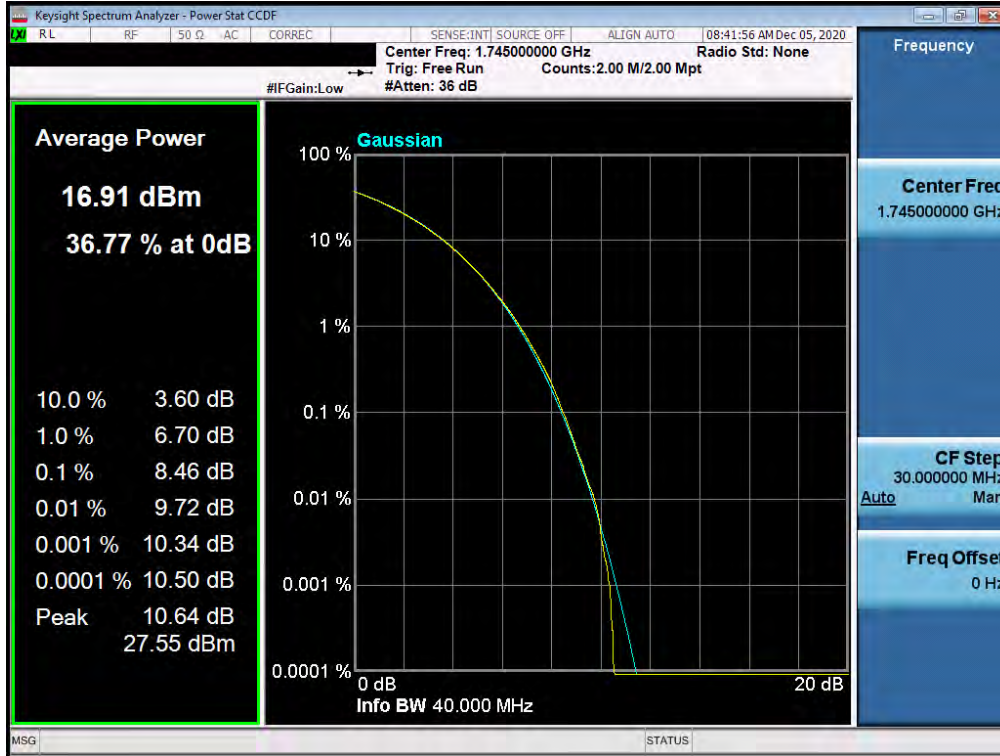


Plot 7-392. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM 16-QAM - Full RB)

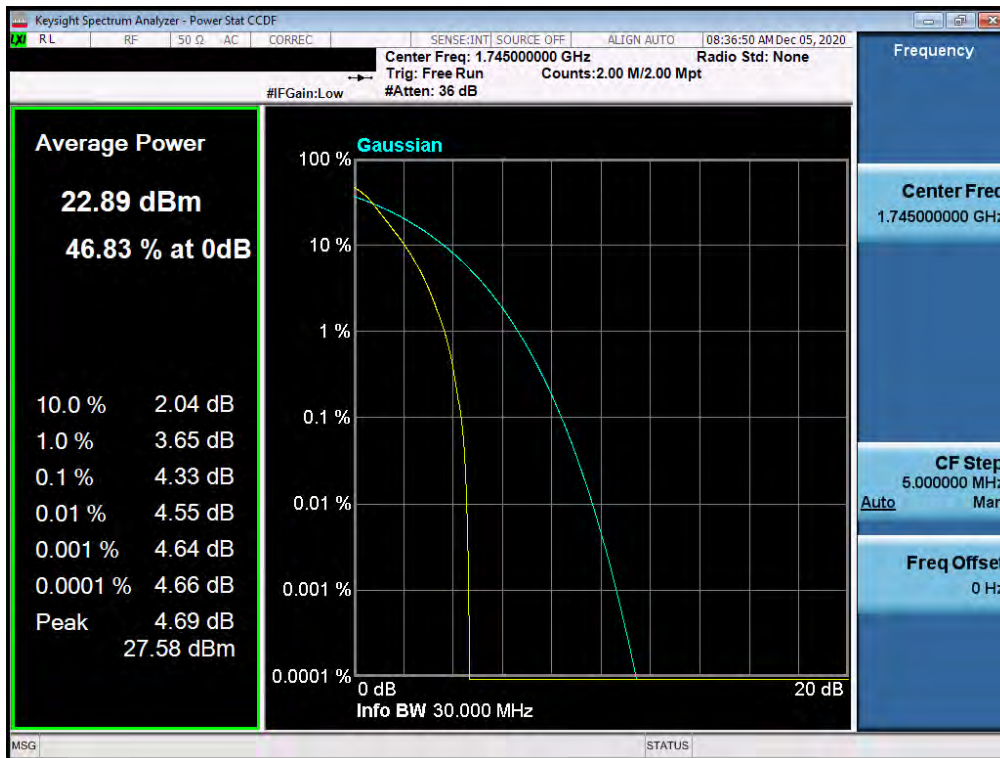


Plot 7-393. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM 64-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 221 of 297

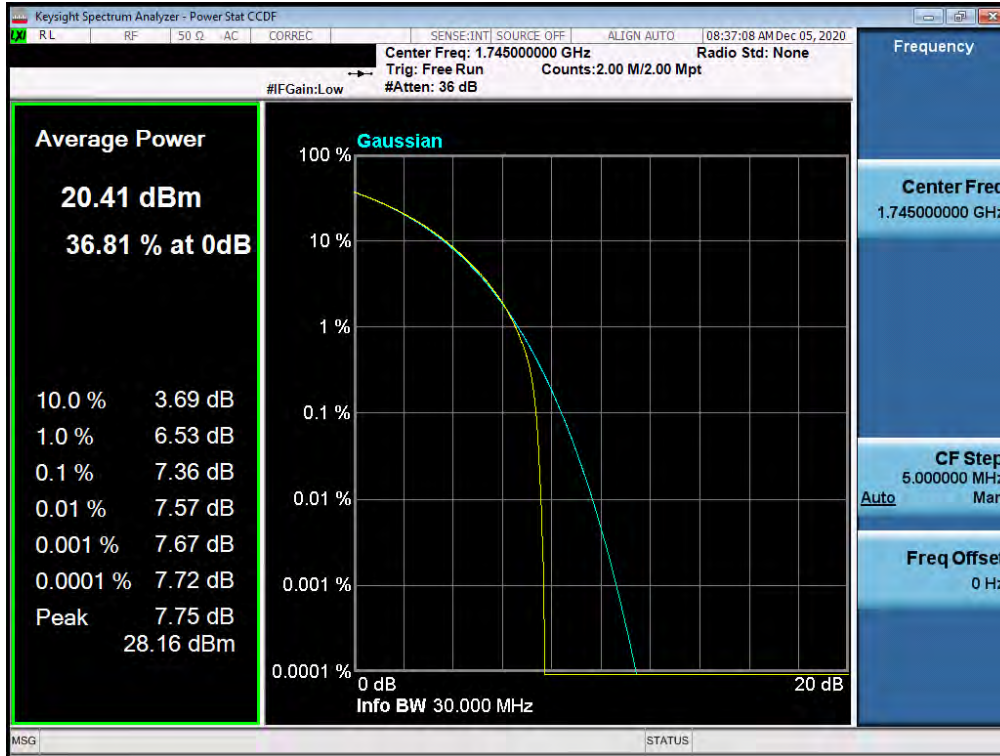


Plot 7-394. PAR Plot (NR Band n66 - 40.0MHz CP-OFDM 256-QAM - Full RB)

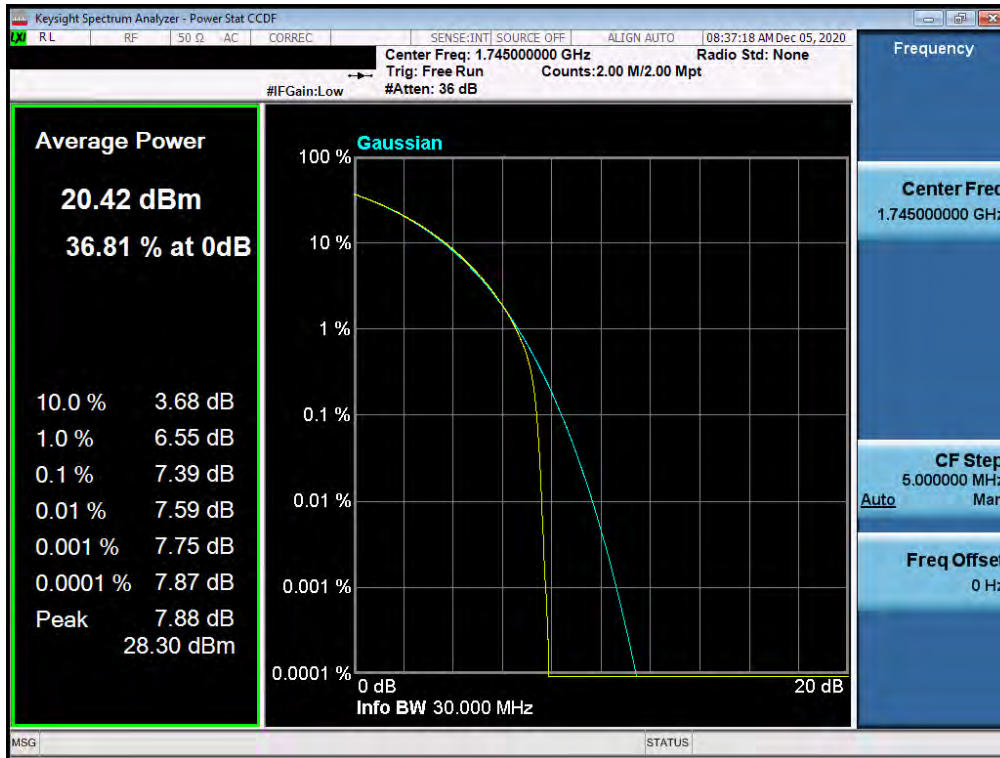


Plot 7-395. PAR Plot (NR Band n66 - 30.0MHz DFT-s-OFDM BPSK - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 222 of 297

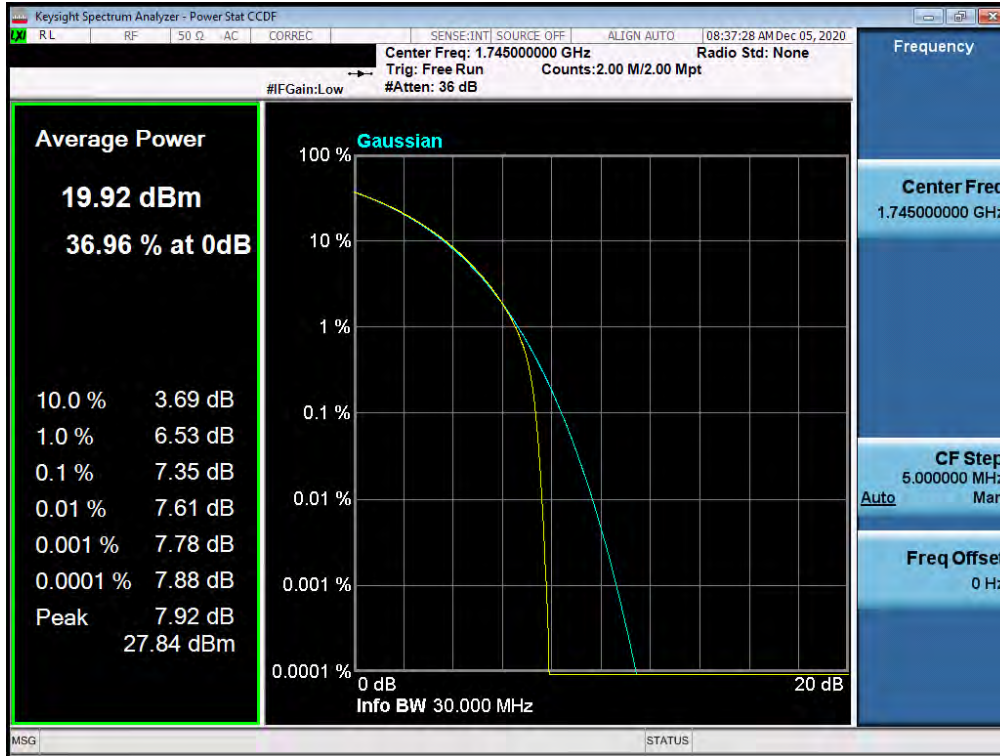


Plot 7-396. PAR Plot (NR Band n66 - 30.0MHz CP-OFDM QPSK - Full RB)

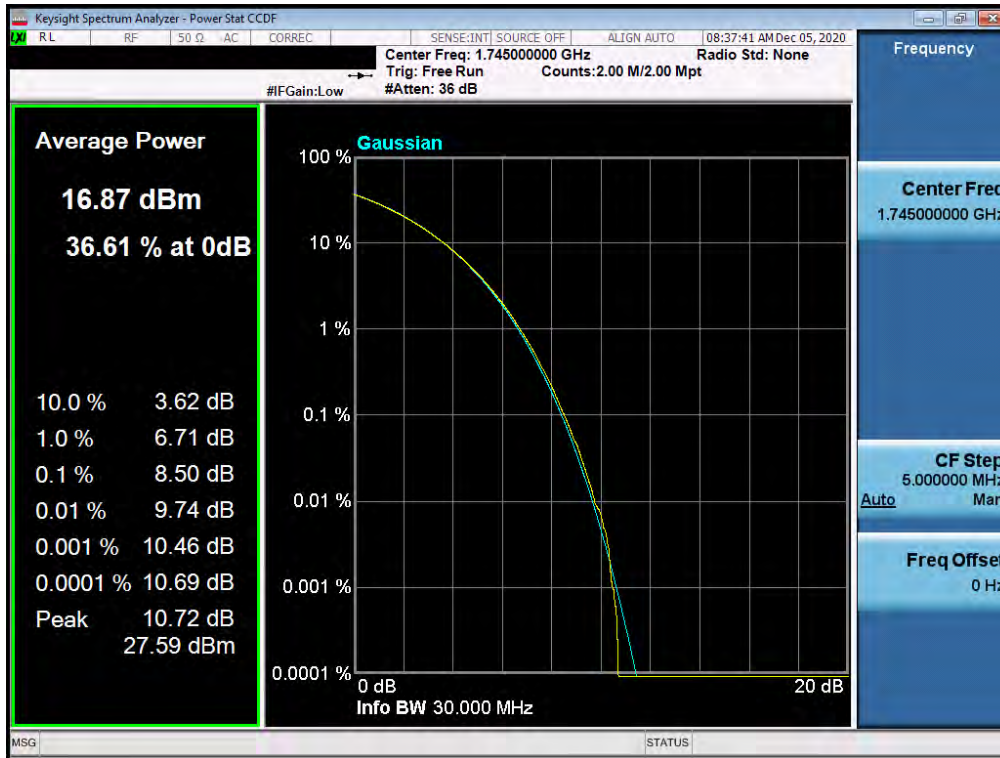


Plot 7-397. PAR Plot (NR Band n66 - 30.0MHz CP-OFDM 16-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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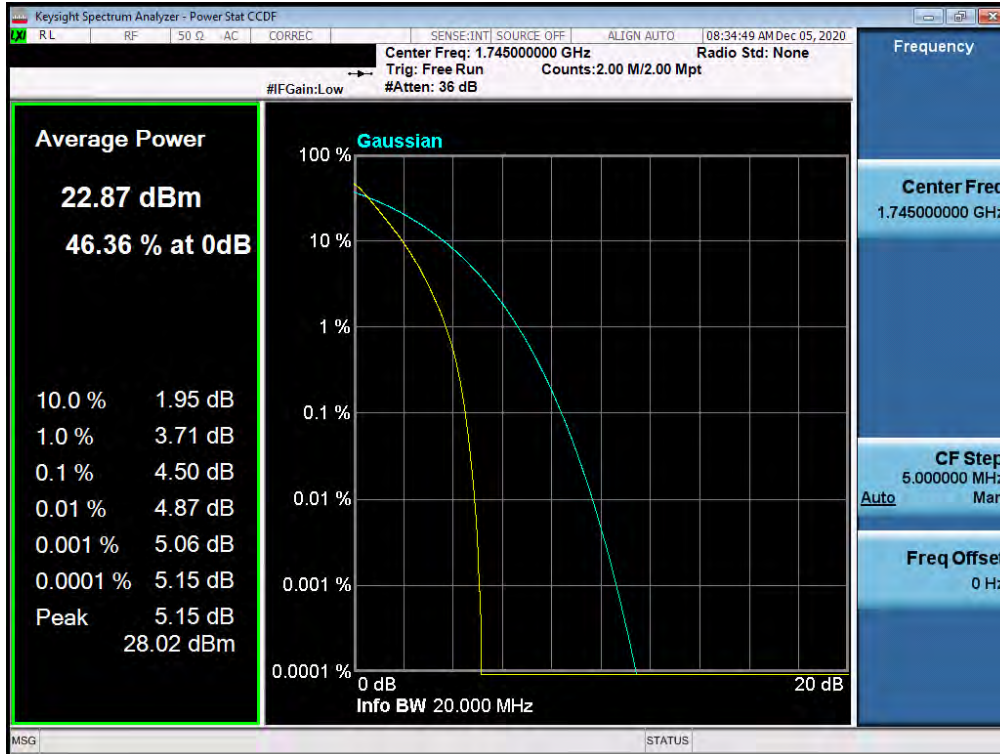


Plot 7-398. PAR Plot (NR Band n66 - 30.0MHz CP-OFDM 64-QAM - Full RB)

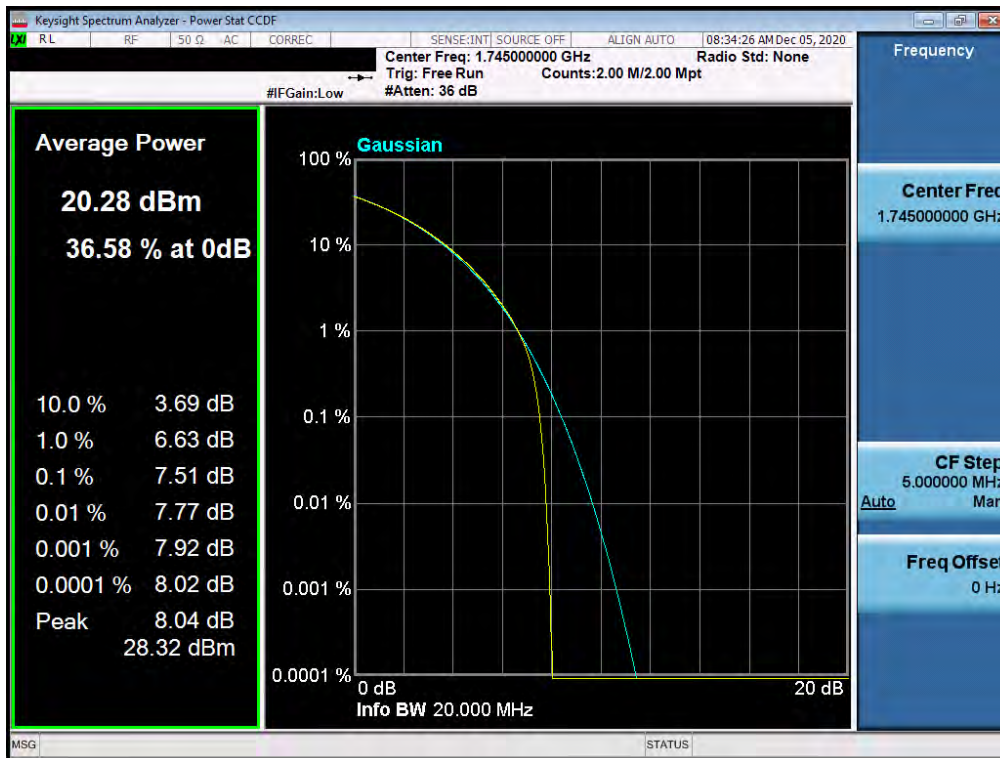


Plot 7-399. PAR Plot (NR Band n66 - 30.0MHz CP-OFDM 256-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 224 of 297

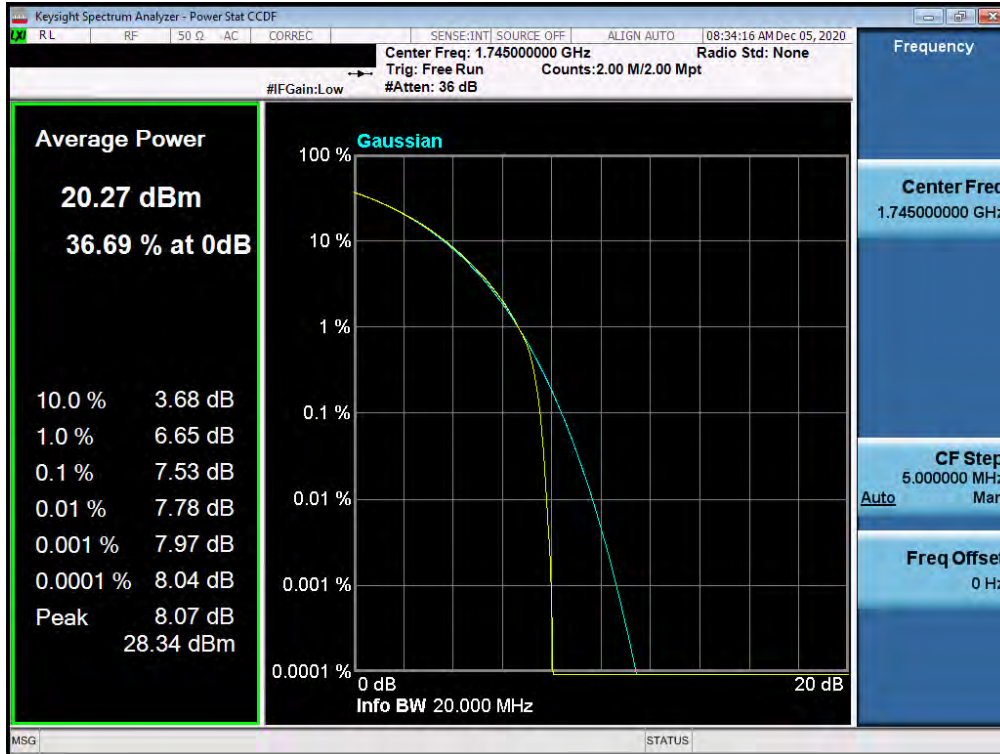


Plot 7-400. PAR Plot (NR Band n66 - 20.0MHz DFT-s-OFDM BPSK - Full RB)

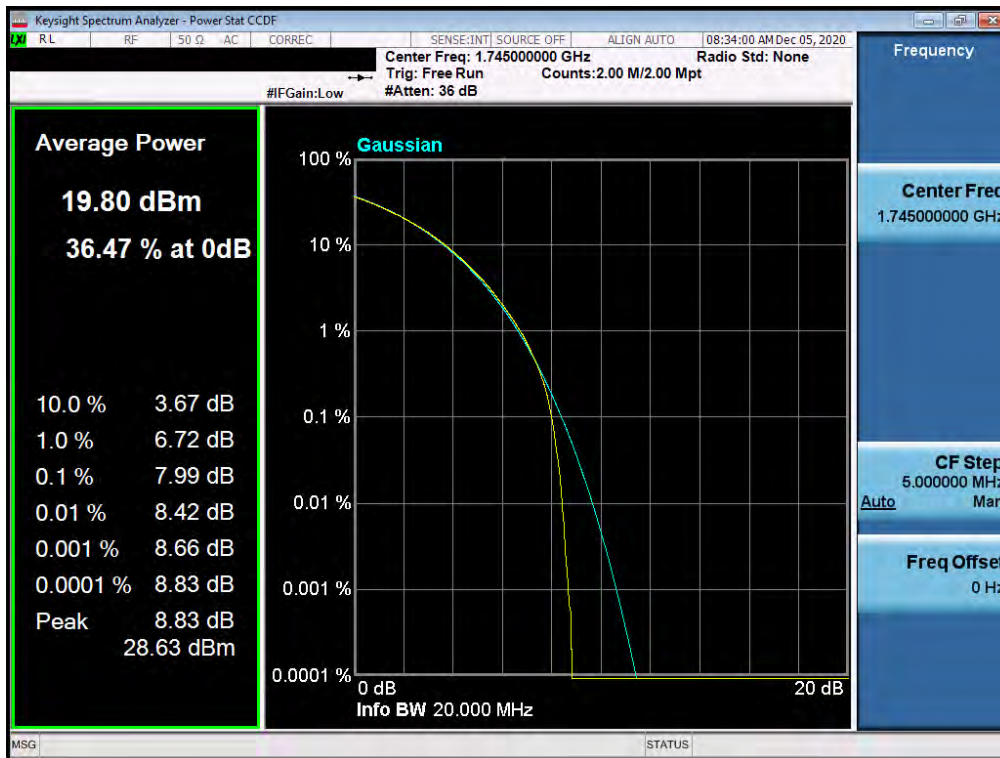


Plot 7-401. PAR Plot (NR Band n66 - 20.0MHz CP-OFDM QPSK - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 225 of 297

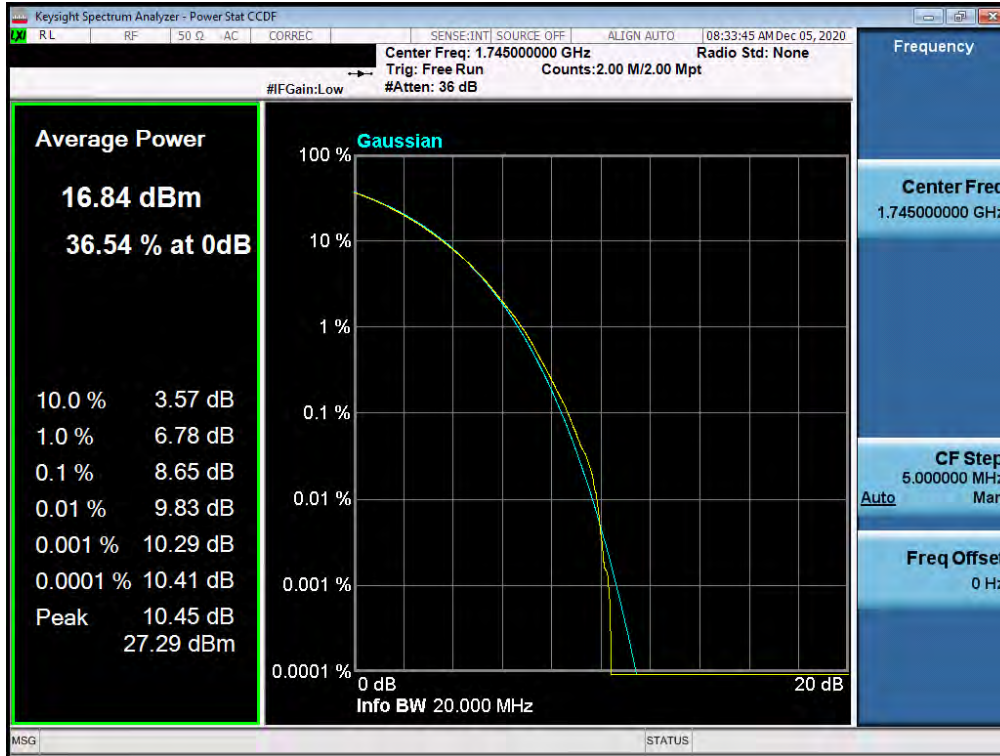


Plot 7-402. PAR Plot (NR Band n66 - 20.0MHz CP-OFDM 16-QAM - Full RB)

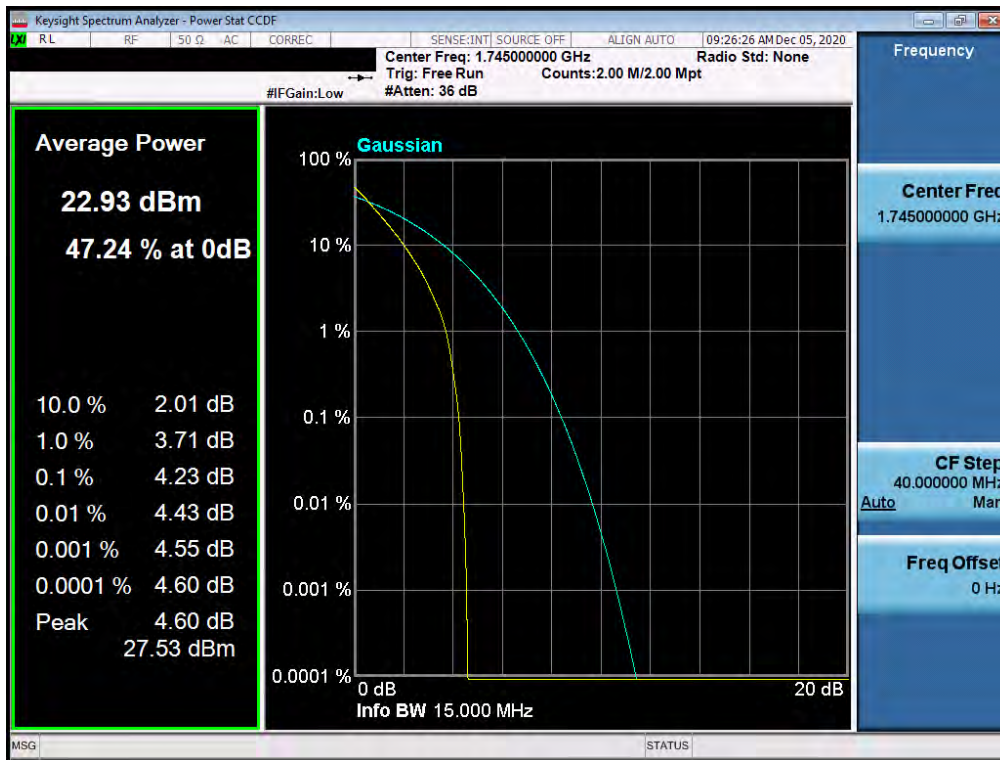


Plot 7-403. PAR Plot (NR Band n66 - 20.0MHz CP-OFDM 64-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 226 of 297

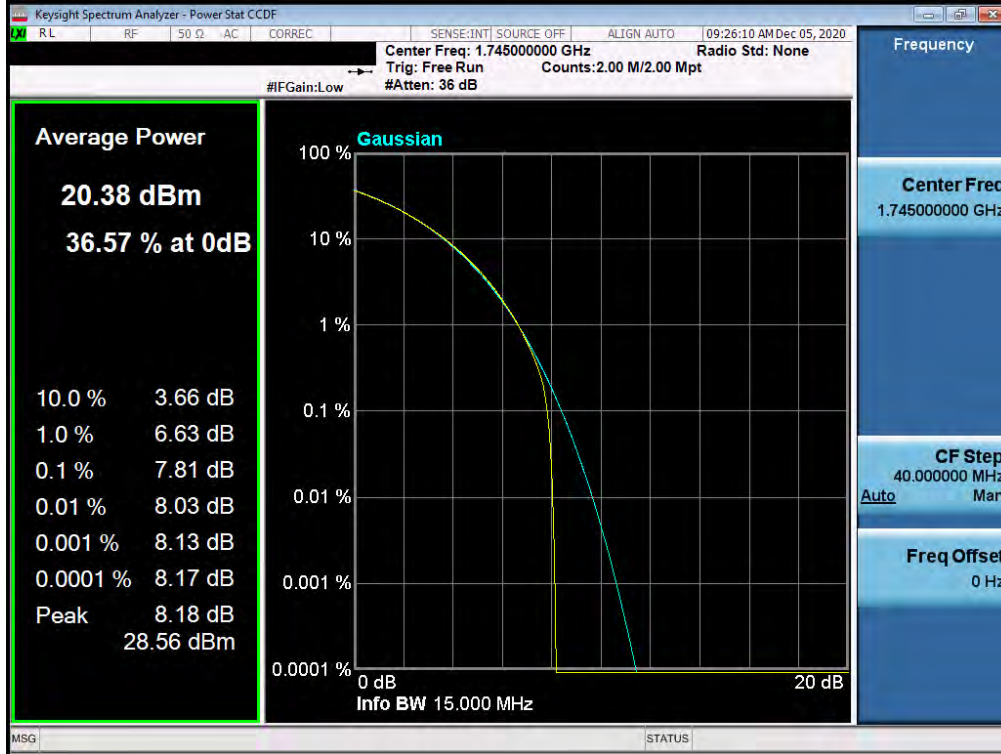


Plot 7-404. PAR Plot (NR Band n66 - 20.0MHz CP-OFDM 256-QAM - Full RB)

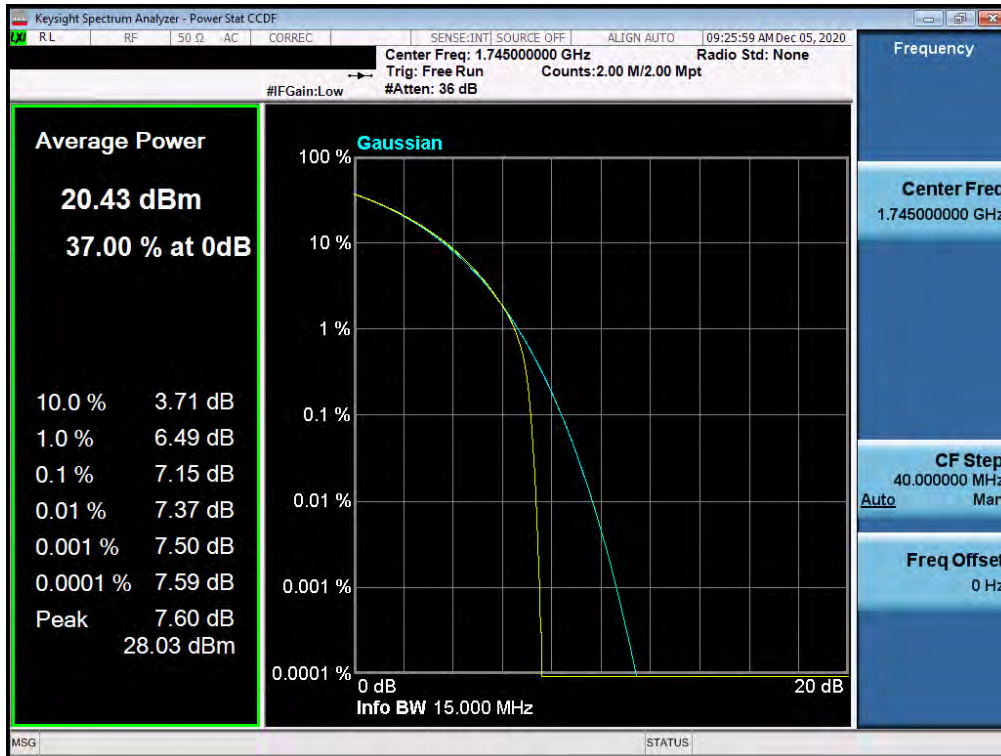


Plot 7-405. PAR Plot (NR Band n66 - 15.0MHz DFT-s-OFDM BPSK - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 227 of 297

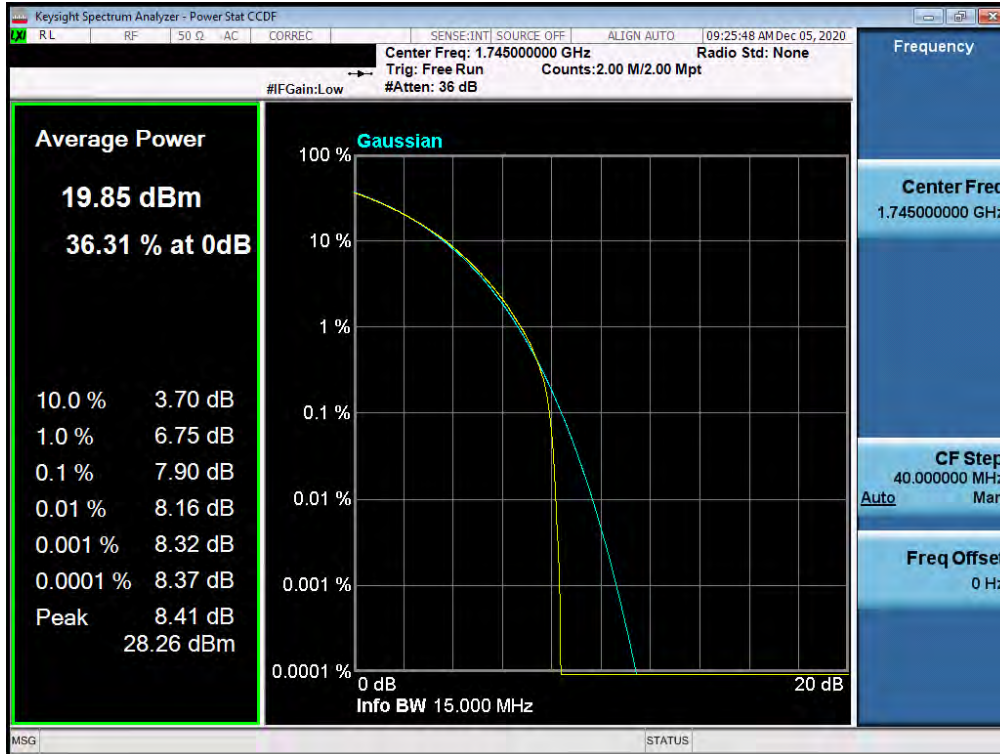


Plot 7-406. PAR Plot (NR Band n66 - 15.0MHz CP-OFDM QPSK - Full RB)

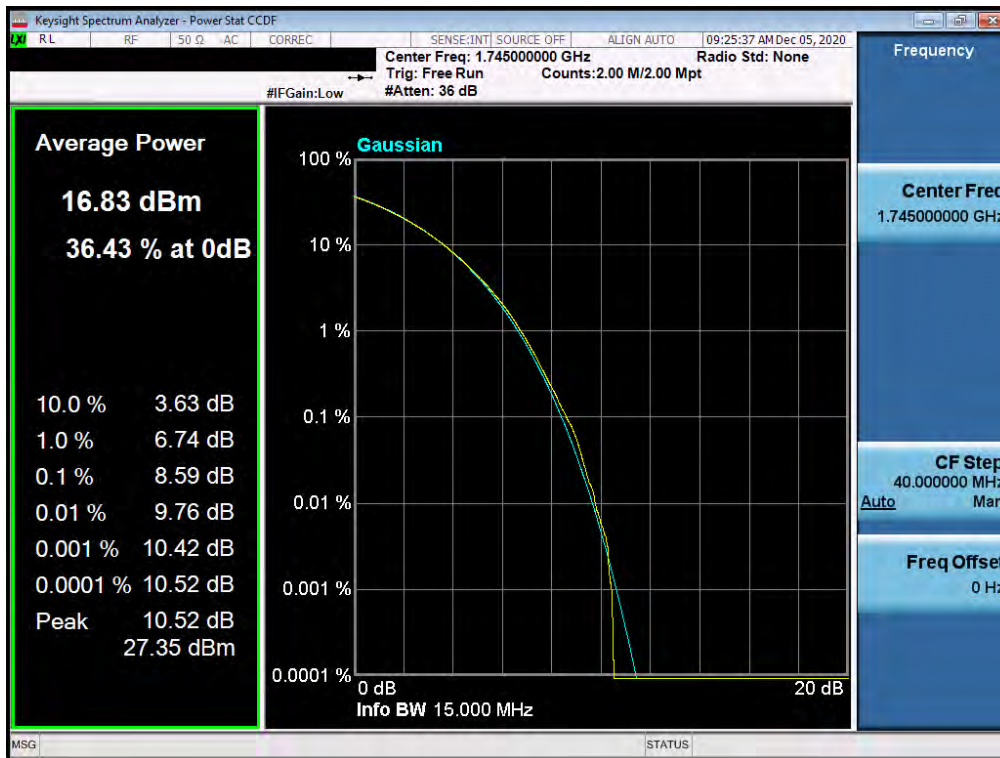


Plot 7-407. PAR Plot (NR Band n66 - 15.0MHz CP-OFDM 16-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 228 of 297

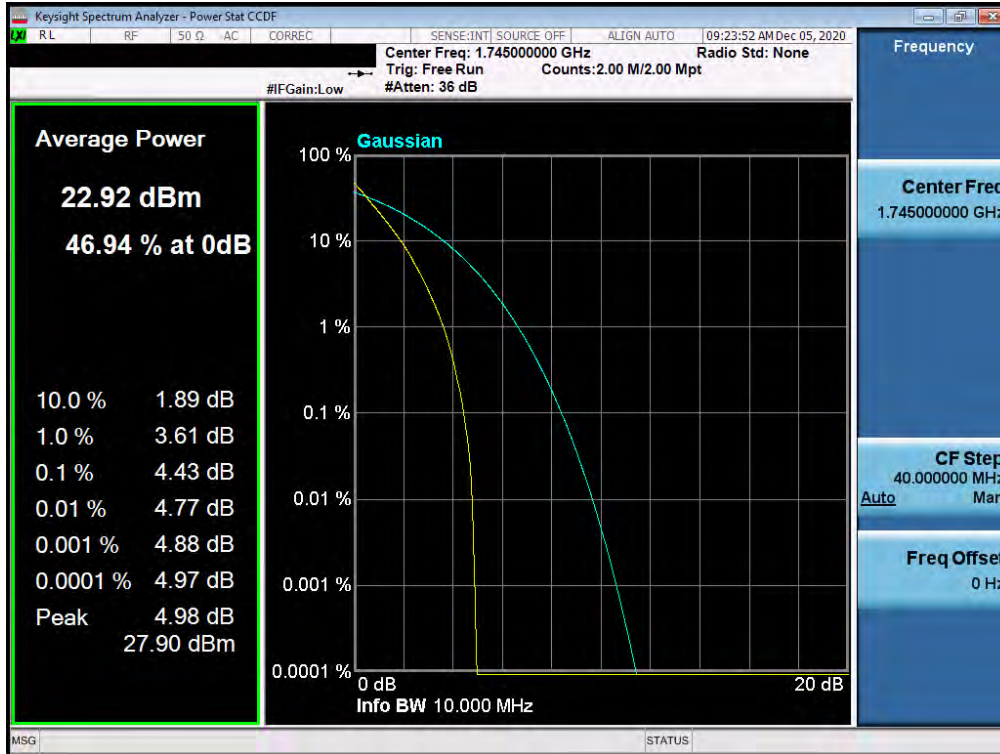


Plot 7-408. PAR Plot (NR Band n66 - 15.0MHz CP-OFDM 64-QAM - Full RB)

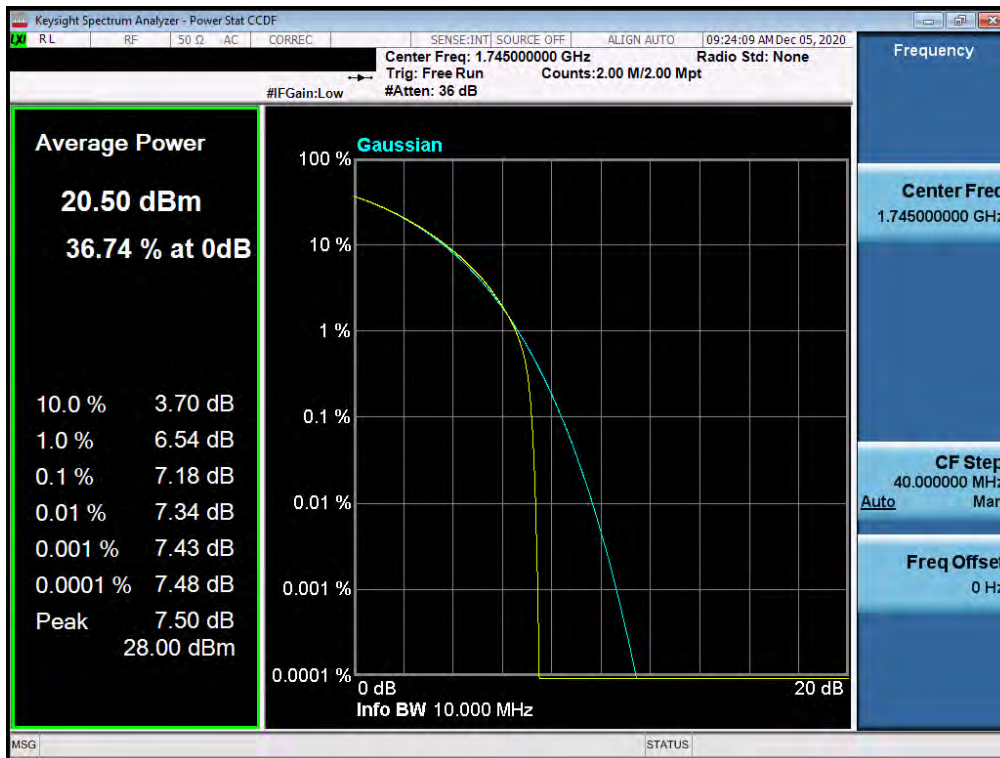


Plot 7-409. PAR Plot (NR Band n66 - 15.0MHz CP-OFDM 256-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 229 of 297

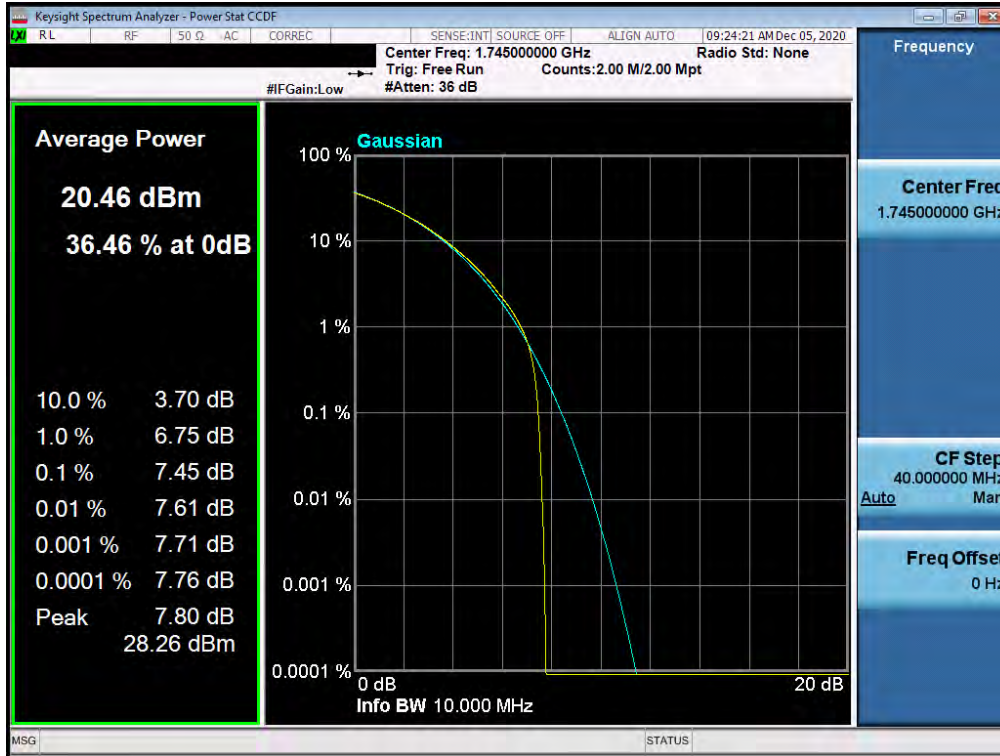


Plot 7-410. PAR Plot (NR Band n66 - 10.0MHz DFT-s-OFDM BPSK - Full RB)

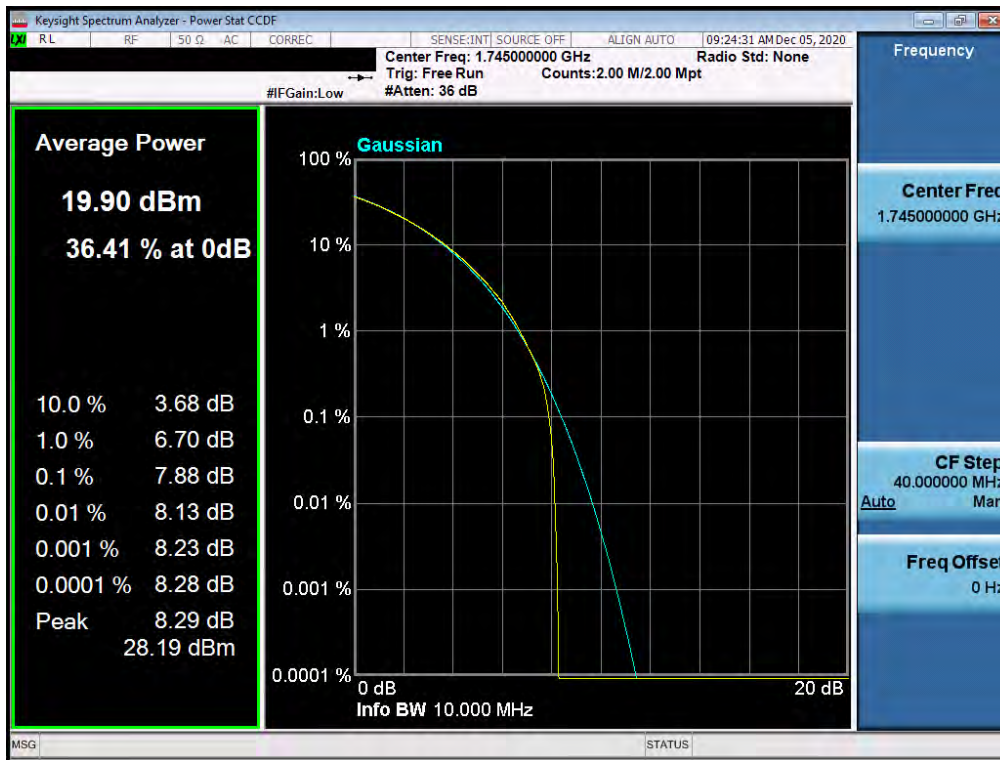


Plot 7-411. PAR Plot (NR Band n66 - 10.0MHz CP-OFDM QPSK - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 230 of 297

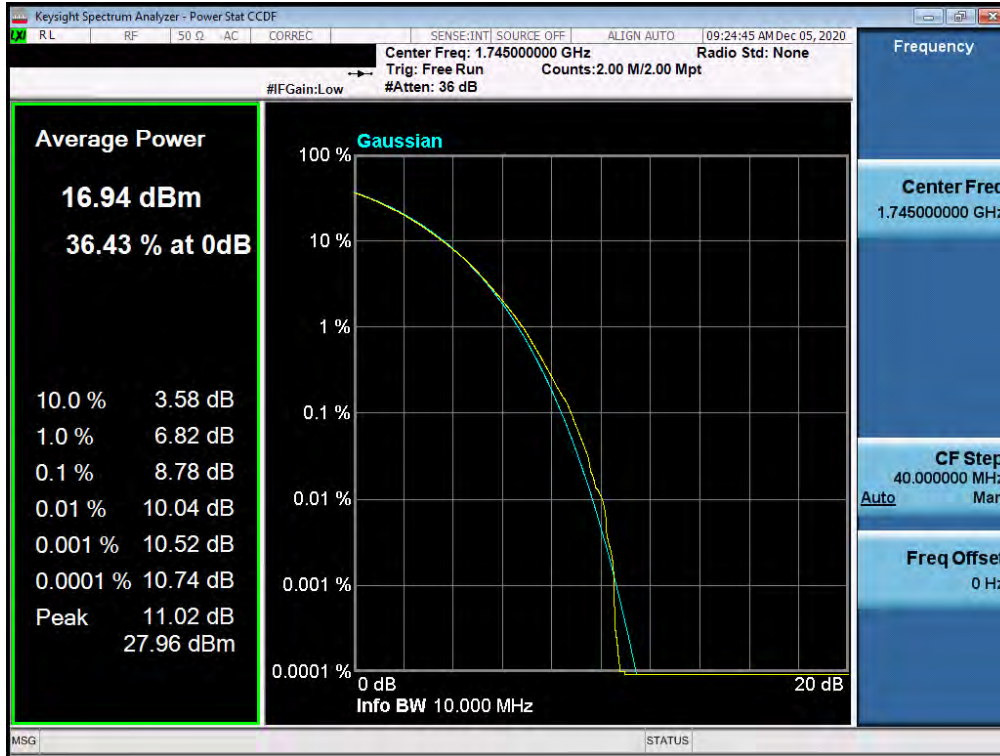


Plot 7-412. PAR Plot (NR Band n66 - 10.0MHz CP-OFDM 16-QAM - Full RB)

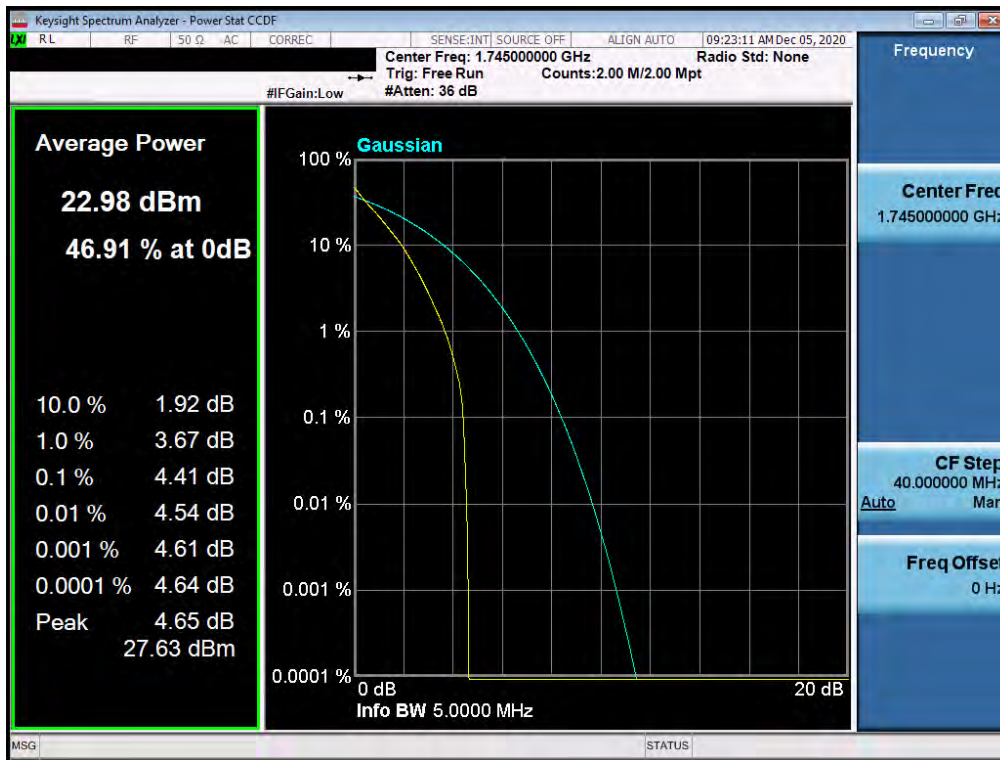


Plot 7-413. PAR Plot (NR Band n66 - 10.0MHz CP-OFDM 64-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 231 of 297

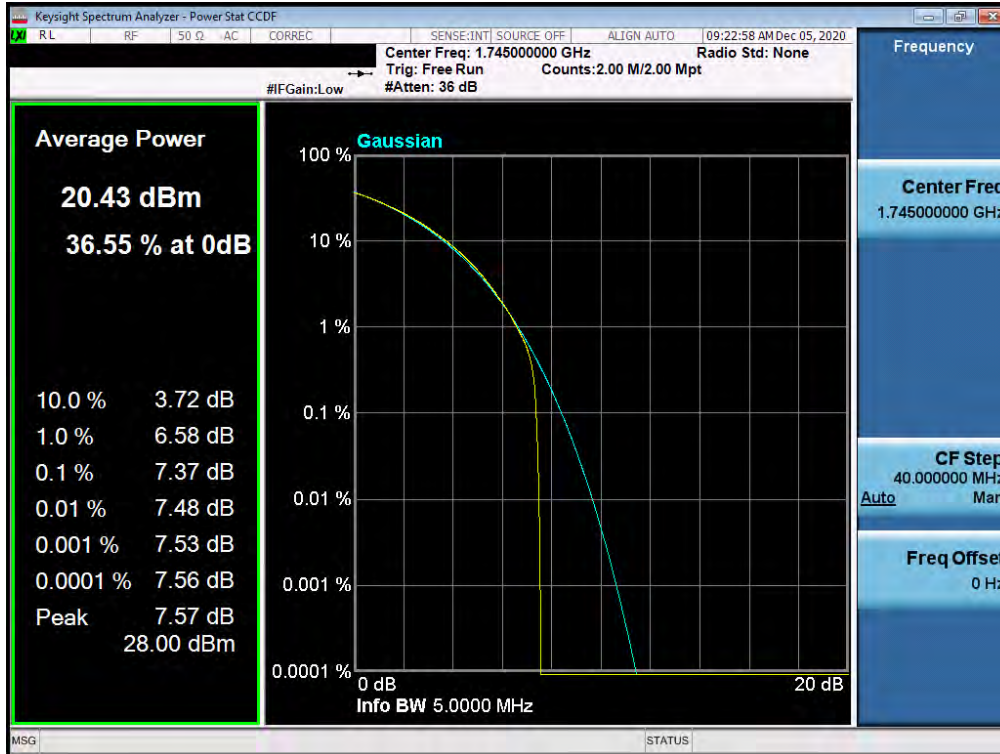


Plot 7-414. PAR Plot (NR Band n66 - 10.0MHz CP-OFDM 256-QAM - Full RB)

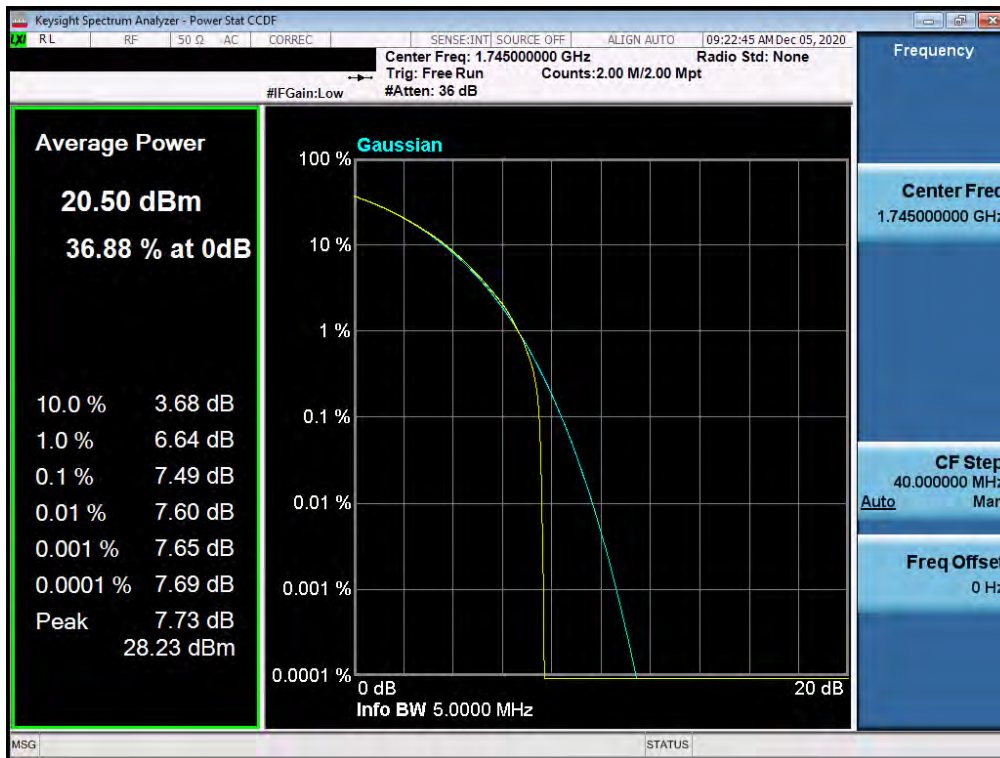


Plot 7-415. PAR Plot (NR Band n66 - 5.0MHz DFT-s-OFDM BPSK - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 232 of 297

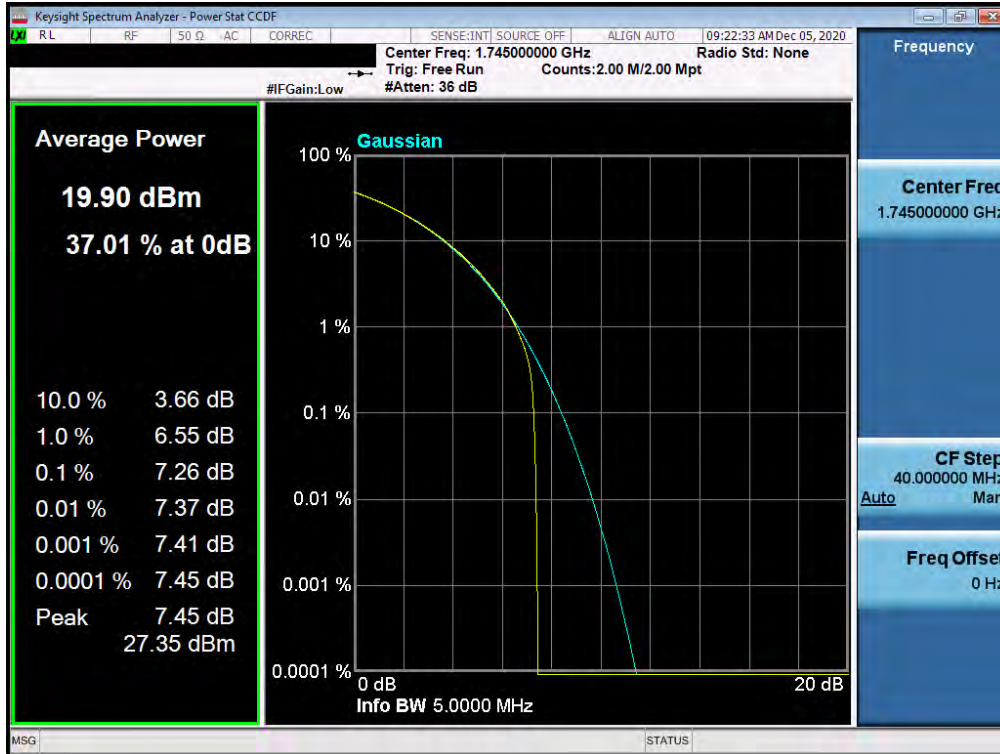


Plot 7-416. PAR Plot (NR Band n66 - 5.0MHz CP-OFDM QPSK - Full RB)

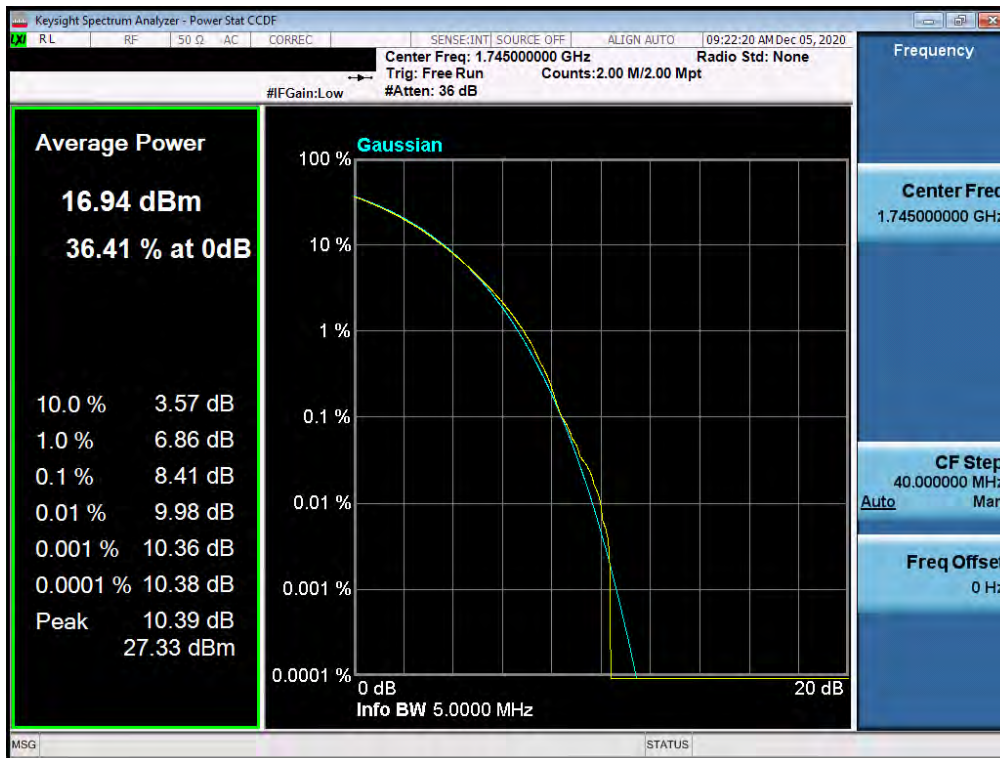


Plot 7-417. PAR Plot (NR Band n66 - 5.0MHz CP-OFDM 16-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
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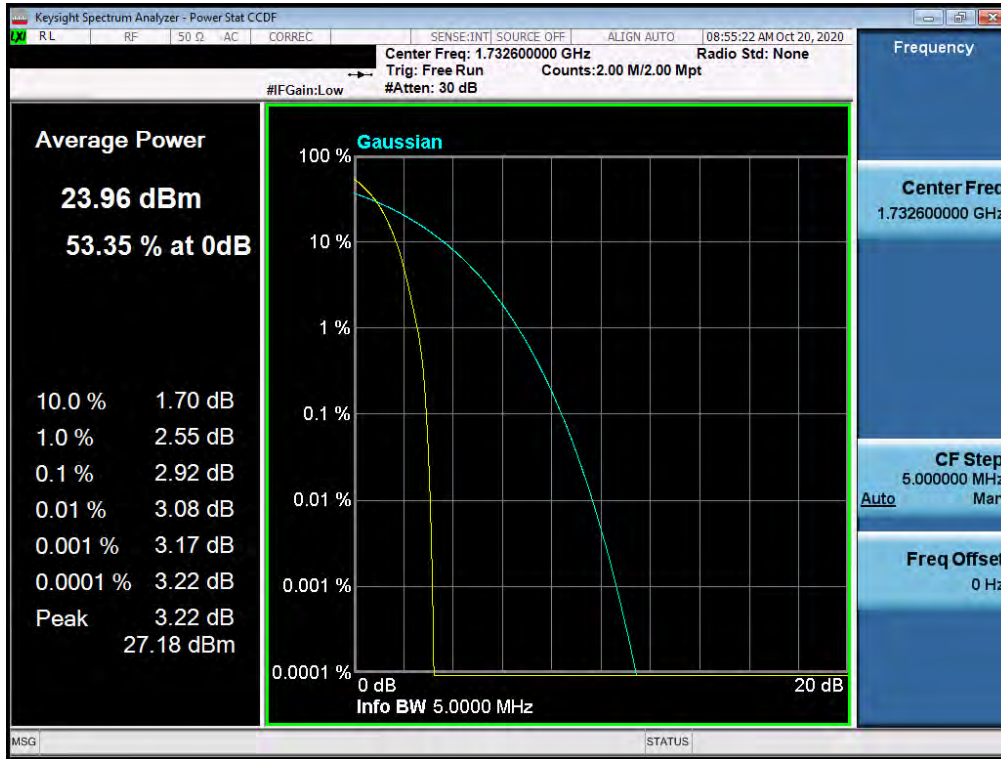
Plot 7-418. PAR Plot (NR Band n66 - 5.0MHz CP-OFDM 64-QAM - Full RB)



Plot 7-419. PAR Plot (NR Band n66 - 5.0MHz CP-OFDM 256-QAM - Full RB)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 - 12/10/2020	EUT Type: Portable Handset		Page 234 of 297

WCDMA AWS



Plot 7-420. PAR Plot (WCDMA, Ch. 1413)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
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7.6 Uplink Carrier Aggregation

§27.53(m)

Test Overview

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

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: A3LSMG998U	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
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Test Notes



1. 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.
2. 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.

FCC ID: A3LSMG998U	 PART 27 MEASUREMENT REPORT 		Approved by: Quality Manager
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Uplink CA Configuration 66B/C

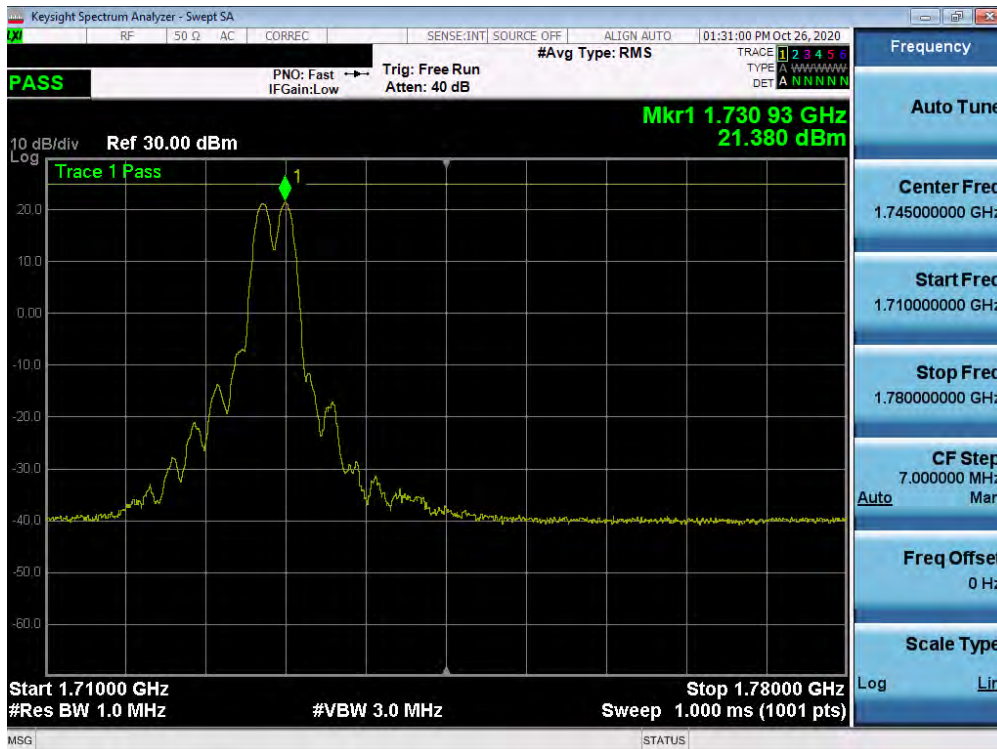
Power State	Band	Bandwidth (PCC + SCC)	PCC				SCC				ULCA Tx. Power [dBm]		
			Modulation	UL Channel	UL Frequency	UL # RB	UL RB Offset	Modulation	UL Channel	UL Frequency		UL # RB	UL RB Offset
Max	LTE B66	20MHz + 20MHz	QPSK	132072	1720.0	1	99	QPSK	132270	1739.8	1	0	24.27
				132322	1745.0	1	99		132520	1764.8	1	0	24.21
				132572	1770.0	1	0		132374	1750.2	1	99	24.39
			QPSK	132572	1770	100	0	QPSK	132374	1750.2	100	0	23.29
			16-QAM	132572	1770	100	0	16-QAM	132374	1750.2	100	0	22.30
			64-QAM	132572	1770	100	0	64-QAM	132374	1750.2	100	0	21.14
			256-QAM	132572	1770	100	0	256-QAM	132374	1750.2	100	0	19.59

Table 7-2. Conducted Powers (B66 with Various Combinations for 20MHz + 20MHz Channel Bandwidth)

FCC ID: A3LSMG998U	 PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
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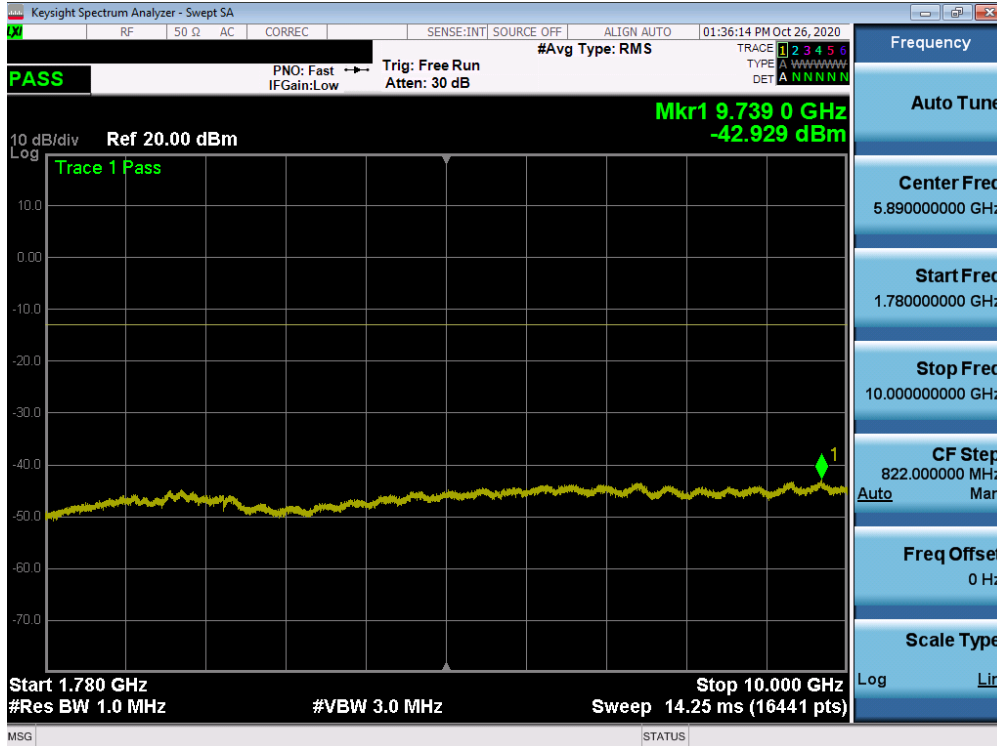


Plot 7-421. Conducted Spurious Plot (Band 66 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Low Channel)

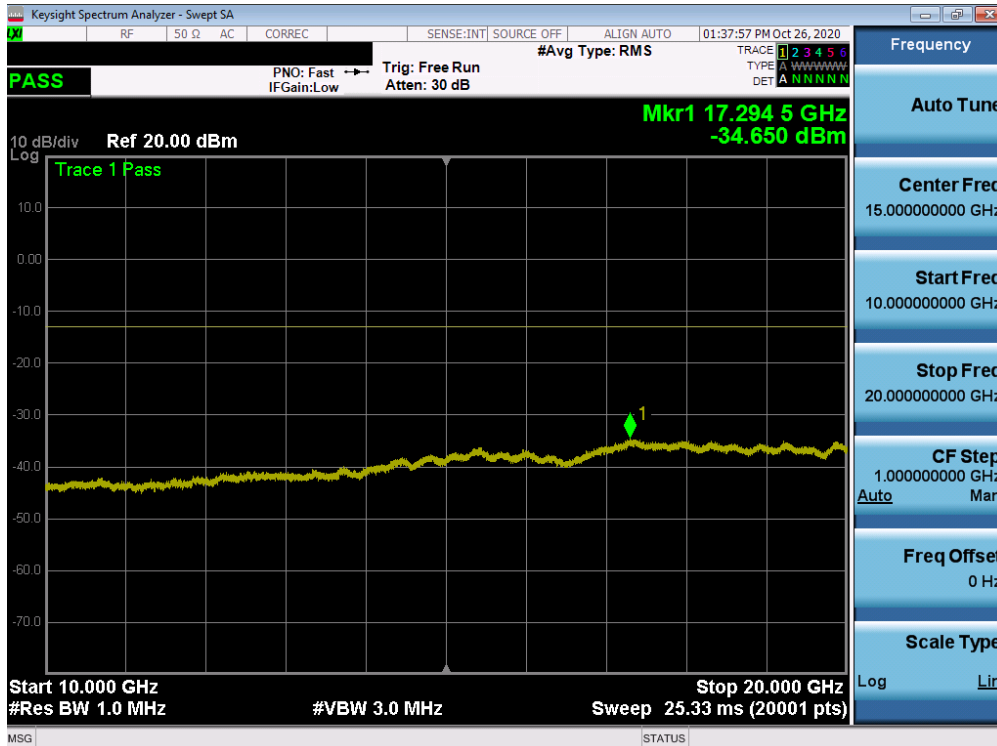


Plot 7-422. Conducted Spurious Plot (Band 66 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Low Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 – 12/10/2020	EUT Type: Portable Handset		Page 239 of 297

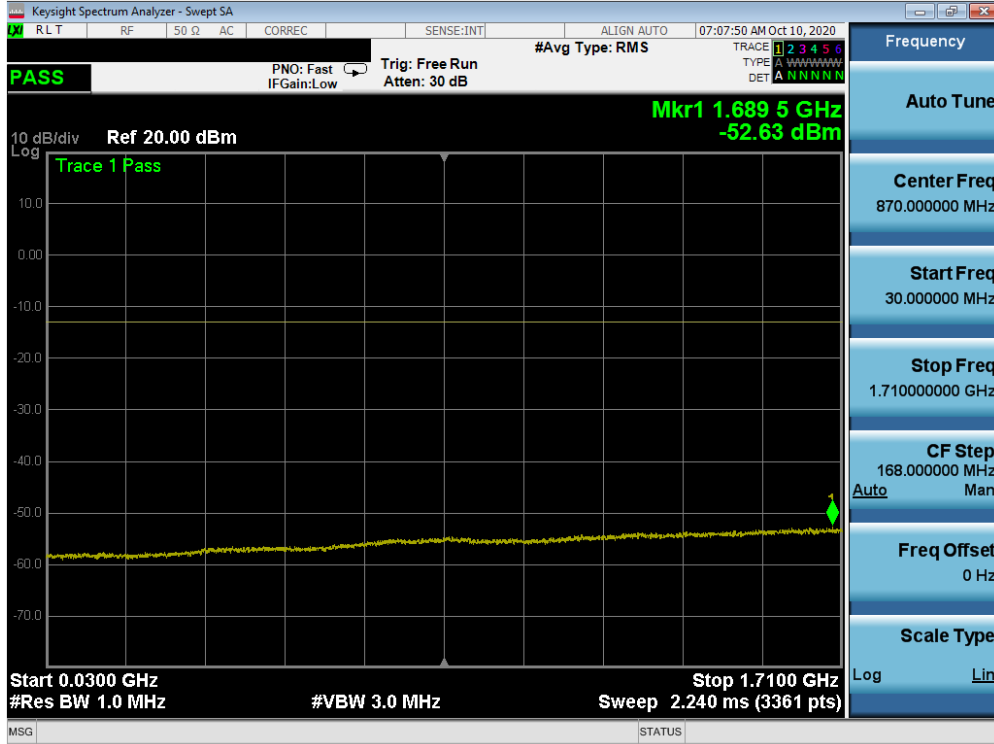


Plot 7-423. Conducted Spurious Plot (Band 66 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Low Channel)

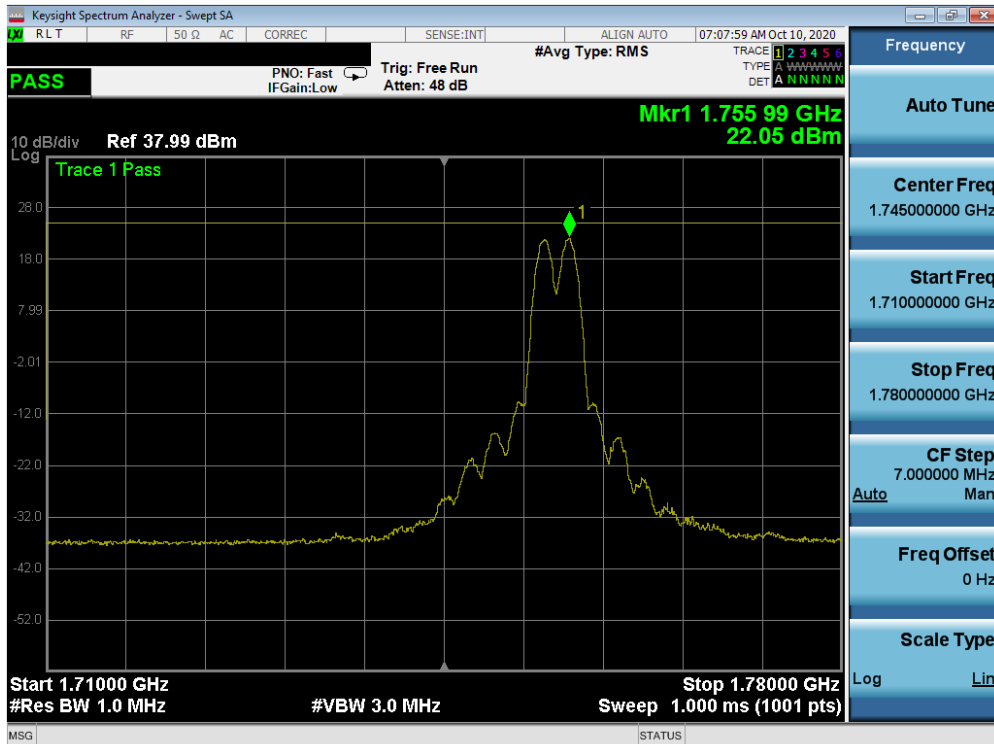


Plot 7-424. Conducted Spurious Plot (Band 66 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Low Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 – 12/10/2020	EUT Type: Portable Handset		Page 240 of 297

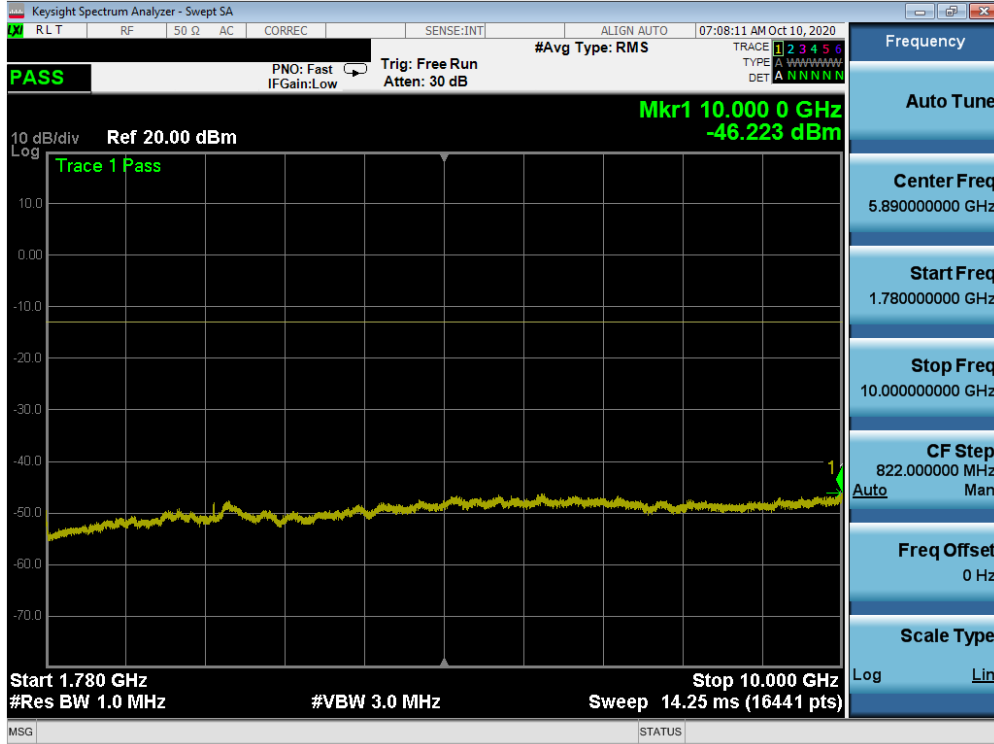


Plot 7-425. Conducted Spurious Plot (Band 66 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

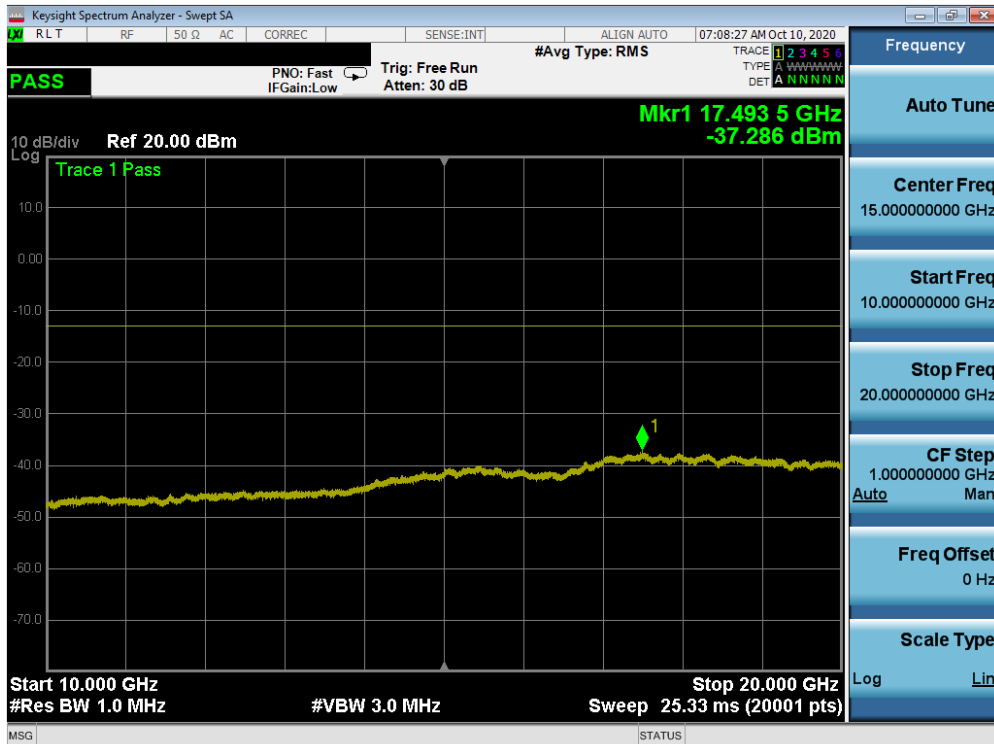


Plot 7-426. Conducted Spurious Plot (Band 66 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT		Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 – 12/10/2020	EUT Type: Portable Handset		Page 241 of 297



Plot 7-427. Conducted Spurious Plot (Band 66 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)



Plot 7-428. Conducted Spurious Plot (Band 66 – 20.0MHz QPSK – PCC 1/99 SCC 1/0 – Mid Channel)

FCC ID: A3LSMG998U	PCTEST Proud to be part of element	PART 27 MEASUREMENT REPORT	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M2009230152-27.A3L	Test Dates: 9/23 – 12/10/2020	EUT Type: Portable Handset		Page 242 of 297