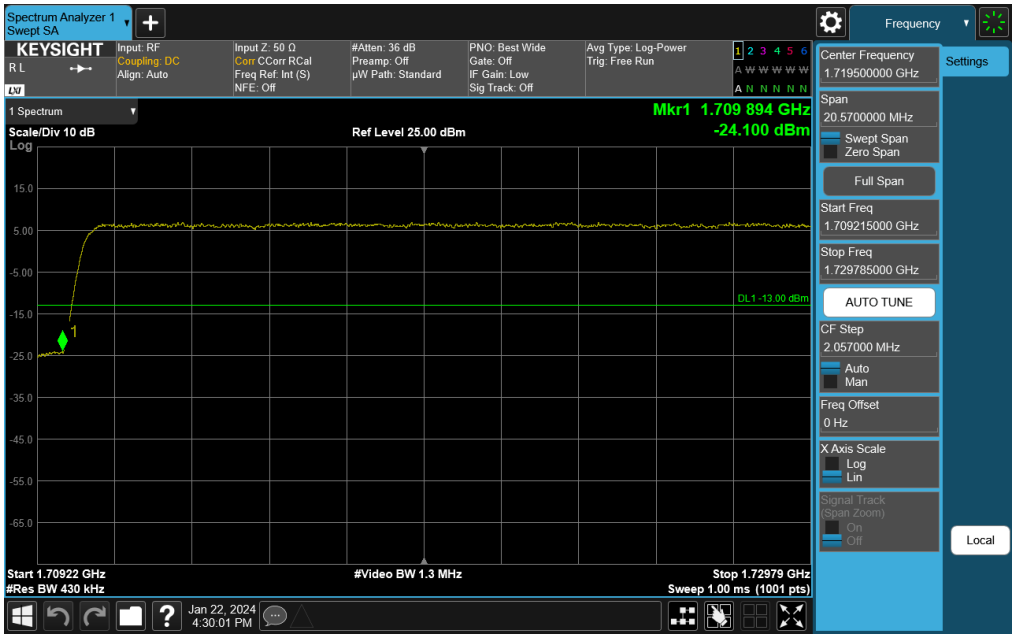
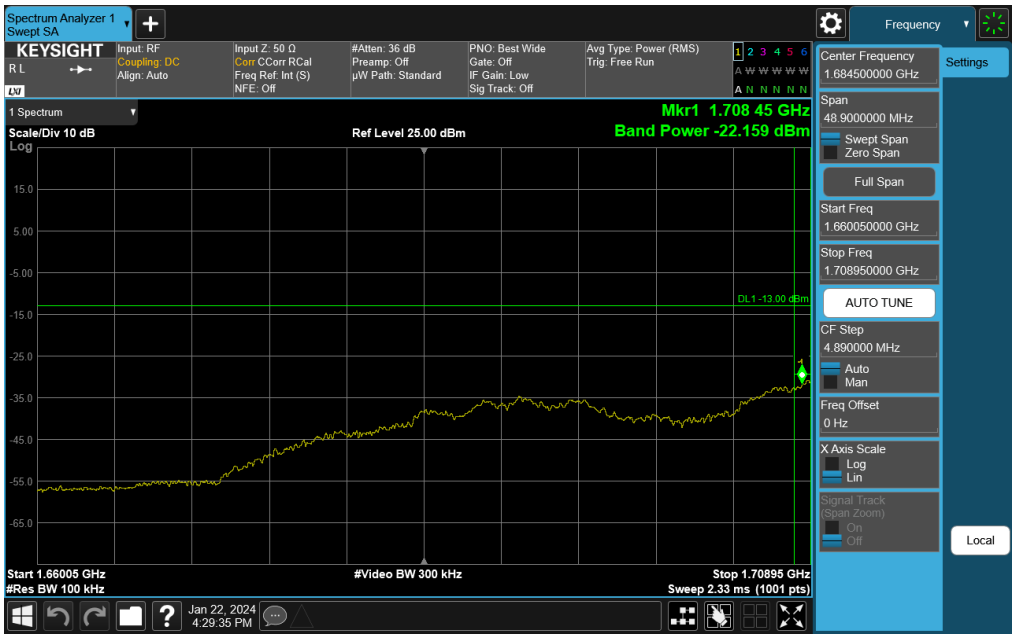
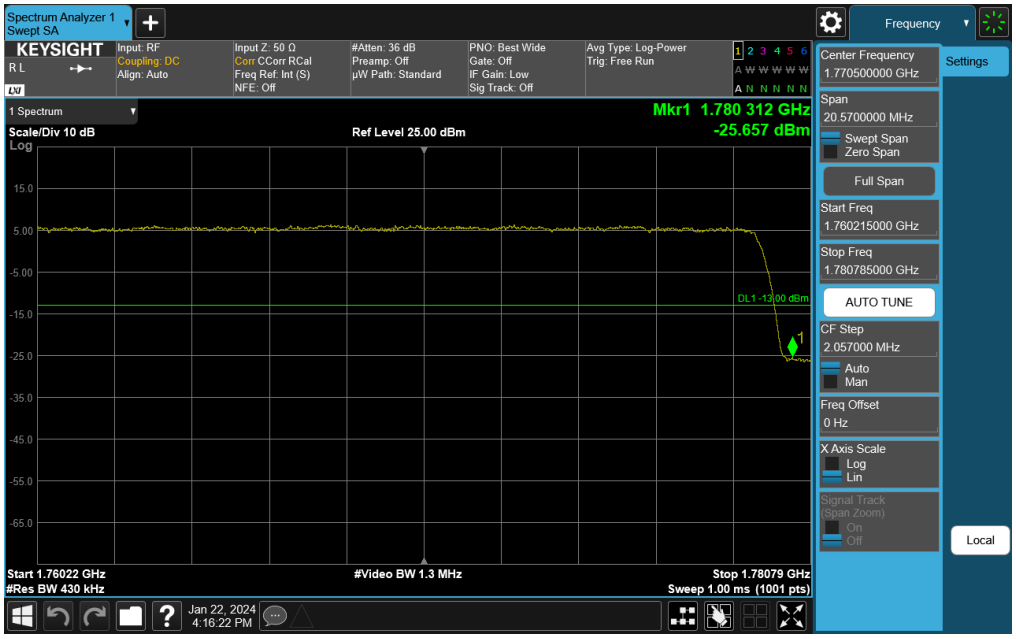


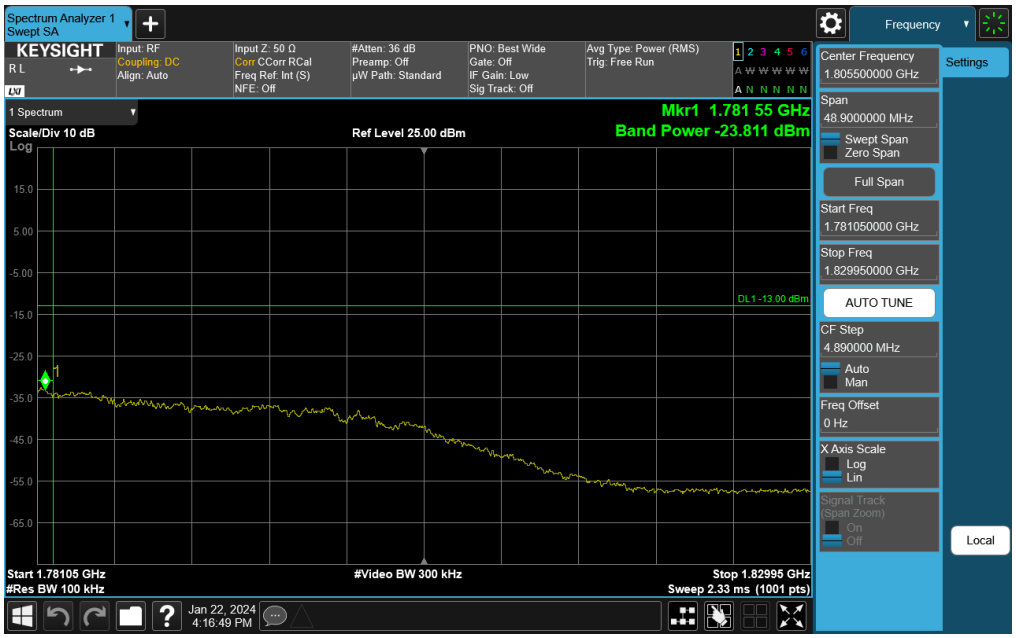
Plot 7-340. Lower Band Edge Plot (NR Band n66 – 40.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



Plot 7-341. Lower Extended Band Edge Plot (NR Band n66 – 40.0MHz DFT-s-OFDM π/2 BPSK - Full RB)

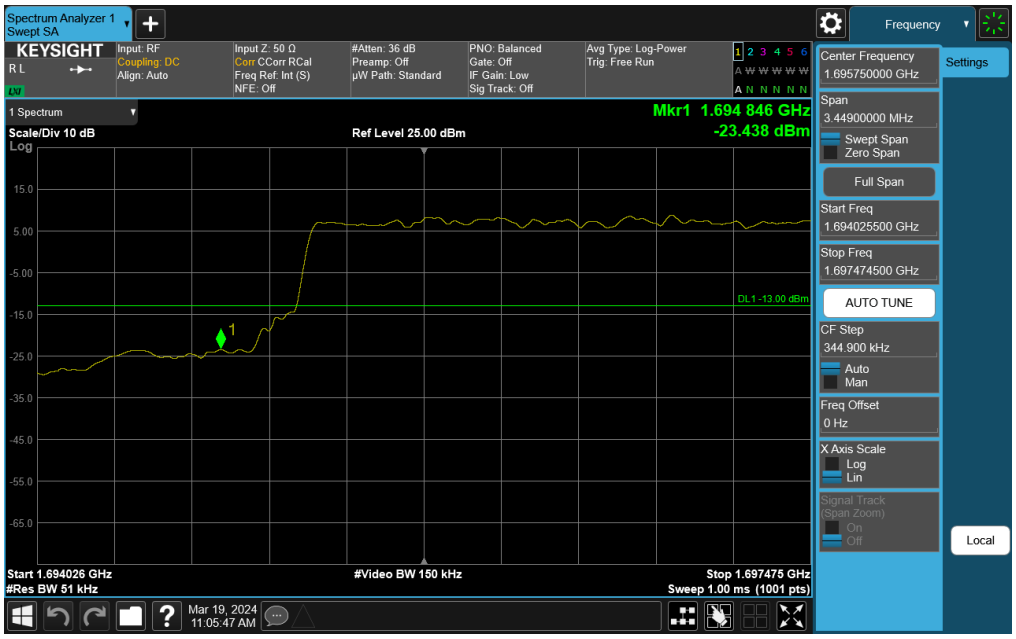


Plot 7-342. Upper Band Edge Plot (NR Band n66 – 40.0MHz DFT-s-OFDM π/2 BPSK - Full RB)

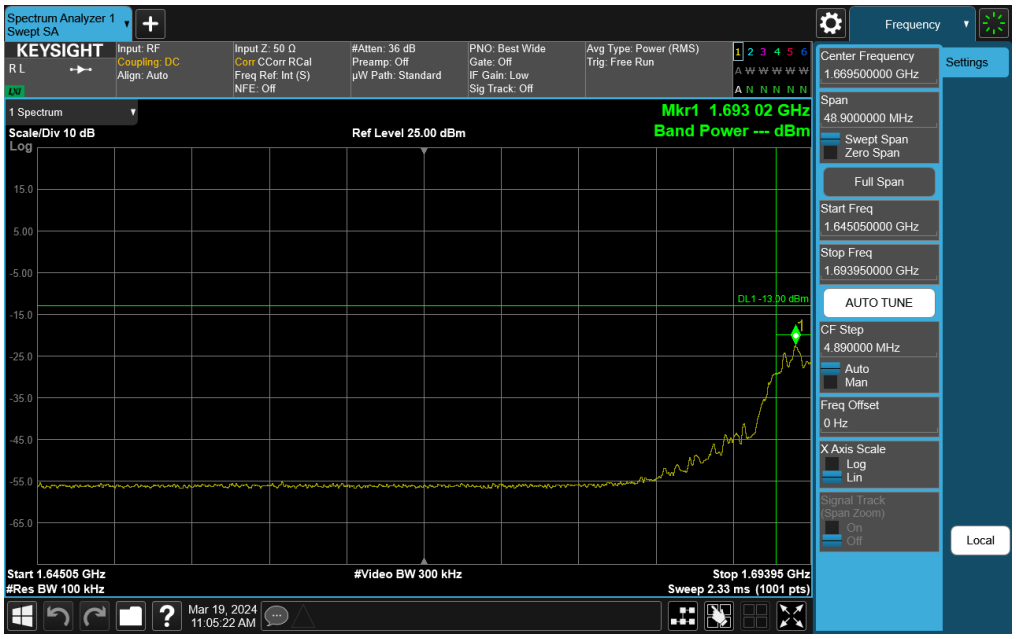


Plot 7-343. Upper Extended Band Edge Plot (NR Band n66 – 40.0MHz DFT-s-OFDM π/2 BPSK - Full RB)

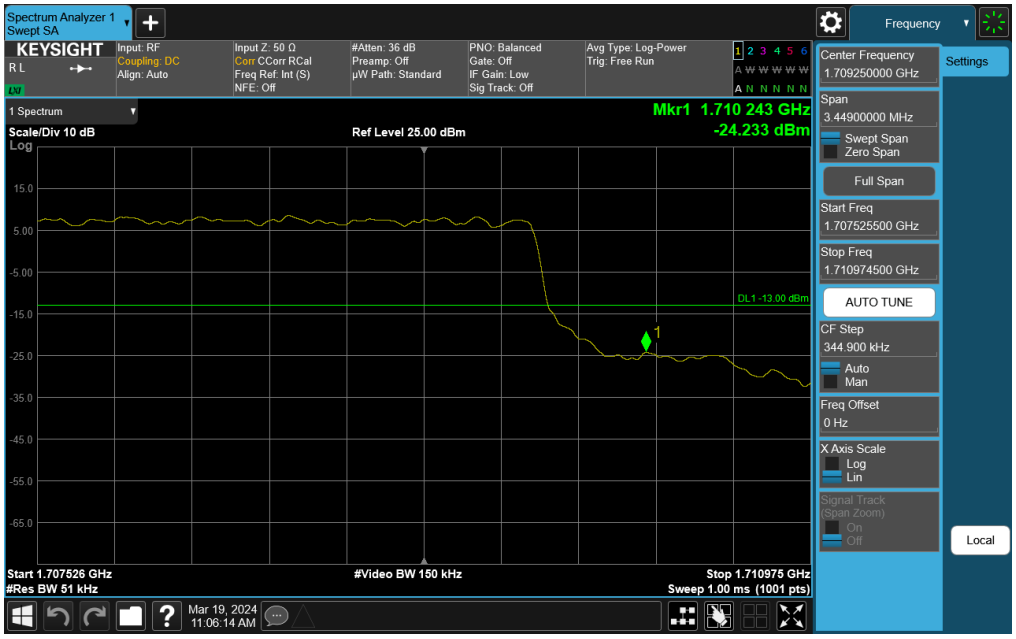
NR Band n70



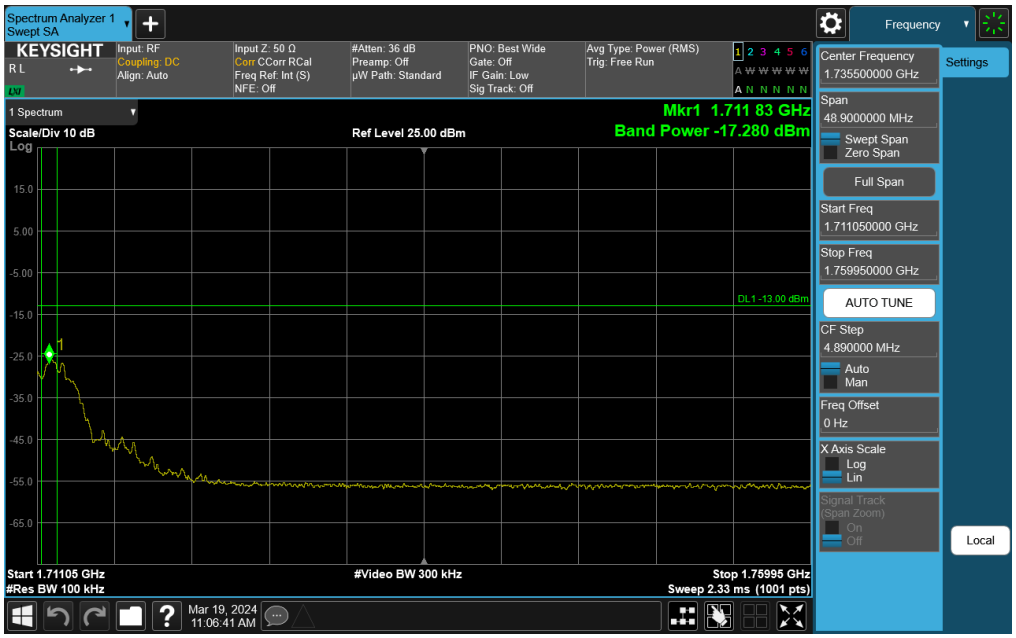
Plot 7-344. Lower Band Edge Plot (NR Band n70 – 5.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



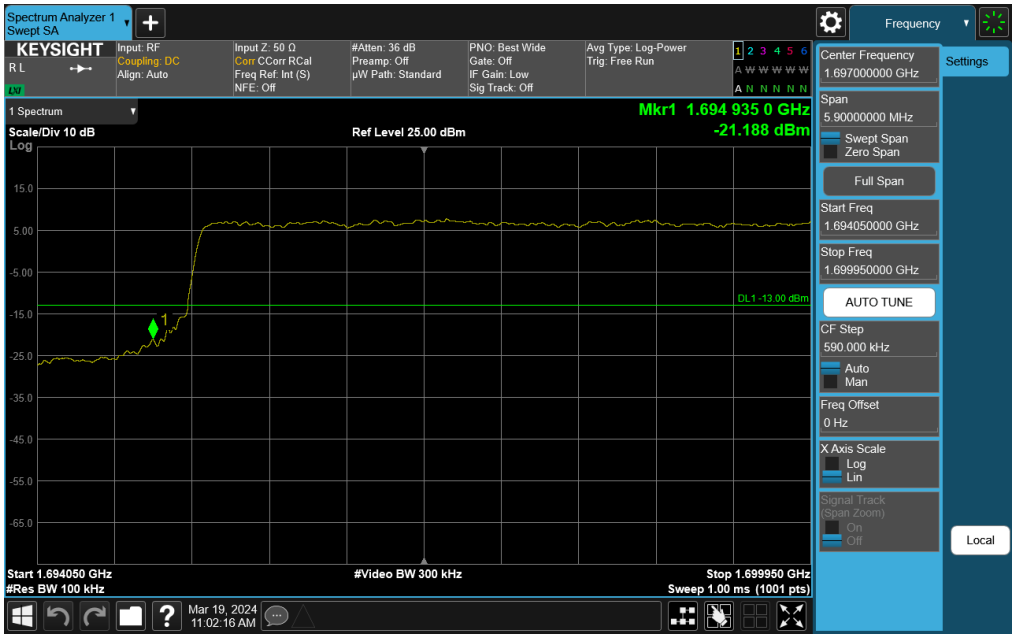
Plot 7-345. Lower Extended Band Edge Plot (NR Band n70 – 5.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



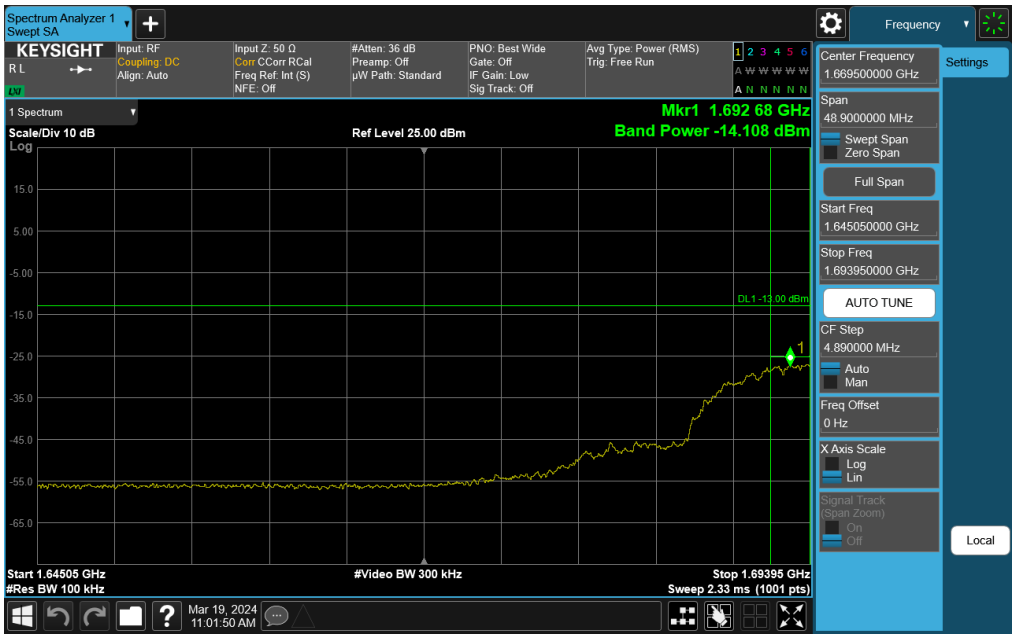
Plot 7-346. Upper Band Edge Plot (NR Band n70 – 5.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



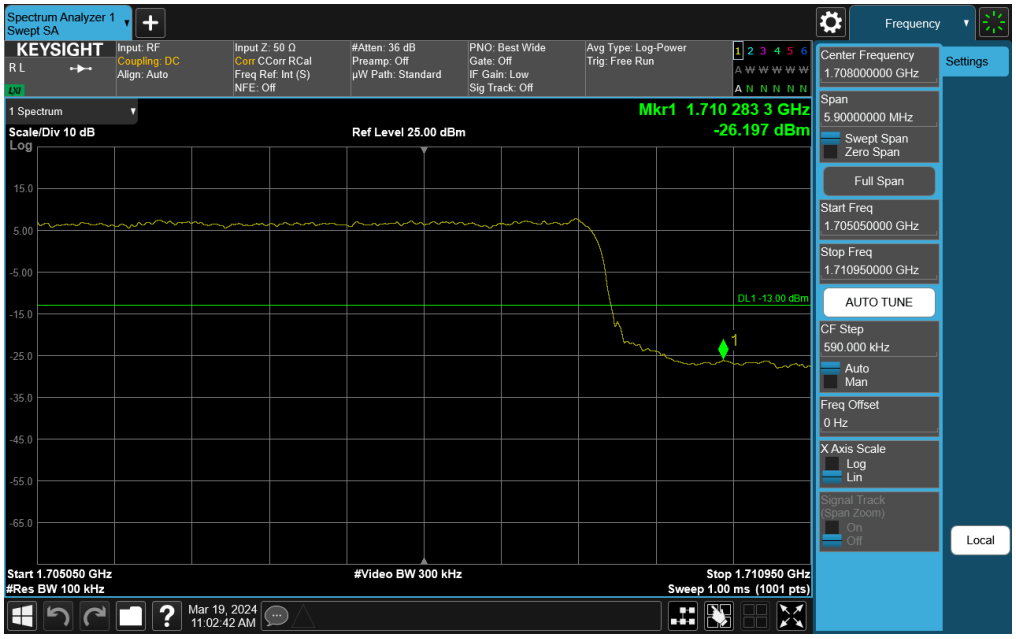
Plot 7-347. Upper Extended Band Edge Plot (NR Band n70 – 5.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



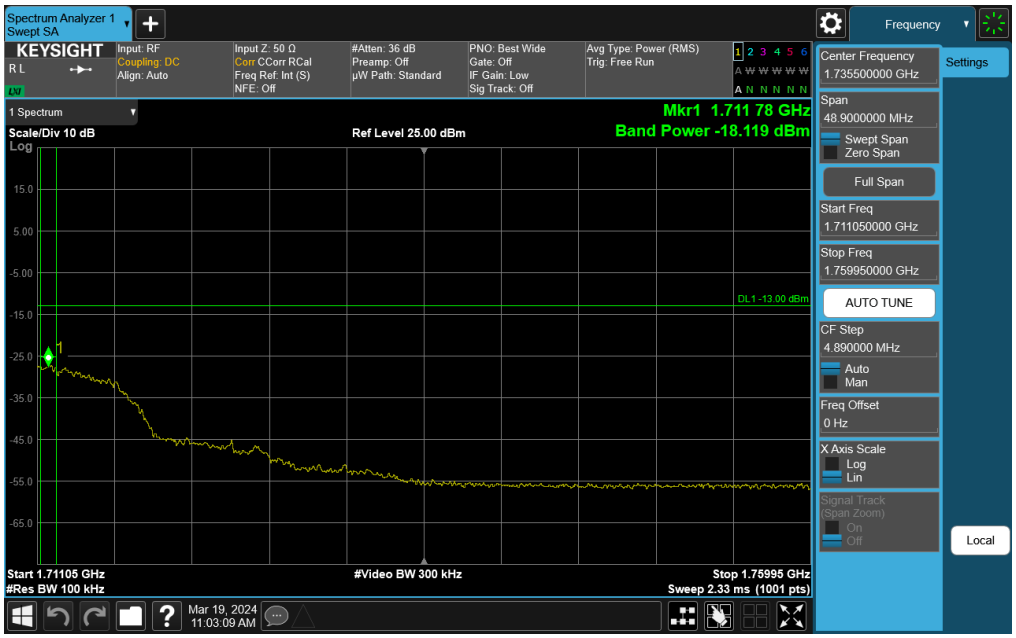
Plot 7-348. Lower Band Edge Plot (NR Band n70 – 10.0MHz DFT-s-OFDM QPSK - Full RB)



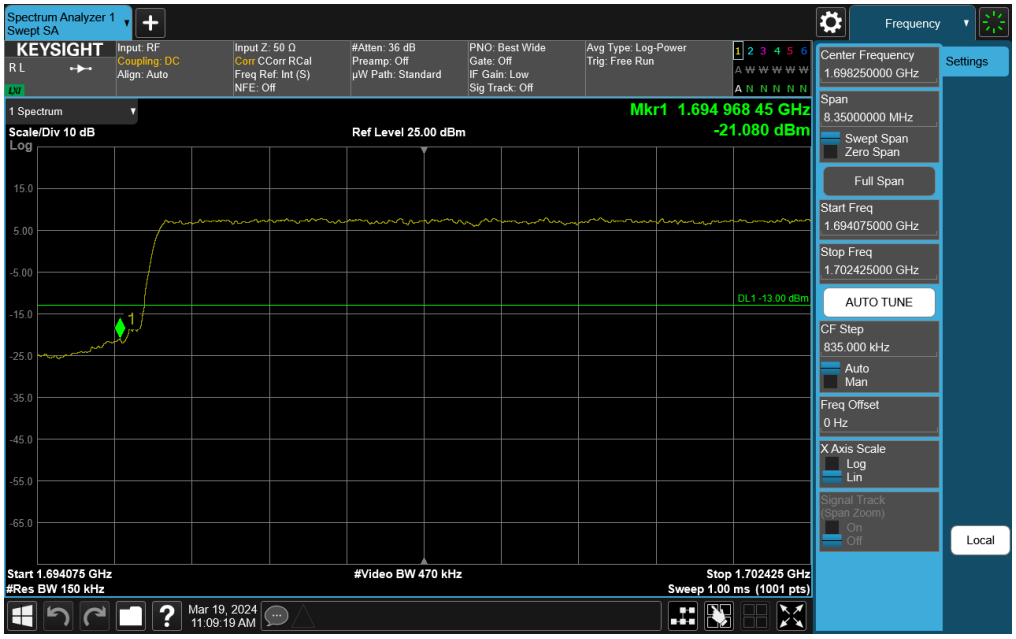
Plot 7-349. Lower Extended Band Edge Plot (NR Band n70 – 10.0MHz DFT-s-OFDM QPSK - Full RB)



Plot 7-350. Upper Band Edge Plot (NR Band n70 – 10.0MHz CP-OFDM QPSK - Full RB)

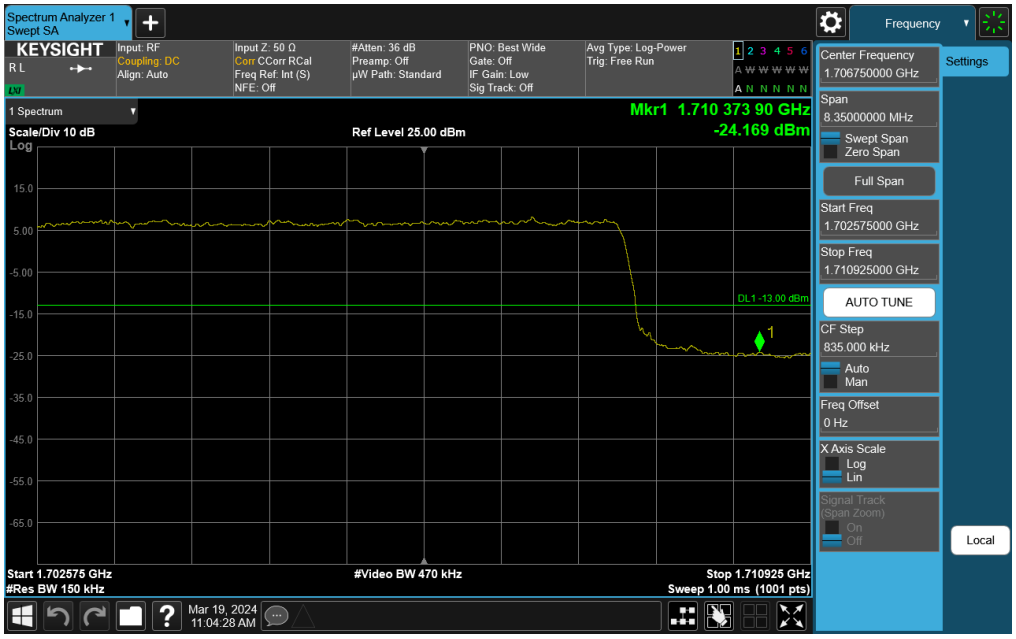


Plot 7-351. Upper Extended Band Edge Plot (NR Band n70 – 10.0MHz CP-OFDM QPSK - Full RB)

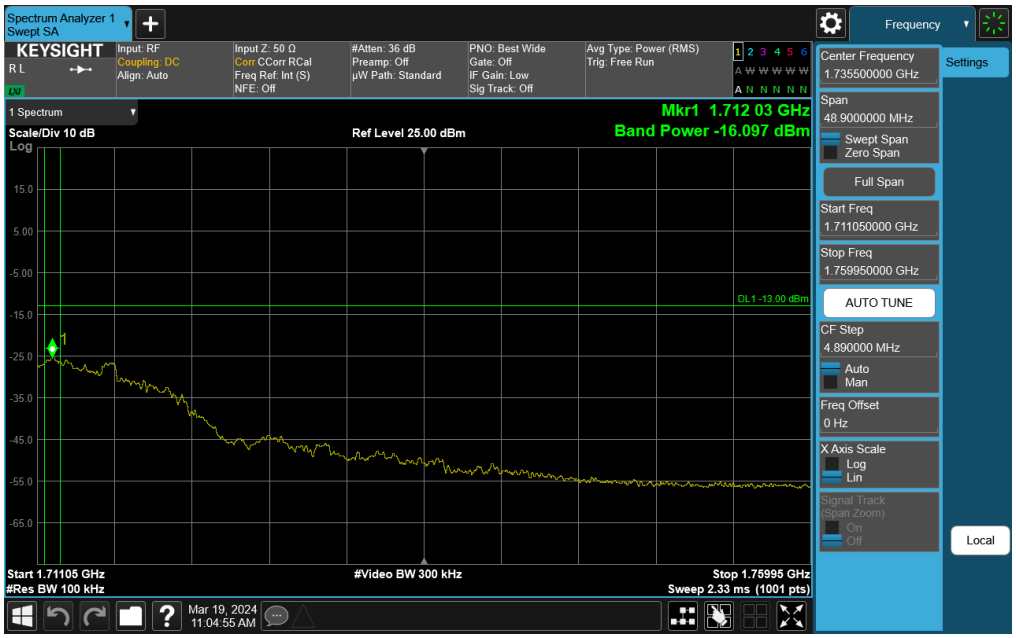


Plot 7-352. Lower Band Edge Plot (NR Band n70 – 15.0MHz DFT-s-OFDM π/2 BPSK - Full RB)

Plot 7-353. Lower Extended Band Edge Plot (NR Band n70 – 15.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



Plot 7-354. Upper Band Edge Plot (NR Band n70 – 15.0MHz DFT-s-OFDM QPSK - Full RB)

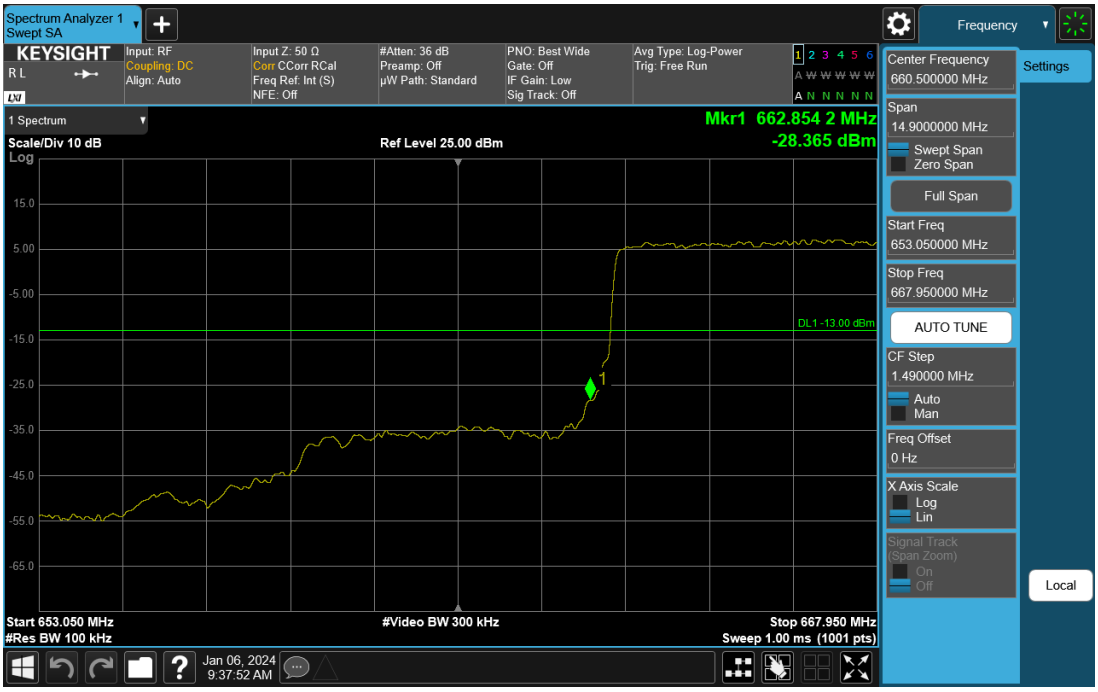


Plot 7-355. Upper Extended Band Edge Plot (NR Band n70 – 15.0MHz DFT-s-OFDM QPSK - Full RB)

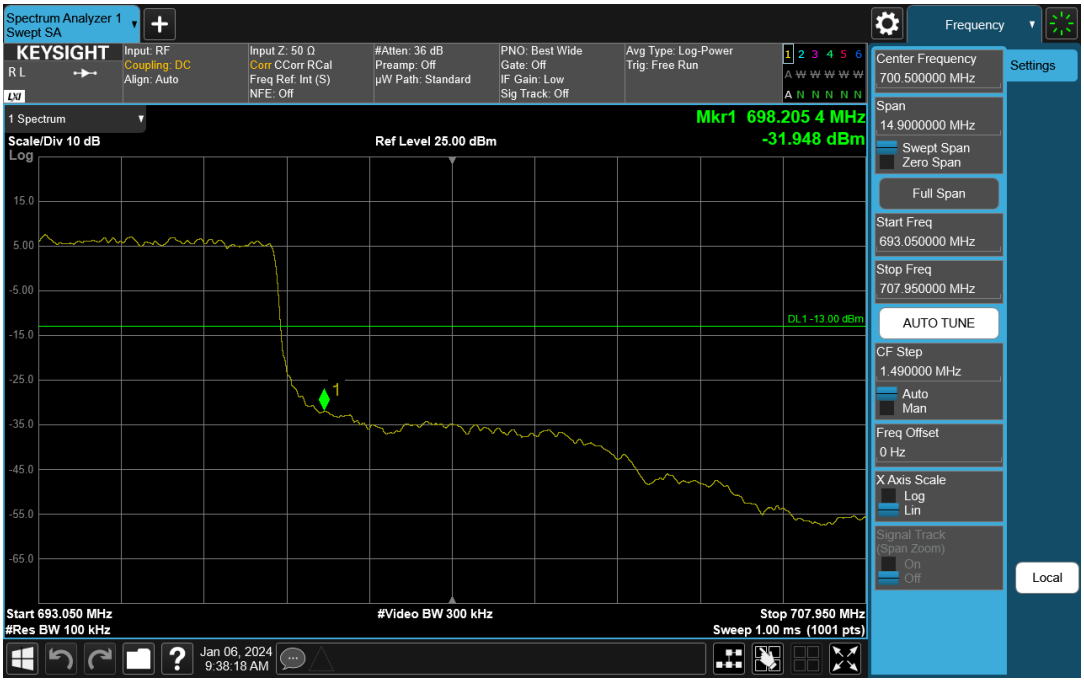
NR Band n71

Plot 7-356. Lower Band Edge Plot (NR Band n71 – 5.0MHz DFT-s-OFDM π/2 BPSK - Full RB)

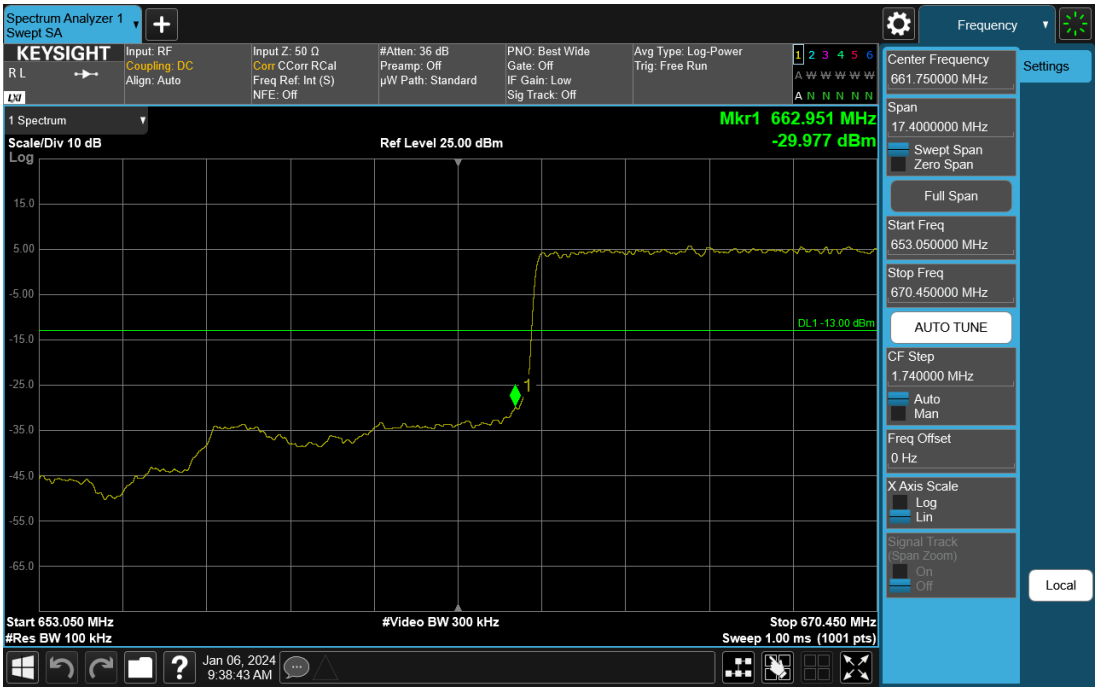
Plot 7-357. Upper Band Edge Plot (NR Band n71 – 5.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



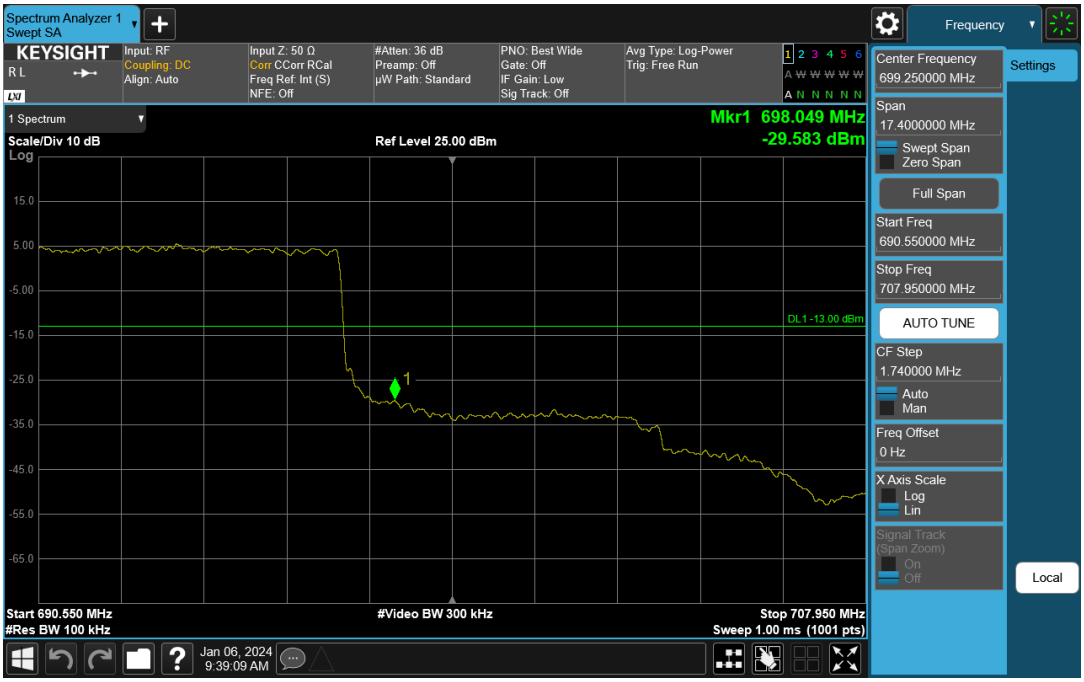
Plot 7-358. Lower Band Edge Plot (NR Band n71 – 10.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



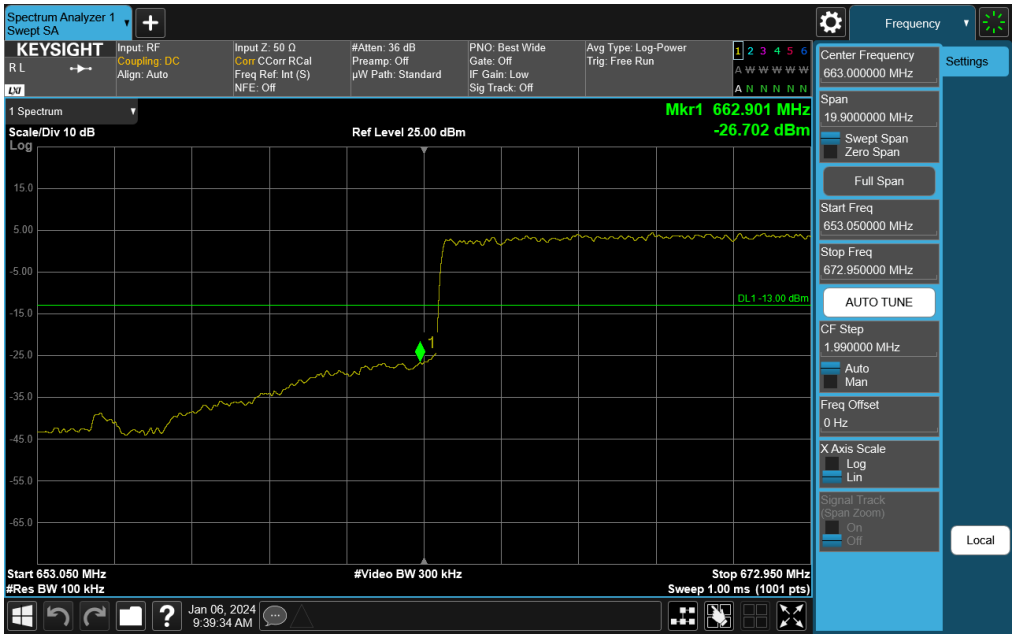
Plot 7-359. Upper Band Edge Plot (NR Band n71 – 10.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



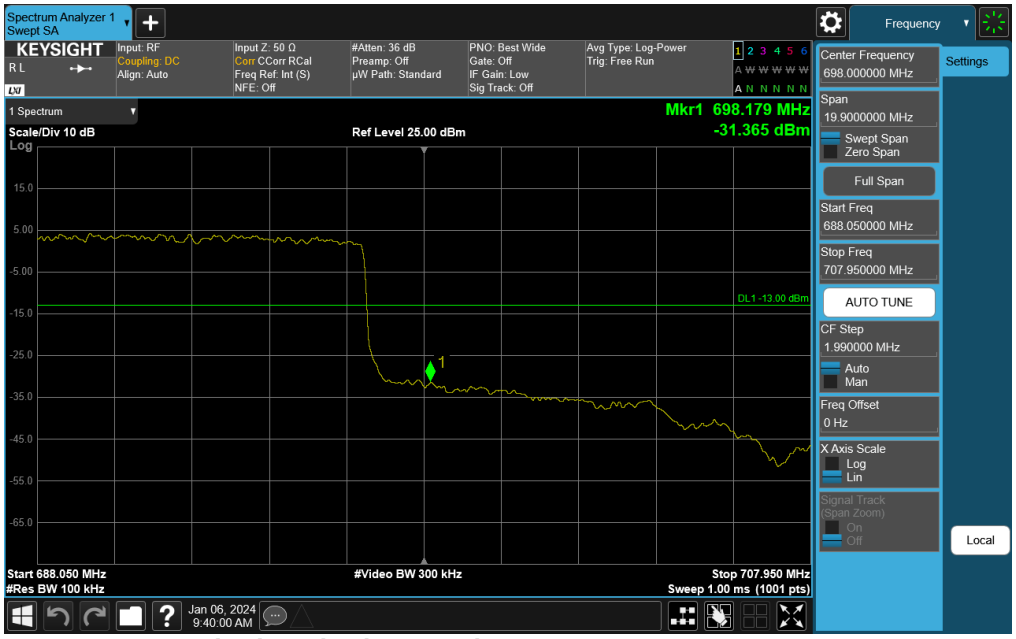
Plot 7-360. Lower Band Edge Plot (NR Band n71 – 15.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



Plot 7-361. Upper Band Edge Plot (NR Band n71 – 15.0MHz DFT-s-OFDM π/2 BPSK - Full RB)

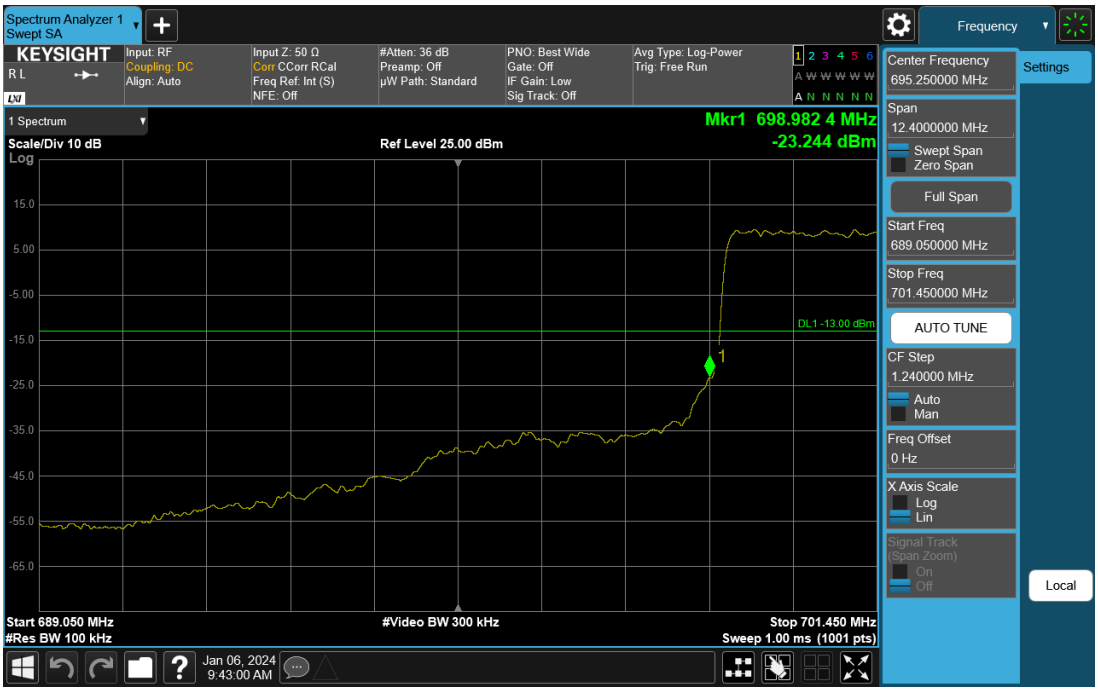


Plot 7-362. Lower Band Edge Plot (NR Band n71 – 20.0MHz DFT-s-OFDM π/2 BPSK - Full RB)

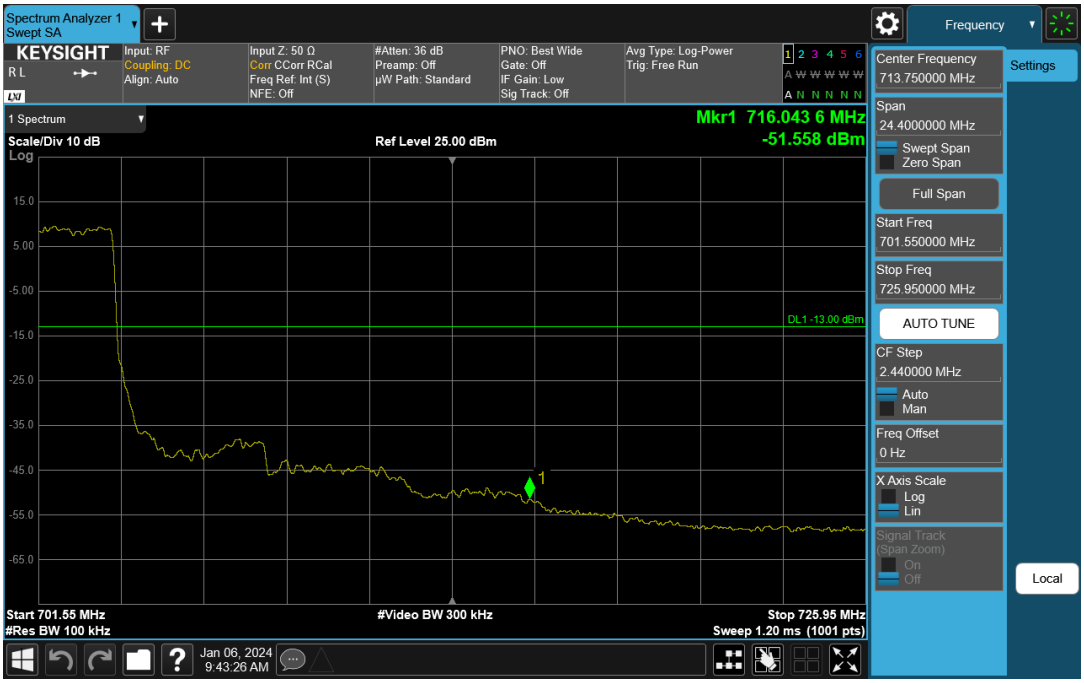


Plot 7-363. Upper Band Edge Plot (NR Band n71 – 20.0MHz DFT-s-OFDM π/2 BPSK - Full RB)

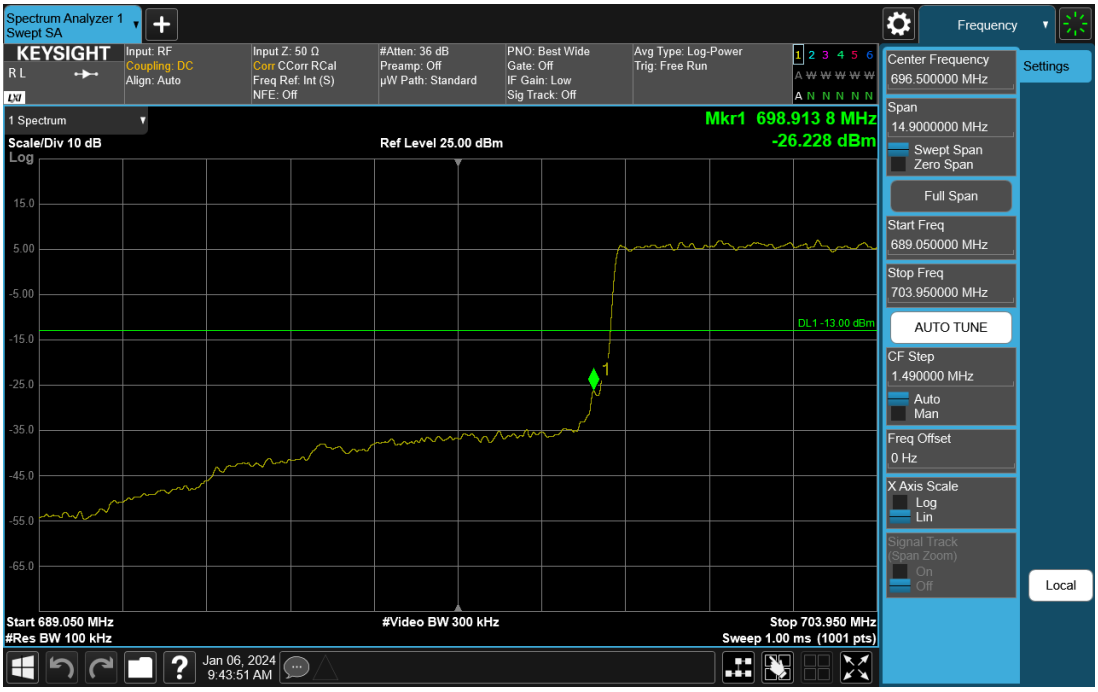
NR Band n12



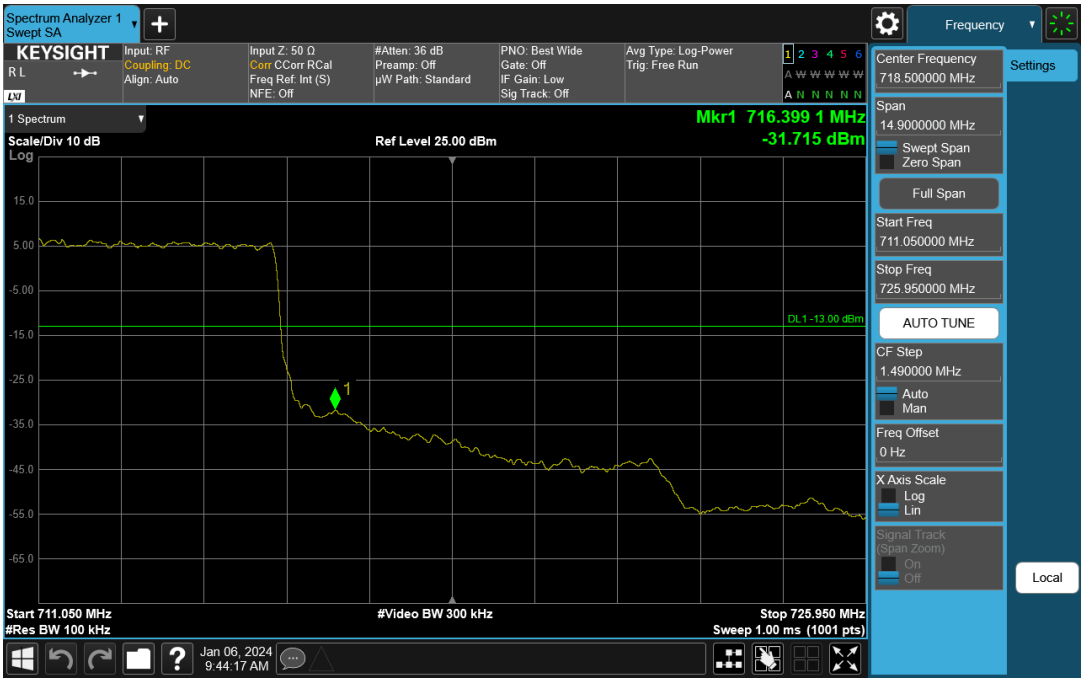
Plot 7-364. Lower Band Edge Plot (NR Band n12 – 5.0MHz CP-OFDM QPSK - Full RB)



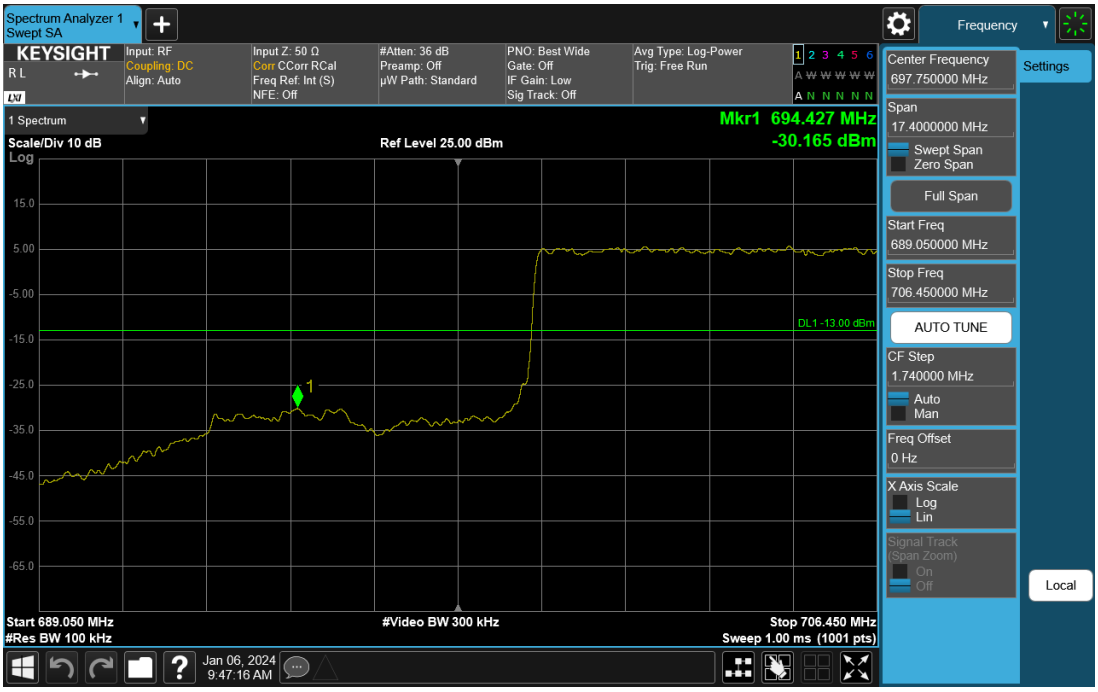
Plot 7-365. Upper Band Edge Plot (NR Band n12 – 5.0MHz DFT-s-OFDM QPSK- Full RB)



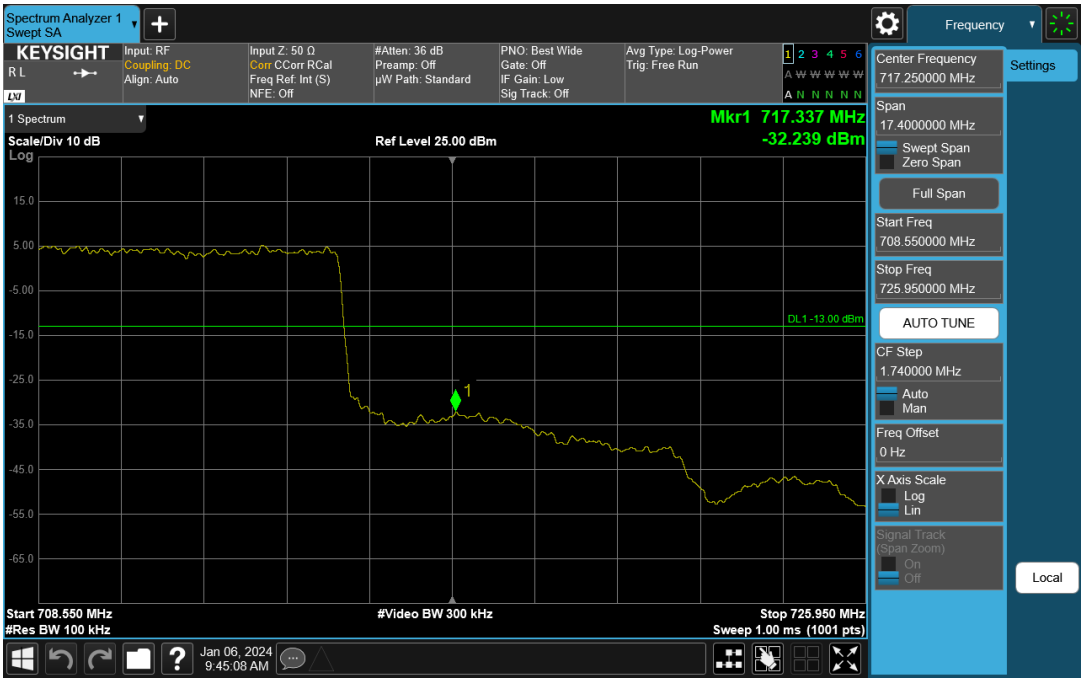
Plot 7-366. Lower Band Edge Plot (NR Band n12 – 10.0MHz DFT-s-OFDM QPSK - Full RB)



Plot 7-367. Upper Band Edge Plot (NR Band n12 – 10.0MHz CP-OFDM QPSK- Full RB)

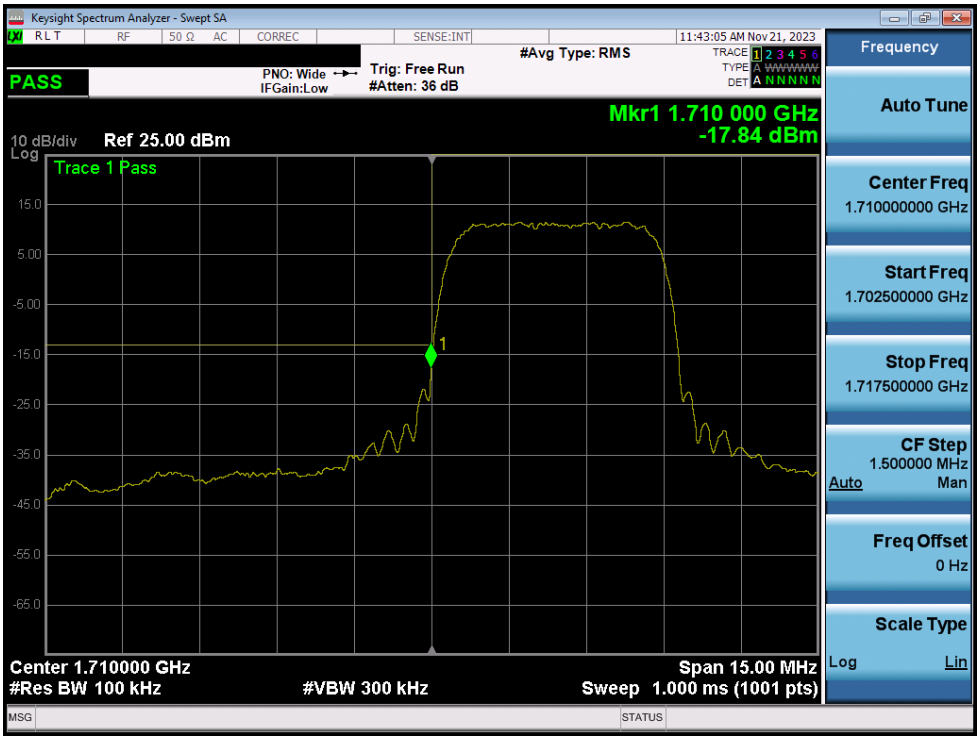


Plot 7-368. Lower Band Edge Plot (NR Band n12 – 15.0MHz DFT-s-OFDM π/2 BPSK - Full RB)

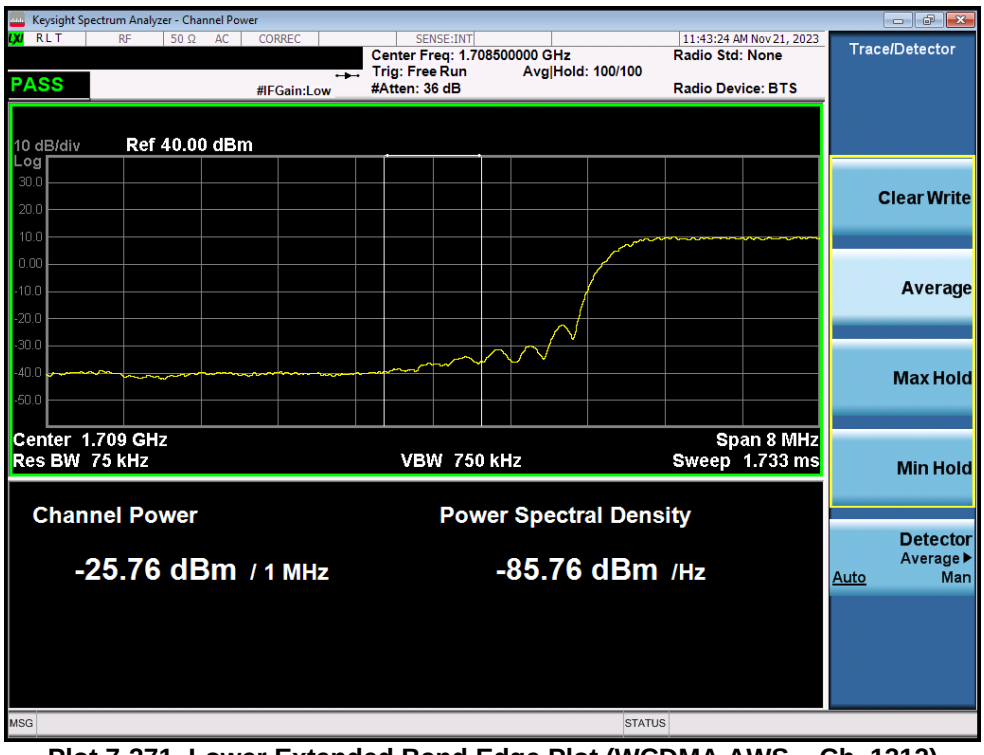


Plot 7-369. Upper Band Edge Plot (NR Band n12 – 15.0MHz DFT-s-OFDM QPSK- Full RB)

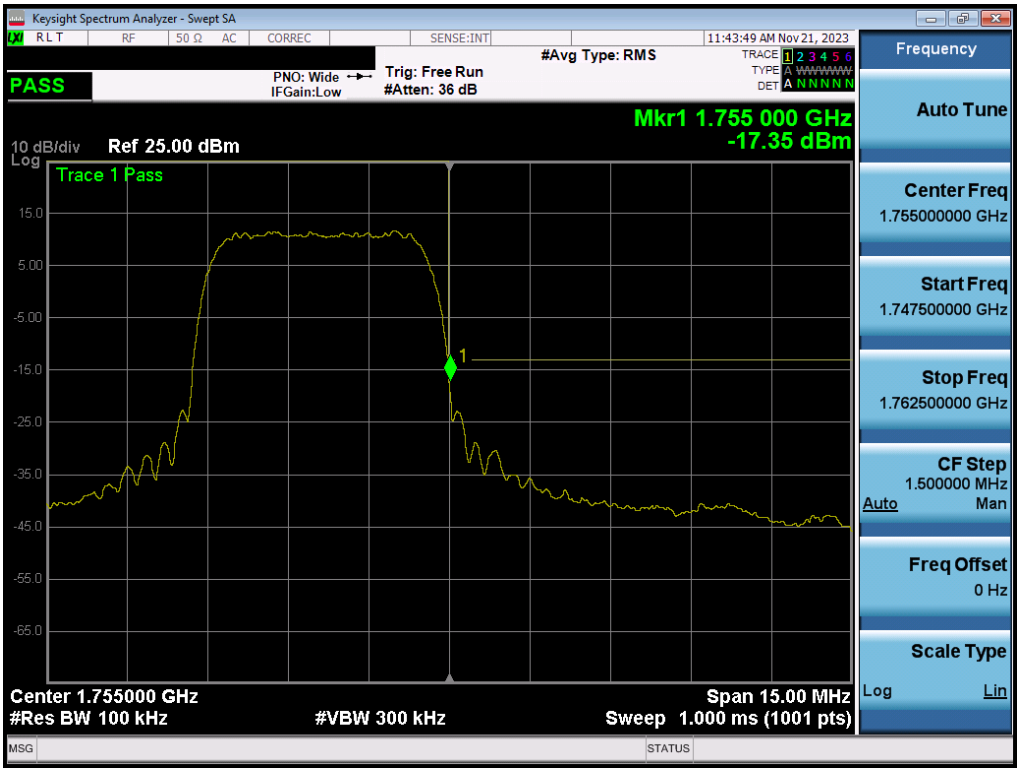
WCDMA AWS



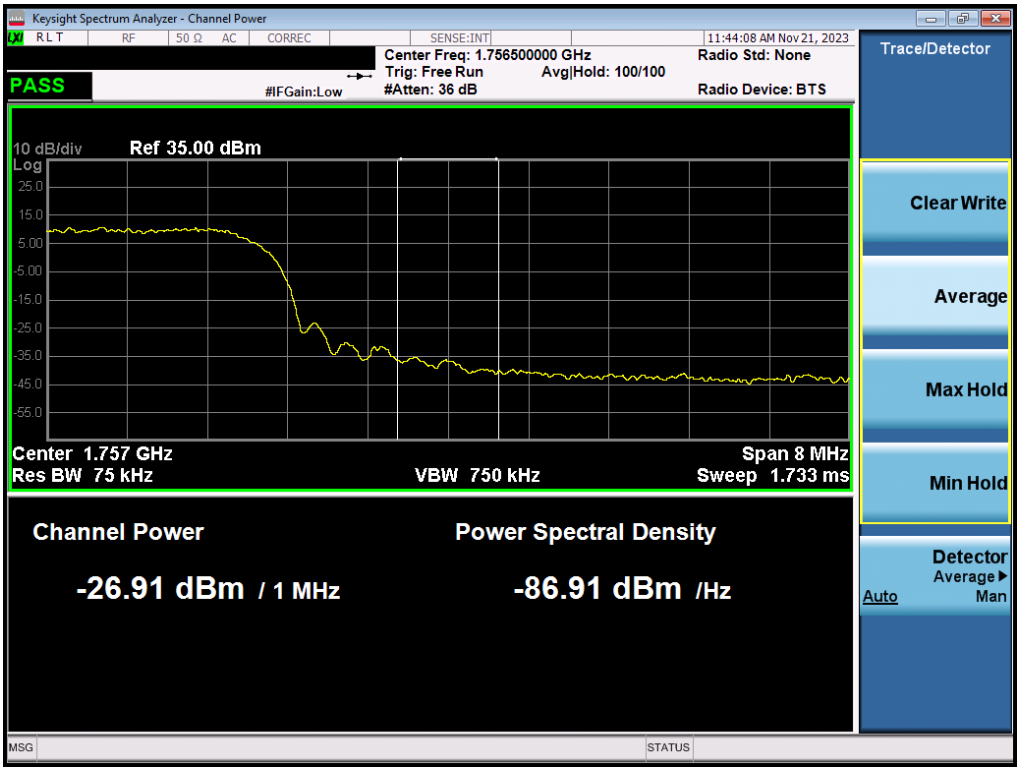
Plot 7-370. Lower Band Edge Plot (WCDMA AWS – Ch. 1312)



Plot 7-371. Lower Extended Band Edge Plot (WCDMA AWS – Ch. 1312)



Plot 7-372. Upper Band Edge Plot (WCDMA AWS – Ch. 1513)



Plot 7-373. Upper Extended Band Edge Plot (WCDMA AWS – Ch. 1513)

7.5 Peak-Average Ratio

§27.50(d)(5)

Test Overview and Limit

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. All ports were tested and only the worst case data were reported.

The peak to average power ratio (PAPR) of the equipment shall not exceed 13 dB for more than 0.1% of the time.

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 ≥ 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.

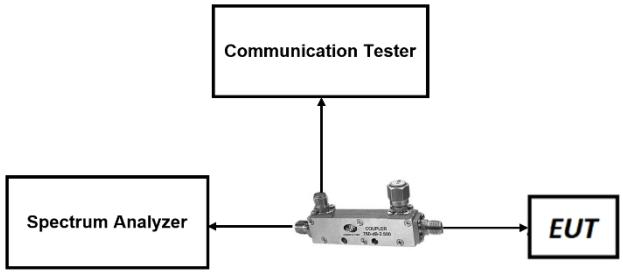
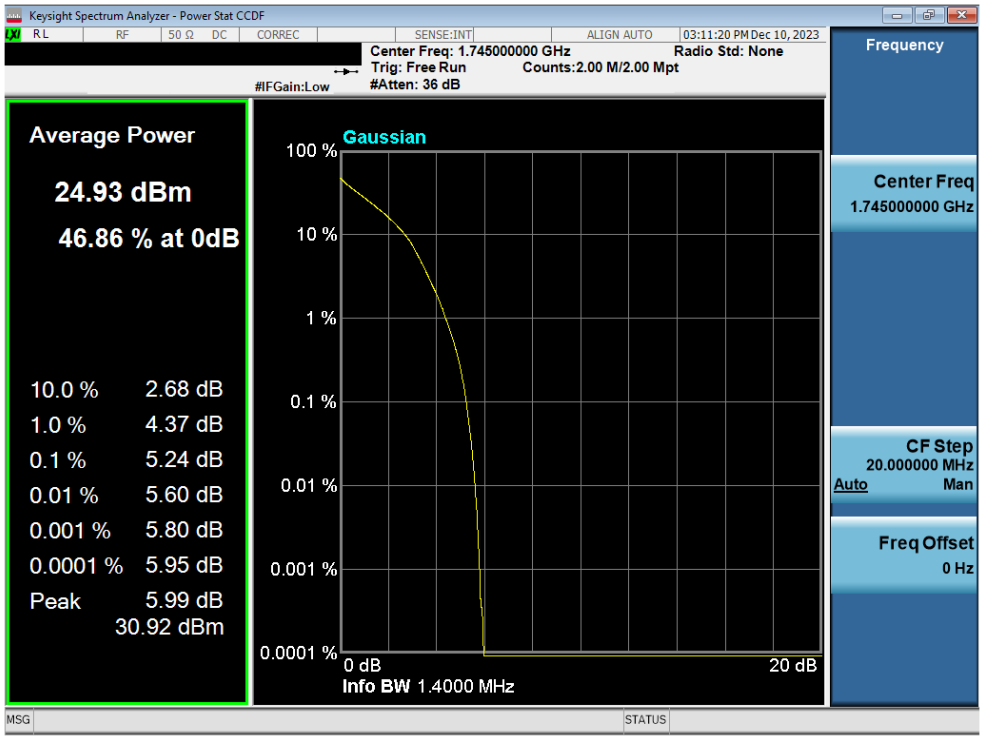


Figure 7-4. Test Instrument & Measurement Setup

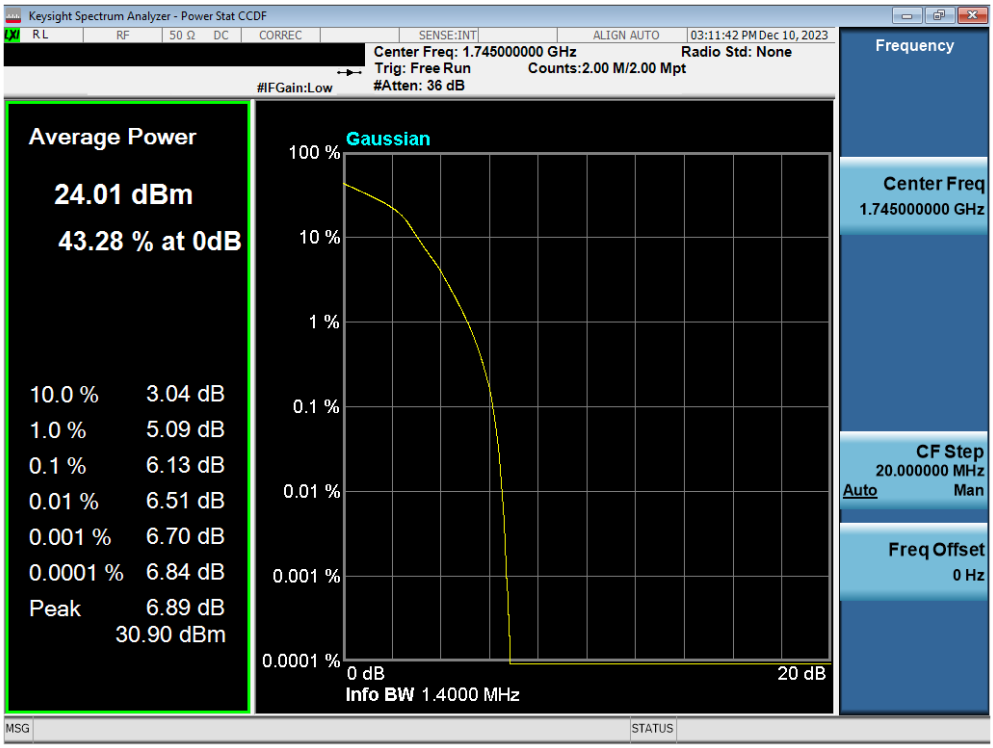
Test Notes

None.

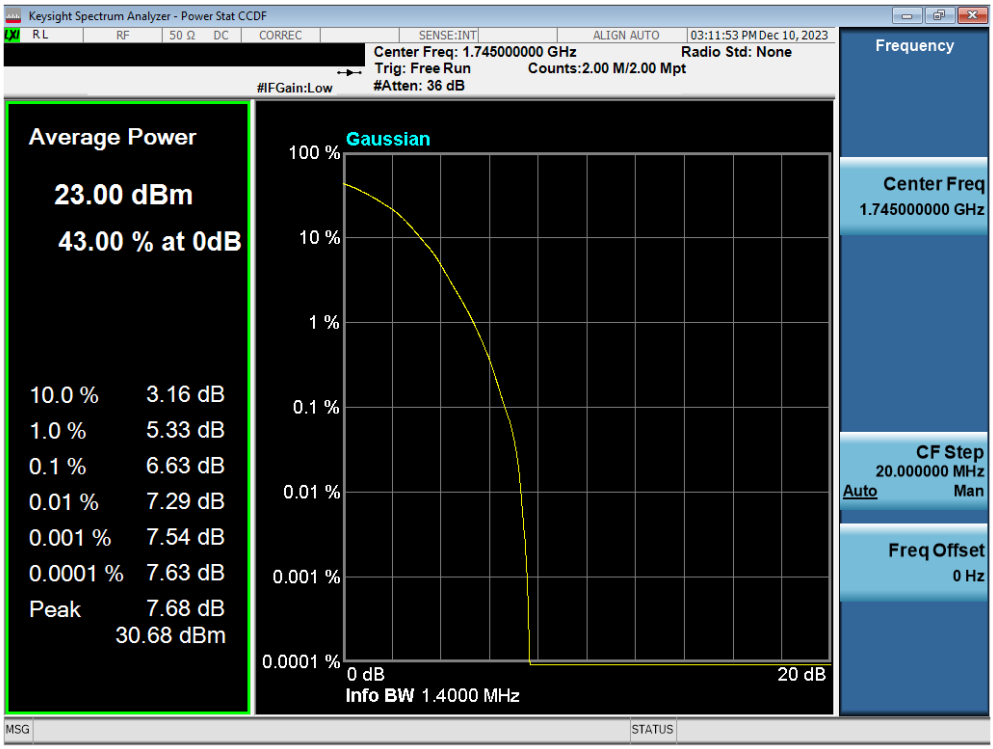
LTE Band 66



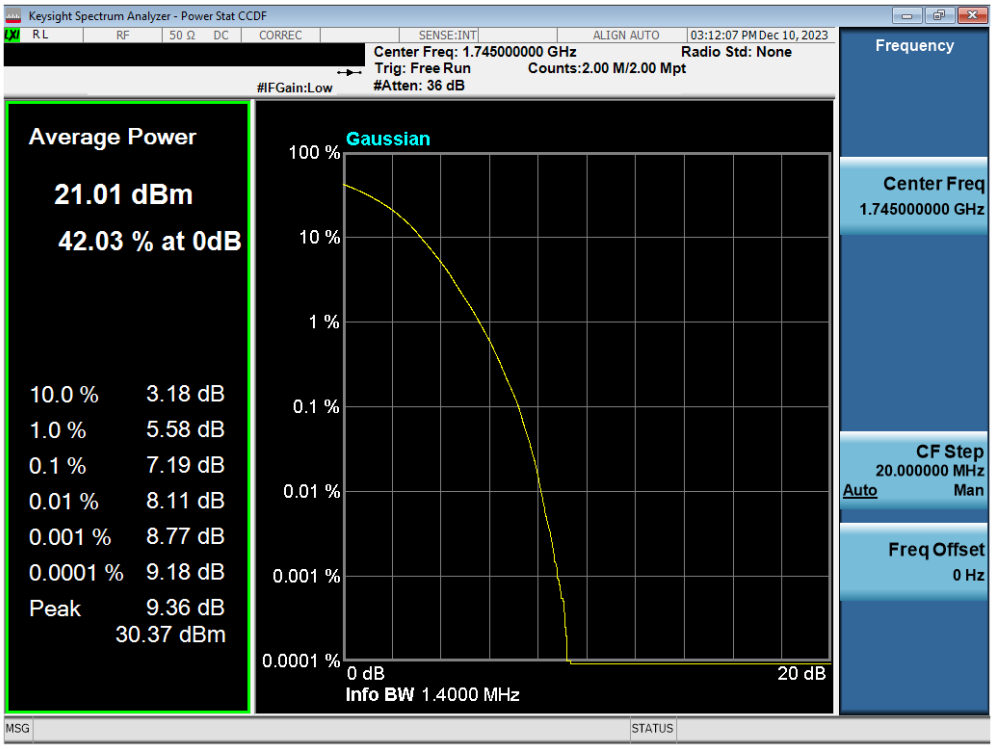
Plot 7-374. PAR Plot (LTE Band 66 - 1.4MHz QPSK - Full RB)



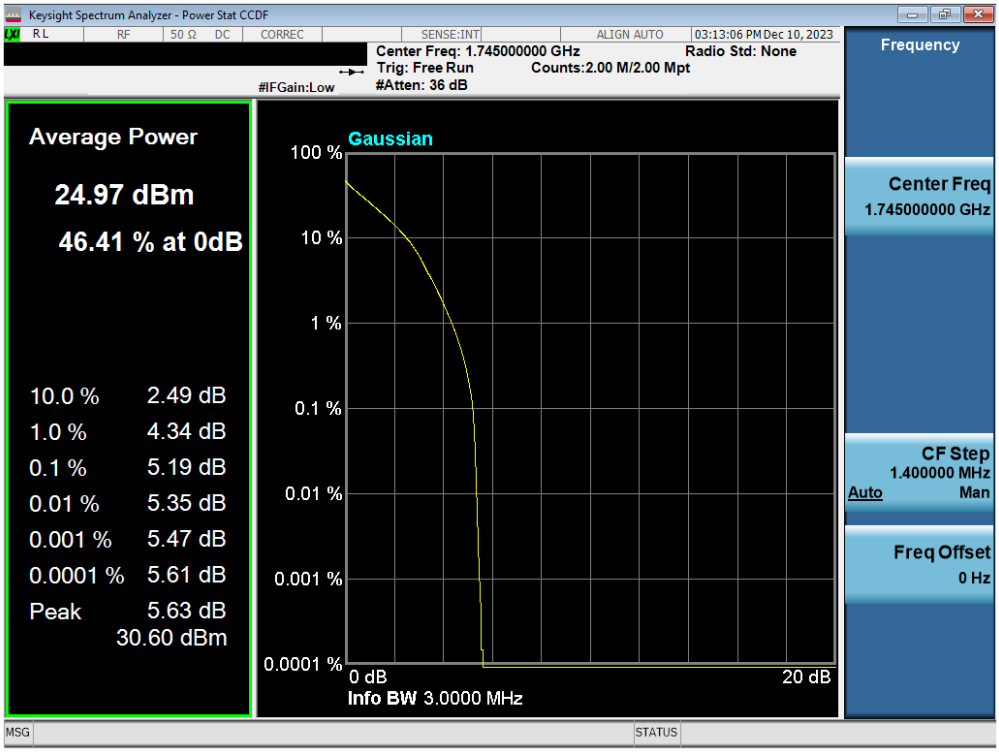
Plot 7-375. PAR Plot (LTE Band 66 - 1.4MHz 16-QAM - Full RB)



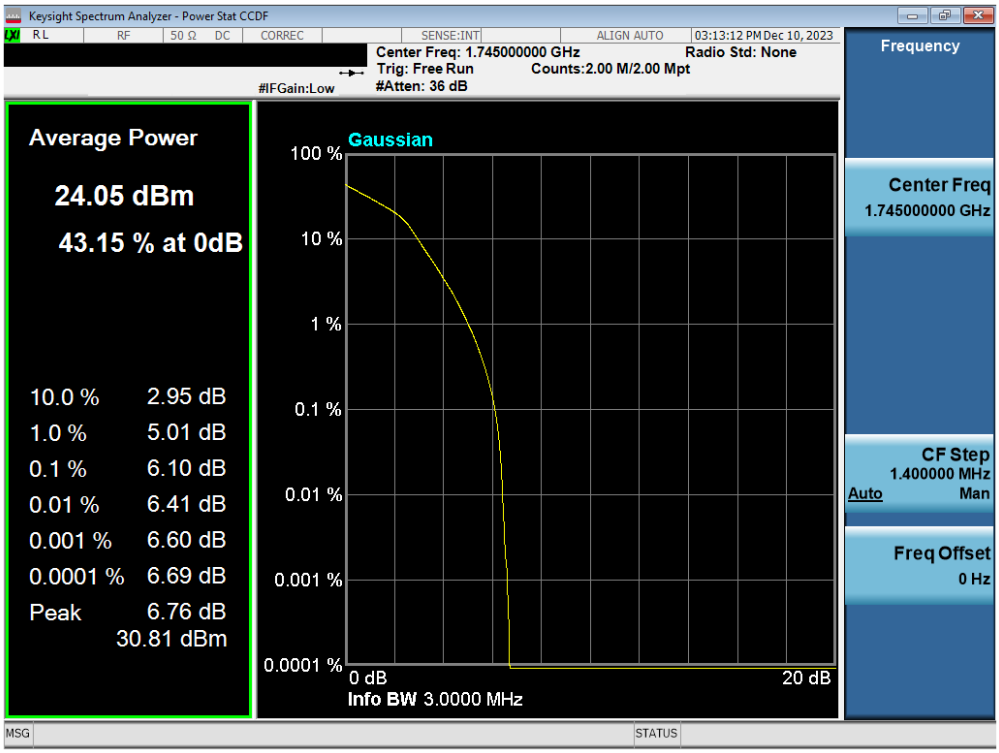
Plot 7-376. PAR Plot (LTE Band 66 - 1.4MHz 64-QAM - Full RB)



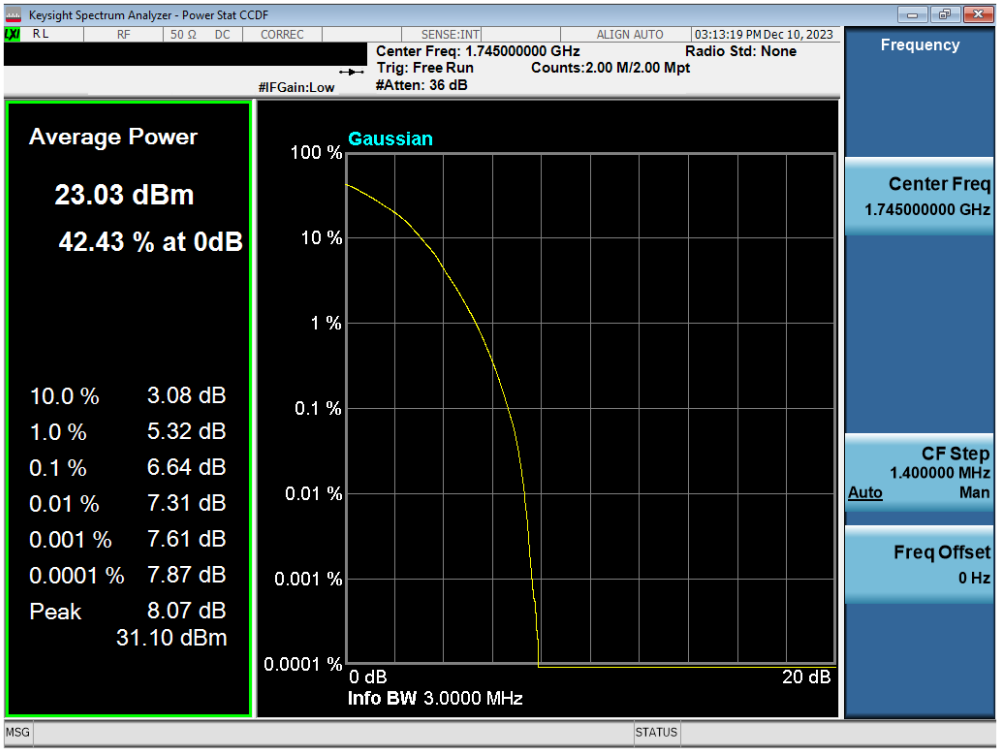
Plot 7-377. PAR Plot (LTE Band 66 - 1.4MHz 256-QAM - Full RB)



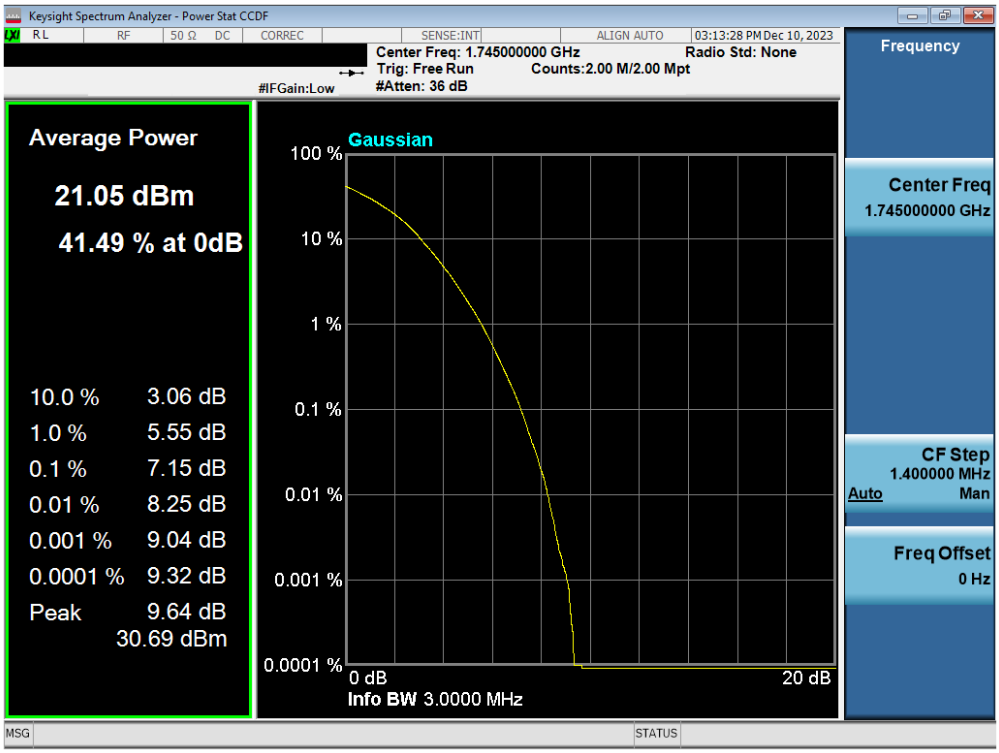
Plot 7-378. PAR Plot (LTE Band 66 - 3MHz QPSK - Full RB)



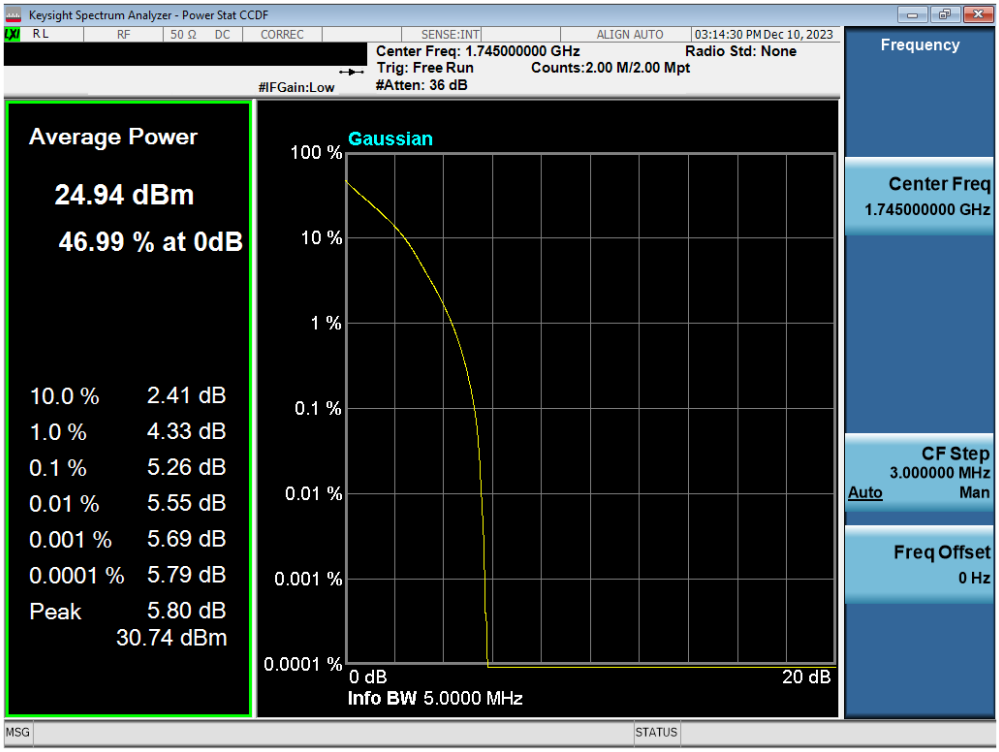
Plot 7-379. PAR Plot (LTE Band 66 - 3MHz 16-QAM - Full RB)



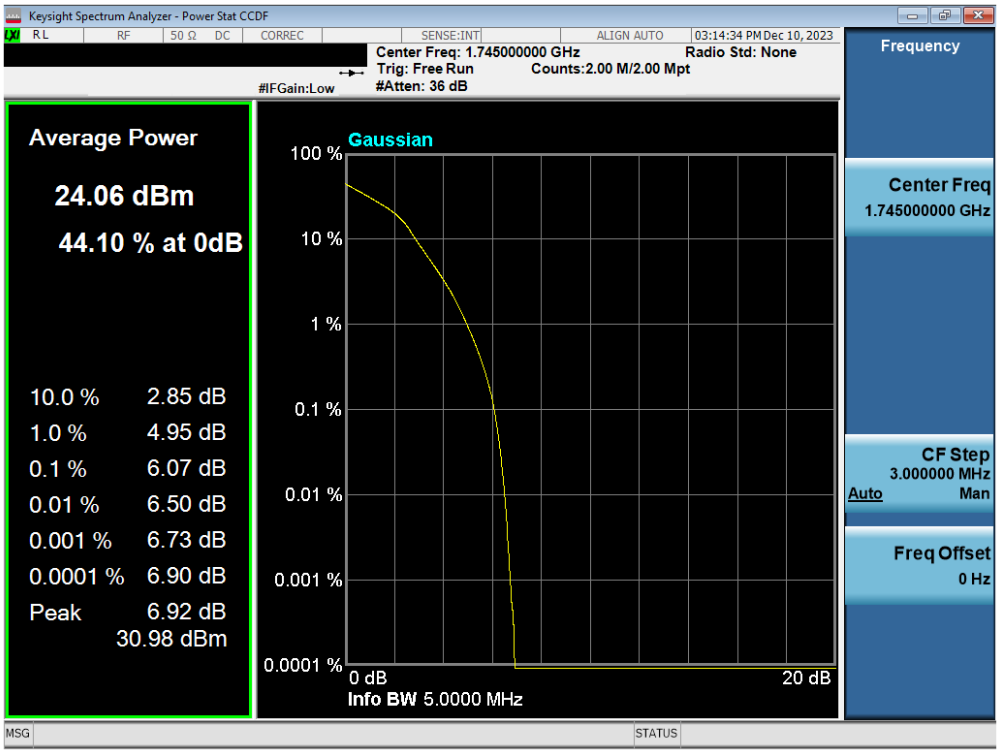
Plot 7-380. PAR Plot (LTE Band 66 - 3MHz 64-QAM - Full RB)



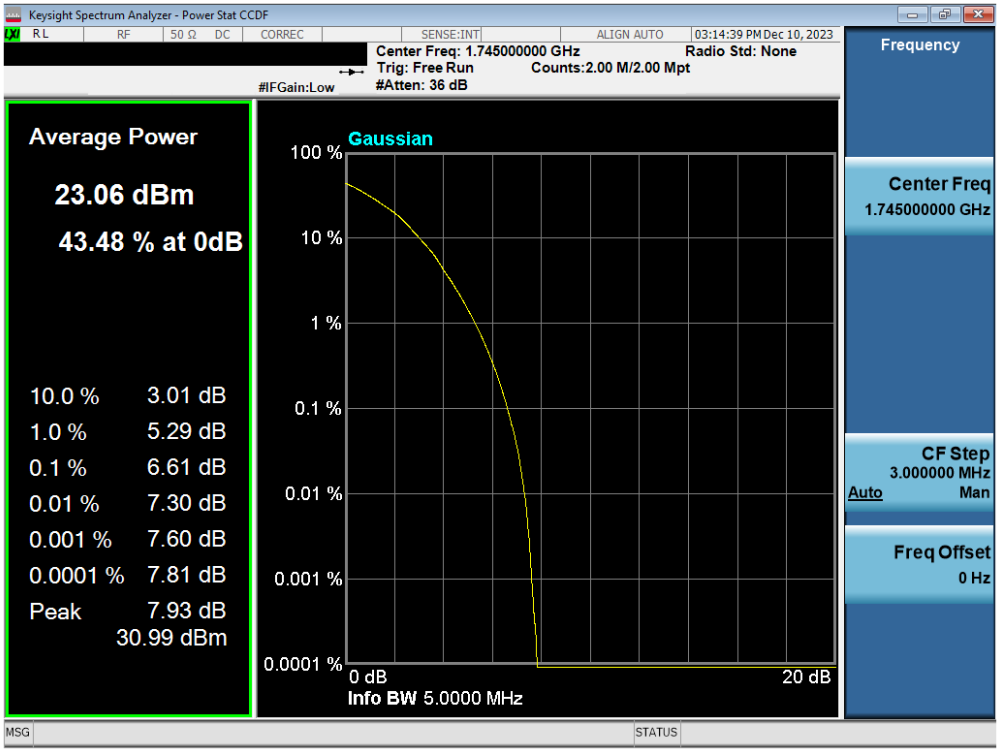
Plot 7-381. PAR Plot (LTE Band 66 - 3MHz 256-QAM - Full RB)



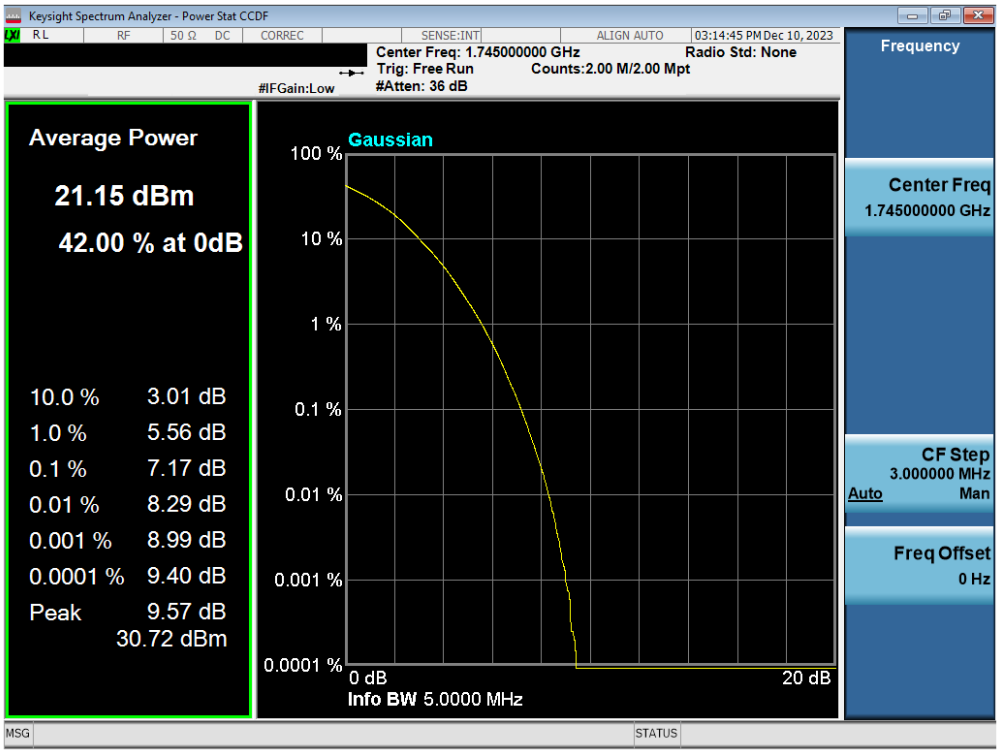
Plot 7-382. PAR Plot (LTE Band 66 - 5MHz QPSK - Full RB)



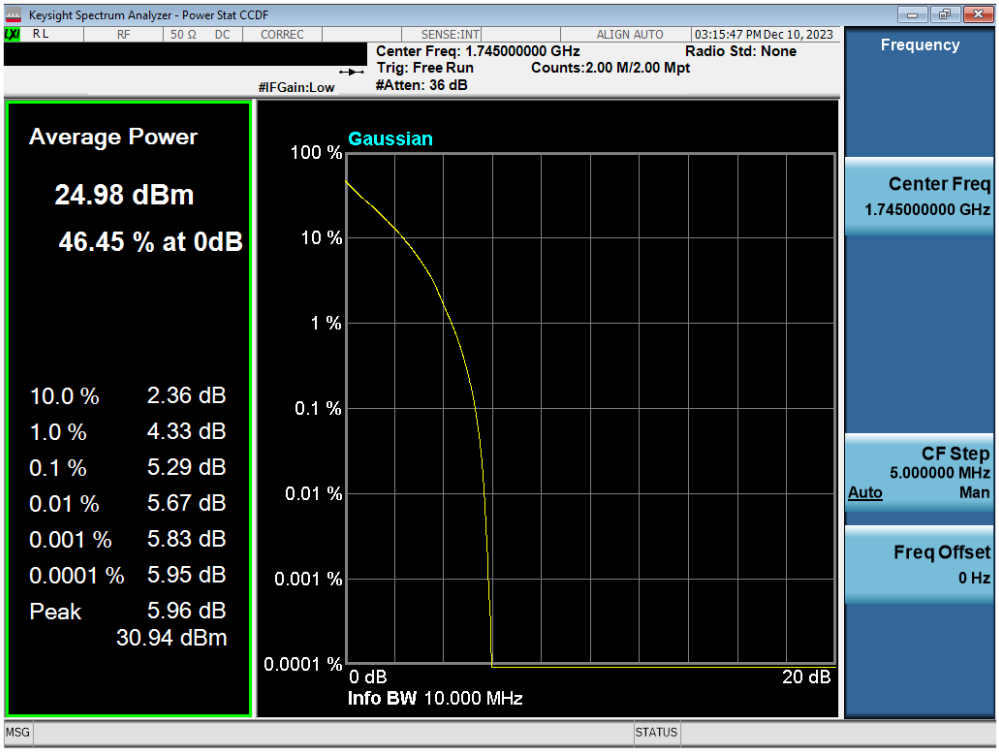
Plot 7-383. PAR Plot (LTE Band 66 - 5MHz 16-QAM - Full RB)



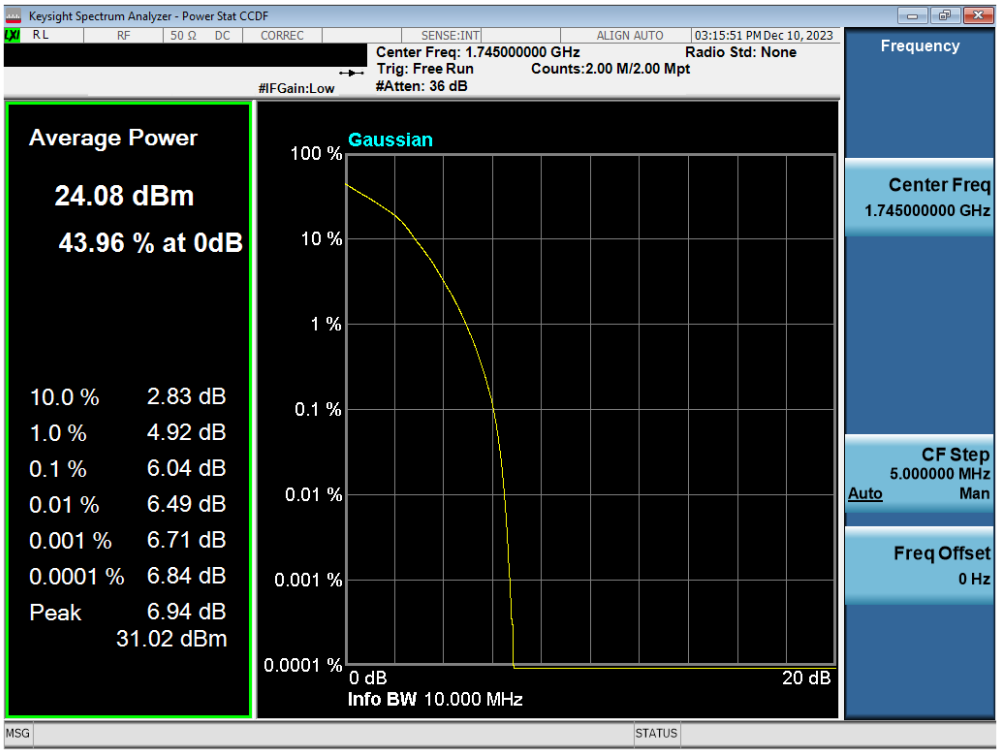
Plot 7-384. PAR Plot (LTE Band 66 - 5MHz 64-QAM - Full RB)



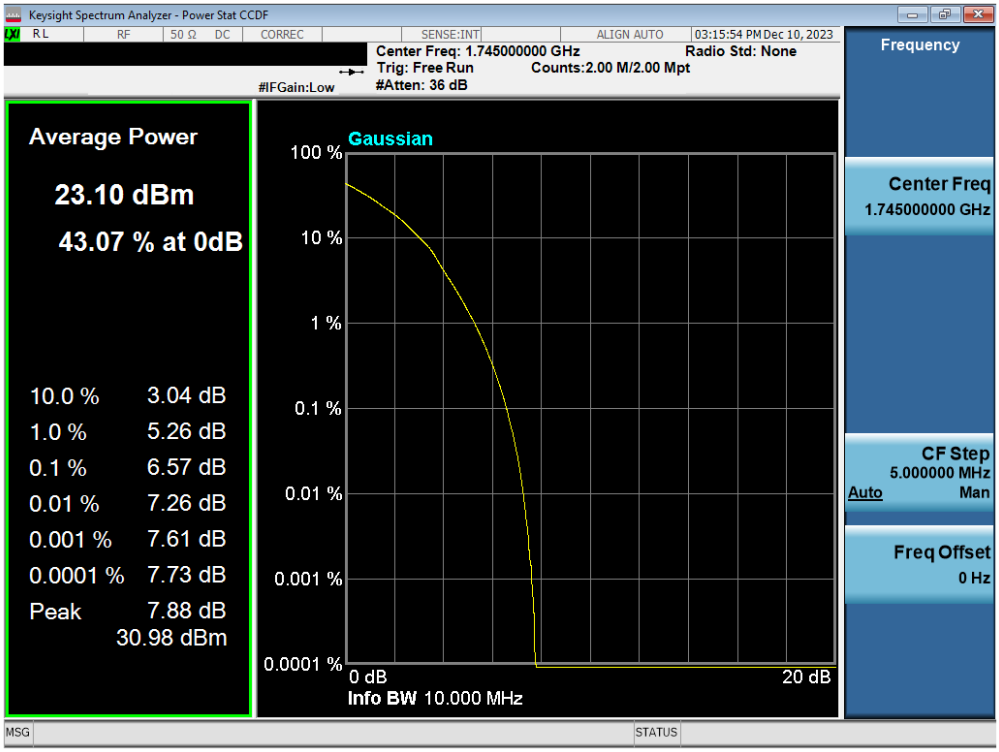
Plot 7-385. PAR Plot (LTE Band 66 - 5MHz 256-QAM - Full RB)



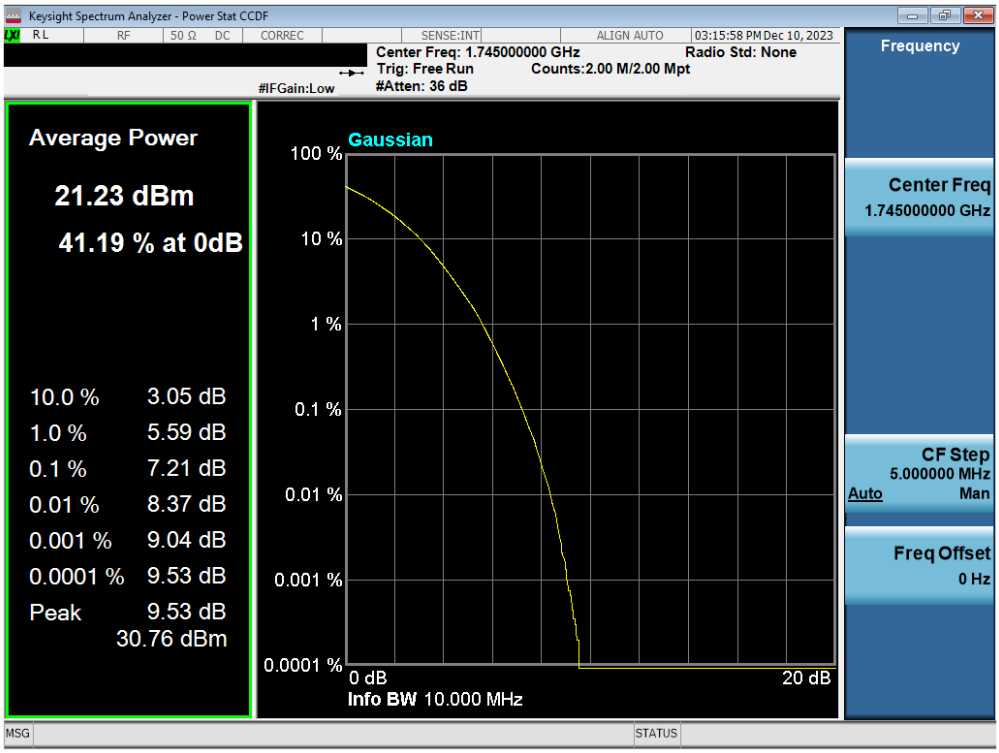
Plot 7-386. PAR Plot (LTE Band 66 - 10MHz QPSK - Full RB)



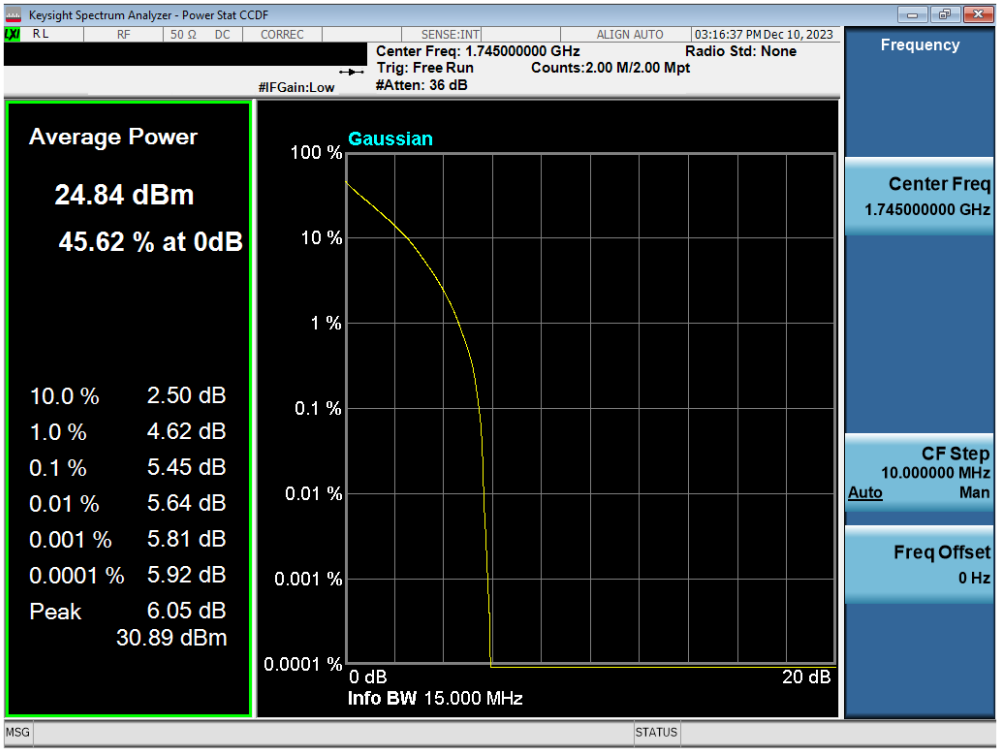
Plot 7-387. PAR Plot (LTE Band 66 - 10MHz 16-QAM - Full RB)



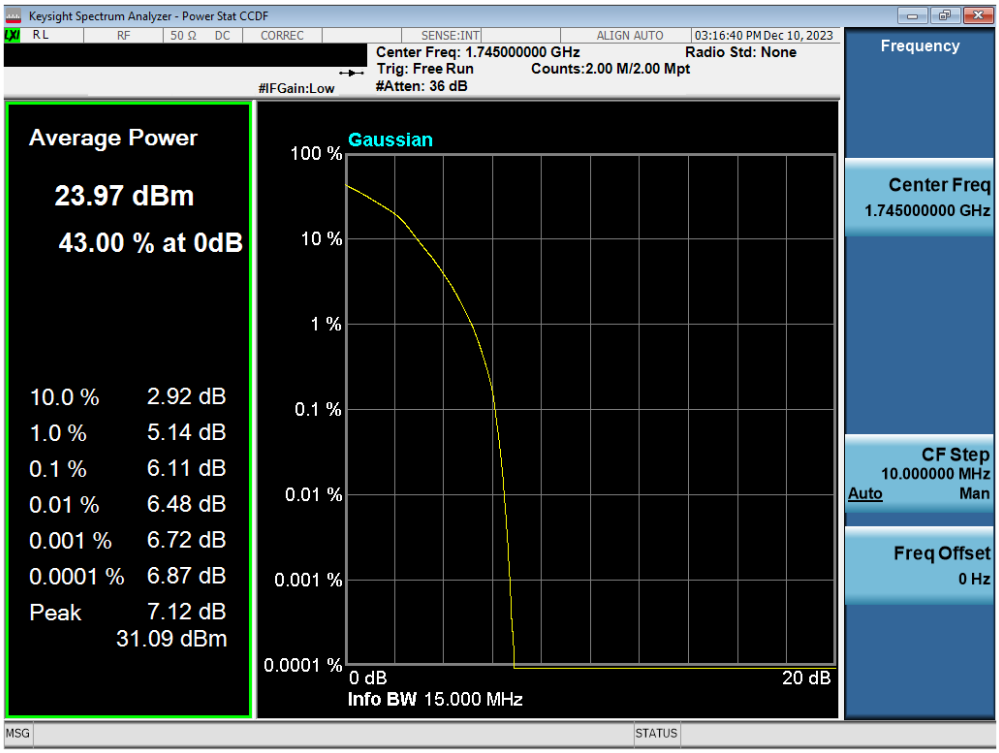
Plot 7-388. PAR Plot (LTE Band 66 - 10MHz 64-QAM - Full RB)



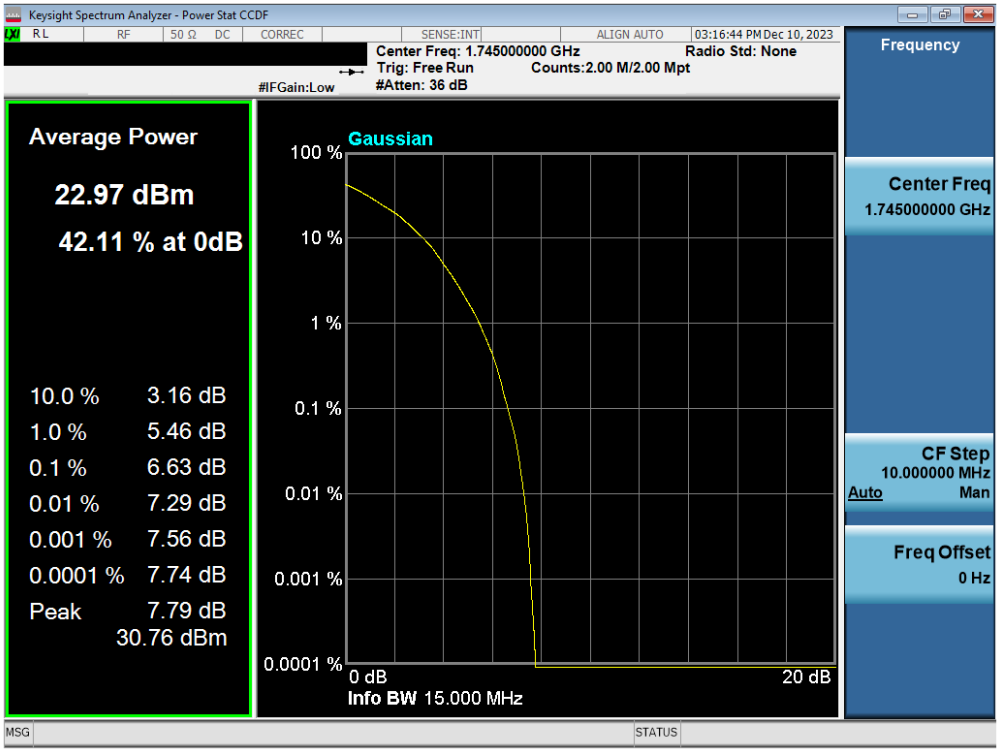
Plot 7-389. PAR Plot (LTE Band 66 - 10MHz 256-QAM - Full RB)



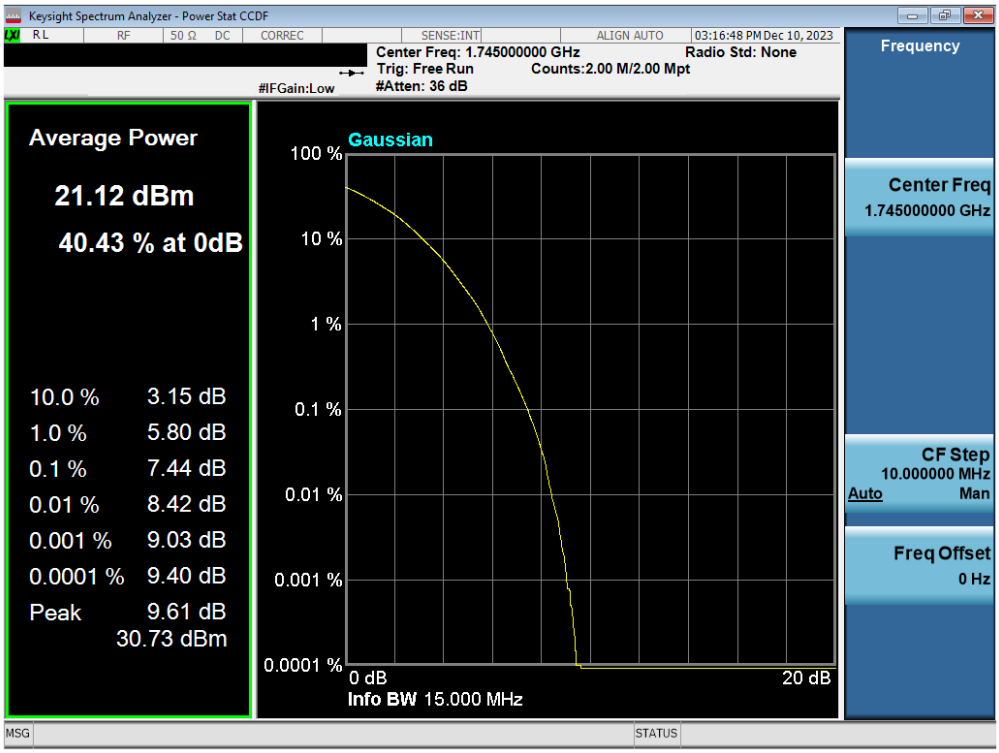
Plot 7-390. PAR Plot (LTE Band 66 - 15MHz QPSK - Full RB)



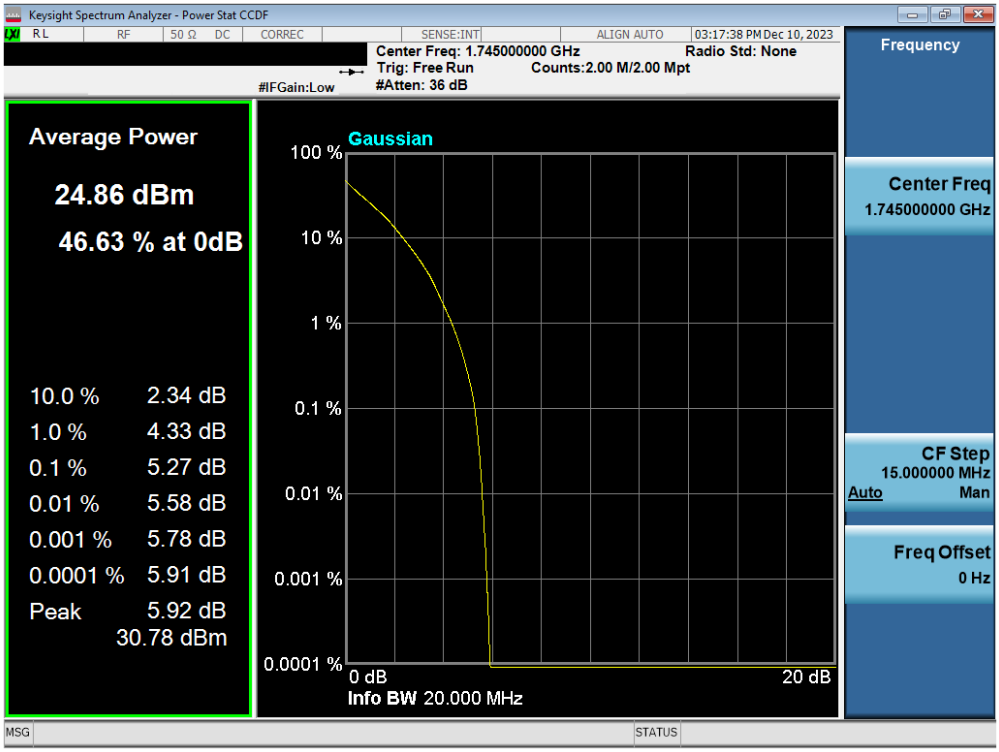
Plot 7-391. PAR Plot (LTE Band 66 - 15MHz 16-QAM - Full RB)



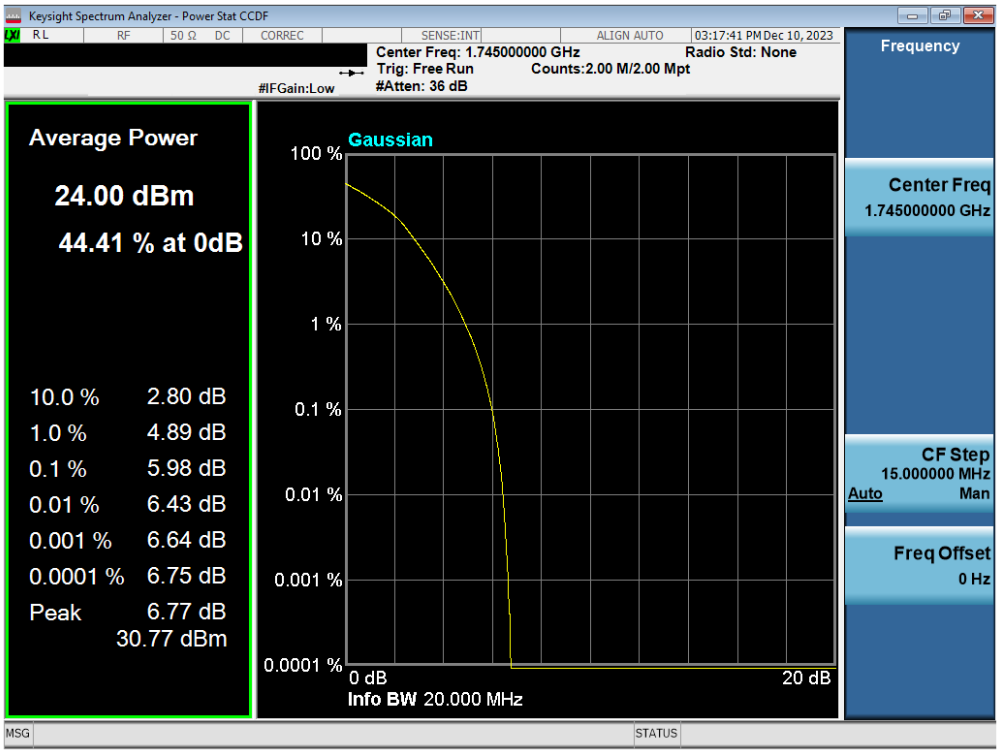
Plot 7-392. PAR Plot (LTE Band 66 - 15MHz 64-QAM - Full RB)



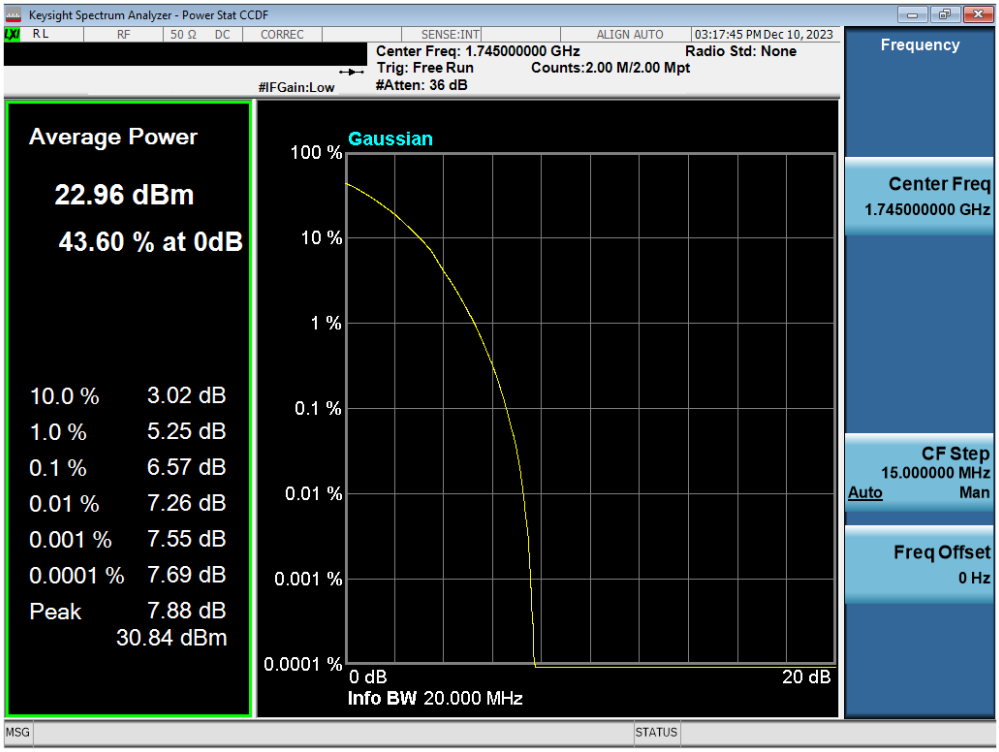
Plot 7-393. PAR Plot (LTE Band 66 - 15MHz 256-QAM - Full RB)



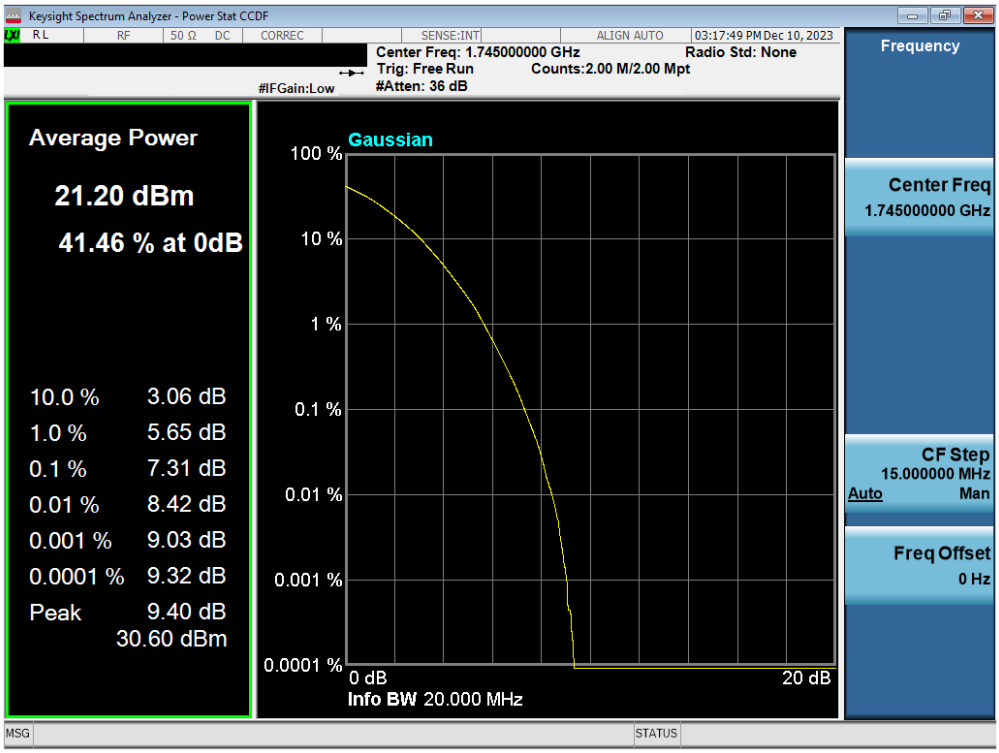
Plot 7-394. PAR Plot (LTE Band 66 - 20MHz QPSK - Full RB)



Plot 7-395. PAR Plot (LTE Band 66 - 20MHz 16-QAM - Full RB)

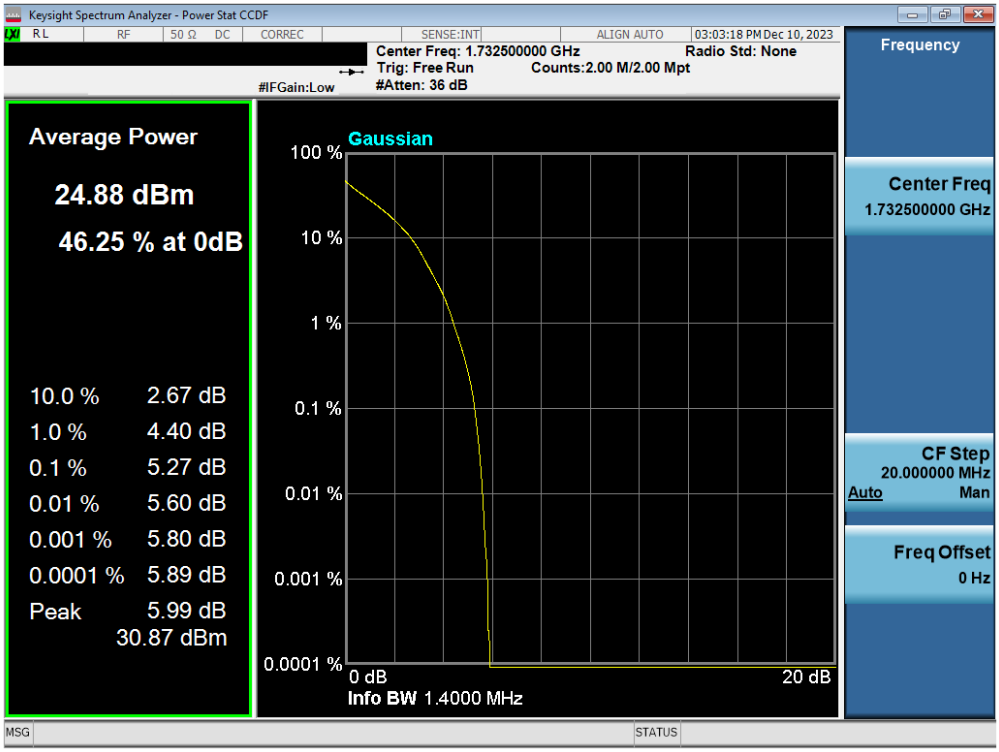


Plot 7-396. PAR Plot (LTE Band 66 - 20MHz 64-QAM - Full RB)

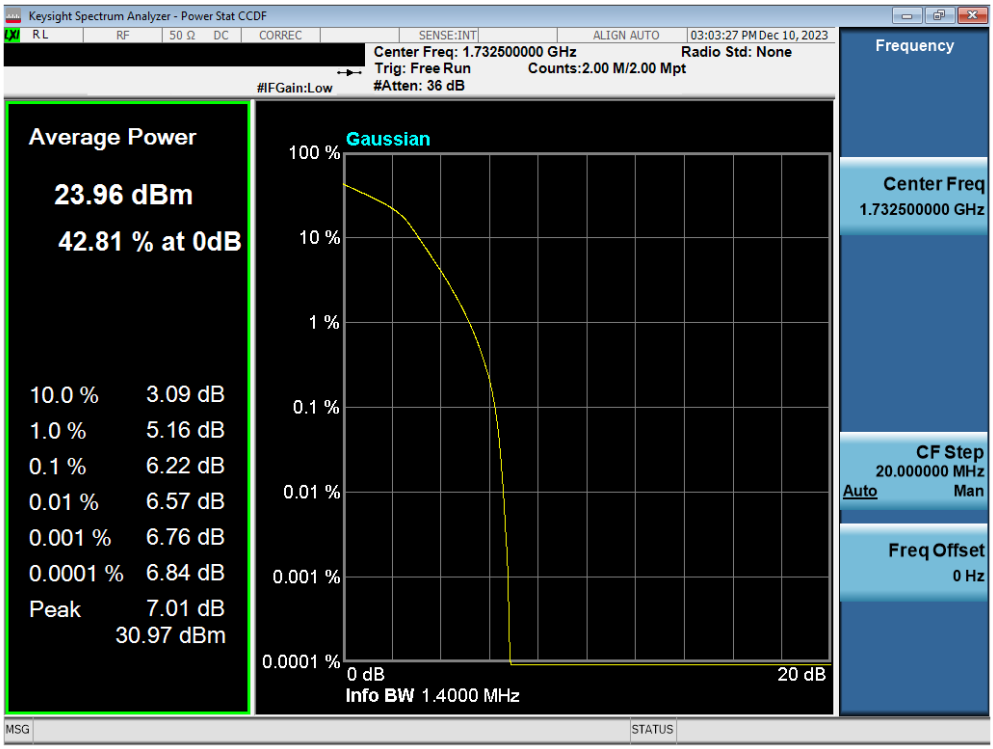


Plot 7-397. PAR Plot (LTE Band 66 - 20MHz 256-QAM - Full RB)

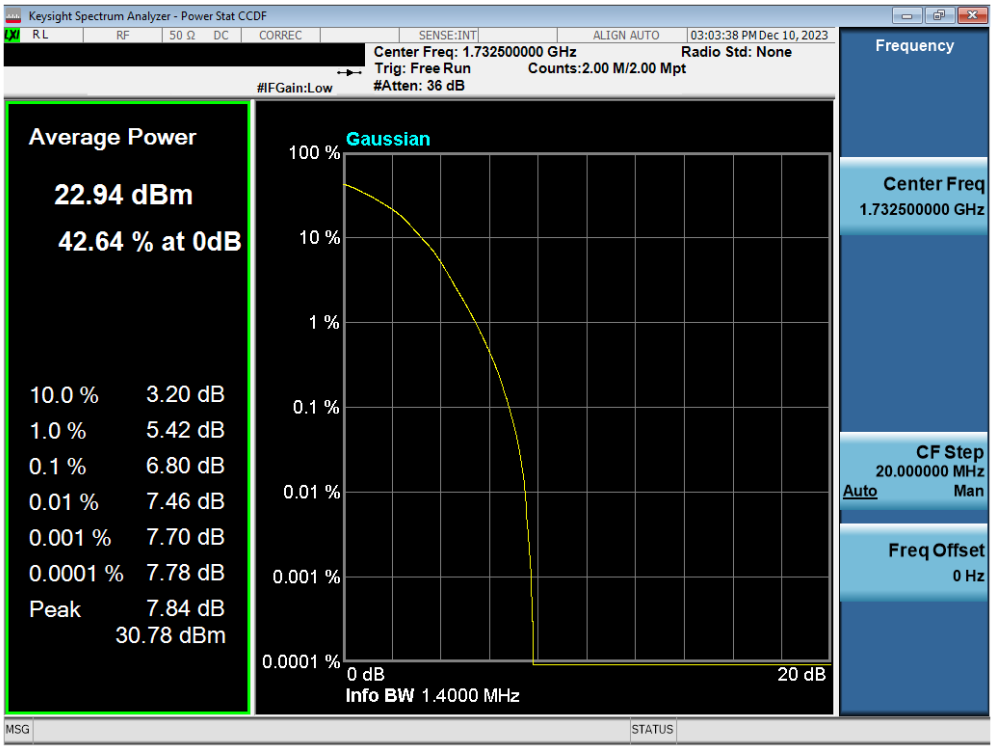
LTE Band 4



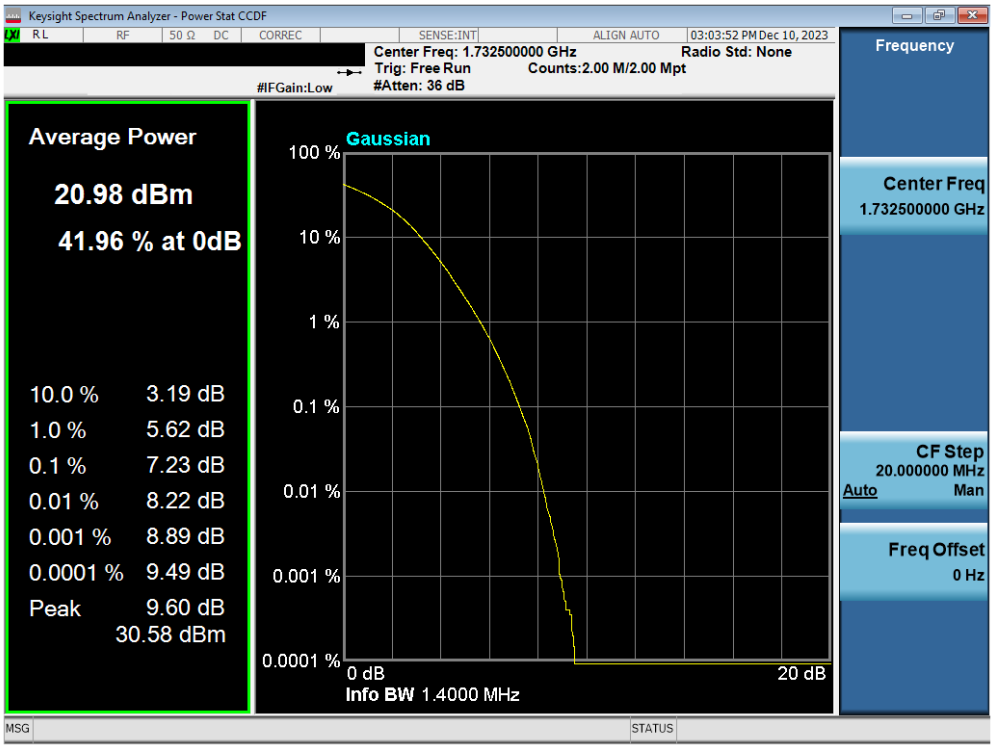
Plot 7-398. PAR Plot (LTE Band 4 - 1.4MHz QPSK - Full RB)



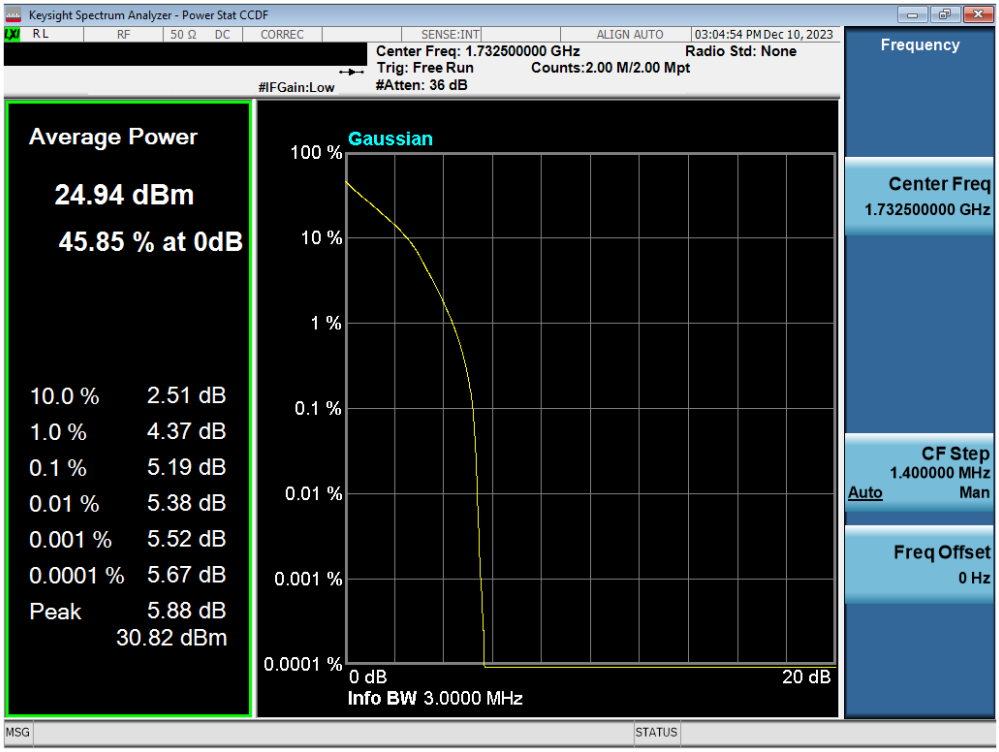
Plot 7-399. PAR Plot (LTE Band 4 - 1.4MHz 16-QAM - Full RB)



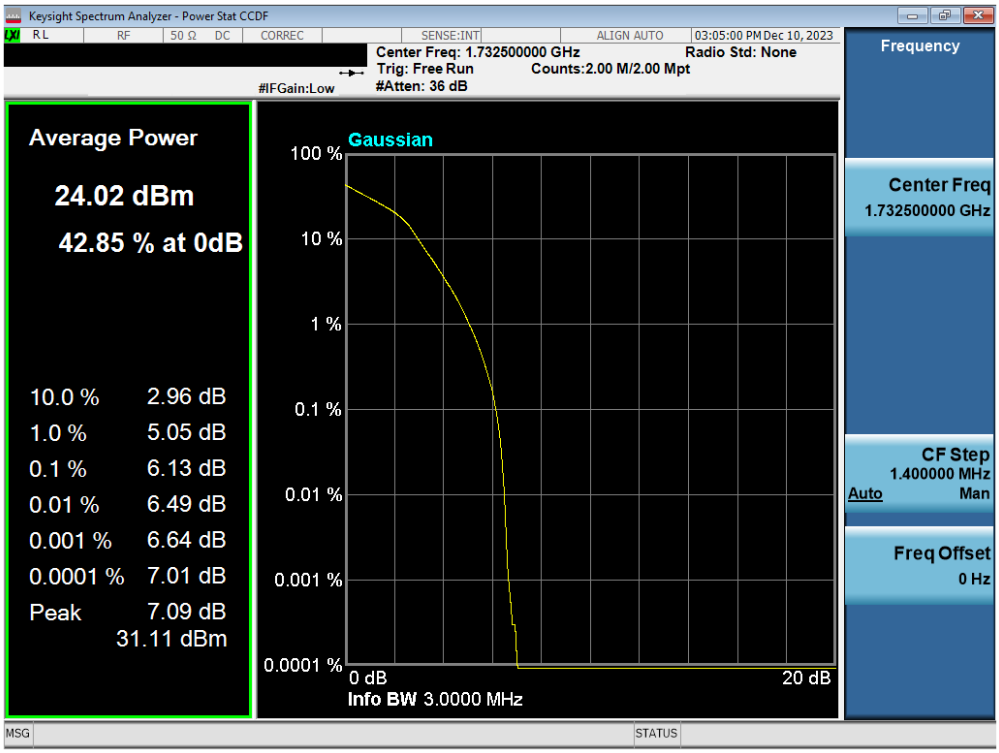
Plot 7-400. PAR Plot (LTE Band 4 - 1.4MHz 64-QAM - Full RB)



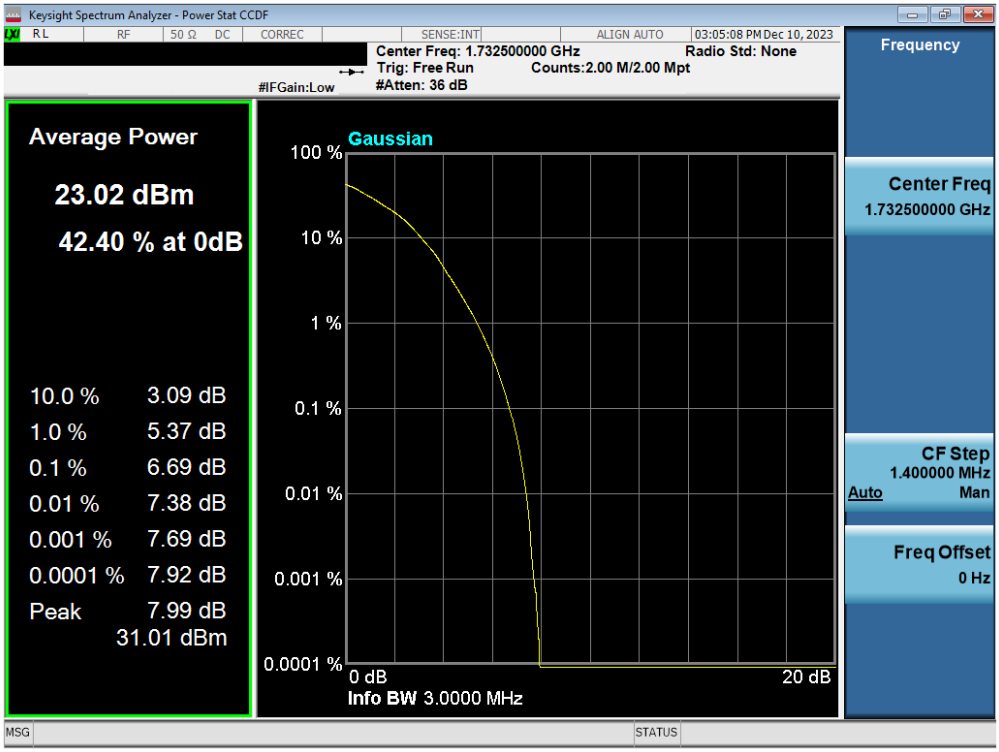
Plot 7-401. PAR Plot (LTE Band 4 - 1.4MHz 256-QAM - Full RB)



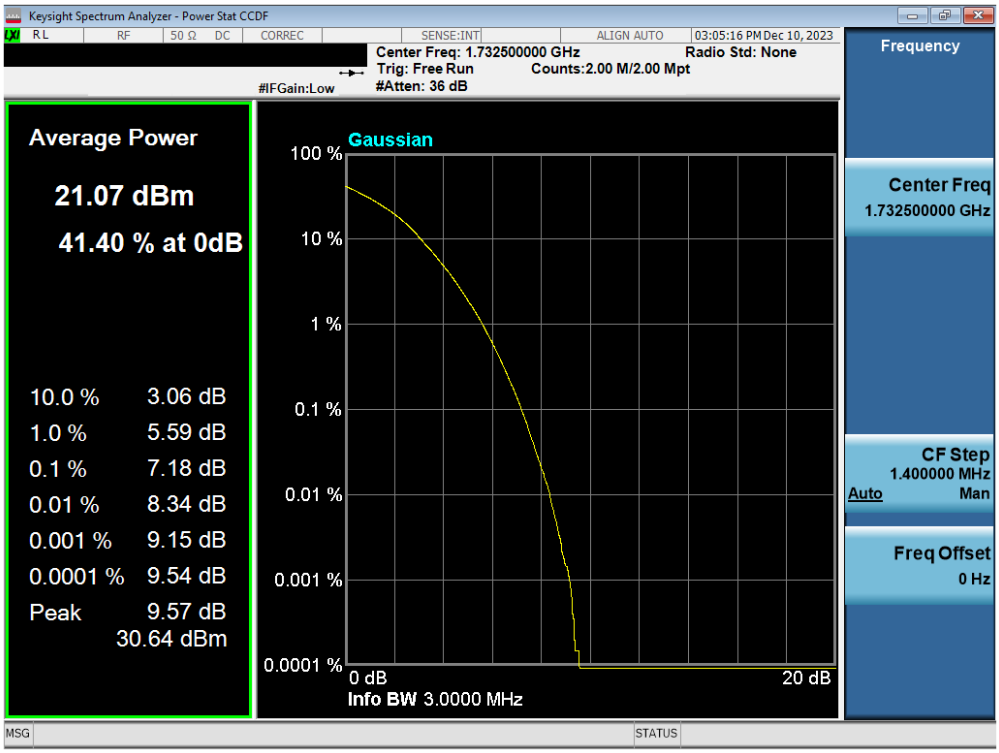
Plot 7-402. PAR Plot (LTE Band 4 - 3MHz QPSK - Full RB)



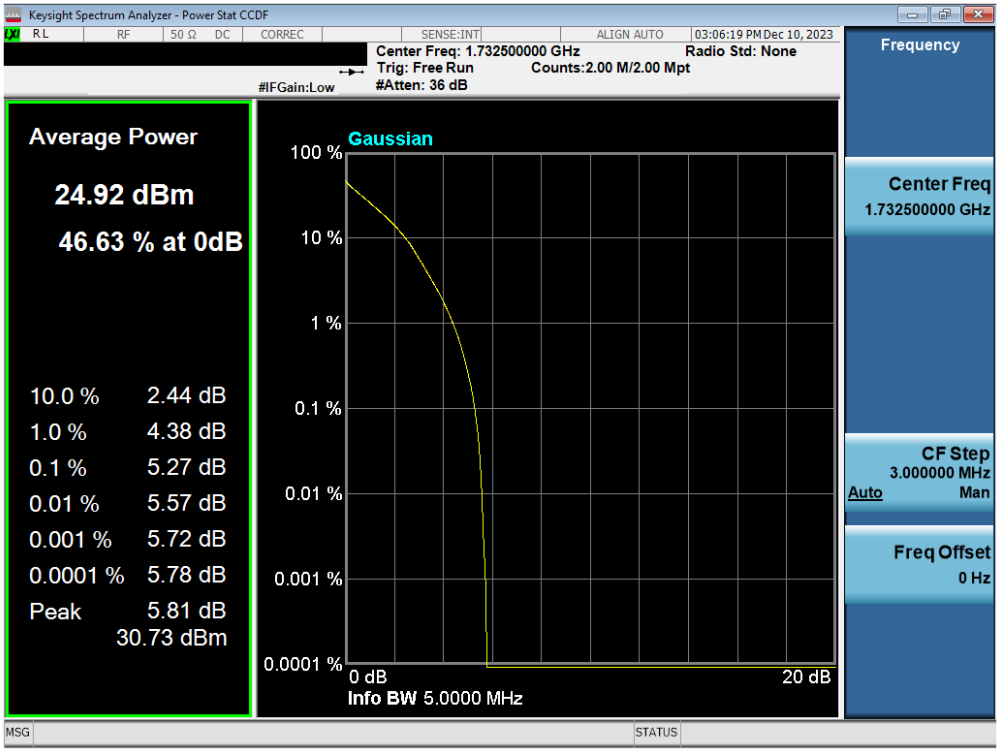
Plot 7-403. PAR Plot (LTE Band 4 - 3MHz 16-QAM - Full RB)



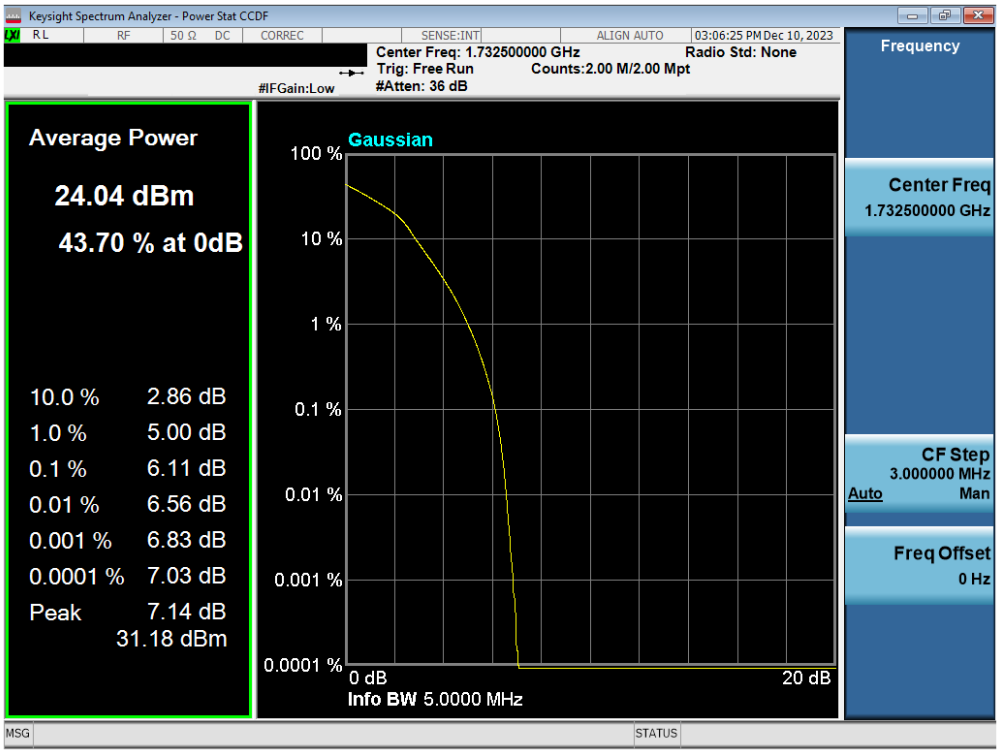
Plot 7-404. PAR Plot (LTE Band 4 - 3MHz 64-QAM - Full RB)



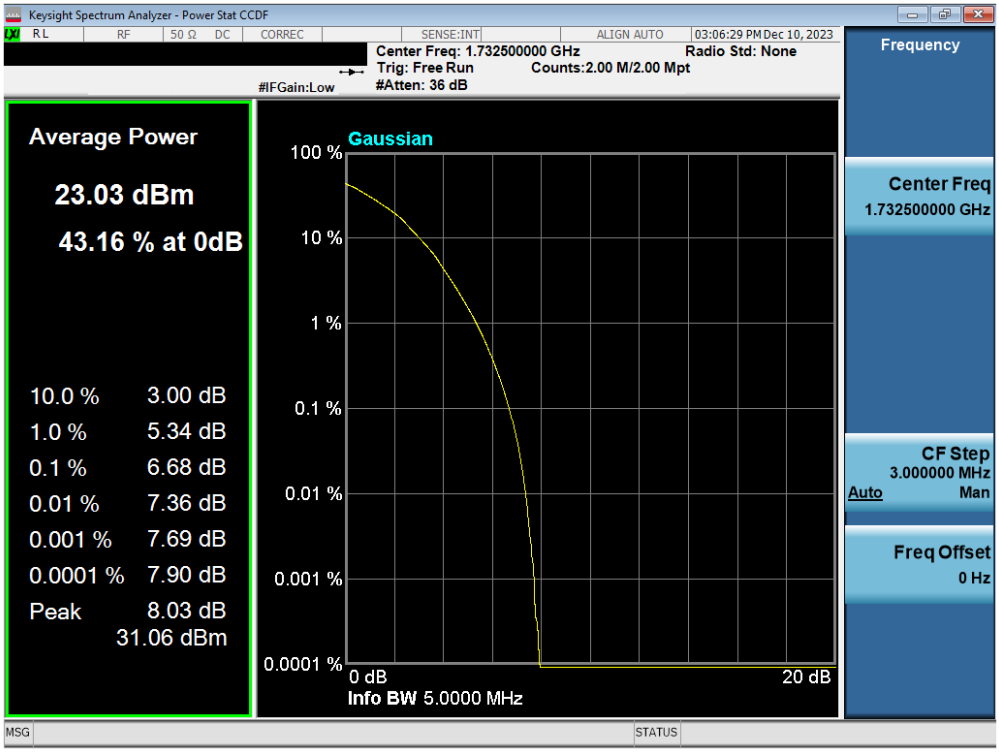
Plot 7-405. PAR Plot (LTE Band 4 - 3MHz 256-QAM - Full RB)



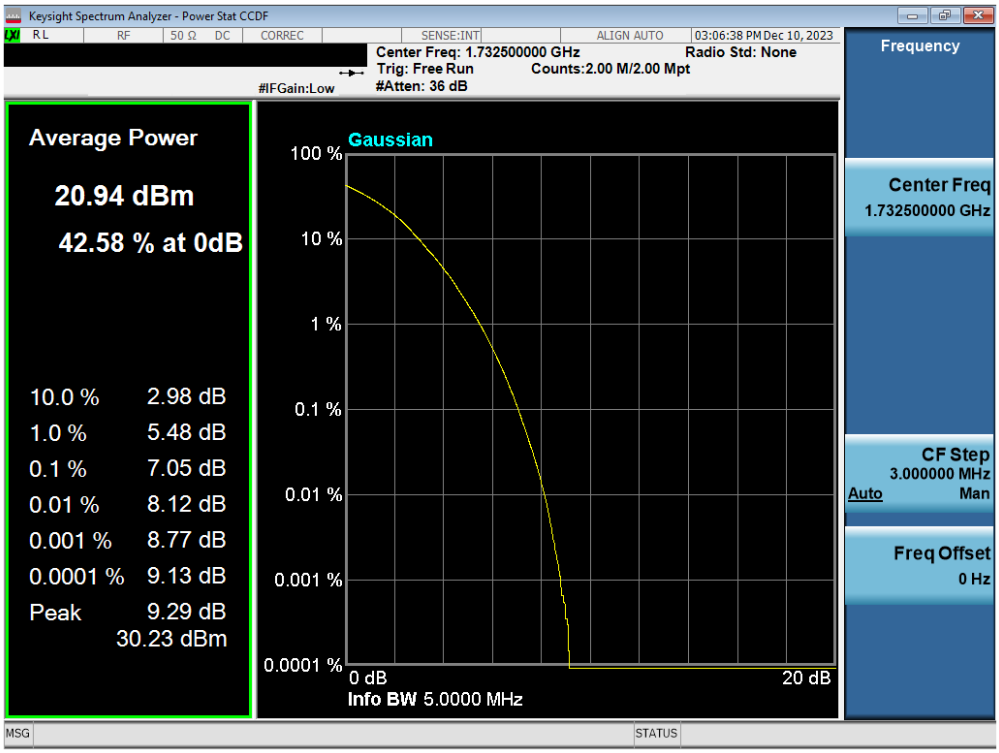
Plot 7-406. PAR Plot (LTE Band 4 - 5MHz QPSK - Full RB)



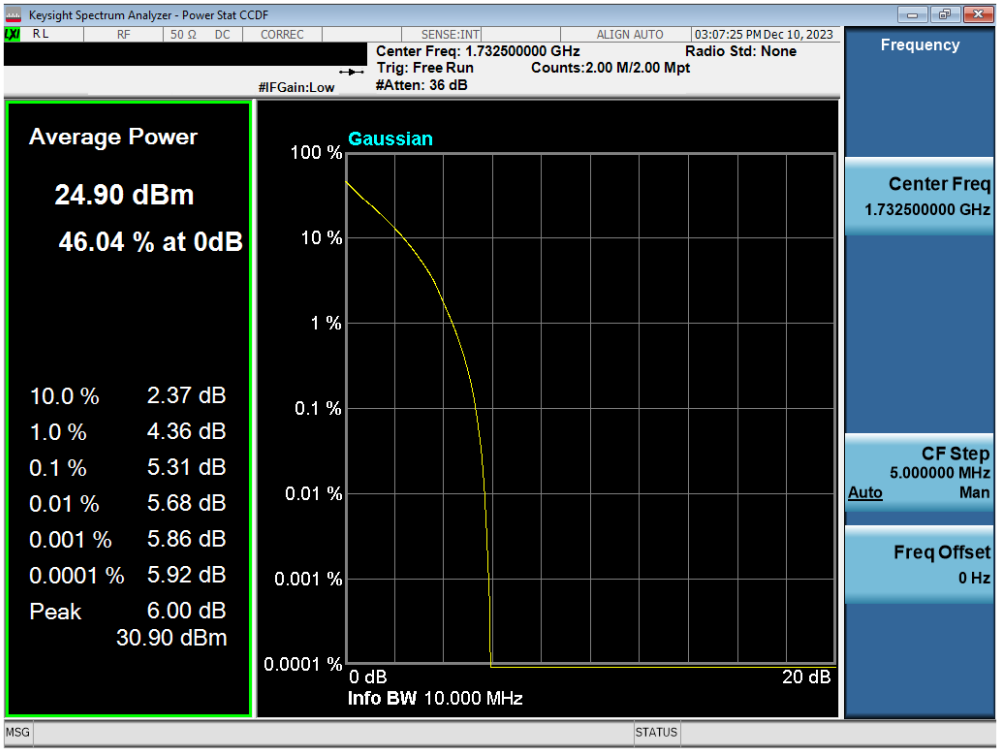
Plot 7-407. PAR Plot (LTE Band 4 - 5MHz 16-QAM - Full RB)



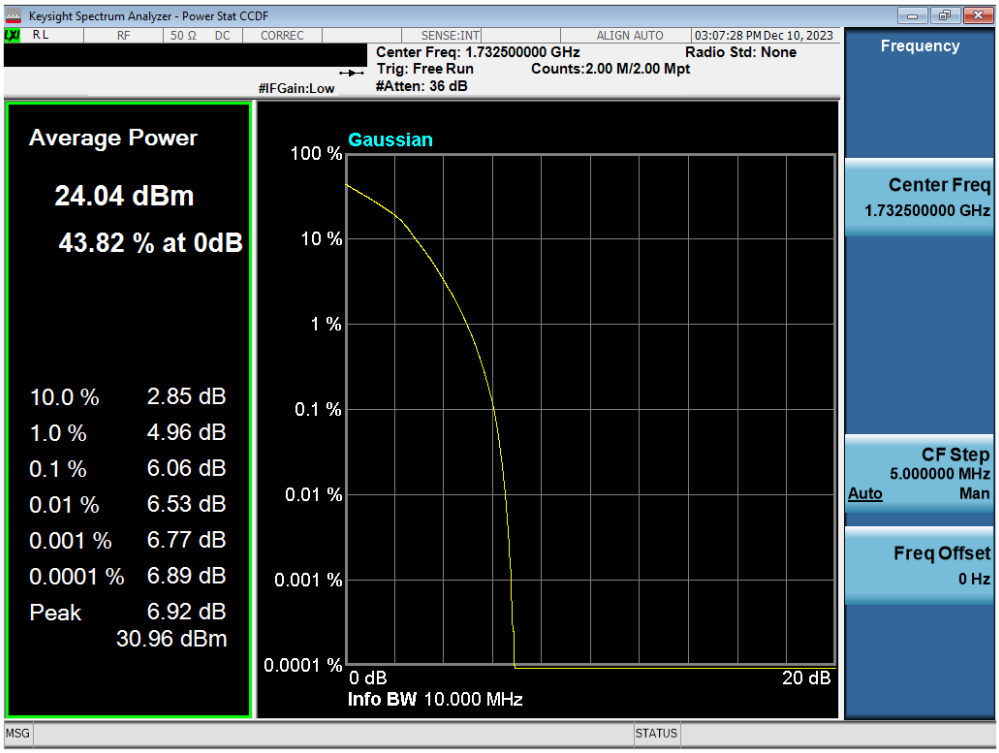
Plot 7-408. PAR Plot (LTE Band 4 - 5MHz 64-QAM - Full RB)



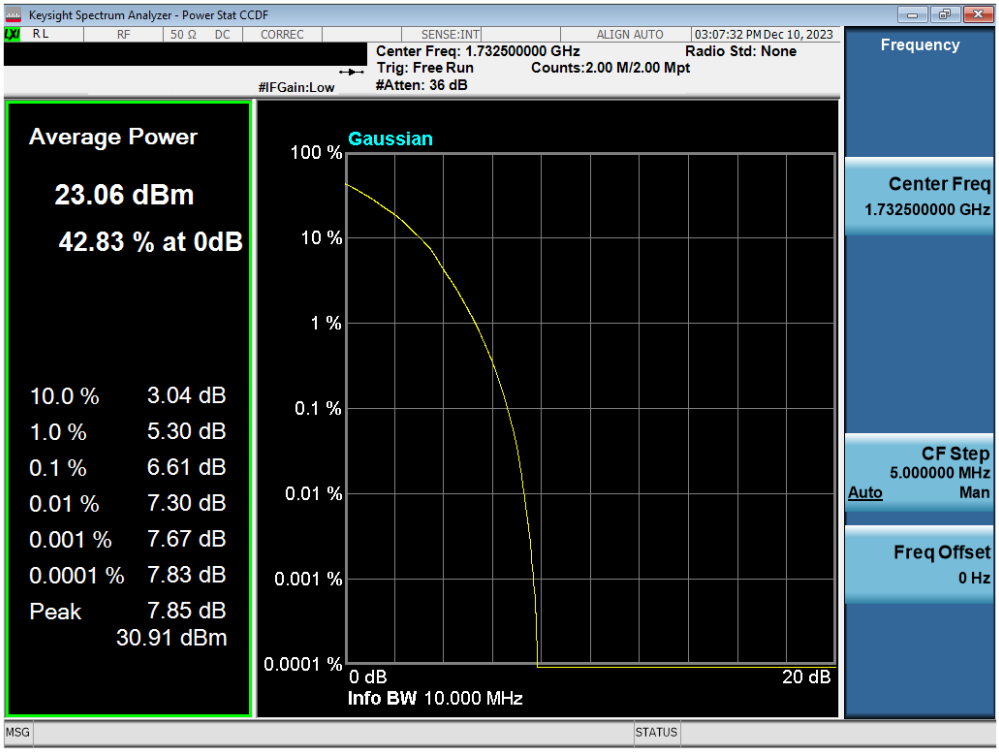
Plot 7-409. PAR Plot (LTE Band 4 - 5MHz 256-QAM - Full RB)



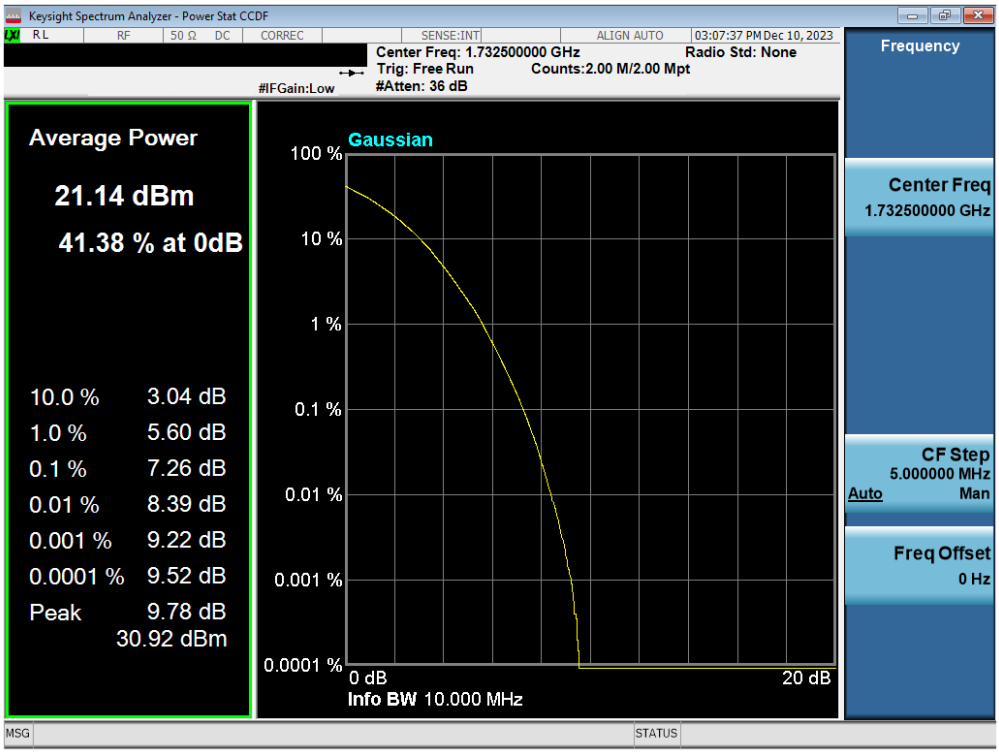
Plot 7-410. PAR Plot (LTE Band 4 - 10MHz QPSK - Full RB)



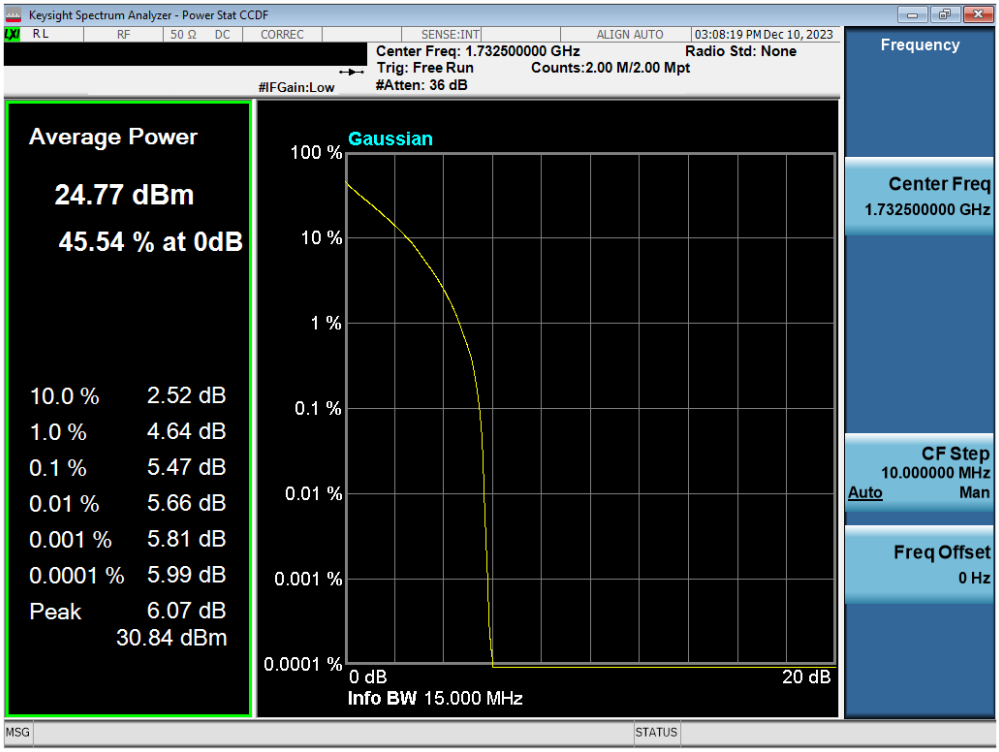
Plot 7-411. PAR Plot (LTE Band 4 - 10MHz 16-QAM - Full RB)



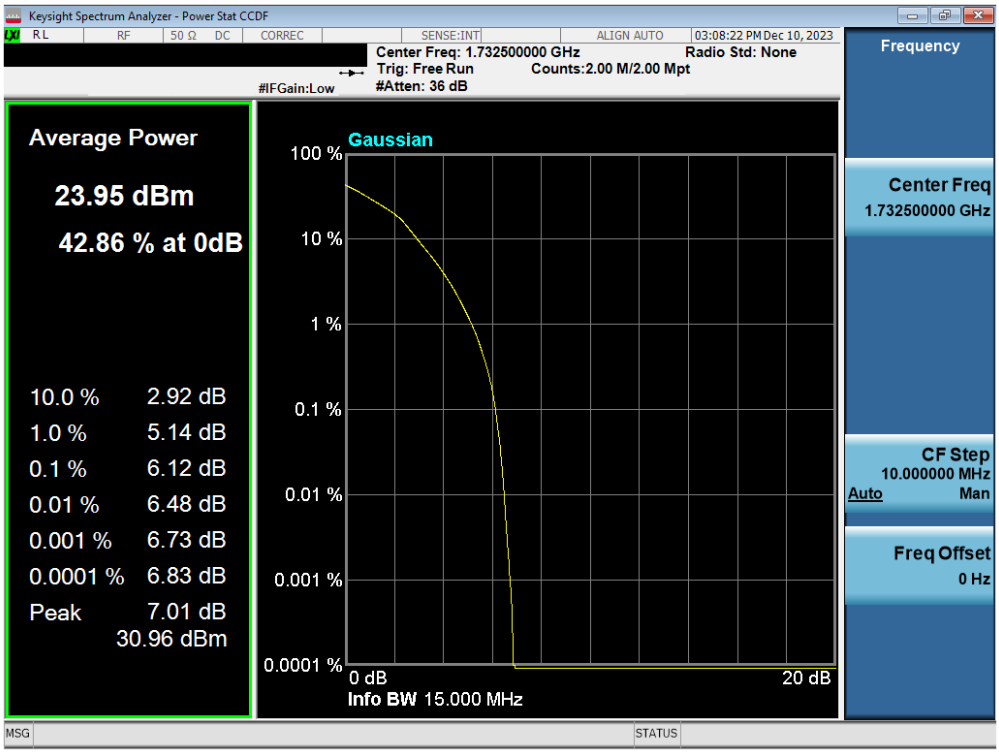
Plot 7-412. PAR Plot (LTE Band 4 - 10MHz 64-QAM - Full RB)



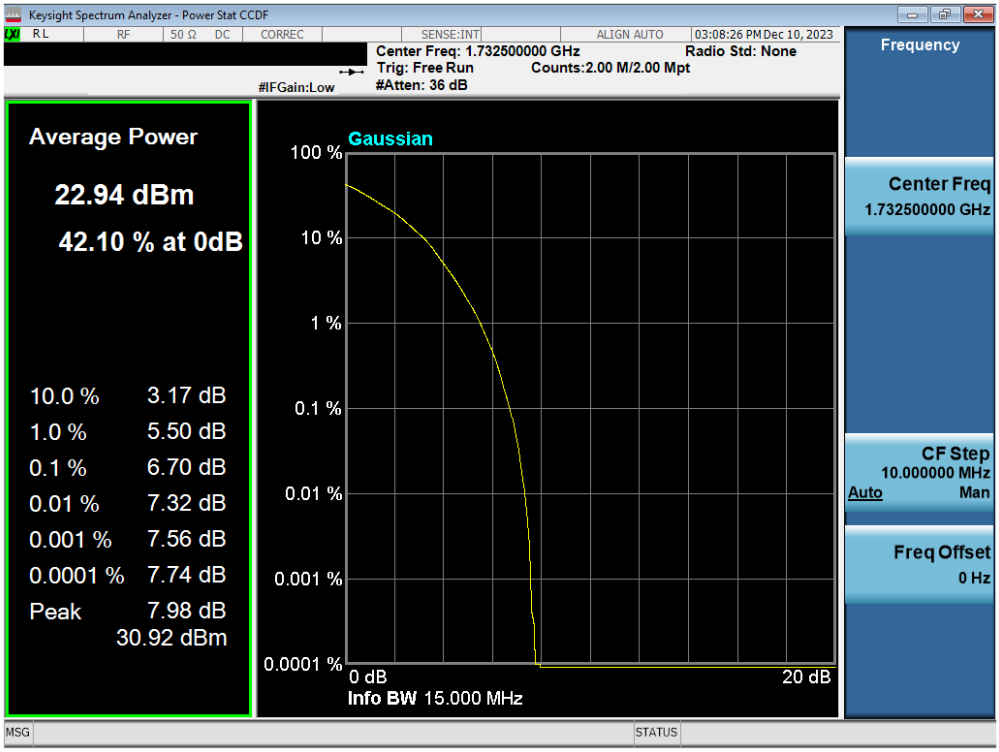
Plot 7-413. PAR Plot (LTE Band 4 - 10MHz 256-QAM - Full RB)



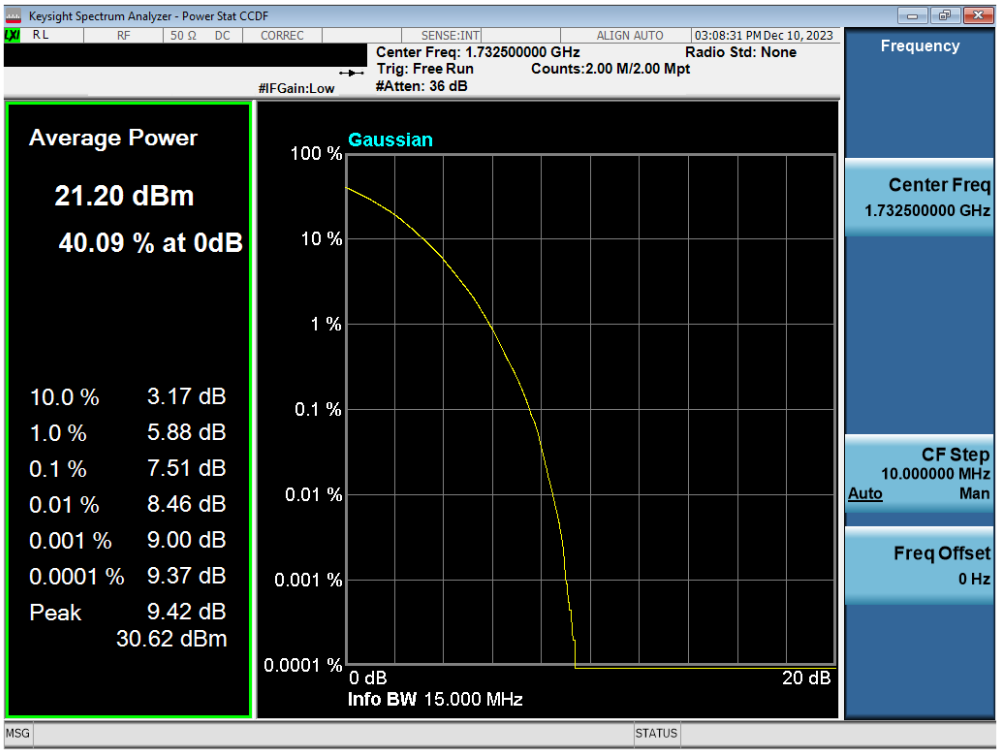
Plot 7-414. PAR Plot (LTE Band 4 - 15MHz QPSK - Full RB)



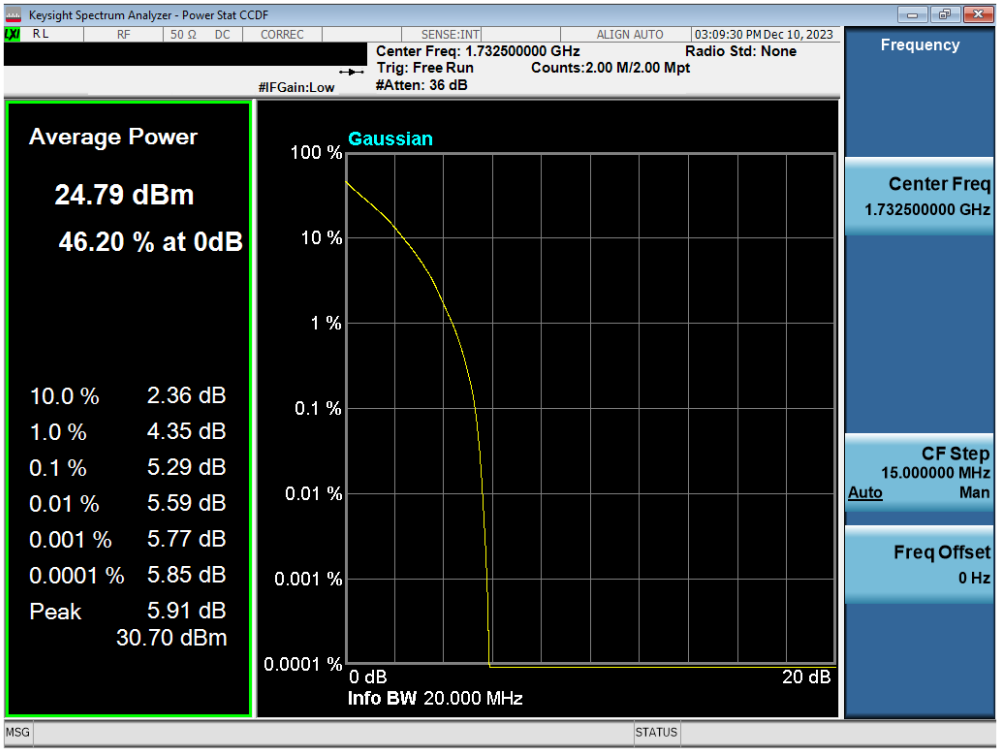
Plot 7-415. PAR Plot (LTE Band 4 - 15MHz 16-QAM - Full RB)



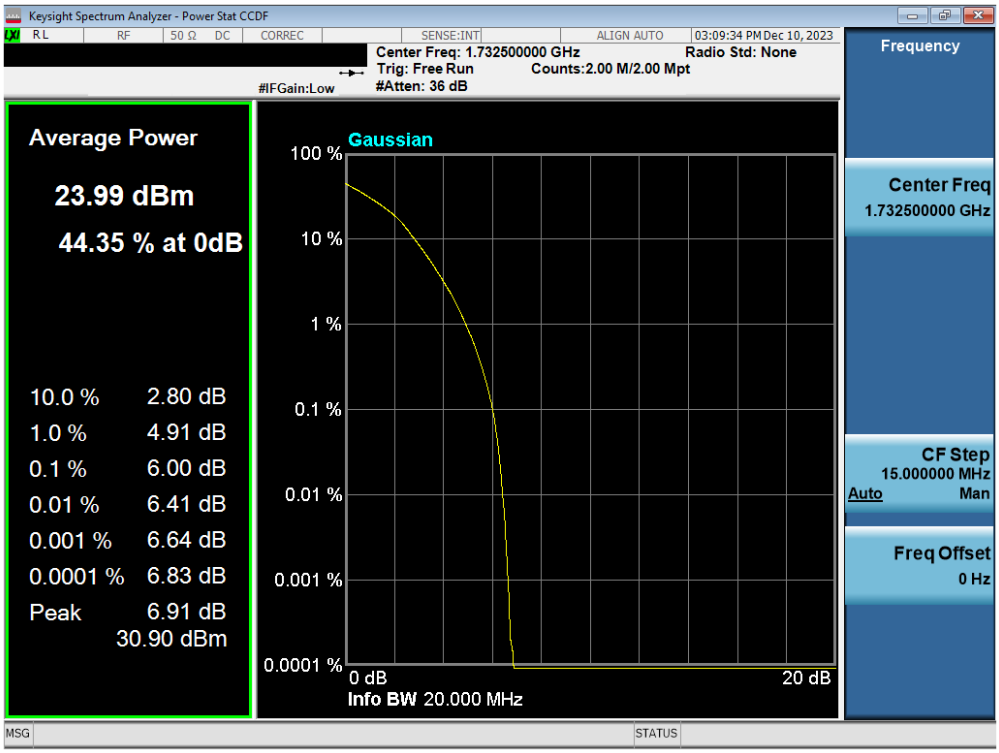
Plot 7-416. PAR Plot (LTE Band 4 - 15MHz 64-QAM - Full RB)



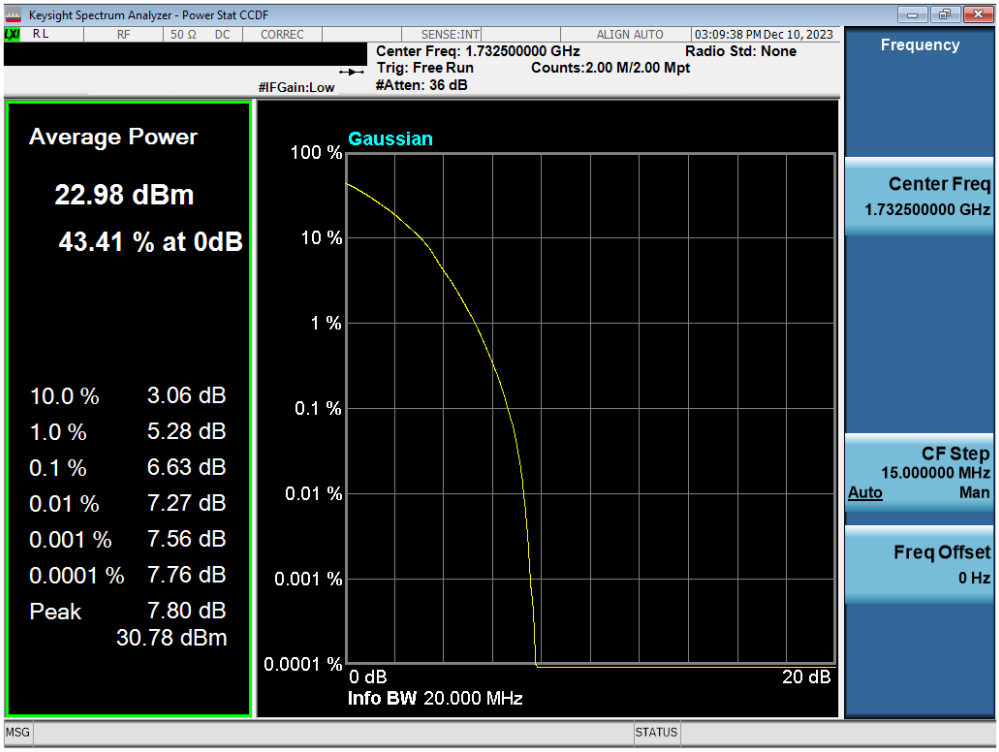
Plot 7-417. PAR Plot (LTE Band 4 - 15MHz 256-QAM - Full RB)



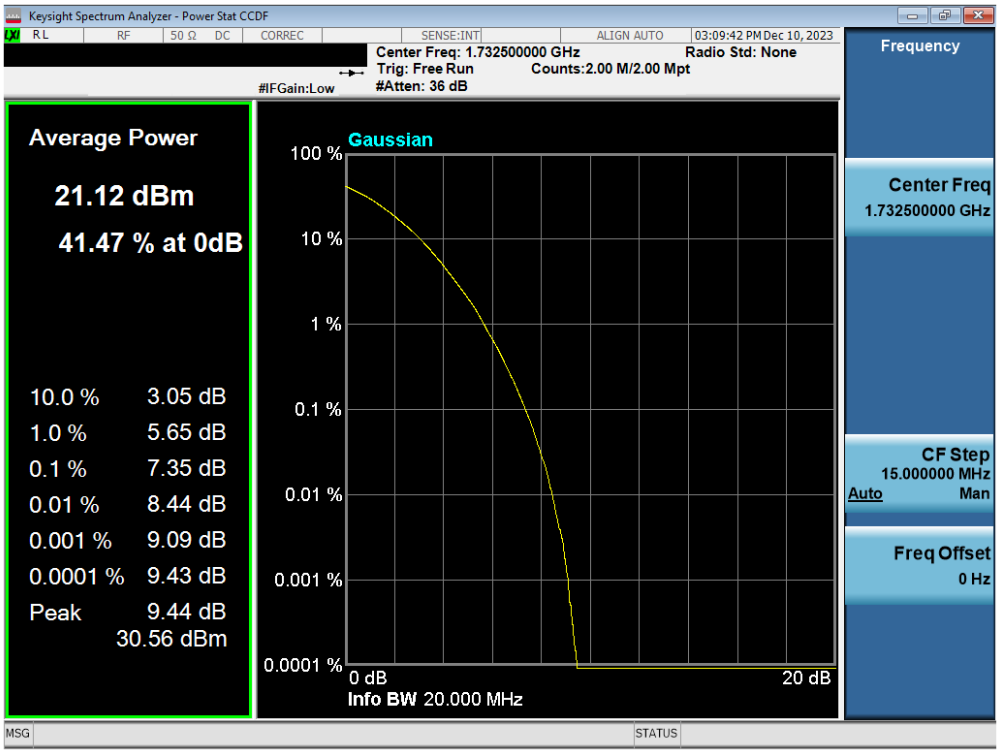
Plot 7-418. PAR Plot (LTE Band 4 - 20MHz QPSK - Full RB)



Plot 7-419. PAR Plot (LTE Band 4 - 20MHz 16-QAM - Full RB)

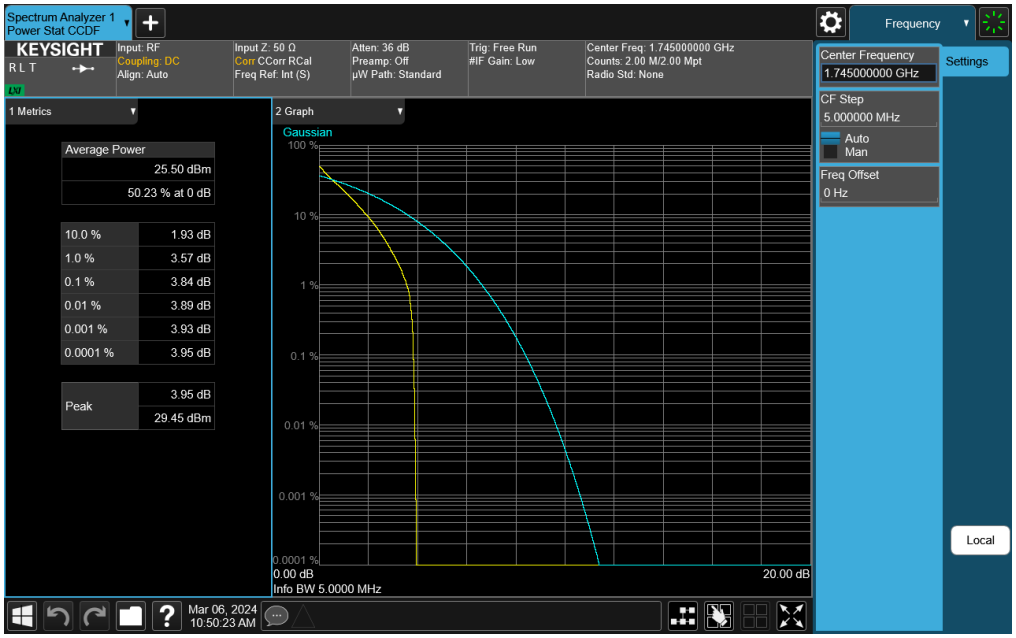


Plot 7-420. PAR Plot (LTE Band 4 - 20MHz 64-QAM - Full RB)

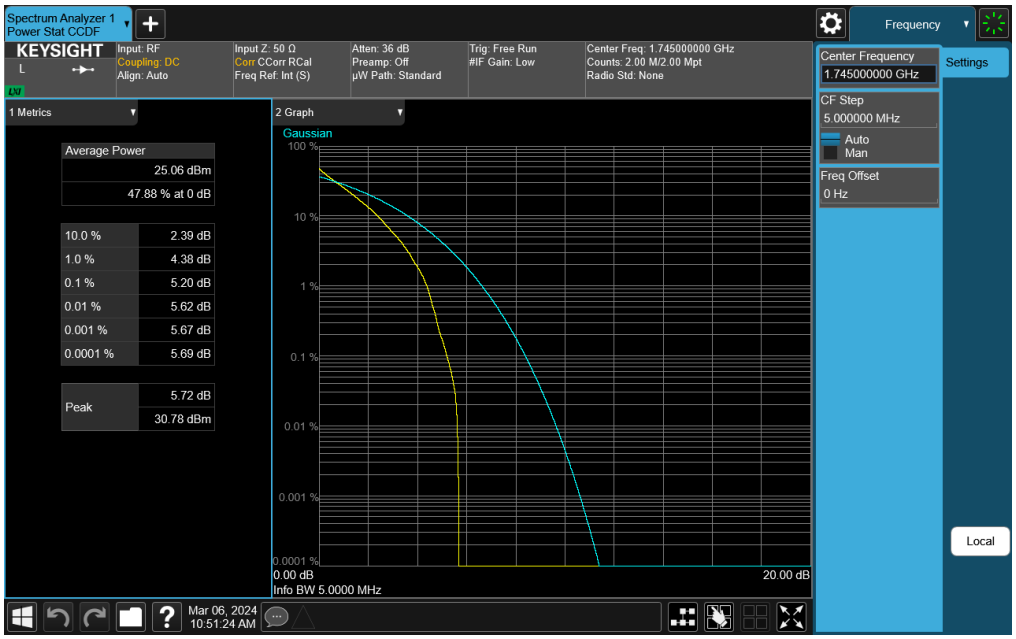


Plot 7-421. PAR Plot (LTE Band 4 - 20MHz 256-QAM - Full RB)

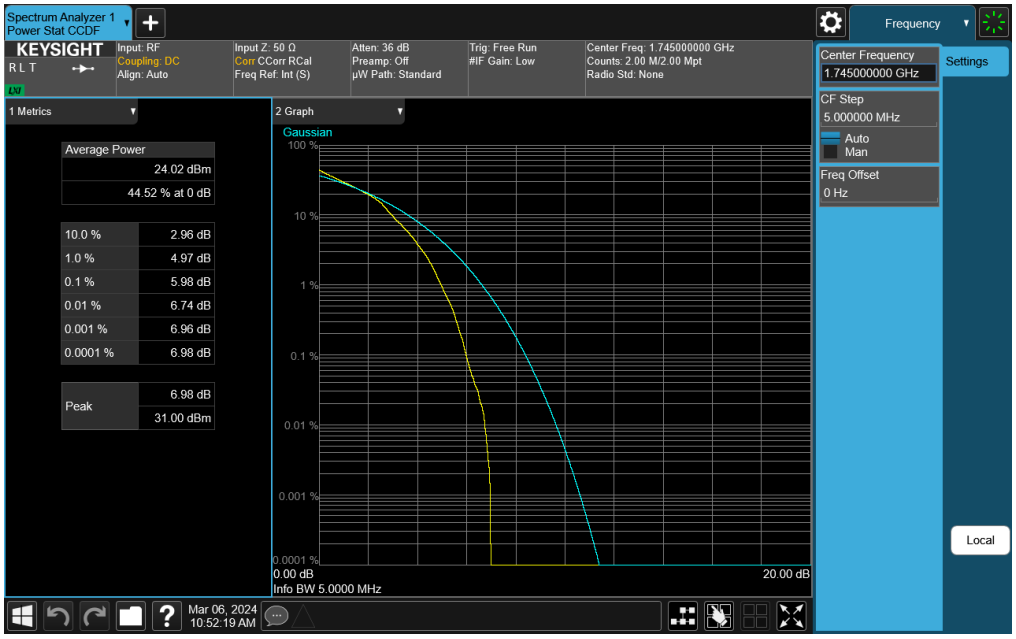
NR Band n66



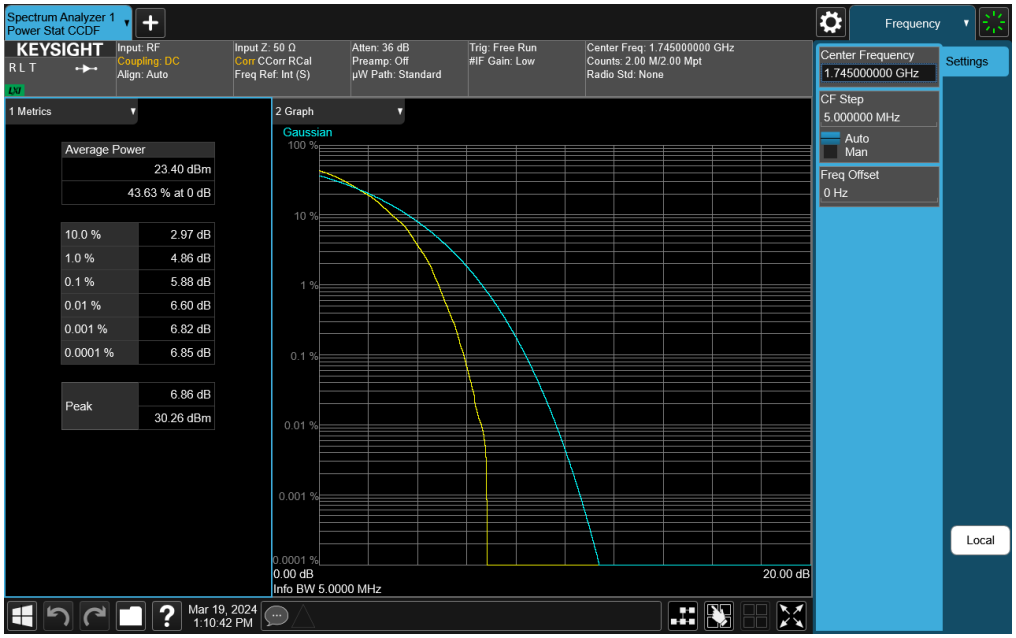
Plot 7-422. PAR Plot (NR Band n66 - 5.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



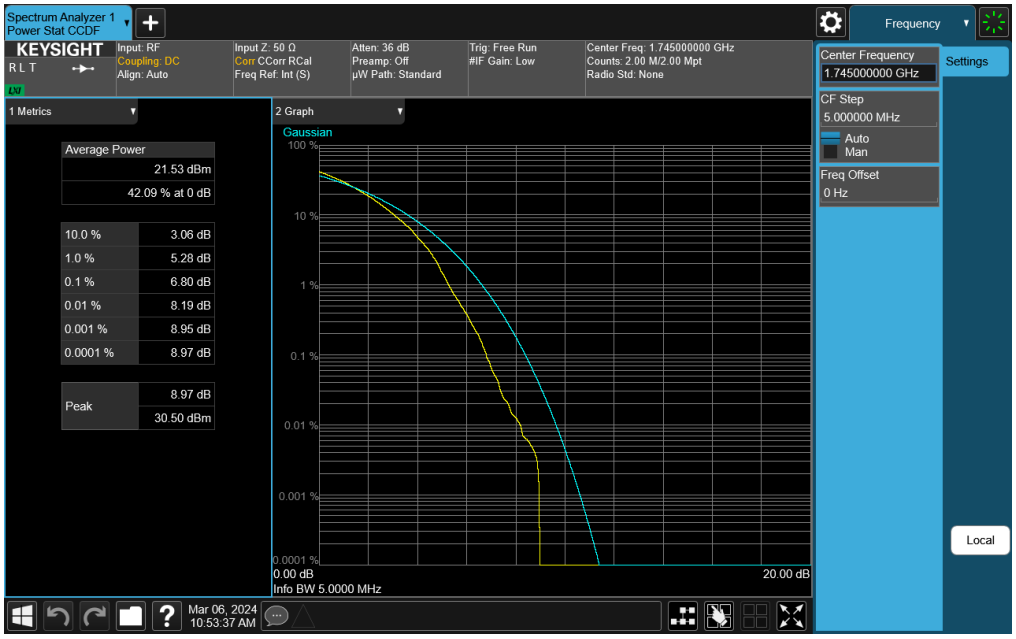
Plot 7-423. PAR Plot (NR Band n66 - 5.0MHz DFT-s-OFDM QPSK - Full RB)



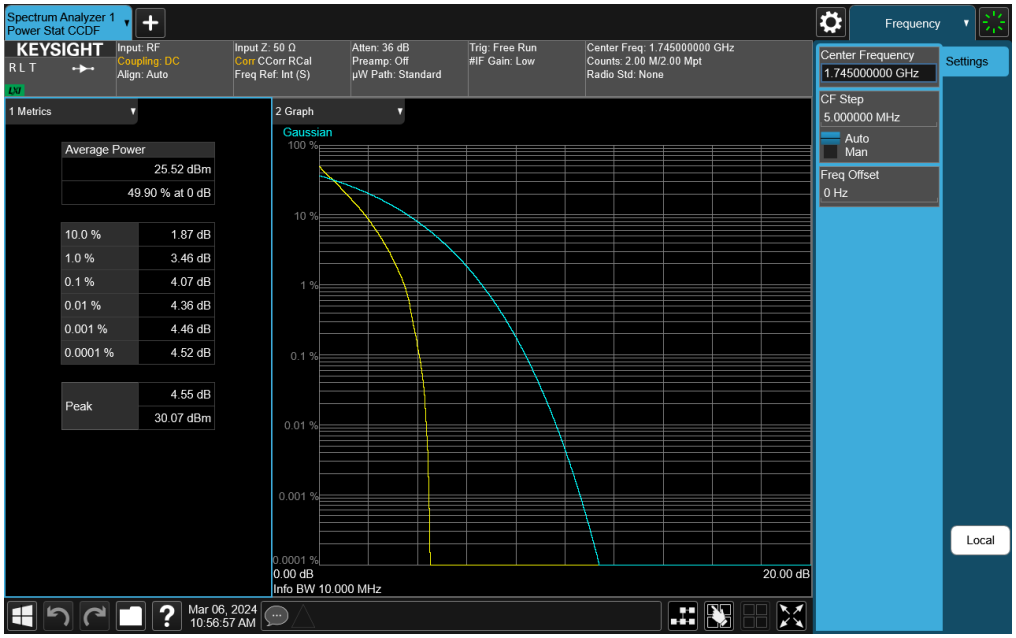
Plot 7-424. PAR Plot (NR Band n66 - 5.0MHz DFT-s-OFDM 16-QAM - Full RB)



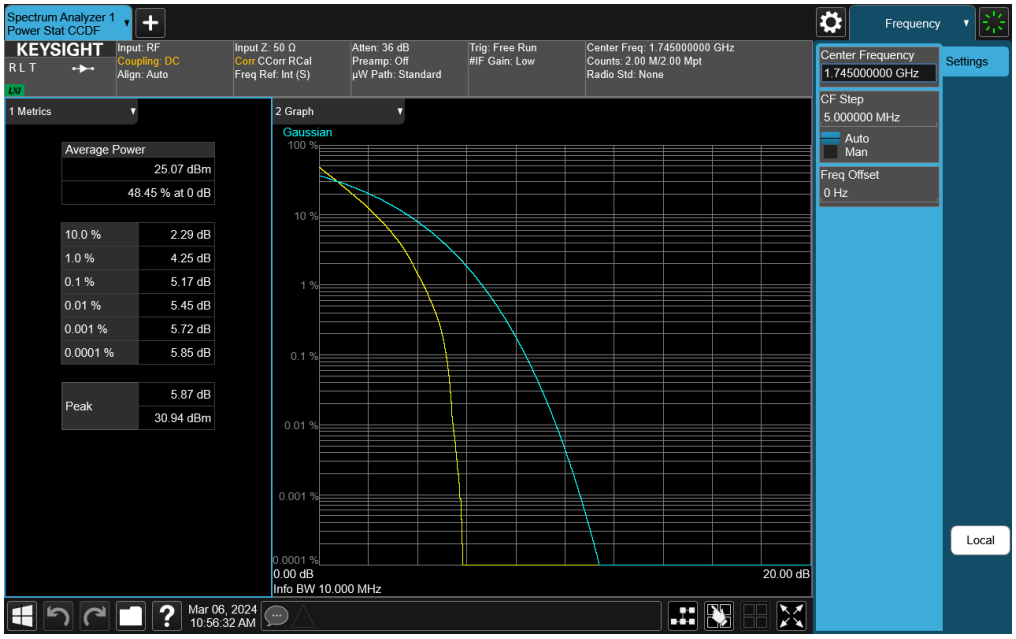
Plot 7-425. PAR Plot (NR Band n66 - 5.0MHz DFT-s-OFDM 64-QAM - Full RB)



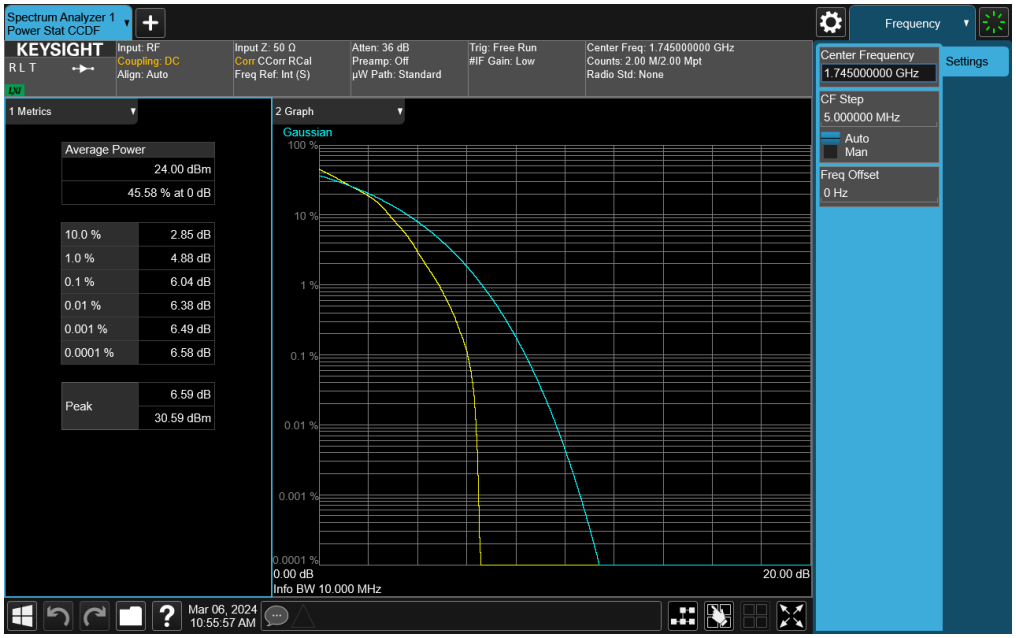
Plot 7-426. PAR Plot (NR Band n66 - 5.0MHz DFT-s-OFDM 256-QAM - Full RB)



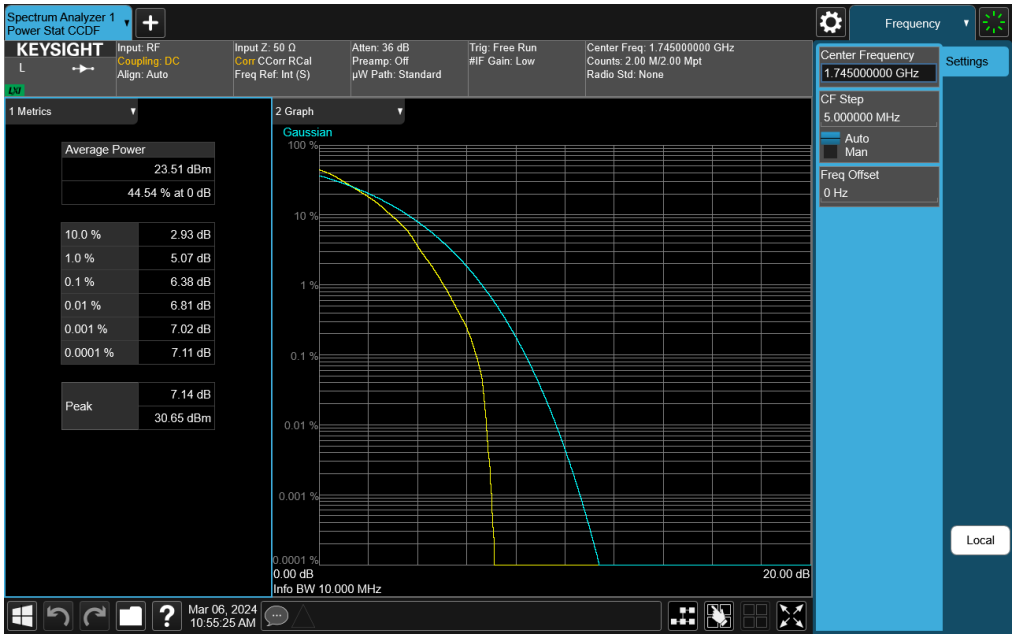
Plot 7-427. PAR Plot (NR Band n66 - 10.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



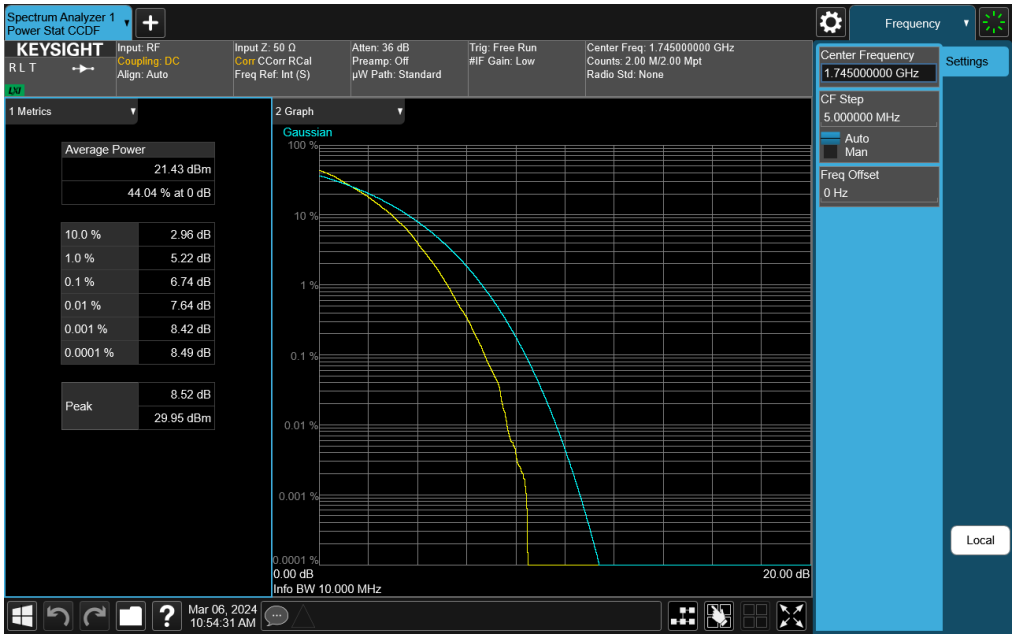
Plot 7-428. PAR Plot (NR Band n66 - 10.0MHz DFT-S-OFDM QPSK - Full RB)



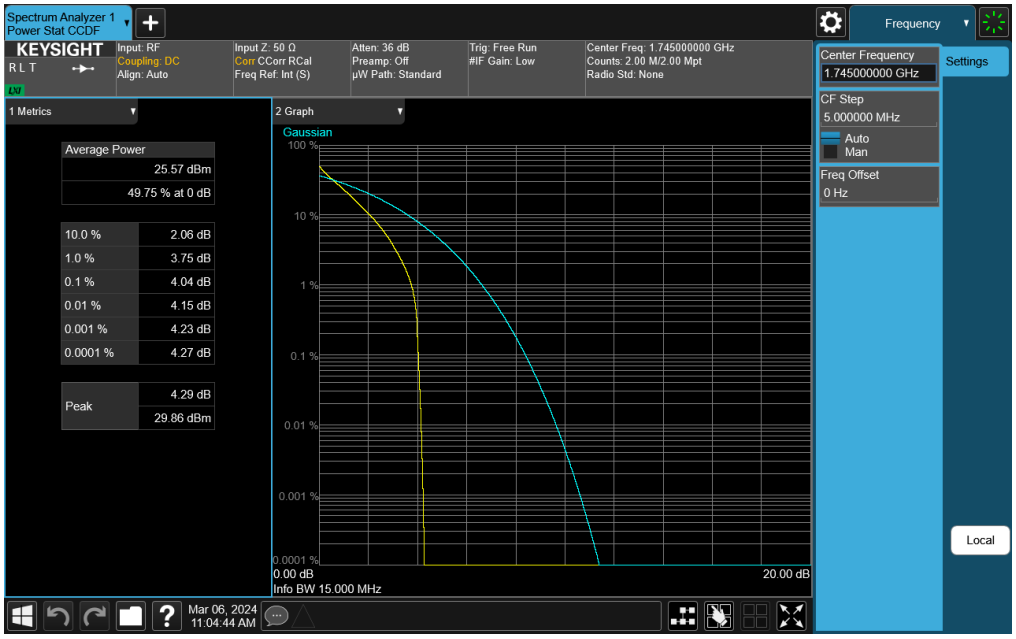
Plot 7-429. PAR Plot (NR Band n66 - 10.0MHz DFT-s-OFDM 16-QAM - Full RB)



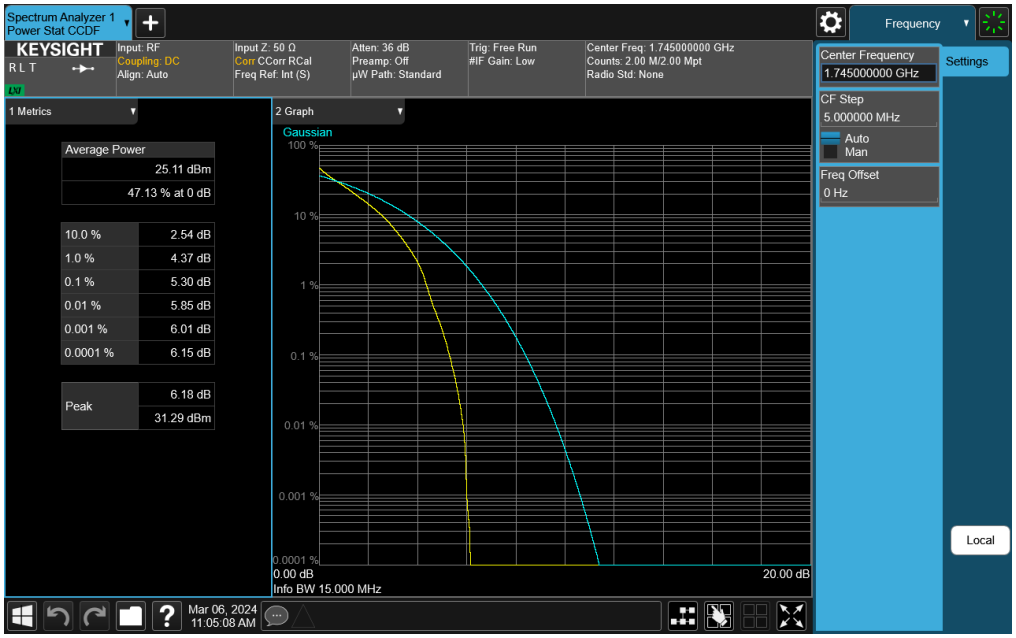
Plot 7-430. PAR Plot (NR Band n66 - 10.0MHz DFT-S-OFDM 64-QAM - Full RB)



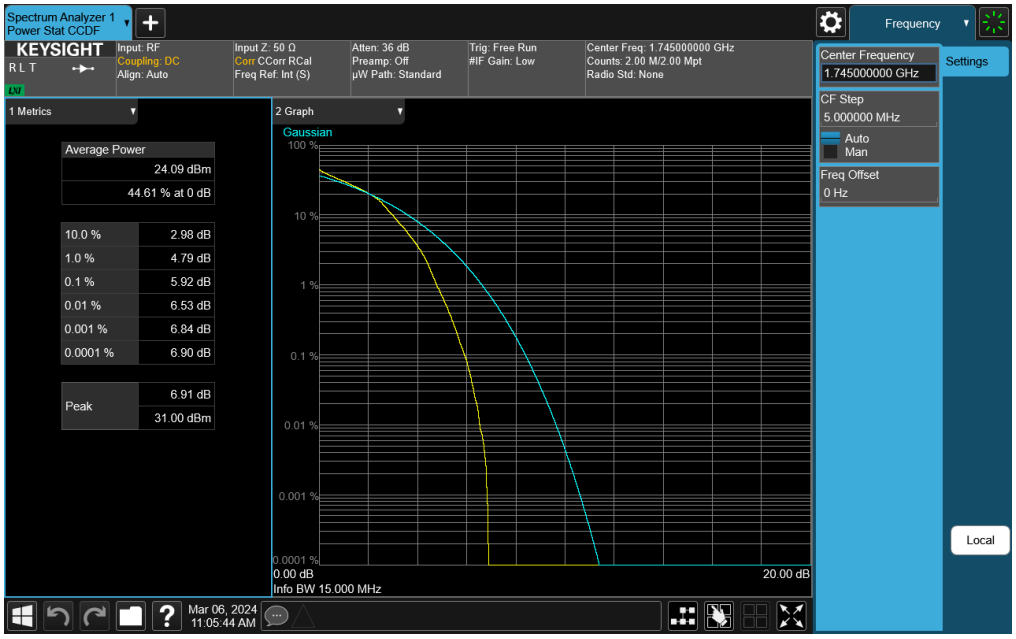
Plot 7-431. PAR Plot (NR Band n66 - 10.0MHz DFT-s-OFDM 256-QAM - Full RB)



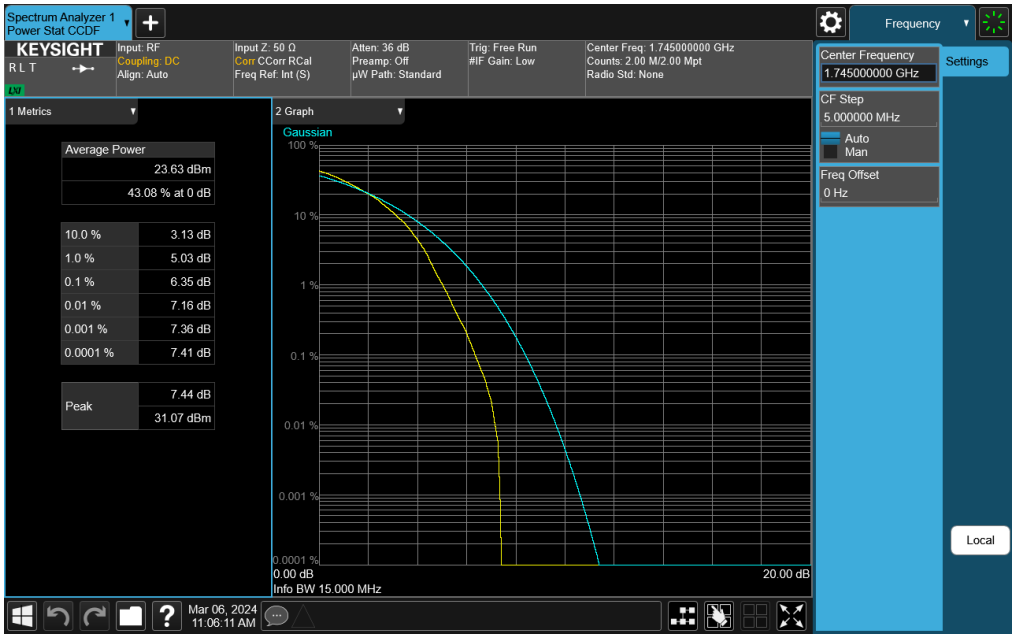
Plot 7-432. PAR Plot (NR Band n66 - 15.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



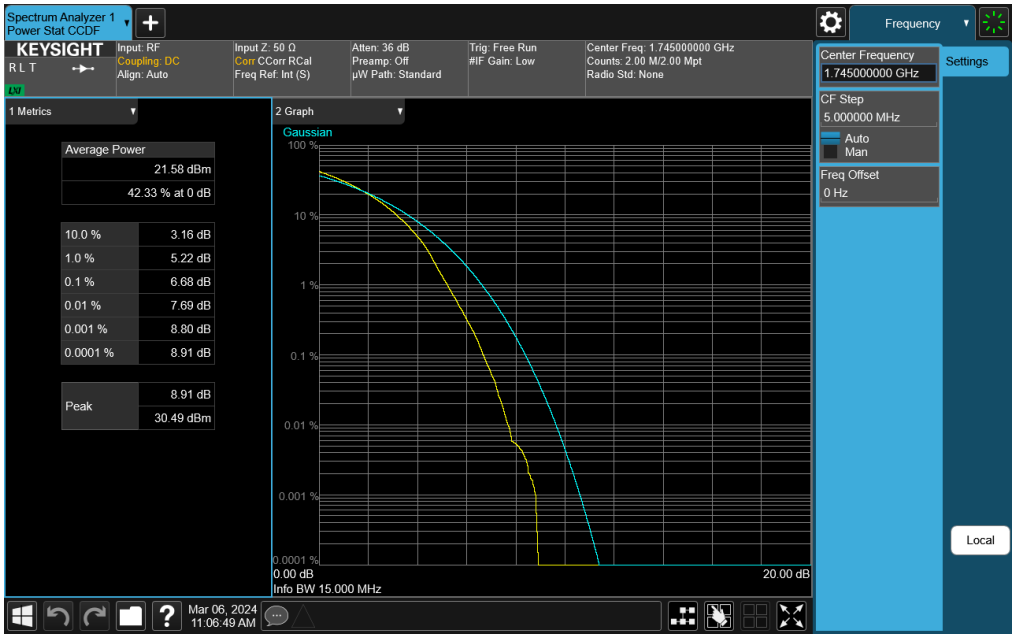
Plot 7-433. PAR Plot (NR Band n66 - 15.0MHz DFT-s-OFDM QPSK - Full RB)



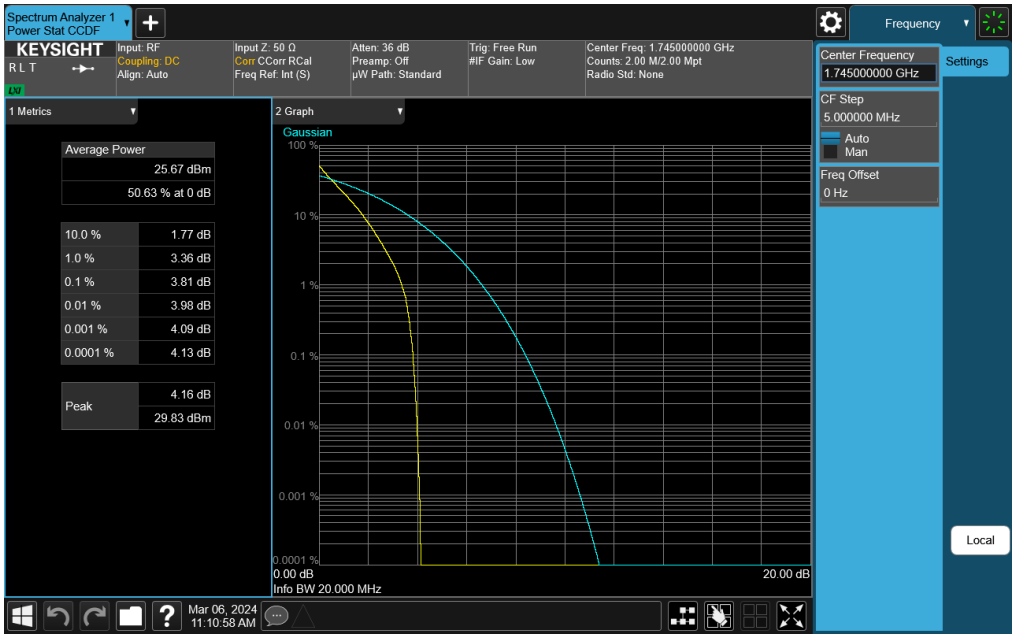
Plot 7-434. PAR Plot (NR Band n66 - 15.0MHz DFT-s-OFDM 16-QAM - Full RB)



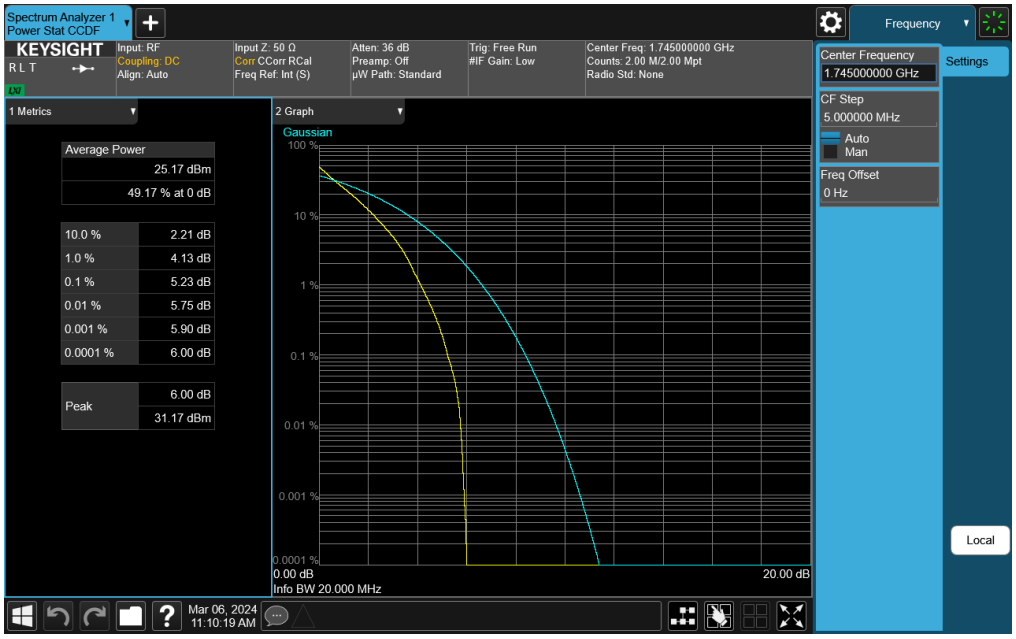
Plot 7-435. PAR Plot (NR Band n66 - 15.0MHz DFT-s-OFDM 64-QAM - Full RB)



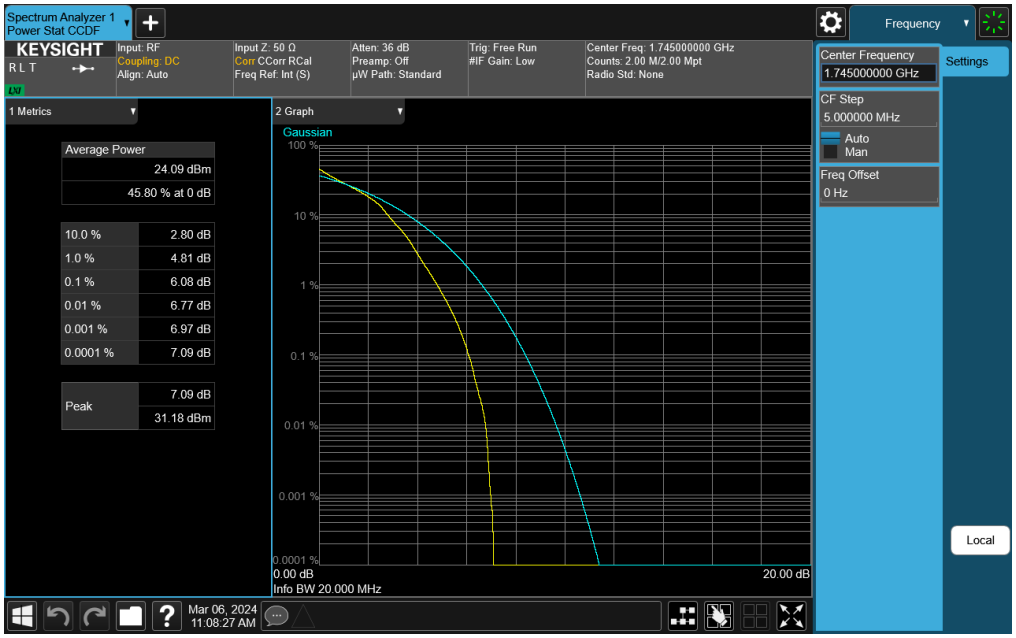
Plot 7-436. PAR Plot (NR Band n66 - 15.0MHz DFT-s-OFDM 256-QAM - Full RB)



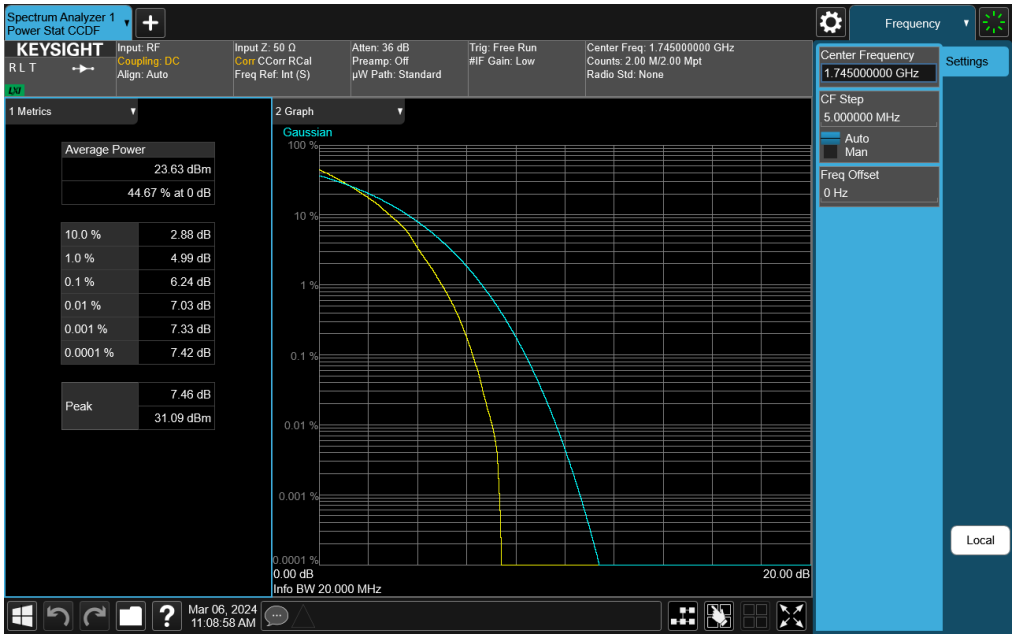
Plot 7-437. PAR Plot (NR Band n66 - 20.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



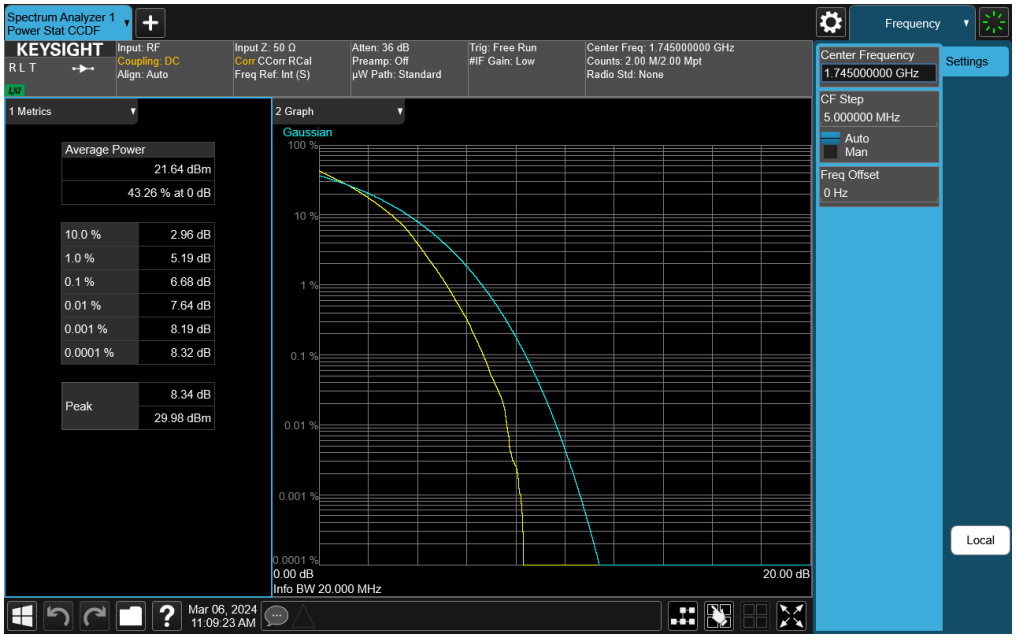
Plot 7-438. PAR Plot (NR Band n66 - 20.0MHz DFT-s-OFDM QPSK - Full RB)



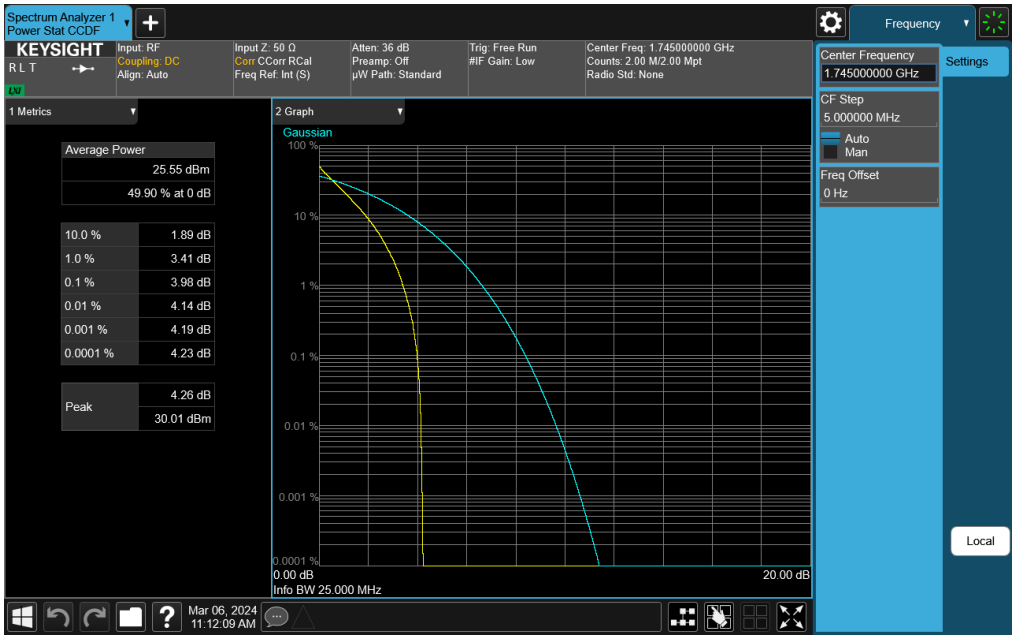
Plot 7-439. PAR Plot (NR Band n66 - 20.0MHz DFT-s-OFDM 16-QAM - Full RB)



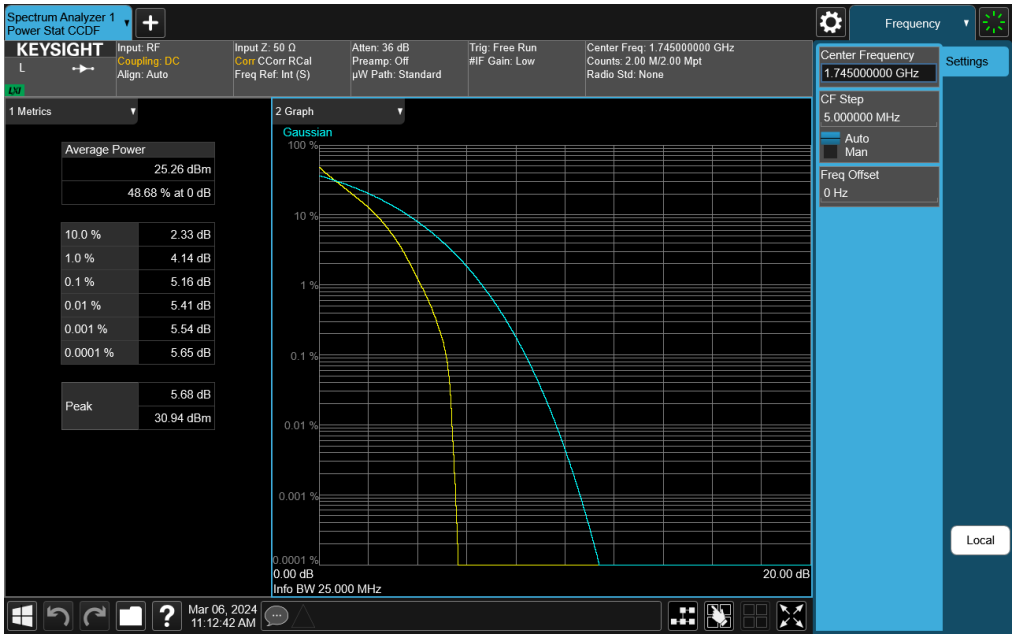
Plot 7-440. PAR Plot (NR Band n66 - 20.0MHz DFT-s-OFDM 64-QAM - Full RB)



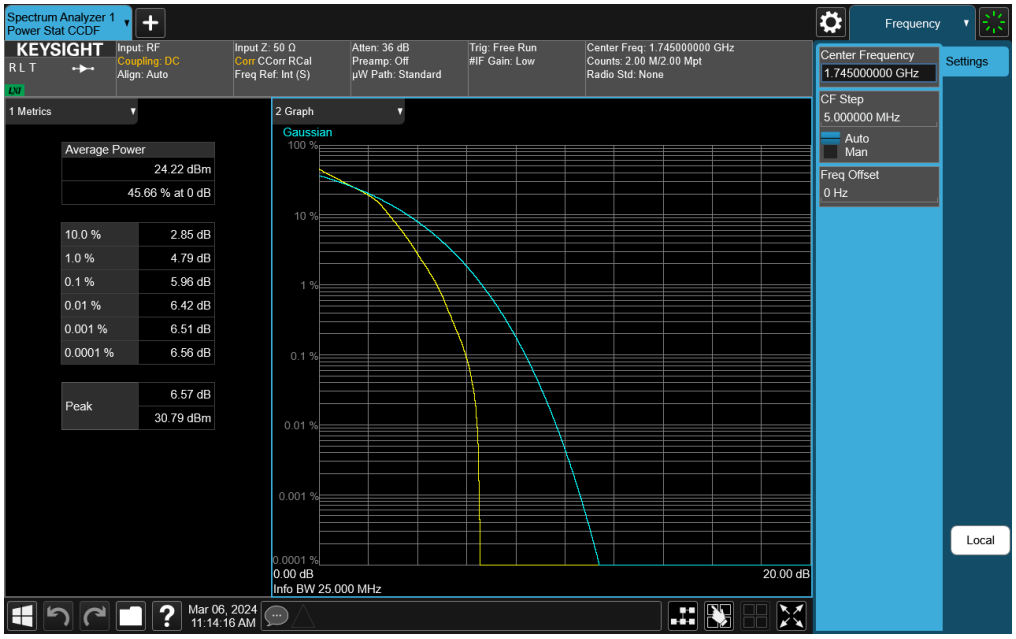
Plot 7-441. PAR Plot (NR Band n66 - 20.0MHz DFT-s-OFDM 256-QAM - Full RB)



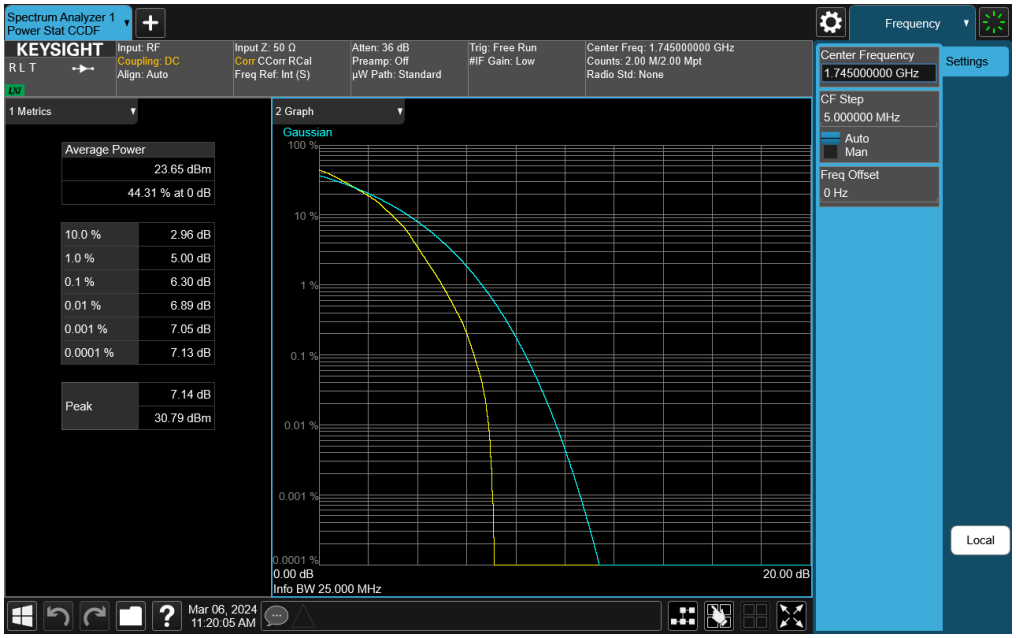
Plot 7-442. PAR Plot (NR Band n66 - 25.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



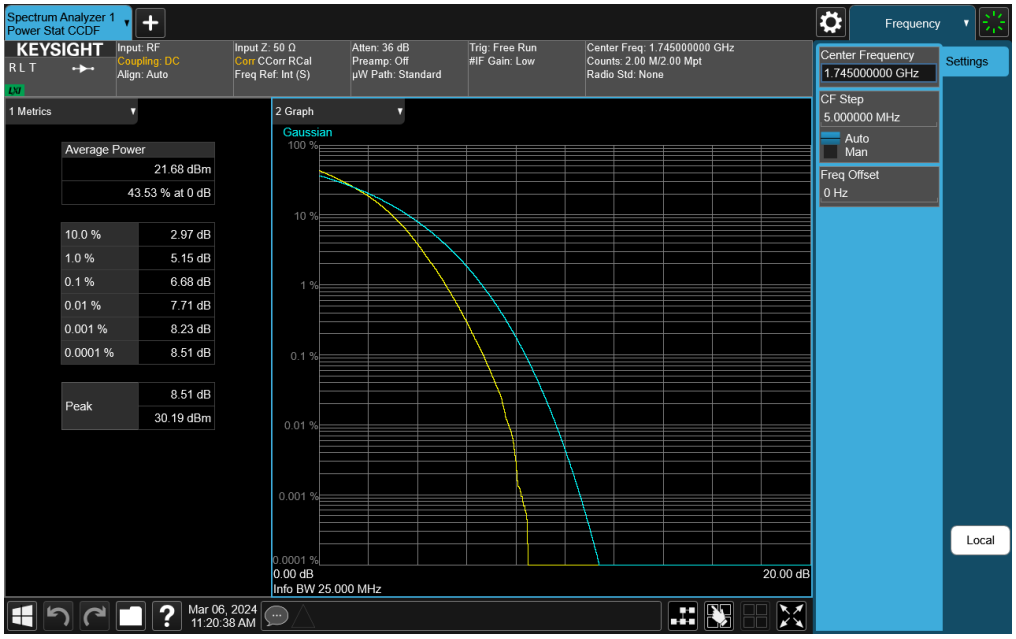
Plot 7-443. PAR Plot (NR Band n66 - 25.0MHz DFT-s-OFDM QPSK - Full RB)



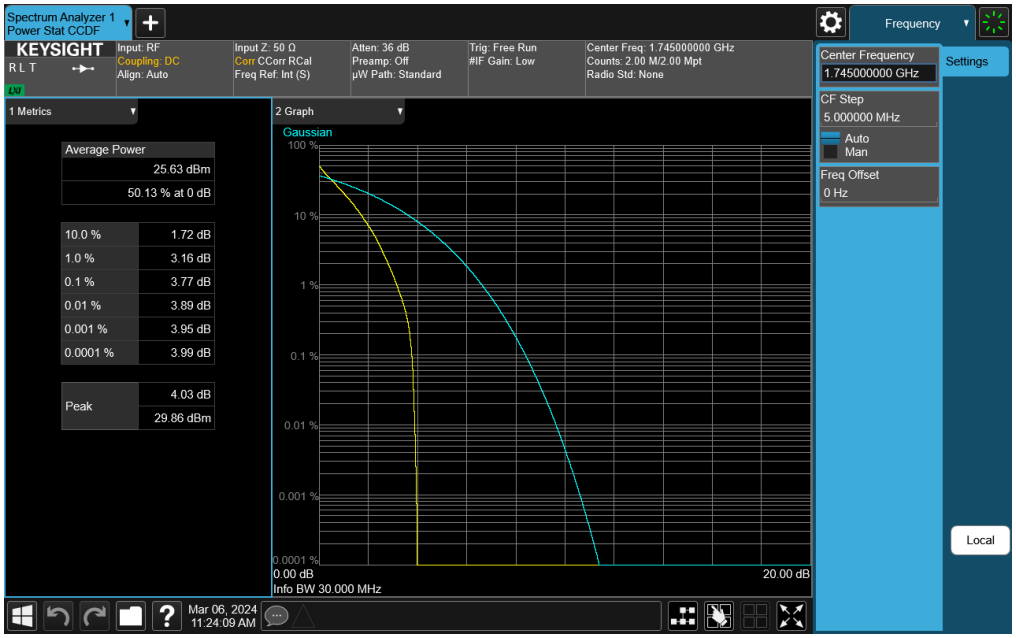
Plot 7-444. PAR Plot (NR Band n66 - 25.0MHz DFT-s-OFDM 16-QAM - Full RB)



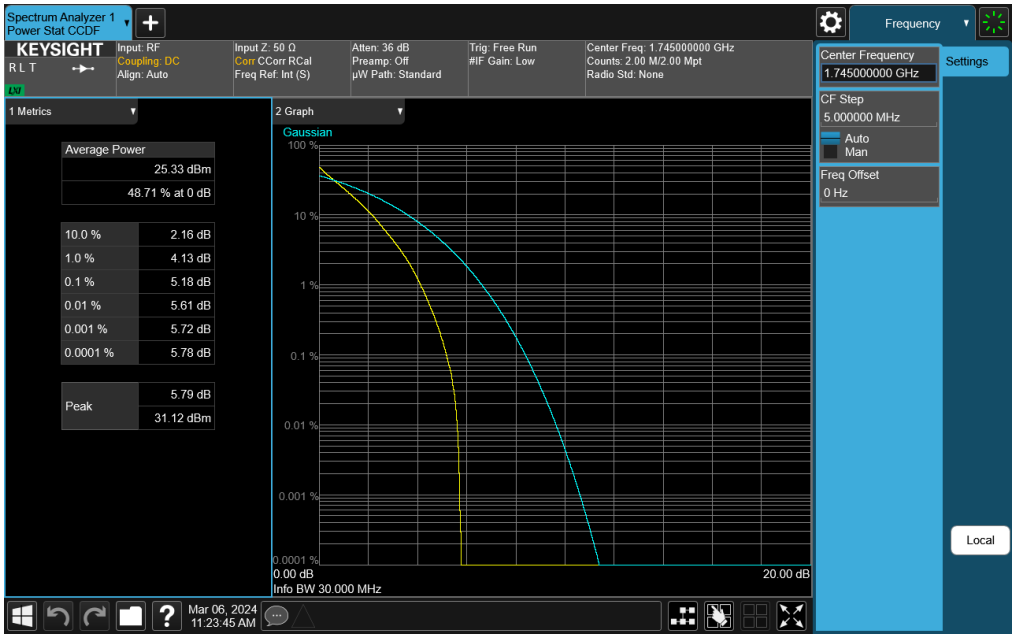
Plot 7-445. PAR Plot (NR Band n66 - 25.0MHz DFT-s-OFDM 64-QAM - Full RB)



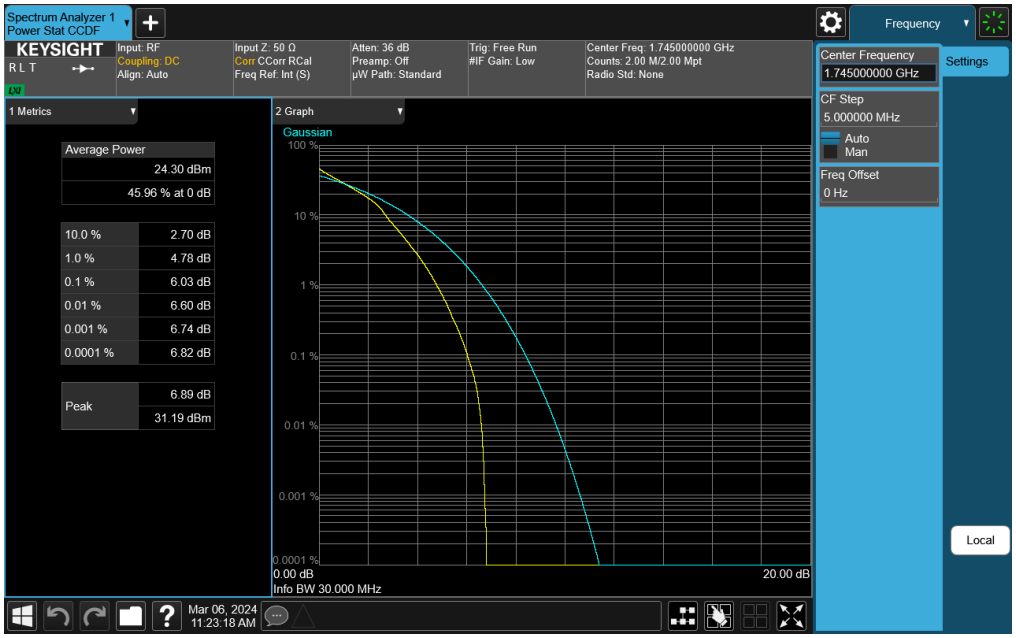
Plot 7-446. PAR Plot (NR Band n66 - 25.0MHz DFT-s-OFDM 256-QAM - Full RB)



Plot 7-447. PAR Plot (NR Band n66 - 30.0MHz DFT-s-OFDM π/2 BPSK - Full RB)



Plot 7-448. PAR Plot (NR Band n66 - 30.0MHz DFT-s-OFDM QPSK - Full RB)



Plot 7-449. PAR Plot (NR Band n66 - 30.0MHz DFT-s-OFDM 16-QAM - Full RB)