Plot 7-305. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz QPSK- High Channel) Port 15

Plot 7-306. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz QPSK- High Channel) Port 14

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Plot 7-307. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz QPSK- High Channel) Port 13

Plot 7-308. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz QPSK- High Channel) Port 12

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Plot 7-309. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz QPSK- High Channel) Port 28

Plot 7-310. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz QPSK- High Channel) Port 29

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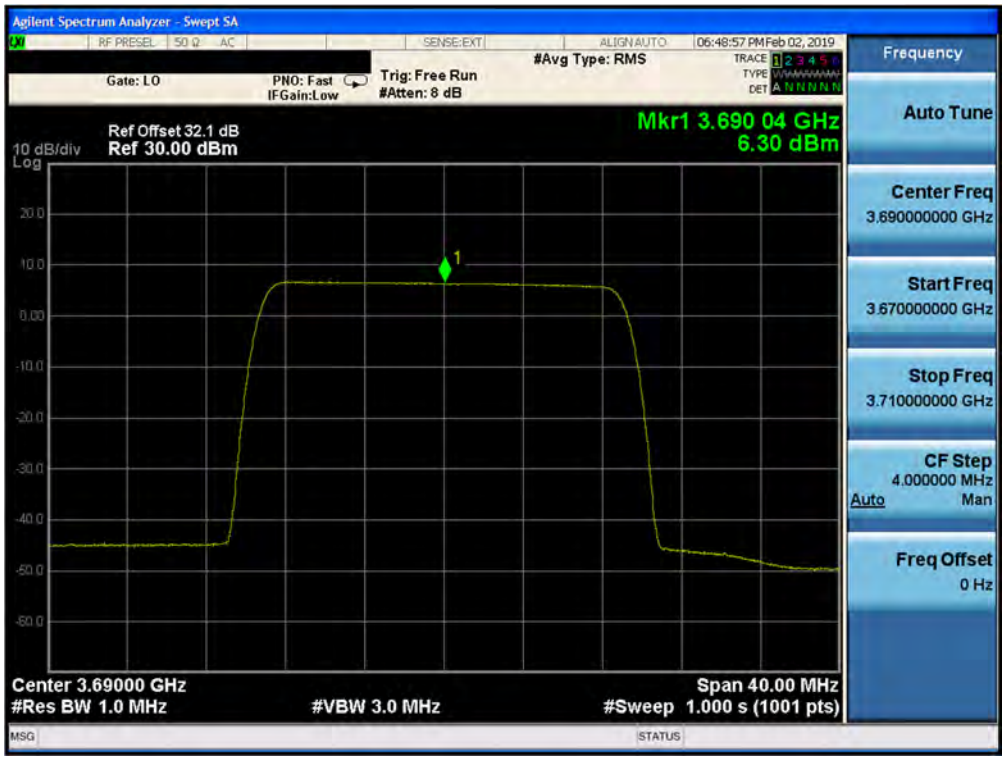

Plot 7-311. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz QPSK- High Channel) Port 30

Plot 7-312. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz QPSK- High Channel) Port 31

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8-User Beam 1CC High Channel 16-QAM

Plot 7-313. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 03

Plot 7-314. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 02

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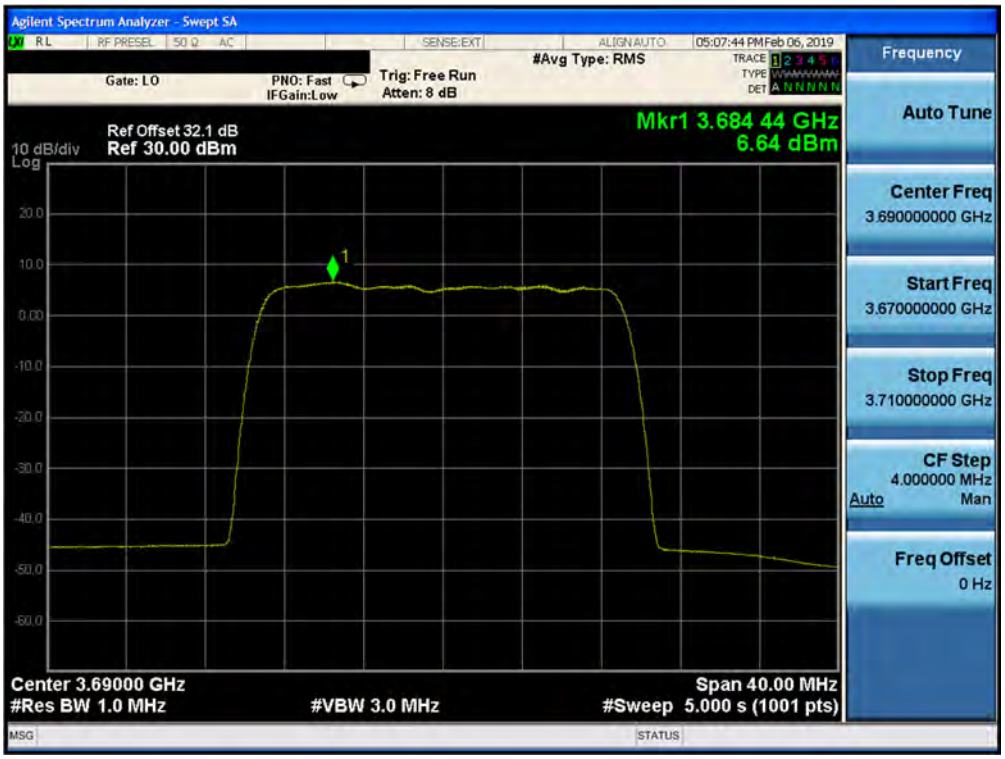
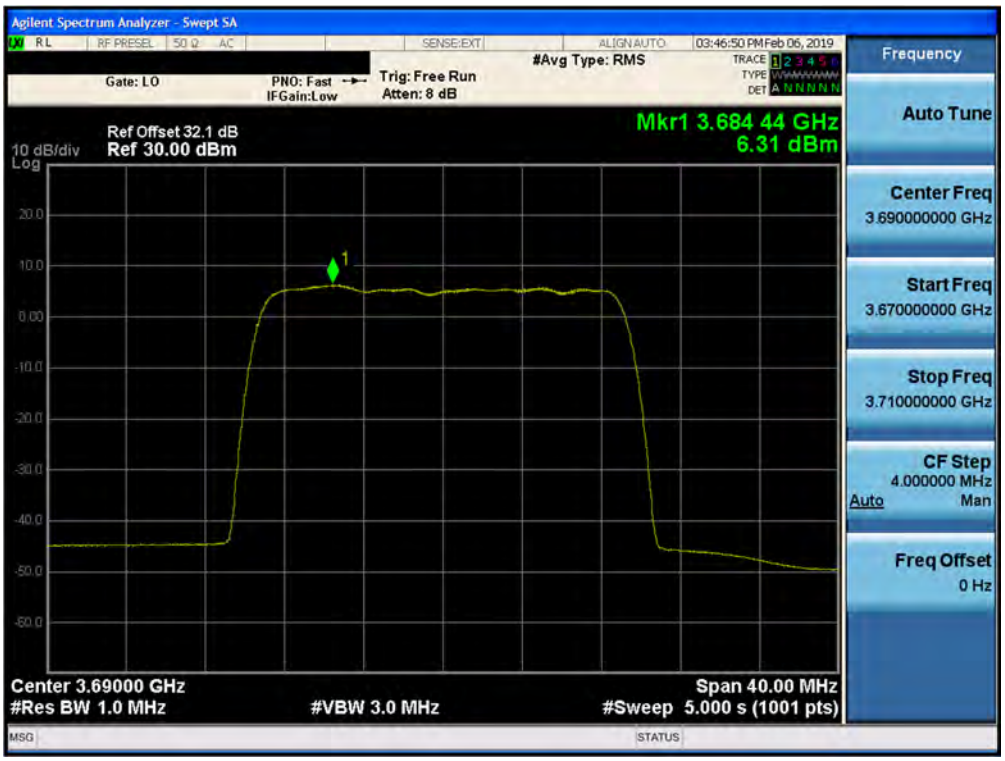


Plot 7-315. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 01



Plot 7-316. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 00

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Plot 7-317. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 16

Plot 7-318. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 17

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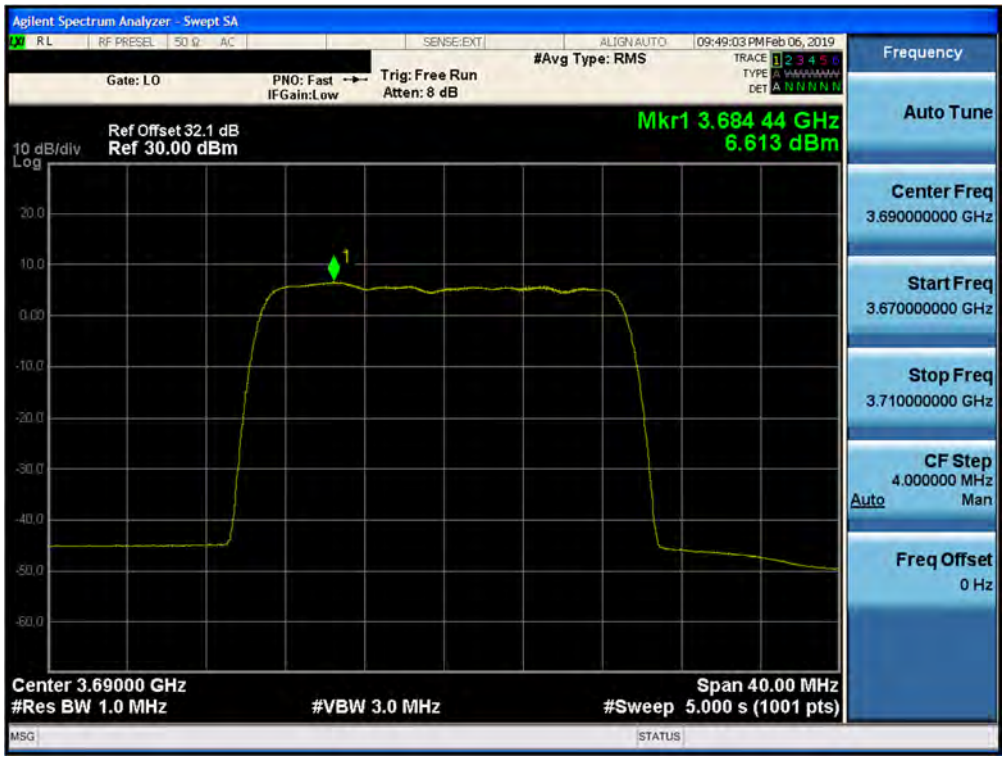
Plot 7-319. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 18



Plot 7-320. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 19

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Plot 7-321. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 07

Plot 7-322. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 06

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Plot 7-323. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 05

Plot 7-324. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 04

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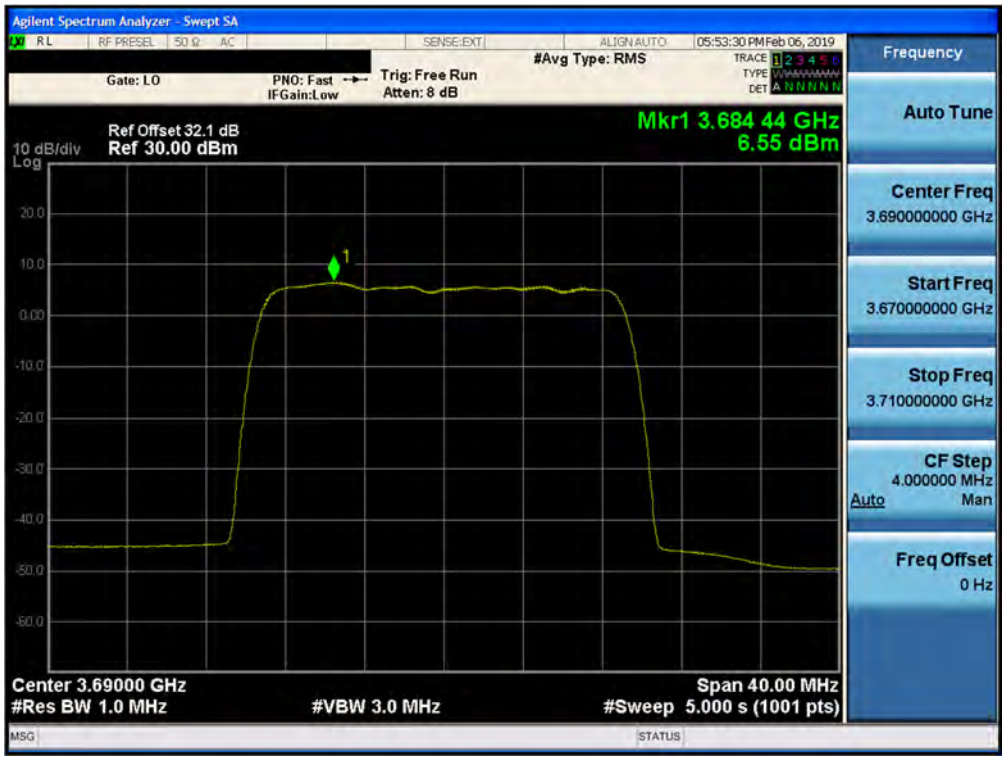
Plot 7-325. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 20



Plot 7-326. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 21

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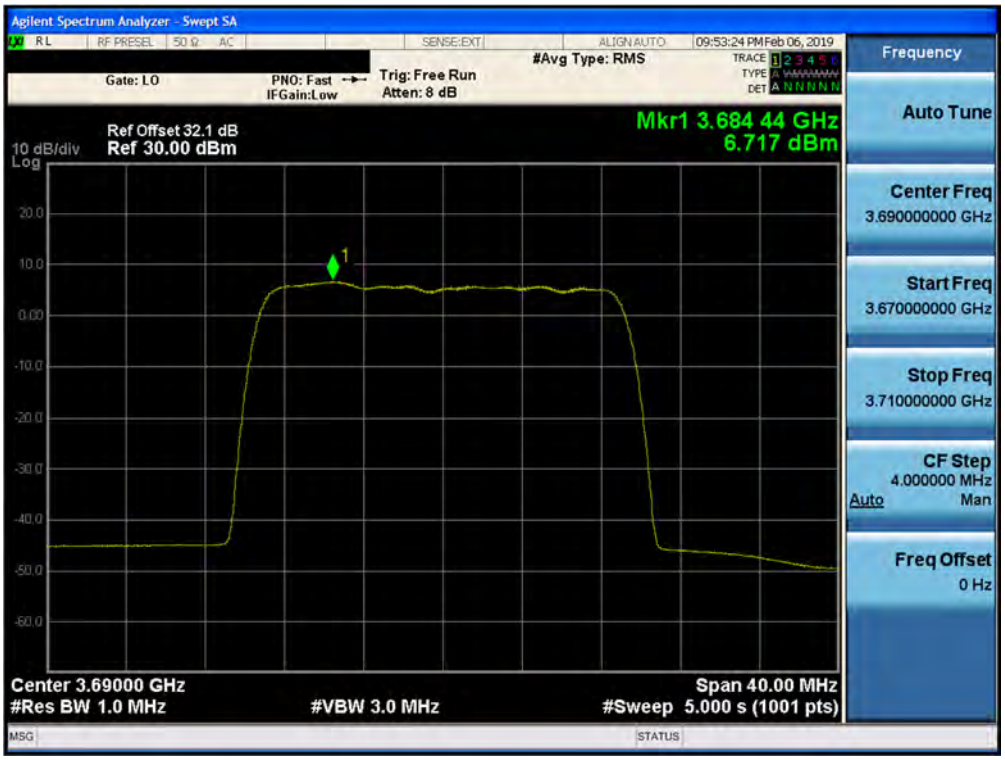
Plot 7-327. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 22



Plot 7-328. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 23

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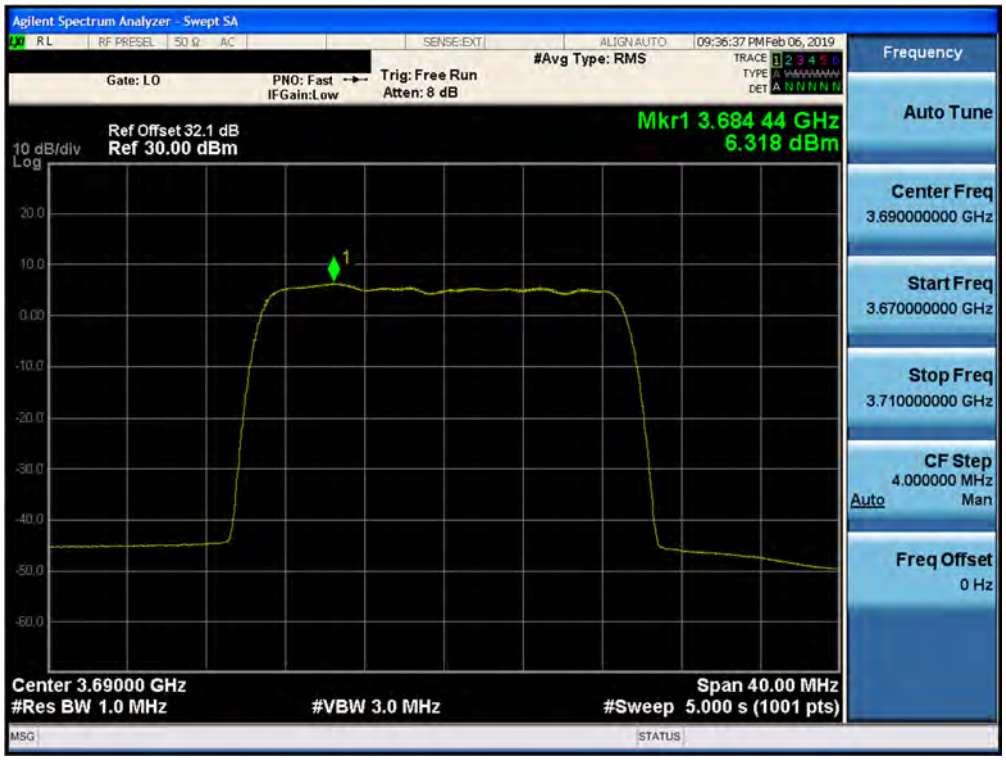
Plot 7-329. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 11



Plot 7-330. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 10

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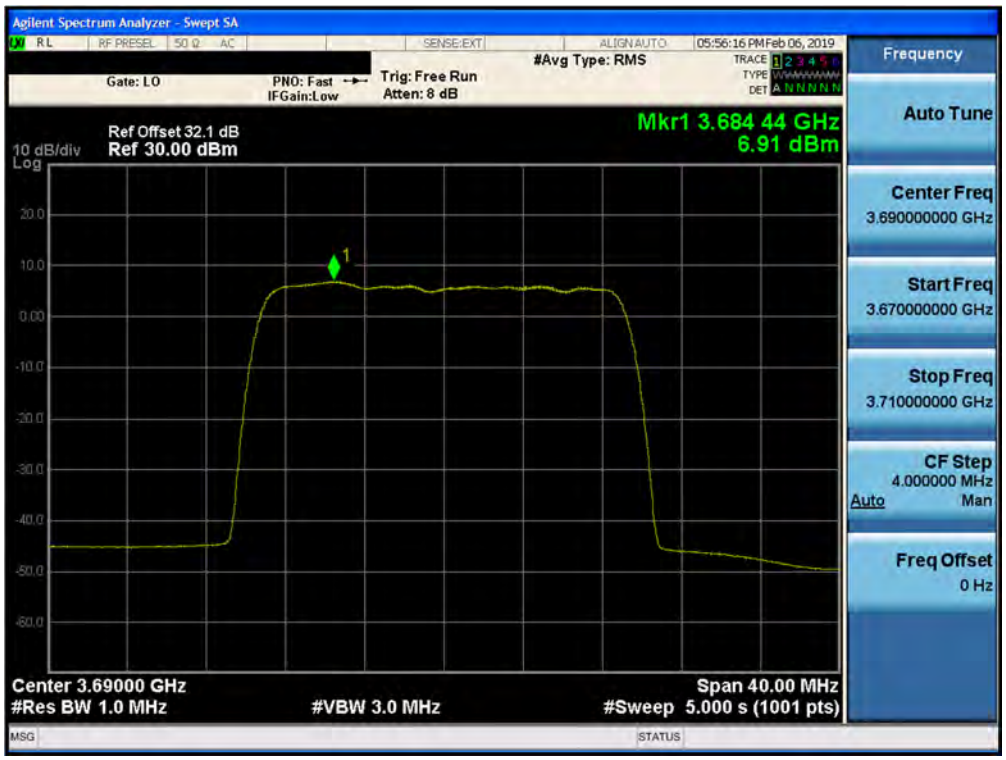
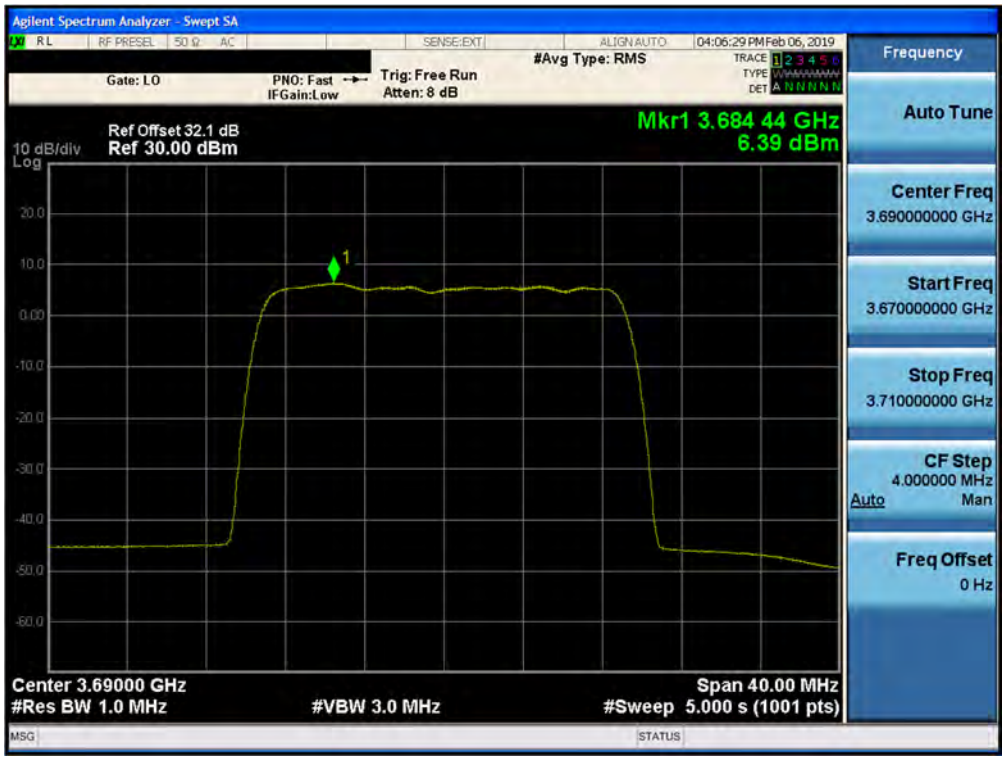


Plot 7-331. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 09



Plot 7-332. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 08

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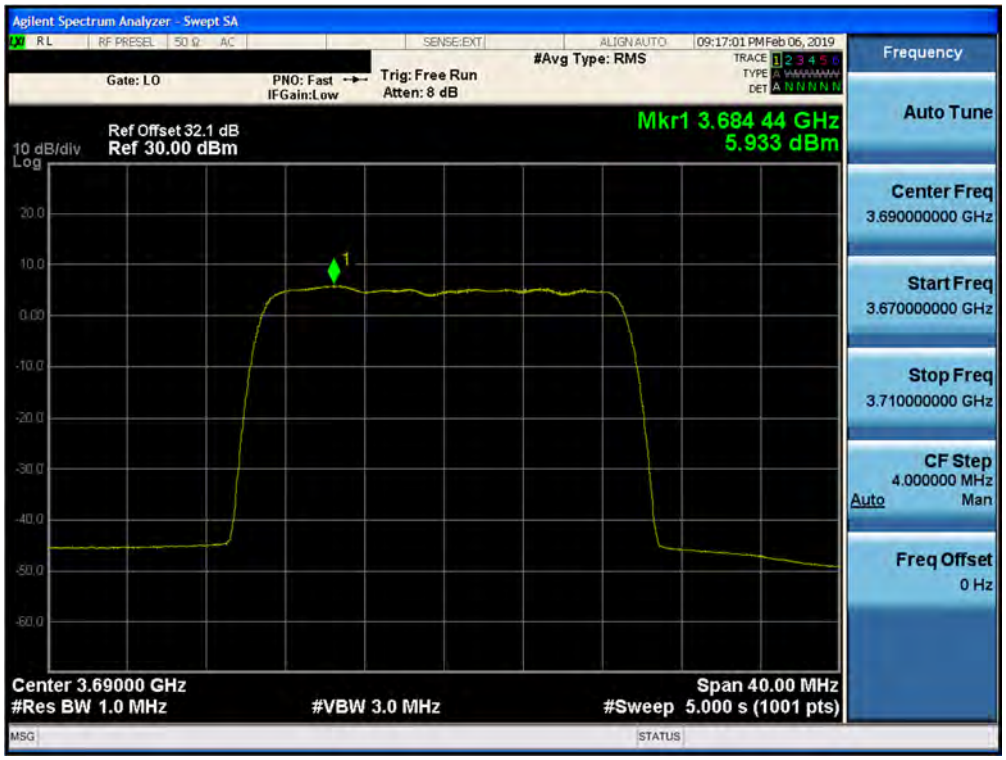
Plot 7-333. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 24



Plot 7-334. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 25

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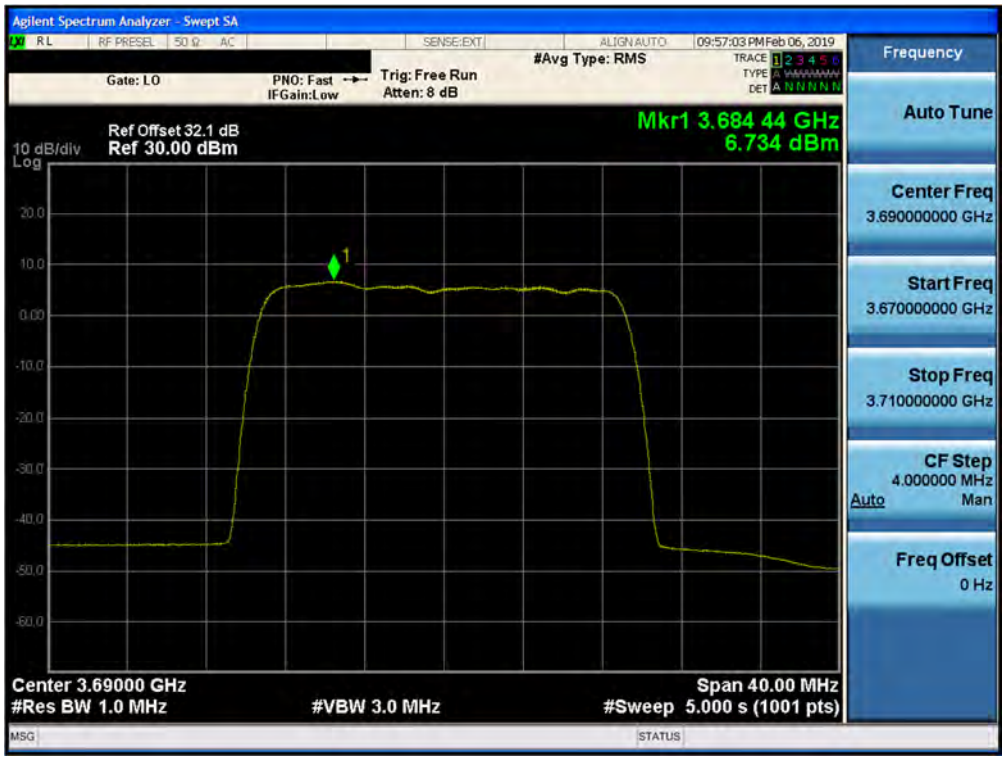
Plot 7-335. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 26



Plot 7-336. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 27

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Plot 7-337. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 15

Plot 7-338. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 14

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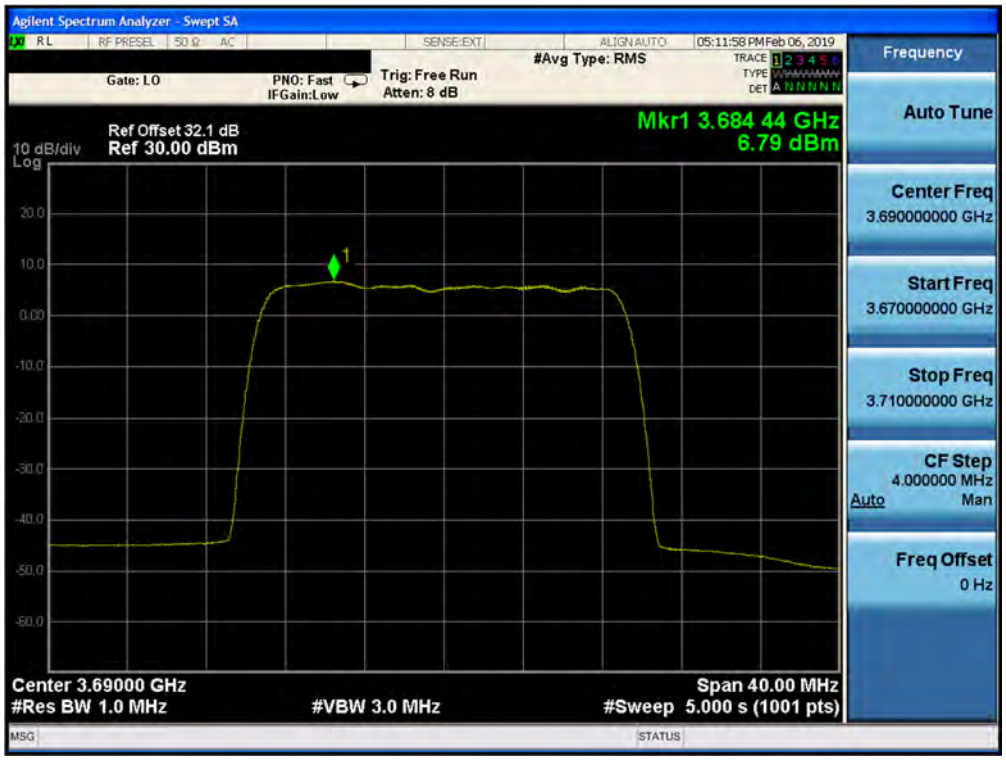
Plot 7-339. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 13



Plot 7-340. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 12

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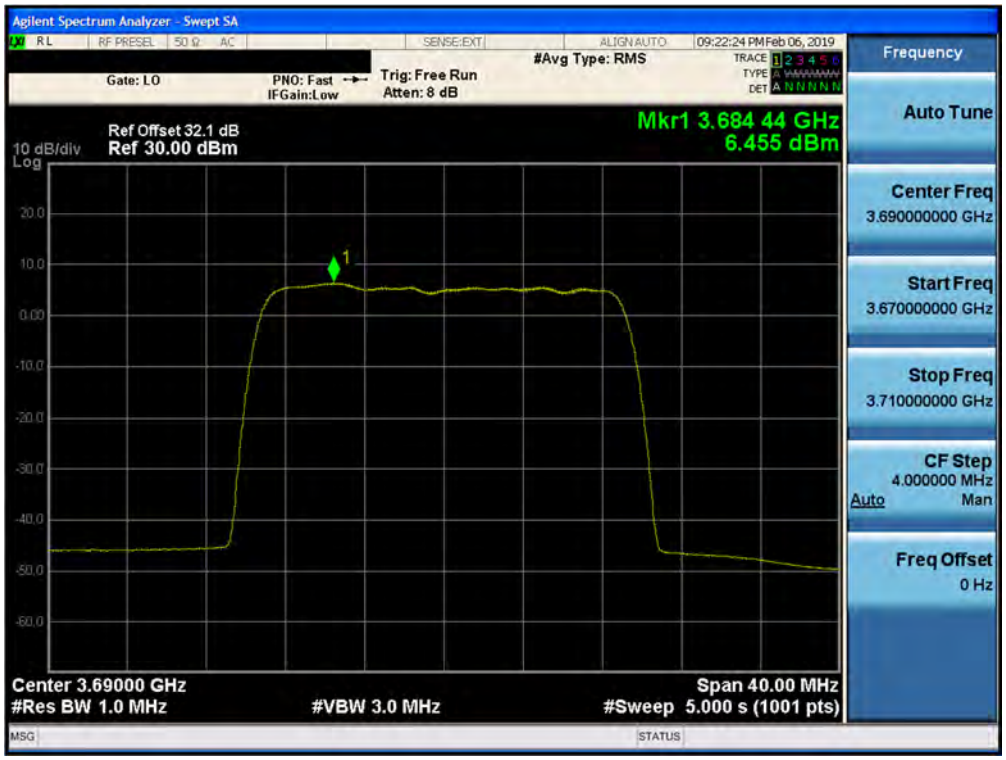
Plot 7-341. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 28



Plot 7-342. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 29

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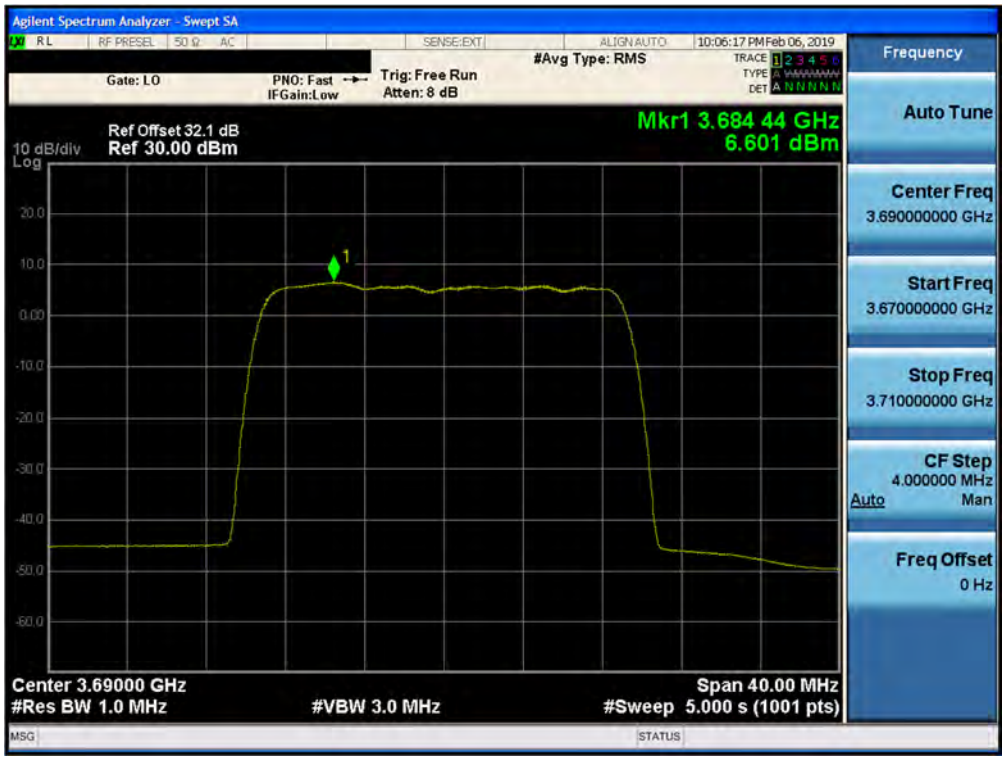
Plot 7-343. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 30



Plot 7-344. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 16QAM- High Channel) Port 31

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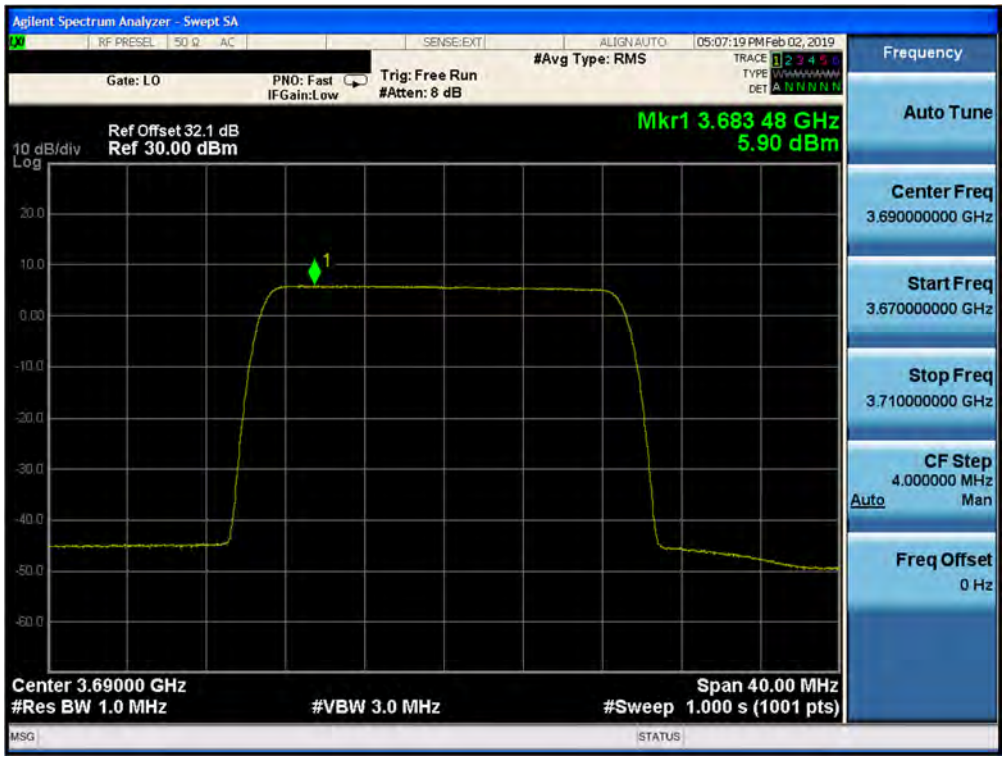
Plot 7-345. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 03



Plot 7-346. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 02

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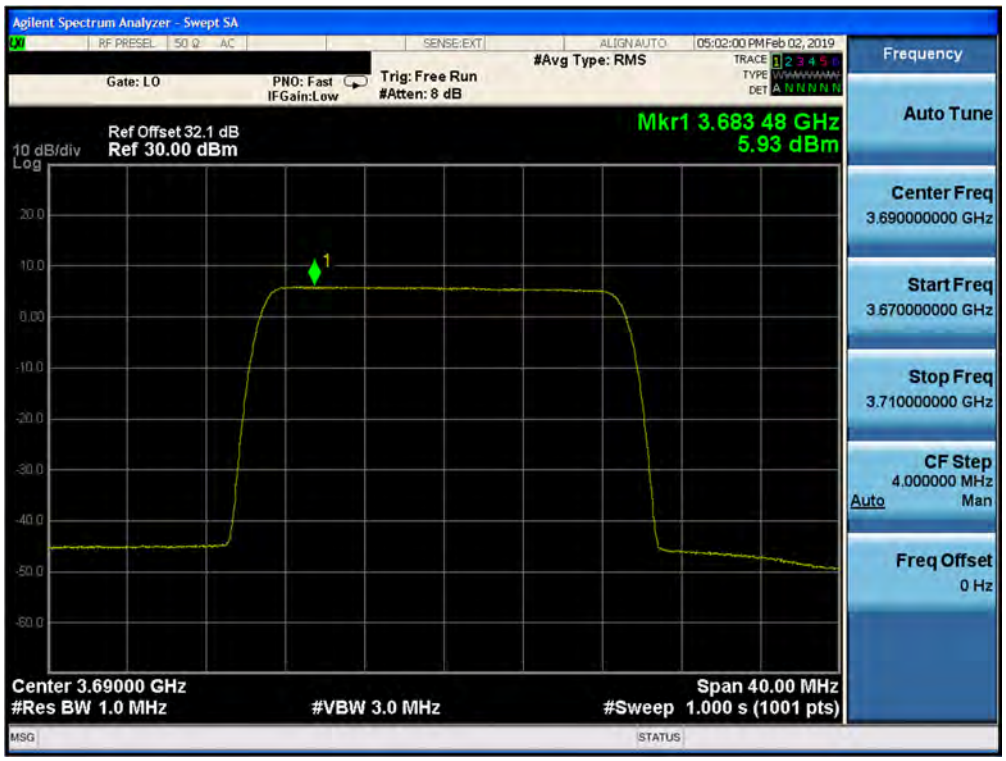
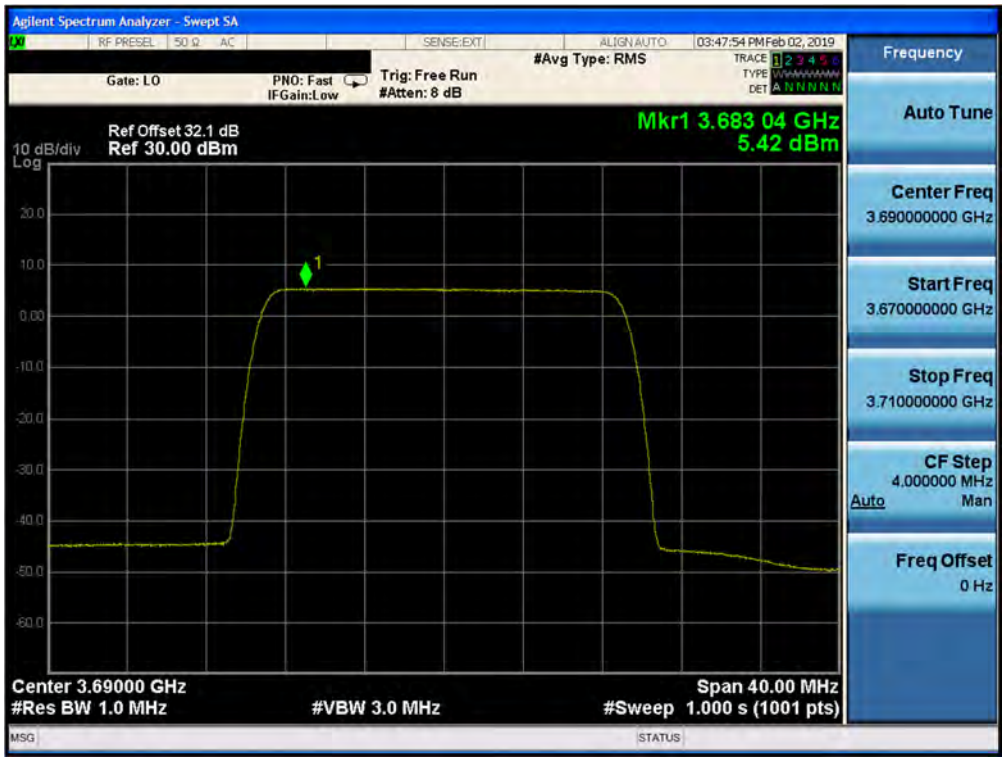


Plot 7-347. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 01



Plot 7-348. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 00

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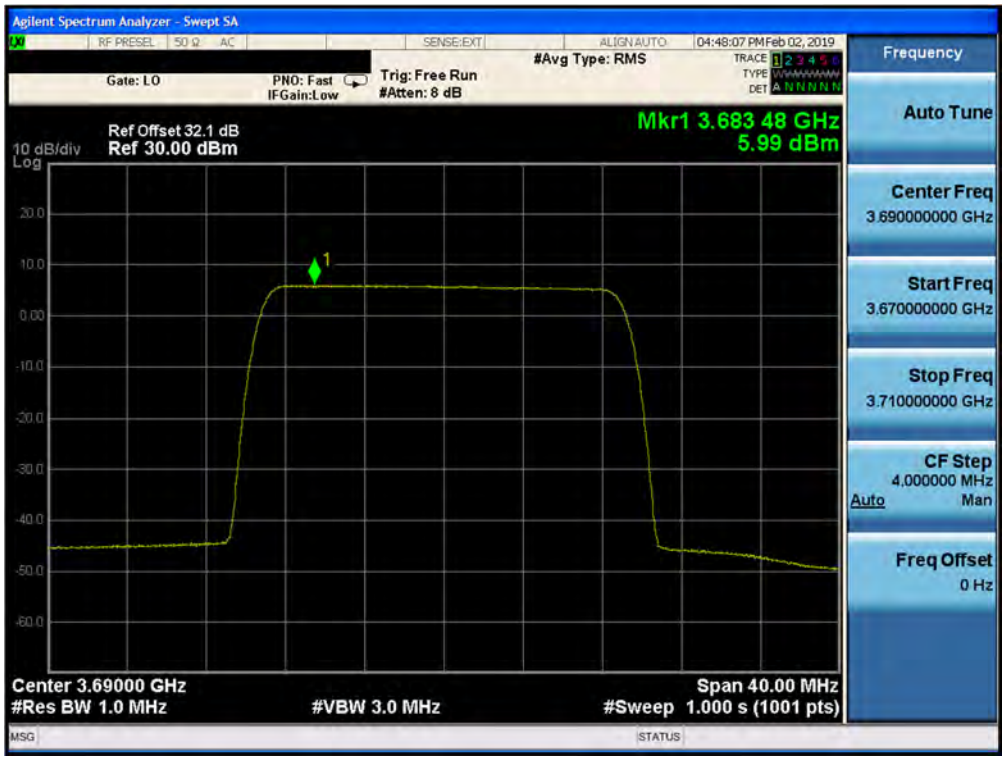
Plot 7-349. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 16



Plot 7-350. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 17

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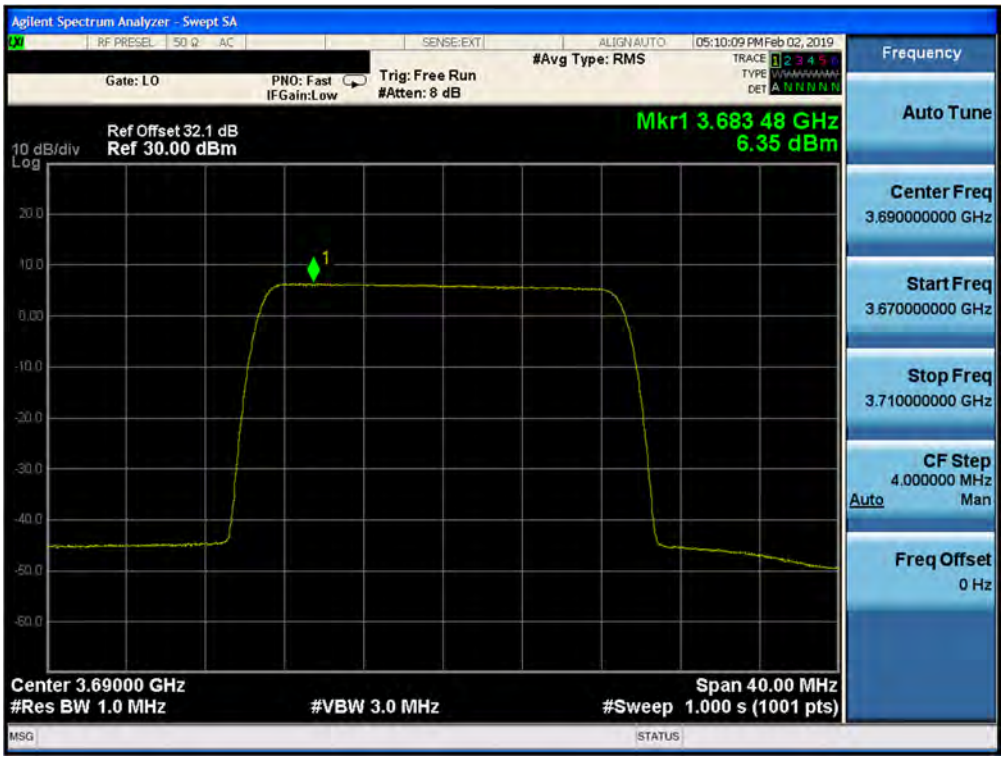

Plot 7-351. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 18

Plot 7-352. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 19

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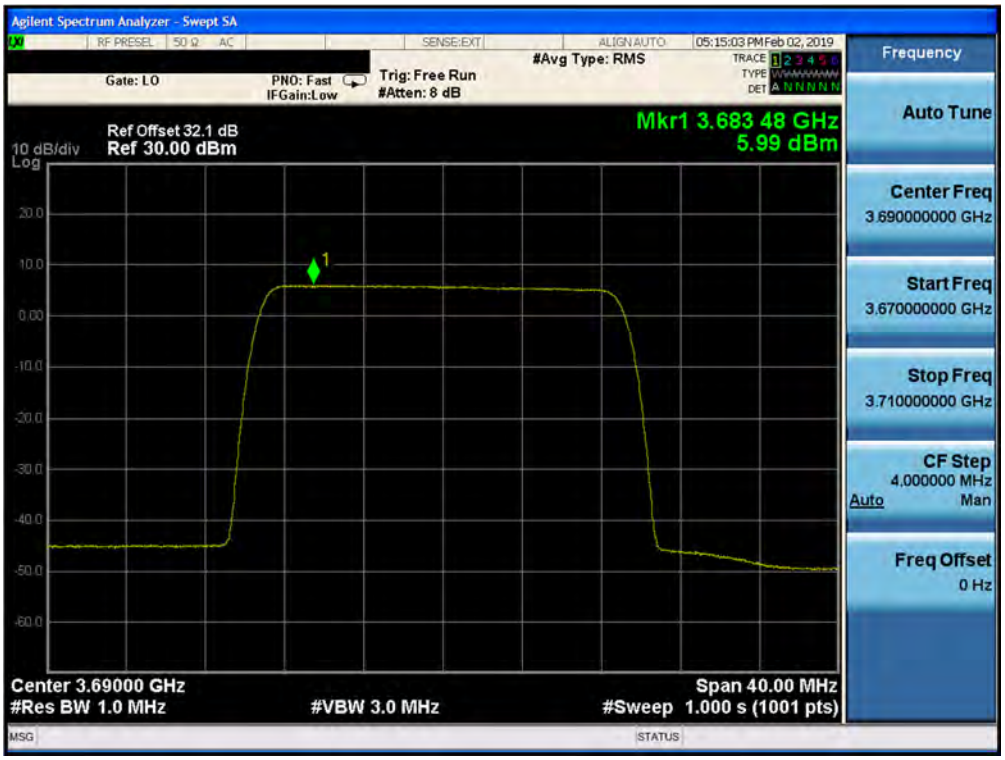
Plot 7-353. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 07



Plot 7-354. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 06

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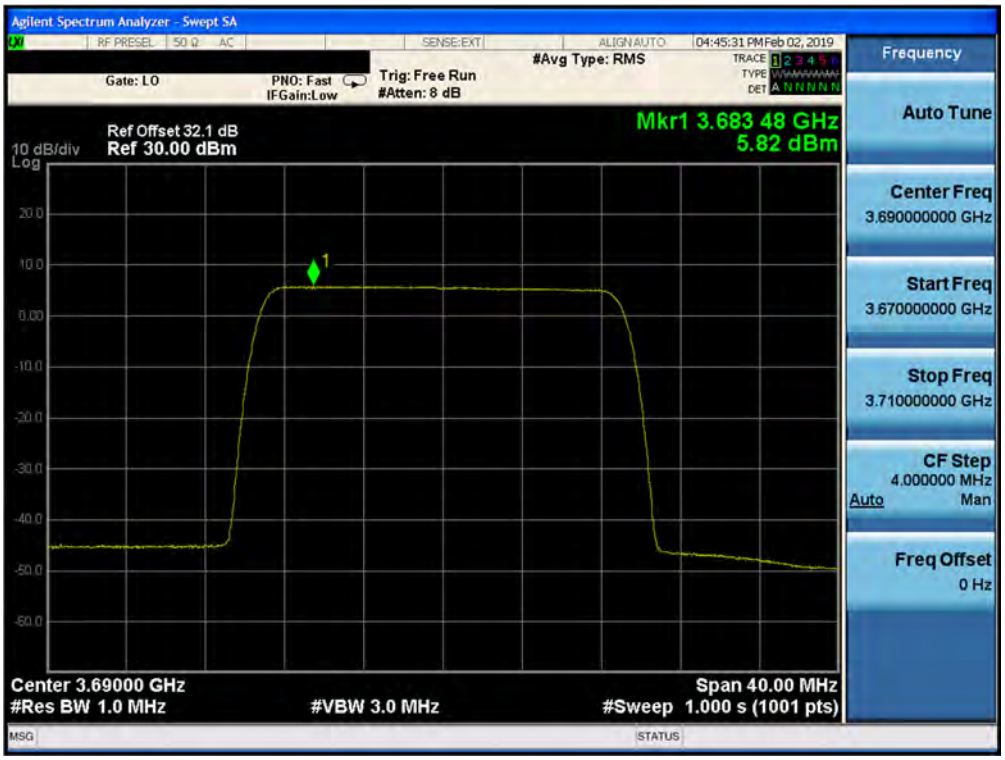
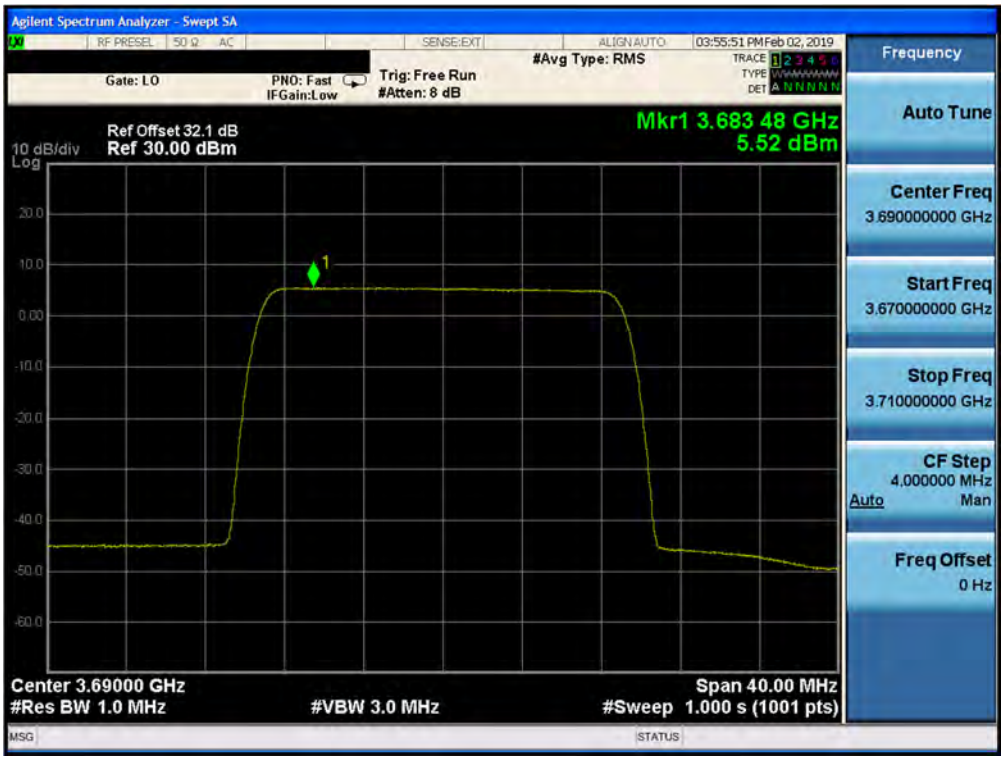


Plot 7-355. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 05



Plot 7-356. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 04

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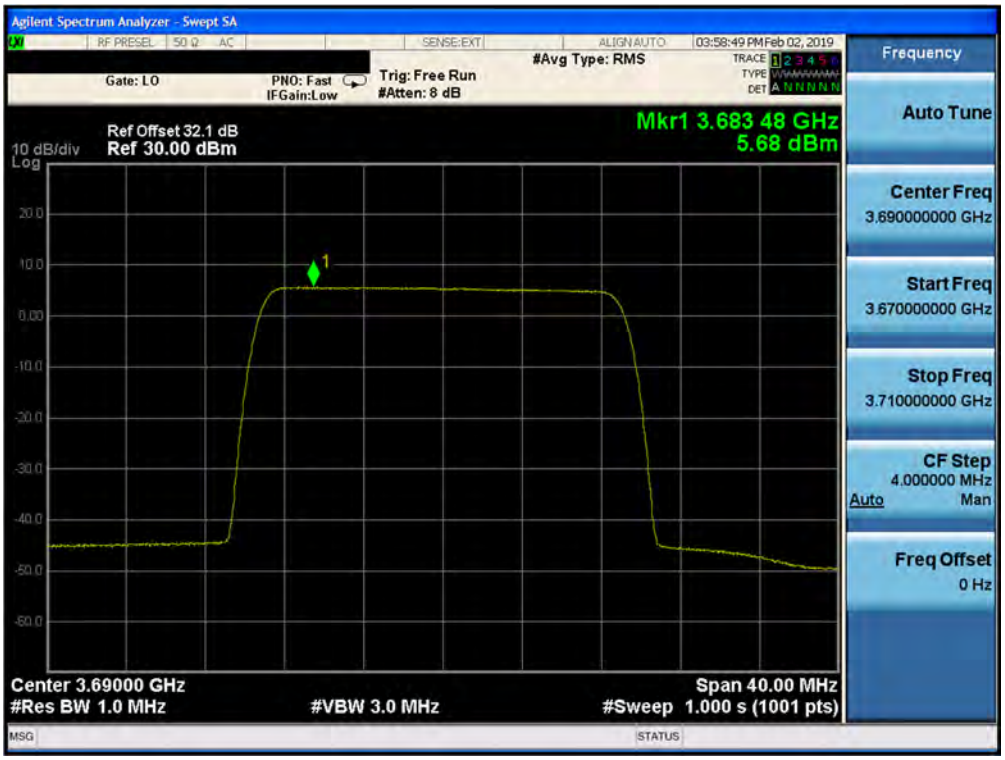
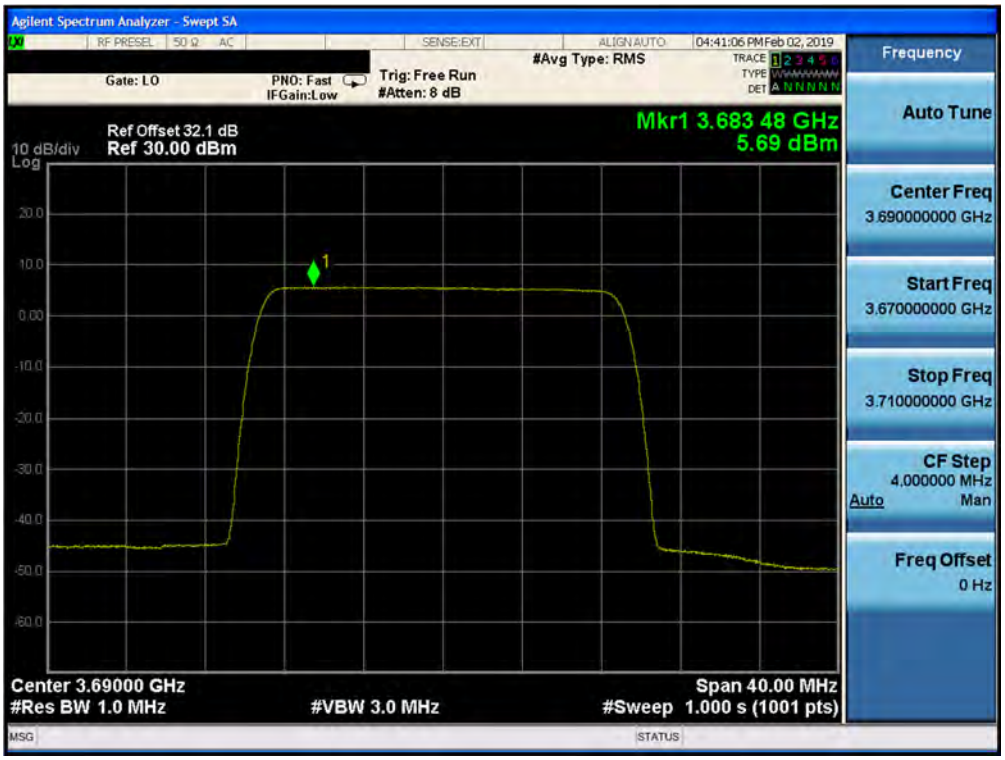


Plot 7-357. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 20



Plot 7-358. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 21

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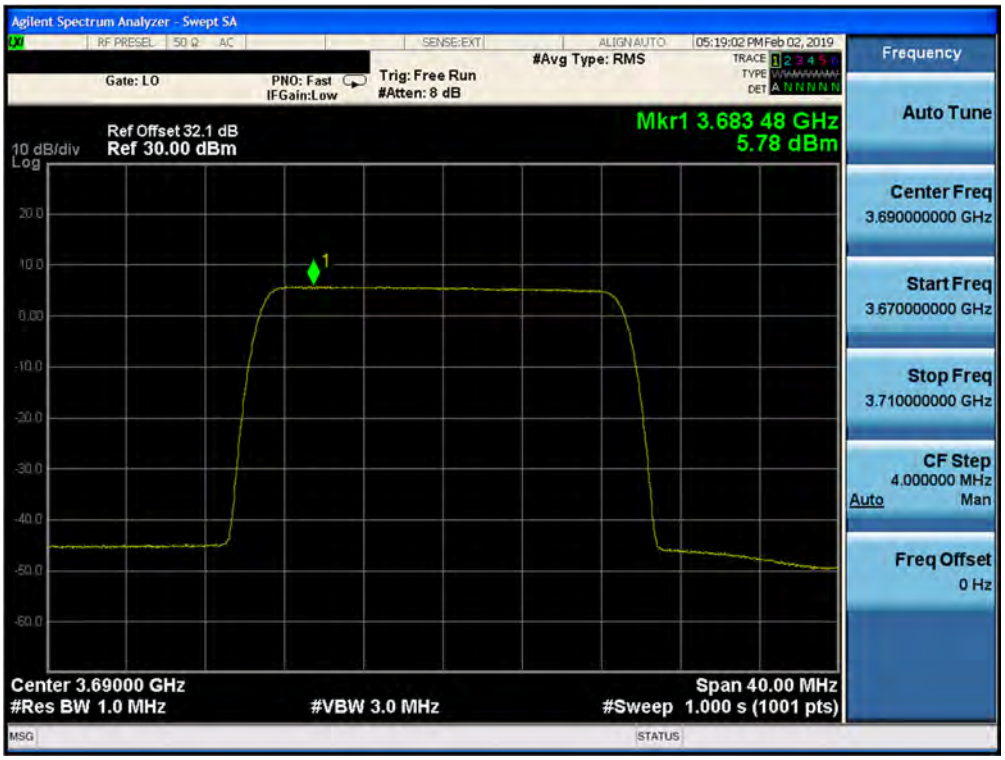

Plot 7-359. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 22

Plot 7-360. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 23

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Plot 7-361. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 11

Plot 7-362. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 10

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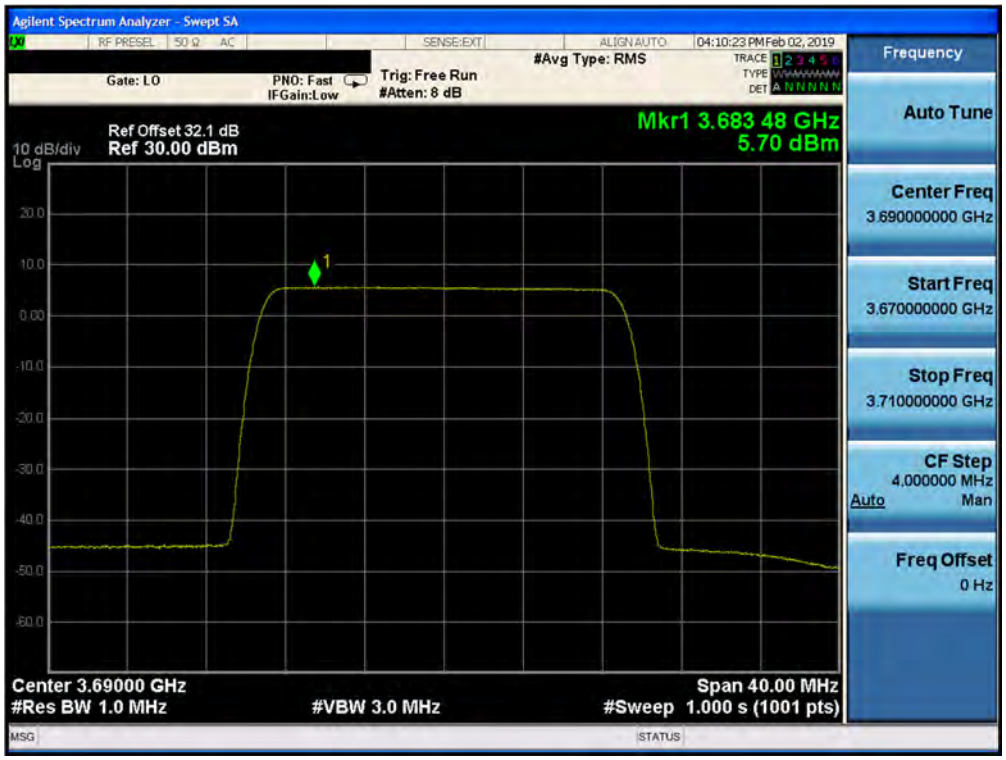
Plot 7-363. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 09



Plot 7-364. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 08

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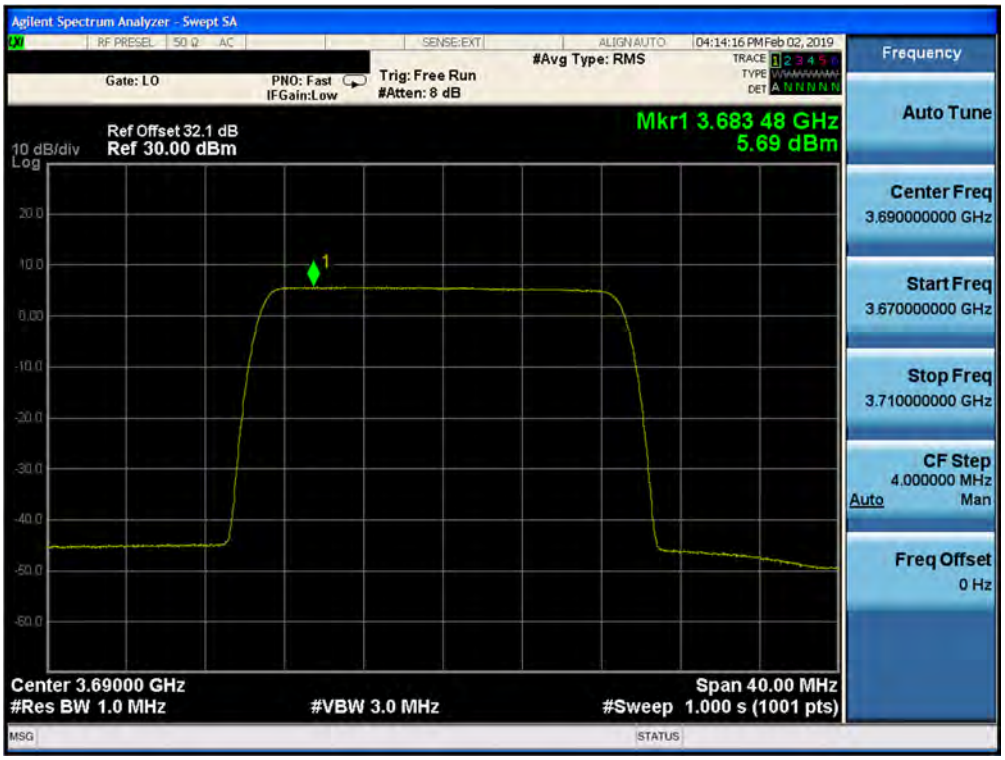
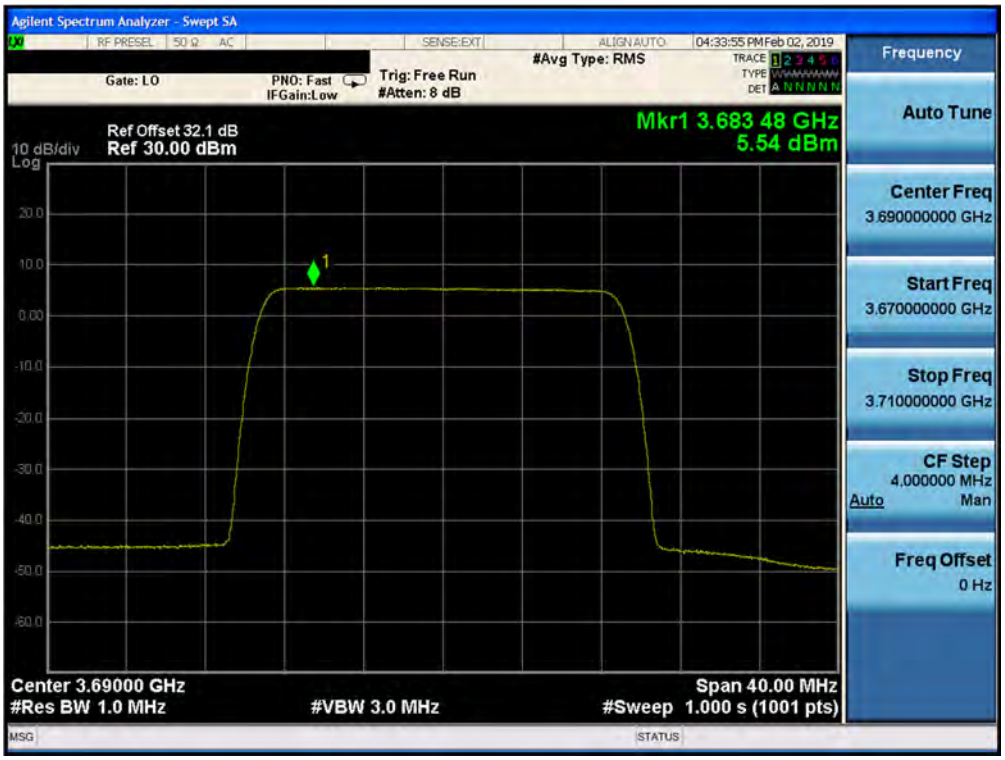


Plot 7-365. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 24



Plot 7-366. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 25

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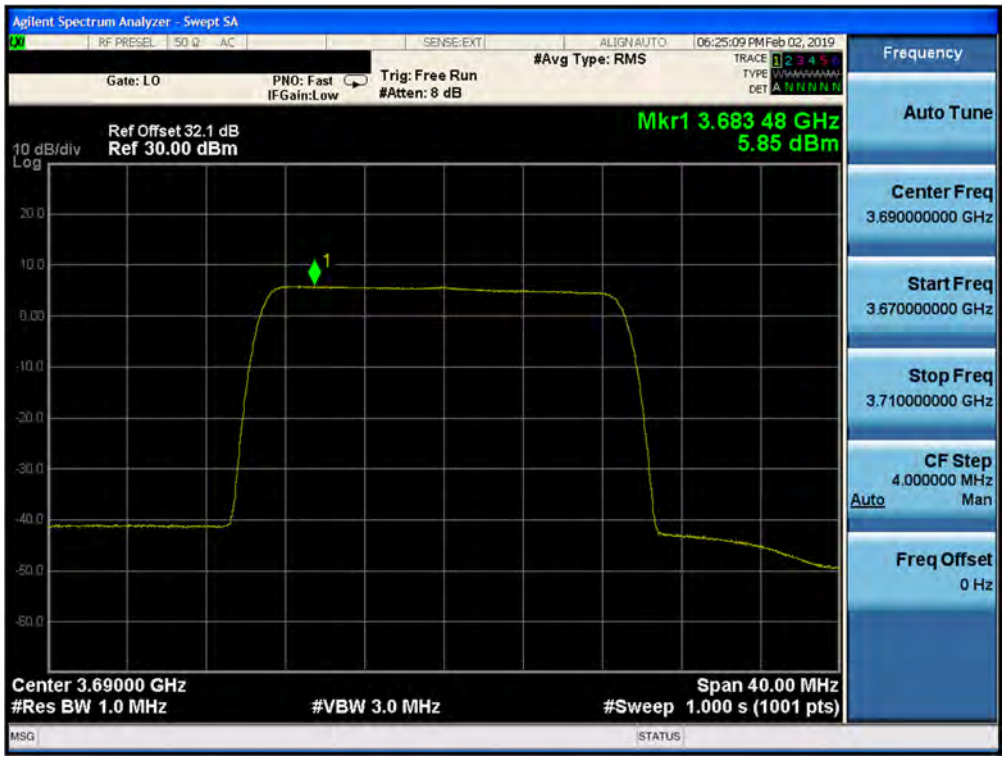

Plot 7-367. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 26

Plot 7-368. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 27

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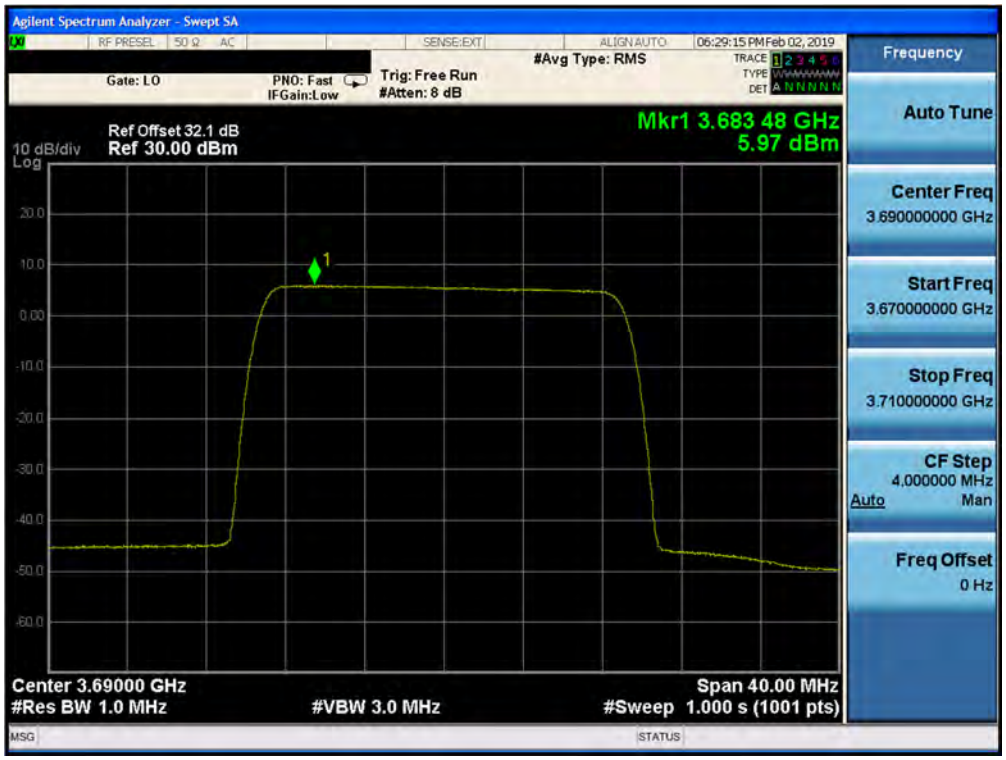
Plot 7-369. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 15



Plot 7-370. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 14

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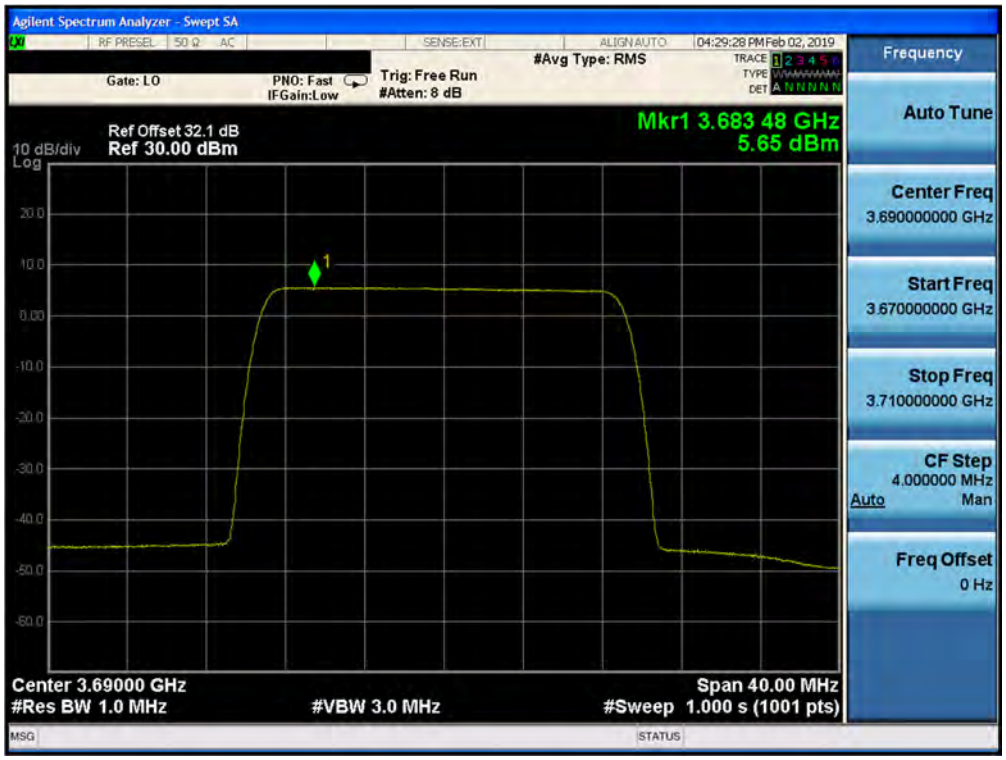
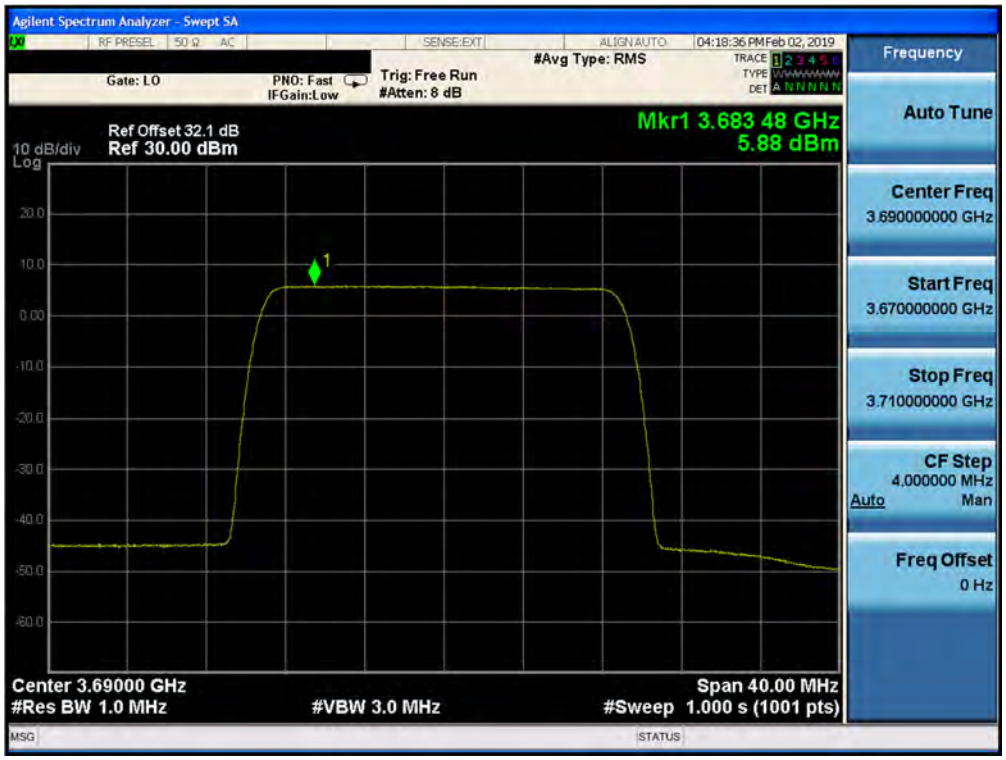


Plot 7-371. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 13



Plot 7-372. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 12

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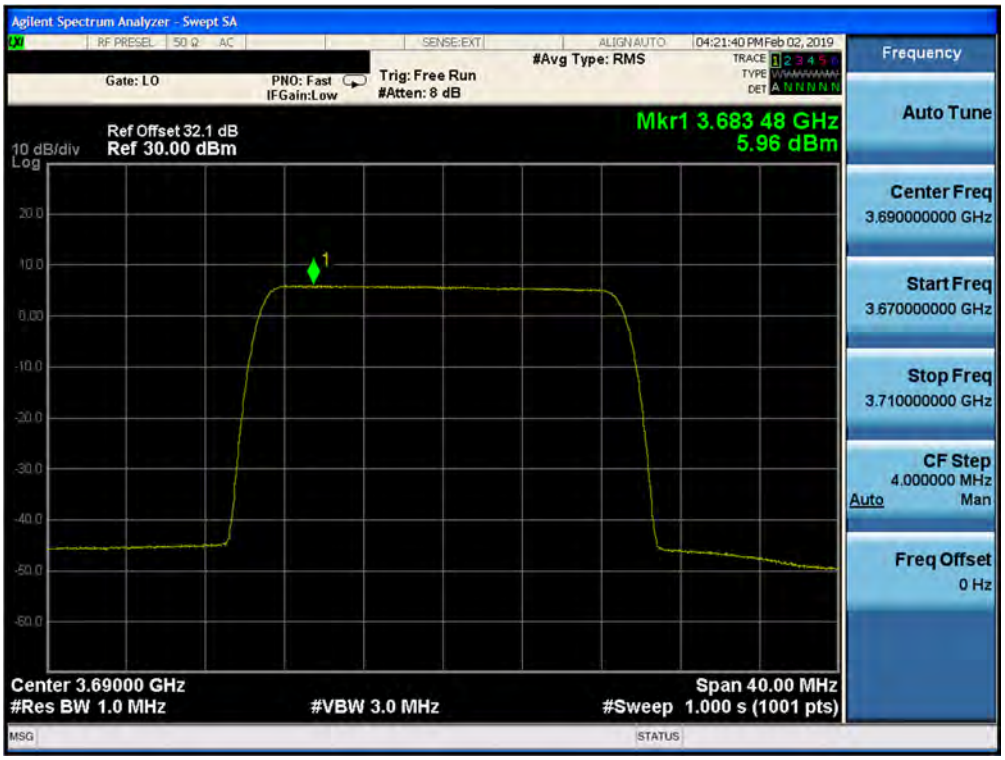
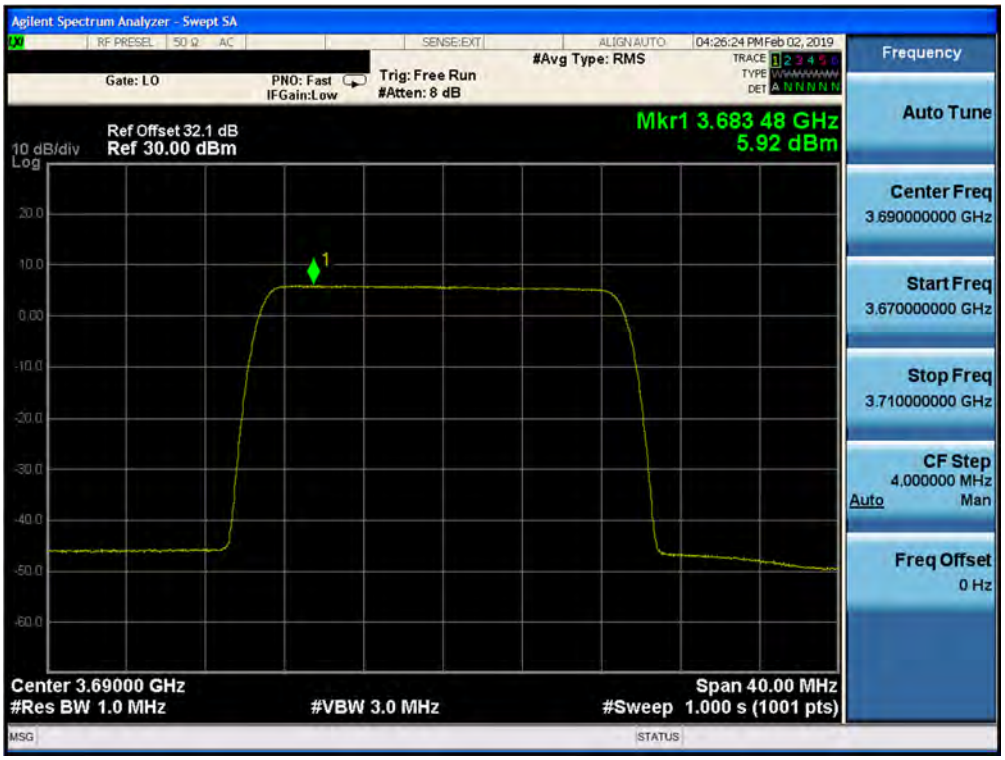


Plot 7-373. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 28



Plot 7-374. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 29

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Plot 7-375. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 30

Plot 7-376. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 64QAM- High Channel) Port 31

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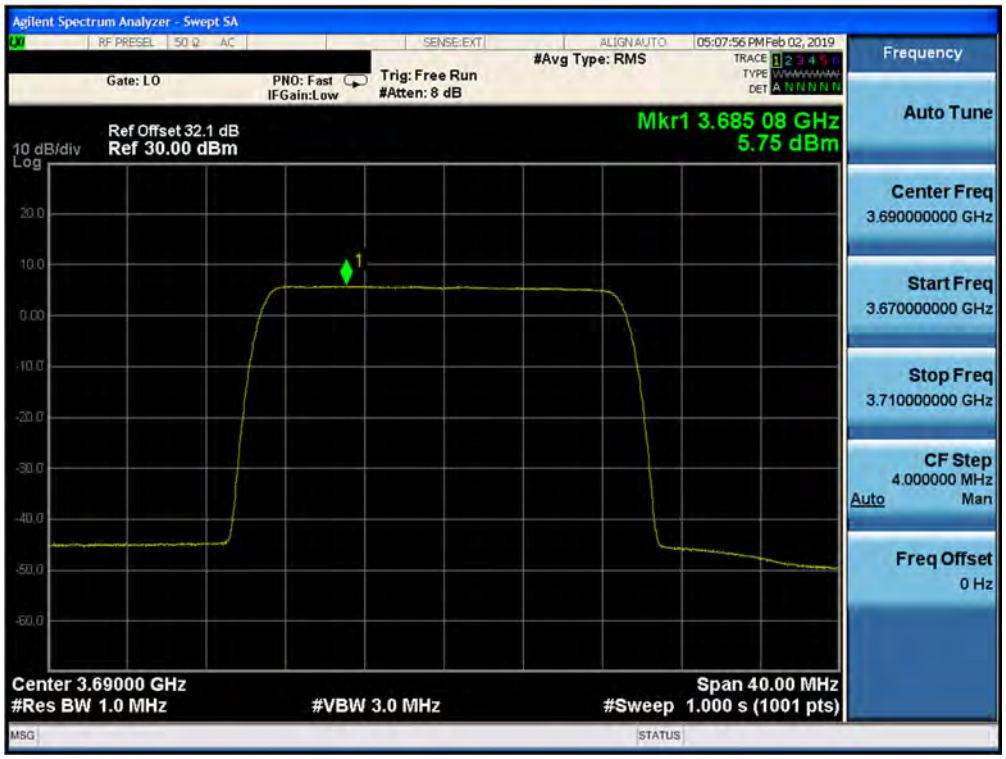
Plot 7-377. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 03



Plot 7-378. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 02

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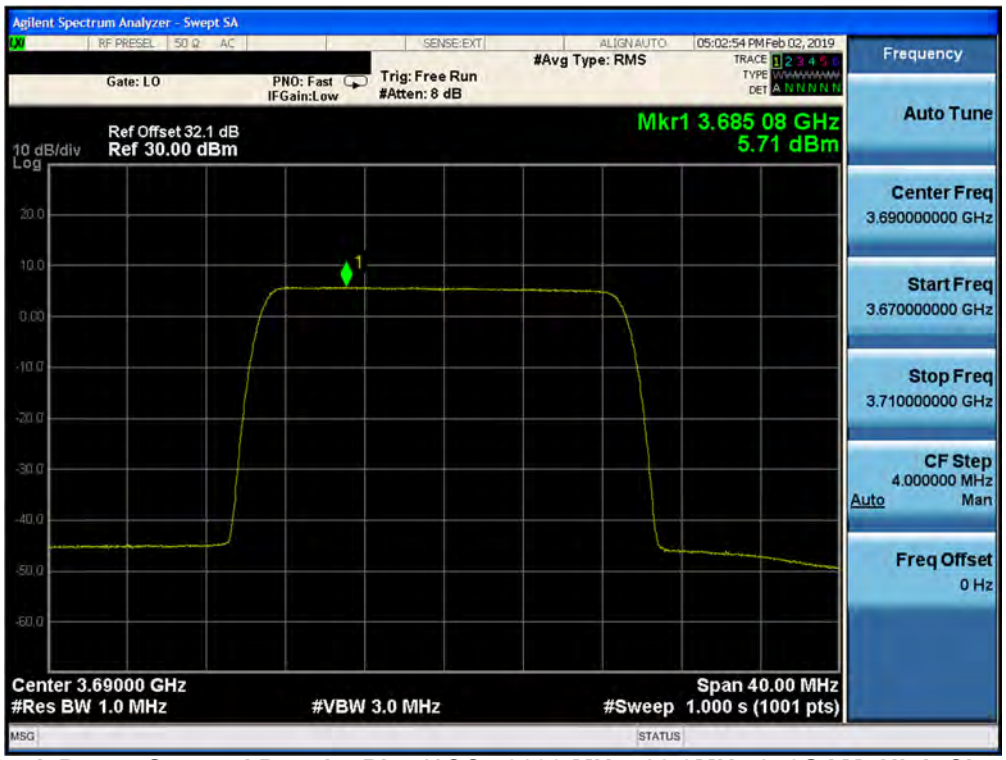
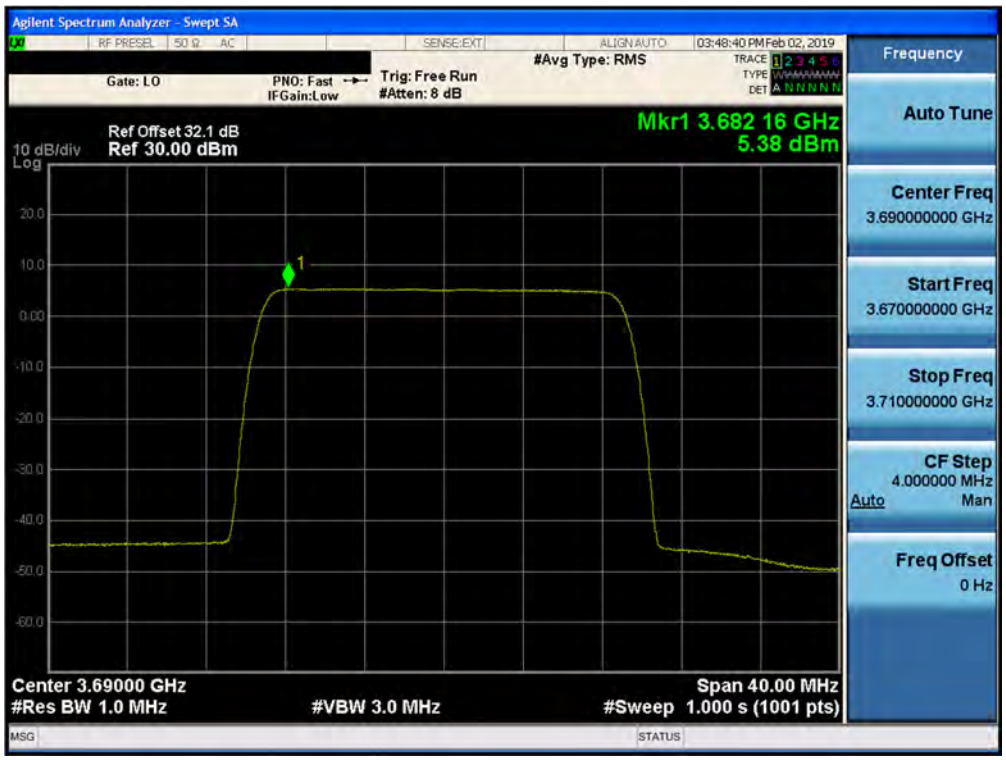


Plot 7-379. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 01



Plot 7-380. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 00

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Plot 7-381. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 16

Plot 7-382. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 17

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Plot 7-383. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 18

Plot 7-384. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 19

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Plot 7-385. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 07

Plot 7-386. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 06

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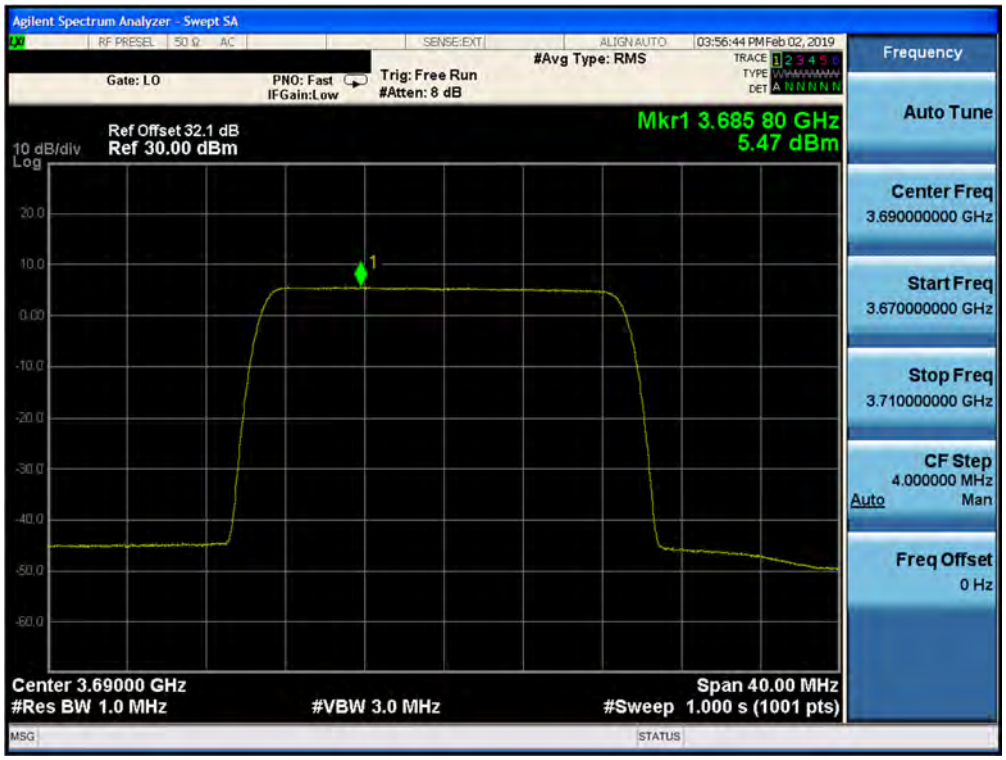
Plot 7-387. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 05



Plot 7-388. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 04

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Plot 7-389. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 20

Plot 7-390. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 21

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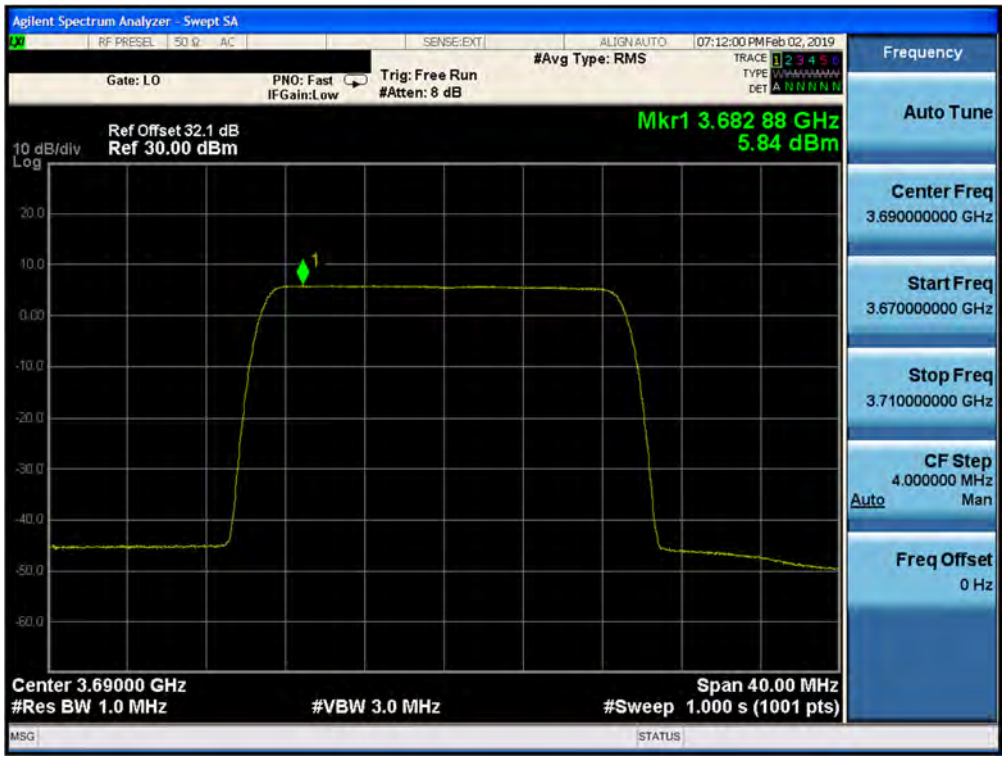
Plot 7-391. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 22



Plot 7-392. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 23

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Plot 7-393. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 11

Plot 7-394. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 10

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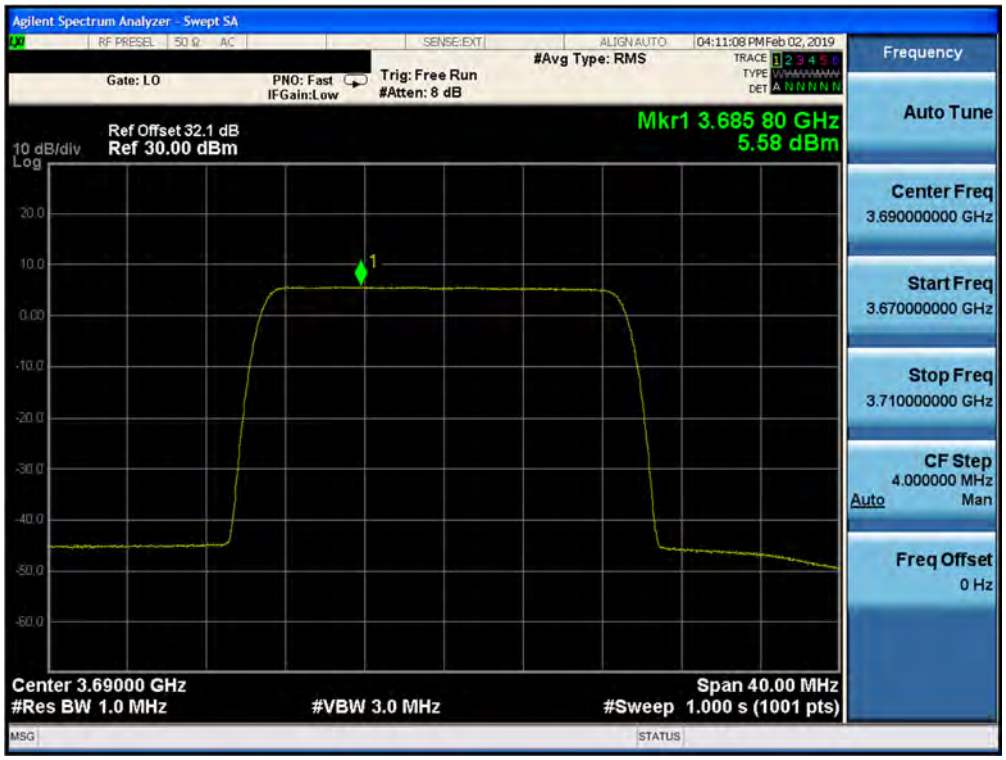
Plot 7-395. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 09



Plot 7-396. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 08

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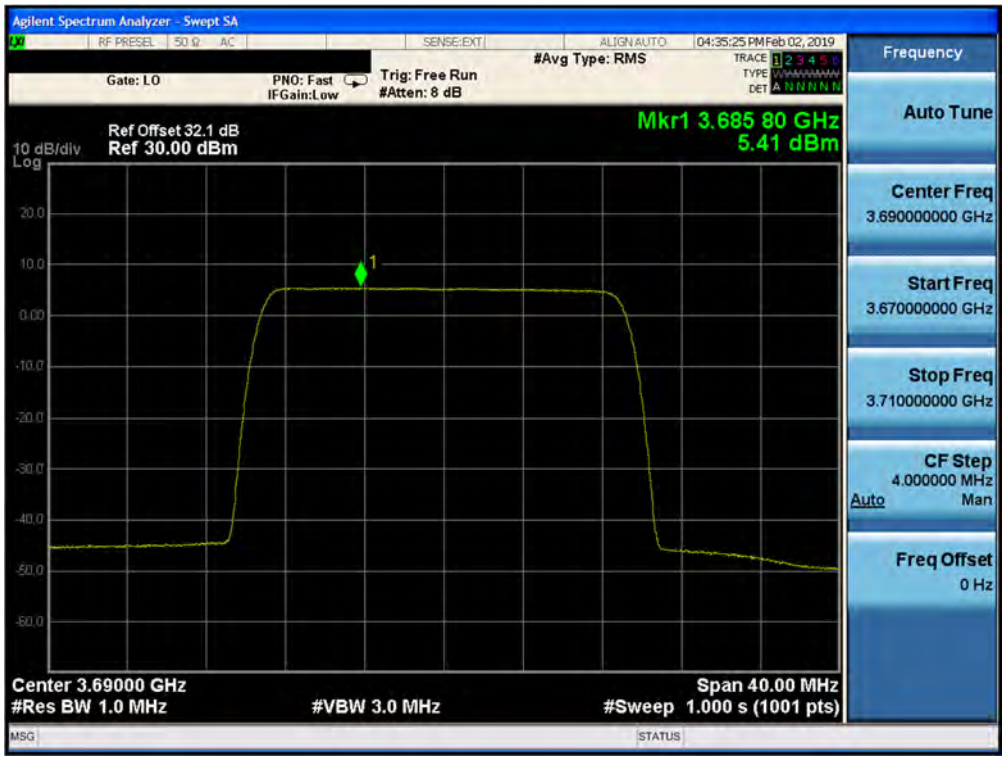
Plot 7-397. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 24



Plot 7-398. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 25

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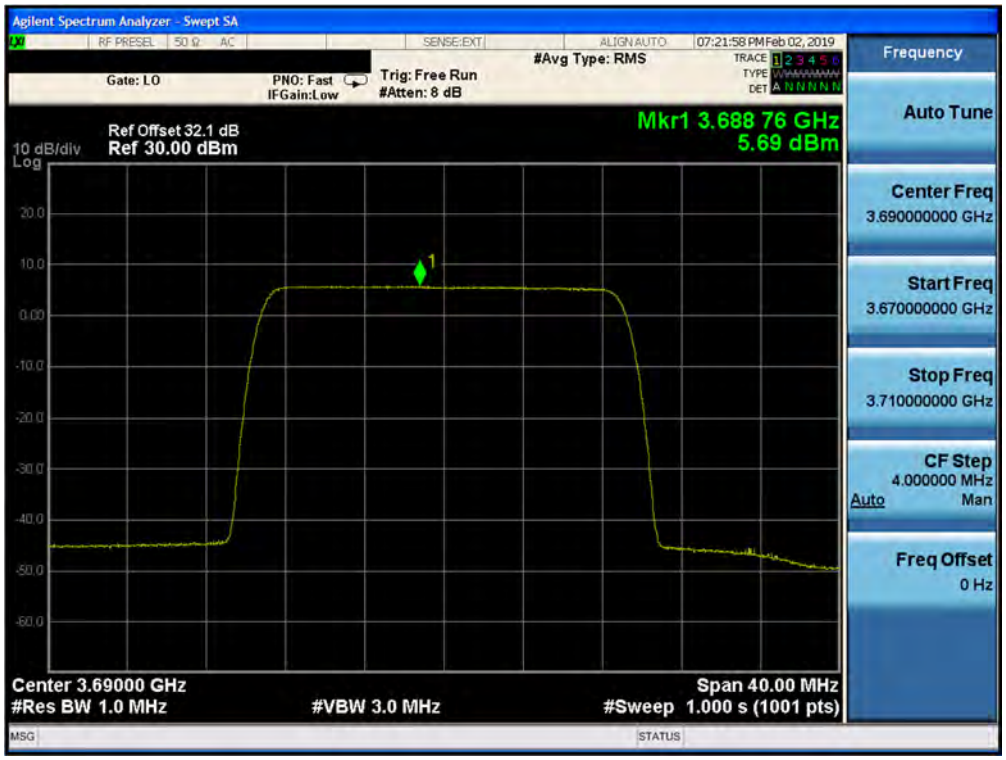
Plot 7-399. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 26



Plot 7-400. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 27

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Plot 7-401. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 15

Plot 7-402. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 14

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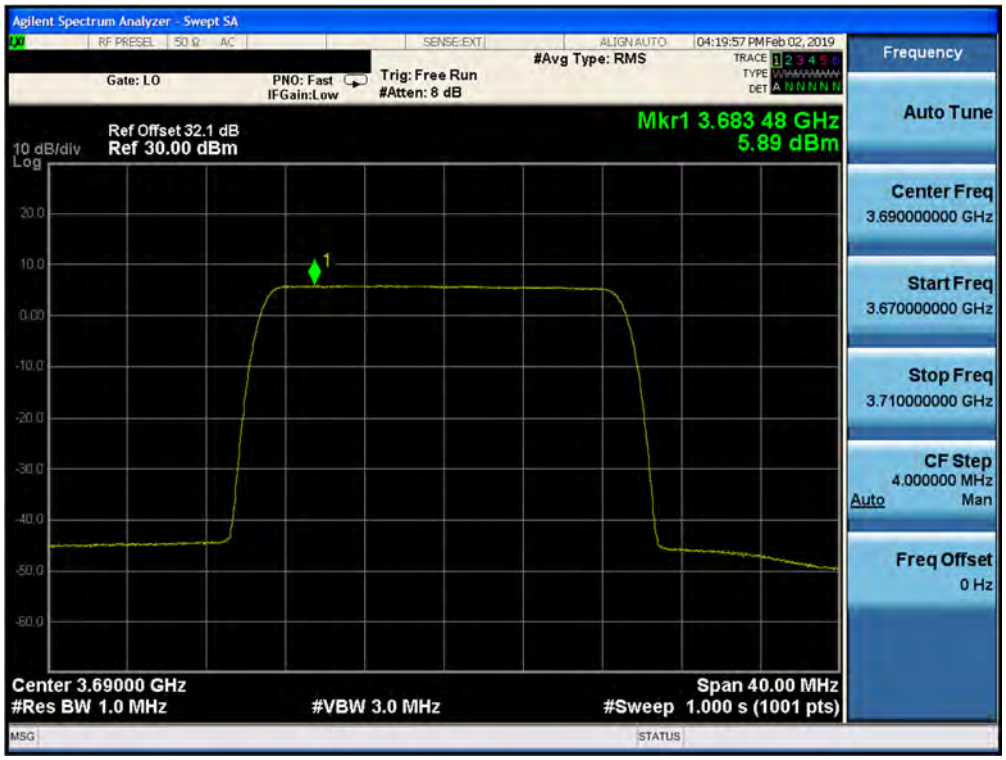
Plot 7-403. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 13



Plot 7-404. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 12

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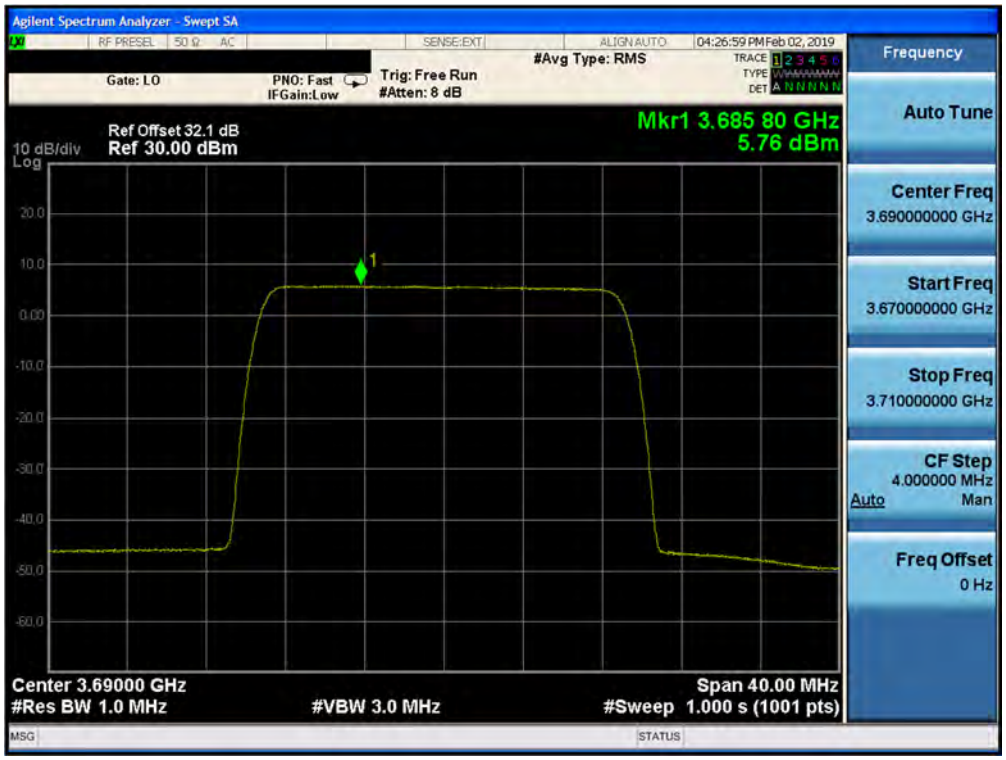
Plot 7-405. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 28



Plot 7-406. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 29

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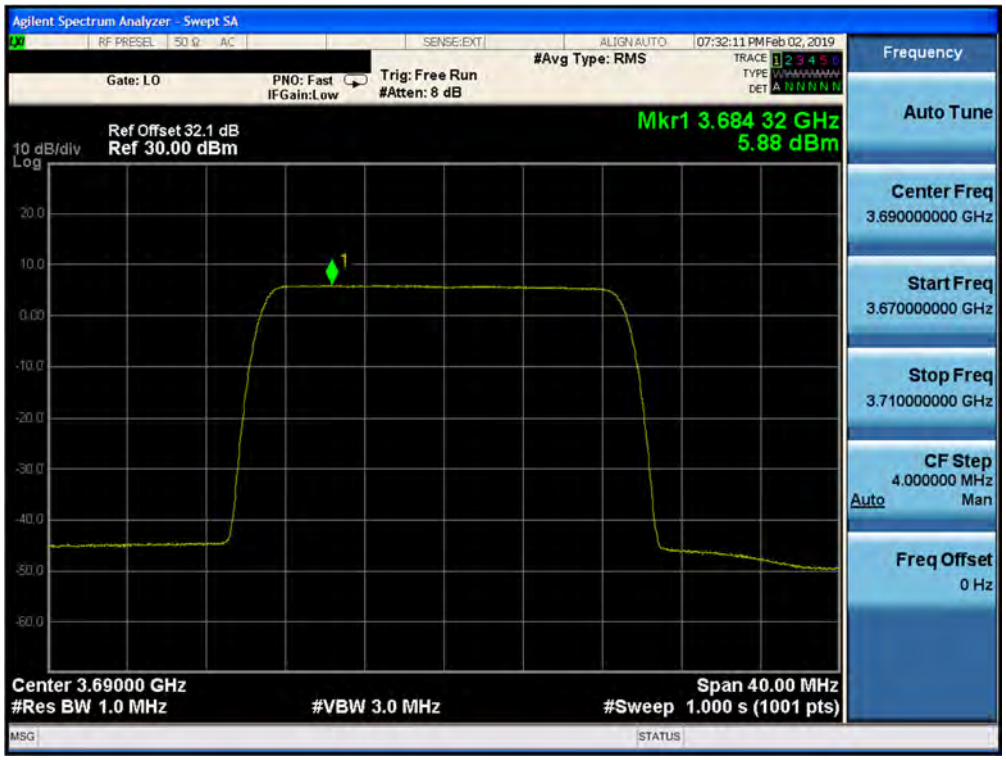
Plot 7-407. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 30



Plot 7-408. Peak Power Spectral Density Plot (1CC– 3690 MHz- 20.0MHz 256QAM- High Channel) Port 31

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7.5 Peak-Average Ratio

§96.41(g)

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

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 two million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed.
6. An RF-Burst triggering method ensured measurement in the on time of the signal.

Test Setup

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

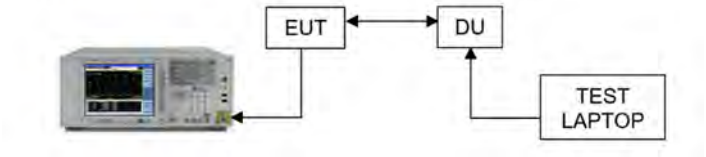

Figure 7-4. Test Instrument & Measurement Setup

Test Notes

The PAR data is taken from the power with the highest output power on the mid channel.
The deviation between peak and average power was found to be higher in 1CC compared to 2CC.Thus, 1CC was determined to be the worst case for PAR.

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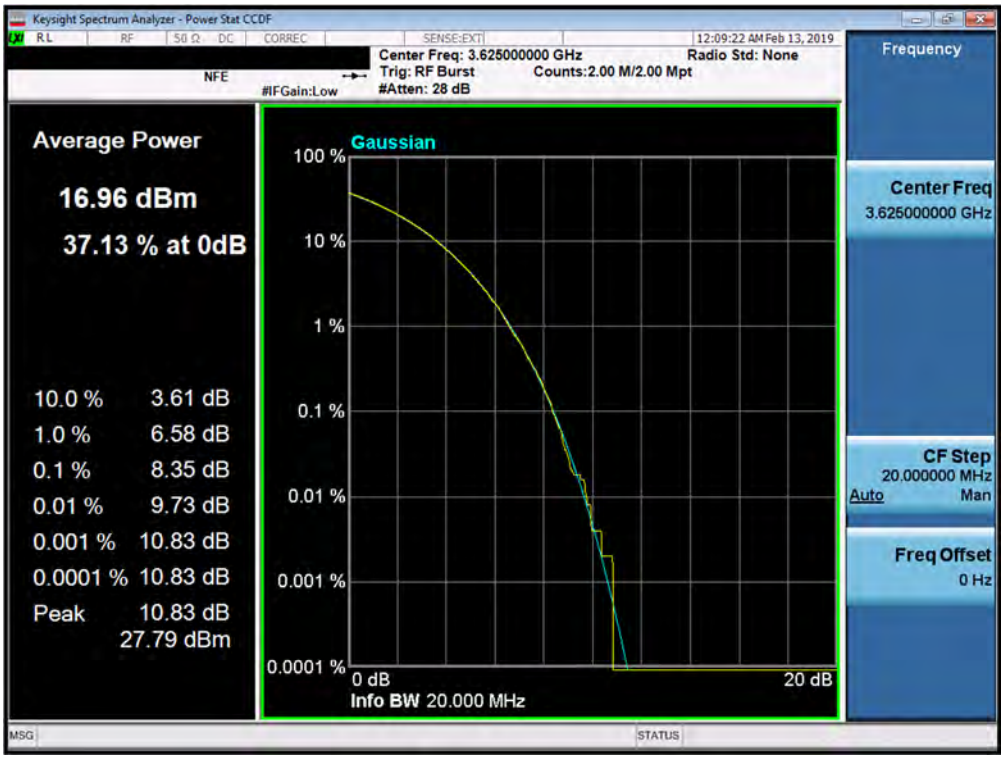
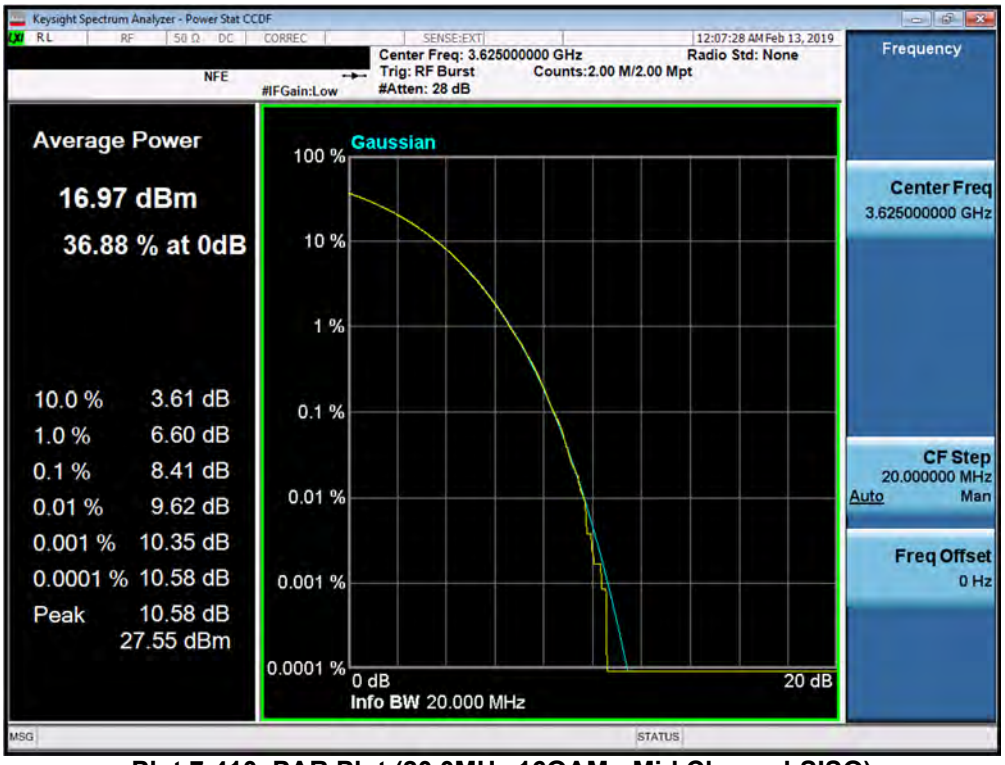


Plot 7-409. PAR Plot (20.0MHz QPSK - Mid Channel-SISO)



Plot 7-410. PAR Plot (20.0MHz 16QAM - Mid Channel-SISO)

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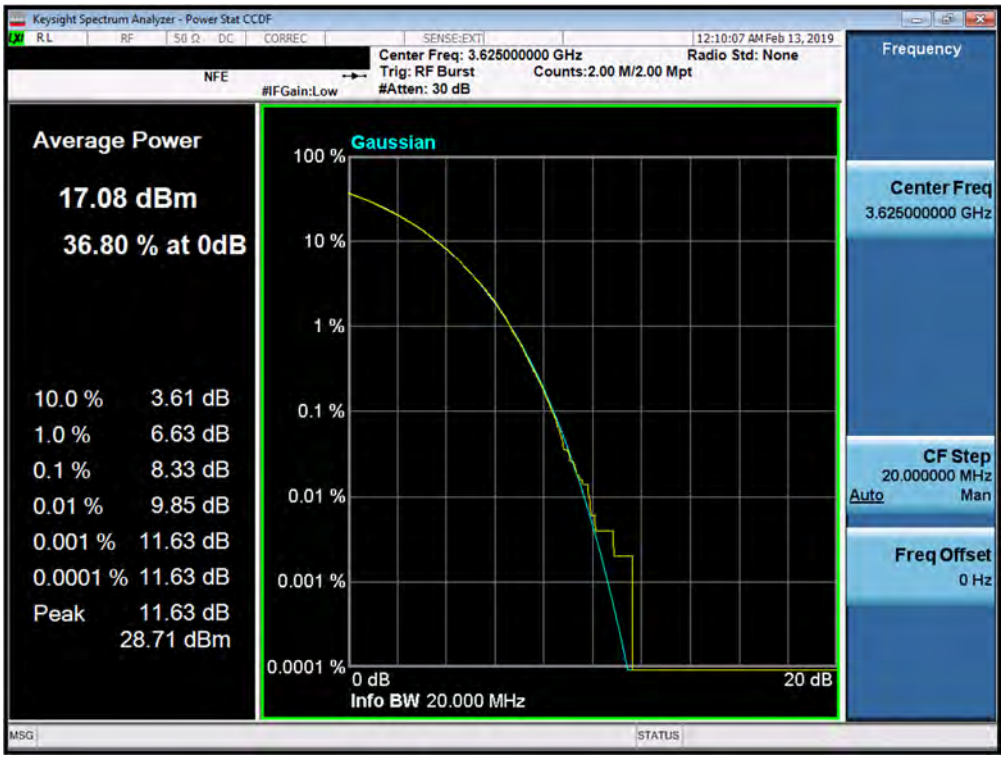
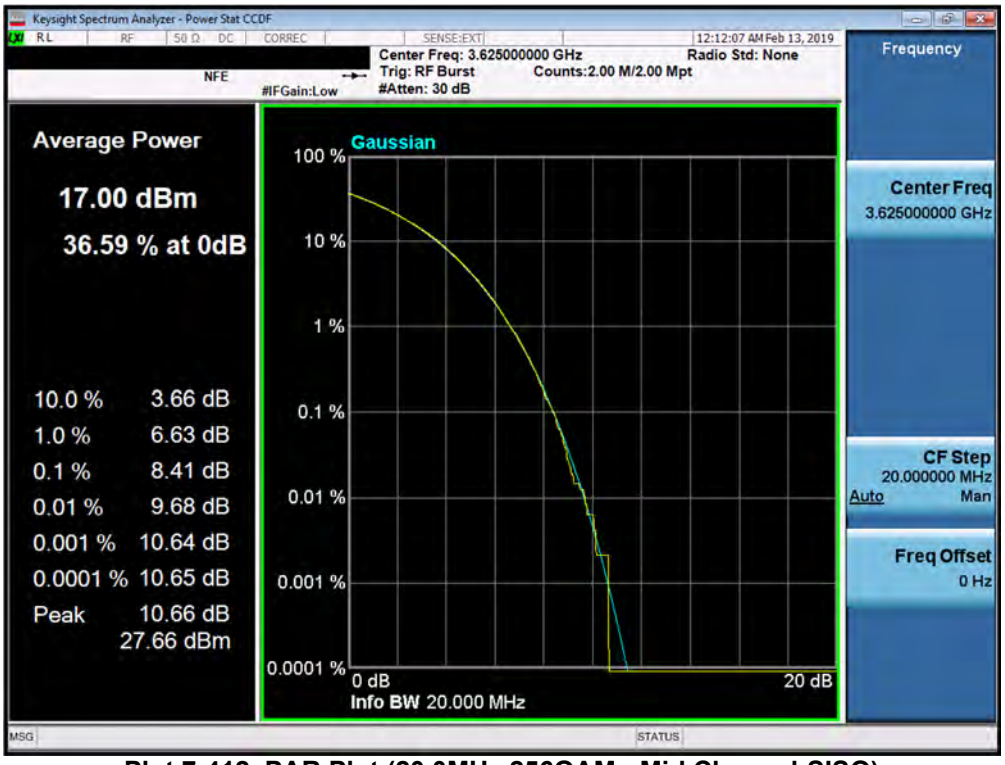


Plot 7-411. PAR Plot (20.0MHz 64QAM - Mid Channel-SISO)



Plot 7-412. PAR Plot (20.0MHz 256QAM - Mid Channel-SISO)

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7.6 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051 §96.41(e)

Test Overview

The level of the carrier 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.

The conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/Mhz.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 6.0

KDB 662911 D01 v02r01 – Section E)3) Out-of-Band and Spurious Emission Measurements

a) Absolute Emission Limits

(iii) Measure and add 10 log(NANT) Db

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. Trace mode and Detector= RMS
3. Sweep time = auto couple
4. The trace was allowed to stabilize
5. 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.

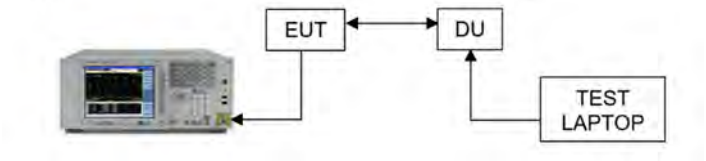

Figure 7-5. Test Instrument & Measurement Setup

Test Notes

1. Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz. 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. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

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2. 8 user beam mode is the worst case mode and all conducted spurious emissions are measured in this mode.
3. The modulation QPSK for single carrier is the worst case.
4. The 6.5 GHz to 15 GHz range for High Channel QPSK is measured using 6GHz High Pass filter.
5. Mid Channel SISO and MIMO plots are measured.
    a. MIMO plots show the conducted spurious emissions with all 32 transmit ports combined.
    b. The offset calculation:

        10*log(32) = 15.05 dB

        This value has been added in the MIMO Plots.
        Refer KDB 662911 D01 v02r01 – Section E)2)c) for details.

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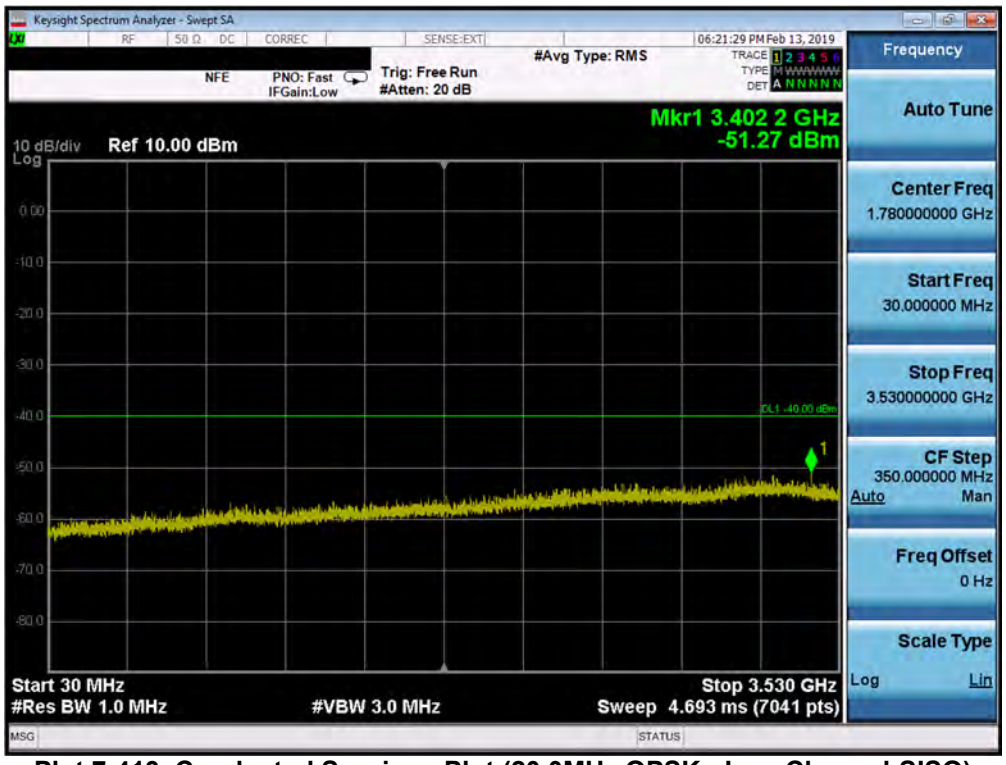
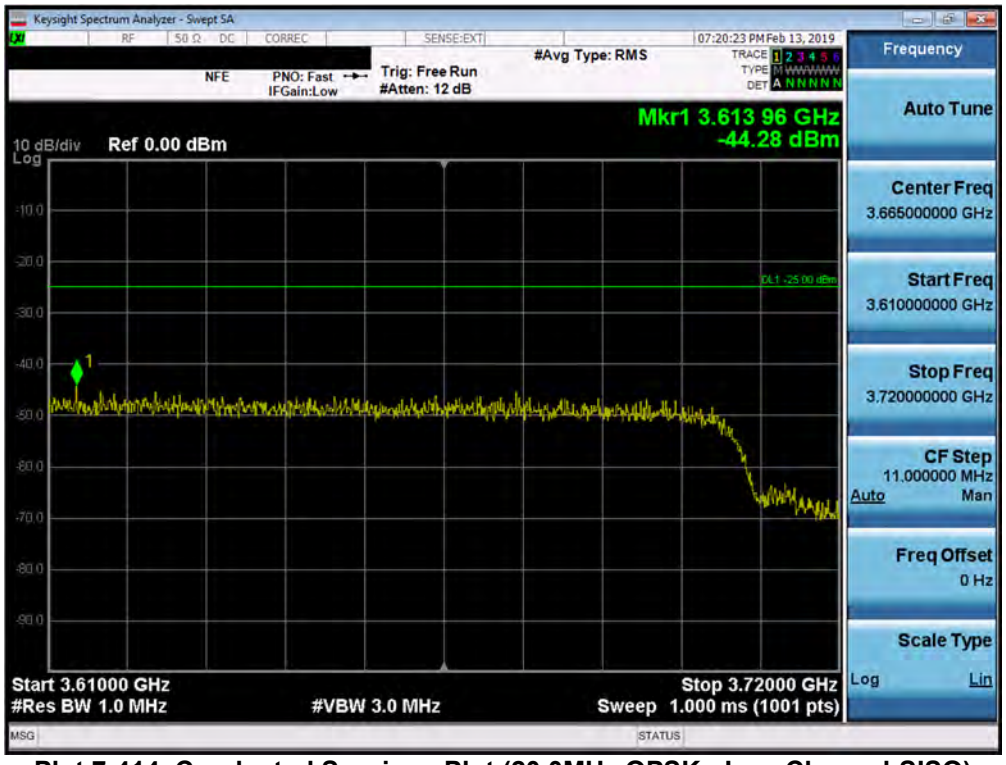
1CC Low Channel SISO



Plot 7-413. Conducted Spurious Plot (20.0MHz QPSK - Low Channel-SISO)



Plot 7-414. Conducted Spurious Plot (20.0MHz QPSK - Low Channel-SISO)

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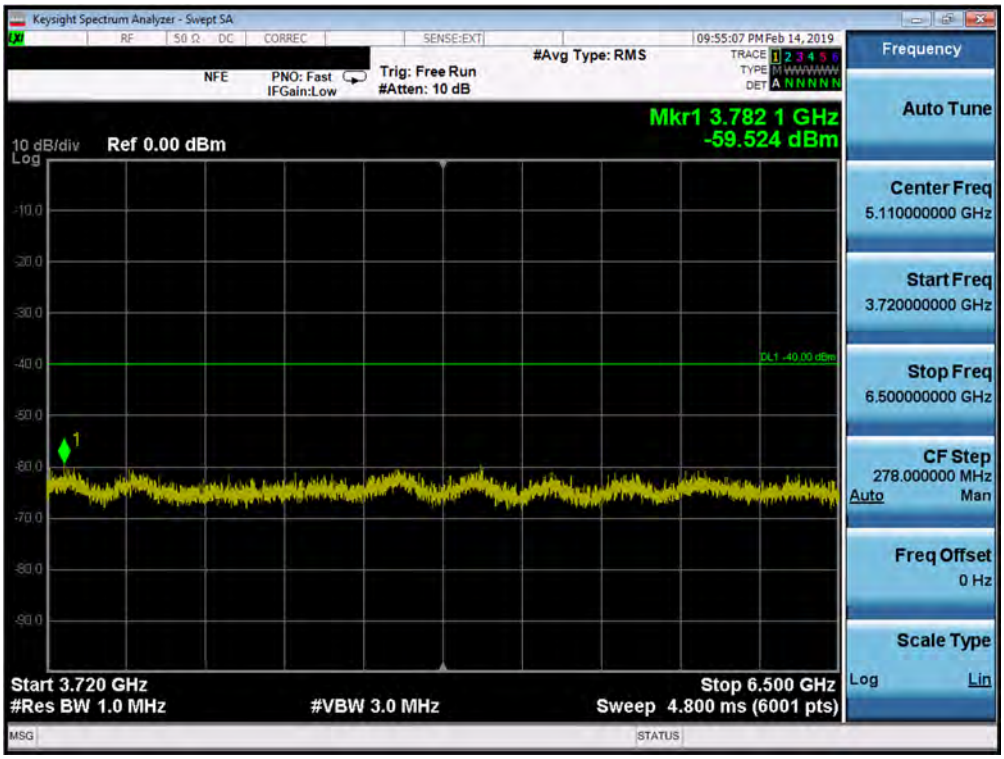
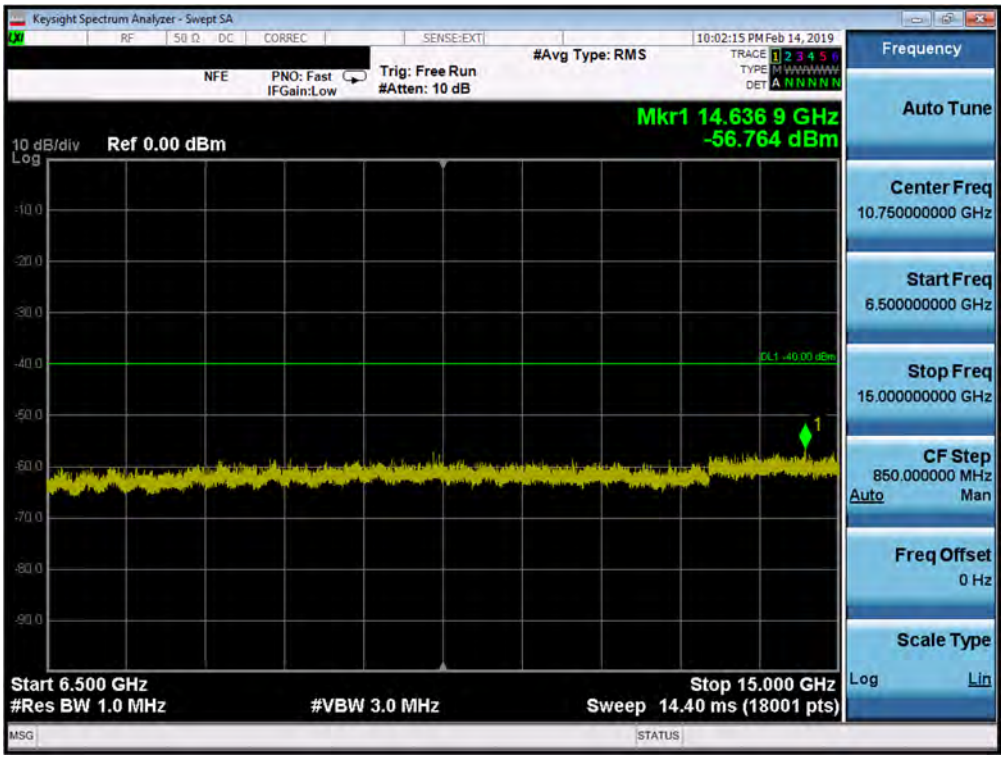


Plot 7-415. Conducted Spurious Plot (20.0MHz QPSK - Low Channel-SISO)



Plot 7-416. Conducted Spurious Plot (20.0MHz QPSK - Low Channel-SISO)

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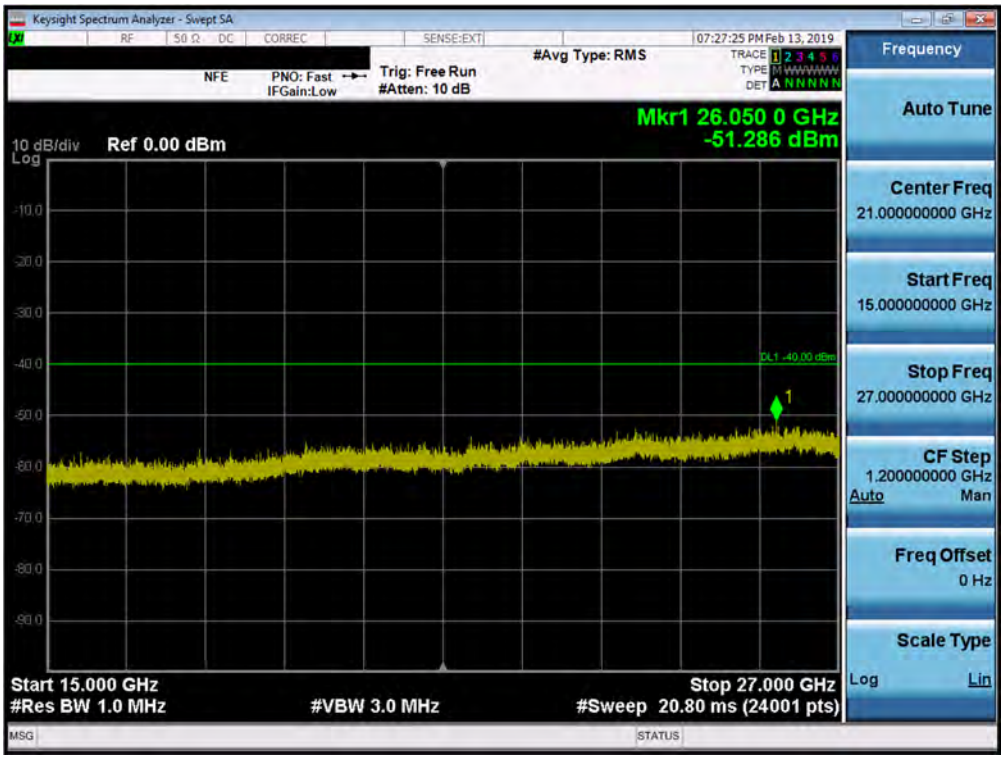
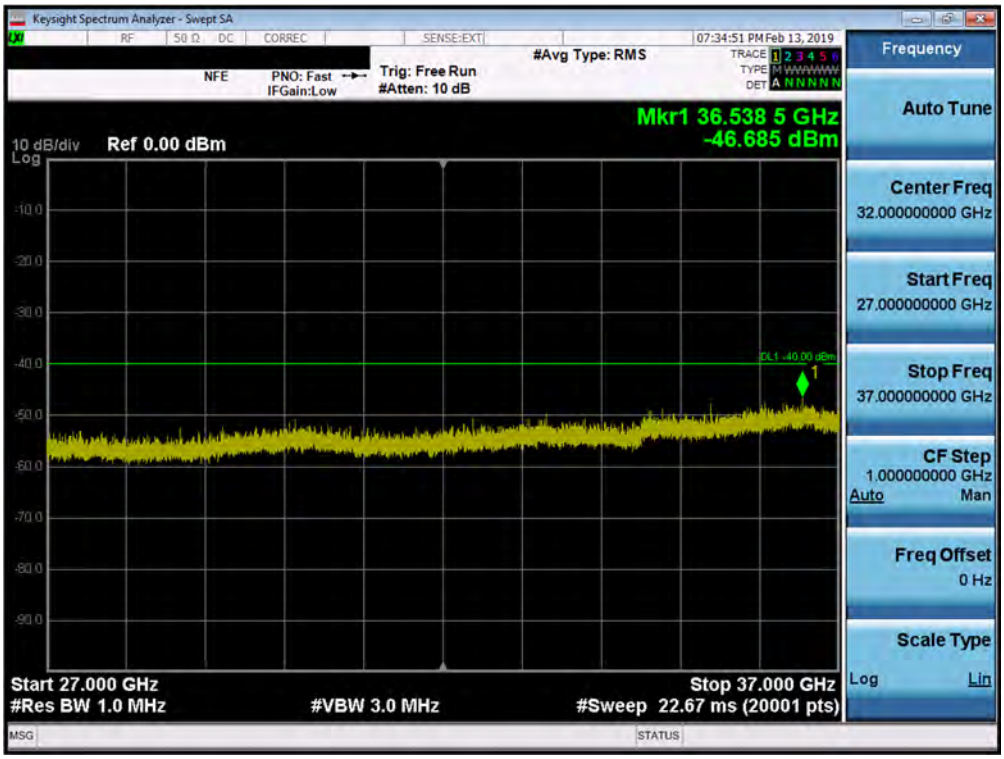


Plot 7-417. Conducted Spurious Plot (20.0MHz QPSK - Low Channe-SISOl)



Plot 7-418. Conducted Spurious Plot (20.0MHz QPSK - Low Channel-SISO)

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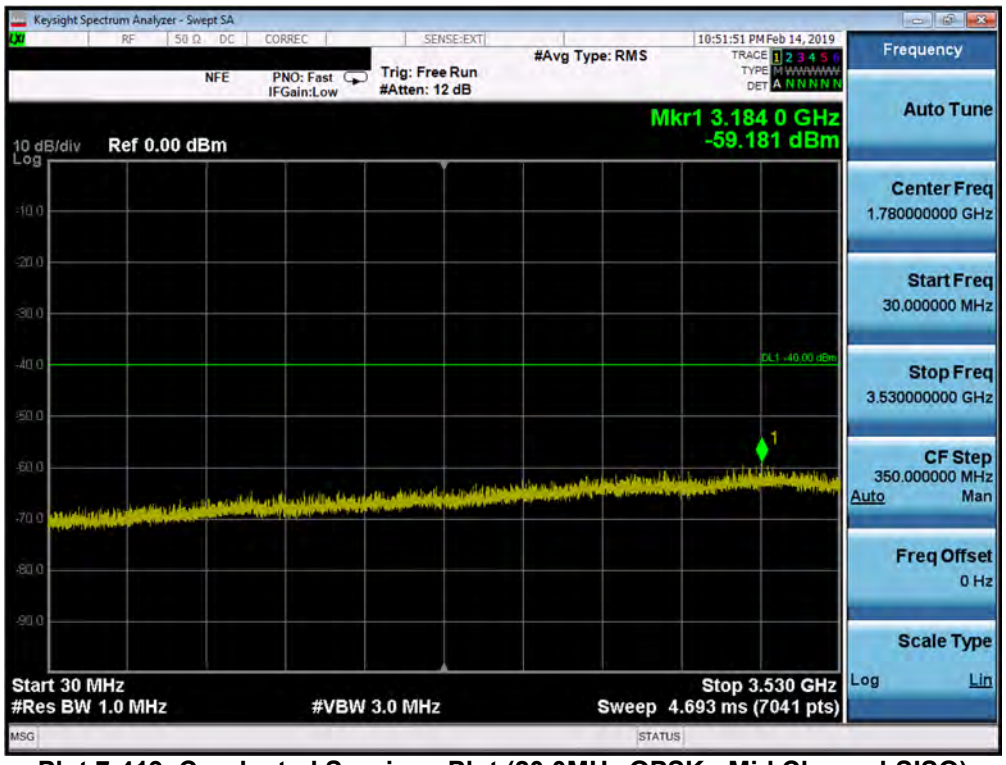
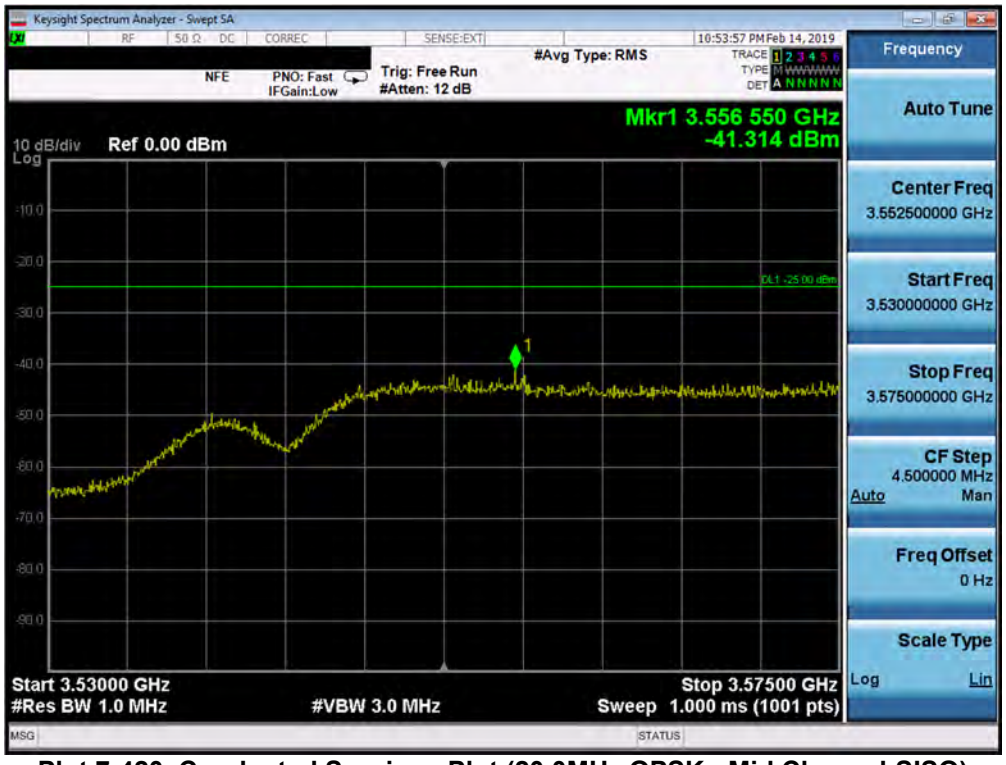
1CC Mid Channel SISO



Plot 7-419. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-SISO)



Plot 7-420. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-SISO)

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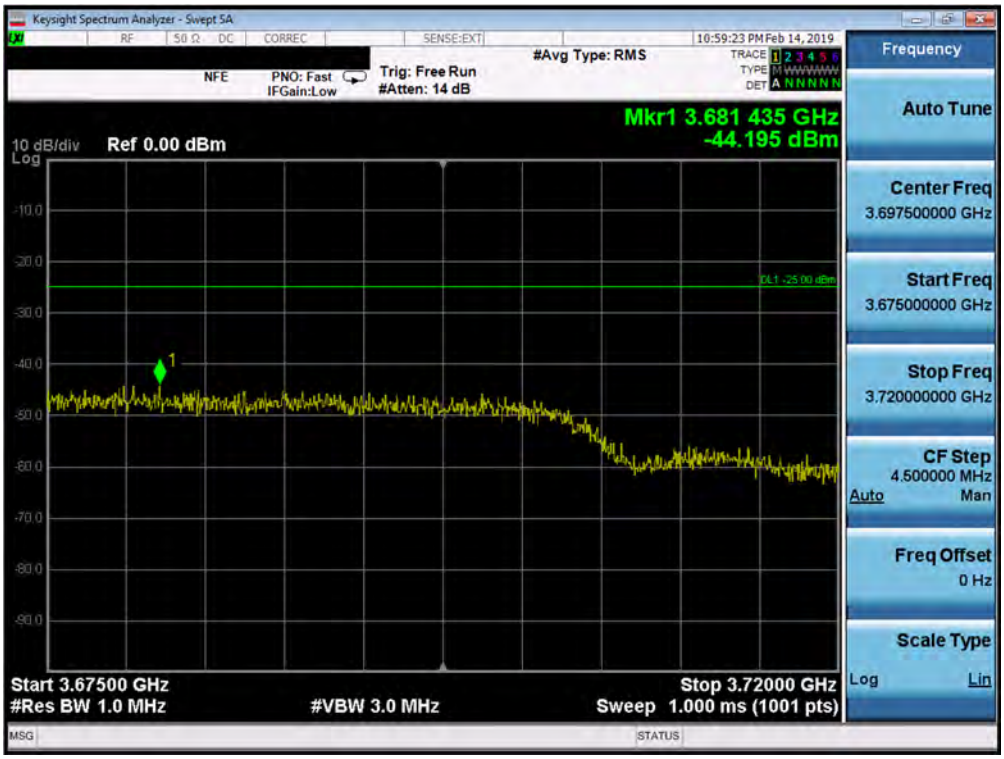
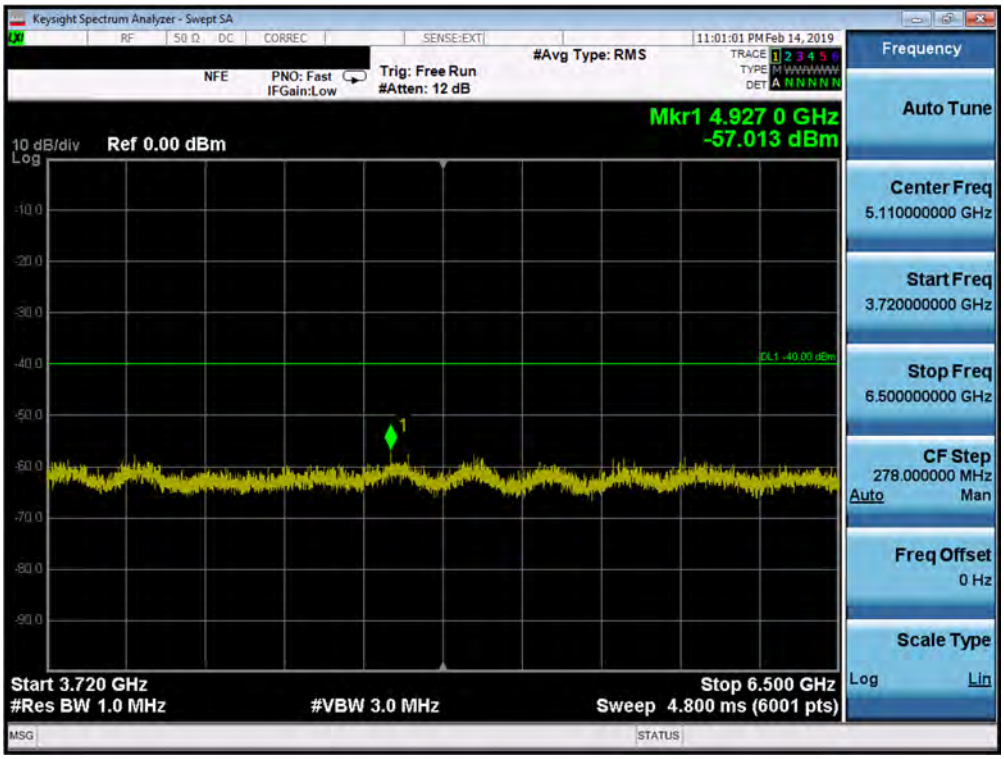


Plot 7-421. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-SISO)



Plot 7-422. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-SISO)

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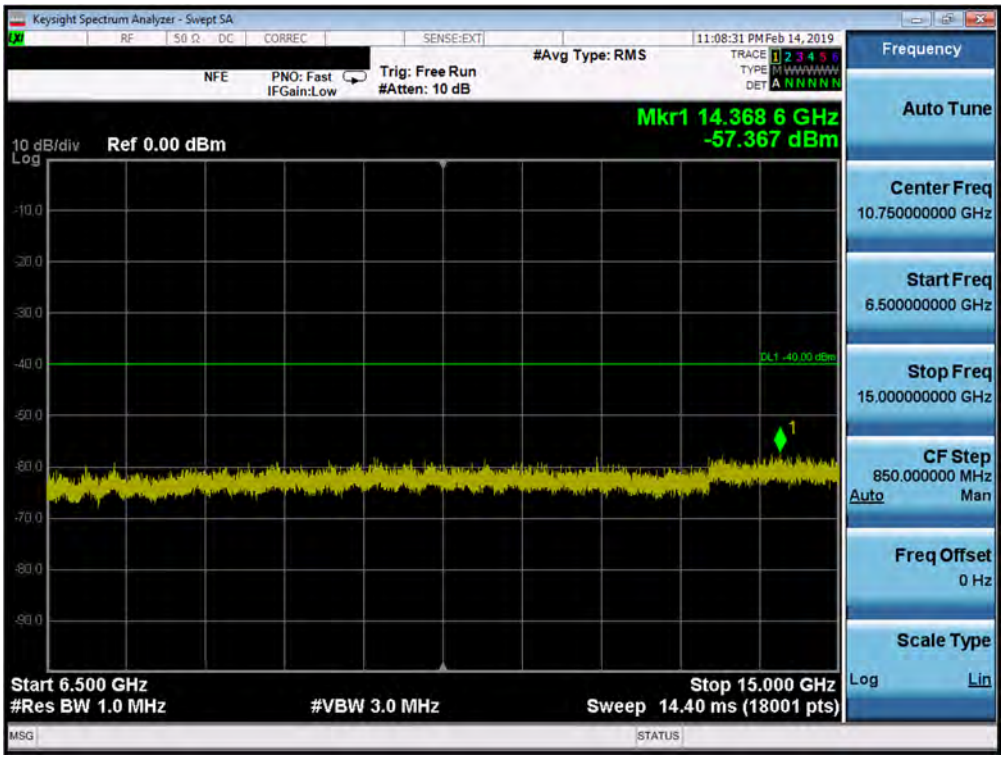
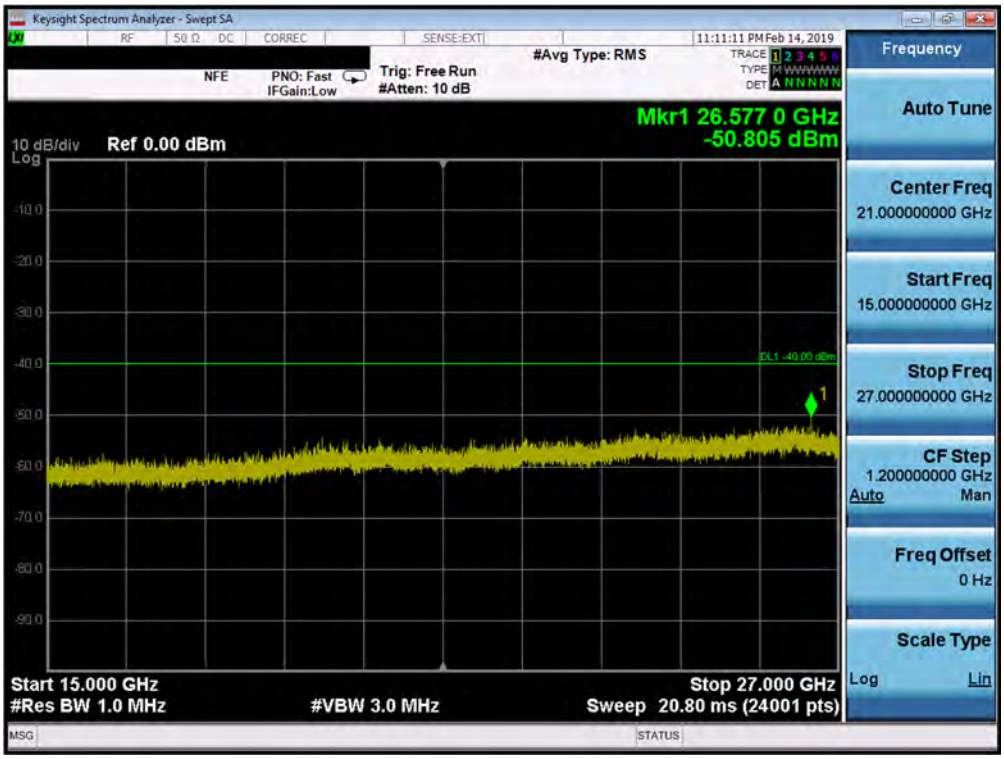


Plot 7-423. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-SISO)



Plot 7-424. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-SISO)

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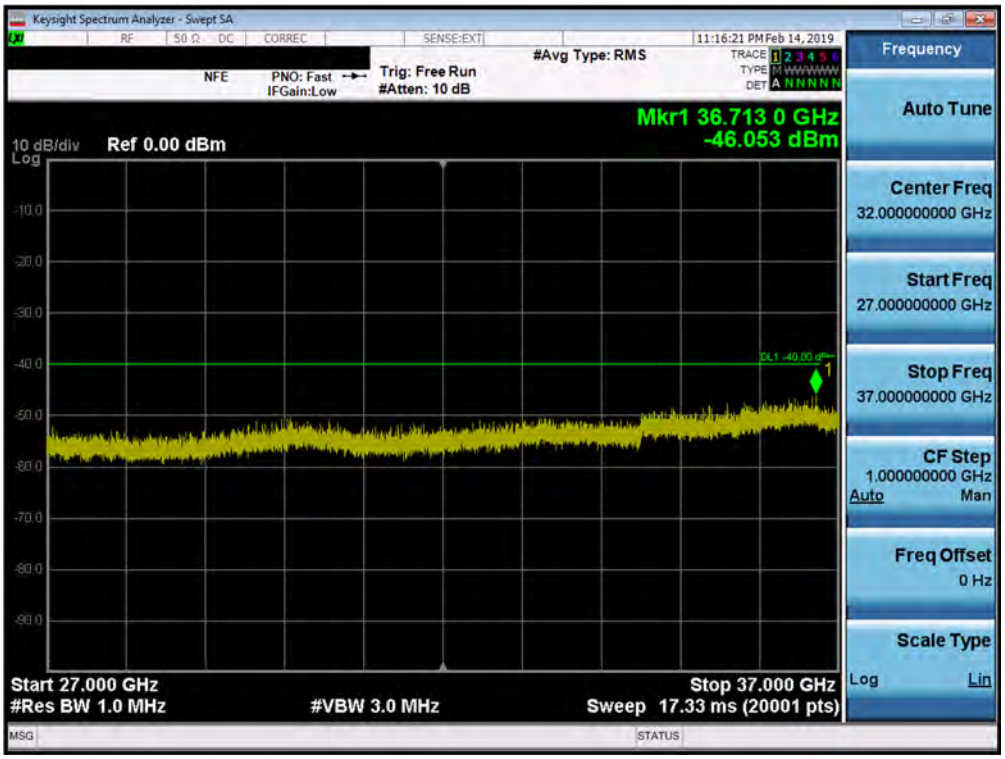

Plot 7-425. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-SISO)

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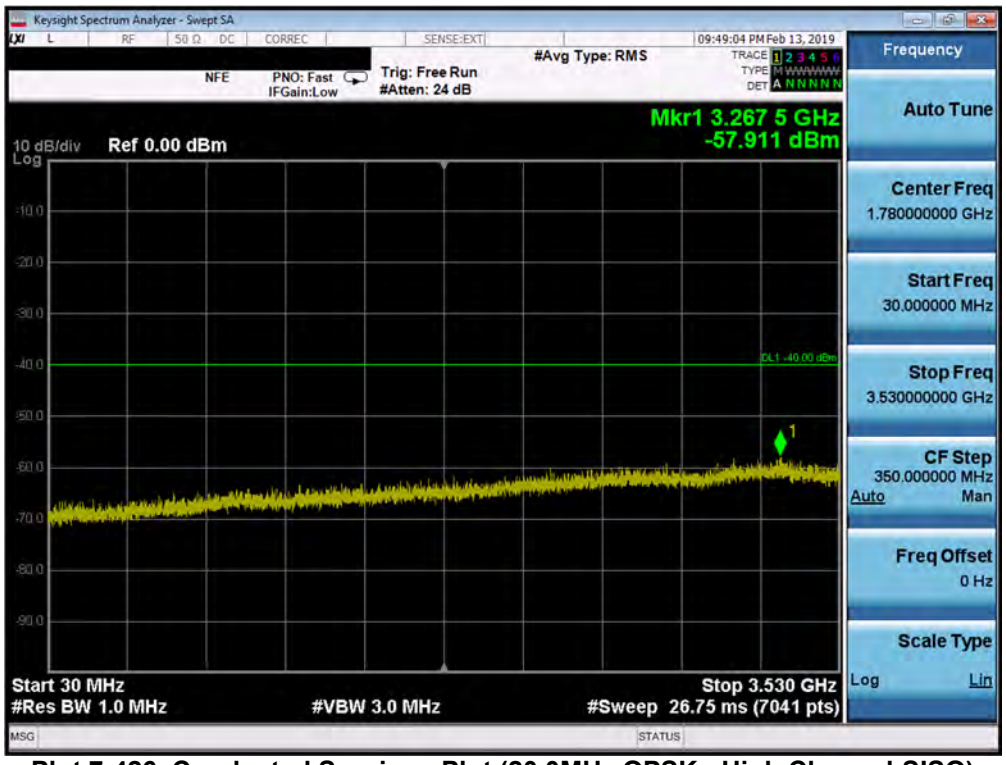
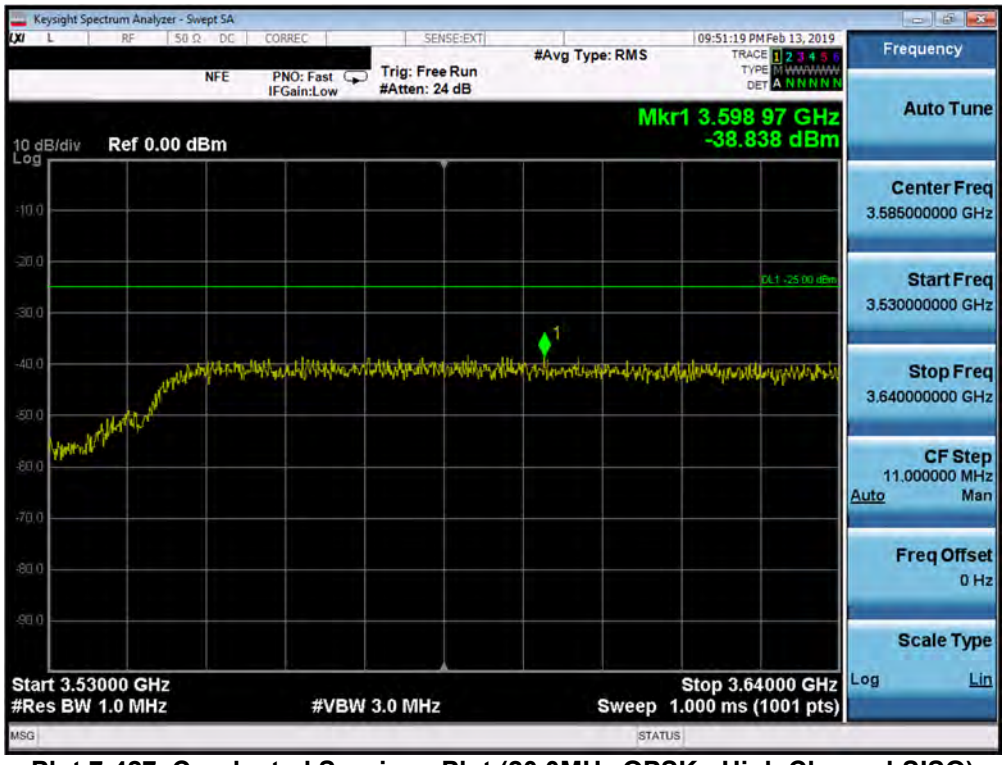
1CC High Channel SISO



Plot 7-426. Conducted Spurious Plot (20.0MHz QPSK - High Channel-SISO)



Plot 7-427. Conducted Spurious Plot (20.0MHz QPSK - High Channel-SISO)

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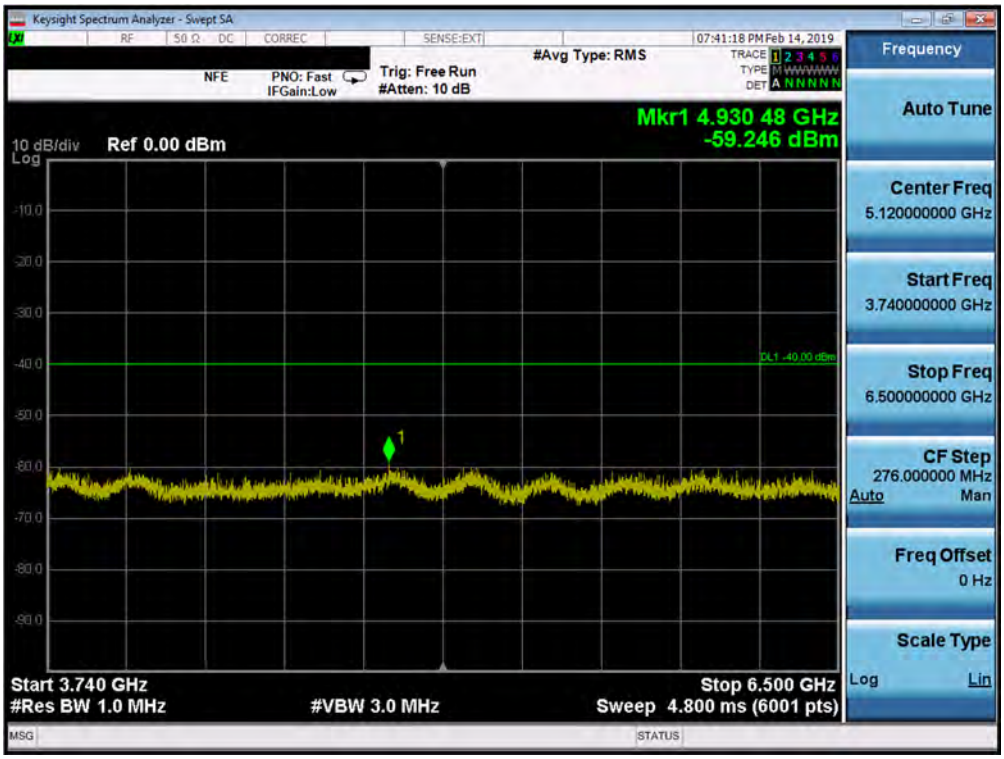
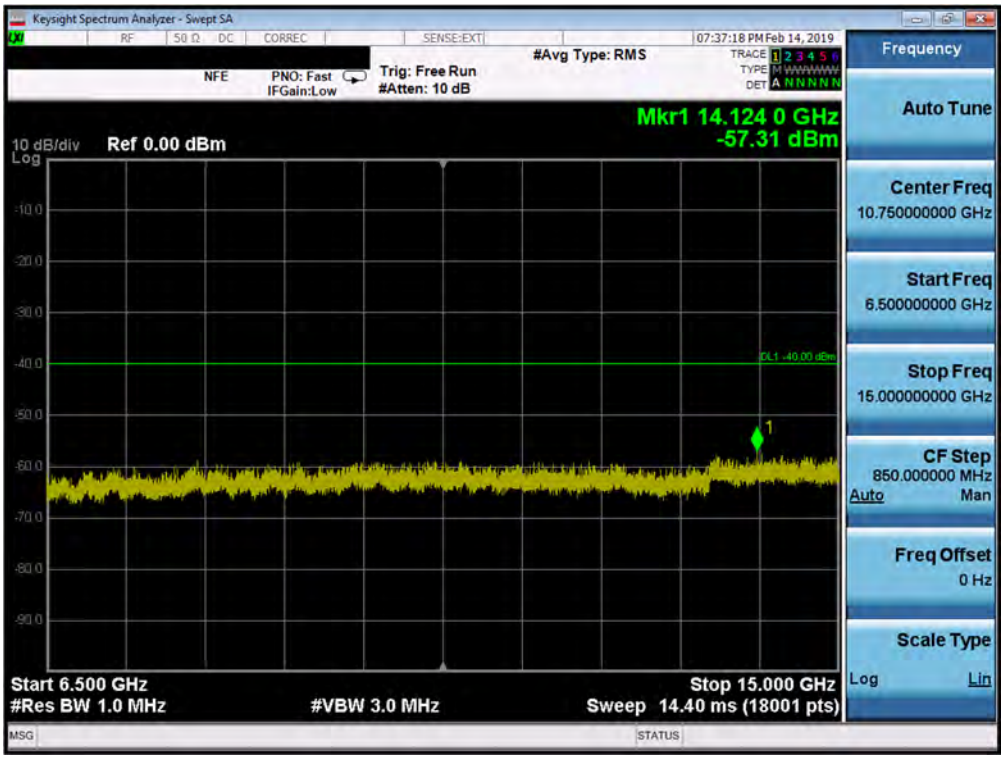


Plot 7-428. Conducted Spurious Plot (20.0MHz QPSK - High Channel-SISO)



Plot 7-429. Conducted Spurious Plot (20.0MHz QPSK - High Channel-SISO)

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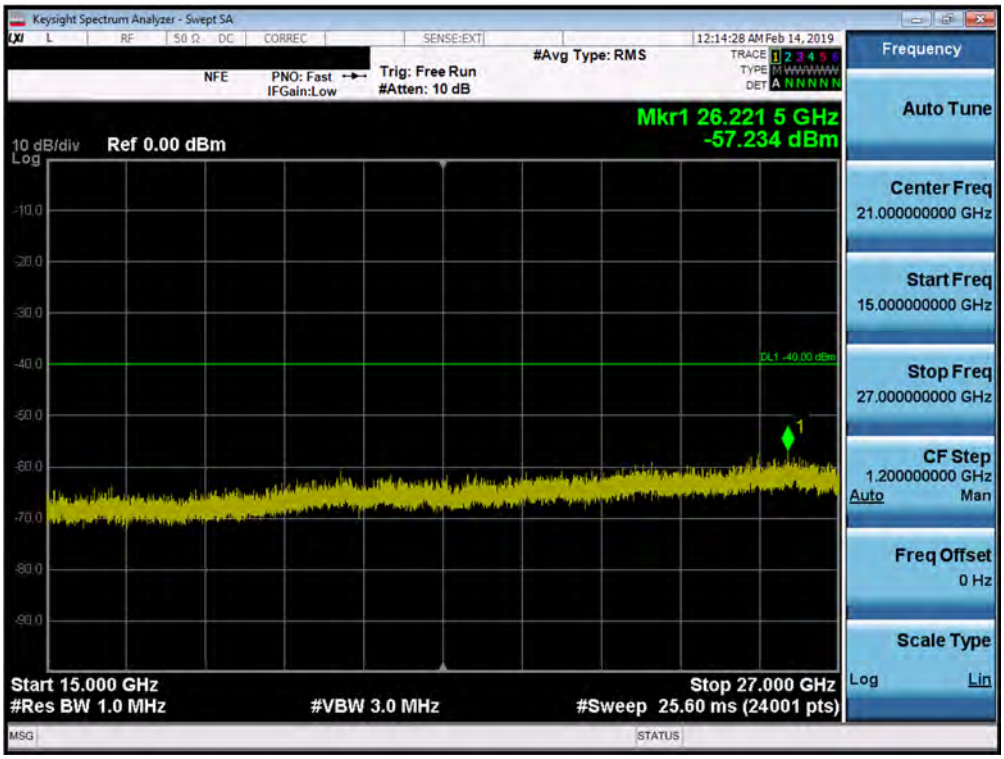
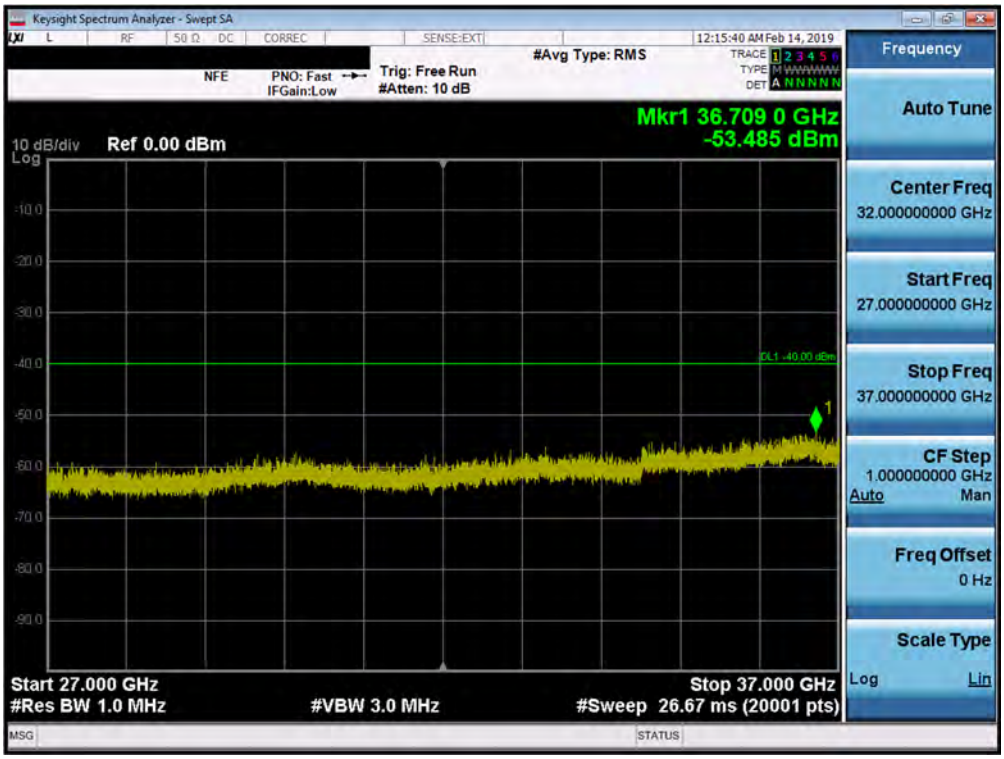


Plot 7-430. Conducted Spurious Plot (20.0MHz QPSK - High Channel-SISO)



Plot 7-431. Conducted Spurious Plot (20.0MHz QPSK - High Channel-SISO)

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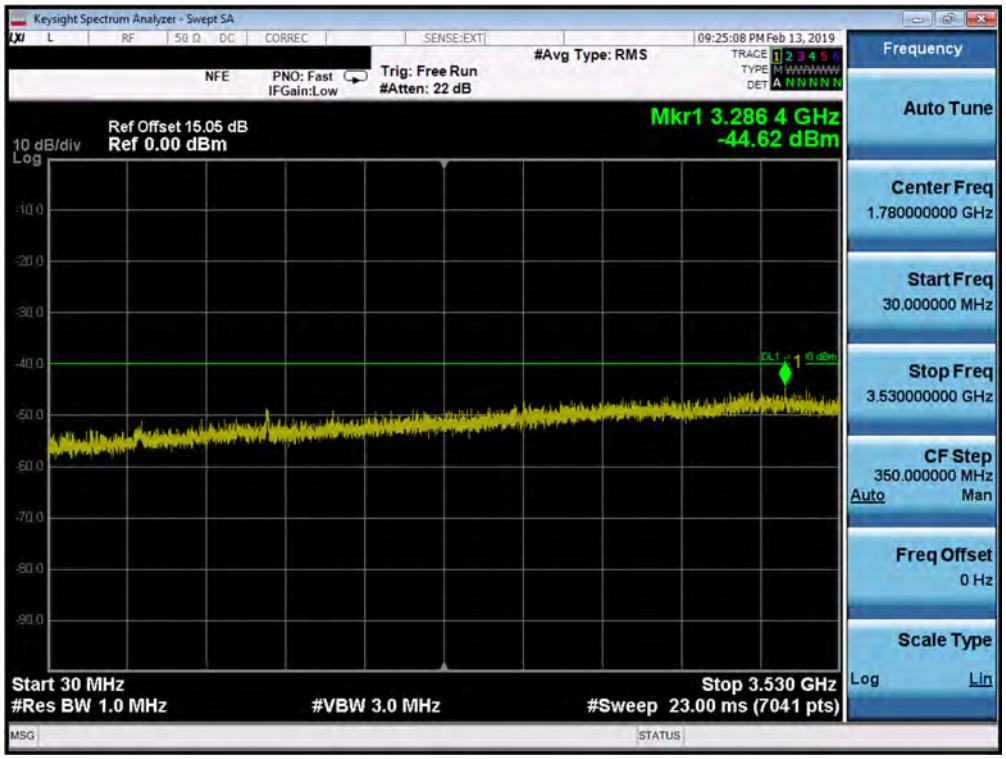
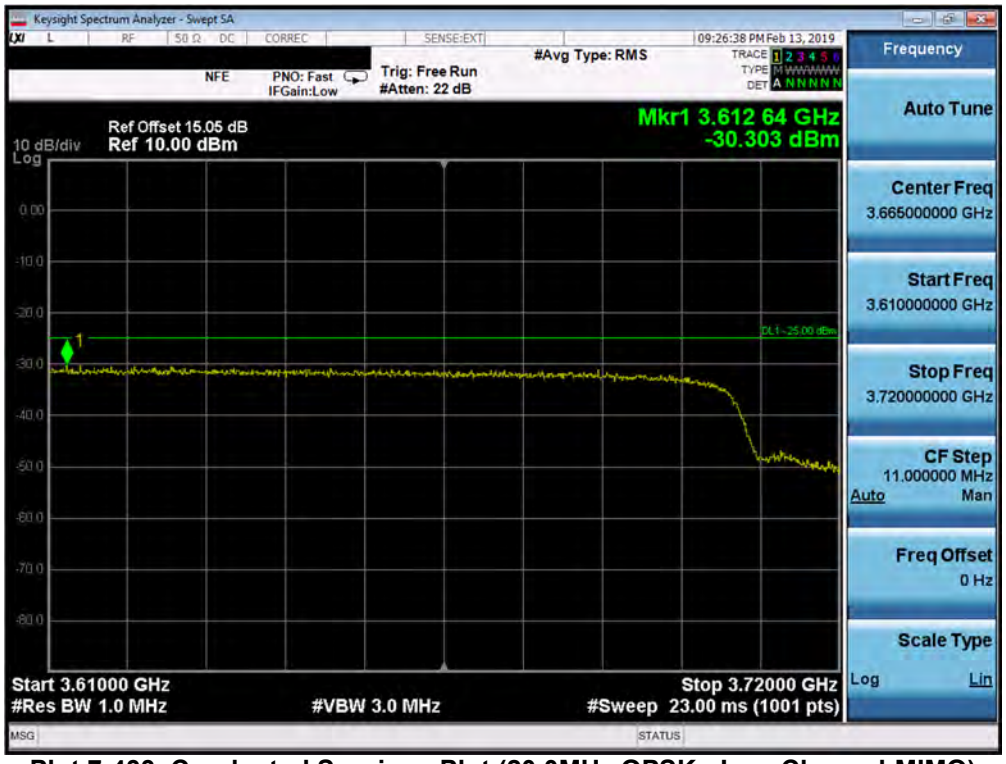


Plot 7-432. Conducted Spurious Plot (20.0MHz QPSK - Low Channel-MIMO)



Plot 7-433. Conducted Spurious Plot (20.0MHz QPSK - Low Channel-MIMO)

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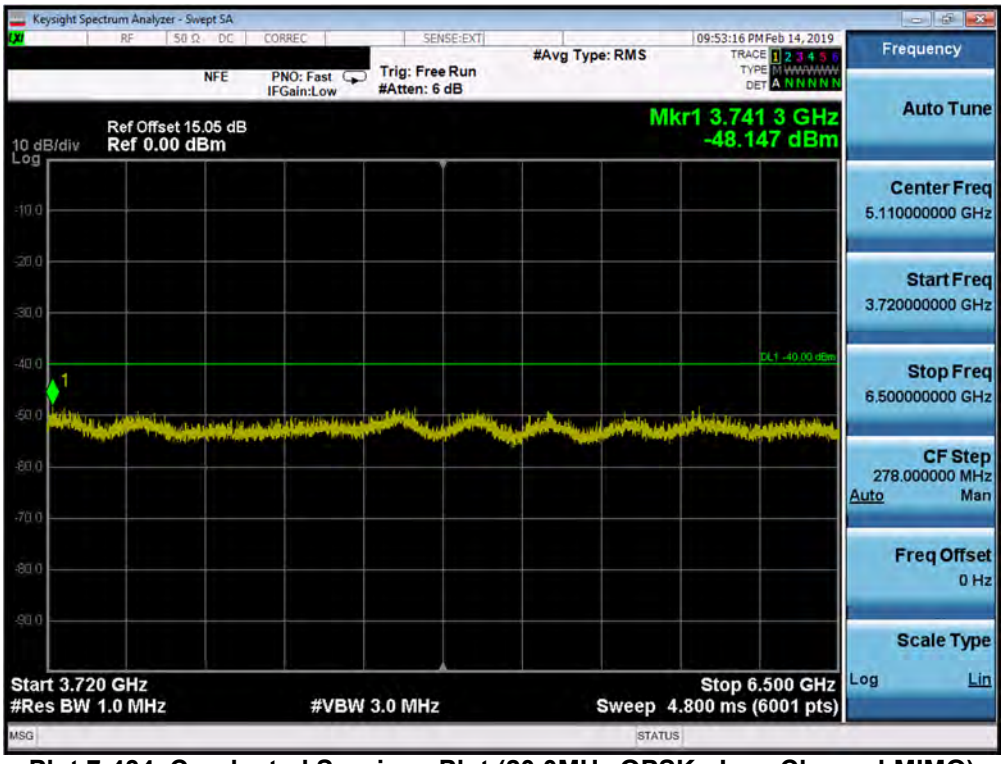
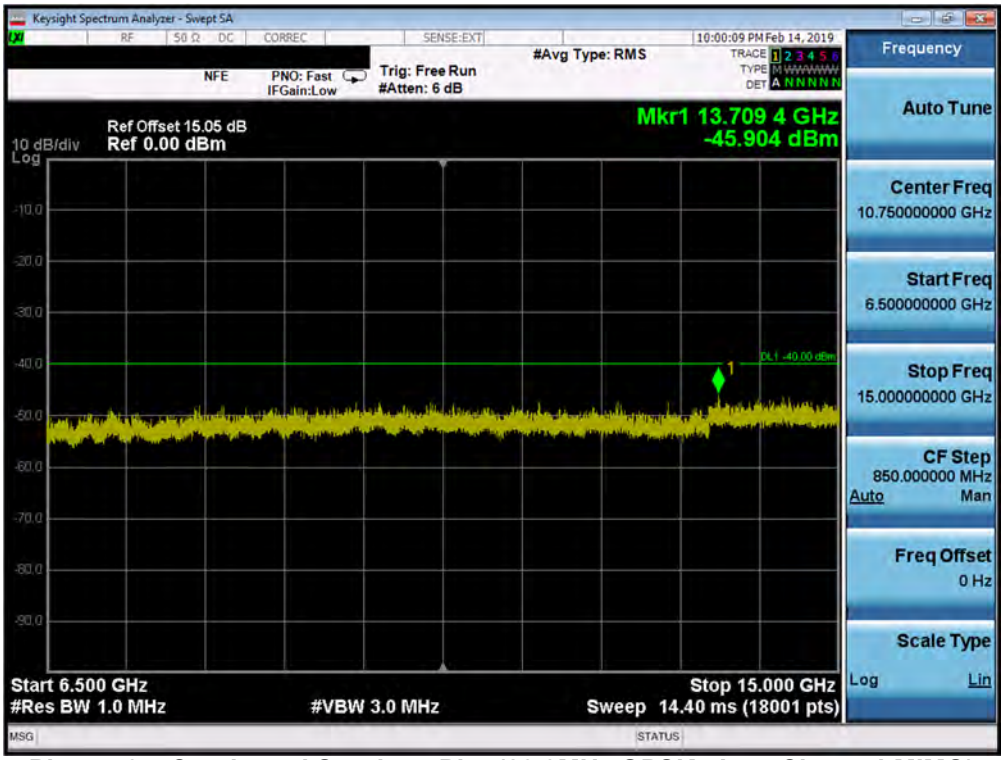


Plot 7-434. Conducted Spurious Plot (20.0MHz QPSK - Low Channel-MIMO)



Plot 7-435. Conducted Spurious Plot (20.0MHz QPSK - Low Channel-MIMO)

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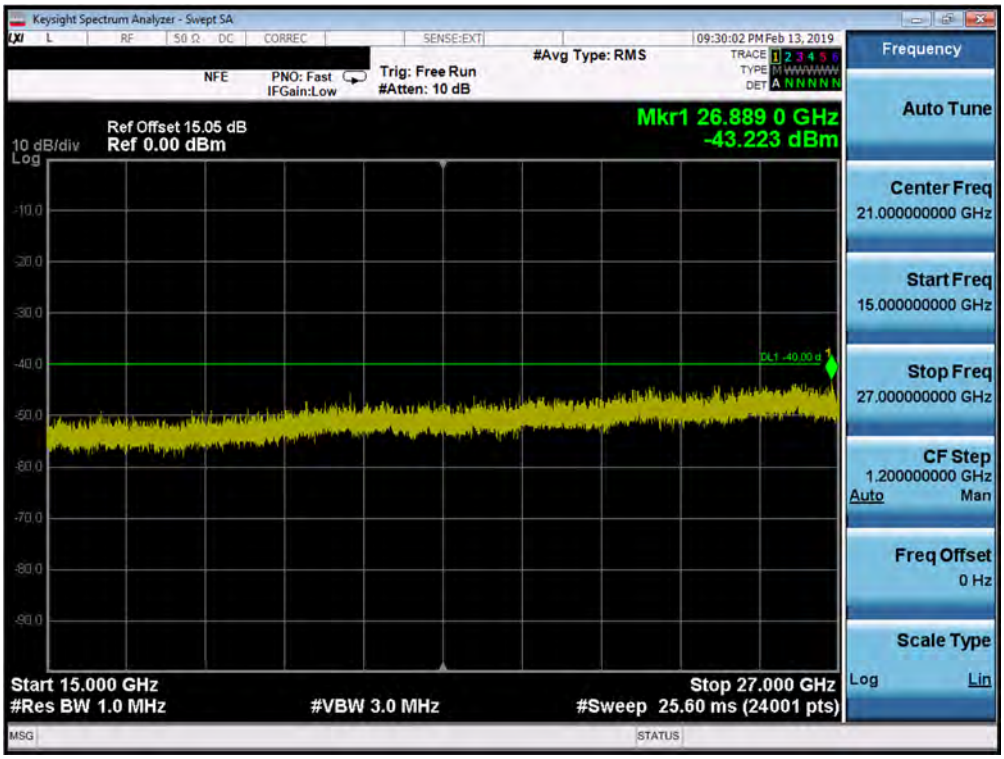
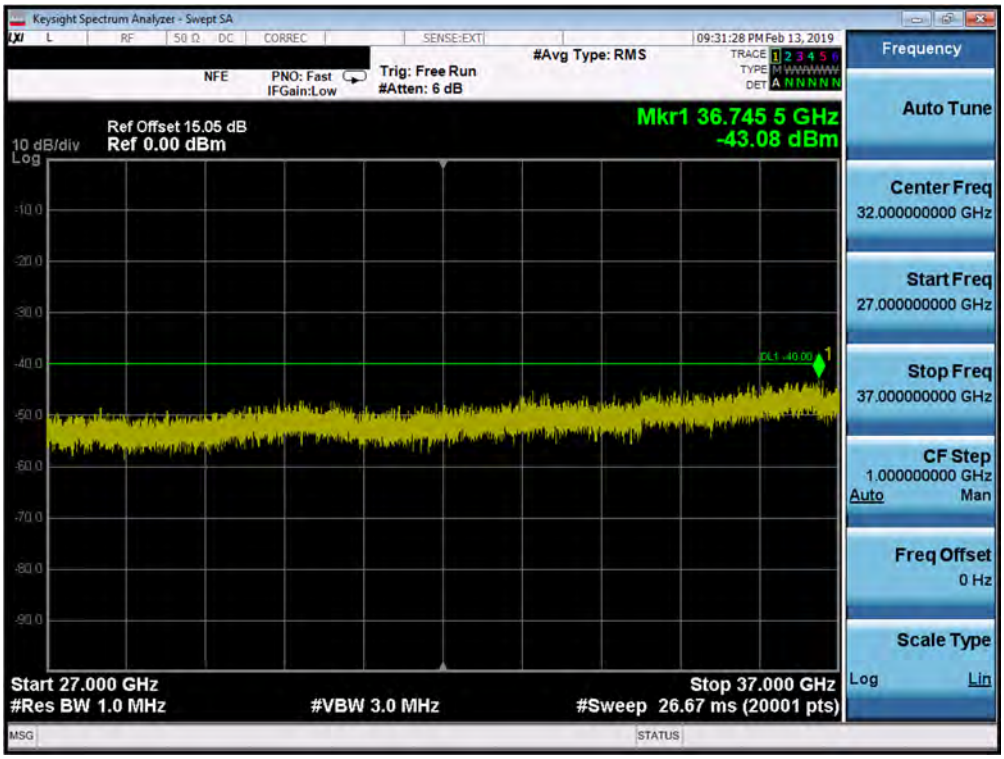


Plot 7-436. Conducted Spurious Plot (20.0MHz QPSK - Low Channel-MIMO)



Plot 7-437. Conducted Spurious Plot (20.0MHz QPSK - Low Channel-MIMO)

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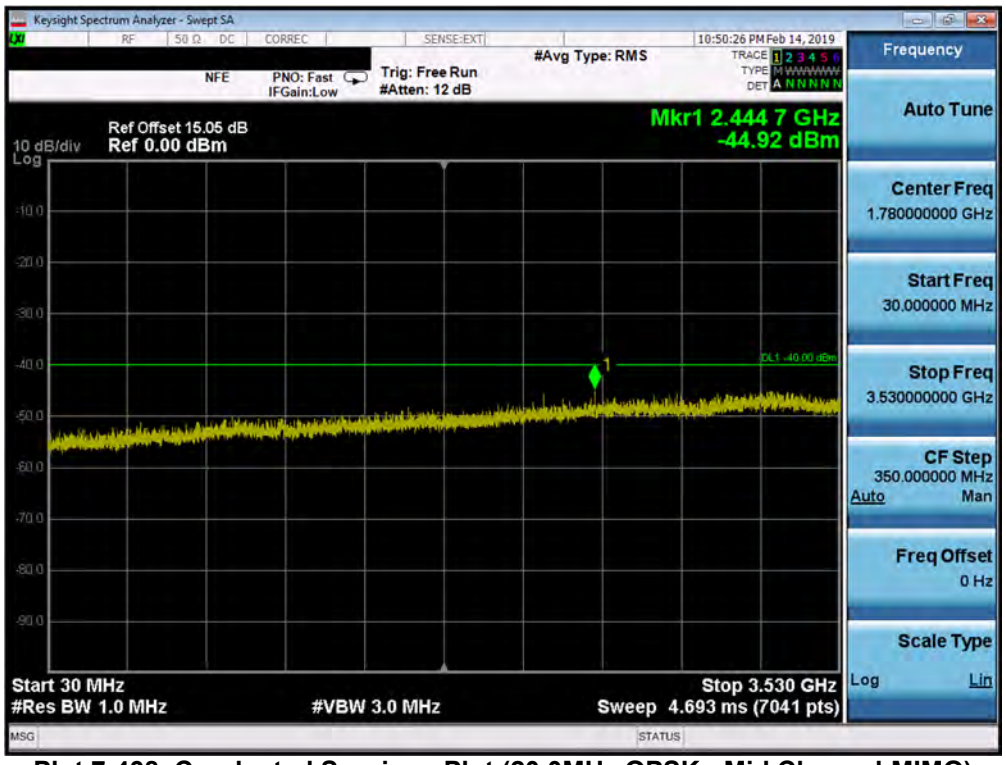
1CC Mid Channel MIMO



Plot 7-438. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-MIMO)

Plot 7-439. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-MIMO)

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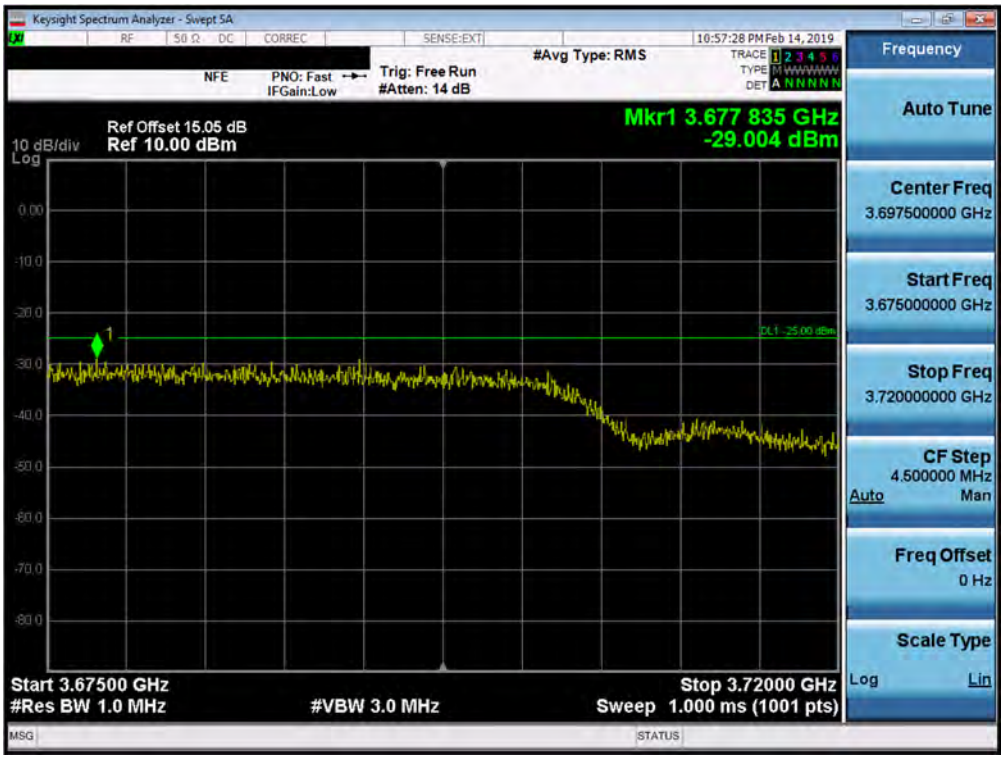
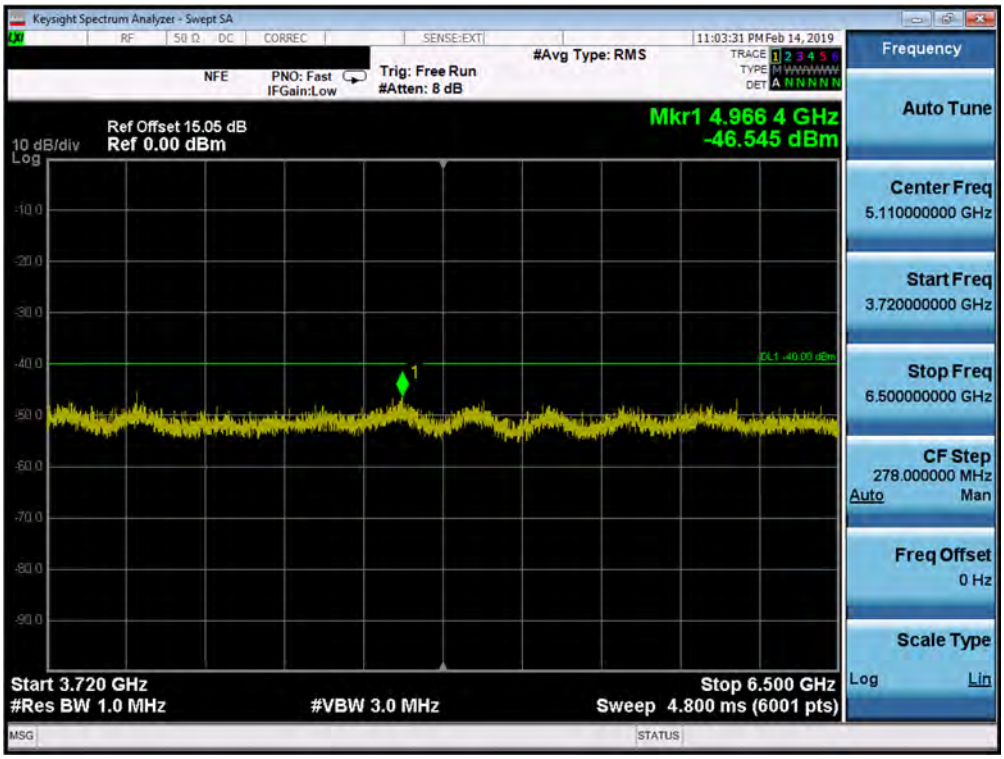


Plot 7-440. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-MIMO)



Plot 7-441. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-MIMO)

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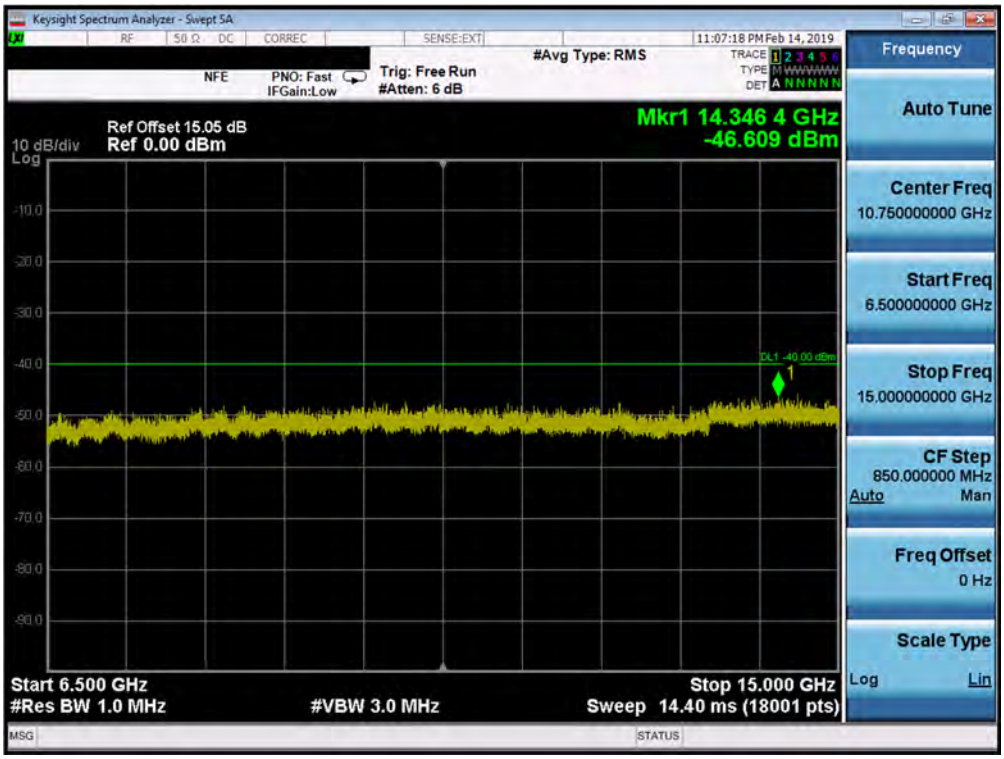
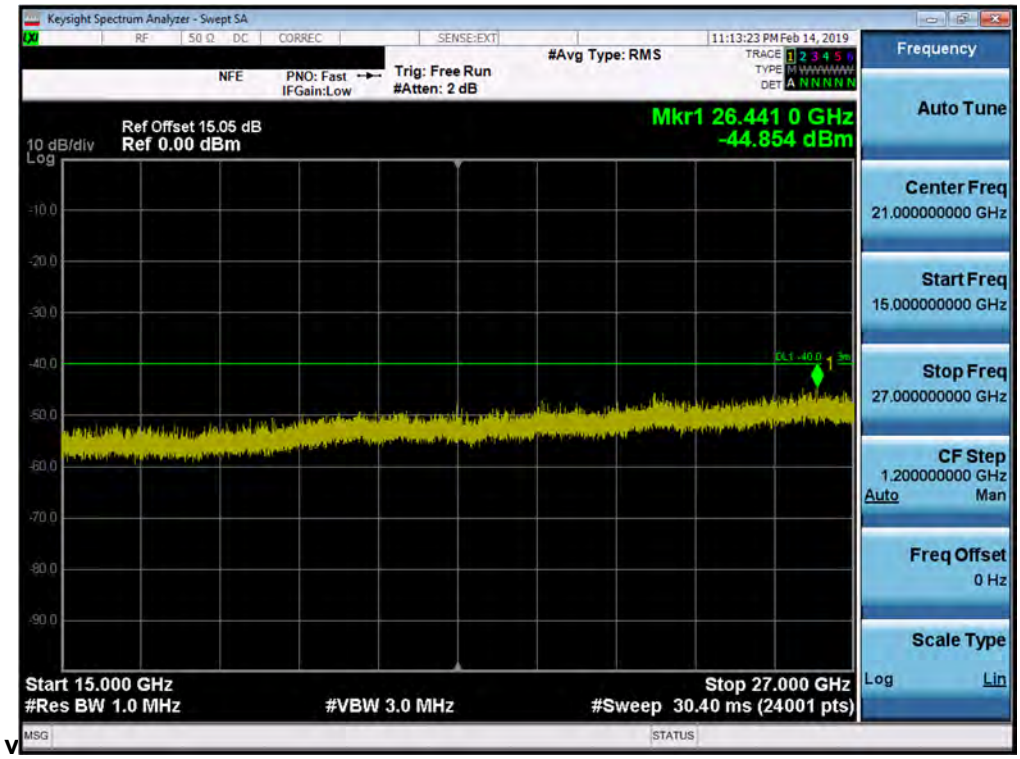


Plot 7-442. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-MIMO)



Plot 7-443. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-MIMO)

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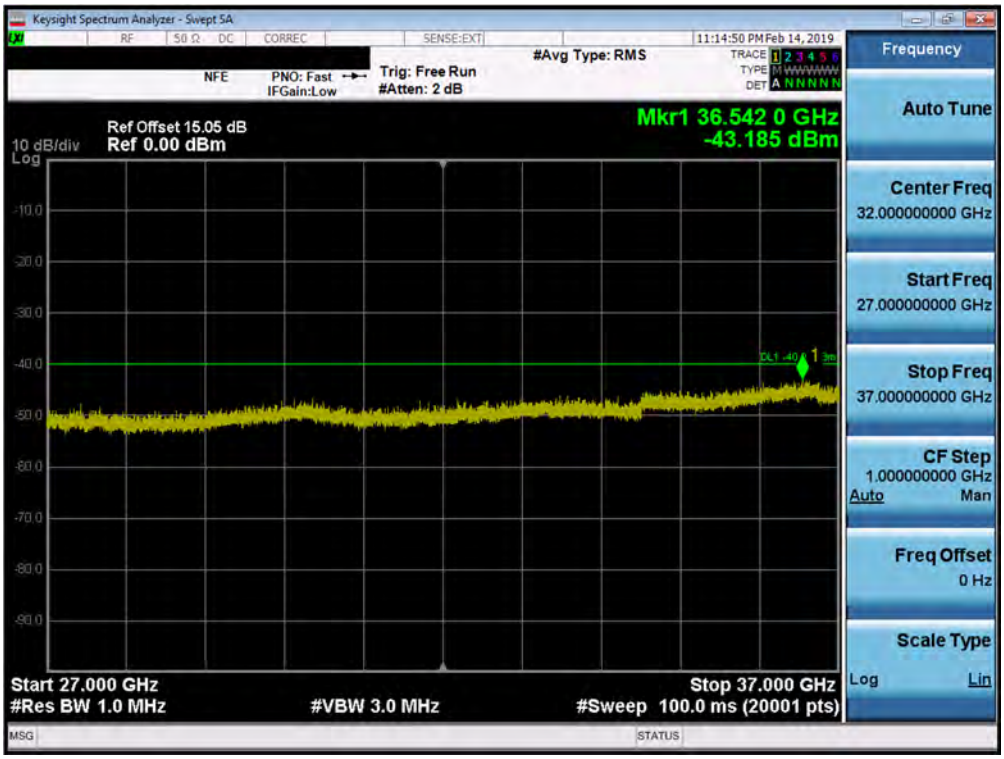

Plot 7-444. Conducted Spurious Plot (20.0MHz QPSK - Mid Channel-MIMO)

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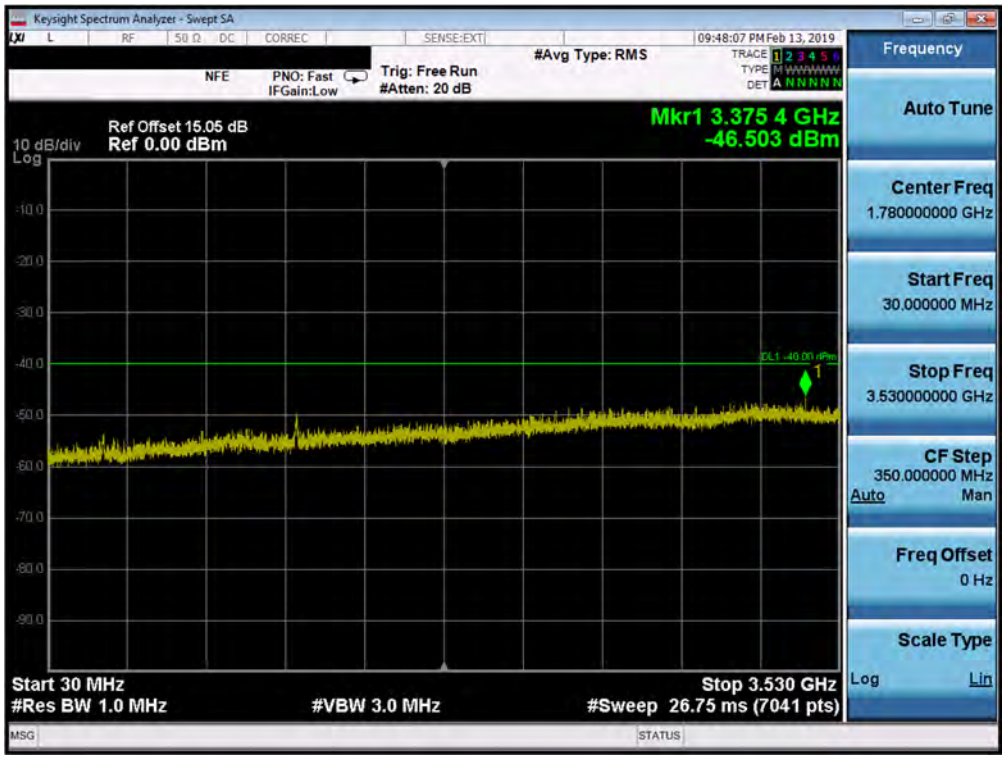
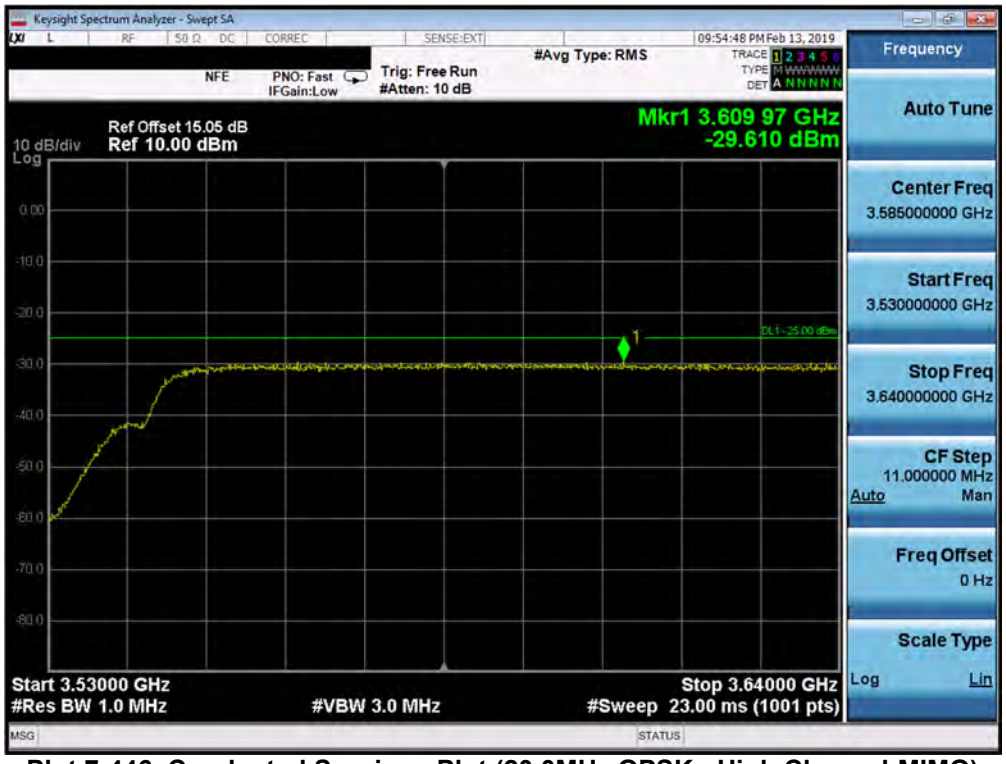


Plot 7-445. Conducted Spurious Plot (20.0MHz QPSK - High Channel-MIMO)



Plot 7-446. Conducted Spurious Plot (20.0MHz QPSK - High Channel-MIMO)

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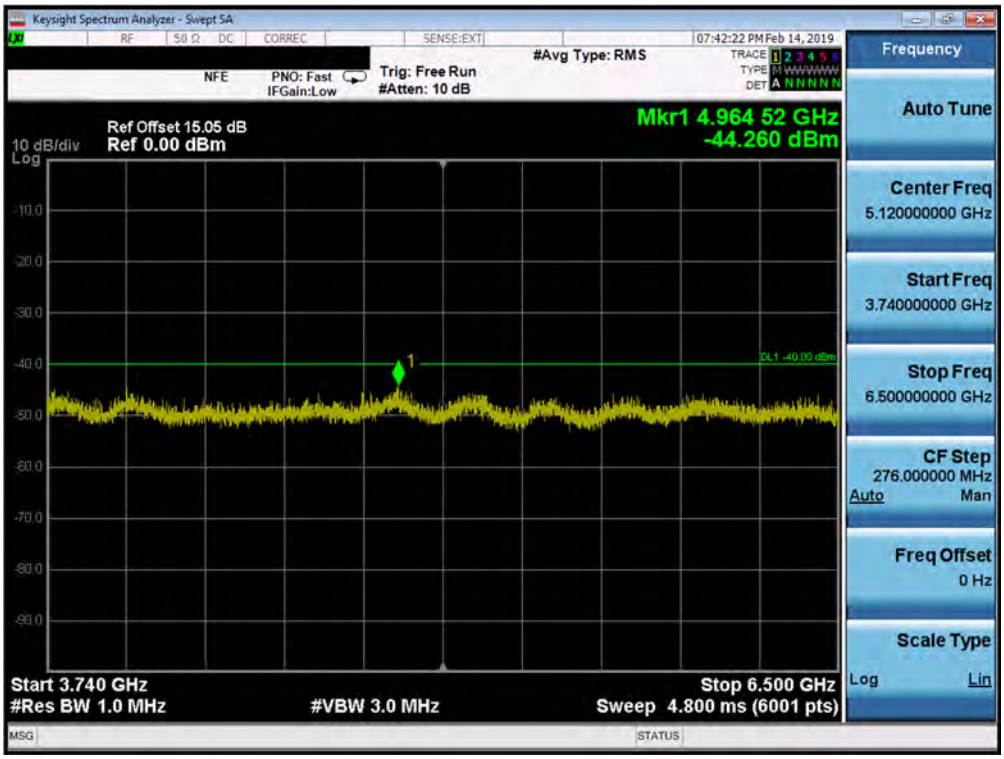
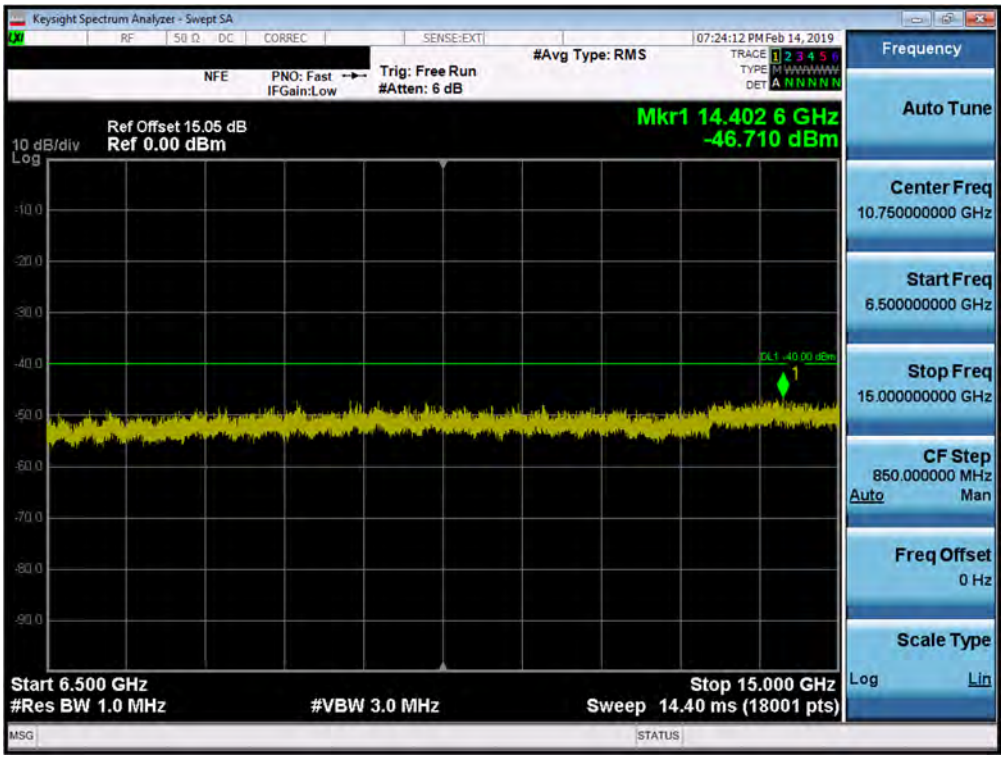


Plot 7-447. Conducted Spurious Plot (20.0MHz QPSK - High Channel-MIMO)



Plot 7-448. Conducted Spurious Plot (20.0MHz QPSK - High Channel-MIMO)

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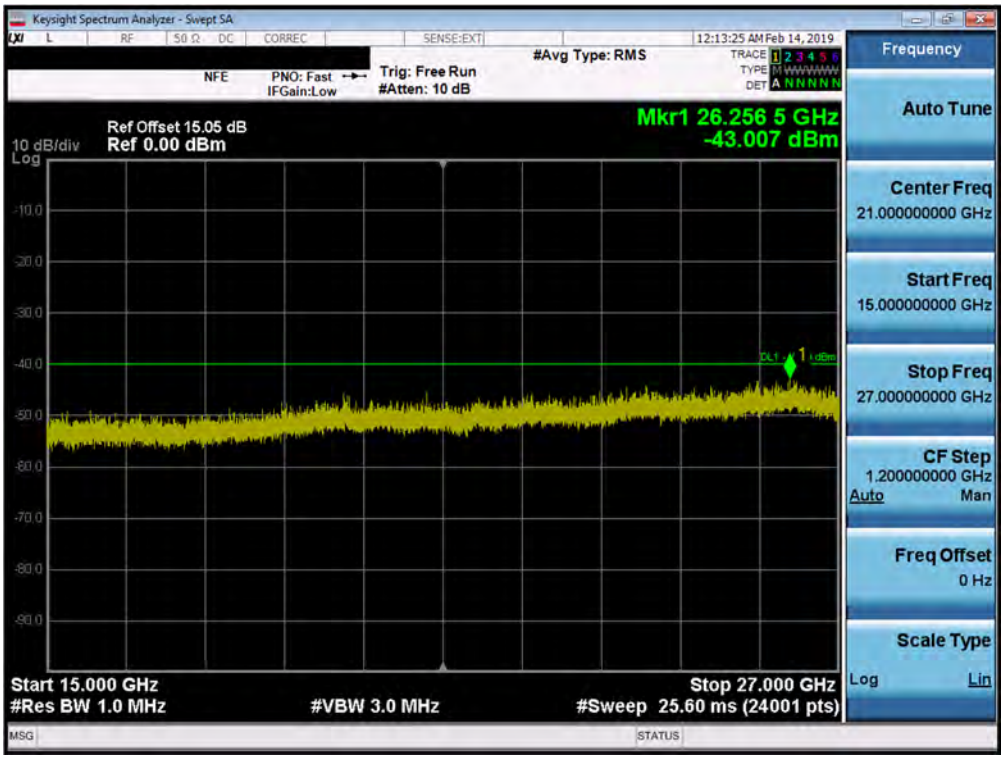
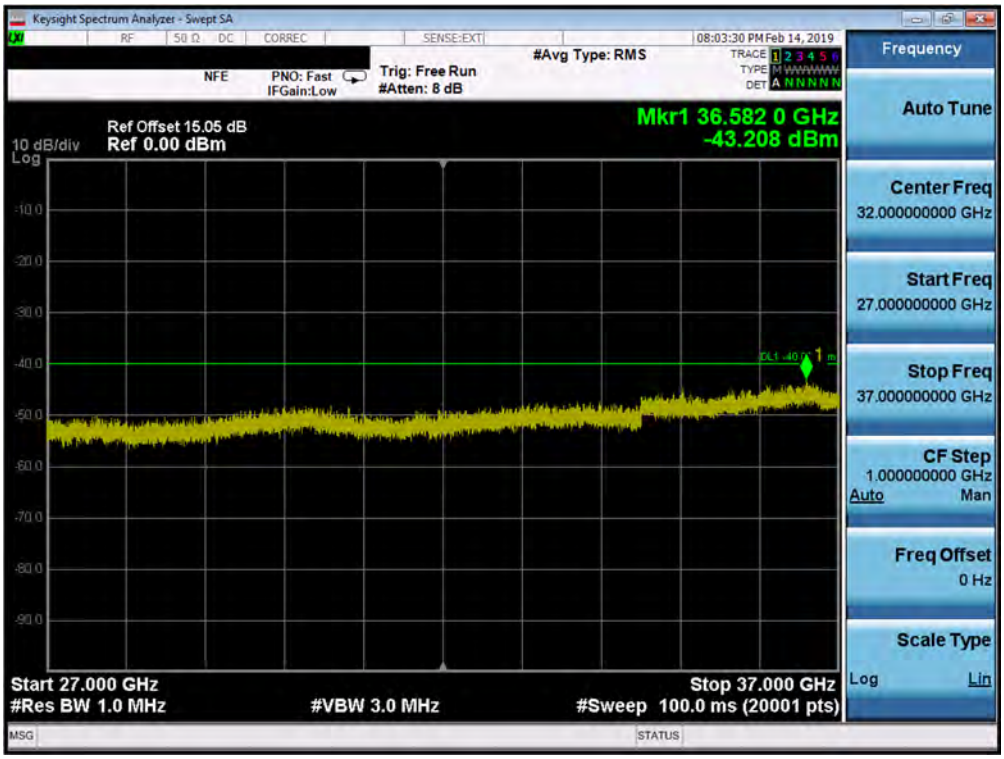


Plot 7-449. Conducted Spurious Plot (20.0MHz QPSK - High Channel-MIMO)



Plot 7-450. Conducted Spurious Plot (20.0MHz QPSK - High Channel-MIMO)

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7.7 Band Edge Emissions at Antenna Terminal

§2.1051 §96.41(e)

Test Overview

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.

The conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed −13 dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any emission shall not exceed −25 dBm/MHz.

The conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/Mhz.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 6.0

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW ≥ 1% of the emission bandwidth
4. VBW ≥ 3 x RBW
5. Detector = RMS
6. Number of sweep points ≥ 2 x Span/RBW
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Setup

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

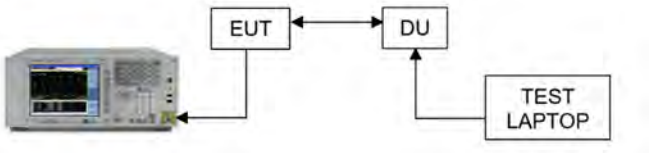

Figure 7-6. Test Instrument & Measurement Setup

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Test Notes

1. The signal was gated with an approporiate sweep time, gate delay and length to capture the on time of the transmission.

2. The conducted band edge measurements are done with a Reference Level offset at 32.1 dB which includes corrections for the cable, connectors and attenuators used in the measurement.

3. MIMO plots show band edge for 32 transmit ports combined. Refer to the following calculation:
   10*log(32) = 15.05 dB
   This offset has been added in the MIMO Plots.

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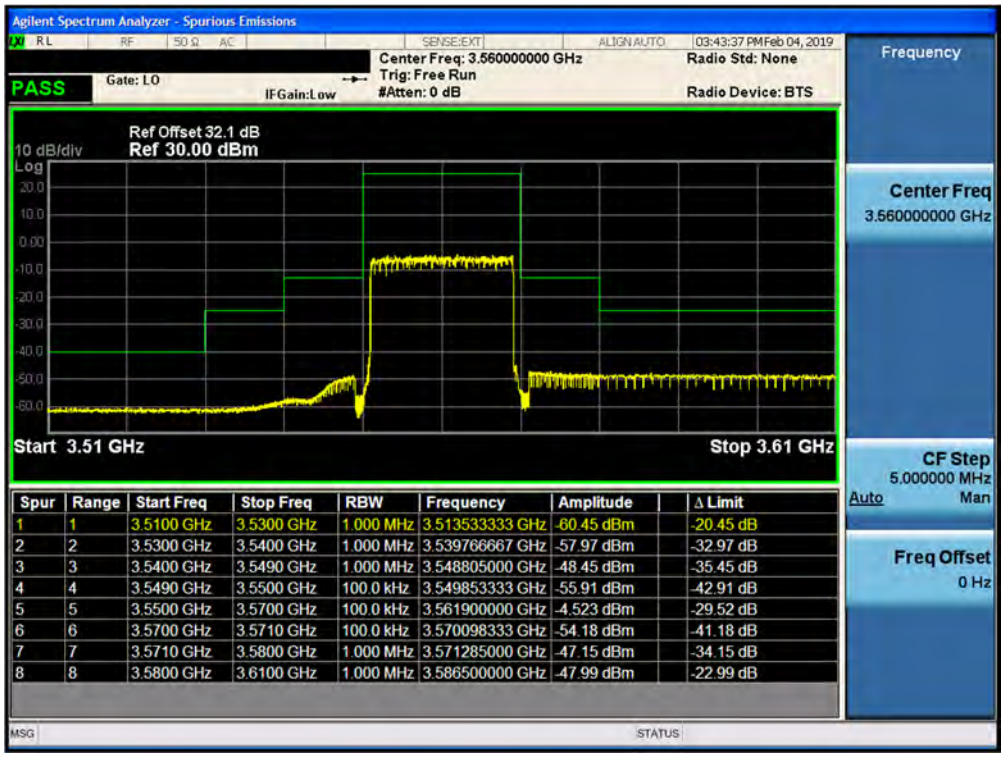
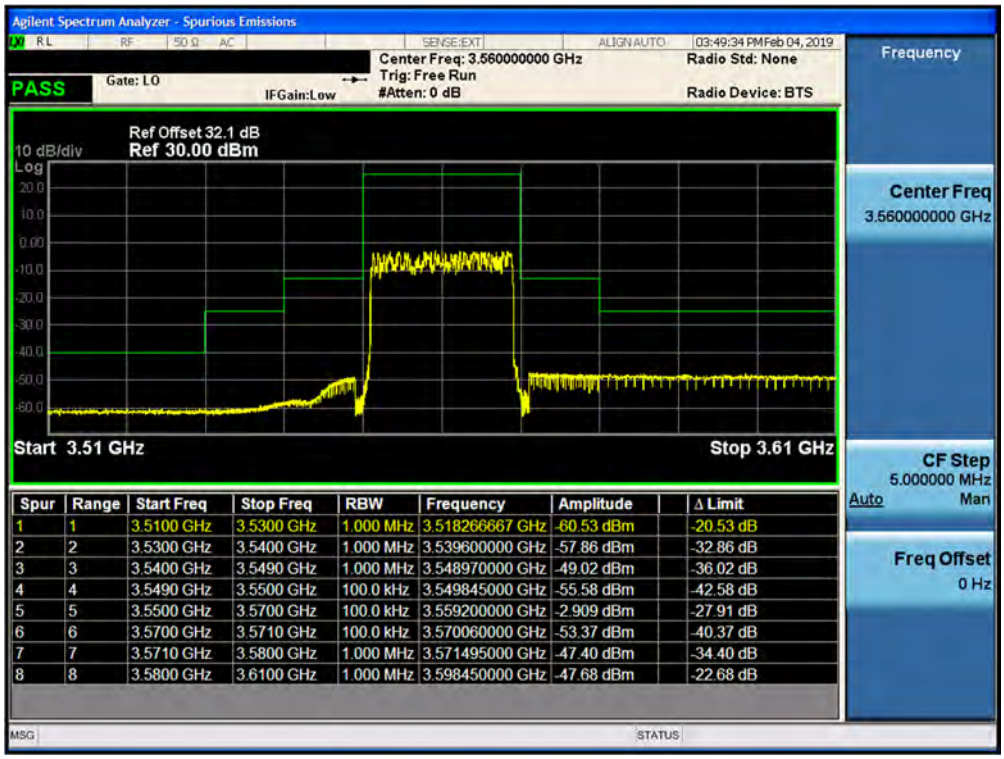
1CC Low Channel SISO



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5100 GHz	3.5300 GHz	1.000 MHz	3.513533333 GHz	-60.45 dBm	-20.45 dB
2	2	3.5300 GHz	3.5400 GHz	1.000 MHz	3.539766667 GHz	-57.97 dBm	-32.97 dB
3	3	3.5400 GHz	3.5490 GHz	1.000 MHz	3.548805000 GHz	-48.45 dBm	-35.45 dB
4	4	3.5490 GHz	3.5500 GHz	100.0 kHz	3.549853333 GHz	-55.91 dBm	-42.91 dB
5	5	3.5500 GHz	3.5700 GHz	100.0 kHz	3.561900000 GHz	-4.523 dBm	-29.52 dB
6	6	3.5700 GHz	3.5710 GHz	100.0 kHz	3.570098333 GHz	-54.18 dBm	-41.18 dB
7	7	3.5710 GHz	3.5800 GHz	1.000 MHz	3.571285000 GHz	-47.15 dBm	-34.15 dB
8	8	3.5800 GHz	3.6100 GHz	1.000 MHz	3.586500000 GHz	-47.99 dBm	-22.99 dB

Plot 7-451. Lower Channel Edge Plot (20.0MHz QPSK Low Channel– SISO)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5100 GHz	3.5300 GHz	1.000 MHz	3.518266667 GHz	-60.53 dBm	-20.53 dB
2	2	3.5300 GHz	3.5400 GHz	1.000 MHz	3.539600000 GHz	-57.86 dBm	-32.86 dB
3	3	3.5400 GHz	3.5490 GHz	1.000 MHz	3.548970000 GHz	-49.02 dBm	-36.02 dB
4	4	3.5490 GHz	3.5500 GHz	100.0 kHz	3.549845000 GHz	-55.58 dBm	-42.58 dB
5	5	3.5500 GHz	3.5700 GHz	100.0 kHz	3.559200000 GHz	-2.909 dBm	-27.91 dB
6	6	3.5700 GHz	3.5710 GHz	100.0 kHz	3.570060000 GHz	-53.37 dBm	-40.37 dB
7	7	3.5710 GHz	3.5800 GHz	1.000 MHz	3.571495000 GHz	-47.40 dBm	-34.40 dB
8	8	3.5800 GHz	3.6100 GHz	1.000 MHz	3.598450000 GHz	-47.68 dBm	-22.68 dB

Plot 7-452. Lower Channel Edge Plot (20.0MHz 16QAM Low Channel - SISO)

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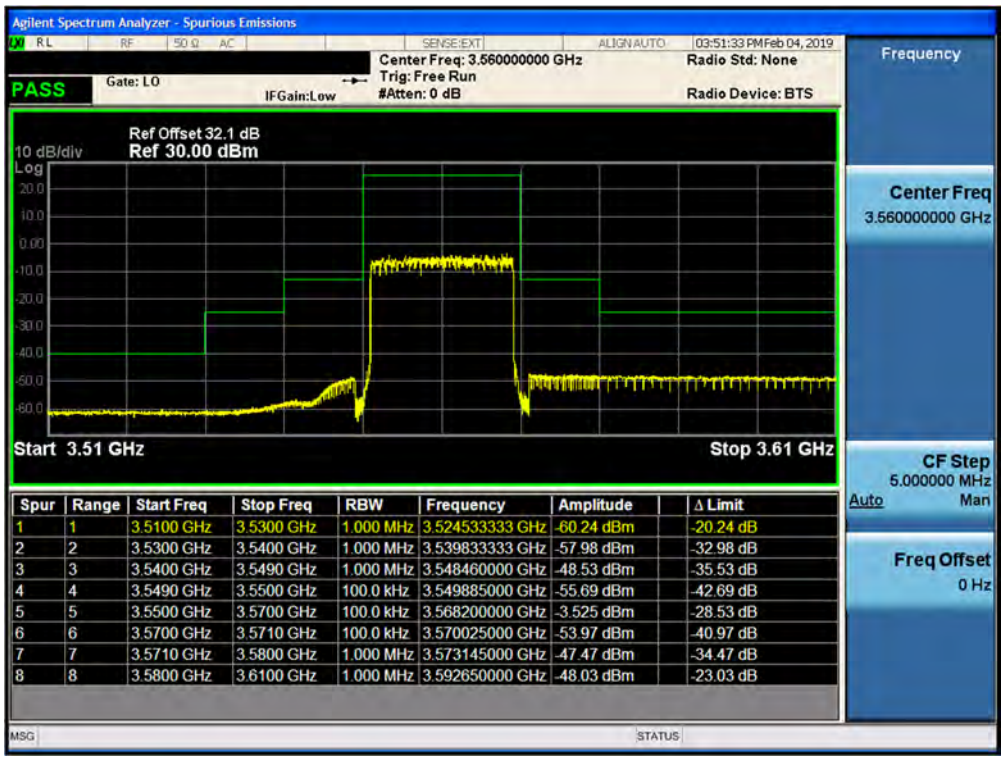
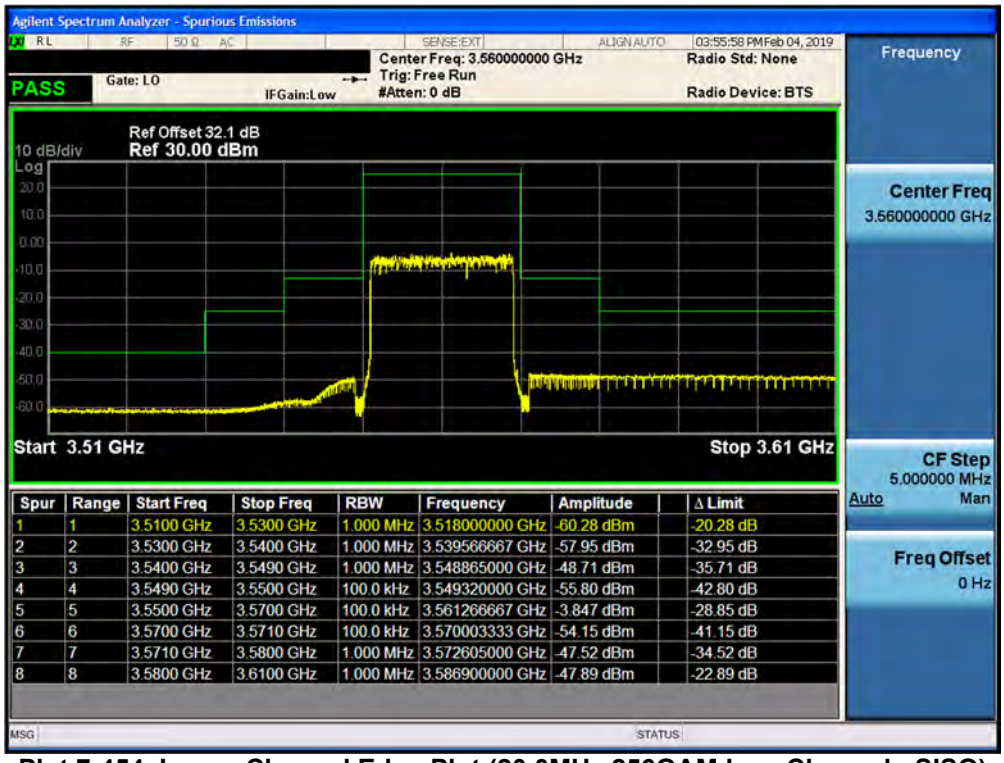


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5100 GHz	3.5300 GHz	1.000 MHz	3.524533333 GHz	-60.24 dBm	-20.24 dB
2	2	3.5300 GHz	3.5400 GHz	1.000 MHz	3.539833333 GHz	-57.98 dBm	-32.98 dB
3	3	3.5400 GHz	3.5490 GHz	1.000 MHz	3.548460000 GHz	-48.53 dBm	-35.53 dB
4	4	3.5490 GHz	3.5500 GHz	100.0 kHz	3.549885000 GHz	-55.69 dBm	-42.69 dB
5	5	3.5500 GHz	3.5700 GHz	100.0 kHz	3.568200000 GHz	-3.525 dBm	-28.53 dB
6	6	3.5700 GHz	3.5710 GHz	100.0 kHz	3.570025000 GHz	-53.97 dBm	-40.97 dB
7	7	3.5710 GHz	3.5800 GHz	1.000 MHz	3.573145000 GHz	-47.47 dBm	-34.47 dB
8	8	3.5800 GHz	3.6100 GHz	1.000 MHz	3.592650000 GHz	-48.03 dBm	-23.03 dB

Plot 7-453. Lower Channel Edge Plot (20.0MHz 64QAM Low Channel - SISO)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	3.5100 GHz	3.5300 GHz	1.000 MHz	3.518000000 GHz	-60.28 dBm	-20.28 dB
2	2	3.5300 GHz	3.5400 GHz	1.000 MHz	3.539566667 GHz	-57.95 dBm	-32.95 dB
3	3	3.5400 GHz	3.5490 GHz	1.000 MHz	3.548865000 GHz	-48.71 dBm	-35.71 dB
4	4	3.5490 GHz	3.5500 GHz	100.0 kHz	3.549320000 GHz	-55.80 dBm	-42.80 dB
5	5	3.5500 GHz	3.5700 GHz	100.0 kHz	3.561266667 GHz	-3.847 dBm	-28.85 dB
6	6	3.5700 GHz	3.5710 GHz	100.0 kHz	3.570003333 GHz	-54.15 dBm	-41.15 dB
7	7	3.5710 GHz	3.5800 GHz	1.000 MHz	3.572605000 GHz	-47.52 dBm	-34.52 dB
8	8	3.5800 GHz	3.6100 GHz	1.000 MHz	3.586900000 GHz	-47.89 dBm	-22.89 dB

Plot 7-454. Lower Channel Edge Plot (20.0MHz 256QAM Low Channel - SISO)

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