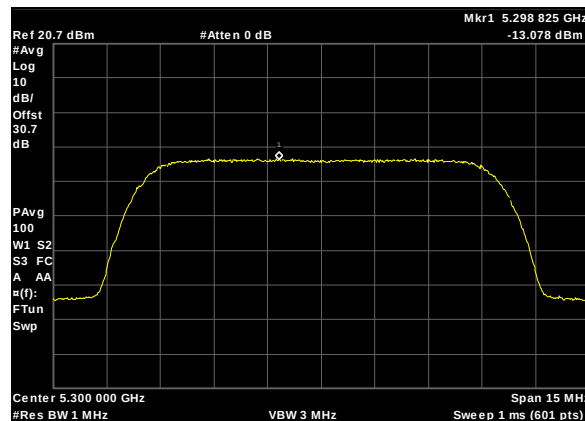
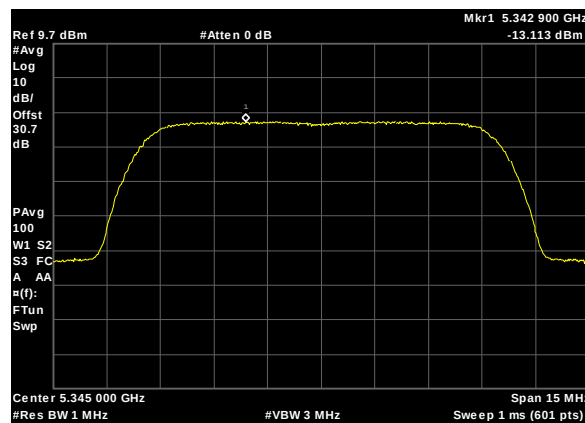
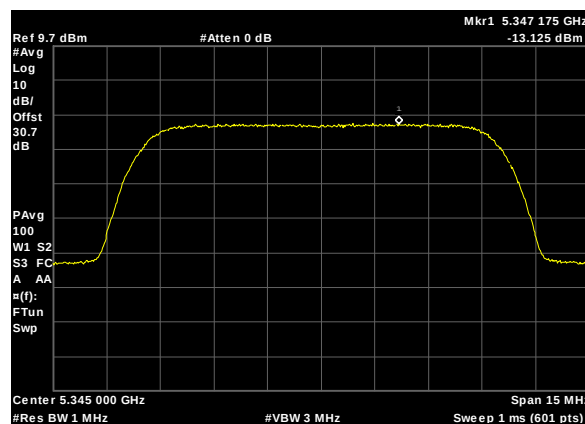




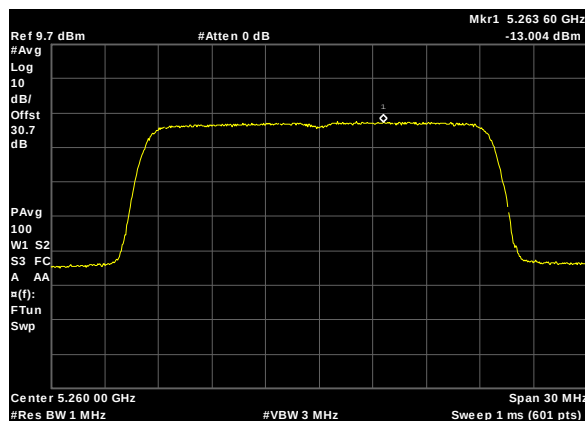
**Plot 274. Power Spectral Density, UNII 2A, BW 10M, CF 5300M, c1, 27dBi**



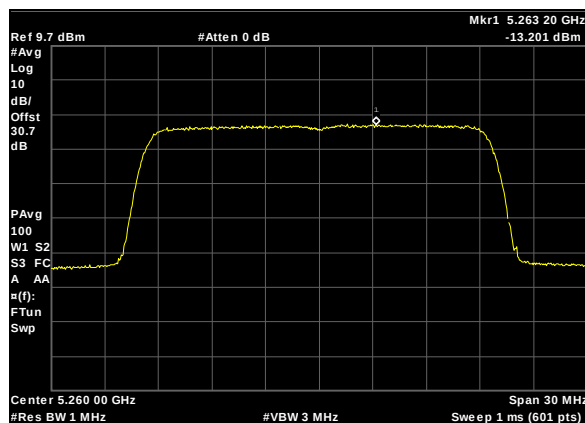
**Plot 275. Power Spectral Density, UNII 2A, BW 10M, CF 5345M, c0, 27dBi**



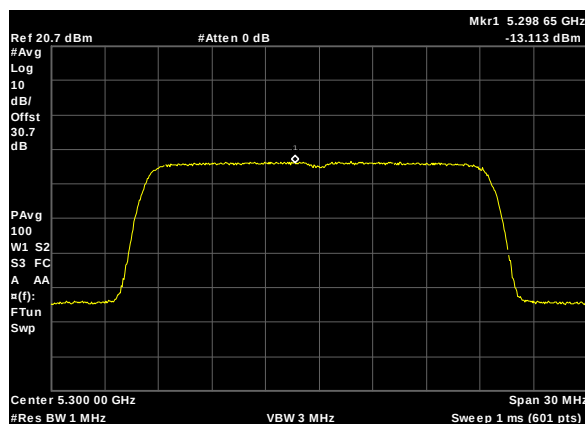
**Plot 276. Power Spectral Density, UNII 2A, BW 10M, CF 5345M, c1, 27dBi**



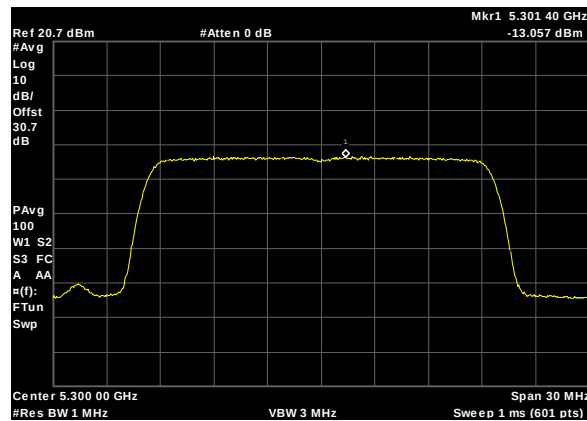
**Plot 277. Power Spectral Density, UNII 2A, BW 20M, CF 5260M, c0, 27dBi**



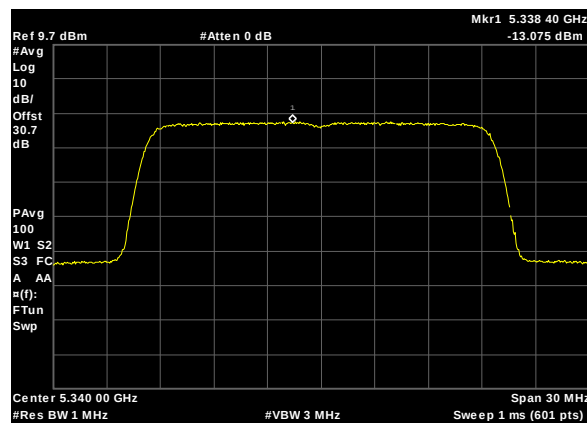
**Plot 278. Power Spectral Density, UNII 2A, BW 20M, CF 5260M, c1, 27dBi**



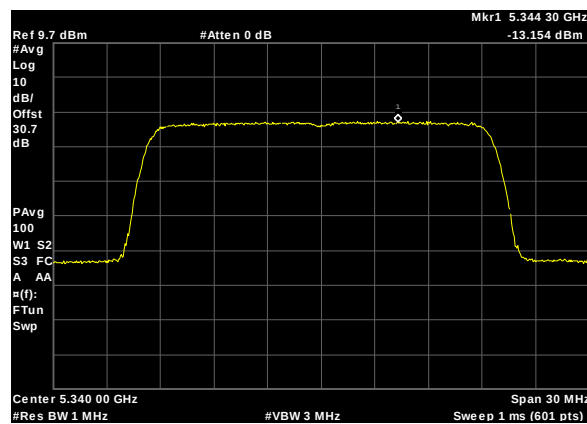
**Plot 279. Power Spectral Density, UNII 2A, BW 20M, CF 5300M, c0, 27dBi**



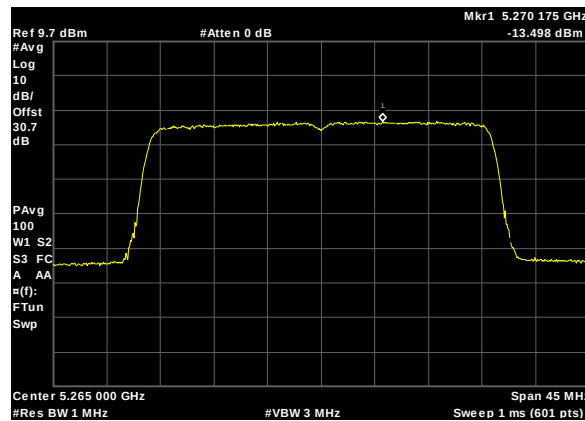
Plot 280. Power Spectral Density, UNII 2A, BW 20M, CF 5300M, c1, 27dBi



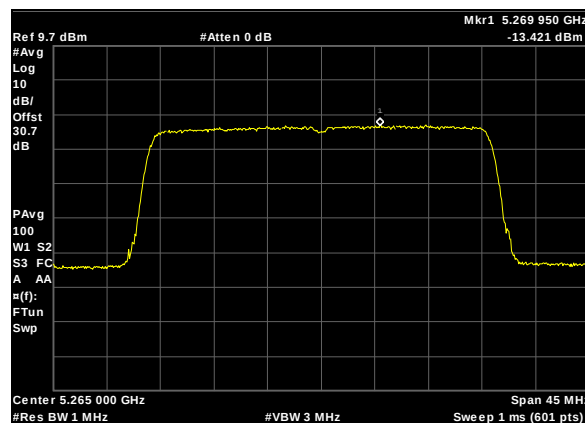
Plot 281. Power Spectral Density, UNII 2A, BW 20M, CF 5340M, c0, 27dBi



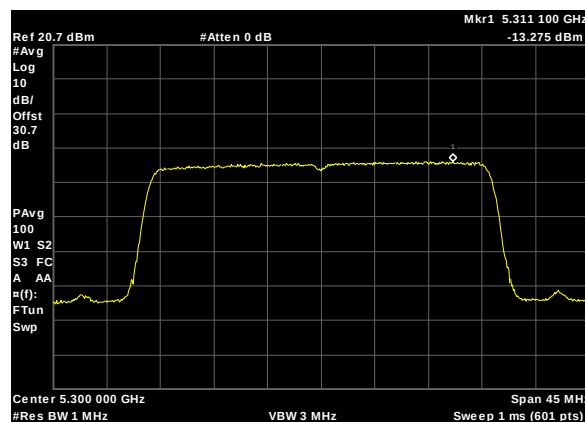
Plot 282. Power Spectral Density, UNII 2A, BW 20M, CF 5340M, c1, 27dBi



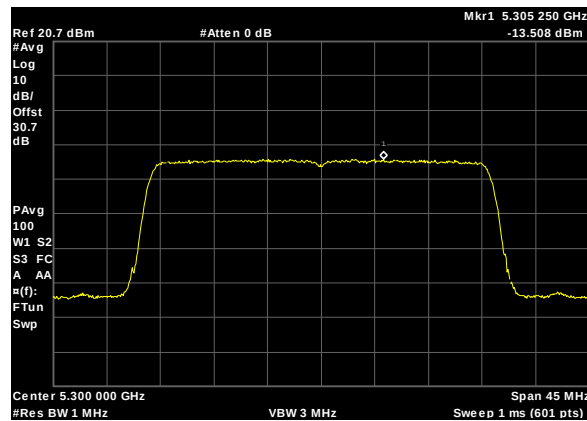
Plot 283. Power Spectral Density, UNII 2A, BW 30M, CF 5265M, c0, 27dBi



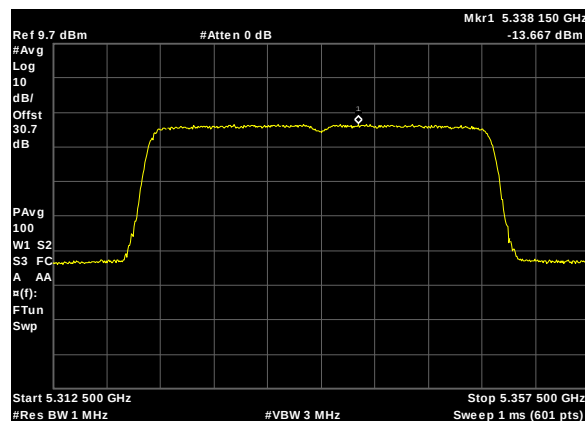
Plot 284. Power Spectral Density, UNII 2A, BW 30M, CF 5265M, c1, 27dBi



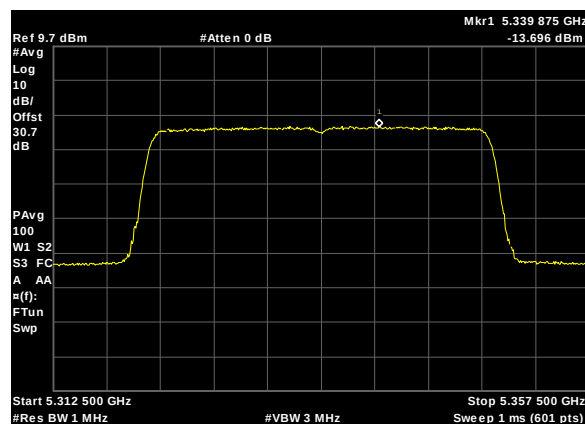
Plot 285. Power Spectral Density, UNII 2A, BW 30M, CF 5300M, c0, 27dBi



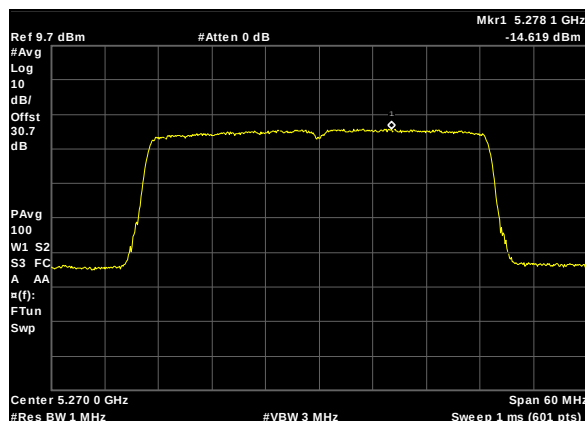
Plot 286. Power Spectral Density, UNII 2A, BW 30M, CF 5300M, c1, 27dBi



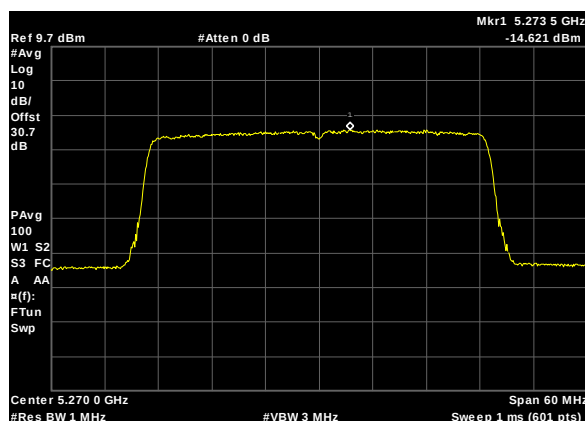
Plot 287. Power Spectral Density, UNII 2A, BW 30M, CF 5335M, c0, 27dBi



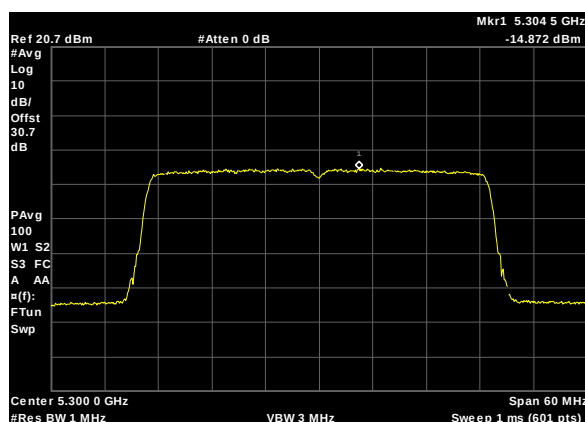
Plot 288. Power Spectral Density, UNII 2A, BW 30M, CF 5335M, c1, 27dBi



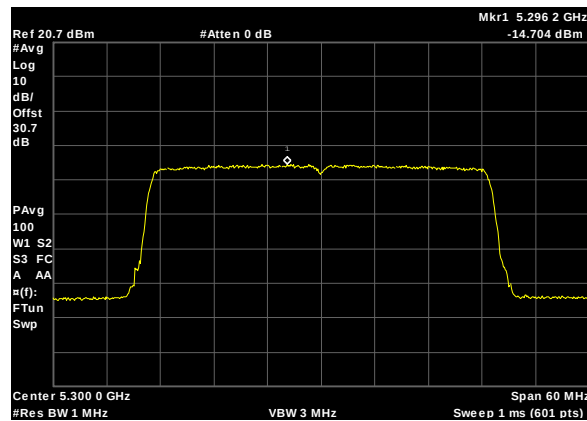
Plot 289. Power Spectral Density, UNII 2A, BW 40M, CF 5270M, c0, 27dBi



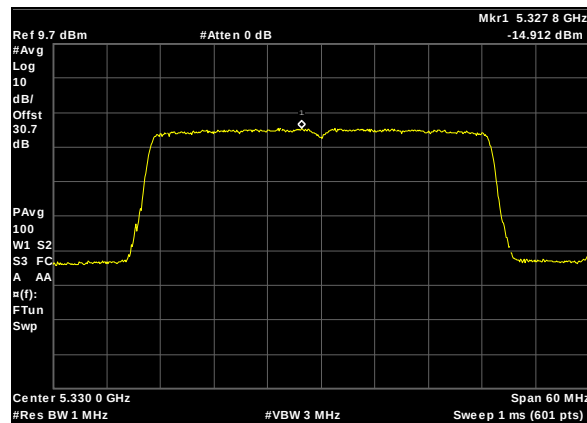
Plot 290. Power Spectral Density, UNII 2A, BW 40M, CF 5270M, c1, 27dBi



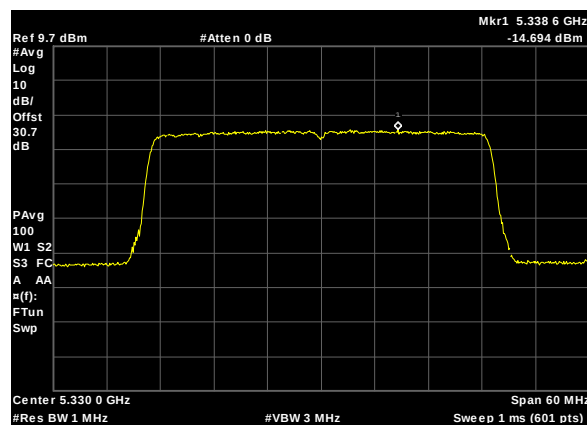
Plot 291. Power Spectral Density, UNII 2A, BW 40M, CF 5300M, c0, 27dBi



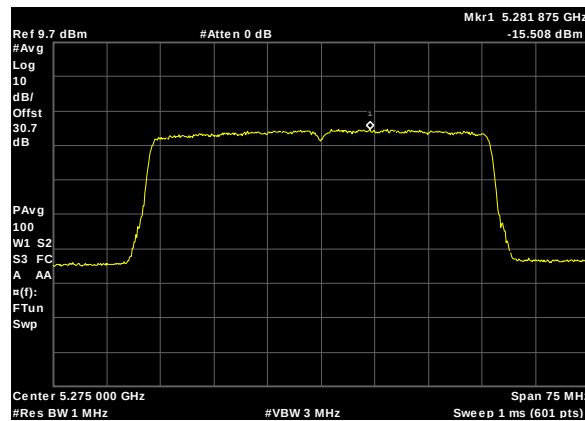
Plot 292. Power Spectral Density, UNII 2A, BW 40M, CF 5300M, c1, 27dBi



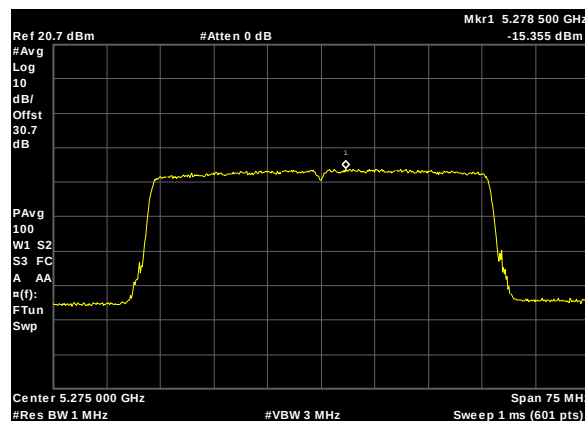
Plot 293. Power Spectral Density, UNII 2A, BW 40M, CF 5330M, c0, 27dBi



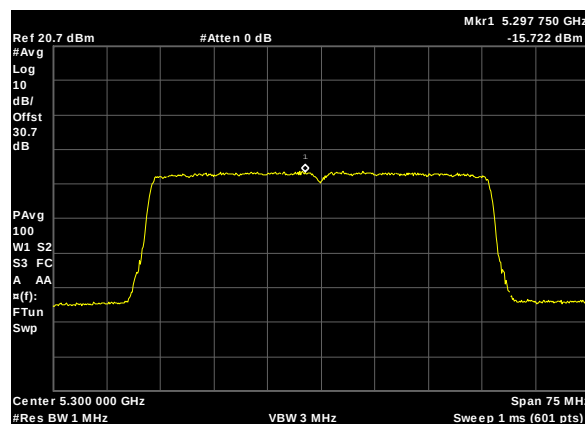
Plot 294. Power Spectral Density, UNII 2A, BW 40M, CF 5330M, c1, 27dBi



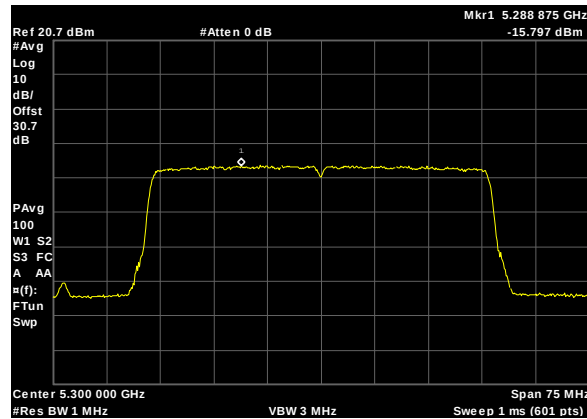
**Plot 295. Power Spectral Density, UNII 2A, BW 50M, CF 5275M, c0, 27dBi**



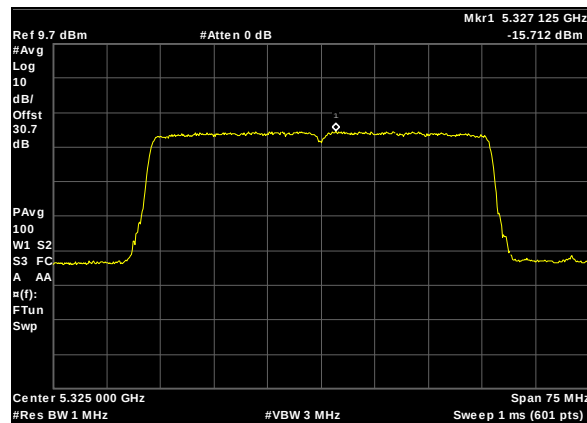
**Plot 296. Power Spectral Density, UNII 2A, BW 50M, CF 5275M, c1, 27dBi**



**Plot 297. Power Spectral Density, UNII 2A, BW 50M, CF 5300M, c0, 27dBi**



**Plot 298. Power Spectral Density, UNII 2A, BW 50M, CF 5300M, c1, 27dBi**



**Plot 299. Power Spectral Density, UNII 2A, BW 50M, CF 5325M, c0, 27dBi**

## Power Spectral Density, UNII 2C

| Channel BW (MHz) | Frequency (MHz) | Chain 0 (dBm) | Chain 1 (dBm) | Sum (dBm) | Limit (dBm) | Directional Gain (dBi) | Final Limit (dBm) | Margin (dB) |
|------------------|-----------------|---------------|---------------|-----------|-------------|------------------------|-------------------|-------------|
| 10               | 5475            | 0.909         | 0.986         | 3.958     | 11          | 13                     | 4                 | -0.042      |
|                  | 5600            | 0.904         | 0.984         | 3.955     | 11          | 13                     | 4                 | -0.045      |
|                  | 5720            | 0.977         | 0.963         | 3.981     | 11          | 13                     | 4                 | -0.019      |
| 20               | 5480            | 0.725         | 0.763         | 3.755     | 11          | 13                     | 4                 | -0.245      |
|                  | 5600            | 0.498         | 1.38          | 3.972     | 11          | 13                     | 4                 | -0.028      |
|                  | 5715            | 0.887         | 0.983         | 3.946     | 11          | 13                     | 4                 | -0.054      |
| 30               | 5485            | 0.261         | 0.005         | 3.146     | 11          | 13                     | 4                 | -0.854      |
|                  | 5600            | 0.557         | 0.158         | 3.373     | 11          | 13                     | 4                 | -0.627      |
|                  | 5710            | 0.117         | 0.378         | 3.26      | 11          | 13                     | 4                 | -0.74       |
| 40               | 5490            | -0.994        | -1.612        | 1.719     | 11          | 13                     | 4                 | -2.281      |
|                  | 5600            | -0.685        | -1.008        | 2.167     | 11          | 13                     | 4                 | -1.833      |
|                  | 5705            | -0.828        | -0.812        | 2.191     | 11          | 13                     | 4                 | -1.809      |
| 50               | 5495            | -0.874        | -2.714        | 1.314     | 11          | 13                     | 4                 | -2.686      |
|                  | 5600            | -1.575        | -1.751        | 1.349     | 11          | 13                     | 4                 | -2.651      |
|                  | 5700            | -1.974        | -1.77         | 1.14      | 11          | 13                     | 4                 | -2.86       |

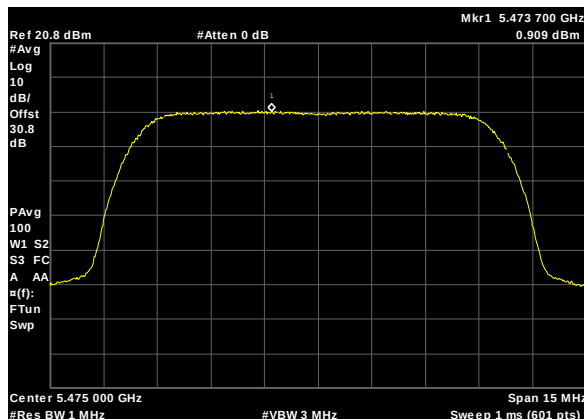
Table 19. Power Spectral Density, UNII 2C, 13 dBi, 2x2, Test Results

| Channel BW (MHz) | Frequency (MHz) | Chain 0 (dBm) | Chain 1 (dBm) | Sum (dBm) | Limit (dBm) | Directional Gain (dBi) | Final Limit (dBm) | Margin (dB) |
|------------------|-----------------|---------------|---------------|-----------|-------------|------------------------|-------------------|-------------|
| 10               | 5475            | -5.089        | -5.019        | -2.043    | 11          | 19                     | -2                | -0.043      |
|                  | 5600            | -5.079        | -5.087        | -2.072    | 11          | 19                     | -2                | -0.072      |
|                  | 5720            | -5.017        | -5.041        | -2.018    | 11          | 19                     | -2                | -0.018      |
| 20               | 5480            | -5.126        | -5.033        | -2.068    | 11          | 19                     | -2                | -0.068      |
|                  | 5600            | -5.115        | -5.025        | -2.059    | 11          | 19                     | -2                | -0.059      |
|                  | 5715            | -5.031        | -5.032        | -2.021    | 11          | 19                     | -2                | -0.021      |
| 30               | 5485            | -5.438        | -5.51         | -2.463    | 11          | 19                     | -2                | -0.463      |
|                  | 5600            | -5.968        | -5.816        | -2.881    | 11          | 19                     | -2                | -0.881      |
|                  | 5710            | -5.634        | -5.829        | -2.72     | 11          | 19                     | -2                | -0.72       |
| 40               | 5490            | -6.675        | -6.918        | -3.784    | 11          | 19                     | -2                | -1.784      |
|                  | 5600            | -6.728        | -6.819        | -3.762    | 11          | 19                     | -2                | -1.762      |
|                  | 5705            | -6.832        | -6.807        | -3.809    | 11          | 19                     | -2                | -1.809      |
| 50               | 5495            | -7.582        | -7.693        | -4.626    | 11          | 19                     | -2                | -2.626      |
|                  | 5600            | -7.797        | -7.534        | -4.653    | 11          | 19                     | -2                | -2.653      |
|                  | 5700            | -7.967        | -7.643        | -4.791    | 11          | 19                     | -2                | -2.791      |

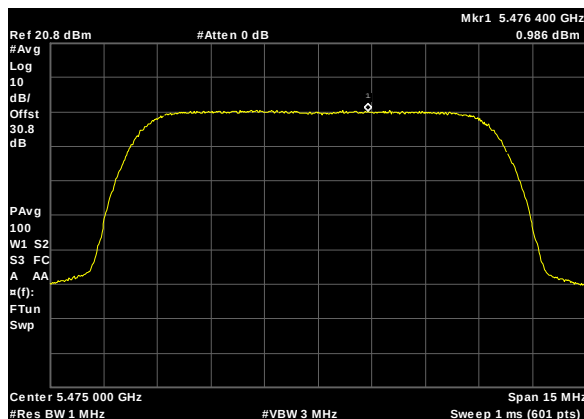
Table 20. Power Spectral Density, UNII 2C, 19 dBi, 2x2, Test Results

| Channel BW (MHz) | Frequency (MHz) | Chain 0 (dBm) | Chain 1 (dBm) | Sum (dBm) | Limit (dBm) | Directional Gain (dBi) | Final Limit (dBm) | Margin (dB) |
|------------------|-----------------|---------------|---------------|-----------|-------------|------------------------|-------------------|-------------|
| 10               | 5475            | -13.064       | -13.123       | -10.083   | 11          | 27                     | -10               | -0.083      |
|                  | 5600            | -13.019       | -13.084       | -10.041   | 11          | 27                     | -10               | -0.041      |
|                  | 5720            | -13.069       | -13.025       | -10.036   | 11          | 27                     | -10               | -0.036      |
| 20               | 5480            | -13.031       | -13.101       | -10.055   | 11          | 27                     | -10               | -0.055      |
|                  | 5600            | -13.015       | -13.049       | -10.021   | 11          | 27                     | -10               | -0.021      |
|                  | 5715            | -13.049       | -13.038       | -10.033   | 11          | 27                     | -10               | -0.033      |
| 30               | 5485            | -13.66        | -13.581       | -10.61    | 11          | 27                     | -10               | -0.61       |
|                  | 5600            | -13.631       | -13.498       | -10.553   | 11          | 27                     | -10               | -0.553      |
|                  | 5710            | -13.463       | -13.685       | -10.562   | 11          | 27                     | -10               | -0.562      |
| 40               | 5490            | -14.488       | -14.804       | -11.632   | 11          | 27                     | -10               | -1.632      |
|                  | 5600            | -14.776       | -14.76        | -11.757   | 11          | 27                     | -10               | -1.757      |
|                  | 5705            | -14.81        | -14.712       | -11.75    | 11          | 27                     | -10               | -1.75       |
| 50               | 5495            | -15.943       | -16.028       | -12.974   | 11          | 27                     | -10               | -2.974      |
|                  | 5600            | -15.764       | -15.787       | -12.765   | 11          | 27                     | -10               | -2.765      |
|                  | 5700            | -15.952       | -15.578       | -12.75    | 11          | 27                     | -10               | -2.75       |

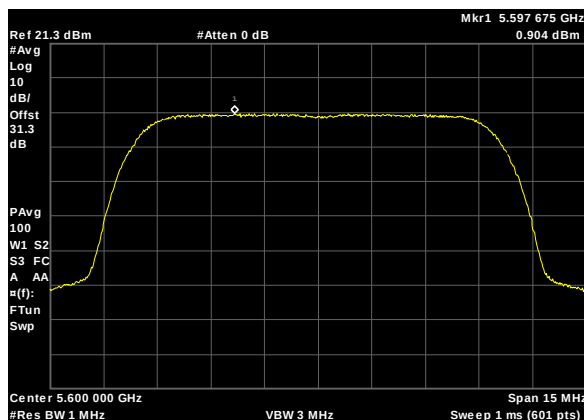
**Table 21. Power Spectral Density, UNII 2C, 27 dBi, 2x2, Test Results**



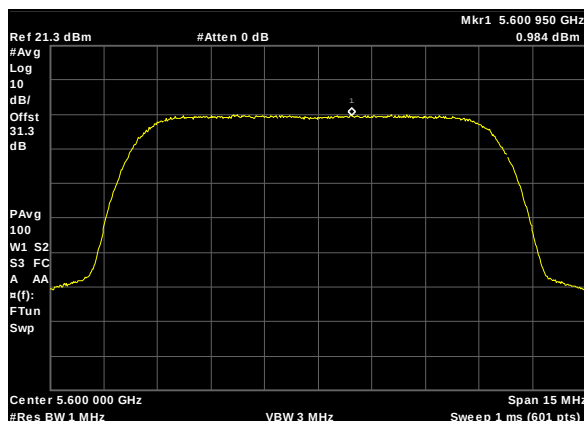
Plot 300. Power Spectral Density, UNII 2C, BW 10M, CF 5475M, c0, 13dBi



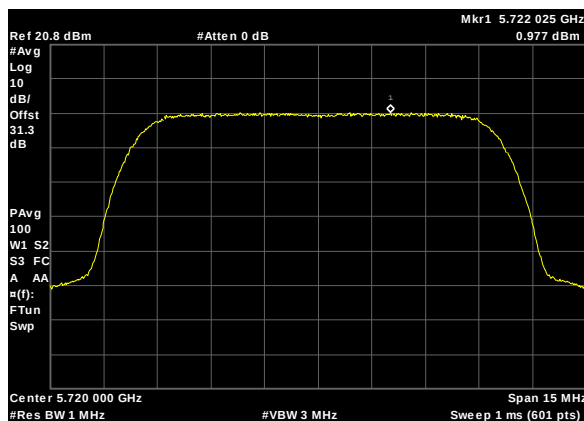
Plot 301. Power Spectral Density, UNII 2C, BW 10M, CF 5475M, c1, 13dBi



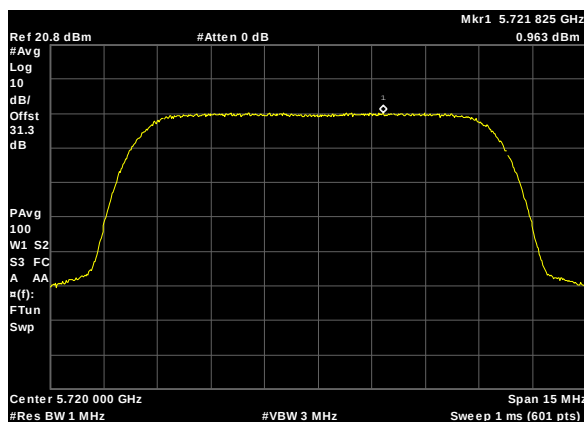
Plot 302. Power Spectral Density, UNII 2C, BW 10M, CF 5600M, c0, 13dBi



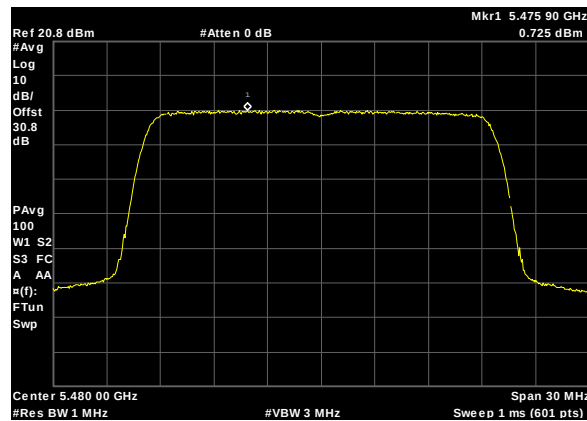
Plot 303. Power Spectral Density, UNII 2C, BW 10M, CF 5600M, c1, 13dBi



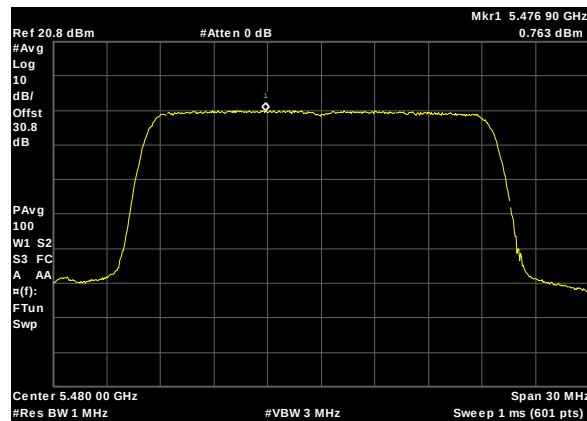
Plot 304. Power Spectral Density, UNII 2C, BW 10M, CF 5720M, c0, 13dBi



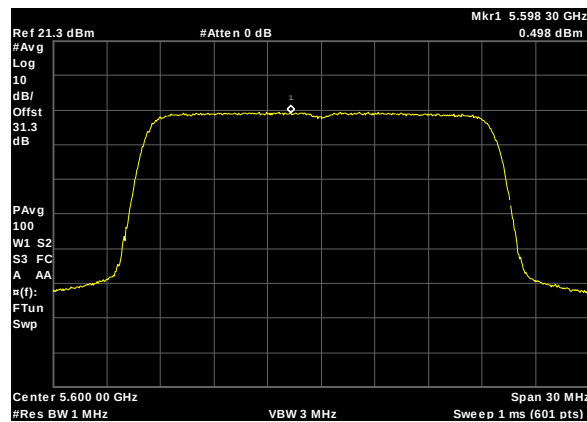
Plot 305. Power Spectral Density, UNII 2C, BW 10M, CF 5720M, c1, 13dBi



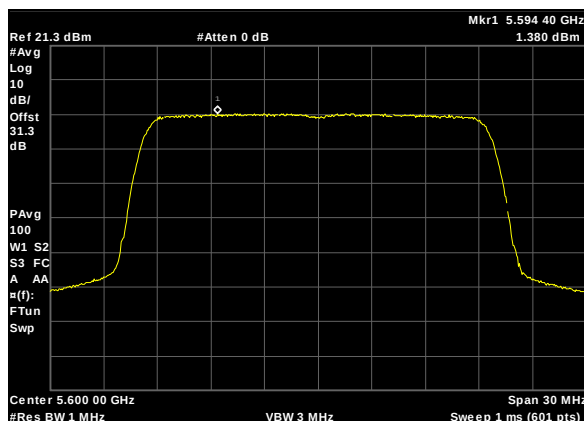
Plot 306. Power Spectral Density, UNII 2C, BW 20M, CF 5480M, c0, 13dBi



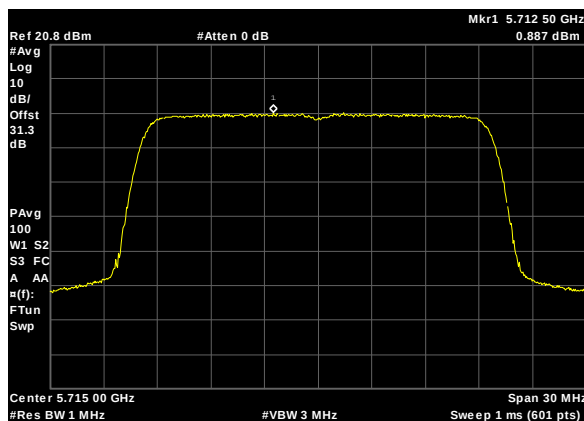
Plot 307. Power Spectral Density, UNII 2C, BW 20M, CF 5480M, c1, 13dBi



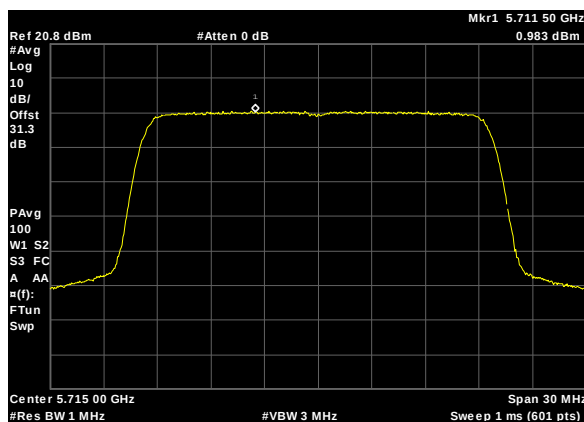
Plot 308. Power Spectral Density, UNII 2C, BW 20M, CF 5600M, c0, 13dBi



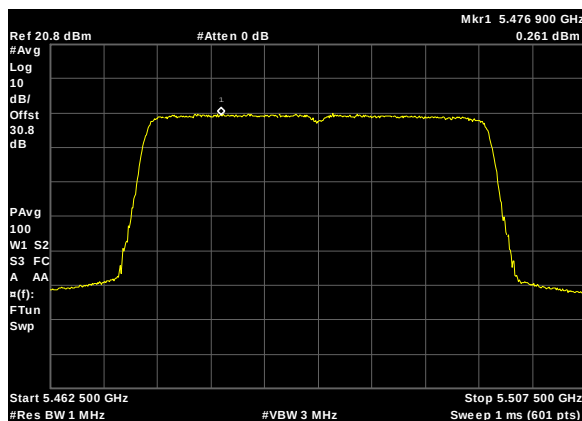
Plot 309. Power Spectral Density, UNII 2C, BW 20M, CF 5600M, c1, 13dBi



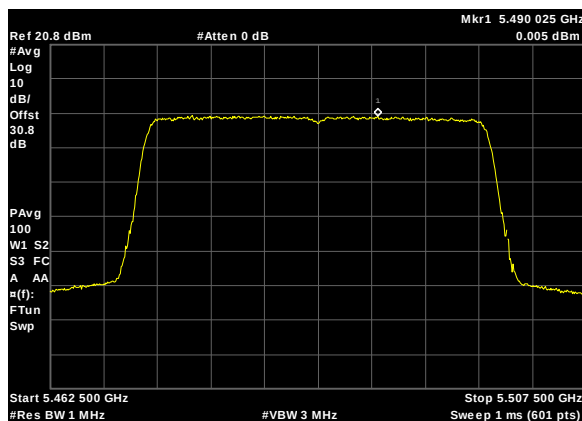
Plot 310. Power Spectral Density, UNII 2C, BW 20M, CF 5715M, c0, 13dBi



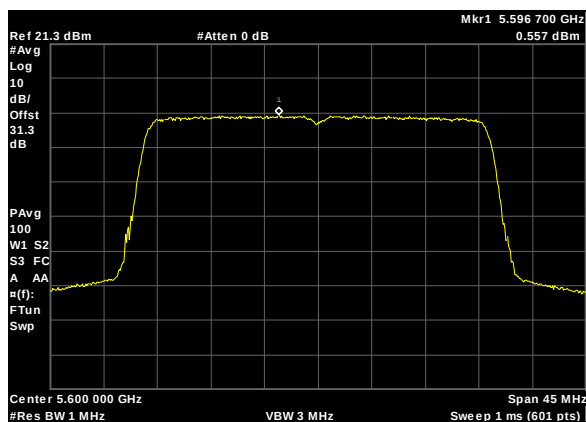
Plot 311. Power Spectral Density, UNII 2C, BW 20M, CF 5715M, c1, 13dBi



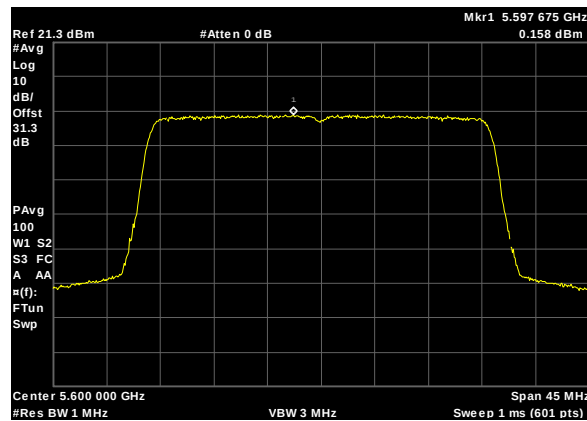
Plot 312. Power Spectral Density, UNII 2C, BW 30M, CF 5485M, c0, 13dBi



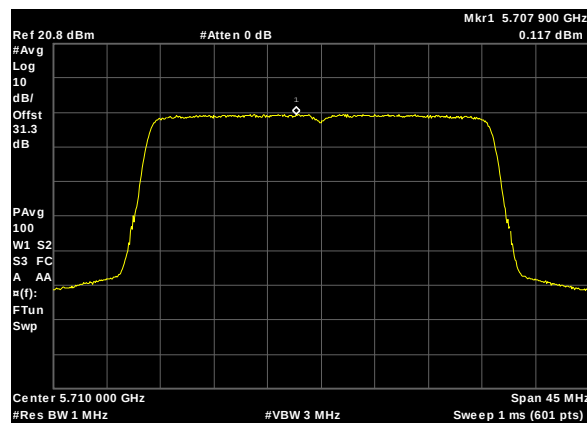
Plot 313. Power Spectral Density, UNII 2C, BW 30M, CF 5485M, c1, 13dBi



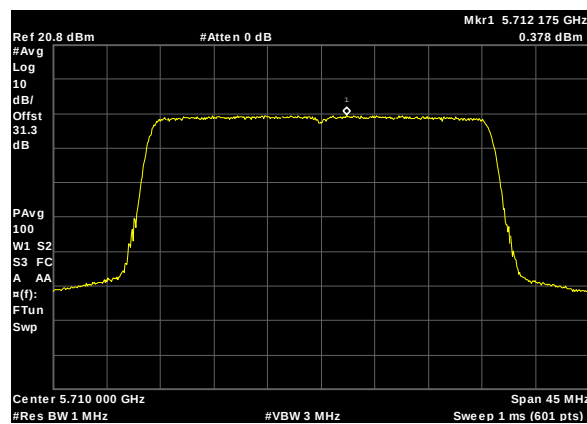
Plot 314. Power Spectral Density, UNII 2C, BW 30M, CF 5600M, c0, 13dBi



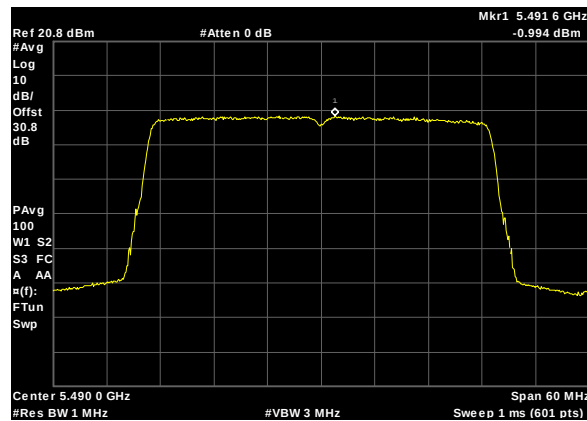
Plot 315. Power Spectral Density, UNII 2C, BW 30M, CF 5600M, c1, 13dBi



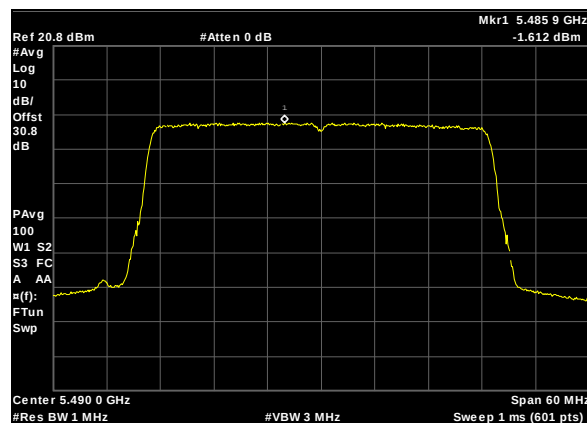
Plot 316. Power Spectral Density, UNII 2C, BW 30M, CF 5710M, c0, 13dBi



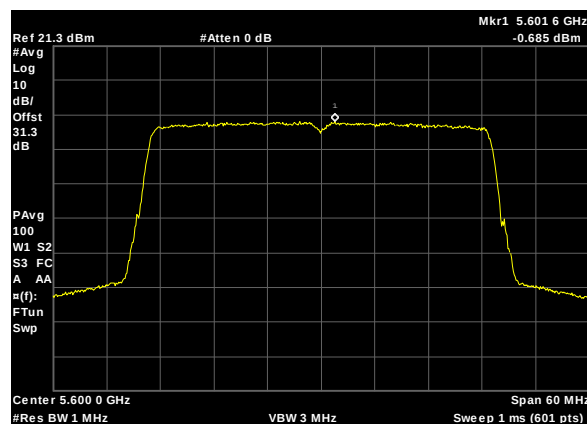
Plot 317. Power Spectral Density, UNII 2C, BW 30M, CF 5710M, c1, 13dBi



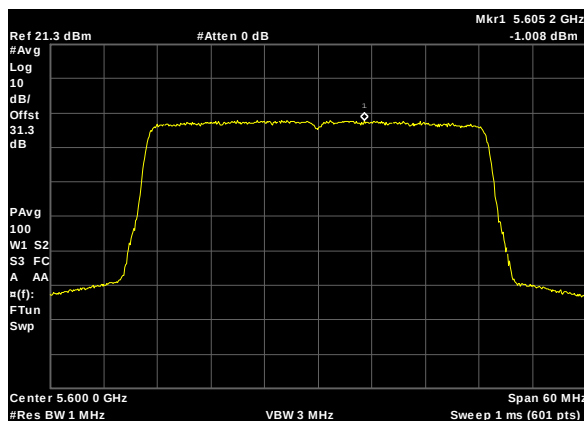
Plot 318. Power Spectral Density, UNII 2C, BW 40M, CF 5490M, c0, 13dBi



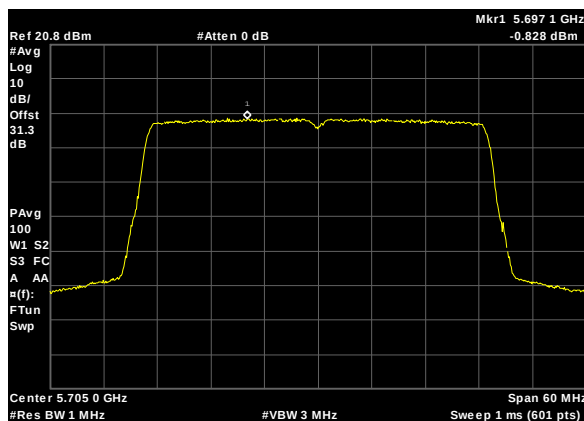
Plot 319. Power Spectral Density, UNII 2C, BW 40M, CF 5490M, c1, 13dBi



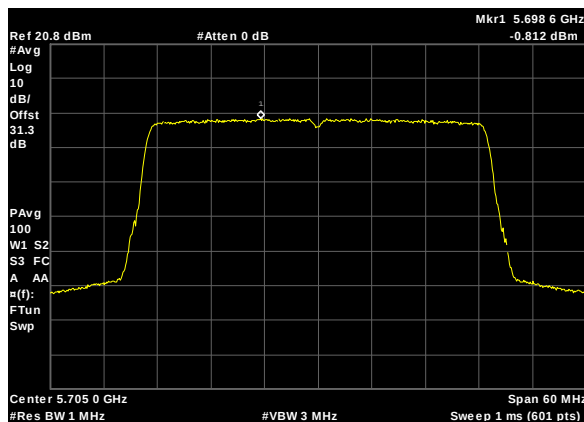
Plot 320. Power Spectral Density, UNII 2C, BW 40M, CF 5600M, c0, 13dBi



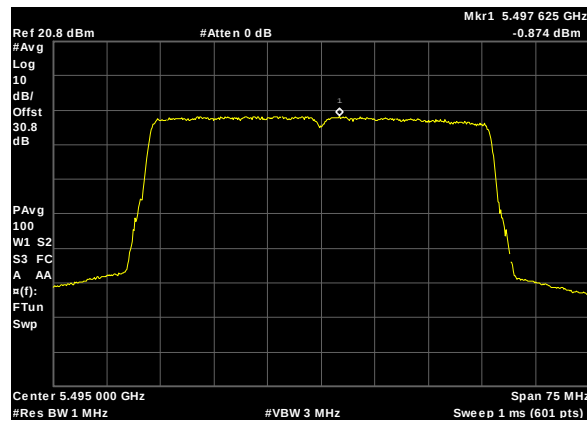
Plot 321. Power Spectral Density, UNII 2C, BW 40M, CF 5600M, c1, 13dBi



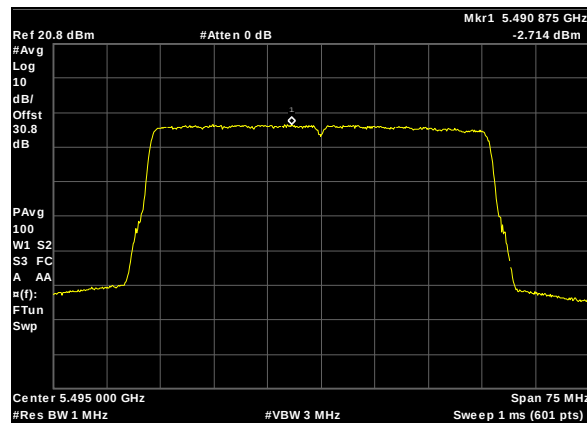
Plot 322. Power Spectral Density, UNII 2C, BW 40M, CF 5705M, c0, 13dBi



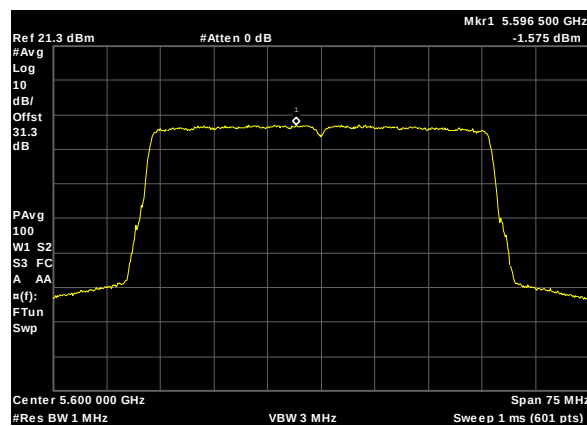
Plot 323. Power Spectral Density, UNII 2C, BW 40M, CF 5705M, c1, 13dBi



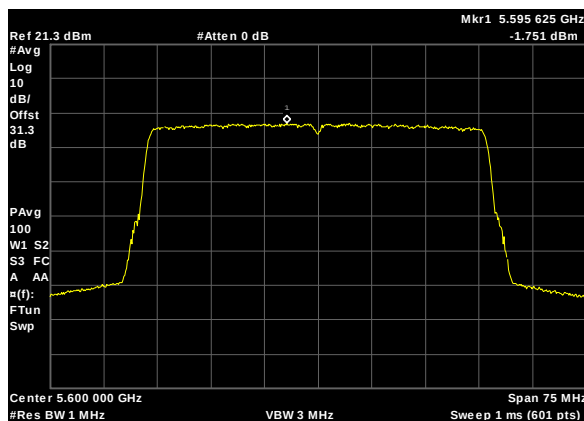
Plot 324. Power Spectral Density, UNII 2C, BW 50M, CF 5495M, c0, 13dBi



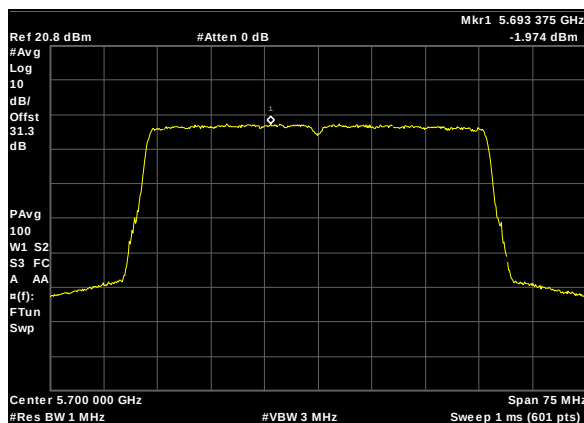
Plot 325. Power Spectral Density, UNII 2C, BW 50M, CF 5495M, c1, 13dBi



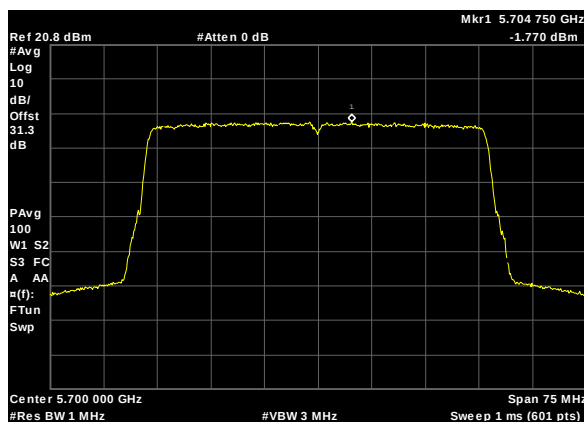
Plot 326. Power Spectral Density, UNII 2C, BW 50M, CF 5600M, c0, 13dBi



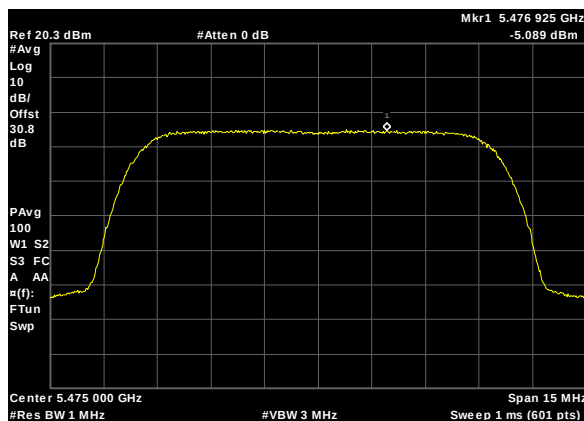
Plot 327. Power Spectral Density, UNII 2C, BW 50M, CF 5600M, c1, 13dBi



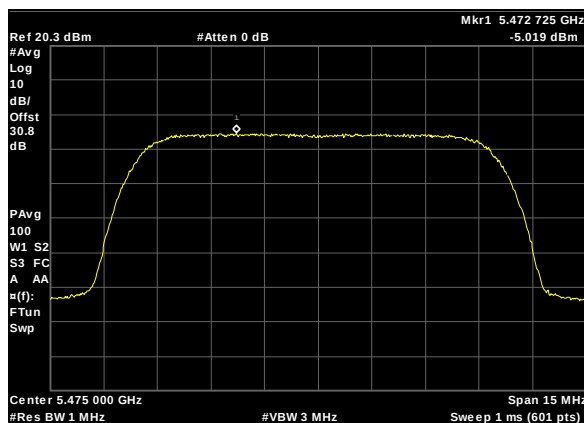
Plot 328. Power Spectral Density, UNII 2C, BW 50M, CF 5700M, c0, 13dBi



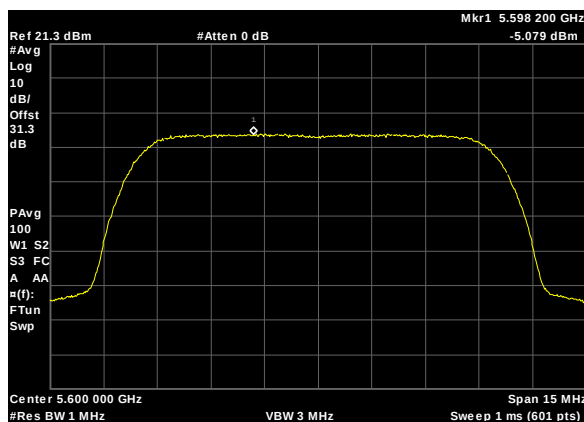
Plot 329. Power Spectral Density, UNII 2C, BW 50M, CF 5700M, c1, 13dBi



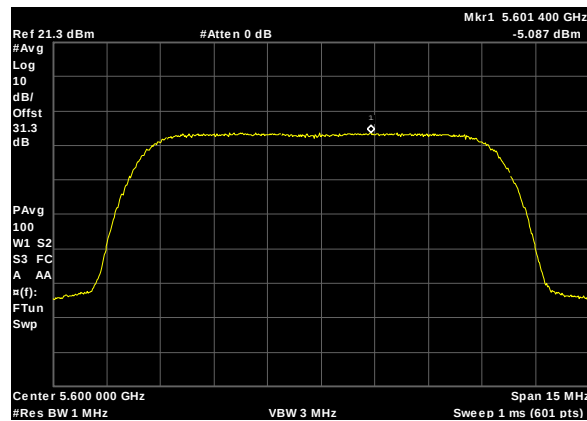
Plot 330. Power Spectral Density, UNII 2C, BW 10M, CF 5475M, c0, 19dBi



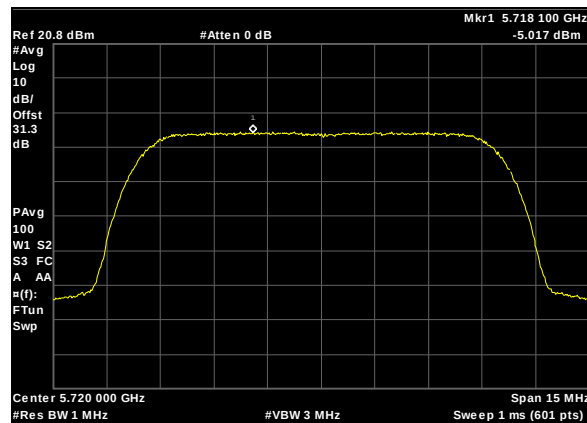
Plot 331. Power Spectral Density, UNII 2C, BW 10M, CF 5475M, c1, 19dBi



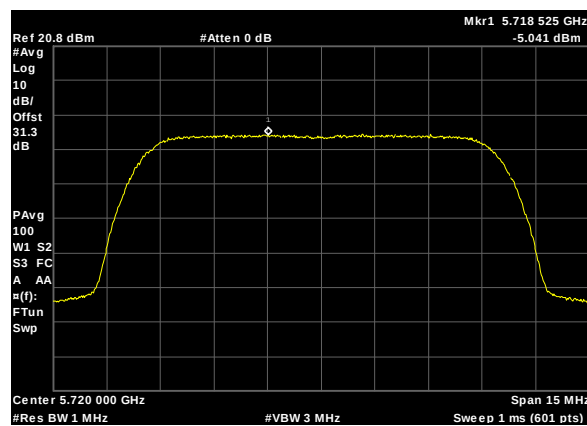
Plot 332. Power Spectral Density, UNII 2C, BW 10M, CF 5600M, c0, 19dBi



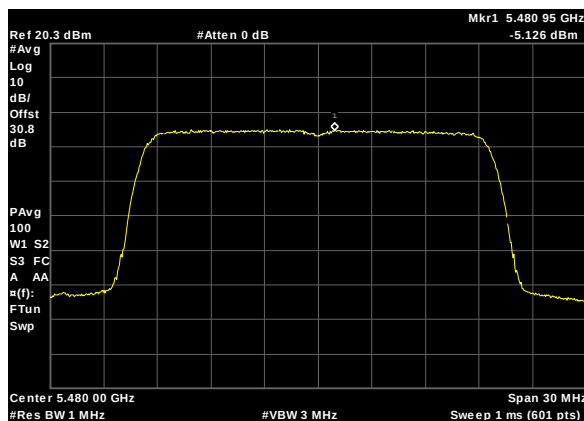
Plot 333. Power Spectral Density, UNII 2C, BW 10M, CF 5600M, c1, 19dBi



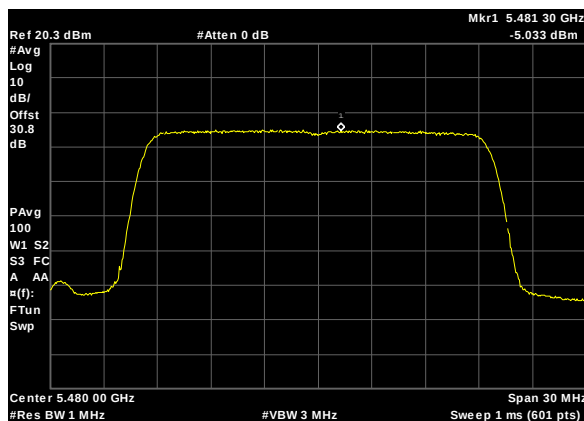
Plot 334. Power Spectral Density, UNII 2C, BW 10M, CF 5720M, c0, 19dBi



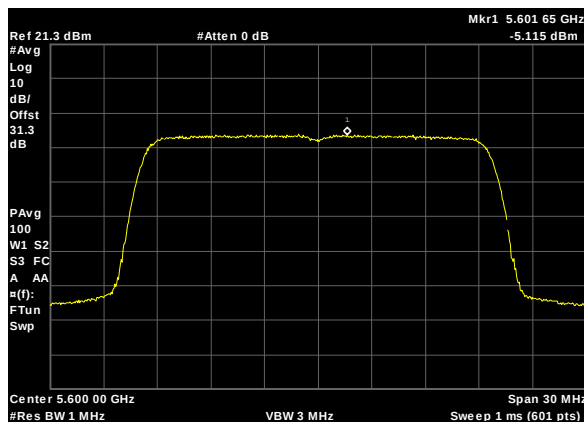
Plot 335. Power Spectral Density, UNII 2C, BW 10M, CF 5720M, c1, 19dBi



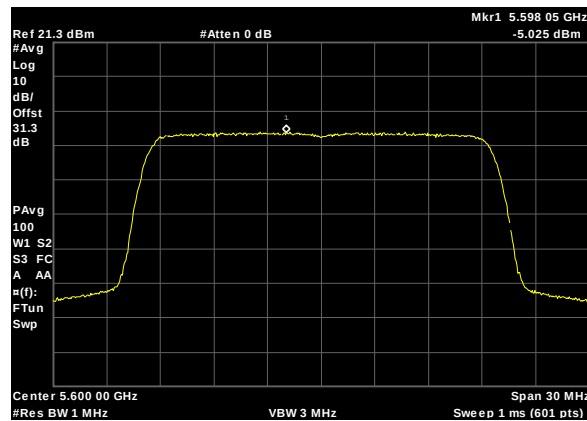
Plot 336. Power Spectral Density, UNII 2C, BW 20M, CF 5480M, c0, 19dBi



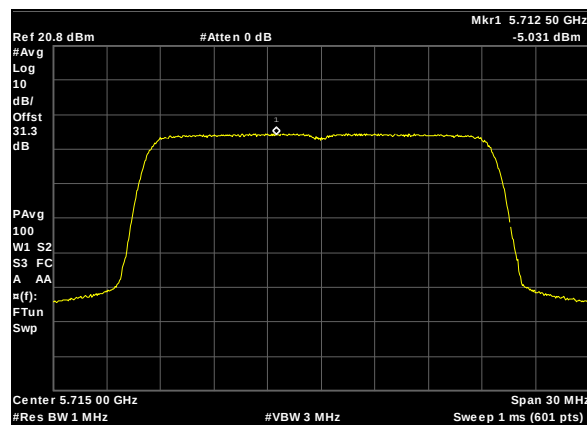
Plot 337. Power Spectral Density, UNII 2C, BW 20M, CF 5480M, c1, 19dBi



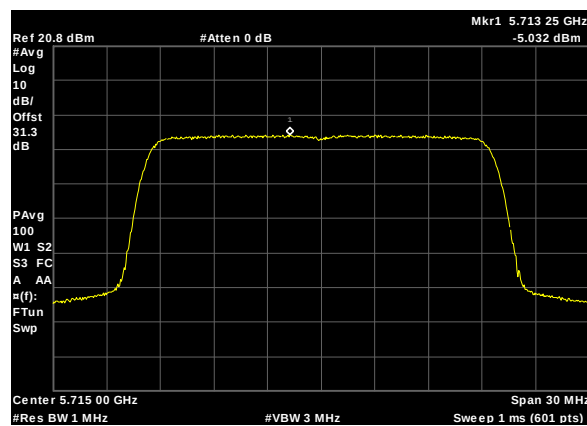
Plot 338. Power Spectral Density, UNII 2C, BW 20M, CF 5600M, c0, 19dBi



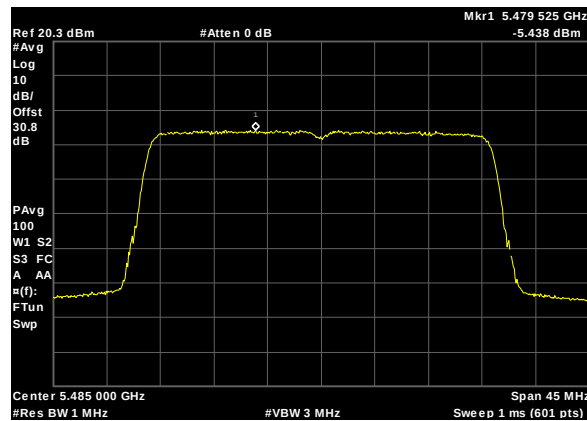
Plot 339. Power Spectral Density, UNII 2C, BW 20M, CF 5600M, c1, 19dBi



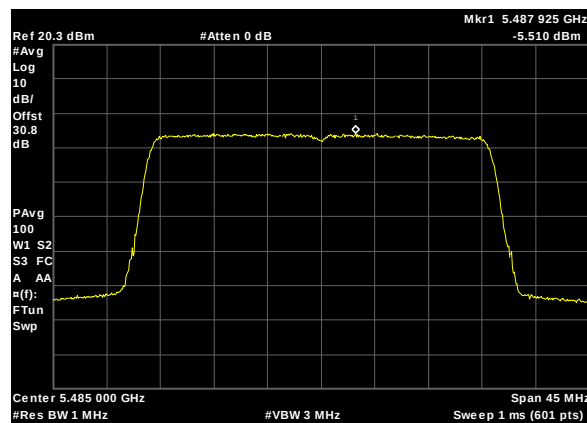
Plot 340. Power Spectral Density, UNII 2C, BW 20M, CF 5715M, c0, 19dBi



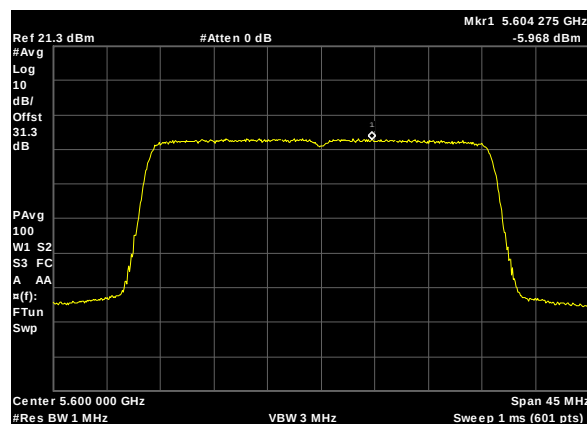
Plot 341. Power Spectral Density, UNII 2C, BW 20M, CF 5715M, c1, 19dBi



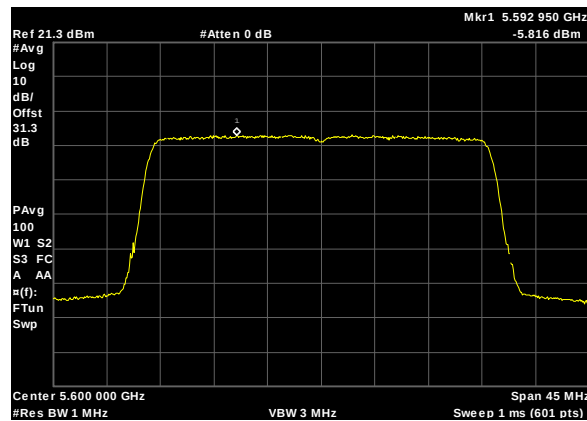
Plot 342. Power Spectral Density, UNII 2C, BW 30M, CF 5485M, c0, 19dBi



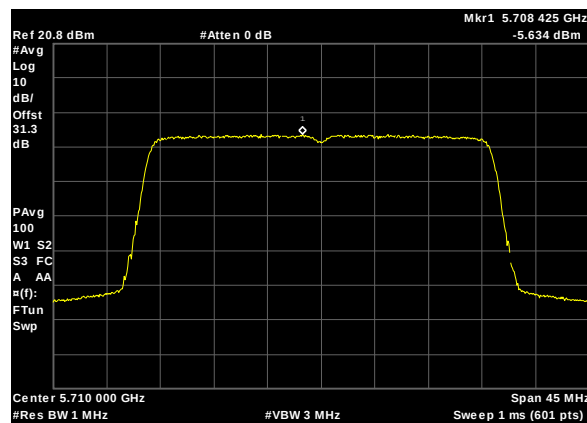
Plot 343. Power Spectral Density, UNII 2C, BW 30M, CF 5485M, c1, 19dBi



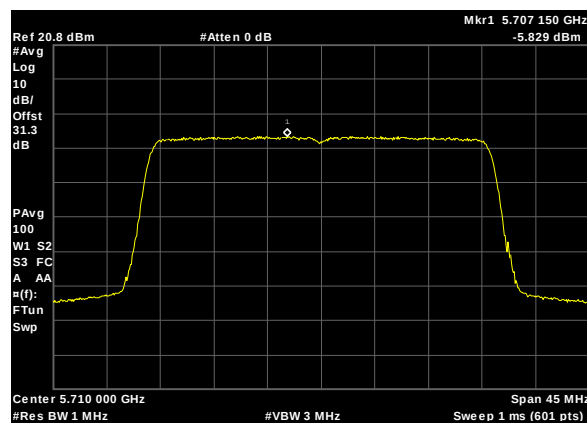
Plot 344. Power Spectral Density, UNII 2C, BW 30M, CF 5600M, c0, 19dBi



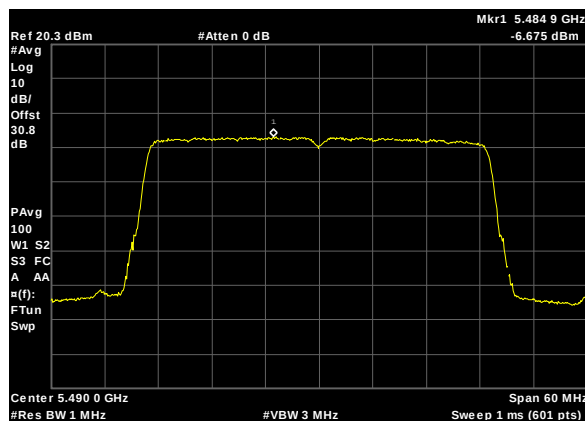
Plot 345. Power Spectral Density, UNII 2C, BW 30M, CF 5600M, c1, 19dBi



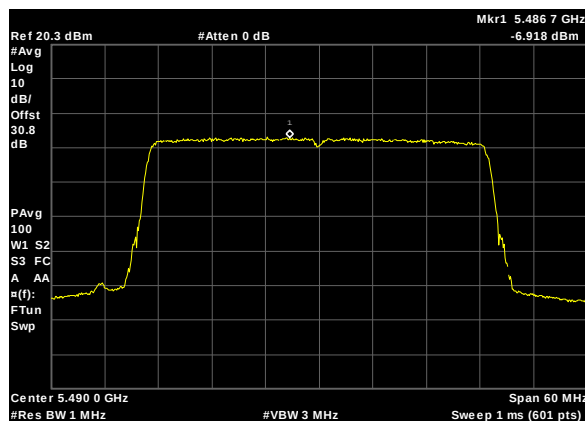
Plot 346. Power Spectral Density, UNII 2C, BW 30M, CF 5710M, c0, 19dBi



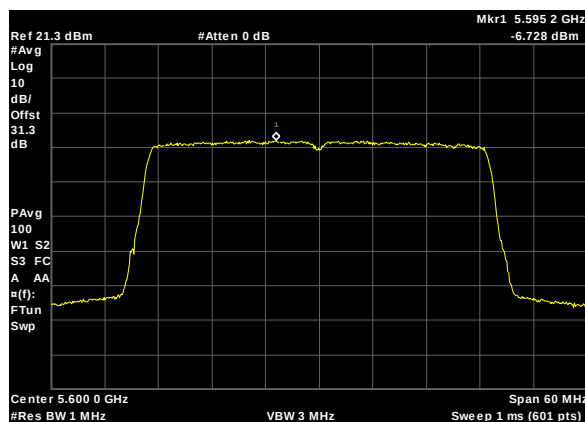
Plot 347. Power Spectral Density, UNII 2C, BW 30M, CF 5710M, c1, 19dBi



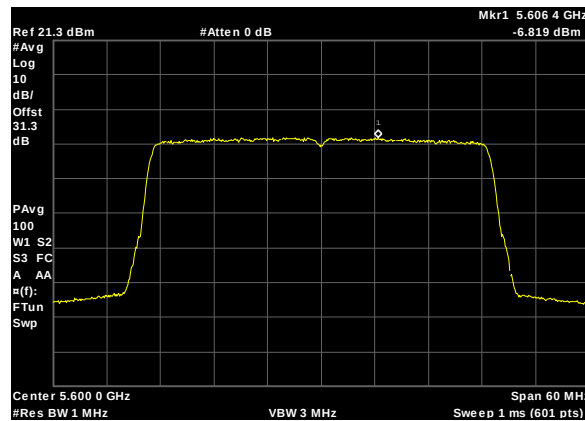
Plot 348. Power Spectral Density, UNII 2C, BW 40M, CF 5490M, c0, 19dBi



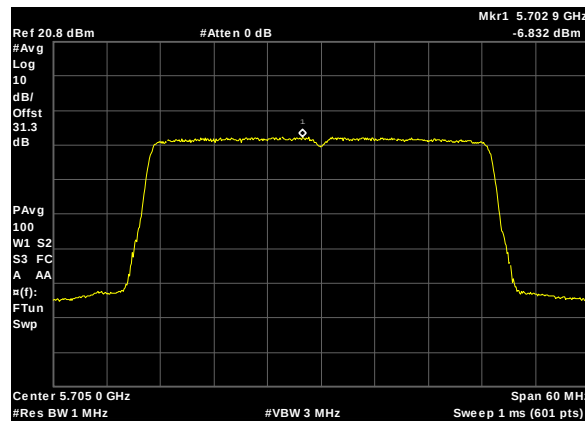
Plot 349. Power Spectral Density, UNII 2C, BW 40M, CF 5490M, c1, 19dBi



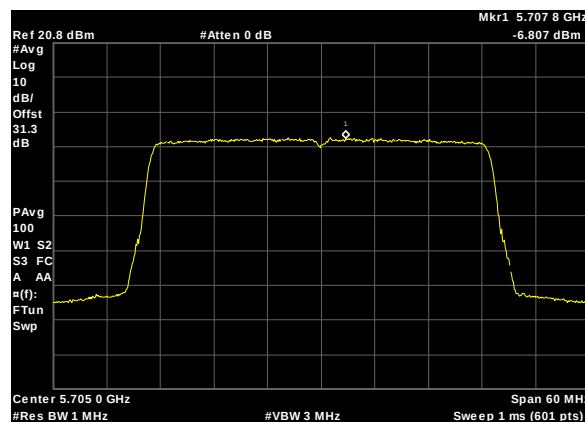
Plot 350. Power Spectral Density, UNII 2C, BW 40M, CF 5600M, c0, 19dBi



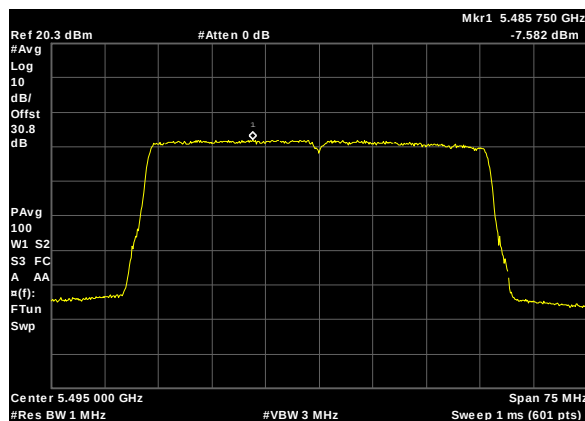
Plot 351. Power Spectral Density, UNII 2C, BW 40M, CF 5600M, c1, 19dBi



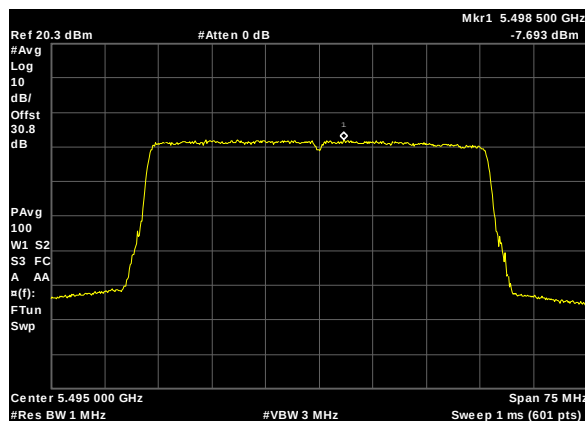
Plot 352. Power Spectral Density, UNII 2C, BW 40M, CF 5705M, c0, 19dBi



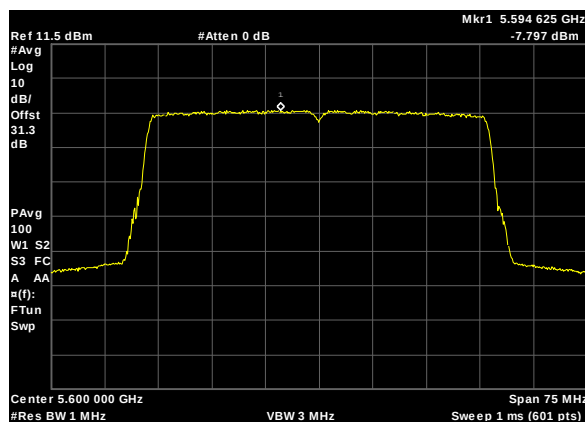
Plot 353. Power Spectral Density, UNII 2C, BW 40M, CF 5705M, c1, 19dBi



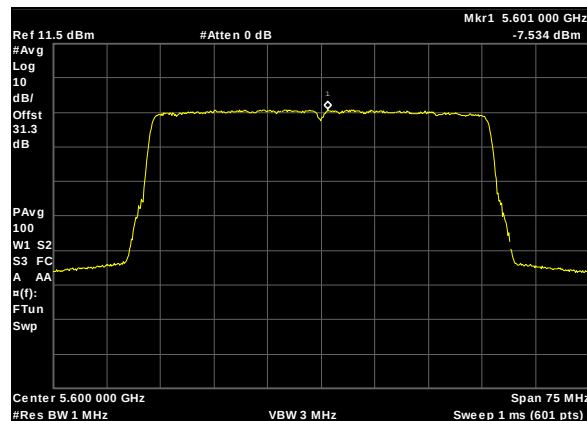
Plot 354. Power Spectral Density, UNII 2C, BW 50M, CF 5495M, c0, 19dBi



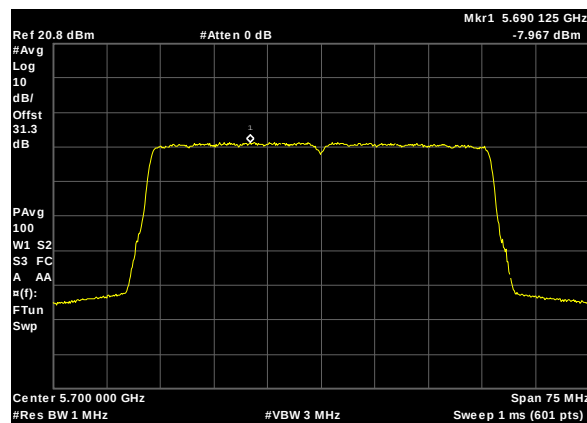
Plot 355. Power Spectral Density, UNII 2C, BW 50M, CF 5495M, c1, 19dBi



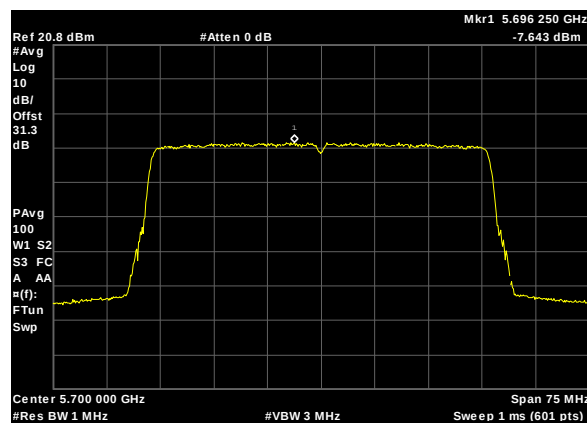
Plot 356. Power Spectral Density, UNII 2C, BW 50M, CF 5600M, c0, 19dBi



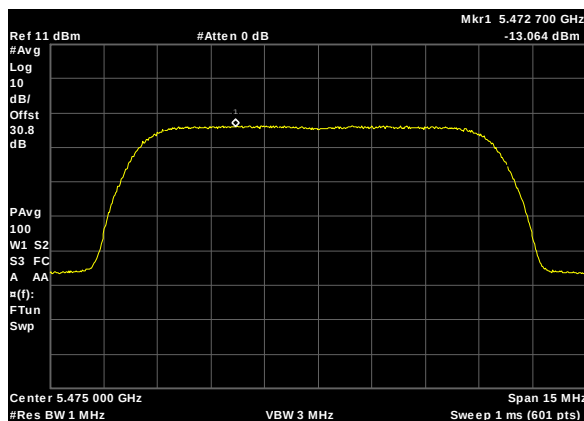
**Plot 357. Power Spectral Density, UNII 2C, BW 50M, CF 5600M, c1, 19dBi**



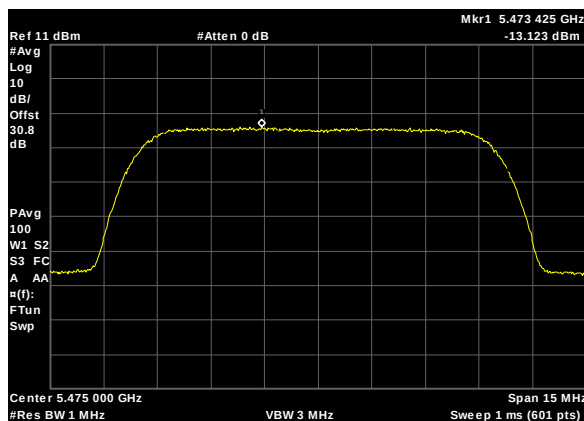
**Plot 358. Power Spectral Density, UNII 2C, BW 50M, CF 5700M, c0, 19dBi**



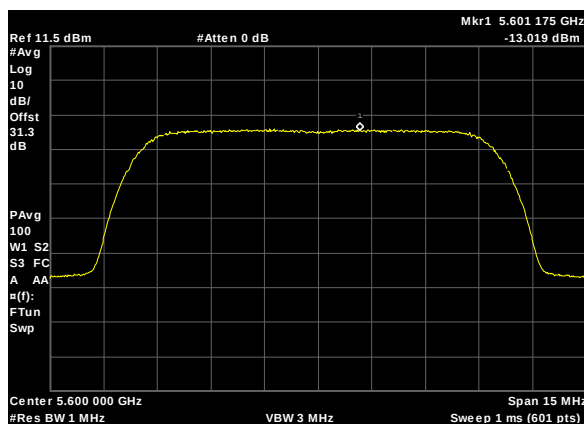
**Plot 359. Power Spectral Density, UNII 2C, BW 50M, CF 5700M, c1, 19dBi**



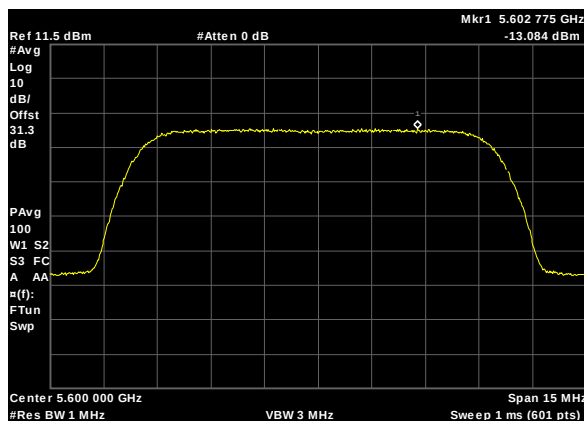
**Plot 360. Power Spectral Density, UNII 2C, BW 10W, CF 5475M, c0, 27dBi**



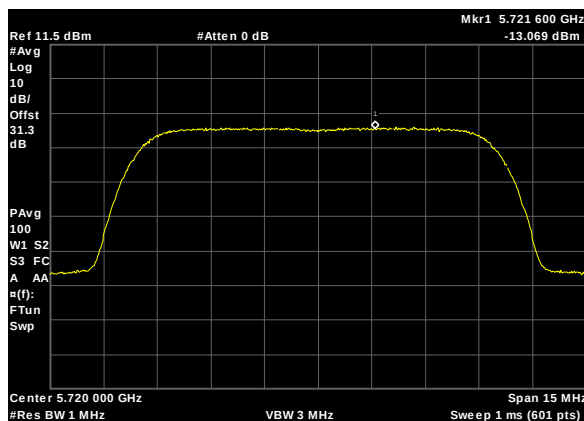
**Plot 361. Power Spectral Density, UNII 2C, BW 10W, CF 5475M, c1, 27dBi**



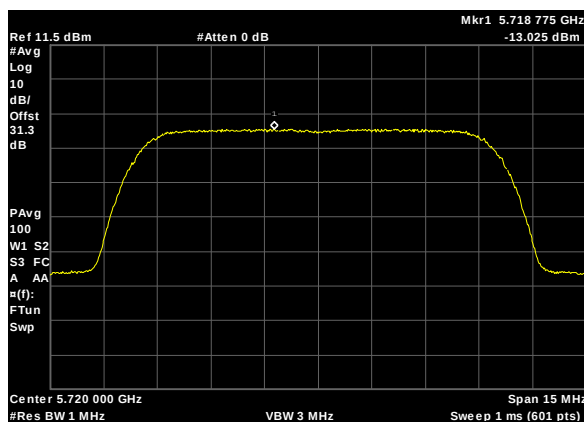
**Plot 362. Power Spectral Density, UNII 2C, BW 10W, CF 5600M, c0, 27dBi**



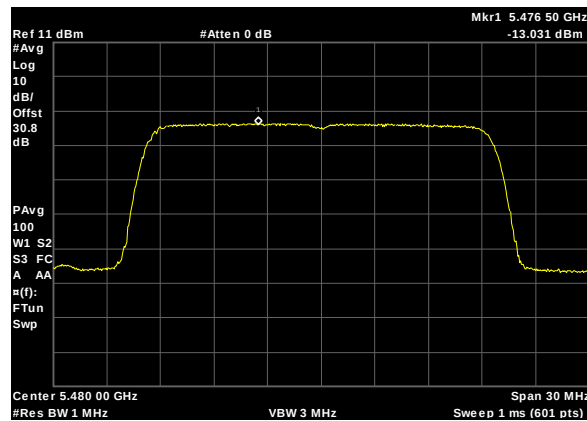
Plot 363. Power Spectral Density, UNII 2C, BW 10W, CF 5600M, c1, 27dBi



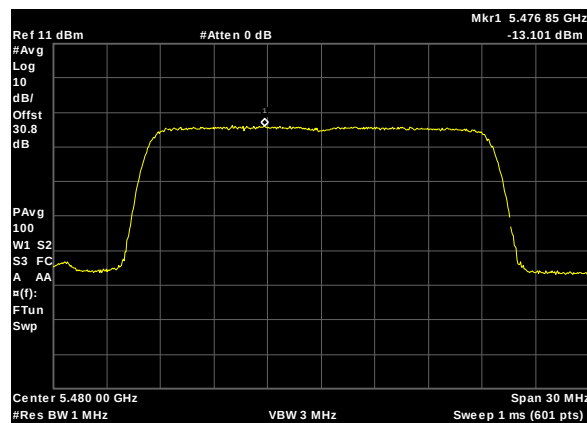
Plot 364. Power Spectral Density, UNII 2C, BW 10W, CF 5720M, c0, 27dBi



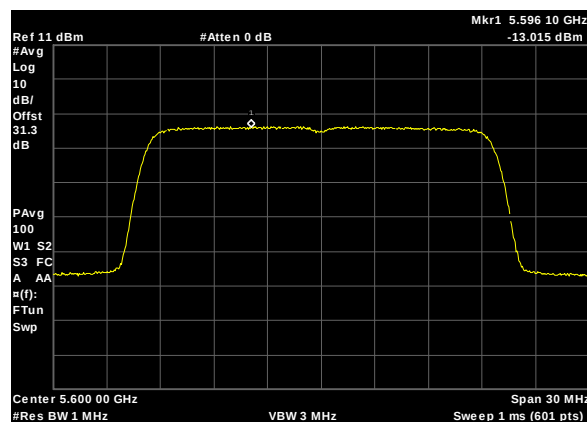
Plot 365. Power Spectral Density, UNII 2C, BW 10W, CF 5720M, c1, 27dBi



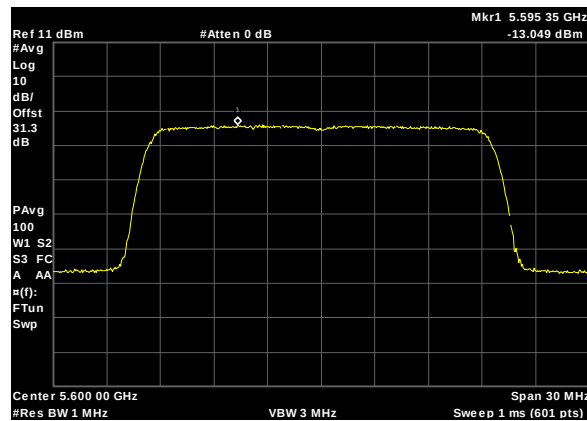
Plot 366. Power Spectral Density, UNII 2C, BW 20W, CF 5480M, c0, 27dBi



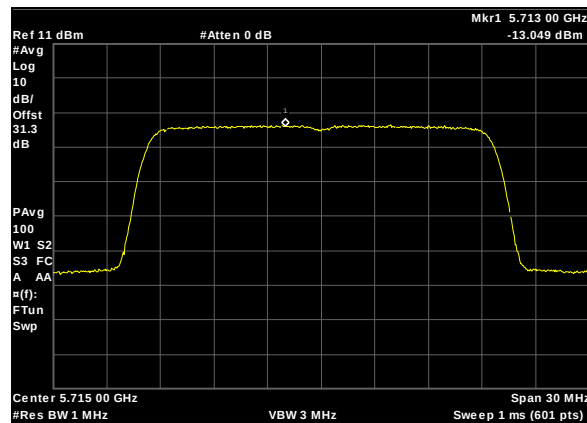
Plot 367. Power Spectral Density, UNII 2C, BW 20W, CF 5480M, c1, 27dBi



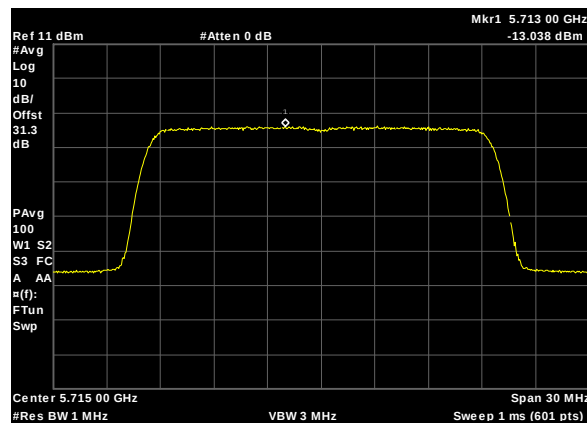
Plot 368. Power Spectral Density, UNII 2C, BW 20W, CF 5600M, c0, 27dBi



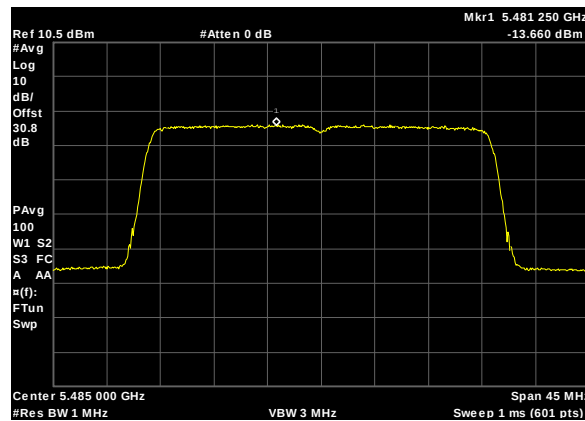
**Plot 369. Power Spectral Density, UNII 2C, BW 20W, CF 5600M, c1, 27dBi**



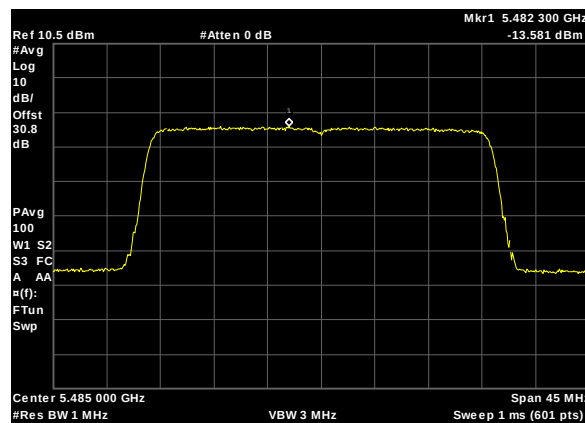
**Plot 370. Power Spectral Density, UNII 2C, BW 20W, CF 5715M, c0, 27dBi**



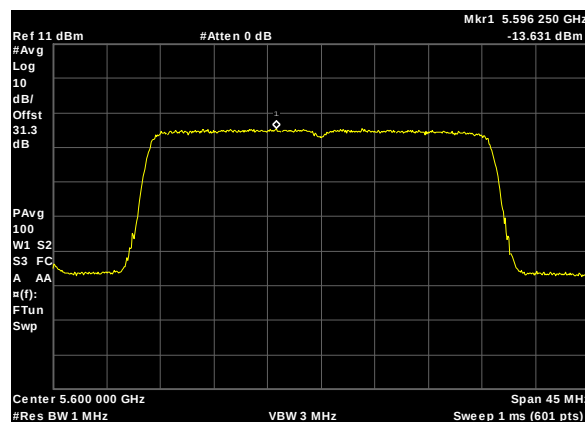
**Plot 371. Power Spectral Density, UNII 2C, BW 20W, CF 5715M, c1, 27dBi**



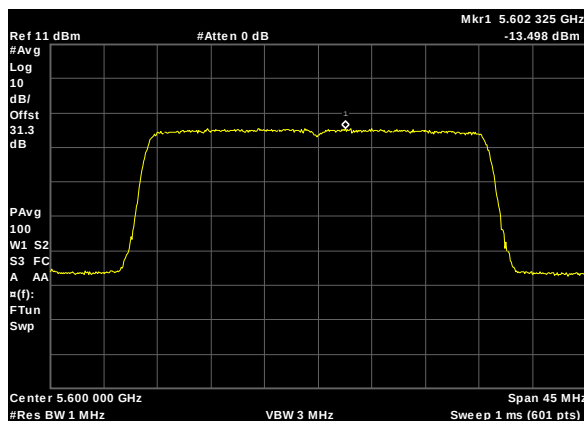
Plot 372. Power Spectral Density, UNII 2C, BW 30W, CF 5485M, c0, 27dBi



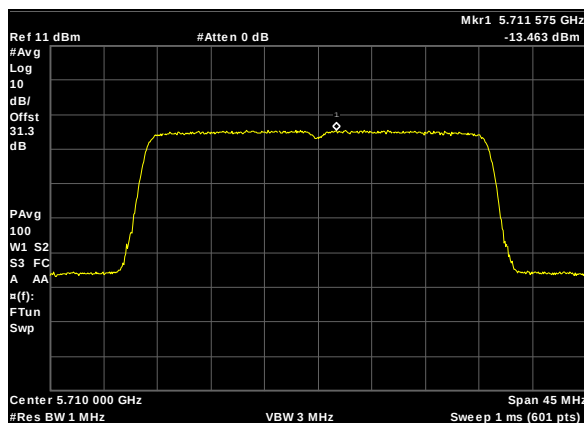
Plot 373. Power Spectral Density, UNII 2C, BW 30W, CF 5485M, c1, 27dBi



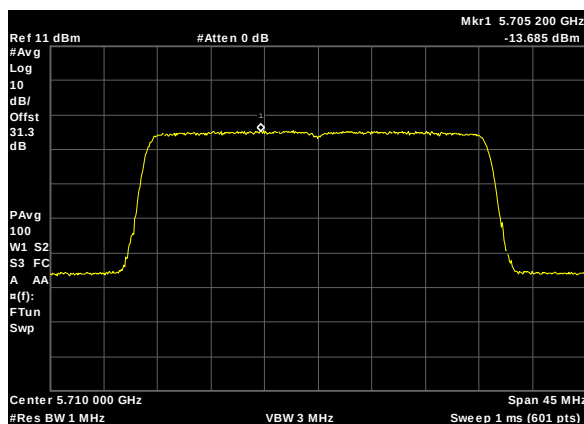
Plot 374. Power Spectral Density, UNII 2C, BW 30W, CF 5600M, c0, 27dBi



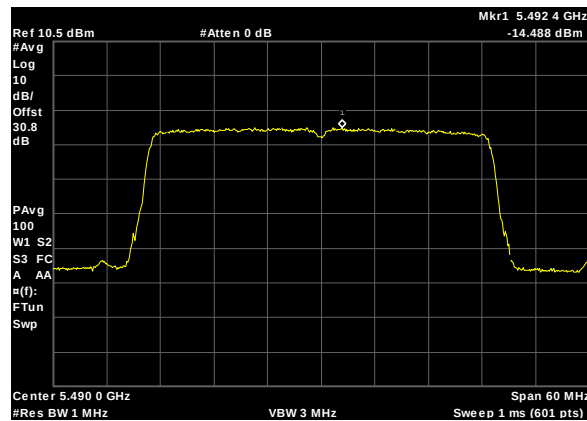
Plot 375. Power Spectral Density, UNII 2C, BW 30W, CF 5600M, c1, 27dBi



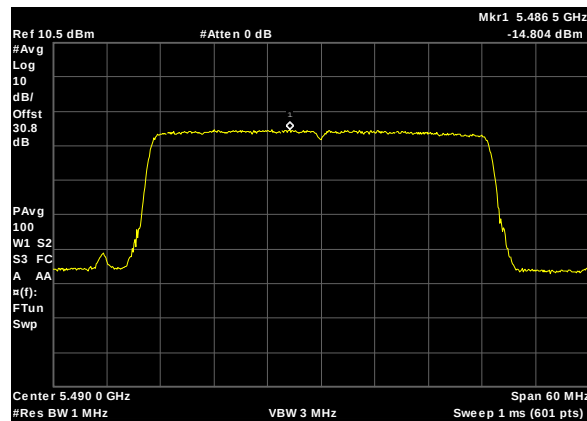
Plot 376. Power Spectral Density, UNII 2C, BW 30W, CF 5710M, c0, 27dBi



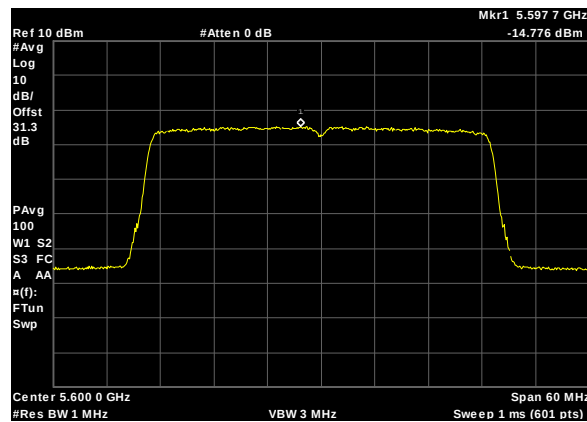
Plot 377. Power Spectral Density, UNII 2C, BW 30W, CF 5710M, c1, 27dBi



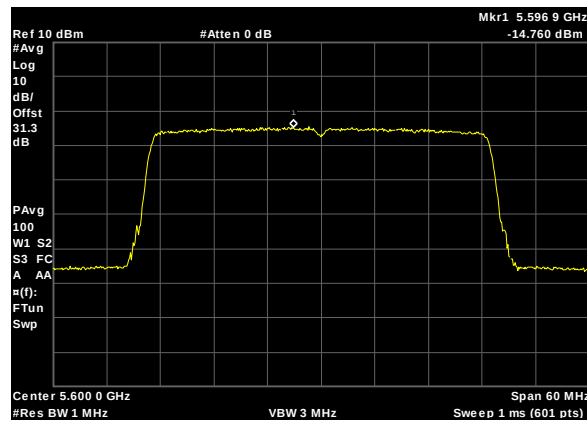
Plot 378. Power Spectral Density, UNII 2C, BW 40W, CF 5490M, c0, 27dBi



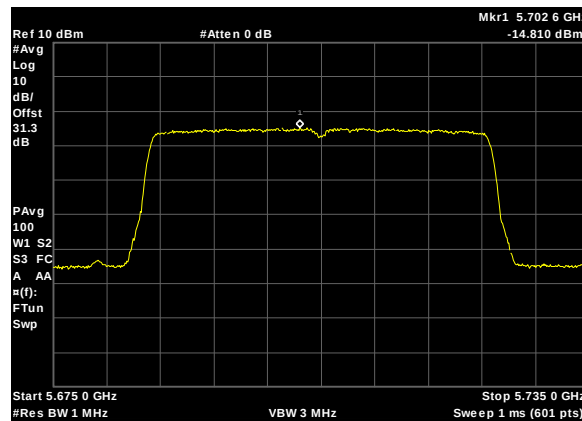
Plot 379. Power Spectral Density, UNII 2C, BW 40W, CF 5490M, c1, 27dBi



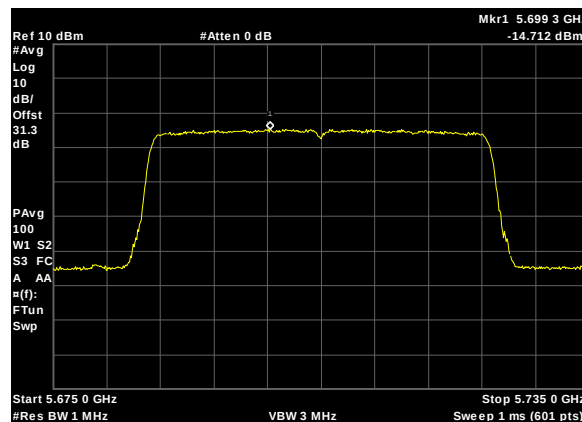
Plot 380. Power Spectral Density, UNII 2C, BW 40W, CF 5600M, c0, 27dBi



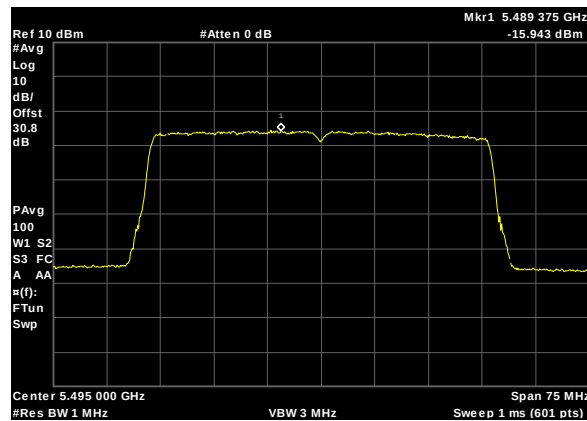
Plot 381. Power Spectral Density, UNII 2C, BW 40W, CF 5600M, c1, 27dBi



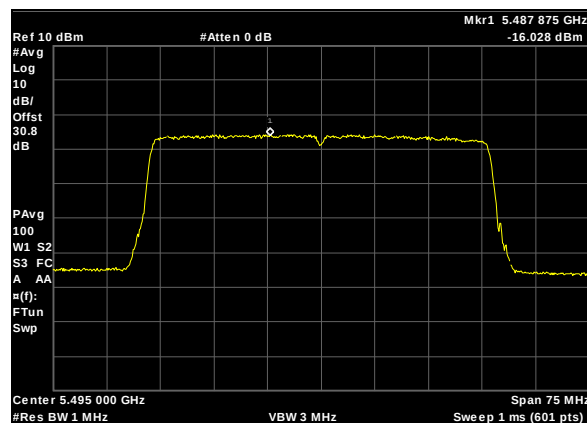
Plot 382. Power Spectral Density, UNII 2C, BW 40W, CF 5705M, c1, 27dBi



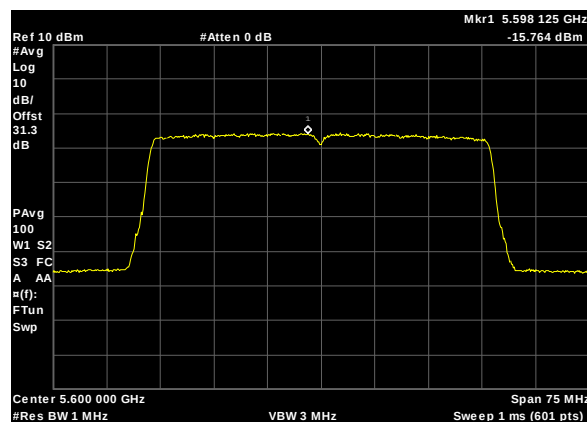
Plot 383. Power Spectral Density, UNII 2C, BW 40W, CF 5705M, c1, 27dBi



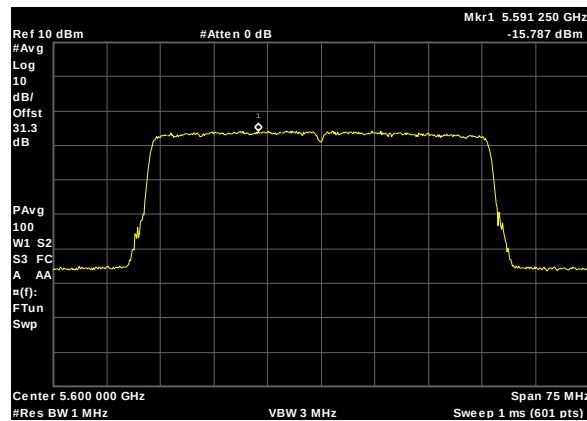
**Plot 384. Power Spectral Density, UNII 2C, BW 50W, CF 5495M, c0, 27dBi**



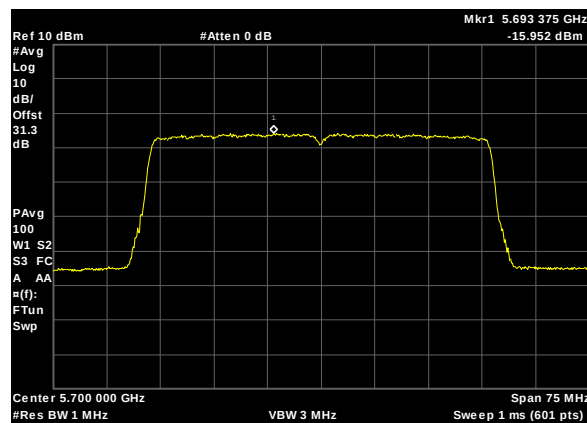
**Plot 385. Power Spectral Density, UNII 2C, BW 50W, CF 5495M, c1, 27dBi**



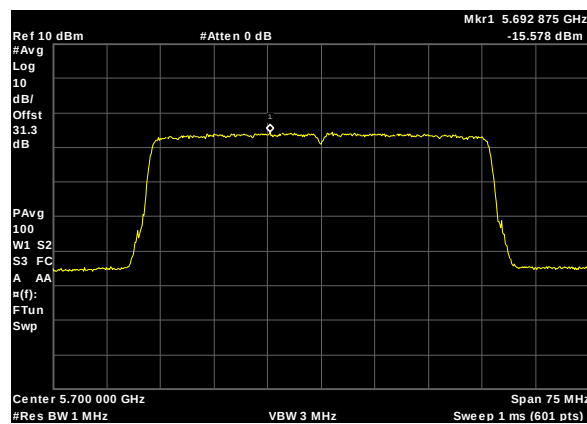
**Plot 386. Power Spectral Density, UNII 2C, BW 50W, CF 5600M, c0, 27dBi**



Plot 387. Power Spectral Density, UNII 2C, BW 50W, CF 5600M, c1, 27dBi



Plot 388. Power Spectral Density, UNII 2C, BW 50W, CF 5700M, c0, 27dBi



Plot 389. Power Spectral Density, UNII 2C, BW 50W, CF 5700M, c1, 27dBi

## Electromagnetic Compatibility Criteria for Intentional Radiators

### §15.407(b)(2 – 3) & (6 – 7) Undesirable Emissions

**Test Requirements:** § 15.407(b)(2): For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

§ 15.407(b)(3): For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

§ 15.407(b)(6): Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in Section 15.207.

§ 15.407(b)(7): The provisions of Section 15.205 of this part apply to intentional radiators operating under this section.

**Test Procedure:** The EUT was placed on a non-conducting stand on a turntable in a chamber. To find the maximum emission the EUT was set to transmit on low, mid, and high channels. Additionally, the turntable was rotated 360 degrees, the EUT was oriented through its three orthogonal axes, and the receive antenna height was varied in order to maximize emissions.

For frequencies from 30 MHz to 1 GHz, measurements were first made using a peak detector with a 100 kHz resolution bandwidth. Emissions which exceeded the limits were re-measured using a quasi-peak detector with a 120 kHz resolution bandwidth.

Above 1 GHz, measurements were made pursuant the method described in FCC KDB 789033 D02 General UNII Test Procedure New Rules v01. The equation,  $EIRP = E + 20 \log D - 104.8$  was used to convert field strength to EIRP ( $E$  = field strength (dBμV/m) and  $D$  = Reference measurement distance).

For emissions above 1 GHz and in restricted bands, measurements of the field strength were made with a peak detector and an average detector and compared with the limits of 15.209.

As an alternative, according to FCC KDB 789033 D02 General UNII Test Procedure New Rules v01, all emissions above 1 GHz that comply with the peak and average limits of 15.209 satisfy the requirements of unwanted emissions in 15.407.

**Test Results:** For emissions below 1 GHz, the EUT was compliant with the requirements of this section. The worst case configuration is used to show compliance with the requirements.

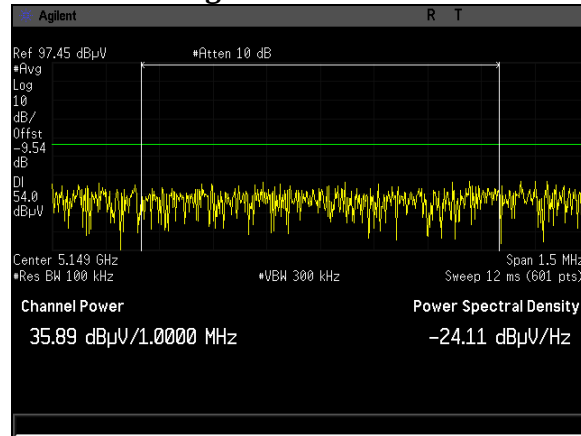
For emissions above 1 GHz, the EUT was compliant with the requirements of this section. Plots for band-edge measurements account for cable loss, antenna and distance correction factors.

Measured emissions were within applicable limits. Above 18GHz, only noise floor was seen.

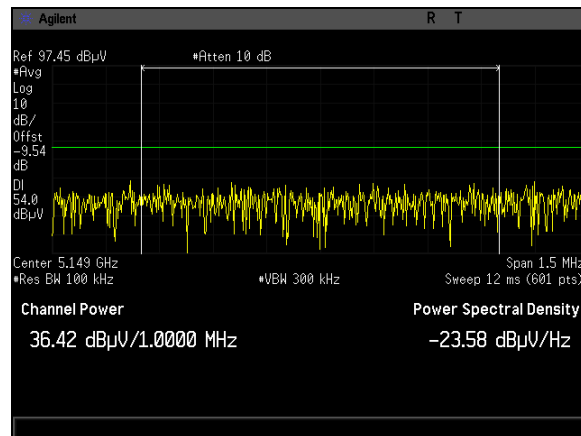
**Test Engineer(s):** Donald Salguero

**Test Date(s):** November 2, 2017

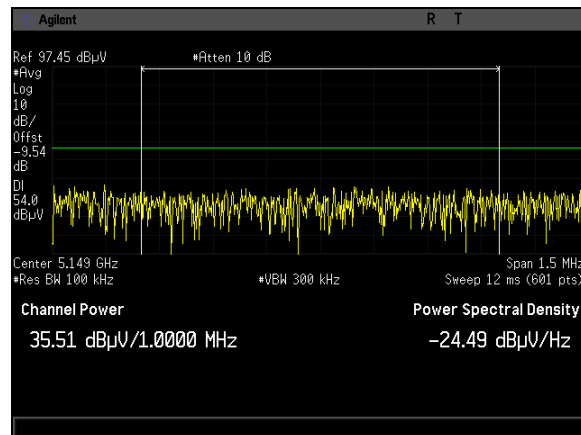
## Undesirable Emissions, Radiated Bandedge



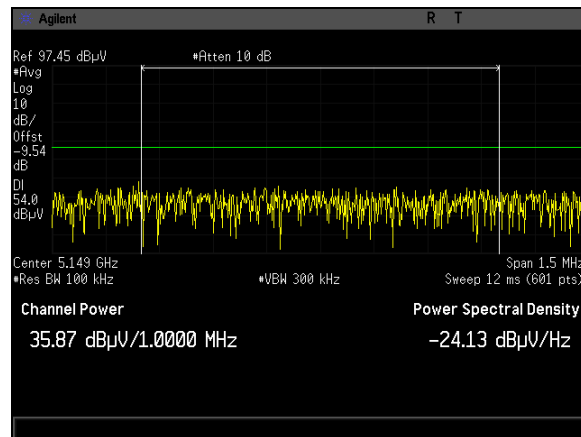
**Plot 390. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 10M, CF 5255M, 13dBi**



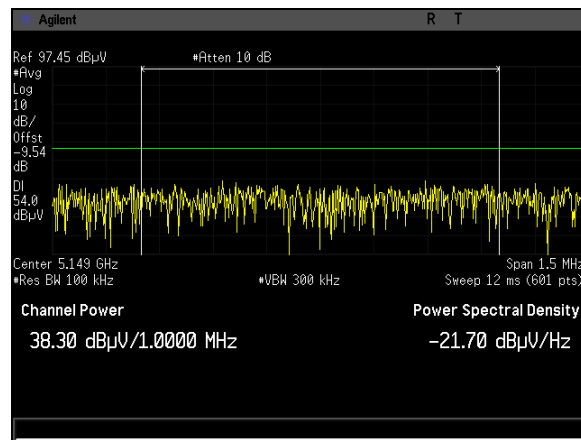
**Plot 391. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 20M, CF 5260M, 13dBi**



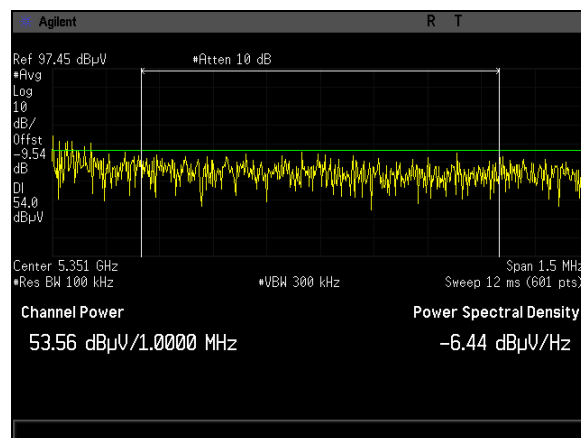
**Plot 392. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 30M, CF 5265M, 13dBi**



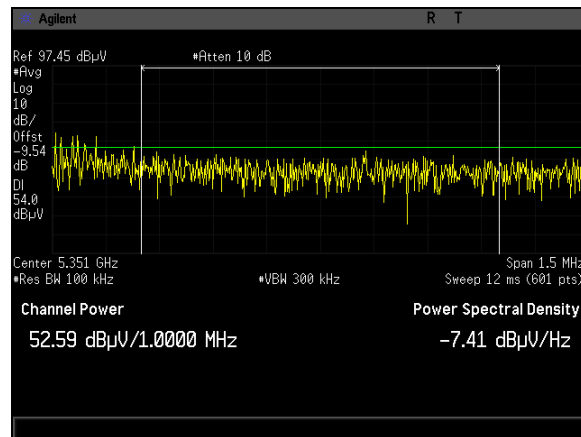
**Plot 393. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 40M, CF 5270M, 13dBi**



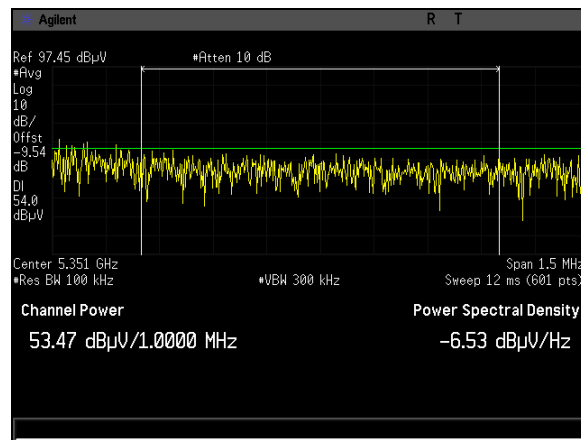
**Plot 394. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 50M, CF 5275M, 13dBi**



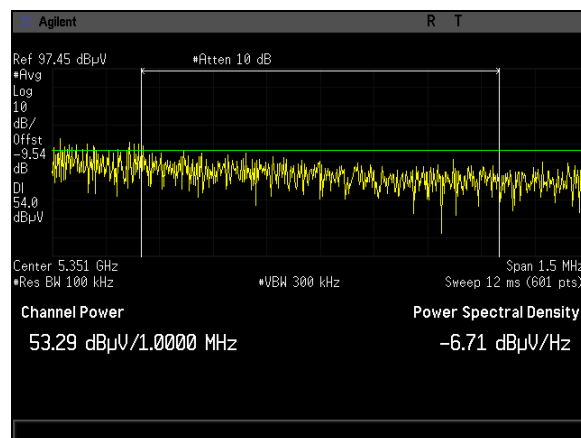
**Plot 395. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 10M, CF 5345M, 13dBi**



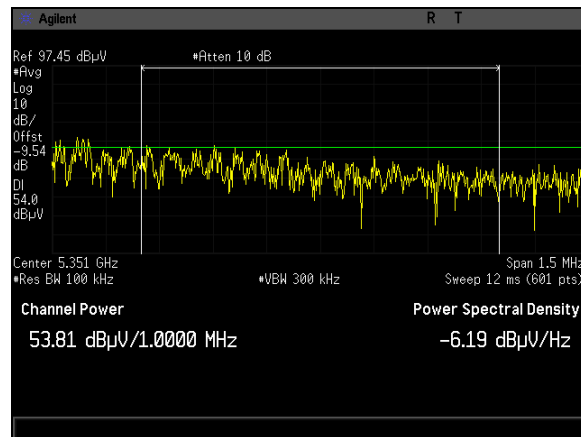
**Plot 396. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 20M, CF 5340M, 13dBi**



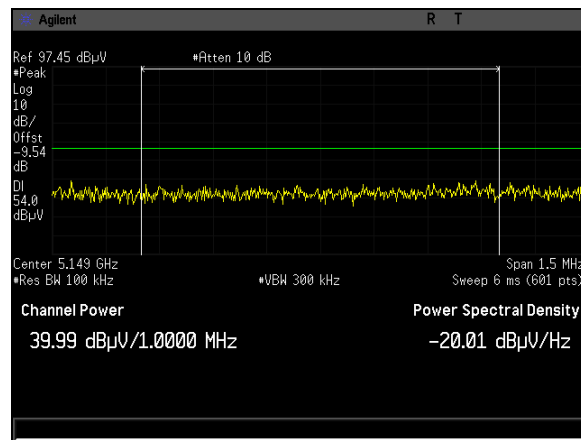
**Plot 397. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 30M, CF 5335M, 13dBi**



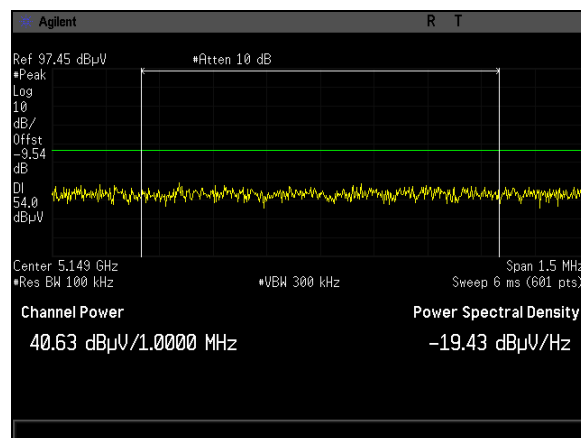
**Plot 398. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 40M, CF 5330M, 13dBi**



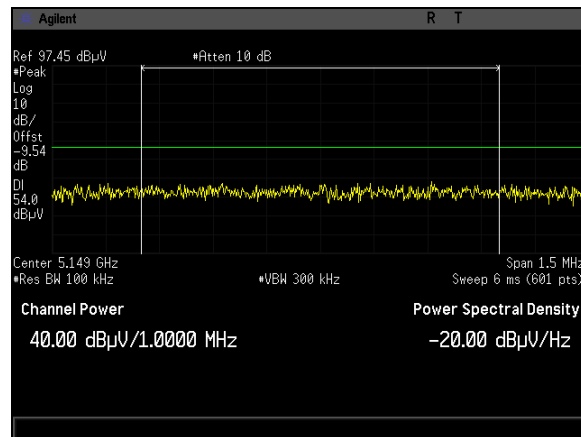
**Plot 399. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 50M, CF 5325M, 13dBi**



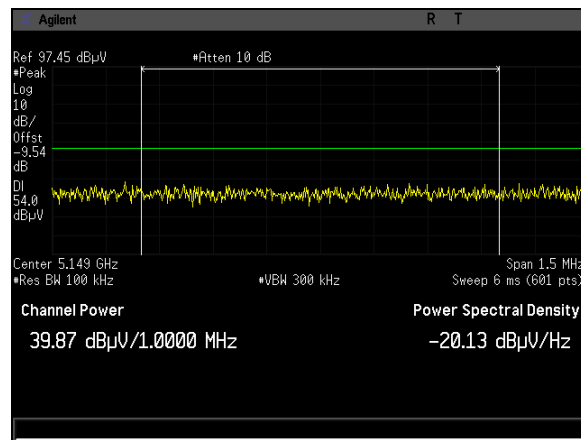
**Plot 400. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 10M, CF 5255M, 13dBi**



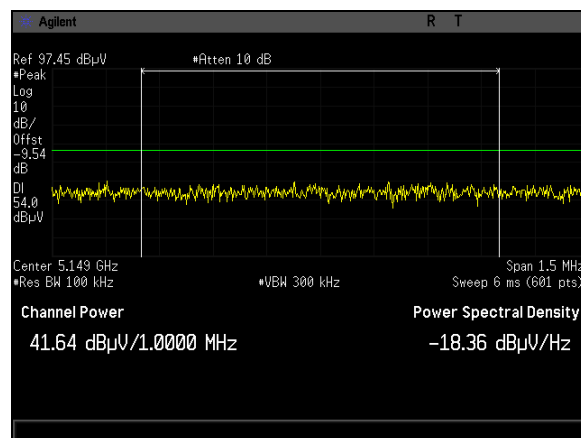
**Plot 401. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 20M, CF 5260M, 13dBi**



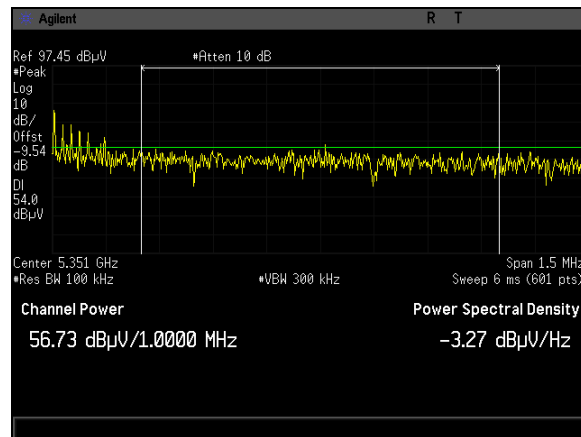
**Plot 402. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 30M, CF 5265M, 13dBi**



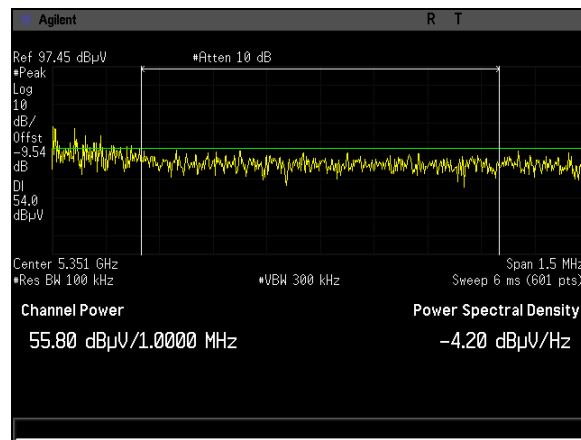
**Plot 403. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 40M, CF 5270M, 13dBi**



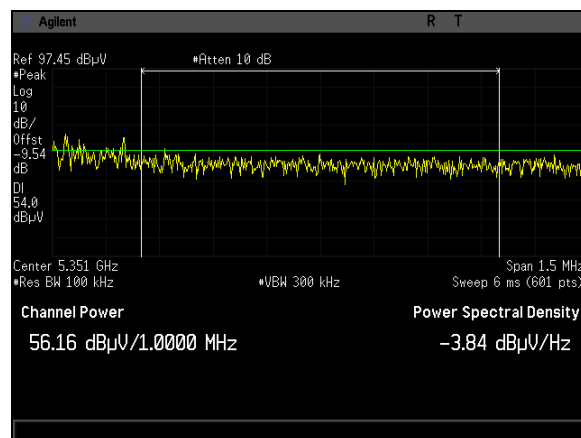
**Plot 404. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 50M, CF 5275M, 13dBi**



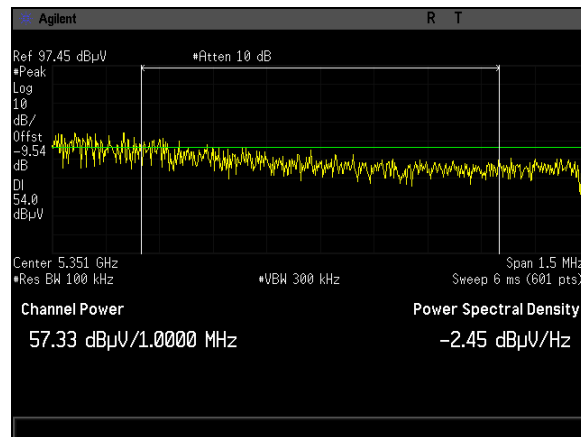
**Plot 405. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 10M, CF 5345M, 13dBi**



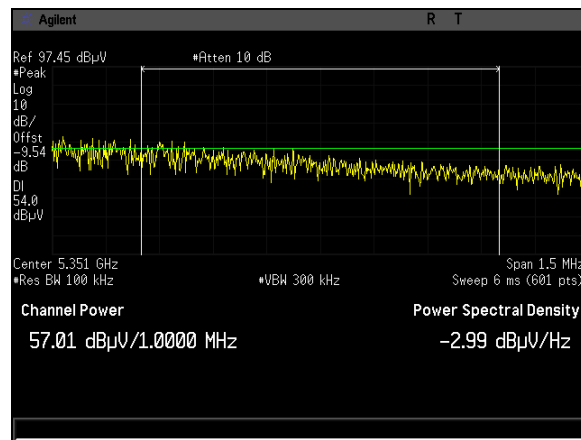
**Plot 406. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 20M, CF 5340M, 13dBi**



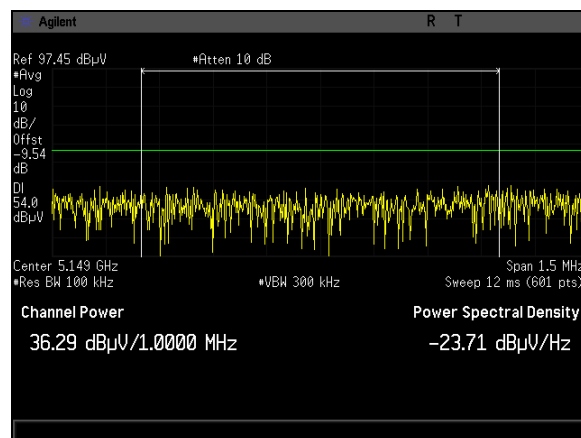
**Plot 407. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 30M, CF 5335M, 13dBi**



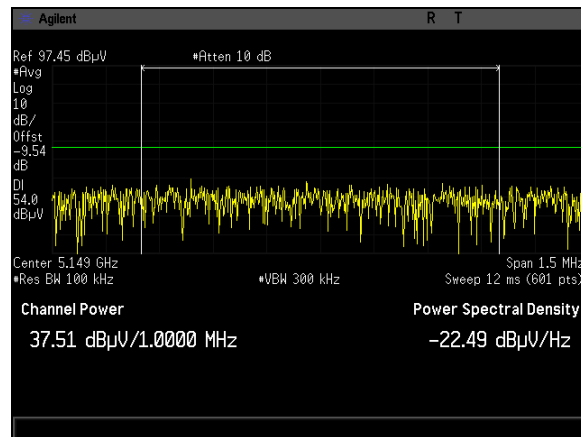
**Plot 408. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 40M, CF 5330M, 13dBi**



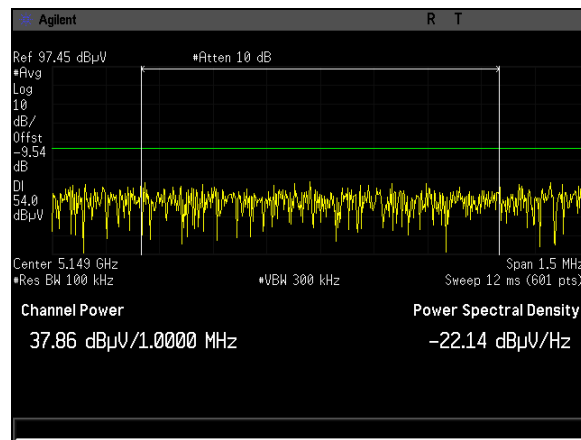
**Plot 409. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 50M, CF 5325M, 13dBi**



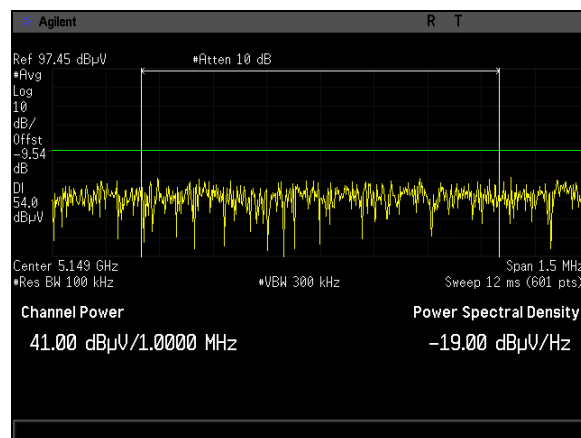
**Plot 410. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 10M, CF 5255M, 19dBi**



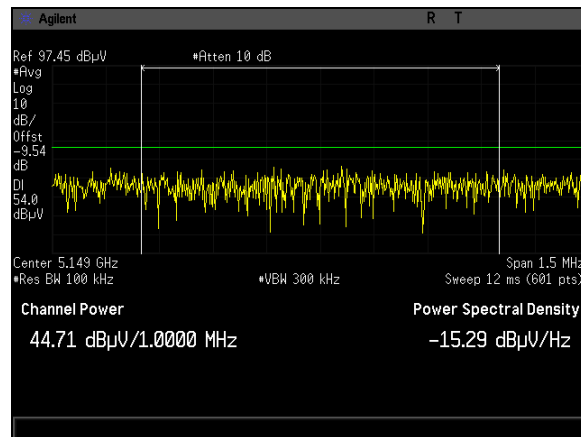
**Plot 411. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 20M, CF 5260M, 19dBi**



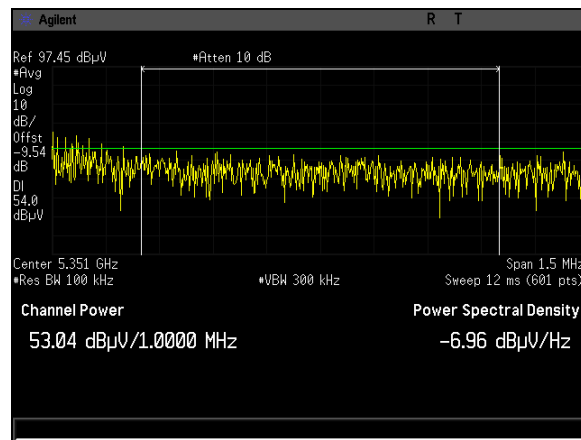
**Plot 412. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 30M, CF 5265M, 19dBi**



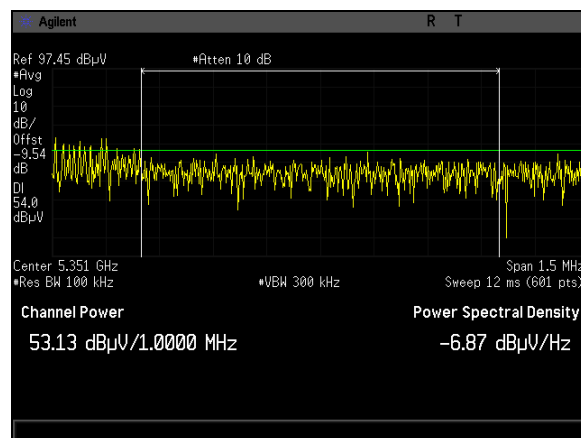
**Plot 413. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 40M, CF 5270M, 19dBi**



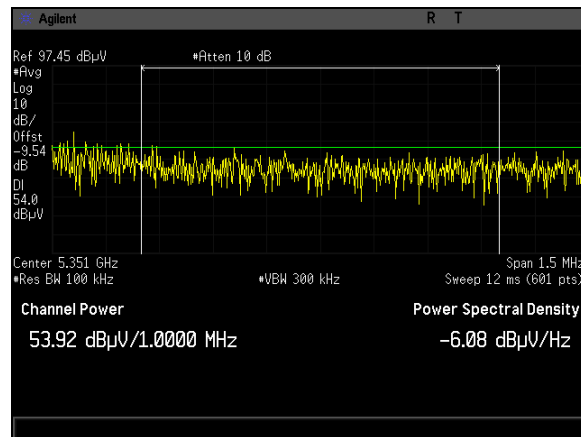
**Plot 414. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 50M, CF 5275M, 19dBi**



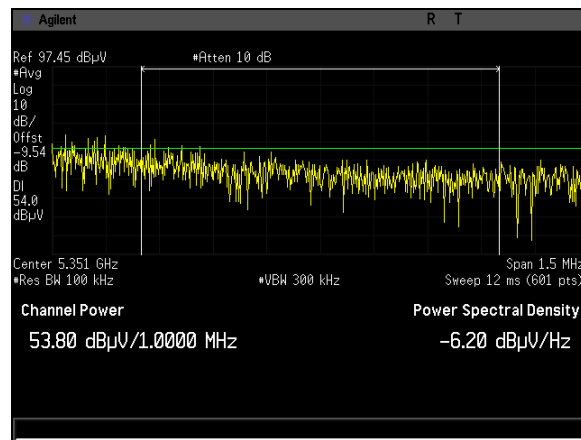
**Plot 415. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 10M, CF 5345M, 19dBi**



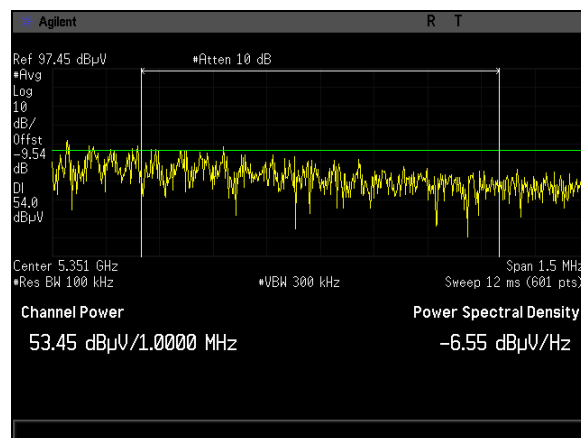
**Plot 416. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 20M, CF 5340M, 19dBi**



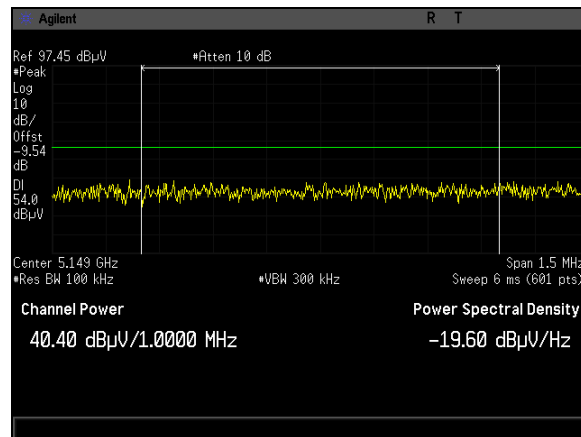
**Plot 417. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 30M, CF 5335M, 19dBi**



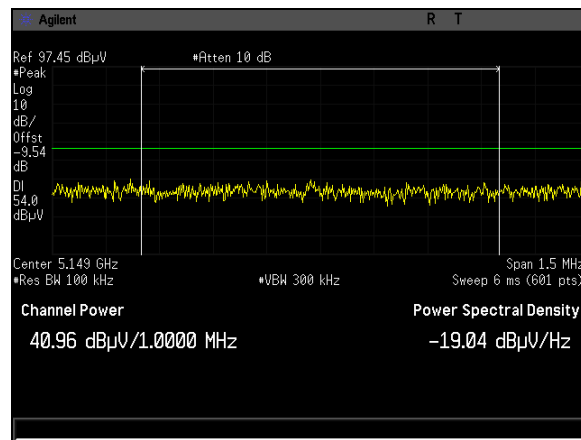
**Plot 418. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 40M, CF 5330M, 19dBi**



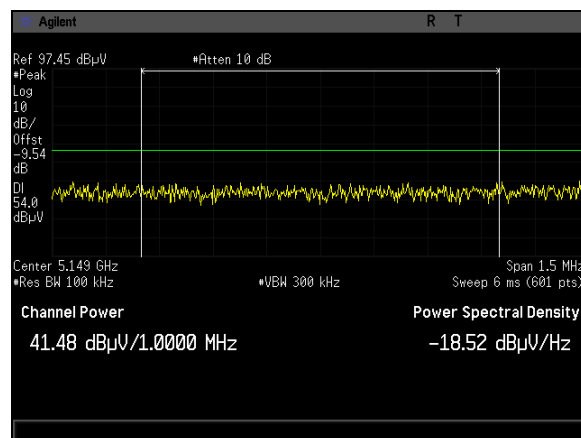
**Plot 419. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 50M, CF 5325M, 19dBi**



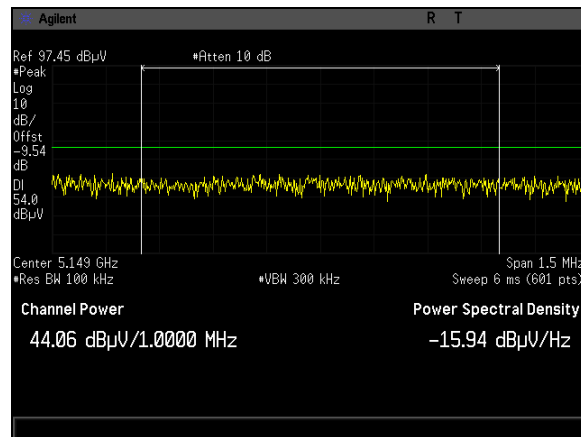
**Plot 420. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 10M, CF 5255M, 19dBi**



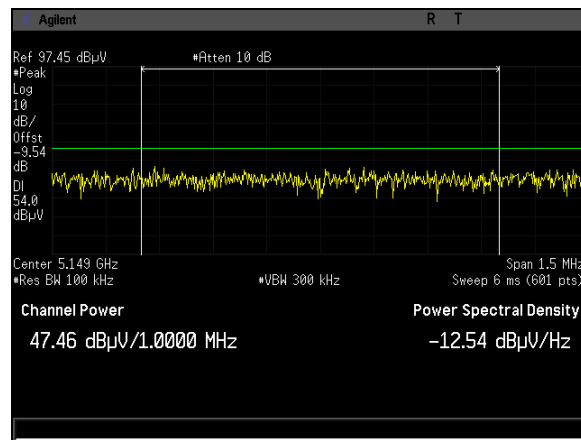
**Plot 421. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 20M, CF 5260M, 19dBi**



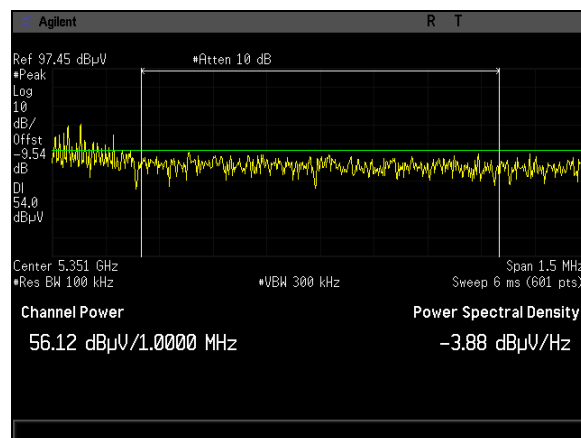
**Plot 422. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 30M, CF 5265M, 19dBi**



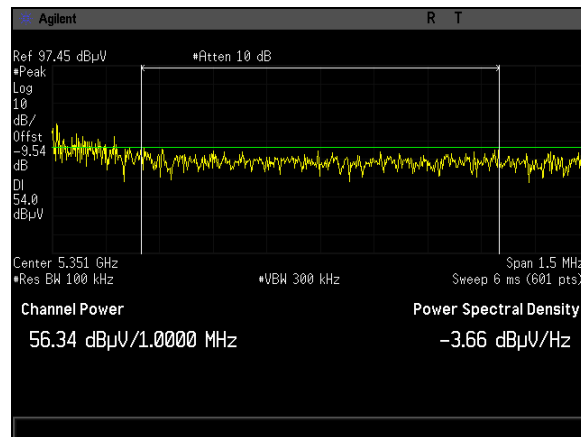
**Plot 423. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 40M, CF 5270M, 19dBi**



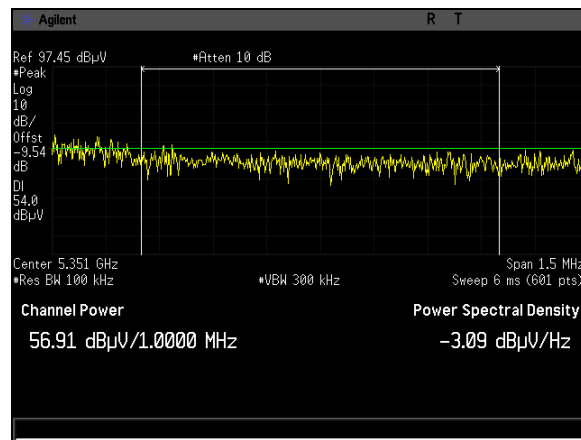
**Plot 424. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 50M, CF 5275M, 19dBi**



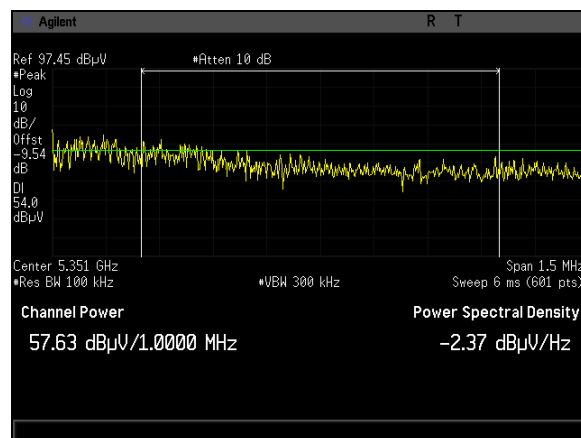
**Plot 425. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 10M, CF 5345M, 19dBi**



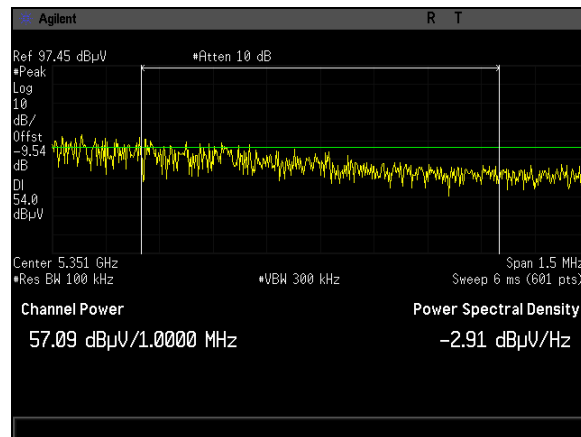
**Plot 426. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 20M, CF 5340M, 19dBi**



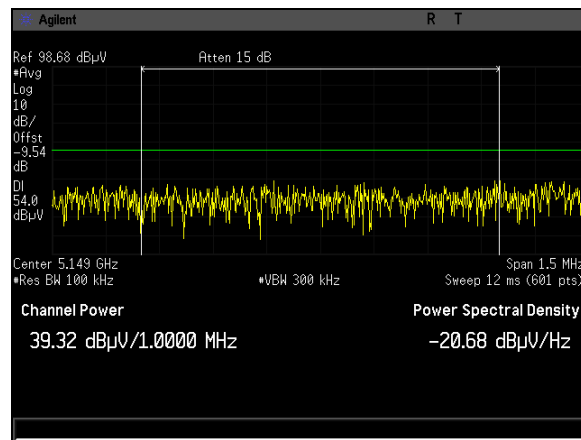
**Plot 427. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 30M, CF 5335M, 19dBi**



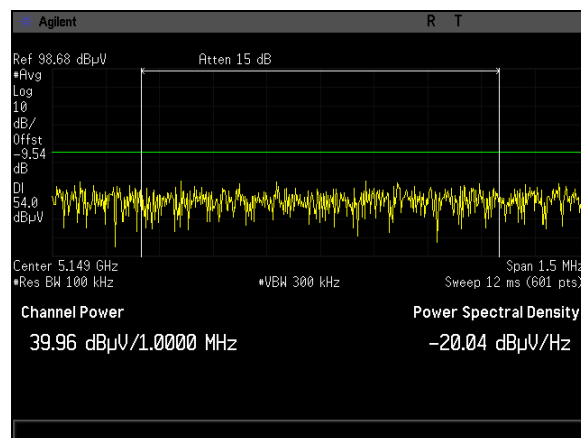
**Plot 428. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 40M, CF 5330M, 19dBi**



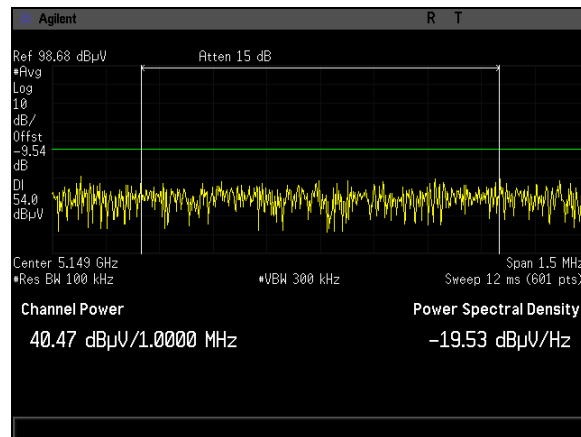
**Plot 429. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 50M, CF 5325M, 19dBi**



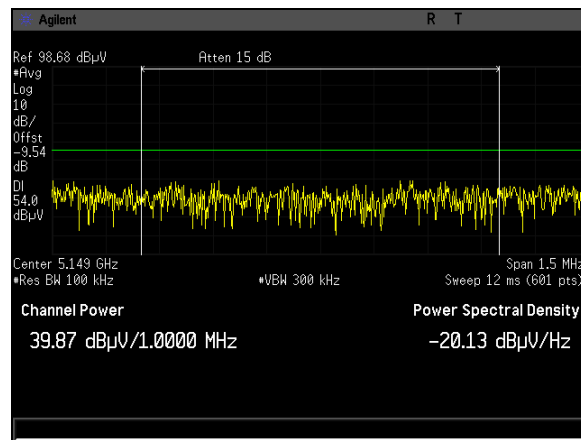
**Plot 430. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 10M, CF 5255M, 27dBi**



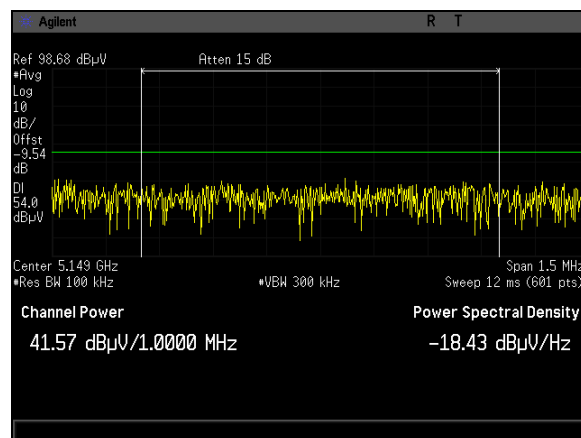
**Plot 431. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 20M, CF 5260M, 27dBi**



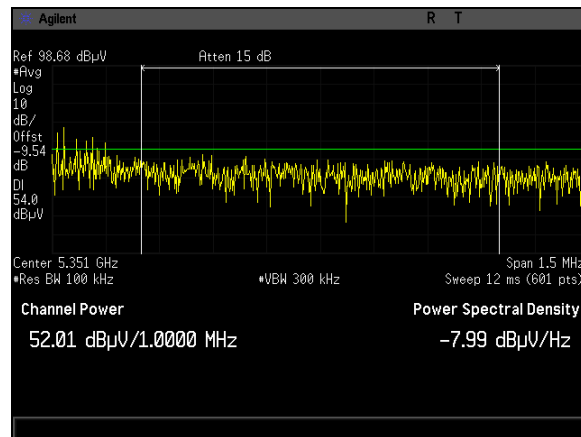
**Plot 432. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 30M, CF 5265M, 27dBi**



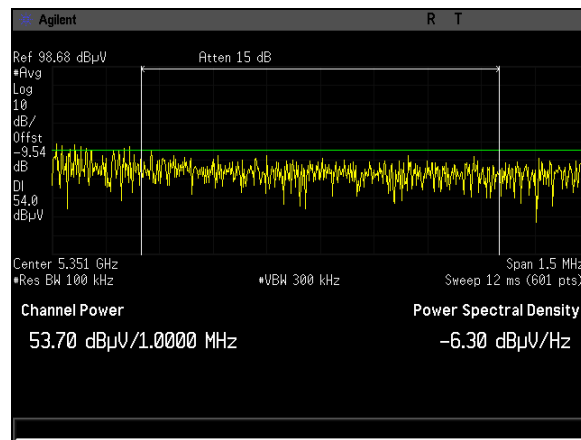
**Plot 433. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 40M, CF 5270M, 27dBi**



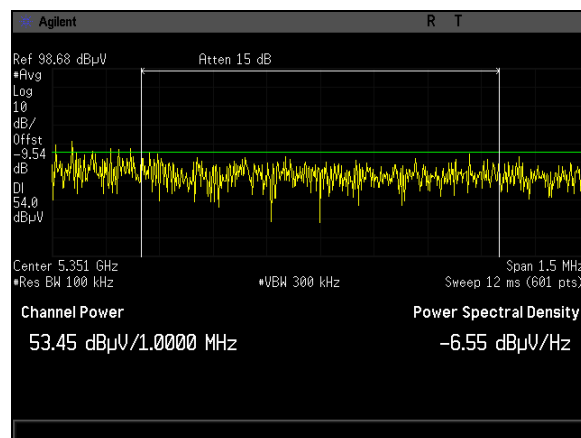
**Plot 434. Undesirable Emissions, Average, Radiated Bandedge 5150M, BW 50M, CF 5275M, 27dBi**



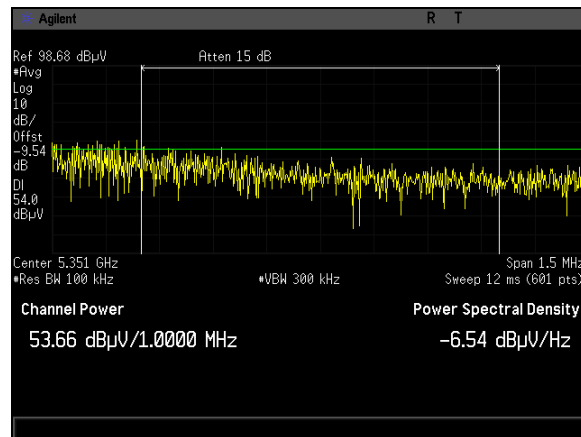
**Plot 435. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 10M, CF 5345M, 27dBi**



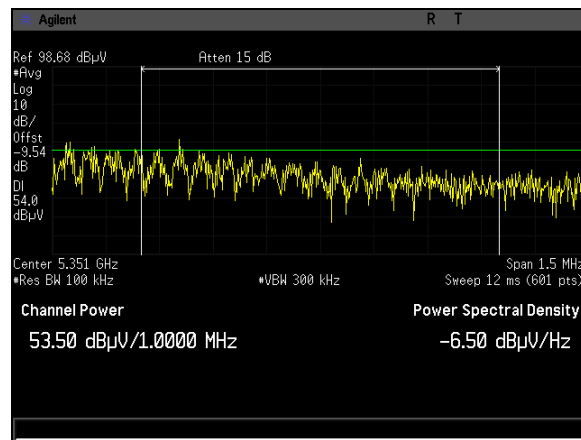
**Plot 436. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 20M, CF 5340M, 27dBi**



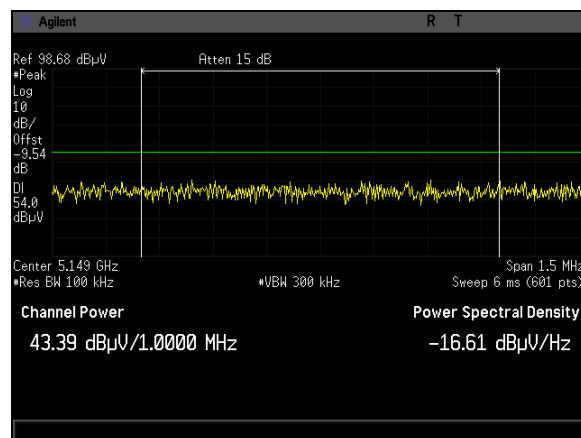
**Plot 437. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 30M, CF 5335M, 27dBi**



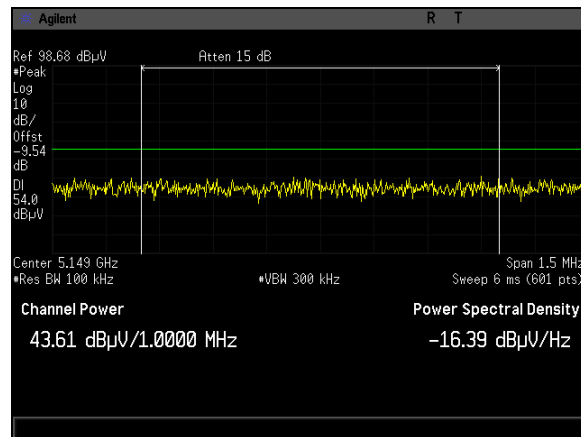
**Plot 438. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 40M, CF 5330M, 27dBi**



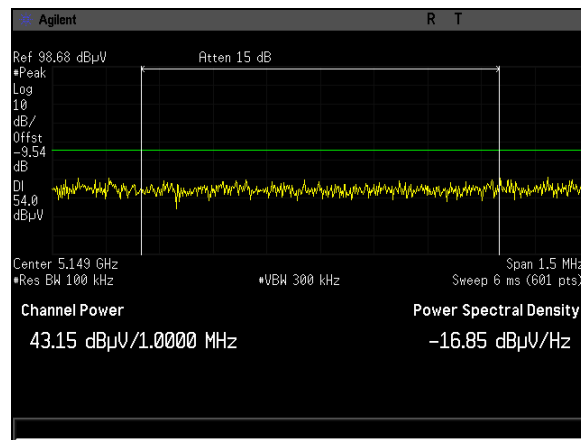
**Plot 439. Undesirable Emissions, Average, Radiated Bandedge 5350M, BW 50M, CF 5325M, 27dBi**



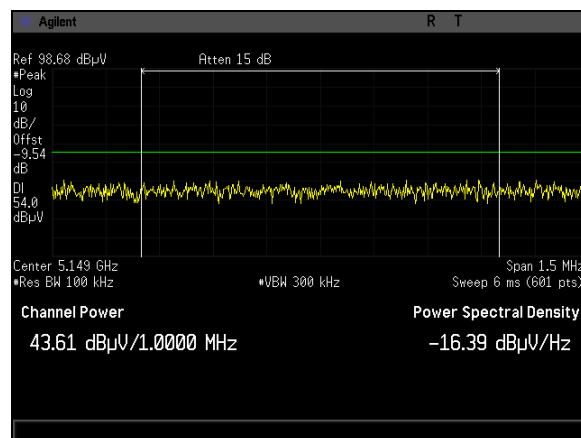
**Plot 440. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 10M, CF 5255M, 27dBi**



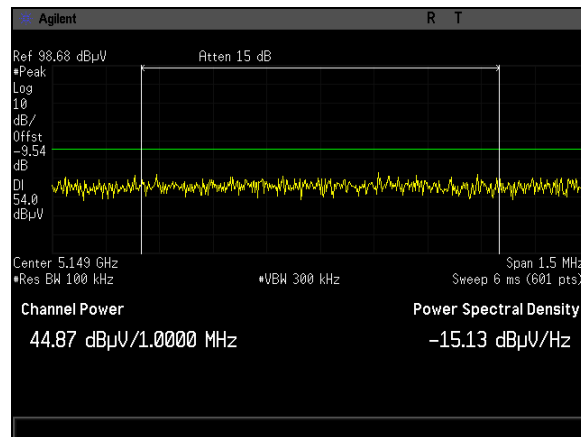
**Plot 441. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 20M, CF 5260M, 27dBi**



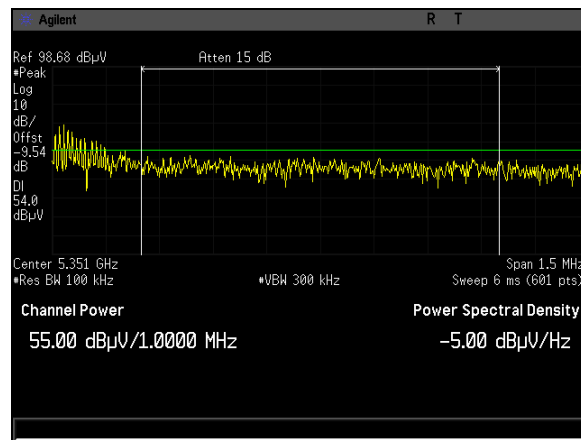
**Plot 442. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 30M, CF 5265M, 27dBi**



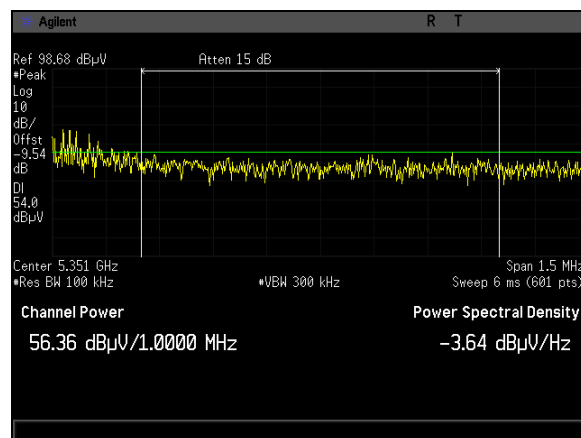
**Plot 443. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 40M, CF 5270M, 27dBi**



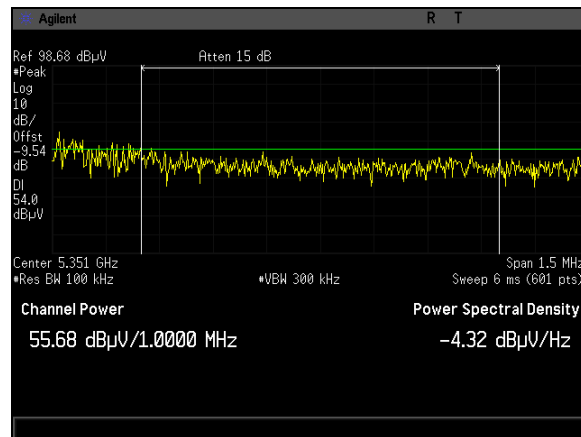
**Plot 444. Undesirable Emissions, Peak, Radiated Bandedge 5150M, BW 50M, CF 5275M, 27dBi**



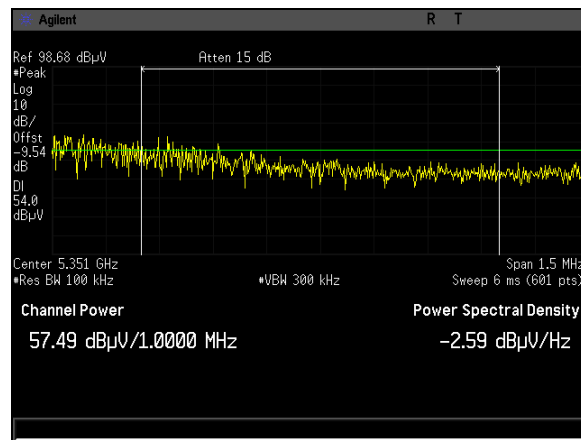
**Plot 445. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 10M, CF 5345M, 27dBi**



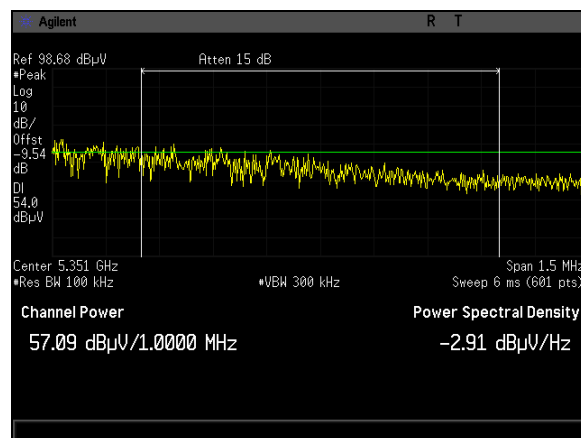
**Plot 446. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 20M, CF 5340M, 27dBi**



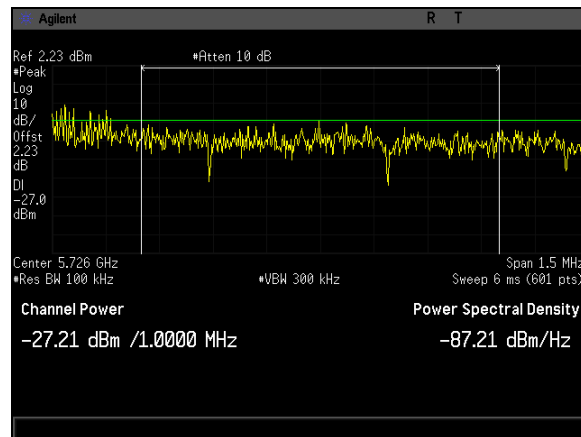
**Plot 447. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 30M, CF 5335M, 27dBi**



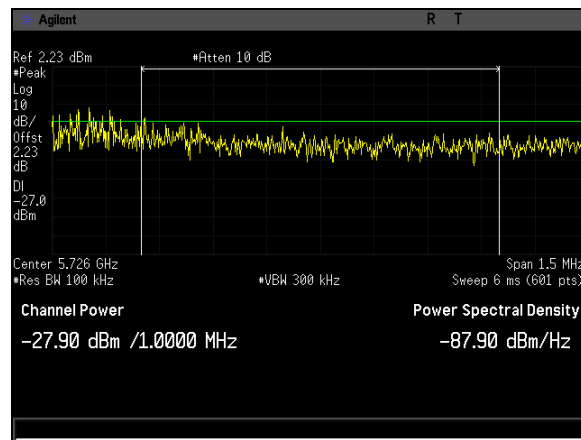
**Plot 448. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 40M, CF 5330M, 27dBi**



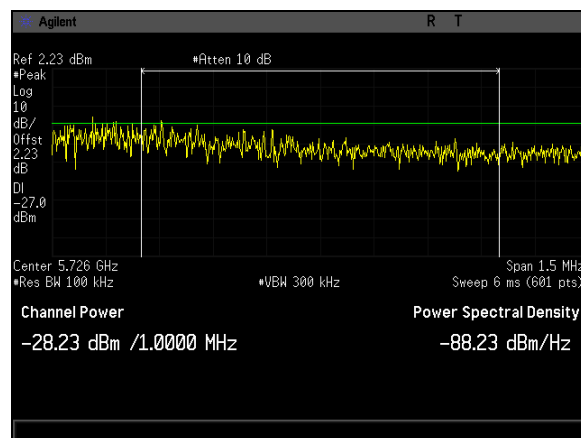
**Plot 449. Undesirable Emissions, Peak, Radiated Bandedge 5350M, BW 50M, CF 5325M, 27dBi**



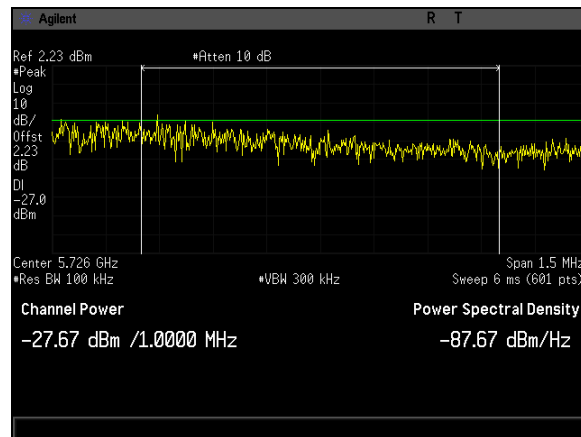
**Plot 450. Undesirable Emissions, -27dBm, Radiated Bandedge 5725M, BW 10M, CF 5720M, 13dBi**



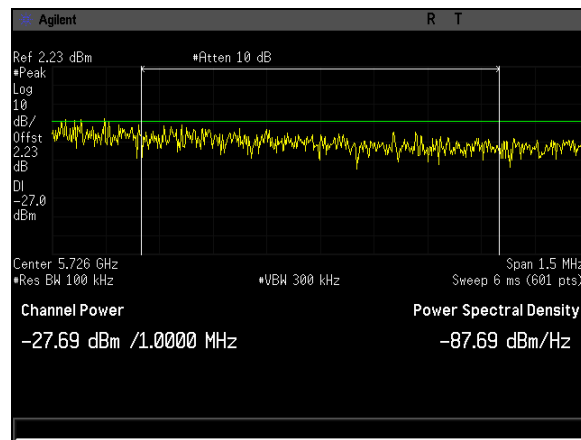
**Plot 451. Undesirable Emissions, -27dBm, Radiated Bandedge 5725M, BW 20M, CF 5715M, 13dBi**



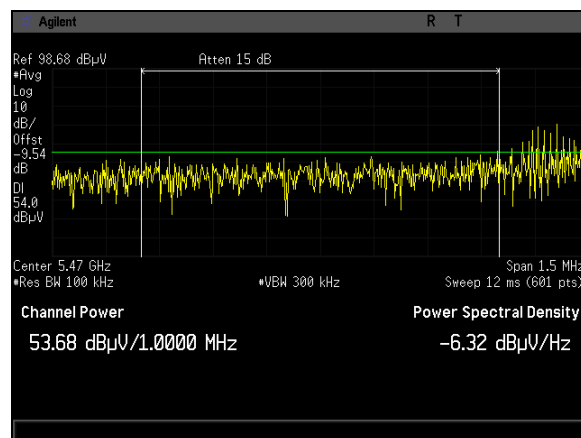
**Plot 452. Undesirable Emissions, -27dBm, Radiated Bandedge 5725M, BW 30M, CF 5710M, 13dBi**



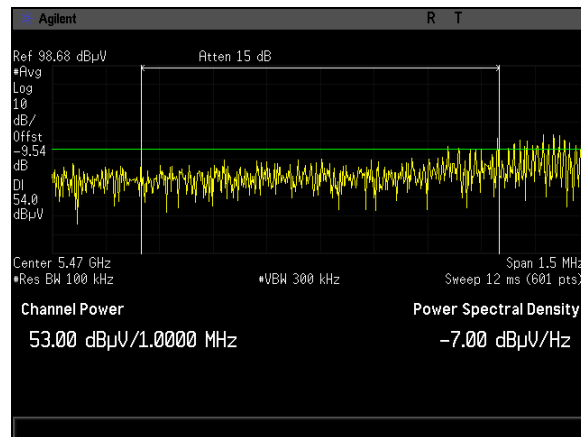
**Plot 453. Undesirable Emissions, -27dBm, Radiated Bandedge 5725M, BW 40M, CF 5705M, 13dBi**



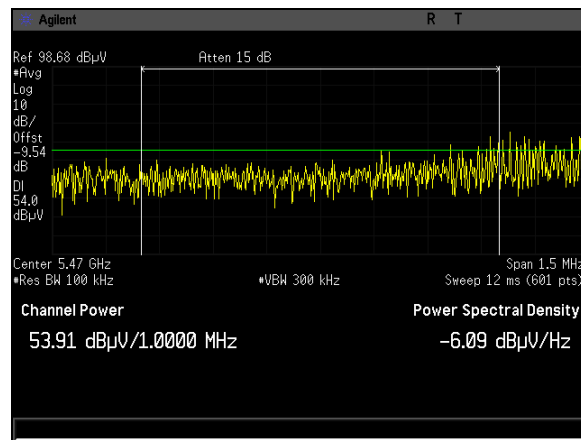
**Plot 454. Undesirable Emissions, -27dBm, Radiated Bandedge 5725M, BW 50M, CF 5700M, 13dBi**



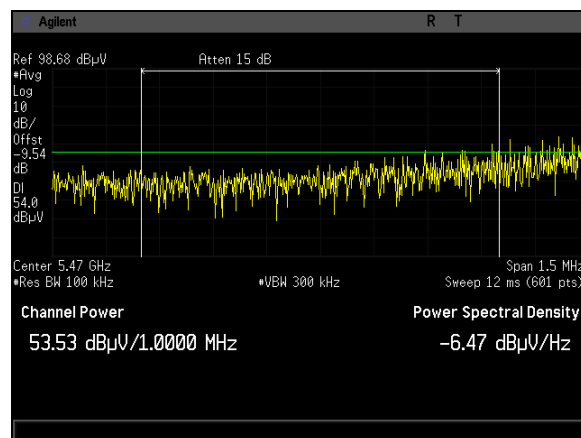
**Plot 455. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 10M, CF 5475M, 13dBi**



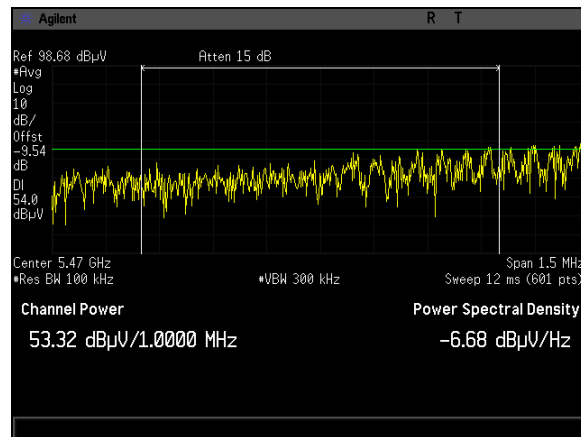
**Plot 456. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 20M, CF 5480M, 13dBi**



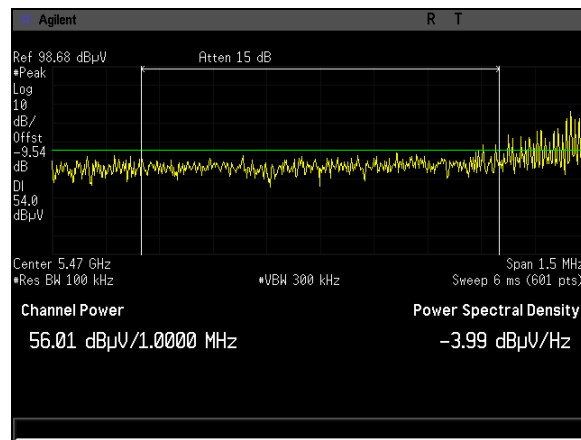
**Plot 457. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 30M, CF 5485M, 13dBi**



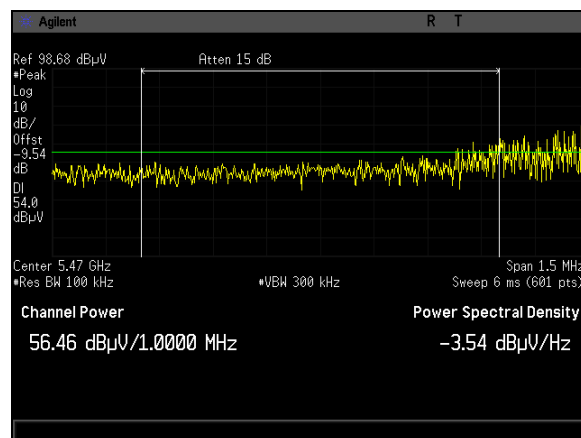
**Plot 458. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 40M, CF 5490M, 13dBi**



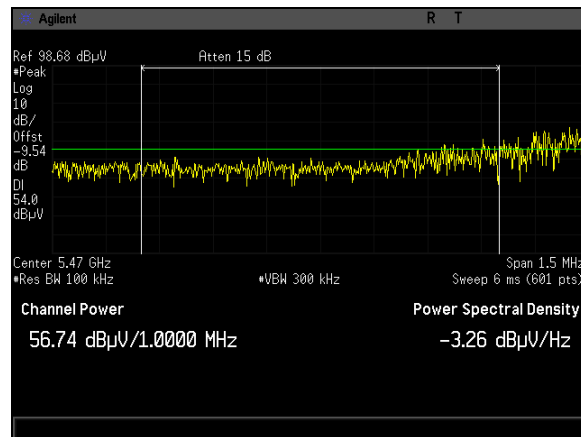
**Plot 459. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 50M, CF 5495M, 13dBi**



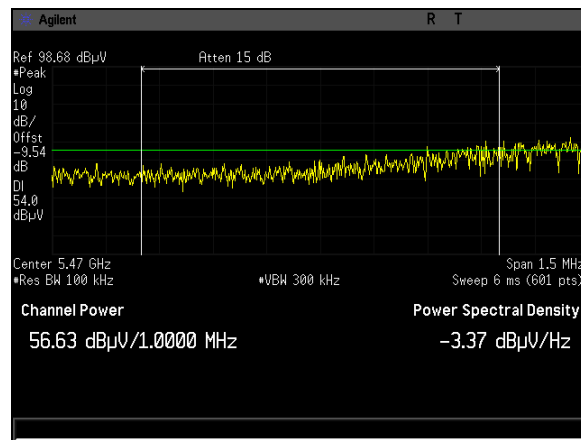
**Plot 460. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 10M, CF 5475M, 13dBi**



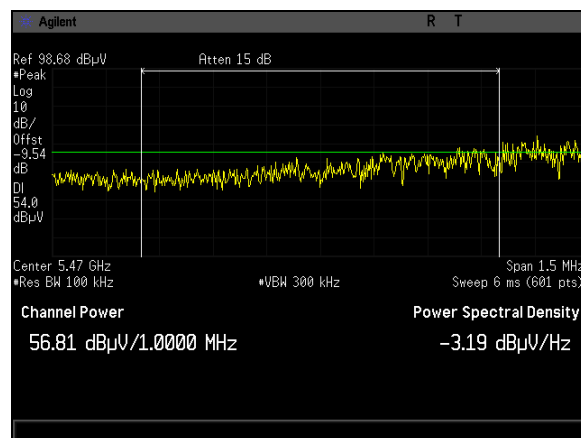
**Plot 461. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 20M, CF 5480M, 13dBi**



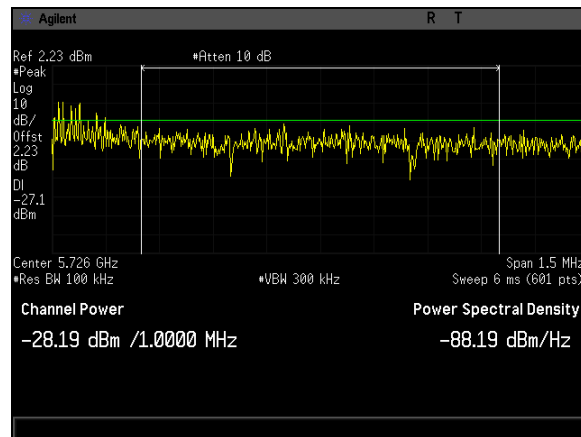
**Plot 462. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 30M, CF 5485M, 13dBi**



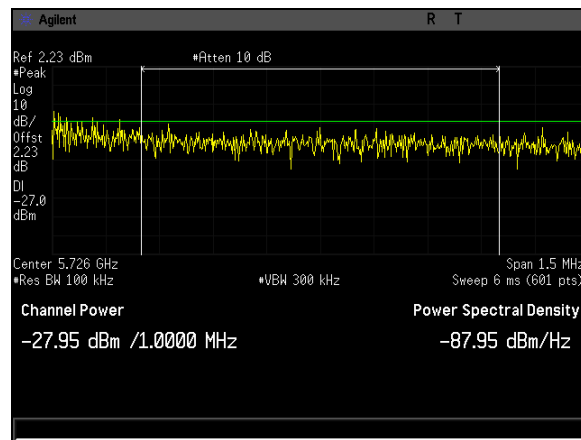
**Plot 463. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 40M, CF 5490M, 13dBi**



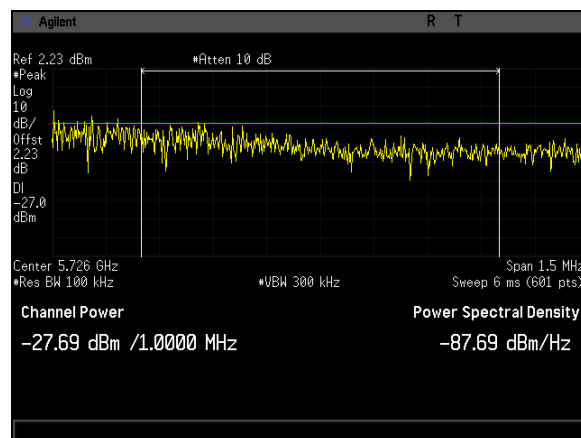
**Plot 464. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 50M, CF 5495M, 13dBi**



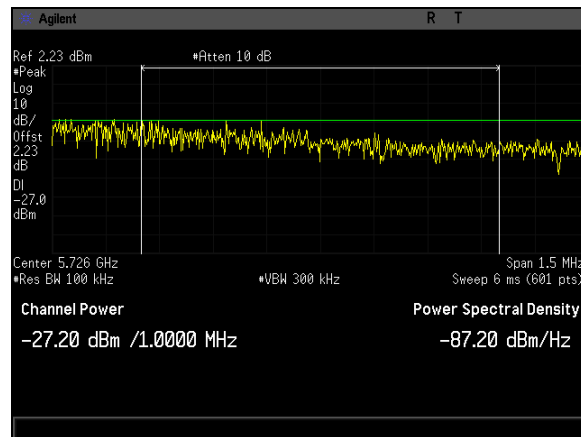
Plot 465. Undesirable Emissions, -27dBm, Radiated Bandedge, 5725M, BW 10M, CF 5720M, 19dBi



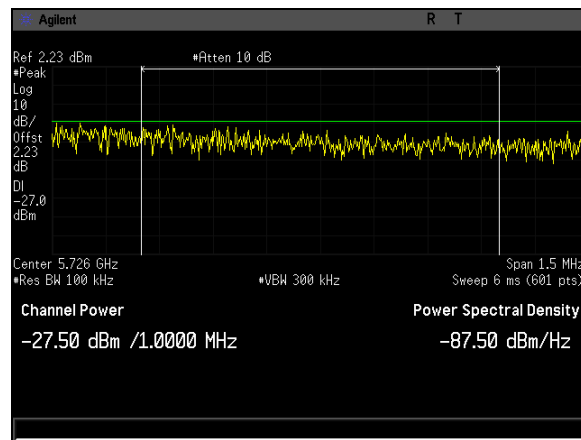
Plot 466. Undesirable Emissions, -27dBm, Radiated Bandedge, 5725M, BW 20M, CF 5715M, 19dBi



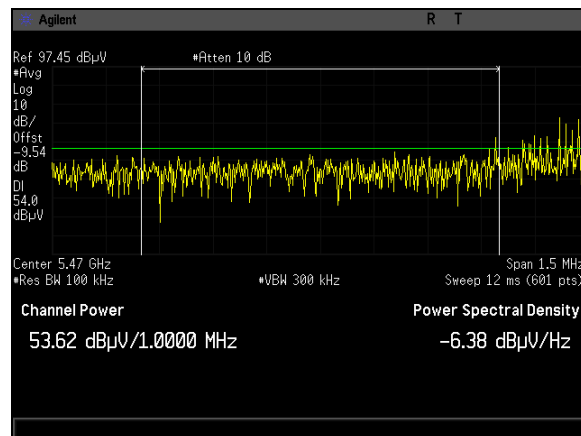
Plot 467. Undesirable Emissions, -27dBm, Radiated Bandedge, 5725M, BW 30M, CF 5710M, 19dBi



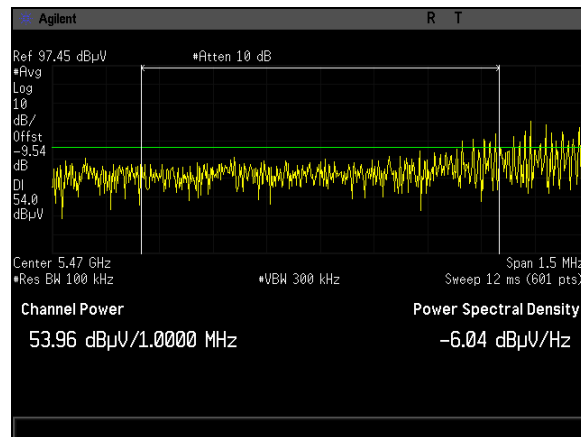
**Plot 468. Undesirable Emissions, -27dBm, Radiated Bandedge, 5725M, BW 40M, CF 5705M, 19dBi**



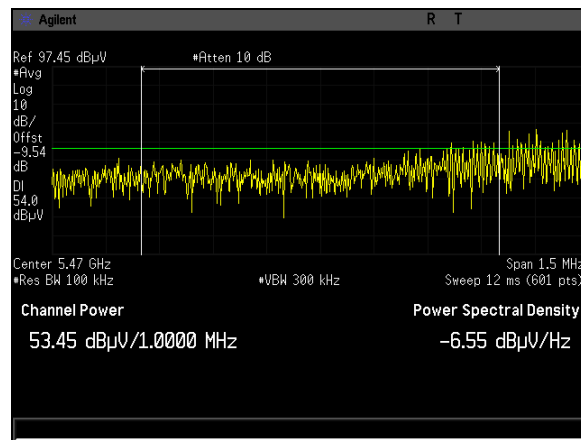
**Plot 469. Undesirable Emissions, -27dBm, Radiated Bandedge, 5725M, BW 50M, CF 5700M, 19dBi**



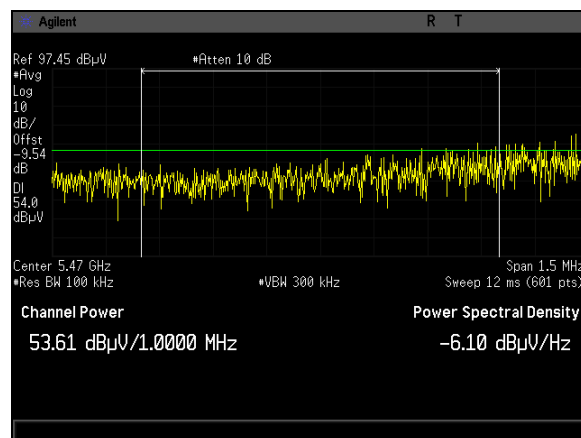
**Plot 470. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 10M, CF 5475M, 19dBi**



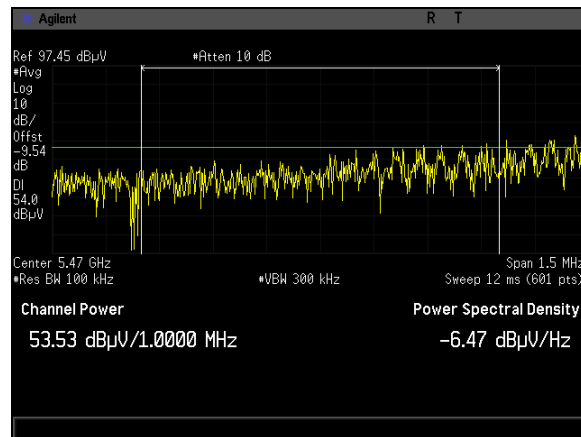
**Plot 471. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 20M, CF 5480M, 19dBi**



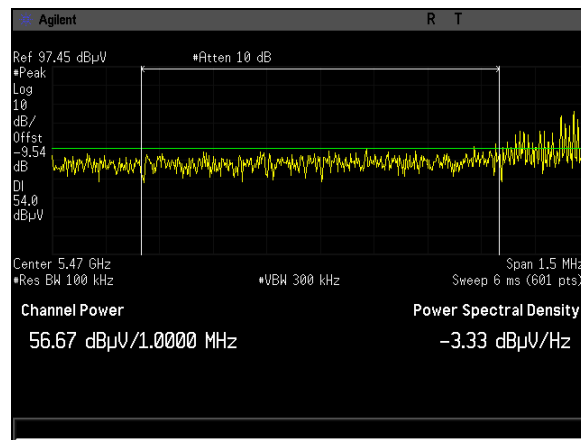
**Plot 472. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 30M, CF 5485M, 19dBi**



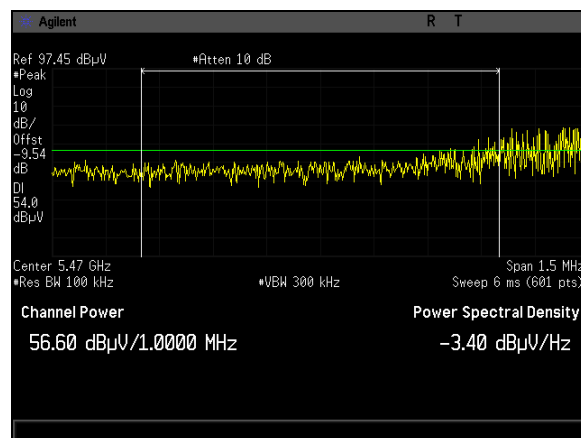
**Plot 473. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 40M, CF 5490M, 19dBi**



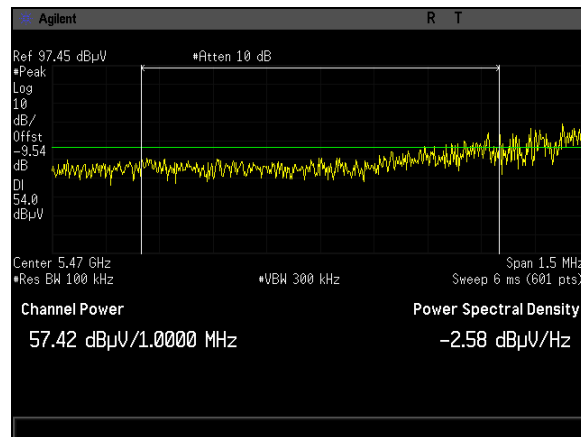
**Plot 474. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 50M, CF 5495M, 19dBi**



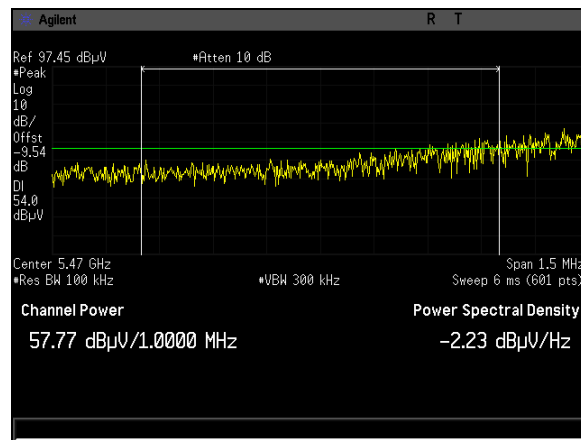
**Plot 475. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 10M, CF 5475M, 19dBi**



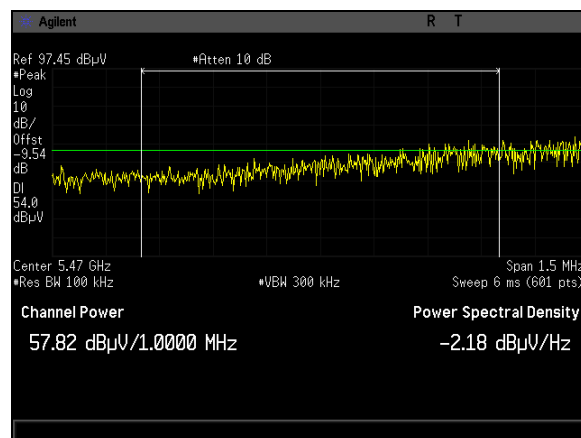
**Plot 476. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 20M, CF 5480M, 19dBi**



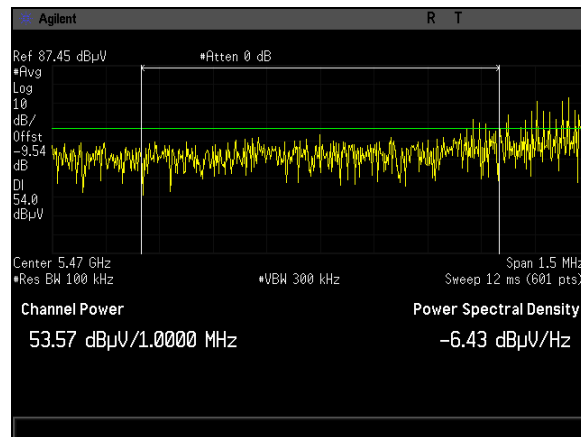
Plot 477. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 30M, CF 5485M, 19dBi



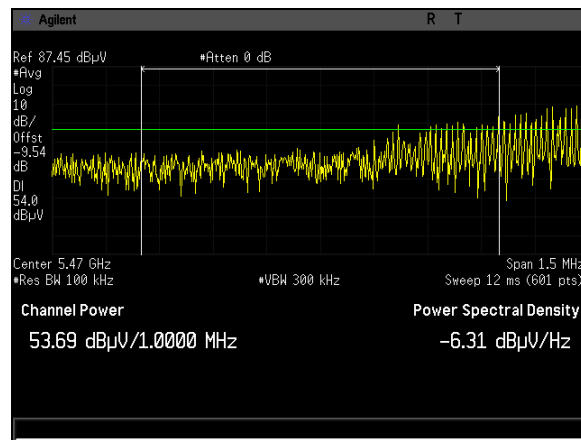
Plot 478. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 40M, CF 5490M, 19dBi



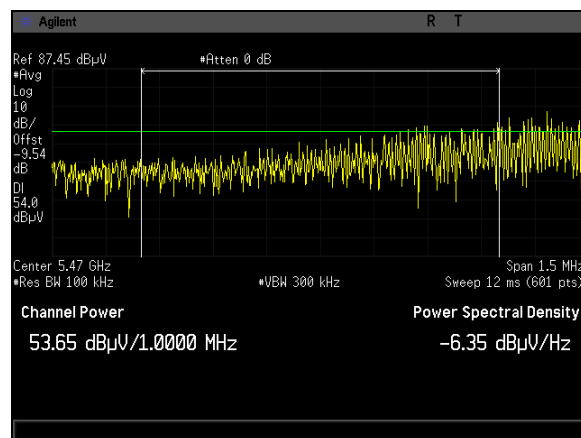
Plot 479. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 50M, CF 5495M, 19dBi



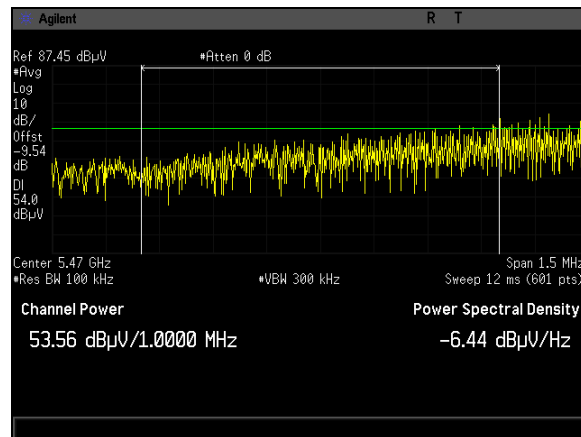
**Plot 480. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 10M, CF 5475M, 27dBi**



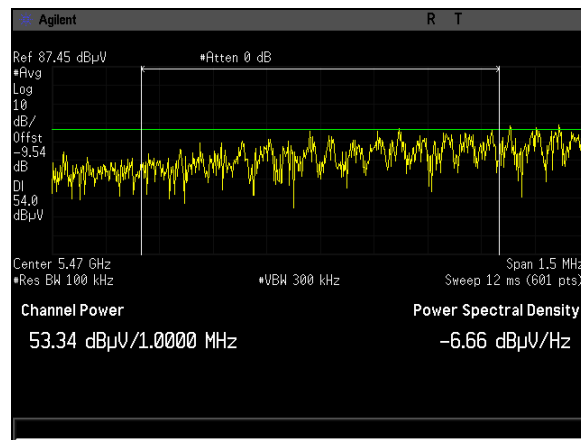
**Plot 481. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 20M, CF 5480M, 27dBi**



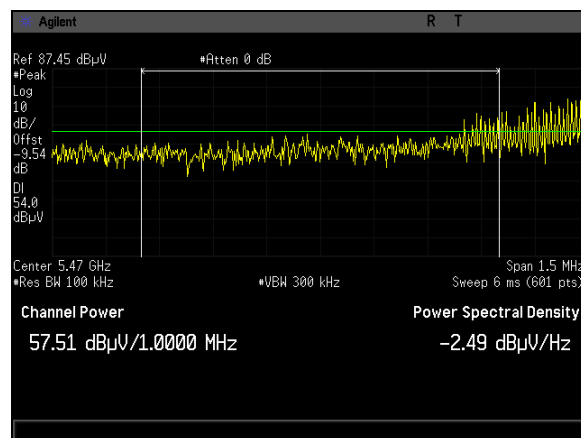
**Plot 482. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 30M, CF 5485M, 27dBi**



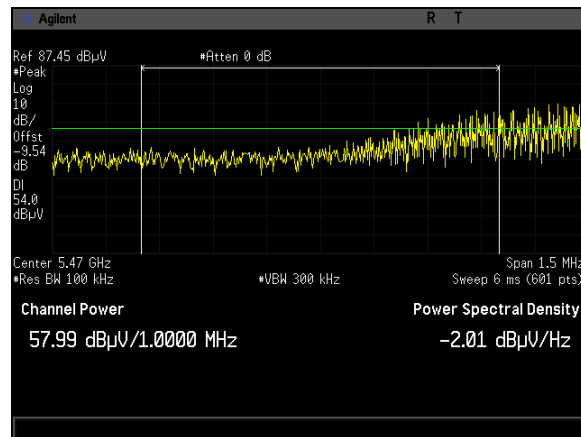
**Plot 483. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 40M, CF 5490M, 27dBi**



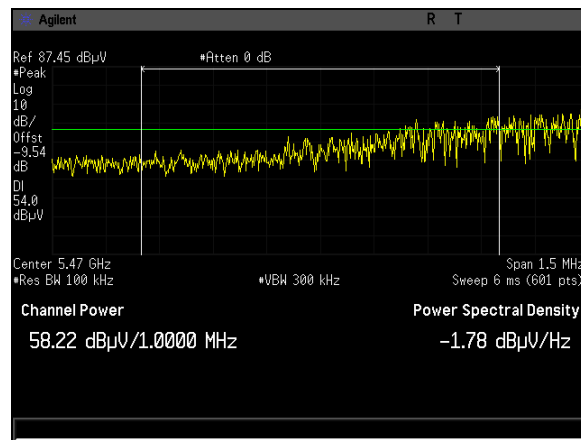
**Plot 484. Undesirable Emissions, Average, Radiated Bandedge 5470M, BW 50M, CF 5495M, 27dBi**



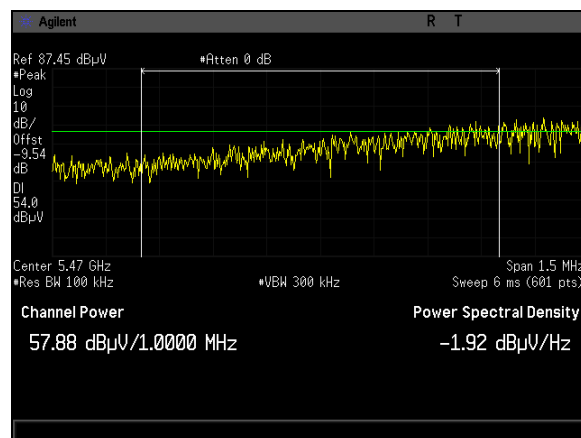
**Plot 485. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 10M, CF 5475M, 27dBi**



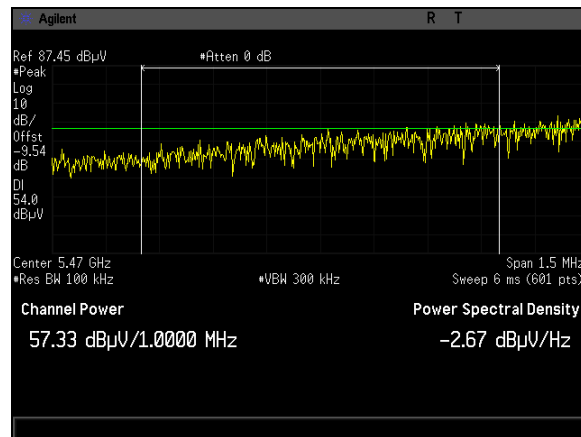
**Plot 486. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 20M, CF 5480M, 27dBi**



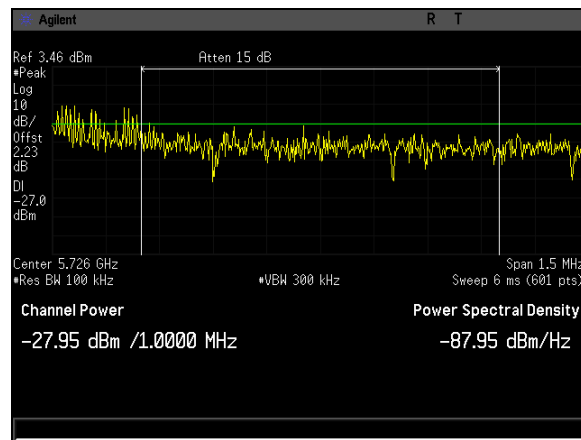
**Plot 487. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 30M, CF 5485M, 27dBi**



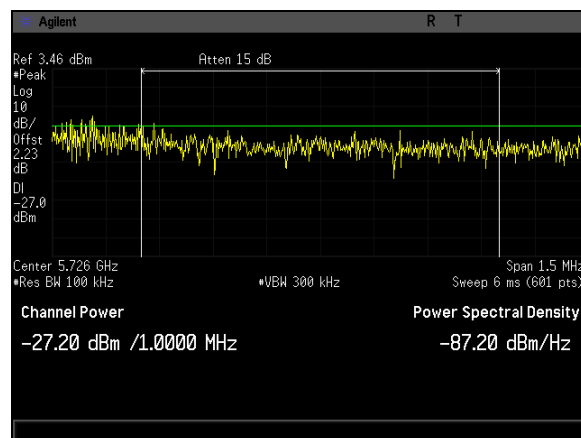
**Plot 488. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 40M, CF 5490M, 27dBi**



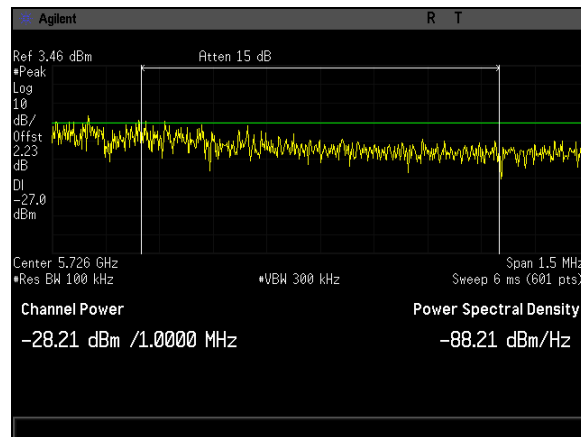
Plot 489. Undesirable Emissions, Peak, Radiated Bandedge 5470M, BW 50M, CF 5495M, 27dBi



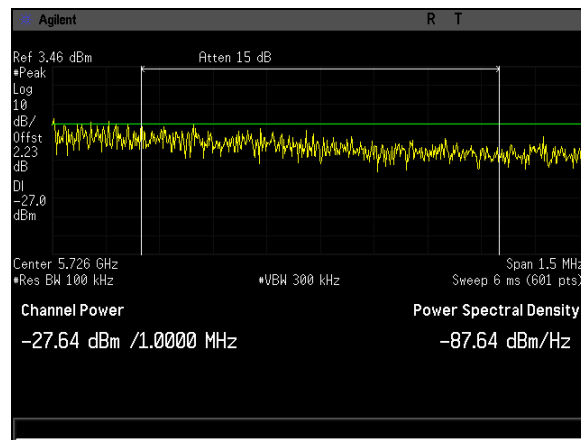
Plot 490. Undesirable Emissions, -27dBm, Radiated Bandedge 5725M, BW 10M, CF 5720M, 27dBi



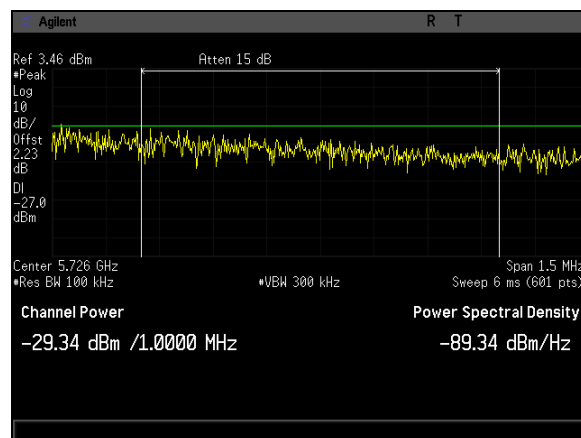
Plot 491. Undesirable Emissions, -27dBm, Radiated Bandedge 5725M, BW 20M, CF 5715M, 27dBi



**Plot 492. Undesirable Emissions, -27dBm, Radiated Bandedge 5725M, BW 30M, CF 5710M, 27dBi**

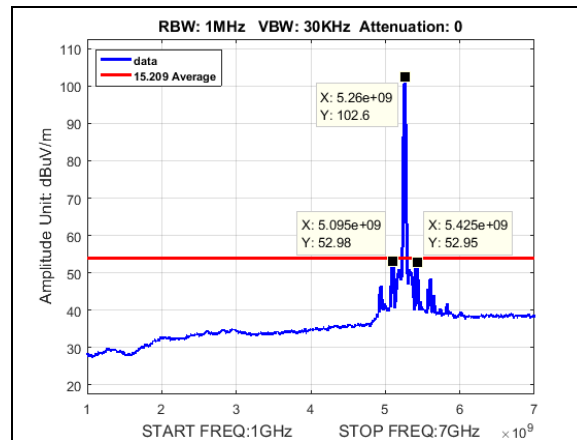


**Plot 493. Undesirable Emissions, -27dBm, Radiated Bandedge 5725M, BW 40M, CF 5705M, 27dBi**

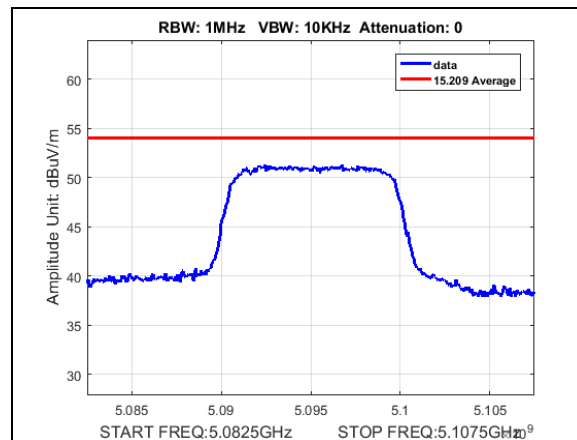


**Plot 494. Undesirable Emissions, -27dBm, Radiated Bandedge 5725M, BW 50M, CF 5700M, 27dBi**

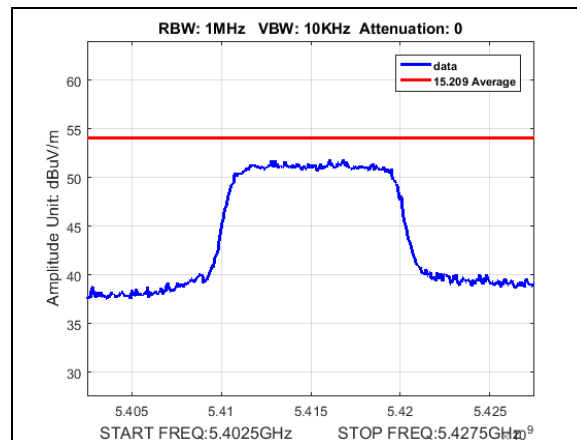
## Radiated Spurious Emissions



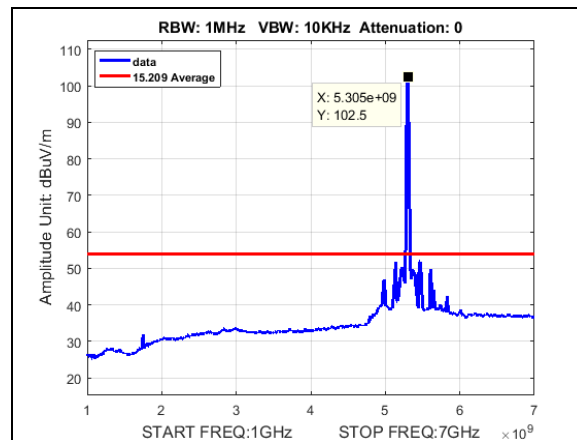
Plot 495. Radiated Spurious Emissions, Average, BW 10M, CF 5255M, 19dBi



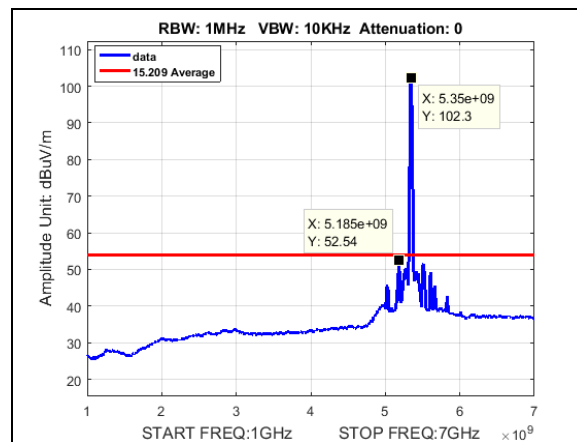
Plot 496. Radiated Spurious Emissions, Average, BW 10M, CF 5255M, 19dBi, 5095M spur



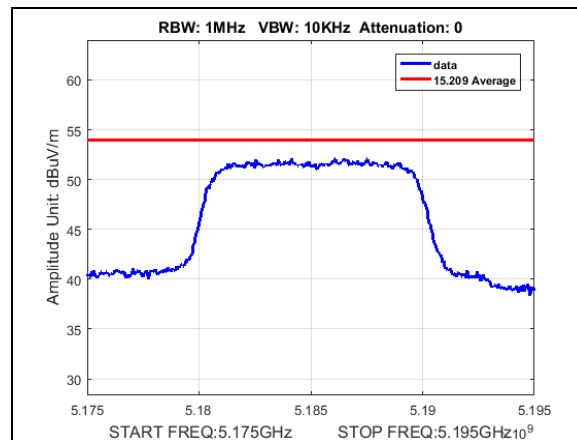
Plot 497. Radiated Spurious Emissions, Average, BW 10M, CF 5255M, 19dBi, 5415M spur



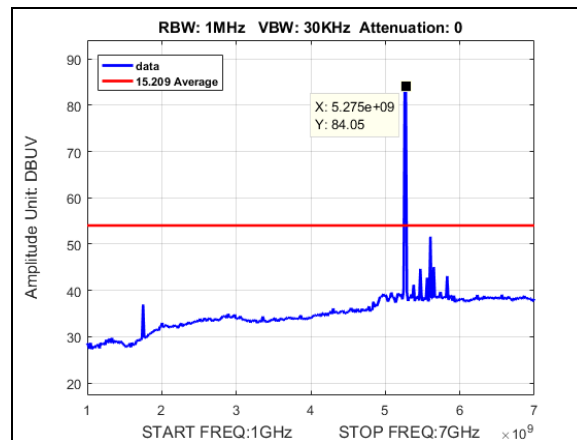
**Plot 498. Radiated Spurious Emissions, Average, BW 10M, CF 5300M, 19dBi**



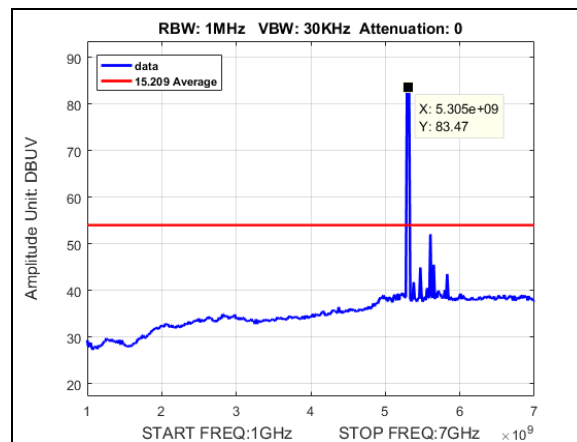
**Plot 499. Radiated Spurious Emissions, Average, BW 10M, CF 5345M, 19dBi**



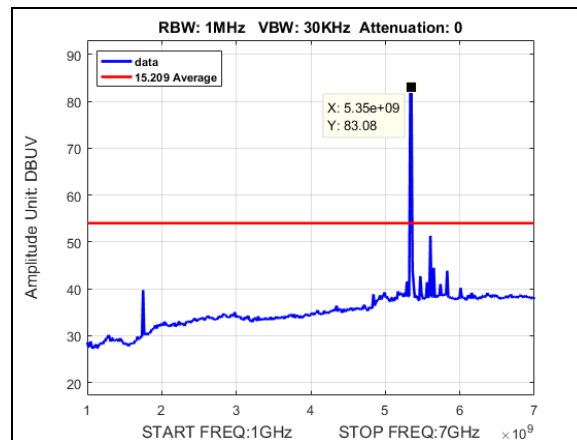
**Plot 500. Radiated Spurious Emissions, Average, BW 10M, CF 5345M, 19dBi, 5185M spur**



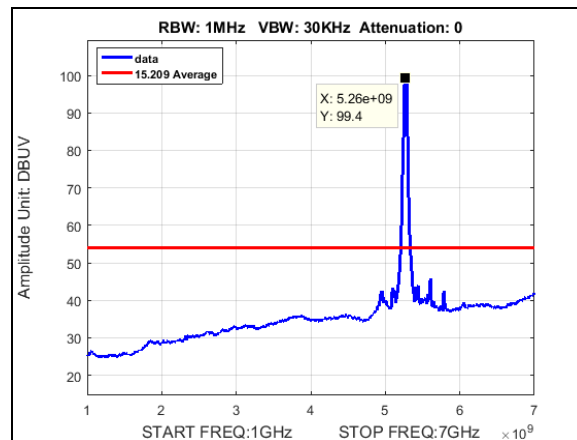
**Plot 501. Radiated Spurious Emissions, Average, BW 20M, CF 5260M, 19dBi**



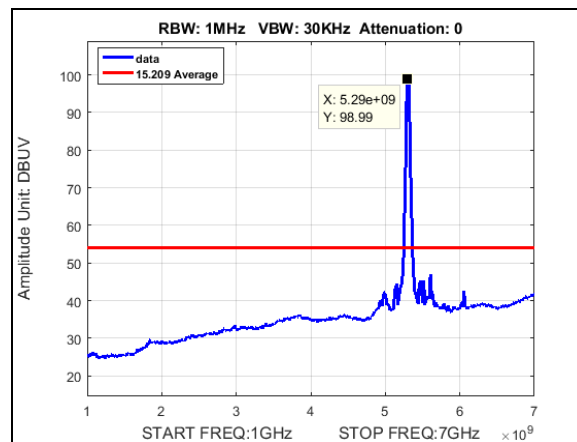
**Plot 502. Radiated Spurious Emissions, Average, BW 20M, CF 5300M, 19dBi**



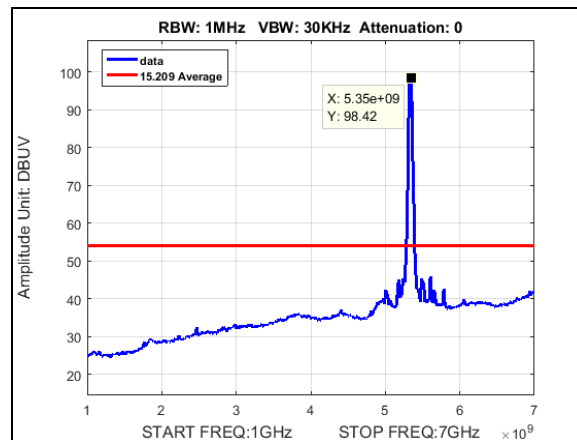
**Plot 503. Radiated Spurious Emissions, Average, BW 20M, CF 5340M, 19dBi**



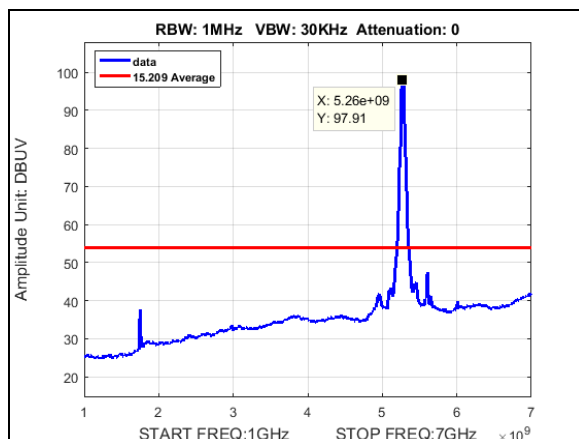
**Plot 504. Radiated Spurious Emissions, Average, BW 30M, CF 5265M, 19dBi**



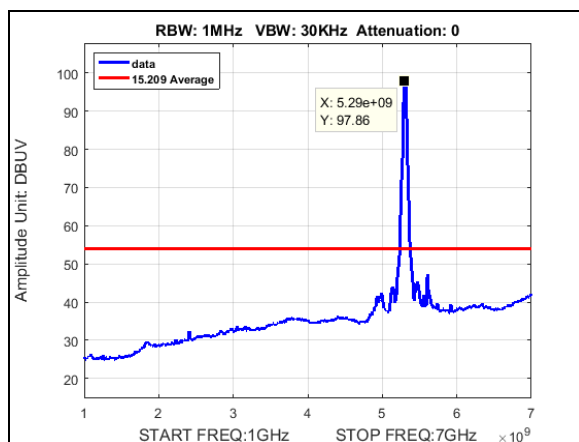
**Plot 505. Radiated Spurious Emissions, Average, BW 30M, CF 5300M, 19dBi**



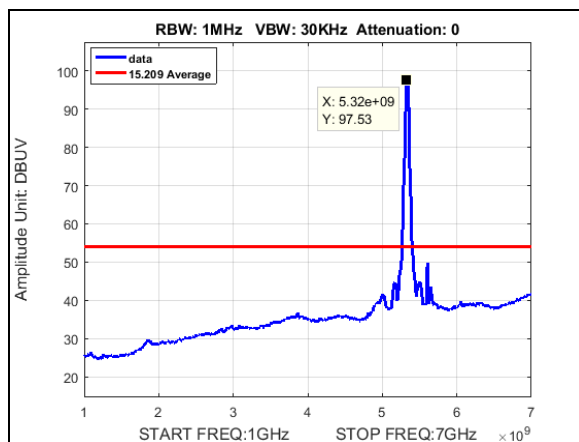
**Plot 506. Radiated Spurious Emissions, Average, BW 30M, CF 5335M, 19dBi**



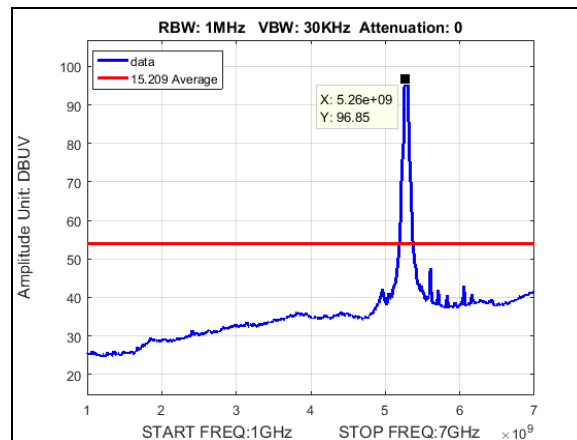
Plot 507. Radiated Spurious Emissions, Average, BW 40M, CF 5270M, 19dBi



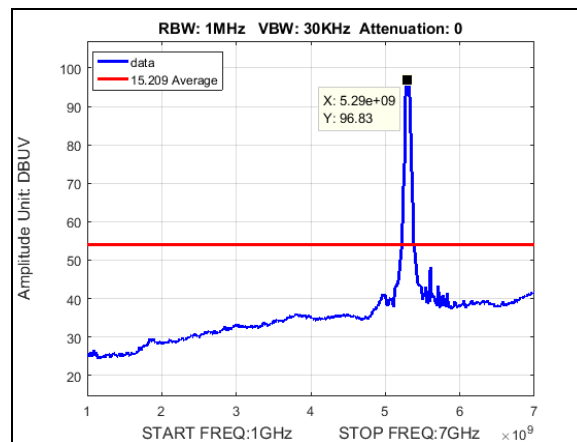
Plot 508. Radiated Spurious Emissions, Average, BW 40M, CF 5300M, 19dBi



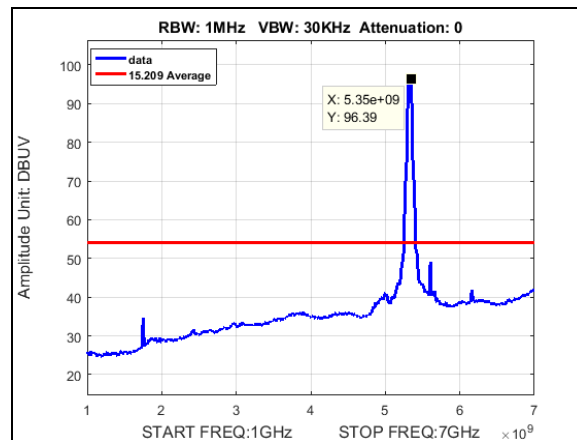
Plot 509. Radiated Spurious Emissions, Average, BW 40M, CF 5330M, 19dBi



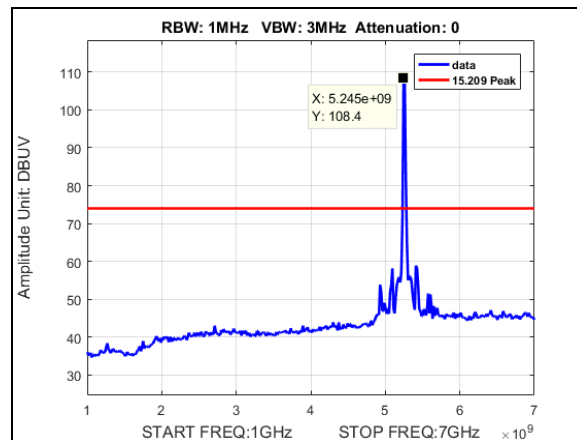
Plot 510. Radiated Spurious Emissions, Average, BW 50M, CF 5275M, 19dBi



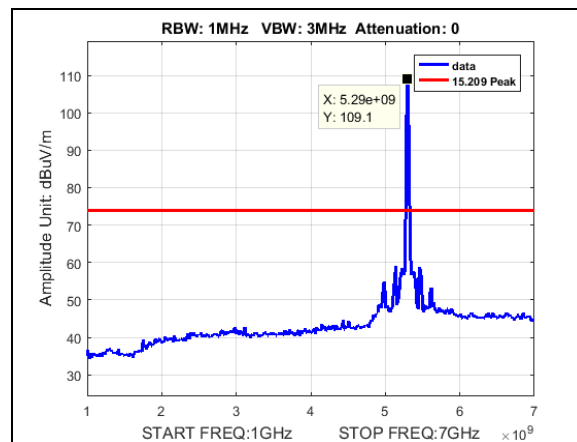
Plot 511. Radiated Spurious Emissions, Average, BW 50M, CF 5300M, 19dBi



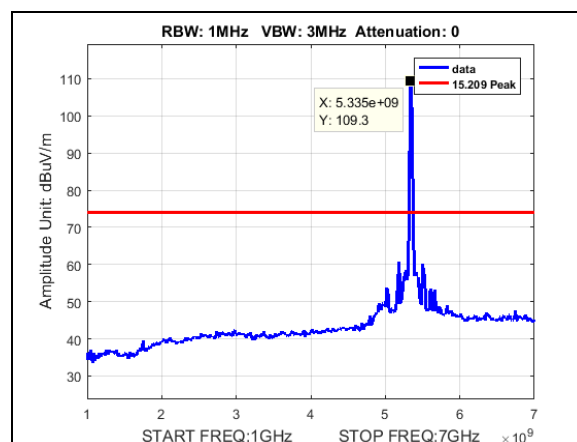
Plot 512. Radiated Spurious Emissions, Average, BW 50M, CF 5325M, 19dBi



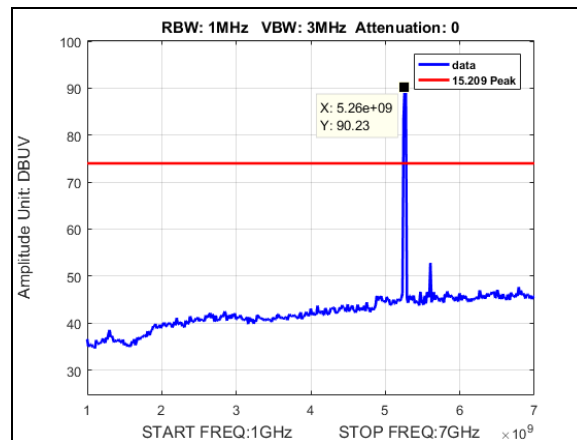
**Plot 513. Radiated Spurious Emissions, Peak, BW 10M, CF 5255M, 19dBi**



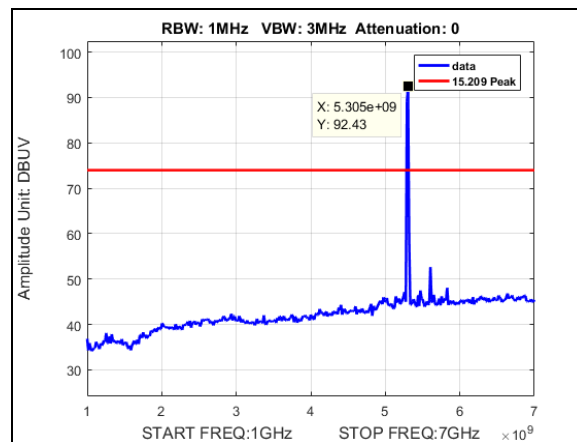
**Plot 514. Radiated Spurious Emissions, Peak, BW 10M, CF 5300M, 19dBi**



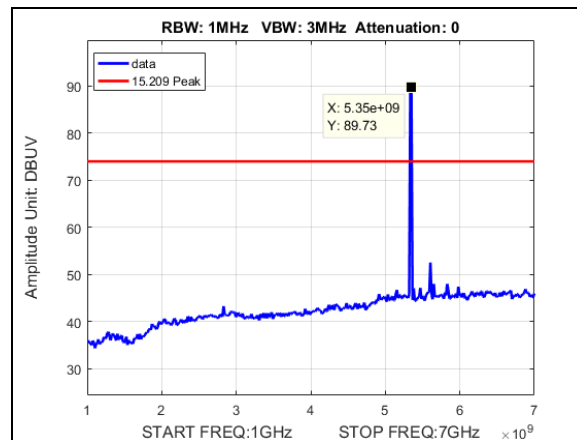
**Plot 515. Radiated Spurious Emissions, Peak, BW 10M, CF 5345M, 19dBi**



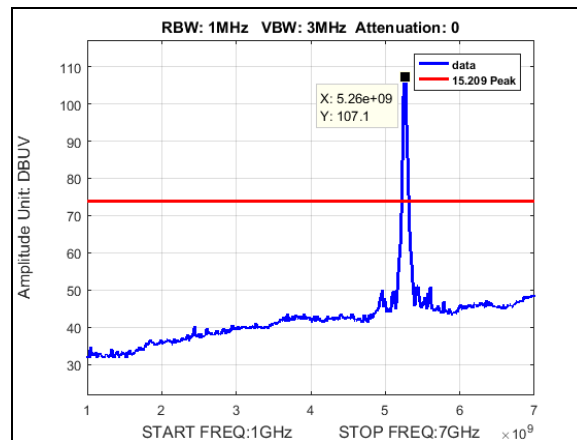
**Plot 516. Radiated Spurious Emissions, Peak, BW 20M, CF 5260M, 19dBi**



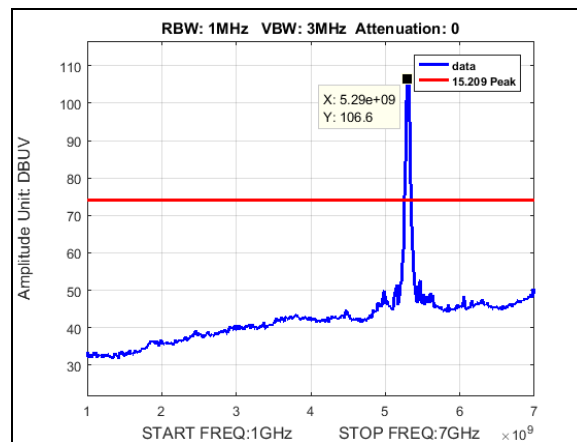
**Plot 517. Radiated Spurious Emissions, Peak, BW 20M, CF 5300M, 19dBi**



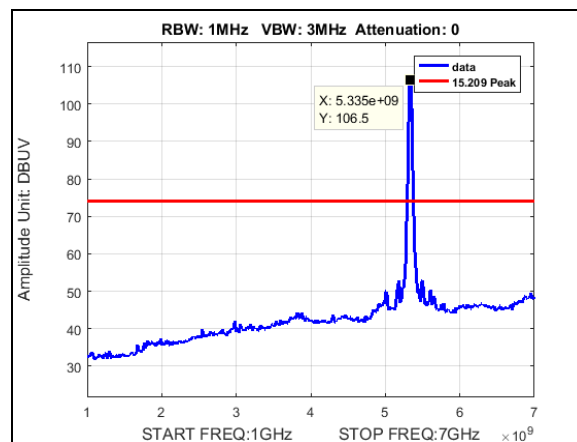
**Plot 518. Radiated Spurious Emissions, Peak, BW 20M, CF 5340M, 19dBi**



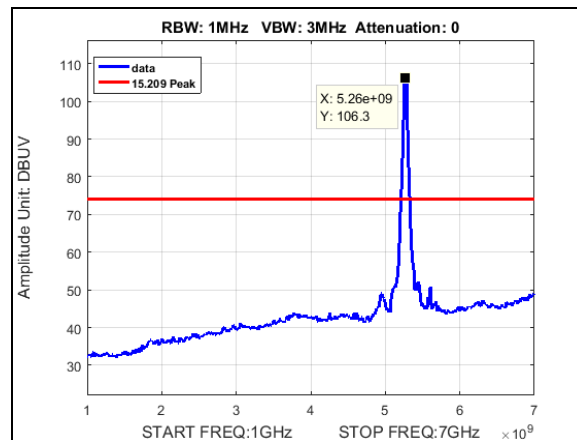
**Plot 519. Radiated Spurious Emissions, Peak, BW 30M, CF 5265M, 19dBi**



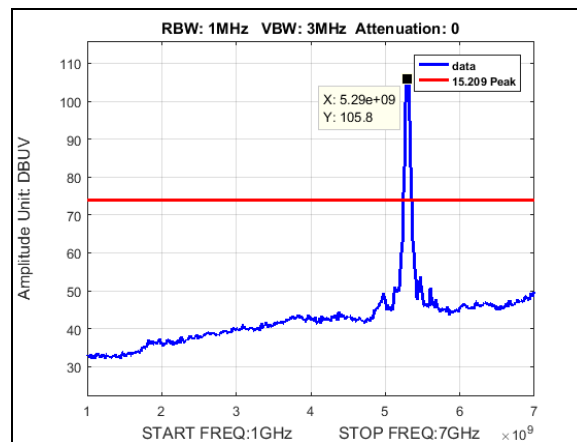
**Plot 520. Radiated Spurious Emissions, Peak, BW 30M, CF 5300M, 19dBi**



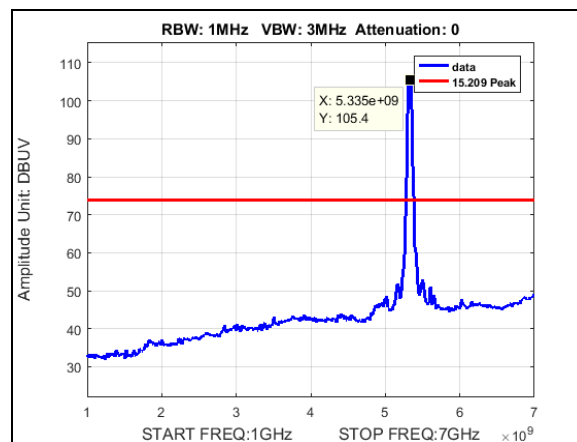
**Plot 521. Radiated Spurious Emissions, Peak, BW 30M, CF 5335M, 19dBi**



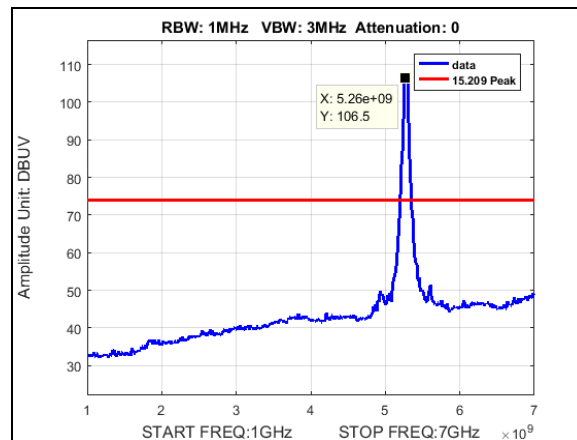
**Plot 522. Radiated Spurious Emissions, Peak, BW 40M, CF 5270M, 19dBi**



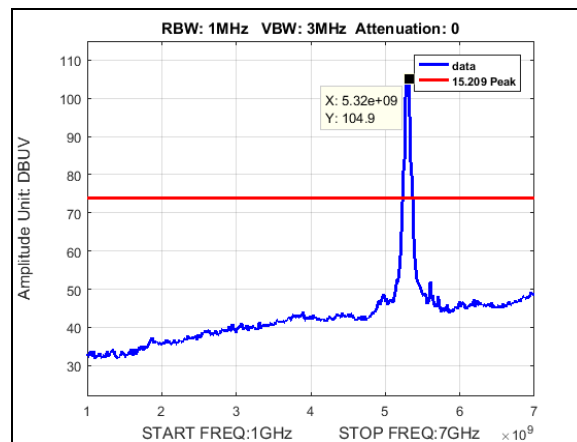
**Plot 523. Radiated Spurious Emissions, Peak, BW 40M, CF 5300M, 19dBi**



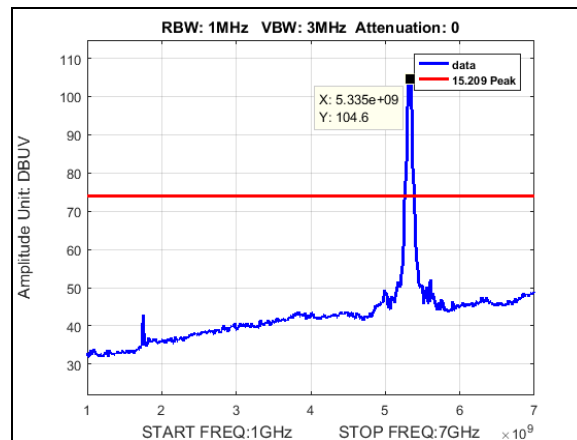
**Plot 524. Radiated Spurious Emissions, Peak, BW 40M, CF 5330M, 19dBi**



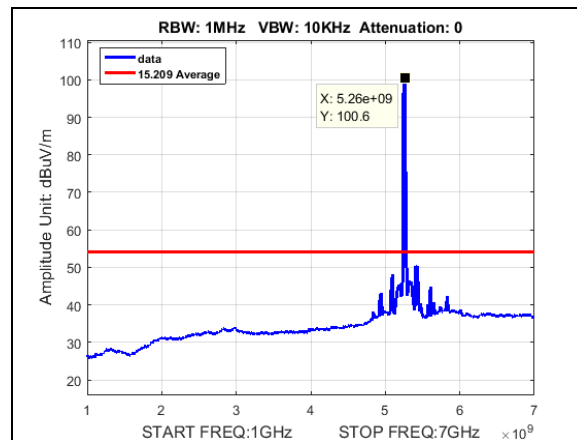
**Plot 525. Radiated Spurious Emissions, Peak, BW 50M, CF 5275M, 19dB<sub>i</sub>**



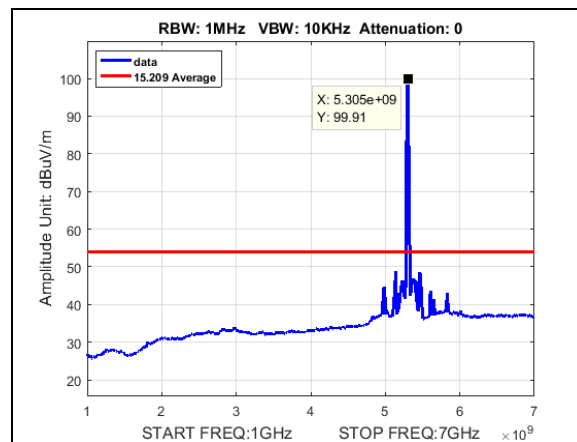
**Plot 526. Radiated Spurious Emissions, Peak, BW 50M, CF 5300M, 19dB<sub>i</sub>**



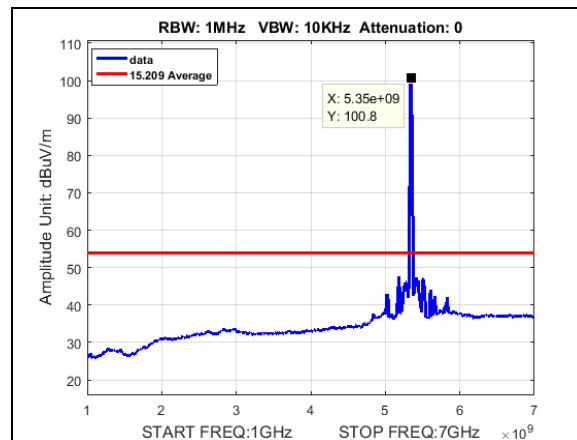
**Plot 527. Radiated Spurious Emissions, Peak, BW 50M, CF 5325M, 19dB<sub>i</sub>**



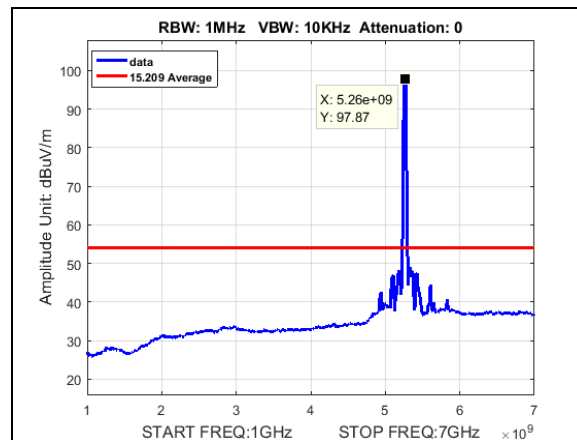
**Plot 528. Radiated Spurious Emissions, Average, BW 10M, CF 5255M, 27dBi, 1-7GHz**



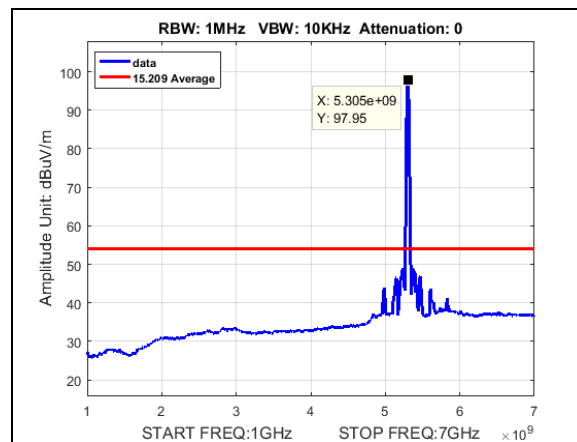
**Plot 529. Radiated Spurious Emissions, Average, BW 10M, CF 5300M, 27dBi, 1-7GHz**



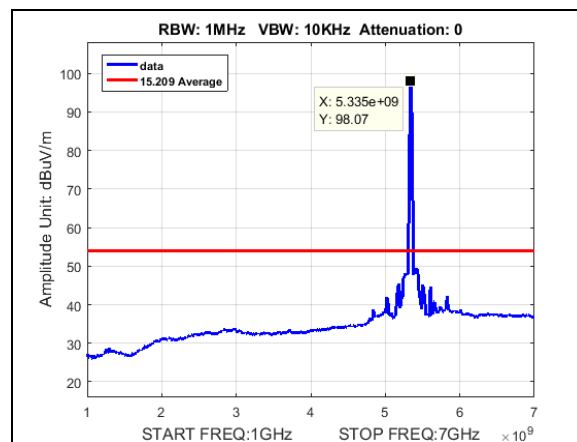
**Plot 530. Radiated Spurious Emissions, Average, BW 10M, CF 5345M, 27dBi, 1-7GHz**



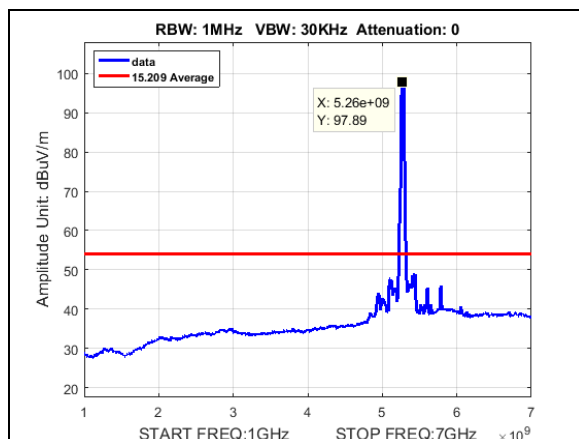
**Plot 531. Radiated Spurious Emissions, Average, BW 20M, CF 5260M, 27dBi, 1-7GHz**



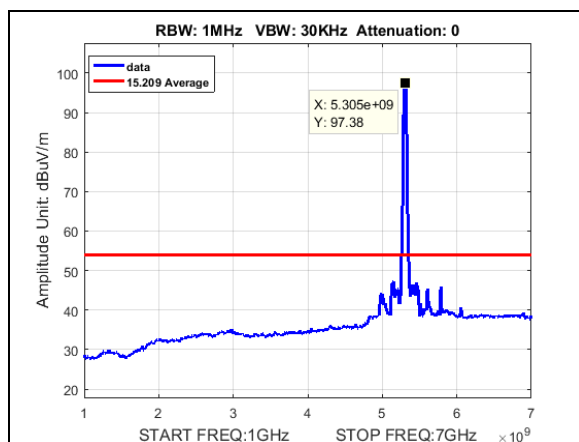
**Plot 532. Radiated Spurious Emissions, Average, BW 20M, CF 5300M, 27dBi, 1-7GHz**



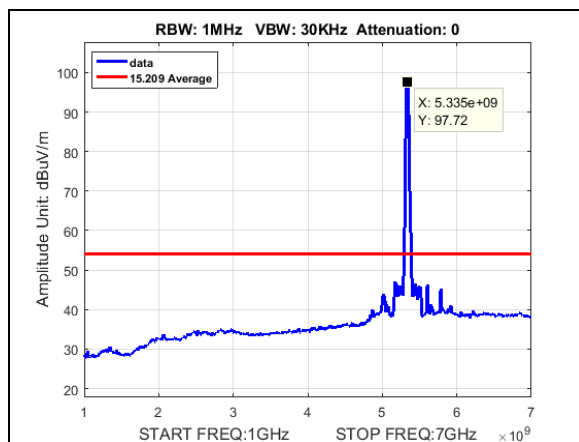
**Plot 533. Radiated Spurious Emissions, Average, BW 20M, CF 5340M, 27dBi, 1-7GHz**



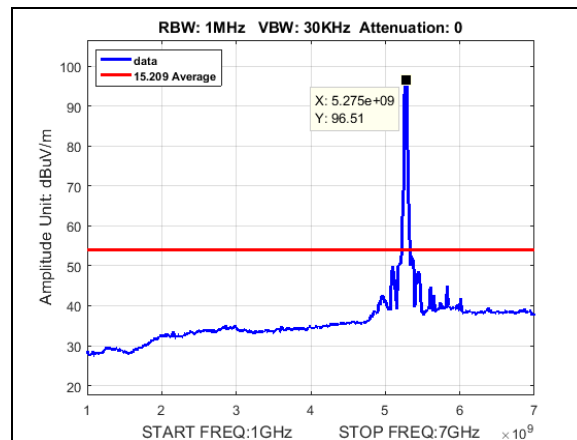
**Plot 534. Radiated Spurious Emissions, Average, BW 30M, CF 5265M, 27dBi, 1-7GHz**



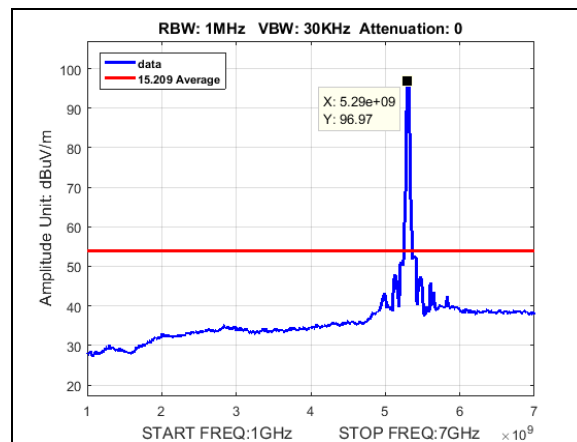
**Plot 535. Radiated Spurious Emissions, Average, BW 30M, CF 5300M, 27dBi, 1-7GHz**



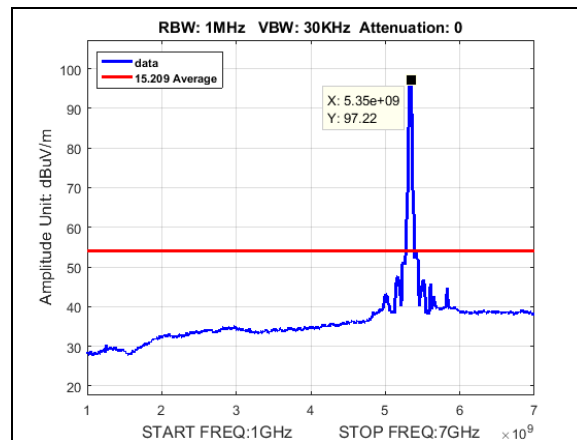
**Plot 536. Radiated Spurious Emissions, Average, BW 30M, CF 5335M, 27dBi, 1-7GHz**



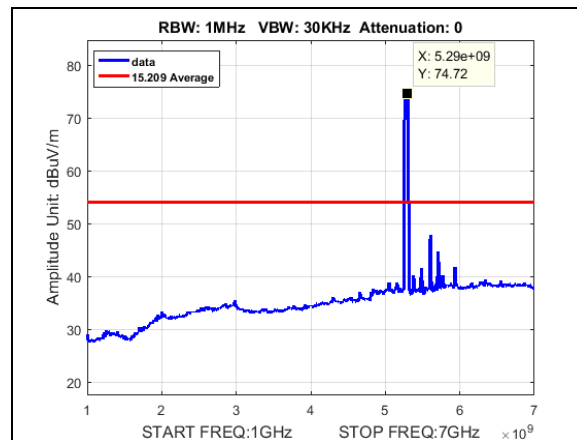
**Plot 537. Radiated Spurious Emissions, Average, BW 40M, CF 5270M, 27dBi, 1-7GHz**



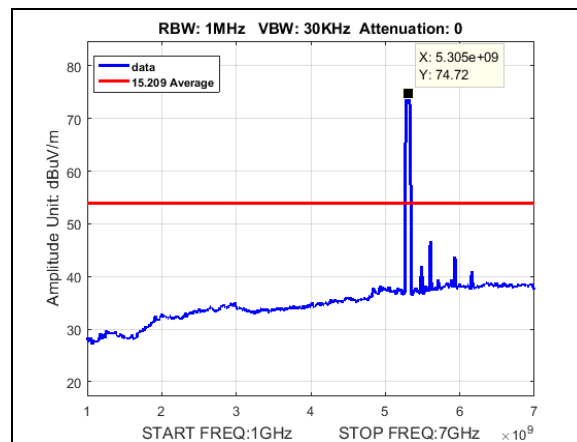
**Plot 538. Radiated Spurious Emissions, Average, BW 40M, CF 5300M, 27dBi, 1-7GHz**



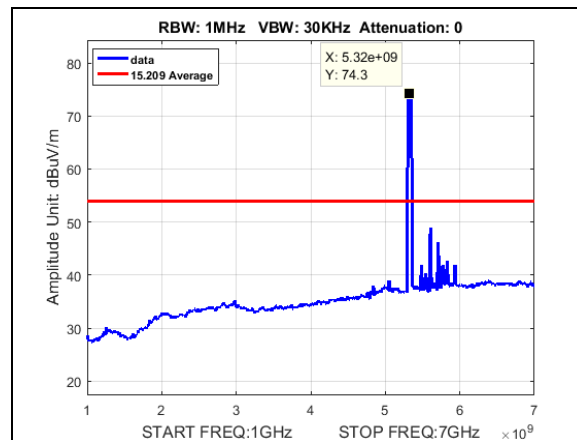
**Plot 539. Radiated Spurious Emissions, Average, BW 40M, CF 5330M, 27dBi, 1-7GHz**



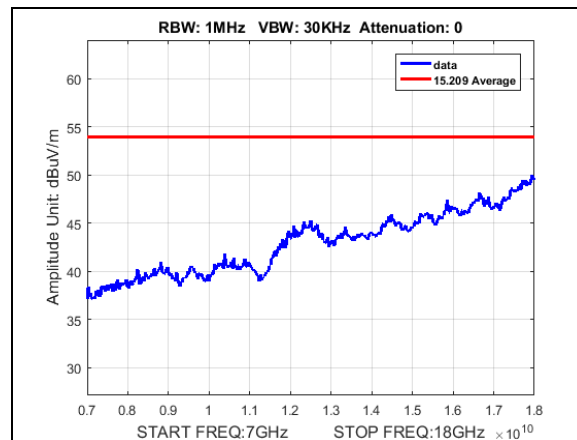
**Plot 540. Radiated Spurious Emissions, Average, BW 50M, CF 5275M, 27dBi, 1-7GHz**



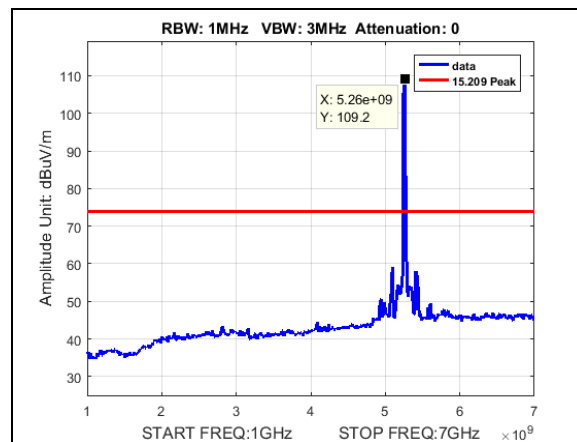
**Plot 541. Radiated Spurious Emissions, Average, BW 50M, CF 5300M, 27dBi, 1-7GHz**



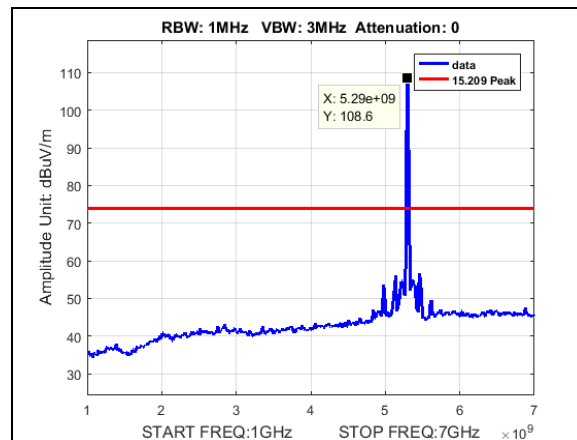
**Plot 542. Radiated Spurious Emissions, Average, BW 50M, CF 5325M, 27dBi, 1-7GHz**



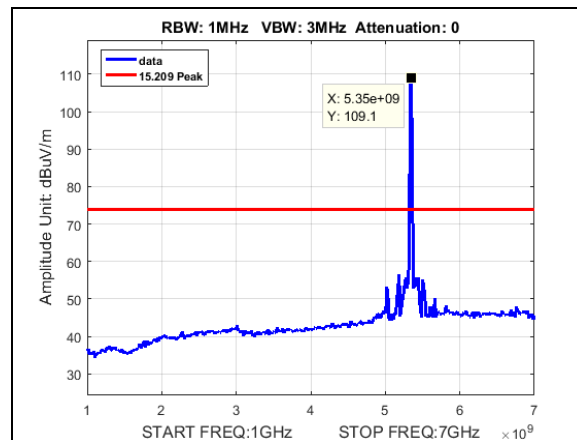
**Plot 543. Radiated Spurious Emissions, Average, Worst Case, 27dBi, 7-18GHz**



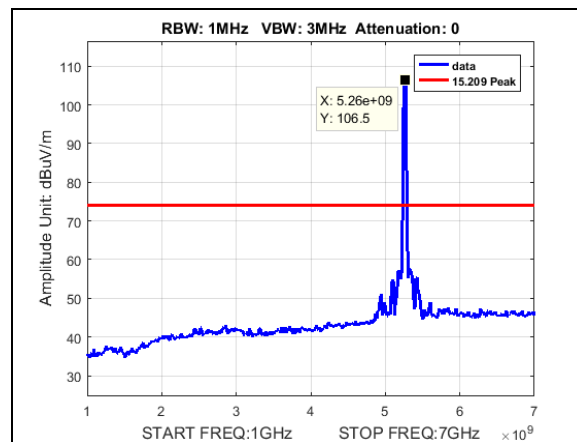
**Plot 544. Radiated Spurious Emissions, Peak, BW 10M, CF 5255M, 27dBi, 1-7GHz**



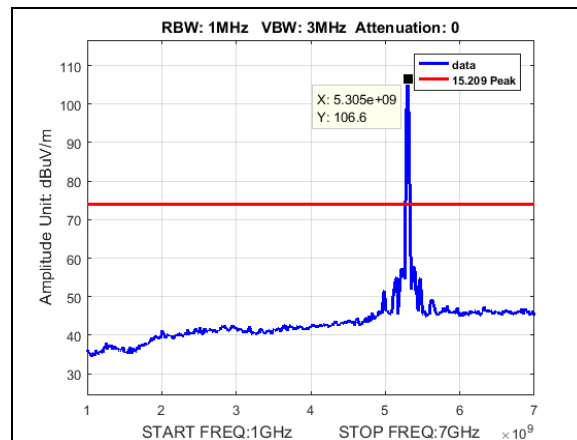
**Plot 545. Radiated Spurious Emissions, Peak, BW 10M, CF 5300M, 27dBi, 1-7GHz**



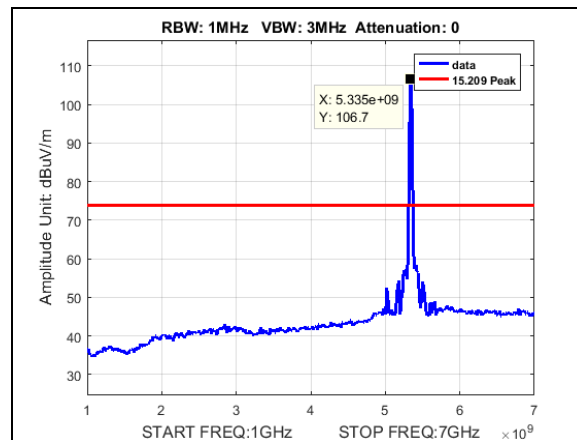
**Plot 546. Radiated Spurious Emissions, Peak, BW 10M, CF 5345M, 27dB, 1-7GHz**



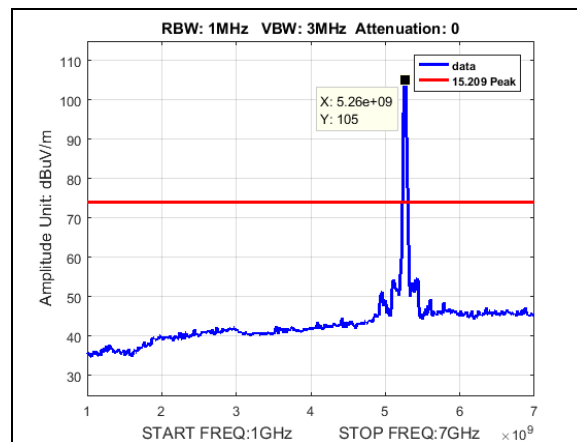
**Plot 547. Radiated Spurious Emissions, Peak, BW 20M, CF 5260M, 27dB, 1-7GHz**



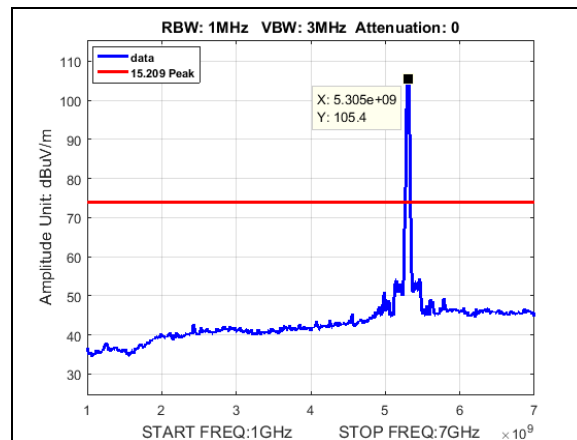
**Plot 548. Radiated Spurious Emissions, Peak, BW 20M, CF 5300M, 27dB, 1-7GHz**



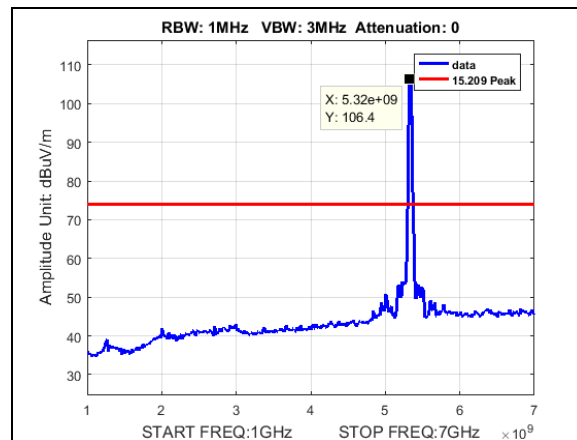
**Plot 549. Radiated Spurious Emissions, Peak, BW 20M, CF 5340M, 27dB, 1-7GHz**



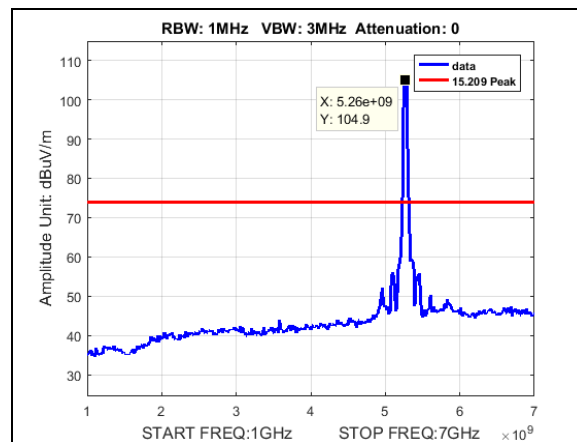
**Plot 550. Radiated Spurious Emissions, Peak, BW 30M, CF 5265M, 27dBi, 1-7GHz**



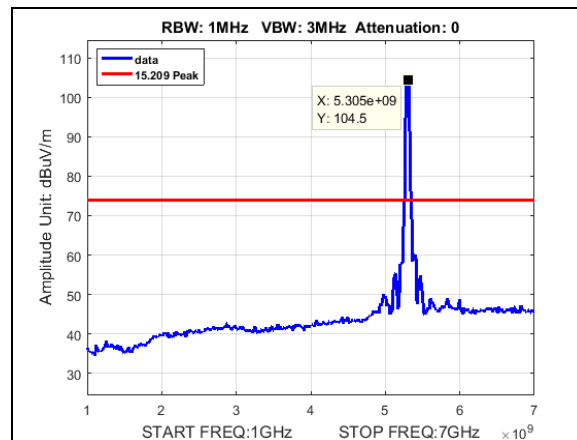
**Plot 551. Radiated Spurious Emissions, Peak, BW 30M, CF 5300M, 27dBi, 1-7GHz**



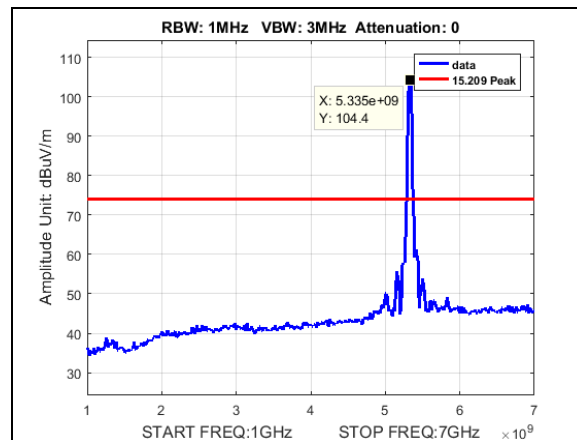
**Plot 552. Radiated Spurious Emissions, Peak, BW 30M, CF 5335M, 27dB, 1-7GHz**



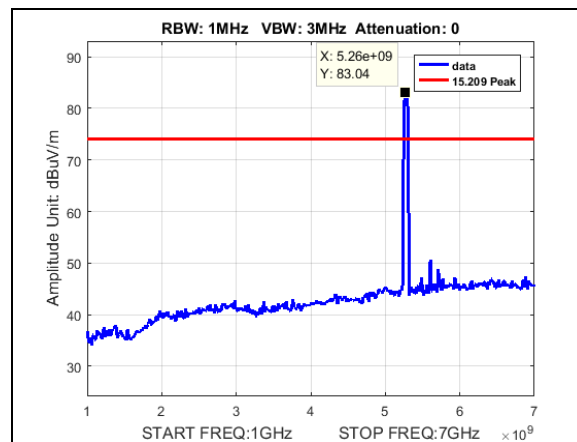
**Plot 553. Radiated Spurious Emissions, Peak, BW 40M, CF 5270M, 27dBi, 1-7GHz**



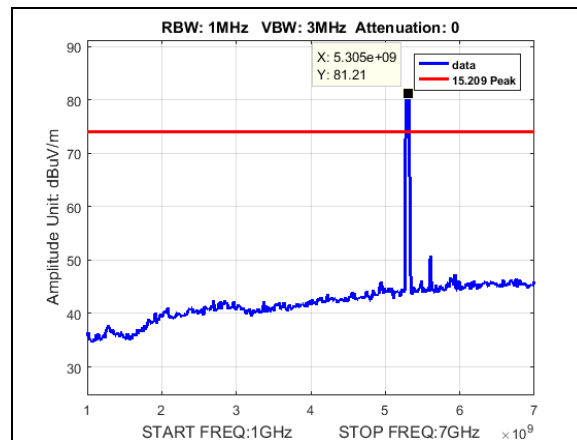
**Plot 554. Radiated Spurious Emissions, Peak, BW 40M, CF 5300M, 27dBi, 1-7GHz**



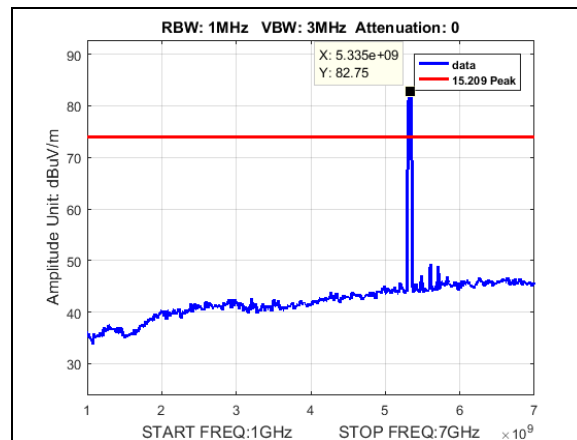
Plot 555. Radiated Spurious Emissions, Peak, BW 40M, CF 5330M, 27dBi, 1-7GHz



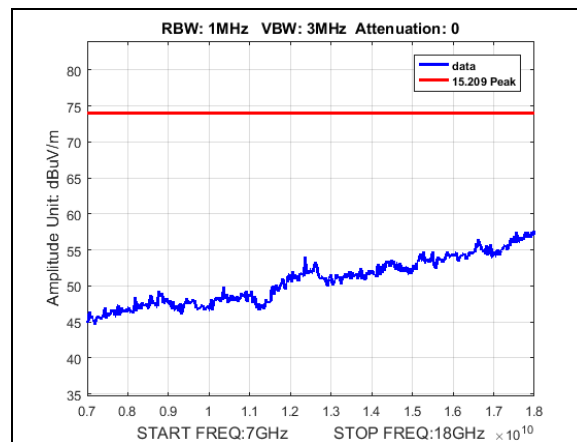
Plot 556. Radiated Spurious Emissions, Peak, BW 50M, CF 5275M, 27dBi, 1-7GHz



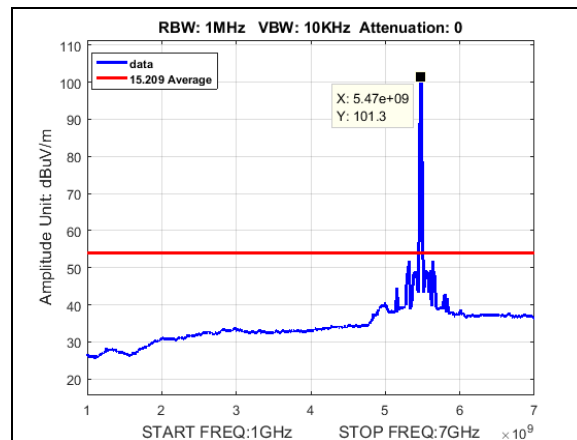
Plot 557. Radiated Spurious Emissions, Peak, BW 50M, CF 5300M, 27dBi, 1-7GHz



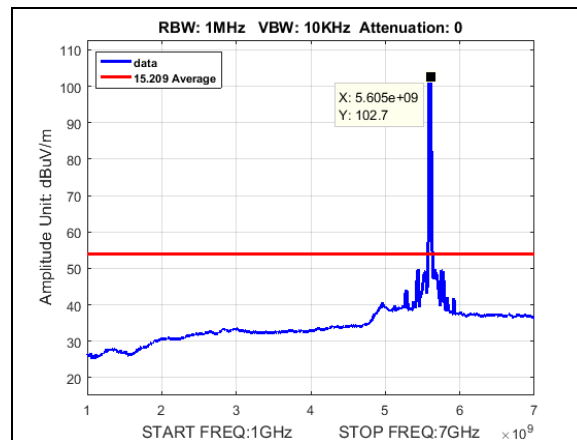
**Plot 558. Radiated Spurious Emissions, Peak, BW 50M, CF 5325M, 27dBi, 1-7GHz**



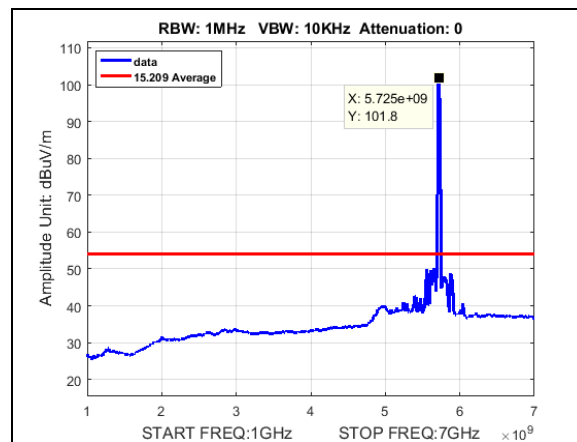
**Plot 559. Radiated Spurious Emissions, Peak, Worst Case, 27dBi, 7-18GHz**



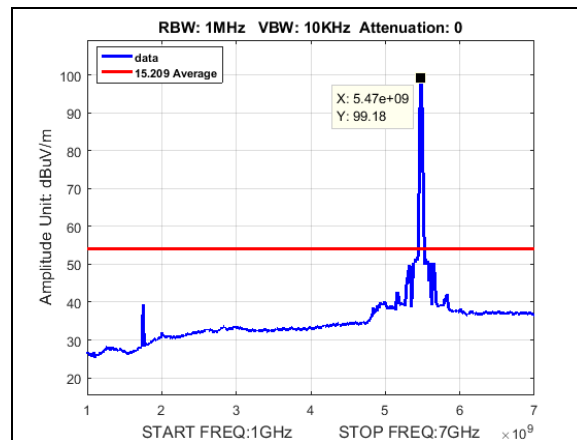
**Plot 560. Radiated Spurious Emissions, Average, BW 10M, CF 5475M, 19dBi**



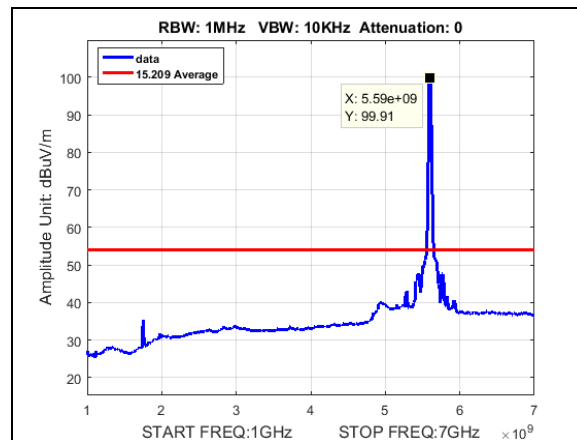
**Plot 561. Radiated Spurious Emissions, Average, BW 10M, CF 5600M, 19dBi**



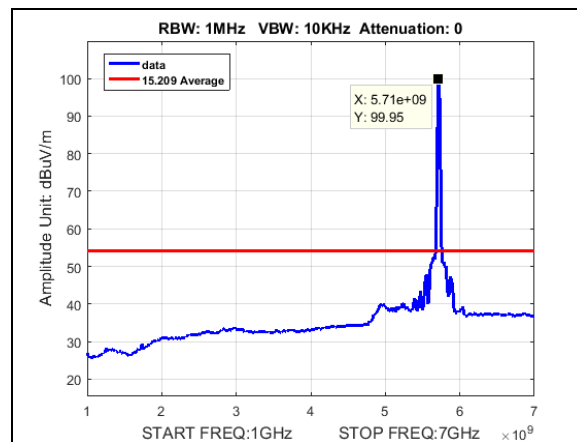
**Plot 562. Radiated Spurious Emissions, Average, BW 10M, CF 5720M, 19dBi**



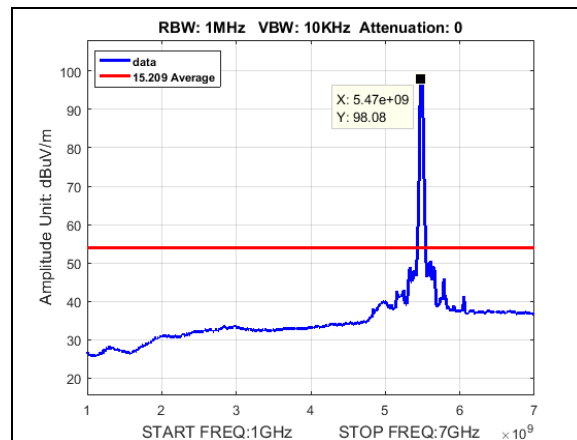
**Plot 563. Radiated Spurious Emissions, Average, BW 20M, CF 5480M, 19dBi**



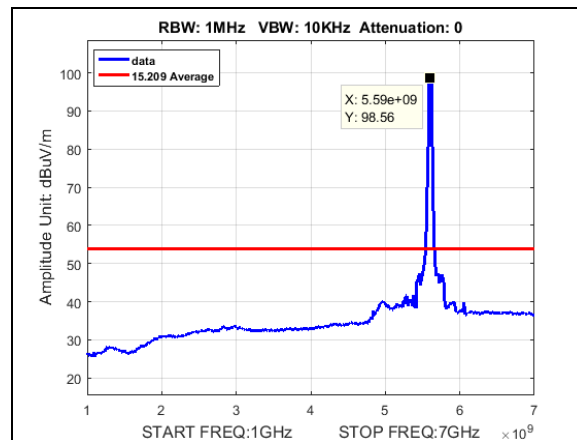
**Plot 564. Radiated Spurious Emissions, Average, BW 20M, CF 5600M, 19dBi**



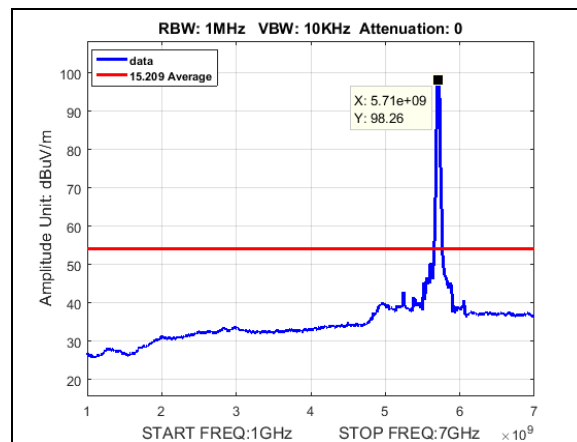
**Plot 565. Radiated Spurious Emissions, Average, BW 20M, CF 5715M, 19dBi**



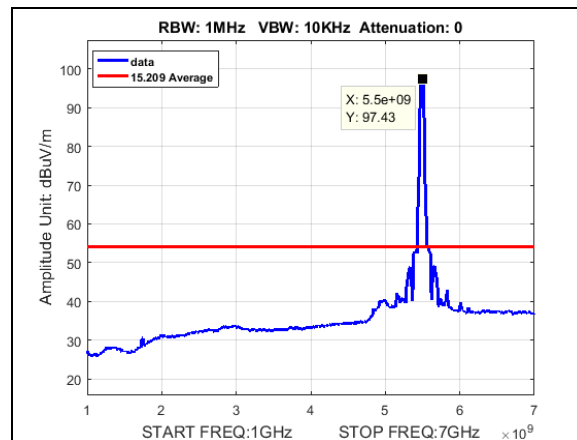
**Plot 566. Radiated Spurious Emissions, Average, BW 30M, CF 5485M, 19dBi**



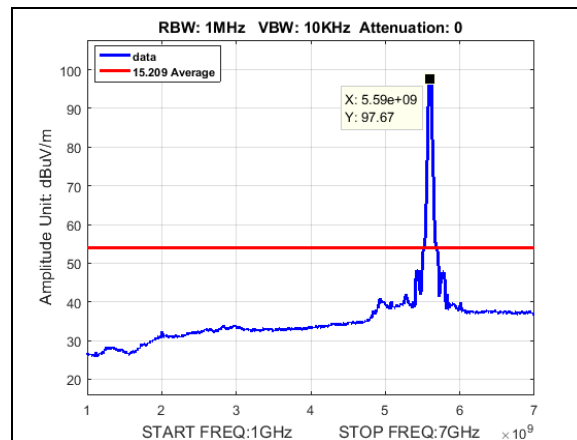
**Plot 567. Radiated Spurious Emissions, Average, BW 30M, CF 5600M, 19dBi**



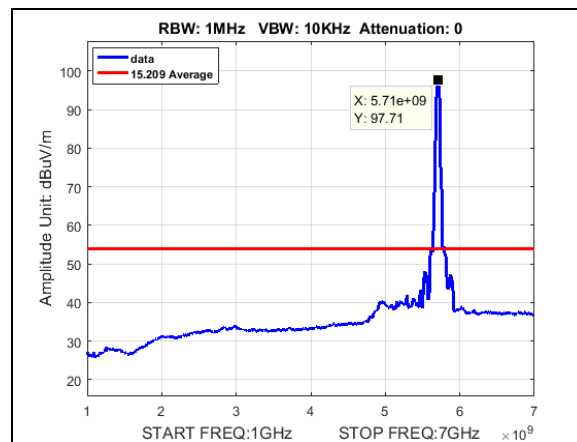
**Plot 568. Radiated Spurious Emissions, Average, BW 30M, CF 5710M, 19dBi**



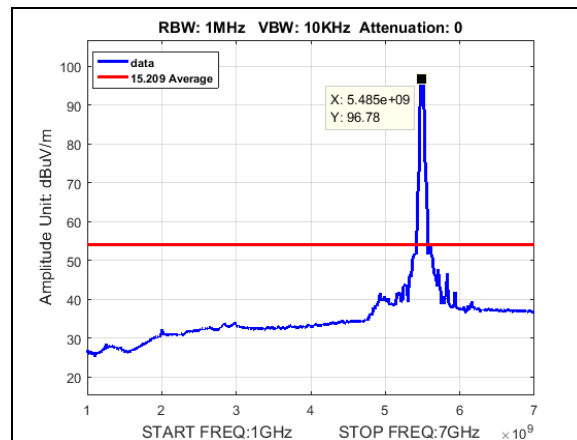
**Plot 569. Radiated Spurious Emissions, Average, BW 40M, CF 5490M, 19dBi**



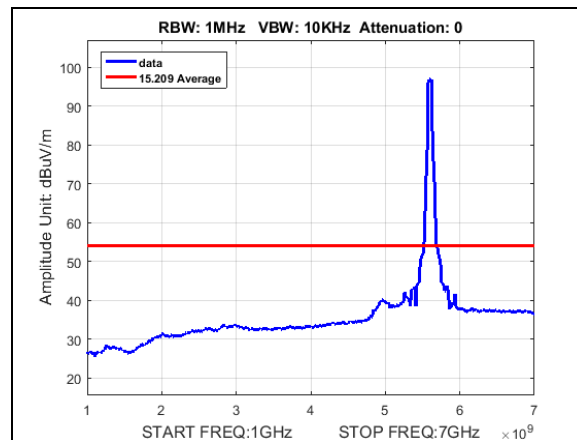
**Plot 570. Radiated Spurious Emissions, Average, BW 40M, CF 5600M, 19dBi**



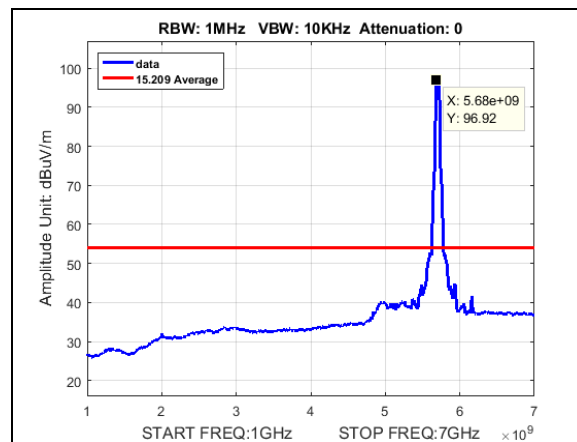
**Plot 571. Radiated Spurious Emissions, Average, BW 40M, CF 5705M, 19dBi**



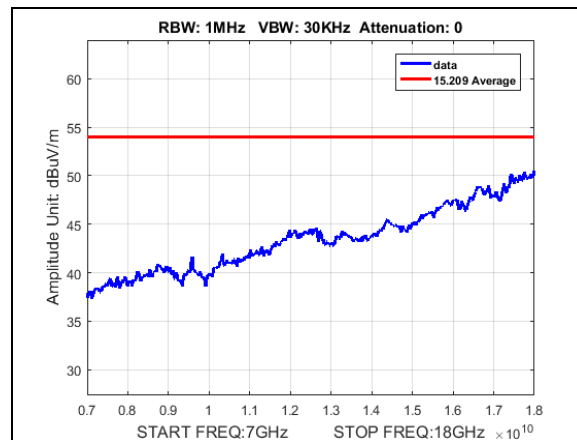
**Plot 572. Radiated Spurious Emissions, Average, BW 50M, CF 5495M, 19dBi**



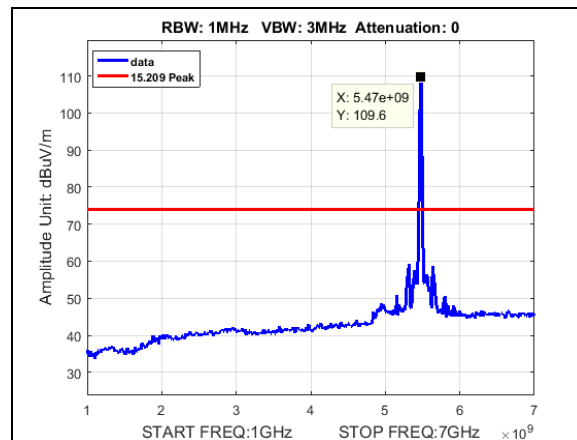
Plot 573. Radiated Spurious Emissions, Average, BW 50M, CF 5600M, 19dBi



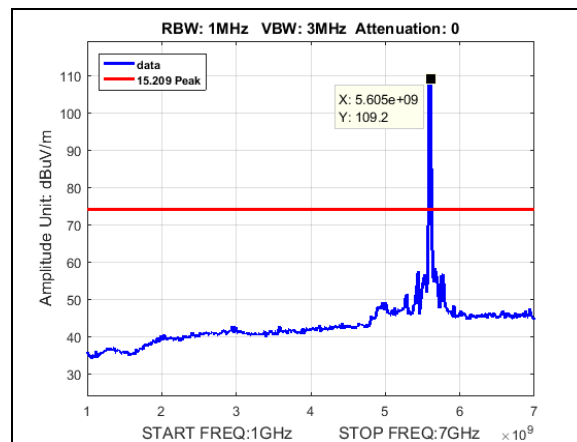
Plot 574. Radiated Spurious Emissions, Average, BW 50M, CF 5700M, 19dBi



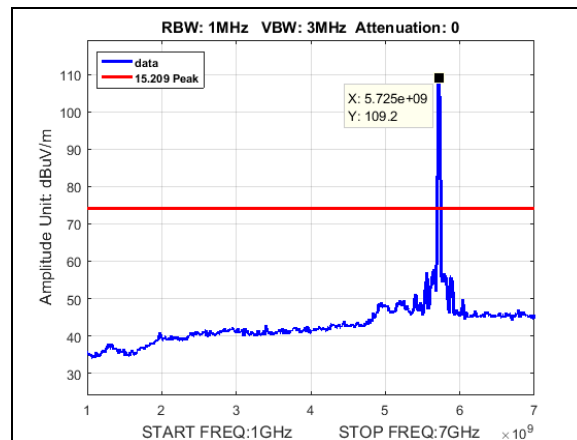
Plot 575. Radiated Spurious Emissions, Average, Worst Case, 7-18GHz, 19dBi



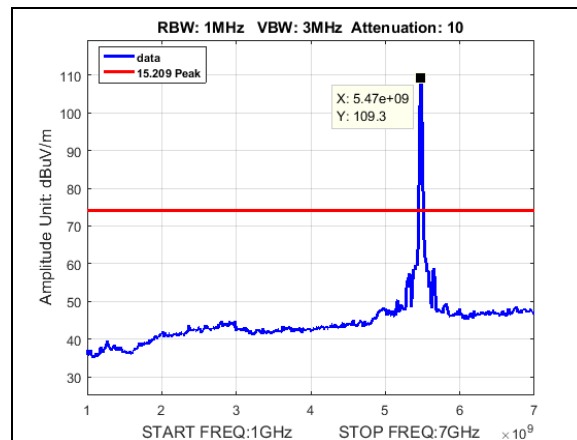
**Plot 576. Radiated Spurious Emissions, Peak, BW 10M, CF 5475M, 19dB**



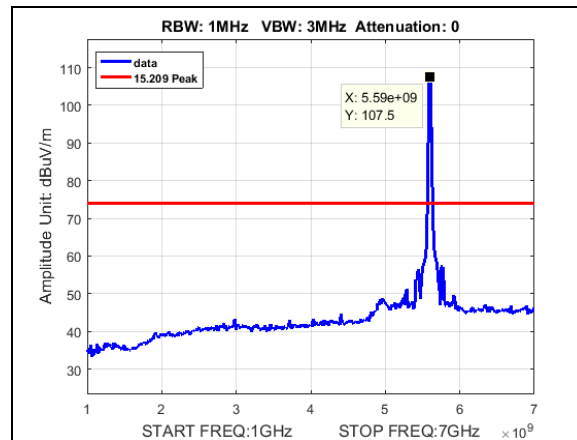
**Plot 577. Radiated Spurious Emissions, Peak, BW 10M, CF 5600M, 19dB**



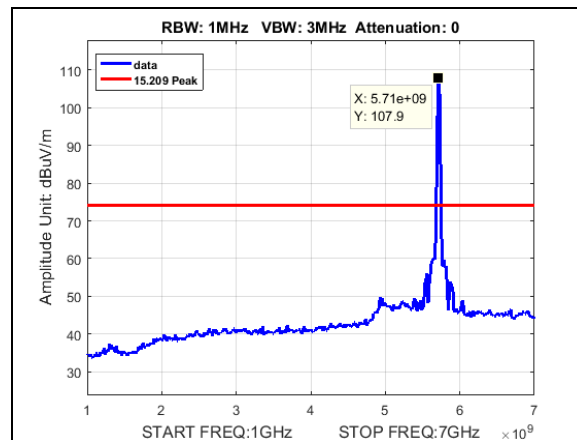
**Plot 578. Radiated Spurious Emissions, Peak, BW 10M, CF 5720M, 19dB**



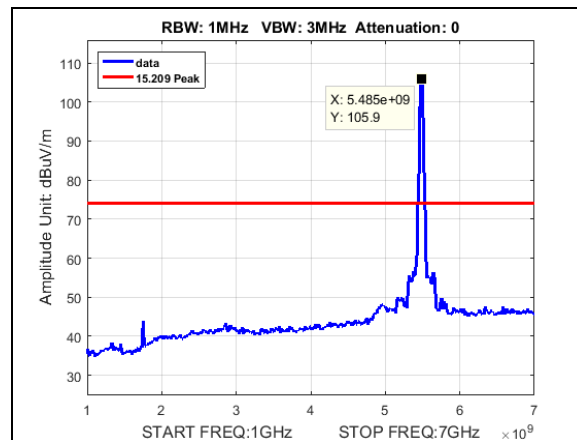
**Plot 579. Radiated Spurious Emissions, Peak, BW 20M, CF 5480M, 19dBi**



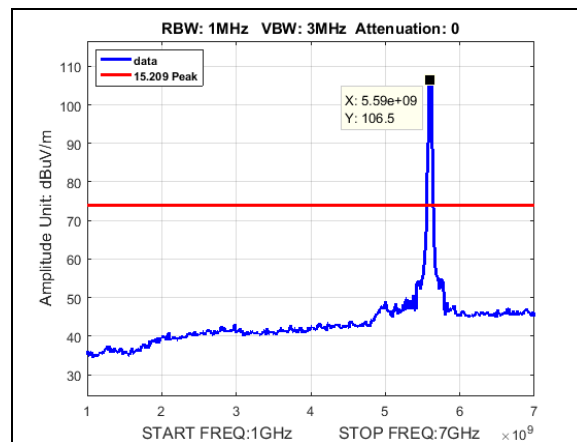
**Plot 580. Radiated Spurious Emissions, Peak, BW 20M, CF 5600M, 19dBi**



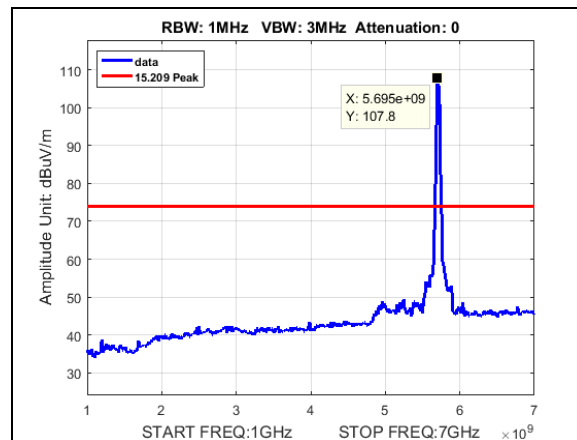
**Plot 581. Radiated Spurious Emissions, Peak, BW 20M, CF 5715M, 19dBi**



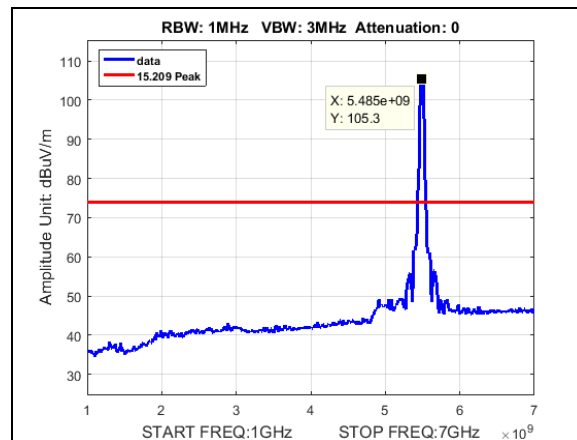
**Plot 582. Radiated Spurious Emissions, Peak, BW 30M, CF 5485M, 19dBi**



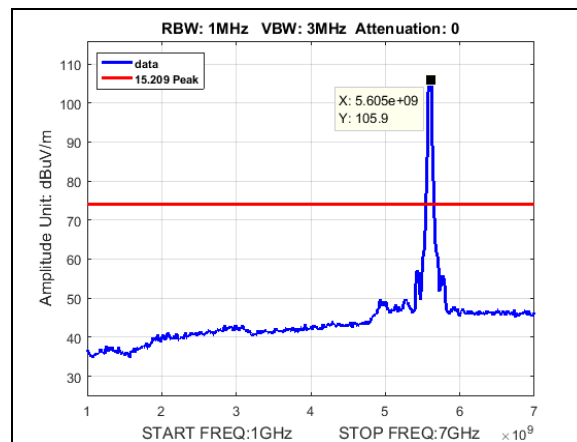
**Plot 583. Radiated Spurious Emissions, Peak, BW 30M, CF 5600M, 19dBi**



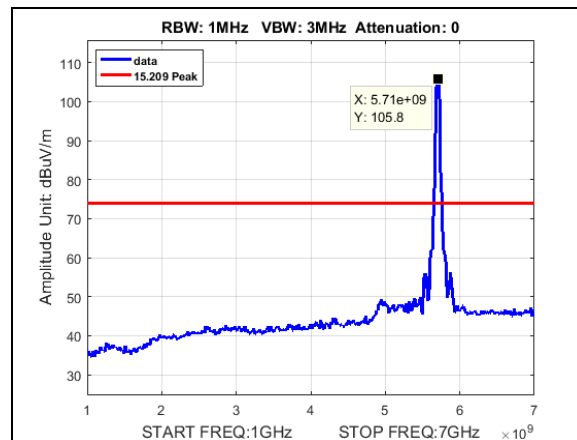
**Plot 584. Radiated Spurious Emissions, Peak, BW 30M, CF 5710M, 19dBi**



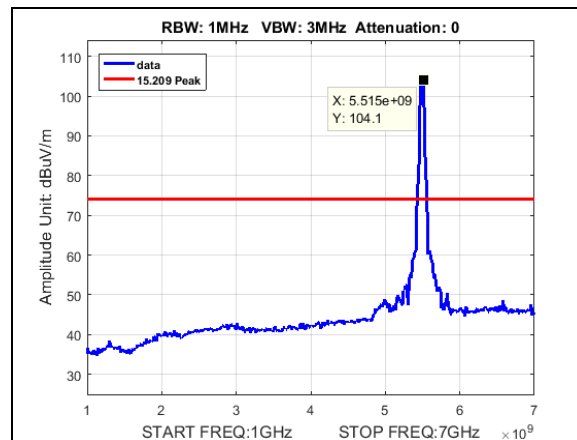
**Plot 585. Radiated Spurious Emissions, Peak, BW 40M, CF 5490M, 19dBi**



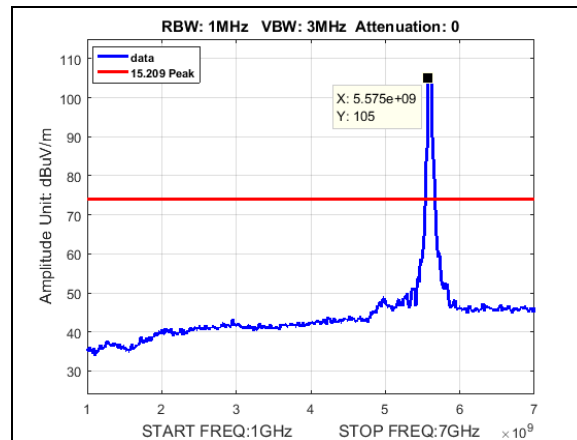
**Plot 586. Radiated Spurious Emissions, Peak, BW 40M, CF 5600M, 19dBi**



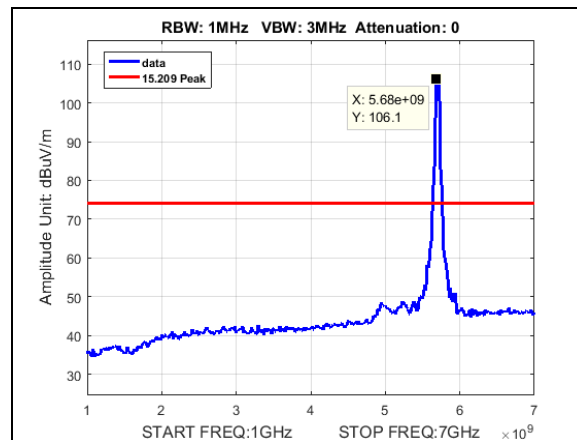
**Plot 587. Radiated Spurious Emissions, Peak, BW 40M, CF 5705M, 19dBi**



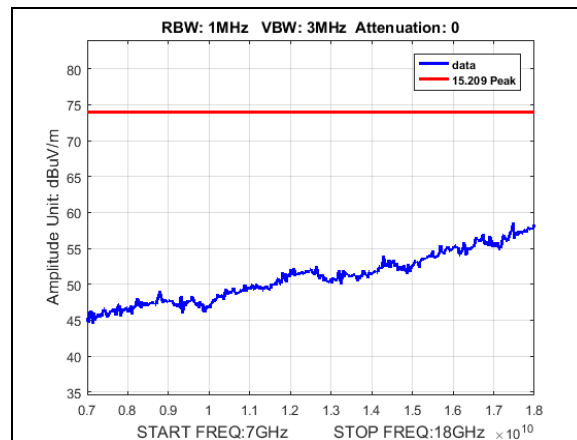
**Plot 588. Radiated Spurious Emissions, Peak, BW 50M, CF 5495M, 19dBi**



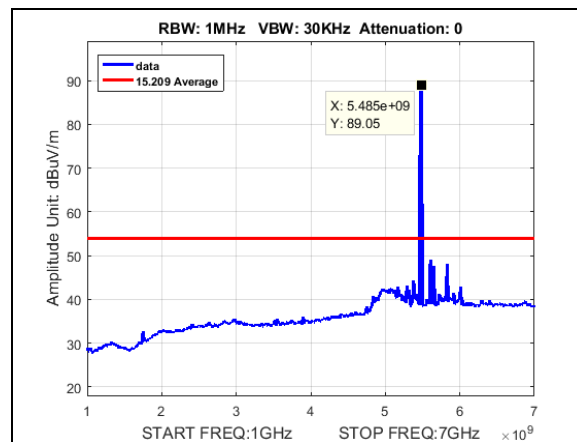
**Plot 589. Radiated Spurious Emissions, Peak, BW 50M, CF 5600M, 19dBi**



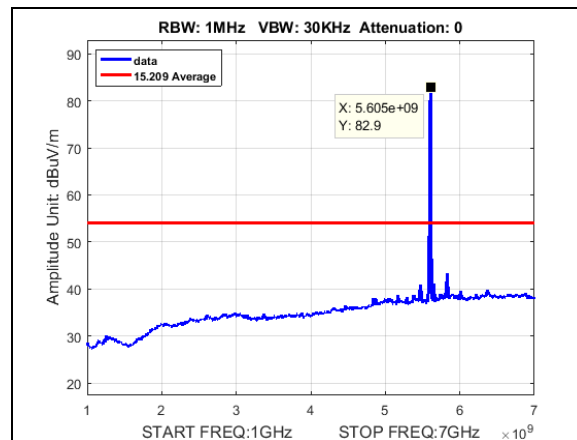
**Plot 590. Radiated Spurious Emissions, Peak, BW 50M, CF 5700M, 19dBi**



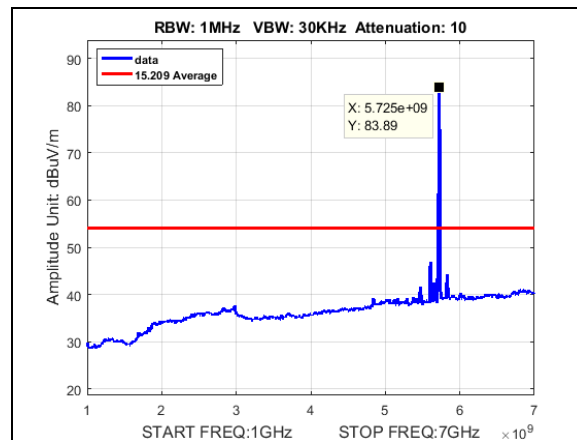
**Plot 591. Radiated Spurious Emissions, Peak, Worst Case, 7-18GHz, 19dBi**



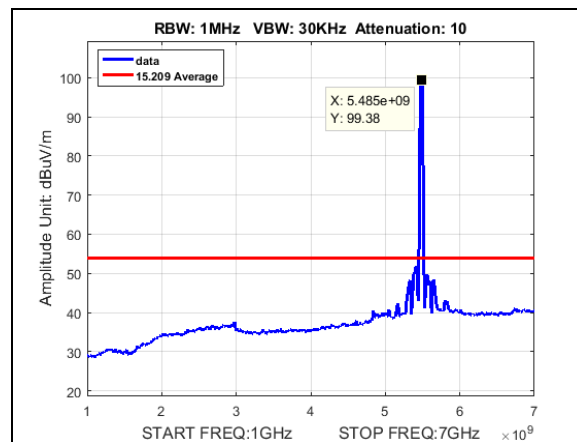
**Plot 592. Radiated Spurious Emissions, Average, BW 10M, CF 5475M, 27dBi**



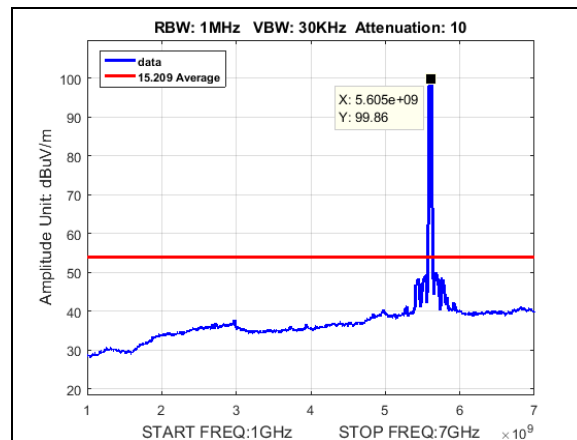
**Plot 593. Radiated Spurious Emissions, Average, BW 10M, CF 5600M, 27dBi**



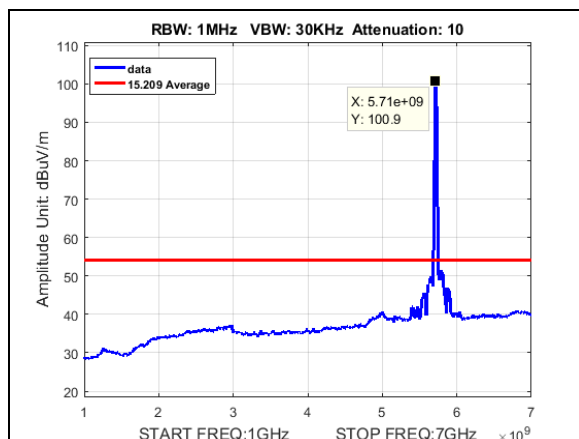
**Plot 594. Radiated Spurious Emissions, Average, BW 10M, CF 5720M, 27dBi**



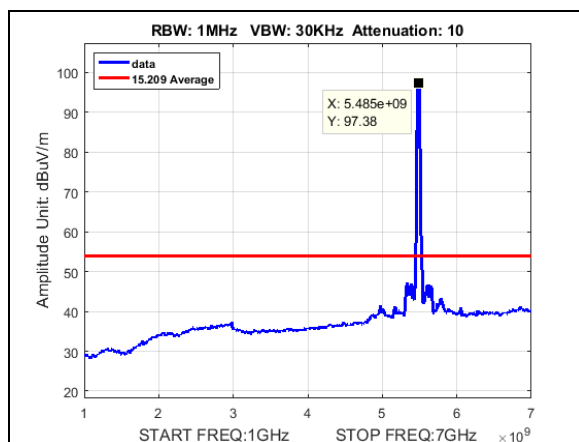
**Plot 595. Radiated Spurious Emissions, Average, BW 20M, CF 5480M, 27dBi**



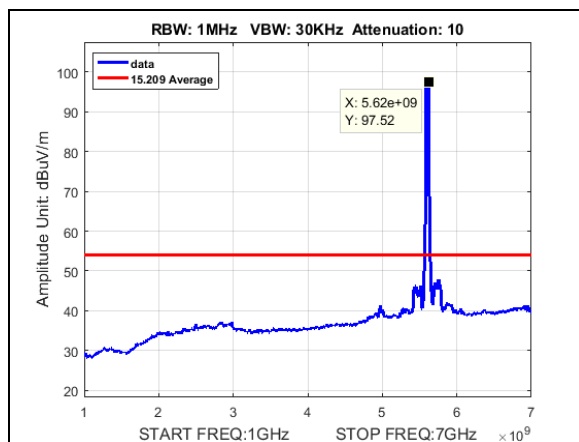
**Plot 596. Radiated Spurious Emissions, Average, BW 20M, CF 5600M, 27dBi**



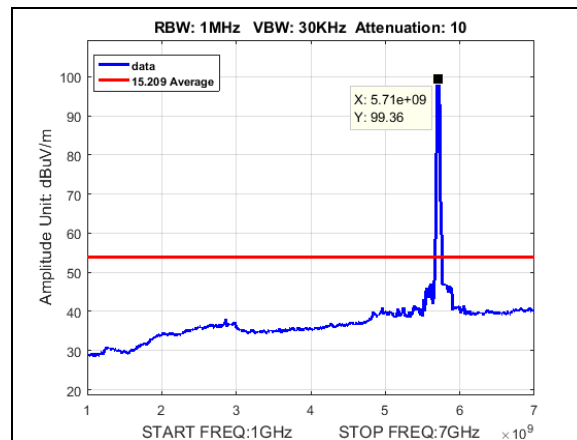
**Plot 597. Radiated Spurious Emissions, Average, BW 20M, CF 5715M, 27dBi**



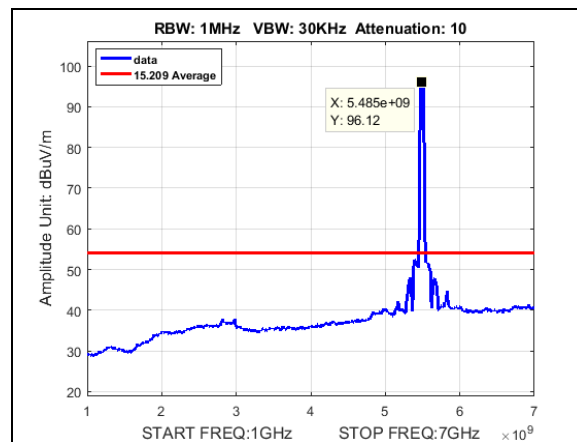
**Plot 598. Radiated Spurious Emissions, Average, BW 30M, CF 5485M, 27dBi**



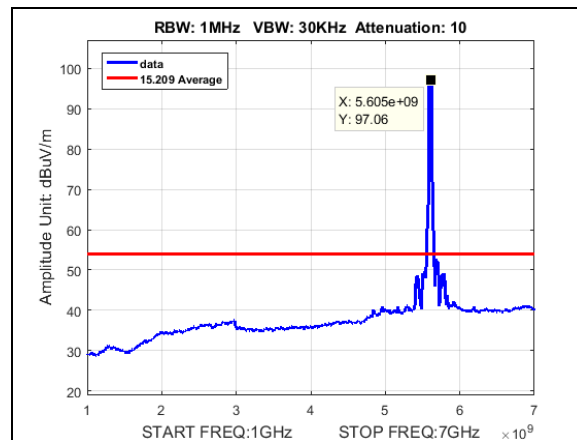
**Plot 599. Radiated Spurious Emissions, Average, BW 30M, CF 5600M, 27dBi**



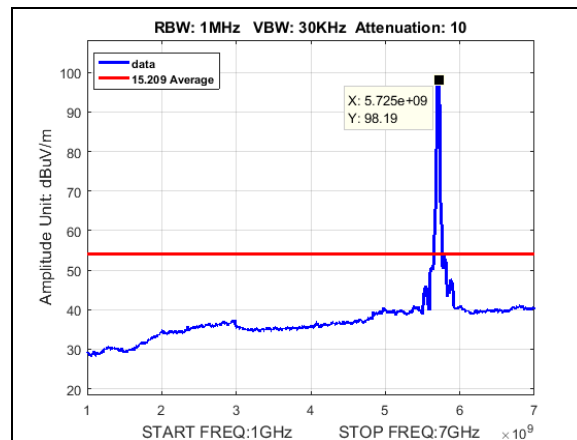
**Plot 600. Radiated Spurious Emissions, Average, BW 30M, CF 5710M, 27dBi**



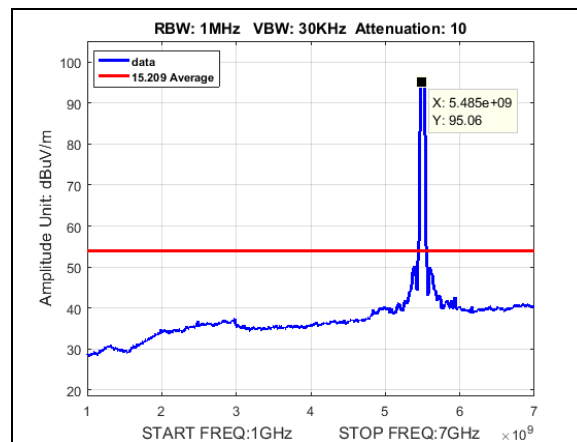
**Plot 601. Radiated Spurious Emissions, Average, BW 40M, CF 5490M, 27dBi**



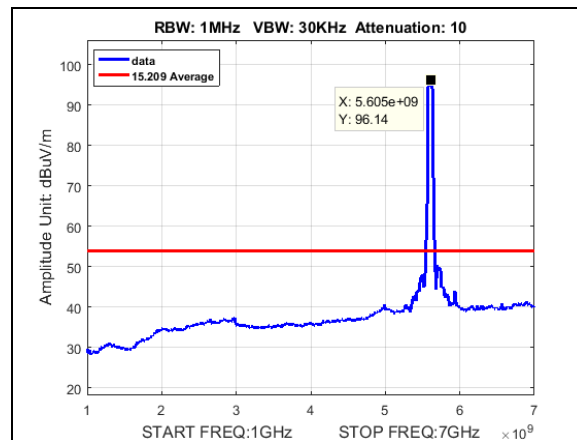
**Plot 602. Radiated Spurious Emissions, Average, BW 40M, CF 5600M, 27dBi**



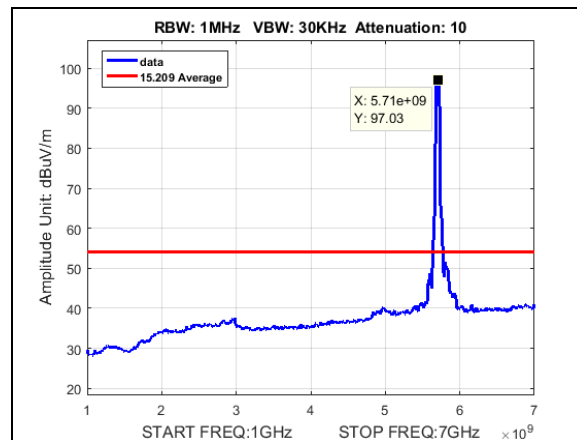
**Plot 603. Radiated Spurious Emissions, Average, BW 40M, CF 5705M, 27dBi**



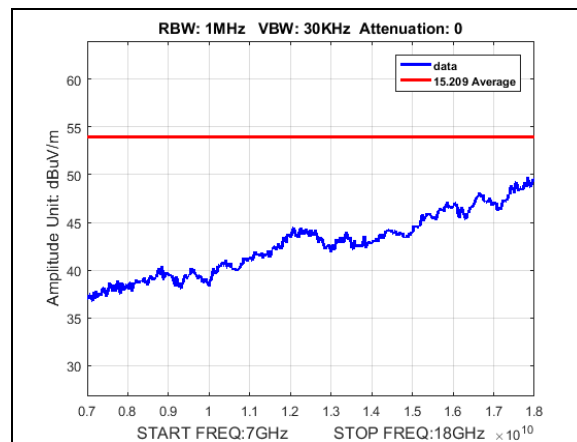
**Plot 604. Radiated Spurious Emissions, Average, BW 50M, CF 5495M, 27dBi**



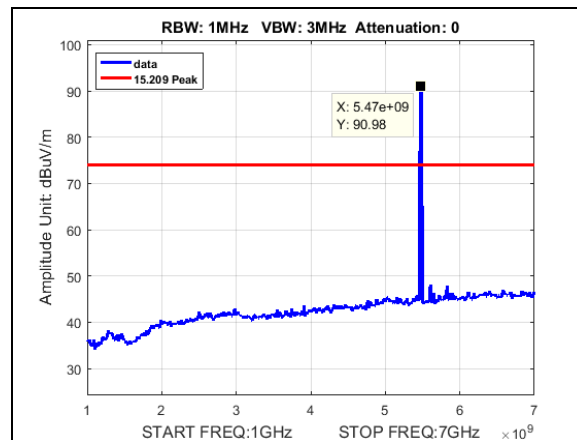
**Plot 605. Radiated Spurious Emissions, Average, BW 50M, CF 5600M, 27dBi**



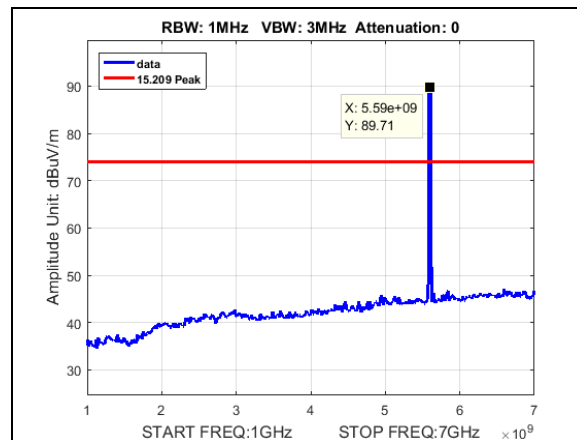
**Plot 606. Radiated Spurious Emissions, Average, BW 50M, CF 5700M, 27dBi**



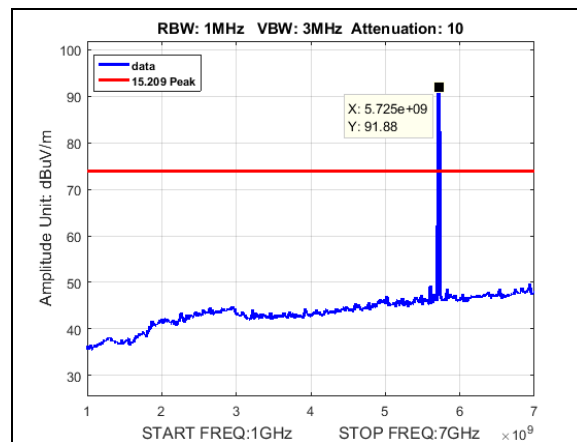
**Plot 607. Radiated Spurious Emissions, Average, worst case, 7-18GHz, 27dBi**



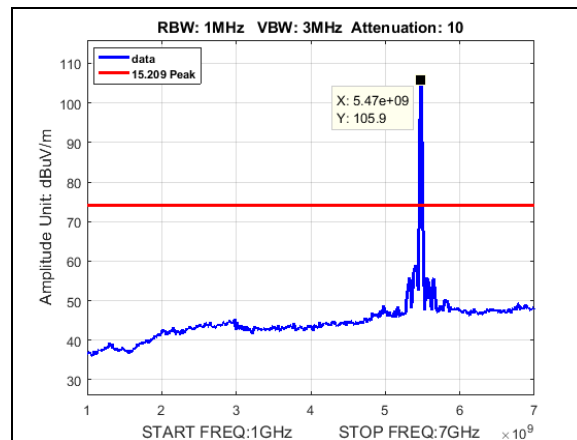
**Plot 608. Radiated Spurious Emissions, Peak, BW 10M, CF 5475M, 27dBi**



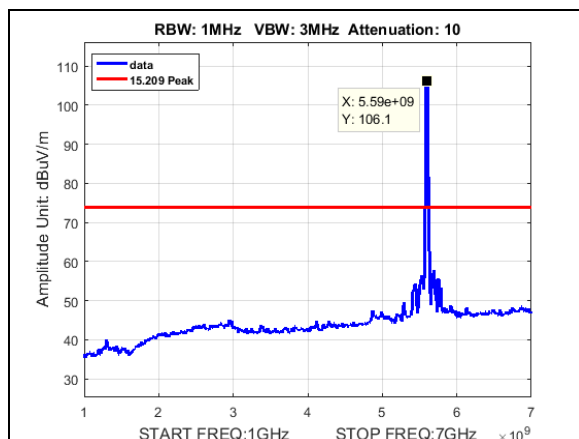
**Plot 609. Radiated Spurious Emissions, Peak, BW 10M, CF 5600M, 27dBi**



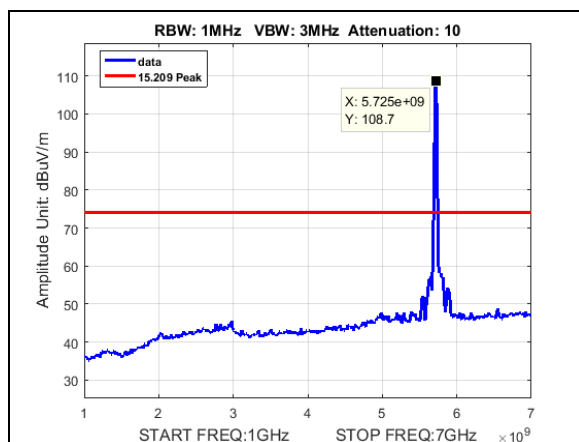
**Plot 610. Radiated Spurious Emissions, Peak, BW 10M, CF 5720M, 27dBi**



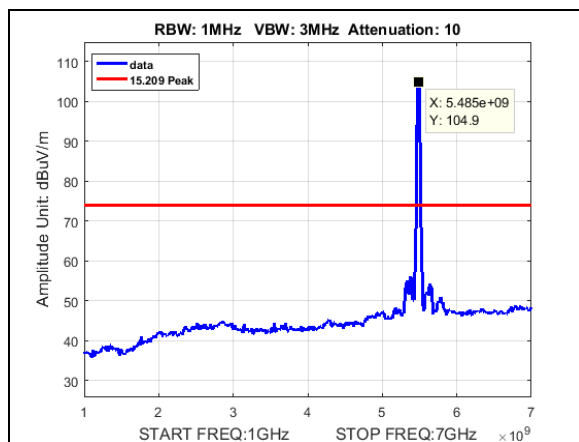
**Plot 611. Radiated Spurious Emissions, Peak, BW 20M, CF 5480M, 27dBi**



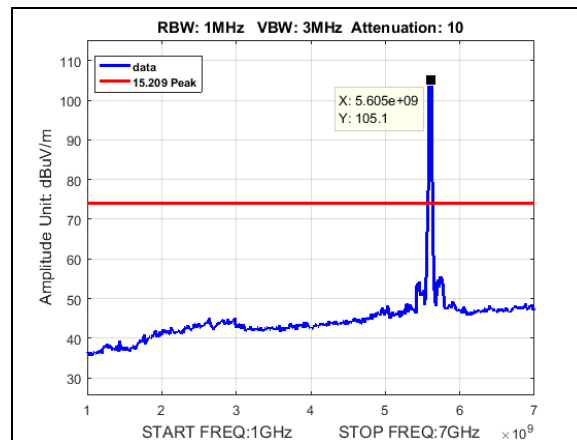
**Plot 612. Radiated Spurious Emissions, Peak, BW 20M, CF 5600M, 27dBi**



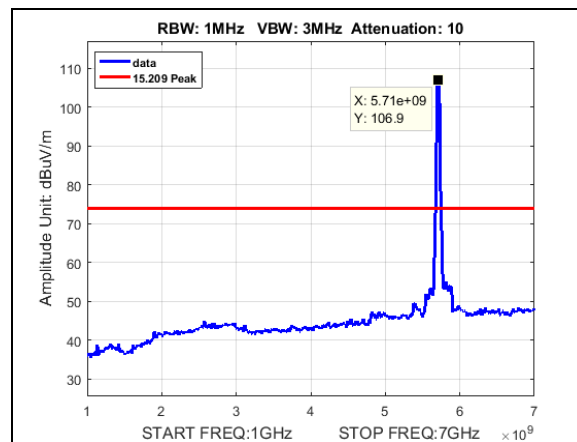
**Plot 613. Radiated Spurious Emissions, Peak, BW 20M, CF 5715M, 27dBi**



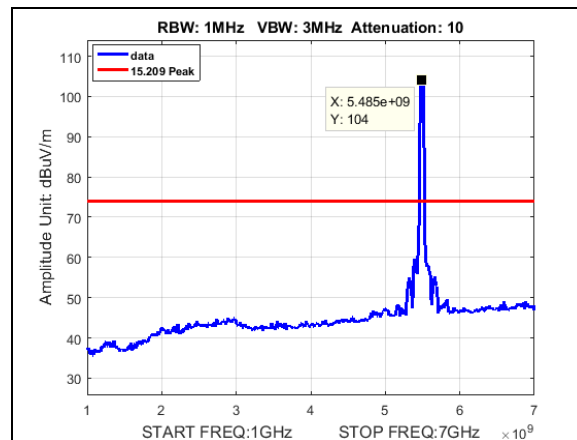
**Plot 614. Radiated Spurious Emissions, Peak, BW 30M, CF 5485M, 27dBi**



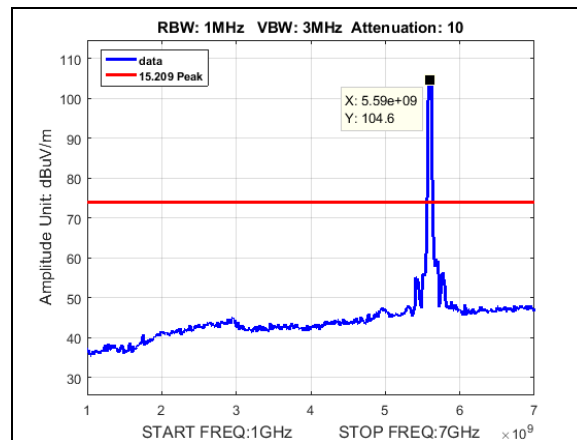
**Plot 615. Radiated Spurious Emissions, Peak, BW 30M, CF 5600M, 27dBi**



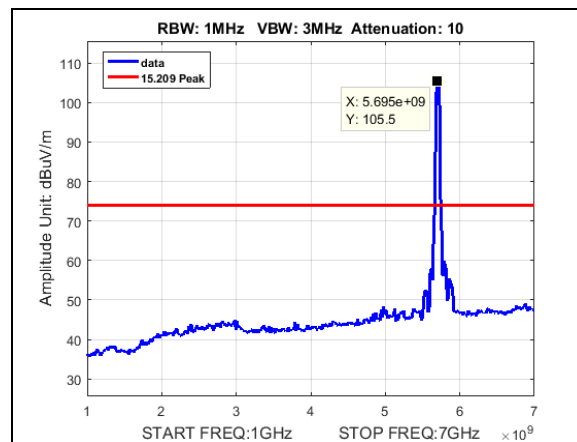
**Plot 616. Radiated Spurious Emissions, Peak, BW 30M, CF 5710M, 27dBi**



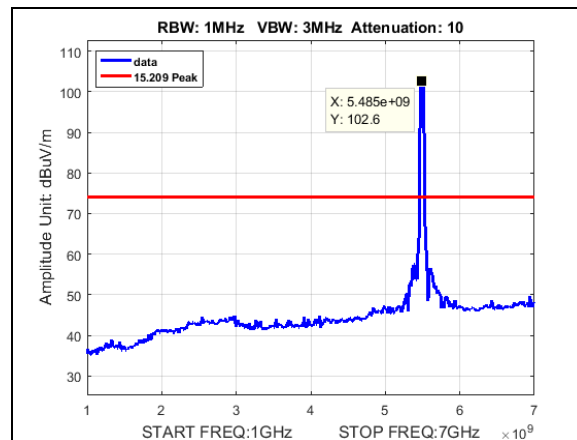
**Plot 617. Radiated Spurious Emissions, Peak, BW 40M, CF 5490M, 27dBi**



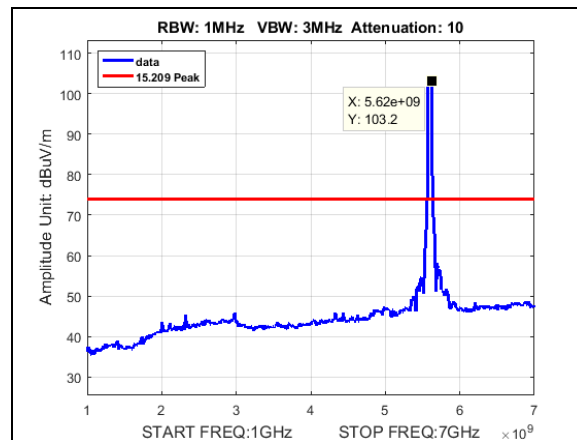
**Plot 618. Radiated Spurious Emissions, Peak, BW 40M, CF 5600M, 27dBi**



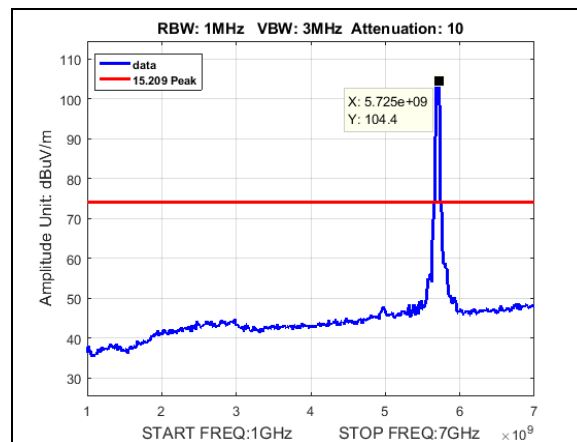
**Plot 619. Radiated Spurious Emissions, Peak, BW 40M, CF 5705M, 27dBi**



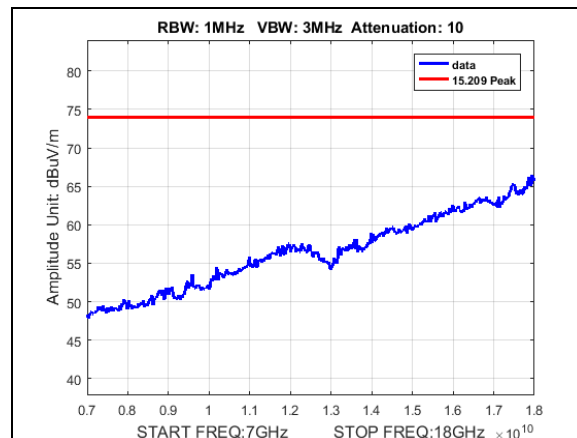
**Plot 620. Radiated Spurious Emissions, Peak, BW 50M, CF 5495M, 27dBi**



**Plot 621. Radiated Spurious Emissions, Peak, BW 50M, CF 5600M, 27dBi**



**Plot 622. Radiated Spurious Emissions, Peak, BW 50M, CF 5700M, 27dBi**



**Plot 623. Radiated Spurious Emissions, Peak, worst case, 7-18GHz, 27dBi**

## Electromagnetic Compatibility Criteria for Intentional Radiators

### § 15.407(b)(6) Conducted Emissions

**Test Requirement(s):** § 15.407 (b)(6): Any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

§ 15.207 (a): For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30MHz, shall not exceed the limits in the following table, as measured using a 50  $\mu$ H/50  $\Omega$  line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

| Frequency range<br>(MHz) | § 15.207(a), Conducted Limit (dB $\mu$ V) |         |
|--------------------------|-------------------------------------------|---------|
|                          | Quasi-Peak                                | Average |
| * 0.15- 0.45             | 66 – 56                                   | 56 - 46 |
| 0.45 - 0.5               | 56                                        | 46      |
| 0.5 - 30                 | 60                                        | 50      |

**Table 22. Conducted Limits for Intentional Radiators from FCC Part 15 § 15.207(a)**

**Test Procedure:** The EUT was placed on a non-metallic table inside a screen room. The EUT was situated such that the back of the EUT was 0.4 m from one wall of the vertical ground plane, and the remaining sides of the EUT were no closer than 0.8 m from any other conductive surface. The EUT was powered from a 50  $\Omega$ /50  $\mu$ H Line Impedance Stabilization Network (LISN). The EMC receiver scanned the frequency range from 150 kHz to 30 MHz. Conducted Emissions measurements were made in accordance with *ANSI C63.4-2014 "Methods and Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz"*. Scans were performed with the transmitter on.

**Test Results:** The EUT was compliant with requirements of this section.

**Test Engineer(s):** Donald Salguero

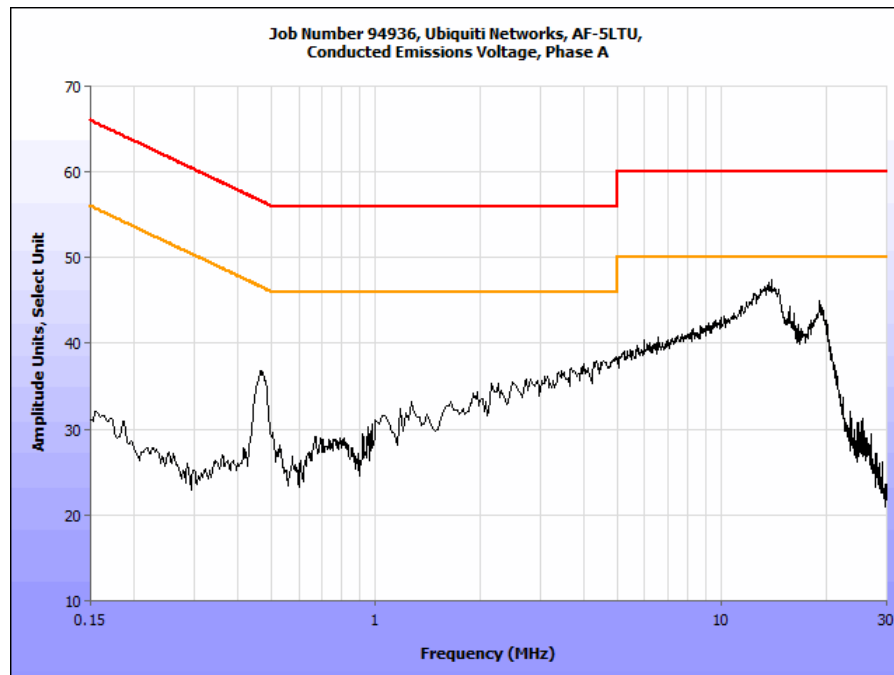
**Test Date(s):** November 2, 2017

| Frequency (MHz) | Uncorrected Meter Reading (dBuV) QP | Cable Loss (dB) | Corrected Measurement (dBuV) QP | Limit (dBuV) QP | Margin (dB) QP | Uncorrected Meter Reading (dBuV) Avg. | Cable Loss (dB) | Corrected Measurement (dBuV) AVG | Limit (dBuV) AVG | Margin (dB) AVG |
|-----------------|-------------------------------------|-----------------|---------------------------------|-----------------|----------------|---------------------------------------|-----------------|----------------------------------|------------------|-----------------|
| 13.95           | 44.12                               | 0               | 44.12                           | 60              | -15.88         | 38.45                                 | 0               | 38.45                            | 50               | -11.55          |
| 19.15           | 40.78                               | 0               | 40.78                           | 60              | -19.22         | 36.79                                 | 0               | 36.79                            | 50               | -13.21          |

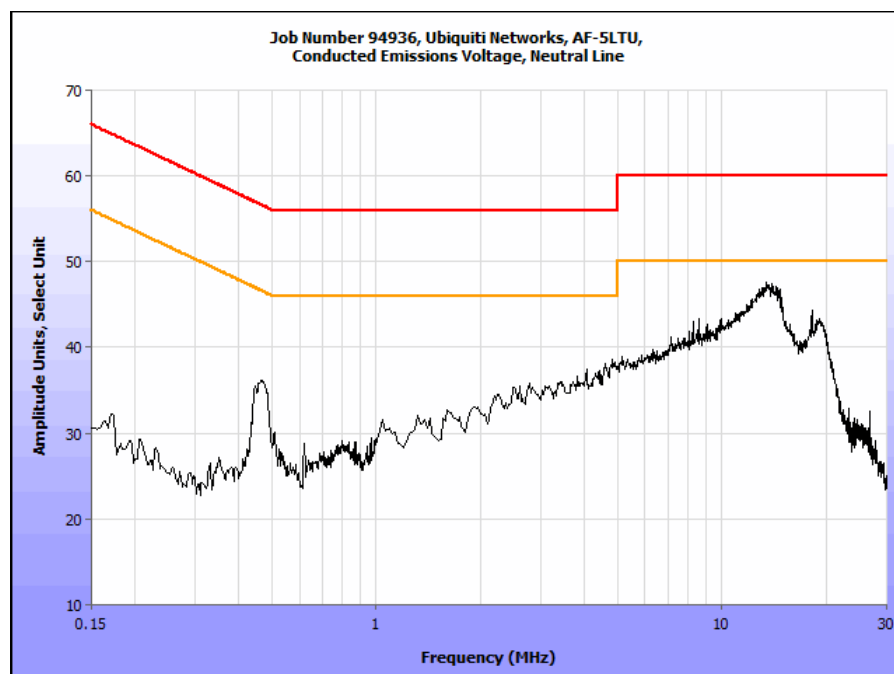
**Table 23. Conducted Emissions, Phase, Test Results**

| Frequency (MHz) | Uncorrected Meter Reading (dBuV) QP | Cable Loss (dB) | Corrected Measurement (dBuV) QP | Limit (dBuV) QP | Margin (dB) QP | Uncorrected Meter Reading (dBuV) Avg. | Cable Loss (dB) | Corrected Measurement (dBuV) AVG | Limit (dBuV) AVG | Margin (dB) AVG |
|-----------------|-------------------------------------|-----------------|---------------------------------|-----------------|----------------|---------------------------------------|-----------------|----------------------------------|------------------|-----------------|
| 13.55           | 43.38                               | 0               | 43.38                           | 60              | -16.62         | 37.91                                 | 0               | 37.91                            | 50               | -12.09          |
| 18.25           | 38.35                               | 0               | 38.35                           | 60              | -21.65         | 33.81                                 | 0               | 33.81                            | 50               | -16.19          |

**Table 24. Conducted Emissions, Neutral, Test Results**



**Plot 624. Conducted Emissions, Phase**



**Plot 625. Conducted Emissions, Neutral**

## Electromagnetic Compatibility Criteria for Intentional Radiators

### § 15.407(f) Maximum Permissible Exposure

**Test Requirement(s):** §15.407(f): U-NII devices are subject to the radio frequency radiation exposure requirements specified in §1.1307(b), §2.1091 and §2.1093 of this chapter, as appropriate. All equipment shall be considered to operate in a “general population/uncontrolled” environment.

**RF Exposure Requirements:** §1.1307(b)(1) and §1.1307(b)(2): Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission’s guidelines.

**RF Radiation Exposure Limit:** §1.1310: As specified in this section, the Maximum Permissible Exposure (MPE) Limit shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in Sec. 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of Sec. 2.1093 of this chapter.

MPE Limit: EUT’s operating frequencies @ 5250-5350 MHz and 5470 – 5725 MHz; **Limit for Uncontrolled exposure: 1 mW/cm<sup>2</sup> or 10 W/m<sup>2</sup>**

Equation from page 18 of OET 65, Edition 97-01

$$S = PG / 4\pi R^2 \quad \text{or} \quad R = \sqrt{(PG / 4\pi S)}$$

where, S = Power Density (mW/cm<sup>2</sup>)  
P = Power Input to antenna (mW)  
G = Antenna Gain (numeric value)  
R = Distance (cm)

#### Test Results:

| FCC             |                 |                |                 |                   |                                    |                             |         |               |        |
|-----------------|-----------------|----------------|-----------------|-------------------|------------------------------------|-----------------------------|---------|---------------|--------|
| Frequency (MHz) | Con. Pwr. (dBm) | Con. Pwr. (mW) | Ant. Gain (dBi) | Ant. Gain numeric | Pwr. Density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Margin  | Distance (cm) | Result |
| 5265            | 10.996          | 12.578         | 19              | 79.433            | 0.19876                            | 1                           | 0.80124 | 20            | Pass   |

The safe distance where Power Density is less than the MPE Limit listed above was found to be 20 cm.

## IV. Test Equipment

## Test Equipment

Calibrated test equipment utilized during testing was maintained in a current state of calibration per the requirements of ISO/IEC 17025:2005.

| MET Asset # | Equipment                       | Manufacturer              | Model                 | Last Cal Date | Cal Due Date |
|-------------|---------------------------------|---------------------------|-----------------------|---------------|--------------|
| 1T4612      | Spectrum Analyzer               | Agilent Technologies      | E4407B                | 03/30/2017    | 09/30/2018   |
| 1T4565      | LISN (24 AMP)                   | Solar Electronics Company | 9252-50-R-24-BNC      | 08/15/2017    | 08/15/2018   |
| 1T6658      | Spectrum Analyzer               | Agilent Technologies      | E4407B                | 12/21/2016    | 12/21/2017   |
| 1T4771      | PSA Spectrum Analyzer           | Agilent Technologies      | E4446A                | 8/10/2016     | 2/10/2018    |
| 1T4753      | Antenna - Bilog                 | Sunol Sciences            | JB6                   | 10/24/2016    | 4/24/2018    |
| 1T4483      | Antenna; Horn                   | ETS-Lindgren              | 3117                  | 4/19/2017     | 10/19/2018   |
| 1T2665      | Antenna; Horn                   | EMCO                      | 3115                  | 6/22/2017     | 12/22/2018   |
| 1T4442      | Pre-amplifier, Microwave        | Miteq                     | AFS42-01001800-30-10P | Func Verify   |              |
| 1T4149      | High-Frequency Anechoic Chamber | Ray Proof                 | 81                    | Not Required  |              |
| 1T4300      | SEMI-ANECHOIC CHAMBER # 1 (NSA) | EMC TEST SYSTEMS          | NONE                  | 2/6/2015      | 2/6/2018     |

**Table 25. Test Equipment List**

Note: Functionally tested equipment is verified using calibrated instrumentation at the time of testing.

## **V. Certification & User's Manual Information**

## Certification & User's Manual Information

### L. Certification Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart I — Marketing of Radio frequency devices:

#### § 2.801 Radio-frequency device defined.

As used in this part, a radio-frequency device is any device which in its operation is capable of Emitting radio-frequency energy by radiation, conduction, or other means. Radio- frequency devices include, but are not limited to:

- (a) The various types of radio communication transmitting devices described throughout this chapter.
- (b) *The incidental, unintentional and intentional radiators defined in Part 15 of this chapter.*
- (c) The industrial, scientific, and medical equipment described in Part 18 of this chapter.
- (d) Any part or component thereof which in use emits radio-frequency energy by radiation, conduction, or other means.

#### § 2.803 Marketing of radio frequency devices prior to equipment authorization.

- (a) Except as provided elsewhere in this chapter, no person shall sell or lease, or offer for sale or lease (including advertising for sale or lease), or import, ship or distribute for the purpose of selling or leasing or offering for sale or lease, any radio frequency device unless:
  - (1) In the case of a device subject to certification, such device has been authorized by the Commission in accordance with the rules in this chapter and is properly identified and labeled as required by §2.925 and other relevant sections in this chapter; or
  - (2) In the case of a device that is not required to have a grant of equipment authorization issued by the Commission, but which must comply with the specified technical standards prior to use, such device also complies with all applicable administrative (including verification of the equipment or authorization under a Declaration of Conformity, where required), technical, labeling and identification requirements specified in this chapter.
- (d) Notwithstanding the provisions of paragraph (a) of this section, the offer for sale solely to business, commercial, industrial, scientific or medical users (but not an offer for sale to other parties or to end users located in a residential environment) of a radio frequency device that is in the conceptual, developmental, design or pre-production stage is permitted prior to equipment authorization or, for devices not subject to the equipment authorization requirements, prior to a determination of compliance with the applicable technical requirements *provided* that the prospective buyer is advised in writing at the time of the offer for sale that the equipment is subject to the FCC rules and that the equipment will comply with the appropriate rules before delivery to the buyer or to centers of distribution.

- (e)(1) Notwithstanding the provisions of paragraph (a) of this section, prior to equipment authorization or determination of compliance with the applicable technical requirements any radio frequency device may be operated, but not marketed, for the following purposes and under the following conditions:
- (i) *Compliance testing;*
  - (ii) Demonstrations at a trade show provided the notice contained in paragraph (c) of this section is displayed in a conspicuous location on, or immediately adjacent to, the device;
  - (iii) Demonstrations at an exhibition conducted at a business, commercial, industrial, scientific or medical location, but excluding locations in a residential environment, provided the notice contained in paragraphs (c) or (d) of this section, as appropriate, is displayed in a conspicuous location on, or immediately adjacent to, the device;
  - (iv) Evaluation of product performance and determination of customer acceptability, provided such operation takes place at the manufacturer's facilities during developmental, design or pre-production states; or
  - (v) Evaluation of product performance and determination of customer acceptability where customer acceptability of a radio frequency device cannot be determined at the manufacturer's facilities because of size or unique capability of the device, provided the device is operated at a business, commercial, industrial, scientific or medical user's site, but not at a residential site, during the development, design or pre-production stages.
- (e)(2) For the purpose of paragraphs (e)(1)(iv) and (e)(1)(v) of this section, the term *manufacturer's facilities* includes the facilities of the party responsible for compliance with the regulations and the manufacturer's premises, as well as the facilities of other entities working under the authorization of the responsible party in connection with the development and manufacture, but not the marketing, of the equipment.
- (f) For radio frequency devices subject to verification and sold solely to business, commercial, industrial, scientific and medical users (excluding products sold to other parties or for operation in a residential environment), parties responsible for verification of the devices shall have the option of ensuring compliance with the applicable technical specifications of this chapter at each end user's location after installation, provided that the purchase or lease agreement includes a proviso that such a determination of compliance be made and is the responsibility of the party responsible for verification of the equipment.

## Certification & User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 2, Subpart J — Equipment Authorization Procedures:

### § 2.901 Basis and Purpose

- (a) In order to carry out its responsibilities under the Communications Act and the various treaties and international regulations, and in order to promote efficient use of the radio spectrum, the Commission has developed technical standards for radio frequency equipment and parts or components thereof. The technical standards applicable to individual types of equipment are found in that part of the rules governing the service wherein the equipment is to be operated.<sup>1</sup> *In addition to the technical standards provided, the rules governing the service may require that such equipment be verified by the manufacturer or importer, be authorized under a Declaration of Conformity, or receive an equipment authorization from the Commission by one of the following procedures: certification or registration.*
- (b) The following sections describe the verification procedure, the procedure for a Declaration of Conformity, and the procedures to be followed in obtaining certification from the Commission and the conditions attendant to such a grant.

### § 2.907 Certification.

- (a) Certification is an equipment authorization issued by the Commission, based on representation and test data submitted by the applicant.
- (b) Certification attaches to all units subsequently marketed by the grantee which are identical (see Section 2.908) to the sample tested except for permissive changes or other variations authorized by the Commission pursuant to Section 2.1043.

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<sup>1</sup> In this case, the equipment is subject to the rules of Part 15. More specifically, the equipment falls under Subpart B (of Part 15), which deals with unintentional radiators.

## Certification & User's Manual Information

### § 2.948 Description of measurement facilities.

- (a) Each party making measurements of equipment that is subject to an equipment authorization under Part 15 or Part 18 of this chapter, regardless of whether the measurements are filed with the Commission or kept on file by the party responsible for compliance of equipment marketed within the U.S. or its possessions, shall compile a description of the measurement facilities employed.
  - (1) If the measured equipment is subject to the verification procedure, the description of the measurement facilities shall be retained by the party responsible for verification of the equipment.
    - (i) *If the equipment is verified through measurements performed by an independent laboratory, it is acceptable for the party responsible for verification of the equipment to rely upon the description of the measurement facilities retained by or placed on file with the Commission by that laboratory. In this situation, the party responsible for the verification of the equipment is not required to retain a duplicate copy of the description of the measurement facilities.*
    - (ii) If the equipment is verified based on measurements performed at the installation site of the equipment, no specific site calibration data is required. It is acceptable to retain the description of the measurement facilities at the site at which the measurements were performed.
  - (2) If the equipment is to be authorized by the Commission under the certification procedure, the description of the measurement facilities shall be filed with the Commission's Laboratory in Columbia, Maryland. The data describing the measurement facilities need only be filed once but must be updated as changes are made to the measurement facilities or as otherwise described in this section. At least every three years, the organization responsible for filing the data with the Commission shall certify that the data on file is current.

## Certification & User's Manual Information

### Label and User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart A — General:

#### § 15.19 Labeling requirements.

(a) *In addition to the requirements in Part 2 of this chapter, a device subject to certification or verification shall be labeled as follows:*

- (1) Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under Part 73 of this chapter, land mobile operation under Part 90, etc., shall bear the following statement in a conspicuous location on the device:

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

- (2) A stand-alone cable input selector switch, shall bear the following statement in a conspicuous location on the device:

This device is verified to comply with Part 15 of the FCC Rules for use with cable television service.

- (3) All other devices shall bear the following statement in a conspicuous location on the device:

*This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.*

- (4) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified under paragraph (a) of this section is required to be affixed only to the main control unit.

- (5) When the device is so small or for such use that it is not practicable to place the statement specified under paragraph (a) of this section on it, the information required by this paragraph shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. However, the FCC identifier or the unique identifier, as appropriate, must be displayed on the device.

#### § 15.21 Information to user.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## Verification & User's Manual Information

The following is extracted from Title 47 of the Code of Federal Regulations, Part 15, Subpart B — Unintentional Radiators:

### § 15.105 Information to the user.

- (a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at own expense.

- (b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.