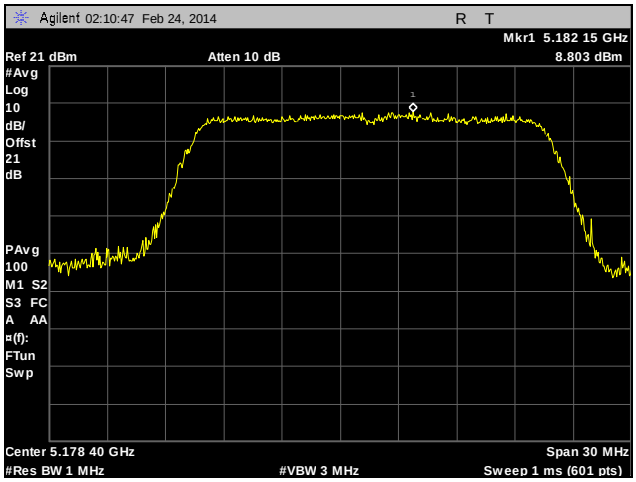
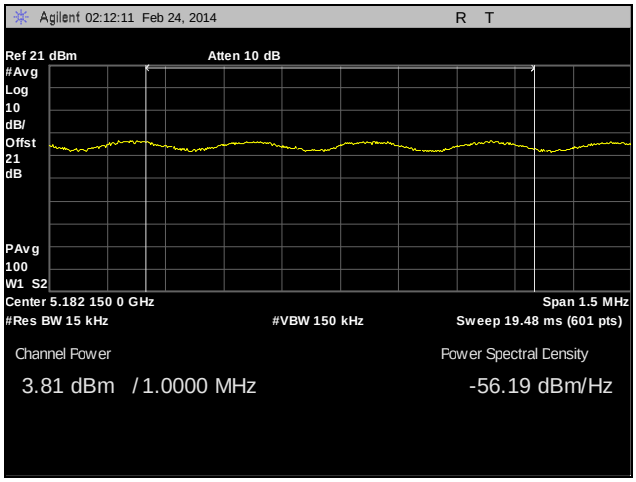
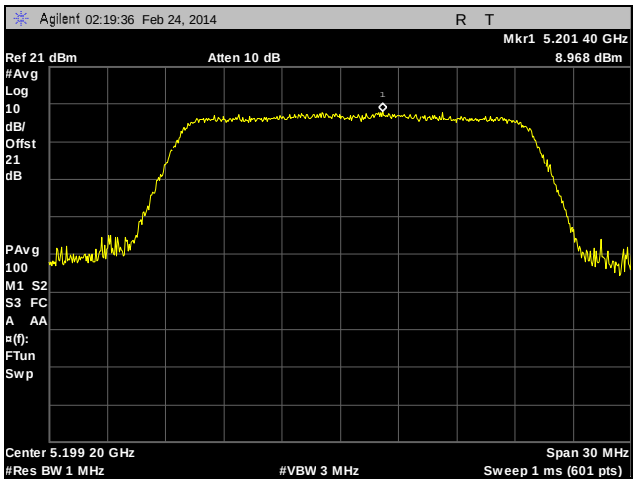
Peak Power Spectral Density, 802.11ac 20 MHz



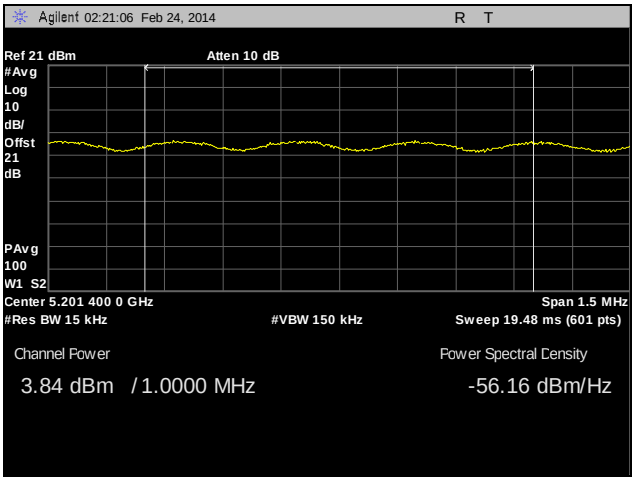
Plot 262. Peak Power Spectral Density, Determination, Low Channel, 802.11ac 20 MHz, Ant. 0



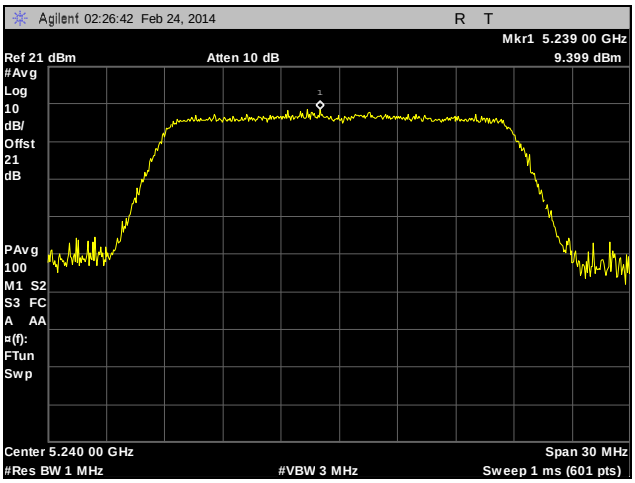
Plot 263. Peak Power Spectral Density, Low Channel, 802.11ac 20 MHz, Ant. 0



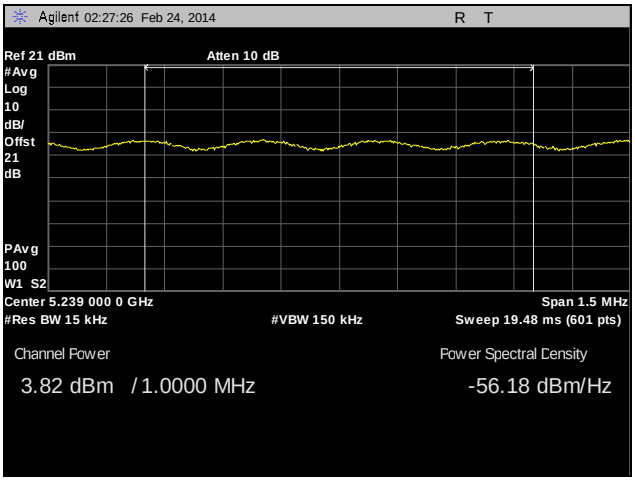
Plot 264. Peak Power Spectral Density, Determination, Mid Channel, 802.11ac 20 MHz, Ant. 0



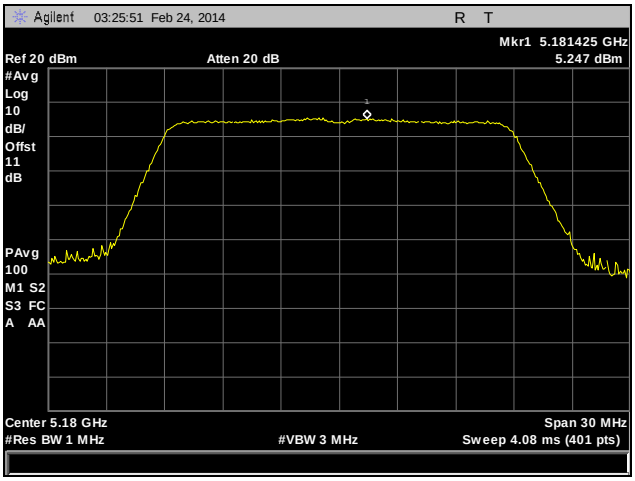
Plot 265. Peak Power Spectral Density, Mid Channel, 802.11ac 20 MHz, Ant. 0



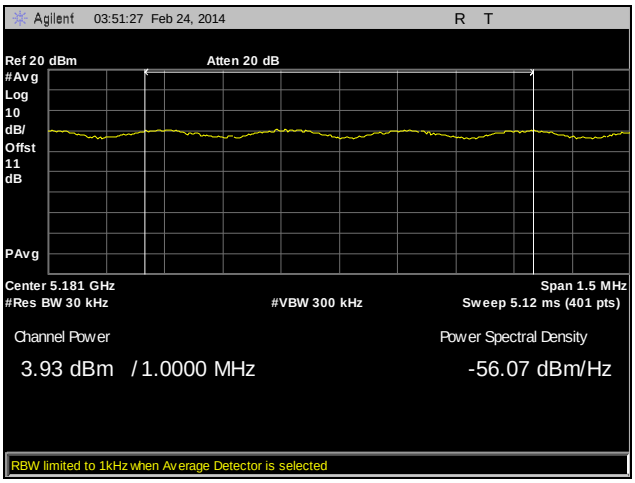
Plot 266. Peak Power Spectral Density, Determination, High Channel, 802.11ac 20 MHz, Ant. 0



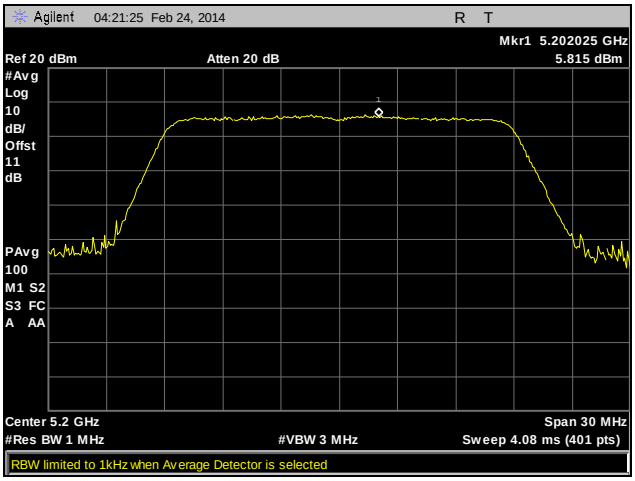
Plot 267. Peak Power Spectral Density, High Channel, 802.11ac 20 MHz, Ant. 0



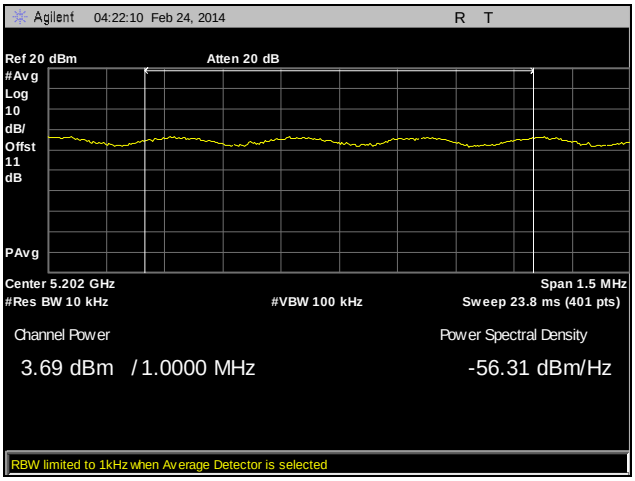
Plot 268. Peak Power Spectral Density, Determination, Low Channel, 802.11ac 20 MHz, Ant. 1



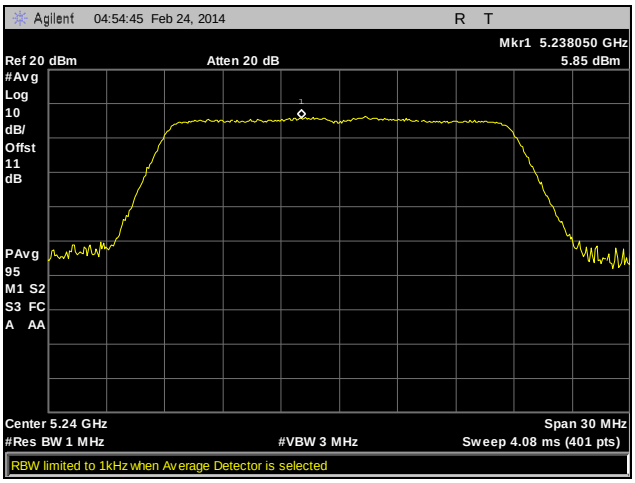
Plot 269. Peak Power Spectral Density, Low Channel, 802.11ac 20 MHz, Ant. 1



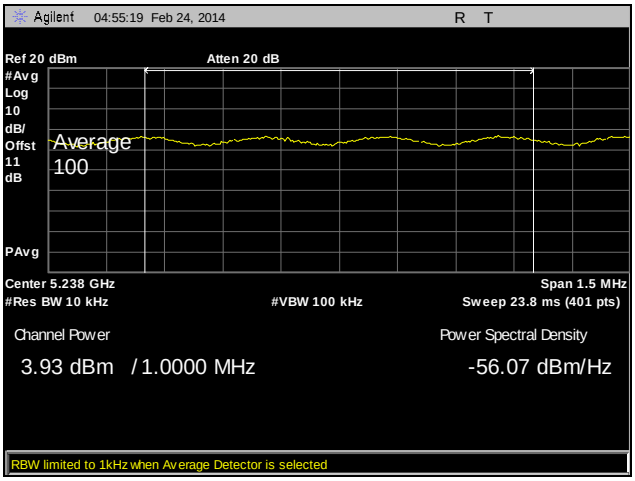
Plot 270. Peak Power Spectral Density, Determination, Mid Channel, 802.11ac 20 MHz, Ant. 1



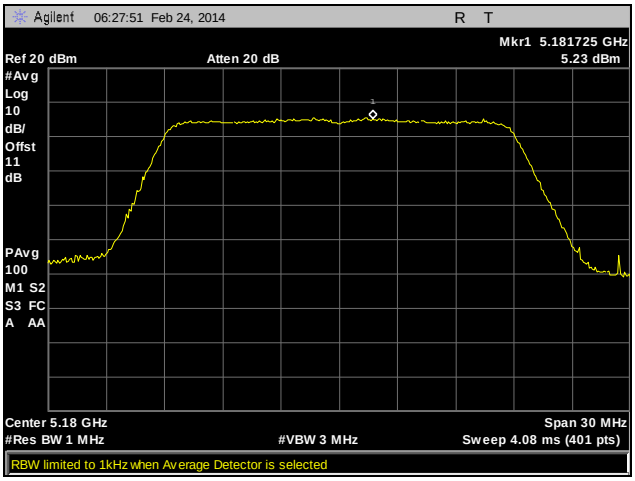
Plot 271. Peak Power Spectral Density, Mid Channel, 802.11ac 20 MHz, Ant. 1



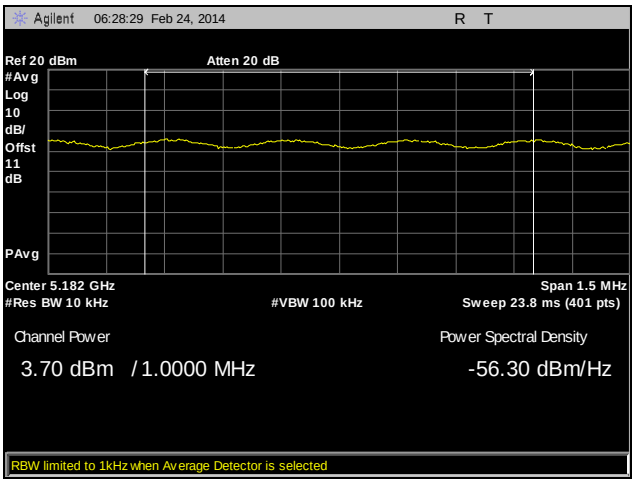
Plot 272. Peak Power Spectral Density, Determination, High Channel, 802.11ac 20 MHz, Ant. 1



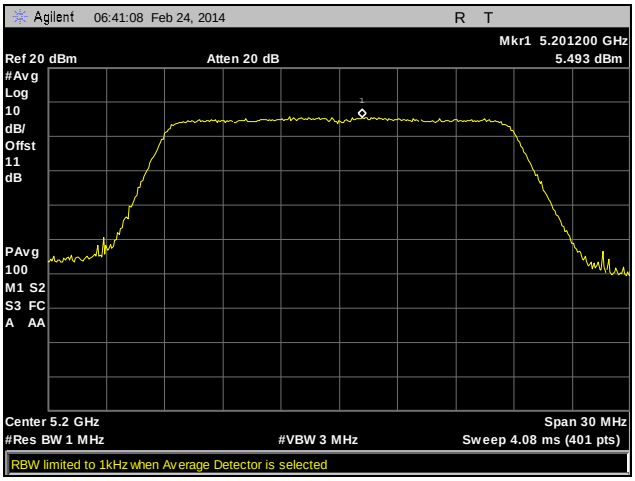
Plot 273. Peak Power Spectral Density, High Channel, 802.11ac 20 MHz, Ant. 1



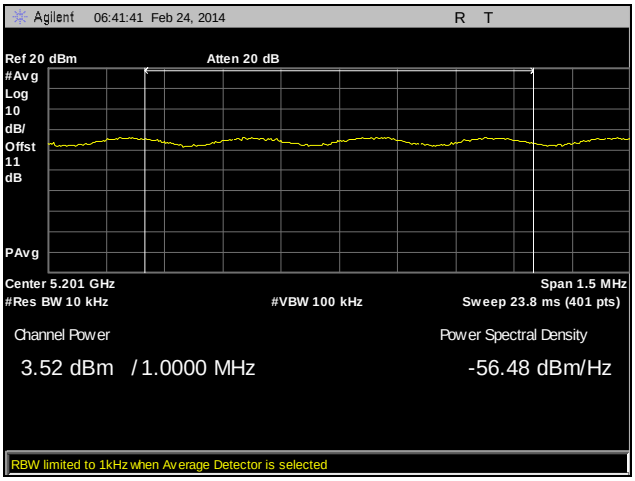
Plot 274. Peak Power Spectral Density, Determination, Low Channel, 802.11ac 20 MHz, Ant. 2



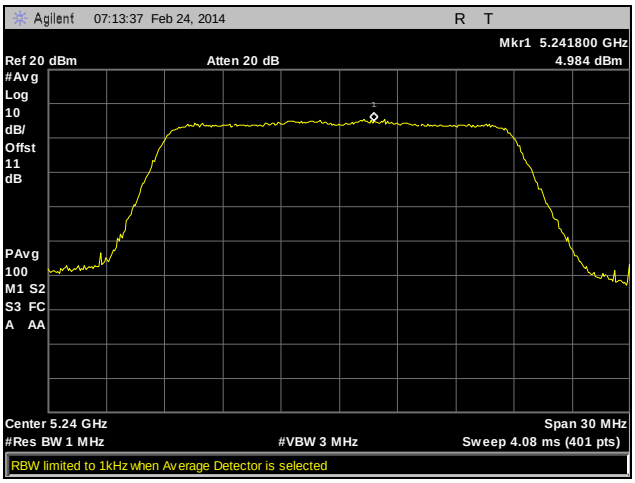
Plot 275. Peak Power Spectral Density, Low Channel, 802.11ac 20 MHz, Ant. 2



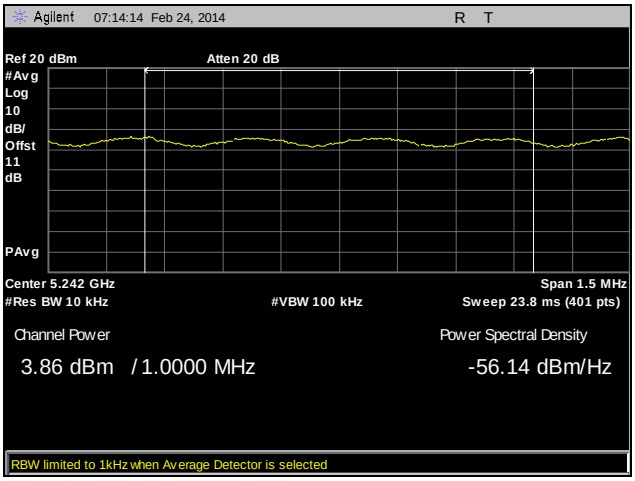
Plot 276. Peak Power Spectral Density, Determination, Mid Channel, 802.11ac 20 MHz, Ant. 2



Plot 277. Peak Power Spectral Density, Mid Channel, 802.11ac 20 MHz, Ant. 2

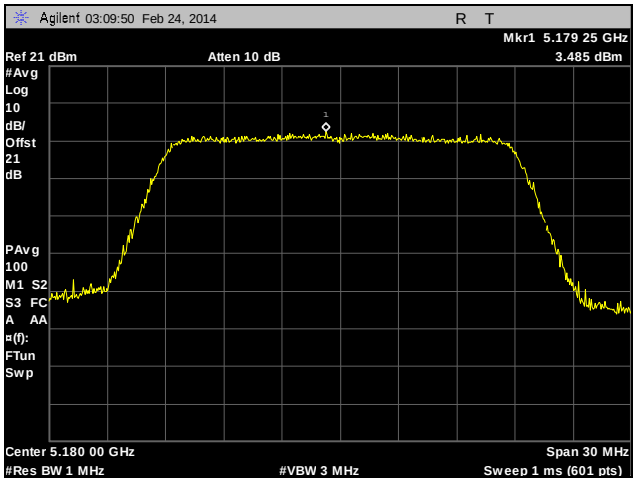


Plot 278. Peak Power Spectral Density, Determination, High Channel, 802.11ac 20 MHz, Ant. 2

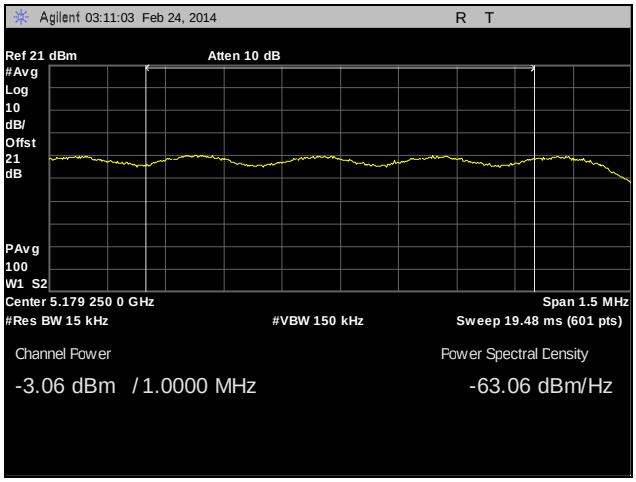


Plot 279. Peak Power Spectral Density, High Channel, 802.11ac 20 MHz, Ant. 2

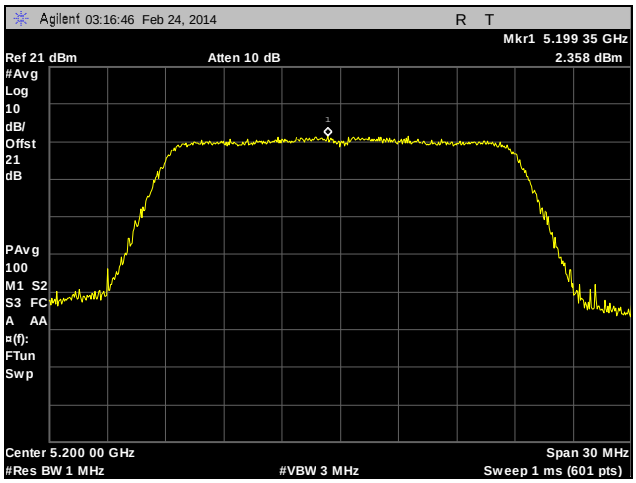
Peak Power Spectral Density, 802.11ac 20 MHz, MIMO



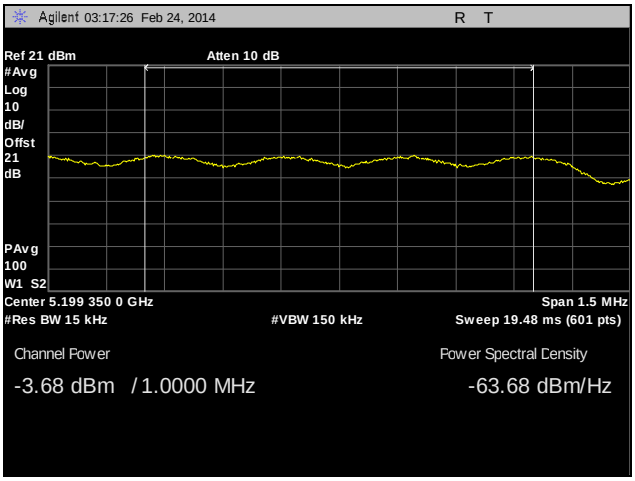
Plot 280. Peak Power Spectral Density, Determination, Low Channel, 802.11ac 20 MHz, Ant. 0, MIMO



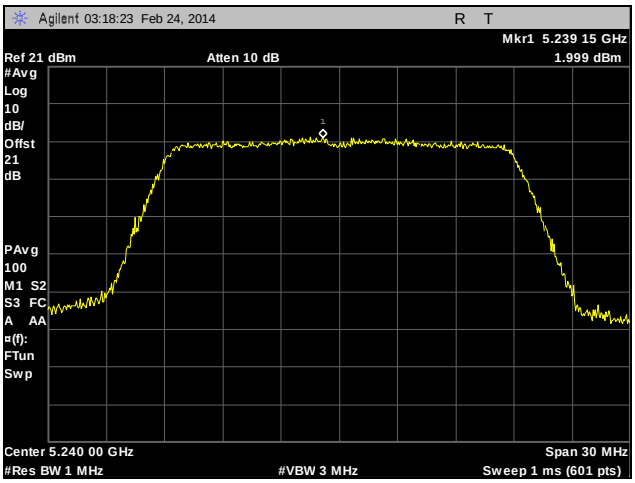
Plot 281. Peak Power Spectral Density, Low Channel, 802.11ac 20 MHz, Ant. 0, MIMO



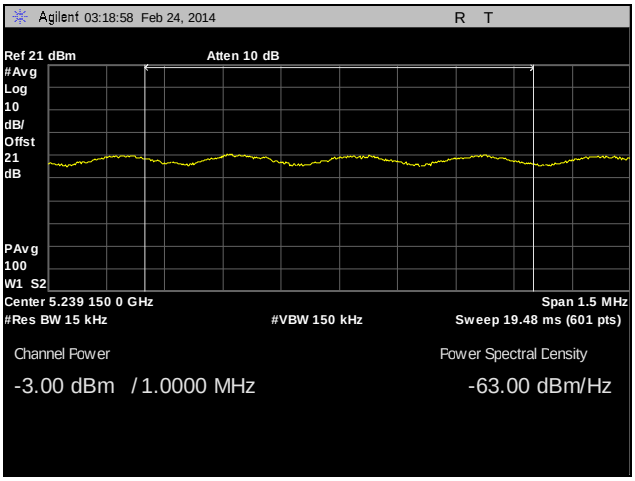
Plot 282. Peak Power Spectral Density, Determination, Mid Channel, 802.11ac 20 MHz, Ant. 0, MIMO



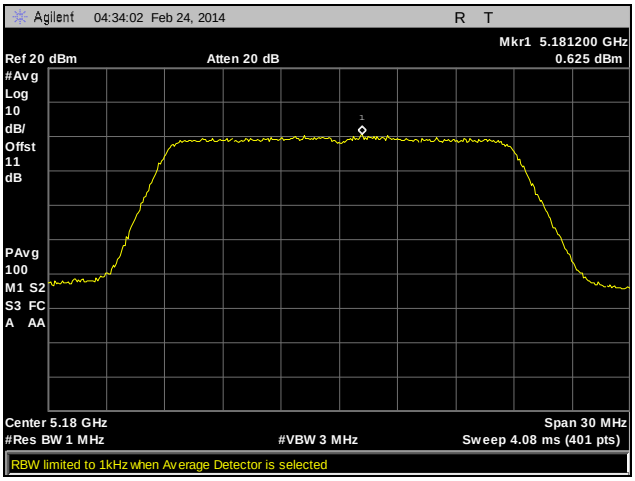
Plot 283. Peak Power Spectral Density, Mid Channel, 802.11ac 20 MHz, Ant. 0, MIMO



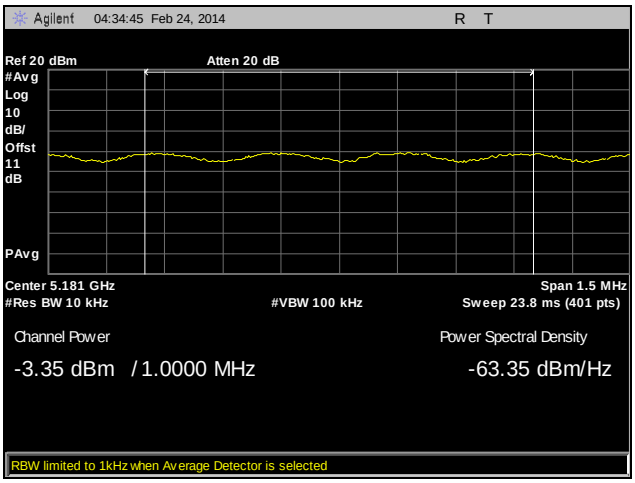
Plot 284. Peak Power Spectral Density, Determination, High Channel, 802.11ac 20 MHz, Ant. 0, MIMO



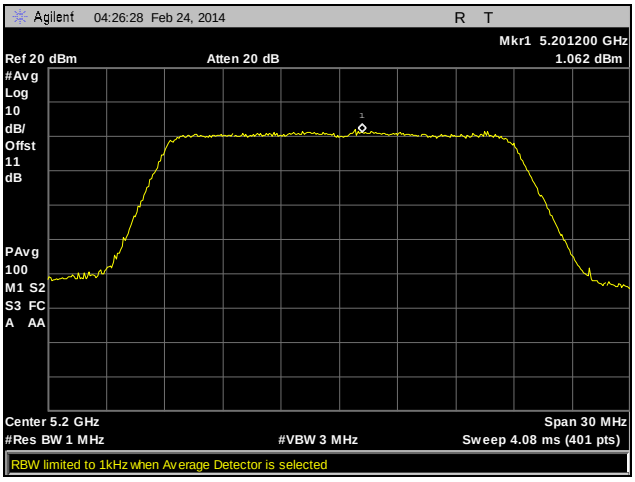
Plot 285. Peak Power Spectral Density, High Channel, 802.11ac 20 MHz, Ant. 0, MIMO



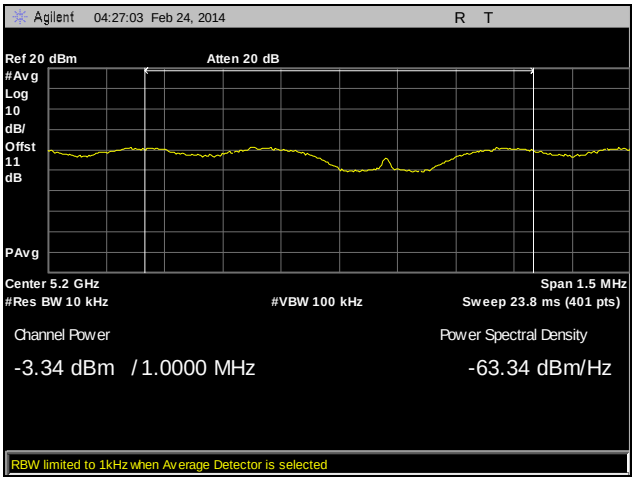
Plot 286. Peak Power Spectral Density, Determination, Low Channel, 802.11ac 20 MHz, Ant. 1, MIMO



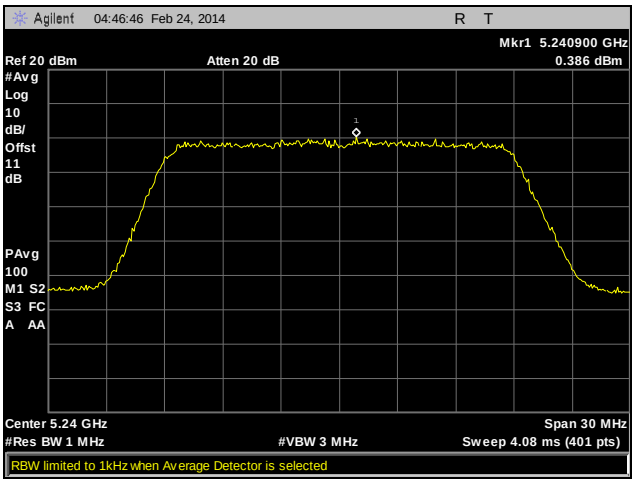
Plot 287. Peak Power Spectral Density, Low Channel, 802.11ac 20 MHz, Ant. 1, MIMO



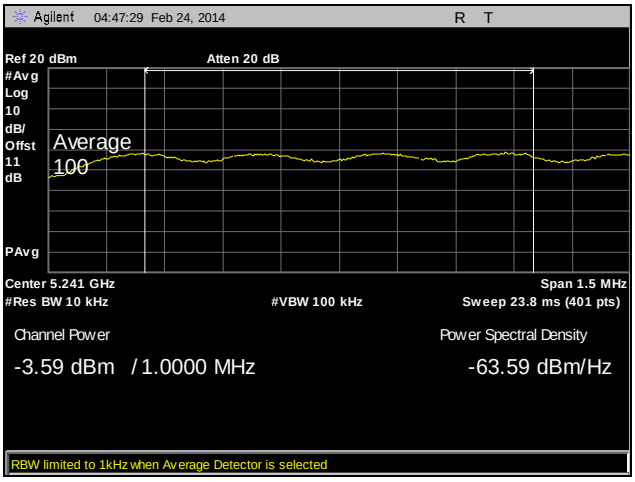
Plot 288. Peak Power Spectral Density, Determination, Mid Channel, 802.11ac 20 MHz, Ant. 1, MIMO



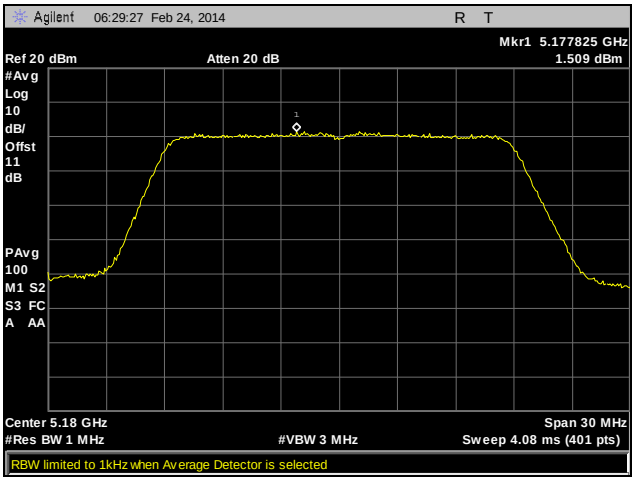
Plot 289. Peak Power Spectral Density, Mid Channel, 802.11ac 20 MHz, Ant. 1, MIMO



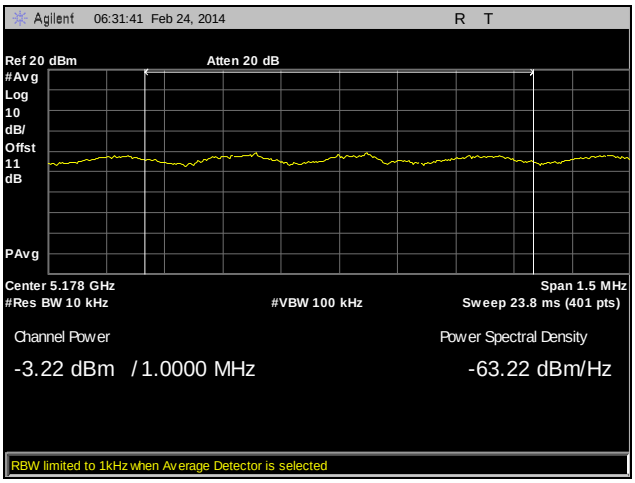
Plot 290. Peak Power Spectral Density, Determination, High Channel, 802.11ac 20 MHz, Ant. 1, MIMO



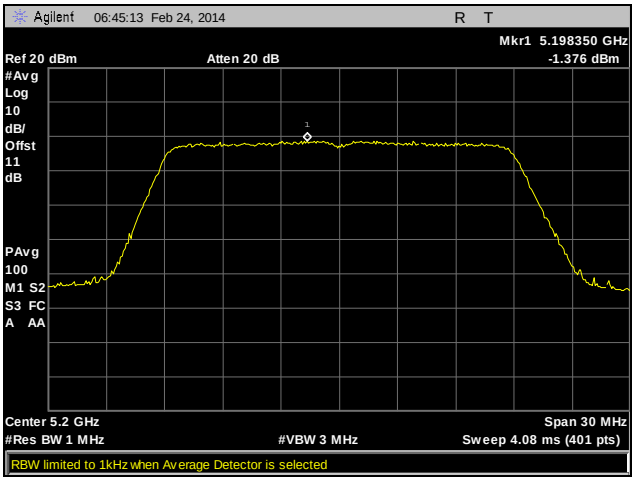
Plot 291. Peak Power Spectral Density, High Channel, 802.11ac 20 MHz, Ant. 1, MIMO



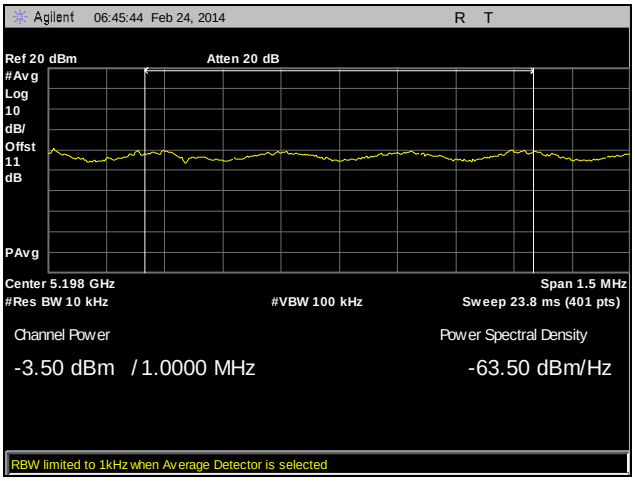
Plot 292. Peak Power Spectral Density, Determination, Low Channel, 802.11ac 20 MHz, Ant. 2, MIMO



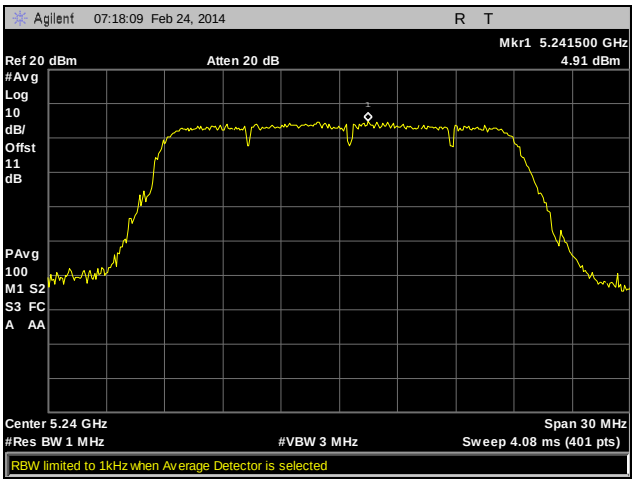
Plot 293. Peak Power Spectral Density, Low Channel, 802.11ac 20 MHz, Ant. 2, MIMO



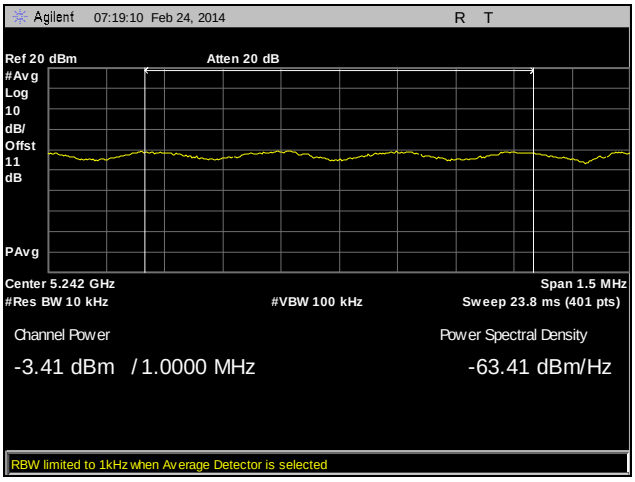
Plot 294. Peak Power Spectral Density, Determination, Mid Channel, 802.11ac 20 MHz, Ant. 2, MIMO



Plot 295. Peak Power Spectral Density, Mid Channel, 802.11ac 20 MHz, Ant. 2, MIMO

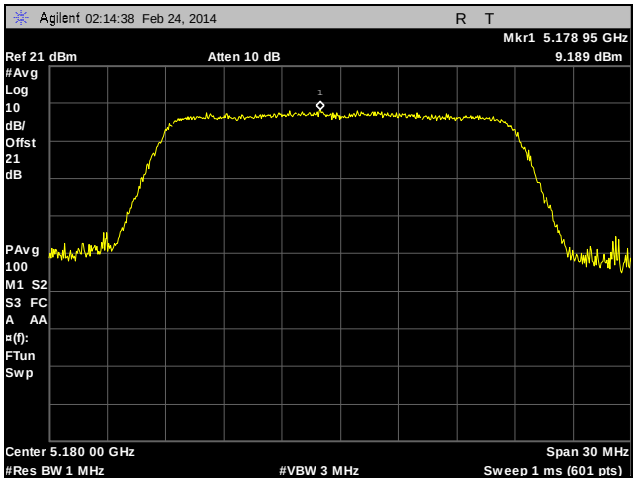


Plot 296. Peak Power Spectral Density, Determination, High Channel, 802.11ac 20 MHz, Ant. 2, MIMO

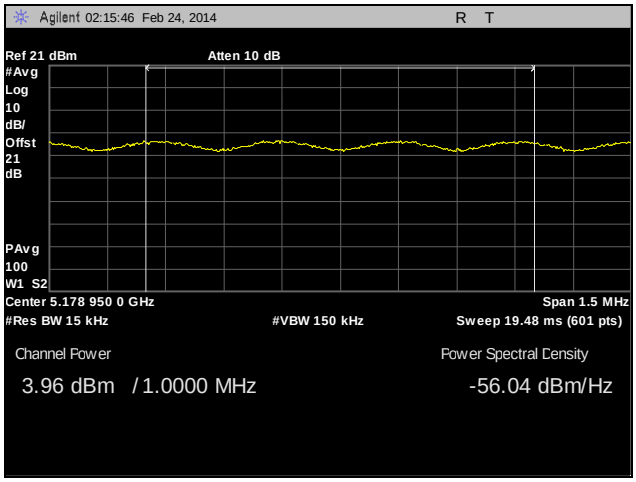


Plot 297. Peak Power Spectral Density, High Channel, 802.11ac 20 MHz, Ant. 2, MIMO

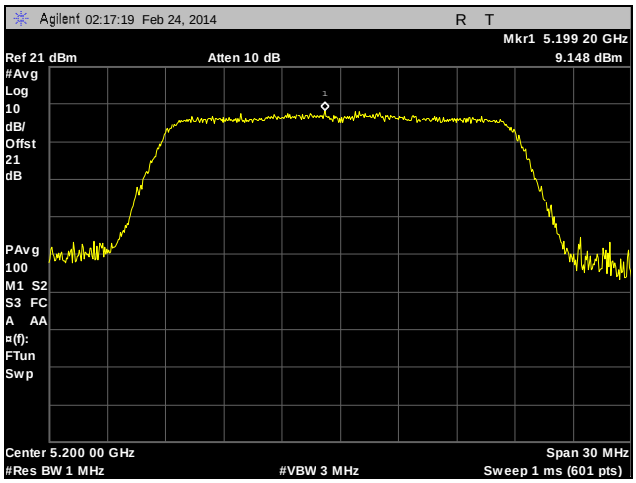
Peak Power Spectral Density, 802.11n 20 MHz



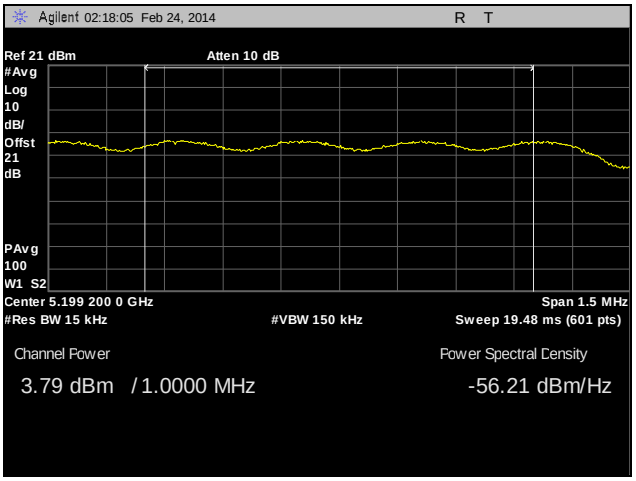
Plot 298. Peak Power Spectral Density, Determination, Low Channel, 802.11n 20 MHz, Ant. 0



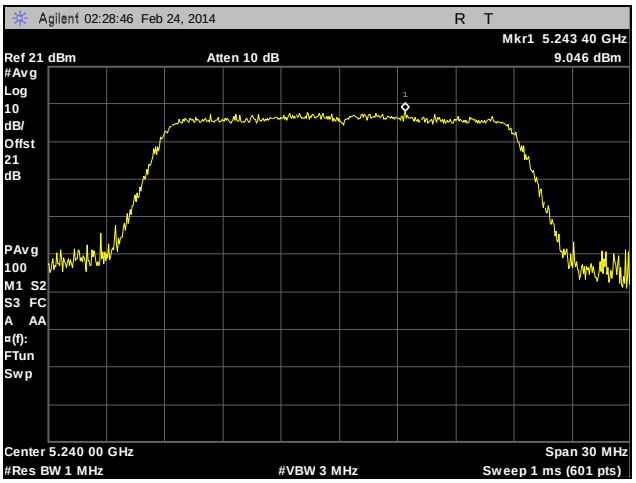
Plot 299. Peak Power Spectral Density, Low Channel, 802.11n 20 MHz, Ant. 0



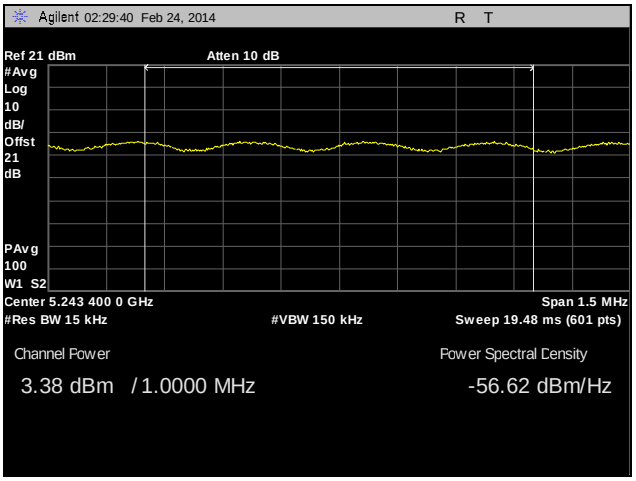
Plot 300. Peak Power Spectral Density, Determination, Mid Channel, 802.11n 20 MHz, Ant. 0



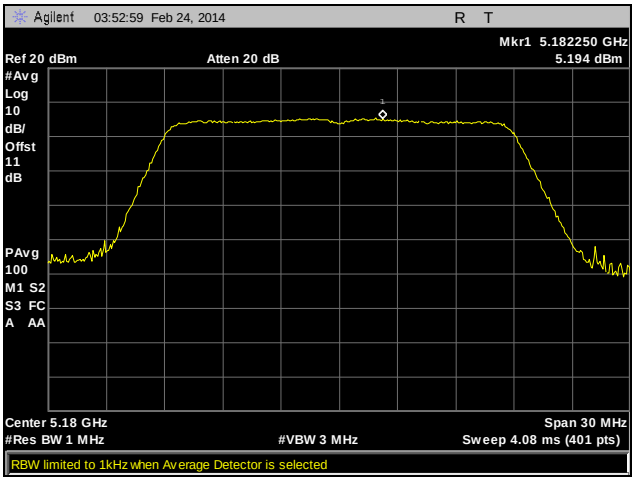
Plot 301. Peak Power Spectral Density, Mid Channel, 802.11n 20 MHz, Ant. 0



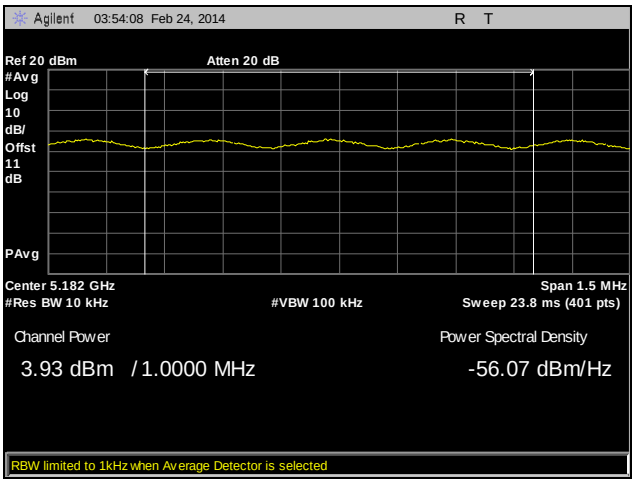
Plot 302. Peak Power Spectral Density, Determination, High Channel, 802.11n 20 MHz, Ant. 0



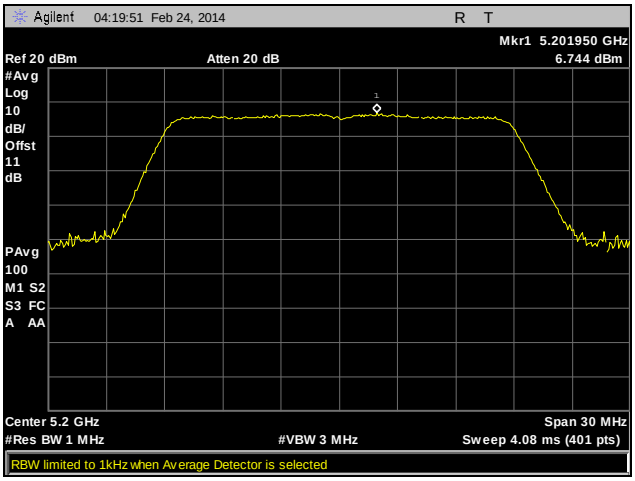
Plot 303. Peak Power Spectral Density, High Channel, 802.11n 20 MHz, Ant. 0



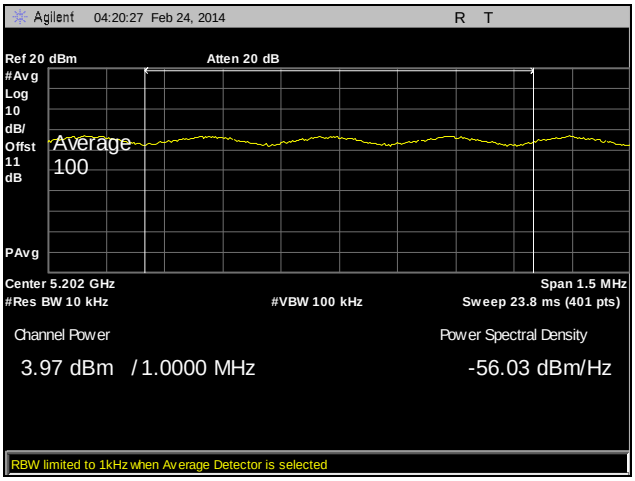
Plot 304. Peak Power Spectral Density, Determination, Low Channel, 802.11n 20 MHz, Ant. 1



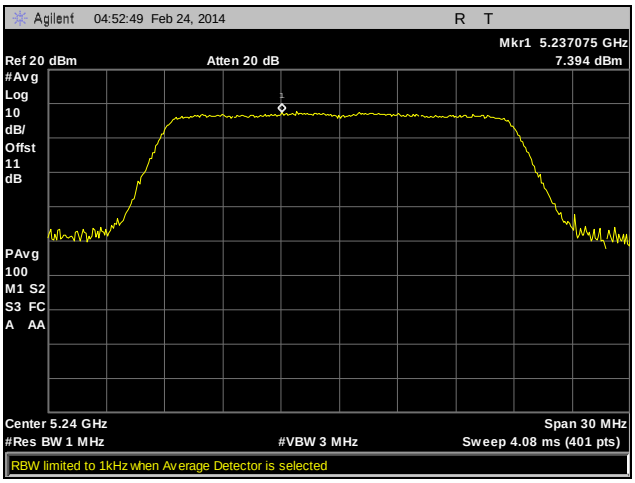
Plot 305. Peak Power Spectral Density, Low Channel, 802.11n 20 MHz, Ant. 1



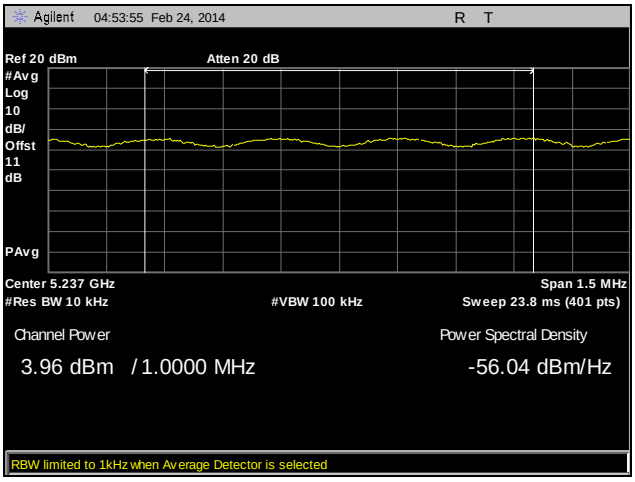
Plot 306. Peak Power Spectral Density, Determination, Mid Channel, 802.11n 20 MHz, Ant. 1



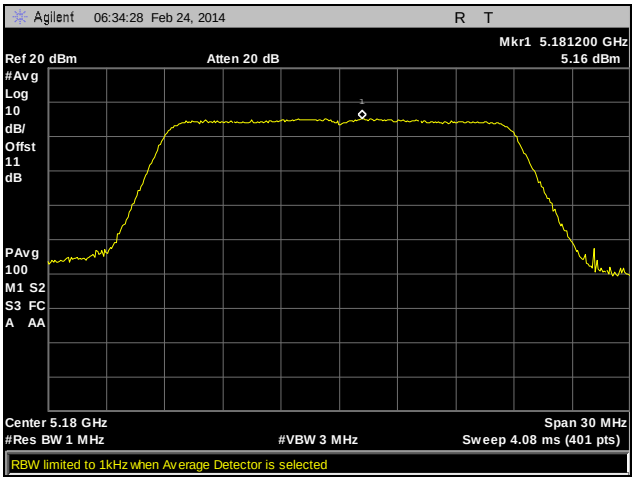
Plot 307. Peak Power Spectral Density, Mid Channel, 802.11n 20 MHz, Ant. 1



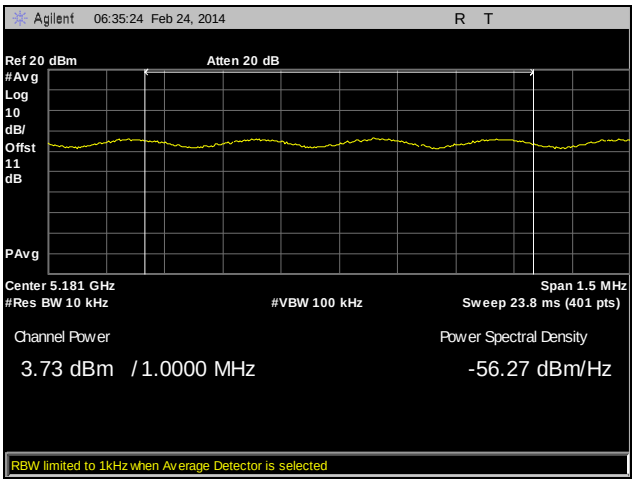
Plot 308. Peak Power Spectral Density, Determination, High Channel, 802.11n 20 MHz, Ant. 1



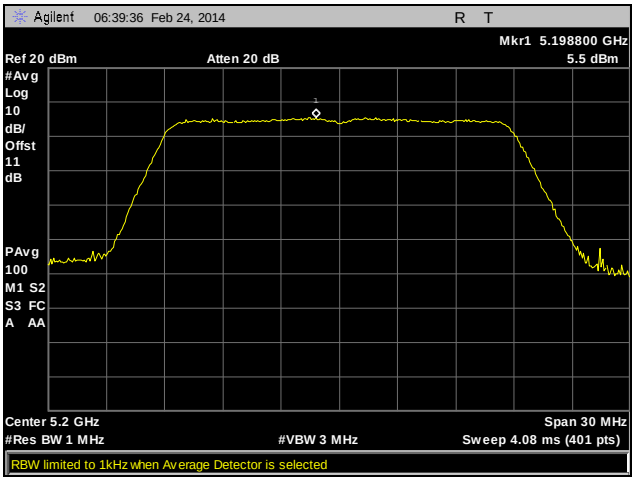
Plot 309. Peak Power Spectral Density, High Channel, 802.11n 20 MHz, Ant. 1



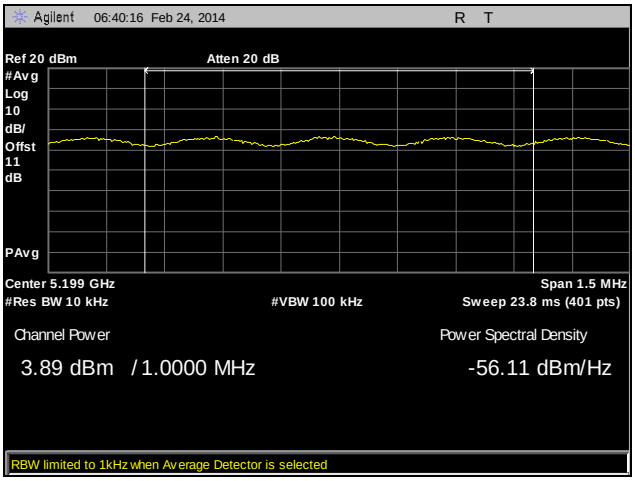
Plot 310. Peak Power Spectral Density, Determination, Low Channel, 802.11n 20 MHz, Ant. 2



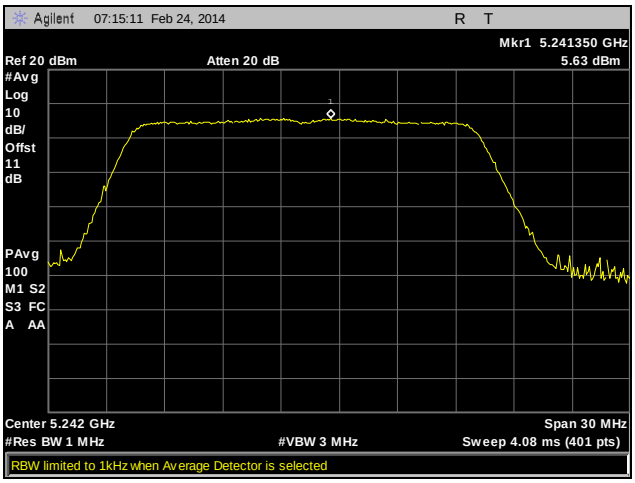
Plot 311. Peak Power Spectral Density, Low Channel, 802.11n 20 MHz, Ant. 2



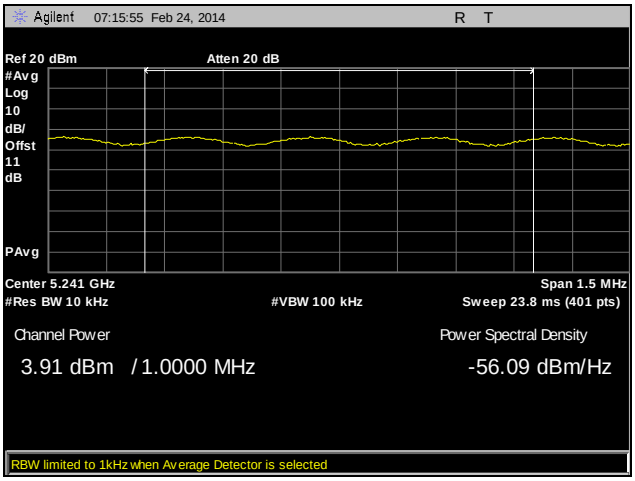
Plot 312. Peak Power Spectral Density, Determination, Mid Channel, 802.11n 20 MHz, Ant. 2



Plot 313. Peak Power Spectral Density, Mid Channel, 802.11n 20 MHz, Ant. 2

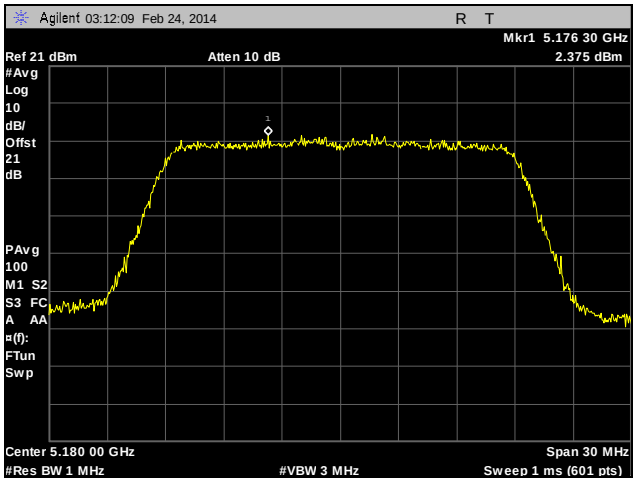


Plot 314. Peak Power Spectral Density, Determination, High Channel, 802.11n 20 MHz, Ant. 2

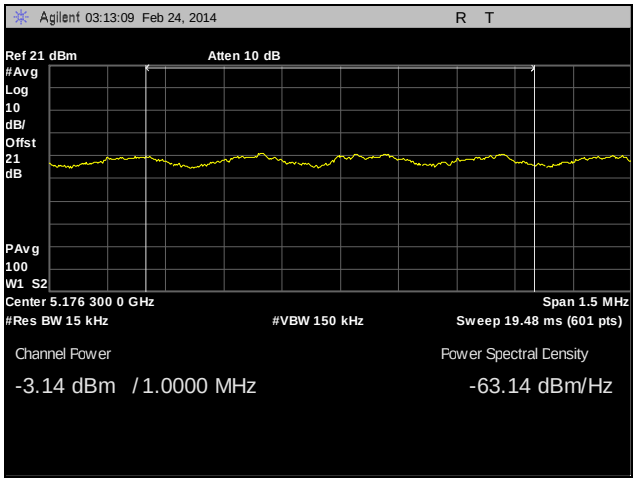


Plot 315. Peak Power Spectral Density, High Channel, 802.11n 20 MHz, Ant. 2

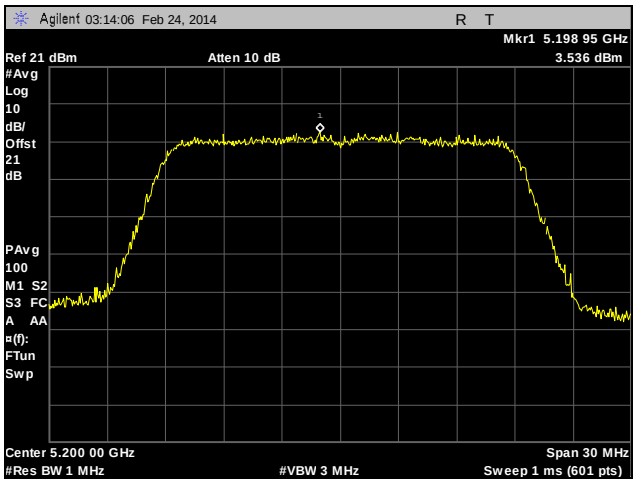
Peak Power Spectral Density, 802.11n 20 MHz, MIMO



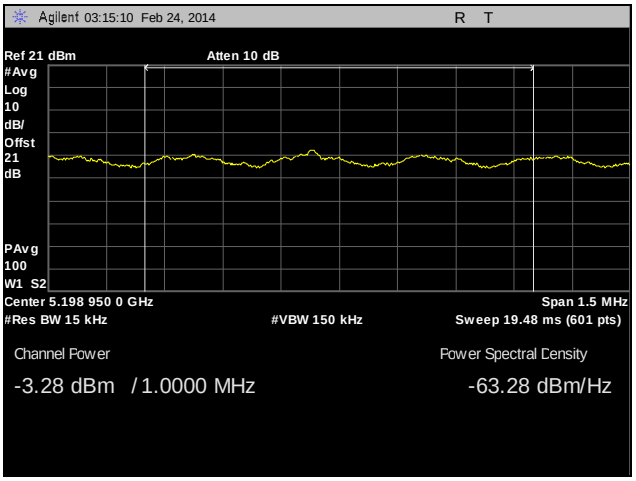
Plot 316. Peak Power Spectral Density, Determination, Low Channel, 802.11n 20 MHz, Ant. 0, MIMO



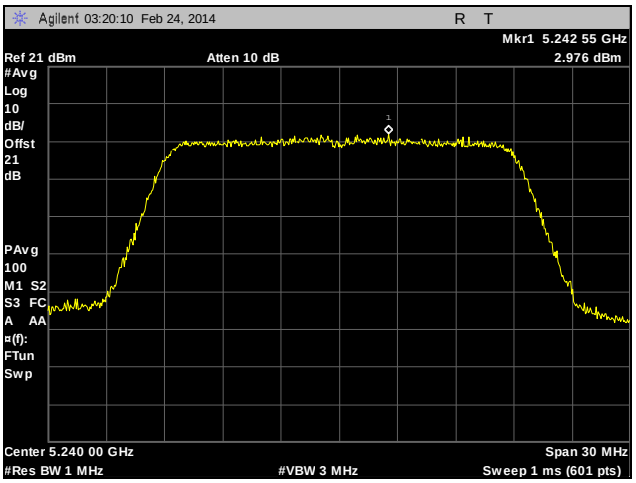
Plot 317. Peak Power Spectral Density, Low Channel, 802.11n 20 MHz, Ant. 0, MIMO



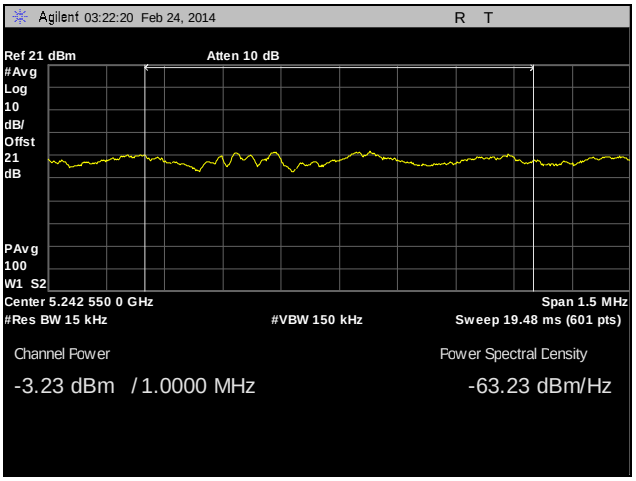
Plot 318. Peak Power Spectral Density, Determination, Mid Channel, 802.11n 20 MHz, Ant. 0, MIMO



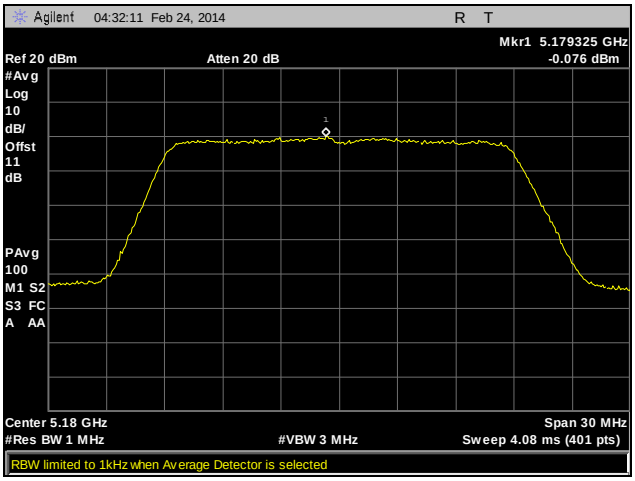
Plot 319. Peak Power Spectral Density, Mid Channel, 802.11n 20 MHz, Ant. 0, MIMO



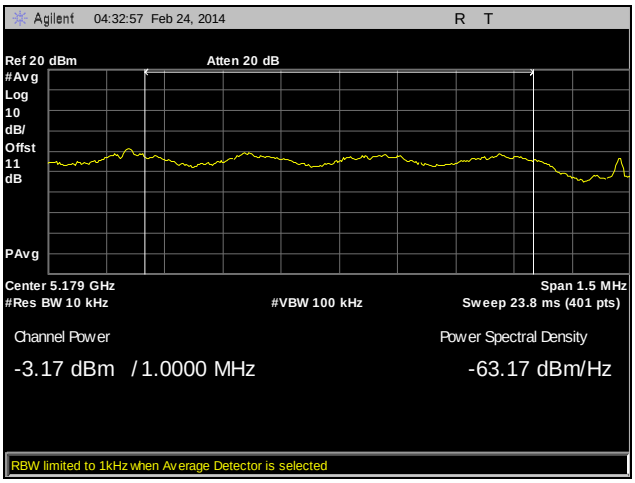
Plot 320. Peak Power Spectral Density, Determination, High Channel, 802.11n 20 MHz, Ant. 0, MIMO



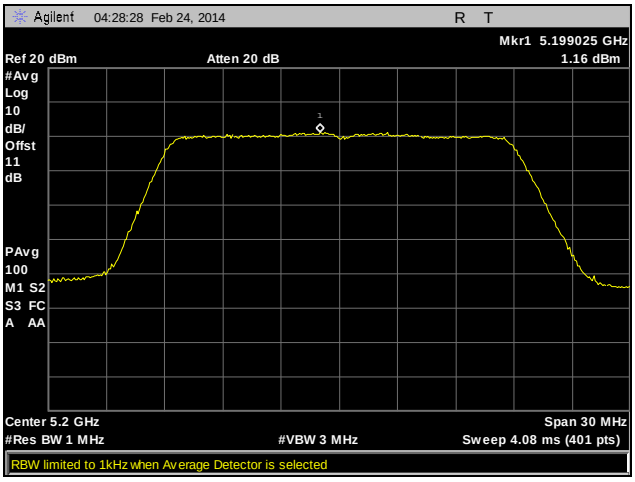
Plot 321. Peak Power Spectral Density, High Channel, 802.11n 20 MHz, Ant. 0, MIMO



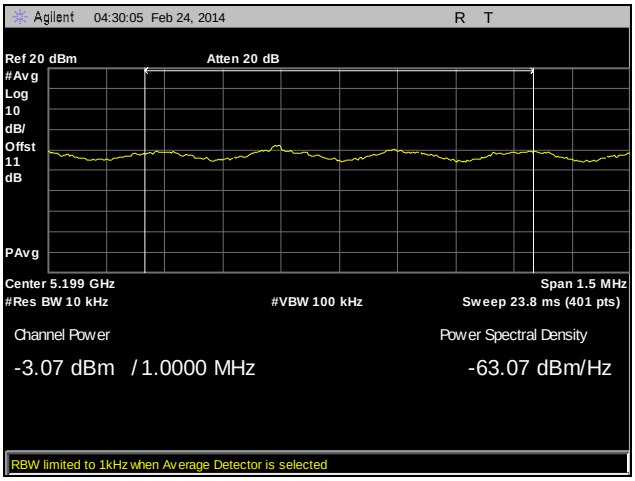
Plot 322. Peak Power Spectral Density, Determination, Low Channel, 802.11n 20 MHz, Ant. 1, MIMO



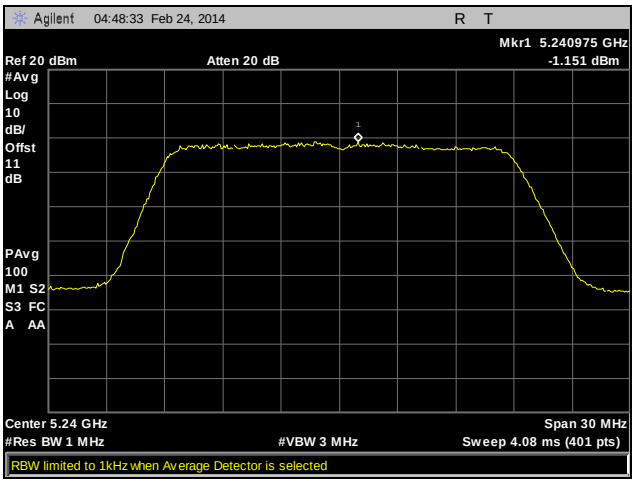
Plot 323. Peak Power Spectral Density, Low Channel, 802.11n 20 MHz, Ant. 1, MIMO



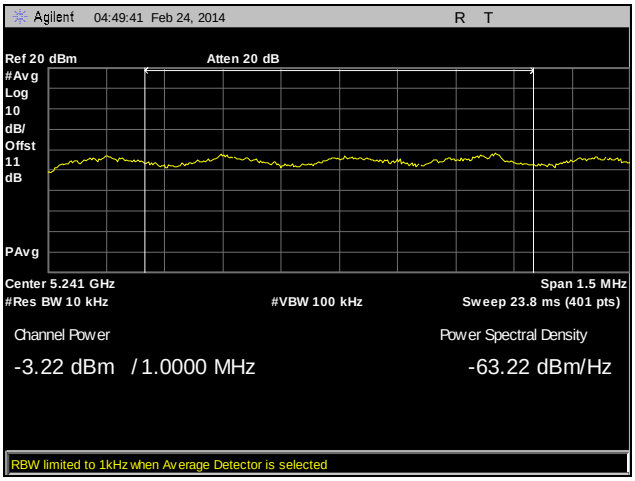
Plot 324. Peak Power Spectral Density, Determination, Mid Channel, 802.11n 20 MHz, Ant. 1, MIMO



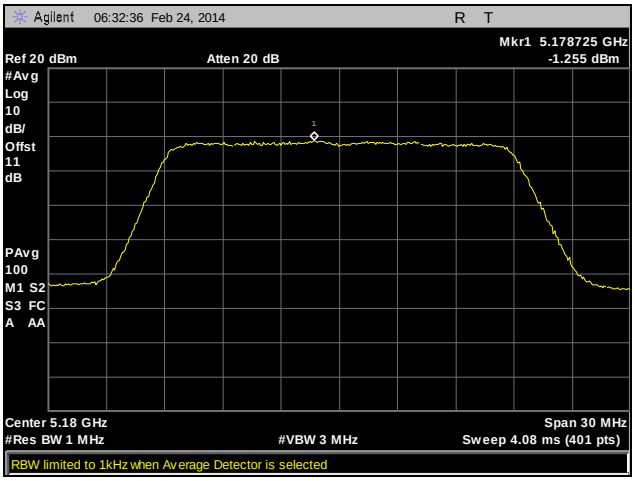
Plot 325. Peak Power Spectral Density, Mid Channel, 802.11n 20 MHz, Ant. 1, MIMO



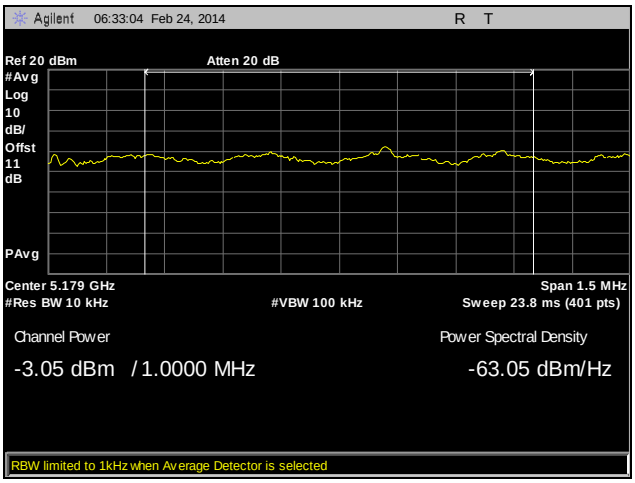
Plot 326. Peak Power Spectral Density, Determination, High Channel, 802.11n 20 MHz, Ant. 1, MIMO



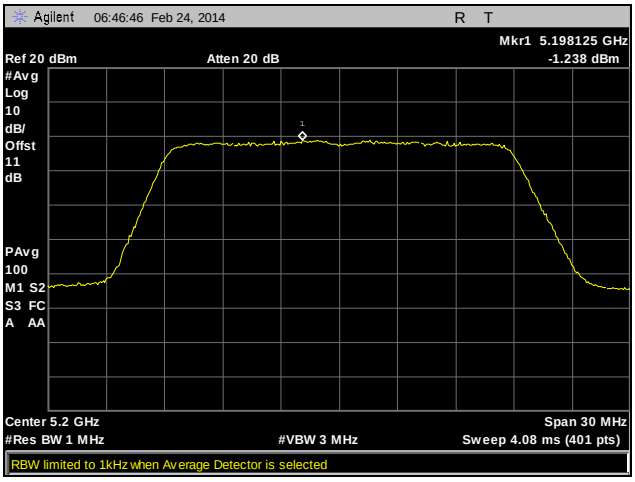
Plot 327. Peak Power Spectral Density, High Channel, 802.11n 20 MHz, Ant. 1, MIMO



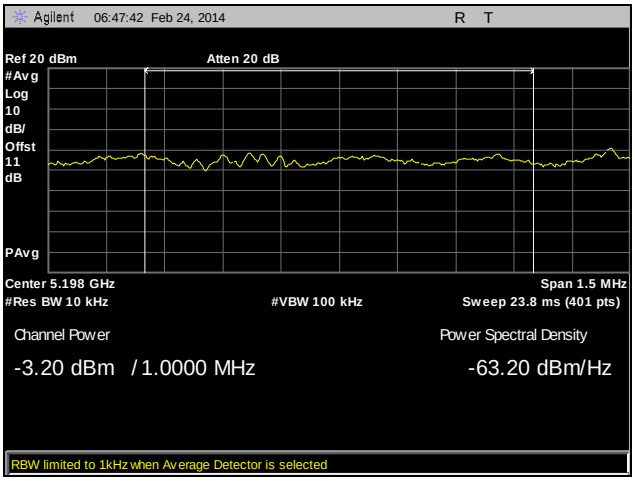
Plot 328. Peak Power Spectral Density, Determination, Low Channel, 802.11n 20 MHz, Ant. 2, MIMO



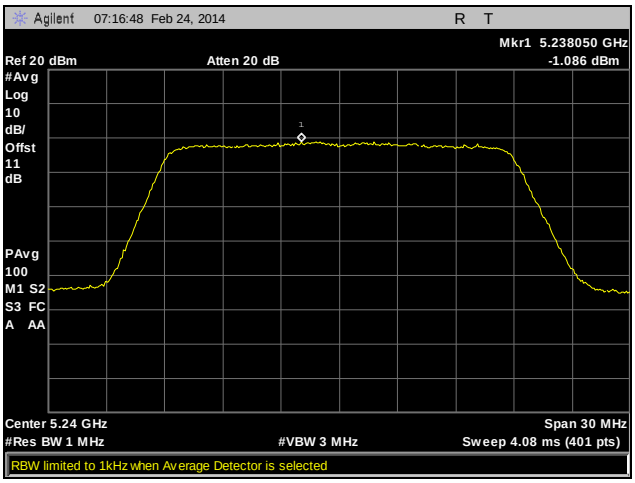
Plot 329. Peak Power Spectral Density, Low Channel, 802.11n 20 MHz, Ant. 2, MIMO



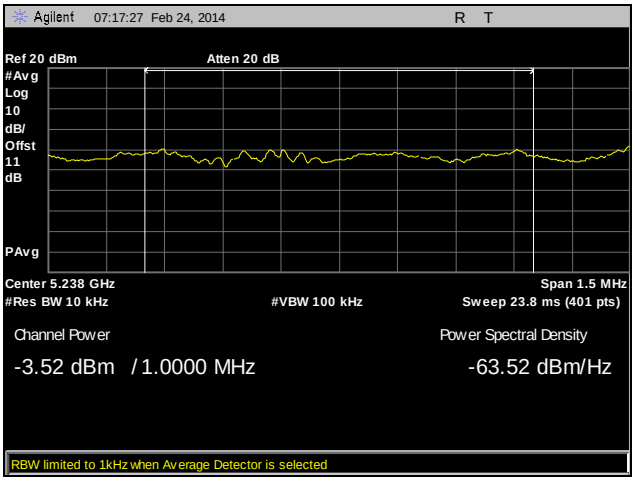
Plot 330. Peak Power Spectral Density, Determination, Mid Channel, 802.11n 20 MHz, Ant. 2, MIMO



Plot 331. Peak Power Spectral Density, Mid Channel, 802.11n 20 MHz, Ant. 2, MIMO

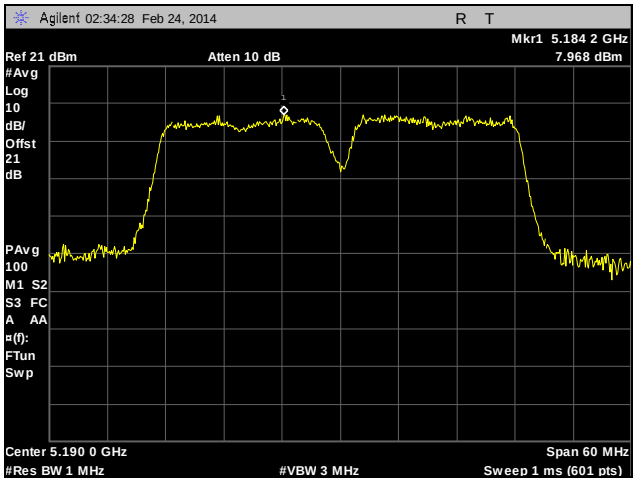


Plot 332. Peak Power Spectral Density, Determination, High Channel, 802.11n 20 MHz, Ant. 2, MIMO

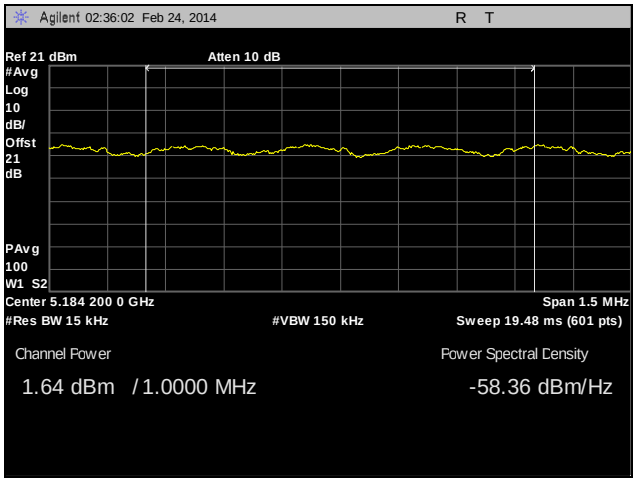


Plot 333. Peak Power Spectral Density, High Channel, 802.11n 20 MHz, Ant. 2, MIMO

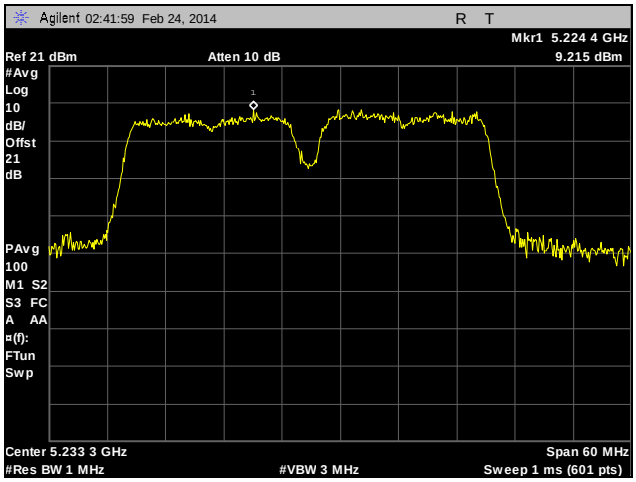
Peak Power Spectral Density, 802.11a 40 MHz



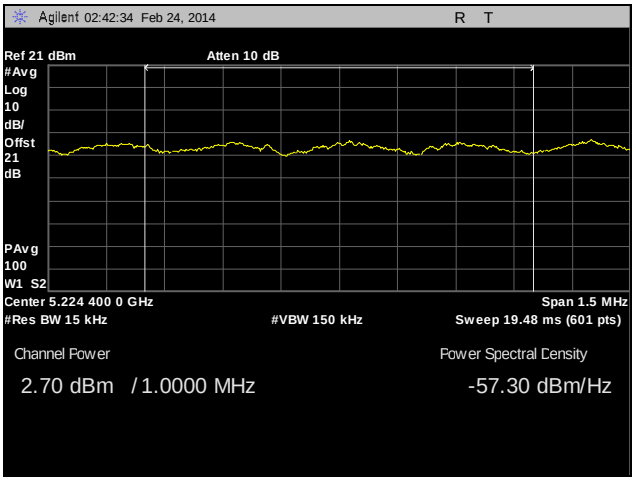
Plot 334. Peak Power Spectral Density, Determination, Low Channel, 802.11a 40 MHz, Ant. 0



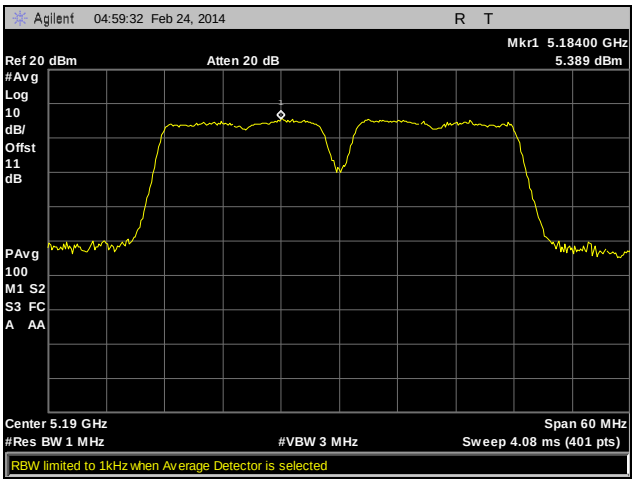
Plot 335. Peak Power Spectral Density, Low Channel, 802.11a 40 MHz, Ant. 0



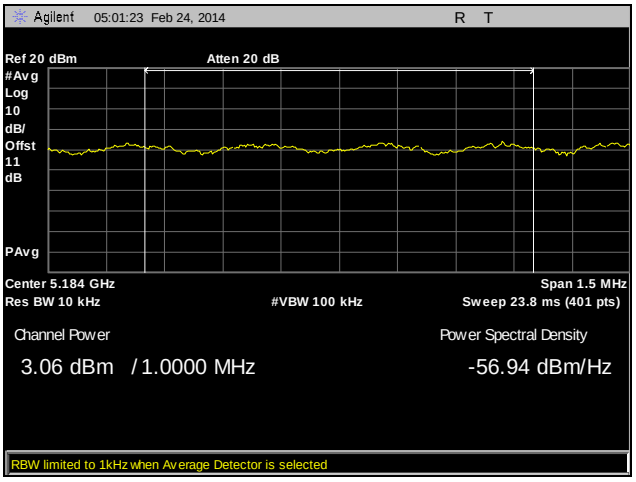
Plot 336. Peak Power Spectral Density, Determination, High Channel, 802.11a 40 MHz, Ant. 0



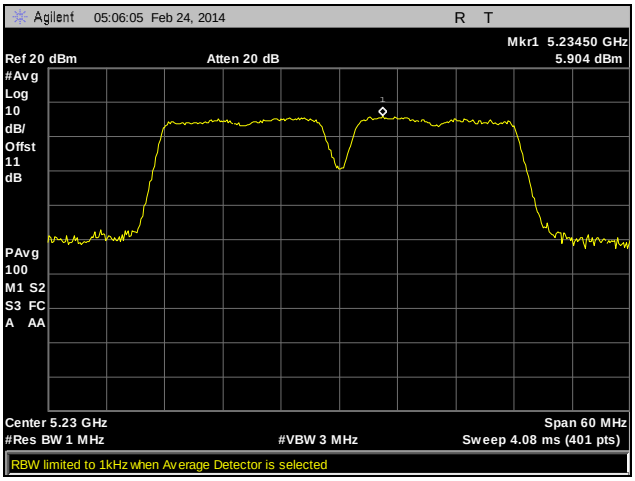
Plot 337. Peak Power Spectral Density, High Channel, 802.11a 40 MHz, Ant. 0



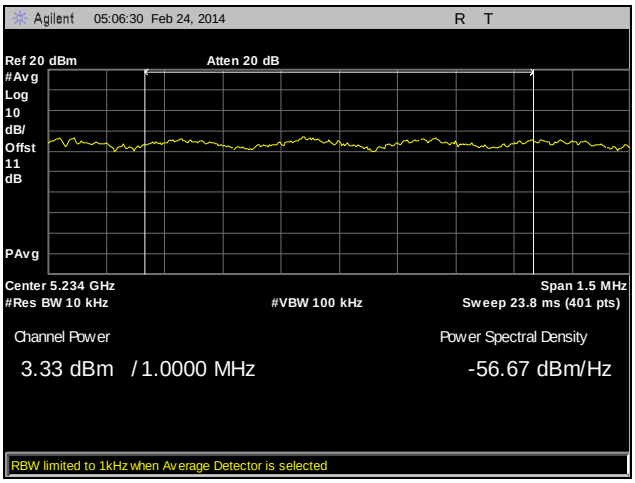
Plot 338. Peak Power Spectral Density, Determination, Low Channel, 802.11a 40 MHz, Ant. 1



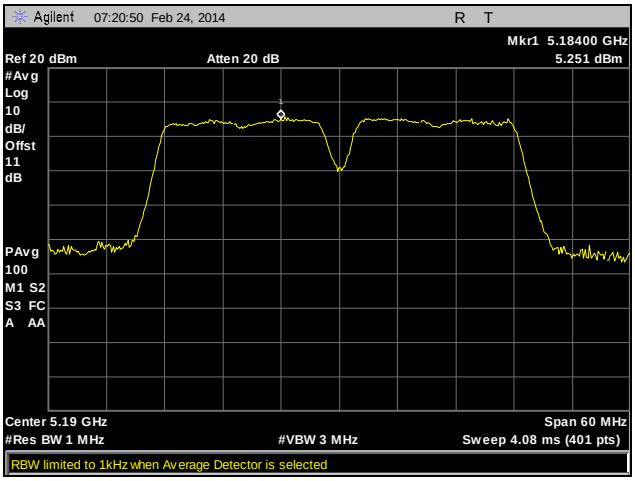
Plot 339. Peak Power Spectral Density, Low Channel, 802.11a 40 MHz, Ant. 1



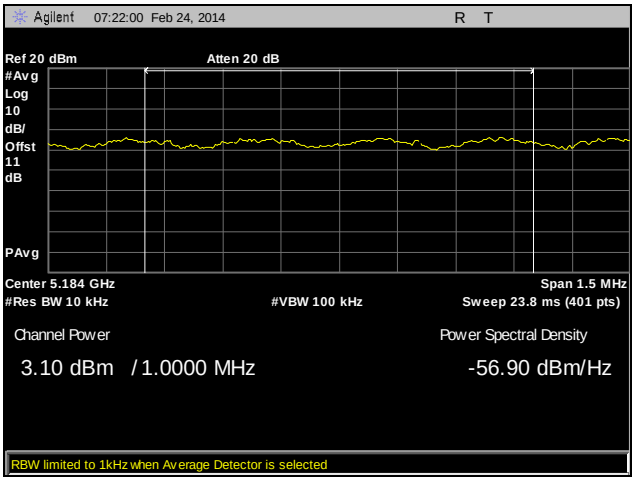
Plot 340. Peak Power Spectral Density, Determination, High Channel, 802.11a 40 MHz, Ant. 1



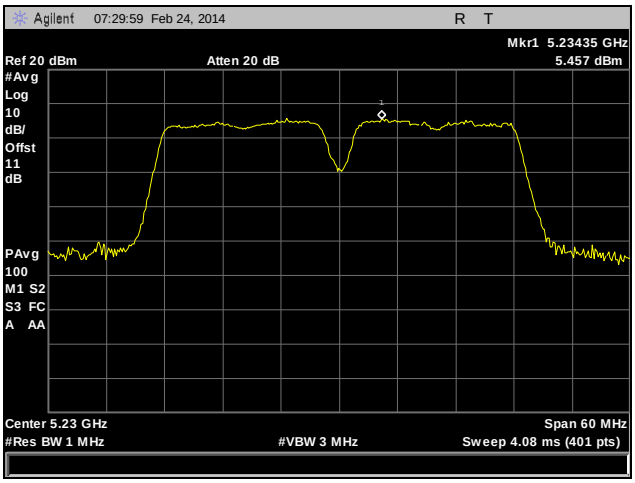
Plot 341. Peak Power Spectral Density, High Channel, 802.11a 40 MHz, Ant. 1



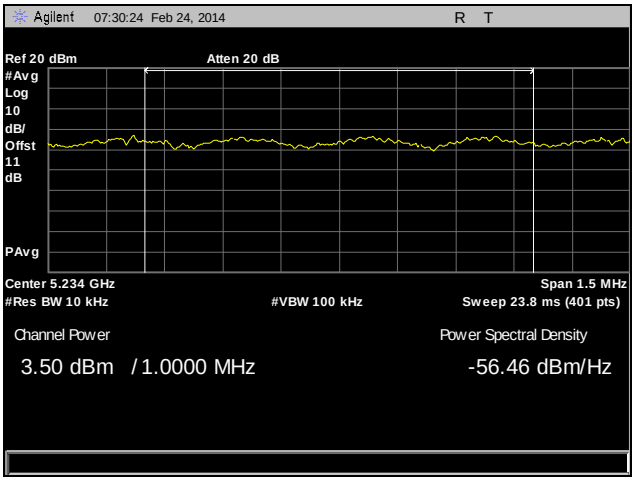
Plot 342. Peak Power Spectral Density, Determination, Low Channel, 802.11a 40 MHz, Ant. 2



Plot 343. Peak Power Spectral Density, Low Channel, 802.11a 40 MHz, Ant. 2

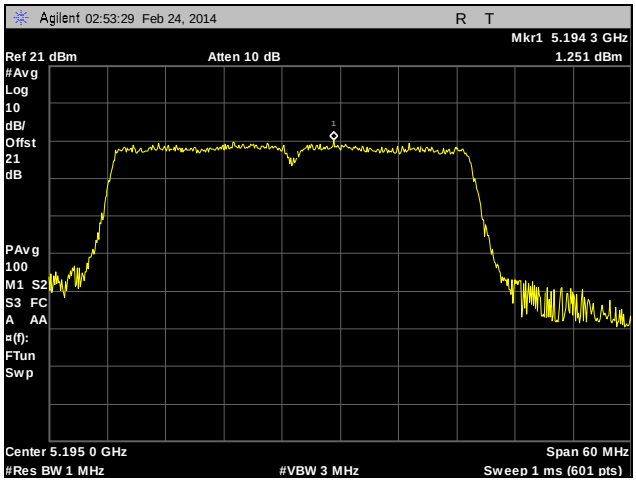


Plot 344. Peak Power Spectral Density, Determination, High Channel, 802.11a 40 MHz, Ant. 2

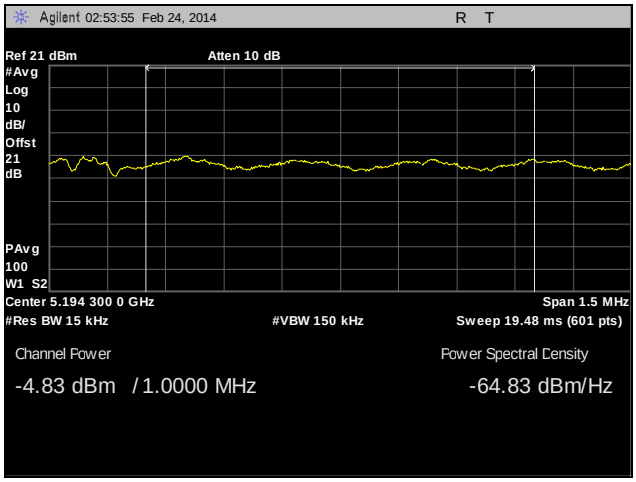


Plot 345. Peak Power Spectral Density, High Channel, 802.11a 40 MHz, Ant. 2

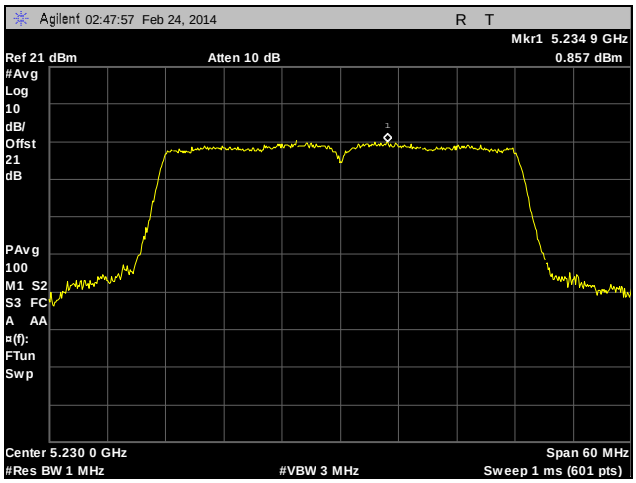
Peak Power Spectral Density, 802.11ac 40 MHz, MIMO



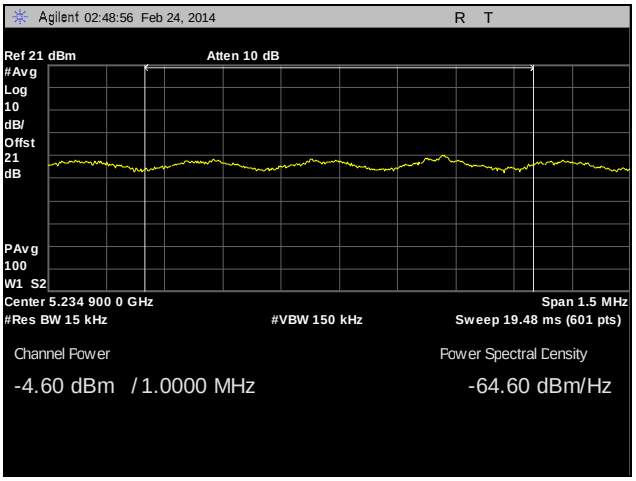
Plot 346. Peak Power Spectral Density, Determination, Low Channel, 802.11ac 40 MHz, Ant. 0, MIMO



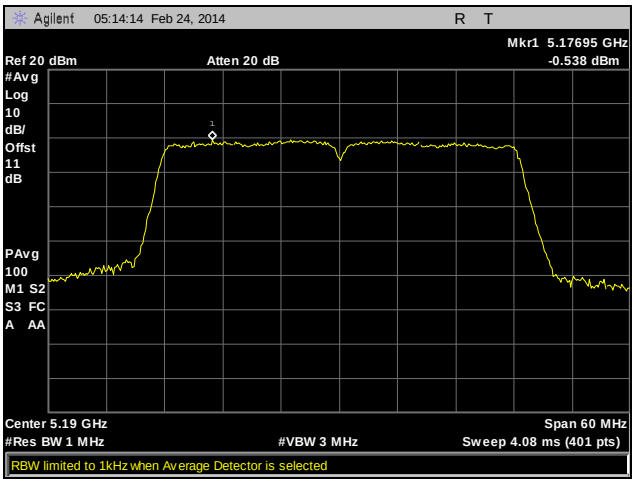
Plot 347. Peak Power Spectral Density, Low Channel, 802.11ac 40 MHz, Ant. 0, MIMO



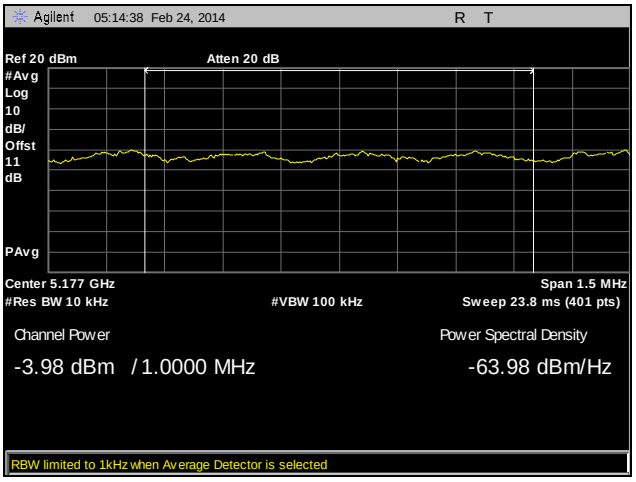
Plot 348. Peak Power Spectral Density, Determination, High Channel, 802.11ac 40 MHz, Ant. 0, MIMO



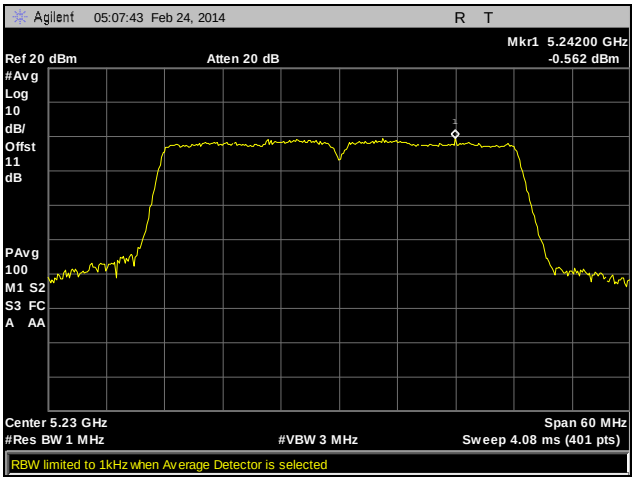
Plot 349. Peak Power Spectral Density, High Channel, 802.11ac 40 MHz, Ant. 0, MIMO



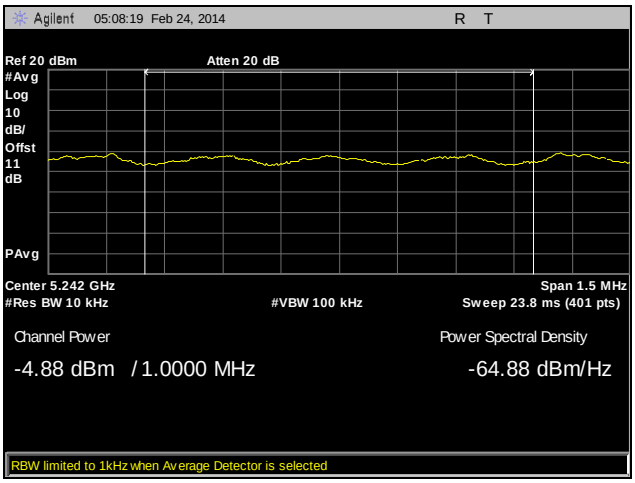
Plot 350. Peak Power Spectral Density, Determination, Low Channel, 802.11ac 40 MHz, Ant. 1, MIMO



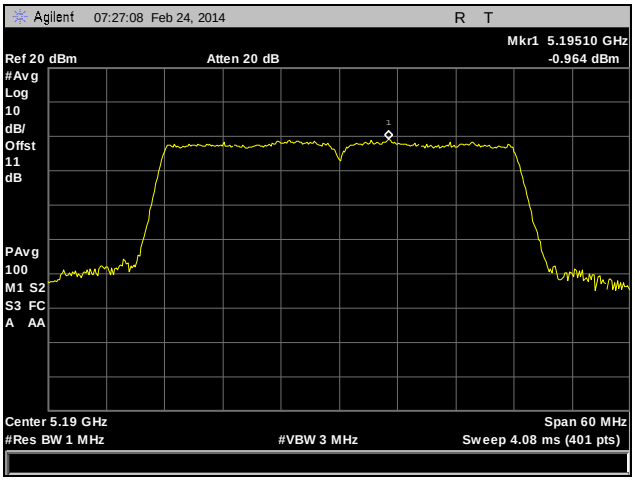
Plot 351. Peak Power Spectral Density, Low Channel, 802.11ac 40 MHz, Ant. 1, MIMO



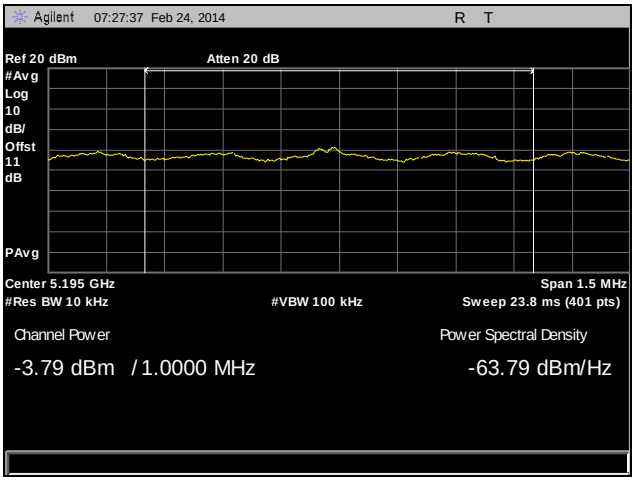
Plot 352. Peak Power Spectral Density, Determination, High Channel, 802.11ac 40 MHz, Ant. 1, MIMO



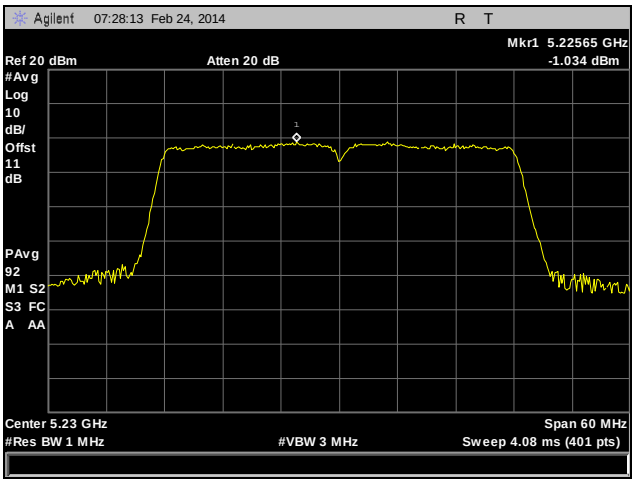
Plot 353. Peak Power Spectral Density, High Channel, 802.11ac 40 MHz, Ant. 1, MIMO



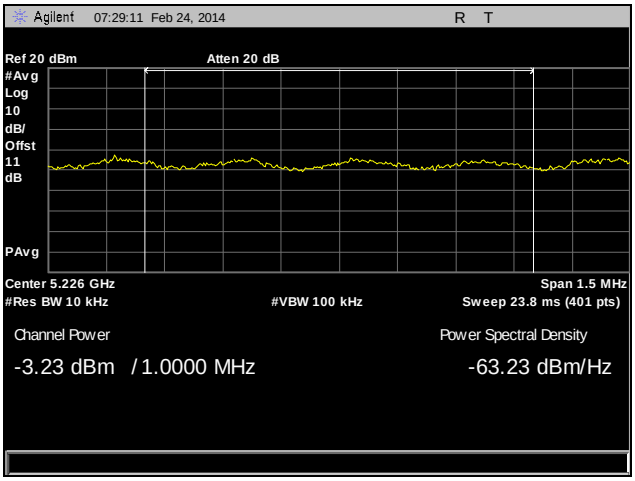
Plot 354. Peak Power Spectral Density, Determination, Low Channel, 802.11ac 40 MHz, Ant. 2, MIMO



Plot 355. Peak Power Spectral Density, Low Channel, 802.11ac 40 MHz, Ant. 2, MIMO

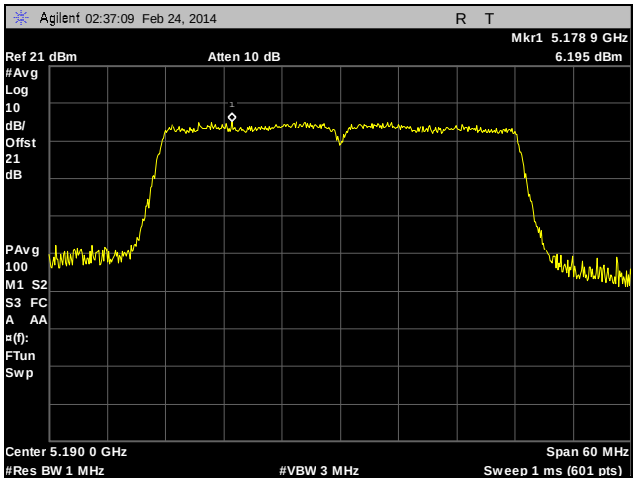


Plot 356. Peak Power Spectral Density, Determination, High Channel, 802.11ac 40 MHz, Ant. 2, MIMO

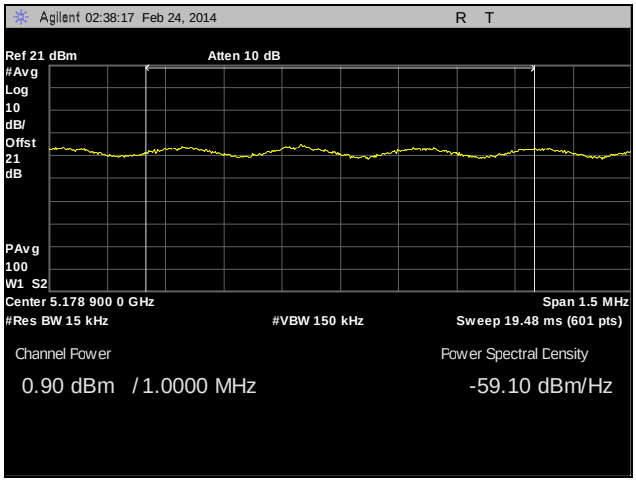


Plot 357. Peak Power Spectral Density, High Channel, 802.11ac 40 MHz, Ant. 2, MIMO

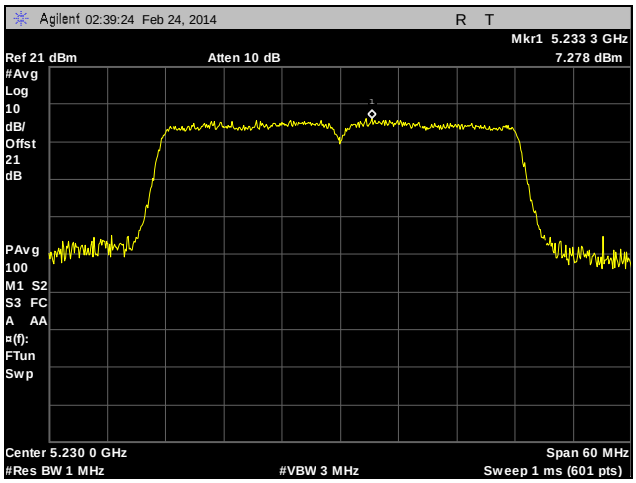
Peak Power Spectral Density, 802.11n 40 MHz



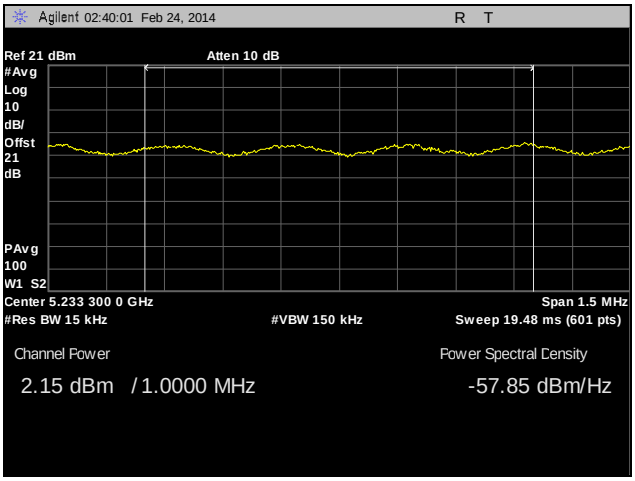
Plot 358. Peak Power Spectral Density, Determination, Low Channel, 802.11n 40 MHz, Ant. 0



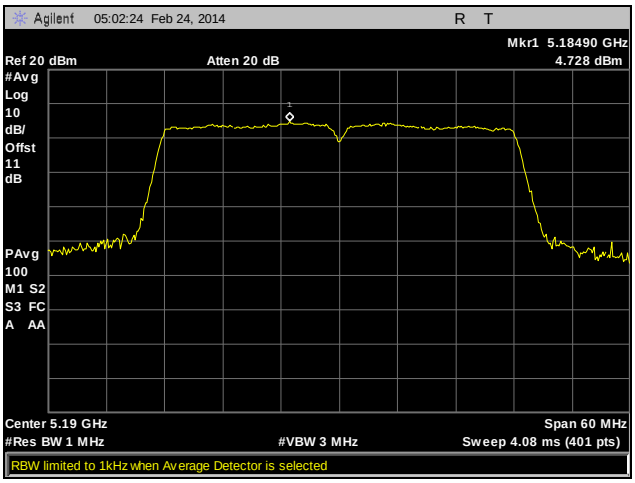
Plot 359. Peak Power Spectral Density, Low Channel, 802.11n 40 MHz, Ant. 0



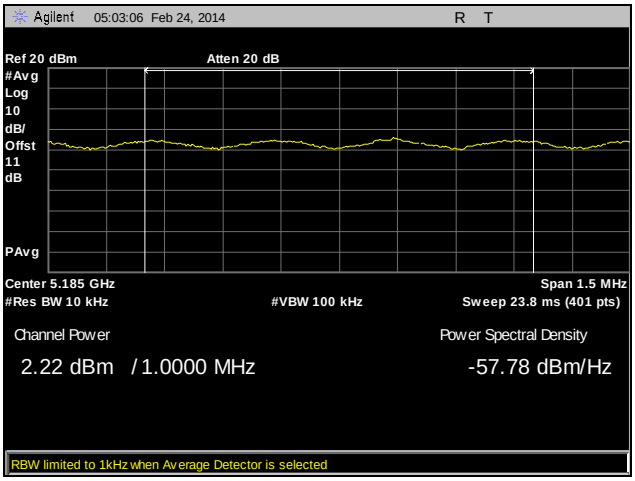
Plot 360. Peak Power Spectral Density, Determination, High Channel, 802.11n 40 MHz, Ant. 0



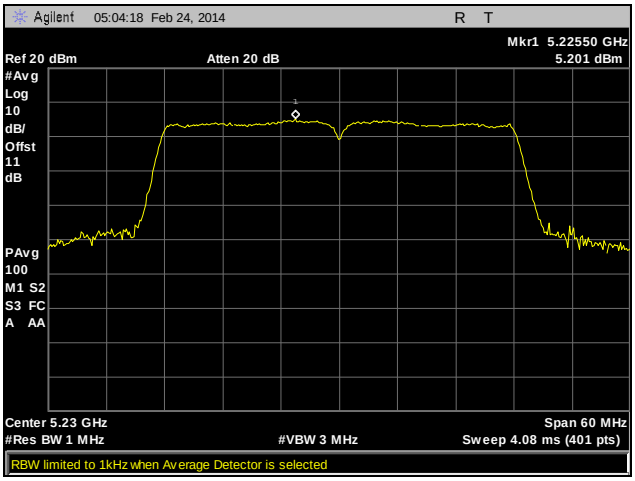
Plot 361. Peak Power Spectral Density, High Channel, 802.11n 40 MHz, Ant. 0



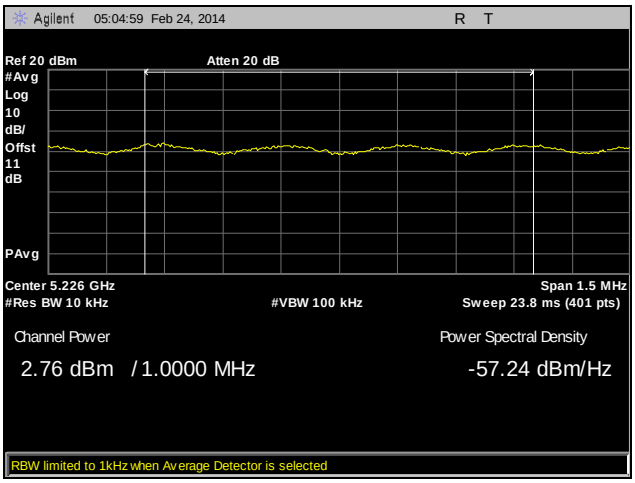
Plot 362. Peak Power Spectral Density, Determination, Low Channel, 802.11n 40 MHz, Ant. 1



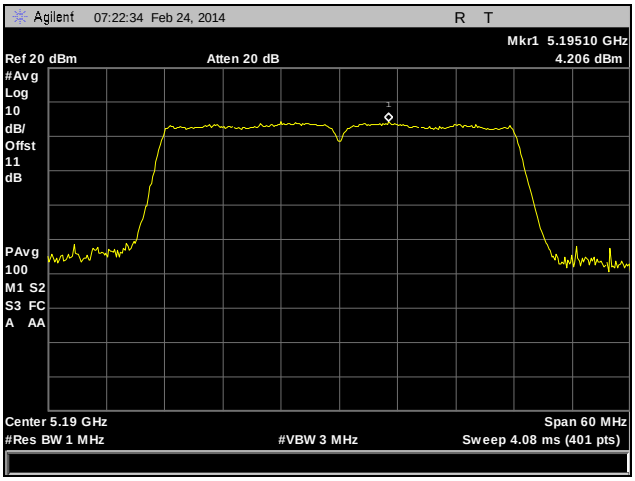
Plot 363. Peak Power Spectral Density, Low Channel, 802.11n 40 MHz, Ant. 1



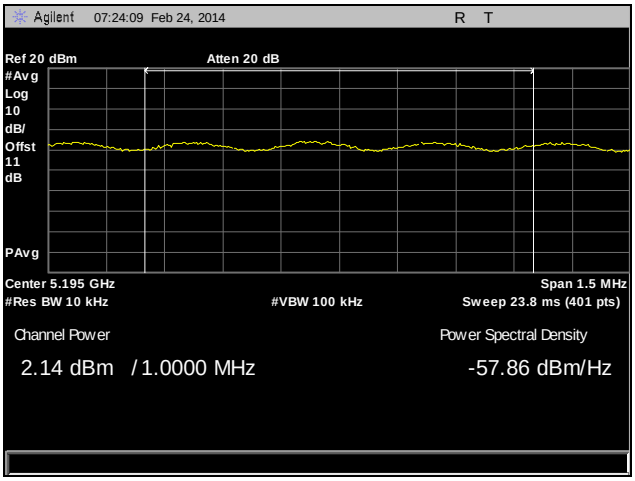
Plot 364. Peak Power Spectral Density, Determination, High Channel, 802.11n 40 MHz, Ant. 1



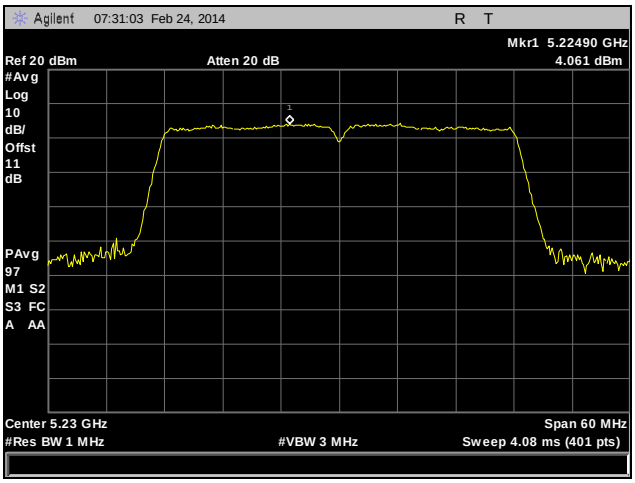
Plot 365. Peak Power Spectral Density, High Channel, 802.11n 40 MHz, Ant. 1



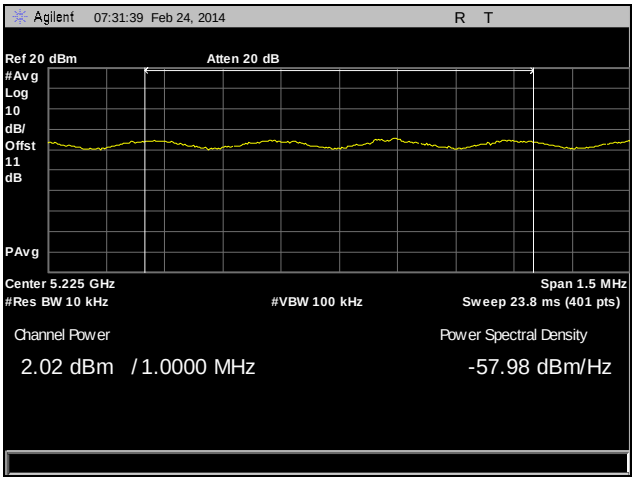
Plot 366. Peak Power Spectral Density, Determination, Low Channel, 802.11n 40 MHz, Ant. 2



Plot 367. Peak Power Spectral Density, Low Channel, 802.11n 40 MHz, Ant. 2

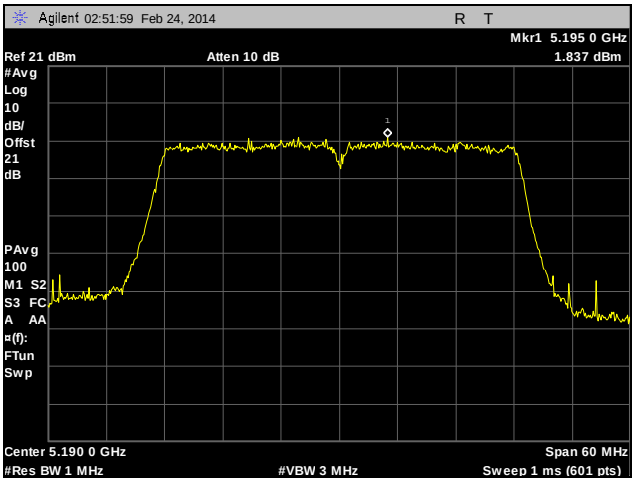


Plot 368. Peak Power Spectral Density, Determination, High Channel, 802.11n 40 MHz, Ant. 2

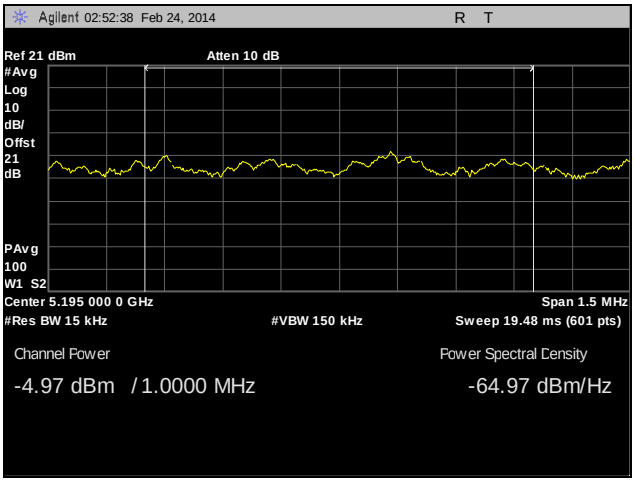


Plot 369. Peak Power Spectral Density, High Channel, 802.11n 40 MHz, Ant. 2

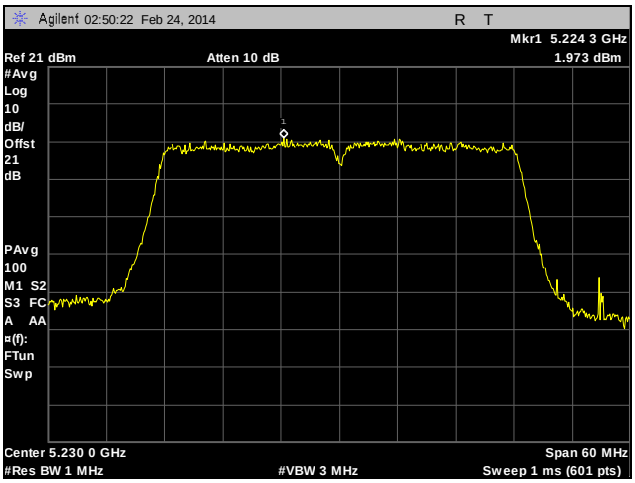
Peak Power Spectral Density, 802.11n 40 MHz, MIMO



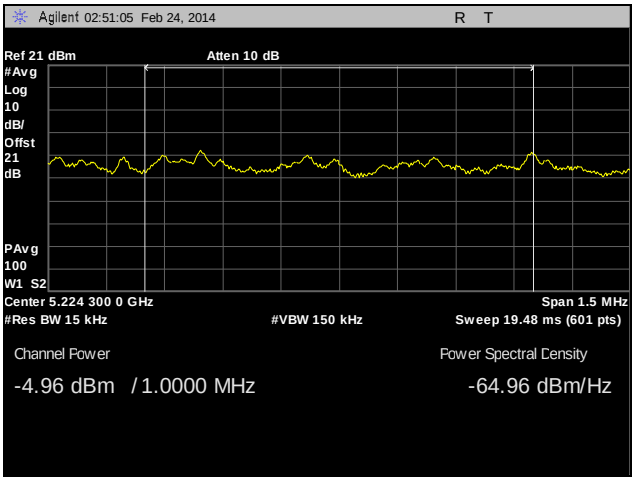
Plot 370. Peak Power Spectral Density, Determination, Low Channel, 802.11n 40 MHz, Ant. 0, MIMO



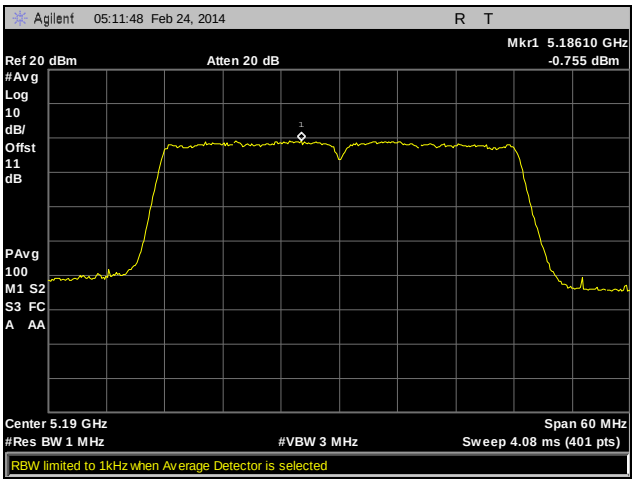
Plot 371. Peak Power Spectral Density, Low Channel, 802.11n 40 MHz, Ant. 0, MIMO



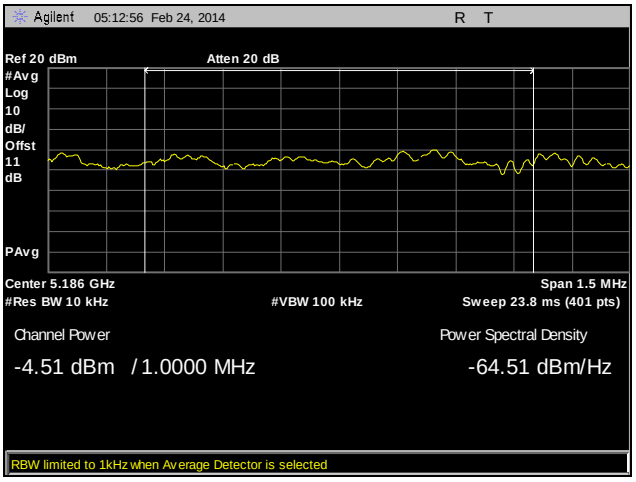
Plot 372. Peak Power Spectral Density, Determination, High Channel, 802.11n 40 MHz, Ant. 0, MIMO



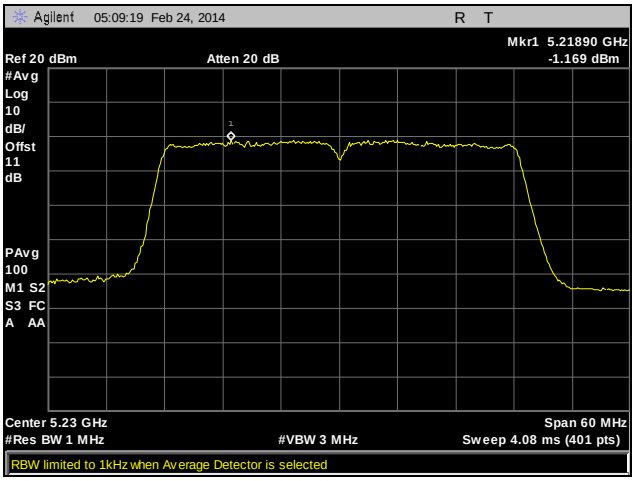
Plot 373. Peak Power Spectral Density, High Channel, 802.11n 40 MHz, Ant. 0, MIMO



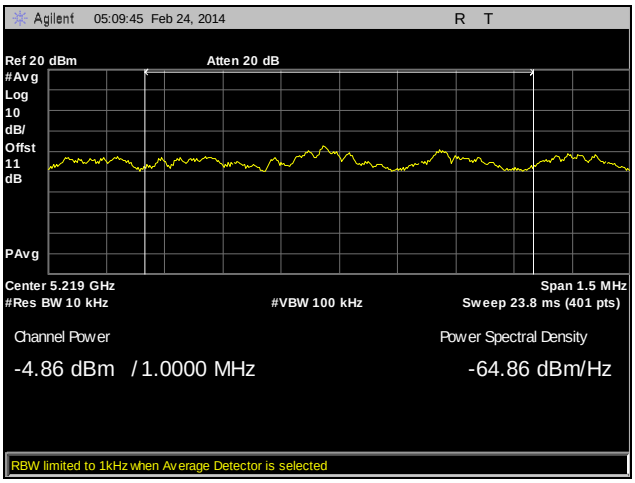
Plot 374. Peak Power Spectral Density, Determination, Low Channel, 802.11n 40 MHz, Ant. 1, MIMO



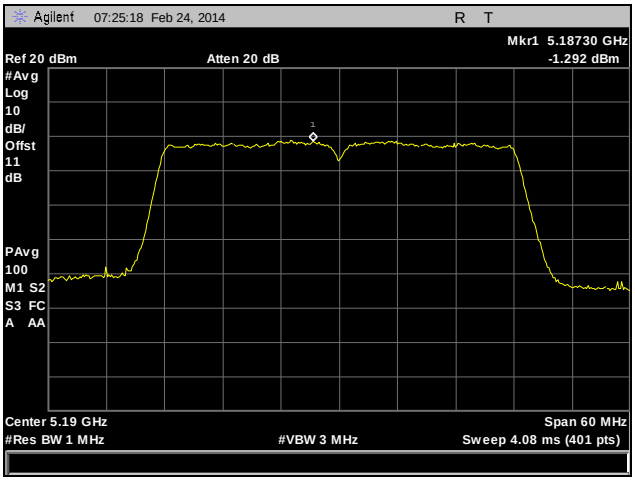
Plot 375. Peak Power Spectral Density, Low Channel, 802.11n 40 MHz, Ant. 1, MIMO



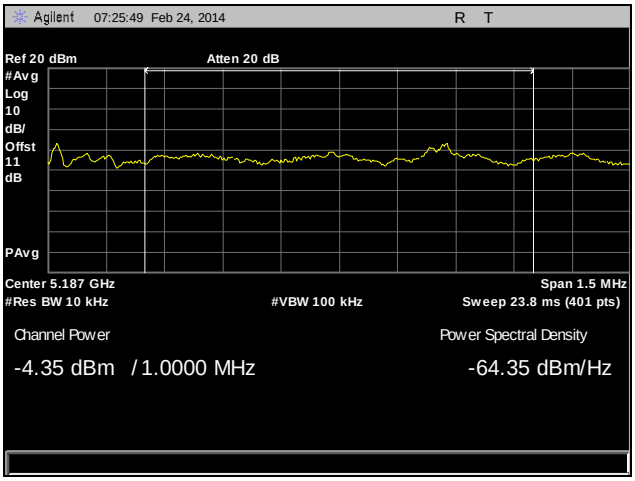
Plot 376. Peak Power Spectral Density, Determination, High Channel, 802.11n 40 MHz, Ant. 1, MIMO



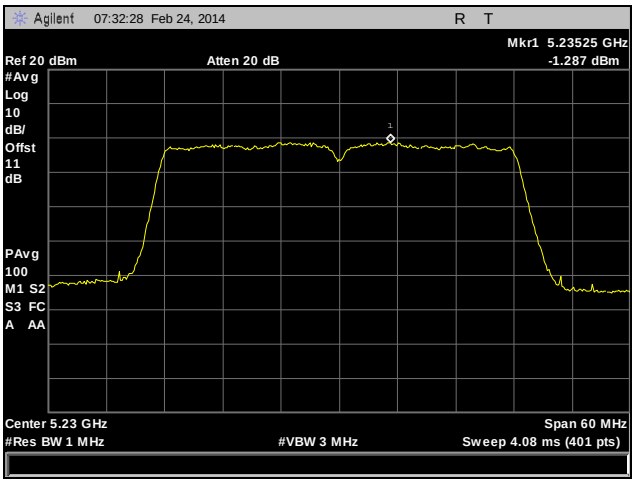
Plot 377. Peak Power Spectral Density, High Channel, 802.11n 40 MHz, Ant. 1, MIMO



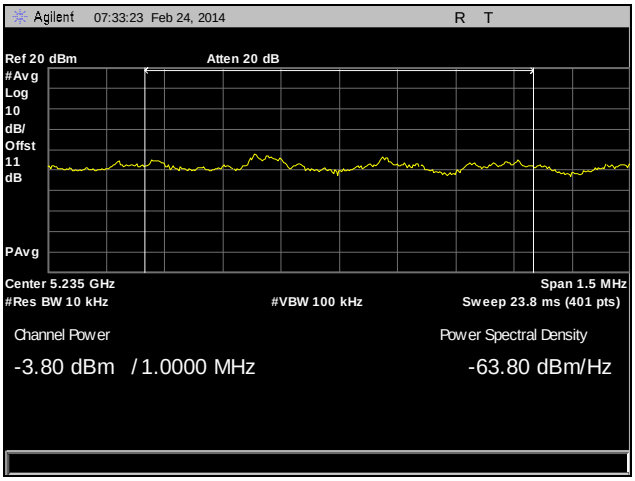
Plot 378. Peak Power Spectral Density, Determination, Low Channel, 802.11n 40 MHz, Ant. 2, MIMO



Plot 379. Peak Power Spectral Density, Low Channel, 802.11n 40 MHz, Ant. 2, MIMO

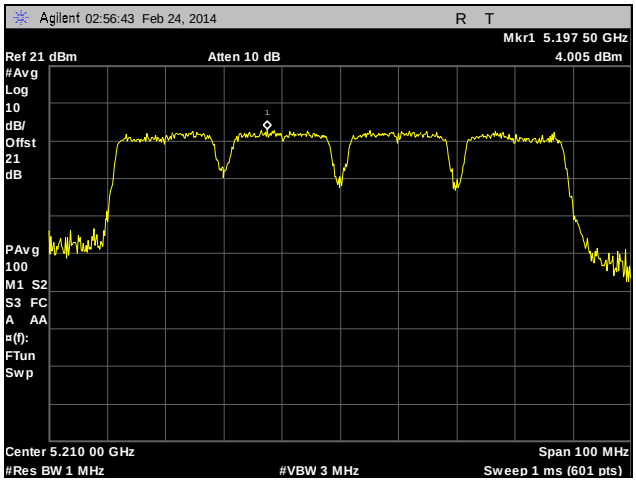


Plot 380. Peak Power Spectral Density, Determination, High Channel, 802.11n 40 MHz, Ant. 2, MIMO

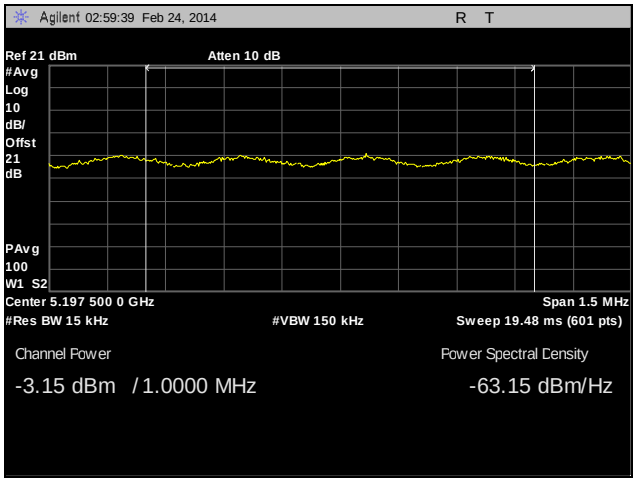


Plot 381. Peak Power Spectral Density, High Channel, 802.11n 40 MHz, Ant. 2, MIMO

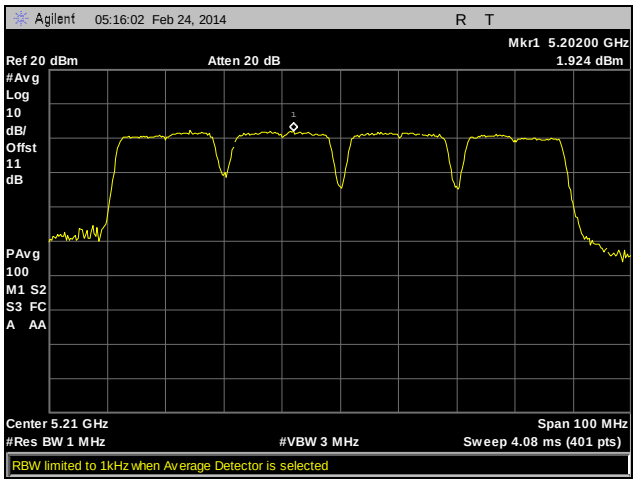
Peak Power Spectral Density, 802.11a 80 MHz



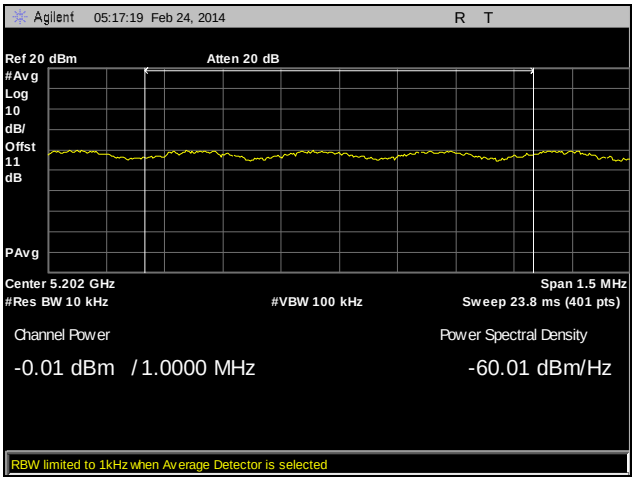
Plot 382. Peak Power Spectral Density, Determination, 802.11a 80 MHz, Ant. 0



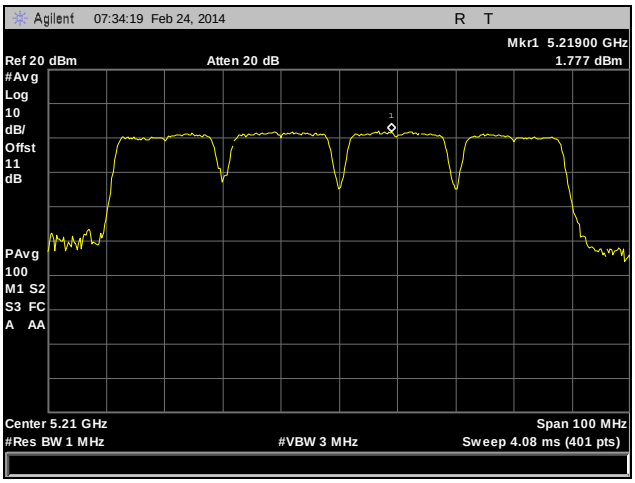
Plot 383. Peak Power Spectral Density, 802.11a 80 MHz, Ant. 0



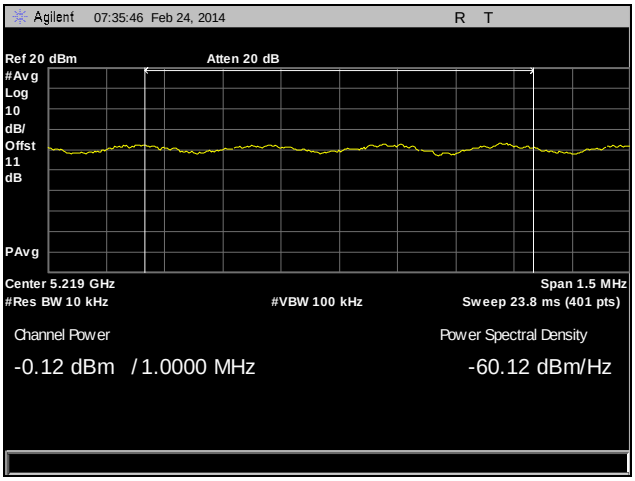
Plot 384. Peak Power Spectral Density, Determination, 802.11a 80 MHz, Ant. 1



Plot 385. Peak Power Spectral Density, 802.11a 80 MHz, Ant. 1

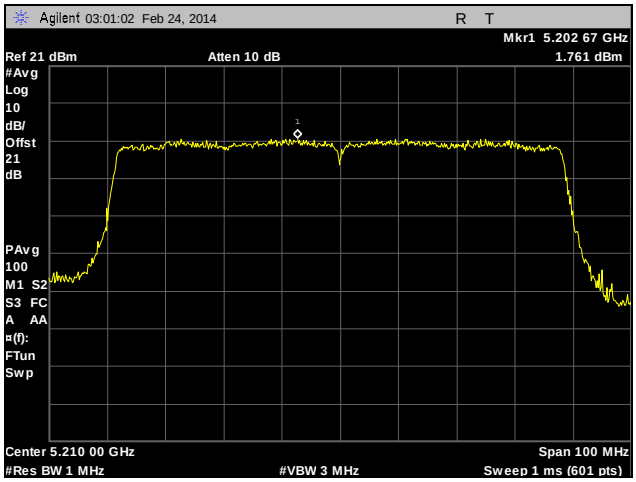


Plot 386. Peak Power Spectral Density, Determination, 802.11a 80 MHz, Ant. 2

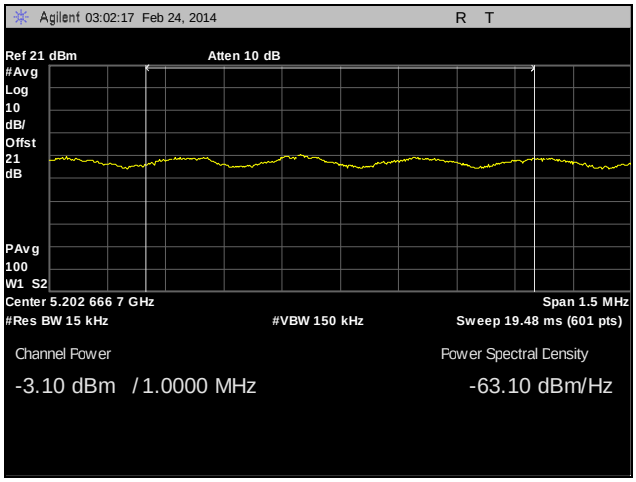


Plot 387. Peak Power Spectral Density, 802.11a 80 MHz, Ant. 2

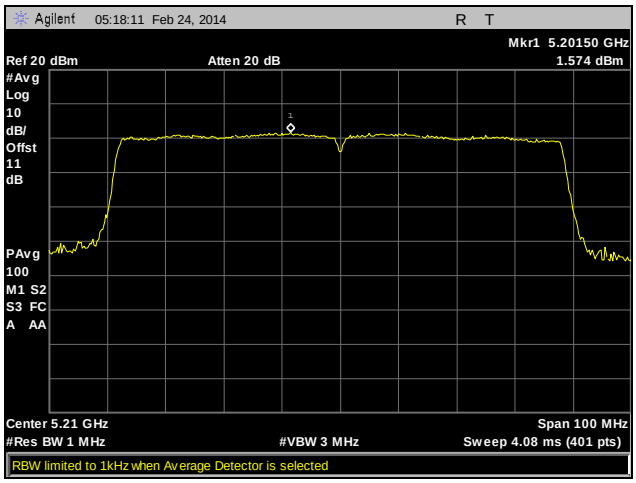
Peak Power Spectral Density, 802.11ac 80 MHz



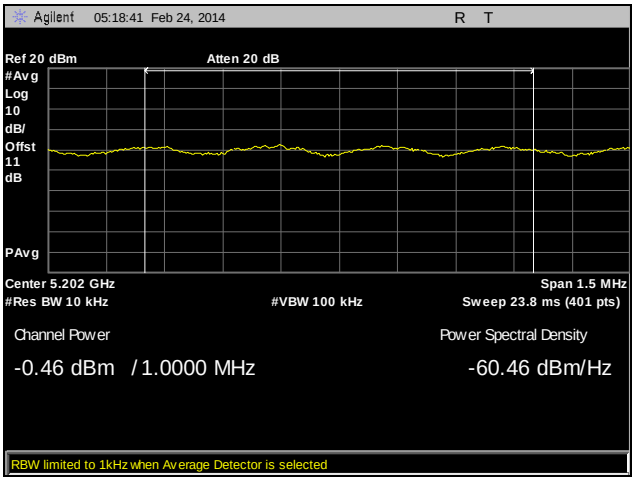
Plot 388. Peak Power Spectral Density, Determination, 802.11ac 80 MHz, Ant. 0



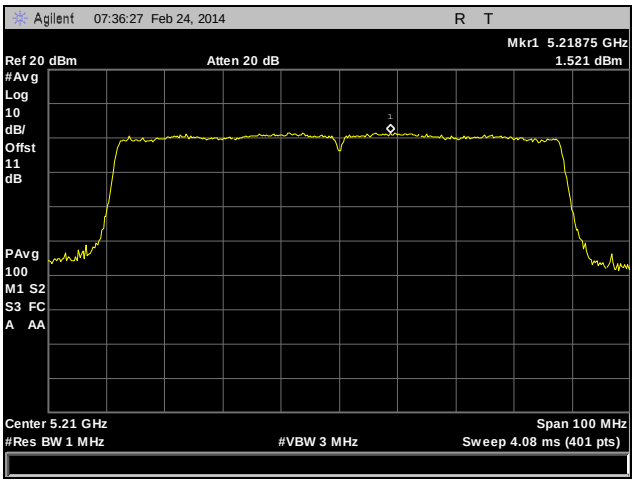
Plot 389. Peak Power Spectral Density, 802.11ac 80 MHz, Ant. 0



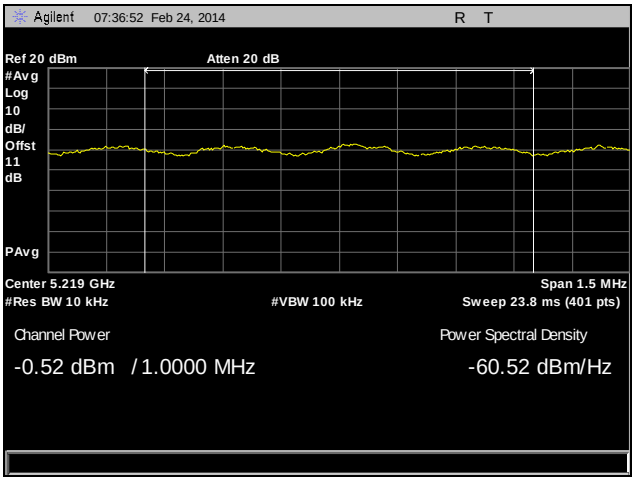
Plot 390. Peak Power Spectral Density, Determination, 802.11ac 80 MHz, Ant. 1



Plot 391. Peak Power Spectral Density, 802.11ac 80 MHz, Ant. 1

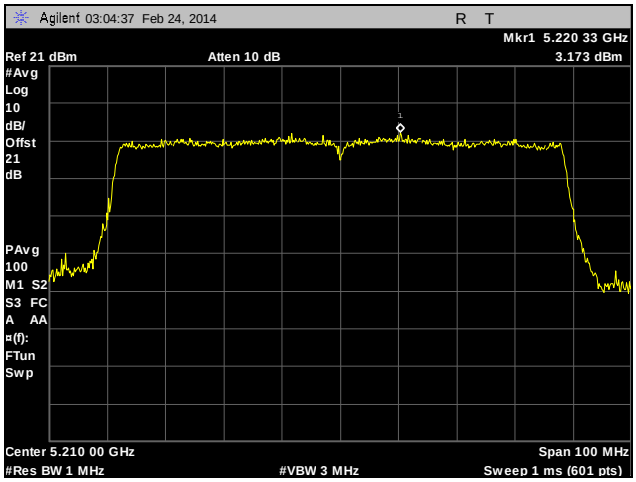


Plot 392. Peak Power Spectral Density, Determination, 802.11ac 80 MHz, Ant. 2

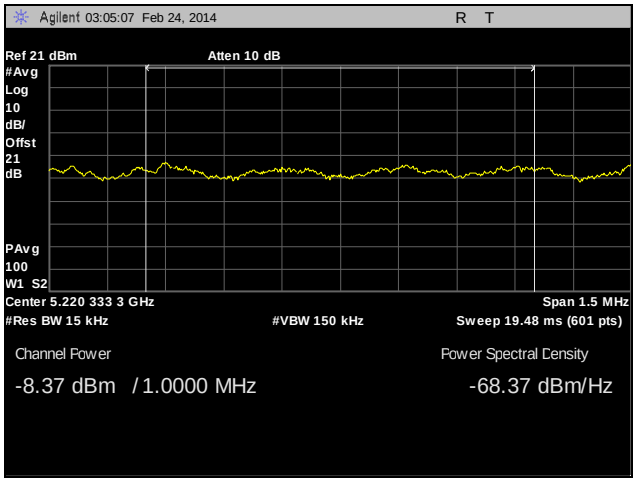


Plot 393. Peak Power Spectral Density, 802.11ac 80 MHz, Ant. 2

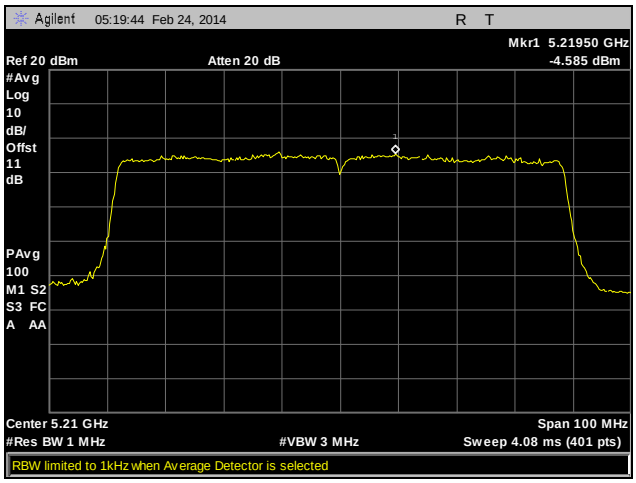
Peak Power Spectral Density, 802.11ac 80 MHz, MIMO



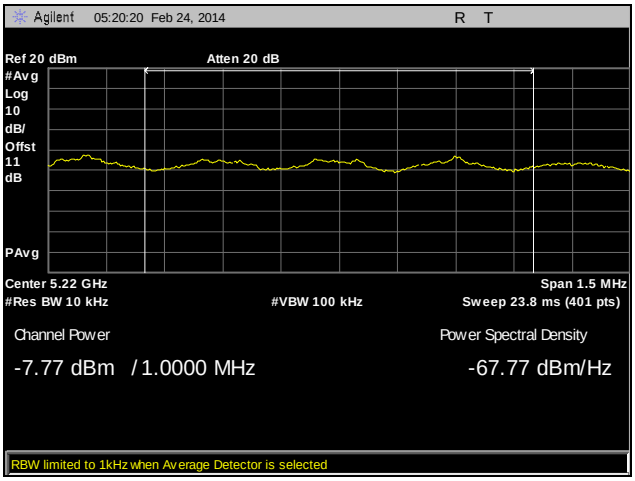
Plot 394. Peak Power Spectral Density, Determination, 802.11ac 80 MHz, Ant. 0, MIMO



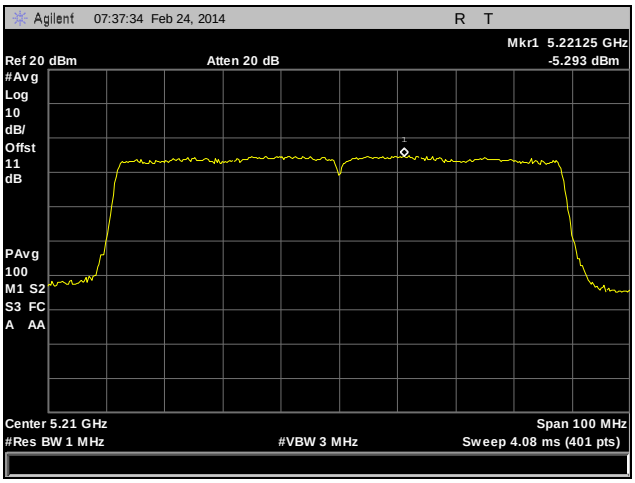
Plot 395. Peak Power Spectral Density, 802.11ac 80 MHz, Ant. 0, MIMO



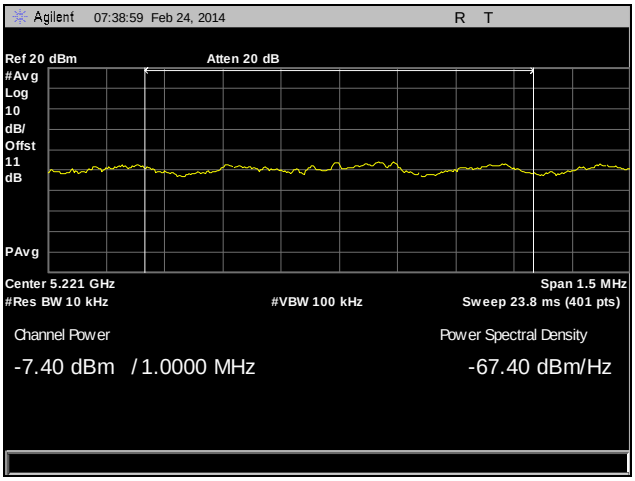
Plot 396. Peak Power Spectral Density, Determination, 802.11ac 80 MHz, Ant. 1, MIMO



Plot 397. Peak Power Spectral Density, 802.11ac 80 MHz, Ant. 1, MIMO



Plot 398. Peak Power Spectral Density, Determination, 802.11ac 80 MHz, Ant. 2, MIMO



Plot 399. Peak Power Spectral Density, 802.11ac 80 MHz, Ant. 2, MIMO

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(a)(6) Peak Excursion Ratio

Test Requirements: **§ 15.407(a)(6):** The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

Test Procedure: The EUT was connected directly to the spectrum analyzer through cabling and attenuation. KDB 789033 D01 was used to perform these measurements.

Test Results: Equipment was compliant with the peak excursion ratio limits of **§ 15.407(a)(6).** The peak excursion ratio was determined from plots on the following page(s).

Test Engineer(s): Surinder Singh

Test Date(s): 02/26/14

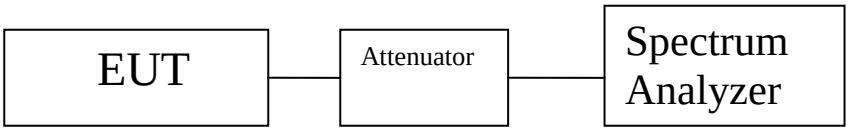


Figure 4. Peak Excursion Ration Test Setup

20MHz Band Legacy Mode						
Carrier (MHz)	**Mode**	**Peak Max Hold Spectrum (dBm)**	**Max Hold Avg Spectrum (dBm)**	**Peak Excursion Ratio**	**Limit**	**Margin**
5200	a	10.3	3.69	6.61	13	-6.39
5200	ac	10.4	3.52	6.88	13	-6.12
5200	n	11.4	3.89	7.51	13	-5.49

Table 113. Peak Excursion, 20 MHz Band

20MHz Band MIMO Mode						
Carrier (MHz)	**Mode**	**Peak Max Hold Spectrum (dBm)**	**Max Hold Avg Spectrum (dBm)**	**Peak Excursion Ratio**	**Limit**	**Margin**
5200	ac	4.79	-3.5	8.29	13	-4.71
5200	n	4.17	-3.2	7.37	13	-5.63

Table 114. Peak Excursion, 20 MHz Band MIMO

40MHz Band Legacy Mode						
Carrier (MHz)	**Mode**	**Peak Max Hold Spectrum (dBm)**	**Max Hold Avg Spectrum (dBm)**	**Peak Excursion Ratio**	**Limit**	**Margin**
5190	a	11.15	3.1	8.05	13	-4.95
5190	n	10.3	2.14	8.16	13	-4.84

Table 115. Peak Excursion, 40 MHz Band

40MHz Band MIMO Mode						
Carrier (MHz)	**Mode**	**Peak Max Hold Spectrum (dBm)**	**Max Hold Avg Spectrum (dBm)**	**Peak Excursion Ratio**	**Limit**	**Margin**
5190	ac	3.75	-3.79	7.54	13	-5.46
5190	n	4.1	-4.35	8.45	13	-4.55

Table 116. Peak Excursion, 40 MHz Band MIMO

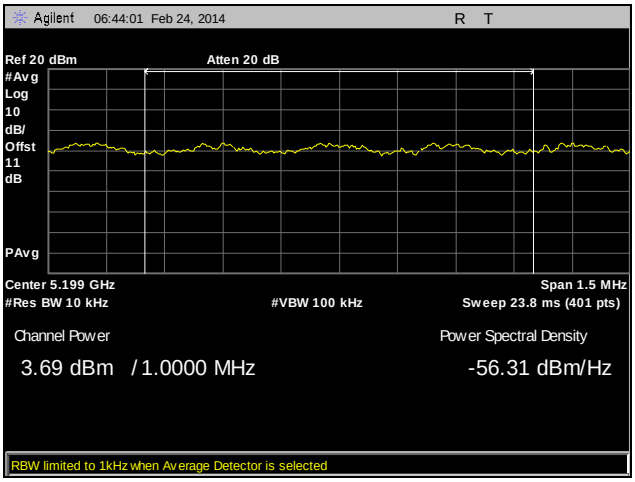
80MHz Band Legacy Mode						
Carrier (MHz)	**Mode**	**Peak Max Hold Spectrum (dBm)**	**Max Hold Avg Spectrum (dBm)**	**Peak Excursion Ratio**	**Limit**	**Margin**
5210	a	7.09	-0.12	7.21	13	-5.79
5210	ac	8.04	-0.52	8.56	13	-4.44

Table 117. Peak Excursion, 80 MHz Band

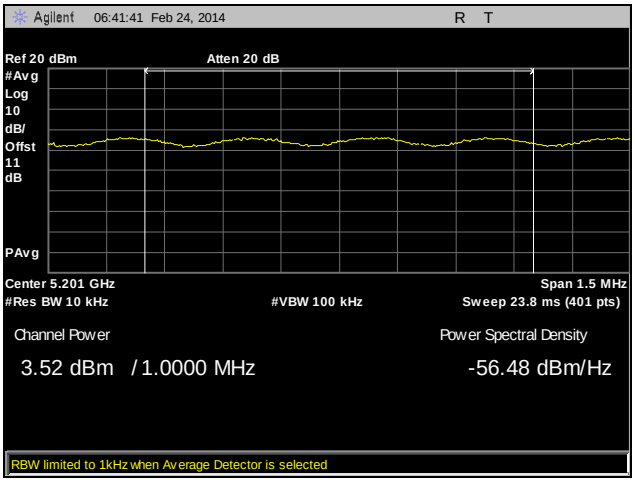
80MHz Band MIMO Mode						
Carrier (MHz)	**Mode**	**Peak Max Hold Spectrum (dBm)**	**Max Hold Avg Spectrum (dBm)**	**Peak Excursion Ratio**	**Limit**	**Margin**
5210	ac	1.07	-7.4	8.47	13	-4.53

Table 118. Peak Excursion, 80 MHz Band MIMO

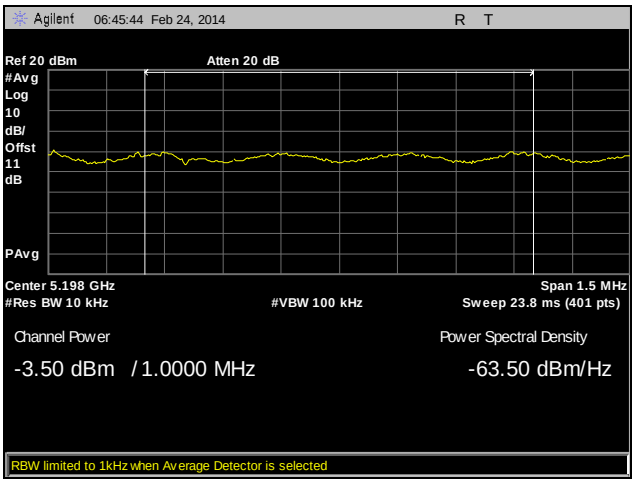
Peak PSD



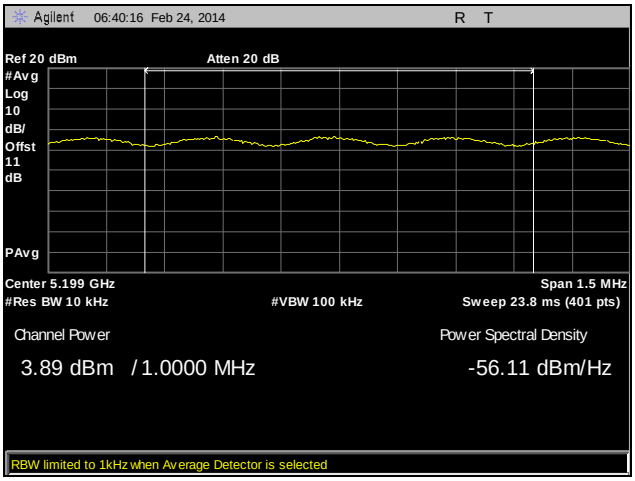
Plot 400. Peak PSD, 802.11a 20 MHz, Mid Channel, Ant. 2



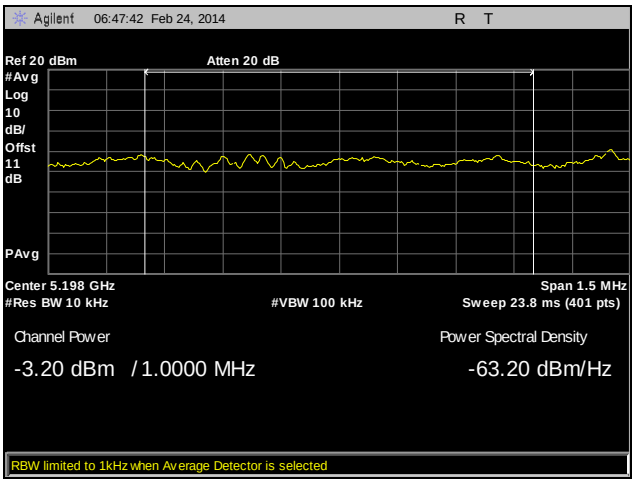
Plot 401. Peak PSD, 802.11ac 20 MHz, Mid Channel, Ant. 2



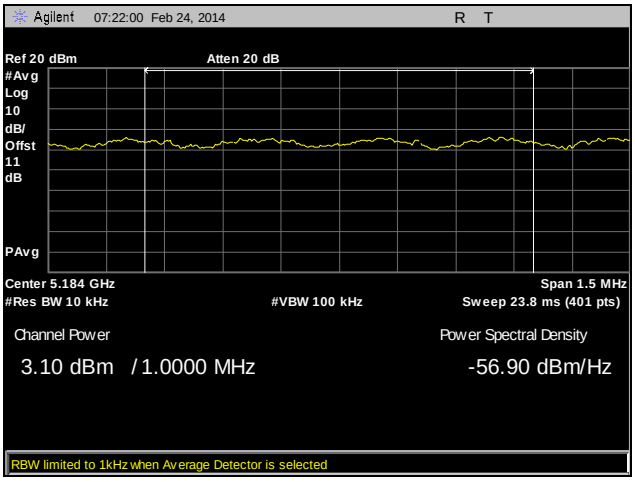
Plot 402. Peak PSD, 802.11ac 20 MHz, Mid Channel, Ant. 2, MIMO



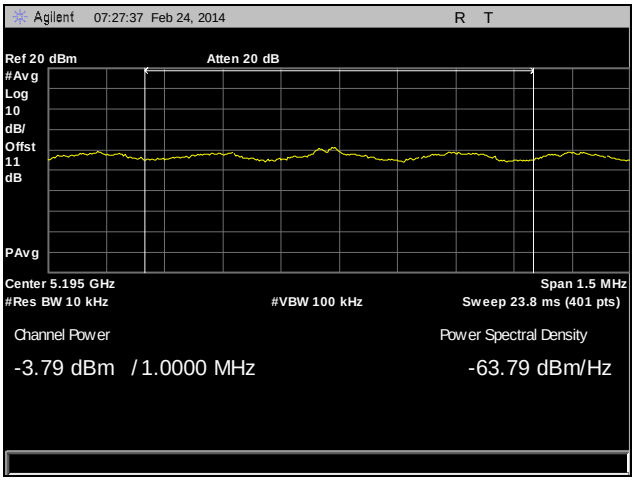
Plot 403. Peak PSD, 802.11n 20 MHz, Mid Channel, Ant. 2



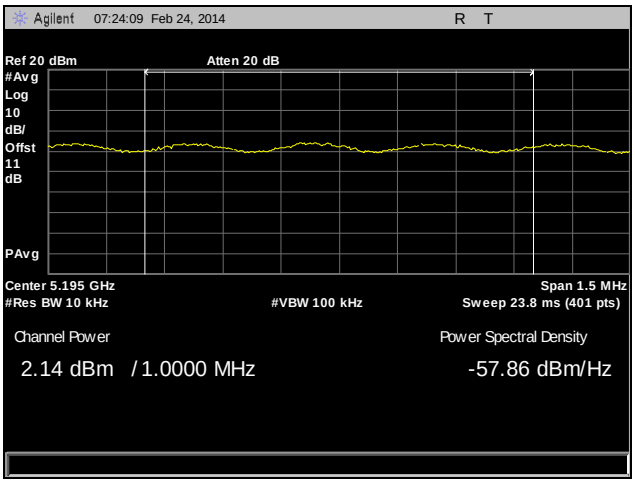
Plot 404. Peak PSD, 802.11n 20 MHz, Mid Channel, Ant. 2, MIMO



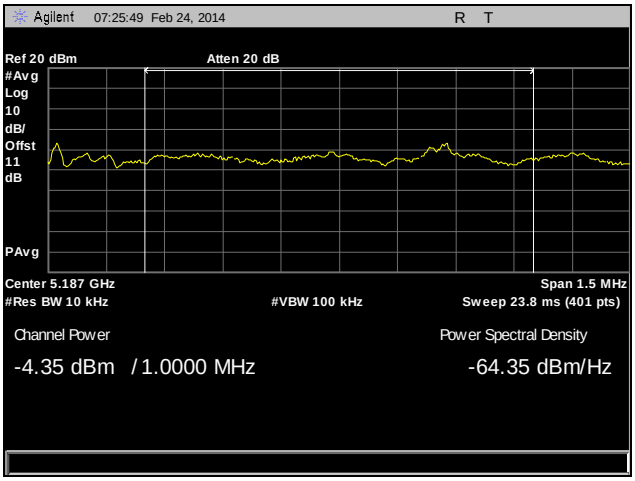
Plot 405. Peak PSD, 802.11a 40 MHz, Low Channel, Ant. 2



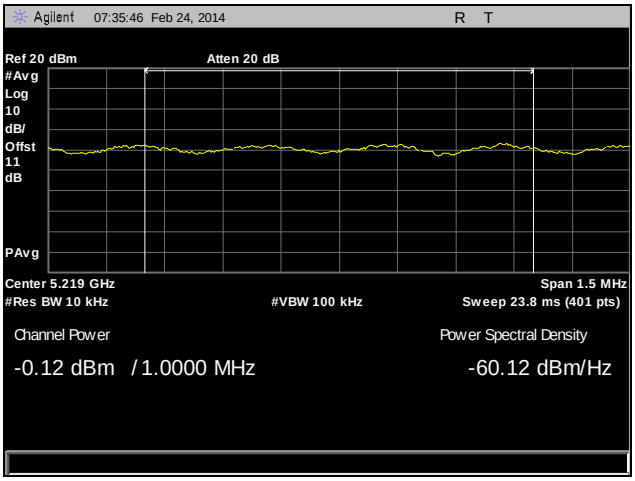
Plot 406. Peak PSD, 802.11ac 40 MHz, Low Channel, Ant. 2, MIMO



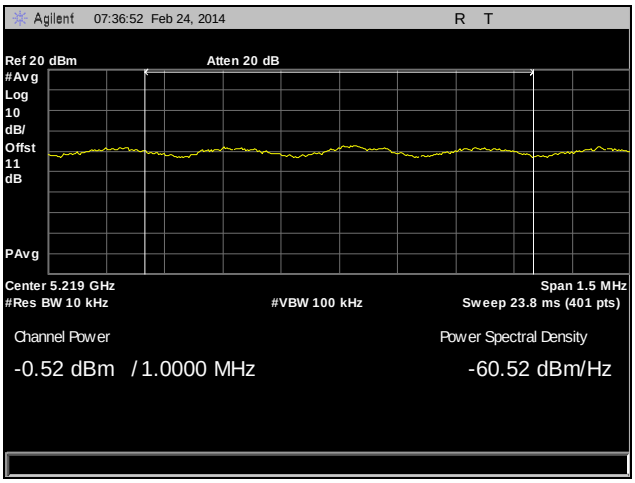
Plot 407. Peak PSD, 802.11n 40 MHz, Low Channel, Ant. 2



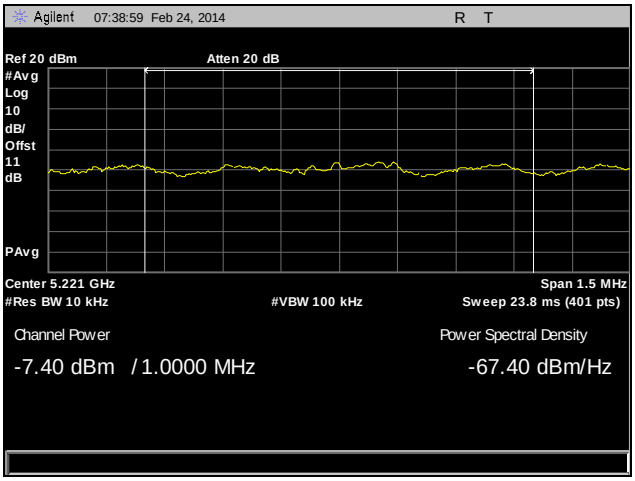
Plot 408. Peak PSD, 802.11n 40 MHz, Low Channel, Ant. 2, MIMO



Plot 409. Peak PSD, 802.11a 80 MHz, Ant. 2

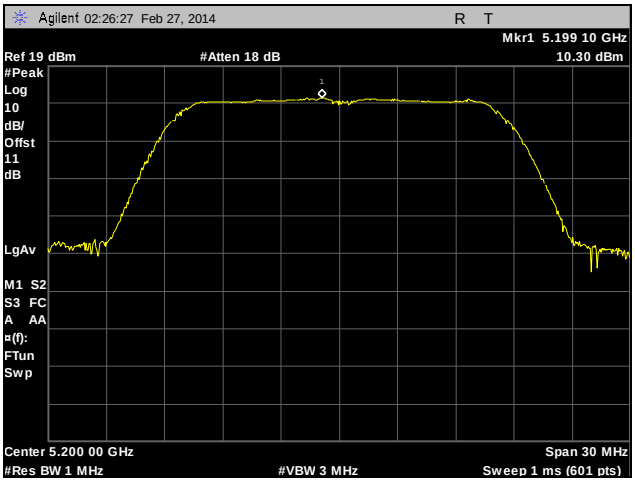


Plot 410. Peak PSD, 802.11ac 80 MHz, Ant. 2

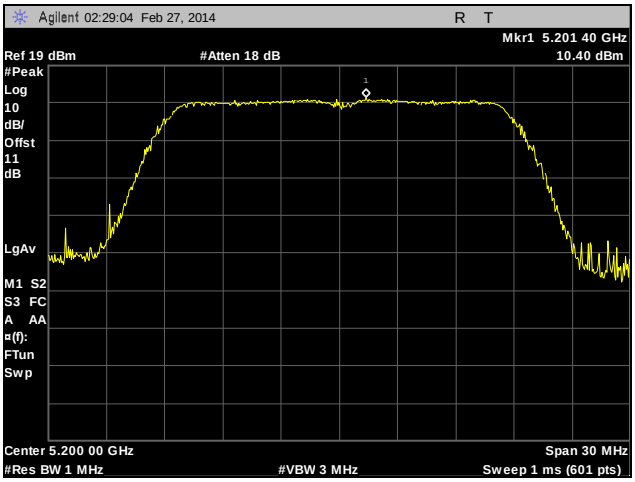


Plot 411. Peak PSD, 802.11ac 80 MHz, Ant. 2, MIMO

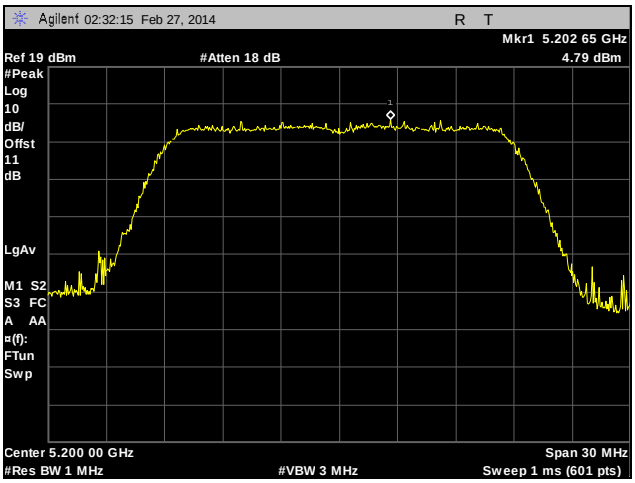
Peak Max Hold Spectrum



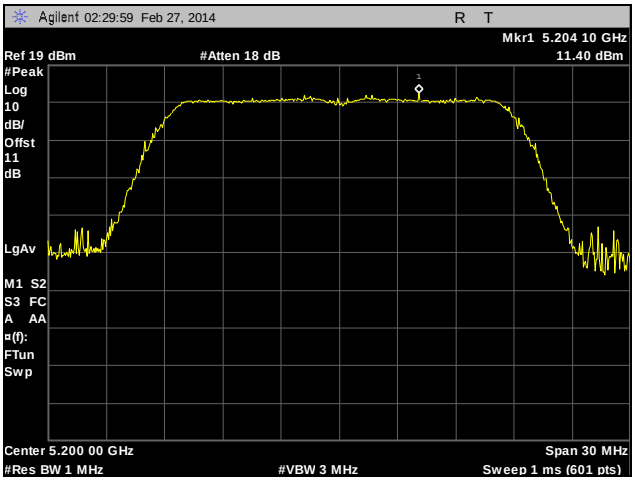
Plot 412. Peak Max Hold Spectrum, 802.11a 20 MHz, Mid Channel, Ant. 2



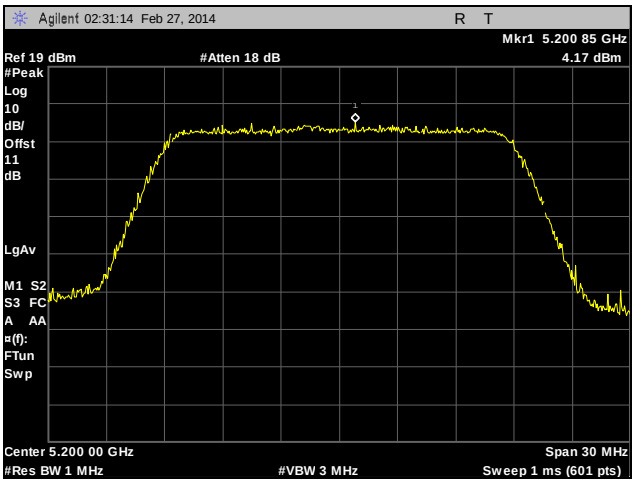
Plot 413. Peak Max Hold Spectrum, 802.11ac 20 MHz, Mid Channel, Ant. 2



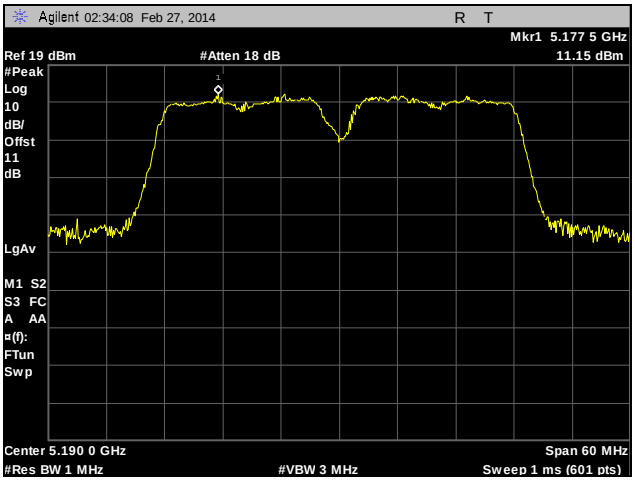
Plot 414. Peak Max Hold Spectrum, 802.11ac 20 MHz, Mid Channel, Ant. 2, MIMO



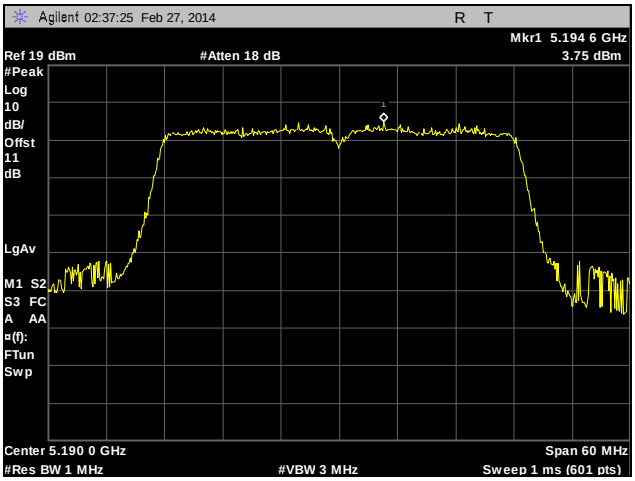
Plot 415. Peak Max Hold Spectrum, 802.11n 20 MHz, Mid Channel, Ant. 2



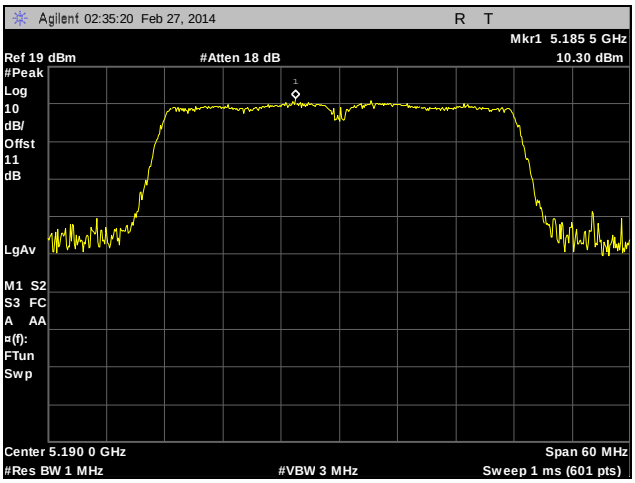
Plot 416. Peak Max Hold Spectrum, 802.11n 20 MHz, Mid Channel, Ant. 2, MIMO



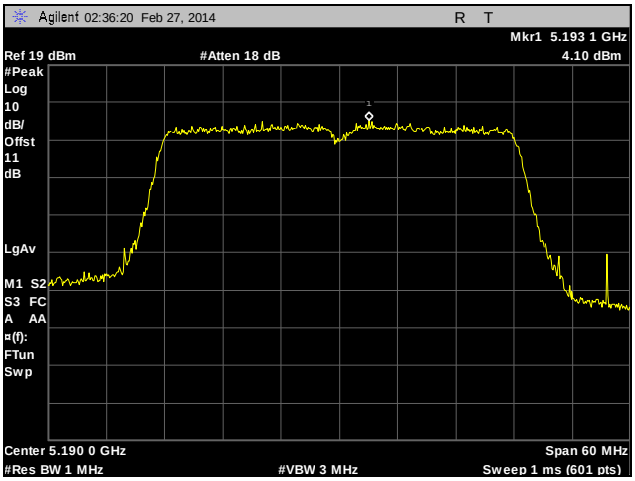
Plot 417. Peak Max Hold Spectrum, 802.11a 40 MHz, Low Channel, Ant. 2



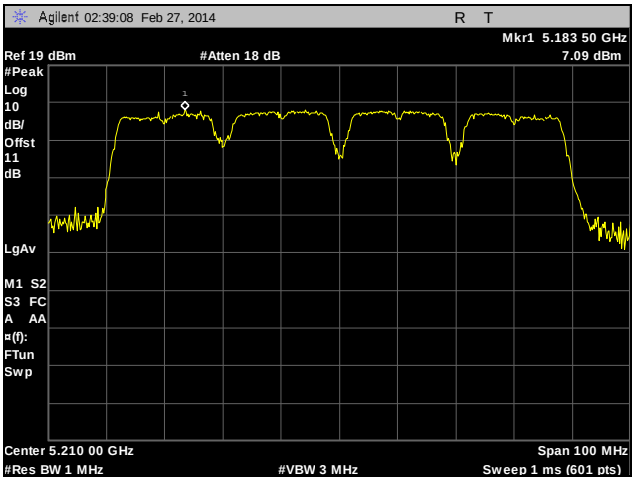
Plot 418. Peak Max Hold Spectrum, 802.11ac 40 MHz, Low Channel, Ant. 2, MIMO



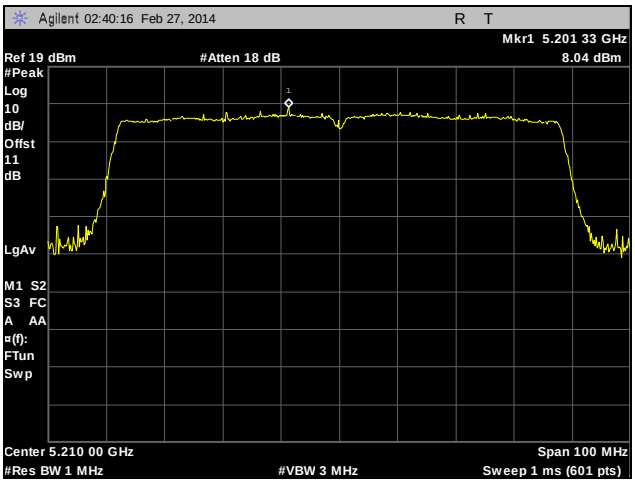
Plot 419. Peak Max Hold Spectrum, 802.11n 40 MHz, Low Channel, Ant. 2



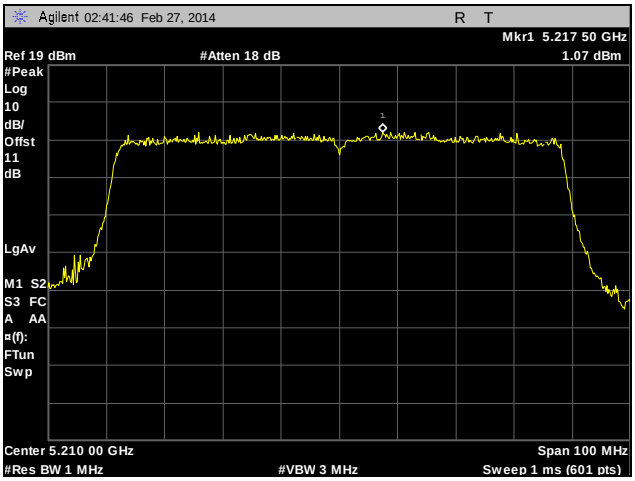
Plot 420. Peak Max Hold Spectrum, 802.11n 40 MHz, Low Channel, Ant. 2, MIMO



Plot 421. Peak Max Hold Spectrum, 802.11a 80 MHz, Ant. 2



Plot 422. Peak Max Hold Spectrum, 802.11ac 80 MHz, Ant. 2



Plot 423. Peak Max Hold Spectrum, 802.11ac 80 MHz, Ant. 2, MIMO

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(b)(1), (6), (7) Undesirable Emissions

Test Requirements: **§ 15.407(b)(1), (6), (7)**; **§15.205:** Emissions outside the frequency band.

§ 15.407(b)(1): For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP 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 0.8m high stand on a turntable in a semi-anechoic chamber. The EUT was set to transmit on low, mid, and high channels, while the turntable was rotated 360 degrees through three orthogonal axes and the receiving antenna height was varied to maximize emissions.

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

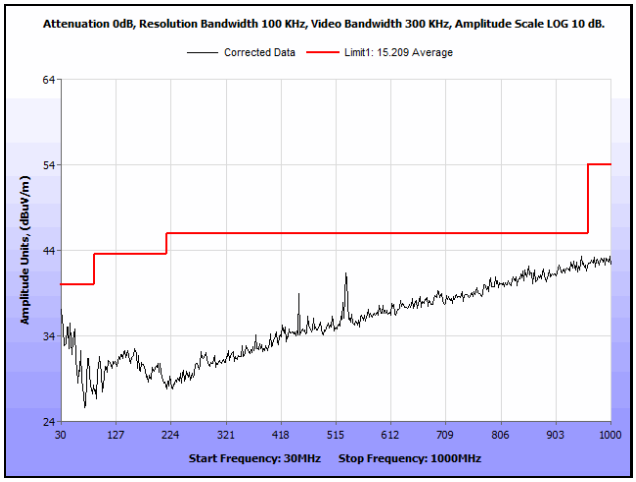
For measurements above 1 GHz, measurements were made with a Peak detector with 1 MHz resolution bandwidth. Where the spurious emissions fell into a restricted band, measurements were also made with an average detector to make sure they complied with 15.209 limits. Emissions were explored up to 40 GHz.
The equation, **EIRP= E + 20 log D – 104.8** was used to convert an EIRP limit to a field strength limit.
E = field strength (dBUv/m)
D = Reference measurement distance

Test Results: The EUT was compliant with the Radiated Emission limits for Intentional Radiators. See following pages for detailed test results. Only noise floor was observed above 18GHz. During the 5 GHz spurious emissions testing the 2.4 GHz radio was also beaconing. Arris had no way of turning this off. This is not a spurious emission of the 5 GHz radio.

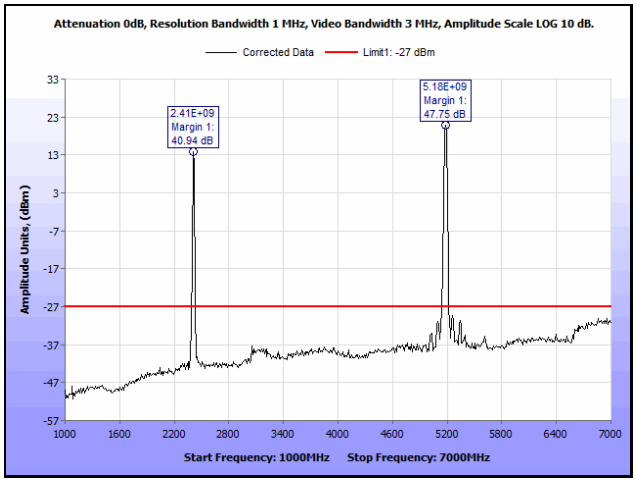
Test Engineer(s): Surinder Singh

Test Date(s): 02/24/14

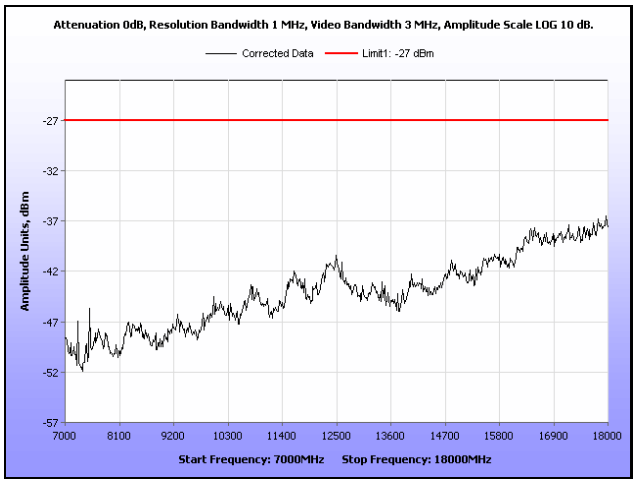
Radiated Spurious Emissions Test Results, 802.11a 20 MHz



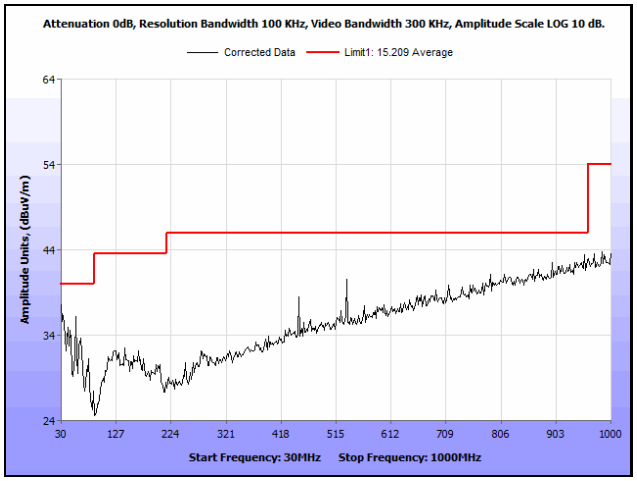
Plot 424. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 0, 30 MHz – 1 GHz



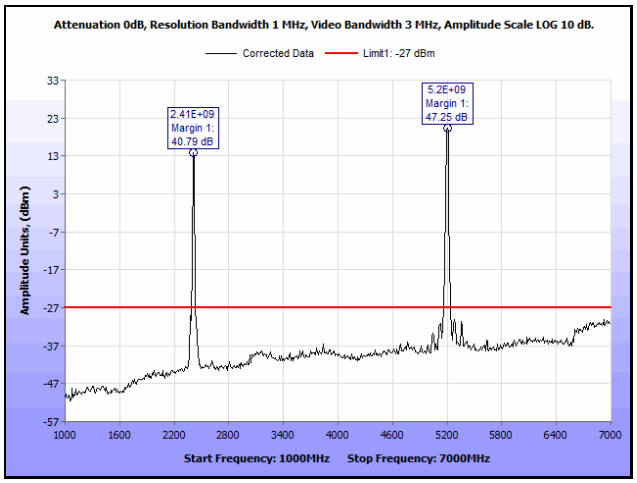
Plot 425. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



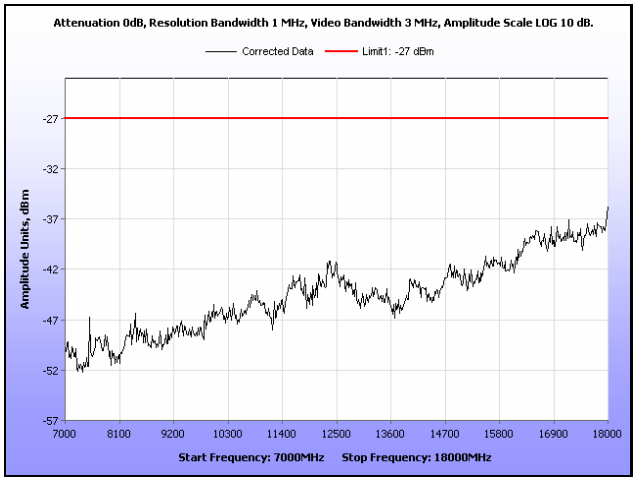
Plot 426. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 0, 7 GHz – 18 GHz



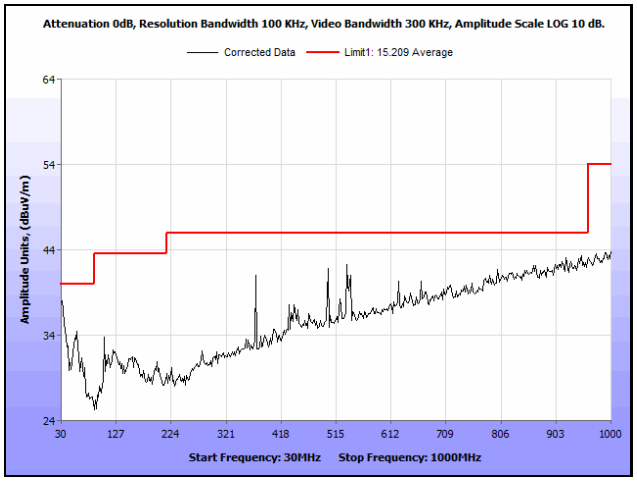
Plot 427. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 0, 30 MHz – 1 GHz



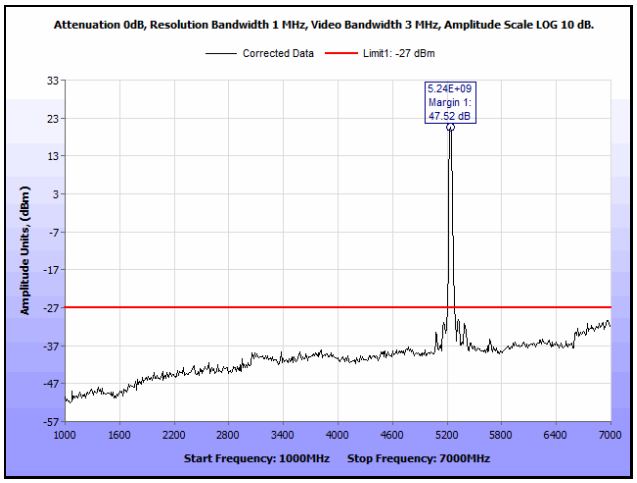
Plot 428. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



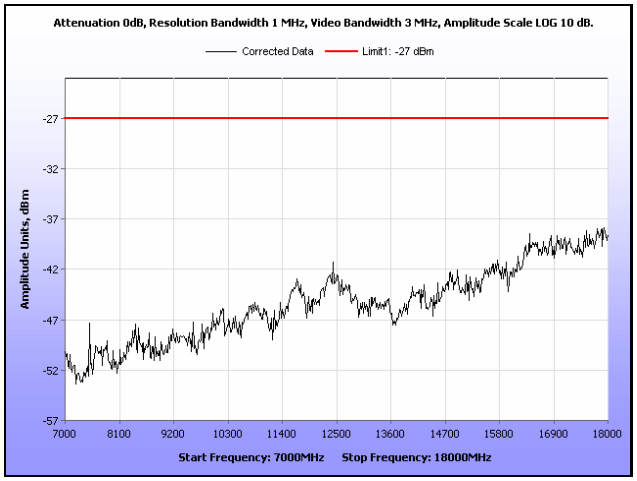
Plot 429. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 0, 7 GHz – 18 GHz



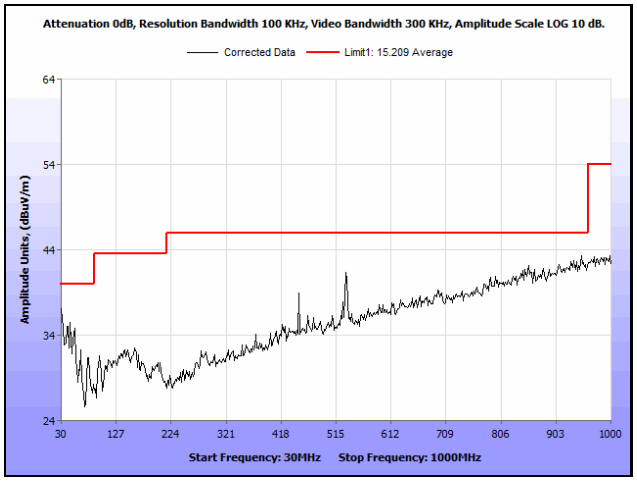
Plot 430. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 0, 30 MHz – 1 GHz



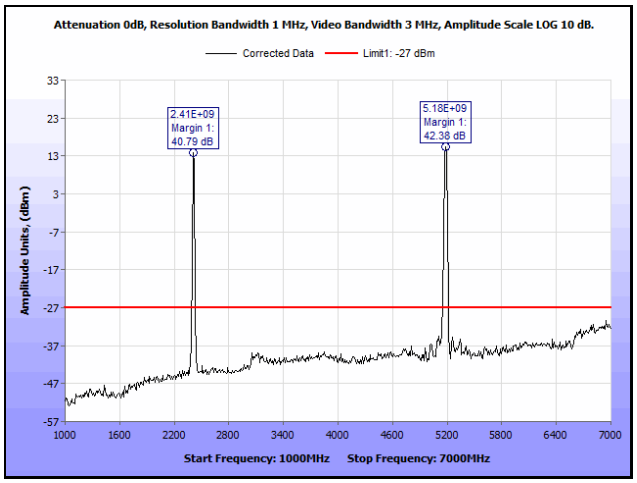
Plot 431. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



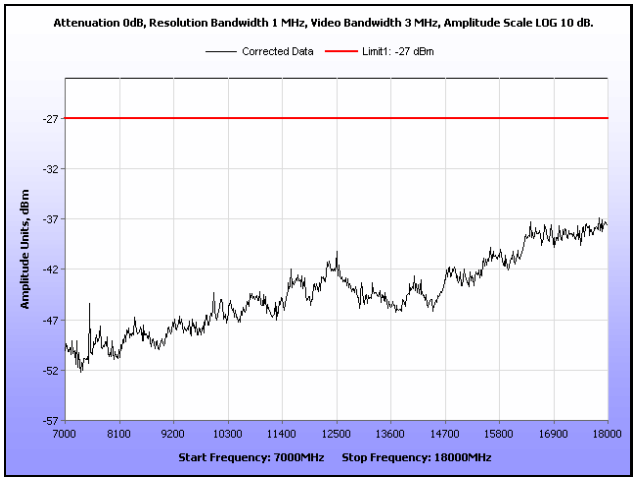
Plot 432. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 0, 7 GHz – 18 GHz



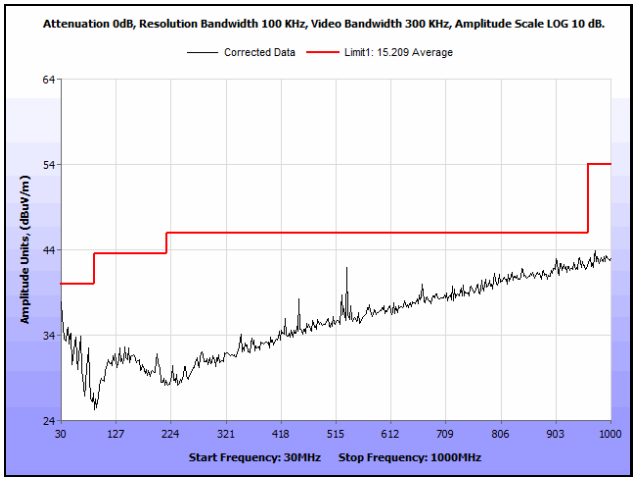
Plot 433. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 1, 30 MHz – 1 GHz



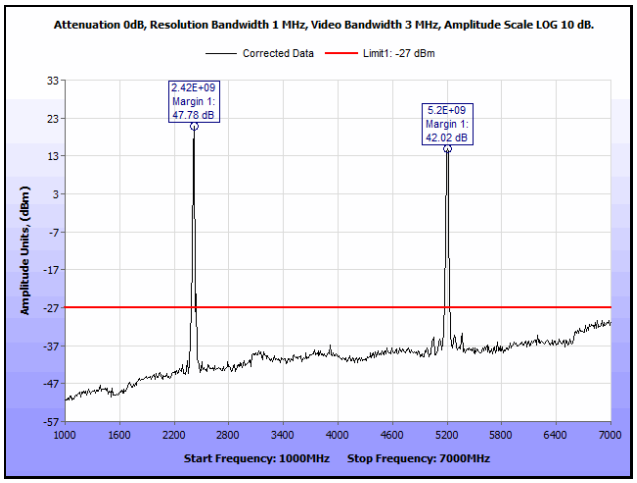
Plot 434. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



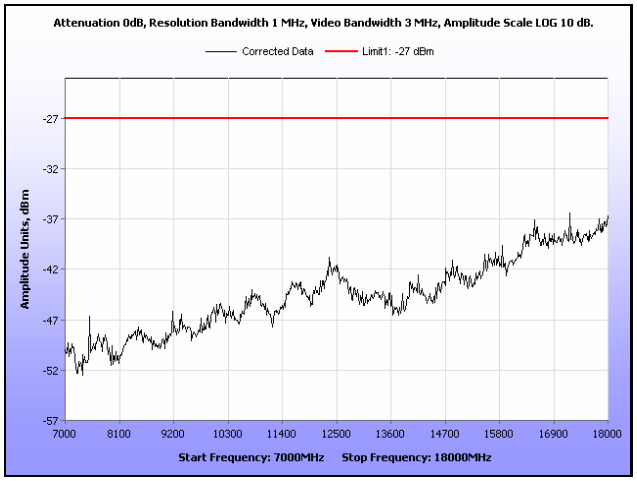
Plot 435. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 1, 7 GHz – 18 GHz



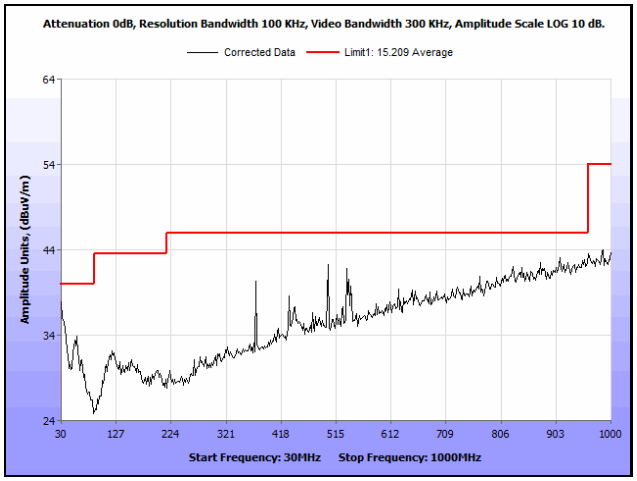
Plot 436. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 1, 30 MHz – 1 GHz



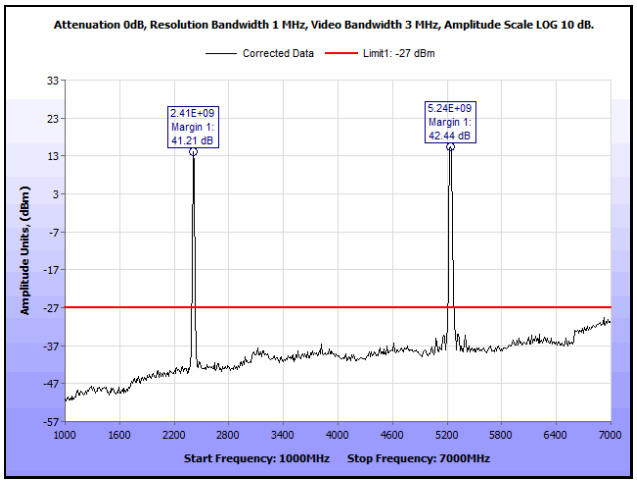
Plot 437. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



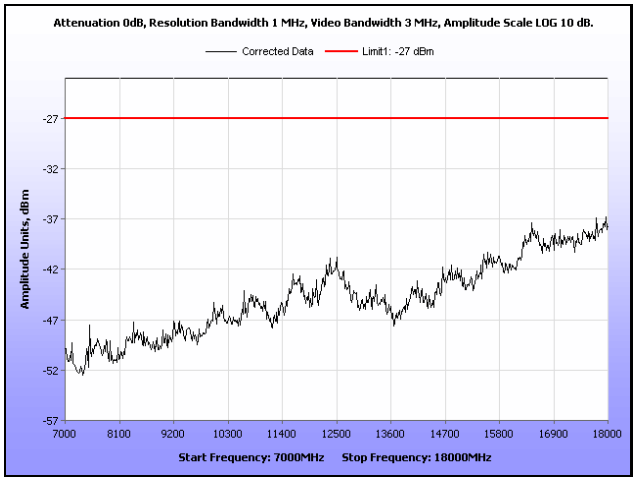
Plot 438. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 1, 7 GHz – 18 GHz



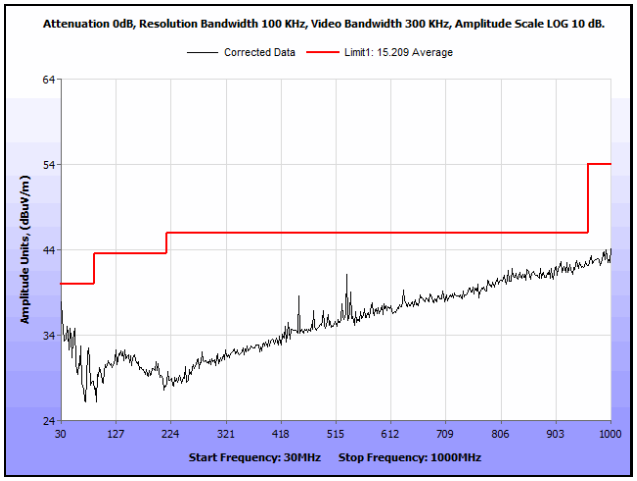
Plot 439. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 1, 30 MHz – 1 GHz



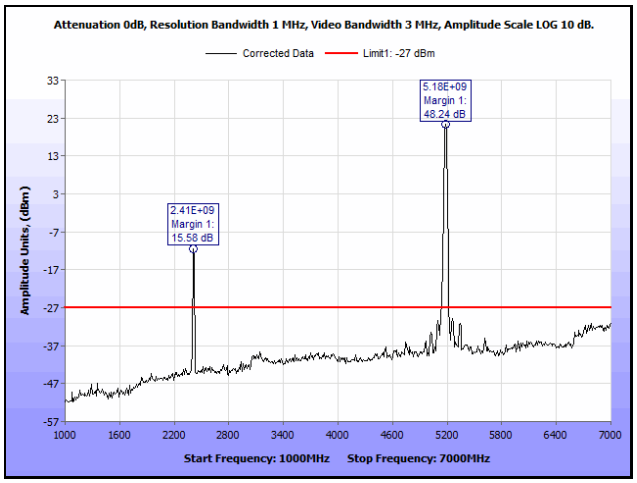
Plot 440. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



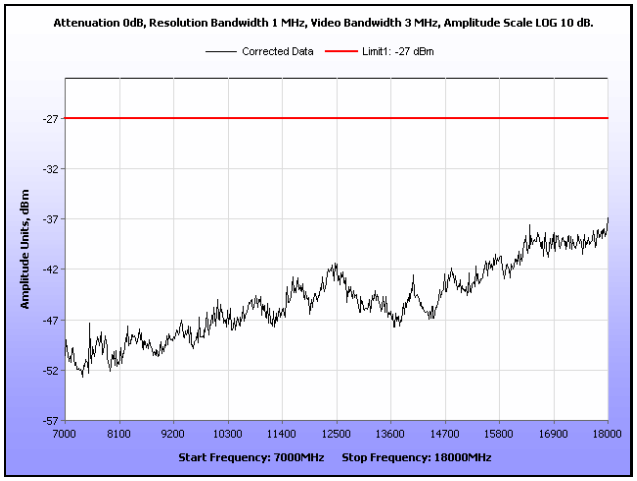
Plot 441. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 1, 7 GHz – 18 GHz



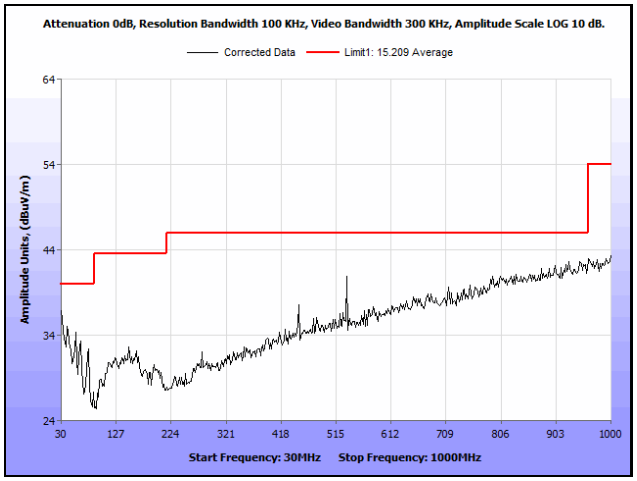
Plot 442. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 2, 30 MHz – 1 GHz



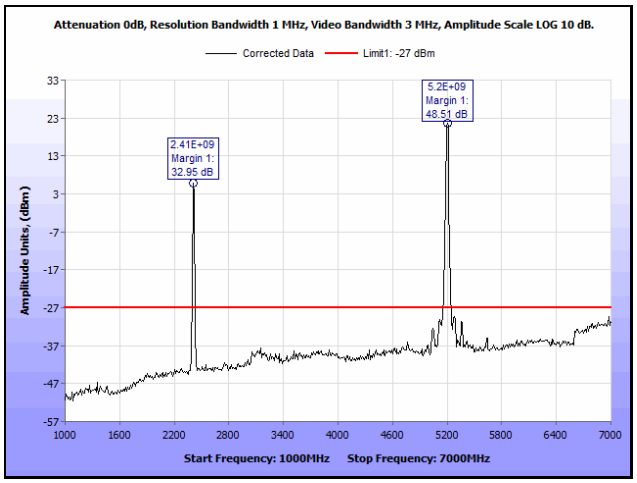
Plot 443. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 2, 1 GHz – 7 GHz, Peak



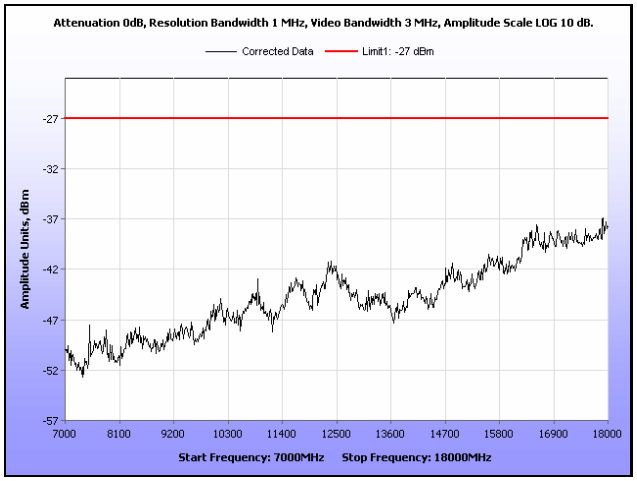
Plot 444. Radiated Spurious Emissions, Low Channel, 802.11a 20 MHz, Ant. 2, 7 GHz – 18 GHz



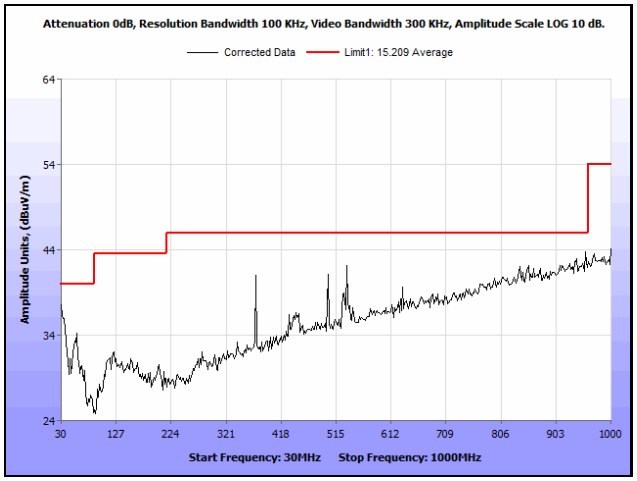
Plot 445. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 2, 30 MHz – 1 GHz



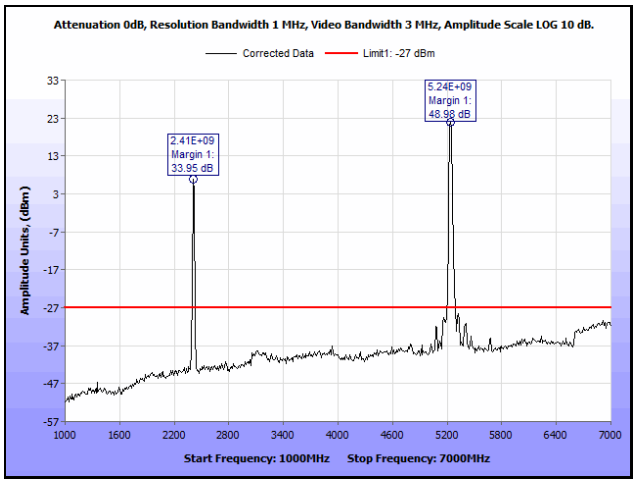
Plot 446. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 2, 1 GHz – 7 GHz, Peak



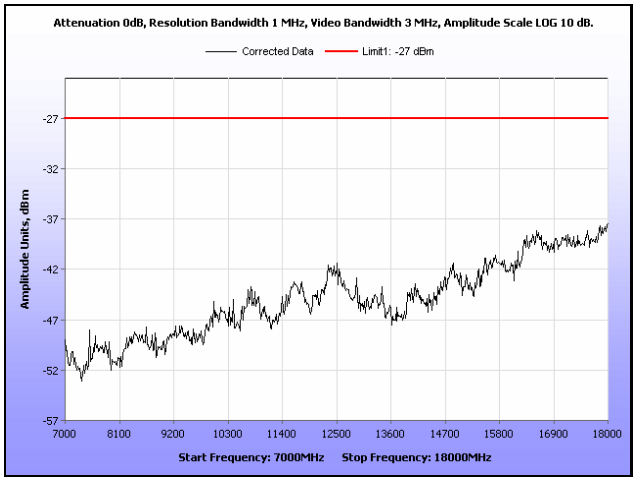
Plot 447. Radiated Spurious Emissions, Mid Channel, 802.11a 20 MHz, Ant. 2, 7 GHz – 18 GHz



Plot 448. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 2, 30 MHz – 1 GHz

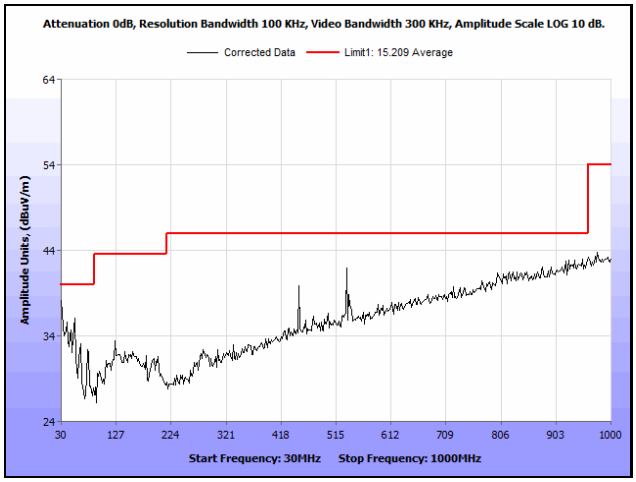


Plot 449. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 2, 1 GHz – 7 GHz, Peak

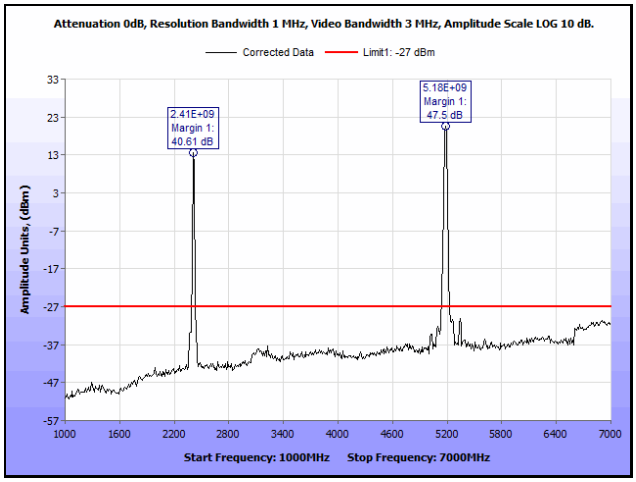


Plot 450. Radiated Spurious Emissions, High Channel, 802.11a 20 MHz, Ant. 2, 7 GHz – 18 GHz

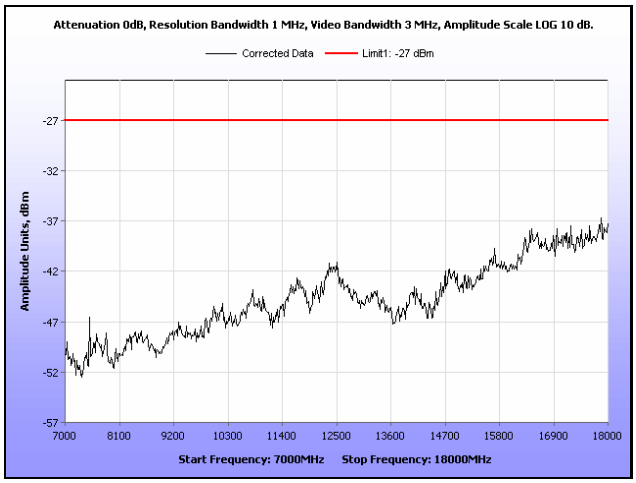
Radiated Spurious Emissions Test Results, 802.11ac 20 MHz



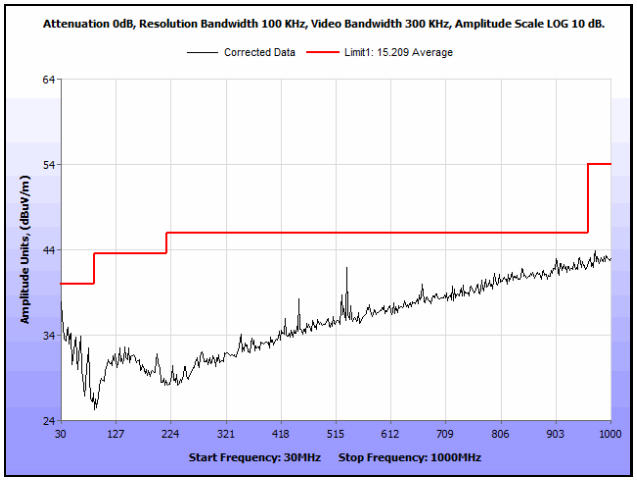
Plot 451. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 0, 30 MHz – 1 GHz



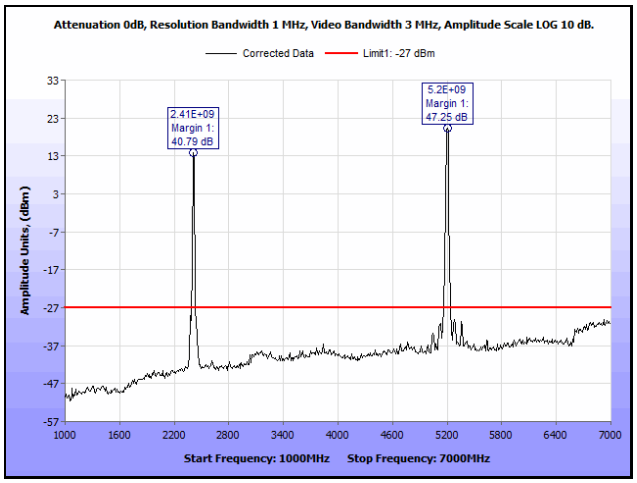
Plot 452. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



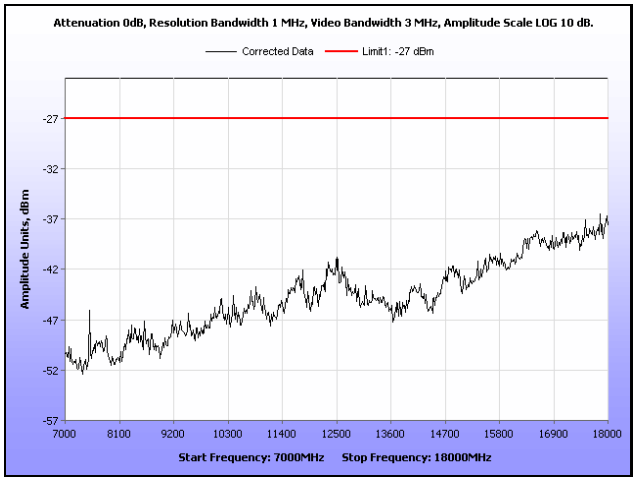
Plot 453. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 0, 7 GHz – 18 GHz



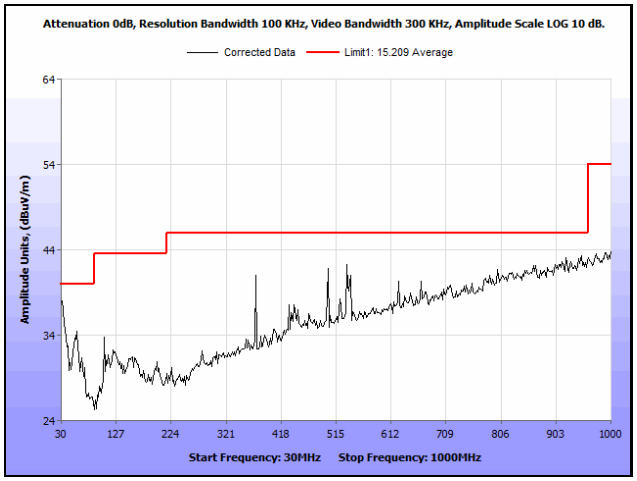
Plot 454. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 0, 30 MHz – 1 GHz



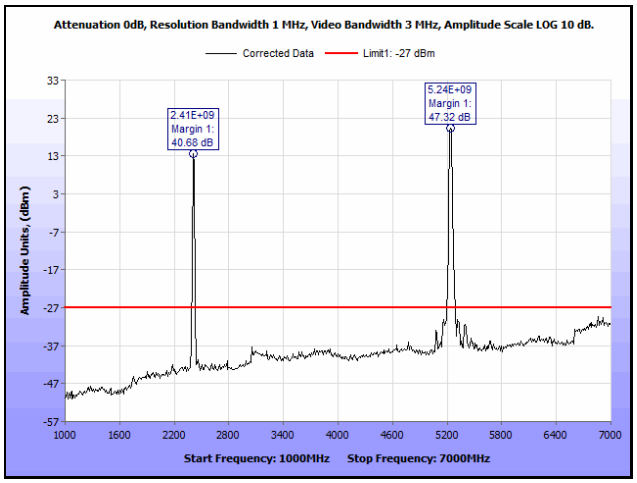
Plot 455. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



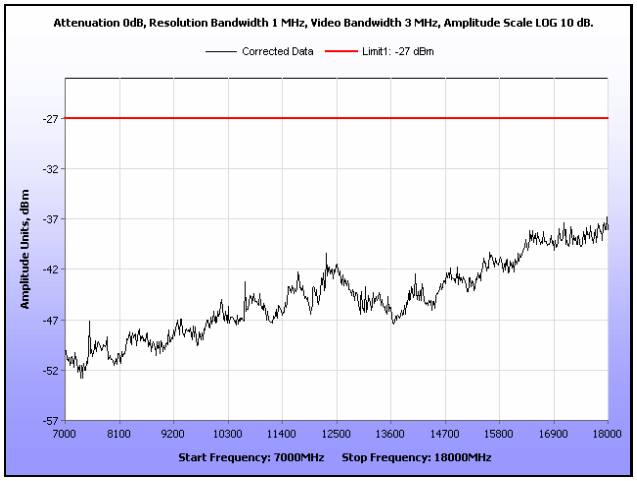
Plot 456. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 0, 7 GHz – 18 GHz



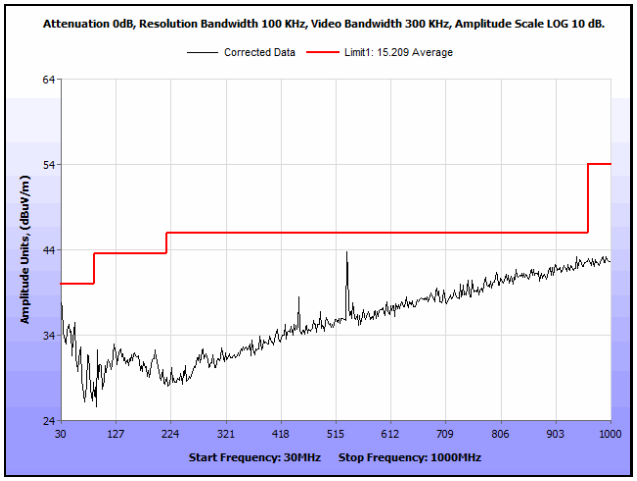
Plot 457. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 0, 30 MHz – 1 GHz



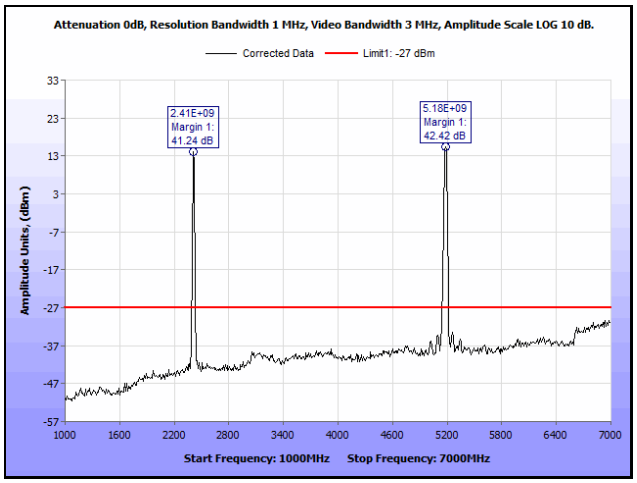
Plot 458. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



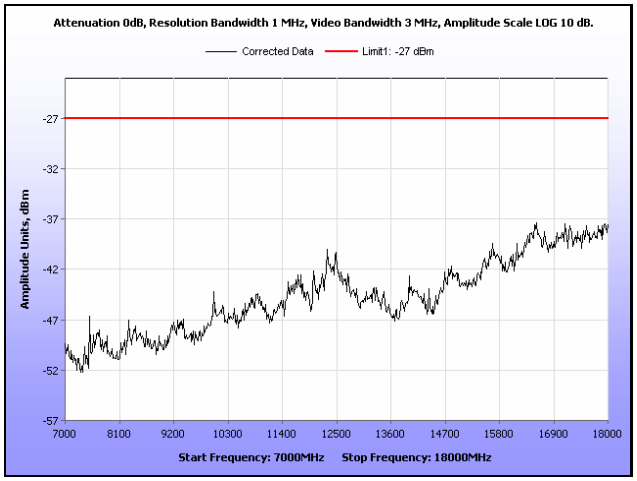
Plot 459. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 0, 7 GHz – 18 GHz



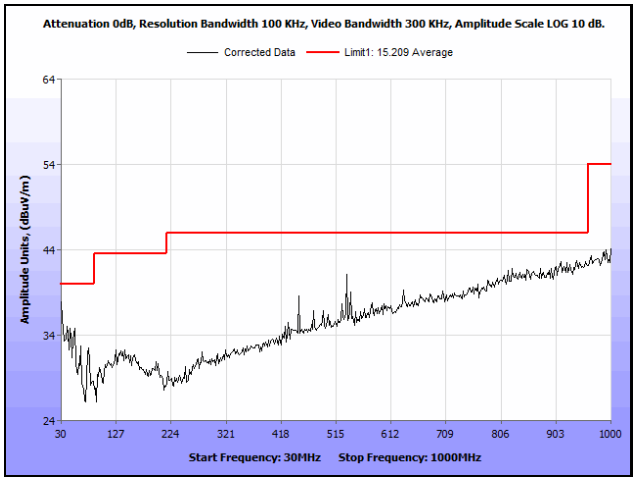
Plot 460. Radiated Spurious Emissions, Low Channel 802.11ac 20 MHz, Ant. 1, 30 MHz – 1 GHz



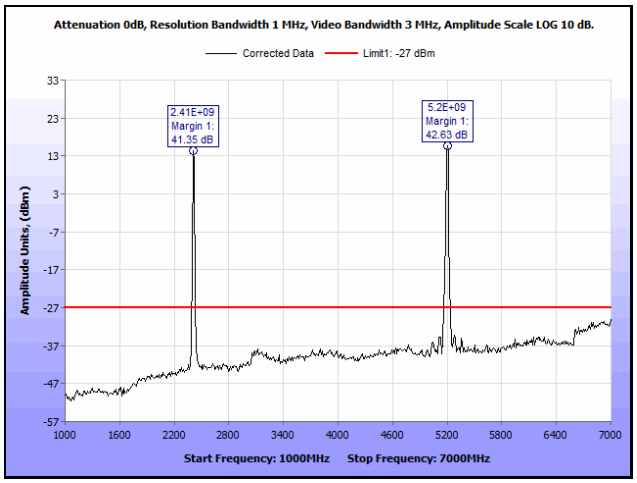
Plot 461. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



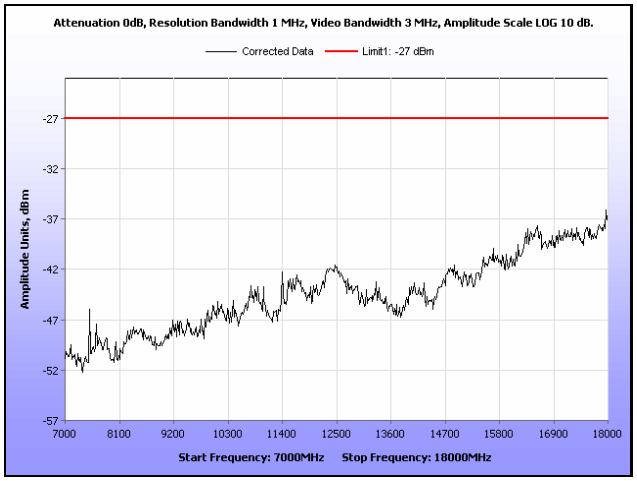
Plot 462. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 1, 7 GHz – 18 GHz



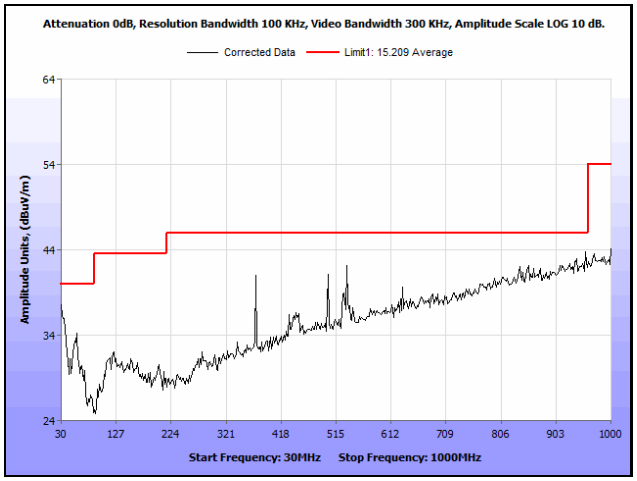
Plot 463. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 1, 30 MHz – 1 GHz



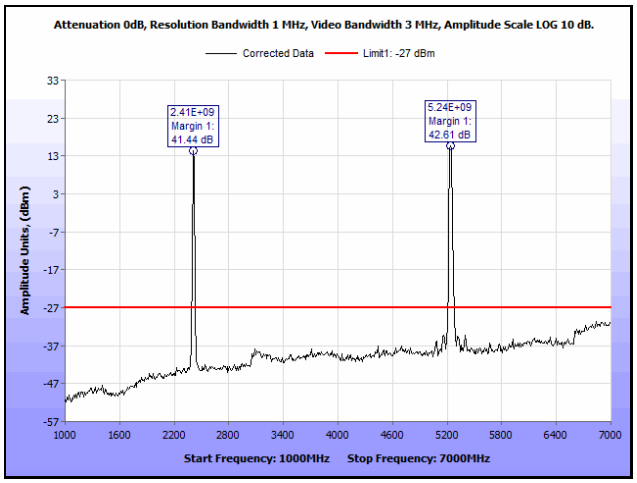
Plot 464. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



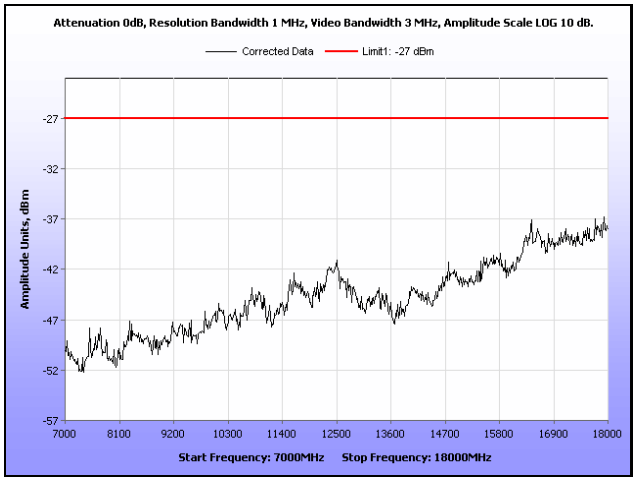
Plot 465. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 1, 7 GHz – 18 GHz



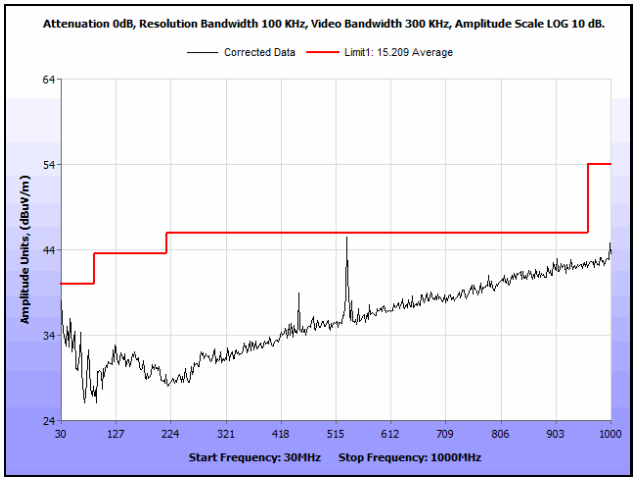
Plot 466. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 1, 30 MHz – 1 GHz



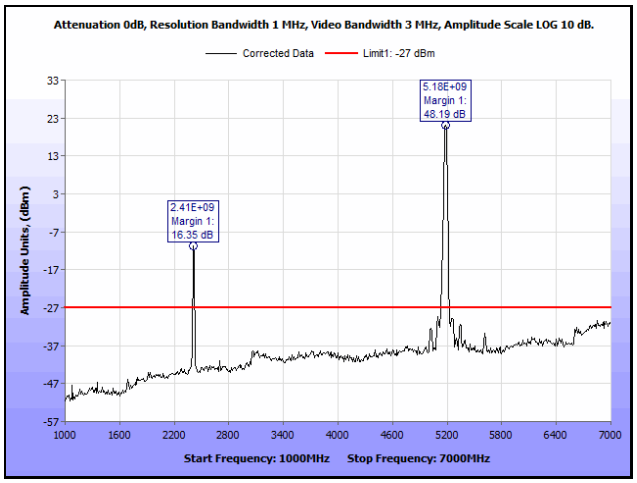
Plot 467. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



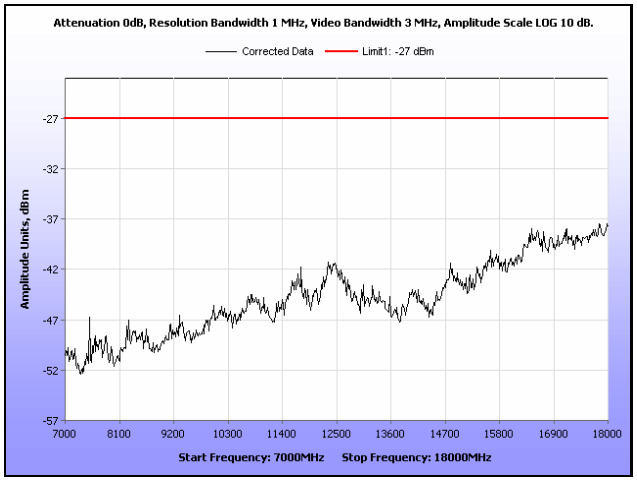
Plot 468. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 1, 7 GHz – 18 GHz



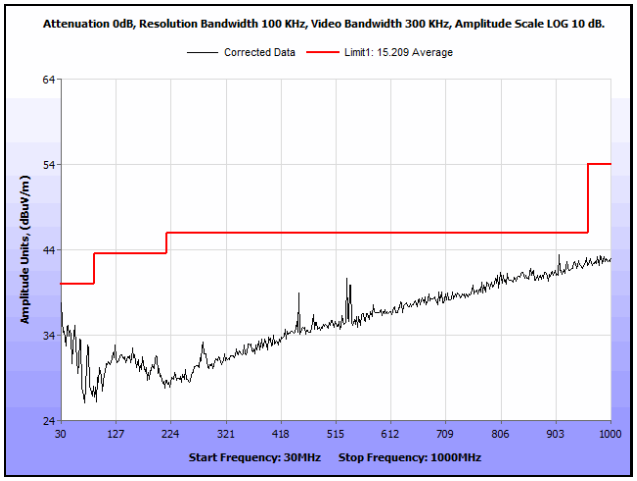
Plot 469. Radiated Spurious Emissions, Low Channel 802.11ac 20 MHz, Ant. 2, 30 MHz – 1 GHz



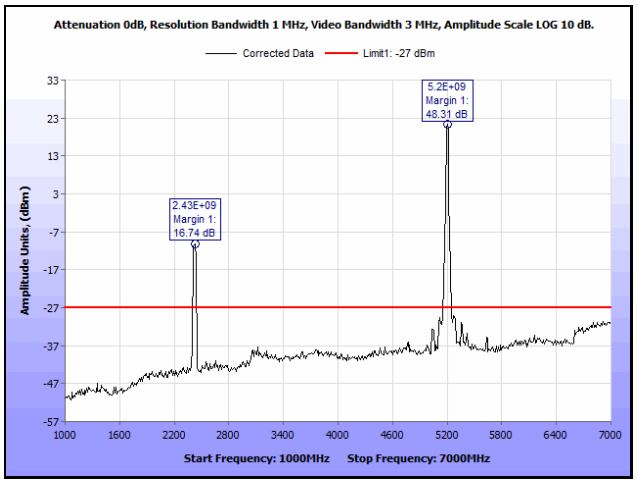
Plot 470. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 2, 1 GHz – 7 GHz, Peak



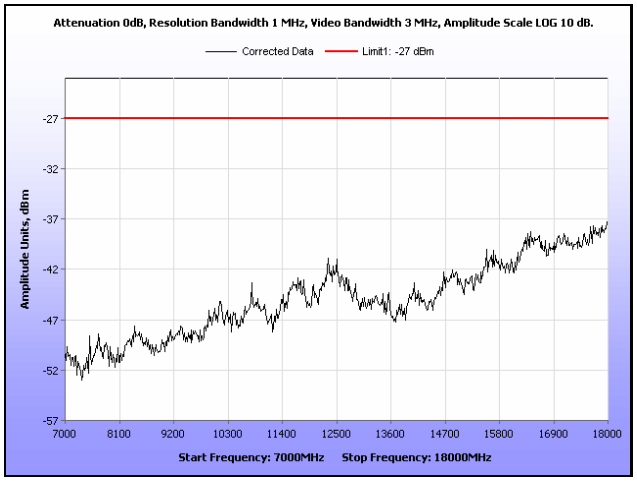
Plot 471. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, Ant. 2, 7 GHz – 18 GHz



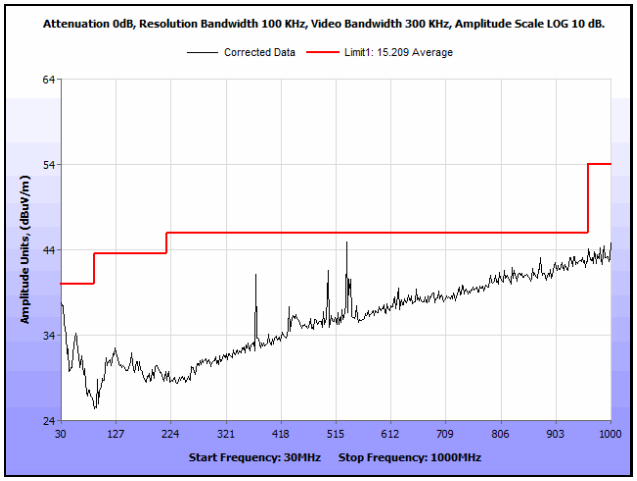
Plot 472. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 2, 30 MHz – 1 GHz



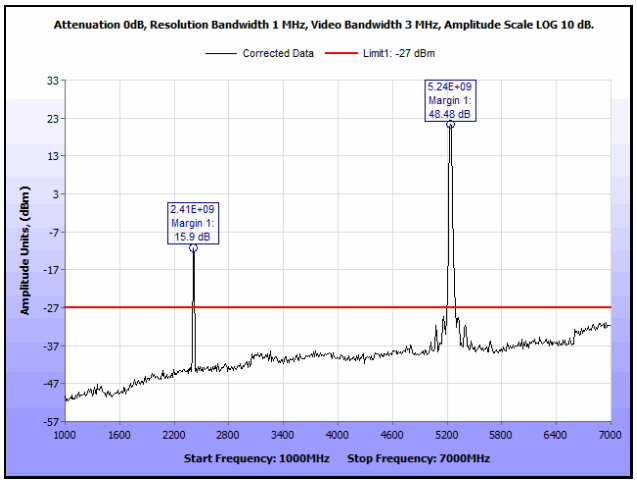
Plot 473. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 2, 1 GHz – 7 GHz, Peak



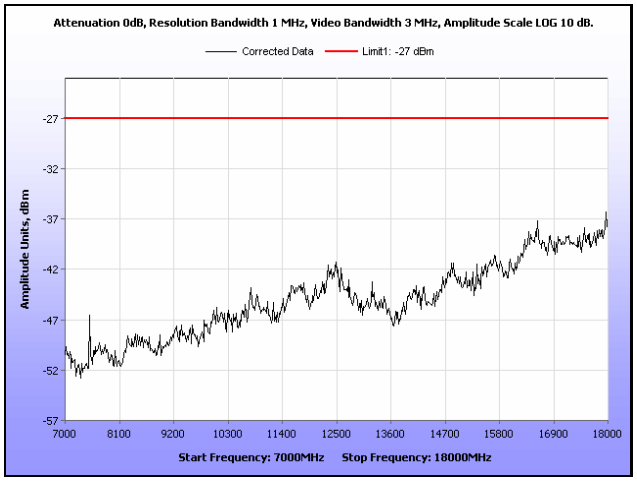
Plot 474. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, Ant. 2, 7 GHz – 18 GHz



Plot 475. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 2, 30 MHz – 1 GHz

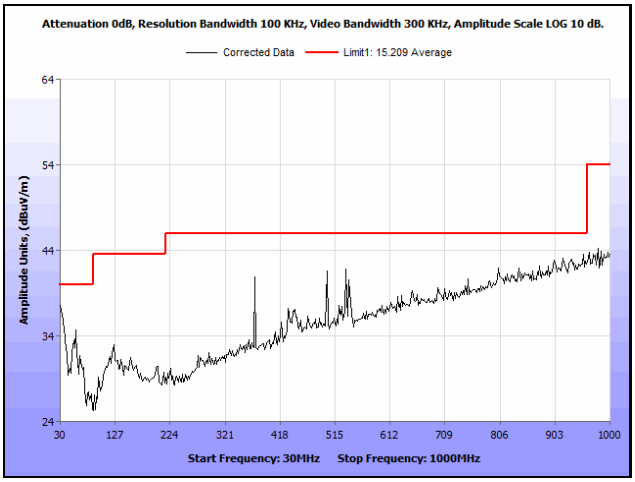


Plot 476. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 2, 1 GHz – 7 GHz, Peak

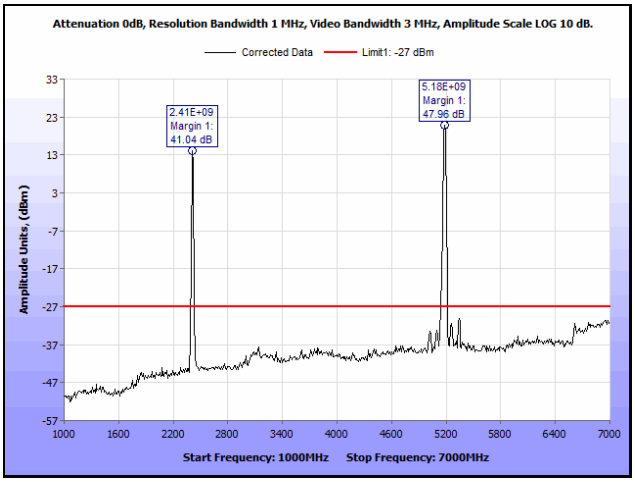


Plot 477. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, Ant. 2, 7 GHz – 18 GHz

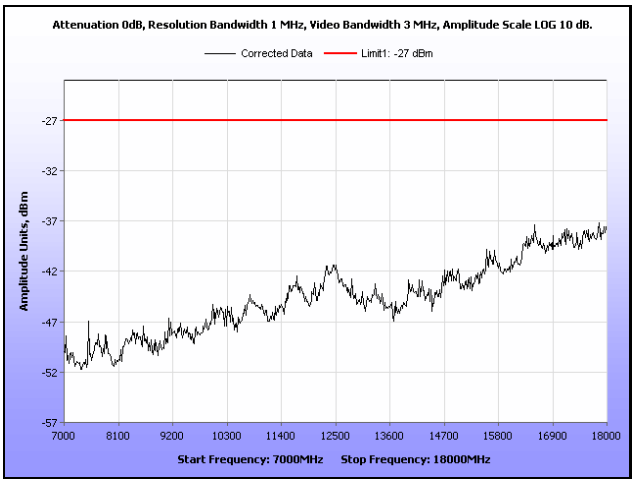
Radiated Spurious Emissions Test Results, 802.11ac 20 MHz, MIMO



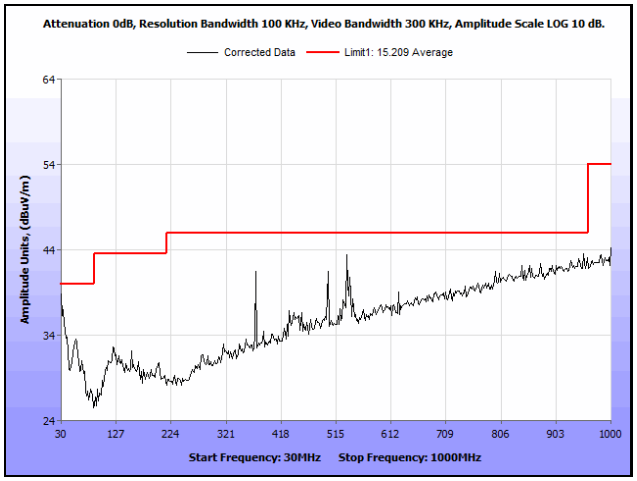
Plot 478. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, 30 MHz – 1 GHz, MIMO



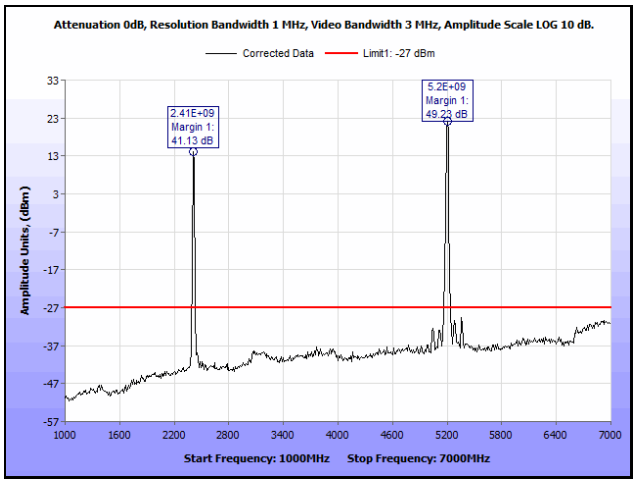
Plot 479. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, 1 GHz – 7 GHz, Peak, MIMO



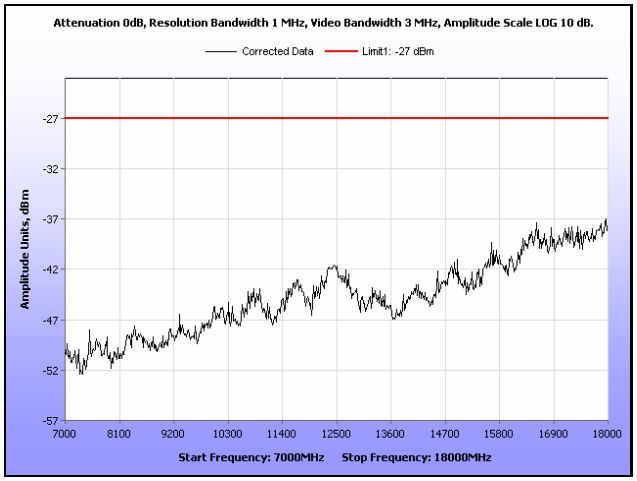
Plot 480. Radiated Spurious Emissions, Low Channel, 802.11ac 20 MHz, 7 GHz – 18 GHz, MIMO



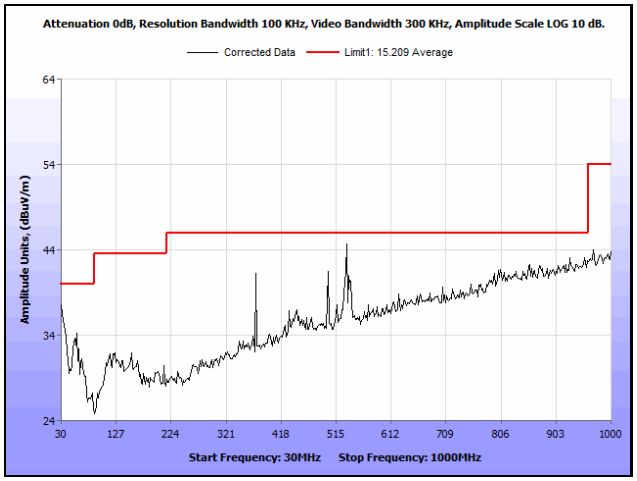
Plot 481. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, 30 MHz – 1 GHz, MIMO



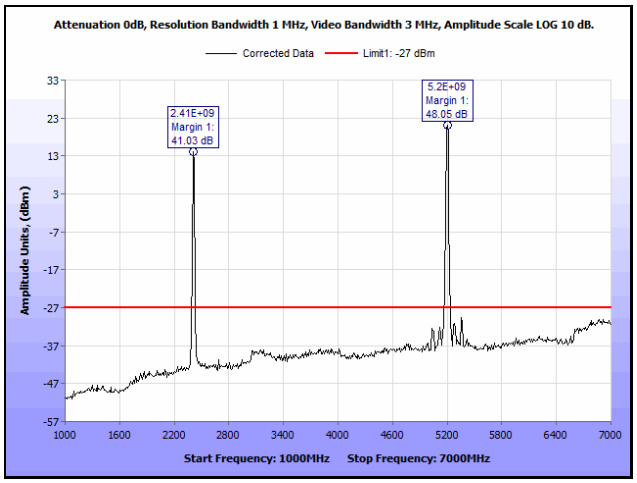
Plot 482. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, 1 GHz – 7 GHz, Peak, MIMO



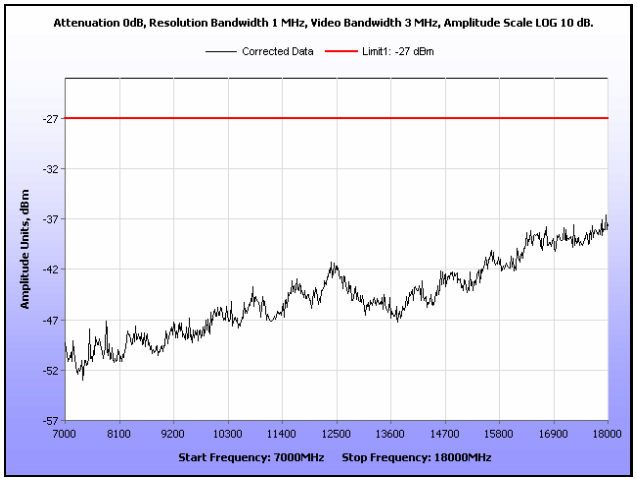
Plot 483. Radiated Spurious Emissions, Mid Channel, 802.11ac 20 MHz, 7 GHz – 18 GHz, MIMO



Plot 484. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, 30 MHz – 1 GHz, MIMO

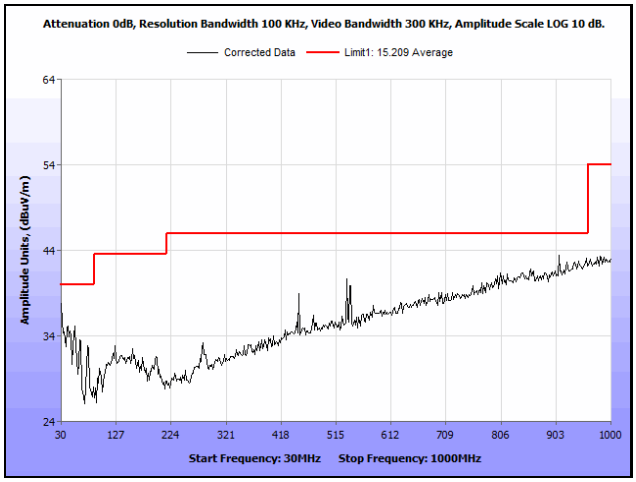


Plot 485. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, 1 GHz – 7 GHz, Peak, MIMO

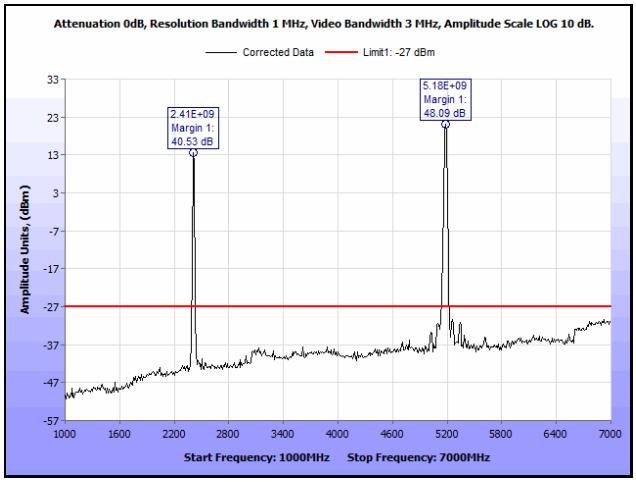


Plot 486. Radiated Spurious Emissions, High Channel, 802.11ac 20 MHz, 7 GHz – 18 GHz, MIMO

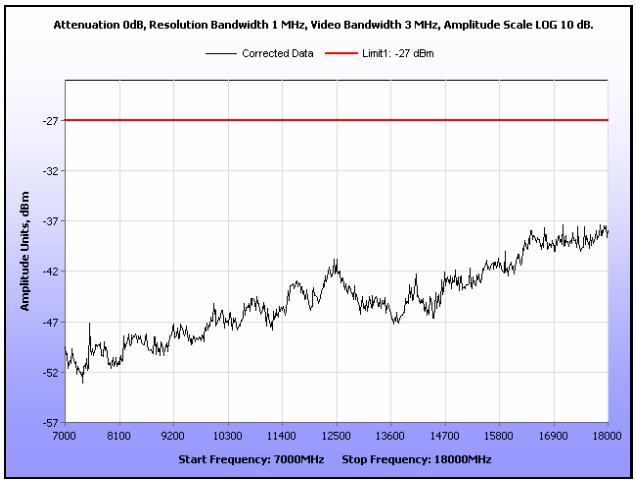
Radiated Spurious Emissions Test Results, 802.11n 20 MHz



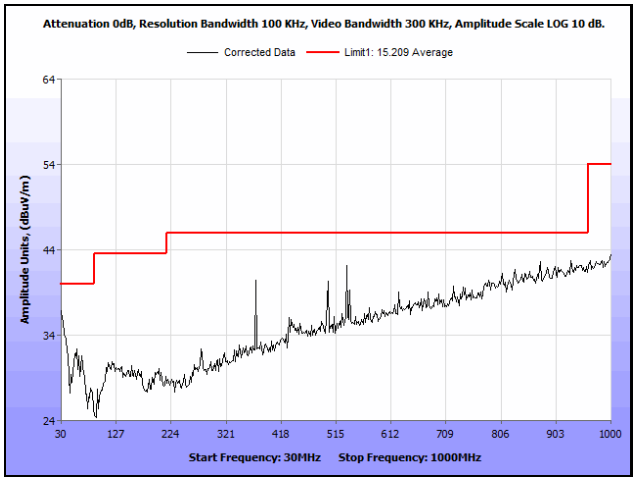
Plot 487. Radiated Spurious Emissions, Low Channel, 802.11n 20 MHz, Ant. 0, 30 MHz – 1 GHz



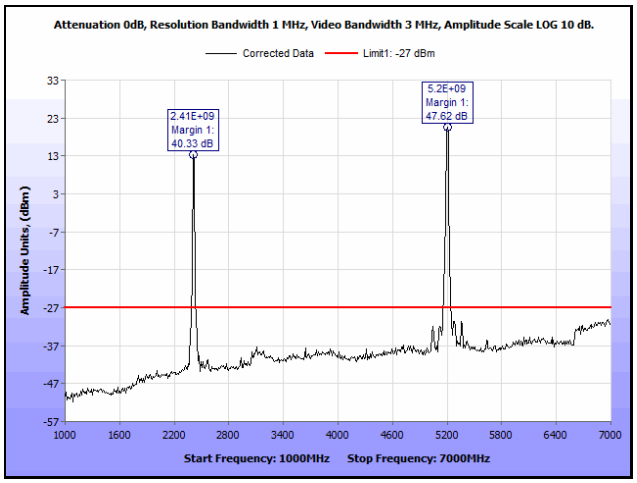
Plot 488. Radiated Spurious Emissions, Low Channel, 802.11n 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



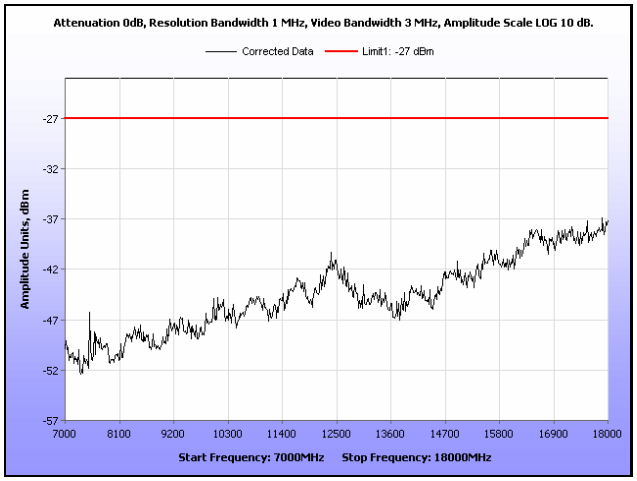
Plot 489. Radiated Spurious Emissions, Low Channel, 802.11n 20 MHz, Ant. 0, 7 GHz – 18 GHz



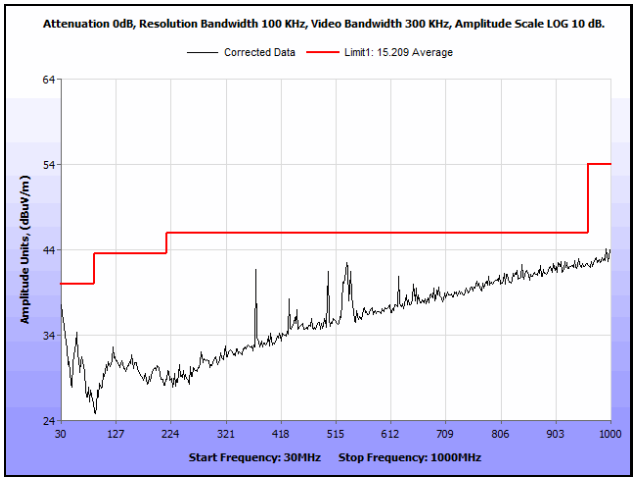
Plot 490. Radiated Spurious Emissions, Mid Channel, 802.11n 20 MHz, Ant. 0, 30 MHz – 1 GHz



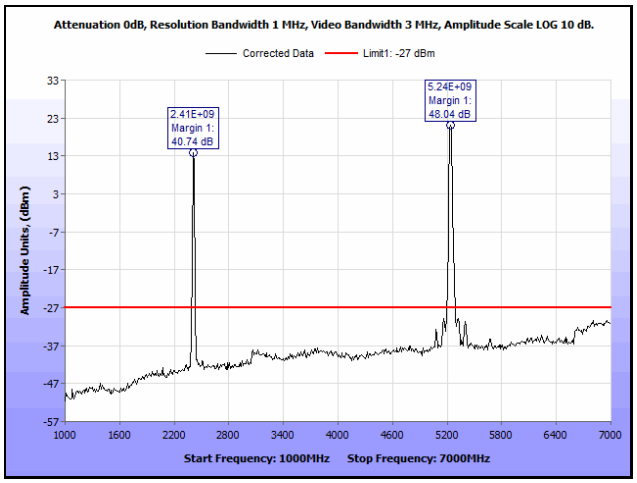
Plot 491. Radiated Spurious Emissions, Mid Channel, 802.11n 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



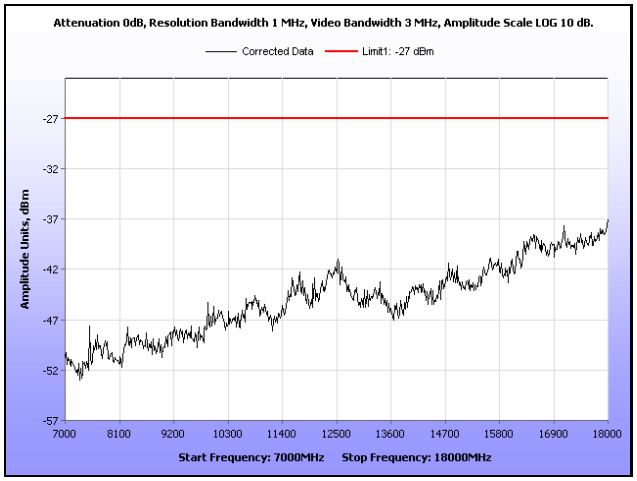
Plot 492. Radiated Spurious Emissions, Mid Channel, 802.11n 20 MHz, Ant. 0, 7 GHz – 18 GHz



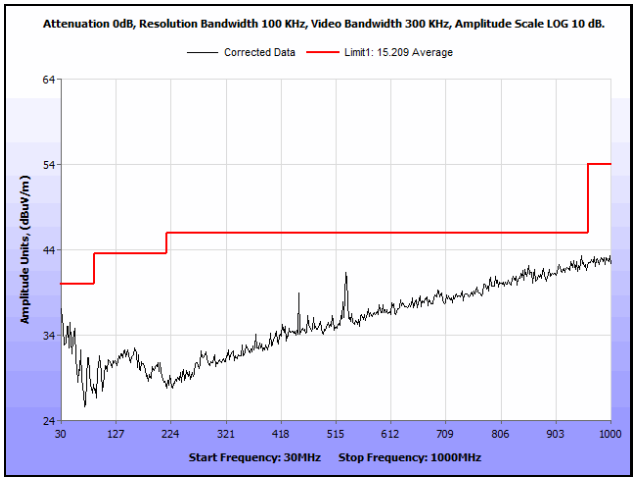
Plot 493. Radiated Spurious Emissions, High Channel, 802.11n 20 MHz, Ant. 0, 30 MHz – 1 GHz



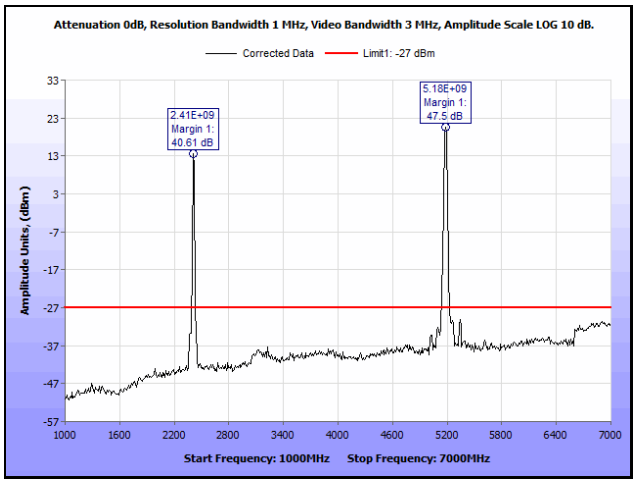
Plot 494. Radiated Spurious Emissions, High Channel, 802.11n 20 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



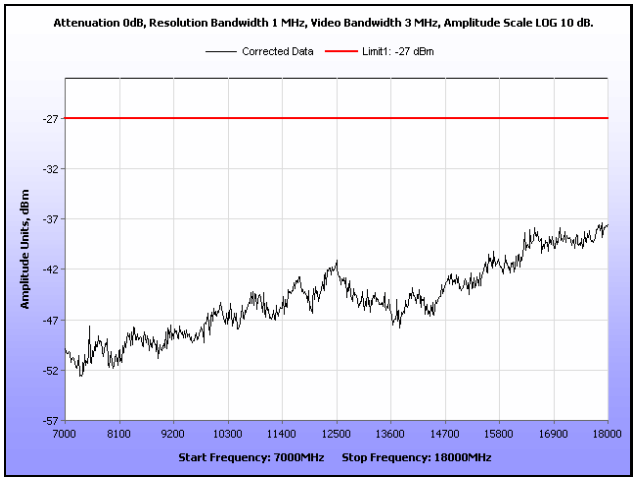
Plot 495. Radiated Spurious Emissions, High Channel, 802.11n 20 MHz, Ant. 0, 7 GHz – 18 GHz



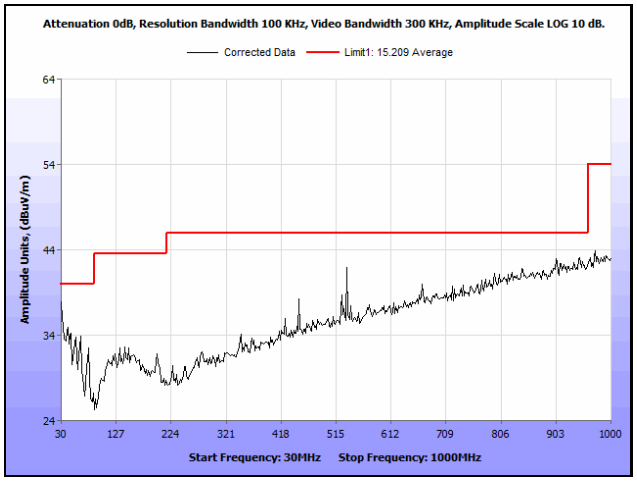
Plot 496. Radiated Spurious Emissions, Low Channel 802.11n 20 MHz, Ant. 1, 30 MHz – 1 GHz



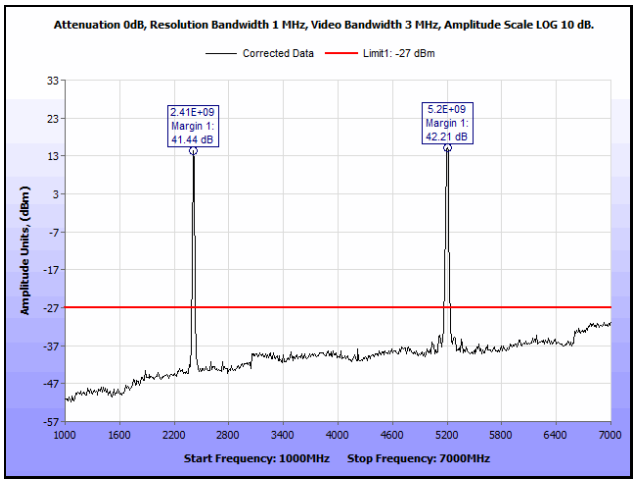
Plot 497. Radiated Spurious Emissions, Low Channel, 802.11n 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



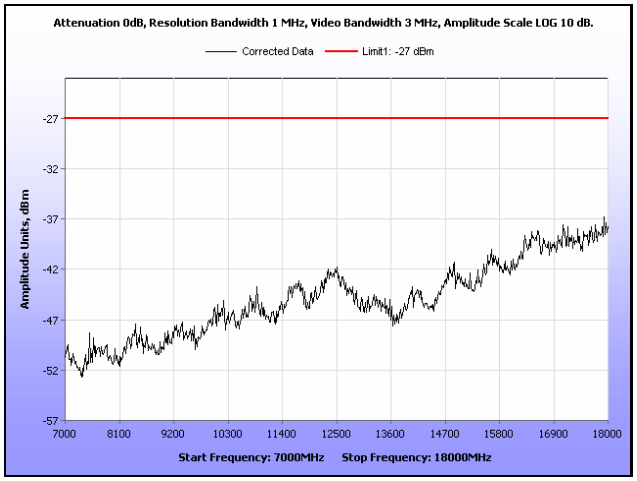
Plot 498. Radiated Spurious Emissions, Low Channel, 802.11n 20 MHz, Ant. 1, 7 GHz – 18 GHz



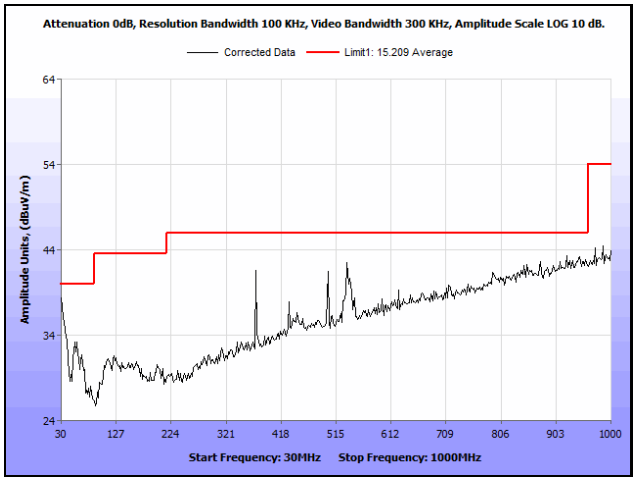
Plot 499. Radiated Spurious Emissions, Mid Channel, 802.11n 20 MHz, Ant. 1, 30 MHz – 1 GHz



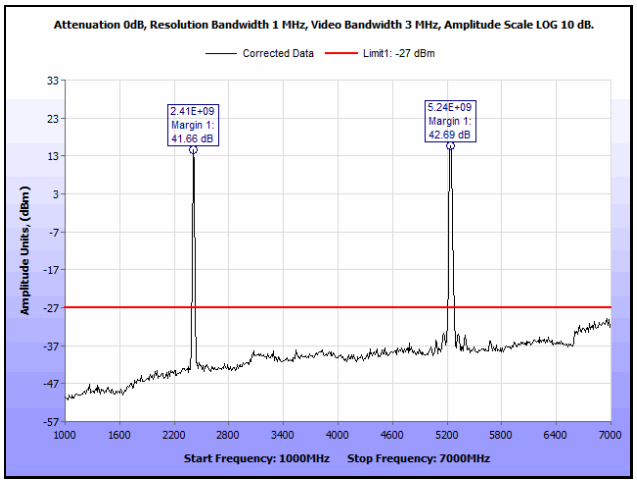
Plot 500. Radiated Spurious Emissions, Mid Channel, 802.11n 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



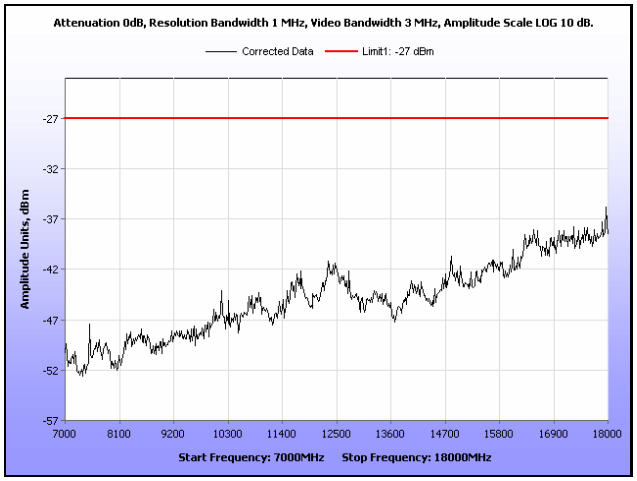
Plot 501. Radiated Spurious Emissions, Mid Channel, 802.11n 20 MHz, Ant. 1, 7 GHz – 18 GHz



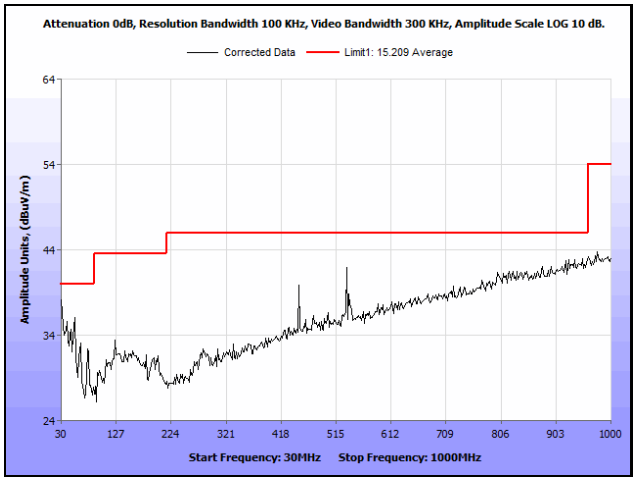
Plot 502. Radiated Spurious Emissions, High Channel, 802.11n 20 MHz, Ant. 1, 30 MHz – 1 GHz



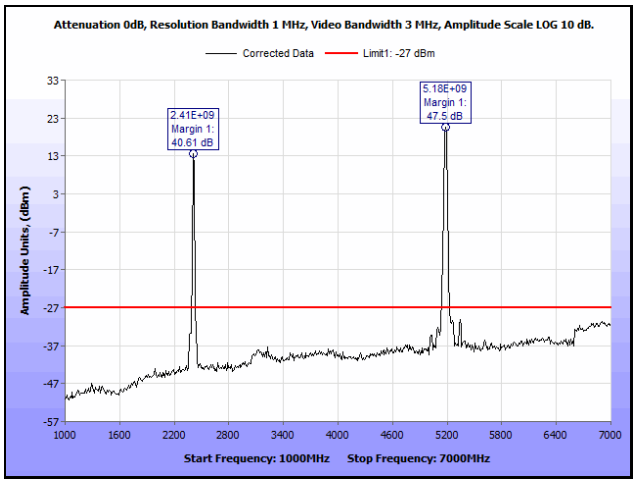
Plot 503. Radiated Spurious Emissions, High Channel, 802.11n 20 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



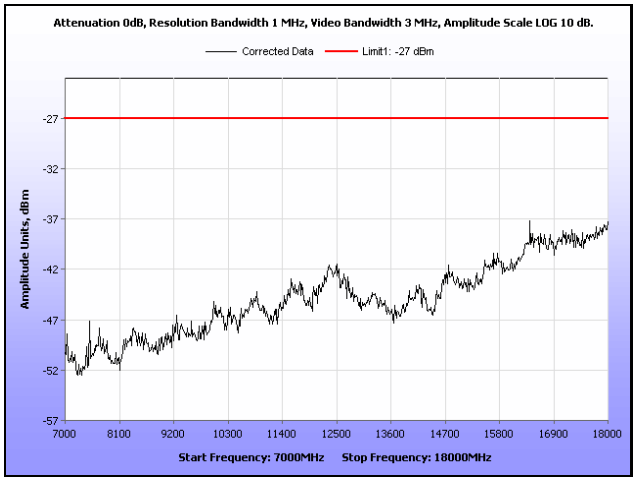
Plot 504. Radiated Spurious Emissions, High Channel, 802.11n 20 MHz, Ant. 1, 7 GHz – 18 GHz



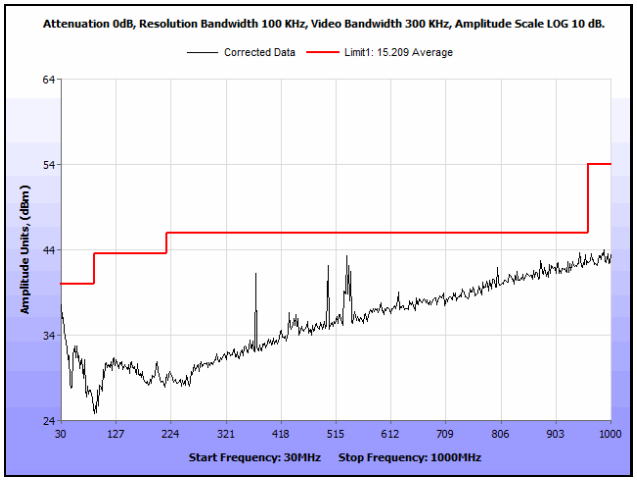
Plot 505. Radiated Spurious Emissions, Low Channel 802.11n 20 MHz, Ant. 2, 30 MHz – 1 GHz



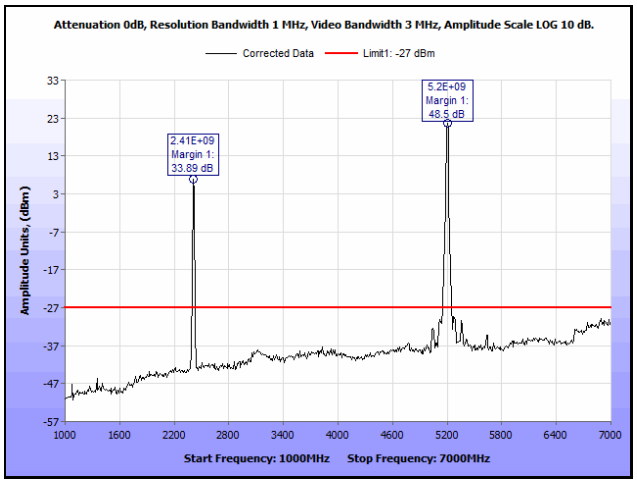
Plot 506. Radiated Spurious Emissions, Low Channel, 802.11n 20 MHz, Ant. 2, 1 GHz – 7 GHz, Peak



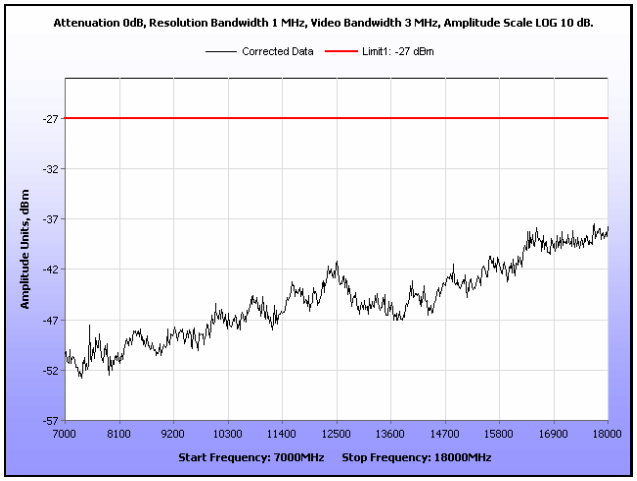
Plot 507. Radiated Spurious Emissions, Low Channel, 802.11n 20 MHz, Ant. 2, 7 GHz – 18 GHz



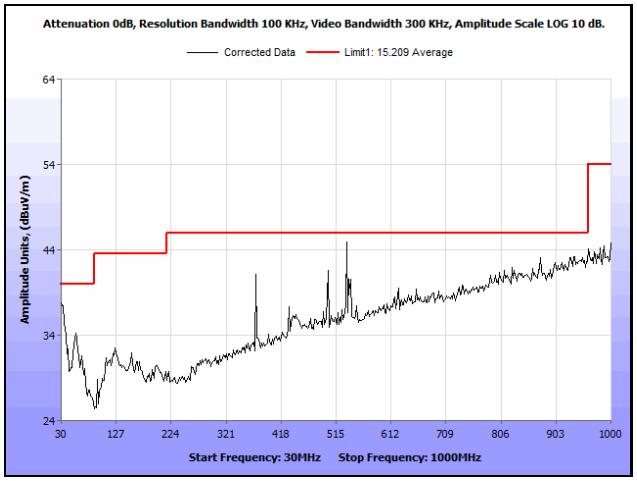
Plot 508. Radiated Spurious Emissions, Mid Channel, 802.11n 20 MHz, Ant. 2, 30 MHz – 1 GHz



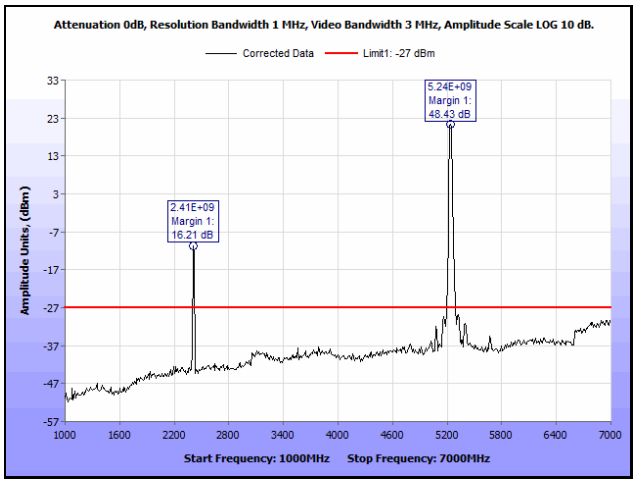
Plot 509. Radiated Spurious Emissions, Mid Channel, 802.11n 20 MHz, Ant. 2, 1 GHz – 7 GHz, Peak



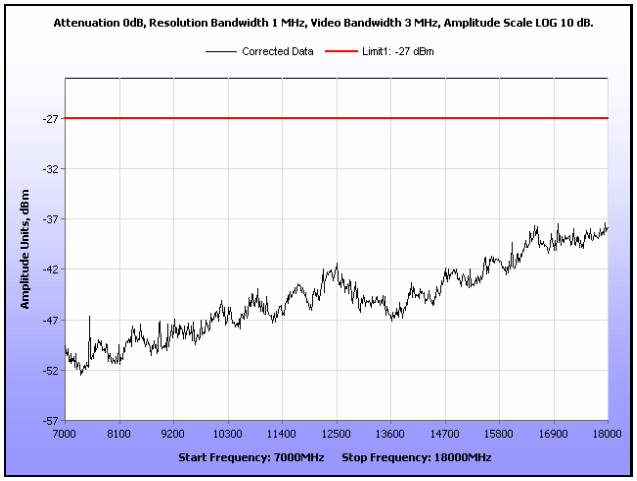
Plot 510. Radiated Spurious Emissions, Mid Channel, 802.11n 20 MHz, Ant. 2, 7 GHz – 18 GHz



Plot 511. Radiated Spurious Emissions, High Channel, 802.11n 20 MHz, Ant. 2, 30 MHz – 1 GHz

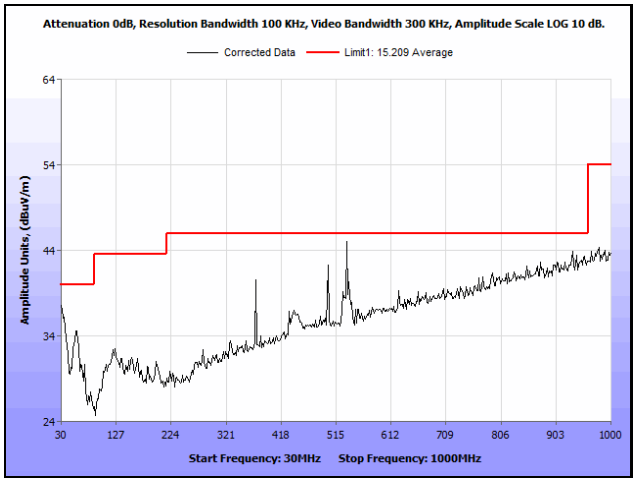


Plot 512. Radiated Spurious Emissions, High Channel, 802.11n 20 MHz, Ant. 2, 1 GHz – 7 GHz, Peak

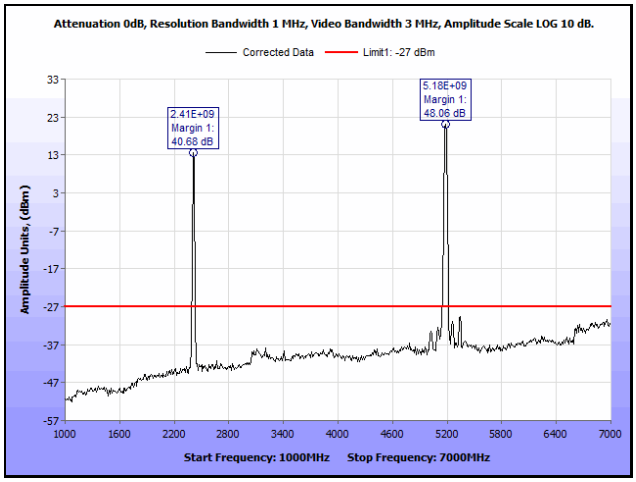


Plot 513. Radiated Spurious Emissions, High Channel, 802.11n 20 MHz, Ant. 2, 7 GHz – 18 GHz

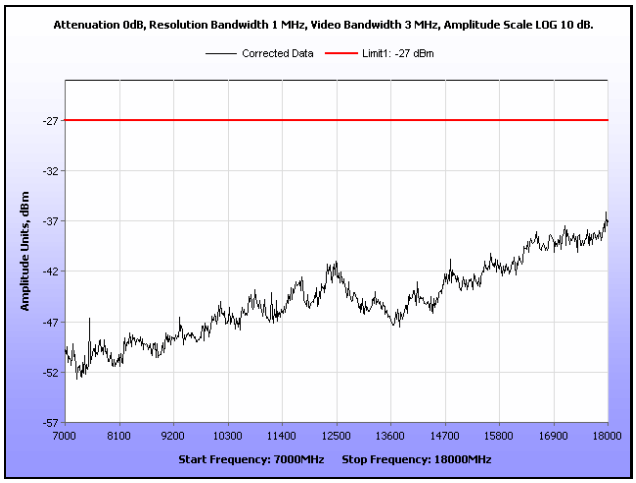
Radiated Spurious Emissions Test Results, 802.11n 20 MHz, MIMO



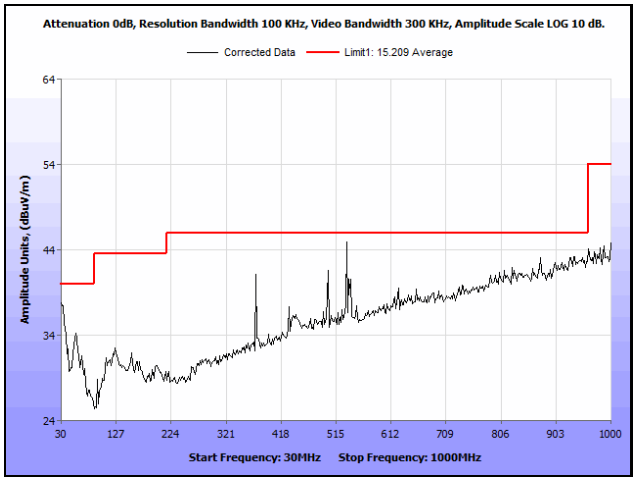
Plot 514. Radiated Spurious Emissions, Low Channel, 802.11n 20 MHz, 30 MHz – 1 GHz, MIMO



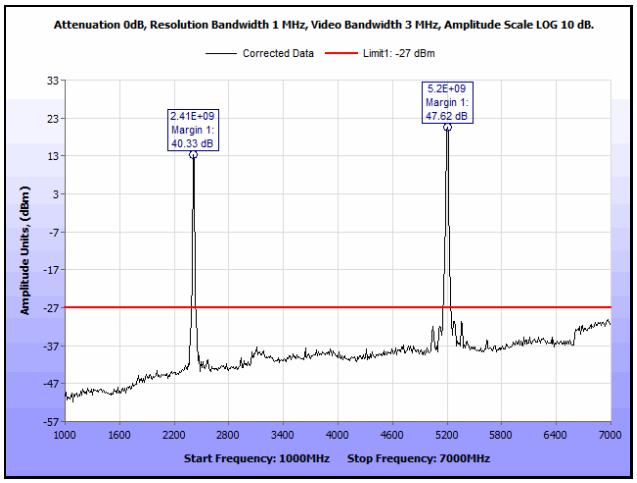
Plot 515. Radiated Spurious Emissions, Low Channel, 802.11n 20 MHz, 1 GHz – 7 GHz, Peak, MIMO



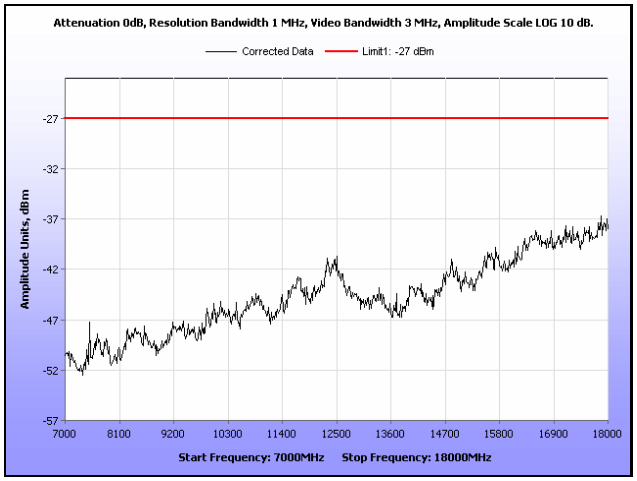
Plot 516. Radiated Spurious Emissions, Low Channel, 802.11n 20 MHz, 7 GHz – 18 GHz, MIMO



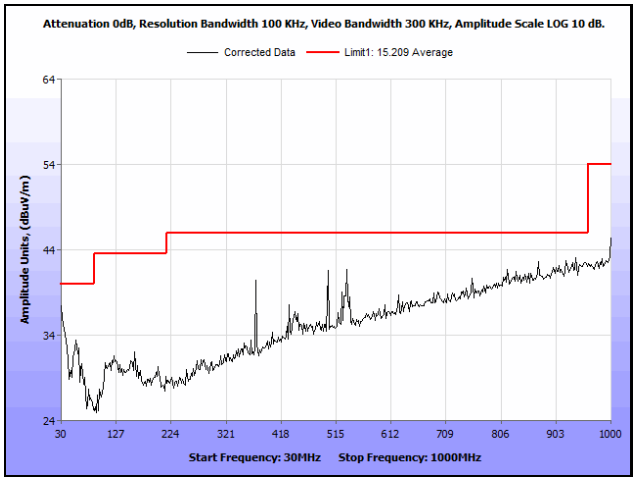
Plot 517. Radiated Spurious Emissions, Mid Channel, 802.11n 20 MHz, 30 MHz – 1 GHz, MIMO



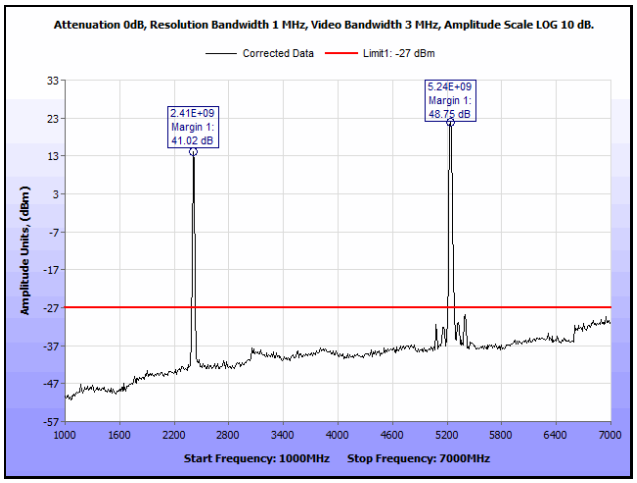
Plot 518. Radiated Spurious Emissions, Mid Channel, 802.11n 20 MHz, 1 GHz – 7 GHz, Peak, MIMO



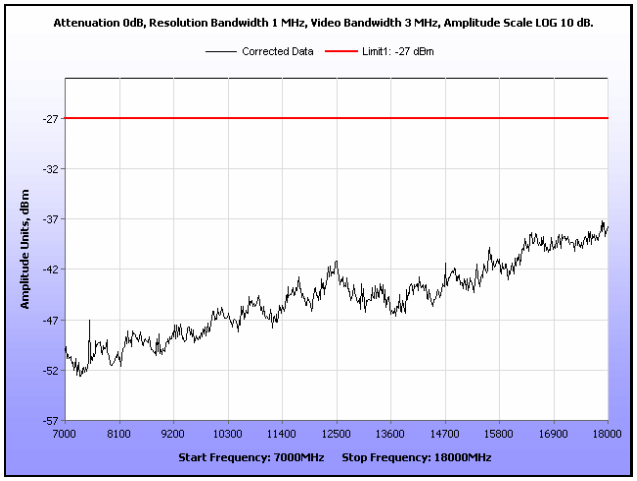
Plot 519. Radiated Spurious Emissions, Mid Channel, 802.11n 20 MHz, 7 GHz – 18 GHz, MIMO



Plot 520. Radiated Spurious Emissions, High Channel, 802.11n 20 MHz, 30 MHz – 1 GHz, MIMO

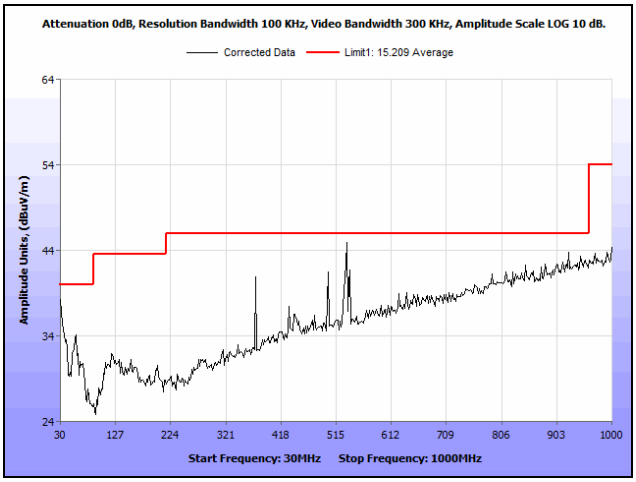


Plot 521. Radiated Spurious Emissions, High Channel, 802.11n 20 MHz, 1 GHz – 7 GHz, Peak, MIMO

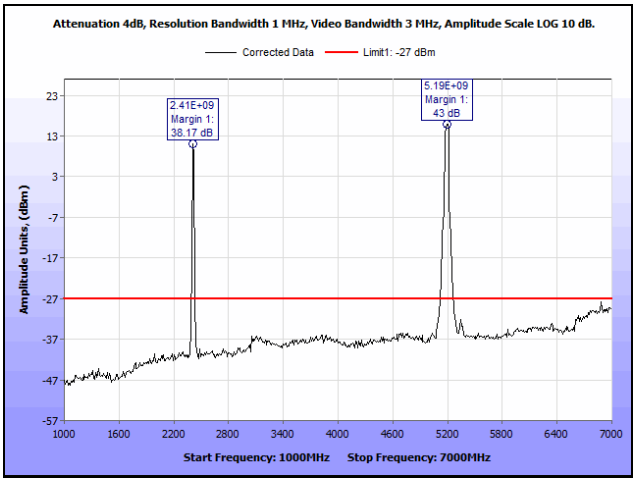


Plot 522. Radiated Spurious Emissions, High Channel, 802.11n 20 MHz, 7 GHz – 18 GHz, MIMO

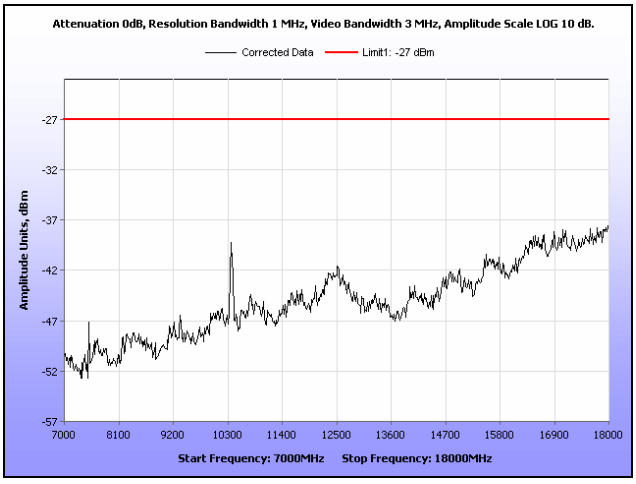
Radiated Spurious Emissions Test Results, 802.11a 40 MHz



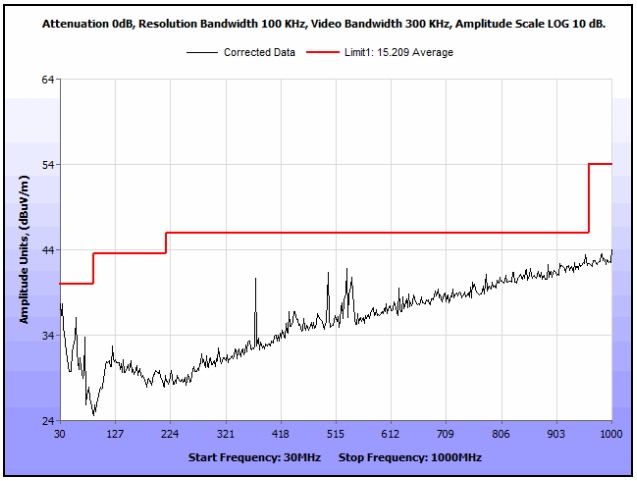
Plot 523. Radiated Spurious Emissions, Low Channel, 802.11a 40 MHz, Ant. 0, 30 MHz – 1 GHz



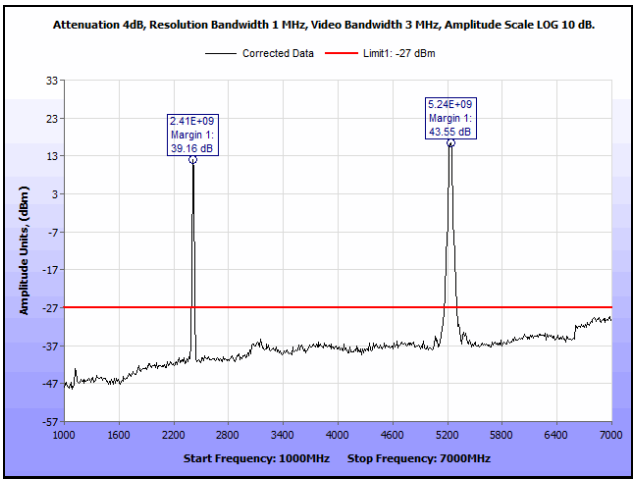
Plot 524. Radiated Spurious Emissions, Low Channel, 802.11a 40 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



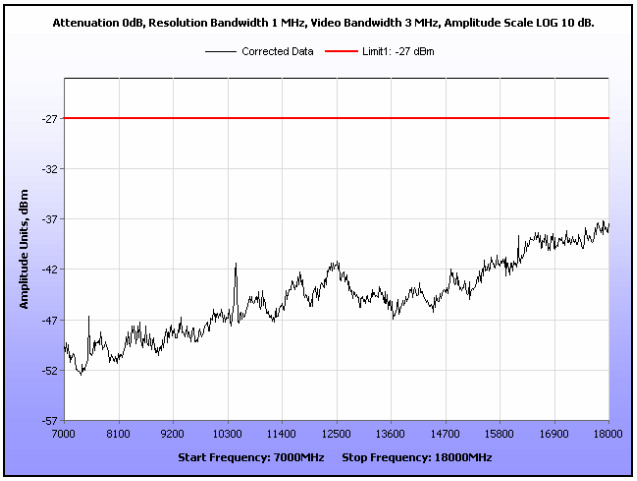
Plot 525. Radiated Spurious Emissions, Low Channel, 802.11a 40 MHz, Ant. 0, 7 GHz – 18 GHz



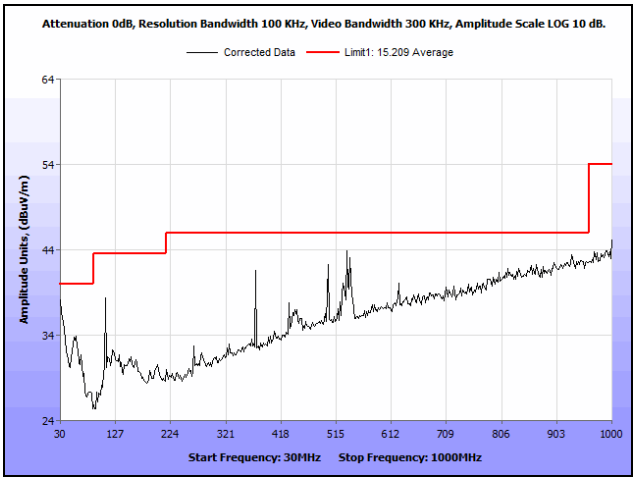
Plot 526. Radiated Spurious Emissions, High Channel, 802.11a 40 MHz, Ant. 0, 30 MHz – 1 GHz



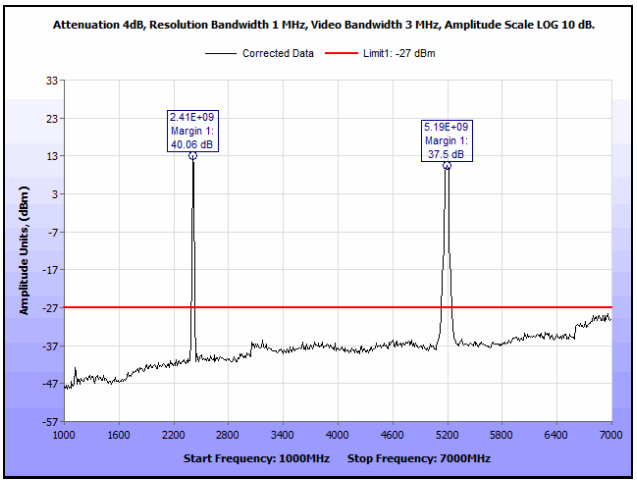
Plot 527. Radiated Spurious Emissions, High Channel, 802.11a 40 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



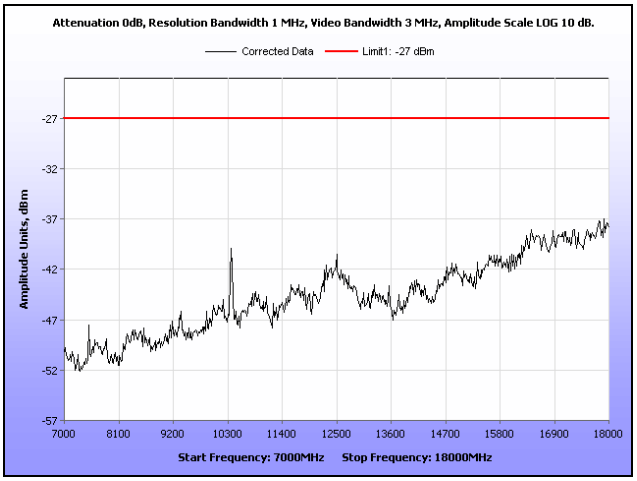
Plot 528. Radiated Spurious Emissions, High Channel, 802.11a 40 MHz, Ant. 0, 7 GHz – 18 GHz



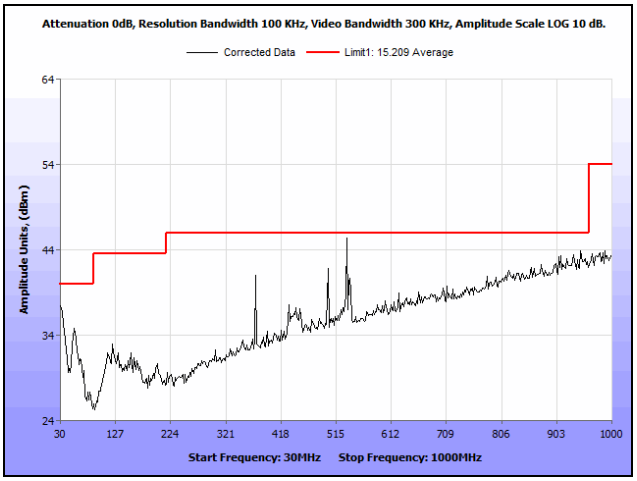
Plot 529. Radiated Spurious Emissions, Low Channel, 802.11a 40 MHz, Ant. 1, 30 MHz – 1 GHz



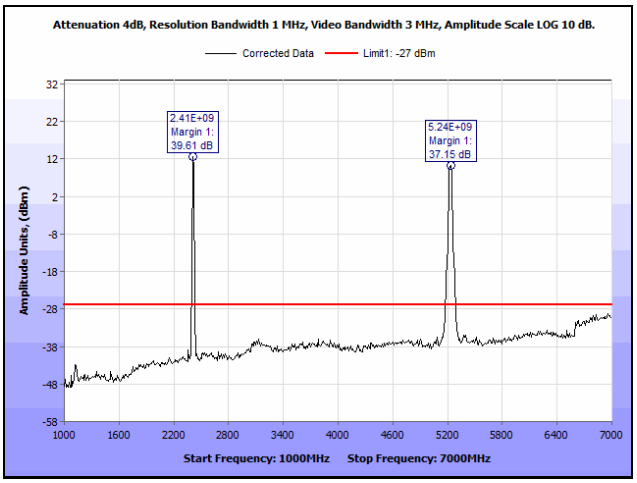
Plot 530. Radiated Spurious Emissions, Low Channel, 802.11a 40 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



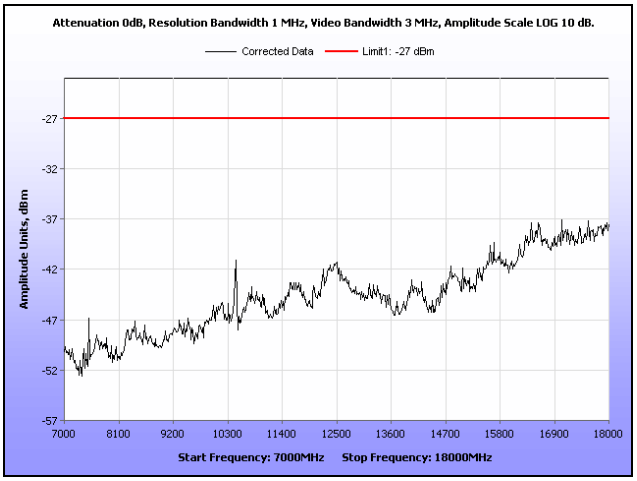
Plot 531. Radiated Spurious Emissions, Low Channel, 802.11a 40 MHz, Ant. 1, 7 GHz – 18 GHz



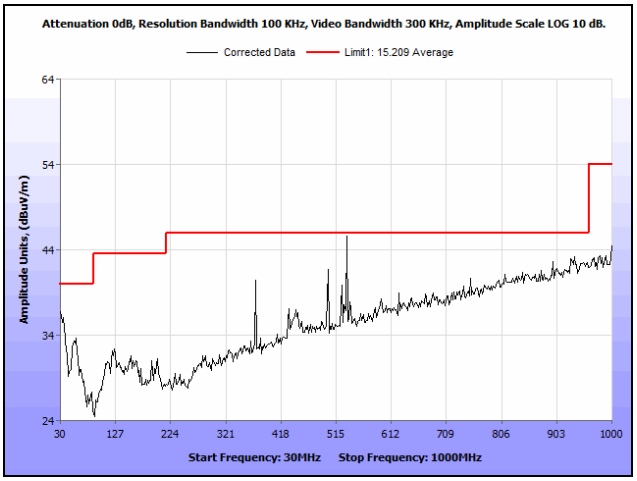
Plot 532. Radiated Spurious Emissions, High Channel, 802.11a 40 MHz, Ant. 1, 30 MHz – 1 GHz



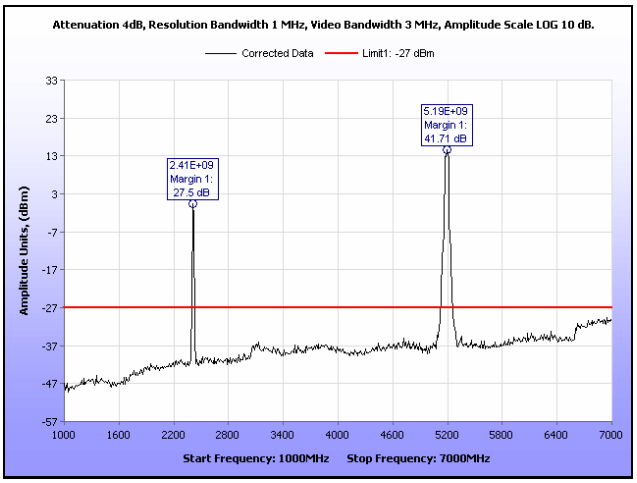
Plot 533. Radiated Spurious Emissions, High Channel, 802.11a 40 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



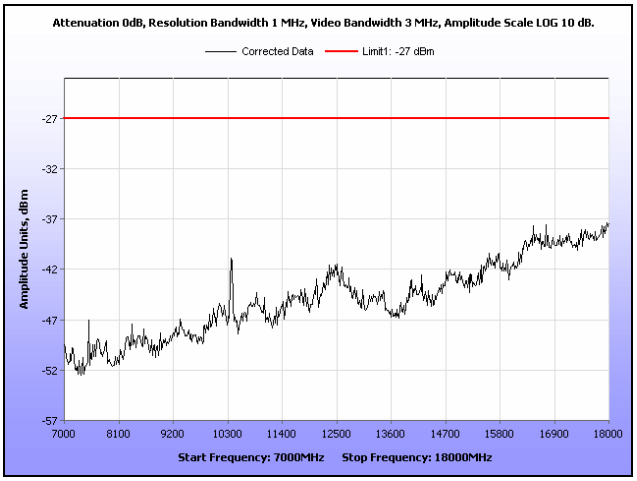
Plot 534. Radiated Spurious Emissions, High Channel, 802.11a 40 MHz, Ant. 1, 7 GHz – 18 GHz



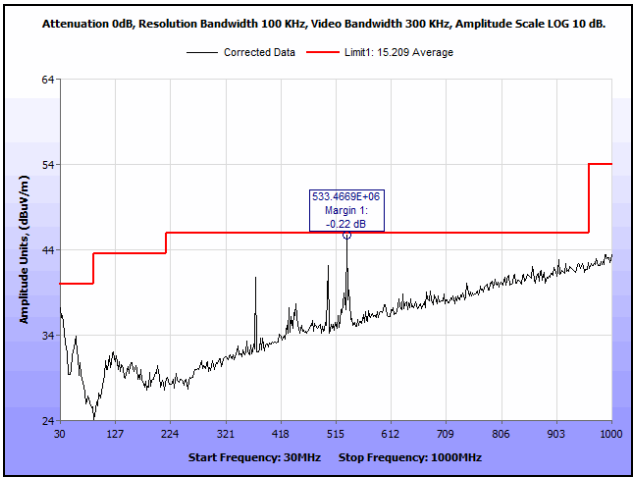
Plot 535. Radiated Spurious Emissions, Low Channel, 802.11a 40 MHz, Ant. 2, 30 MHz – 1 GHz



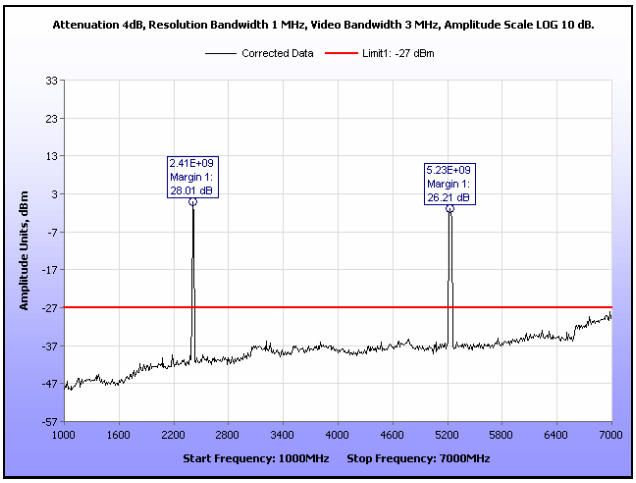
Plot 536. Radiated Spurious Emissions, Low Channel, 802.11a 40 MHz, Ant. 2, 1 GHz – 7 GHz, Peak



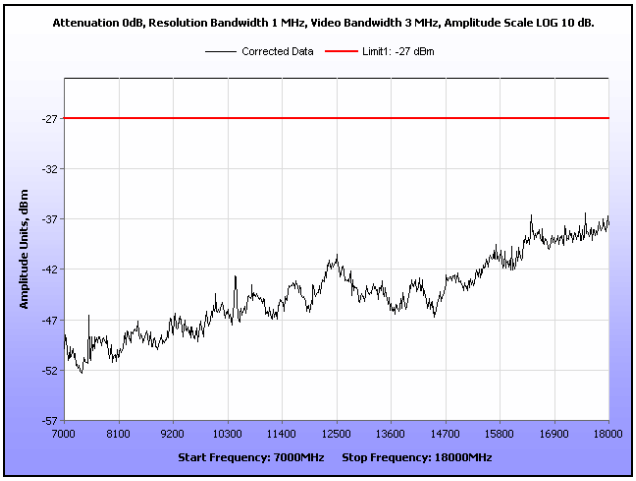
Plot 537. Radiated Spurious Emissions, Low Channel, 802.11a 40 MHz, Ant. 2, 7 GHz – 18 GHz



Plot 538. Radiated Spurious Emissions, High Channel, 802.11a 40 MHz, Ant. 2, 30 MHz – 1 GHz

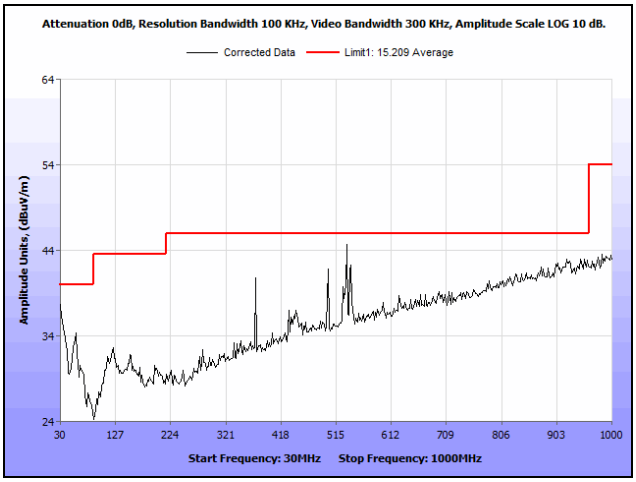


Plot 539. Radiated Spurious Emissions, High Channel, 802.11a 40 MHz, Ant. 2, 1 GHz – 7 GHz, Peak

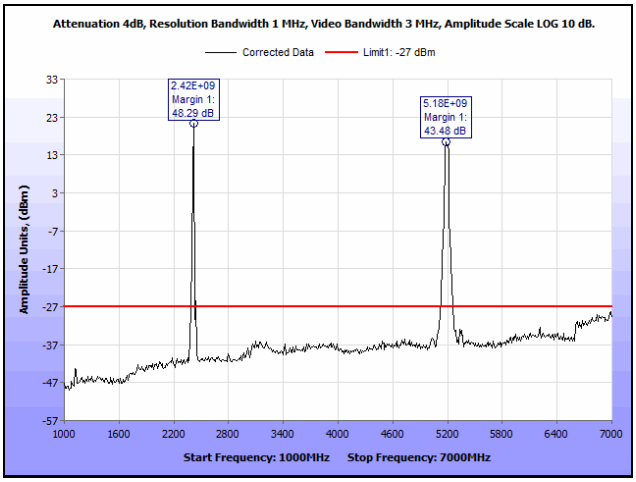


Plot 540. Radiated Spurious Emissions, High Channel, 802.11a 40 MHz, Ant. 2, 7 GHz – 18 GHz

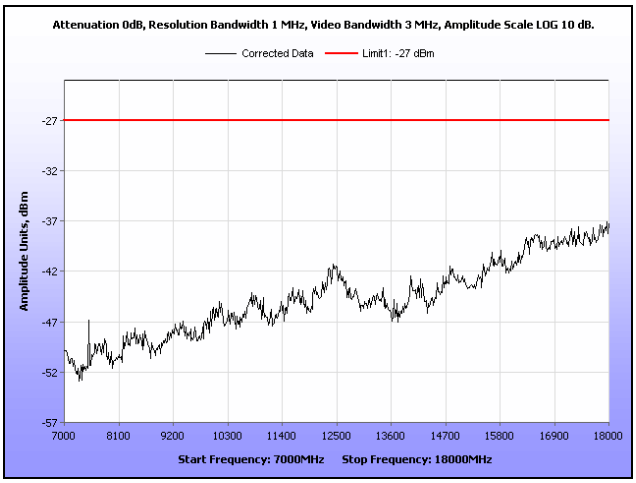
Radiated Spurious Emissions Test Results, 802.11ac 40 MHz, MIMO



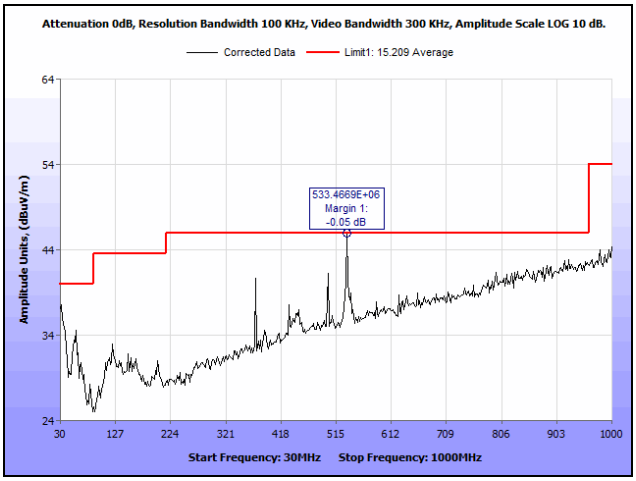
Plot 541. Radiated Spurious Emissions, Low Channel, 802.11ac 40 MHz, 30 MHz – 1 GHz, MIMO



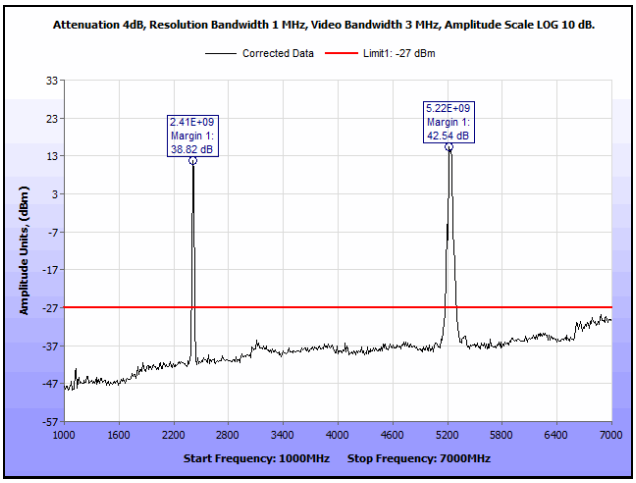
Plot 542. Radiated Spurious Emissions, Low Channel, 802.11ac 40 MHz, 1 GHz – 7 GHz, Peak, MIMO



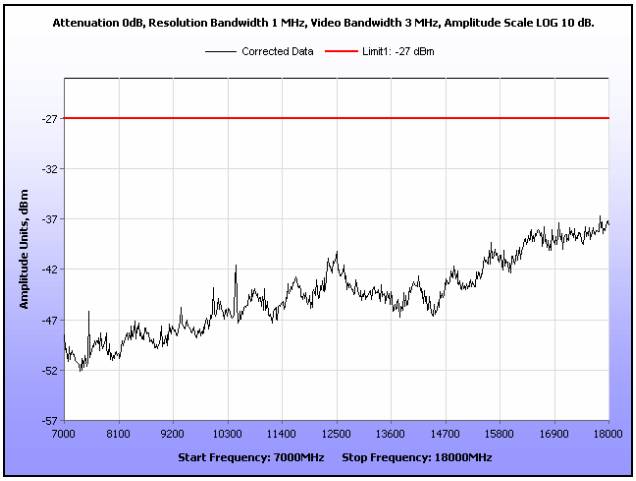
Plot 543. Radiated Spurious Emissions, Low Channel, 802.11ac 40 MHz, 7 GHz – 18 GHz, MIMO



Plot 544. Radiated Spurious Emissions, High Channel, 802.11ac 40 MHz, 30 MHz – 1 GHz, MIMO

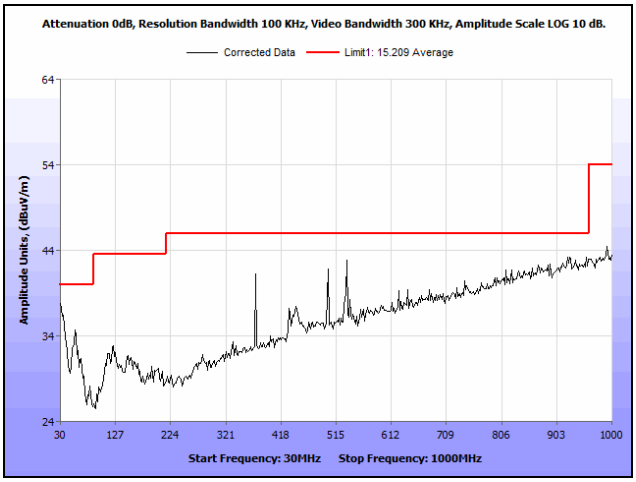


Plot 545. Radiated Spurious Emissions, High Channel, 802.11ac 40 MHz, 1 GHz – 7 GHz, Peak, MIMO

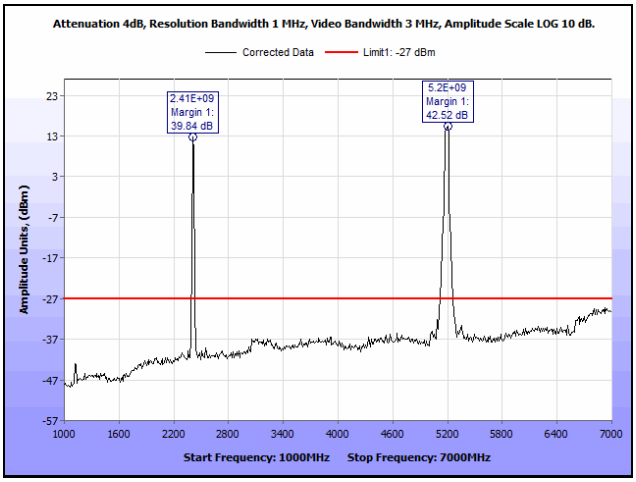


Plot 546. Radiated Spurious Emissions, High Channel, 802.11ac 40 MHz, 7 GHz – 18 GHz, MIMO

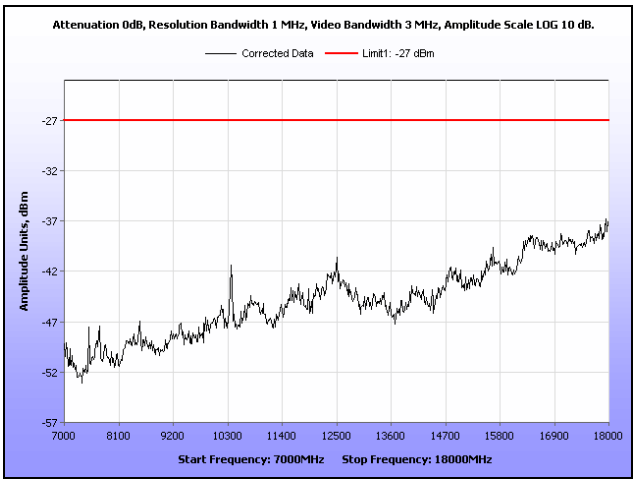
Radiated Spurious Emissions Test Results, 802.11n 40 MHz



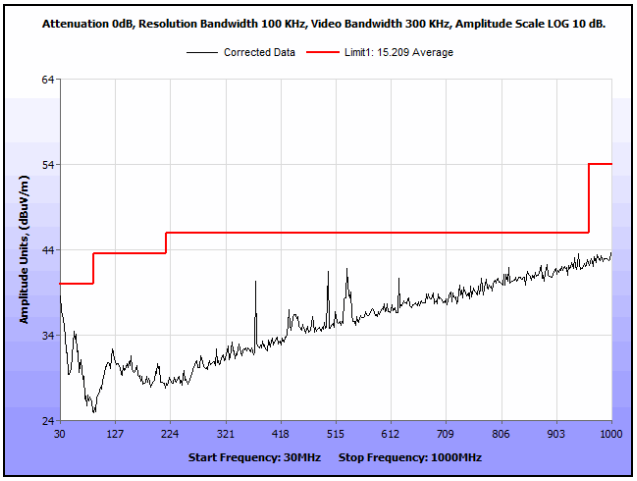
Plot 547. Radiated Spurious Emissions, Low Channel, 802.11n 40 MHz, Ant. 0, 30 MHz – 1 GHz



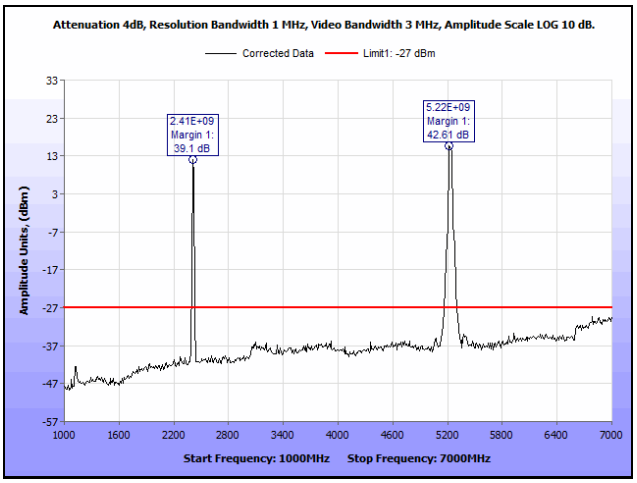
Plot 548. Radiated Spurious Emissions, Low Channel, 802.11n 40 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



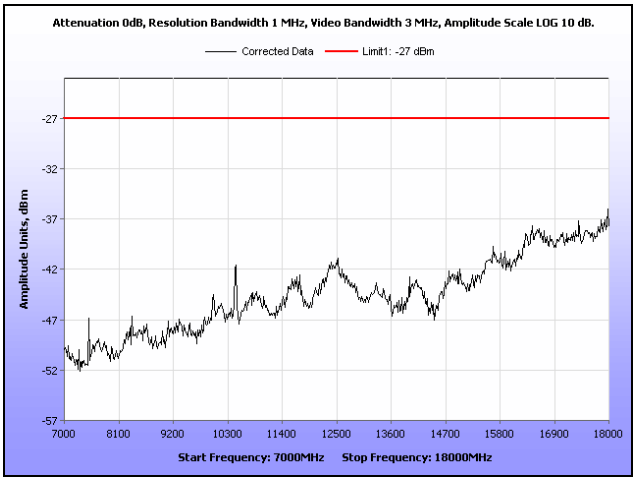
Plot 549. Radiated Spurious Emissions, Low Channel, 802.11n 40 MHz, Ant. 0, 7 GHz – 18 GHz



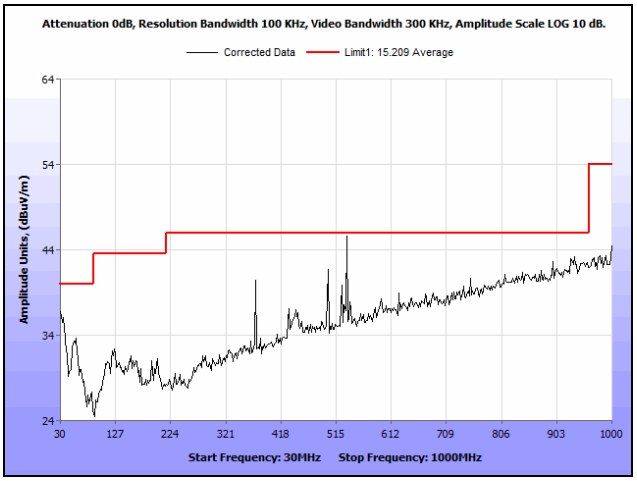
Plot 550. Radiated Spurious Emissions, High Channel, 802.11n 40 MHz, Ant. 0, 30 MHz – 1 GHz



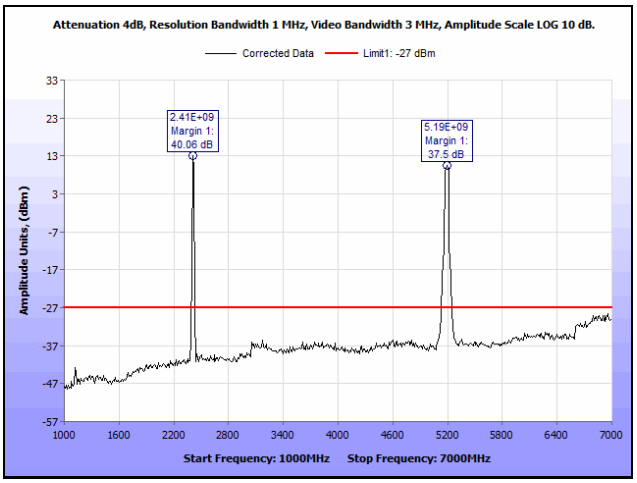
Plot 551. Radiated Spurious Emissions, High Channel, 802.11n 40 MHz, Ant. 0, 1 GHz – 7 GHz, Peak



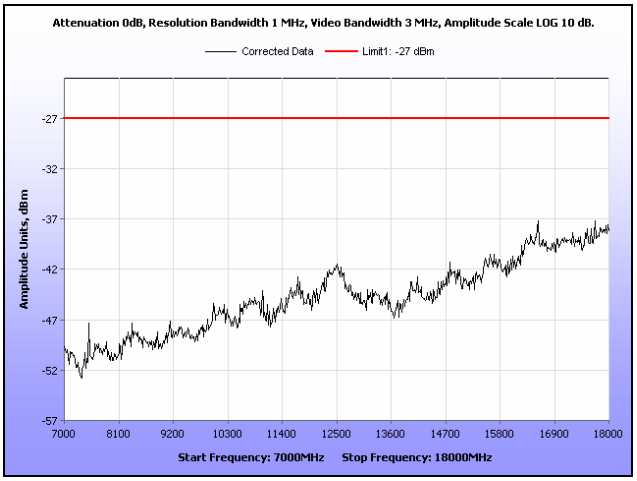
Plot 552. Radiated Spurious Emissions, High Channel, 802.11n 40 MHz, Ant. 0, 7 GHz – 18 GHz



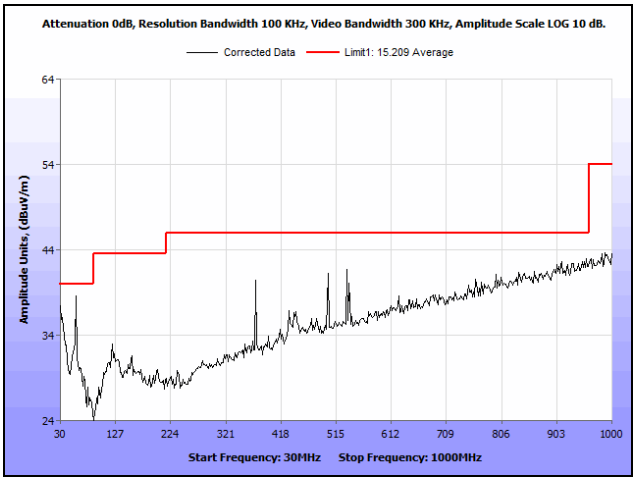
Plot 553. Radiated Spurious Emissions, Low Channel 802.11n 40 MHz, Ant. 1, 30 MHz – 1 GHz



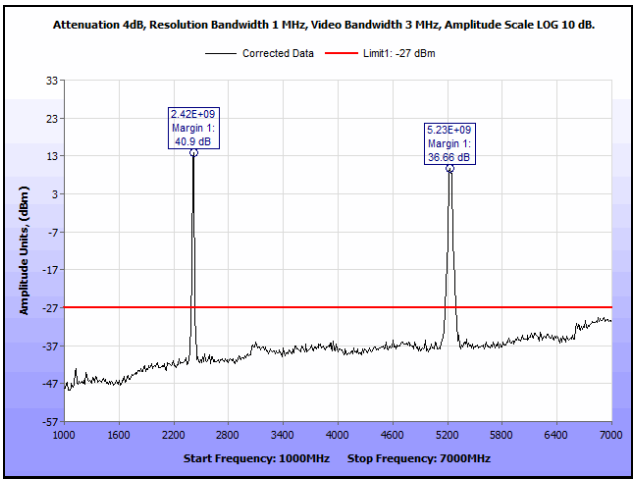
Plot 554. Radiated Spurious Emissions, Low Channel, 802.11n 40 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



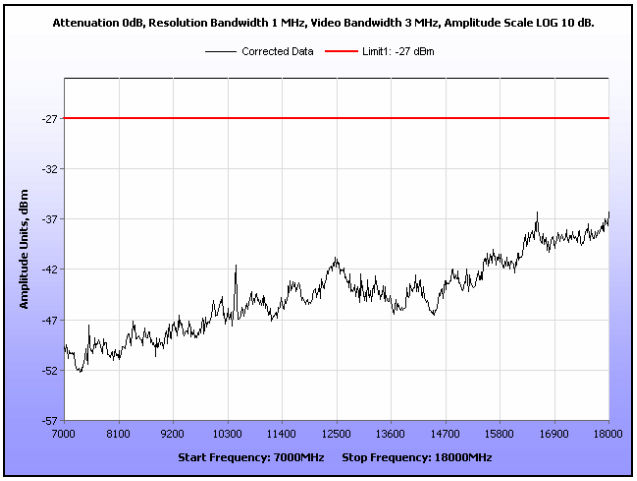
Plot 555. Radiated Spurious Emissions, Low Channel, 802.11n 40 MHz, Ant. 1, 7 GHz – 18 GHz



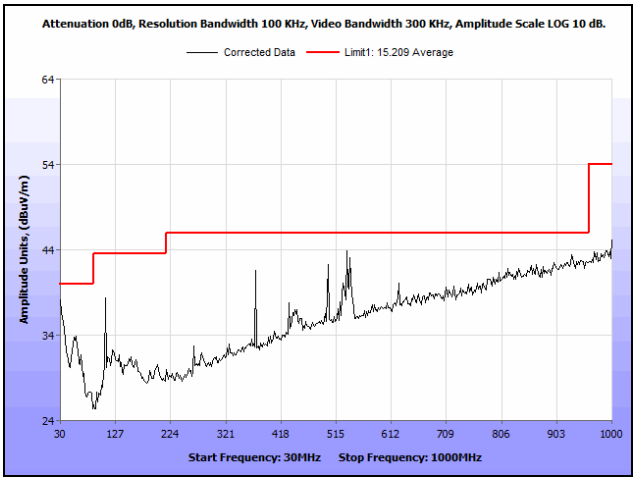
Plot 556. Radiated Spurious Emissions, High Channel, 802.11n 40 MHz, Ant. 1, 30 MHz – 1 GHz



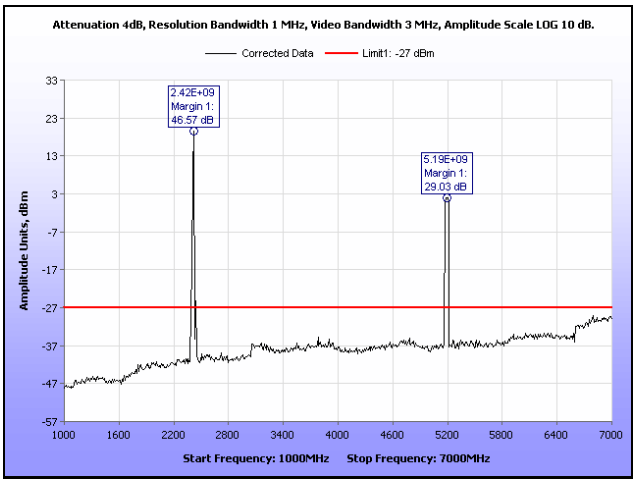
Plot 557. Radiated Spurious Emissions, High Channel, 802.11n 40 MHz, Ant. 1, 1 GHz – 7 GHz, Peak



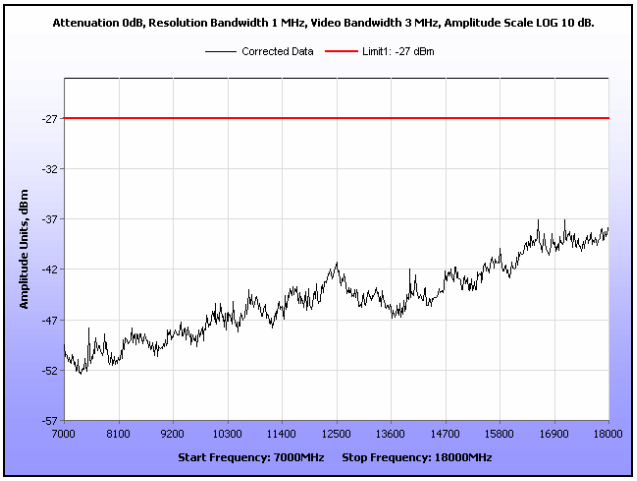
Plot 558. Radiated Spurious Emissions, High Channel, 802.11n 40 MHz, Ant. 1, 7 GHz – 18 GHz



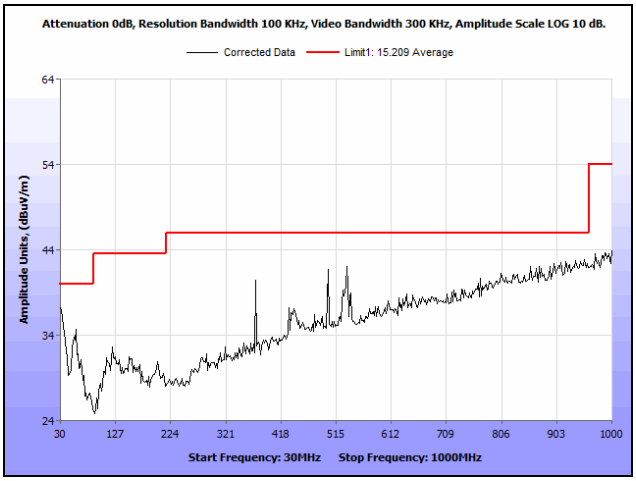
Plot 559. Radiated Spurious Emissions, Low Channel 802.11n 40 MHz, Ant. 2, 30 MHz – 1 GHz



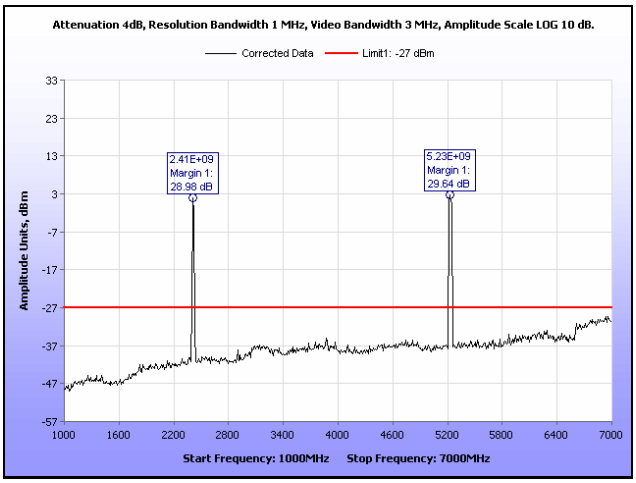
Plot 560. Radiated Spurious Emissions, Low Channel, 802.11n 40 MHz, Ant. 2, 1 GHz – 7 GHz, Peak



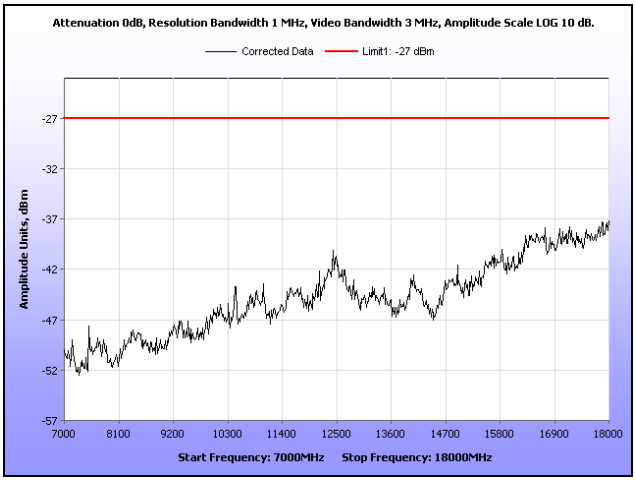
Plot 561. Radiated Spurious Emissions, Low Channel, 802.11n 40 MHz, Ant. 2, 7 GHz – 18 GHz



Plot 562. Radiated Spurious Emissions, High Channel, 802.11n 40 MHz, Ant. 2, 30 MHz – 1 GHz

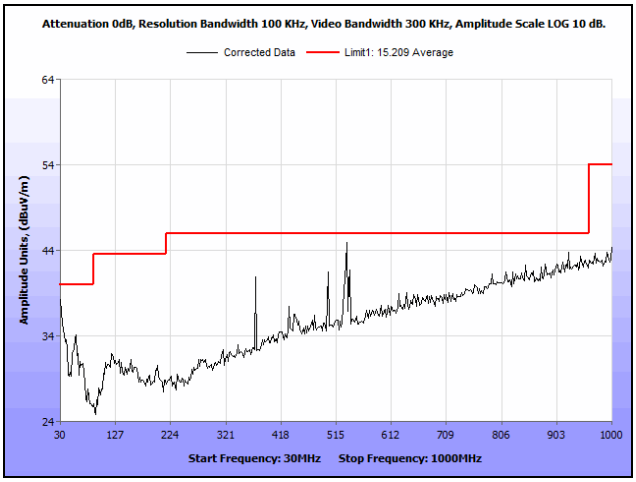


Plot 563. Radiated Spurious Emissions, High Channel, 802.11n 40 MHz, Ant. 2, 1 GHz – 7 GHz, Peak

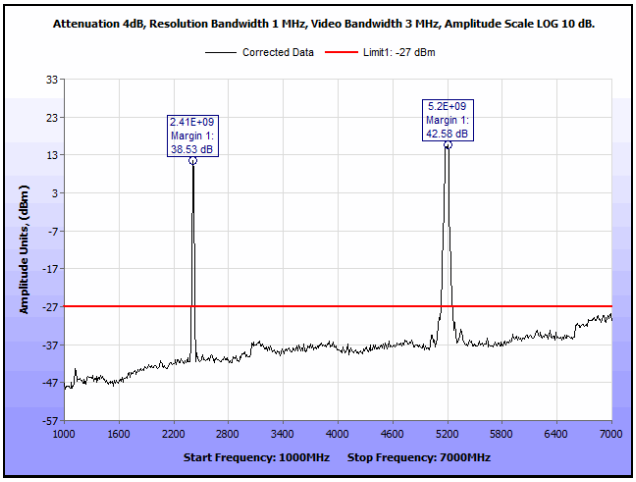


Plot 564. Radiated Spurious Emissions, High Channel, 802.11n 40 MHz, Ant. 2, 7 GHz – 18 GHz

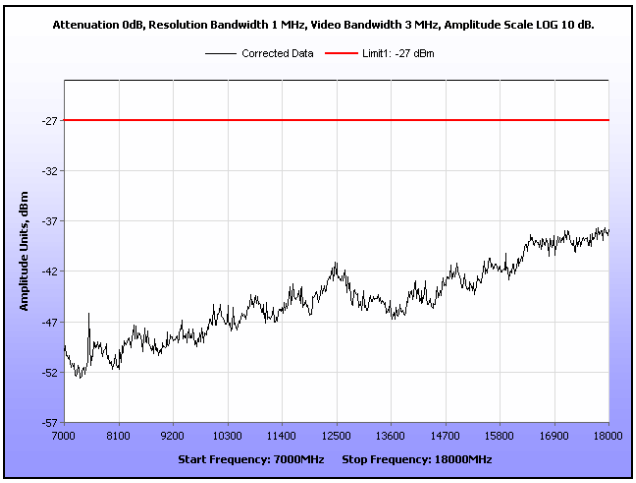
Radiated Spurious Emissions Test Results, 802.11n 40 MHz, MIMO



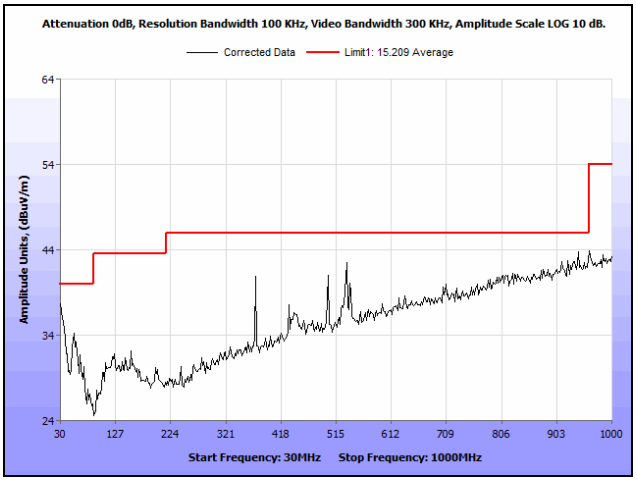
Plot 565. Radiated Spurious Emissions, Low Channel, 802.11n 40 MHz, 30 MHz – 1 GHz, MIMO



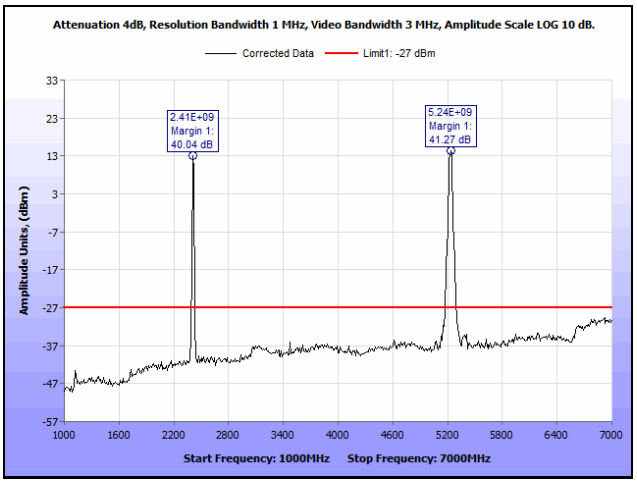
Plot 566. Radiated Spurious Emissions, Low Channel, 802.11n 40 MHz, 1 GHz – 7 GHz, Peak, MIMO



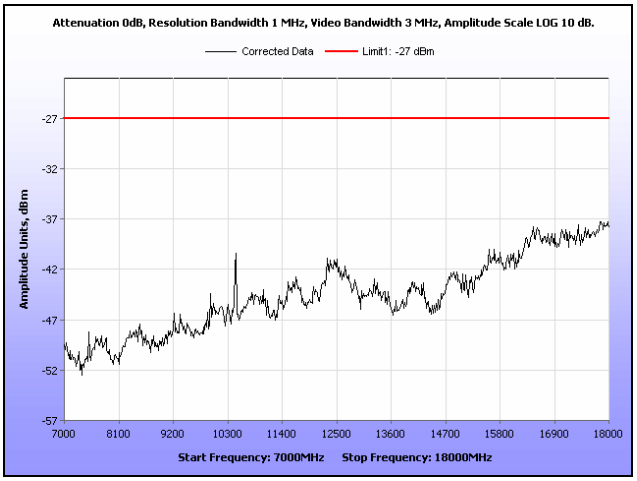
Plot 567. Radiated Spurious Emissions, Low Channel, 802.11n 40 MHz, 7 GHz – 18 GHz, MIMO



Plot 568. Radiated Spurious Emissions, High Channel, 802.11n 40 MHz, 30 MHz – 1 GHz, MIMO

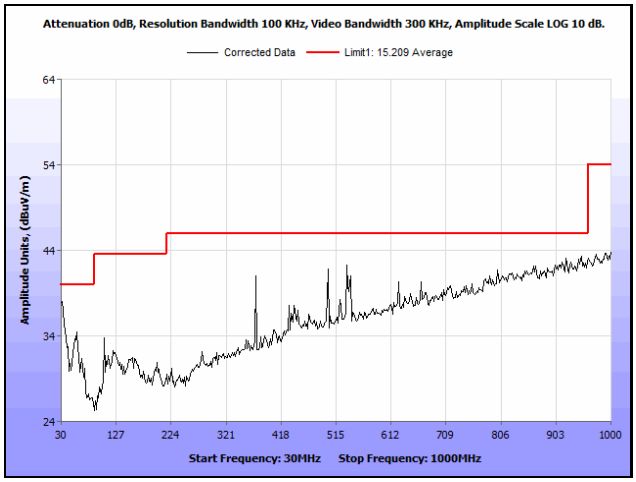


Plot 569. Radiated Spurious Emissions, High Channel, 802.11n 40 MHz, 1 GHz – 7 GHz, Peak, MIMO

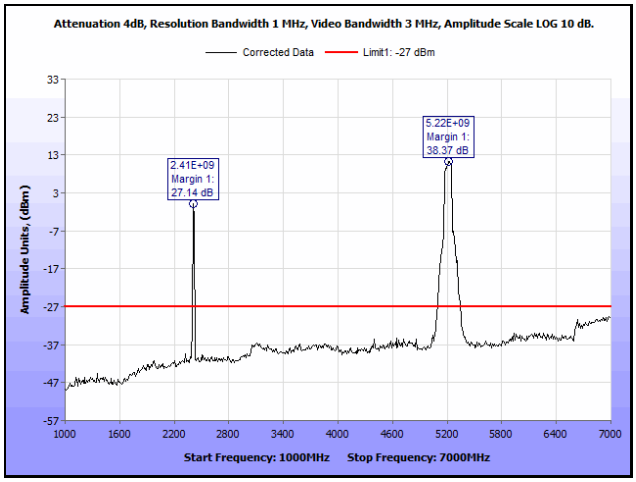


Plot 570. Radiated Spurious Emissions, High Channel, 802.11n 40 MHz, 7 GHz – 18 GHz, MIMO

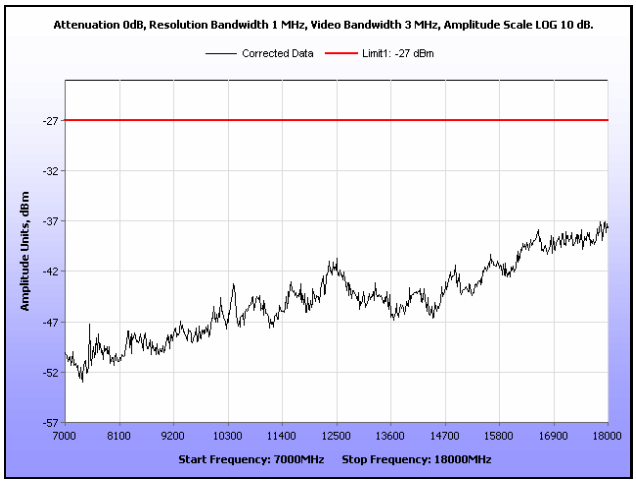
Radiated Spurious Emissions Test Results, 802.11a 80 MHz



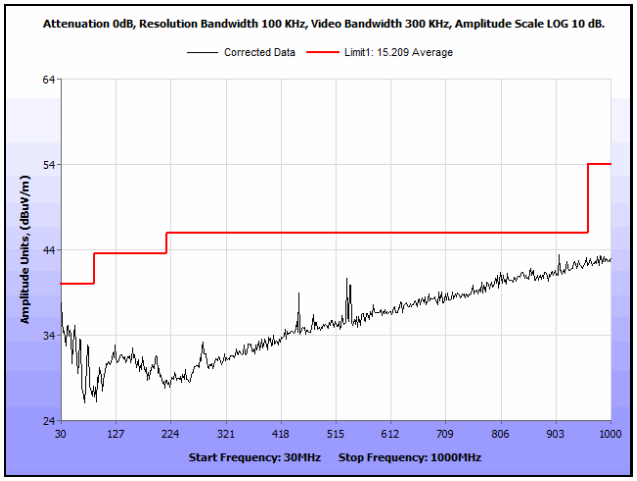
Plot 571. Radiated Spurious Emissions, 802.11a 80 MHz, Ant. 0, 30 MHz – 1 GHz



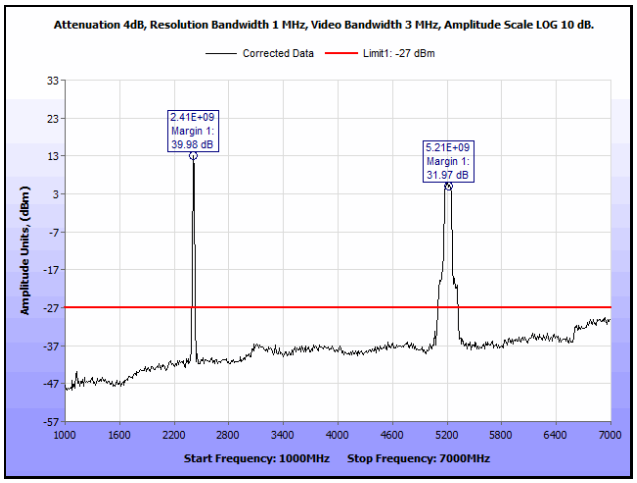
Plot 572. Radiated Spurious Emissions, 802.11a 80 MHz, Ant. 0, 1 GHz – 7 GHz



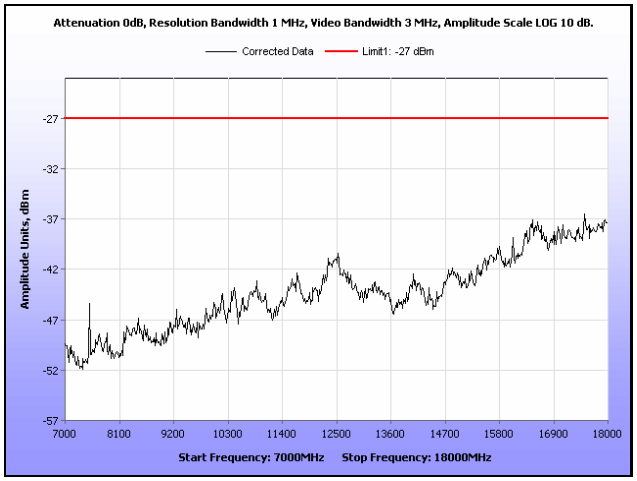
Plot 573. Radiated Spurious Emissions, 802.11a 80 MHz, Ant. 0, 7 GHz – 18 GHz



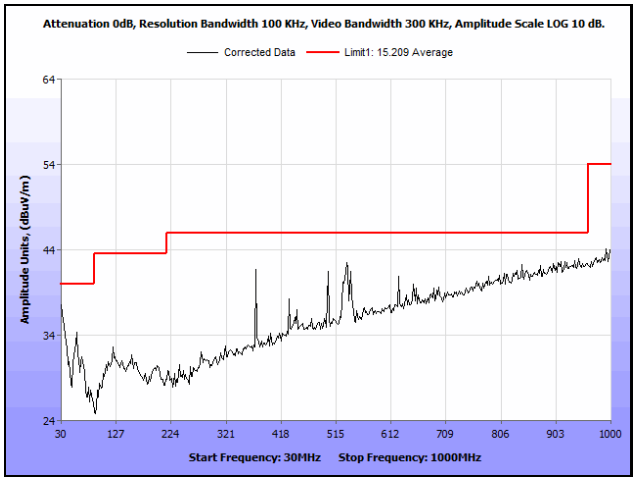
Plot 574. Radiated Spurious Emissions, 802.11a 80 MHz, Ant. 1, 30 MHz – 1 GHz



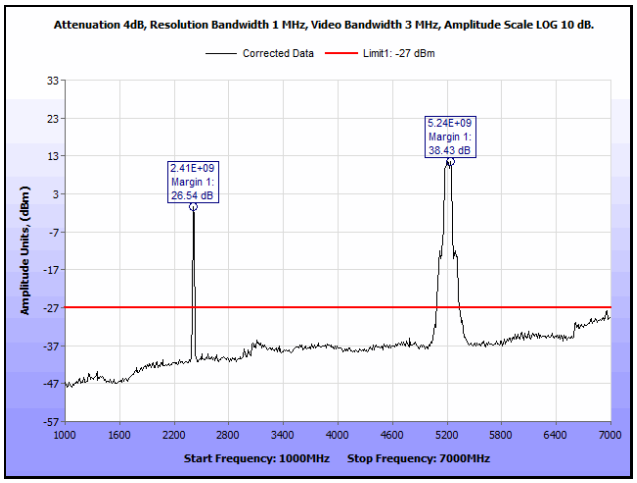
Plot 575. Radiated Spurious Emissions, 802.11a 80 MHz, Ant. 1, 1 GHz – 7 GHz



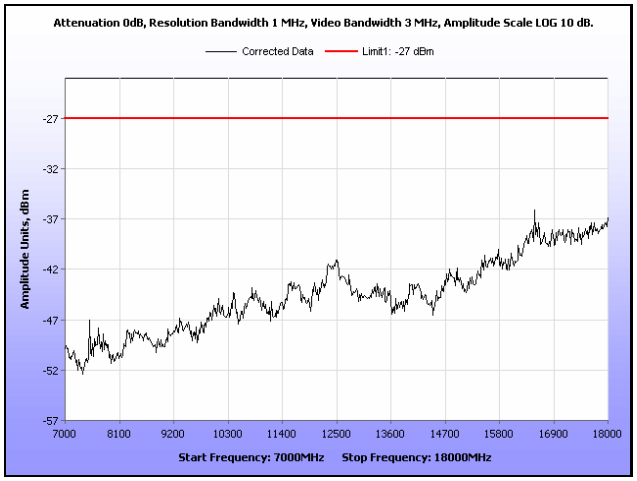
Plot 576. Radiated Spurious Emissions, 802.11a 80 MHz, Ant. 1, 7 GHz – 18 GHz



Plot 577. Radiated Spurious Emissions, 802.11a 80 MHz, Ant. 2, 30 MHz – 1 GHz

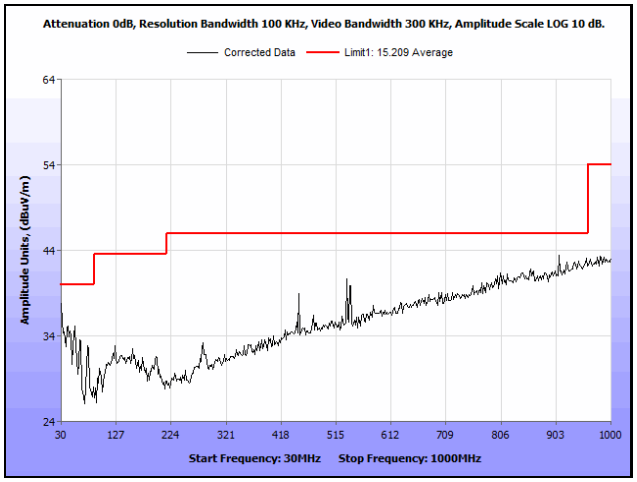


Plot 578. Radiated Spurious Emissions, 802.11a 80 MHz, Ant. 2, 1 GHz – 7 GHz

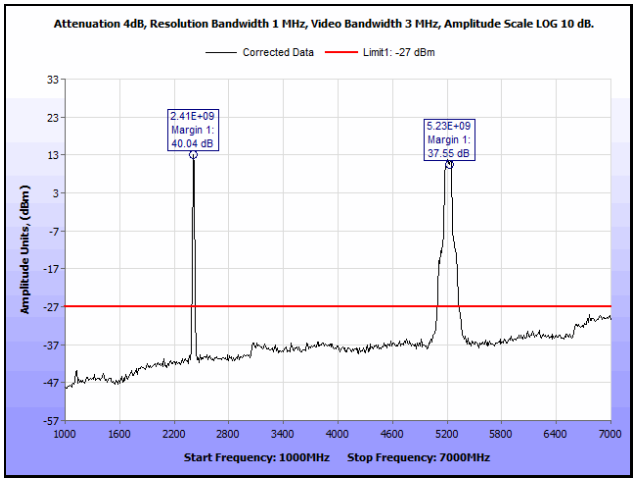


Plot 579. Radiated Spurious Emissions, 802.11a 80 MHz, Ant. 2, 7 GHz – 18 GHz

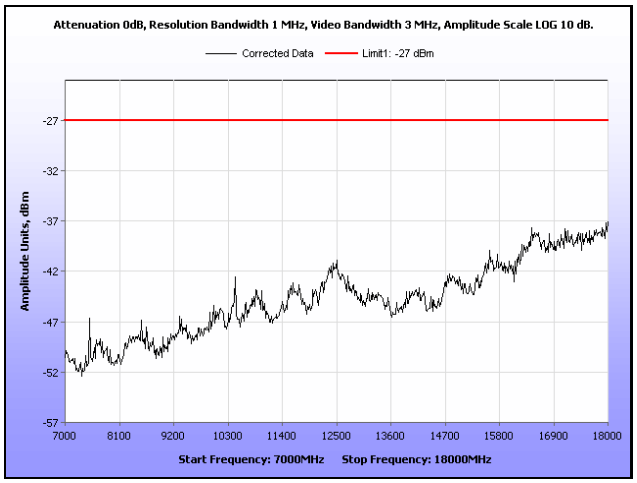
Radiated Spurious Emissions Test Results, 802.11ac 80 MHz



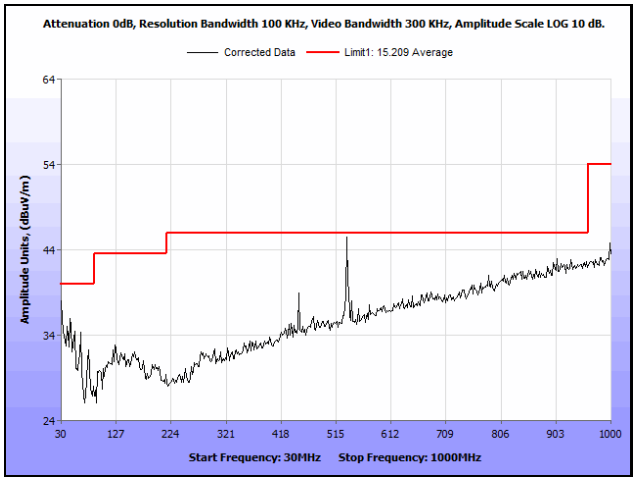
Plot 580. Radiated Spurious Emissions, 802.11ac 80 MHz, Ant. 0, 30 MHz – 1 GHz



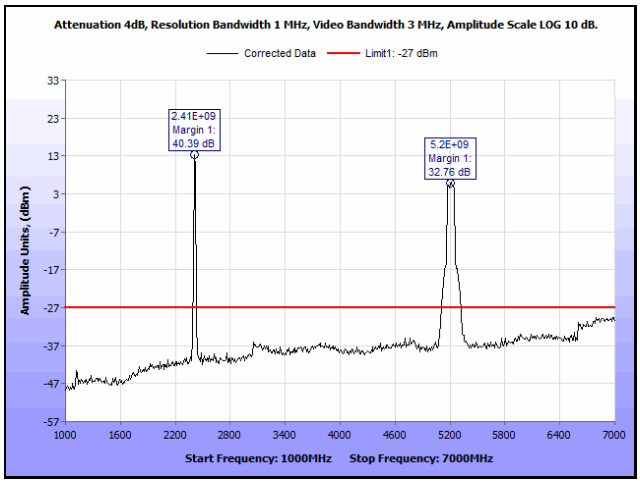
Plot 581. Radiated Spurious Emissions, 802.11ac 80 MHz, Ant. 0, 1 GHz – 7 GHz



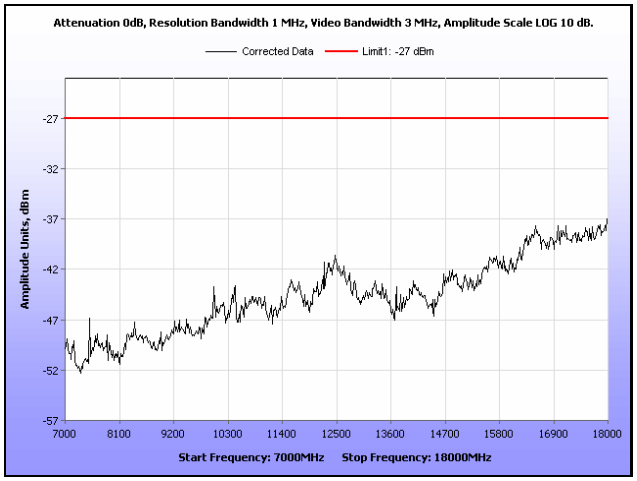
Plot 582. Radiated Spurious Emissions, 802.11ac 80 MHz, Ant. 0, 7 GHz – 18 GHz



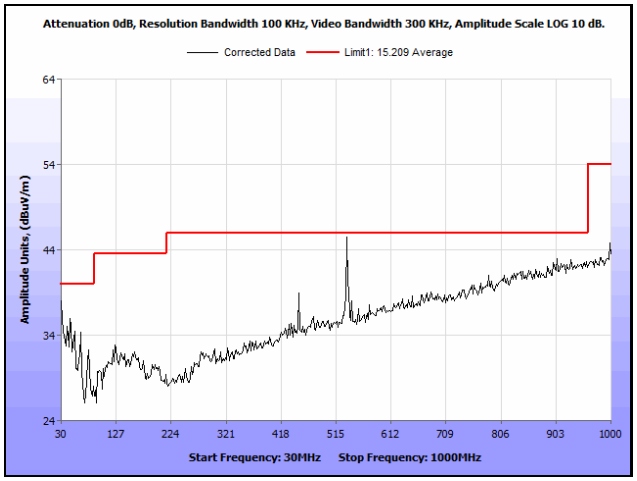
Plot 583. Radiated Spurious Emissions, 802.11ac 80 MHz, Ant. 1, 30 MHz – 1 GHz



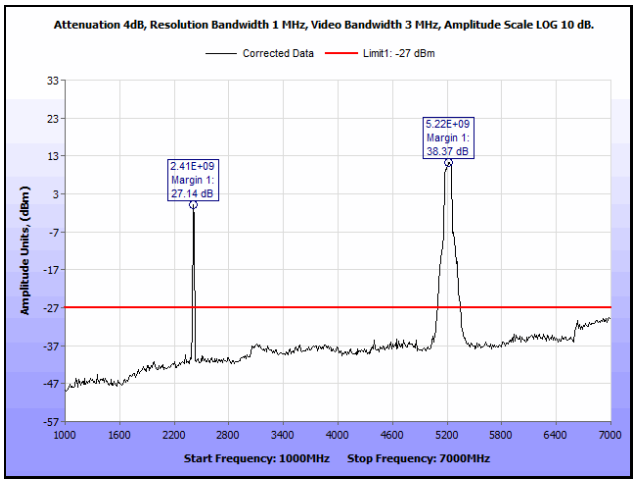
Plot 584. Radiated Spurious Emissions, 802.11ac 80 MHz, Ant. 1, 1 GHz – 7 GHz



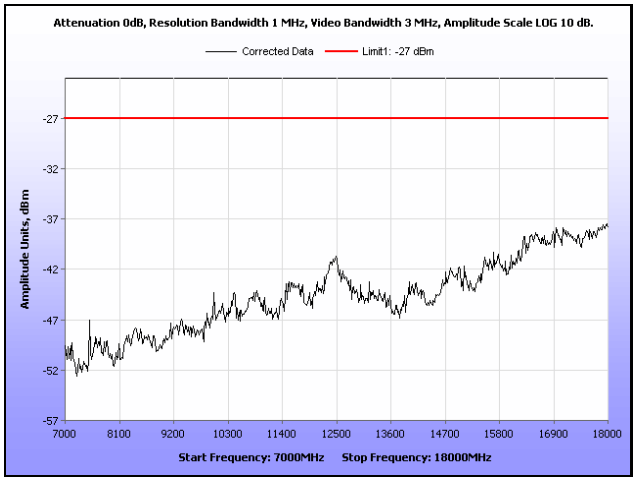
Plot 585. Radiated Spurious Emissions, 802.11ac 80 MHz, Ant. 1, 7 GHz – 18 GHz



Plot 586. Radiated Spurious Emissions, 802.11ac 80 MHz, Ant. 2, 30 MHz – 1 GHz

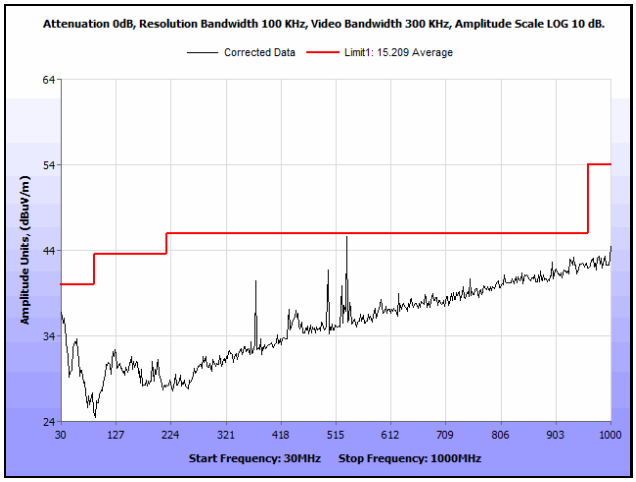


Plot 587. Radiated Spurious Emissions, 802.11ac 80 MHz, Ant. 2, 1 GHz – 7 GHz

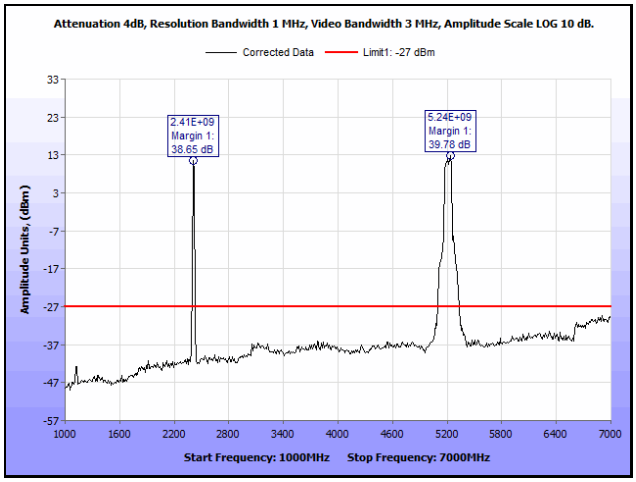


Plot 588. Radiated Spurious Emissions, 802.11ac 80 MHz, Ant. 2, 7 GHz – 18 GHz

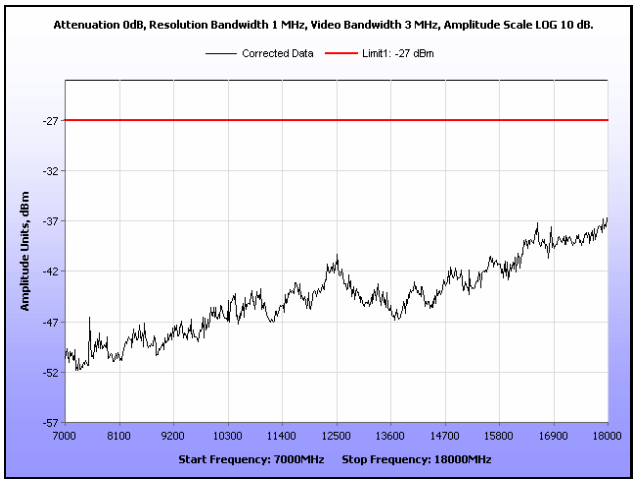
Radiated Spurious Emissions Test Results, 802.11ac 80 MHz, MIMO



Plot 589. Radiated Spurious Emissions, 802.11ac 80 MHz, 30 MHz – 1 GHz, MIMO

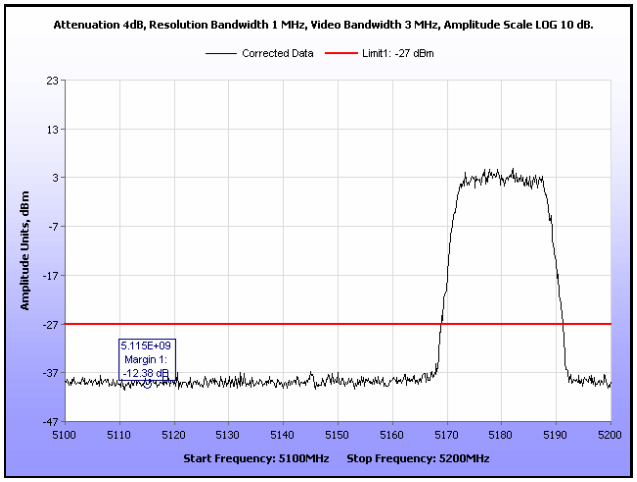


Plot 590. Radiated Spurious Emissions, 802.11ac 80 MHz, 1 GHz – 7 GHz, Peak

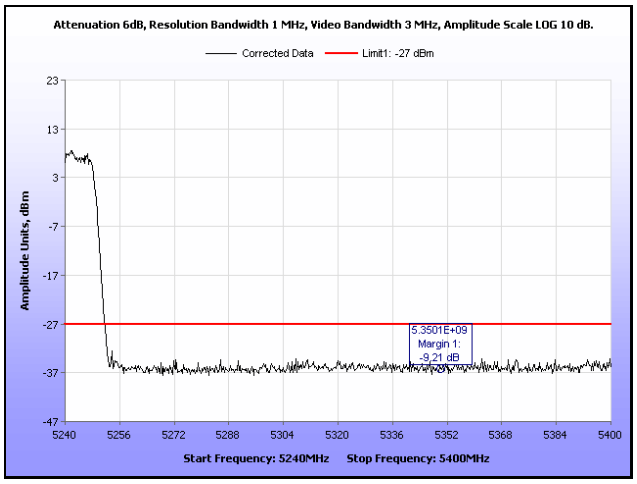


Plot 591. Radiated Spurious Emissions, 802.11ac 80 MHz, 7 GHz – 18 GHz, MIMO

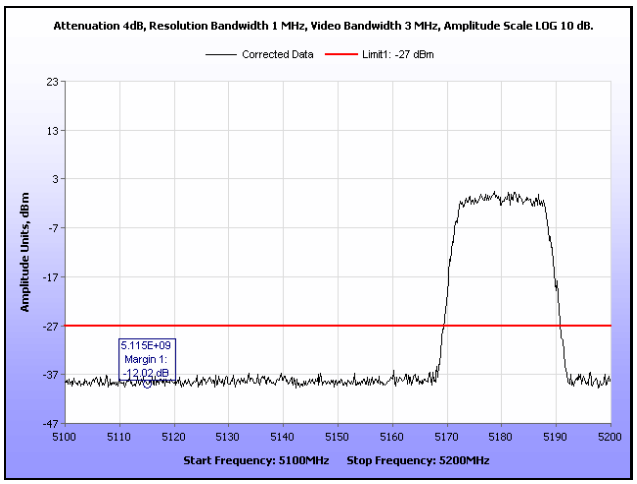
Radiated Band Edge, 802.11a 20 MHz



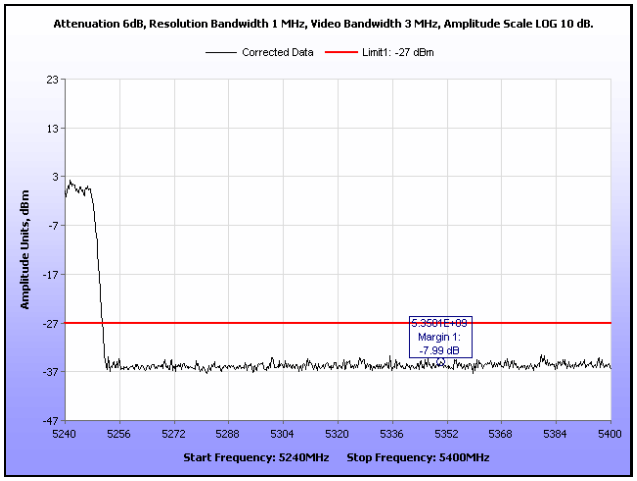
Plot 592. Radiated Band Edge, 802.11a 20 MHz, Low Channel, Ant. 0



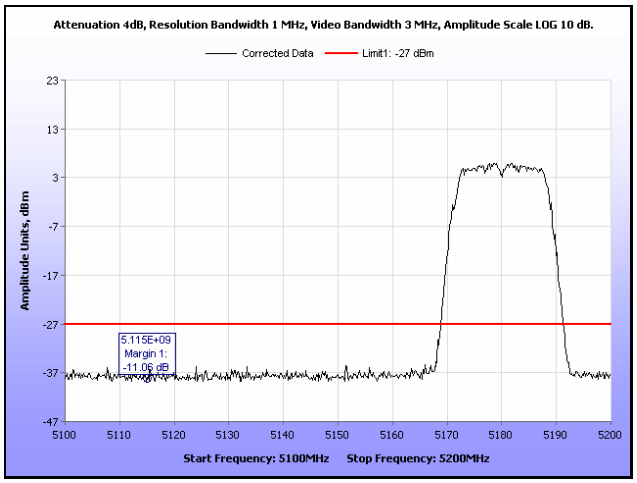
Plot 593. Radiated Band Edge, 802.11a 20 MHz, High Channel, Ant. 0



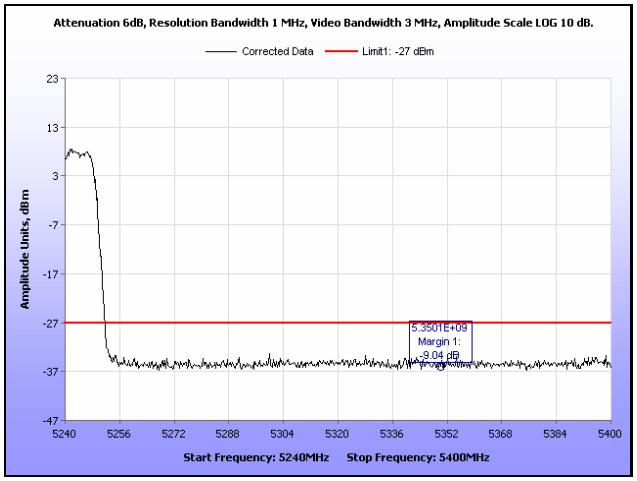
Plot 594. Radiated Band Edge, 802.11a 20 MHz, Low Channel, Ant. 1



Plot 595. Radiated Band Edge, 802.11a 20 MHz, High Channel, Ant. 1

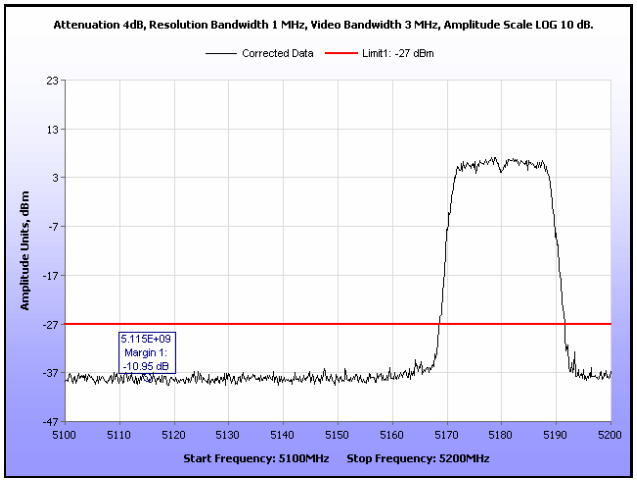


Plot 596. Radiated Band Edge, 802.11a 20 MHz, Low Channel, Ant. 2

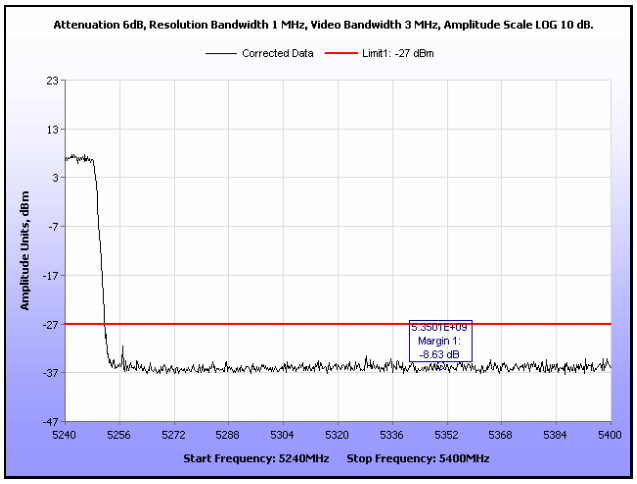


Plot 597. Radiated Band Edge, 802.11a 20 MHz, High Channel, Ant. 2

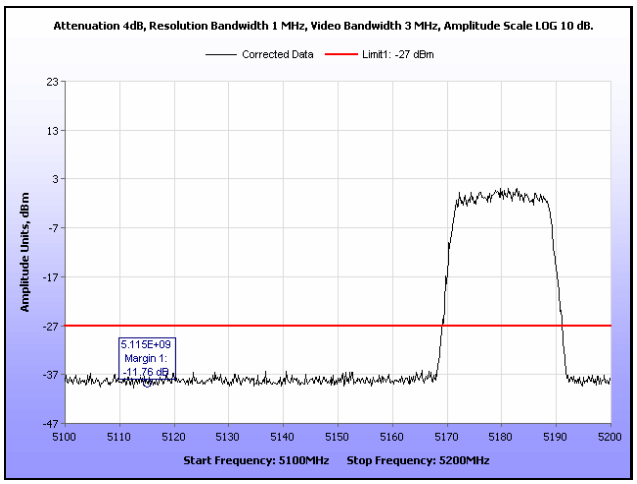
Radiated Band Edge, 802.11ac 20 MHz



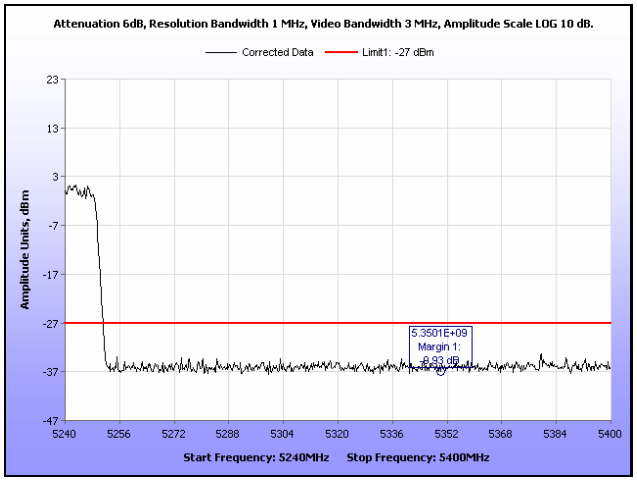
Plot 598. Radiated Band Edge, 802.11ac 20 MHz, Low Channel, Ant. 0



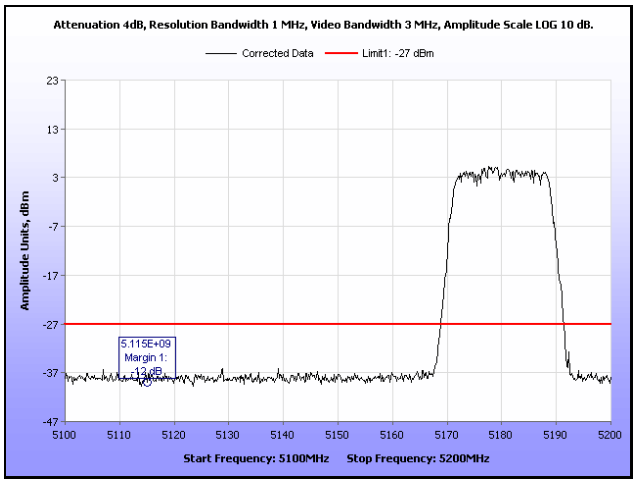
Plot 599. Radiated Band Edge, 802.11ac 20 MHz, High Channel, Ant. 0



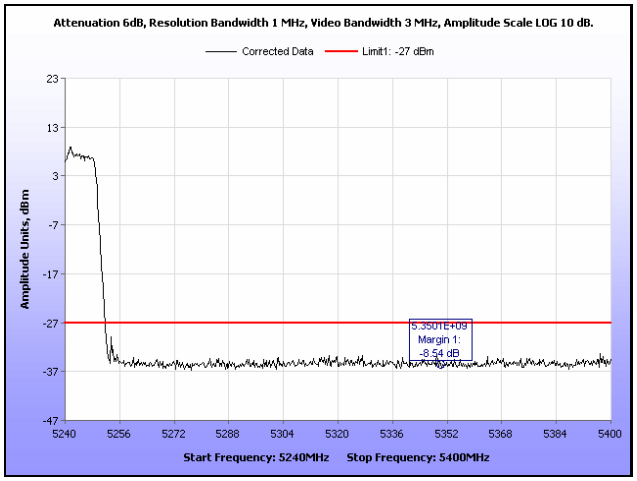
Plot 600. Radiated Band Edge, 802.11ac 20 MHz, Low Channel, Ant. 1



Plot 601. Radiated Band Edge, 802.11ac 20 MHz, High Channel, Ant. 1

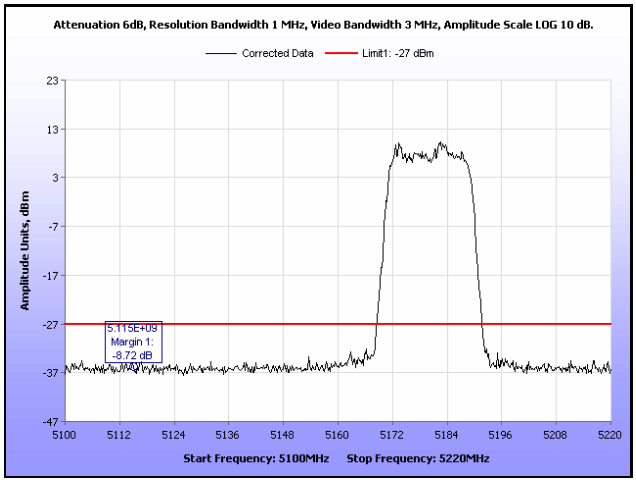


Plot 602. Radiated Band Edge, 802.11ac 20 MHz, Low Channel, Ant. 2

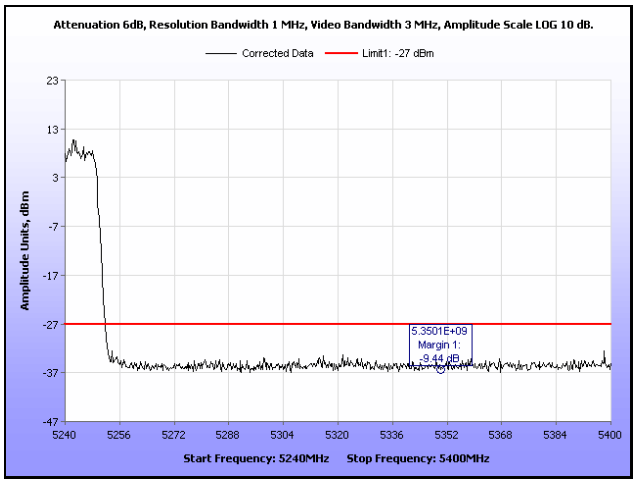


Plot 603. Radiated Band Edge, 802.11ac 20 MHz, High Channel, Ant. 2

Radiated Band Edge, 802.11ac 20 MHz, MIMO

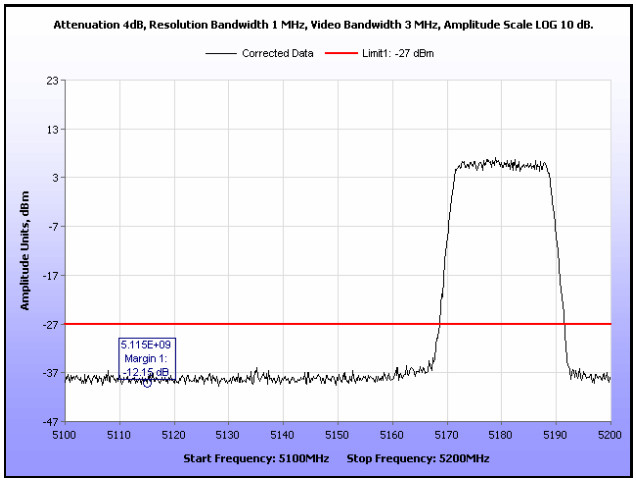


Plot 604. Radiated Band Edge, 802.11ac 20 MHz, Low Channel, MIMO

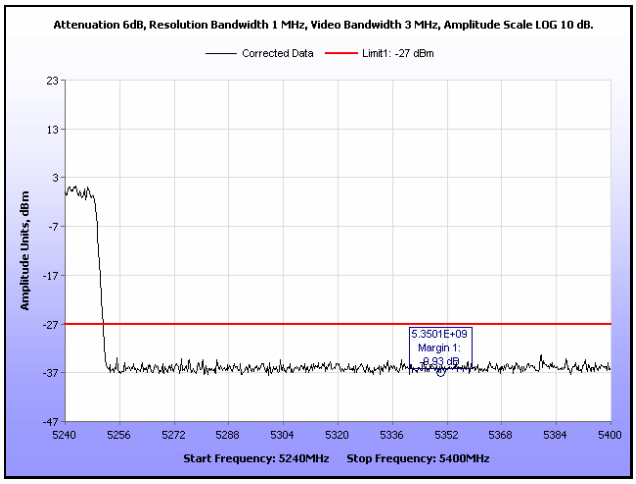


Plot 605. Radiated Band Edge, 802.11ac 20 MHz, High Channel, MIMO

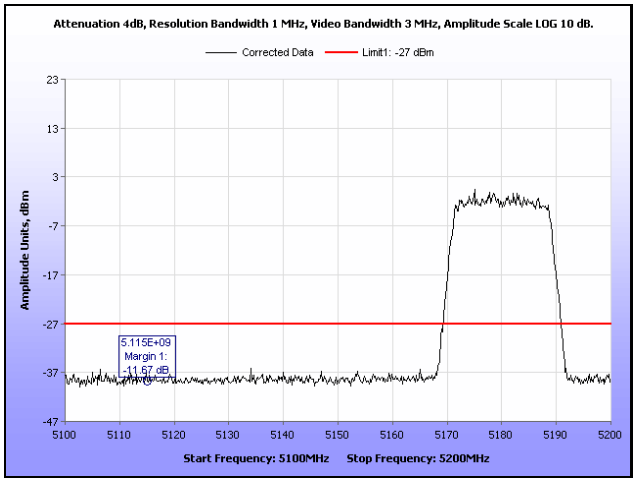
Radiated Band Edge, 802.11n 20 MHz



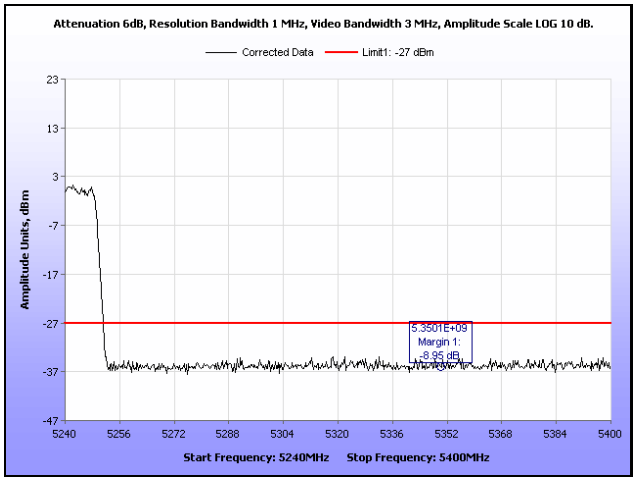
Plot 606. Radiated Band Edge, 802.11n 20 MHz, Low Channel, Ant. 0



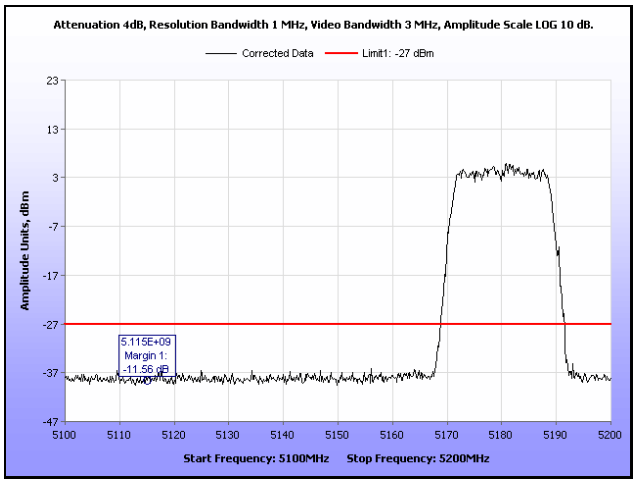
Plot 607. Radiated Band Edge, 802.11n 20 MHz, High Channel, Ant. 0



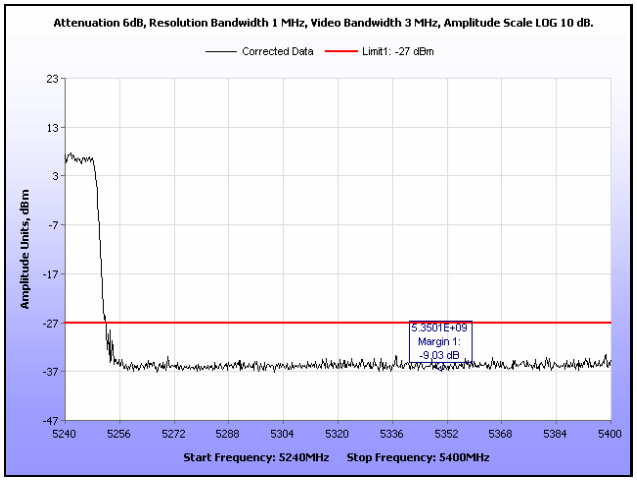
Plot 608. Radiated Band Edge, 802.11n 20 MHz, Low Channel, Ant. 1



Plot 609. Radiated Band Edge, 802.11n 20 MHz, High Channel, Ant. 1

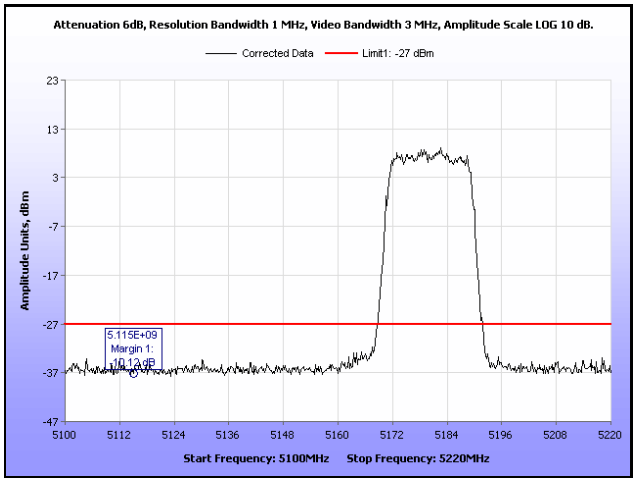


Plot 610. Radiated Band Edge, 802.11n 20 MHz, Low Channel, Ant. 2

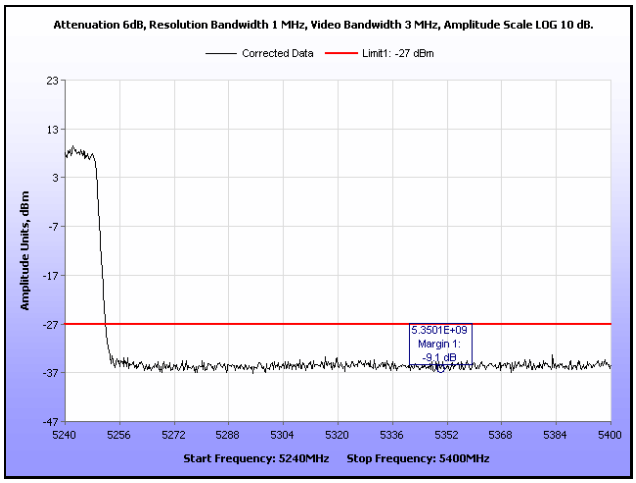


Plot 611. Radiated Band Edge, 802.11n 20 MHz, High Channel, Ant. 2

Radiated Band Edge, 802.11n 20 MHz, MIMO

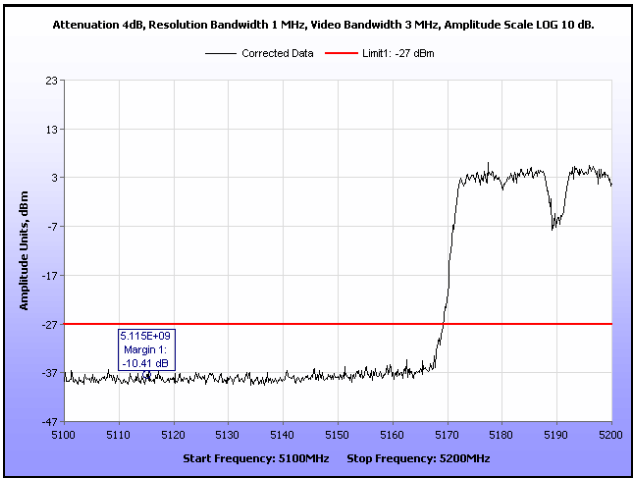


Plot 612. Radiated Band Edge, 802.11n 20 MHz, Low Channel, MIMO

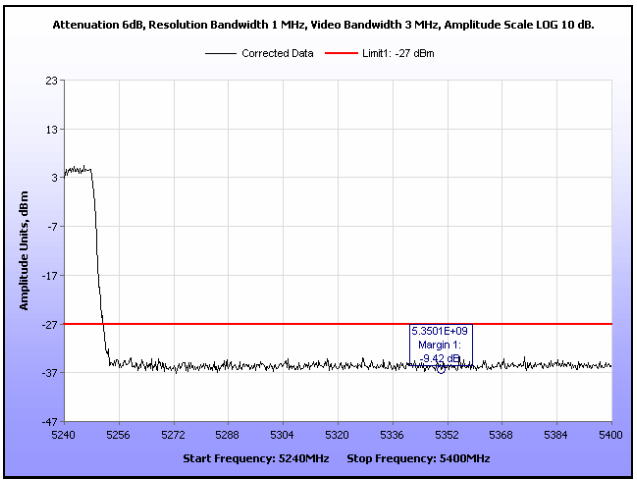


Plot 613. Radiated Band Edge, 802.11n 20 MHz, High Channel, MIMO

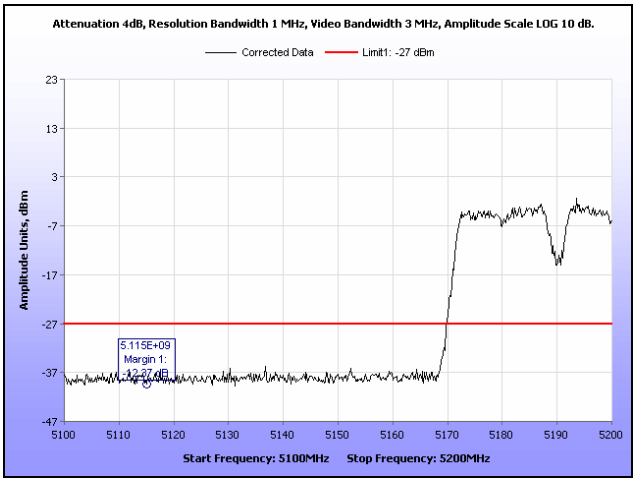
Radiated Band Edge, 802.11a 40 MHz



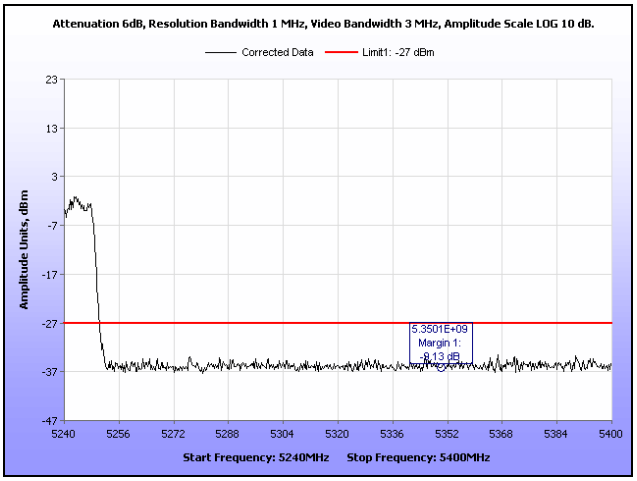
Plot 614. Radiated Band Edge, 802.11a 40 MHz, Low Channel, Ant. 0



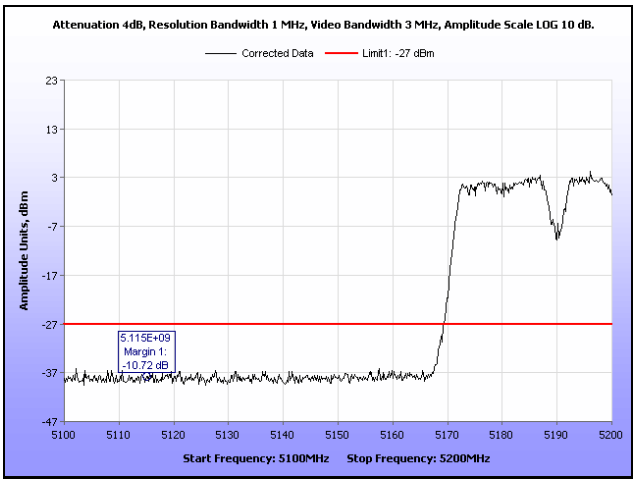
Plot 615. Radiated Band Edge, 802.11a 40 MHz, High Channel, Ant. 0



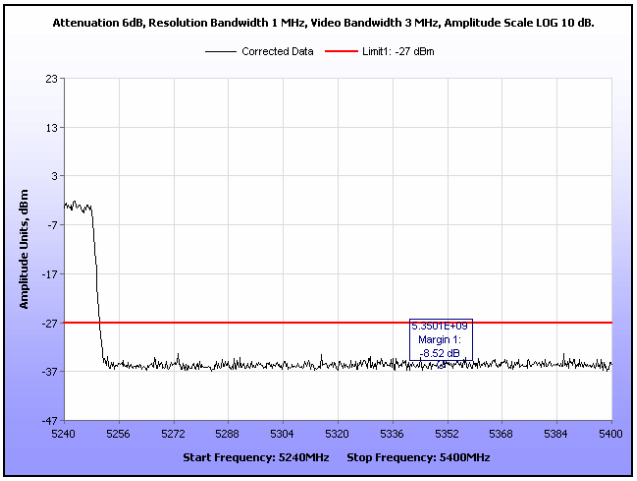
Plot 616. Radiated Band Edge, 802.11a 40 MHz, Low Channel, Ant. 1



Plot 617. Radiated Band Edge, 802.11a 40 MHz, High Channel, Ant. 1

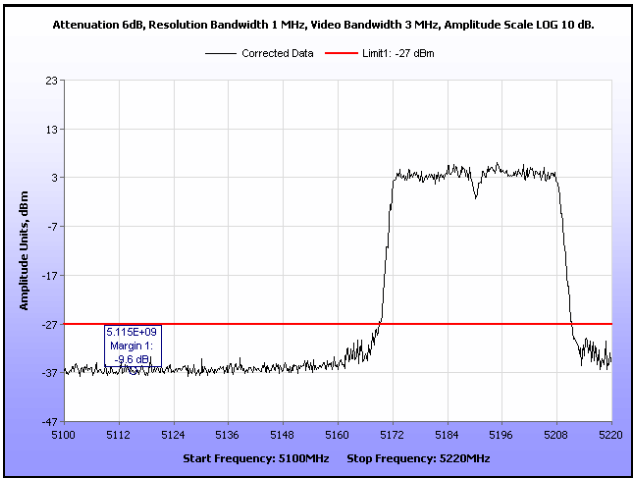


Plot 618. Radiated Band Edge, 802.11a 40 MHz, Low Channel, Ant. 2

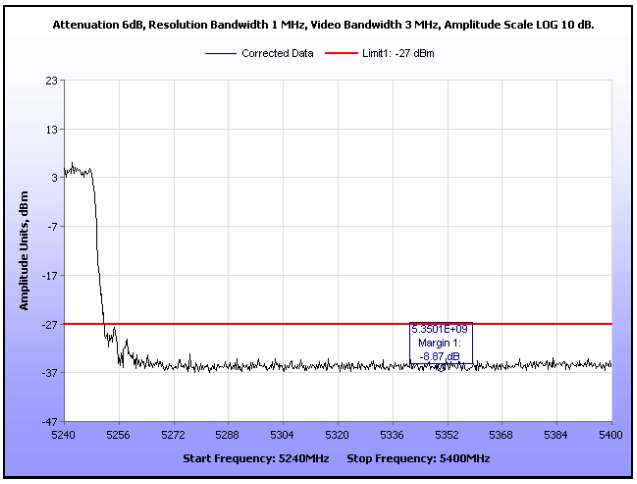


Plot 619. Radiated Band Edge, 802.11a 40 MHz, High Channel, Ant. 2

Radiated Band Edge, 802.11ac 40 MHz, MIMO

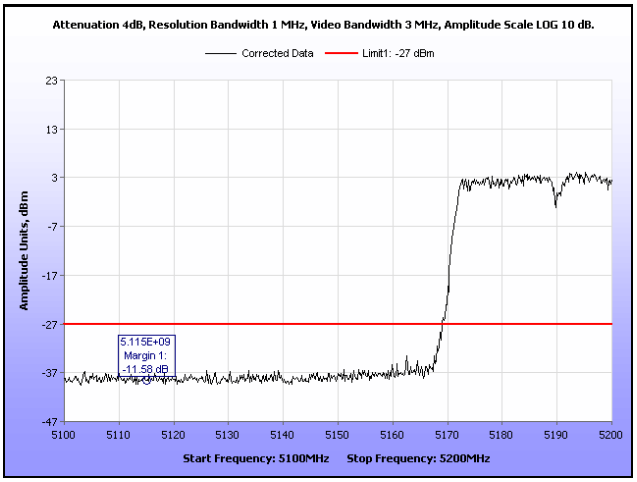


Plot 620. Radiated Band Edge, 802.11ac 40 MHz, Low Channel, MIMO

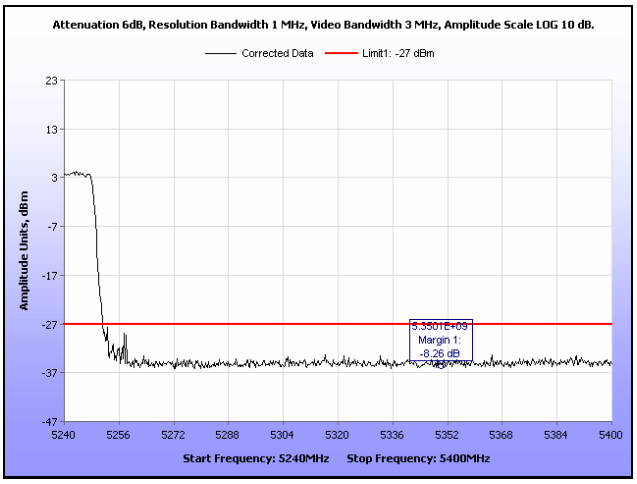


Plot 621. Radiated Band Edge, 802.11ac 40 MHz, High Channel, MIMO

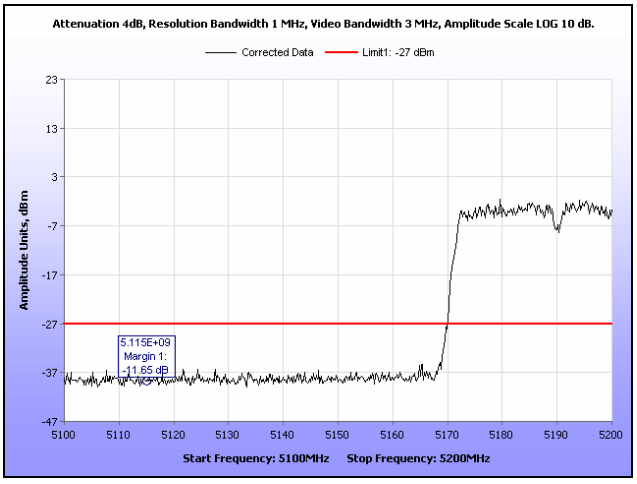
Radiated Band Edge, 802.11n 40 MHz



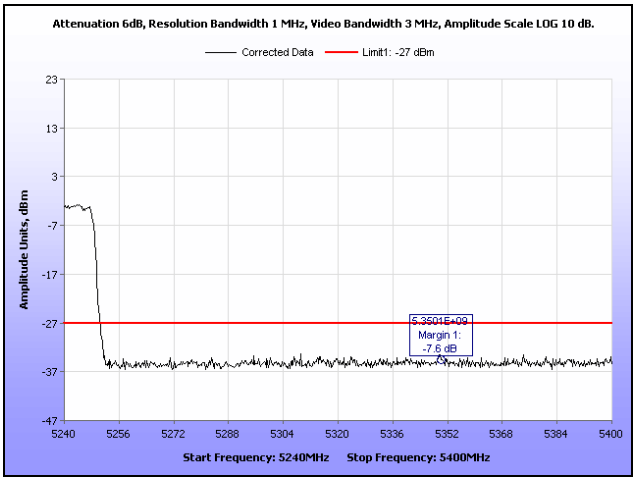
Plot 622. Radiated Band Edge, 802.11n 40 MHz, Low Channel, Ant. 0



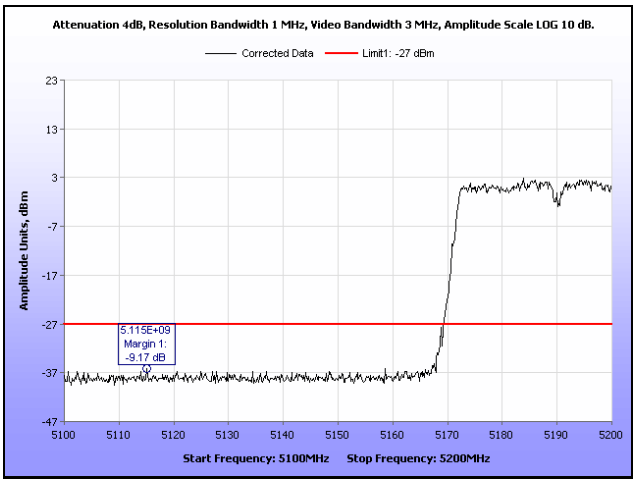
Plot 623. Radiated Band Edge, 802.11n 40 MHz, High Channel, Ant. 0



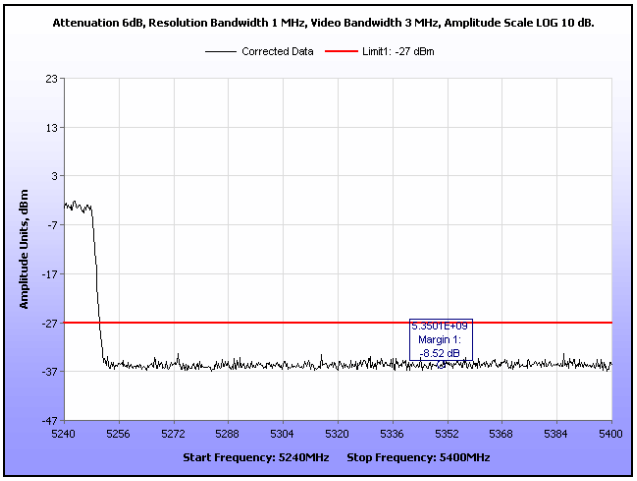
Plot 624. Radiated Band Edge, 802.11n 40 MHz, Low Channel, Ant. 1



Plot 625. Radiated Band Edge, 802.11n 40 MHz, High Channel, Ant. 1

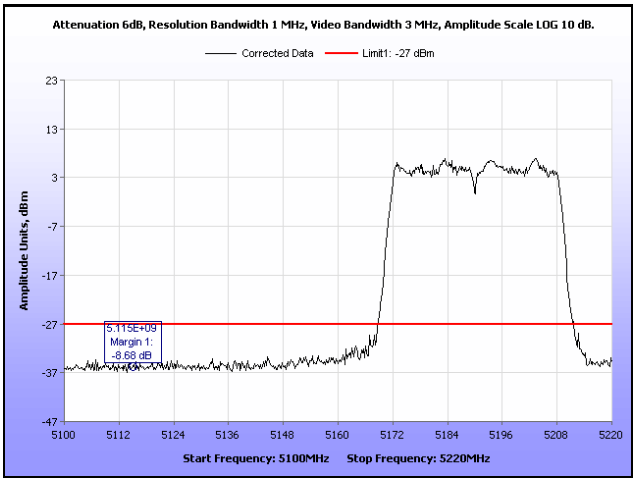


Plot 626. Radiated Band Edge, 802.11n 40 MHz, Low Channel, Ant. 2

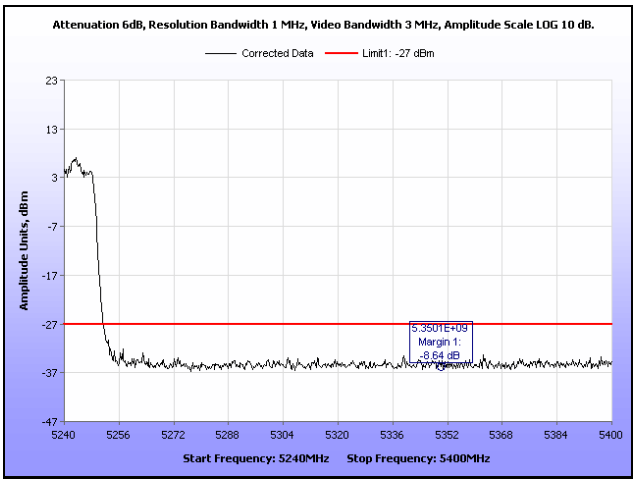


Plot 627. Radiated Band Edge, 802.11n 40 MHz, High Channel, Ant. 2

Radiated Band Edge, 802.11n 40 MHz, MIMO

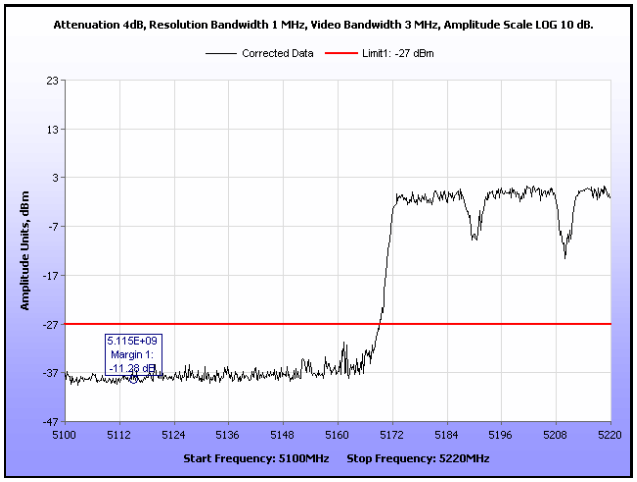


Plot 628. Radiated Band Edge, 802.11n 40 MHz, Low Channel, MIMO

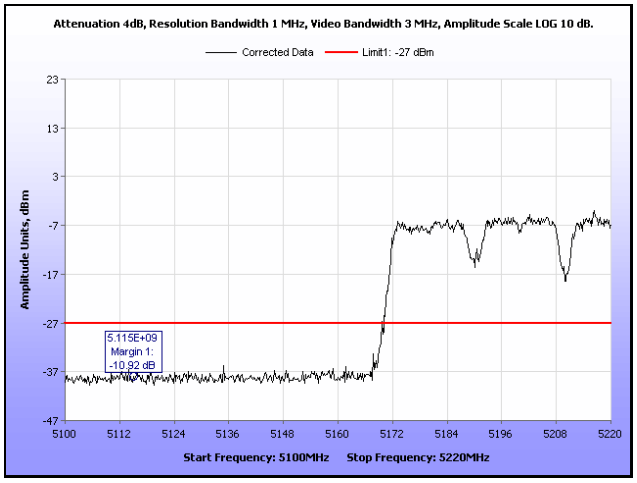


Plot 629. Radiated Band Edge, 802.11n 40 MHz, High Channel, MIMO

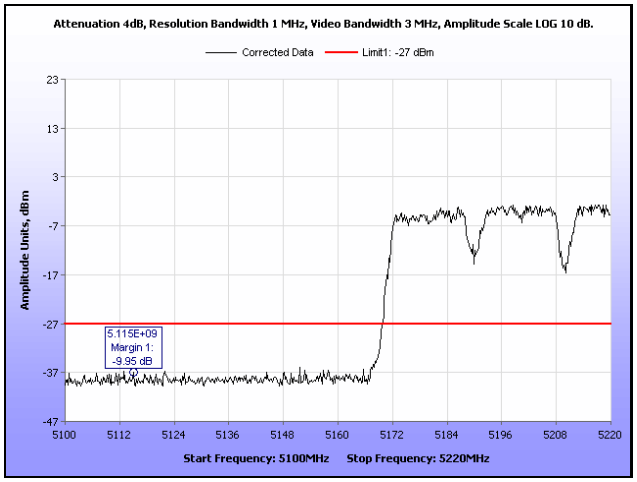
Radiated Band Edge, 802.11a 80 MHz



Plot 630. Radiated Band Edge, 802.11a 80 MHz, Ant. 0

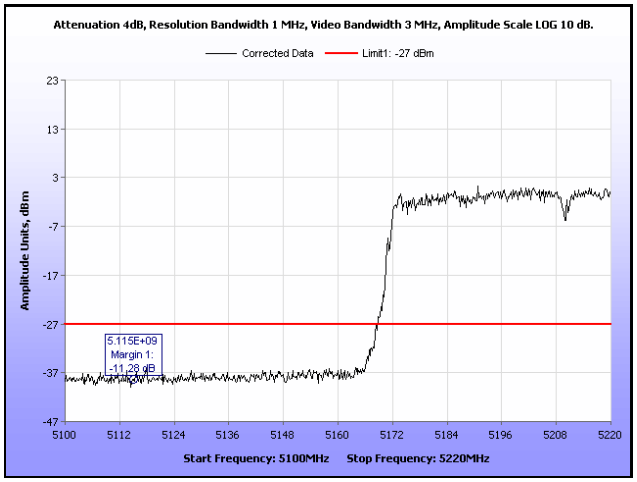


Plot 631. Radiated Band Edge, 802.11a 80 MHz, Ant. 1

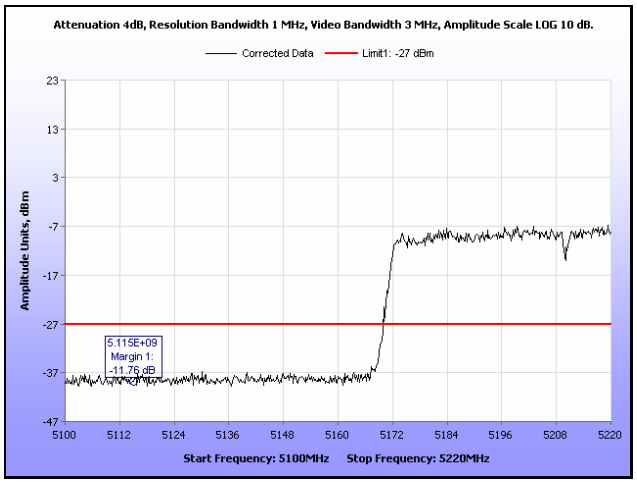


Plot 632. Radiated Band Edge, 802.11a 80 MHz, Ant. 2

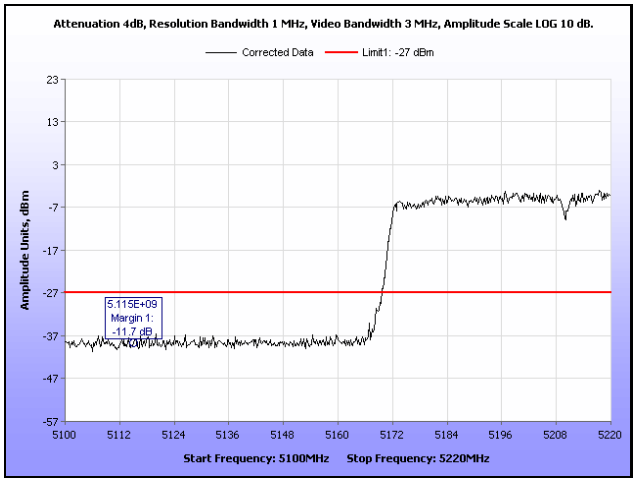
Radiated Band Edge, 802.11ac 80 MHz



Plot 633. Radiated Band Edge, 802.11ac 80 MHz, Ant. 0

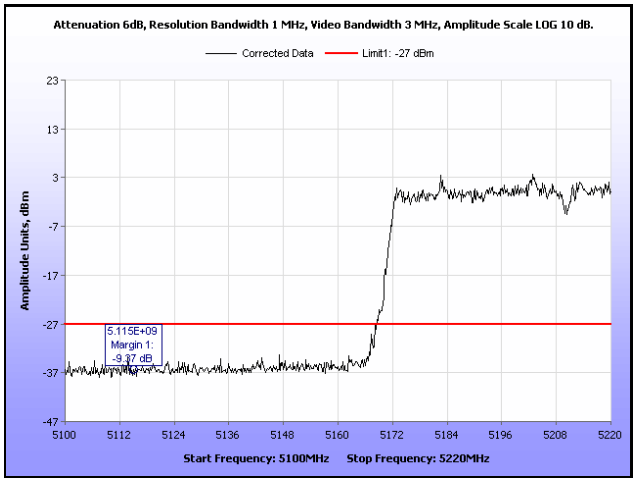


Plot 634. Radiated Band Edge, 802.11ac 80 MHz, Ant. 1



Plot 635. Radiated Band Edge, 802.11ac 80 MHz, Ant. 2

Radiated Band Edge, 802.11ac 80 MHz, MIMO



Plot 636. Radiated Band Edge, 802.11ac 80 MHz, MIMO

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(f) RF Exposure

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.

Peak Conducted Power = 16.96dBm =49.65mW

Antenna Array gain = 8.21 dBi = 6.62

The limit for maximum RF exposure for 5.8GHz device is 1mW/cm^2

The formula for calculating RF exposure is given as $S= \frac{PG}{4\pi R^2}$

P=49.65mW, G= 2.4 & R=20cm, then S = 0.023mW/cm^2 which was under the limit specified in 1.1310

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(g) Frequency Stability

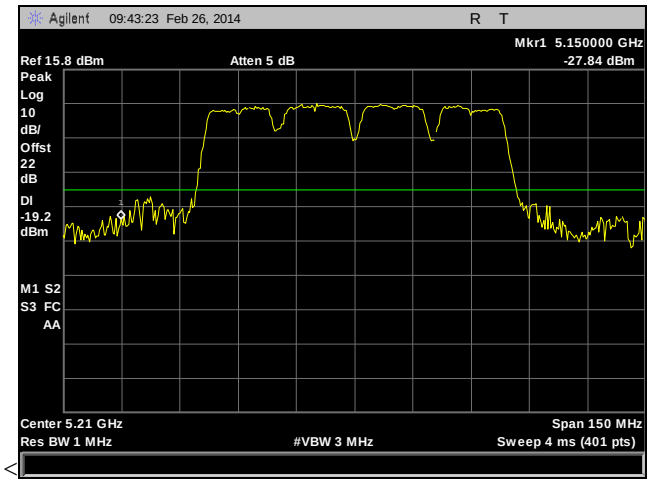
Test Requirements: **§ 15.407(g):** Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

Test Procedure: The EUT was connected directly to a spectrum analyzer through an attenuator. The resolution band width of the spectrum analyzer was set to 1 MHz. The 26dB display line from peak value of the carrier was used to show that all emissions were suppressed below that display line outside the band.

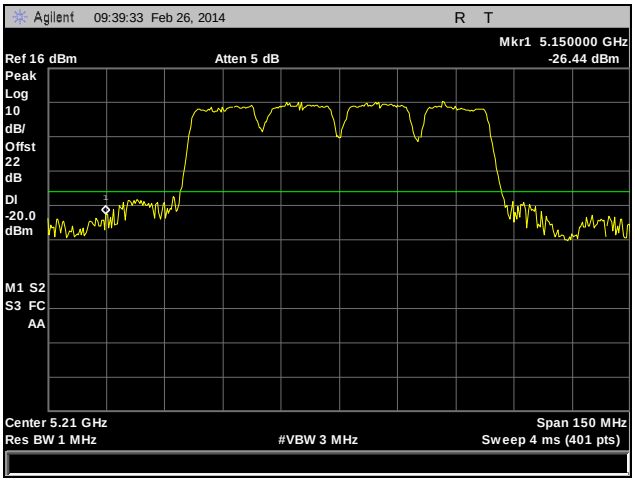
Test Results: The EUT was compliant with the requirements of **§15.407(g)**.

Test Engineer(s): Surinder Singh

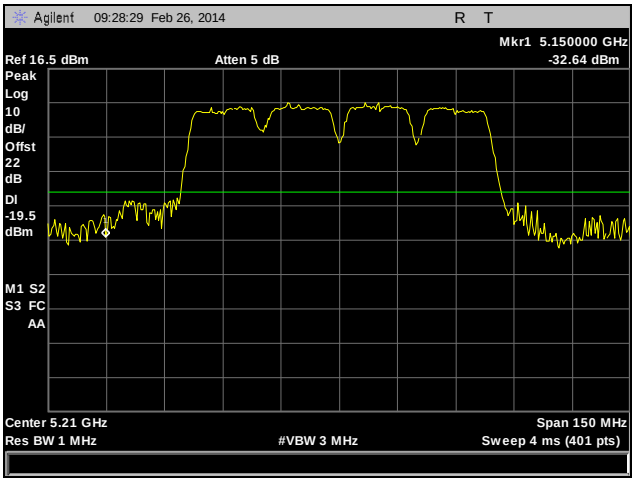
Test Date(s): 02/27/14



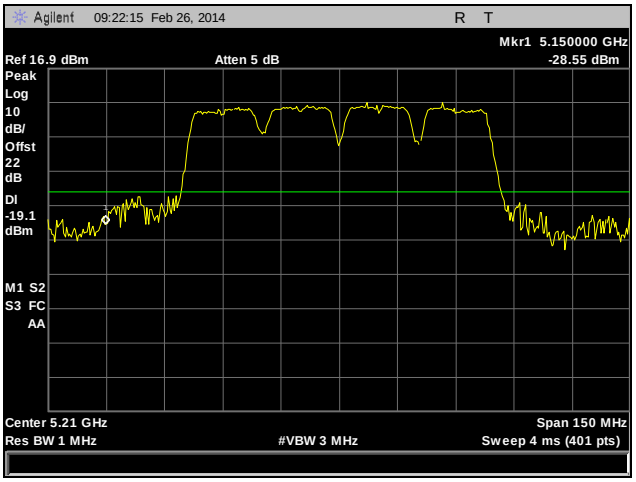
Plot 637. Frequency Stability, -20°C, 80 MHz Band, Center, 5210 MHz, 120V



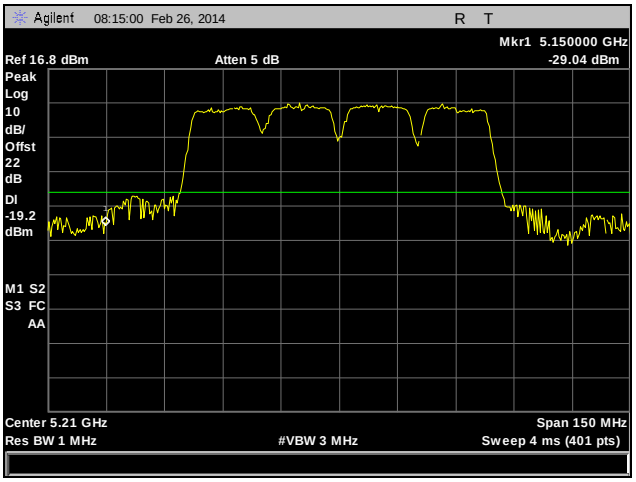
Plot 638. Frequency Stability, -10°C, 80 MHz Band, Center, 5210 MHz, 120V



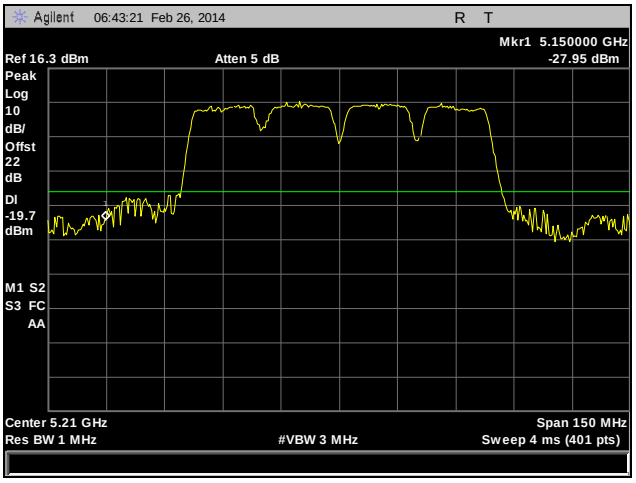
Plot 639. Frequency Stability, 0°C, 80 MHz Band, Center, 5210 MHz, 120V



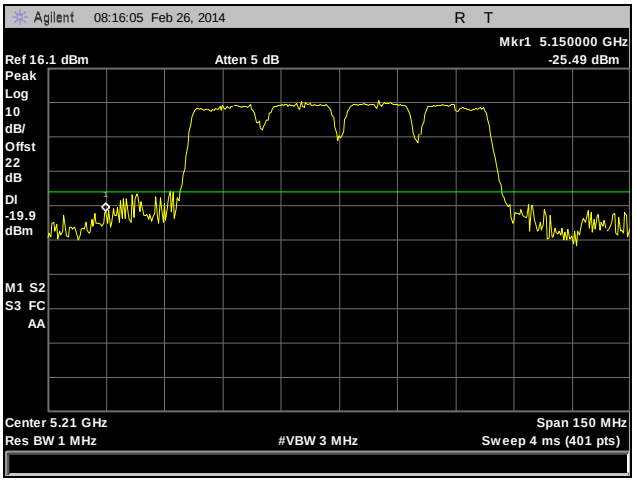
Plot 640. Frequency Stability, 10°C, 80 MHz Band, Center, 5210 MHz, 120V



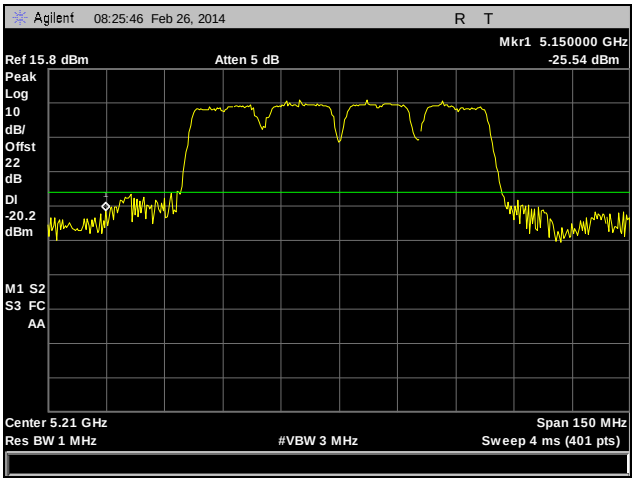
Plot 641. Frequency Stability, 20°C, 80 MHz Band, Center, 5210 MHz, 108V



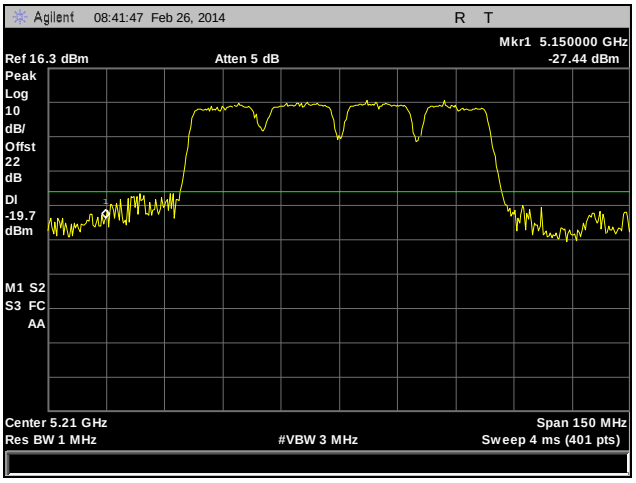
Plot 642. Frequency Stability, 20°C, 80 MHz Band, Center, 5210 MHz, 120V



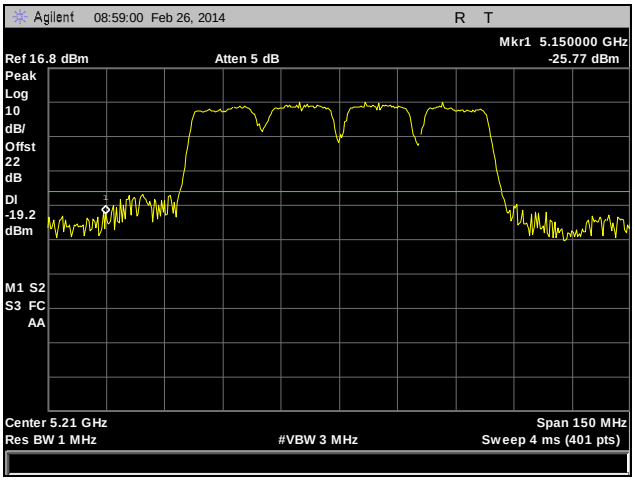
Plot 643. Frequency Stability, 20°C, 80 MHz Band, Center, 5210 MHz, 132V



Plot 644. Frequency Stability, 30°C, 80 MHz Band, Center, 5210 MHz, 120V



Plot 645. Frequency Stability, 40°C, 80 MHz Band, Center, 5210 MHz, 120V



Plot 646. Frequency Stability, 55°C, 80 MHz Band, Center, 5210 MHz, 120V

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.

Asset	Equipment	Manufacturer	Model Number	Cal Date	Cal Due
1T4409	EMI RECEIVER	ROHDE & SCHWARZ	ESIB7	7/16/2012	7/16/2014
1T4818	COMB GENERATOR	COM-POWER	CGO-520	SEE NOTE	
1T4787	HYGROMETER / THERMOMETER / BAROMETER / DEW POINT PEN	CONTROL COMPANY	15-078-198, FB70423, 245CD	2/15/2012	2/15/2014
1T4483	ANTENNA; HORN	EMCO	3115	9/5/2012	3/5/2014
1T4300C	SEMI-ANECHOIC 3M CHAMBER # 1 (VCCI)	EMC TEST SYSTEMS	NONE	1/31/2012	1/31/2015
1T4612	SPECTRUM ANALYZER	AGILENT TECHNOLOGIES	E4407B	7/30/2013	7/30/2014

Table 119. 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

A. 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.[1] *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.

[1] 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.

ICES-003 Procedural & Labeling Requirements

From the Industry Canada Electromagnetic Compatibility Advisory Bulletin entitled, "Implementation and Interpretation of the Interference-Causing Equipment Standard for Digital Apparatus, ICES-003" (EMCAB-3, Issue 2, July 1995):

> "At present, CISPR 22: 2002 and ICES technical requirements are essentially equivalent. Therefore, if you have CISPR 22: 2002 approval by meeting CISPR Publication 22, the only additional requirements are: to attach a note to the report of the test results for compliance, indicating that these results are deemed satisfactory evidence of compliance with ICES-003 of the Canadian Interference-Causing Equipment Regulations; to maintain these records on file for the requisite five year period; and to provide the device with a notice of compliance in accordance with ICES-003."

Procedural Requirements:

According to Industry Canada's Interference Causing Equipment Standard for Digital Apparatus ICES-003 Issue 5 August 2012:

Section 6.1: A record of the measurements and results, showing the date that the measurements were completed, shall be retained by the manufacturer or importer for a period of at least five years from the date shown in the record and made available for examination on the request of the Minister.

Section 6.2: A written notice indicating compliance must accompany each unit of digital apparatus to the end user. The notice shall be in the form of a label that is affixed to the apparatus. Where because of insufficient space or other constraints it is not feasible to affix a label to the apparatus, the notice may be in the form of a statement in the users' manual.

Labeling Requirements:

The suggested text for the notice, in English and in French, is provided below, from the Annex of ICES-003:

> This Class [2] digital apparatus complies with Canadian ICES-003.
>
> Cet appareil numérique de la classe [1] est conforme à la norme NMB-003 du Canada.

[2] Insert either A or B but not both as appropriate for the equipment requirements.

End of Report

