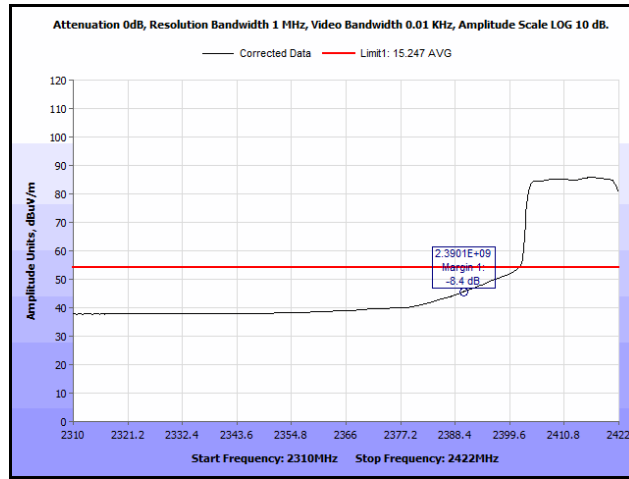
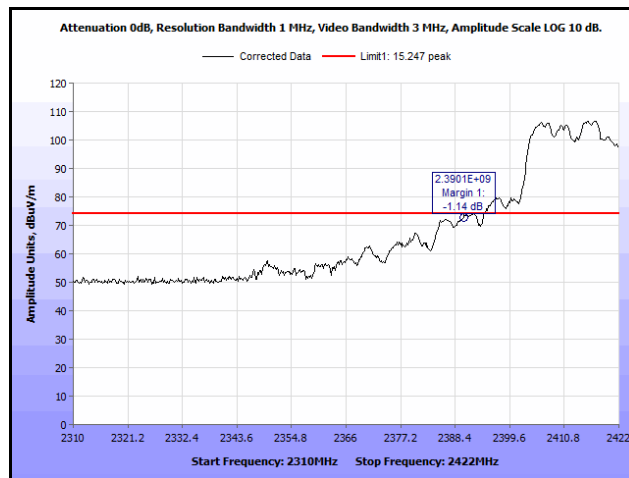


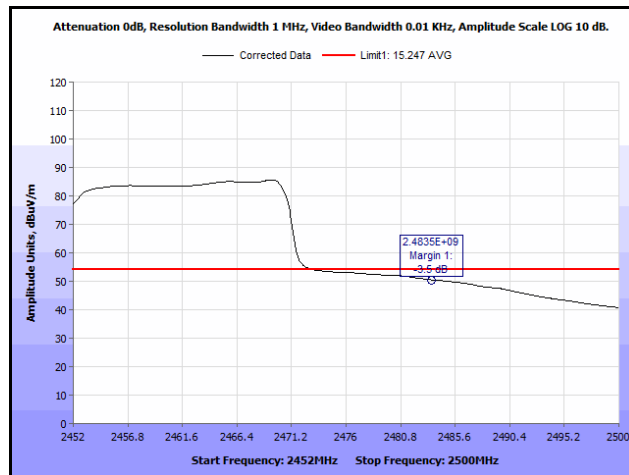
Radiated Band Edge Measurements, 802.11n 40 MHz, ANT-BG080-NM



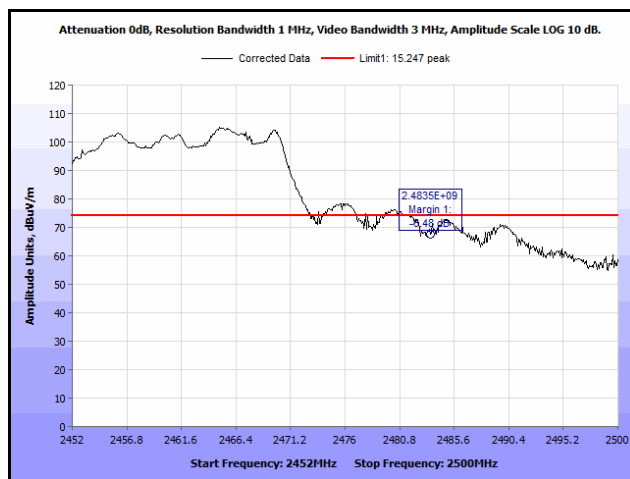
Plot 214. Radiated Restricted Band Edge, 2422 MHz @ 2390 MHz, 802.11n 40 MHz, ANT-BG080-NM, Average



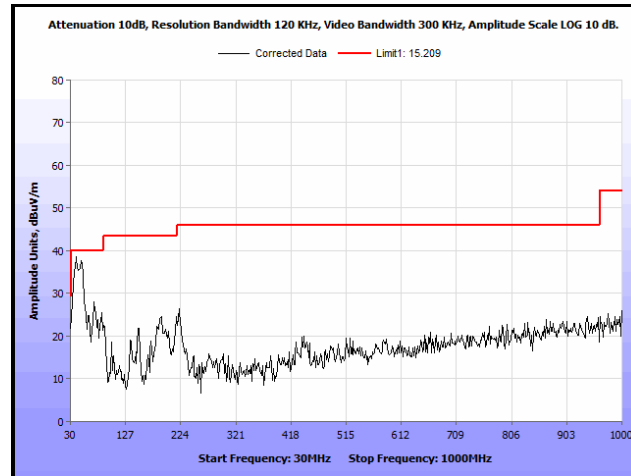
Plot 215. Radiated Restricted Band Edge, 2422 MHz @ 2390 MHz, 802.11n 40 MHz, ANT-BG080-NM, Peak



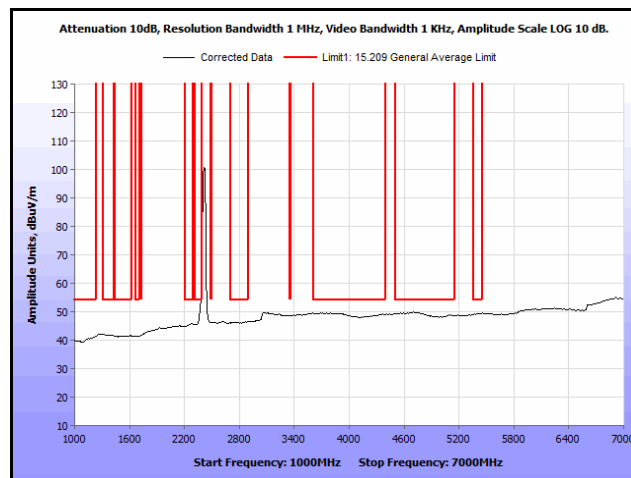
Plot 216. Radiated Restricted Band Edge, 2452 MHz @ 2483.5 MHz, 802.11n 40 MHz, ANT-BG080-NM, Average



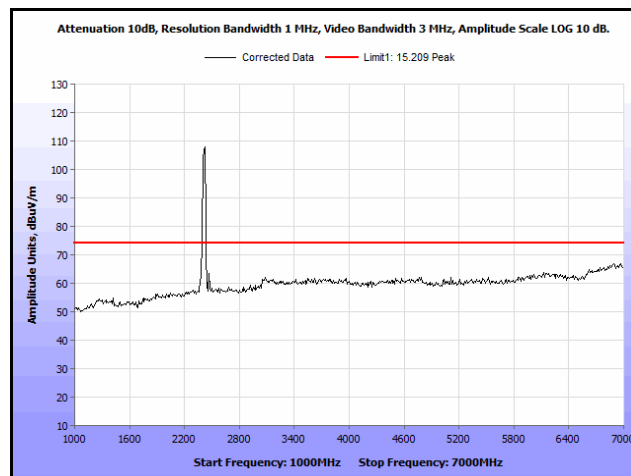
Plot 217. Radiated Restricted Band Edge, 2452 MHz @ 2483.5 MHz, 802.11n 40 MHz, ANT-BG080-NM, Peak



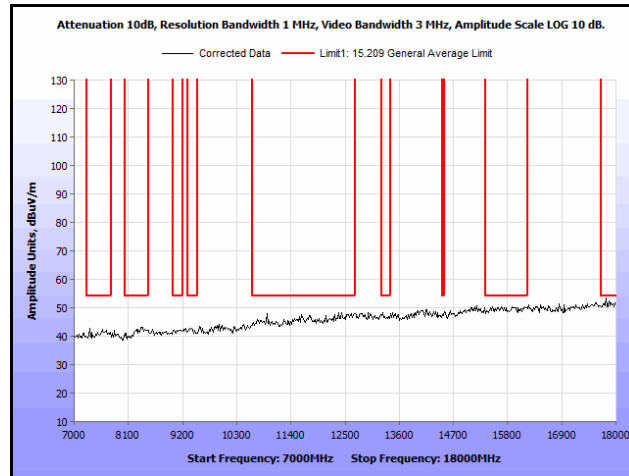
Plot 218. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 2412 MHz, 30 MHz - 1 GHz, Average



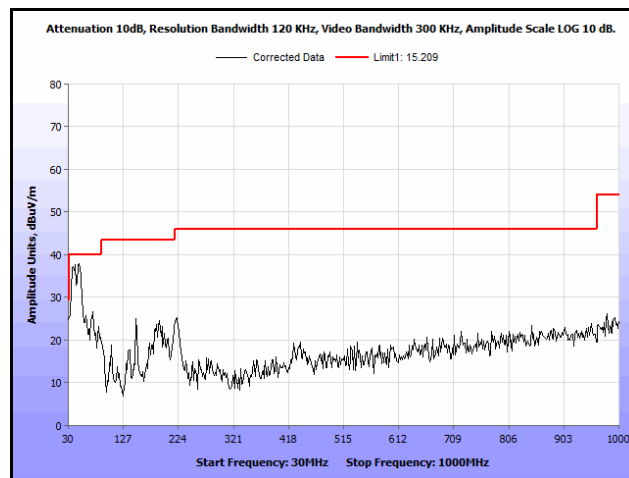
Plot 219. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 2412 MHz, 1 GHz - 7 GHz, Average



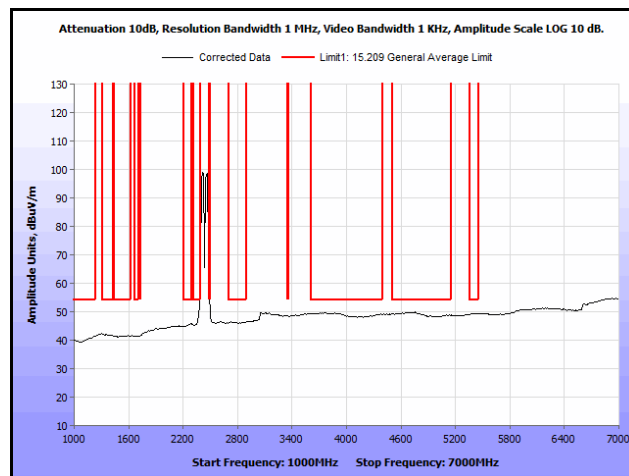
Plot 220. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 2412 MHz, 1 GHz - 7 GHz, Peak



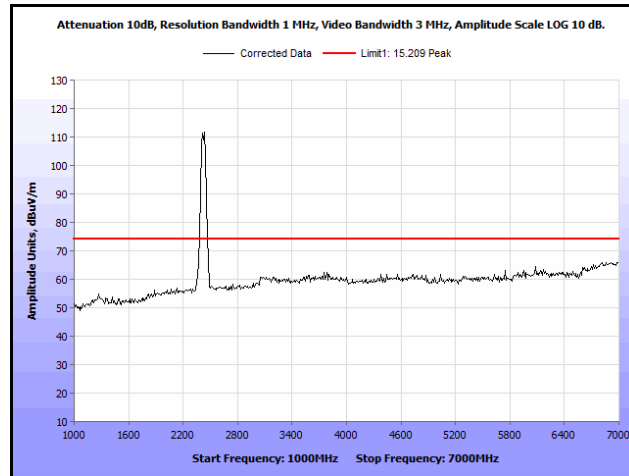
Plot 221. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 2412 MHz, 7 GHz - 18 GHz, Average



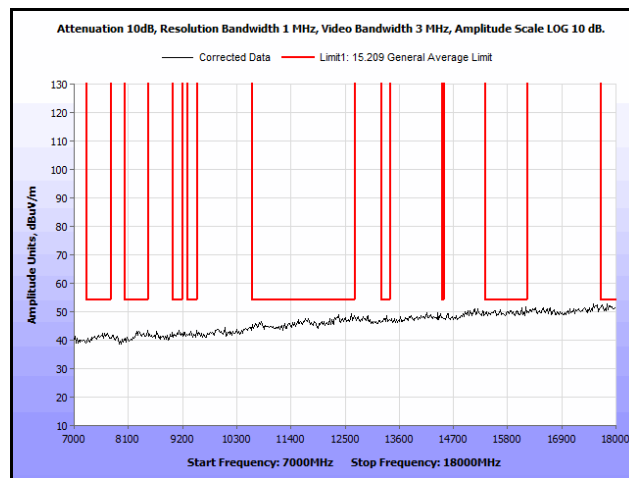
Plot 222. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 2437 MHz, 30 MHz - 1 GHz, Average



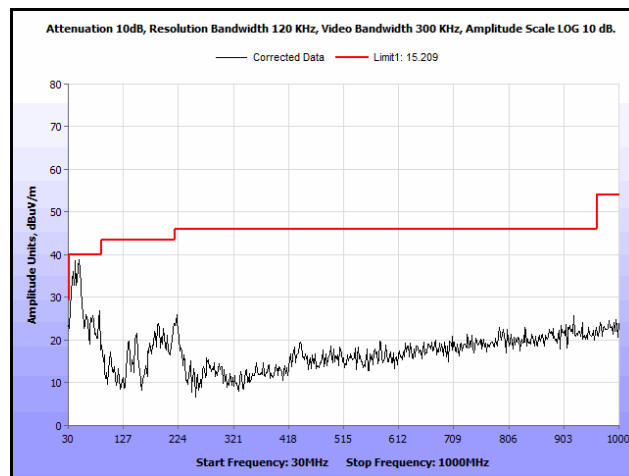
Plot 223. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 2437 MHz, 1 GHz - 7 GHz, Average



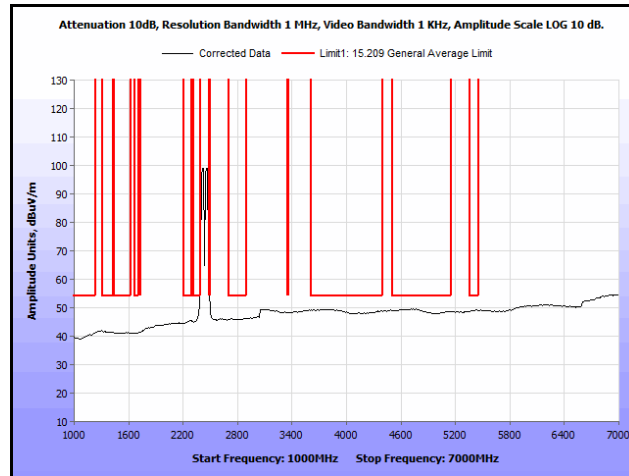
Plot 224. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 2437 MHz, 1 GHz - 7 GHz, Peak



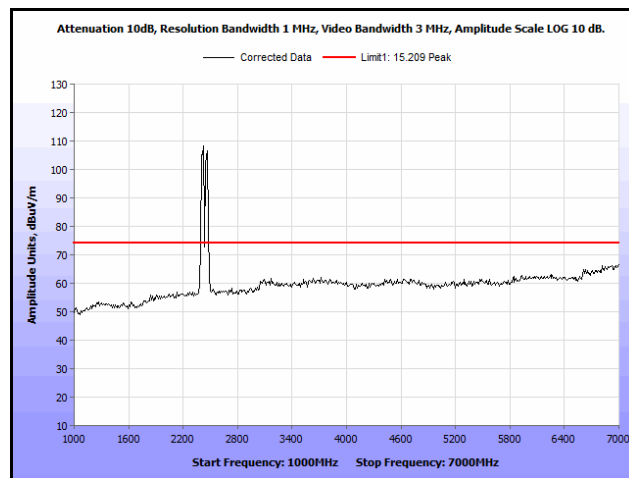
Plot 225. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 2437 MHz, 7 GHz - 18 GHz, Average



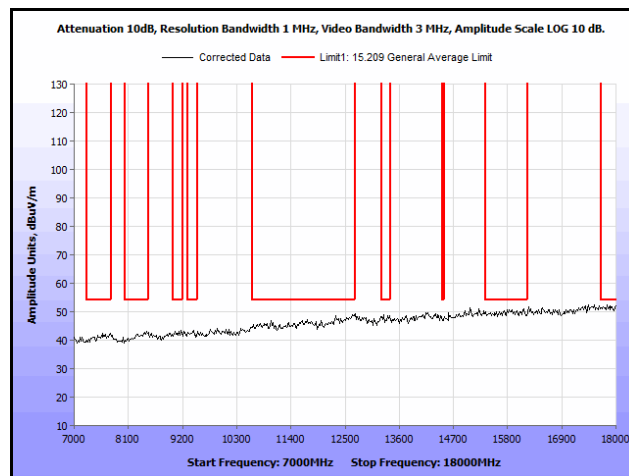
Plot 226. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 2462 MHz, 30 MHz - 1 GHz, Average



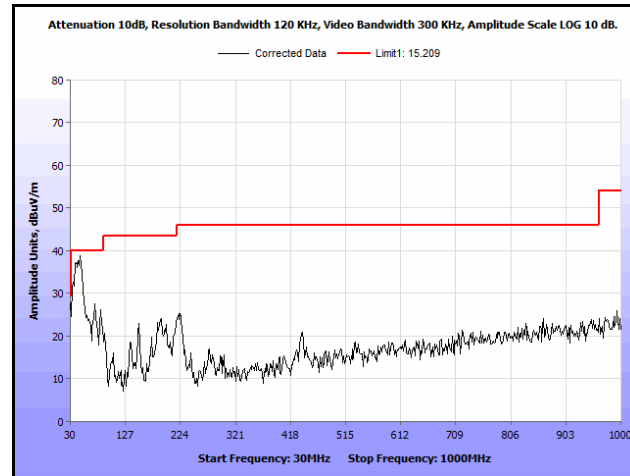
Plot 227. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 2462 MHz, 1 GHz - 7 GHz, Average



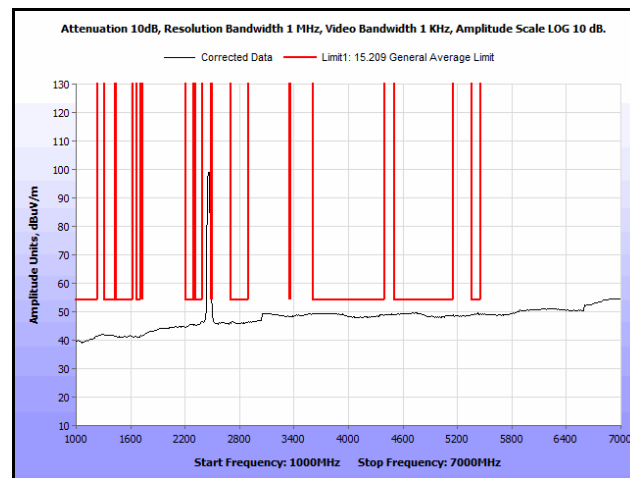
Plot 228. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 2462 MHz, 1 GHz - 7 GHz, Peak



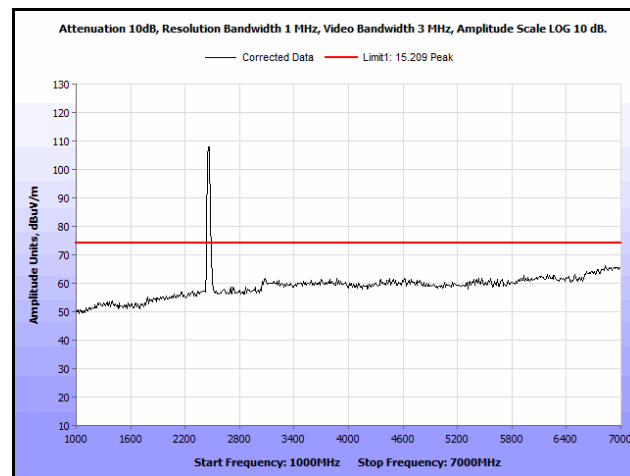
Plot 229. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 2462 MHz, 7 GHz - 18 GHz, Average



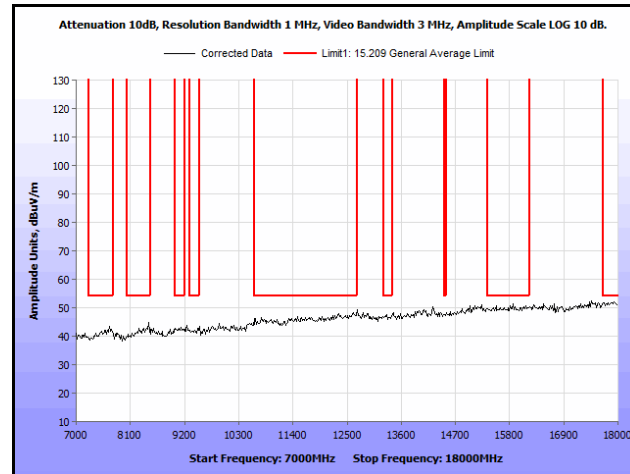
Plot 230. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 2437 MHz, 30 MHz - 1 GHz, Average



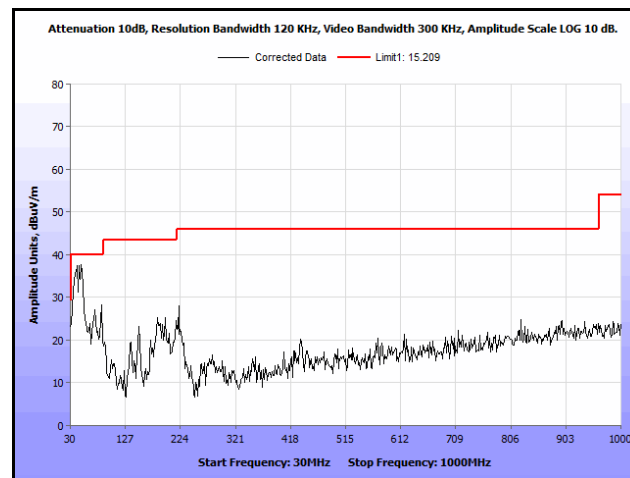
Plot 231. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 2437 MHz, 1 GHz - 7 GHz, Average



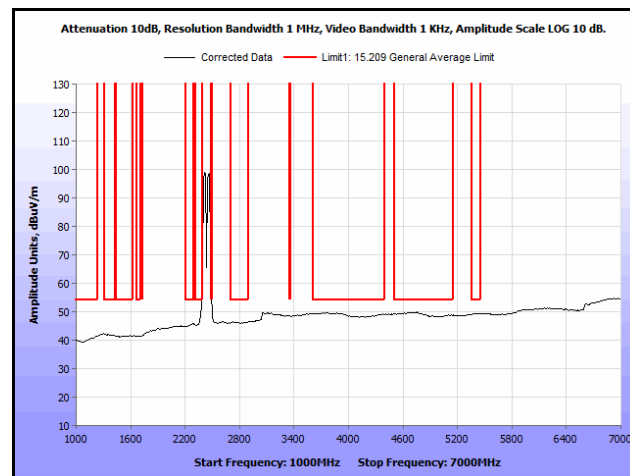
Plot 232. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 2437 MHz, 1 GHz - 7 GHz, Peak



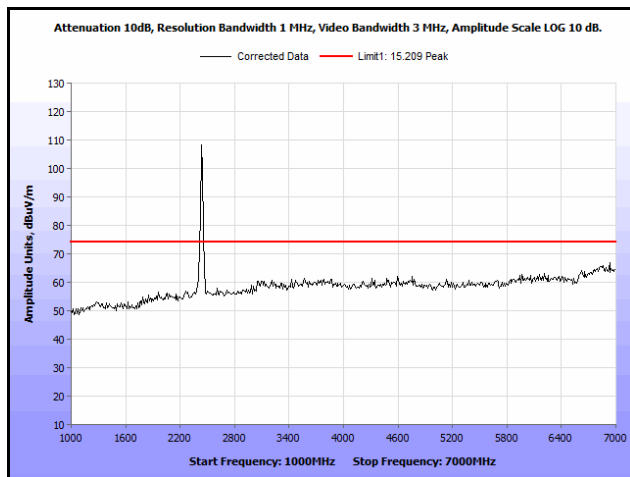
Plot 233. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 2437 MHz, 7 GHz - 18 GHz, Average



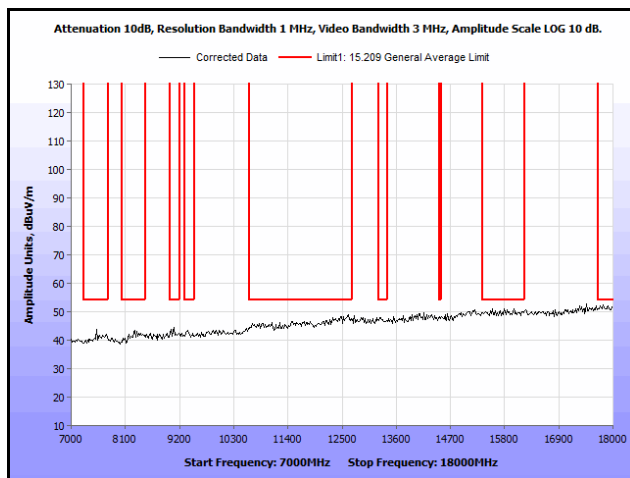
Plot 234. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 2462 MHz, 30 MHz - 1 GHz, Average



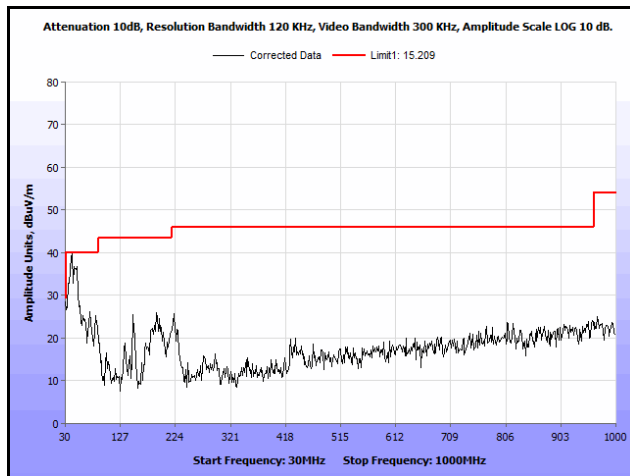
Plot 236. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 2462 MHz, 1 GHz - 7 GHz, Average



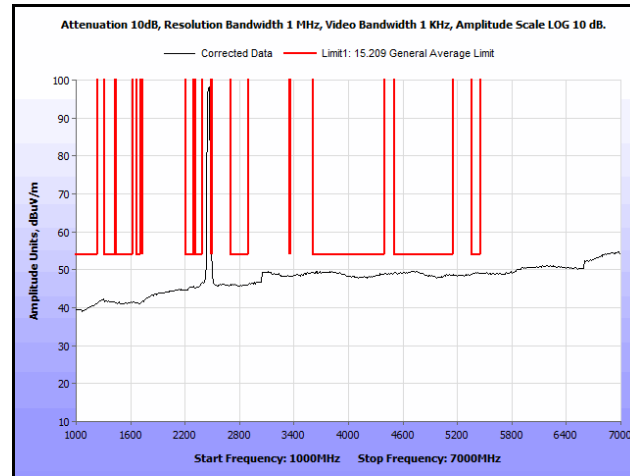
Plot 237. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 2462 MHz, 1 GHz - 7 GHz, Peak



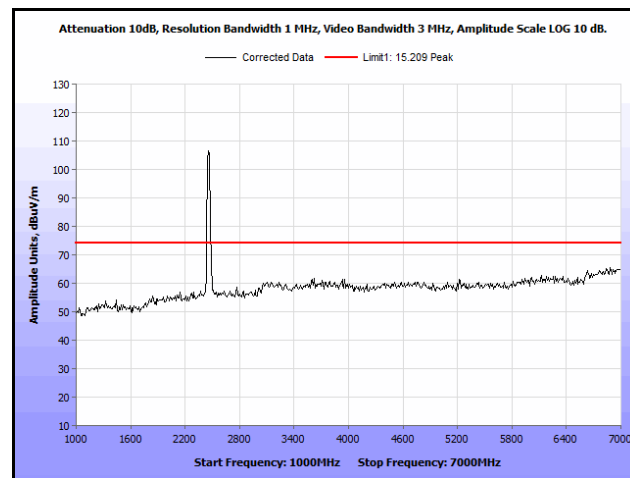
Plot 238. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 2462 MHz, 7 GHz - 18 GHz, Average



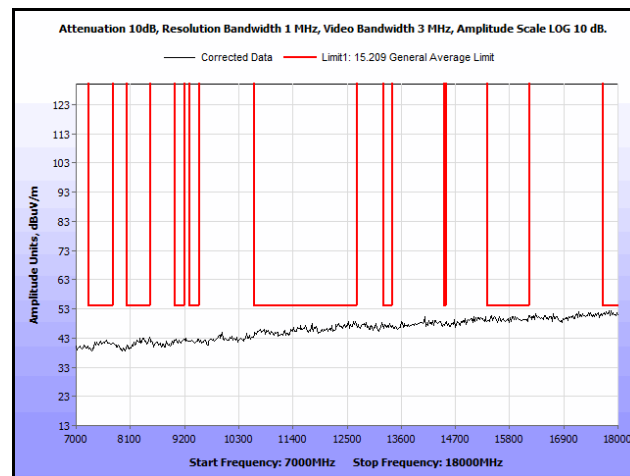
Plot 239. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 2462 MHz, 30 MHz - 1 GHz, Average



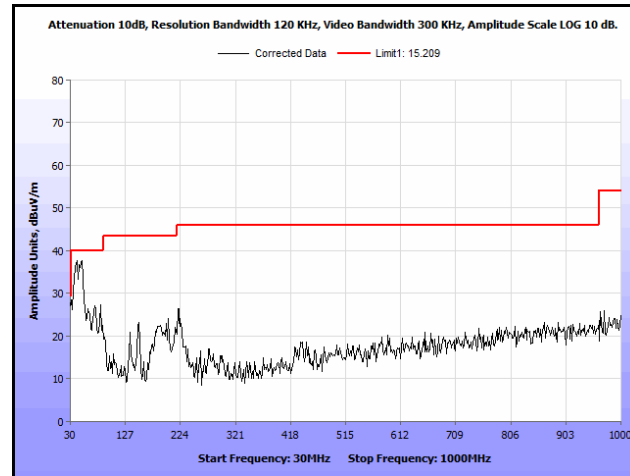
Plot 240. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 2462 MHz, 1 GHz - 7 GHz, Average



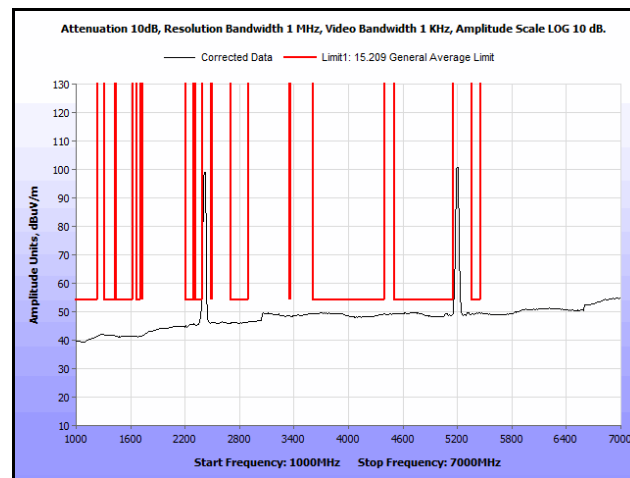
Plot 241. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 2462 MHz, 1 GHz - 7 GHz, Peak



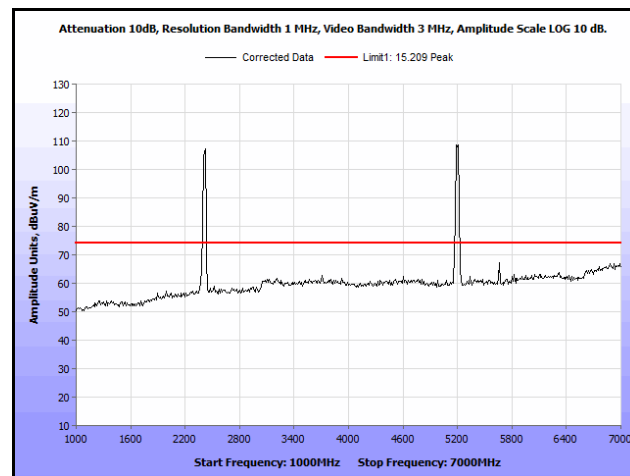
Plot 242. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 2462 MHz, 7 GHz - 18 GHz, Average



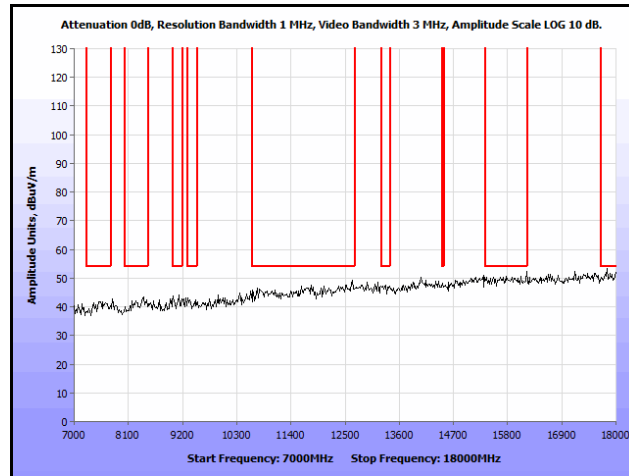
Plot 243. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5200 MHz, 30 MHz - 1 GHz, Average



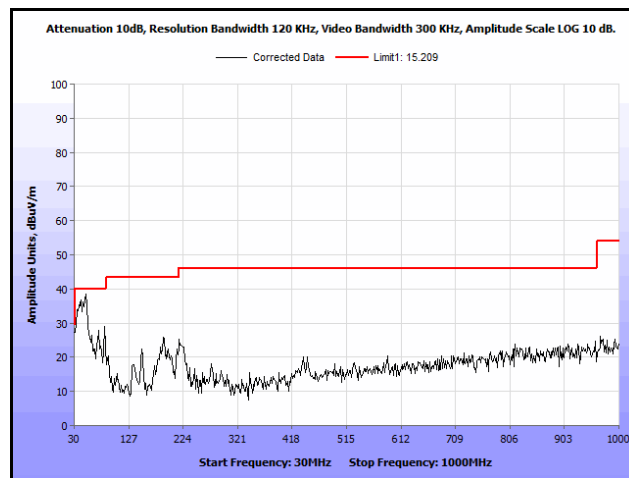
Plot 244. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5200 MHz, 1 GHz - 7 GHz, Average



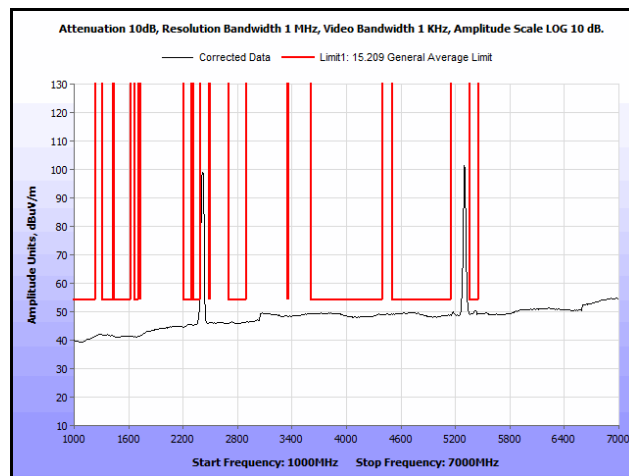
Plot 245. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5200 MHz, 1 GHz - 7 GHz, Peak



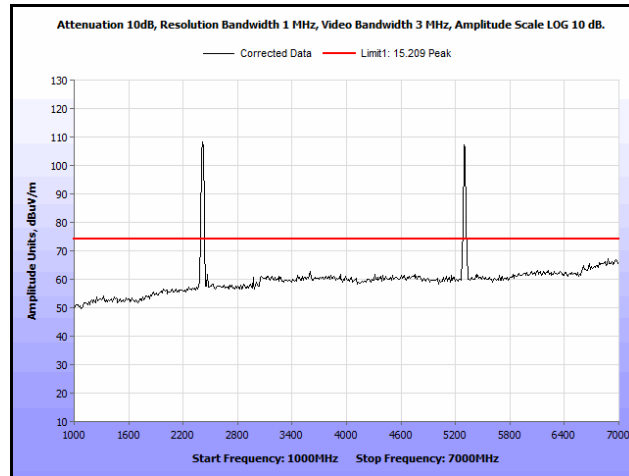
Plot 246. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5200 MHz, 7 GHz - 18 GHz, Average



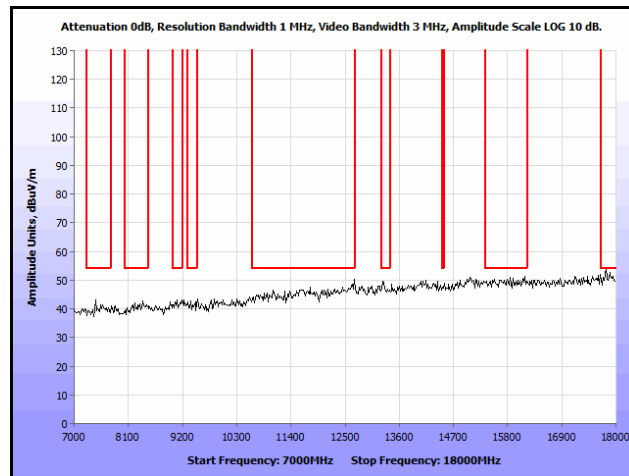
Plot 247. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5300 MHz, 30 MHz - 1 GHz, Average



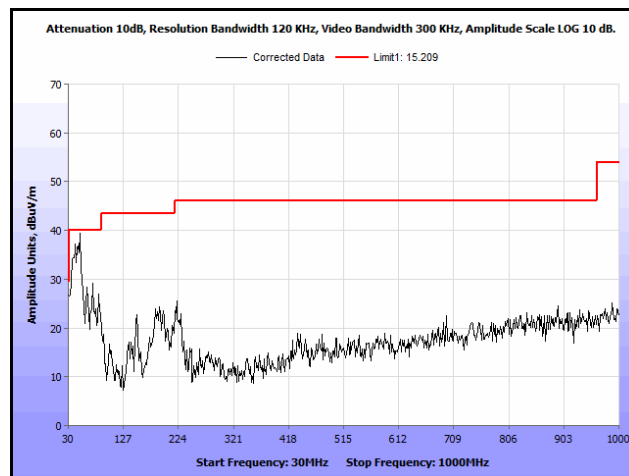
Plot 248. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5300 MHz, 1 GHz - 7 GHz, Average



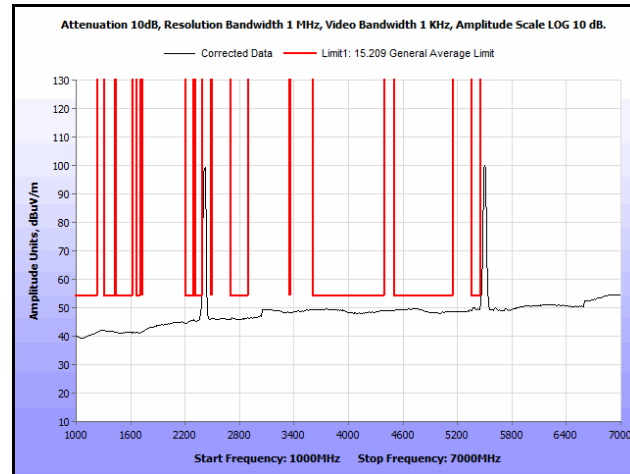
Plot 249. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5300 MHz, 1 GHz - 7 GHz, Peak



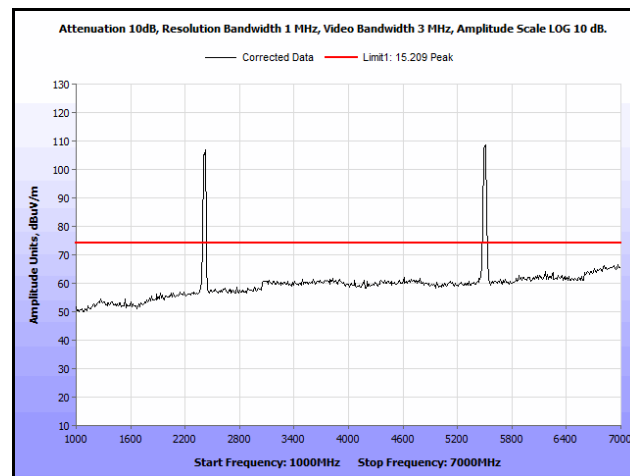
Plot 250. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5300 MHz, 7 GHz - 18 GHz, Average



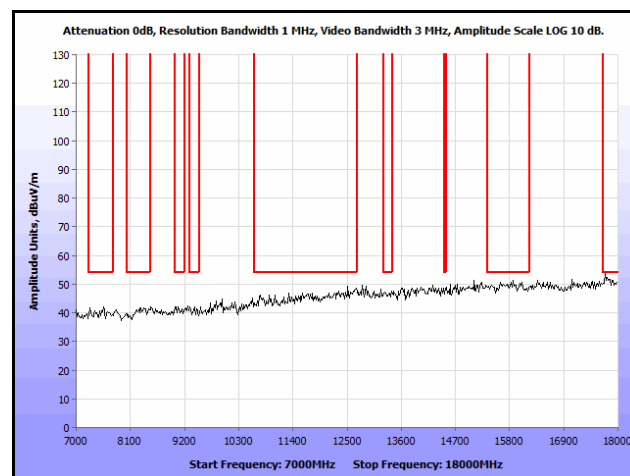
Plot 251. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5580 MHz, 30 MHz - 1 GHz, Average



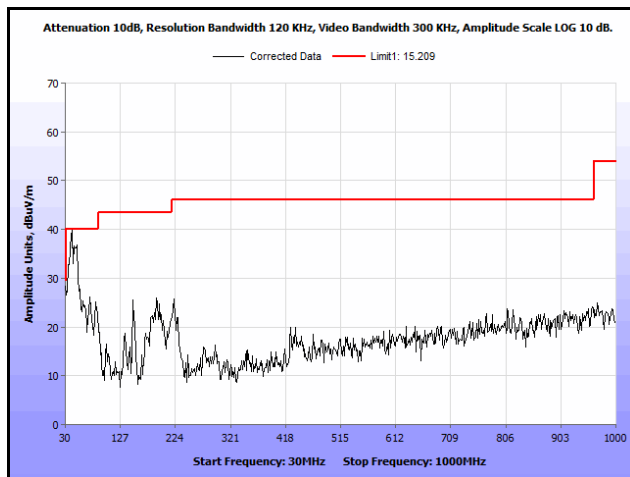
Plot 252. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5580 MHz, 1 GHz - 7 GHz, Average



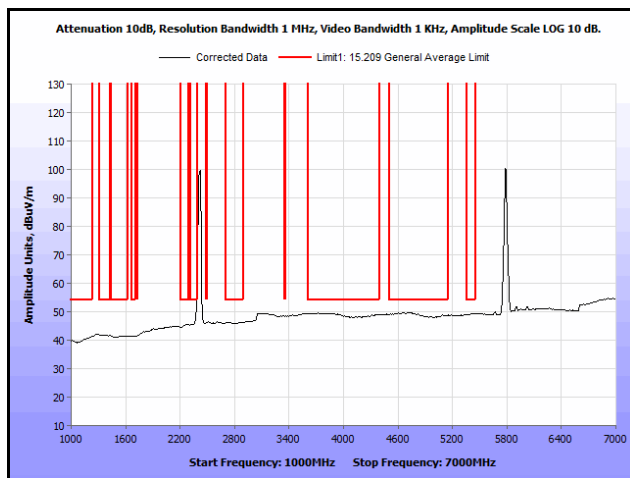
Plot 253. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5580 MHz, 1 GHz - 7 GHz, Peak



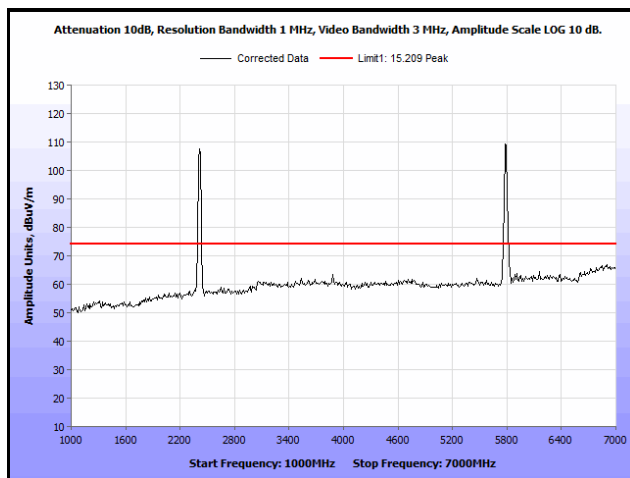
Plot 254. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5580 MHz, 7 GHz - 18 GHz, Average



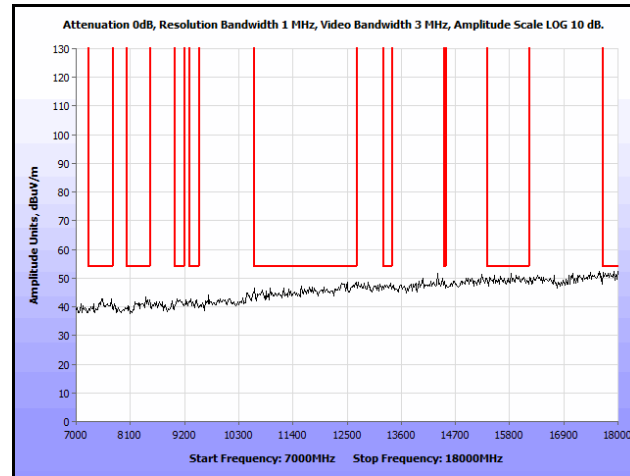
Plot 255. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



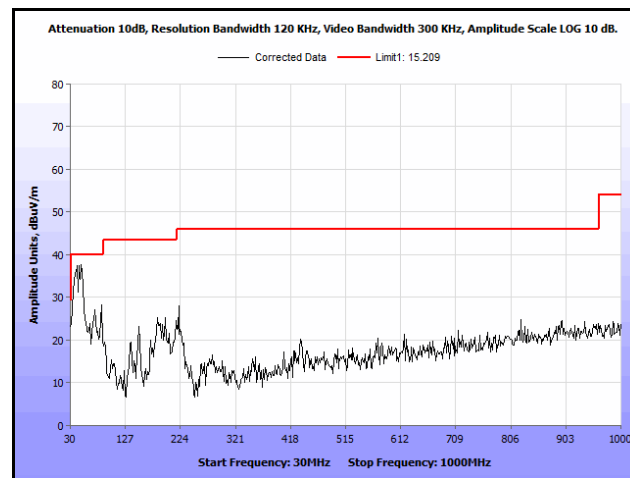
Plot 256. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



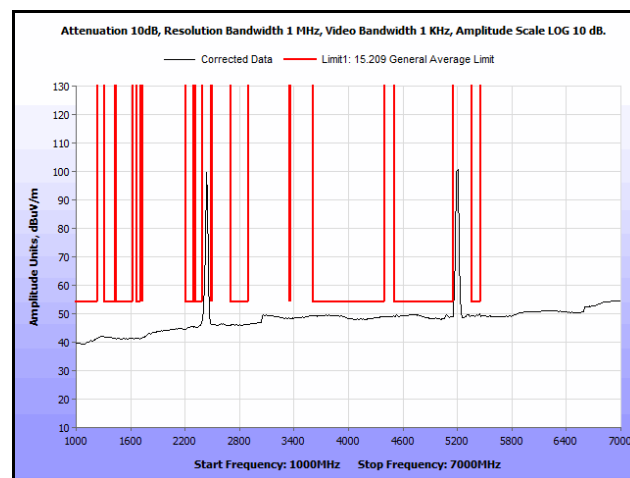
Plot 257. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



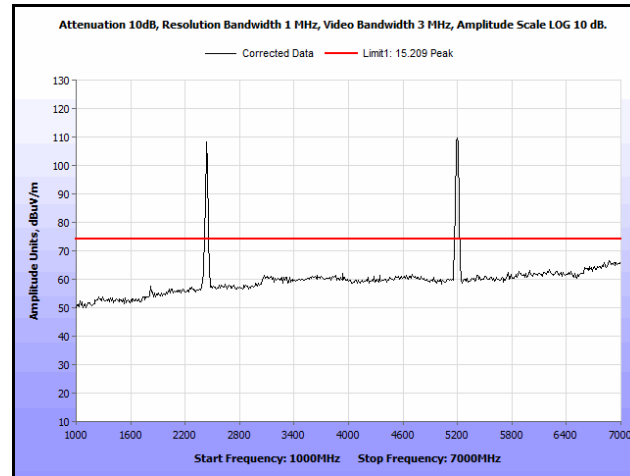
Plot 258. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2412 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



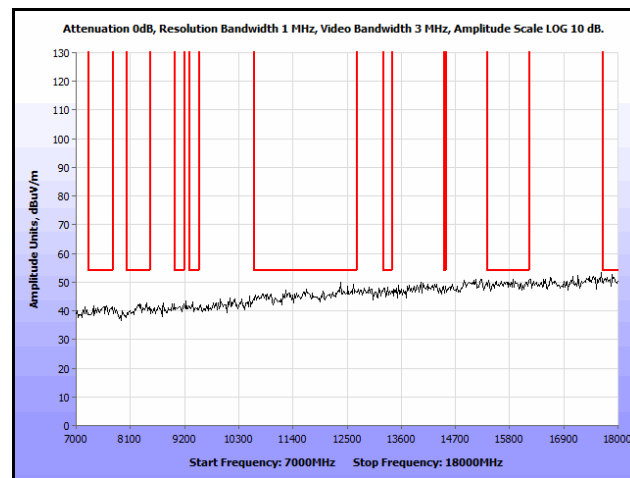
Plot 259. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5200 MHz, 30 MHz - 1 GHz, Average



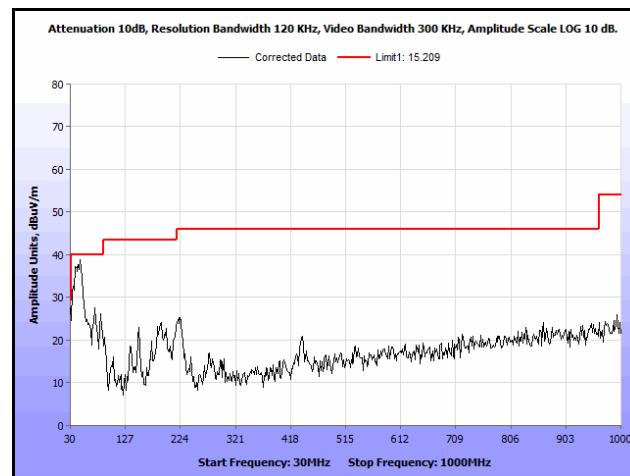
Plot 260. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5200 MHz, 1 GHz - 7 GHz, Average



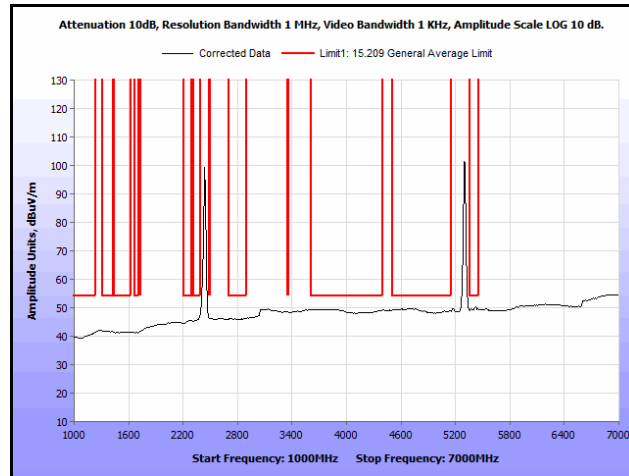
Plot 261. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5200 MHz, 1 GHz - 7 GHz, Peak



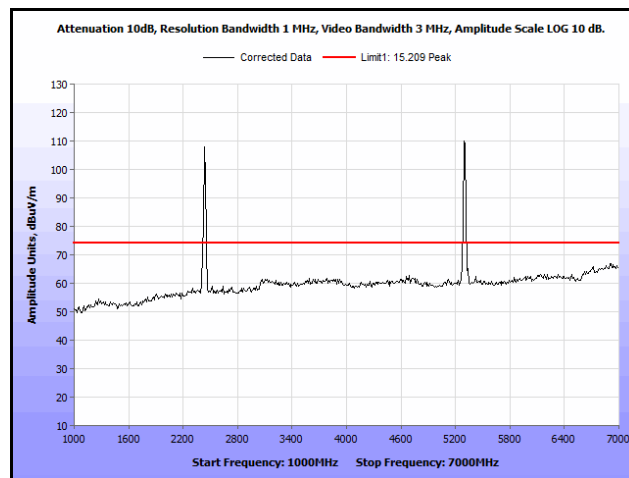
Plot 262. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5200 MHz, 7 GHz - 18 GHz, Average



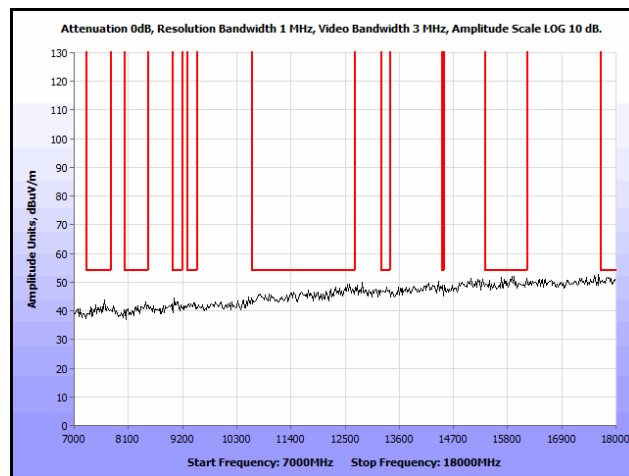
Plot 263. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5300 MHz, 30 MHz - 1 GHz, Average



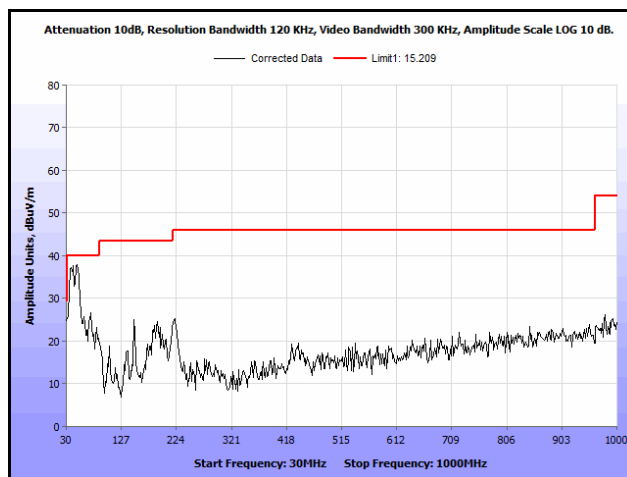
Plot 264. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5300 MHz, 1 GHz - 7 GHz, Average



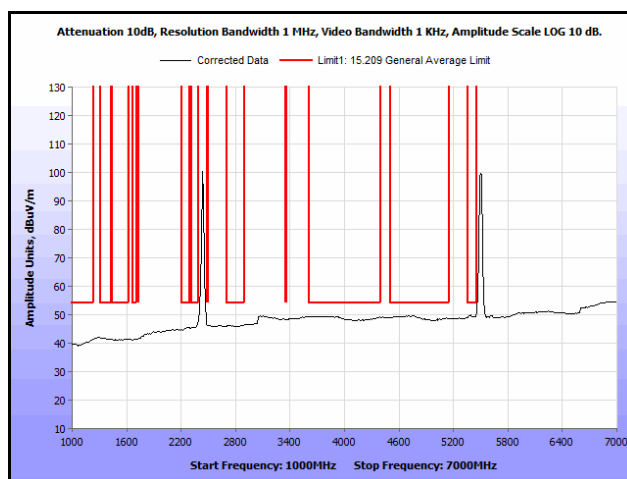
Plot 265. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5300 MHz, 1 GHz - 7 GHz, Peak



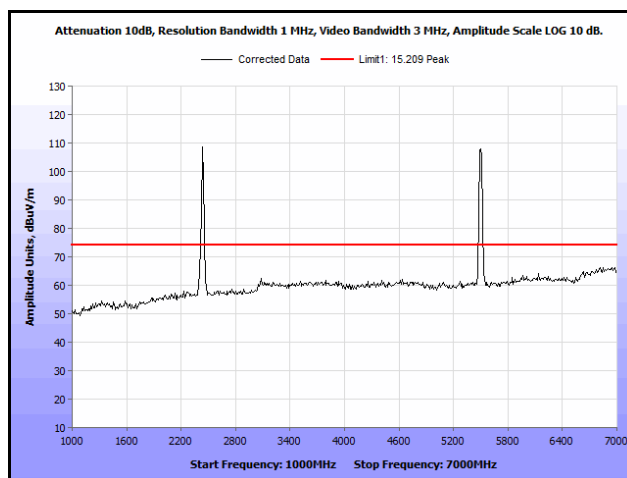
Plot 266. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5300 MHz, 7 GHz - 18 GHz, Average



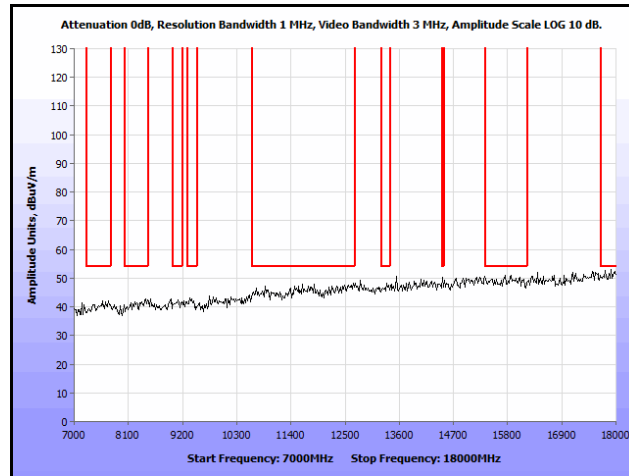
Plot 267. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5580 MHz, 30 MHz - 1 GHz, Average



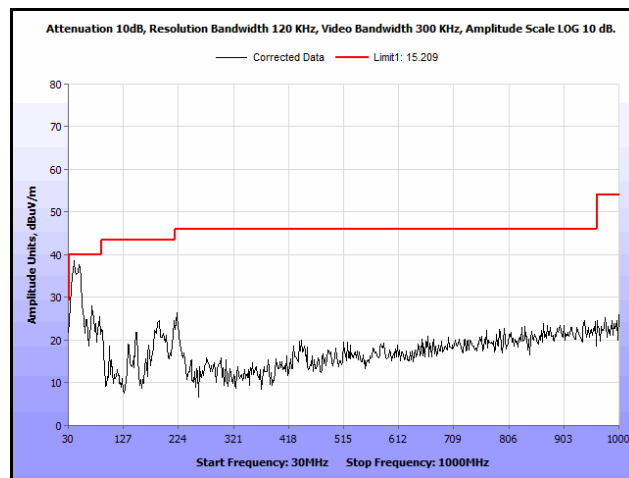
Plot 268. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5580 MHz, 1 GHz - 7 GHz, Average



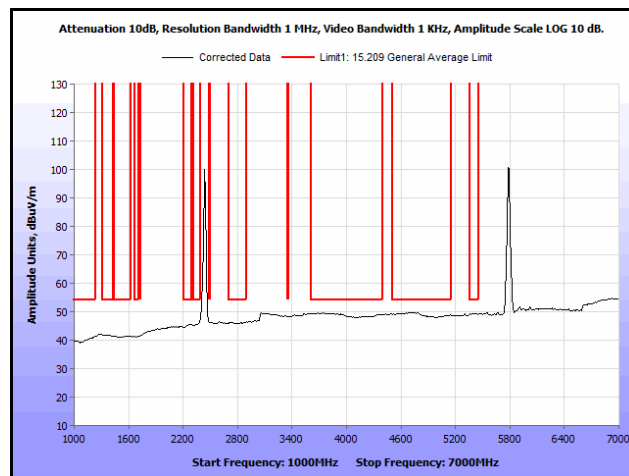
Plot 269. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5580 MHz, 1 GHz - 7 GHz, Peak



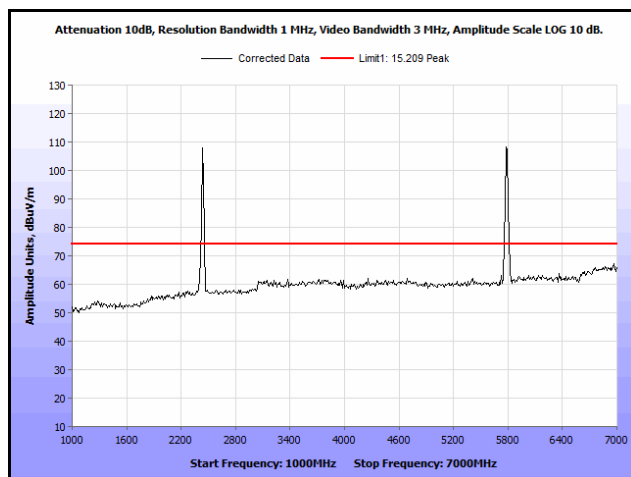
Plot 270. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5580 MHz, 7 GHz - 18 GHz, Average



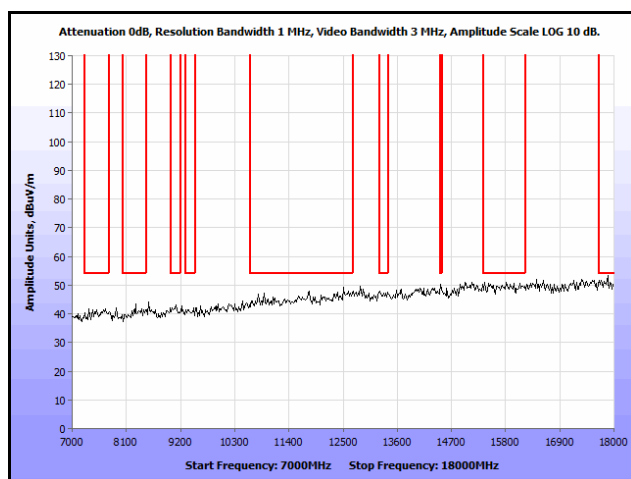
Plot 271. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



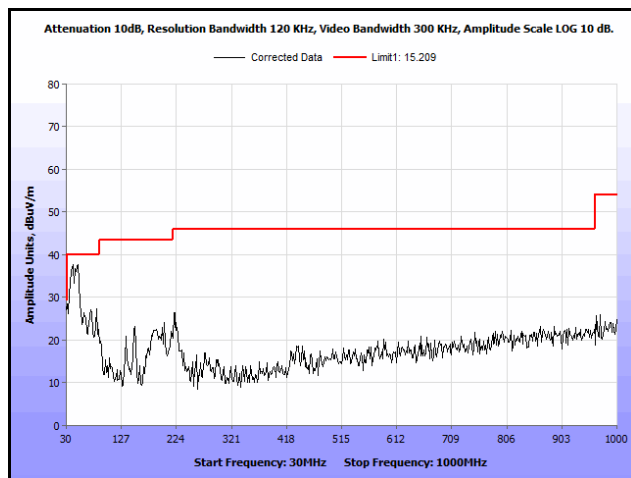
Plot 272. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



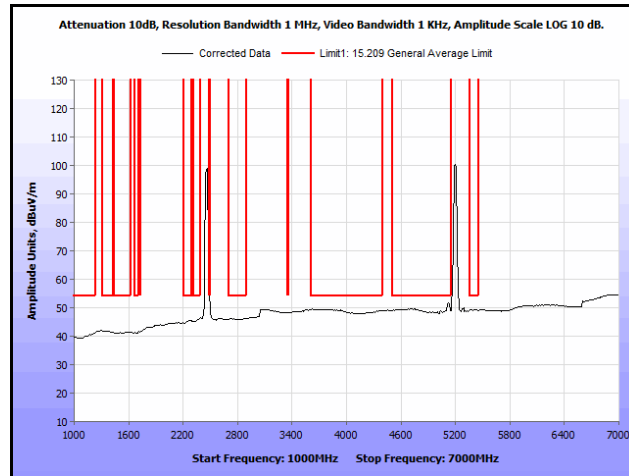
Plot 273. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



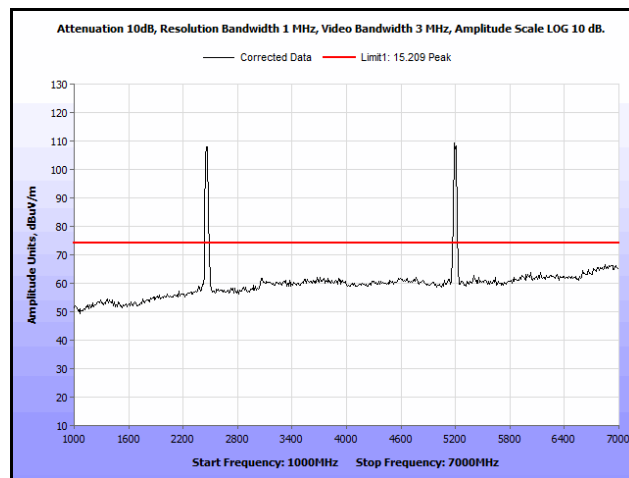
Plot 274. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2437 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



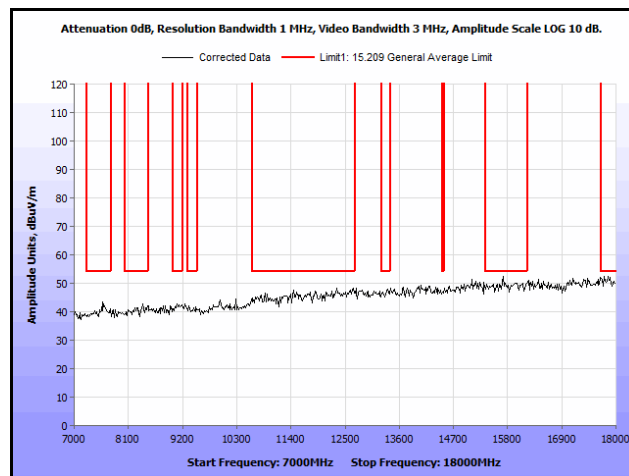
Plot 275. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5200 MHz, 30 MHz - 1 GHz, Average



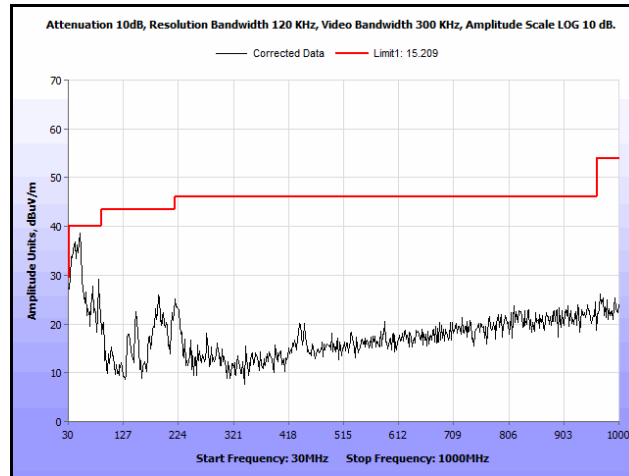
Plot 276. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5200 MHz, 1 GHz - 7 GHz, Average



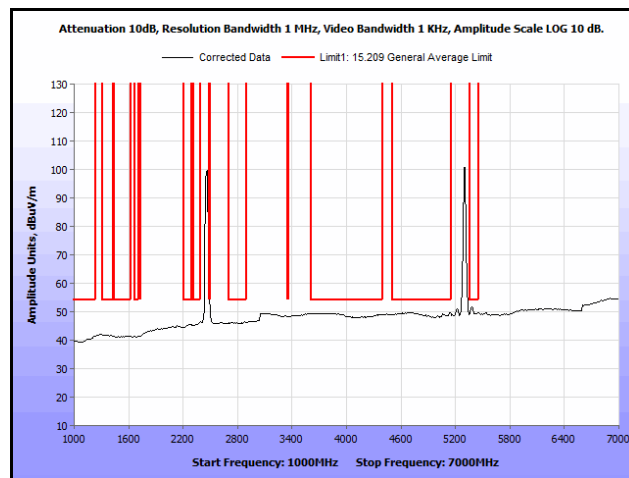
Plot 277. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5200 MHz, 1 GHz - 7 GHz, Peak



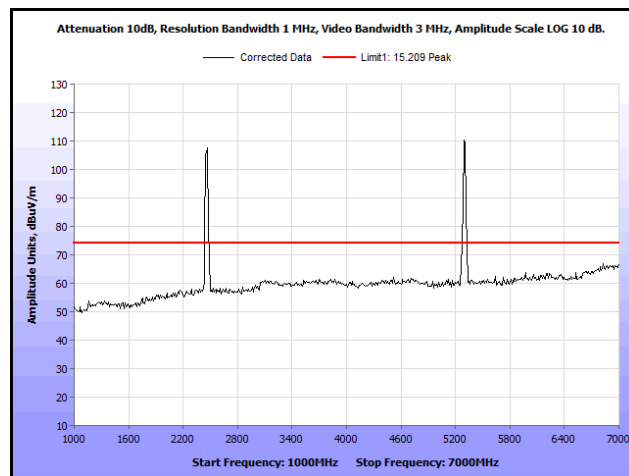
Plot 278. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5200 MHz, 7 GHz - 18 GHz, Average



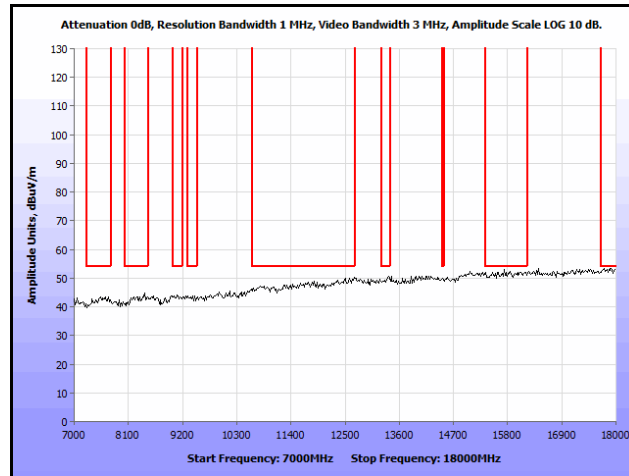
Plot 279. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5300 MHz, 30 MHz - 1 GHz, Average



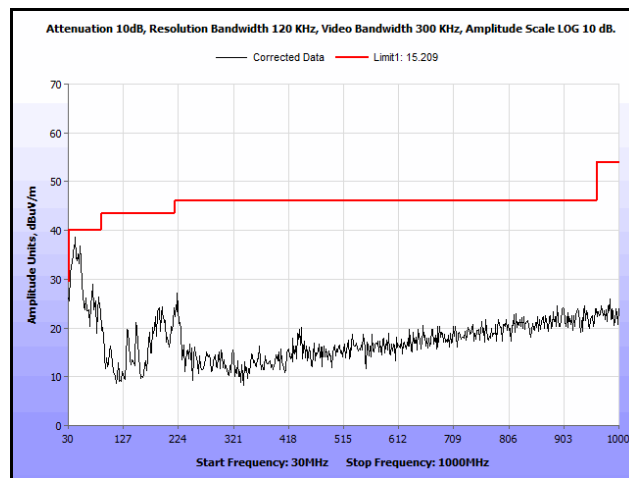
Plot 280. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5300 MHz, 1 GHz - 7 GHz, Average



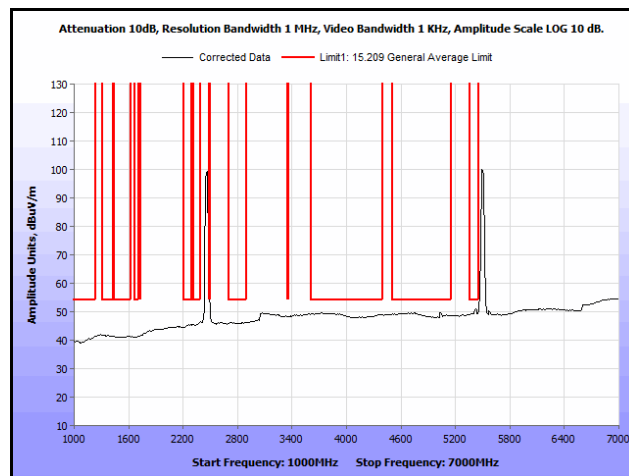
Plot 281. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5300 MHz, 1 GHz - 7 GHz, Peak



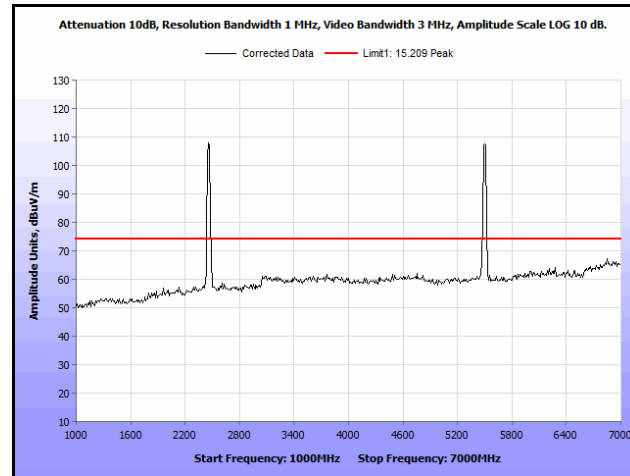
Plot 282. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5300 MHz, 7 GHz - 18 GHz, Average



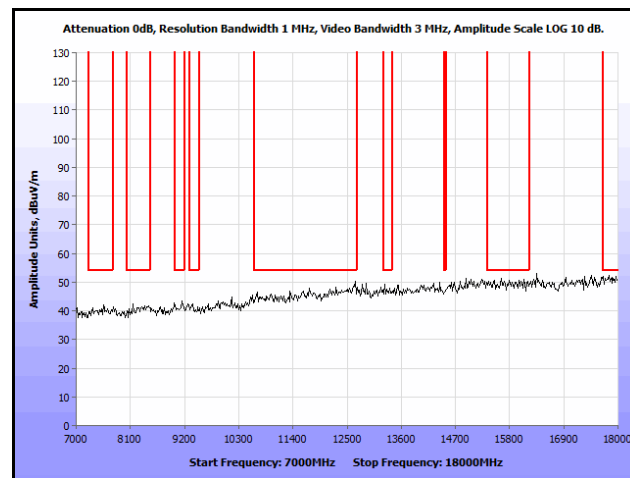
Plot 283. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5580 MHz, 30 MHz - 1 GHz, Average



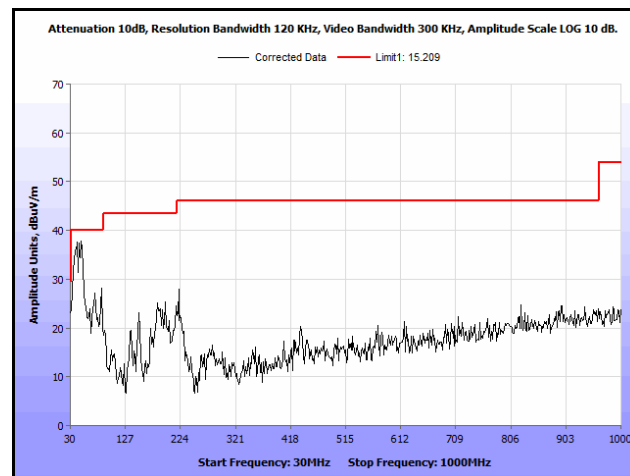
Plot 284. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5580 MHz, 1 GHz - 7 GHz, Average



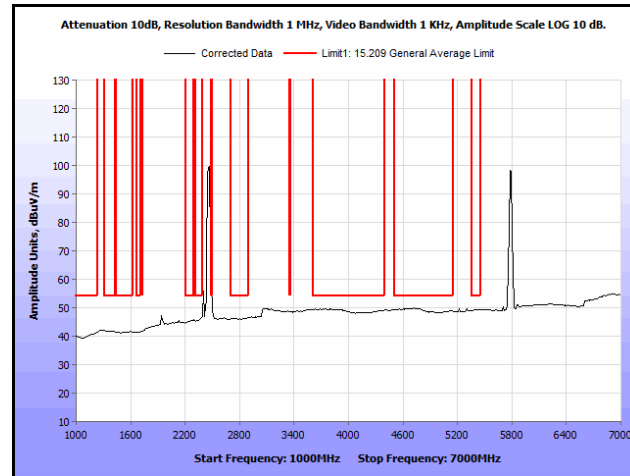
Plot 285. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5580 MHz, 1 GHz - 7 GHz, Peak



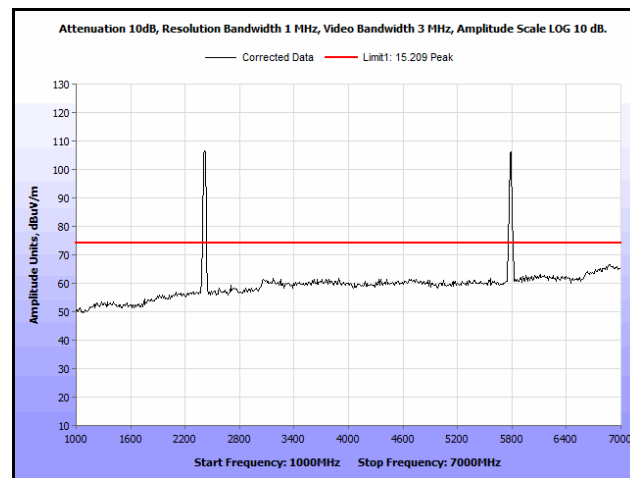
Plot 286. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5580 MHz, 7 GHz - 18 GHz, Average



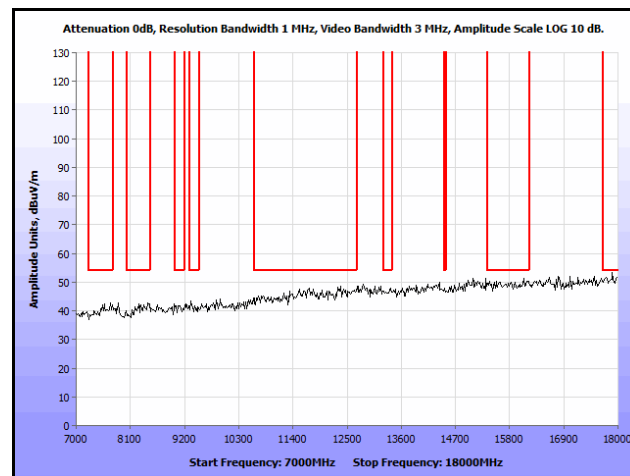
Plot 287. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



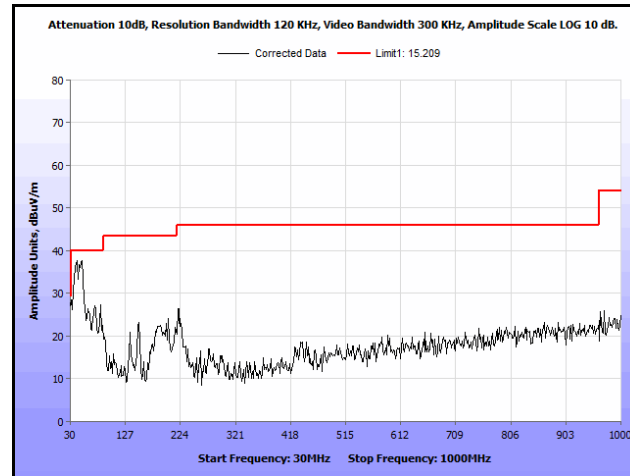
Plot 288. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



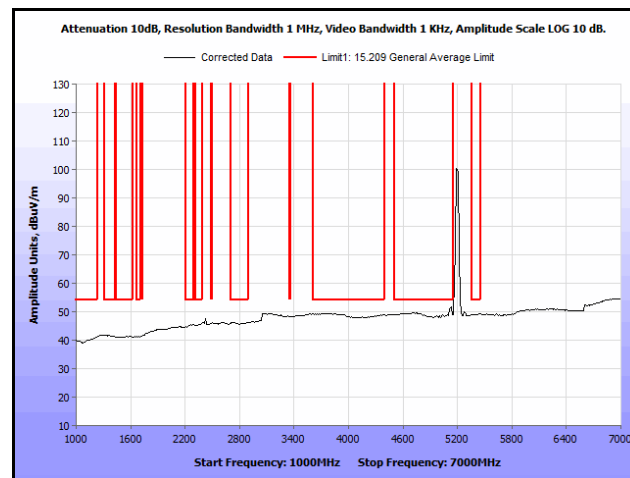
Plot 289. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



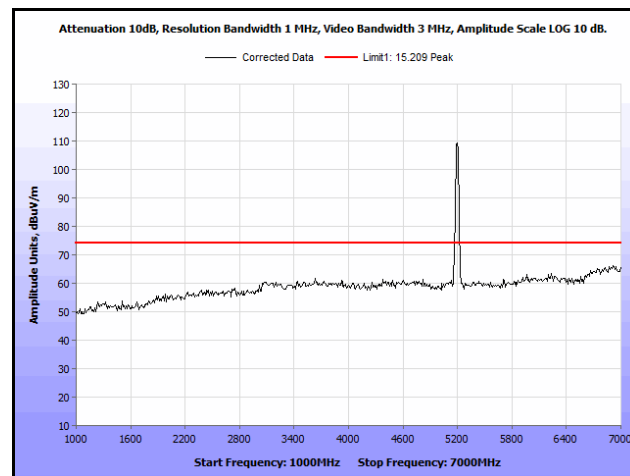
Plot 290. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 2462 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



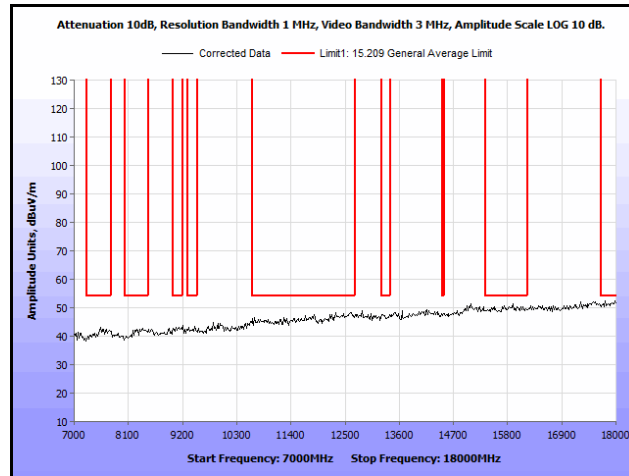
Plot 291. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5200 MHz, 30 MHz - 1 GHz, Average



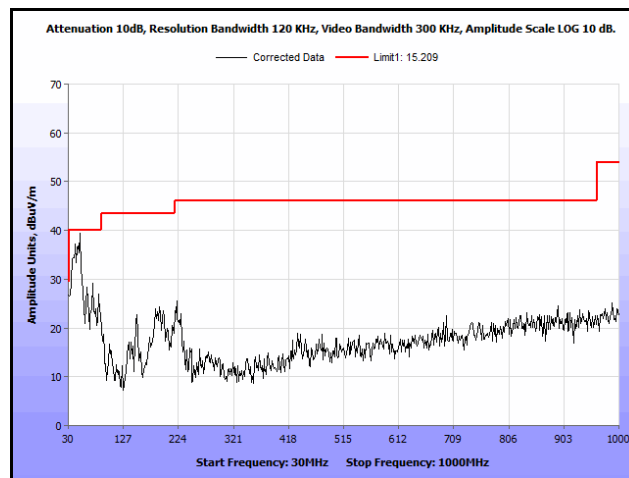
Plot 292. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5200 MHz, 1 GHz - 7 GHz, Average



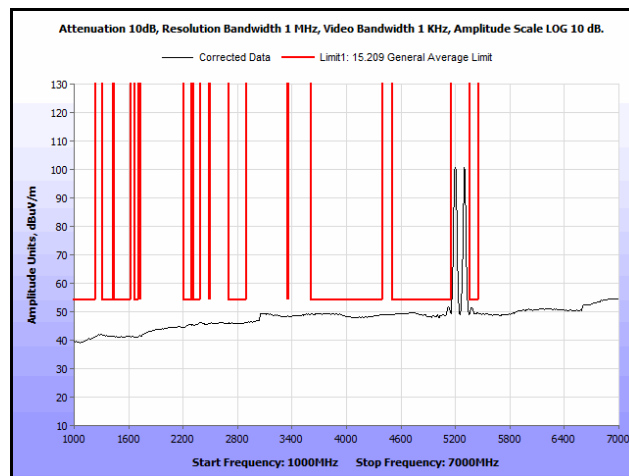
Plot 293. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5200 MHz, 1 GHz - 7 GHz, Peak



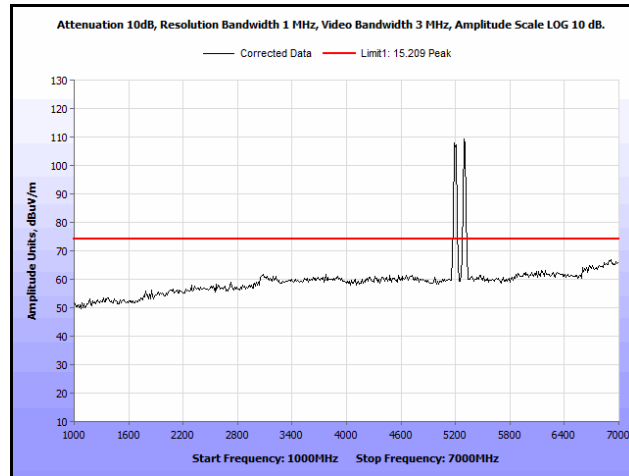
Plot 294. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5200 MHz, 7 GHz - 18 GHz, Average



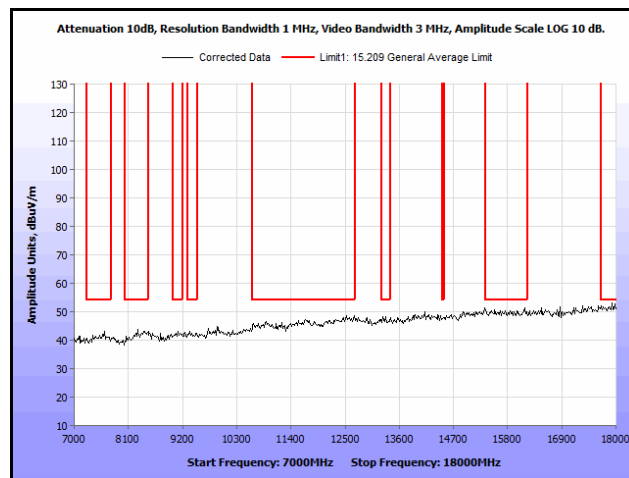
Plot 295. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5300 MHz, 30 MHz - 1 GHz, Average



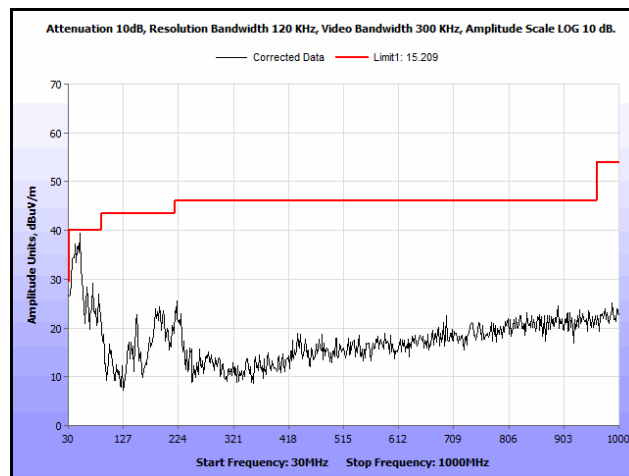
Plot 296. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5300 MHz, 1 GHz - 7 GHz, Average



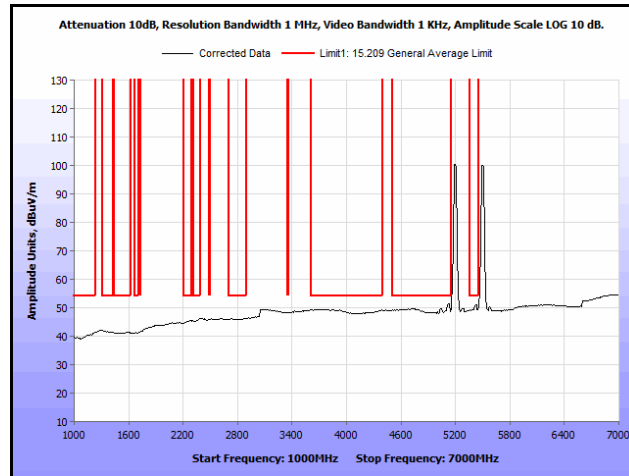
Plot 297. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5300 MHz, 1 GHz - 7 GHz, Peak



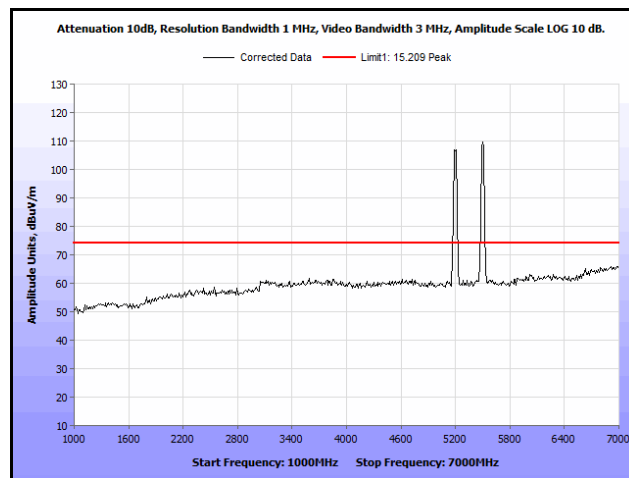
Plot 298. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5300 MHz, 7 GHz - 18 GHz, Average



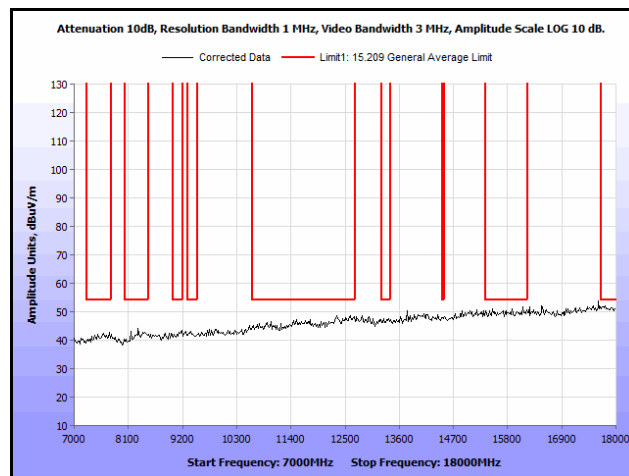
Plot 299. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5580 MHz, 30 MHz - 1 GHz, Average



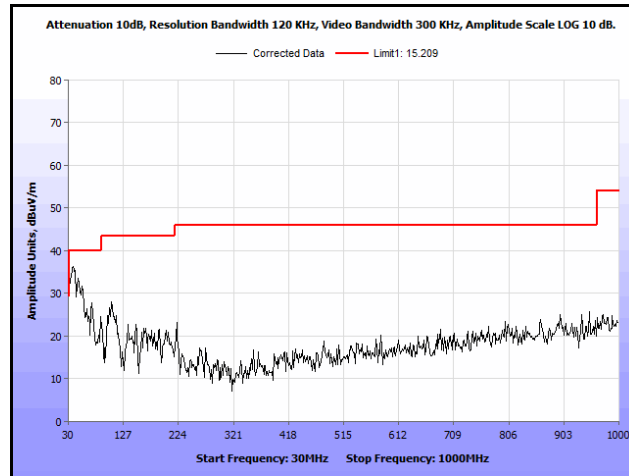
Plot 300. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5580 MHz, 1 GHz - 7 GHz, Average



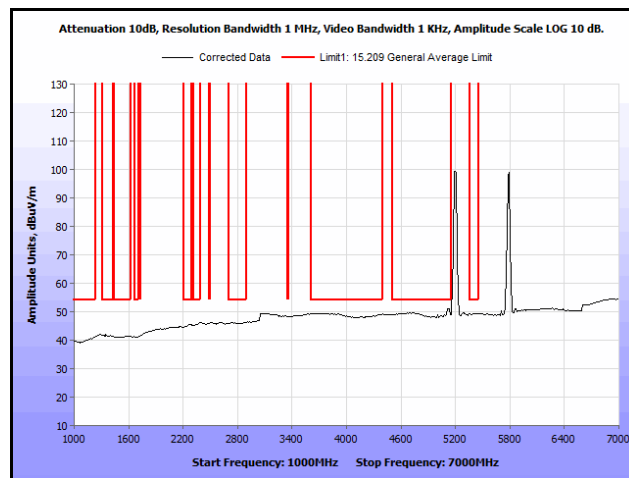
Plot 301. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5580 MHz, 1 GHz - 7 GHz, Peak



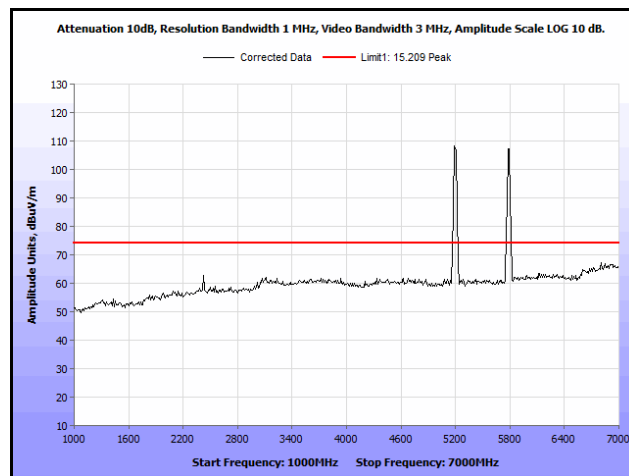
Plot 302. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5580 MHz, 7 GHz - 18 GHz, Average



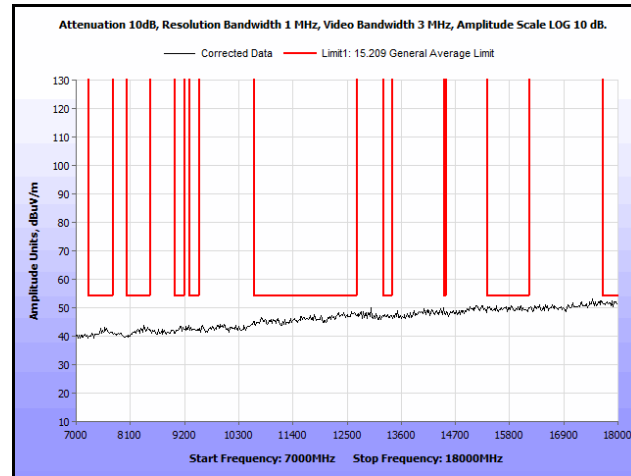
Plot 303. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



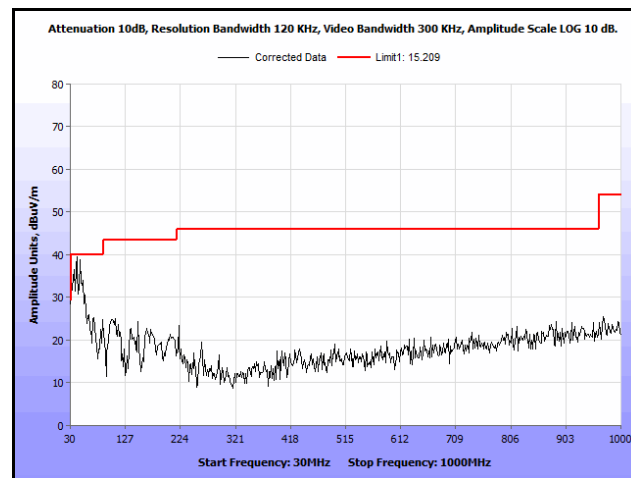
Plot 304. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



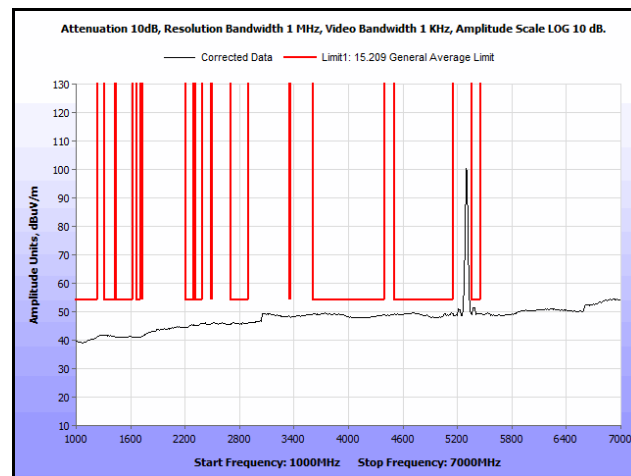
Plot 305. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



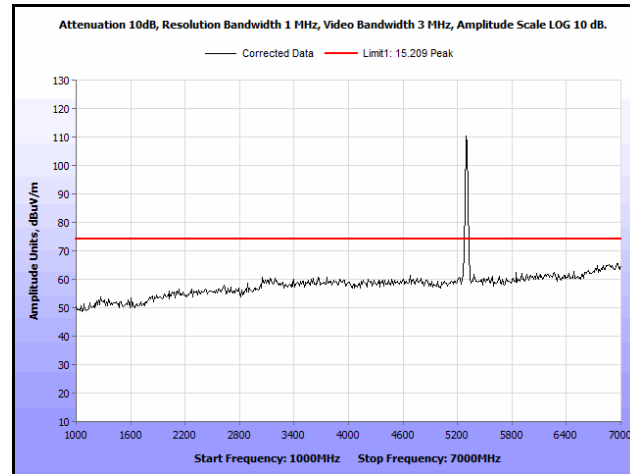
Plot 306. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5200 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



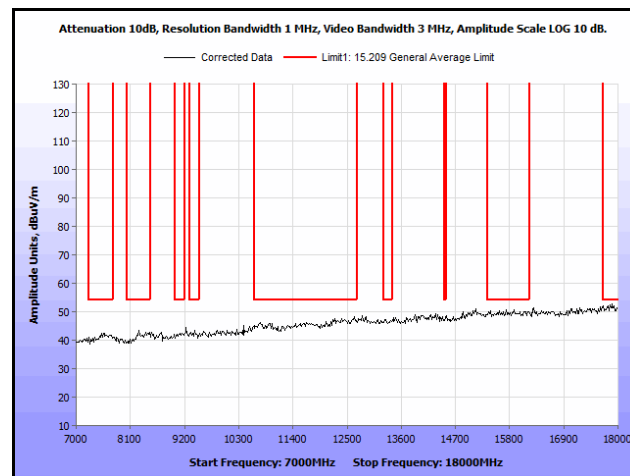
Plot 307. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5300 MHz & 5300 MHz, 30 MHz - 1 GHz, Average



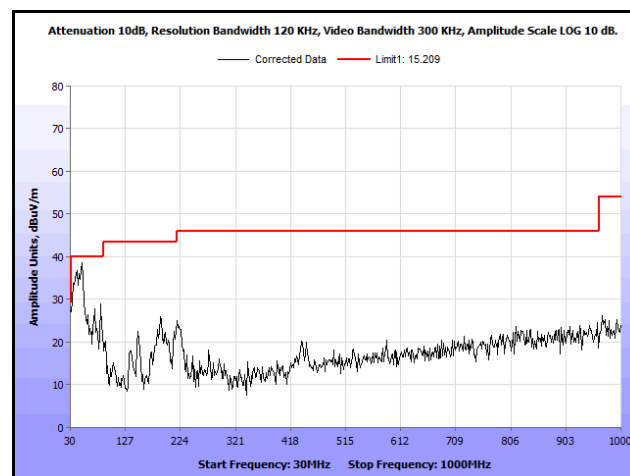
Plot 308. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5300 MHz & 5300 MHz, 1 GHz - 7 GHz, Average



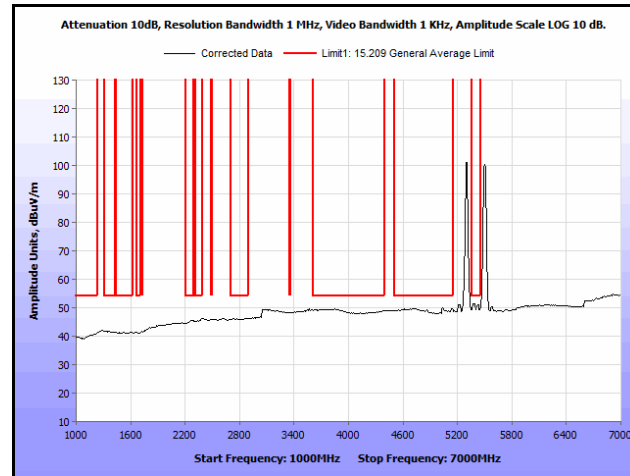
Plot 309. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5300 MHz & 5300 MHz, 1 GHz - 7 GHz, Peak



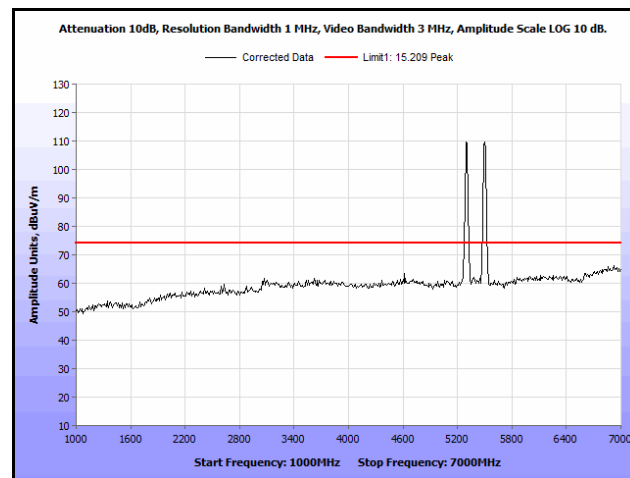
Plot 310. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5300 MHz & 5300 MHz, 7 GHz - 18 GHz, Peak



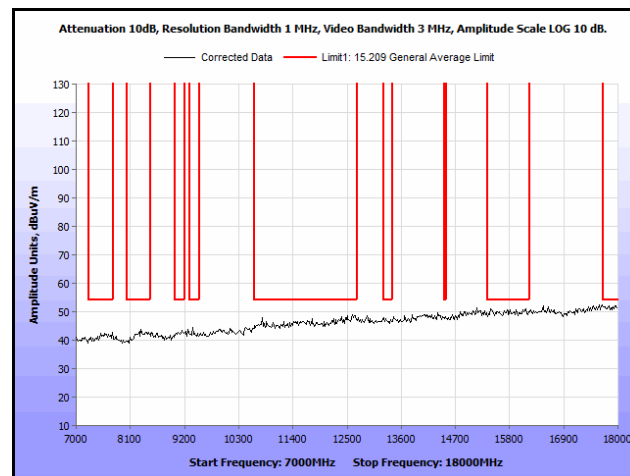
Plot 311. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5300MHz and 5580MHz, 30 MHz - 1 GHz, Average



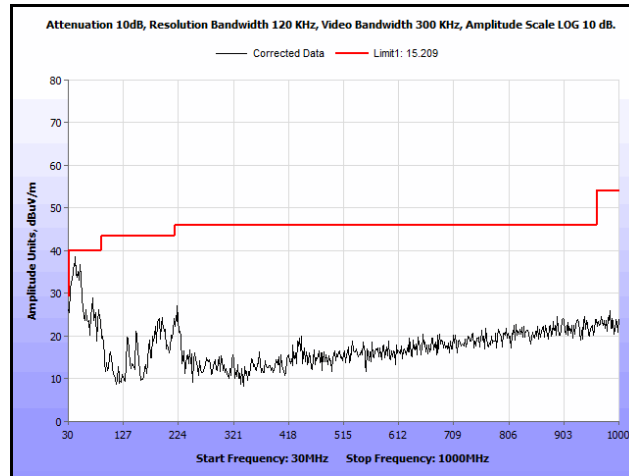
Plot 312. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5300 MHz & 5580 MHz, 1 GHz - 7 GHz, Average



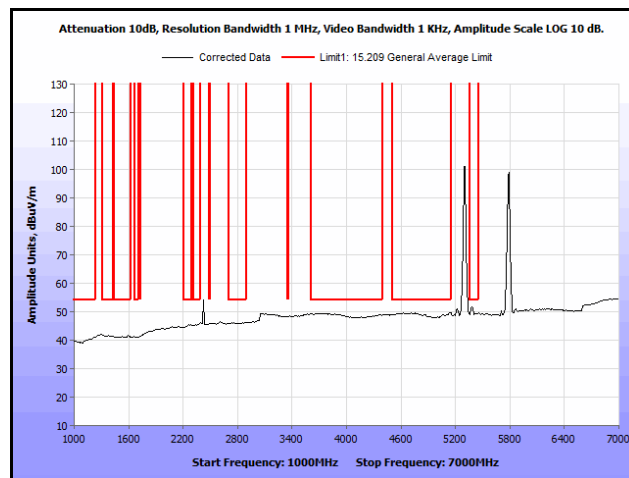
Plot 313. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5300 MHz & 5580 MHz, 1 GHz - 7 GHz, Peak



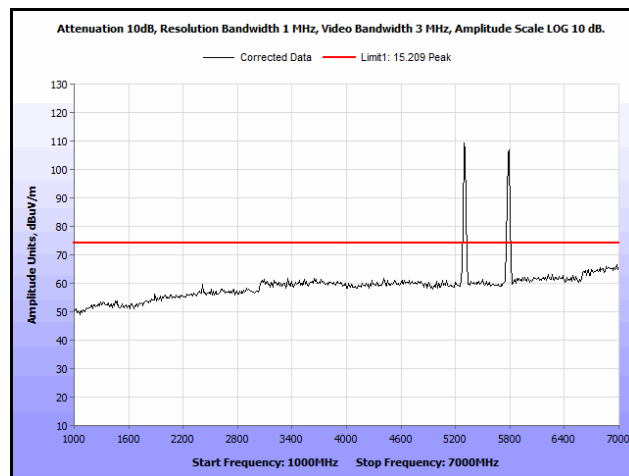
Plot 314. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5300 MHz & 5580 MHz, 7 GHz - 18 GHz, Average



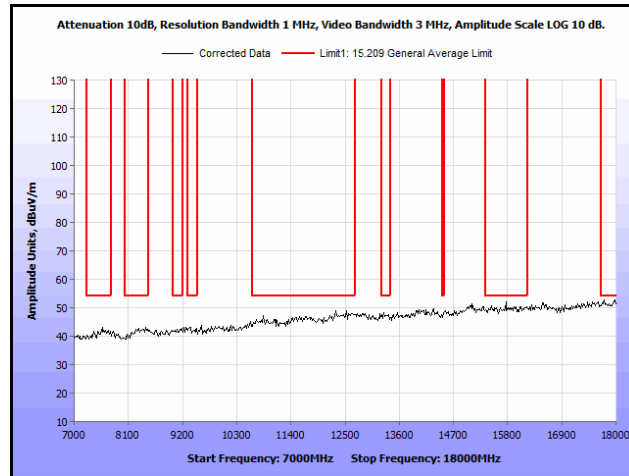
Plot 315. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5300 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



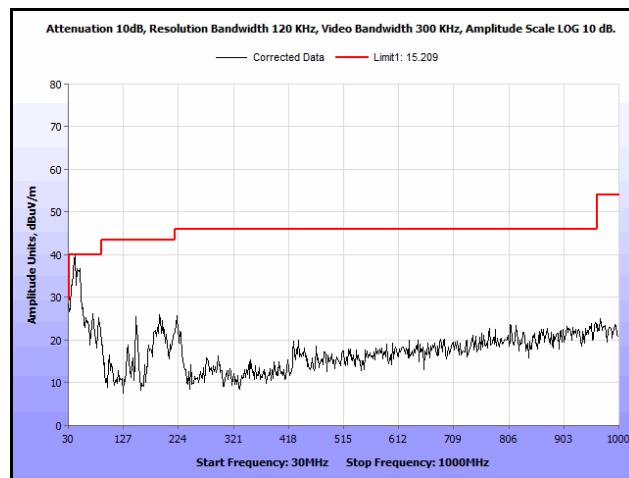
Plot 316. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5300 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



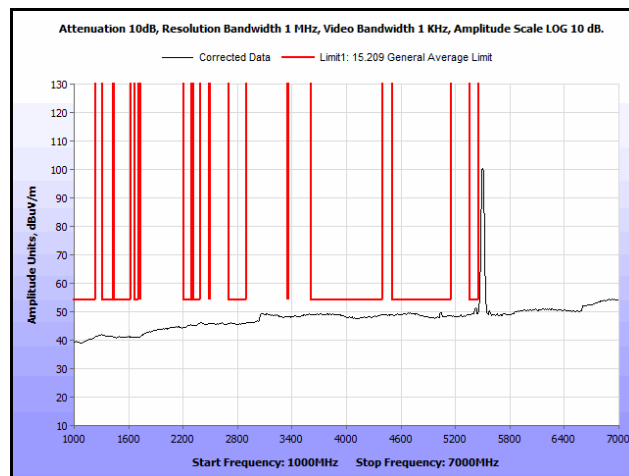
Plot 317. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5300 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



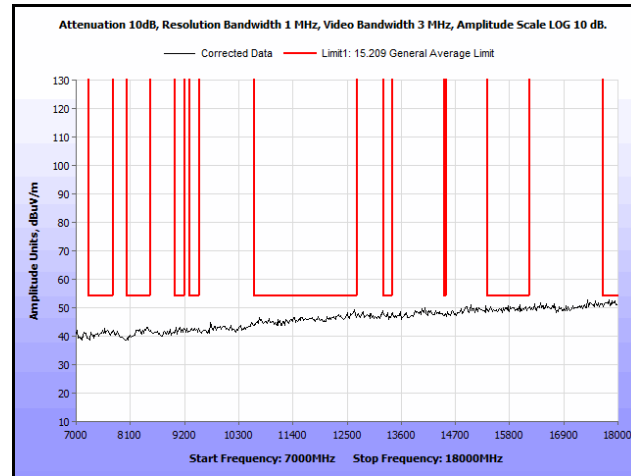
Plot 318. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5300 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



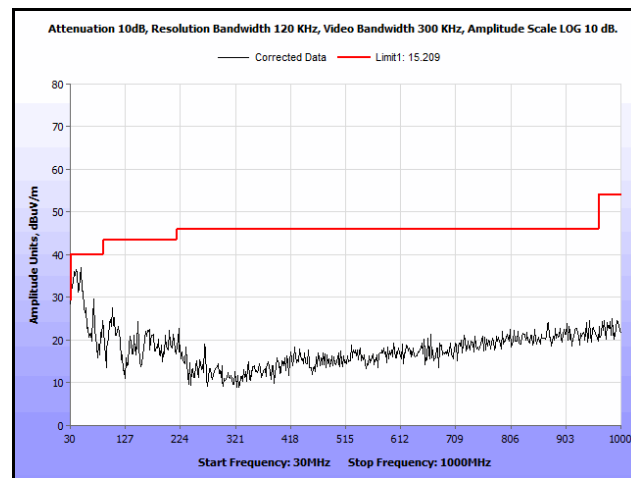
Plot 319. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5580 MHz & 5580 MHz, 30 MHz - 1 GHz, Average



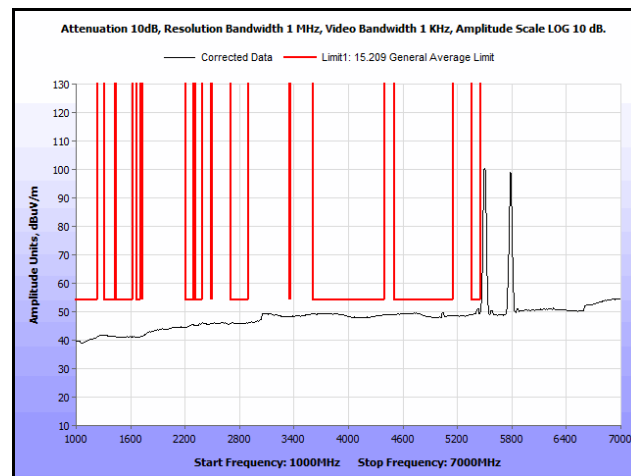
Plot 320. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5580 MHz & 5580 MHz, 1 GHz - 7 GHz, Average



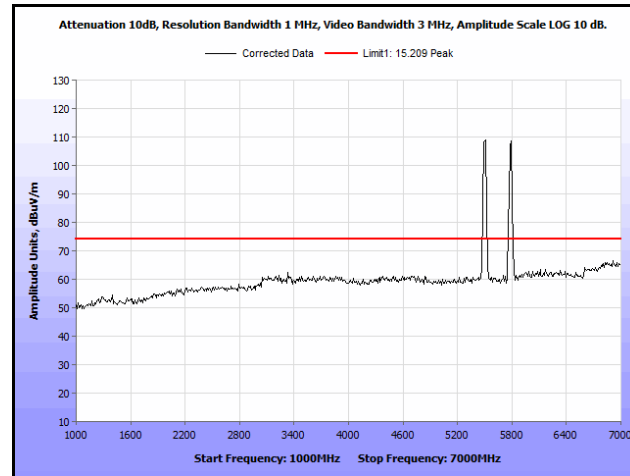
Plot 321. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5580 MHz & 5580 MHz, 7 GHz - 18 GHz, Average



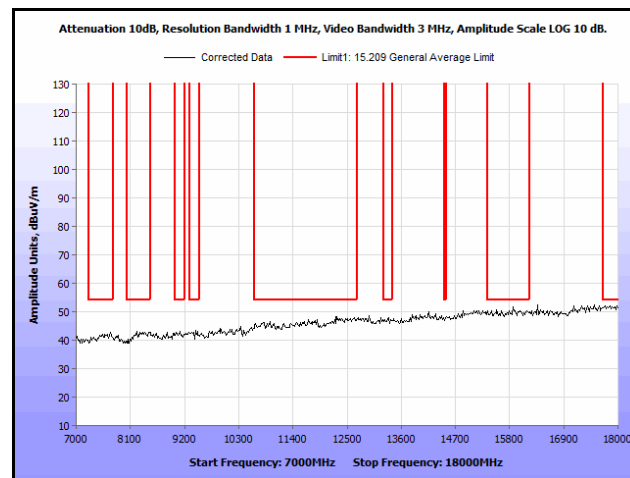
Plot 322. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5580 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



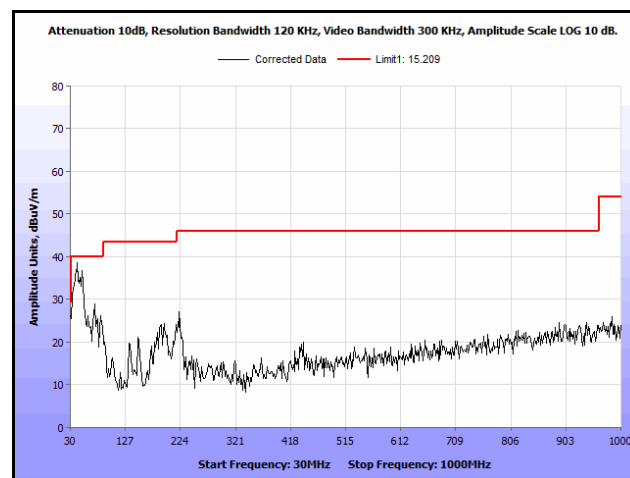
Plot 323. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5580 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



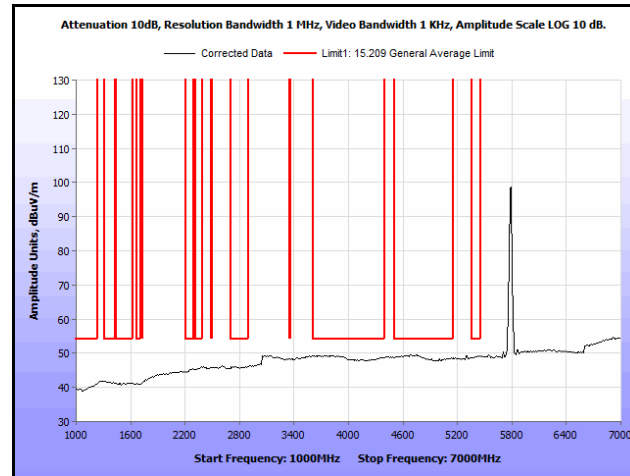
Plot 324. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5580 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



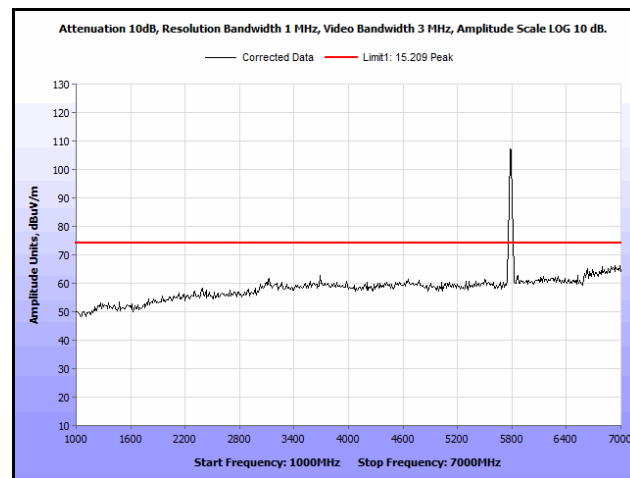
Plot 325. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5580 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



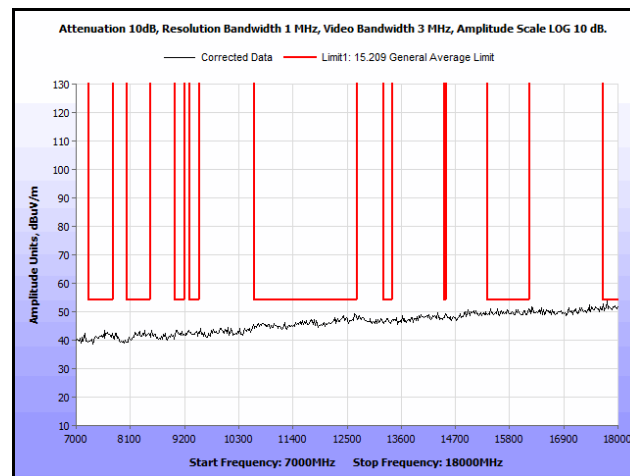
Plot 326. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5785 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



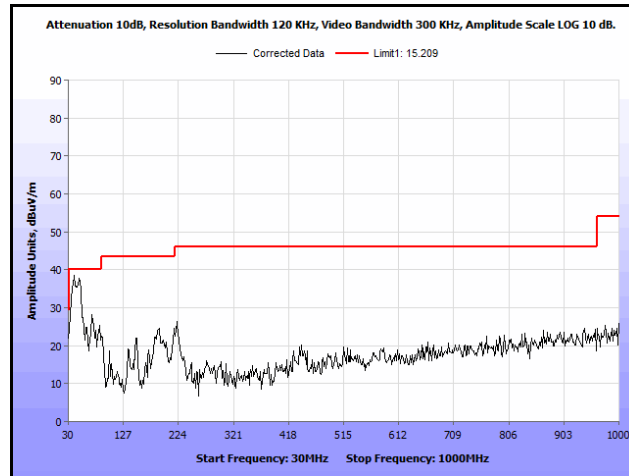
Plot 327. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5785 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



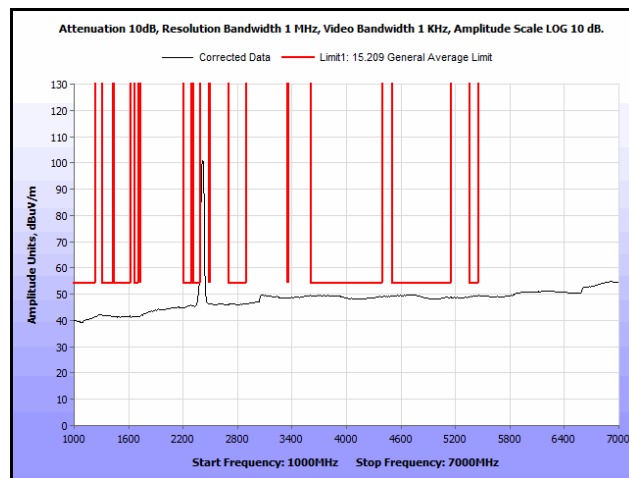
Plot 328. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5785 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



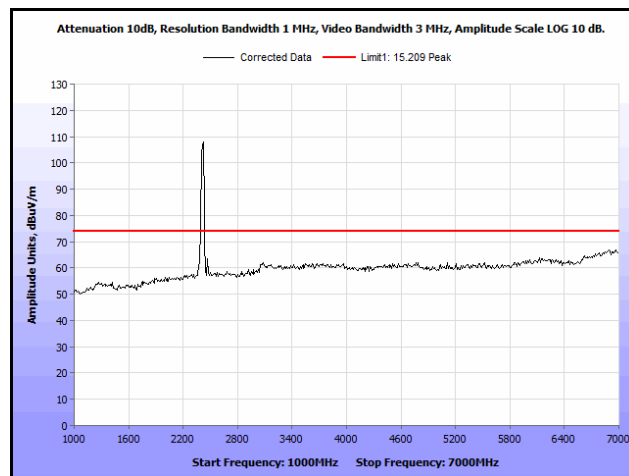
Plot 329. Co-Location, ANT-O6ABGN-1211-PA, 802.11n 20 MHz, 5785 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



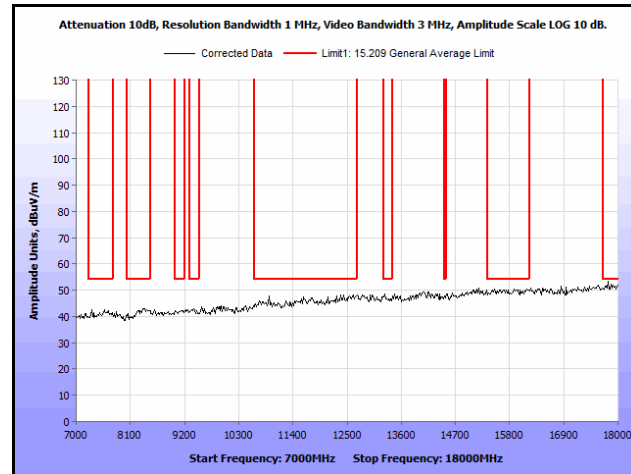
Plot 330. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 2412 MHz, 30 MHz - 1 GHz, Average



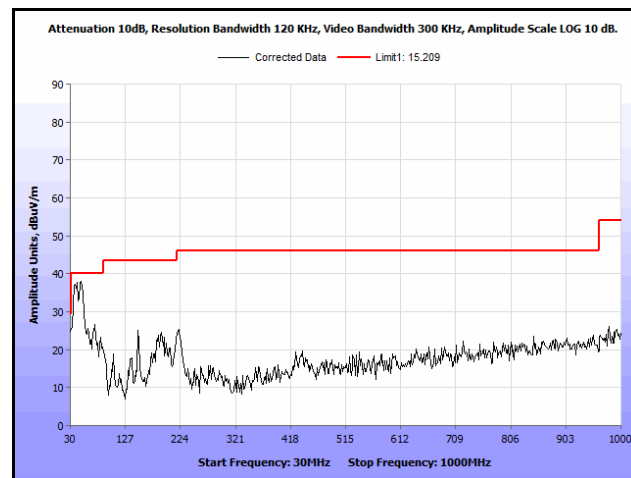
Plot 331. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 2412 MHz, 1 GHz - 7 GHz, Average



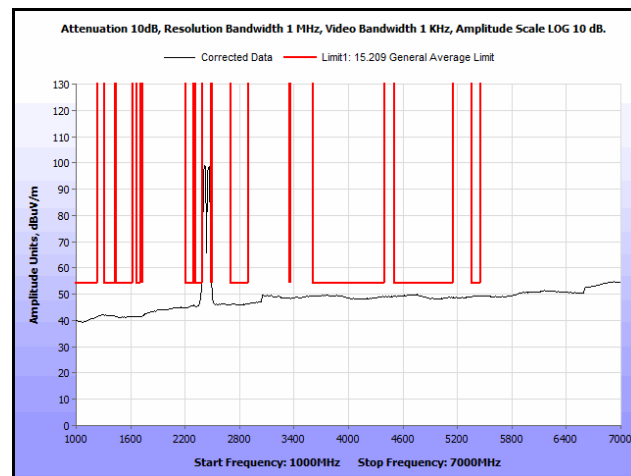
Plot 332. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 2412 MHz, 1 GHz - 7 GHz, Peak



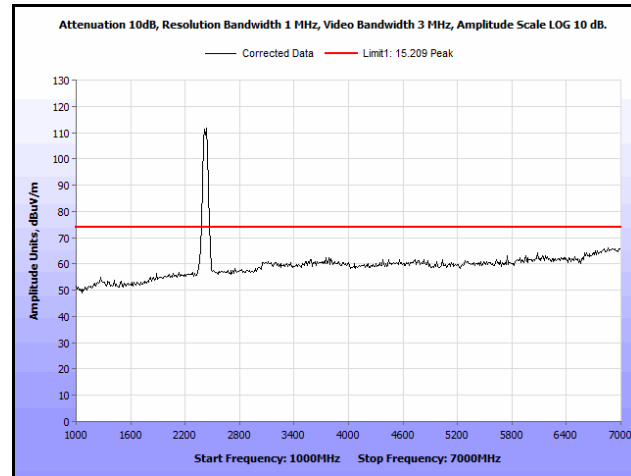
Plot 333. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 2412 MHz, 7 GHz - 18 GHz, Average



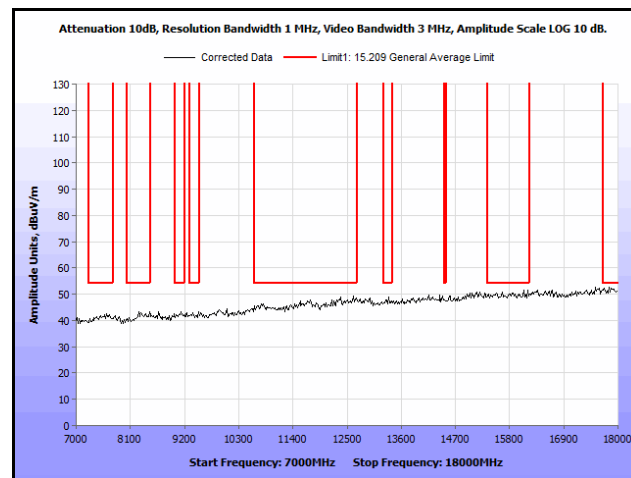
Plot 334. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 2437 MHz, 30 MHz - 1 GHz, Average



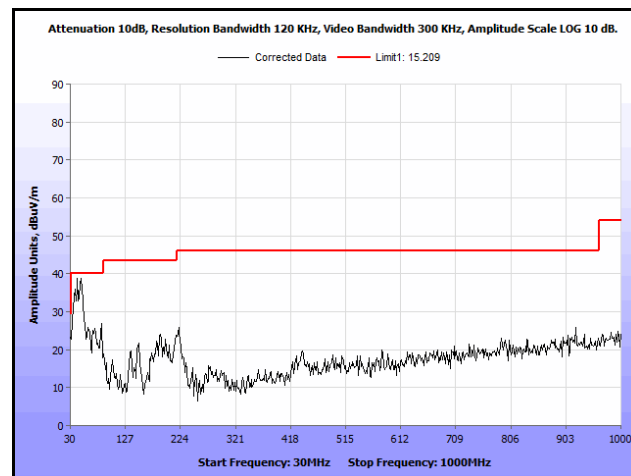
Plot 335. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 2437 MHz, 1 GHz - 7 GHz, Average



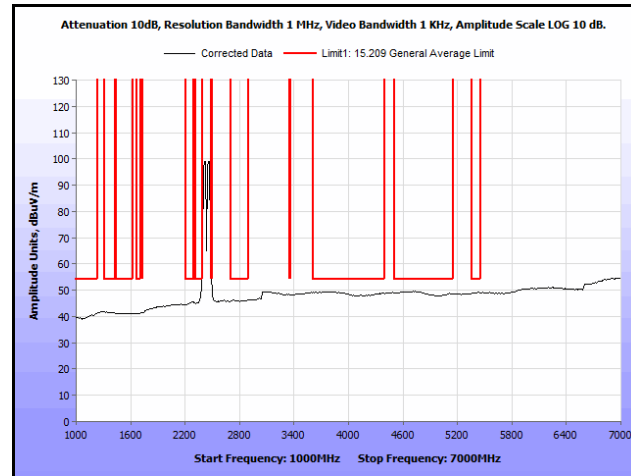
Plot 336. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 2437 MHz, 1 GHz - 7 GHz, Peak



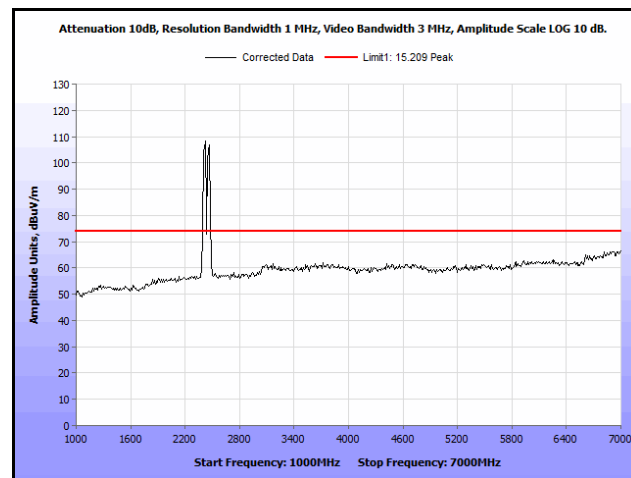
Plot 337. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 2437 MHz, 7 GHz - 18 GHz, Average



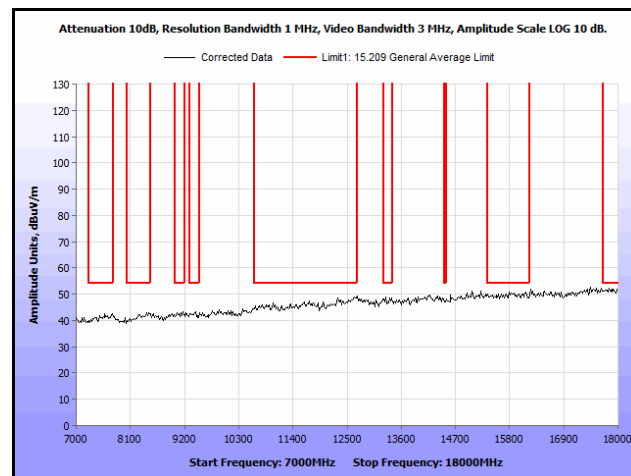
Plot 338. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 2462 MHz, 30 MHz - 1 GHz, Average



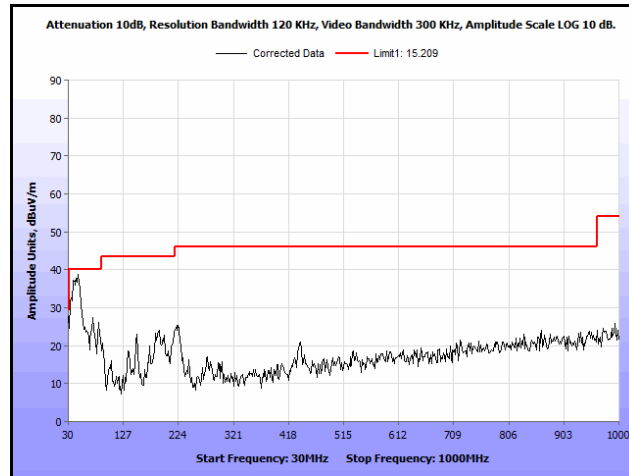
Plot 339. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 2462 MHz, 1 GHz - 7 GHz, Average



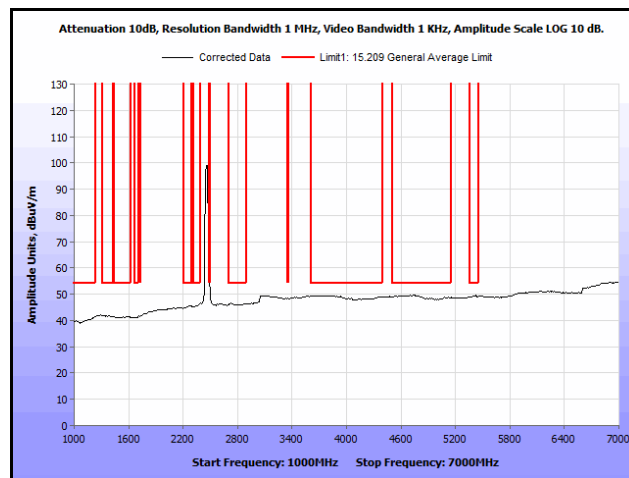
Plot 340. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 2462 MHz, 1 GHz - 7 GHz, Peak



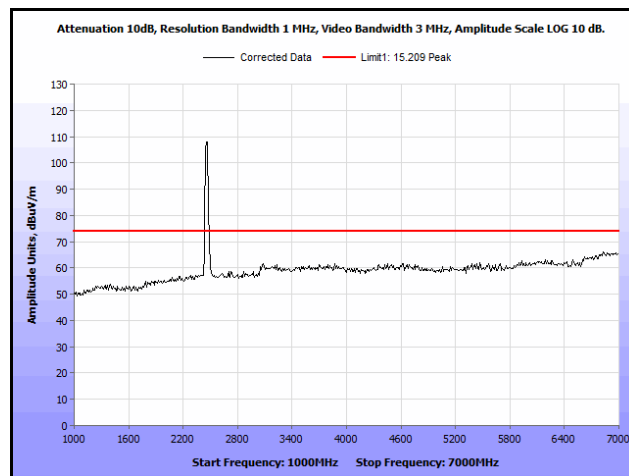
Plot 341. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 2462 MHz, 7 GHz - 18 GHz, Average



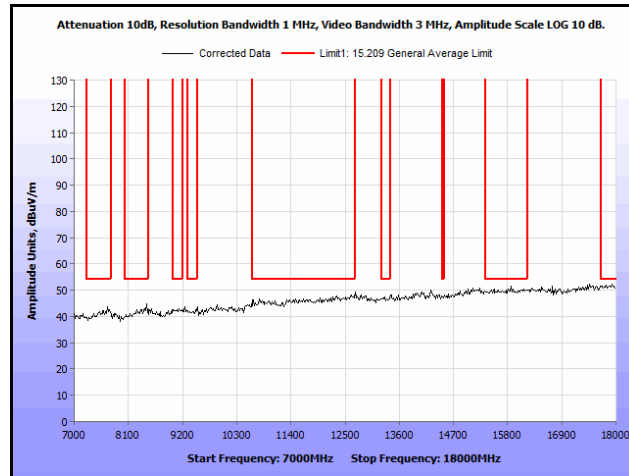
Plot 342. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 2437 MHz, 30 MHz - 1 GHz, Average



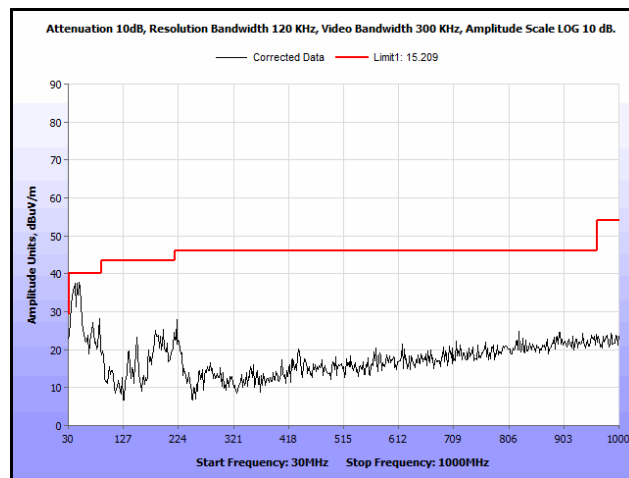
Plot 343. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 2437 MHz, 1 GHz - 7 GHz, Average



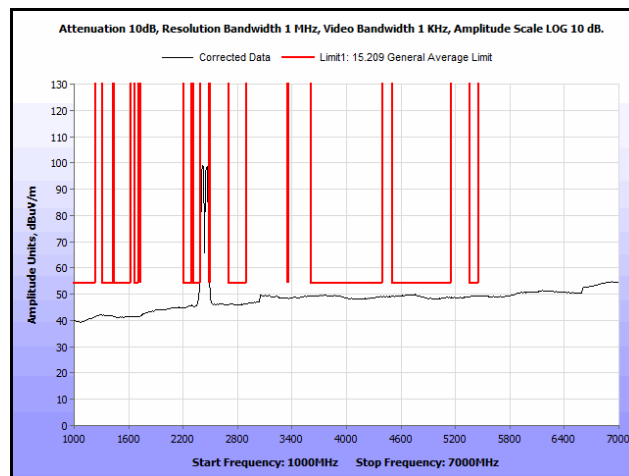
Plot 344. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 2437 MHz, 1 GHz - 7 GHz, Peak



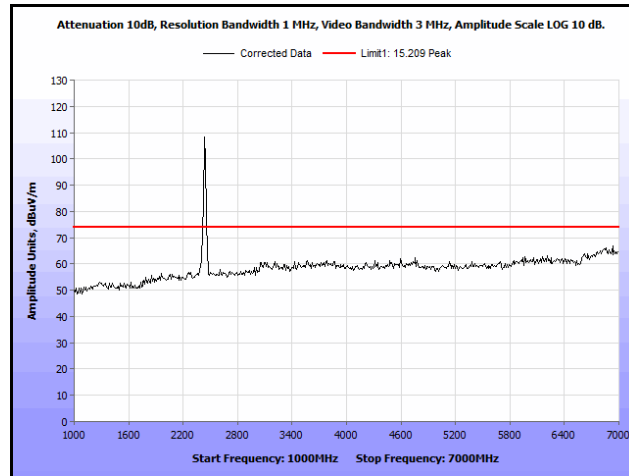
Plot 345. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 2437 MHz, 7 GHz - 18 GHz, Average



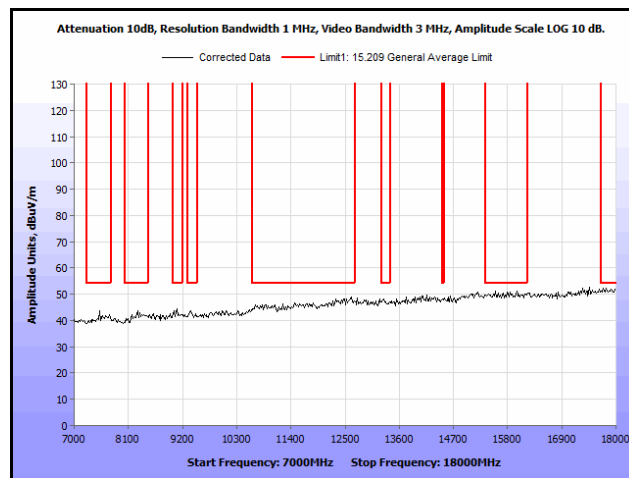
Plot 346. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 2462 MHz, 30 MHz - 1 GHz, Average



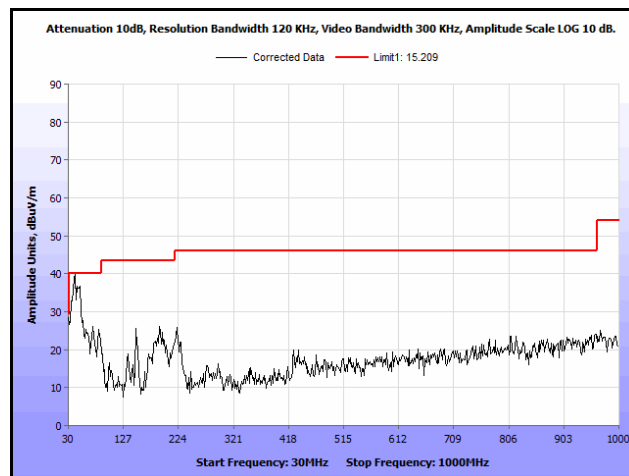
Plot 347. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 2462 MHz, 1 GHz - 7 GHz, Average



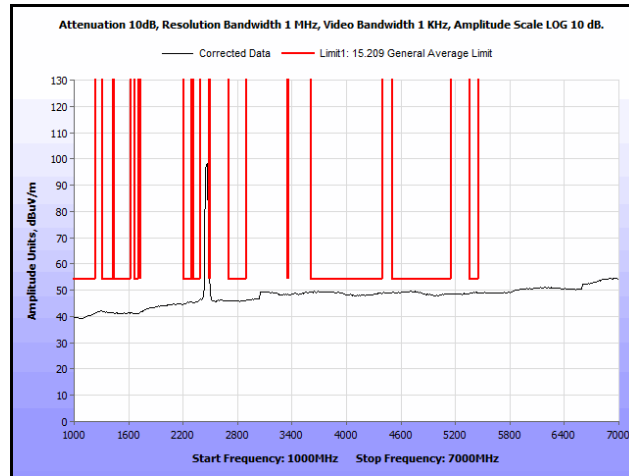
Plot 348. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 2462 MHz, 1 GHz - 7 GHz, Peak



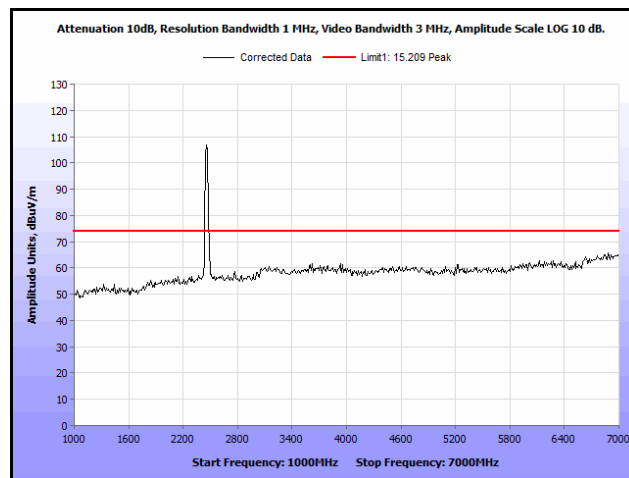
Plot 349. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 2462 MHz, 7 GHz - 18 GHz, Average



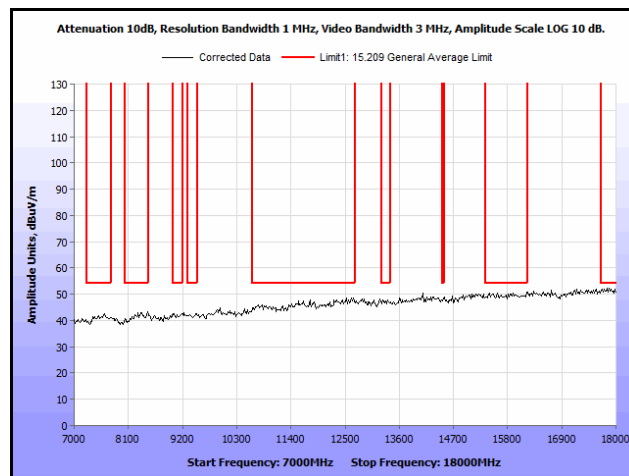
Plot 350. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 2462 MHz, 30 MHz - 1 GHz, Average



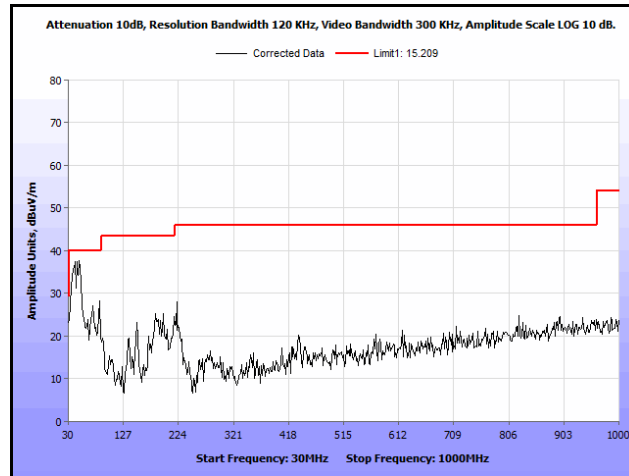
Plot 351. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 2462 MHz, 1 GHz - 7 GHz, Average



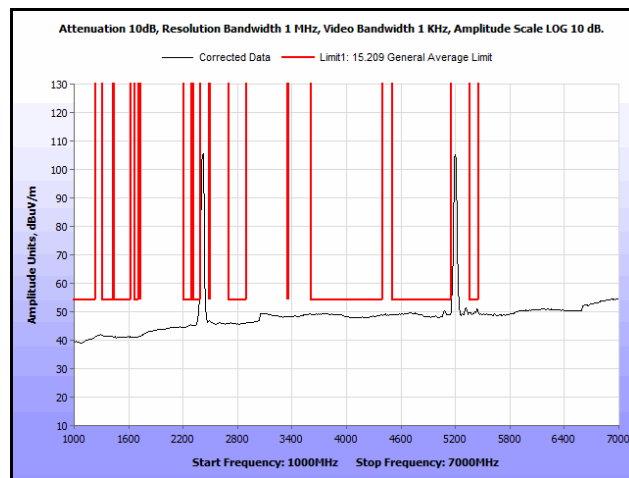
Plot 352. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 2462 MHz, 1 GHz - 7 GHz, Peak



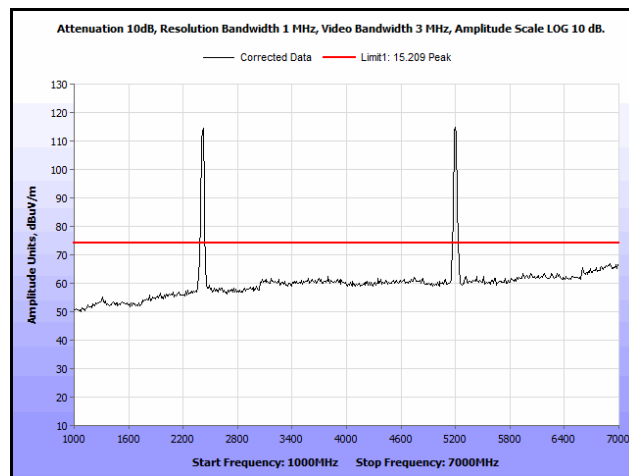
Plot 353. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 2462 MHz, 7 GHz - 18 GHz, Average



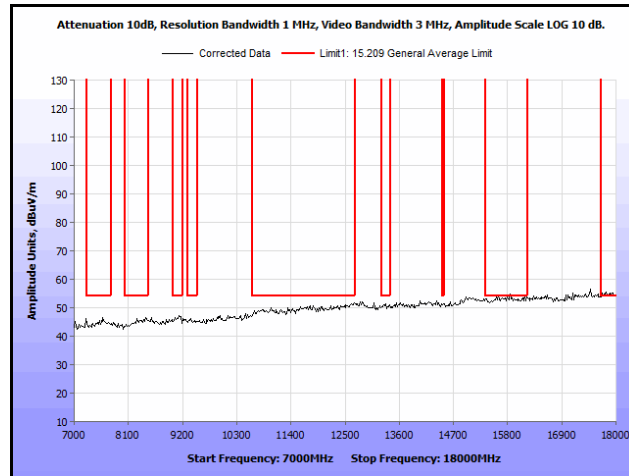
Plot 354. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5200 MHz, 30 MHz - 1 GHz, Average



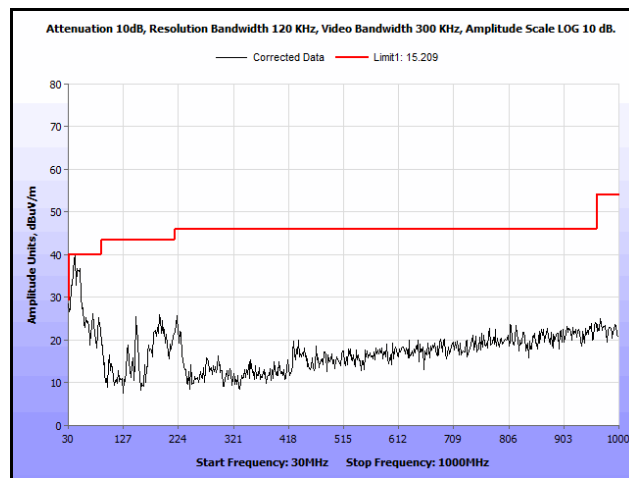
Plot 355. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5200 MHz, 1 GHz - 7 GHz, Average



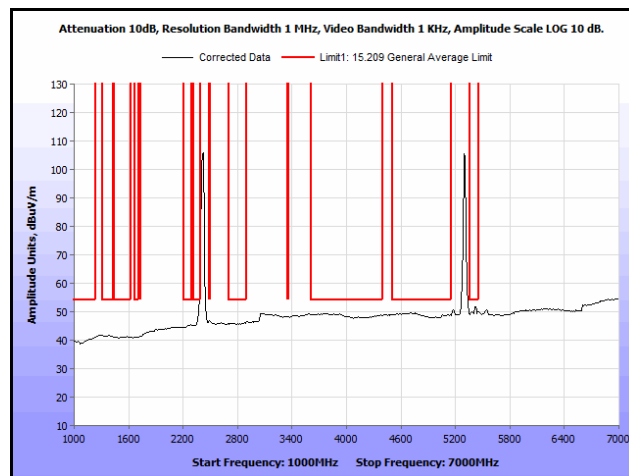
Plot 356. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5200 MHz, 1 GHz - 7 GHz, Peak



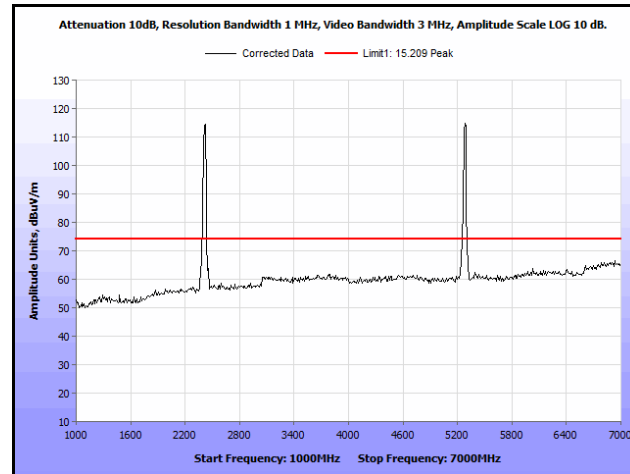
Plot 357. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5200 MHz, 7 GHz - 18 GHz, Average



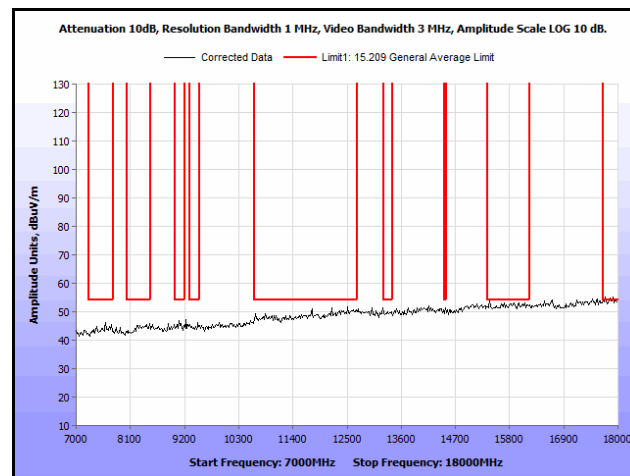
Plot 358. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5300 MHz, 30 MHz - 1 GHz, Average



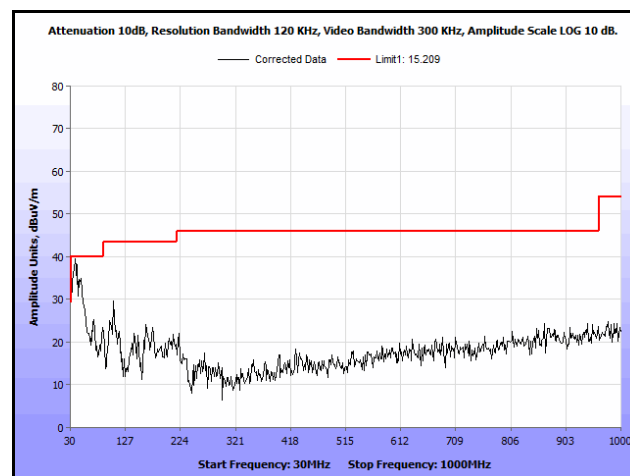
Plot 359. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5300 MHz, 1 GHz - 7 GHz, Average



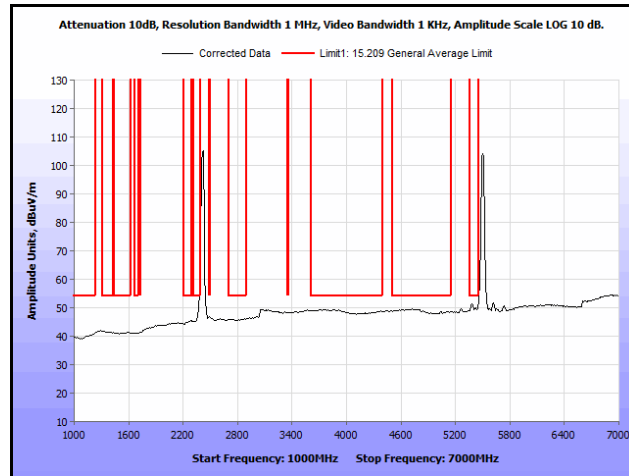
Plot 360. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5300 MHz, 1 GHz - 7 GHz, Peak



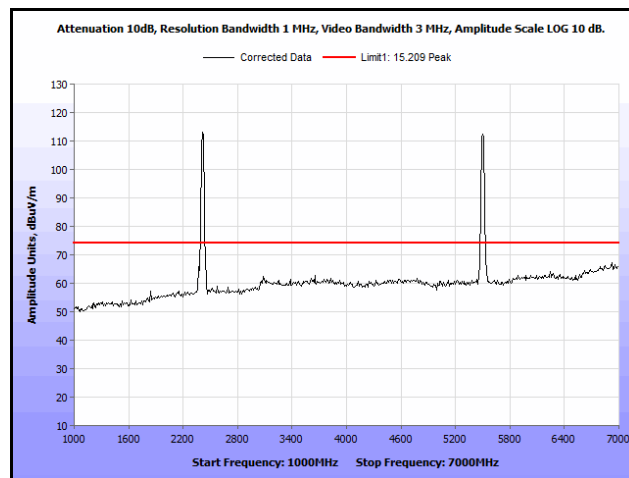
Plot 361. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5300 MHz, 7 GHz - 18 GHz, Average



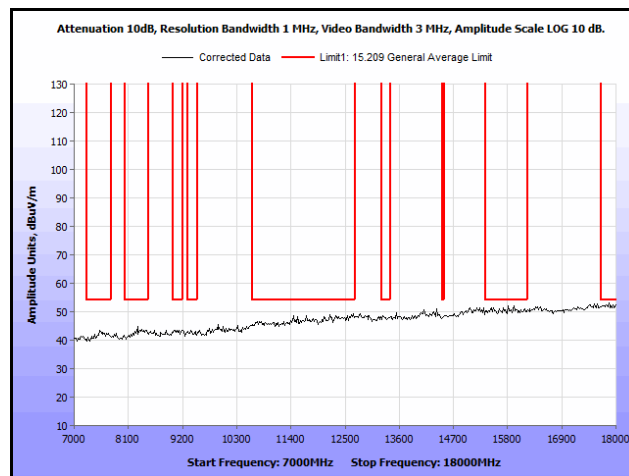
Plot 362. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5580 MHz, 30 MHz - 1 GHz, Average



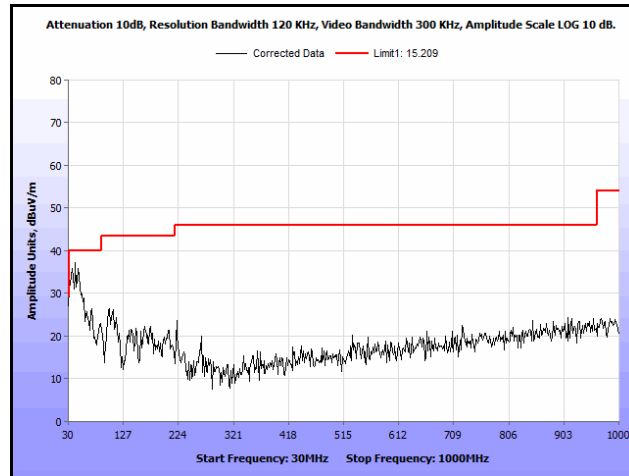
Plot 363. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5580 MHz, 1 GHz - 7 GHz, Average



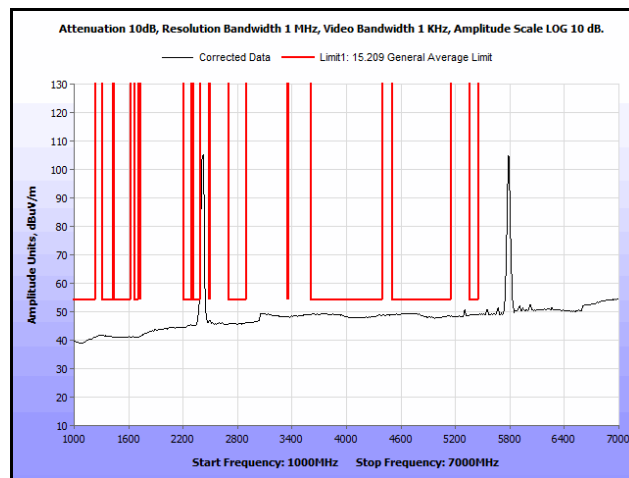
Plot 364. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5580 MHz, 1 GHz - 7 GHz, Peak



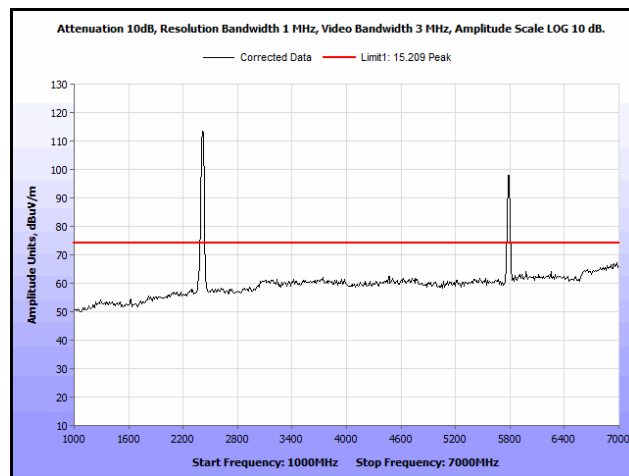
Plot 365. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5580 MHz, 7 GHz - 18 GHz, Average



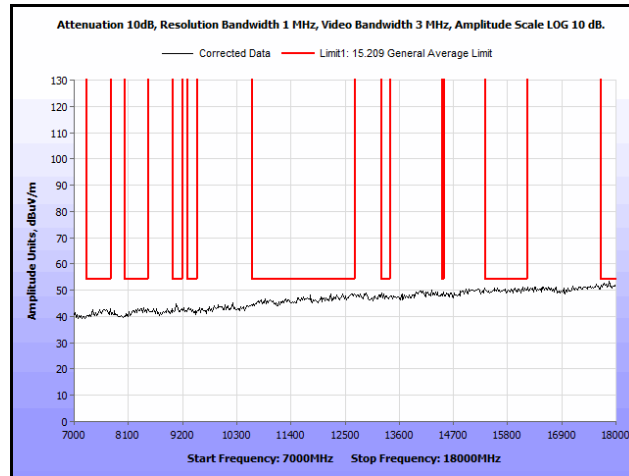
Plot 366. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



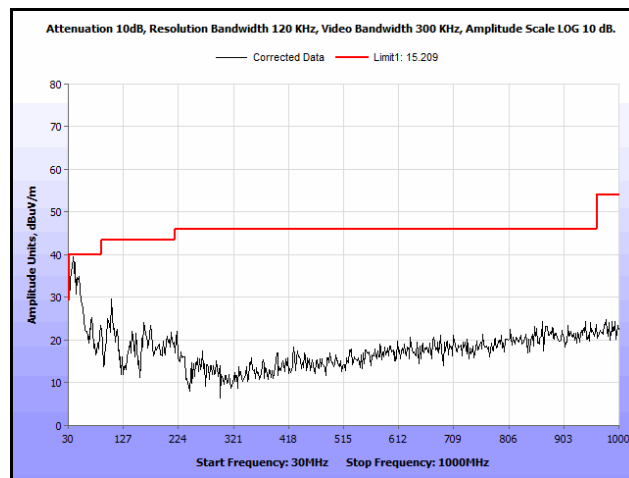
Plot 367. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



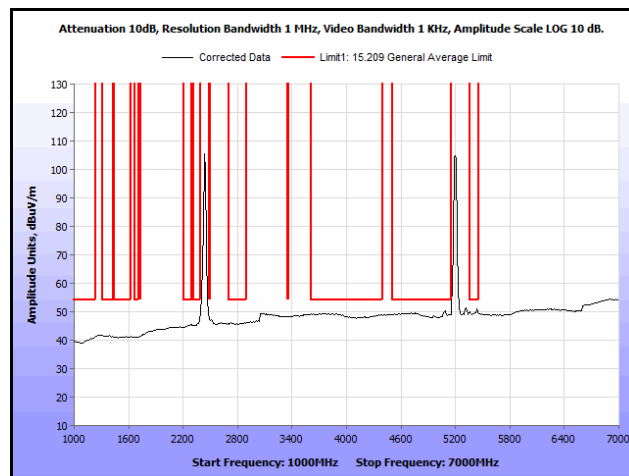
Plot 368. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



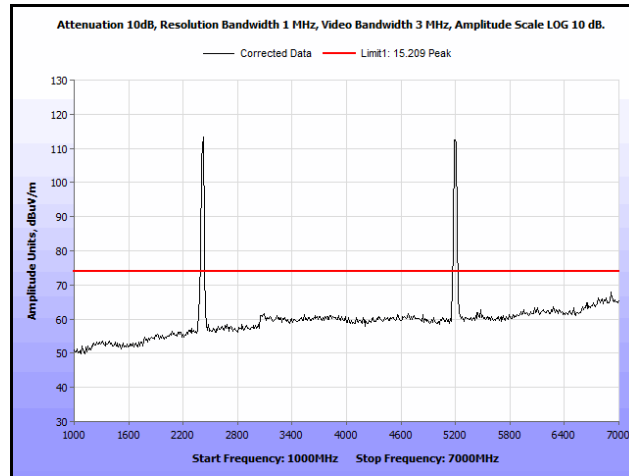
Plot 369. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2412 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



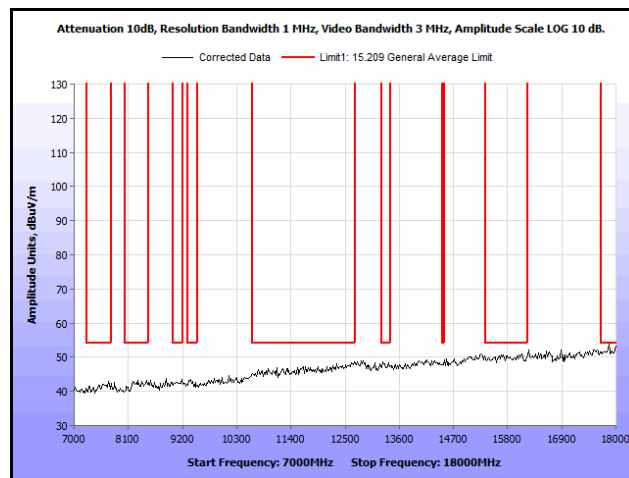
Plot 370. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5200 MHz, 30 MHz - 1 GHz, Average



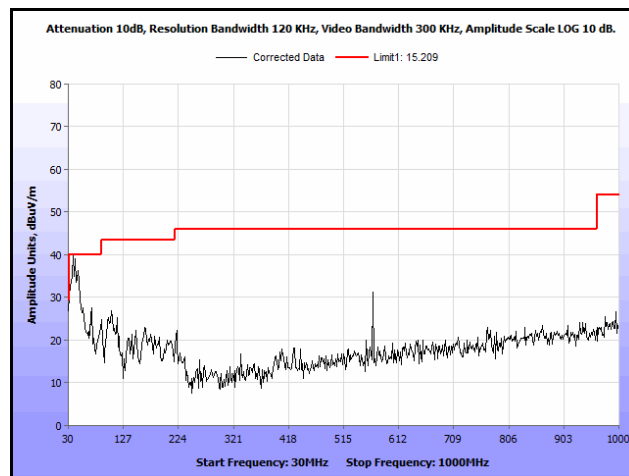
Plot 371. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5200 MHz, 1 GHz - 7 GHz, Average



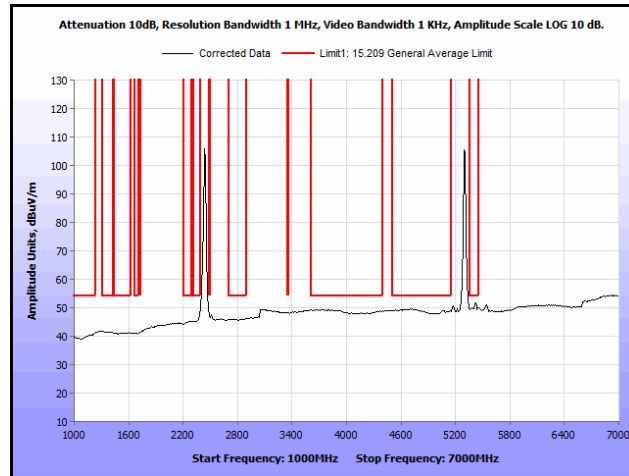
Plot 372. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5200 MHz, 1 GHz - 7 GHz, Peak



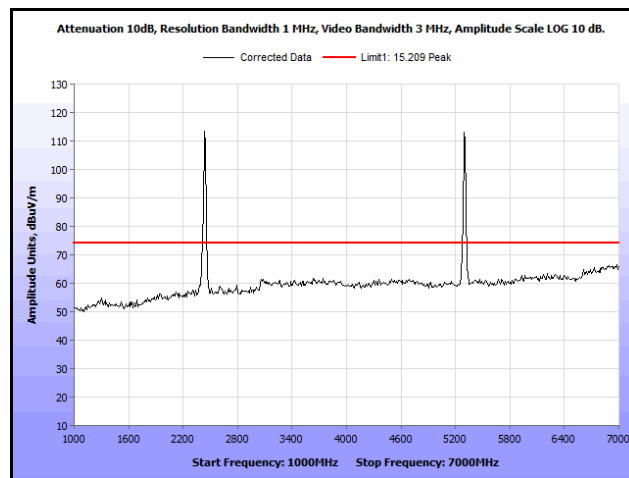
Plot 373. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5200 MHz, 7 GHz - 18 GHz, Average



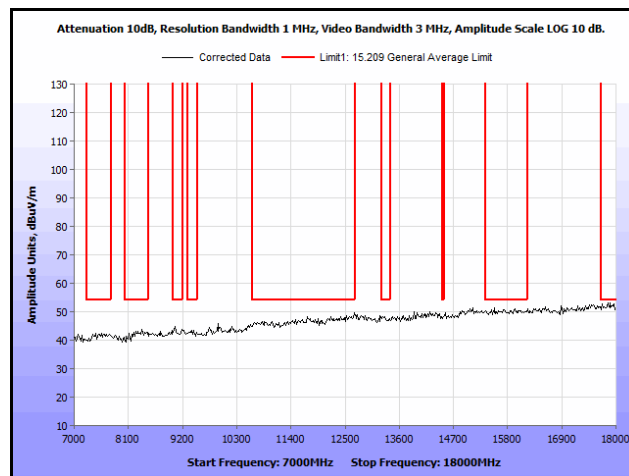
Plot 374. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5300 MHz, 30 MHz - 1 GHz, Average



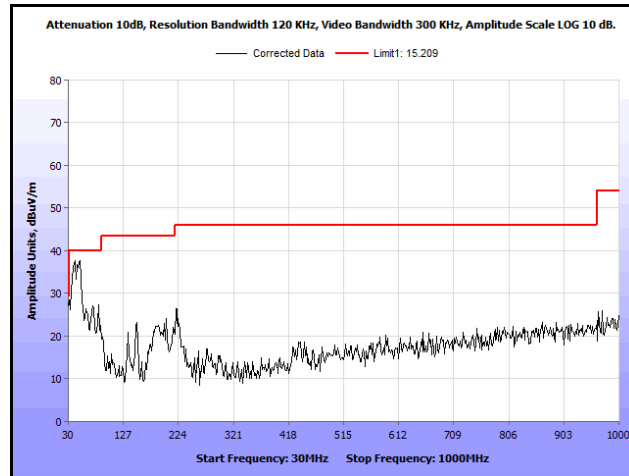
Plot 375. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5300 MHz, 1 GHz - 7 GHz, Average



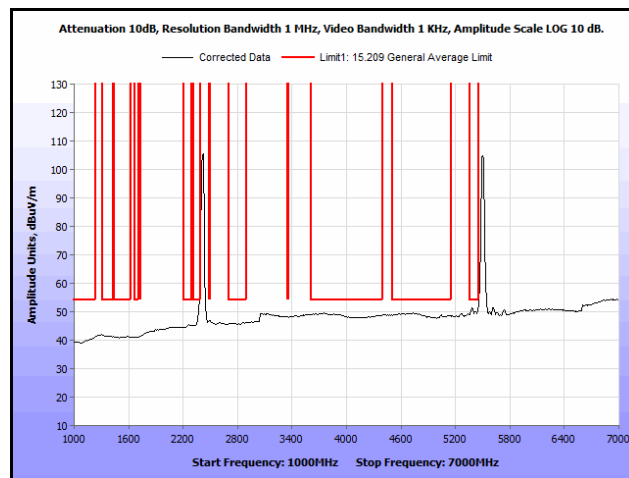
Plot 376. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5300 MHz, 1 GHz - 7 GHz, Peak



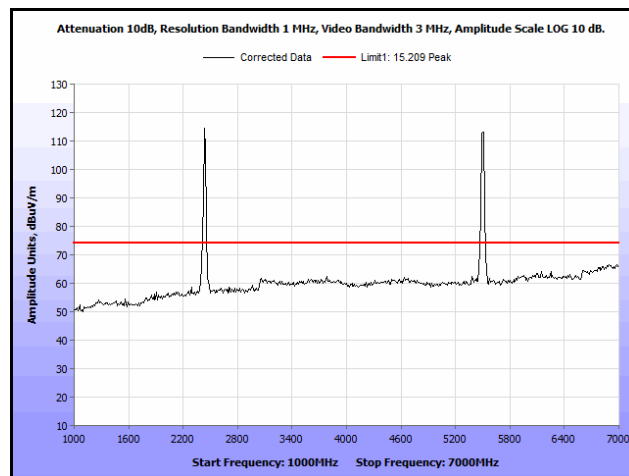
Plot 377. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5300 MHz, 7 GHz - 18 GHz, Average



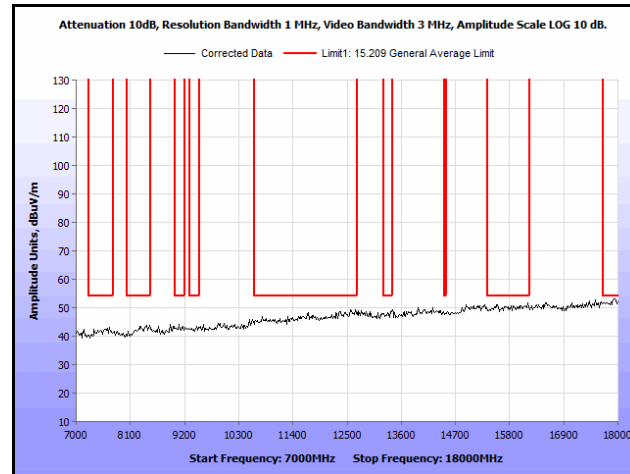
Plot 378. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5580 MHz, 30 MHz - 1 GHz, Average



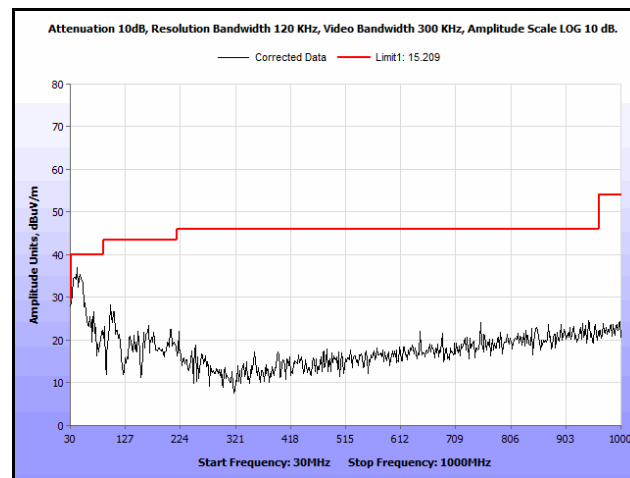
Plot 379. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5580 MHz, 1 GHz - 7 GHz, Average



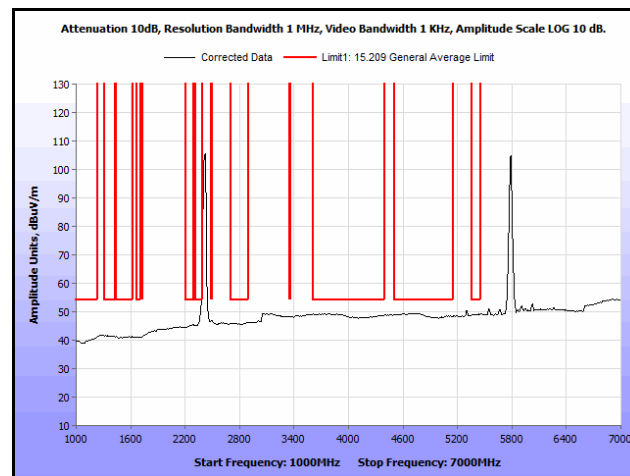
Plot 380. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5580 MHz, 1 GHz - 7 GHz, Peak



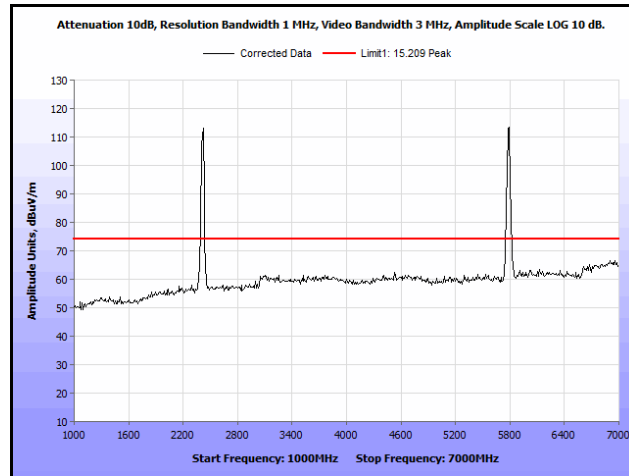
Plot 381. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5580 MHz, 7 GHz - 18 GHz, Average



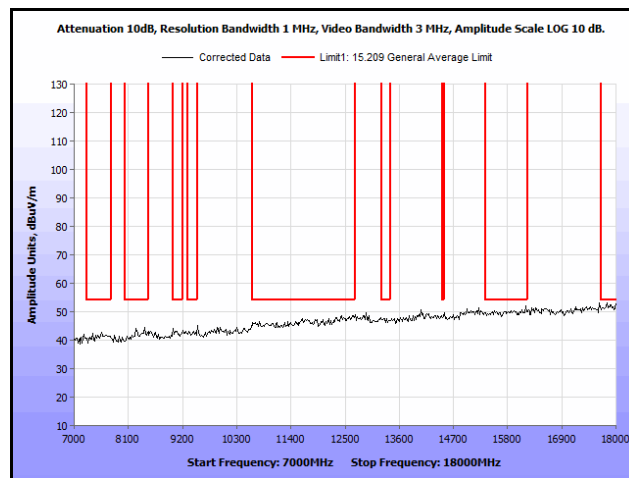
Plot 382. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



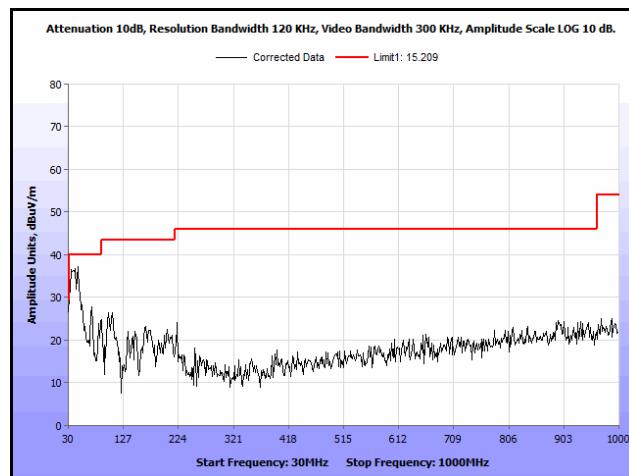
Plot 383. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



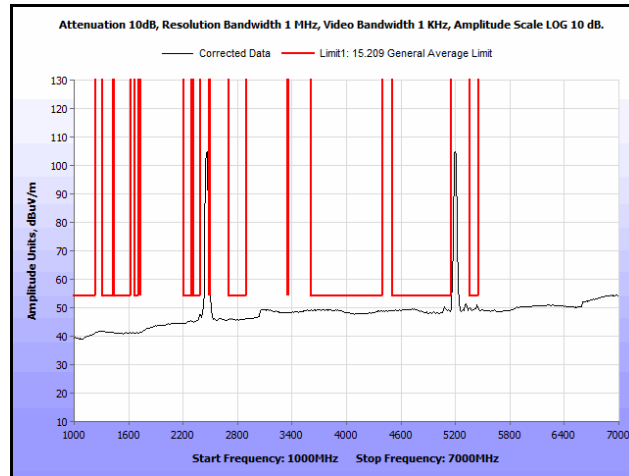
Plot 384. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



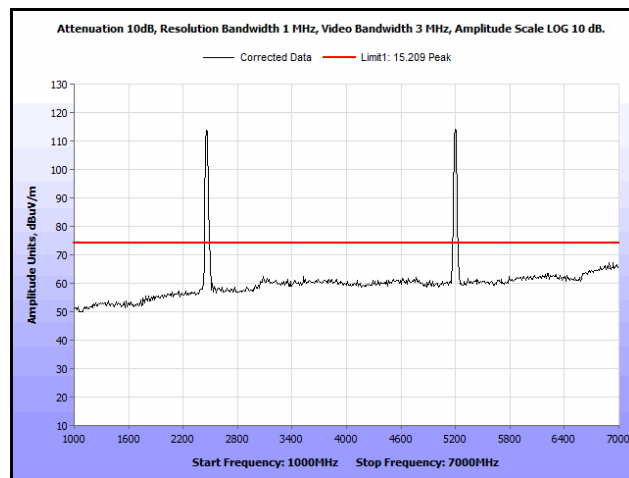
Plot 385. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2437 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



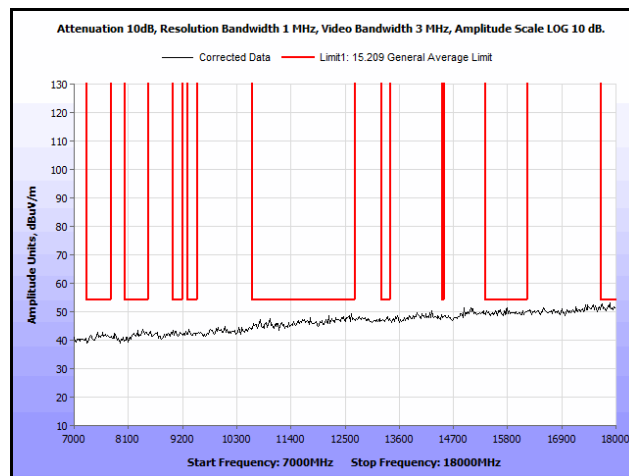
Plot 386. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5200 MHz, 30 MHz - 1 GHz, Average



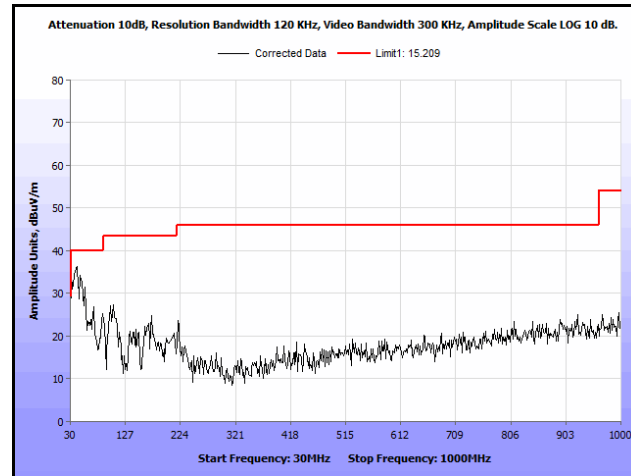
Plot 387. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5200 MHz, 1 GHz - 7 GHz, Average



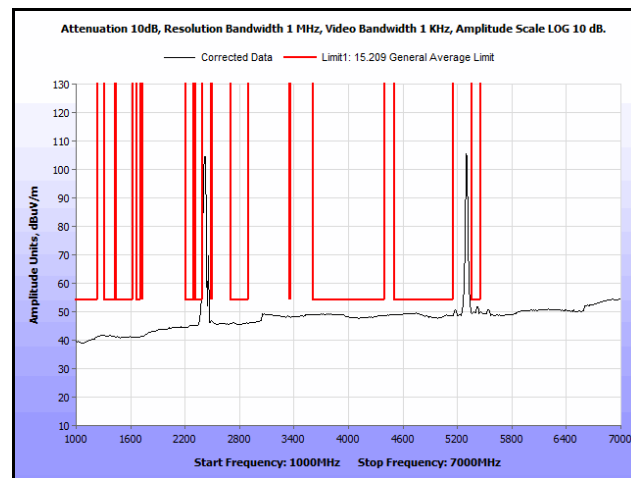
Plot 388. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5200 MHz, 1 GHz - 7 GHz, Peak



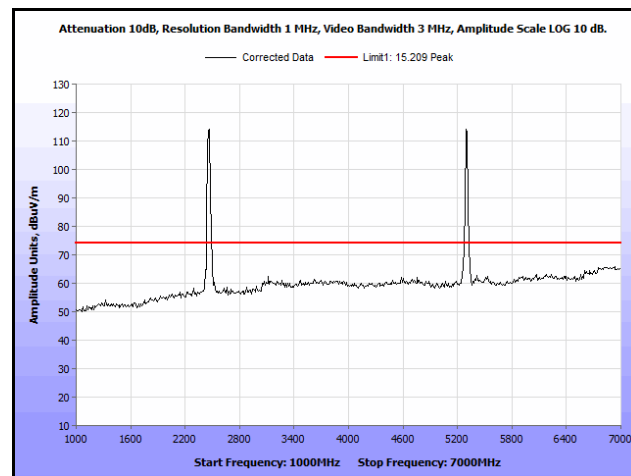
Plot 389. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5200 MHz, 7 GHz - 18 GHz, Average



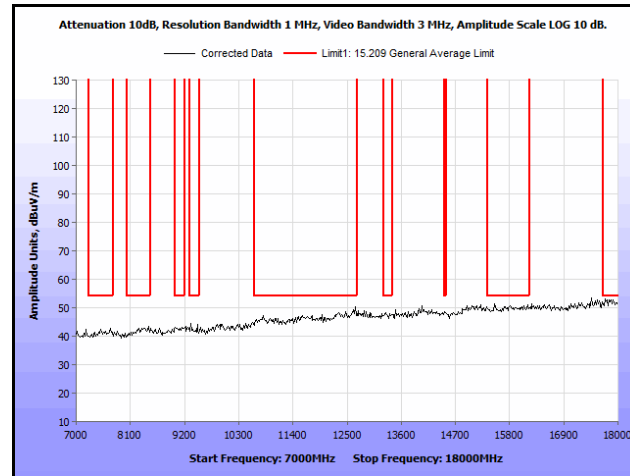
Plot 390. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5300 MHz, 30 MHz - 1 GHz, Average



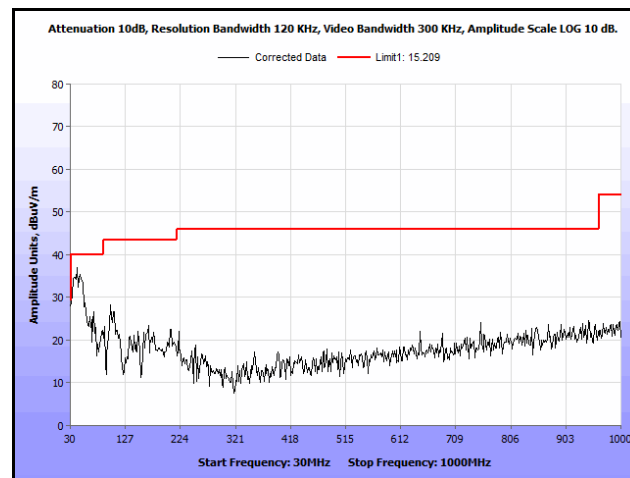
Plot 391. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5300 MHz, 1 GHz - 7 GHz, Average



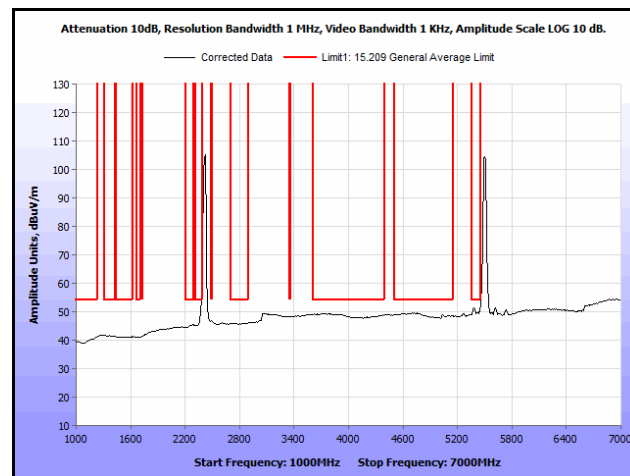
Plot 392. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5300 MHz, 1 GHz - 7 GHz, Peak



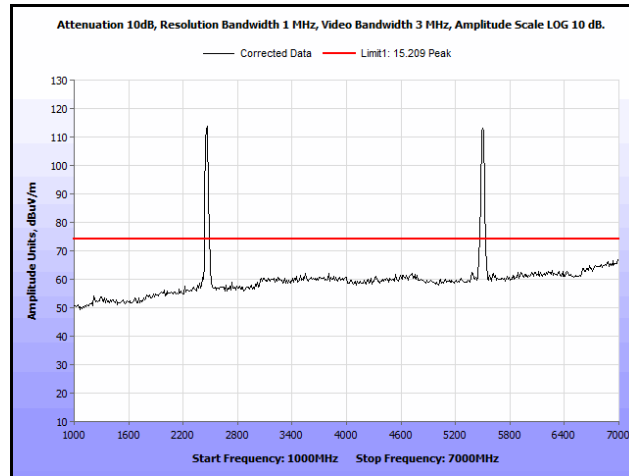
Plot 393. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5300 MHz, 7 GHz - 18 GHz, Average



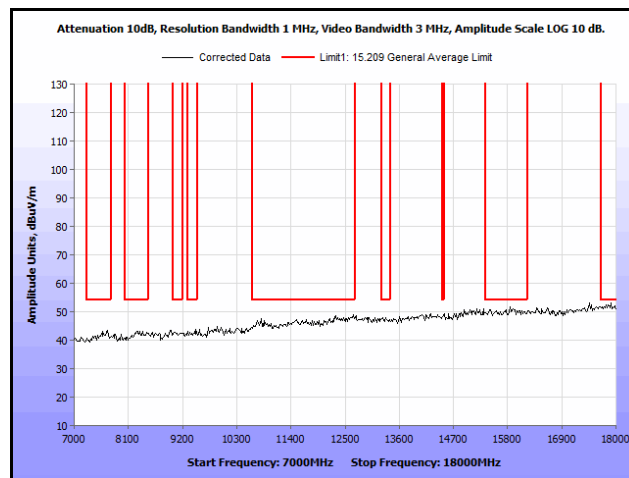
Plot 394. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5580 MHz, 30 MHz - 1 GHz, Average



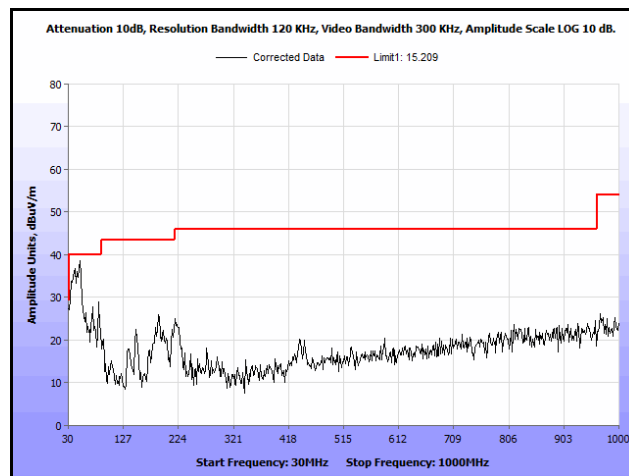
Plot 395. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5580 MHz, 1 GHz - 7 GHz, Average



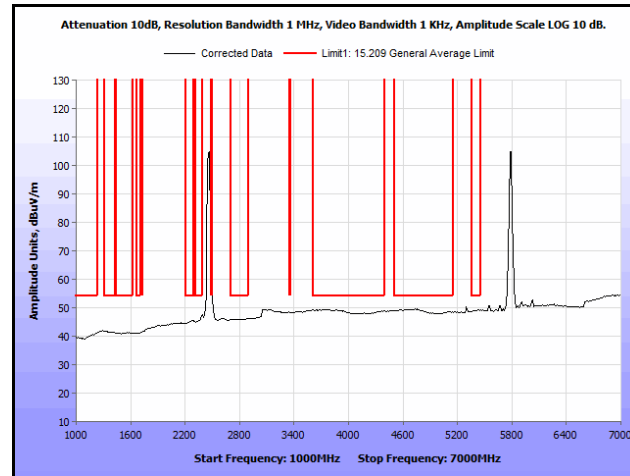
Plot 396. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5580 MHz, 1 GHz - 7 GHz, Peak



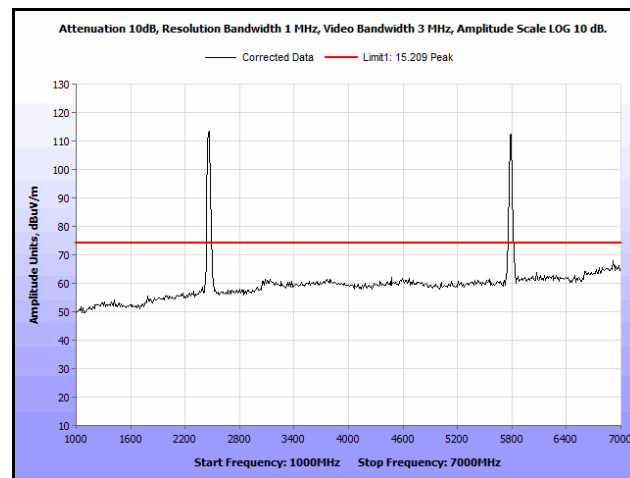
Plot 397. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5580 MHz, 7 GHz - 18 GHz, Average



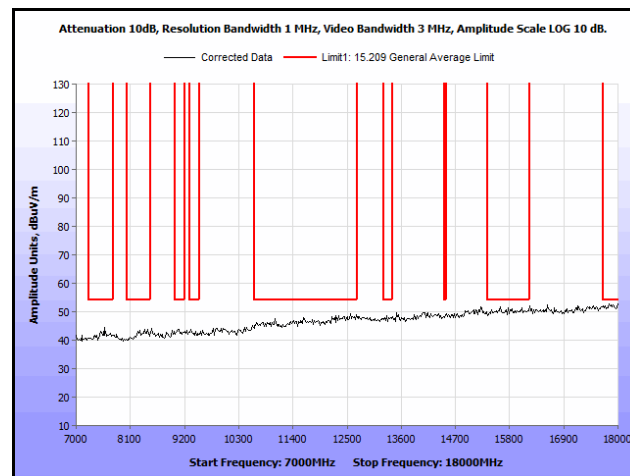
Plot 398. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



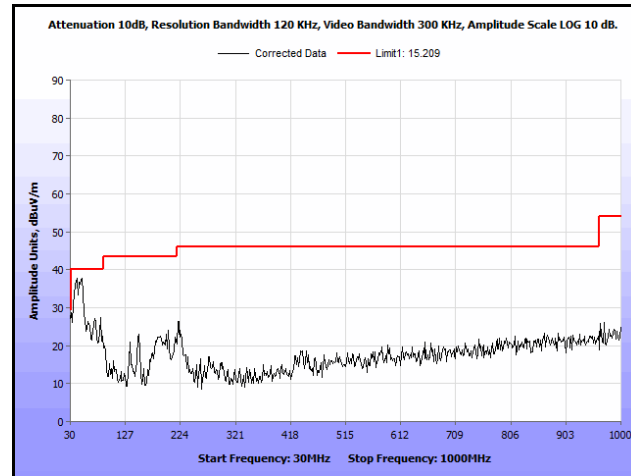
Plot 399. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



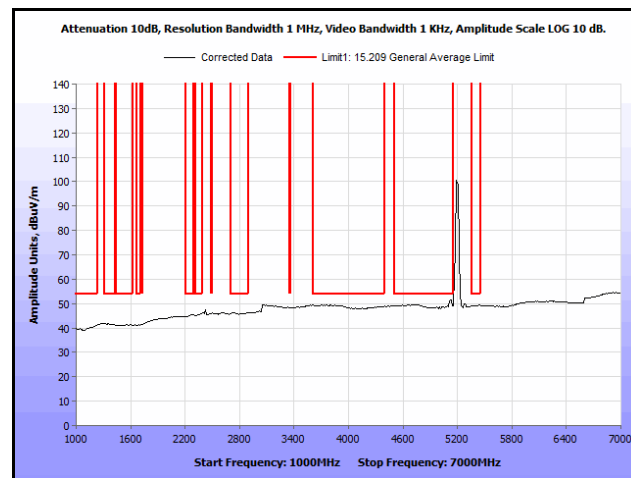
Plot 400. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



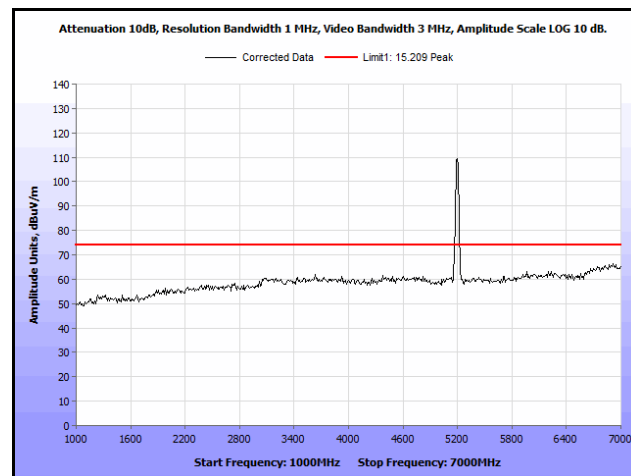
Plot 401. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 2462 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



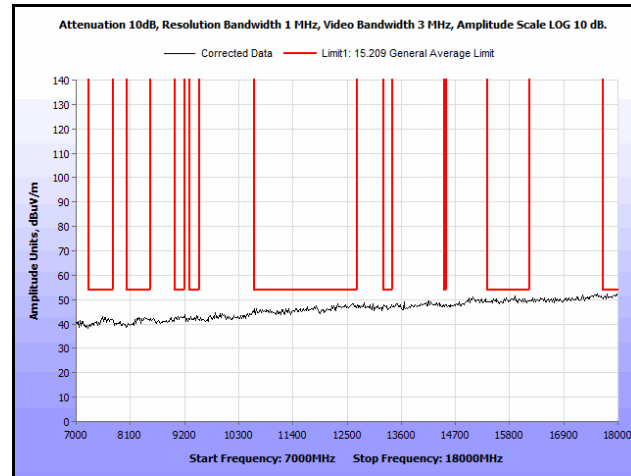
Plot 402. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5200 MHz, 30 MHz - 1 GHz, Average



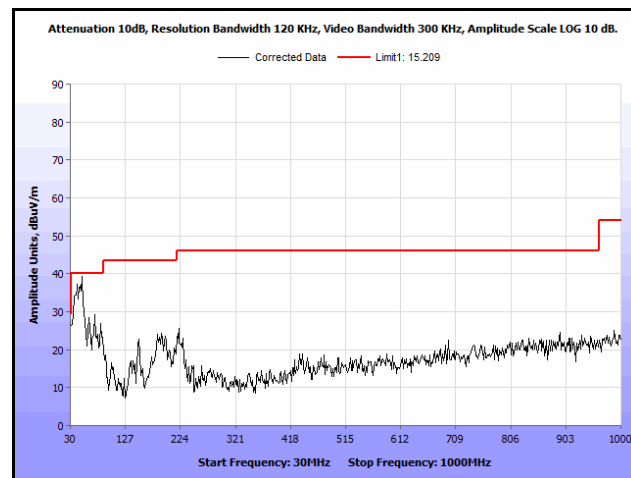
Plot 403. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5200 MHz, 1 GHz - 7 GHz, Average



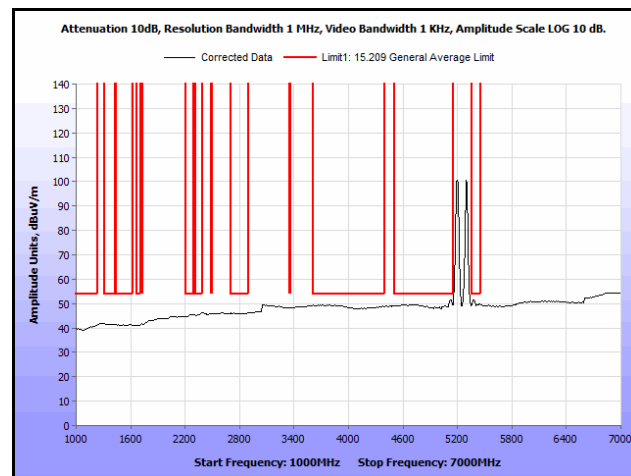
Plot 404. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5200 MHz, 1 GHz - 7 GHz, Peak



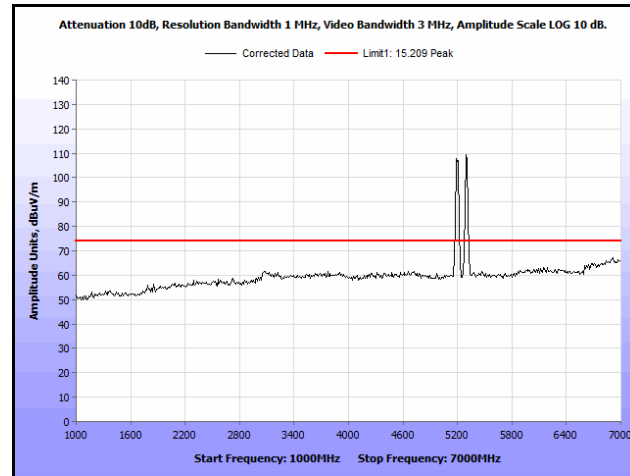
Plot 405. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5200 MHz, 7 GHz - 18 GHz, Average



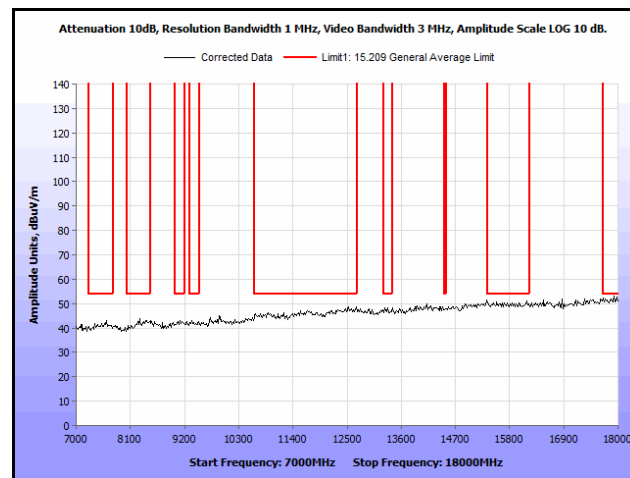
Plot 406. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5300 MHz, 30 MHz - 1 GHz, Average



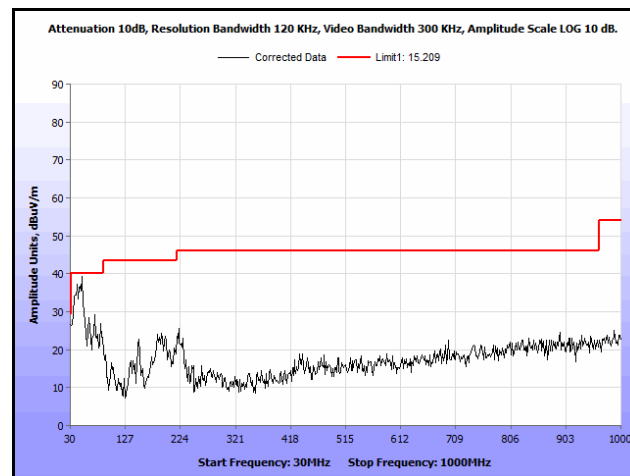
Plot 407. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5300 MHz, 1 GHz - 7 GHz, Average



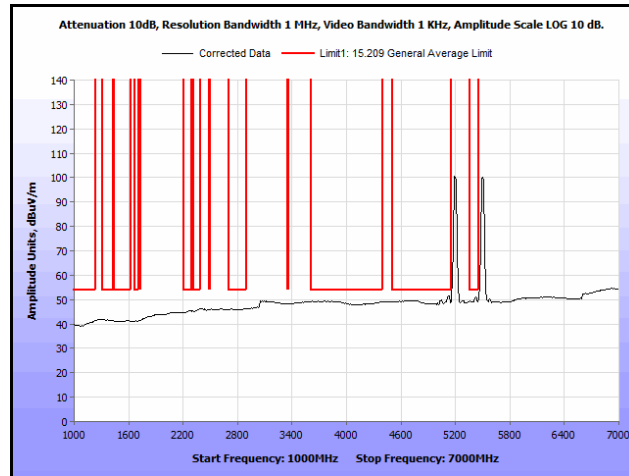
Plot 408. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5300 MHz, 1 GHz - 7 GHz, Peak



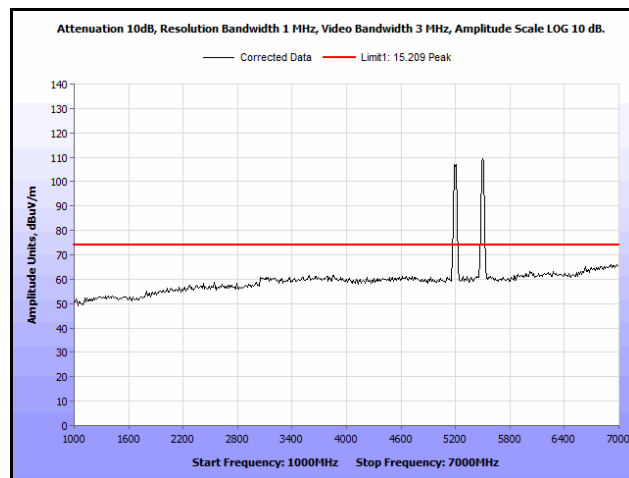
Plot 409. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5300 MHz, 7 GHz - 18 GHz, Average



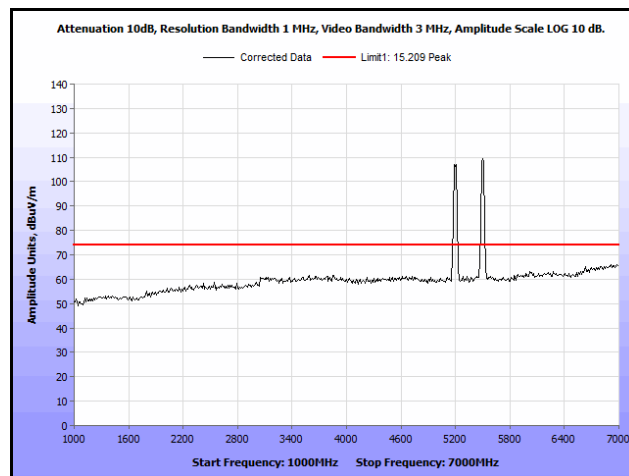
Plot 410. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5580 MHz, 30 MHz - 1 GHz, Average



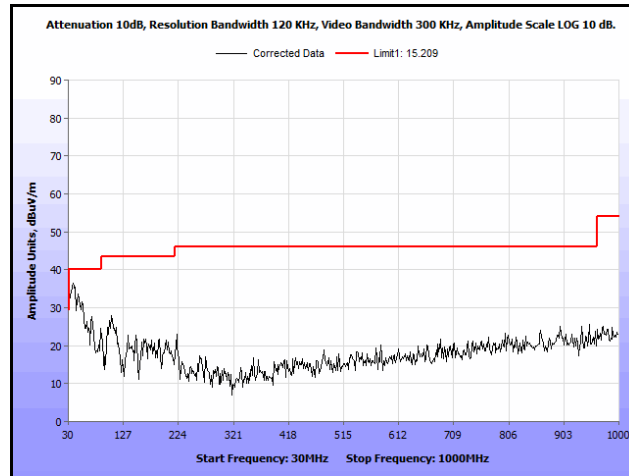
Plot 411. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5580 MHz, 1 GHz - 7 GHz, Average



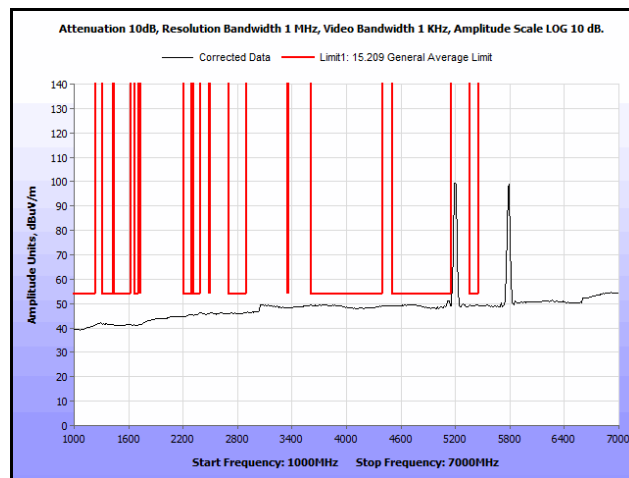
Plot 412. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5580 MHz, 1 GHz - 7 GHz, Peak



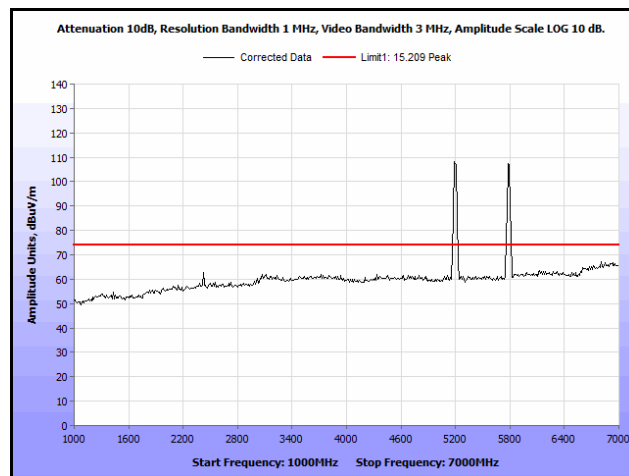
Plot 413. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5580 MHz, 7 GHz - 18 GHz, Average



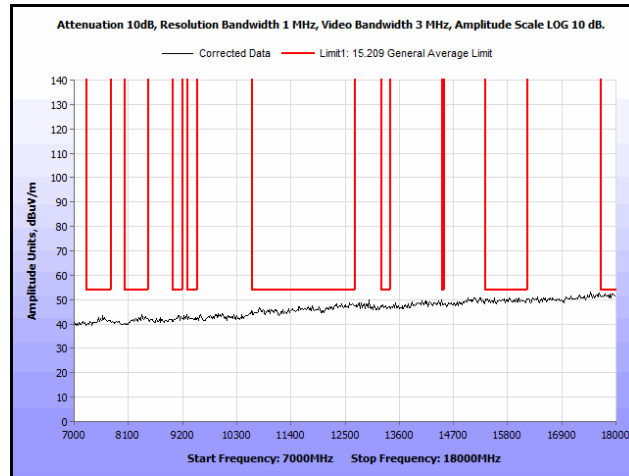
Plot 414. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



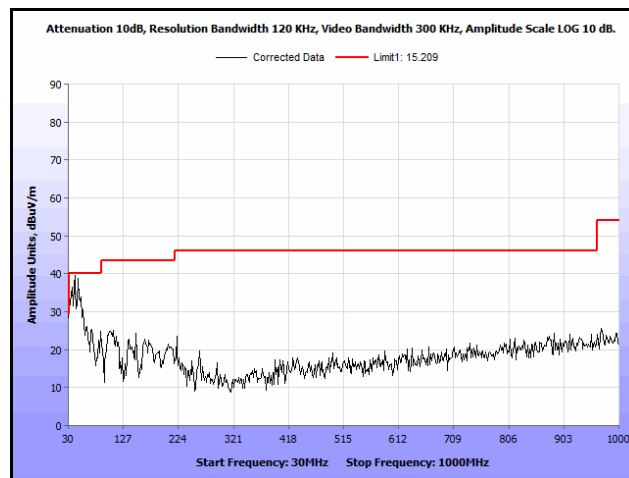
Plot 415. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



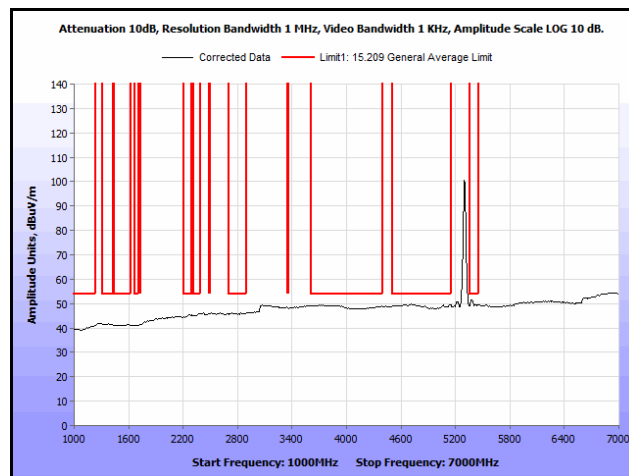
Plot 416. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



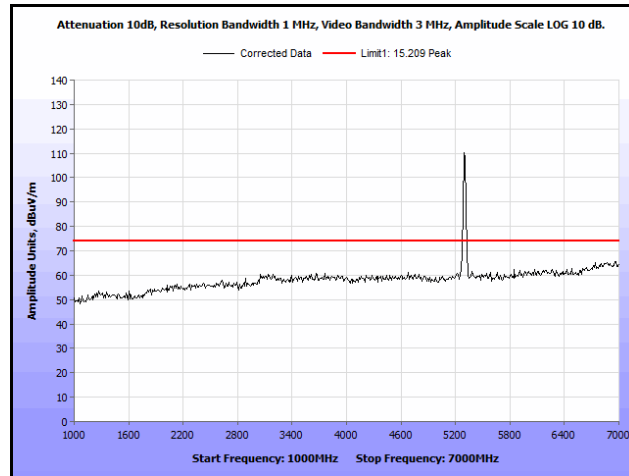
Plot 417. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5200 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



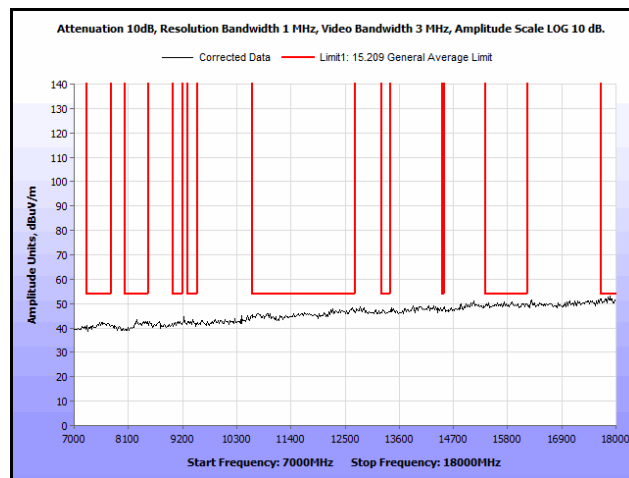
Plot 418. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5300 MHz & 5300 MHz, 30 MHz - 1 GHz, Average



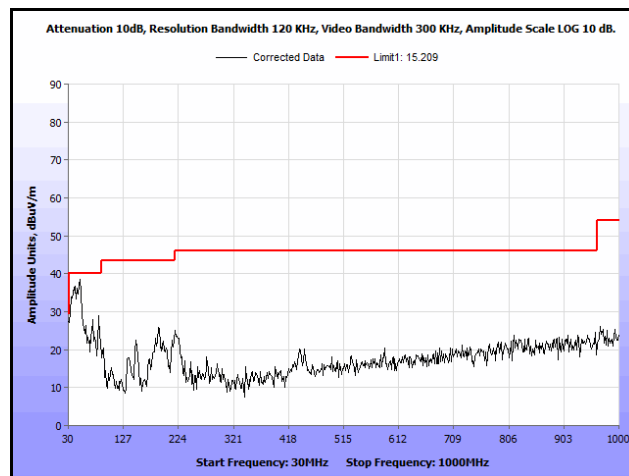
Plot 419. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5300 MHz & 5300 MHz, 1 GHz - 7 GHz, Average



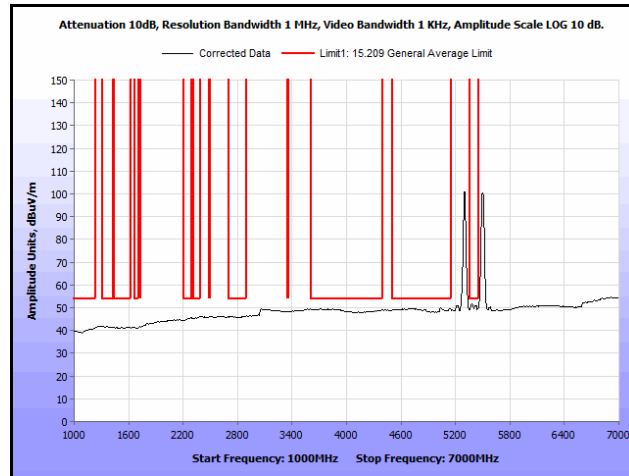
Plot 420. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5300 MHz & 5300 MHz, 1 GHz - 7 GHz, Peak



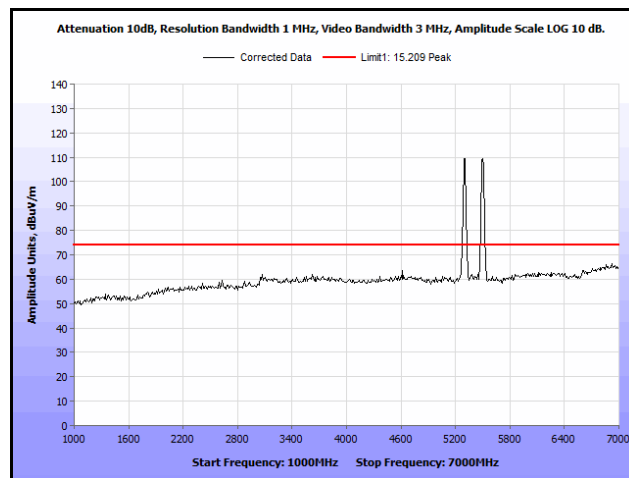
Plot 421. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5300 MHz & 5300 MHz, 7 GHz - 18 GHz, Average



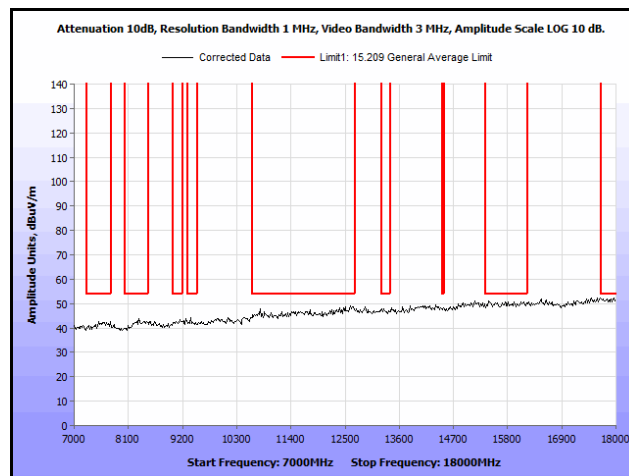
Plot 422. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5300 MHz & 5580 MHz, 30 MHz - 1 GHz, Average



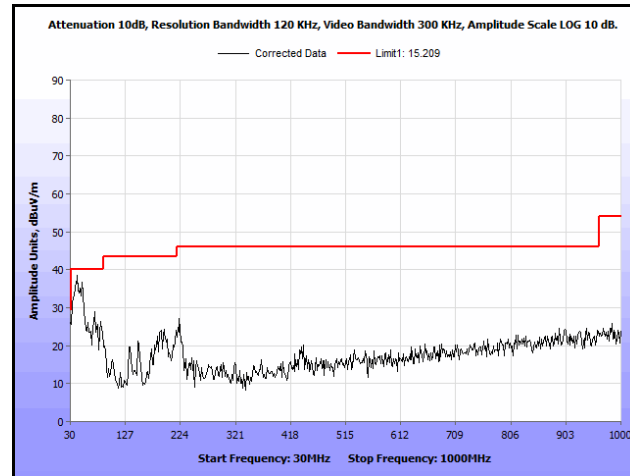
Plot 423. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5300 MHz & 5580 MHz, 1 GHz - 7 GHz, Average



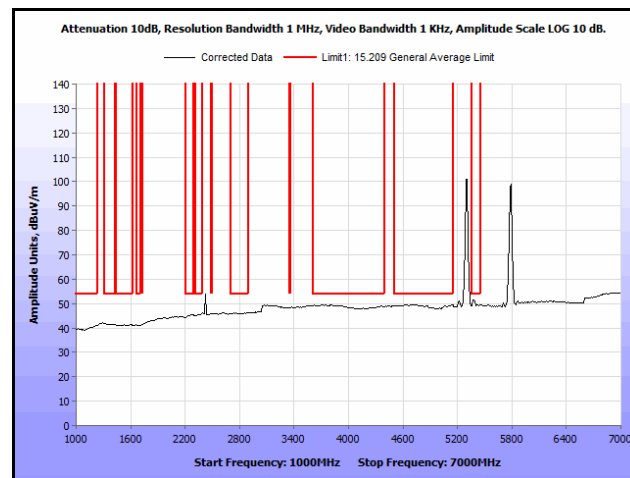
Plot 424. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5300 MHz & 5580 MHz, 1 GHz - 7 GHz, Peak



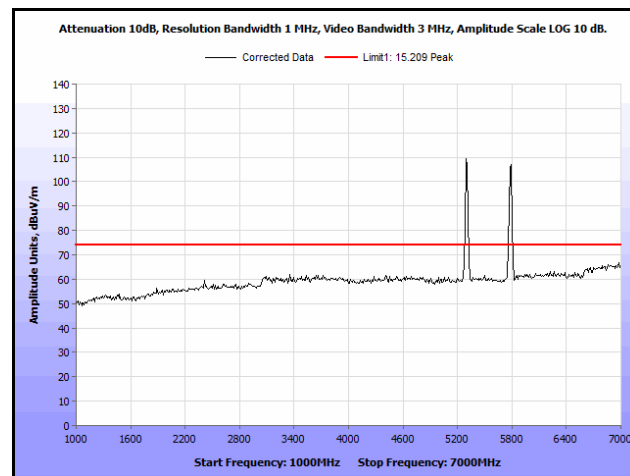
Plot 425. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5300 MHz & 5580 MHz, 7 GHz - 18 GHz, Average



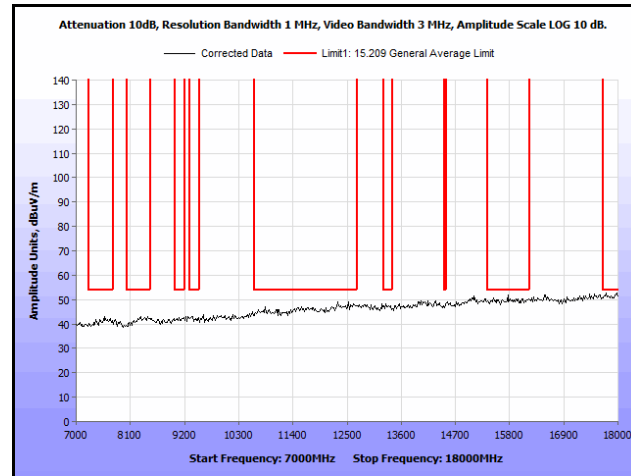
Plot 426. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5300 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



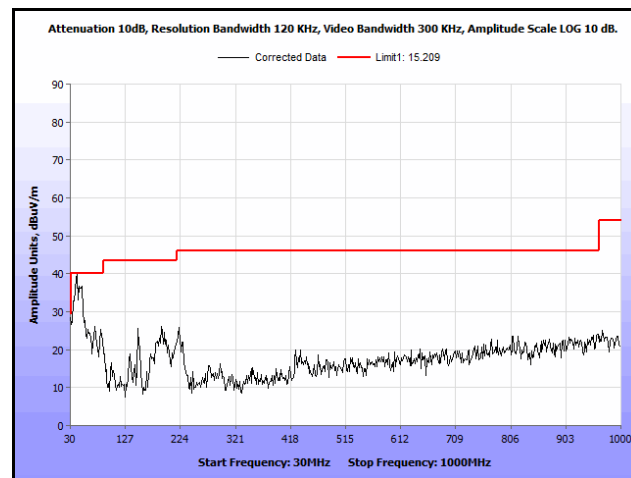
Plot 427. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5300 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



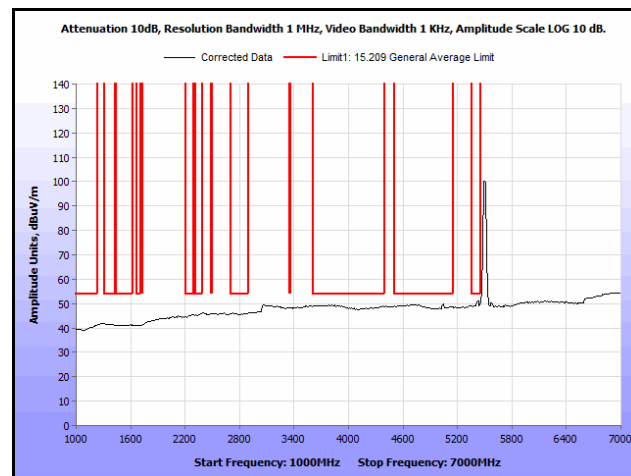
Plot 428. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5300 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



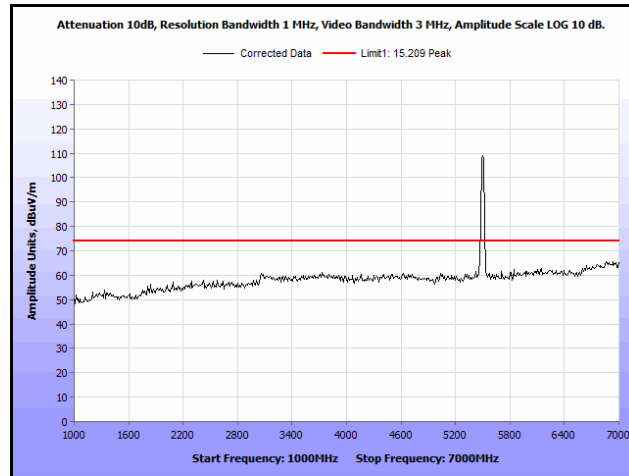
Plot 429. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5300 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



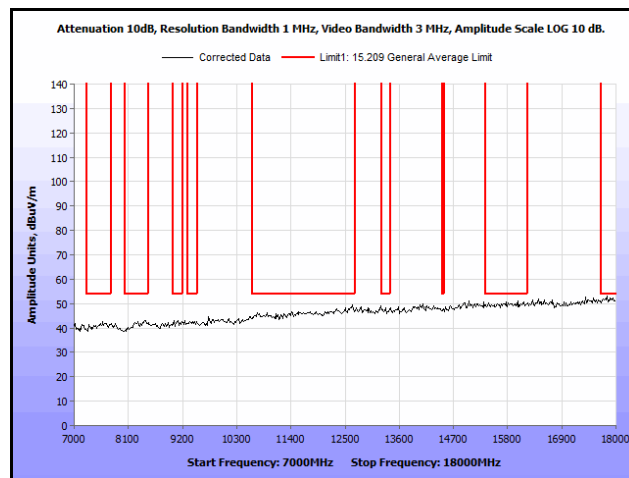
Plot 430. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5580 MHz & 5580 MHz, 30 MHz - 1 GHz, Average



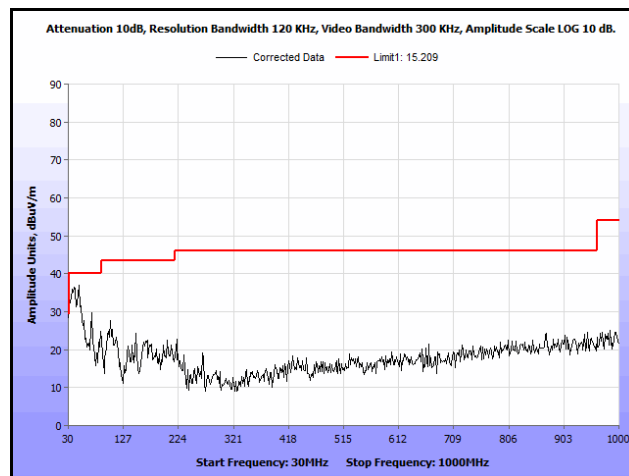
Plot 431. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5580 MHz & 5580 MHz, 1 GHz - 7 GHz, Average



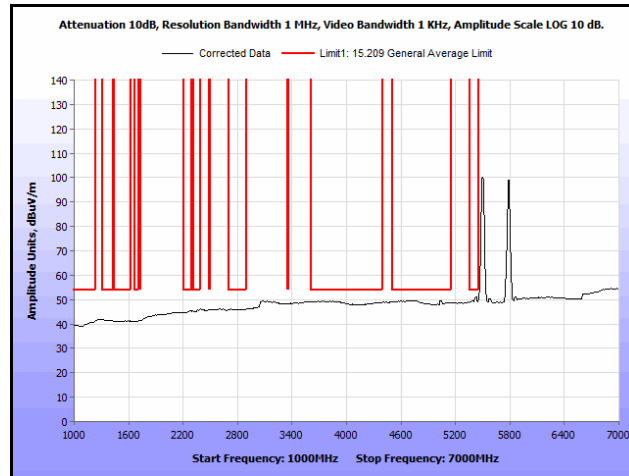
Plot 432. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5580 MHz & 5580 MHz, 1 GHz - 7 GHz, Peak



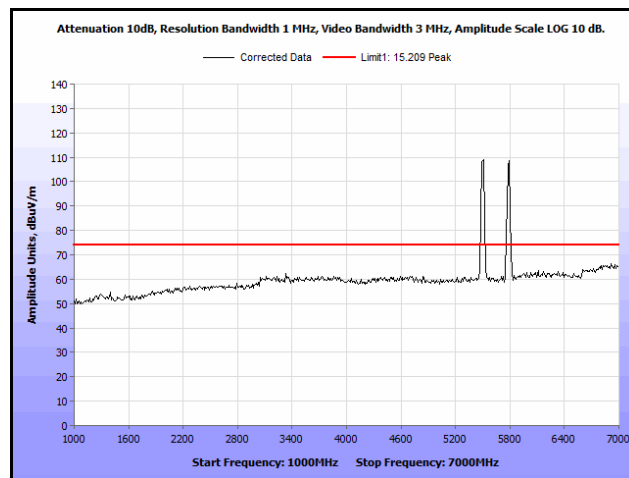
Plot 433. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5580 MHz & 5580 MHz, 7 GHz - 18 GHz, Average



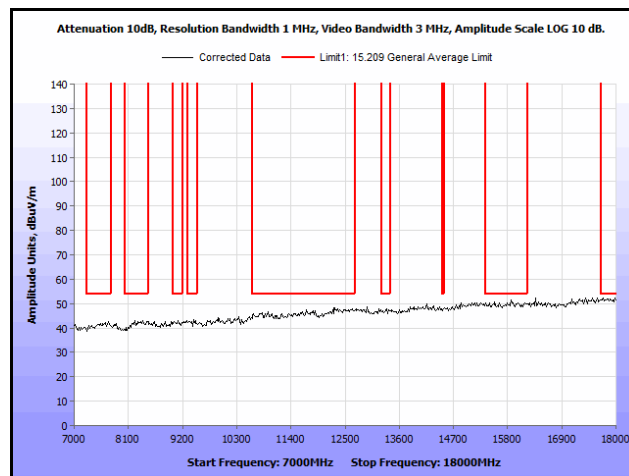
Plot 434. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5580 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



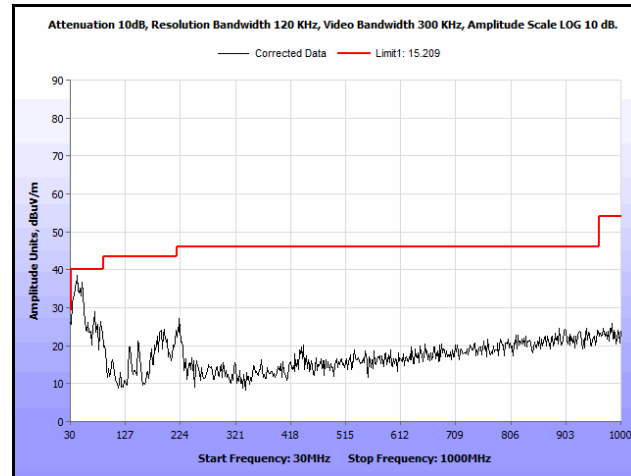
Plot 435. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5580 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



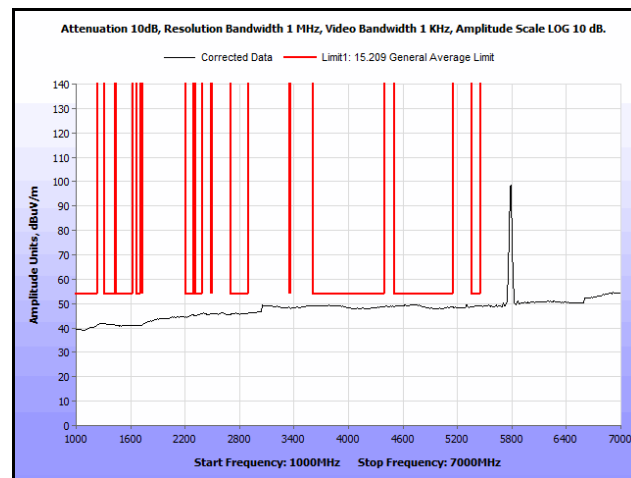
Plot 436. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5580 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



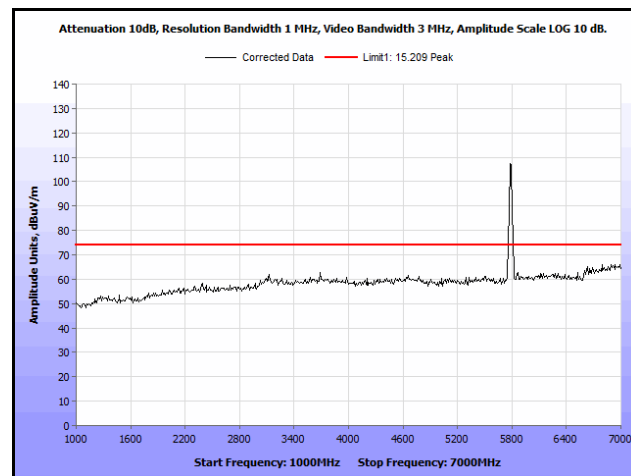
Plot 437. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5580 MHz & 5785 MHz, 7 GHz - 18 GHz, Average



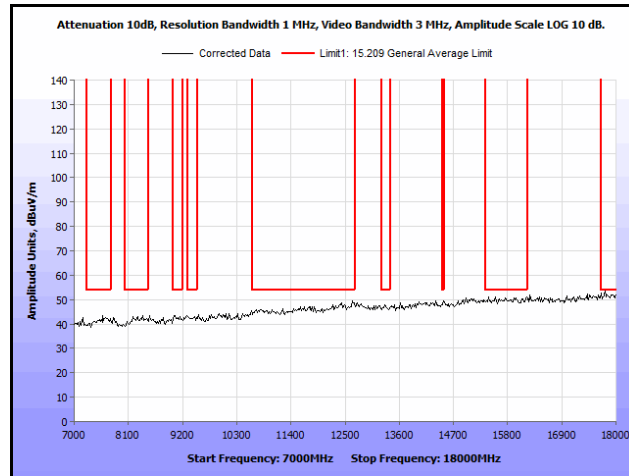
Plot 438. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5785 MHz & 5785 MHz, 30 MHz - 1 GHz, Average



Plot 439. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5785 MHz & 5785 MHz, 1 GHz - 7 GHz, Average



Plot 440. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5785 MHz & 5785 MHz, 1 GHz - 7 GHz, Peak



Plot 441. Co-Location, ANT-BG080-NM, 802.11n 20 MHz, 5785 MHz & 5785 MHz, 7 GHz - 18 GHz, Average

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.247(d) RF Conducted Spurious Emissions Requirements and Band Edge

Test Requirement: **15.247(d)** In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

Test Procedure: For intentional radiators with a digital device portion which operates below 10 GHz, the spectrum was investigated as per §15.33(a)(1) and §15.33(a)(4); i.e., the lowest RF signal generated or used in the device up to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

See following pages for detailed test results with RF Conducted Spurious Emissions.

Test Results: The EUT was compliant with the Conducted Spurious Emission limits of **§15.247(d)**.

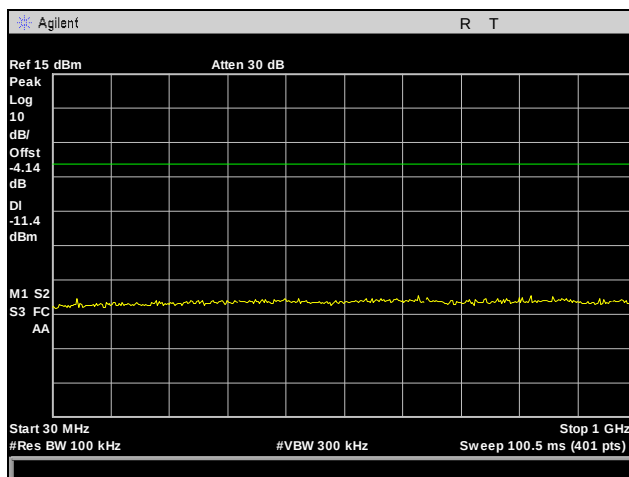
Test Engineer(s): Kaushani Dasgupta

Test Date(s): 12/15/14

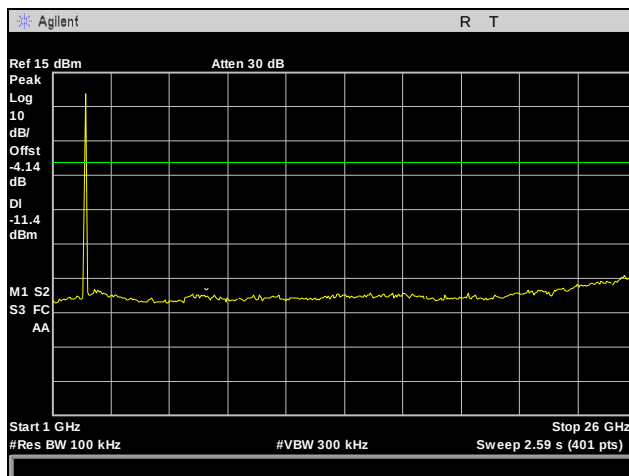


Figure 4. Block Diagram, Conducted Spurious Emissions Test Setup

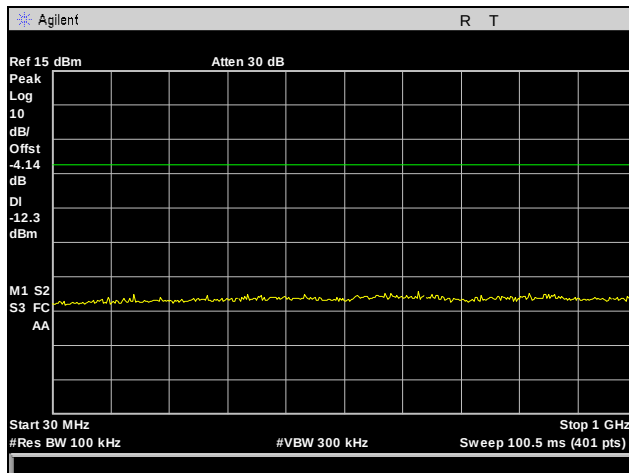
Conducted Spurious Emissions Test Results, 802.11b, Port L



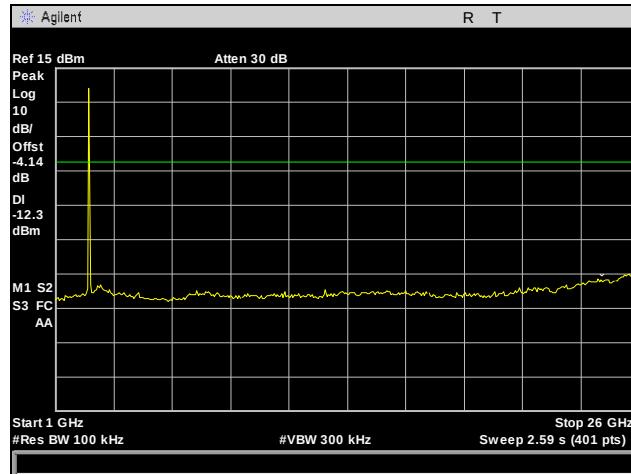
Plot 442. Conducted Spurious Emissions, Low Channel, 802.11b, Port L, 30 MHz – 1 GHz



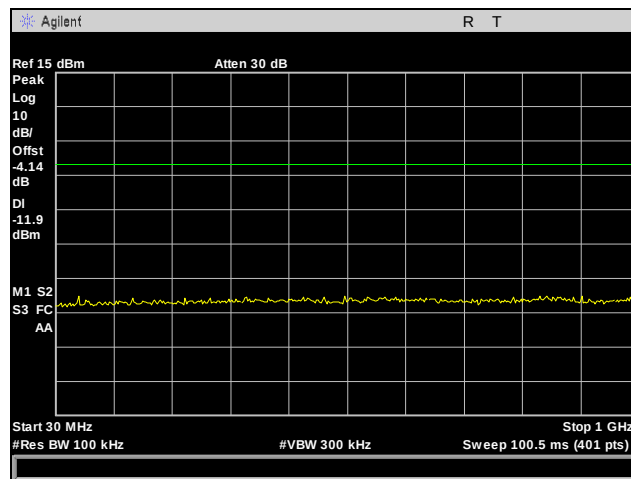
Plot 443. Conducted Spurious Emissions, Low Channel, 802.11b, Port L, 1 GHz – 26 GHz



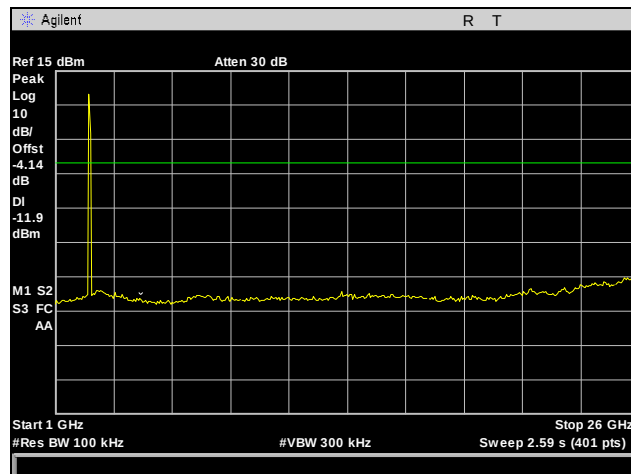
Plot 444. Conducted Spurious Emissions, Mid Channel, 802.11b, Port L, 30 MHz – 1 GHz



Plot 445. Conducted Spurious Emissions, Mid Channel, 802.11b, Port L, 1 GHz – 26 GHz

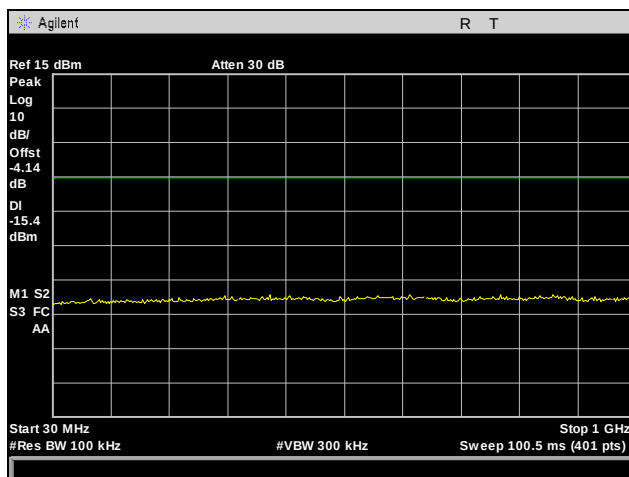


Plot 446. Conducted Spurious Emissions, High Channel, 802.11b, Port L, 30 MHz – 1 GHz

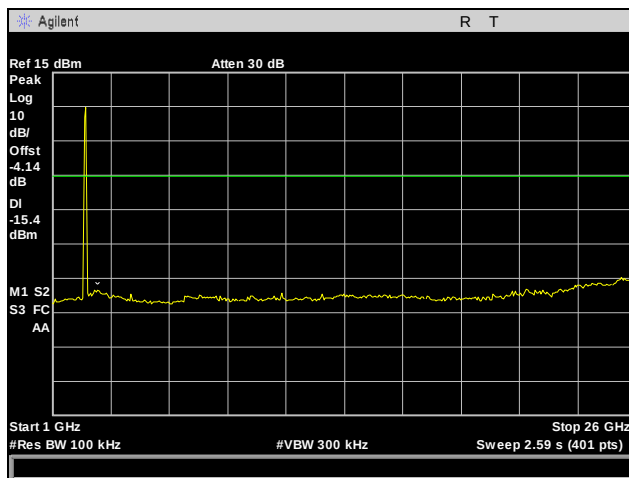


Plot 447. Conducted Spurious Emissions, High Channel, 802.11b, Port L, 1 GHz – 26 GHz

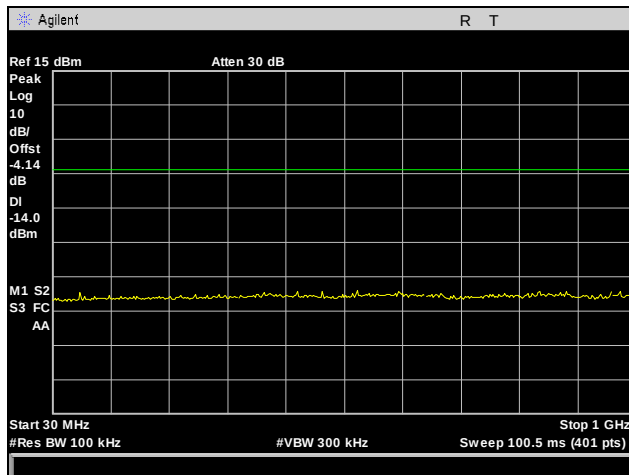
Conducted Spurious Emissions Test Results, 802.11g, Port L



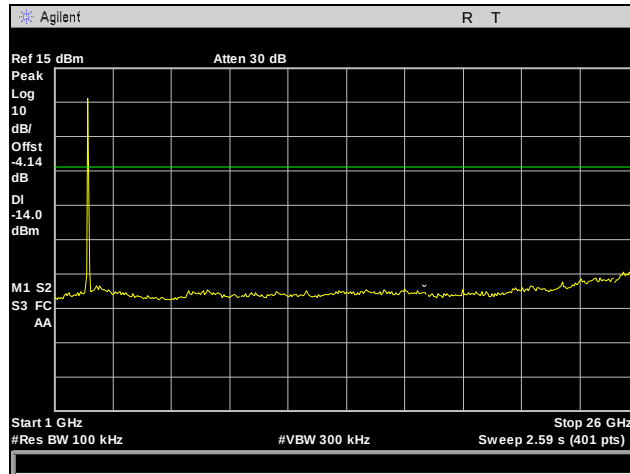
Plot 448. Conducted Spurious Emissions, Low Channel, 802.11g, Port L, 30 MHz – 1 GHz



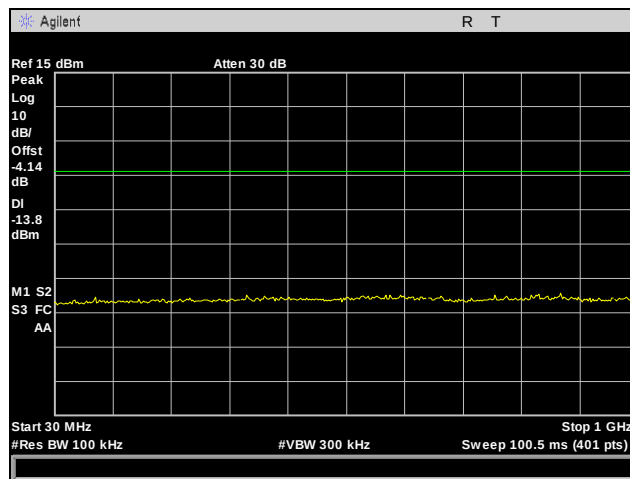
Plot 449. Conducted Spurious Emissions, Low Channel, 802.11g, Port L, 1 GHz – 26 GHz



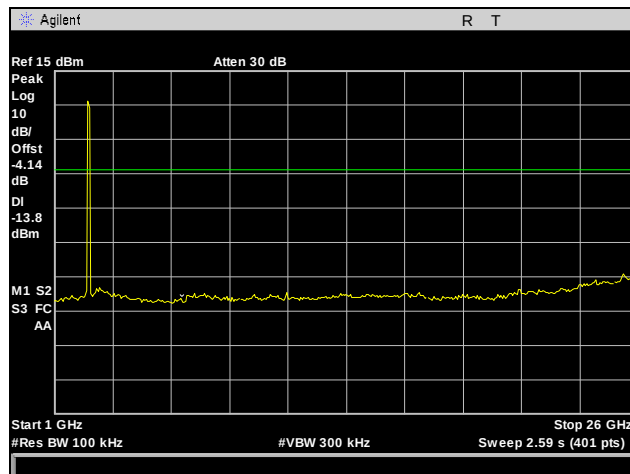
Plot 450. Conducted Spurious Emissions, Mid Channel, 802.11g, Port L, 30 MHz – 1 GHz



Plot 451. Conducted Spurious Emissions, Mid Channel, 802.11g, Port L, 1 GHz – 26 GHz

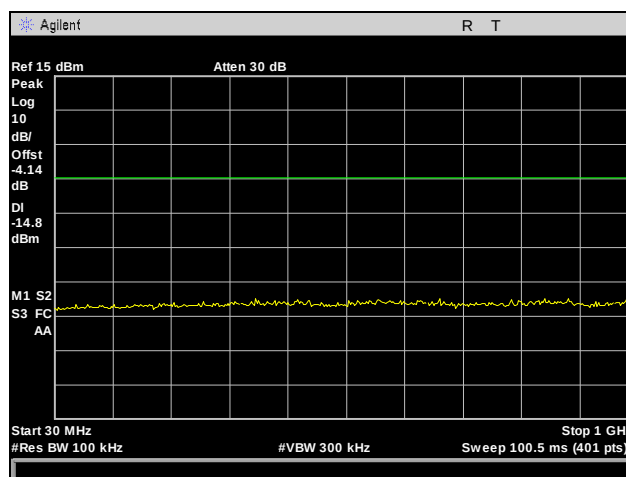


Plot 452. Conducted Spurious Emissions, High Channel, 802.11g, Port L, 30 MHz – 1 GHz

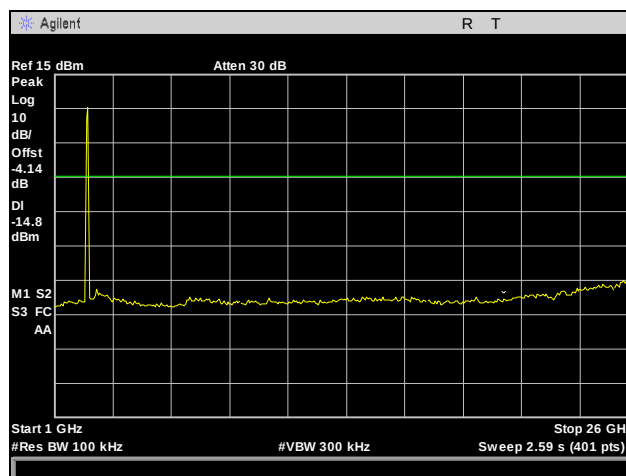


Plot 453. Conducted Spurious Emissions, High Channel, 802.11g, Port L, 1 GHz – 26 GHz

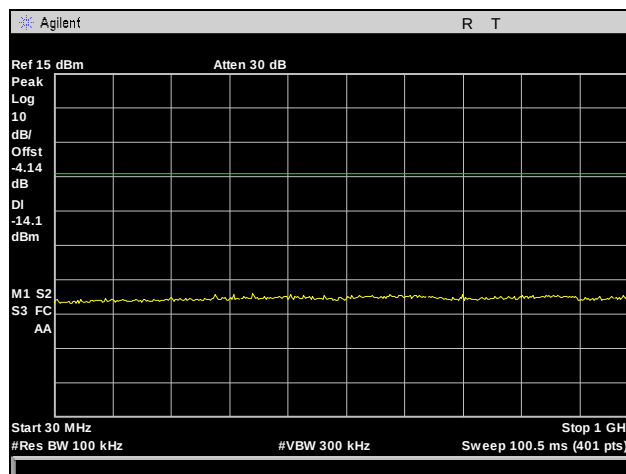
Conducted Spurious Emissions Test Results, 802.11n 20 MHz, Port L



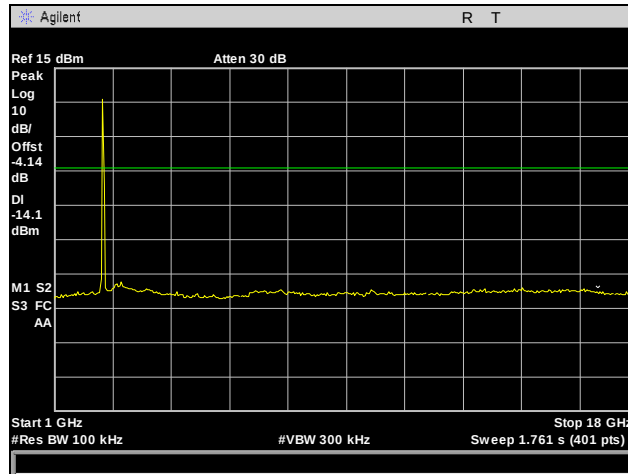
Plot 454. Conducted Spurious Emissions, Low Channel, 802.11n 20 MHz, Port L, 30 MHz – 1 GHz



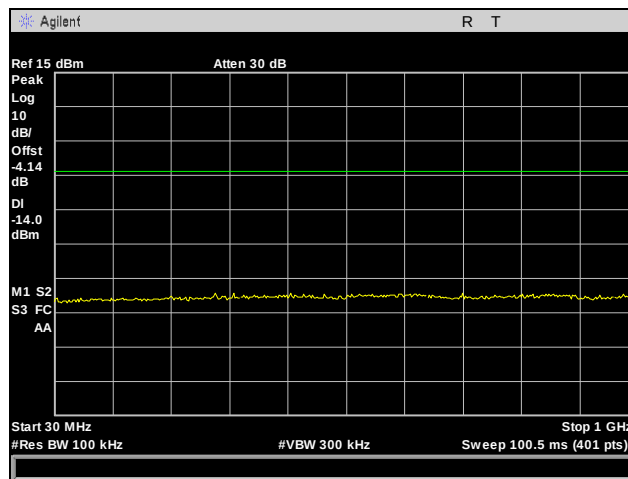
Plot 455. Conducted Spurious Emissions, Low Channel, 802.11n 20 MHz, Port L, 1 GHz – 26 GHz



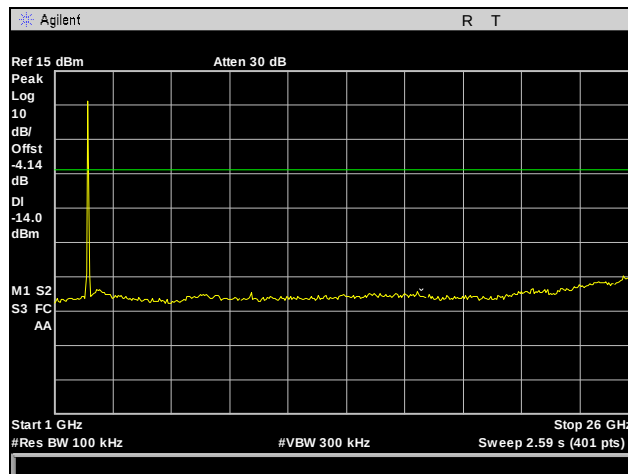
Plot 456. Conducted Spurious Emissions, Mid Channel, 802.11n 20 MHz, Port L, 30 MHz – 1 GHz



Plot 457. Conducted Spurious Emissions, Mid Channel, 802.11n 20 MHz, Port L, 1 GHz – 26 GHz

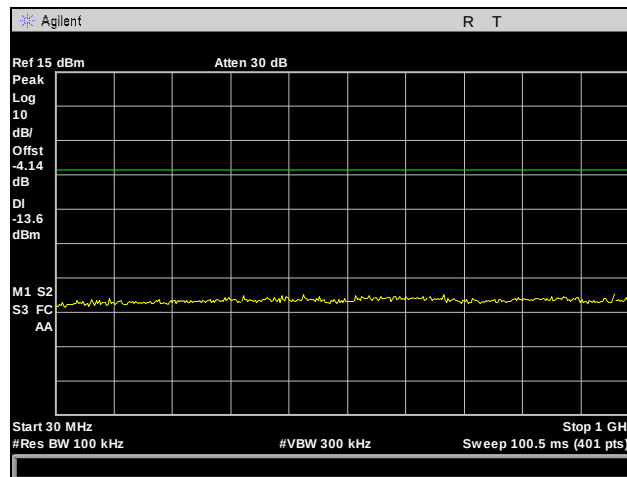


Plot 458. Conducted Spurious Emissions, High Channel, 802.11n 20 MHz, Port L, 30 MHz – 1 GHz

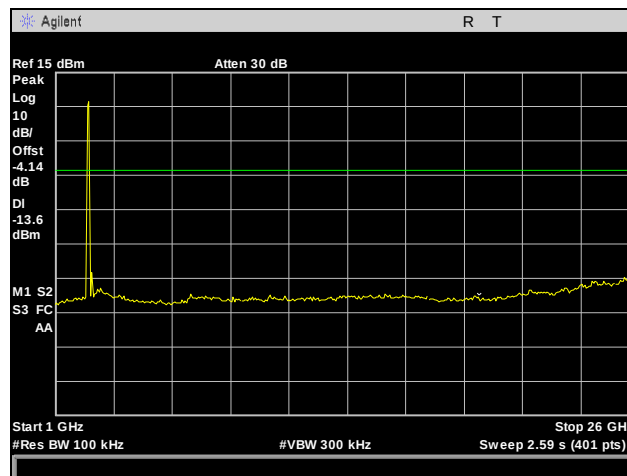


Plot 459. Conducted Spurious Emissions, High Channel, 802.11n 20 MHz, Port L, 1 GHz – 26 GHz

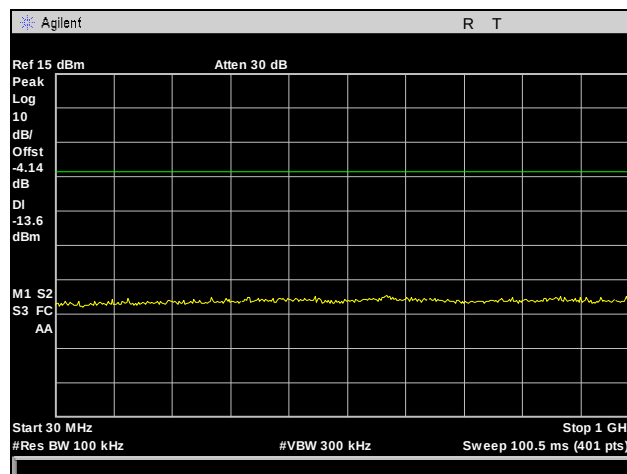
Conducted Spurious Emissions Test Results, 802.11n 20 MHz, Port M



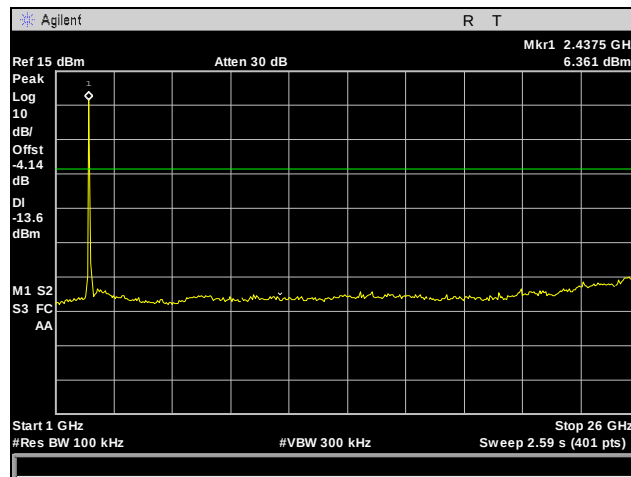
Plot 460. Conducted Spurious Emissions, Low Channel, 802.11n 20 MHz, Port M, 30 MHz – 1 GHz



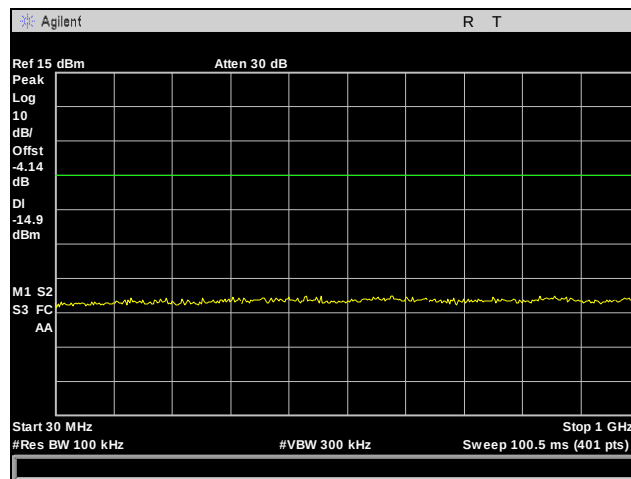
Plot 461. Conducted Spurious Emissions, Low Channel, 802.11n 20 MHz, Port M, 1 GHz – 26 GHz



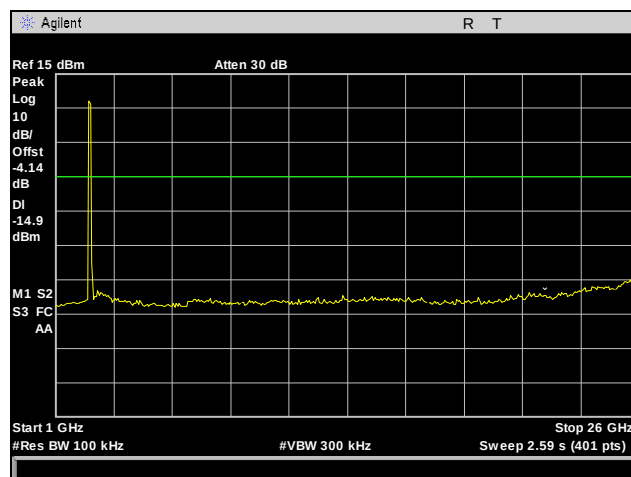
Plot 462. Conducted Spurious Emissions, Mid Channel, 802.11n 20 MHz, Port M, 30 MHz – 1 GHz



Plot 463. Conducted Spurious Emissions, Mid Channel, 802.11n 20 MHz, Port M, 1 GHz – 26 GHz

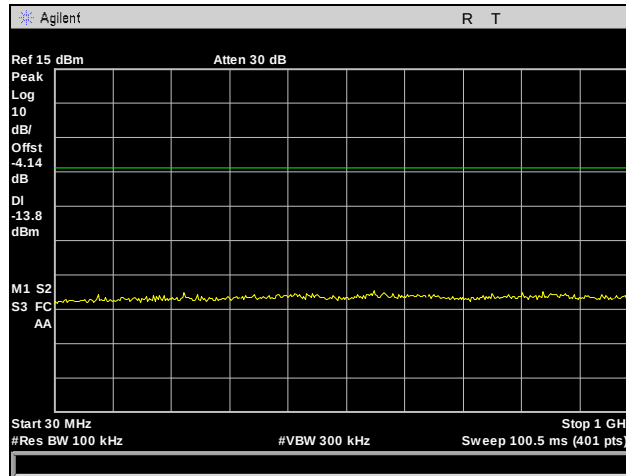


Plot 464. Conducted Spurious Emissions, High Channel, 802.11n 20 MHz, Port M, 30 MHz – 1 GHz

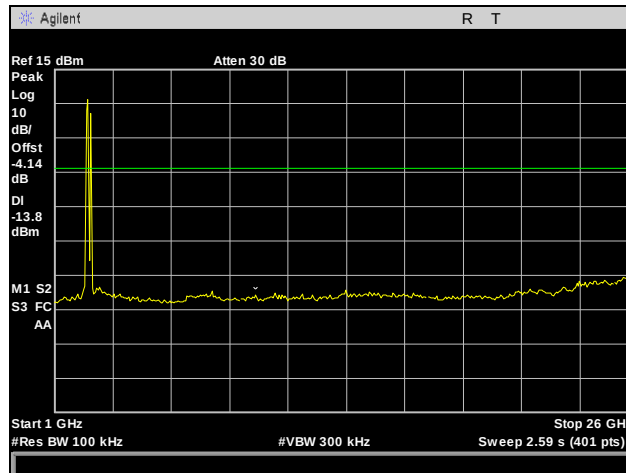


Plot 465. Conducted Spurious Emissions, High Channel, 802.11n 20 MHz, Port M, 1 GHz – 26 GHz

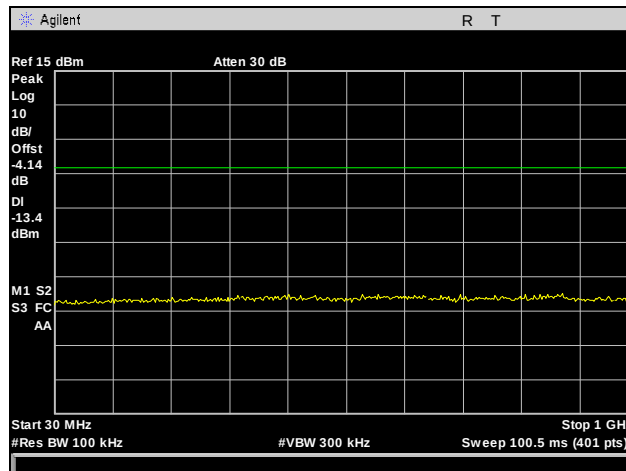
Conducted Spurious Emissions Test Results, 802.11n 20 MHz, Port R



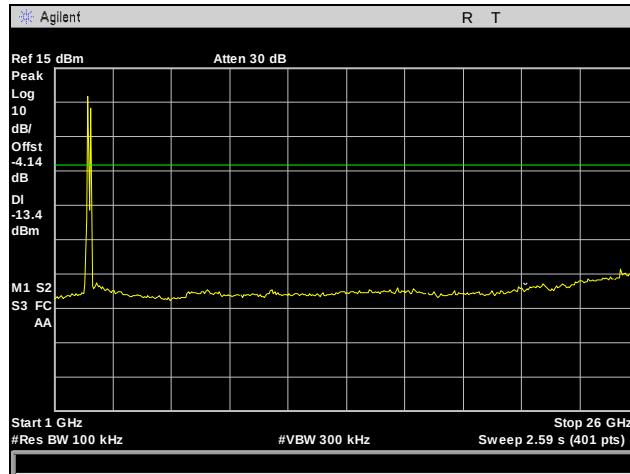
Plot 466. Conducted Spurious Emissions, Low Channel, 802.11n 20 MHz, Port R, 30 MHz – 1 GHz



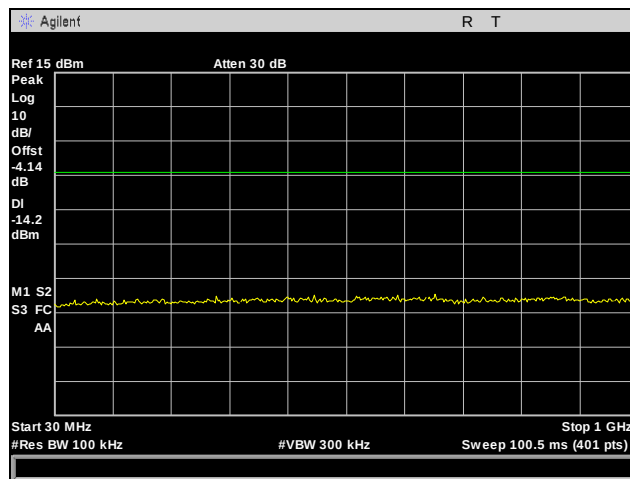
Plot 467. Conducted Spurious Emissions, Low Channel, 802.11n 20 MHz, Port R, 1 GHz – 26 GHz



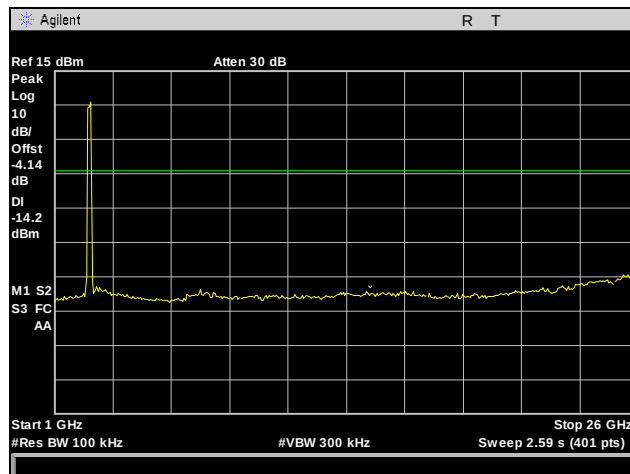
Plot 468. Conducted Spurious Emissions, Mid Channel, 802.11n 20 MHz, Port R, 30 MHz – 1 GHz



Plot 469. Conducted Spurious Emissions, Mid Channel, 802.11n 20 MHz, Port R, 1 GHz – 26 GHz

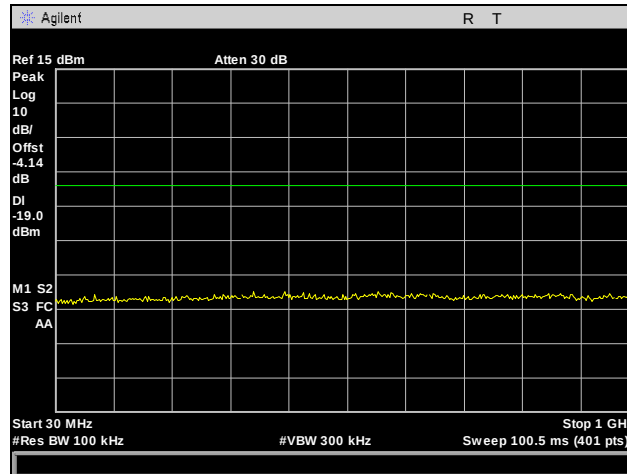


Plot 470. Conducted Spurious Emissions, High Channel, 802.11n 20 MHz, Port R, 30 MHz – 1 GHz

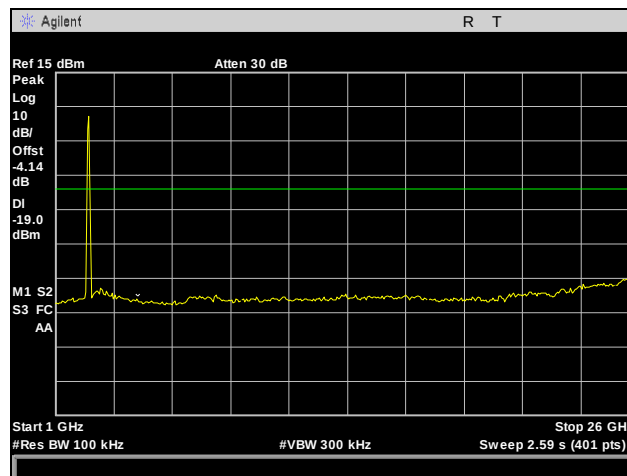


Plot 471. Conducted Spurious Emissions, High Channel, 802.11n 20 MHz, Port R, 1 GHz – 26 GHz

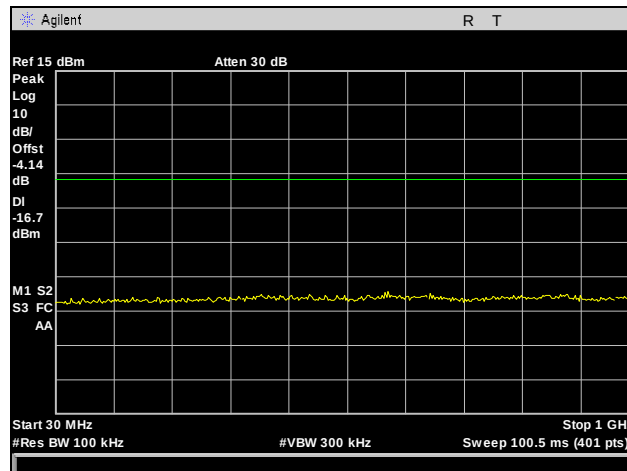
Conducted Spurious Emissions Test Results, 802.11n 40 MHz, Port L



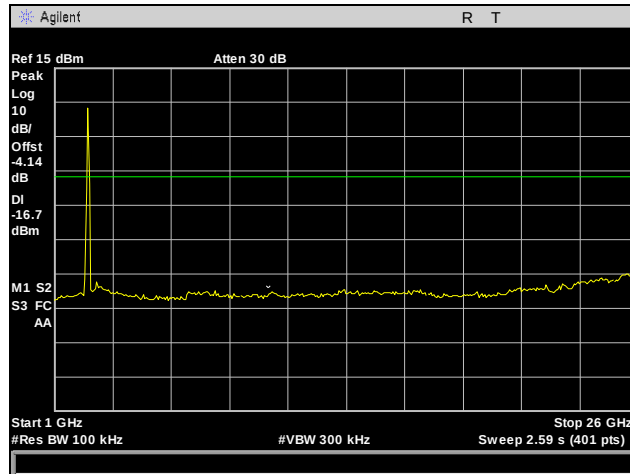
Plot 472. Conducted Spurious Emissions, Low Channel, 802.11n 40 MHz, Port L, 30 MHz – 1 GHz



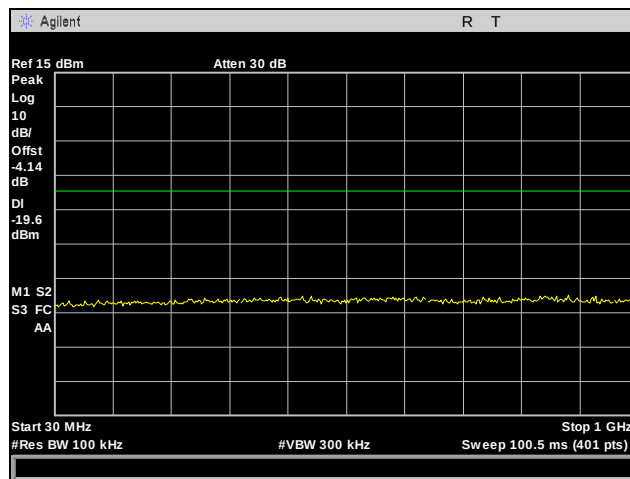
Plot 473. Conducted Spurious Emissions, Low Channel, 802.11n 40 MHz, Port L, 1 GHz – 26 GHz



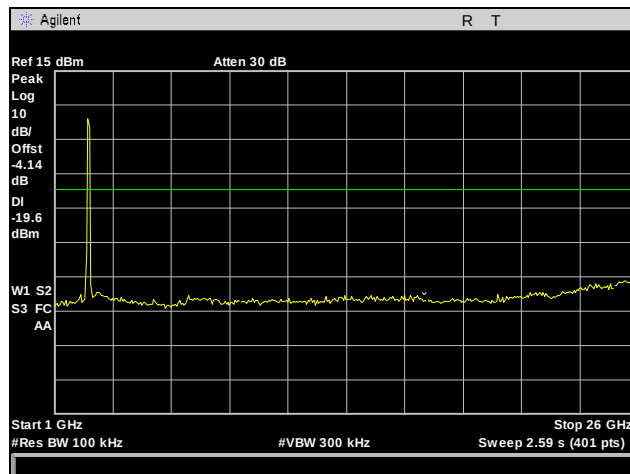
Plot 474. Conducted Spurious Emissions, Mid Channel, 802.11n 40 MHz, Port L, 30 MHz – 1 GHz



Plot 475. Conducted Spurious Emissions, Mid Channel, 802.11n 40 MHz, Port L, 1 GHz – 26 GHz

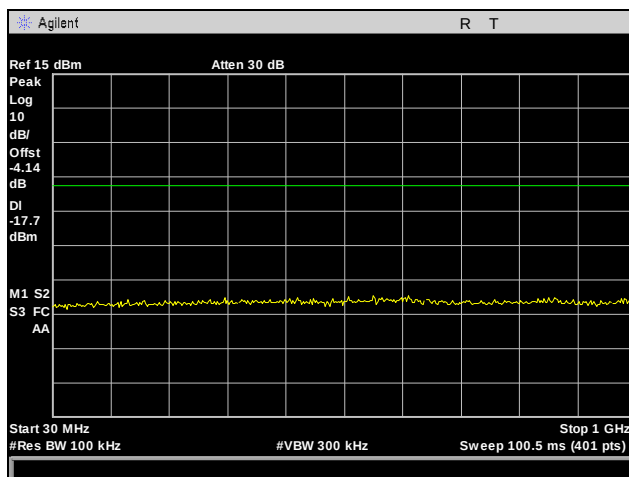


Plot 476. Conducted Spurious Emissions, High Channel, 802.11n 40 MHz, Port L, 30 MHz – 1 GHz

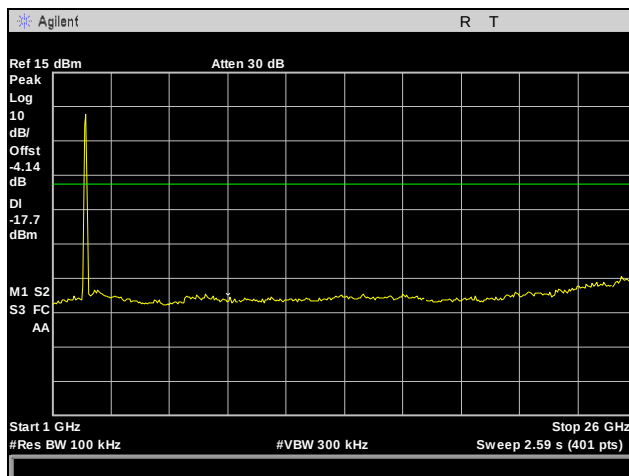


Plot 477. Conducted Spurious Emissions, High Channel, 802.11n 40 MHz, Port L, 1 GHz – 26 GHz

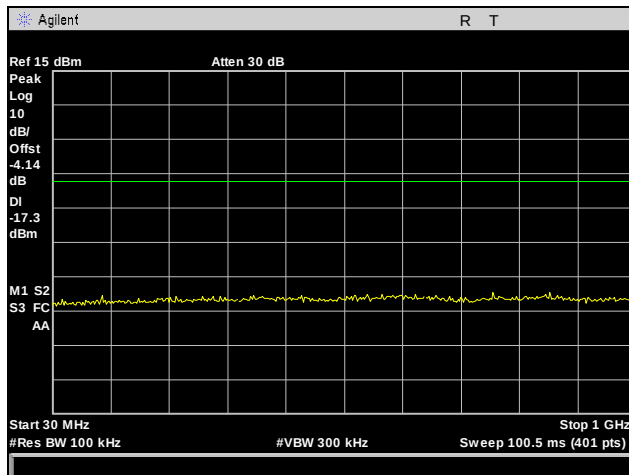
Conducted Spurious Emissions Test Results, 802.11n 40 MHz, Port M



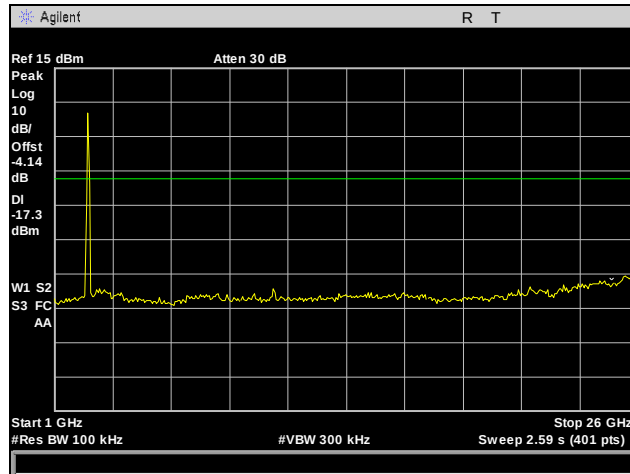
Plot 478. Conducted Spurious Emissions, Low Channel, 802.11n 40 MHz, Port M, 30 MHz – 1 GHz



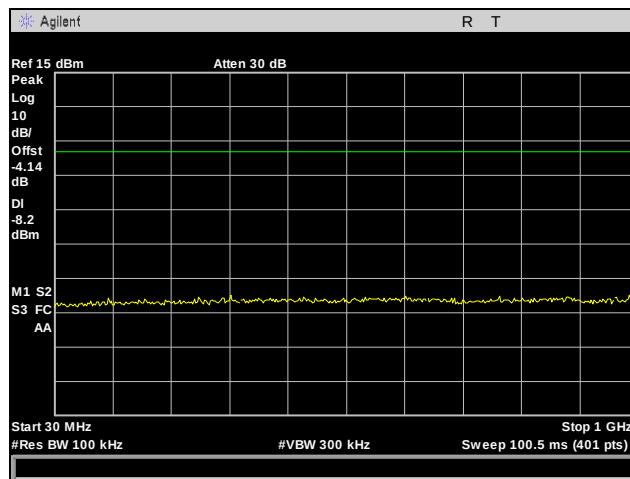
Plot 479. Conducted Spurious Emissions, Low Channel, 802.11n 40 MHz, Port M, 1 GHz – 26 GHz



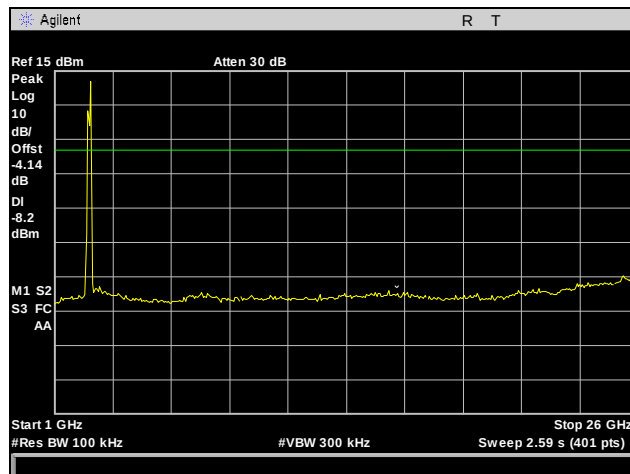
Plot 480. Conducted Spurious Emissions, Mid Channel, 802.11n 40 MHz, Port M, 30 MHz – 1 GHz



Plot 481. Conducted Spurious Emissions, Mid Channel, 802.11n 40 MHz, Port M, 1 GHz – 26 GHz

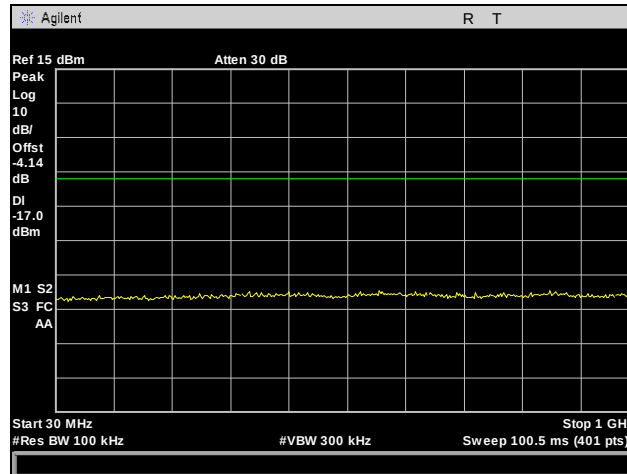


Plot 482. Conducted Spurious Emissions, High Channel, 802.11n 40 MHz, Port M, 30 MHz – 1 GHz

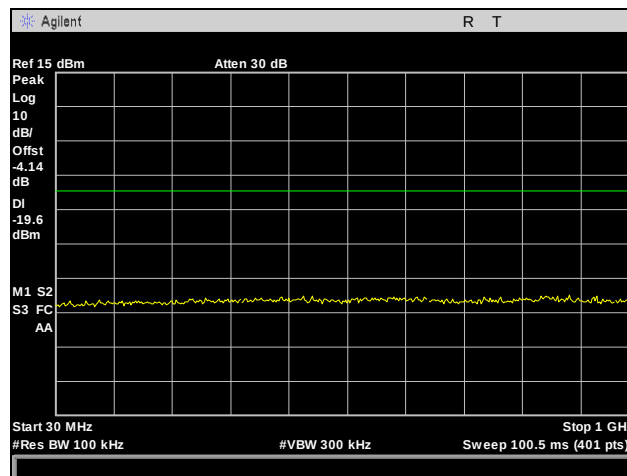


Plot 483. Conducted Spurious Emissions, High Channel, 802.11n 40 MHz, Port M, 1 GHz – 26 GHz

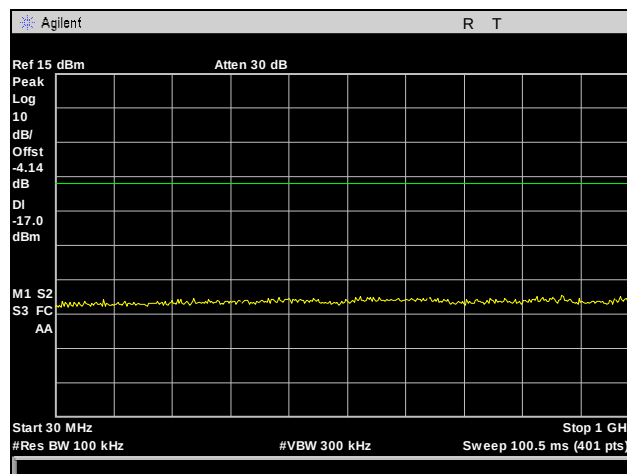
Conducted Spurious Emissions Test Results, 802.11n 40 MHz, Port R



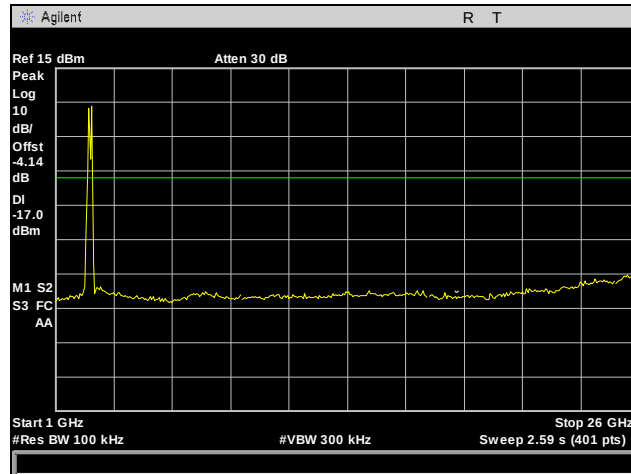
Plot 484. Conducted Spurious Emissions, Low Channel, 802.11n 40 MHz, Port R, 30 MHz – 1 GHz



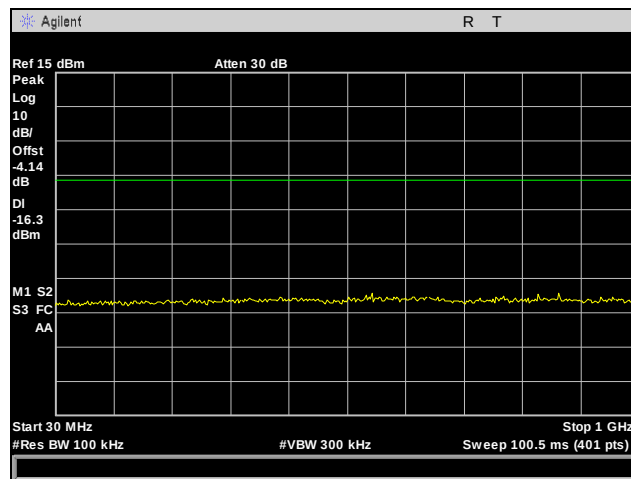
Plot 485. Conducted Spurious Emissions, Low Channel, 802.11n 40 MHz, Port R, 1 GHz – 26 GHz



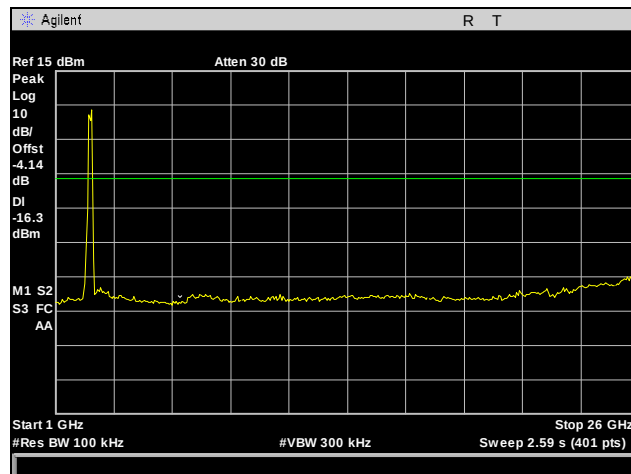
Plot 486. Conducted Spurious Emissions, Mid Channel, 802.11n 40 MHz, Port R, 30 MHz – 1 GHz



Plot 487. Conducted Spurious Emissions, Mid Channel, 802.11n 40 MHz, Port R, 1 GHz – 26 GHz

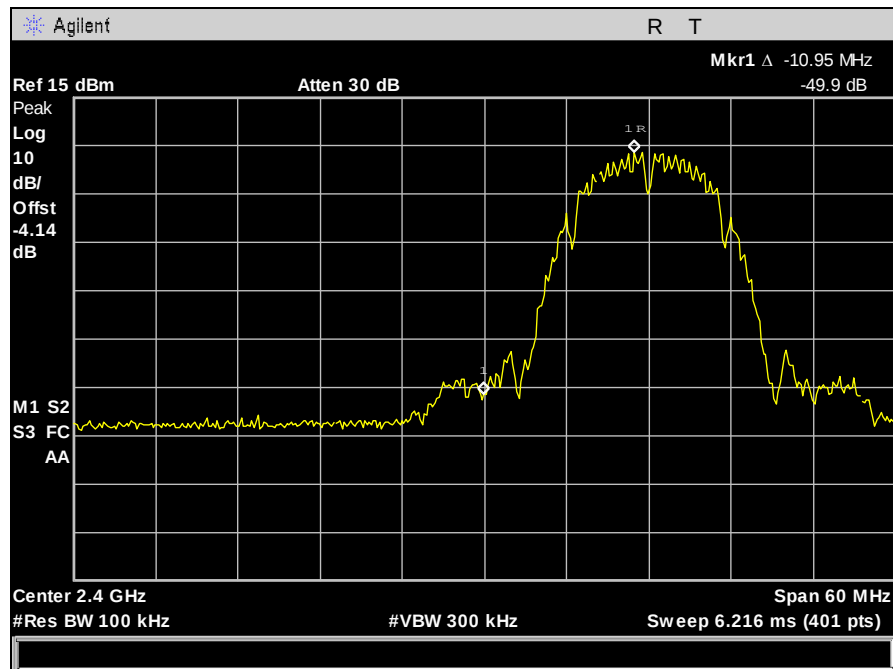


Plot 488. Conducted Spurious Emissions, High Channel, 802.11n 40 MHz, Port R, 30 MHz – 1 GHz

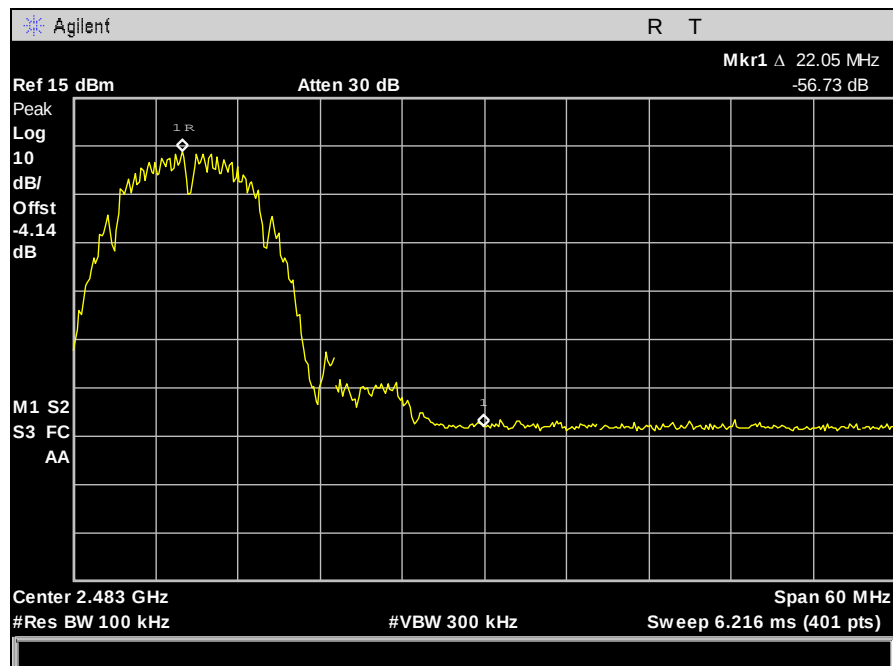


Plot 489. Conducted Spurious Emissions, High Channel, 802.11n 40 MHz, Port R, 1 GHz – 26 GHz

Conducted Band Edge Test Results, 802.11b, Port L

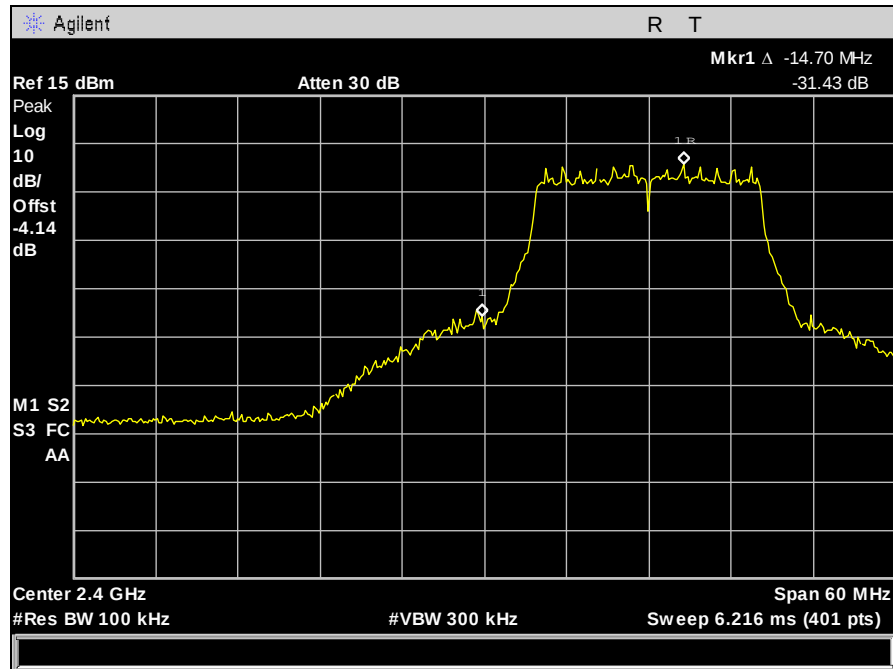


Plot 490. Conducted Band Edge, Low Channel, 802.11b, Port L

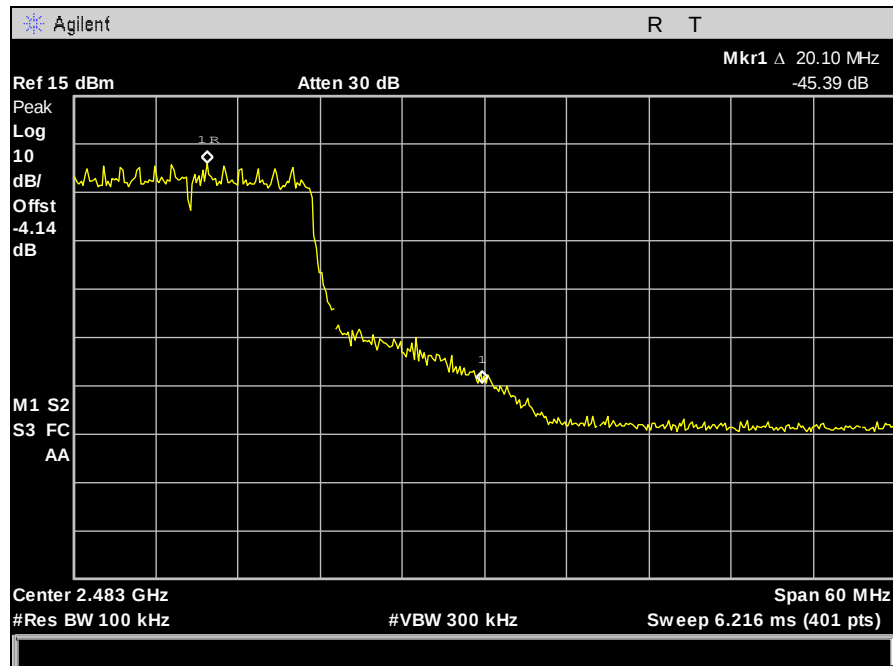


Plot 491. Conducted Band Edge, High Channel, 802.11b, Port L

Conducted Band Edge Test Results, 802.11g, Port L

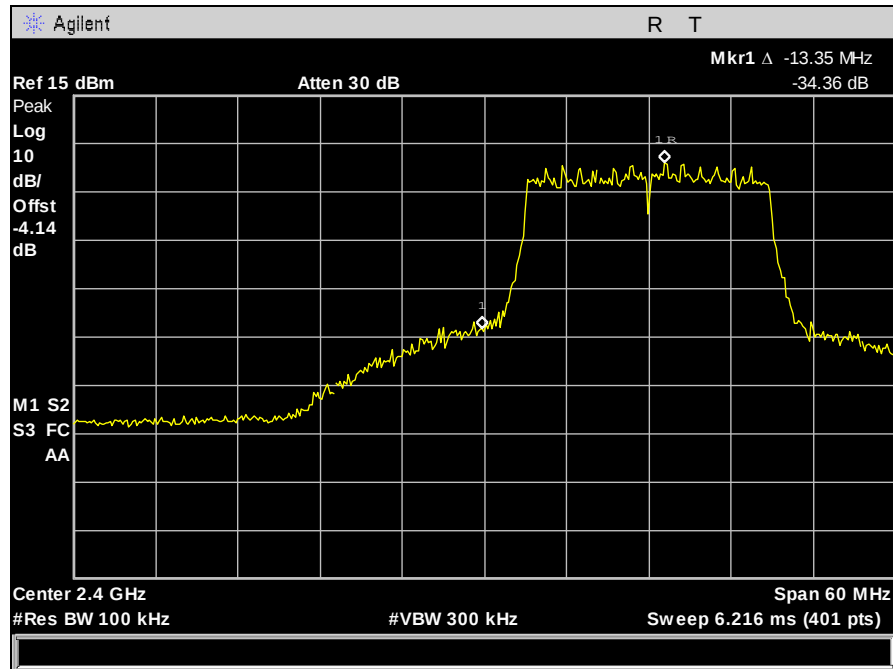


Plot 492. Conducted Band Edge, Low Channel, 802.11g, Port L

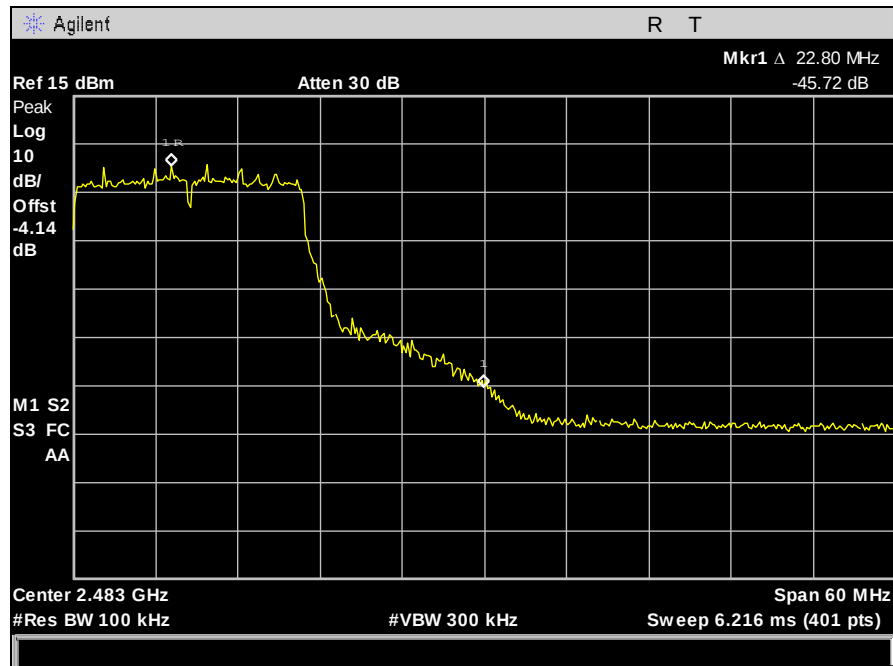


Plot 493. Conducted Band Edge, High Channel, 802.11g, Port L

Conducted Band Edge Test Results, 802.11n 20 MHz, Port L

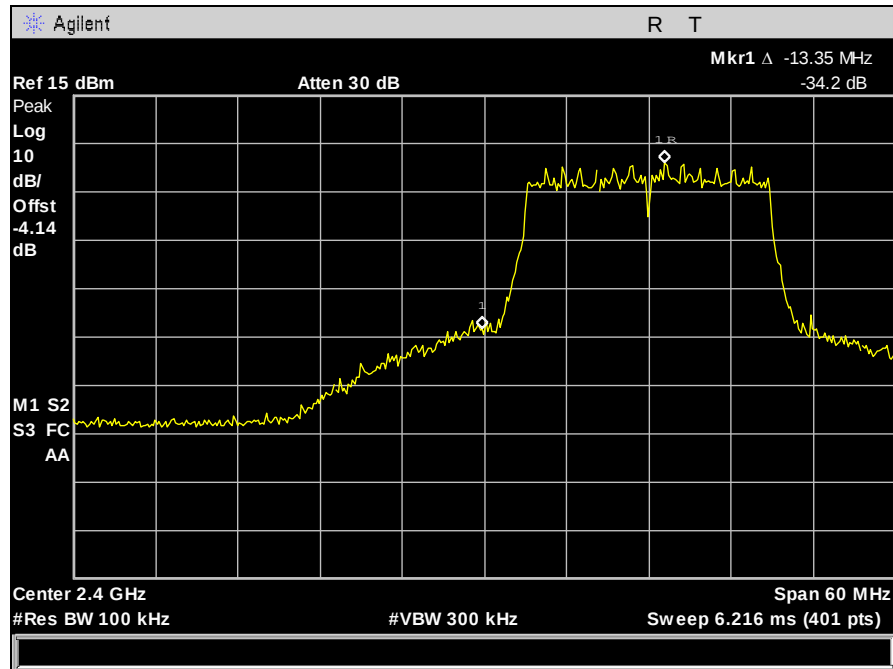


Plot 494. Conducted Band Edge, Low Channel, 802.11n 20 MHz, Port L

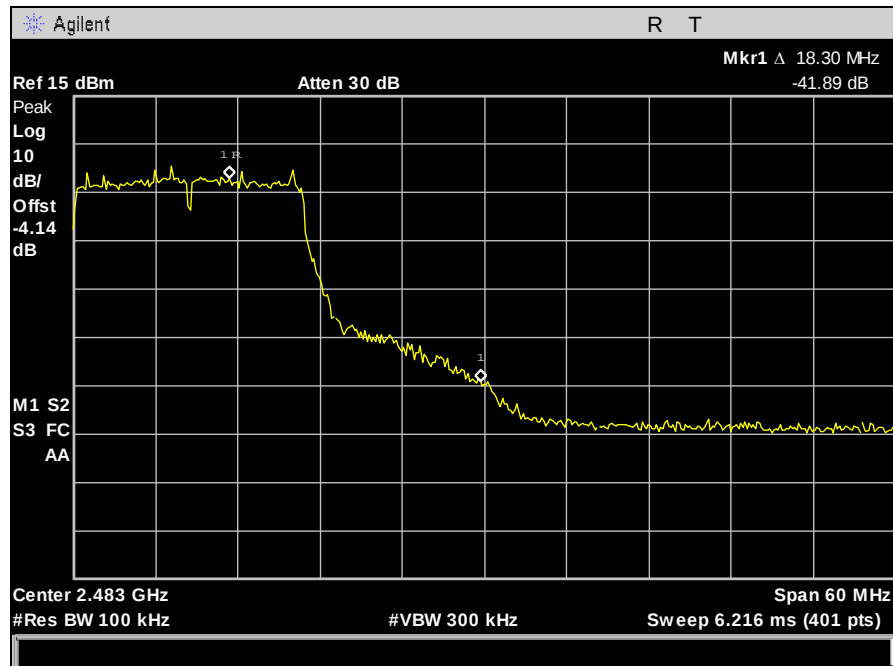


Plot 495. Conducted Band Edge, High Channel, 802.11n 20 MHz, Port L

Conducted Band Edge Test Results, 802.11n 20 MHz, Port M

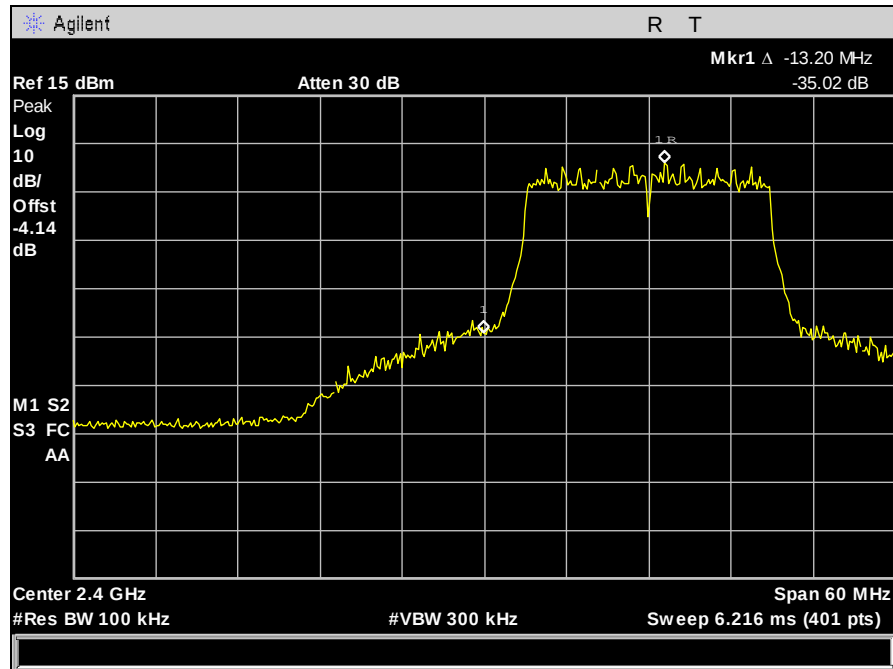


Plot 496. Conducted Band Edge, Low Channel, 802.11n 20 MHz, Port M

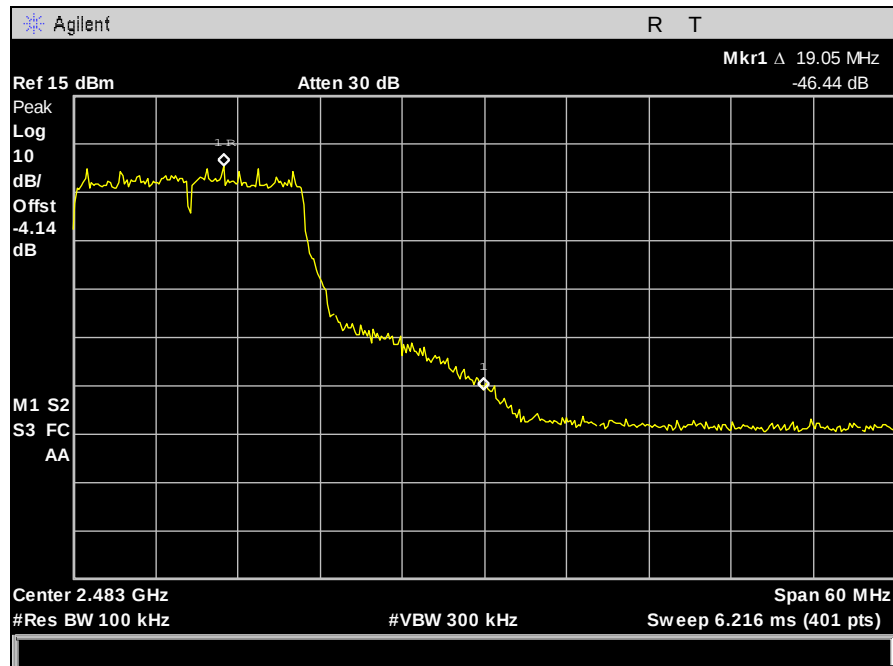


Plot 497. Conducted Band Edge, High Channel, 802.11n 20 MHz, Port M

Conducted Band Edge Test Results, 802.11n 20 MHz, Port R

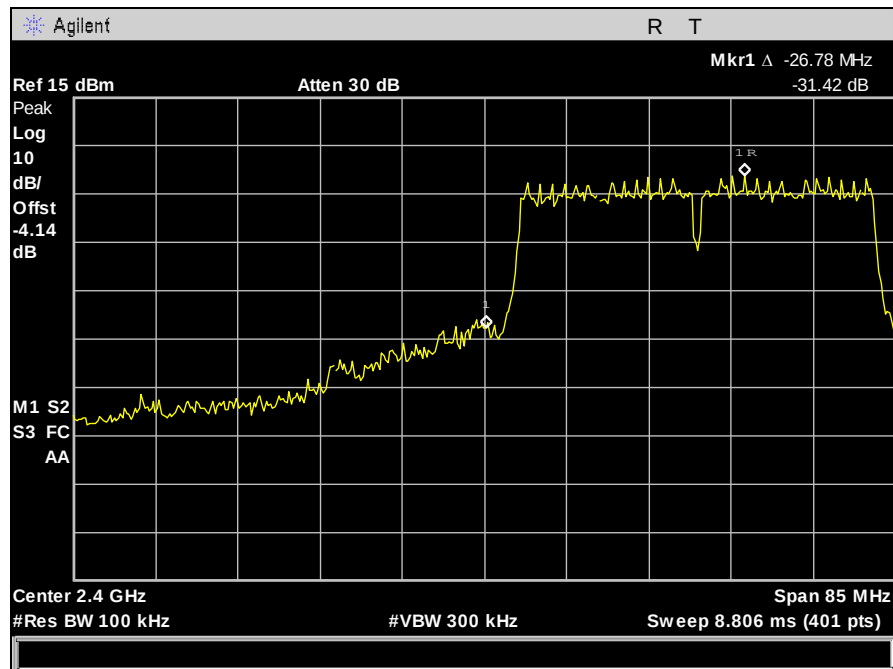


Plot 498. Conducted Band Edge, Low Channel, 802.11n 20 MHz, Port R

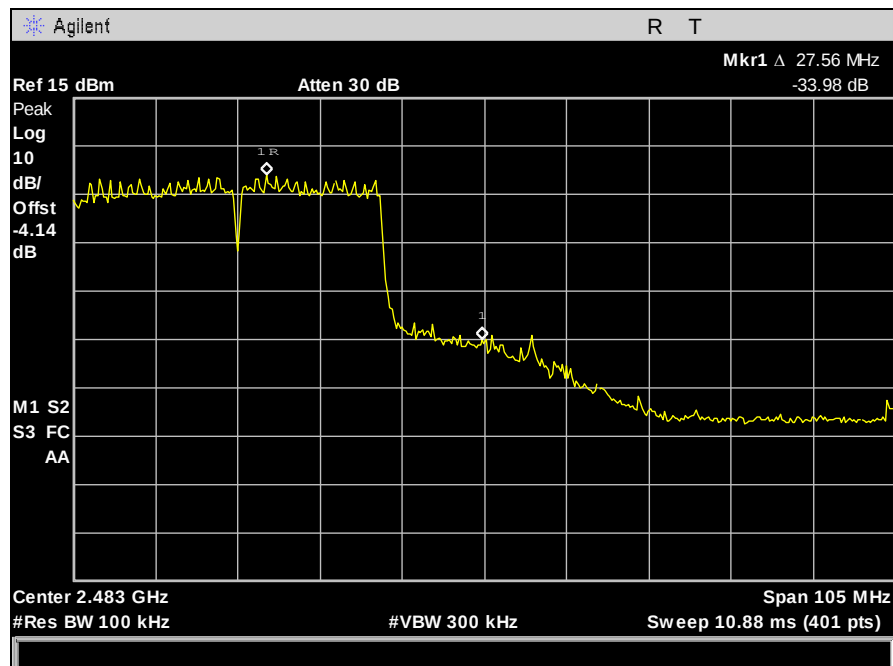


Plot 499. Conducted Band Edge, High Channel, 802.11n 20 MHz, Port R

Conducted Band Edge Test Results, 802.11n 40 MHz, Port L

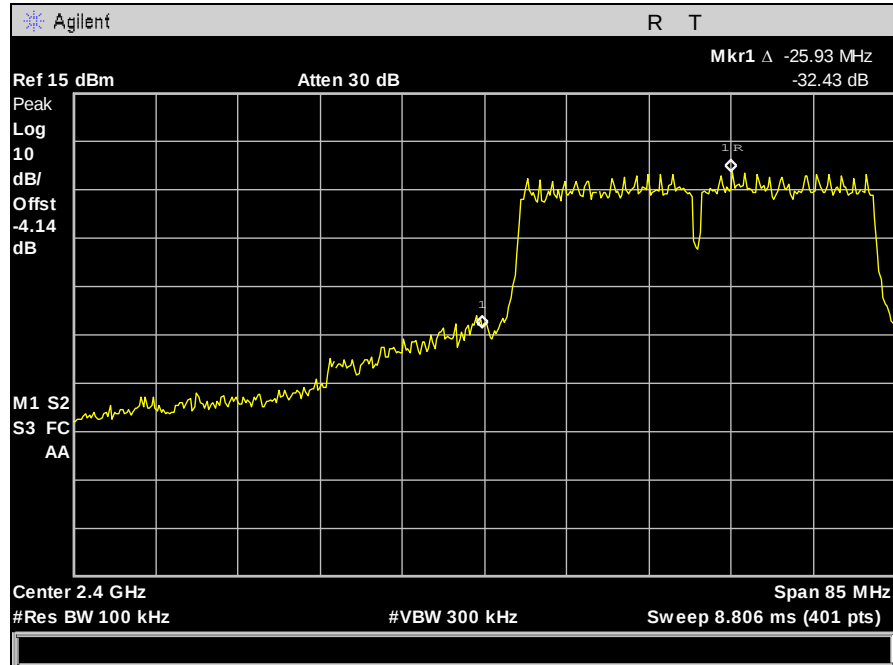


Plot 500. Conducted Band Edge, Low Channel, 802.11n 40 MHz, Port L

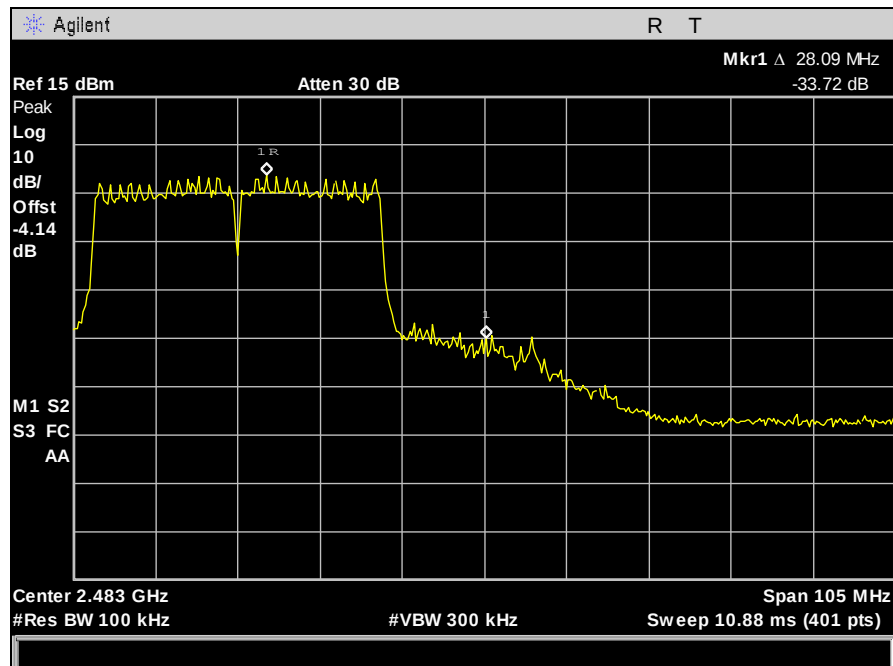


Plot 501. Conducted Band Edge, High Channel, 802.11n 40 MHz, Port L

Conducted Band Edge Test Results, 802.11n 40 MHz, Port M

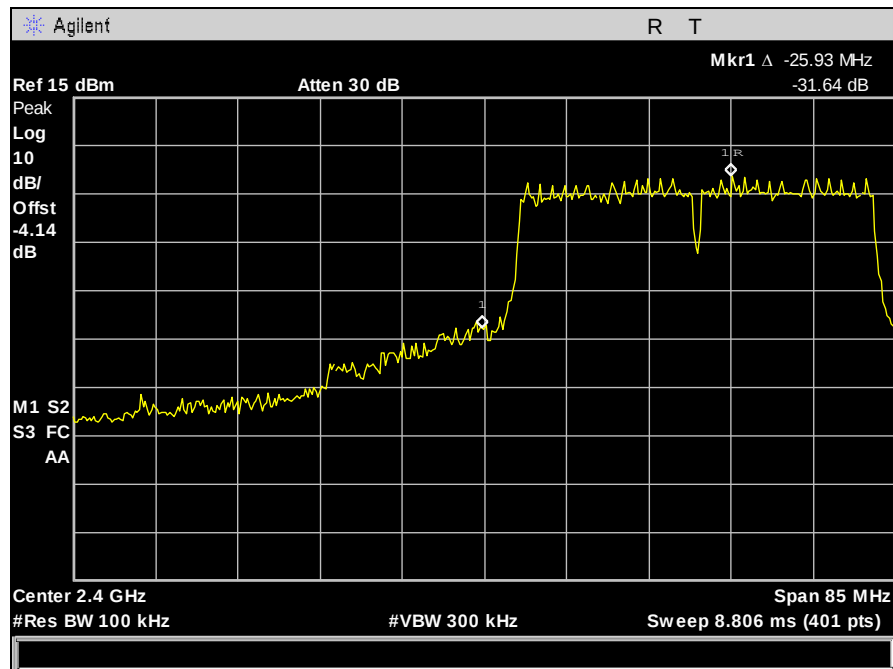


Plot 502. Conducted Band Edge, Low Channel, 802.11n 40 MHz, Port M

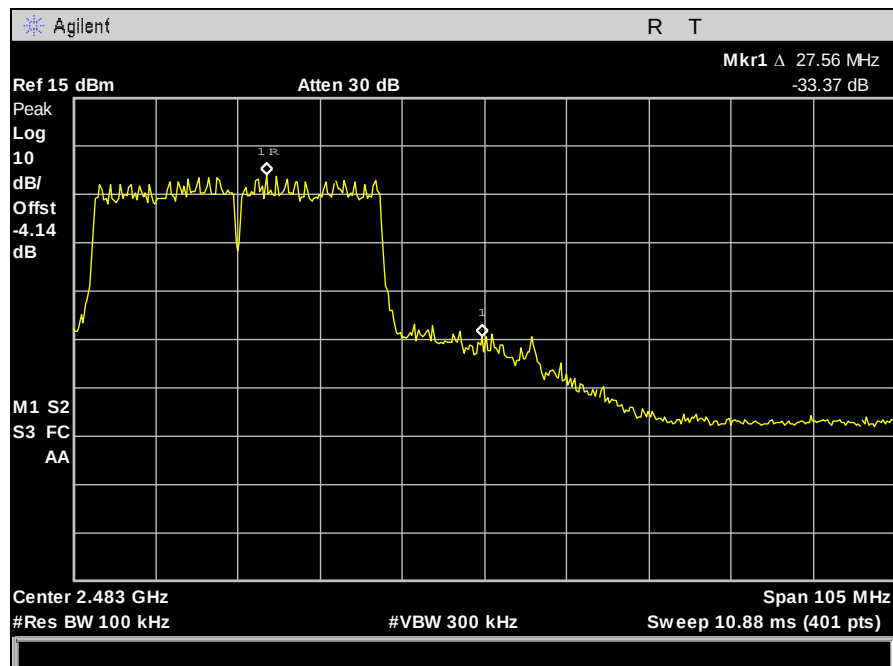


Plot 503. Conducted Band Edge, High Channel, 802.11n 40 MHz, Port M

Conducted Band Edge Test Results, 802.11n 40 MHz, Port R



Plot 504. Conducted Band Edge, Low Channel, 802.11n 40 MHz, Port R



Plot 505. Conducted Band Edge, High Channel, 802.11n 40 MHz, Port R

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.247(e) Peak Power Spectral Density

Test Requirements: §15.247(e): For digitally modulated systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

Test Procedure: The transmitter was connected directly to a Spectrum Analyzer through an attenuator. The power level was set to the maximum level based on the output power settings of 15.247(b). A RBW of 3 kHz and VBW of 10 kHz were used to determine the peak emissions within the band. The Peak Marker function of the analyzer was used to determine the highest peak spectral density in a 3 kHz band. Measurements were carried out at the low, mid and high channels.

Test Results: The EUT was compliant with the peak power spectral density limits of § 15.247 (e).

The peak power spectral density was determined from plots on the following page(s).

Test Engineer(s): Ajaz Khan

Test Date(s): 12/22/14



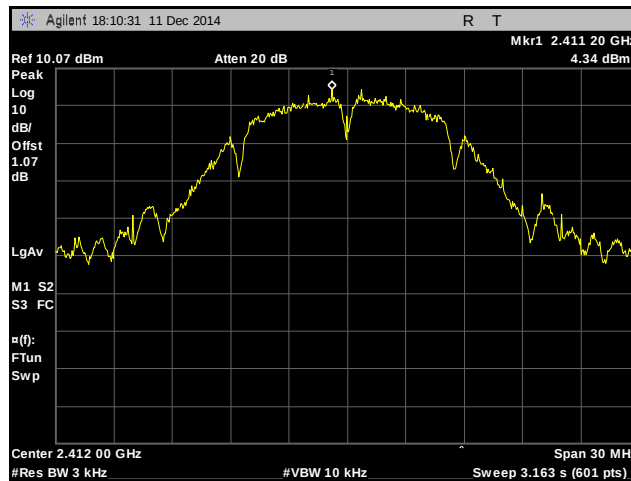
Figure 5. Block Diagram, Peak Power Spectral Density Test Setup

Peak Power Spectral Density Test Results

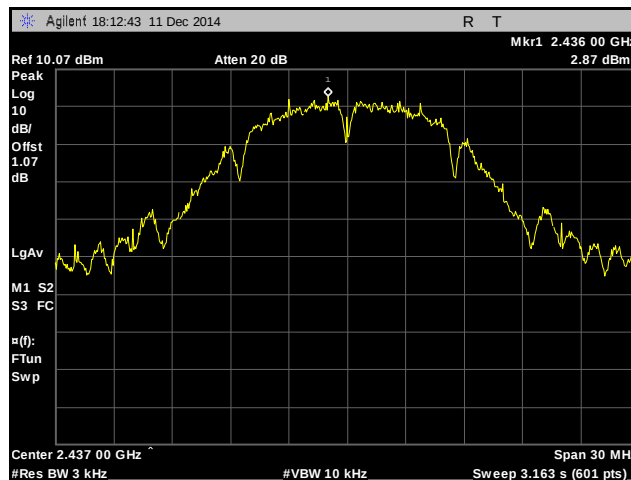
Peak Power Spectral Density					
	Carrier Channel	Frequency (MHz)	Measured PPSD (dBm)	Limit (dBm)	Margin (dB)
802.11b	Low	2412.00	4.34	8.00	-3.66
	Mid	2437.00	2.87	8.00	-5.13
	High	2462.00	3.07	8.00	-4.93
802.11g 20MHz	Low	2412.00	-0.13	8.00	-8.13
	Mid	2437.00	0.03	8.00	-7.97
	High	2462.00	-0.16	8.00	-8.16
802.11g 40MHz	Low	2412.00	-2.02	8.00	-10.02
	Mid	2437.00	-1.65	8.00	-9.65
	High	2462.00	-1.72	8.00	-9.72
802.11n 20 MHz Port Left	Low	2412.00	0.30	3.23	-2.93
	Mid	2437.00	-0.95	3.23	-4.18
	High	2462.00	-0.42	3.23	-3.65
802.11n 20 MHz Port Mid	Low	2412.00	0.84	3.23	-2.39
	Mid	2437.00	0.73	3.23	-2.50
	High	2462.00	1.19	3.23	-2.04
802.11n 20 MHz Port Right	Low	2412.00	0.50	3.23	-2.73
	Mid	2437.00	1.77	3.23	-1.47
	High	2462.00	1.96	3.23	-1.27
802.11n 20 MHz Summed	Low	2422.00	5.32	8.00	-2.68
	Mid	2437.00	5.43	8.00	-2.58
	High	2452.00	5.79	8.00	-2.21
802.11n 40 MHz Port Left	Low	2422.00	-0.94	3.23	-4.17
	Mid	2437.00	-1.96	3.23	-5.19
	High	2452.00	-2.75	3.23	-5.98
802.11n 40 MHz Port Mid	Low	2422.00	0.43	3.23	-2.80
	Mid	2437.00	-1.23	3.23	-4.46
	High	2452.00	0.29	3.23	-2.94
802.11n 40 MHz Port Right	Low	2422.00	-0.66	3.23	-3.89
	Mid	2437.00	-0.02	3.23	-3.25
	High	2452.00	0.37	3.23	-2.86
802.11n 40 MHz Summed	Low	2422.00	4.42	8.00	-3.58
	Mid	2437.00	3.78	8.00	-4.23
	High	2452.00	4.30	8.00	-3.71

Table 32. Peak Power Spectral Density, Test Results

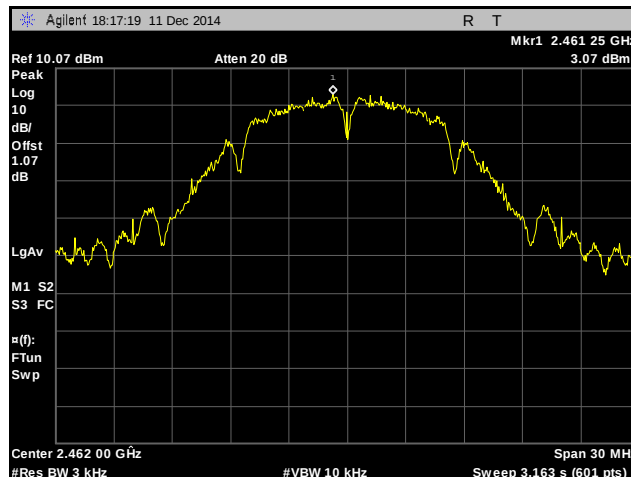
Peak Power Spectral Density, 802.11b



Plot 506. Peak Power Spectral Density, Low Channel, 802.11b 20 MHz, Port L

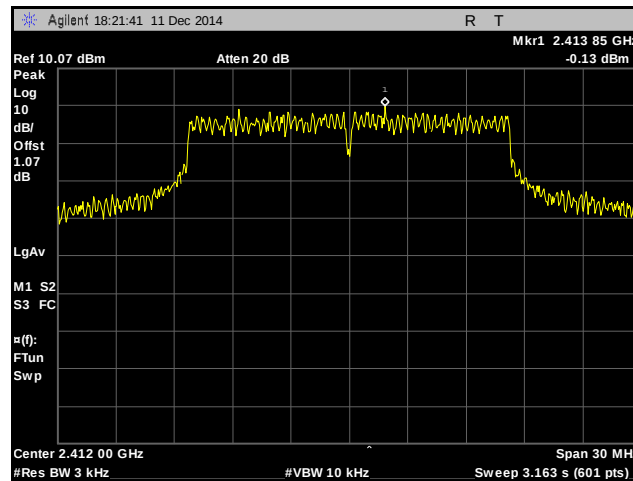


Plot 507. Peak Power Spectral Density, Mid Channel, 802.11b 20 MHz, Port L

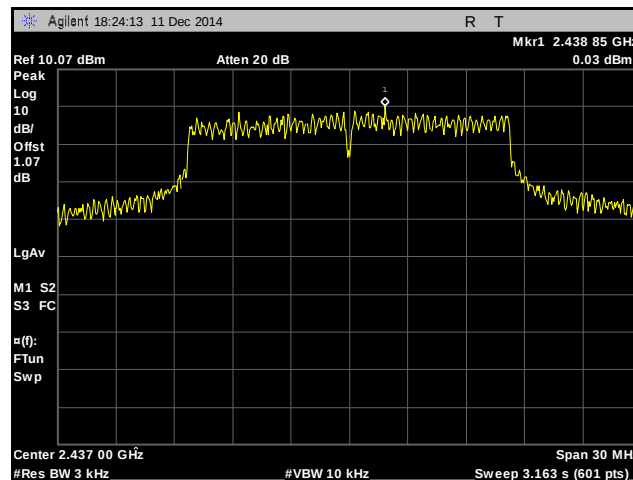


Plot 508. Peak Power Spectral Density, High Channel, 802.11b 20 MHz, Port L

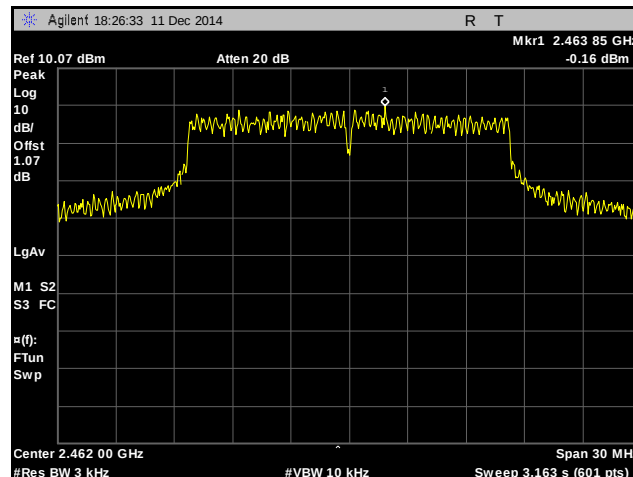
Peak Power Spectral Density, 802.11g 20 MHz



Plot 509. Peak Power Spectral Density, Low Channel, 802.11g 20 MHz, Port L

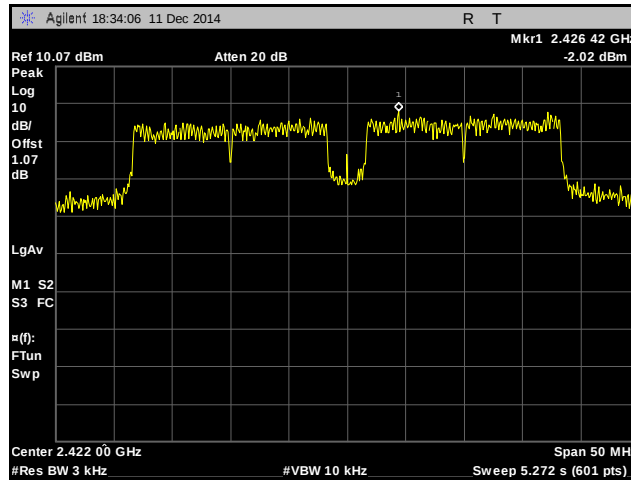


Plot 510. Peak Power Spectral Density, Mid Channel, 802.11g 20 MHz, Port L

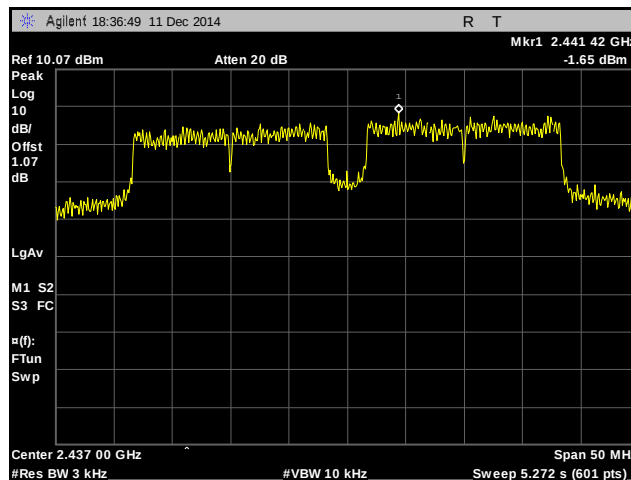


Plot 511. Peak Power Spectral Density, High Channel, 802.11g 20 MHz, Port L

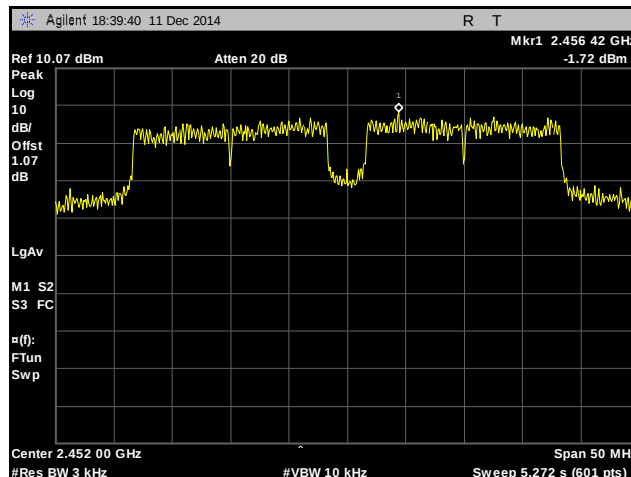
Peak Power Spectral Density, 802.11g 40 MHz



Plot 512. Peak Power Spectral Density, Low Channel, 802.11g 40 MHz, Port L

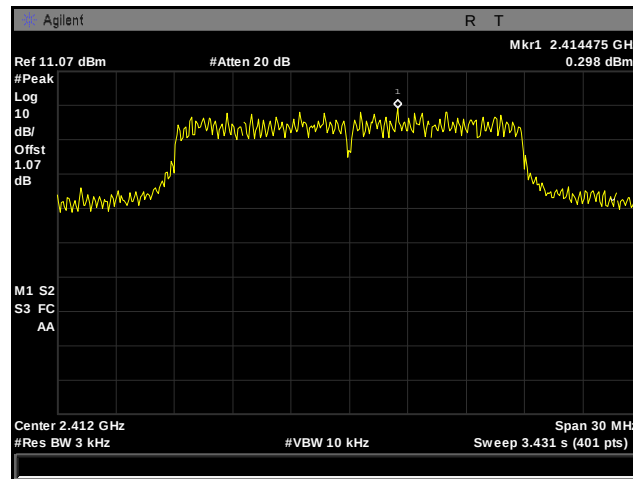


Plot 513. Peak Power Spectral Density, Mid Channel, 802.11g 40 MHz, Port L

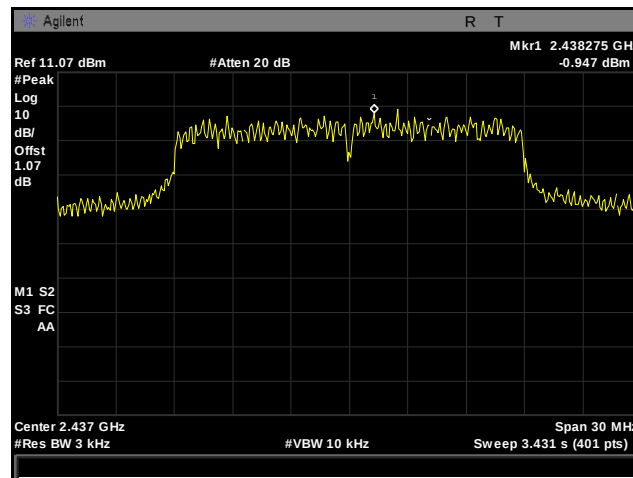


Plot 514. Peak Power Spectral Density, High Channel, 802.11g 40 MHz, Port L

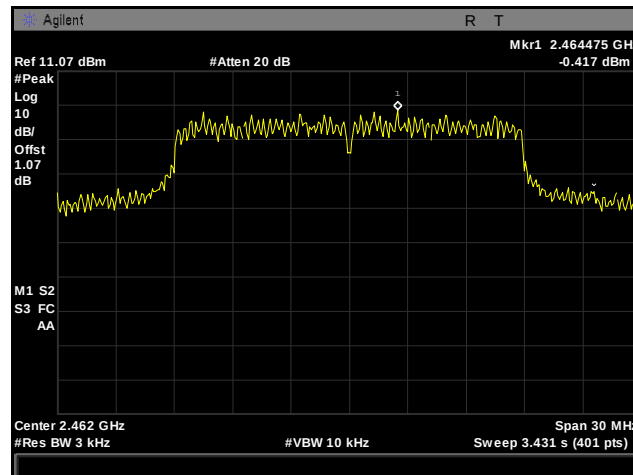
Peak Power Spectral Density, 802.11n 20 MHz, Port L



Plot 515. Peak Power Spectral Density, Low Channel, 802.11n 20 MHz, Port L

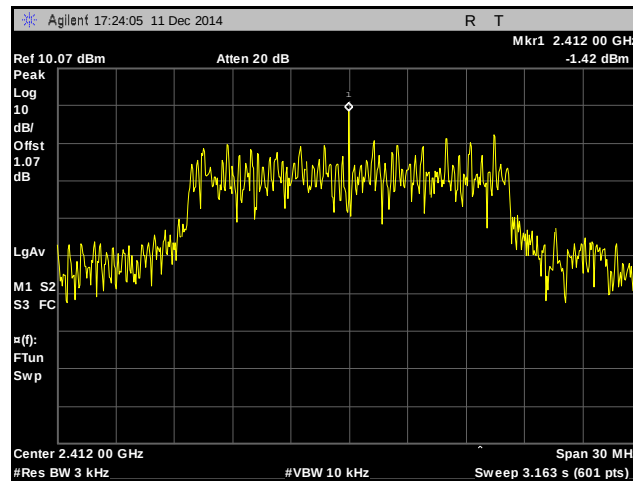


Plot 516. Peak Power Spectral Density, Mid Channel, 802.11n 20 MHz, Port L

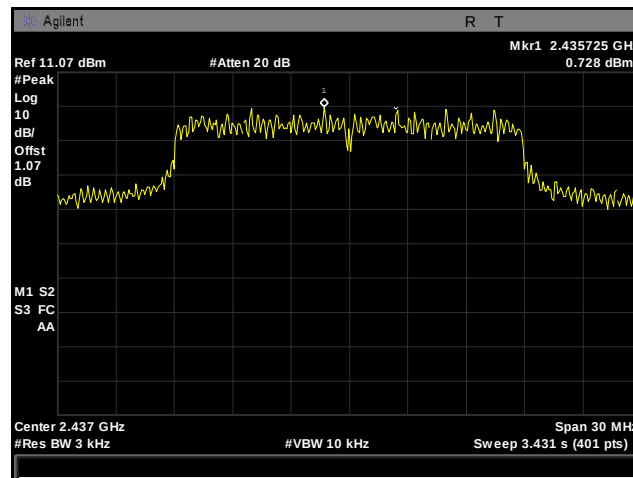


Plot 517. Peak Power Spectral Density, High Channel, 802.11n 20 MHz, Port L

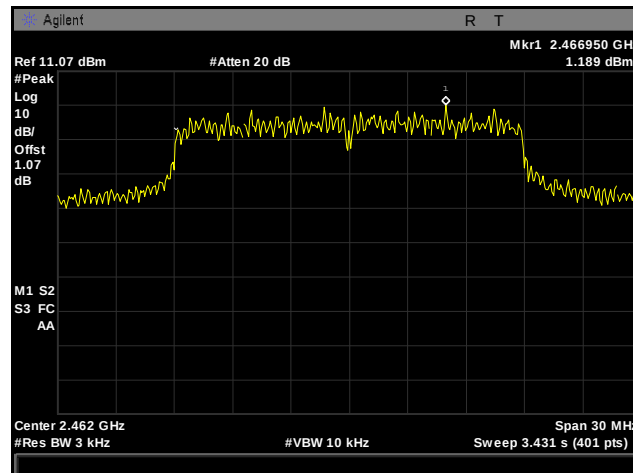
Peak Power Spectral Density, 802.11n 20 MHz, Port M



Plot 518. Peak Power Spectral Density, Low Channel, 802.11n 20 MHz, Port M

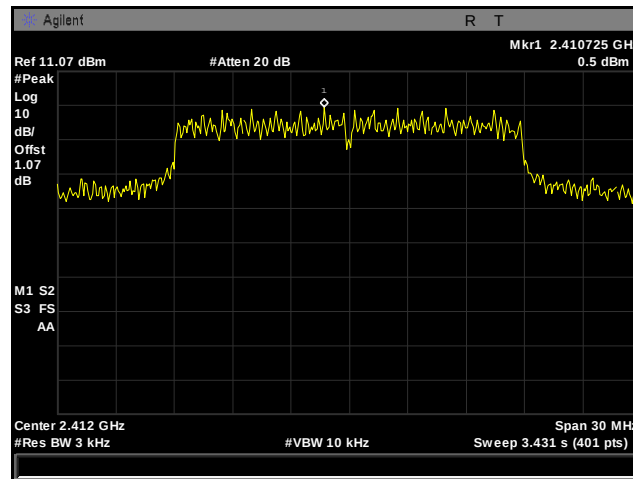


Plot 519. Peak Power Spectral Density, Mid Channel, 802.11n 20 MHz, Port M

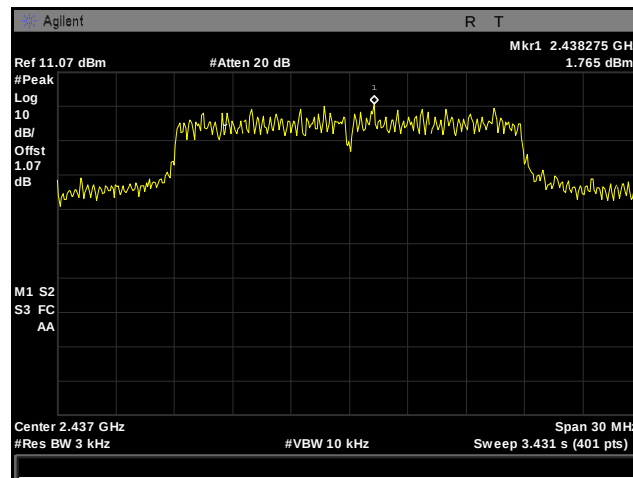


Plot 520. Peak Power Spectral Density, High Channel, 802.11n 20 MHz, Port M

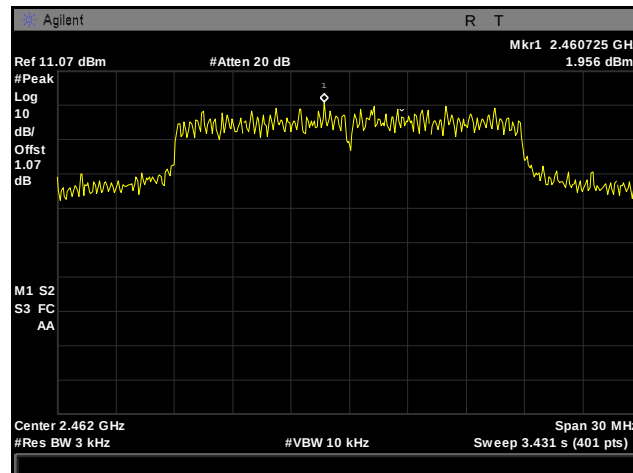
Peak Power Spectral Density, 802.11n 20 MHz, Port R



Plot 521. Peak Power Spectral Density, Low Channel, 802.11n 20 MHz, Port R

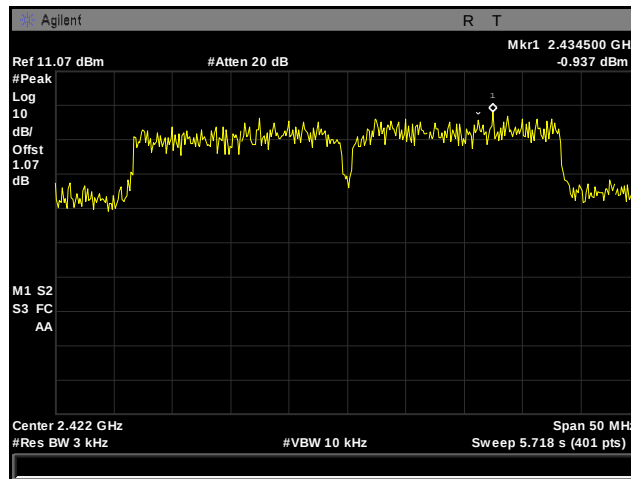


Plot 522. Peak Power Spectral Density, Mid Channel, 802.11n 20 MHz, Port R

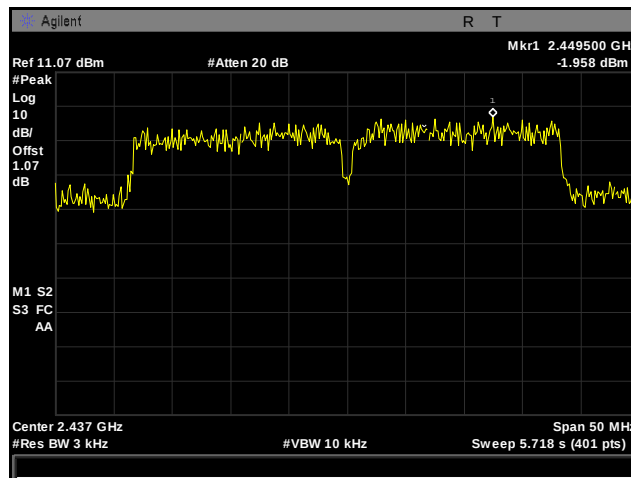


Plot 523. Peak Power Spectral Density, High Channel, 802.11n 20 MHz, Port R

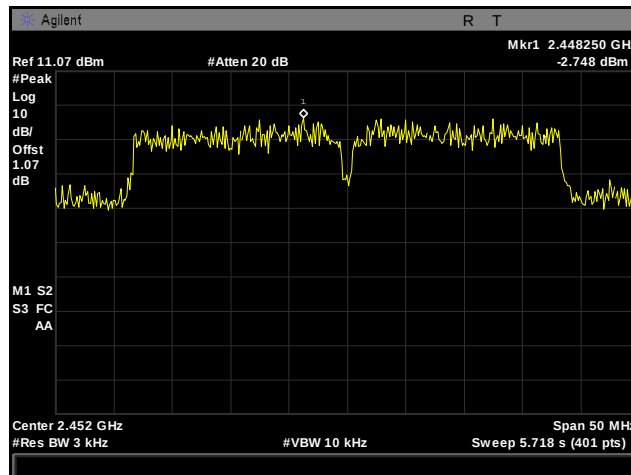
Peak Power Spectral Density, 802.11n 40 MHz, Port L



Plot 524. Peak Power Spectral Density, Low Channel, 802.11n 40 MHz, Port L

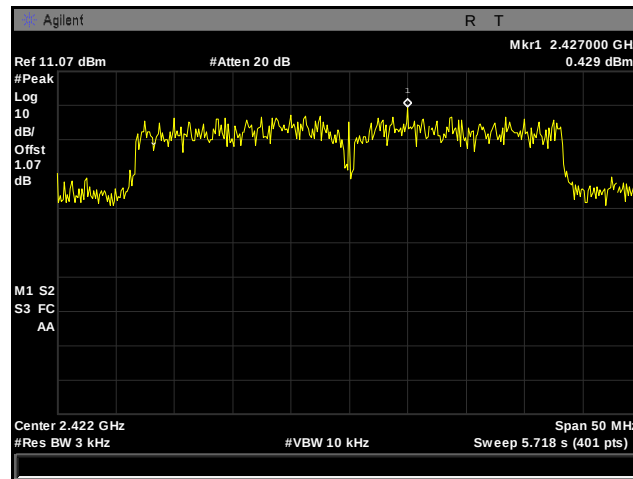


Plot 525. Peak Power Spectral Density, Mid Channel, 802.11n 40 MHz, Port L

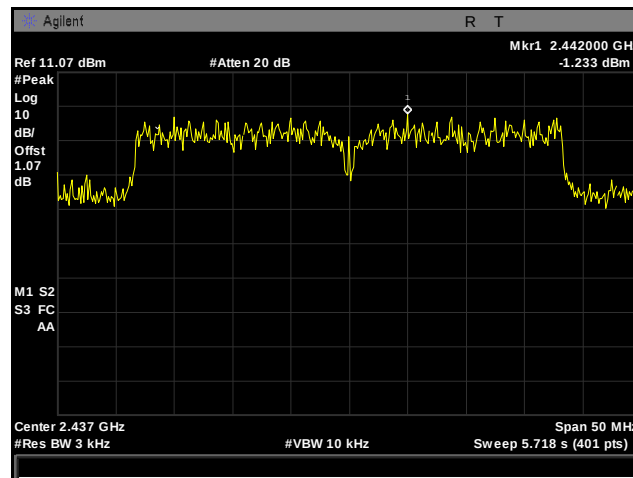


Plot 526. Peak Power Spectral Density, High Channel, 802.11n 40 MHz, Port L

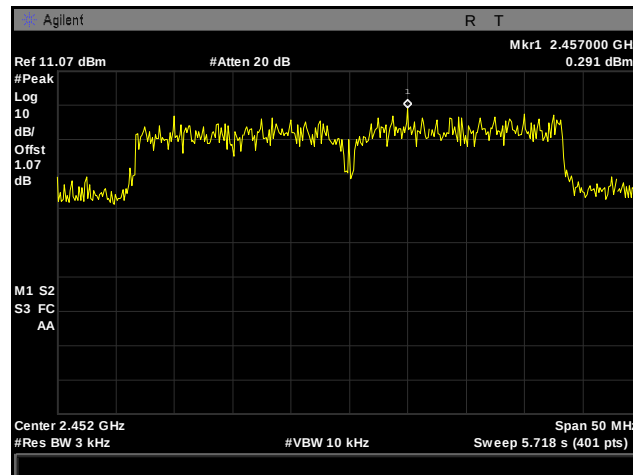
Peak Power Spectral Density, 802.11n 40 MHz, Port M



Plot 527. Peak Power Spectral Density, Low Channel, 802.11n 40 MHz, Port M

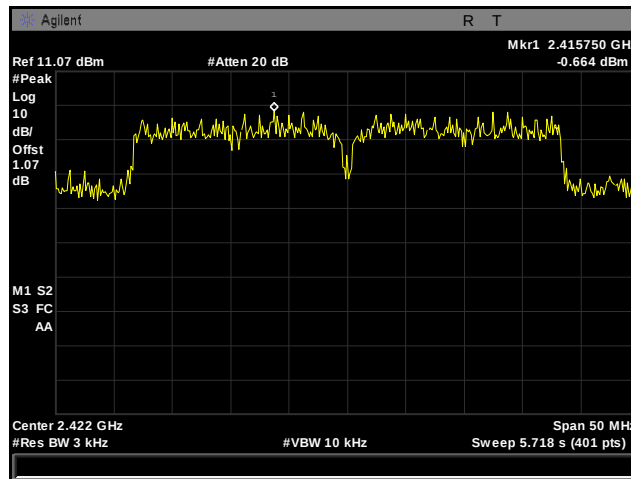


Plot 528. Peak Power Spectral Density, Mid Channel, 802.11n 40 MHz, Port M

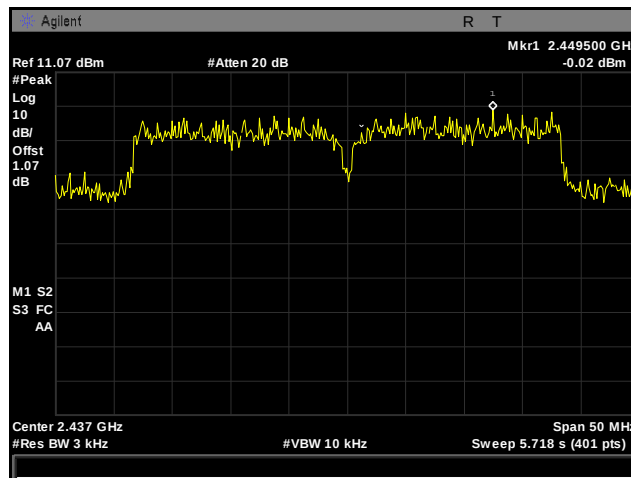


Plot 529. Peak Power Spectral Density, High Channel, 802.11n 40 MHz, Port M

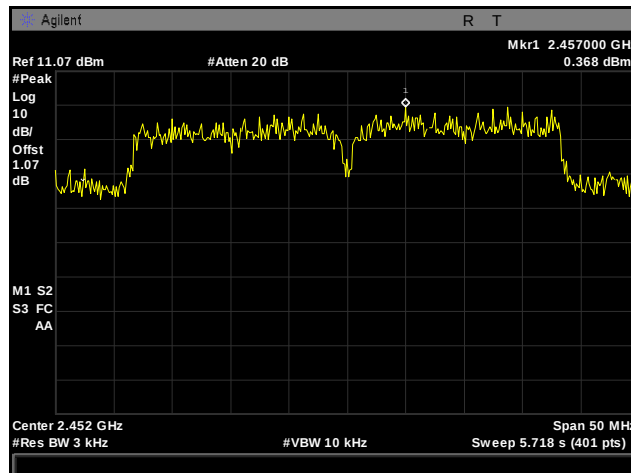
Peak Power Spectral Density, 802.11n 40 MHz, Port R



Plot 530. Peak Power Spectral Density, Low Channel, 802.11n 40 MHz, Port R



Plot 531. Peak Power Spectral Density, Mid Channel, 802.11n 40 MHz, Port R



Plot 532. Peak Power Spectral Density, High Channel, 802.11n 40 MHz, Port R

Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.247(i) Maximum Permissible 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.

MPE Limit Calculation: EUT's operating frequencies @ 2400-2483.5 MHz; highest conducted power = 18.59 dBm (peak) therefore, **Limit for Uncontrolled exposure: 1 mW/cm² or 10 W/m²**

2.4 GHz highest power density:

EUT antenna gain = 12.5 dBi +10log (3) = 17.27 dBi (53.33 linear);
Power = 18.59 dBm (72.28 mW)

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

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

where, S = Power Density

P = Power Input to antenna

G = Antenna Gain

R = 25 cm

$$S = (53.33 \times 72.28 / 4 \times 3.14 \times 625) = 0.49 \text{ mW/cm}^2$$

Co-location:

Frequency Range	MPE Result (mW/cm ²)	Limit (mW/cm ²)
2.4GHz	0.49	1
5.745-5.805GHz	0.29	1

Test Requirements: $[MPE(f1) / \text{limit}(f1) + MPE(f2) / \text{limit}(f2)] < 1$

Test Results:

MPE(f1)	MPE(f2)	Calculation [MPE(f1) / limit(f1) + MPE(f2) / limit(f2)]	MPE Result (mW/cm ²)
Frequency (MHZ)	Frequency (MHZ)		
2412 - 2462	5745-5825	0.49 / 1 + 0.29 / 1 = (0.49+ 0.29)	0.78

Therefore, the uncontrolled exposure limit is not exceeded at 25 cm.

IV. Test Equipment

Test Equipment

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

MET Asset #	Equipment	Manufacturer	Model	Last Cal Date	Cal Due Date
1S2600	BILOG ANTENNA	TESEQ	CBL6112D	8/29/2013	8/29/2015
1S2482	5 METER CHAMBER (NSA)	PANASHIELD	5 METER SEMI-ANECHOIC CHAMBER	8/12/2013	2/12/2015
1S2583	SPECTRUM ANALYZER	AGILENT/HP	E4447A	11/1/2013	5/1/2015
1S2460	1-26GHZ SPECTRUM ANALYZER	AGILENT TECHNOLOGIES	E4407B	2/27/2014	8/27/2015
1S2603	DOUBLE RIDGED WAVEGUIDE HORN	ETS-LINDGREN	3117	4/24/2013	4/24/2015
1S2523	PREAMPLIFIER	AGILENT TECHNOLOGIES	8449B	SEE NOTE	
1S2729	SONOMA AMPLIFIER	SONOMA INSTRUMENT	310N	SEE NOTE	
1S2460	1-26GHZ SPECTRUM ANALYZER	AGILENT TECHNOLOGIES	E4407B	2/27/2014	8/27/2015
N/A	NOTCH FILTER	MIRCRO-TRONICS	BRM50702	SEE NOTE	
N/A	HIGH PASS FILTER	MICRO-TRONICS	BRM50705	SEE NOTE	

Table 33. 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

1. 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 user's 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