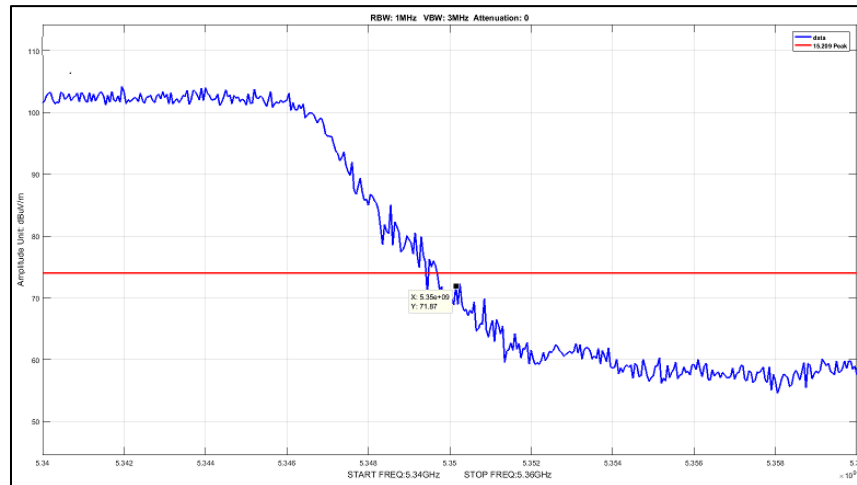
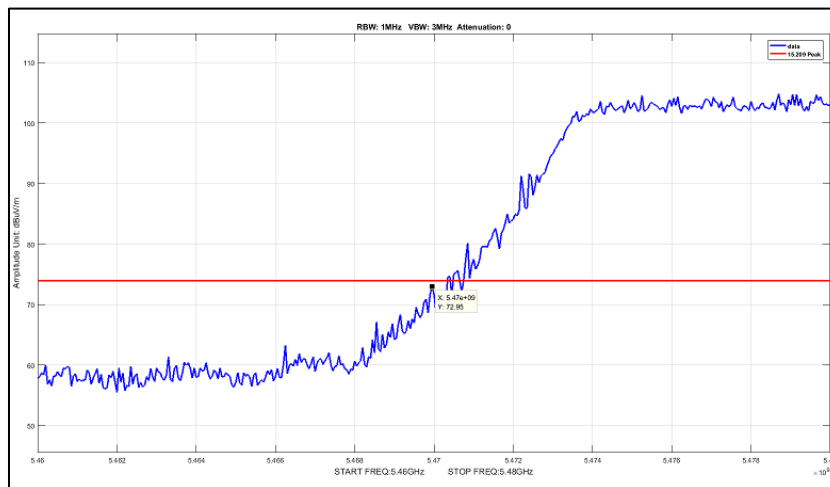




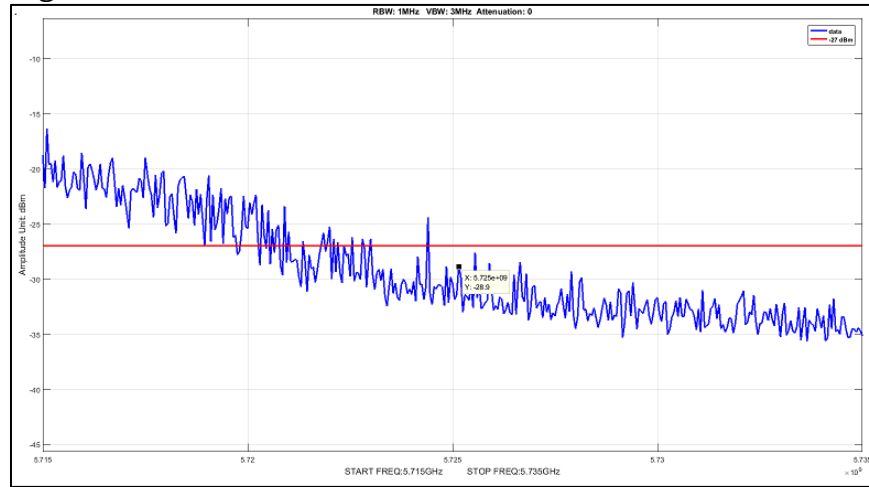
Plot 1190. Radiated Band Edge, 3' Para, Peak, 40M, 5328, pow-6



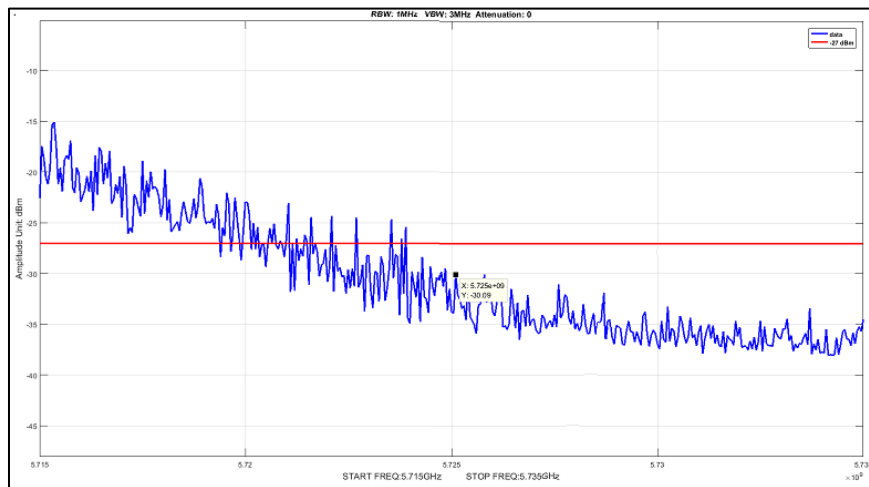
Plot 1191. Radiated Band Edge, 3' Para, Peak, 40M, 5492, pow-6



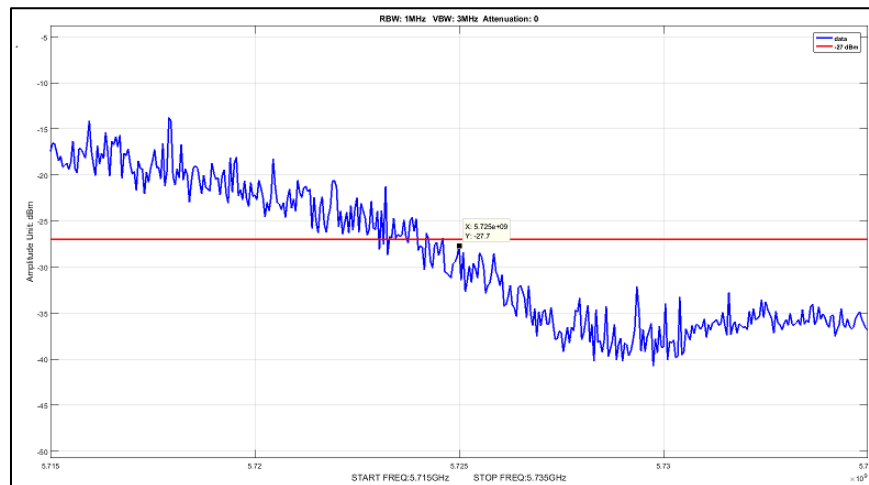
Radiated Band Edge, 5 Omni, Test Results



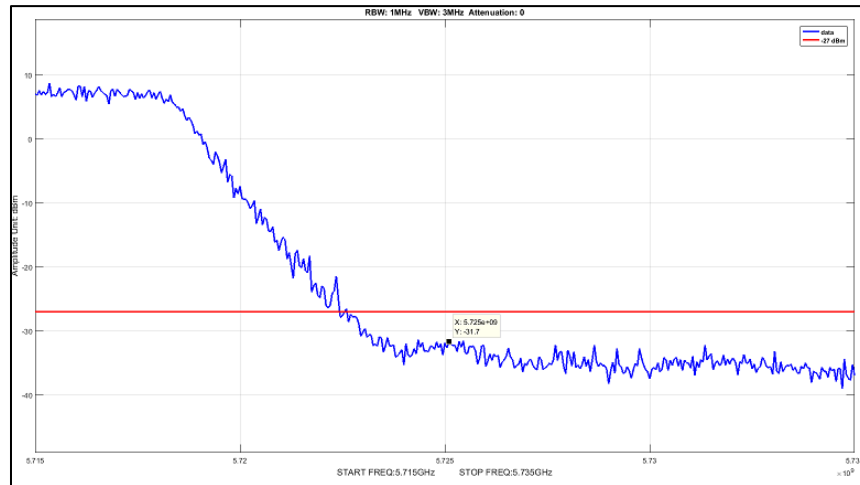
Plot 1192. Radiated Band Edge, 5 Omni, -27 dBm, 5M, 5700, pow22



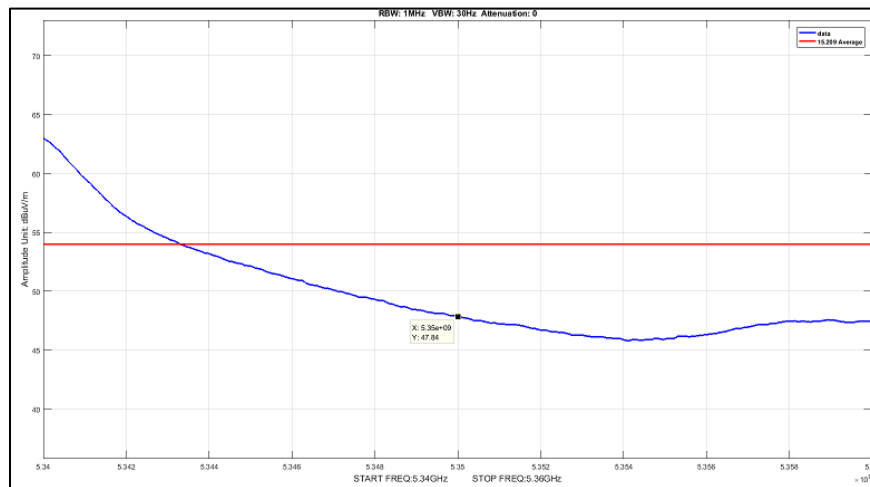
Plot 1193. Radiated Band Edge, 5 Omni, -27 dBm, 10M, 5700, pow16



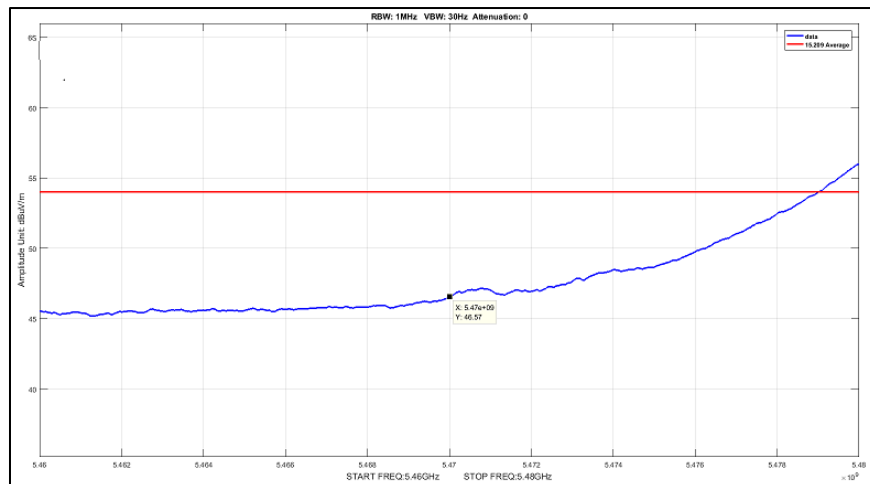
Plot 1194. Radiated Band Edge, 5 Omni, -27 dBm, 20M, 5700, pow11



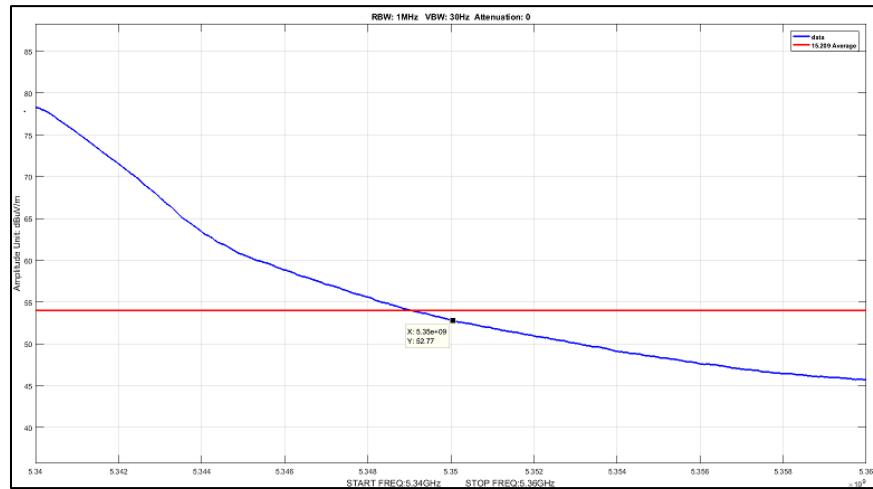
Plot 1195. Radiated Band Edge, 5 Omni, -27 dBm, 40M, 5700, pow7



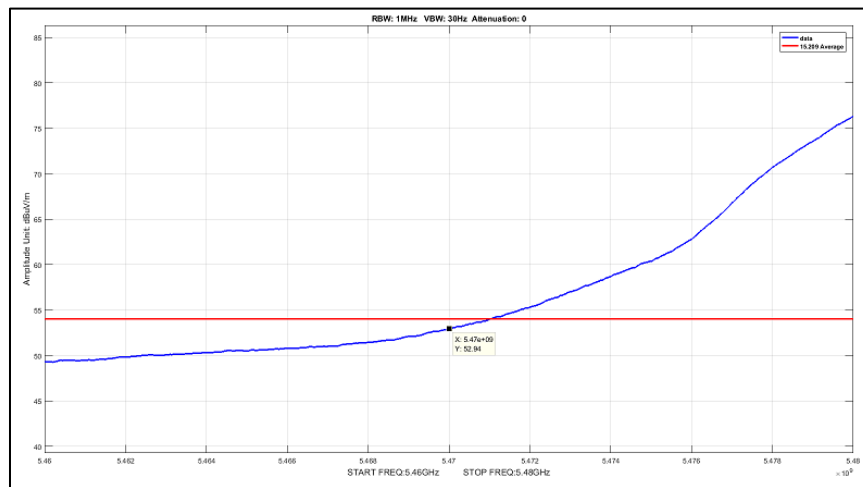
Plot 1196. Radiated Band Edge, 5 Omni, Average, 5M, 5330, pow22



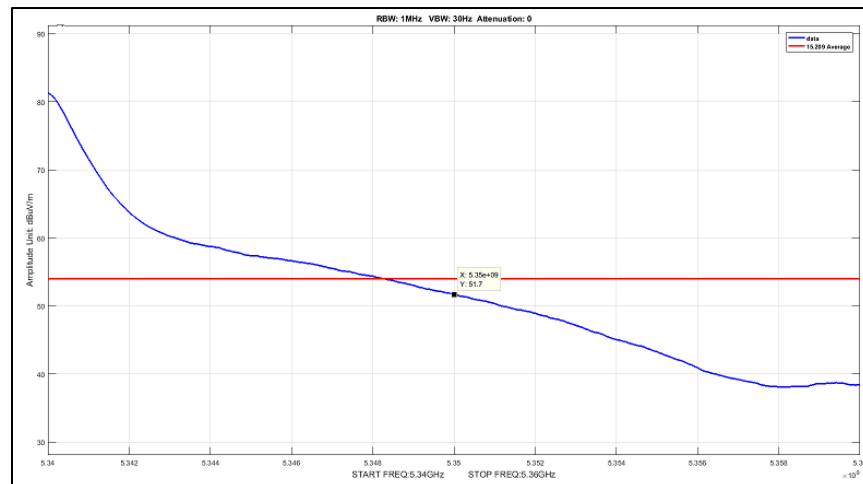
Plot 1197. Radiated Band Edge, 5 Omni, Average, 5M, 5490, pow22



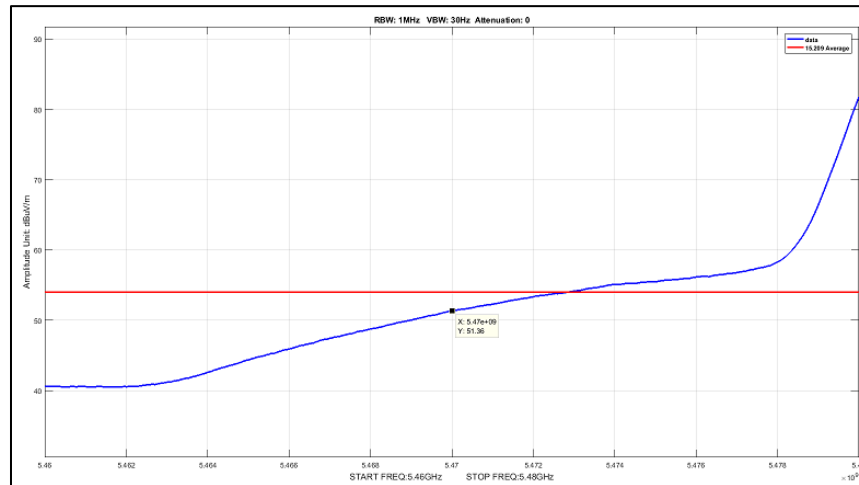
Plot 1198. Radiated Band Edge, 5 Omni, Average, 10M, 5330, pow20



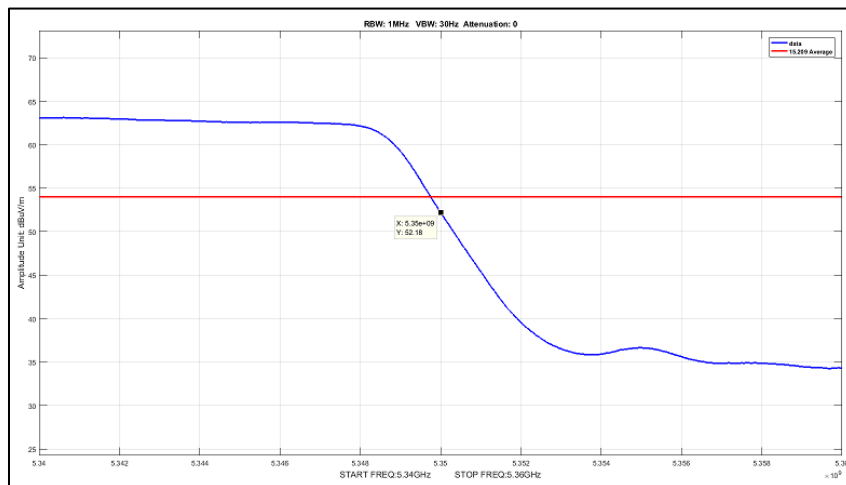
Plot 1199. Radiated Band Edge, 5 Omni, Average, 10M, 5490, pow21



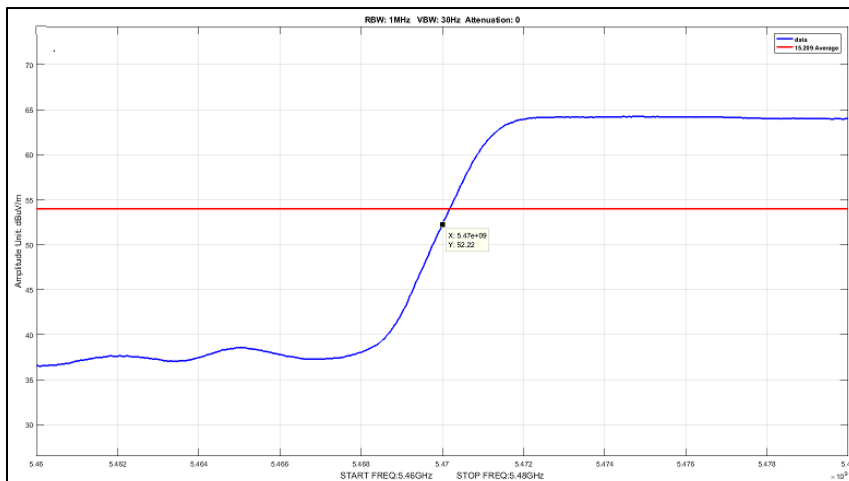
Plot 1200. Radiated Band Edge, 5 Omni, Average, 20M, 5330, pow12



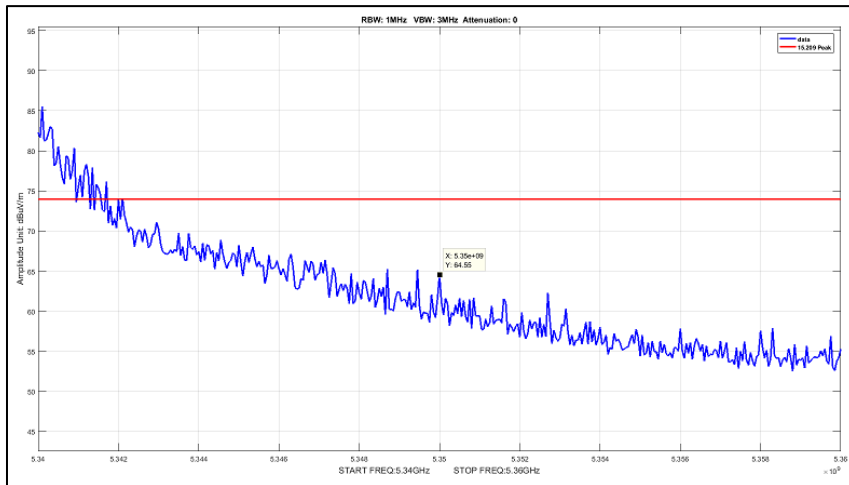
Plot 1201. Radiated Band Edge, 5 Omni, Average, 20M, 5490, pow11



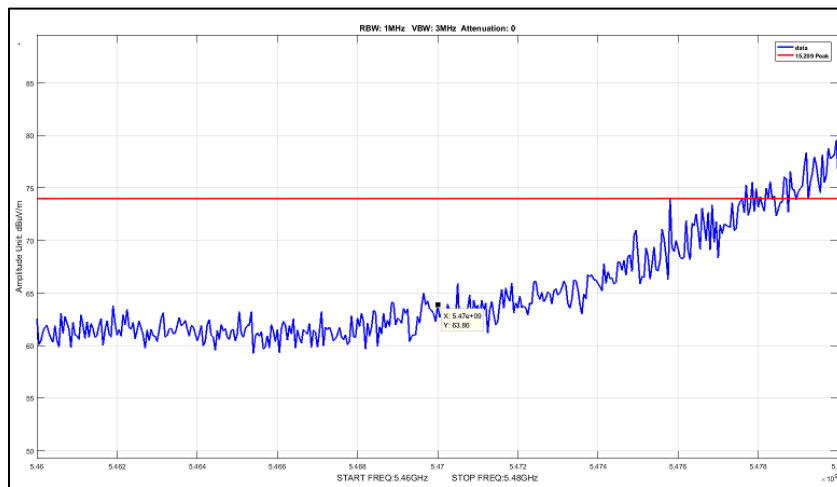
Plot 1202. Radiated Band Edge, 5 Omni, Average, 40M, 5330, pow4



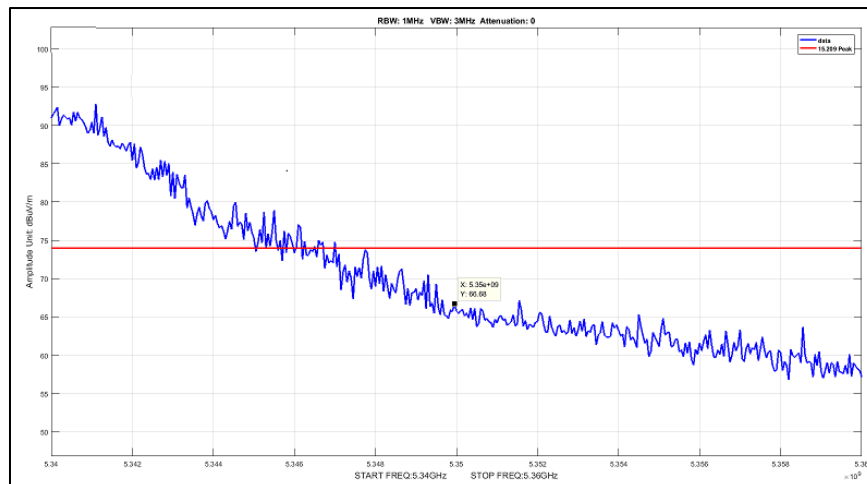
Plot 1203. Radiated Band Edge, 5 Omni, Average, 40M, 5490, pow4



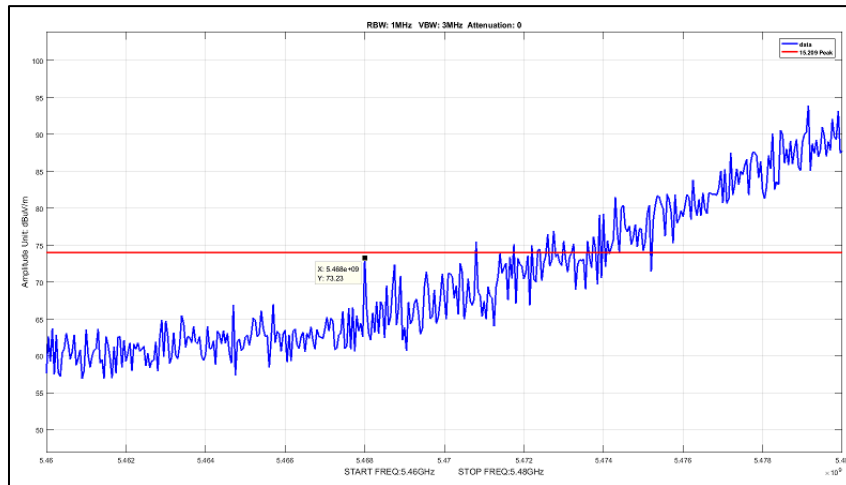
Plot 1204. Radiated Band Edge, 5 Omni, Peak, 5M, 5330, pow22



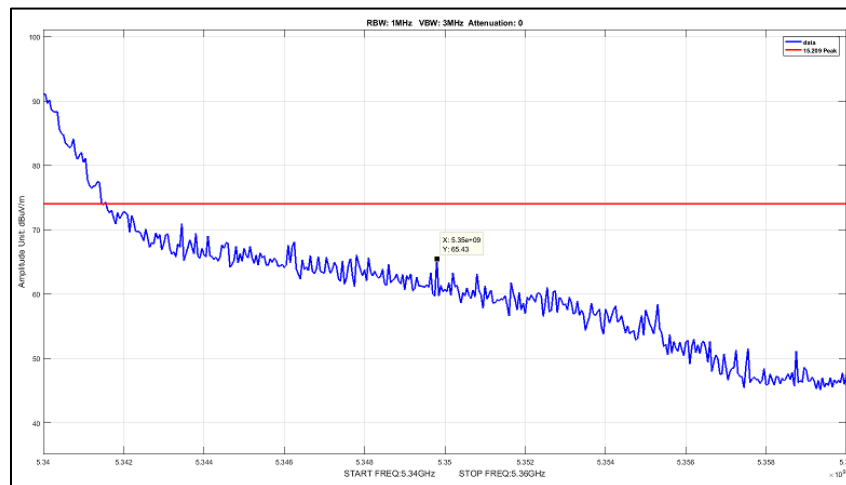
Plot 1205. Radiated Band Edge, 5 Omni, Peak, 5M, 5490, pow22



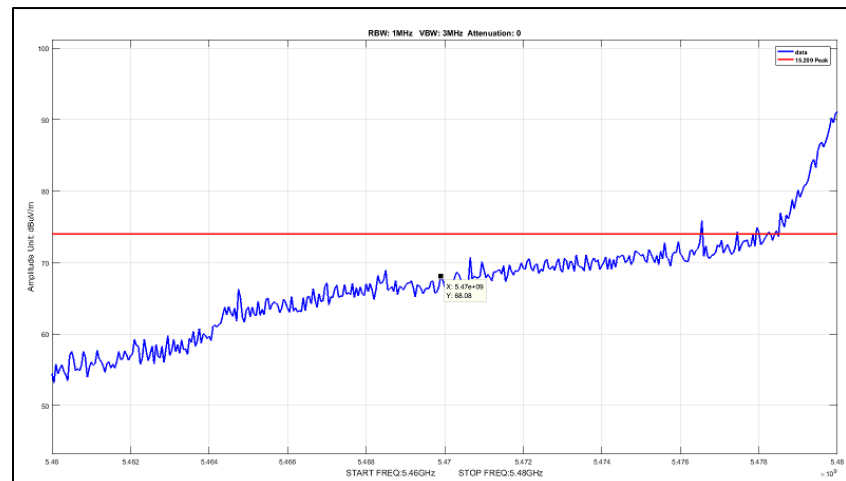
Plot 1206. Radiated Band Edge, 5 Omni, Peak, 10M, 5330, pow 20



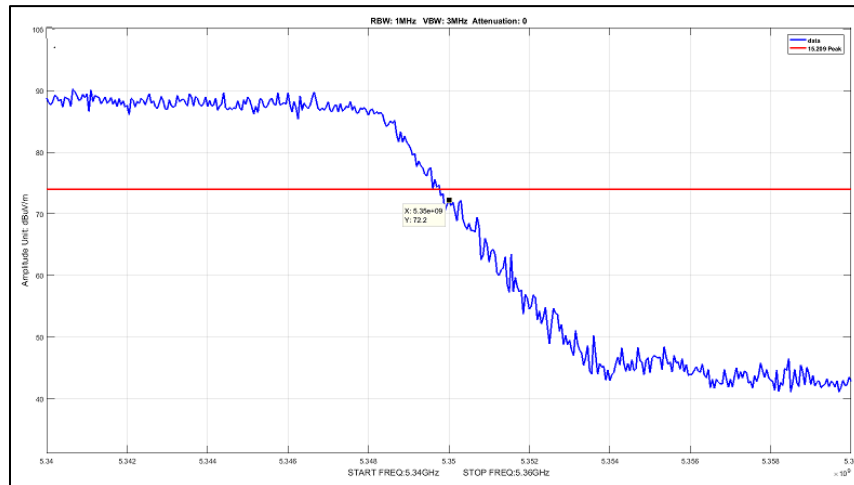
Plot 1207. Radiated Band Edge, 5 Omni, Peak, 10M, 5490, pow21



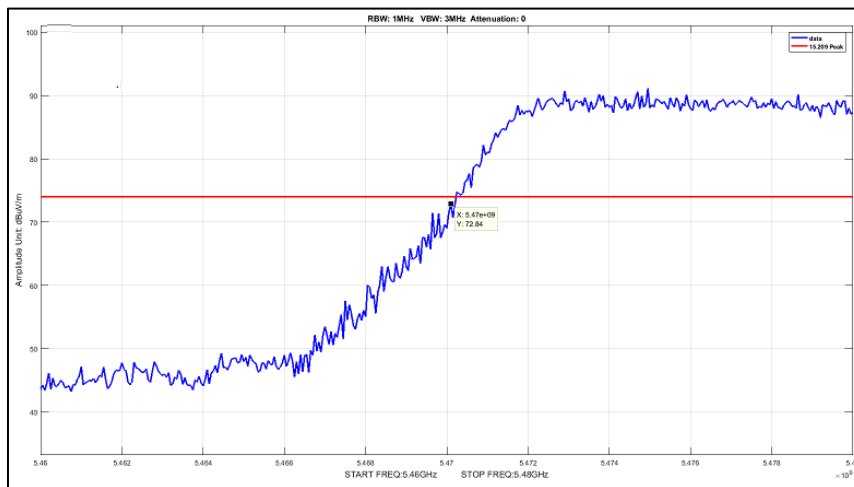
Plot 1208. Radiated Band Edge, 5 Omni, Peak, 20M, 5330, pow12



Plot 1209. Radiated Band Edge, 5 Omni, Peak, 20M, 5490, pow 11



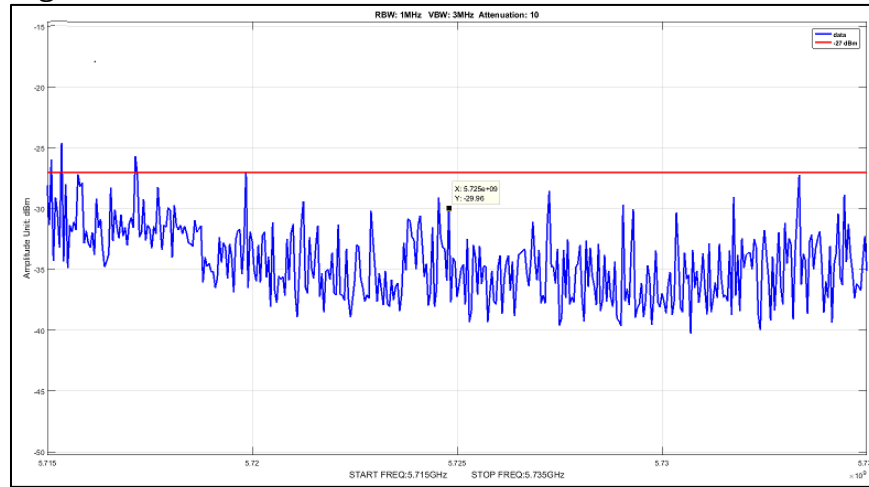
Plot 1210. Radiated Band Edge, 5 Omni, Peak, 40M, 5330, pow4



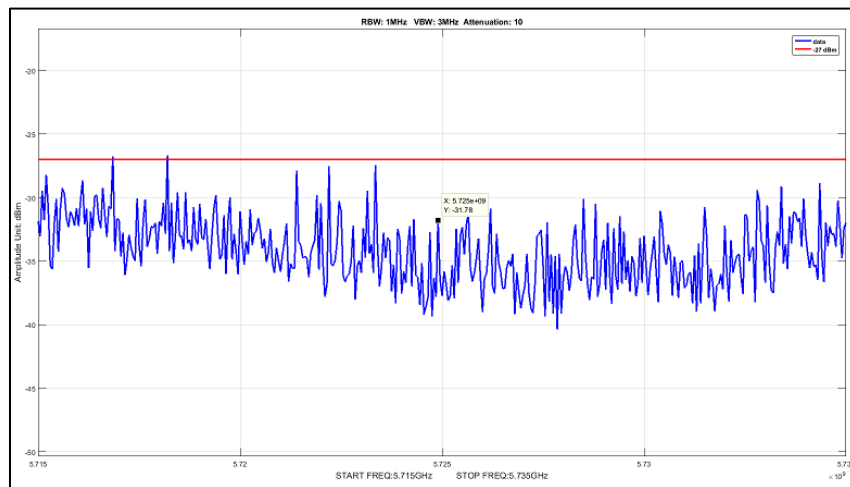
Plot 1211. Radiated Band Edge, 5 Omni, Peak, 40M, 5490, pow4



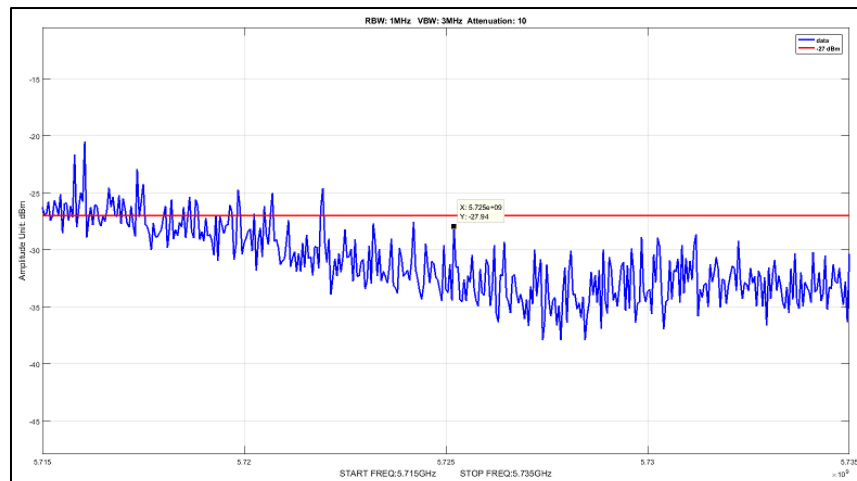
Radiated Band Edge, 8 Omni, Test Results



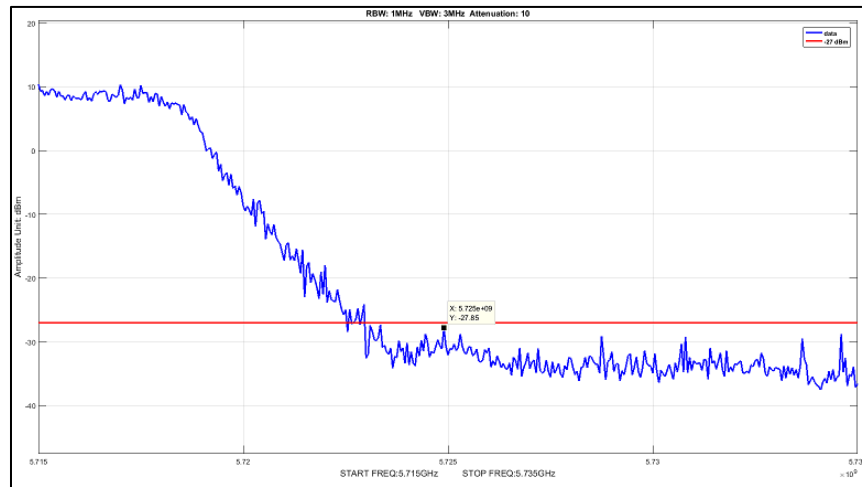
Plot 1212. Radiated Band Edge, 8 Omni, -27 dBm, 5M, 5700, pow8



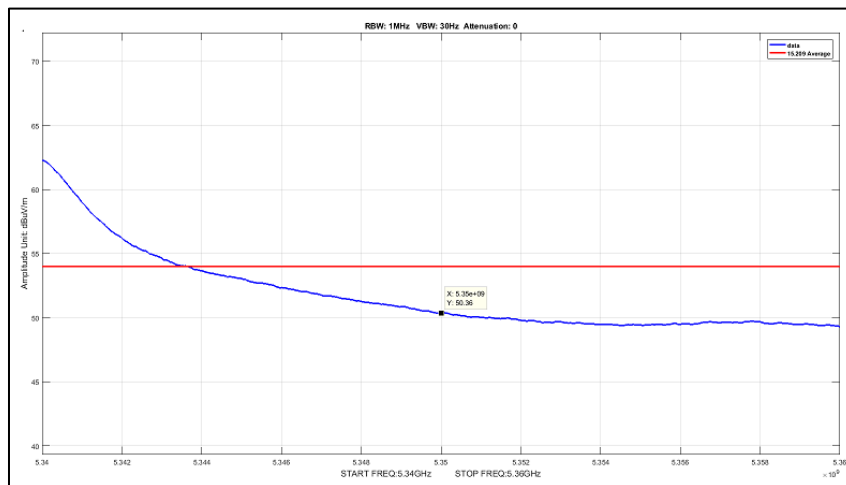
Plot 1213. Radiated Band Edge, 8 Omni, -27 dBm, 10M, 5700, pow8



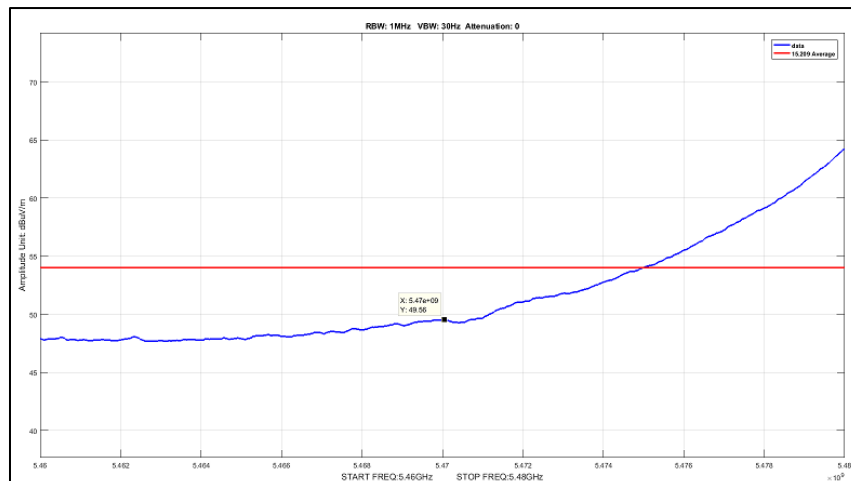
Plot 1214. Radiated Band Edge, 8 Omni, -27 dBm, 20M, 5700, pow8



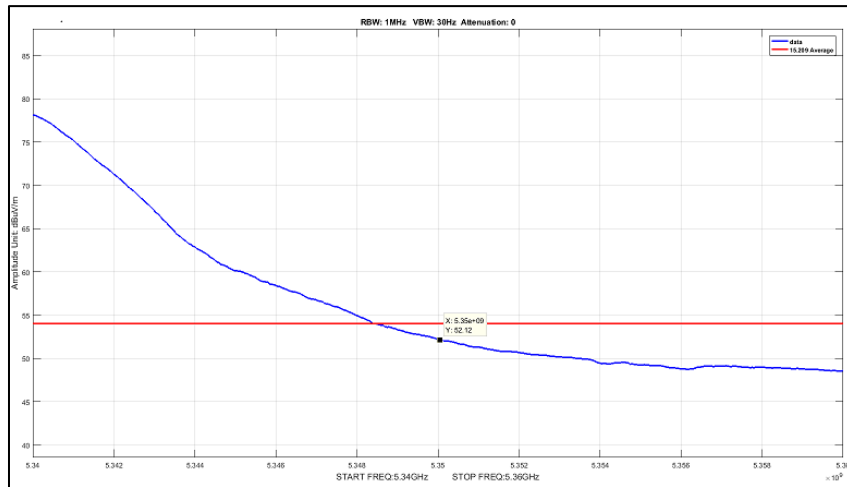
Plot 1215. Radiated Band Edge, 8 Omni, -27 dBm, 40M, 5700, pow6



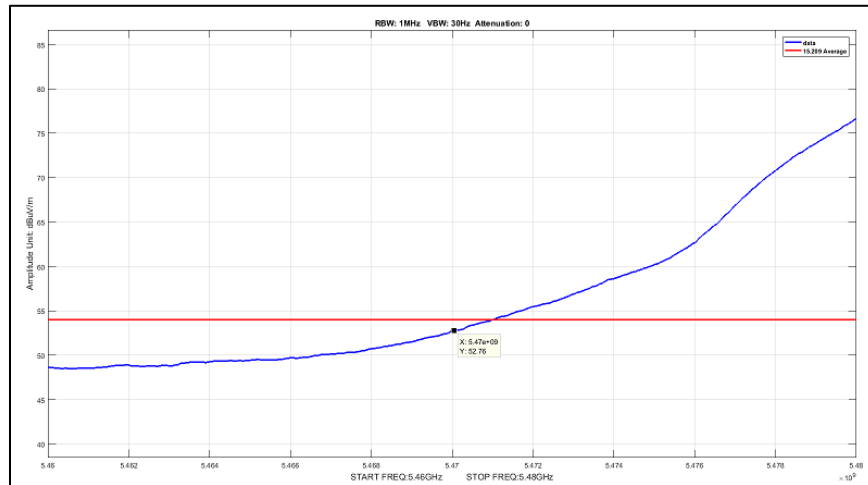
Plot 1216. Radiated Band Edge, 8 Omni, Average, 5M, 5330, pow22



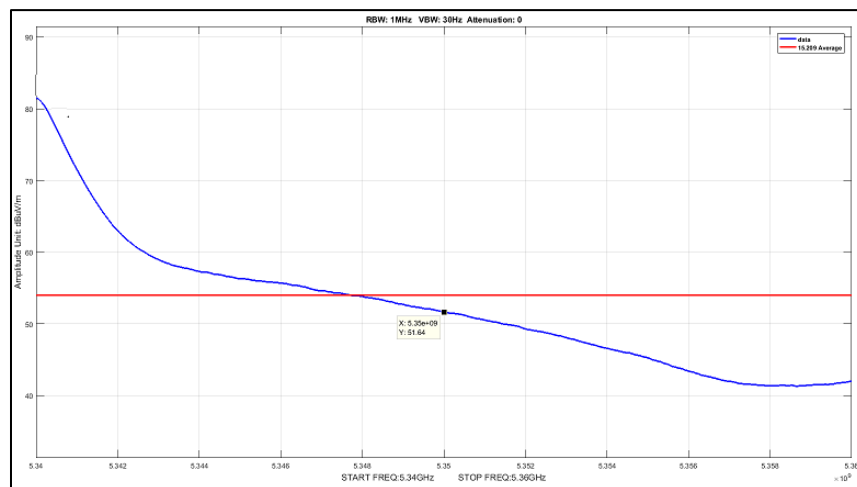
Plot 1217. Radiated Band Edge, 8 Omni, Average, 5M, 5490, pow22



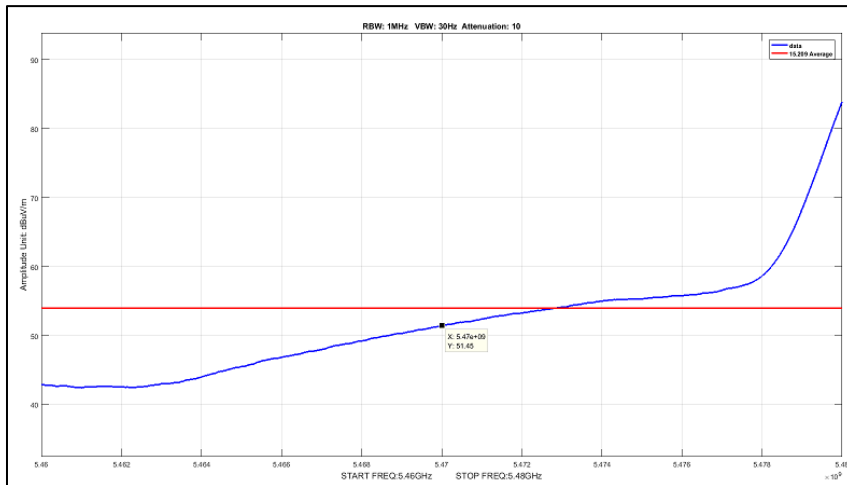
Plot 1218. Radiated Band Edge, 8 Omni, Average, 10M, 5330, pow19



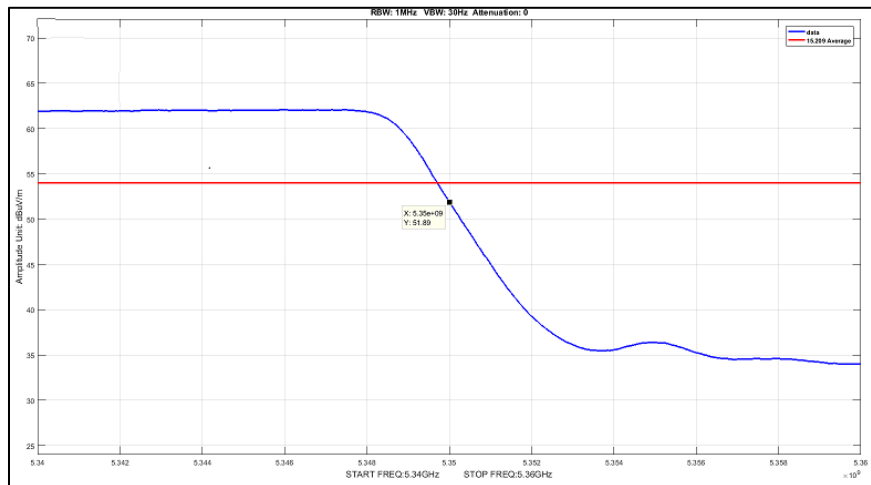
Plot 1219. Radiated Band Edge, 8 Omni, Average, 10M, 5490, pow17



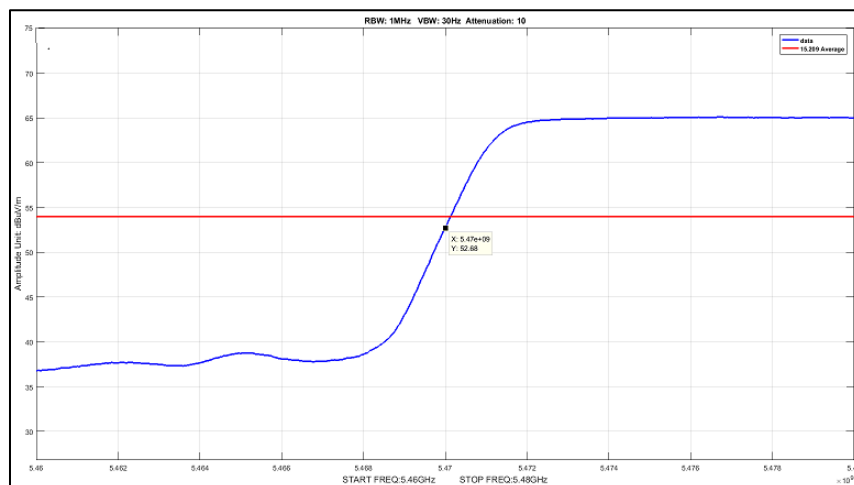
Plot 1220. Radiated Band Edge, 8 Omni, Average, 20M, 5330, pow10



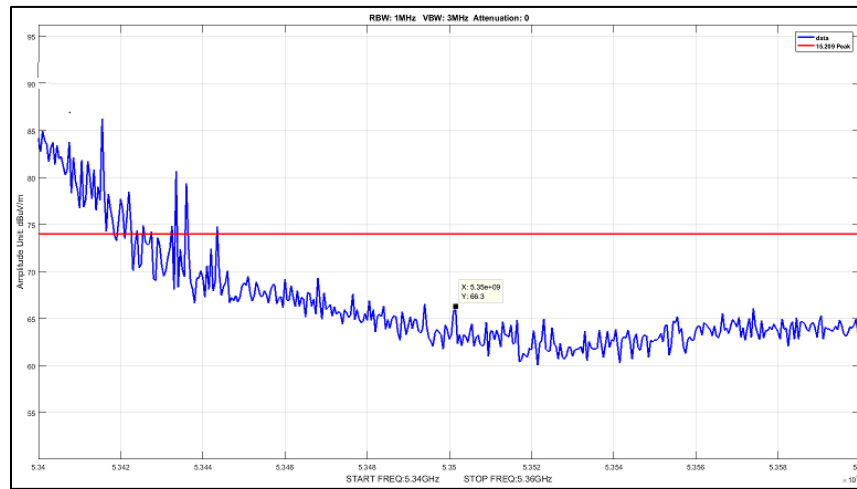
Plot 1221. Radiated Band Edge, 8 Omni, Average, 20M, 5490, pow9



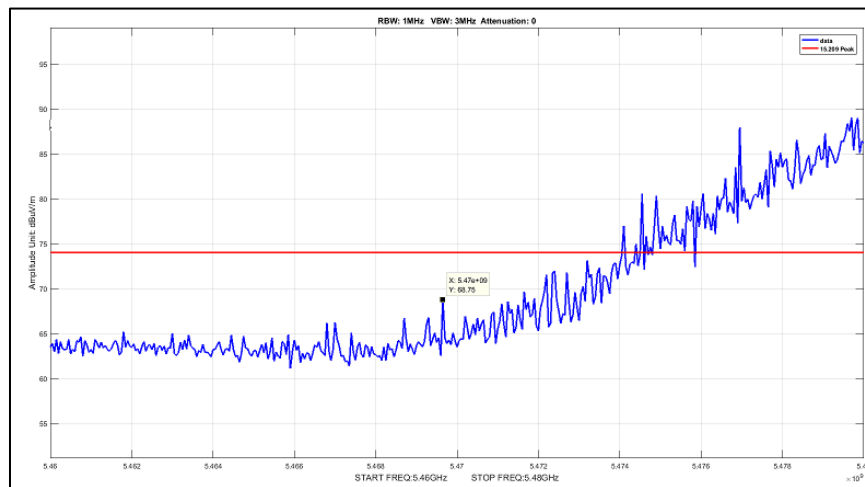
Plot 1222. Radiated Band Edge, 8 Omni, Average, 40M, 5330, pow1



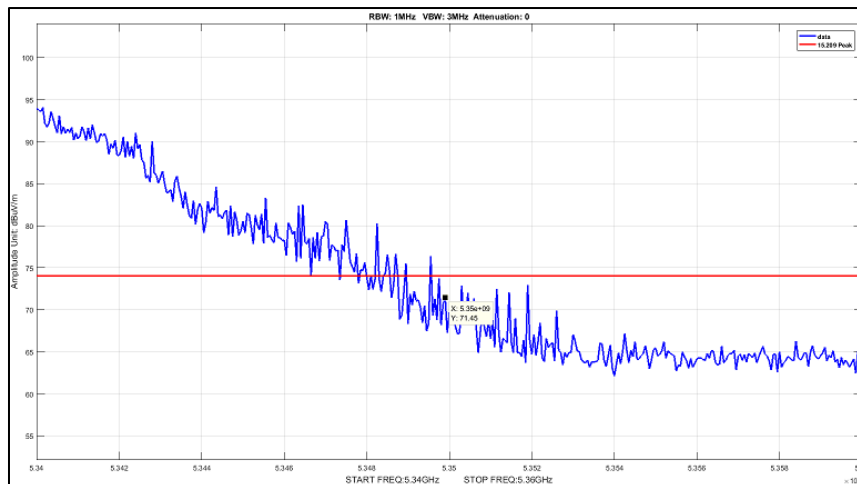
Plot 1223. Radiated Band Edge, 8 Omni, Average, 40M, 5490, pow1



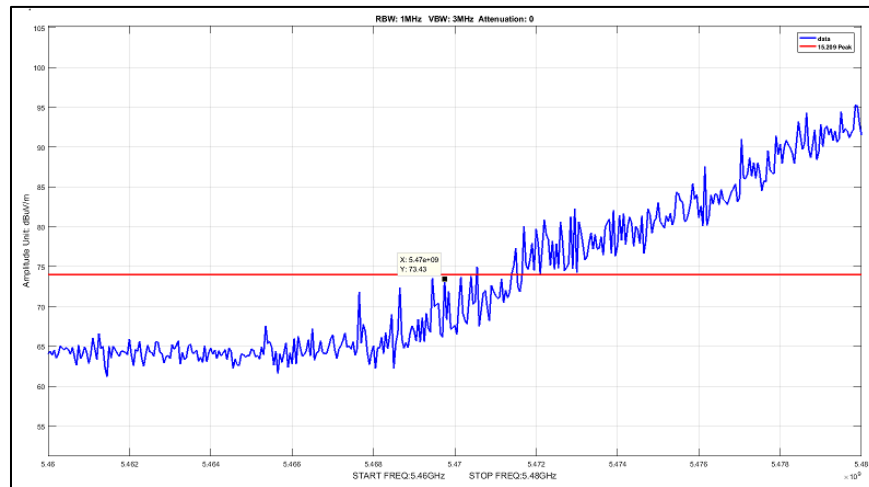
Plot 1224. Radiated Band Edge, 8 Omni, Peak, 5M, 5330, pow22



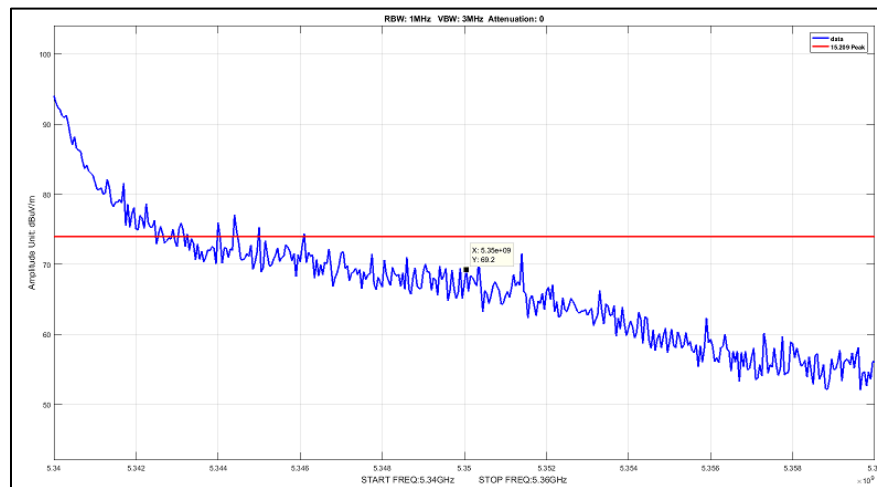
Plot 1225. Radiated Band Edge, 8 Omni, Peak, 5M, 5490, pow22



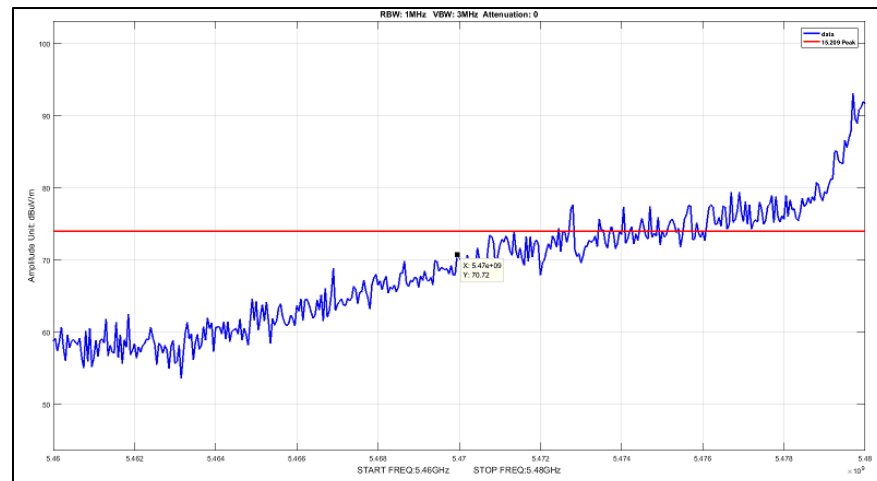
Plot 1226. Radiated Band Edge, 8 Omni, Peak, 10M, 5330, pow19



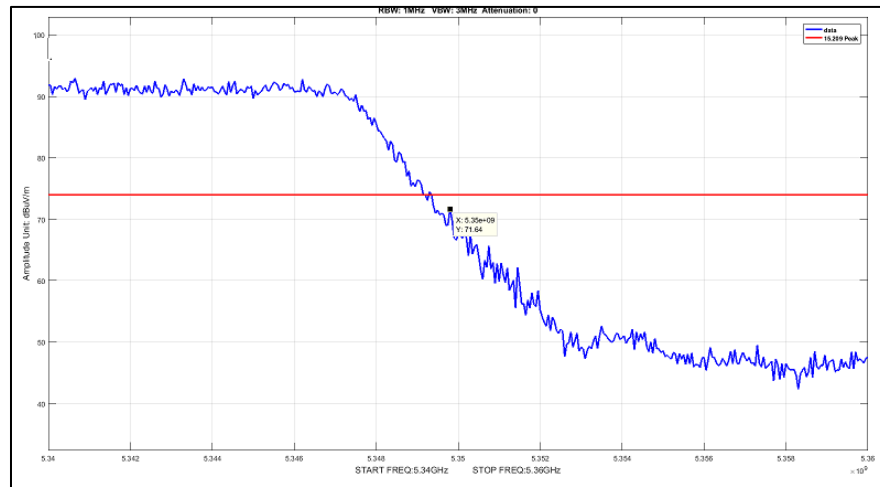
Plot 1227. Radiated Band Edge, 8 Omni, Peak, 10M, 5490, pow17



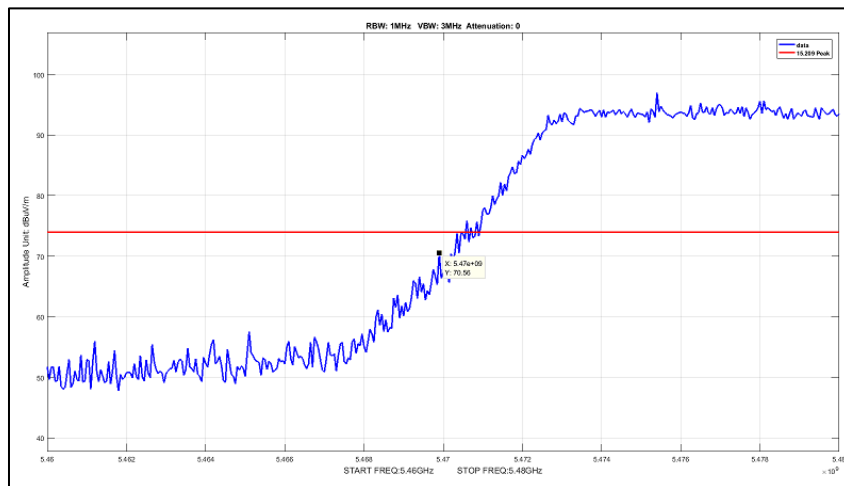
Plot 1228. Radiated Band Edge, 8 Omni, Peak, 20M, 5330, pow10



Plot 1229. Radiated Band Edge, 8 Omni, Peak, 20M, 5490, pow9



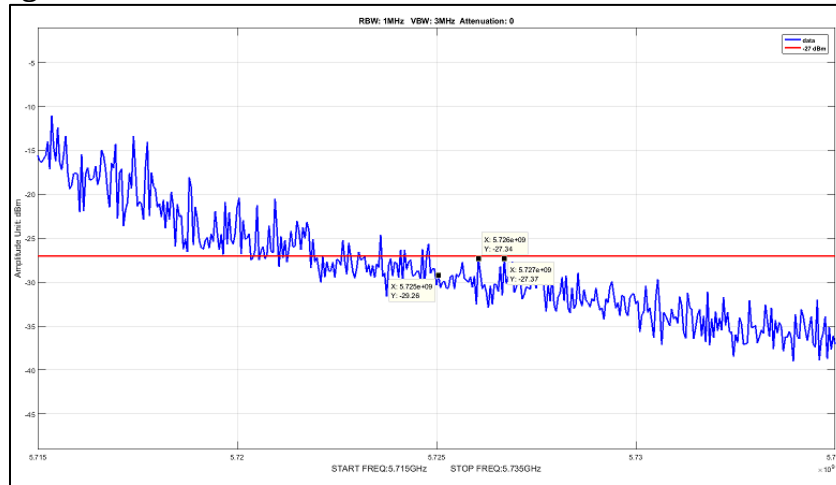
Plot 1230. Radiated Band Edge, 8 Omni, Peak, 40M, 5330, pow1



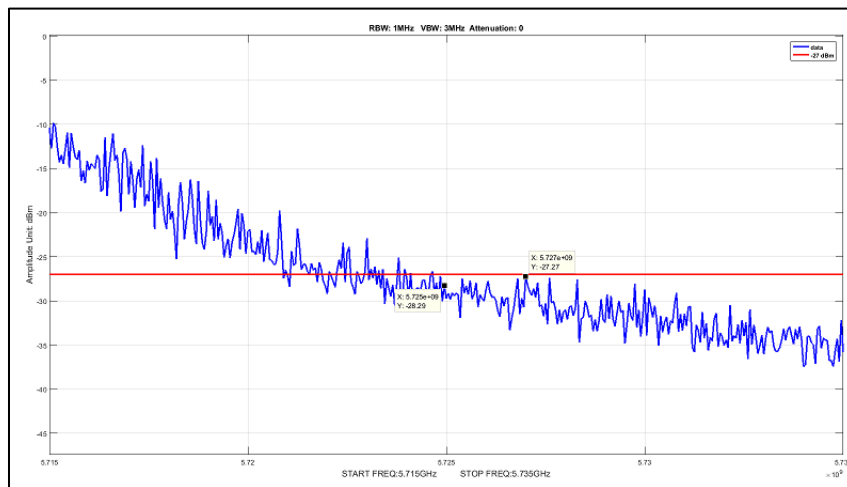
Plot 1231. Radiated Band Edge, 8 Omni, Peak, 40M, 5490, pow1



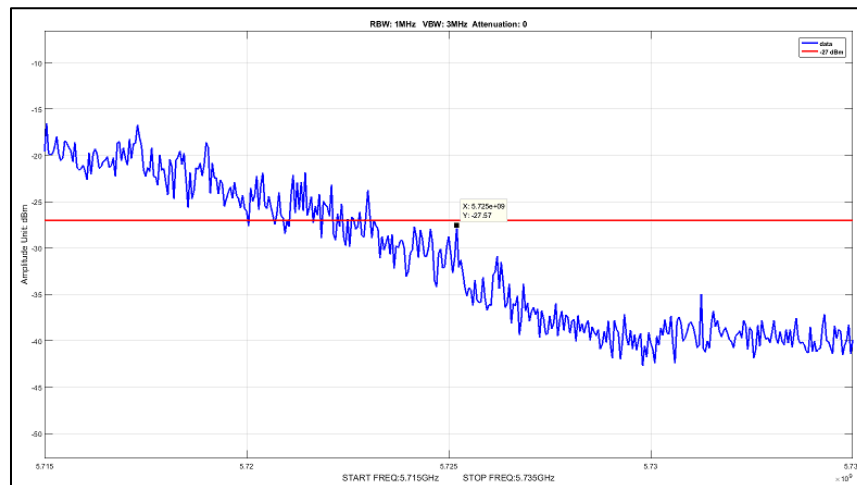
Radiated Band Edge, 90 Sector, Test Results



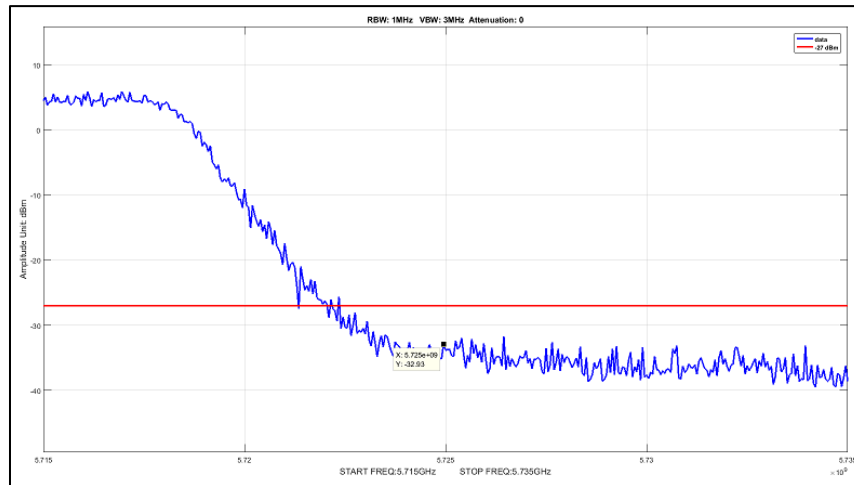
Plot 1232. Radiated Band Edge, 90 Sector, -27dBm, 5M, 5700, pow21



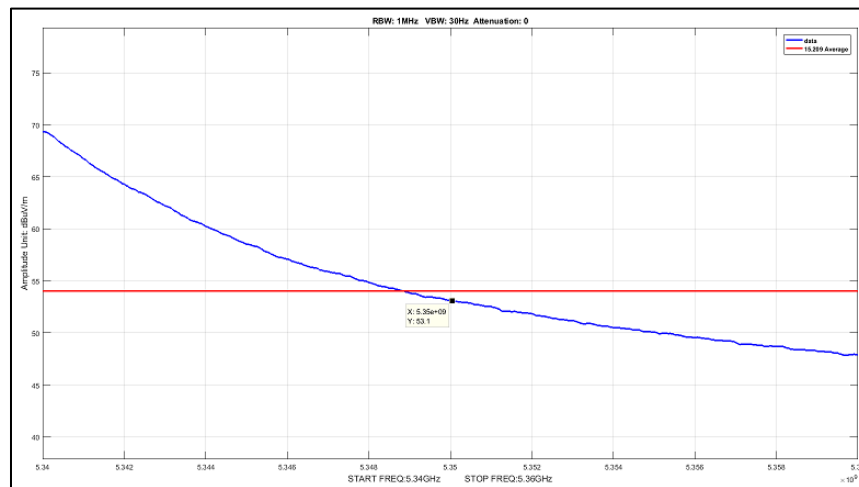
Plot 1233. Radiated Band Edge, 90 Sector, -27dBm, 10M, 5700, pow14



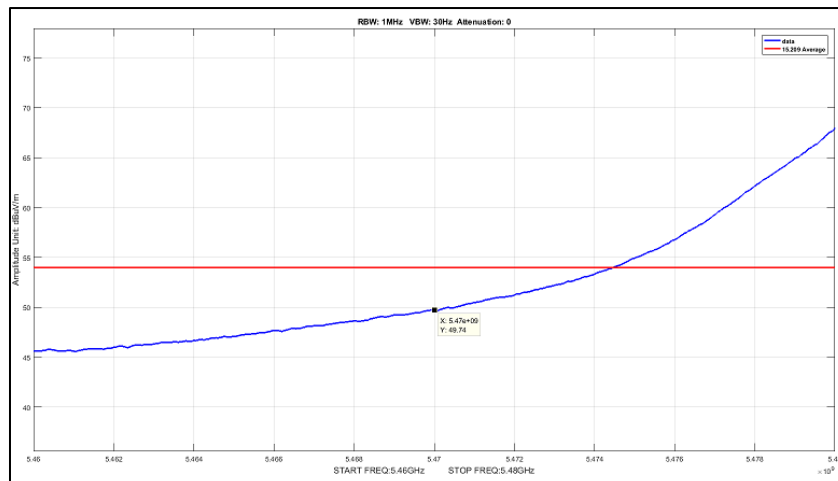
Plot 1234. Radiated Band Edge, 90 Sector, -27dBm, 20M, 5700, pow6



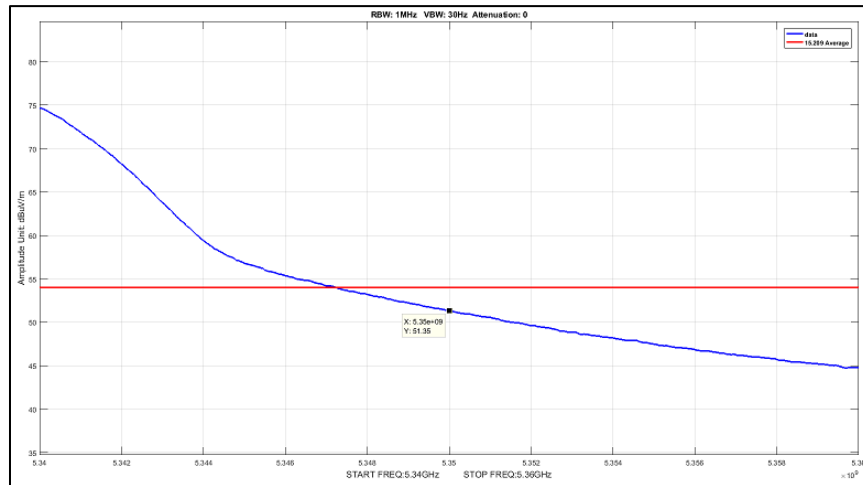
Plot 1235. Radiated Band Edge, 90 Sector, -27dBm, 40M, 5700, pow3



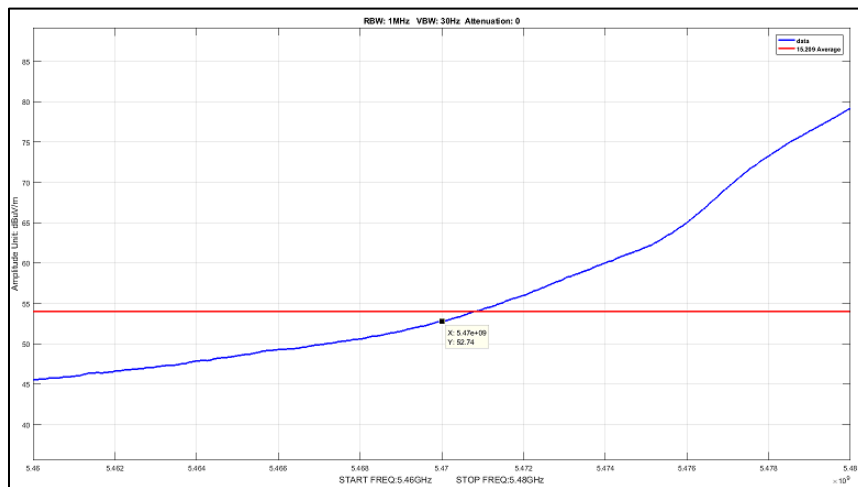
Plot 1236. Radiated Band Edge, 90 Sector, Average, 5M, 5330, pow21



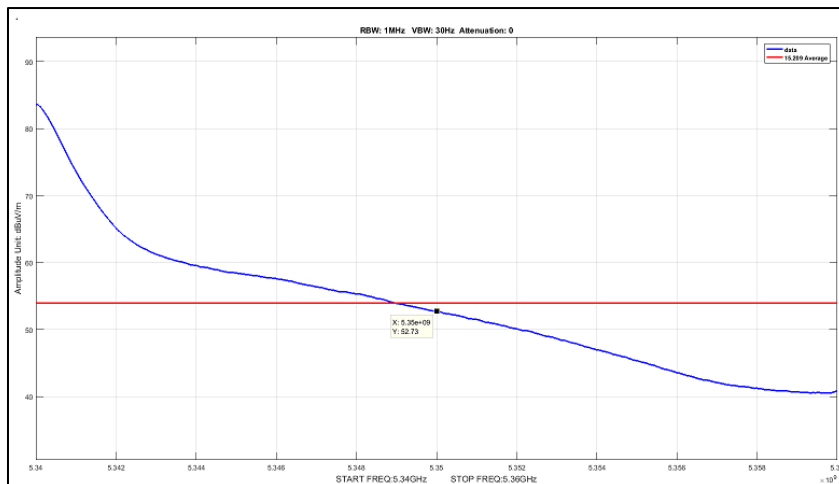
Plot 1237. Radiated Band Edge, 90 Sector, Average, 5M, 5490, pow22



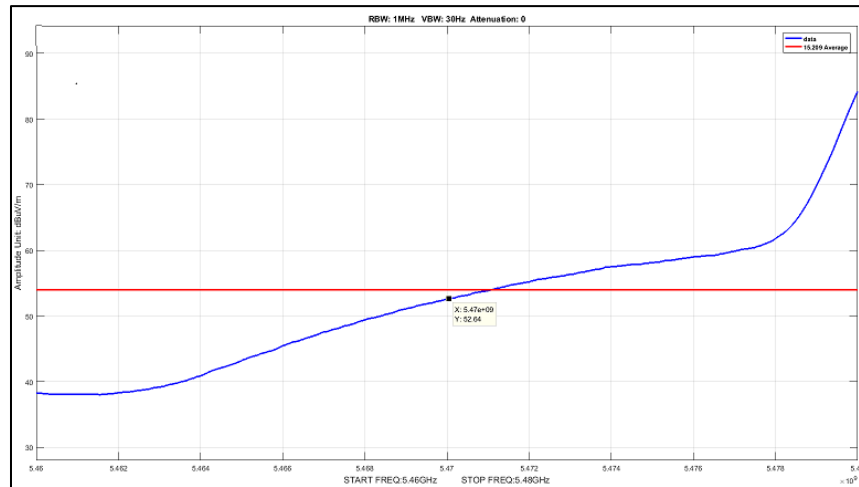
Plot 1238. Radiated Band Edge, 90 Sector, Average, 10M, 5330, pow14



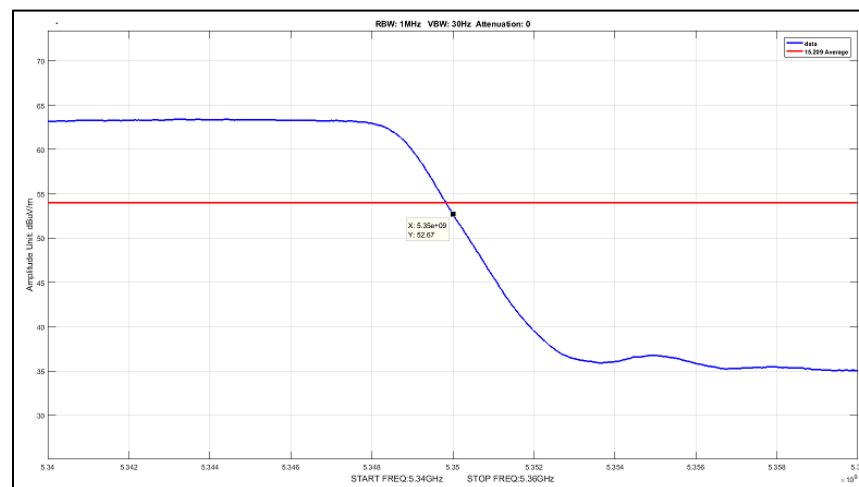
Plot 1239. Radiated Band Edge, 90 Sector, Average, 10M, 5490, pow16



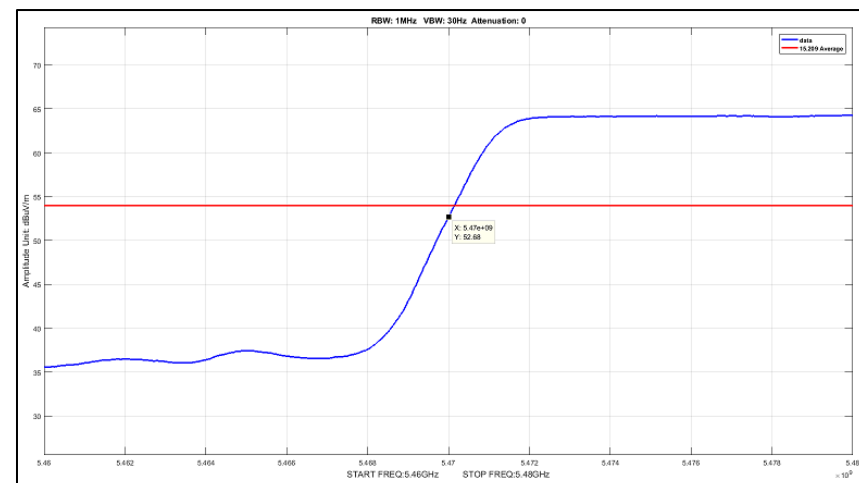
Plot 1240. Radiated Band Edge, 90 Sector, Average, 20M, 5330, pow7



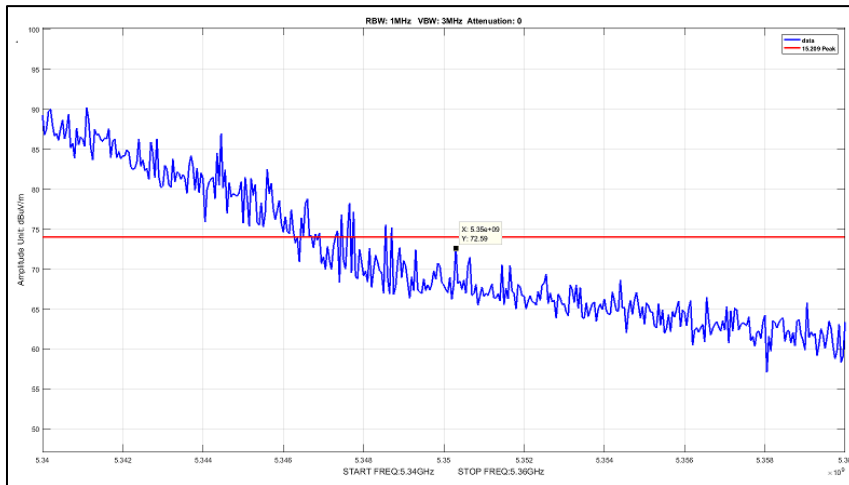
Plot 1241. Radiated Band Edge, 90 Sector, Average, 20M, 5490, pow8



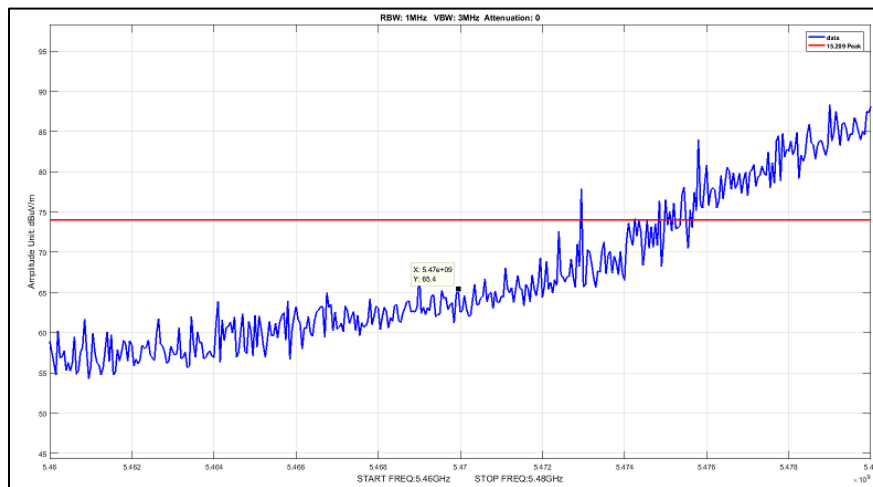
Plot 1242. Radiated Band Edge, 90 Sector, Average, 40M, 5330, pow-5



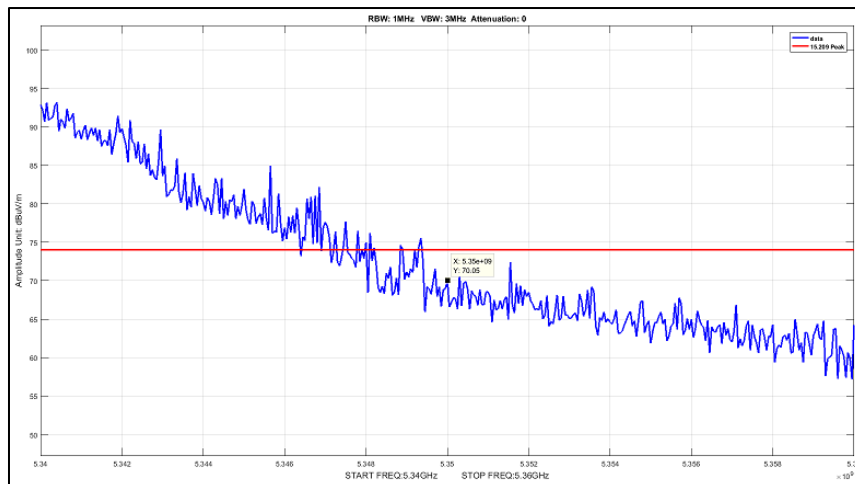
Plot 1243. Radiated Band Edge, 90 Sector, Average, 40M, 5490, pow0



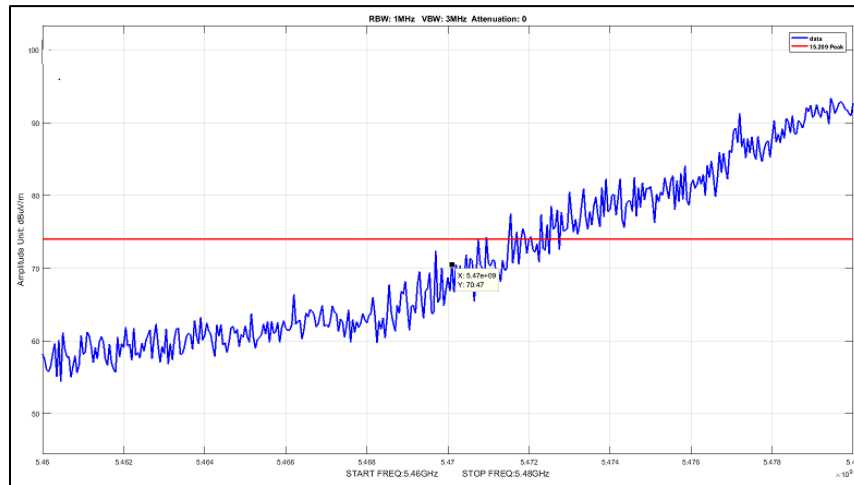
Plot 1244. Radiated Band Edge, 90 Sector, Peak, 5M, 5330, pow21



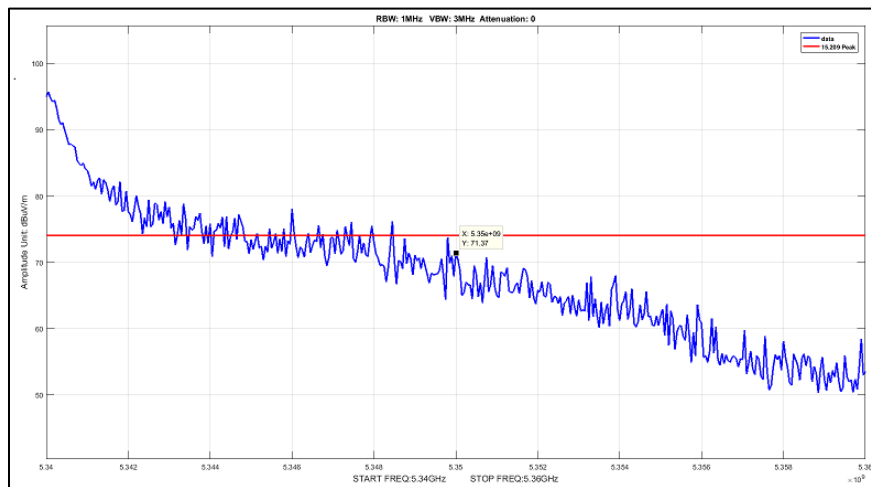
Plot 1245. Radiated Band Edge, 90 Sector, Peak, 5M, 5490, pow22



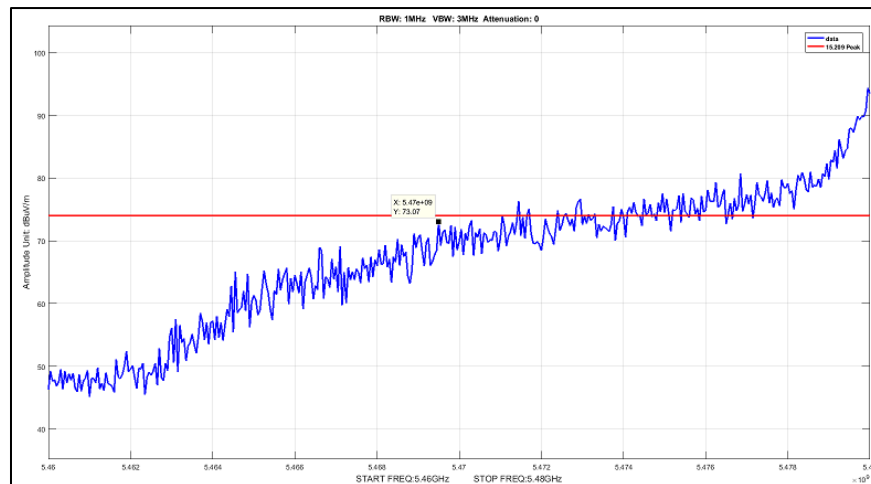
Plot 1246. Radiated Band Edge, 90 Sector, Peak, 10M, 5330, pow14



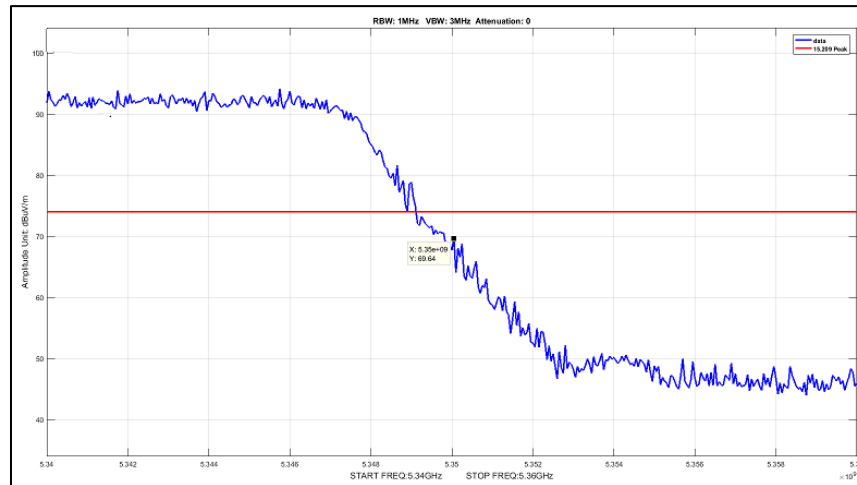
Plot 1247. Radiated Band Edge, 90 Sector, Peak, 10M, 5490, pow16



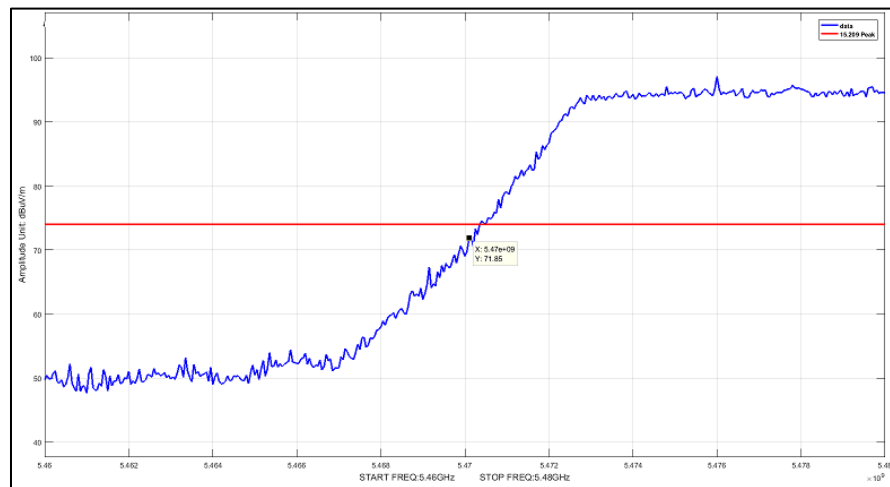
Plot 1248. Radiated Band Edge, 90 Sector, Peak, 20M, 5330, pow7



Plot 1249. Radiated Band Edge, 90 Sector, Peak, 20M, 5490, pow8

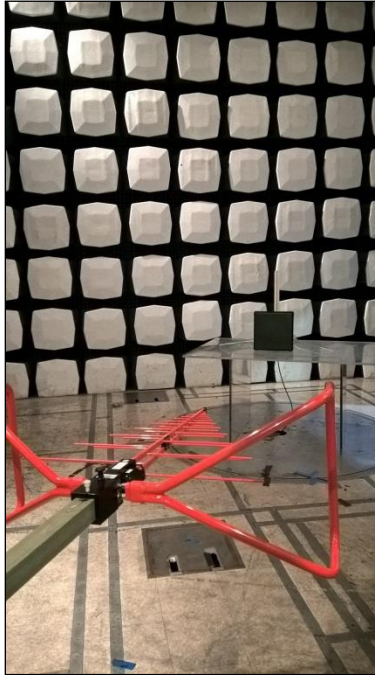


Plot 1250. Radiated Band Edge, 90 Sector, Peak, 40M, 5329, pow-4



Plot 1251. Radiated Band Edge, 90 Sector, Peak, 40M, 5491, pow0

Radiated Emissions, Test Setup Photos



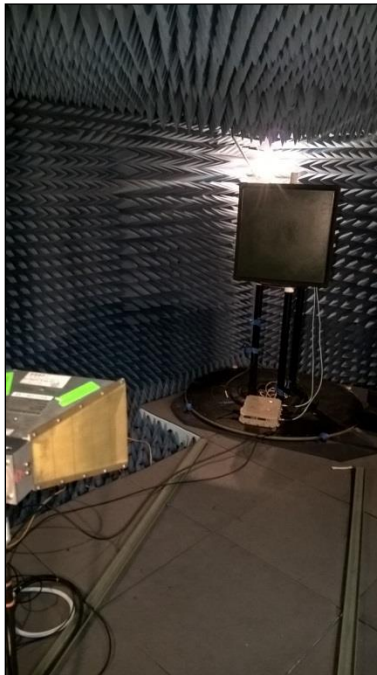
Photograph 1. Undesirable Emissions, 1' Panel Below 1 GHz



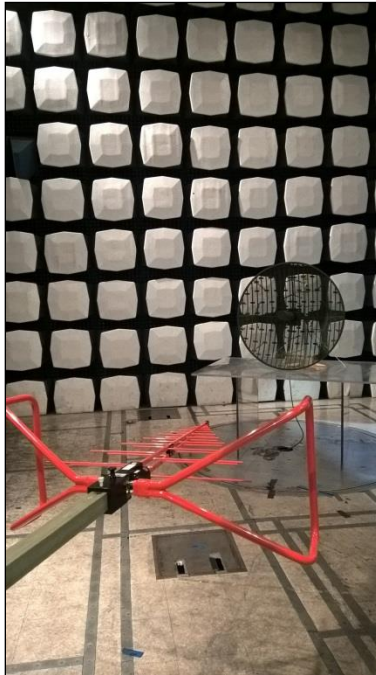
Photograph 2. Undesirable Emissions, 1' Panel Above 1 GHz



Photograph 3. Undesirable Emissions, 2' Panel Below 1 GHz



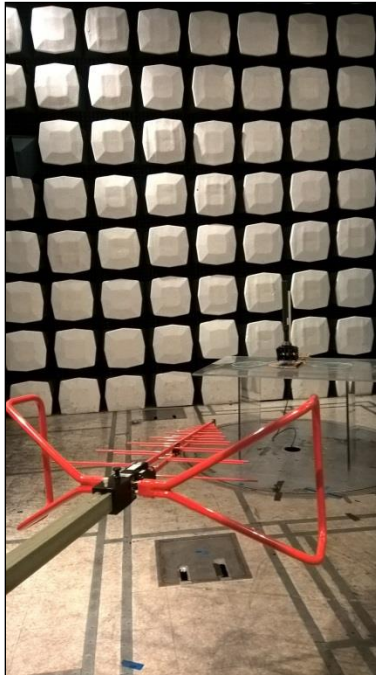
Photograph 4. Undesirable Emissions, 2' Panel Above 1 GHz



Photograph 5. Undesirable Emissions, 3' Para Below 1 GHz



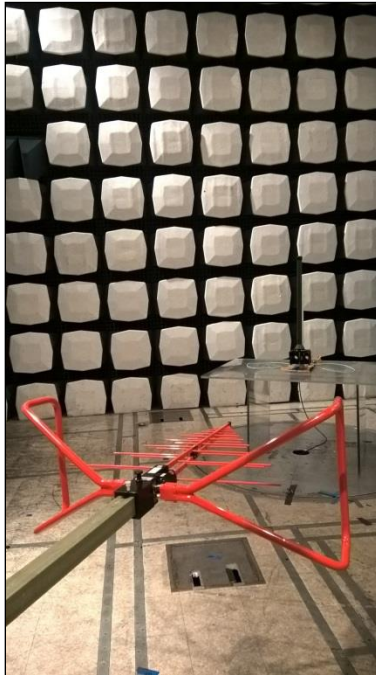
Photograph 6. Undesirable Emissions, 3' Para Above 1 GHz



Photograph 7. Undesirable Emissions, 5 Omni Below 1 GHz



Photograph 8. Undesirable Emissions, 5 Omni Above 1 GHz



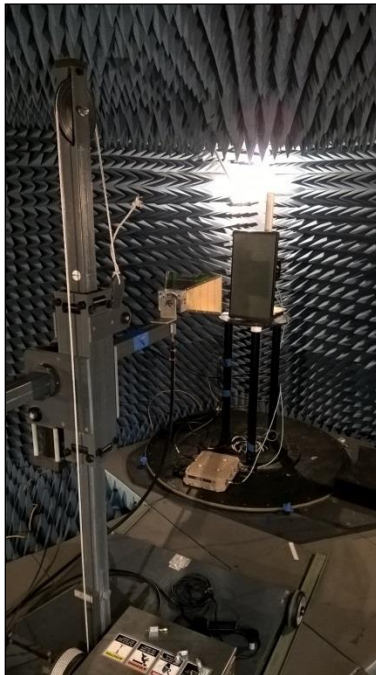
Photograph 9. Undesirable Emissions, 8 Omni Below 1 GHz



Photograph 10. Undesirable Emissions, 8 Omni Above 1 GHz



Photograph 11. Undesirable Emissions, 90 Sector Below 1 GHz



Photograph 12. Undesirable Emissions, 90 Sector Above 1 GHz



Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(b)(6) Conducted Emissions

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

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

Frequency range (MHz)	§ 15.207(a), Conducted Limit (dB μ V)	
	Quasi-Peak	Average
* 0.15- 0.45	66 – 56	56 - 46
0.45 - 0.5	56	46
0.5 - 30	60	50

Table 39. Conducted Limits for Intentional Radiators from FCC Part 15 § 15.207(a)

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

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

Measured emissions were within applicable limits.

Test Engineer(s): Bradley Jones

Test Date(s): December 29, 2017

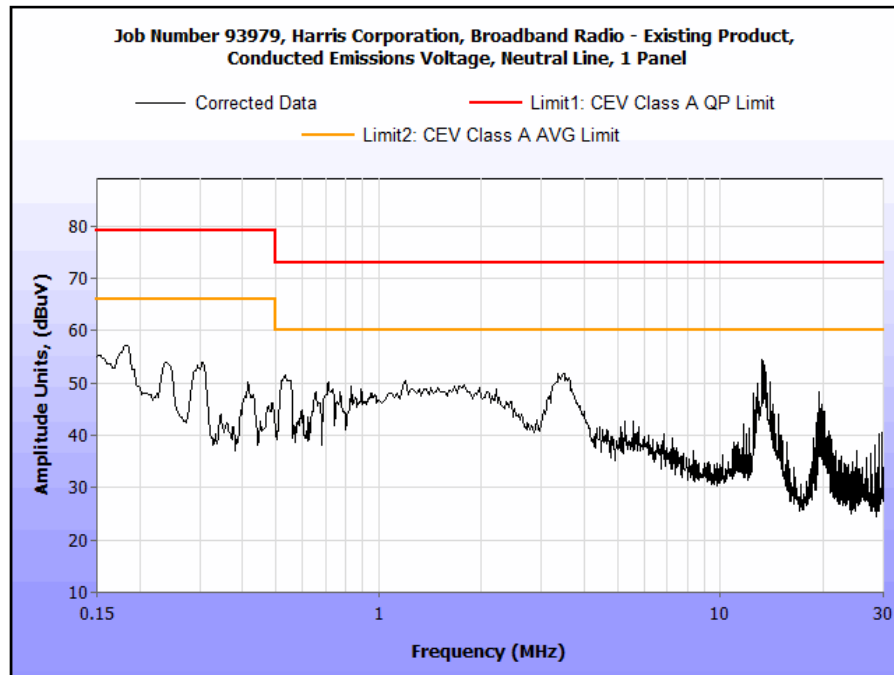


Frequency (MHz)	Uncorrected Meter Reading (dBuV) QP	Cable Loss (dB)	Corrected Measurement (dBuV) QP	Limit (dBuV) QP	Margin (dB) QP	Uncorrected Meter Reading (dBuV) Avg.	Cable Loss (dB)	Corrected Measurement (dBuV) AVG	Limit (dBuV) AVG	Margin (dB) AVG
0.1836	41.46	0	41.46	79	-37.54	37.85	0	37.85	66	-28.15
11.37	39.03	0	39.03	73	-33.97	26.68	0	26.68	60	-33.32

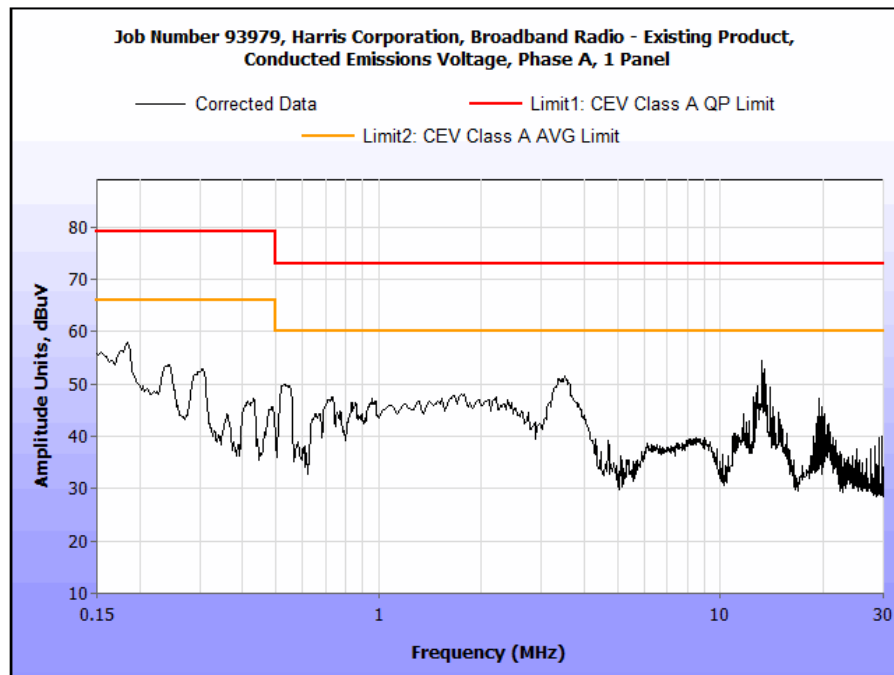
Table 40. Conducted Emissions, Phase, Test Result

Frequency (MHz)	Uncorrected Meter Reading (dBuV) QP	Cable Loss (dB)	Corrected Measurement (dBuV) QP	Limit (dBuV) QP	Margin (dB) QP	Uncorrected Meter Reading (dBuV) Avg.	Cable Loss (dB)	Corrected Measurement (dBuV) AVG	Limit (dBuV) AVG	Margin (dB) AVG
0.1853	40.78	0	40.78	79	-38.22	36.26	0	36.26	66	-29.74
11.71	39.88	0	39.88	73	-33.12	39.14	0	39.14	60	-20.86

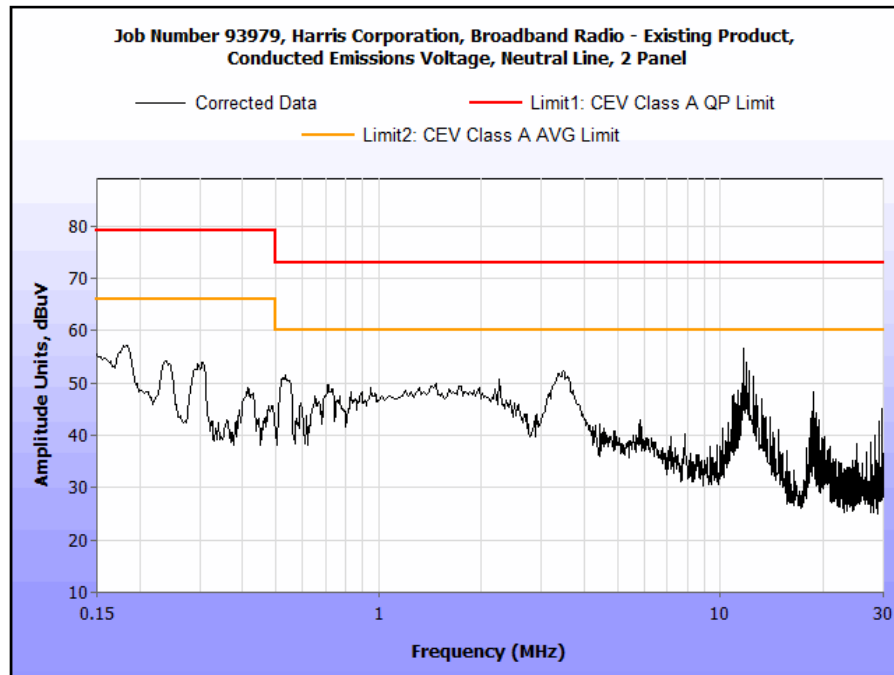
Table 41. Conducted Emissions, Neutral, Test Results



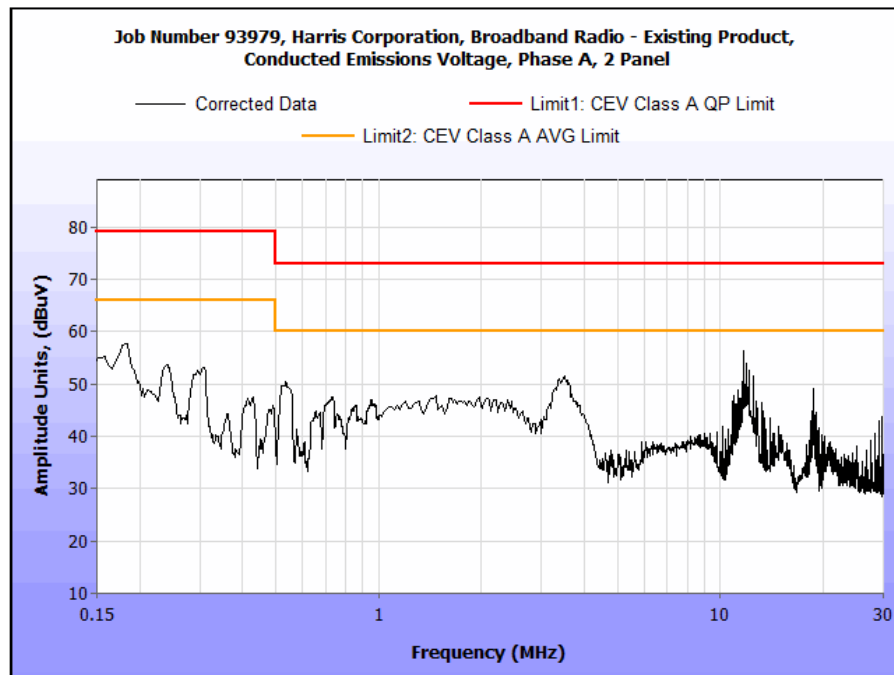
Plot 1252. Conducted Emissions, 1 Panel Neutral



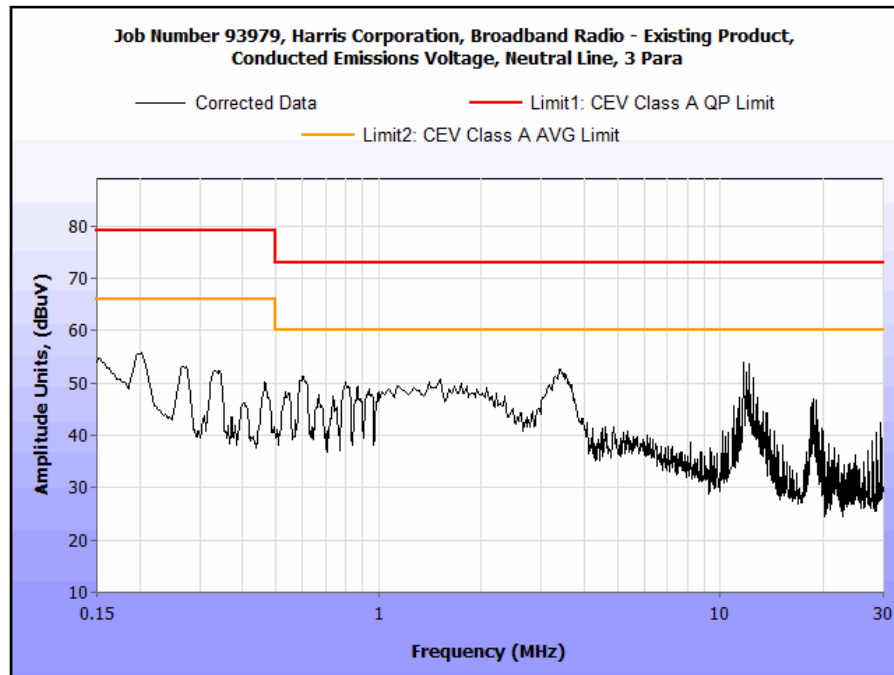
Plot 1253. Conducted Emissions, 1 Panel Phase



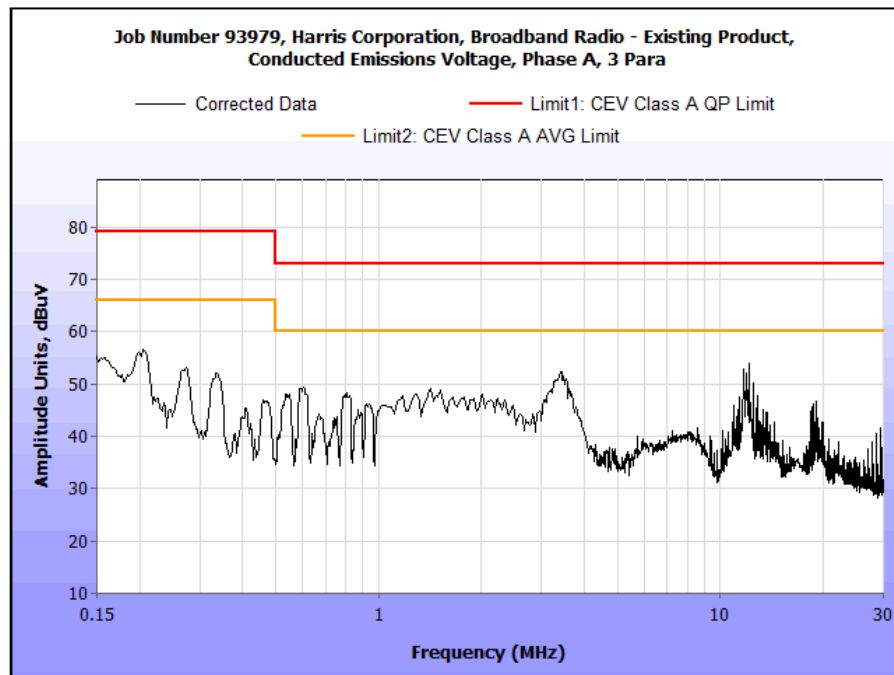
Plot 1254. Conducted Emissions, 2 Panel Neutral



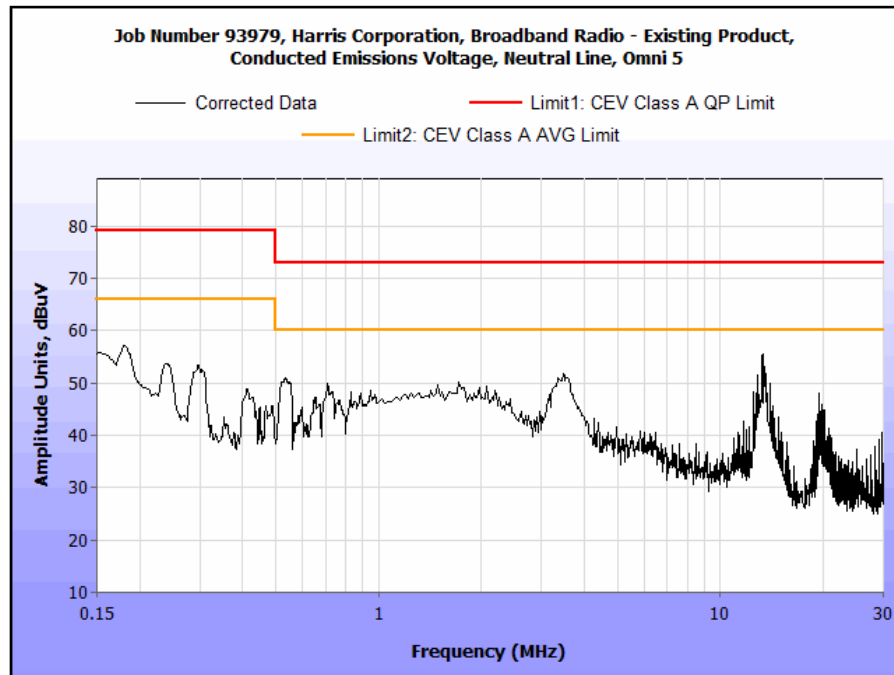
Plot 1255. Conducted Emissions, 2 Panel Phase



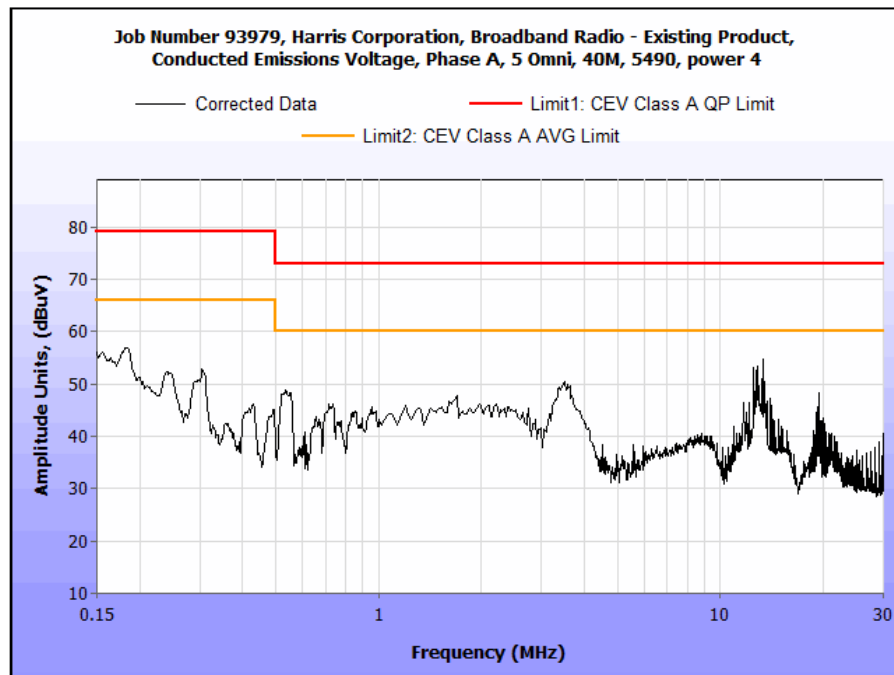
Plot 1256. Conducted Emissions, 3 Para Neutral



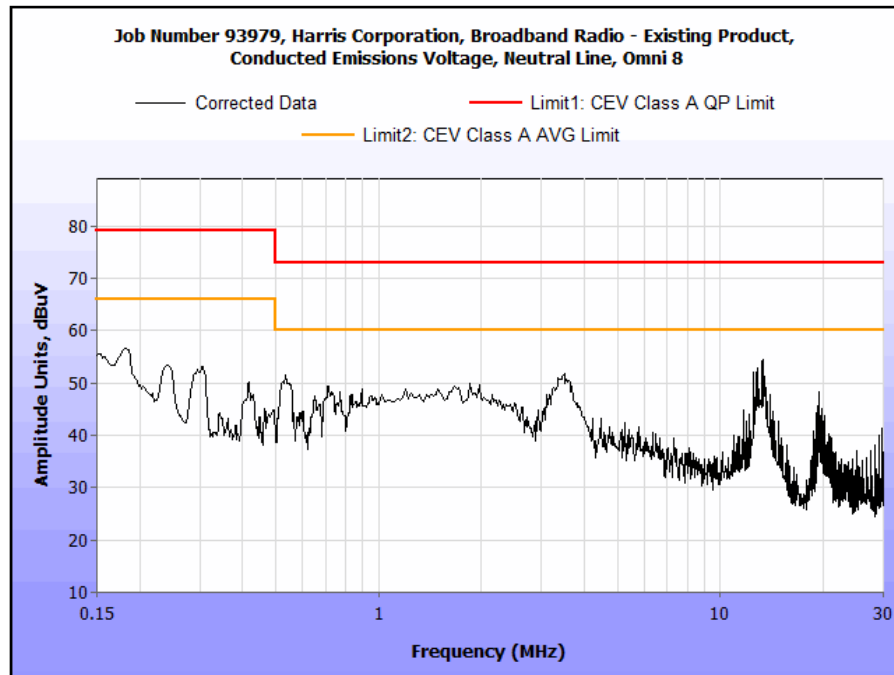
Plot 1257. Conducted Emissions, 3 Para Phase



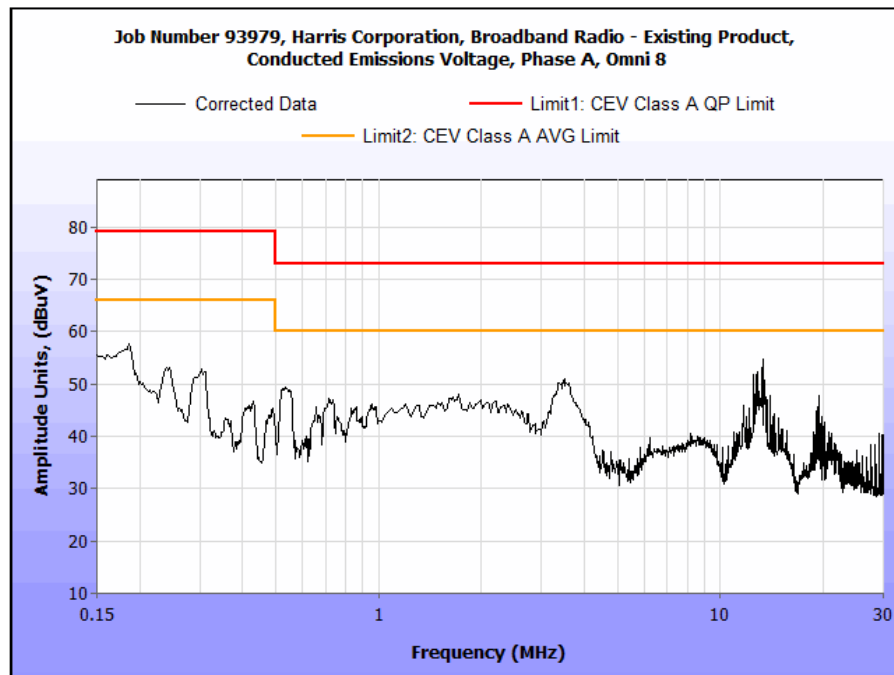
Plot 1258. Conducted Emissions, 5 Omni Neutral



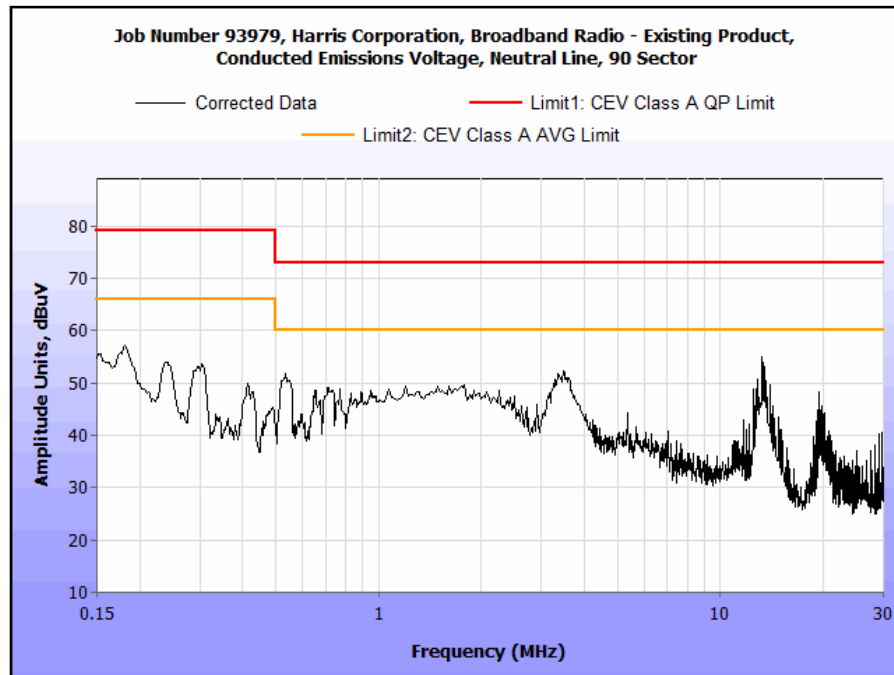
Plot 1259. Conducted Emissions, 5 Omni



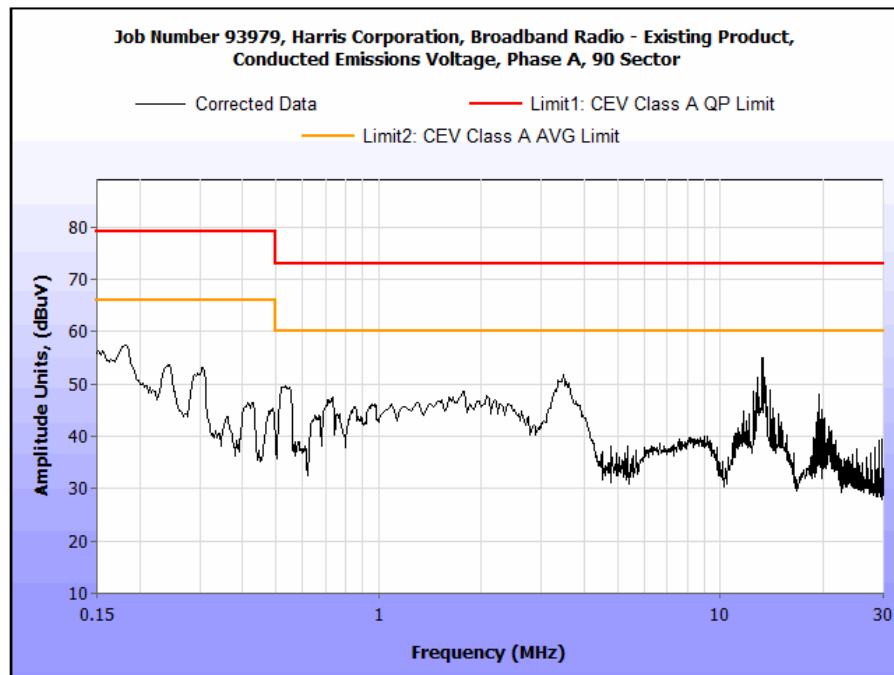
Plot 1260. Conducted Emissions, 8 Omni neutral



Plot 1261. Conducted Emissions, 8 Omni Phase



Plot 1262. Conducted Emissions, 90 Sector Neutral



Plot 1263. Conducted Emissions, 90 Sector Phase



Photograph 13. Conducted Emissions, 1' Panel. Test Setup



Photograph 14. Conducted Emissions, 2' Panel, Test Setup



Photograph 15. Conducted Emissions, 3' Para, Test Setup



Photograph 16. Conducted Emissions, 5 Omni, Test Setup



Photograph 17. Conducted Emissions, 90 Sector. Test Setup



Photograph 18. Conducted Emissions, Omni 8, Test Setup



Electromagnetic Compatibility Criteria for Intentional Radiators

§ 15.407(f) Maximum Permissible Exposure

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

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

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

MPE Limit: EUT’s operating frequencies @ 5250-5350 MHz and 5470 – 5725 MHz; **Limit for Uncontrolled exposure: 1 mW/cm² or 10 W/m²**

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

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

where, S = Power Density (mW/cm²)
P = Power Input to antenna (mW)
G = Antenna Gain (numeric value)
R = Distance (cm)

Test Results:

FCC									
Frequency (MHz)	Con. Pwr. (dBm)	Con. Pwr. (mW)	Ant. Gain (dBi)	Ant. Gain numeric	Pwr. Density (mW/cm ²)	Limit (mW/cm ²)	Margin	Distance (cm)	Result
5300	-0.104	0.976	30	1000	0.19424	1	0.80576	20	Pass
5270	3.358	2.167	26	398.107	0.17161	1	0.82839	20	Pass
5270	8.655	7.337	21	125.893	0.18375	1	0.81625	20	Pass
5300	15.464	35.188	14	25.119	0.17585	1	0.82415	20	Pass
5270	22.035	159.772	8	6.31	0.20055	1	0.79945	20	Pass
5300	22.456	176.035	5	3.162	0.11075	1	0.88925	20	Pass

Table 42. MPE, UNII 2A, Test Results



FCC									
Frequency (MHz)	Con. Pwr. (dBm)	Con. Pwr. (mW)	Ant. Gain (dBi)	Ant. Gain numeric	Pwr. Density (mW/cm ²)	Limit (mW/cm ²)	Margin	Distance (cm)	Result
5595	-1.142	0.769	30	1000	0.15294	1	0.84706	20	Pass
5595	3.421	2.198	26	398.107	0.17411	1	0.82589	20	Pass
5595	8.697	7.408	21	125.893	0.18554	1	0.81446	20	Pass
5595	15.278	33.713	14	25.119	0.16847	1	0.83153	20	Pass
5595	20.278	106.611	8	6.31	0.13382	1	0.86618	20	Pass
5595	23.445	221.055	5	3.162	0.13907	1	0.86093	20	Pass

Table 43. MPE, UNII 2C, Test Results

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



III. 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
1T4455	Compass	SUUNTO	KB-14/360	Functional verified	
1T4712	Gauss Meter	F.W. Bell	5180	11/7/2014	5/7/2016
1T4486	1,3 Phase Power Line Filter	Schaffner	FN258-55-07	See Note	
1T4870	Therm./Clock/Humidity Monitor	Control Company	06-662-4, FB70258	3/14/2014	3/14/2016
1T4406	HELMHOLTZ COIL	MET Laboratories	N/A	See Note	
1T4442	Pre-amplifier, Microwave	Miteq	AFS42-01001800-30-10P	See Note.	
1T4149	High-Frequency Anechoic Chamber	Ray Proof	81	8/23/2001	8/23/2002
1T8818	Spectrum Analyzer	Agilent Technologies	E4407B	2/24/2017	2/24/2018
1T2665	Antenna; Horn	EMCO	3115	6/22/2017	12/22/2018
1T4612	Spectrum Analyzer	Agilent Technologies	E4407B	3/30/2017	9/30/2018
1T4753	Antenna - Bilog	Sunol Sciences	JB6	10/24/2016	4/24/2018
1T4409	EMI Receiver	Rohde & Schwarz	ESIB7	12/7/2016	12/7/2018
1T4300A	SEMI-ANECHOIC CHAMBER # 1 (FCC)	EMC TEST SYSTEMS	NONE	1/31/2016	1/31/2019

Table 44. Test Equipment List

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



IV. Certification & User's Manual Information



Certification & User's Manual Information

M. Certification Information

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

§ 2.801 Radio-frequency device defined.

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

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

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

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



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



Certification & User's Manual Information

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

§ 2.901 Basis and Purpose

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

§ 2.907 Certification.

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

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



Certification & User's Manual Information

§ 2.948 Description of measurement facilities.

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



Certification & User's Manual Information

Label and User's Manual Information

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

§ 15.19 Labeling requirements.

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

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

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

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

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

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

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

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

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

§ 15.21 Information to user.

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



Verification & User's Manual Information

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

§ 15.105 Information to the user.

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

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

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

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

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