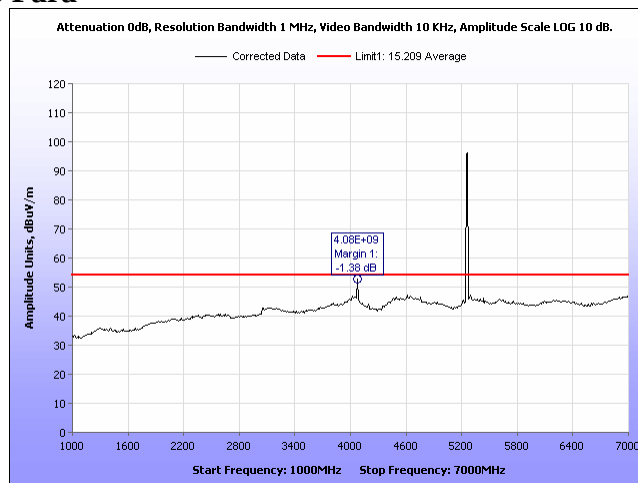


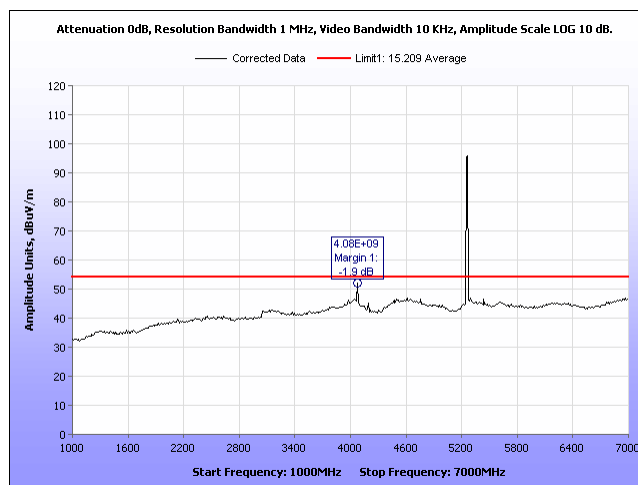
Continued from

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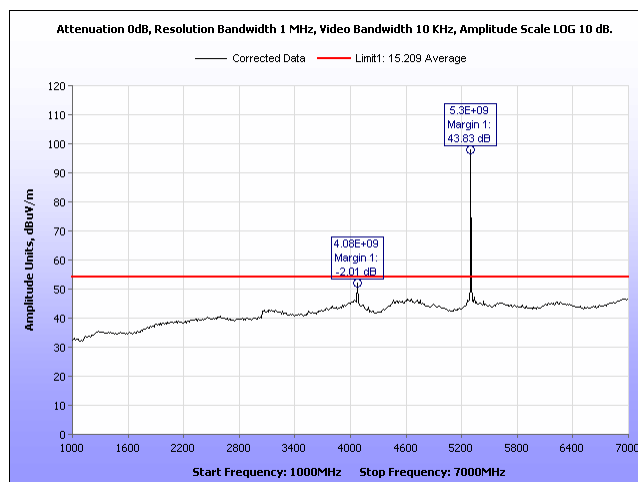
Undesirable Emissions 3 Para



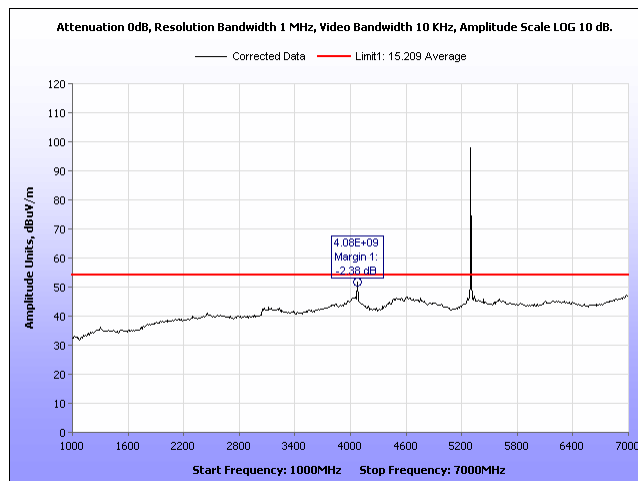
Plot 880. Undesirable Emissions, 1-7MHz , Average 3 Para, 5M, 5255, Port 1



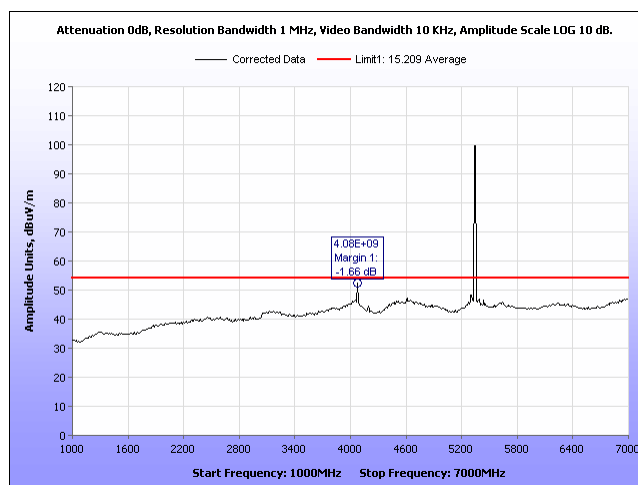
Plot 881. Undesirable Emissions, 1-7MHz , Average 3 Para, 5M, 5255, Port 2



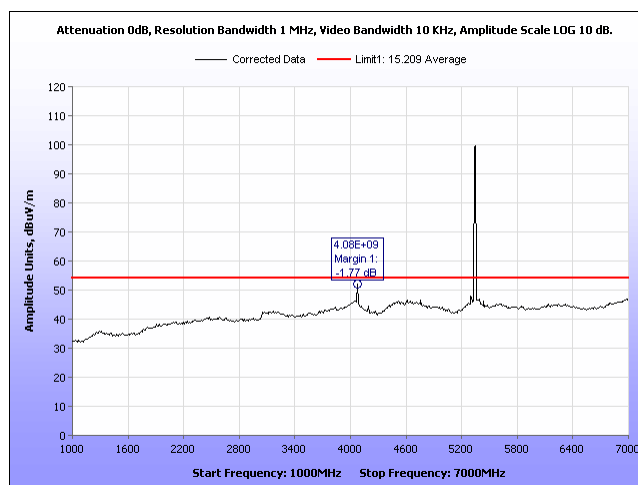
Plot 882. Undesirable Emissions, 1-7MHz , Average 3 Para, 5M, 5300, Port 1



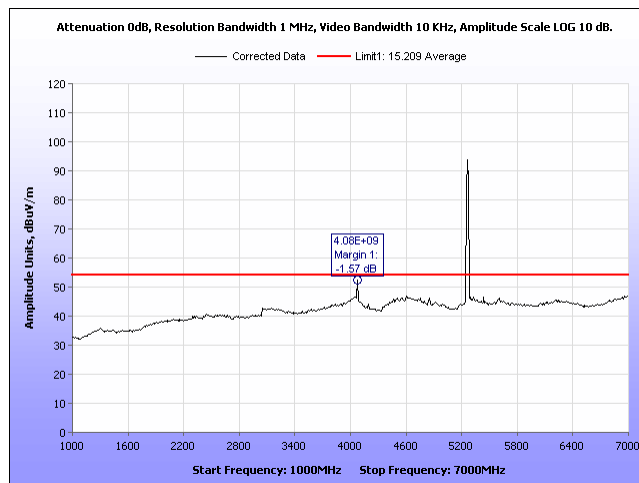
Plot 883. Undesirable Emissions, 1-7MHz , Average 3 Para, 5M, 5300, Port 2



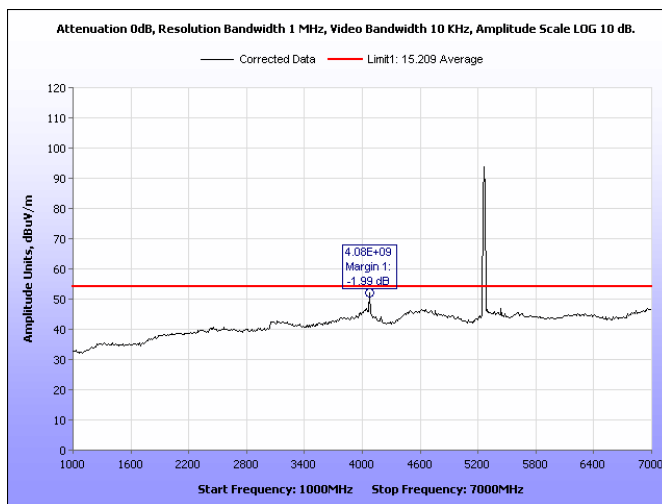
Plot 884. Undesirable Emissions, 1-7MHz , Average 3 Para, 5M, 5345, Port 1



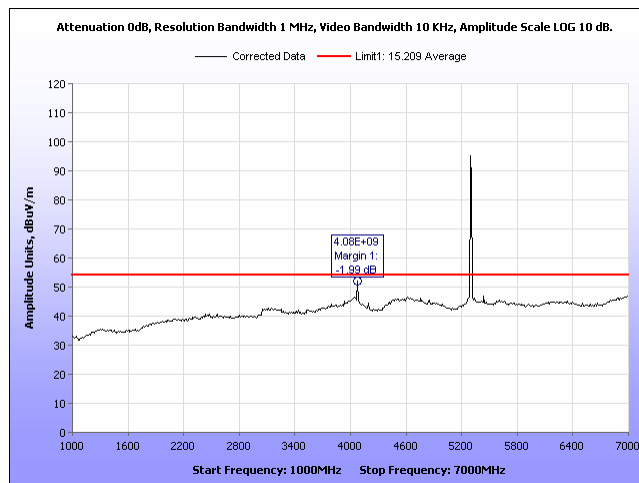
Plot 885. Undesirable Emissions, 1-7MHz , Average 3 Para, 5M, 5345, Port 2



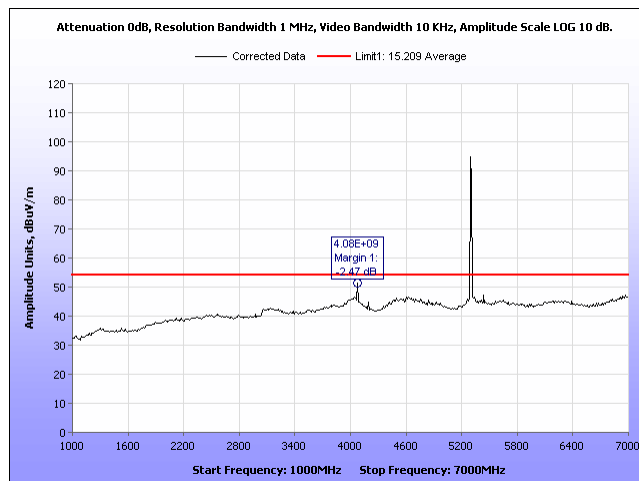
Plot 886. Undesirable Emissions, 1-7MHz , Average 3 Para, 10M, 5260, Port 1



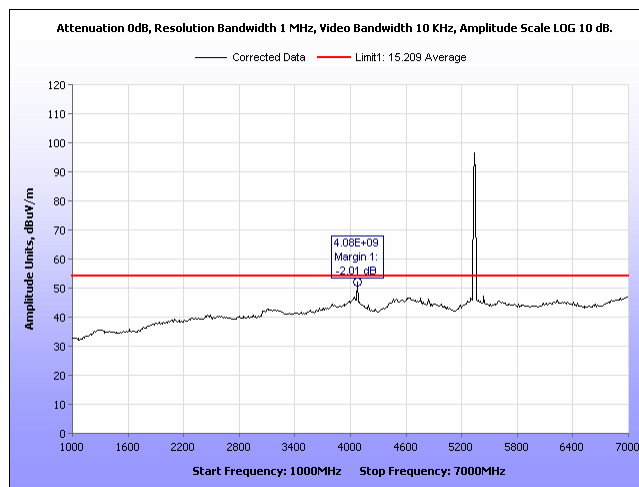
Plot 887. Undesirable Emissions, 1-7MHz , Average 3 Para, 10M, 5260, Port 2



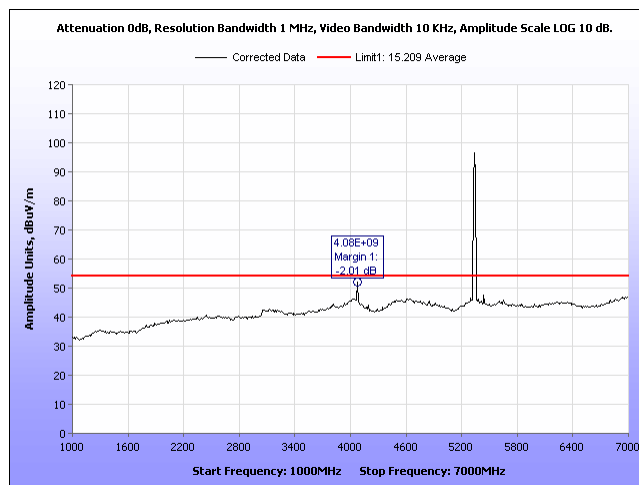
Plot 888. Undesirable Emissions, 1-7MHz , Average 3 Para, 10M, 5300, Port 1



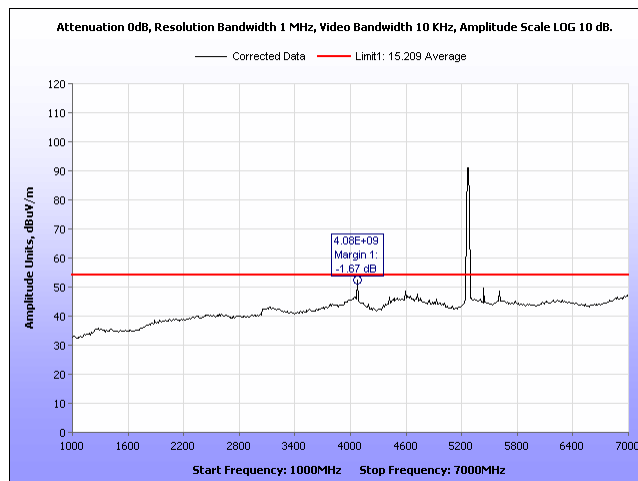
Plot 889. Undesirable Emissions, 1-7MHz , Average 3 Para, 10M, 5300, Port 2



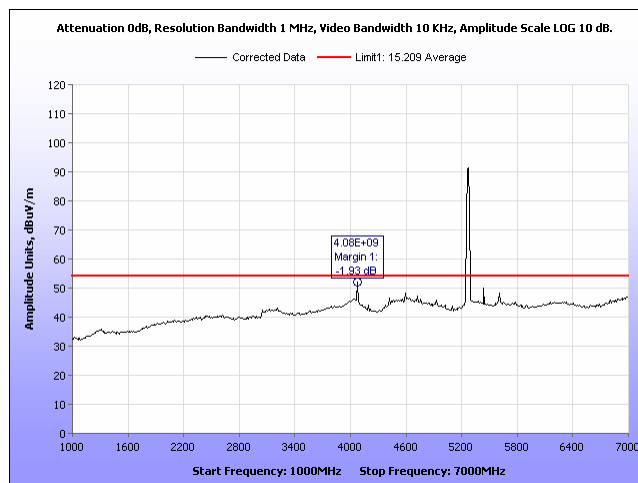
Plot 890. Undesirable Emissions, 1-7MHz , Average 3 Para, 10M, 5340, Port 1



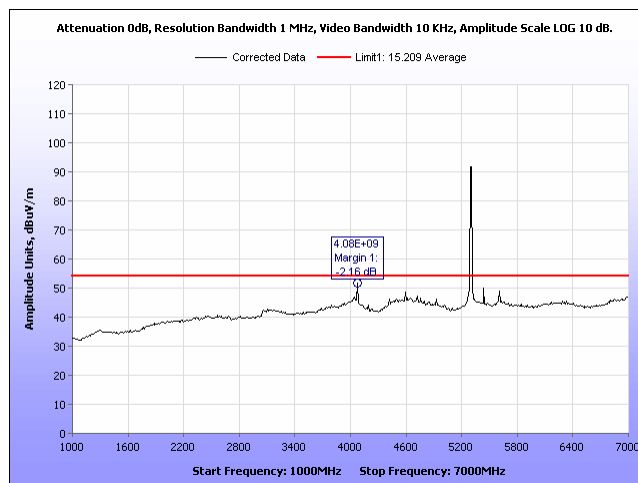
Plot 891. Undesirable Emissions, 1-7MHz , Average 3 Para, 10M, 5340, Port 2



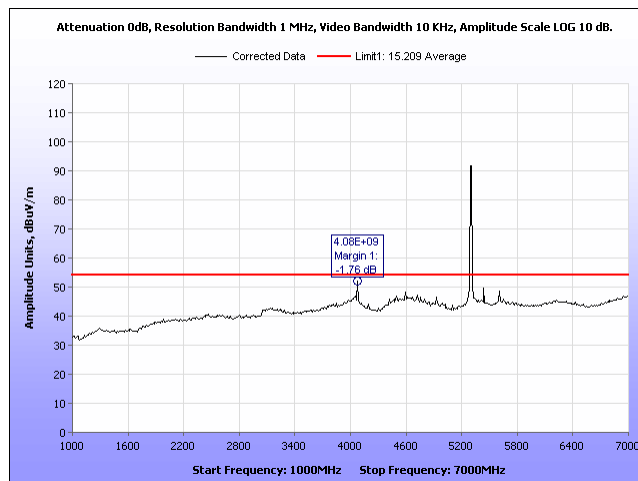
Plot 892. Undesirable Emissions, 1-7MHz , Average 3 Para, 20M, 5265, Port 1



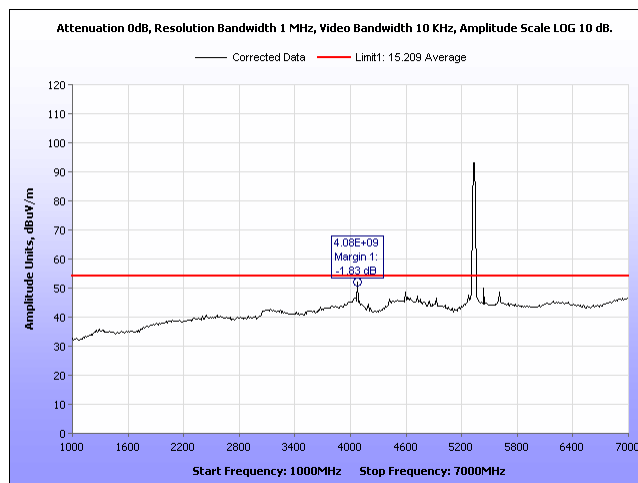
Plot 893. Undesirable Emissions, 1-7MHz , Average 3 Para, 20M, 5265, Port 2



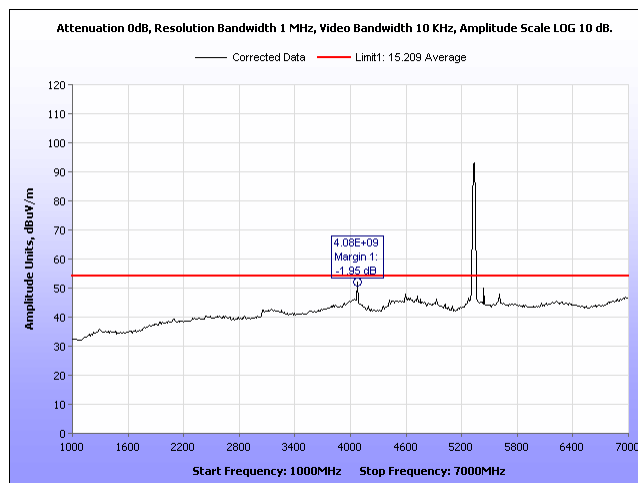
Plot 894. Undesirable Emissions, 1-7MHz , Average 3 Para, 20M, 5300, Port 1



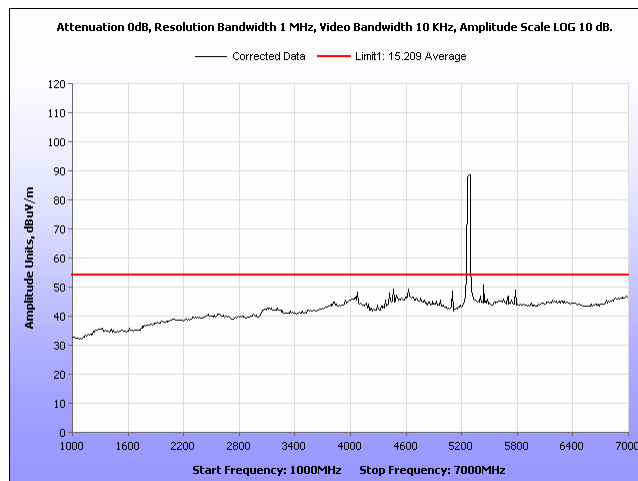
Plot 895. Undesirable Emissions, 1-7MHz , Average 3 Para, 20M, 5300, Port 2



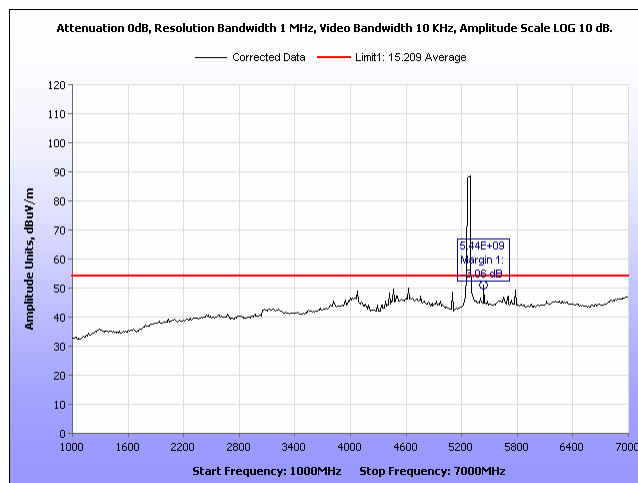
Plot 896. Undesirable Emissions, 1-7MHz , Average 3 Para, 20M, 5335, Port 1



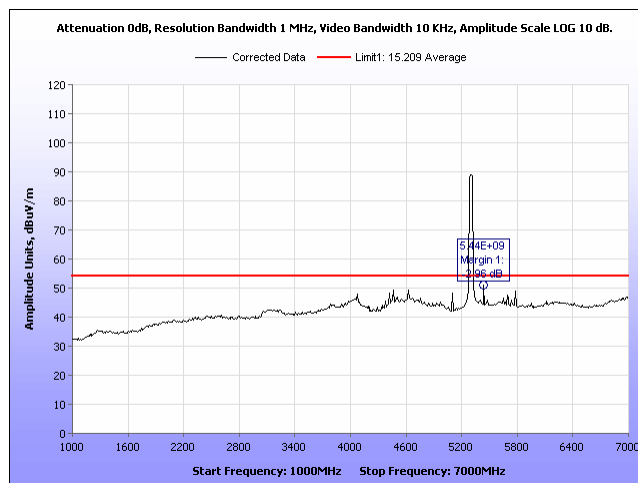
Plot 897. Undesirable Emissions, 1-7MHz , Average 3 Para, 20M, 5335, Port 2



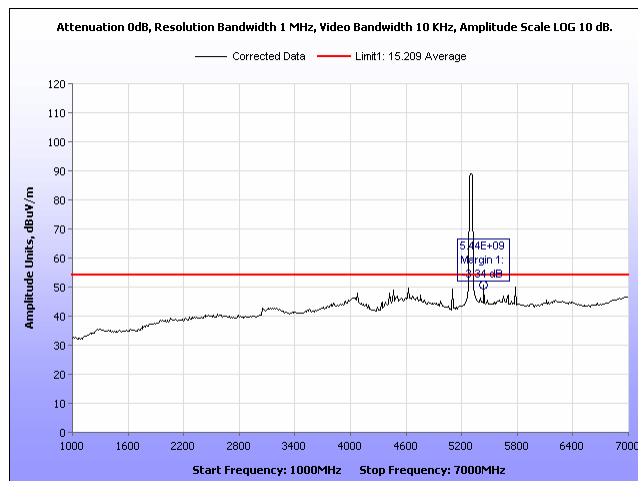
Plot 898. Undesirable Emissions, 1-7MHz , Average 3 Para, 40M, 5275, Port 1



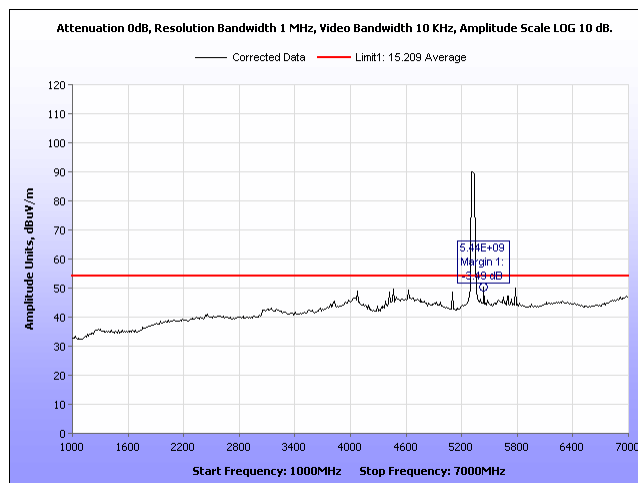
Plot 899. Undesirable Emissions, 1-7MHz , Average 3 Para, 40M, 5275, Port 2



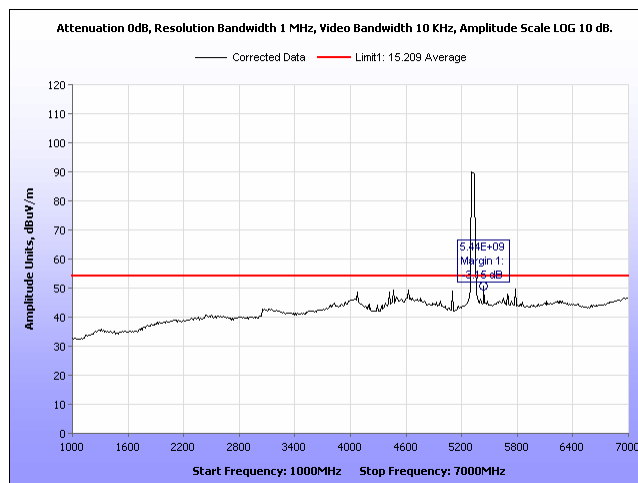
Plot 890. Undesirable Emissions, 1-7MHz , Average 3 Para, 40M, 5300, Port 1



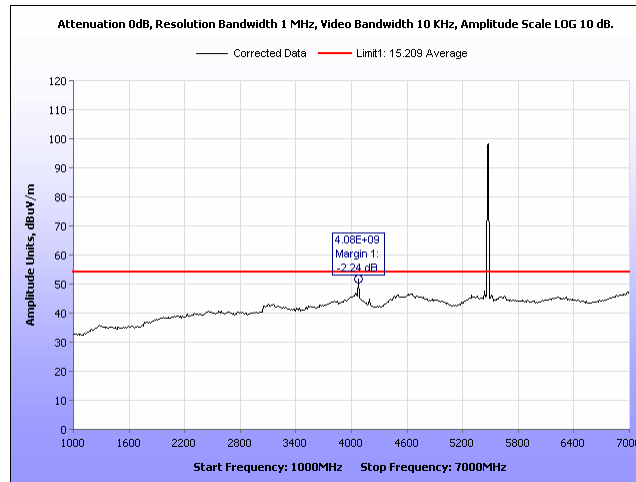
Plot 891. Undesirable Emissions, 1-7MHz , Average 3 Para, 40M, 5300, Port 2



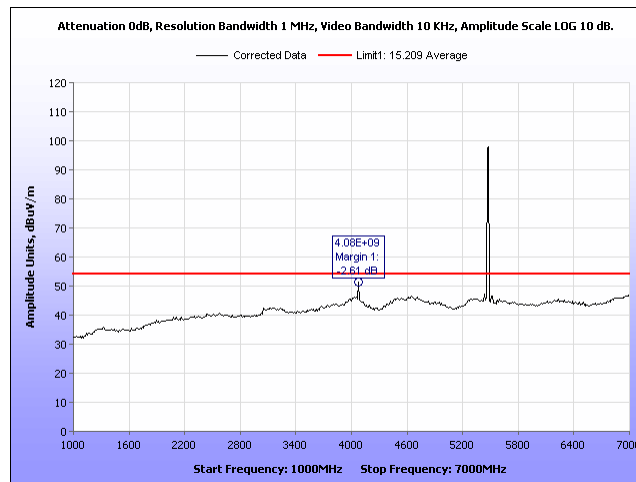
Plot 892. Undesirable Emissions, 1-7MHz , Average 3 Para, 40M, 5325, Port 1



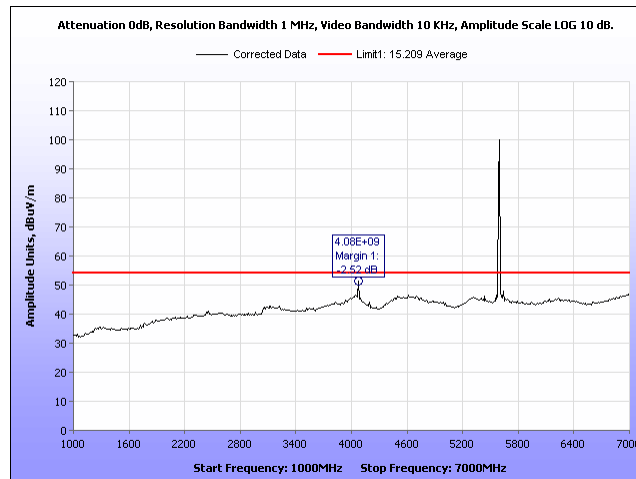
Plot 893. Undesirable Emissions, 1-7MHz , Average 3 Para, 40M, 5325, Port 2



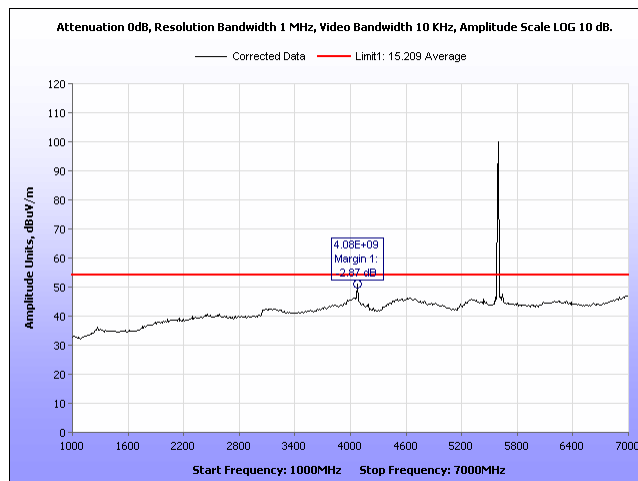
Plot 894. Undesirable Emissions, 1-7MHz , Average 3 Para, 5M, 5475, Port 1



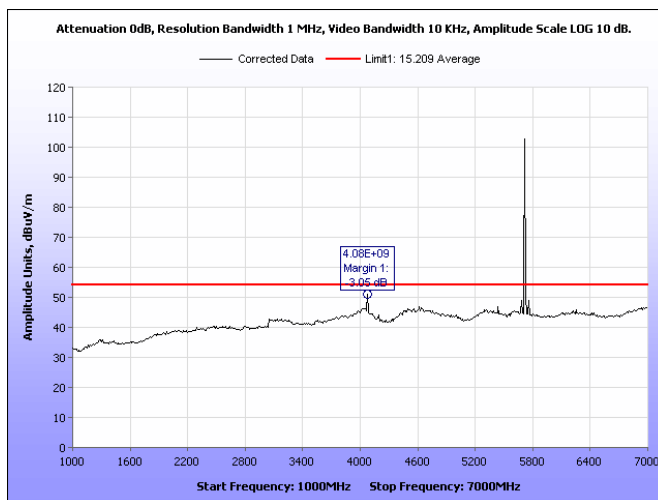
Plot 895. Undesirable Emissions, 1-7MHz , Average 3 Para, 5M, 5475, Port 2



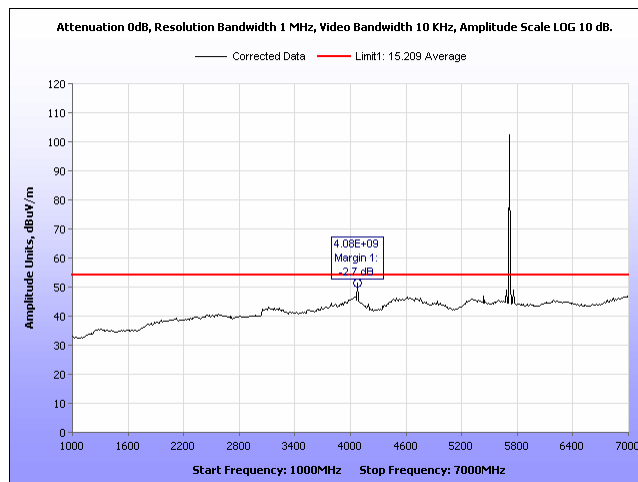
Plot 896. Undesirable Emissions, 1-7MHz , Average 3 Para, 5M, 5598, Port 1



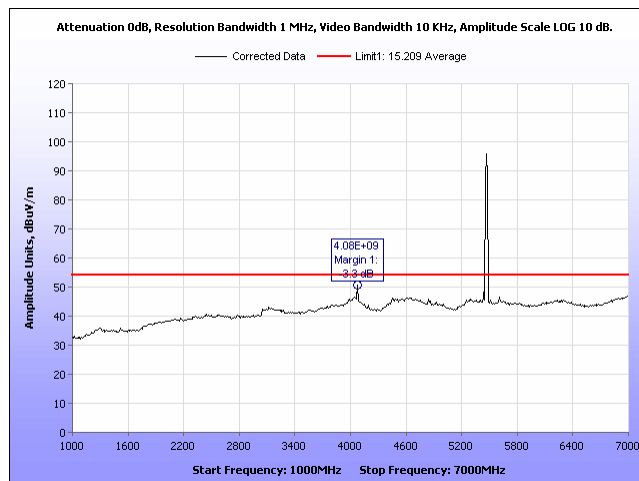
Plot 897. Undesirable Emissions, 1-7MHz , Average 3 Para, 5M, 5598, Port 2



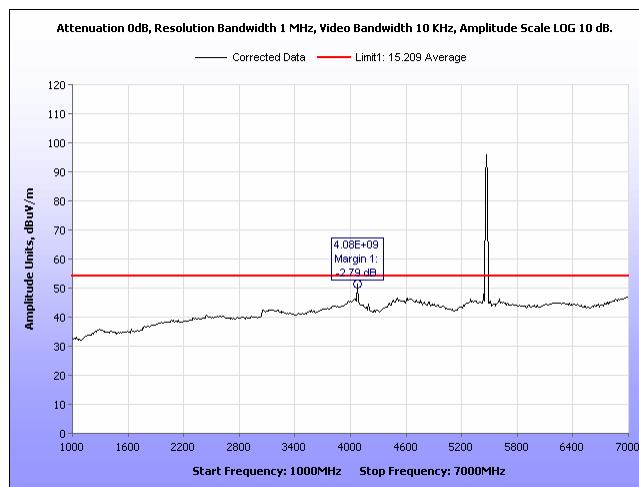
Plot 898. Undesirable Emissions, 1-7MHz , Average 3 Para, 5M, 5720, Port 1



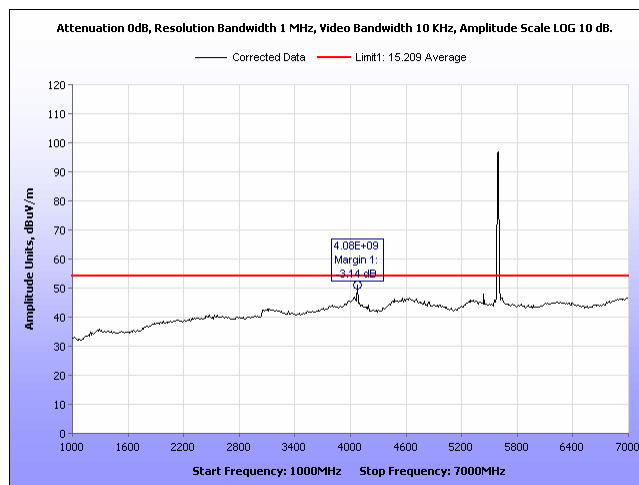
Plot 899. Undesirable Emissions, 1-7MHz , Average 3 Para, 5M, 5720, Port 2



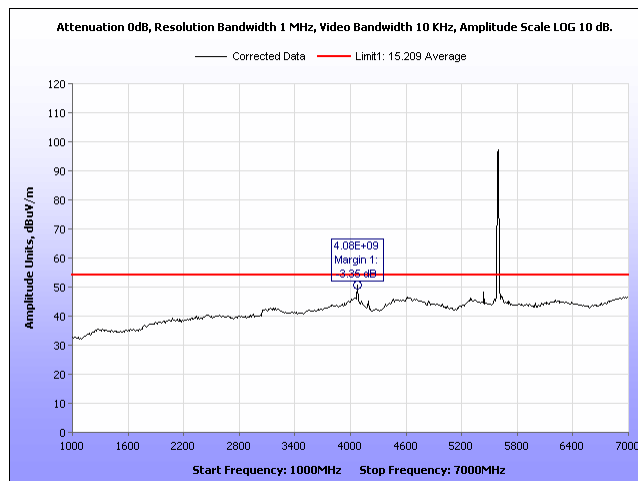
Plot 900. Undesirable Emissions, 1-7MHz , Average 3 Para, 10M, 5480, Port 1



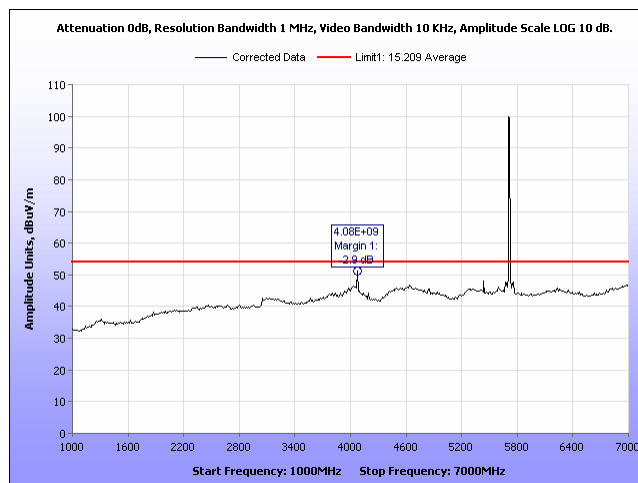
Plot 901. Undesirable Emissions, 1-7MHz , Average 3 Para, 10M, 5480, Port 2



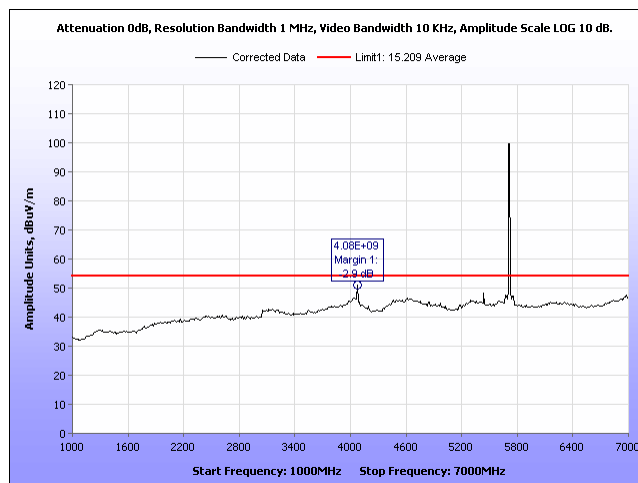
Plot 902. Undesirable Emissions, 1-7MHz , Average 3 Para, 10M, 5598, Port 1



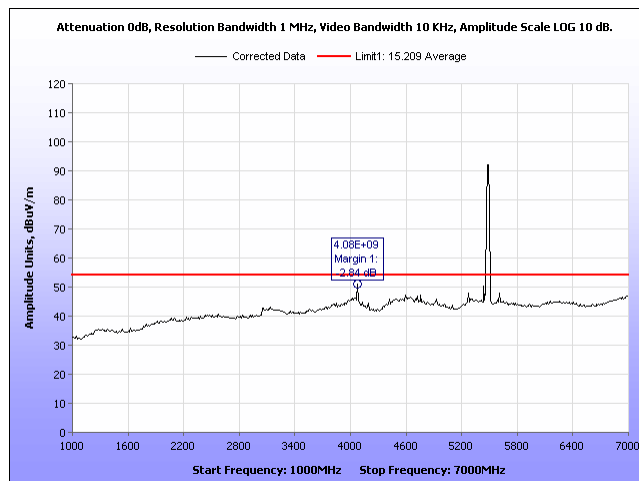
Plot 903. Undesirable Emissions, 1-7MHz , Average 3 Para, 10M, 5598, Port 2



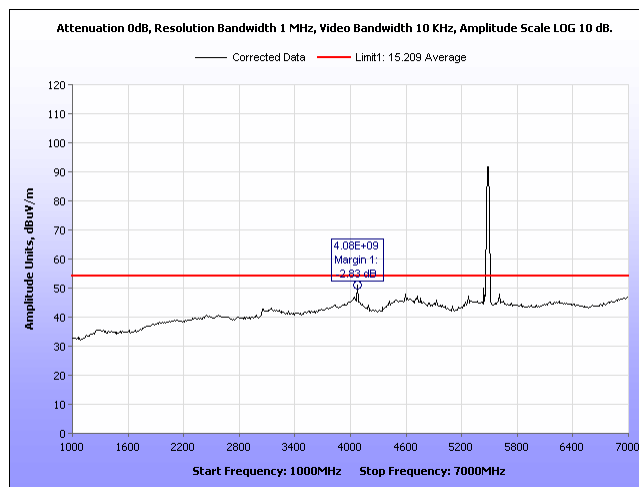
Plot 904. Undesirable Emissions, 1-7MHz , Average 3 Para, 10M, 5715, Port 1



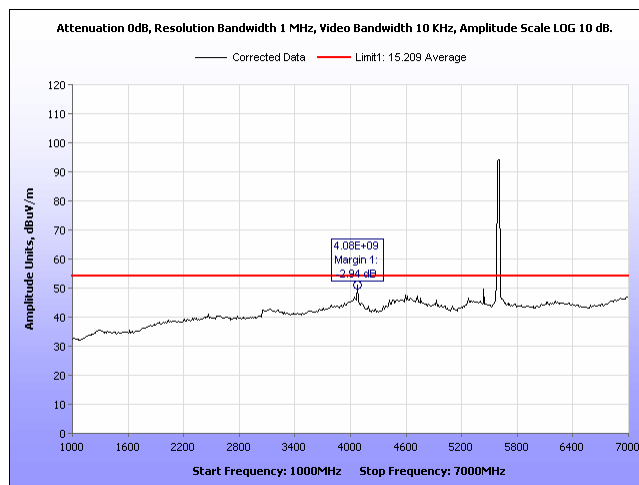
Plot 905. Undesirable Emissions, 1-7MHz , Average 3 Para, 10M, 5715, Port 2



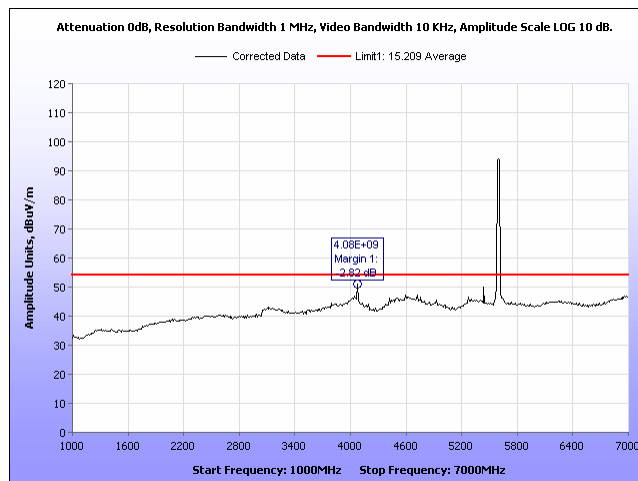
Plot 906. Undesirable Emissions, 1-7MHz , Average 3 Para, 20M, 5485, Port 1



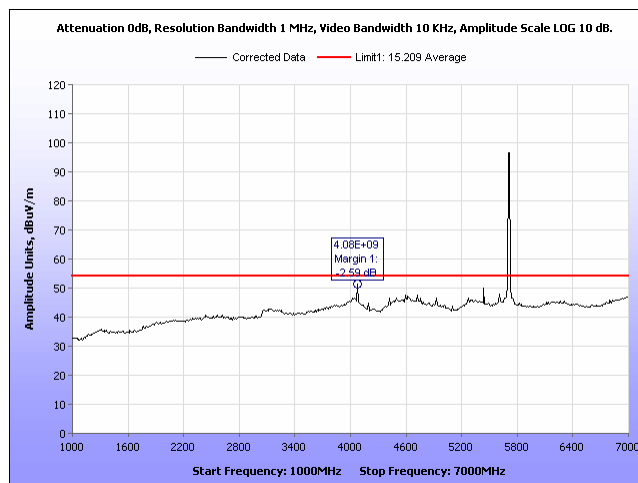
Plot 907. Undesirable Emissions, 1-7MHz , Average 3 Para, 20M, 5485, Port 2



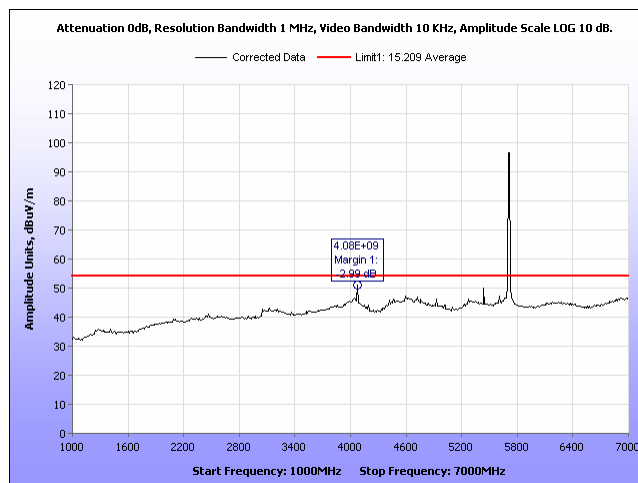
Plot 908. Undesirable Emissions, 1-7MHz , Average 3 Para, 20M, 5598, Port 1



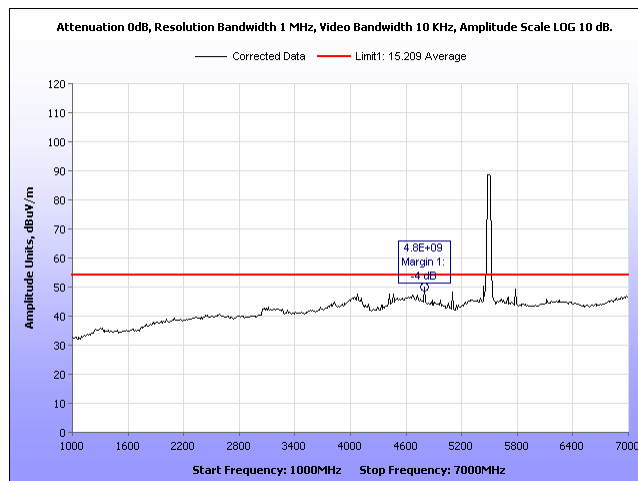
Plot 909. Undesirable Emissions, 1-7MHz , Average 3 Para, 20M, 5598, Port 2



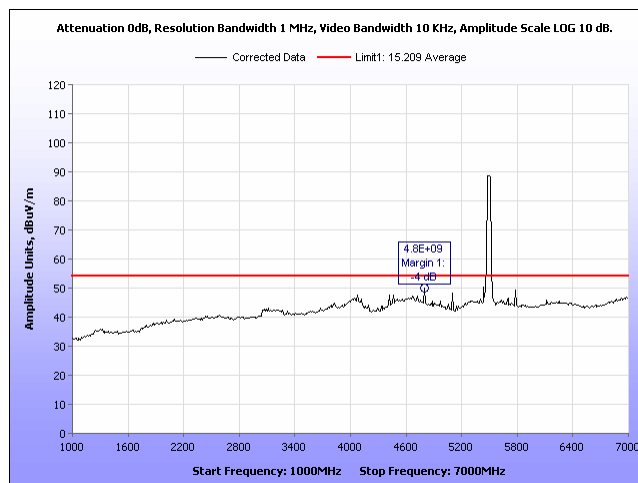
Plot 910. Undesirable Emissions, 1-7MHz , Average 3 Para, 20M, 5710, Port 1



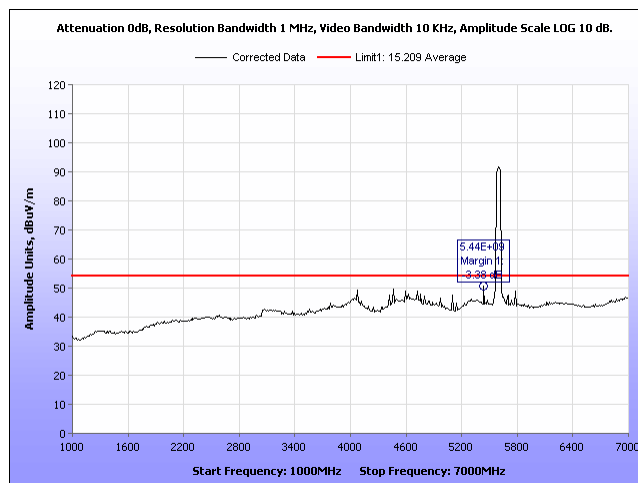
Plot 911. Undesirable Emissions, 1-7MHz , Average 3 Para, 20M, 5710, Port 2



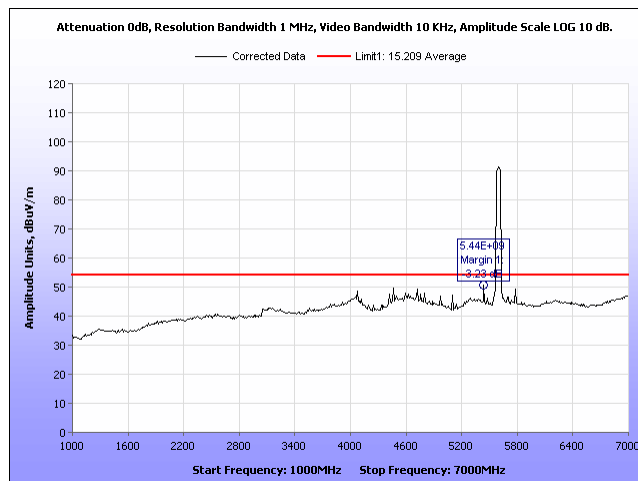
Plot 912. Undesirable Emissions, 1-7MHz , Average 3 Para, 40M, 5495, Port 1



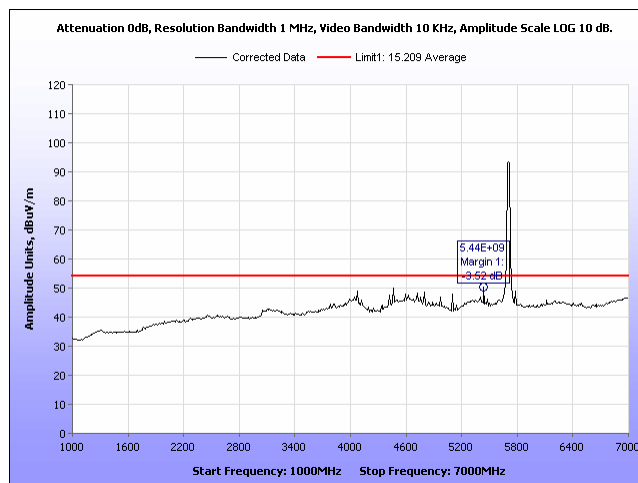
Plot 913. Undesirable Emissions, 1-7MHz , Average 3 Para, 40M, 5495, Port 2



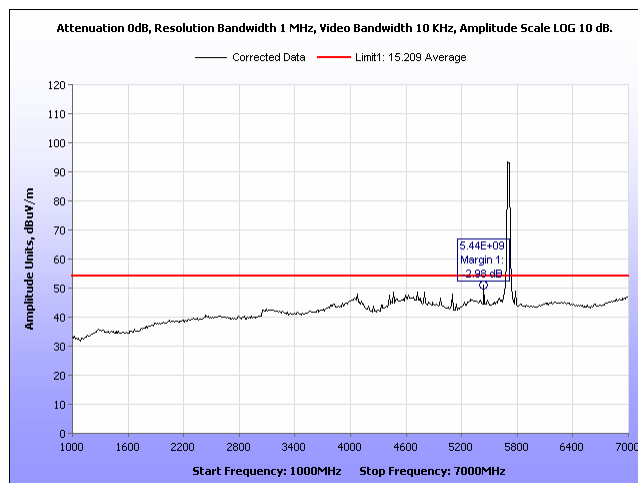
Plot 914. Undesirable Emissions, 1-7MHz , Average 3 Para, 40M, 5598, Port 1



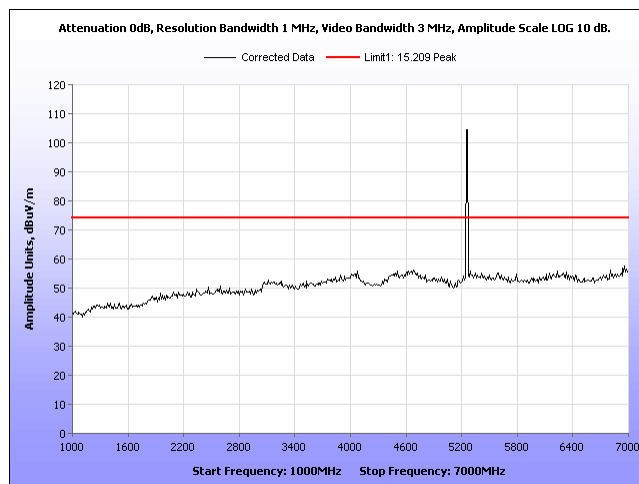
Plot 915. Undesirable Emissions, 1-7MHz , Average 3 Para, 40M, 5598, Port 2



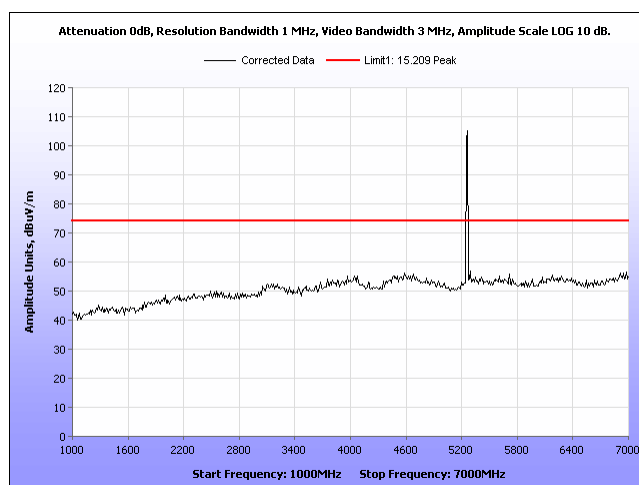
Plot 916. Undesirable Emissions, 1-7MHz , Average 3 Para, 40M, 5700, Port 1



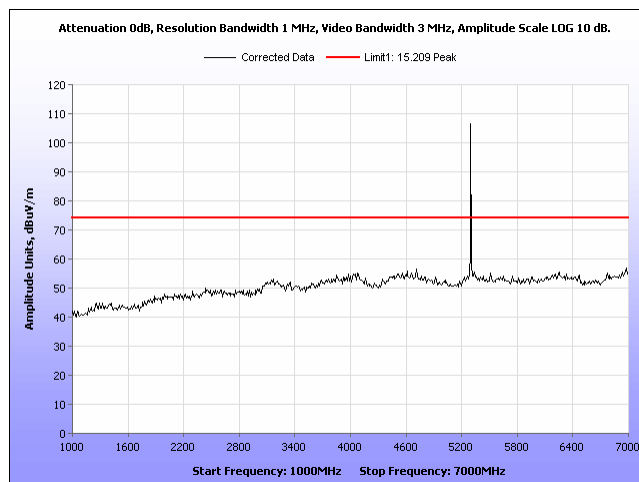
Plot 917. Undesirable Emissions, 1-7MHz , Average 3 Para, 40M, 5700, Port 2



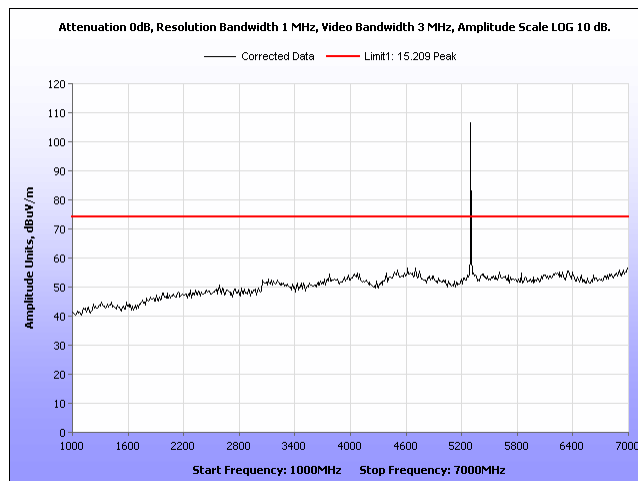
Plot 918. Undesirable Emissions, 1-7MHz , Peak 3 Para, 5M, 5255, Port 1



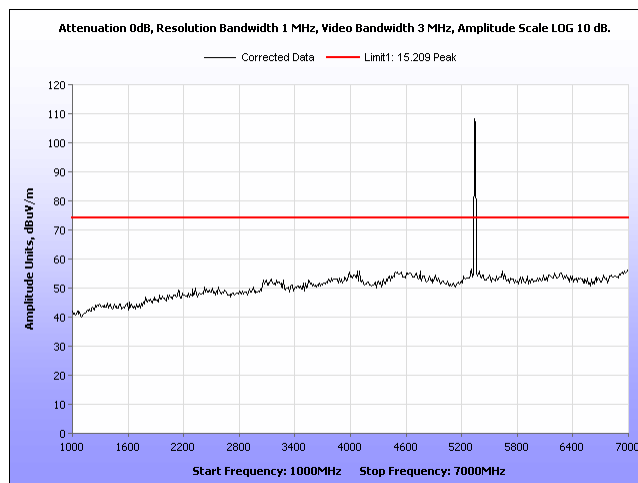
Plot 919. Undesirable Emissions, 1-7MHz , Peak 3 Para, 5M, 5255, Port 2



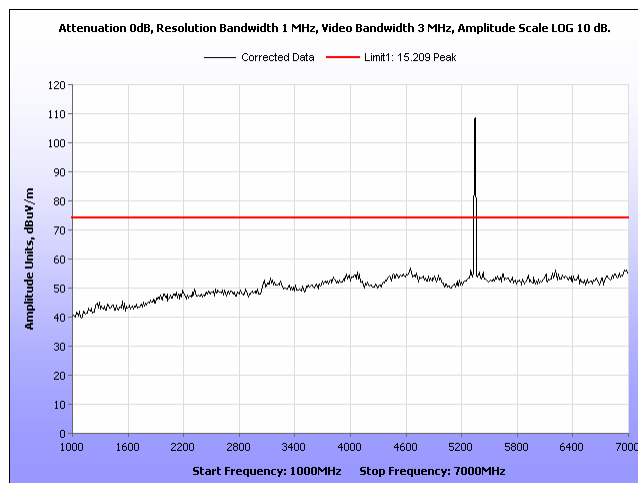
Plot 920. Undesirable Emissions, 1-7MHz , Peak 3 Para, 5M, 5300, Port 1



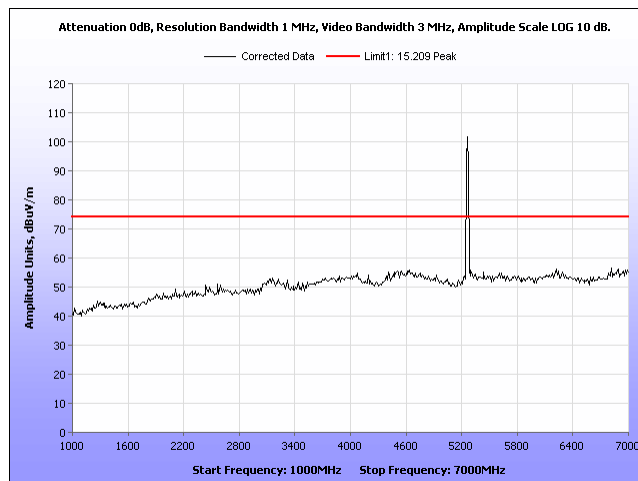
Plot 921. Undesirable Emissions, 1-7MHz , Peak 3 Para, 5M, 5300, Port 2



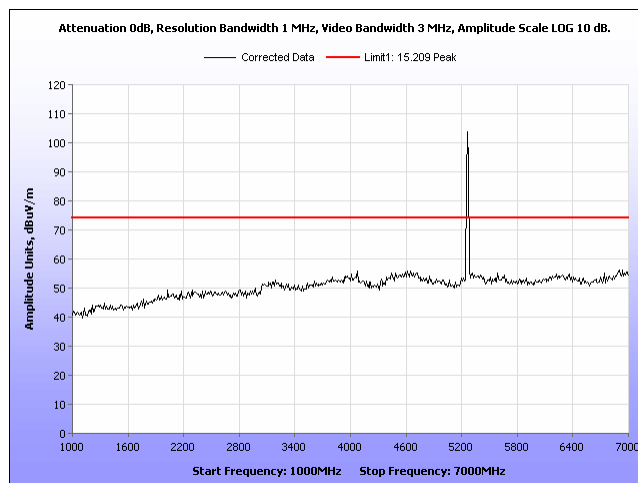
Plot 922. Undesirable Emissions, 1-7MHz , Peak 3 Para, 5M, 5345, Port 1



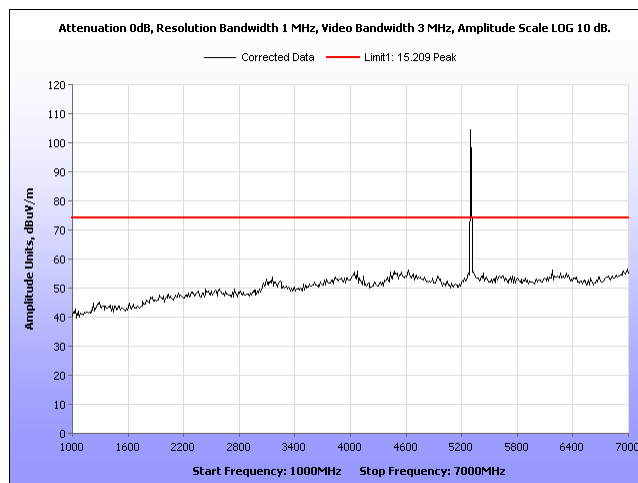
Plot 923. Undesirable Emissions, 1-7MHz , Peak 3 Para, 5M, 5345, Port 2



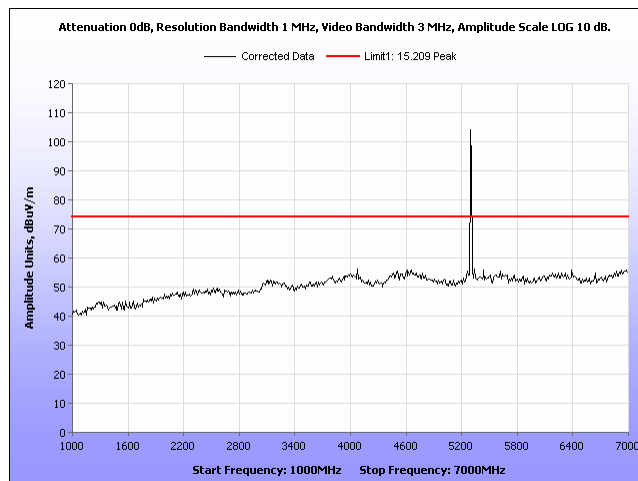
Plot 924. Undesirable Emissions, 1-7MHz , Peak 3 Para, 10M, 5260, Port 1



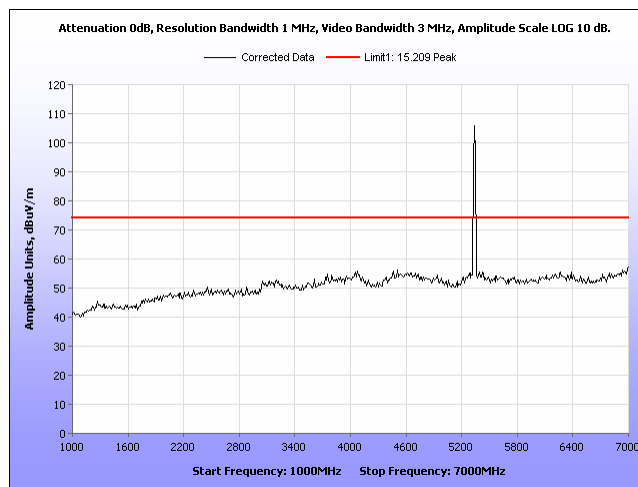
Plot 925. Undesirable Emissions, 1-7MHz , Peak 3 Para, 10M, 5260, Port 2



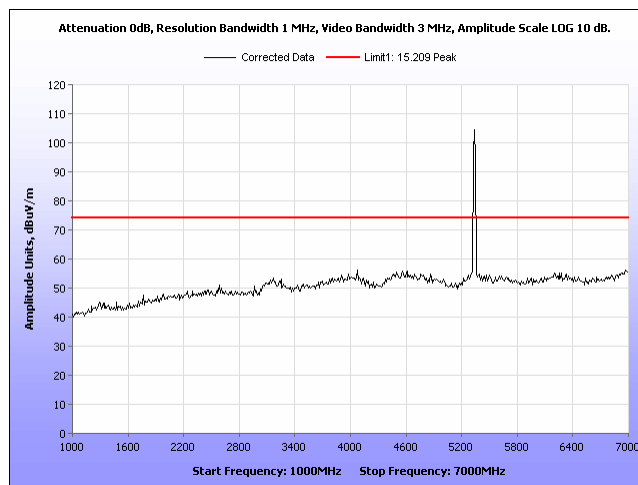
Plot 926. Undesirable Emissions, 1-7MHz , Peak 3 Para, 10M, 5300, Port 1



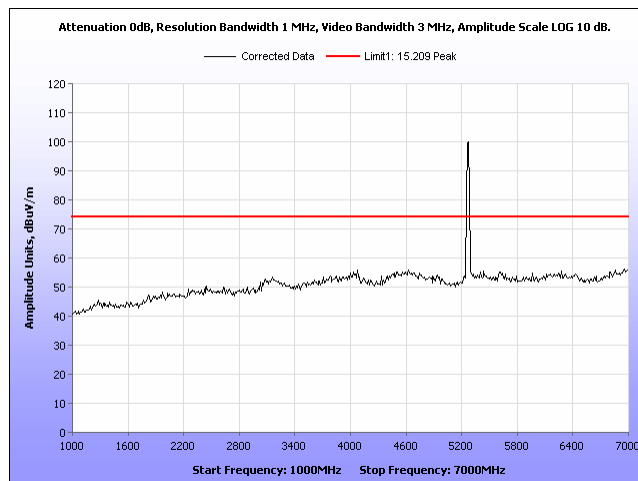
Plot 927. Undesirable Emissions, 1-7MHz , Peak 3 Para, 10M, 5300, Port 2



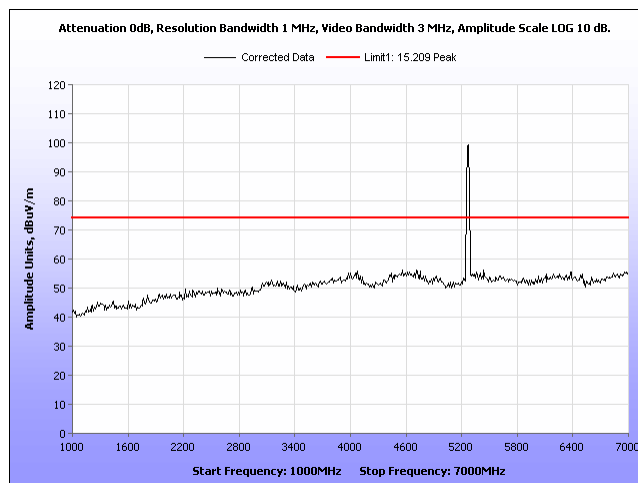
Plot 928. Undesirable Emissions, 1-7MHz , Peak 3 Para, 10M, 5340, Port 1



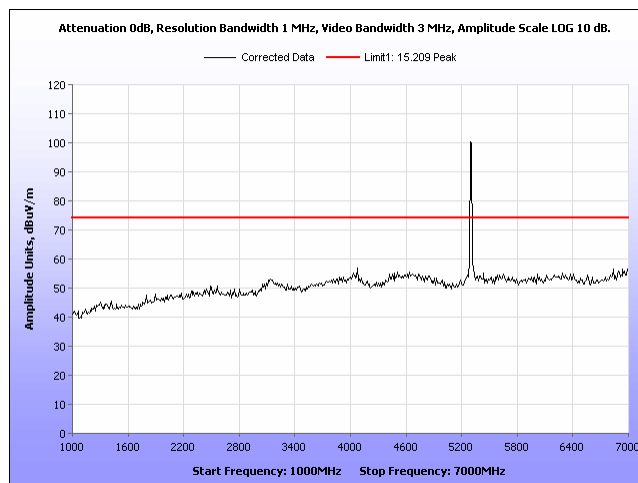
Plot 929. Undesirable Emissions, 1-7MHz , Peak 3 Para, 10M, 5340, Port 2



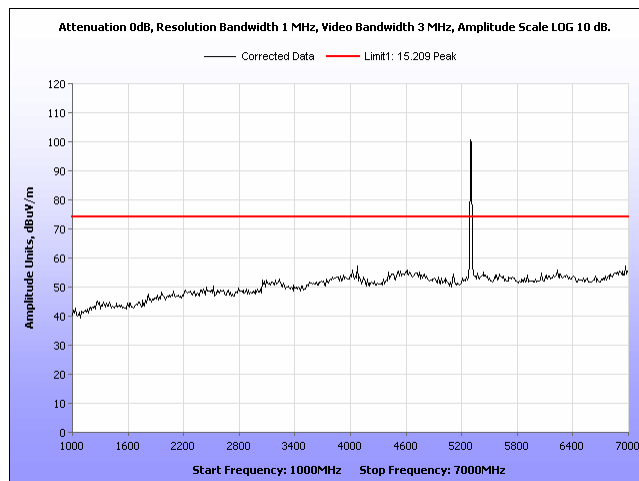
Plot 930. Undesirable Emissions, 1-7MHz, Peak 3 Para, 20M, 5265, Port 1



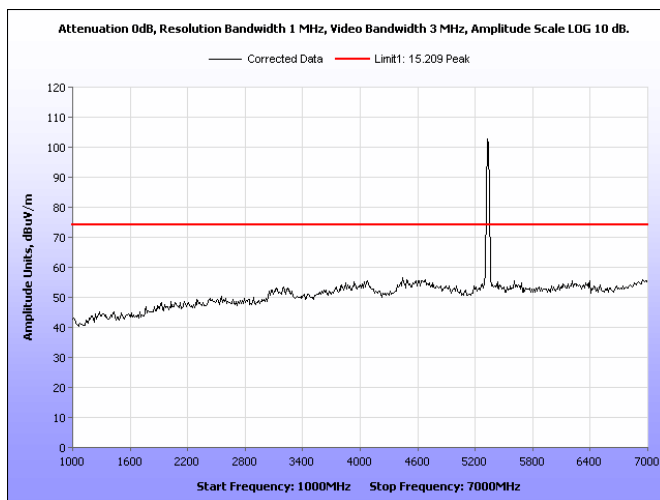
Plot 931. Undesirable Emissions, 1-7MHz, Peak 3 Para, 20M, 5265, Port 2



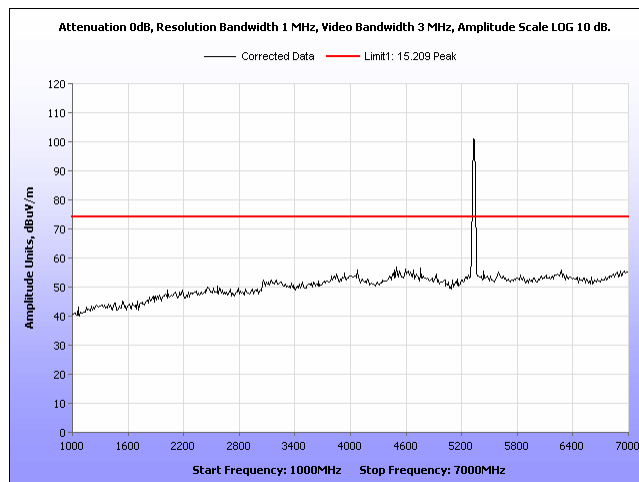
Plot 932. Undesirable Emissions, 1-7MHz, Peak 3 Para, 20M, 5300, Port 1



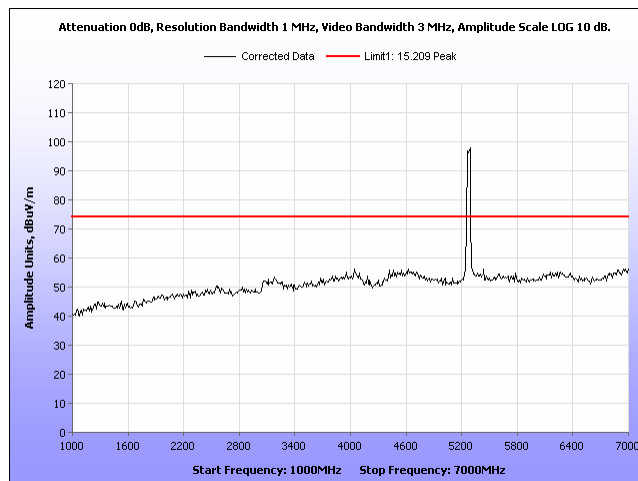
Plot 933. Undesirable Emissions, 1-7MHz, Peak 3 Para, 20M, 5300, Port 2



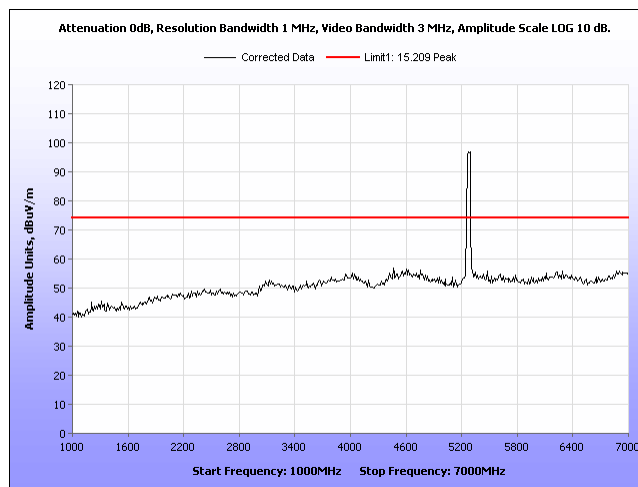
Plot 934. Undesirable Emissions, 1-7MHz, Peak 3 Para, 20M, 5335, Port 1



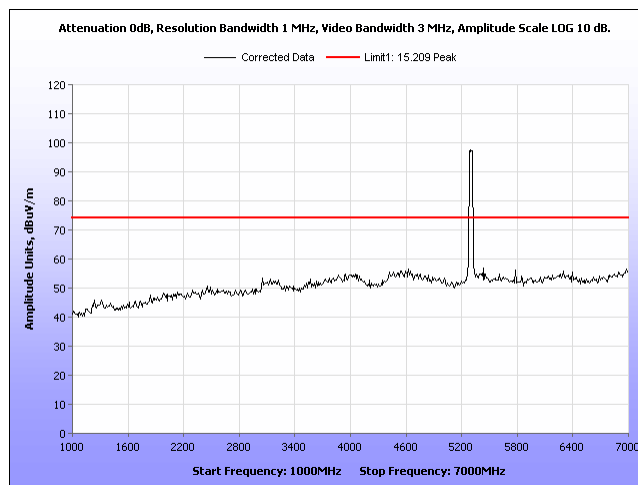
Plot 935. Undesirable Emissions, 1-7MHz, Peak 3 Para, 20M, 5335, Port 2



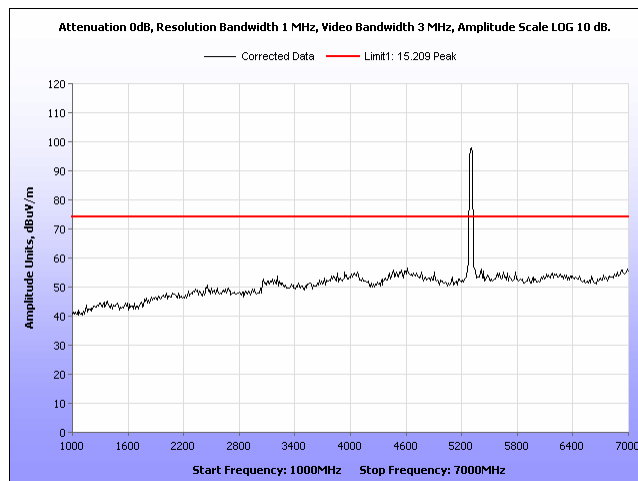
Plot 936. Undesirable Emissions, 1-7MHz , Peak 3 Para, 40M, 5275, Port 1



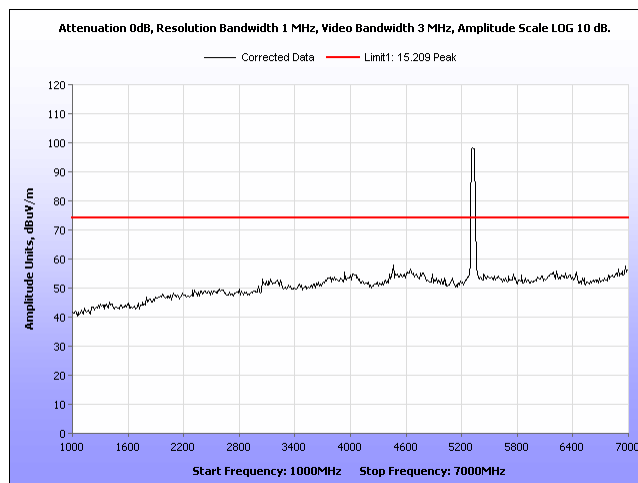
Plot 937. Undesirable Emissions, 1-7MHz , Peak 3 Para, 40M, 5275, Port 2



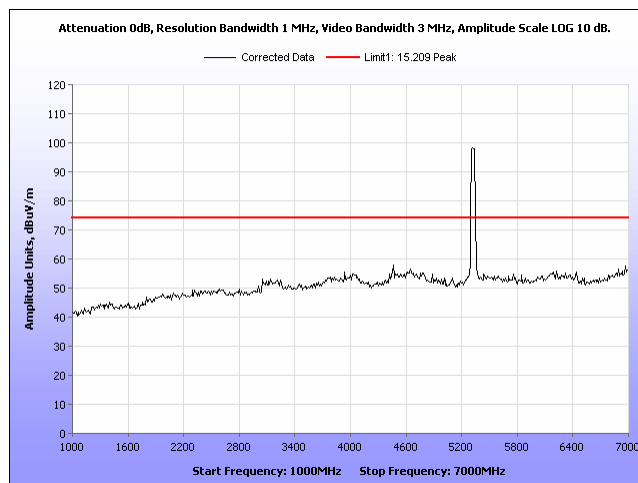
Plot 938. Undesirable Emissions, 1-7MHz , Peak 3 Para, 40M, 5300, Port 1



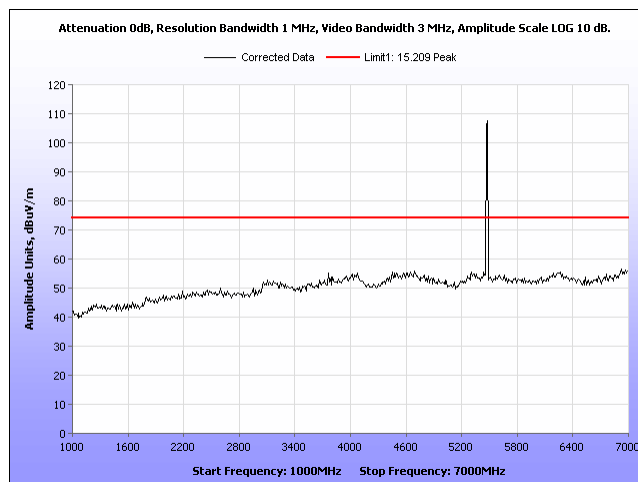
Plot 939. Undesirable Emissions, 1-7MHz , Peak 3 Para, 40M, 5300, Port 2



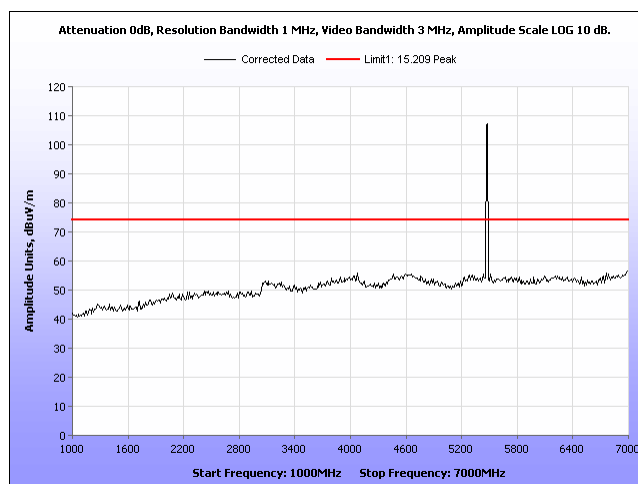
Plot 940. Undesirable Emissions, 1-7MHz , Peak 3 Para, 40M, 5325, Port 1



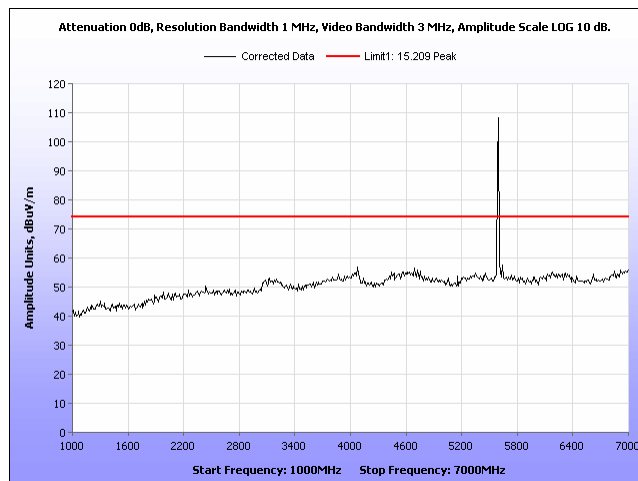
Plot 941. Undesirable Emissions, 1-7MHz , Peak 3 Para, 40M, 5325, Port 2



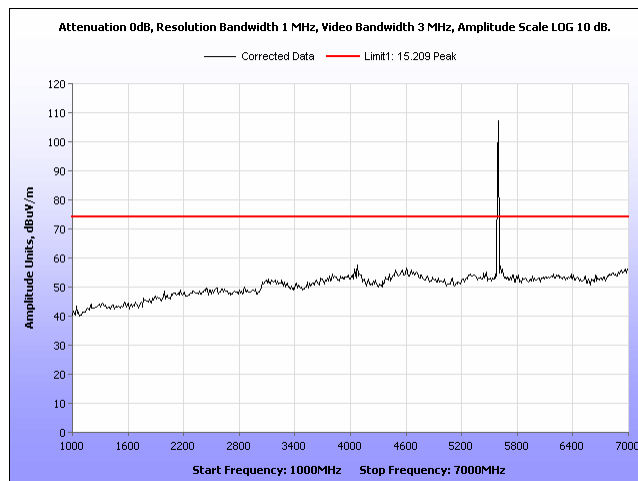
Plot 942. Undesirable Emissions, 1-7MHz , Peak 3 Para, 5M, 5475, Port 1



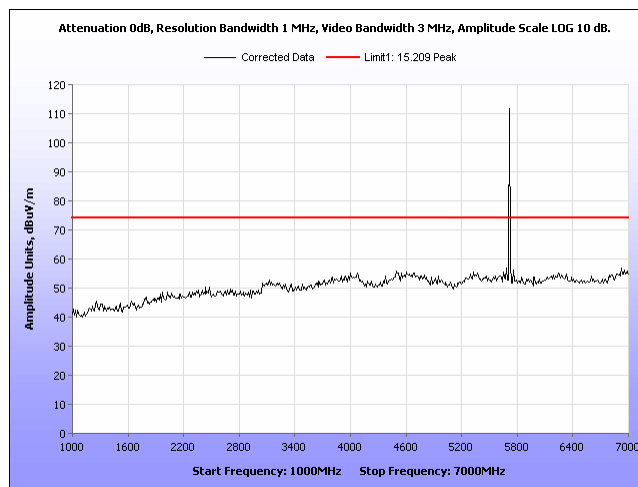
Plot 943. Undesirable Emissions, 1-7MHz , Peak 3 Para, 5M, 5475, Port 2



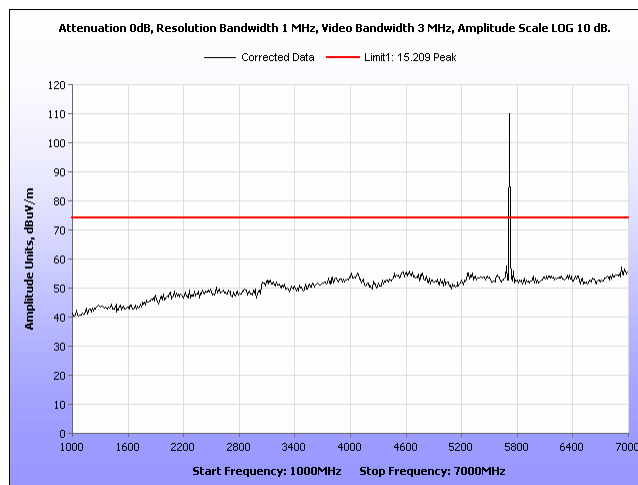
Plot 944. Undesirable Emissions, 1-7MHz , Peak 3 Para, 5M, 5598, Port 1



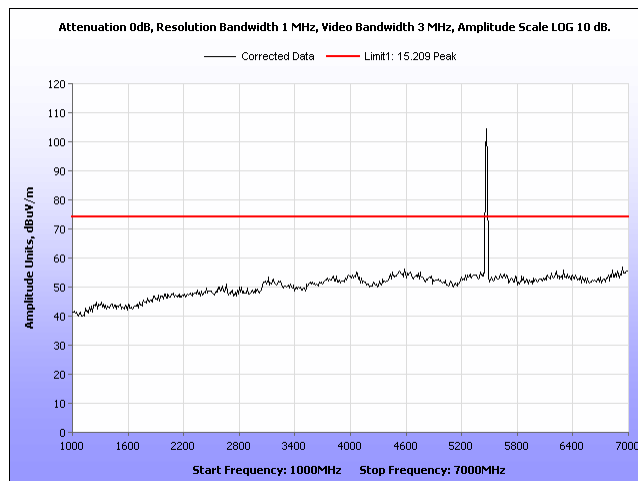
Plot 945. Undesirable Emissions, 1-7MHz , Peak 3 Para, 5M, 5598, Port 2



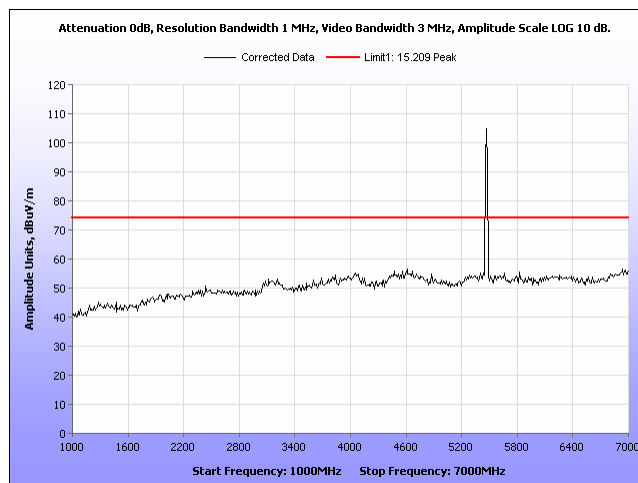
Plot 946. Undesirable Emissions, 1-7MHz , Peak 3 Para, 5M, 5720, Port 1



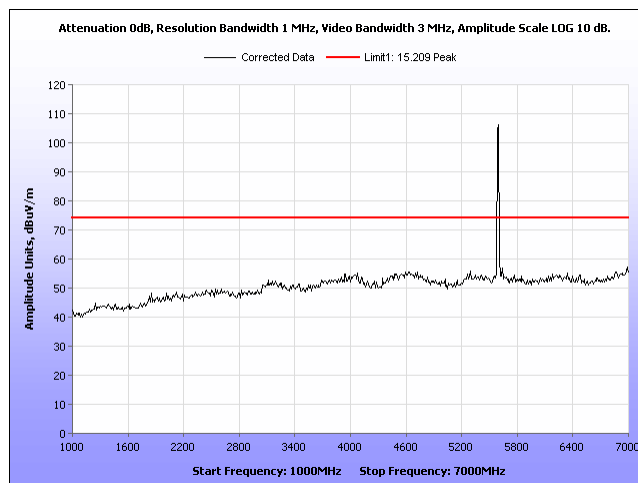
Plot 947. Undesirable Emissions, 1-7MHz , Peak 3 Para, 5M, 5720, Port 2



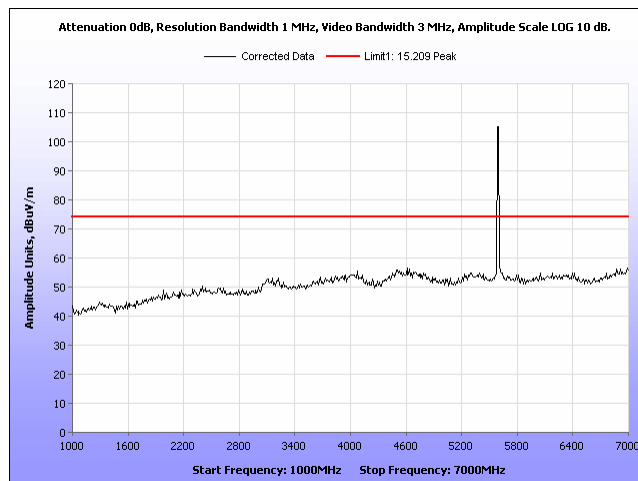
Plot 948. Undesirable Emissions, 1-7MHz , Peak 3 Para, 10M, 5480, Port 1



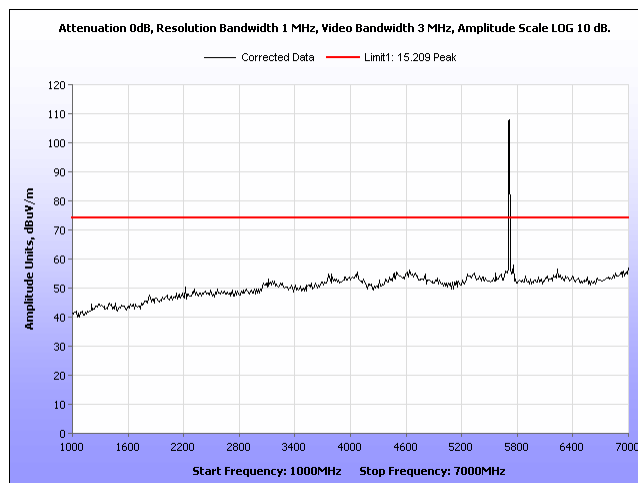
Plot 949. Undesirable Emissions, 1-7MHz , Peak 3 Para, 10M, 5480, Port 2



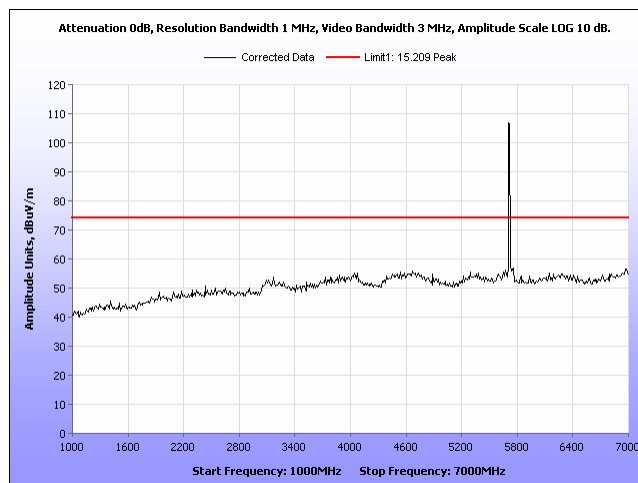
Plot 950. Undesirable Emissions, 1-7MHz , Peak 3 Para, 10M, 5598, Port 1



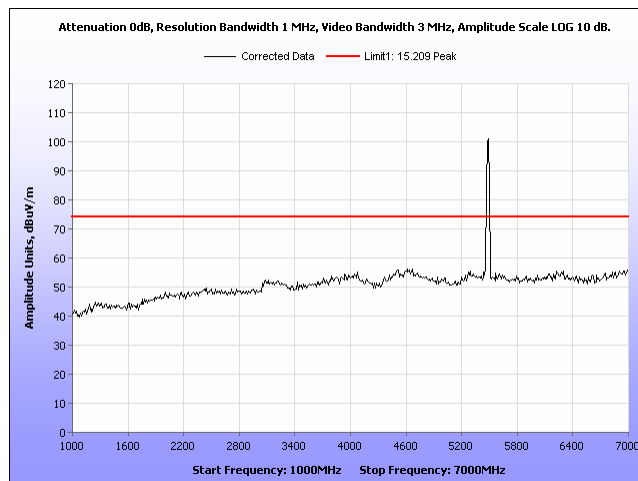
Plot 951. Undesirable Emissions, 1-7MHz , Peak 3 Para, 10M, 5598, Port 2



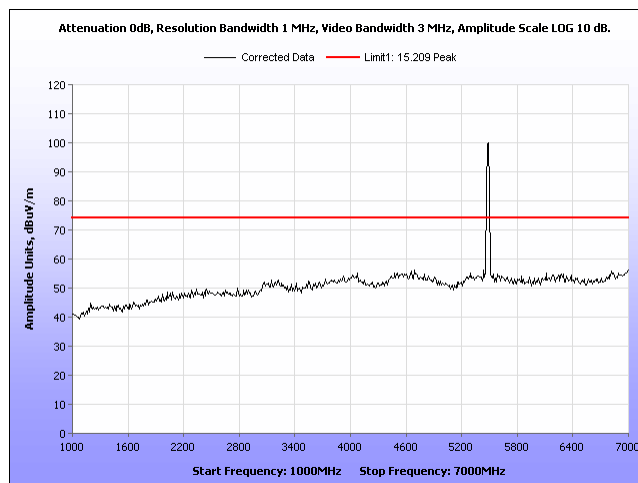
Plot 952. Undesirable Emissions, 1-7MHz , Peak 3 Para, 10M, 5715, Port 1



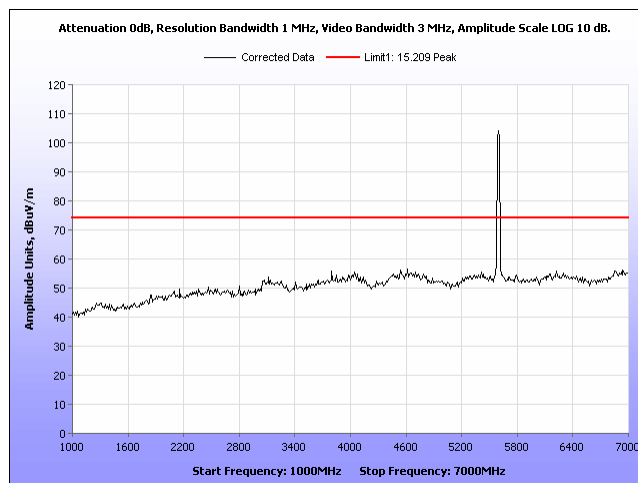
Plot 953. Undesirable Emissions, 1-7MHz , Peak 3 Para, 10M, 5715, Port 2



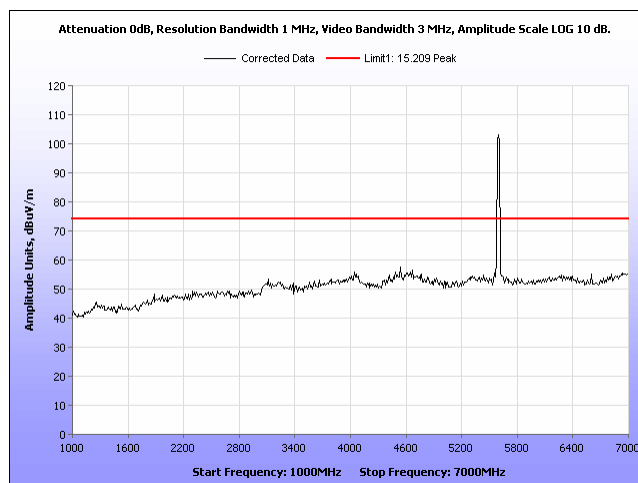
Plot 954. Undesirable Emissions, 1-7MHz , Peak 3 Para, 20M, 5485, Port 1



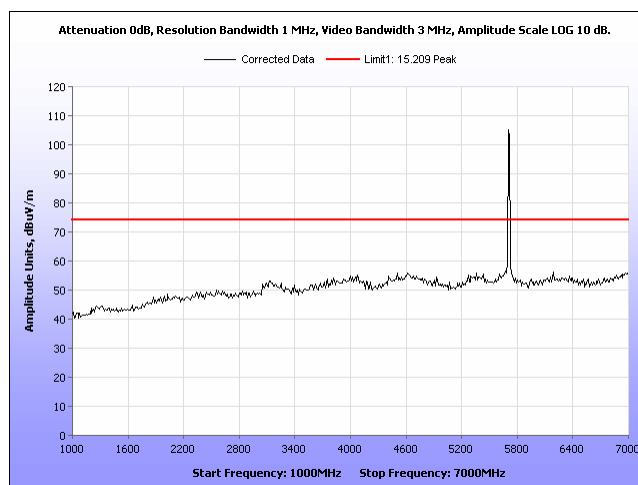
Plot 955. Undesirable Emissions, 1-7MHz , Peak 3 Para, 20M, 5485, Port 2



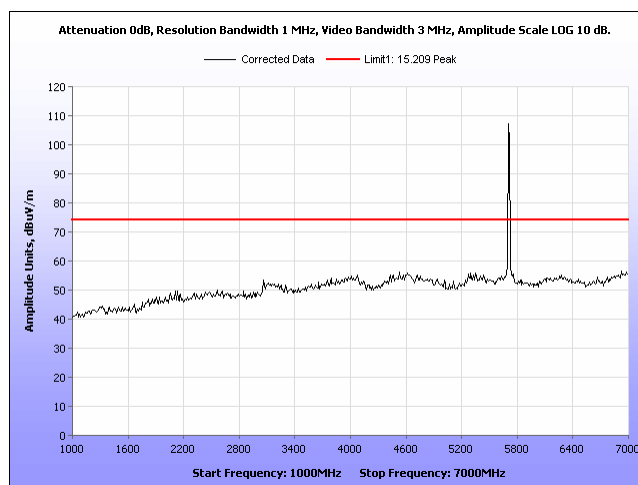
Plot 956. Undesirable Emissions, 1-7MHz , Peak 3 Para, 20M, 5598, Port 1



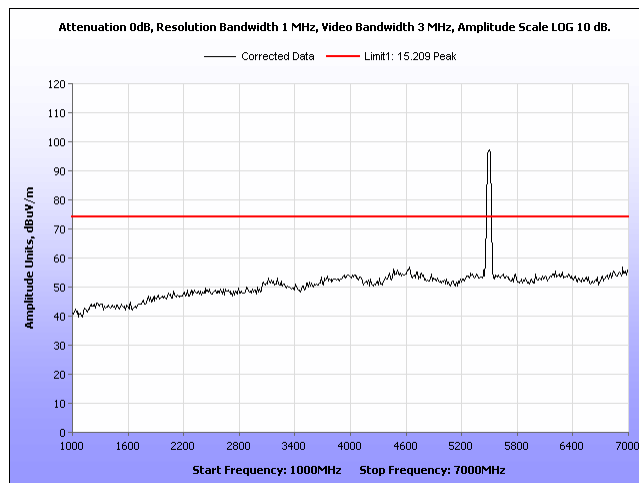
Plot 957. Undesirable Emissions, 1-7MHz , Peak 3 Para, 20M, 5598, Port 2



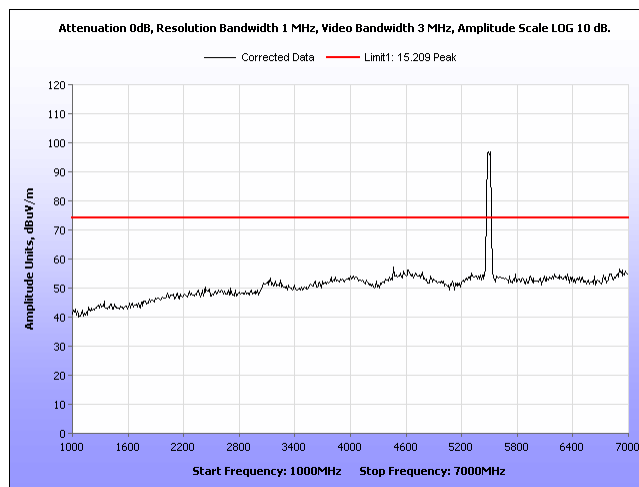
Plot 958. Undesirable Emissions, 1-7MHz , Peak 3 Para, 20M, 5710, Port 1



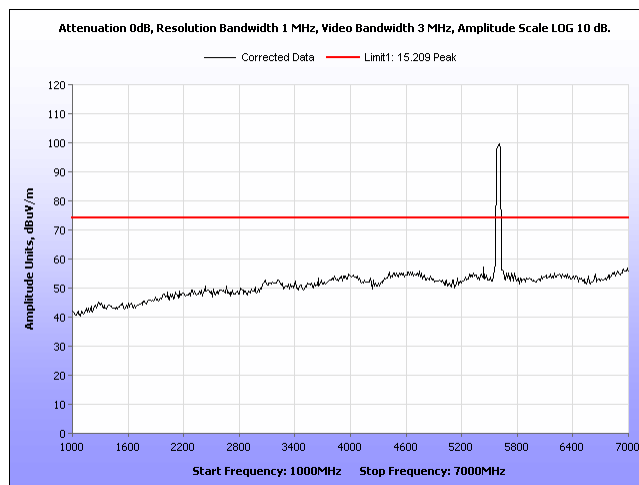
Plot 959. Undesirable Emissions, 1-7MHz , Peak 3 Para, 20M, 5710, Port 2



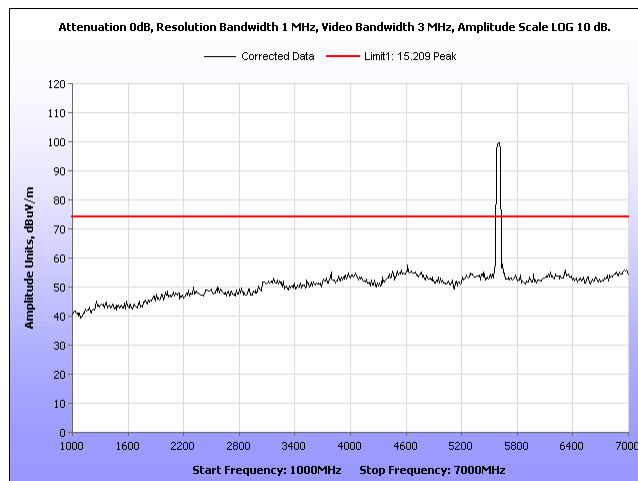
Plot 960. Undesirable Emissions, 1-7MHz , Peak 3 Para, 40M, 5495, Port 1



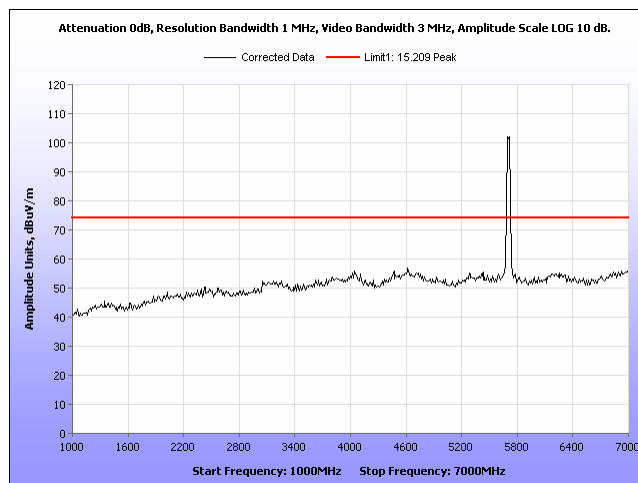
Plot 961. Undesirable Emissions, 1-7MHz , Peak 3 Para, 40M, 5495, Port 2



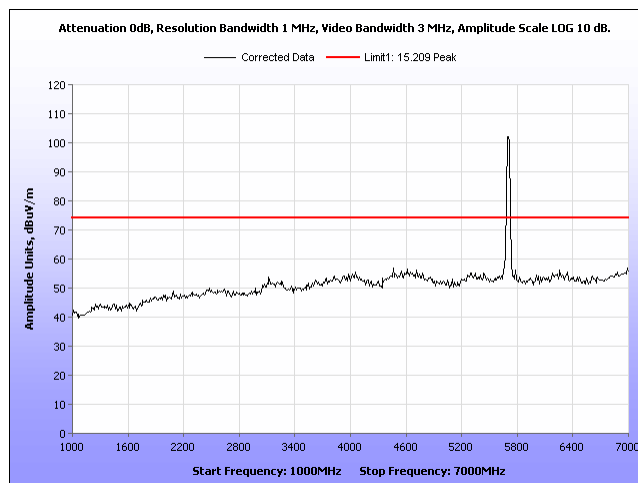
Plot 962. Undesirable Emissions, 1-7MHz , Peak 3 Para, 40M, 5598, Port 1



Plot 963. Undesirable Emissions, 1-7MHz , Peak 3 Para, 40M, 5598, Port 2

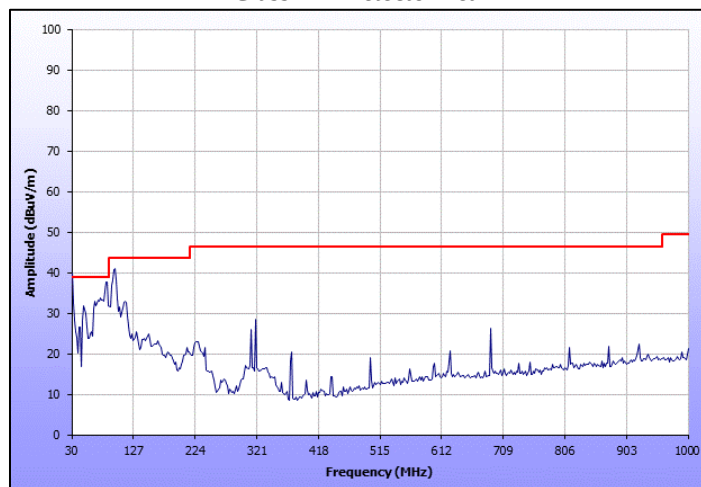


Plot 964. Undesirable Emissions, 1-7MHz , Peak 3 Para, 40M, 5700, Port 1

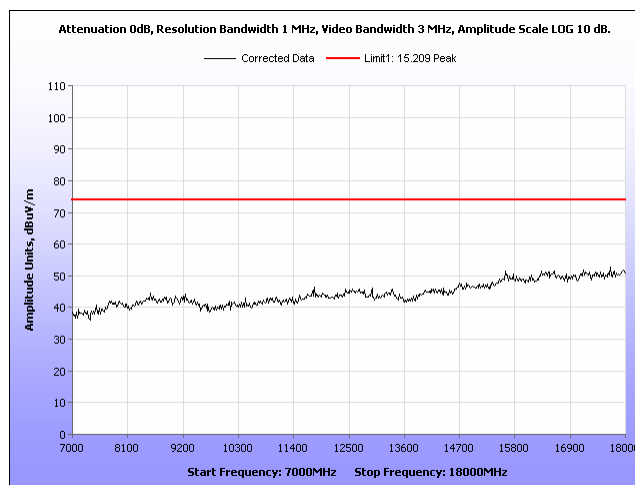


Plot 965. Undesirable Emissions, 1-7MHz , Peak 3 Para, 40M, 5700, Port 2

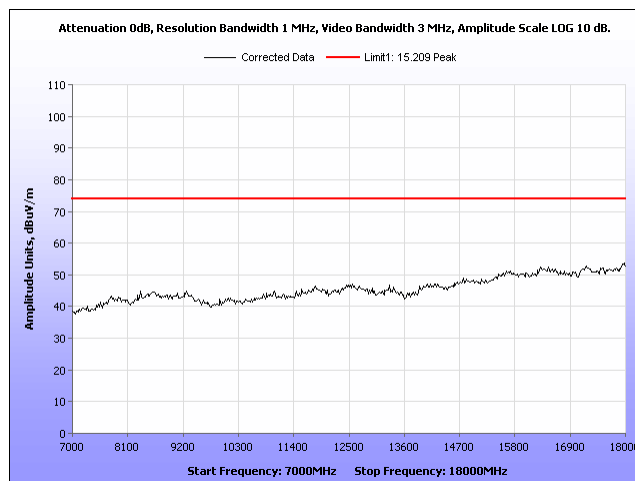
Class A – Detector Peak



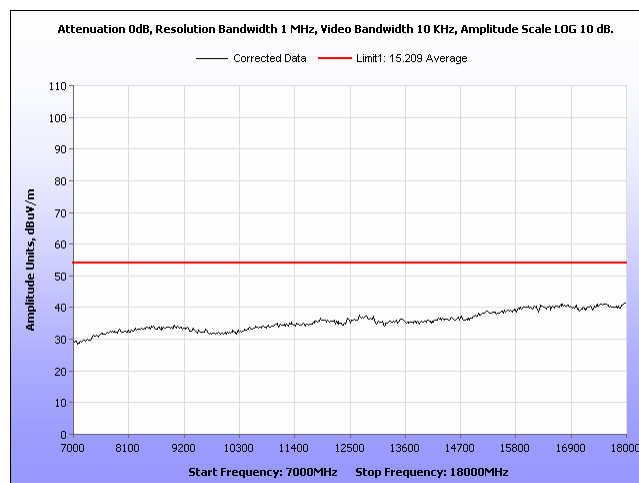
Plot 966. Undesirable Emissions 30MHz – 1GHz, Worst Case



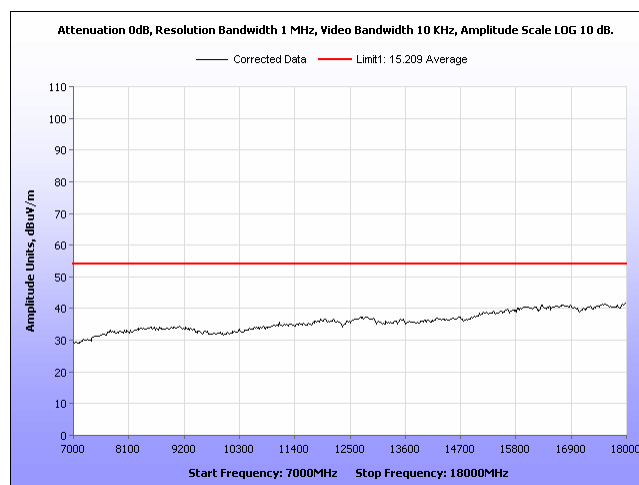
Plot 967. Undesirable Emissions, 7-18 MHz, Peak 3 Para, Worst Case, Port 1



Plot 968. Undesirable Emissions, 7-18 MHz, Peak 3 Para, Worst Case, Port 2

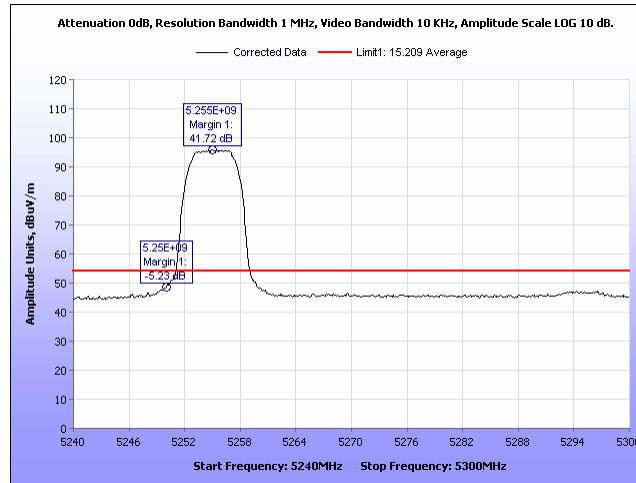


Plot 969. Undesirable Emissions, 7-18 MHz, Average 3 Para, Worst Case, Port 1

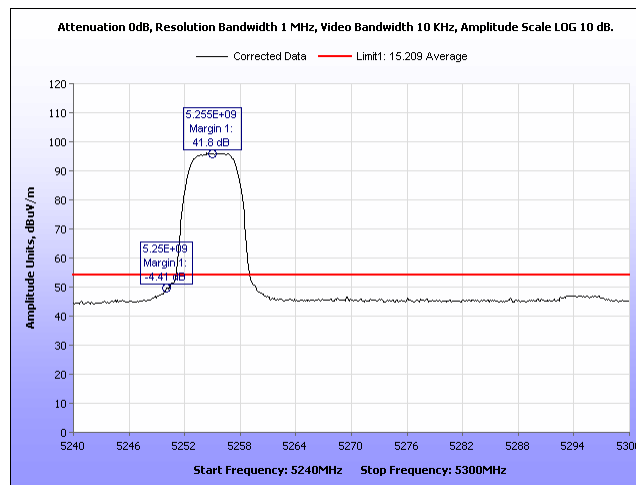


Plot 970. Undesirable Emissions, 7-18 MHz, Average 3 Para, Worst Case, Port 2

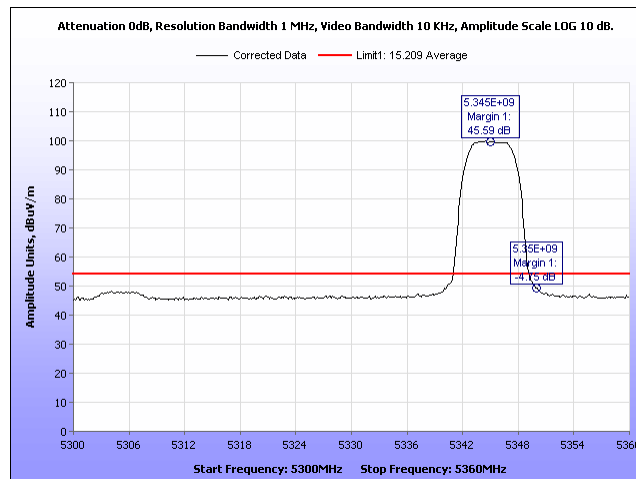
Radiated Band Edge, 3 Para



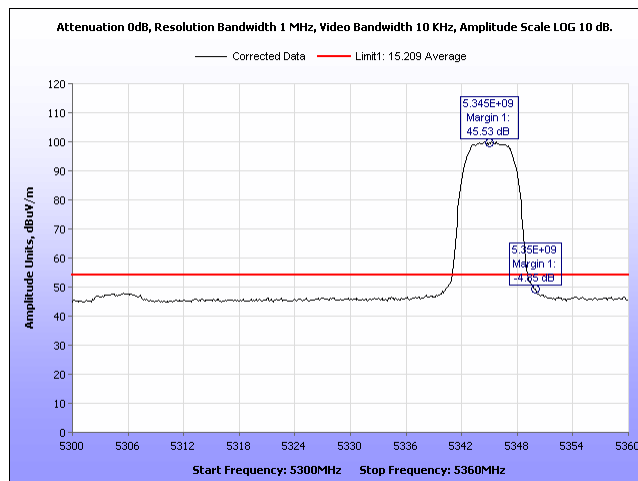
Plot 971. Radiated Band Edge, Average 3 Para, 5MHz, 5255MHz, Port 1



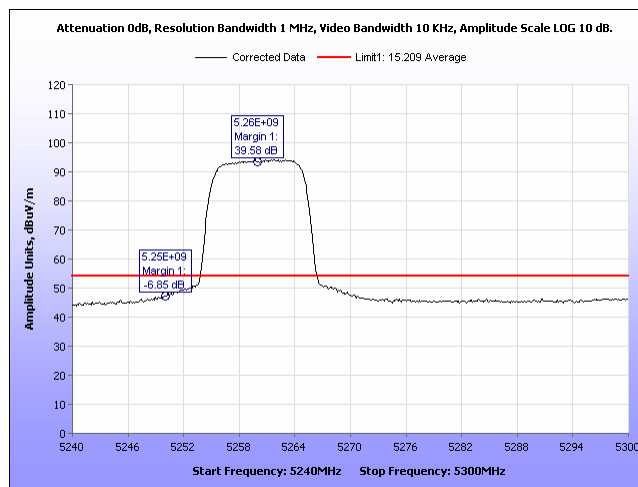
Plot 972. Radiated Band Edge, Average 3 Para, 5MHz, 5255MHz, Port 2



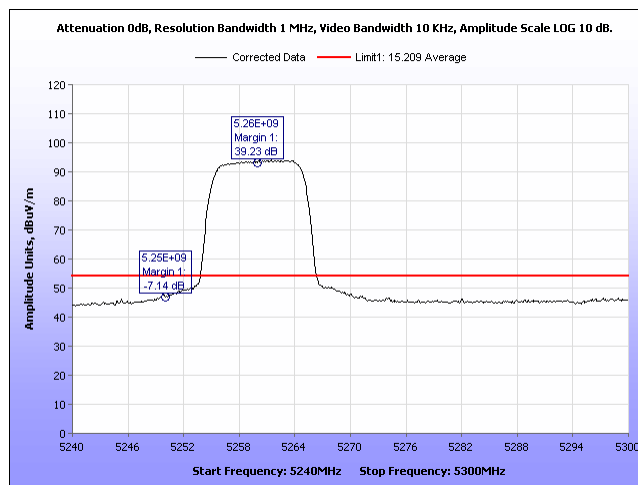
Plot 973. Radiated Band Edge, Average 3 Para, 5MHz, 5345MHz, Port 1



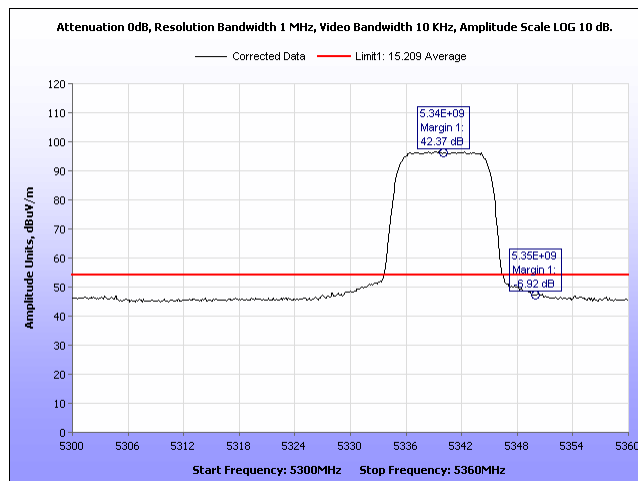
Plot 974. Radiated Band Edge, Average 3 Para, 5MHz, 5345MHz, Port 2



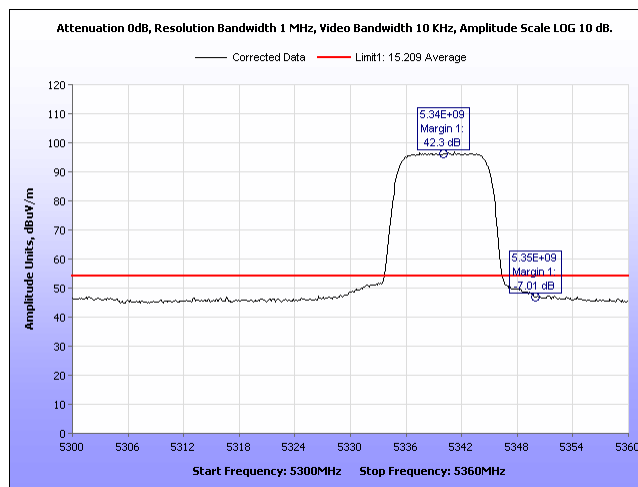
Plot 975. Radiated Band Edge, Average 3 Para, 10MHz, 5260MHz, Port 1



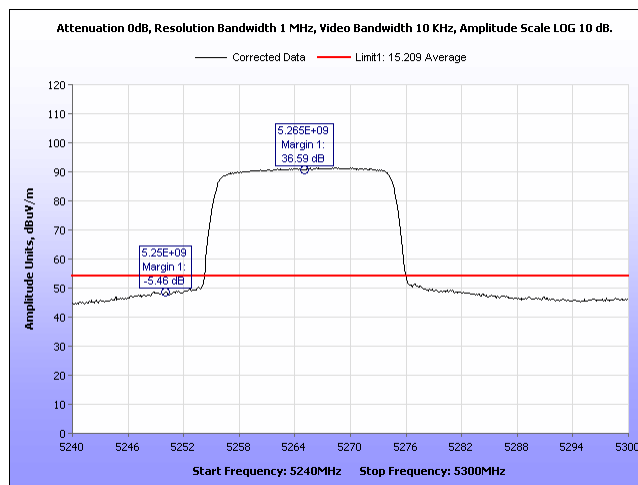
Plot 976. Radiated Band Edge, Average 3 Para, 10MHz, 5260MHz, Port 2



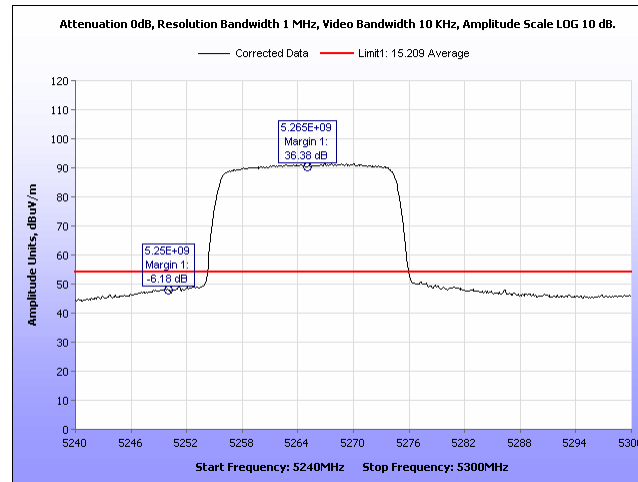
Plot 977. Radiated Band Edge, Average 3 Para, 10MHz, 5340MHz, Port 1



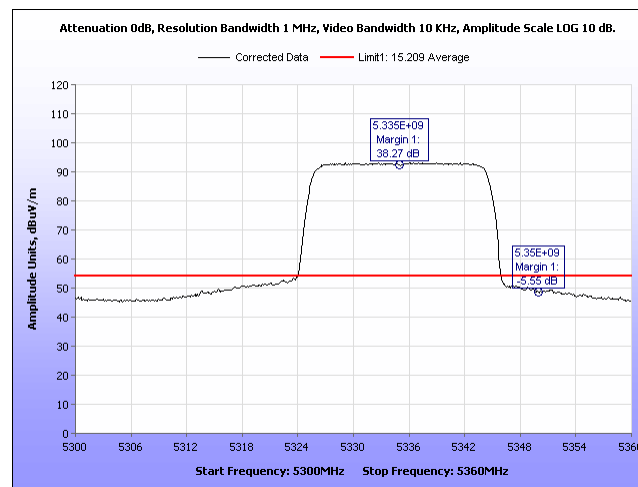
Plot 978. Radiated Band Edge, Average 3 Para, 10MHz, 5340MHz, Port 2



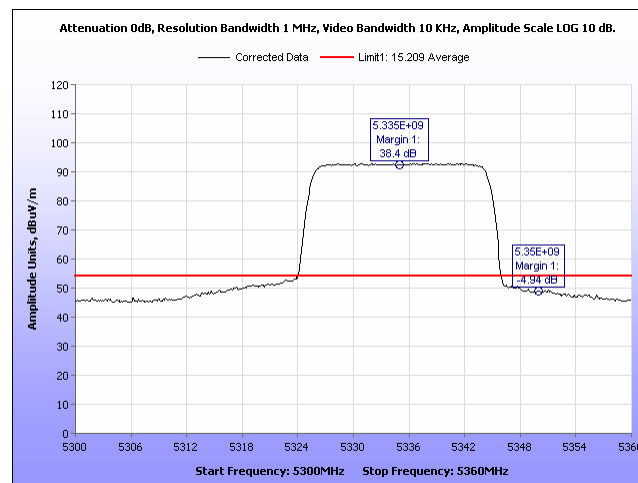
Plot 979. Radiated Band Edge, Average 3 Para, 20MHz, 5265MHz, Port 1



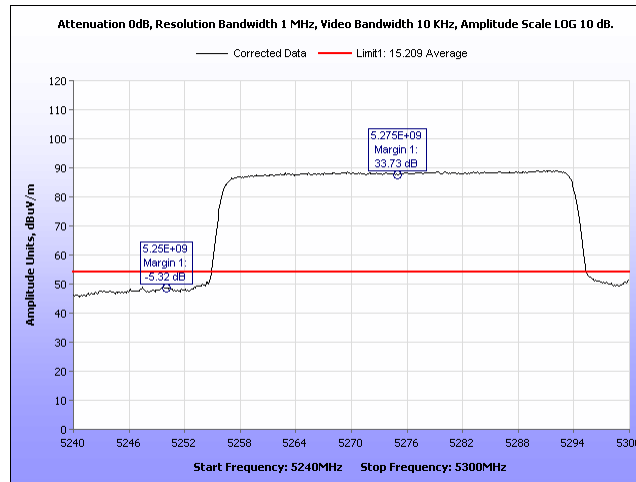
Plot 980. Radiated Band Edge, Average 3 Para, 20MHz, 5265MHz, Port 2



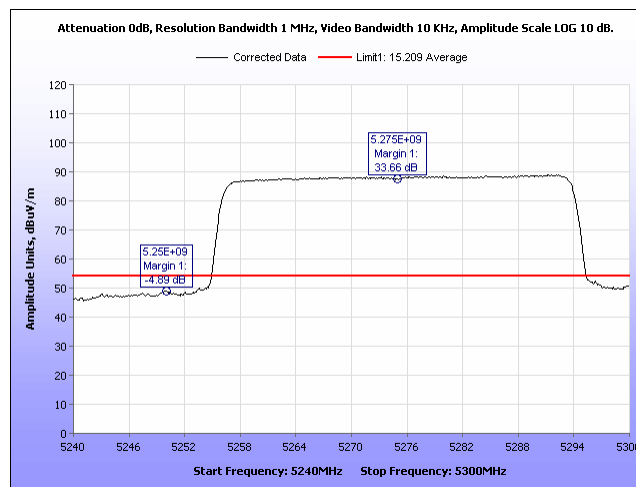
Plot 981. Radiated Band Edge, Average 3 Para, 20MHz, 5335MHz, Port 1



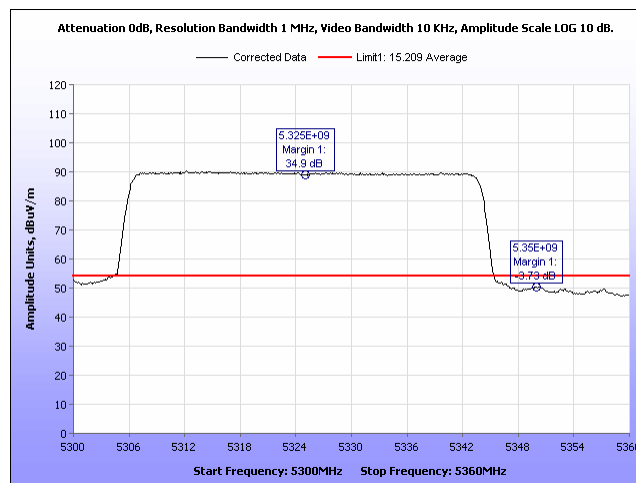
Plot 982. Radiated Band Edge, Average 3 Para, 20MHz, 5335MHz, Port 2



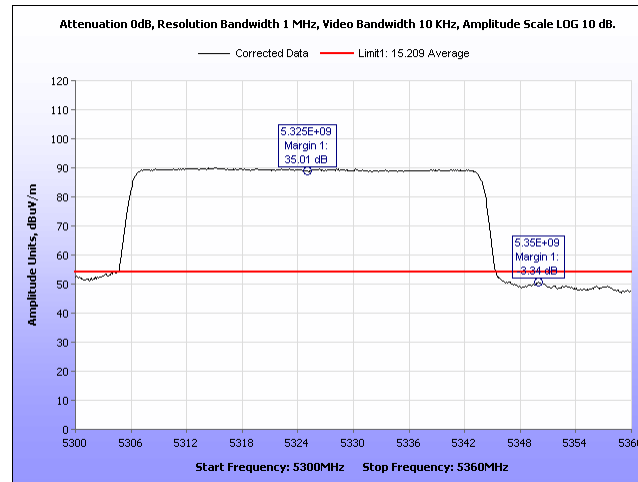
Plot 983. Radiated Band Edge, Average 3 Para, 40MHz, 5275MHz, Port 1



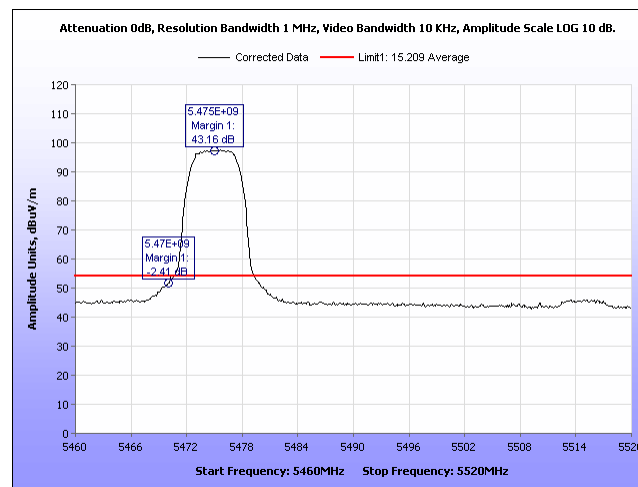
Plot 984. Radiated Band Edge, Average 3 Para, 40MHz, 5275MHz, Port 2



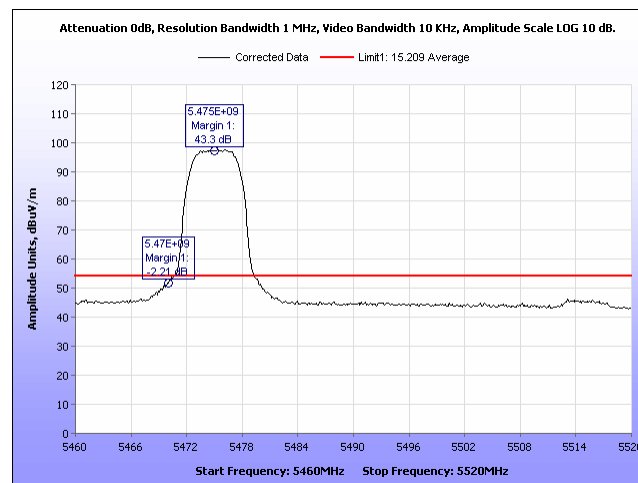
Plot 985. Radiated Band Edge, Average 3 Para, 40MHz, 5325MHz, Port 1



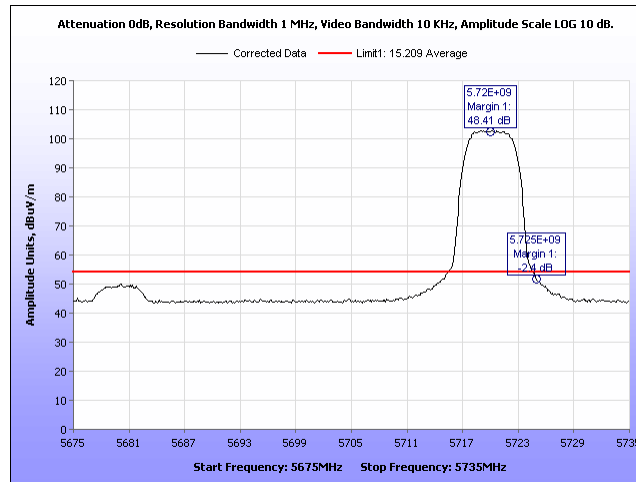
Plot 986. Radiated Band Edge, Average 3 Para, 40MHz, 5325MHz, Port 2



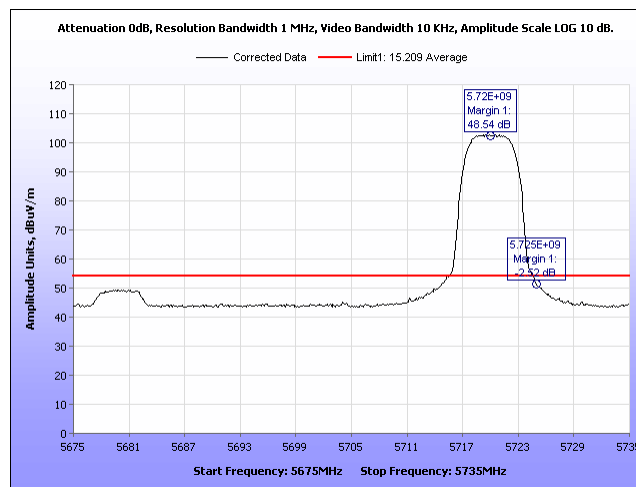
Plot 987. Radiated Band Edge, Average 3 Para, 5MHz, 5475MHz, Port 1



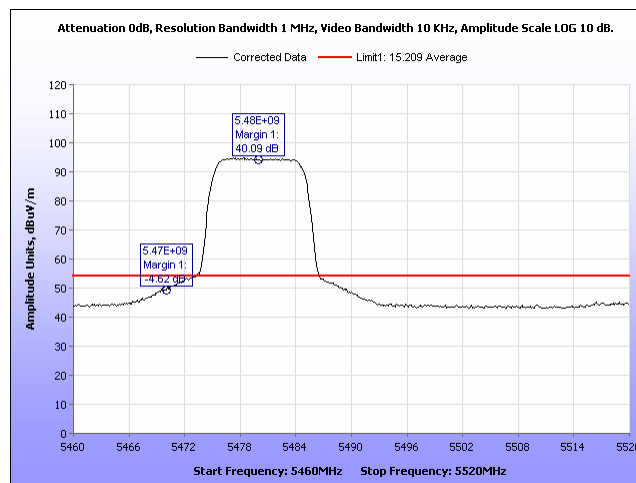
Plot 988. Radiated Band Edge, Average 3 Para, 5MHz, 5475MHz, Port 2



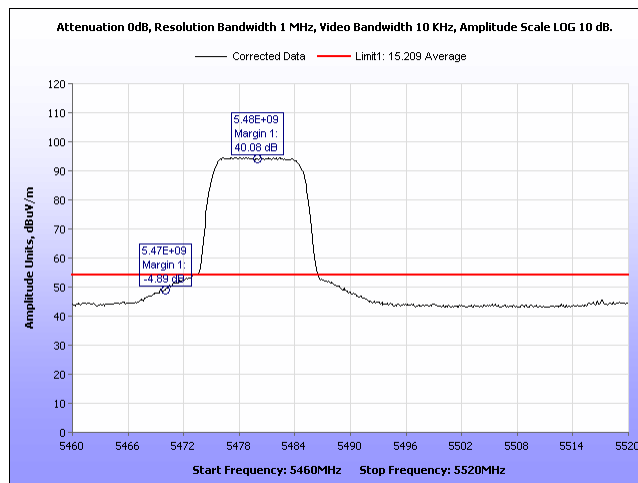
Plot 989. Radiated Band Edge, Average 3 Para, 5MHz, 5720MHz, Port 1



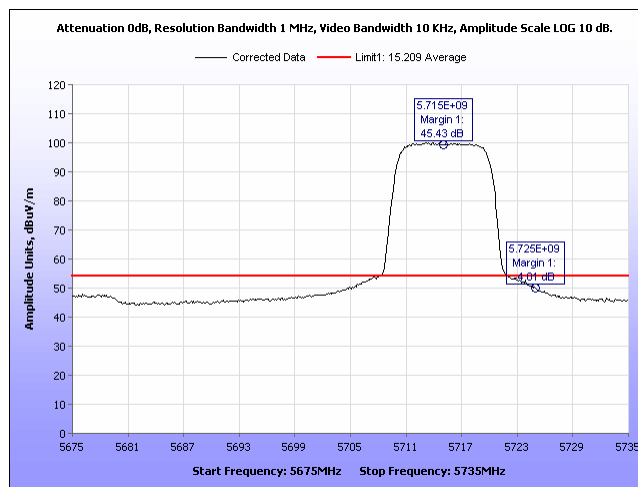
Plot 990. Radiated Band Edge, Average 3 Para, 5MHz, 5720MHz, Port 2



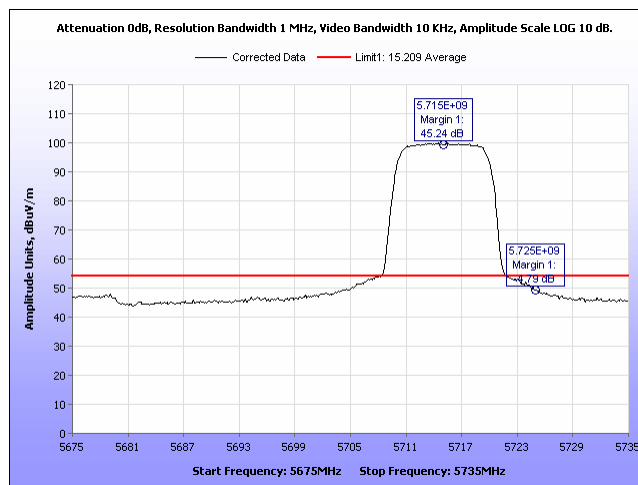
Plot 991. Radiated Band Edge, Average 3 Para, 10MHz, 5480MHz, Port 1



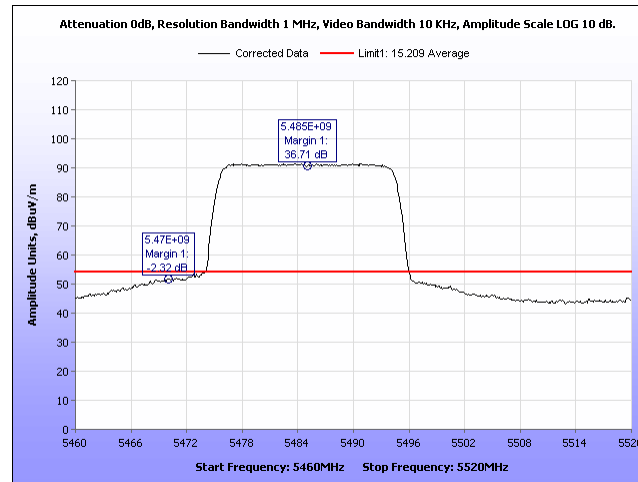
Plot 992. Radiated Band Edge, Average 3 Para, 10MHz, 5480MHz, Port 2



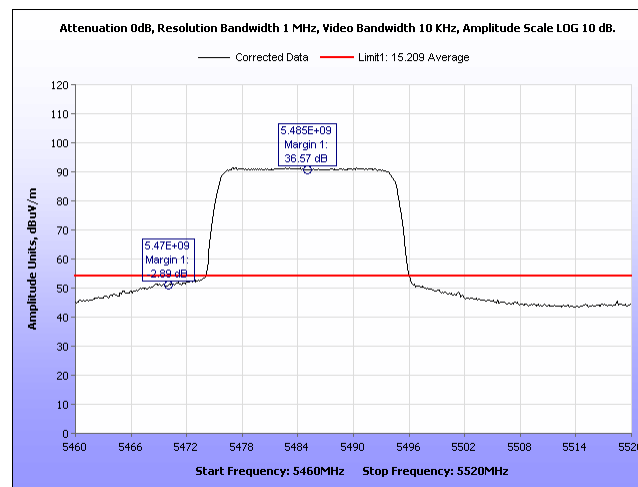
Plot 993. Radiated Band Edge, Average 3 Para, 10MHz, 5715MHz, Port 1



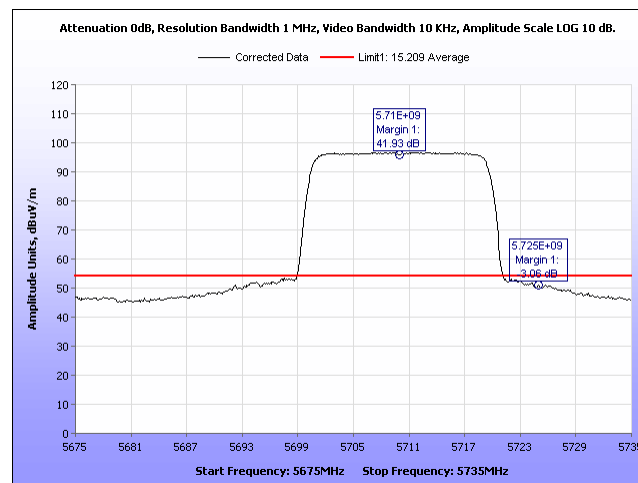
Plot 994. Radiated Band Edge, Average 3 Para, 10MHz, 5715MHz, Port 2



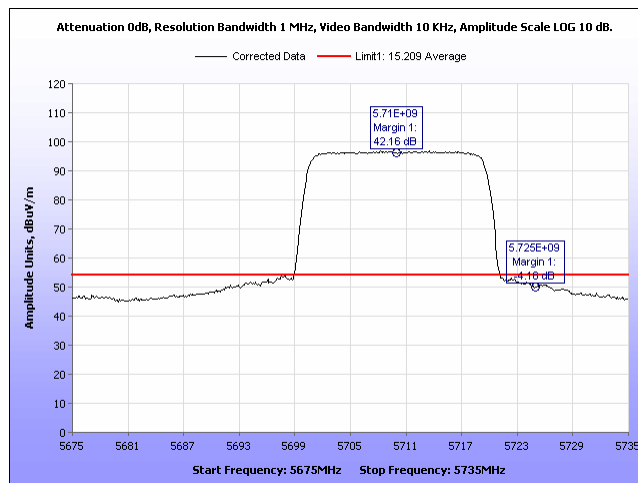
Plot 995. Radiated Band Edge, Average 3 Para, 20MHz, 5485MHz, Port 1



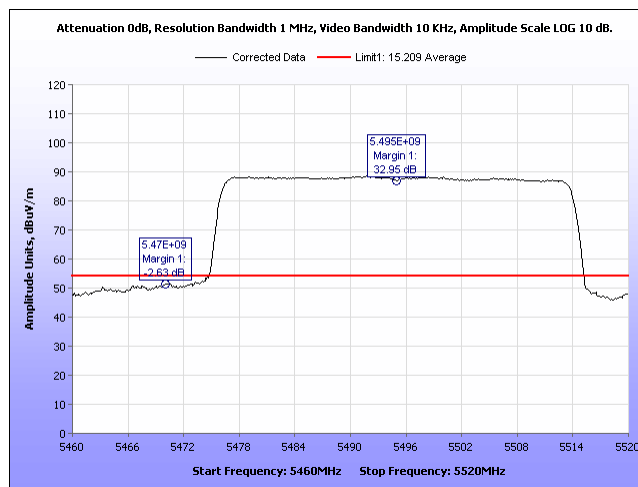
Plot 996. Radiated Band Edge, Average 3 Para, 20MHz, 5485MHz, Port 2



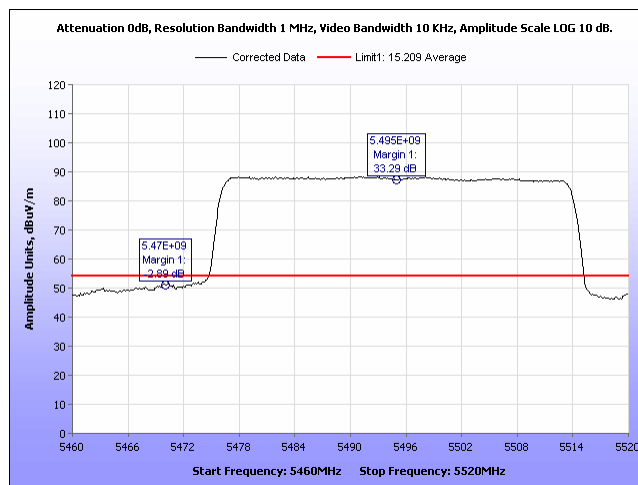
Plot 997. Radiated Band Edge, Average 3 Para, 20MHz, 5710MHz, Port 1



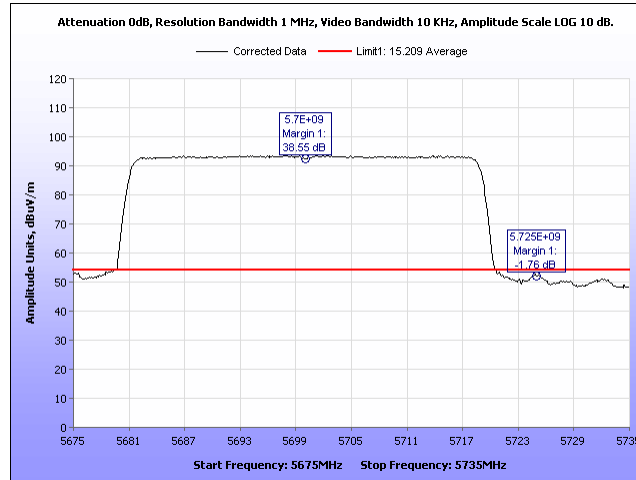
Plot 998. Radiated Band Edge, Average 3 Para, 20MHz, 5710MHz, Port 2



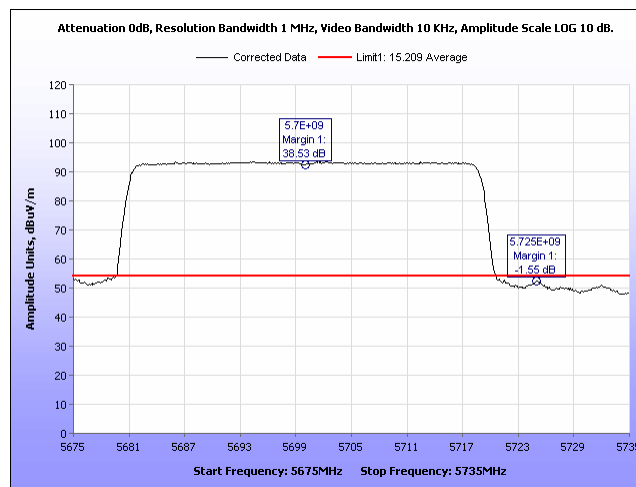
Plot 999. Radiated Band Edge, Average 3 Para, 40MHz, 5495MHz, Port 1



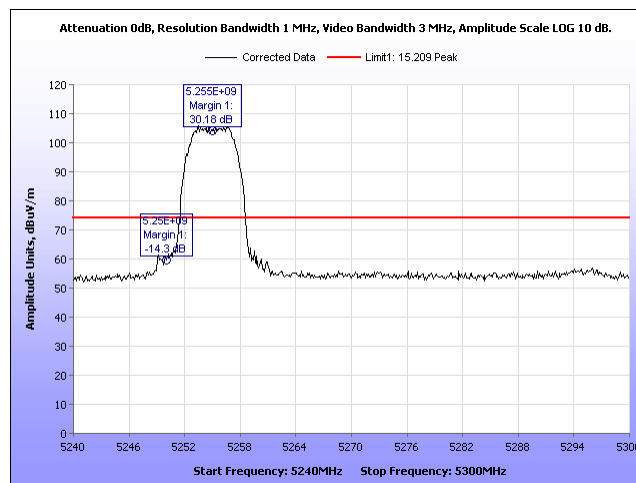
Plot 1000. Radiated Band Edge, Average 3 Para, 40MHz, 5495MHz, Port 2



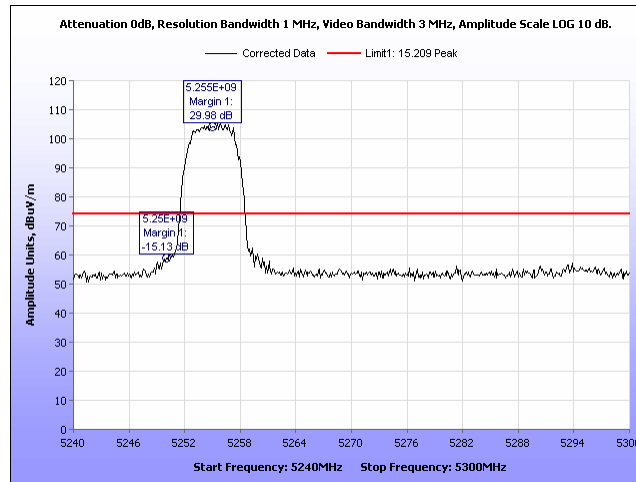
Plot 1001. Radiated Band Edge, Average 3 Para, 40MHz, 5700MHz, Port 1



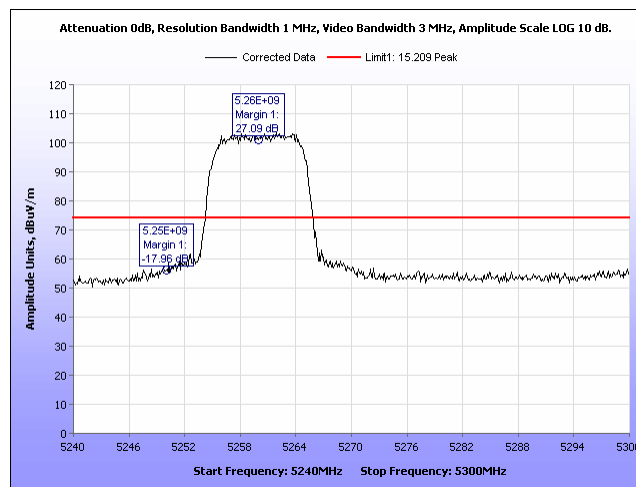
Plot 1002. Radiated Band Edge, Average 3 Para, 40MHz, 5700MHz, Port 2



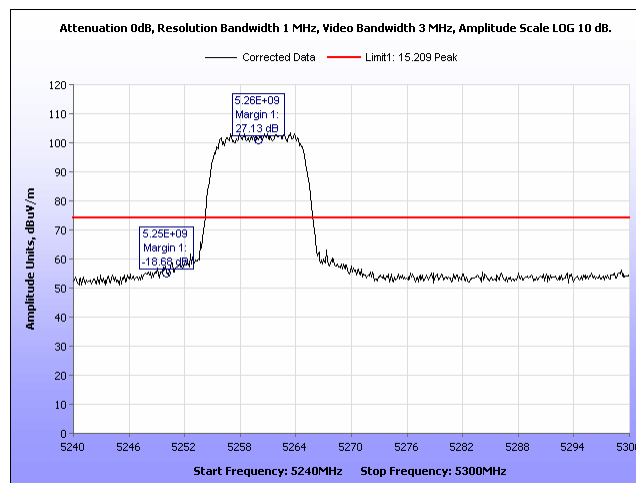
Plot 1003. Radiated Band Edge, Peak 3 Para, 5MHz, 5255MHz, Port 1



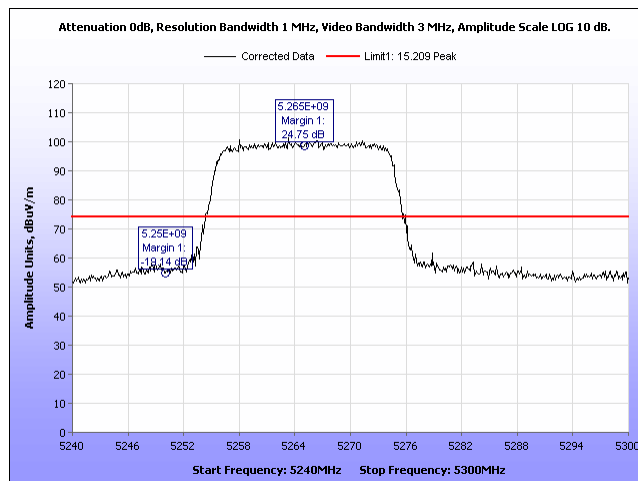
Plot 1004. Radiated Band Edge, Peak 3 Para, 5MHz, 5255MHz, Port 2



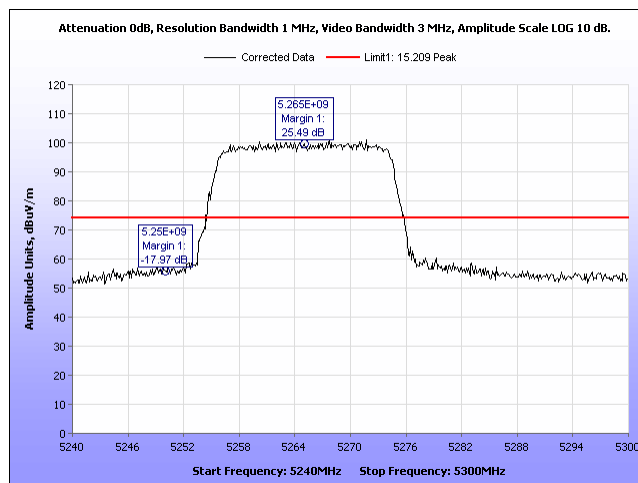
Plot 1005. Radiated Band Edge, Peak 3 Para, 10MHz, 5260MHz, Port 1



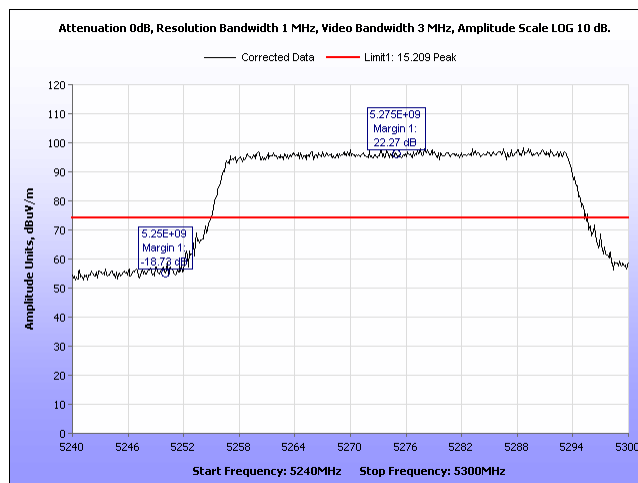
Plot 1006. Radiated Band Edge, Peak 3 Para, 10MHz, 5260MHz, Port 2



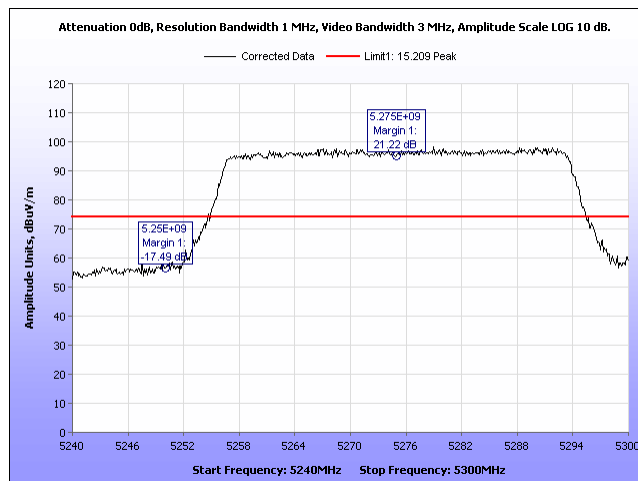
Plot 1007. Radiated Band Edge, Peak 3 Para, 20MHz, 5265MHz, Port 1



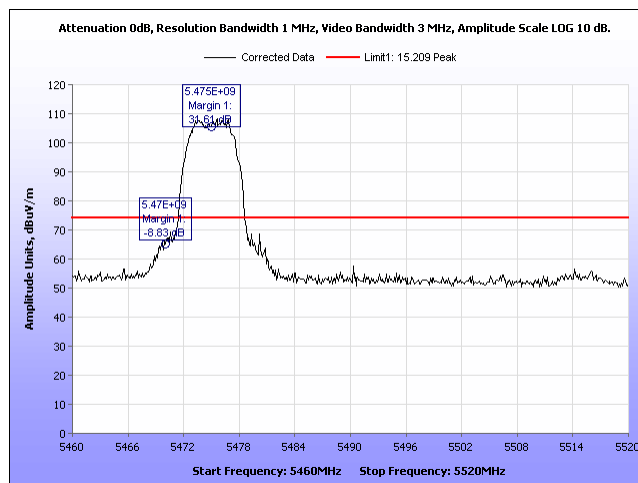
Plot 1008. Radiated Band Edge, Peak 3 Para, 20MHz, 5265MHz, Port 2



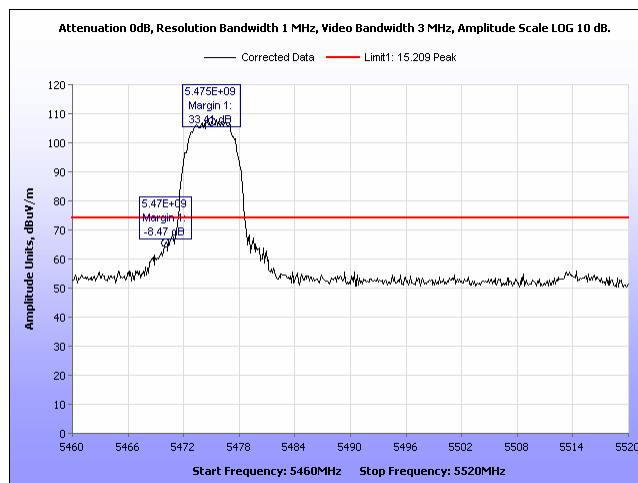
Plot 1009. Radiated Band Edge, Peak 3 Para, 40MHz, 5275MHz, Port 1



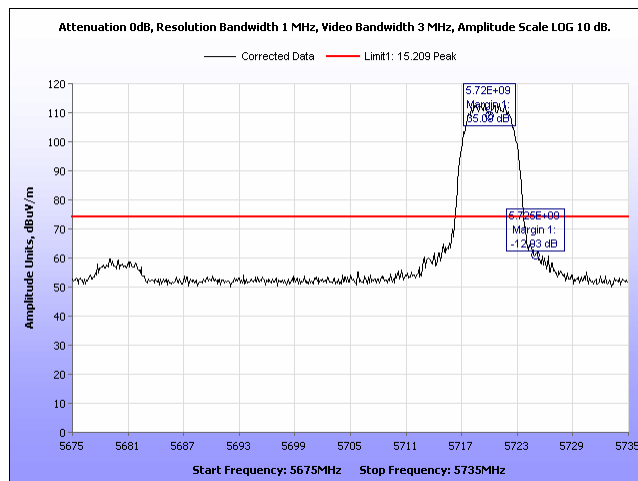
Plot 1010. Radiated Band Edge, Peak 3 Para, 40MHz, 5275MHz, Port 2



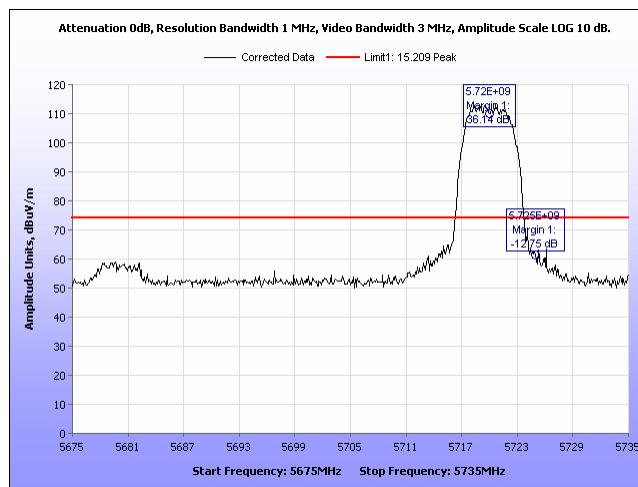
Plot 1011. Radiated Band Edge, Peak 3 Para, 5MHz, 5475MHz, Port 1



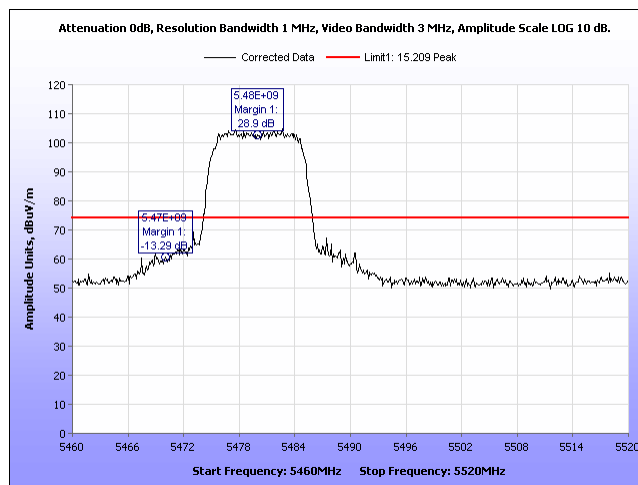
Plot 1012. Radiated Band Edge, Peak 3 Para, 5MHz, 5475MHz, Port 2



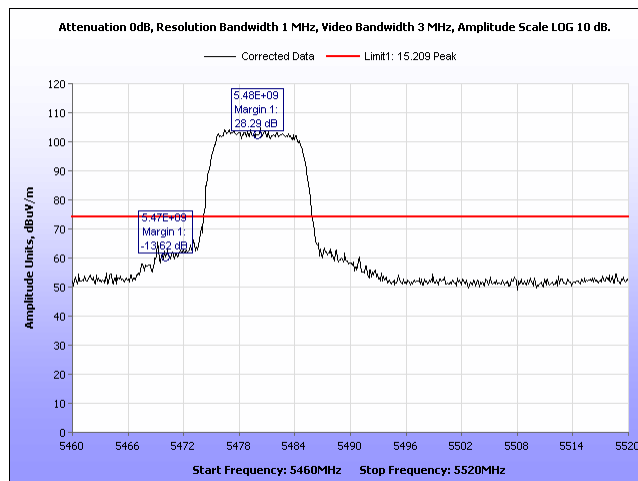
Plot 1013. Radiated Band Edge, Peak 3 Para, 5MHz, 5720MHz, Port 1



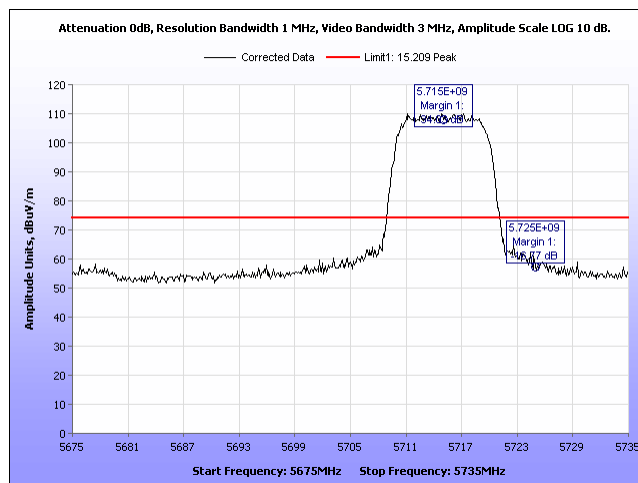
Plot 1014. Radiated Band Edge, Peak 3 Para, 5MHz, 5720MHz, Port 2



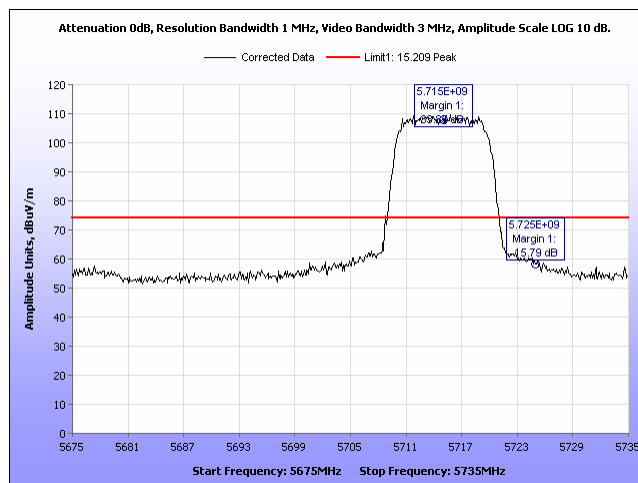
Plot 1015. Radiated Band Edge, Peak 3 Para, 10MHz, 5480MHz, Port 1



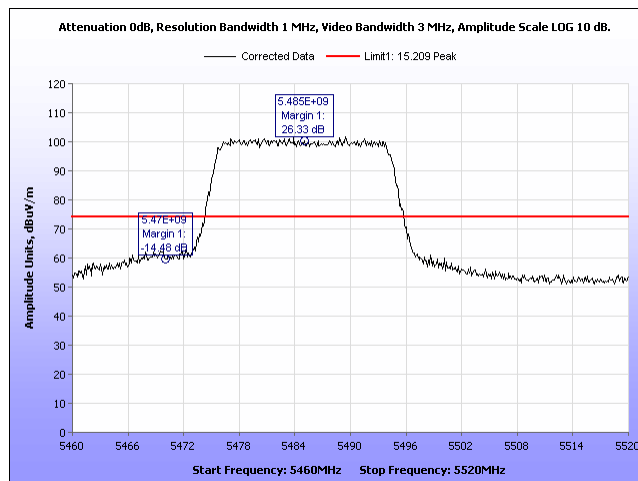
Plot 1016. Radiated Band Edge, Peak 3 Para, 10MHz, 5480MHz, Port 2



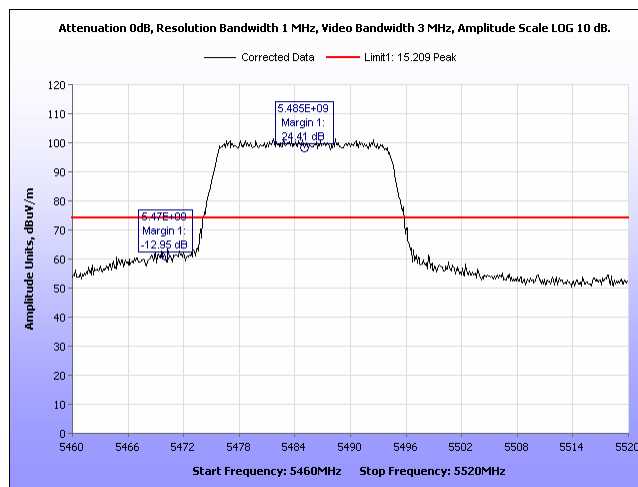
Plot 1017. Radiated Band Edge, Peak 3 Para, 10MHz, 5715MHz, Port 1



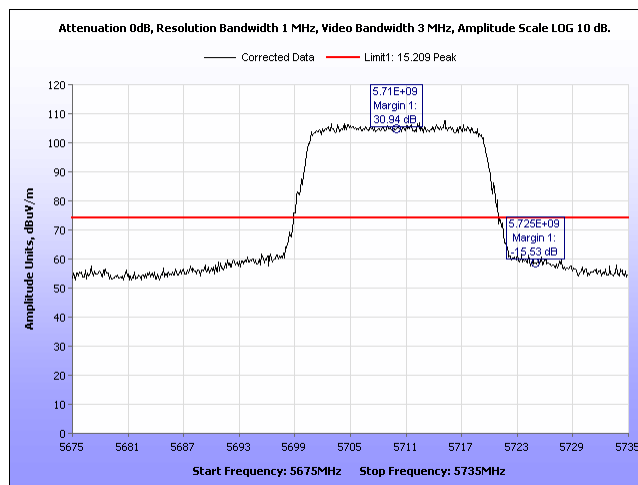
Plot 1018. Radiated Band Edge, Peak 3 Para, 10MHz, 5715MHz, Port 2



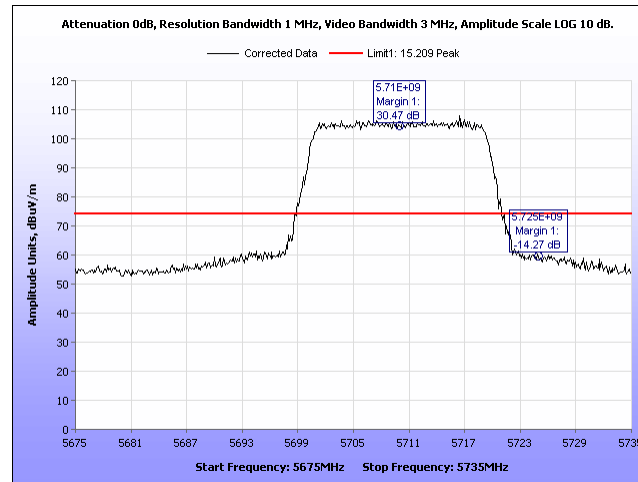
Plot 1019. Radiated Band Edge, Peak 3 Para, 20MHz, 5485MHz, Port 1



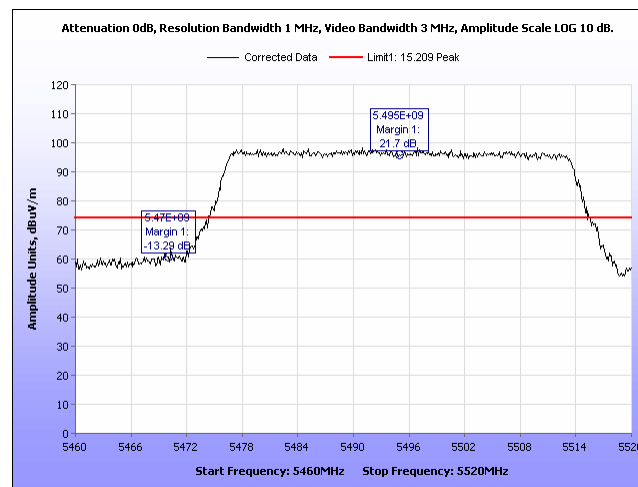
Plot 1020. Radiated Band Edge, Peak 3 Para, 20MHz, 5485MHz, Port 2



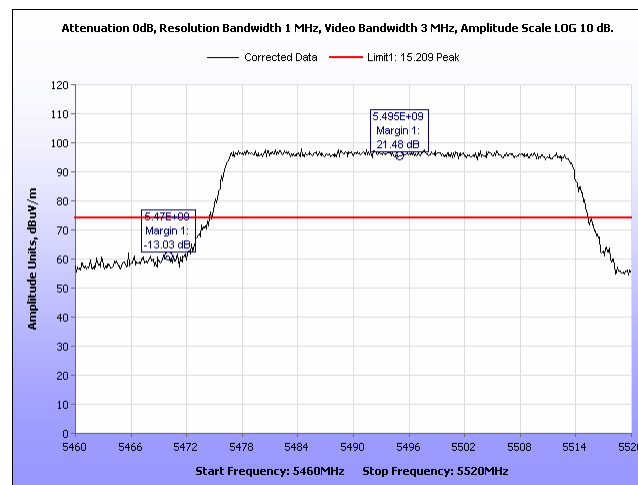
Plot 1021. Radiated Band Edge, Peak 3 Para, 20MHz, 5710MHz, Port 1



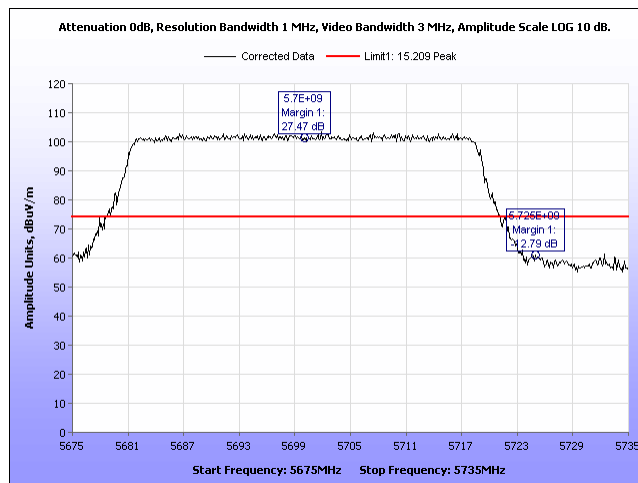
Plot 1022. Radiated Band Edge, Peak 3 Para, 20MHz, 5710MHz, Port 2



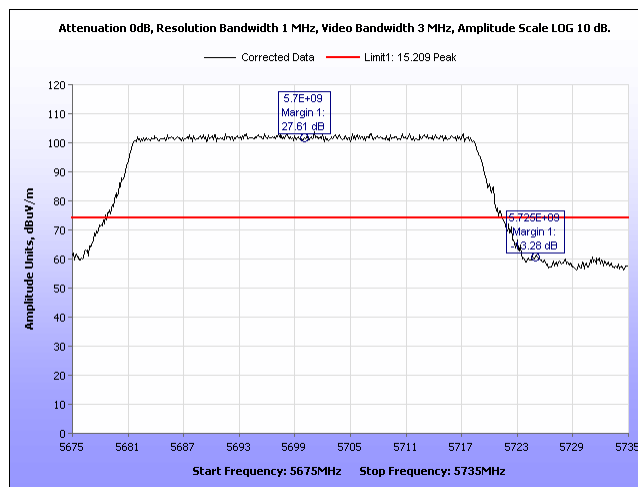
Plot 1023. Radiated Band Edge, Peak 3 Para, 40MHz, 5495MHz, Port 1



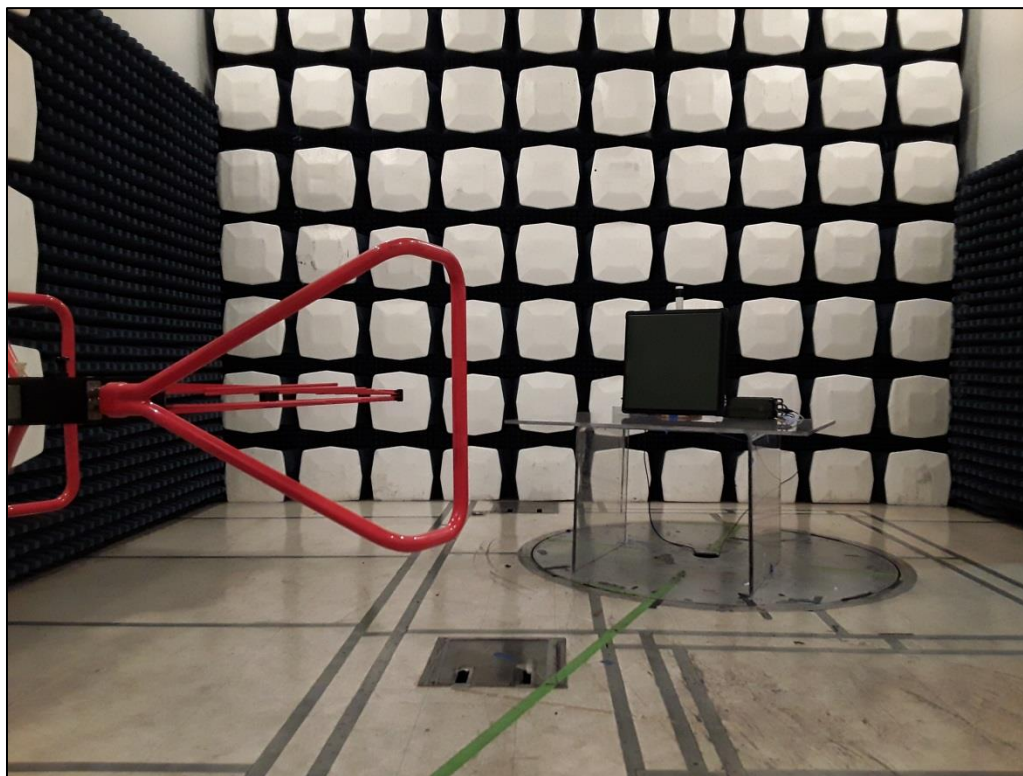
Plot 1024. Radiated Band Edge, Peak 3 Para, 40MHz, 5495MHz, Port 2



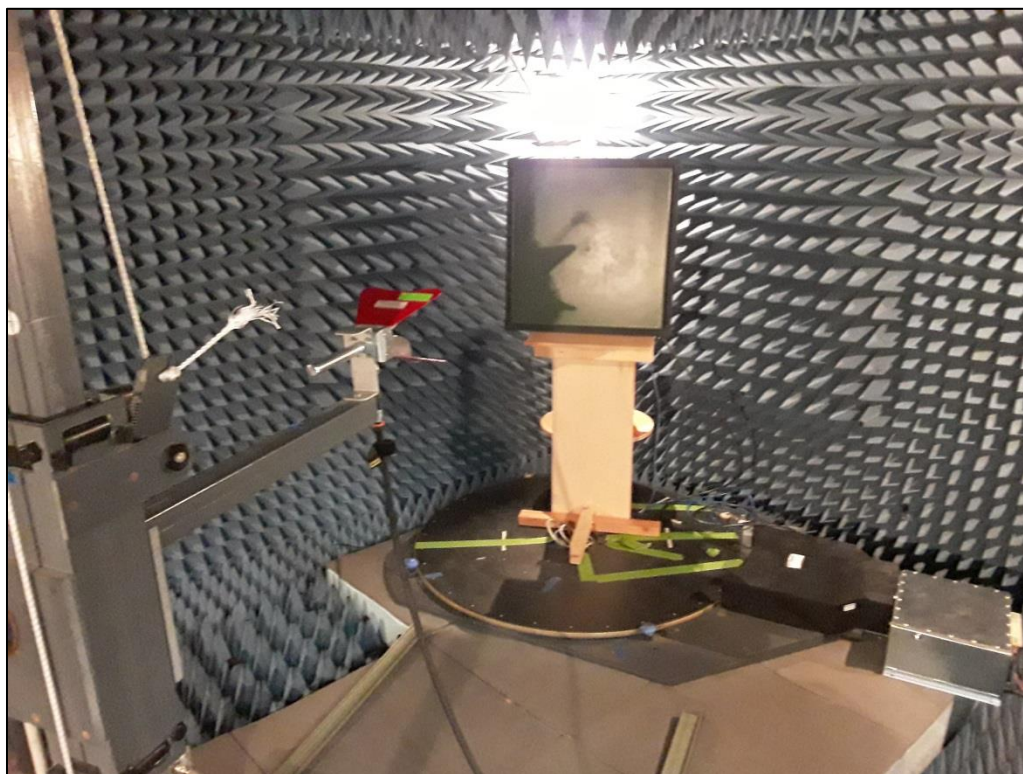
Plot 1025. Radiated Band Edge, Peak 3 Para, 40MHz, 5700MHz, Port 1



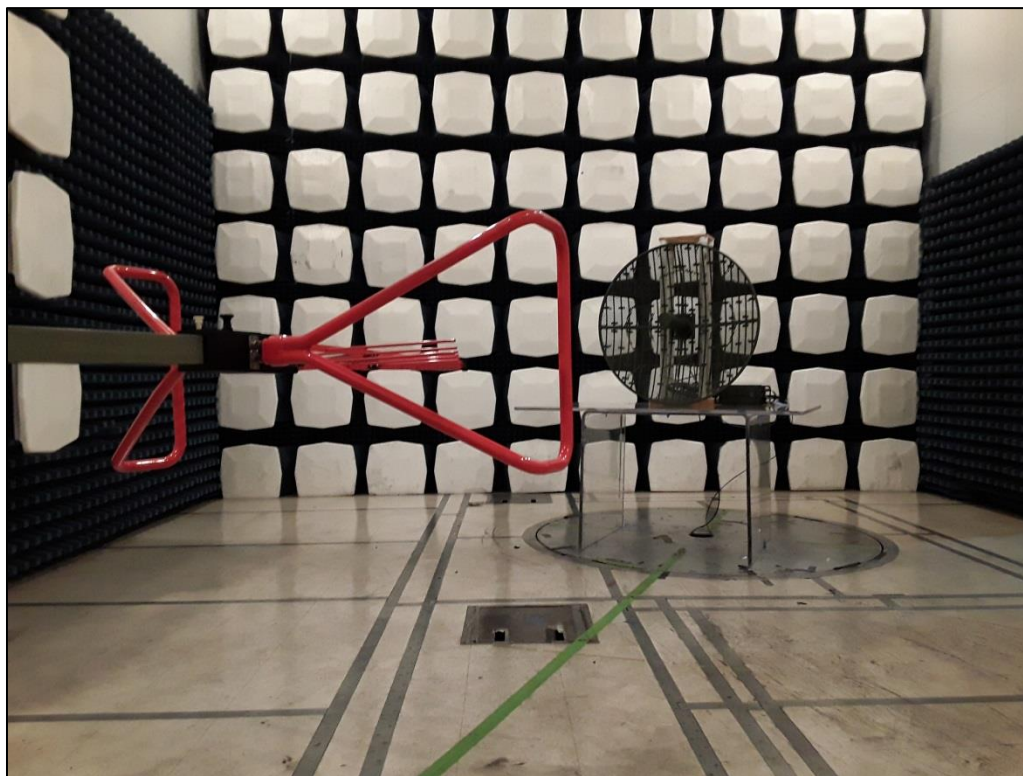
Plot 1026. Radiated Band Edge, Peak 3 Para, 40MHz, 5700MHz, Port 2



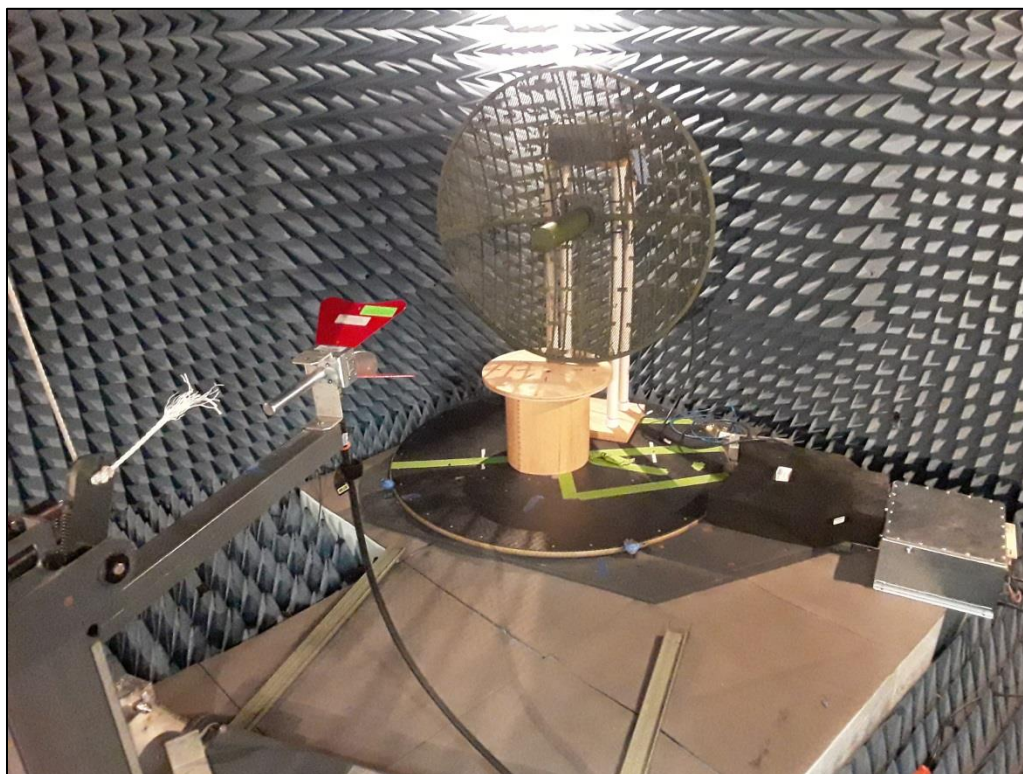
Photograph 1. Undesirable Emissions, 2' Panel below 1 GHz, Test Setup



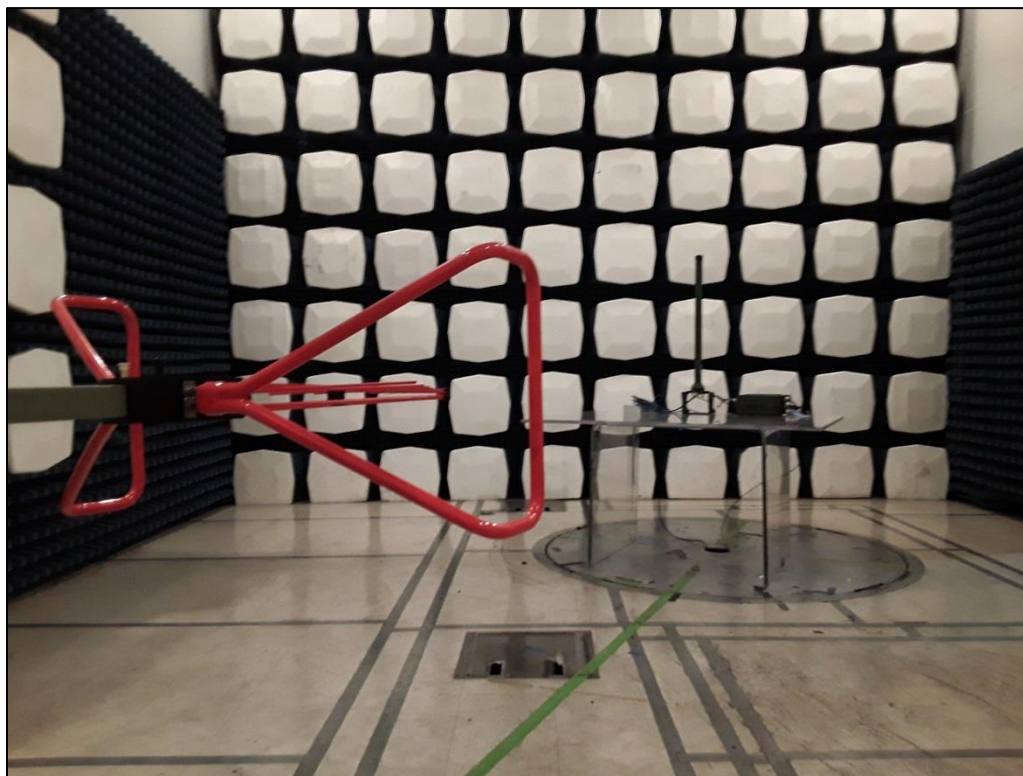
Photograph 2. Undesirable Emissions, 2' Panel above 1 GHz, Test Setup



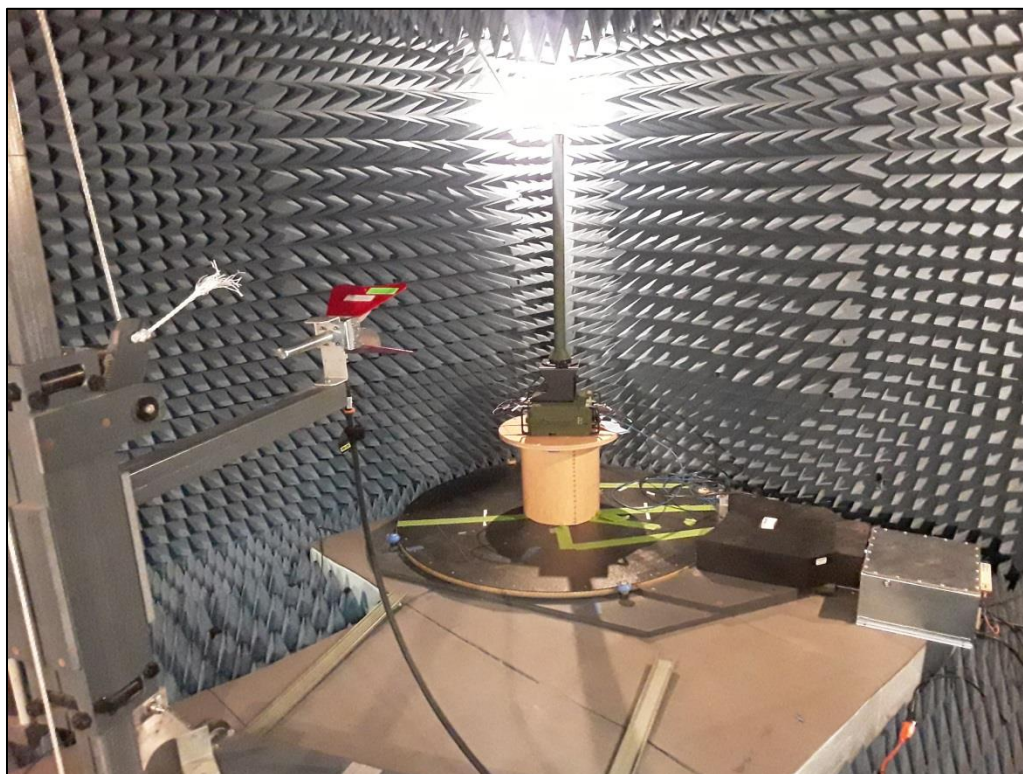
Photograph 3. Undesirable Emissions, Para below 1 GHz, Test Setup



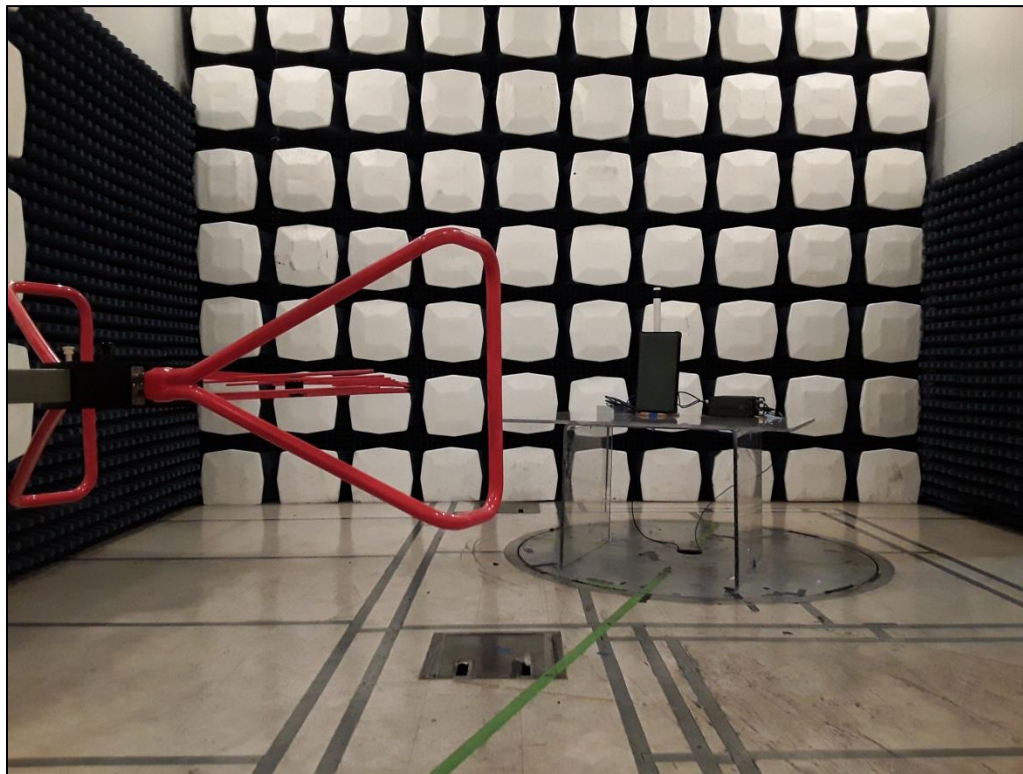
Photograph 4. Undesirable Emissions, Para above 1 GHz, Test Setup



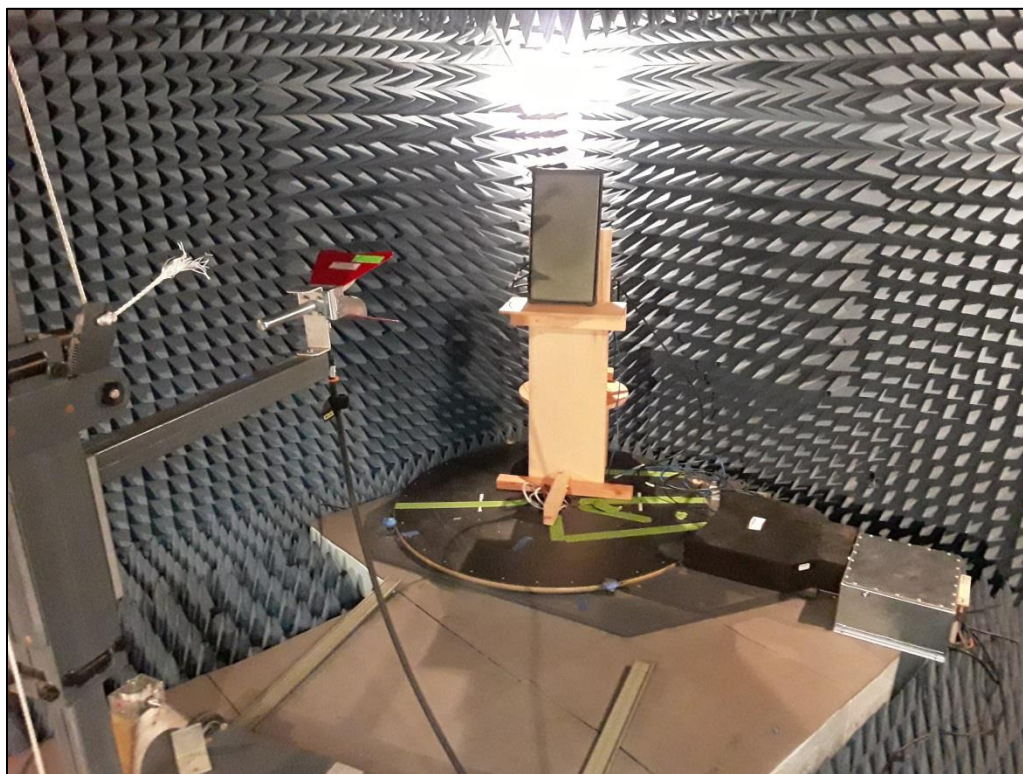
Photograph 5. Undesirable Emissions, 8 Omni below 1 GHz, Test Setup



Photograph 6. Undesirable Emissions, 8 Omni above 1 GHz, Test Setup



Photograph 7. Undesirable Emissions, 90 Sector below 1 GHz, Test Setup



Photograph 8. Undesirable Emissions, 90 Sector above 1 GHz, Test Setup

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 23. 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 is DC powered hence AC power conducted emissions were not applicable. .

Measured emissions were within applicable limits.

Test Engineer(s): Arsalan Hasan

Test Date(s): June 1, 2019

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**

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

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

For Antenna Gain → dBi = 10log(Numeric)

Test Results:

Frequency (MHz)	Conducted Power (dBm)	Conducted Power (mW)	Antenna Gain (dBi)	Antenna Gain (Numeric)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Margin	Distance (cm)	Result
5710	20.86	121.8989	8	6.309	0.1530	1	0.8469	20	Pass
5700	15.69	37.0680	13.5	22.387	0.1651	1	0.8348	20	Pass
5710	3.59	2.2855	26	398.107	0.1811	1	0.8188	20	Pass
5495	-0.88	0.8165	30	1000.000	0.1625	1	0.8374	20	Pass

Table 24: Maximum Permissible Exposure Calculations

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
1T4612	Spectrum Analyzer	Agilent Technologies	E4407B	03/30/2018	09/30/2019
1T4565	LISN (24 AMP)	Solar Electronics Company	9252-50-R-24-BNC	08/15/2019	08/15/2019
1T6658	Spectrum Analyzer	Agilent Technologies	E4407B	12/21/2018	12/21/2019
1T4771	PSA Spectrum Analyzer	Agilent Technologies	E4446A	8/10/2017	8/10/2019
1T4753	Antenna - Bilog	Sunol Sciences	JB6	10/24/2017	10/24/2019
1T4483	Antenna; Horn	ETS-Lindgren	3117	4/19/2017	10/19/2019
1T2665	Antenna; Horn	EMCO	3115	6/22/2018	12/22/2019
1T4442	Pre-amplifier, Microwave	Miteq	AFS42-01001800-30-10P	Func Verify	
1T4149	High-Frequency Anechoic Chamber	Ray Proof	81	Not Required	
1T4300	SEMI-ANECHOIC CHAMBER # 1 (NSA)	EMC TEST SYSTEMS	NONE	2/6/2018	2/6/2020

Table 25. 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

A. Certification Information

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

§ 2.801 Radio-frequency device defined.

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

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

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

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

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

Certification & User's Manual Information

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

§ 2.901 Basis and Purpose

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

§ 2.907 Certification.

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

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

Certification & User's Manual Information

§ 2.948 Description of measurement facilities.

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

Certification & User's Manual Information

Label and User's Manual Information

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

§ 15.19 Labeling requirements.

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

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

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

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

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

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

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

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

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

§ 15.21 Information to user.

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

Verification & User's Manual Information

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

§ 15.105 Information to the user.

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

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

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

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

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

End of Report