

EMC TEST REPORT	
TEST REPORT NUMBER	DBN 1604TEL544-B1
TEST REPORT DATE	10-Jun-2016
TEST REPORT VERSION	1.0
MANUFACTURER	Cambium Networks
PRODUCT NAME	ePMP2000
PRODUCT MODEL	C050900P031A
CONDITION OF EUT WHEN RECEIVED	GOOD and in proper working condition
ISSUED TO	Cambium Networks, 3800 Golf Road, Suite 360, Rolling Meadows, IL, USA 60008
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AMENDMENT HISTORY

Amendment Number	Amendment Date	Author of Amendment	Previous Report Version	Previous Report Date

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1 TEST REPORT SUMMARY

Applicant	Cambium Networks
Manufacturer	Cambium Networks
Product Name	ePMP2000
Product Model	C050900P031A
Product Serial Number	000456D18469
Date of Test	22 nd Jan 2016 to 30 th Mar 2016
Venue of Test	Tarang Lab

Applicable Standard	Description	Results
47 CFR Part 15 Feb 2016	§15.407 b (1)	PASS
	§15.407 b (6) - Transmitter Unwanted emission (Radiated)	
	§15.407 b (6) - Conducted emission	PASS

ePMP2000 was tested by Tarang Lab as per the standards that are listed in the table above. Based on the observations during the test and interpretations by Tarang lab, results have been indicated. The test results produced in this report shall apply only to the above sample that has been tested under the specific conditions and modes of testing as described in the report. Other similar equipment may not necessarily reproduce same result due to production tolerances and measurement uncertainties. Any measurement uncertainties listed in this report are for information purpose only.

The results shall stand invalid, in case there are any modifications / additions / removals to the hardware or software or end use atmosphere to the product tested. This report shall not be modified or in any way revised unless it is expressly permitted and endorsed by Tarang lab, through a duly authorized representative. Particulars on Manufacturer / Supplier / Product configuration / performance criteria, given in this report, are based on the information given by the customer, along with test request. Tarang does not assume any responsibility for the correctness of such information for the above mentioned equipment under test.

Customer acknowledges that this is a test report and not a certificate to gain market access for the product. To gain market access, Customer needs appropriate clearance from the Government or authorized agency for the target market. For markets that allow self-declaration, customer needs to follow the procedure defined by the target market.

Prepared by	Reviewed by	Approved by
		
Dikshit Raviteja	Narendra M	Satheesh I
EMI/EMC Test Engineer	Lead EMI/EMC Test Engineer	Technical Manager

2 GENERAL INFORMATION

2.1 ACCREDITATION DETAILS

Following are the accreditation and listing details for Tarang.

Accreditation / Listing body	Registration / Company / Certificate Number
NABL, India	Certificate No: T-1533, T-1534 http://www.nabl-india.org/
FCC (Federal Communications Commission)	Registration Number: 799247 http://www.fcc.gov/
IC (Industry Canada)	Company Number: 9023A-1 http://www.ic.gc.ca

2.2 MEASUREMENT UNCERTAINTY

The following measurement uncertainties are applicable to the relevant tests that are mentioned below:

Name of the test	Measurement Uncertainty
Radiated Emission from 30 MHz to 1 GHz at 3 meter	± 4.6687 dB
Radiated Emission from 1 GHz to 18 GHz at 3 meter	± 3.2297 dB
Radiated Emission from 18 GHz to 26.5 GHz at 3 meter	± 3.7832 dB
Radiated Emission from 26.5 GHz to 40 GHz at 3 meter	± 3.7962 dB
Conducted Emission from 150 kHz to 30 MHz	± 1.6160 dB

3 INSTRUMENTATION AND CALIBRATION

3.1 TEST AND MEASURING EQUIPMENT

The list of following measuring equipment used for this testing conforms to the applicable standards. Performance of all test and measuring equipment including any accessories are checked periodically to ensure accuracy.

3.2 EQUIPMENTS USED

Name of Equipment	Manufacturer	Model No	Serial No	Calibration Due
EMI Test Receiver	R&S	ESU8	100324	11 th Jul 2016 & 09 th Mar 2017
EMI Test Receiver	R&S	ESIB40	100306	04 th Jul 2016 & 21 st Jan 2017
Active Loop Antenna	ETS-Lindgren	6507	00104711	05 th Aug 2016
Bi conical Antenna	SME	VHBB-9124	9124-374	06 th Apr 2016
Log- periodic Antenna	SME	VUSLP-9111	9111-308	06 th Apr 2016
Preamplifier	Rohde & Schwarz	SCU-01	100626	30 th Oct 2016
Double Ridge Horn Antenna	SME	BBHA 9120D	9120D-687	11 th Apr 2016
Preamplifier	TDK	PA-02	100008	14 th Apr 2016
Broad Band Horn Antenna	Schwarz beck	BBHA9170	9170-337	29 th Oct 2016
Broad Band Horn Antenna	Schwarz beck	BBHA9170	9170-344	29 th Oct 2016
Pre-Amplifier	TDK	PA-02-3	2007332	28 th Oct 2016
Pre-Amplifier	TDK	PA-02-2	2007331	28 th Oct 2016
Tunable Band reject / Notch filter	Wainwright Instruments GmbH	WTRCJV8-5150-5850-40-160-50SSK	01	NA

Table 1: List of Equipment used for Radiated Emissions Test

Name of Equipment	Manufacturer	Model No	Serial No	Calibration Due
EMI Test Receiver	R&S	ESIB40	100306	04 th Jul 2016 & 21 st Jan 2017
Pulse Limiter	R&S	ESH3-Z2	101260	03 rd Mar 2017
LISN	Schwarzback	NSLK 8128	243	11 th Sep 2016

Table 2: List of Equipment used for Conducted Emissions Test

4 PRODUCT INFORMATION

4.1 DESCRIPTION OF THE PRODUCT

EUT is a point to point & point to multipoint fixed outdoor Transceiver with the following defined channels.

40 MHz channel for 17 dBi and 6 dBi antenna	5 MHz channel for 17 dBi and 6 dBi antenna
Low – 5180 MHz	Low – 5155 MHz
Mid - 5200 MHz	Mid – 5200 MHz
High - 5220 MHz	High – 5245 MHz

Product	ePMP2000
Model Number	C050900P031A
Serial Number	000456D18469
Product Category / Type of Equipment	TELECOM
EUT Operating Voltage	120 V AC / 230 V AC
EUT Operating frequency range	60 Hz / 50 Hz
Max EUT Operating Current	< 1 A

Table 3: EUT details

Cable No.	Cable Name	Cable Length	Power / Interconnection cable	Shielded / Unshielded
Cable - 1	Power cable	0.8 meter	Power	Unshielded
Cable - 2	Ethernet Cable	1.5 meter	Interconnection	Unshielded
Cable - 3	Ethernet Cable	3.05 meter	Interconnection	Unshielded

Table 4: List of cables

4.2 SOFTWARE AND FIRMWARE DETAILS

Atheros Radio Test 2 (ART2-GUI) Version 2.3

5 TEST DETAILS

5.1 PRODUCT AND TEST SETUP

5.1.1 PRODUCT CONFIGURATION

The EUT was powered through AC power supply (120 V AC / 60 Hz). The EUT was connected to Ethernet switch by using RJ45 cable. Figure 1 shows the product configuration during the tests. POE module was used during the test to power ON the EUT.

The 5.8 GHz ePMP Integrated Radio was configured with test software and configured to have the following settings during the course of testing:

- 40MHz modulation bandwidth for low, mid & high channels
 - Rate - HT40,
 - 54 Mbps OFDM, MCS15 / 270 Mbps
 - Tx Power is 11 dBm Tx99 for 17 dBi antenna configuration-Low channel
 - Tx Power is 18 dBm Tx100 for 17 dBi antenna configuration-Mid channel
 - Tx Power is 11 dBm Tx99 for 17 dBi antenna configuration-High channel
 - Tx Power is 20 dBm Tx99 for 6 dBi antenna configuration-Low channel
 - Tx Power is 17.5 dBm Tx100 for 6 dBi antenna configuration-Mid channel
 - Tx Power is 22.5 dBm Tx100 for 6 dBi antenna configuration-High channel
- 5 MHz modulation bandwidth for low, mid & high channels
 - Rate – Legacy,
 - 54 Mbps OFDM, MCS15 / 130 Mbps
 - Tx Power is 12.5 dBm Tx99 for 17 dBi antenna configuration-Low channel
 - Tx Power is 14 dBm Tx99 for 17 dBi antenna configuration-Mid channel
 - Tx Power is 11.5 dBm Tx99 for 17 dBi antenna configuration-High channel
 - Tx Power is 22 dBm Tx99 for 6 dBi antenna configuration-Low channel
 - Tx Power is 24 dBm Tx99 for 6 dBi antenna configuration-Mid channel
 - Tx Power is 22 dBm Tx99 for 6 dBi antenna configuration-High channel

The unit was continuously monitored for transmission using an auxiliary antenna during the radiated tests.

5.1.2 TEST SETUP DETAILS

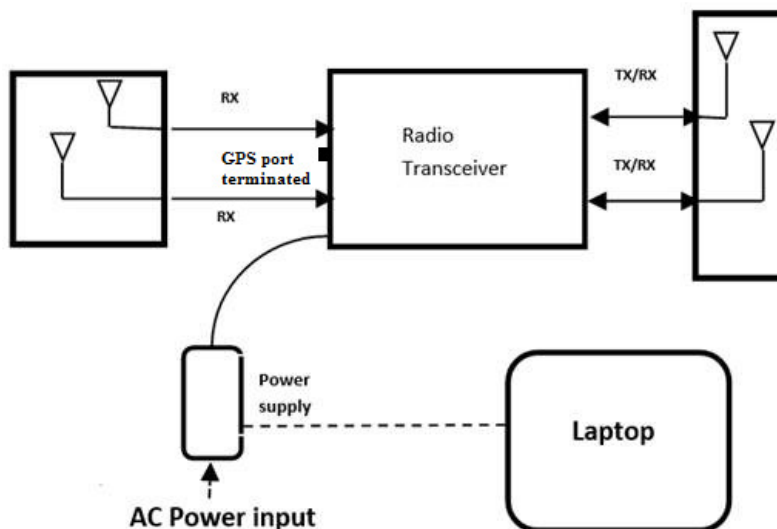


Figure 1: Block diagram of the EUT test setup

5.1.3 ACCESSORIES

Name of the Equipment	Manufacturer	Model Number	Serial Number
17dBi Antenna Beam steer- Rx	Cambium Networks	C050900D020A	NA
17dBi Antenna sector- Tx	Cambium Networks	C050900D021A	NA
Power Supply	Cambium Networks	NET P30 56	031-326-6719
6dBI Antenna	Cambium Networks	C005095D360A	NA
Switching Power Supply Gigabit Compatible	Cambium Networks	NET-P30-56	N000000L034A

5.2 APPLICABLE TEST

Applicable Standard	Description	Test level / Test Voltage	Applicability
47 CFR Part 15, Feb 2016	Transmitter unwanted emission (Radiated)	9 kHz - 40 GHz	Enclosure
	Conducted Emission	150 kHz - 30 MHz	Power Port

5.3 TEST RESULT

5.3.1 TRANSMITTER UNWANTED EMISSION (RADIATED)

5.3.1.1 TEST SPECIFICATION

Test Standard	47 CFR, Part 15 Feb 2016			
Test Procedure	ANSI C63.10-2013			
Class	Class B			
Frequency Range	9 kHz - 150 kHz	150 kHz - 30 MHz	30 MHz - 1 GHz	1 GHz - 40 GHz
Resolution Bandwidth	200 Hz	9 kHz	120 kHz	1 MHz
Video Bandwidth	3 kHz	30 kHz	300 kHz	3 MHz
Step size	400 Hz	4 kHz	40 kHz	400 kHz
Pre Scan Measurement Time	50 ms	50 ms	20 ms	5 ms
Final Measurement Time	1 second	1 second	1 second	1 second
Attenuation	5 dB	5 dB	10 dB	5 dB
Test Distance	3 meter	3 meter	3 meter	3 meter
Polarization	Parallel and Perpendicular	Parallel and Perpendicular	H & V	H & V
Detector	Quasi Peak, Peak & Average			
Input Voltage	120 V AC			
Input Frequency	60 Hz			
Temperature	22.1 °C to 24.0 °C			
Humidity	50.0 % to 58.2 %			
Tested By	Suresh G.N. / Nishanth / Raviteja			
Test Date	22 nd Jan 2016 to 10 th Feb 2016			

5.3.1.2 LIMITS

Standard	Reference section	Frequency range	Limit (dBμV/m)
47 CFR, Part 15 Feb 2016	§15.407 b (1) §15.407 b (6)	Outside 5150-5250 MHz	79.99

Table 5: Unwanted emission Limit

Standard	Reference section	Frequency range	Limit (dBμV/m)
47 CFR, Part 15 Feb 2016	§15.209	9 kHz to 490 kHz 490 kHz to 1.705 MHz 1.705 MHz to 30 MHz	128.5194 to 93.8003* 73.8003 to 62.9697* 69.5429

Table 6: General Field strength limit below 30 MHz

*Note: * Decreases with the logarithm of the frequency*

Standard	Reference section	Frequency range	Limit (dB μ V/m)
47 CFR, Part 15 Feb 2016	§15.209	30 MHz to 88 MHz	40
		88 MHz to 216 MHz	43.52
		216 MHz to 960 MHz	46.02
		960 MHz to 40 GHz	53.98

Table 7: General Field strength limit above 30MHz

5.3.1.3 TEST SETUP

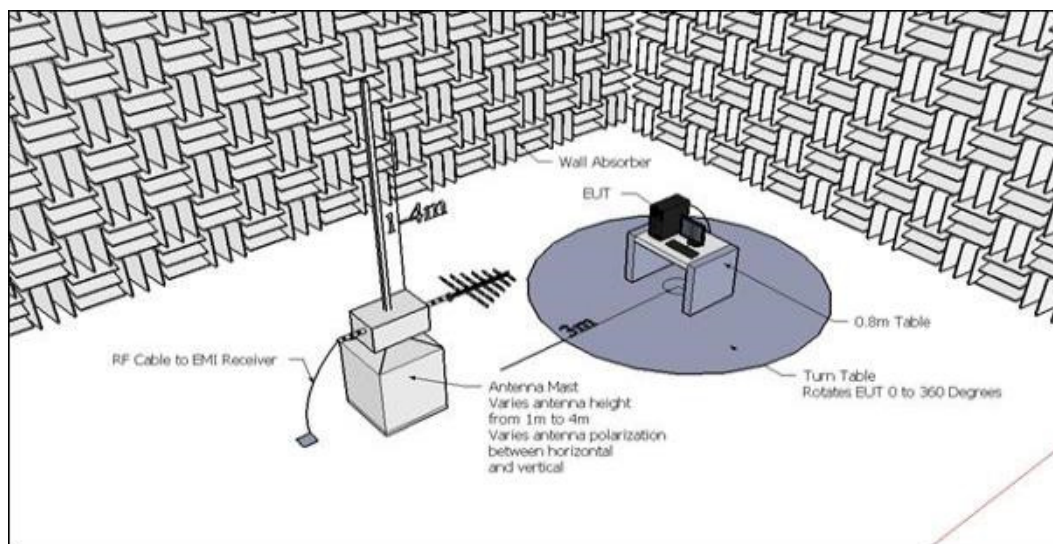


Figure 2: Sample Radiated Emission test setup

5.3.1.4 TEST PROCEDURE

The test procedure is in accordance with ANSI C63.10. The Radiated Emission test was performed inside a Shielded Semi-Anechoic chamber. The EUT was placed on 0.8 m height table for the measurements below 1 GHz and on 1.5 meter height table for the measurements above 1 GHz as per ANSI C63.10. The test setup was placed on a rotating turn table to enable 0 to 360 degree rotation.

The EUT was placed 3 meter away from the receiving antenna for the radiated emission measurement in the frequency range 30 MHz to 1 GHz. The receiving antenna was mounted on an antenna mast to enable height variation from 1meter to 4 meter above the ground plane.

The radiated emission measurement test system was configured through software as per standard. Pre-scan (Peak) was taken at different angles of EUT at 22.5 degree step, by rotating the turn table from 0 to 360 degree and by varying the antenna height from 1 to 4 meter in both vertical and horizontal polarization. The measurement was carried out in max hold mode and maximum amplitude of radiated emissions from the EUT was plotted in Graph. The predominant peaks at various frequencies, closer to limit line were identified using peak search option and listed. The Quasi-peak & Average measurement were carried out for the listed frequencies and compared with the limit specified in standard.

For Radiated Emission measurement from 1 GHz to 40 GHz the EUT was placed 3 meter away from the receiving antenna. The receiving antenna's height was fixed to 1 meter for the pre-scan measurement. Pre-scan (Peak) was taken at different angles of EUT at 22.5 degree step, by rotating the turn table from 0 to 360 degree in both vertical and horizontal polarization. The measurement was carried out in max hold mode and maximum amplitude of radiated emissions from the EUT was plotted in Graph. The predominant peaks at various frequencies, closer to limit line were identified using peak search option and listed. Average measurement were carried out for the listed frequencies and compared with the limit specified in standard.

5.3.1.5 MEASUREMENT GRAPHS / DATA

5.3.1.5.1 40 MHz MODULATION BANDWIDTH, 17 dBi ANTENNA, LOW CHANNEL - 5180 MHz

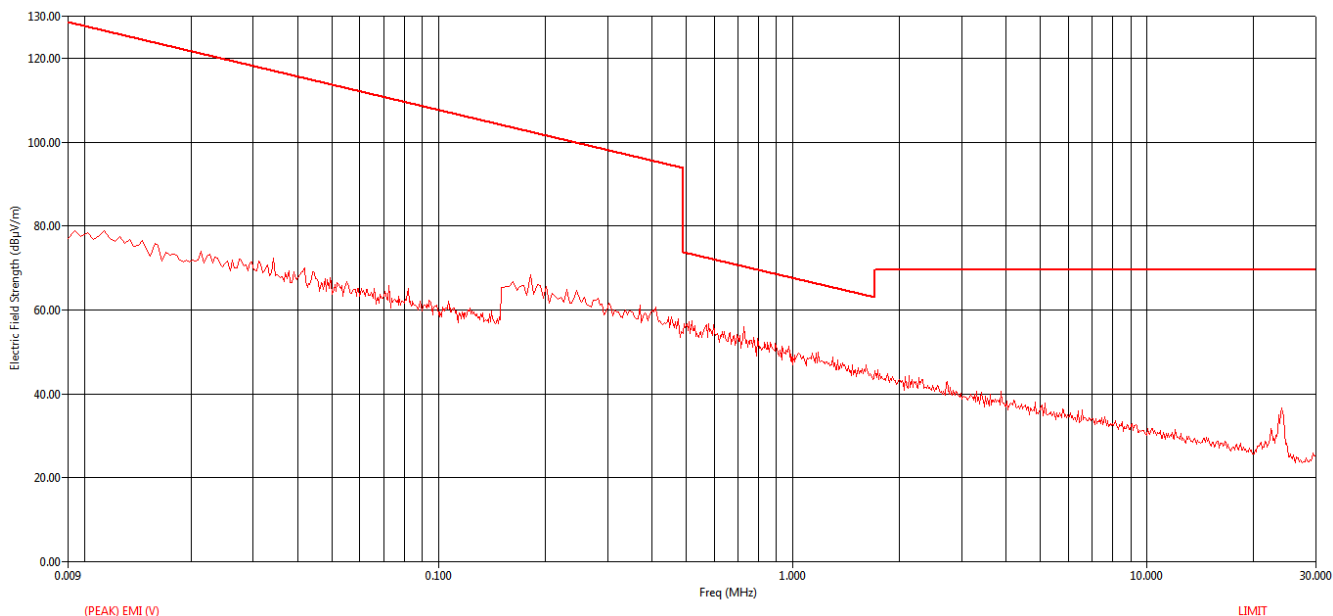


Figure 3: 40MHz, 17dBi, Low Channel: Peak RE Graph - 9kHz to 30MHz - Parallel

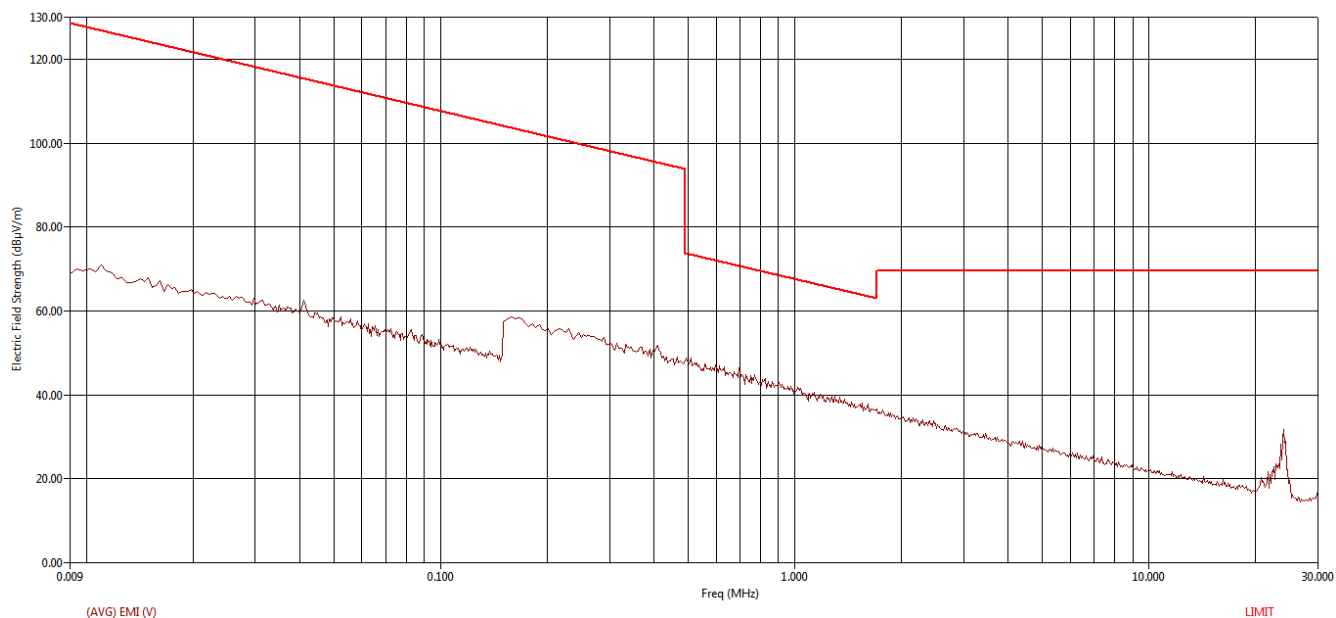


Figure 4: 40MHz, 17dBi, Low Channel: Average RE Graph - 9kHz to 30MHz - Parallel

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbi Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
24.09	24.09	191.00	16.95	1.06	16.17	34.18	69.54	-35.36
24.35	24.35	179.90	15.37	1.07	16.15	32.58	69.54	-36.96

Table 8: 40MHz, 17dBi, Low Channel: Quasipeak table from 9 kHz to 30 MHz

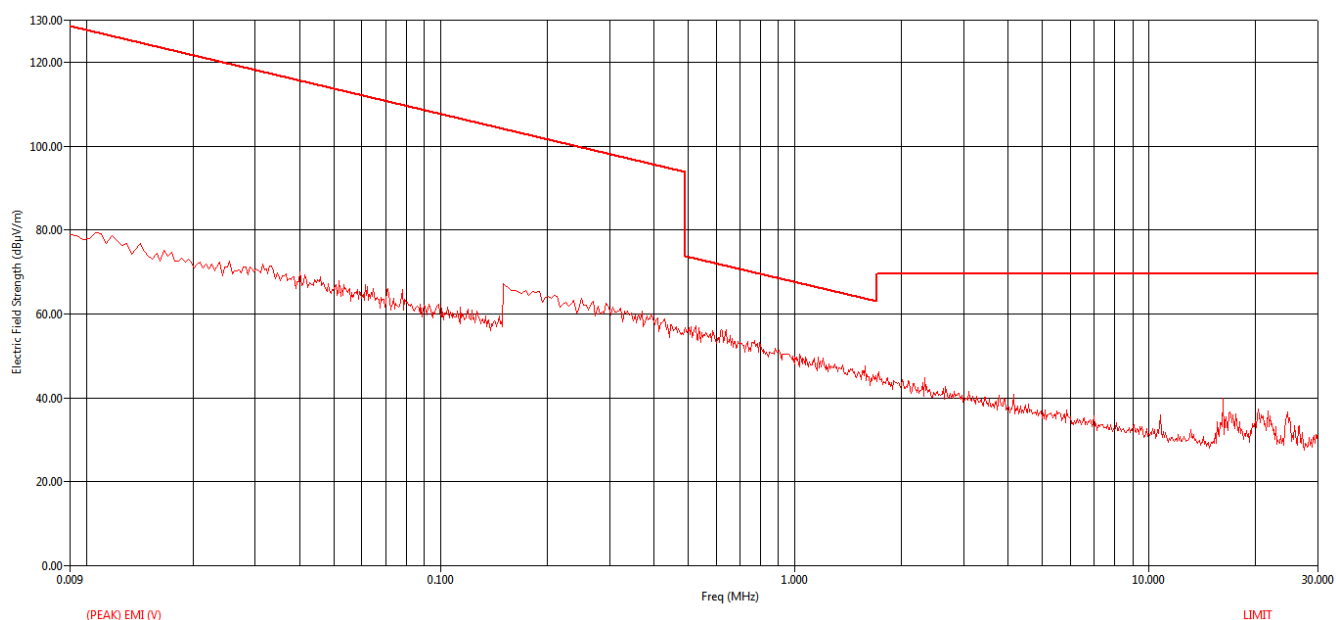


Figure 5: 40MHz, 17dBi, Low Channel: Peak RE Graph - 9kHz to 30MHz - Perpendicular

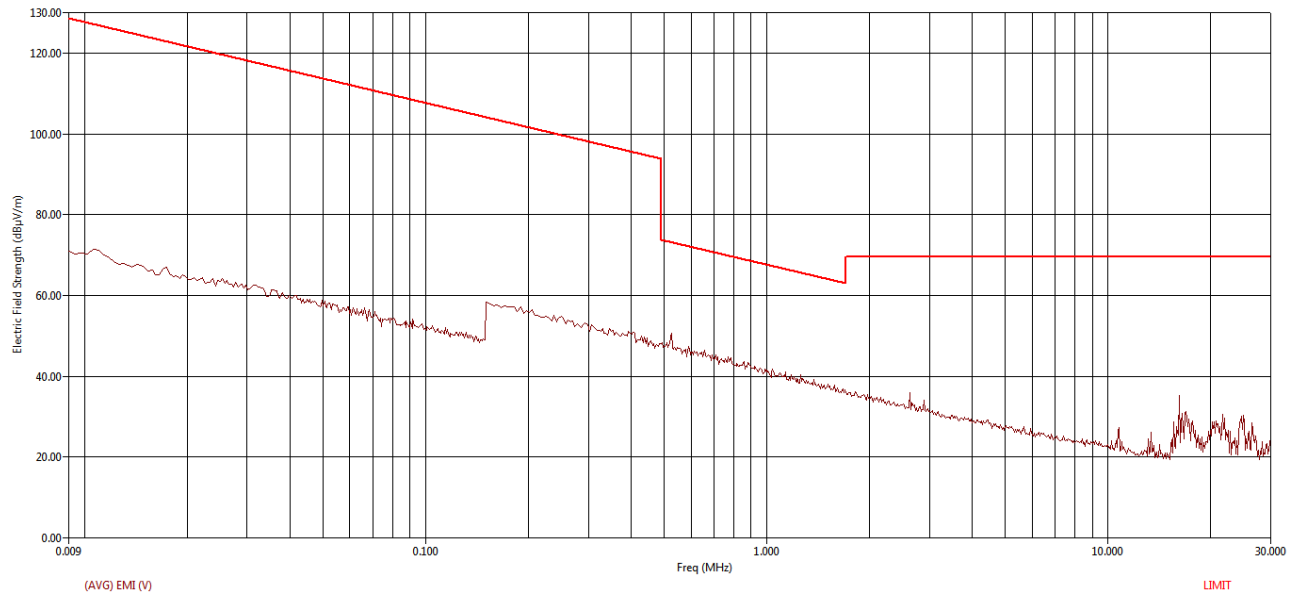


Figure 6: 40MHz, 17dBi, Low Channel: Average RE Graph - 9kHz to 30MHz - Perpendicular

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbl Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
10.78	10.79	296.60	14.85	0.72	17.22	32.80	69.54	-36.74
16.21	16.23	233.80	22.36	0.87	16.79	40.02	69.54	-29.52
16.94	16.93	247.90	10.17	0.89	16.73	27.80	69.54	-41.74
20.33	20.32	238.00	15.23	0.98	16.47	32.68	69.54	-36.86
24.69	24.70	180.20	14.17	1.08	16.12	31.37	69.54	-38.17

Table 9: 40MHz, 17dBi, Low Channel: Quasipeak table from 9 kHz to 30 MHz

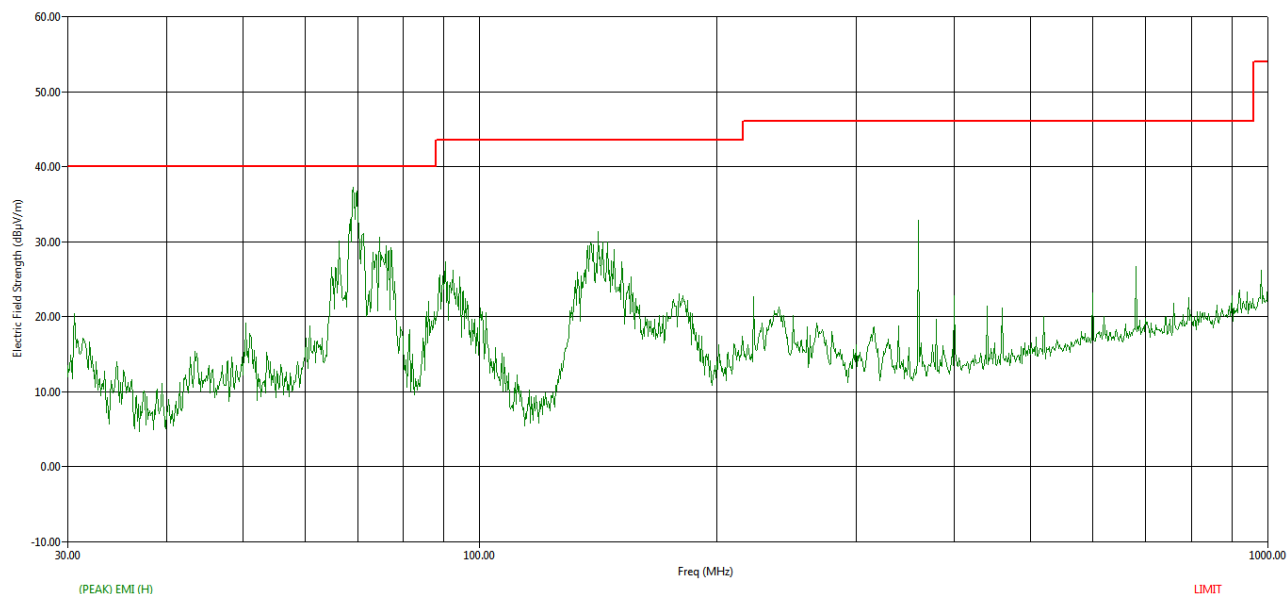


Figure 7: 40MHz, 17dBi, Low Channel: Peak RE Graph - 30MHz to 1GHz - Horizontal Polarization

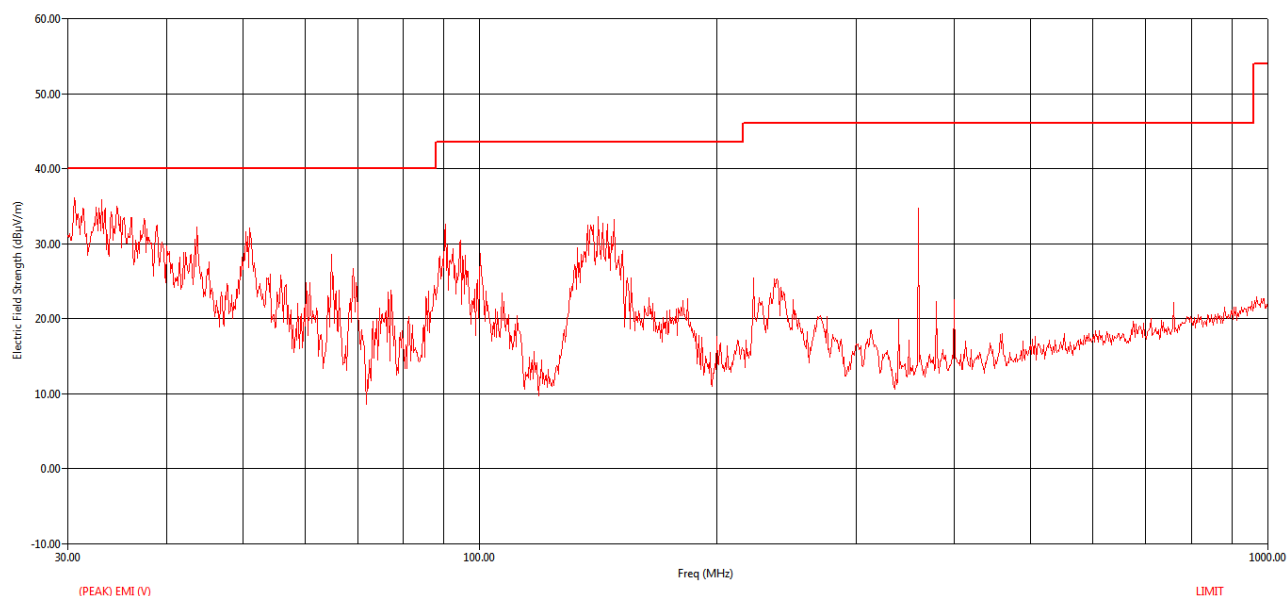


Figure 8: 40MHz, 17dBi, Low Channel: Peak RE Graph - 30MHz to 1GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
30.60	30.62	V	123.40	104.00	65.67	1.18	9.66	43.80	32.72	40.00	-7.28
69.00	68.98	H	359.10	227.00	67.58	1.78	9.78	43.88	35.26	40.00	-4.74
69.76	69.72	H	358.80	204.00	68.56	1.79	9.84	43.88	36.31	40.00	-3.69
141.20	141.21	H	147.90	221.00	53.11	2.51	11.21	43.94	22.89	43.52	-20.63
141.20	141.18	V	359.00	100.00	62.32	2.51	11.21	43.94	32.09	43.52	-11.43
148.12	148.11	V	359.10	103.00	60.60	2.57	11.43	43.95	30.66	43.52	-12.86

Table 10: 40MHz, 17dBi, Low Channel: Quasipeak table from 30 MHz to 1 GHz

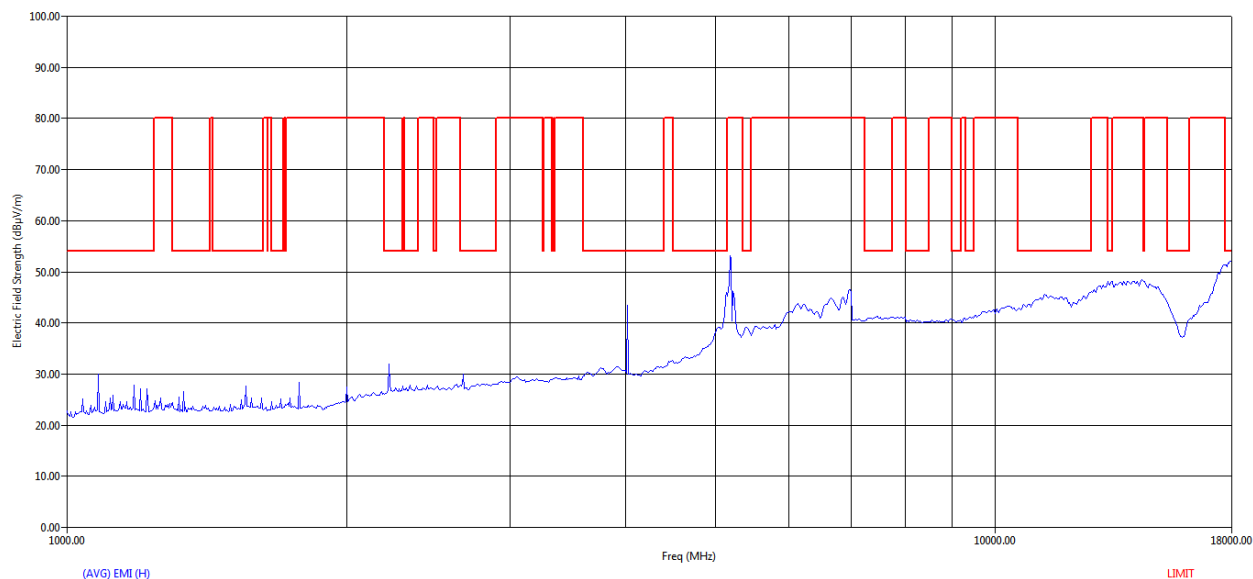


Figure 9: 40MHz, 17dBi, Low Channel: Average RE Graph - 1GHz to 18GHz - Horizontal Polarization

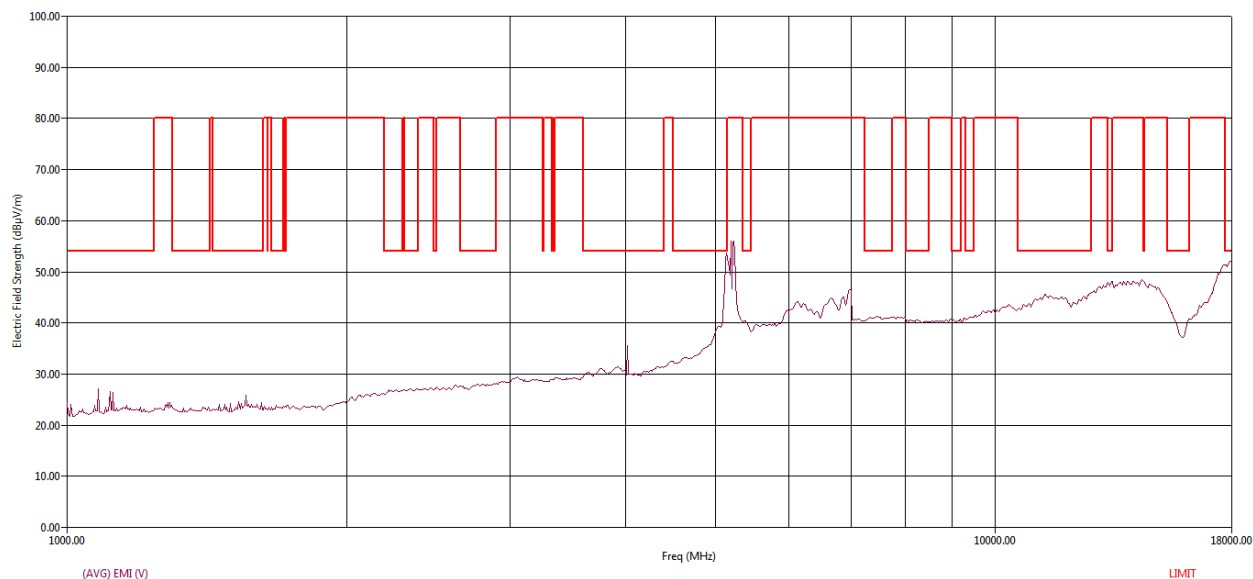


Figure 10: 40MHz, 17dBi, Low Channel: Average RE Graph - 1GHz to 18GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbi Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
1080.00	1080.00	H	346.60	120.00	37.27	1.86	25.10	32.48	31.74	53.98	-22.24
2223.40	2223.40	H	104.60	104.00	28.96	2.50	27.04	31.80	26.71	53.98	-27.27
4019.10	4019.10	H	180.00	118.00	29.06	3.33	30.23	30.26	32.36	53.98	-21.62
5126.40	5126.40	V	180.10	200.00	30.25	3.79	32.93	28.31	38.66	53.98	-15.32
5142.10	5142.10	V	180.10	130.00	30.86	3.80	32.93	28.32	39.27	53.98	-14.71
5252.60	5252.60	V	180.10	199.00	29.43	3.82	32.90	28.33	37.83	80.00	-42.17

Table 11: 40MHz, 17dBi, Low Channel: Average table from 1 GHz to 18 GHz

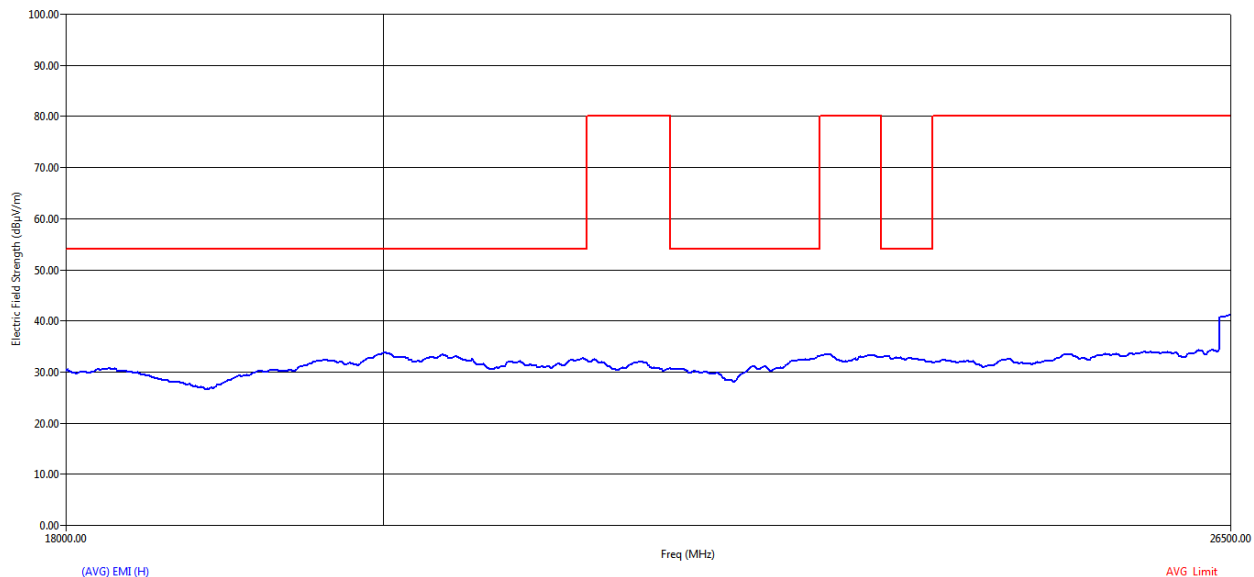


Figure 11: 40MHz, 17dBi, Low Channel: Average RE Graph - 18GHz to 26.5GHz - Horizontal Polarization

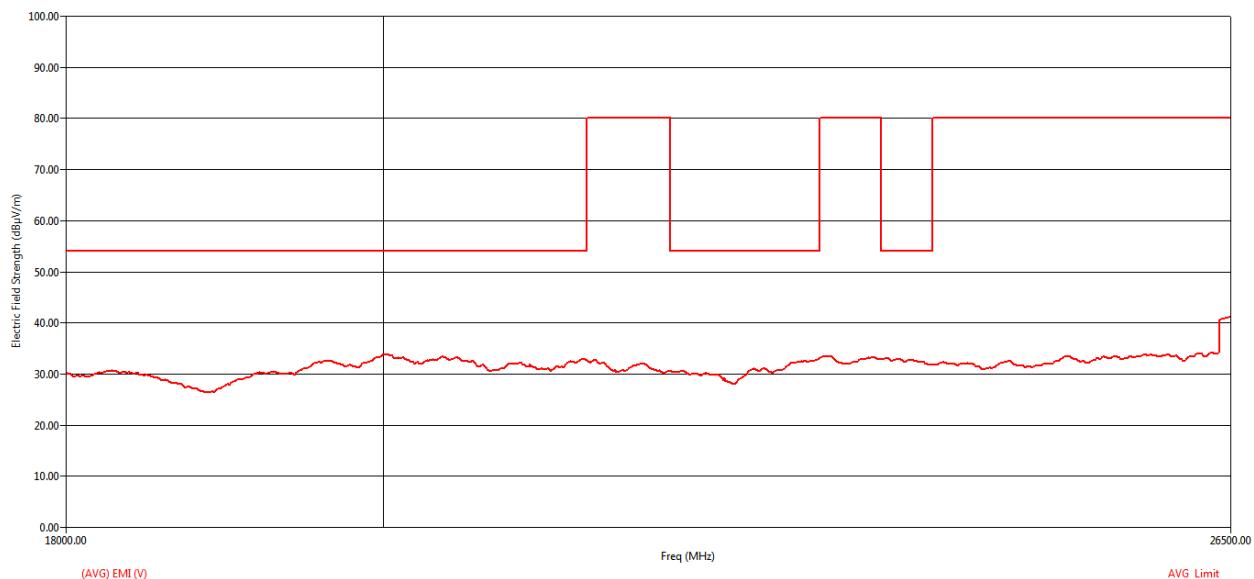


Figure 12: 40MHz, 17dBi, Low Channel: Average RE Graph - 18GHz to 26.5GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbi Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
19992.40	19661.86	H	76.80	100.00	32.85	6.91	36.54	44.27	32.04	53.98	-21.94
20674.30	21289.56	V	266.80	102.00	32.63	7.67	37.51	45.40	32.42	53.98	-21.56
21654.40	21756.38	V	42.80	102.00	32.61	7.38	37.38	46.04	31.33	80.00	-48.67

Table 12: 40MHz, 17dBi, Low Channel: Average table from 18 GHz to 26.5 GHz

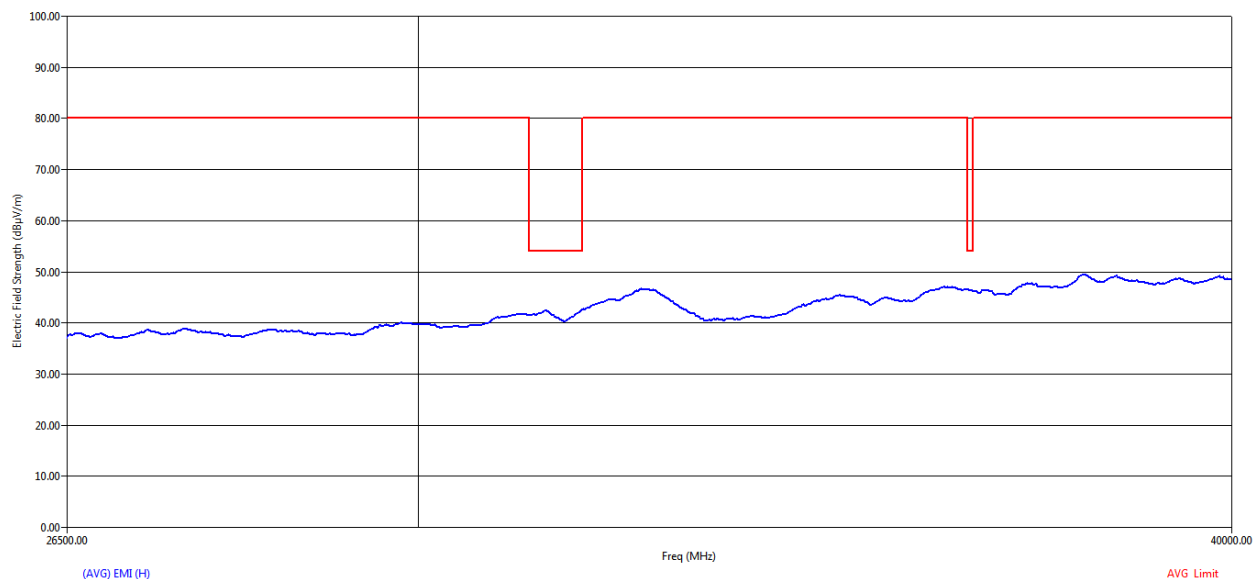


Figure 13: 40MHz, 17dBi, Low Channel: Average RE Graph - 26.5GHz to 40GHz - Horizontal Polarization

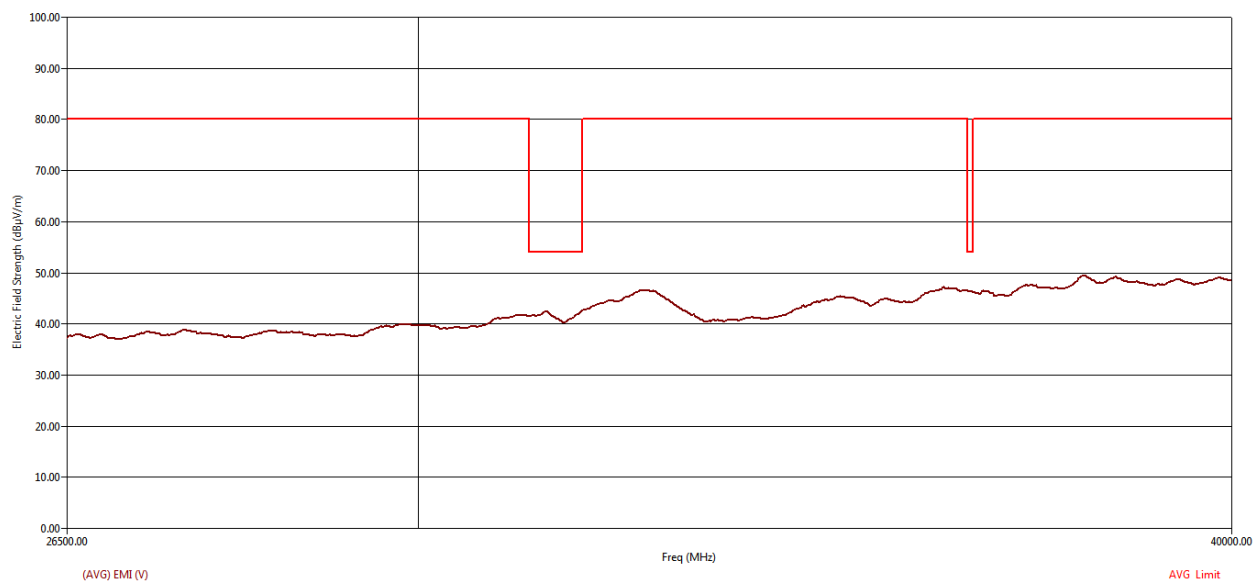


Figure 14: 40MHz, 17dBi, Low Channel: Average RE Graph - 26.5GHz to 40GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
32410.40	32410.40	H	180.10	200.00	41.37	10.62	38.90	44.76	46.13	80.00	-33.87
38640.00	38640.00	V	78.10	199.00	41.29	12.25	41.59	47.06	48.07	80.00	-31.93

Table 13: 40MHz, 17dBi, Low Channel: Average table from 26.5 GHz to 40 GHz

5.3.1.5.2 40 MHz MODULATION BANDWIDTH, 17 dBi ANTENNA, MID CHANNEL - 5200 MHz

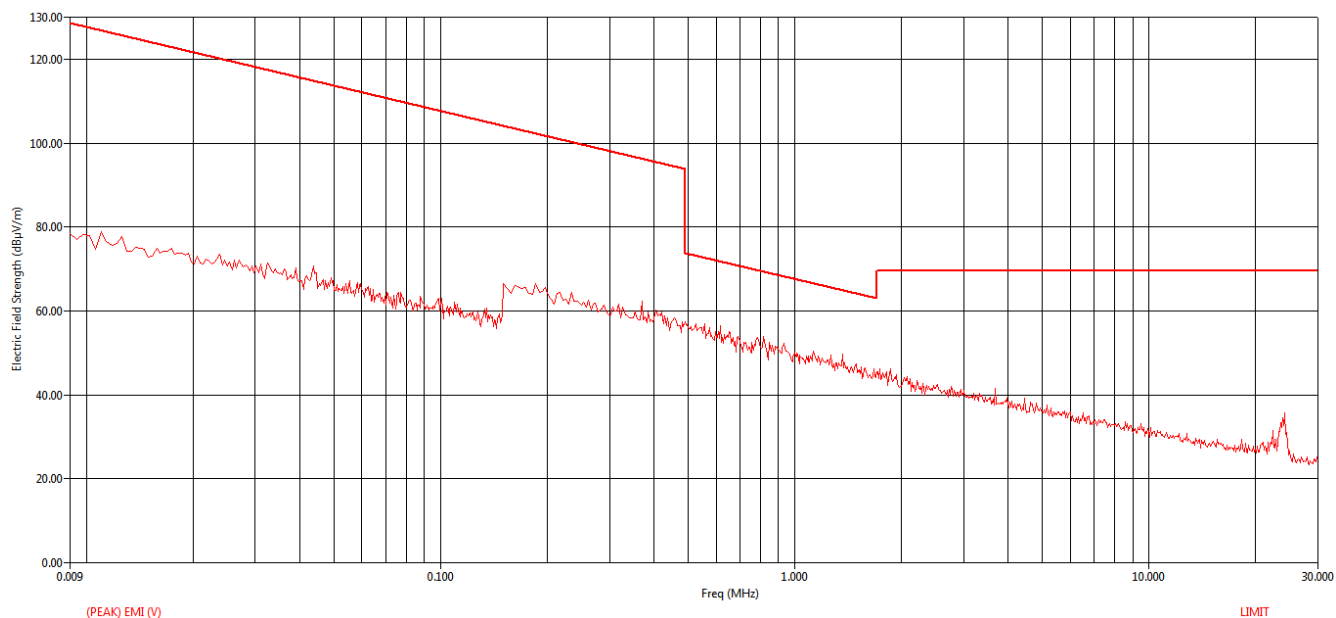


Figure 15: 40MHz, 17dBi, Mid Channel: Peak RE Graph - 9kHz to 30MHz - Parallel

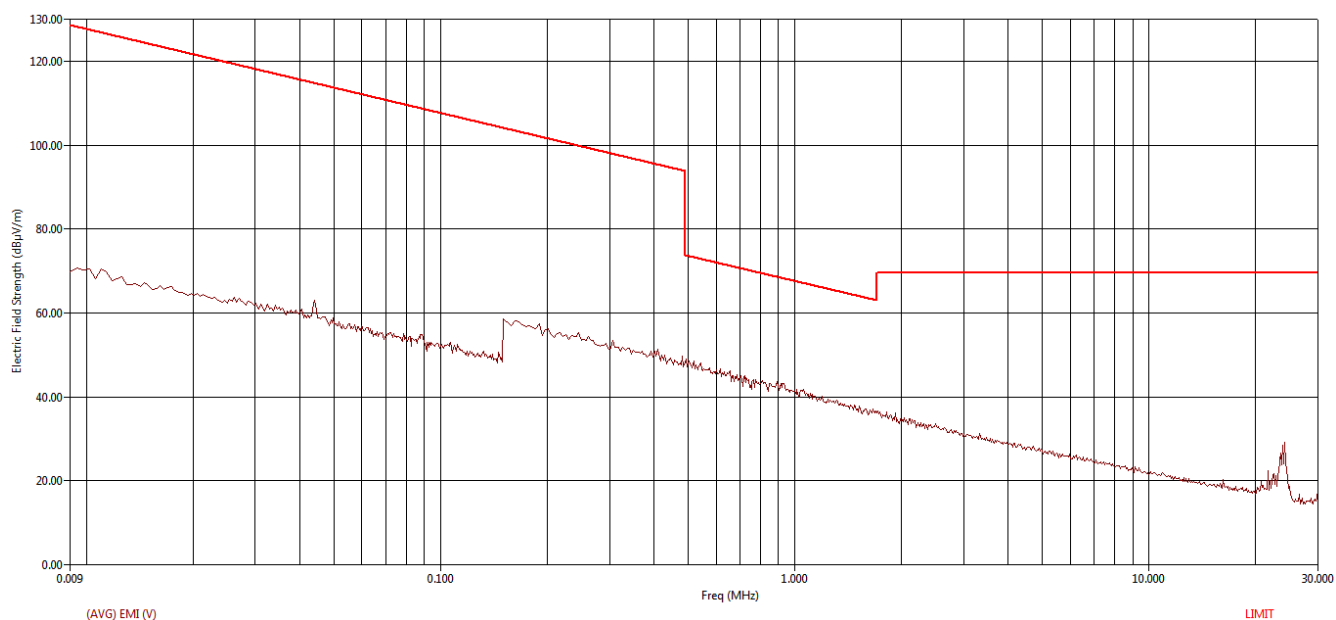


Figure 16: 40MHz, 17dBi, Mid Channel: Average RE Graph - 9kHz to 30MHz - Parallel

Freq (MHz)	Freq (Max) (MHz)	EUT TtBl Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
23.87	23.86	181.20	15.65	1.06	16.18	32.89	69.54	-36.65
24.13	24.11	179.90	13.50	1.06	16.16	30.73	69.54	-38.81

Table 14: 40MHz, 17dBi, Mid Channel: Quasipeak table from 9 kHz to 30 MHz

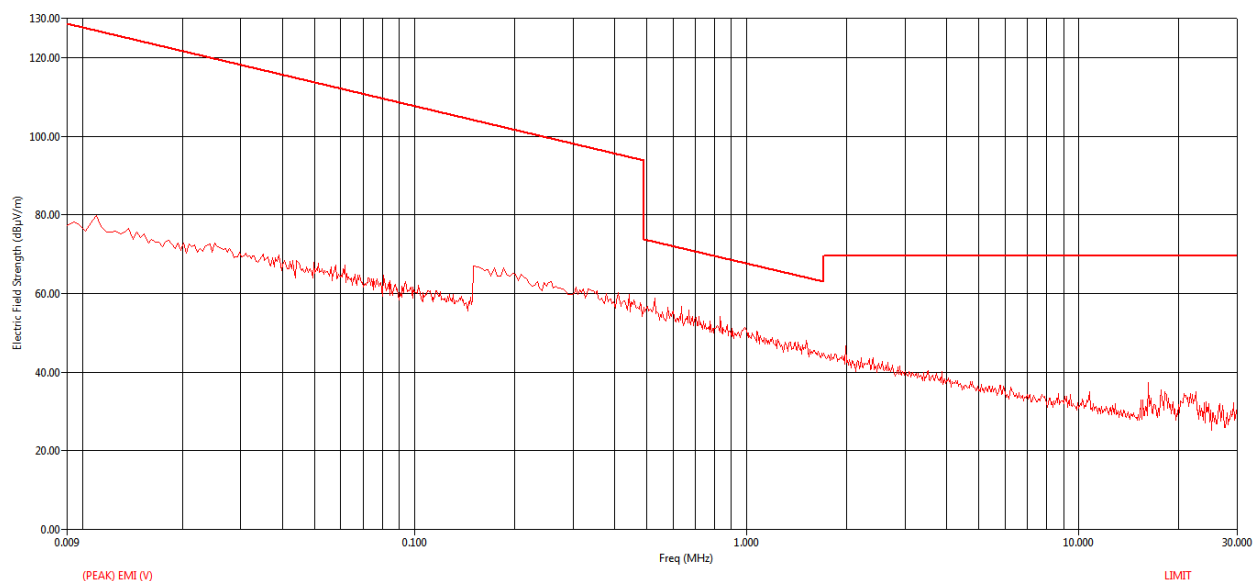


Figure 17: 40MHz, 17dBi, Mid Channel: Peak RE Graph - 9kHz to 30MHz - Perpendicular

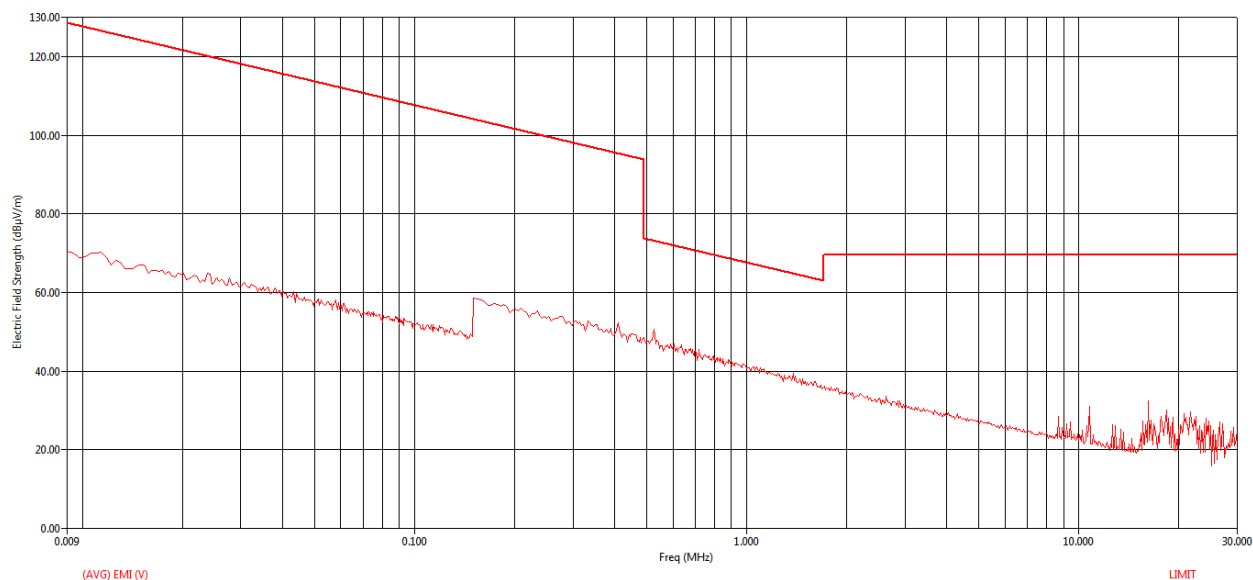


Figure 18: 40MHz, 17dBi, Mid Channel: Average RE Graph - 9kHz to 30MHz - Perpendicular

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbi Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
16.17	16.17	244.30	18.65	0.87	16.80	36.31	69.54	-33.23
16.23	16.23	179.90	5.92	0.87	16.79	23.58	69.54	-45.96
17.69	17.70	217.40	7.78	0.91	16.67	25.36	69.54	-44.18
22.58	22.57	192.10	8.17	1.03	16.28	25.49	69.54	-44.05
26.61	26.61	291.90	5.64	1.11	16.00	22.75	69.54	-46.79

Table 15: 40MHz, 17dBi, Mid Channel: Quasipeak table from 9 kHz to 30 MHz

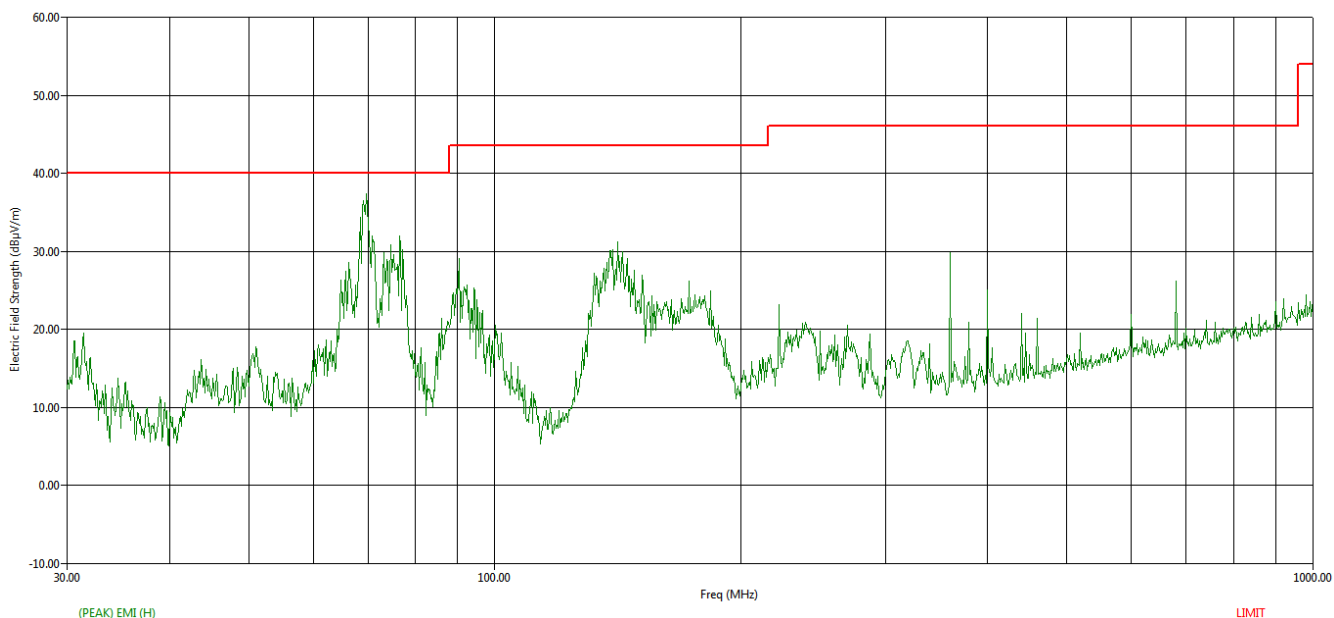


Figure 19: 40MHz, 17dBi, Mid Channel: Peak RE Graph - 30MHz to 1GHz - Horizontal Polarization

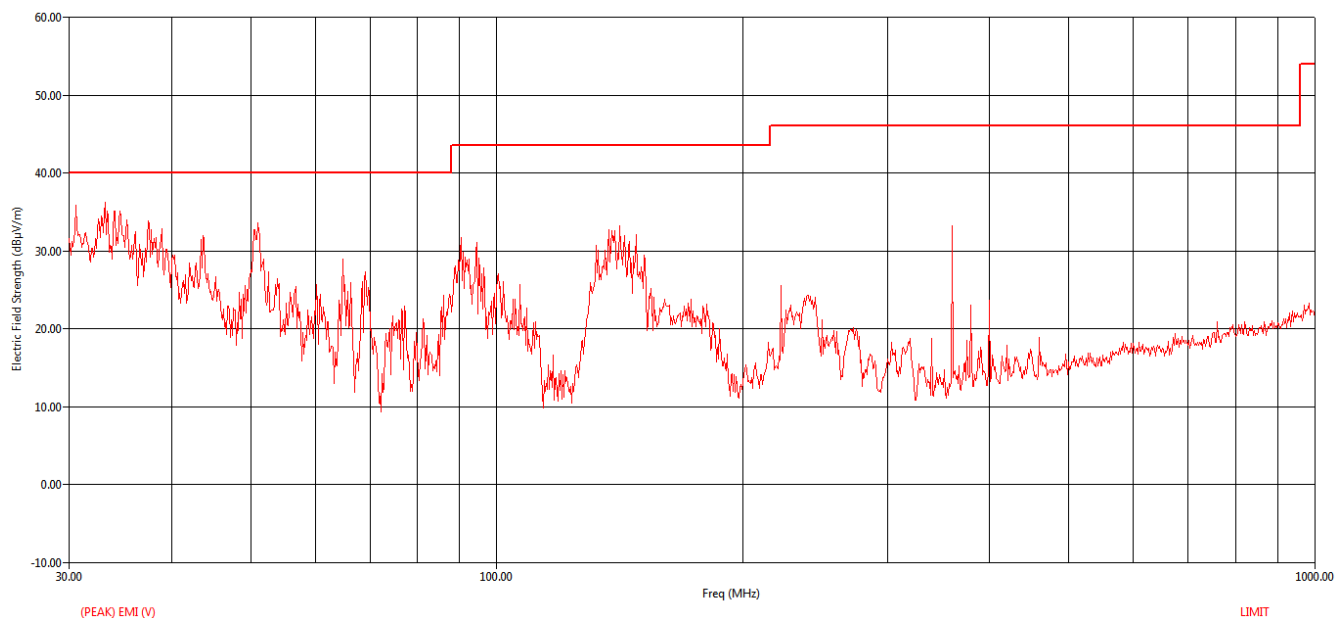


Figure 20: 40MHz, 17dBi, Mid Channel: Peak RE Graph - 30MHz to 1GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbi Agl (deg)	Twr Ht (cm)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
30.56	30.64	V	117.30	103.00	65.21	1.19	9.66	43.80	32.25	40.00	-7.75
33.20	33.18	V	33.70	100.00	66.92	1.24	9.52	43.80	33.87	40.00	-6.13
37.52	37.53	V	36.00	100.00	65.12	1.33	9.79	43.81	32.43	40.00	-7.57
51.08	51.03	V	317.50	100.00	65.54	1.56	9.13	43.83	32.39	40.00	-7.61
69.04	69.01	H	161.60	222.00	67.17	1.78	9.78	43.88	34.85	40.00	-5.15
69.72	69.67	H	347.40	222.00	67.42	1.79	9.83	43.88	35.16	40.00	-4.84

Table 16: 40MHz, 17dBi, Mid Channel: Quasipeak table from 30 MHz to 1 GHz

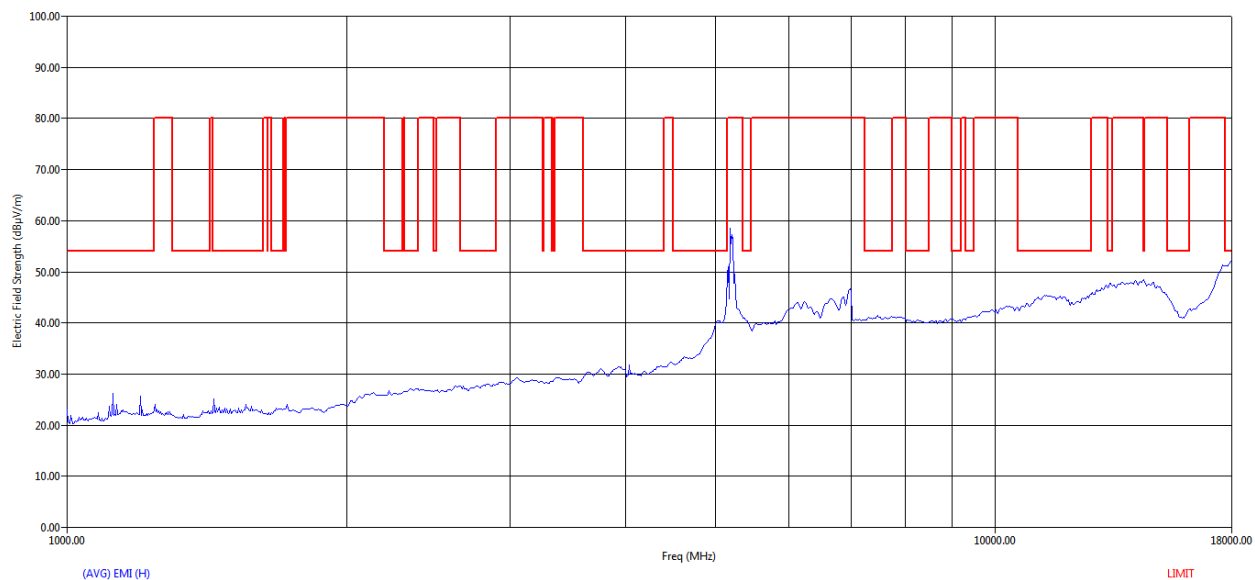


Figure 21: 40MHz, 17dBi, Mid Channel: Average RE Graph - 1GHz to 18GHz - Horizontal Polarization

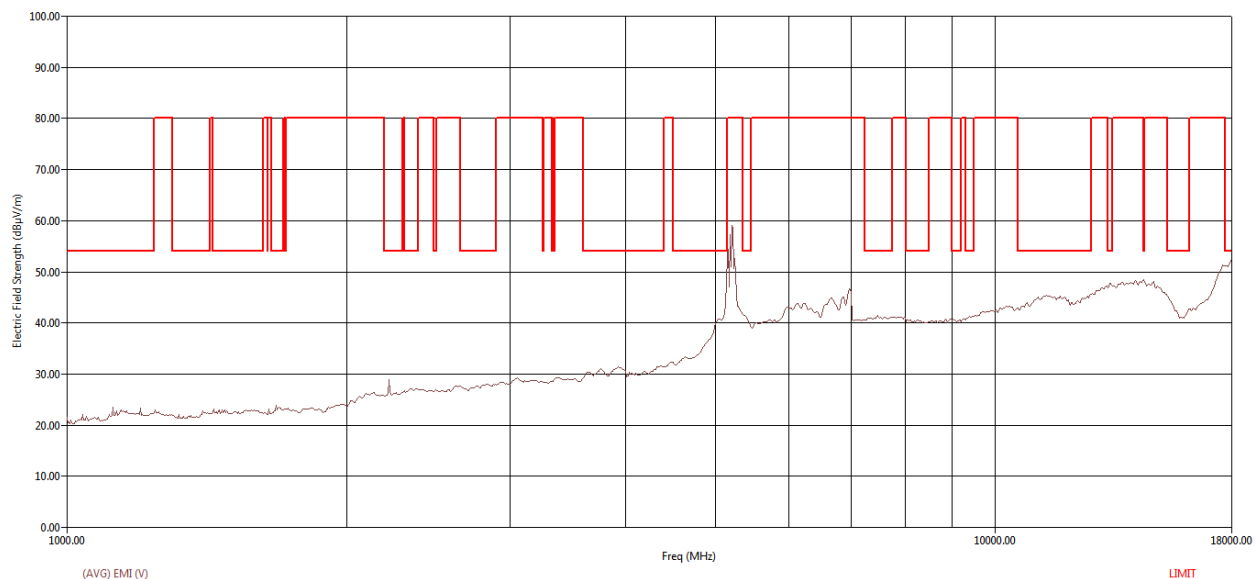


Figure 22: 40MHz, 17dBi, Mid Channel: Average RE Graph - 1GHz to 18GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preampl (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
5135.10	5135.10	V	351.80	133.00	39.73	3.80	32.93	28.31	48.14	53.98	-5.84
5139.30	5139.30	V	351.60	133.00	41.15	3.80	32.93	28.32	49.56	53.98	-4.42
5146.60	5146.60	H	13.70	133.00	42.18	3.80	32.93	28.32	50.59	53.98	-3.39
5258.10	5258.10	H	22.20	131.00	37.52	3.82	32.90	28.33	45.92	80.00	-34.08

Table 17: 40MHz, 17dBi, Mid Channel: Average table from 1 GHz to 18 GHz

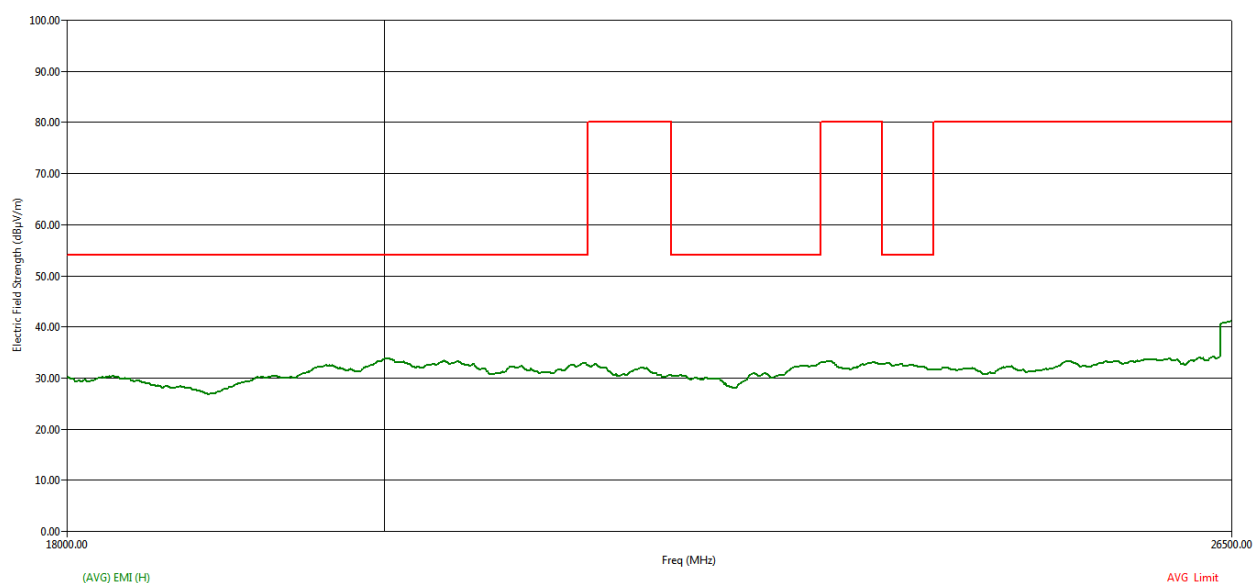


Figure 23: 40MHz, 17dBi, Mid Channel: Average RE Graph - 18GHz to 26.5GHz - Horizontal Polarization

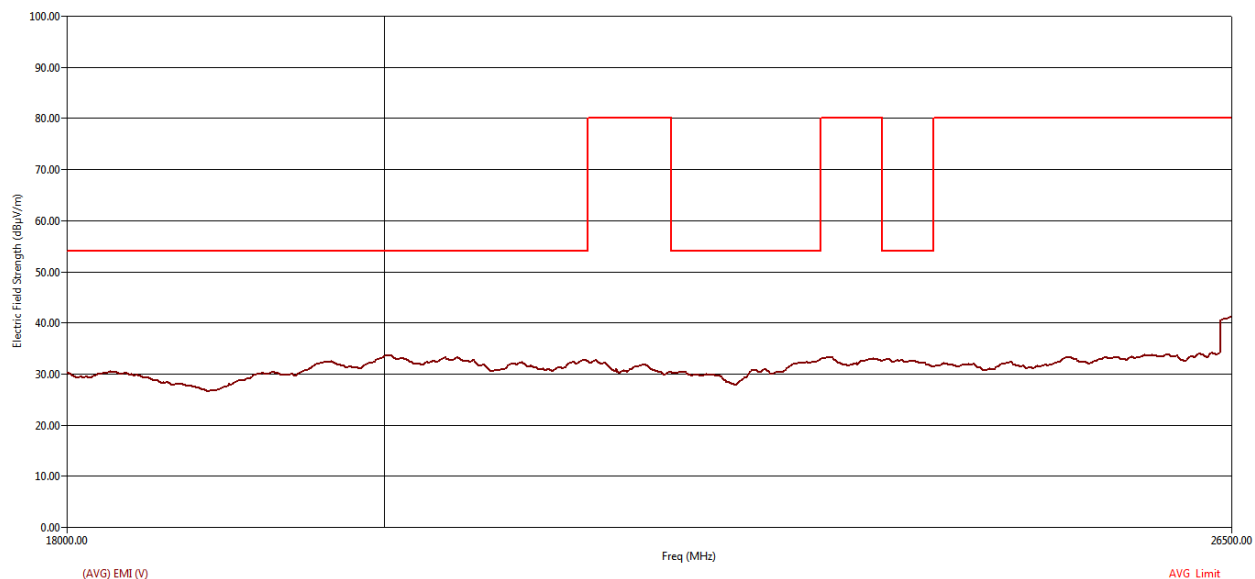


Figure 24: 40MHz, 17dBi, Mid Channel: Average RE Graph - 18GHz to 26.5GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
19537.60	19537.60	H	180.90	188.00	32.80	6.79	36.58	44.55	31.62	53.98	-22.36
23145.90	23145.90	V	287.60	108.00	33.94	8.25	37.79	46.82	33.16	80.00	-46.84
26348.30	26348.30	V	103.60	100.00	31.60	9.27	37.79	44.61	34.05	80.00	-45.95

Table 18: 40MHz, 17dBi, Mid Channel: Average table from 18 GHz to 26.5 GHz

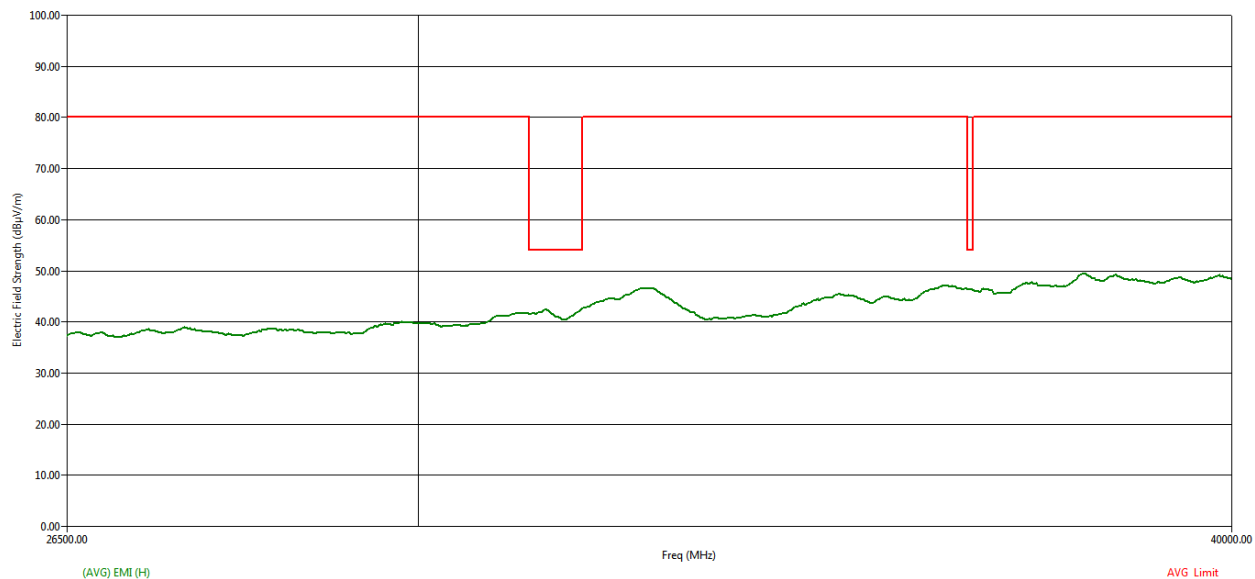


Figure 25: 40MHz, 17dBi, Mid Channel: Average RE Graph - 26.5GHz to 40GHz - Horizontal Polarization

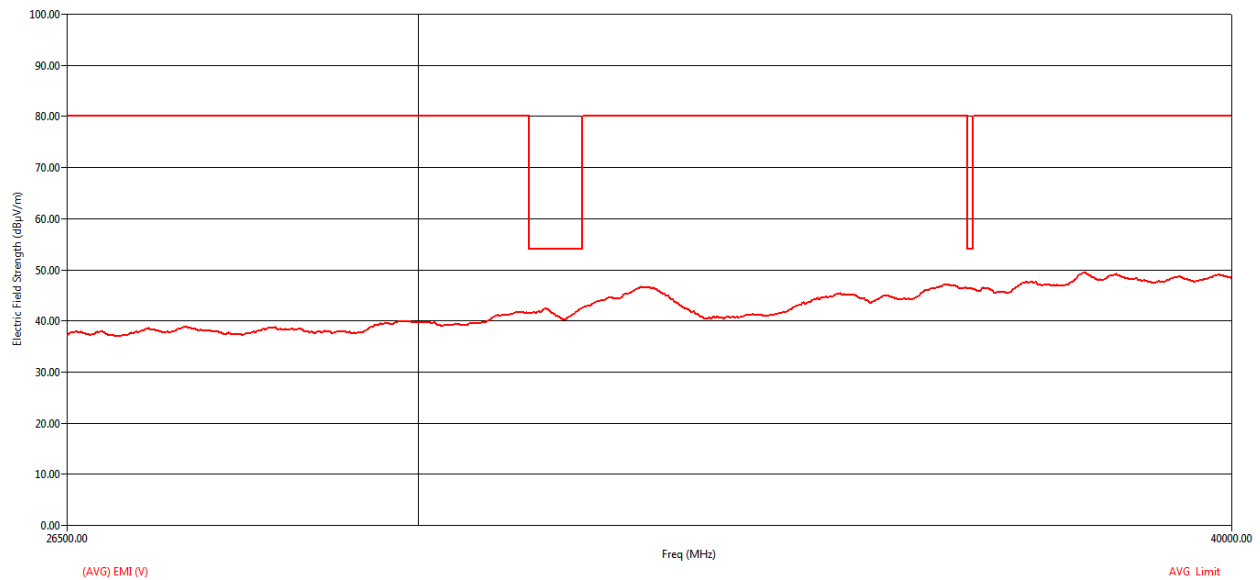


Figure 26: 40MHz, 17dBi, Mid Channel: Average RE Graph - 26.5GHz to 40GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
31585.10	31585.10	V	104.00	200.00	39.39	10.07	38.92	48.31	40.06	53.98	-13.92
36466.60	36466.60	H	277.00	146.00	39.18	12.33	39.76	45.07	46.21	53.98	-7.77

Table 19: 40MHz, 17dBi, Mid Channel: Average table from 26.5 GHz to 40 GHz

5.3.1.5.3 40 MHz MODULATION BANDWIDTH, 17 dBi ANTENNA, HIGH CHANNEL - 5220 MHz

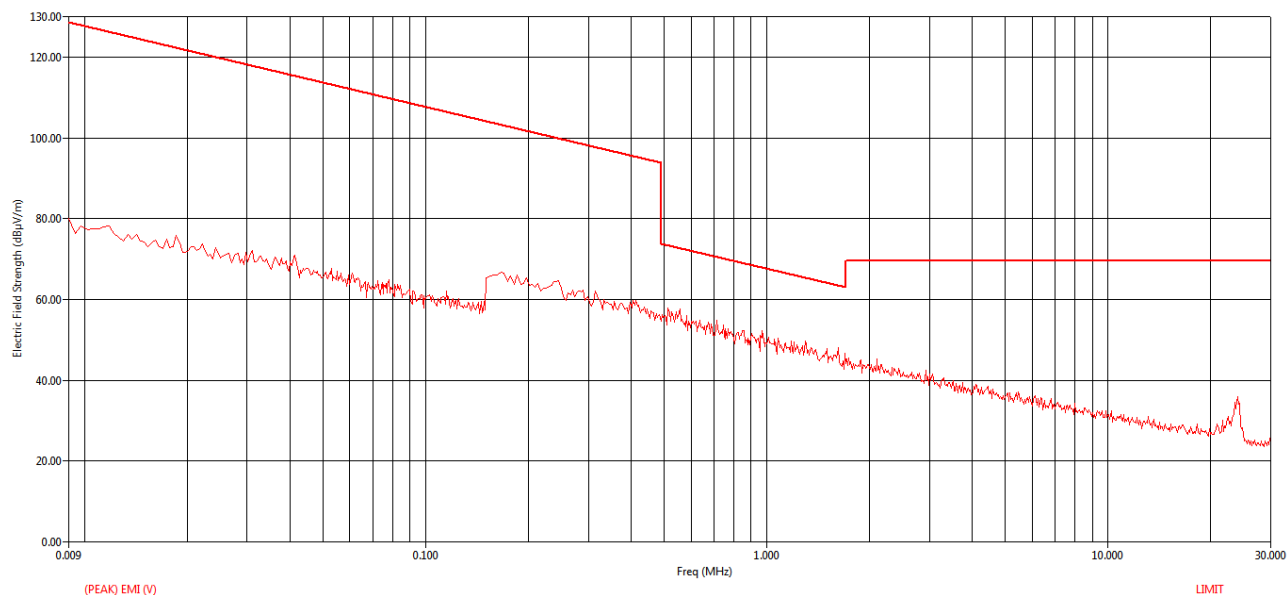


Figure 27: 40MHz, 17dBi, High Channel: Peak RE Graph - 9kHz to 30MHz - Parallel

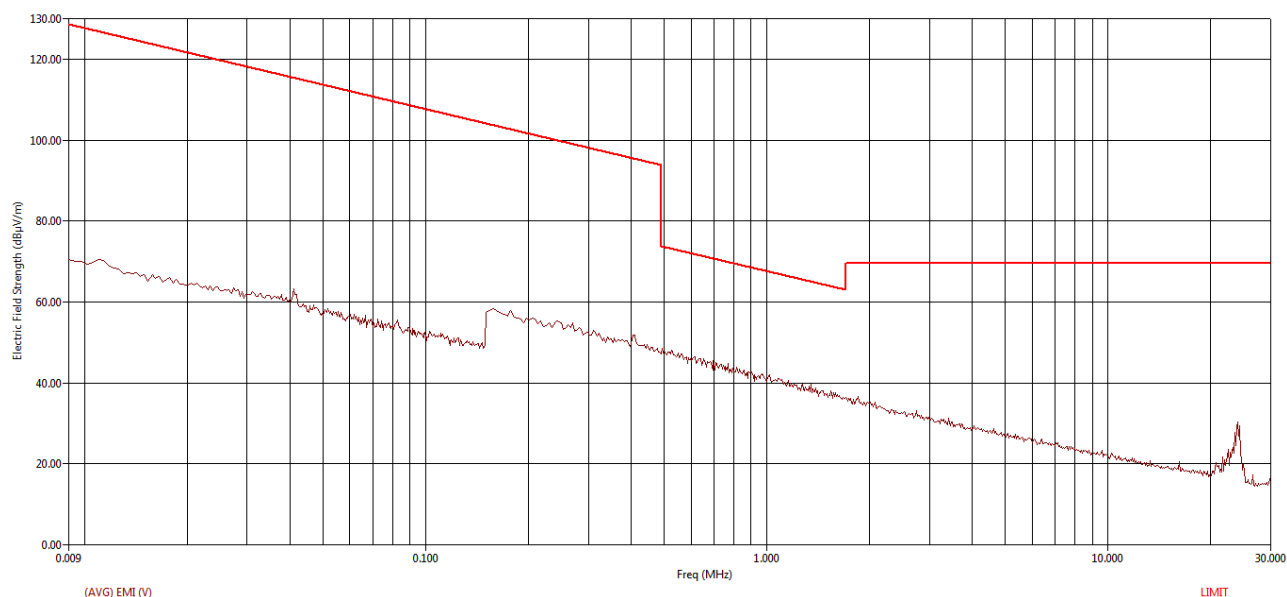


Figure 28: 40MHz, 17dBi, High Channel: Average RE Graph - 9kHz to 30MHz - Parallel

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbl Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
24.09	24.08	184.10	18.81	1.06	16.17	36.04	69.54	-33.50
24.35	24.35	222.40	14.41	1.07	16.15	31.63	69.54	-37.91

Table 20: 40MHz, 17dBi, High Channel: Quasipeak table from 9 kHz to 30 MHz

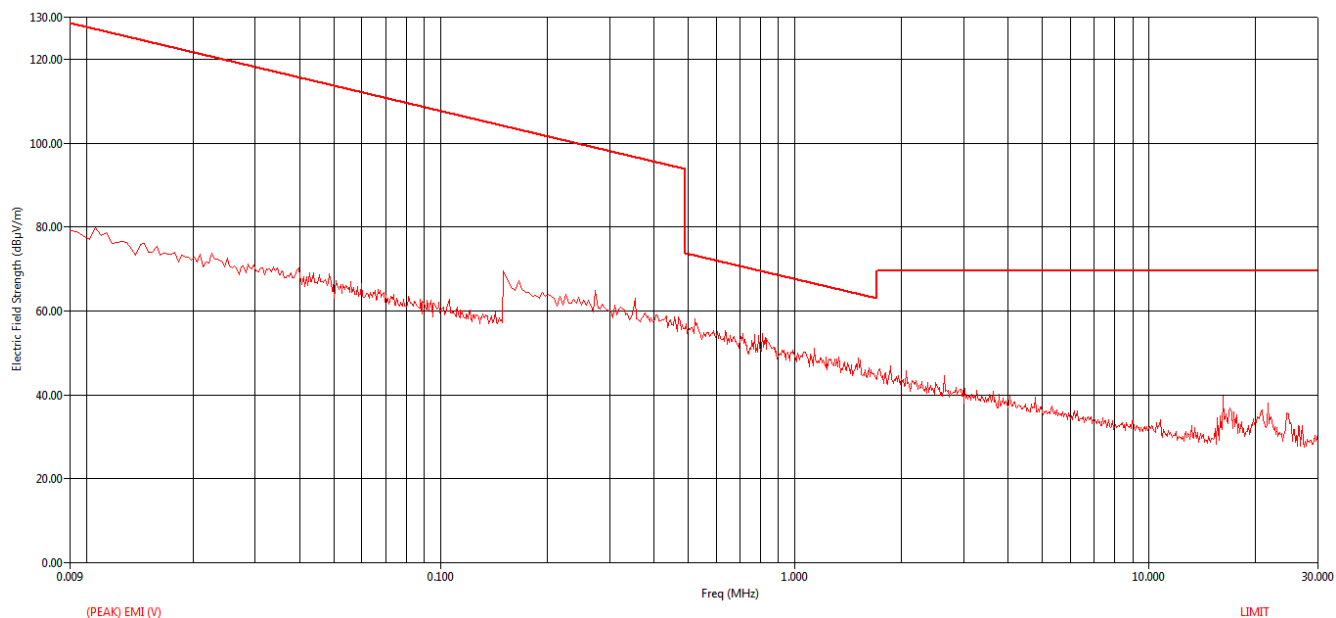


Figure 29: 40MHz, 17dBi, High Channel: Peak RE Graph - 9kHz to 30MHz - Perpendicular

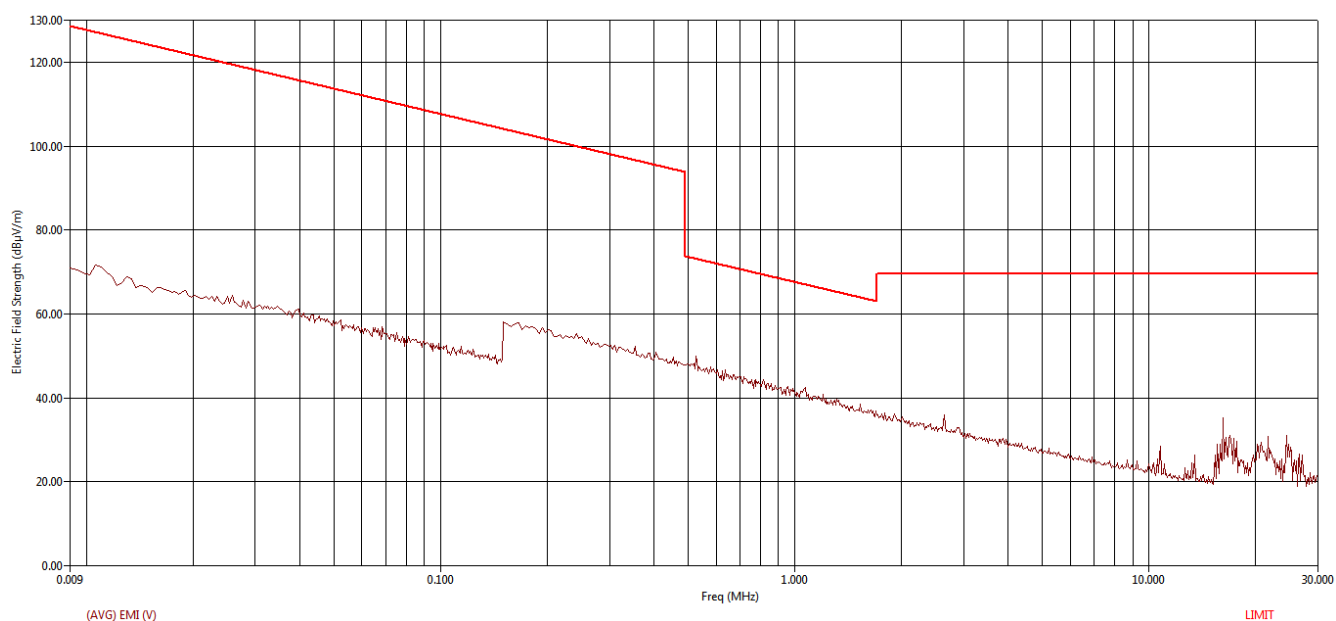


Figure 30: 40MHz, 17dBi, High Channel: Average RE Graph - 9kHz to 30MHz - Perpendicular

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbi Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
16.21	16.22	0.10	16.84	0.87	16.79	34.50	69.54	-35.04
16.94	16.93	0.10	9.68	0.89	16.73	27.31	69.54	-42.23
20.84	20.84	192.20	12.69	0.99	16.43	30.10	69.54	-39.44
21.64	21.63	182.90	11.24	1.01	16.36	28.60	69.54	-40.94

Table 21: 40MHz, 17dBi, High Channel: Quasipeak table from 9 kHz to 30 MHz

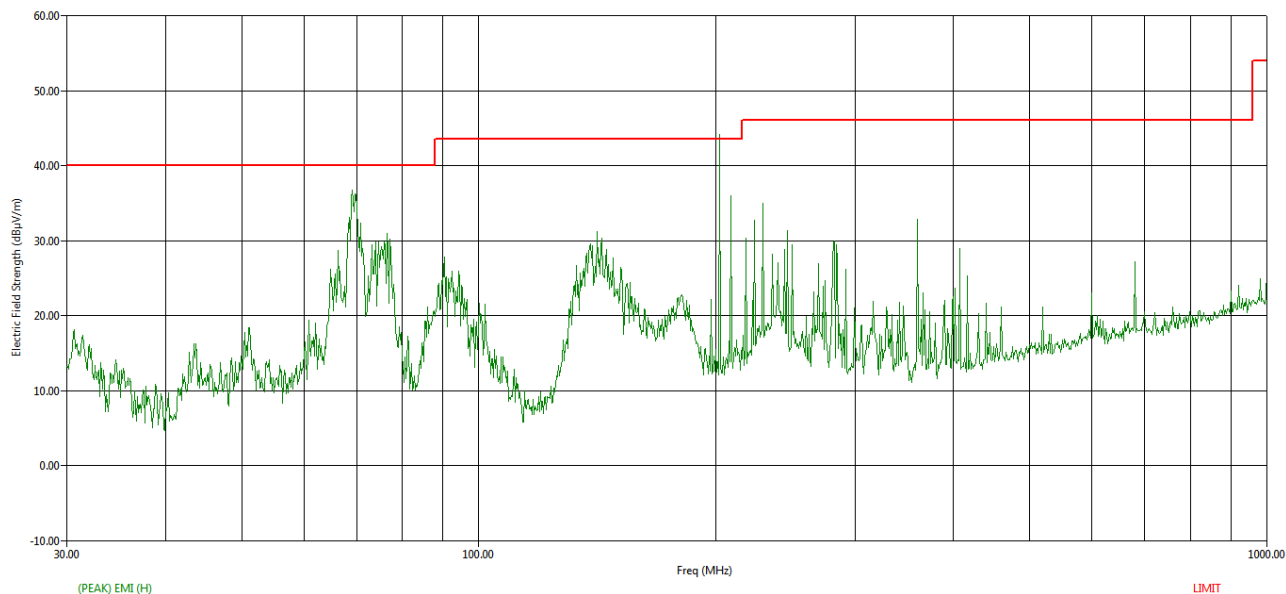


Figure 31: 40MHz, 17dBi, High Channel: Peak RE Graph - 30MHz to 1GHz - Horizontal Polarization

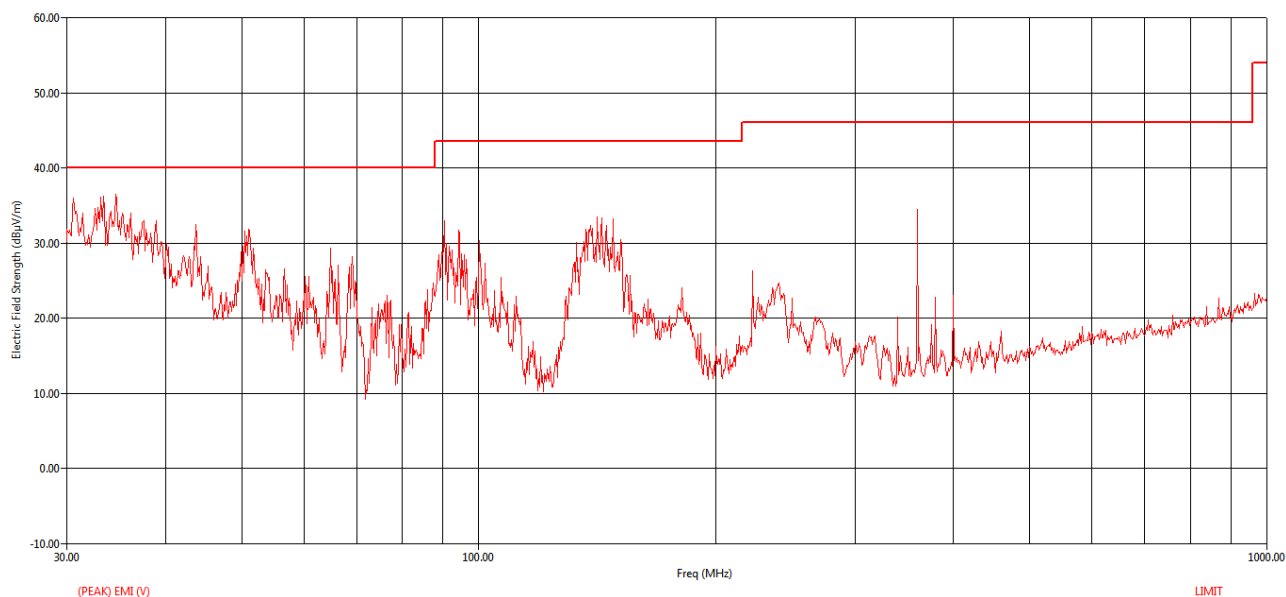


Figure 32: 40MHz, 17dBi, High Channel: Peak RE Graph - 30MHz to 1GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
34.64	34.63	V	63.60	103.00	66.99	1.28	9.44	43.81	33.89	40.00	-6.11
69.16	69.13	H	355.60	240.00	65.96	1.79	9.79	43.88	33.65	40.00	-6.35
69.72	69.70	H	348.20	230.00	68.69	1.79	9.84	43.88	36.44	40.00	-3.56
141.20	141.20	V	354.20	103.00	62.02	2.51	11.21	43.94	31.80	43.52	-11.72
143.32	143.28	V	4.90	100.00	61.33	2.53	11.28	43.95	31.20	43.52	-12.32
148.16	148.10	V	358.10	100.00	60.75	2.57	11.43	43.95	30.81	43.52	-12.71

Table 22: 40MHz, 17dBi, High Channel: Quasipeak table from 30 MHz to 1 GHz

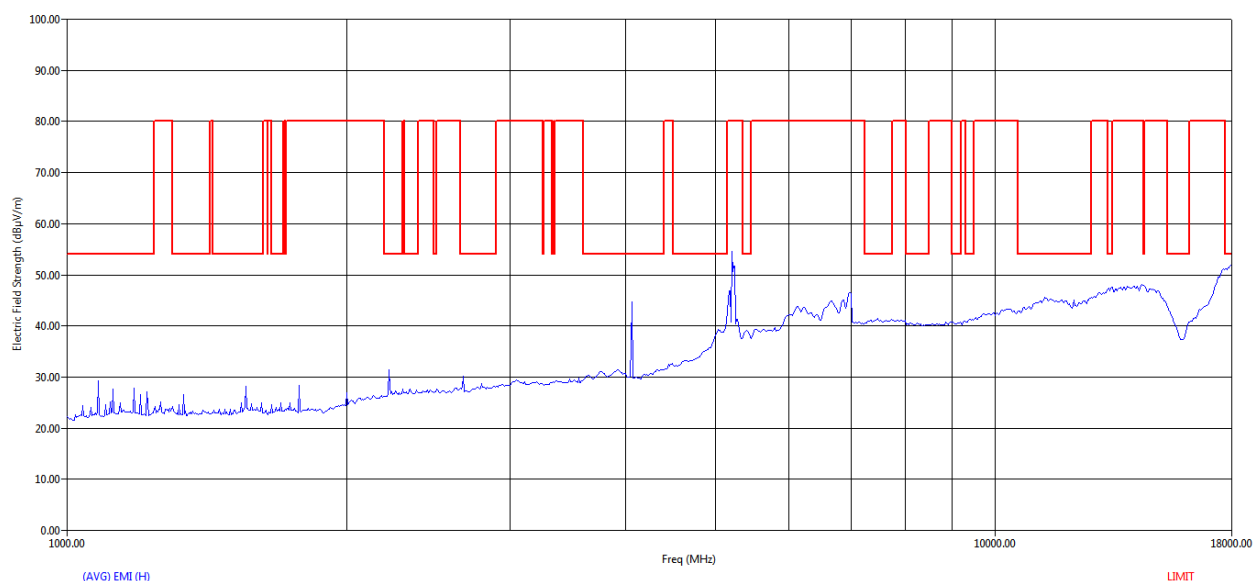


Figure 33: 40MHz, 17dBi, High Channel: Average RE Graph - 1GHz to 18GHz - Horizontal Polarization

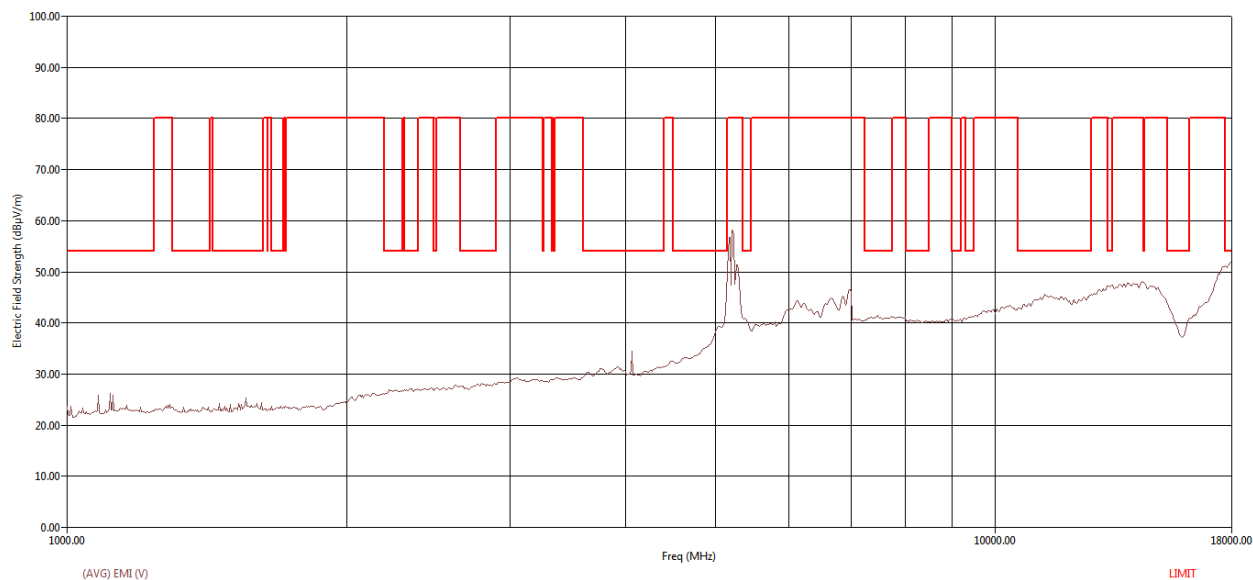


Figure 34: 40MHz, 17dBi, High Channel: Average RE Graph - 1GHz to 18GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preampl (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
1080.00	1080.00	H	353.70	130.00	36.00	1.86	25.10	32.48	30.48	53.98	-23.50
1781.70	1781.70	H	180.00	147.00	26.76	2.27	26.07	32.33	22.76	80.00	-57.24
4062.50	4062.50	H	301.40	103.00	26.30	3.34	30.29	30.16	29.77	53.98	-24.21
5145.90	5145.90	V	72.20	101.00	40.45	3.80	32.93	28.32	48.86	53.98	-5.12
5292.50	5292.50	V	76.70	104.00	39.87	3.82	32.89	28.33	48.26	80.00	-31.74

Table 23: 40MHz, 17dBi, High Channel: Average table from 1 GHz to 18 GHz

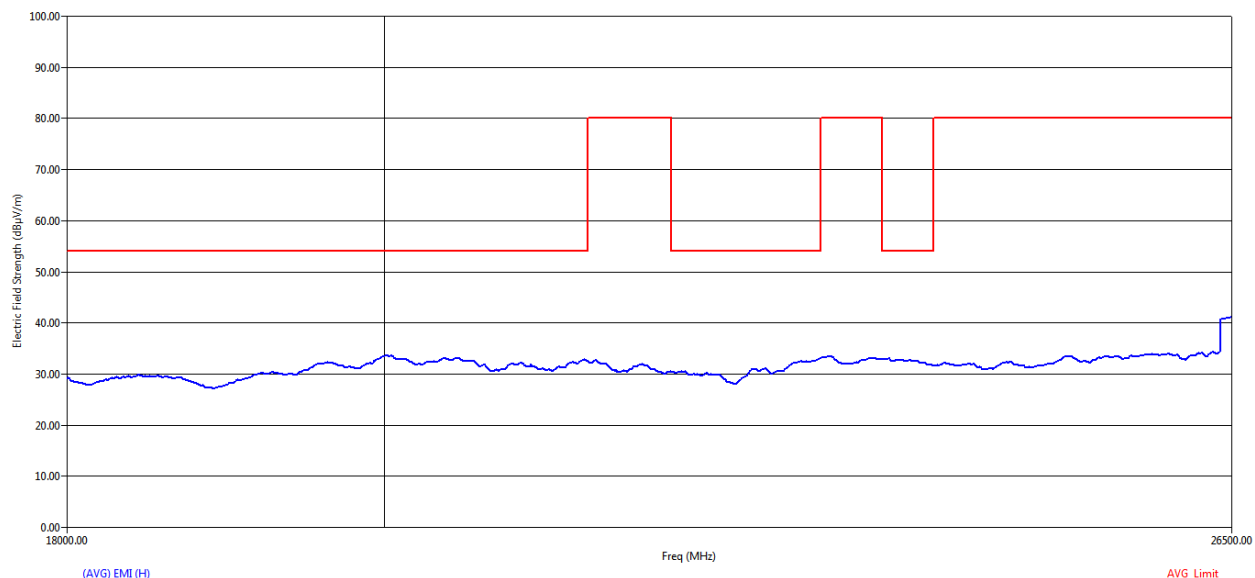


Figure 35: 40MHz, 17dBi, High Channel: Average RE Graph - 18GHz to 26.5GHz - Horizontal Polarization

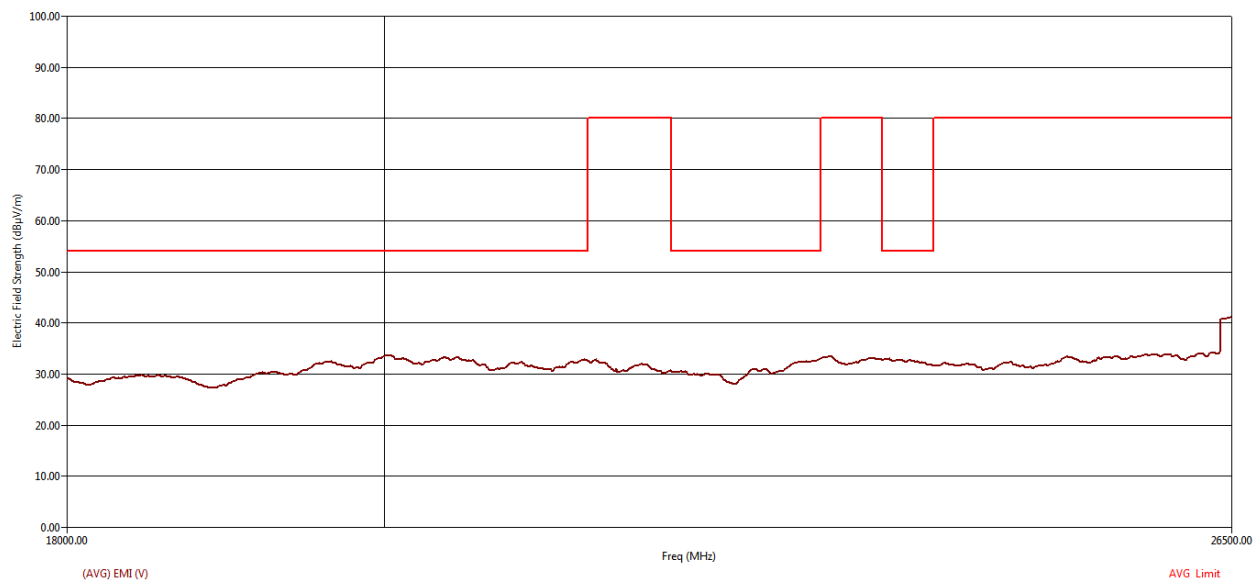


Figure 36: 40MHz, 17dBi, High Channel: Average RE Graph - 18GHz to 26.5GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
19984.00	19984.00	H	173.40	185.00	32.46	7.22	36.45	43.04	33.11	53.98	-20.87
20460.80	20460.80	H	57.30	100.00	32.12	7.62	36.78	43.65	32.87	53.98	-21.11
20947.20	20947.20	V	204.10	199.00	32.21	7.26	37.24	44.87	31.84	53.98	-22.14

Table 24: 40MHz, 17dBi, High Channel: Average table from 18 GHz to 26.5 GHz

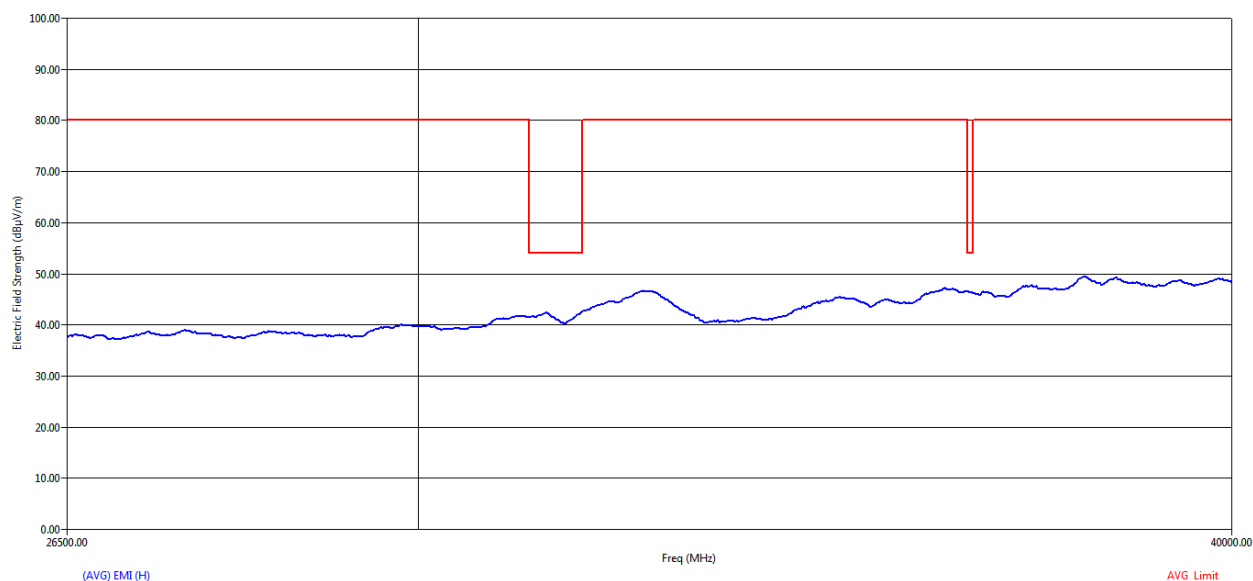


Figure 37: 40MHz, 17dBi, High Channel: Average RE Graph - 26.5GHz to 40GHz - Horizontal Polarization

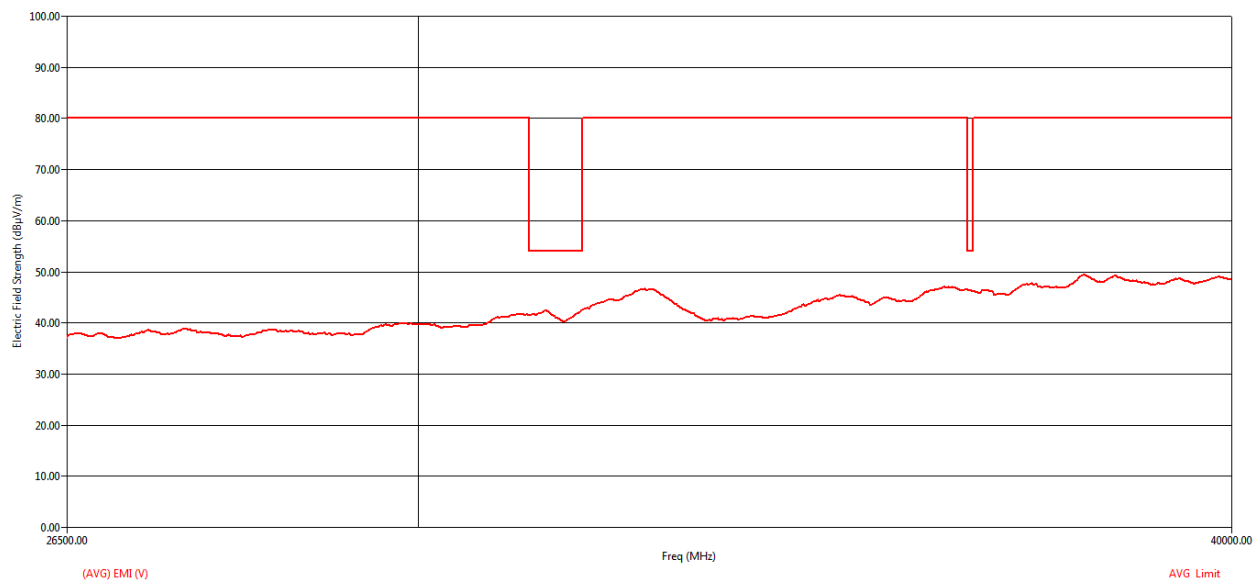


Figure 38: 40MHz, 17dBi, High Channel: Average RE Graph - 26.5GHz to 40GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
31317.60	31317.60	V	343.50	146.00	39.51	10.08	38.82	46.70	41.71	53.98	-12.27
36467.20	36467.20	H	3.70	200.00	39.19	12.33	39.76	45.07	46.21	53.98	-7.77

Table 25: 40MHz, 17dBi, High Channel: Average table form 26.5 GHz to 40 GHz

5.3.1.5.4 5 MHz MODULATION BANDWIDTH, 17 dBi ANTENNA, LOW CHANNEL - 5155 MHz

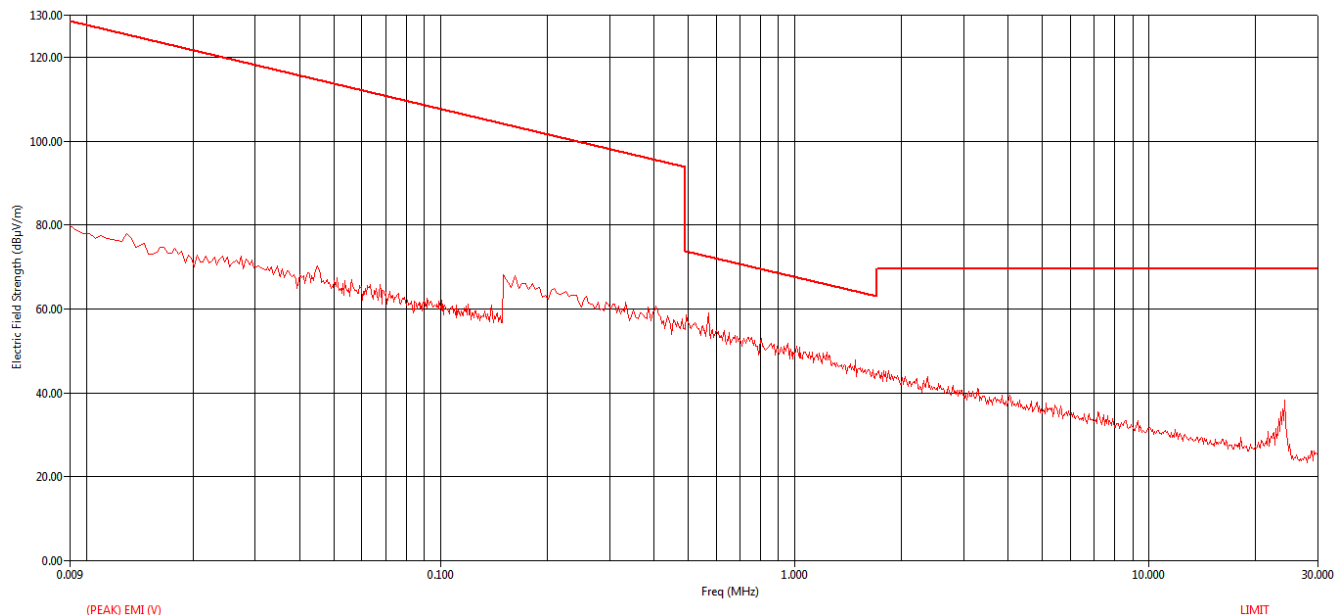


Figure 39: 5MHz, 17dBi, Low Channel: Peak RE Graph - 9kHz to 30MHz - Parallel

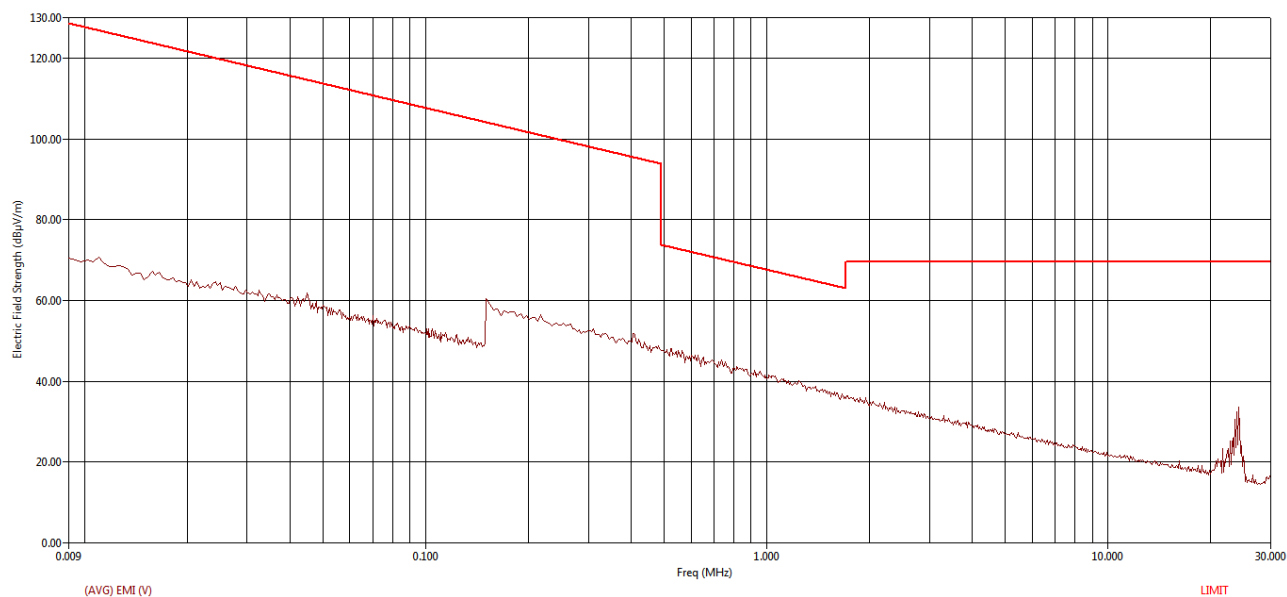


Figure 40: 5MHz, 17dBi, Low Channel: Average RE Graph - 9kHz to 30MHz - Parallel

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbl Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
23.58	23.58	179.90	13.81	1.05	16.20	31.07	69.54	-38.47
23.85	23.83	180.10	17.11	1.06	16.19	34.36	69.54	-35.18
24.11	24.09	179.90	15.70	1.06	16.17	32.93	69.54	-36.61

Table 26: 5MHz, 17dBi, Low Channel: Quasipeak table from 9 kHz to 30 MHz

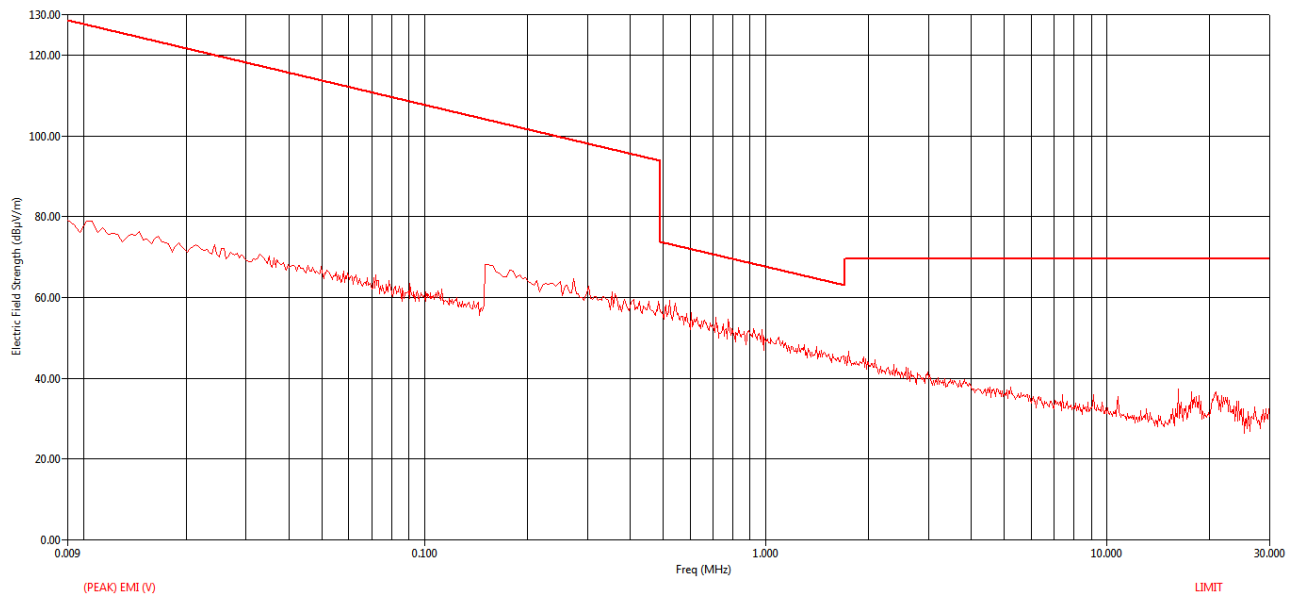


Figure 41: 5MHz, 17dBi, Low Channel: Peak RE Graph - 9kHz to 30MHz - Perpendicular

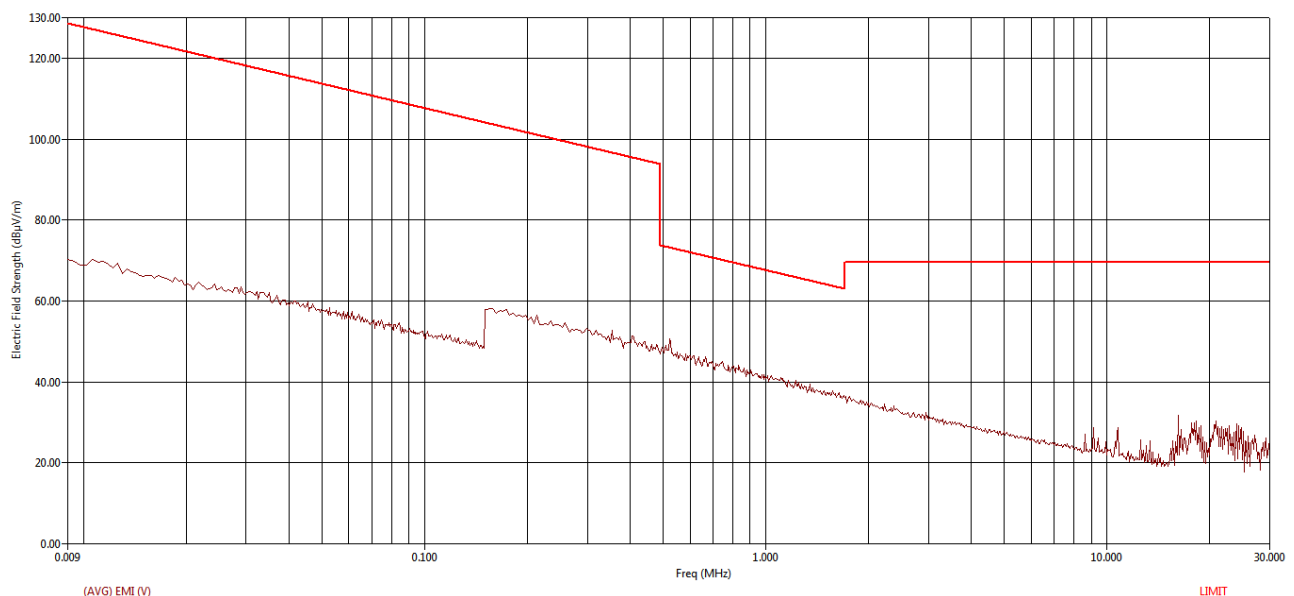


Figure 42: 5MHz, 17dBi, Low Channel: Average RE Graph - 9kHz to 30MHz - Perpendicular

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbt Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
16.24	16.23	215.00	17.73	0.87	16.79	35.39	69.54	-34.15
21.00	20.99	179.90	15.34	0.99	16.41	32.75	69.54	-36.79

Table 27: 5MHz, 17dBi, Low Channel: Quasipeak table from 9 kHz to 30 MHz

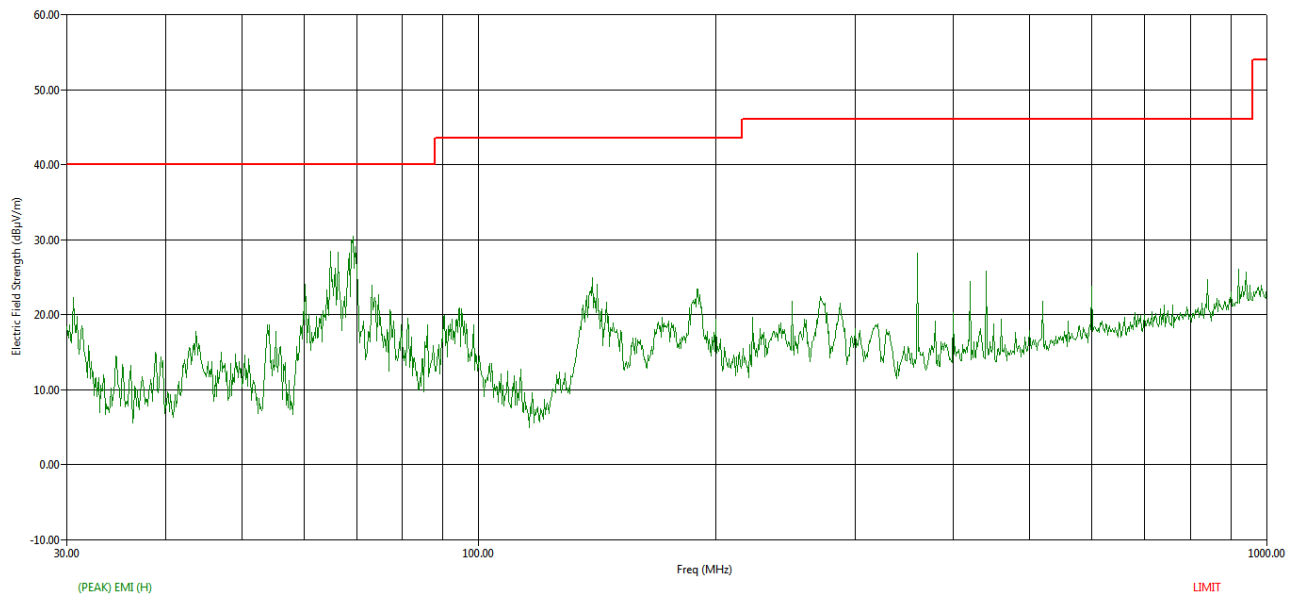


Figure 43: 5MHz, 17dBi, Low Channel: Peak RE Graph - 30MHz to 1GHz - Horizontal Polarization

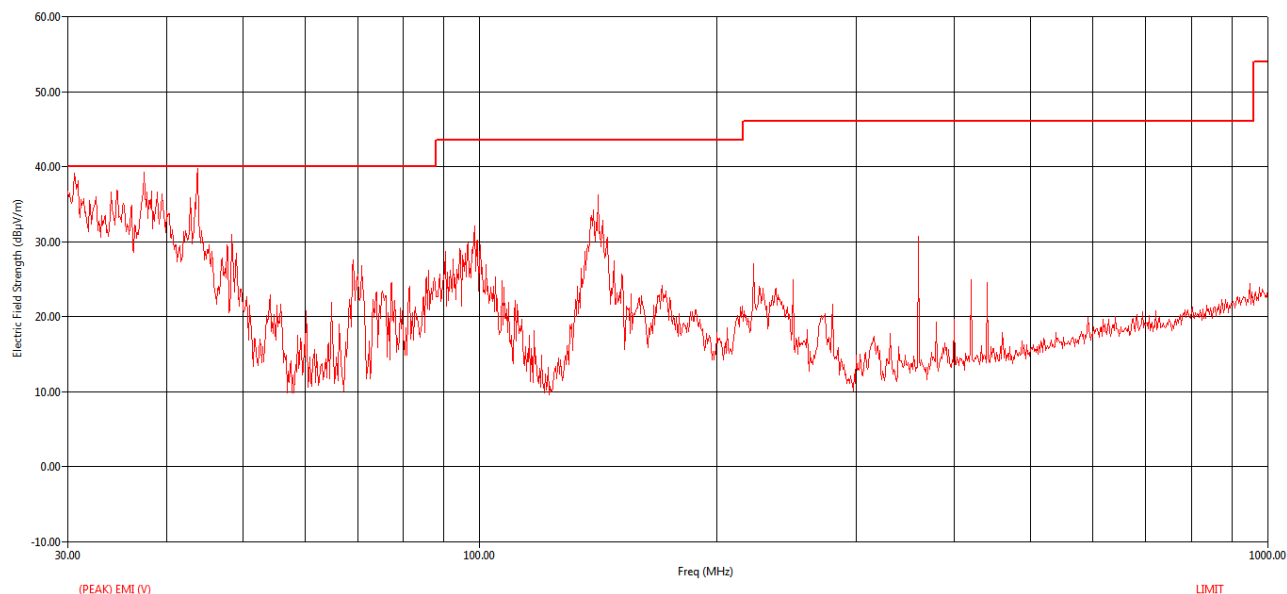


Figure 44: 5MHz, 17dBi, Low Channel: Peak RE Graph - 30MHz to 1GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbi Agl (deg)	Twr Ht (cm)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preampl (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
30.60	30.62	V	74.50	100.00	63.48	1.18	13.19	43.80	34.05	40.00	-5.95
37.52	37.52	V	81.70	104.00	65.76	1.33	12.43	43.81	35.71	40.00	-4.29
43.84	43.80	V	83.90	127.00	66.56	1.45	10.77	43.82	34.96	40.00	-5.04
139.20	139.19	V	213.50	100.00	62.09	2.50	12.22	43.94	32.86	43.52	-10.66
141.20	141.19	V	272.10	100.00	62.88	2.51	12.25	43.94	33.69	43.52	-9.83

Table 28: 5MHz, 17dBi, Low Channel: Quasipeak table from 30 MHz to 1 GHz

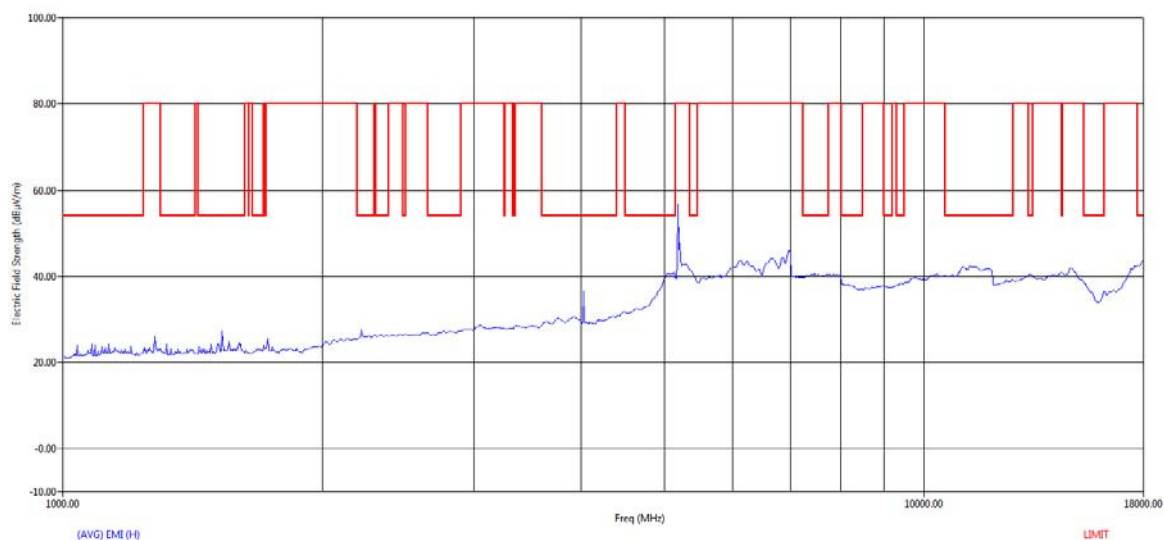


Figure 45: 5MHz, 17dBi, Low Channel: Average RE Graph - 1GHz to 18GHz - Horizontal Polarization

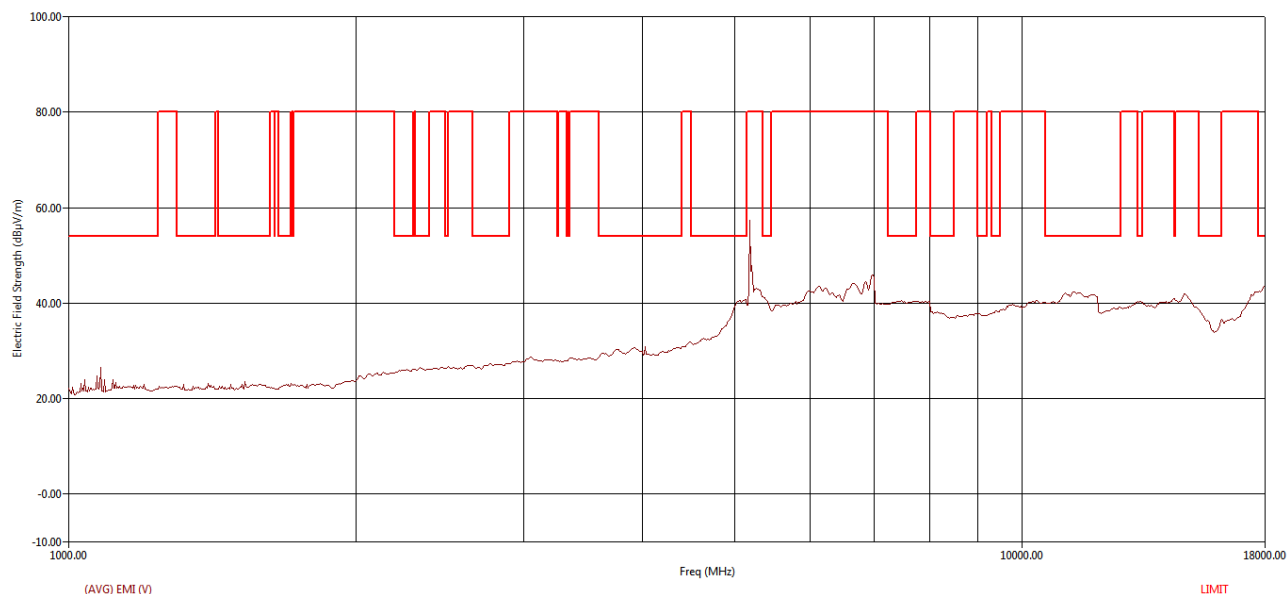


Figure 46: 5MHz, 17dBi, Low Channel: Average RE Graph - 1GHz to 18GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
4023.90	4023.90	H	166.40	108.00	43.14	3.33	30.24	30.25	46.46	53.98	-7.52
5127.20	5127.20	H	352.50	199.00	29.76	3.79	32.93	28.31	38.17	53.98	-15.81
5264.40	5264.40	V	9.80	100.00	32.05	3.82	32.90	28.33	40.44	80.00	-39.56

Table 29: 5MHz, 17dBi, Low Channel: Average table from 1 GHz to 18 GHz

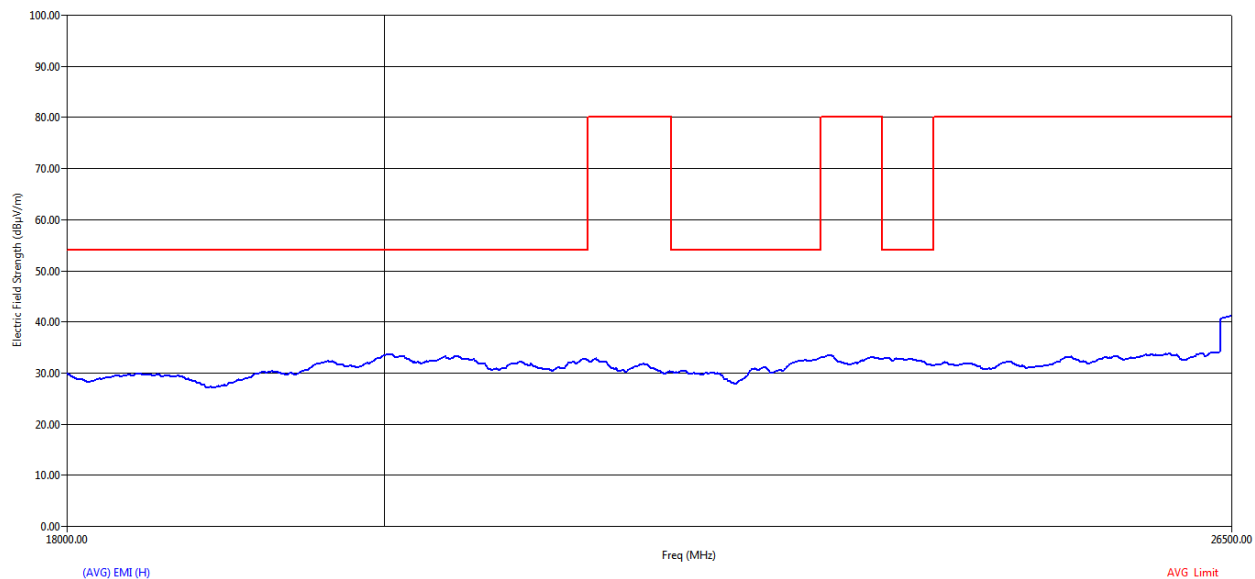


Figure 47: 5MHz, 17dBi, Low Channel: Average RE Graph - 18GHz to 26.5GHz - Horizontal Polarization

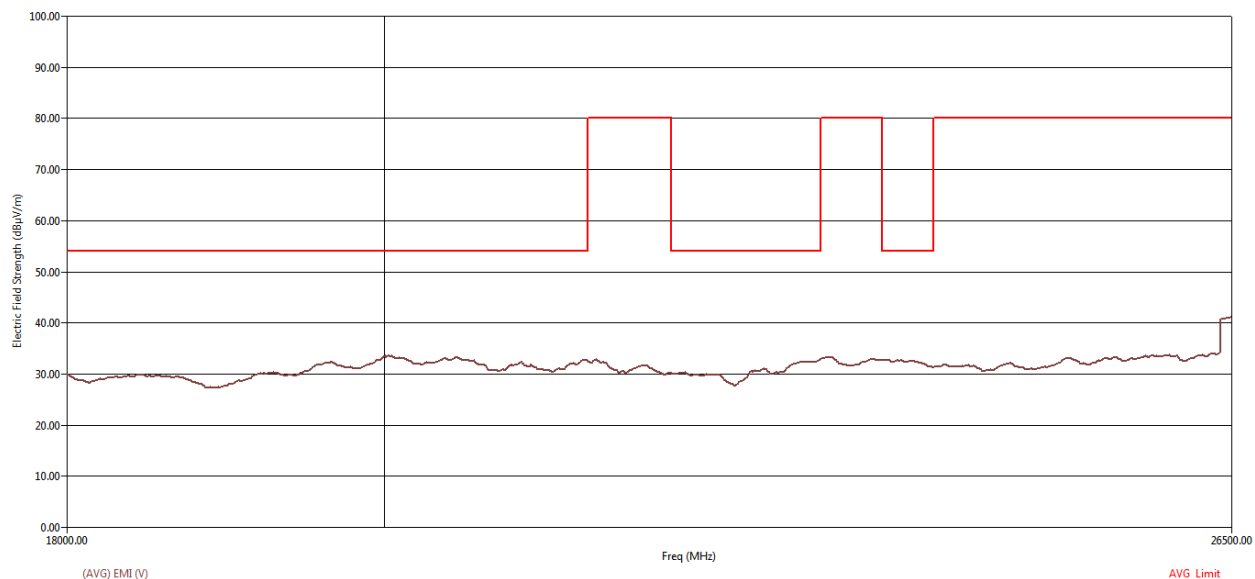


Figure 48: 5MHz, 17dBi, Low Channel: Average RE Graph - 18GHz to 26.5GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
20049.60	19219.89	V	351.70	111.00	33.45	6.64	36.53	46.61	30.00	53.98	-23.98
21357.90	21818.02	H	280.20	142.00	33.26	7.23	37.31	46.01	31.78	53.98	-22.20
26024.30	25082.74	V	280.90	133.00	32.97	8.80	37.95	46.68	33.04	80.00	-46.96

Table 30: 5MHz, 17dBi, Low Channel: Average table form 18 GHz to 26.5 GHz

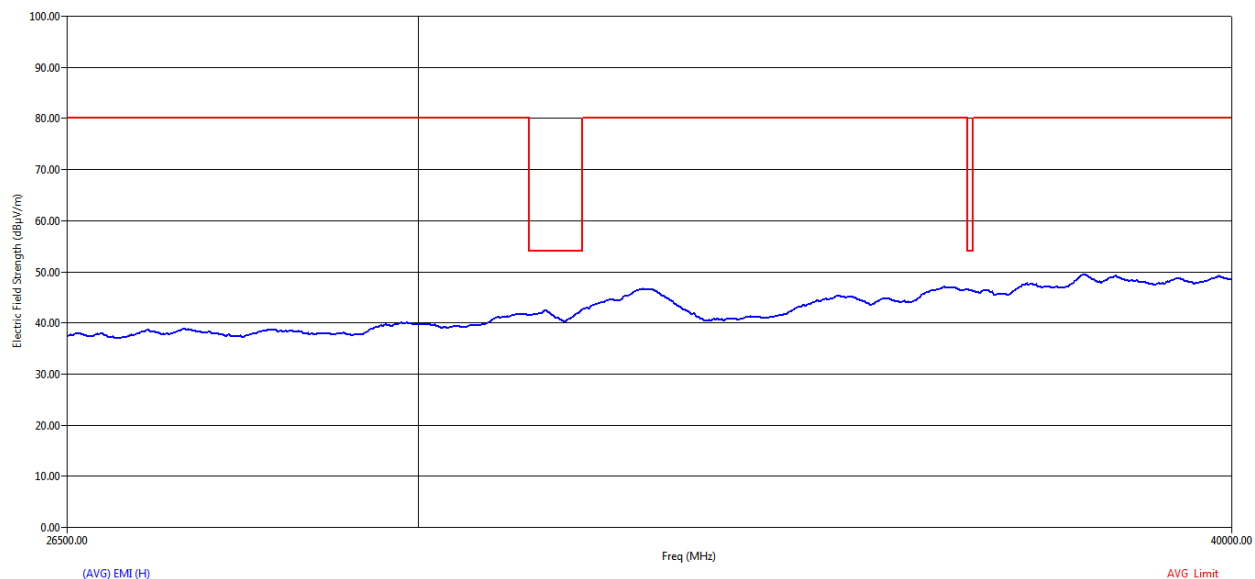


Figure 49: 5MHz, 17dBi, Low Channel: Average RE Graph - 26.5GHz to 40GHz - Horizontal Polarization

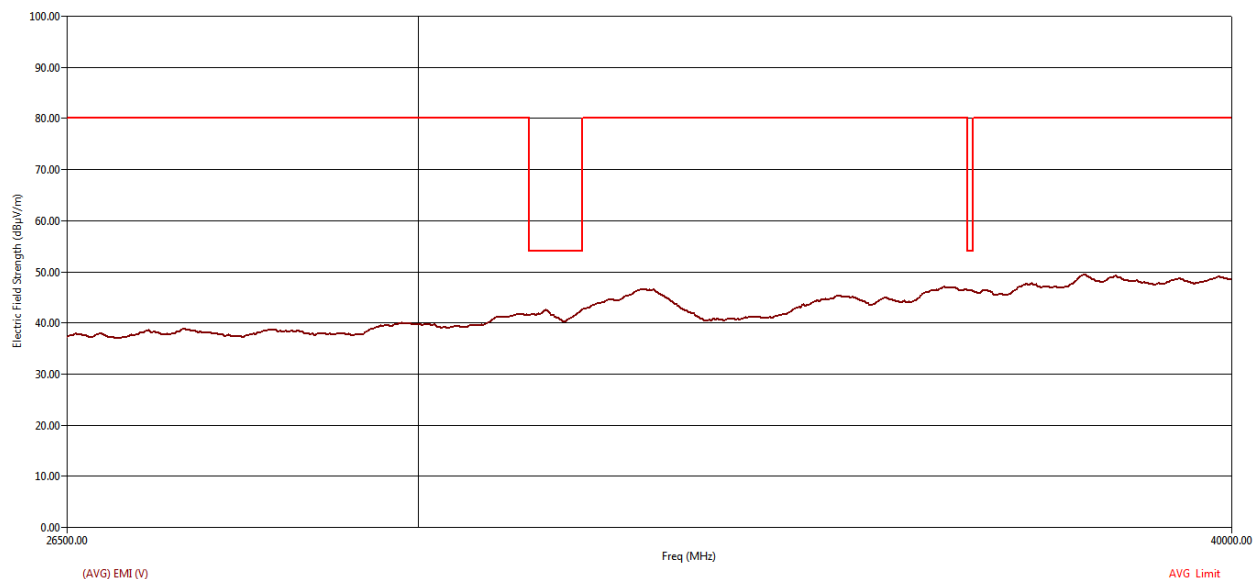


Figure 50: 5MHz, 17dBi, Low Channel: Average RE Graph - 26.5GHz to 40GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preampl (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
32470.80	32470.80	V	98.10	107.00	41.49	10.73	38.91	44.65	46.47	80.00	-33.53
39223.90	39223.90	H	195.30	172.00	41.13	12.81	42.06	47.54	48.46	80.00	-31.54

Table 31: 5MHz, 17dBi, Low Channel: Average table from 26.5 GHz to 40 GHz

5.3.1.5.5 5 MHz MODULATION BANDWIDTH, 17 dBi ANTENNA, MID CHANNEL - 5200 MHz

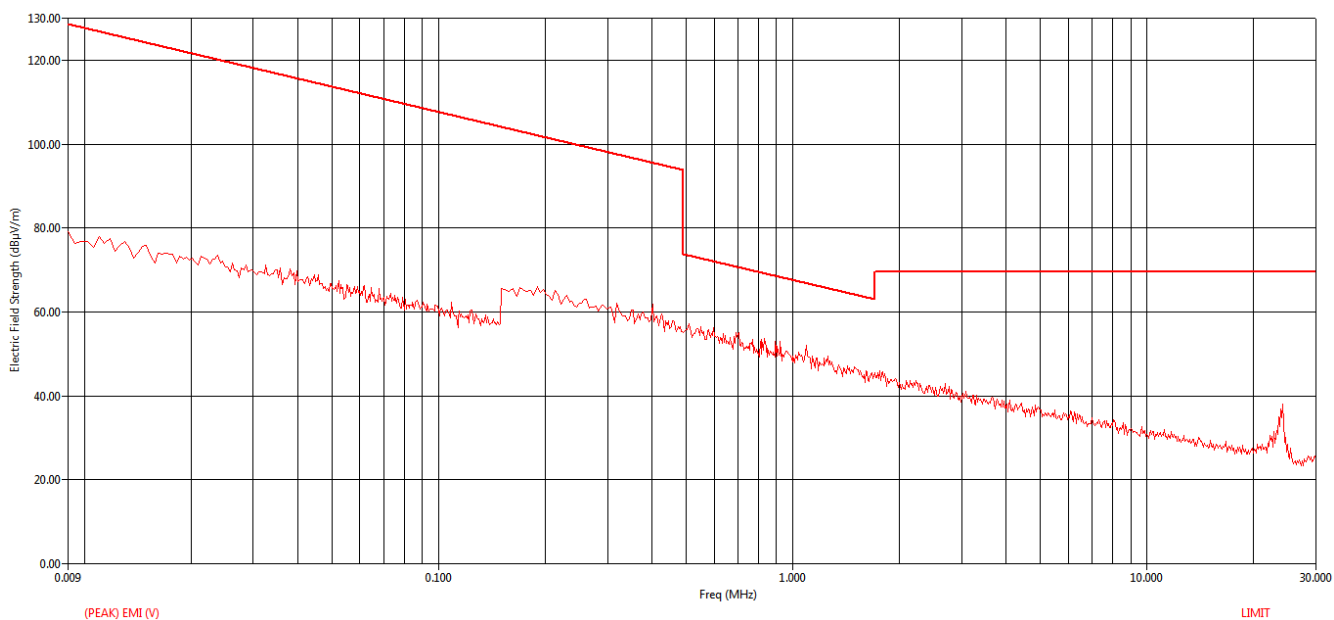


Figure 51: 5MHz, 17dBi, Mid Channel: Peak RE Graph - 9kHz to 30MHz - Parallel

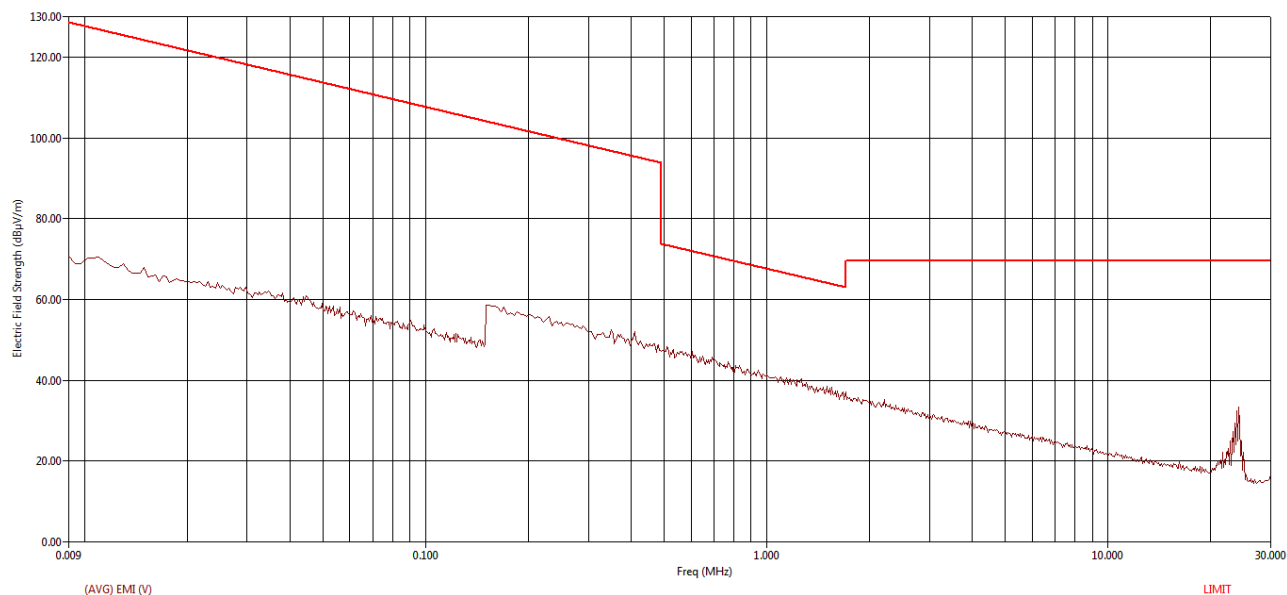


Figure 52: 5MHz, 17dBi, Mid Channel: Average RE Graph - 9kHz to 30MHz - Parallel

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbl Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
23.84	23.83	180.00	17.79	1.06	16.19	35.04	69.54	-34.50
24.10	24.09	180.00	17.50	1.06	16.17	34.73	69.54	-34.81
24.36	24.35	185.60	14.96	1.07	16.15	32.18	69.54	-37.36

Table 32: 5MHz, 17dBi, Mid Channel: Quasipeak table from 9 kHz to 30 MHz

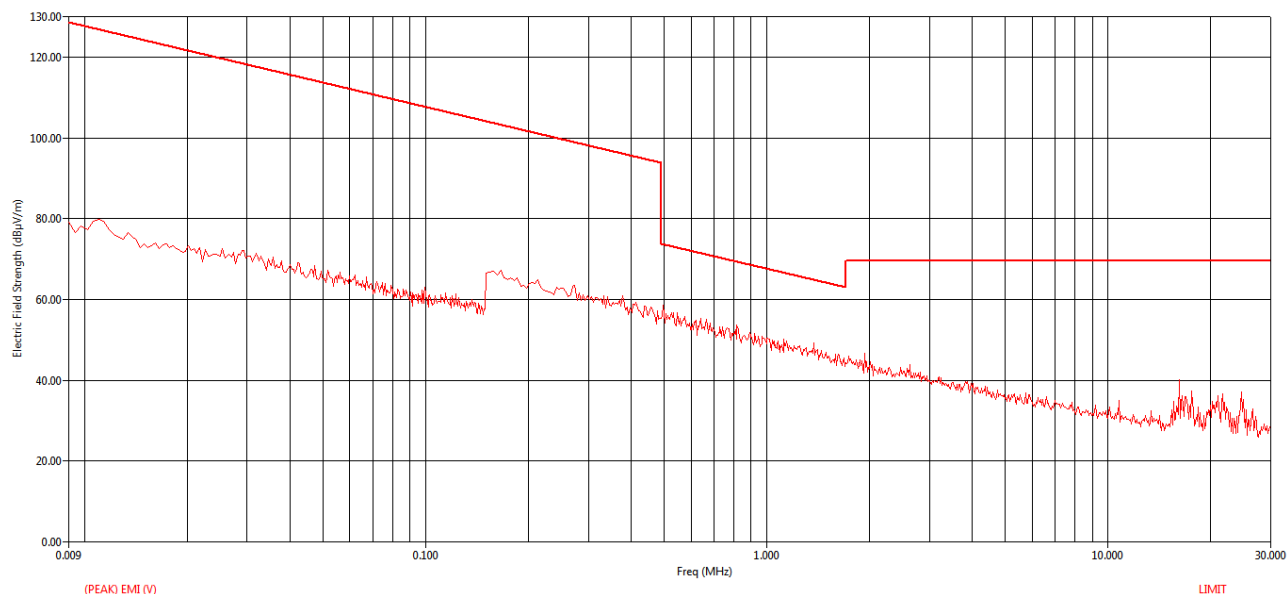


Figure 53: 5MHz, 17dBi, Mid Channel: Peak RE Graph - 9kHz to 30MHz - Perpendicular

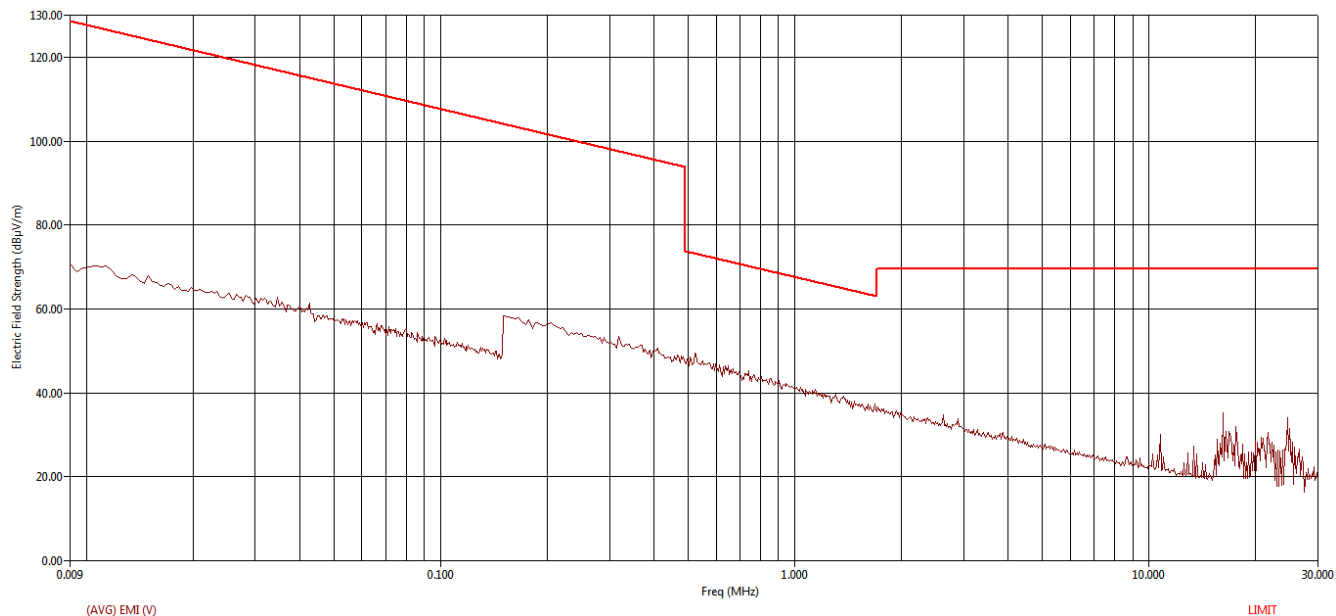


Figure 54: 5MHz, 17dBi, Mid Channel: Average RE Graph - 9kHz to 30MHz - Perpendicular

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbi Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
16.21	16.23	312.10	22.28	0.87	16.79	39.94	69.54	-29.60
17.59	17.60	324.60	7.68	0.91	16.68	25.27	69.54	-44.27
21.00	20.99	267.30	13.15	0.99	16.41	30.56	69.54	-38.98
24.69	24.69	179.90	11.34	1.08	16.12	28.54	69.54	-41.00

Table 33: 5MHz, 17dBi, Mid Channel: Quasipeak table from 9 kHz to 30 MHz

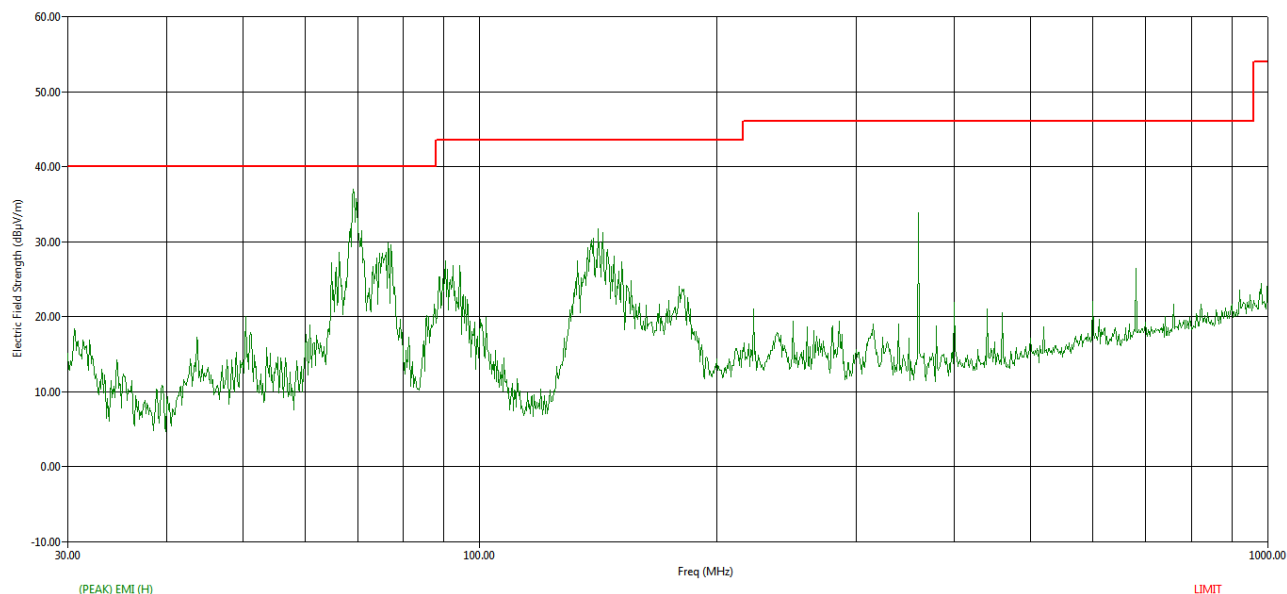


Figure 55: 5MHz, 17dBi, Mid Channel: Peak RE Graph - 30MHz to 1GHz - Horizontal Polarization

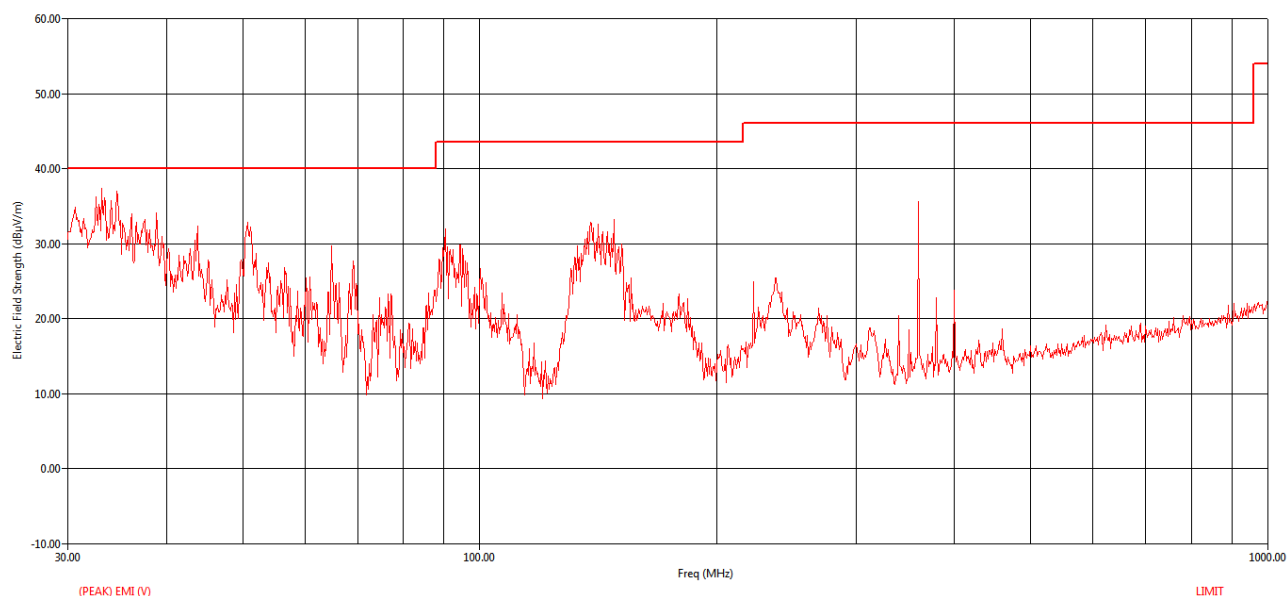


Figure 56: 5MHz, 17dBi, Mid Channel: Peak RE Graph - 30MHz to 1GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
33.16	33.18	V	44.50	109.00	66.92	1.24	9.52	43.80	33.88	40.00	-6.12
50.72	50.64	V	311.10	100.00	66.23	1.56	9.13	43.83	33.08	40.00	-6.92
69.16	69.15	H	156.20	193.00	65.30	1.79	9.79	43.88	33.00	40.00	-7.00
69.72	69.68	H	358.90	220.00	67.84	1.79	9.84	43.88	35.59	40.00	-4.41
138.40	138.40	V	356.80	100.00	61.69	2.49	11.07	43.94	31.31	43.52	-12.21
148.16	148.11	V	354.00	100.00	61.63	2.57	11.43	43.95	31.69	43.52	-11.83

Table 34: 5MHz, 17dBi, Mid Channel: Quasipeak table from 30 MHz to 1 GHz

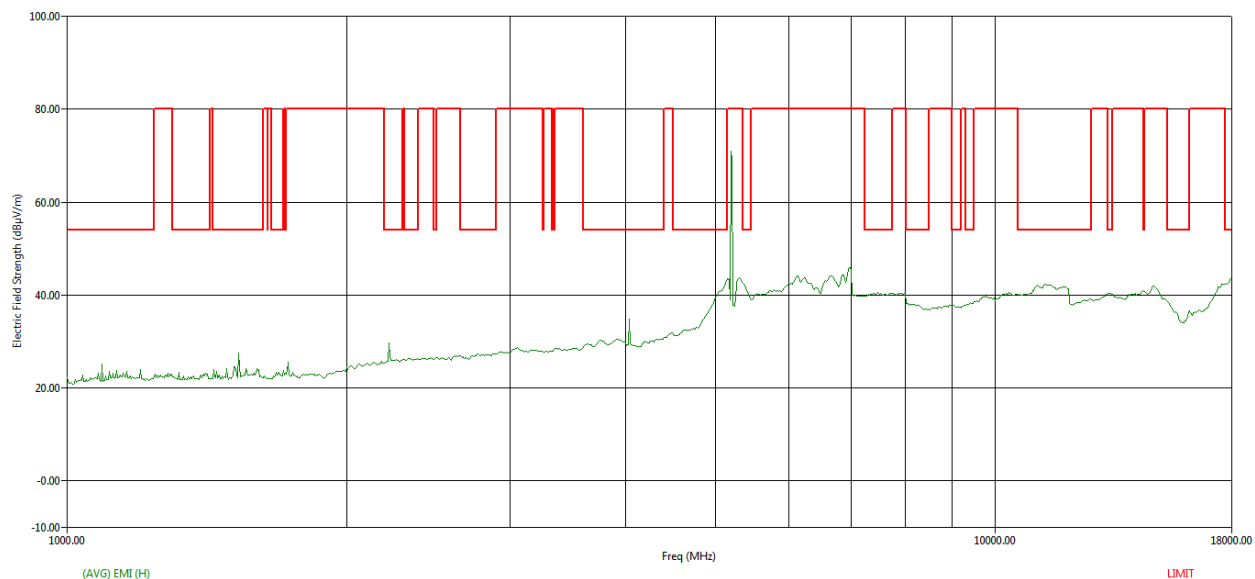


Figure 57: 5MHz, 17dBi, Mid Channel: Average RE Graph - 1GHz to 18GHz - Horizontal Polarization

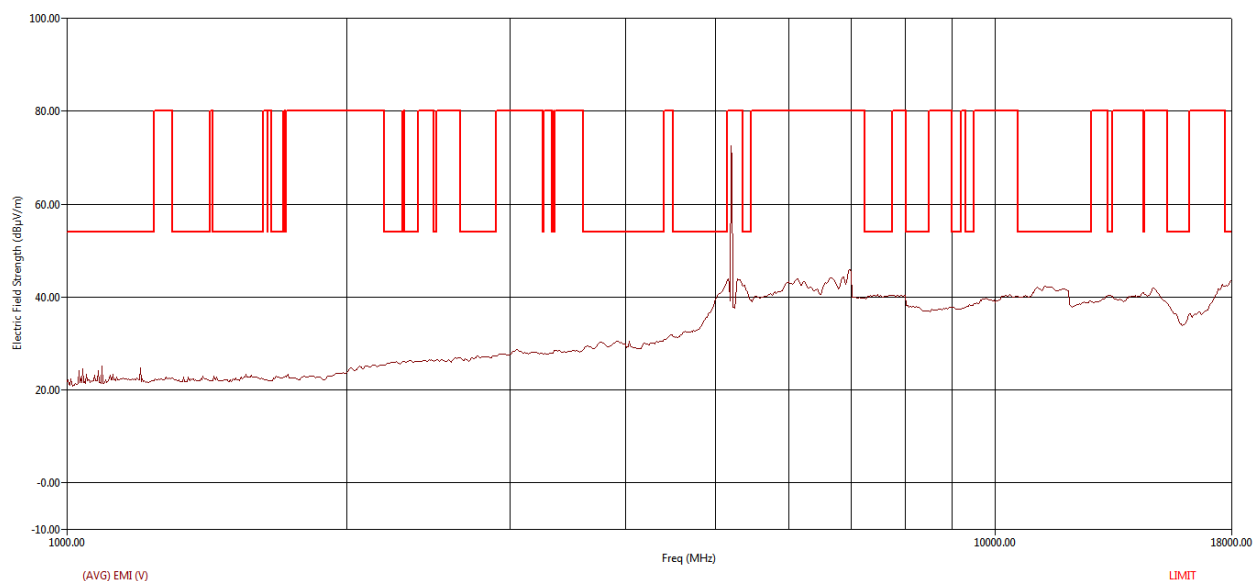


Figure 58: 5MHz, 17dBi, Mid Channel: Average RE Graph - 1GHz to 18GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT TbtI AgI (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
4039.00	4039.00	H	180.10	100.00	37.73	3.33	30.26	30.21	41.11	53.98	-12.87
5148.80	5148.80	V	2.50	100.00	34.75	3.80	32.93	28.32	43.16	53.98	-10.82
5280.80	5280.80	V	359.10	100.00	35.22	3.82	32.90	28.33	43.61	80.00	-36.39

Table 35: 5MHz, 17dBi, Mid Channel: Average table from 1 GHz to 18 GHz

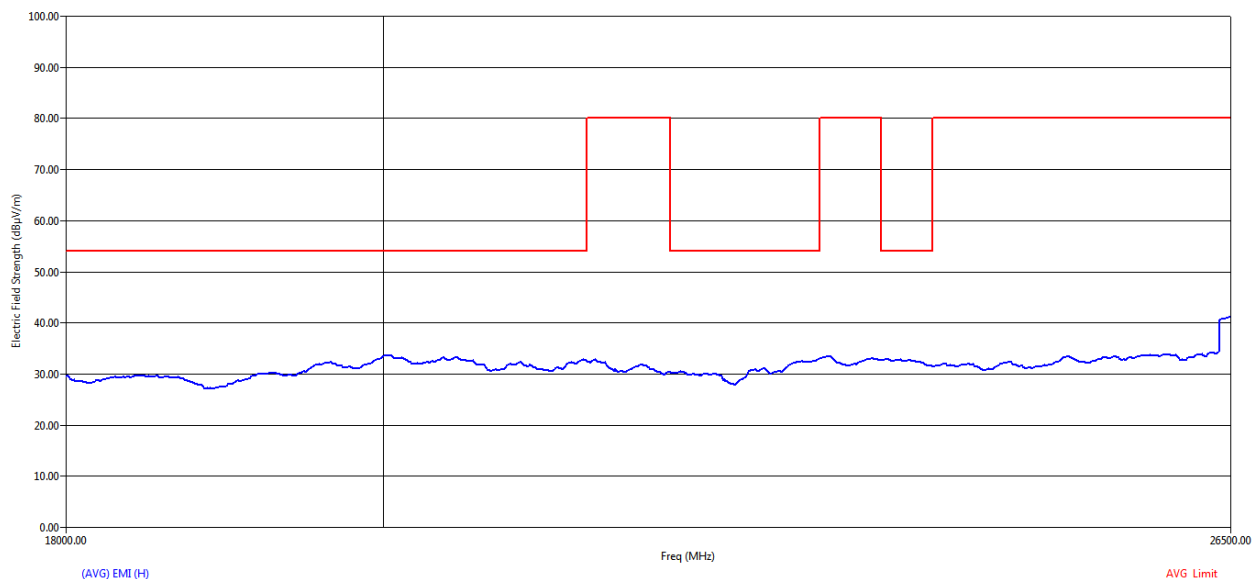


Figure 59: 5MHz, 17dBi, Mid Channel: Average RE Graph - 18GHz to 26.5GHz - Horizontal Polarization

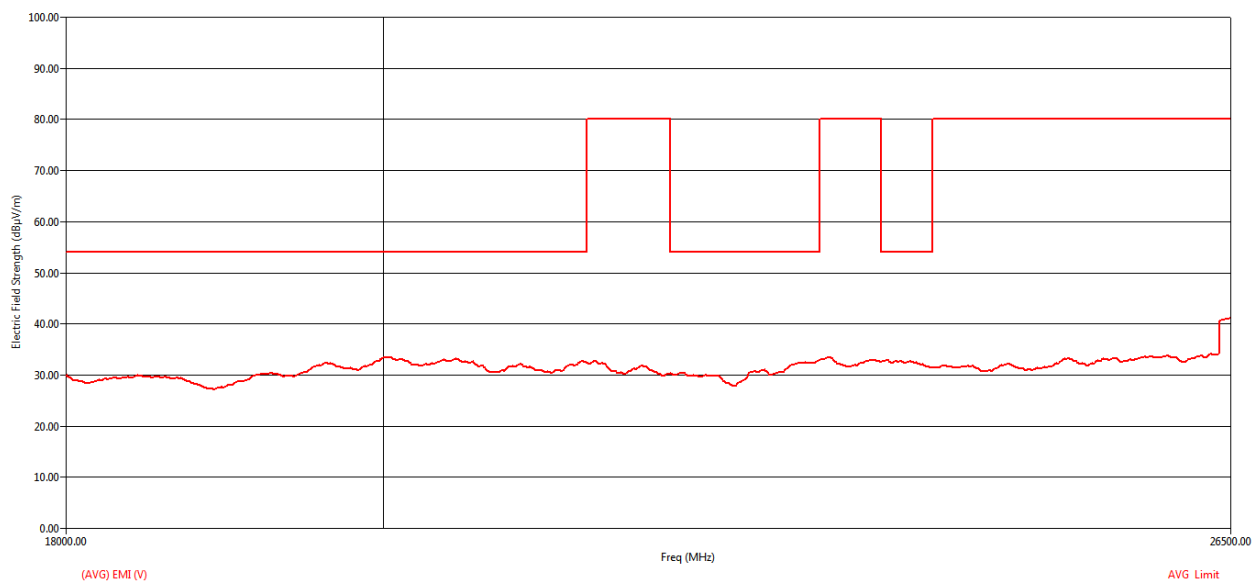


Figure 60: 5MHz, 17dBi, Mid Channel: Average RE Graph - 18GHz to 26.5GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
20038.40	20038.40	V	165.60	177.00	32.78	7.27	36.48	42.94	33.59	53.98	-20.39
20922.80	20922.80	V	79.60	200.00	32.55	7.29	37.22	44.81	32.24	53.98	-21.74
23650.30	23650.30	H	288.20	173.00	33.21	8.38	38.02	47.06	32.56	53.98	-21.42

Table 36: 5MHz, 17dBi, Mid Channel: Average table from 18 GHz to 26.5 GHz

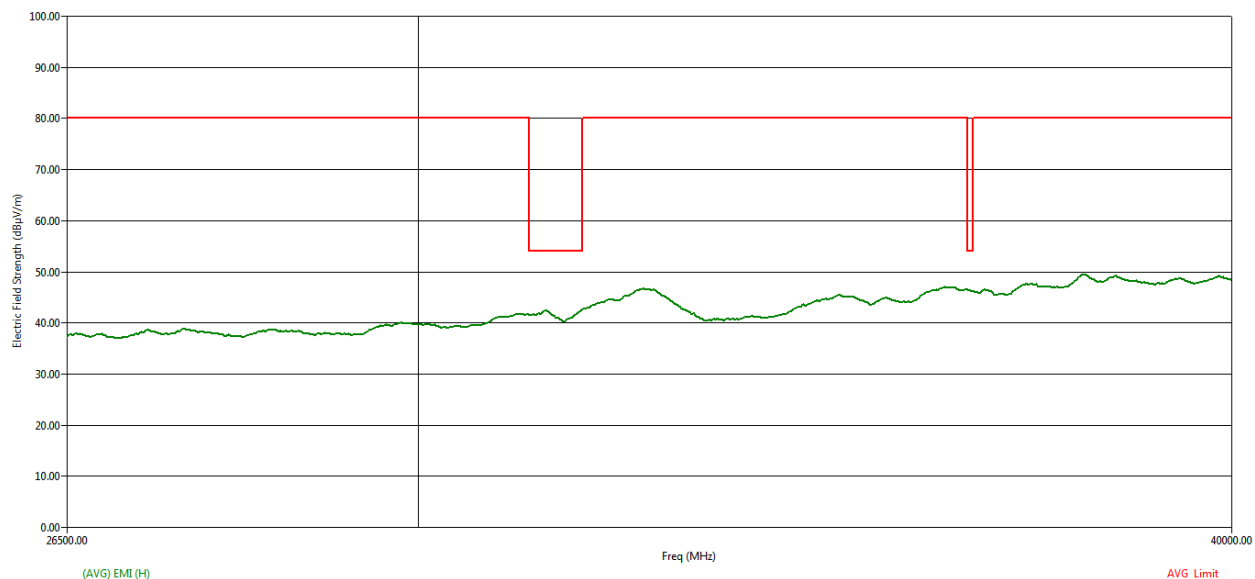


Figure 61: 5MHz, 17dBi, Mid Channel: Average RE Graph - 26.5GHz to 40GHz - Horizontal Polarization

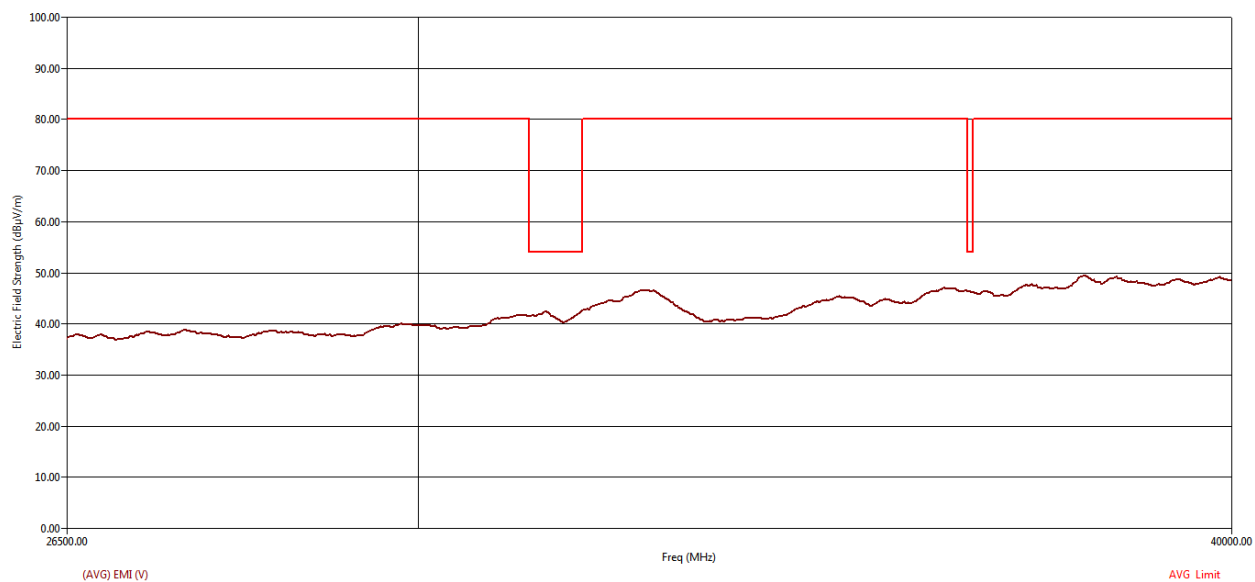


Figure 62: 5MHz, 17dBi, Mid Channel: Average RE Graph - 26.5GHz to 40GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
29751.60	29751.60	V	180.00	102.00	38.03	9.98	38.94	47.37	39.58	80.00	-40.42
34822.00	34822.00	H	212.10	130.00	41.21	11.31	39.86	47.10	45.27	80.00	-34.73

Table 37: 5MHz, 17dBi, Mid Channel: Average table from 26.5 GHz to 40 GHz

5.3.1.5.6 5 MHz MODULATION BANDWIDTH, 17 dBi ANTENNA, HIGH CHANNEL - 5245 MHz

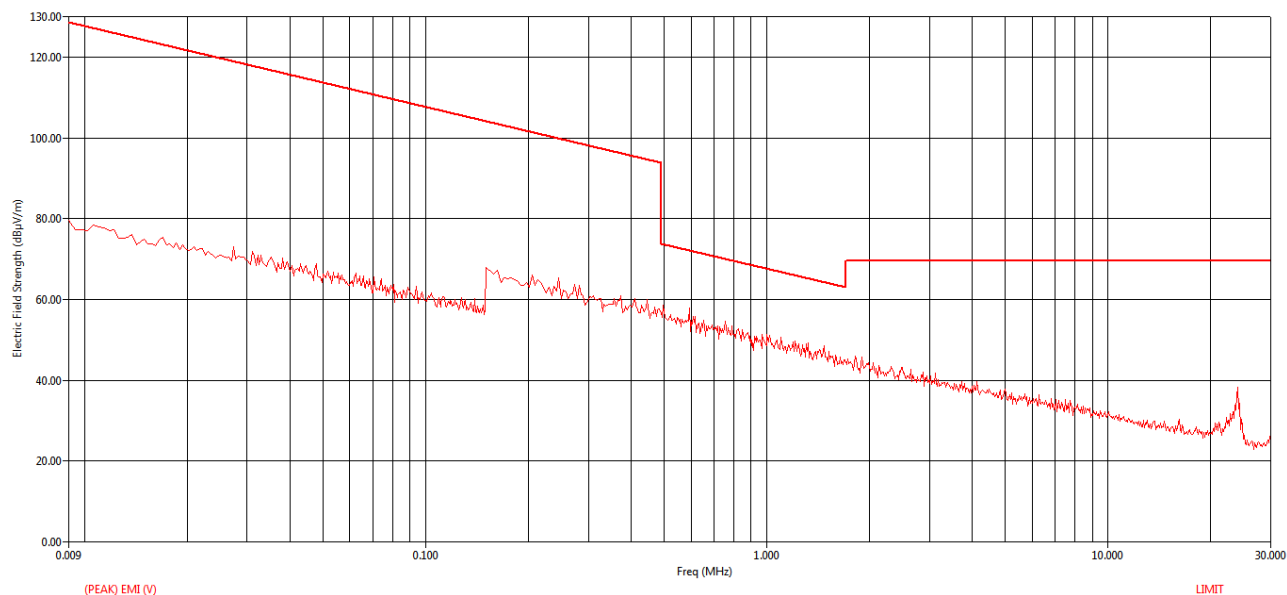


Figure 63: 5MHz, 17dBi, High Channel: Peak RE Graph - 9kHz to 30MHz - Parallel

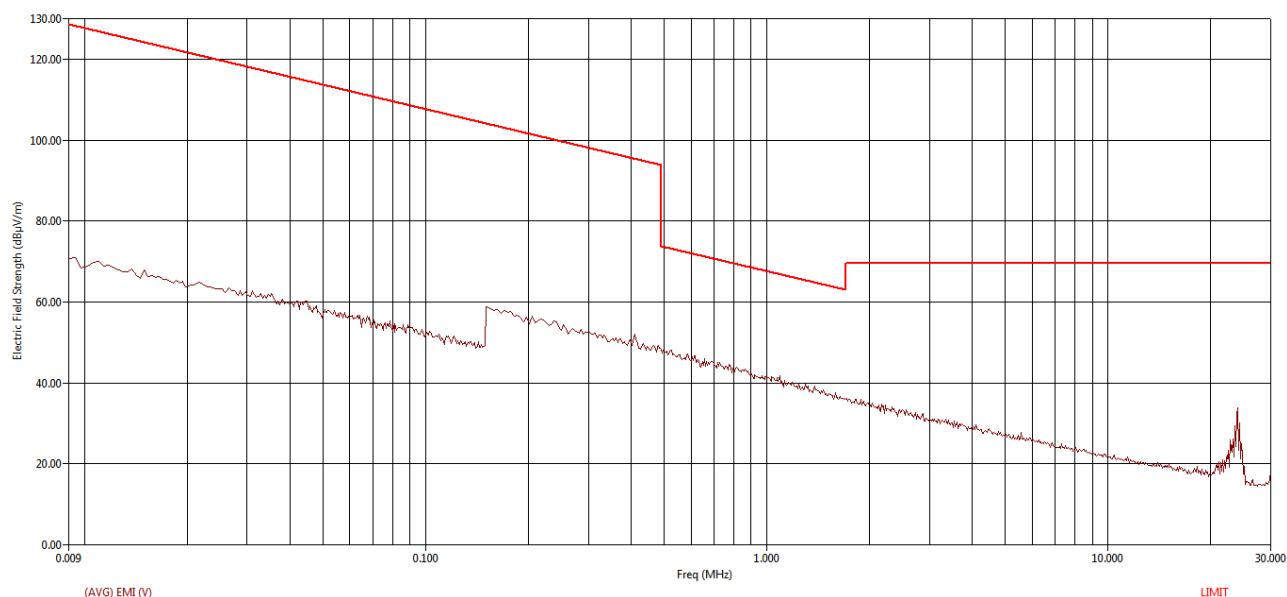


Figure 64: 5MHz, 17dBi, High Channel: Average RE Graph - 9kHz to 30MHz - Parallel

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbl Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
23.80	23.81	188.90	18.65	1.06	16.19	35.89	69.54	-33.65
24.07	24.07	180.20	19.56	1.06	16.17	36.79	69.54	-32.75

Table 38: 5MHz, 17dBi, High Channel: Quasipeak table from 9 kHz to 30 MHz

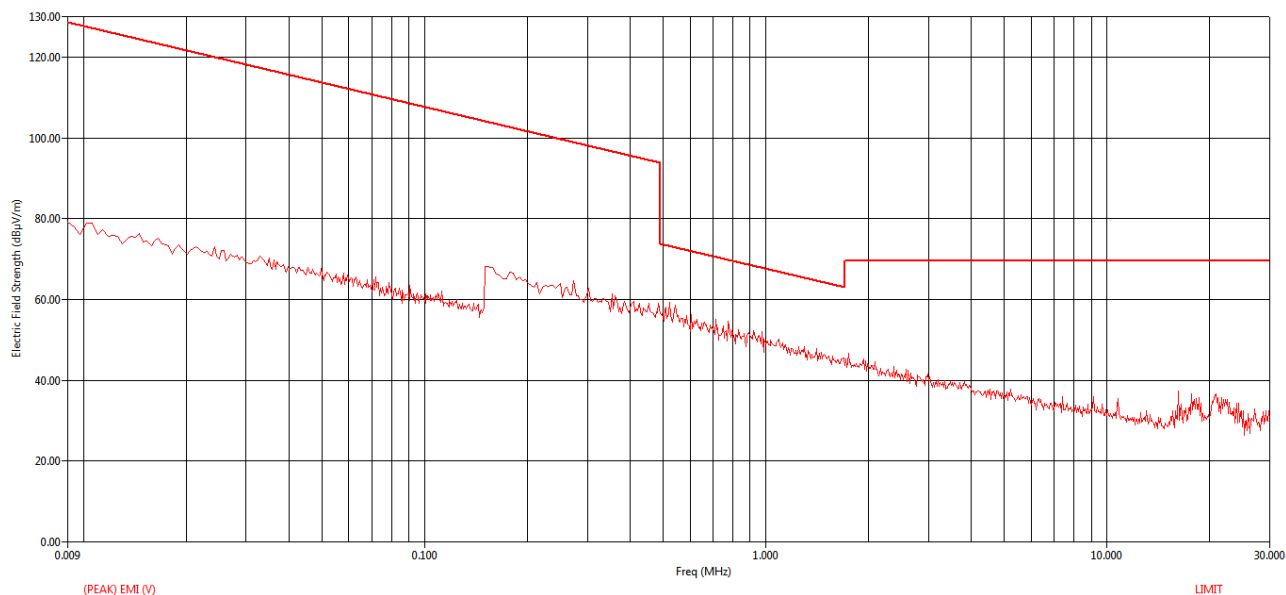


Figure 65: 5MHz, 17dBi, High Channel: Peak RE Graph - 9kHz to 30MHz - Perpendicular

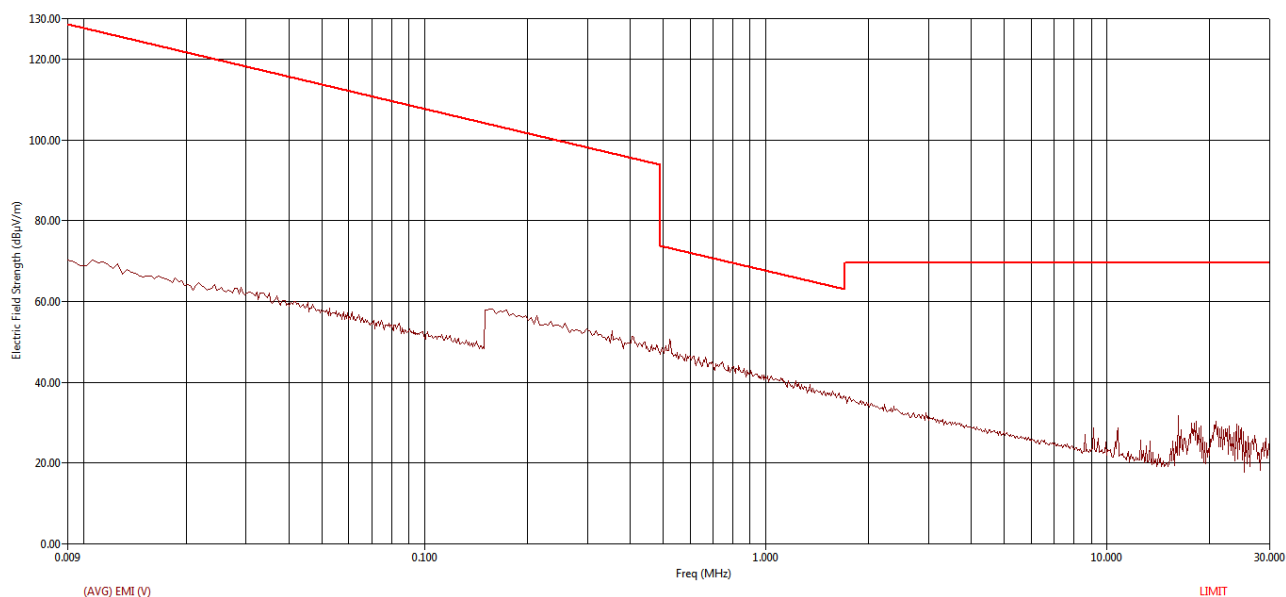


Figure 66: 5MHz, 17dBi, High Channel: Average RE Graph - 9kHz to 30MHz - Perpendicular

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbt Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
16.24	16.23	183.00	18.67	0.87	16.79	36.33	69.54	-33.21
21.00	20.99	242.80	15.44	0.99	16.41	32.84	69.54	-36.70

Table 39: 5MHz, 17dBi, High Channel: Quasipeak table from 9 kHz to 30 MHz

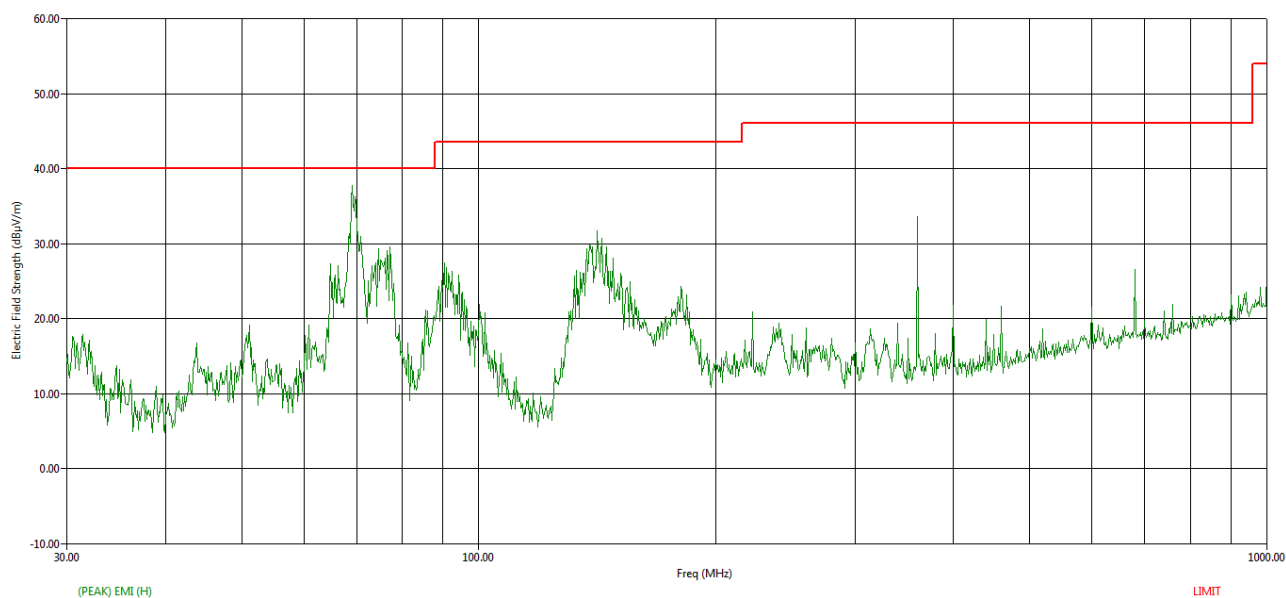


Figure 67: 5MHz, 17dBi, High Channel: Peak RE Graph - 30MHz to 1GHz - Horizontal Polarization

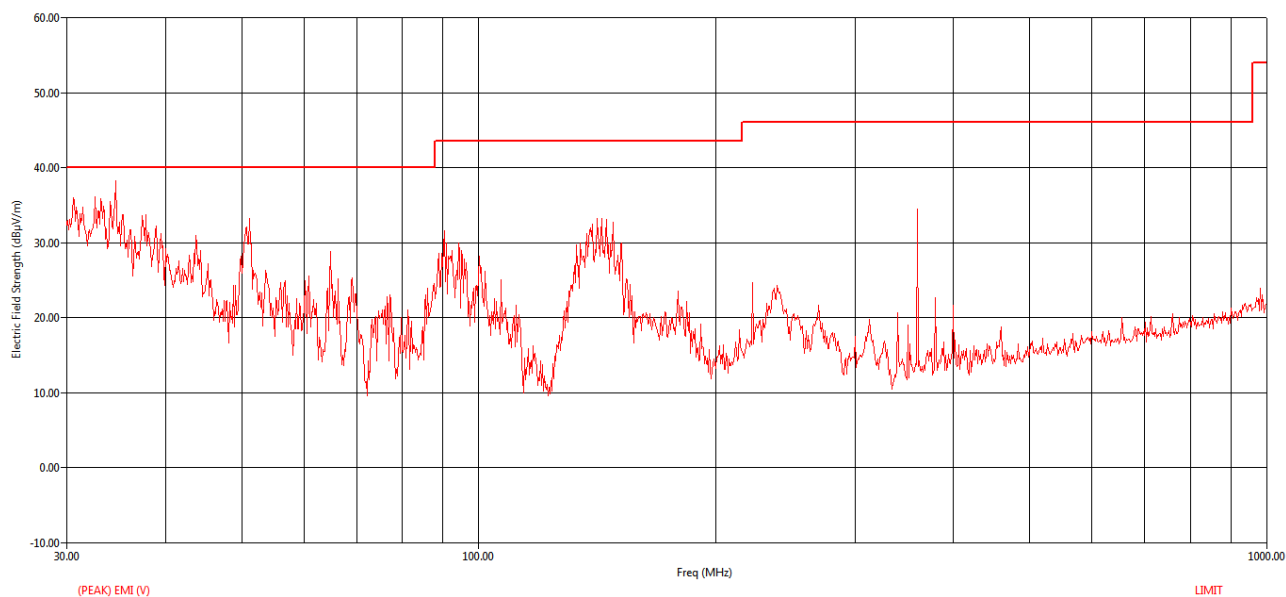


Figure 68: 5MHz, 17dBi, High Channel: Peak RE Graph - 30MHz to 1GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
32.60	32.61	V	51.40	103.00	66.20	1.23	9.55	43.80	33.18	40.00	-6.82
34.64	34.60	V	3.80	110.00	66.92	1.27	9.44	43.81	33.83	40.00	-6.17
37.80	37.80	V	52.60	100.00	65.22	1.34	9.83	43.81	32.58	40.00	-7.42
51.20	51.18	V	306.40	108.00	65.69	1.56	9.12	43.83	32.54	40.00	-7.46
69.12	69.00	H	353.40	182.00	67.51	1.78	9.78	43.88	35.19	40.00	-4.81
69.72	69.71	H	347.20	227.00	68.83	1.79	9.84	43.88	36.58	40.00	-3.42
141.20	141.20	H	354.10	329.00	60.78	2.51	11.21	43.94	30.56	43.52	-12.96
143.32	143.29	H	347.20	337.00	59.69	2.53	11.28	43.95	29.55	43.52	-13.97

Table 40: 5MHz, 17dBi, High Channel: Quasipeak table from 30 MHz to 1 GHz

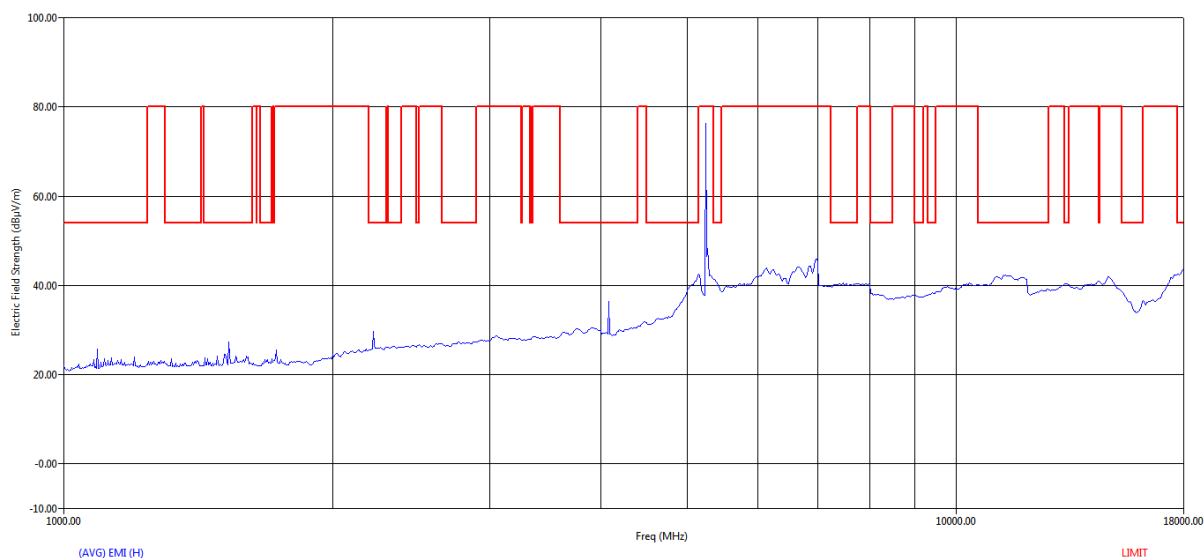


Figure 69: 5MHz, 17dBi, High Channel: Average RE Graph - 1GHz to 18GHz - Horizontal Polarization

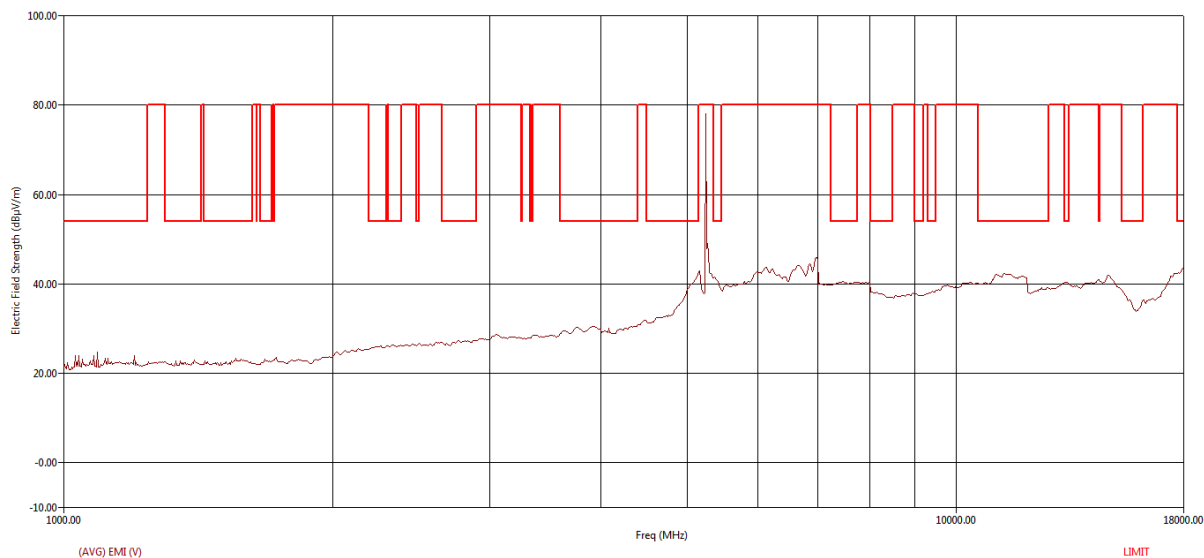


Figure 70: 5MHz, 17dBi, High Channel: Average RE Graph - 1GHz to 18GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
4084.00	4084.00	H	180.10	110.00	38.41	3.35	30.32	30.11	41.97	53.98	-12.01
5266.80	5266.80	V	354.40	100.00	40.59	3.82	32.90	28.33	48.98	80.00	-31.02
5268.40	5268.40	H	18.70	100.00	39.31	3.82	32.90	28.33	47.70	80.00	-32.30

Table 41: 5MHz, 17dBi, High Channel: Average table from 1 GHz to 18 GHz

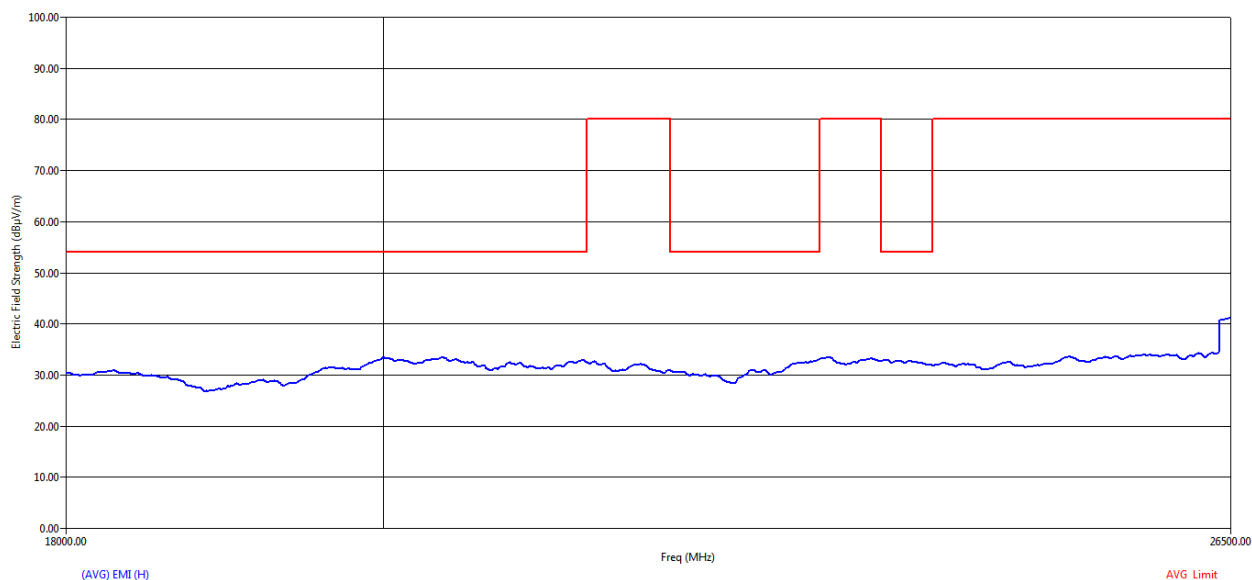


Figure 71: 5MHz, 17dBi, High Channel: Average RE Graph - 18GHz to 26.5GHz - Horizontal Polarization

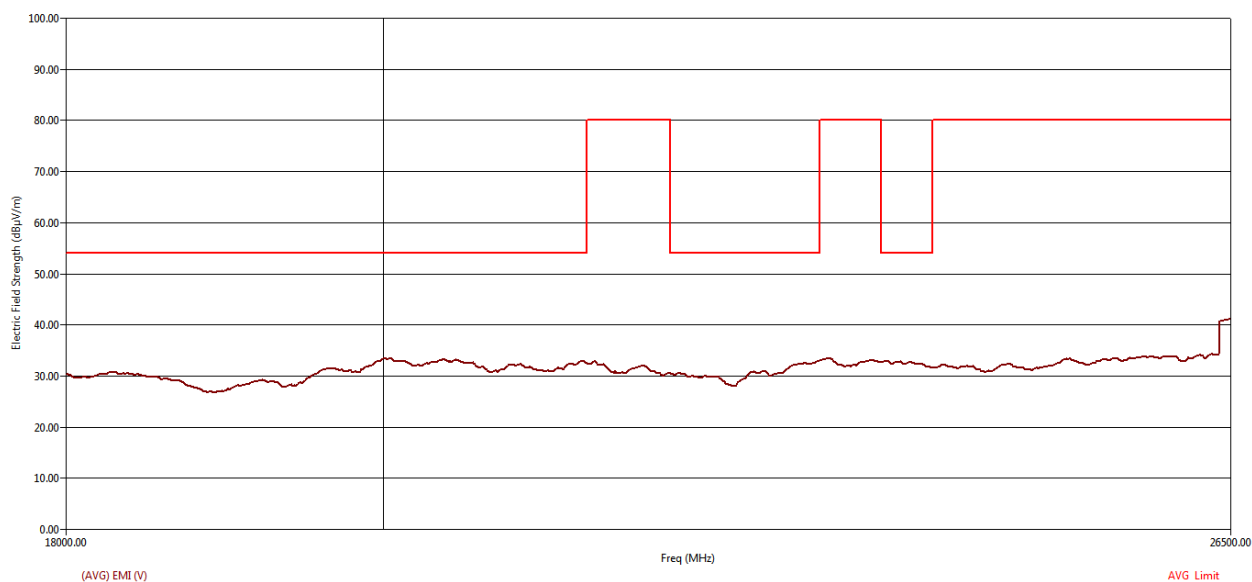


Figure 72: 5MHz, 17dBi, High Channel: Average RE Graph - 18GHz to 26.5GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
18956.00	18956.00	H	131.50	103.00	31.94	6.60	36.47	47.73	27.28	53.98	-26.70
20479.60	20479.60	H	75.40	194.00	32.29	7.63	36.80	43.73	32.98	53.98	-21.00
23058.40	23058.40	H	259.80	132.00	33.29	8.18	37.72	46.87	32.31	53.98	-21.67

Table 42: 5MHz, 17dBi, High Channel: Average table from 18 GHz to 26.5 GHz

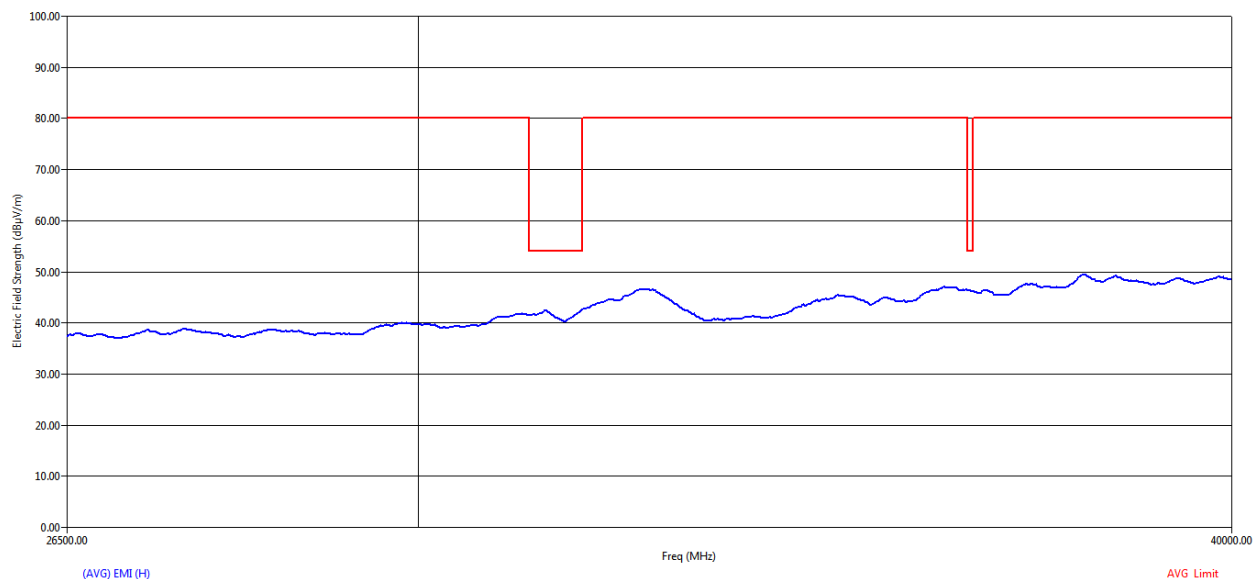


Figure 73: 5MHz, 17dBi, High Channel: Average RE Graph - 26.5GHz to 40GHz - Horizontal Polarization

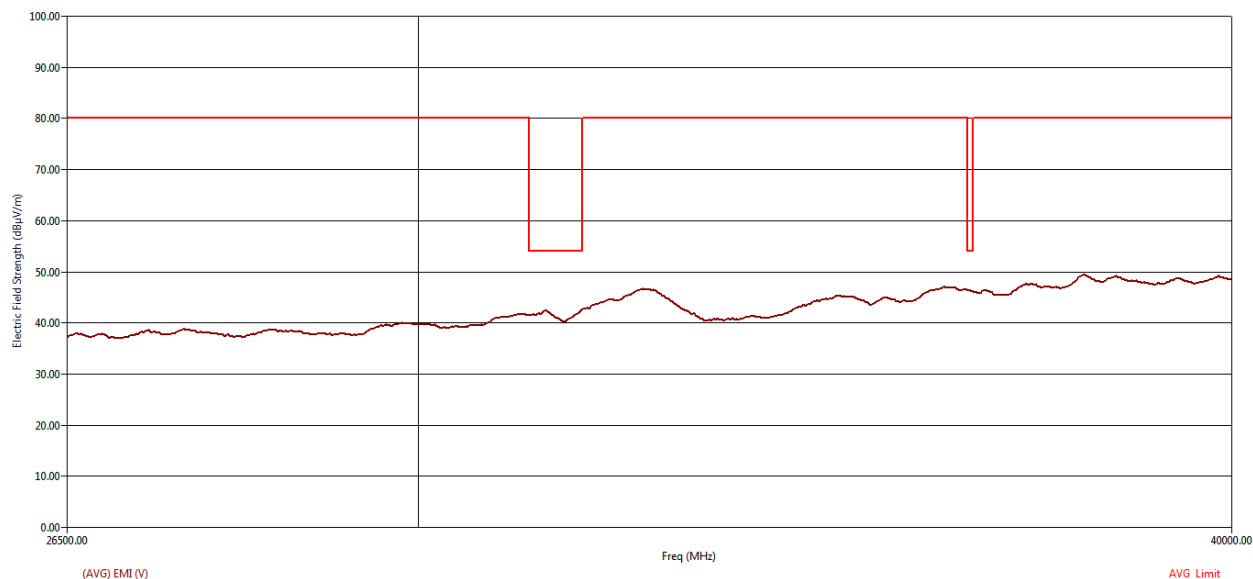


Figure 74: 5MHz, 17dBi, High Channel: Average RE Graph - 26.5GHz to 40GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
32514.00	32514.00	H	309.40	184.00	41.33	10.76	38.92	44.57	46.43	80.00	-33.57
37497.60	37497.60	V	223.20	101.00	41.18	12.34	40.08	46.65	46.94	80.00	-33.06

Table 43: 5MHz, 17dBi, High Channel: Average table from 26.5 GHz to 40 GHz

5.3.1.5.7 40 MHz MODULATION BANDWIDTH, 6 dBi ANTENNA, LOW CHANNEL - 5180 MHz

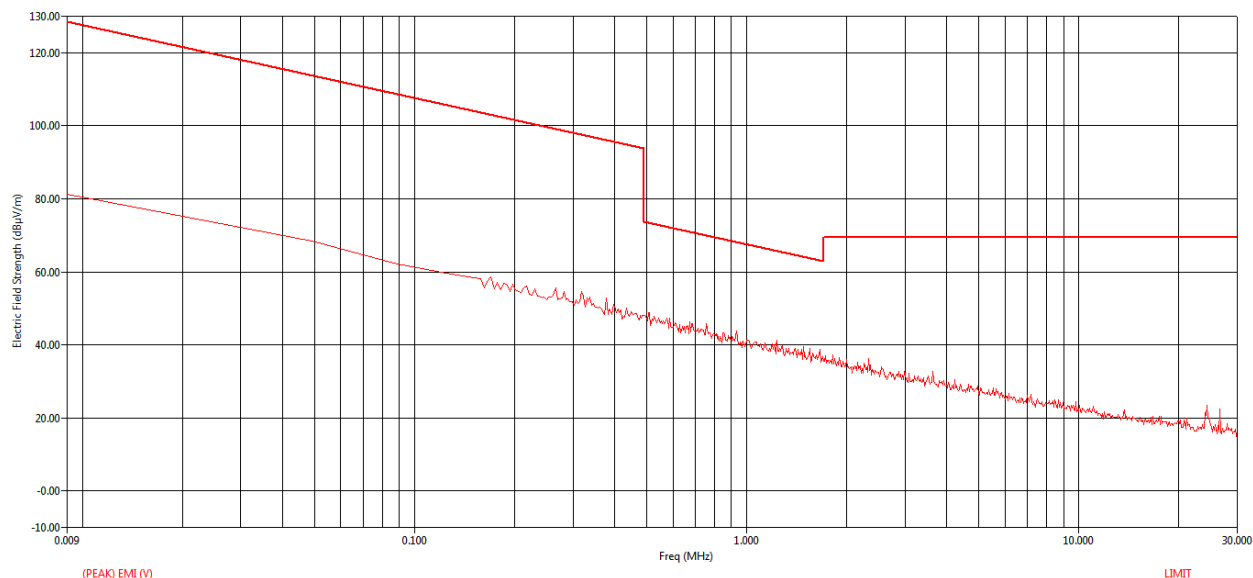


Figure 75: 40MHz, 6dBi, Low Channel: Peak RE Graph - 9kHz to 30MHz - Parallel

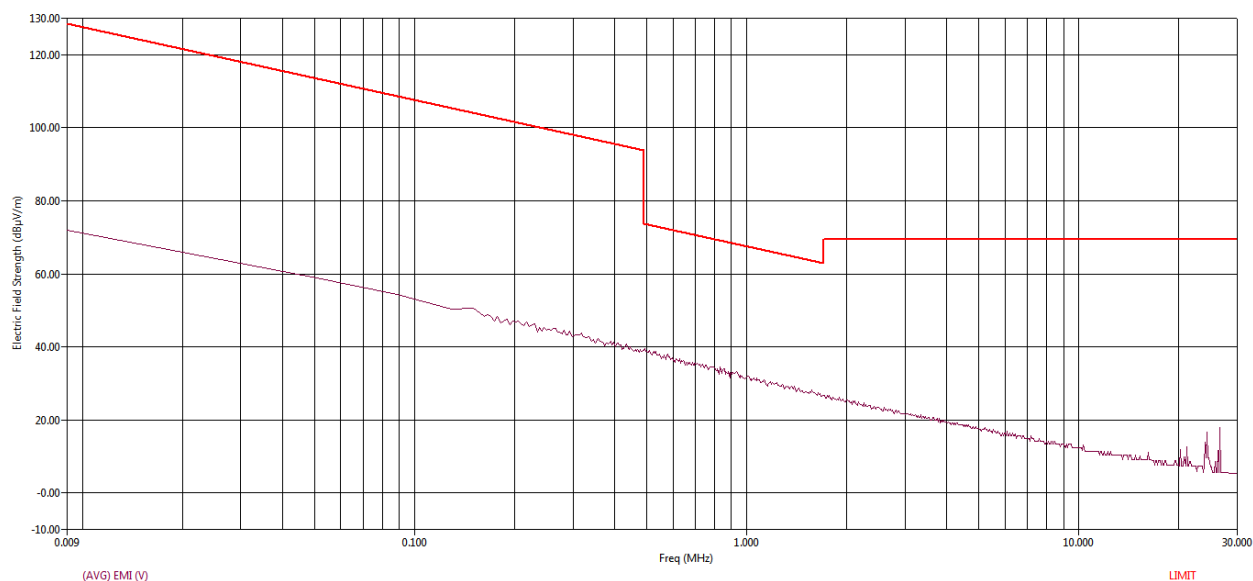


Figure 76: 40MHz, 6dBi, Low Channel: Average RE Graph - 9kHz to 30MHz - Parallel

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	(QP) Trace (dB μ V)	Cable (dB)	Transducer (dB)	(QP) EMI (dB μ V/m)	Limit (dB μ V/m)	(QP) Margin (dB)
24.39	24.38	V	104.30	10.38	1.07	16.14	27.59	69.54	-41.95
26.57	26.57	V	347.50	4.88	1.11	16.00	21.99	69.54	-47.55

Table 44: 40MHz, 6dBi, Low Channel: Quasipeak table from 9 kHz to 30 MHz

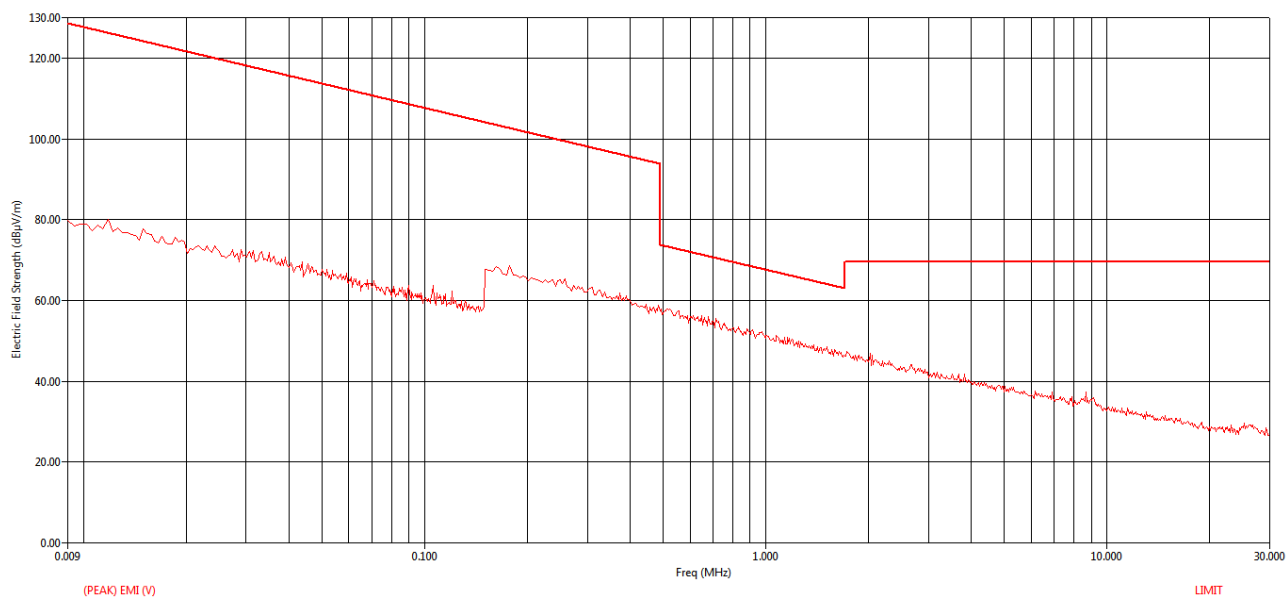


Figure 77: 40MHz, 6dBi, Low Channel: Peak RE Graph - 9kHz to 30MHz - Perpendicular

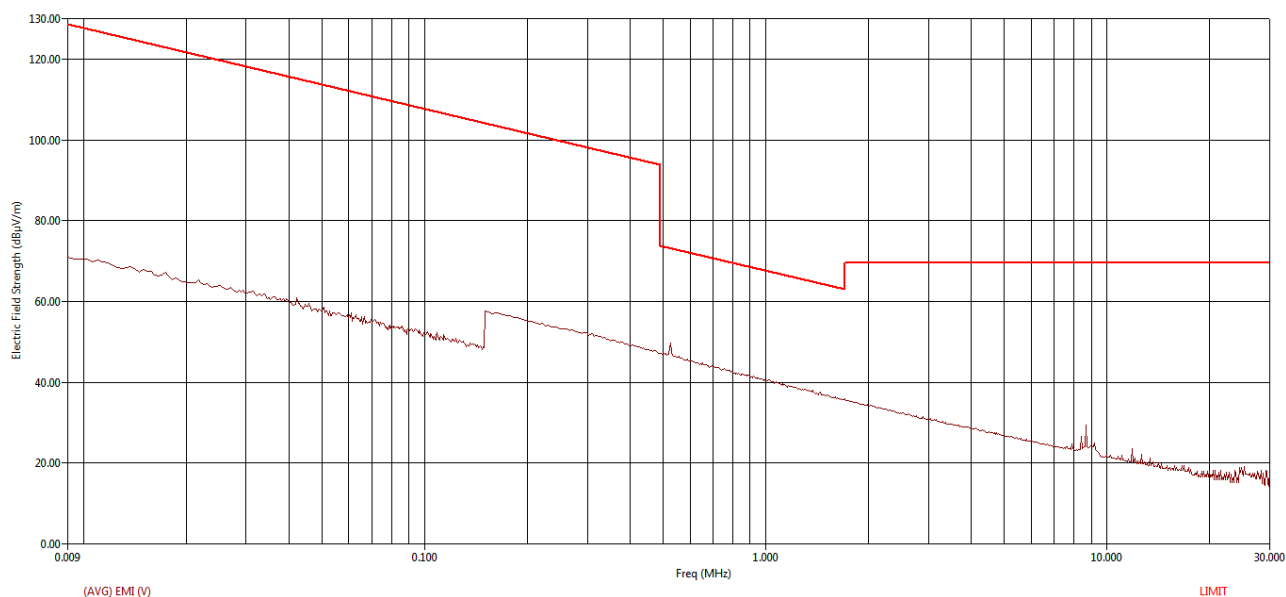


Figure 78: 40MHz, 6dBi, Low Channel: Average RE Graph - 9kHz to 30MHz - Perpendicular

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbi Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
8.65	8.66	V	336.40	11.05	0.65	17.45	29.14	69.54	-40.40
25.32	25.31	V	292.90	4.91	1.09	16.08	22.08	69.54	-47.46

Table 45: 40MHz, 6dBi, Low Channel: Quasipeak table from 9 kHz to 30 MHz

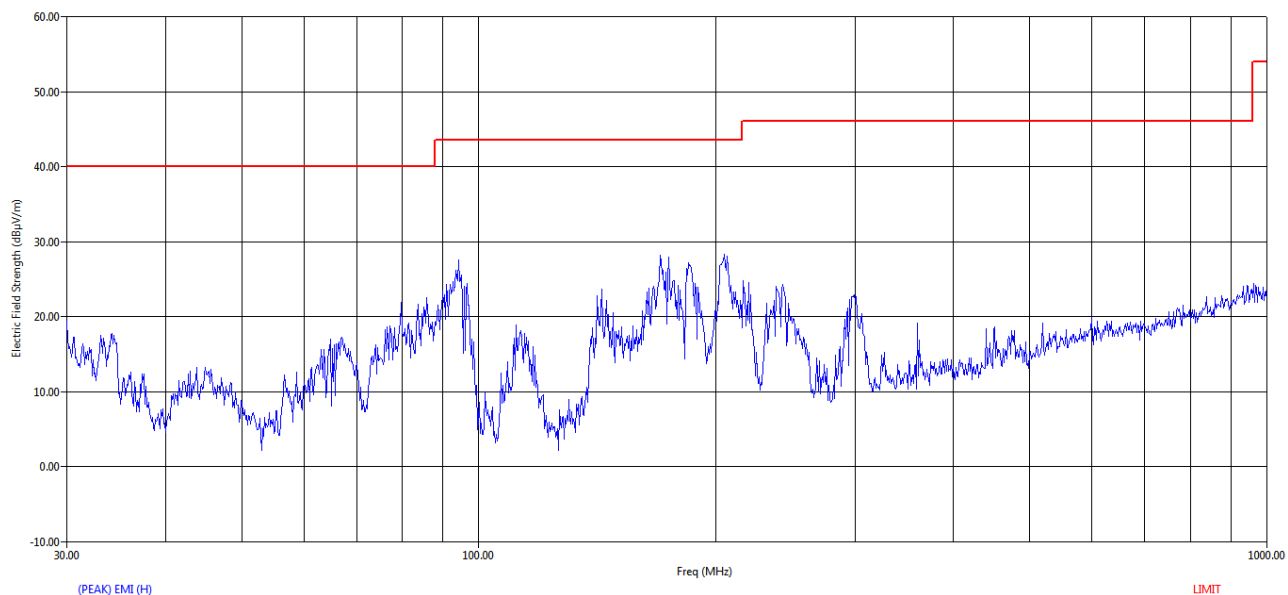


Figure 79: 40MHz, 6dBi, Low Channel: Peak RE Graph - 30MHz to 1GHz - Horizontal Polarization

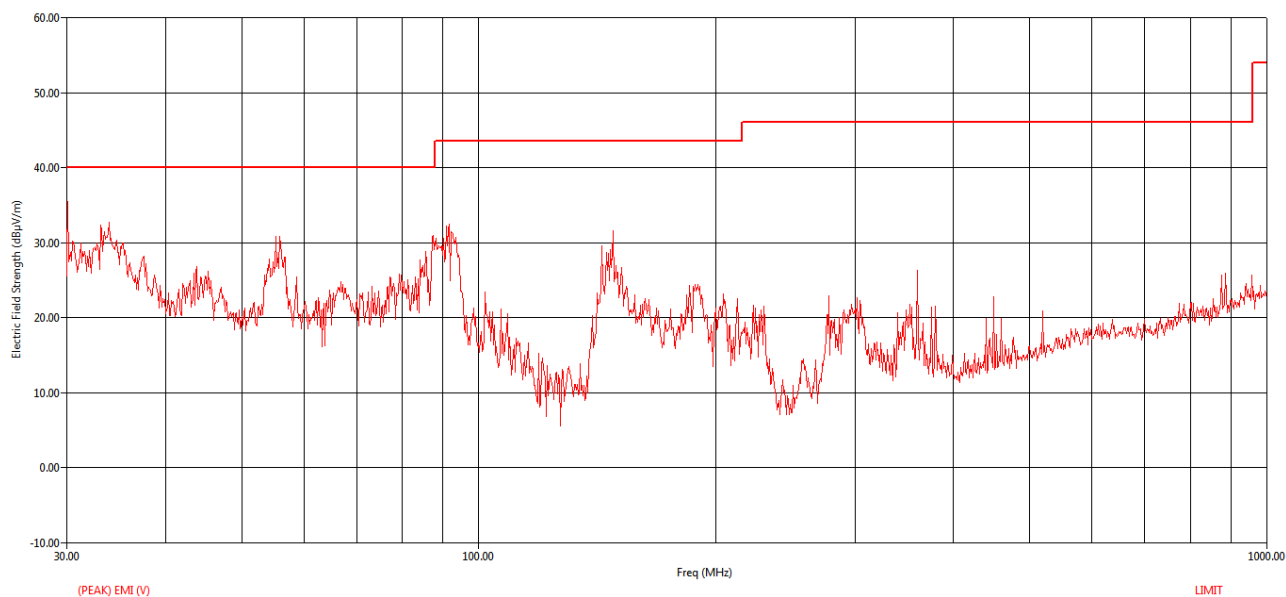


Figure 80: 40MHz, 6dBi, Low Channel: Peak RE Graph - 30MHz to 1GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
30.08	30.00	V	172.80	322.00	53.19	1.17	11.50	43.80	22.06	40.00	-17.94
33.96	33.96	V	170.70	100.00	64.92	1.26	10.84	43.81	33.21	40.00	-6.79
91.08	90.99	V	355.20	143.00	59.54	2.04	8.74	43.93	26.39	43.52	-17.13
91.64	91.63	V	162.10	129.00	57.02	2.04	8.68	43.93	23.82	43.52	-19.70
170.08	169.98	H	115.20	109.00	53.36	2.77	12.99	43.95	25.17	43.52	-18.35

Table 46: 40MHz, 6dBi, Low Channel: Quasipeak table from 30 MHz to 1 GHz

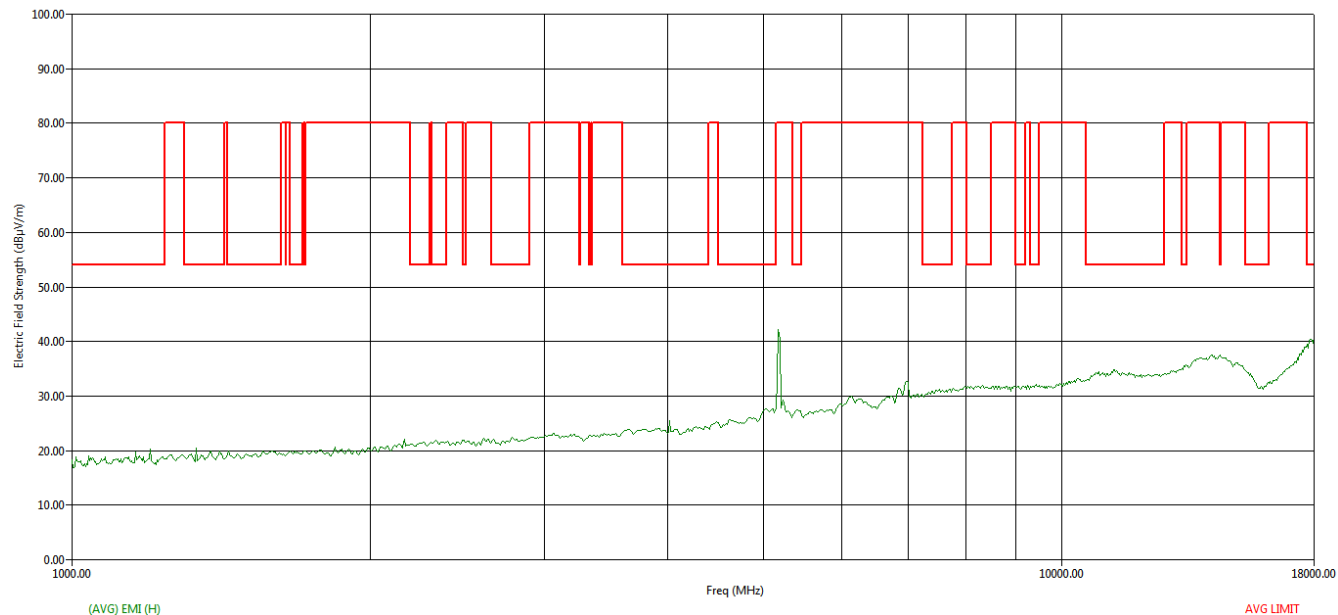


Figure 81: 40MHz, 6dBi, Low Channel: Average RE Graph - 1GHz to 18GHz - Horizontal Polarization

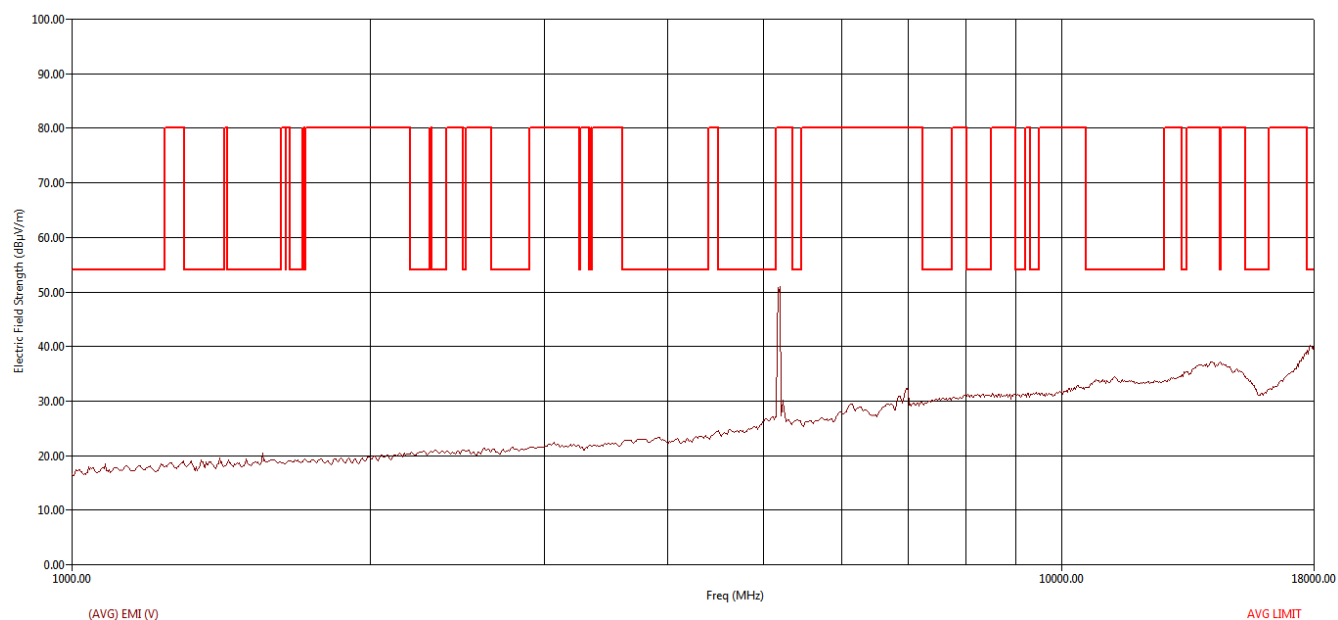


Figure 82: 40MHz, 6dBi, Low Channel: Average RE Graph - 1GHz to 18GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
1335.40	1335.40	H	323.20	100.00	38.45	1.72	24.94	45.58	19.52	53.98	-34.46
4019.10	4019.10	H	102.60	100.00	51.89	2.49	29.60	45.02	38.95	53.98	-15.03
5231.30	5231.30	V	210.80	100.00	36.33	2.79	32.13	44.76	26.48	80.00	-53.52
6976.20	6976.20	V	176.40	100.00	38.76	3.20	35.22	44.83	32.35	80.00	-47.65

Table 47: 40MHz, 6dBi, Low Channel: Average table from 1 GHz to 18 GHz

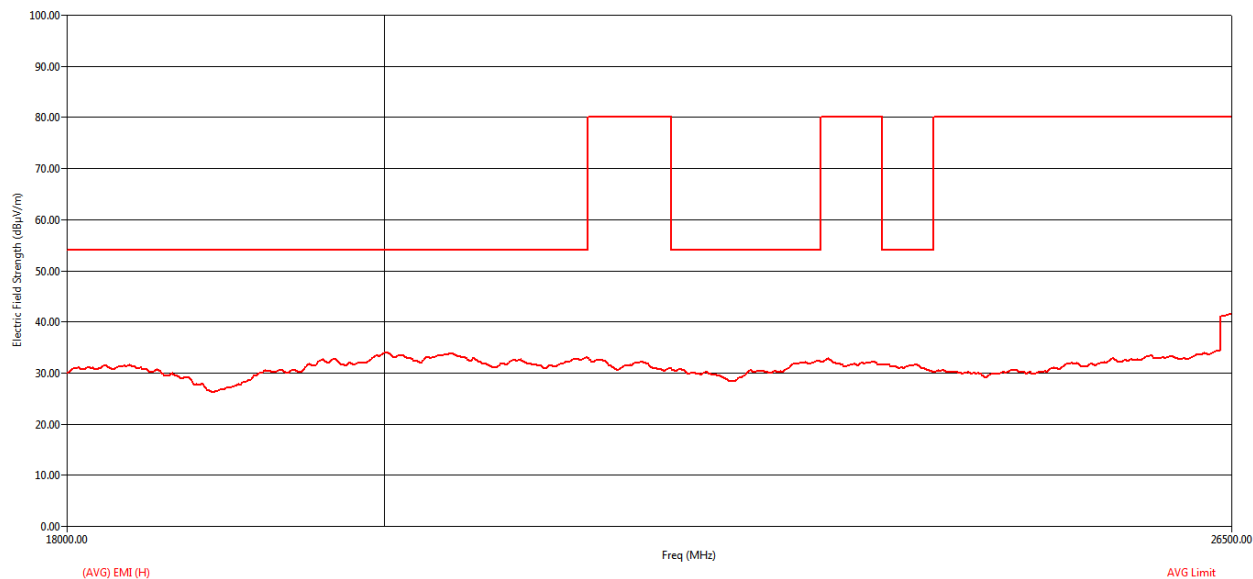


Figure 83: 40MHz, 6dBi, Low Channel: Average RE Graph - 18GHz to 26.5GHz - Horizontal Polarization

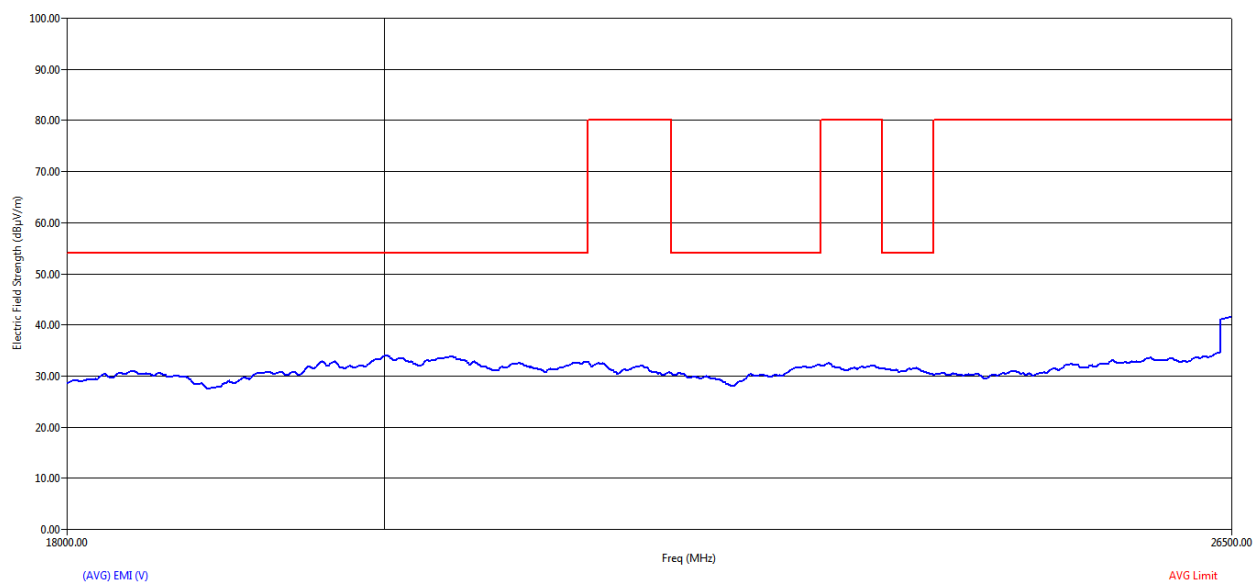


Figure 84: 40MHz, 6dBi, Low Channel: Average RE Graph - 18GHz to 26.5GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
18428.80	18428.80	H	180.00	150.00	33.91	7.09	36.43	46.74	30.69	53.98	-23.29
21404.80	21404.80	V	179.90	150.00	31.70	7.85	37.60	45.12	32.03	80.00	-47.97

Table 48: 40MHz, 6dBi, Low Channel: Average table from 18 GHz to 26.5 GHz

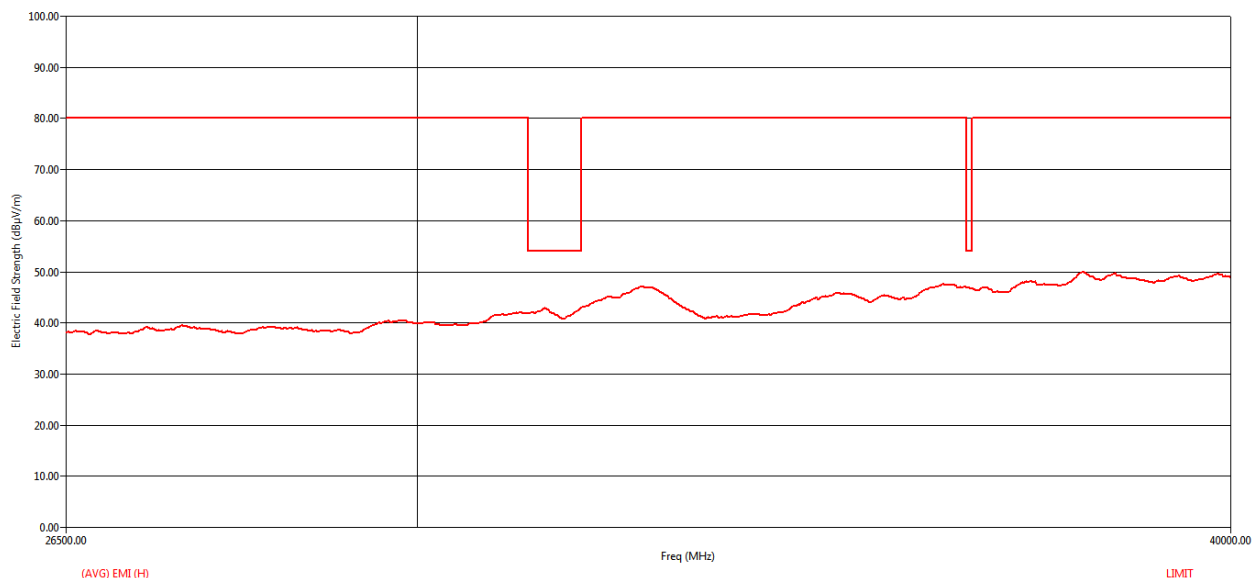


Figure 85: 40MHz, 6dBi, Low Channel: Average RE Graph - 26.5GHz to 40GHz - Horizontal Polarization

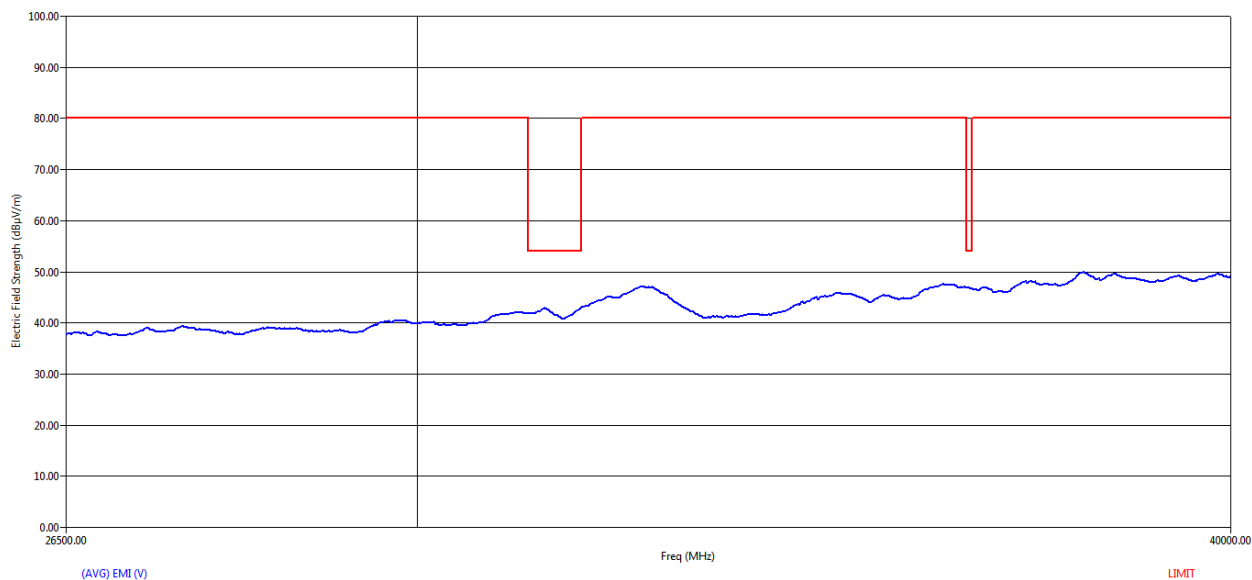


Figure 86: 40MHz, 6dBi, Low Channel: Average RE Graph - 26.5GHz to 40GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
27260.00	27260.00	H	179.90	150.00	38.99	9.46	38.52	48.20	38.77	80.00	-41.23
32536.80	32536.80	V	288.20	150.00	41.67	10.73	38.92	44.53	46.79	80.00	-33.21

Table 49: 40MHz, 6dBi, Low Channel: Average table from 26.5 GHz to 40 GHz

5.3.1.5.8 40 MHz MODULATION BANDWIDTH, 6 dBi ANTENNA, MID CHANNEL - 5200 MHz

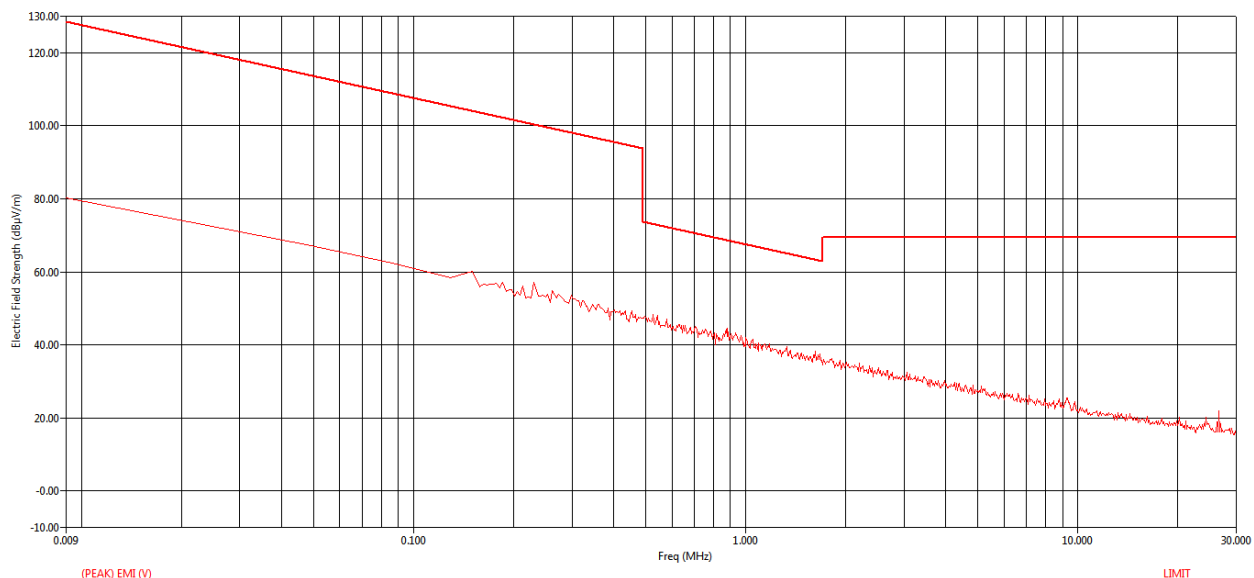


Figure 87: 40MHz, 6dBi, Mid Channel: Peak RE Graph - 9kHz to 30MHz - Parallel

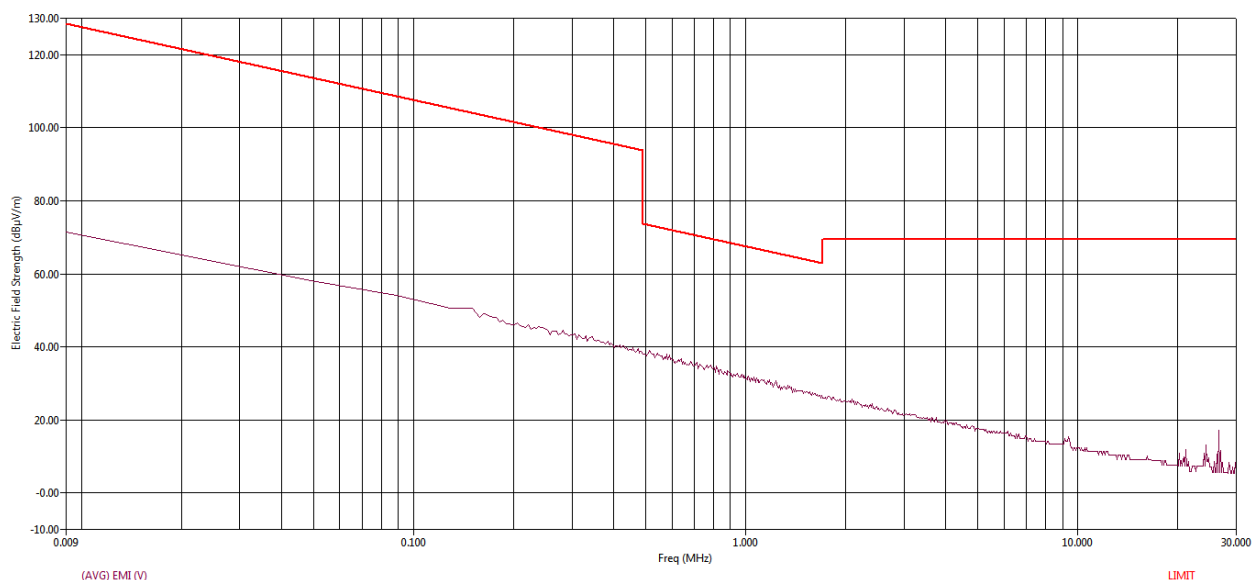


Figure 88: 40MHz, 6dBi, Mid Channel: Average RE Graph - 9kHz to 30MHz - Parallel

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbi Agl (deg)	(QP) Trace (dB μ V)	Cable (dB)	Transducer (dB)	(QP) EMI (dB μ V/m)	Limit (dB μ V/m)	(QP) Margin (dB)
24.34	24.35	V	125.20	10.80	1.07	16.15	28.02	69.54	-41.52
26.61	26.61	V	352.60	8.87	1.11	16.00	25.98	69.54	-43.56

Table 50: 40MHz, 6dBi, Mid Channel: Quasipeak table from 9 kHz to 30 MHz

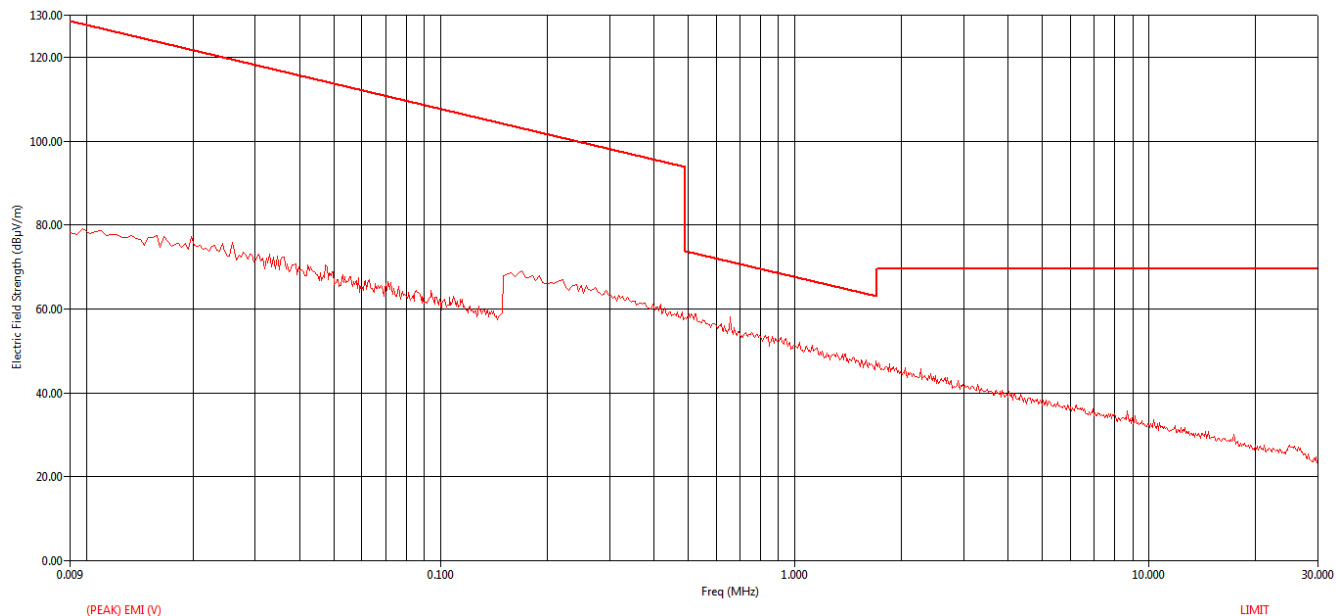


Figure 89: 40MHz, 6dBi, Mid Channel: Peak RE Graph - 9kHz to 30MHz - Perpendicular

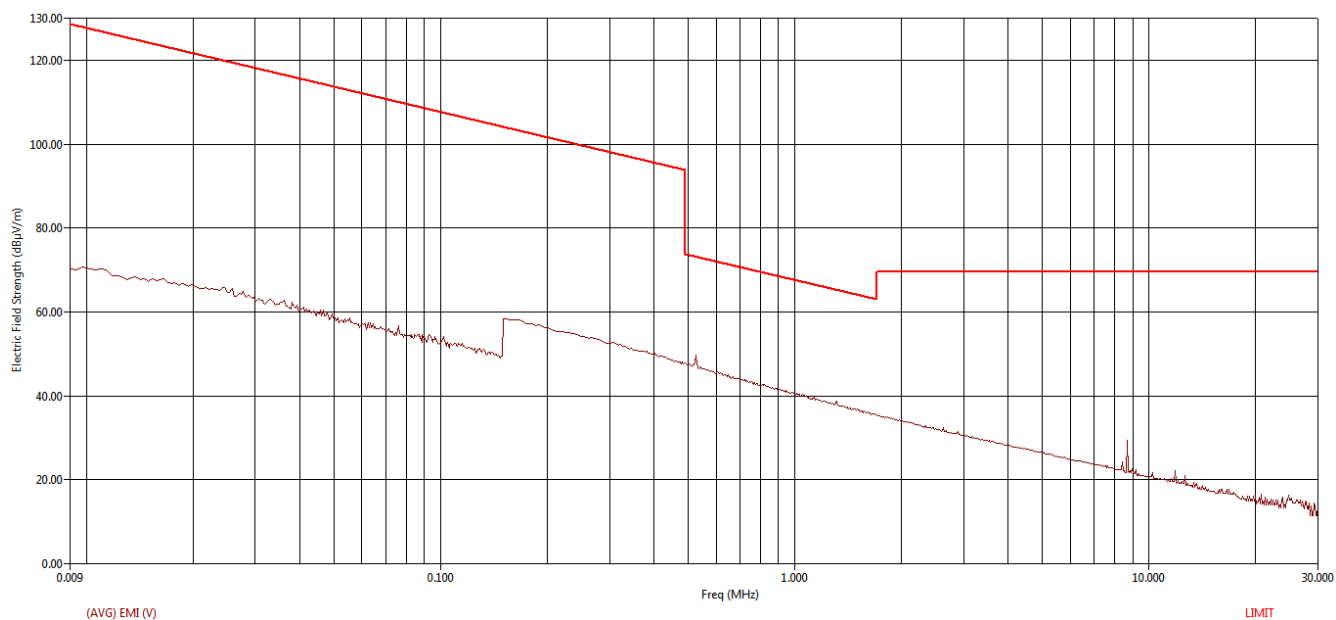


Figure 90: 40MHz, 6dBi, Mid Channel: Average RE Graph - 9kHz to 30MHz - Perpendicular

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	(QP) Trace (dB μ V)	Cable (dB)	Transducer (dB)	(QP) EMI (dB μ V/m)	Limit (dB μ V/m)	(QP) Margin (dB)
8.65	8.64	V	180.10	9.73	0.65	17.45	27.83	69.54	-41.71
17.37	17.38	V	134.90	2.25	0.90	16.70	19.85	69.54	-49.69

Table 51: 40MHz, 6dBi, Mid Channel: Quasipeak table from 9 kHz to 30 MHz

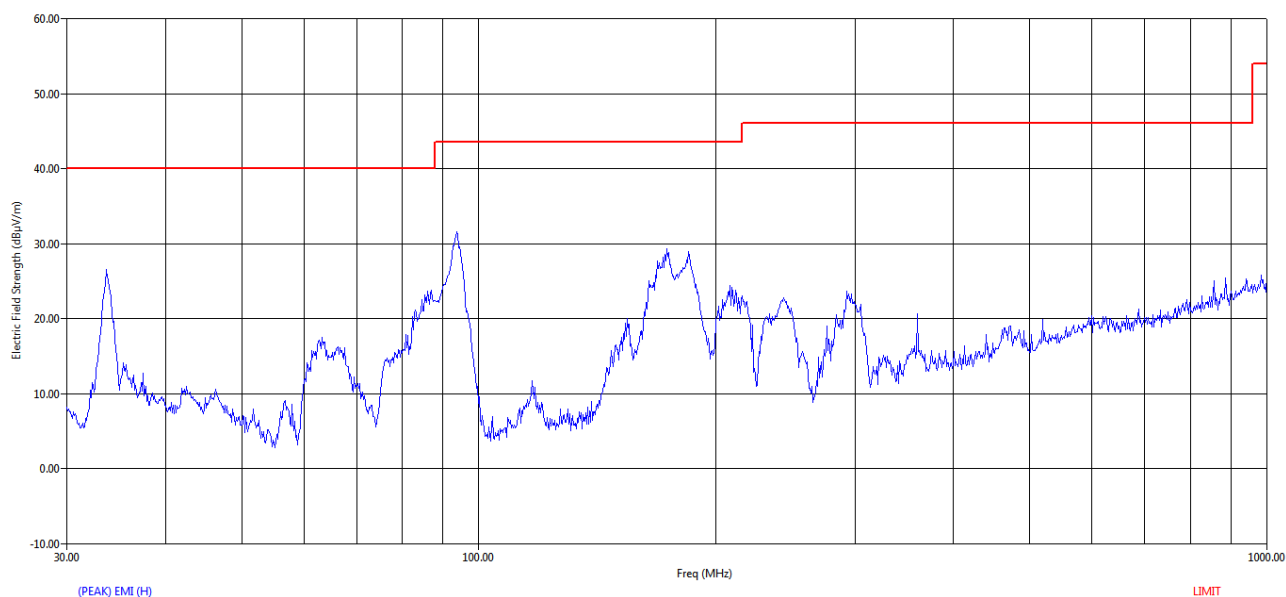


Figure 91: 40MHz, 6dBi, Mid Channel: Peak RE Graph - 30MHz to 1GHz - Horizontal Polarization

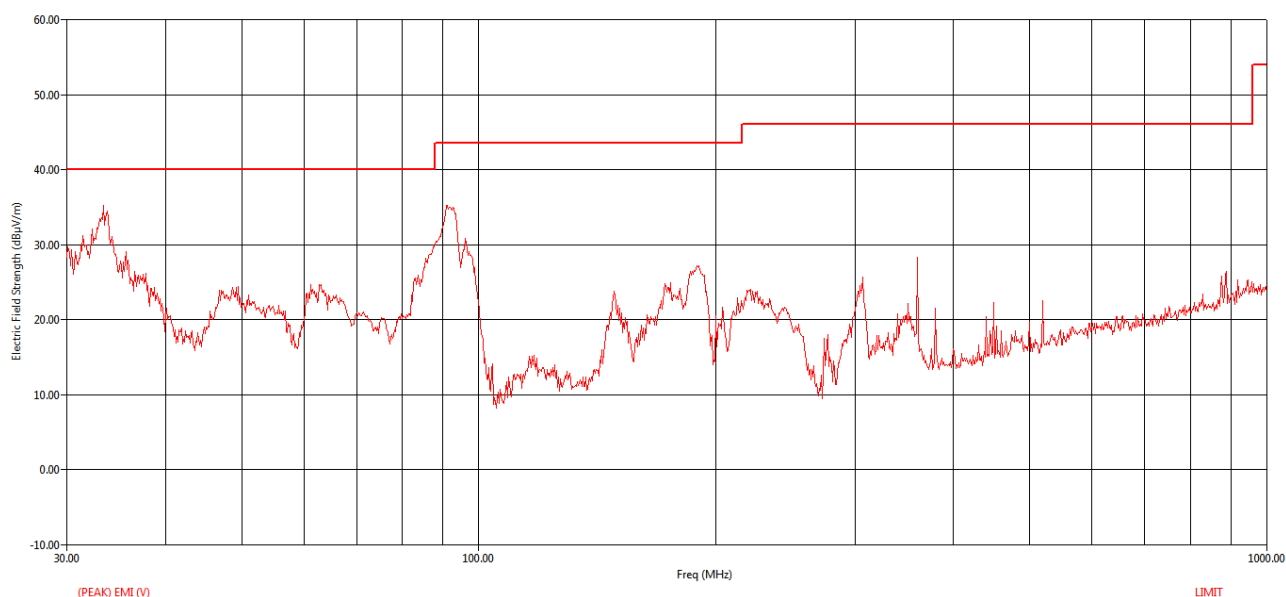


Figure 92: 40MHz, 6dBi, Mid Channel: Peak RE Graph - 30MHz to 1GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
33.40	33.34	V	292.30	107.00	59.56	1.25	10.94	43.80	27.94	40.00	-12.06
91.28	91.27	V	1.80	157.00	61.63	2.04	8.71	43.93	28.46	43.52	-15.06
93.48	93.52	V	162.10	157.00	55.06	2.06	8.53	43.93	21.72	43.52	-21.80
93.68	93.76	H	244.40	193.00	71.67	2.07	8.51	43.93	38.32	43.52	-5.20
173.44	173.41	H	303.80	144.00	52.41	2.79	13.29	43.95	24.55	43.52	-18.97
184.32	184.34	H	161.90	169.00	47.17	2.88	13.76	43.95	19.86	43.52	-23.66

Table 52: 40MHz, 6dBi, Mid Channel: Quasipeak table from 30 MHz to 1 GHz

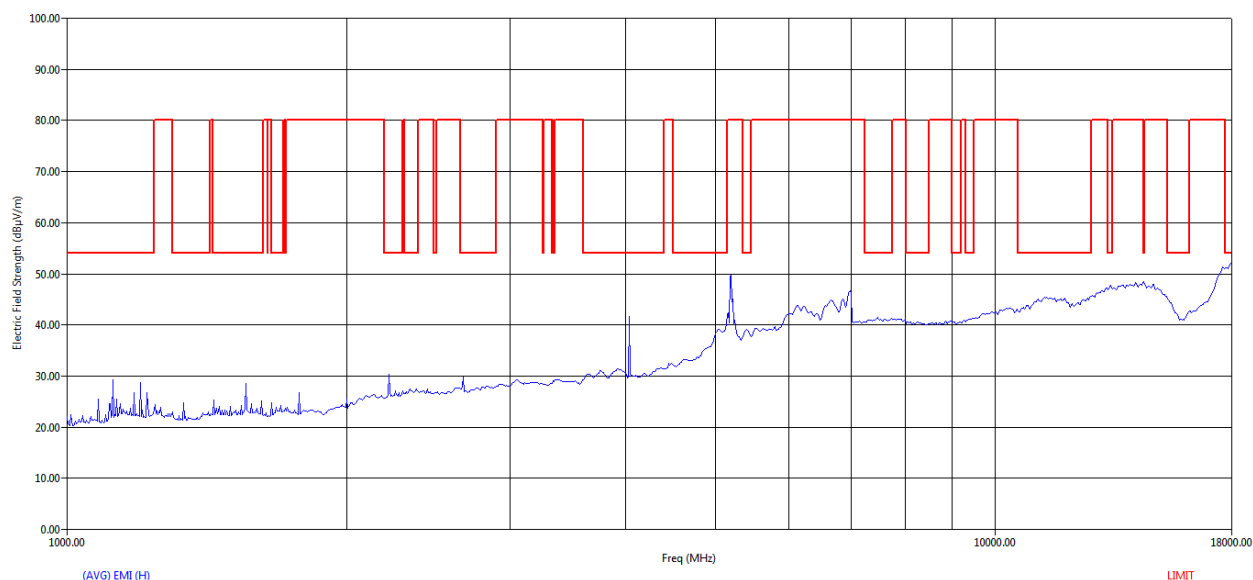


Figure 93: 40MHz, 6dBi, Mid Channel: Average RE Graph - 1GHz to 18GHz - Horizontal Polarization

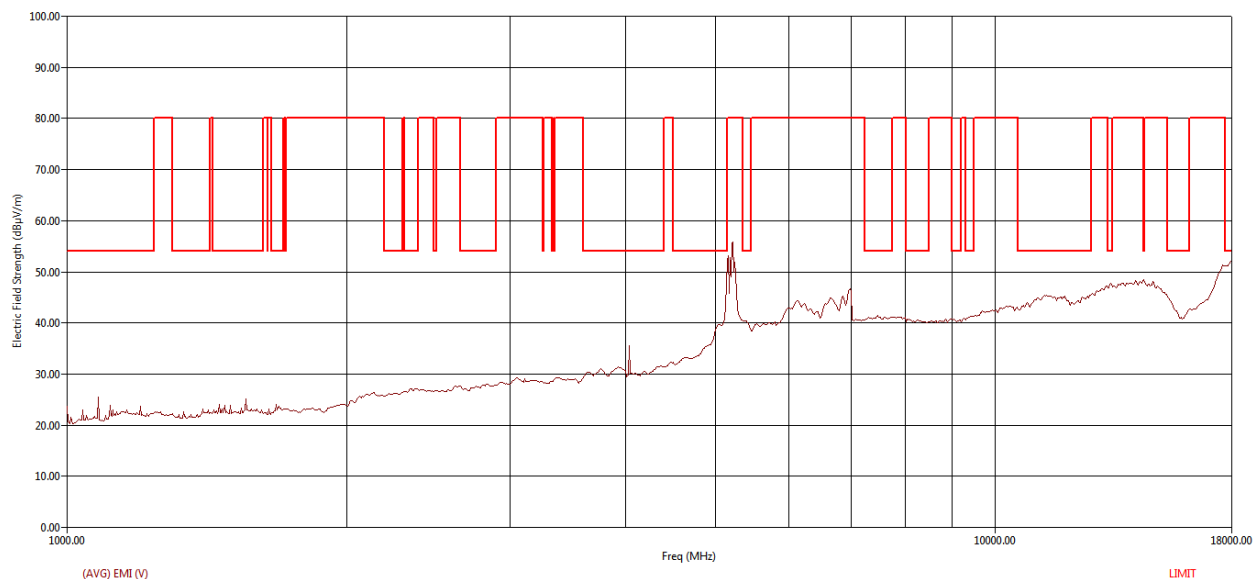


Figure 94: 40MHz, 6dBi, Mid Channel: Average RE Graph - 1GHz to 18GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preampl (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
1119.90	1119.90	H	180.00	130.00	34.42	1.89	25.17	32.47	29.02	53.98	-24.96
5135.10	5135.10	V	98.80	101.00	35.11	3.80	32.93	28.31	43.52	53.98	-10.46
5139.30	5139.30	V	80.50	114.00	37.18	3.80	32.93	28.32	45.59	53.98	-8.39
5146.60	5146.60	H	90.20	200.00	31.32	3.80	32.93	28.32	39.73	53.98	-14.25
5258.10	5258.10	H	86.10	200.00	29.60	3.82	32.90	28.33	37.99	80.00	-42.01

Table 53: 40MHz, 6dBi, Mid Channel: Average table from 1 GHz to 18 GHz

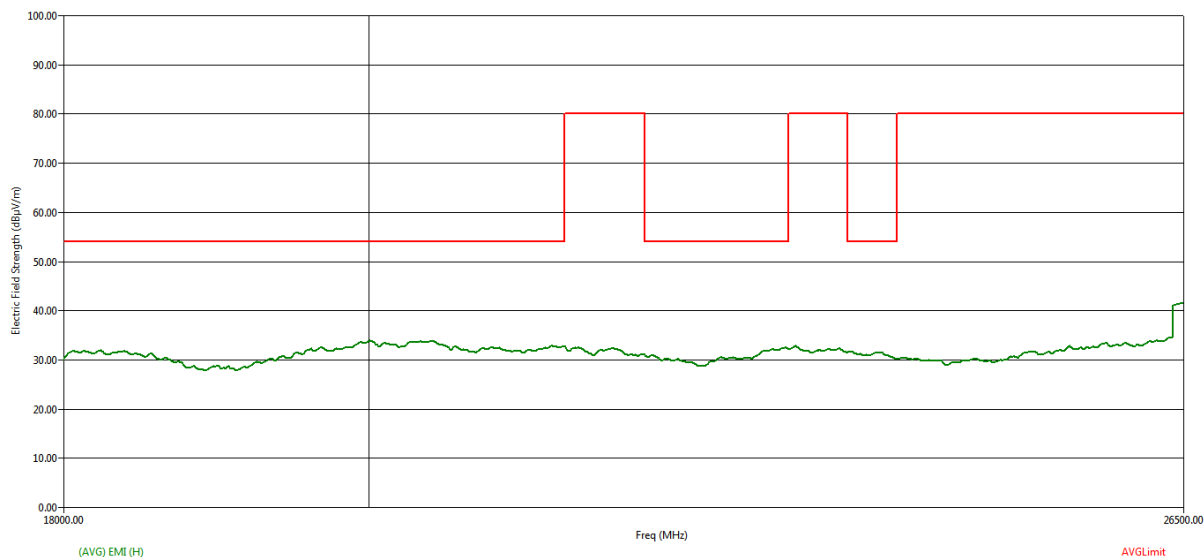


Figure 95: 40MHz, 6dBi, Mid Channel: Average RE Graph - 18GHz to 26.5GHz - Horizontal Polarization

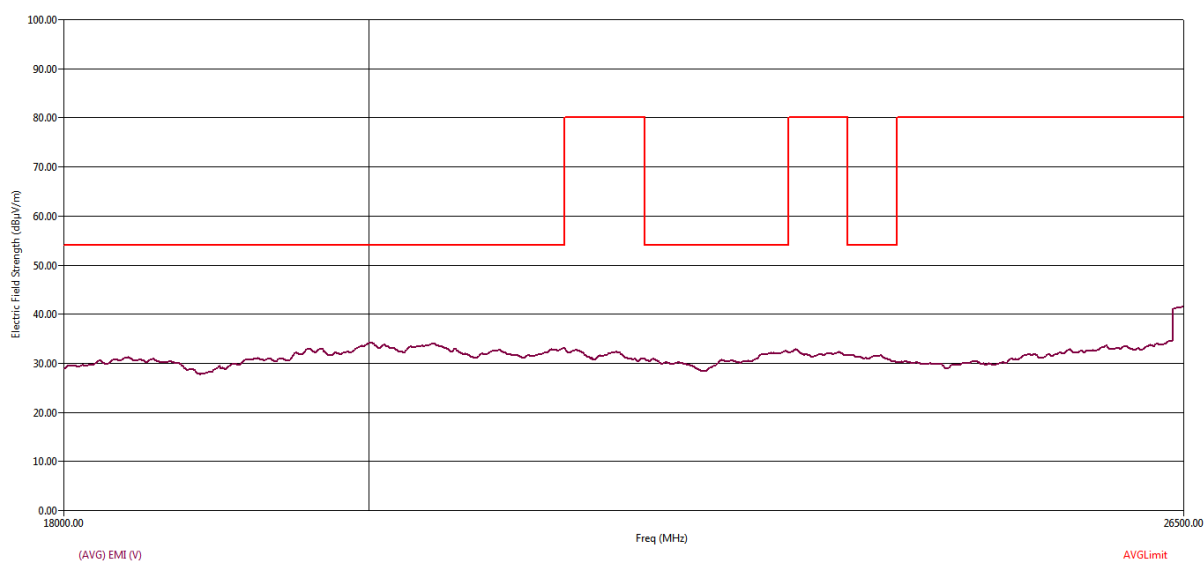


Figure 96: 40MHz, 6dBi, Mid Channel: Average RE Graph - 18GHz to 26.5GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
19988.50	19988.50	H	15.10	150.00	32.66	7.23	36.45	43.00	33.34	53.98	-20.64
23188.00	23188.00	V	14.90	150.00	32.52	8.28	37.83	46.80	31.83	80.00	-48.17

Table 54: 40MHz, 6dBi, Mid Channel: Average table from 18 GHz to 26.5 GHz

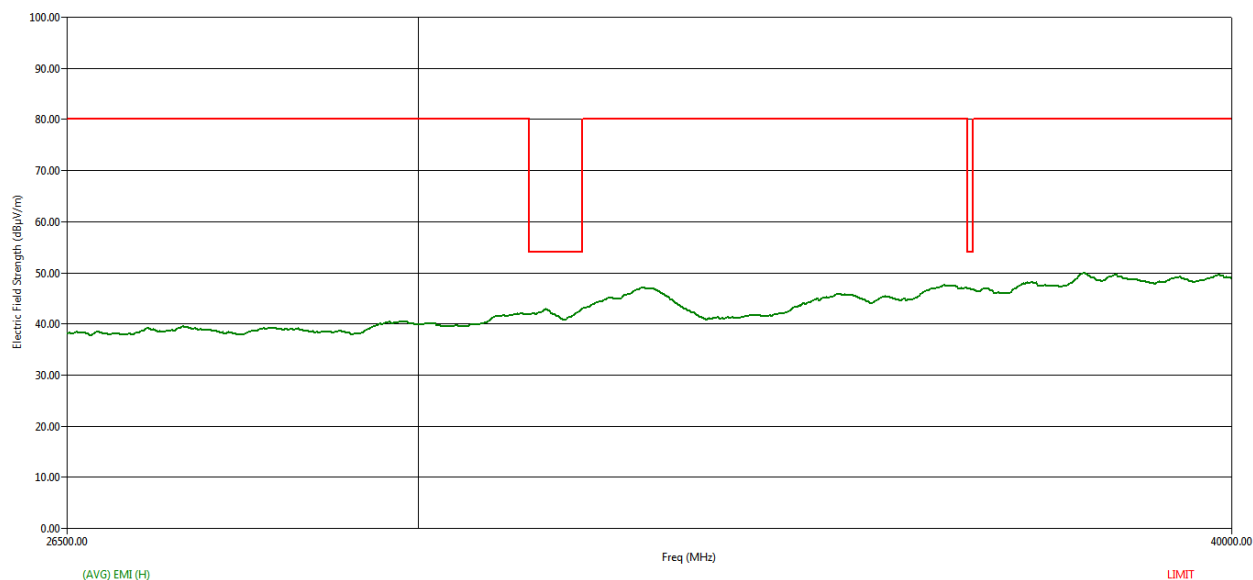


Figure 97: 40MHz, 6dBi, Mid Channel: Average RE Graph - 26.5GHz to 40GHz - Horizontal Polarization

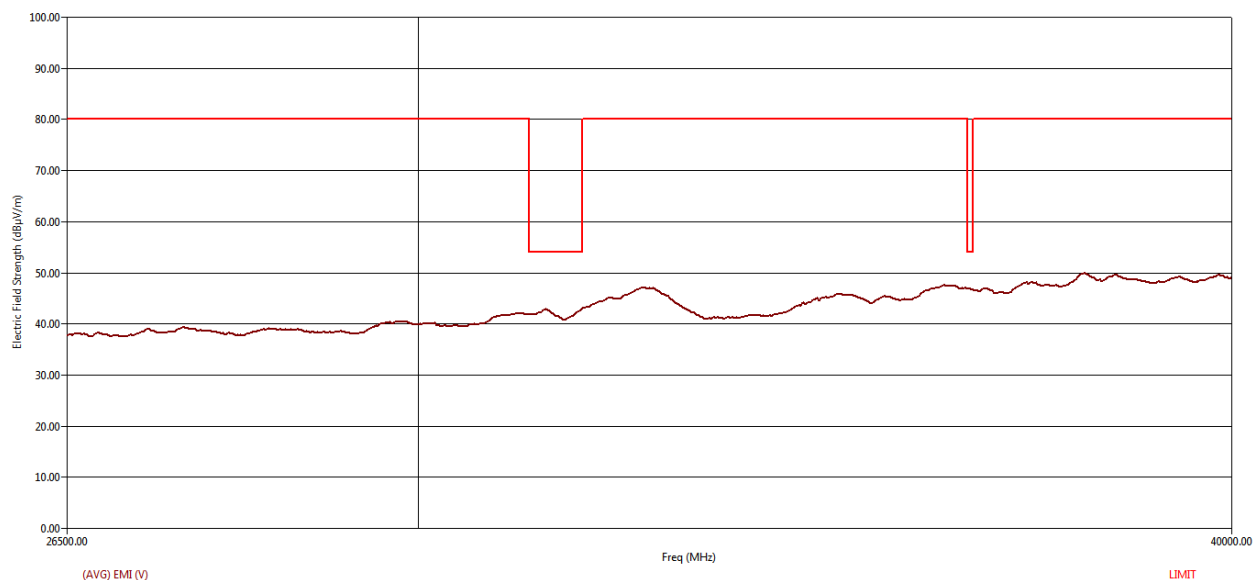


Figure 98: 40MHz, 6dBi, Mid Channel: Average RE Graph - 26.5GHz to 40GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
32557.60	32557.60	H	180.00	150.00	41.62	10.70	38.93	44.50	46.76	80.00	-33.24
37984.10	37984.10	V	180.00	150.00	43.06	12.32	40.79	46.48	49.68	80.00	-30.32

Table 55: 40MHz, 6dBi, Mid Channel: Average table from 26.5 GHz to 40 GHz

5.3.1.5.9 40 MHz MODULATION BANDWIDTH, 6 dBi ANTENNA, HIGH CHANNEL - 5220 MHz

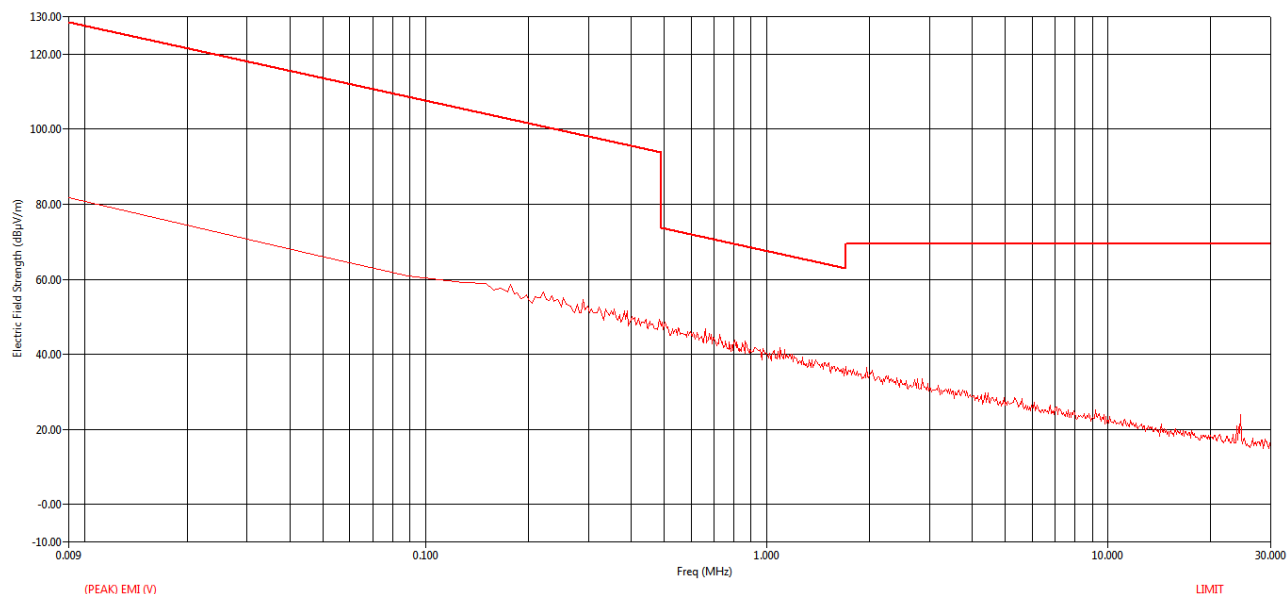


Figure 99: 40MHz, 6dBi, High Channel: Peak RE Graph - 9kHz to 30MHz - Parallel

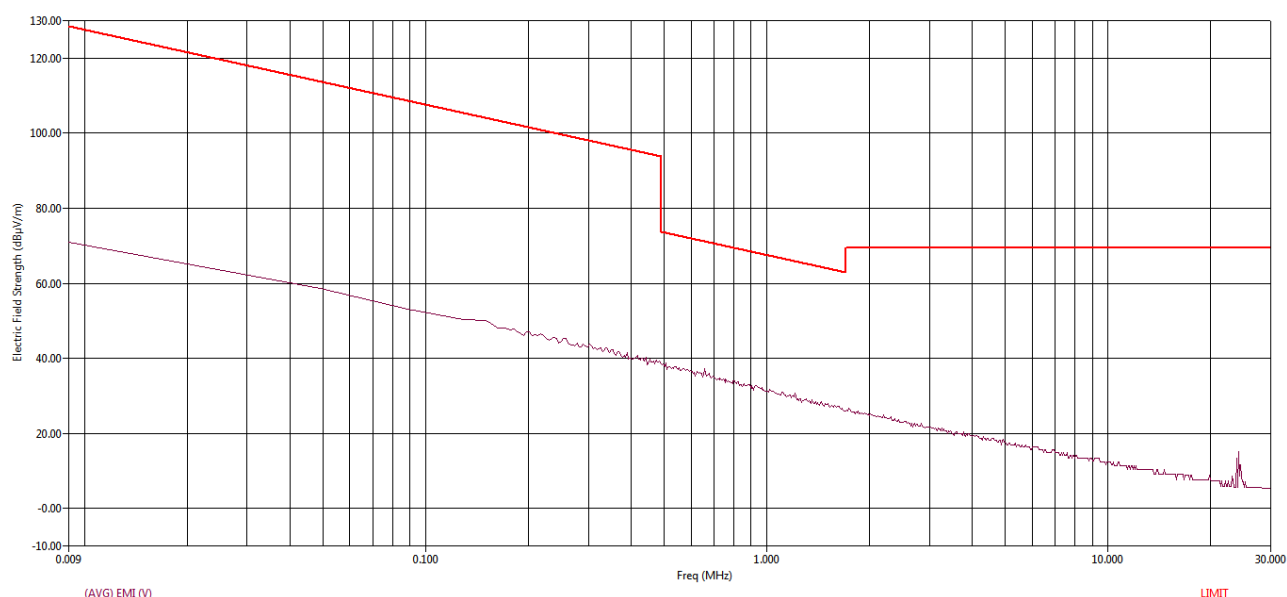


Figure 100: 40MHz, 6dBi, High Channel: Average RE Graph - 9kHz to 30MHz - Parallel

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	(QP) Trace (dB μ V)	Cable (dB)	Transducer (dB)	(QP) EMI (dB μ V/m)	Limit (dB μ V/m)	(QP) Margin (dB)
24.34	24.35	V	125.20	10.80	1.07	16.15	28.02	69.54	-41.52
26.61	26.61	V	352.60	8.87	1.11	16.00	25.98	69.54	-43.56

Table 56: 40MHz, 6dBi, High Channel: Quasipeak table from 9 kHz to 30 MHz

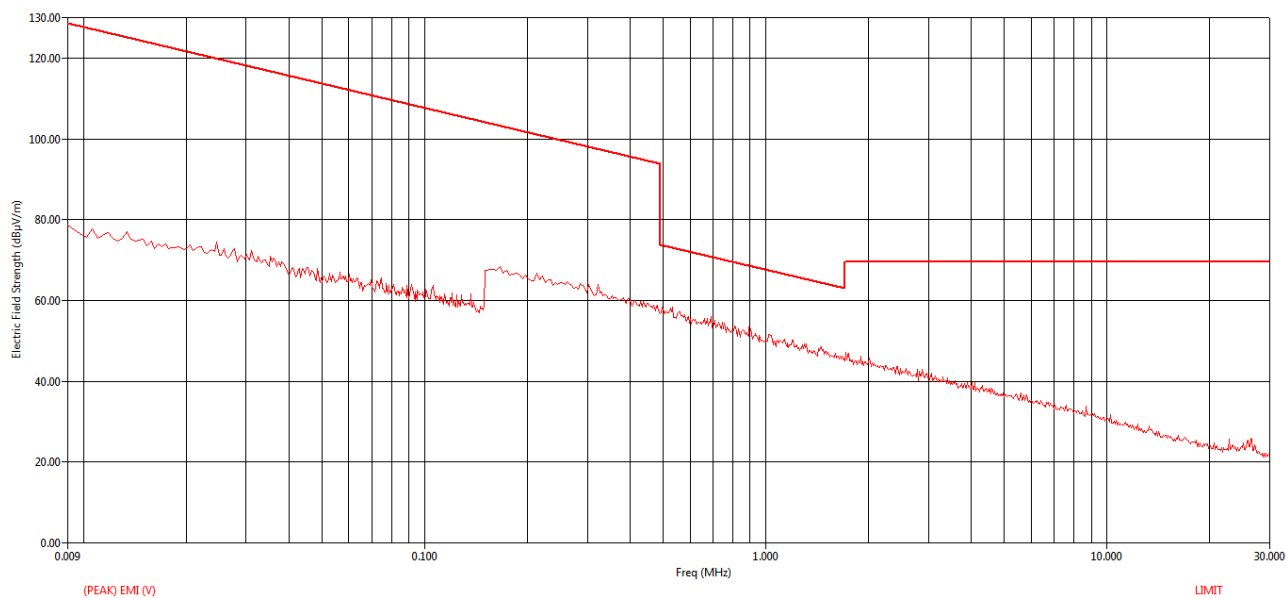


Figure 101: 40MHz, 6dBi, High Channel: Peak RE Graph - 9kHz to 30MHz - Perpendicular

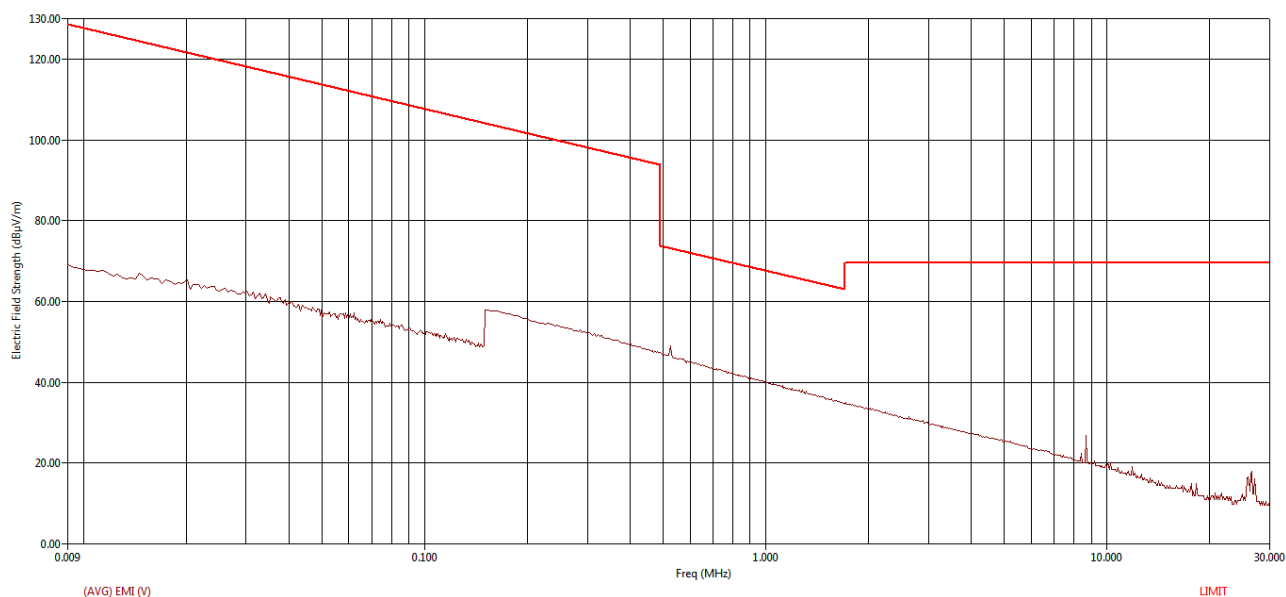


Figure 102: 40MHz, 6dBi, High Channel: Average RE Graph - 9kHz to 30MHz - Perpendicular

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbi Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
8.65	8.65	V	208.40	4.78	0.65	17.45	22.87	69.54	-46.67
22.89	22.88	V	208.60	-7.84	1.04	16.26	9.46	69.54	-60.08
26.61	26.62	V	184.00	-7.95	1.11	16.00	9.16	69.54	-60.38

Table 57: 40MHz, 6dBi, High Channel: Quasipeak table from 9 kHz to 30 MHz

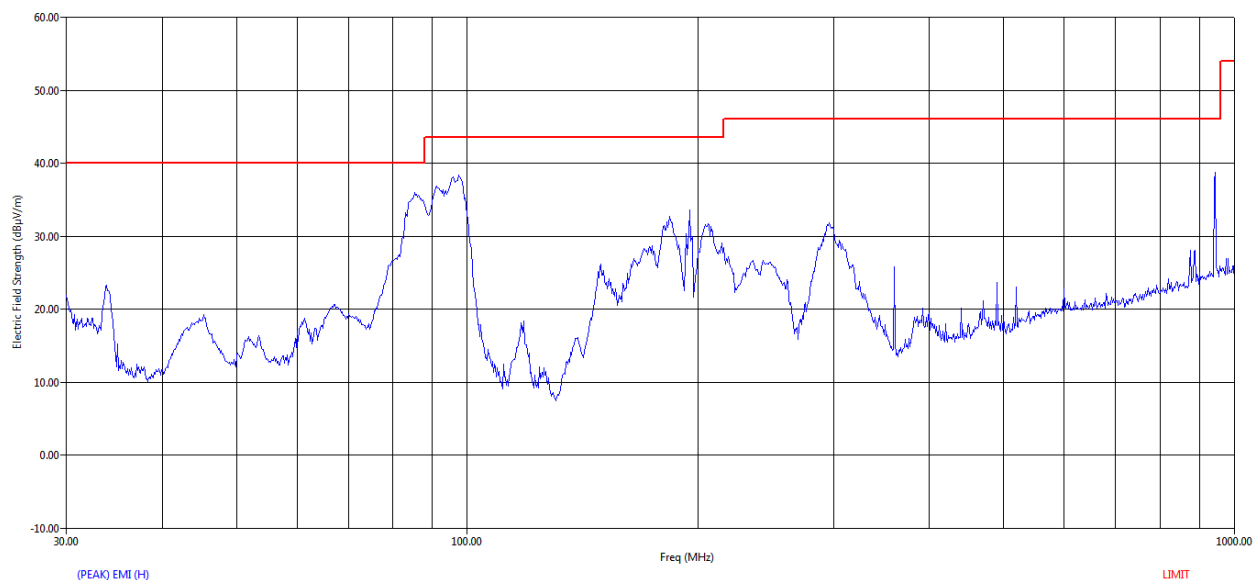


Figure 103: 40MHz, 6dBi, High Channel: Peak RE Graph - 30MHz to 1GHz - Horizontal Polarization

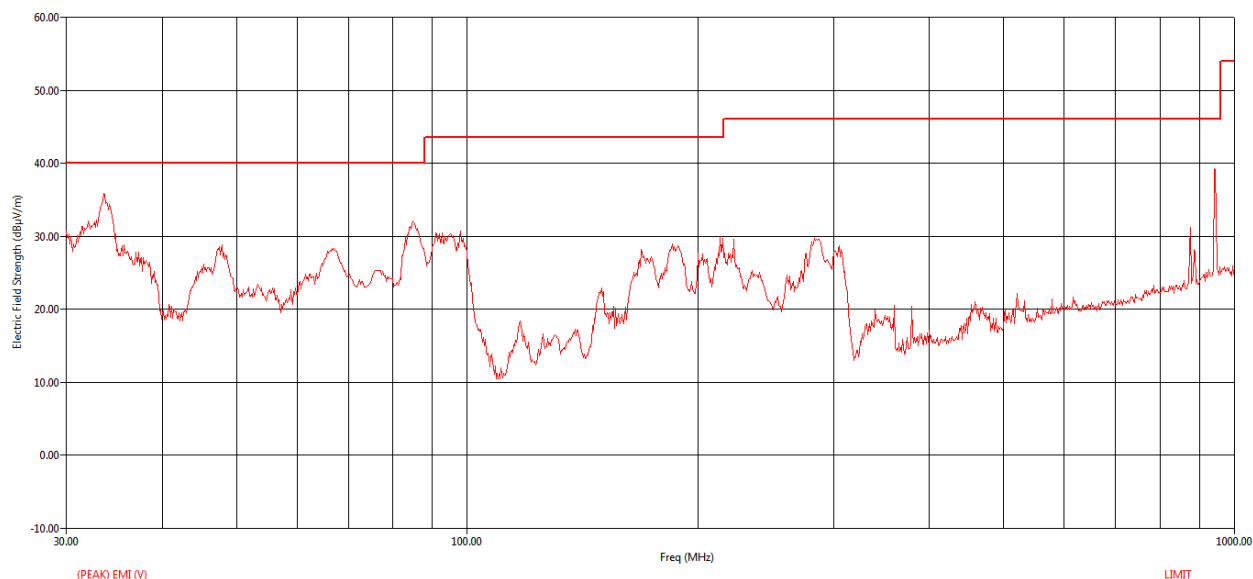


Figure 104: 40MHz, 6dBi, High Channel: Peak RE Graph - 30MHz to 1GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
33.50	33.51	V	18.70	306.00	55.15	1.25	10.91	43.81	23.50	40.00	-16.50
97.52	97.63	H	72.40	192.00	66.53	2.11	8.19	43.94	32.90	43.52	-10.62
941.48	941.41	H	194.80	370.00	32.87	6.61	23.15	42.61	20.02	46.02	-26.00
941.68	941.78	V	182.10	351.00	36.34	6.61	23.16	42.61	23.50	46.02	-22.52
943.04	943.05	V	237.50	400.00	33.13	6.62	23.16	42.60	20.31	46.02	-25.71
944.80	944.87	H	347.00	390.00	32.90	6.63	23.17	42.59	20.11	46.02	-25.91

Table 58: 40MHz, 6dBi, High Channel: Quasipeak table from 30 MHz to 1 GHz

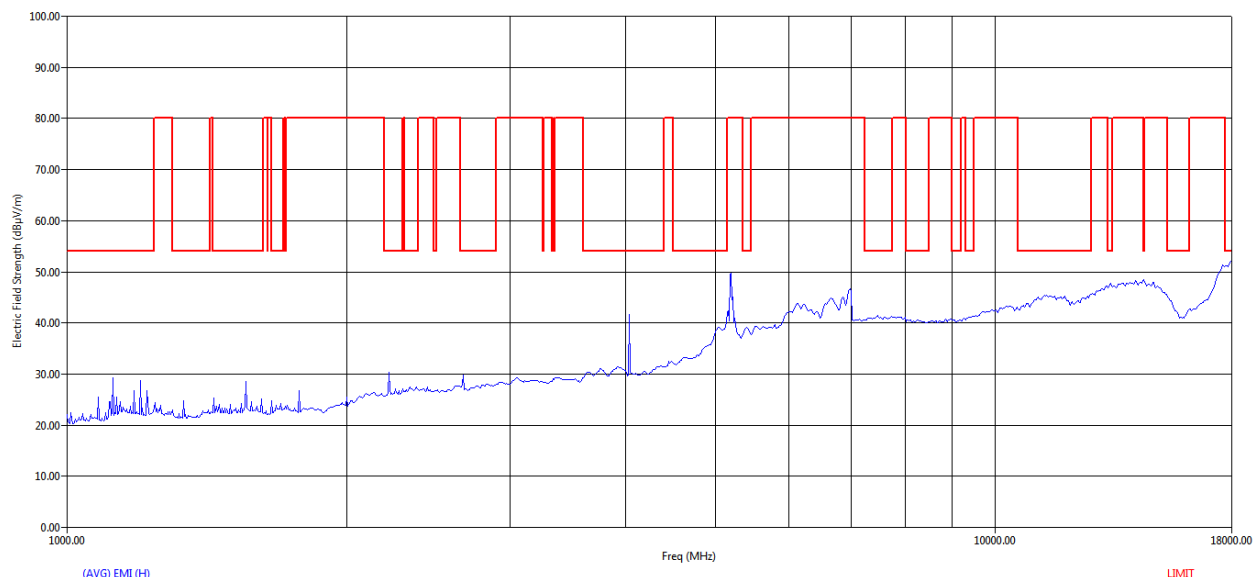


Figure 105: 40MHz, 6dBi, High Channel: Average RE Graph - 1GHz to 18GHz - Horizontal Polarization

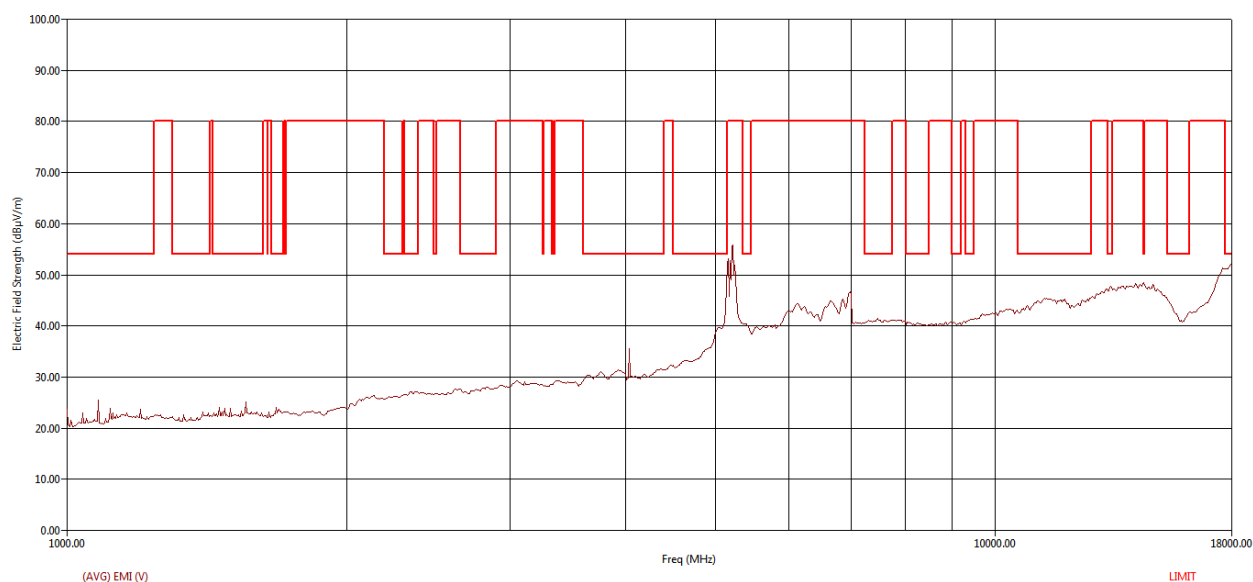


Figure 106: 40MHz, 6dBi, High Channel: Average RE Graph - 1GHz to 18GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
1119.90	1119.90	H	180.00	130.00	34.42	1.89	25.17	32.47	29.02	53.98	-24.96
5135.10	5135.10	V	98.80	101.00	35.11	3.80	32.93	28.31	43.52	53.98	-10.46
5139.30	5139.30	V	80.50	114.00	37.18	3.80	32.93	28.32	45.59	53.98	-8.39
5146.60	5146.60	H	90.20	200.00	31.32	3.80	32.93	28.32	39.73	53.98	-14.25
5258.10	5258.10	H	86.10	200.00	29.60	3.82	32.90	28.33	37.99	80.00	-42.01

Table 59: 40MHz, 6dBi, High Channel: Average table from 1 GHz to 18 GHz

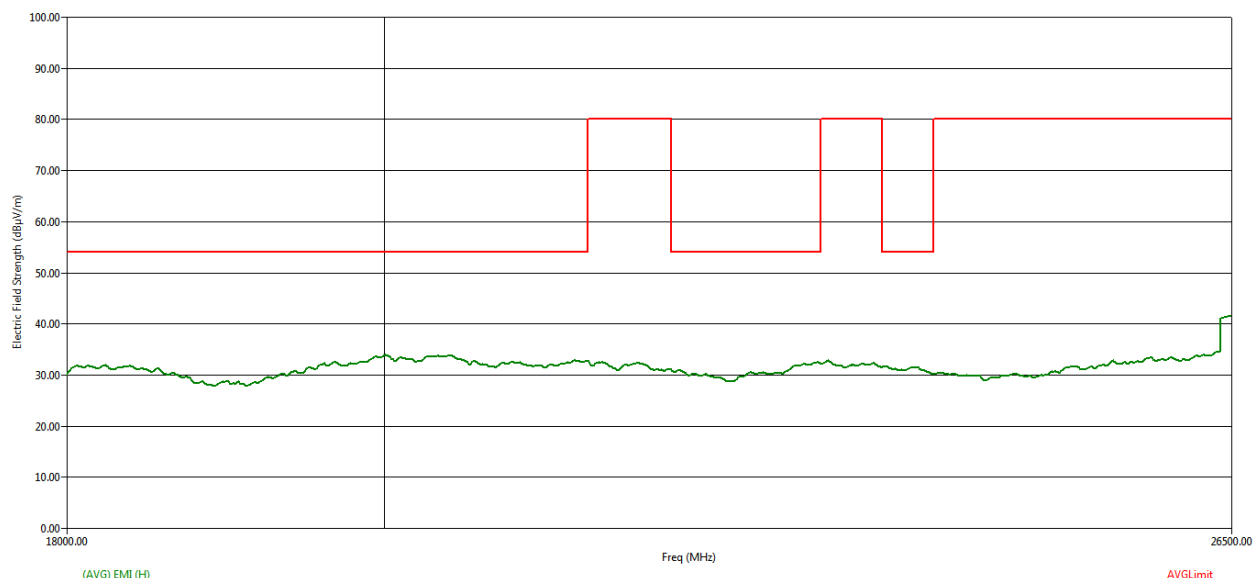


Figure 107: 40MHz, 6dBi, High Channel: Average RE Graph - 18GHz to 26.5GHz - Horizontal Polarization

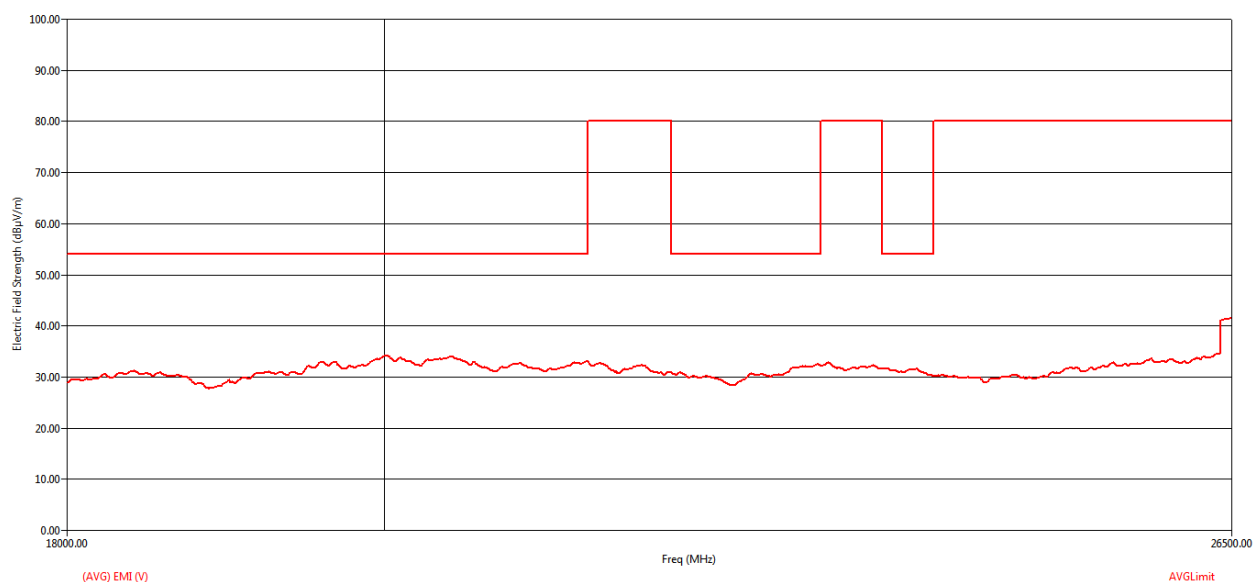


Figure 108: 40MHz, 6dBi, High Channel: Average RE Graph - 18GHz to 26.5GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT TtBl Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
18400.50	18400.50	H	89.40	150.00	33.95	7.08	36.48	46.74	30.77	53.98	-23.21
20188.00	20188.00	V	127.00	150.00	31.40	7.40	36.59	43.06	32.32	53.98	-21.66
24457.00	24457.00	V	99.60	150.00	31.53	8.19	37.76	47.19	30.28	80.00	-49.72

Table 60: 40MHz, 6dBi, High Channel: Average table from 18 GHz to 26.5 GHz

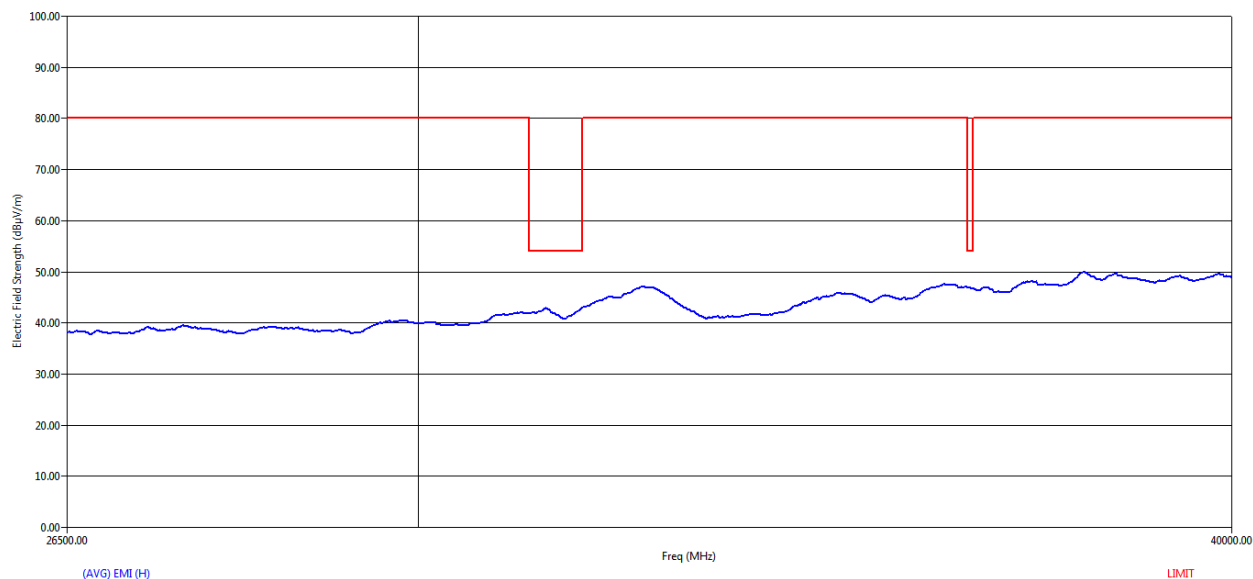


Figure 109: 40MHz, 6dBi, High Channel: Average RE Graph - 26.5GHz to 40GHz - Horizontal Polarization

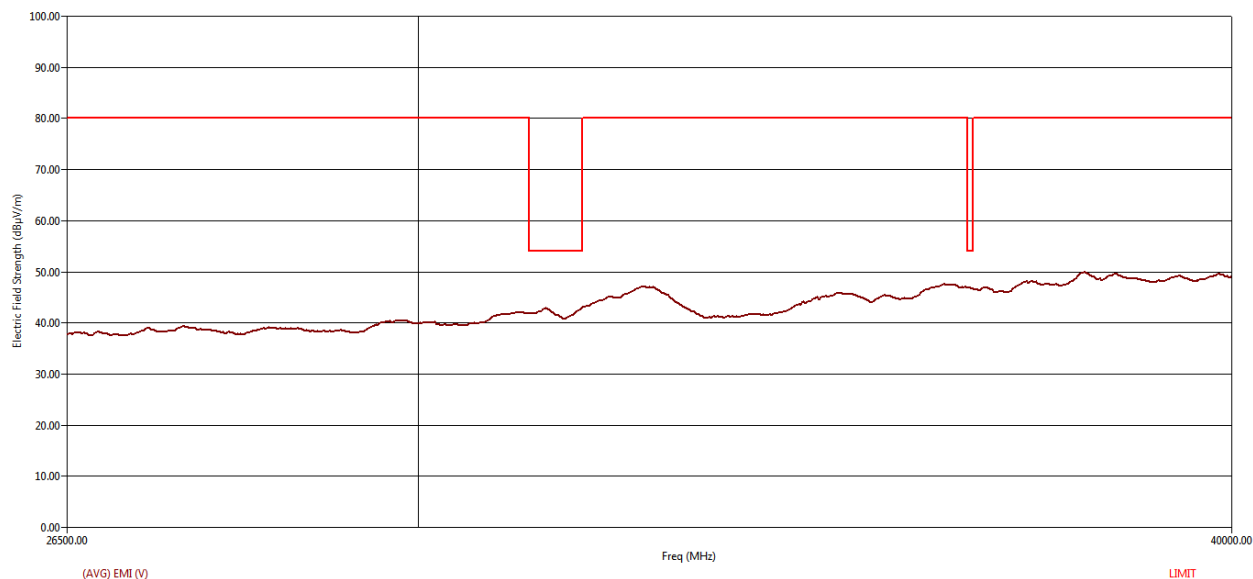


Figure 110: 40MHz, 6dBi, High Channel: Average RE Graph - 26.5GHz to 40GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
27260.50	27260.50	H	90.10	150.00	39.09	9.46	38.52	48.20	38.86	80.00	-41.14
32451.90	32451.90	H	90.10	150.00	41.92	10.69	38.90	44.69	46.83	80.00	-33.17

Table 61: 40MHz, 6dBi, High Channel: Average table form 26.5 GHz to 40 GHz

5.3.1.5.10 5 MHz MODULATION BANDWIDTH, 6 dBi ANTENNA, LOW CHANNEL - 5155 MHz

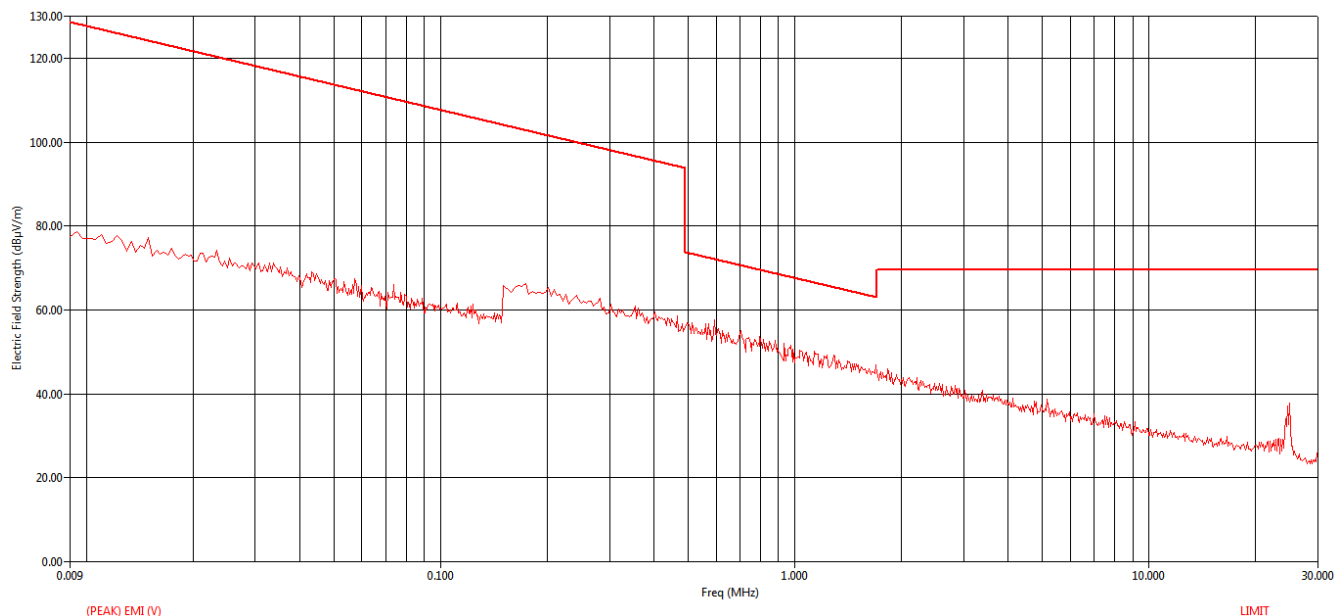


Figure 111: 5MHz, 6dBi, Low Channel: Peak RE Graph - 9kHz to 30MHz - Parallel

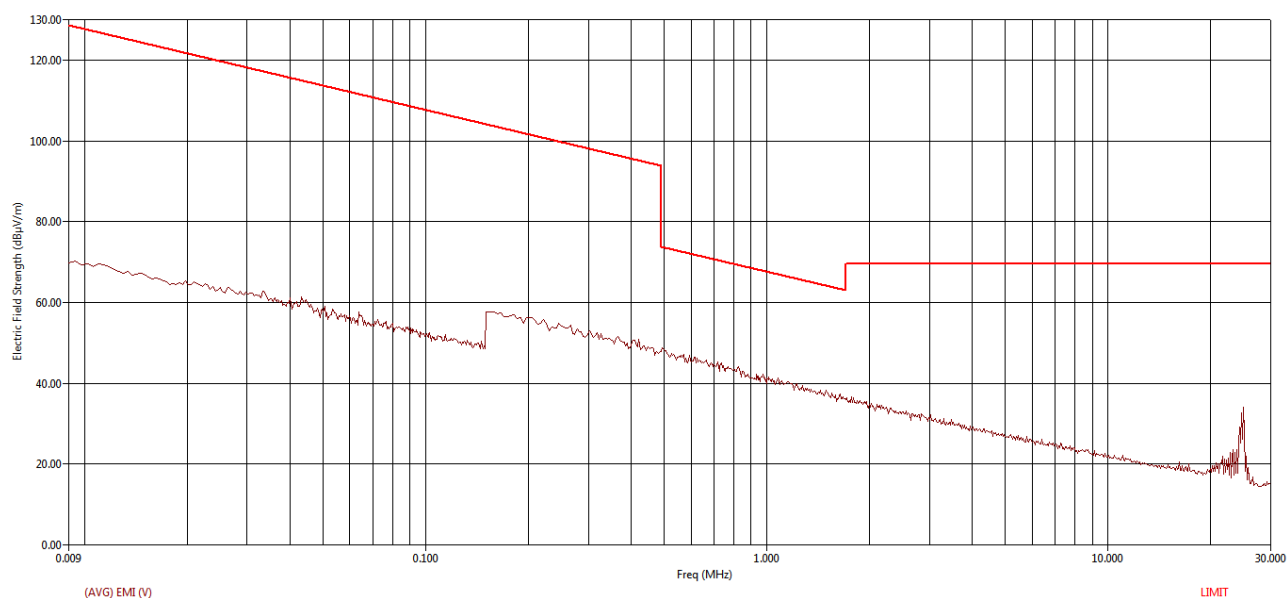


Figure 112: 5MHz, 6dBi, Low Channel: Average RE Graph - 9kHz to 30MHz - Parallel

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbl Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
24.37	24.37	184.80	9.35	1.07	16.15	26.56	69.54	-42.98
24.63	24.62	180.00	14.97	1.08	16.13	32.17	69.54	-37.37
24.89	24.88	180.00	12.60	1.08	16.11	29.79	69.54	-39.75

Table 62: 5MHz, 6dBi, Low Channel: Quasipeak table from 9 kHz to 30 MHz

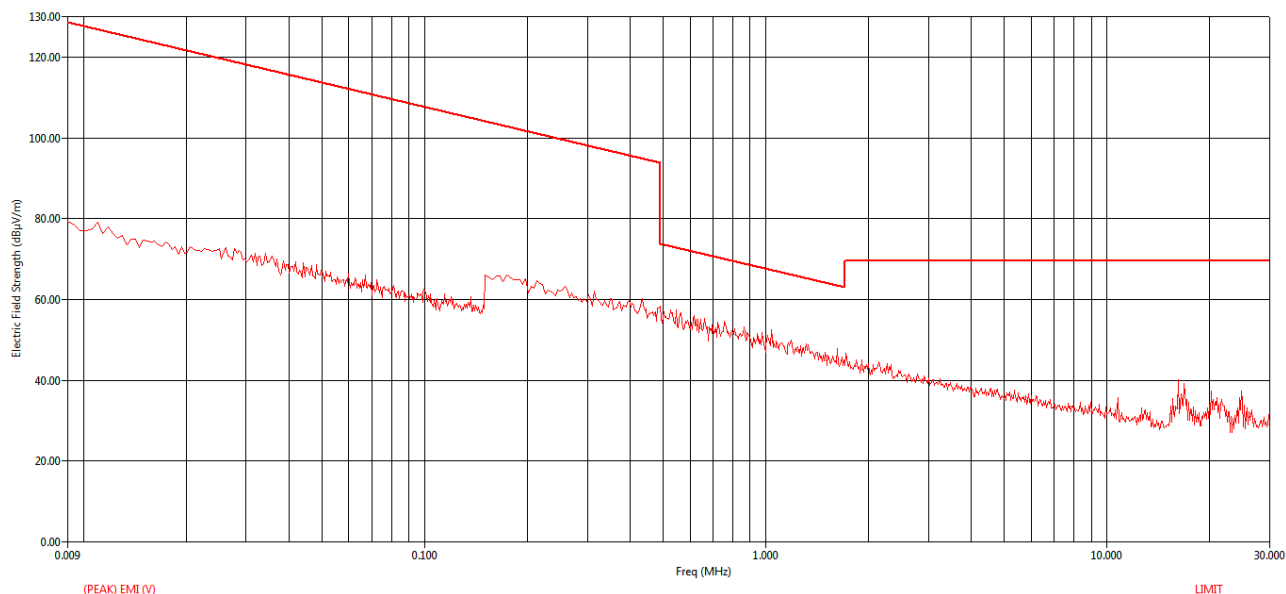


Figure 113: 5MHz, 6dBi, Low Channel: Peak RE Graph - 9kHz to 30MHz - Perpendicular

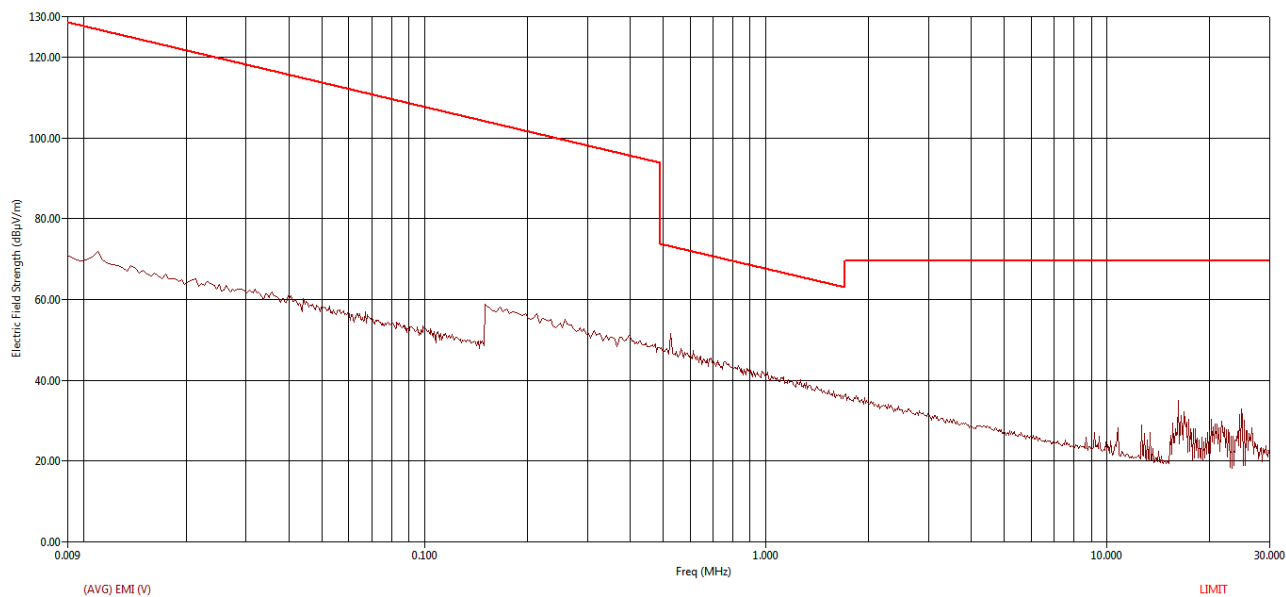


Figure 114: 5MHz, 6dBi, Low Channel: Average RE Graph - 9kHz to 30MHz - Perpendicular

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbi Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
10.78	10.79	328.50	12.59	0.72	17.22	30.53	69.54	-39.01
16.21	16.23	258.40	22.66	0.87	16.79	40.32	69.54	-29.22
20.33	20.32	273.20	12.14	0.98	16.47	29.59	69.54	-39.95
24.69	24.68	195.50	11.66	1.08	16.12	28.86	69.54	-40.68

Table 63: 5MHz, 6dBi, Low Channel: Quasipeak table from 9 kHz to 30 MHz

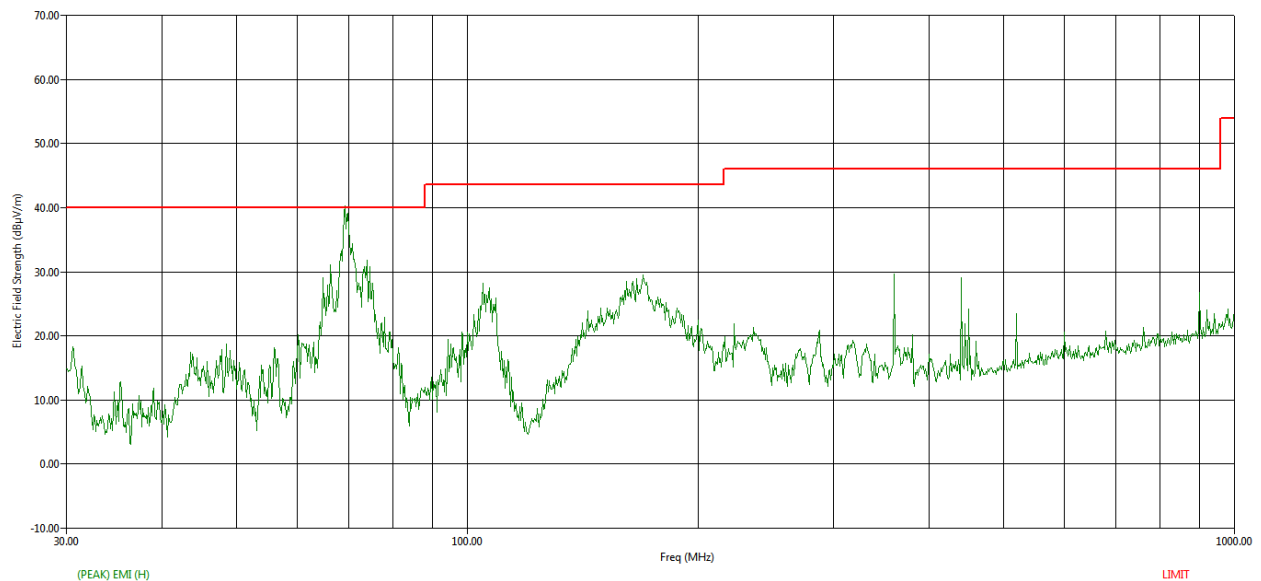


Figure 115: 5MHz, 6dBi, Low Channel: Peak RE Graph - 30MHz to 1GHz - Horizontal Polarization

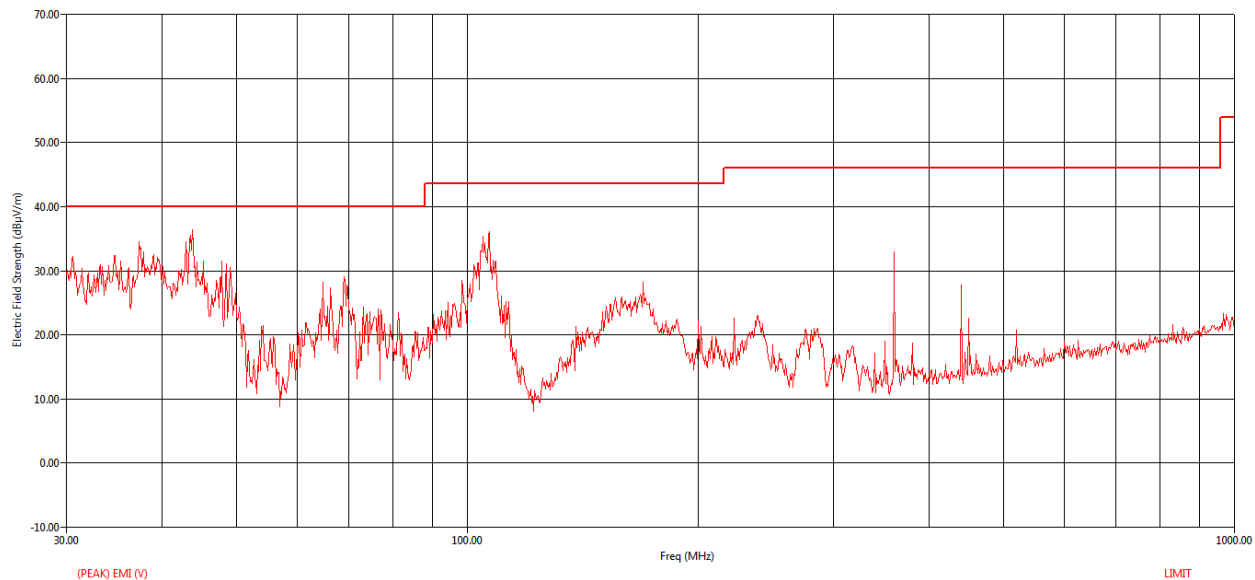


Figure 116: 5MHz, 6dBi, Low Channel: Peak RE Graph - 30MHz to 1GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbl Agl (deg)	Twr Ht (cm)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
37.36	37.38	V	205.90	215.00	60.11	1.33	9.77	43.81	27.40	40.00	-12.60
42.92	42.95	V	340.20	142.00	62.31	1.43	10.11	43.82	30.03	40.00	-9.97
43.84	43.80	V	341.00	109.00	64.46	1.45	10.11	43.82	32.20	40.00	-7.80
69.20	69.14	H	177.00	156.00	66.19	1.79	9.79	43.88	33.88	40.00	-6.12
69.76	69.72	H	162.00	246.00	70.11	1.79	9.84	43.88	37.86	40.00	-2.14
104.76	104.74	V	271.10	184.00	63.42	2.18	9.41	43.94	31.07	43.52	-12.45
106.72	106.69	V	289.90	100.00	65.50	2.20	9.47	43.94	33.23	43.52	-10.29

Table 64: 5MHz, 6dBi, Low Channel: Quasipeak table from 30 MHz to 1 GHz

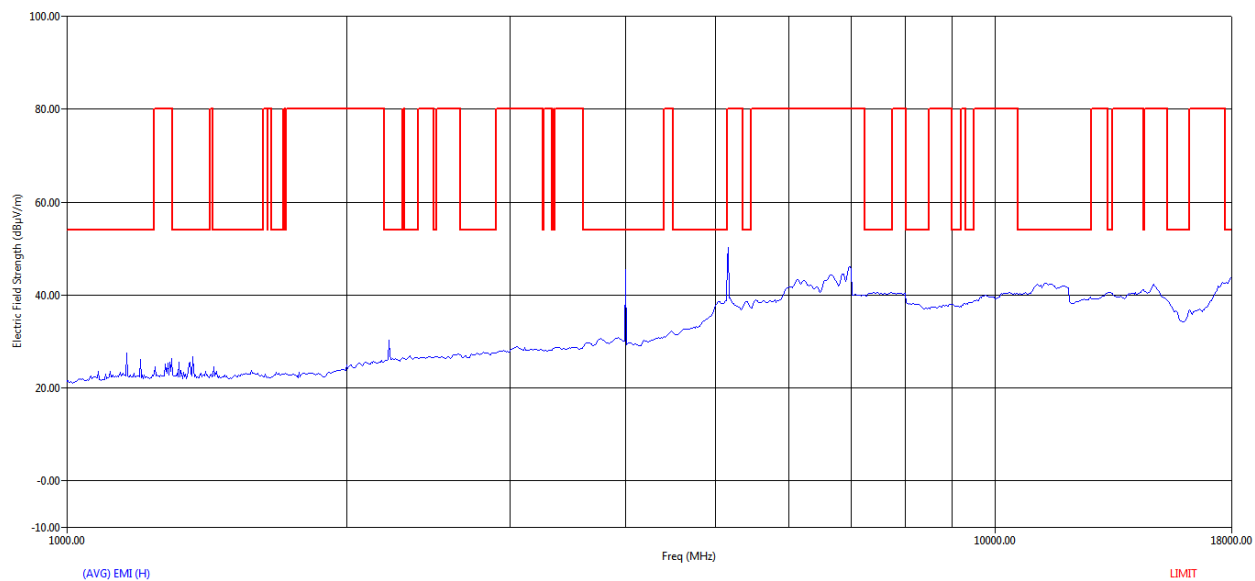


Figure 117: 5MHz, 6dBi, Low Channel: Average RE Graph - 1GHz to 18GHz - Horizontal Polarization

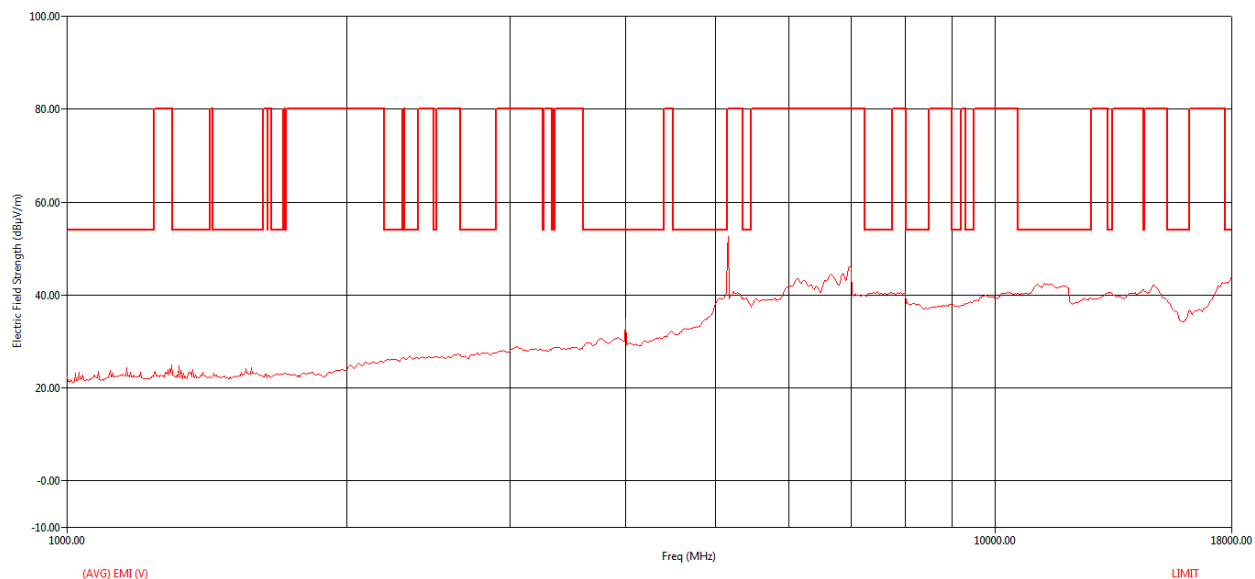


Figure 118: 5MHz, 6dBi, Low Channel: Average RE Graph - 1GHz to 18GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
3998.80	3998.80	H	179.90	102.00	40.93	3.32	30.20	30.30	44.14	53.98	-9.84
6968.40	6968.40	H	179.90	126.00	34.10	4.20	35.83	28.30	45.84	80.00	-34.16
6999.60	6999.60	V	168.10	112.00	33.68	4.21	35.88	28.30	45.47	80.00	-34.53

Table 65: 5MHz, 6dBi, Low Channel: Average table from 1 GHz to 18 GHz

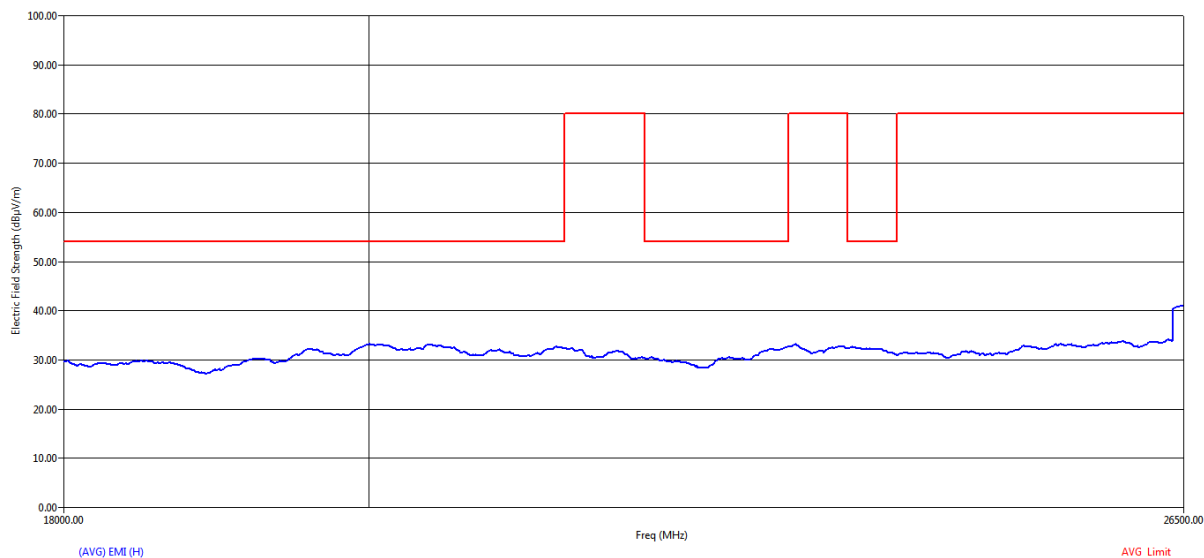


Figure 119: 5MHz, 6dBi, Low Channel: Average RE Graph - 18GHz to 26.5GHz - Horizontal Polarization

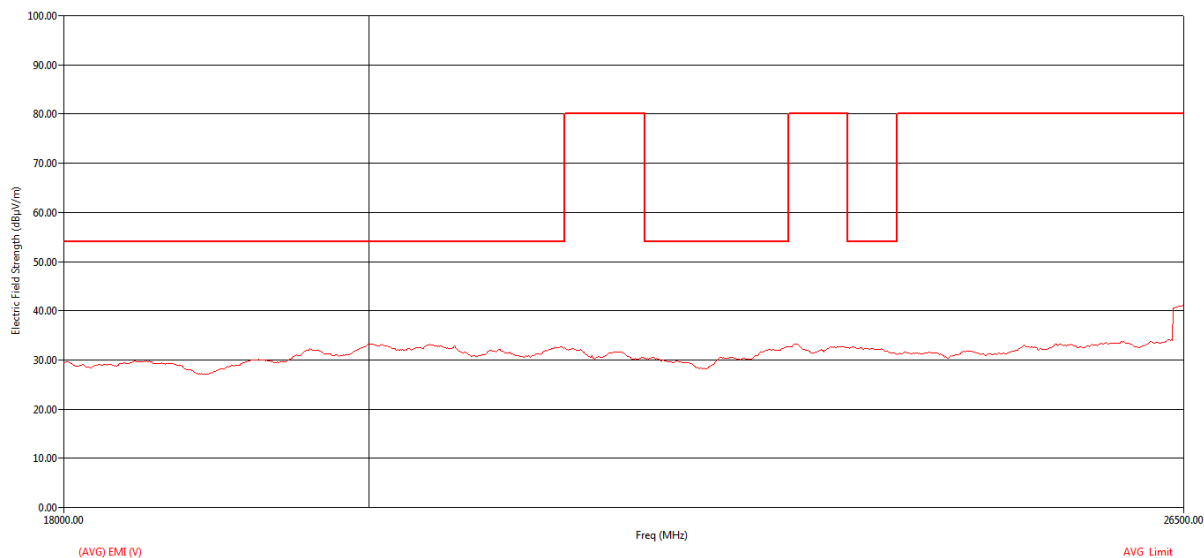


Figure 120: 5MHz, 6dBi, Low Channel: Average RE Graph - 18GHz to 26.5GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbi Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
18082.60	18703.96	H	149.40	150.00	33.73	6.89	36.38	47.85	29.15	53.98	-24.83
20674.30	19653.01	V	327.10	116.00	32.71	6.90	36.55	44.26	31.90	53.98	-22.08
21358.40	22199.47	V	328.10	149.00	32.30	6.71	36.82	46.49	29.34	53.98	-24.64

Table 66: 5MHz, 6dBi, Low Channel: Average table from 18 GHz to 26.5 GHz

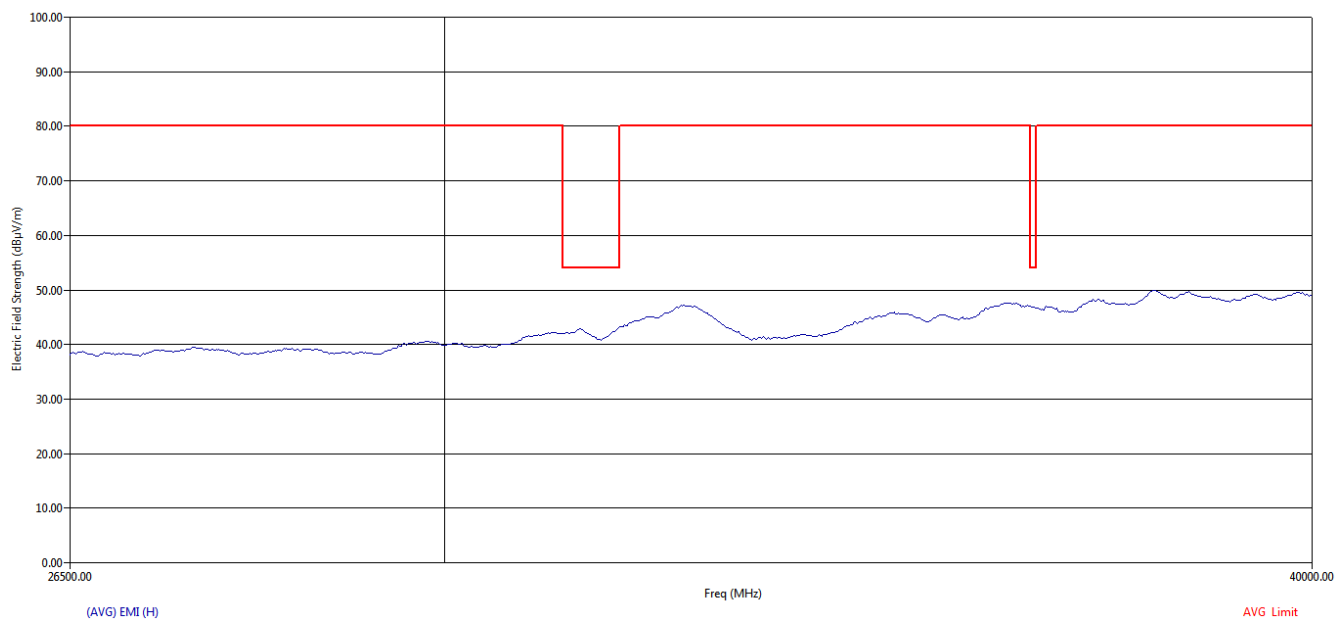


Figure 121: 5MHz, 6dBi, Low Channel: Average RE Graph - 26.5GHz to 40GHz - Horizontal Polarization

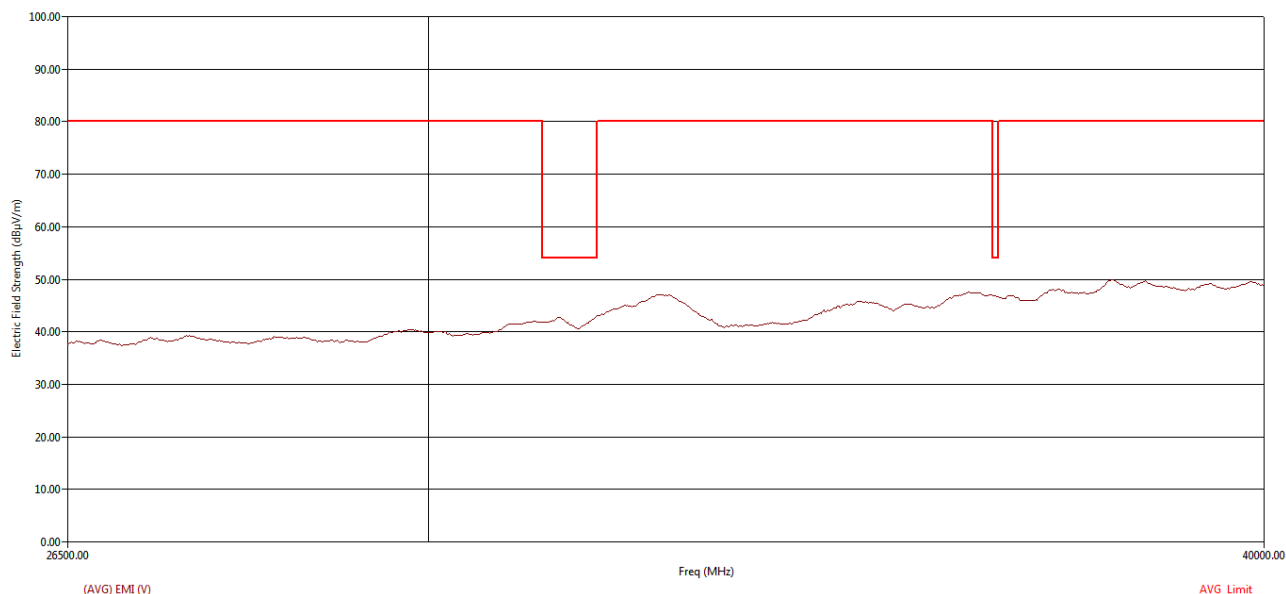


Figure 122: 5MHz, 6dBi, Low Channel: Average RE Graph - 26.5GHz to 40GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
32463.20	33455.31	V	261.10	100.00	42.14	10.66	39.37	51.27	40.90	80.00	-39.10
37950.90	38068.78	H	179.90	100.00	42.29	12.29	40.87	46.61	48.83	80.00	-31.17
38393.90	37958.01	V	215.20	100.00	43.11	12.32	40.75	46.50	49.67	80.00	-30.33

Table 67: 5MHz, 6dBi, Low Channel: Average table from 26.5 GHz to 40 GHz

5.3.1.5.11 5 MHz MODULATION BANDWIDTH, 6 dBi ANTENNA, MID CHANNEL - 5200 MHz

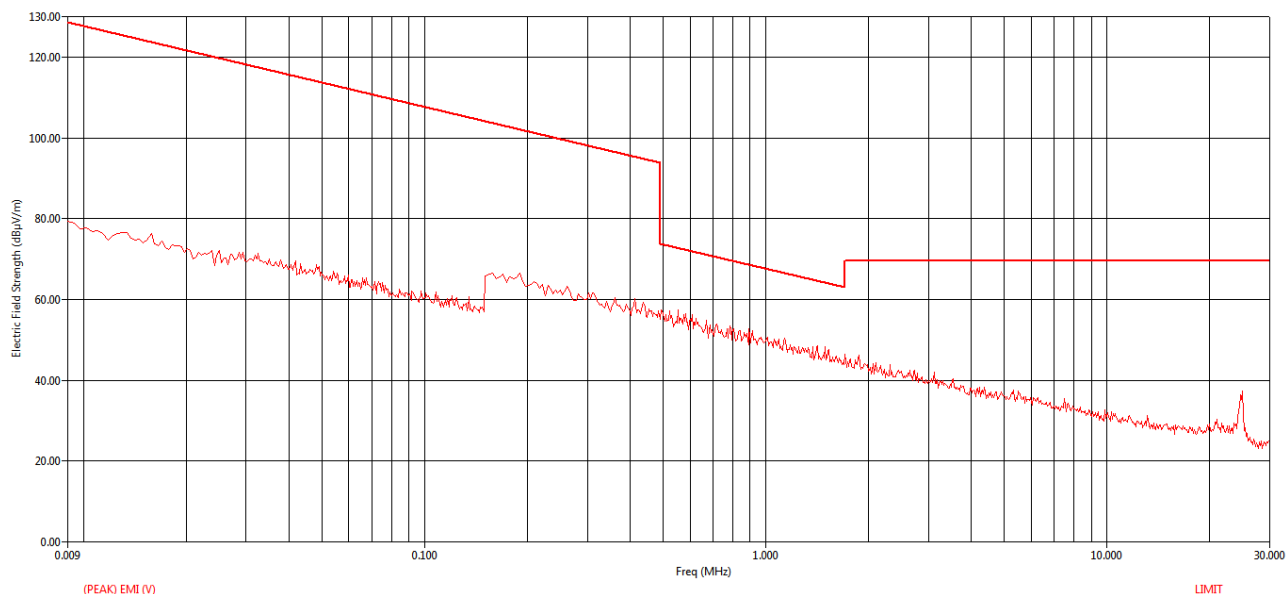


Figure 123: 5MHz, 6dBi, Mid Channel: Peak RE Graph - 9kHz to 30MHz - Parallel

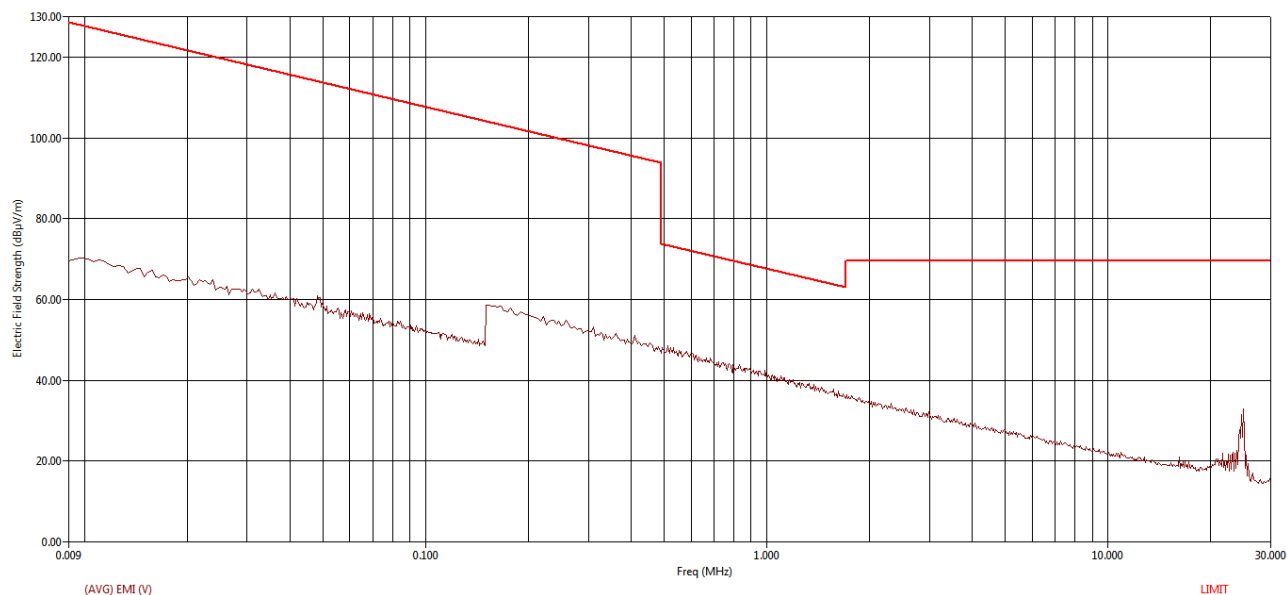


Figure 124: 5MHz, 6dBi, Mid Channel: Average RE Graph - 9kHz to 30MHz - Parallel

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbl Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
23.87	23.88	181.20	6.01	1.06	16.18	23.25	69.54	-46.29
24.13	24.13	99.40	5.24	1.07	16.16	22.47	69.54	-47.07

Table 68: 5MHz, 6dBi, Mid Channel: Quasipeak table from 9 kHz to 30 MHz

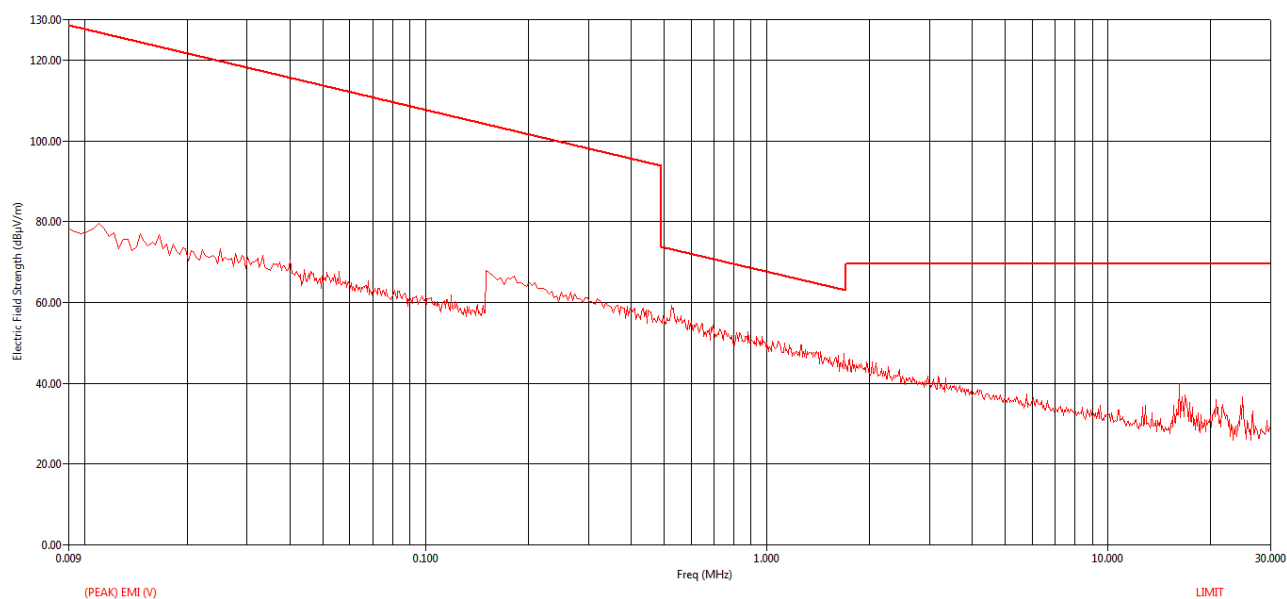


Figure 125: 5MHz, 6dBi, Mid Channel: Peak RE Graph - 9kHz to 30MHz - Perpendicular

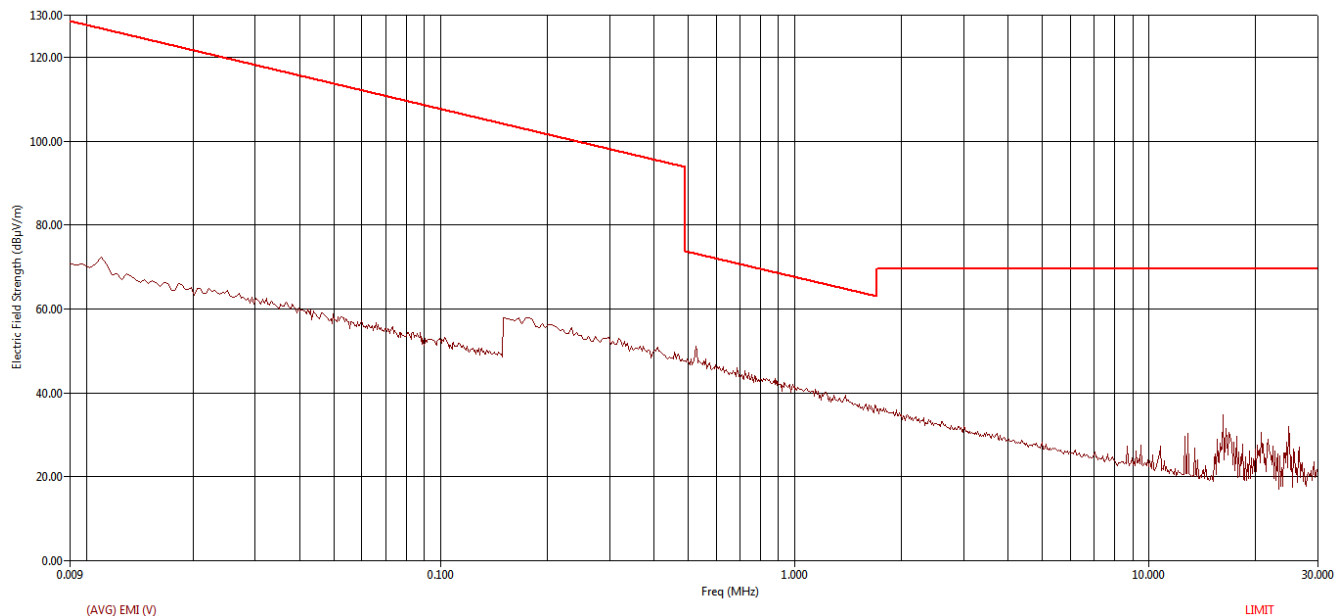


Figure 126: 5MHz, 6dBi, Mid Channel: Average RE Graph - 9kHz to 30MHz - Perpendicular

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbi Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
10.78	10.79	330.00	15.19	0.72	17.22	33.13	69.54	-36.41
12.61	12.62	192.30	7.29	0.78	17.07	25.14	69.54	-44.40
16.21	16.23	258.40	22.53	0.87	16.79	40.20	69.54	-29.34
20.33	20.32	179.90	11.49	0.98	16.47	28.94	69.54	-40.60
24.69	24.70	187.90	10.23	1.08	16.12	27.43	69.54	-42.11

Table 69: 5MHz, 6dBi, Mid Channel: Quasipeak table from 9 kHz to 30 MHz

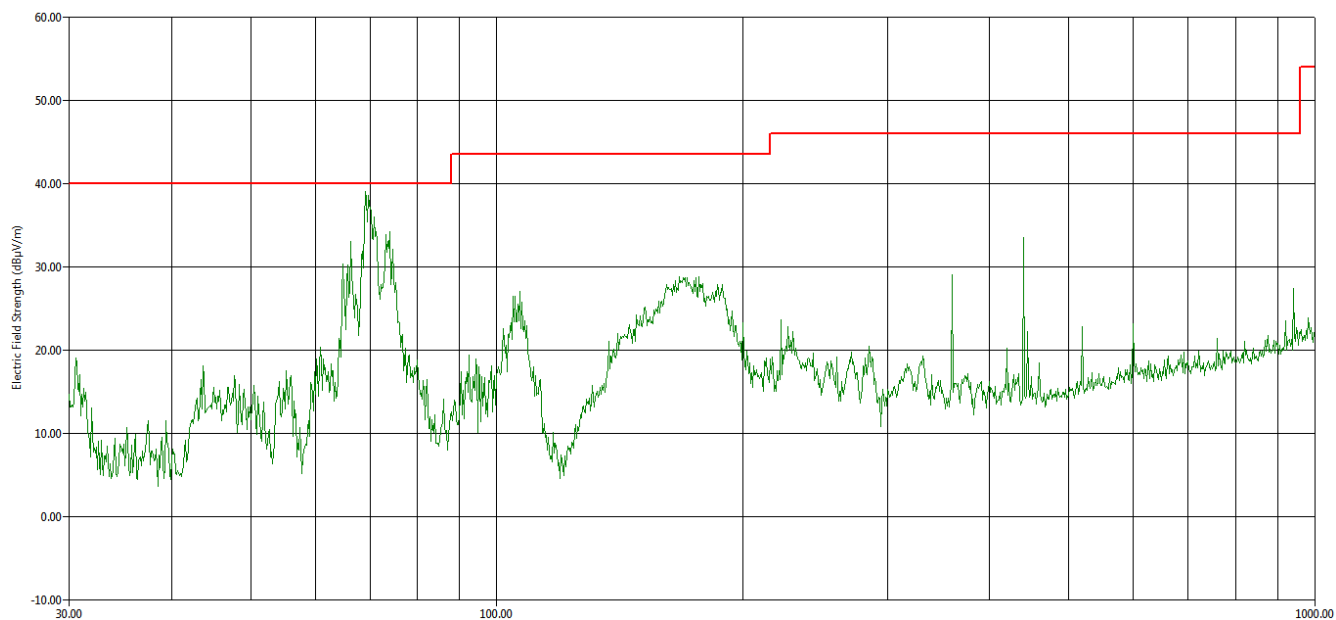


Figure 127: 5MHz, 6dBi, Mid Channel: Peak RE Graph - 30MHz to 1GHz - Horizontal Polarization

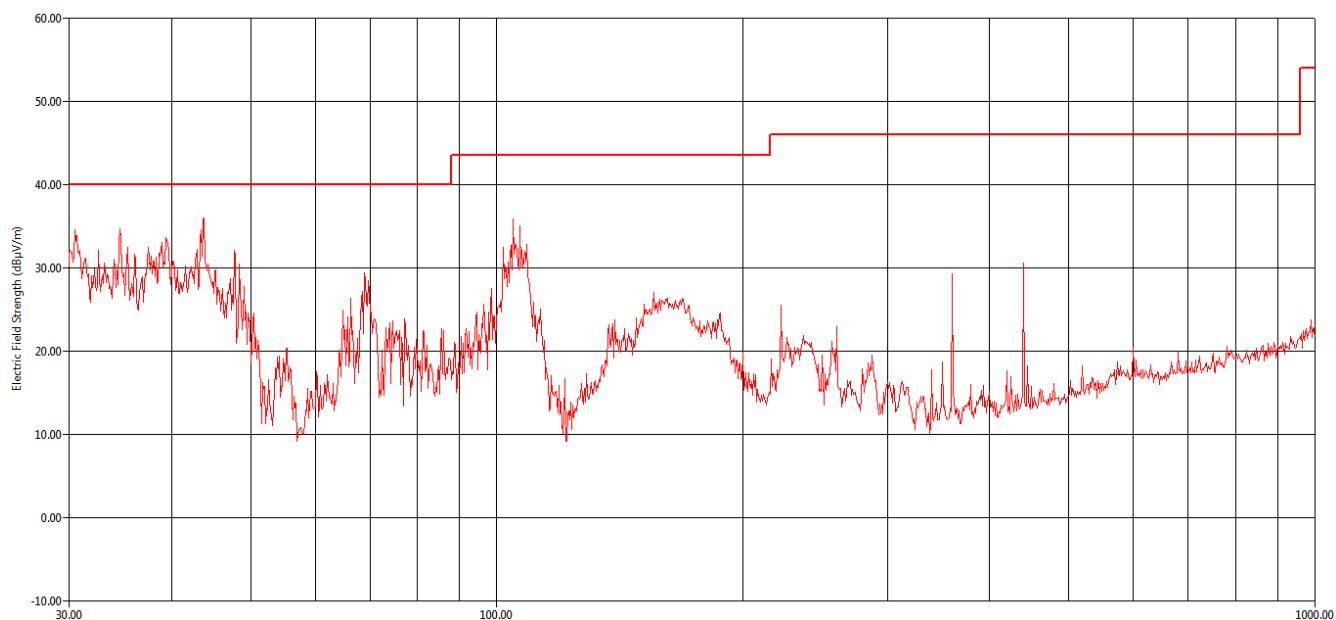


Figure 128: 5MHz, 6dBi, Mid Channel: Peak RE Graph - 30MHz to 1GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
30.52	30.60	V	161.90	104.00	65.92	1.18	13.19	43.80	36.50	40.00	-3.50
34.64	34.60	V	97.40	113.00	63.82	1.27	12.71	43.81	33.99	40.00	-6.01
43.84	43.80	V	191.20	185.00	57.90	1.45	10.77	43.82	26.30	40.00	-13.70
69.12	69.14	H	162.00	235.00	66.91	1.79	9.39	43.88	34.21	40.00	-5.79
69.68	69.72	H	162.00	245.00	69.84	1.79	9.38	43.88	37.12	40.00	-2.88
70.20	70.20	H	319.20	227.00	65.72	1.80	9.37	43.88	33.00	40.00	-7.00
104.76	104.76	V	271.10	100.00	66.39	2.18	9.83	43.94	34.46	43.52	-9.06

Table 70: 5MHz, 6dBi, Mid Channel: Quasipeak table from 30 MHz to 1 GHz

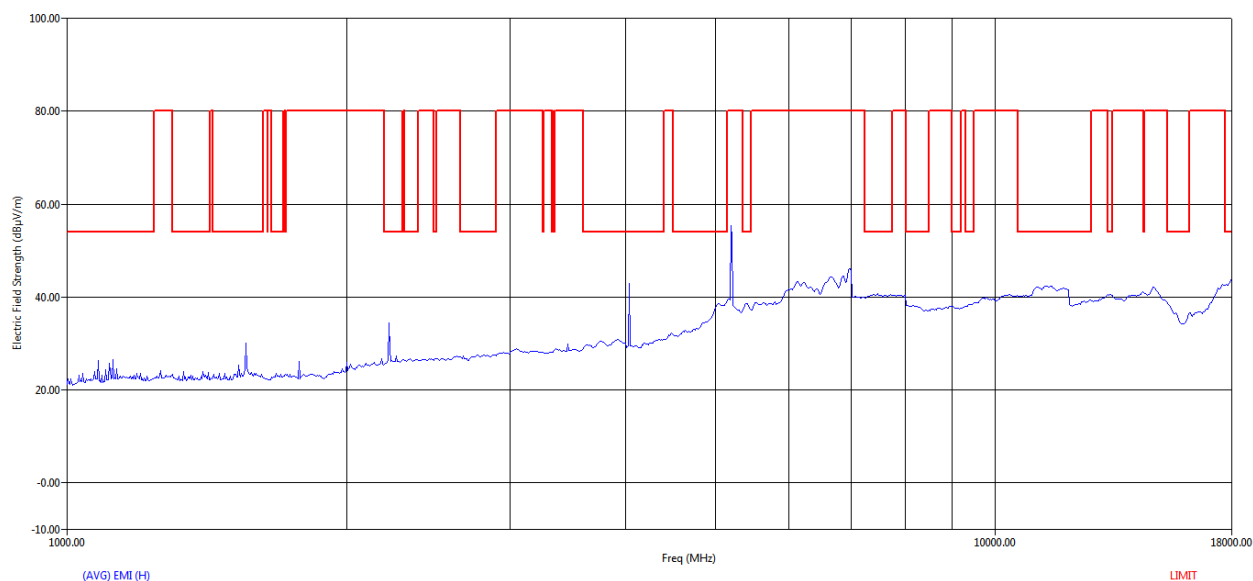


Figure 129: 5MHz, 6dBi, Mid Channel: Average RE Graph - 1GHz to 18GHz - Horizontal Polarization

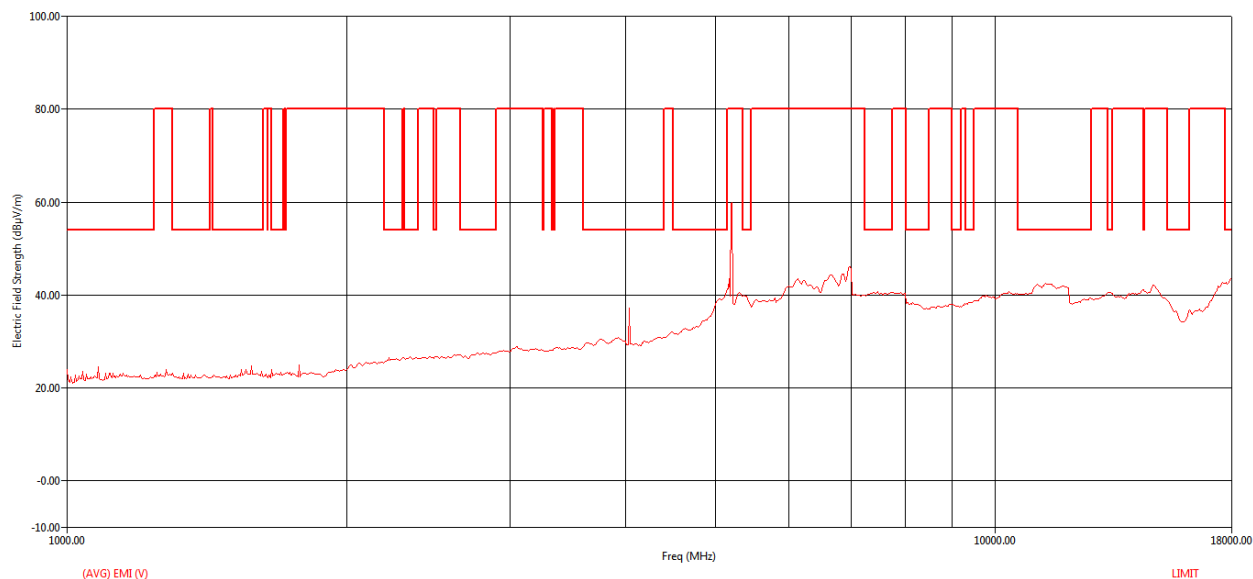


Figure 130: 5MHz, 6dBi, Mid Channel: Average RE Graph - 1GHz to 18GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
4539.20	4539.20	H	180.10	185.00	26.03	3.50	31.07	29.17	31.44	53.98	-22.54
5171.50	5171.50	V	291.60	100.00	34.23	3.80	32.92	28.32	42.64	80.00	-37.36
5360.60	5360.60	V	294.50	100.00	30.52	3.84	32.88	28.34	38.89	53.98	-15.09

Table 71: 5MHz, 6dBi, Mid Channel: Average table from 1 GHz to 18 GHz

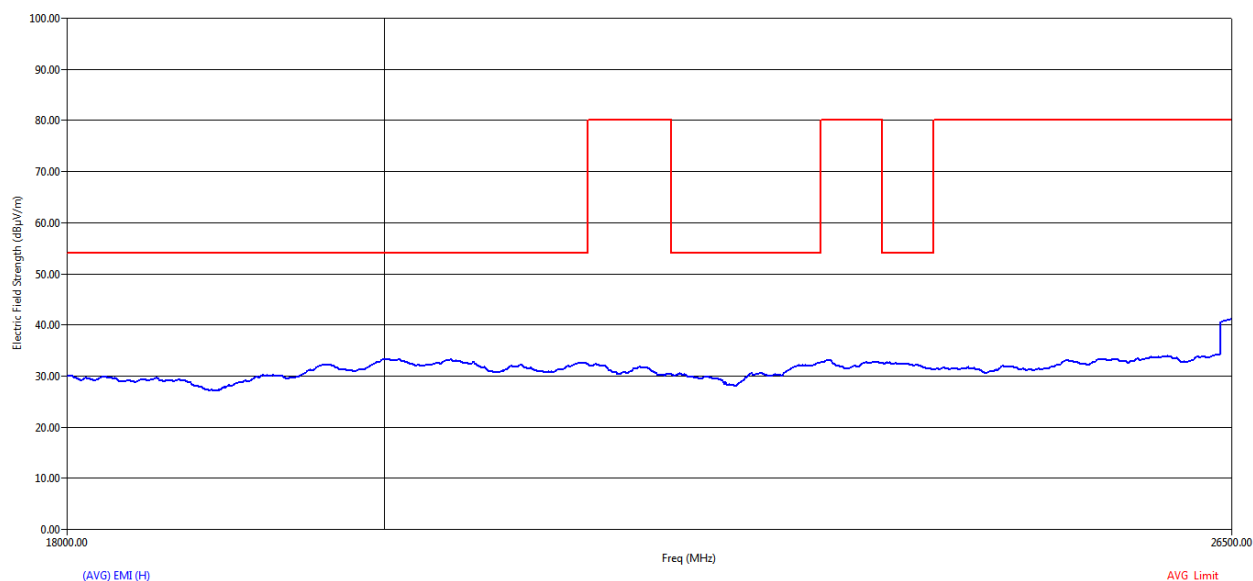


Figure 131: 5MHz, 6dBi, Mid Channel: Average RE Graph - 18GHz to 26.5GHz - Horizontal Polarization

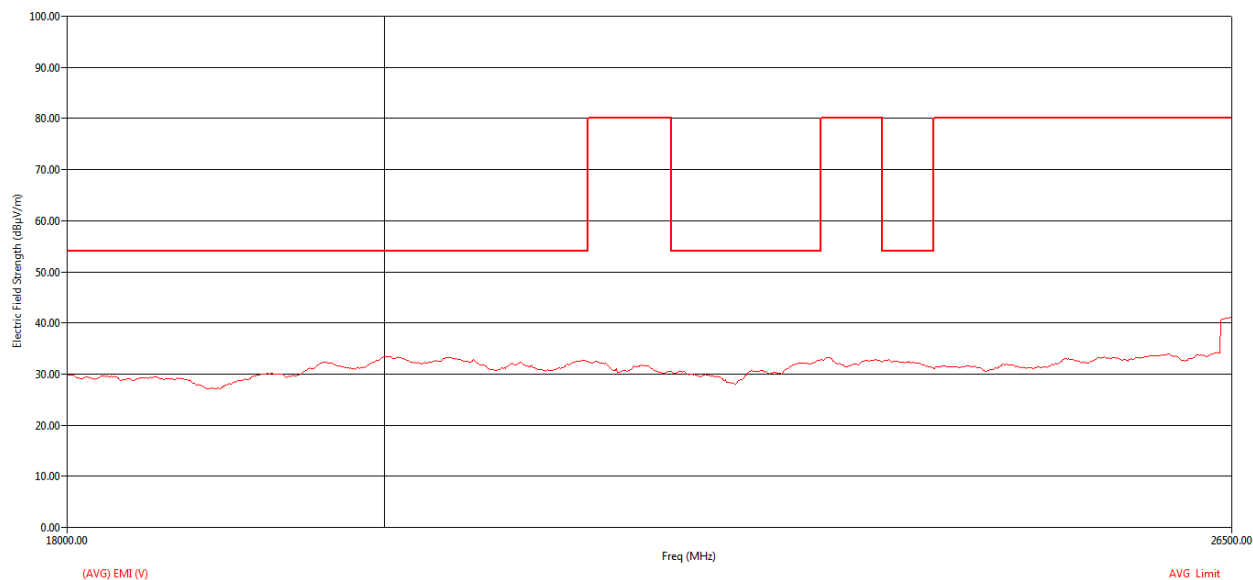


Figure 132: 5MHz, 6dBi, Mid Channel: Average RE Graph - 18GHz to 26.5GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agt (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preampl (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
18027.50	18619.87	H	234.10	143.00	33.00	6.99	36.35	46.98	29.36	53.98	-24.62
20019.10	19656.03	V	234.90	150.00	32.79	6.90	36.55	44.26	31.97	53.98	-22.01
23124.40	23094.28	V	234.90	100.00	33.32	8.21	37.75	46.85	32.42	80.00	-47.58

Table 72: 5MHz, 6dBi, Mid Channel: Average table from 18 GHz to 26.5 GHz

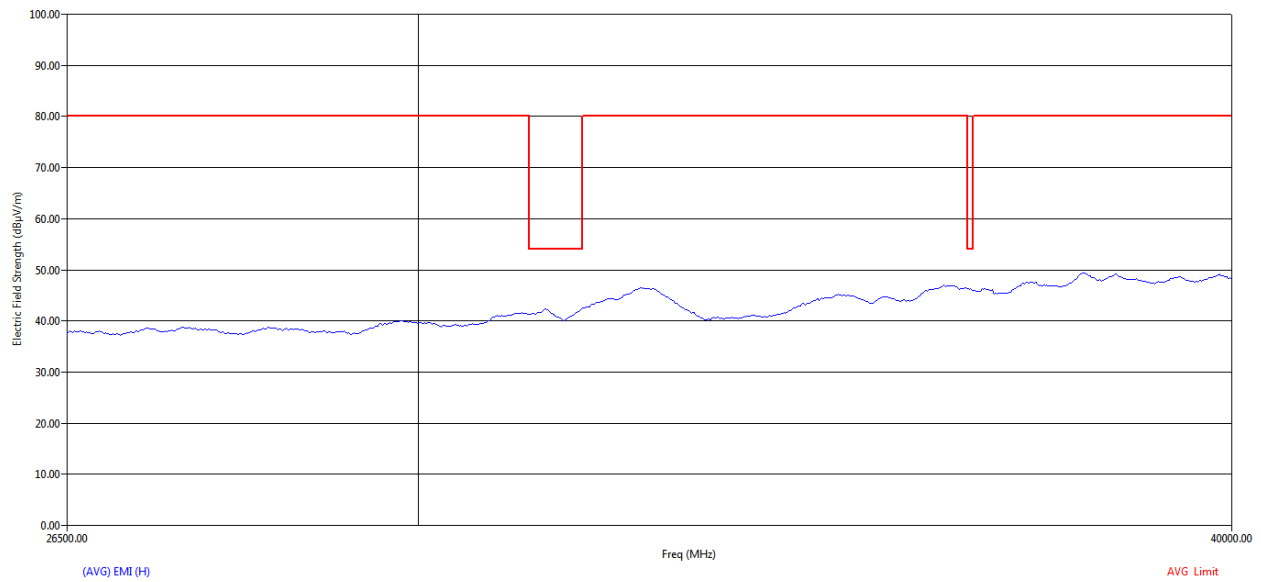


Figure 133: 5MHz, 6dBi, Mid Channel: Average RE Graph - 26.5GHz to 40GHz - Horizontal Polarization

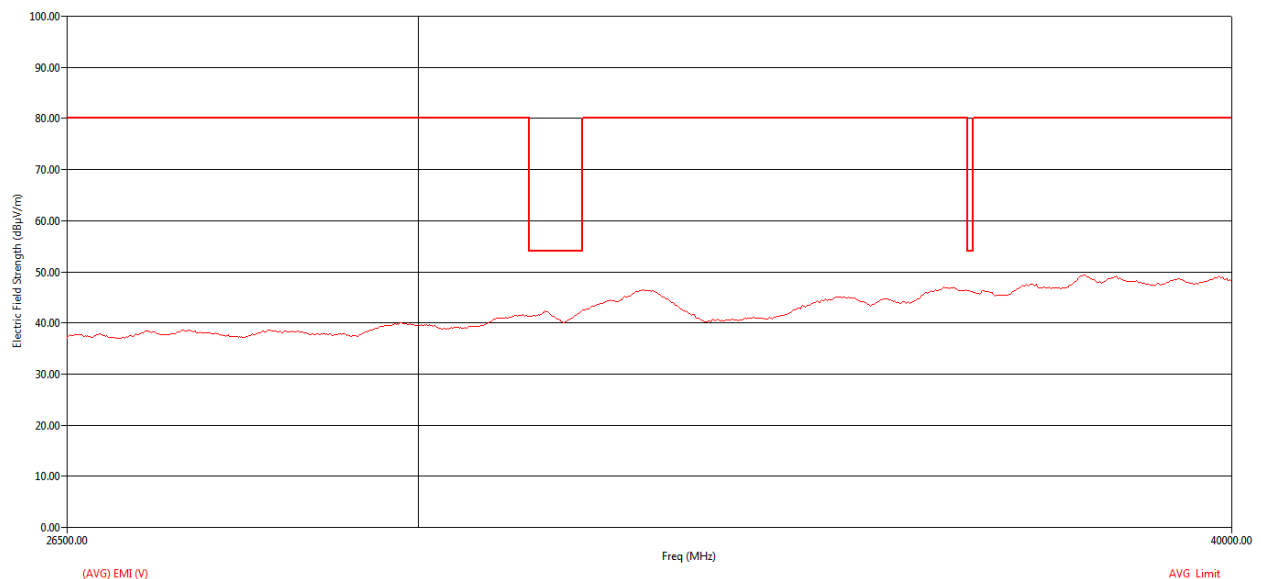


Figure 134: 5MHz, 6dBi, Mid Channel: Average RE Graph - 26.5GHz to 40GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
32536.40	32536.40	H	33.30	106.00	41.06	10.73	38.92	44.53	46.18	80.00	-33.82
39393.00	39393.00	V	180.00	171.00	40.23	12.96	41.71	47.12	47.79	80.00	-32.21

Table 73: 5MHz, 6dBi, Mid Channel: Average table from 26.5 GHz to 40 GHz

5.3.1.5.12 5 MHz MODULATION BANDWIDTH, 6 dBi ANTENNA, HIGH CHANNEL - 5245 MHz

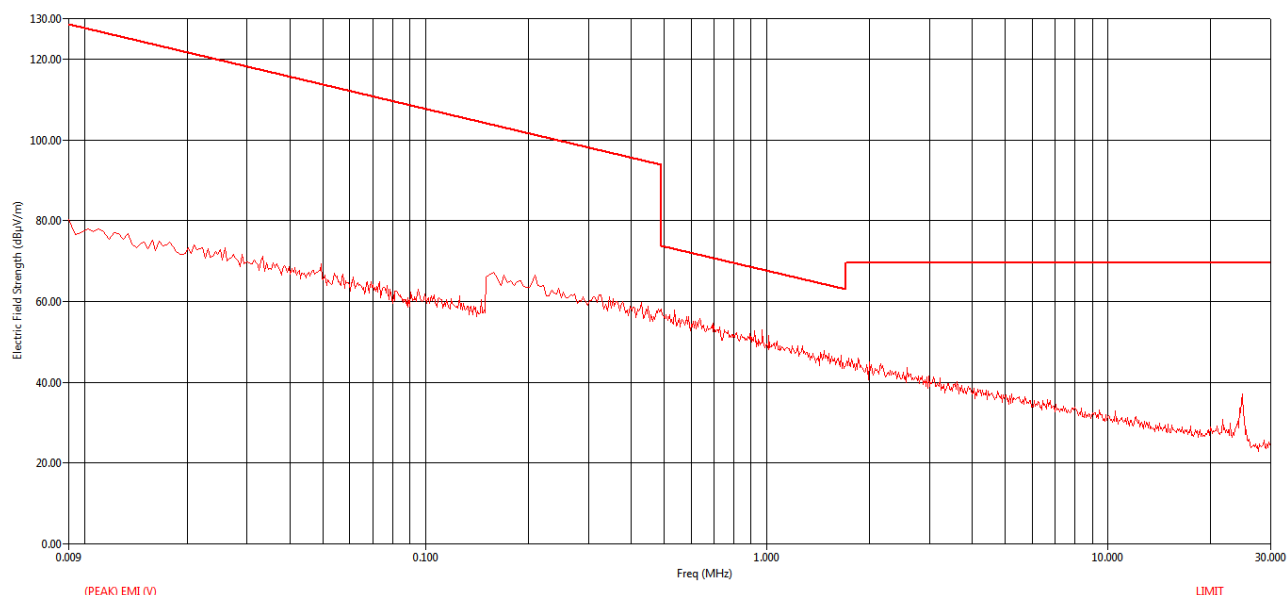


Figure 135: 5MHz, 6dBi, High Channel: Peak RE Graph - 9kHz to 30MHz - Parallel

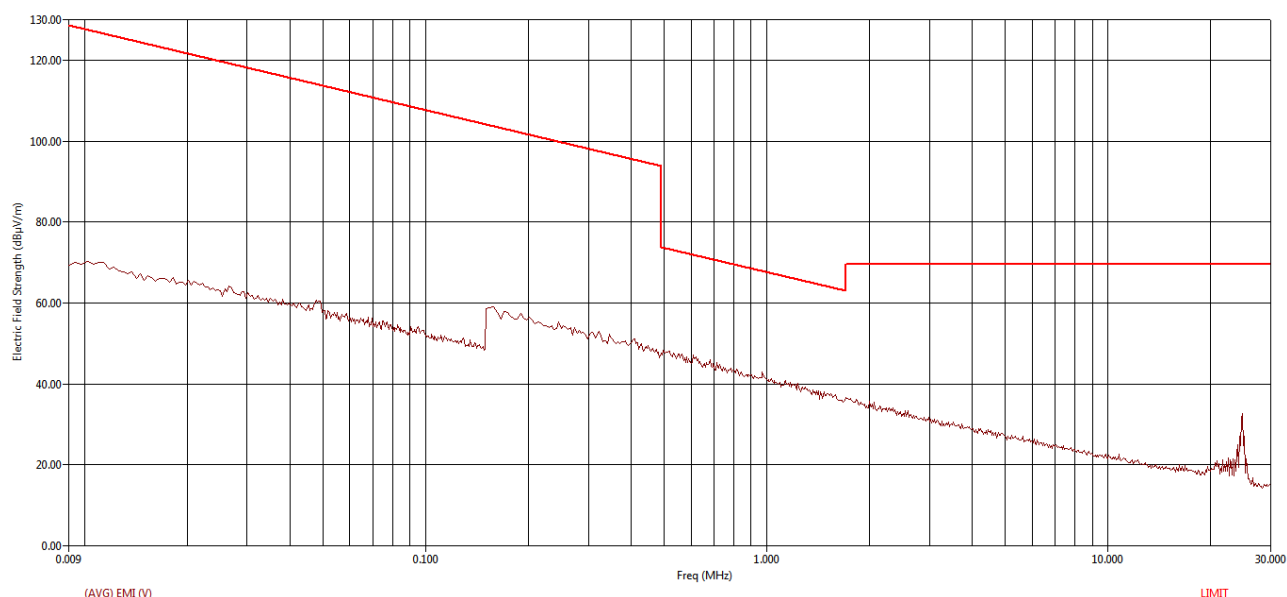


Figure 136: 5MHz, 6dBi, High Channel: Average RE Graph - 9kHz to 30MHz - Parallel

Freq (MHz)	Freq (Max) (MHz)	EUT TtBl Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
24.60	24.59	202.10	13.62	1.07	16.13	30.82	69.54	-38.72
24.72	24.72	189.90	17.73	1.08	16.12	34.93	69.54	-34.61
24.86	24.84	185.00	17.44	1.08	16.11	34.63	69.54	-34.91

Table 74: 5MHz, 6dBi, High Channel: Quasipeak table from 9 kHz to 30 MHz

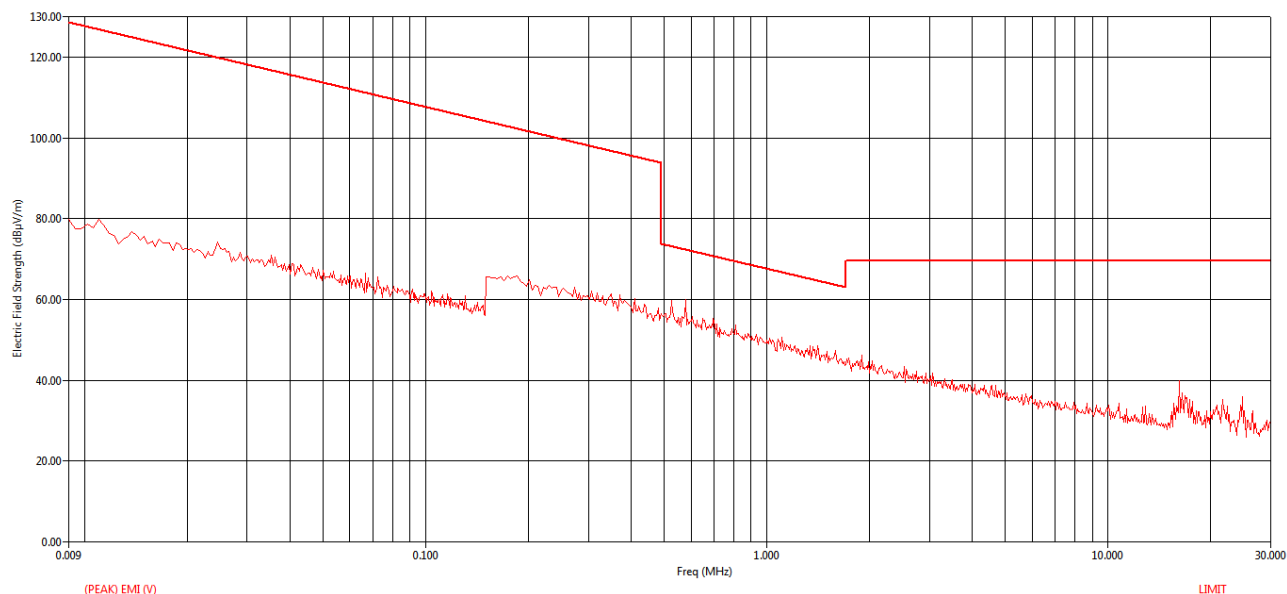


Figure 137: 5MHz, 6dBi, High Channel: Peak RE Graph - 9kHz to 30MHz - Perpendicular

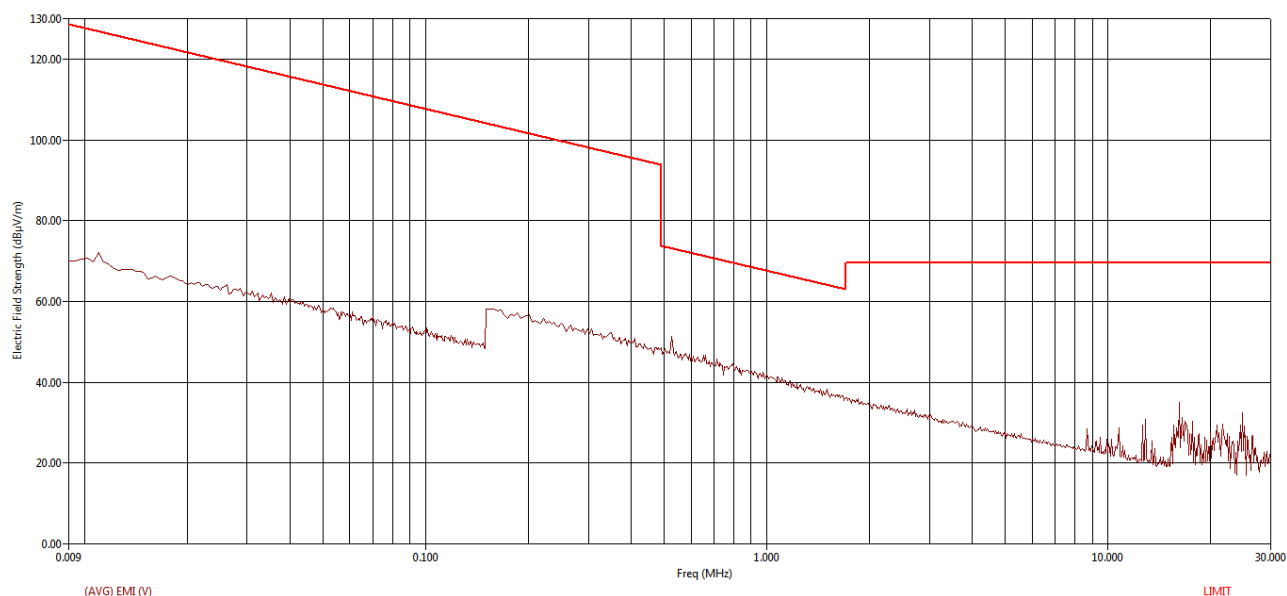


Figure 138: 5MHz, 6dBi, High Channel: Average RE Graph - 9kHz to 30MHz - Perpendicular

Freq (MHz)	Freq (Max) (MHz)	EUT Ttbi Agl (deg)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
16.21	16.23	248.10	22.39	0.87	16.79	40.05	69.54	-29.49
20.33	20.32	322.10	11.41	0.98	16.47	28.86	69.54	-40.68
24.69	24.69	184.30	10.20	1.08	16.12	27.40	69.54	-42.14

Table 75: 5MHz, 6dBi, High Channel: Quasipeak table from 9 kHz to 30 MHz

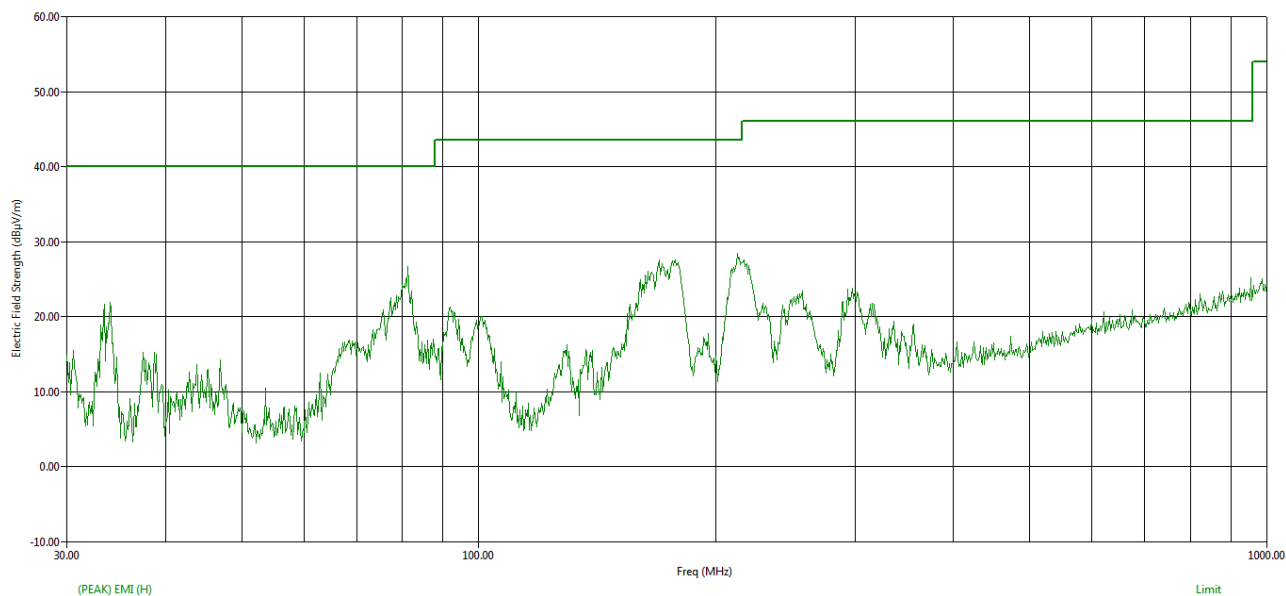


Figure 139: 5MHz, 6dBi, High Channel: Peak RE Graph - 30MHz to 1GHz - Horizontal Polarization

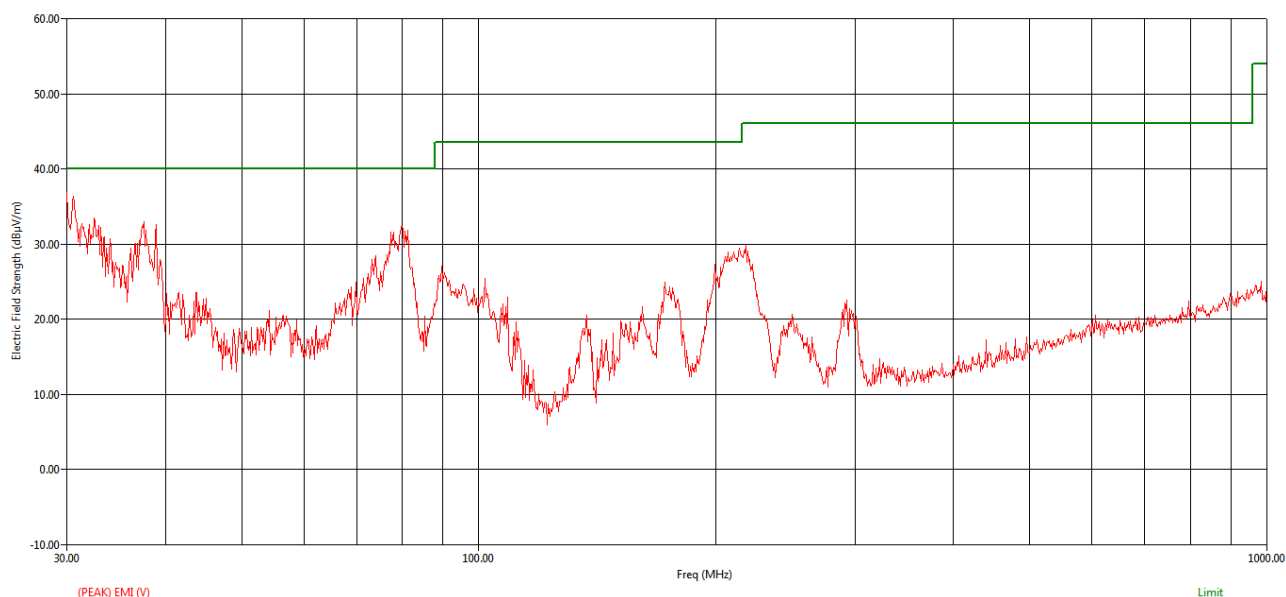


Figure 140: 5MHz, 6dBi, High Channel: Peak RE Graph - 30MHz to 1GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(QP) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(QP) EMI (dBμV/m)	Limit (dBμV/m)	(QP) Margin (dB)
30.00	30.01	V	133.60	100.00	64.46	1.17	11.50	43.80	33.33	40.00	-6.67
37.56	37.67	V	123.70	264.00	44.25	1.34	9.96	43.81	11.73	40.00	-28.27
38.92	39.04	V	162.00	137.00	54.71	1.36	9.61	43.81	21.86	40.00	-18.14
212.72	212.80	H	190.60	134.00	52.05	3.07	12.92	43.94	24.10	43.52	-19.42
214.04	214.00	H	245.30	184.00	57.78	3.08	12.87	43.93	29.80	43.52	-13.72
217.00	216.89	H	239.60	192.00	55.59	3.10	12.76	43.93	27.51	46.02	-18.51

Table 76: 5MHz, 6dBi, High Channel: Quasipeak table from 30 MHz to 1 GHz

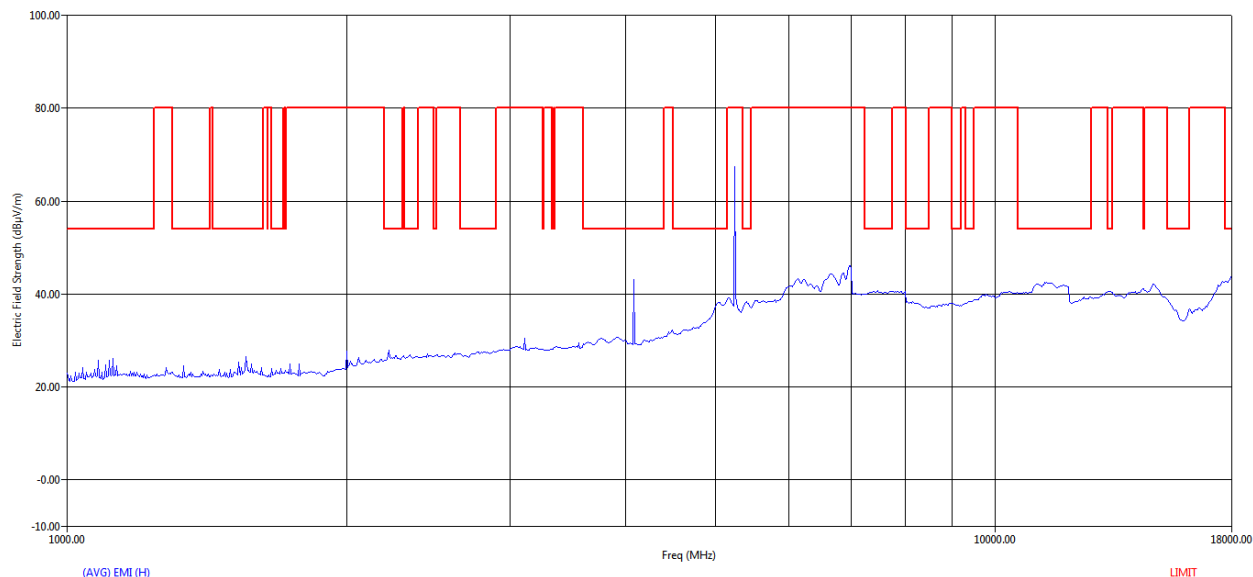


Figure 141: 5MHz, 6dBi, High Channel: Average RE Graph - 1GHz to 18GHz - Horizontal Polarization

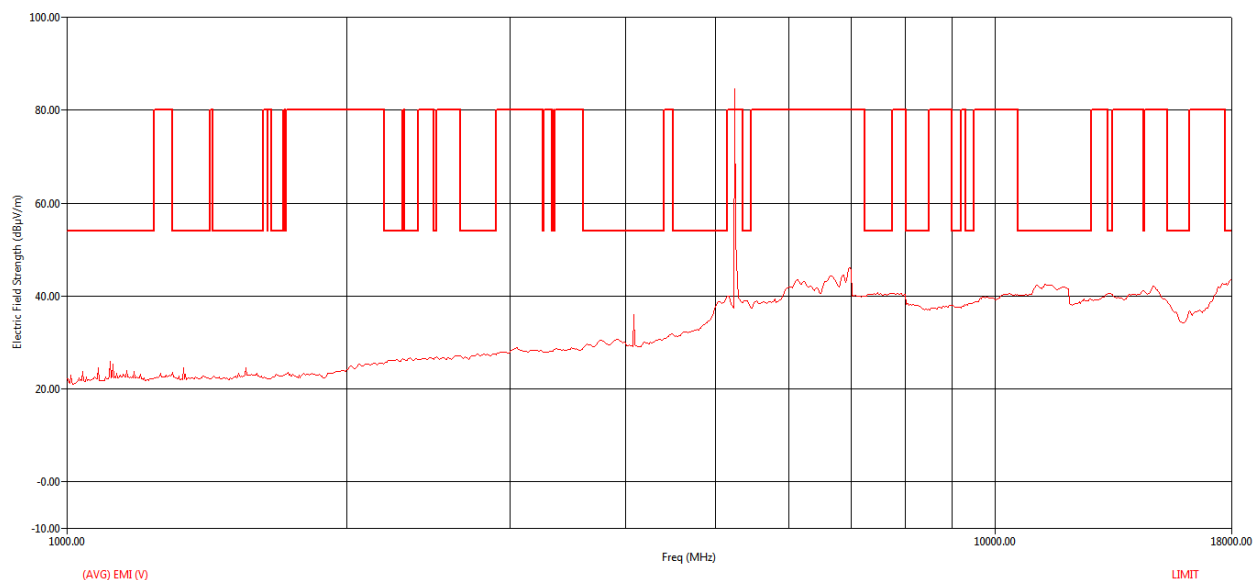


Figure 142: 5MHz, 6dBi, High Channel: Average RE Graph - 1GHz to 18GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbi Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
4084.01	4084.01	H	180.10	103.00	35.67	3.35	30.32	30.11	39.23	53.98	-14.75
5127.67	5127.67	V	314.60	100.00	30.93	3.79	32.93	28.31	39.34	53.98	-14.64
5266.79	5266.79	V	79.10	100.00	41.49	3.82	32.90	28.33	49.88	80.00	-30.12

Table 77: 5MHz, 6dBi, High Channel: Average table from 1 GHz to 18 GHz

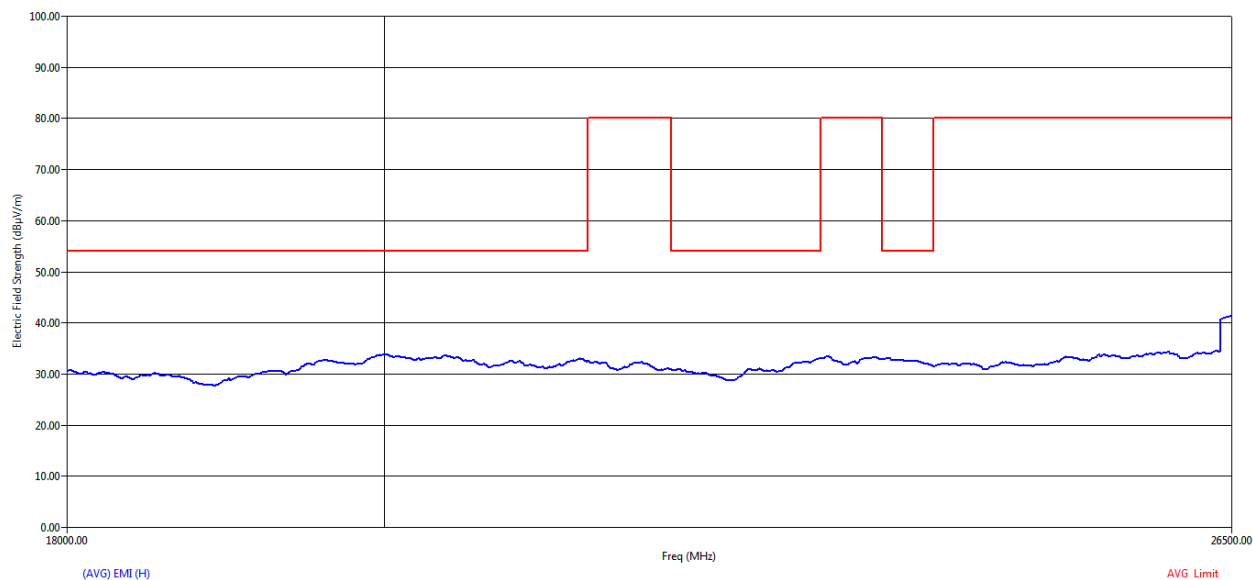


Figure 143: 5MHz, 6dBi, High Channel: Average RE Graph - 18GHz to 26.5GHz - Horizontal Polarization

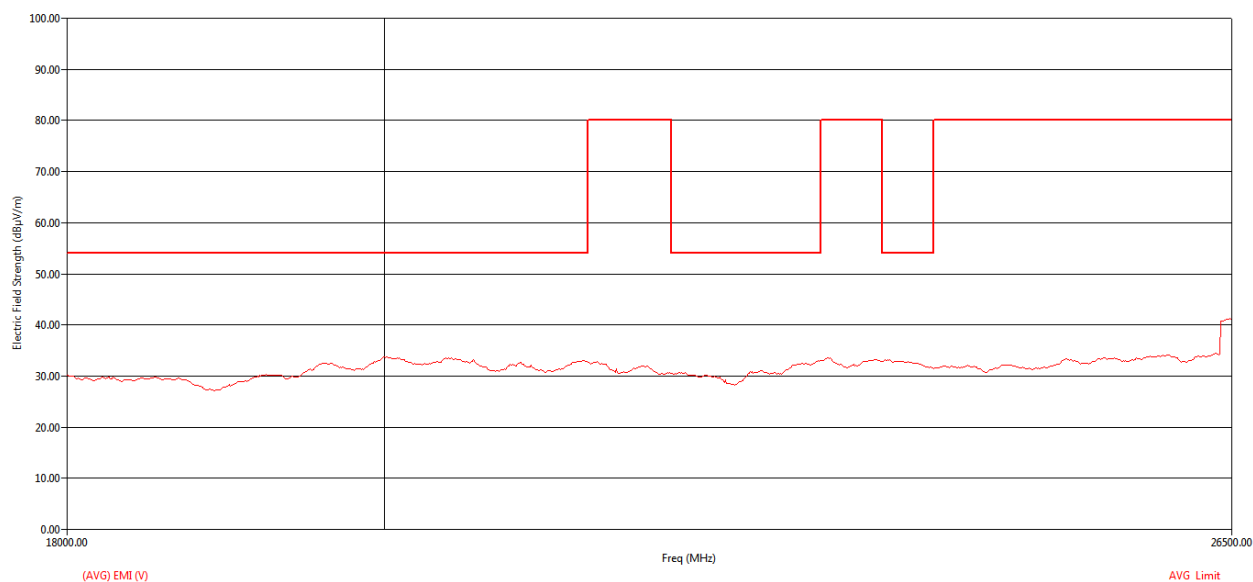


Figure 144: 5MHz, 6dBi, High Channel: Average RE Graph - 18GHz to 26.5GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agt (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamplifier (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
18082.60	18013.84	H	280.60	120.00	33.45	6.89	37.14	48.09	29.39	53.98	-24.59
20674.30	21376.56	V	345.60	134.00	32.38	7.81	37.58	45.16	32.60	53.98	-21.38
21358.40	21249.25	V	9.30	125.00	31.98	7.61	37.48	45.51	31.57	53.98	-22.41

Table 78: 5MHz, 6dBi, High Channel: Average table form 18 GHz to 26.5 GHz

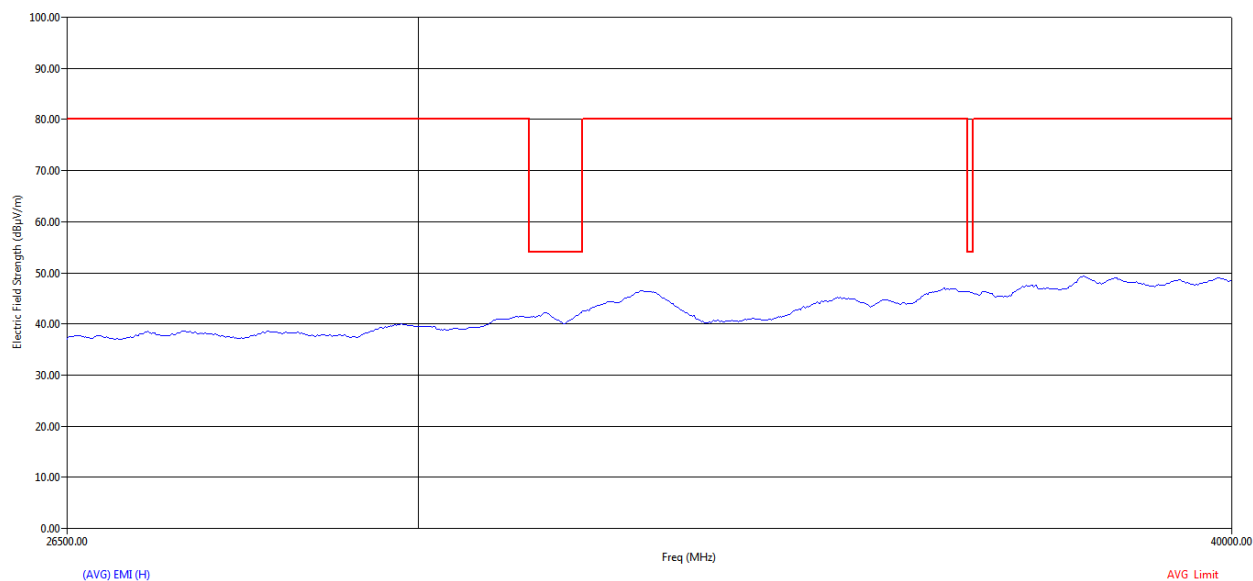


Figure 145: 5MHz, 6dBi, High Channel: Average RE Graph - 26.5GHz to 40GHz - Horizontal Polarization

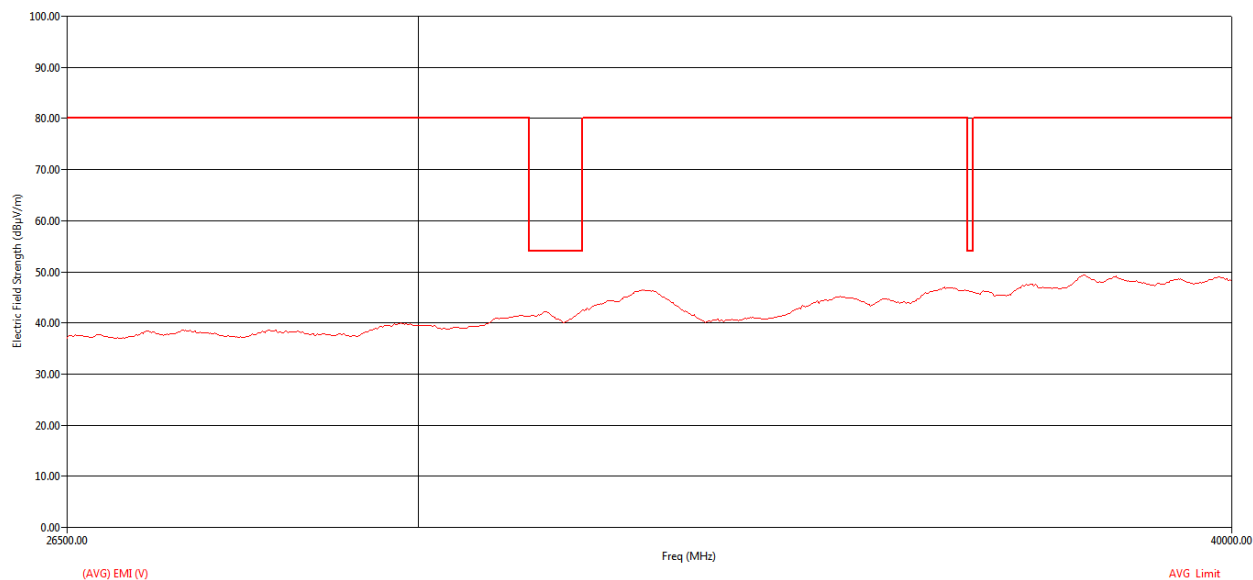


Figure 146: 5MHz, 6dBi, High Channel: Average RE Graph - 26.5GHz to 40GHz - Vertical Polarization

Freq (MHz)	Freq (Max) (MHz)	Pol	EUT Ttbt Agl (deg)	Twr Ht (cm)	(AVG) Trace (dBμV)	Cable (dB)	Transducer (dB)	Preamp (dB)	(AVG) EMI (dBμV/m)	Limit (dBμV/m)	(AVG) Margin (dB)
32393.00	32393.00	V	216.60	126.00	41.16	10.59	38.90	44.82	45.82	80.00	-34.18
32609.00	32609.00	H	173.80	165.00	40.98	10.64	38.95	44.49	46.08	80.00	-33.92

Table 79: 5MHz, 6dBi, High Channel: Average table from 26.5 GHz to 40 GHz

5.3.1.6 RESULT

Radiated emissions from the EUT are within the specified limits

5.3.2 CONDUCTED EMISSION TEST

5.3.2.1 TEST SPECIFICATION

Test Standard	47 CFR, Part 15 Feb 2016	
Test Procedure	ANSI C63.4-2014	
Class / Group	Class 'B'	
Type of Cable (Shielded/Unshielded)	Unshielded Cable	
Frequency Range	150 kHz - 30 MHz	
Resolution Bandwidth	9 kHz	
Video Bandwidth	30 kHz	
Step size	4 kHz	
Pre Scan Measurement Time	20 ms	
Final Measurement Time	1 second	
Attenuation	10 dB	
Detector	Quasi Peak and Average	
Input Voltage	120 V AC	230 V AC
Input Frequency	60 Hz	50 Hz
Temperature	22.0 °C	
Humidity	53.0 %	
Tested By	Nishanth	
Test Date	29 th Mar 2016	

5.3.2.2 LIMITS

Maximum permissible voltage levels of Conducted Emission as per 47 CFR, Part 15 Feb 2016 Class 'B' on Power lines are as shown below:

Frequency (MHz)	Voltage limits Class 'A' (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.5 to 5	56	46
5 to 30	60	50

5.3.2.3 TEST SETUP

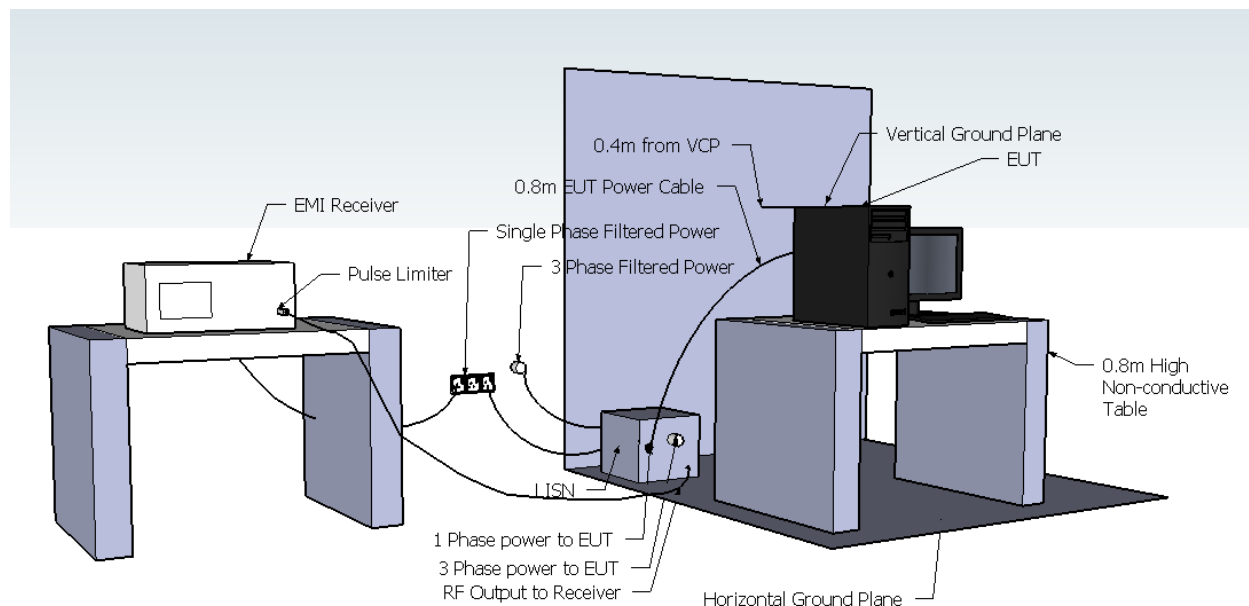


Figure 147 Sample Conducted Emission test setup

5.3.2.4 TEST PROCEDURE

The test procedure is in accordance with ANSI C63.4-2014

The EUT was tested at the conducted emission test site with a horizontal ground reference plane and a vertical ground reference plane bonded together. The EUT was placed on non-conductive table of 0.8 m height as per standard. The power supply to the EUT and auxiliary equipment was feed through LISN.

LISN (Voltage Method):

The conducted emission (disturbance) was measured through the 50 Ω RF port of the LISN using an EMI receiver. Pre-scan (Peak and Average) was carried out in max hold mode and conducted emission from the EUT coupled through the Power (mains) port was plotted in the graph. The dominant peaks at various frequencies, closer to and above the limit line were identified using peak search option and listed. Quasipeak and Average measurement was carried out for the listed frequencies and compared with the limit specified in the standard.

Note: During this test the EUT was configured with the maximum power (i.e., 6dBi antenna configuration), terminating the antenna port. .

5.3.2.5 MEASUREMENT DATA

5.3.2.5.1 POWER LINE – 230 V 50 Hz – 40 MHz BANDWIDTH – Low CHANNEL

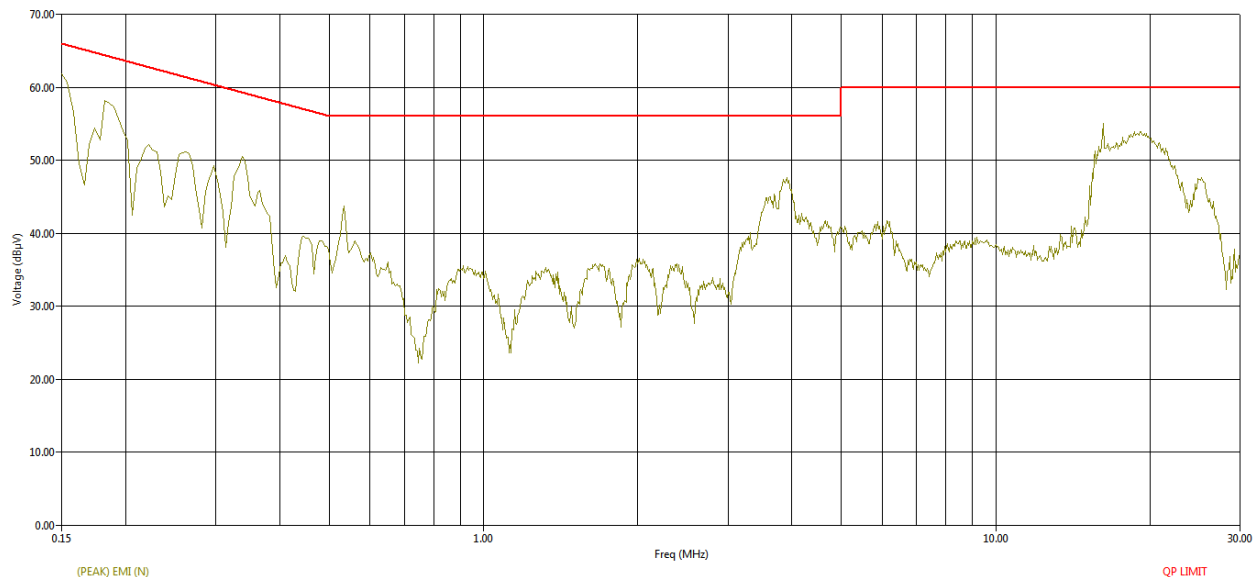


Figure 148: 40MHz, 230V/50Hz, Low channel: Peak CE Graph - 150kHz to 30MHz - Neutral

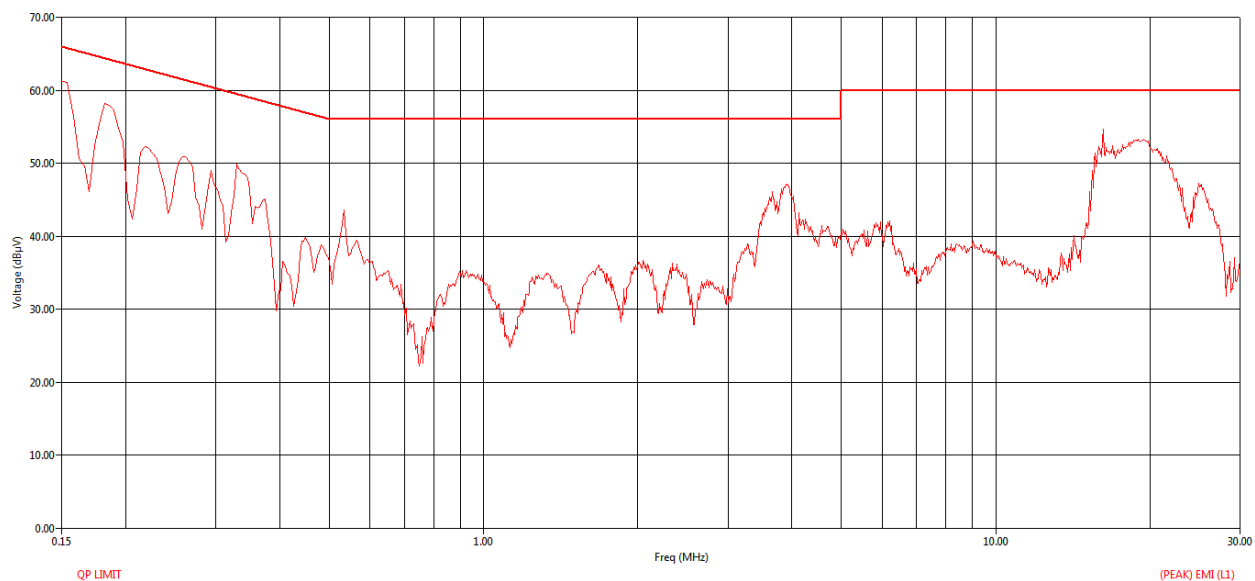


Figure 149: 40MHz, 230V/50Hz, Low channel: Peak CE Graph - 150kHz to 30MHz - Line

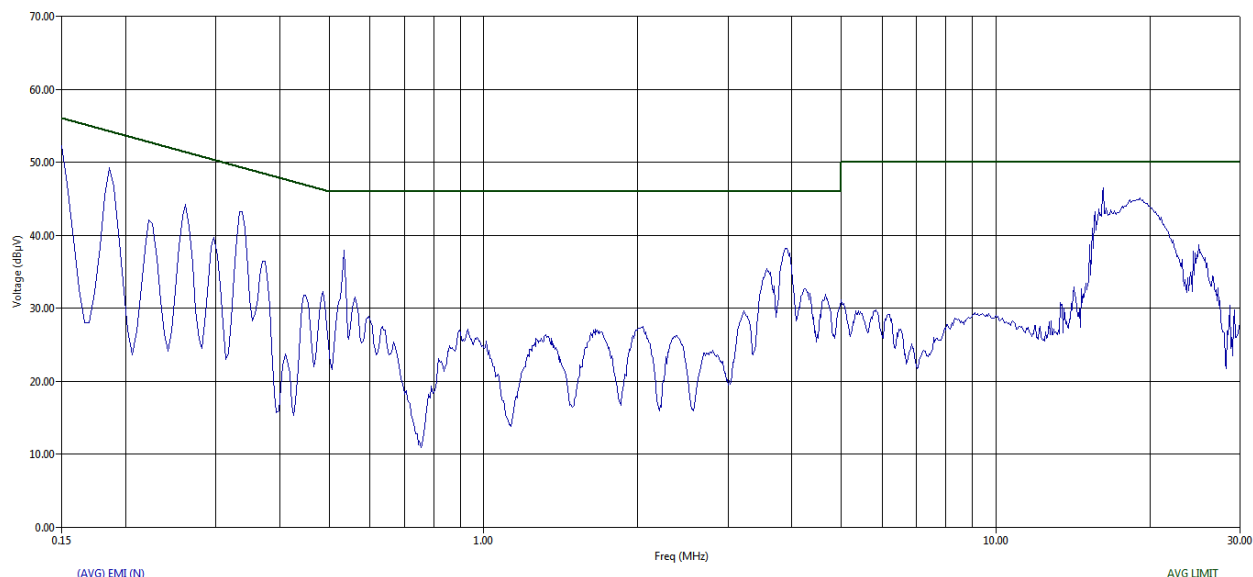


Figure 150: 40MHz, 230V/50Hz, Low channel: Average CE Graph - 150kHz to 30MHz - Neutral

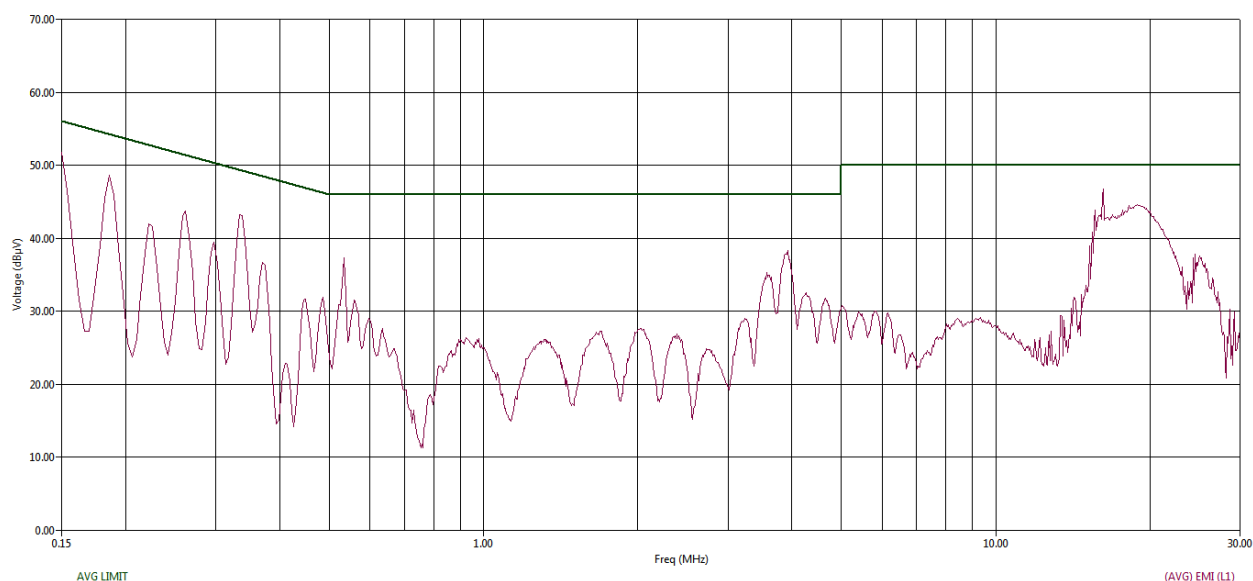


Figure 151: 40MHz, 230V/50Hz, Low channel: Average CE Graph - 150kHz to 30MHz - Line

Freq (MHz)	Freq (Max) (MHz)	Line	(QP) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(QP) EMI (dBμV)	(QP) Limit (dBμV)	(QP) Margin QPL (dB)
0.150	0.159	N	41.933	10.107	2.097	0.000	54.137	65.539	-11.402
0.150	0.155	L1	41.116	10.107	0.000	2.155	53.378	65.730	-12.352
0.182	0.183	N	39.464	10.106	1.886	0.000	51.456	64.337	-12.881
0.182	0.184	L1	38.854	10.106	0.000	1.906	50.866	64.324	-13.459
0.218	0.201	L1	36.626	10.106	0.000	1.774	48.506	63.581	-15.075
0.222	0.229	N	32.630	10.105	1.560	0.000	44.295	62.484	-18.189
0.330	0.338	L1	33.746	10.102	0.000	1.005	44.853	59.241	-14.388
0.338	0.340	N	34.316	10.102	0.983	0.000	45.402	59.205	-13.803
16.230	16.231	N	39.749	10.356	0.688	0.000	50.794	60.000	-9.206
16.230	16.231	L1	39.694	10.356	0.000	0.686	50.736	60.000	-9.264

Table 80: 40MHz, 230V/50Hz, Low channel: Quasipeak table for CE from 150 kHz to 30 MHz

Freq (MHz)	Freq (Max) (MHz)	Line	(AVG) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(AVG) EMI (dBμV)	(AVG) Limit (dBμV)	(AVG) Margin AVL (dB)
0.150	0.159	N	34.048	10.107	2.097	0.000	46.252	55.539	-9.287
0.150	0.155	L1	32.157	10.107	0.000	2.155	44.419	55.730	-11.311
0.182	0.183	N	31.274	10.106	1.886	0.000	43.266	54.337	-11.071
0.182	0.184	L1	30.227	10.106	0.000	1.906	42.239	54.324	-12.085
0.218	0.201	L1	28.275	10.106	0.000	1.774	40.155	53.581	-13.426
0.222	0.229	N	23.563	10.105	1.560	0.000	35.228	52.484	-17.256
0.330	0.338	L1	28.302	10.102	0.000	1.005	39.409	49.241	-9.832
0.338	0.340	N	29.114	10.102	0.983	0.000	40.200	49.205	-9.005
16.230	16.231	N	34.315	10.356	0.688	0.000	45.360	50.000	-4.640
16.230	16.231	L1	34.376	10.356	0.000	0.686	45.418	50.000	-4.582

Table 81: 40MHz, 230V/50Hz, Low channel: Average table for CE from 150 kHz to 30 MHz

5.3.2.5.2 POWER LINE – 230 V 50 Hz – 40 MHz BANDWIDTH – MID CHANNEL

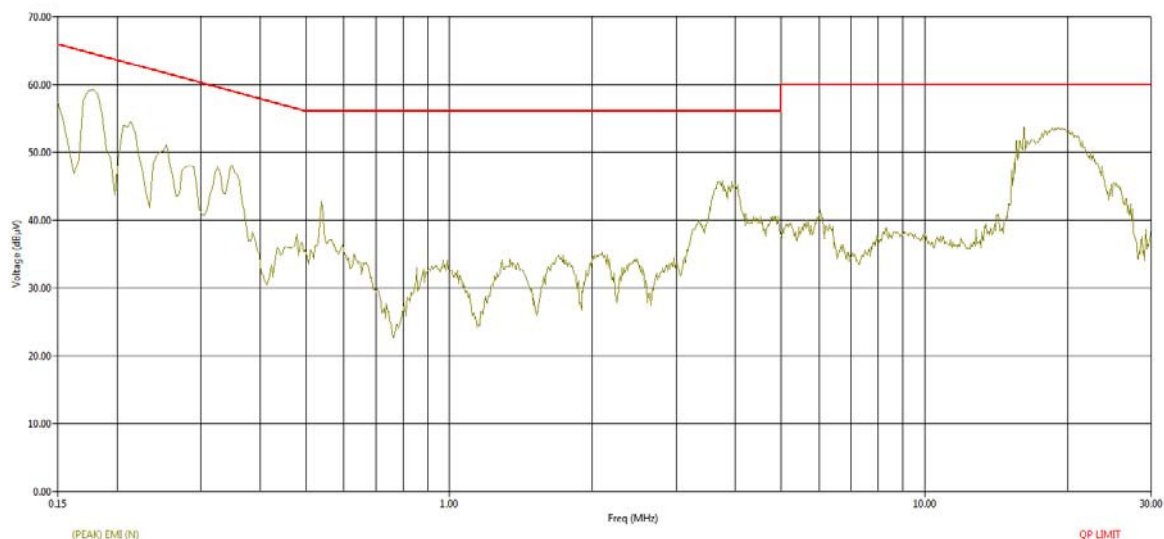


Figure 152: 40MHz, 230V/50Hz, Mid channel: Peak CE Graph - 150kHz to 30MHz - Neutral

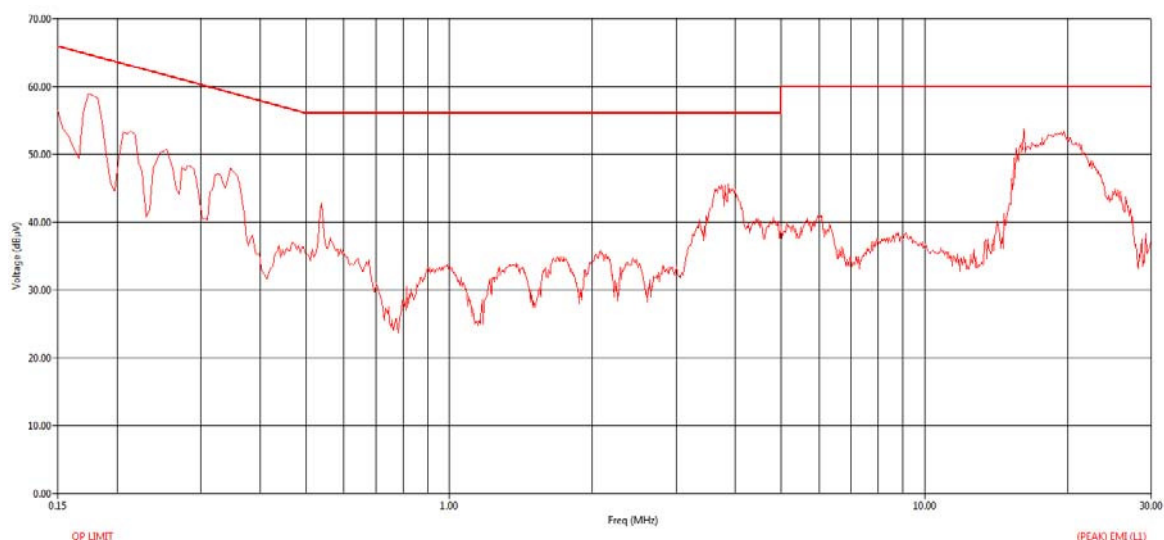


Figure 153: 40MHz, 230V/50Hz, Mid channel: Peak CE Graph - 150kHz to 30MHz - Line

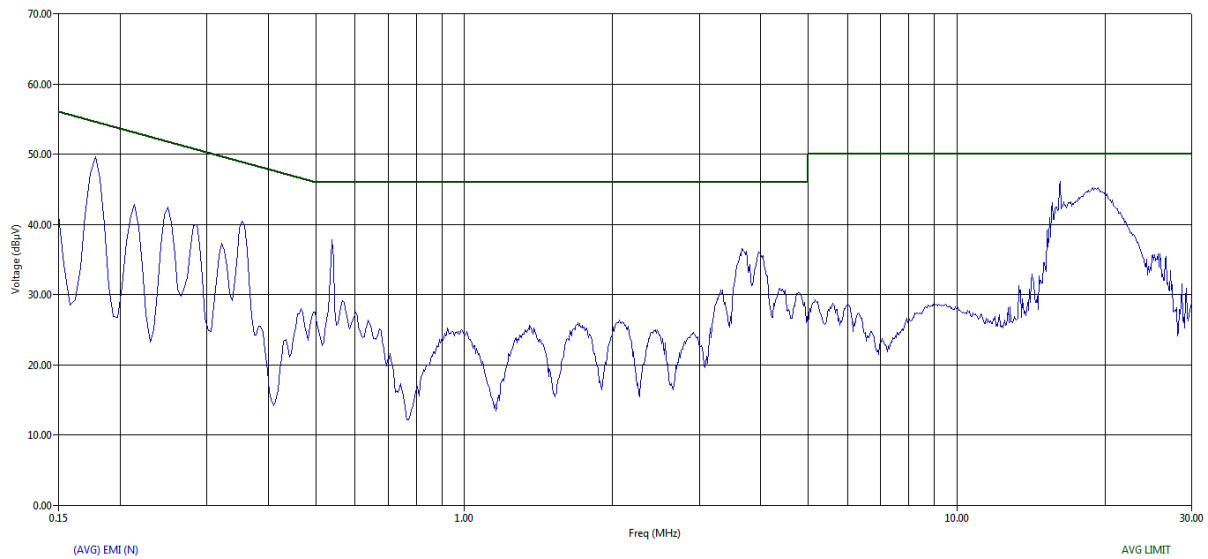


Figure 154: 40MHz, 230V/50Hz, Mid channel: Average CE Graph - 150kHz to 30MHz - Neutral

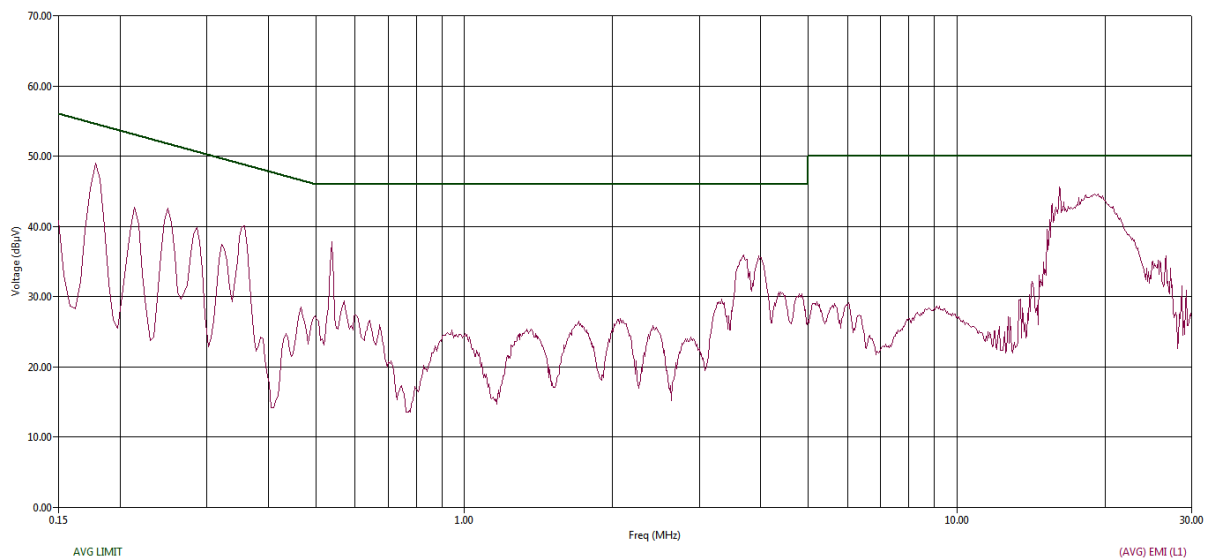


Figure 155: 40MHz, 230V/50Hz, Mid channel: Average CE Graph - 150kHz to 30MHz - Line

Freq (MHz)	Freq (Max) (MHz)	Line	(QP) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(QP) EMI (dBμV)	(QP) Limit (dBμV)	(QP) Margin QPL (dB)
0.150	0.151	N	38.404	10.107	2.173	0.000	50.685	65.970	-15.285
0.174	0.179	L1	44.242	10.106	0.000	1.943	56.291	64.534	-8.243
0.178	0.173	N	43.289	10.107	1.968	0.000	55.364	64.805	-9.441
0.214	0.207	N	36.918	10.105	1.708	0.000	48.731	63.328	-14.597
0.214	0.217	L1	37.112	10.105	0.000	1.656	48.873	62.917	-14.044
0.254	0.248	N	36.680	10.104	1.442	0.000	48.227	61.814	-13.588
0.254	0.247	L1	36.108	10.104	0.000	1.470	47.683	61.865	-14.183
0.540	0.536	L1	30.487	10.102	0.000	0.420	41.009	56.000	-14.991
0.540	0.536	N	30.902	10.102	0.411	0.000	41.415	56.000	-14.585
3.870	3.868	L1	28.117	10.112	0.000	0.342	38.570	56.000	-17.430
16.170	16.169	L1	39.535	10.356	0.000	0.691	50.581	60.000	-9.419
16.230	16.230	N	40.140	10.356	0.688	0.000	51.184	60.000	-8.816

Table 82: 40MHz, 230V/50Hz, Mid channel: Quasipeak table for CE from 150 kHz to 30 MHz

Freq (MHz)	Freq (Max) (MHz)	Line	(AVG) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(AVG) EMI (dBμV)	(AVG) Limit (dBμV)	(AVG) Margin AVL (dB)
0.150	0.151	N	26.850	10.107	2.173	0.000	39.130	55.970	-16.840
0.174	0.179	L1	36.602	10.106	0.000	1.943	48.652	54.534	-5.882
0.178	0.173	N	34.485	10.107	1.968	0.000	46.559	54.805	-8.245
0.214	0.207	N	26.325	10.105	1.708	0.000	38.139	53.328	-15.190
0.214	0.217	L1	27.627	10.105	0.000	1.656	39.389	52.917	-13.528
0.254	0.248	N	31.230	10.104	1.442	0.000	42.776	51.814	-9.038
0.254	0.247	L1	30.461	10.104	0.000	1.470	42.035	51.865	-9.830
0.540	0.536	L1	26.917	10.102	0.000	0.420	37.439	46.000	-8.561
0.540	0.536	N	27.412	10.102	0.411	0.000	37.925	46.000	-8.075
3.870	3.868	L1	19.408	10.112	0.000	0.342	29.861	46.000	-16.139
16.170	16.169	L1	33.759	10.356	0.000	0.691	44.805	50.000	-5.195
16.230	16.230	N	34.382	10.356	0.688	0.000	45.427	50.000	-4.573

Table 83: 40MHz, 230V/50Hz, Mid channel: Average table for CE from 150 kHz to 30 MHz

5.3.2.5.3 POWER LINE – 230 V 50 Hz – 40 MHz BANDWIDTH – HIGH CHANNEL

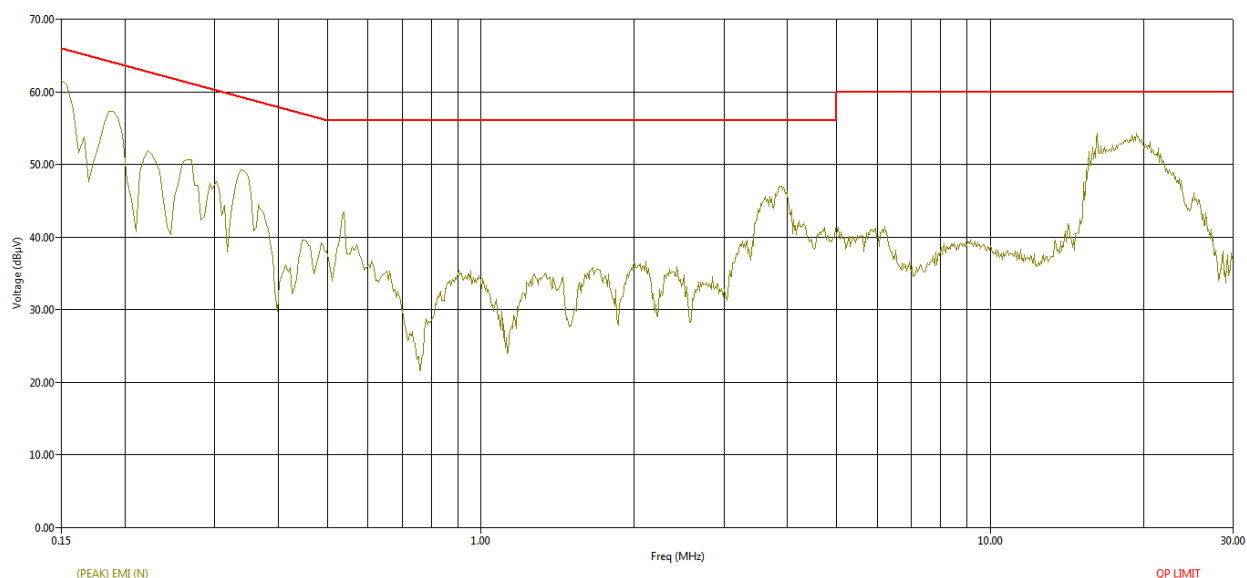


Figure 156: 40MHz, 230V/50Hz, High channel: Peak CE Graph - 150kHz to 30MHz - Neutral

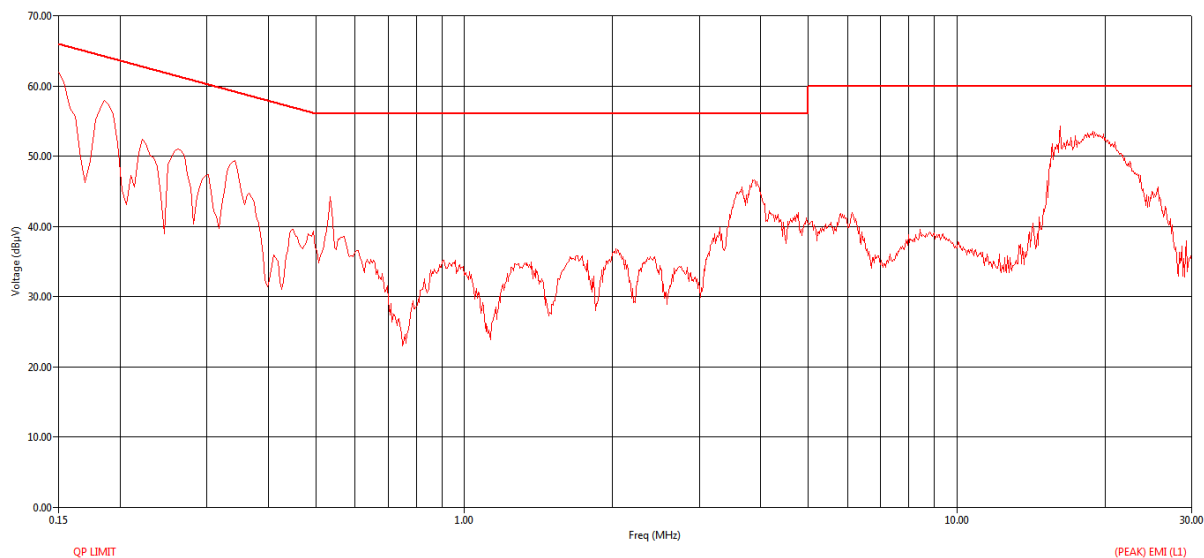


Figure 157: 40MHz, 230V/50Hz, High channel: Peak CE Graph - 150kHz to 30MHz - Line

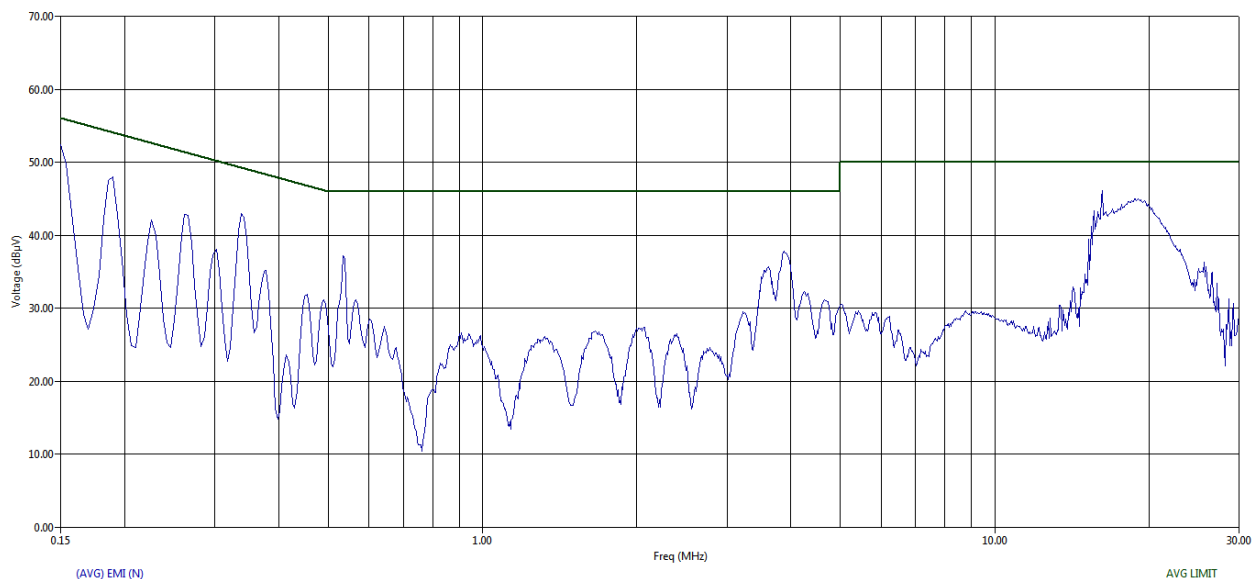


Figure 158: 40MHz, 230V/50Hz, High channel: Average CE Graph - 150kHz to 30MHz - Neutral

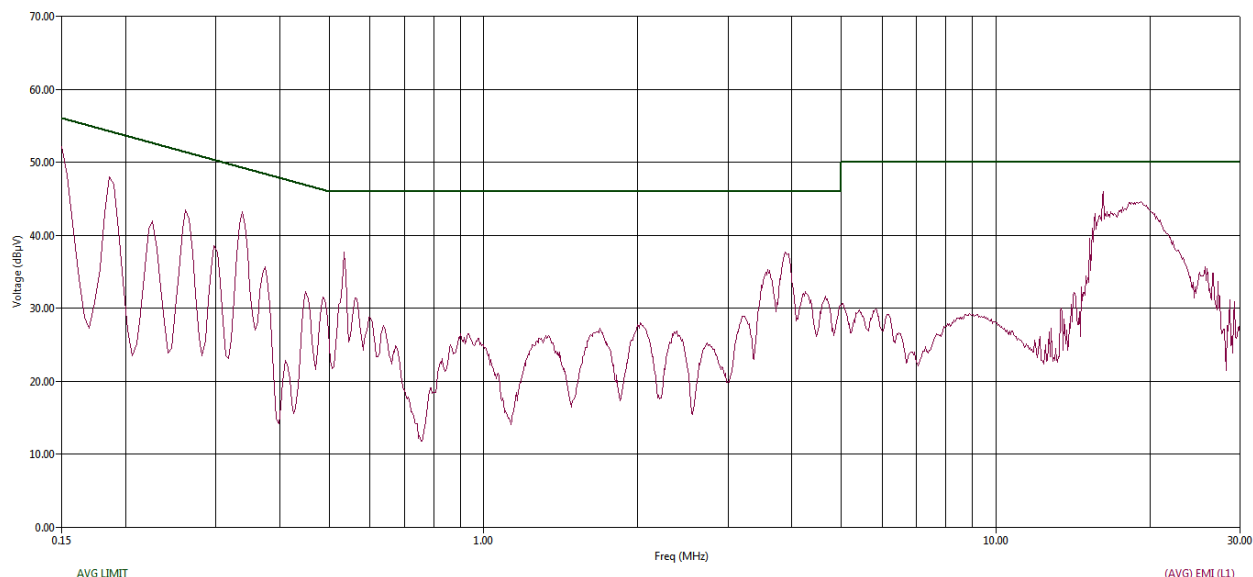


Figure 159: 40MHz, 230V/50Hz, High channel: Average CE Graph - 150kHz to 30MHz - Line

Freq (MHz)	Freq (Max) (MHz)	Line	(QP) Trace (dBuV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(QP) EMI (dBuV)	(QP) Limit (dBuV)	(QP) Margin QPL (dB)
0.150	0.150	N	47.406	10.107	2.178	0.000	59.691	65.998	-6.307
0.150	0.151	L1	47.009	10.107	0.000	2.194	59.311	65.952	-6.642
0.186	0.188	N	43.780	10.106	1.847	0.000	55.733	64.116	-8.384
0.186	0.183	L1	42.542	10.106	0.000	1.913	54.562	64.367	-9.805
0.222	0.226	N	37.714	10.105	1.580	0.000	49.399	62.600	-13.201
0.222	0.227	L1	36.887	10.105	0.000	1.591	48.583	62.548	-13.966
0.262	0.262	L1	37.533	10.104	0.000	1.380	49.018	61.359	-12.341
0.270	0.265	N	37.380	10.104	1.350	0.000	48.834	61.288	-12.454
0.540	0.533	L1	30.631	10.102	0.000	0.421	41.154	56.000	-14.846
0.540	0.534	N	31.098	10.102	0.411	0.000	41.611	56.000	-14.389
16.230	16.229	L1	40.350	10.356	0.000	0.686	51.392	60.000	-8.608
19.370	19.371	N	38.358	10.393	0.571	0.000	49.322	60.000	-10.678

Table 84: 40MHz, 230V/50Hz, High channel: Quasipeak table for CE from 150 kHz to 30 MHz

Freq (MHz)	Freq (Max) (MHz)	Line	(AVG) Trace (dBuV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(AVG) EMI (dBuV)	(AVG) Limit (dBuV)	(AVG) Margin AVL (dB)
0.150	0.150	N	39.899	10.107	2.178	0.000	52.184	55.998	-3.814
0.150	0.151	L1	39.079	10.107	0.000	2.194	51.380	55.952	-4.572
0.186	0.188	N	36.763	10.106	1.847	0.000	48.716	54.116	-5.401
0.186	0.183	L1	33.298	10.106	0.000	1.913	45.317	54.367	-9.049
0.222	0.226	N	30.279	10.105	1.580	0.000	41.965	52.600	-10.635
0.222	0.227	L1	28.980	10.105	0.000	1.591	40.675	52.548	-11.873
0.262	0.262	L1	32.155	10.104	0.000	1.380	43.639	51.359	-7.720
0.270	0.265	N	31.395	10.104	1.350	0.000	42.848	51.288	-8.440
0.540	0.533	L1	26.798	10.102	0.000	0.421	37.321	46.000	-8.679
0.540	0.534	N	27.466	10.102	0.411	0.000	37.980	46.000	-8.020
16.230	16.229	L1	34.512	10.356	0.000	0.686	45.554	50.000	-4.446
19.370	19.371	N	32.825	10.393	0.571	0.000	43.790	50.000	-6.210

Table 85: 40MHz, 230V/50Hz, High channel: Average table for CE from 150 kHz to 30 MHz

5.3.2.5.4 POWER LINE – 120 V 60 Hz – 40 MHz BANDWIDTH – Low CHANNEL

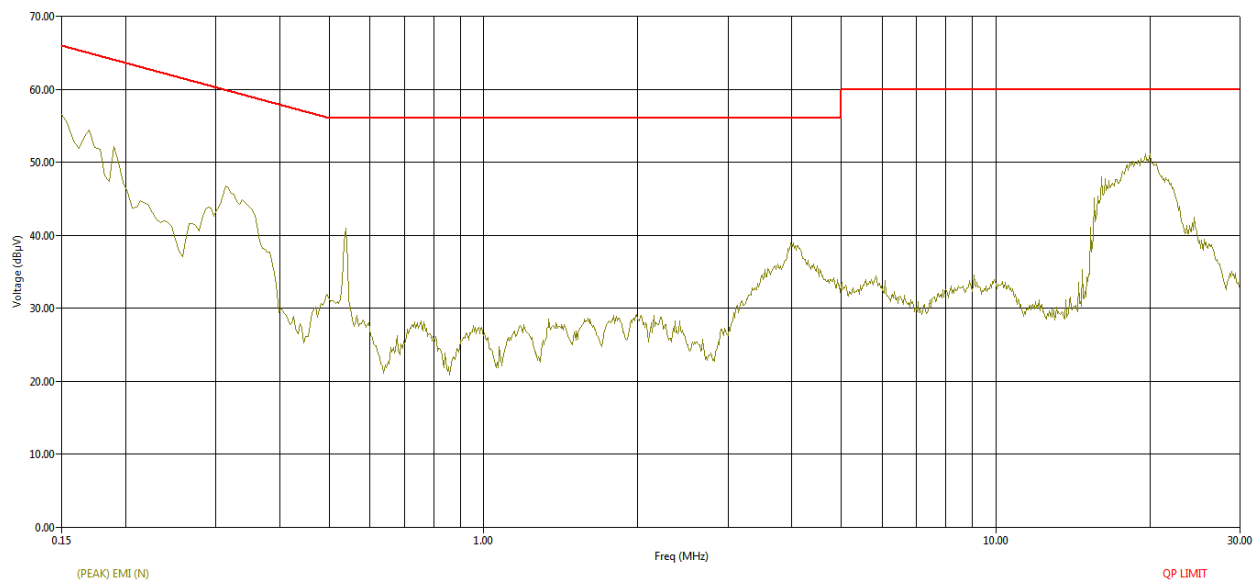


Figure 160: 40MHz, 120V/60Hz, Low channel: Peak CE Graph - 150kHz to 30MHz - Neutral

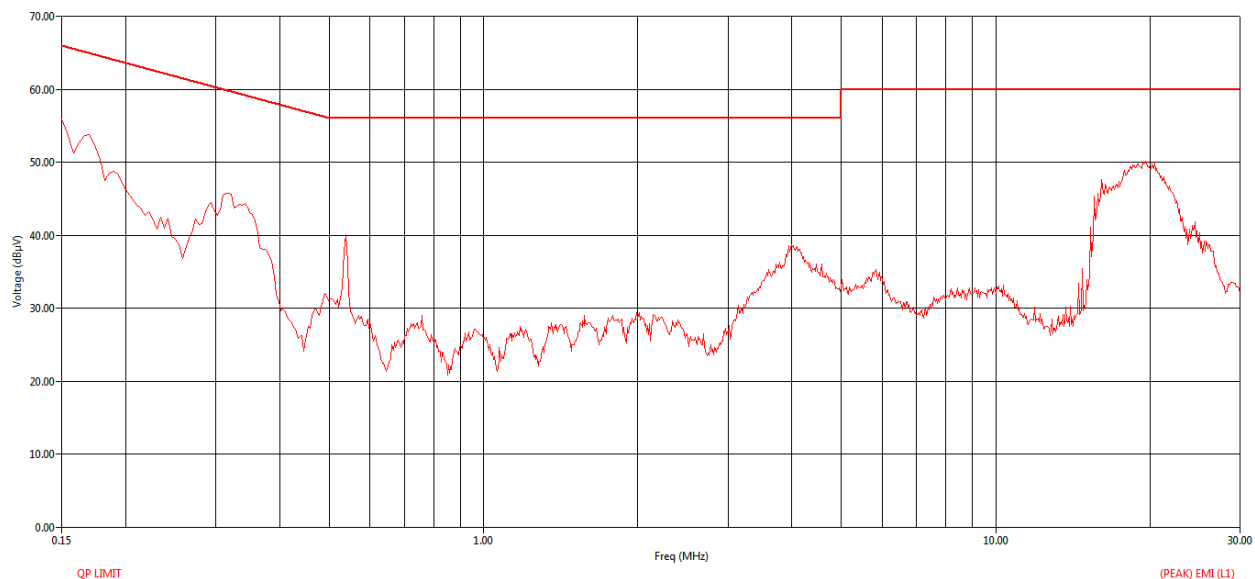


Figure 161: 40MHz, 120V/60Hz, Low channel: Peak CE Graph - 150kHz to 30MHz - Line

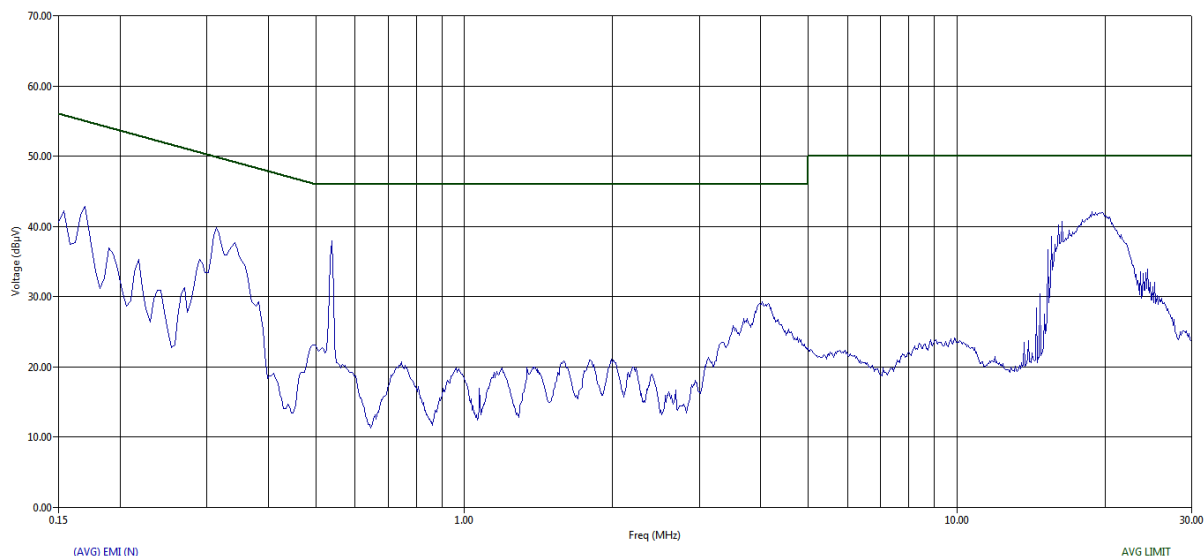


Figure 162: 40MHz, 120V/60Hz, Low channel: Average CE Graph - 150kHz to 30MHz - Neutral

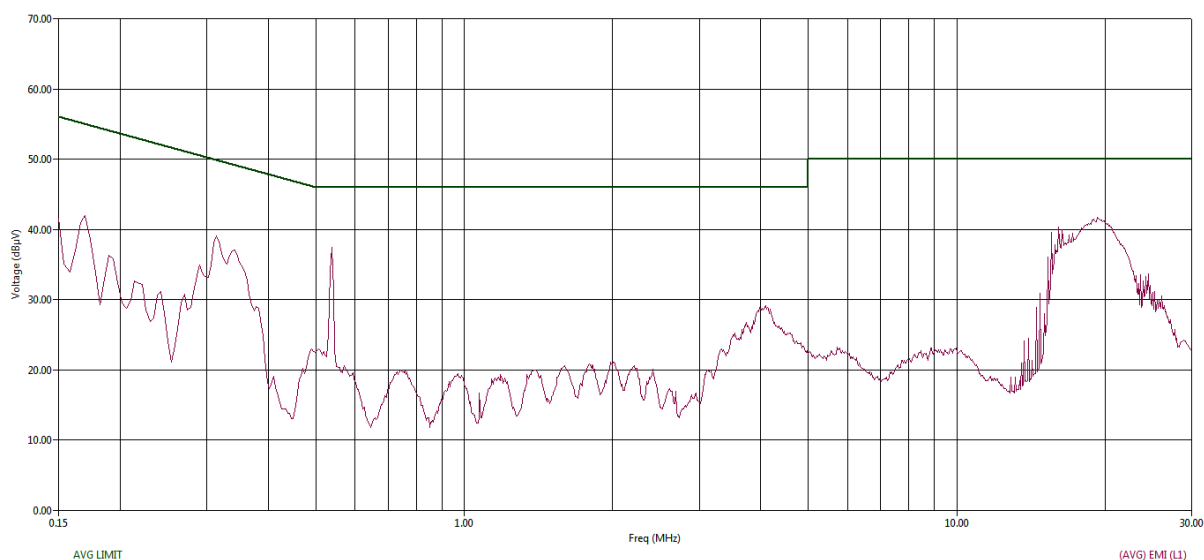


Figure 163: 40MHz, 120V/60Hz, Low channel: Average CE Graph - 150kHz to 30MHz - Line

Freq (MHz)	Freq (Max) (MHz)	Line	(QP) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(QP) EMI (dBμV)	(QP) Limit (dBμV)	(QP) Margin QPL (dB)
0.150	0.151	N	39.545	10.107	2.173	0.000	51.826	65.970	-14.145
0.154	0.150	L1	39.965	10.107	0.000	2.202	52.275	65.994	-13.720
0.322	0.319	N	32.810	10.103	1.078	0.000	43.990	59.742	-15.751
0.330	0.322	L1	31.395	10.103	0.000	1.078	42.576	59.657	-17.081
0.538	0.538	N	29.089	10.102	0.410	0.000	39.602	56.000	-16.398
0.538	0.538	L1	28.372	10.102	0.000	0.419	38.894	56.000	-17.106
3.774	3.767	N	22.222	10.112	0.307	0.000	32.640	56.000	-23.360
3.774	3.769	L1	21.759	10.112	0.000	0.341	32.212	56.000	-23.788
19.134	19.141	L1	34.804	10.391	0.000	0.468	45.663	60.000	-14.337
19.362	19.369	N	35.218	10.393	0.571	0.000	46.183	60.000	-13.817

Table 86: 40MHz, 120V/60Hz, Low channel: Quasipeak table for CE from 150 kHz to 30 MHz

Freq (MHz)	Freq (Max) (MHz)	Line	(AVG) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(AVG) EMI (dBμV)	(AVG) Limit (dBμV)	(AVG) Margin AVL (dB)
0.150	0.151	N	27.689	10.107	2.173	0.000	39.969	55.970	-16.001
0.154	0.150	L1	27.904	10.107	0.000	2.202	40.213	55.994	-15.781
0.322	0.319	N	27.186	10.103	1.078	0.000	38.367	49.742	-11.375
0.330	0.322	L1	25.288	10.103	0.000	1.078	36.469	49.657	-13.188
0.538	0.538	N	27.418	10.102	0.410	0.000	37.931	46.000	-8.069
0.538	0.538	L1	26.667	10.102	0.000	0.419	37.189	46.000	-8.811
3.774	3.767	N	15.725	10.112	0.307	0.000	26.144	46.000	-19.856
3.774	3.769	L1	15.197	10.112	0.000	0.341	25.650	46.000	-20.350
19.134	19.141	L1	29.511	10.391	0.000	0.468	40.370	50.000	-9.630
19.362	19.369	N	29.973	10.393	0.571	0.000	40.937	50.000	-9.063

Table 87: 40MHz, 120V/60Hz, Low channel: Average table for CE from 150 kHz to 30 MHz

5.3.2.5.5 POWER LINE – 120 V 60 Hz – 40 MHz BANDWIDTH – MID CHANNEL

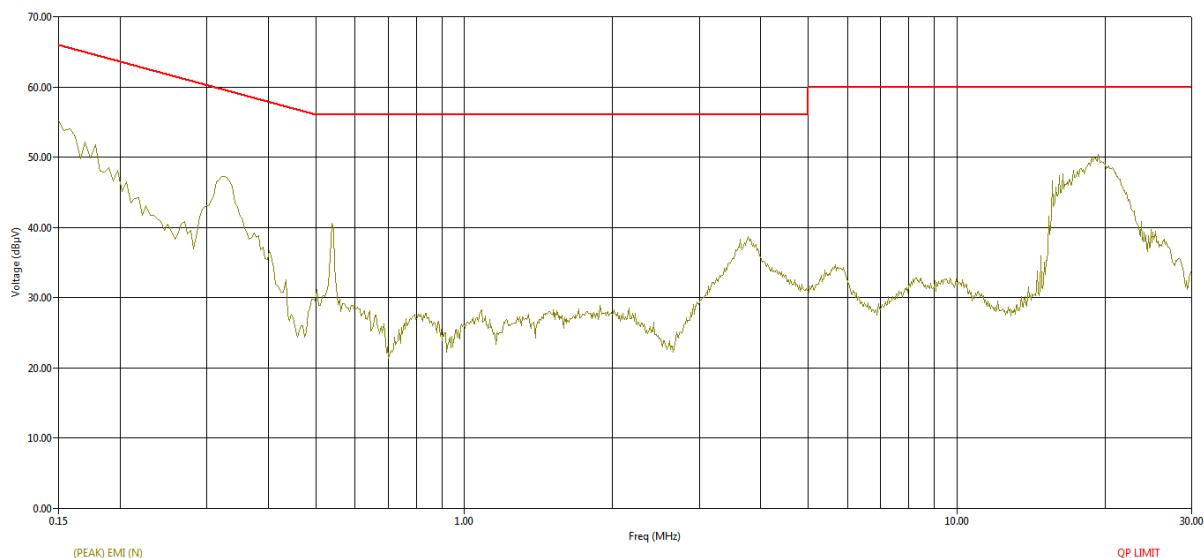


Figure 164: 40MHz, 120V/60Hz, Mid channel: Peak CE Graph - 150kHz to 30MHz - Neutral

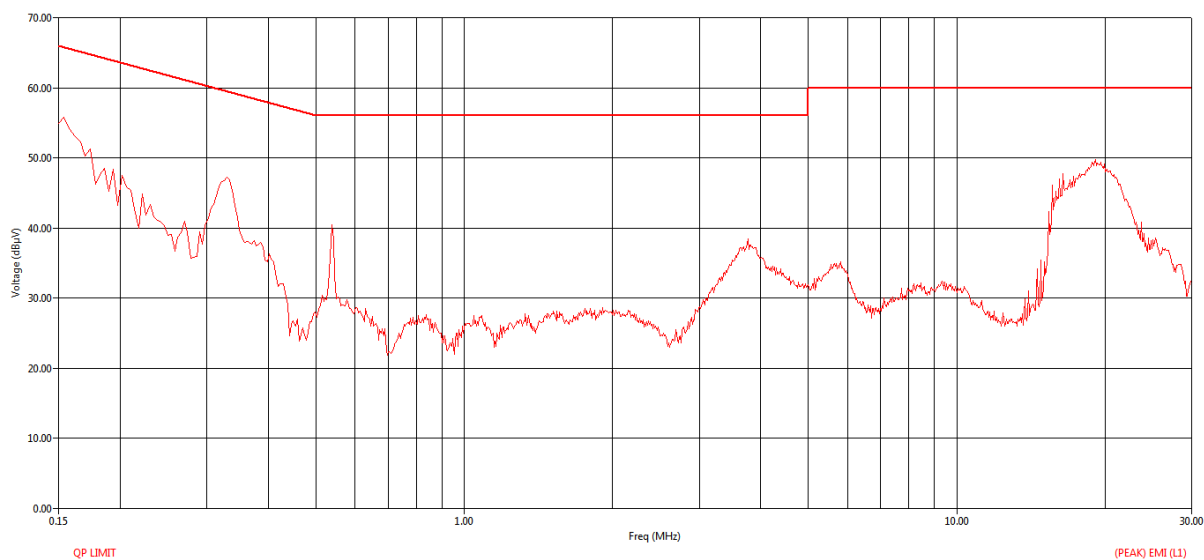


Figure 165: 40MHz, 120V/60Hz, Mid channel: Peak CE Graph - 150kHz to 30MHz - Line

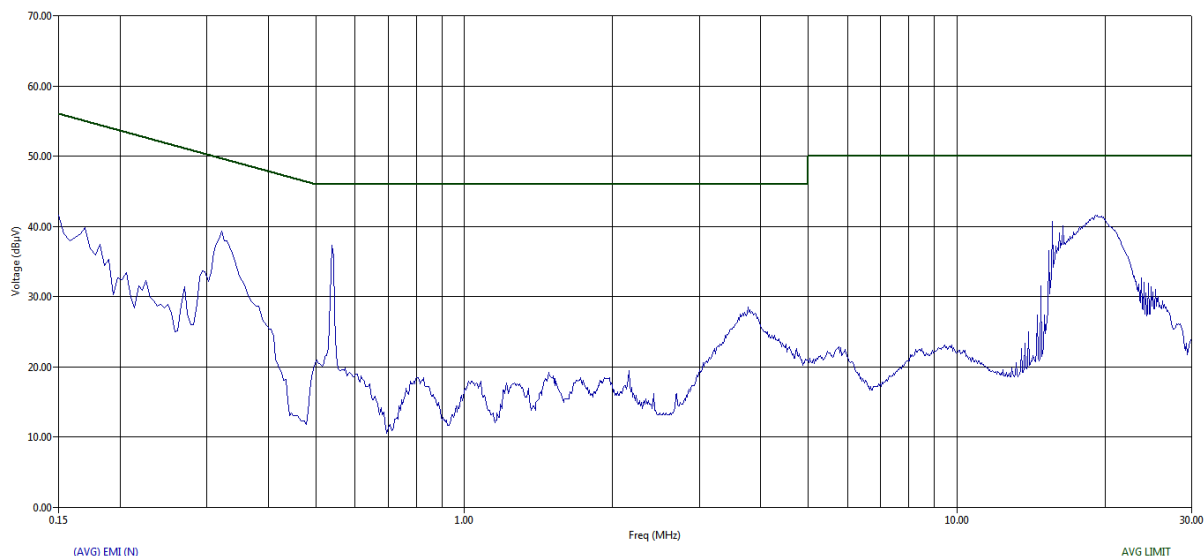


Figure 166: 40MHz, 120V/60Hz, Mid channel: Average CE Graph - 150kHz to 30MHz - Neutral

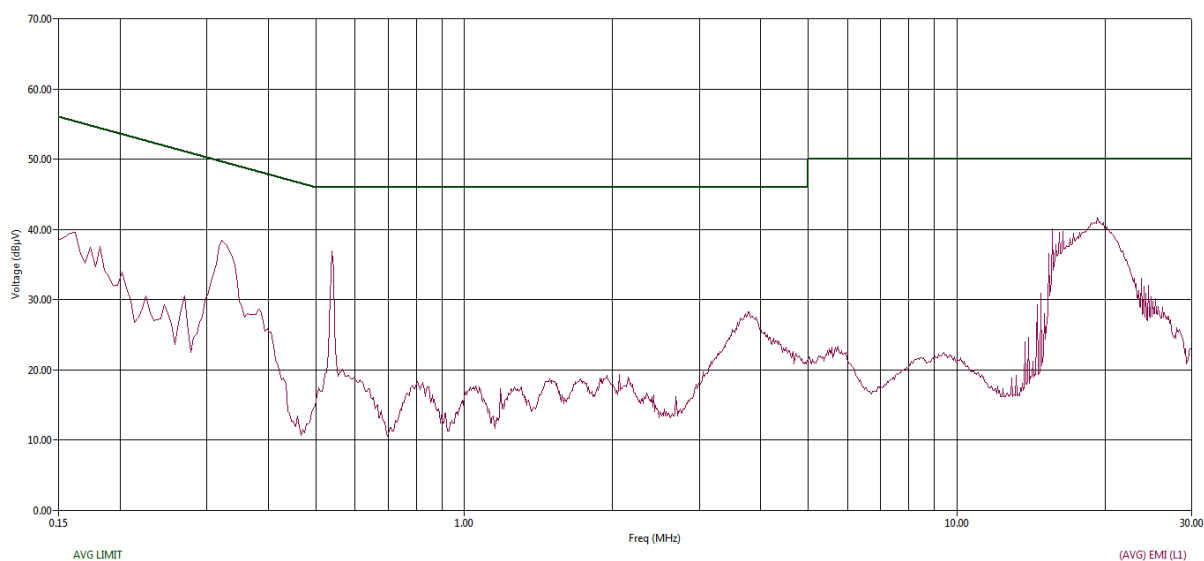


Figure 167: 40MHz, 120V/60Hz, Mid channel: Average CE Graph - 150kHz to 30MHz - Line

Freq (MHz)	Freq (Max) (MHz)	Line	(QP) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(QP) EMI (dBμV)	(QP) Limit (dBμV)	(QP) Margin QPL (dB)
0.150	0.150	N	39.911	10.107	2.177	0.000	52.195	65.994	-13.799
0.154	0.150	L1	39.487	10.107	0.000	2.199	51.794	65.978	-14.184
0.322	0.319	N	32.842	10.103	1.078	0.000	44.023	59.741	-15.718
0.330	0.323	L1	31.031	10.103	0.000	1.075	42.209	59.641	-17.432
0.538	0.538	N	29.045	10.102	0.411	0.000	39.558	56.000	-16.442
0.538	0.538	L1	28.404	10.102	0.000	0.419	38.925	56.000	-17.075
3.774	3.767	N	22.299	10.112	0.307	0.000	32.718	56.000	-23.282
3.774	3.766	L1	21.778	10.112	0.000	0.341	32.231	56.000	-23.769
19.134	19.138	L1	34.741	10.391	0.000	0.468	45.600	60.000	-14.400
19.362	19.370	N	35.239	10.393	0.571	0.000	46.203	60.000	-13.797

Table 88: 40MHz, 120V/60Hz, Mid channel: Quasipeak table for CE from 150 kHz to 30 MHz

Freq (MHz)	Freq (Max) (MHz)	Line	(AVG) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(AVG) EMI (dBμV)	(AVG) Limit (dBμV)	(AVG) Margin AVL (dB)
0.150	0.150	N	28.054	10.107	2.177	0.000	40.338	55.994	-15.656
0.154	0.150	L1	27.336	10.107	0.000	2.199	39.643	55.978	-16.336
0.322	0.319	N	27.175	10.103	1.078	0.000	38.356	49.741	-11.385
0.330	0.323	L1	24.937	10.103	0.000	1.075	36.115	49.641	-13.526
0.538	0.538	N	27.422	10.102	0.411	0.000	37.934	46.000	-8.066
0.538	0.538	L1	26.687	10.102	0.000	0.419	37.208	46.000	-8.792
3.774	3.767	N	15.831	10.112	0.307	0.000	26.250	46.000	-19.750
3.774	3.766	L1	15.201	10.112	0.000	0.341	25.654	46.000	-20.346
19.134	19.138	L1	29.466	10.391	0.000	0.468	40.325	50.000	-9.675
19.362	19.370	N	29.983	10.393	0.571	0.000	40.947	50.000	-9.053

Table 89: 40MHz, 120V/60Hz, Mid channel: Average table for CE from 150 kHz to 30 MHz

5.3.2.5.6 POWER LINE – 120 V 60 Hz – 40 MHz BANDWIDTH – HIGH CHANNEL

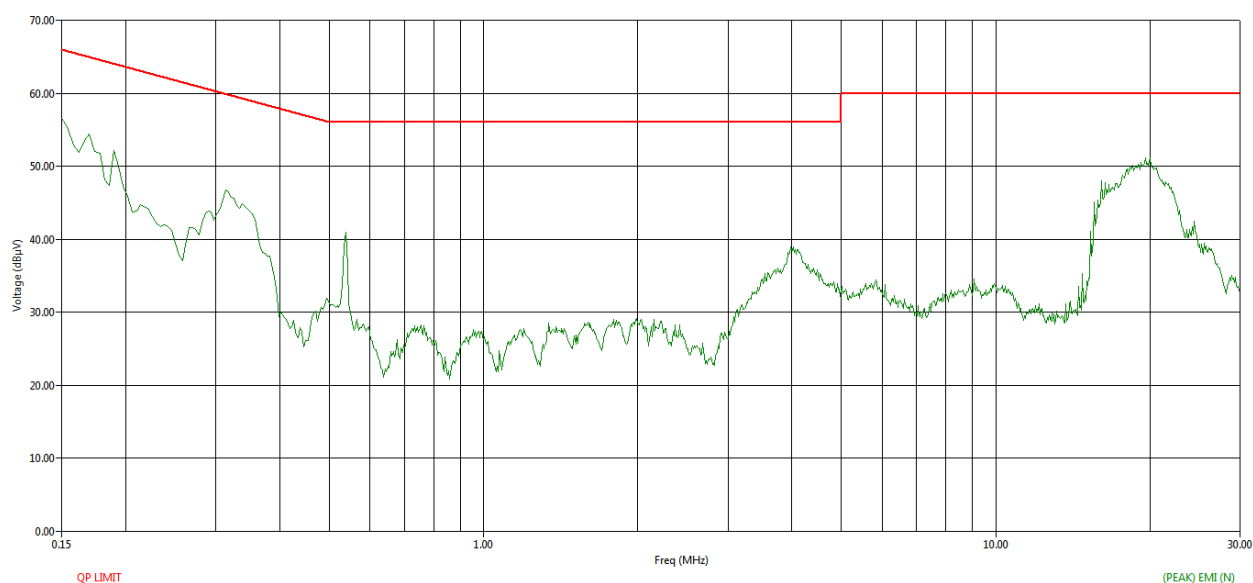


Figure 168: 40MHz, 120V/60Hz, High channel: Peak CE Graph - 150kHz to 30MHz - Neutral

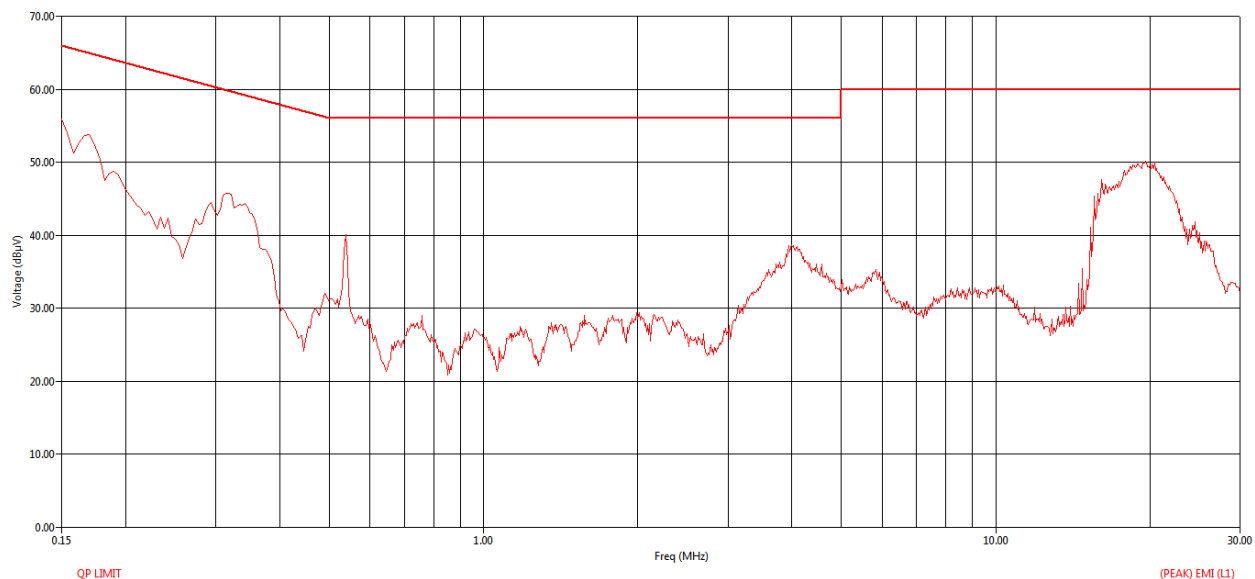


Figure 169: 40MHz, 120V/60Hz, High channel: Peak CE Graph - 150kHz to 30MHz - Line

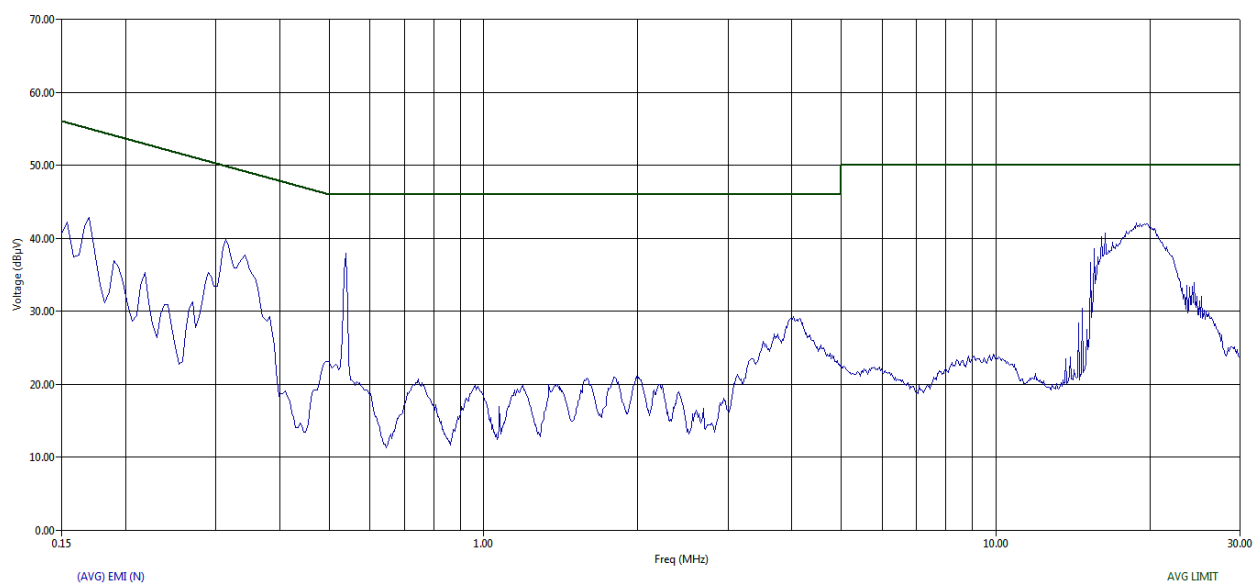


Figure 170: 40MHz, 120V/60Hz, High channel: Average CE Graph - 150kHz to 30MHz - Neutral

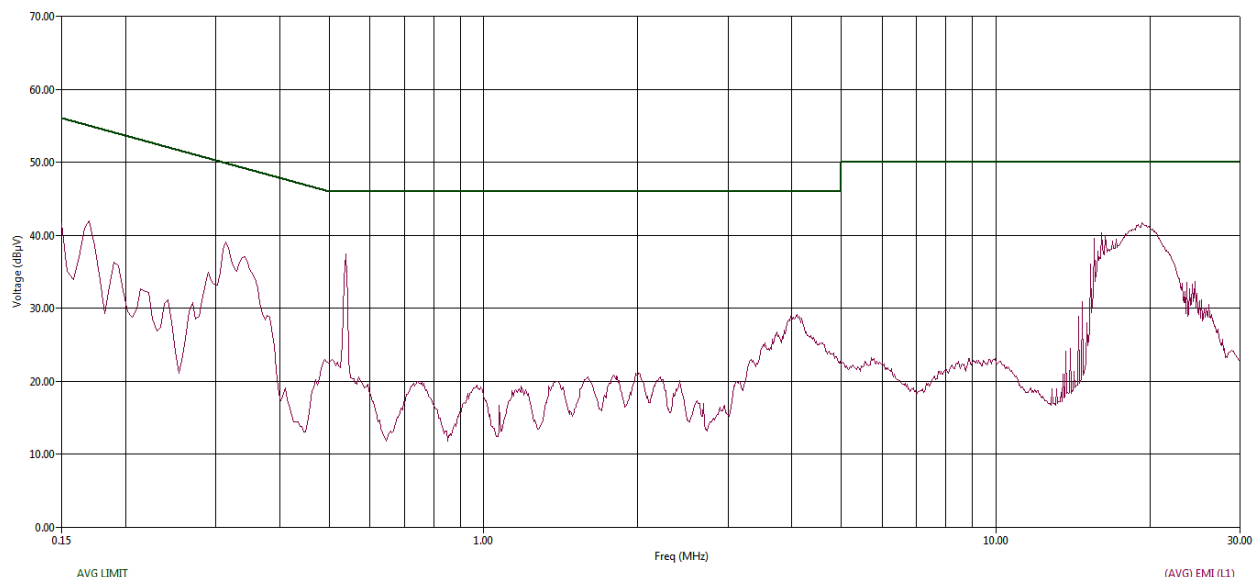


Figure 171: 40MHz, 120V/60Hz, High channel: Average CE Graph - 150kHz to 30MHz - Line

Freq (MHz)	Freq (Max) (MHz)	Line	(QP) Trace (dBuV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(QP) EMI (dBuV)	(QP) Limit (dBuV)	(QP) Margin QPL (dB)
0.150	0.151	N	38.478	10.107	2.164	0.000	50.749	65.921	-15.172
0.154	0.150	L1	39.498	10.107	0.000	2.199	51.805	65.978	-14.174
0.322	0.315	N	33.269	10.103	1.095	0.000	44.466	59.838	-15.372
0.330	0.321	L1	31.568	10.103	0.000	1.083	42.753	59.681	-16.928
0.538	0.538	N	29.087	10.102	0.410	0.000	39.600	56.000	-16.400
0.538	0.538	L1	28.449	10.102	0.000	0.419	38.970	56.000	-17.030
3.774	3.769	N	22.232	10.112	0.307	0.000	32.651	56.000	-23.349
3.774	3.778	L1	21.307	10.112	0.000	0.341	31.759	56.000	-24.241
19.134	19.128	L1	34.674	10.391	0.000	0.469	45.533	60.000	-14.467
19.362	19.368	N	35.264	10.393	0.571	0.000	46.229	60.000	-13.771

Table 90: 40MHz, 120V/60Hz, High channel: Quasipeak table for CE from 150 kHz to 30 MHz

Freq (MHz)	Freq (Max) (MHz)	Line	(AVG) Trace (dBuV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(AVG) EMI (dBuV)	(AVG) Limit (dBuV)	(AVG) Margin AVL (dB)
0.150	0.151	N	26.302	10.107	2.164	0.000	38.573	55.921	-17.348
0.154	0.150	L1	27.357	10.107	0.000	2.199	39.664	55.978	-16.315
0.322	0.315	N	27.841	10.103	1.095	0.000	39.039	49.838	-10.799
0.330	0.321	L1	25.642	10.103	0.000	1.083	36.828	49.681	-12.853
0.538	0.538	N	27.423	10.102	0.410	0.000	37.936	46.000	-8.064
0.538	0.538	L1	26.701	10.102	0.000	0.419	37.222	46.000	-8.778
3.774	3.769	N	15.779	10.112	0.307	0.000	26.197	46.000	-19.803
3.774	3.778	L1	14.761	10.112	0.000	0.341	25.213	46.000	-20.787
19.134	19.128	L1	29.456	10.391	0.000	0.469	40.316	50.000	-9.684
19.362	19.368	N	29.898	10.393	0.571	0.000	40.862	50.000	-9.138

Table 91: 40MHz, 120V/60Hz, High channel: Average table for CE from 150 kHz to 30 MHz

5.3.2.5.7 POWER LINE – 230 V 50 Hz – 5 MHz BANDWIDTH – LOW CHANNEL

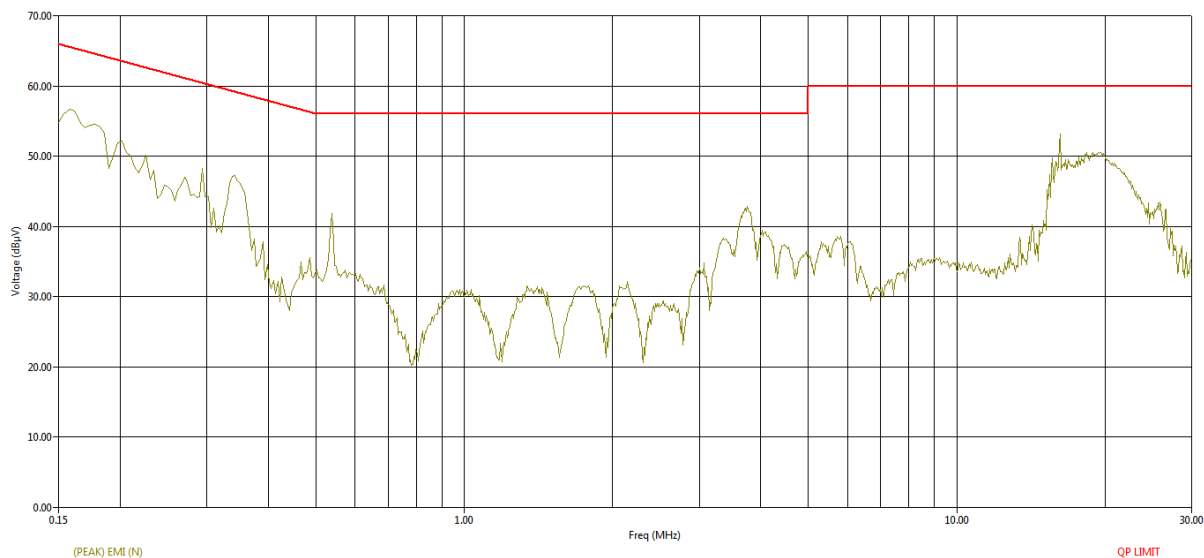


Figure 172: 5MHz, 230V/50Hz, Low channel: Peak CE Graph - 150kHz to 30MHz - Neutral

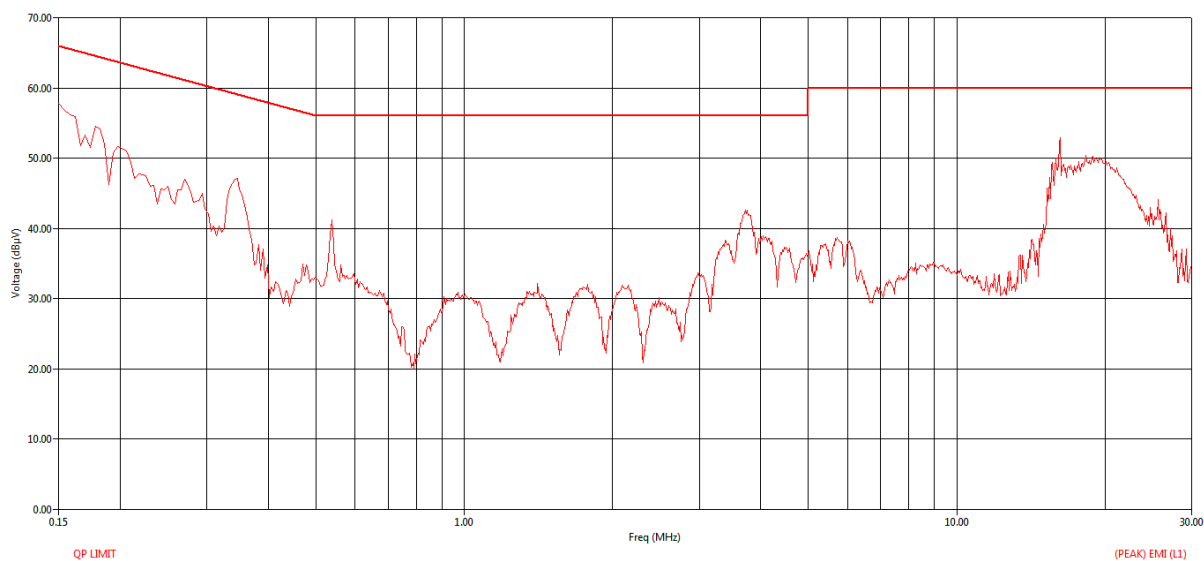


Figure 173: 5MHz, 230V/50Hz, Low channel: Peak CE Graph - 150kHz to 30MHz - Line

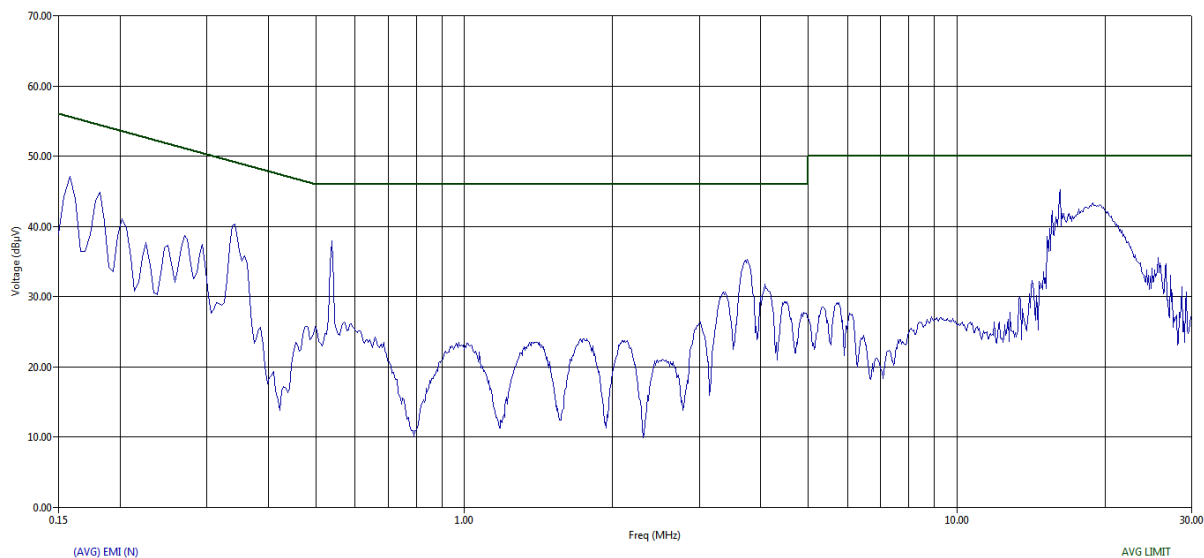


Figure 174: 5MHz, 230V/50Hz, Low channel: Average CE Graph - 150kHz to 30MHz - Neutral

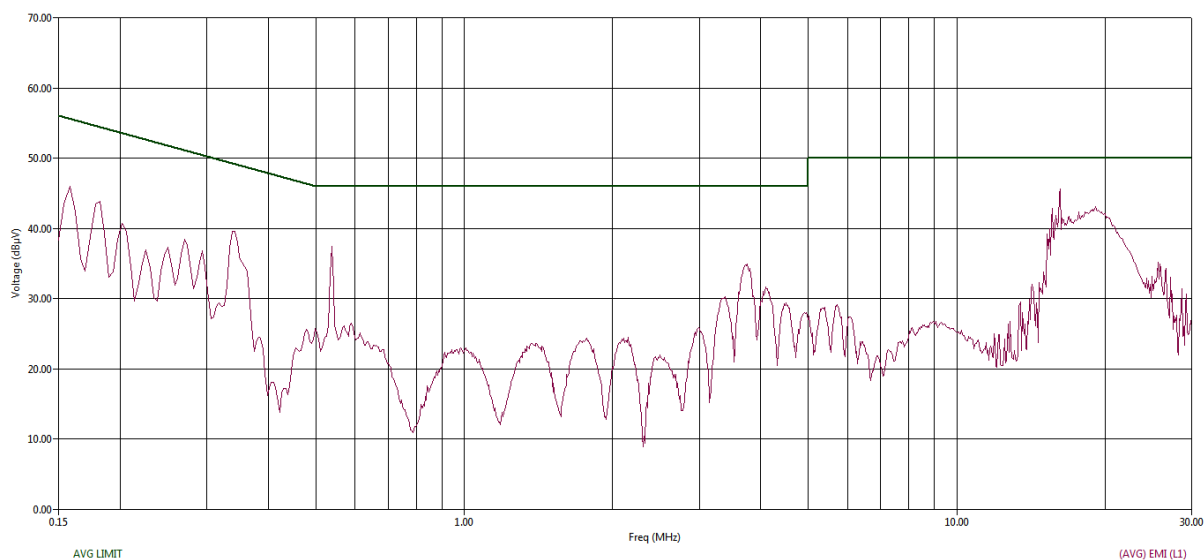


Figure 175: 5MHz, 230V/50Hz, Low channel: Average CE Graph - 150kHz to 30MHz - Line

Freq (MHz)	Freq (Max) (MHz)	Line	(QP) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(QP) EMI (dBμV)	(QP) Limit (dBμV)	(QP) Margin QPL (dB)
0.150	0.155	N	41.667	10.107	2.133	0.000	53.907	65.744	-11.837
0.150	0.154	L1	41.477	10.107	0.000	2.160	53.744	65.758	-12.013
0.182	0.182	N	38.135	10.106	1.896	0.000	50.138	64.398	-14.260
0.182	0.172	L1	39.211	10.107	0.000	2.002	51.319	64.865	-13.546
0.218	0.217	L1	33.351	10.105	0.000	1.659	45.115	62.934	-17.819
0.222	0.218	N	33.816	10.105	1.632	0.000	45.553	62.894	-17.342
0.330	0.338	L1	33.248	10.102	0.000	1.009	44.359	59.263	-14.904
0.338	0.340	N	34.221	10.102	0.984	0.000	45.308	59.209	-13.902
16.230	16.229	N	40.053	10.356	0.688	0.000	51.098	60.000	-8.902
16.230	16.228	L1	39.834	10.356	0.000	0.686	50.876	60.000	-9.124

Table 92: 5MHz, 230V/50Hz, Low channel: Quasipeak table for CE from 150 kHz to 30 MHz

Freq (MHz)	Freq (Max) (MHz)	Line	(AVG) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(AVG) EMI (dBμV)	(AVG) Limit (dBμV)	(AVG) Margin AVL (dB)
0.150	0.155	N	33.179	10.107	2.133	0.000	45.420	55.744	-10.325
0.150	0.154	L1	32.513	10.107	0.000	2.160	44.780	55.758	-10.978
0.182	0.182	N	28.000	10.106	1.896	0.000	40.003	54.398	-14.395
0.182	0.172	L1	29.430	10.107	0.000	2.002	41.539	54.865	-13.326
0.218	0.217	L1	23.573	10.105	0.000	1.659	35.337	52.934	-17.597
0.222	0.218	N	24.441	10.105	1.632	0.000	36.178	52.894	-16.716
0.330	0.338	L1	25.063	10.102	0.000	1.009	36.174	49.263	-13.089
0.338	0.340	N	28.947	10.102	0.984	0.000	40.033	49.209	-9.176
16.230	16.229	N	34.383	10.356	0.688	0.000	45.428	50.000	-4.572
16.230	16.228	L1	34.013	10.356	0.000	0.686	45.056	50.000	-4.944

Table 93: 5MHz, 230V/50Hz, Low channel: Average table for CE from 150 kHz to 30 MHz

5.3.2.5.8 POWER LINE – 230 V 50 Hz – 5 MHz BANDWIDTH – MID CHANNEL

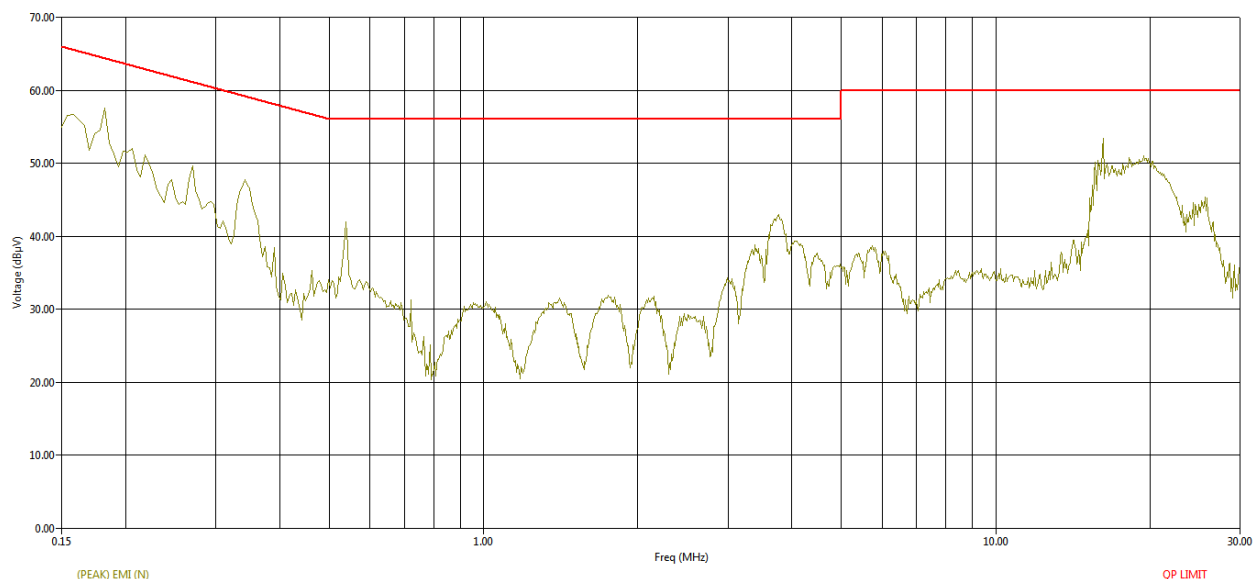


Figure 176: 5MHz, 230V/50Hz, Mid channel: Peak CE Graph - 150kHz to 30MHz - Neutral

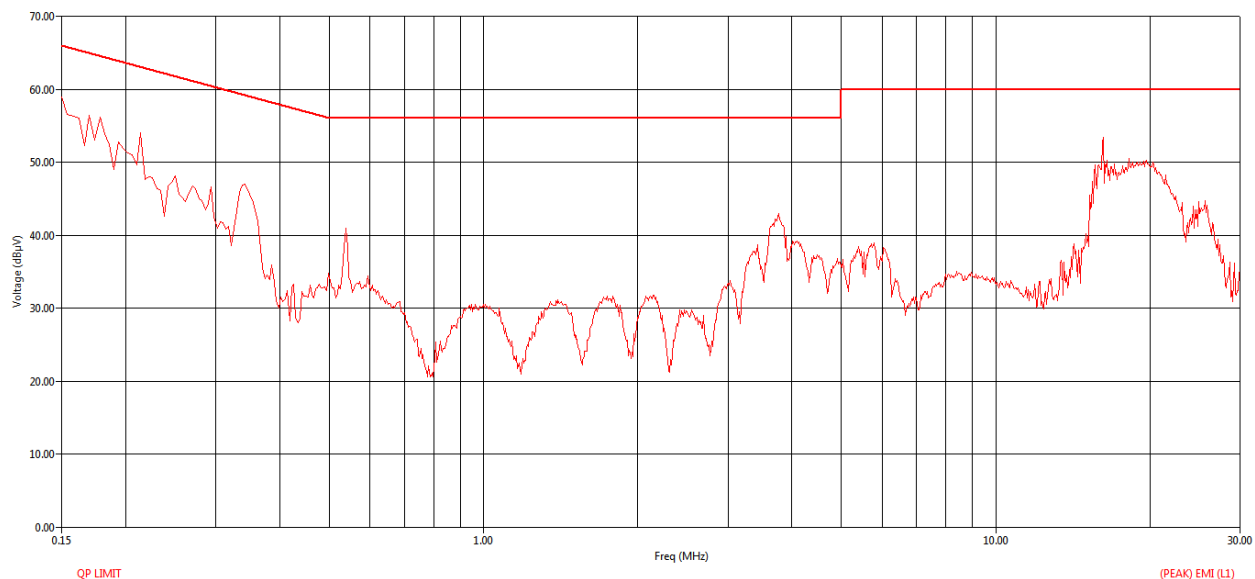


Figure 177: 5MHz, 230V/50Hz, Mid channel: Peak CE Graph - 150kHz to 30MHz - Line

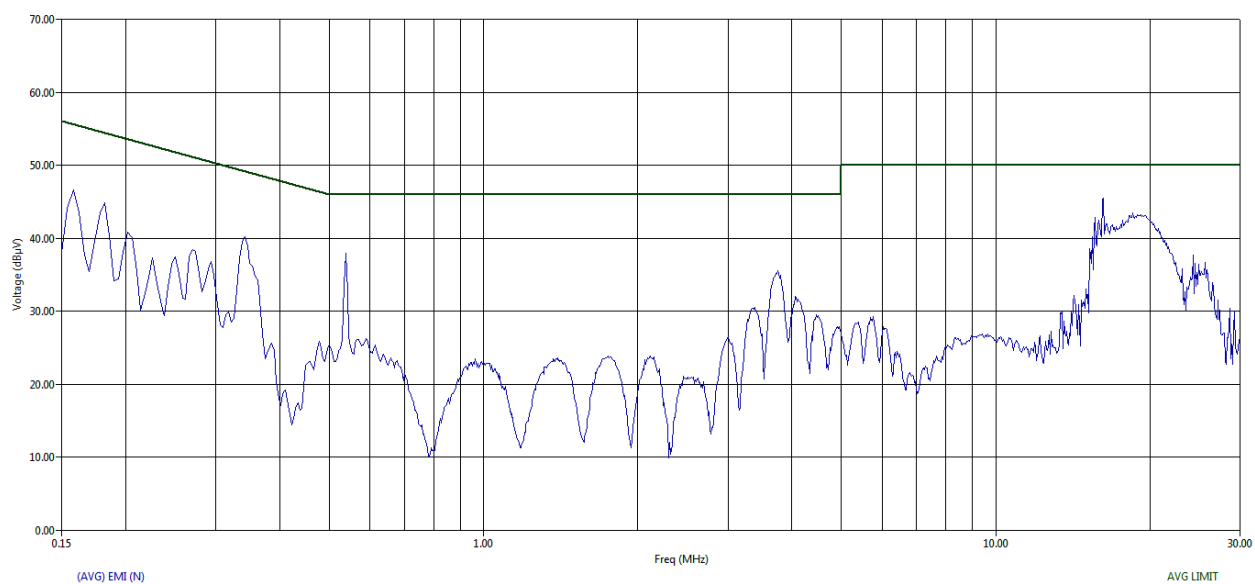


Figure 178: 5MHz, 230V/50Hz, Mid channel: Average CE Graph - 150kHz to 30MHz - Neutral

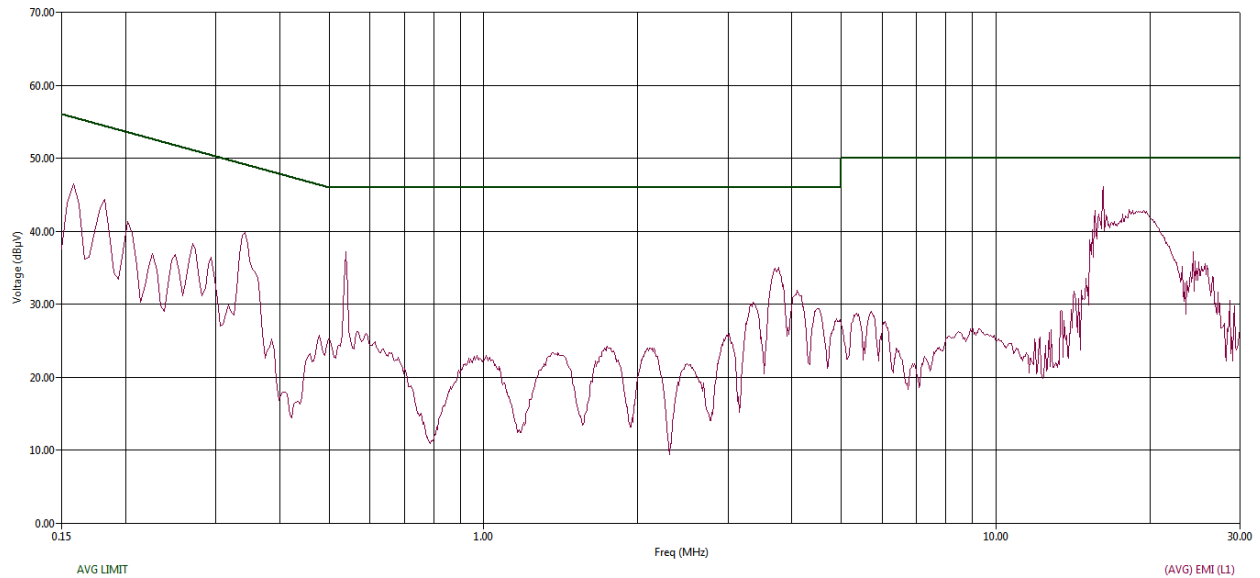


Figure 179: 5MHz, 230V/50Hz, Mid channel: Average CE Graph - 150kHz to 30MHz - Line

Freq (MHz)	Freq (Max) (MHz)	Line	(QP) Trace (dBuV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(QP) EMI (dBuV)	(QP) Limit (dBuV)	(QP) Margin QPL (dB)
0.150	0.159	N	41.899	10.107	2.091	0.000	54.097	65.505	-11.408
0.150	0.152	L1	38.882	10.107	0.000	2.183	51.172	65.887	-14.714
0.182	0.175	N	38.028	10.107	1.953	0.000	50.088	64.722	-14.634
0.182	0.173	L1	37.701	10.107	0.000	1.991	49.799	64.806	-15.008
0.218	0.222	L1	33.228	10.105	0.000	1.628	44.961	62.756	-17.795
0.222	0.224	N	32.588	10.105	1.592	0.000	44.285	62.667	-18.381
0.330	0.334	L1	31.501	10.102	0.000	1.022	42.626	59.339	-16.713
0.338	0.346	N	34.185	10.102	0.959	0.000	45.247	59.067	-13.820
16.230	16.222	N	33.516	10.356	0.688	0.000	44.560	60.000	-15.440
16.230	16.225	L1	33.235	10.356	0.000	0.686	44.278	60.000	-15.722

Table 94: 5MHz, 230V/50Hz, Mid channel: Quasipeak table for CE from 150 kHz to 30 MHz

Freq (MHz)	Freq (Max) (MHz)	Line	(AVG) Trace (dBuV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(AVG) EMI (dBuV)	(AVG) Limit (dBuV)	(AVG) Margin AVL (dB)
0.150	0.159	N	33.735	10.107	2.091	0.000	45.933	55.505	-9.572
0.150	0.152	L1	28.028	10.107	0.000	2.183	40.318	55.887	-15.568
0.182	0.175	N	28.243	10.107	1.953	0.000	40.303	54.722	-14.419
0.182	0.173	L1	27.798	10.107	0.000	1.991	39.896	54.806	-14.911
0.218	0.222	L1	23.943	10.105	0.000	1.628	35.675	52.756	-17.081
0.222	0.224	N	22.881	10.105	1.592	0.000	34.578	52.667	-18.088
0.330	0.334	L1	24.060	10.102	0.000	1.022	35.185	49.339	-14.154
0.338	0.346	N	27.134	10.102	0.959	0.000	38.196	49.067	-10.871
16.230	16.222	N	28.453	10.356	0.688	0.000	39.498	50.000	-10.502
16.230	16.225	L1	28.255	10.356	0.000	0.686	39.298	50.000	-10.702

Table 95: 5MHz, 230V/50Hz, Mid channel: Average table for CE from 150 kHz to 30 MHz

5.3.2.5.9 POWER LINE – 230 V 50 Hz – 5 MHz BANDWIDTH – HIGH CHANNEL

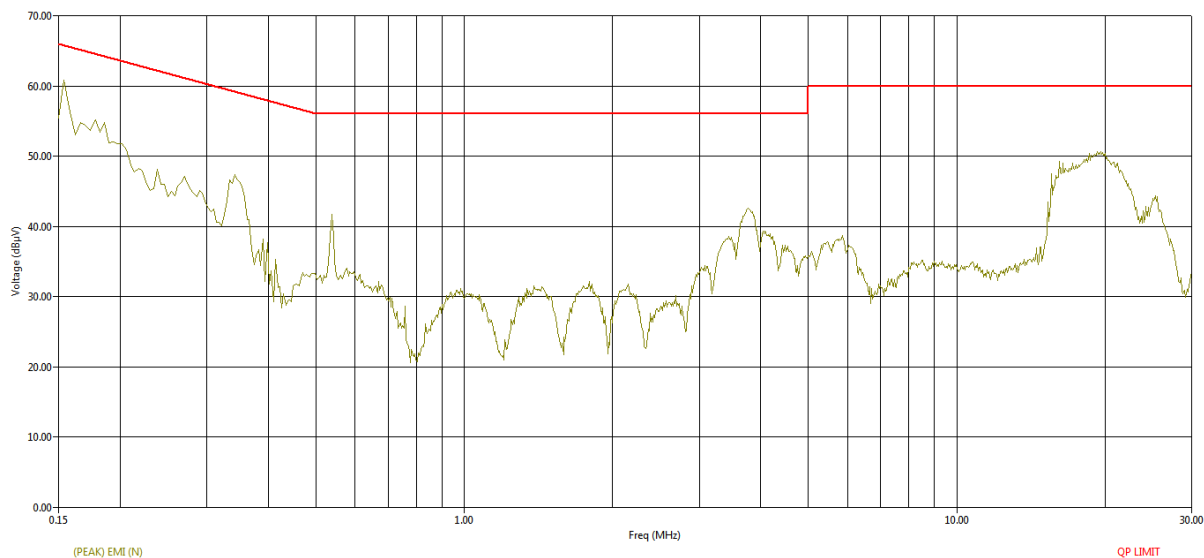


Figure 180: 5MHz, 230V/50Hz, High channel: Peak CE Graph - 150kHz to 30MHz - Neutral

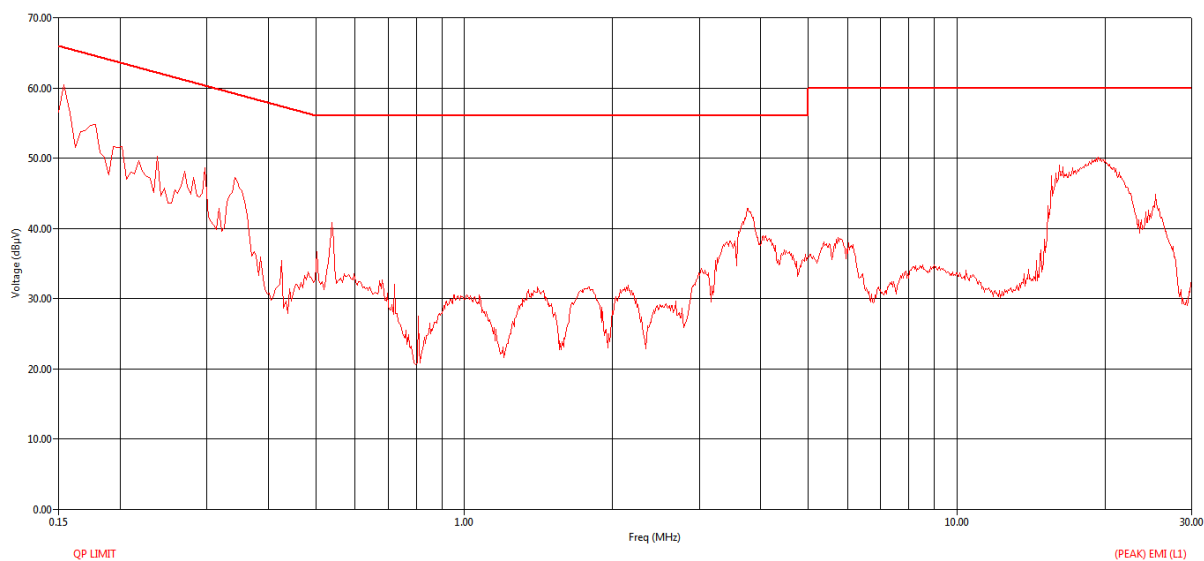


Figure 181: 5MHz, 230V/50Hz, High channel: Peak CE Graph - 150kHz to 30MHz - Line

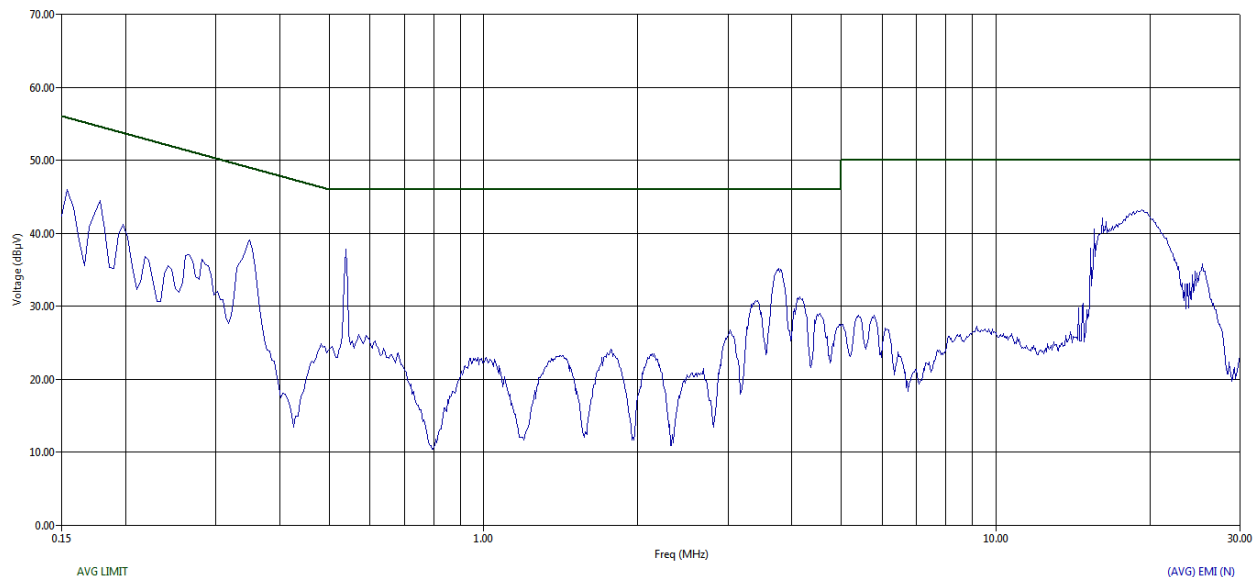


Figure 182: 5MHz, 230V/50Hz, High channel: Average CE Graph - 150kHz to 30MHz - Neutral

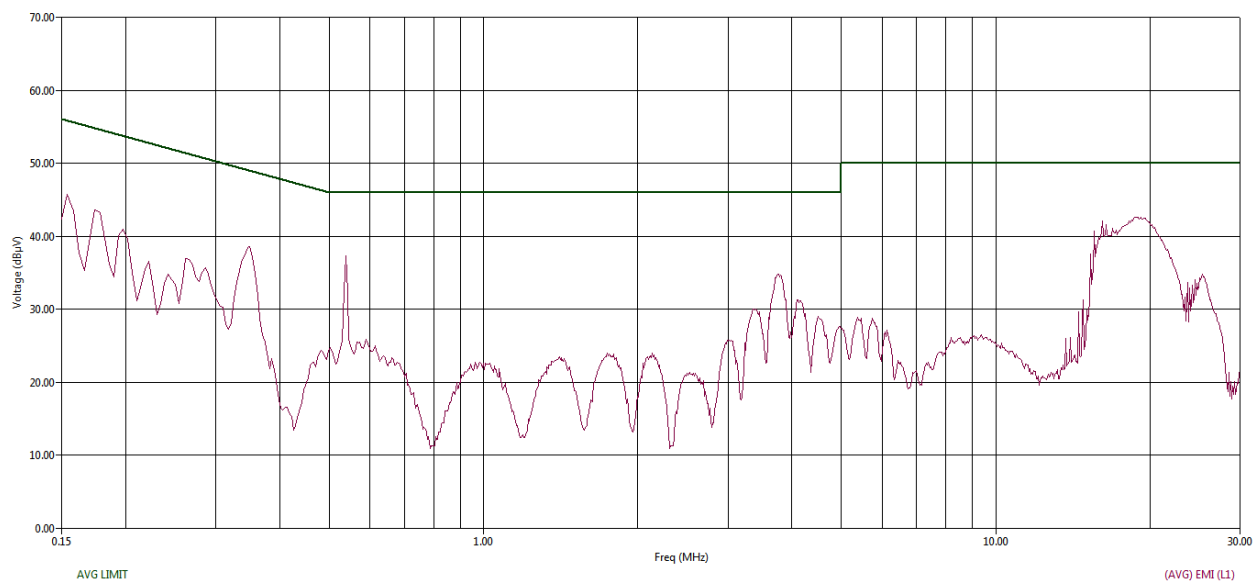


Figure 183: 5MHz, 230V/50Hz, High channel: Average CE Graph - 150kHz to 30MHz - Line

Freq (MHz)	Freq (Max) (MHz)	Line	(QP) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(QP) EMI (dBμV)	(QP) Limit (dBμV)	(QP) Margin QPL (dB)
0.150	0.154	N	41.901	10.107	2.139	0.000	54.148	65.780	-11.633
0.150	0.152	L1	41.280	10.107	0.000	2.183	53.570	65.885	-12.315
0.182	0.174	N	40.068	10.107	1.957	0.000	52.131	64.744	-12.612
0.182	0.175	L1	39.516	10.107	0.000	1.977	51.600	64.726	-13.126
0.218	0.203	L1	35.515	10.106	0.000	1.760	47.380	63.502	-16.122
0.222	0.221	N	33.775	10.105	1.613	0.000	45.493	62.785	-17.292
0.330	0.337	L1	32.198	10.102	0.000	1.012	43.312	59.280	-15.968
0.338	0.345	N	34.057	10.102	0.960	0.000	45.120	59.073	-13.953
16.230	16.225	N	33.415	10.356	0.688	0.000	44.459	60.000	-15.541
16.230	16.235	L1	33.222	10.356	0.000	0.686	44.264	60.000	-15.736

Table 96: 5MHz, 230V/50Hz, High channel: Quasipeak table for CE from 150 kHz to 30 MHz

Freq (MHz)	Freq (Max) (MHz)	Line	(AVG) Trace (dBuV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(AVG) EMI (dBuV)	(AVG) Limit (dBuV)	(AVG) Margin AVL (dB)
0.150	0.154	N	33.310	10.107	2.139	0.000	45.557	55.780	-10.223
0.150	0.152	L1	31.875	10.107	0.000	2.183	44.165	55.885	-11.720
0.182	0.174	N	31.857	10.107	1.957	0.000	43.921	54.744	-10.823
0.182	0.175	L1	31.382	10.107	0.000	1.977	43.466	54.726	-11.261
0.218	0.203	L1	26.405	10.106	0.000	1.760	38.271	53.502	-15.231
0.222	0.221	N	24.717	10.105	1.613	0.000	36.435	52.785	-16.350
0.330	0.337	L1	24.693	10.102	0.000	1.012	35.807	49.280	-13.473
0.338	0.345	N	26.640	10.102	0.960	0.000	37.703	49.073	-11.370
16.230	16.225	N	28.414	10.356	0.688	0.000	39.459	50.000	-10.541
16.230	16.235	L1	28.253	10.356	0.000	0.686	39.295	50.000	-10.705

Table 97: 5MHz, 230V/50Hz, High channel: Average table for CE from 150 kHz to 30 MHz

5.3.2.5.10 POWER LINE – 120 V 60 Hz – 5 MHz BANDWIDTH – LOW CHANNEL

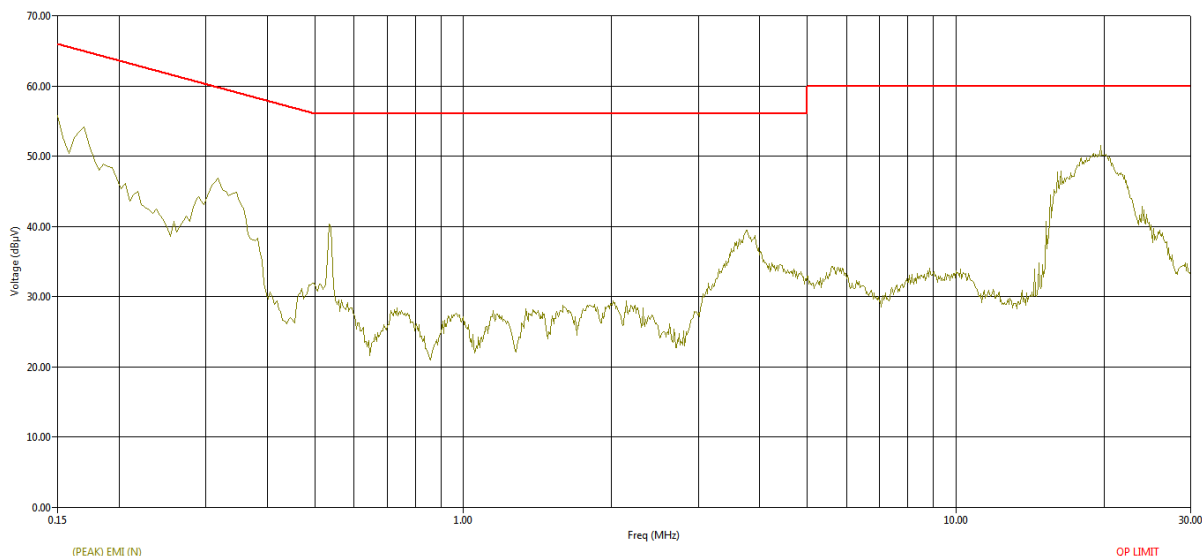


Figure 184: 5MHz, 120V/60Hz, Low channel: Peak CE Graph - 150kHz to 30MHz - Neutral

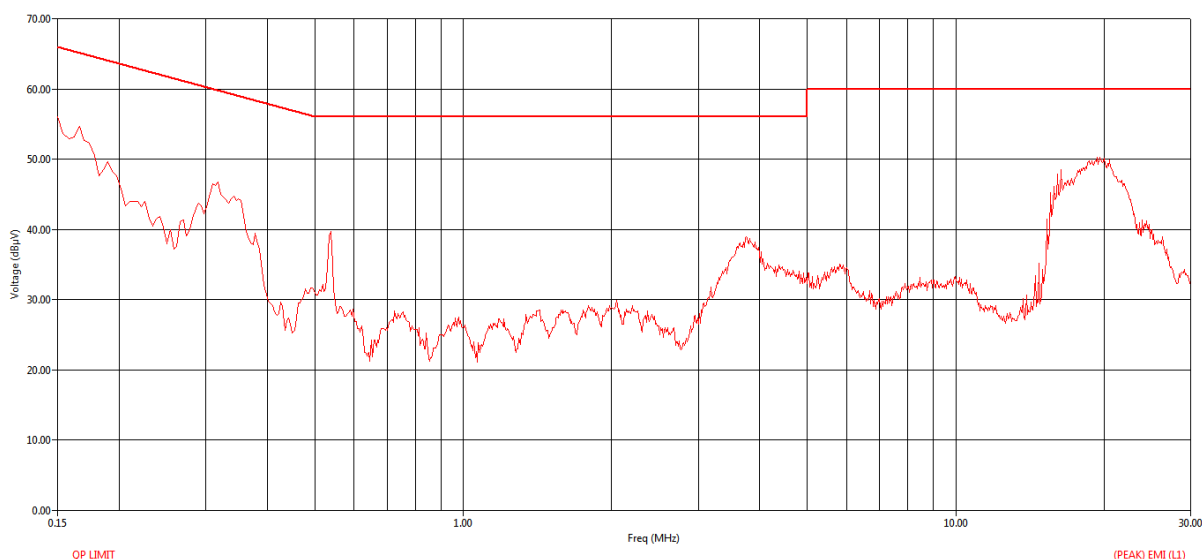


Figure 185: 5MHz, 120V/60Hz, Low channel: Peak CE Graph - 150kHz to 30MHz - Line

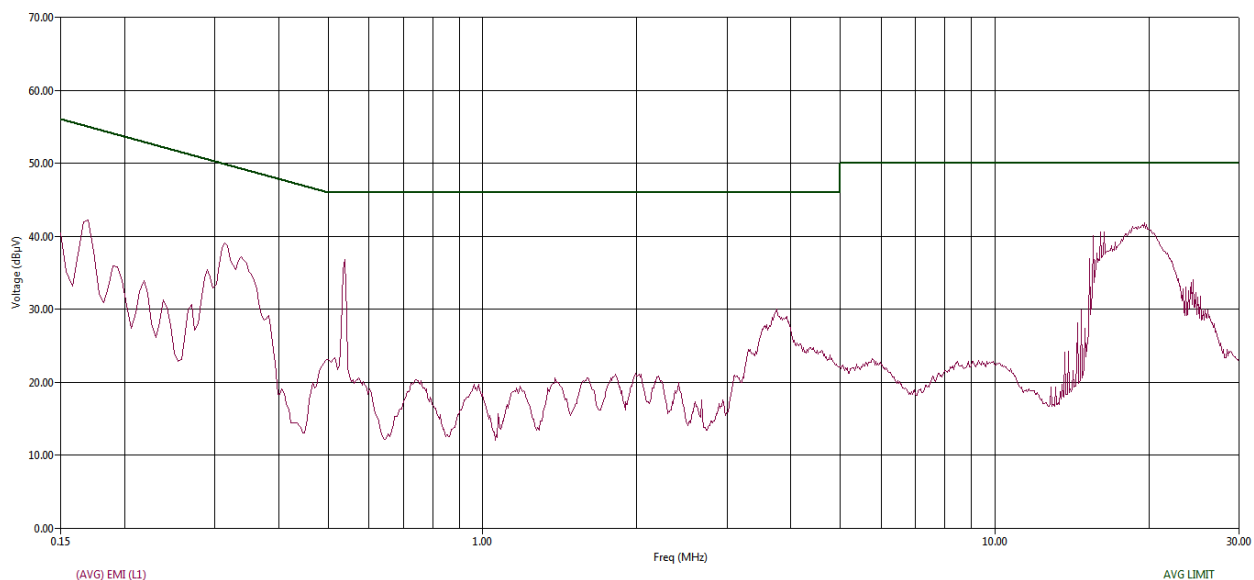


Figure 186: 5MHz, 120V/60Hz, Low channel: Average CE Graph - 150kHz to 30MHz - Neutral

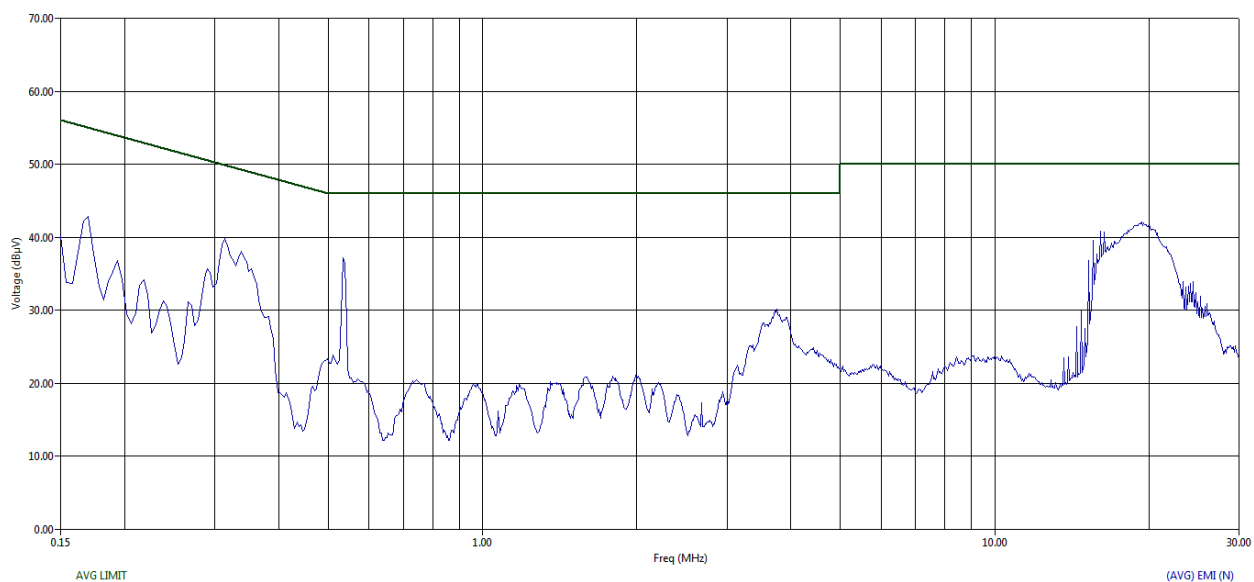


Figure 187: 5MHz, 120V/60Hz, Low channel: Average CE Graph - 150kHz to 30MHz - Line

Freq (MHz)	Freq (Max) (MHz)	Line	(QP) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(QP) EMI (dBμV)	(QP) Limit (dBμV)	(QP) Margin QPL (dB)
0.150	0.154	N	33.734	10.107	2.137	0.000	45.979	65.769	-19.790
0.154	0.151	L1	37.700	10.107	0.000	2.194	50.001	65.950	-15.949
0.322	0.317	N	33.832	10.103	1.088	0.000	45.023	59.797	-14.775
0.330	0.322	L1	31.934	10.103	0.000	1.079	43.116	59.663	-16.547
0.538	0.536	N	29.063	10.102	0.411	0.000	39.576	56.000	-16.424
0.538	0.535	L1	28.640	10.102	0.000	0.420	39.163	56.000	-16.837
3.774	3.779	N	24.813	10.112	0.307	0.000	35.232	56.000	-20.768
3.774	3.778	L1	24.549	10.112	0.000	0.341	35.001	56.000	-20.999
19.134	19.129	L1	34.627	10.391	0.000	0.469	45.487	60.000	-14.513
19.362	19.361	N	35.146	10.393	0.571	0.000	46.110	60.000	-13.890

Table 98: 5MHz, 120V/60Hz, Low channel: Quasipeak table for CE from 150 kHz to 30 MHz

Freq (MHz)	Freq (Max) (MHz)	Line	(AVG) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(AVG) EMI (dBμV)	(AVG) Limit (dBμV)	(AVG) Margin AVL (dB)
0.150	0.154	N	21.836	10.107	2.137	0.000	34.080	55.769	-21.688
0.154	0.151	L1	26.010	10.107	0.000	2.194	38.311	55.950	-17.638
0.322	0.317	N	28.370	10.103	1.088	0.000	39.560	49.797	-10.237
0.330	0.322	L1	25.743	10.103	0.000	1.079	36.925	49.663	-12.738
0.538	0.536	N	27.018	10.102	0.411	0.000	37.531	46.000	-8.469
0.538	0.535	L1	26.787	10.102	0.000	0.420	37.309	46.000	-8.691
3.774	3.779	N	18.483	10.112	0.307	0.000	28.902	46.000	-17.098
3.774	3.778	L1	18.155	10.112	0.000	0.341	28.608	46.000	-17.392
19.134	19.129	L1	29.393	10.391	0.000	0.469	40.253	50.000	-9.747
19.362	19.361	N	29.952	10.393	0.571	0.000	40.917	50.000	-9.083

Table 99: 5MHz, 120V/60Hz, Low channel: Average table for CE from 150 kHz to 30 MHz

5.3.2.5.11 POWER LINE – 120 V 60 Hz – 5 MHz BANDWIDTH – MID CHANNEL

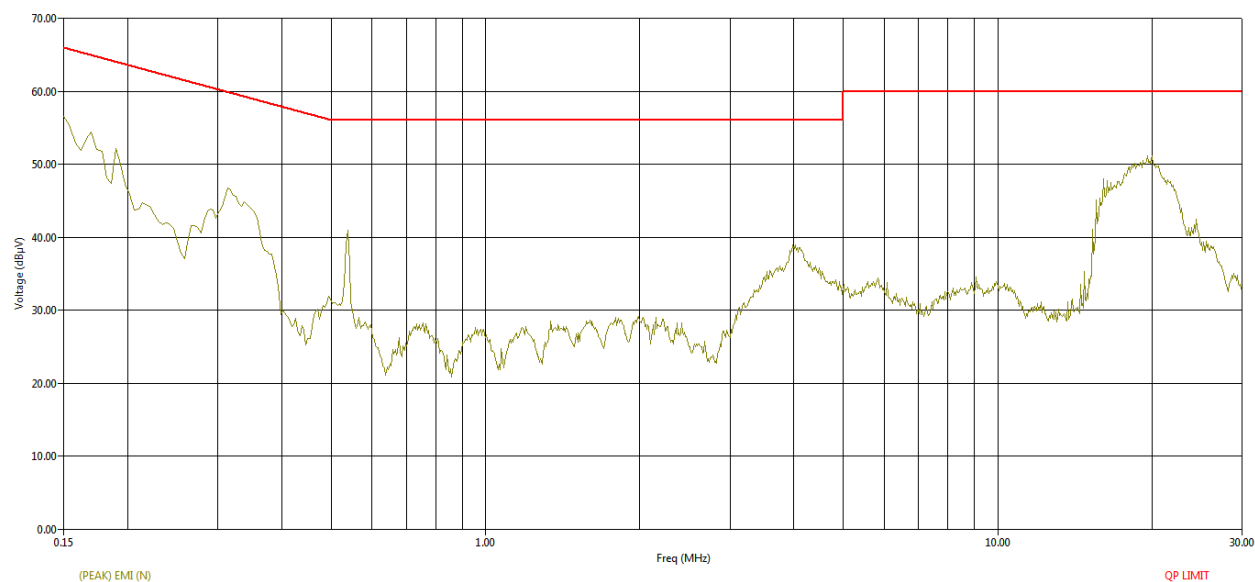


Figure 188: 5MHz, 120V/60Hz, Mid channel: Peak CE Graph - 150kHz to 30MHz - Neutral

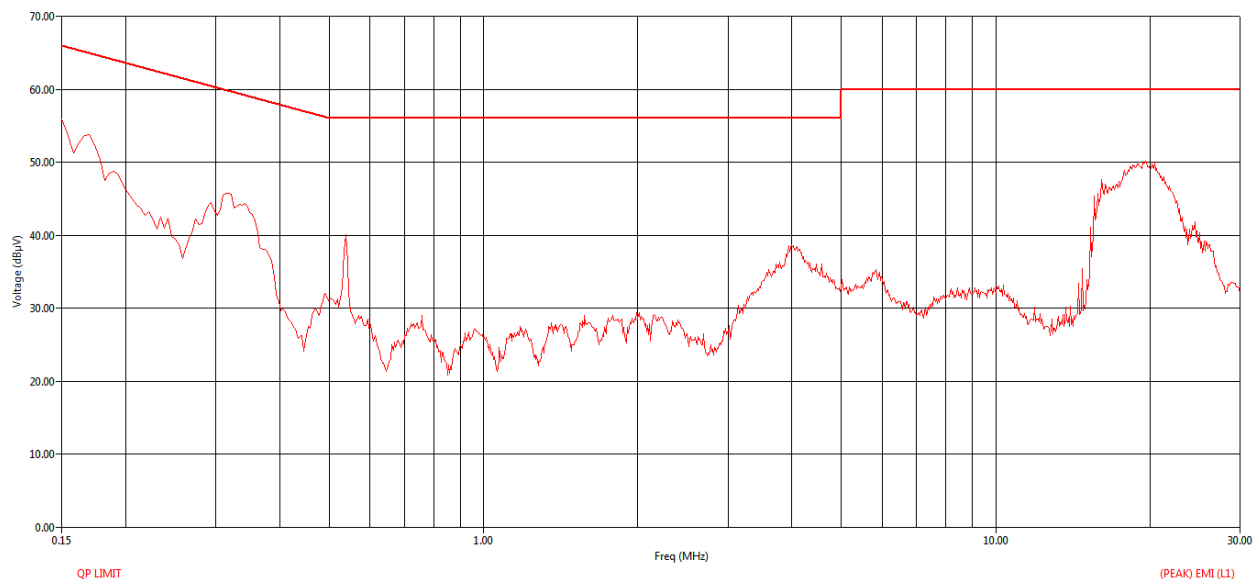


Figure 189: 5MHz, 120V/60Hz, Mid channel: Peak CE Graph - 150kHz to 30MHz - Line

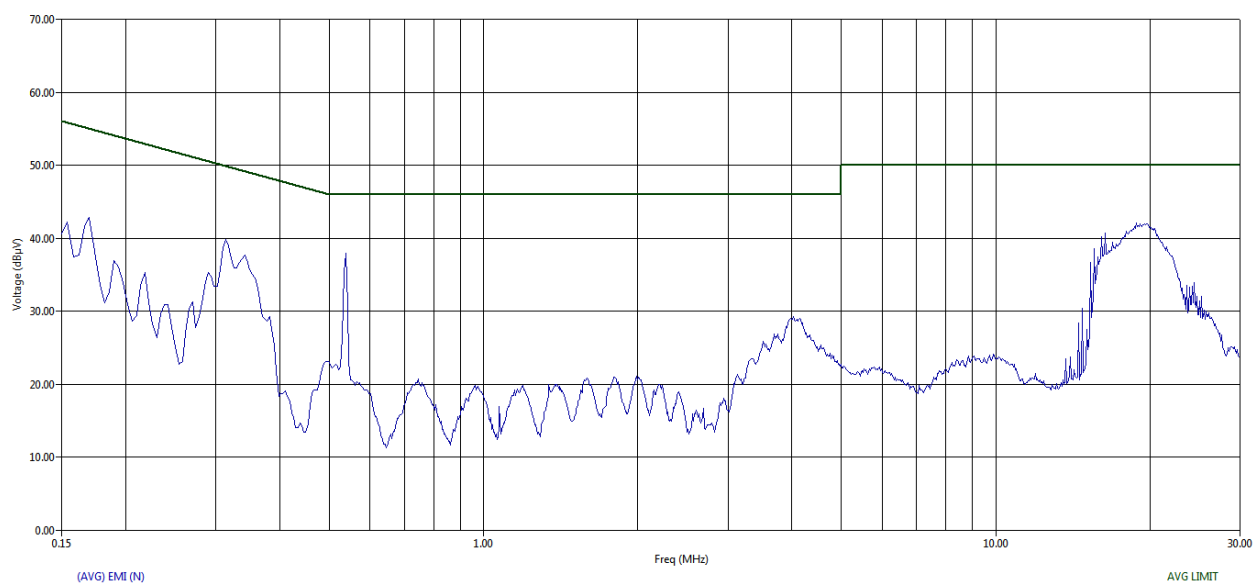


Figure 190: 5MHz, 120V/60Hz, Mid channel: Average CE Graph - 150kHz to 30MHz - Neutral

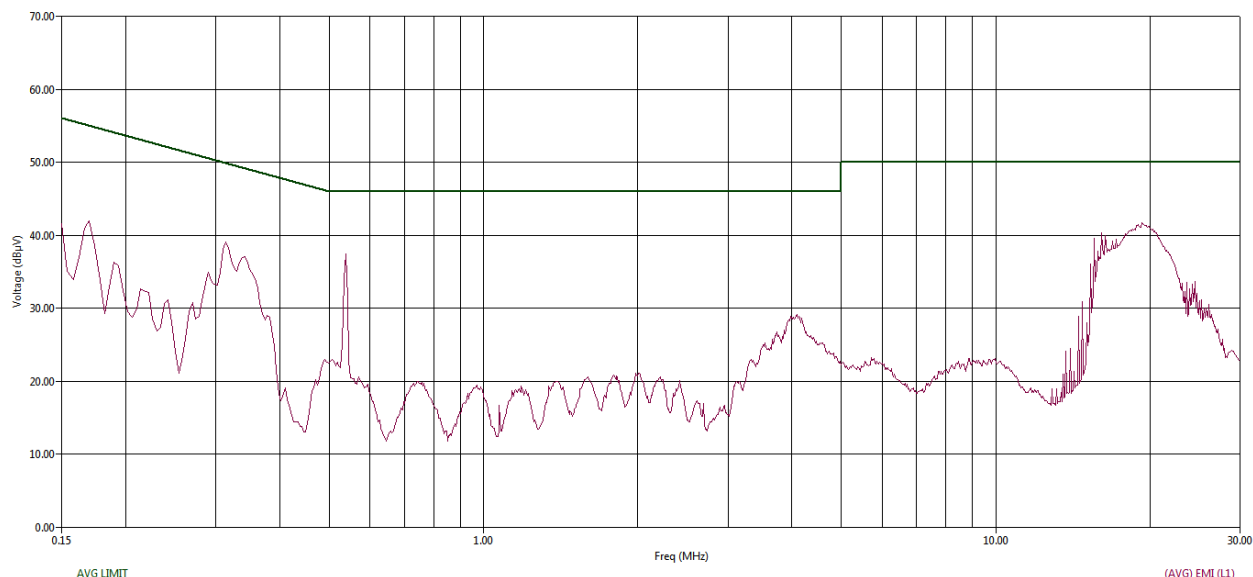


Figure 191: 5MHz, 120V/60Hz, Mid channel: Average CE Graph - 150kHz to 30MHz - Line

Freq (MHz)	Freq (Max) (MHz)	Line	(QP) Trace (dBuV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(QP) EMI (dBuV)	(QP) Limit (dBuV)	(QP) Margin QPL (dB)
0.150	0.154	N	35.782	10.107	2.143	0.000	48.033	65.803	-17.770
0.154	0.150	L1	39.709	10.107	0.000	2.202	52.019	65.994	-13.975
0.322	0.316	N	33.169	10.103	1.091	0.000	44.363	59.819	-15.456
0.330	0.323	L1	30.911	10.103	0.000	1.073	42.087	59.629	-17.542
0.538	0.537	N	29.011	10.102	0.411	0.000	39.524	56.000	-16.476
0.538	0.538	L1	28.405	10.102	0.000	0.419	38.927	56.000	-17.073
3.774	3.766	N	22.222	10.112	0.307	0.000	32.640	56.000	-23.360
3.774	3.765	L1	21.774	10.112	0.000	0.341	32.227	56.000	-23.773
19.134	19.133	L1	34.758	10.391	0.000	0.469	45.617	60.000	-14.383
19.362	19.361	N	35.453	10.393	0.571	0.000	46.418	60.000	-13.582

Table 100: 5MHz, 120V/60Hz, Mid channel: Quasipeak table for CE from 150 kHz to 30 MHz

Freq (MHz)	Freq (Max) (MHz)	Line	(AVG) Trace (dBuV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(AVG) EMI (dBuV)	(AVG) Limit (dBuV)	(AVG) Margin AVL (dB)
0.150	0.154	N	23.255	10.107	2.143	0.000	35.506	55.803	-20.297
0.154	0.150	L1	27.688	10.107	0.000	2.202	39.997	55.994	-15.997
0.322	0.316	N	27.812	10.103	1.091	0.000	39.006	49.819	-10.813
0.330	0.323	L1	24.820	10.103	0.000	1.073	35.996	49.629	-13.633
0.538	0.537	N	27.344	10.102	0.411	0.000	37.856	46.000	-8.144
0.538	0.538	L1	26.613	10.102	0.000	0.419	37.135	46.000	-8.865
3.774	3.766	N	15.768	10.112	0.307	0.000	26.186	46.000	-19.814
3.774	3.765	L1	15.233	10.112	0.000	0.341	25.685	46.000	-20.315
19.134	19.133	L1	29.468	10.391	0.000	0.469	40.328	50.000	-9.672
19.362	19.361	N	30.144	10.393	0.571	0.000	41.108	50.000	-8.892

Table 101: 5MHz, 120V/60Hz, Mid channel: Average table for CE from 150 kHz to 30 MHz

5.3.2.5.12 POWER LINE – 120 V 60 Hz – 5 MHz BANDWIDTH – HIGH CHANNEL

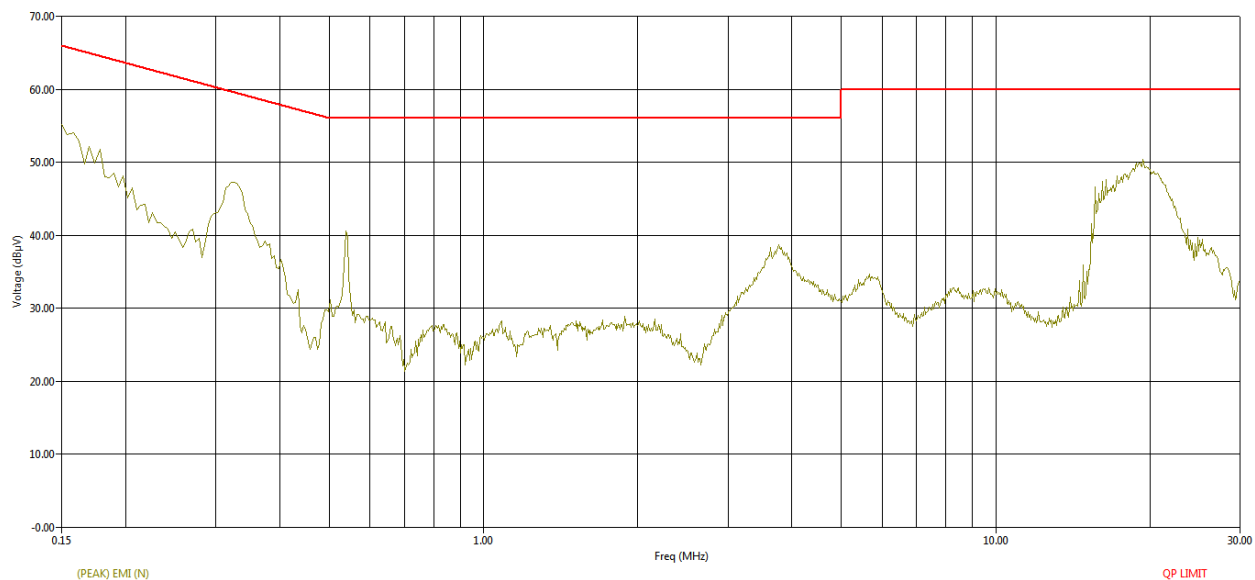


Figure 192: 5MHz, 120V/60Hz, High channel: Peak CE Graph - 150kHz to 30MHz - Neutral

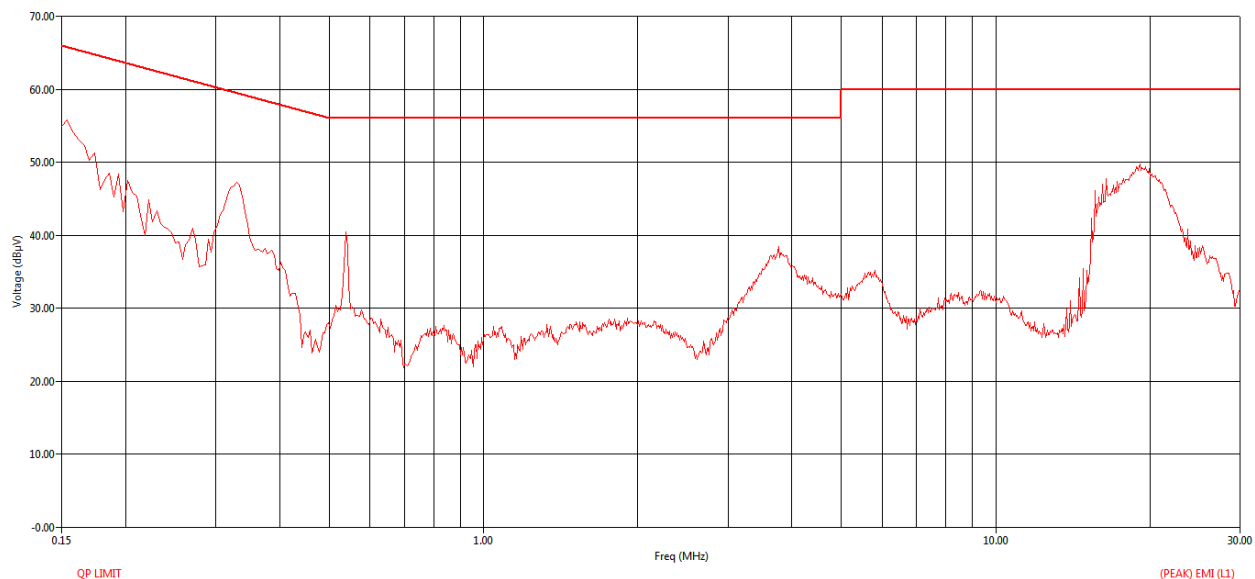


Figure 193: 5MHz, 120V/60Hz, High channel: Peak CE Graph - 150kHz to 30MHz - Line

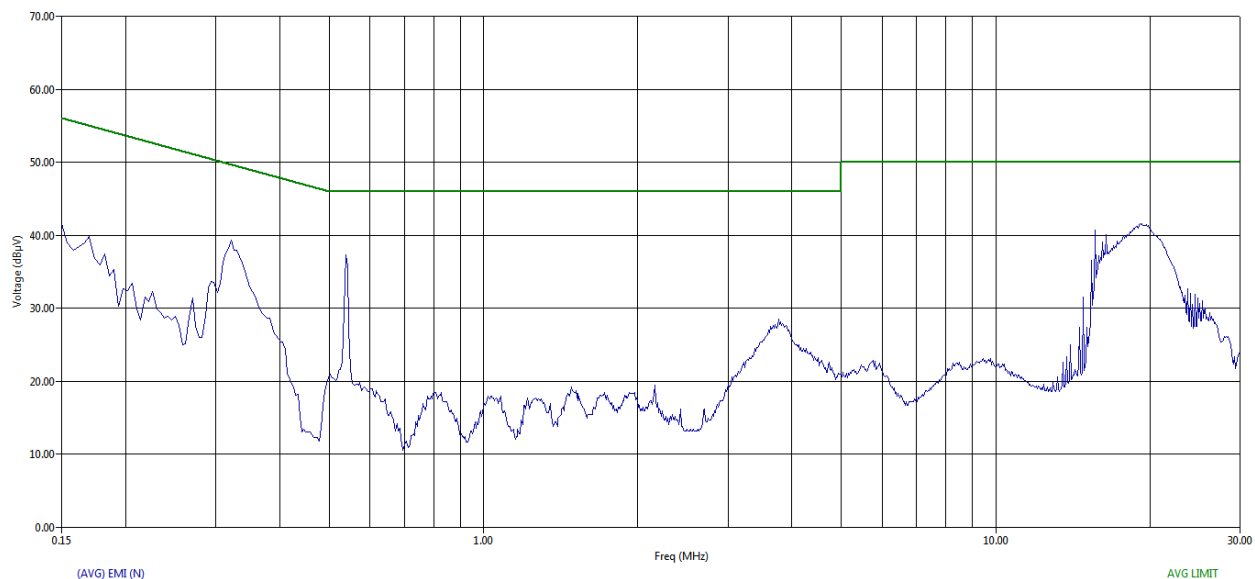


Figure 194: 5MHz, 120V/60Hz, High channel: Average CE Graph - 150kHz to 30MHz - Neutral

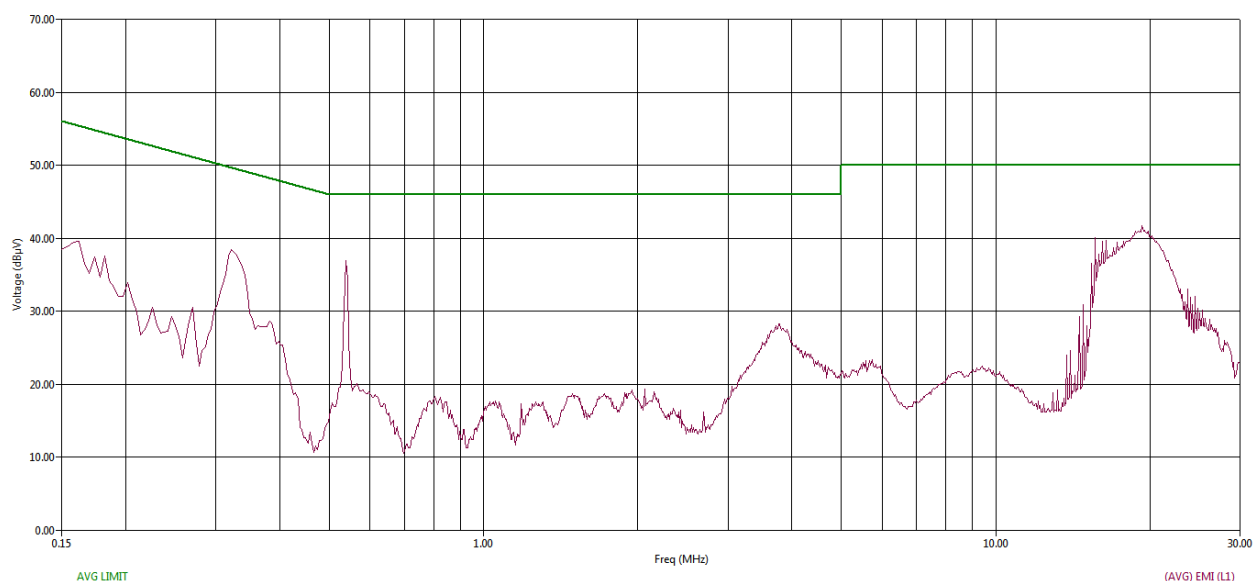


Figure 195: 5MHz, 120V/60Hz, High channel: Average CE Graph - 150kHz to 30MHz - Line

Freq (MHz)	Freq (Max) (MHz)	Line	(QP) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(QP) EMI (dBμV)	(QP) Limit (dBμV)	(QP) Margin QPL (dB)
0.150	0.152	N	45.519	10.107	2.159	0.000	57.785	65.890	-8.105
0.154	0.151	L1	46.480	10.107	0.000	2.197	58.785	65.968	-7.183
0.322	0.328	N	28.351	10.103	1.034	0.000	39.488	59.492	-20.005
0.330	0.335	L1	29.242	10.102	0.000	1.018	40.363	59.317	-18.955
0.538	0.538	N	28.632	10.102	0.411	0.000	39.145	56.000	-16.855
0.538	0.537	L1	28.344	10.102	0.000	0.420	38.866	56.000	-17.134
3.774	3.770	N	26.709	10.112	0.307	0.000	37.128	56.000	-18.872
3.774	3.767	L1	26.489	10.112	0.000	0.341	36.941	56.000	-19.059
19.134	19.139	L1	38.335	10.391	0.000	0.468	49.194	60.000	-10.806
19.362	19.362	N	38.920	10.393	0.571	0.000	49.885	60.000	-10.115

Table 102: 5MHz, 120V/60Hz, High channel: Quasipeak table for CE from 150 kHz to 30 MHz

Freq (MHz)	Freq (Max) (MHz)	Line	(AVG) Trace (dBμV)	Cable+Pulse Limiter (dB)	Transducer N (dB)	Transducer L (dB)	(AVG) EMI (dBμV)	(AVG) Limit (dBμV)	(AVG) Margin AVL (dB)
0.150	0.152	N	32.341	10.107	2.159	0.000	44.607	55.890	-11.283
0.154	0.151	L1	33.962	10.107	0.000	2.197	46.267	55.968	-9.701
0.322	0.328	N	20.682	10.103	1.034	0.000	31.819	49.492	-17.674
0.330	0.335	L1	23.309	10.102	0.000	1.018	34.429	49.317	-14.888
0.538	0.538	N	27.025	10.102	0.411	0.000	37.537	46.000	-8.463
0.538	0.537	L1	26.622	10.102	0.000	0.420	37.144	46.000	-8.856
3.774	3.770	N	20.248	10.112	0.307	0.000	30.667	46.000	-15.333
3.774	3.767	L1	20.111	10.112	0.000	0.341	30.564	46.000	-15.436
19.134	19.139	L1	32.487	10.391	0.000	0.468	43.346	50.000	-6.654
19.362	19.362	N	32.980	10.393	0.571	0.000	43.945	50.000	-6.055

Table 103: 5MHz, 120V/60Hz, High channel: Average table for CE from 150 kHz to 30 MHz

Note:

$(QP) EMI (dB\mu V) = (QP) Trace (dB\mu V) + Transducer (dB) + \{Cable + Pulse limiter\} (dB)$

$QP Margin QPL (dB) = (QP) EMI (dB\mu V) - (QP) Limit (dB\mu V)$

$(AVG) EMI (dB\mu V) = (AVG) Trace (dB\mu V) + Transducer (dB) + \{Cable + Pulse limiter\} (dB)$

$AVG Margin AVL (dB) = (AVG) EMI (dB\mu V) - (AVG) Limit (dB\mu V)$

5.3.2.6 RESULT

Conducted Emission from the EUT was within the specified limits.

ANNEXURE I: EUT SOFTWARE SETTINGS

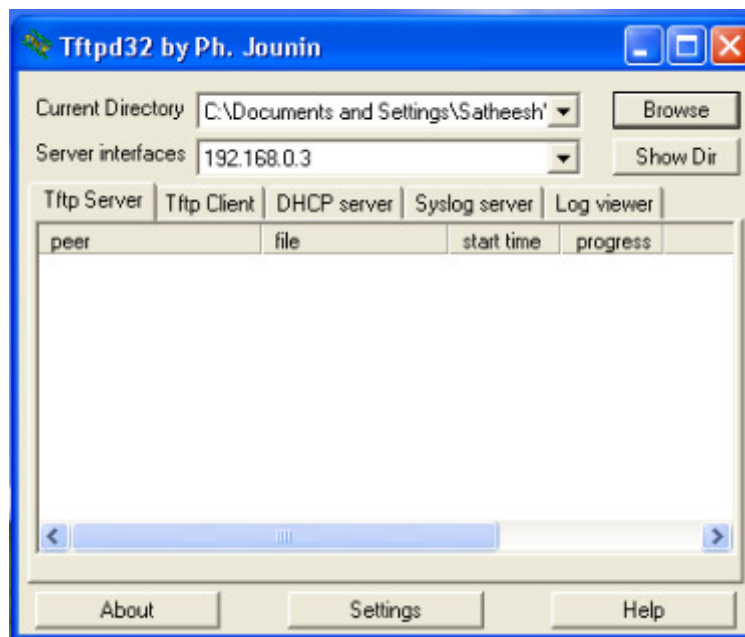


Figure 196 tftpd32 application screenshot

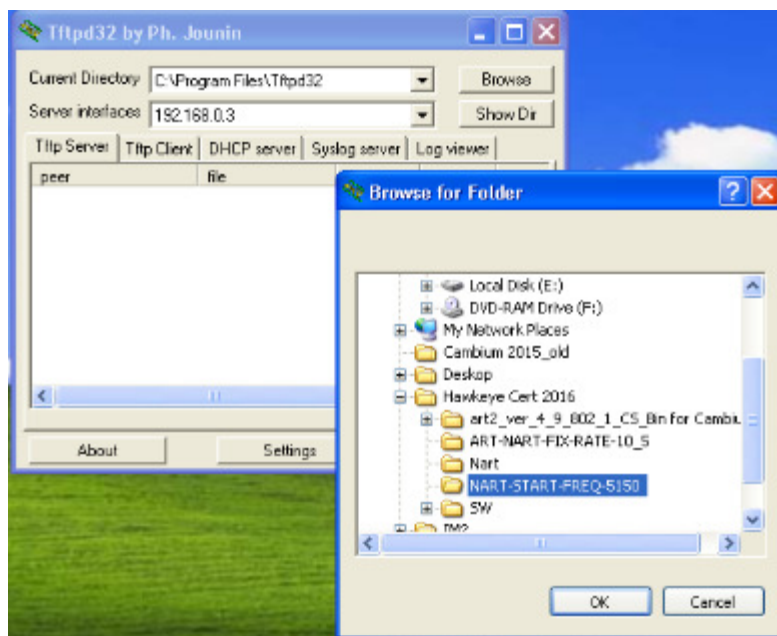


Figure 197 tftpd32 application initialization root_ screenshot

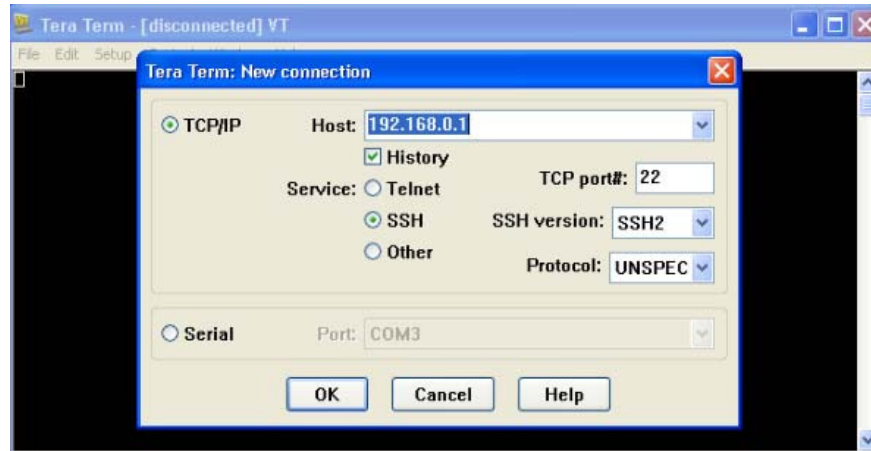


Figure 198 Tera term application screenshot

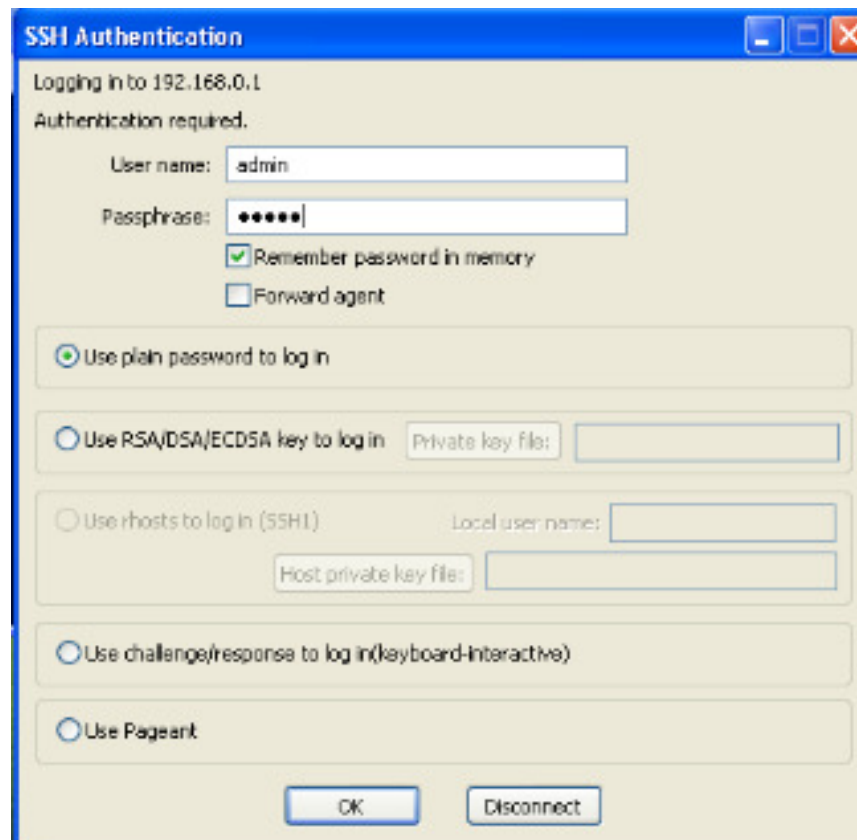


Figure 199 Tera term application Login screenshot

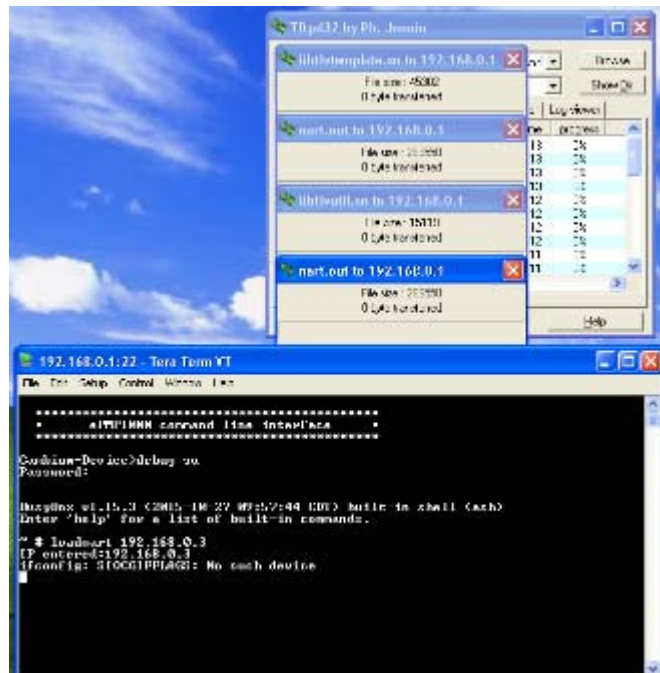


Figure 200 Initializing EUT screenshot

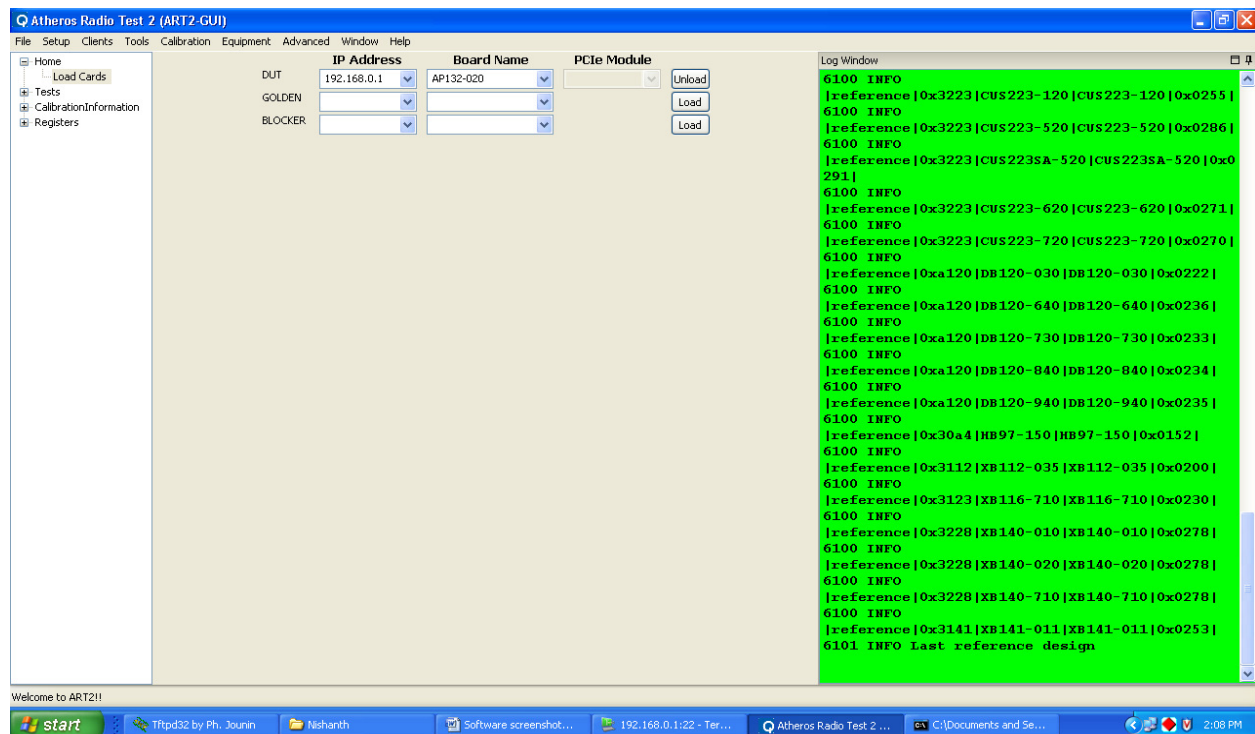


Figure 201 Atheros Radio Test GUI screenshot-1

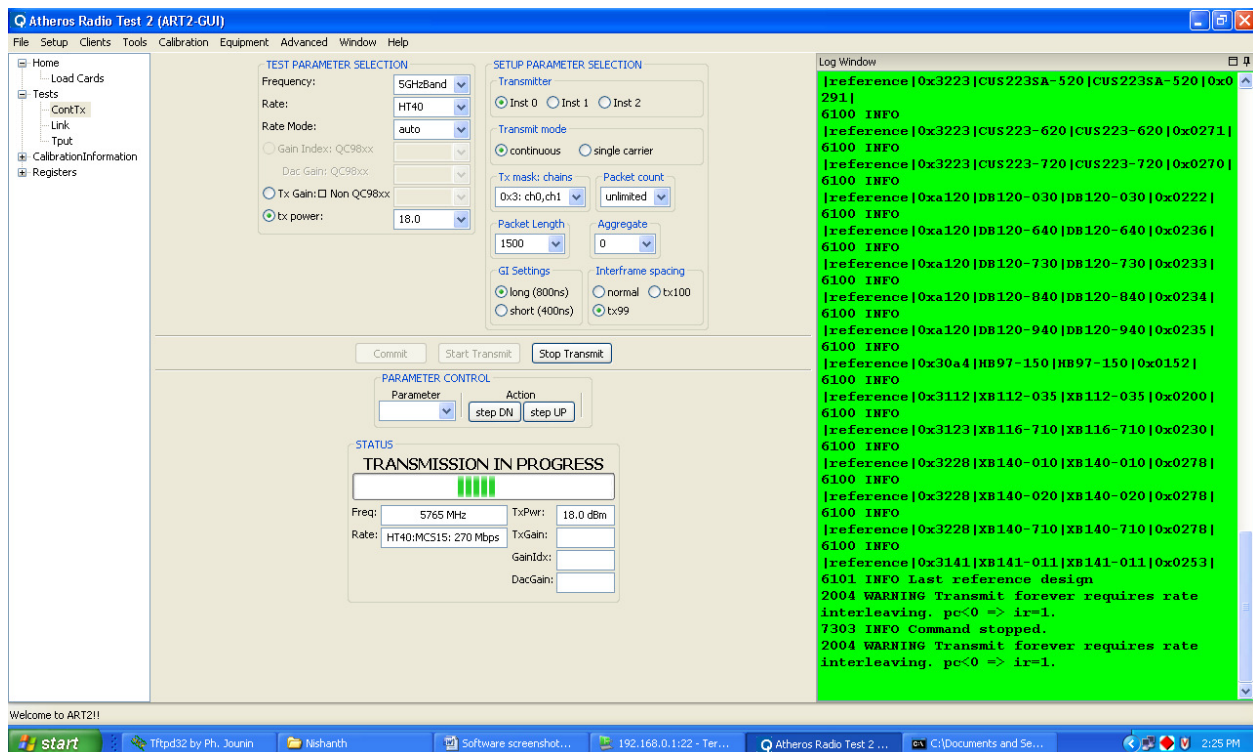


Figure 202 Atheros Radio Test GUI screenshot -2

ANNEXURE II: ACRONYMS

dB μ V	Decibel in micro Volt
dBm	Decibel in milli Watt
EUT	Equipment Under Test
FCC	Federal Communications Commission
GHz	Giga Hertz
kHz	Kilo Hertz
LISN	Line Impedance Stabilization Network
MHz	Mega Hertz
POE	Power over Ethernet
PSD	Power Spectral density
QP	Quasi Peak
RF	Radio Frequency

END OF REPORT