



# FCC&IC Radio Test Report

**FCC ID: MCLCS-E340W**

**IC: 2878D-CSE340W**

**This report concerns (check one):  Original Grant  Class II Change**

**Issued Date** : Sep. 12, 2013  
**Project No.** : 1308C100  
**Equipment** : Cisco Edge 340  
**Model Name** : CS-E340W  
**Applicant** : HON HAI Precision Ind. Co., Ltd.  
**Address** : 5F-1, 5, Hsin-An Road, Hsinchu  
Science-Based Industrial Park,  
Hsinchu, Taiwan

**Tested by:** Neutron Engineering Inc. EMC Laboratory  
**Date of Receipt:** Aug. 12, 2013  
**Date of Test:** Aug. 12, 2013 ~ Sep. 11, 2013

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## Declaration

**Neutron** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C**, or National Institute of Standards and Technology (**NIST**) of **U.S.A**.

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**Neutron**'s laboratory quality assurance procedures are in compliance with the **ISO Guide 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

## Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.



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## 1. CERTIFICATION

Equipment : Cisco Edge 340  
Brand Name : Cisco  
Model Name : CS-E340W  
Applicant : HON HAI Precision Ind. Co., Ltd.  
Manufacturer : Hon Hai Precision Ind Co., Ltd  
Address : Hsinchu Science Park Branch Office 5F-1 5, Hsin-an Rd Hsinchu Science Based Industrial Park Hsinchu, Taiwan  
Factory : HONG FU JIN PRECISION INDUSTRY (SHEN ZHEN) CO LTD  
Address : Bldg D10, F21, No 2, 2 nd DONGGUAN RD, 10 th YOUSONG INDUSTRIAL DISTRICT, LONGHUA TOWN, BAOAN, SHENZHEN, GUANGDONG, CHINA.  
Date of Test : Aug. 12, 2013 ~ Sep. 11, 2013  
Test Item : ENGINEERING SAMPLE  
Standard(s) : FCC Part15, Subpart C(15.247) / ANSI C63.4-2009  
Canada RSS-210:2010  
RSS-GEN Issue 3, Dec 2010

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

This test report consists of 75 pages in total.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FICP-2-1308C100) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

Testing Engineer : David Mao  
(David Mao)

Technical Manager : Leo Hung  
(Leo Hung)

Authorized Signatory : Steven Lu  
(Steven Lu)



## 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

**Applied Standard(s): FCC Part15 (15.247) , Subpart C  
Canada RSS-210:2010; RSS-GEN Issue 3, Dec 2010**

Standard(s)	Section	Test Item	Judgment	Remark
15.207	RSS-GEN 7.2.2	Conducted Emission	PASS	
15.247(d)	RSS-210 Annex 8 (A8.5)	Antenna conducted Spurious Emission	PASS	
15.247(a)(2)	RSS-210 Annex 8 (A8.2(a))	6dB Bandwidth	PASS	
15.247(b)(3)	RSS-210 Annex 8 (A8.4(4))	Peak Output Power	PASS	
15.247(e)	RSS-210 Annex 8 (A8.2(b))	Power Spectral Density	PASS	
15.203	-	Antenna Requirement	PASS	
15.209/15.205	RSS-210 Annex 8 (A8.5)	Transmitter Radiated Emissions	PASS	

NOTE:

- (1)" N/A" denotes test is not applicable in this test report.
- (2) The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance v03r01 (Measurement Guidelines of DTS)



## 2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-C02/DG-CB03** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China.523792

Neutron's test firm number for FCC: 319330

Neutron's test firm number for IC: 4428B-1

## 2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 % .

### A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	1.94	

### B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)	NOTE
DG-CB03	CISPR	9KHz~30MHz	V	3.79	
		9KHz~30MHz	H	3.57	
		30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	H	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	H	4.14	



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

Equipment	Cisco Edge 340	
Brand Name	Cisco	
Model Name	CS-E340W	
Model Difference	N/A	
Product Description	Operation Frequency	2402~2480 MHz
	Modulation Technology	GFSK(1Mbps)
	Bit Rate of Transmitter	
	Number of Channel	40CH, Please see note 2.(Page 9)
	Antenna Designation	Please see note 3.(Page 9)
	Antenna Gain(Peak)	
	Peak Output Power	4.81 dBm (1Mbps)
More details of EUT technical specification, please refer to the User's Manual.		
Power Source	DC voltage supplied from AC/DC adapter #1 Brand /Model name: LITEON /PA-1600-2A-LF #2 Brand /Model name: DELTA /EADP-60MB B #3 PoE	
Power Rating	#1 I/P 100-240V 50-60Hz 2A O/P 12V 5A #2 I/P 100-240V 50-60Hz 1.5A O/P 12V 5A #3 DC 48V	
Connecting I/O Port(s)	USB port*4 IR Extension port Console port RS232 port Audio out port Audio in port HDMI port VGA port Gigabit Ethernet port Power SD card 802.11a/b/g/n Bluetooth	

**Note:**

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



2.

<b>Channel List</b>			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	20	2442
01	2404	21	2444
02	2406	22	2446
03	2408	23	2448
04	2410	24	2450
05	2412	25	2452
06	2414	26	2454
07	2416	27	2456
08	2418	28	2458
09	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	FOXCONN	FX01G66-0G-EF	Integral	N/A	4.39



## 3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	TX Mode <b>NOTE (1)</b>
Mode 2	TX Mode

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

For Conducted Test	
Final Test Mode	Description
Mode 2	TX Mode

For Conducted test, the Dipole antenna is found to be the worst case and recorded.

For Radiated Test	
Final Test Mode	Description
Mode 1	TX Mode <b>NOTE (1)</b>

For Radiated Below 1G test, the 802.11a mode is found to be the worst case and recorded.

Note:

(1) The measurements are performed at the high, middle, low available channels.



### 3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

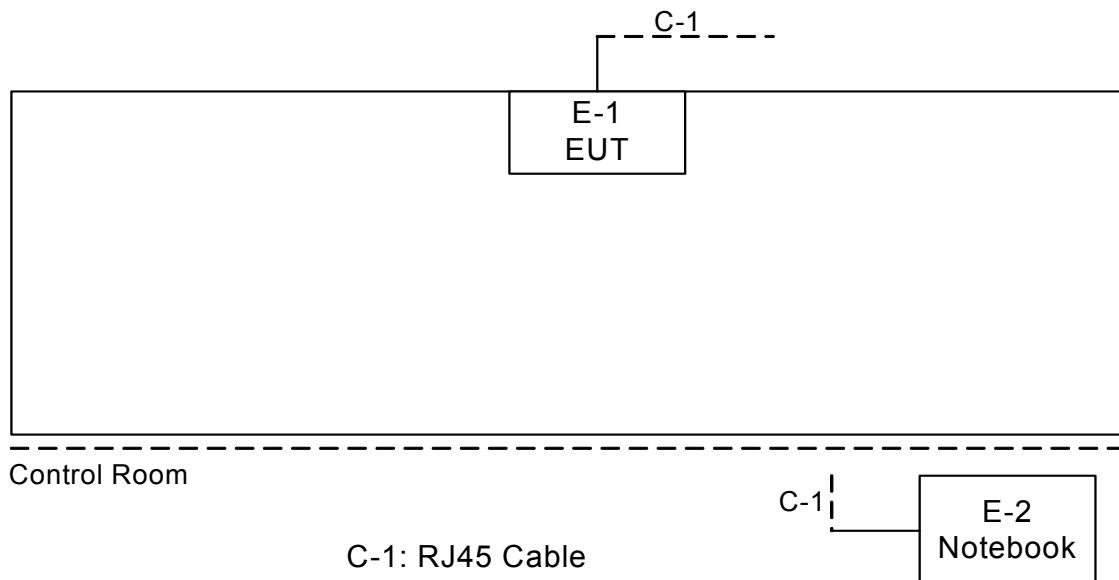
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN

Test software version	DOS		
Frequency	2402MHz	2440 MHz	2480MHz
GFSK-1Mbps	0	0	0

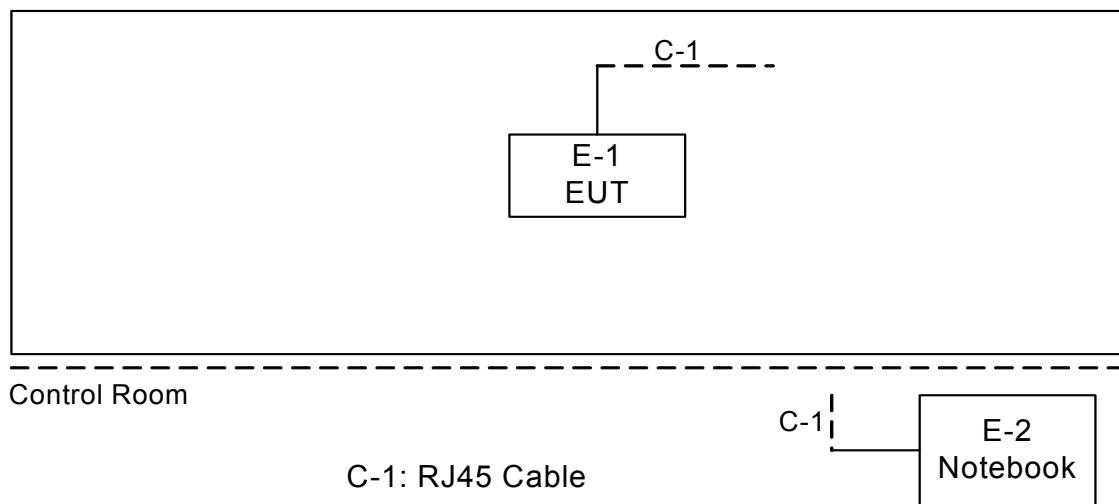


## 3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

### Conducted TX Mode:



### Radiated TX Mode:



Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	10m	Between the EUT and a Notebook

Note:

- (1) For detachable type I/O cable should be specified the length in m in 『Length』 column.

**3.5 DESCRIPTION OF SUPPORT UNITS**

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID/IC	Series No.	Note
E-1	Cisco Edge 340	Cisco	CS-E340W	MCLCS-E340W / 2878D-CSE340W	N/A	EUT
E-2	Notebook	DELL	Inspiron 14-N4030	DOC	N/A	



## 4. EMC EMISSION TEST

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

Frequency (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

### 4.1.2 MEASUREMENT INSTRUMENTS LIST AND SETTING

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Until
1	LISN	EMCO	3816/2	00052765	Apr. 25, 2014
2	LISN	R&S	ENV216	100087	Nov.16, 2013
3	Test Cable	N/A	C_17	N/A	Mar.15.2014
4	EMI TEST RECEIVER	R&S	ESCS30	826547/022	Apr. 25, 2014
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Apr. 25, 2014

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

The test was performed in DG-C02.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz



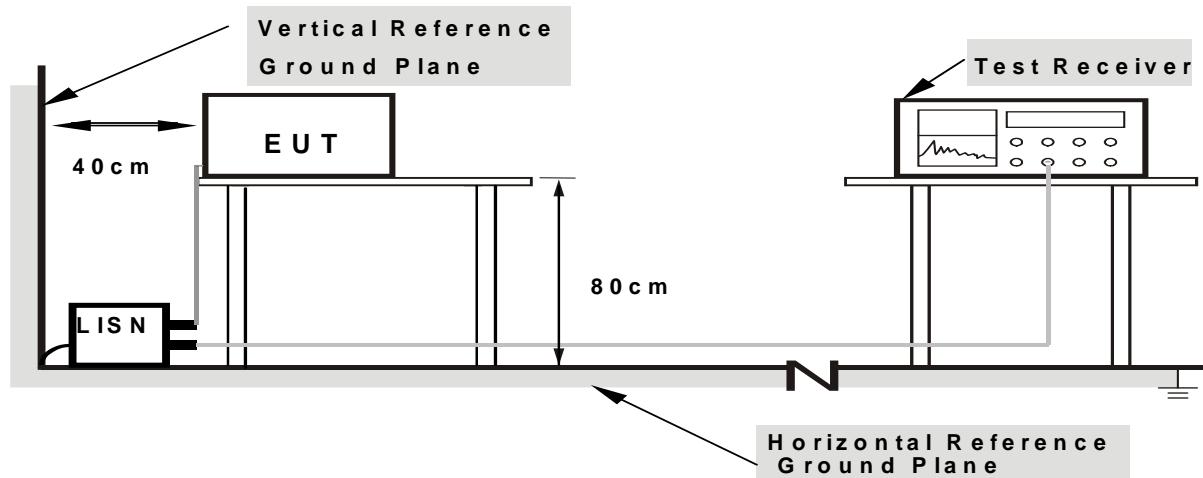
### 4.1.3 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

### 4.1.5 TEST SETUP



### 4.1.6 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

The EUT was programmed to be in continuously transmitting mode.



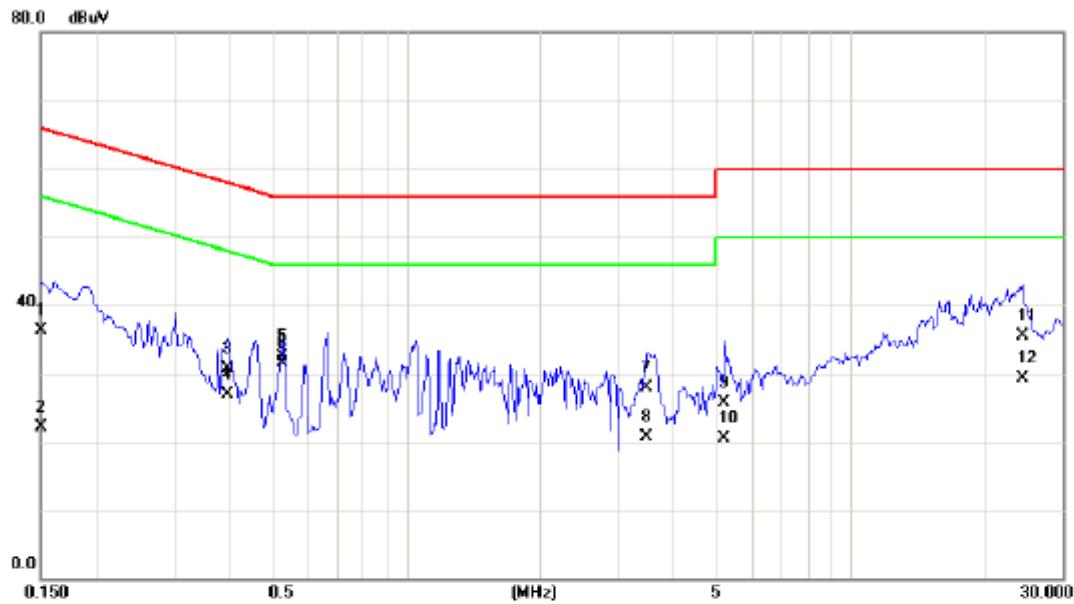
#### **4.1.7 TEST RESULTS**

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a “\*” marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150KHz to 30MHz.
- (3) “N/A” denotes test is not applicable in this test report.



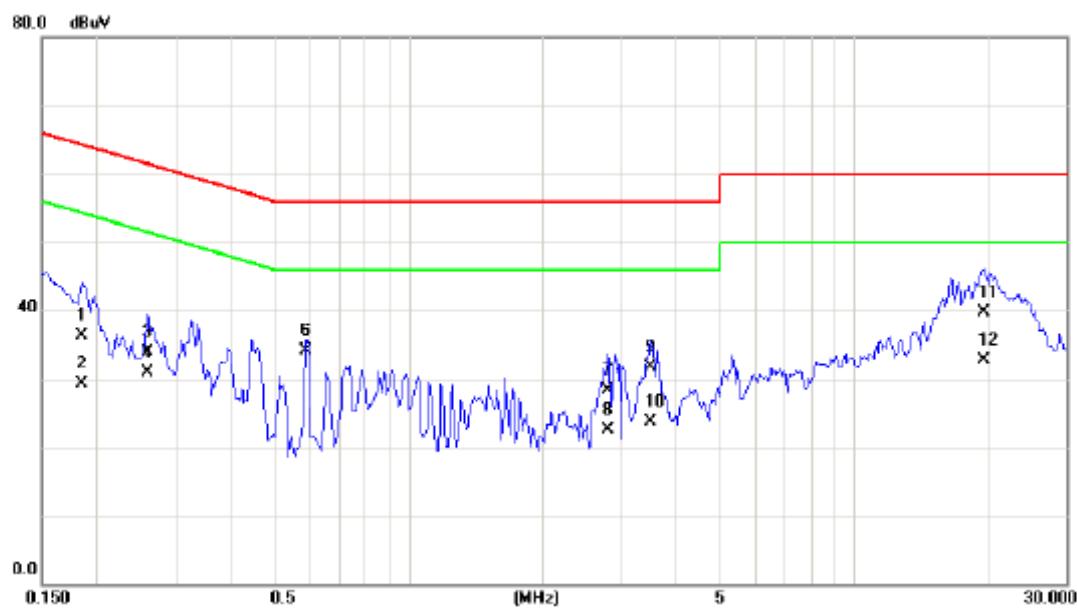
EUT:	Cisco Edge 340	Model Name :	CS-E340W
Temperature:	25 °C	Relative Humidity:	50 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode:	TX Mode / Adapter: PA-1600-2A-LF		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		0.1500	26.75	9.61	36.36	66.00	-29.64	QP	
2		0.1500	12.45	9.61	22.06	56.00	-33.94	AVG	
3		0.3961	20.95	9.66	30.61	57.93	-27.32	QP	
4		0.3961	17.15	9.66	26.81	47.93	-21.12	AVG	
5		0.5250	22.75	9.68	32.43	56.00	-23.57	QP	
6	*	0.5250	21.85	9.68	31.53	46.00	-14.47	AVG	
7		3.4883	18.15	9.83	27.98	56.00	-28.02	QP	
8		3.4883	10.95	9.83	20.78	46.00	-25.22	AVG	
9		5.2031	15.85	9.91	25.76	60.00	-34.24	QP	
10		5.2031	10.55	9.91	20.46	50.00	-29.54	AVG	
11		24.2773	24.55	10.86	35.41	60.00	-24.59	QP	
12		24.2773	18.35	10.86	29.21	50.00	-20.79	AVG	



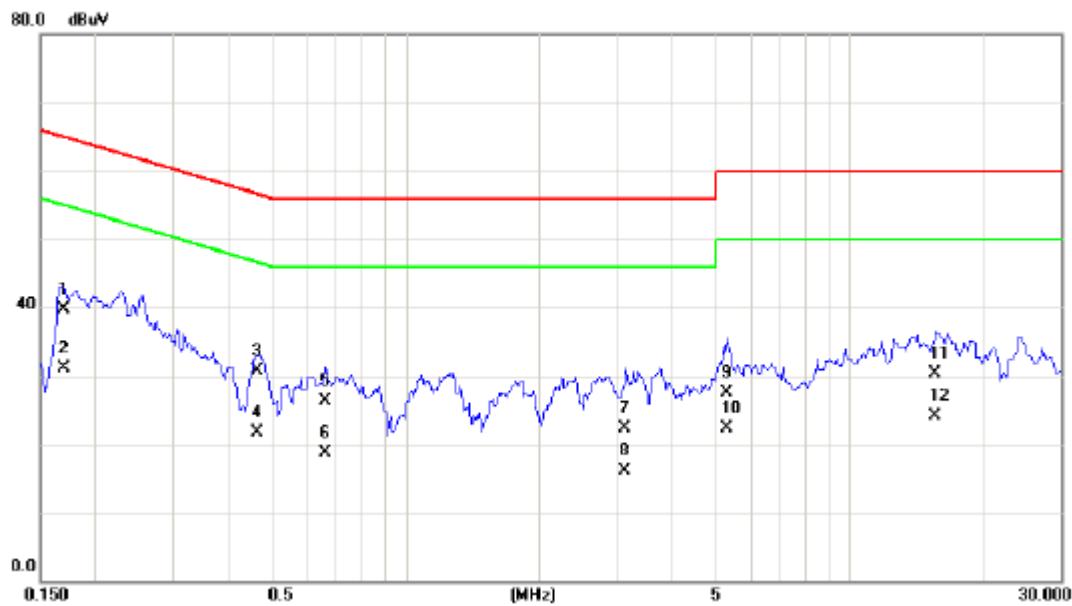
EUT:	Cisco Edge 340	Model Name :	CS-E340W
Temperature:	25 °C	Relative Humidity:	50 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode:	TX Mode / Adapter: PA-1600-2A-LF		



No.	Mk.	Freq. MHz	Reading Level	Correct Factor	Measure- ment	Limit	Over	Comment
			dBuV	dB	dBuV	dB	Detector	
1		0.1852	26.67	9.62	36.29	64.25	-27.96	QP
2		0.1852	19.67	9.62	29.29	54.25	-24.96	AVG
3		0.2594	24.27	9.62	33.89	61.45	-27.56	QP
4		0.2594	21.36	9.62	30.98	51.45	-20.47	AVG
5		0.5914	24.47	9.69	34.16	56.00	-21.84	QP
6	*	0.5914	24.36	9.69	34.05	46.00	-11.95	AVG
7		2.8220	18.56	9.80	28.36	56.00	-27.64	QP
8		2.8220	12.66	9.80	22.46	46.00	-23.54	AVG
9		3.4922	21.86	9.83	31.69	56.00	-24.31	QP
10		3.4922	13.86	9.83	23.69	46.00	-22.31	AVG
11		19.5508	29.07	10.58	39.65	60.00	-20.35	QP
12		19.5508	22.17	10.58	32.75	50.00	-17.25	AVG



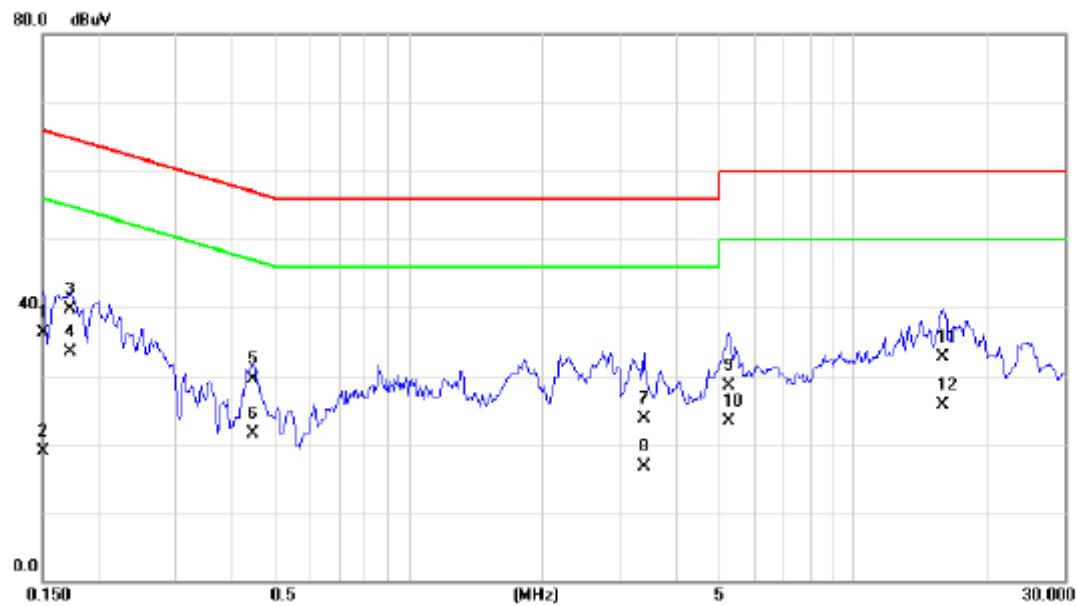
EUT:	Cisco Edge 340	Model Name :	CS-E340W
Temperature:	25 °C	Relative Humidity:	50 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode:	TX Mode / Adapter: EADP-60MB B		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		0.1695	30.02	9.61	39.63	64.98	-25.35	QP	
2	*	0.1695	21.42	9.61	31.03	54.98	-23.95	AVG	
3		0.4625	21.12	9.67	30.79	56.65	-25.86	QP	
4		0.4625	12.02	9.67	21.69	46.65	-24.96	AVG	
5		0.6578	16.52	9.69	26.21	56.00	-29.79	QP	
6		0.6578	9.02	9.69	18.71	46.00	-27.29	AVG	
7		3.1328	12.52	9.82	22.34	56.00	-33.66	QP	
8		3.1328	6.22	9.82	16.04	46.00	-29.96	AVG	
9		5.3047	17.52	9.91	27.43	60.00	-32.57	QP	
10		5.3047	12.42	9.91	22.33	50.00	-27.67	AVG	
11		15.6953	20.02	10.38	30.40	60.00	-29.60	QP	
12		15.6953	13.82	10.38	24.20	50.00	-25.80	AVG	



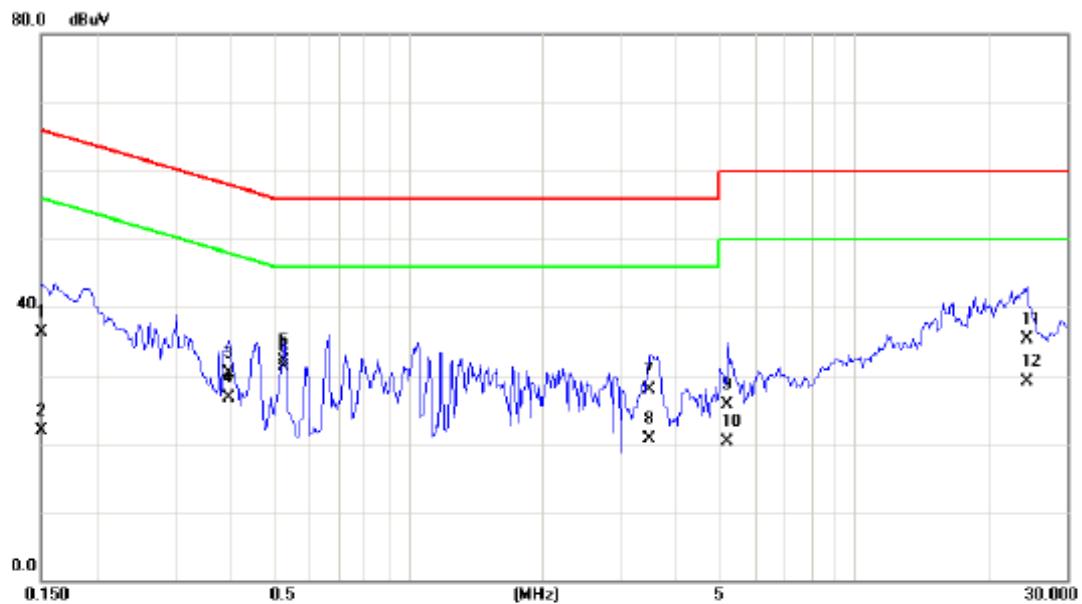
EUT:	Cisco Edge 340	Model Name :	CS-E340W
Temperature:	25 °C	Relative Humidity:	50 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode:	TX Mode / Adapter: EADP-60MB B		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		0.1508	26.72	9.60	36.32	65.96	-29.64	QP	
2		0.1508	9.32	9.60	18.92	55.96	-37.04	AVG	
3		0.1734	30.02	9.60	39.62	64.80	-25.18	QP	
4	*	0.1734	23.82	9.60	33.42	54.80	-21.38	AVG	
5		0.4470	19.92	9.66	29.58	56.93	-27.35	QP	
6		0.4470	11.92	9.66	21.58	46.93	-25.35	AVG	
7		3.3906	13.92	9.87	23.79	56.00	-32.21	QP	
8		3.3906	6.92	9.87	16.79	46.00	-29.21	AVG	
9		5.2617	18.62	9.98	28.60	60.00	-31.40	QP	
10		5.2617	13.42	9.98	23.40	50.00	-26.60	AVG	
11		15.9531	21.92	10.73	32.65	60.00	-27.35	QP	
12		15.9531	15.02	10.73	25.75	50.00	-24.25	AVG	



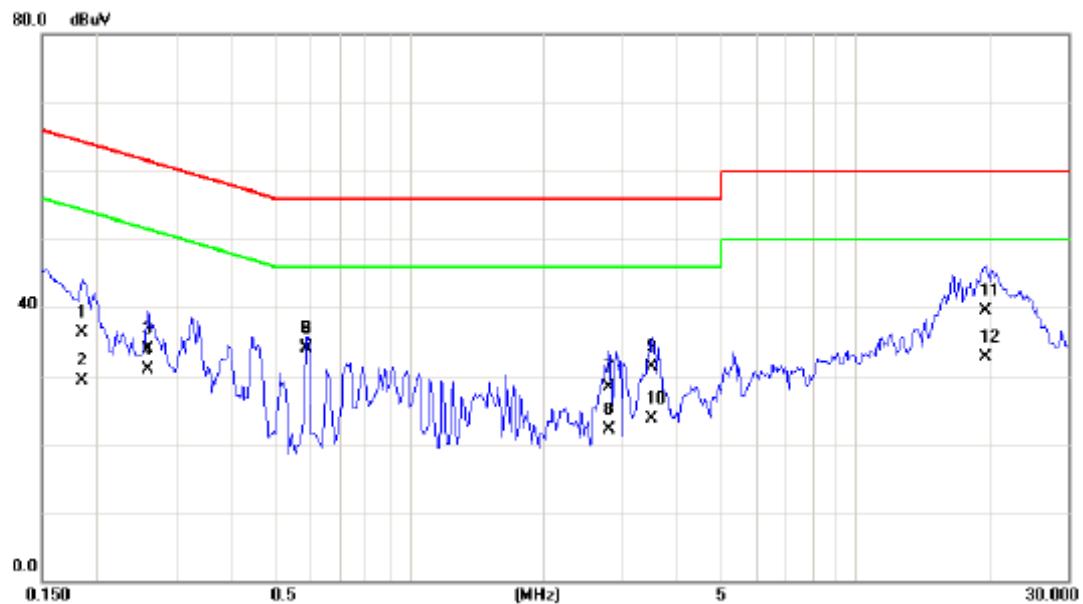
EUT:	Cisco Edge 340	Model Name :	CS-E340W
Temperature:	25 °C	Relative Humidity:	50 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode:	TX Mode / POE		



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Over	
							Detector	Comment
1	0.1500	26.66	9.61	36.27	66.00	-29.73	QP	
2	0.1500	12.33	9.61	21.94	56.00	-34.06	AVG	
3	0.3961	20.65	9.66	30.31	57.93	-27.62	QP	
4	0.3961	17.01	9.66	26.67	47.93	-21.26	AVG	
5	0.5250	22.45	9.68	32.13	56.00	-23.87	QP	
6 *	0.5250	21.65	9.68	31.33	46.00	-14.67	AVG	
7	3.4883	18.03	9.83	27.86	56.00	-28.14	QP	
8	3.4883	10.87	9.83	20.70	46.00	-25.30	AVG	
9	5.2031	15.76	9.91	25.67	60.00	-34.33	QP	
10	5.2031	10.39	9.91	20.30	50.00	-29.70	AVG	
11	24.2773	24.47	10.86	35.33	60.00	-24.67	QP	
12	24.2773	18.24	10.86	29.10	50.00	-20.90	AVG	



EUT:	Cisco Edge 340	Model Name :	CS-E340W
Temperature:	25 °C	Relative Humidity:	50 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode:	TX Mode / POE		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1852	26.65	9.62	36.27	64.25	-27.98	QP	
2		0.1852	19.65	9.62	29.27	54.25	-24.98	AVG	
3		0.2594	24.22	9.62	33.84	61.45	-27.61	QP	
4		0.2594	21.33	9.62	30.95	51.45	-20.50	AVG	
5		0.5914	24.44	9.69	34.13	56.00	-21.87	QP	
6	*	0.5914	24.25	9.69	33.94	46.00	-12.06	AVG	
7		2.8220	18.50	9.80	28.30	56.00	-27.70	QP	
8		2.8220	12.32	9.80	22.12	46.00	-23.88	AVG	
9		3.4922	21.45	9.83	31.28	56.00	-24.72	QP	
10		3.4922	13.88	9.83	23.71	46.00	-22.29	AVG	
11		19.5508	29.00	10.58	39.58	60.00	-20.42	QP	
12		19.5508	22.11	10.58	32.69	50.00	-17.31	AVG	



## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 RADIATED EMISSION LIMITS (Frequency Range 9KHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Section 15.33 Frequency range of radiated measurements.

Unless otherwise noted in the specific rule section under which the equipment operates for an intentional radiator the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in this paragraph:

- (1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
- (2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
- (3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules
- (4) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a)(1)-(a)(3) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this Section, whichever is the higher frequency range of investigation.

**4.2.2 MEASUREMENT INSTRUMENTS LIST AND SETTING**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Apr. 25, 2014
2	Amplifier	HP	8447D	2944A09673	Apr. 25, 2014
3	Test Receiver	R&S	ESCI	100382	Apr. 25, 2014
4	Test Cable	N/A	C-01_CB03	N/A	Jul. 02, 2014
5	Antenna	ETS	3115	00075789	Apr. 25, 2014
6	Amplifier	Agilent	8449B	3008A02274	Apr. 25, 2014
7	Spectrum	Agilent	E4408B	US39240143	Nov. 16, 2013
8	Test Cable	HUBER+SUHNE R	C-45	N/A	Apr. 30, 2014
9	Controller	CT	SC100	N/A	N/A
10	Horn Antenna	EMCO	3115	9605-4803	Apr. 25, 2014
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Apr. 25, 2014
12	Broad-Band Horn Antenna	Schwarbeck	BBHA 9170	9170319	Oct.23, 2013

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

The test was performed in DG-CB03.

<b>Spectrum Parameter</b>	<b>Setting</b>
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average

<b>Receiver Parameter</b>	<b>Setting</b>
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz for PK/AVG detector
Start ~ Stop Frequency	90kHz~110kHz for QP detector
Start ~ Stop Frequency	110kHz~490kHz for PK/AVG detector
Start ~ Stop Frequency	490kHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector



#### **4.2.3 TEST PROCEDURE**

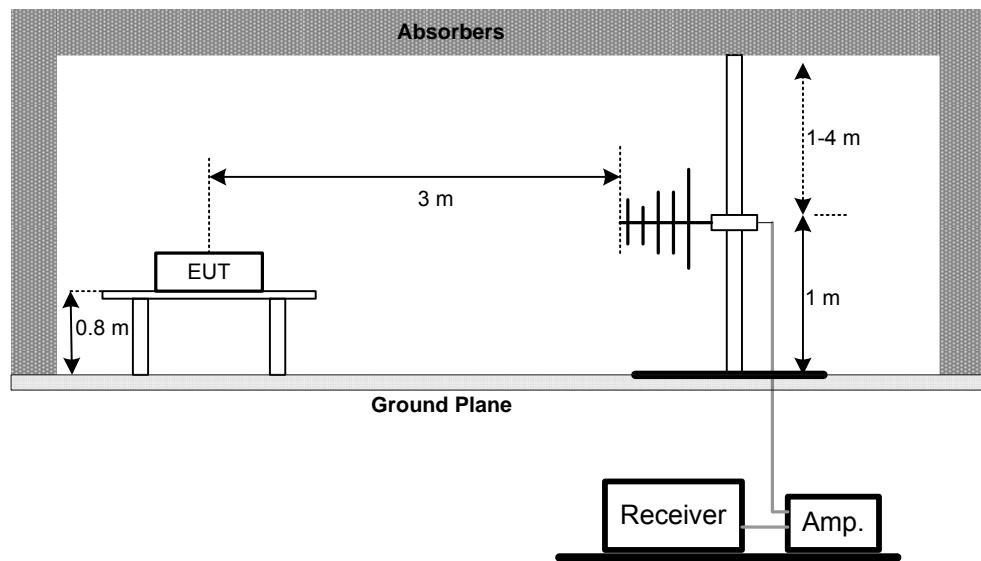
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### **4.2.4 DEVIATION FROM TEST STANDARD**

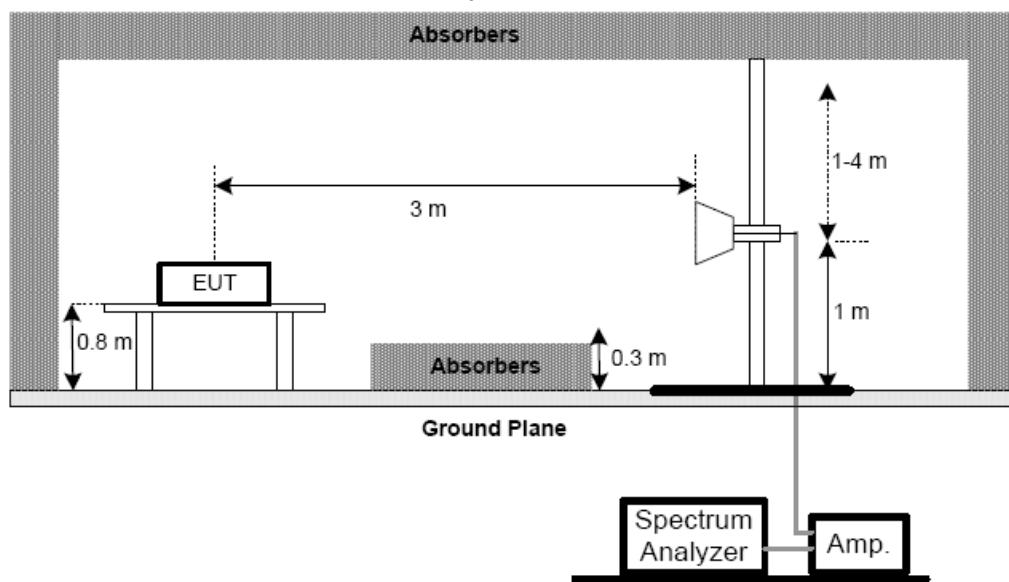
No deviation

#### 4.2.5 TEST SETUP

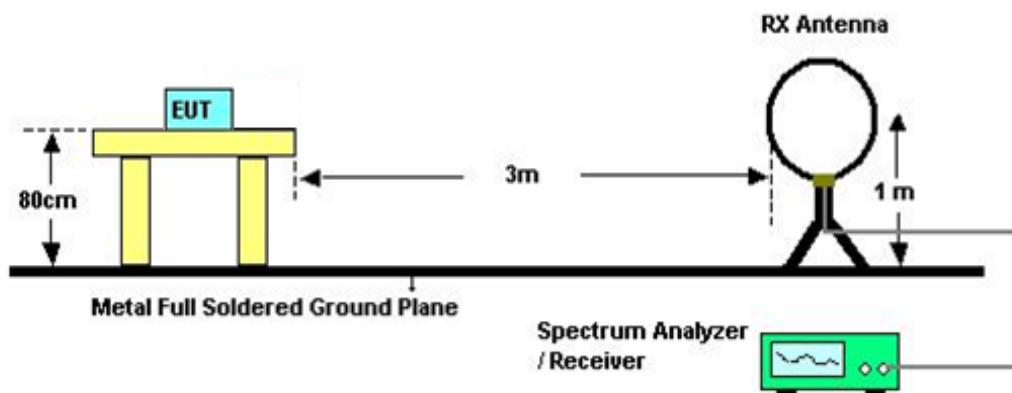
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



(C) For radiated emissions below 30MHz



#### 4.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.



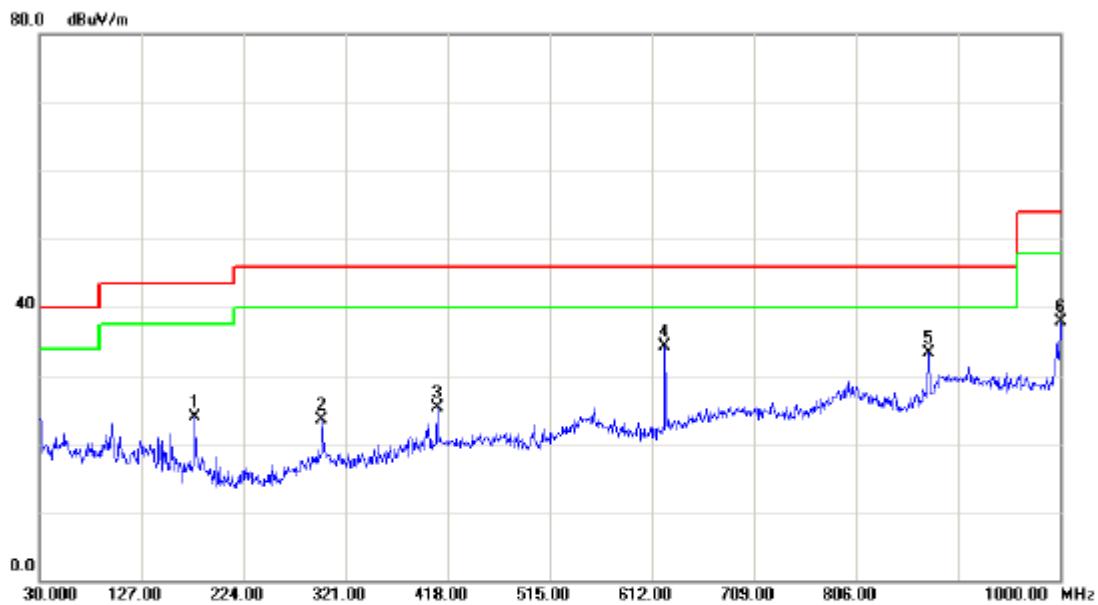
#### **4.2.7 TEST RESULTS-BETWEEN 30MHZ AND 1000MHZ**

Remark:

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (3) Measuring frequency range from 30MHz to 1000MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.



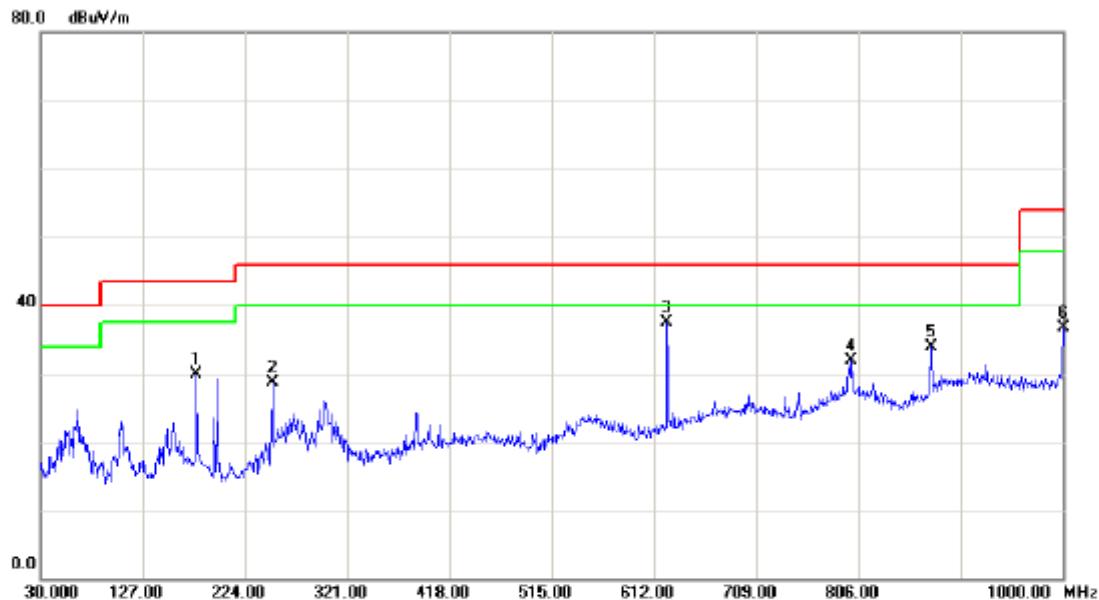
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2402MHz -CH00 -1Mbps / Adapter: PA-1600-2A-LF		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Comment
			Level	Factor	ment			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		178.4100	37.19	-13.25	23.94	43.50	-19.56	peak
2		298.6900	34.57	-11.05	23.52	46.00	-22.48	peak
3		408.3000	34.98	-9.60	25.38	46.00	-20.62	peak
4	*	624.6100	41.42	-7.06	34.36	46.00	-11.64	peak
5		874.8700	35.10	-1.78	33.32	46.00	-12.68	peak
6		1000.0000	38.46	-0.54	37.92	54.00	-16.08	peak



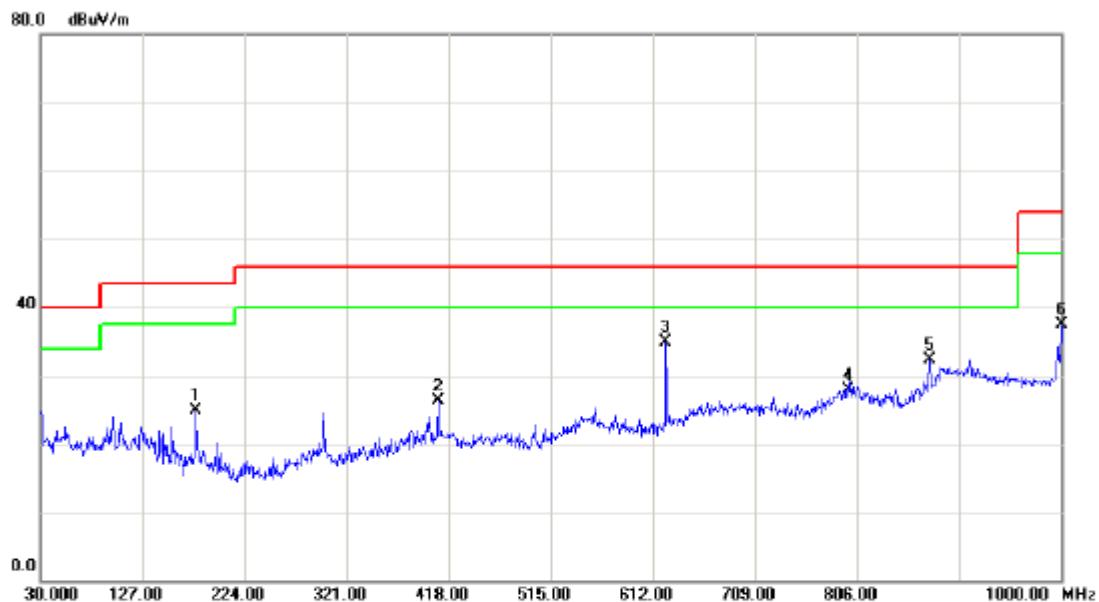
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2402MHz -CH00 -1Mbps / Adapter: PA-1600-2A-LF		



No. Mk.	Freq. MHz	Reading Level	Correct Factor	Measure- ment	Limit	Over	Comment
		dBuV	dB	dBuV/m	dB	Detector	
1	178.4100	43.23	-13.25	29.98	43.50	-13.52	peak
2	250.1900	43.62	-14.87	28.75	46.00	-17.25	peak
3 *	624.6100	44.63	-7.06	37.57	46.00	-8.43	peak
4	799.2100	33.50	-1.67	31.83	46.00	-14.17	peak
5	874.8700	35.74	-1.78	33.96	46.00	-12.04	peak
6	1000.000	37.34	-0.54	36.80	54.00	-17.20	peak



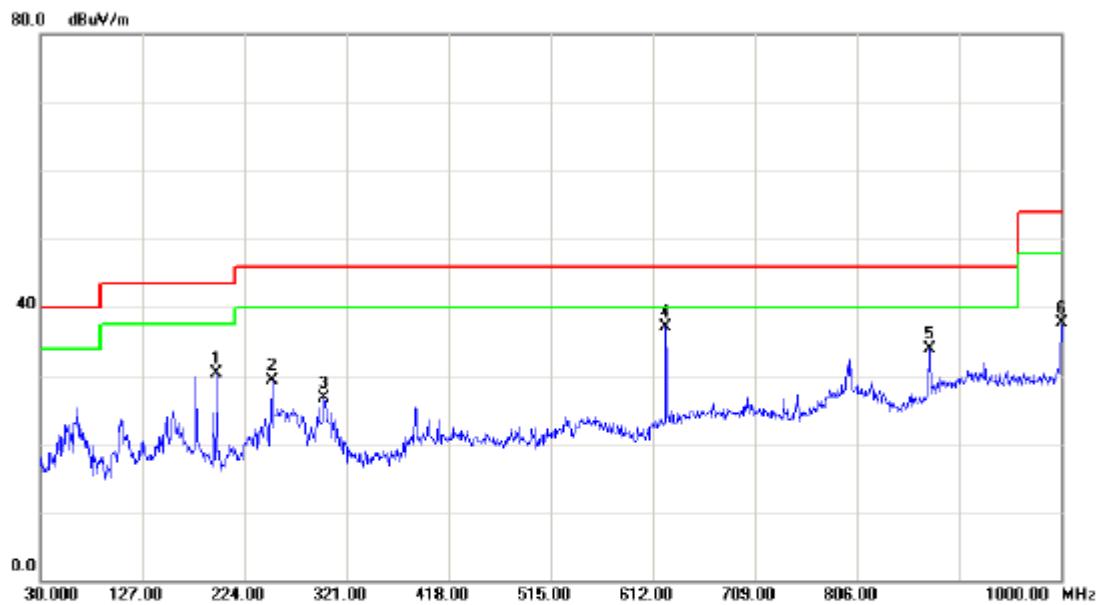
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2440MHz -CH19 -1Mbps / Adapter: PA-1600-2A-LF		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		178.4100	38.19	-13.25	24.94	43.50	-18.56	peak	
2		408.3000	35.98	-9.60	26.38	46.00	-19.62	peak	
3	*	624.6100	41.92	-7.06	34.86	46.00	-11.14	peak	
4		797.2700	29.81	-1.81	28.00	46.00	-18.00	peak	
5		874.8700	34.10	-1.78	32.32	46.00	-13.68	peak	
6		1000.0000	37.96	-0.54	37.42	54.00	-16.58	peak	



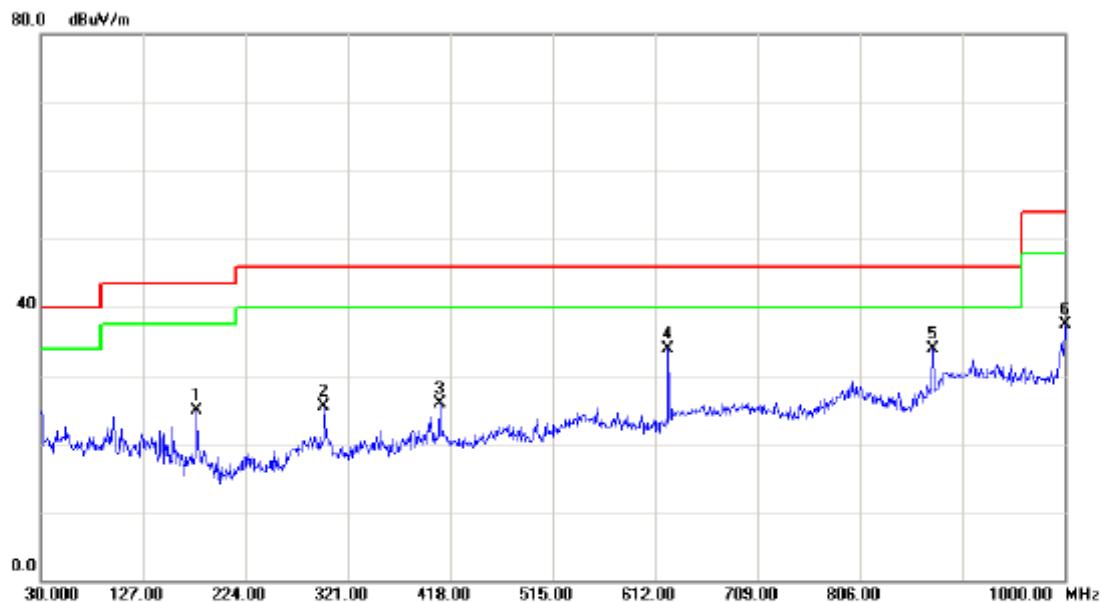
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2440MHz -CH19 -1Mbps / Adapter: PA-1600-2A-LF		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		197.8100	45.71	-15.38	30.33	43.50	-13.17	peak	
2		250.1900	44.12	-14.87	29.25	46.00	-16.75	peak	
3		299.6600	37.62	-10.97	26.65	46.00	-19.35	peak	
4	*	624.6100	44.14	-7.06	37.08	46.00	-8.92	peak	
5		874.8700	35.74	-1.78	33.96	46.00	-12.04	peak	
6		1000.0000	38.34	-0.54	37.80	54.00	-16.20	peak	



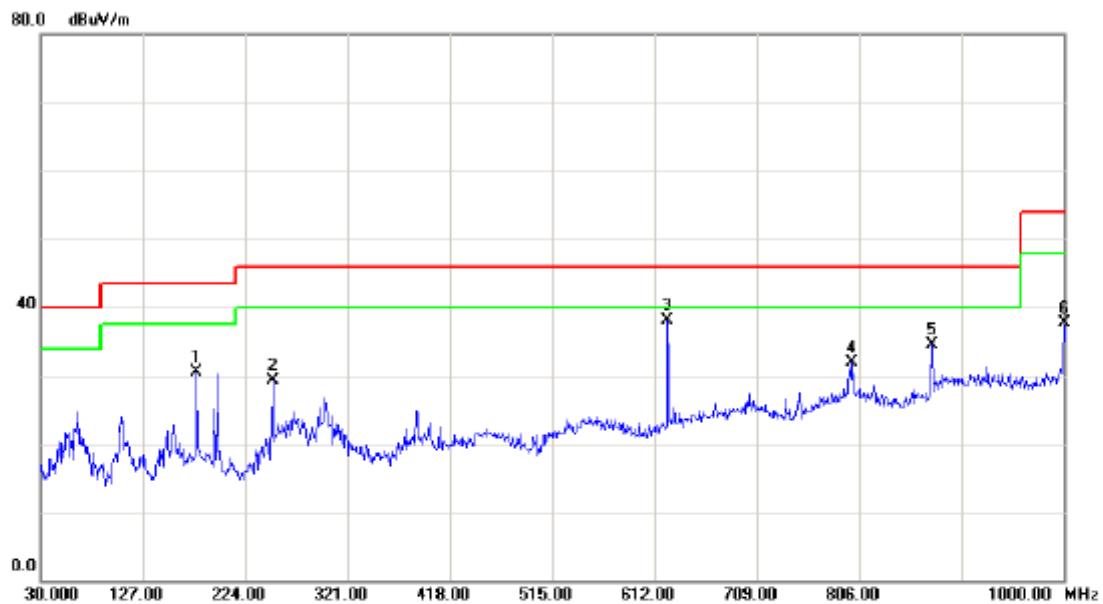
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2480MHz -CH39 -1Mbps / Adapter: PA-1600-2A-LF		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		178.4100	38.19	-13.25	24.94	43.50	-18.56	peak	
2		298.6900	36.57	-11.05	25.52	46.00	-20.48	peak	
3		408.3000	35.48	-9.60	25.88	46.00	-20.12	peak	
4	*	624.6100	40.92	-7.06	33.86	46.00	-12.14	peak	
5		874.8700	35.60	-1.78	33.82	46.00	-12.18	peak	
6		1000.000	37.96	-0.54	37.42	54.00	-16.58	peak	



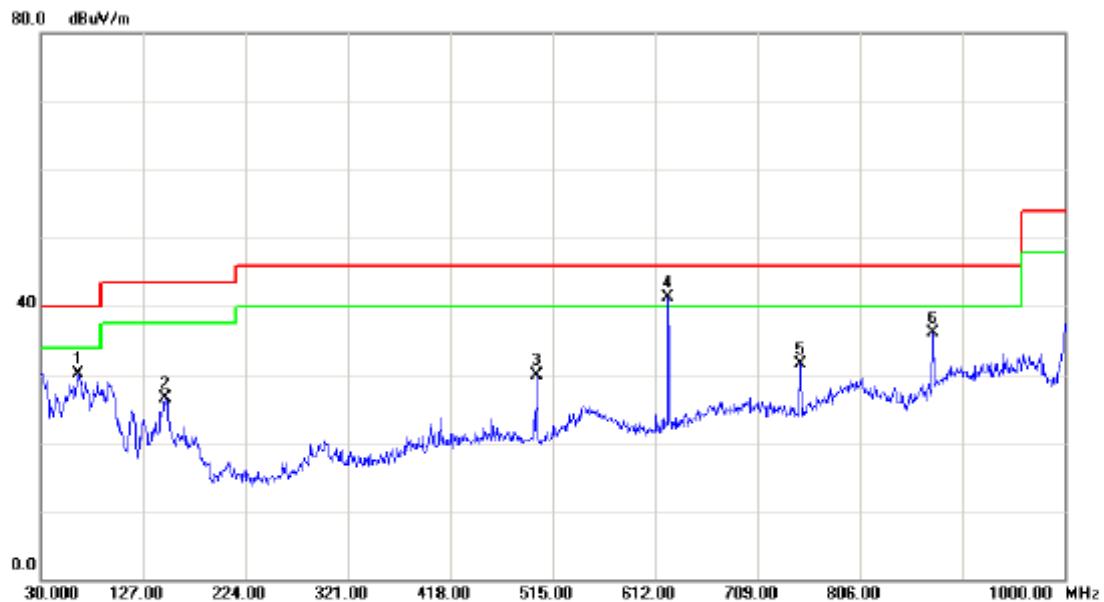
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2480MHz -CH39 -1Mbps / Adapter: PA-1600-2A-LF		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level			m	dB	dB	
1		178.4100	43.73	-13.25	30.48	43.50	-13.02	peak	
2		250.1900	44.12	-14.87	29.25	46.00	-16.75	peak	
3	*	624.6100	45.14	-7.06	38.08	46.00	-7.92	peak	
4		799.2100	33.50	-1.67	31.83	46.00	-14.17	peak	
5		874.8700	36.24	-1.78	34.46	46.00	-11.54	peak	
6		1000.000	38.34	-0.54	37.80	54.00	-16.20	peak	



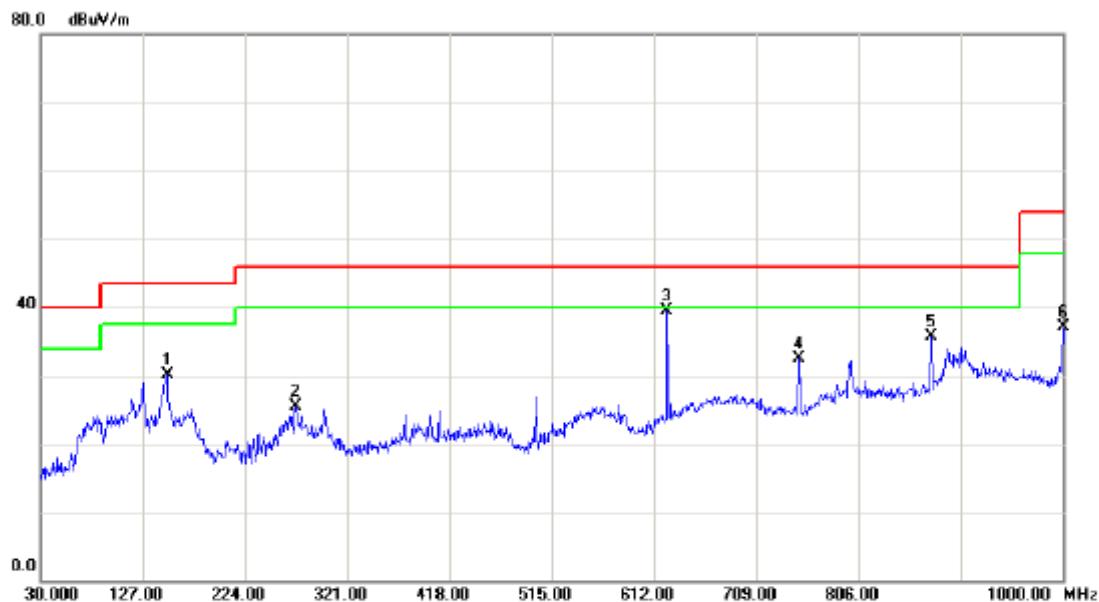
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2402MHz -CH00 -1Mbps / Adapter: EADP-60MB B		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		65.8900	45.42	-15.25	30.17	40.00	-9.83	peak	
2		148.3400	40.29	-13.71	26.58	43.50	-16.92	peak	
3		500.4500	40.42	-10.50	29.92	46.00	-16.08	peak	
4	*	624.6100	48.41	-7.06	41.35	46.00	-4.65	peak	
5		749.7400	36.86	-5.30	31.56	46.00	-14.44	peak	
6		874.8700	37.81	-1.78	36.03	46.00	-9.97	peak	



EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2402MHz -CH00 -1Mbps / Adapter: EADP-60MB B		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		150.2800	43.61	-13.51	30.10	43.50	-13.40	peak	
2		272.5000	39.19	-13.70	25.49	46.00	-20.51	peak	
3	*	624.6100	46.47	-7.06	39.41	46.00	-6.59	peak	
4		749.7400	37.89	-5.30	32.59	46.00	-13.41	peak	
5		874.8700	37.47	-1.78	35.69	46.00	-10.31	peak	
6		1000.0000	37.73	-0.54	37.19	54.00	-16.81	peak	



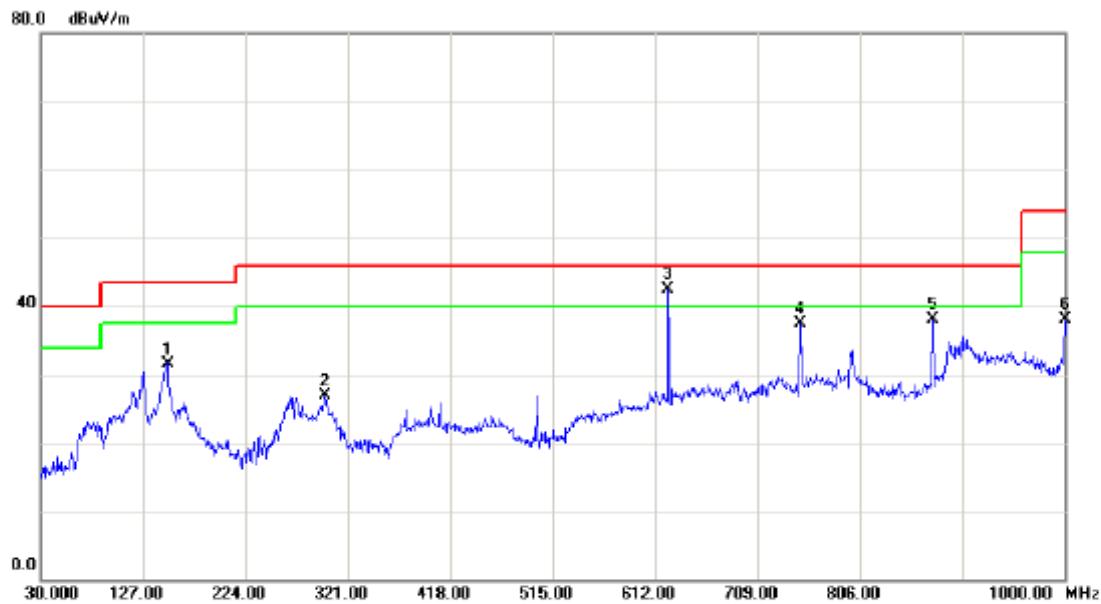
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2440MHz -CH19 -1Mbps / Adapter: EADP-60MB B		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		30.9700	44.70	-15.01	29.69	40.00	-10.31	peak	
2		500.4500	40.42	-10.50	29.92	46.00	-16.08	peak	
3	*	624.6100	49.41	-7.06	42.35	46.00	-3.65	peak	
4		749.7400	37.86	-5.30	32.56	46.00	-13.44	peak	
5		874.8700	37.81	-1.78	36.03	46.00	-9.97	peak	
6		1000.000	38.20	-0.54	37.66	54.00	-16.34	peak	



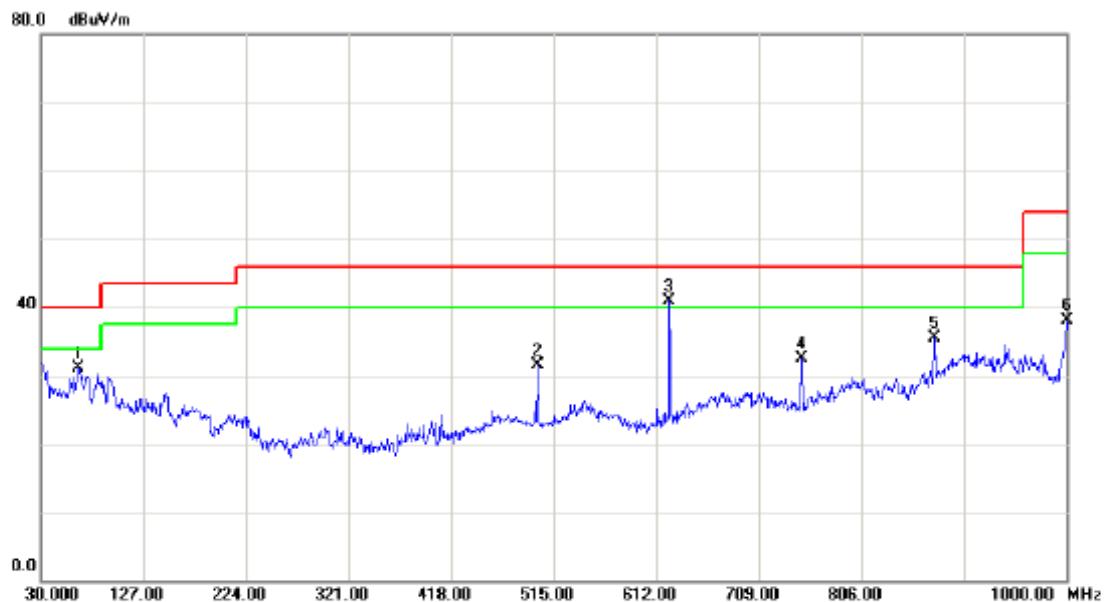
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2440MHz -CH19 -1Mbps / Adapter: EADP-60MB B		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Comment
			Level	Factor	ment			
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		150.2800	45.11	-13.51	31.60	43.50	-11.90	peak
2		299.6600	37.97	-10.97	27.00	46.00	-19.00	peak
3	*	624.6100	49.47	-7.06	42.41	46.00	-3.59	peak
4		749.7400	42.89	-5.30	37.59	46.00	-8.41	peak
5		874.8700	39.97	-1.78	38.19	46.00	-7.81	peak
6		1000.000	38.73	-0.54	38.19	54.00	-15.81	peak



EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2480MHz -CH39 -1Mbps / Adapter: EADP-60MB B		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Comment
			Level	Factor	ment			
1		65.8900 MHz	46.42 dBuV	-15.25 dB	31.17 dBuV/m	40.00 dB	-8.83	peak
2		500.4500 MHz	41.92 dBuV	-10.50 dB	31.42 dBuV/m	46.00 dB	-14.58	peak
3	*	624.6100 MHz	47.91 dBuV	-7.06 dB	40.85 dBuV/m	46.00 dB	-5.15	peak
4		749.7400 MHz	37.86 dBuV	-5.30 dB	32.56 dBuV/m	46.00 dB	-13.44	peak
5		874.8700 MHz	37.31 dBuV	-1.78 dB	35.53 dBuV/m	46.00 dB	-10.47	peak
6		1000.0000 MHz	38.70 dBuV	-0.54 dB	38.16 dBuV/m	54.00 dB	-15.84	peak



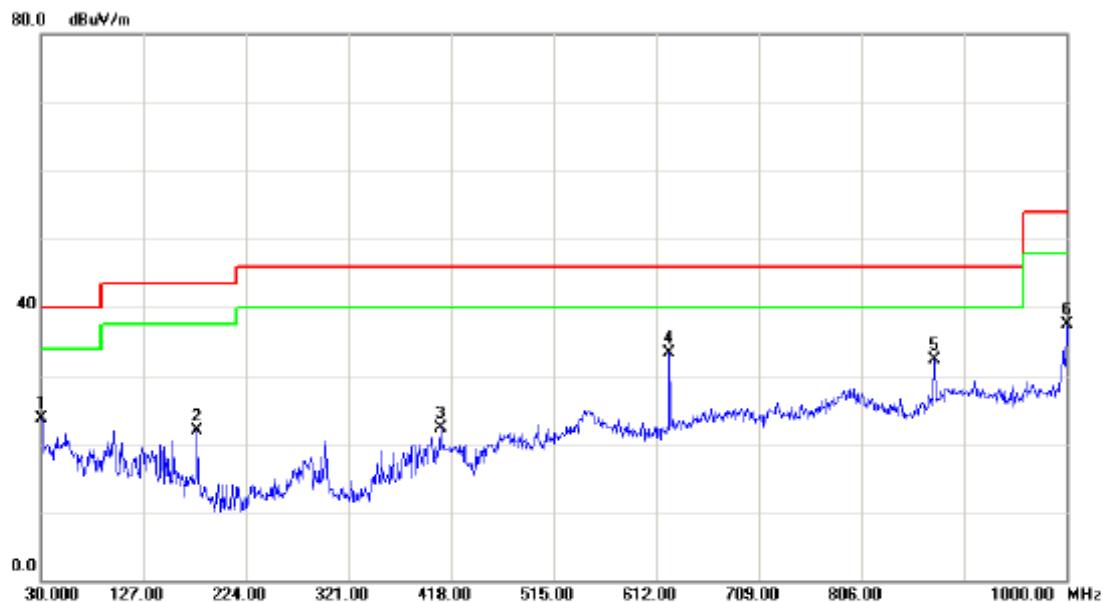
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2480MHz -CH39 -1Mbps / Adapter: EADP-60MB B		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		148.3400	44.38	-13.71	30.67	43.50	-12.83	peak	
2		272.5000	42.69	-13.70	28.99	46.00	-17.01	peak	
3	*	624.6100	47.97	-7.06	40.91	46.00	-5.09	peak	
4		749.7400	39.39	-5.30	34.09	46.00	-11.91	peak	
5		798.2400	33.80	-1.73	32.07	46.00	-13.93	peak	
6		874.8700	39.47	-1.78	37.69	46.00	-8.31	peak	



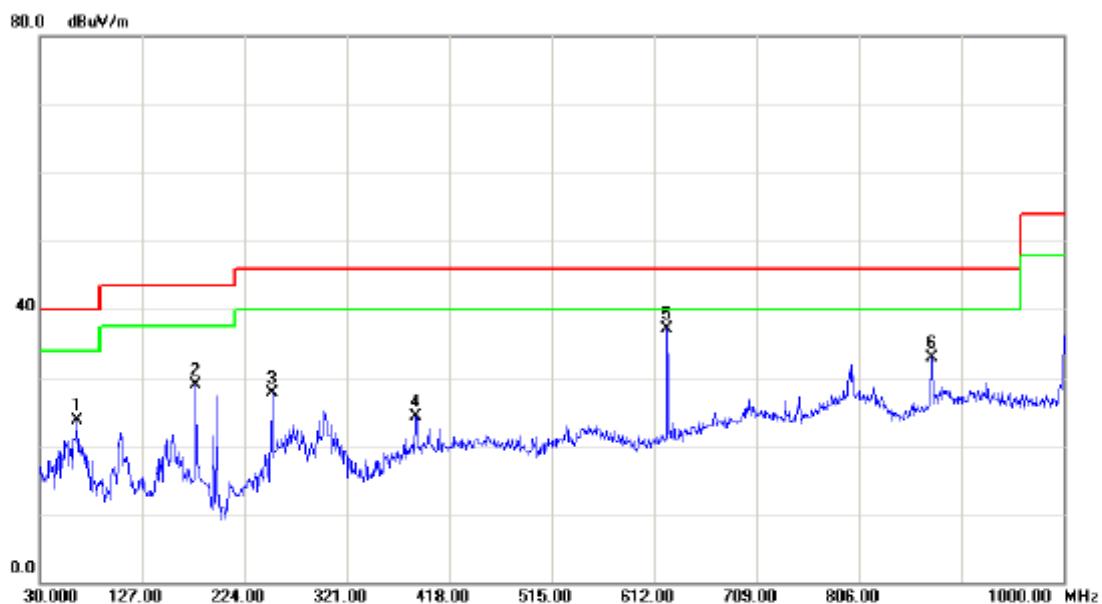
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2402MHz -CH00 -1Mbps / POE		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		30.9700	38.66	-15.01	23.65	40.00	-16.35	peak	
2		178.4100	35.19	-13.25	21.94	43.50	-21.56	peak	
3		408.3000	31.98	-9.60	22.38	46.00	-23.62	peak	
4	*	624.6100	40.42	-7.06	33.36	46.00	-12.64	peak	
5		874.8700	34.10	-1.78	32.32	46.00	-13.68	peak	
6		1000.000	37.96	-0.54	37.42	54.00	-16.58	peak	



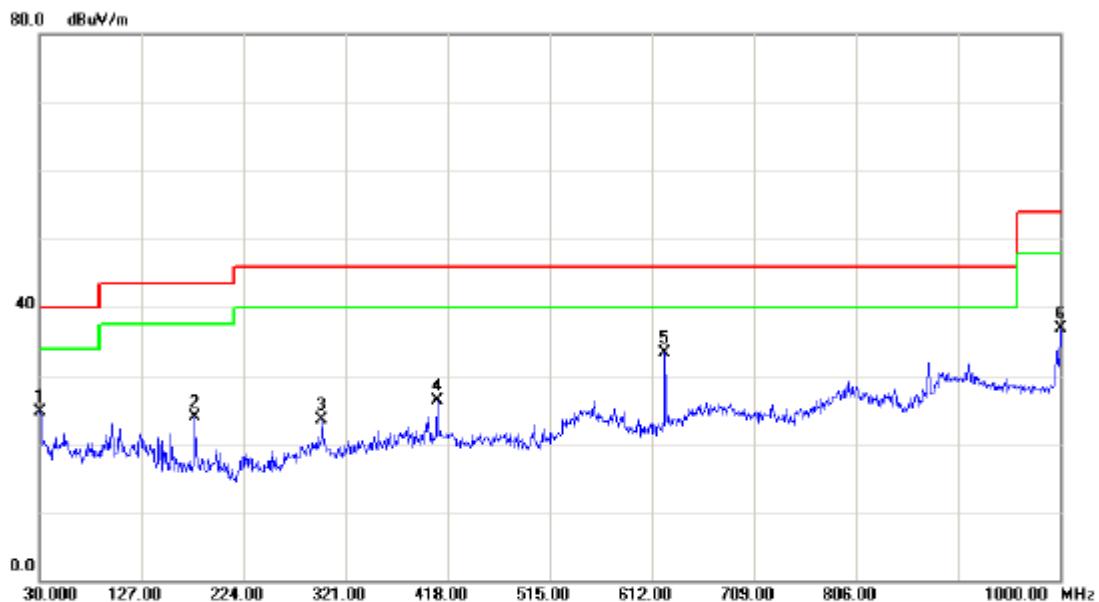
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2402MHz -CH00 -1Mbps / POE		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		64.9200	38.85	-15.13	23.72	40.00	-16.28	peak	
2		178.4100	42.23	-13.25	28.98	43.50	-14.52	peak	
3		250.1900	42.62	-14.87	27.75	46.00	-18.25	peak	
4		385.9900	34.54	-10.23	24.31	46.00	-21.69	peak	
5	*	624.6100	44.14	-7.06	37.08	46.00	-8.92	peak	
6		874.8700	34.74	-1.78	32.96	46.00	-13.04	peak	



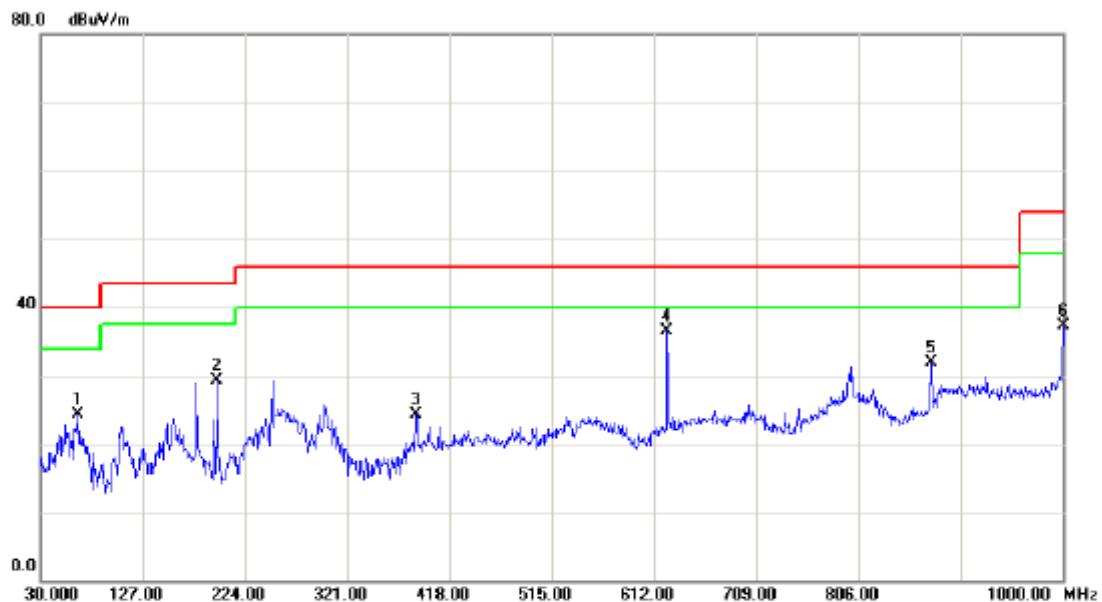
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2440MHz -CH19 -1Mbps / POE		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		30.9700	39.66	-15.01	24.65	40.00	-15.35	peak	
2		178.4100	37.19	-13.25	23.94	43.50	-19.56	peak	
3		298.6900	34.57	-11.05	23.52	46.00	-22.48	peak	
4		408.3000	35.98	-9.60	26.38	46.00	-19.62	peak	
5	*	624.6100	40.42	-7.06	33.36	46.00	-12.64	peak	
6		1000.000	37.46	-0.54	36.92	54.00	-17.08	peak	



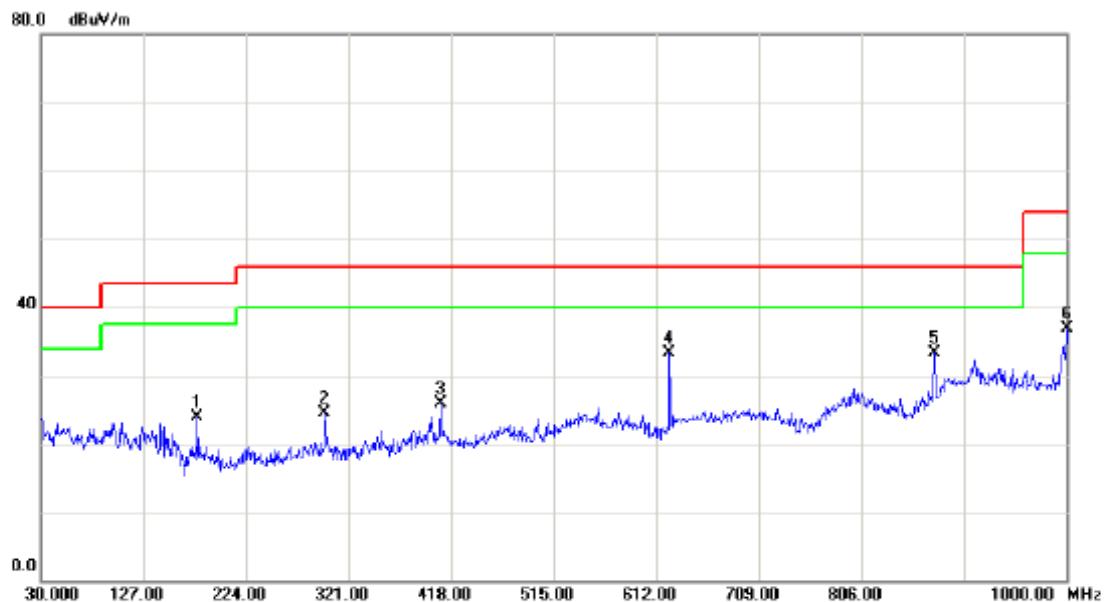
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2440MHz -CH19 -1Mbps / POE		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		64.9200	39.35	-15.13	24.22	40.00	-15.78	peak	
2		197.8100	44.71	-15.38	29.33	43.50	-14.17	peak	
3		385.9900	34.54	-10.23	24.31	46.00	-21.69	peak	
4	*	624.6100	43.64	-7.06	36.58	46.00	-9.42	peak	
5		874.8700	33.74	-1.78	31.96	46.00	-14.04	peak	
6		1000.000	37.84	-0.54	37.30	54.00	-16.70	peak	



EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2480MHz -CH39 -1Mbps / POE		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		178.4100	37.19	-13.25	23.94	43.50	-19.56	peak	
2		298.6900	35.57	-11.05	24.52	46.00	-21.48	peak	
3		408.3000	35.48	-9.60	25.88	46.00	-20.12	peak	
4	*	624.6100	40.42	-7.06	33.36	46.00	-12.64	peak	
5		874.8700	35.10	-1.78	33.32	46.00	-12.68	peak	
6		1000.000	37.46	-0.54	36.92	54.00	-17.08	peak	



EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 °C	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2480MHz -CH39 -1Mbps / POE		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		64.9200	37.85	-15.13	22.72	40.00	-17.28	peak	
2		178.4100	42.73	-13.25	29.48	43.50	-14.02	peak	
3		299.6600	36.62	-10.97	25.65	46.00	-20.35	peak	
4	*	624.6100	44.64	-7.06	37.58	46.00	-8.42	peak	
5		874.8700	35.24	-1.78	33.46	46.00	-12.54	peak	
6		1000.000	37.34	-0.54	36.80	54.00	-17.20	peak	

**4.2.8 TEST RESULTS (ABOVE 1000 MHZ)**

EUT:	Cisco Edge 340	Model Name :	CS-E340W
Temperature:	23 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX 2402MHz -CH00 -1Mbps		

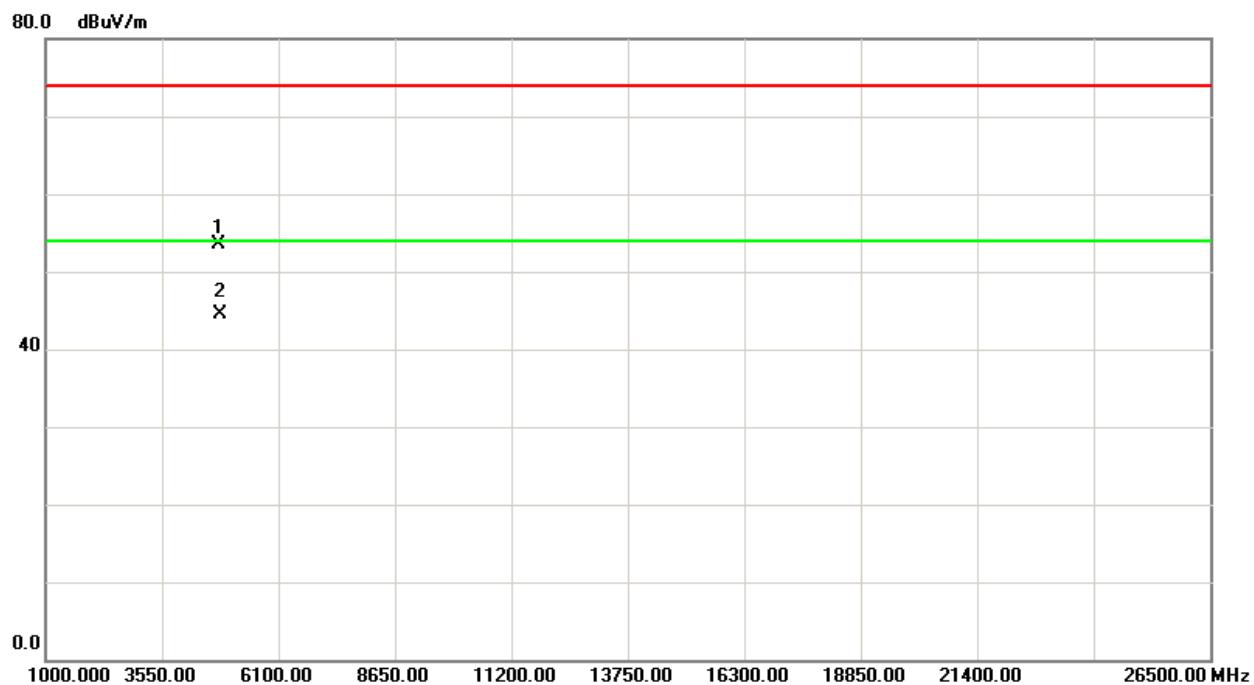
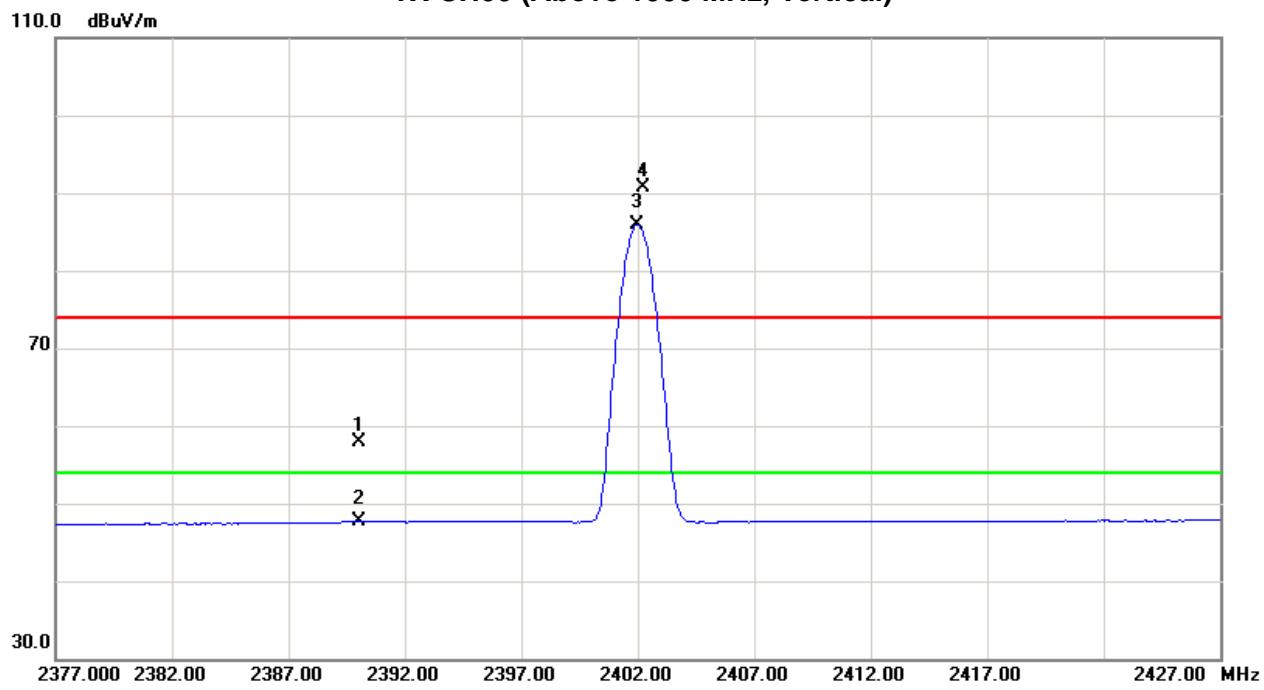
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	V	23.75	13.62	34.09	57.84	47.71	74.00	54.00	X/E
<b>2402.25</b>	<b>V</b>	<b>56.50</b>	<b>51.79</b>	<b>34.12</b>	<b>90.62</b>	<b>85.91</b>			<b>X/F</b>
4804.36	V	47.06	38.14	6.38	53.44	44.52	74.00	54.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform 。
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



**TX CH00 (Above 1000 MHz, Vertical)**



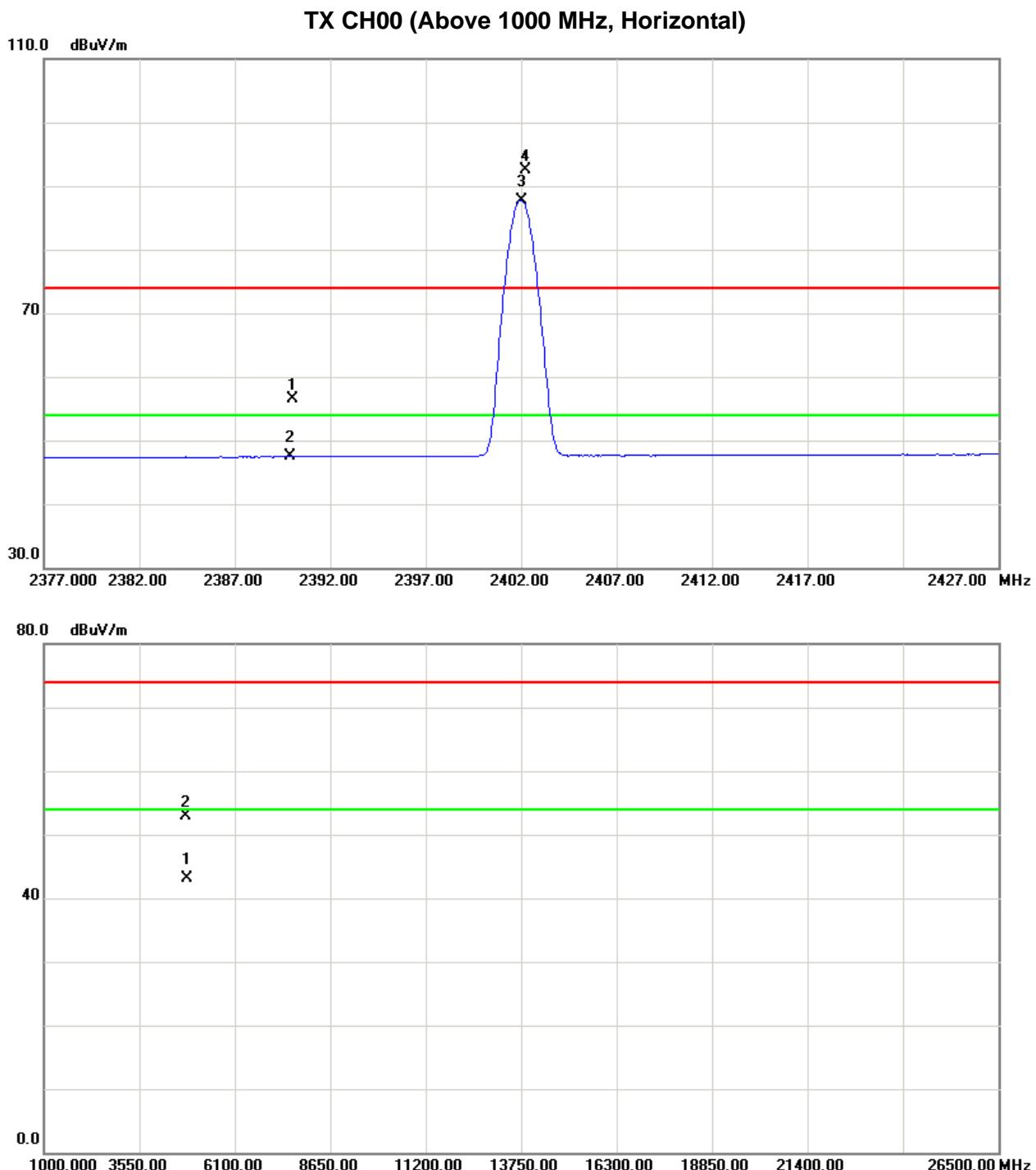


EUT:	Cisco Edge 340		Model Name :	CS-E340W	
Temperature:	23 °C		Relative Humidity:	51 %	
Pressure:	1010 hPa		Test Voltage :	AC 120V/60Hz	
Test Mode :	TX 2402MHz -CH00 -1Mbps				

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	22.38	13.34	34.09	56.47	47.43	74.00	54.00	X/E
<b>2402.25</b>	<b>H</b>	<b>58.35</b>	<b>53.65</b>	<b>34.12</b>	<b>92.47</b>	<b>87.77</b>			<b>X/F</b>
4804.25	H	46.62	36.76	6.38	53.00	43.14	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission.
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna





EUT:	Cisco Edge 340		Model Name :	CS-E340W	
Temperature:	23 °C		Relative Humidity:	51 %	
Pressure:	1010 hPa		Test Voltage :	AC 120V/60Hz	
Test Mode :	TX 2440MHz -CH19 -1Mbps				

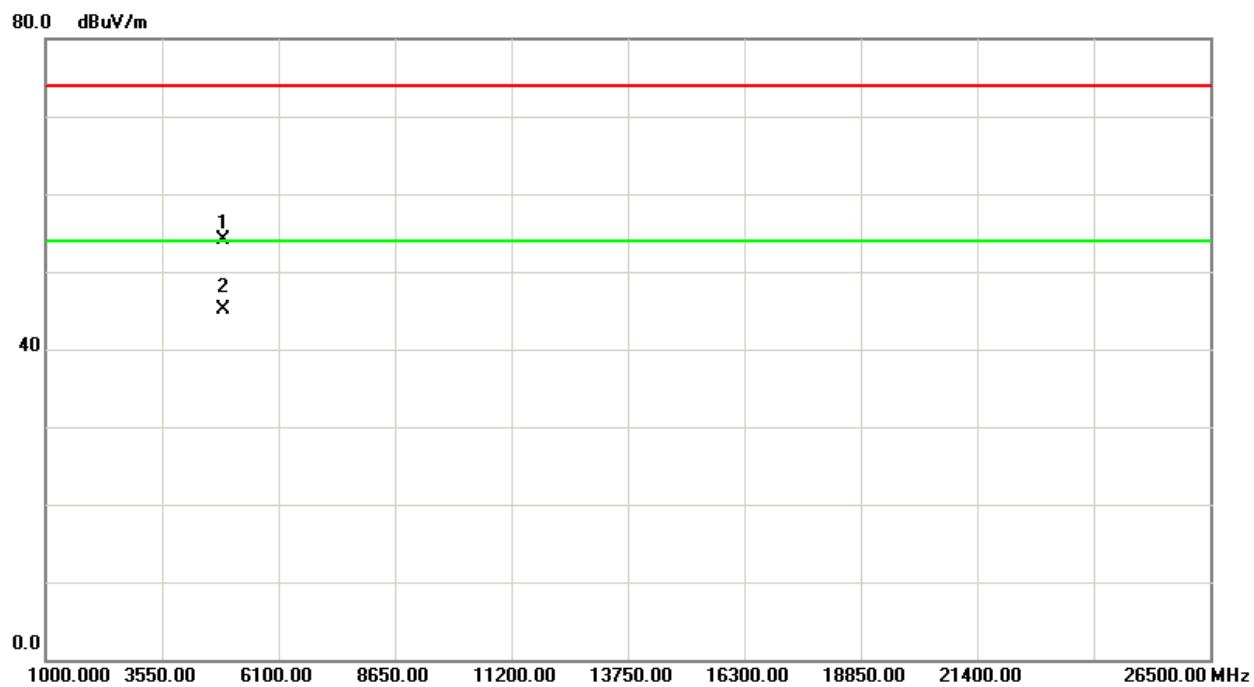
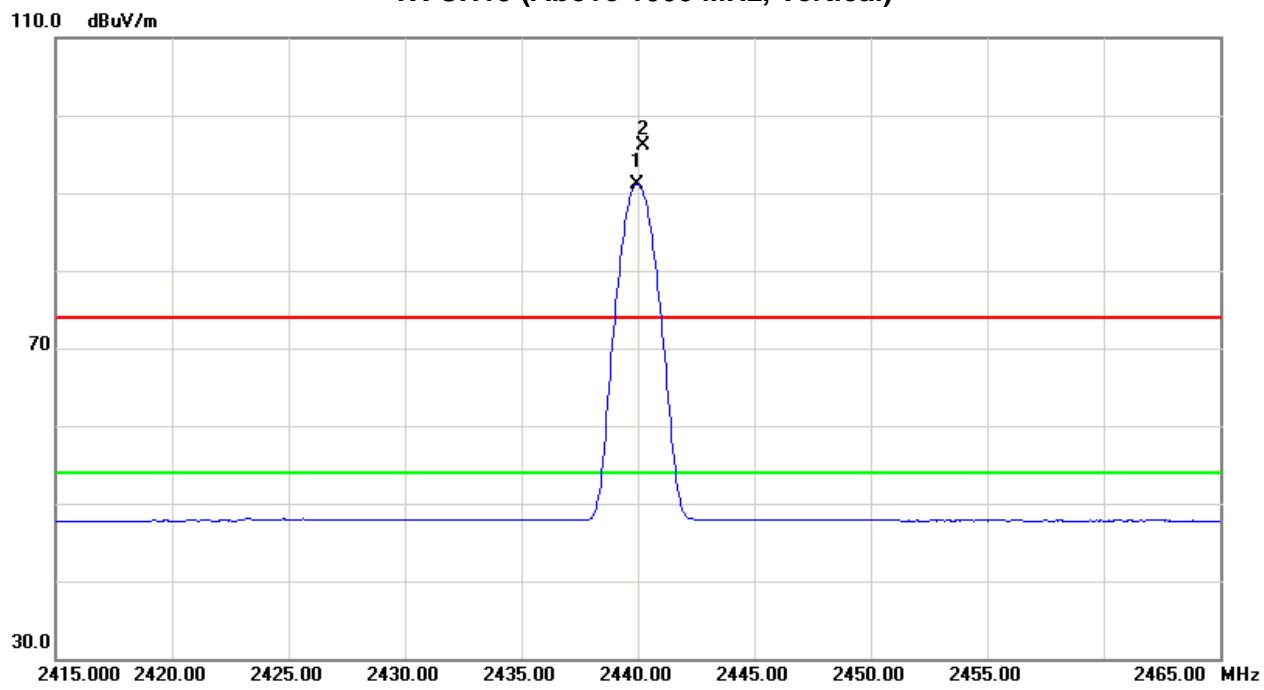
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2440.25	V	61.86	56.93	34.24	96.10	91.17			X/F
4880.25	V	47.52	38.54	6.61	54.13	45.15	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency . "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



**TX CH19 (Above 1000 MHz, Vertical)**





EUT:	Cisco Edge 340	Model Name :	CS-E340W
Temperature:	23 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX 2440MHz -CH19 -1Mbps		

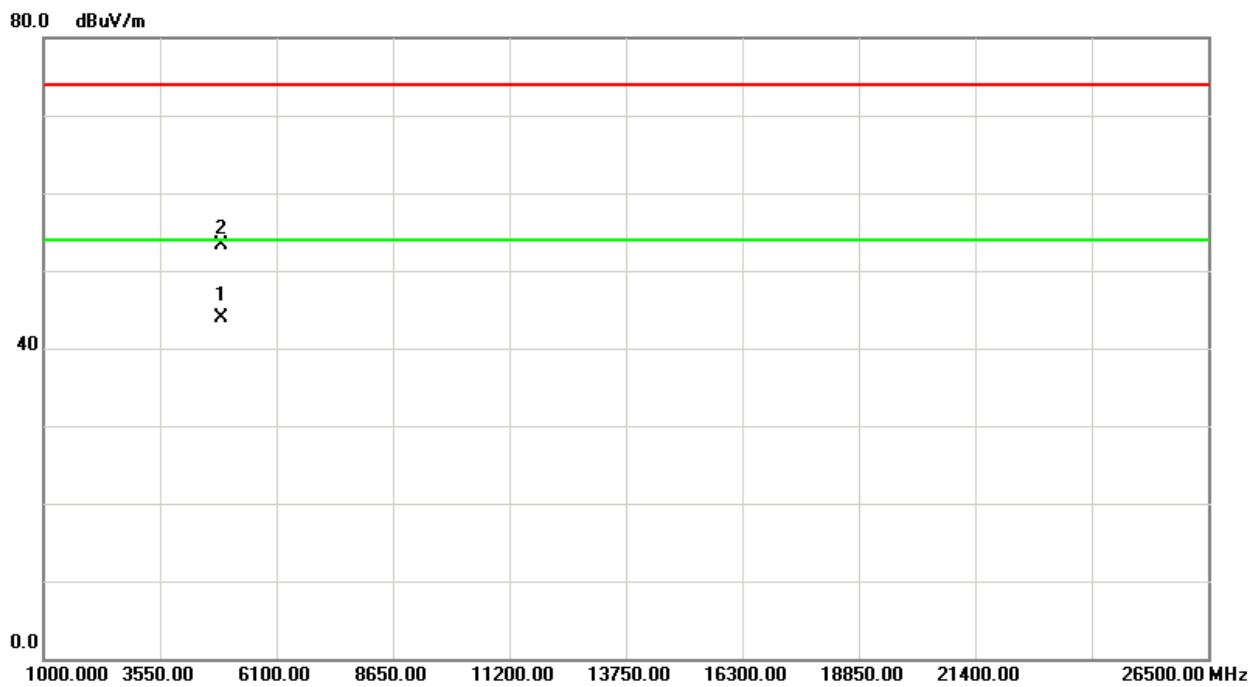
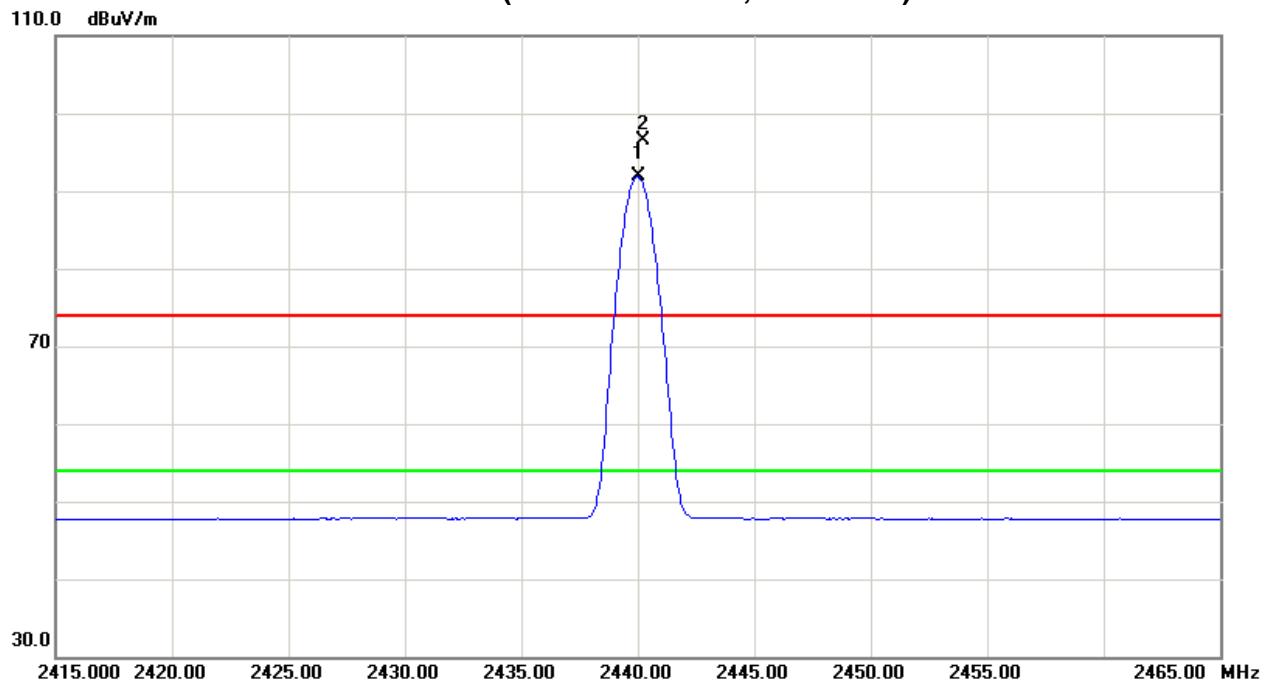
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2440.25	H	62.26	57.60	34.24	96.50	91.84			X/F
4880.76	H	46.72	37.35	6.61	53.33	43.96	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



**TX CH19 (Above 1000 MHz, Horizontal)**





EUT:	Cisco Edge 340		Model Name :	CS-E340W	
Temperature:	23 °C		Relative Humidity:	51 %	
Pressure:	1010 hPa		Test Voltage :	AC 120V/60Hz	
Test Mode :	TX 2480MHz -CH39 -1Mbps				

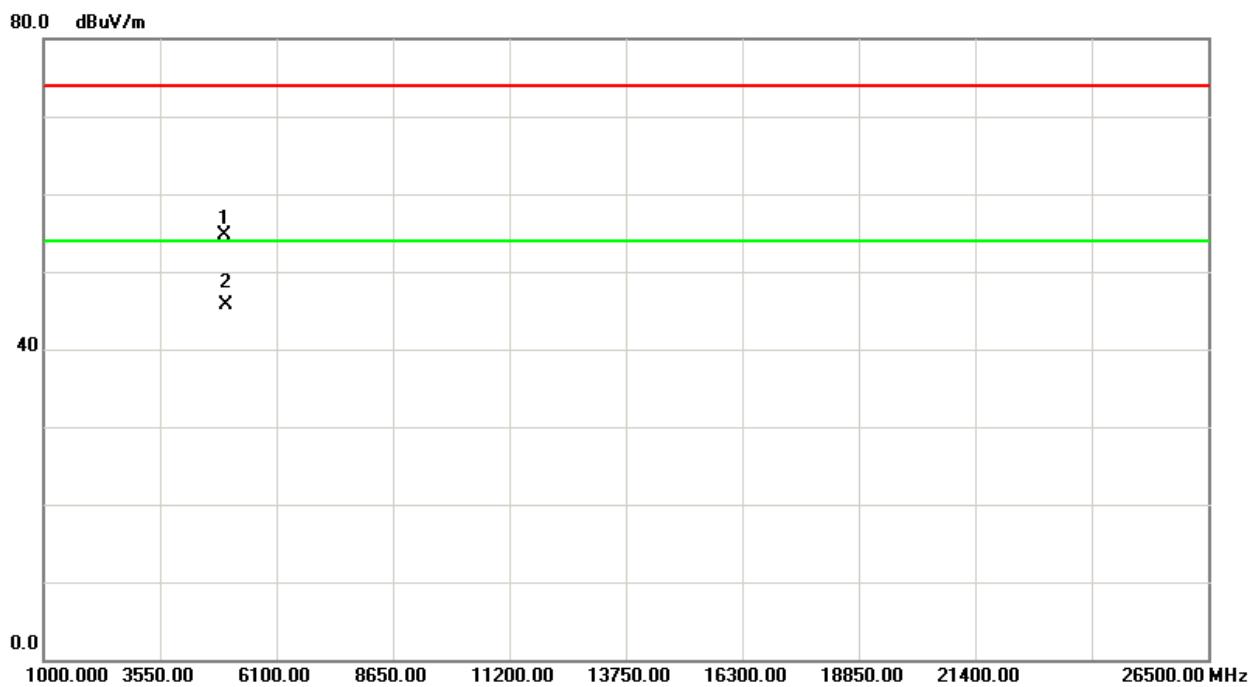
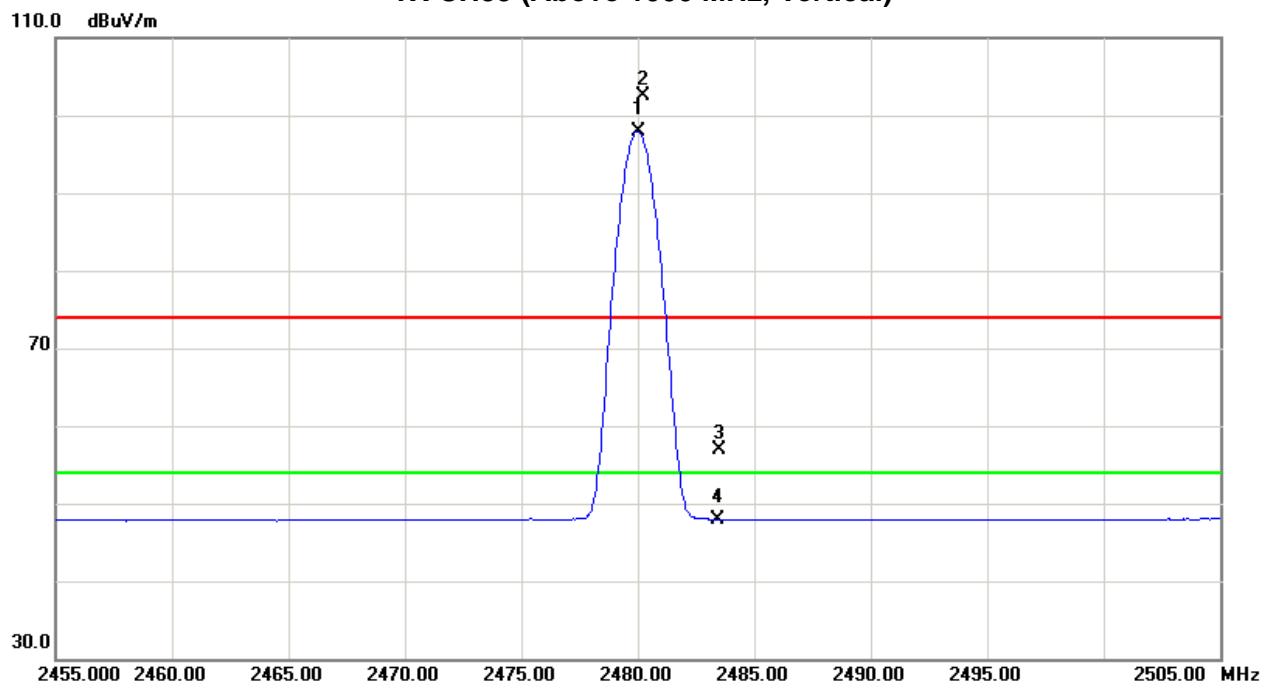
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2480.00</b>	<b>V</b>	<b>63.53</b>	<b>68.06</b>	<b>34.36</b>	<b>97.89</b>	<b>102.42</b>			<b>X/F</b>
2483.50	V	22.54	13.55	34.37	56.91	47.92	74.00	54.00	X/E
4959.46	V	47.85	38.85	6.83	54.68	45.68	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission.
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



**TX CH39 (Above 1000 MHz, Vertical)**



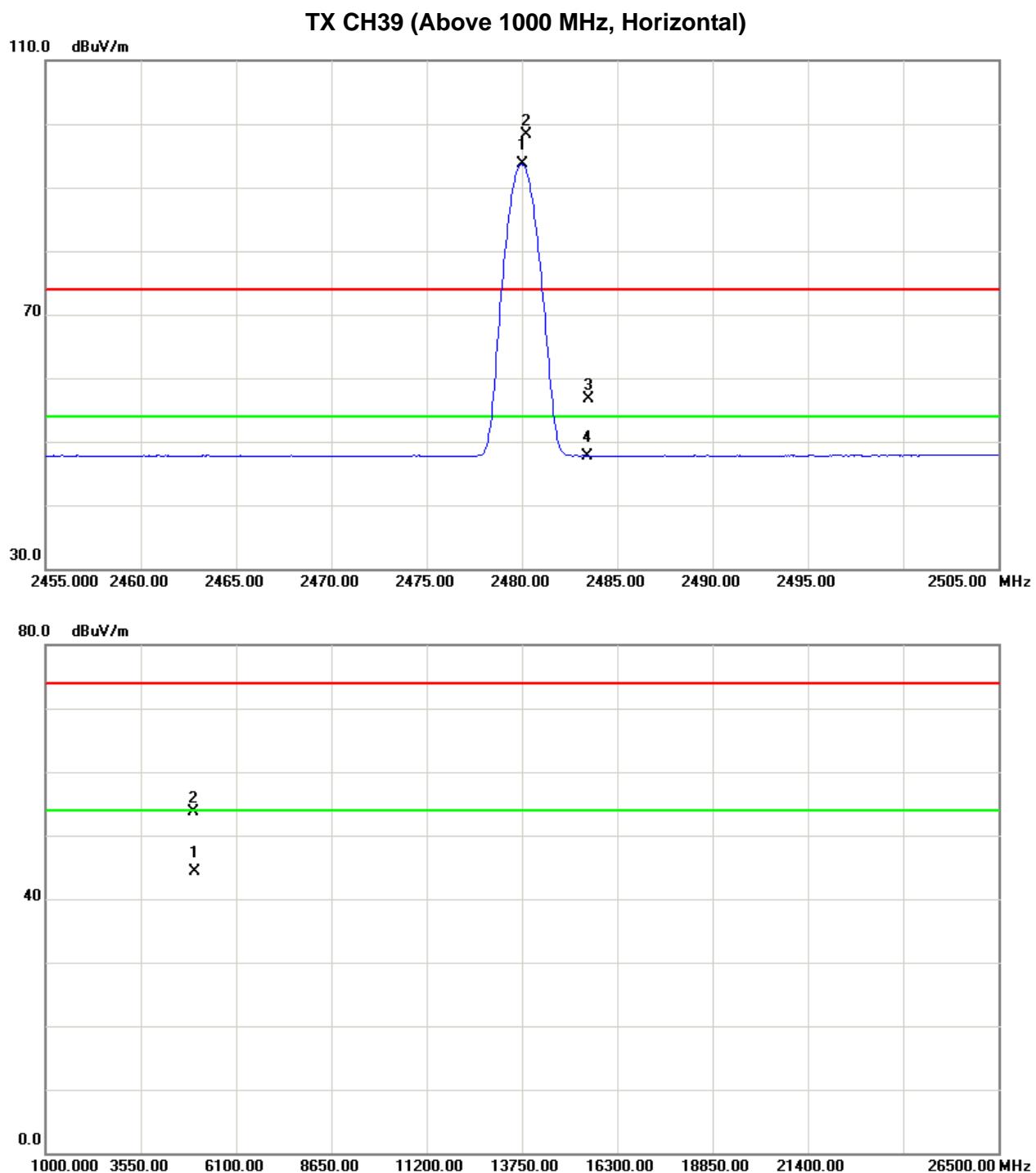


EUT:	Cisco Edge 340		Model Name :	CS-E340W	
Temperature:	23 °C		Relative Humidity:	51 %	
Pressure:	1010 hPa		Test Voltage :	AC 120V/60Hz	
Test Mode :	TX 2480MHz -CH39 -1Mbps				

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2480.25	H	63.88	59.27	34.36	98.24	93.63			X/F
2483.50	H	22.35	13.41	34.37	56.72	47.78	74.00	54.00	X/E
4960.26	H	46.84	37.39	6.83	53.67	44.22	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission.
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna





## 5. BANDWIDTH TEST

### 5.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C/ RSS-GEN and RSS-210				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2) RSS-GEN section 4.6.1 RSS-210 Annex 8 (A8.2(a))	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS

#### 5.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Until
1	Spectrum Analyzer	R&S	FSP_40	100185	Nov.16, 2013

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

#### 5.1.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms.

#### 5.1.3 DEVIATION FROM STANDARD

No deviation.

#### 5.1.4 TEST SETUP



#### 5.1.5 EUT OPERATION CONDITIONS

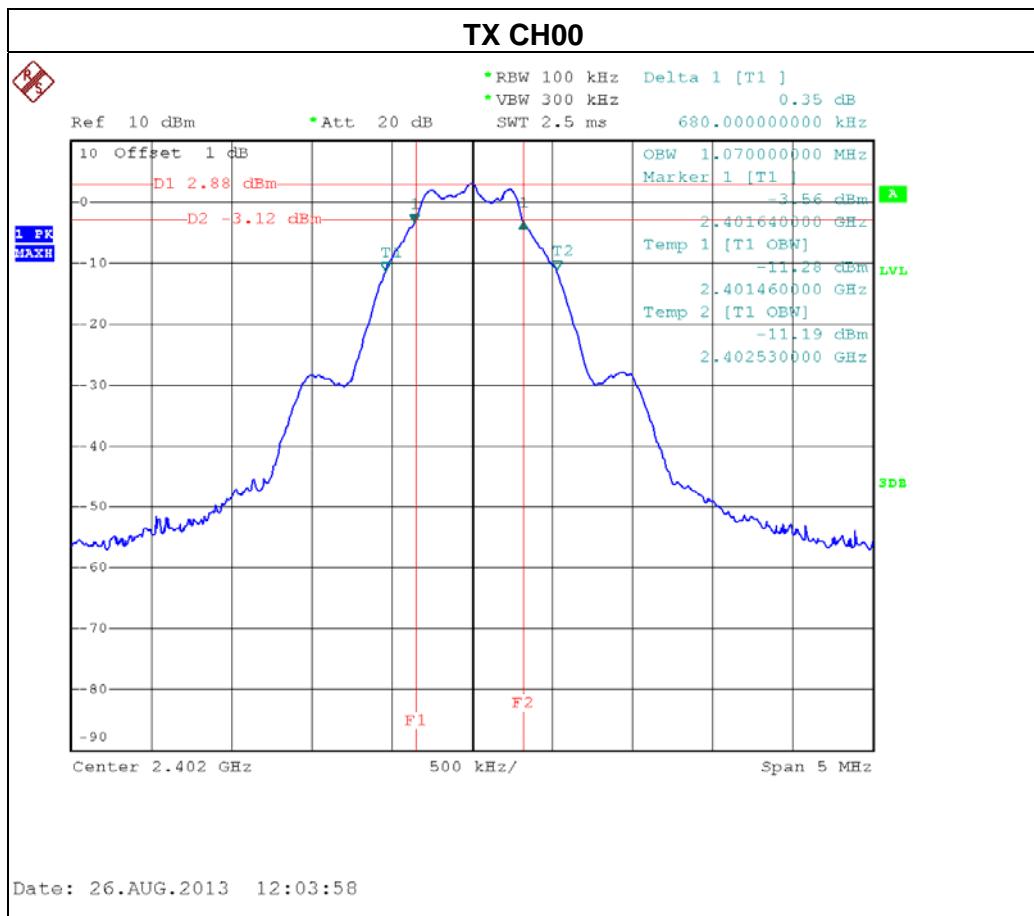
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

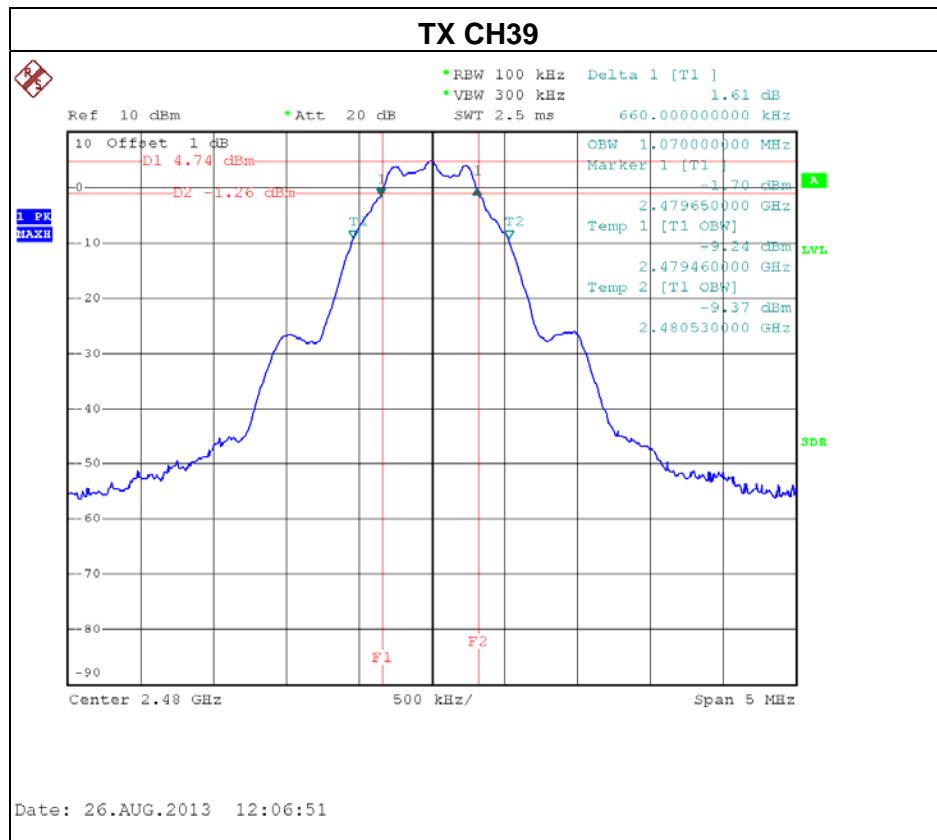
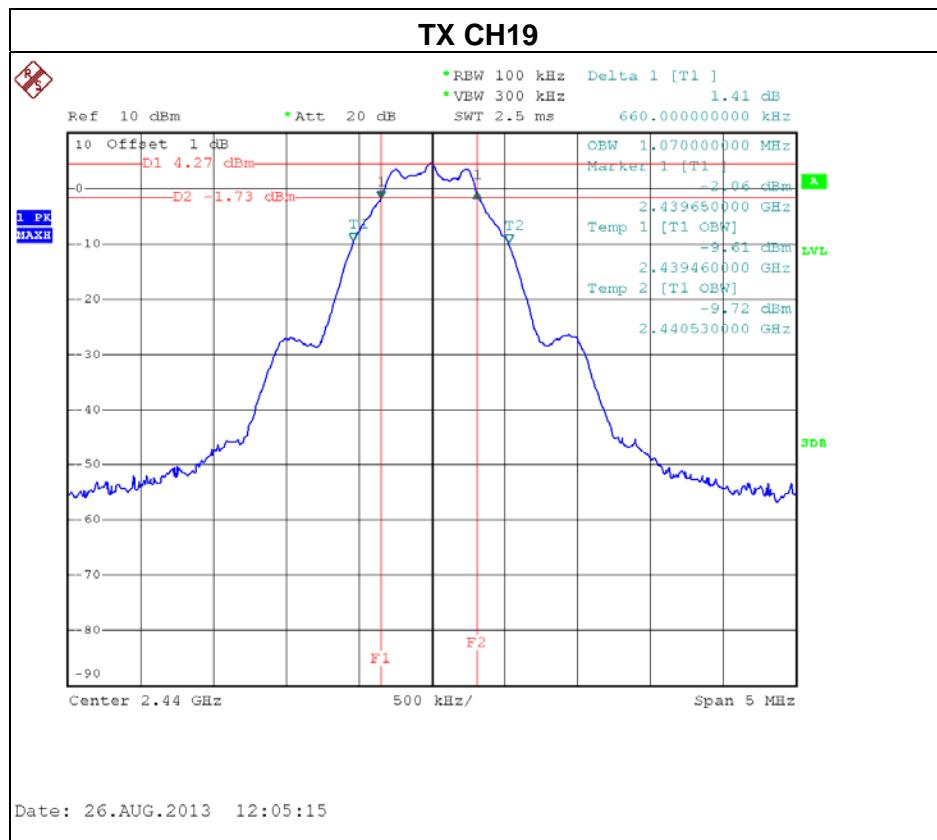


## 5.1.6 TEST RESULTS

EUT:	Cisco Edge 340	Model Name.:	CS-E340W
Temperature:	28 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	CH00, CH19, CH39 - 1Mbps		

Test Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% OBW (MHz)	LIMIT (MHz)
CH00	2402MHz	0.68	1.07	>=500KHz
CH19	2440MHz	0.66	1.07	>=500KHz
CH39	2480MHz	0.66	1.07	>=500KHz







## 6. MAXIMUM OUTPUT POWER TEST

### 6.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C/ RSS-210				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3) RSS-210 Annex 8.4(4)	Maximum Output Power	1 watt or 30dBm	2400-2483.5	PASS

#### 6.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	P-series Power meter	Agilent	N1911A	MY45100473	Apr. 25, 2014
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Apr. 25, 2014

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

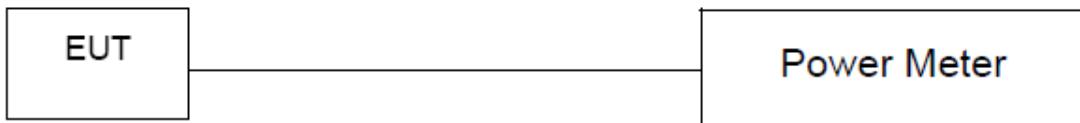
#### 6.1.2 TEST PROCEDURE

- The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
- The maximum peak conducted output power was performed in accordance with method 9.3.1 of FCC KDB 558074

#### 6.1.3 DEVIATION FROM STANDARD

No deviation.

#### 6.1.4 TEST SETUP



#### 6.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

Transmit output power was measured while the host equipment supply voltage was varied from 85 % to 115 % of the nominal rated supply voltage. No change in transmit output power was observed.



#### 6.1.6 TEST RESULTS

EUT:	Cisco Edge 340	Model Name :	CS-E340W
Temperature:	28 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	CH00, CH19, CH39 - 1Mbps		

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH00	2402MHz	3.16	30	1
CH19	2440MHz	4.54	30	1
CH39	2480MHz	4.81	30	1



## 7. ANTENNA CONDUCTED SPURIOUS EMISSION

### 7.1 Applied procedures / limit

20dB in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified 15.205(a) & RSS-210 section 2.2& Annex 8 (A8.5), then the 15.209(a) & RSS-GEN limit in the table below has to be followed.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

### 7.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Until
1	Spectrum Analyzer	R&S	FSP_40	100185	Nov.16, 2013

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

### 7.1.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=300KHz, Sweep time = 10 ms.

### 7.1.3 DEVIATION FROM STANDARD

No deviation.

### 7.1.4 TEST SETUP



### 7.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

**7.1.6 TEST RESULTS**

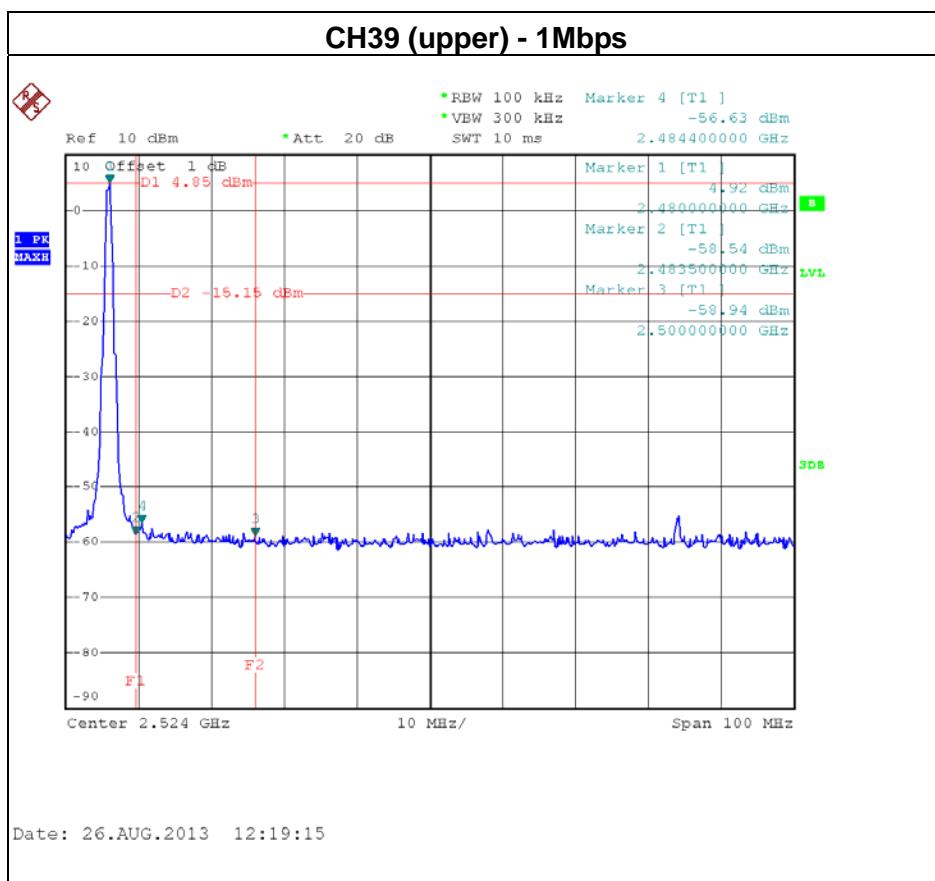
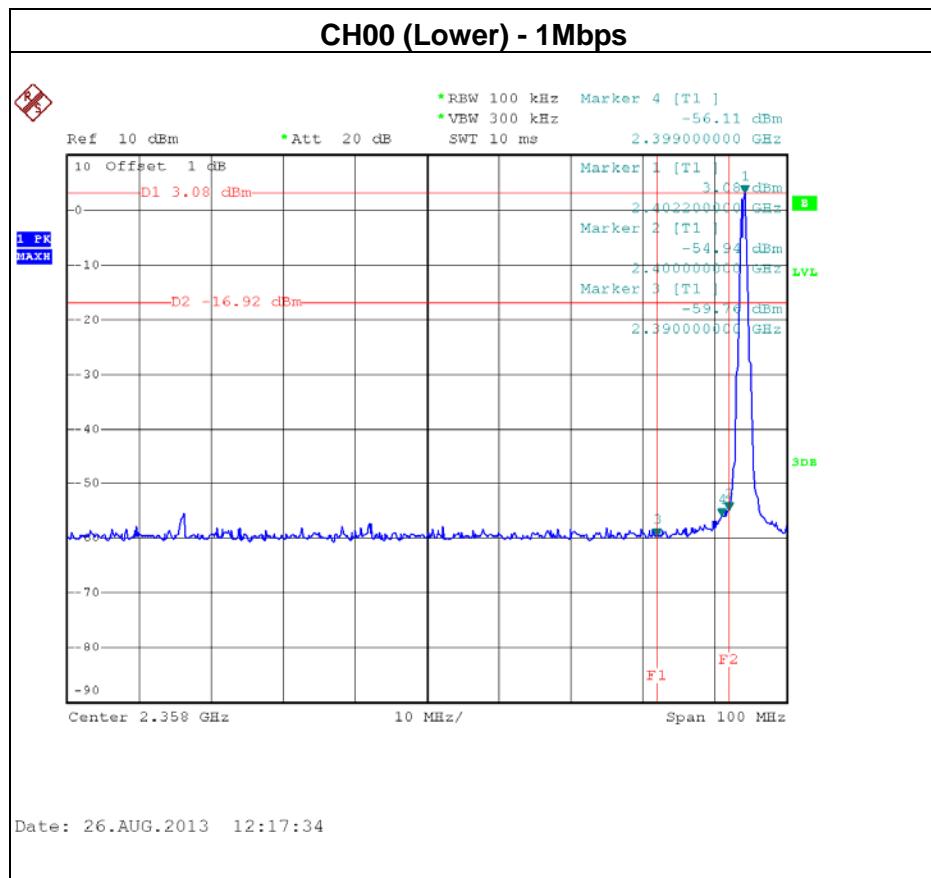
EUT:	Cisco Edge 340	Model Name :	CS-E340W
Temperature:	28 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	CH00, CH19 , CH39 - 1Mbps		

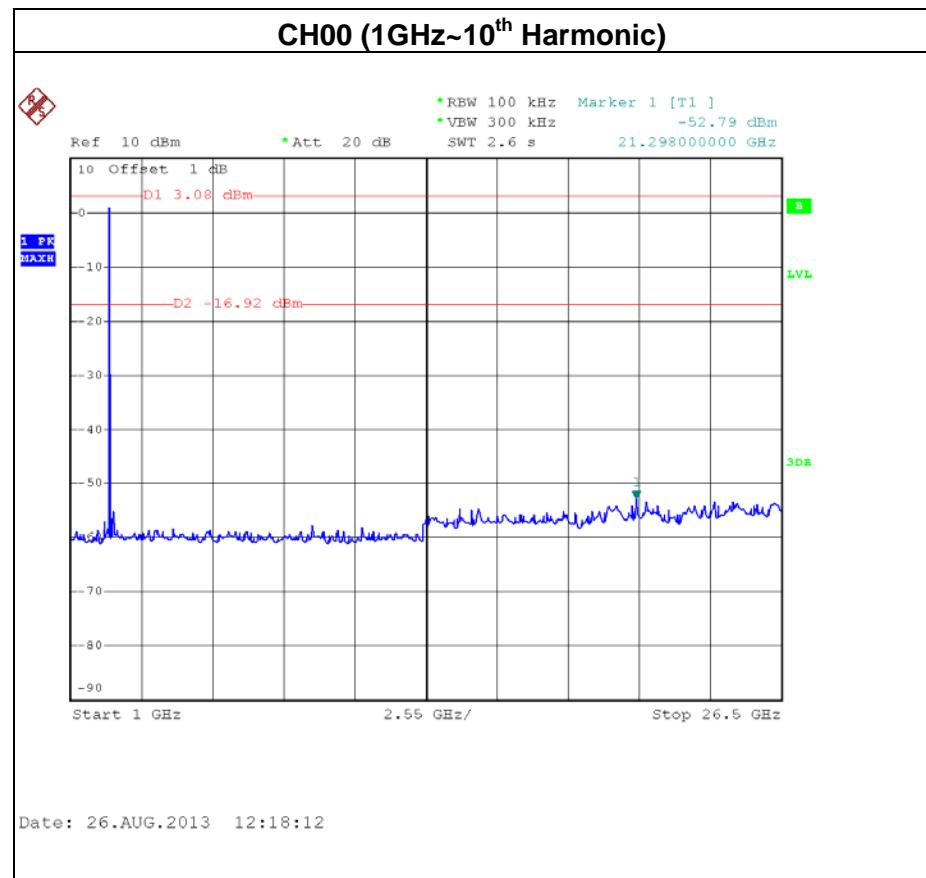
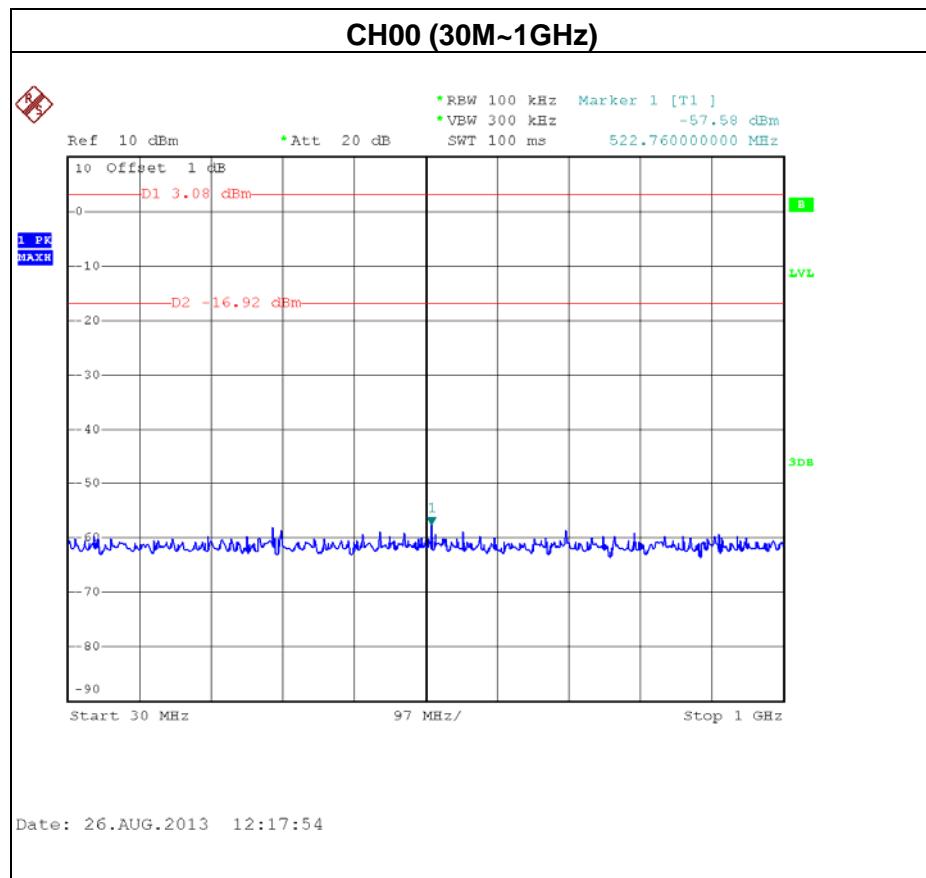
**Channel of Worst Data: CH39**

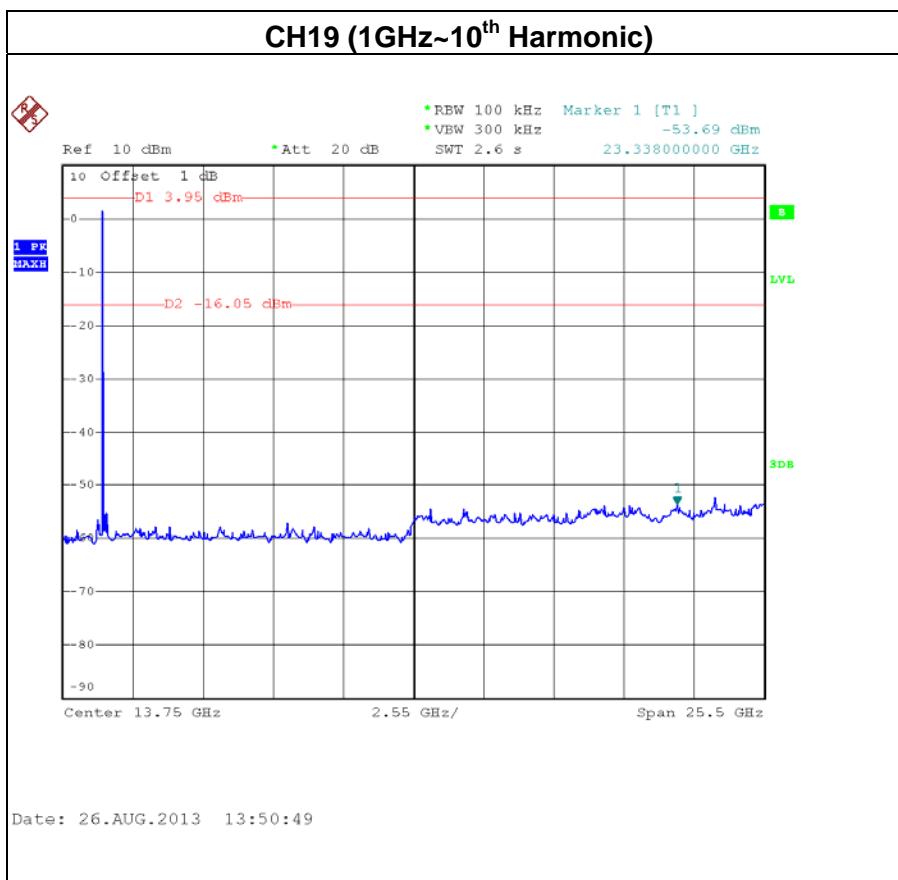
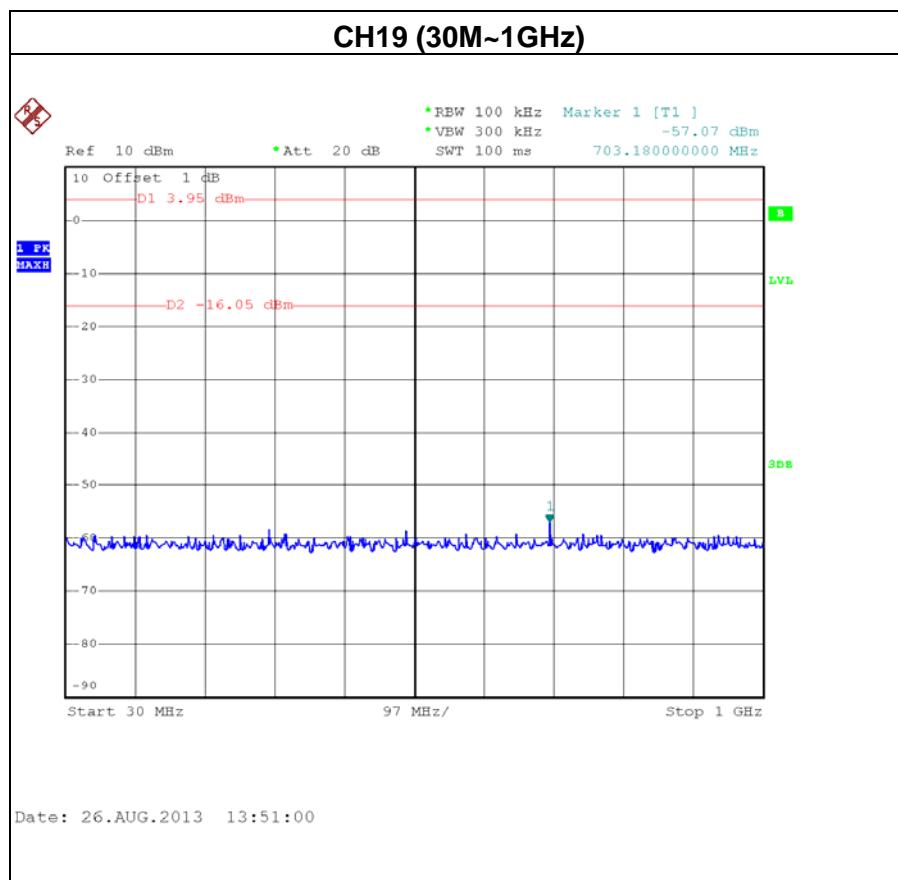
The max. radio frequency power in any 100kHz bandwidth outside the frequency band	The max. radio frequency power in any 100 kHz bandwidth within the frequency band.		
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-54.94	2484.40	-56.63

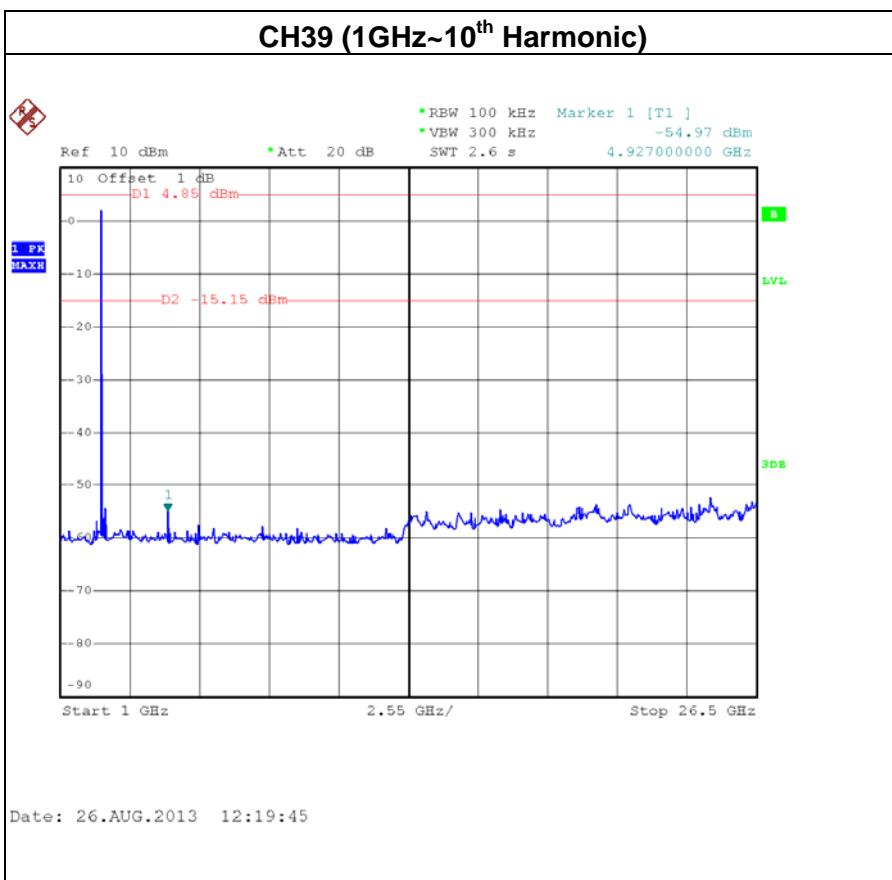
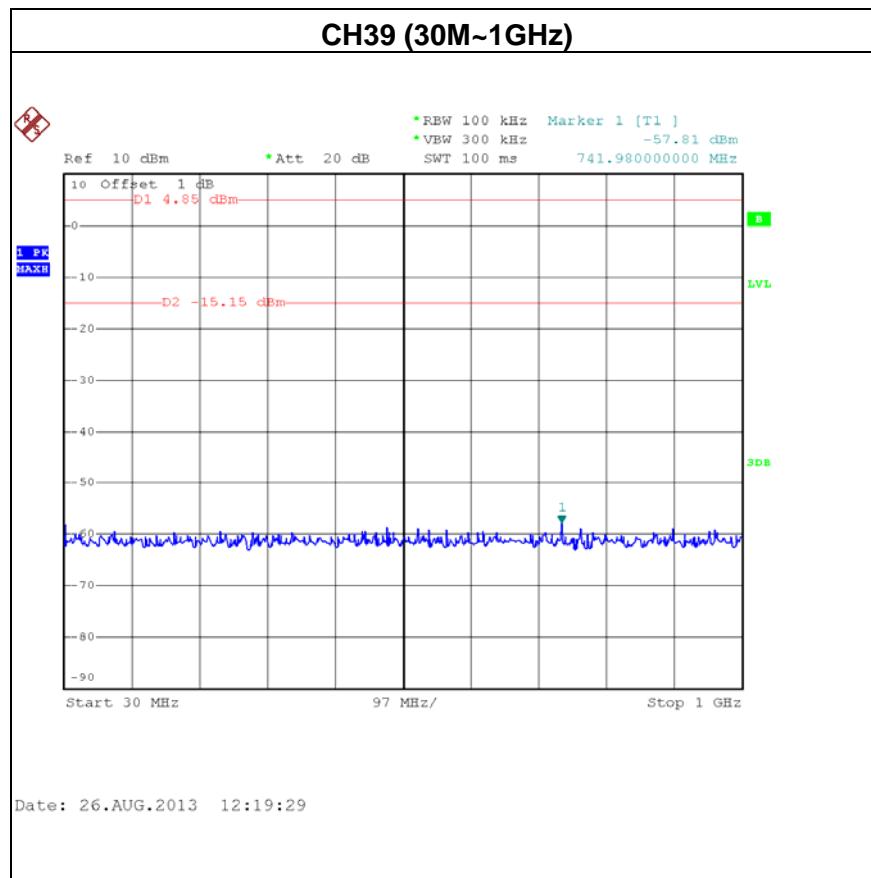
**Result**

In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.











## 8. POWER SPECTRAL DENSITY TEST

### 8.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C / RSS-210				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e) RSS-210 Annex 8( A8.2(b))	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

#### 8.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Until
1	Spectrum Analyzer	R&S	FSP_40	100185	Nov.16, 2013

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

#### 8.1.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW=3KHz, VBW=10 KHz, Sweep time = auto.

#### 8.1.3 DEVIATION FROM STANDARD

No deviation.

#### 8.1.4 TEST SETUP



#### 8.1.5 EUT OPERATION CONDITIONS

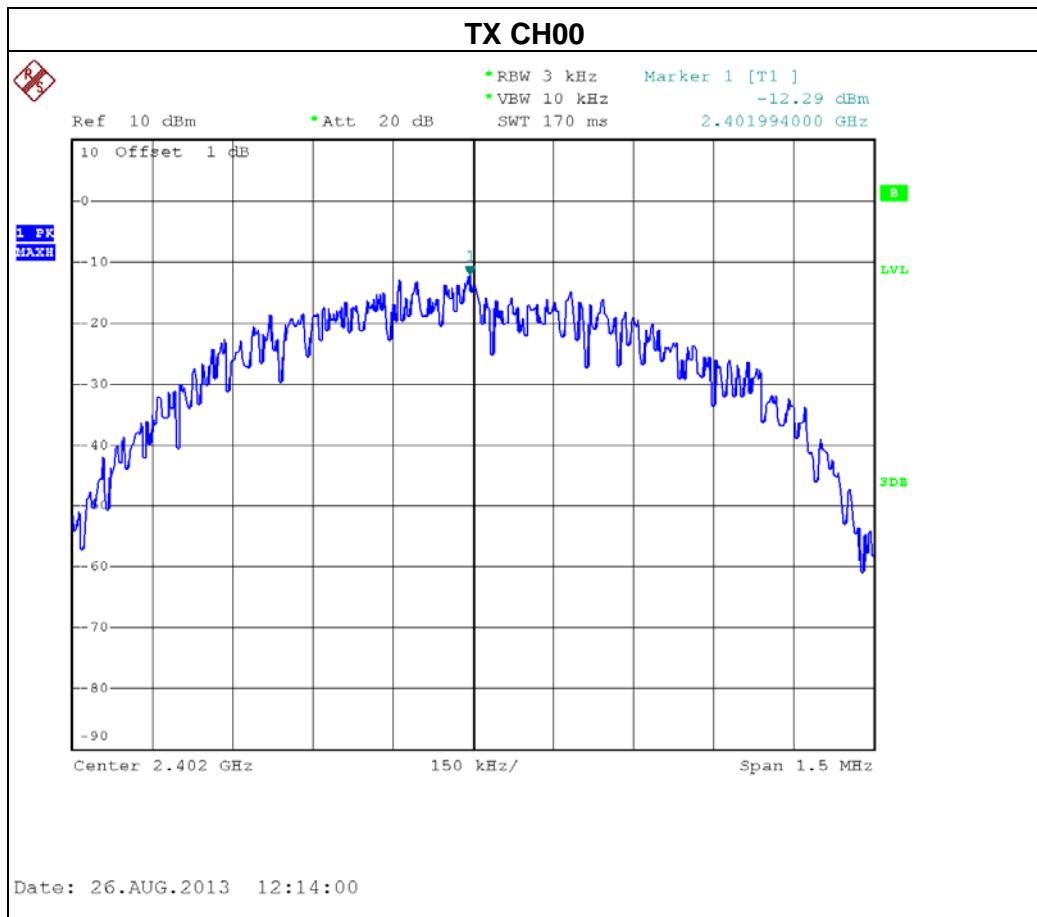
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

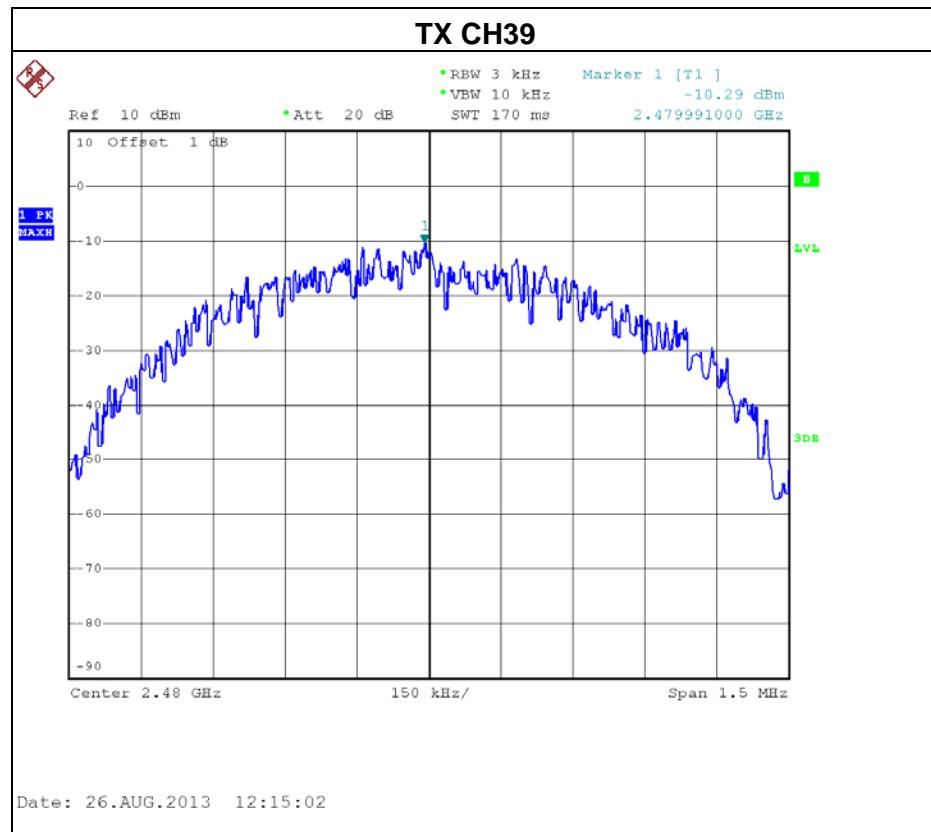
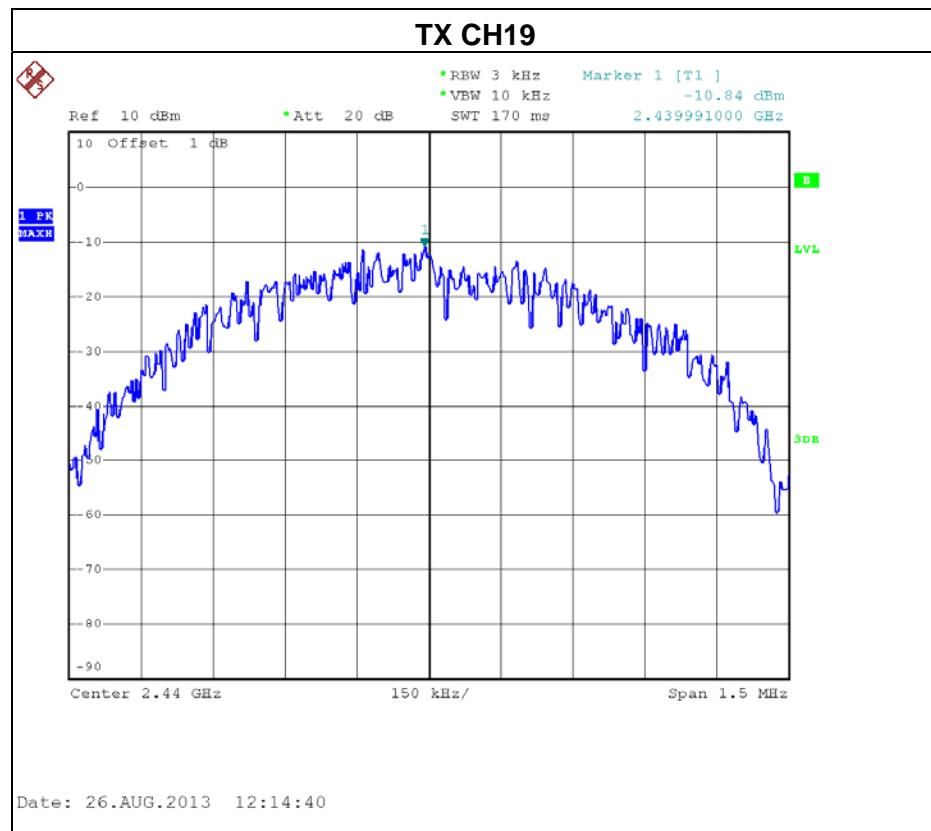


## 8.1.6 TEST RESULTS

EUT:	Cisco Edge 340	Model Name :	CS-E340W
Temperature:	28 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	CH00, CH19, CH39 -1Mbps		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH00	2402MHz	-12.29	8
CH19	2440MHz	-10.84	8
CH39	2480MHz	-10.29	8







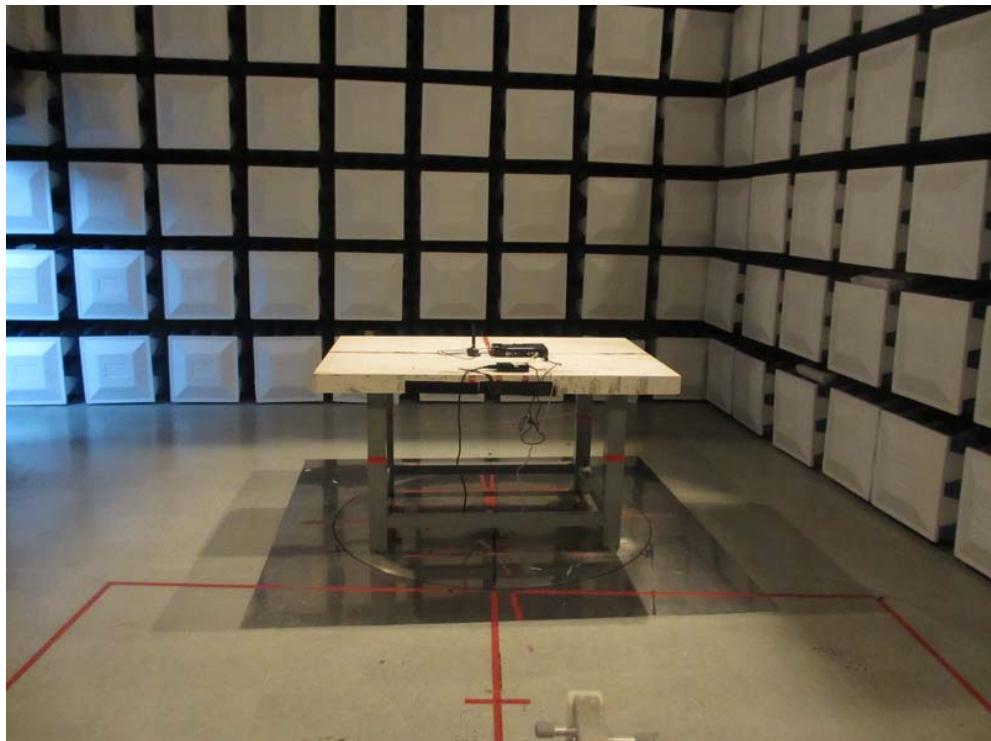
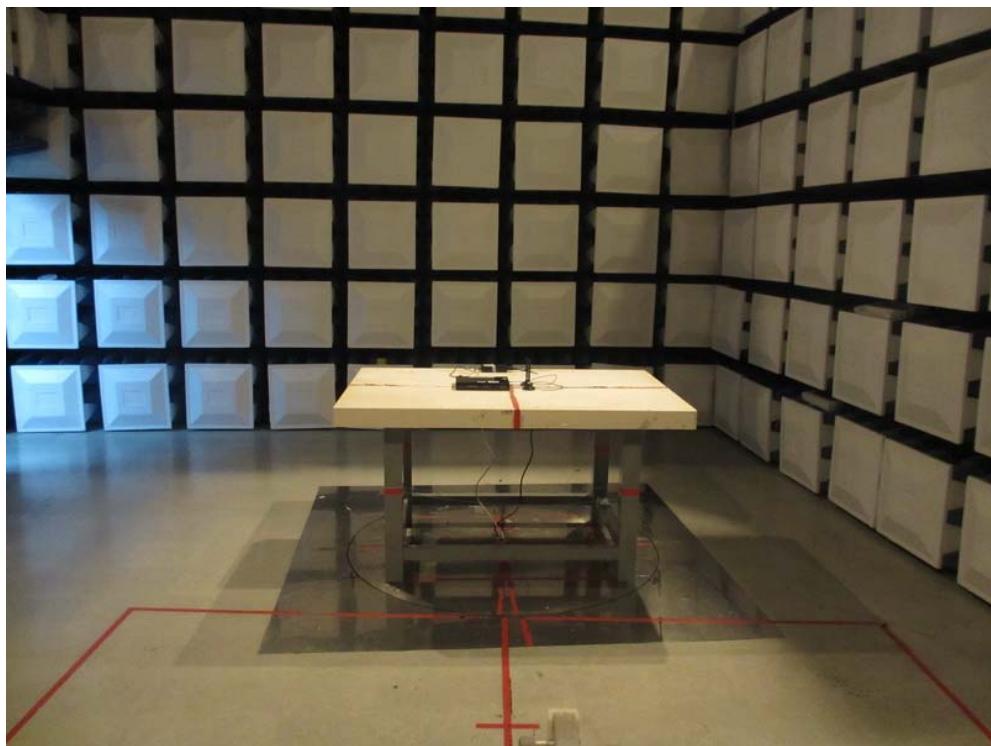
**9. EUT TEST PHOTO**

**Conducted Measurement Photos**





**Radiated Measurement Photos**  
**30M~1000MHz**





**Radiated Measurement Photos  
Above 1000MHz**

