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

Neutron Engineering Inc.
No.3,Jinshagang 1st Road, ShiXia,
Dalang Town, Dong Guan, China.
TEL: 0769-8318-3000
FAX: 0769-8319-6000

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 **CHINA**, 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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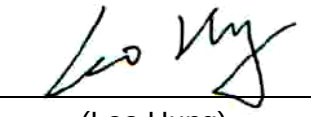
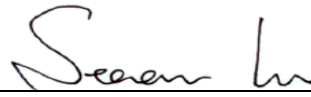
1. CERTIFICATION

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 Address	:	HONG FU JIN PRECISION INDUSTRY (SHEN ZHEN) CO LTD 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 / FCC Public Notice DA 00-705, March 30, 2000. 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 118 pages in total.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FICP-1-1308C100) 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)

Technical Manager : 
(Leo Hung)

Authorized Signatory : 
(Steven Lu)

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): 47 CFR Part 15, Subpart C; Canada RSS-210:2010; RSS-GEN Issue 3, Dec 2010				
Standard(s) Section		Test Item	Judgment	Remark
47 CFR Part 15	**RSS-210/RSS-GEN**			
15.207	RSS-GEN Issue 3, Dec 2010 7.2.4	Conducted Emission	PASS	
15.247(d)	RSS-210, Issue 8, Annex 8, A8.5	Antenna conducted Spurious Emission	PASS	
15.247 (a)(1)	RSS-210, Issue 8, Annex 8, A8.1(b)	Hopping Channel Separation	PASS	
15.247 (b)(1)	RSS-210, Issue 8, Annex 8, A8.1(b)	Peak Output Power	PASS	
15.247(d) 15.209	RSS-210, Issue 8, Annex 8, Section 8.5	Radiated Spurious Emission	PASS	
15.247 (a)(1)(iii)	RSS-210, Issue 8, Annex 8, A8.1(d)	Number of Hopping Frequency	PASS	
15.247 (a)(1)(iii)	RSS-210, Issue 8, Annex 8, A8.1(d)	Dwell Time	PASS	
15.205	RSS-GEN Issue 3, Dec 2010 7.2.2	Restricted Bands	PASS	
15.203	-	Antenna Requirement	PASS	

Note:

(1)" N/A" denotes test is not applicable in this test report

(2) According to FCC Public Notice DA 00-705, March 30, 2000.

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** ± **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

<table>
<tr><td>Equipment</td><td>Cisco Edge 340</td></tr>
<tr><td>Brand Name</td><td>Cisco</td></tr>
<tr><td>Model Name</td><td>CS-E340W</td></tr>
<tr><td>Model Difference</td><td>N/A</td></tr>
<tr><td>Product Description</td><td>
<table>
<tr><td>Operation Frequency</td><td>2402~2480 MHz</td></tr>
<tr><td>Modulation Technology</td><td>GFSK(1Mbps)
π/4-DQPSK(2Mbps)
8-DPSK(3Mbps)</td></tr>
<tr><td>Bit Rate of Transmitter</td><td></td></tr>
<tr><td>Number of Channel</td><td>79 CH, Please see note 2.(Page 10)</td></tr>
<tr><td>Antenna Designation</td><td rowspan="2">Please see note 3.(Page 10)</td></tr>
<tr><td>Antenna Gain(Peak)</td></tr>
<tr><td>Output Power (Max.)</td><td>5.20 dBm (1Mbps)
3.41 dBm (3Mbps)</td></tr>
</table>
More details of EUT technical specification, please refer to the User's Manual.
</td></tr>
<tr><td>Power Source</td><td>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</td></tr>
<tr><td>Power Rating</td><td>#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</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>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</td></tr>
</table>

Note:

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

2.

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

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 **Note (1)**
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 Emission	
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 Emission	
Final Test Mode	Description
Mode 1	TX Mode **Note (1)**

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.

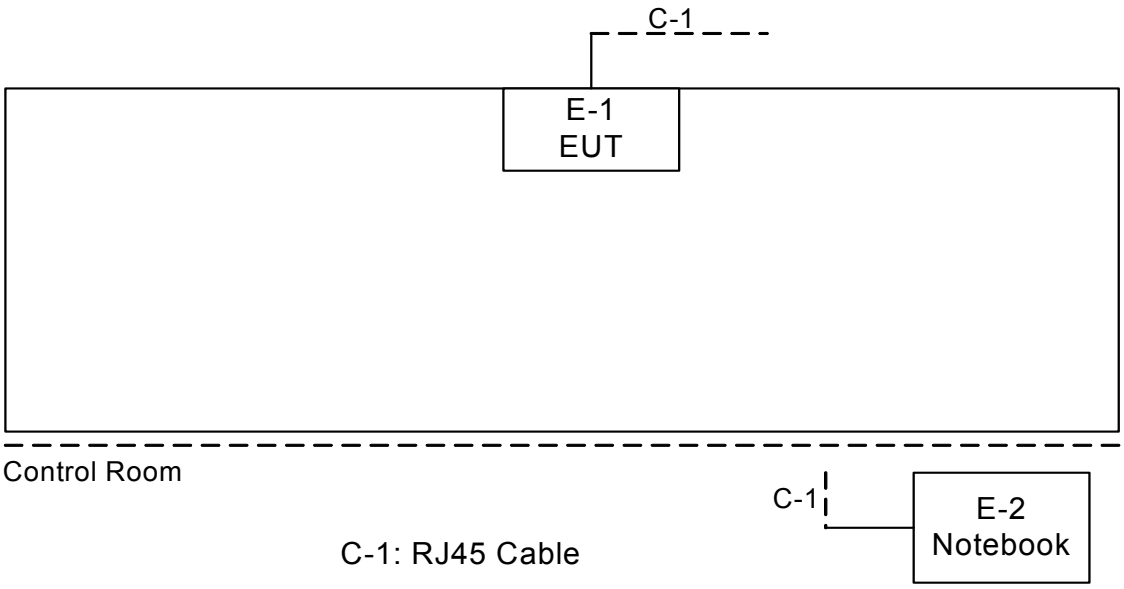
3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

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 FHSS

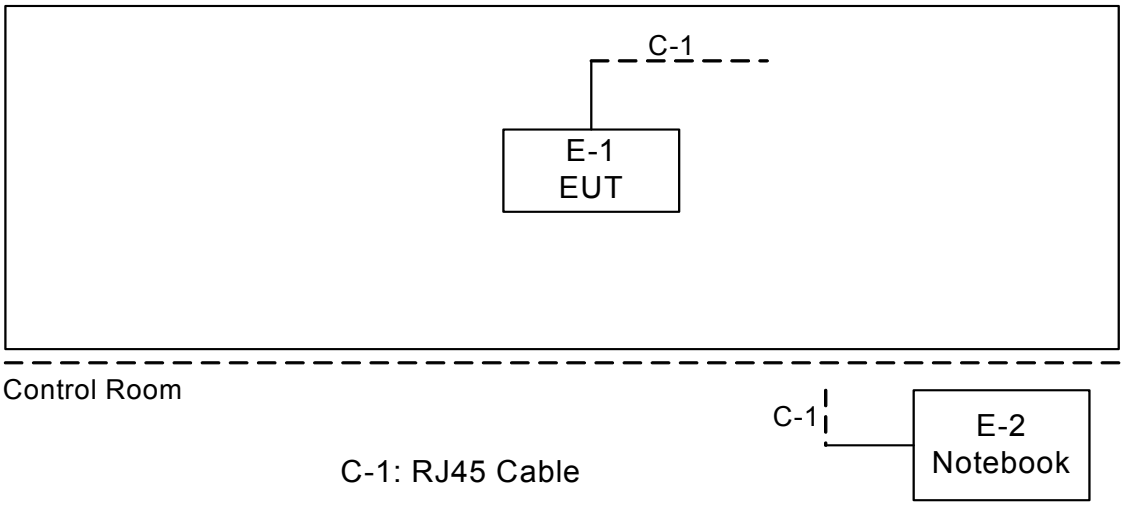
Test software version	DOS		
Frequency	2402 MHz	2441 MHz	2480 MHz
Parameters-1Mbps	8	8	8
Parameters-3Mbps	4	4	4

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

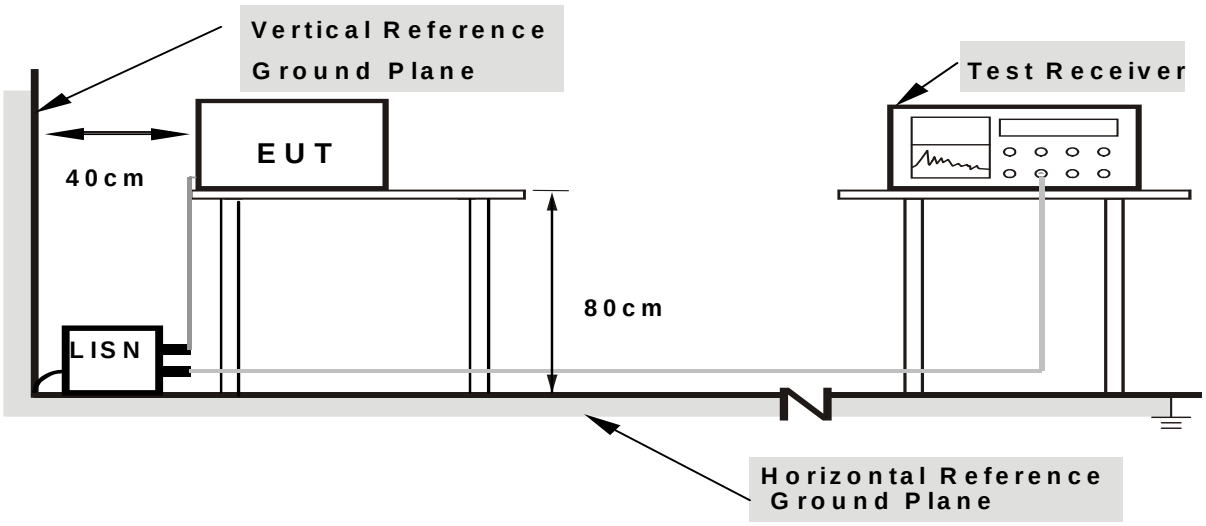
4.1.3 TEST PROCEDURE

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



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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/receiving data or hopping on mode.

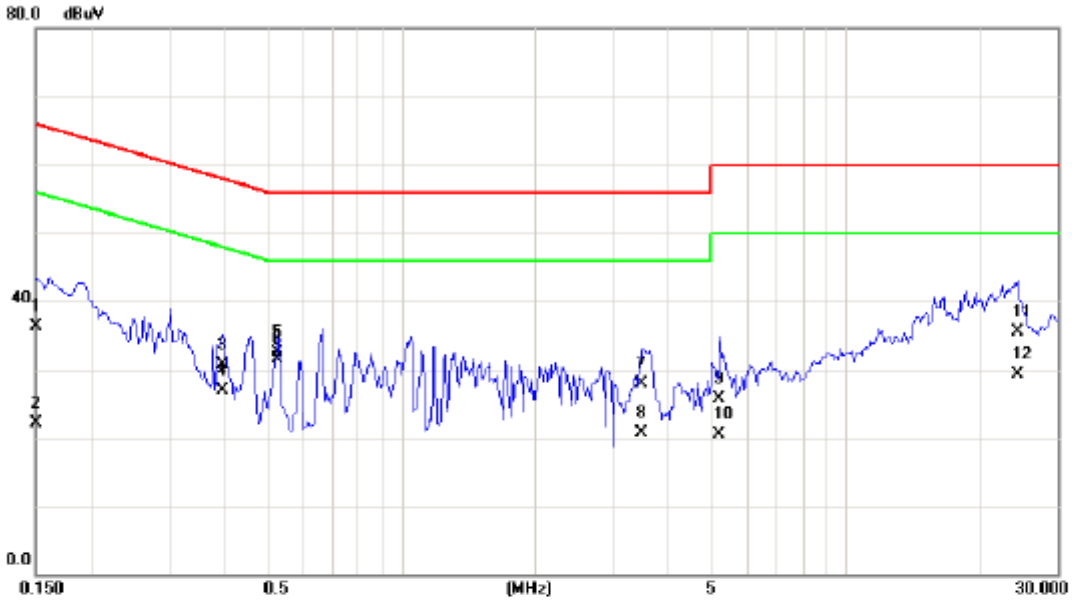
4.1.7 TEST RESULTS

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.

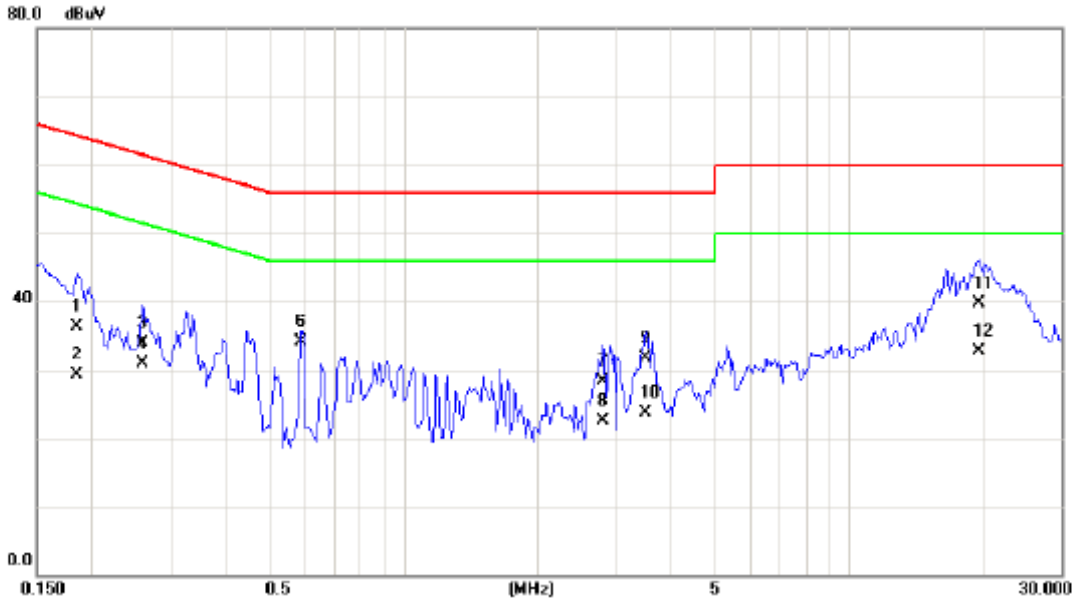
(2) Measuring frequency range from 150KHz to 30MHz.

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



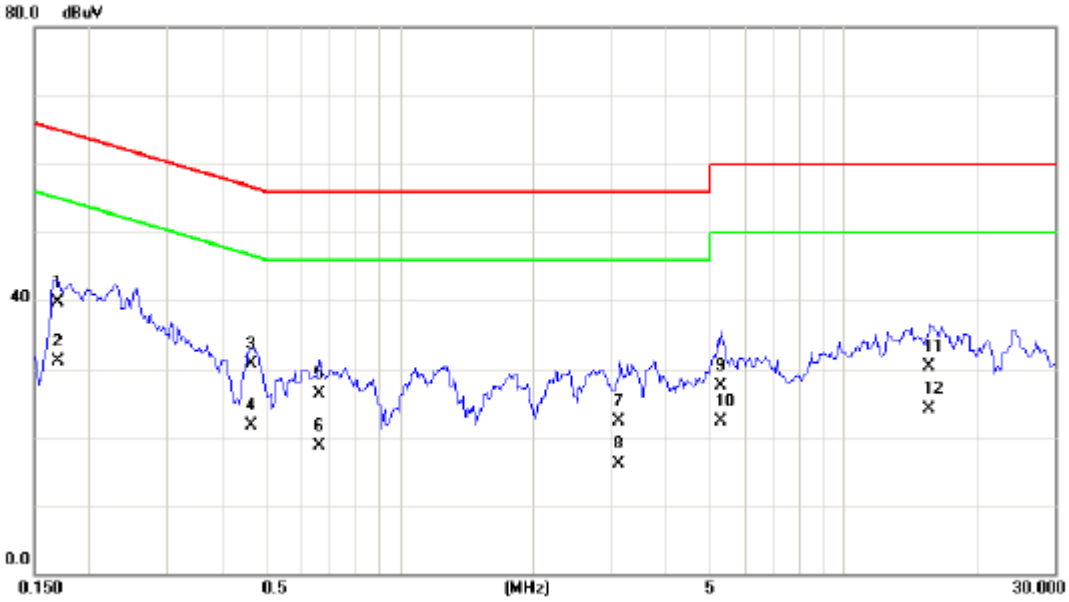
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	26.75	9.61	36.36	66.00	-29.64	QP	
2		0.1500	12.45	9.61	22.06	56.00	-33.94	AVG	
3		0.3961	20.95	9.66	30.61	57.93	-27.32	QP	
4		0.3961	17.15	9.66	26.81	47.93	-21.12	AVG	
5		0.5250	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 ℃	Relative Humidity:	50 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode:	TX Mode / Adapter: PA-1600-2A-LF		



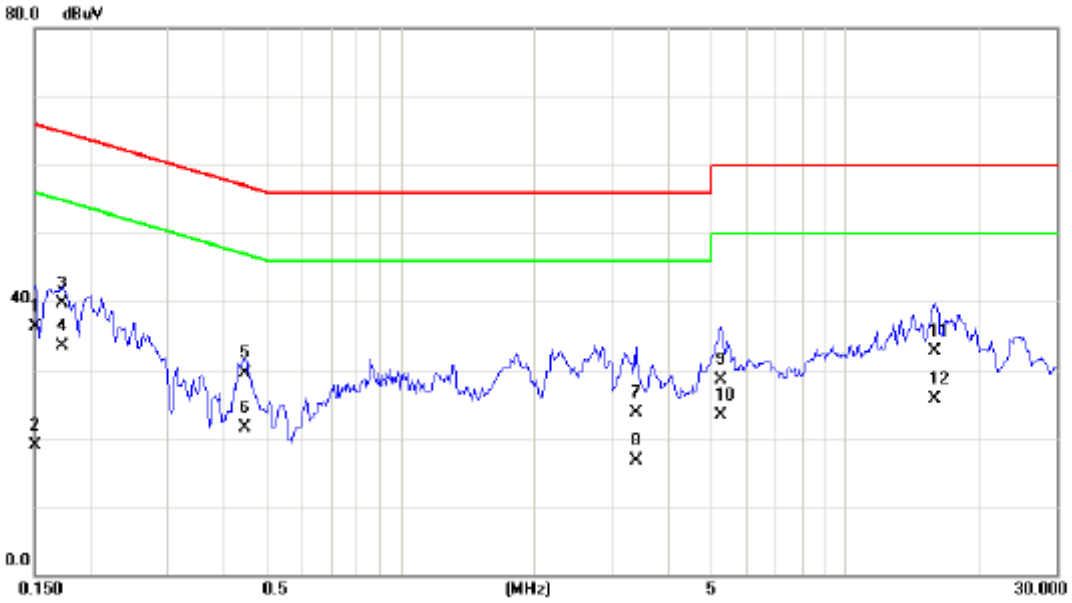
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1852	26.67	9.62	36.29	64.25	-27.96	QP	
2		0.1852	19.67	9.62	29.29	54.25	-24.96	AVG	
3		0.2594	24.27	9.62	33.89	61.45	-27.56	QP	
4		0.2594	21.36	9.62	30.98	51.45	-20.47	AVG	
5		0.5914	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 ℃	Relative Humidity:	50 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode:	TX Mode / Adapter: EADP-60MB B		



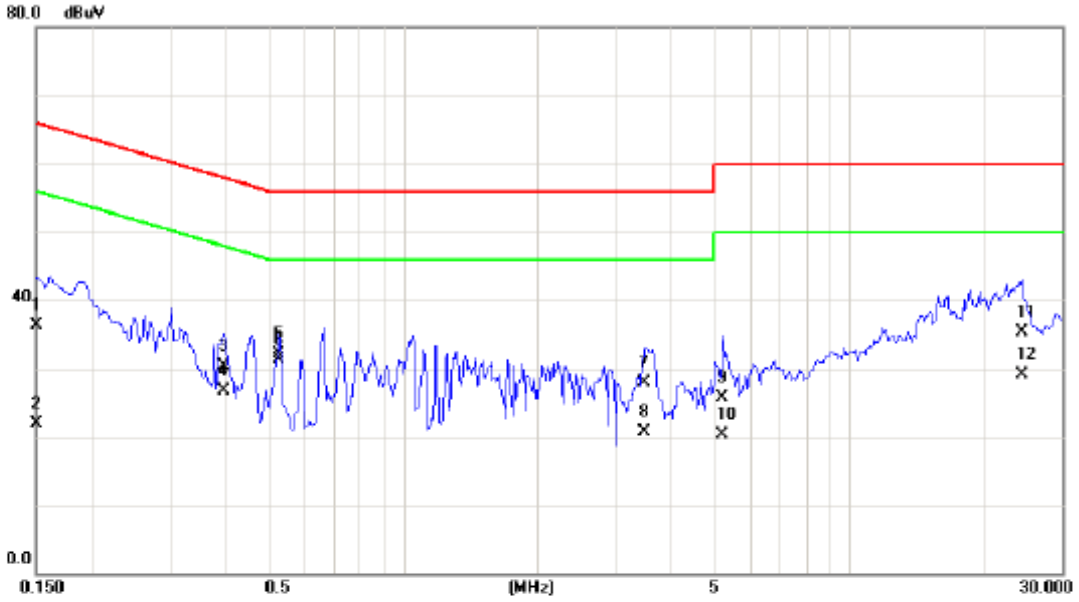
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1695	30.02	9.61	39.63	64.98	-25.35	QP	
2	*	0.1695	21.42	9.61	31.03	54.98	-23.95	AVG	
3		0.4625	21.12	9.67	30.79	56.65	-25.86	QP	
4		0.4625	12.02	9.67	21.69	46.65	-24.96	AVG	
5		0.6578	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 ℃	Relative Humidity:	50 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode:	TX Mode / Adapter: EADP-60MB B		



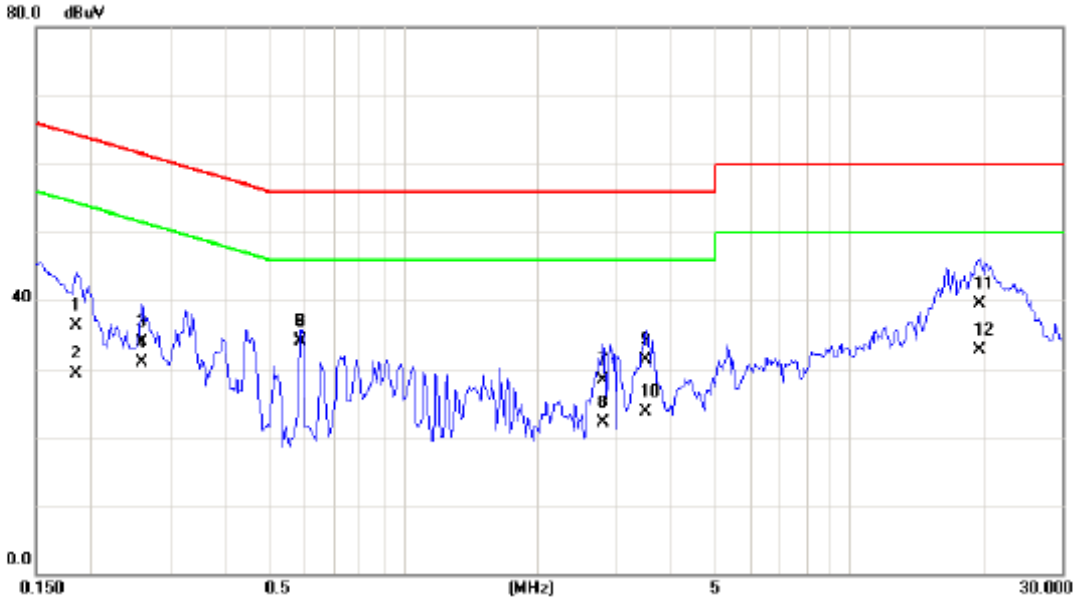
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1508	26.72	9.60	36.32	65.96	-29.64	QP	
2		0.1508	9.32	9.60	18.92	55.96	-37.04	AVG	
3		0.1734	30.02	9.60	39.62	64.80	-25.18	QP	
4	*	0.1734	23.82	9.60	33.42	54.80	-21.38	AVG	
5		0.4470	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 ℃	Relative Humidity:	50 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode:	TX Mode / POE		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	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 ℃	Relative Humidity:	50 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode:	TX Mode / POE		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
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)

20dB 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.

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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m) (at 3 meters)	
	Peak	Average
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m) =20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

4.2.2 MEASUREMENT INSTRUMENTS LIST ANS 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+SUHNER	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	Schwarzbeck	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.

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

Receiver Parameter	Setting
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

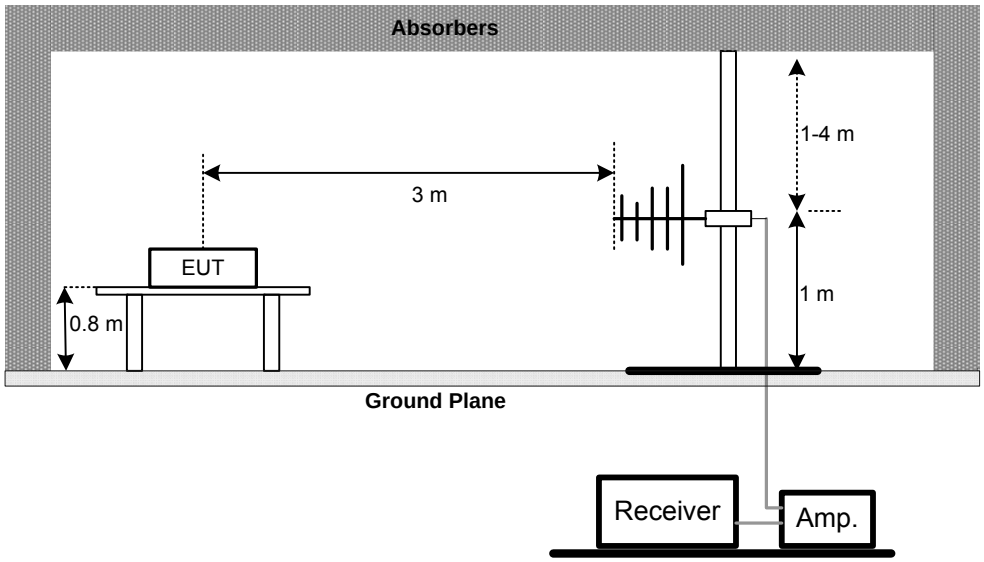
a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-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

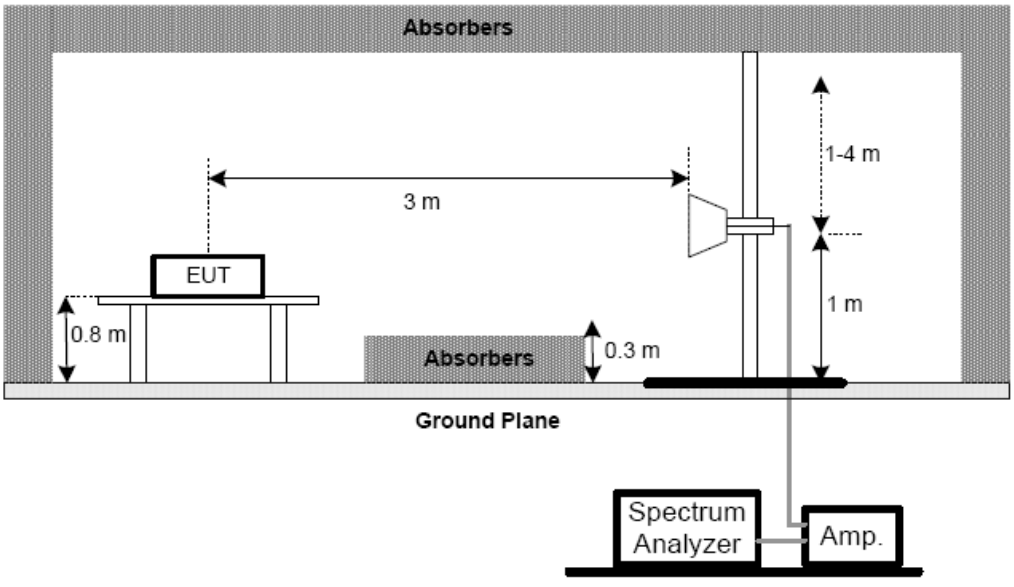
No deviation

4.2.5 TEST SETUP

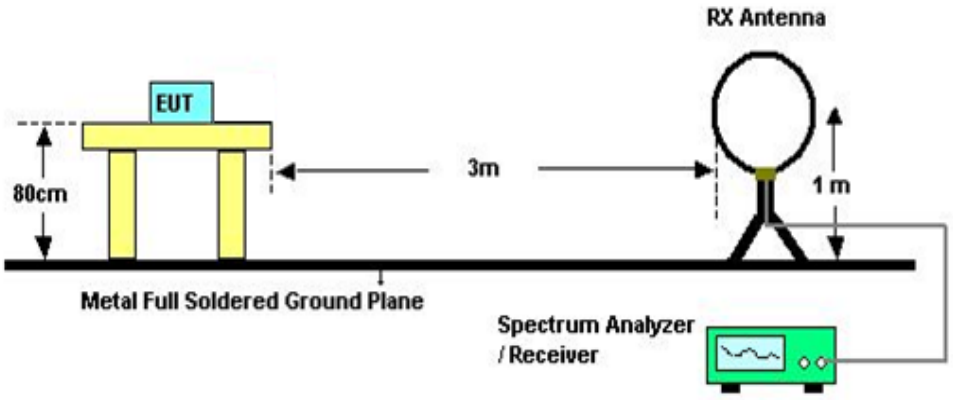
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(C) For radiated emissions below 30MHz



4.2.6 EUT OPERATING CONDITIONS

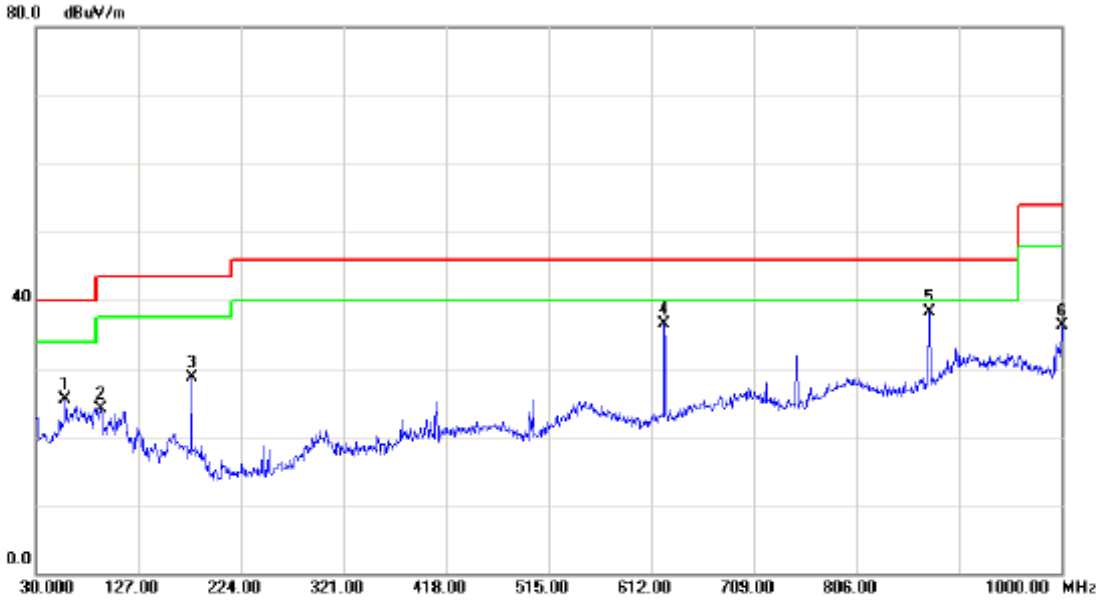
The EUT tested system was configured as the statements of **4.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.

4.2.7 TEST RESULTS: 30MHZ - 1000MHZ

Remark:

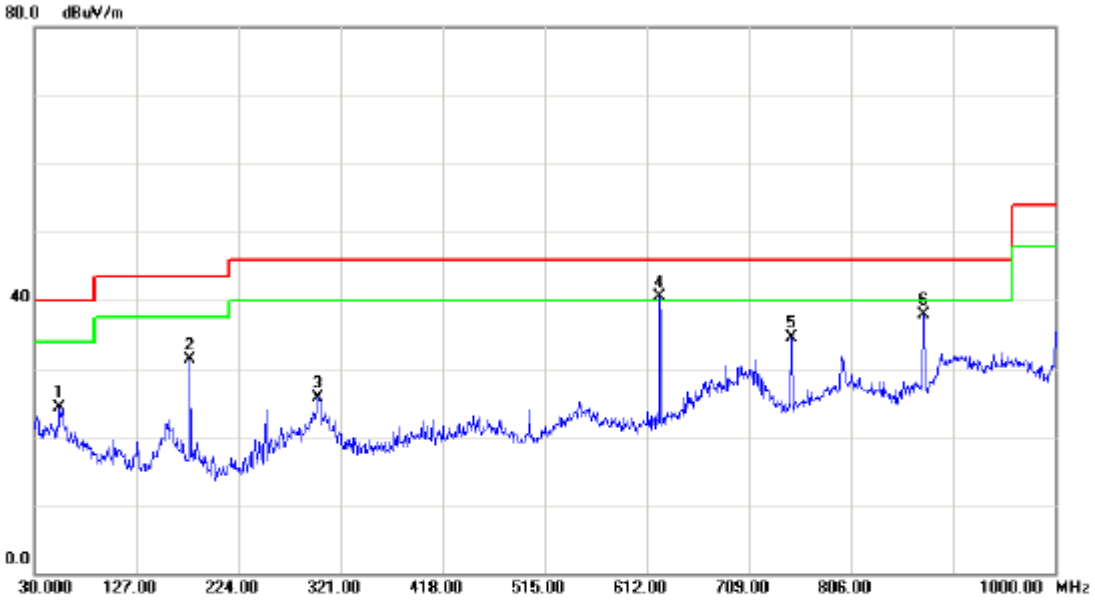
(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz.
(2) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading 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 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2402MHz -CH00 -1Mbps / Adapter: PA-1600-2A-LF		



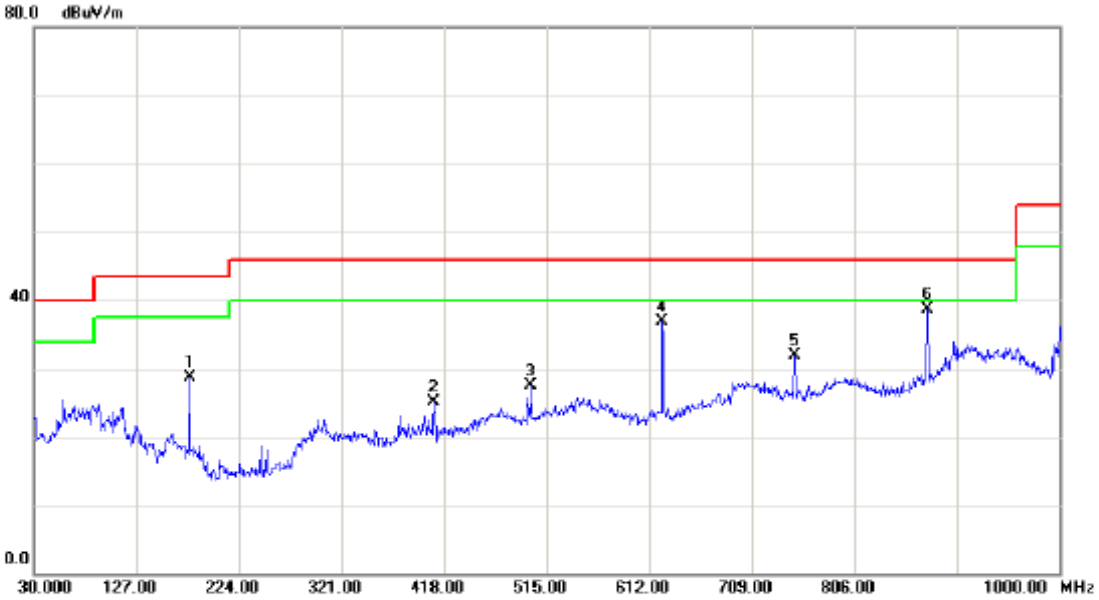
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		58.1300	39.54	-14.03	25.51	40.00	-14.49	peak	
2		91.1100	41.00	-16.83	24.17	43.50	-19.33	peak	
3		177.4400	41.87	-13.21	28.66	43.50	-14.84	peak	
4		624.6100	43.55	-7.06	36.49	46.00	-9.51	peak	
5	*	874.8700	40.06	-1.78	38.28	46.00	-7.72	peak	
6		1000.000	36.78	-0.54	36.24	54.00	-17.76	peak	

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



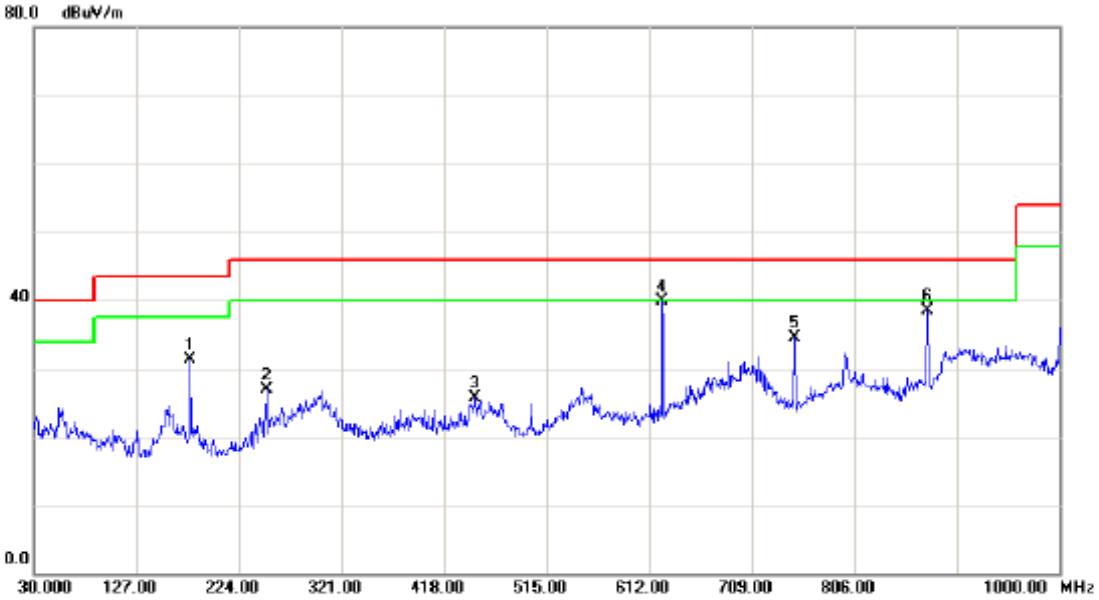
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		54.2500	38.21	-13.86	24.35	40.00	-15.65	peak	
2		178.4100	44.63	-13.25	31.38	43.50	-12.12	peak	
3		299.6600	36.73	-10.97	25.76	46.00	-20.24	peak	
4	*	624.6100	47.52	-7.06	40.46	46.00	-5.54	peak	
5		749.7400	39.88	-5.30	34.58	46.00	-11.42	peak	
6		874.8700	39.71	-1.78	37.93	46.00	-8.07	peak	

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2441MHz -CH39 -1Mbps / Adapter: PA-1600-2A-LF		



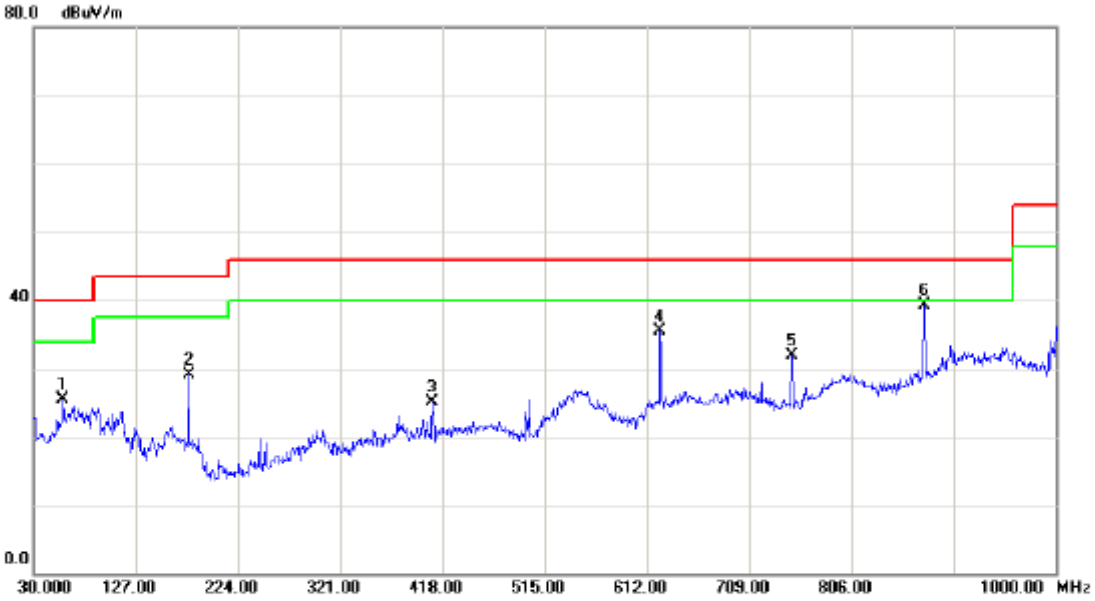
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		177.4400	41.87	-13.21	28.66	43.50	-14.84	peak	
2		408.3000	34.64	-9.60	25.04	46.00	-20.96	peak	
3		500.4500	37.99	-10.50	27.49	46.00	-18.51	peak	
4		624.6100	44.05	-7.06	36.99	46.00	-9.01	peak	
5		749.7400	37.15	-5.30	31.85	46.00	-14.15	peak	
6	*	874.8700	40.56	-1.78	38.78	46.00	-7.22	peak	

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2441MHz -CH39 -1Mbps / Adapter: PA-1600-2A-LF		



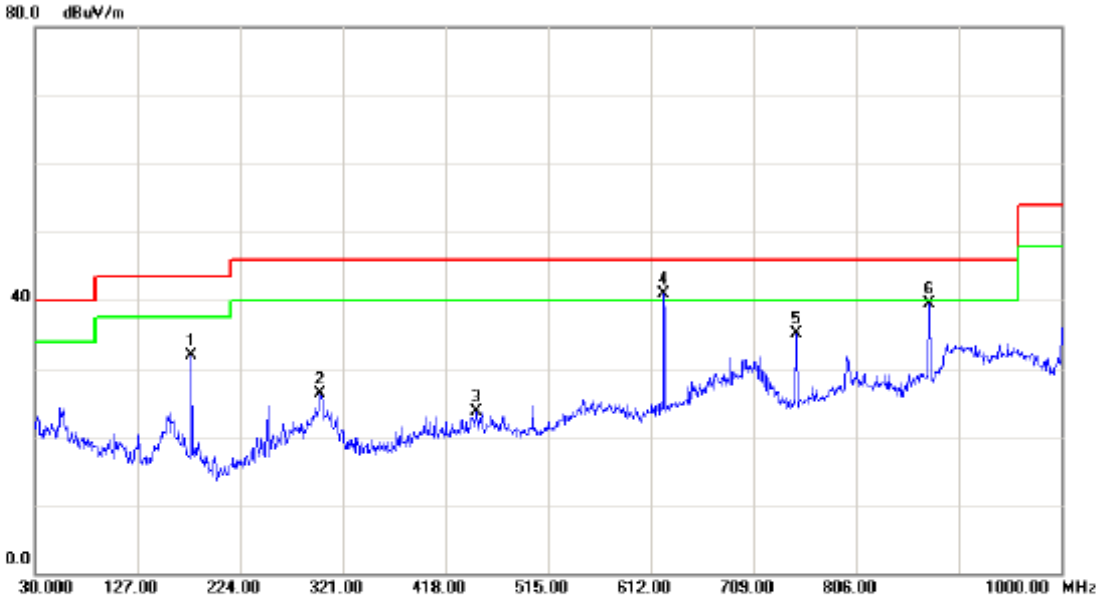
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		178.4100	44.63	-13.25	31.38	43.50	-12.12	peak	
2		250.1900	41.86	-14.87	26.99	46.00	-19.01	peak	
3		447.1000	34.39	-8.78	25.61	46.00	-20.39	peak	
4	*	624.6100	47.02	-7.06	39.96	46.00	-6.04	peak	
5		749.7400	39.88	-5.30	34.58	46.00	-11.42	peak	
6		874.8700	40.21	-1.78	38.43	46.00	-7.57	peak	

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2480MHz -CH78 -1Mbps / Adapter: PA-1600-2A-LF		



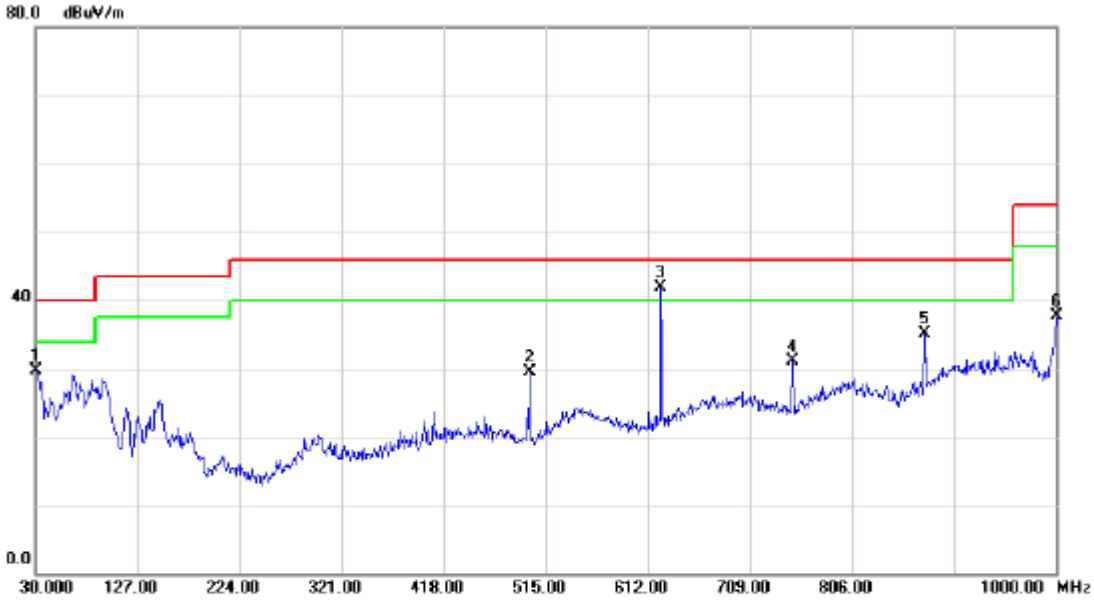
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		58.1300	39.54	-14.03	25.51	40.00	-14.49	peak	
2		177.4400	42.37	-13.21	29.16	43.50	-14.34	peak	
3		408.3000	34.64	-9.60	25.04	46.00	-20.96	peak	
4		624.6100	42.55	-7.06	35.49	46.00	-10.51	peak	
5		749.7400	37.15	-5.30	31.85	46.00	-14.15	peak	
6	*	874.8700	41.06	-1.78	39.28	46.00	-6.72	peak	

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2480MHz -CH78 -1Mbps / Adapter: PA-1600-2A-LF		



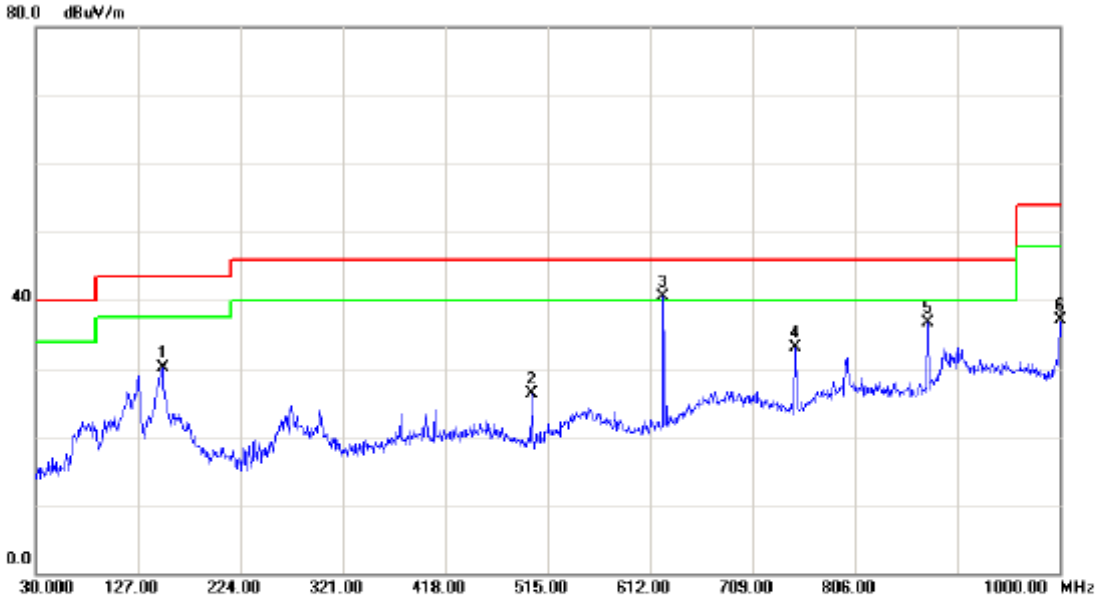
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		178.4100	45.13	-13.25	31.88	43.50	-11.62	peak	
2		299.6600	37.23	-10.97	26.26	46.00	-19.74	peak	
3		447.1000	32.39	-8.78	23.61	46.00	-22.39	peak	
4	*	624.6100	48.02	-7.06	40.96	46.00	-5.04	peak	
5		749.7400	40.38	-5.30	35.08	46.00	-10.92	peak	
6		874.8700	41.21	-1.78	39.43	46.00	-6.57	peak	

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



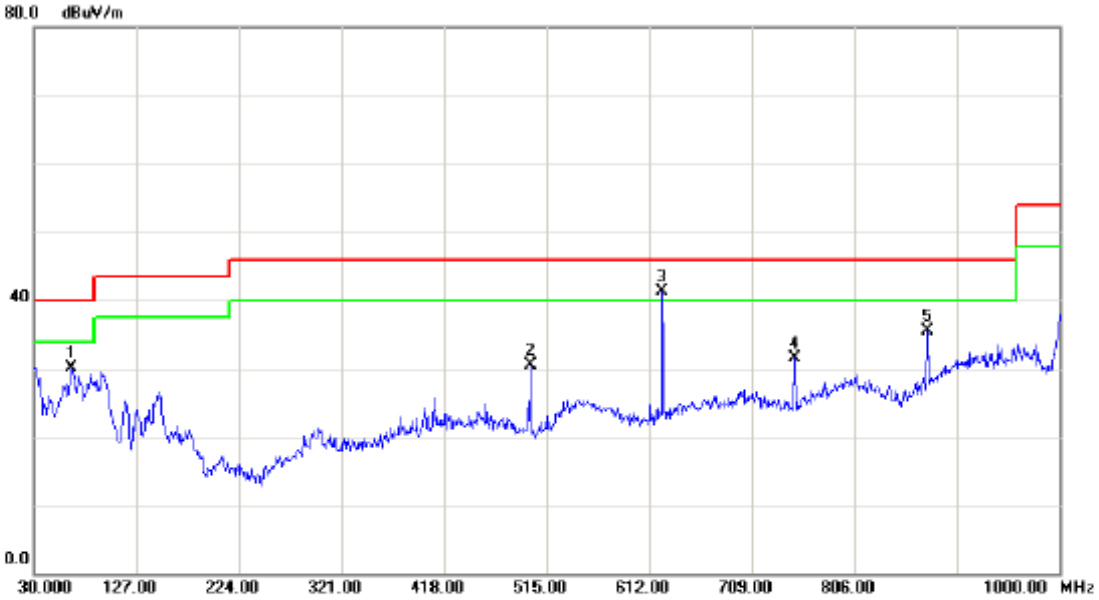
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		30.9700	44.70	-15.01	29.69	40.00	-10.31	peak	
2		500.4500	39.92	-10.50	29.42	46.00	-16.58	peak	
3	*	624.6100	48.91	-7.06	41.85	46.00	-4.15	peak	
4		749.7400	36.36	-5.30	31.06	46.00	-14.94	peak	
5		874.8700	36.81	-1.78	35.03	46.00	-10.97	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 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2402MHz -CH00 -1Mbps / Adapter: EADP-60MB B		



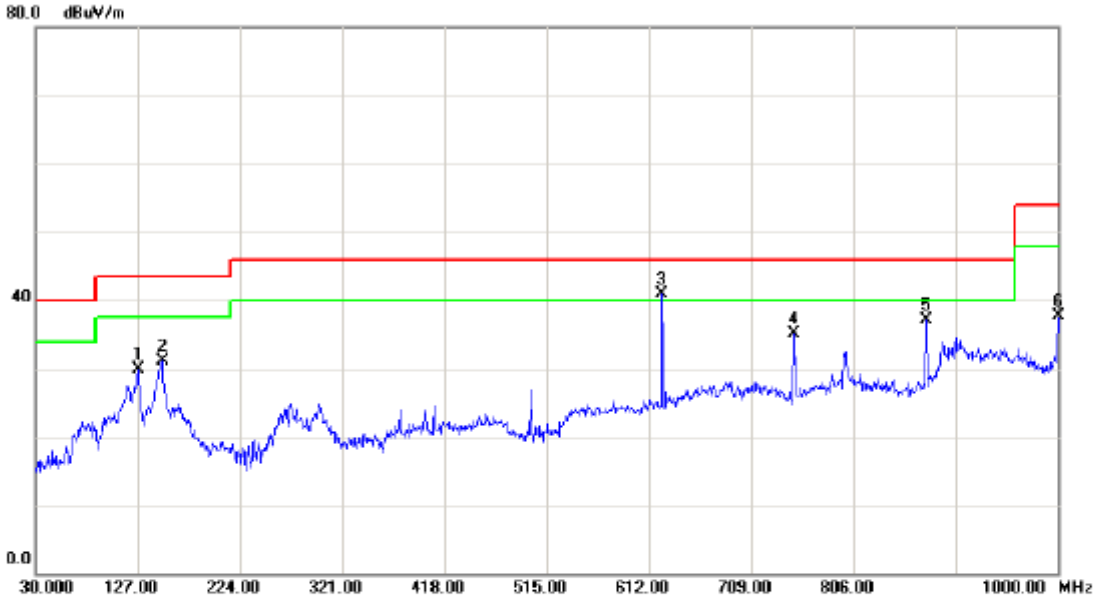
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		150.2800	43.61	-13.51	30.10	43.50	-13.40	peak	
2		500.4500	36.81	-10.50	26.31	46.00	-19.69	peak	
3	*	624.6100	47.47	-7.06	40.41	46.00	-5.59	peak	
4		749.7400	38.40	-5.30	33.10	46.00	-12.90	peak	
5		874.8700	38.47	-1.78	36.69	46.00	-9.31	peak	
6		1000.000	37.73	-0.54	37.19	54.00	-16.81	peak	

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2441MHz -CH39 -1Mbps / Adapter: EADP-60MB B		



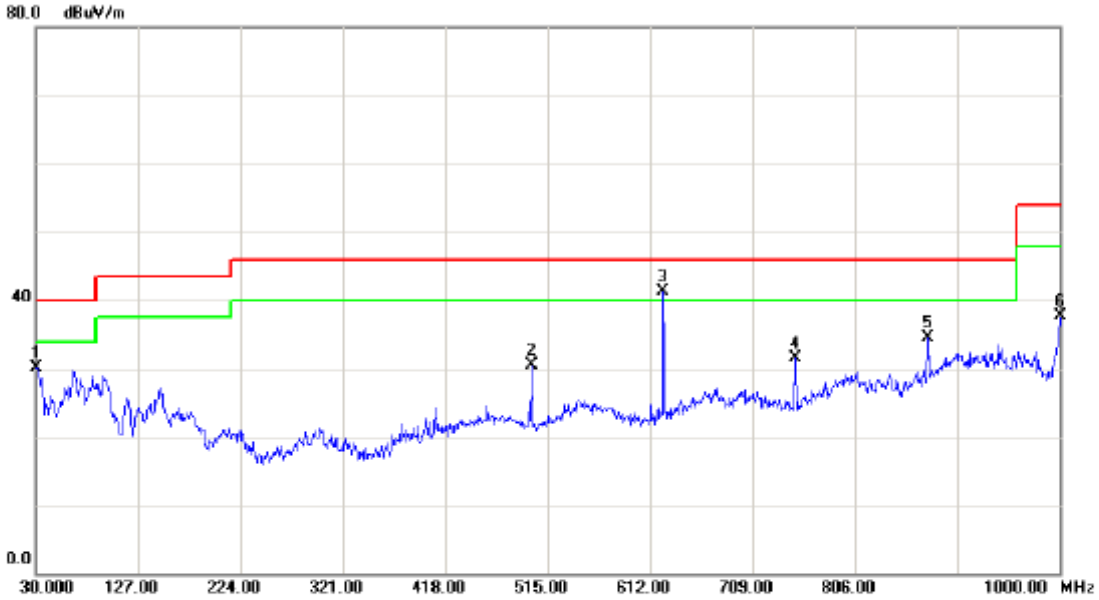
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		65.8900	45.42	-15.25	30.17	40.00	-9.83	peak	
2		500.4500	40.92	-10.50	30.42	46.00	-15.58	peak	
3	*	624.6100	48.41	-7.06	41.35	46.00	-4.65	peak	
4		749.7400	36.86	-5.30	31.56	46.00	-14.44	peak	
5		874.8700	37.31	-1.78	35.53	46.00	-10.47	peak	

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2441MHz -CH39 -1Mbps / Adapter: EADP-60MB B		



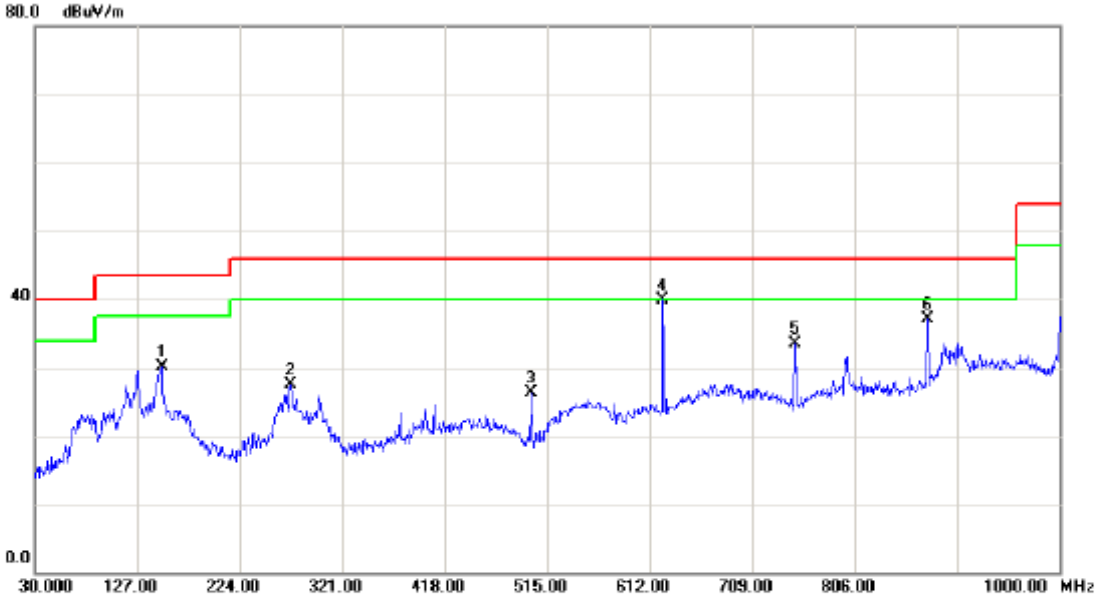
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		127.0000	43.84	-13.85	29.99	43.50	-13.51	peak	
2		150.2800	44.61	-13.51	31.10	43.50	-12.40	peak	
3	*	624.6100	47.97	-7.06	40.91	46.00	-5.09	peak	
4		749.7400	40.39	-5.30	35.09	46.00	-10.91	peak	
5		874.8700	38.97	-1.78	37.19	46.00	-8.81	peak	
6		1000.000	38.23	-0.54	37.69	54.00	-16.31	peak	

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2480MHz -CH78 -1Mbps / Adapter: EADP-60MB B		



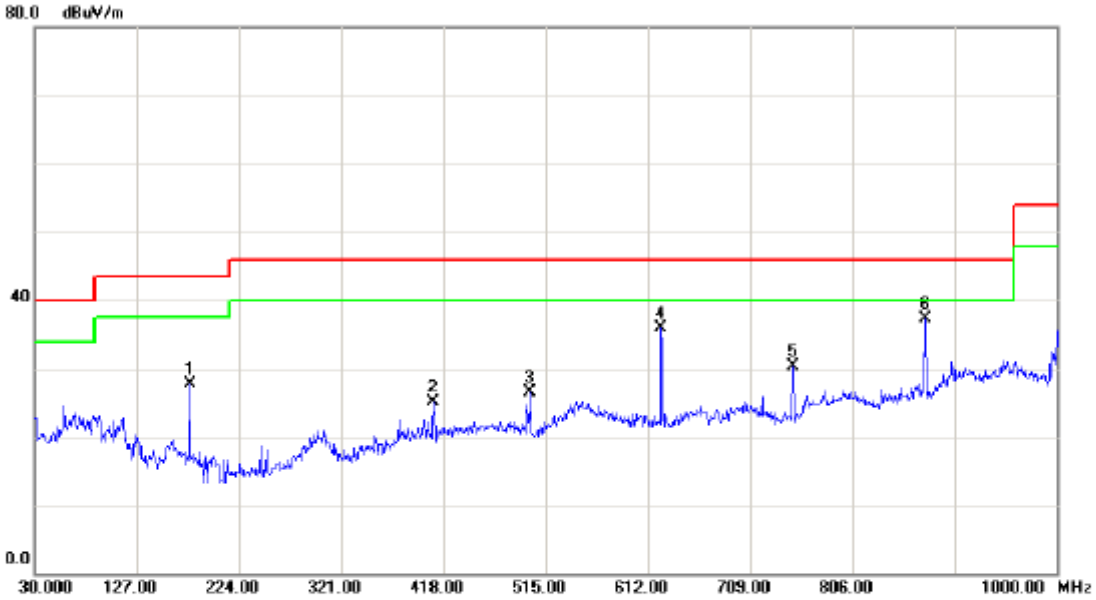
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		30.9700	45.20	-15.01	30.19	40.00	-9.81	peak	
2		500.4500	40.92	-10.50	30.42	46.00	-15.58	peak	
3	*	624.6100	48.41	-7.06	41.35	46.00	-4.65	peak	
4		749.7400	36.86	-5.30	31.56	46.00	-14.44	peak	
5		874.8700	36.31	-1.78	34.53	46.00	-11.47	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 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2480MHz -CH78 -1Mbps / Adapter: EADP-60MB B		



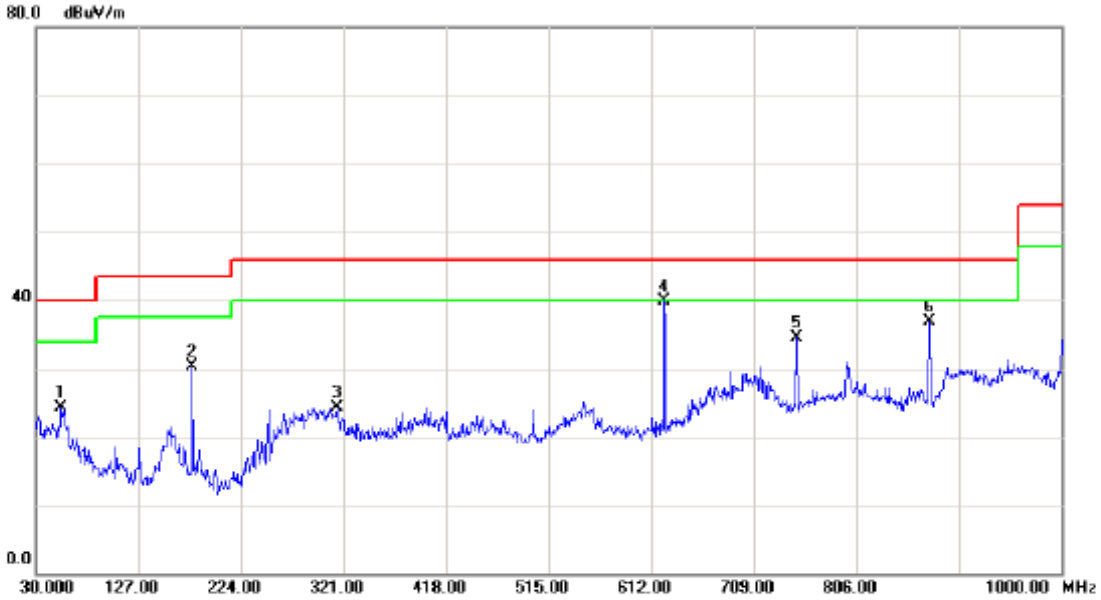
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		150.2800	43.61	-13.51	30.10	43.50	-13.40	peak	
2		272.5000	41.19	-13.70	27.49	46.00	-18.51	peak	
3		500.4500	36.81	-10.50	26.31	46.00	-19.69	peak	
4	*	624.6100	46.97	-7.06	39.91	46.00	-6.09	peak	
5		749.7400	38.89	-5.30	33.59	46.00	-12.41	peak	
6		874.8700	38.97	-1.78	37.19	46.00	-8.81	peak	

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



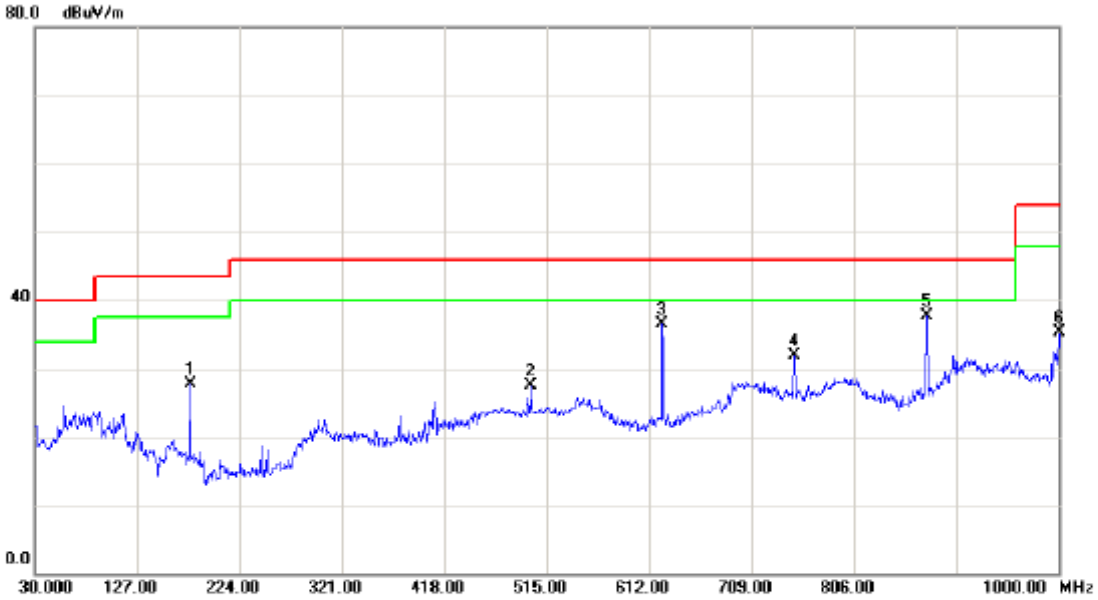
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		177.4400	40.87	-13.21	27.66	43.50	-15.84	peak	
2		408.3000	34.64	-9.60	25.04	46.00	-20.96	peak	
3		500.4500	36.99	-10.50	26.49	46.00	-19.51	peak	
4		624.6100	43.05	-7.06	35.99	46.00	-10.01	peak	
5		749.7400	35.65	-5.30	30.35	46.00	-15.65	peak	
6	*	874.8700	39.06	-1.78	37.28	46.00	-8.72	peak	

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



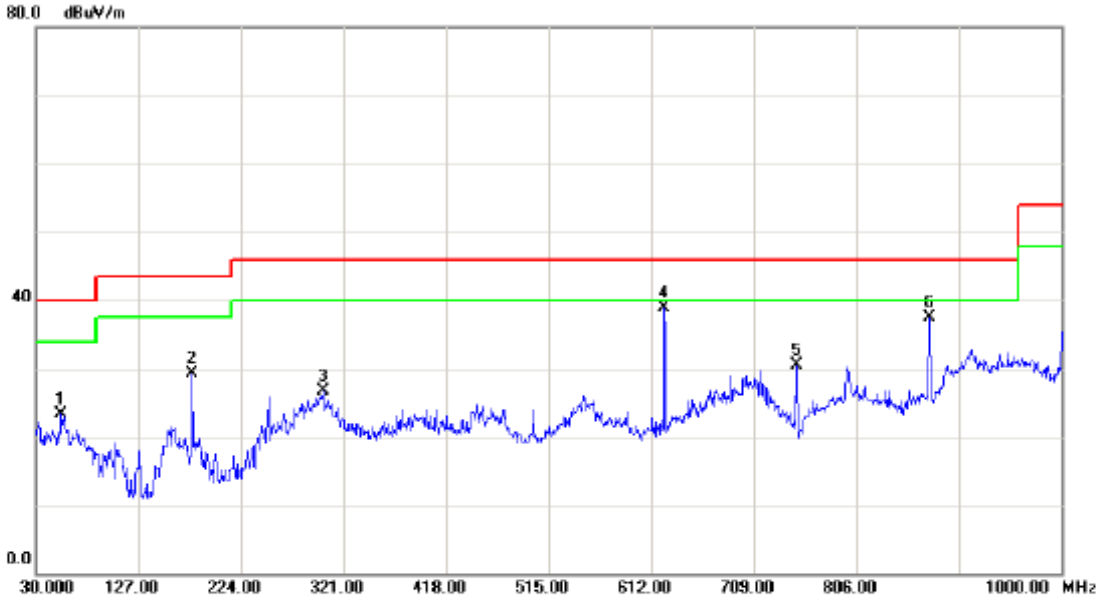
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		54.2500	38.21	-13.86	24.35	40.00	-15.65	peak	
2		178.4100	43.63	-13.25	30.38	43.50	-13.12	peak	
3		315.1800	35.42	-11.08	24.34	46.00	-21.66	peak	
4	*	624.6100	47.02	-7.06	39.96	46.00	-6.04	peak	
5		749.7400	39.88	-5.30	34.58	46.00	-11.42	peak	
6		874.8700	38.71	-1.78	36.93	46.00	-9.07	peak	

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2441MHz -CH39 -1Mbps / POE		



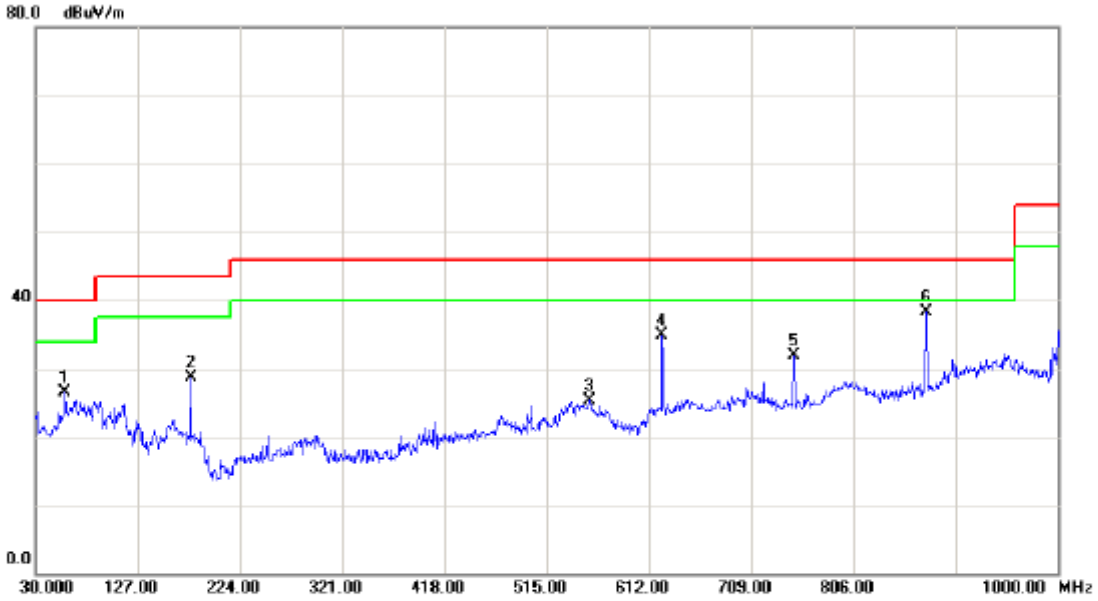
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		177.4400	40.87	-13.21	27.66	43.50	-15.84	peak	
2		500.4500	37.99	-10.50	27.49	46.00	-18.51	peak	
3		624.6100	43.55	-7.06	36.49	46.00	-9.51	peak	
4		749.7400	37.15	-5.30	31.85	46.00	-14.15	peak	
5	*	874.8700	39.56	-1.78	37.78	46.00	-8.22	peak	
6		1000.000	35.78	-0.54	35.24	54.00	-18.76	peak	

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2441MHz -CH39 -1Mbps / POE		



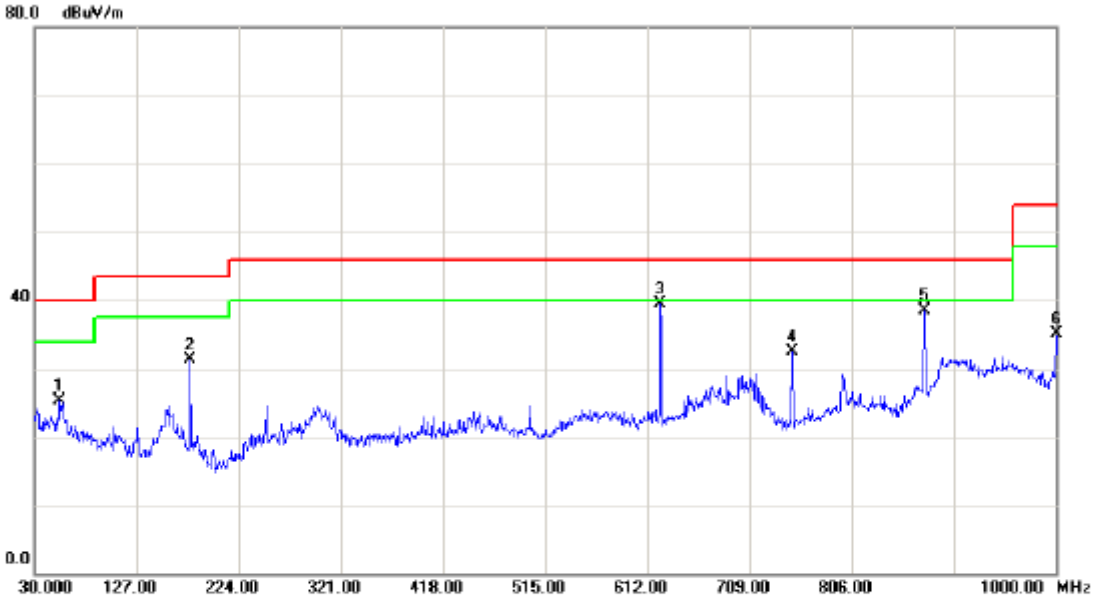
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		54.2500	37.21	-13.86	23.35	40.00	-16.65	peak	
2		178.4100	42.63	-13.25	29.38	43.50	-14.12	peak	
3		301.6000	37.61	-10.97	26.64	46.00	-19.36	peak	
4	*	624.6100	46.02	-7.06	38.96	46.00	-7.04	peak	
5		749.7400	35.88	-5.30	30.58	46.00	-15.42	peak	
6		874.8700	39.21	-1.78	37.43	46.00	-8.57	peak	

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Vertical
Test Mode:	TX 2480MHz -CH78 -1Mbps / POE		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		58.1300	40.54	-14.03	26.51	40.00	-13.49	peak	
2		177.4400	41.87	-13.21	28.66	43.50	-14.84	peak	
3		555.7400	31.52	-6.12	25.40	46.00	-20.60	peak	
4		624.6100	42.05	-7.06	34.99	46.00	-11.01	peak	
5		749.7400	37.15	-5.30	31.85	46.00	-14.15	peak	
6	*	874.8700	40.06	-1.78	38.28	46.00	-7.72	peak	

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	28 ℃	Relative Humidity:	56 %
Test Power:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	TX 2480MHz -CH78 -1Mbps / POE		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		54.2500	39.21	-13.86	25.35	40.00	-14.65	peak	
2		178.4100	44.63	-13.25	31.38	43.50	-12.12	peak	
3	*	624.6100	46.52	-7.06	39.46	46.00	-6.54	peak	
4		749.7400	37.88	-5.30	32.58	46.00	-13.42	peak	
5		874.8700	40.21	-1.78	38.43	46.00	-7.57	peak	
6		1000.000	35.64	-0.54	35.10	54.00	-18.90	peak	

4.2.8 TEST RESULTS (ABOVE 1000 MHZ)

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX 2402MHz -CH00 -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)	
2390.00	V	25.60	13.61	34.09	59.69	47.70	74.00	54.00	X/E
2402.10	**V**	**57.82**	**46.55**	**34.12**	**91.94**	**80.67**			**X/F**
4803.95	V	47.18	36.11	6.38	53.56	42.49	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

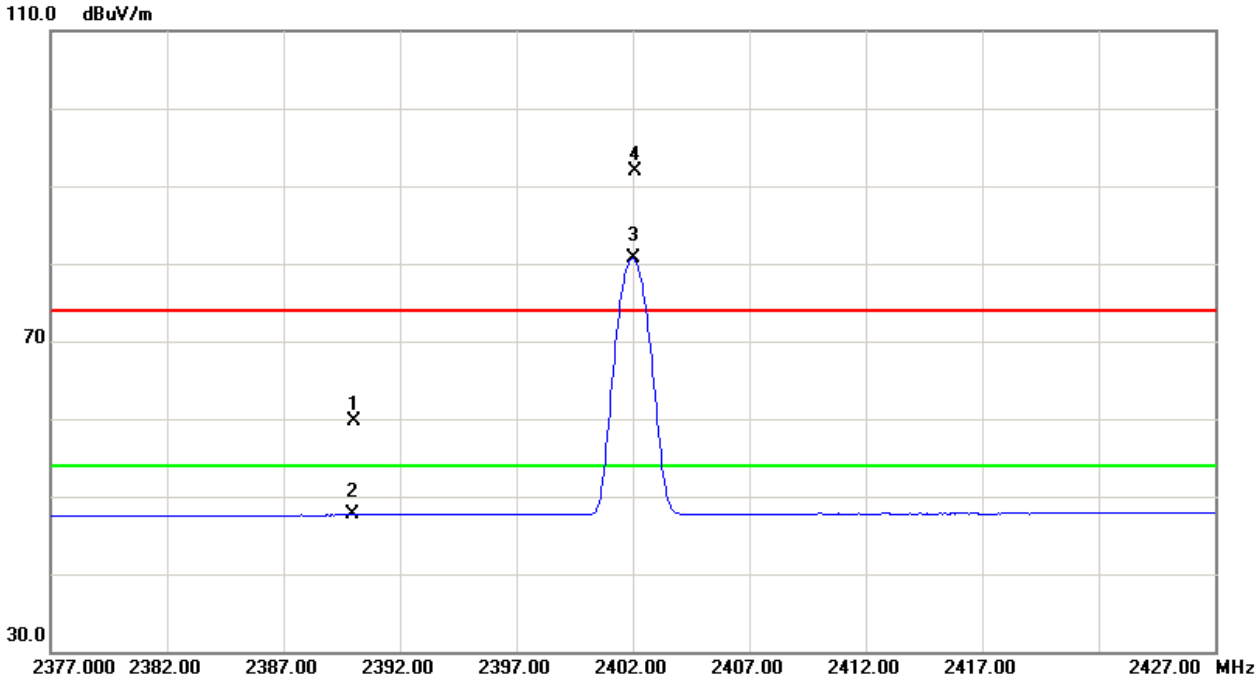
(4) Data of measurement within this frequency range shown "*" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

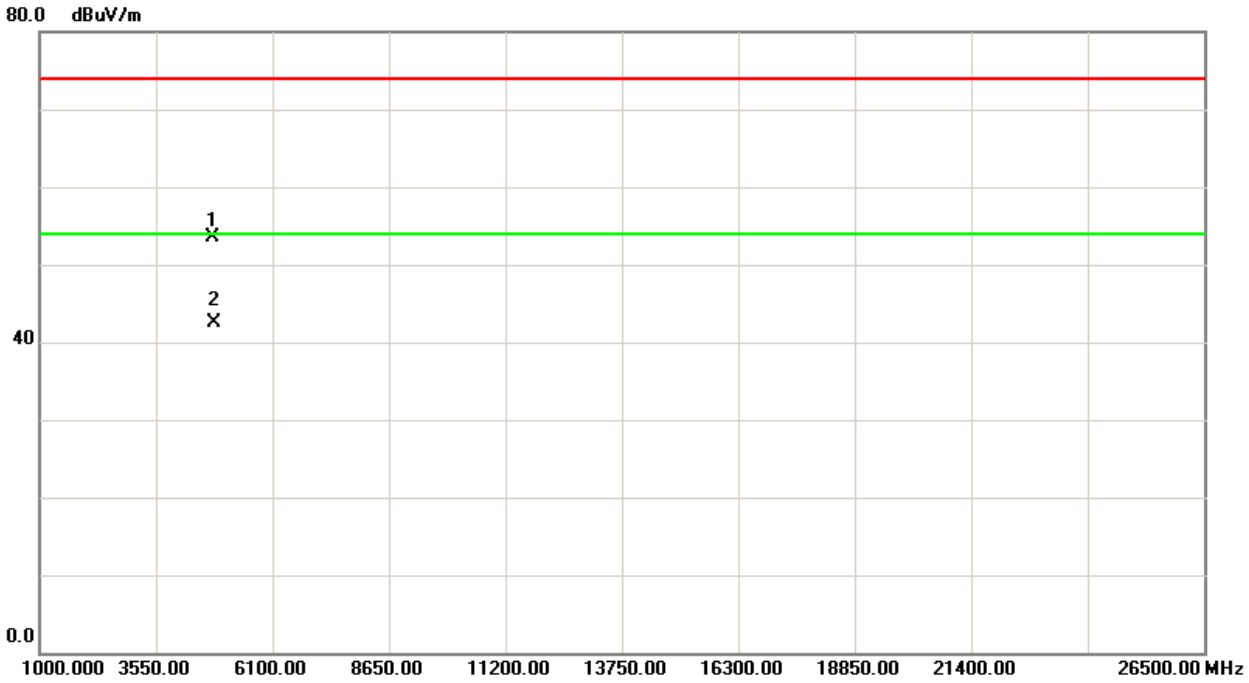
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX 2402MHz -CH00 -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)	
2390.00	H	24.32	13.41	34.09	58.41	47.50	74.00	54.00	X/E
2402.15	**H**	**57.97**	**47.77**	**34.12**	**92.09**	**81.89**			**X/F**
4804.35	H	45.94	35.15	6.38	52.32	41.53	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

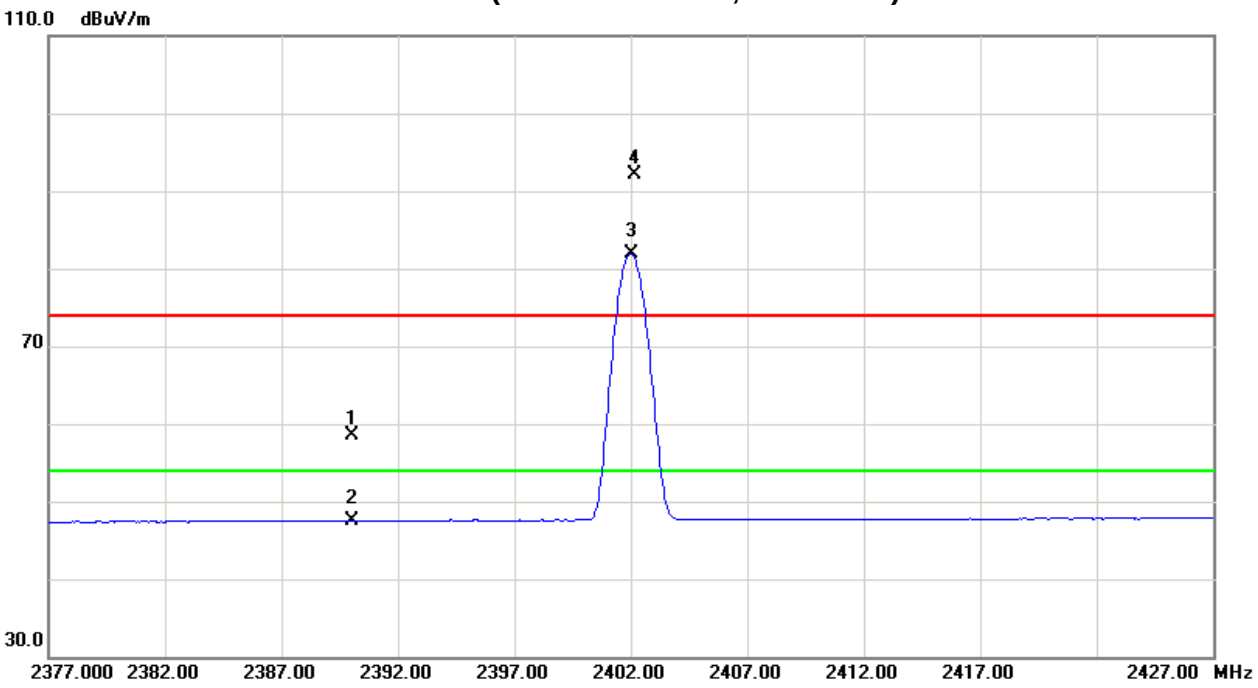
(4) Data of measurement within this frequency range shown "*" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

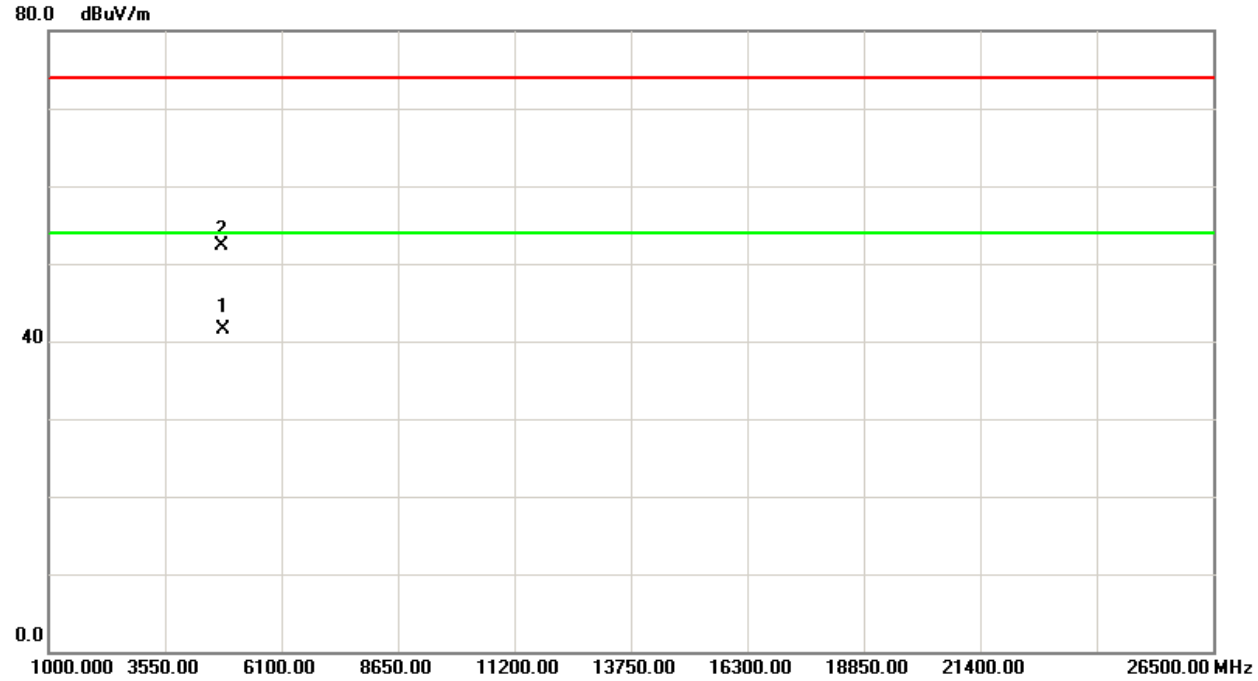
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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, Horizontal)





EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX 2441MHz -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)	
2441.15	**V**	**62.62**	**52.34**	**34.25**	**96.87**	**86.59**			**X/F**
4882.45	V	47.64	35.43	6.61	54.25	42.04	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

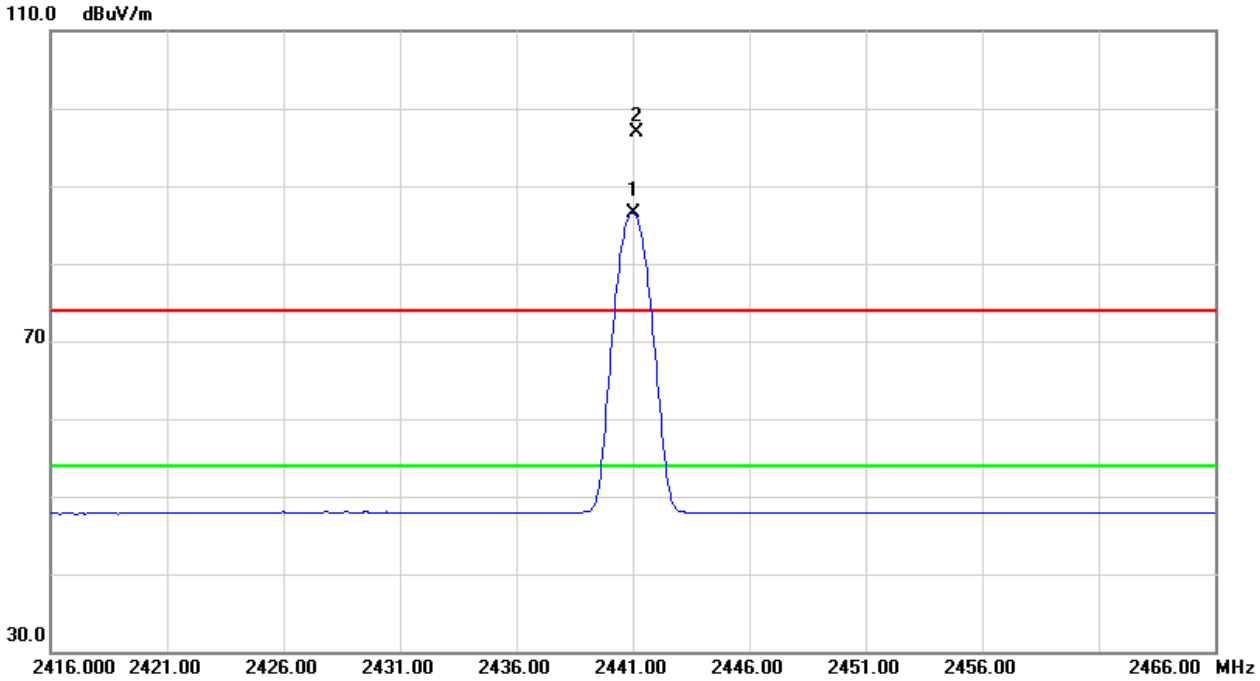
(4) Data of measurement within this frequency range shown "*" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

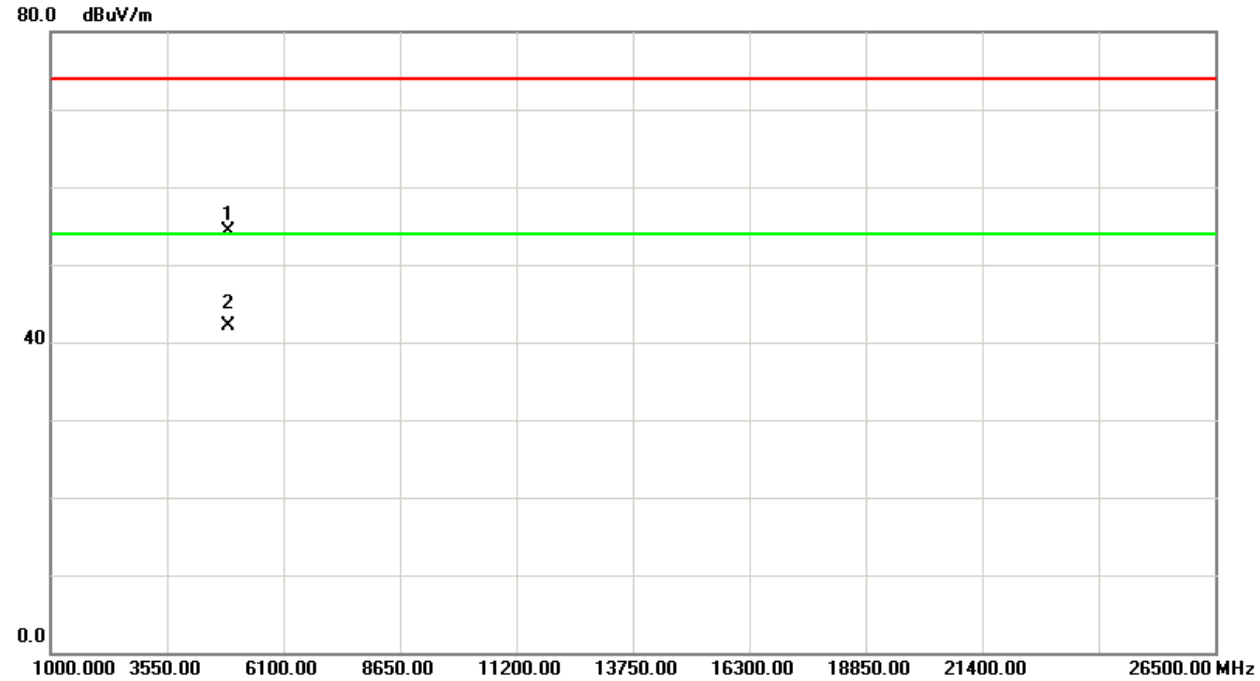
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX 2441MHz -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)	
2441.15	**H**	**63.25**	**53.06**	**34.25**	**97.50**	**87.31**			**X/F**
4882.35	H	46.87	35.20	6.61	53.48	41.81	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

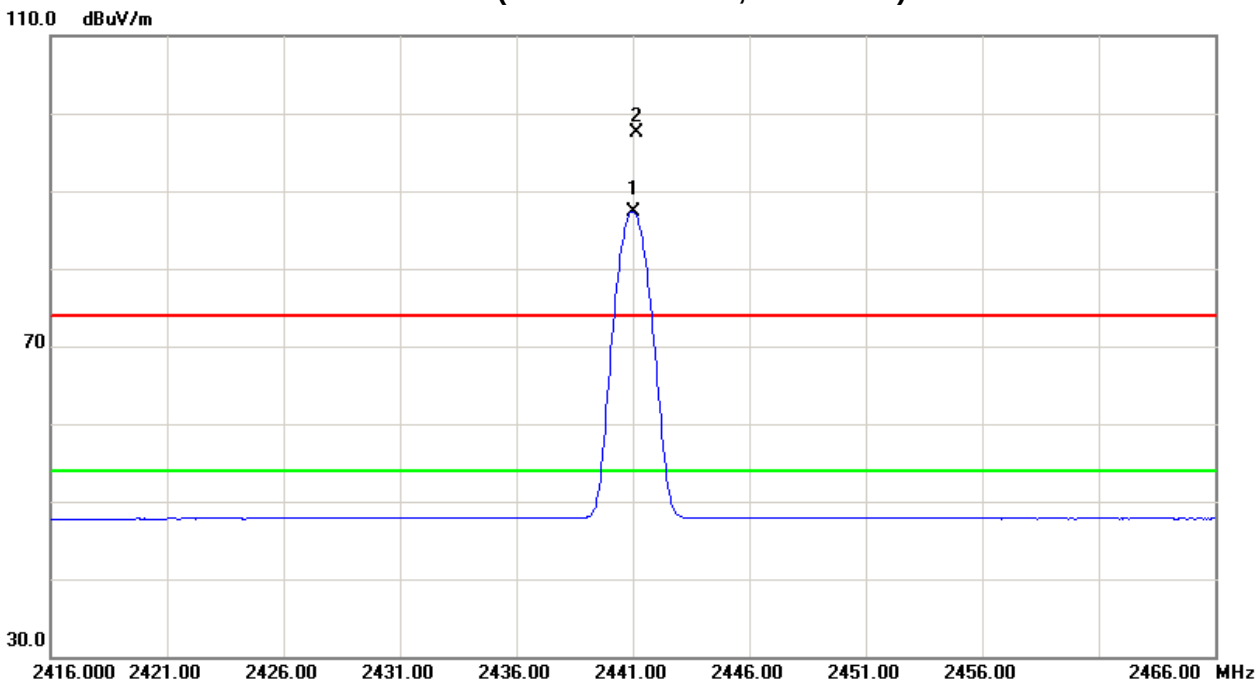
(4) Data of measurement within this frequency range shown "*" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

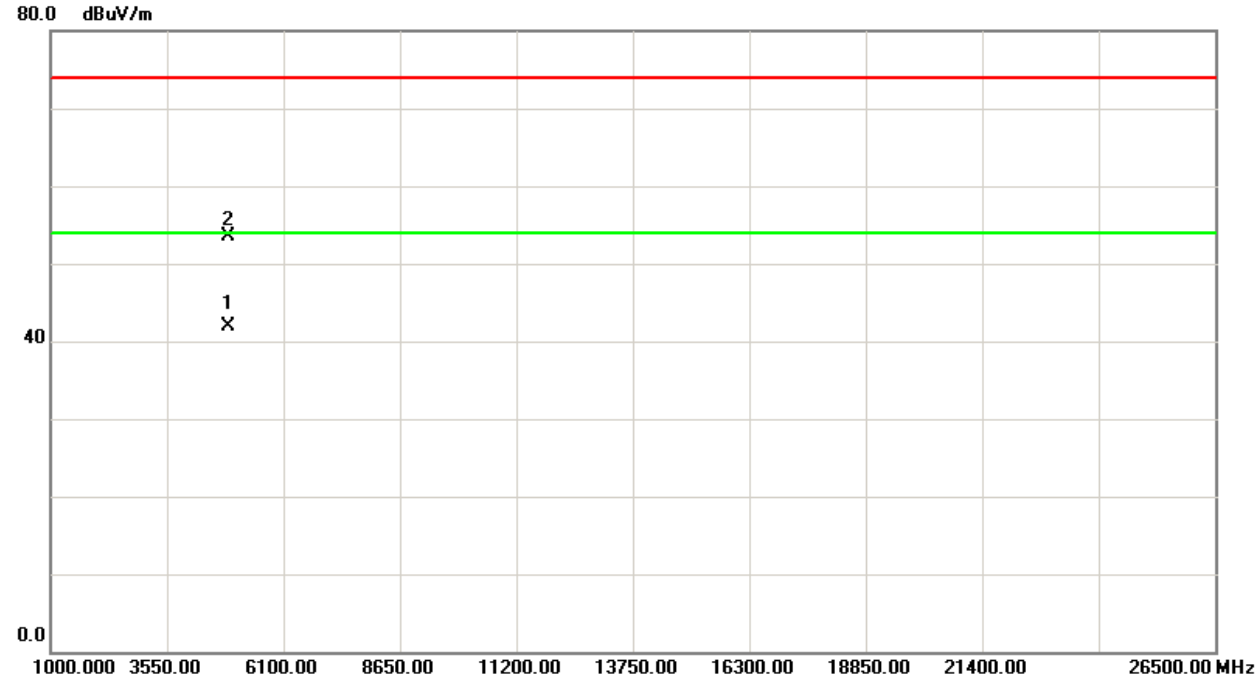
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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, Horizontal)





EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX 2480MHz -CH78 -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)	
2480.15	**V**	**66.66**	**56.39**	**34.36**	**101.02**	**90.75**			**X/F**
2483.50	V	21.95	13.45	34.37	56.32	47.82	74.00	54.00	X/E
4959.96	V	47.91	36.35	6.83	54.74	43.18	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

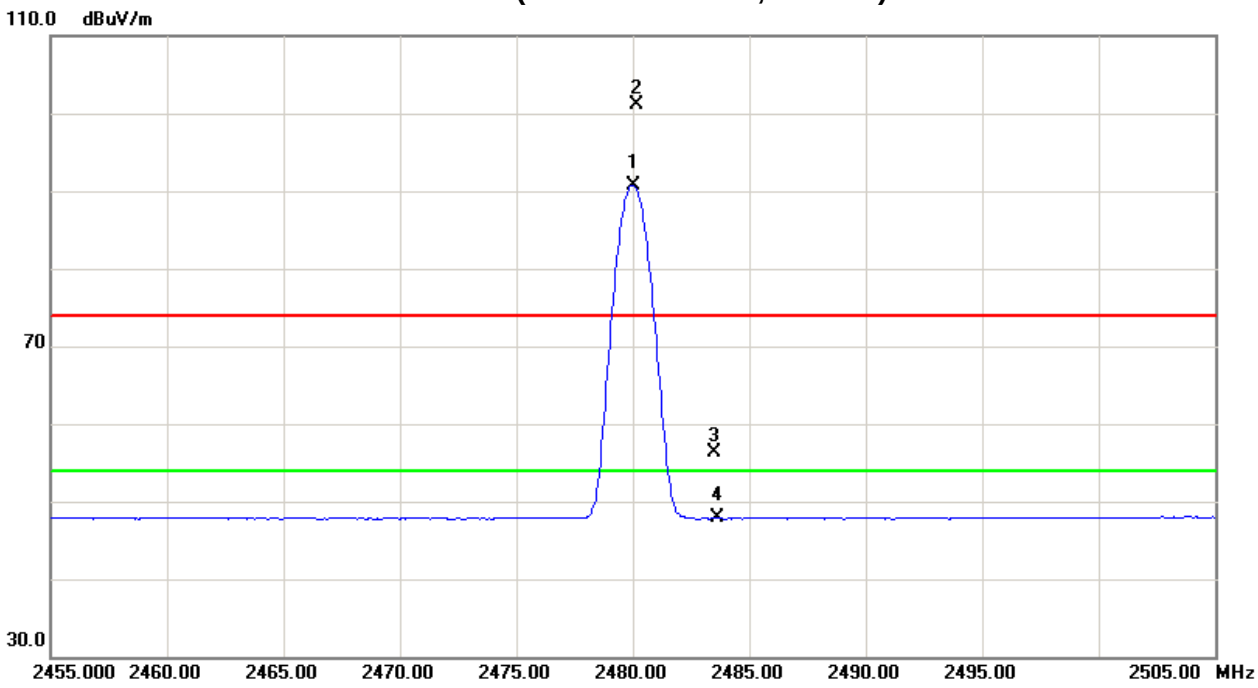
(4) Data of measurement within this frequency range shown "*" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

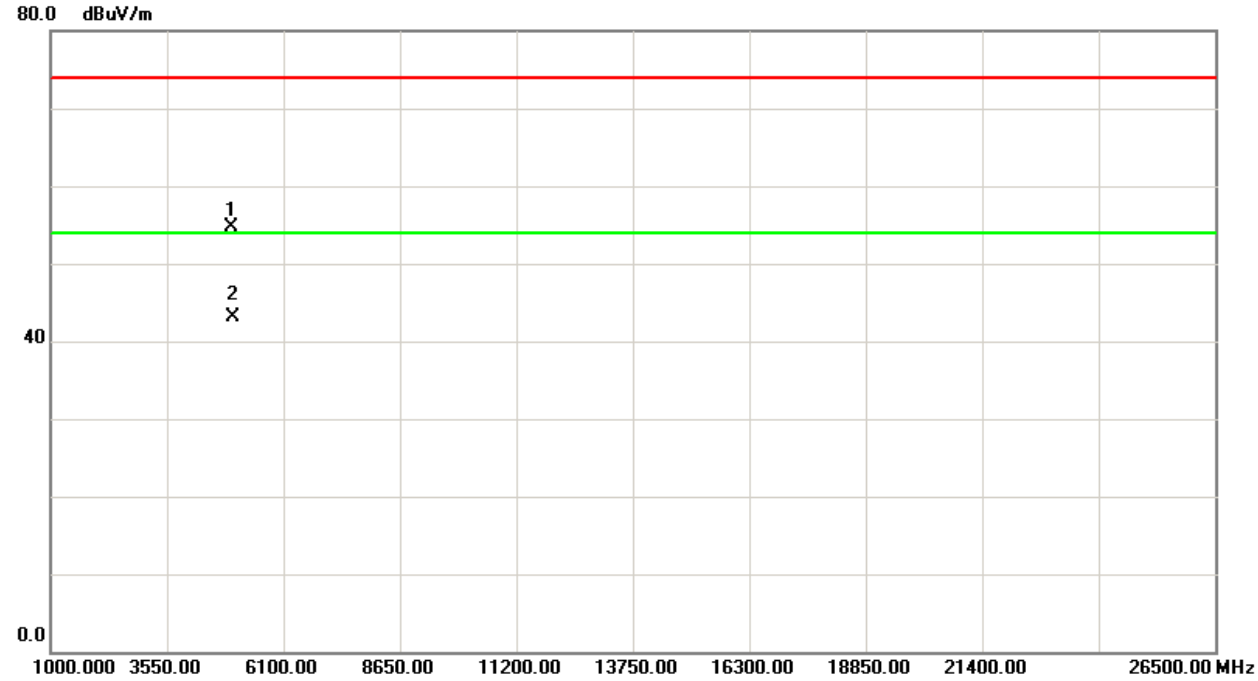
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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 CH78 (Above 1000 MHz, Vertical)





EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX 2480MHz -CH78 -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)	
2480.15	**H**	**64.44**	**54.18**	**34.36**	**98.80**	**88.54**			**X/F**
2483.50	H	22.65	13.44	34.37	57.02	47.81	74.00	54.00	X/E
4960.12	H	47.34	35.82	6.83	54.17	42.65	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

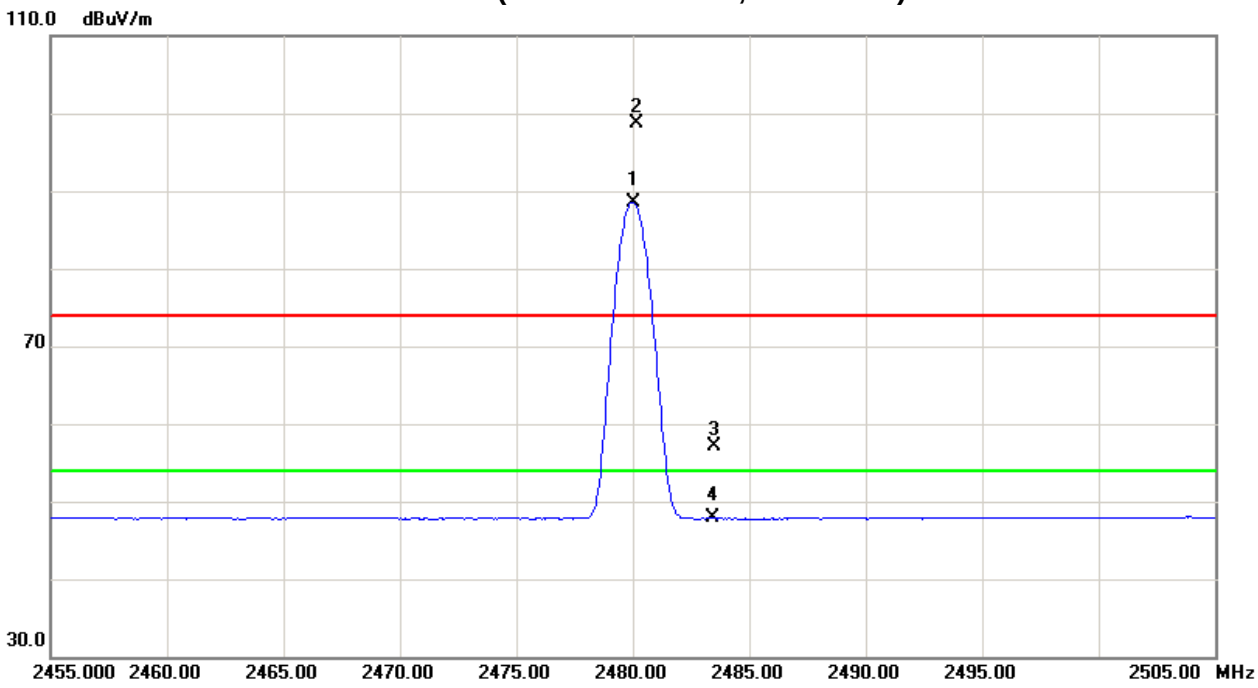
(4) Data of measurement within this frequency range shown "*" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

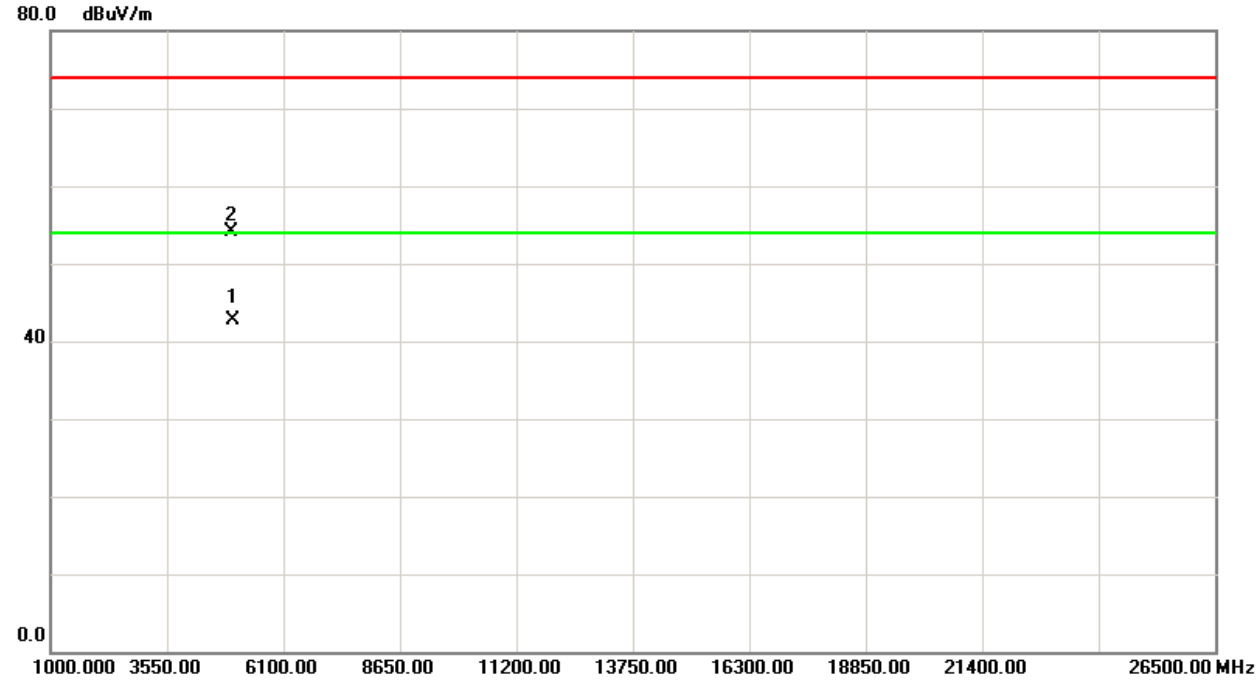
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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 CH78 (Above 1000 MHz, Horizontal)





EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX 2402MHz -CH00 -3Mbps		

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)	
2390.00	V	23.14	13.48	34.09	57.23	47.57	74.00	54.00	X/E
2402.00	**V**	**56.01**	**43.42**	**34.12**	**90.13**	**77.54**			**X/F**
4804.23	V	43.17	30.56	6.38	49.55	36.94	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

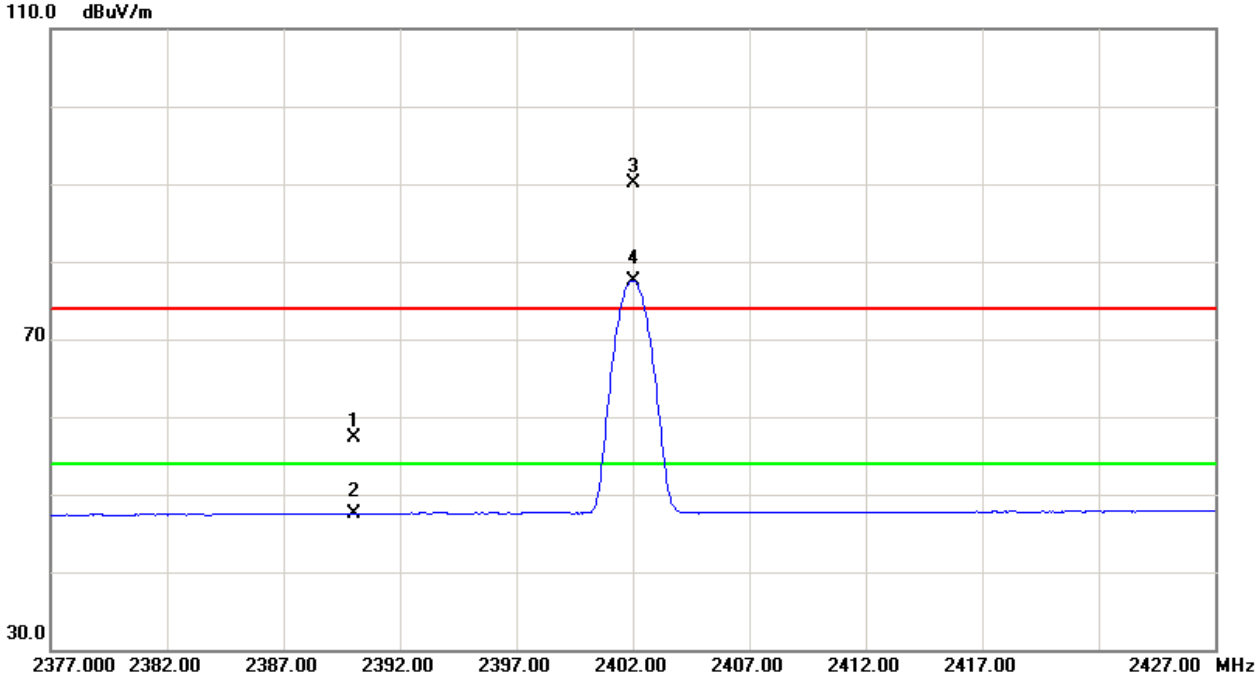
(4) Data of measurement within this frequency range shown "*" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

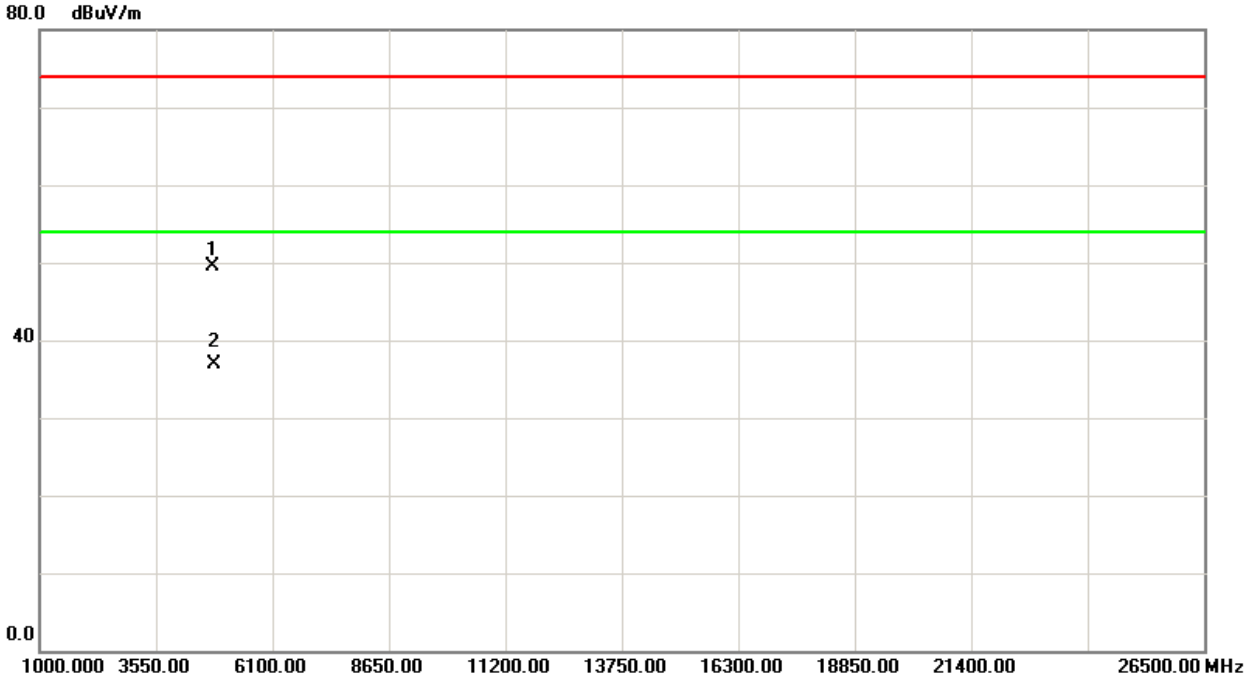
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX 2402MHz -CH00 -3Mbps		

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)	
2390.00	H	22.88	13.41	34.09	56.97	47.50	74.00	54.00	X/E
2402.00	**H**	**55.94**	**43.31**	**34.12**	**90.06**	**77.43**			**X/F**
4803.94	H	43.01	30.40	6.38	49.39	36.78	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

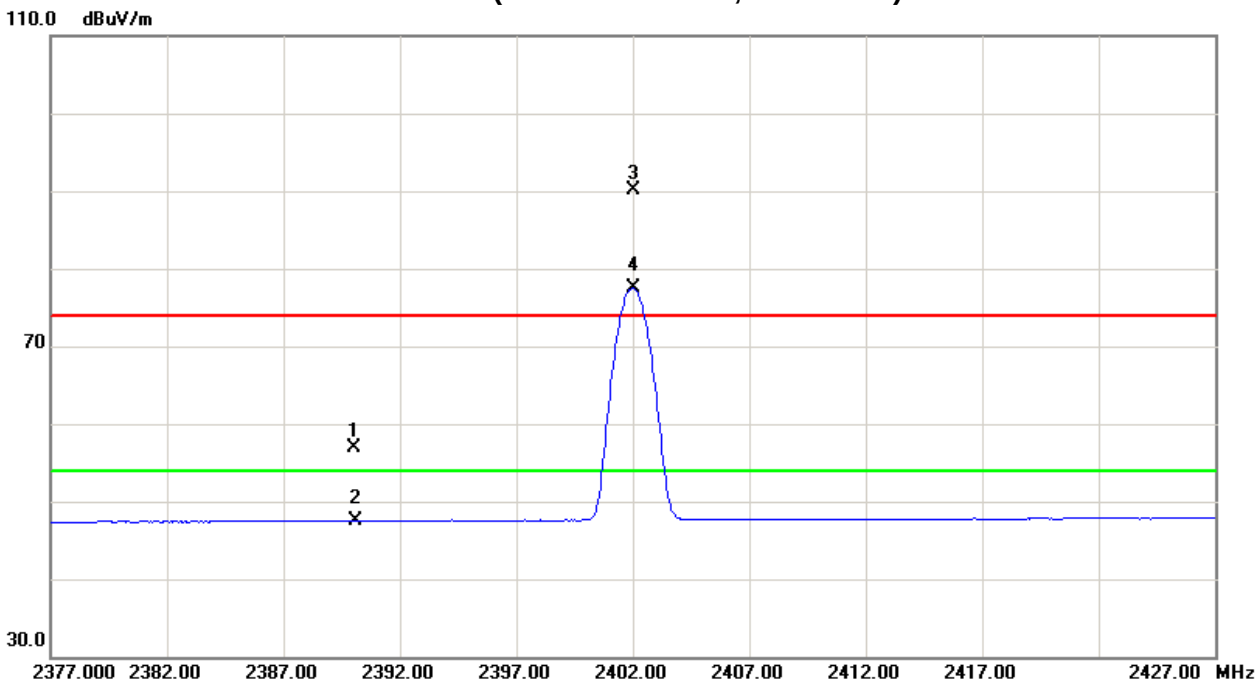
(4) Data of measurement within this frequency range shown "*" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

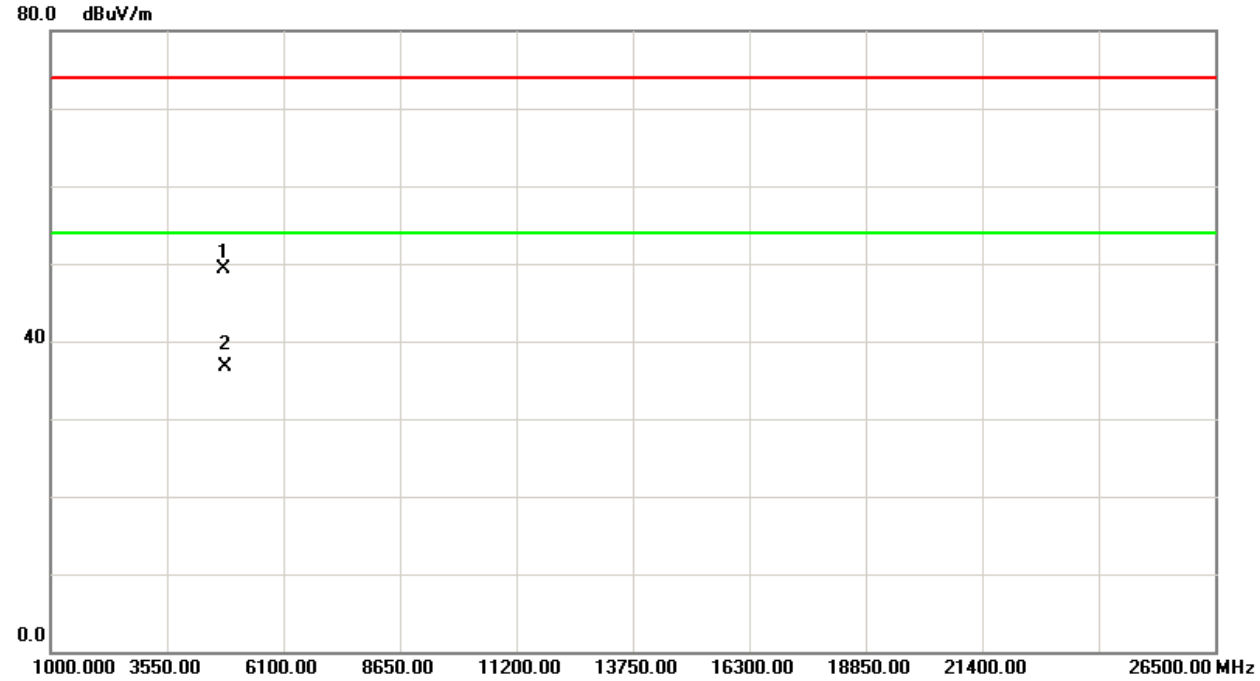
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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, Horizontal)





EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX 2441MHz -CH39 -3Mbps		

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)	
2441.05	**V**	**59.61**	**47.19**	**34.25**	**93.86**	**81.44**			**X/F**
4881.98	V	42.89	31.36	6.61	49.50	37.97	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

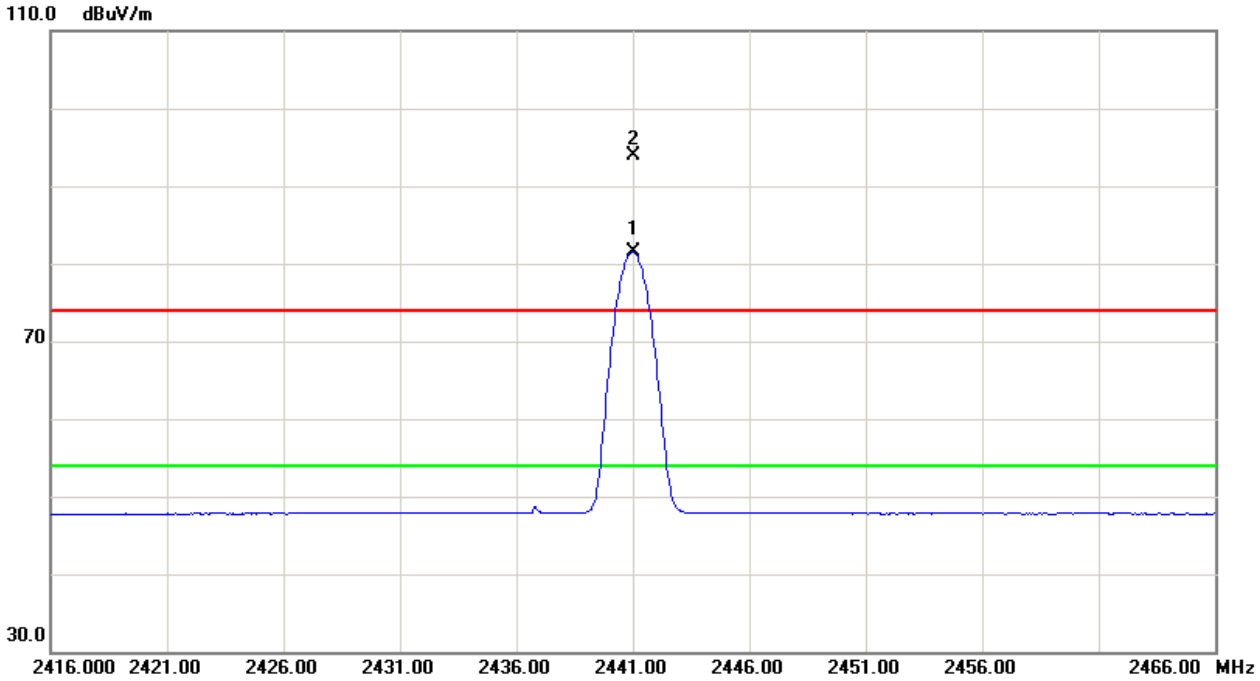
(4) Data of measurement within this frequency range shown "*" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

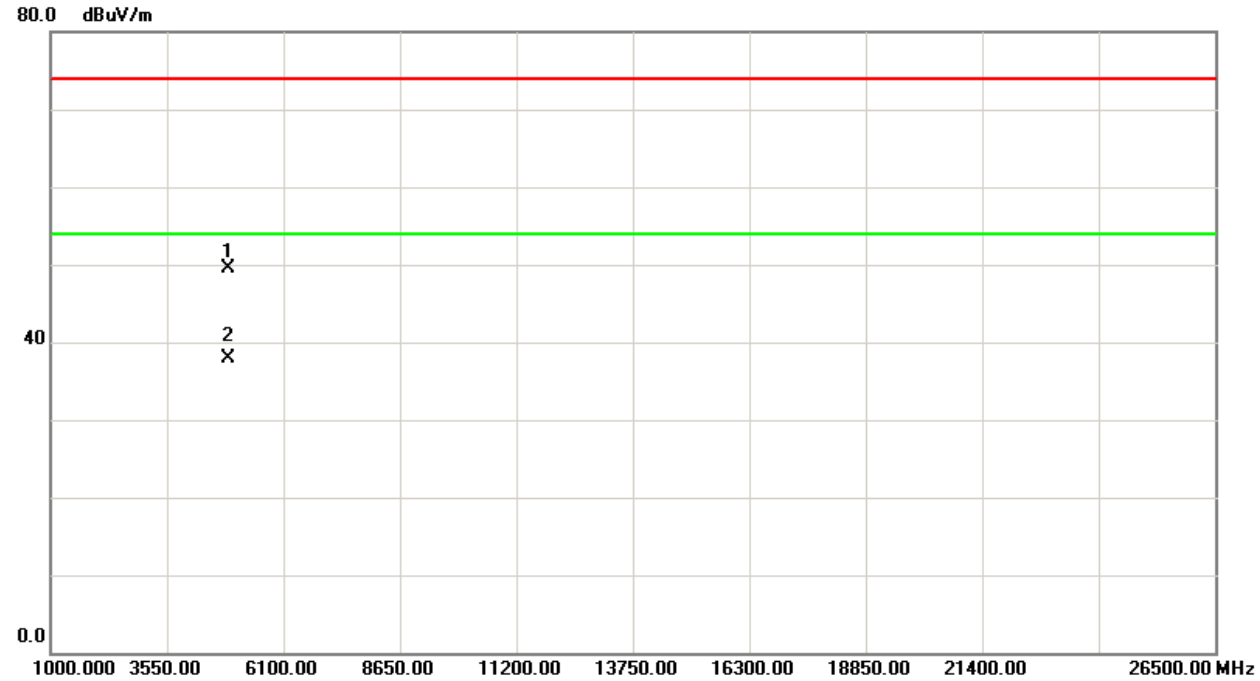
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX 2441MHz -CH39 -3Mbps		

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)	
2441.05	**H**	**59.68**	**47.24**	**34.25**	**93.93**	**81.49**			**X/F**
4881.96	H	42.43	30.55	6.61	49.04	37.16	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

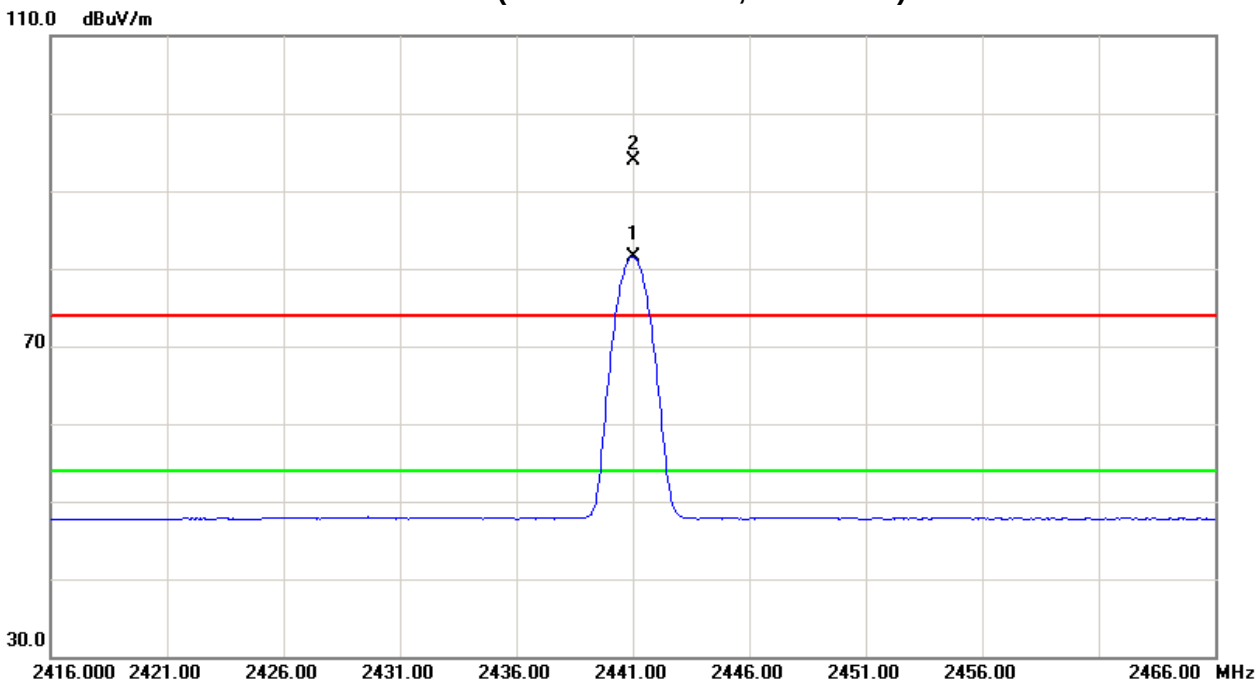
(4) Data of measurement within this frequency range shown "*" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

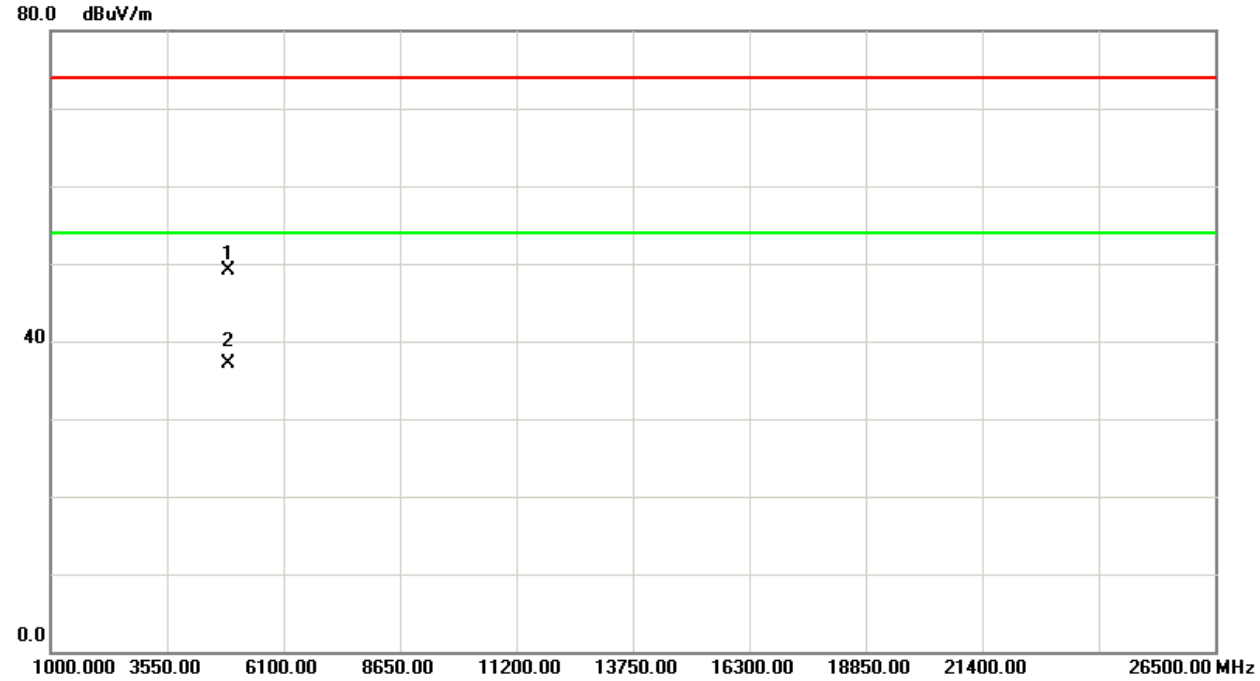
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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, Horizontal)





EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX 2480MHz -CH78 -3Mbps		

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)	
2479.95	**V**	**65.32**	**52.87**	**34.36**	**99.68**	**87.23**			**X/F**
2483.50	V	22.88	13.38	34.37	57.25	47.75	74.00	54.00	X/E
4959.86	V	42.98	31.26	6.83	49.81	38.09	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

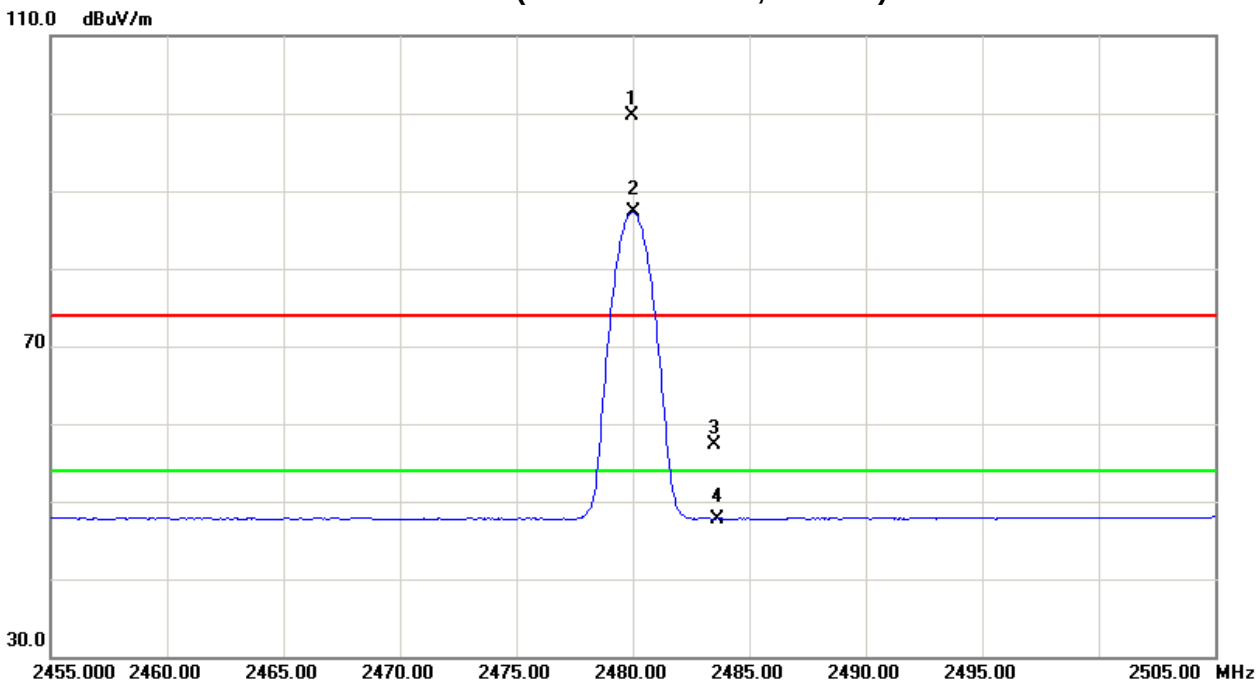
(4) Data of measurement within this frequency range shown "*" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

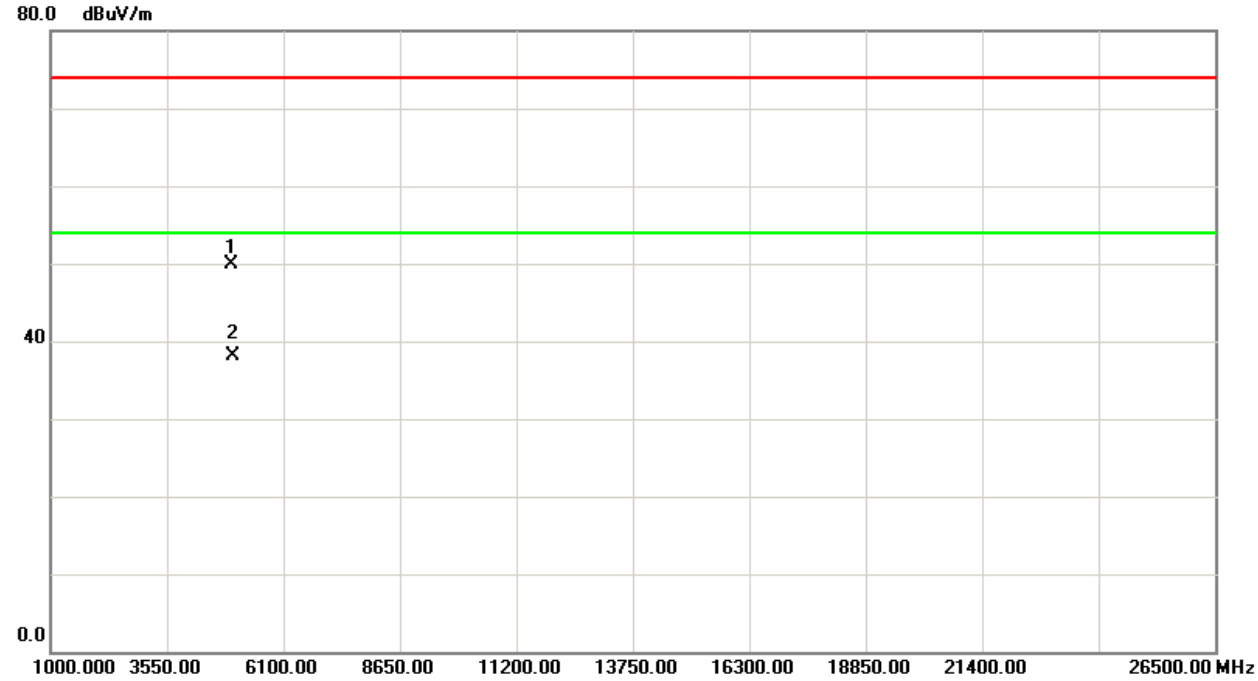
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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 CH78 (Above 1000 MHz, Vertical)





EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX 2480MHz -CH78 -3Mbps		

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)	
2479.85	**H**	**61.04**	**48.68**	**34.36**	**95.40**	**83.04**			**X/F**
2483.50	H	22.41	13.40	34.37	56.78	47.77	74.00	54.00	X/E
4959.93	H	42.94	30.35	6.83	49.77	37.18	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

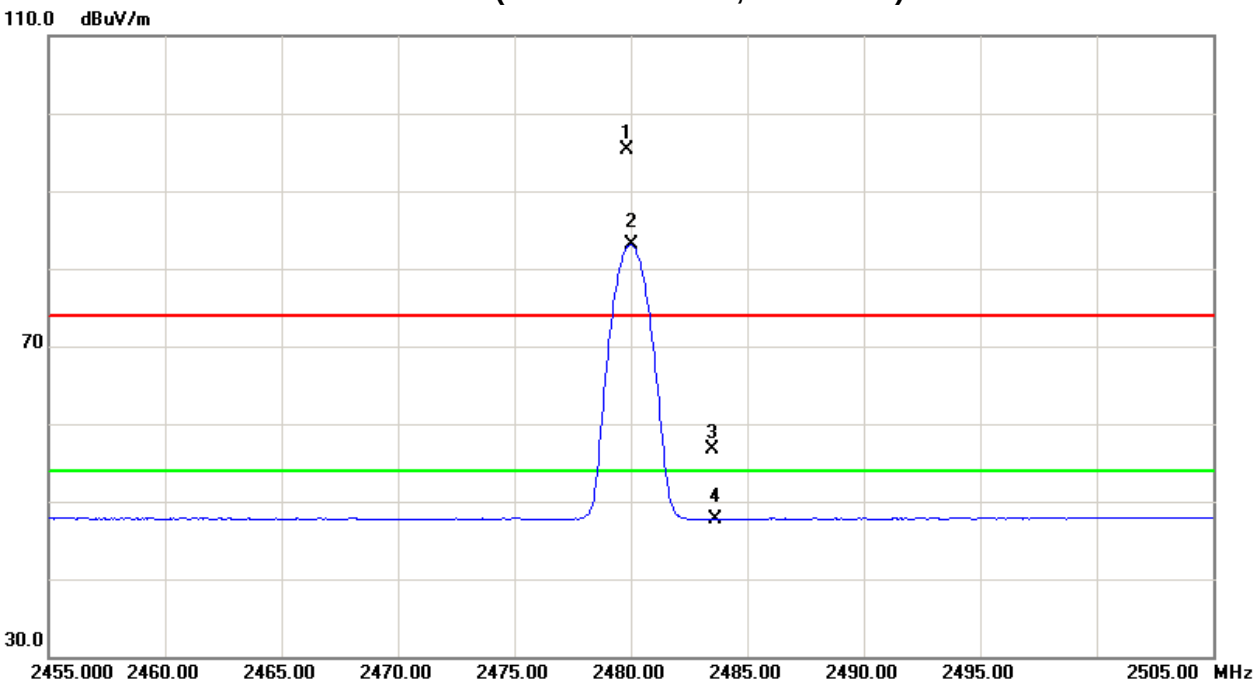
(4) Data of measurement within this frequency range shown "*" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

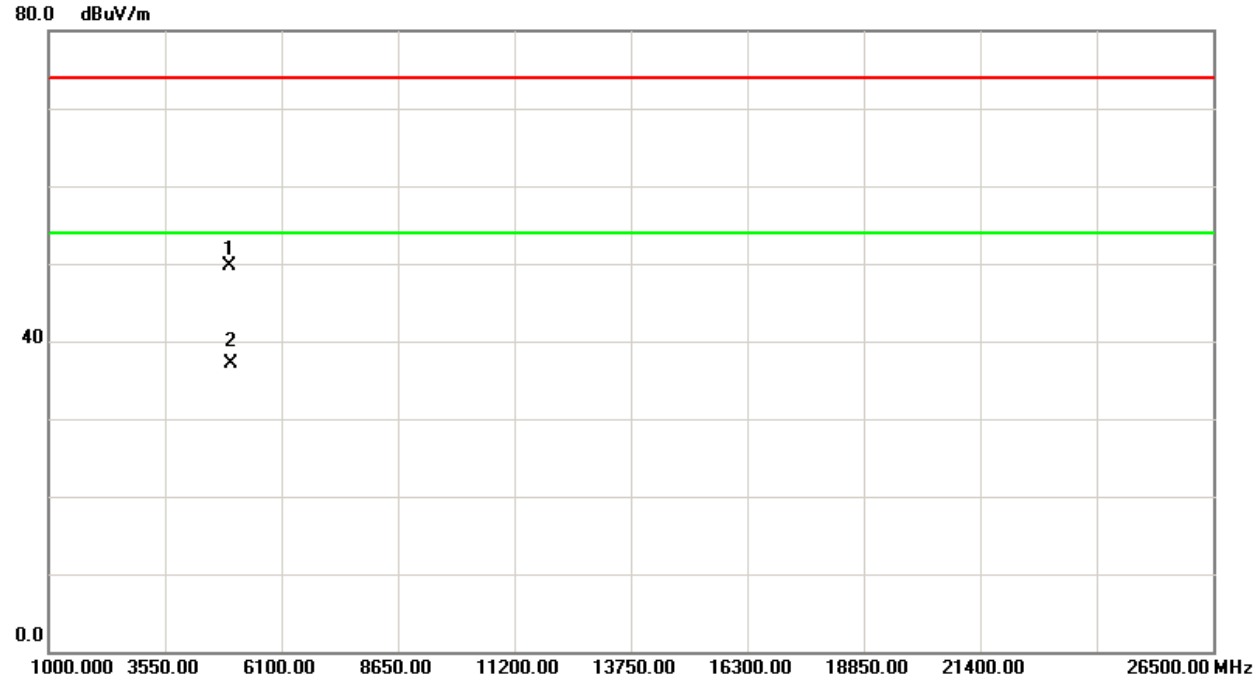
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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 CH78 (Above 1000 MHz, Horizontal)





5. NUMBER OF HOPPING CHANNEL

5.1 APPLIED PROCEDURES

FCC Part15 (15.247) , Subpart C/ RSS-GEN and RSS-210			
Section	Test Item	Frequency Range (MHz)	Result
15.247(a)(1)(iii) RSS-210, Issue 8, Annex 8, A8.1(d)	Number of Hopping Channel	2400-2483.5	PASS

5.1.1 MEASUREMENT INSTRUMENTS LIST AND SETTING

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.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RBW	100 KHz
VBW	100 KHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

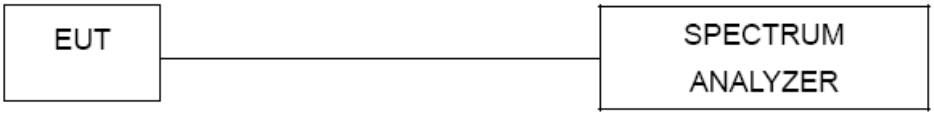
5.1.2 TEST PROCEDURE

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

5.1.3 DEVIATION FROM STANDARD

No deviation.

5.1.4 TEST SETUP



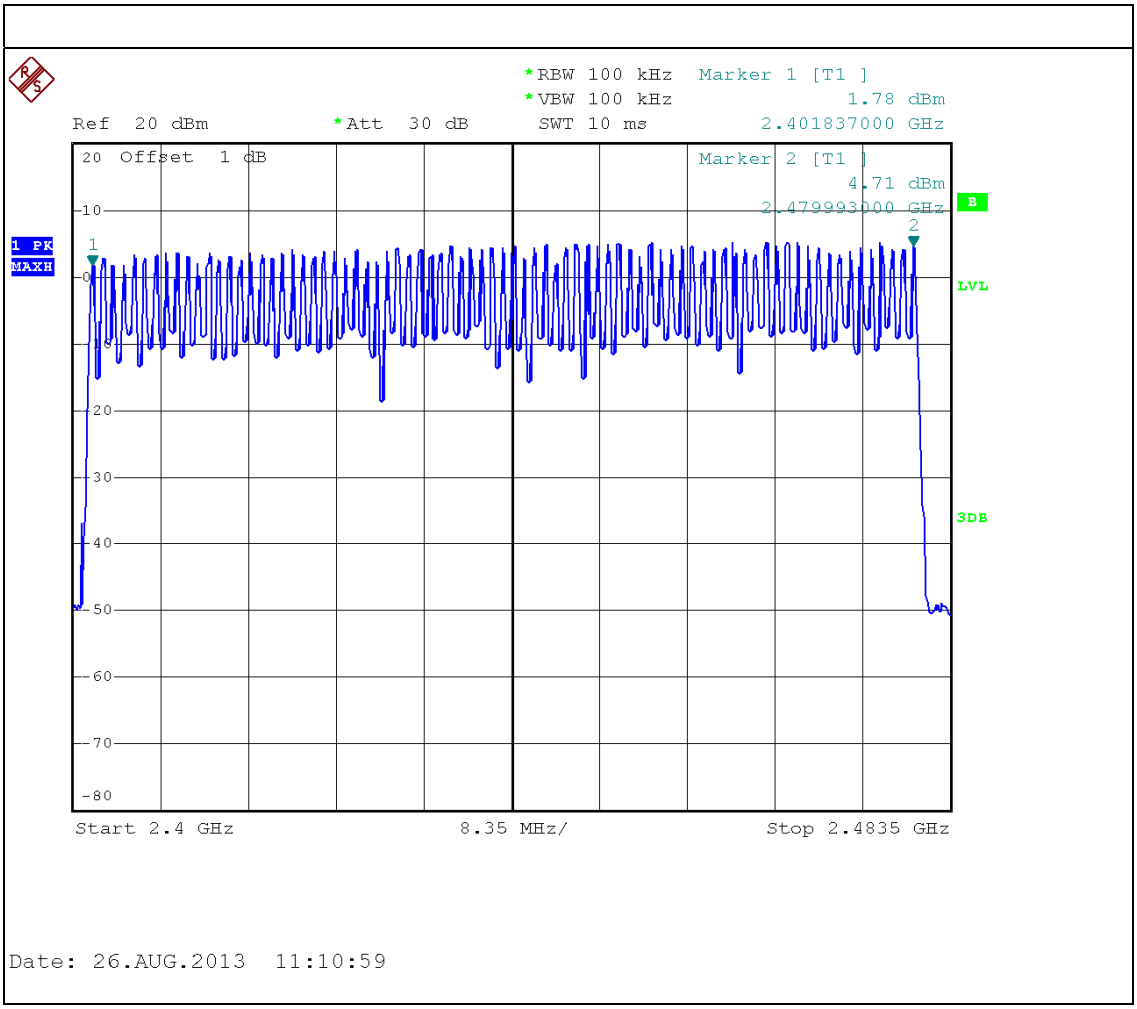
5.1.5 EUT OPERATION CONDITIONS

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

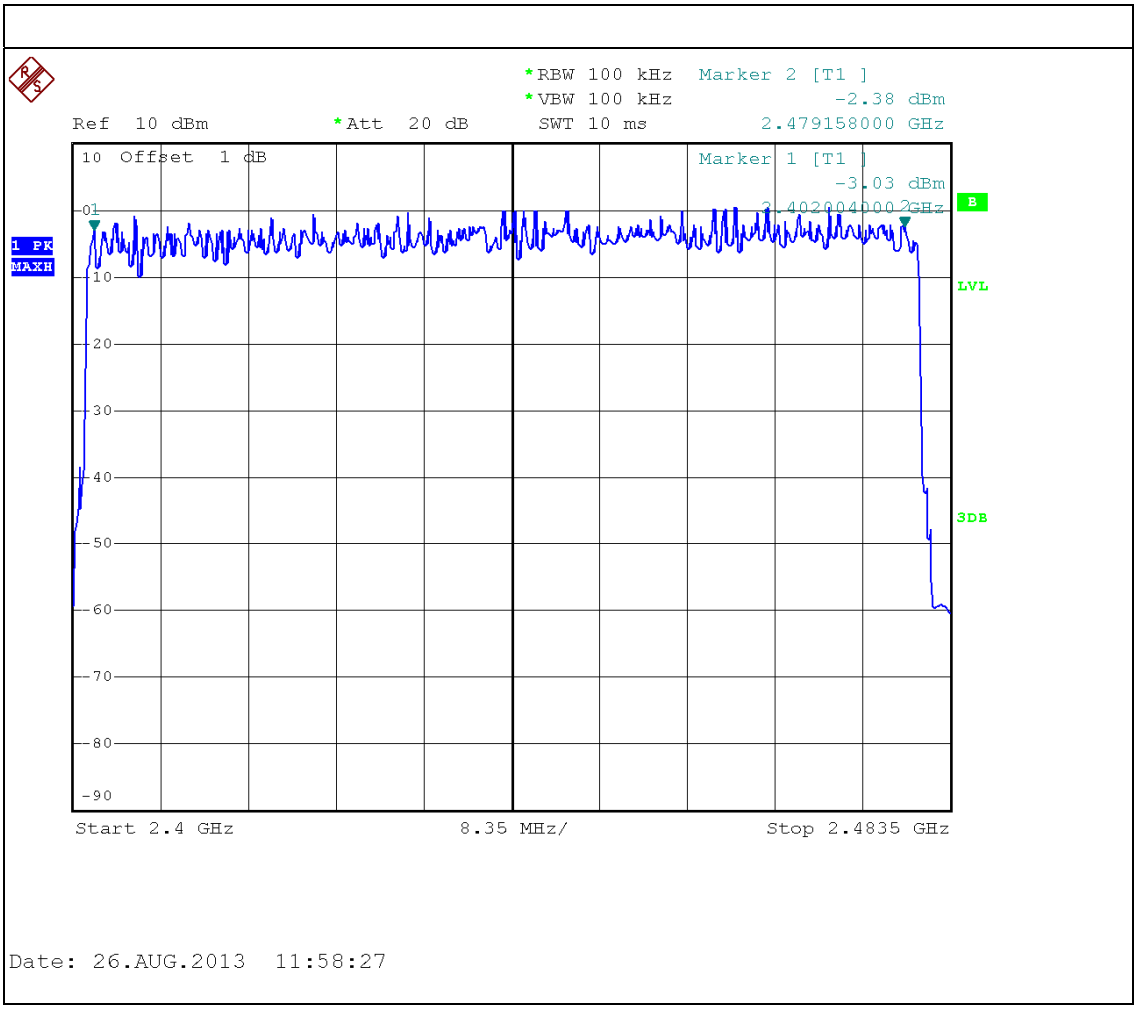
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	Hopping Mode -1Mbps		

Number of Hopping Channel	79



EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	Hopping Mode -3Mbps		

Number of Hopping Channel	79



6. AVERAGE TIME OF OCCUPANCY

6.1 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)(1)(iii) RSS-210, Issue 8, Annex 8, A8.1(d)	Average Time of Occupancy	0.4sec	2400-2483.5	PASS

6.1.1 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.

6.1.2 TEST PROCEDURE

a. The transmitter output (antenna port) was connected to the spectrum analyzer
b. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
c. Use a video trigger with the trigger level set to enable triggering only on full pulses.
d. Sweep Time is more than once pulse time.
e. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
f. Measure the maximum time duration of one single pulse.
g. Set the EUT for DH5, DH3 and DH1 packet transmitting.
h. Measure the maximum time duration of one single pulse.
i. DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots TX, 1 time slot RX). So, the dwell time is the time duration of the pulse times 3.37 x 31.6 = 106.6 within 31.6 seconds.
j. DH3 Packet permit maximum 1600 / 79 / 4 = 5.06 hops per second in each channel (3 time slots TX, 1 time slot RX). So, the dwell time is the time duration of the pulse times 5.06 x 31.6 = 160 within 31.6 seconds.
k. DH1 Packet permit maximum 1600 / 79 /2 = 10.12 hops per second in each channel (1 time slot TX, 1 time slot RX). So, the dwell time is the time duration of the pulse times 10.12 x 31.6 = 320 within 31.6 seconds.

6.1.3 DEVIATION FROM STANDARD

No deviation.

6.1.4 TEST SETUP

6.1.5 EUT OPERATION CONDITIONS

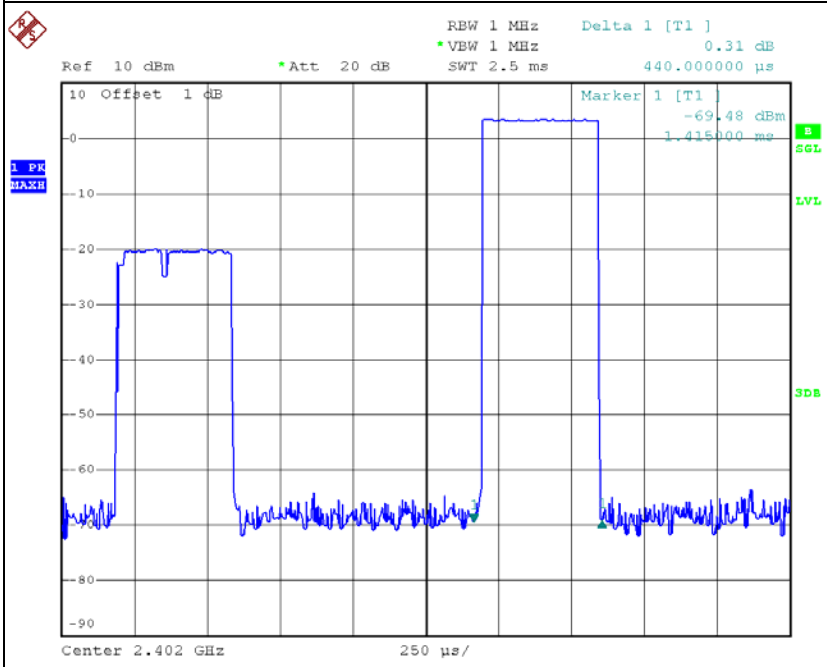
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.6 TEST RESULTS

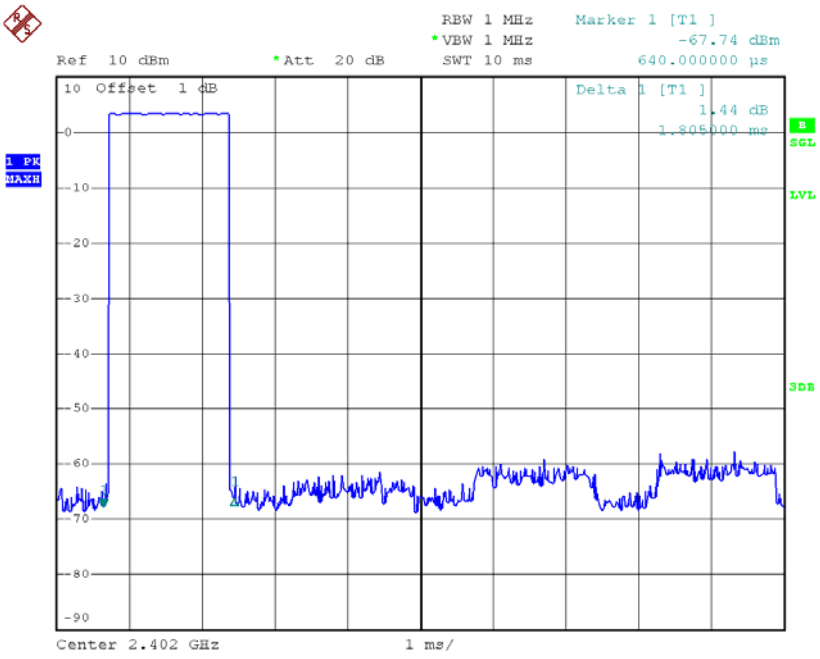
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	CH00-DH1/DH3/DH5 -1Mbps		

Data Packet	Frequency (MHz)	Pulse Duration (ms)	Dwell Time (s)	Limit (s)
DH5	2402	3.1650	0.3376	0.4000
DH3	2402	1.8050	0.2888	0.4000
DH1	2402	0.4400	0.1408	0.4000

CH00-DH1

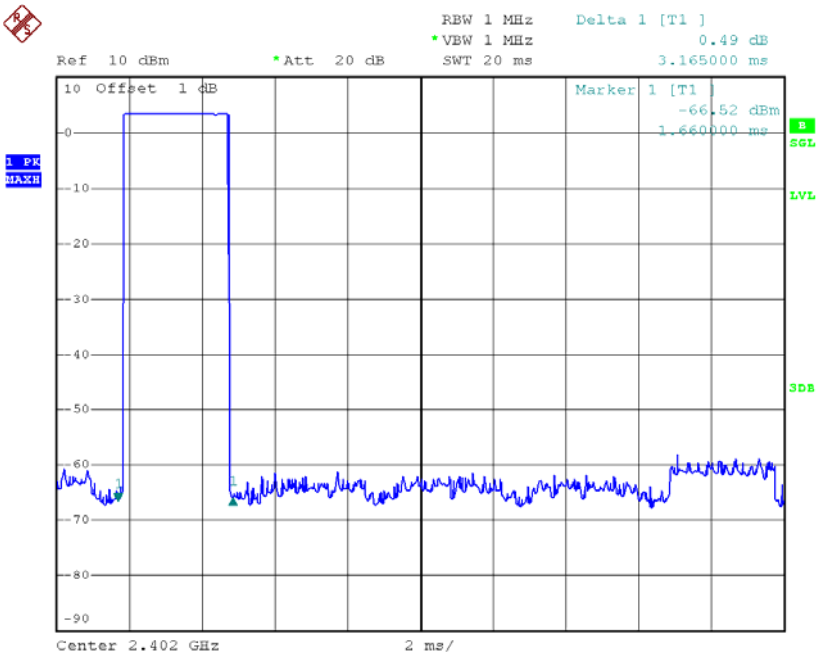


CH00-DH3



Date: 26.AUG.2013 11:17:56

CH00-DH5

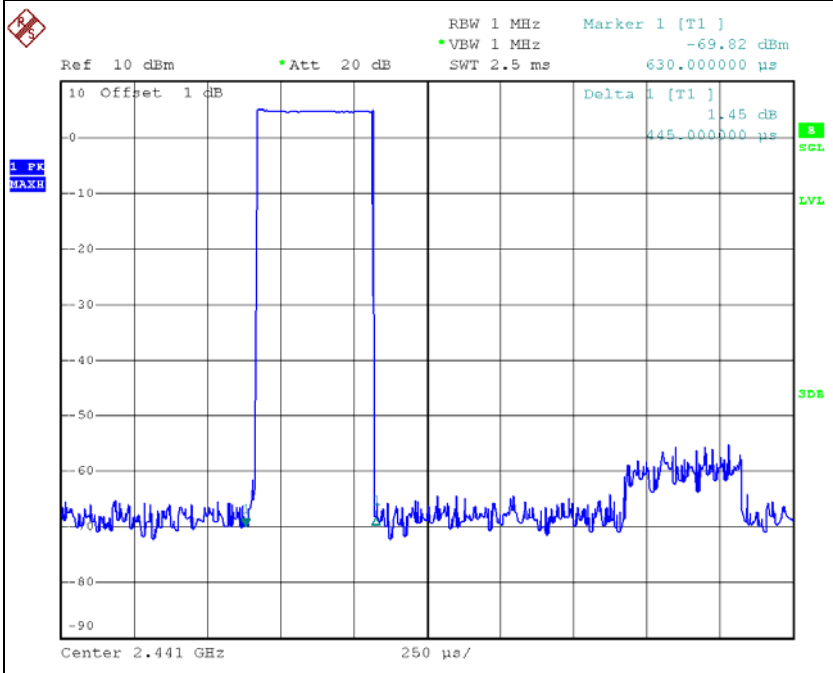


Date: 26.AUG.2013 11:19:33

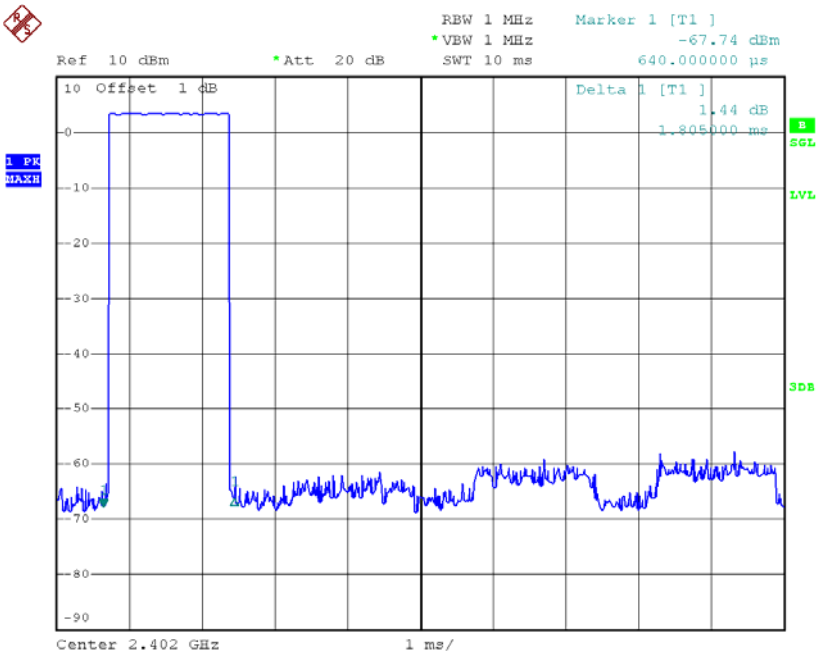
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	CH39 -DH1/DH3/DH5 -1Mbps		

Data Packet	Frequency (MHz)	Pulse Duration (ms)	Dwell Time (s)	Limit (s)
DH5	2441	3.1250	0.3333	0.4000
DH3	2441	1.7450	0.2792	0.4000
DH1	2441	0.4450	0.1424	0.4000

CH39-DH1

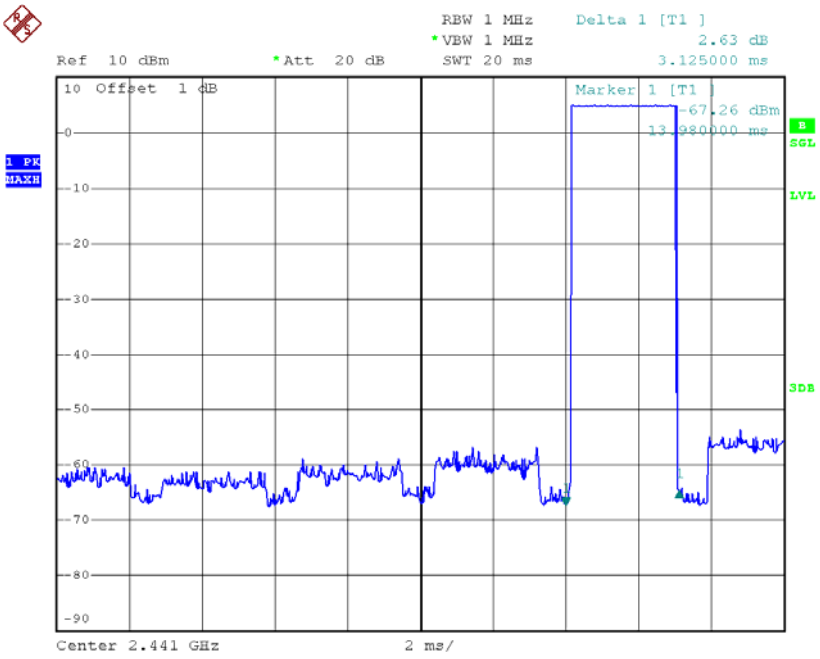


CH39-DH3



Date: 26.AUG.2013 11:17:56

CH39-DH5

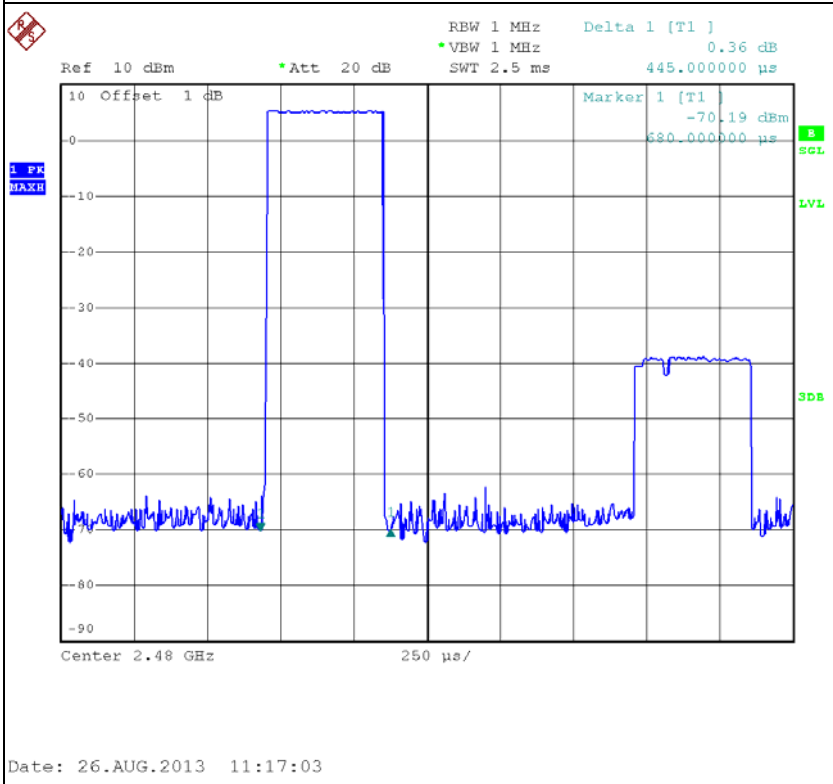


Date: 26.AUG.2013 11:20:25

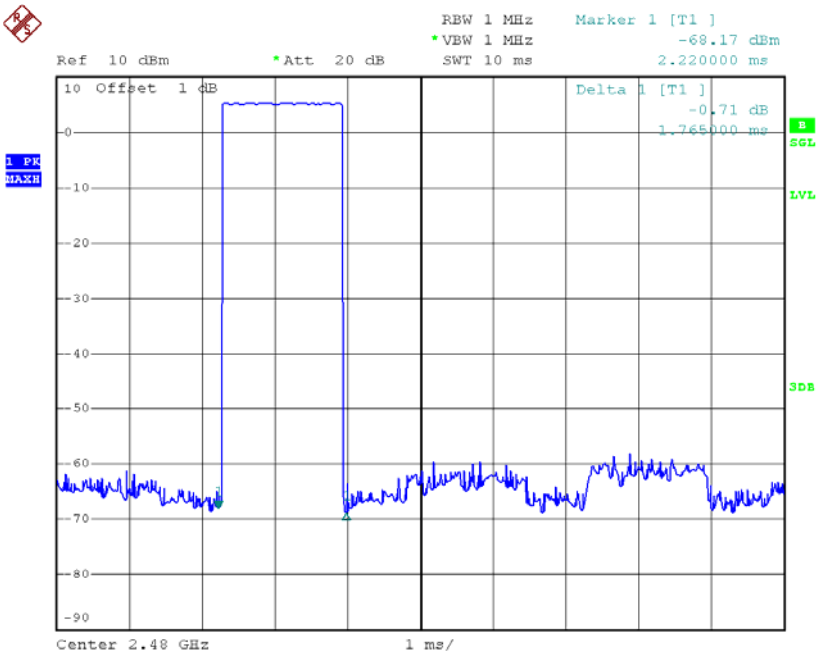
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	CH78 -DH1/DH3/DH5-1Mbps		

Data Packet	Frequency (MHz)	Pulse Duration (ms)	Dwell Time (s)	Limit (s)
DH5	2480	3.0050	0.3205	0.4000
DH3	2480	1.7650	0.2824	0.4000
DH1	2480	0.4450	0.1424	0.4000

CH78-DH1

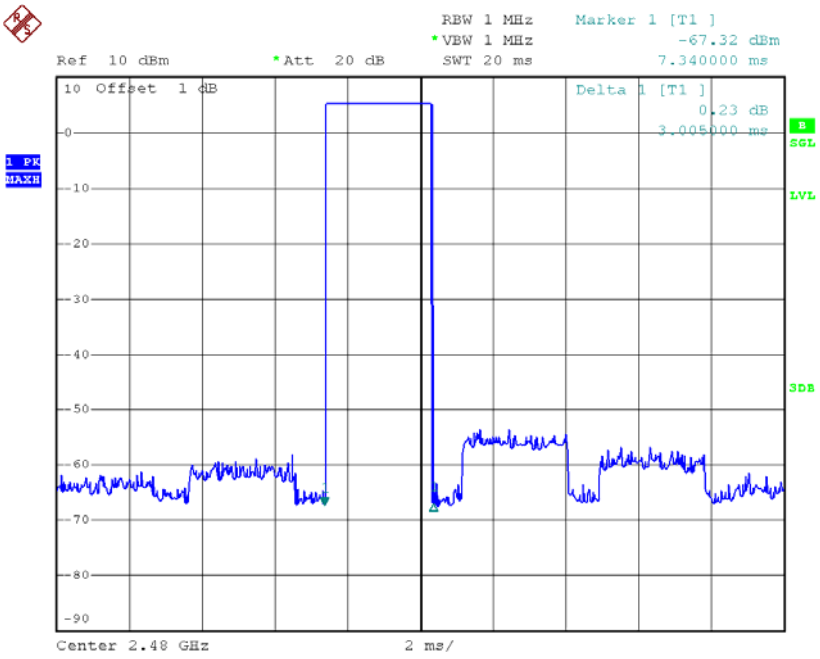


CH78-DH3



Date: 26.AUG.2013 11:18:42

CH78-DH5

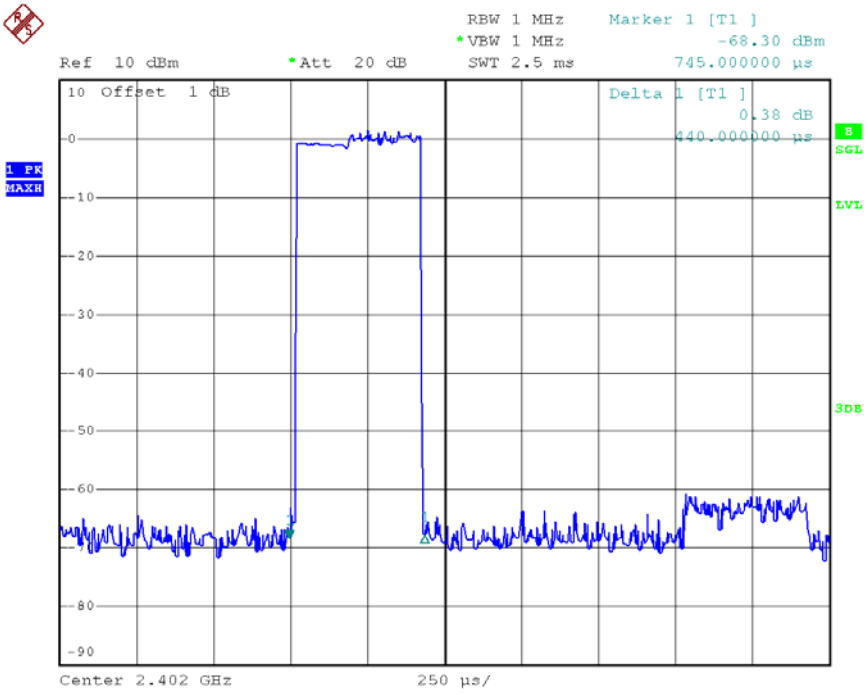


Date: 26.AUG.2013 11:21:27

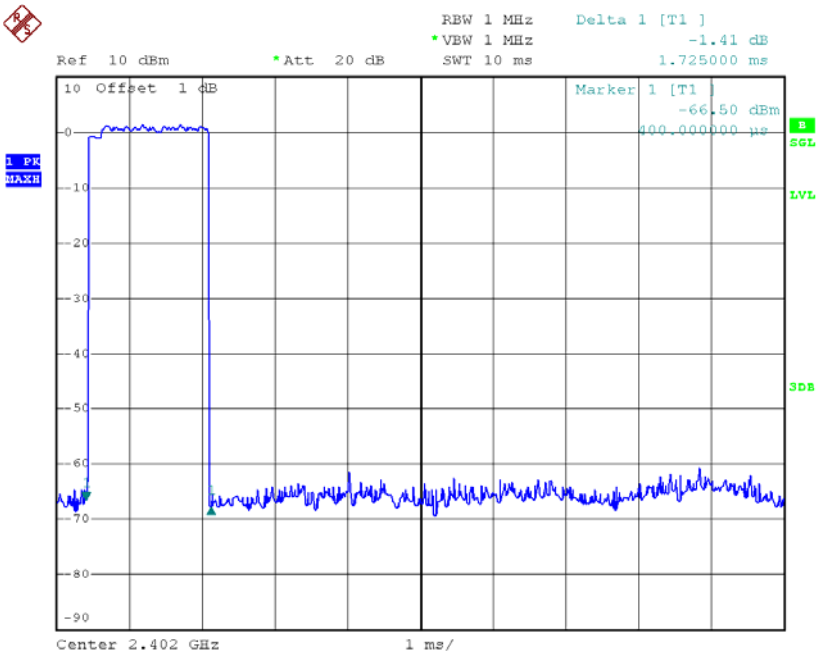
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	CH00-DH1/DH3/DH5-3Mbps		

Data Packet	Frequency (MHz)	Pulse Duration (ms)	Dwell Time (s)	Limit (s)
DH5	2402	3.1200	0.3328	0.4000
DH3	2402	1.7250	0.2760	0.4000
DH1	2402	0.4400	0.1408	0.4000

CH00-DH1

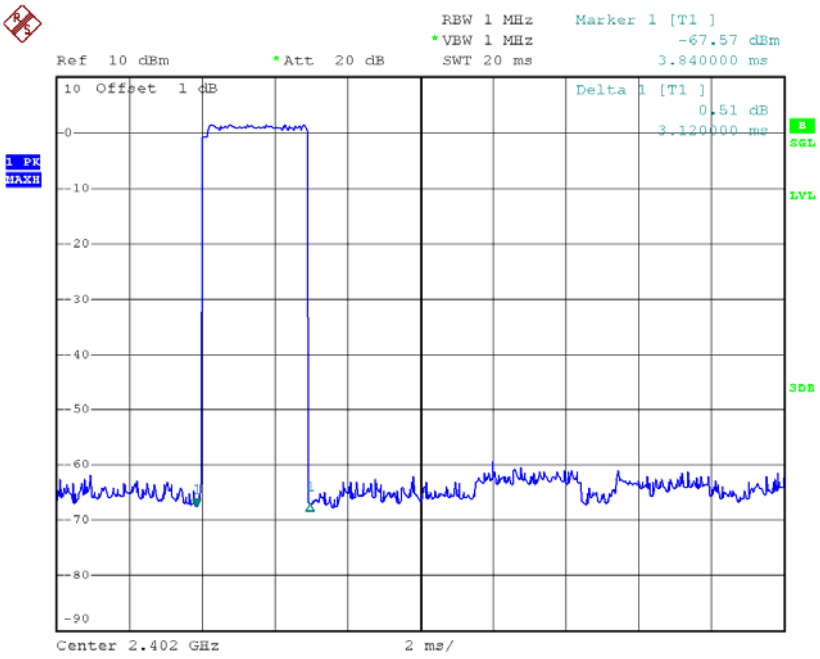


CH00-DH3



Date: 26.AUG.2013 11:53:41

CH00-DH5

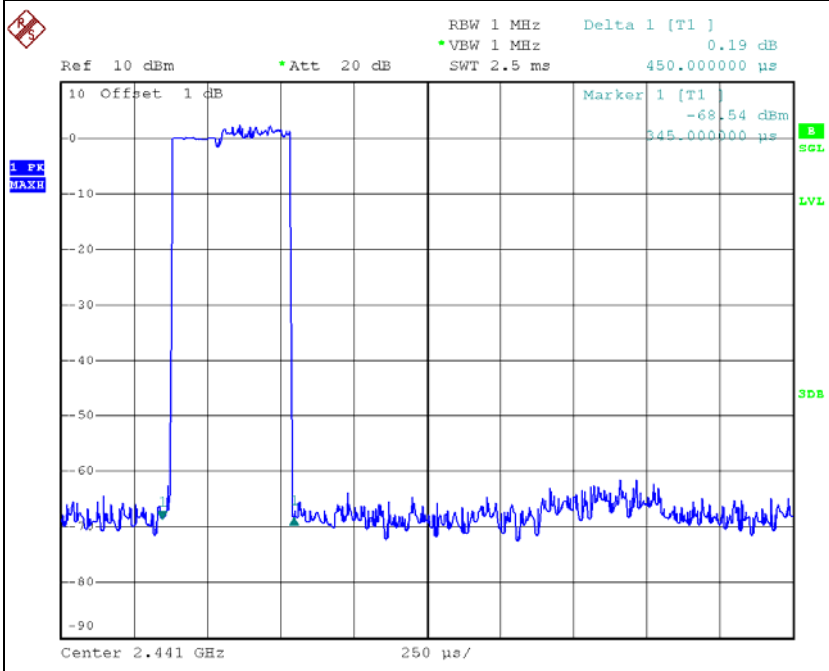


Date: 26.AUG.2013 11:54:42

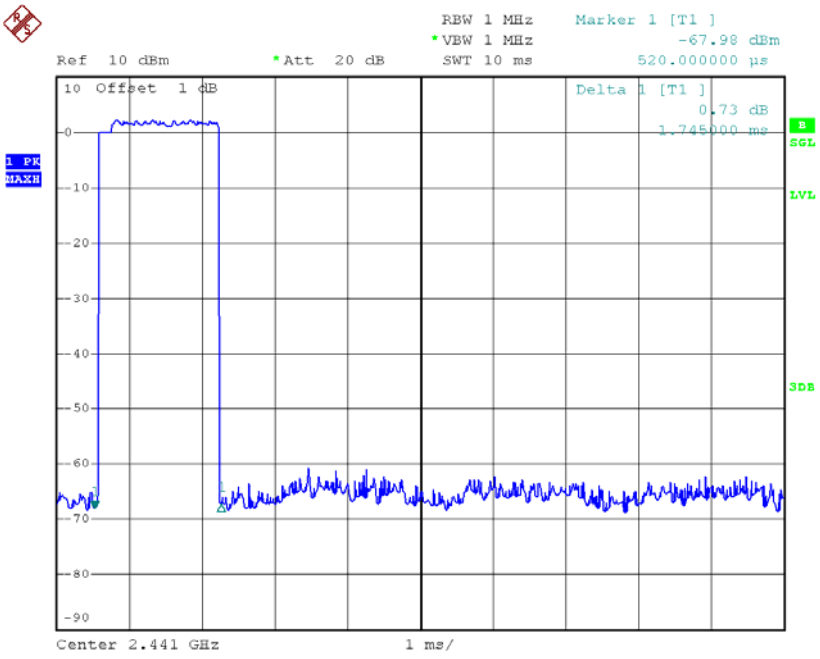
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	CH39 -DH1/DH3/DH5-3Mbps		

Data Packet	Frequency (MHz)	Pulse Duration (ms)	Dwell Time (s)	Limit (s)
DH5	2441	3.1200	0.3328	0.4000
DH3	2441	1.7450	0.2792	0.4000
DH1	2441	0.4500	0.1440	0.4000

CH39-DH1

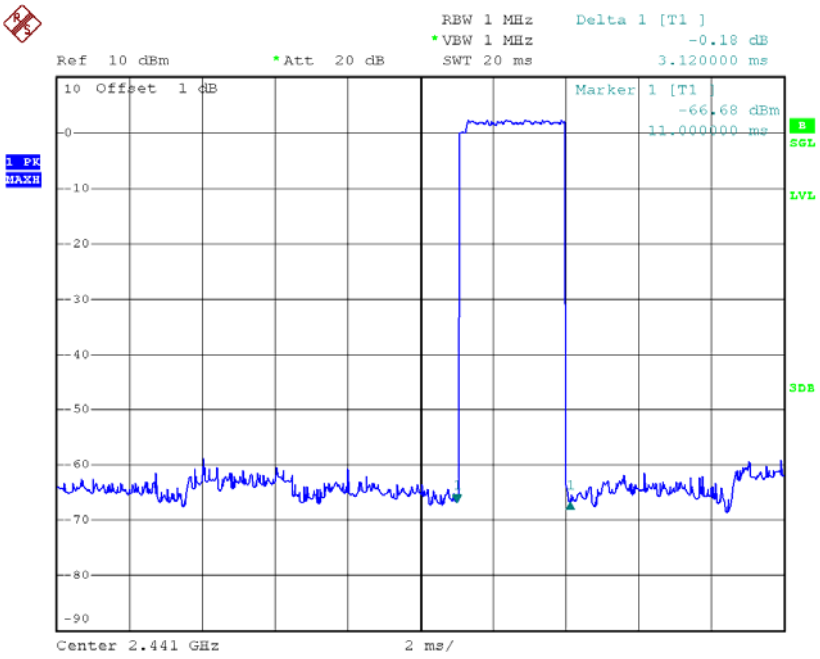


CH39-DH3



Date: 26.AUG.2013 11:53:02

CH39-DH5

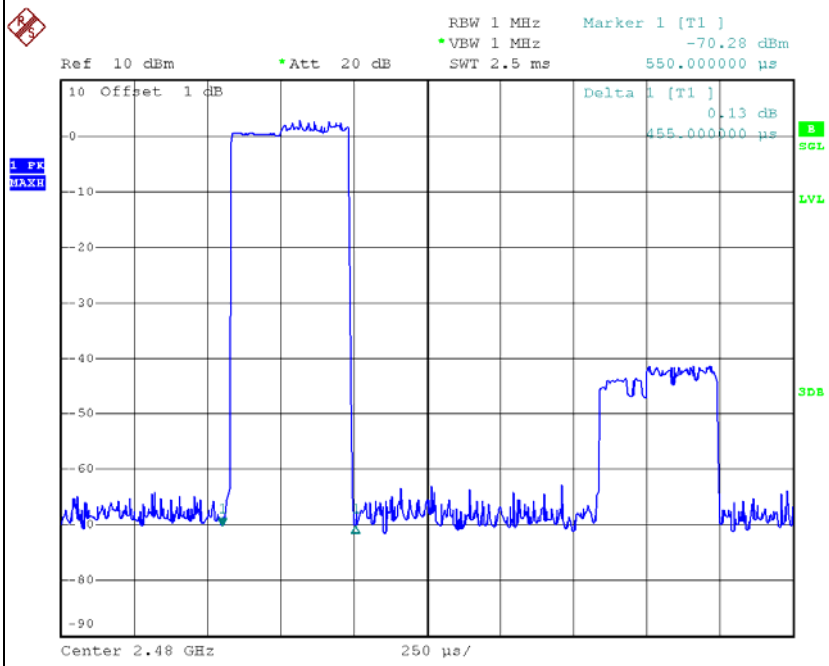


Date: 26.AUG.2013 11:55:23

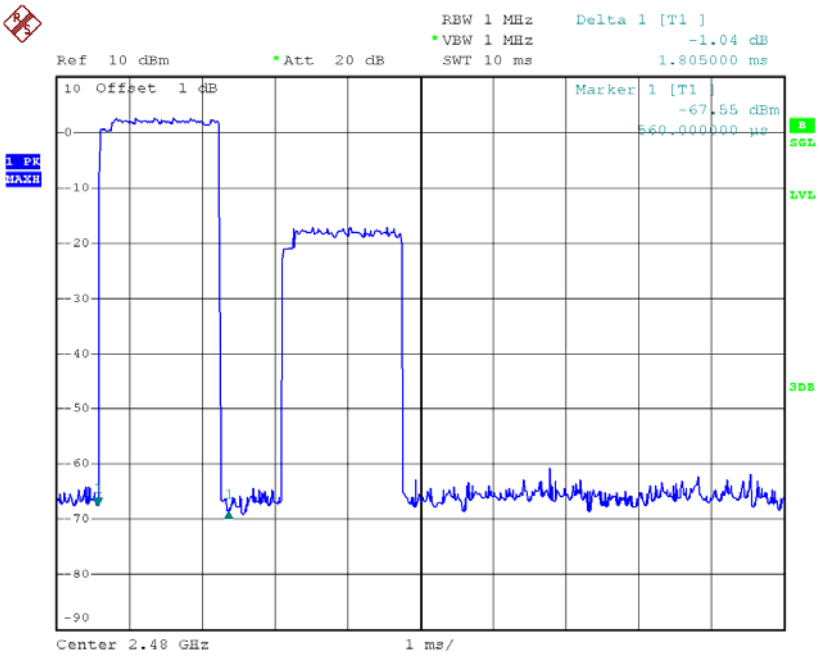
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	CH78 -DH1/DH3/DH5-3Mbps		

Data Packet	Frequency (MHz)	Pulse Duration (ms)	Dwell Time (s)	Limit (s)
DH5	2480	3.0800	0.3285	0.4000
DH3	2480	1.8050	0.2888	0.4000
DH1	2480	0.4550	0.1456	0.4000

CH78-DH1

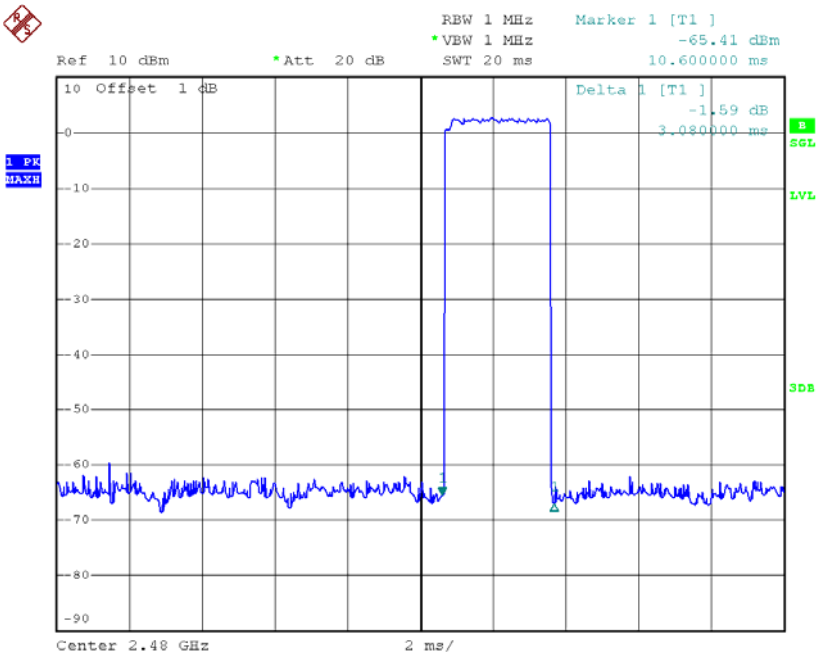


CH78-DH3



Date: 26.AUG.2013 11:51:39

CH78-DH5



Date: 26.AUG.2013 11:57:21

7. HOPPING CHANNEL SEPARATION MEASUREMENT

7.1 APPLIED PROCEDURES / LIMIT

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 KHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

7.1.1 MEASUREMENT INSTRUMENTS LIST AND SETTING

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.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RBW	30 KHz
VBW	100 KHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

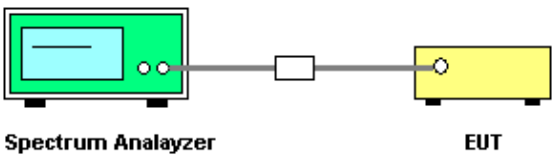
7.1.2 TEST PROCEDURE

a. The EUT must have its hopping function enabled
b. Span = wide enough to capture the peaks of two adjacent channels
Resolution (or IF) Bandwidth (RBW) ≥ 1% of the span
Video (or Average) Bandwidth (VBW) ≥ RBW
Sweep = Auto
Detector function = Peak
Trace = Max Hold

7.1.3 DEVIATION FROM STANDARD

No deviation.

7.1.4 TEST SETUP



7.1.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in hopping mode.

7.1.6 TEST RESULTS

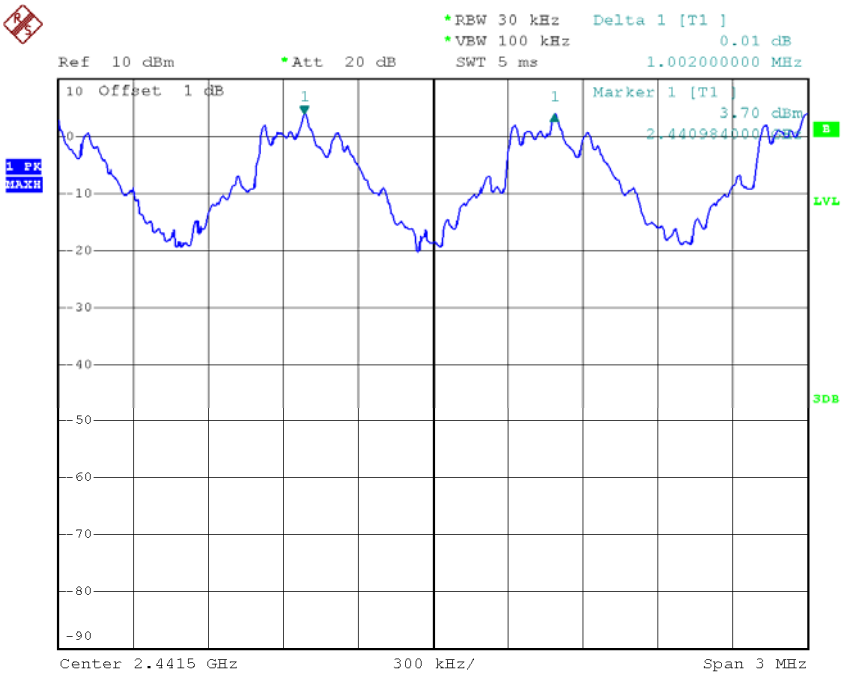
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	Hopping on -CH00 / CH39 /CH78-1Mbps		

Frequency (MHz)	Ch. Separation (MHz)	2/3 of the 20 dB bandwidth (MHz)	Result
2402	0.999	0.620	**Complies**
2441	1.002	0.627	**Complies**
2480	1.002	0.620	**Complies**

Ch. Separation Limit: >20dB bandwidth or >2/3 of the 20 dB bandwidth

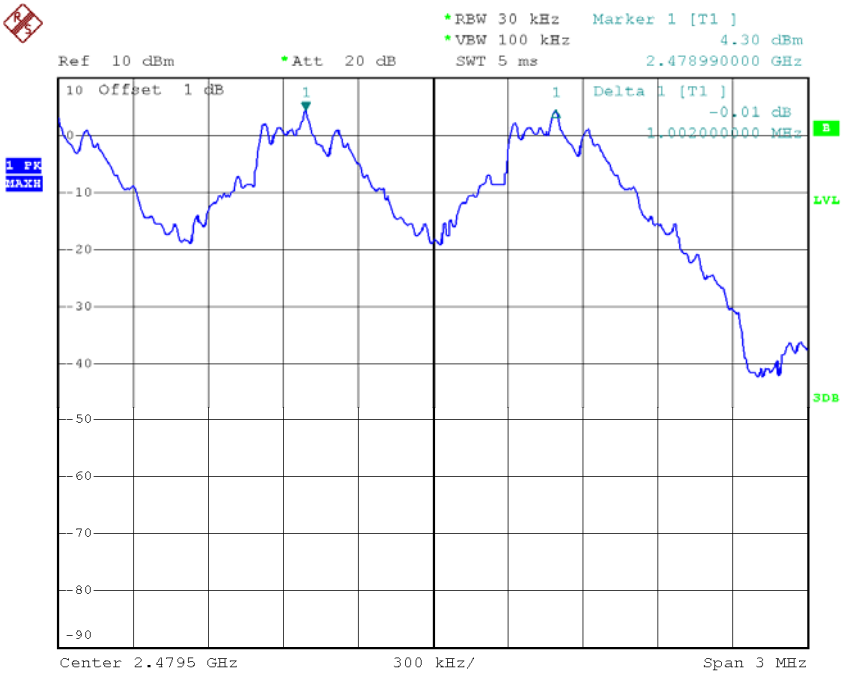
CH00 -1Mbps

CH39 -1Mbps



Date: 26.AUG.2013 11:14:02

CH78 -1Mbps



Date: 26.AUG.2013 11:15:01

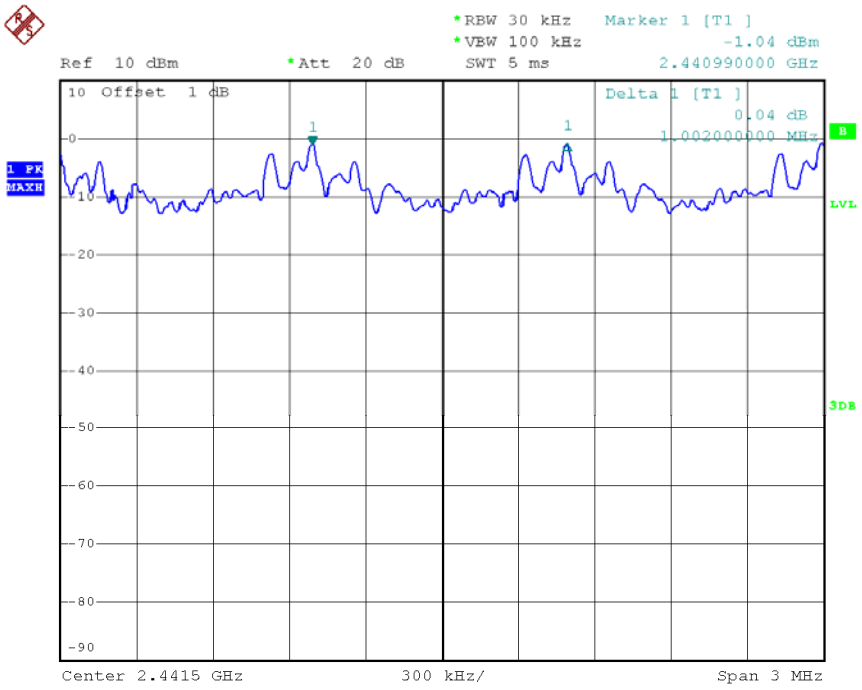
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	Hopping on -CH00 / CH39 /CH78-3Mbps		

Frequency (MHz)	Ch. Separation (MHz)	2/3 of the 20 dB bandwidth (MHz)	Result
2402	1.008	0.827	**Complies**
2441	1.002	0.827	**Complies**
2480	1.002	0.827	**Complies**

Ch. Separation Limit: >20dB bandwidth or >2/3 of the 20 dB bandwidth

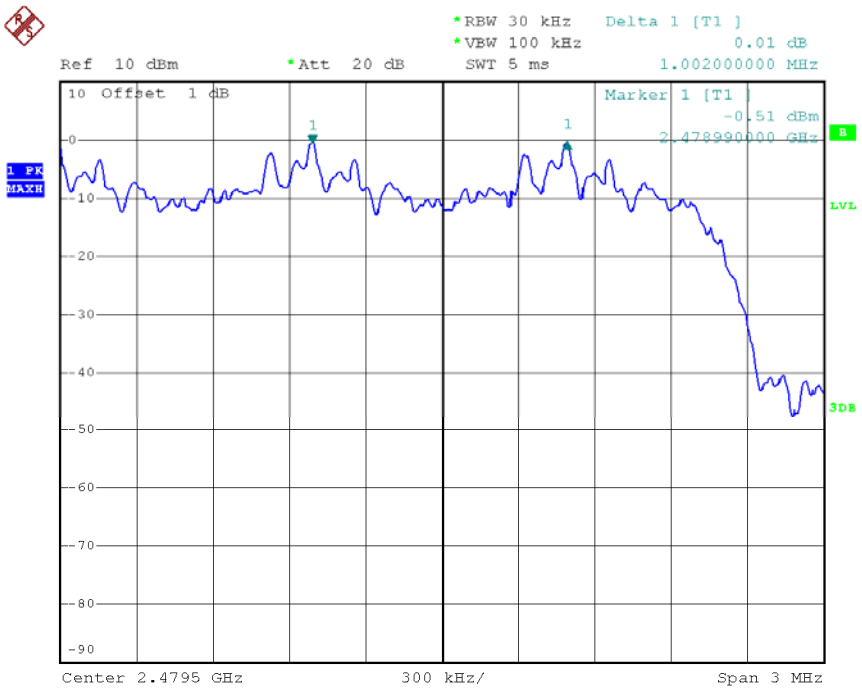
CH00 -3Mbps

CH39 -3Mbps



Date: 26.AUG.2013 11:45:24

CH78 -3Mbps



Date: 26.AUG.2013 11:46:10

8. BANDWIDTH TEST

8.1 APPLIED PROCEDURES

FCC Part15 (15.247) , Subpart C/ RSS-GEN and RSS-210		
Section	Test Item	Frequency Range (MHz)
15.247(a)(2) RSS-GEN section 4.6.1 RSS-210, Issue 8, Annex 8, A8.1(b)	Bandwidth	2400-2483.5

8.1.1 MEASUREMENT INSTRUMENTS LIST AND SETTING

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.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RBW	30 KHz (20dB Bandwidth) / 30 KHz (Channel Separation)
VBW	100 KHz (20dB Bandwidth) / 100 KHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

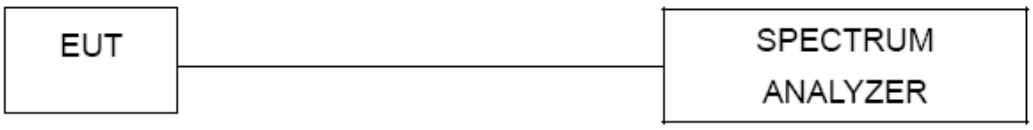
8.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW= 30KHz, VBW=100KHz, Sweep time = Auto.

8.1.3 DEVIATION FROM STANDARD

No deviation.

8.1.4 TEST SETUP



8.1.5 EUT OPERATION CONDITIONS

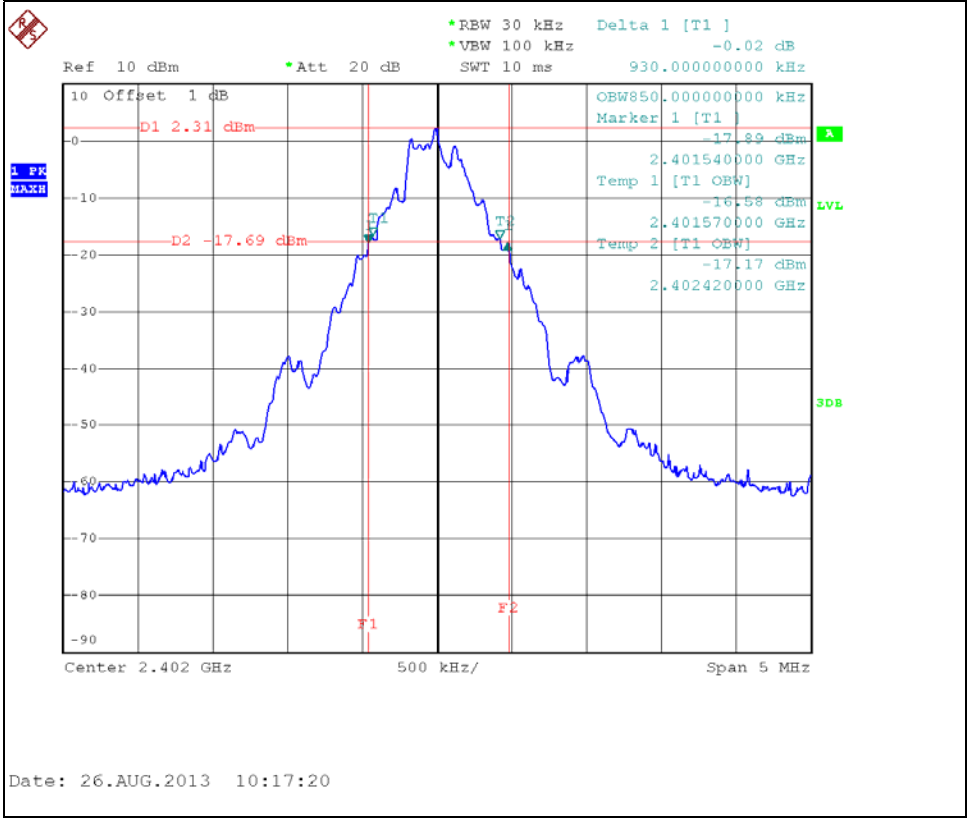
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

8.1.6 TEST RESULTS

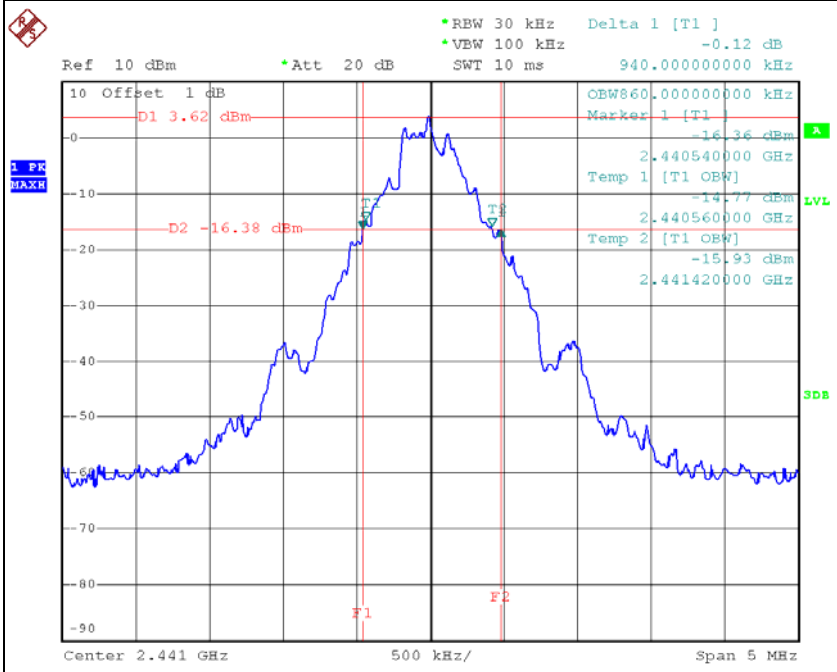
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	CH00 / CH39 /CH78-1Mbps		

Test Channel	Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Result
CH00	2402	0.93	0.85	**PASS**
CH39	2441	0.94	0.86	**PASS**
CH78	2480	0.93	0.87	**PASS**

CH00 -1Mbps

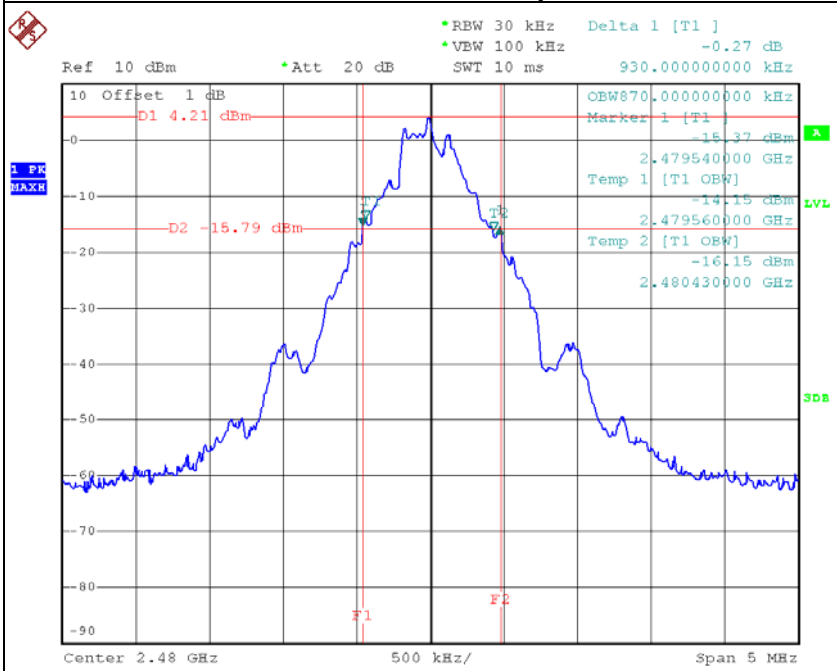


CH39 -1Mbps



Date: 26.AUG.2013 10:18:44

CH78 -1Mbps

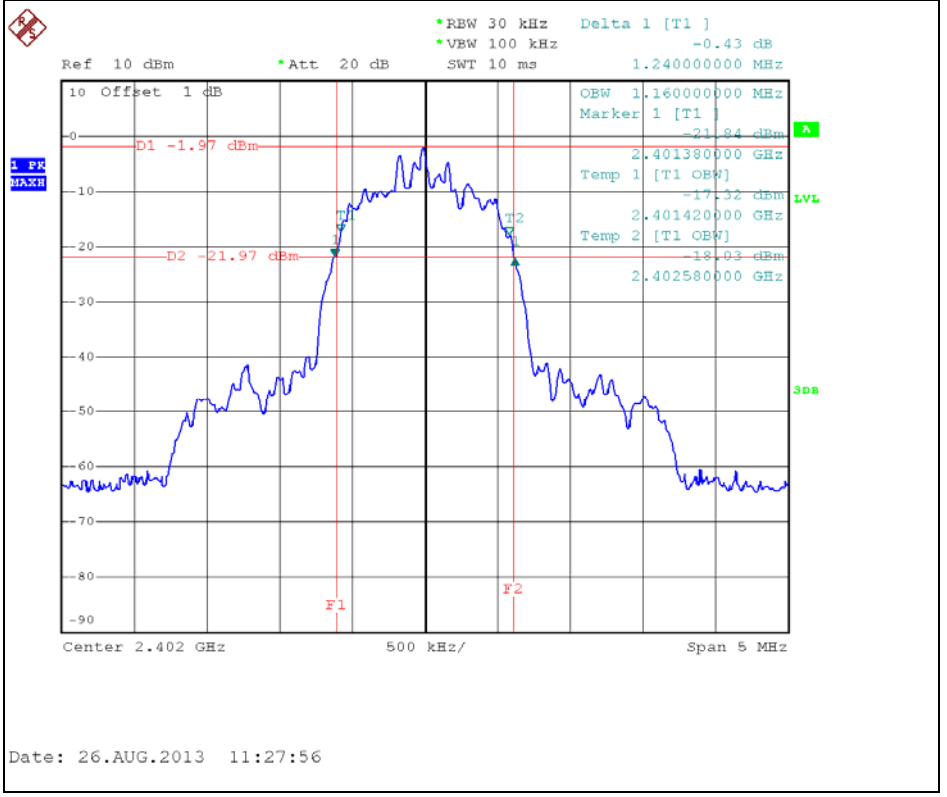


Date: 26.AUG.2013 10:19:41

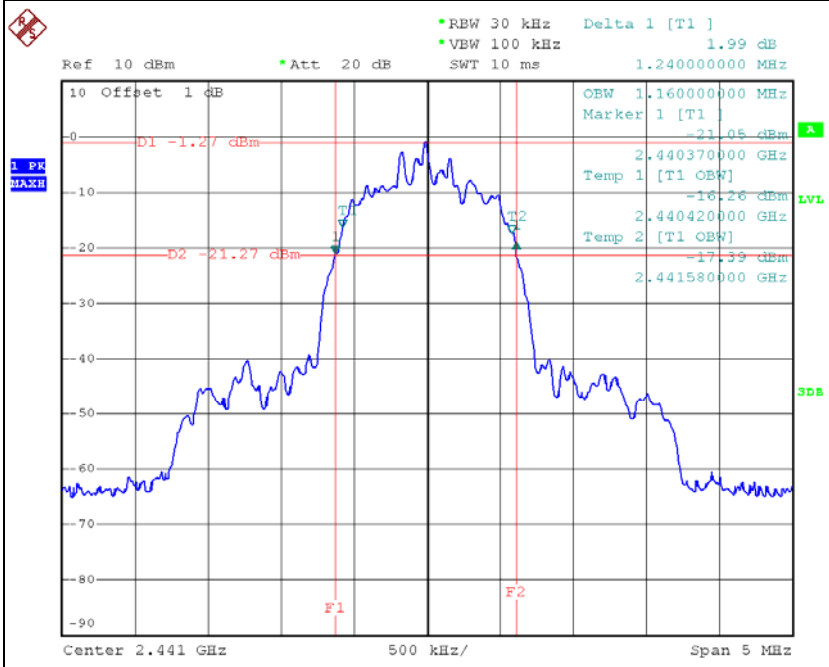
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	CH00 / CH39 /CH78-3Mbps		

Test Channel	Frequency (MHz)	20dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Result
CH00	2402	1.24	1.16	**PASS**
CH39	2441	1.24	1.16	**PASS**
CH78	2480	1.24	1.16	**PASS**

CH00 -3Mbps

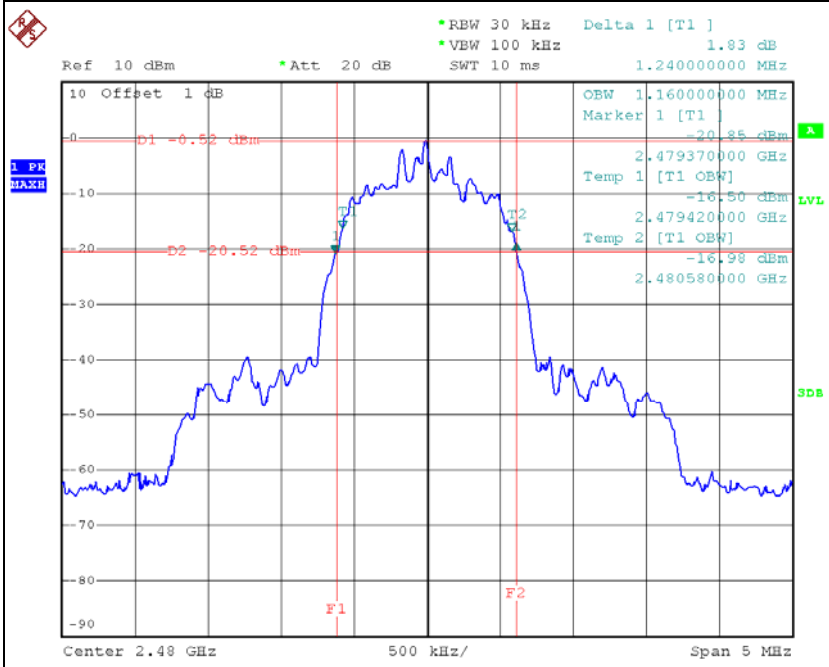


CH39 -3Mbps



Date: 26.AUG.2013 11:28:49

CH78 -3Mbps



Date: 26.AUG.2013 11:29:41

9. PEAKOUTPUT POWER TEST

9.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C/ RSS-GEN and RSS-210				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(1) RSS-GEN section 4.8 RSS-210, Issue 8, Annex 8, A8.1(b)	Peak Output Power	0.125 Watt or 21dBm	2400-2483.5	PASS

9.1.1 MEASUREMENT INSTRUMENTS LIST AND SETTING

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.

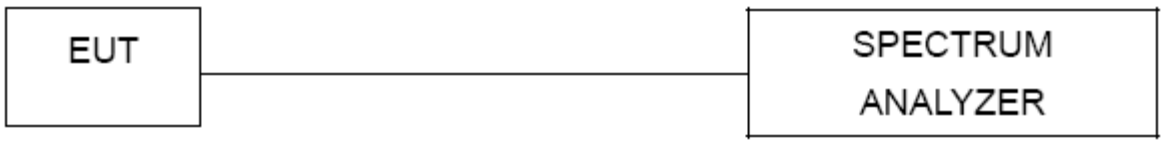
9.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting: RBW= 1MHz/3MHz, VBW= 1MHz/3MHz, Sweep time = Auto.

9.1.3 DEVIATION FROM STANDARD

No deviation.

9.1.4 TEST SETUP



9.1.5 EUT OPERATION CONDITIONS

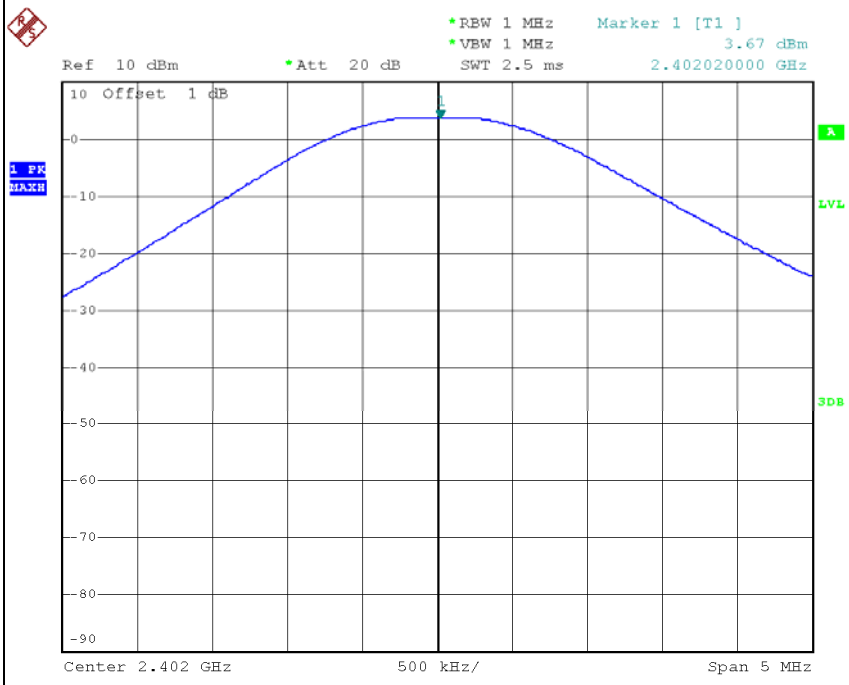
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

9.1.6 TEST RESULTS

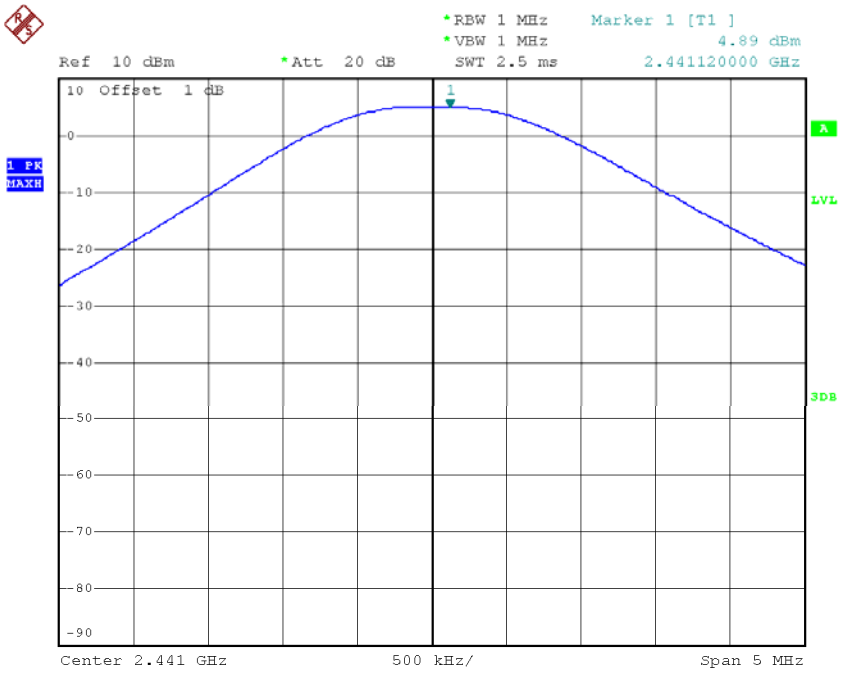
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	CH00/ CH39 /CH78 -1Mbps		

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)	Limit (Watt)
CH00	2402	3.67	21	0.125
CH39	2441	4.89	21	0.125
CH78	2480	5.20	21	0.125

CH00 -1Mbps

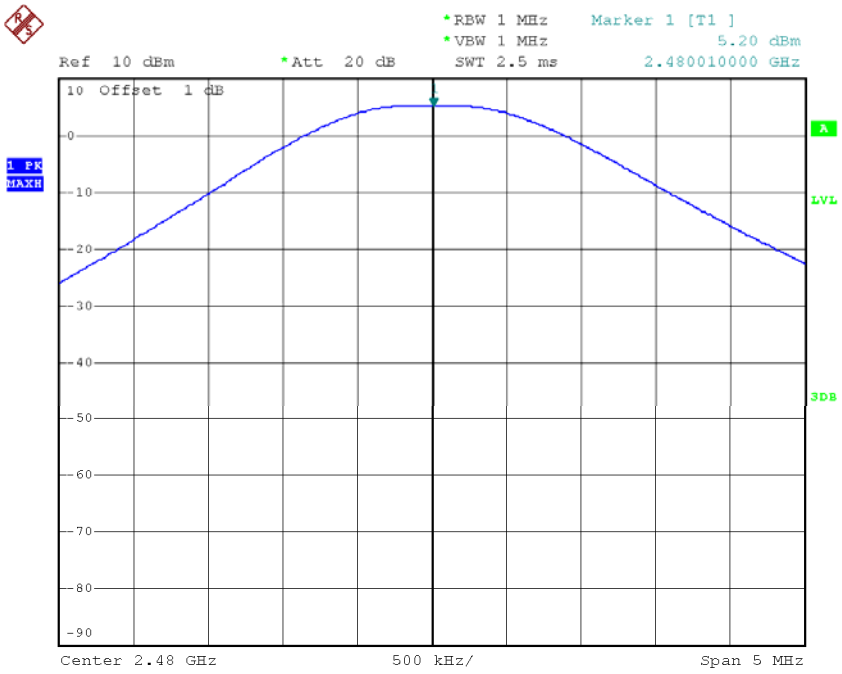


CH39 -1Mbps



Date: 21.AUG.2013 15:00:43

CH78 -1Mbps

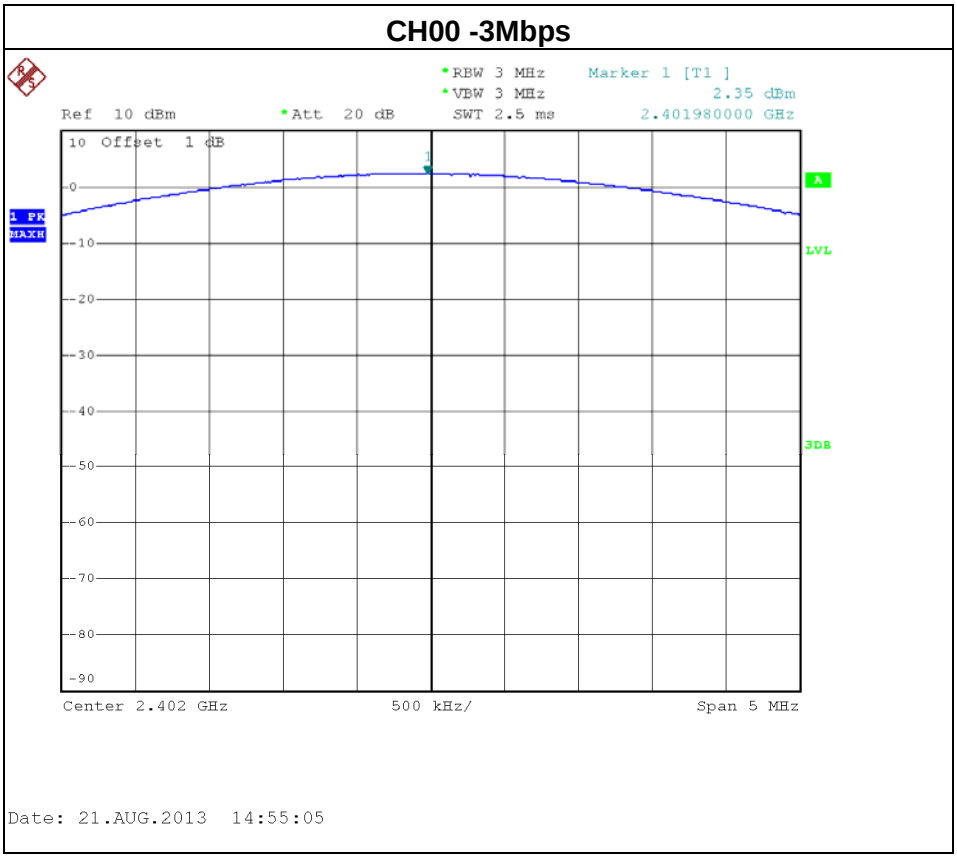


Date: 21.AUG.2013 15:01:01

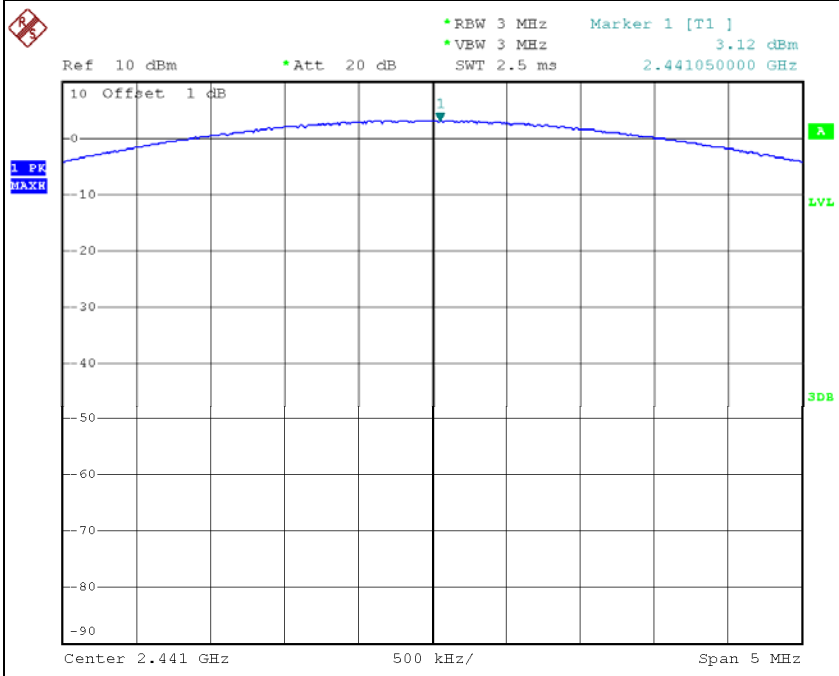
EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	CH00/ CH39 /CH78 -3Mbps		

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)	Limit (Watt)
CH00	2402	2.35	21	0.125
CH39	2441	3.12	21	0.125
CH78	2480	3.41	21	0.125

CH00 -3Mbps

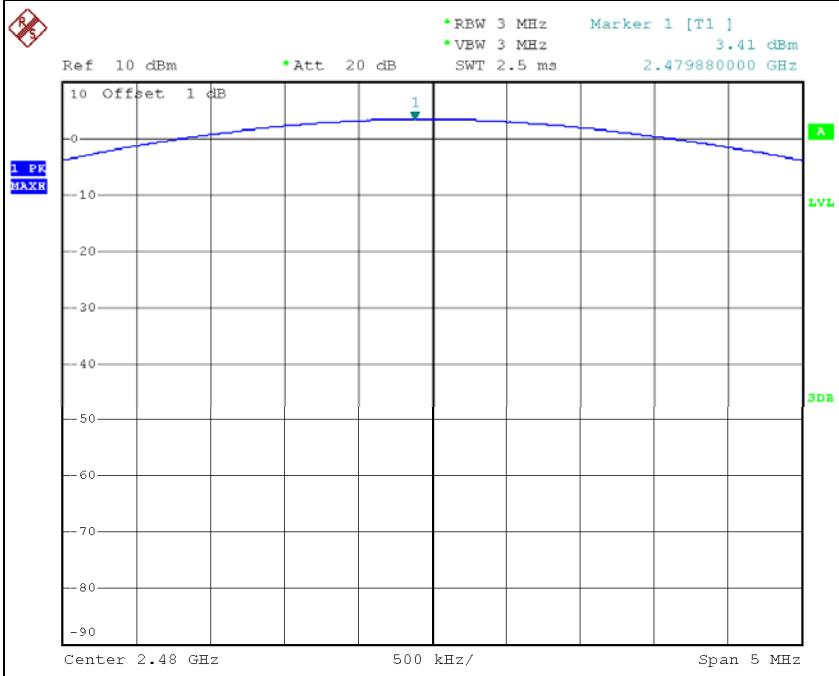


CH39 -3Mbps



Date: 21.AUG.2013 14:59:22

CH78 -3Mbps



Date: 21.AUG.2013 14:47:47

10. ANTENNA CONDUCTED SPURIOUS EMISSION

10.1 APPLIED PROCEDURES / LIMIT

20dB in any 100 KHz bandwidth outside the operating frequency band, In case the emission fall within the restricted band specified on 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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m) (at 3 meters)	
	Peak	Average
Above 1000	74	54

10.1.1 MEASUREMENT INSTRUMENTS LIST AND SETTING

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.

10.1.2 TEST PROCEDURE

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

10.1.3 DEVIATION FROM STANDARD

No deviation.

10.1.4 TEST SETUP

10.1.5 EUT OPERATION CONDITIONS

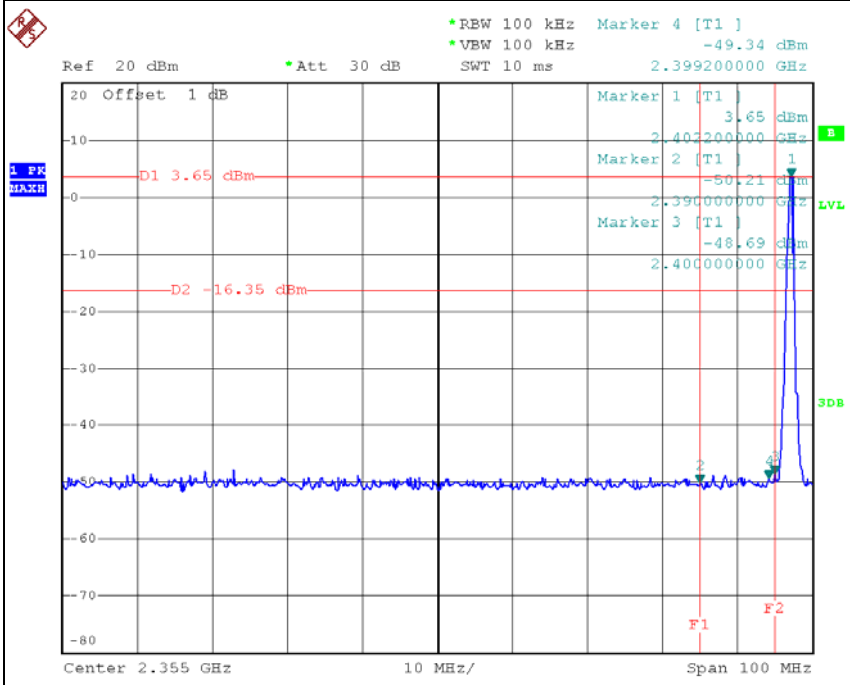
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

10.1.6 TEST RESULTS

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	CH00 / CH39/ CH78-1Mbps & Hopping on mode (1Mbps)		

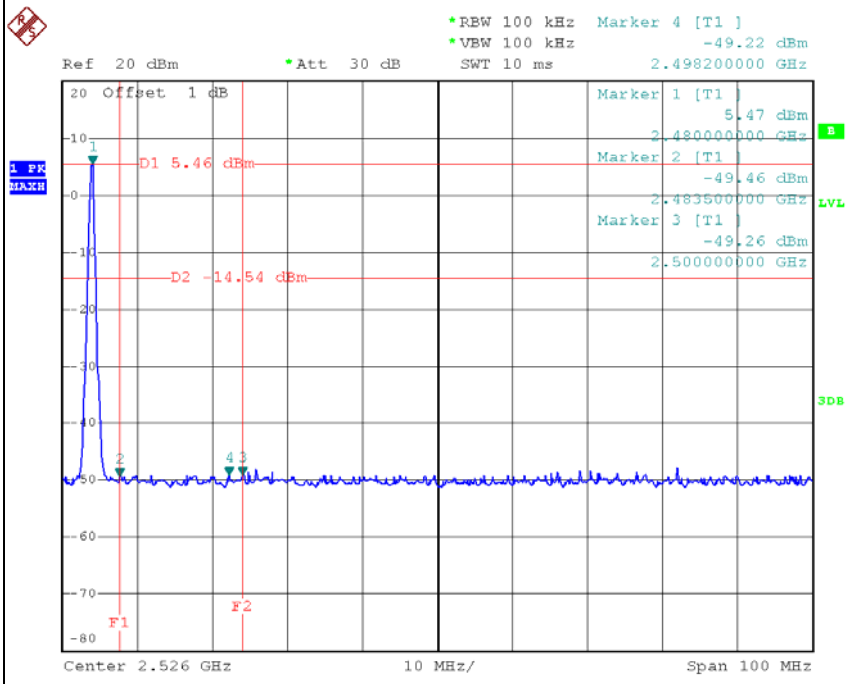
The max. radio frequency power in any 100KHz bandwidth outside the frequency band		The max. radio frequency power in any 100 KHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-48.69	2498.20	-49.22
Result			
In any 100KHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100KHz bandwidth within the band that contains the highest level of the desired power.			

CH00 (Lower) -1Mbps



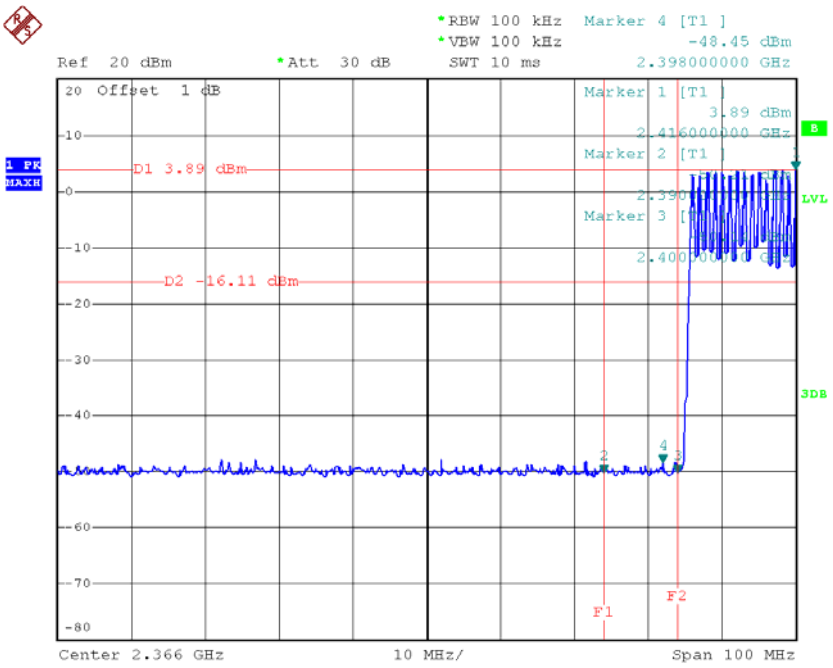
Date: 26.AUG.2013 10:40:09

CH78 (upper) -1Mbps



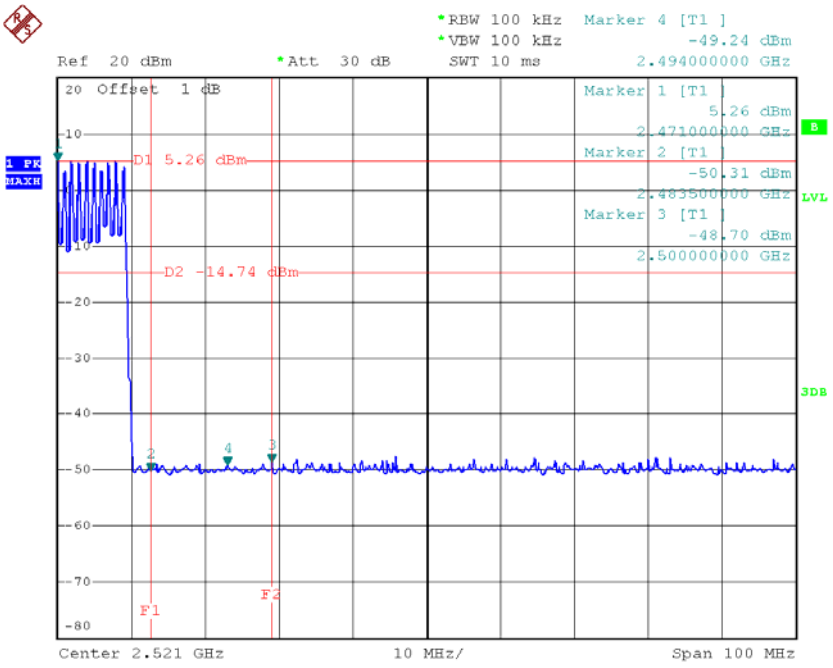
Date: 26.AUG.2013 10:41:49

Hopping on mode (1Mbps- Lower)



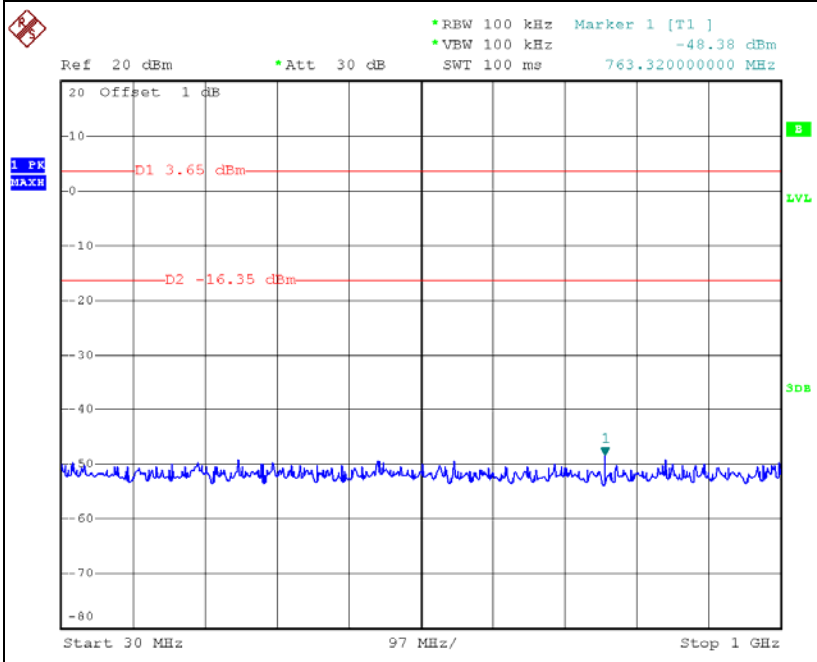
Date: 26.AUG.2013 11:08:01

Hopping on mode (1Mbps- upper)



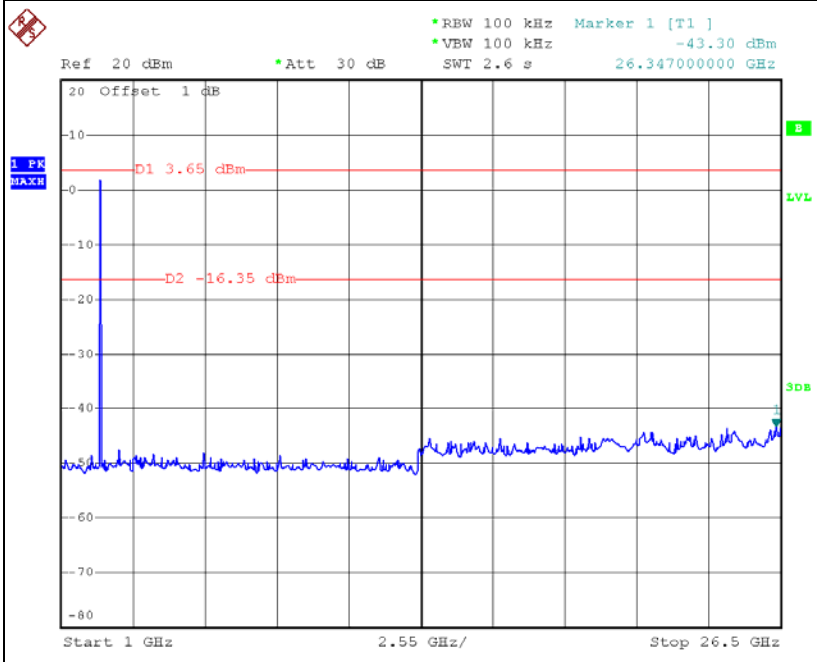
Date: 26.AUG.2013 11:09:42

CH00 (30MHz~1GHz)



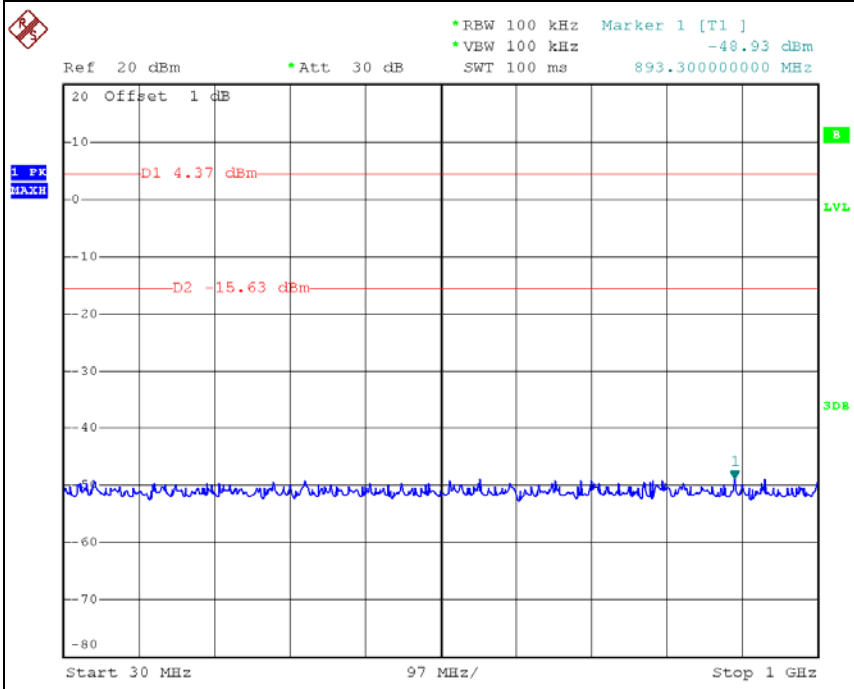
Date: 26.AUG.2013 10:40:27

CH00(1GHz～10th Harmonic)



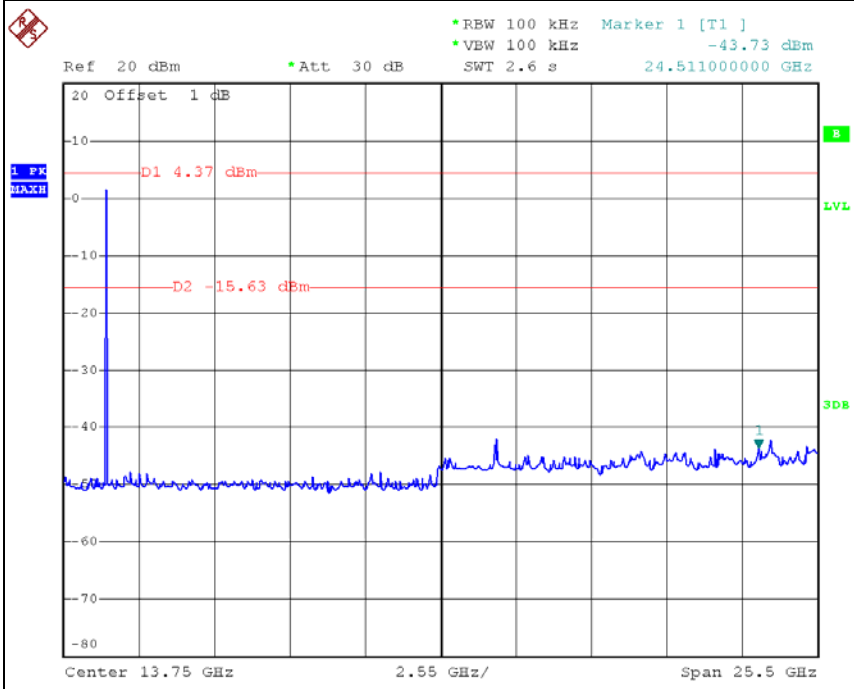
Date: 26.AUG.2013 10:40:40

CH39 (30MHz~1GHz)



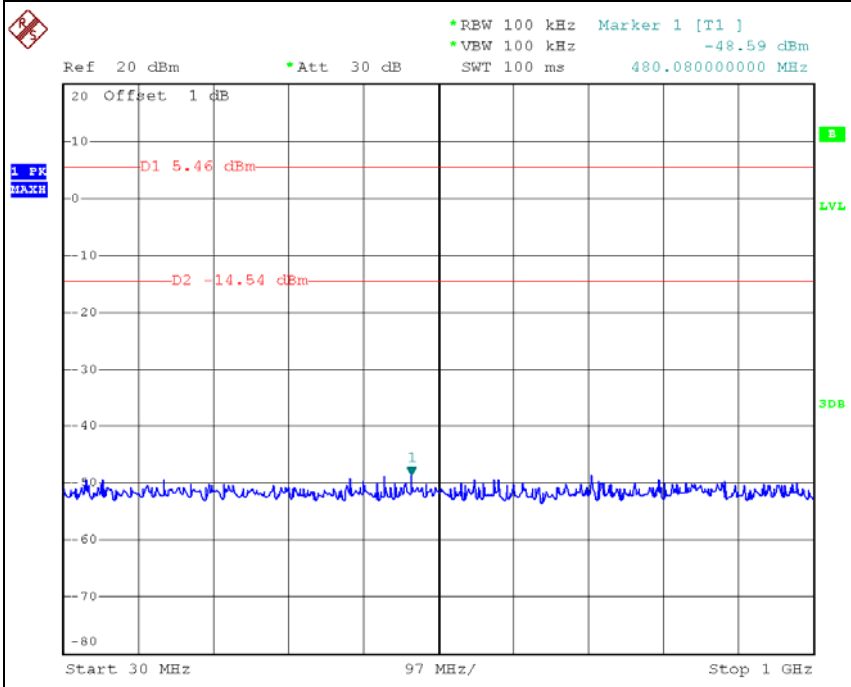
Date: 26.AUG.2013 11:05:51

CH39(1GHz～10th Harmonic)



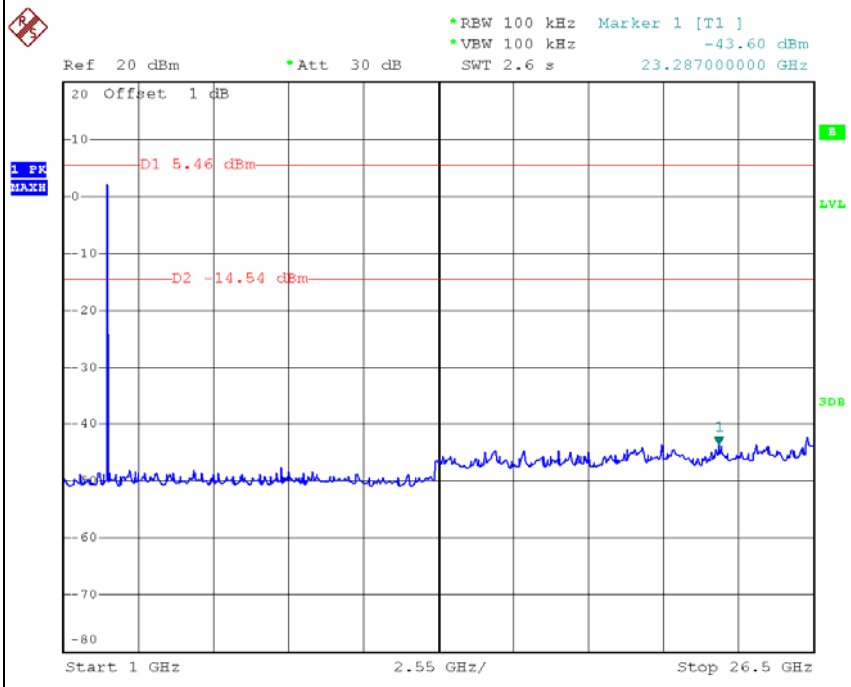
Date: 26.AUG.2013 11:05:38

CH78 (30MHz~1GHz)



Date: 26.AUG.2013 10:42:02

CH78(1GHz～10th Harmonic)

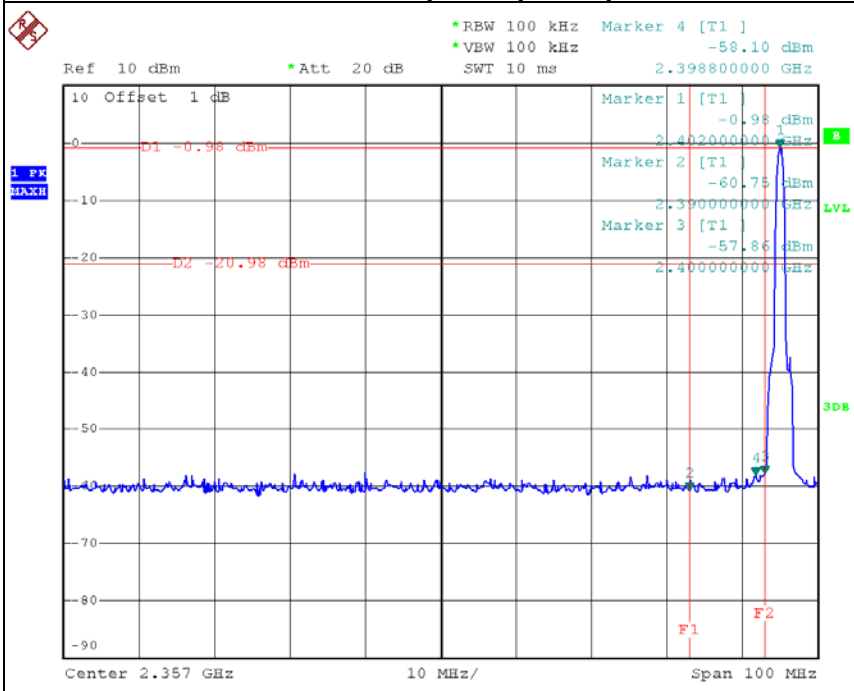


Date: 26.AUG.2013 10:42:26

EUT:	Cisco Edge 340	Model Name:	CS-E340W
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1009 hPa	Test Voltage:	AC 120V/60Hz
Test Mode:	CH00 / CH39/ CH78 -3Mbps & Hopping on mode (3Mbps)		

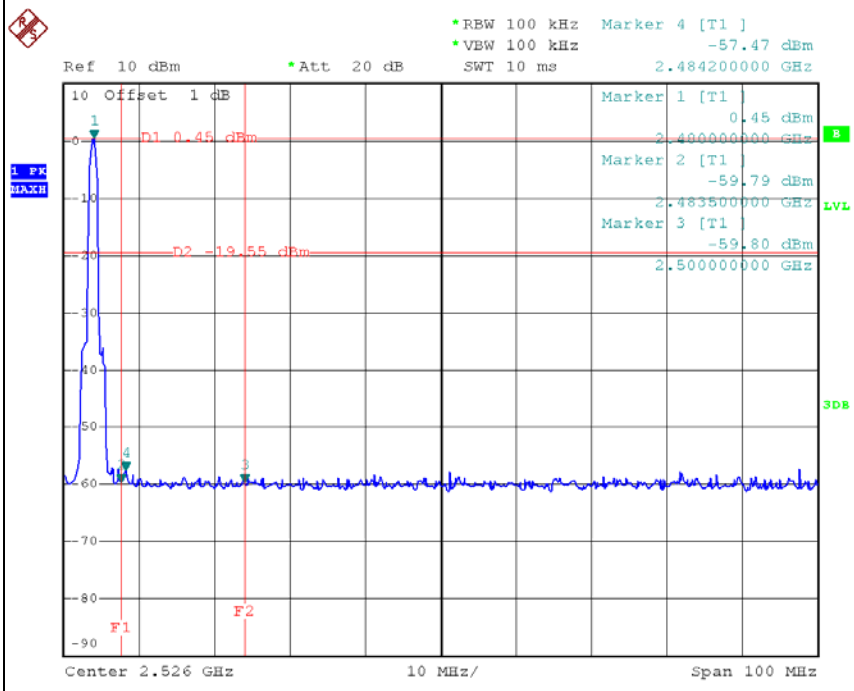
The max. radio frequency power in any 100KHz bandwidth outside the frequency band		The max. radio frequency power in any 100 KHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-57.86	2484.20	-57.47
Result			
In any 100KHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100KHz bandwidth within the band that contains the highest level of the desired power.			

CH00 (Lower) -3Mbps



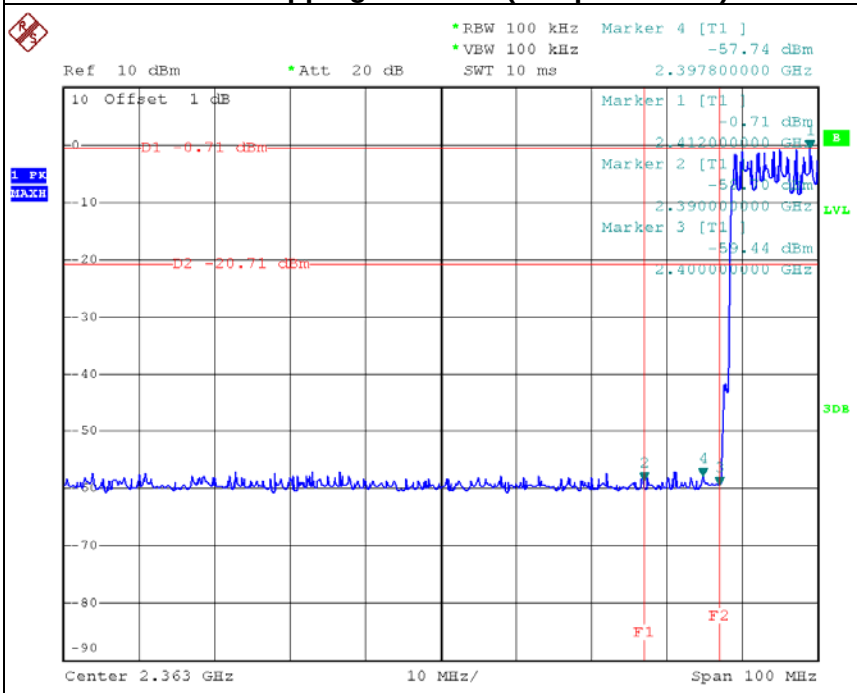
Date: 26.AUG.2013 11:31:32

CH 78 (Upper) -3Mbps



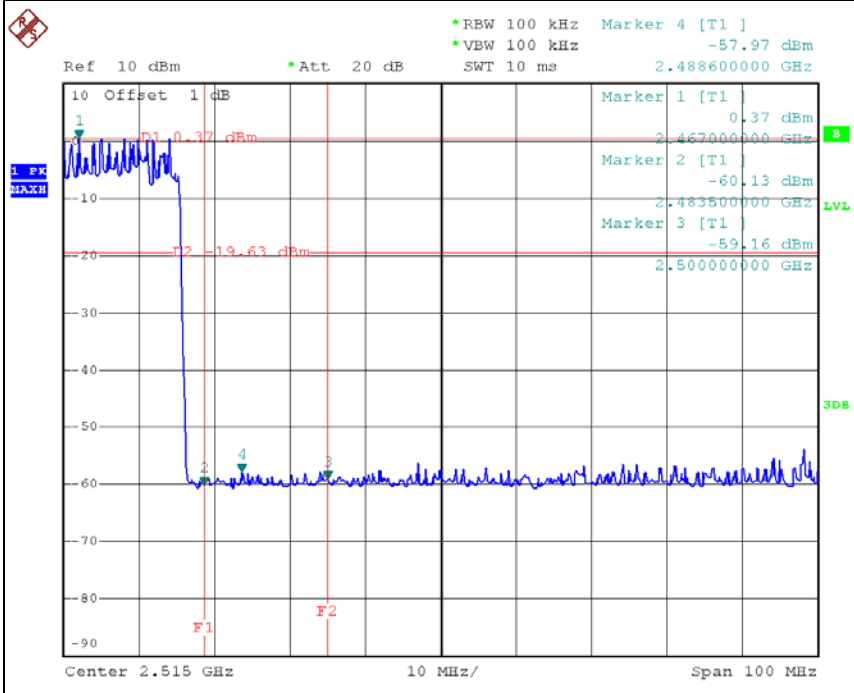
Date: 26.AUG.2013 11:34:18

Hopping on mode (3Mbps- Lower)



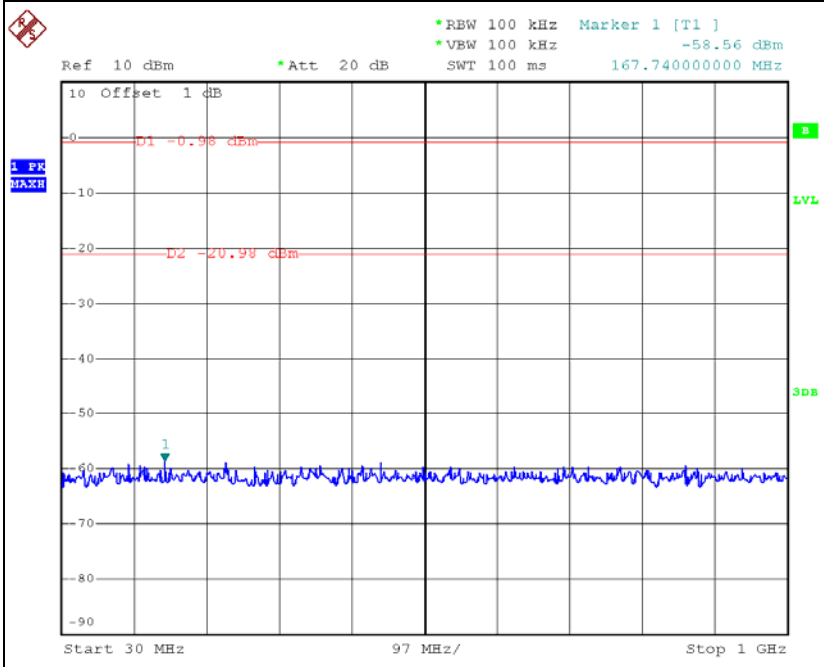
Date: 26.AUG.2013 11:39:44

Hopping on mode (3Mbps-upper)



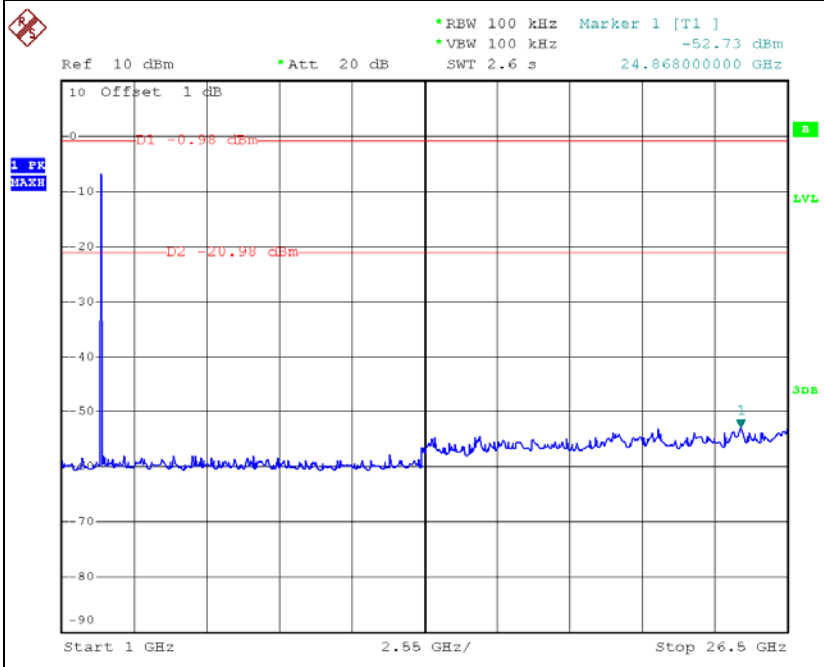
Date: 26.AUG.2013 11:41:47

CH00 (30MHz~1GHz)



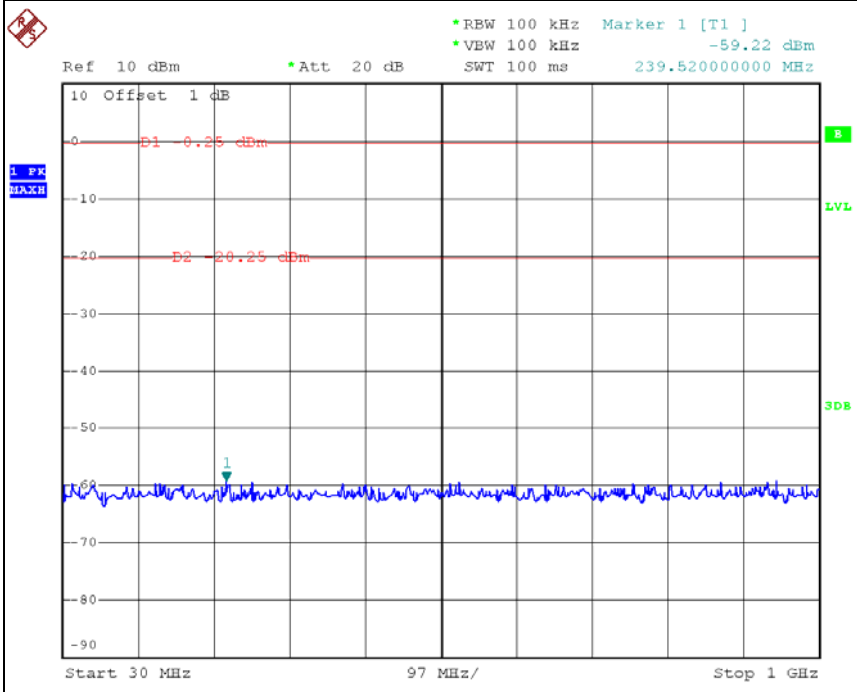
Date: 26.AUG.2013 11:32:01

CH00(1GHz～10th Harmonic)



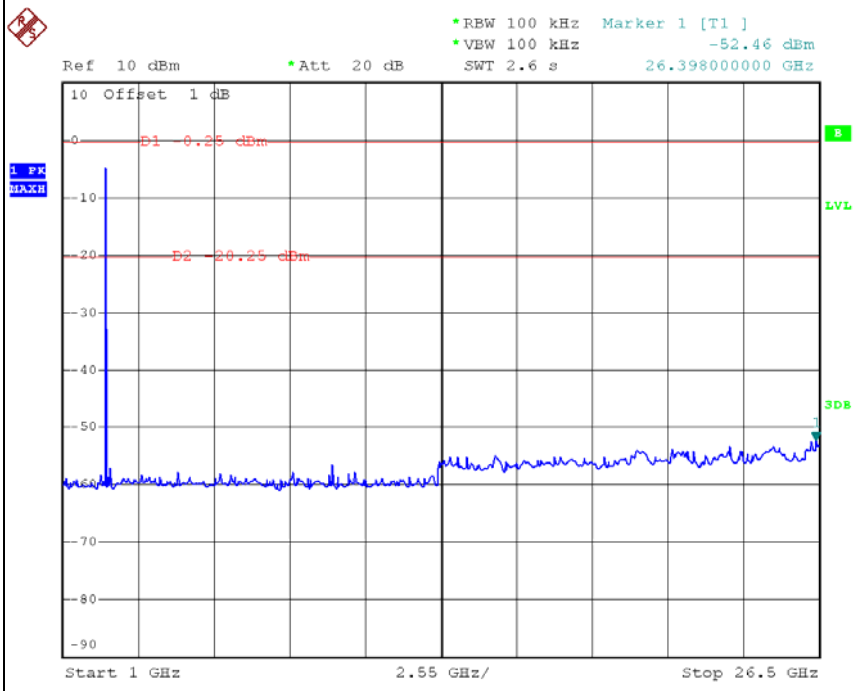
Date: 26.AUG.2013 11:33:08

CH39 (30MHz~1GHz)



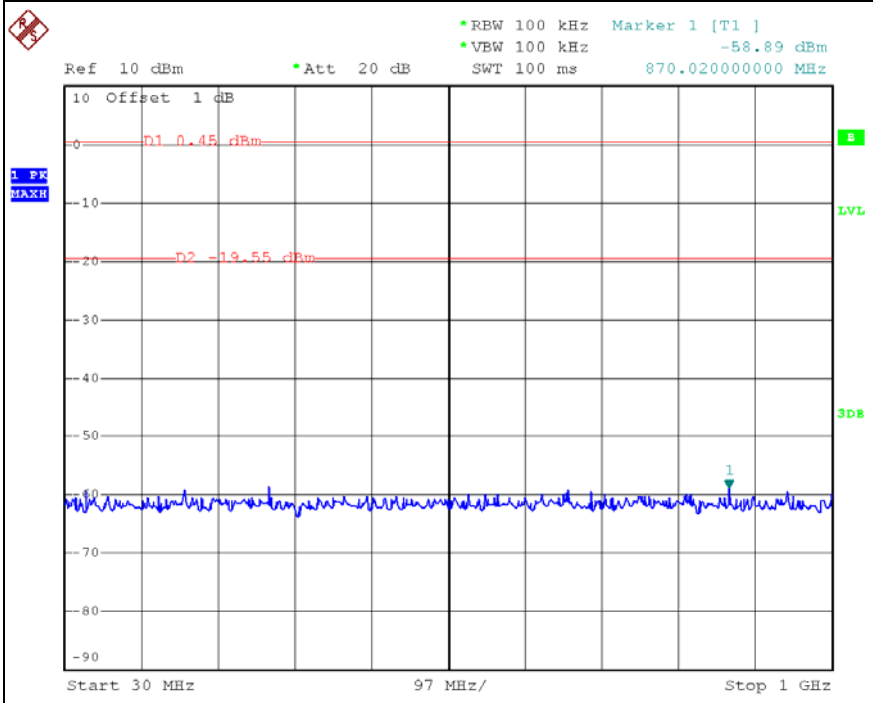
Date: 26.AUG.2013 11:36:16

CH39(1GHz～10th Harmonic)



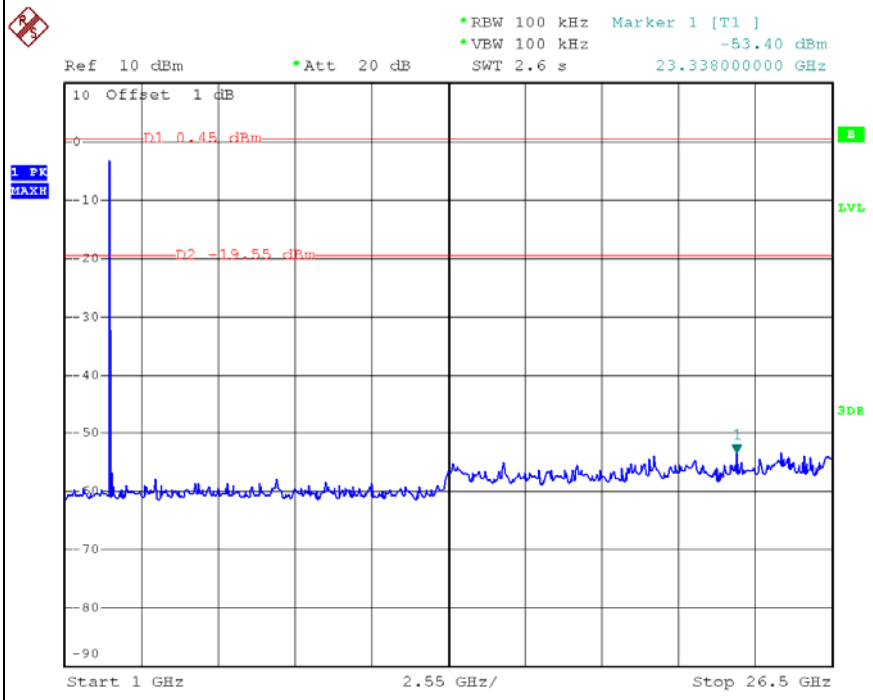
Date: 26.AUG.2013 11:35:57

CH78 (30MHz~1GHz)



Date: 26.AUG.2013 11:34:31

CH78(1GHz～10th Harmonic)



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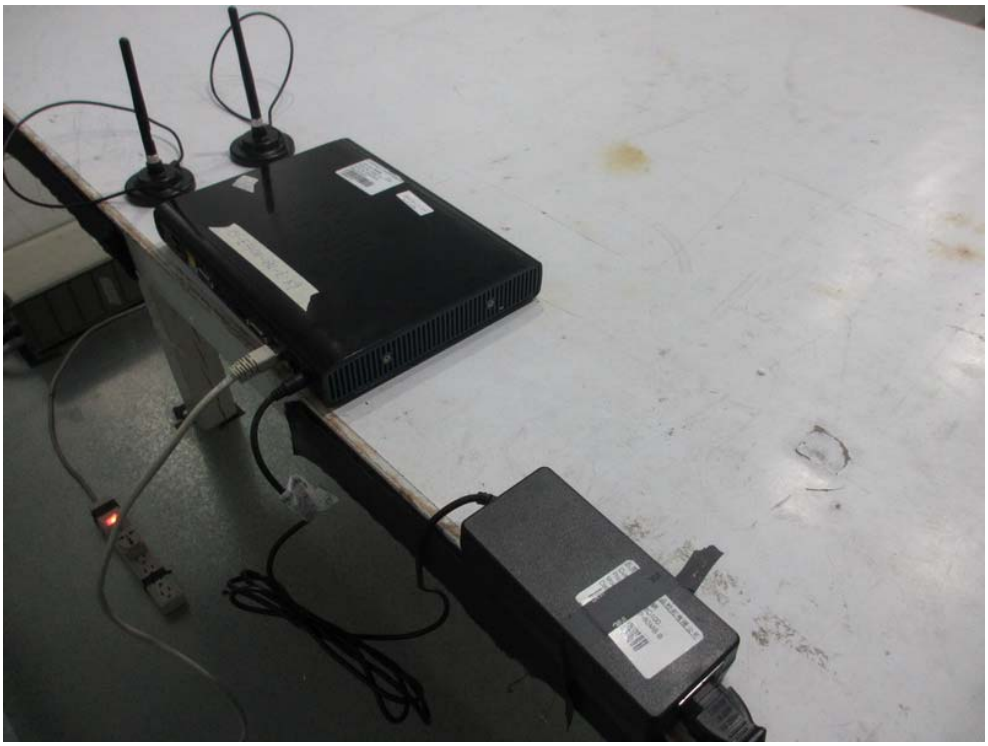
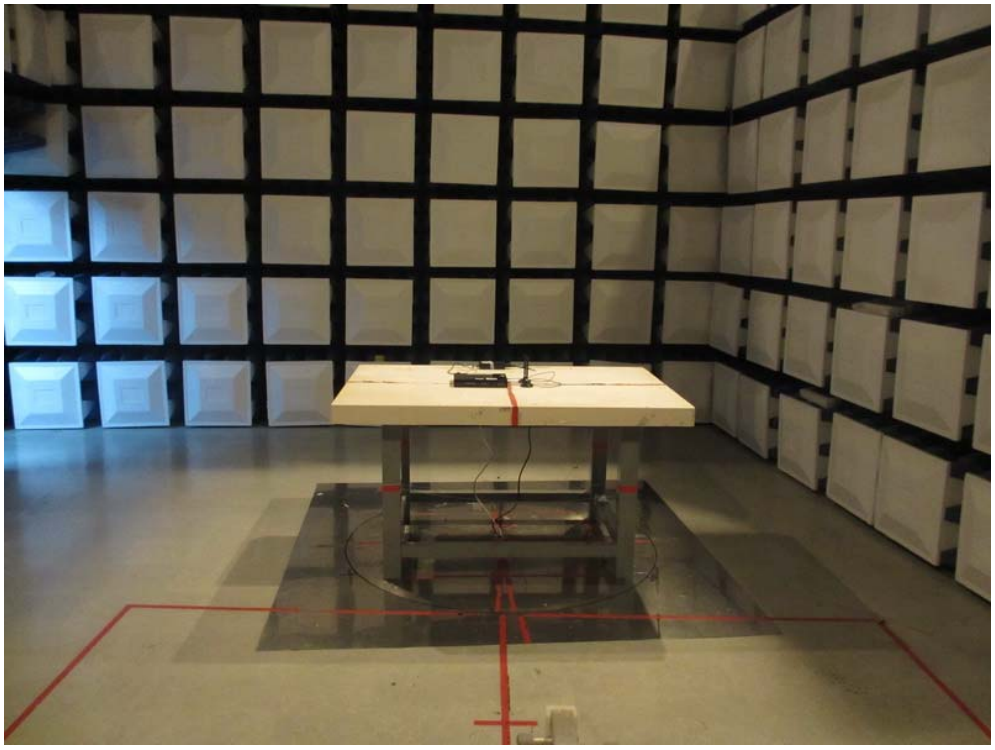
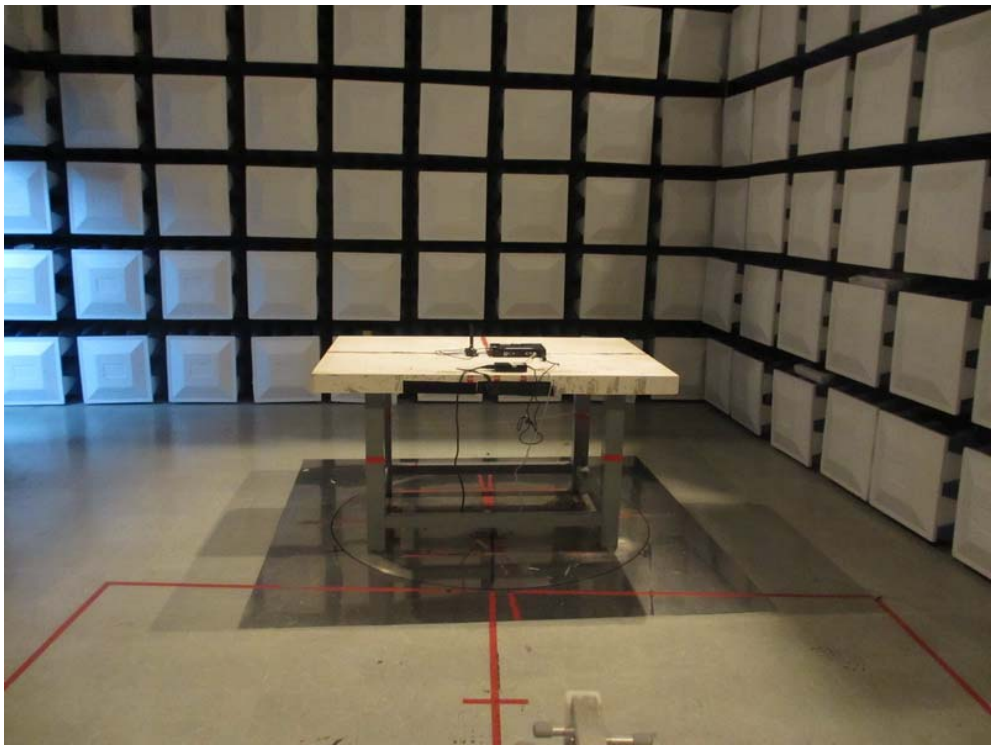
11. EUT TEST PHOTO

Conducted Measurement Photos



Radiated Measurement Photos
30M~1000MHz





Radiated Measurement Photos
Above 1000MHz