FCC Part 15C Test Report

FCC ID: 2AKHL-ONS1

Product Name:	Onion
Trademark:	N/A
Model Name :	ONS1
Prepared For : Address :	Shenzhen Inpor Cloud Computing CO.,Ltd. 1501, Block B4, Kexing Science Park,15 Keyuan Road, Nanshan, Shenzhen, Guangdong, P.R.China.
Prepared By : Address :	Shenzhen BCTC Technology Co., Ltd. No.101,Yousong Road,Longhua New District, Shenzhen,China
Test Date:	Nov. 04 – Nov. 24, 2016
Date of Report :	Nov. 28, 2016
Report No.:	BCTC-LH160911138-1E

TEST RESULT CERTIFICATION

Applicant's name ..... :	Shenzhen Inpor Cloud Computing CO.,Ltd.
Address ..... :	1501, Block B4, Kexing Science Park,15 Keyuan Road, Nanshan, Shenzhen, Guangdong, P.R.China.
Manufacture's Name ..... :	Shenzhen Inpor Cloud Computing CO.,Ltd.
Address ..... :	1501, Block B4, Kexing Science Park,15 Keyuan Road, Nanshan, Shenzhen, Guangdong, P.R.China.
Product description	
Product name .....:	Onion
Trademark .....:	N/A
Model and/or type reference :	ONS1
Standards ..... :	FCC Part15.247 ANSI C63.10:2013 KBD 558074 D01 DTS Meas Guidance v03r05

This device described above has been tested by BCTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Testing Engineer	:	Eric Yang
Reviewer (Supervisor)	:	Jade Yang
Approved & Authorized Signer(Manager)	:	Carson Zhang

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247 (a)(2)	6dB Bandwidth	PASS	
15.247 (b)	Peak Output Power	PASS	
15.247 (d)	Radiated Spurious Emission	PASS	
15.247 (e)	Power Spectral Density	PASS	
15.205	Restricted Band of Operation	PASS	
15.247 (d)	Band Edge (Out of Band Emissions)	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

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

1.1 TEST FACILITY

Shenzhen BCTC Technology Co., Ltd.
Add. : No.101,Yousong Road,Longhua New District, Shenzhen,China
FCC Registered No.: 187086

1.2 MEASUREMENT UNCERTAINTY

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** %。

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power,conducted	±0.16dB
3	Spurious emissions,conducted	±0.21dB
4	All emissions,radiated(<1G)	±4.68dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Onion
Trade Name	N/A
Model Name	ONS1
Model Difference	N/A
Product Description	The EUT is a Onion Operation Frequency: 802.11b/g/n20MHz:2412~2462 MHz 802.11n40MHz:2422~2452 MHz Modulation Type: WIFI: OFDM/DSSS Bit Rate of Transmitter 802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n Up to 150Mbps Number Of Channel 802.11b/g/n20MHz:11 CH 802.11n40MHz: 7 CH Antenna Designation: Please see Note 3. Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.
Channel List	Please refer to the Note 2.
Power	DC 5V from adapter
Adapter	Model:M050250W111 I/P: AC 100-240V 50/60Hz O/P: DC 5V 2500mA
hardware version	--
Software version	--
Serial number	--
Connecting I/O Port(s)	Please refer to the User's Manual

Note:

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

2.

Channel List for 802.11b/g/n(20)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

Channel List for 802.11n(40)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
03	2422	05	2432	07	2442	09	2452
04	2427	06	2437	08	2447		

3.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	internal antenna		2.0	

2.2 DESCRIPTION OF TEST MODES

Pretest Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n20 CH1/ CH6/ CH11
Mode 4	802.11n40 CH3/ CH6/ CH9
Mode 5	Link Mode

Conducted Emission	
Final Test Mode	Description
Mode 5	Link Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n20 CH1/ CH6/ CH11
Mode 4	802.11n40 CH3/ CH6/ CH9

Note:

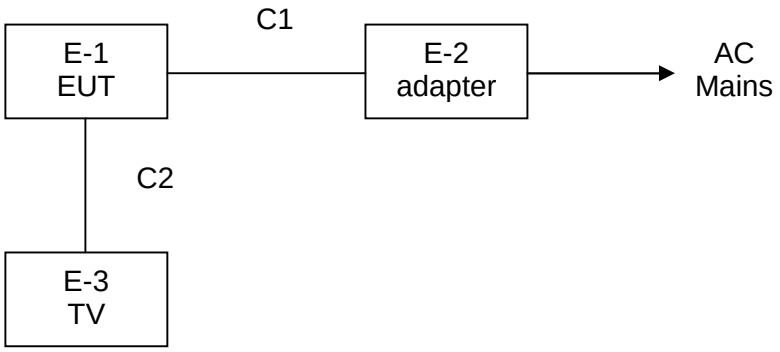
(1) The measurements are performed at the highest, middle, lowest available channels.

(2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

(3) According to ANSI C63.10 standards, the test results are both the “worst case” and “worst setup” 11MHz for 802.11b,6MHz for 802.11g,13Mbps for 802.11n(H20), 54Mbps for 802.11n(H40).

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated & Conducted Spurious Emission Test



2.4 DESCRIPTION OF TEST 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.	Series No.	Note
E-1	Onion		ONS1	N/A	EUT
E-2	Adapter		M050250W111	N/A	
E-3	TV	SNOY	NY00214A		

Item	Shielded Type	Ferrite Core	Length	Note
C1	No	No	0.8m	Mini USB
C2	No	No	1.5m	HDMI

Note:

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

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer	Agilent	E4407B	MY45109572	2016.08.27	2017.08.26
2	Test Receiver	R&S	ESPI	101396	2016.08.27	2017.08.26
3	Bilog Antenna	SCHWARZBECK	VULB9160	VULB9160-3369	2016.08.27	2017.08.26
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2016.08.27	2017.08.26
5	Spectrum Analyzer	Agilent	N9020A	MY5051041	2016.08.27	2017.08.26
6	Horn Antenna	SCHWARZBECK	9120D	9120D-1275	2016.08.27	2017.08.26
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2016.07.06	2017.07.05
8	Amplifier	SCHWARZBECK	BBV9718	9718-270	2016.08.27	2017.08.26
9	Amplifier	SCHWARZBECK	BBV9743	9743-119	2016.08.27	2017.08.26
10	Loop Antenna	ARA	PLDS83030/B	1029	2016.07.06	2017.07.05
11	Power Meter	R&S	NRVS	100696	2016.08.27	2017.08.26
12	Power Sensor	R&S	URV5-Z4	0395.1619.05	2016.08.27	2017.08.26
13	RF cables	R&S	N/A	N/A	2016.08.27	2017.08.26

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Test Receiver	R&S	ESCI	1166.5950K03-101165-ha	2016.08.27	2017.08.26
2	LISN	R&S	NSLK8126	8126466	2016.08.27	2017.08.26
3	LISN	R&S	NSLK8126	8126487	2016.08.27	2017.08.26
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2016.08.27	2017.08.26
5	RF cables	R&S	R204	R20X	2016.08.27	2017.08.26

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

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

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	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.

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

3.1.2 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.

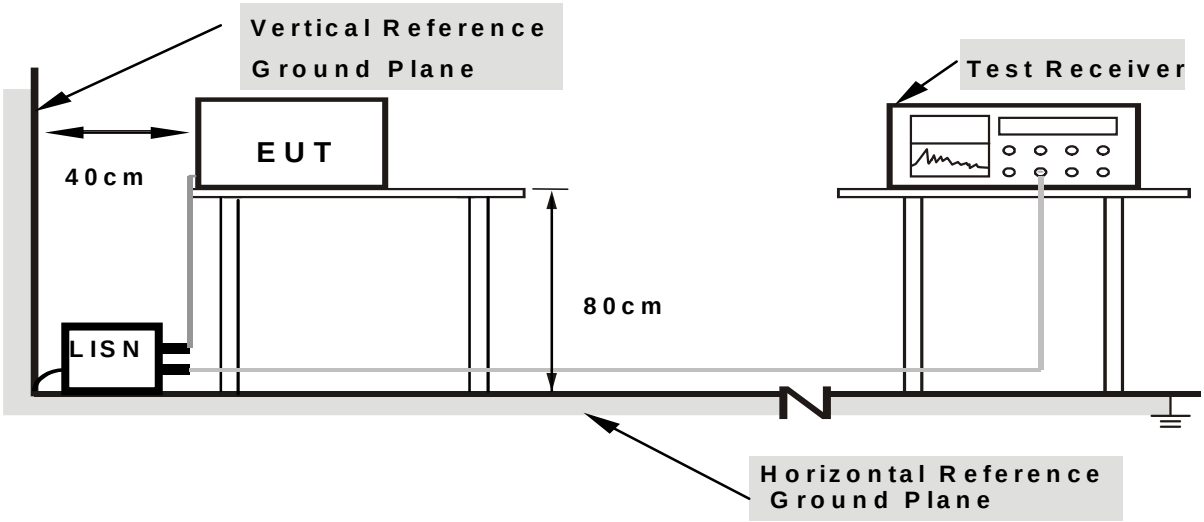
d. LISN at least 80 cm from nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 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

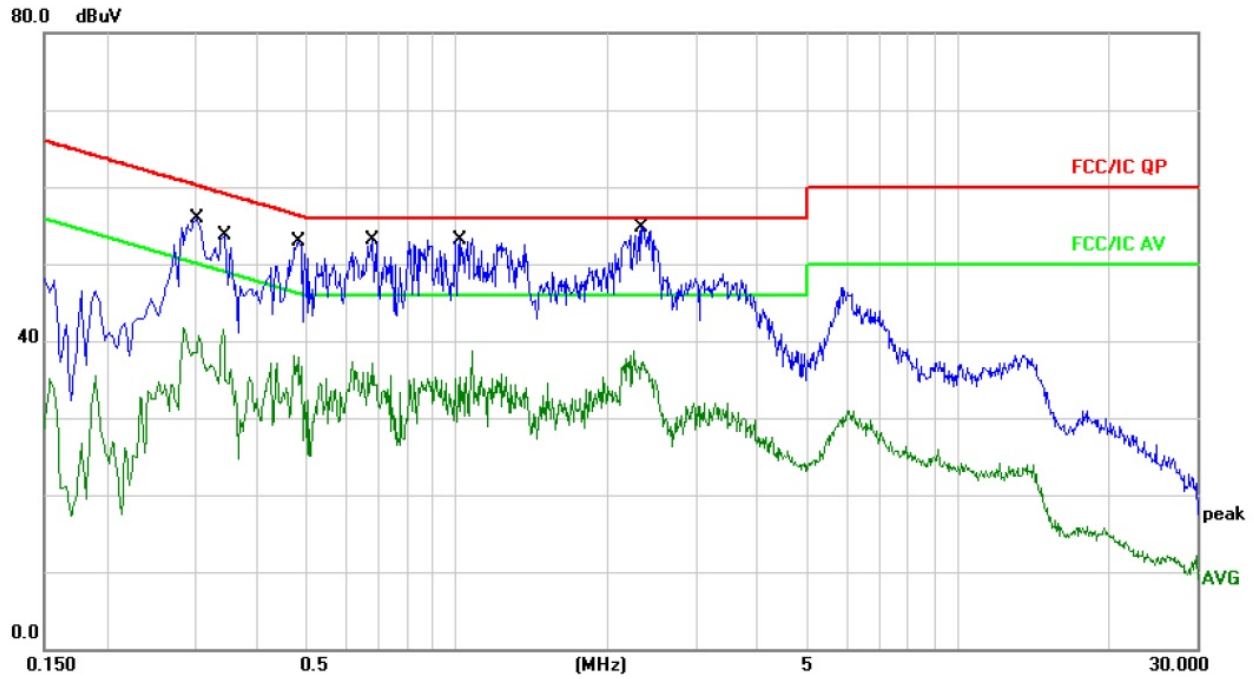
3.1.5 EUT OPERATING CONDITIONS

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.

We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the report.

3.1.6 TEST RESULTS

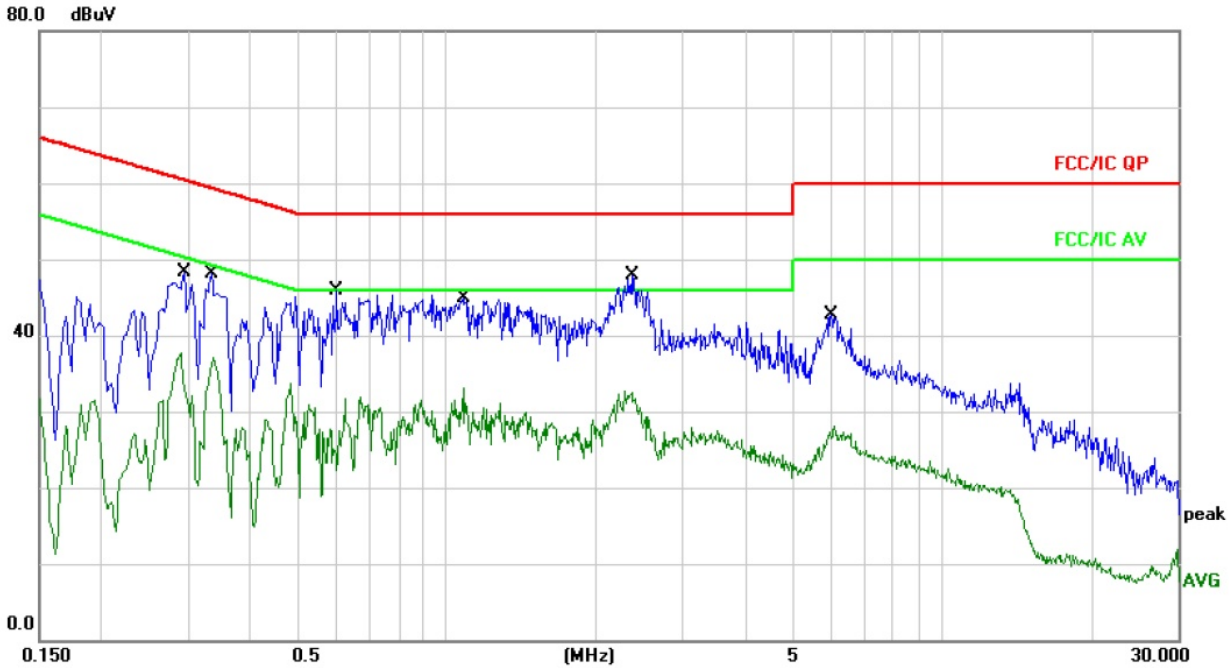
Temperature :	25 ℃	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 5



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3020	45.73	10.09	55.82	60.19	-4.37	QP	
2		0.3034	29.23	10.09	39.32	50.15	-10.83	AVG	
3		0.3460	43.59	10.10	53.69	59.06	-5.37	QP	
4		0.3460	24.80	10.10	34.90	49.06	-14.16	AVG	
5		0.4820	42.89	10.11	53.00	56.30	-3.30	QP	
6		0.4860	24.25	10.11	34.36	46.24	-11.88	AVG	
7		0.6820	42.98	10.13	53.11	56.00	-2.89	QP	
8		0.6820	27.02	10.13	37.15	46.00	-8.85	AVG	
9		1.0140	42.87	10.17	53.04	56.00	-2.96	QP	
10		1.0180	20.80	10.17	30.97	46.00	-15.03	AVG	
11	*	2.3340	44.60	10.18	54.78	56.00	-1.22	QP	
12		2.3340	26.87	10.18	37.05	46.00	-8.95	AVG	

Temperature :	25 ℃	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 5



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2940	38.21	10.09	48.30	60.41	-12.11	QP	
2		0.2940	22.58	10.09	32.67	50.41	-17.74	AVG	
3		0.3339	37.93	10.10	48.03	59.35	-11.32	QP	
4		0.3379	27.08	10.10	37.18	49.25	-12.07	AVG	
5		0.5980	35.69	10.12	45.81	56.00	-10.19	QP	
6		0.5980	12.27	10.12	22.39	46.00	-23.61	AVG	
7		1.0740	20.17	10.17	30.34	46.00	-15.66	AVG	
8		1.0780	34.80	10.17	44.97	56.00	-11.03	QP	
9	*	2.3699	37.67	10.18	47.85	56.00	-8.15	QP	
10		2.3940	21.41	10.18	31.59	46.00	-14.41	AVG	
11		5.9899	32.68	10.09	42.77	60.00	-17.23	QP	
12		5.9899	16.40	10.09	26.49	50.00	-23.51	AVG	

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

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

Frequencies (MHz)	Field Strength (micorvolts/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
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	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).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	25GHz
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / *10Hz* for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).
h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel

   Note:

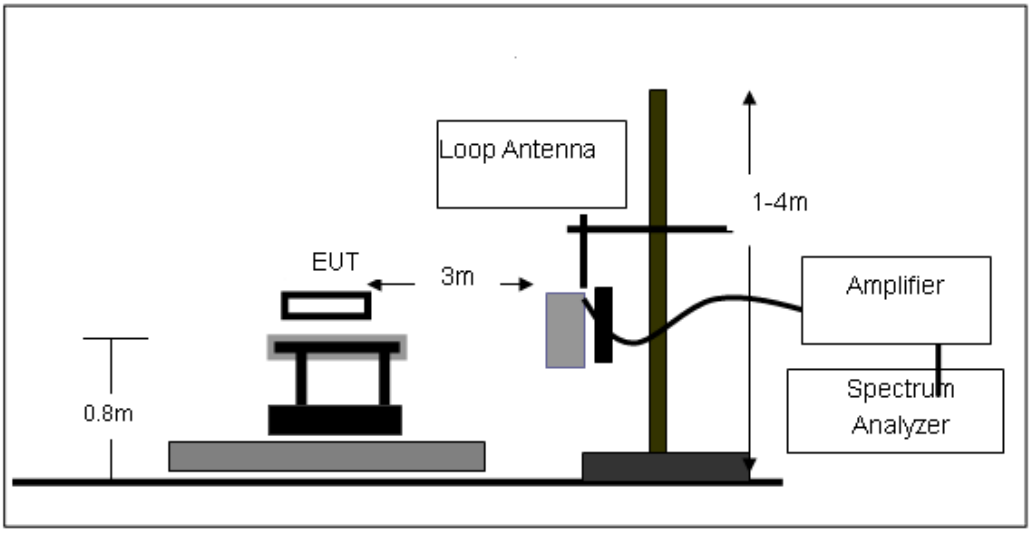
   Both horizontal and vertical antenna polarities were tested
   and performed pretest to three orthogonal axis. The worst case emissions were reported
   We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in t he report.

3.2.3 DEVIATION FROM TEST STANDARD

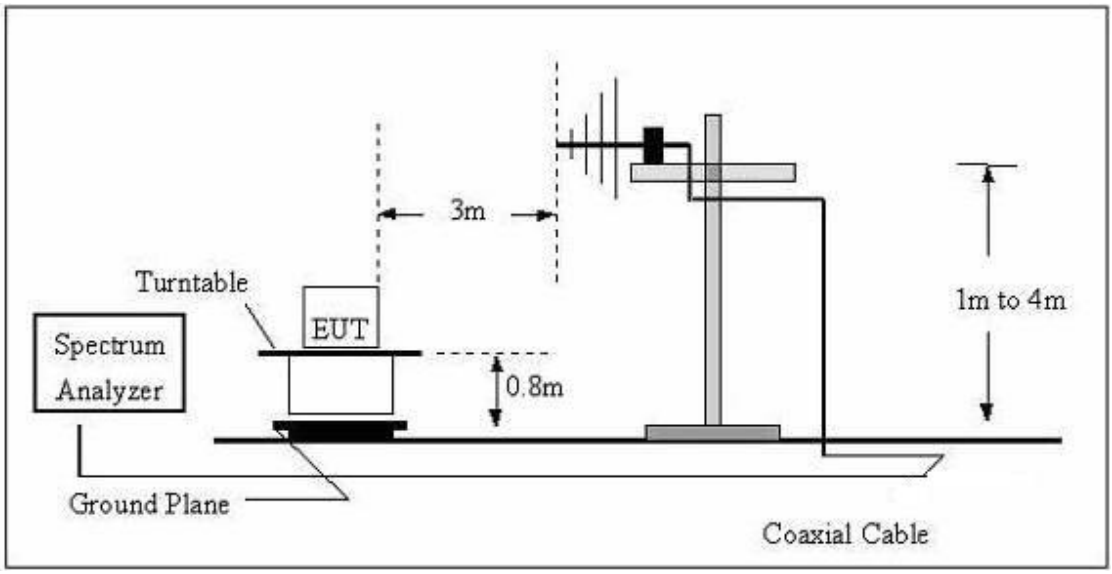
No deviation

3.2.4 TEST SETUP

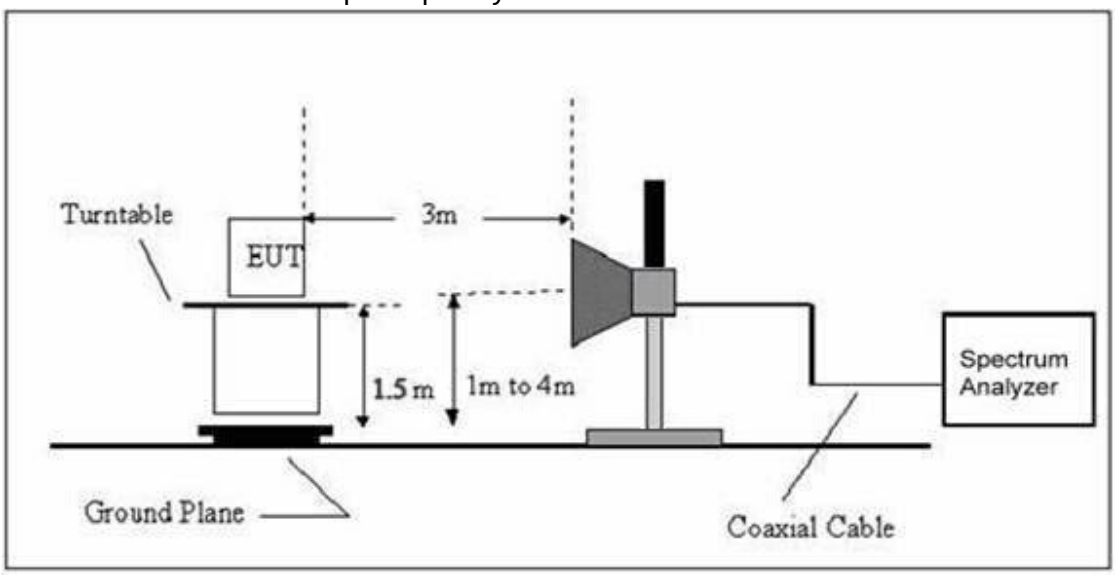
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)

Temperature:	20℃	Relative Humidtity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	Mode 5	Polarization :	--

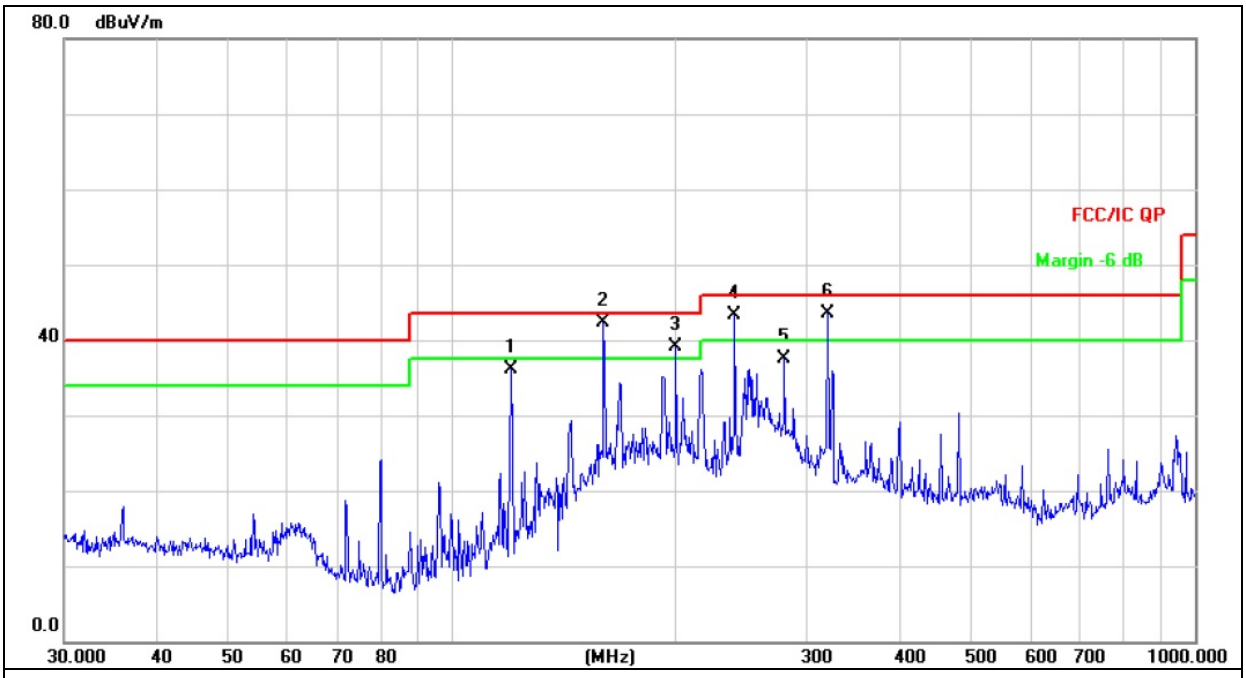
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

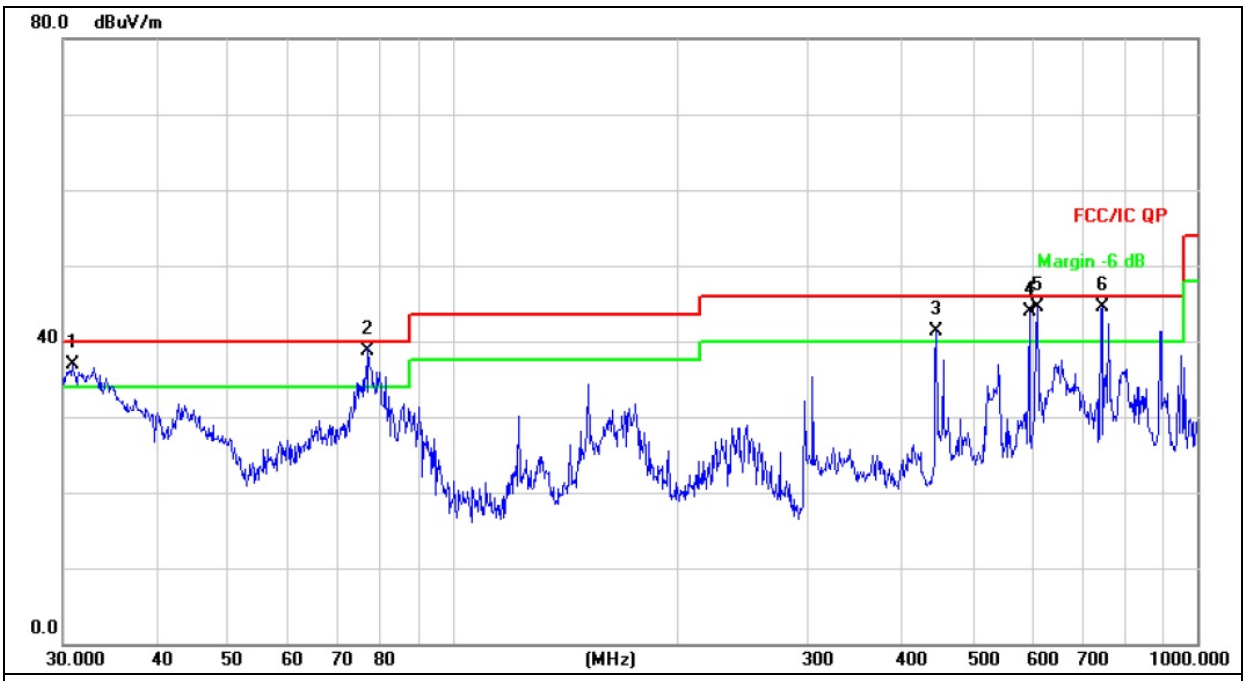
Temperature :	26℃	Relative Humidity :	54%
Pressure :	1010 hPa	Polarization :	Horizontal
Test Voltage :	DC 5V from adapter		
Test Mode :	Mode 5		



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		119.8555	50.81	-14.72	36.09	43.50	-7.41	QP
2	*	159.7844	55.09	-12.87	42.22	43.50	-1.28	QP
3	!	199.9856	55.24	-16.20	39.04	43.50	-4.46	QP
4	!	239.9874	57.87	-14.49	43.38	46.00	-2.62	QP
5		280.0237	50.54	-13.10	37.44	46.00	-8.56	QP
6	!	319.9370	55.58	-12.06	43.52	46.00	-2.48	QP

Temperature :	26℃	Relative Humidity :	54%
Pressure :	1010 hPa	Polarization :	Vertical
Test Voltage :	DC 5V from adapter		
Test Mode :	Mode 5		



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	!	30.8535	45.14	-8.14	37.00	40.00	-3.00	QP
2	*	77.0504	55.68	-17.05	38.63	40.00	-1.37	QP
3	!	446.4141	50.40	-9.08	41.32	46.00	-4.68	QP
4	!	595.1327	49.70	-5.83	43.87	46.00	-2.13	QP
5	!	609.9215	50.10	-5.61	44.49	46.00	-1.51	QP
6	!	744.8660	47.74	-3.22	44.52	46.00	-1.48	QP

3.2.8 TEST RESULTS (1GHZ~25GHZ)

802.11b									
Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2412									
V	4824.00	66.96	39.55	7.85	25.66	60.92	74	-13.08	PK
V	4824.00	48.77	39.55	7.85	25.66	42.73	54	-11.27	AV
V	7236.00	68.03	38.33	7.52	24.55	61.77	74	-12.23	PK
V	7236.00	48.26	38.33	7.52	24.55	42.00	54	-12.00	AV
V	15450.00	51.33	35.23	6.75	26.59	49.44	74	-24.56	PK
H	4824.00	68.49	39.55	7.85	25.66	62.45	74	-11.55	PK
H	4824.00	49.24	39.55	7.85	25.66	43.20	54	-10.80	AV
H	7236.00	69.23	38.33	7.52	23.55	61.97	74	-12.03	PK
H	7236.00	52.52	38.33	7.52	23.22	44.93	54	-9.07	AV
H	15450.00	47.58	35.45	6.75	27.88	46.76	74	-27.24	PK
operation frequency:2437									
V	4874.00	65.28	38.89	7.57	25.45	59.41	74	-14.59	PK
V	4874.00	48.44	38.89	7.57	25.45	42.57	54	-11.43	AV
V	7311.00	66.39	38.78	7.35	24.78	59.74	74	-14.26	PK
V	7311.00	48.04	38.78	7.35	24.78	41.39	54	-12.61	AV
V	15450.00	52.13	35.89	6.42	26.47	49.13	74	-24.87	PK
H	4874.00	64.61	38.89	7.57	25.45	58.74	74	-15.26	PK
H	4874.00	49.33	38.89	7.57	25.45	43.46	54	-10.54	AV
H	7311.00	70.05	38.78	7.35	24.78	63.40	74	-10.60	PK
H	7311.00	48.60	38.78	7.35	24.78	41.95	54	-12.05	AV
H	15450.00	48.48	36.68	6.45	26.65	44.90	74	-29.10	PK
operation frequency:2462									
V	4924.00	68.07	38.75	7.46	25.45	62.23	74	-11.77	PK
V	4924.00	50.56	38.75	7.46	25.45	44.72	54	-9.28	AV
V	7386.00	67.45	38.65	7.22	24.78	60.80	74	-13.20	PK
V	7386.00	49.14	38.65	7.22	24.78	42.49	54	-11.51	AV
V	15450.00	53.39	35.58	6.35	26.47	50.63	74	-23.37	PK
H	4924.00	65.93	38.75	7.46	25.45	60.09	74	-13.91	PK
H	4924.00	50.17	38.75	7.46	25.45	44.33	54	-9.67	AV
H	7386.00	69.38	38.65	7.22	24.78	62.73	74	-11.27	PK
H	7386.00	48.03	38.65	7.22	24.78	41.38	54	-12.62	AV
H	15450.00	50.26	36.42	6.32	26.65	46.81	74	-27.19	PK

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11g									
Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2412									
V	4824.00	65.94	39.55	7.85	25.66	59.90	74	-14.10	PK
V	4824.00	49.36	39.55	7.85	25.66	43.32	54	-10.68	AV
V	7236.00	66.10	38.33	7.52	24.55	59.84	74	-14.16	PK
V	7236.00	47.47	38.33	7.52	24.55	41.21	54	-12.79	AV
V	15450.00	50.73	35.23	6.75	26.59	48.84	74	-25.16	PK
H	4824.00	62.97	39.55	7.85	25.66	56.93	74	-17.07	PK
H	4824.00	49.27	39.55	7.85	25.66	43.23	54	-10.77	AV
H	7236.00	69.05	38.33	7.52	23.55	61.79	74	-12.21	PK
H	7236.00	50.26	38.33	7.52	23.22	42.67	54	-11.33	AV
H	15450.00	45.58	35.45	6.75	27.88	44.76	74	-29.24	PK
operation frequency:2437									
V	4874.00	66.38	38.89	7.57	25.45	60.51	74	-13.49	PK
V	4874.00	49.04	38.89	7.57	25.45	43.17	54	-10.83	AV
V	7311.00	67.24	38.78	7.35	24.78	60.59	74	-13.41	PK
V	7311.00	47.55	38.78	7.35	24.78	40.90	54	-13.10	AV
V	15450.00	52.61	35.89	6.42	26.47	49.61	74	-24.39	PK
H	4874.00	65.06	38.89	7.57	25.45	59.19	74	-14.81	PK
H	4874.00	49.27	38.89	7.57	25.45	43.40	54	-10.60	AV
H	7311.00	69.02	38.78	7.35	24.78	62.37	74	-11.63	PK
H	7311.00	48.07	38.78	7.35	24.78	41.42	54	-12.58	AV
H	15450.00	49.15	36.68	6.42	26.65	45.54	74	-28.46	PK
operation frequency:2462									
V	4924.00	67.60	38.75	7.46	25.45	61.76	74	-12.24	PK
V	4924.00	48.24	38.75	7.46	25.45	42.40	54	-11.60	AV
V	7386.00	68.27	38.65	7.22	24.78	61.62	74	-12.38	PK
V	7386.00	49.56	38.65	7.22	24.78	42.91	54	-11.09	AV
V	15450.00	53.43	35.58	6.35	26.47	50.67	74	-23.33	PK
H	4924.00	66.26	38.75	7.46	25.45	60.42	74	-13.58	PK
H	4924.00	50.23	38.75	7.46	25.45	44.39	54	-9.61	AV
H	7386.00	69.07	38.65	7.22	24.78	62.42	74	-11.58	PK
H	7386.00	48.67	38.65	7.22	24.78	42.02	54	-11.98	AV
H	15450.00	49.52	36.42	6.32	26.65	46.07	74	-27.93	PK

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n(20MHz)									
Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2412									
V	4824.00	67.47	39.55	7.85	25.66	61.43	74	-12.57	PK
V	4824.00	48.47	39.55	7.85	25.66	42.43	54	-11.57	AV
V	7236.00	68.17	38.33	7.52	24.55	61.91	74	-12.09	PK
V	7236.00	48.34	38.33	7.52	24.55	42.08	54	-11.92	AV
V	15450.00	51.56	35.23	6.75	26.59	49.67	74	-24.33	PK
H	4824.00	68.06	39.55	7.85	25.66	62.02	74	-11.98	PK
H	4824.00	49.43	39.55	7.85	25.66	43.39	54	-10.61	AV
H	7236.00	69.07	38.33	7.52	23.55	61.81	74	-12.19	PK
H	7236.00	52.25	38.33	7.52	23.22	44.66	54	-9.34	AV
H	15450.00	47.65	35.45	6.75	27.88	46.83	74	-27.17	PK
operation frequency:2437									
V	4874.00	66.43	38.89	7.57	25.45	60.56	74	-13.44	PK
V	4874.00	49.43	38.89	7.57	25.45	43.56	54	-10.44	AV
V	7311.00	67.08	38.78	7.35	24.78	60.43	74	-13.57	PK
V	7311.00	47.24	38.78	7.35	24.78	40.59	54	-13.41	AV
V	15450.00	52.13	35.89	6.42	26.47	49.13	74	-24.87	PK
H	4874.00	65.31	38.89	7.57	25.45	59.44	74	-14.56	PK
H	4874.00	49.45	38.89	7.57	25.45	43.58	54	-10.42	AV
H	7311.00	69.45	38.78	7.35	24.78	62.80	74	-11.20	PK
H	7311.00	48.61	38.78	7.35	24.78	41.96	54	-12.04	AV
H	15450.00	49.42	36.68	6.42	26.65	45.81	74	-28.19	PK
operation frequency:2462									
V	4924.00	68.48	38.75	7.46	25.45	62.64	74	-11.36	PK
V	4924.00	50.17	38.75	7.46	25.45	44.33	54	-9.67	AV
V	7386.00	67.47	38.65	7.22	24.78	60.82	74	-13.18	PK
V	7386.00	49.36	38.65	7.22	24.78	42.71	54	-11.29	AV
V	15450.00	53.16	35.58	6.35	26.47	50.40	74	-23.60	PK
H	4924.00	66.49	38.75	7.46	25.45	60.65	74	-13.35	PK
H	4924.00	50.30	38.75	7.46	25.45	44.46	54	-9.54	AV
H	7386.00	68.99	38.65	7.22	24.78	62.34	74	-11.66	PK
H	7386.00	48.17	38.65	7.22	24.78	41.52	54	-12.48	AV
H	15450.00	49.95	36.42	6.32	26.65	46.50	74	-27.50	PK

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n(40MHz)									
Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2422									
V	4844.000	68.85	39.55	7.77	25.66	62.73	74	-11.27	PK
V	4844.000	48.86	39.55	7.77	25.66	42.74	54	-11.26	AV
V	7266.000	67.83	38.33	7.30	24.55	61.35	74	-12.65	PK
V	7266.000	48.57	38.33	7.30	24.55	42.09	54	-11.91	AV
V	15450.00	51.96	35.23	6.60	26.59	49.92	74	-24.08	PK
H	4844.000	69.06	39.55	7.77	25.66	62.94	74	-11.06	PK
H	4844.000	49.59	39.55	7.77	25.66	43.47	54	-10.53	AV
H	7266.000	70.04	38.33	7.30	23.55	62.56	74	-11.44	PK
H	7266.000	52.76	38.33	7.30	23.22	44.95	54	-9.05	AV
H	15450.00	48.64	35.45	6.60	27.88	47.67	74	-26.33	PK
operation frequency:2437									
V	4874.00	67.03	38.89	7.57	25.45	61.16	74	-12.84	PK
V	4874.00	49.88	38.89	7.57	25.45	44.01	54	-9.99	AV
V	7311.00	67.94	38.78	7.35	24.78	61.29	74	-12.71	PK
V	7311.00	47.95	38.78	7.35	24.78	41.30	54	-12.70	AV
V	15450.00	52.57	35.89	6.42	26.47	49.57	74	-24.43	PK
H	4874.00	65.49	38.89	7.57	25.45	59.62	74	-14.38	PK
H	4874.00	49.88	38.89	7.57	25.45	44.01	54	-9.99	AV
H	7311.00	70.25	38.78	7.35	24.78	63.60	74	-10.40	PK
H	7311.00	48.44	38.78	7.35	24.78	41.79	54	-12.21	AV
H	15450.00	49.67	36.68	6.42	26.65	46.06	74	-27.94	PK
operation frequency:2452									
V	4904.00	68.86	38.75	7.38	25.45	62.94	74	-11.06	PK
V	4904.00	50.56	38.75	7.38	25.45	44.64	54	-9.36	AV
V	7356.00	67.92	38.65	7.15	24.78	61.20	74	-12.80	PK
V	7356.00	50.16	38.65	7.15	24.78	43.44	54	-10.56	AV
V	15450.00	53.67	35.58	6.25	26.47	50.81	74	-23.19	PK
H	4904.00	66.99	38.75	7.38	25.45	61.07	74	-12.93	PK
H	4904.00	51.15	38.75	7.38	25.45	45.23	54	-8.77	AV
H	7356.00	70.05	38.65	7.15	24.78	63.33	74	-10.67	PK
H	7356.00	48.77	38.65	7.15	24.78	42.05	54	-11.95	AV
H	15450.00	50.58	36.42	6.25	26.65	47.06	74	-26.94	PK

Remark:

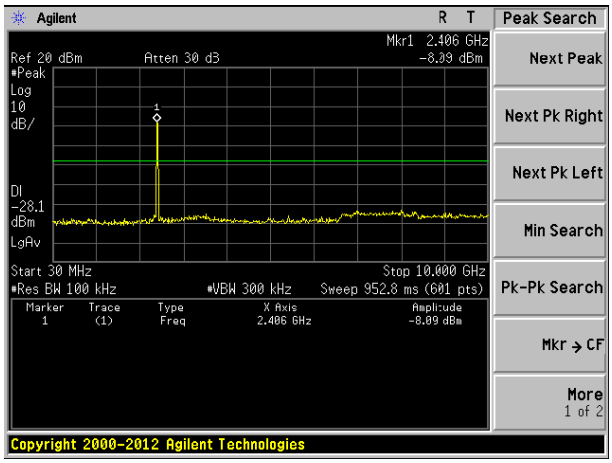
1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

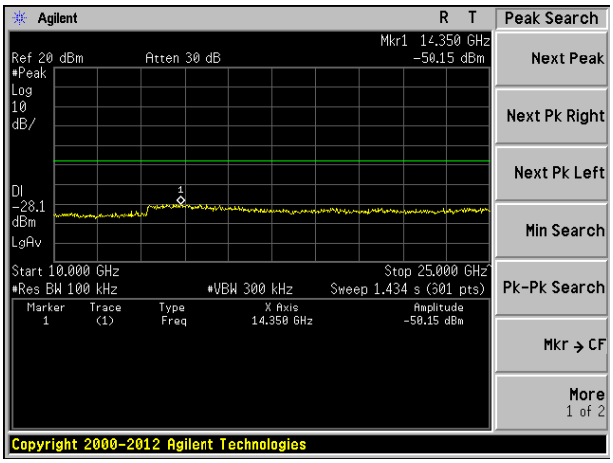
For Conducted

The worst mode 802.11b, the data only show the worst mode.

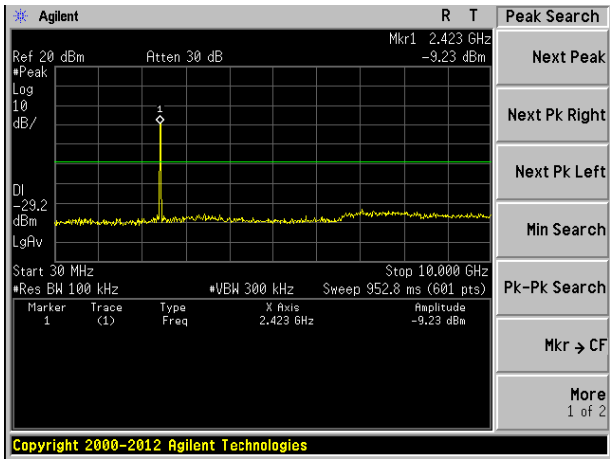
802.11b

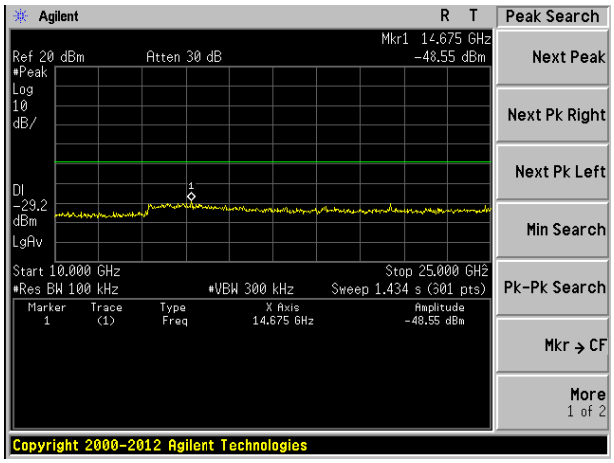
2412MHz



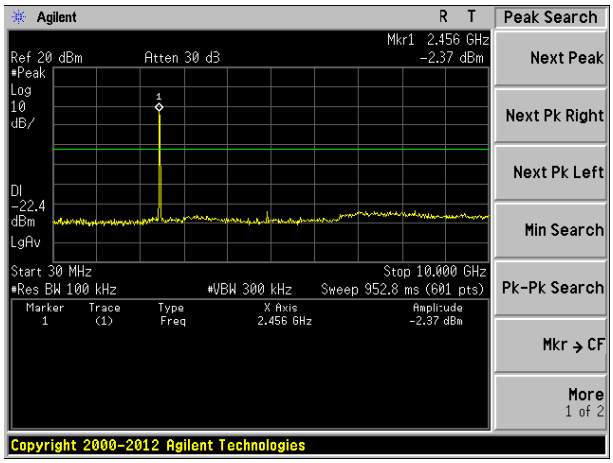


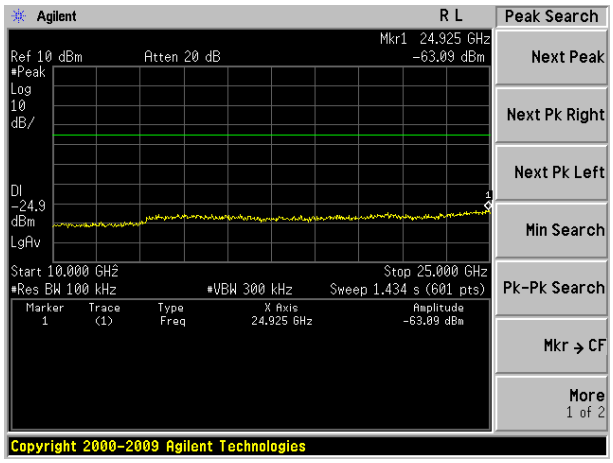
2437MHz





2462MHz





3.3 RADIATED BAND EMISSION MEASUREMENT

3.3.1 TEST REQUIREMENT:

FCC Part15 C Section 15.209 and 15.205

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	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).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	2300MHz
Stop Frequency	2520
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

3.3.2 TEST PROCEDURE

Above 1GHz test procedure as below:

a. 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel,the Highest channel

Note:

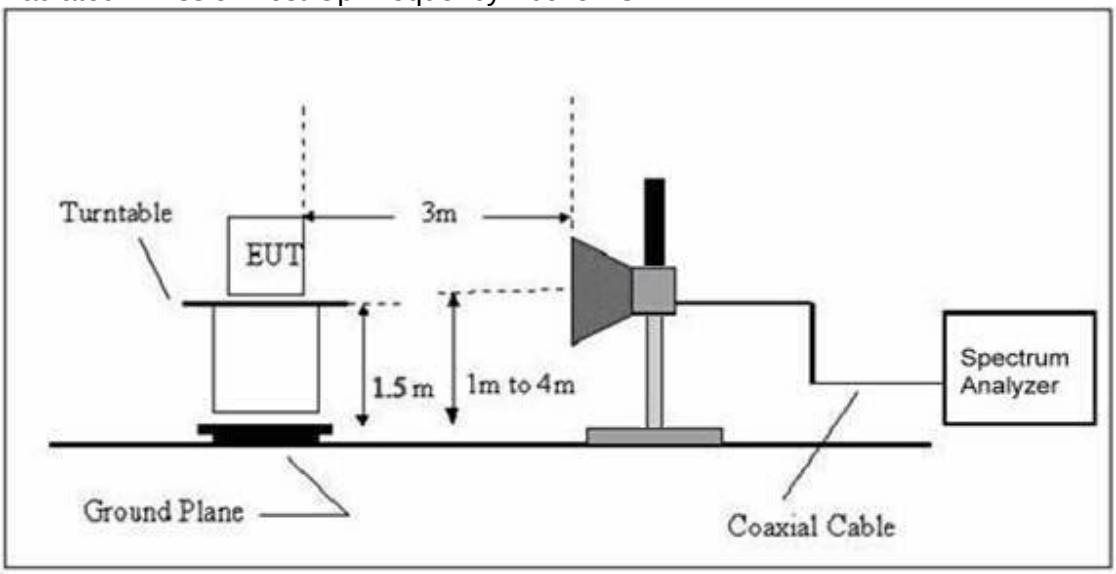
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.3.3 DEVIATION FROM TEST STANDARD

No deviation

3.3.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



3.3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.3.6 TEST RESULT

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission evel (dBuV/m)	Limits (dBuV/m	Margin (dB)	Detector Type
802.11b operation frequency:2412									
V	2390.00	67.63	38.06	7.42	20.15	57.14	74.00	-16.86	PK
V	2390.00	56.18	38.06	7.42	20.15	45.69	54.00	-8.31	AV
V	2400.00	67.84	38.06	7.42	20.15	57.35	74.00	-16.65	PK
V	2400.00	55.76	38.06	7.42	20.15	45.27	54.00	-8.73	AV
H	2390.00	67.92	38.06	7.42	20.15	57.43	74.00	-16.57	PK
H	2390.00	56.21	38.06	7.42	20.15	45.72	54.00	-8.28	AV
H	2400.00	67.79	38.06	7.42	20.15	57.30	74.00	-16.70	PK
H	2400.00	56.15	38.06	7.42	20.15	45.66	54.00	-8.34	AV
802.11b operation frequency:2462									
V	2483.50	67.84	38.17	7.42	20.51	57.60	74.00	-16.40	PK
V	2483.50	56.43	38.17	7.42	20.51	46.19	54.00	-7.81	AV
V	2500.00	67.78	38.20	7.45	20.54	57.57	74.00	-16.43	PK
V	2500.00	55.87	38.20	7.45	20.54	45.66	54.00	-8.34	AV
H	2483.50	67.96	38.17	7.42	20.51	57.72	74.00	-16.28	PK
H	2483.50	56.47	38.17	7.42	20.51	46.23	54.00	-7.77	AV
H	2500.00	67.58	38.20	7.45	20.54	57.37	74.00	-16.63	PK
H	2500.00	56.73	38.20	7.45	20.54	46.52	54.00	-7.48	AV
802.11g operation frequency:2412									
V	2390.00	67.79	38.06	7.42	20.15	57.30	74.00	-16.70	PK
V	2390.00	56.32	38.06	7.42	20.15	45.83	54.00	-8.17	AV
V	2400.00	68.00	38.06	7.42	20.15	57.51	74.00	-16.49	PK
V	2400.00	55.89	38.06	7.42	20.15	45.40	54.00	-8.60	AV
H	2390.00	68.08	38.06	7.42	20.15	57.59	74.00	-16.41	PK
H	2390.00	56.35	38.06	7.42	20.15	45.86	54.00	-8.14	AV
H	2400.00	67.95	38.06	7.42	20.15	57.46	74.00	-16.54	PK
H	2400.00	56.28	38.06	7.42	20.15	45.79	54.00	-8.21	AV
802.11g operation frequency:2462									
V	2483.50	68.00	38.17	7.42	20.51	57.76	74.00	-16.24	PK
V	2483.50	56.57	38.17	7.42	20.51	46.33	54.00	-7.67	AV
V	2500.00	67.94	38.20	7.45	20.54	57.73	74.00	-16.27	PK
V	2500.00	56.00	38.20	7.45	20.54	45.79	54.00	-8.21	AV
H	2483.50	68.12	38.17	7.42	20.51	57.88	74.00	-16.12	PK
H	2483.50	56.61	38.17	7.42	20.51	46.37	54.00	-7.63	AV
H	2500.00	67.74	38.20	7.45	20.54	57.53	74.00	-16.47	PK
H	2500.00	56.87	38.20	7.45	20.54	46.66	54.00	-7.34	AV

Remark:

1. Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission evel (dBuV/m)	Limits (dBuV/m	Margin (dB)	Detector Type
802.11n(20MHz) operation frequency:2412									
V	2390.00	67.97	38.06	7.42	20.15	57.48	74.00	-16.52	PK
V	2390.00	56.49	38.06	7.42	20.15	46.00	54.00	-8.00	AV
V	2400.00	68.20	38.06	7.42	20.15	57.71	74.00	-16.29	PK
V	2400.00	56.04	38.06	7.42	20.15	45.55	54.00	-8.45	AV
H	2390.00	68.28	38.06	7.42	20.15	57.79	74.00	-16.21	PK
H	2390.00	56.52	38.06	7.42	20.15	46.03	54.00	-7.97	AV
H	2400.00	68.13	38.06	7.42	20.15	57.64	74.00	-16.36	PK
H	2400.00	56.45	38.06	7.42	20.15	45.96	54.00	-8.04	AV
802.11n(20MHz) operation frequency:2462									
V	2483.50	68.20	38.17	7.42	20.51	57.96	74.00	-16.04	PK
V	2483.50	56.73	38.17	7.42	20.51	46.49	54.00	-7.51	AV
V	2500.00	68.12	38.20	7.45	20.54	57.91	74.00	-16.09	PK
V	2500.00	56.15	38.20	7.45	20.54	45.94	54.00	-8.06	AV
H	2483.50	68.32	38.17	7.42	20.51	58.08	74.00	-15.92	PK
H	2483.50	56.77	38.17	7.42	20.51	46.53	54.00	-7.47	AV
H	2500.00	67.92	38.20	7.45	20.54	57.71	74.00	-16.29	PK
H	2500.00	57.02	38.20	7.45	20.54	46.81	54.00	-7.19	AV
802.11n(40MHz) operation frequency:2412									
V	2390.00	67.84	38.06	7.42	20.15	57.35	74.00	-16.65	PK
V	2390.00	56.36	38.06	7.42	20.15	45.87	54.00	-8.13	AV
V	2400.00	68.05	38.06	7.42	20.15	57.56	74.00	-16.44	PK
V	2400.00	55.93	38.06	7.42	20.15	45.44	54.00	-8.56	AV
H	2390.00	68.13	38.06	7.42	20.15	57.64	74.00	-16.36	PK
H	2390.00	56.39	38.06	7.42	20.15	45.90	54.00	-8.10	AV
H	2400.00	68.00	38.06	7.42	20.15	57.51	74.00	-16.49	PK
H	2400.00	56.32	38.06	7.42	20.15	45.83	54.00	-8.17	AV
802.11n(40MHz) operation frequency:2462									
V	2483.50	68.05	38.17	7.42	20.51	57.81	74.00	-16.19	PK
V	2483.50	56.60	38.17	7.42	20.51	46.36	54.00	-7.64	AV
V	2500.00	67.99	38.20	7.45	20.54	57.78	74.00	-16.22	PK
V	2500.00	56.04	38.20	7.45	20.54	45.83	54.00	-8.17	AV
H	2483.50	68.17	38.17	7.42	20.51	57.93	74.00	-16.07	PK
H	2483.50	56.64	38.17	7.42	20.51	46.40	54.00	-7.60	AV
H	2500.00	67.79	38.20	7.45	20.54	57.58	74.00	-16.42	PK
H	2500.00	56.91	38.20	7.45	20.54	46.70	54.00	-7.30	AV

Remark:

1. Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

4. POWER SPECTRAL DENSITY TEST

4.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

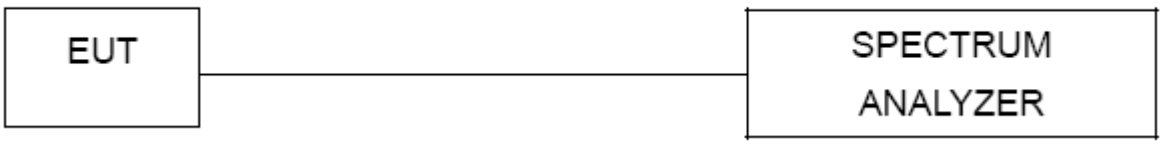
4.1.1 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = RMS.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



4.1.4 EUT OPERATION CONDITIONS

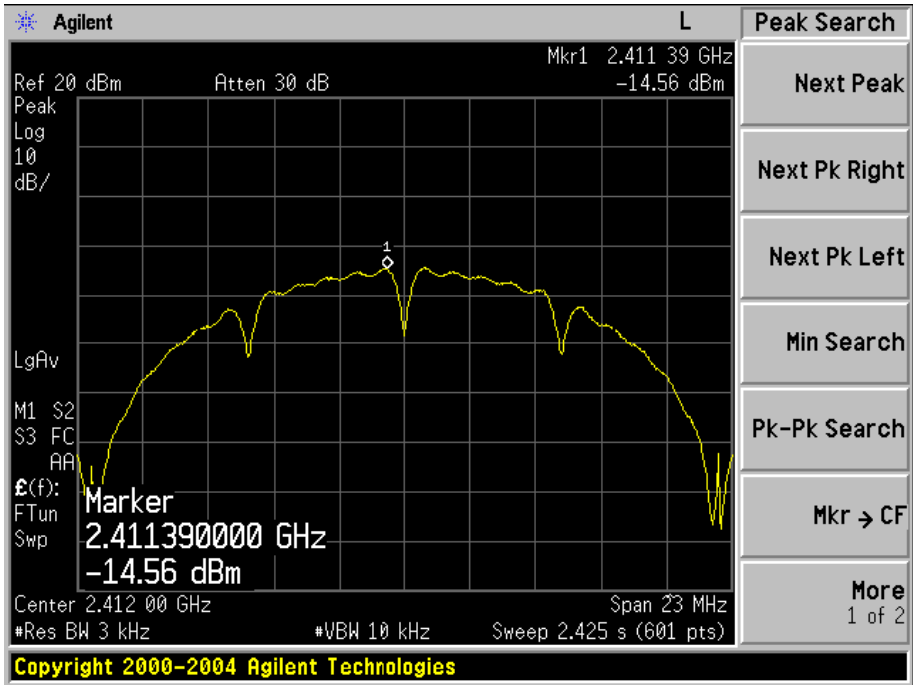
The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.
Note: Power Spectral Density(dBm)=Reading+Cable Loss

4.1.5 TEST RESULTS

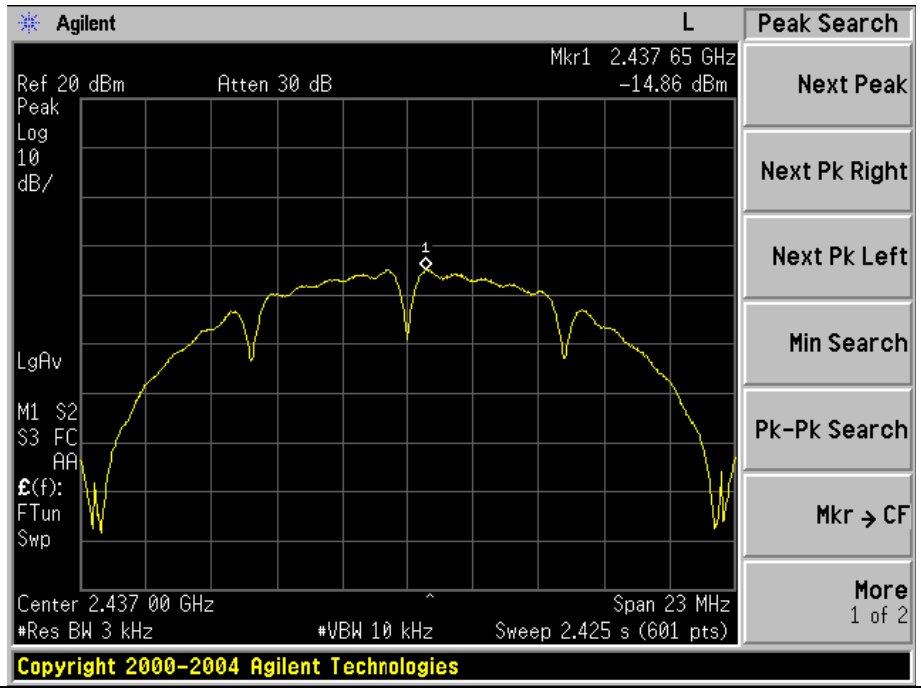
Temperature :	25℃	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX b Mode		

Frequency	Reading(dBm)	Cable Loss (dB)	Power Spectral Density(dBm)	Limit (dBm)	Result
2412 MHz	-14.56	0.5	-14.06	8	PASS
2437 MHz	-14.86	0.5	-14.36	8	PASS
2462 MHz	-13.54	0.5	-13.04	8	PASS

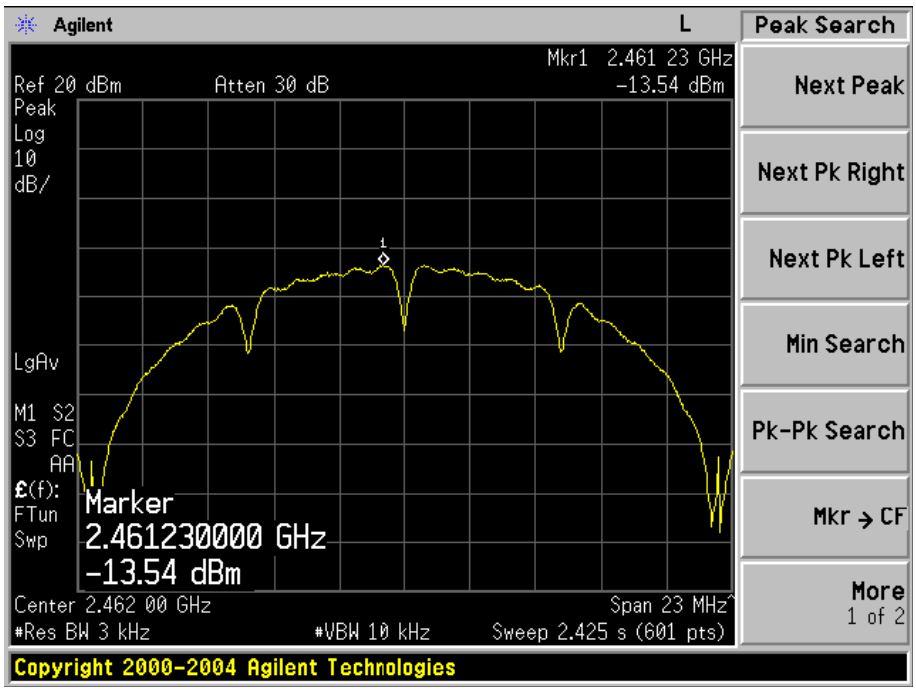
TX CH01



TX CH06



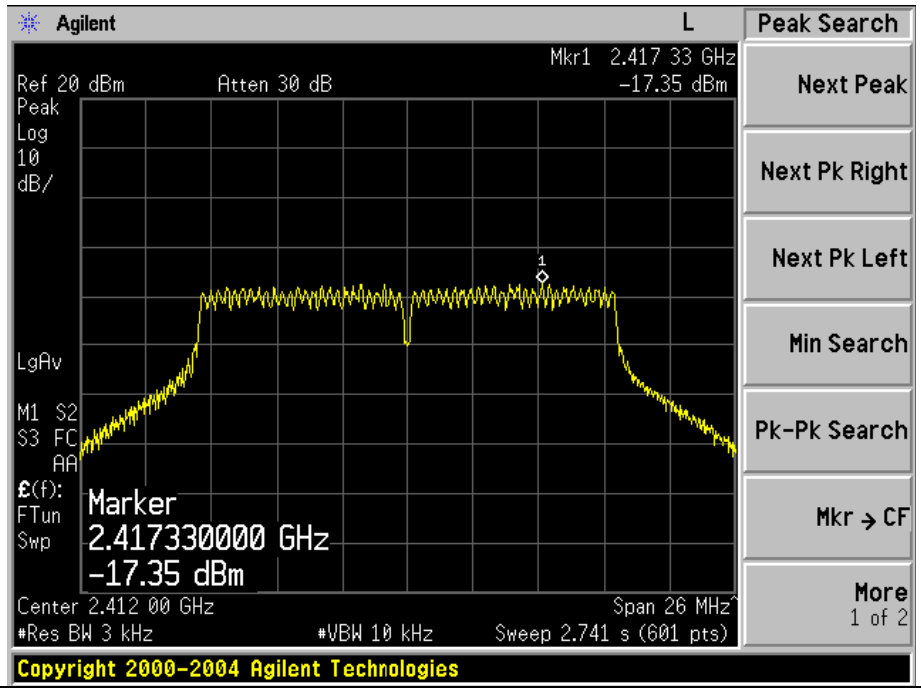
TX CH11



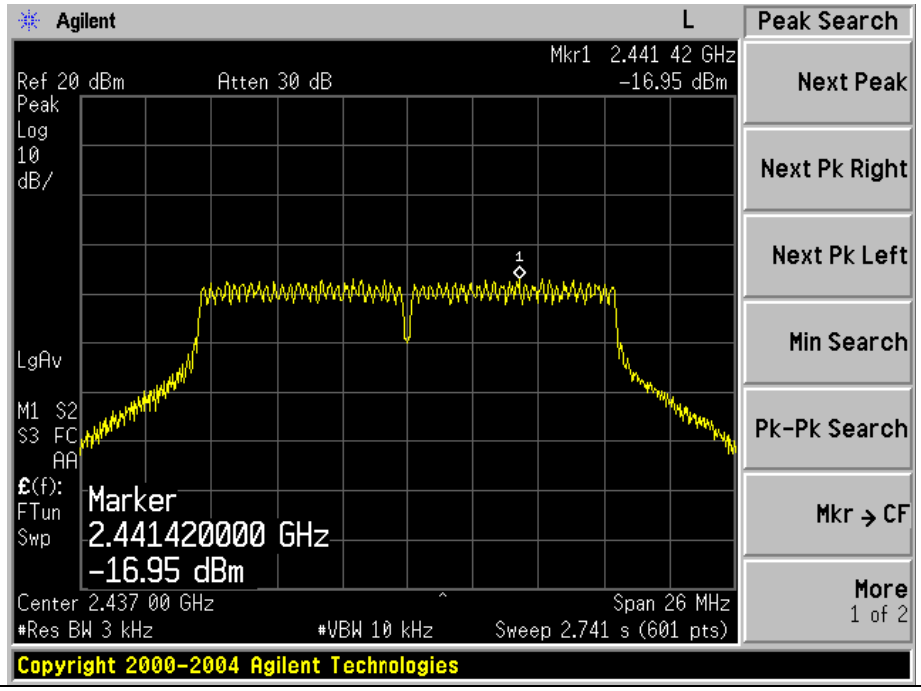
Temperature :	25℃	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX g Mode		

Frequency	Reading(dBm)	Cable Loss (dB)	Power Spectral Density(dBm)	Limit (dBm)	Result
2412 MHz	-17.35	0.5	-16.85	8	PASS
2437 MHz	-16.95	0.5	-16.45	8	PASS
2462 MHz	-16.72	0.5	-16.22	8	PASS

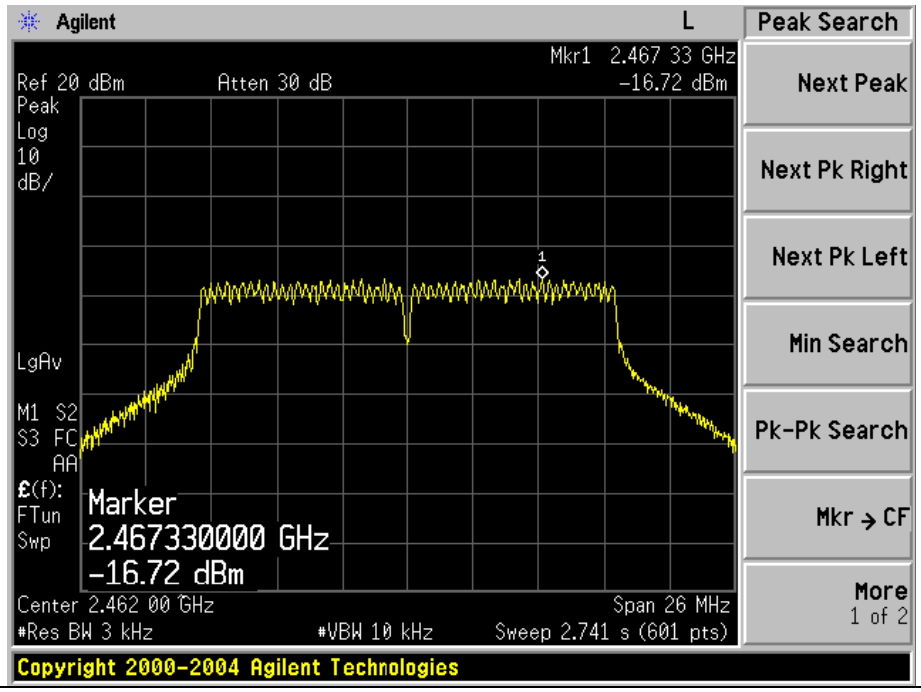
TX CH01



TX CH06



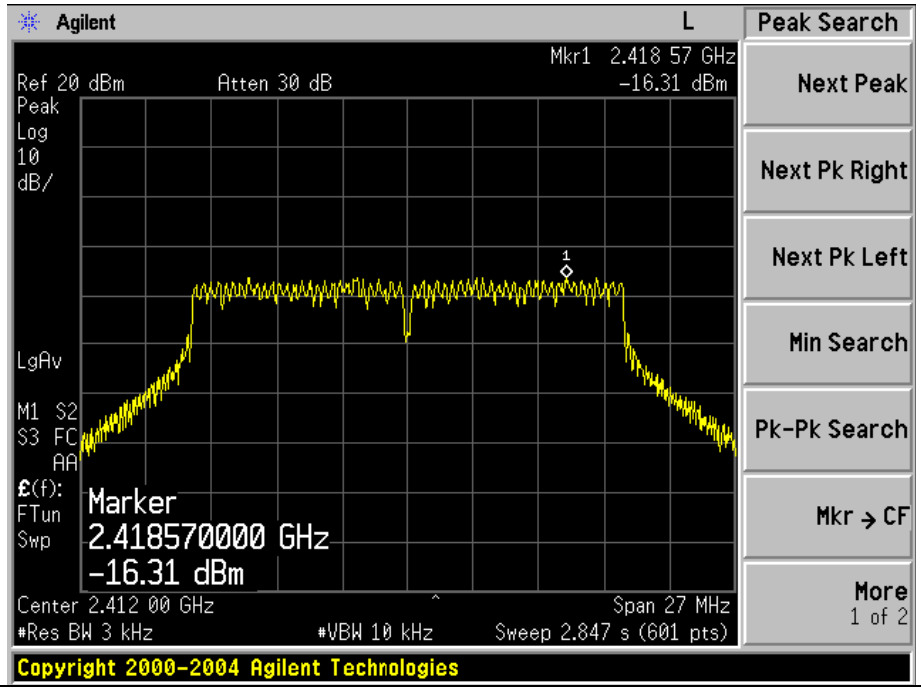
TX CH11



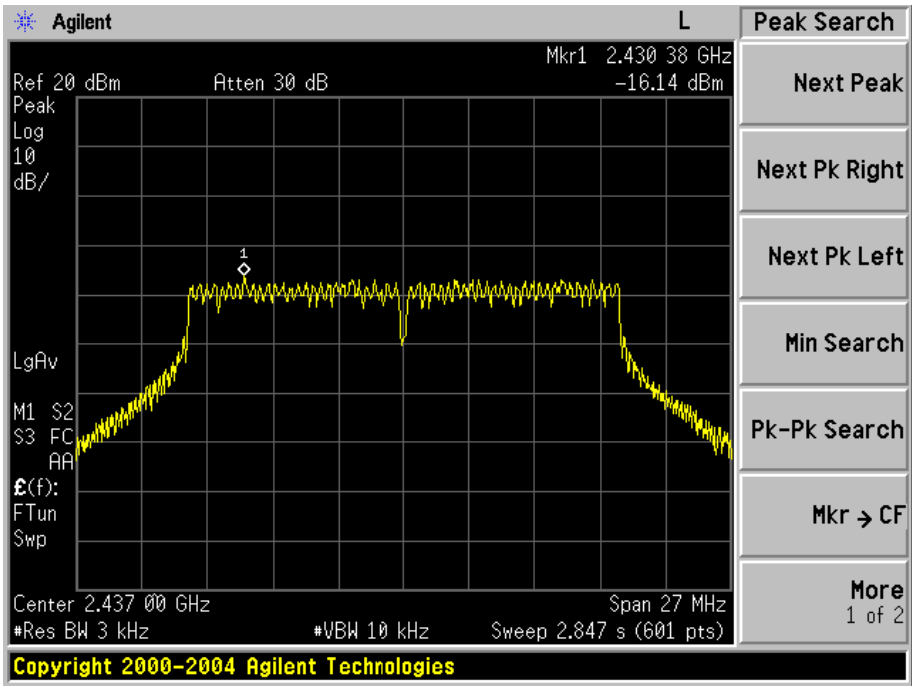
Temperature :	25℃	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX n Mode(20M)		

Frequency	Reading(dBm)	Cable Loss (dB)	Power Spectral Density(dBm)	Limit (dBm)	Result
2412 MHz	-16.31	0.5	-15.81	8	PASS
2437 MHz	-16.14	0.5	-15.64	8	PASS
2462 MHz	-16.36	0.5	-15.86	8	PASS

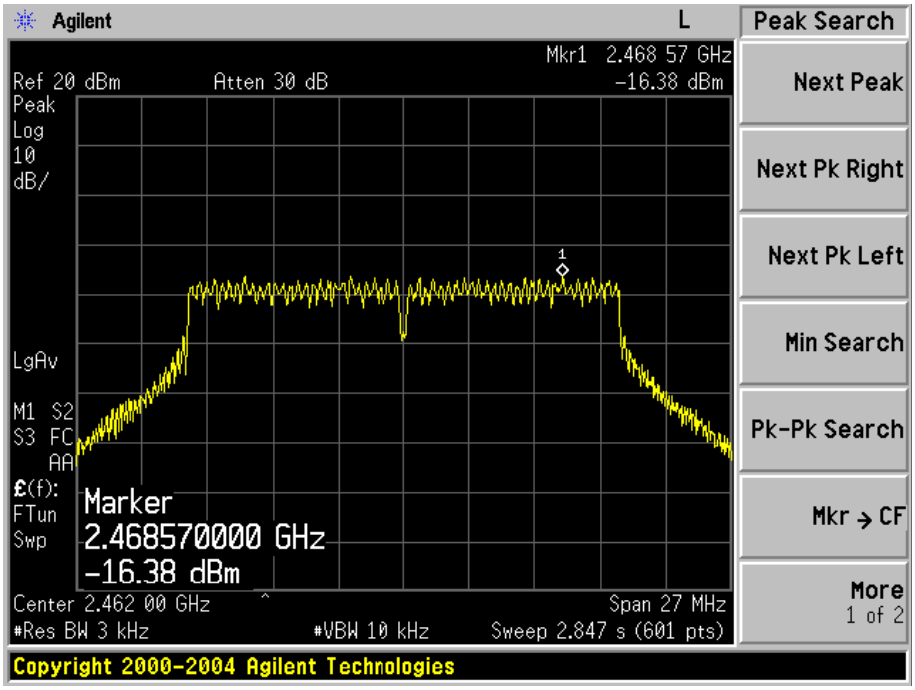
TX CH01



TX CH06



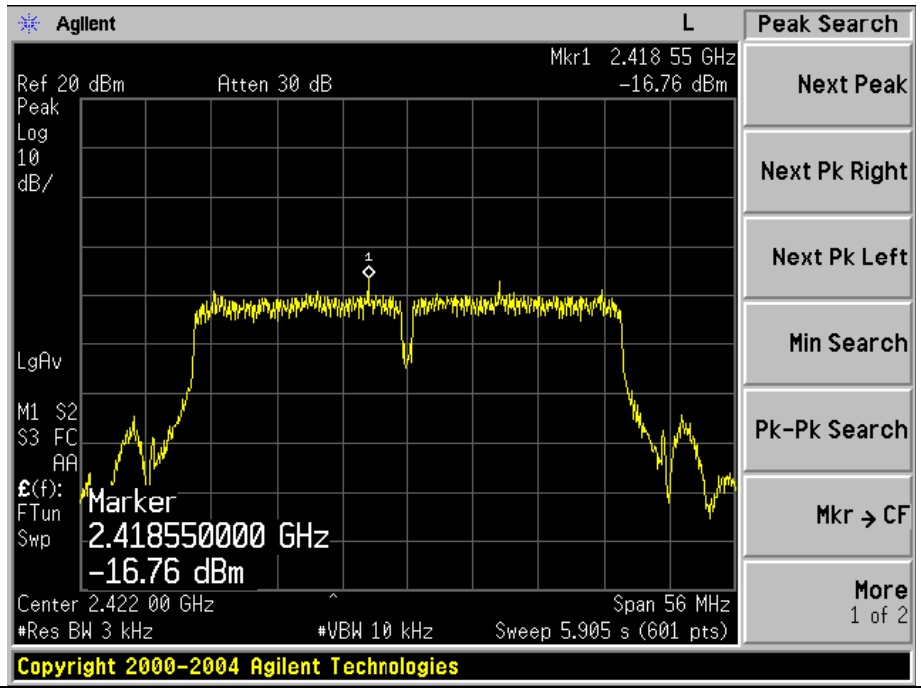
TX CH11



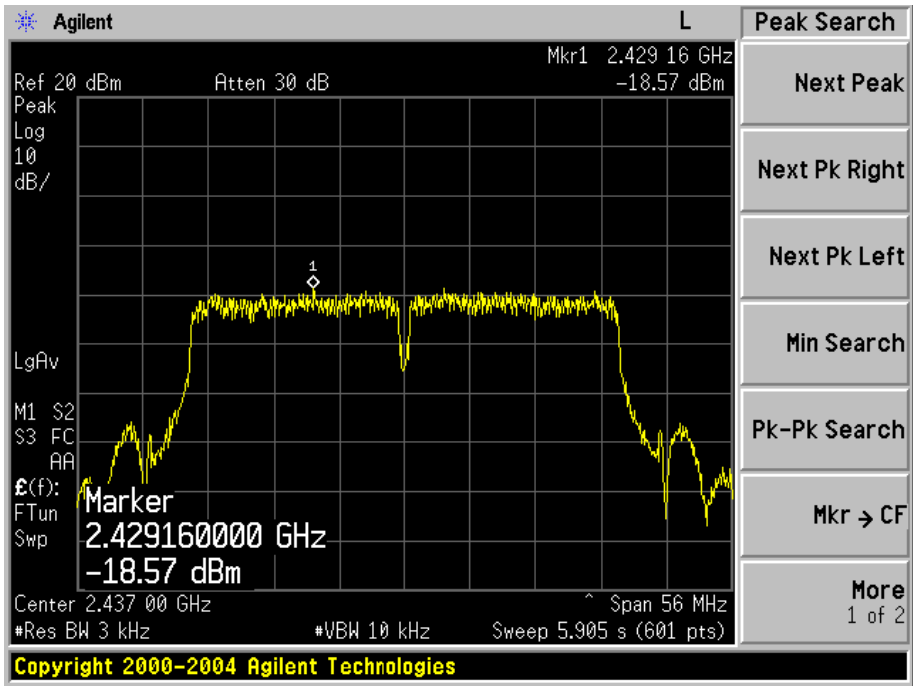
Temperature :	25℃	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX n Mode(40M)		

Frequency	Reading(dBm)	Cable Loss (dB)	Power Spectral Density(dBm)	Limit (dBm)	Result
2422 MHz	-16.76	0.5	-16.26	8	PASS
2437 MHz	-18.57	0.5	-18.07	8	PASS
2452 MHz	-18.59	0.5	-18.09	8	PASS

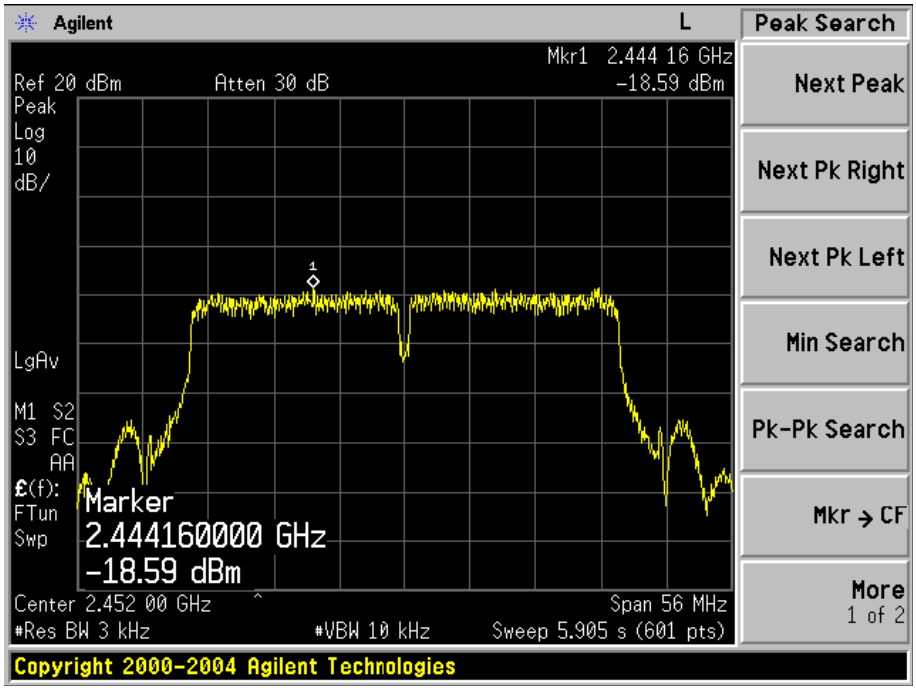
TX CH03



TX CH06



TX CH09



5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS

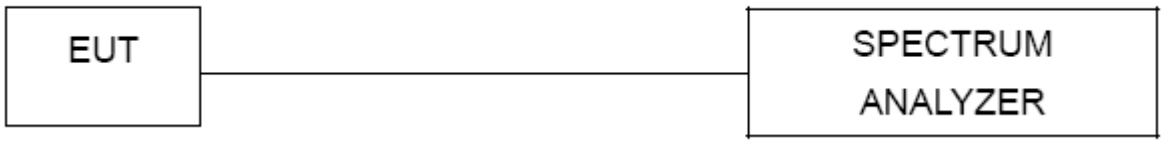
5.1.1 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

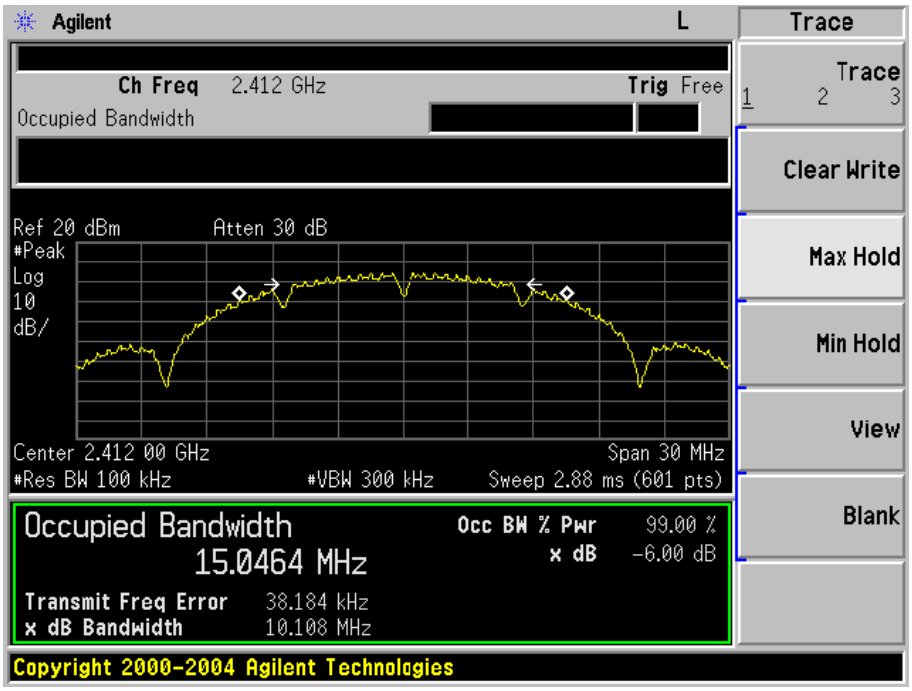
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5 TEST RESULTS

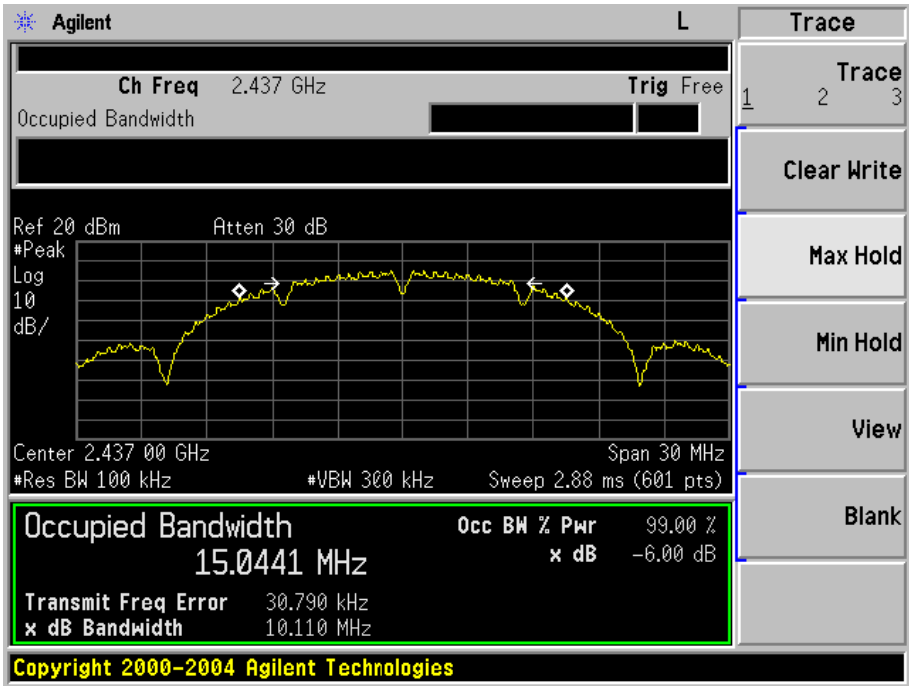
Temperature :	25℃	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX b Mode		

Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
2412	10.108	500	Pass
2437	10.110	500	Pass
2462	10.109	500	Pass

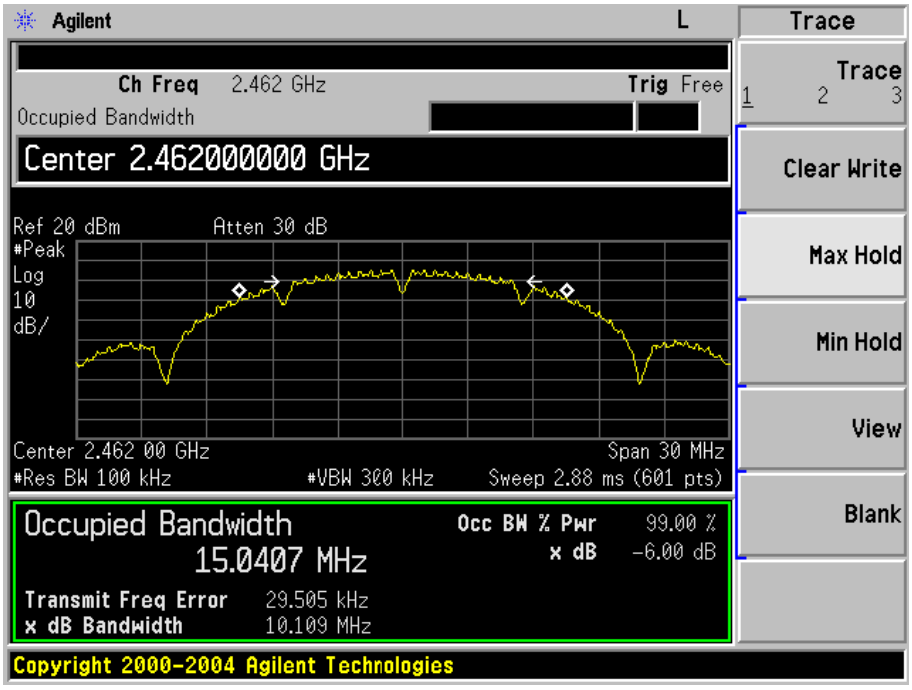
TX CH 01



TX CH 06



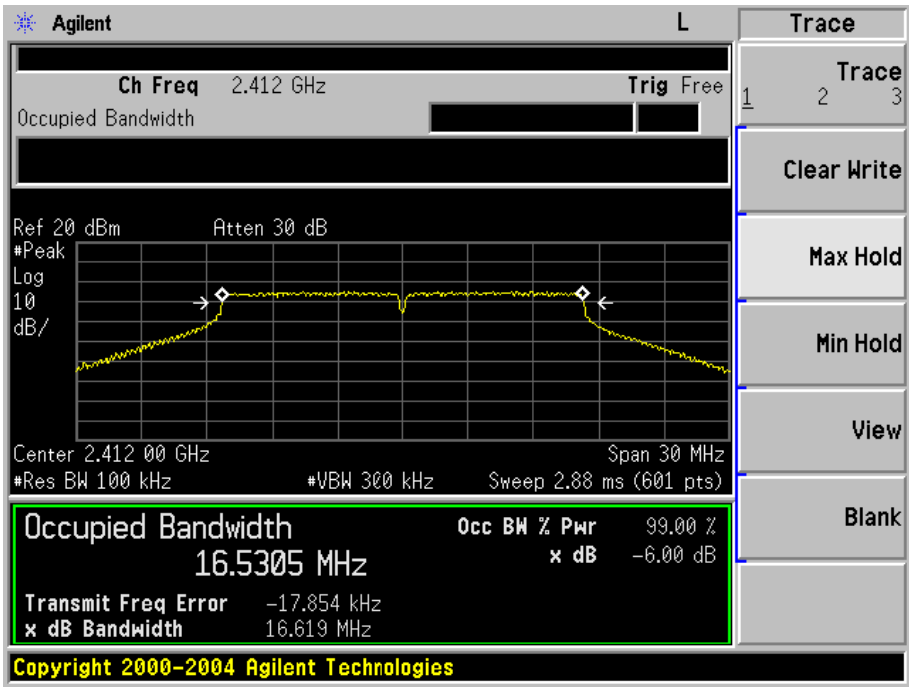
TX CH 11



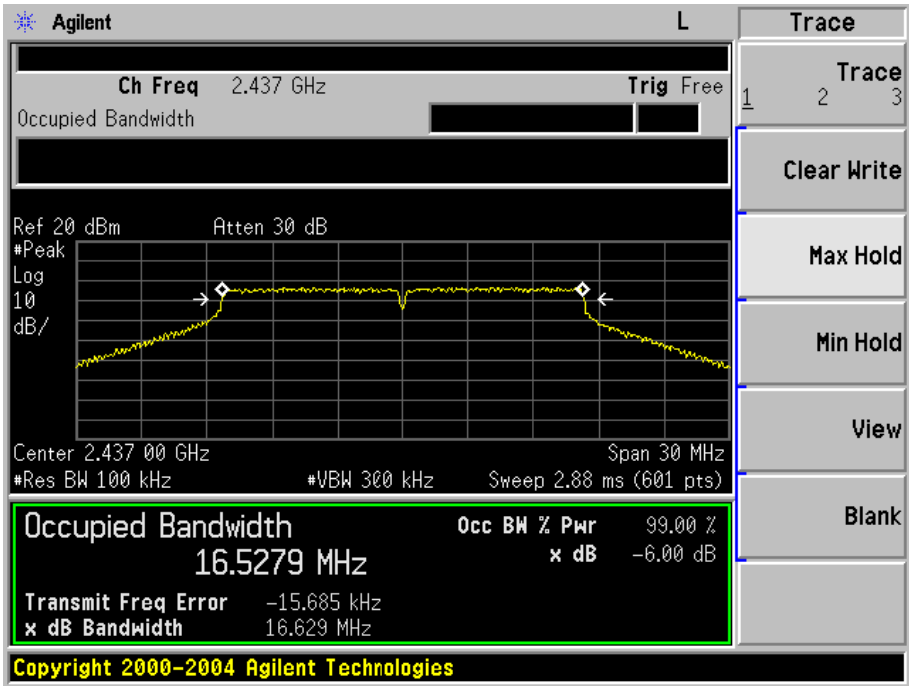
Temperature :	25℃	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX g Mode		

Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
2412	16.619	500	Pass
2437	16.629	500	Pass
2462	16.627	500	Pass

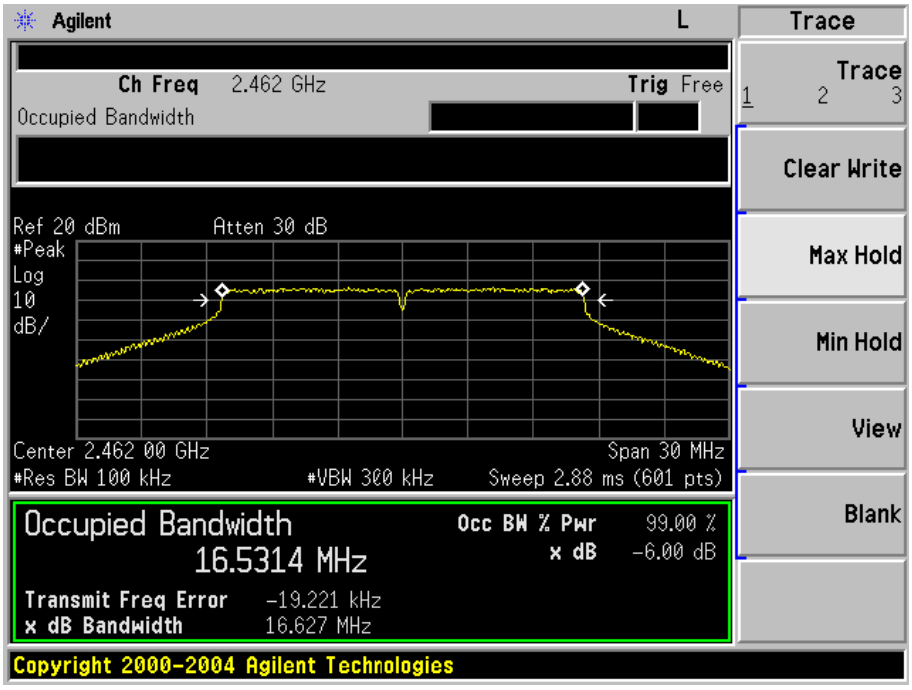
TX CH 01



TX CH 06



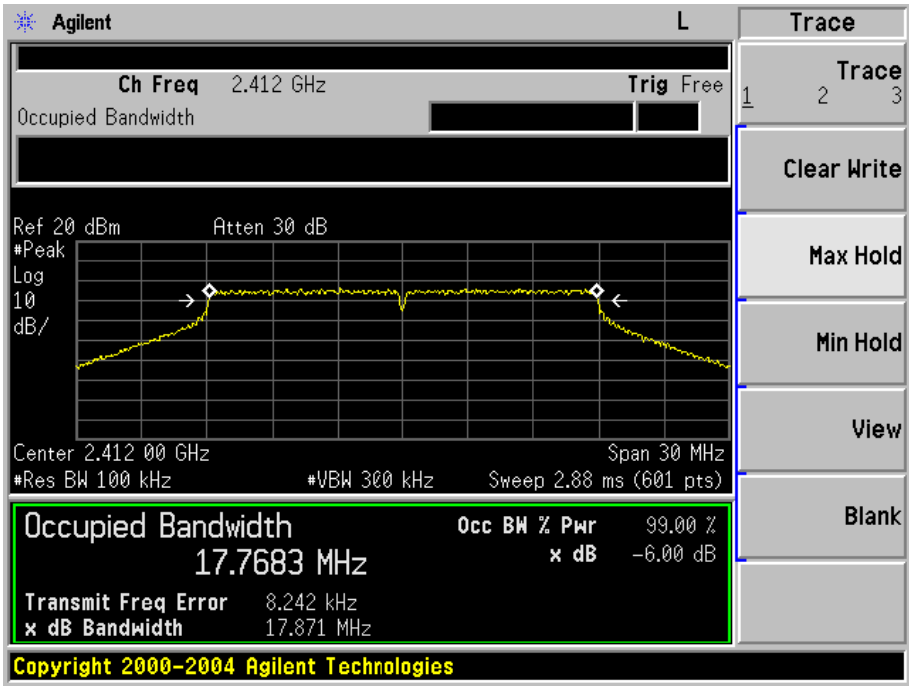
TX CH 11



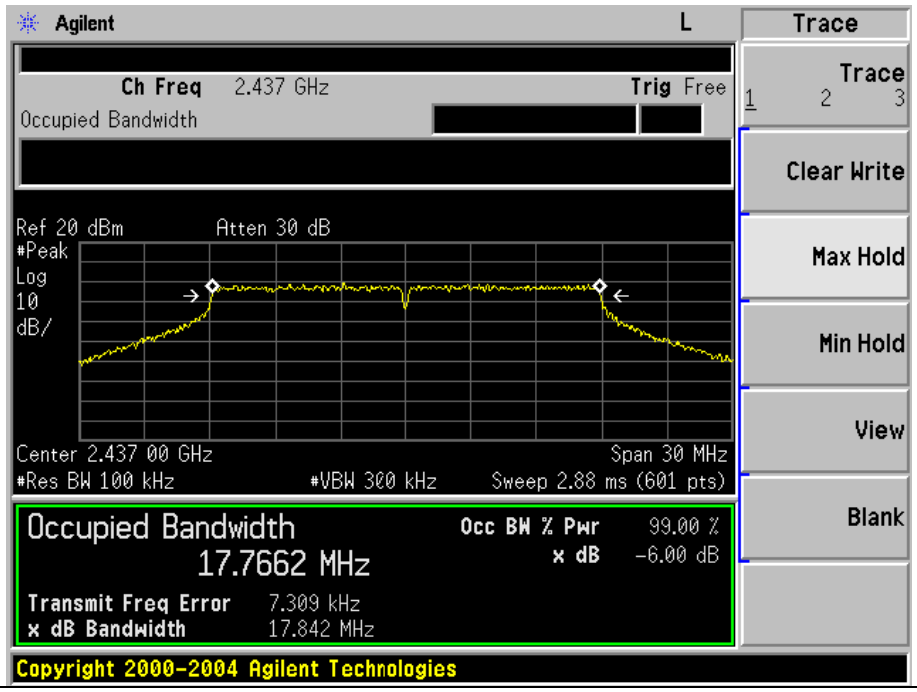
Temperature :	25℃	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX n Mode(20M)		

Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
2412	17.871	500	Pass
2437	17.842	500	Pass
2462	17.846	500	Pass

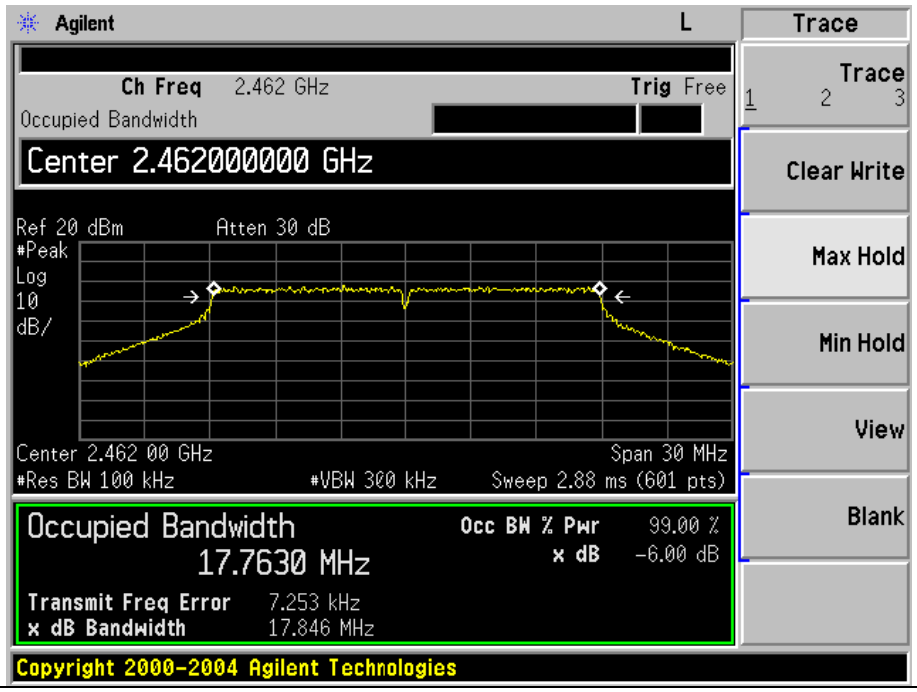
TX CH 01



TX CH 06



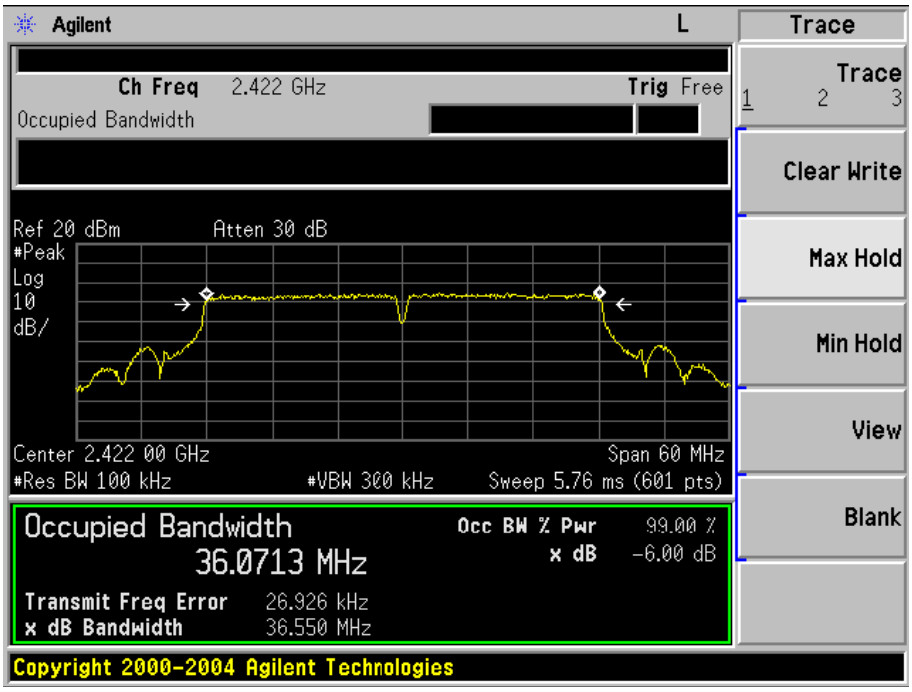
TX CH 11



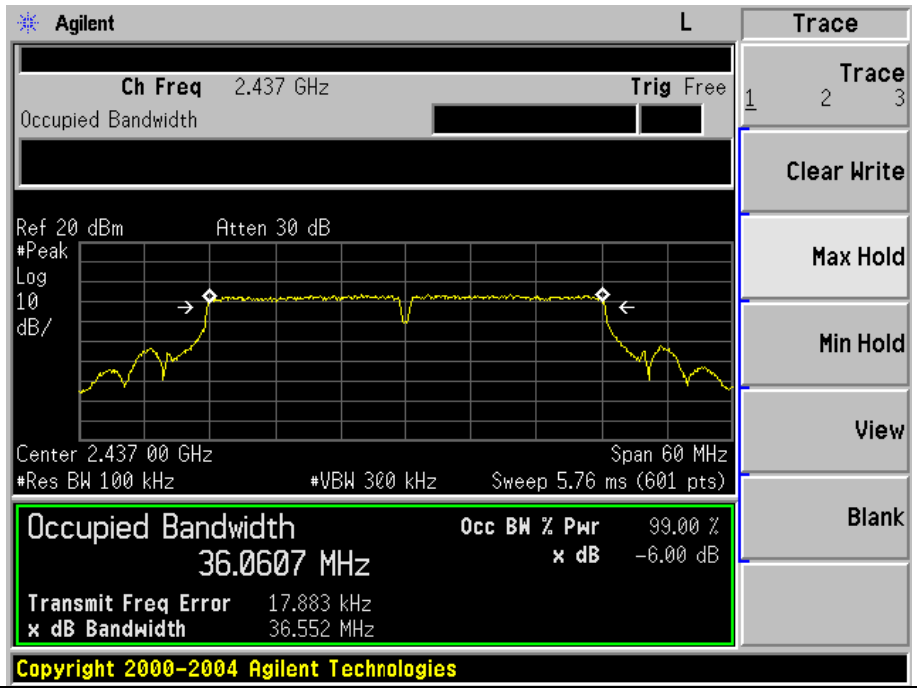
Temperature :	25℃	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX n Mode(40M)		

Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
2422	36.550	500	Pass
2437	36.552	500	Pass
2452	36.536	500	Pass

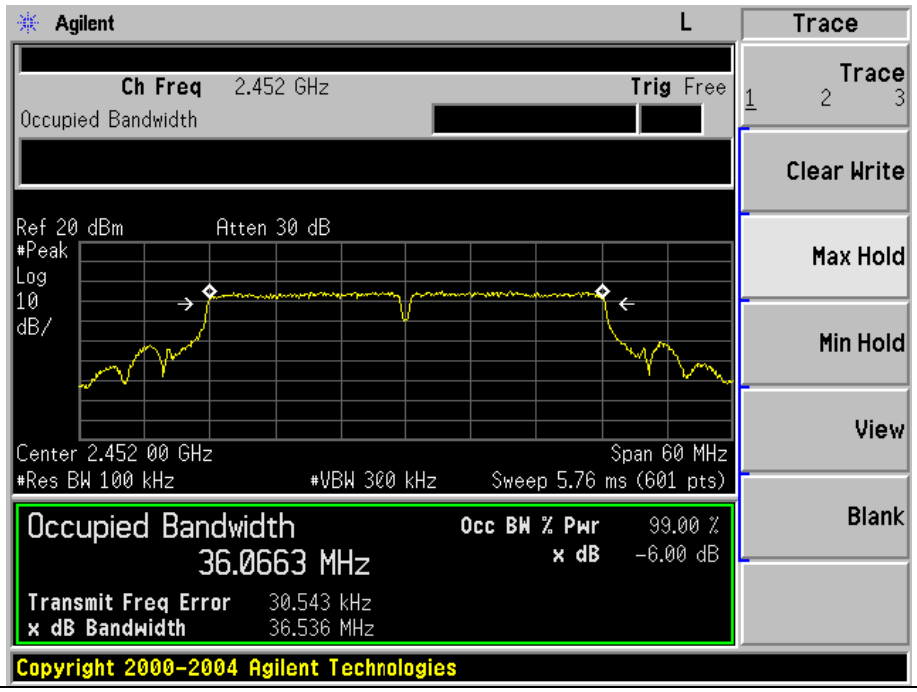
TX CH 03



TX CH 06



TX CH 09



6. PEAK OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

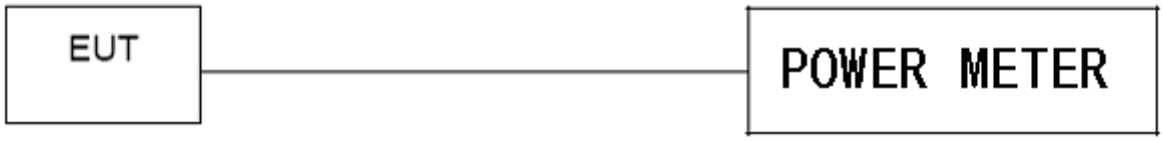
6.1.1 TEST PROCEDURE

a. The EUT was directly connected to the Power meter

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 TEST RESULTS

Temperature :	25℃	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V from adapter

	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
802.11b	2412	17.38	30
	2437	17.40	30
	2462	17.33	30
802.11g	2412	15.26	30
	2437	15.24	30
	2462	15.23	30
802.11n20	2412	15.34	30
	2437	15.31	30
	2462	15.29	30
802.11n40	2422	14.51	30
	2437	14.52	30
	2452	14.49	30

7. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

7.1 APPLICABLE STANDARD

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

7.2 TEST PROCEDURE

a) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

b) Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.

c) Set RBW to 100 kHz and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.

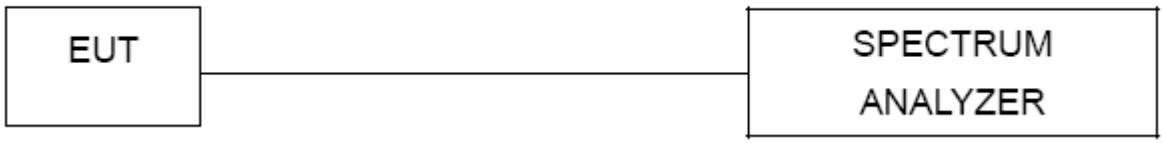
d) Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.

e) Repeat above procedures until all measured frequencies were complete.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP

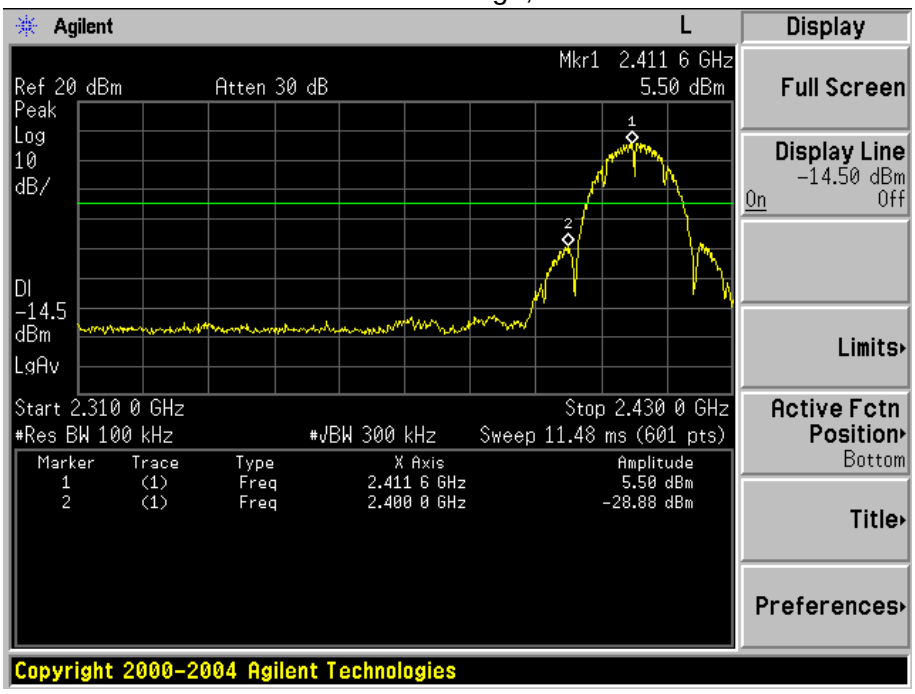


7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

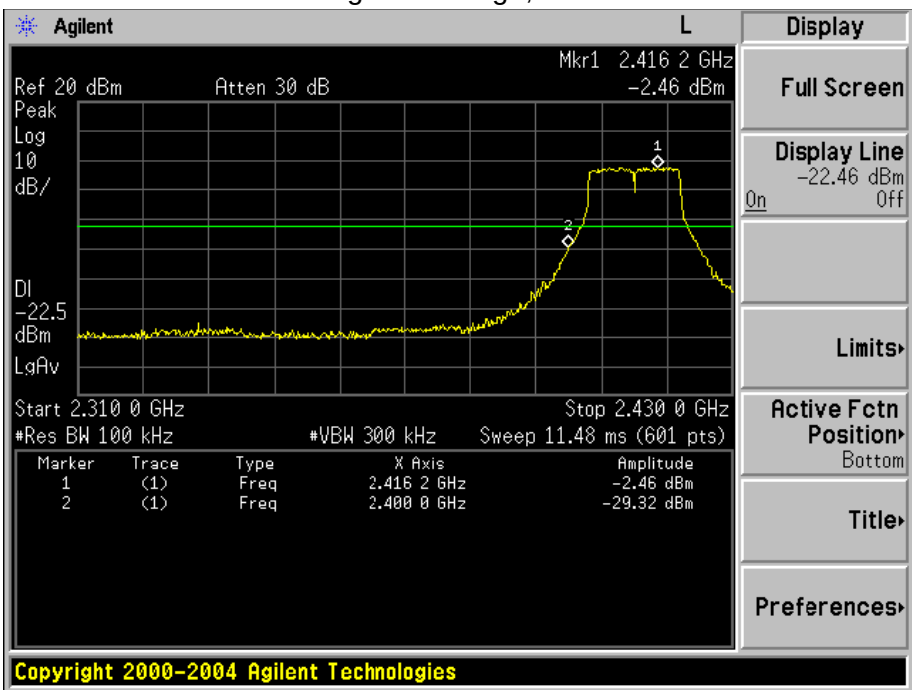
7.1 TEST RESULTS

802.11b: Band Edge, Left Side

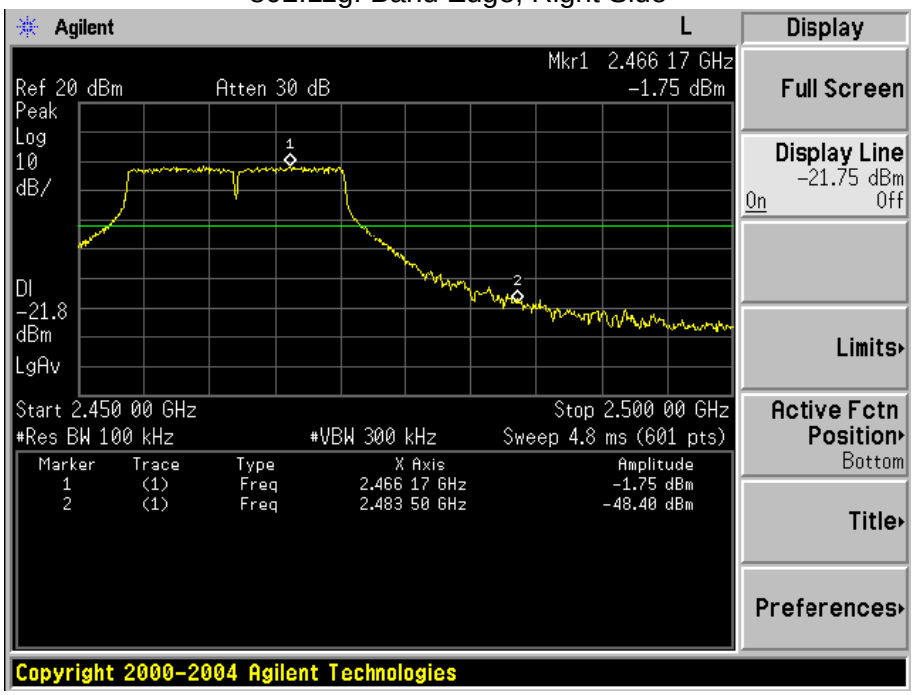


802.11b: Band Edge, Right Side

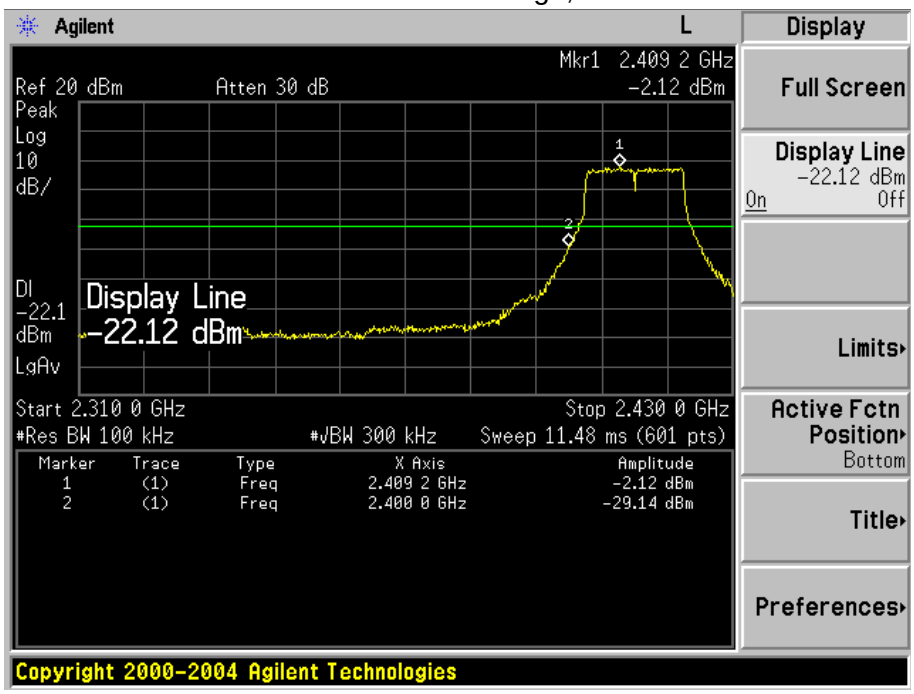
802.11g: Band Edge, Left Side



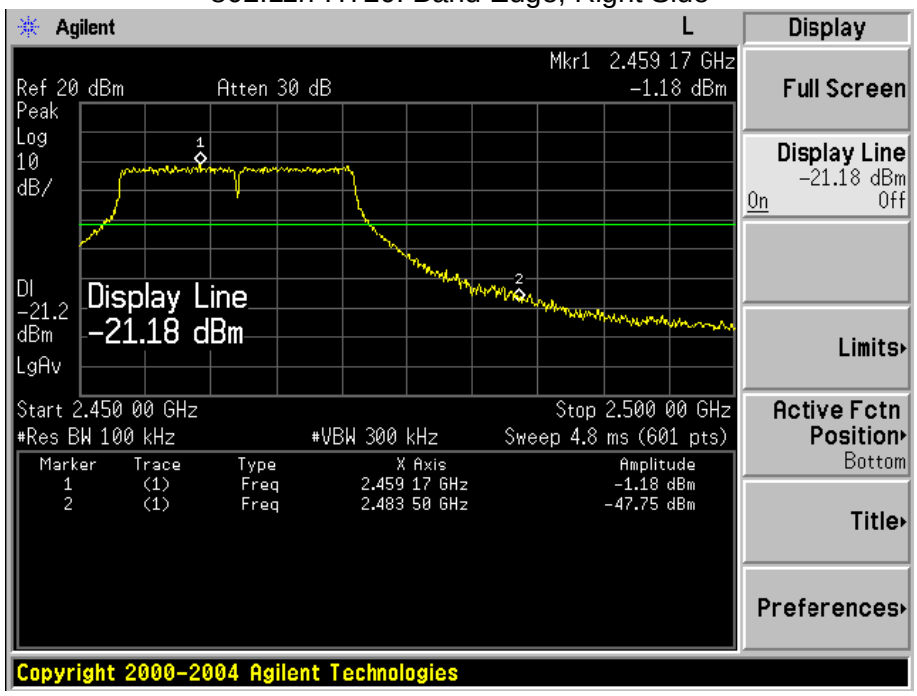
802.11g: Band Edge, Right Side



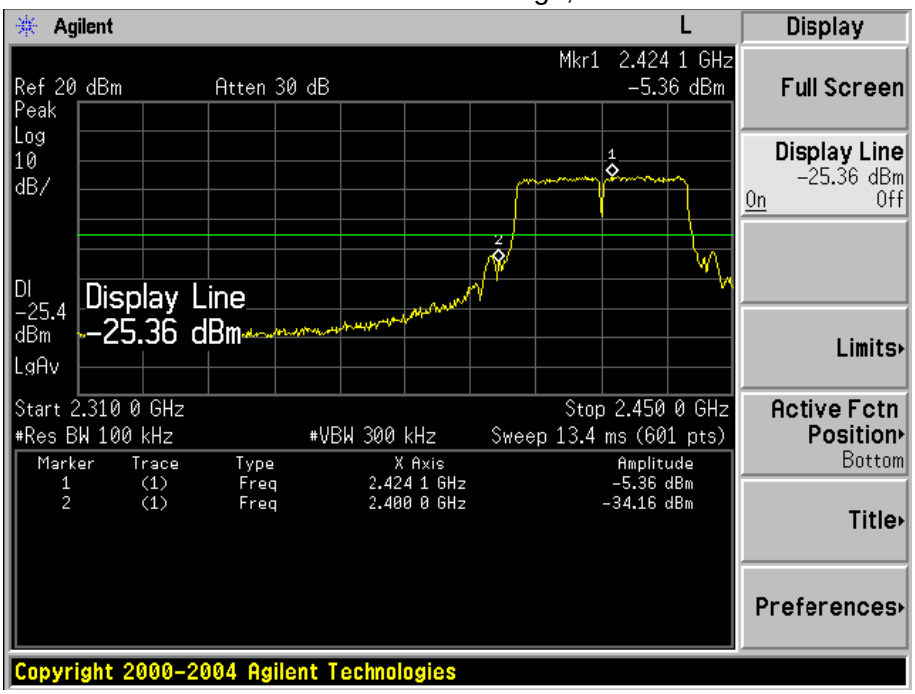
802.11n-HT20: Band Edge, Left Side



802.11n-HT20: Band Edge, Right Side



802.11n-HT40: Band Edge, Left Side



802.11n-HT40: Band Edge, Right Side

8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

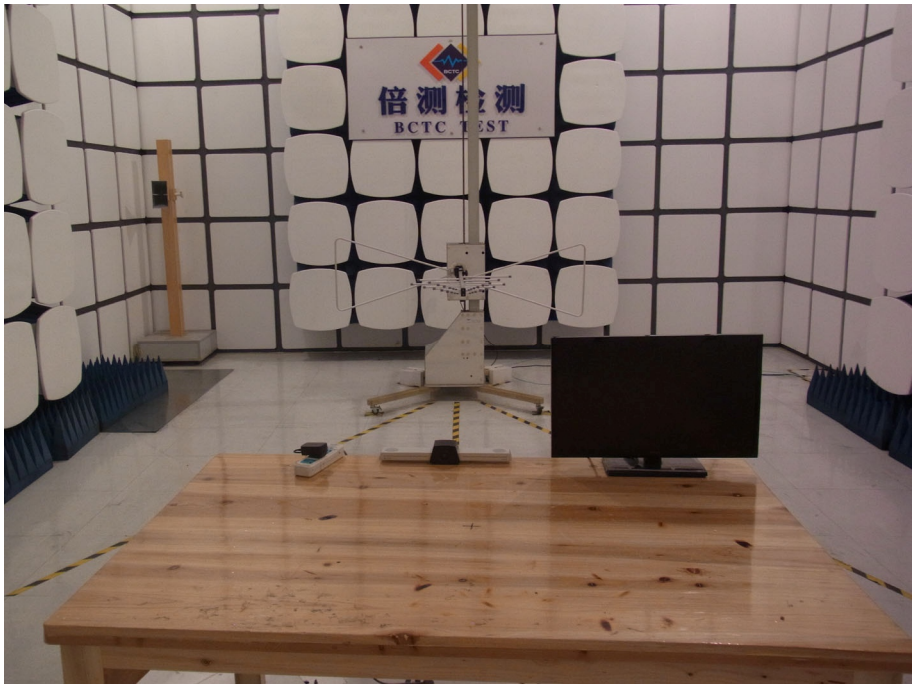
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

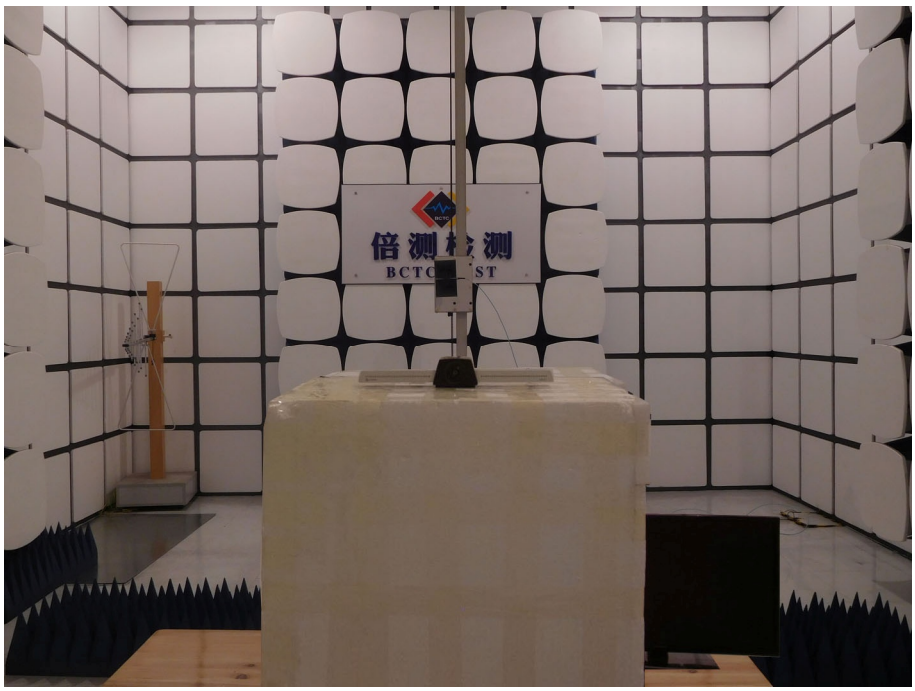
8.2 EUT ANTENNA

The EUT antenna is internal antenna, It comply with the standard requirement.

9. EUT TEST PHOTO

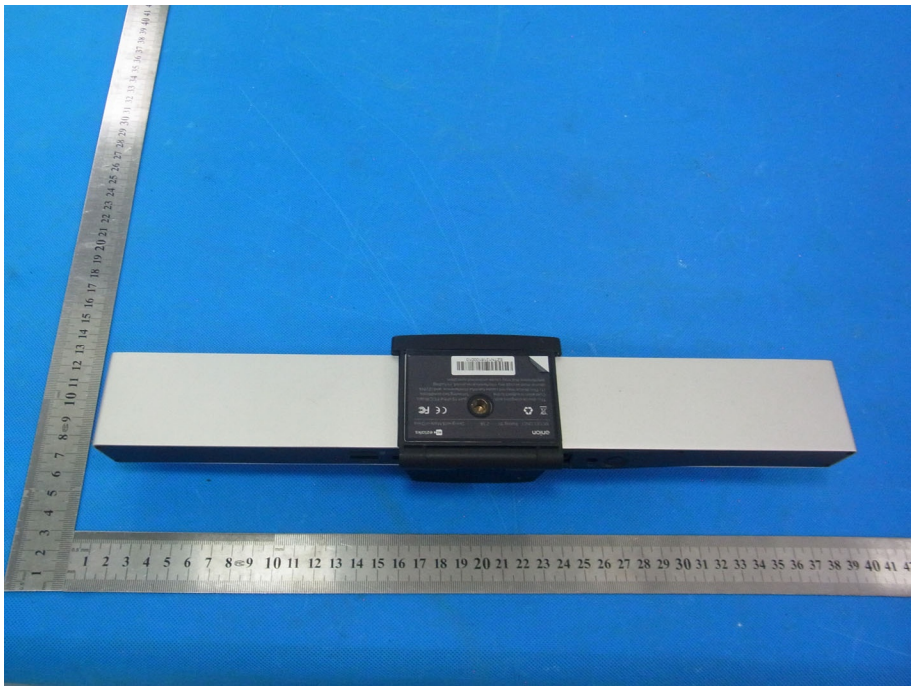
Radiated Measurement Photos

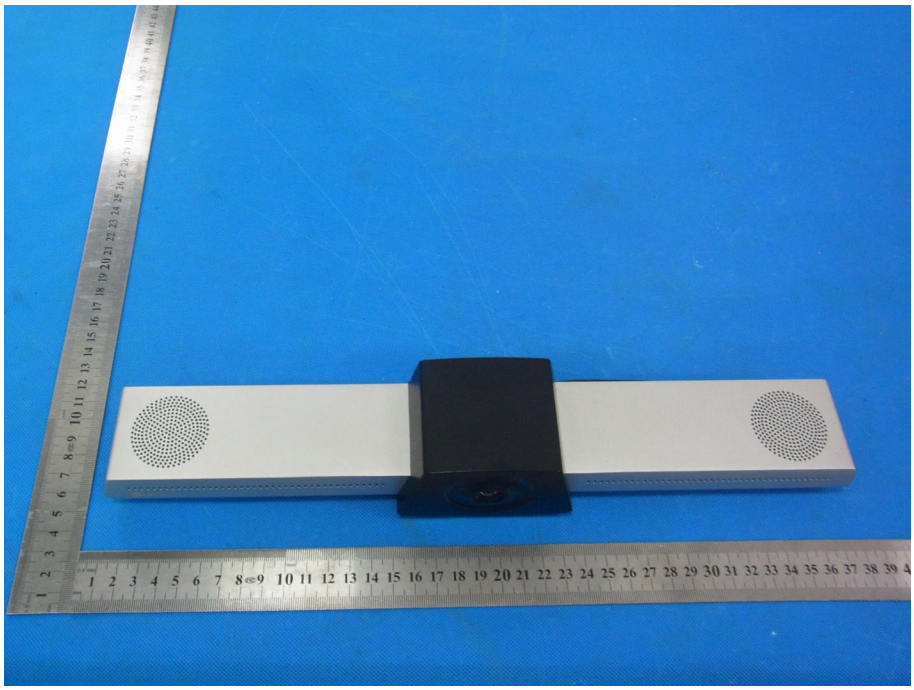


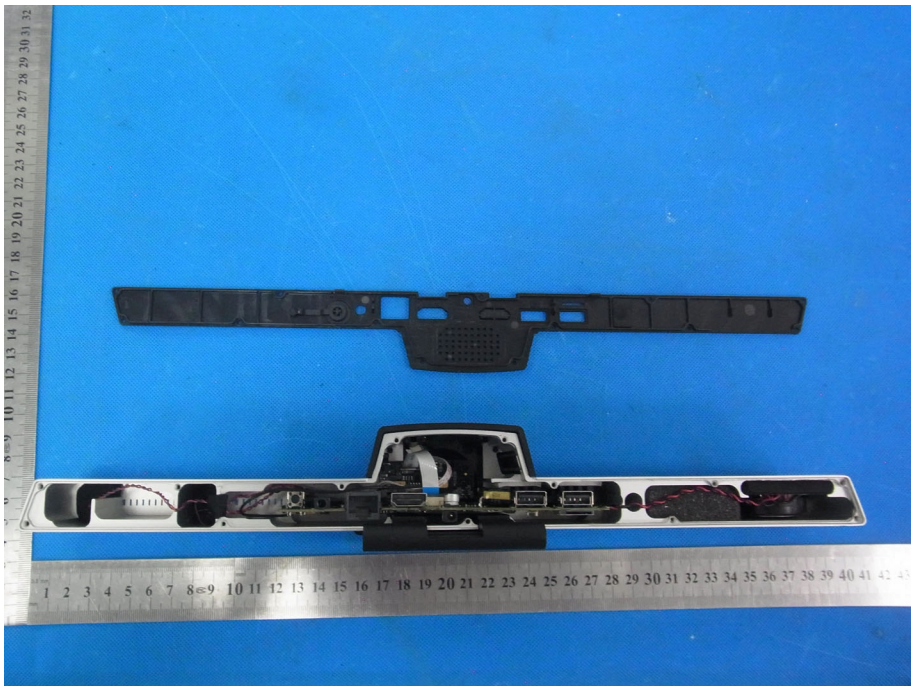


Conducted Measurement Photos

10. EUT PHOTO







※※※※※ **END OF REPORT** ※※※※※