



Test Report

FCC ID:SENISC3S

Product Name:	iCamera KEEP Pro
Trademark:	N/A
Model Name :	iSC3s
Prepared For :	iSmart Alarm, Inc.
Address :	1290 Kifer Road, Suite 306 Sunnyvale, CA 94086
Prepared By :	Shenzhen BCTC Technology Co., Ltd.
Address :	No.101,Yousong Road,Longhua New District, Shenzhen,China
Test Date:	Nov. 18 - Nov 28, 2016
Date of Report :	Nov 28, 2016
Report No.:	BCTC-FY161004657-2E



TEST RESULT CERTIFICATION

Applicant's name : iSmart Alarm, Inc.

Address : Room B402, Zhongdi Building China University of Geosciences
Base, No. 8 Yuexing 3rd Road, South of High-Tech Industrial
Park, Nanshan Distric, Shenzhen Guangdong, 518057, China

Manufacture's Name : iSmart Alarm, Inc.

Address : Room B402, Zhongdi Building China University of Geosciences
Base, No. 8 Yuexing 3rd Road, South of High-Tech Industrial
Park, Nanshan Distric, Shenzhen Guangdong, 518057, China

Product description

Product name : iCamera KEEP Pro

Model and/or type reference : iSC3s

Standards : FCC Part15.247
ANSI C63.10-2013

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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Approved &
Authorized
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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

RSS-247 FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
RSS-GEN 8.8 RSS-247 3.1 15.207	Conducted Emission	PASS	
RSS-247 5.2 (1) 15.247 (a)(2)	6dB Bandwidth	PASS	
RSS-247 5.4 (3) 15.247 (b)	Peak Output Power	PASS	
RSS-247 5.5 15.247 (c)	Radiated Spurious Emission	PASS	
RSS-247 5.2 (2) 15.247 (d)	Power Spectral Density	PASS	
RSS-247 5.5 15.205	Band Edge Emission	PASS	
RSS-247 5.4 15.203	Antenna Requirement	PASS	

NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report
- (2) For all test, the setup authorization of the prototype testing software comes from the customer. (including output power and other parameters)



1.1 TEST FACILITY

Shenzhen BCTC Technology Co., Ltd.

Add. : No.101,Yousong Road,Longhua New District, Shenzhen,China

FCC Registered No.: 187086

IC Registered No.:12655A

1.2 MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	iCamera KEEP Pro	
Trade Name	N/A	
Model Name	iSC3s	
Model Difference	N/A	
Product Description	The EUT is a iCamera KEEP Pro	
	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.
	Antenna Gain (dBi)	2.0dbi
	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 supply	DC 5V from adapter	
Adapter	Model: KA1517-050200USU I/P:AC 100-240V 50/60Hz 0.35A Max O/P:DC 5V/2000mA	
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
A	N/A	N/A	FPCB Antenna	N/A	2.0	

2.2 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	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



For 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

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission/Conducted Emission Test



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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	iCamera KEEP Pro	N/A	iSC3s	N/A	EUT
E-2	Adapter	N/A	KA1517-050200USU	N/A	



Item	Shielded Type	Ferrite Core	Length	Note
C1	No	No	1.8m	USB cable unshielded

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) 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	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45109572	2016.08.25	2017.08.24	1 year
2	Test Receiver	R&S	ESPI	101396	2016.08.25	2017.08.24	1 year
3	Bilog Antenna	SCHWARZBECK	VULB9160	VULB9160-3369	2016.08.25	2017.08.24	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2016.07.06	2017.07.05	1 year
5	Spectrum Analyzer	Agilent	N9020A	MY5051041	2016.07.06	2017.07.05	1 year
6	Horn Antenna	SCHWARZBECK	9120D	9120D-1275	2016.08.25	2017.08.24	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2016.07.06	2017.07.05	1 year
8	Amplifier	SCHWARZBECK	BBV9718	9718-270	2016.08.25	2017.08.24	1 year
9	Amplifier	SCHWARZBECK	BBV9743	9743-119	2016.08.25	2017.08.24	1 year
10	Loop Antenna	ARA	PLA-1030/B	1029	2016.07.06	2017.07.05	1 year
11	Power Meter	R&S	NRVS	100696	2016.07.06	2017.07.05	1 year
12	Power Sensor	R&S	NRV-Z55	161905	2016.07.06	2017.07.05	1 year
13	RF cables	R&S	N/A	N/A	2016.07.06	2017.07.05	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101421	2016.08.25	2017.08.24	1 year
2	LISN	SCHWARZBECK	NSLK8127	812779	2016.08.25	2017.08.24	1 year
3	LISN	EMCO	Feb-16	42990	2016.08.25	2017.08.24	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2016.07.06	2017.07.05	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2016.07.06	2017.07.05	1 year



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 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.

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

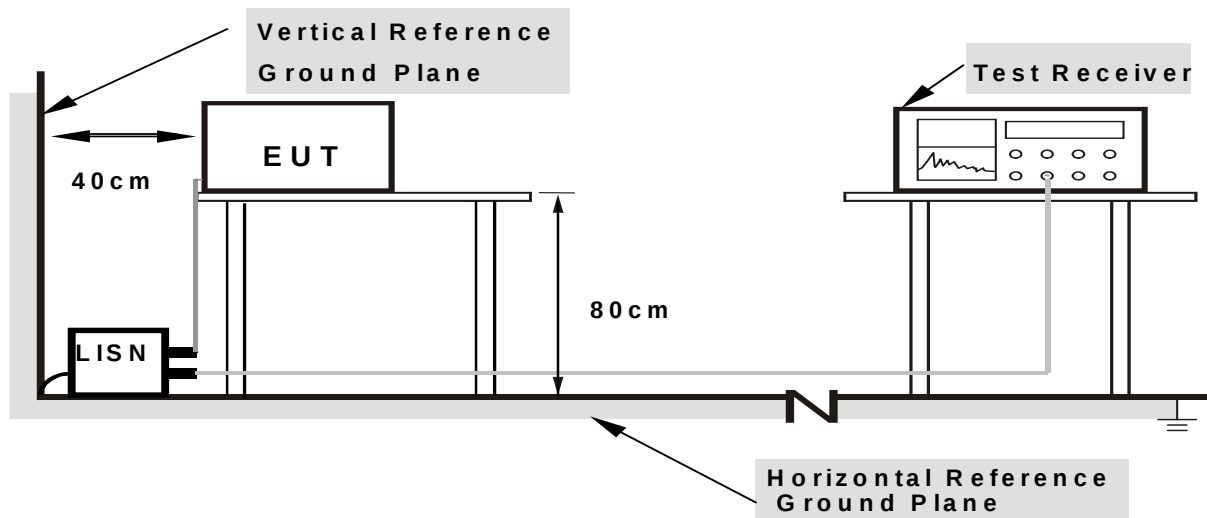
3.1.2 TEST PROCEDURE

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

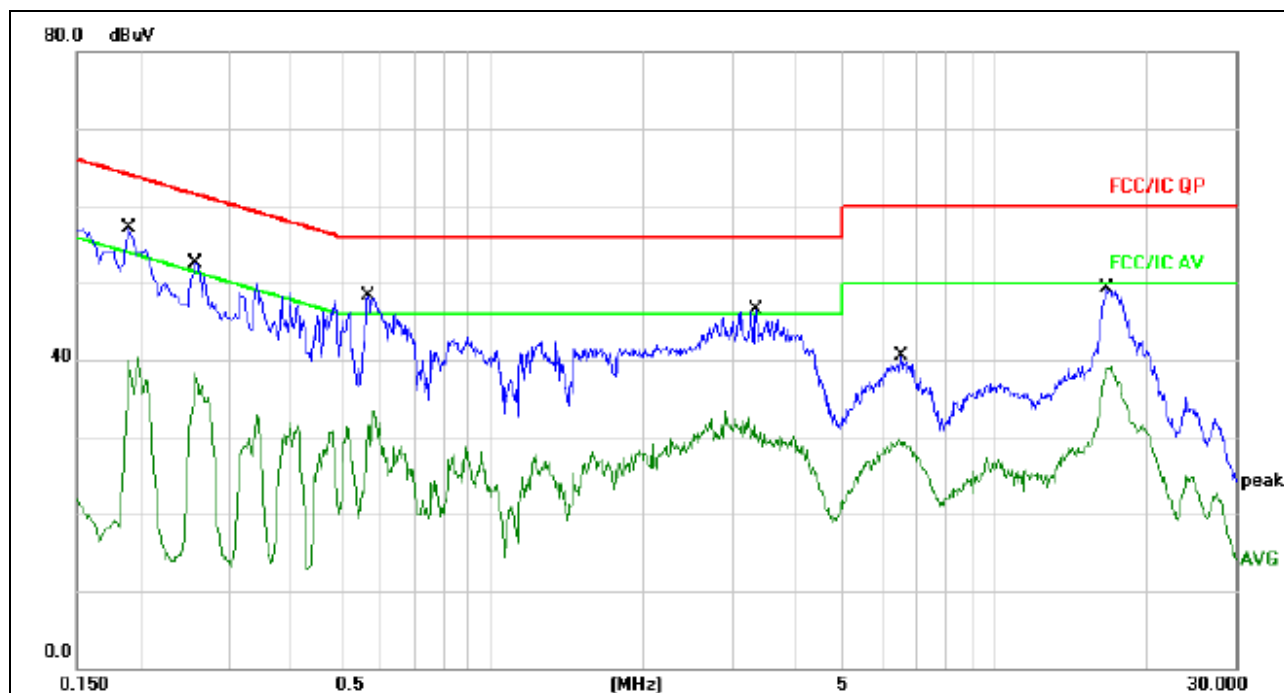
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

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 :	26℃	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	AC120V/60Hz	Test Mode :	Mode 5



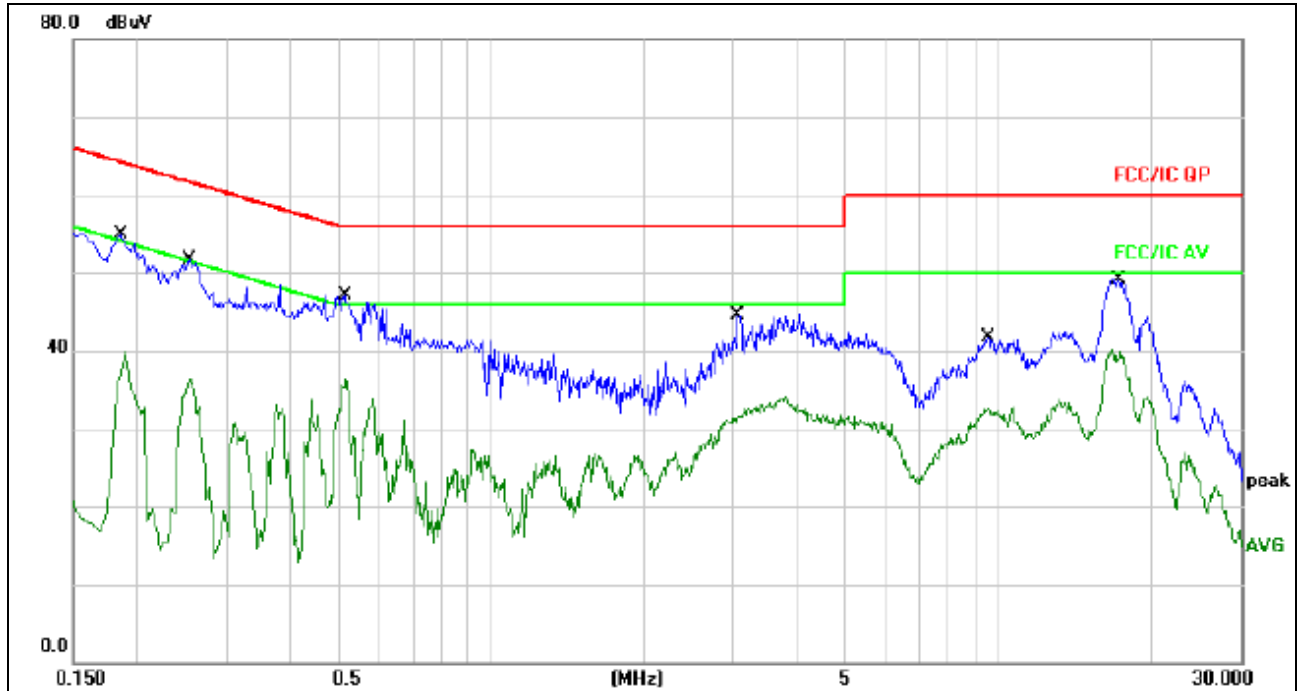
Remark:

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

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1	*	0.1900	47.52	9.65	57.17	64.03	-6.86	QP	
2		0.1900	30.71	9.65	40.36	54.03	-13.67	AVG	
3		0.2580	42.80	9.66	52.46	61.49	-9.03	QP	
4		0.2580	28.54	9.66	38.20	51.49	-13.29	AVG	
5		0.5700	38.72	9.68	48.40	56.00	-7.60	QP	
6		0.5700	23.70	9.68	33.38	46.00	-12.62	AVG	
7		3.3460	36.70	9.72	46.42	56.00	-9.58	QP	
8		3.3460	22.81	9.72	32.53	46.00	-13.47	AVG	
9		6.5179	30.70	9.79	40.49	60.00	-19.51	QP	
10		6.5179	19.98	9.79	29.77	50.00	-20.23	AVG	
11		16.7259	39.50	9.89	49.39	60.00	-10.61	QP	
12		16.7259	29.15	9.89	39.04	50.00	-10.96	AVG	



Temperature :	26℃	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	N
Test Voltage :	AC120V/60Hz	Test Mode :	Mode 5



Remark:

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1860	45.22	9.66	54.88	64.21	-9.33	QP	
2		0.1860	30.31	9.66	39.97	54.21	-14.24	AVG	
3		0.2540	42.03	9.66	51.69	61.62	-9.93	QP	
4		0.2540	26.73	9.66	36.39	51.62	-15.23	AVG	
5	*	0.5140	37.47	9.68	47.15	56.00	-8.85	QP	
6		0.5140	26.59	9.68	36.27	46.00	-9.73	AVG	
7		3.0700	34.81	9.72	44.53	56.00	-11.47	QP	
8		3.0700	22.78	9.72	32.50	46.00	-13.50	AVG	
9		9.5299	31.94	9.82	41.76	60.00	-18.24	QP	
10		9.5299	22.74	9.82	32.56	50.00	-17.44	AVG	
11		17.2099	39.29	9.89	49.18	60.00	-10.82	QP	
12		17.2099	30.23	9.89	40.12	50.00	-9.88	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)	Class B (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

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- 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.

Note:

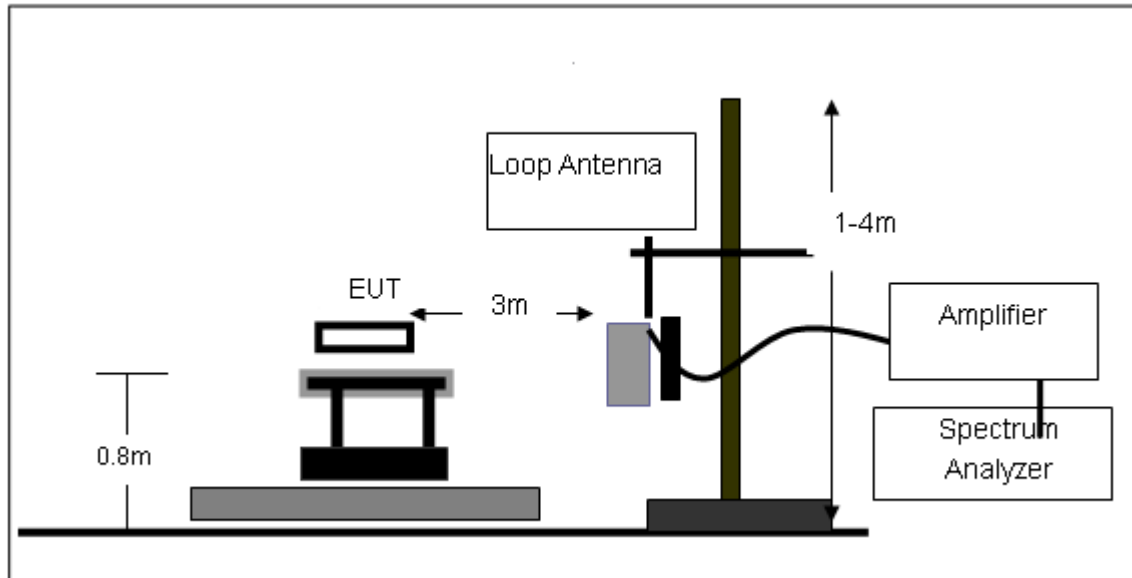
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the report.

3.2.3 DEVIATION FROM TEST STANDARD

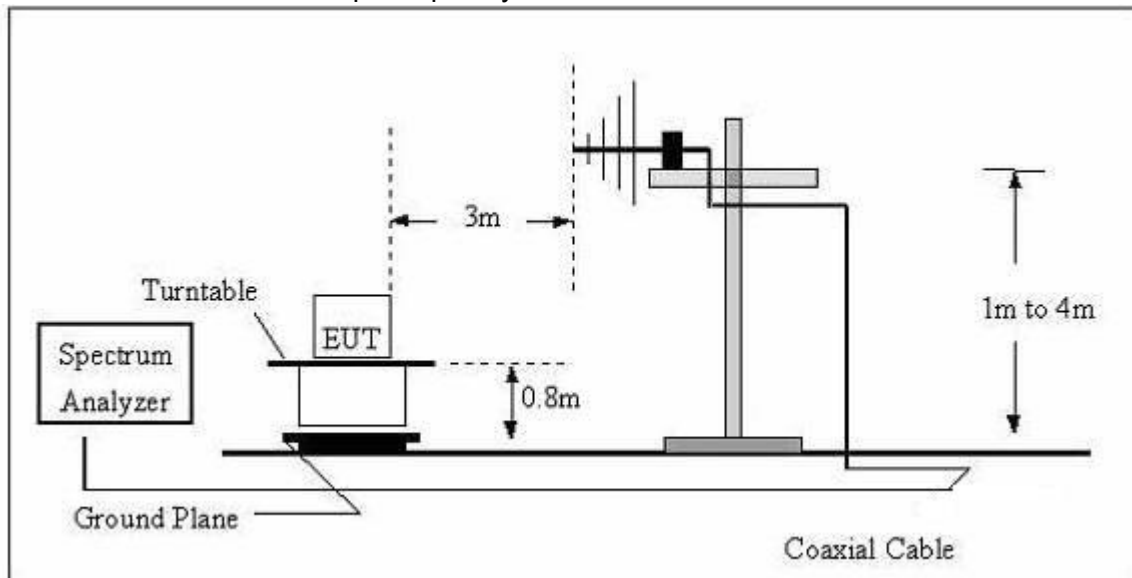
No deviation

3.2.4 TEST SETUP

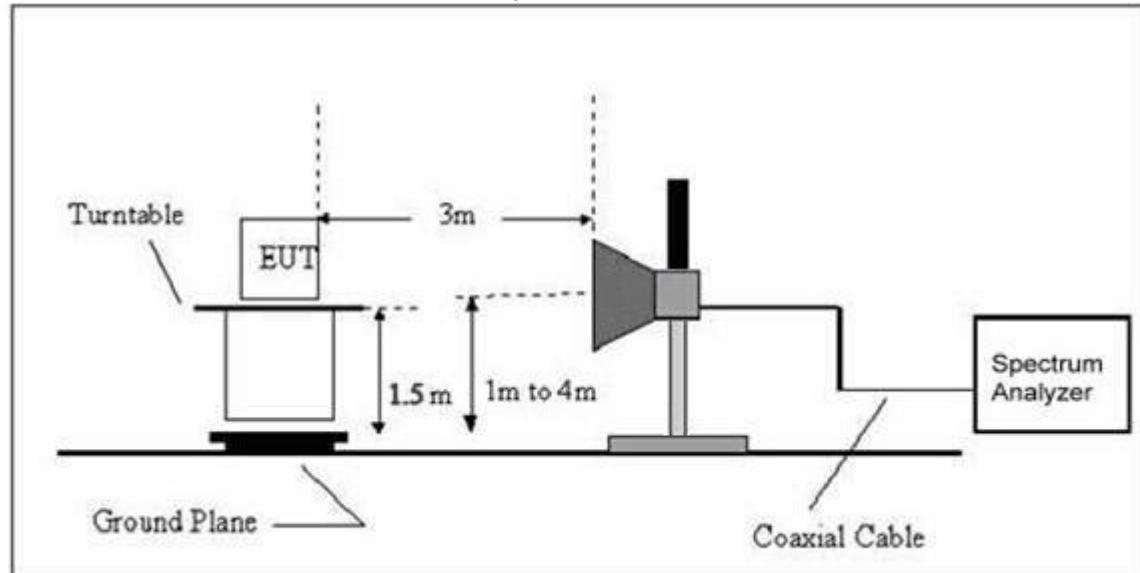
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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)**

EUT:	iCamera KEEP Pro	Model Name. :	iSC3s
Temperature:	20℃	Relative Humidity:	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.

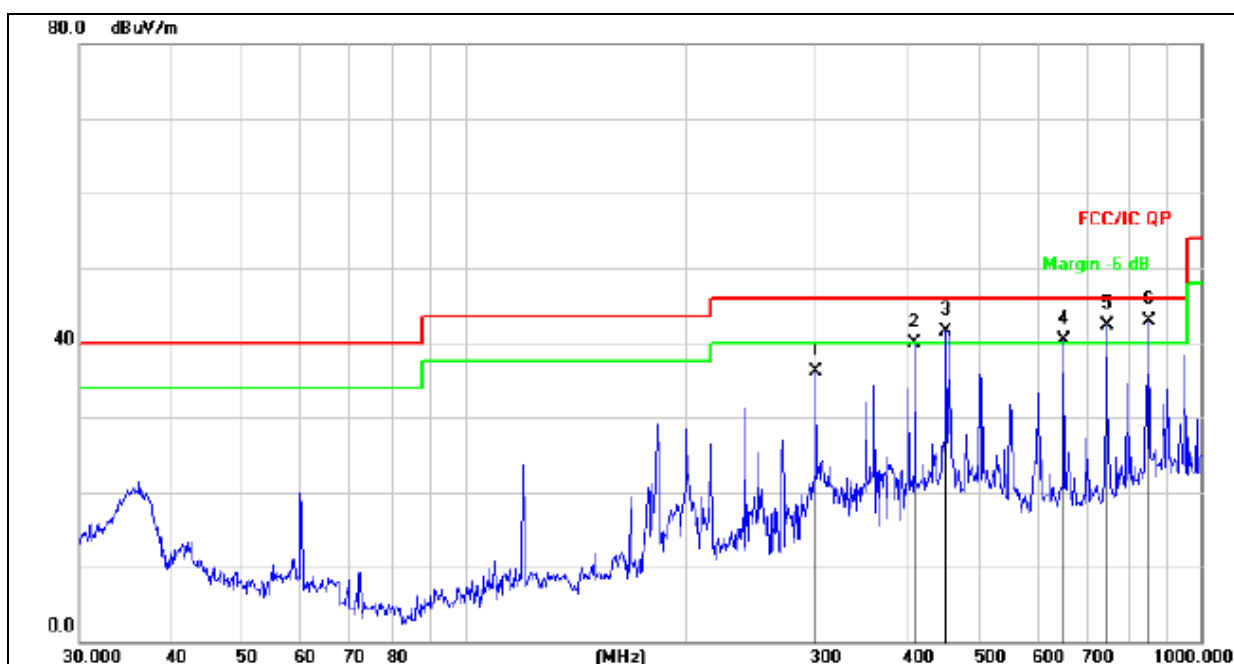
Distance extrapolation factor = $40 \log (\text{specific distance/test distance})$ (dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.



3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

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



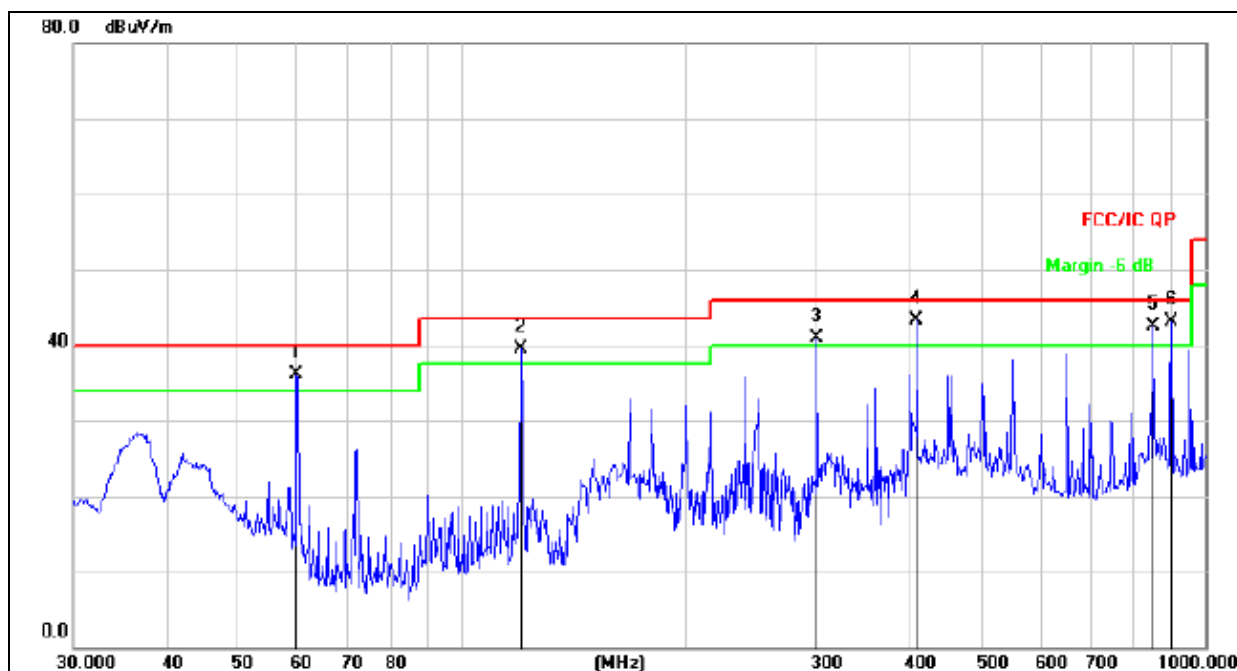
Remark:

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		300.3672	48.28	-12.09	36.19	46.00	-9.81	QP
2		408.9460	48.99	-9.13	39.86	46.00	-6.14	QP
3	!	451.1349	50.01	-8.42	41.59	46.00	-4.41	QP
4	!	651.9416	44.13	-3.78	40.35	46.00	-5.65	QP
5	!	744.8660	44.22	-1.92	42.30	46.00	-3.70	QP
6	*	851.0353	43.22	-0.27	42.95	46.00	-3.05	QP



Temperature :	26°C	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	dBuV/m	dB/m	dB	Detector
1	!	59.8588	52.41	-16.25	36.16	40.00	-3.84	QP
2	!	119.8555	57.59	-18.07	39.52	43.50	-3.98	QP
3	!	300.3672	52.93	-12.09	40.84	46.00	-5.16	QP
4	*	408.9460	52.36	-9.13	43.23	46.00	-2.77	QP
5	!	851.0353	42.69	-0.27	42.42	46.00	-3.58	QP
6	!	900.1473	42.34	0.70	43.04	46.00	-2.96	QP

**3.2.8 TEST RESULTS (1GHZ~26GHZ)**

802.11b									
Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2412									
V	4824.00	67.35	39.55	7.85	25.66	61.31	74	-12.69	PK
V	4824.00	48.74	39.55	7.85	25.66	42.70	54	-11.30	AV
V	7236.00	66.59	38.33	7.52	24.55	60.33	74	-13.67	PK
V	7236.00	48.63	38.33	7.52	24.55	42.37	54	-11.63	AV
V	15450.00	51.48	35.23	6.75	26.59	49.59	74	-24.41	PK
H	4824.00	68.27	39.55	7.85	25.66	62.23	74	-11.77	PK
H	4824.00	49.46	39.55	7.85	25.66	43.42	54	-10.58	AV
H	7236.00	69.39	38.33	7.52	23.55	62.13	74	-11.87	PK
H	7236.00	52.46	38.33	7.52	23.22	44.87	54	-9.13	AV
H	15450.00	47.34	35.45	6.75	27.88	46.52	74	-27.48	PK

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2437									
V	4874.00	65.56	38.89	7.57	25.45	59.69	74	-14.31	PK
V	4874.00	48.65	38.89	7.57	25.45	42.78	54	-11.22	AV
V	7311.00	66.68	38.78	7.35	24.78	60.03	74	-13.97	PK
V	7311.00	48.25	38.78	7.35	24.78	41.60	54	-12.40	AV
V	15450.00	52.36	35.89	6.42	26.47	49.36	74	-24.64	PK
H	4874.00	64.89	38.89	7.57	25.45	59.02	74	-14.98	PK
H	4874.00	49.55	38.89	7.57	25.45	43.68	54	-10.32	AV
H	7311.00	70.35	38.78	7.35	24.78	63.70	74	-10.30	PK
H	7311.00	48.81	38.78	7.35	24.78	42.16	54	-11.84	AV
H	15450.00	48.69	36.68	6.45	26.65	45.11	74	-28.89	PK

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2462									
V	4924.00	62.78	38.75	7.46	25.45	56.94	74	-17.06	PK
V	4924.00	44.63	38.75	7.46	25.45	38.79	54	-15.21	AV
V	7386.00	61.17	38.65	7.22	24.78	54.52	74	-19.48	PK
V	7386.00	42.99	38.65	7.22	24.78	36.34	54	-17.66	AV
V	15450.00	50.61	35.58	6.35	26.47	47.85	74	-26.15	PK
H	4924.00	60.88	38.75	7.46	25.45	55.04	74	-18.96	PK
H	4924.00	44.69	38.75	7.46	25.45	38.85	54	-15.15	AV
H	7386.00	62.63	38.65	7.22	24.78	55.98	74	-18.02	PK
H	7386.00	41.82	38.65	7.22	24.78	35.17	54	-18.83	AV
H	15450.00	47.93	36.42	6.32	26.65	44.48	74	-29.52	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. Testing is carried out with frequency range 9 kHz to the 10th harmonics, which above 5th harmonics, According to 15.31(o), the amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported . Hence there no other emissions have been reported.



802.11g									
Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2412									
V	4824.00	66.23	39.55	7.85	25.66	60.19	74	-13.81	PK
V	4824.00	49.58	39.55	7.85	25.66	43.54	54	-10.46	AV
V	7236.00	66.39	38.33	7.52	24.55	60.13	74	-13.87	PK
V	7236.00	47.67	38.33	7.52	24.55	41.41	54	-12.59	AV
V	15450.00	50.95	35.23	6.75	26.59	49.06	74	-24.94	PK
H	4824.00	63.25	39.55	7.85	25.66	57.21	74	-16.79	PK
H	4824.00	49.49	39.55	7.85	25.66	43.45	54	-10.55	AV
H	7236.00	69.35	38.33	7.52	23.55	62.09	74	-11.91	PK
H	7236.00	50.47	38.33	7.52	23.22	42.88	54	-11.12	AV
H	15450.00	45.78	35.45	6.75	27.88	44.96	74	-29.04	PK

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2437									
V	4874.00	66.87	38.89	7.57	25.45	61.00	74	-13.00	PK
V	4874.00	49.61	38.89	7.57	25.45	43.74	54	-10.26	AV
V	7311.00	67.54	38.78	7.35	24.78	60.89	74	-13.11	PK
V	7311.00	47.73	38.78	7.35	24.78	41.08	54	-12.92	AV
V	15450.00	52.32	35.89	6.42	26.47	49.32	74	-24.68	PK
H	4874.00	65.48	38.89	7.57	25.45	59.61	74	-14.39	PK
H	4874.00	49.59	38.89	7.57	25.45	43.72	54	-10.28	AV
H	7311.00	69.64	38.78	7.35	24.78	62.99	74	-11.01	PK
H	7311.00	48.29	38.78	7.35	24.78	41.64	54	-12.36	AV
H	15450.00	49.33	36.68	6.42	26.65	45.72	74	-28.28	PK

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2462									
V	4924.00	67.89	38.75	7.46	25.45	62.05	74	-11.95	PK
V	4924.00	48.45	38.75	7.46	25.45	42.61	54	-11.39	AV
V	7386.00	68.57	38.65	7.22	24.78	61.92	74	-12.08	PK
V	7386.00	49.78	38.65	7.22	24.78	43.13	54	-10.87	AV
V	15450.00	53.66	35.58	6.35	26.47	50.90	74	-23.10	PK
H	4924.00	66.55	38.75	7.46	25.45	60.71	74	-13.29	PK
H	4924.00	50.44	38.75	7.46	25.45	44.60	54	-9.40	AV
H	7386.00	69.37	38.65	7.22	24.78	62.72	74	-11.28	PK
H	7386.00	48.88	38.65	7.22	24.78	42.23	54	-11.77	AV
H	15450.00	49.74	36.42	6.32	26.65	46.29	74	-27.71	PK

Remark:

- Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
- If peak below the average limit, the average emission was no test.
- Testing is carried out with frequency range 9 kHz to the 10th harmonics, which above 5th harmonics, According to 15.31(o), the amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported . Hence there no other emissions have been reported.



802.11n(20MHz)

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
		operation frequency:2412							
V	4824.00	67.42	39.55	7.85	25.66	61.38	74	-12.62	PK
V	4824.00	48.54	39.55	7.85	25.66	42.50	54	-11.50	AV
V	7236.00	66.57	38.33	7.52	24.55	60.31	74	-13.69	PK
V	7236.00	48.49	38.33	7.52	24.55	42.23	54	-11.77	AV
V	15450.00	51.82	35.23	6.75	26.59	49.93	74	-24.07	PK
H	4824.00	68.33	39.55	7.85	25.66	62.29	74	-11.71	PK
H	4824.00	49.47	39.55	7.85	25.66	43.43	54	-10.57	AV
H	7236.00	69.32	38.33	7.52	23.55	62.06	74	-11.94	PK
H	7236.00	52.44	38.33	7.52	23.22	44.85	54	-9.15	AV
H	15450.00	47.61	35.45	6.75	27.88	46.79	74	-27.21	PK

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
		operation frequency:2437							
V	4874.00	66.72	38.89	7.57	25.45	60.85	74	-13.15	PK
V	4874.00	49.65	38.89	7.57	25.45	43.78	54	-10.22	AV
V	7311.00	67.38	38.78	7.35	24.78	60.73	74	-13.27	PK
V	7311.00	47.45	38.78	7.35	24.78	40.80	54	-13.20	AV
V	15450.00	52.36	35.89	6.42	26.47	49.36	74	-24.64	PK
H	4874.00	65.59	38.89	7.57	25.45	59.72	74	-14.28	PK
H	4874.00	49.67	38.89	7.57	25.45	43.80	54	-10.20	AV
H	7311.00	69.76	38.78	7.35	24.78	63.11	74	-10.89	PK
H	7311.00	48.82	38.78	7.35	24.78	42.17	54	-11.83	AV
H	15450.00	49.64	36.68	6.42	26.65	46.03	74	-27.97	PK

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
		operation frequency:2462							
V	4924.00	66.55	38.89	7.57	25.45	60.68	74	-13.32	PK
V	4924.00	49.47	38.89	7.57	25.45	43.60	54	-10.40	AV
V	7386.00	67.39	38.78	7.35	24.78	60.74	74	-13.26	PK
V	7386.00	47.28	38.78	7.35	24.78	40.63	54	-13.37	AV
V	15450.00	52.44	35.89	6.42	26.47	49.44	74	-24.56	PK
H	4924.00	65.58	38.89	7.57	25.45	59.71	74	-14.29	PK
H	4924.00	49.67	38.89	7.57	25.45	43.80	54	-10.20	AV
H	7386.00	69.72	38.78	7.35	24.78	63.07	74	-10.93	PK
H	7386.00	48.81	38.78	7.35	24.78	42.16	54	-11.84	AV
H	15450.00	49.90	36.68	6.42	26.65	46.29	74	-27.71	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. Testing is carried out with frequency range 9 kHz to the 10th harmonics, which above 5th harmonics, According to 15.31(o), the amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported . Hence there no other emissions have been reported.



802.11n(40MHz)

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
		operation frequency:2422							
V	4844.000	68.81	39.55	7.77	25.66	62.69	74	-11.31	PK
V	4844.000	48.34	39.55	7.77	25.66	42.22	54	-11.78	AV
V	7266.000	67.63	38.33	7.30	24.55	61.15	74	-12.85	PK
V	7266.000	48.72	38.33	7.30	24.55	42.24	54	-11.76	AV
V	15450.00	51.85	35.23	6.60	26.59	49.81	74	-24.19	PK
H	4844.000	68.69	39.55	7.77	25.66	62.57	74	-11.43	PK
H	4844.000	49.88	39.55	7.77	25.66	43.76	54	-10.24	AV
H	7266.000	69.47	38.33	7.30	23.55	61.99	74	-12.01	PK
H	7266.000	52.23	38.33	7.30	23.22	44.42	54	-9.58	AV
H	15450.00	48.41	35.45	6.60	27.88	47.44	74	-26.56	PK

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
		operation frequency:2437							
V	4874.00	66.76	38.89	7.57	25.45	60.89	74	-13.11	PK
V	4874.00	49.68	38.89	7.57	25.45	43.81	54	-10.19	AV
V	7311.00	67.66	38.78	7.35	24.78	61.01	74	-12.99	PK
V	7311.00	47.75	38.78	7.35	24.78	41.10	54	-12.90	AV
V	15450.00	52.36	35.89	6.42	26.47	49.36	74	-24.64	PK
H	4874.00	65.22	38.89	7.57	25.45	59.35	74	-14.65	PK
H	4874.00	49.68	38.89	7.57	25.45	43.81	54	-10.19	AV
H	7311.00	69.96	38.78	7.35	24.78	63.31	74	-10.69	PK
H	7311.00	48.24	38.78	7.35	24.78	41.59	54	-12.41	AV
H	15450.00	49.47	36.68	6.42	26.65	45.86	74	-28.14	PK

Polar (H/V)	Frequency	Meter Reading	Pre-amplifier	Cable Loss	Antenna Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
		operation frequency:2452							
V	4904.00	68.36	38.75	7.38	25.45	62.44	74	-11.56	PK
V	4904.00	50.45	38.75	7.38	25.45	44.53	54	-9.47	AV
V	7356.00	67.54	38.65	7.15	24.78	60.82	74	-13.18	PK
V	7356.00	49.69	38.65	7.15	24.78	42.97	54	-11.03	AV
V	15450.00	53.91	35.58	6.25	26.47	51.05	74	-22.95	PK
H	4904.00	66.58	38.75	7.38	25.45	60.66	74	-13.34	PK
H	4904.00	50.69	38.75	7.38	25.45	44.77	54	-9.23	AV
H	7356.00	69.57	38.65	7.15	24.78	62.85	74	-11.15	PK
H	7356.00	48.86	38.65	7.15	24.78	42.14	54	-11.86	AV
H	15450.00	50.25	36.42	6.25	26.65	46.73	74	-27.27	PK

Remark:

- Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
Margin= Emission Level - Limit
- If peak below the average limit, the average emission was no test.
- Testing is carried out with frequency range 9 kHz to the 10th harmonics, which above 5th harmonics, According to 15.31(o), the amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported . Hence there no other emissions have been reported.



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)	Class B (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:

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.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. 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.
4. 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.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. 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.
7. Test the EUT in the lowest channel,the Highest channel

Note:

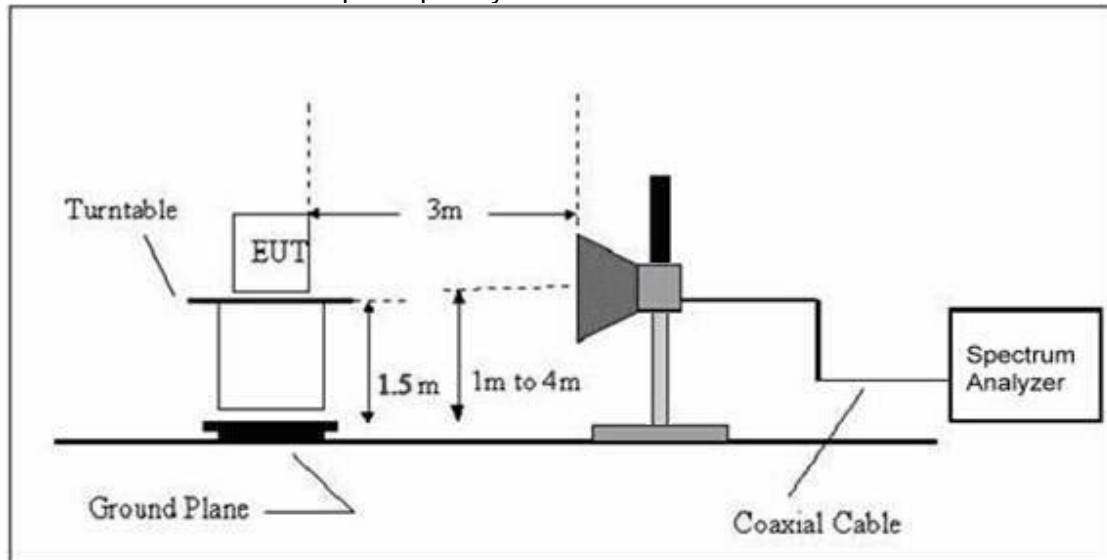
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

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

802.11b

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2412							
V	2390.00	37.46	13.83	51.29	74.00	-22.71	PK
V	2390.00	25.78	13.83	39.61	54.00	-14.39	AV
V	2400.00	37.39	13.85	51.24	74.00	-22.76	PK
V	2400.00	25.47	13.85	39.32	54.00	-14.68	AV
H	2390.00	37.56	13.83	51.39	74.00	-22.61	PK
H	2390.00	25.91	13.83	39.74	54.00	-14.26	AV
V	2400.00	37.34	13.85	51.19	74.00	-22.81	PK
V	2400.00	25.82	13.85	39.67	54.00	-14.33	AV

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2462							
V	2483.50	38.26	14.02	52.28	74.00	-21.72	PK
V	2483.50	26.68	14.02	40.70	54.00	-13.30	AV
V	2500.00	38.20	14.06	52.26	74.00	-21.74	PK
V	2500.00	26.10	14.06	40.16	54.00	-13.84	AV
H	2483.50	38.39	14.02	52.41	74.00	-21.59	PK
H	2483.50	26.72	14.02	40.74	54.00	-13.26	AV
H	2500.00	38.00	14.06	52.06	74.00	-21.94	PK
H	2500.00	26.98	14.06	41.04	54.00	-12.96	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.



802.11b

Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Factor (dB)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
operation frequency:2412							
V	2390.00	37.74	13.83	51.57	74.00	-22.43	PK
V	2390.00	26.21	13.83	40.04	54.00	-13.96	AV
V	2400.00	37.95	13.85	51.80	74.00	-22.20	PK
V	2400.00	25.79	13.85	39.64	54.00	-14.36	AV
H	2390.00	38.04	13.83	51.87	74.00	-22.13	PK
H	2390.00	26.24	13.83	40.07	54.00	-13.93	AV
V	2400.00	37.90	13.85	51.75	74.00	-22.25	PK
V	2400.00	26.18	13.85	40.03	54.00	-13.97	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Factor (dB)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
operation frequency:2462							
V	2483.50	37.57	14.02	51.59	74.00	-22.41	PK
V	2483.50	26.29	14.02	40.31	54.00	-13.69	AV
V	2500.00	37.48	14.06	51.54	74.00	-22.46	PK
V	2500.00	25.36	14.06	39.42	54.00	-14.58	AV
H	2483.50	37.47	14.02	51.49	74.00	-22.51	PK
H	2483.50	26.26	14.02	40.28	54.00	-13.72	AV
H	2500.00	37.32	14.06	51.38	74.00	-22.62	PK
H	2500.00	26.54	14.06	40.6	54.00	-13.40	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.



802.11n(20MHz)

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2412							
V	2390.00	37.69	13.83	51.52	74.00	-22.48	PK
V	2390.00	26.25	13.83	40.08	54.00	-13.92	AV
V	2400.00	38.12	13.85	51.97	74.00	-22.03	PK
V	2400.00	25.75	13.85	39.6	54.00	-14.40	AV
H	2390.00	38.45	13.83	52.28	74.00	-21.72	PK
H	2390.00	26.32	13.83	40.15	54.00	-13.85	AV
V	2400.00	38.23	13.85	52.08	74.00	-21.92	PK
V	2400.00	26.27	13.85	40.12	54.00	-13.88	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2462							
V	2483.50	37.44	14.02	51.46	74.00	-22.54	PK
V	2483.50	26.53	14.02	40.55	54.00	-13.45	AV
V	2500.00	37.78	14.06	51.84	74.00	-22.16	PK
V	2500.00	25.56	14.06	39.62	54.00	-14.38	AV
H	2483.50	37.39	14.02	51.41	74.00	-22.59	PK
H	2483.50	26.77	14.02	40.79	54.00	-13.21	AV
H	2500.00	37.23	14.06	51.29	74.00	-22.71	PK
H	2500.00	26.82	14.06	40.88	54.00	-13.12	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.


802.11n(40MHz)

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2422							
V	2390.00	38.17	13.83	52.00	74.00	-22.00	PK
V	2390.00	26.51	13.83	40.34	54.00	-13.66	AV
V	2400.00	38.38	13.85	52.23	74.00	-21.77	PK
V	2400.00	26.07	13.85	39.92	54.00	-14.08	AV
H	2390.00	38.46	13.83	52.29	74.00	-21.71	PK
H	2390.00	26.54	13.83	40.37	54.00	-13.63	AV
V	2400.00	38.33	13.85	52.18	74.00	-21.82	PK
V	2400.00	26.48	13.85	40.33	54.00	-13.67	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:2452							
V	2483.50	38.38	14.02	52.40	74.00	-21.60	PK
V	2483.50	26.76	14.02	40.78	54.00	-13.22	AV
V	2500.00	38.32	14.06	52.38	74.00	-21.62	PK
V	2500.00	26.18	14.06	40.24	54.00	-13.76	AV
H	2483.50	38.50	14.02	52.52	74.00	-21.48	PK
H	2483.50	26.80	14.02	40.82	54.00	-13.18	AV
H	2500.00	38.12	14.06	52.18	74.00	-21.82	PK
H	2500.00	27.06	14.06	41.12	54.00	-12.88	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: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
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

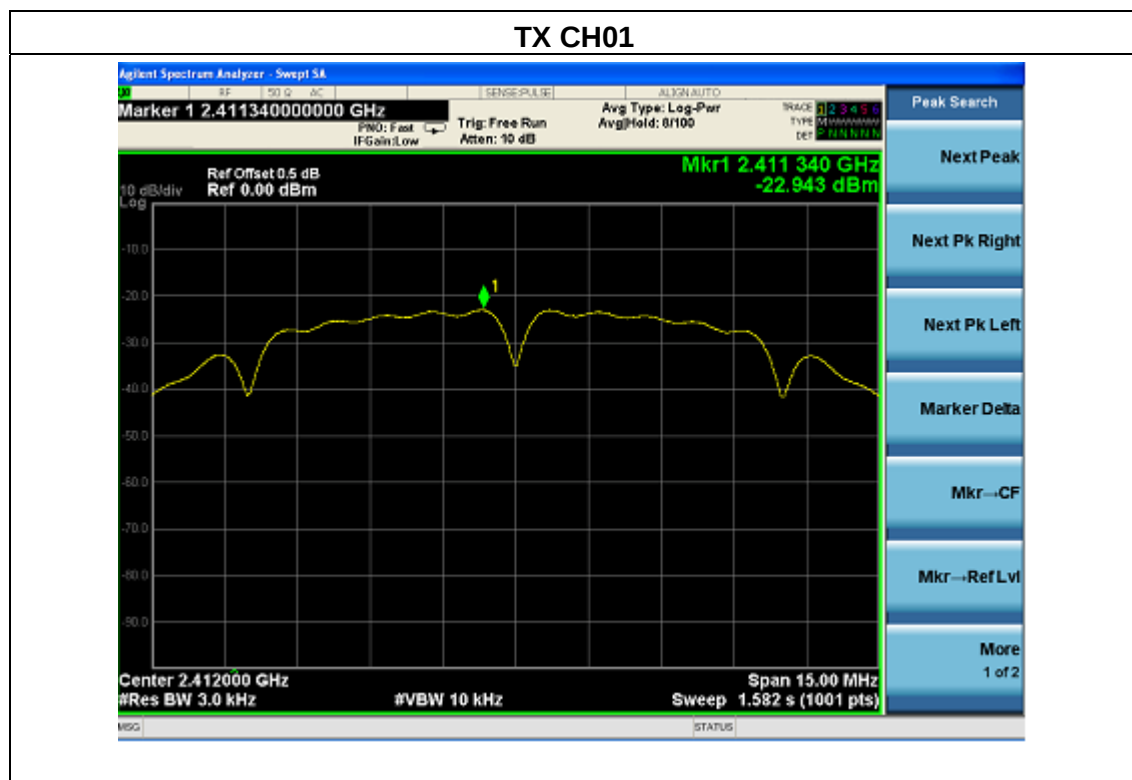
The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.



4.1.5 TEST RESULTS

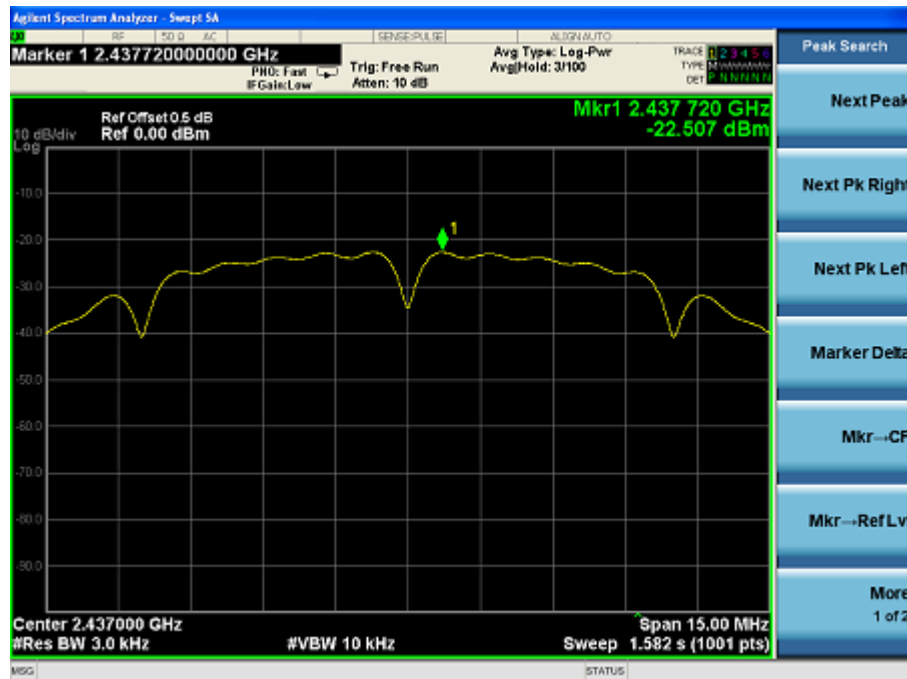
Temperature :	25°C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX b Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-22.943	8	PASS
2437 MHz	-22.507	8	PASS
2462 MHz	-22.046	8	PASS





TX CH06



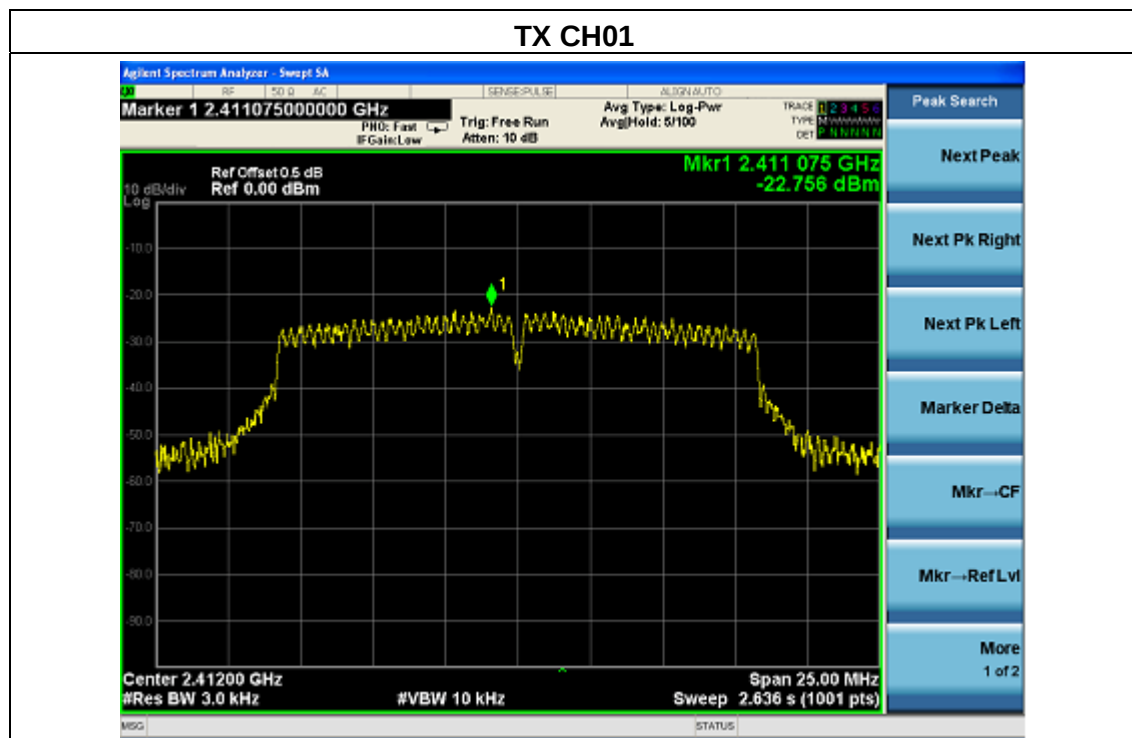
TX CH11





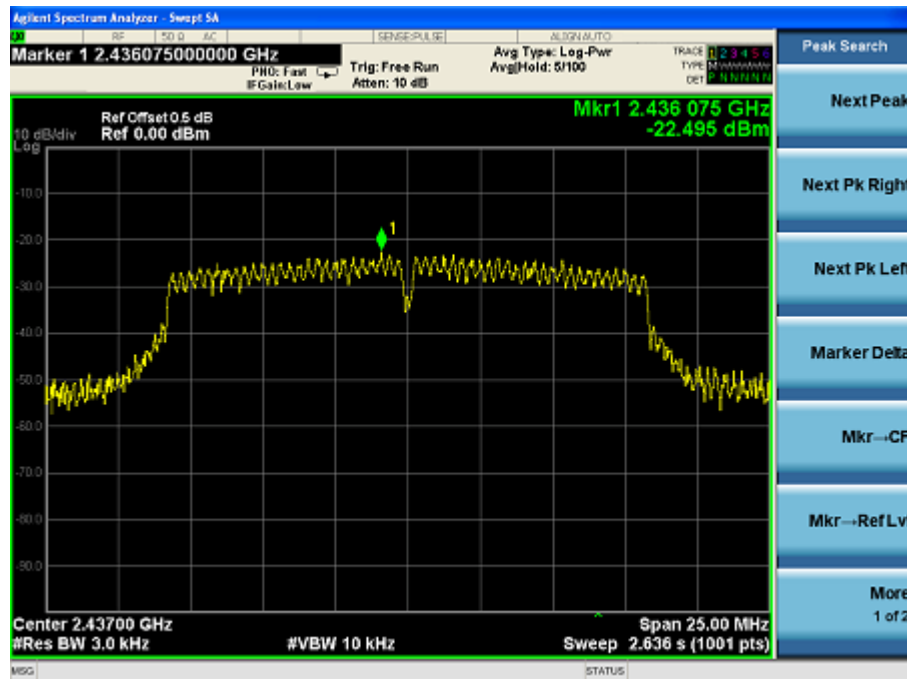
Temperature :	25°C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX g Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-22.756	8	PASS
2437 MHz	-22.495	8	PASS
2462 MHz	-22.166	8	PASS

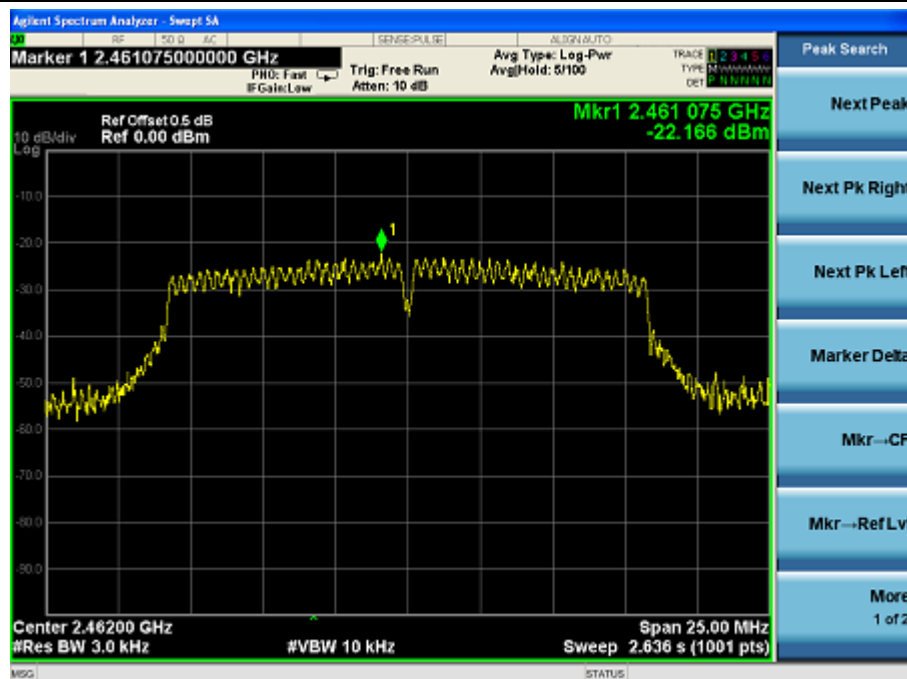




TX CH06



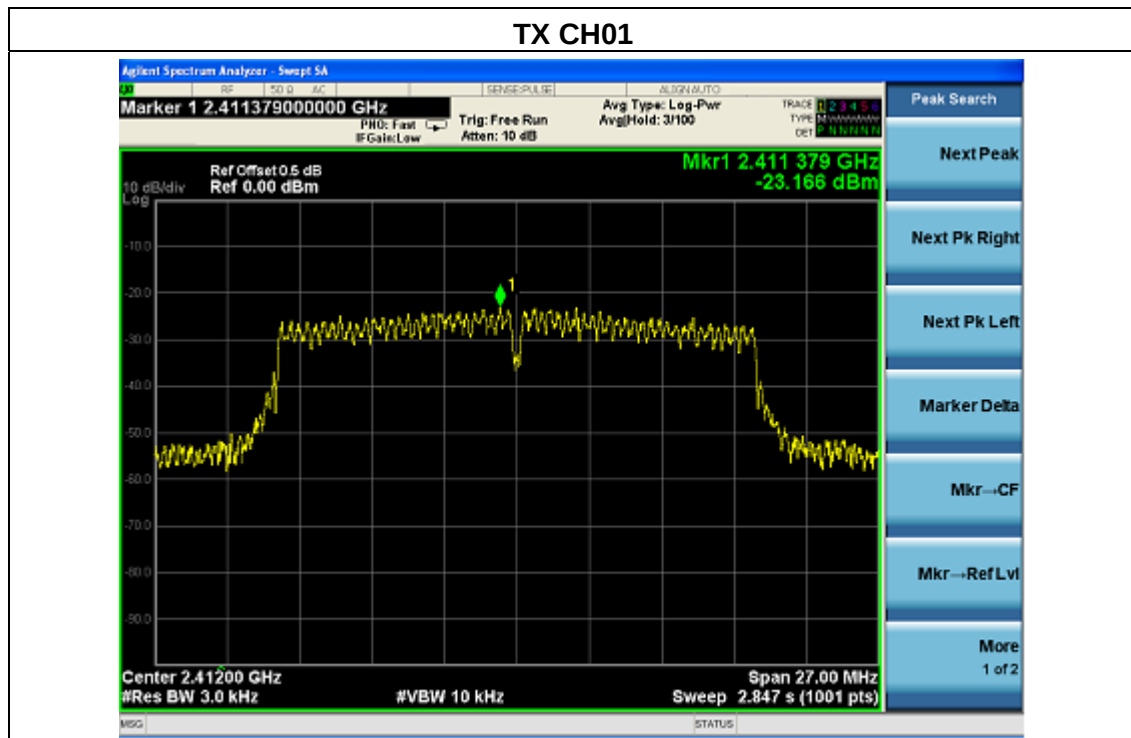
TX CH11





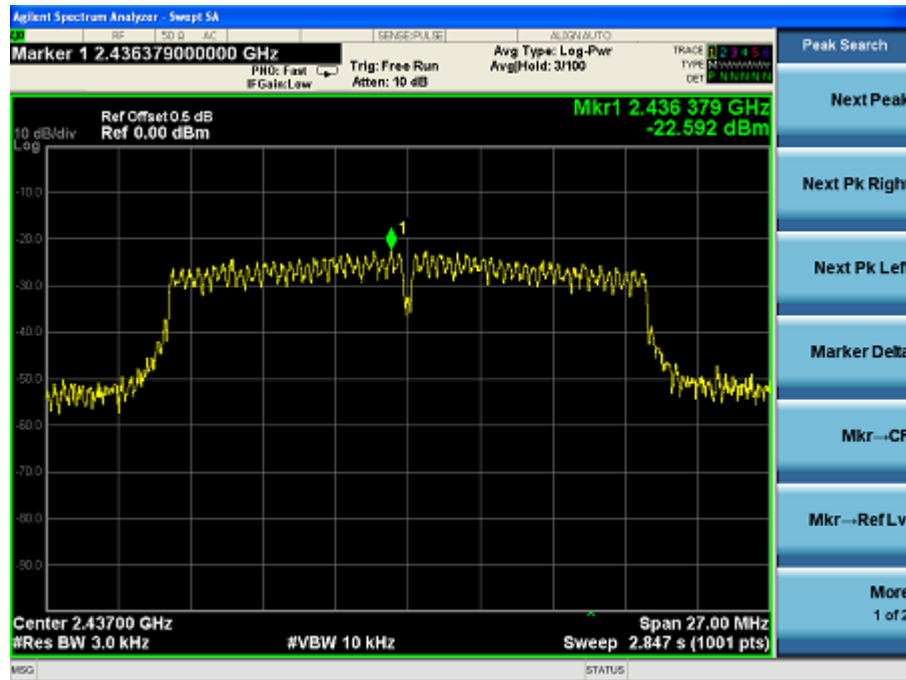
Temperature :	25°C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX n Mode(20M) /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-23.166	8	PASS
2437 MHz	-22.592	8	PASS
2462 MHz	-22.603	8	PASS

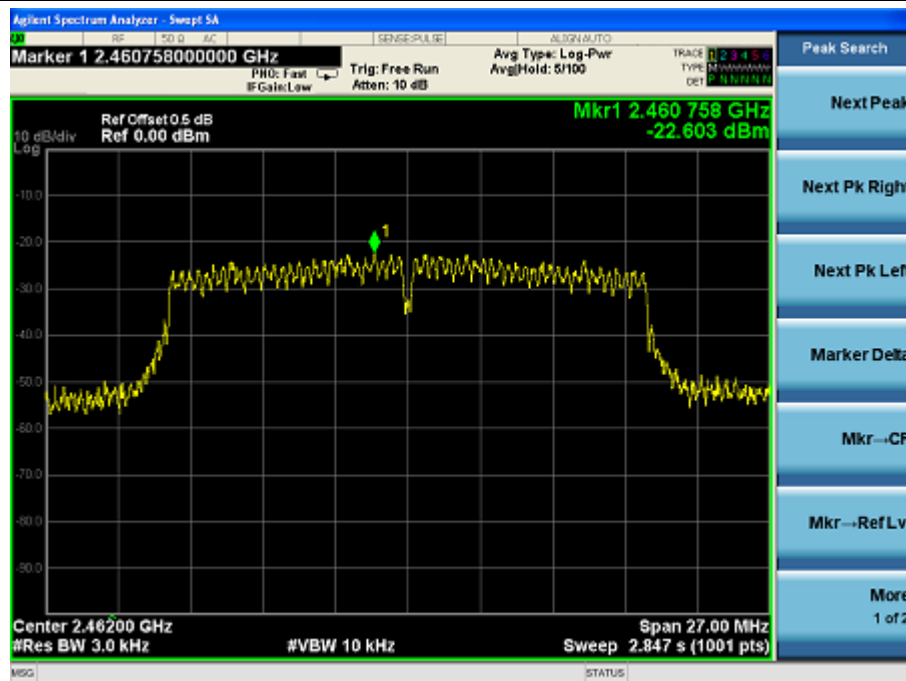




TX CH06



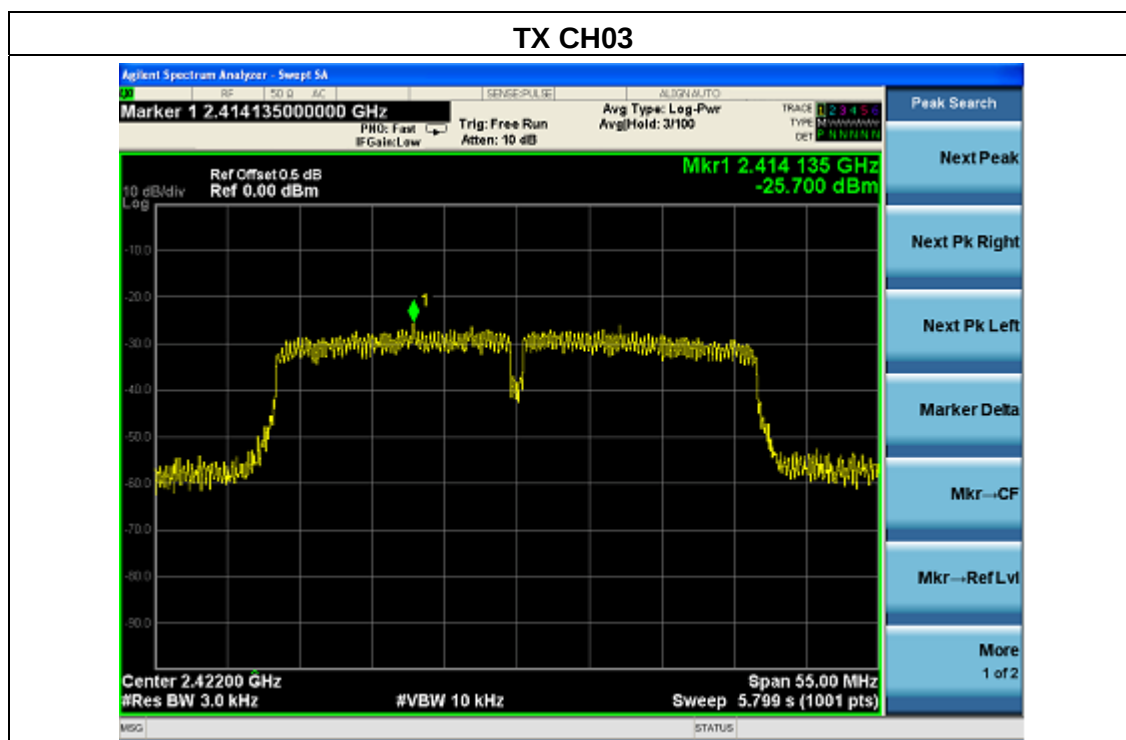
TX CH11





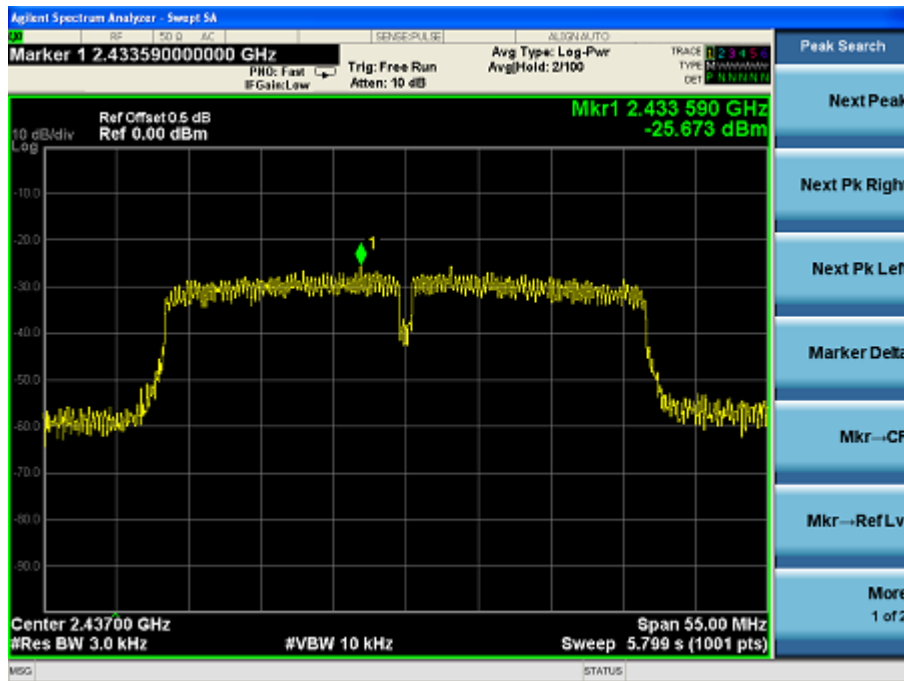
Temperature :	25°C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX n Mode(40M) /CH03, CH06, CH9		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2422 MHz	-25.700	8	PASS
2437 MHz	-25.673	8	PASS
2452 MHz	-25.412	8	PASS

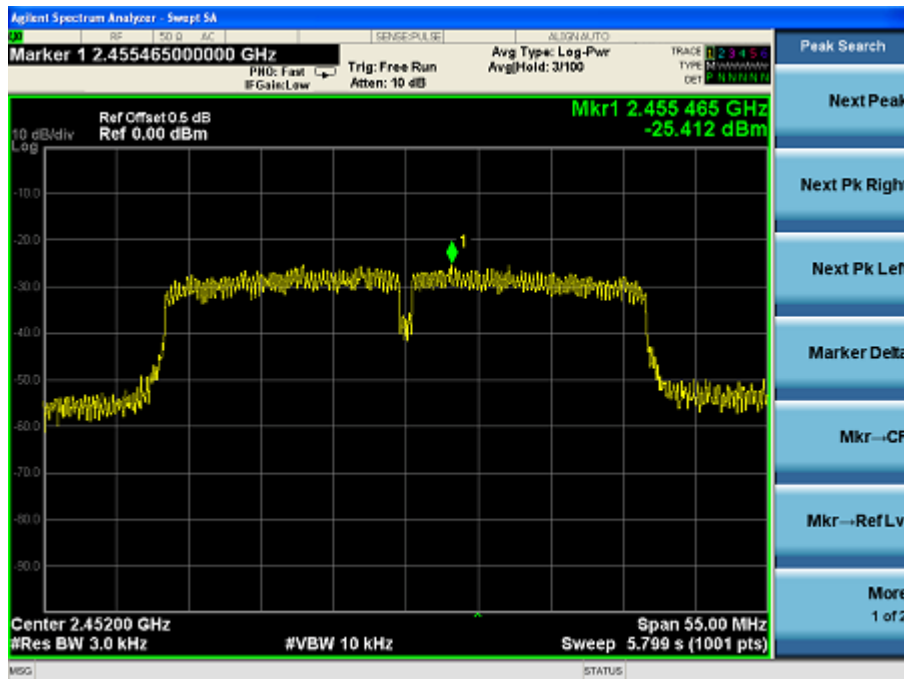




TX CH06



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	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

5.1.1 TEST PROCEDURE

1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ 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

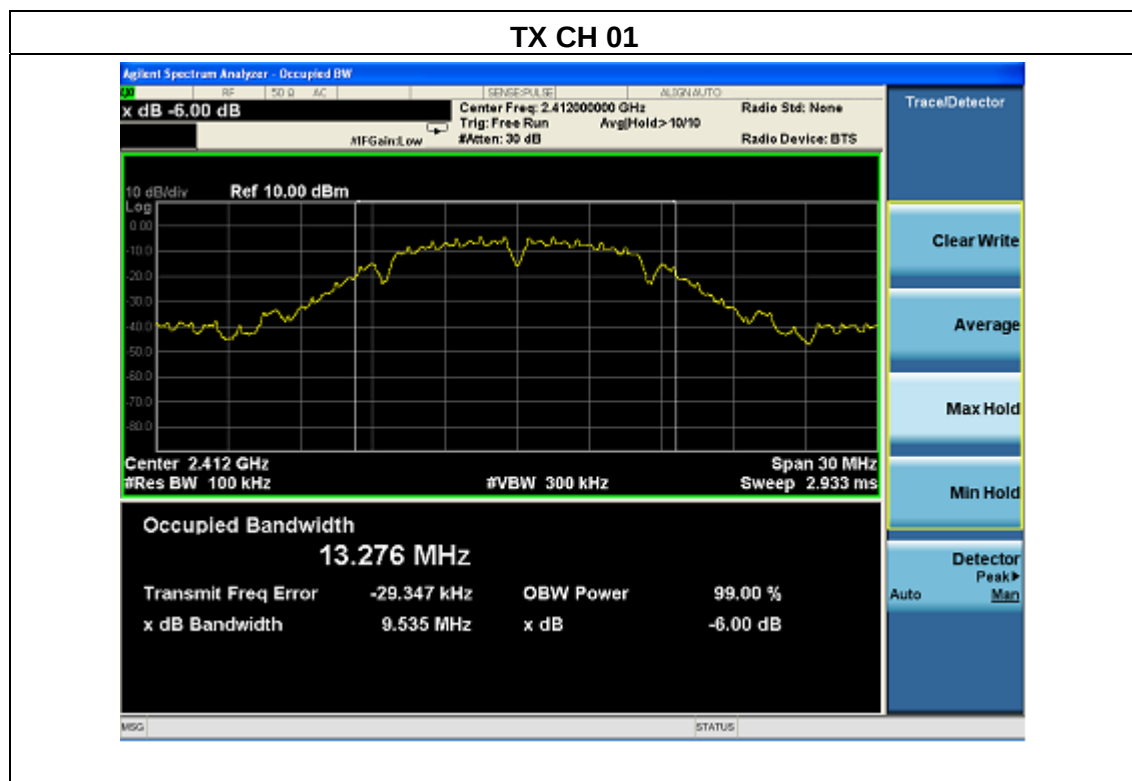
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.



5.1.5 TEST RESULTS

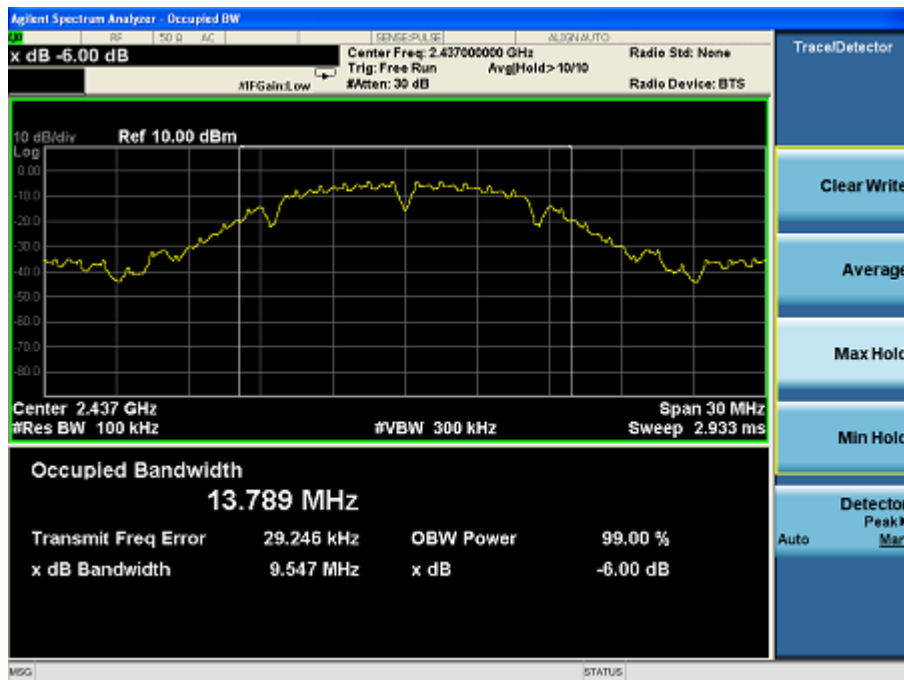
Temperature :	25°C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX b Mode /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	2412	9.535	13.276	500	Pass
Middle	2437	9.547	13.789	500	Pass
High	2462	9.654	13.895	500	Pass

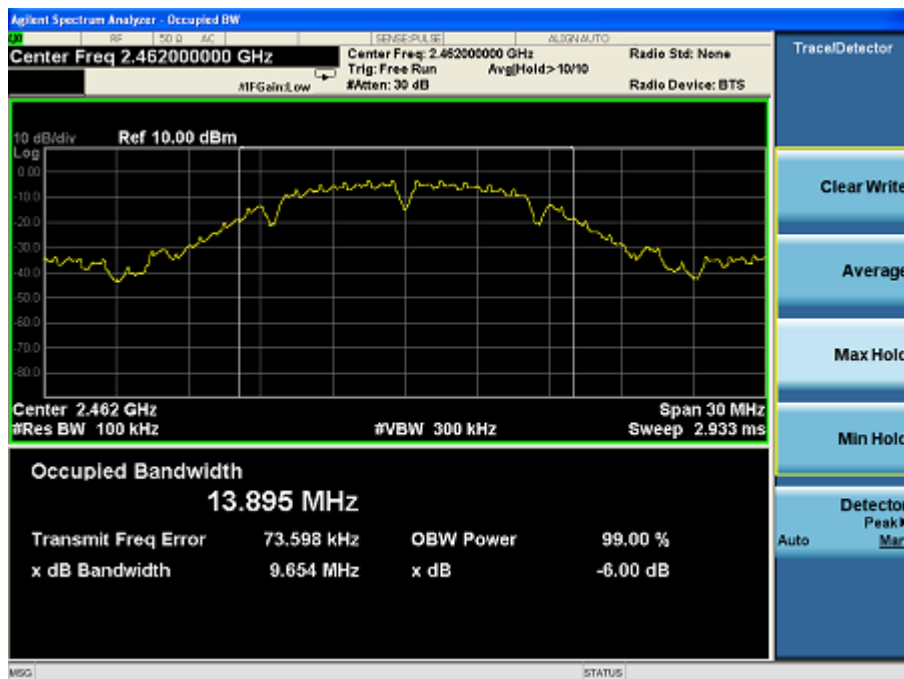




TX CH 06



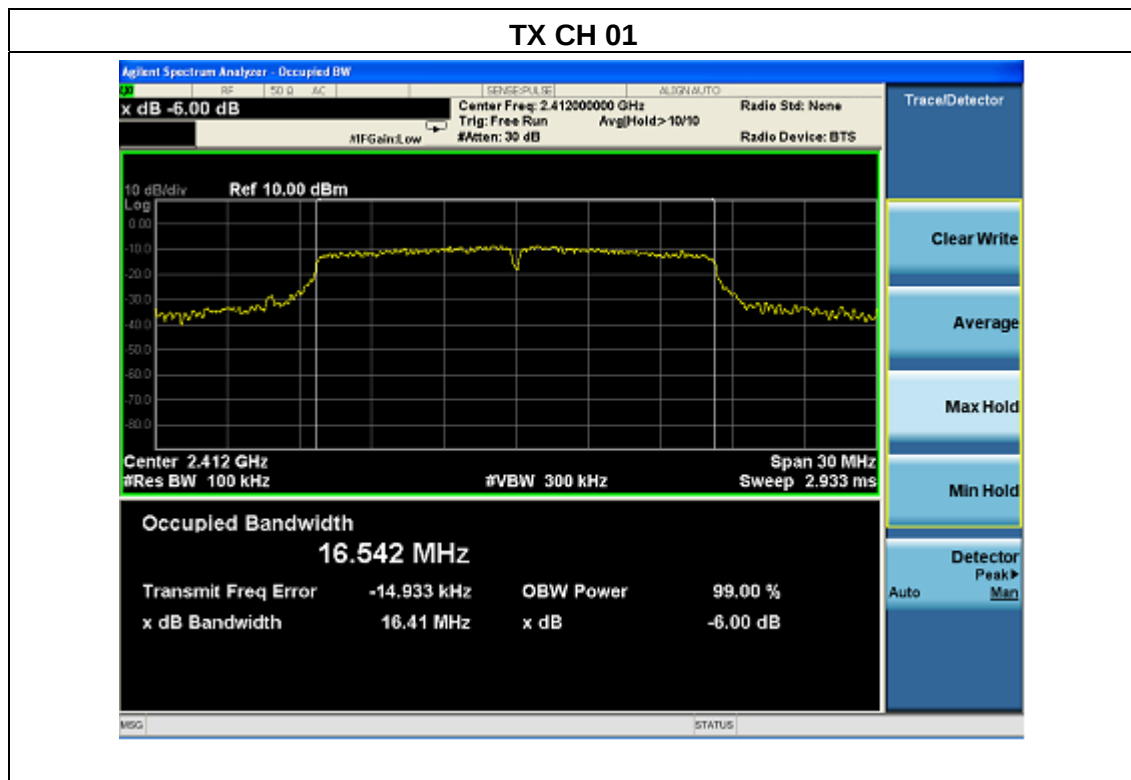
TX CH 11





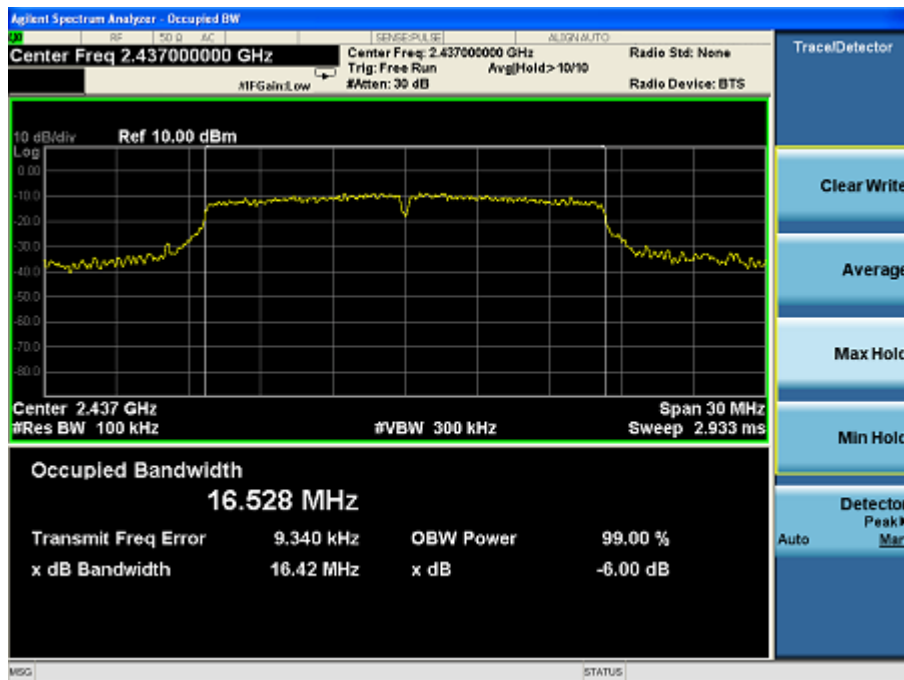
Temperature :	25°C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX g Mode /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	99%bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.410	16.542	500	Pass
Middle	2437	16.420	16.528	500	Pass
High	2462	16.440	16.514	500	Pass

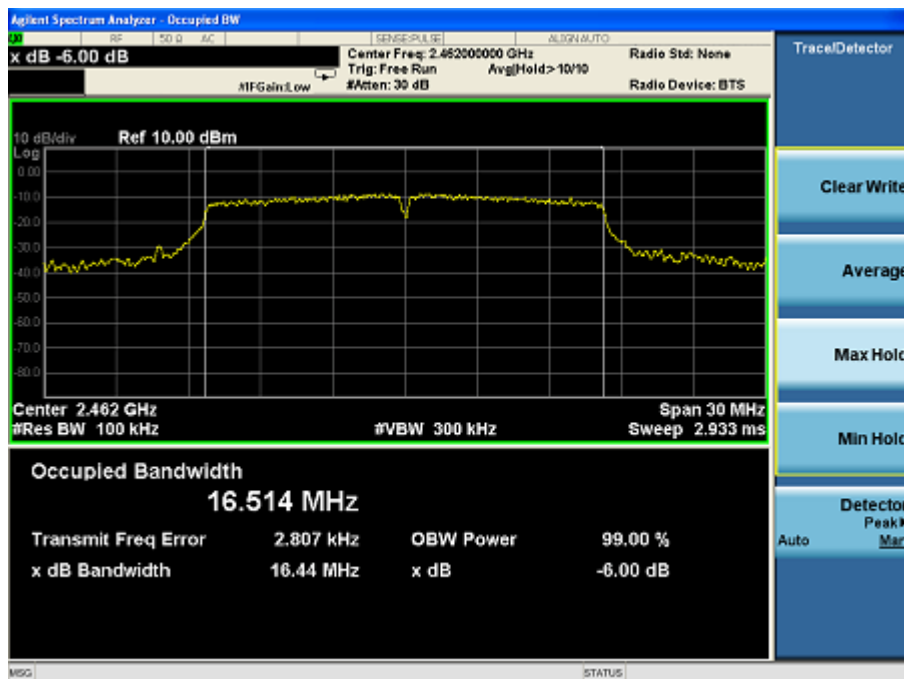




TX CH 06



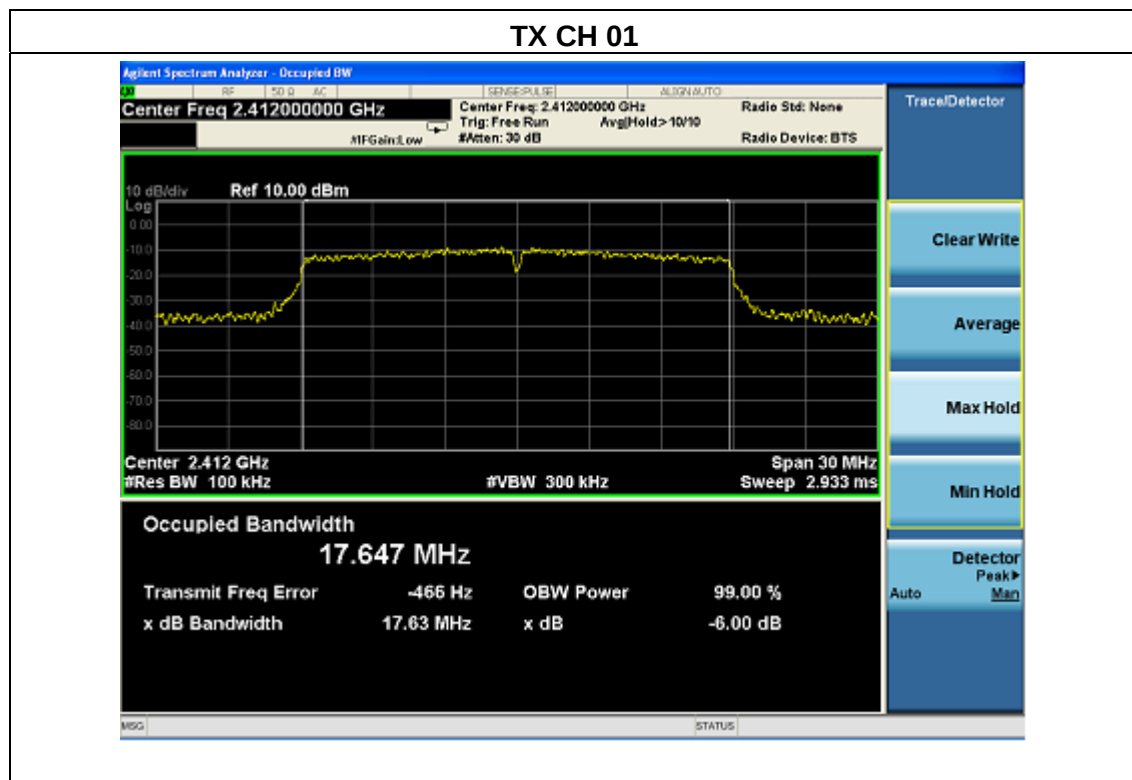
TX CH 11





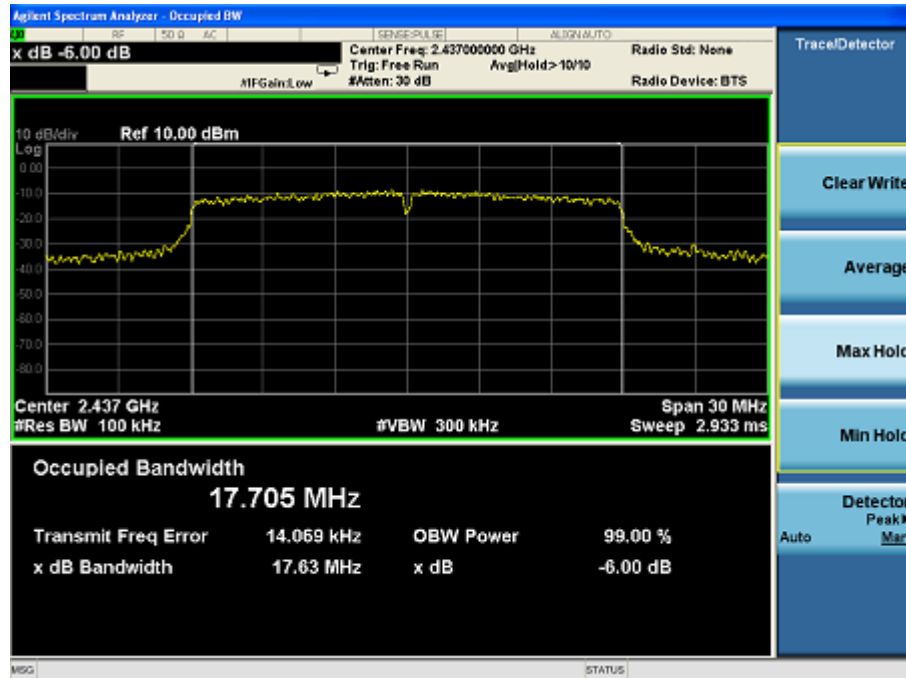
Temperature :	25°C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX n Mode(20M) /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.630	17.647	500	Pass
Middle	2437	17.630	17.705	500	Pass
High	2462	17.640	17.658	500	Pass

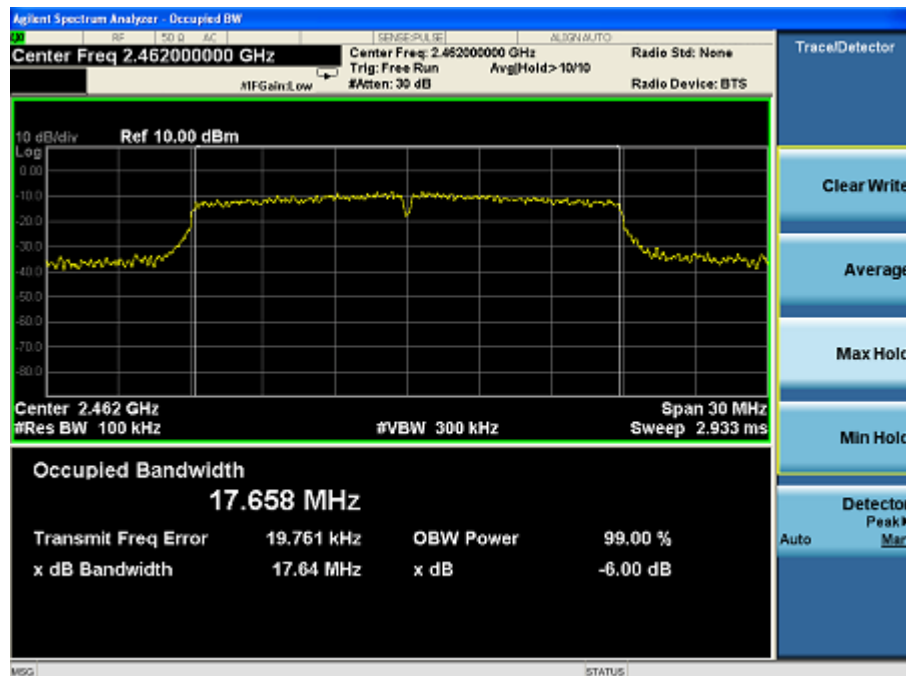




TX CH 06



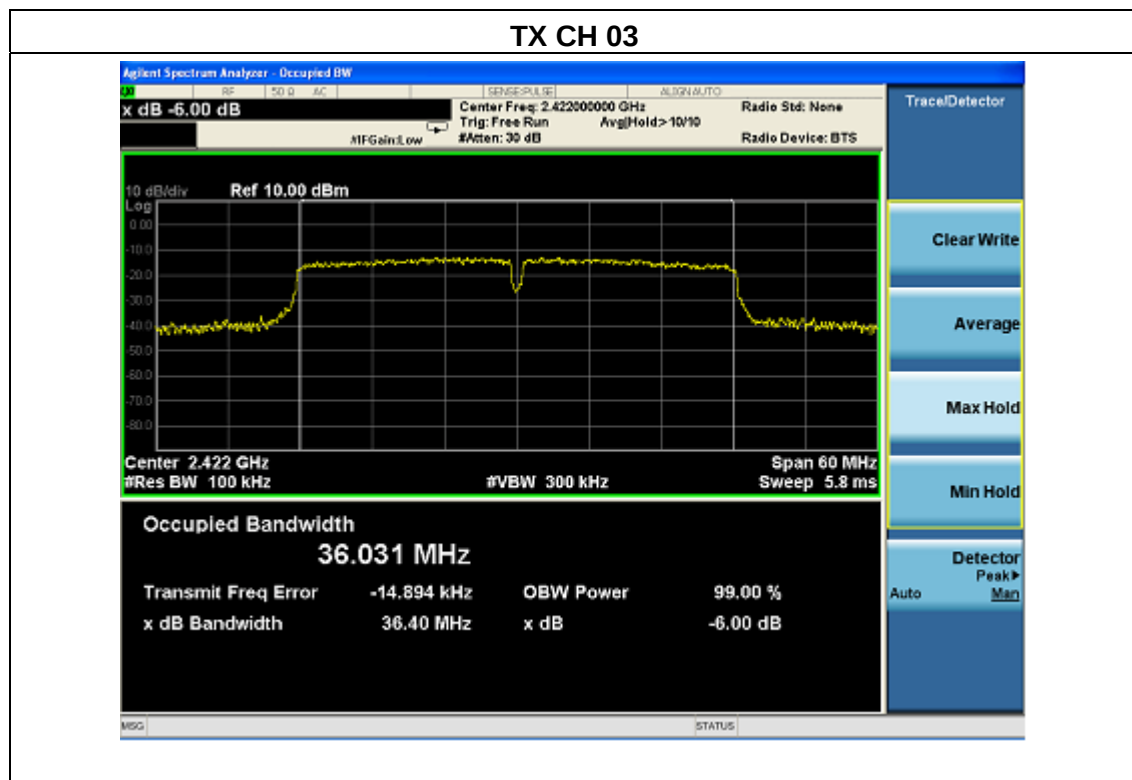
TX CH 11





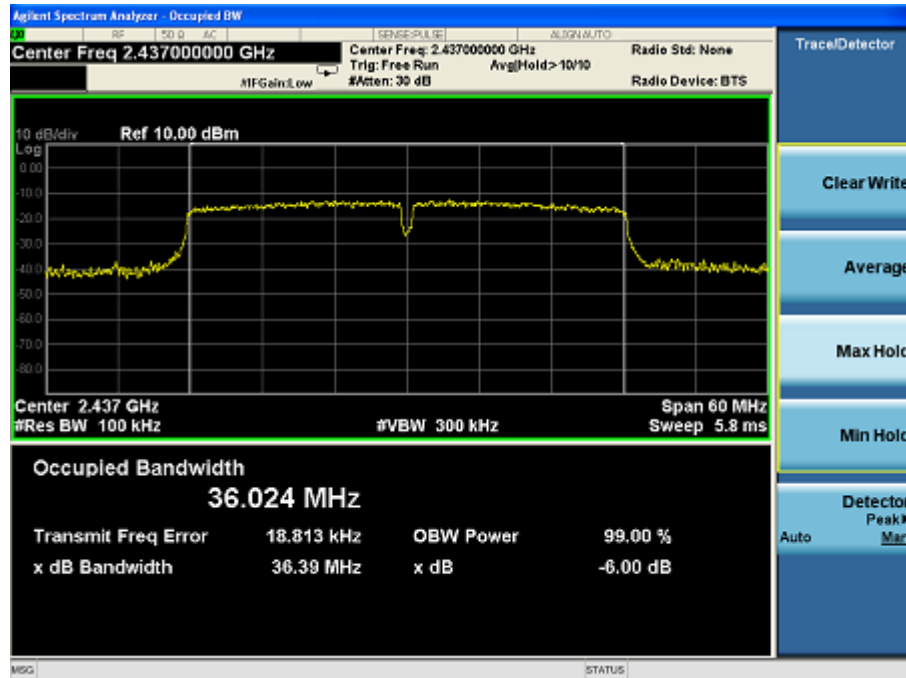
Temperature :	25°C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 5V from adapter
Test Mode :	TX n Mode(40M) /CH03, CH06, CH09		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	2422	36.400	36.031	500	Pass
Middle	2437	36.390	36.024	500	Pass
High	2452	36.400	36.112	500	Pass

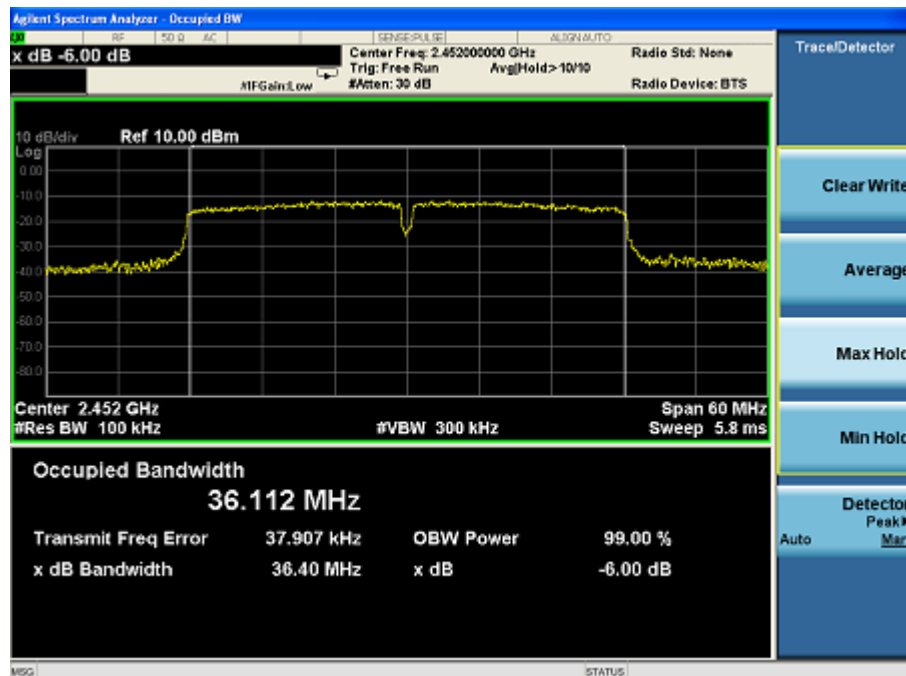




TX CH 06



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

TX 802.11b Mode			
Test Channe	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
CH01	2412	5.35	30
CH06	2437	5.37	30
CH11	2462	5.33	30
TX 802.11g Mode			
CH01	2412	4.12	30
CH06	2437	4.15	30
CH11	2462	4.14	30
TX 802.11n-HT20 Mode			
CH01	2412	4.11	30
CH06	2437	4.10	30
CH11	2462	4.12	30
TX 802.11n-HT40 Mode			
CH03	2422	4.06	30
CH06	2437	4.08	30
CH09	2452	4.05	30



7. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

APPLICABLE STANDARD

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

TEST PROCEDURE

- Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 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.
- Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
- 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.
- Repeat above procedures until all measured frequencies were complete.

7.1 DEVIATION FROM STANDARD

No deviation.

7.2 TEST SETUP





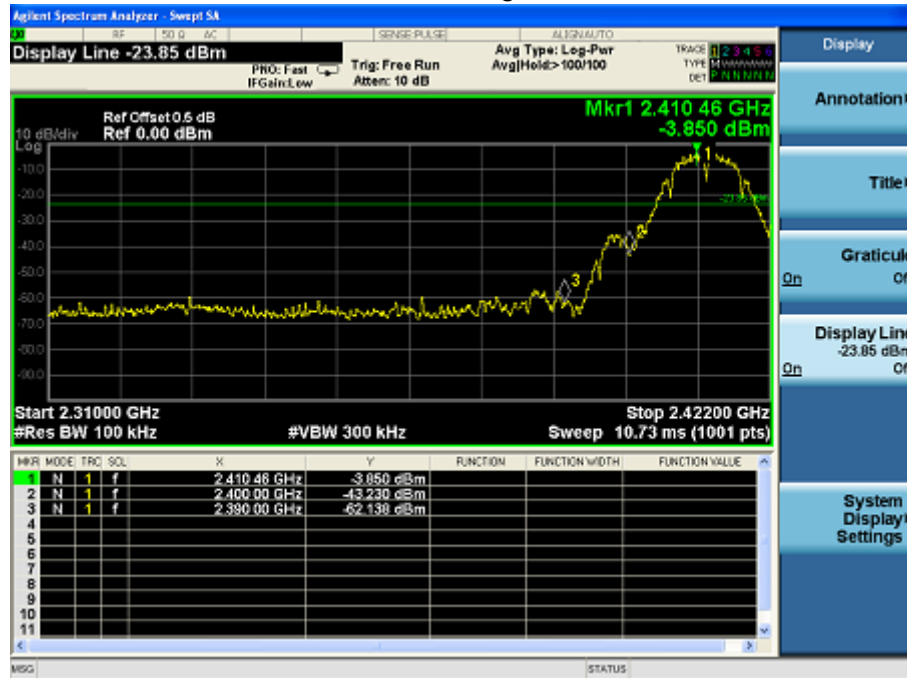
7.3 EUT OPERATION CONDITIONS

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.

7.4 TEST RESULTS



802.11b: Band Edge, Left Side

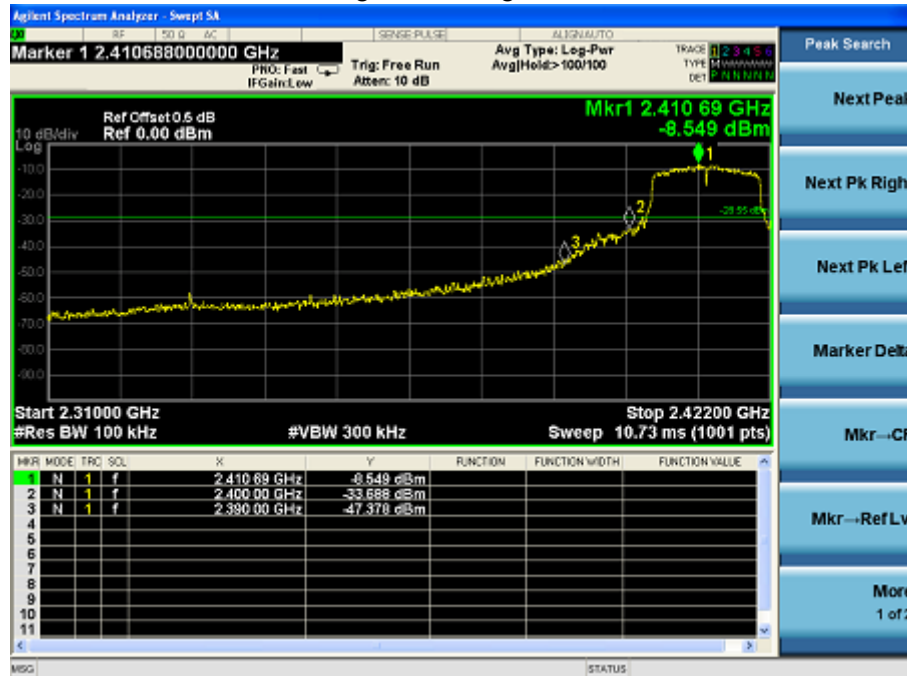


802.11b: Band Edge, Right Side





802.11g: Band Edge, Left Side

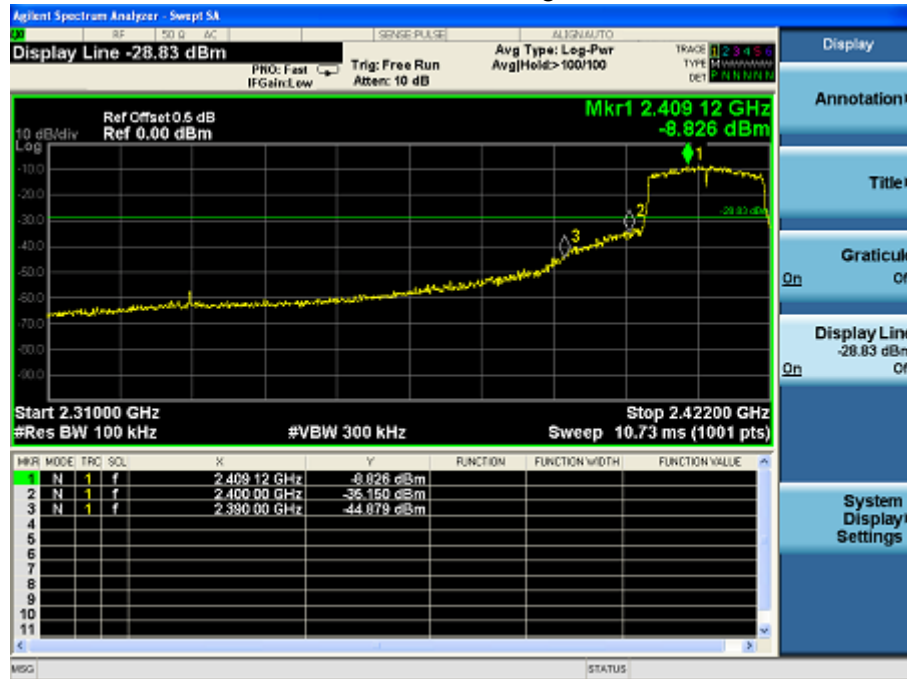


802.11g: Band Edge, Right Side





802.11n-HT20: Band Edge, Left Side

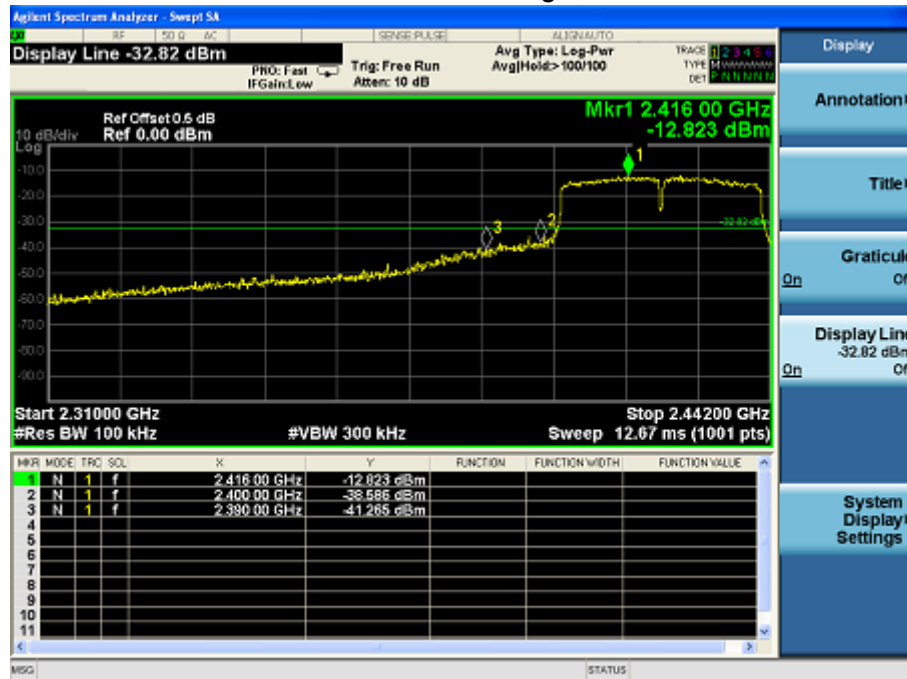


802.11n-HT20: Band Edge, Right Side





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

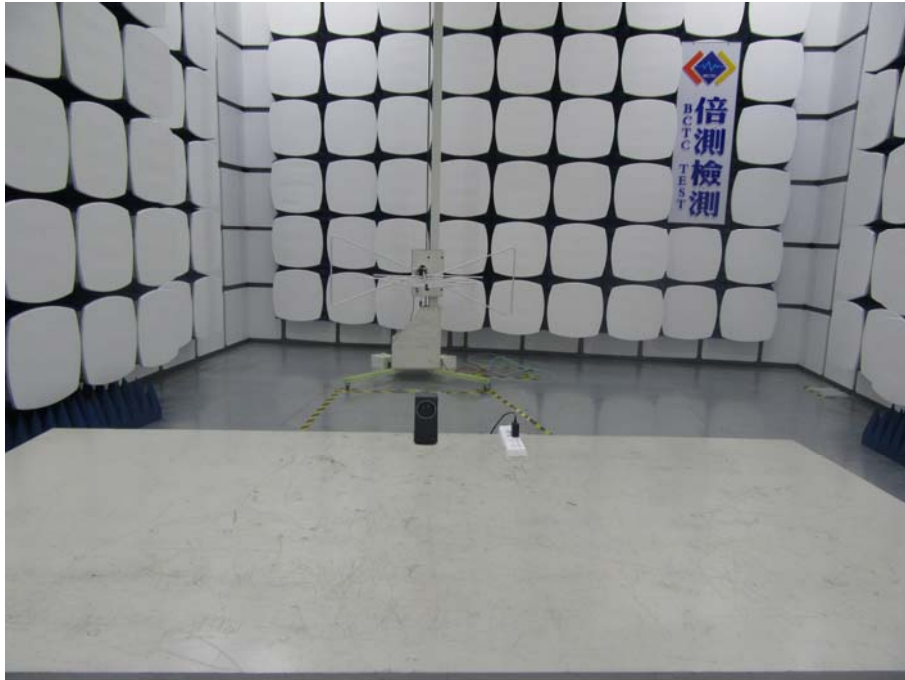
The EUT antenna is FPCB antenna,. It comply with the standard requirement.

9. EUT TEST PHOTO

Conducted Measurement Photos



Radiated Measurement Photos



Radiated Measurement Photos



10. EUT PHOTO



***** END OF REPORT *****