Radio Test Report

Report No.:STS2405102W06

Issued for

DZS Inc.

5700 Tennyson Parkway Plano TX 75024 United States of America

Product Name:	Optical Network Terminal (ONT)
Brand Name:	DZS
Model Name:	5266XG
Series Model(s):	N/A
FCC ID:	PJZ5266XG
Test Standards:	FCC Part15.247

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

TEST REPORT

Applicant's Name ..... :	DZS Inc.
Address ..... :	5700 Tennyson Parkway Plano TX 75024 United States Of America
Manufacturer's Name ..... :	DZS Inc.
Address ..... :	5700 Tennyson Parkway Plano TX 75024 United States Of America
Factory 1 ..... :	Bowei Technology Co., Ltd
Address 1 ..... :	2F, Building 2, No. 306 Gushui Road, Haining Economic Development Zone, Haining, Jiaxing City, Zhejiang, China.
Factory 2 ..... :	BLUEWAY VINA CO.,LTD
Address 2 ..... :	Lot CN17,Van Trung In, Vietyen Dist, Bacgiang Pro Vietnam.

Product Description

Product Name ..... :	Optical Network Terminal (ONT)
Brand Name ..... :	DZS
Model Name ..... : ..	5266XG
Series Model(s) ..... :	N/A
Test Standards ..... :	FCC Part 15.247
Test Procedure ..... :	ANSI C63.10-2020

This device described above has been tested by STS, 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.
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

Date of Test ..... :	
Date of receipt of test item ..... :	24 May 2024
Date (s) of performance of tests ..... :	24 May 2024 ~ 13 June 2024
Date of Issue ..... :	13 June 2024
Test Result ..... :	**Pass**

Testing Engineer : Aaron Bu

(Aaron Bu)

Technical Manager : Chris Chen

(Chris Chen)

Authorized Signatory : Bovey Yang

(Bovey Yang)

SHENZHEN STS TEST SERVICES CO.,LTD. TESTING APPROVAL

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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	13 June 2024	STS2405102W06	ALL	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:
KDB 558074 D01 15.247 Meas Guidance v05r02.

FCC Part 15.247,Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	--
15.209	Radiated Spurious Emission	PASS	--
15.205	Restricted Band Edge Emission	PASS	--
15.203	Antenna Requirement	PASS	--

NOTE:

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

(2) All tests are according to ANSI C63.10-2020.

1.1 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD
Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

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	RF output power, conducted	±0.755dB
2	Unwanted Emissions, conducted	±2.874dB
3	All emissions, radiated 9K-30MHz	±3.80dB
4	All emissions, radiated 30M-1GHz	±4.18dB
5	All emissions, radiated 1G-6GHz	±4.90dB
6	All emissions, radiated>6G	±5.24dB
7	Conducted Emission (9KHz-150KHz)	±2.19dB
8	Conducted Emission (150KHz-30MHz)	±2.53dB
9	Occupied Channel Bandwidth	±3.5%
10	Power Spectral Density, conducted	±1.245dB
11	Duty Cycle	±3.2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

<table>
<tr><td>Product Name</td><td>Optical Network Terminal (ONT)</td></tr>
<tr><td>Brand Name</td><td>DZS</td></tr>
<tr><td>Model Name</td><td>5266XG</td></tr>
<tr><td>Series Model(s)</td><td>N/A</td></tr>
<tr><td>Model Difference</td><td>N/A</td></tr>
<tr><td>Product Description</td><td>The EUT is a Optical Network Terminal (ONT)
<table>
<tr><td>Operation Frequency:</td><td>802.11b/g/n/ac/ax(20MHz): 2412~2462MHz
802.11n/ac/ax(40MHz):2422~2452MHz</td></tr>
<tr><td>Modulation Type:</td><td>802.11b(DSSS):CCK,DQPSK,DBPSK
802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM
802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM
802.11ac(OFDM):
BPSK,QPSK,16-QAM,64-QAM,256-QAM
802.11ax(OFDM, OFDMA):
BPSK,QPSK,16-QAM,64-QAM,256-QAM,
1024QAM</td></tr>
<tr><td>Bit Rate of Transmitter:</td><td>802.11b:11/5.5/2/1 Mbps
802.11g:54/48/36/24/18/12/9/6Mbps
802.11n(20MHz):
65/58.5/52/39/26/19.5/13/6.5Mbps
802.11ac(VHT20)/802.11ax(HE20):
135/65/58.5/52/39/26/19.5/13/6.5Mbps
802.11n(40MHz):
135/121.5/108/81/54/40.5/37/13.5Mbps
802.11ac(VHT40)/ax(HE40):
270/135/121.5/108/81/54/40.5/37/13.5Mbps</td></tr>
<tr><td>Number of Channel:</td><td>802.11 b/g/n/ac/ax n20: 11CH
802.11 n/ac/ax 40: 7CH</td></tr>
<tr><td>Antenna Type:</td><td>internal antenna</td></tr>
<tr><td>Antenna Gain (dBi):</td><td>ANT 1：2.81 dBi ,ANT 2：2.18 dBi</td></tr>
</table></td></tr>
<tr><td>Channel List</td><td>Please refer to the Note 3.</td></tr>
<tr><td>Rating</td><td>Input: DC 12V 2A</td></tr>
<tr><td>Adapter</td><td>Model1: RD1202000-C55-154MG
Brand: RUIDE
Input: 100-240V AC，50/60Hz,1.0A MAX
Output:DC12V 2A
Model2: TPA289-24120-US
Brand:TOPOW
Input: 100-240V AC，50/60Hz,0.7A
Output:DC 12 V, 2A</td></tr>
<tr><td>Hardware version number</td><td>V1.0</td></tr>
<tr><td>Software version number</td><td>7.0.022</td></tr>
</table>

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
2. The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.
3.

Operation Frequency of channel			
802.11b/g/n/ax/ac(20MHz)		Channel List for 802.11n/ax/ac(40MHz)	
Channel	Frequency	Channel	Frequency
01	2412	03	2422
02	2417	04	2427
03	2422	05	2432
04	2427	06	2437
05	2432	07	2442
06	2437	08	2447
07	2442	09	2452
08	2447	--	--
09	2452	--	--
10	2457	--	--
11	2462	--	--

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, themiddle frequency, and the highest frequency of channel were selected to perform the test, and the selectedchannel see below:
Carrier Frequency Channel

2.4GHz Test Frequency:

For 802.11b/g/n/ax/ac(HT20)		For 802.11n/ax/ac (HT40)	
Channel	Freq.(MHz)	Channel	Freq.(MHz)
01	2412	03	2422
06	2437	06	2437
11	2462	09	2452

2.2 DESCRIPTION OF THE TEST MODES

Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test Mode	Description	Data Rate
Mode 1	TX IEEE 802.11b CH1 MIMO	1 Mbps
Mode 2	TX IEEE 802.11b CH6 MIMO	1 Mbps
Mode 3	TX IEEE 802.11 b CH11 MIMO	1 Mbps
Mode 4	TX IEEE 802.11g CH1 MIMO	6 Mbps
Mode 5	TX IEEE 802.11g CH6 MIMO	6 Mbps
Mode 6	TX IEEE 802.11g CH11 MIMO	6 Mbps
Mode 7	TX IEEE 802.11n HT20 CH1 MIMO	MCS 0
Mode 8	TX IEEE 802.11n HT20 CH6 MIMO	MCS 0
Mode 9	TX IEEE 802.11n HT20 CH11 MIMO	MCS 0
Mode 10	TX IEEE 802.11n HT40 CH3 MIMO	MCS 0
Mode 11	TX IEEE 802.11n HT40 CH6 MIMO	MCS 0
Mode 12	TX IEEE 802.11n HT40 CH9 MIMO	MCS 0
Mode 13	TX IEEE 802.11ax HT20 CH1 MIMO	MCS 0
Mode 14	TX IEEE 802.11ax HT20 CH6 MIMO	MCS 0
Mode 15	TX IEEE 802.11ax HT20 CH11 MIMO	MCS 0
Mode 16	TX IEEE 802.11ax HT40 CH3 MIMO	MCS 0
Mode 17	TX IEEE 802.11ax HT40 CH6 MIMO	MCS 0
Mode 18	TX IEEE 802.11ax HT40 CH9 MIMO	MCS 0
Mode 19	TX IEEE 802.11ac HT20 CH1 MIMO	MCS 0
Mode 20	TX IEEE 802.11ac HT20 CH6 MIMO	MCS 0
Mode 21	TX IEEE 802.11ac HT20 CH11 MIMO	MCS 0
Mode 22	TX IEEE 802.11ac HT40 CH3 MIMO	MCS 0
Mode 23	TX IEEE 802.11ac HT40 CH6 MIMO	MCS 0
Mode24	TX IEEE 802.11ac HT40 CH9 MIMO	MCS 0

Note:

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

(2) We have be tested for all avaiable U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V /60Hz is shown in the report.

AC Conducted Emission

Test Case	
AC Conducted Emission	Mode25: Keeping WIFI TX

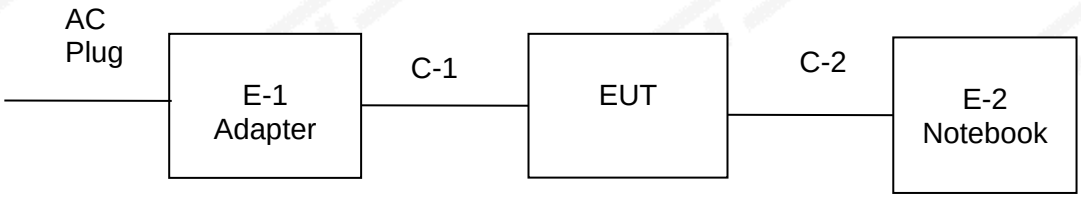
2.3 TEST SOFTWARE AND POWER LEVEL

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

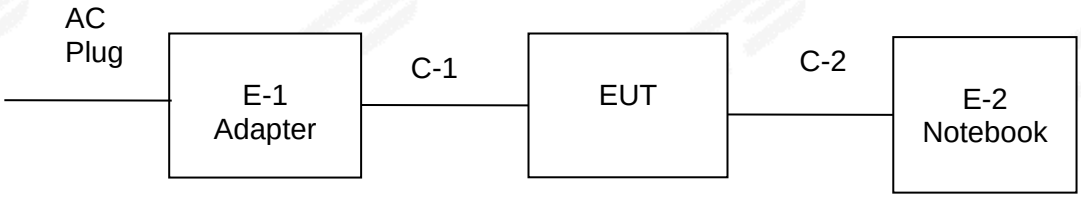
RF Function	Type	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
WIFI(2.4G)	2.4G WIFI	802.11b	ANT 1: 2.81 ANT 2: 2.18	Default	accessMTool_REL_3_2_1_5
		802.11g		Default	
		802.11n(HT20)		Default	
		802.11n(HT40)		Default	
		802.11ax(HE20)		Default	
		802.11ax(HE40)		Default	
		802.11ac(VHT20)		Default	
		802.11ac(VHT40)		Default	

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiation Test Set



Conduction Test Set



2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

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

Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
	Adapter	RUIDE	RD1202000-C55-154MG	N/A	N/A
	Adapter	TOPOW	TPA289-24120-US	N/A	N/A
	DC Cable	N/A	N/A	150cm	NO

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
	LAN Cable	N/A	N/A	>3m	NO
	Personal computer	DELL	Inspiron 14-3467	N/A	N/A

Note:

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

(2) “YES” is means “with core”; “NO” is means “without core”.

2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

RF Radiation Test Equipment					
Kind of Equipment	**Manufacturer**	**Type No.**	**Serial No.**	**Last Calibration**	**Calibrated Until**
Temperature & Humidity	SW-108	SuWei	N/A	2024.03.15	2025.03.14
Pre-Amplifier(0.1M-3GHz)	EM	EM330	060665	2024.02.23	2025.02.22
Pre-Amplifier(1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2023.09.26	2024.09.25
Pre-Amplifier(18G-40GHz)	SKET	LNPA_1840-50	SK2018101801	2024.02.23	2025.02.22
Active loop Antenna	ZHINAN	ZN30900C	16035	2023.02.28	2025.02.27
Bilog Antenna	TESEQ	CBL6111D	34678	2022.09.30	2024.09.29
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2023.09.24	2025.09.23
Horn Antenna	A-INFOMW	LB-180400-KF	J211020657	2023.10.10	2025.10.09
Positioning Controller	MF	MF-7802	MF-780208587	N/A	N/A
Signal Analyzer	R&S	FSV 40-N	101823	2023.09.26	2024.09.25
Switch Control Box	N/A	N/A	N/A	N/A	N/A
Filter Box	BALUN Technology	SU319E	BL-SZ1530051	N/A	N/A
Antenna Mast	MF	MFA-440H	N/A	N/A	N/A
Turn Table	MF	SC100_1	60531	N/A	N/A
AC Power Source	APC	KDF-11010G	F214050035	N/A	N/A
DC power supply	HONGSHENG FENG	DPS-305AF	17064939	2023.09.26	2024.09.25
Test SW	EZ-EMC	Ver.STSLAB-03A1 RE			
Conduction Test equipment					
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2023.09.25	2024.09.24
Limtter	CYBERTEK	EM5010	N/A	2023.09.25	2024.09.24
LISN	R&S	ENV216	101242	2023.09.25	2024.09.24
LISN	EMCO	3810/2NM	23625	2023.09.25	2024.09.24
Temperature & Humidity	SW-108	SuWei	N/A	2024.03.15	2025.03.14
Test SW	EZ-EMC	Ver.STSLAB-03A1 CE			

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table.

FREQUENCY (MHz)	Conducted Emissionlimit (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

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.

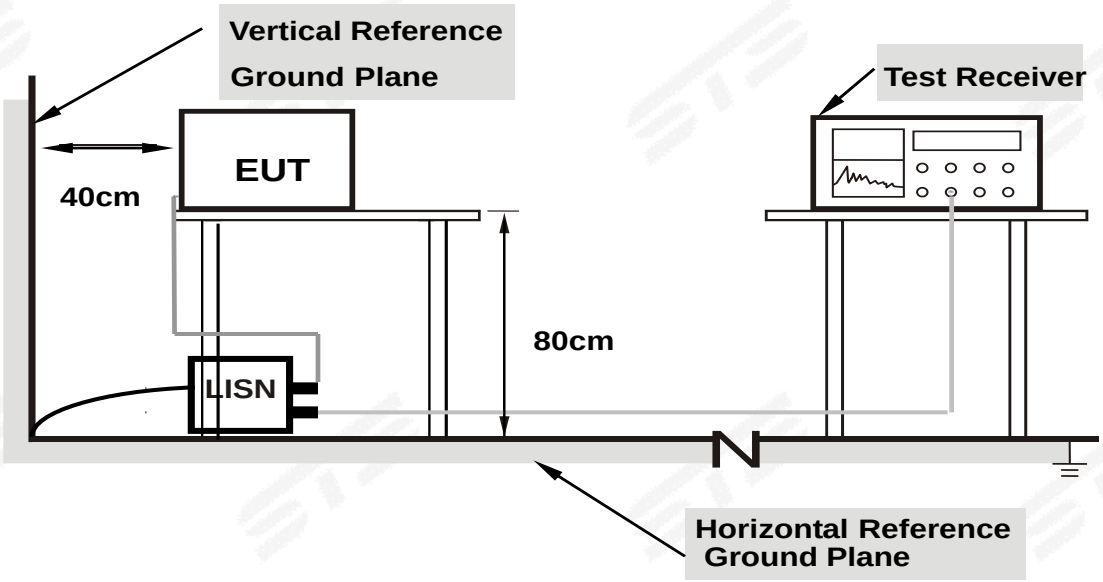
The following table is the setting of the receiver

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 is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 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 is at least 80 cm from the nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 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 cm from other units and other metal planes support units.

3.1.4EUT OPERATING CONDITIONS

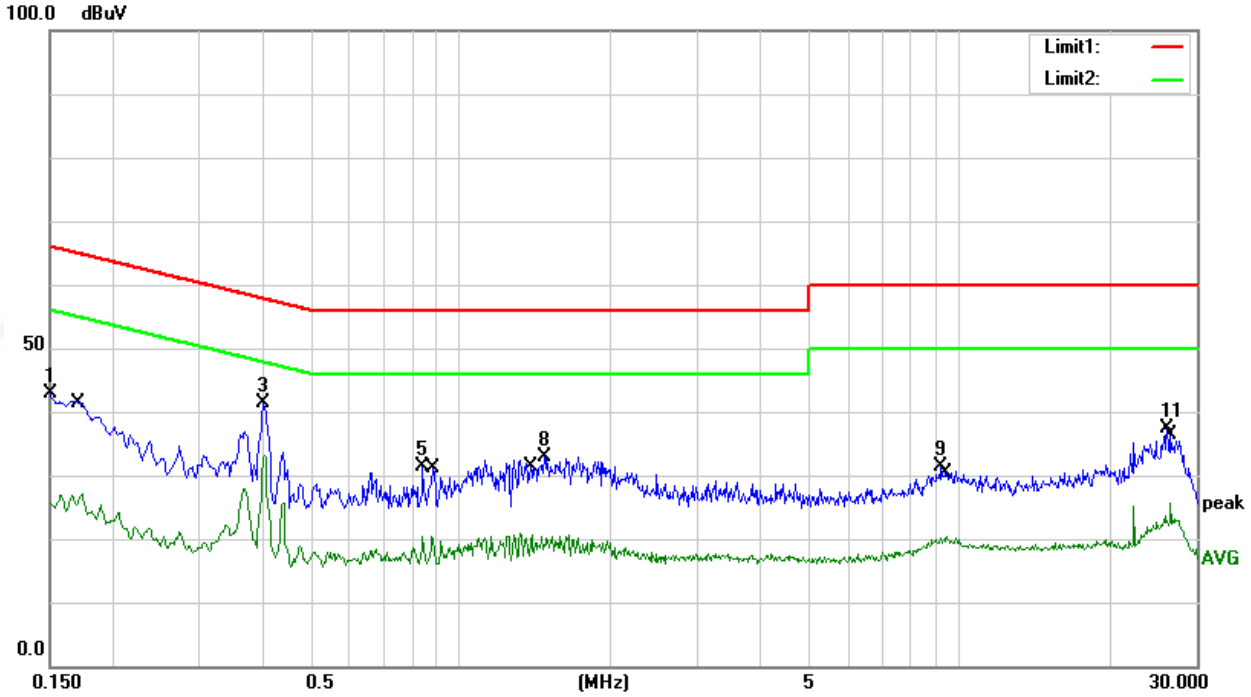
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.5 TEST RESULT

Temperature:	25.1(C)	Relative Humidity:	59%RH
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 25		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	23.10	19.78	42.88	66.00	-23.12	QP
2	0.1740	7.40	19.78	27.18	54.77	-27.59	AVG
3	0.4020	21.25	20.01	41.26	57.81	-16.55	QP
4	0.4060	13.11	20.01	33.12	47.73	-14.61	AVG
5	0.8420	11.64	19.80	31.44	56.00	-24.56	QP
6	0.8780	0.52	19.79	20.31	46.00	-25.69	AVG
7	1.3900	0.95	19.78	20.73	46.00	-25.27	QP
8	1.4740	13.13	19.78	32.91	56.00	-23.09	AVG
9	9.2300	11.11	20.17	31.28	60.00	-28.72	QP
10	9.4660	0.11	20.19	20.30	50.00	-29.70	AVG
11	26.1820	17.24	20.15	37.39	60.00	-22.61	QP
12	26.6220	5.46	20.15	25.61	50.00	-24.39	AVG

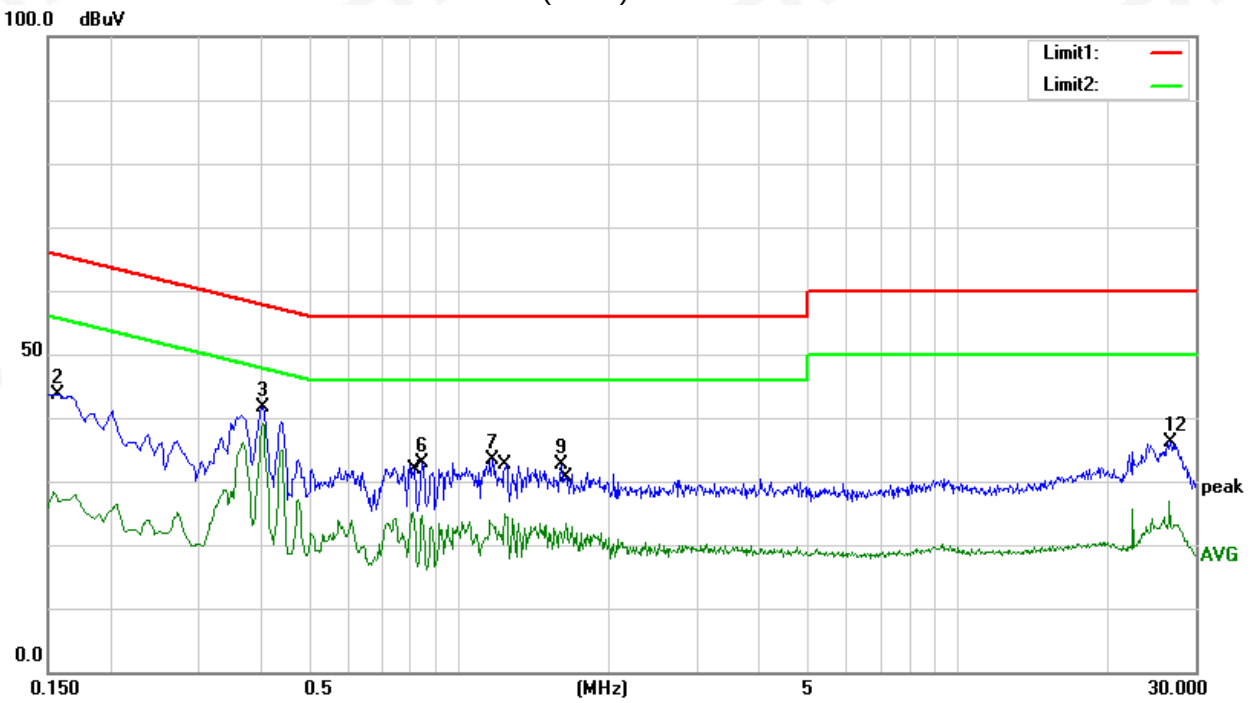
Remark:
1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor=LISN factor+Cable loss+Limiter (10dB)



Temperature:	25.1(C)	Relative Humidity:	59%RH
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 25		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1540	8.68	19.78	28.46	55.78	-27.32	QP
2	0.1580	23.91	19.78	43.69	65.57	-21.88	AVG
3	0.4060	21.66	20.01	41.67	57.73	-16.06	QP
4	0.4060	19.05	20.01	39.06	47.73	-8.67	AVG
5	0.8100	5.38	19.80	25.18	46.00	-20.82	QP
6	0.8460	13.16	19.80	32.96	56.00	-23.04	AVG
7	1.1700	13.64	19.78	33.42	56.00	-22.58	QP
8	1.2420	5.18	19.78	24.96	46.00	-21.04	AVG
9	1.6020	12.83	19.78	32.61	56.00	-23.39	QP
10	1.6420	3.47	19.79	23.26	46.00	-22.74	AVG
11	26.6260	6.66	20.15	26.81	50.00	-23.19	QP
12	26.7740	16.01	20.15	36.16	60.00	-23.84	AVG

Remark:
1. All readings are Quasi-Peak and Average values
2. Margin = Result (Result =Reading + Factor)–Limit
3. Factor=LISN factor+Cable loss+Limiter (10dB)



3.2 RADIATED EMISSION MEASUREMENT

3.2.1RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2020 below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (0.009MHz - 1000MHz)

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 (1000MHz-25GHz)

FREQUENCY (MHz)	(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).

LIMITS OF RESTRICTED FREQUENCY BANDS

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

For Radiated Emission

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP/AV
Start Frequency	9 KHz/150KHz(Peak/QP/AV)
Stop Frequency	150KHz/30MHz(Peak/QP/AV)
RB / VB (emission in restricted band)	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz); 200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP
Start Frequency	30 MHz(Peak/QP)
Stop Frequency	1000 MHz (Peak/QP)
RB / VB (emission in restricted band)	120 KHz / 300 KHz

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/AV
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier hamonic(Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 3 MHz(Peak) 1 MHz/1/T MHz(AVG)

For Restricted band

Spectrum Parameter	Setting
Detector	Peak/AV
Start/Stop Frequency	Lower Band Edge: 2310 to 2430 MHz Upper Band Edge: 2445 to 2500 MHz
RB / VB	1 MHz / 3 MHz(Peak) 1 MHz/1/T MHz(AVG)

Receiver Parameter	Setting
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

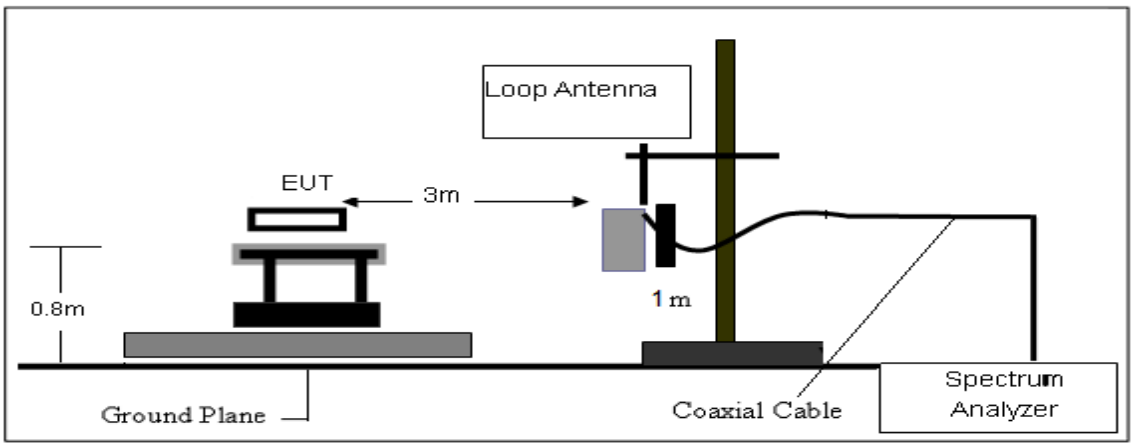
a. The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.
c. The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization 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 QuasiPeak detector mode will be re-measured.
e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

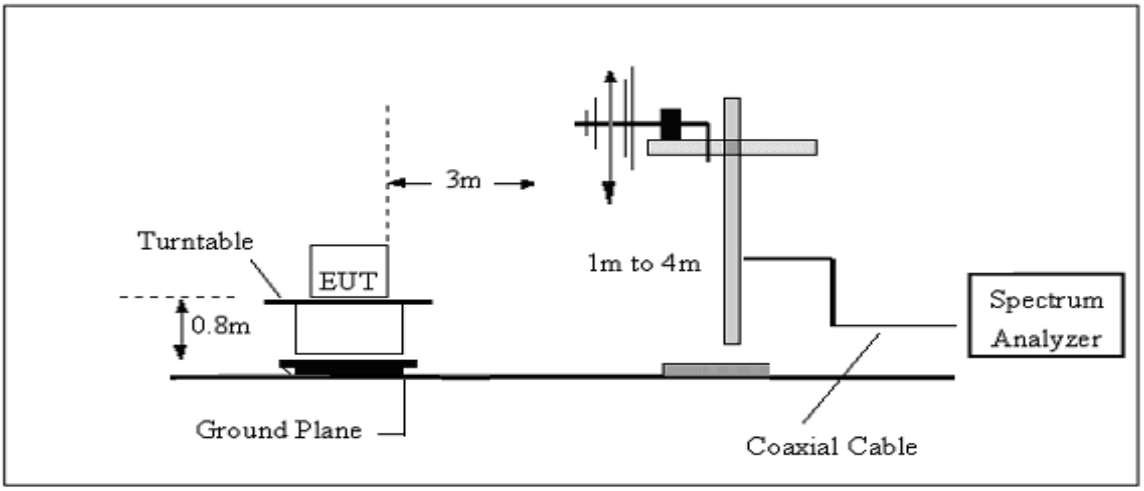
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.3 TEST SETUP

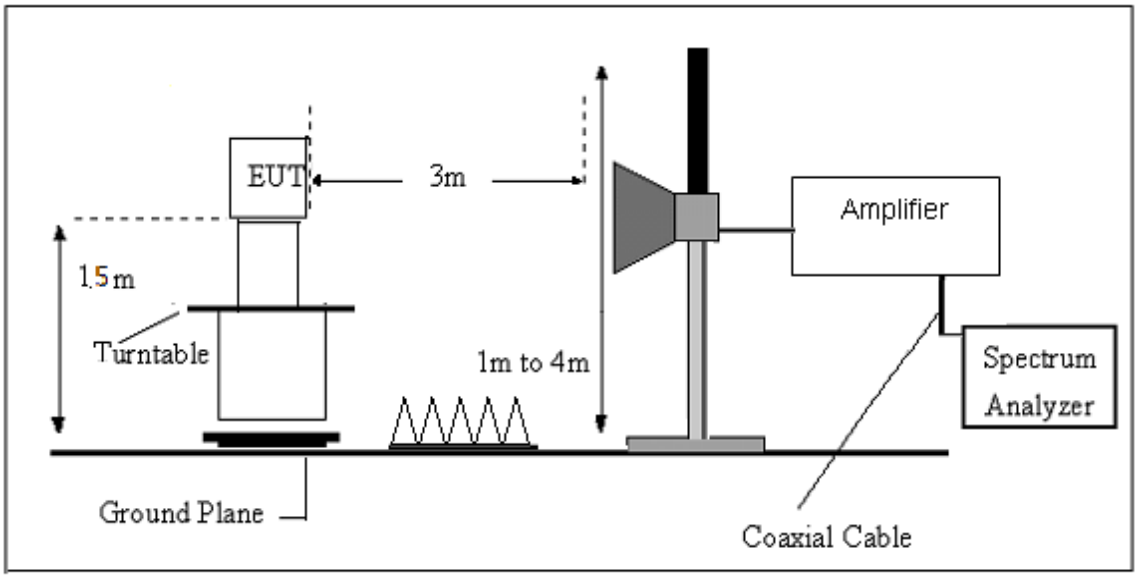
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.4 EUT OPERATING CONDITIONS

Please refer to section 3.1.4 of this report.

3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting theAmplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

Factor=AF+CL-AG

3.2.6 TEST RESULT

9KHz-30MHz

Temperature:	23.1(C)	Relative Humidtity:	60%RH
Test Voltage:	AC 120V/60HZ	Polarization:	--
Test Mode:	TX Mode		

Freq.	Reading	Limit	Margin	State	Test Result
(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.

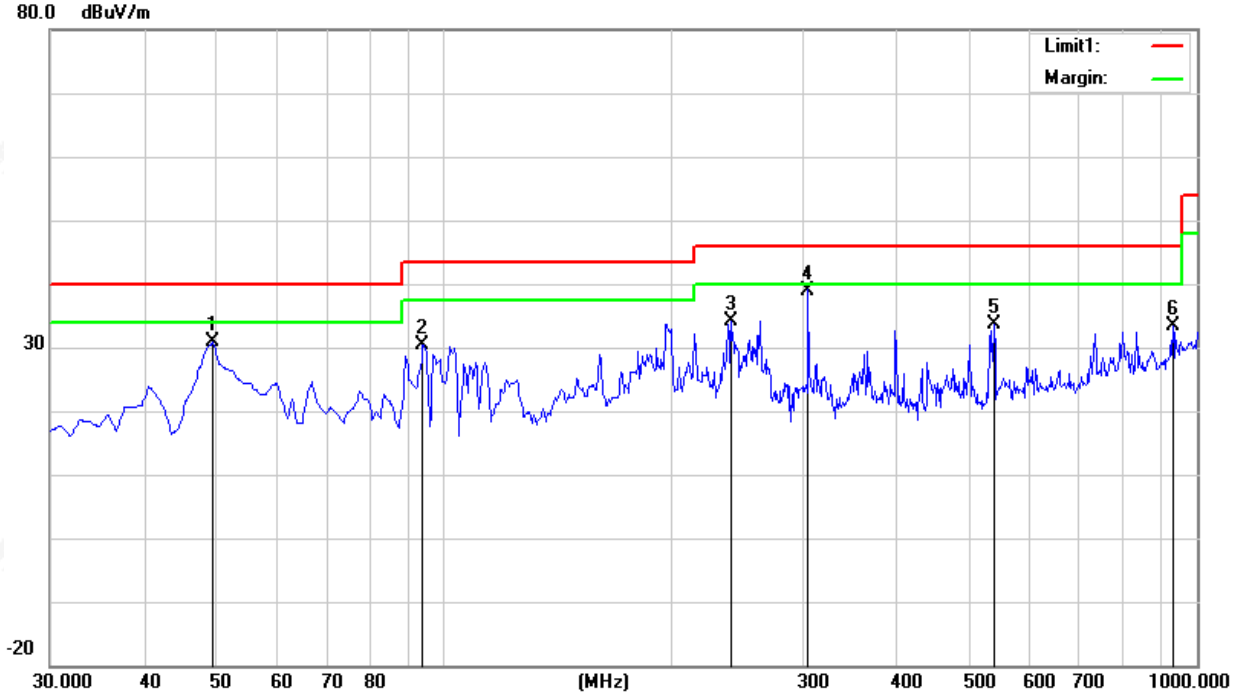
(30MHz - 1000MHz)

Temperature:	23.1(C)	Relative Humidtity:	60%RH
Test Voltage:	AC 120V/60HZ	Phase:	Horizontal
Test Mode:	Mode1~24 (Mode 10 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	49.4000	53.77	-22.95	30.82	40.00	-9.18	peak
2	94.0200	51.38	-20.89	30.49	43.50	-13.01	peak
3	241.4600	51.80	-17.73	34.07	46.00	-11.93	peak
4	305.4800	53.62	-14.62	39.00	46.00	-7.00	peak
5	539.2500	40.65	-6.90	33.75	46.00	-12.25	peak
6	932.1000	32.58	0.72	33.30	46.00	-12.70	peak

Remark:

1. Margin = Result (Result =Reading + Factor)–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain
3. All modes have been tested,only show the worst case.

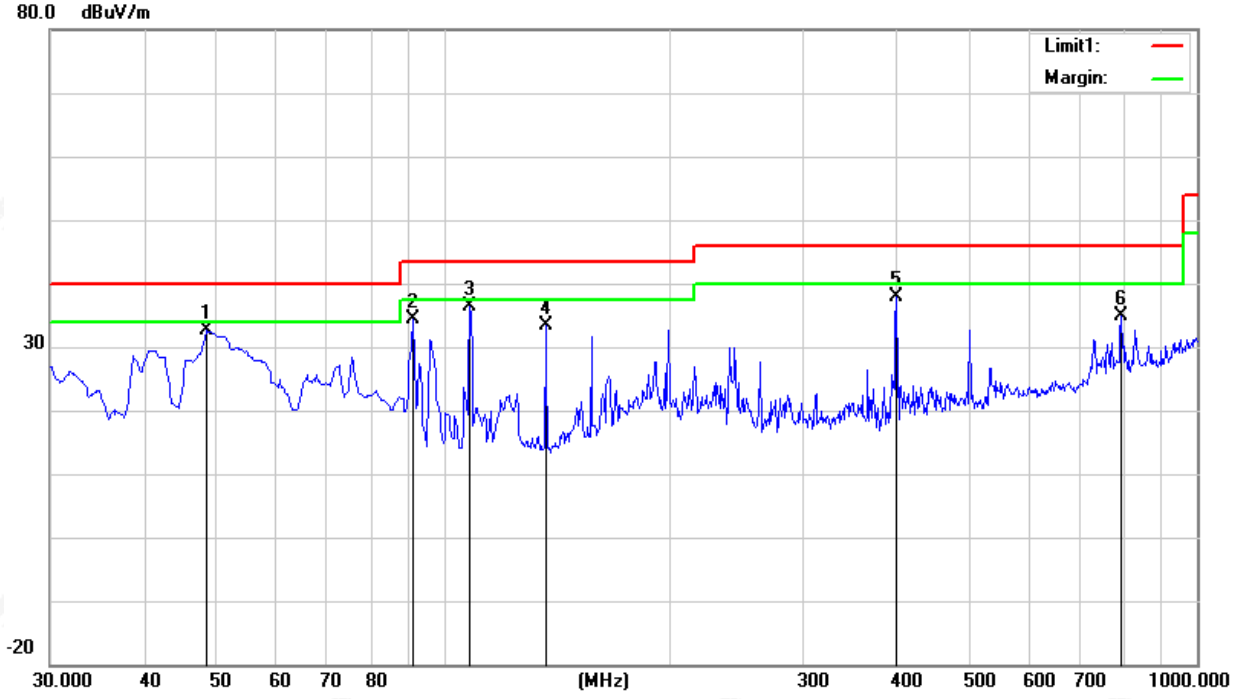


Temperature:	23.1(C)	Relative Humidtity:	60%RH
Test Voltage:	AC 120V/60HZ	Phase:	Vertical
Test Mode:	Mode1~24 (Mode 10 worst mode)		

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	48.4300	54.96	-22.44	32.52	40.00	-7.48	peak
2	91.1100	55.66	-21.31	34.35	43.50	-9.15	peak
3	108.5700	55.57	-19.22	36.35	43.50	-7.15	peak
4	136.7000	51.48	-18.07	33.41	43.50	-10.09	peak
5	399.5700	48.93	-11.16	37.77	46.00	-8.23	peak
6	795.3300	36.98	-2.01	34.97	46.00	-11.03	peak

Remark:.

1. Margin = Result (Result =Reading + Factor)–Limit
2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain
3. All modes have been tested,only show the worst case.



(1000MHz-25GHz) Spurious emission Requirements

802.11n40/2422 MHz

Above 1000 MHz										
Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Corrected Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dB)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
Low Channel (802.11n40/2422 MHz)										
3264.81	62.17	44.70	6.70	28.20	-9.80	52.37	74.00	-21.63	PK	Vertical
3264.81	51.37	44.70	6.70	28.20	-9.80	41.57	54.00	-12.43	AV	Vertical
3264.79	61.35	44.70	6.70	28.20	-9.80	51.55	74.00	-22.45	PK	Horizontal
3264.79	50.32	44.70	6.70	28.20	-9.80	40.52	54.00	-13.48	AV	Horizontal
4824.50	58.59	44.20	9.04	31.60	-3.56	55.03	74.00	-18.97	PK	Vertical
4824.50	50.20	44.20	9.04	31.60	-3.56	46.64	54.00	-7.36	AV	Vertical
4824.38	58.99	44.20	9.04	31.60	-3.56	55.43	74.00	-18.57	PK	Horizontal
4824.38	50.02	44.20	9.04	31.60	-3.56	46.46	54.00	-7.54	AV	Horizontal
5359.79	48.00	44.20	9.86	32.00	-2.34	45.66	74.00	-28.34	PK	Vertical
5359.79	39.59	44.20	9.86	32.00	-2.34	37.25	54.00	-16.75	AV	Vertical
5359.86	47.80	44.20	9.86	32.00	-2.34	45.46	74.00	-28.54	PK	Horizontal
5359.86	38.53	44.20	9.86	32.00	-2.34	36.19	54.00	-17.81	AV	Horizontal
7235.90	53.69	43.50	11.40	35.50	3.40	57.09	74.00	-16.91	PK	Vertical
7235.90	43.75	43.50	11.40	35.50	3.40	47.15	54.00	-6.85	AV	Vertical
7235.96	54.74	43.50	11.40	35.50	3.40	58.14	74.00	-15.86	PK	Horizontal
7235.96	44.83	43.50	11.40	35.50	3.40	48.23	54.00	-5.77	AV	Horizontal
Middle Channel (802.11n40/2437 MHz)										
3264.76	61.43	44.70	6.70	28.20	-9.80	51.63	74.00	-22.37	PK	Vertical
3264.76	51.64	44.70	6.70	28.20	-9.80	41.84	54.00	-12.16	AV	Vertical
3264.73	61.82	44.70	6.70	28.20	-9.80	52.02	74.00	-21.98	PK	Horizontal
3264.73	51.20	44.70	6.70	28.20	-9.80	41.40	54.00	-12.60	AV	Horizontal
4874.54	59.33	44.20	9.04	31.60	-3.56	55.77	74.00	-18.23	PK	Vertical
4874.54	49.94	44.20	9.04	31.60	-3.56	46.38	54.00	-7.62	AV	Vertical
4874.52	59.56	44.20	9.04	31.60	-3.56	56.00	74.00	-18.00	PK	Horizontal
4874.52	49.31	44.20	9.04	31.60	-3.56	45.75	54.00	-8.25	AV	Horizontal
5359.66	48.47	44.20	9.86	32.00	-2.34	46.13	74.00	-27.87	PK	Vertical
5359.66	39.74	44.20	9.86	32.00	-2.34	37.40	54.00	-16.60	AV	Vertical
5359.75	48.19	44.20	9.86	32.00	-2.34	45.85	74.00	-28.15	PK	Horizontal
5359.75	39.14	44.20	9.86	32.00	-2.34	36.80	54.00	-17.20	AV	Horizontal
7310.95	54.48	43.50	11.40	35.50	3.40	57.88	74.00	-16.12	PK	Vertical
7310.95	44.56	43.50	11.40	35.50	3.40	47.96	54.00	-6.04	AV	Vertical
7310.80	54.68	43.50	11.40	35.50	3.40	58.08	74.00	-15.92	PK	Horizontal
7310.80	44.42	43.50	11.40	35.50	3.40	47.82	54.00	-6.18	AV	Horizontal

High Channel (802.11n40/2452 MHz)										
3264.66	62.00	44.70	6.70	28.20	-9.80	52.20	74.00	-21.80	PK	Vertical
3264.66	51.12	44.70	6.70	28.20	-9.80	41.32	54.00	-12.68	AV	Vertical
3264.56	61.23	44.70	6.70	28.20	-9.80	51.43	74.00	-22.57	PK	Horizontal
3264.56	51.27	44.70	6.70	28.20	-9.80	41.47	54.00	-12.53	AV	Horizontal
4924.45	58.42	44.20	9.04	31.60	-3.56	54.86	74.00	-19.14	PK	Vertical
4924.45	50.27	44.20	9.04	31.60	-3.56	46.71	54.00	-7.29	AV	Vertical
4924.35	58.64	44.20	9.04	31.60	-3.56	55.08	74.00	-18.92	PK	Horizontal
4924.35	49.99	44.20	9.04	31.60	-3.56	46.43	54.00	-7.57	AV	Horizontal
5359.70	49.17	44.20	9.86	32.00	-2.34	46.83	74.00	-27.17	PK	Vertical
5359.70	38.98	44.20	9.86	32.00	-2.34	36.64	54.00	-17.36	AV	Vertical
5359.74	48.28	44.20	9.86	32.00	-2.34	45.94	74.00	-28.06	PK	Horizontal
5359.74	38.42	44.20	9.86	32.00	-2.34	36.08	54.00	-17.92	AV	Horizontal
7385.89	54.19	43.50	11.40	35.50	3.40	57.59	74.00	-16.41	PK	Vertical
7385.89	44.20	43.50	11.40	35.50	3.40	47.60	54.00	-6.40	AV	Vertical
7385.84	54.19	43.50	11.40	35.50	3.40	57.59	74.00	-16.41	PK	Horizontal
7385.84	44.97	43.50	11.40	35.50	3.40	48.37	54.00	-5.63	AV	Horizontal

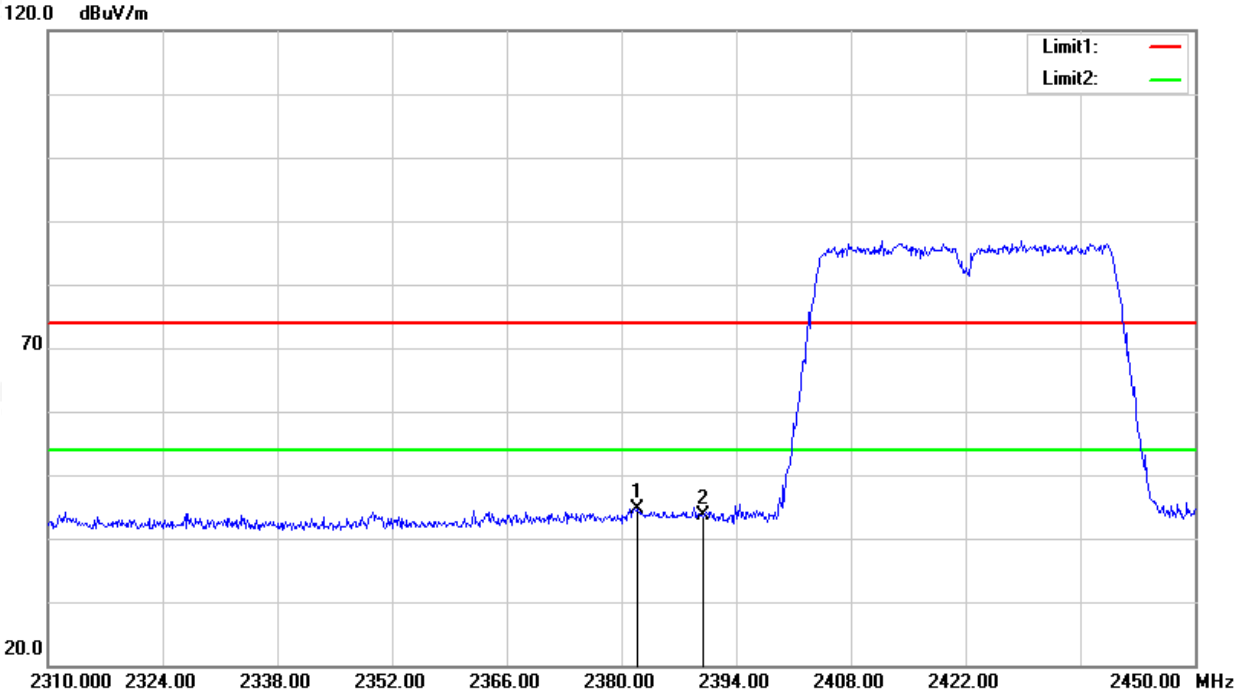
Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Scan with 802.11b, 802.11g, 802.11n (HT-20), 802.11n(HT40), 802.11ax(HE20), 802.11ax(HE40), 802.11ac(VHT20), 802.11ac(VHT40) the worst case is 802.11 n(HT40).
   Emission Level = Reading + Factor
   Margin = Emission Level-Limit
3. The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.

3.2.6 TEST RESULTS(Band edge Requirements)

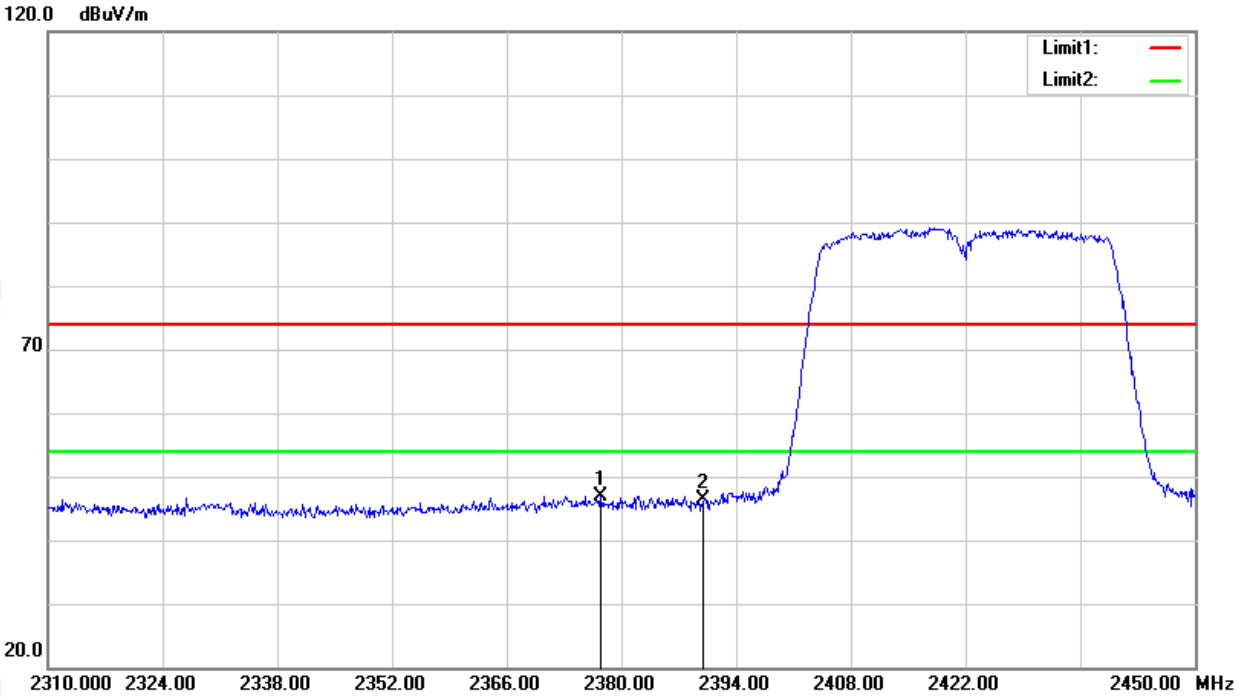
802.11 n(HT40)-Low

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2381.960	40.51	4.22	44.73	74.00	-29.27	peak
2	2390.000	39.31	4.34	43.65	74.00	-30.35	peak

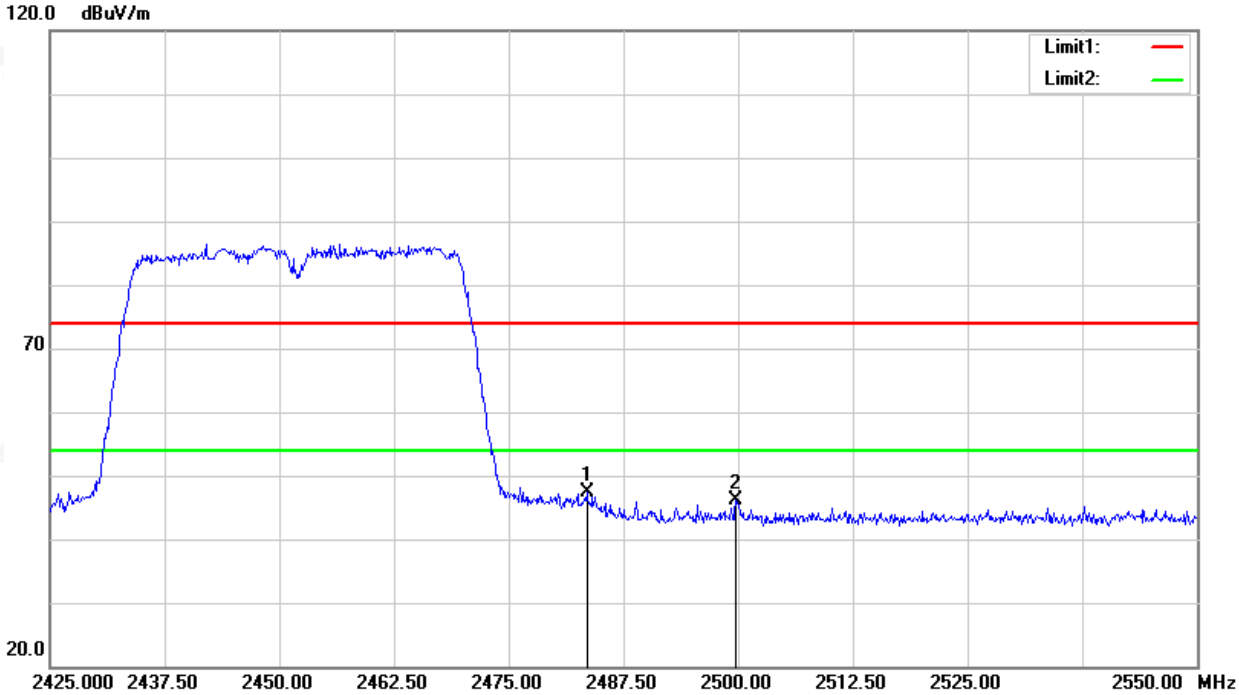
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2377.480	42.75	4.15	46.90	74.00	-27.10	peak
2	2390.000	42.03	4.34	46.37	74.00	-27.63	peak

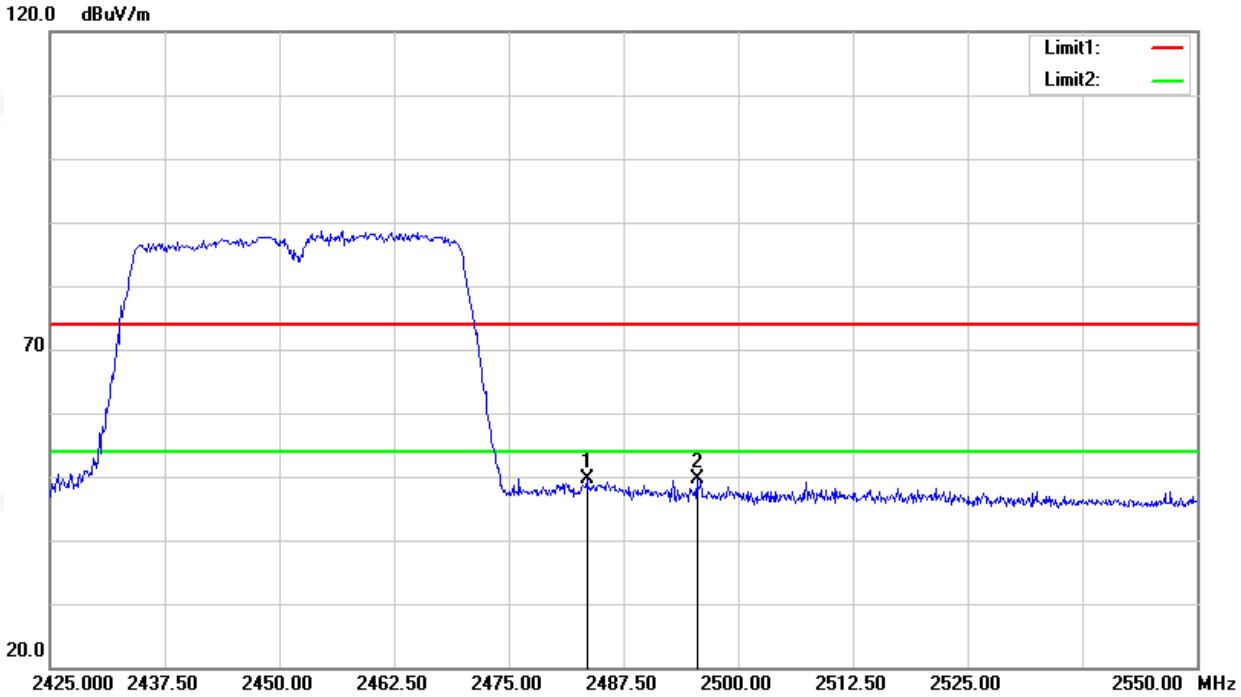
802.11 n(HT40)-High

Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	42.66	4.60	47.26	74.00	-26.74	peak
2	2499.750	41.55	4.65	46.20	74.00	-27.80	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	44.94	4.60	49.54	74.00	-24.46	peak
2	2495.500	45.08	4.63	49.71	74.00	-24.29	peak

Note: 802.11b, 802.11g, 802.11n (HT-20), 802.11n(HT40), 802.11ax(HE20), 802.11ax(HE40), 802.11ac(VHT20), 802.11ac(VHT40) mode all have been tested, the worst case is 802.11 n(HT40), only show the worst case.

4. ANTENNA REQUIREMENT

4.1 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 partyshall be used with the device.

4.2 EUT ANTENNA

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

APPENDIX 2-PHOTOS OF TEST SETUP

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

※※※※※END OF THE REPORT※※※※※