FCC RADIO TEST REPORT
FCC ID:2AFZT-L1

Product：	Intelligent micro laser projection
Trade Name：	LTV
Model Name：	L1
Serial Model：	N/A
Report No.：	NTEK-2015NT07162286F4

Prepared for

ILLUMINANCE(CANTON) Co.,LTD.

Room 17B, 17th floor, building A, central avenue, No.2002 BaoYuan Road, XiXiang, Bao'an disrict, Shenzhen, Guangdong, P. R. China

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.

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Website:www.ntek.org.cn

TEST RESULT CERTIFICATION

Applicant's name	ILLUMINANCE(CANTON) Co.,LTD.
Address	Room 17B, 17th floor, building A, central avenue, No.2002 BaoYuan Road,XiXiang, Bao'an disrict, Shenzhen, Guangdong, P. R. China
Manufacture's Name...	ILLUMINANCE(CANTON) Co.,LTD.
Address	Room 17B, 17th floor, building A, central avenue, No.2002 BaoYuan Road,XiXiang, Bao'an disrict, Shenzhen, Guangdong, P. R. China
Product description	
Product name	Intelligent micro laser projection
Model and/or type reference	L1
Serial Model	N/A
Standards	FCC Part15.247 01 Oct. 2014
Test procedure	ANSI C63.10-2013 and KDB 558074 D01 DTS Meas Guidance v03r02

This device described above has been tested by NTEK, 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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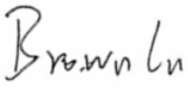
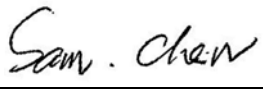
Date of Test	
Date (s) of performance of tests	16 Jul. 2015 ~01 Sep. 2015
Date of Issue	01 Sep. 2015
Test Result	**Pass**

Testing Engineer : 

(Allen Liu)

Technical Manager : 

(Brown Lu)

Authorized Signatory : 

(Sam Chen)

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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 (c)	Radiated Spurious Emission	PASS	
15.247 (d)	Power Spectral Density	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

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

1.1 TEST FACILITY

NTEK Testing Technology Co., Ltd
Add.:1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.
FCC Registration No.:238937; IC Registration No.:9270A-1
CNAS Registration No.:L5516

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

<table>
<tr><td>Equipment</td><td>Intelligent micro laser projection</td></tr>
<tr><td>Trade Name</td><td>LTV</td></tr>
<tr><td>Model Name</td><td>L1</td></tr>
<tr><td>Product Description</td><td>2.4G
<table>
<tr><td>Operation Frequency(2.4G):</td><td>802.11b/g/n(20MHz):2412~2462 MHz</td></tr>
<tr><td>Modulation Type:</td><td>IEEE 802.11b :
DSSS (CCK, QPSK, DBPSK)
IEEE 802.11g/n (HT20) : OFDM
(64QAM, 16QAM, QPSK, BPSK)</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):150/144.44/130/117/
115.56/104/86.67/78/52/6.5Mbps</td></tr>
<tr><td>Number Of Channel</td><td>802.11b/g/n20MHz:11CH</td></tr>
<tr><td>Antenna Designation:</td><td>Please see Note 3.</td></tr>
<tr><td>Antenna Gain (dBi)</td><td>Please see Note 3.</td></tr>
</table>
5G
<table>
<tr><td>Operation Frequency:</td><td>5725 MHz ~ 5850 MHz</td></tr>
<tr><td>Modulation Type:</td><td>OFDM (BPSK / QPSK / 16QAM / 64QAM)</td></tr>
<tr><td>Bit Rate of Transmitter</td><td>802.11a:54/48/36/24/18/12/9/6Mbps
802.11n(20MHz):150/144.44/130/117/
115.56/104/86.67/78/52/6.5Mbps</td></tr>
<tr><td>Number Of Channel</td><td>802.11a/n20MHz:7CH</td></tr>
<tr><td>Antenna Designation:</td><td>Please see Note 3.</td></tr>
<tr><td>Antenna Gain (dBi)</td><td>Please see Note 3.</td></tr>
</table></td></tr>
<tr><td>Channel List</td><td>Please refer to the Note 2.</td></tr>
<tr><td>Ratings</td><td>DC 3.7V</td></tr>
<tr><td>Adapter</td><td>Mode : S31A22
Input: 100-240V~, 50/60Hz, 0.35A
Output: 5.0V⎓, 2.0A</td></tr>
<tr><td>Battery</td><td>DC 3.7V, 3000mAh</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual</td></tr>
</table>

Note:

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

2. 2.4GHz

Channel List for 802.11b/g/n(20 MHz)							
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	-	-

5GHz

802.11a/n20 MHz Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	153	5765	157	5785	161	5805
165	5825	-	-	-	-	-	-

3.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Gain (dBi)	NOTE
A	N/A	N/A	FPCB Antenna	1.0	Wifi Antenna

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	Link Mode
Mode 5	802.11a /n 20 CH149/ CH157/ CH 165

For Conducted Emission	
Final Test Mode	Description
Mode 4	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	Link Mode
Mode 5	802.11a /n 20 CH149/ CH157/ CH 165

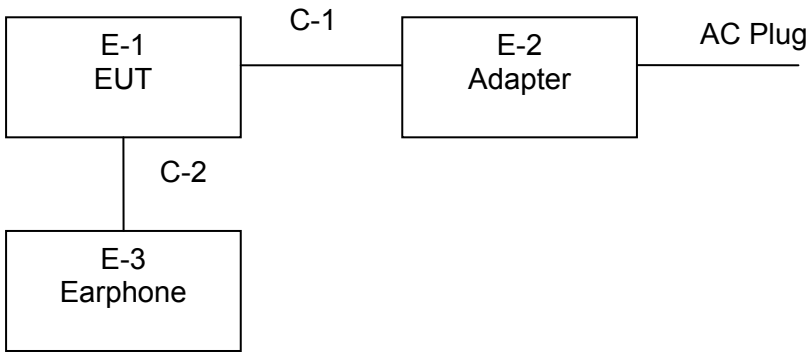
Note:

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

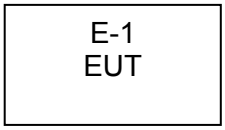
(2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission Test



Radiated Spurious 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	Brand	Model/Type No.	Series No.	Note
E-1	Intelligent micro laser projection	LTV	L1	N/A	EUT
E-2	Adapter	N/A	S31A22	N/A	
E-3	Earphone	N/A	2688	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.2m	
C-2	NO	NO	1.0m	

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	MY45108040	2015.07.06	2016.07.05	1 year
2	Test Receiver	R&S	ESPI	101318	2015.06.07	2016.06.06	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2015.07.06	2016.07.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2015.06.07	2016.06.06	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2015.06.07	2016.06.06	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2015.07.06	2016.07.05	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2015.07.06	2016.07.05	1 year
8	Amplifier	EM	EM-30180	060538	2014.12.22	2015.12.21	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2015.06.08	2016.06.07	1 year
10	Power Meter	R&S	NRVS	100696	2015.07.06	2016.07.05	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2015.07.06	2016.07.05	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	101160	2015.06.06	2016.06.05	1 year
2	LISN	R&S	ENV216	101313	2015.08.24	2016.08.23	1 year
3	LISN	EMCO	3816/2	00042990	2015.08.24	2016.08.23	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2015.06.07	2016.06.06	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2015.06.07	2016.06.06	1 year
6	Absorbing clamp	R&S	MOS-21	100423	2015.06.08	2016.06.07	1 year

2	LISN	R&S	ENV216	101313	2014.08.24	2015.08.23	1 year
3	LISN	EMCO	3816/2	00042990	2014.08.24	2015.08.23	1 year

1	Attenuation	MCE	24-10-34	BN9258	2015.06.08	2016.06.07	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

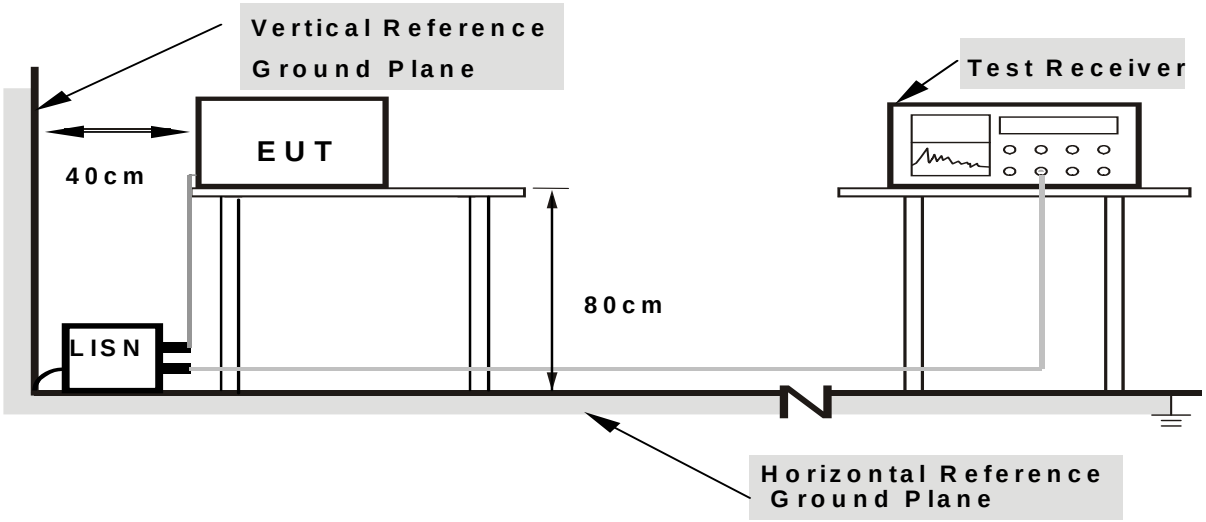
3.1.2 TEST PROCEDURE

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

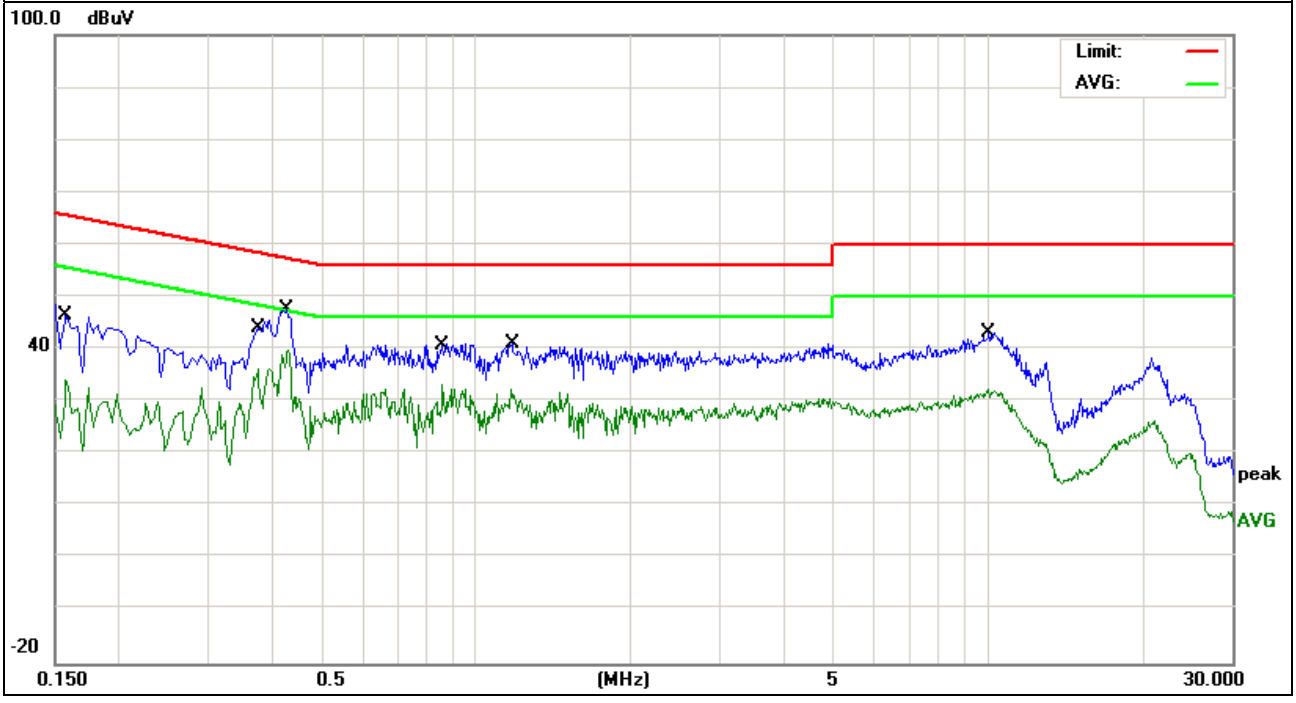
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6 TEST RESULTS

EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V From adapter AC120V/60Hz	Test Mode：	Mode 4(2.4G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1580	36.96	9.63	46.59	65.56	-18.97	QP
0.1580	24.62	9.63	34.25	55.56	-21.31	AVG
0.3738	34.63	9.28	43.91	58.41	-14.50	QP
0.3738	26.96	9.28	36.24	48.41	-12.17	AVG
0.4299	38.48	9.29	47.77	57.25	-9.48	QP
0.4299	30.50	9.29	39.79	47.25	-7.46	AVG
0.8578	31.02	9.58	40.60	56.00	-15.40	QP
0.8578	23.64	9.58	33.22	46.00	-12.78	AVG
1.1778	31.47	9.58	41.05	56.00	-14.95	QP
1.1778	22.82	9.58	32.40	46.00	-13.60	AVG
10.0219	33.48	9.68	43.16	60.00	-16.84	QP
10.0219	22.79	9.68	32.47	50.00	-17.53	AVG

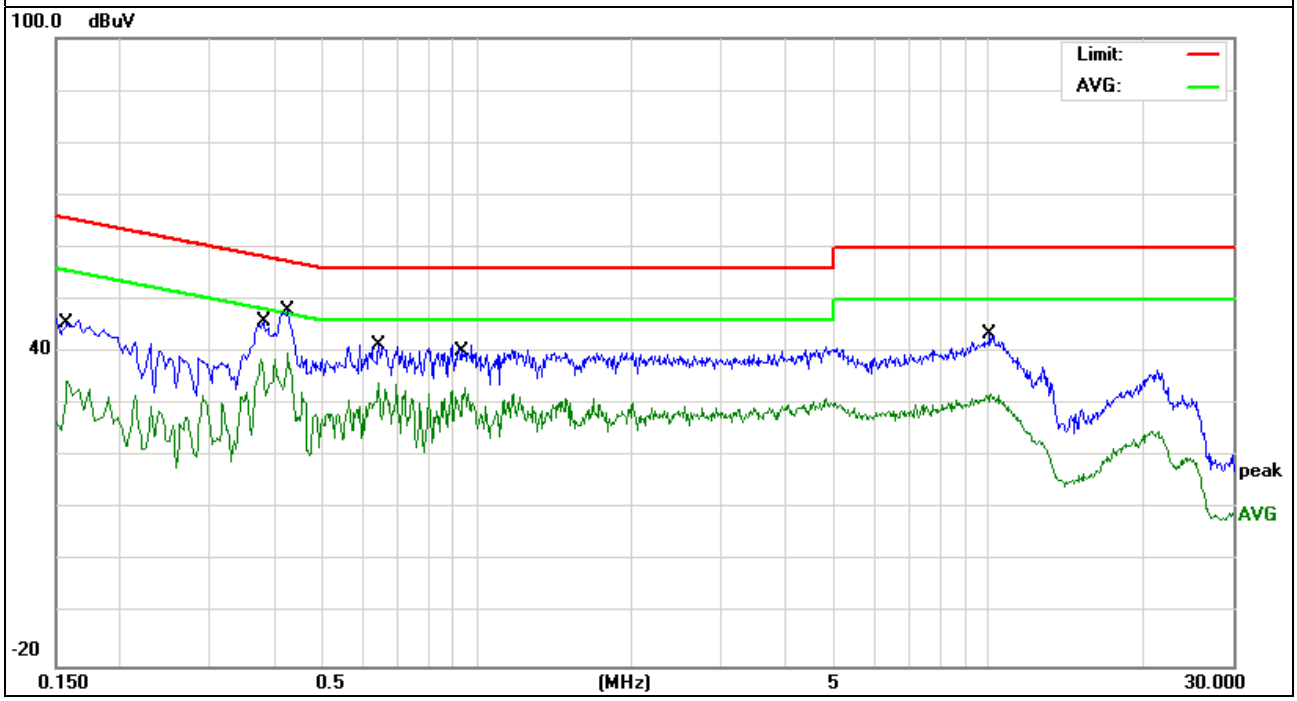
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5V From adapter AC120V/60Hz	Test Mode：	Mode 4(2.4G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1580	36.92	9.63	46.55	65.56	-19.01	QP
0.1580	24.79	9.63	34.42	55.56	-21.14	AVG
0.3820	36.50	9.24	45.74	58.23	-12.49	QP
0.3820	29.49	9.24	38.73	48.23	-9.50	AVG
0.4259	38.70	9.27	47.97	57.33	-9.36	QP
0.4259	30.58	9.27	39.85	47.33	-7.48	AVG
0.6419	31.34	9.57	40.91	56.00	-15.09	QP
0.6419	24.62	9.57	34.19	46.00	-11.81	AVG
0.9458	31.19	9.58	40.77	56.00	-15.23	QP
0.9458	23.61	9.58	33.19	46.00	-12.81	AVG
10.1097	33.65	9.68	43.33	60.00	-16.67	QP
10.1097	22.39	9.68	32.07	50.00	-17.93	AVG

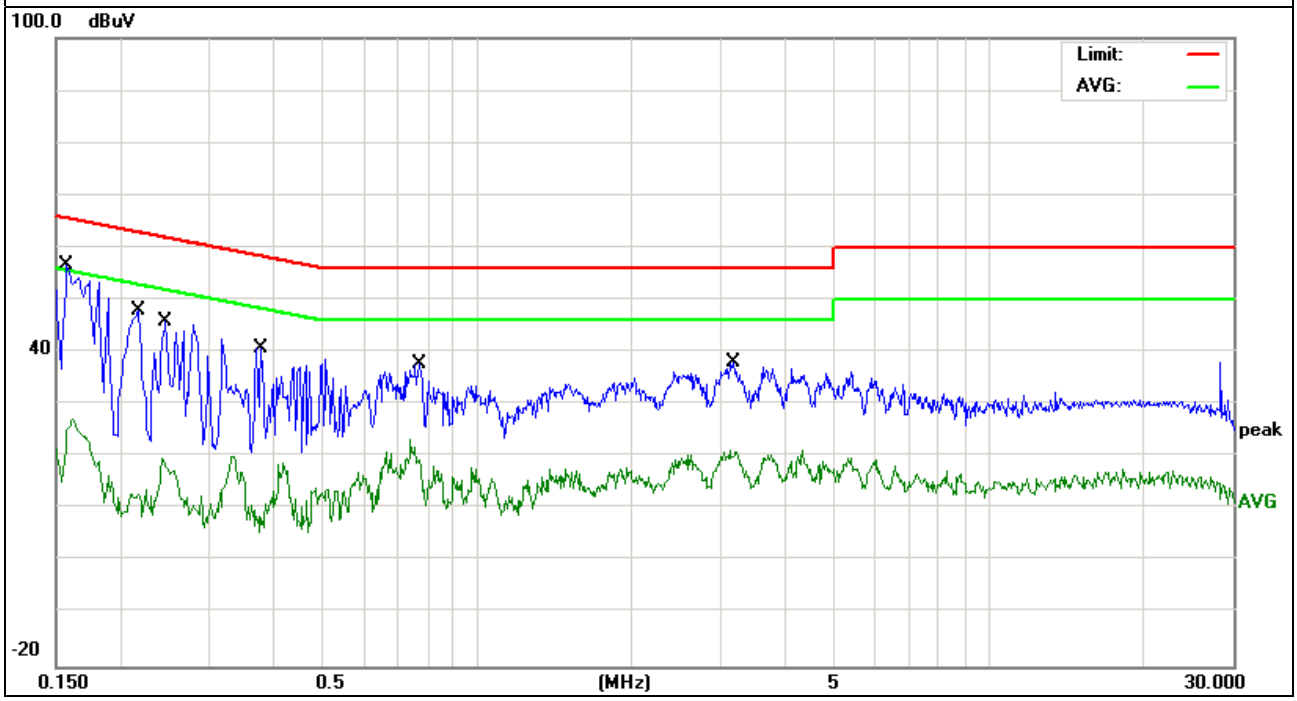
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V From adapter AC240V/60Hz	Test Mode：	Mode 4(2.4G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1580	47.14	9.62	56.76	65.56	-8.80	QP
0.1580	31.63	9.62	41.25	55.56	-14.31	AVG
0.2179	38.22	9.63	47.85	62.89	-15.04	QP
0.2179	29.73	9.63	39.36	52.89	-13.53	AVG
0.2459	36.32	9.66	45.98	61.89	-15.91	QP
0.2459	26.59	9.66	36.25	51.89	-15.64	AVG
0.3780	31.25	9.44	40.69	58.32	-17.63	QP
0.3780	20.76	9.44	30.20	48.32	-18.12	AVG
0.7740	27.85	9.77	37.62	56.00	-18.38	QP
0.7740	18.35	9.77	28.12	46.00	-17.88	AVG
3.1699	28.33	9.67	38.00	56.00	-18.00	QP
3.1699	16.80	9.67	26.47	46.00	-19.53	AVG

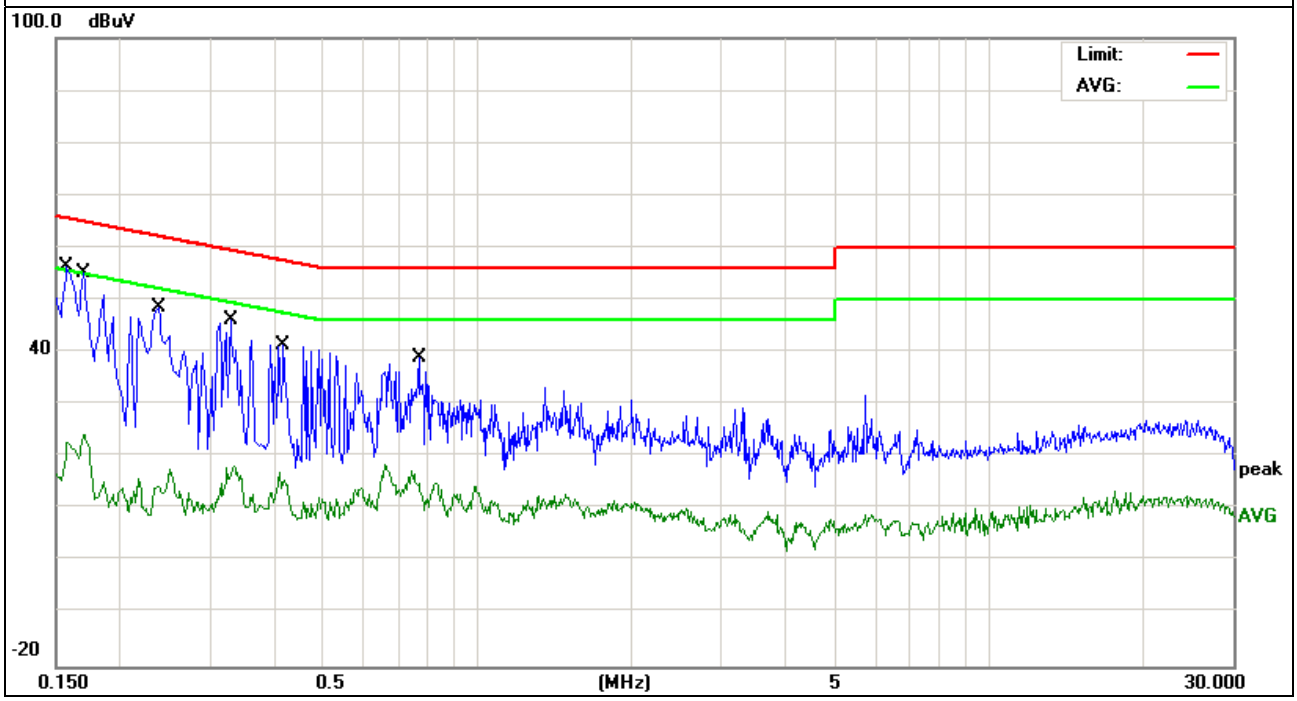
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5V From adapter AC240V/60Hz	Test Mode：	Mode 4(2.4G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1580	46.74	9.60	56.34	65.56	-9.22	QP
0.1580	26.98	9.60	36.58	55.56	-18.98	AVG
0.1700	45.58	9.61	55.19	64.96	-9.77	QP
0.1700	30.28	9.61	39.89	54.96	-15.07	AVG
0.2379	38.98	9.61	48.59	62.17	-13.58	QP
0.2379	30.60	9.61	40.21	52.17	-11.96	AVG
0.3300	36.42	9.62	46.04	59.45	-13.41	QP
0.3300	22.96	9.62	32.58	49.45	-16.87	AVG
0.4178	31.73	9.64	41.37	57.49	-16.12	QP
0.4178	20.94	9.64	30.58	47.49	-16.91	AVG
0.7700	29.21	9.63	38.84	56.00	-17.16	QP
0.7700	20.15	9.63	29.78	46.00	-16.22	AVG

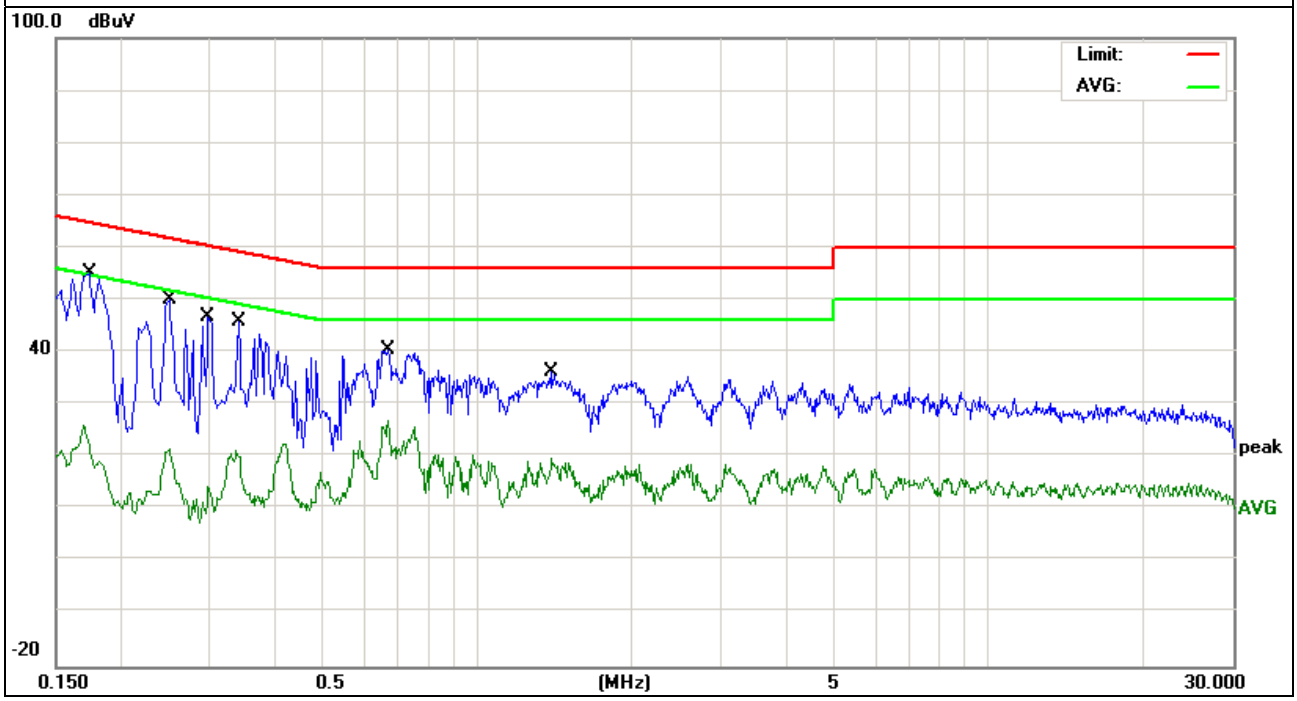
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V From PC AC120V/60Hz	Test Mode：	Mode 4(2.4G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1737	45.51	9.62	55.13	64.78	-9.65	QP
0.1737	20.74	9.62	30.36	54.78	-24.42	AVG
0.2500	40.38	9.67	50.05	61.75	-11.70	QP
0.2500	33.10	9.67	42.77	51.75	-8.98	AVG
0.2977	36.91	9.74	46.65	60.30	-13.65	QP
0.2977	28.28	9.74	38.02	50.30	-12.28	AVG
0.3420	36.33	9.58	45.91	59.15	-13.24	QP
0.3420	24.20	9.58	33.78	49.15	-15.37	AVG
0.6700	30.75	9.78	40.53	56.00	-15.47	QP
0.6700	20.32	9.78	30.10	46.00	-15.90	AVG
1.4017	26.44	9.70	36.14	56.00	-19.86	QP
1.4017	18.42	9.70	28.12	46.00	-17.88	AVG

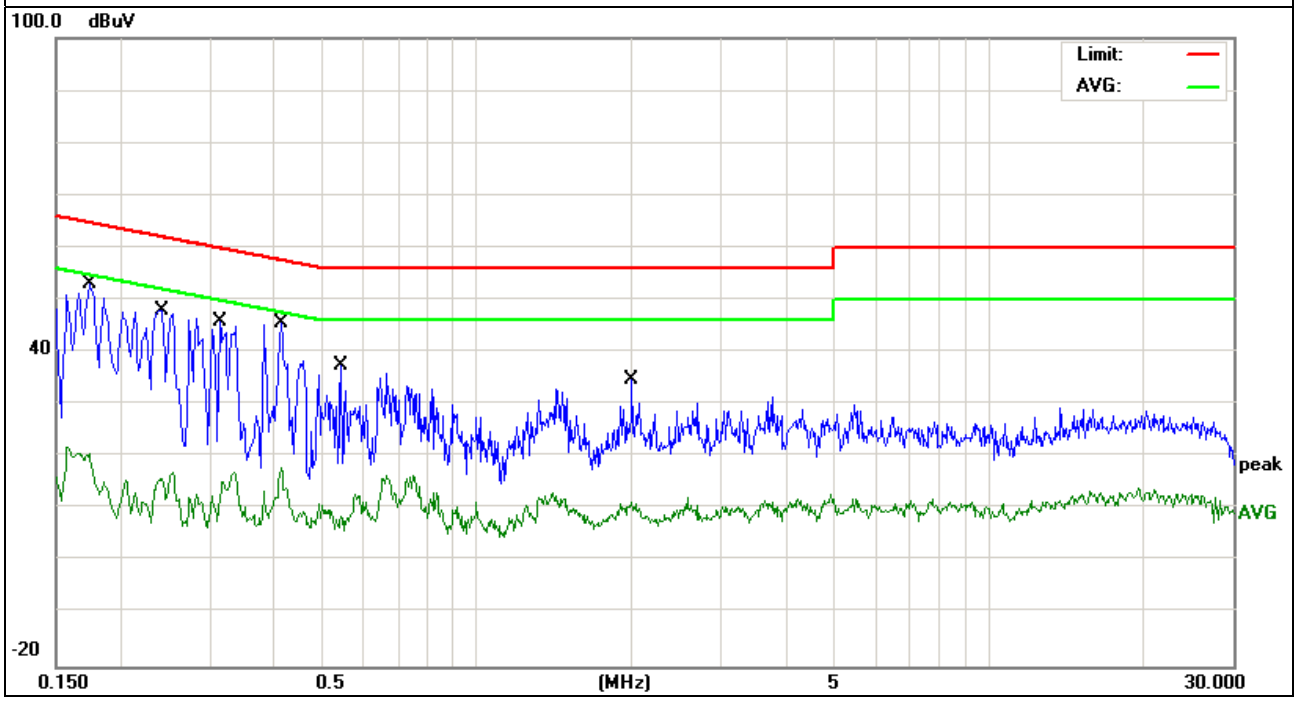
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5V From PC AC120V/60Hz	Test Mode：	Mode 4(2.4G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1737	43.33	9.61	52.94	64.78	-11.84	QP
0.1737	32.75	9.61	42.36	54.78	-12.42	AVG
0.2419	38.47	9.61	48.08	62.03	-13.95	QP
0.2419	23.04	9.61	32.65	52.03	-19.38	AVG
0.3140	36.26	9.62	45.88	59.86	-13.98	QP
0.3140	23.85	9.62	33.47	49.86	-16.39	AVG
0.4138	35.91	9.64	45.55	57.57	-12.02	QP
0.4138	19.94	9.64	29.58	47.57	-17.99	AVG
0.5420	27.82	9.67	37.49	56.00	-18.51	QP
0.5420	19.98	9.67	29.65	46.00	-16.35	AVG
2.0059	25.23	9.54	34.77	56.00	-21.23	QP
2.0059	17.61	9.54	27.15	46.00	-18.85	AVG

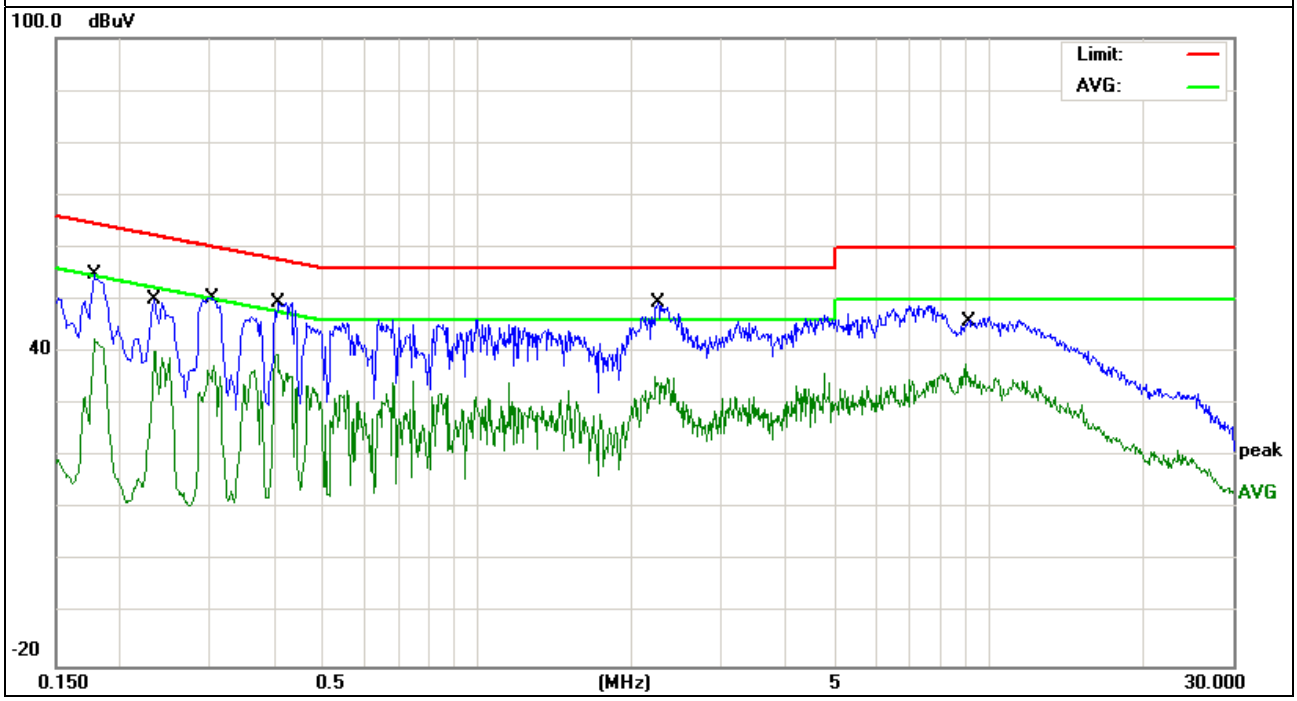
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V From PC AC240V/60Hz	Test Mode：	Mode 4(2.4G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1779	42.72	9.62	52.34	64.58	-12.24	QP
0.1779	32.99	9.62	42.61	54.58	-11.97	AVG
0.2340	40.52	9.65	50.17	62.30	-12.13	QP
0.2340	30.58	9.65	40.23	52.30	-12.07	AVG
0.3059	40.68	9.73	50.41	60.08	-9.67	QP
0.3059	27.70	9.73	37.43	50.08	-12.65	AVG
0.4060	38.47	9.38	47.85	57.73	-9.88	QP
0.4060	30.21	9.38	39.59	47.73	-8.14	AVG
2.2259	38.93	9.65	48.58	56.00	-7.42	QP
2.2259	25.70	9.65	35.35	46.00	-10.65	AVG
9.0259	35.53	9.72	45.25	60.00	-14.75	QP
9.0259	27.95	9.72	37.67	50.00	-12.33	AVG

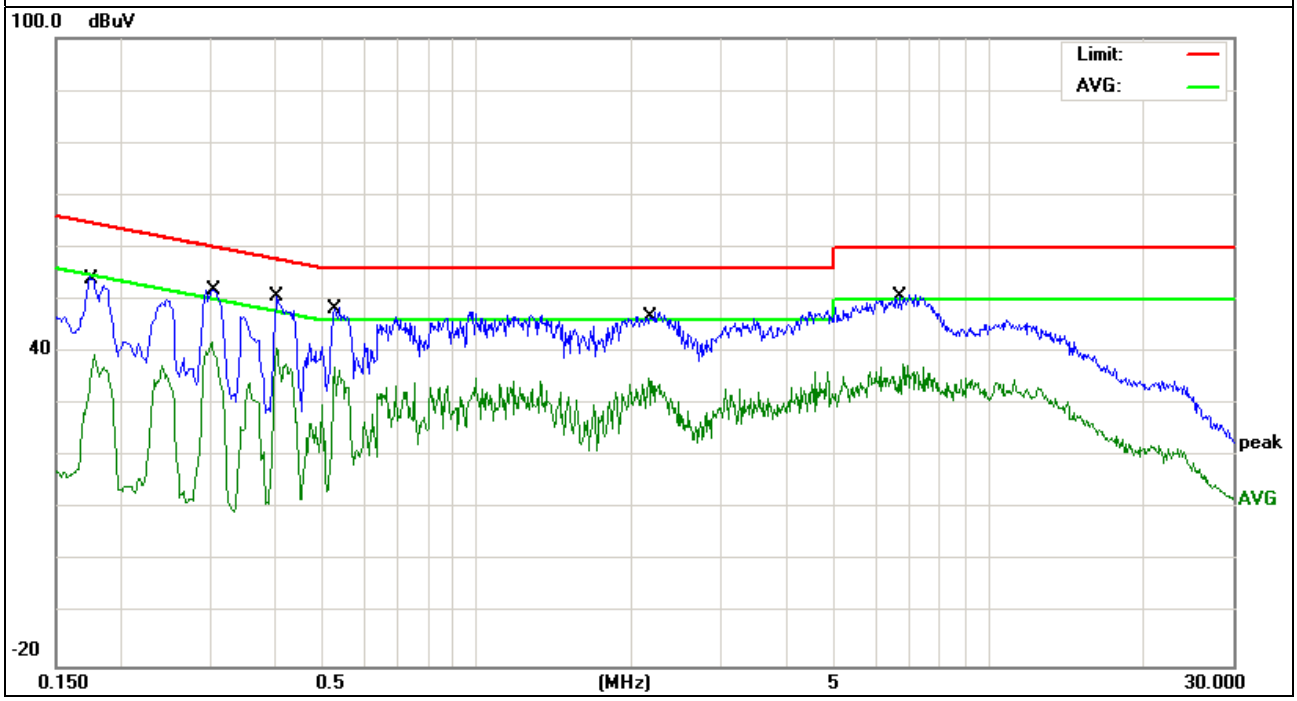
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5V From PC AC240V/60Hz	Test Mode：	Mode 4(2.4G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1779	44.90	9.61	54.51	64.58	-10.07	QP
0.1779	30.03	9.61	39.64	54.58	-14.94	AVG
0.3019	42.29	9.62	51.91	60.19	-8.28	QP
0.3019	32.39	9.62	42.01	50.19	-8.18	AVG
0.4060	41.00	9.64	50.64	57.73	-7.09	QP
0.4060	31.05	9.64	40.69	47.73	-7.04	AVG
0.5260	38.68	9.68	48.36	56.00	-7.64	QP
0.5260	27.44	9.68	37.12	46.00	-8.88	AVG
2.1659	37.34	9.54	46.88	56.00	-9.12	QP
2.1659	25.41	9.54	34.95	46.00	-11.05	AVG
6.7739	40.82	9.51	50.33	60.00	-9.67	QP
6.7739	28.24	9.51	37.75	50.00	-12.25	AVG

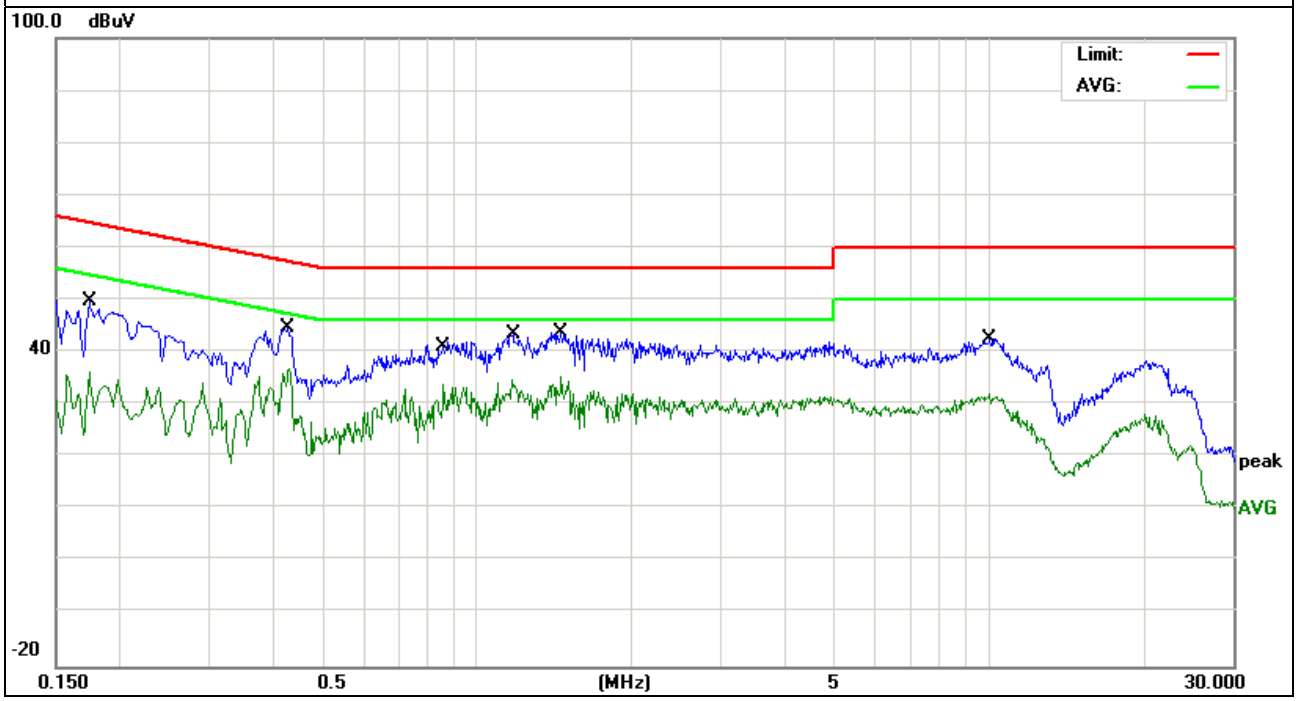
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V From adapter AC120V/60Hz	Test Mode：	Mode 4(5.0G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1737	40.16	9.57	49.73	64.78	-15.05	QP
0.1737	26.56	9.57	36.13	54.78	-18.65	AVG
0.4259	35.50	9.27	44.77	57.33	-12.56	QP
0.4299	27.50	9.29	36.79	47.25	-10.46	AVG
0.8578	31.76	9.58	41.34	56.00	-14.66	QP
0.8578	24.14	9.58	33.72	46.00	-12.28	AVG
1.1697	33.08	9.58	42.66	56.00	-13.34	QP
1.1697	25.32	9.58	34.90	46.00	-11.10	AVG
1.4617	34.30	9.58	43.88	56.00	-12.12	QP
1.4617	25.62	9.58	35.20	46.00	-10.80	AVG
10.0219	32.42	9.68	42.10	60.00	-17.90	QP
10.0219	22.29	9.68	31.97	50.00	-18.03	AVG

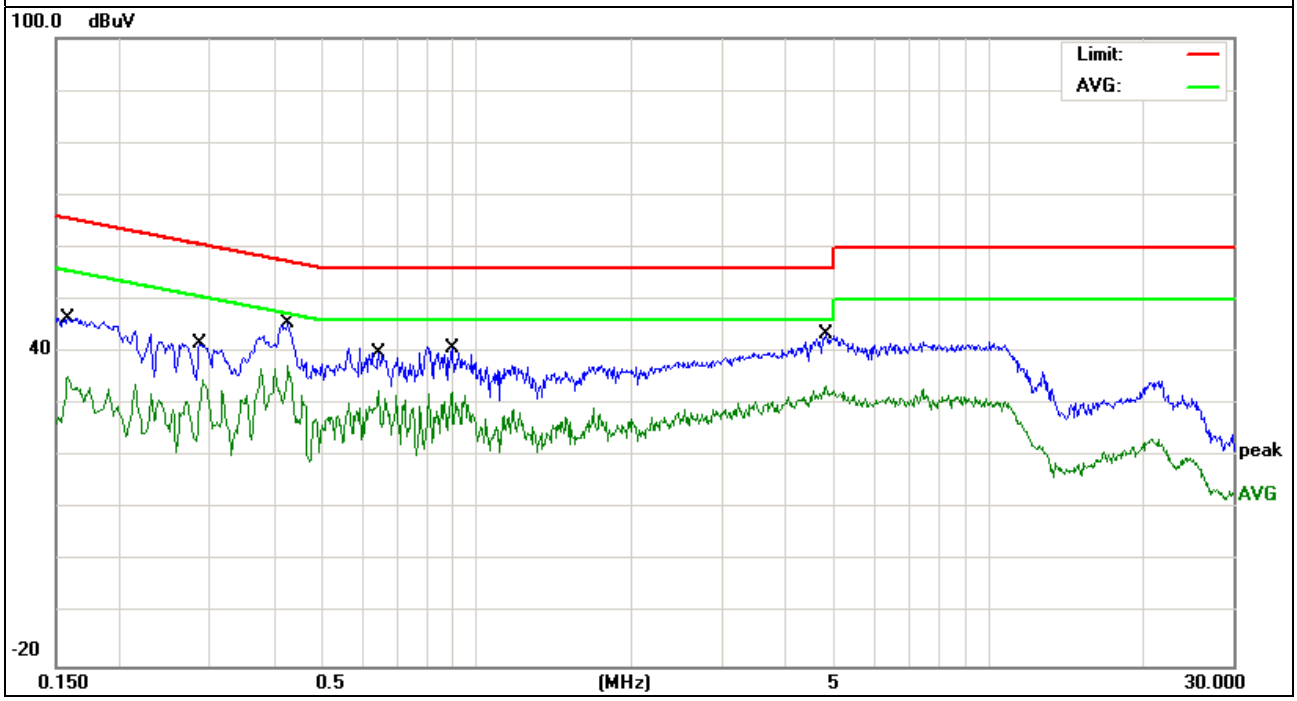
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5V From adapter AC120V/60Hz	Test Mode：	Mode 4(5.0G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1580	36.82	9.63	46.45	65.56	-19.11	QP
0.1580	25.68	9.63	35.31	55.56	-20.25	AVG
0.2898	32.07	9.57	41.64	60.53	-18.89	QP
0.2898	25.03	9.57	34.60	50.53	-15.93	AVG
0.4259	36.20	9.27	45.47	57.33	-11.86	QP
0.4259	28.08	9.27	37.35	47.33	-9.98	AVG
0.6419	30.34	9.57	39.91	56.00	-16.09	QP
0.6419	23.12	9.57	32.69	46.00	-13.31	AVG
0.8900	31.22	9.58	40.80	56.00	-15.20	QP
0.8900	22.71	9.58	32.29	46.00	-13.71	AVG
4.8178	33.79	9.63	43.42	56.00	-12.58	QP
4.8178	23.93	9.63	33.56	46.00	-12.44	AVG

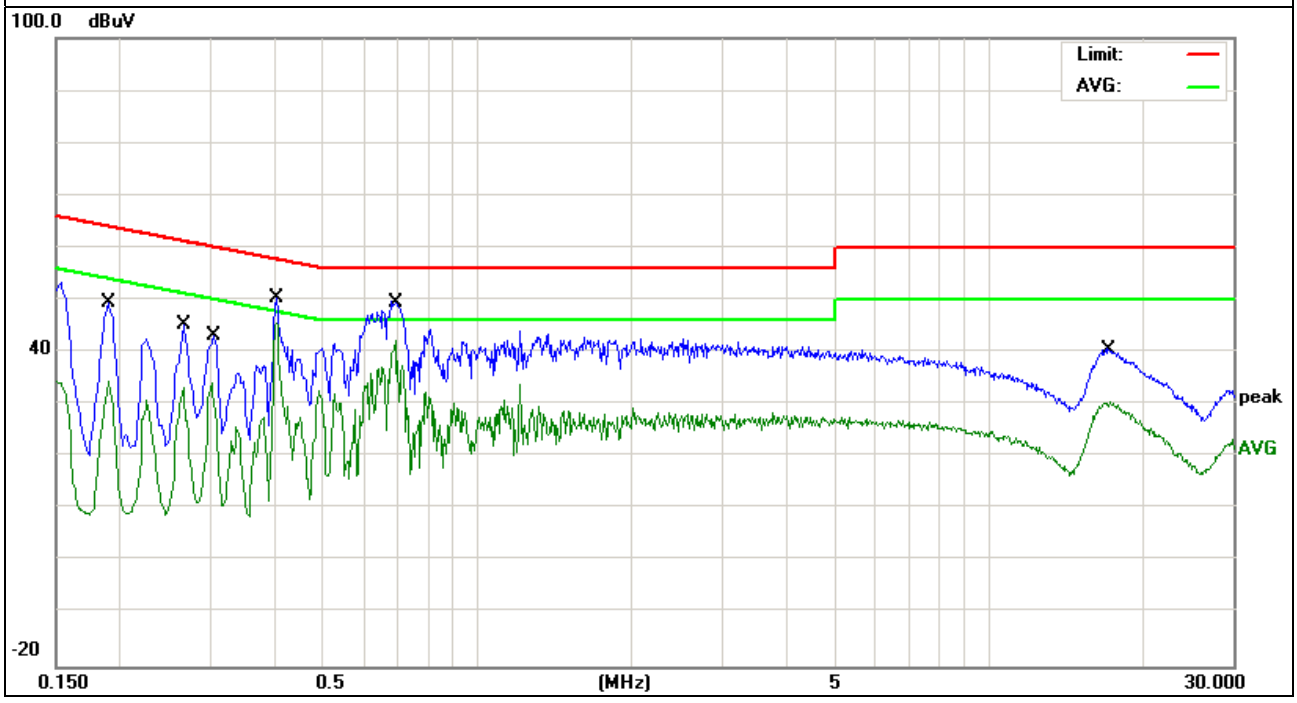
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V From adapter AC240V/60Hz	Test Mode：	Mode 4(5.0G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1900	39.83	9.61	49.44	64.03	-14.59	QP
0.1900	24.88	9.61	34.49	54.03	-19.54	AVG
0.2660	35.60	9.70	45.30	61.24	-15.94	QP
0.2660	23.61	9.70	33.31	51.24	-17.93	AVG
0.3020	24.53	9.74	34.27	50.19	-15.92	AVG
0.3020	33.35	9.74	43.09	60.19	-17.10	QP
0.4060	41.01	9.38	50.39	57.73	-7.34	QP
0.4060	36.04	9.38	45.42	47.73	-2.31	AVG
0.6900	39.90	9.78	49.68	56.00	-6.32	QP
0.6900	32.52	9.78	42.30	46.00	-3.70	AVG
17.2740	31.02	9.88	40.90	60.00	-19.10	QP
17.2740	20.56	9.88	30.44	50.00	-19.56	AVG

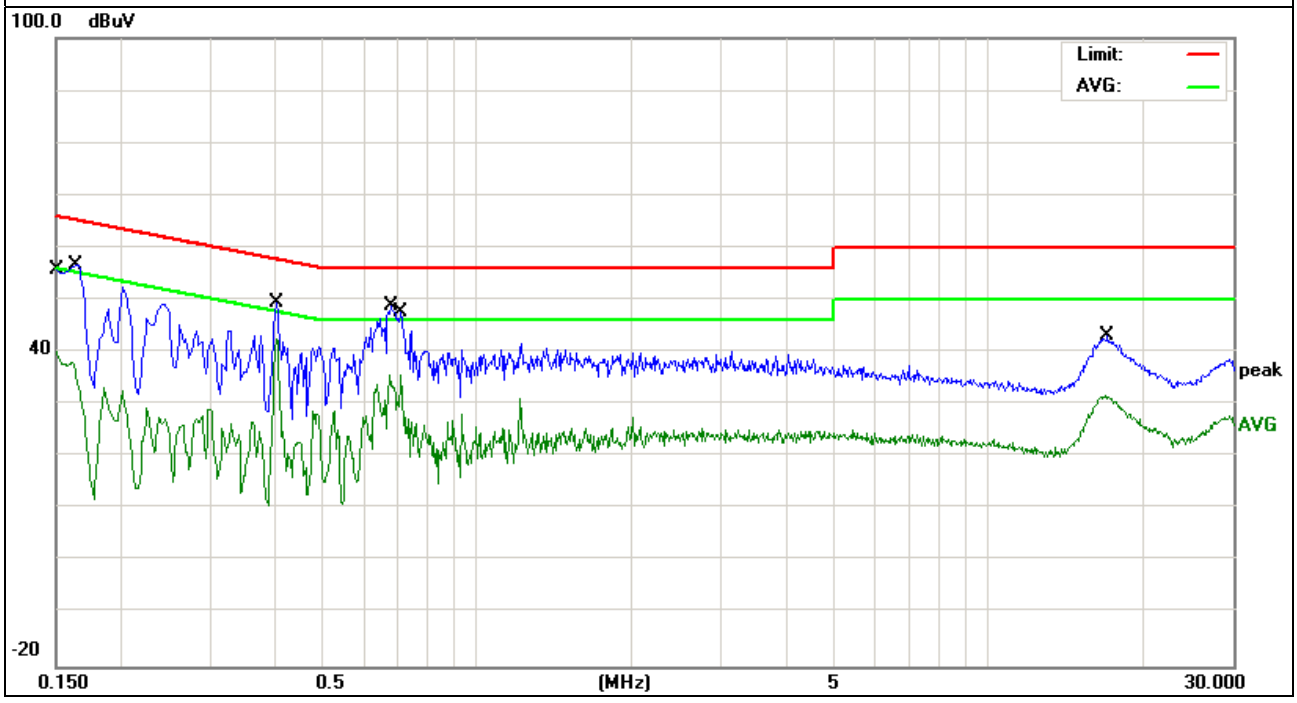
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5V From adapter AC240V/60Hz	Test Mode：	Mode 4(5.0G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1500	46.24	9.60	55.84	65.99	-10.15	QP
0.1500	30.50	9.60	40.10	55.99	-15.89	AVG
0.1620	28.55	9.60	38.15	55.36	-17.21	AVG
0.1620	47.18	9.60	56.78	65.36	-8.58	QP
0.4060	39.72	9.64	49.36	57.73	-8.37	QP
0.4060	32.90	9.64	42.54	47.73	-5.19	AVG
0.6740	25.89	9.64	35.53	46.00	-10.47	AVG
0.6740	39.25	9.64	48.89	56.00	-7.11	QP
0.7100	37.97	9.64	47.61	56.00	-8.39	QP
0.7100	26.14	9.64	35.78	46.00	-10.22	AVG
16.9100	32.66	9.79	42.45	60.00	-17.55	QP
16.9100	21.92	9.79	31.71	50.00	-18.29	AVG

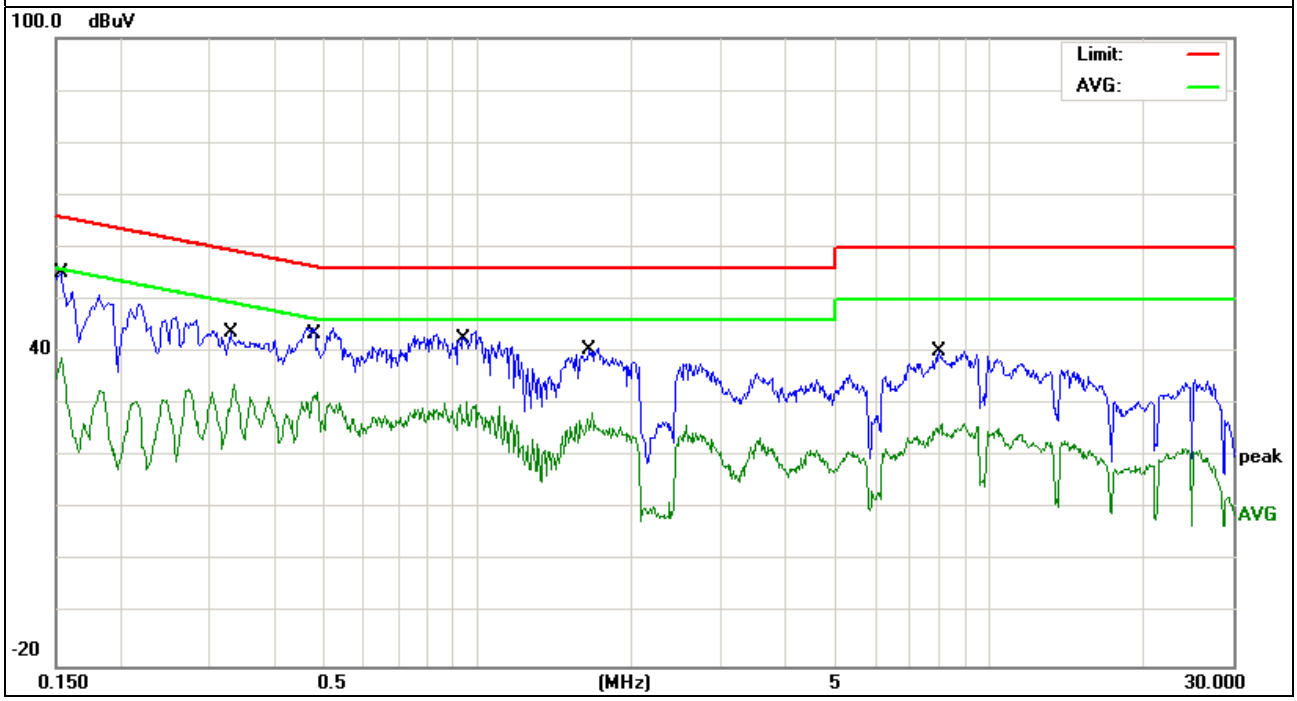
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V From PC AC120V/60Hz	Test Mode：	Mode 4(5.0G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1539	45.23	9.63	54.86	65.78	-10.92	QP
0.1539	29.32	9.63	38.95	55.78	-16.83	AVG
0.3339	33.19	9.61	42.80	59.35	-16.55	QP
0.3339	24.23	9.61	33.84	49.35	-15.51	AVG
0.4863	35.06	9.72	44.78	56.23	-11.45	QP
0.4863	22.58	9.72	32.30	46.23	-13.93	AVG
0.9577	33.13	9.74	42.87	56.00	-13.13	QP
0.9577	20.69	9.74	30.43	46.00	-15.57	AVG
1.6737	29.76	9.67	39.43	56.00	-16.57	QP
1.6737	18.75	9.67	28.42	46.00	-17.58	AVG
8.1019	28.54	9.70	38.24	60.00	-21.76	QP
8.1019	16.73	9.70	26.43	50.00	-23.57	AVG

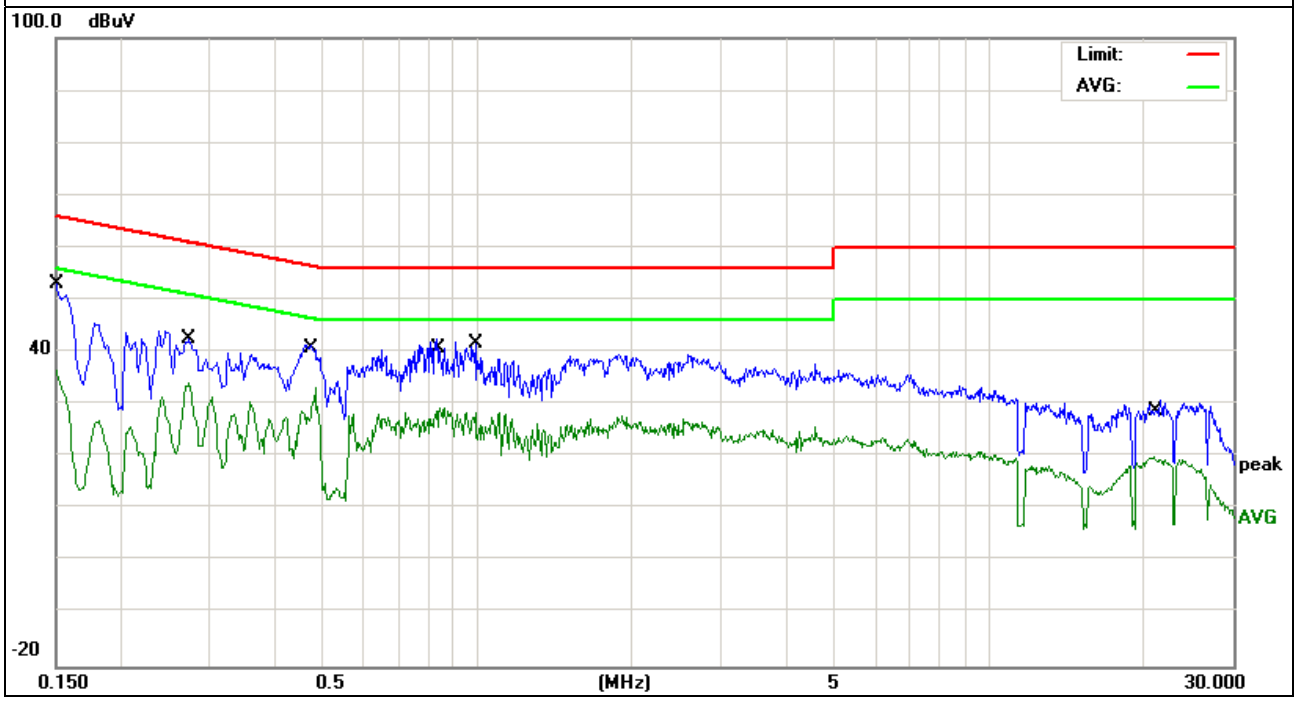
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5V From PC AC120V/60Hz	Test Mode：	Mode 4(5.0G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1500	43.50	9.60	53.10	65.99	-12.89	QP
0.1500	27.00	9.60	36.60	55.99	-19.39	AVG
0.2740	31.87	9.61	41.48	60.99	-19.51	QP
0.2740	24.57	9.61	34.18	50.99	-16.81	AVG
0.4818	31.68	9.68	41.36	56.31	-14.95	QP
0.4818	23.49	9.68	33.17	46.31	-13.14	AVG
0.8458	32.25	9.62	41.87	56.00	-14.13	QP
0.8458	19.79	9.62	29.41	46.00	-16.59	AVG
0.9899	31.54	9.61	41.15	56.00	-14.85	QP
0.9899	18.91	9.61	28.52	46.00	-17.48	AVG
21.0338	19.96	9.86	29.82	60.00	-30.18	QP
21.0338	10.14	9.86	20.00	50.00	-30.00	AVG

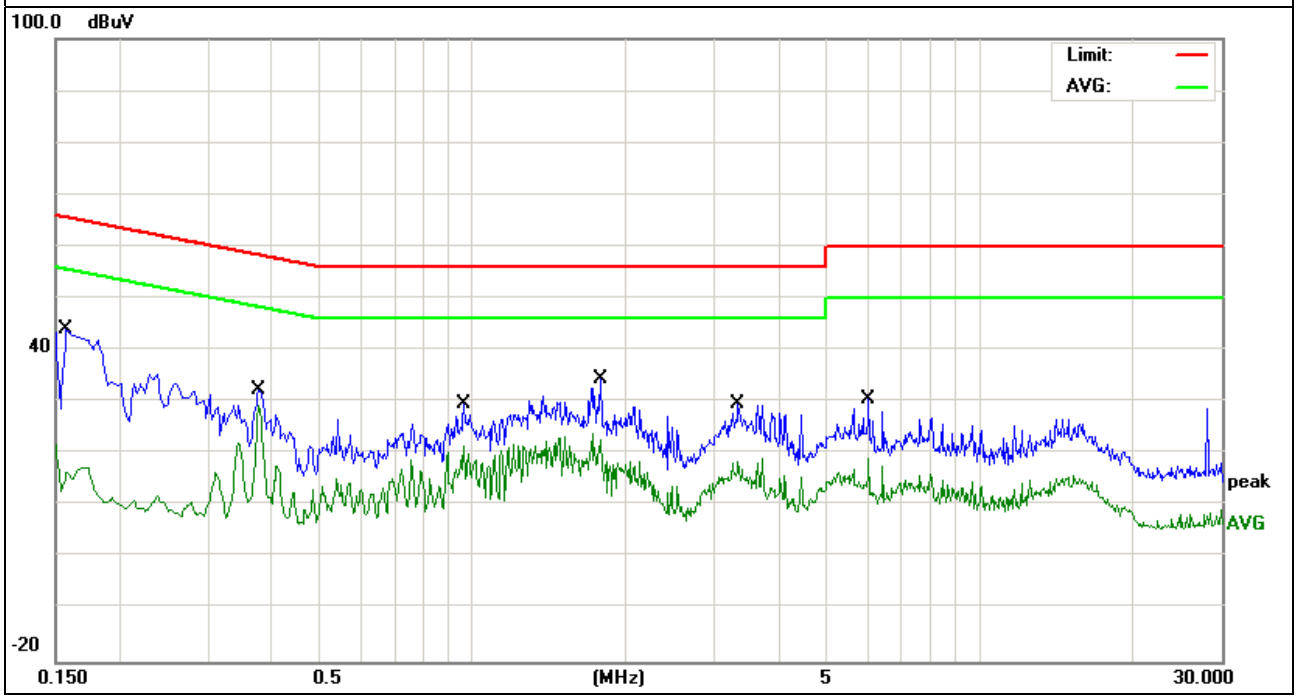
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V From PC AC240V/60Hz	Test Mode：	Mode 4(5.0G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1580	34.47	9.62	44.09	65.56	-21.47	QP
0.1580	12.74	9.62	22.36	55.56	-33.20	AVG
0.3780	23.03	9.44	32.47	58.32	-25.85	QP
0.3780	13.92	9.44	23.36	48.32	-24.96	AVG
0.9620	20.03	9.74	29.77	56.00	-26.23	QP
0.9620	11.91	9.74	21.65	46.00	-24.35	AVG
1.7820	24.84	9.67	34.51	56.00	-21.49	QP
1.7820	12.98	9.67	22.65	46.00	-23.35	AVG
3.3420	19.97	9.68	29.65	56.00	-26.35	QP
3.3420	10.47	9.68	20.15	46.00	-25.85	AVG
6.0419	20.80	9.70	30.50	60.00	-29.50	QP
6.0419	13.32	9.70	23.02	50.00	-26.98	AVG

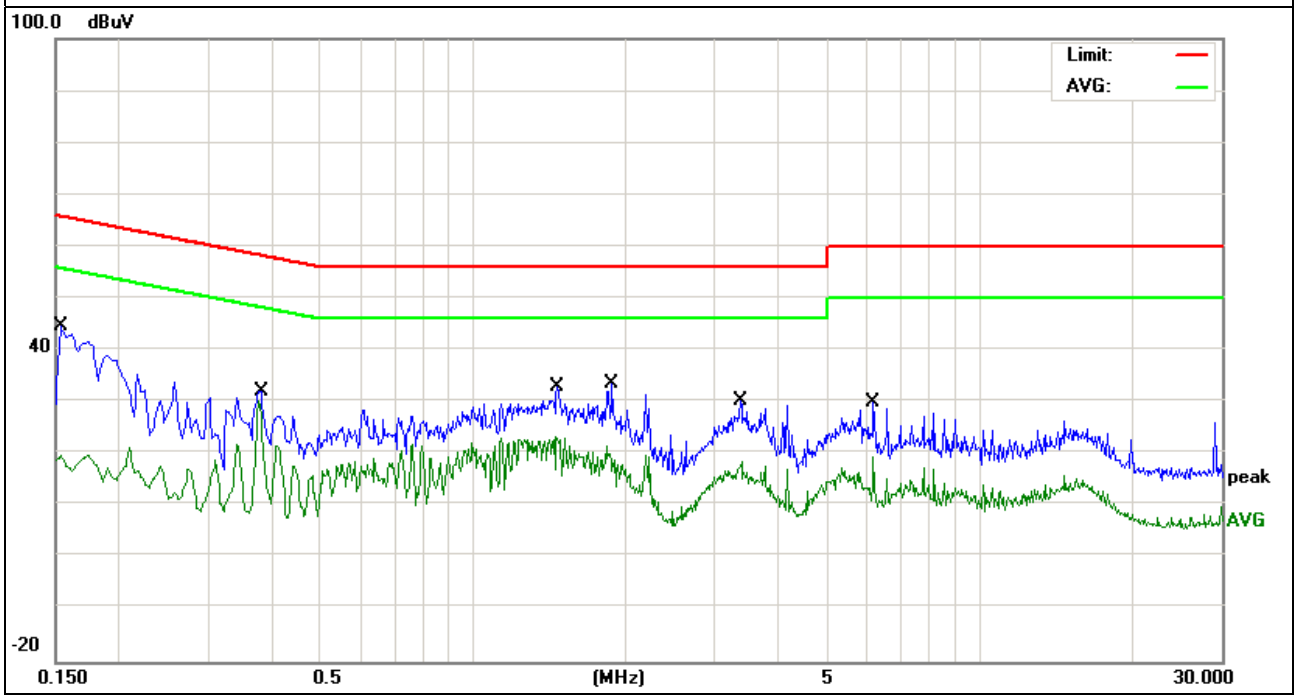
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



EUT：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5V From PC AC240V/60Hz	Test Mode：	Mode 4(5.0G)

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1539	35.06	9.60	44.66	65.78	-21.12	QP
0.1539	20.06	9.60	29.66	55.78	-26.12	AVG
0.3820	22.51	9.63	32.14	58.23	-26.09	QP
0.3820	14.59	9.63	24.22	48.23	-24.01	AVG
1.4660	23.24	9.58	32.82	56.00	-23.18	QP
1.4660	13.44	9.58	23.02	46.00	-22.98	AVG
1.8780	23.87	9.55	33.42	56.00	-22.58	QP
1.8780	12.03	9.55	21.58	46.00	-24.42	AVG
3.3780	20.87	9.51	30.38	56.00	-25.62	QP
3.3780	12.93	9.51	22.44	46.00	-23.56	AVG
6.1619	20.30	9.51	29.81	60.00	-30.19	QP
6.1619	10.60	9.51	20.11	50.00	-29.89	AVG

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



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)	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	10th carrier harmonic
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 m for below 1GHz and 1.5m for above 1GHz 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 for below 1GHz and 1.5m for above 1GHz; 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

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

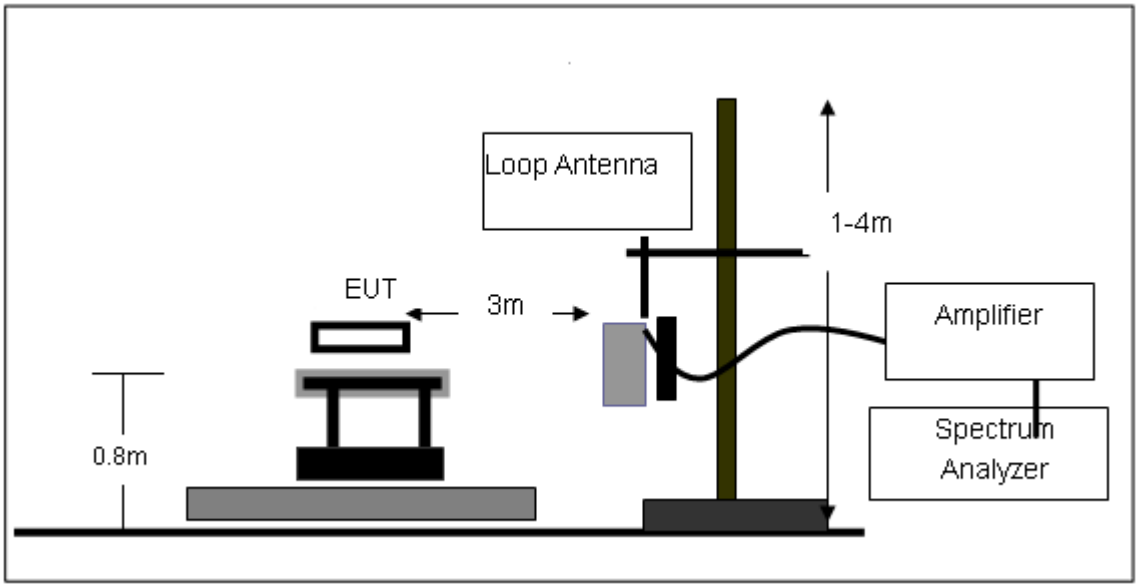
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	Peak	100 kHz	100 kHz
Above 1000	Peak	1 MHz	1 MHz
	Average	1 MHz	10 Hz

3.2.3 DEVIATION FROM TEST STANDARD

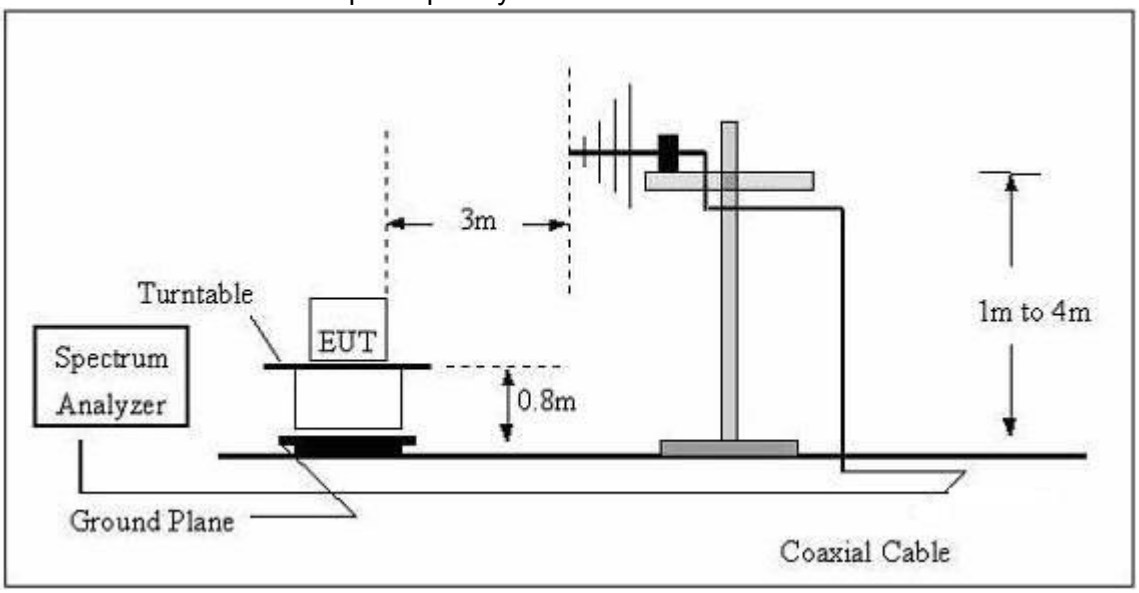
No deviation

3.2.4 TEST SETUP

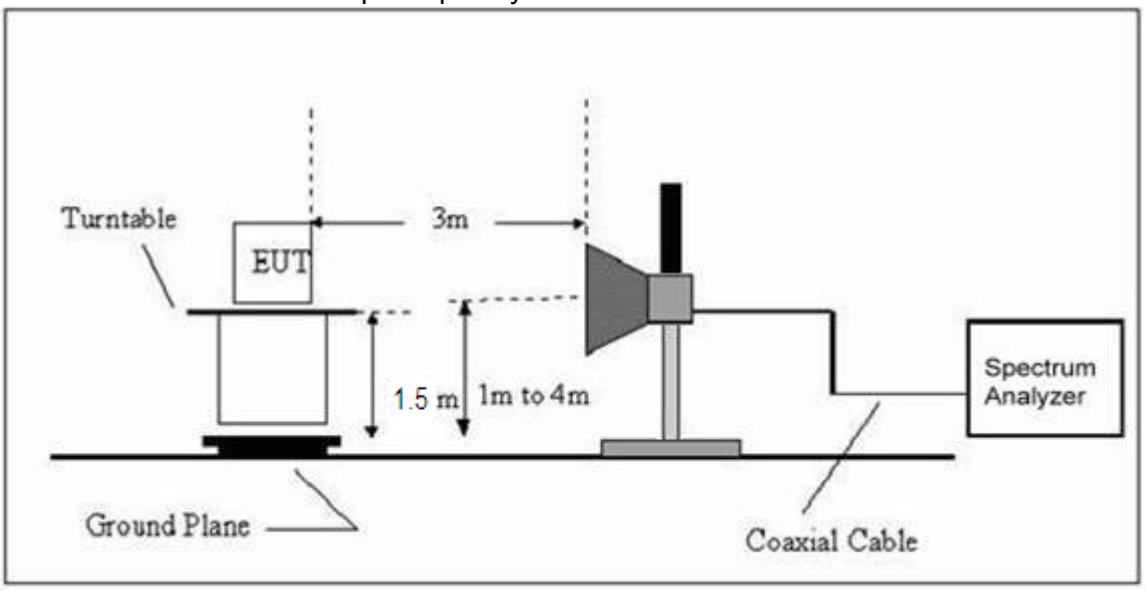
（A）Radiated Emission Test-Up Frequency Below 30MHz



（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：	Intelligent micro laser projection	Model Name. ：	L1
Temperature：	20 ℃	Relative Humidtity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX	Polarization :	--

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

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.

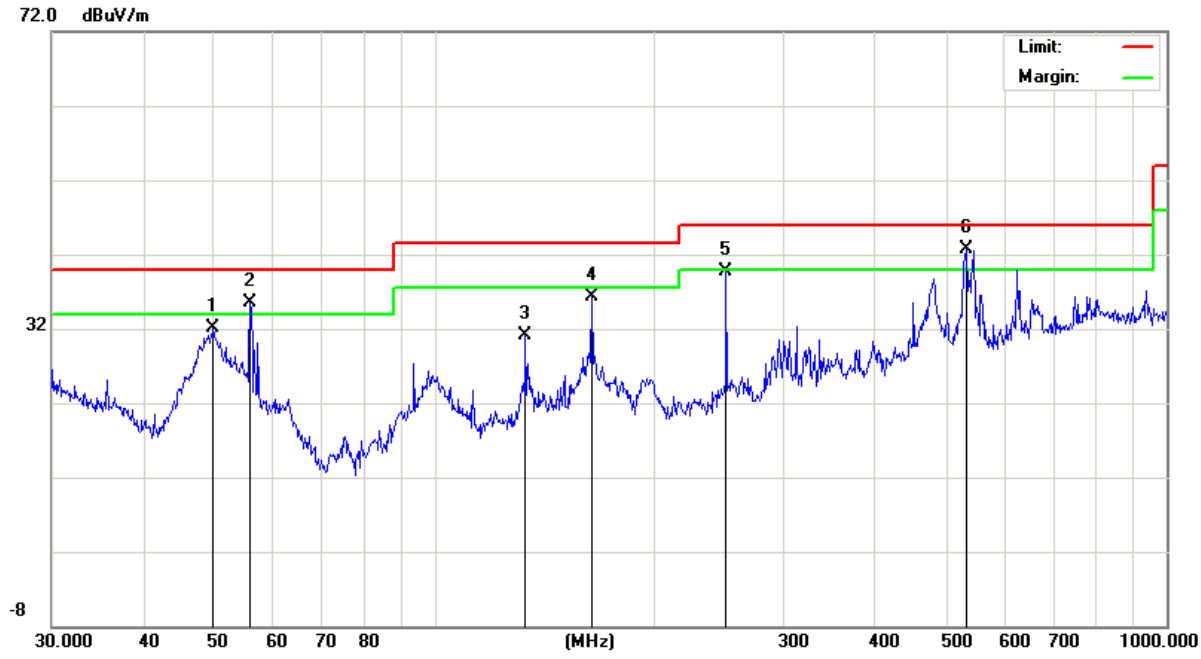
3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX (2.4G)		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
V	49.8814	21.39	10.71	32.10	40.00	-7.90	QP
V	56.0007	26.51	8.97	35.48	40.00	-4.52	QP
V	133.1511	19.44	11.74	31.18	43.50	-12.32	QP
V	163.755	25.73	10.51	36.24	43.50	-7.26	QP
V	250.3012	26.10	13.59	39.69	46.00	-6.31	QP
V	533.8321	21.76	21.00	42.76	46.00	-3.24	QP

Remark:

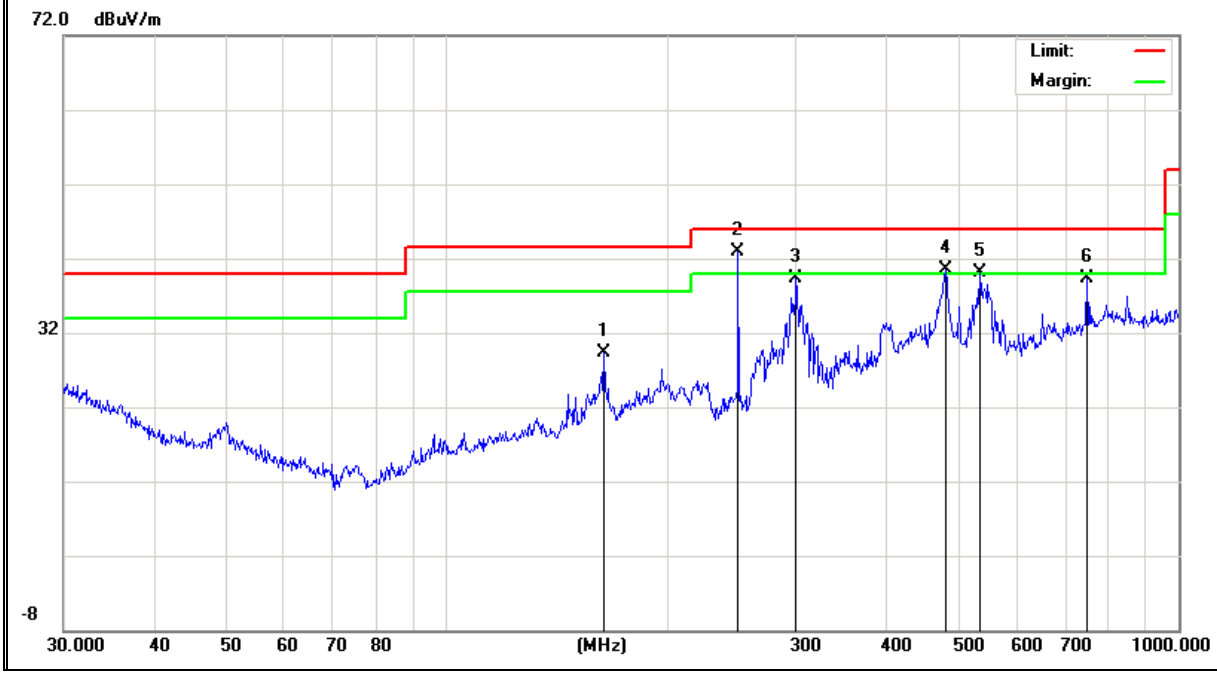
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
H	163.7548	18.74	10.51	29.25	43.50	-14.25	QP
H	250.3012	29.34	13.59	42.93	46.00	-3.07	QP
H	300.3672	25.06	14.16	39.22	46.00	-6.78	QP
H	480.5276	20.66	19.91	40.57	46.00	-5.43	QP
H	535.7073	18.99	21.04	40.03	46.00	-5.97	QP
H	750.1083	13.18	26.10	39.28	46.00	-6.72	QP

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit

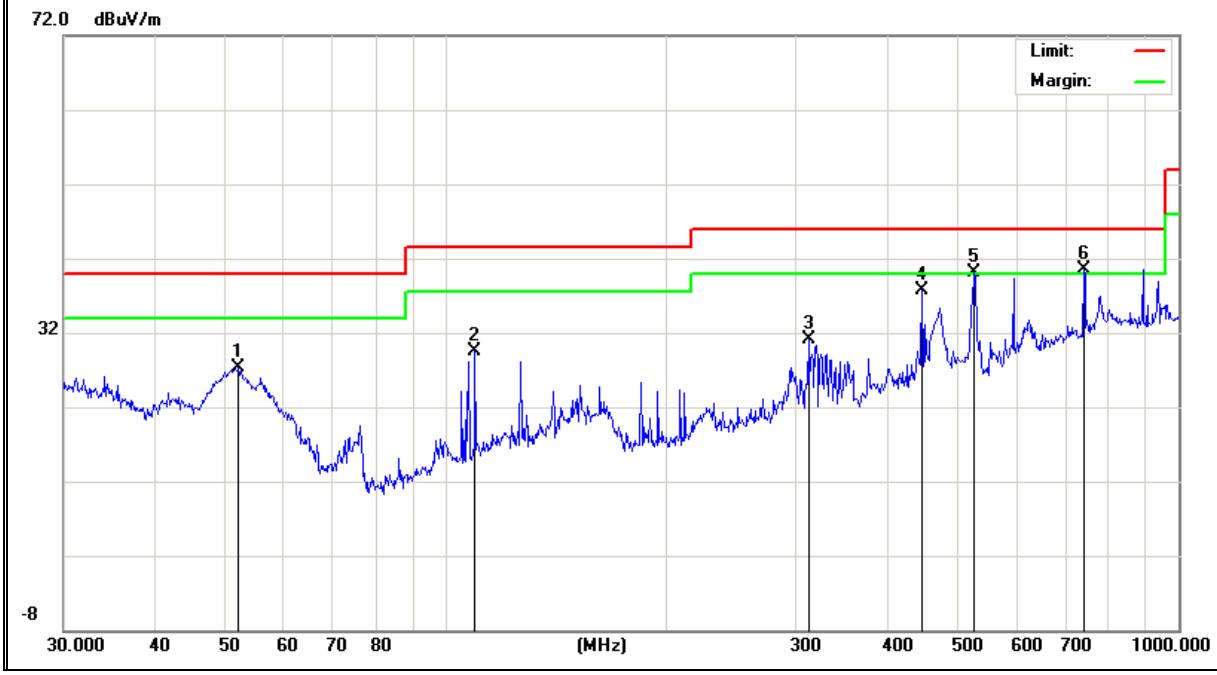


EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX(5.0G)		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
V	52.0251	17.16	10.11	27.27	40.00	-12.73	QP
V	109.4116	19.66	9.89	29.55	43.50	-13.95	QP
V	312.1792	16.49	14.66	31.15	46.00	-14.85	QP
V	446.4141	18.45	19.23	37.68	46.00	-8.32	QP
V	526.3967	19.28	20.84	40.12	46.00	-5.88	QP
V	742.2586	14.66	25.90	40.56	46.00	-5.44	QP

Remark:

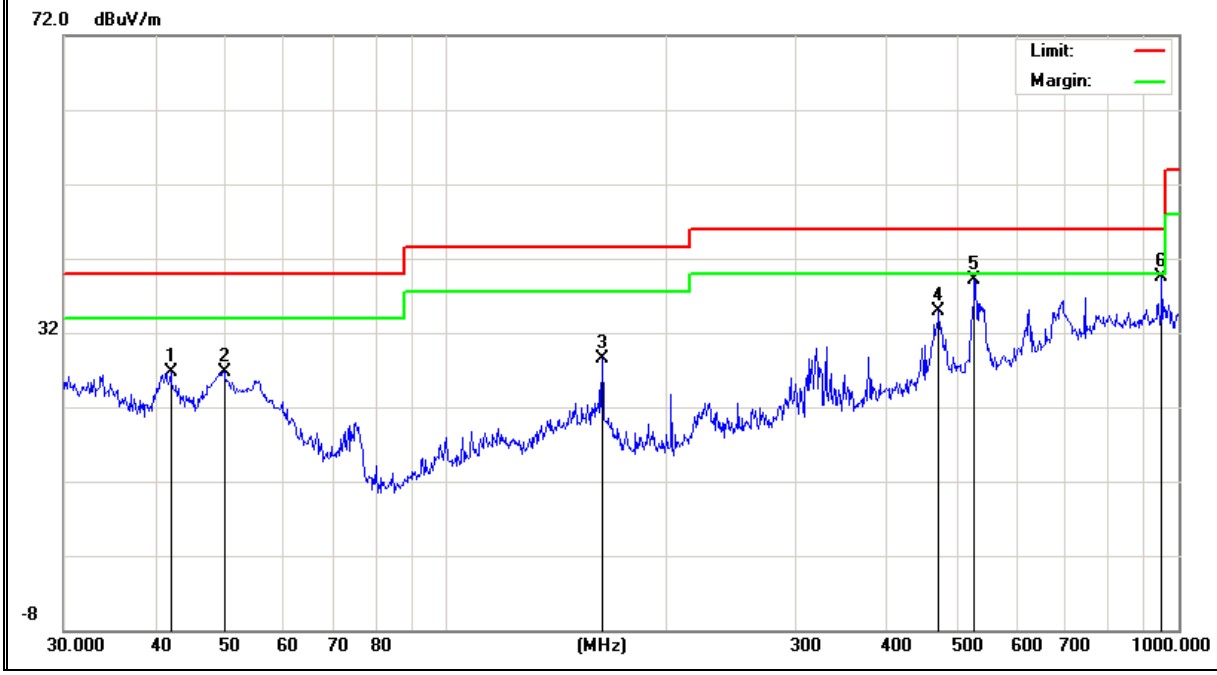
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
H	42.0065	13.86	12.90	26.76	40.00	-13.24	QP
H	49.7068	15.87	10.77	26.64	40.00	-13.36	QP
H	163.1818	18.06	10.51	28.57	43.50	-14.93	QP
H	470.5230	15.25	19.70	34.95	46.00	-11.05	QP
H	526.3967	18.25	20.84	39.09	46.00	-6.91	QP
H	948.7608	12.18	27.32	39.50	46.00	-6.50	QP

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit



3.2.8 TEST RESULTS (ABOVE 1000 MHZ)

EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX (2.4G)		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (2412 MHz)-Above 1G							
Vertical	4824.332	51.6	10.44	61.25	74.00	-12.75	Pk
Vertical	4824.332	33.16	10.44	44.02	54.00	-9.98	Av
Vertical	7236.581	44.81	12.39	57.25	74.00	-16.75	Pk
Vertical	7236.581	29.09	12.39	40.36	54.00	-13.64	Av
Horizontal	4824.025	53.35	10.44	62.02	74.00	-11.98	Pk
Horizontal	4824.025	32.07	10.44	41.69	54.00	-12.31	Av
Horizontal	7236.221	45.51	12.39	56.69	74.00	-17.31	Pk
Horizontal	7236.221	30.65	12.39	42.58	54.00	-11.42	Av
Mid Channel (2437 MHz)-Above 1G							
Vertical	4874.363	51.01	10.40	62.03	74.00	-11.97	Pk
Vertical	4874.363	31.93	10.40	41.69	54.00	-12.31	Av
Vertical	7311.021	44.67	12.75	58.32	74.00	-15.68	Pk
Vertical	7311.021	27.66	12.75	39.25	54.00	-14.75	Av
Horizontal	4874.047	51.78	10.40	61.57	74.00	-12.43	Pk
Horizontal	4874.047	33.01	10.40	42.64	54.00	-11.36	Av
Horizontal	7311.25	47.89	12.75	59.02	74.00	-14.98	Pk
Horizontal	7311.25	28.58	12.75	40.78	54.00	-13.22	Av
High Channel (2462 MHz)- Above 1G							
Vertical	4924.363	50.95	10.39	60.32	74.00	-13.68	Pk
Vertical	4924.363	32.58	10.39	41.36	54.00	-12.64	Av
Vertical	7386.144	44.35	12.68	56.69	74.00	-17.31	Pk
Vertical	7386.144	27.99	12.68	39.58	54.00	-14.42	Av
Horizontal	4924.585	50.98	10.39	62.01	74.00	-11.99	Pk
Horizontal	4924.585	33.08	10.39	42.58	54.00	-11.42	Av
Horizontal	7386.125	47.37	12.68	59.66	74.00	-14.34	Pk
Horizontal	7386.125	28.67	12.68	40.73	54.00	-13.27	Av

Note:”802.11b” mode is the worst mode. When PK value is lower than the Average value limit, average didn't record.

EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX (5.0G)		

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G							
Vertical	11490.000	35.77	14.21	49.98	74	-24.02	Pk
Vertical	17235.000	32.14	16.09	48.23	74	-25.77	Pk
Horizontal	11490.000	35.47	14.21	49.68	74	-24.32	Pk
Horizontal	17235.000	33.38	16.09	49.47	74	-24.53	Pk
middle Channel (5785 MHz)-Above 1G							
Vertical	11570.000	34.76	14.51	49.27	74	-24.73	Pk
Vertical	17355.000	36.89	16.15	53.04	74	-20.96	Pk
Horizontal	11570.000	35.42	14.51	49.93	74	-24.07	Pk
Horizontal	17355.000	35.18	16.15	51.33	74	-22.67	Pk
High Channel (5825 MHz)-Above 1G							
Vertical	11590.000	36.53	14.55	51.08	74	-22.92	Pk
Vertical	17385.000	34.64	16.18	50.82	74	-23.18	Pk
Vertical	11590.000	35.72	14.55	50.27	74	-23.73	Av
Horizontal	17385.000	36.62	16.18	52.8	74	-21.2	Pk
Horizontal	11590.000	36.53	14.55	51.08	74	-22.92	Pk

Note:”802.11a(5G)” mode is the worst mode. When PK value is lower than the Average value limit, average didn't record.

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 channel bandwidth.
3. 3 kHz ≤Set the RBW≤100 kHz.
4. Set the VBW ≥ 3 x 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

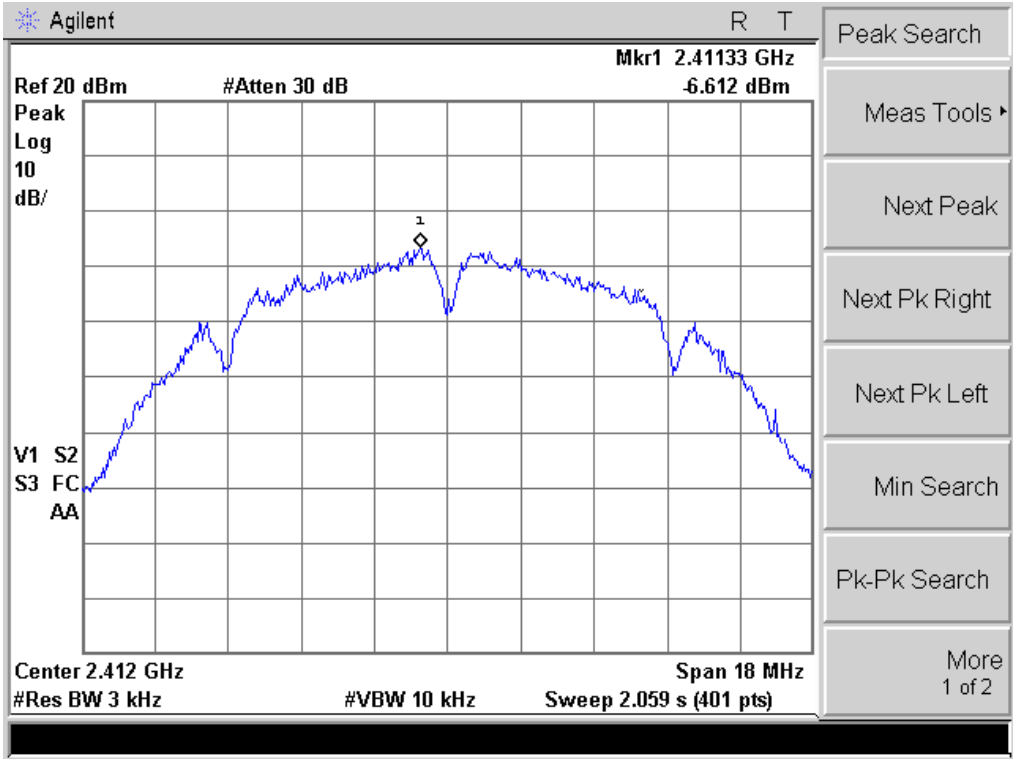
The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.5 TEST RESULTS

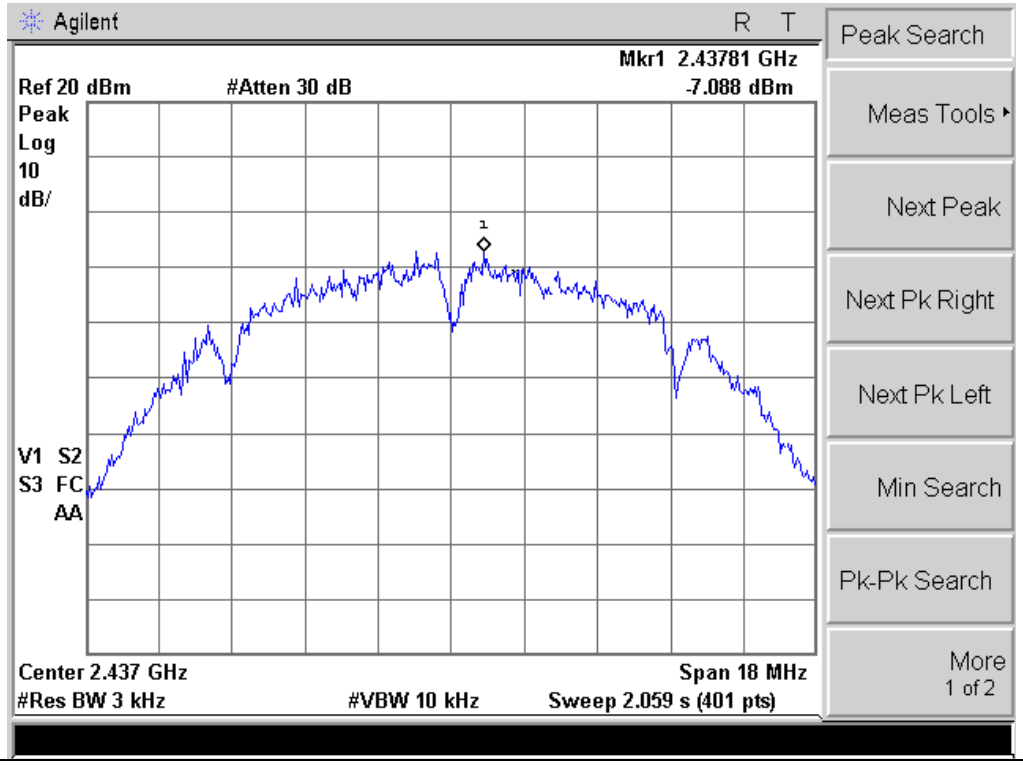
EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1015 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX b Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-6.612	8	PASS
2437 MHz	-7.088	8	PASS
2462 MHz	-7.401	8	PASS

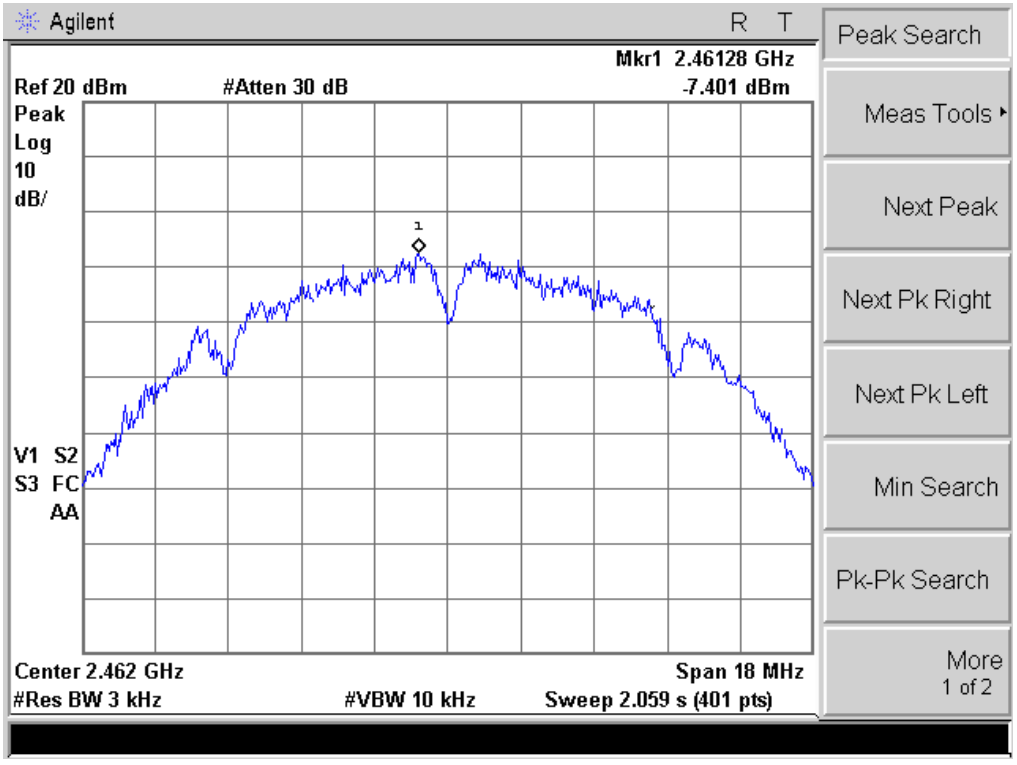
TX CH01



TX CH06



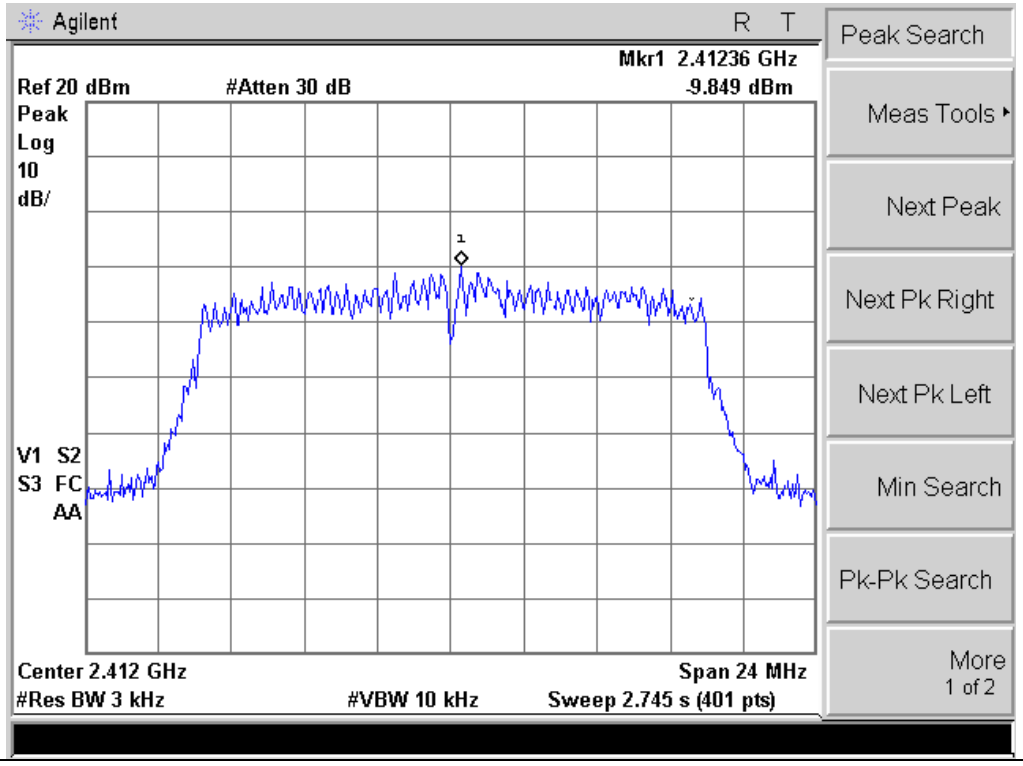
TX CH11



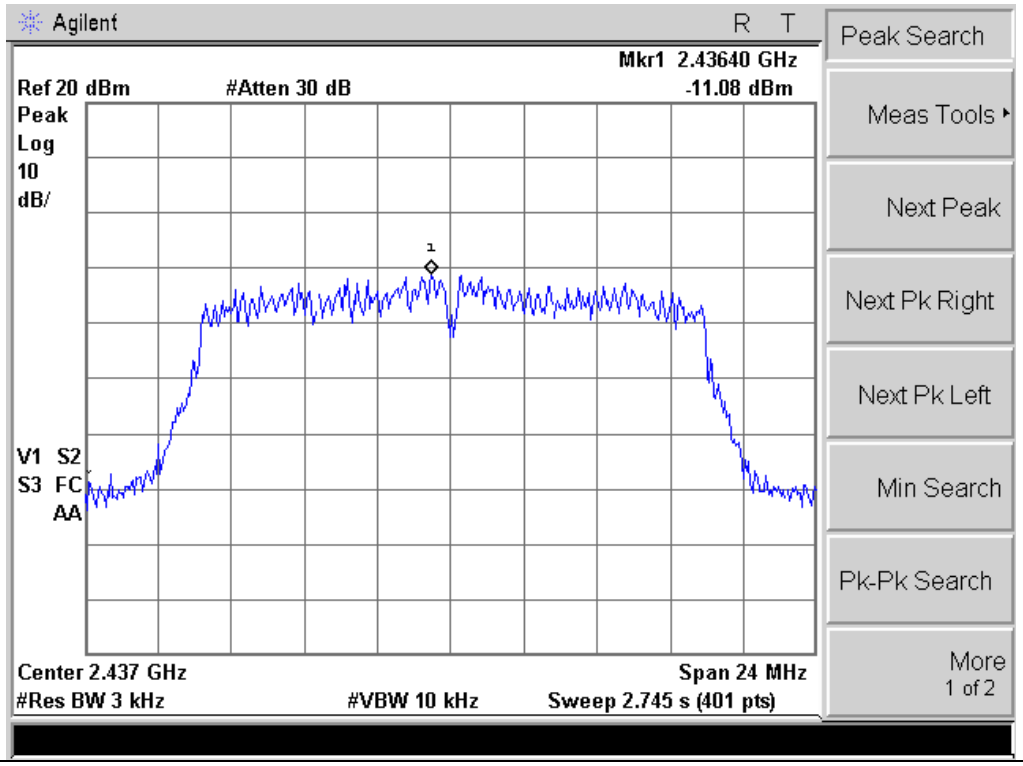
EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1015 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX g Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-9.849	8	PASS
2437 MHz	-11.08	8	PASS
2462 MHz	-10.33	8	PASS

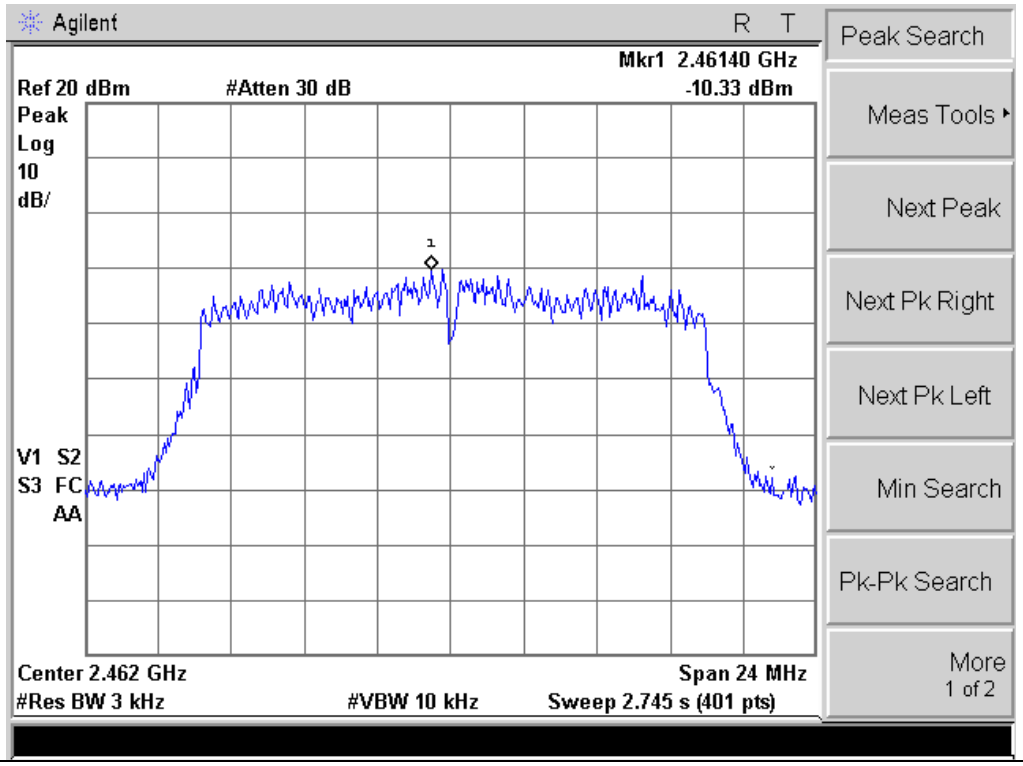
TX CH01



TX CH06



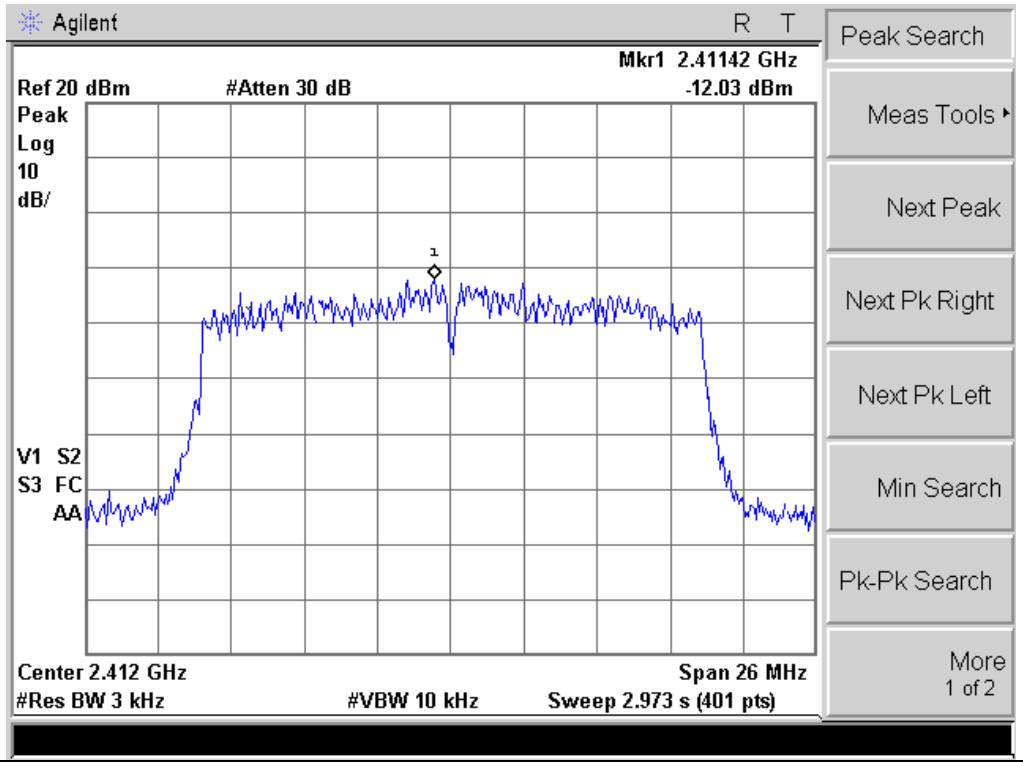
TX CH11



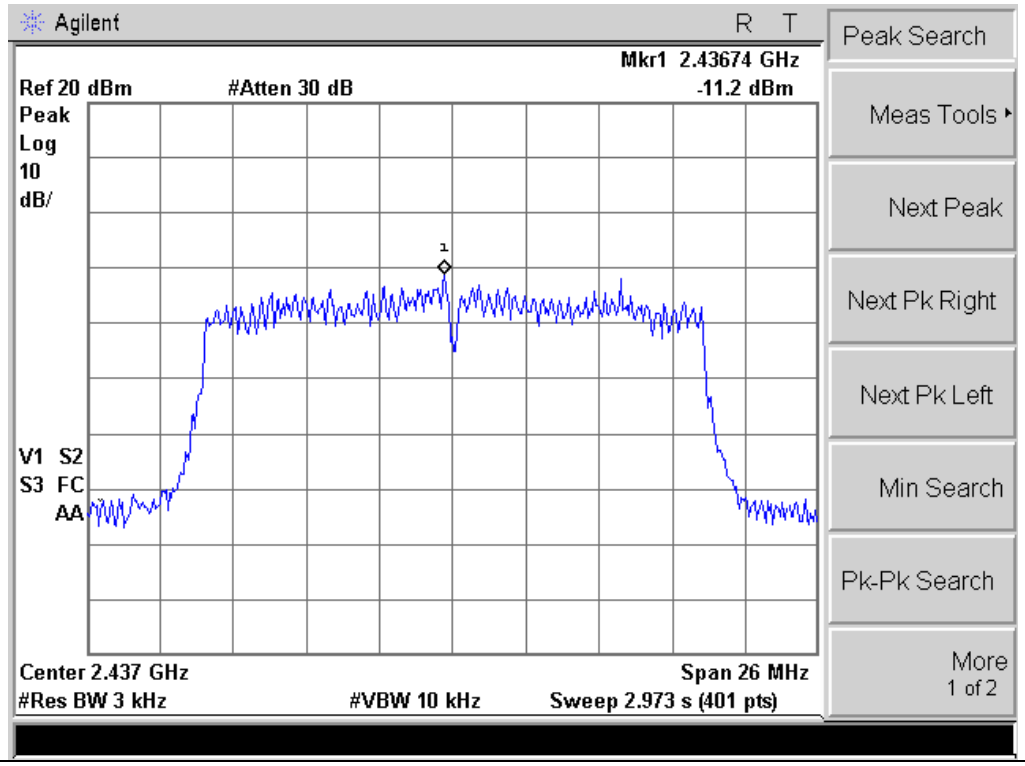
EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1015 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX n Mode (20MHz)/CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-12.03	8	PASS
2437 MHz	-11.20	8	PASS
2462 MHz	-11.43	8	PASS

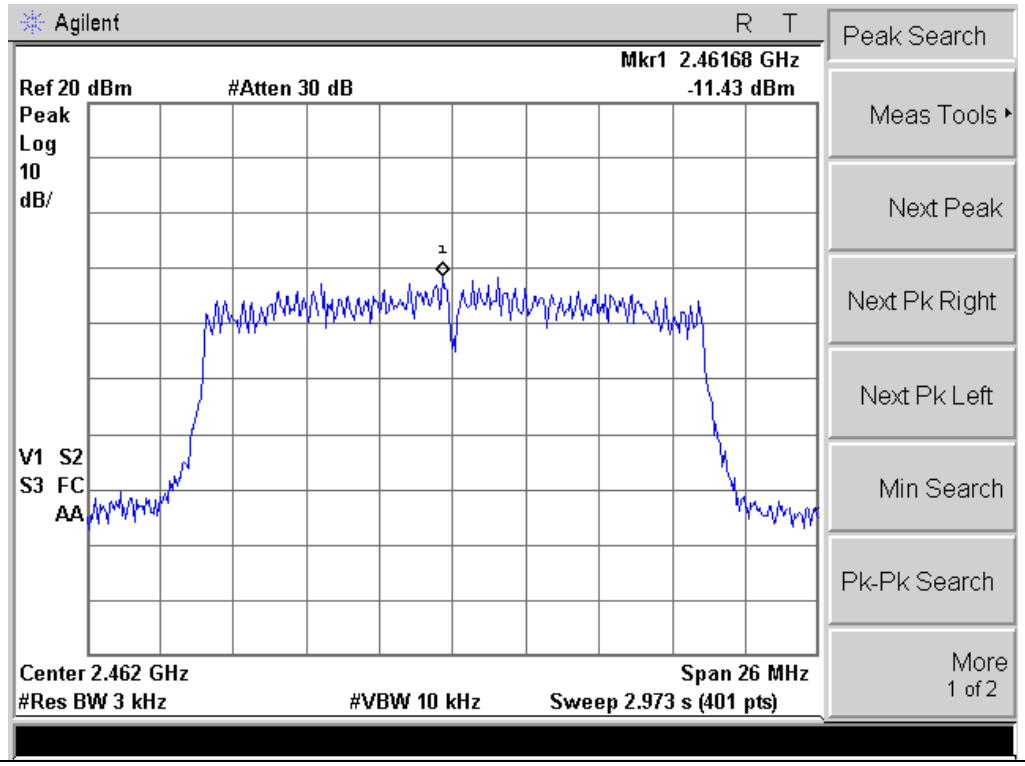
TX CH01



TX CH06



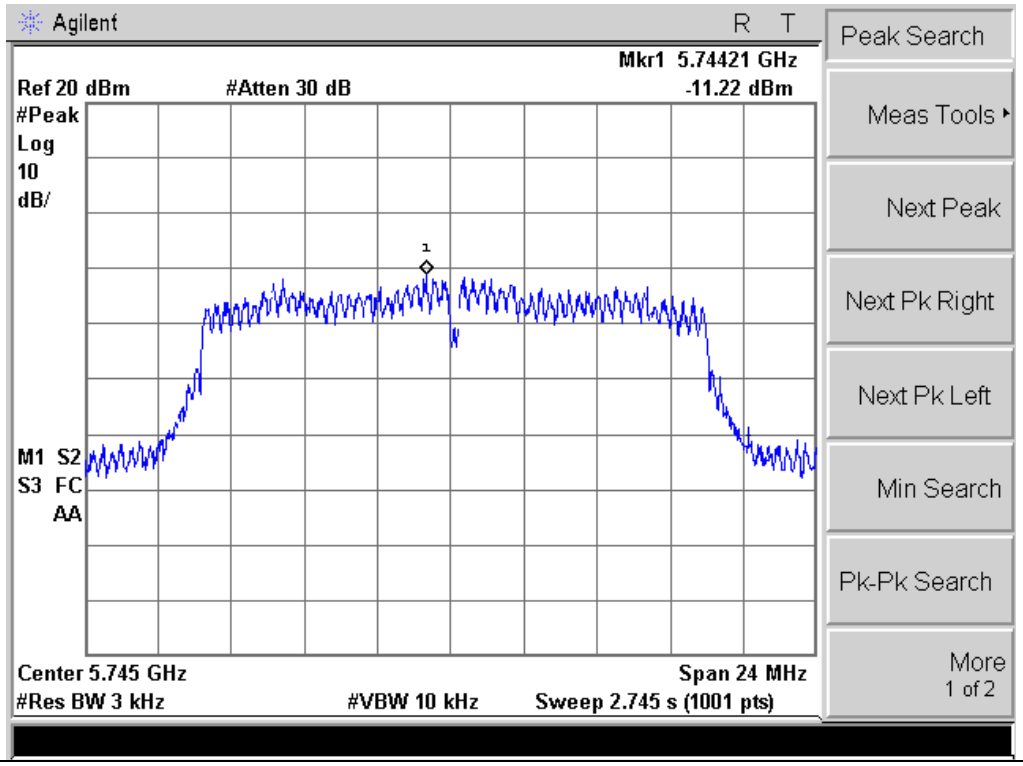
TX CH11



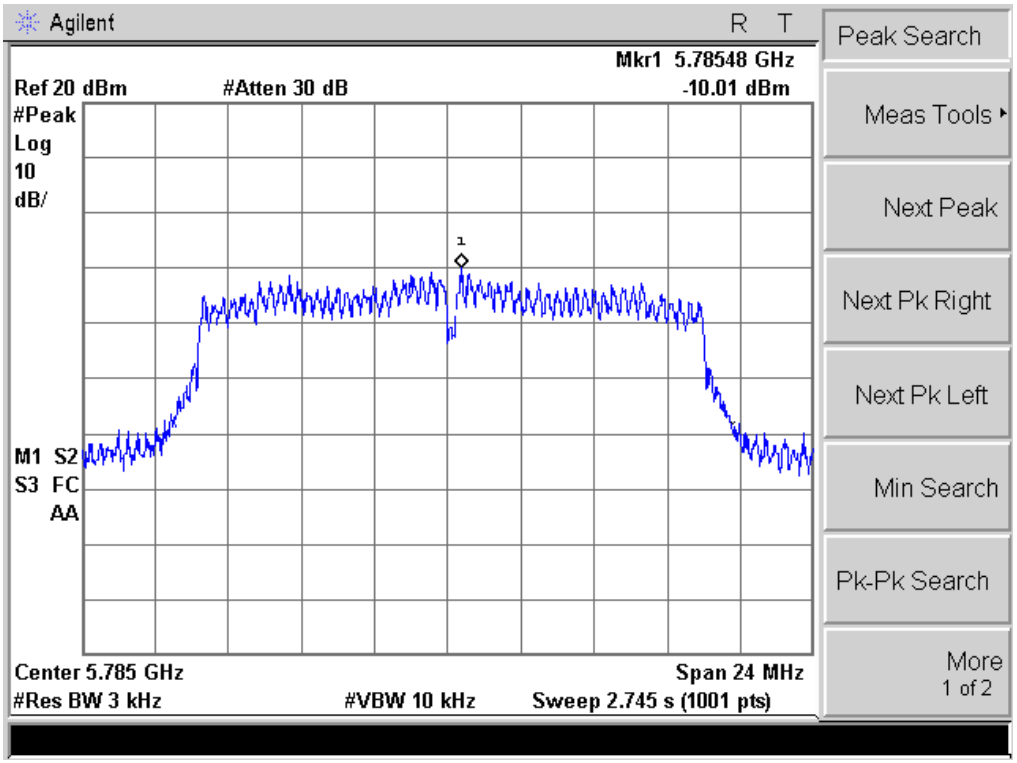
EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1015 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX a Mode /CH149, CH157, CH165		

Frequency	Power Density (dBm)	Limit (dBm)	Result
5745MHz	-11.22	8	PASS
5785 MHz	-10.01	8	PASS
5825 MHz	-10.54	8	PASS

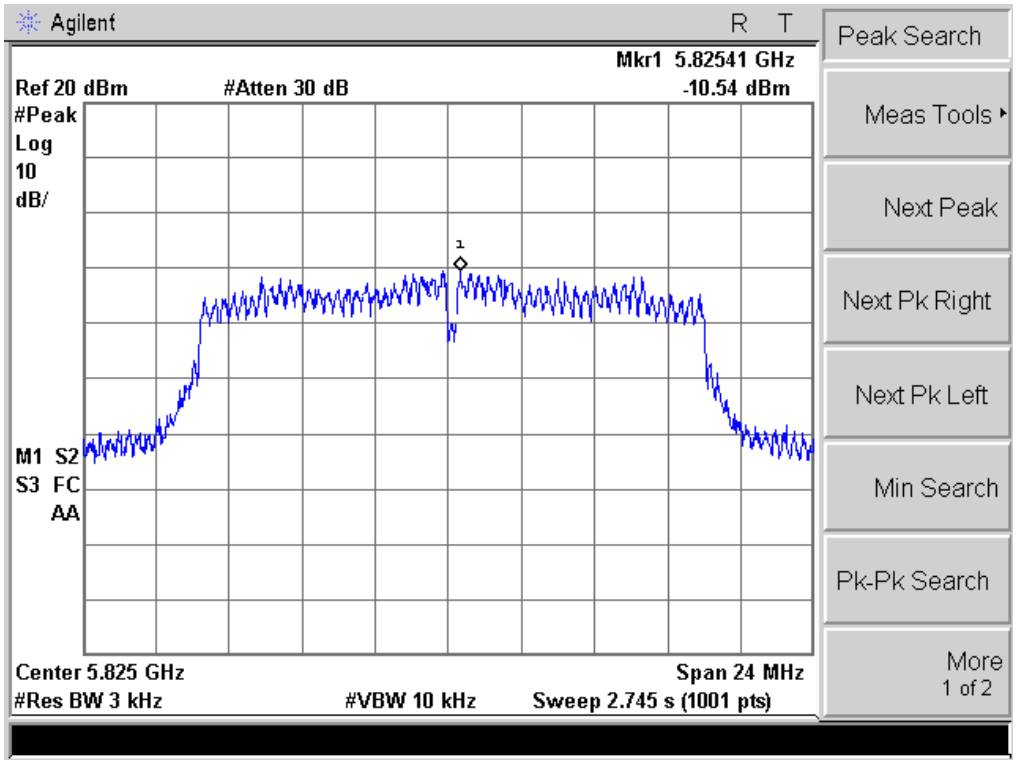
TX CH149



TX CH157



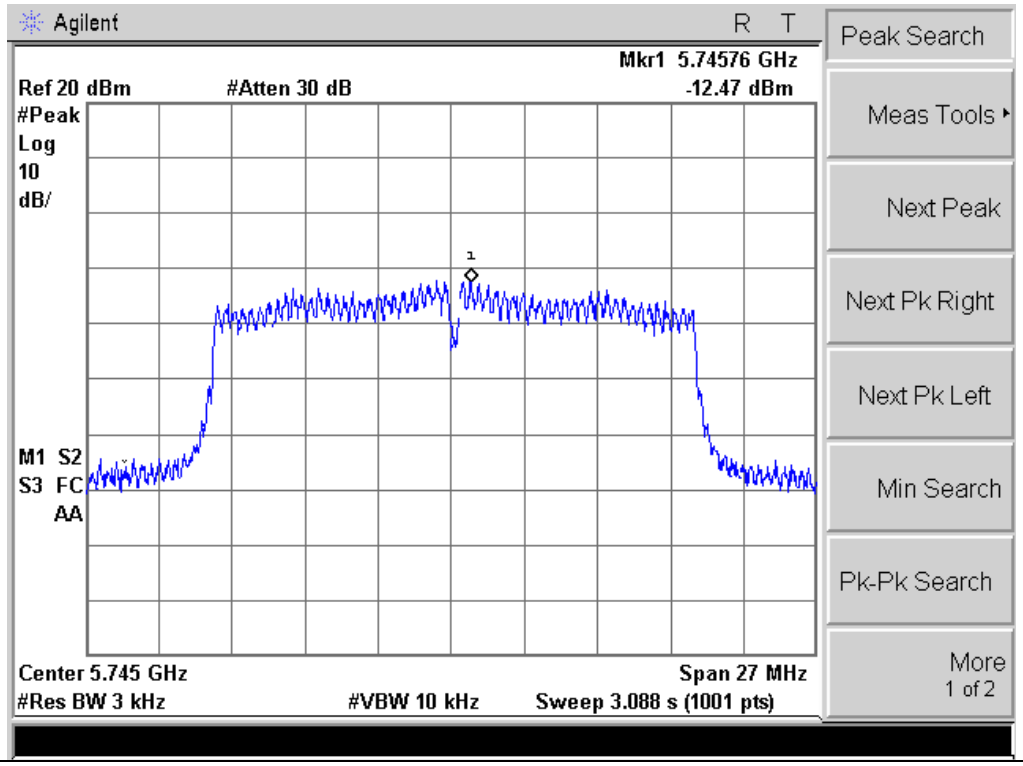
TX CH165



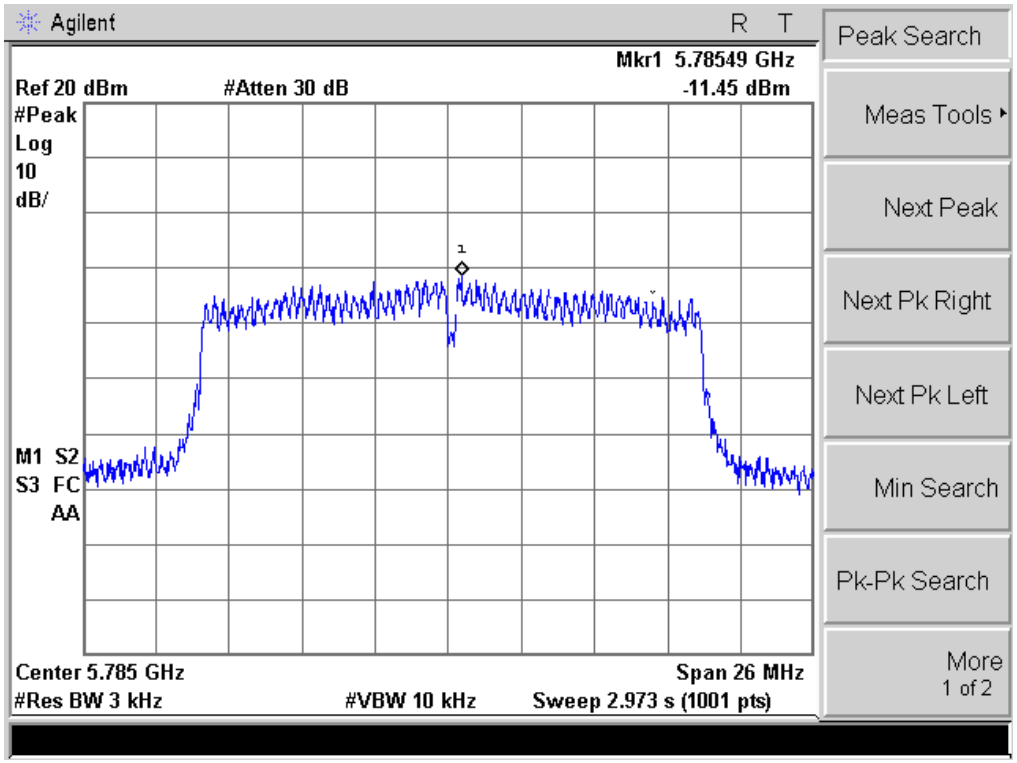
EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1015 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX n(20) Mode(5G) /CH149, CH157, CH165		

Frequency	Power Density (dBm)	Limit (dBm)	Result
5745MHz	-12.47	8	PASS
5785 MHz	-11.45	8	PASS
5825 MHz	-10.24	8	PASS

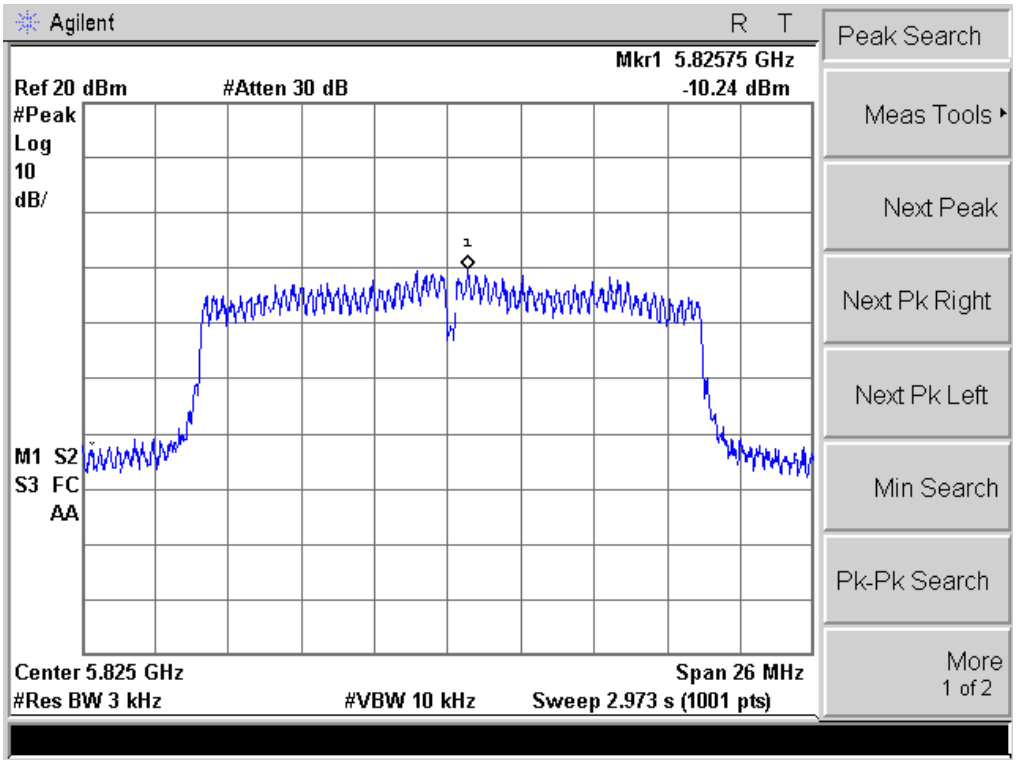
TX CH149



TX CH157



TX CH165



5. BANDWIDTH TEST

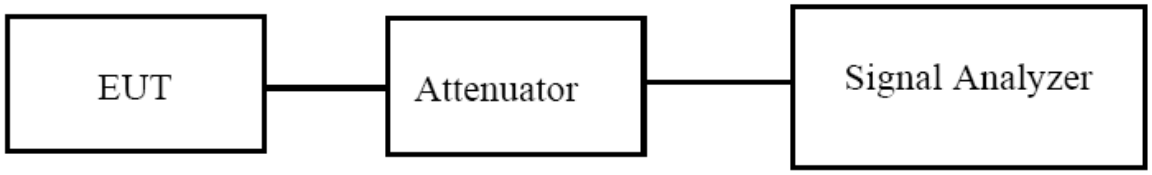
5.1 APPLIED PROCEDURES / LIMIT

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) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

TEST SETUP



5.1.2 EUT OPERATION CONDITIONS

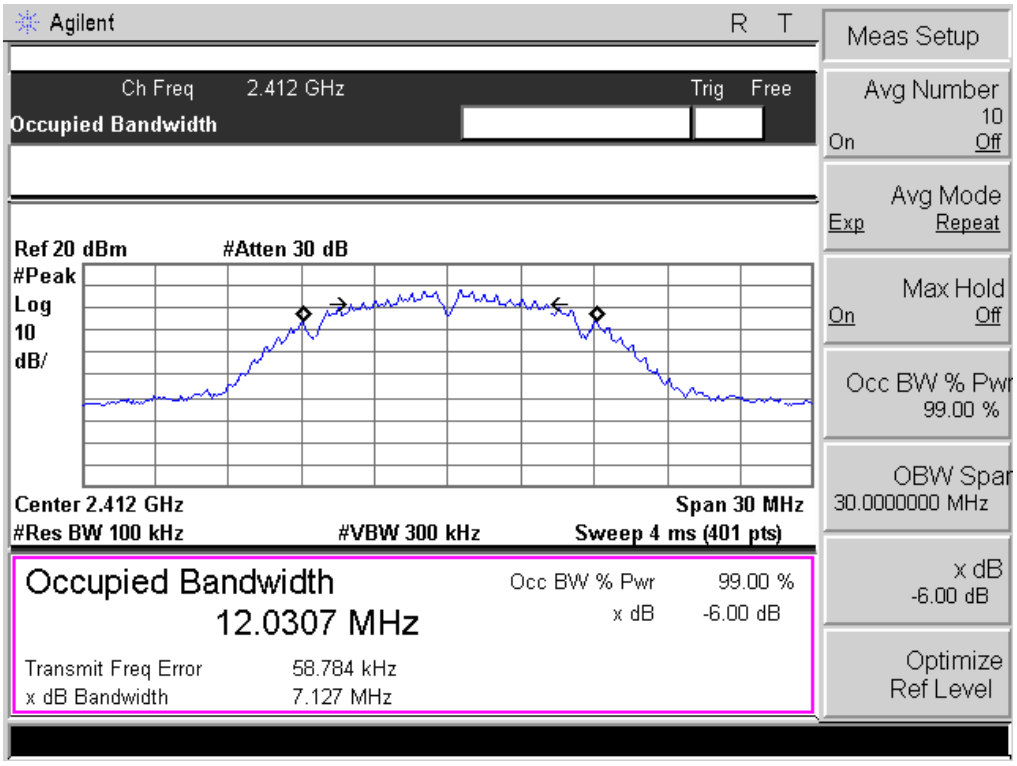
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.3 TEST RESULTS

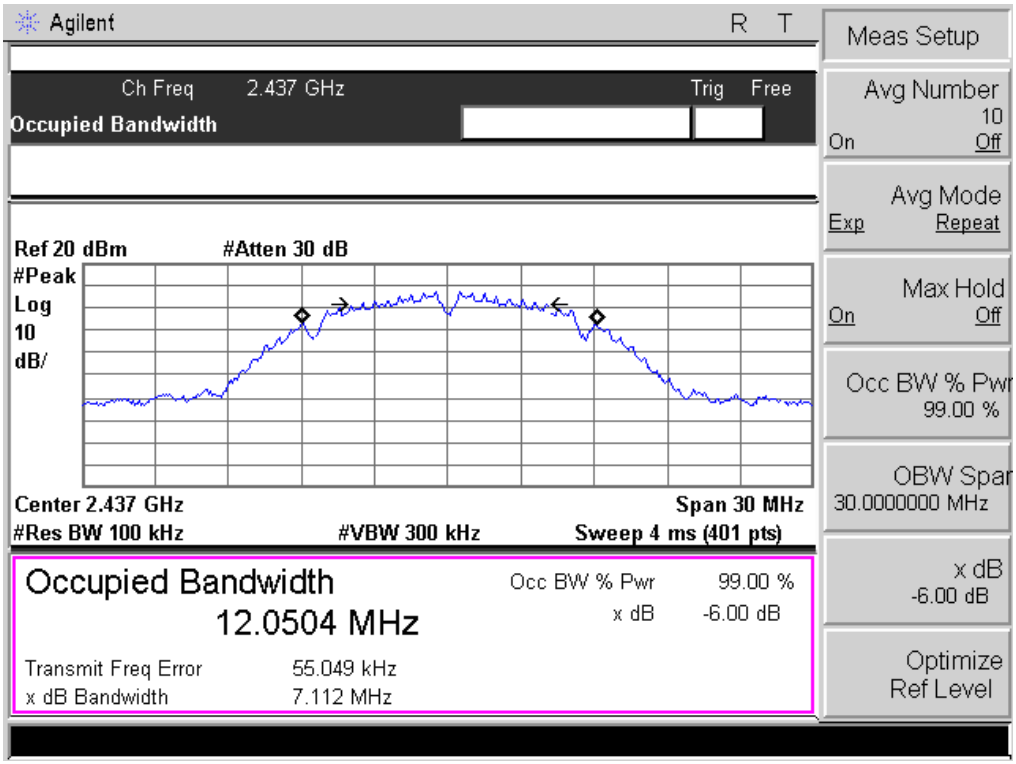
EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX b Mode /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2412	7.127	500	Pass
Middle	2437	7.112	500	Pass
High	2462	7.109	500	Pass

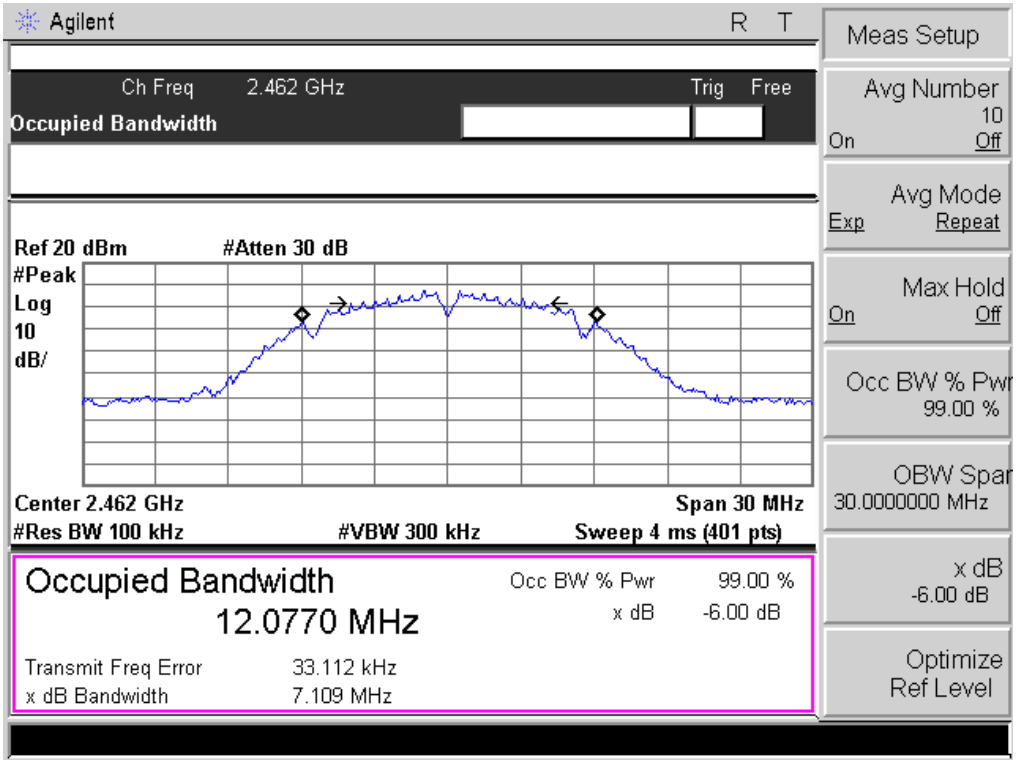
TX CH 01



TX CH 06



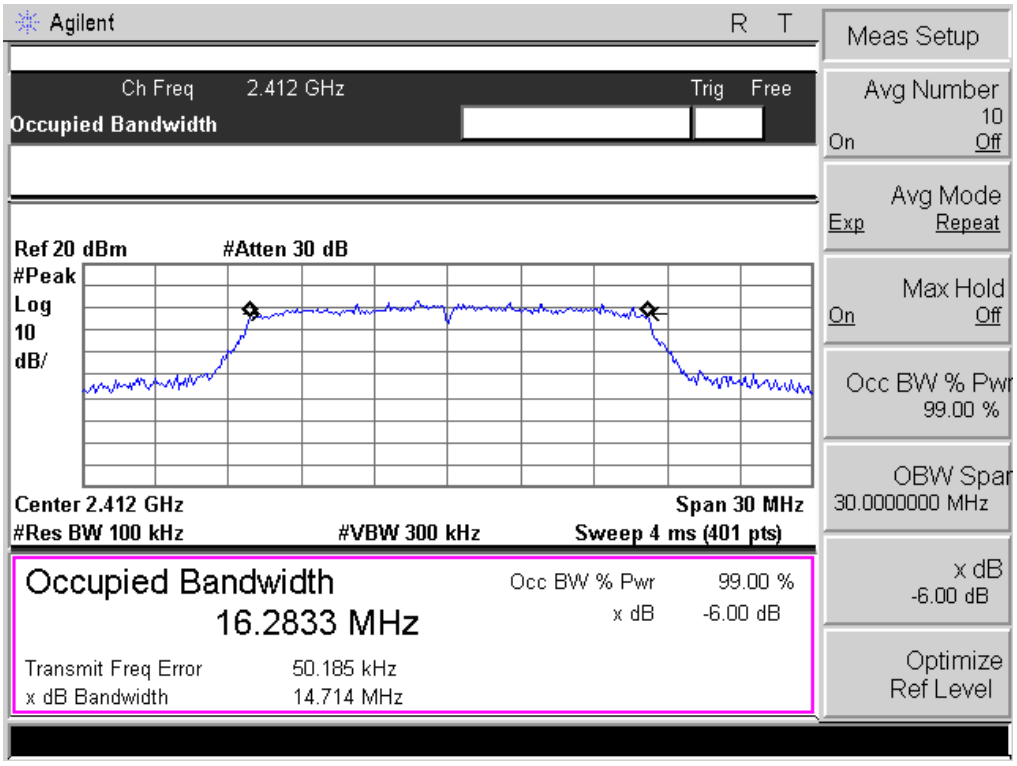
TX CH 11



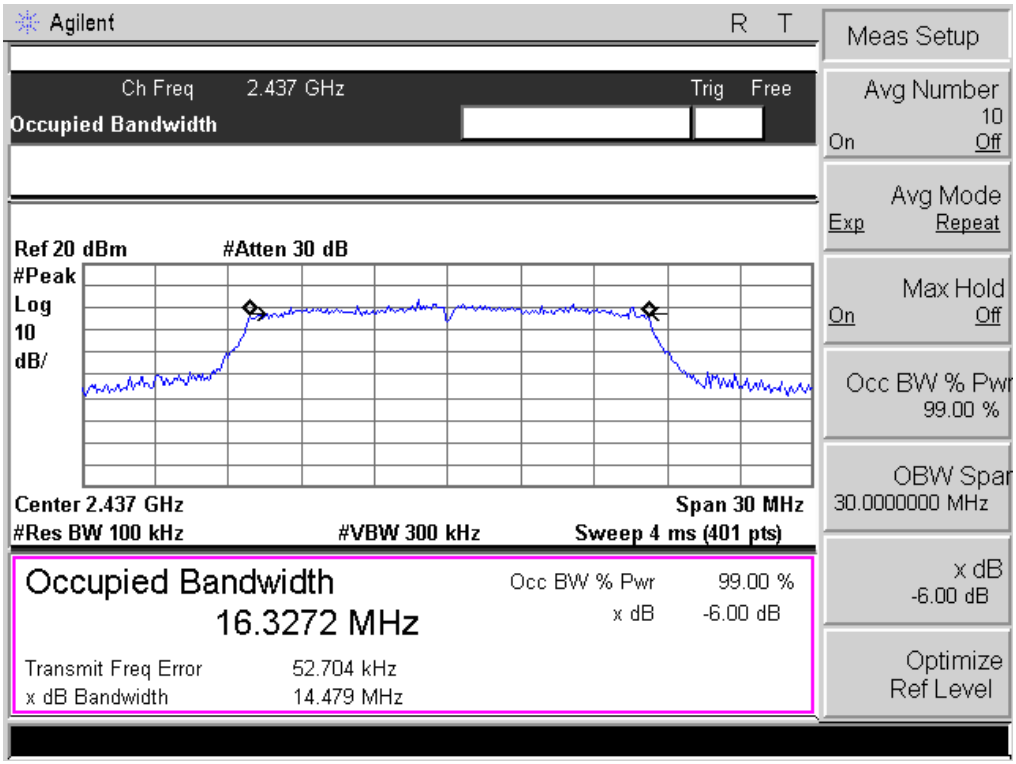
EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX g Mode /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2412	14.714	500	Pass
Middle	2437	14.479	500	Pass
High	2462	14.540	500	Pass

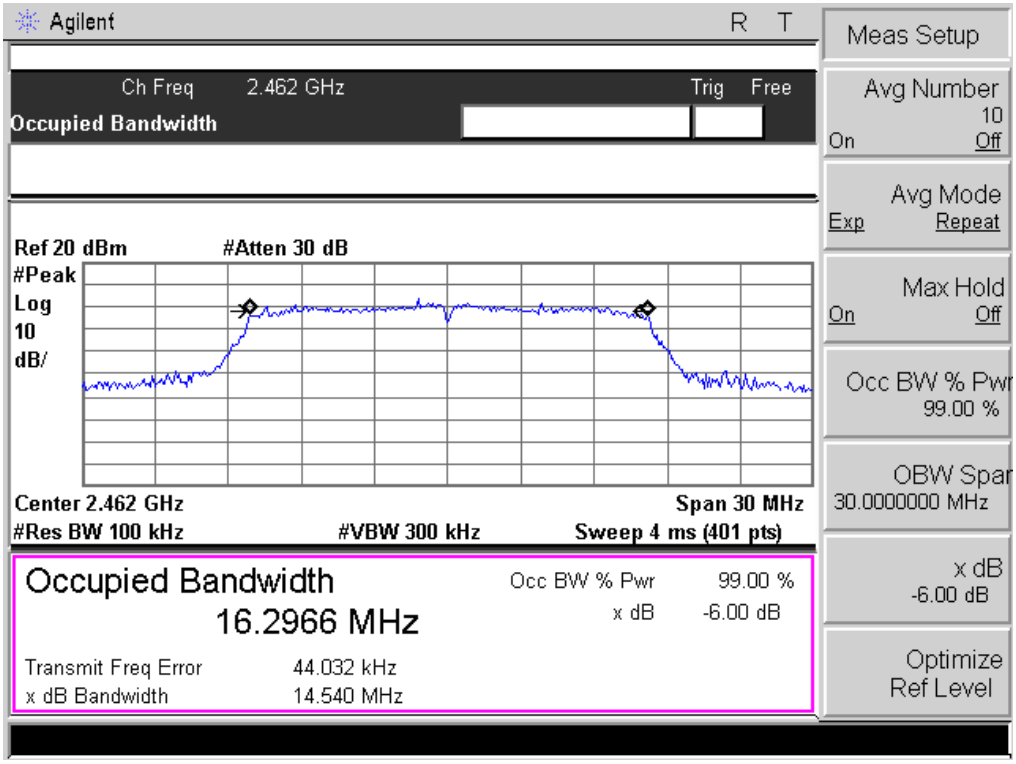
TX CH 01



TX CH 06



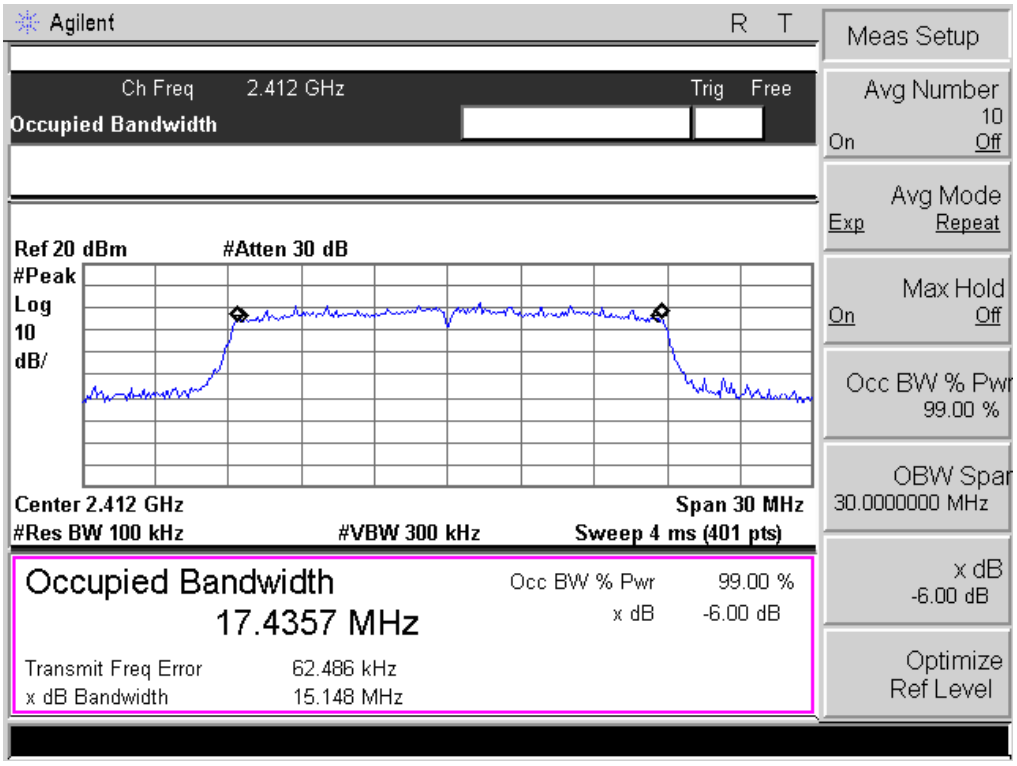
TX CH 11



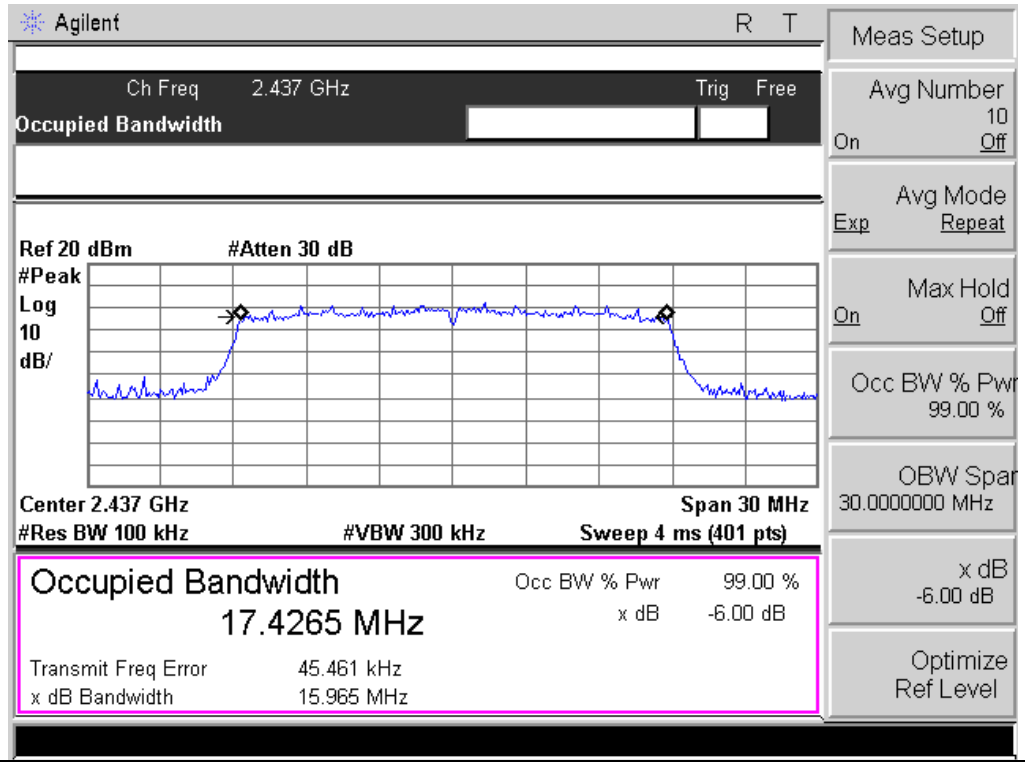
EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX n Mode(20M) /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2412	15.148	500	Pass
Middle	2437	15.965	500	Pass
High	2462	15.115	500	Pass

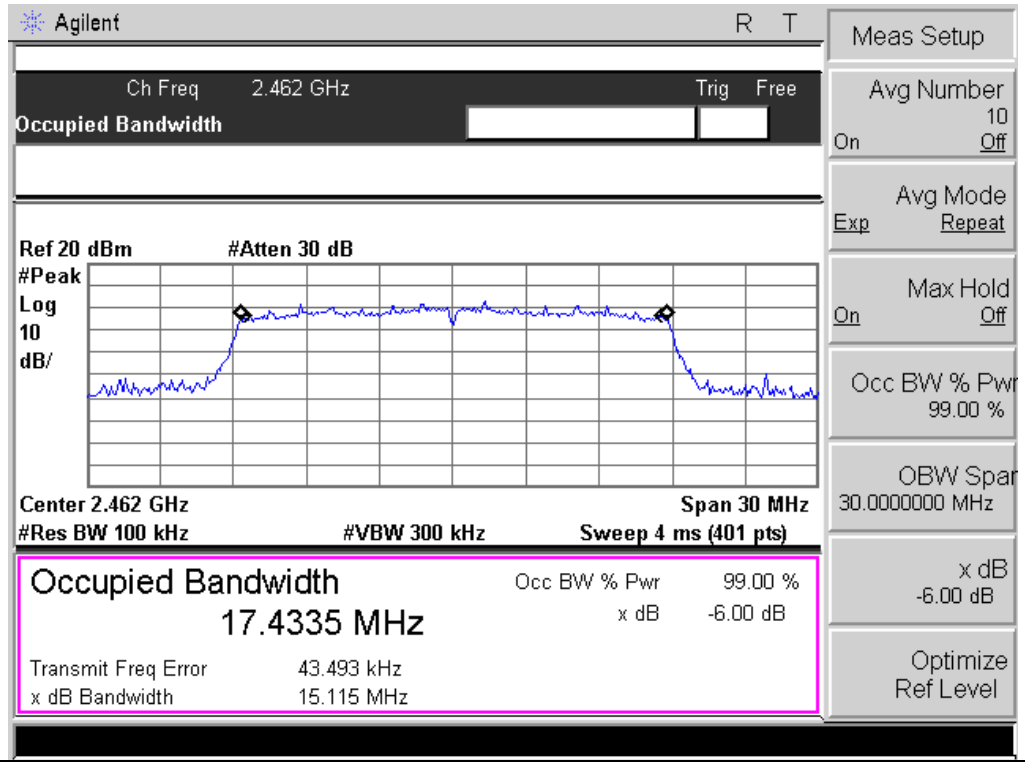
TX CH 01



TX CH 06



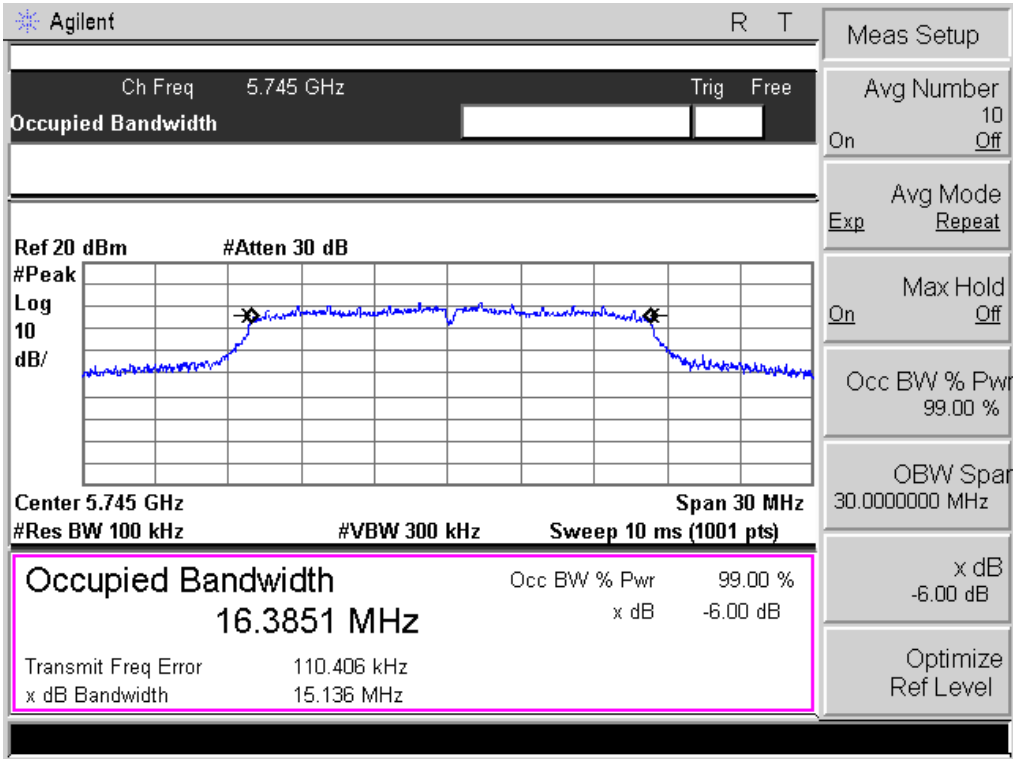
TX CH 11



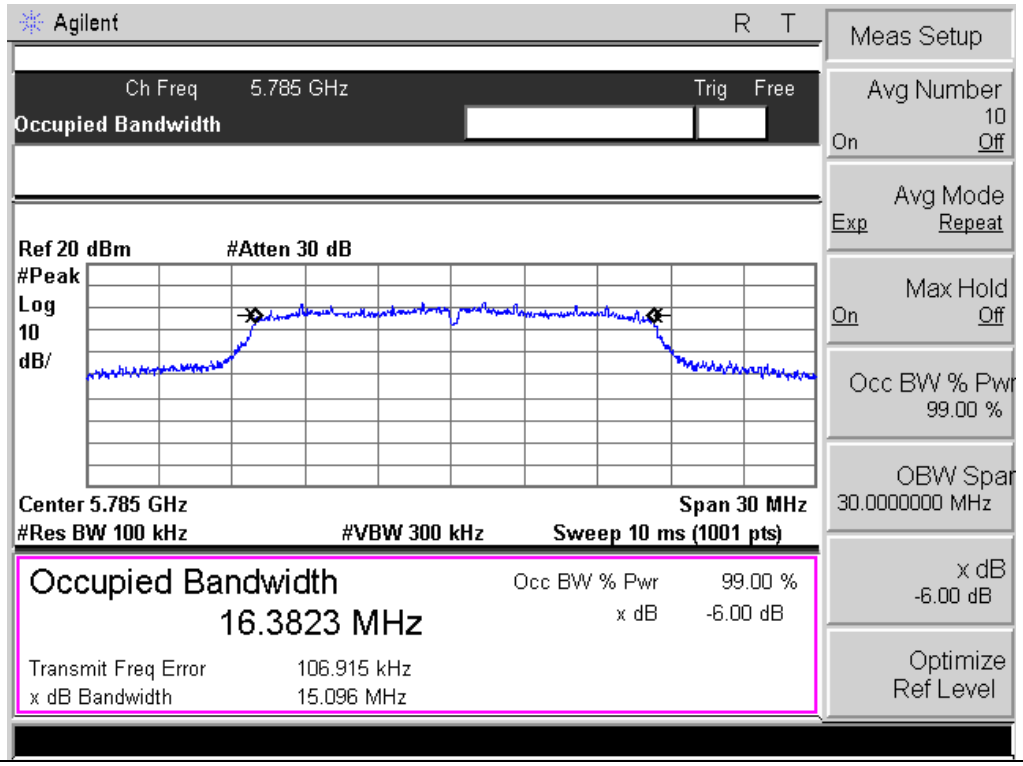
EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX a Mode /CH149, CH157, CH165		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	5745	15.136	500	Pass
Middle	5785	15.096	500	Pass
High	5825	15.128	500	Pass

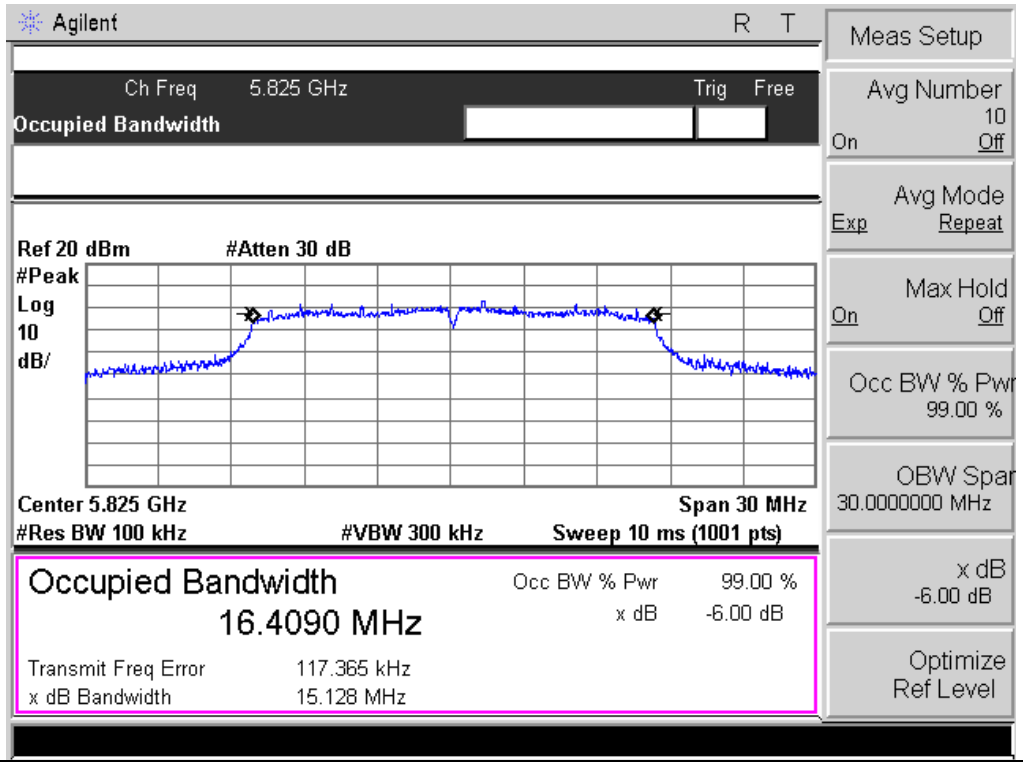
TX CH 149



TX CH 157



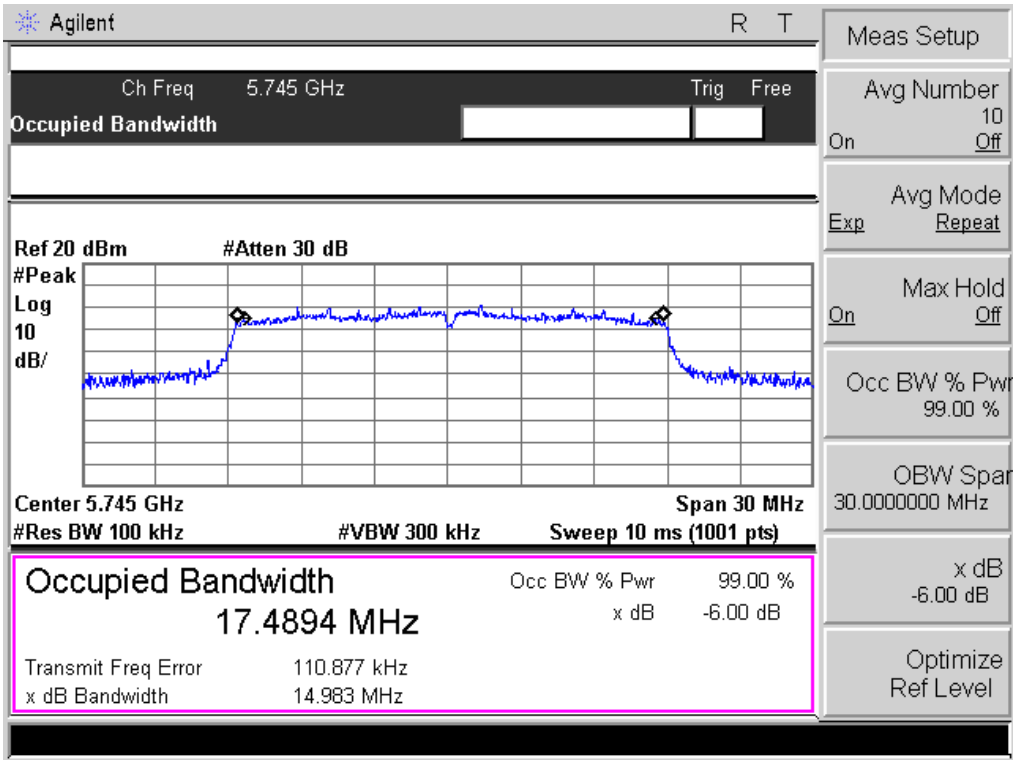
TX CH 165



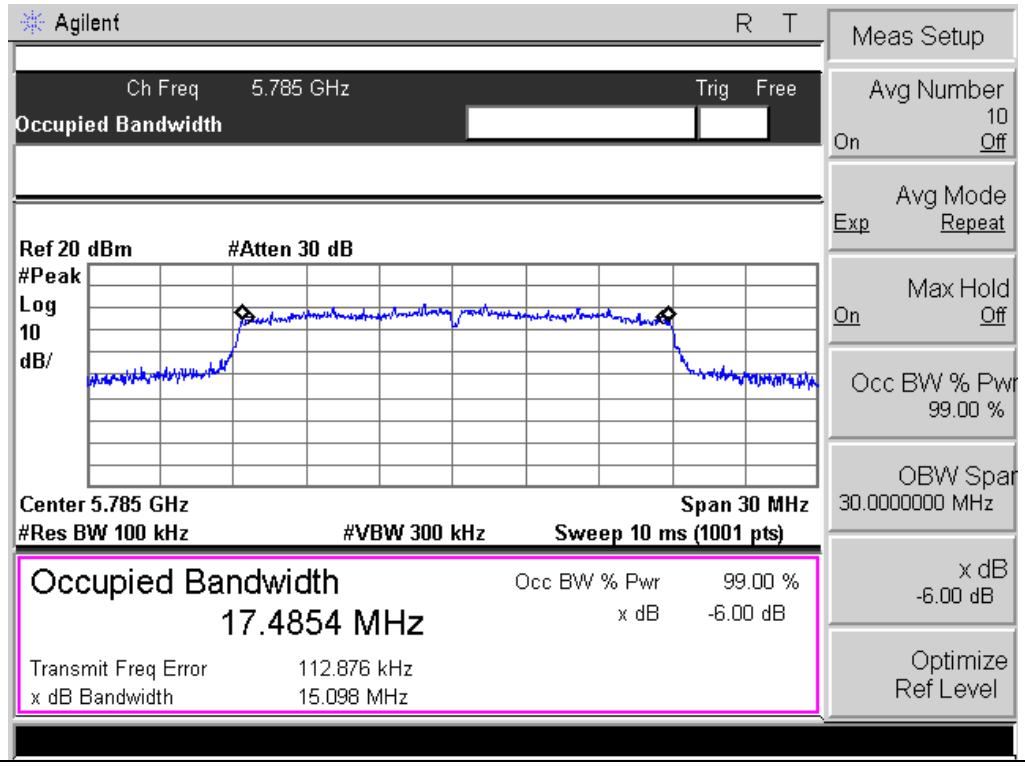
EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX n(20) Mode(5G) /CH149, CH157, CH165		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	5745	14.983	500	Pass
Middle	5785	15.098	500	Pass
High	5825	15.894	500	Pass

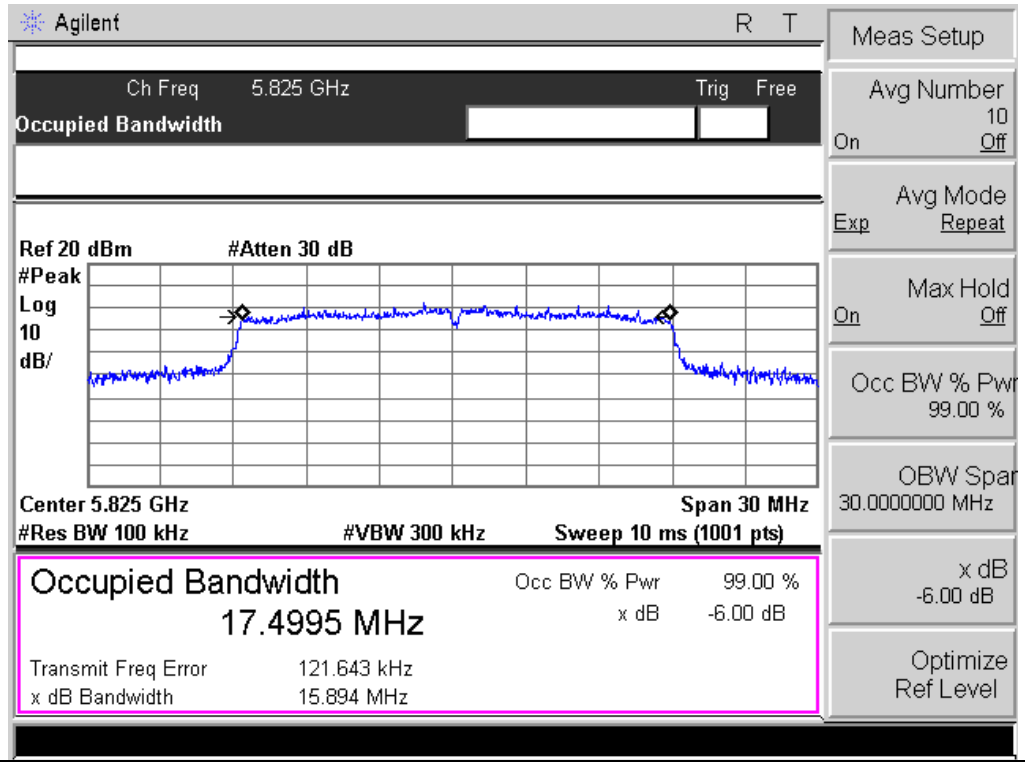
TX CH 149



TX CH 157



TX CH 165



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

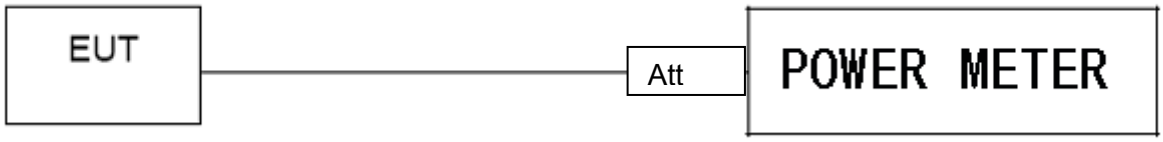
6.1.1 TEST PROCEDURE

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

EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX b/g/n(20M) Mode		

Test Channe	Frequency	Maximum output power. Antenna port		LIMIT
		(PK)	(AV)	
	(MHz)	(dBm)	(dBm)	dBm
TX 802.11b Mode				
CH01	2412	16.54	13.25	30
CH06	2437	16.25	13.36	30
CH11	2462	16.33	13.29	30
TX 802.11g Mode				
CH01	2412	15.36	13.01	30
CH06	2437	15.28	13.05	30
CH11	2462	15.58	13.21	30
TX 802.11n/20M Mode				
CH01	2412	14.16	12.41	30
CH06	2437	14.24	12.36	30
CH11	2462	14.36	12.02	30

EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V
Test Mode ：	TX a/n(5G) Mode		

Test Channe	Frequency	Maximum output power. Antenna port		LIMIT
		(PK)	(AV)	
	(MHz)	(dBm)	(dBm)	dBm
TX 802.11a Mode				
CH149	5745	9.76	7.02	30
CH157	5785	9.52	7.37	30
CH165	5825	9.67	7.24	30
TX 802.11 n20 Mode				
CH149	5745	9.31	6.42	30
CH157	5785	9.35	6.48	30
CH165	5825	9.16	6.22	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)).

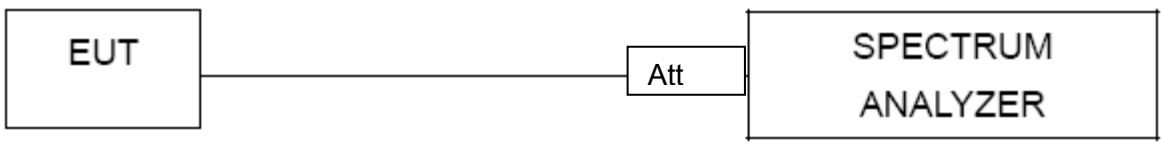
TEST PROCEDURE

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 300 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.

7.1 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

EUT：	Intelligent micro laser projection	Model Name ：	L1
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1012 hPa	Test Voltage ：	DC 3.7V

Frequency Band	Delta Peak to band emission (dBc)	＞Limit (dBc)	Result
802.11b mode			
2400	47.54	20	Pass
2483.5	52.99	20	Pass
802.11g mode			
2400	32.77	20	Pass
2483.5	45.69	20	Pass
802.11n-HT20 mode			
2400	37.33	20	Pass
2483.5	43.89	20	Pass

Frequency Band	Delta Peak to band emission (dBc)	＞Limit (dBc)	Result
802.11a mode			
5725	33.59	20	Pass
5850	46.03	20	Pass
802.11n20 mode			
5725	39.53	20	Pass
5850	47.25	20	Pass

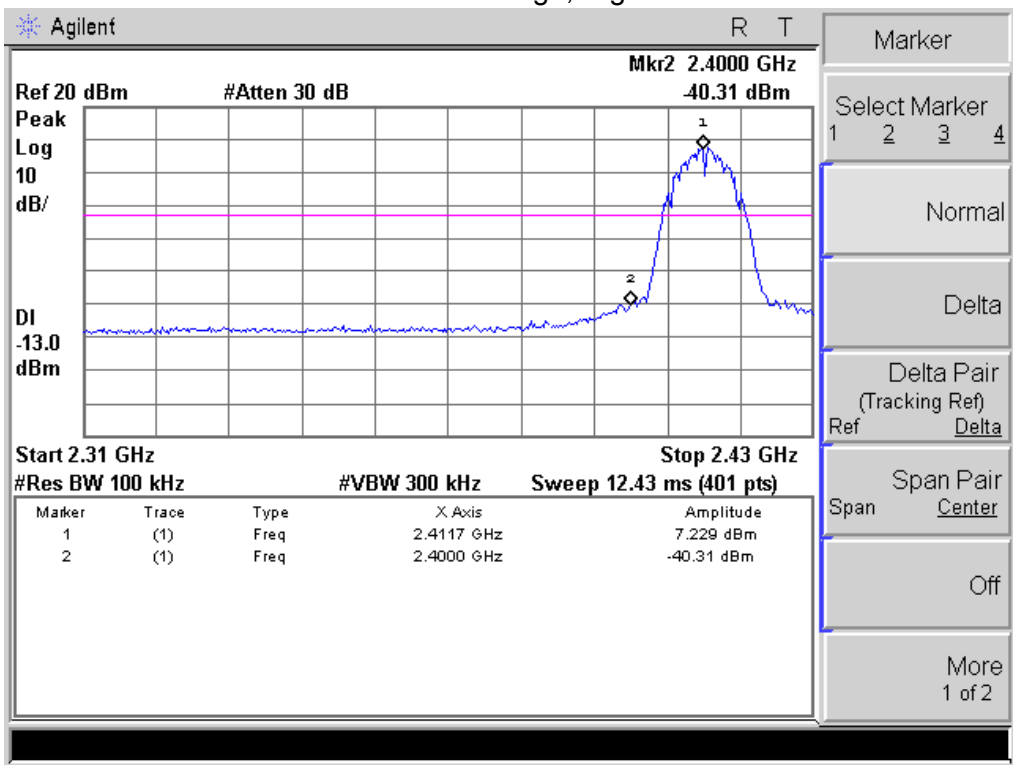
Radiated band edge:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
802.11b							
2390	58.67	-13.06	45.61	74	-28.39	peak	Vertical
2390	58.4	-13.06	45.34	74	-28.66	peak	Horizontal
2483.5	59.59	-12.78	46.81	74	-27.19	peak	Vertical
2483.5	59.61	-12.78	46.83	74	-27.17	peak	Horizontal
802.11g							
2390	58.25	-13.06	45.19	74	-28.81	peak	Vertical
2390	57.48	-13.06	44.42	74	-29.58	peak	Horizontal
2483.5	58.97	-12.78	46.19	74	-27.81	peak	Vertical
2483.5	59.36	-12.78	46.58	74	-27.42	peak	Horizontal
802.11n（20）							
2390	61.18	-13.06	48.12	74	-25.88	peak	Vertical
2390	60.96	-13.06	47.9	74	-26.10	peak	Horizontal
2483.5	61.1	-12.78	48.32	74	-25.68	peak	Vertical
2483.5	61.24	-12.78	48.46	74	-25.54	peak	Horizontal

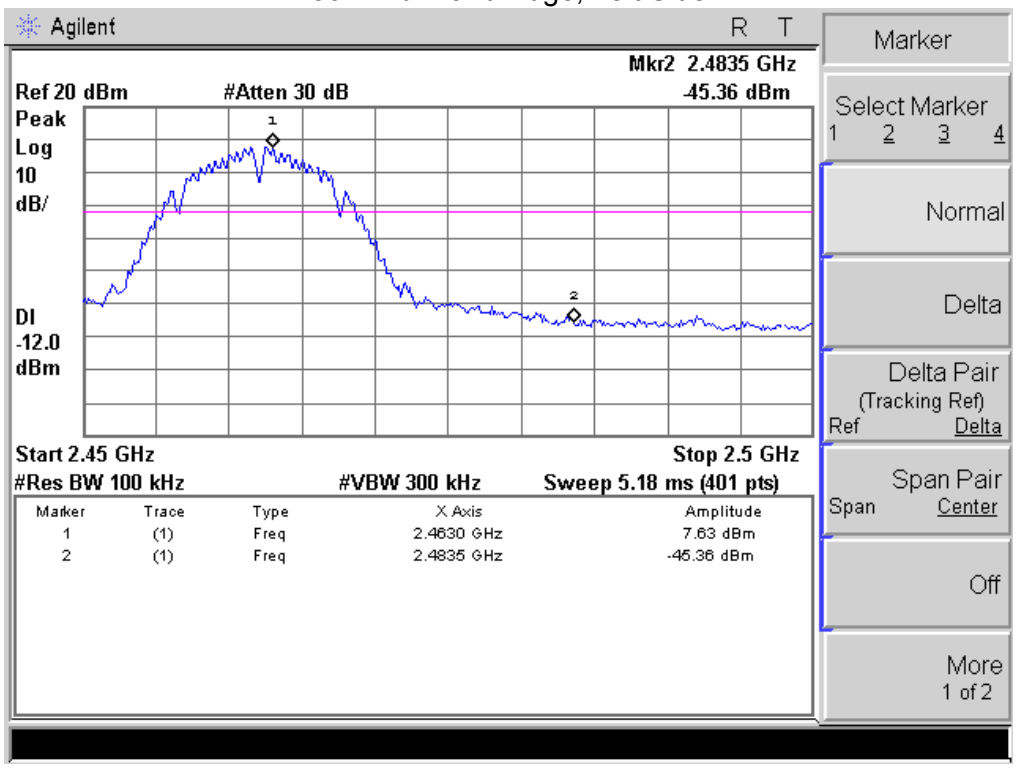
Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
802.11a-5G							
5725	42.13	11.79	53.92	74	-20.08	peak	Vertical
5725	41.54	11.79	53.33	74	-20.67	peak	Horizontal
5850	40.21	11.93	52.14	74	-21.86	peak	Vertical
5850	41.04	11.93	52.97	74	-21.03	peak	Horizontal
802.11n20-5G							
5725	41.85	11.79	53.64	74	-20.36	peak	Vertical
5725	40.19	11.79	51.98	74	-22.02	peak	Horizontal
5850	41.71	11.93	53.64	74	-20.36	peak	Vertical
5850	40.81	11.93	52.74	74	-21.26	peak	Horizontal

Note: Test method to see chapter 3.2 . When PK value is lower than the Average value limit, average not record.

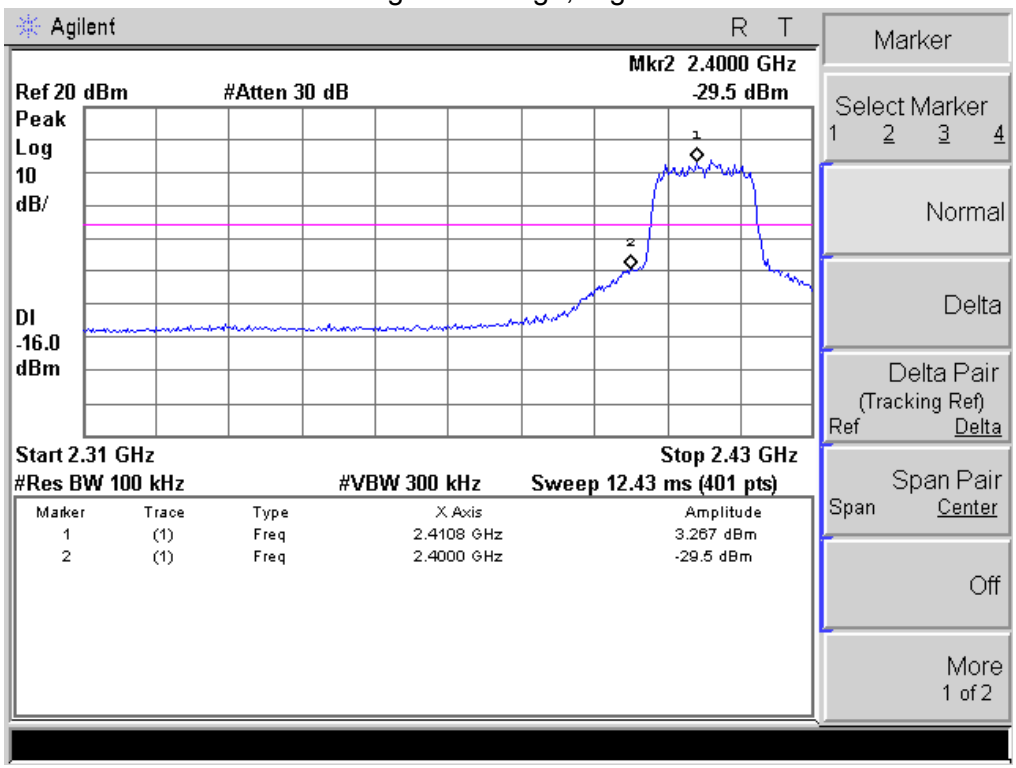
802.11b: Band Edge, Right Side



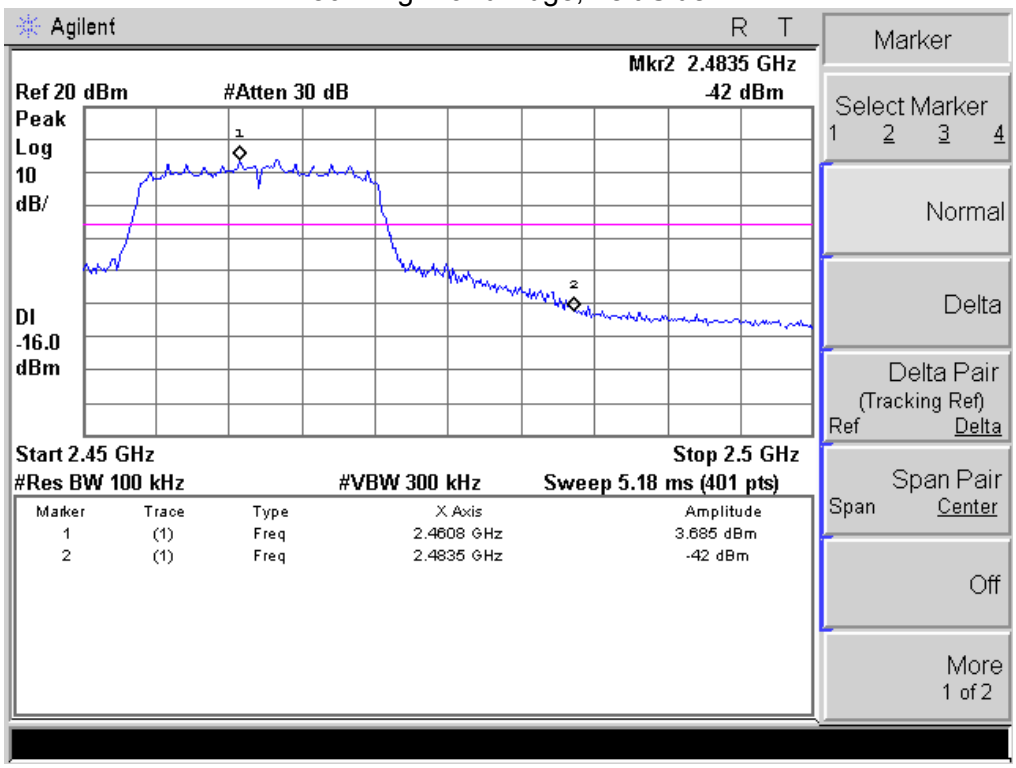
802.11b: Band Edge, Left Side



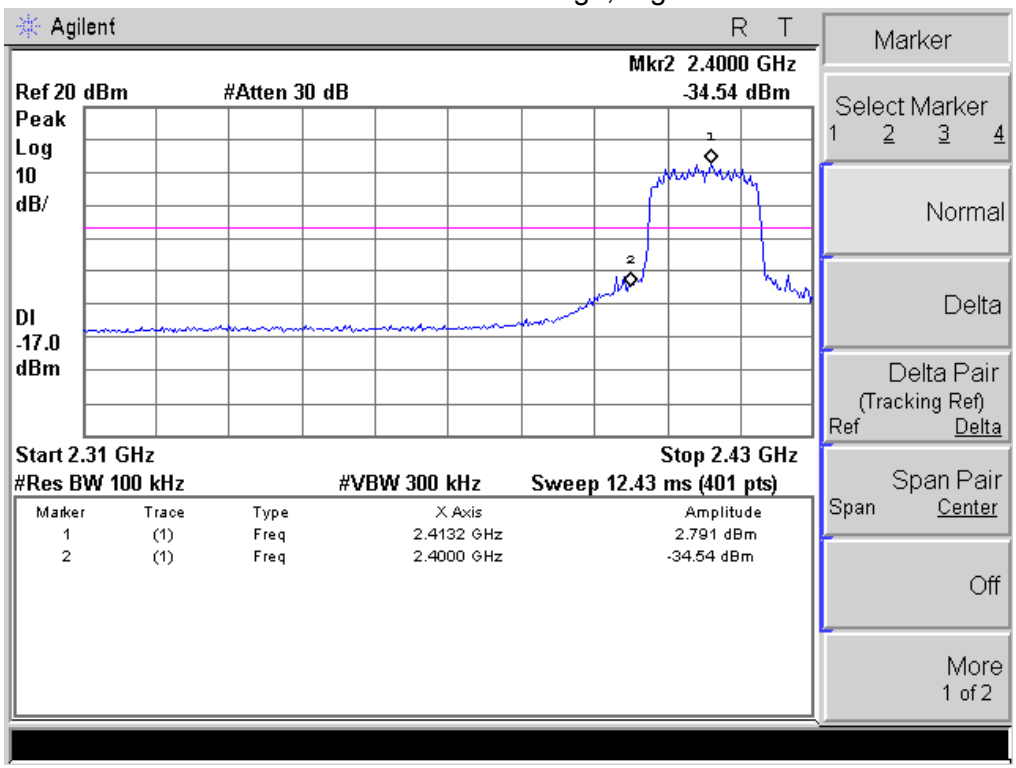
802.11g: Band Edge, Right Side



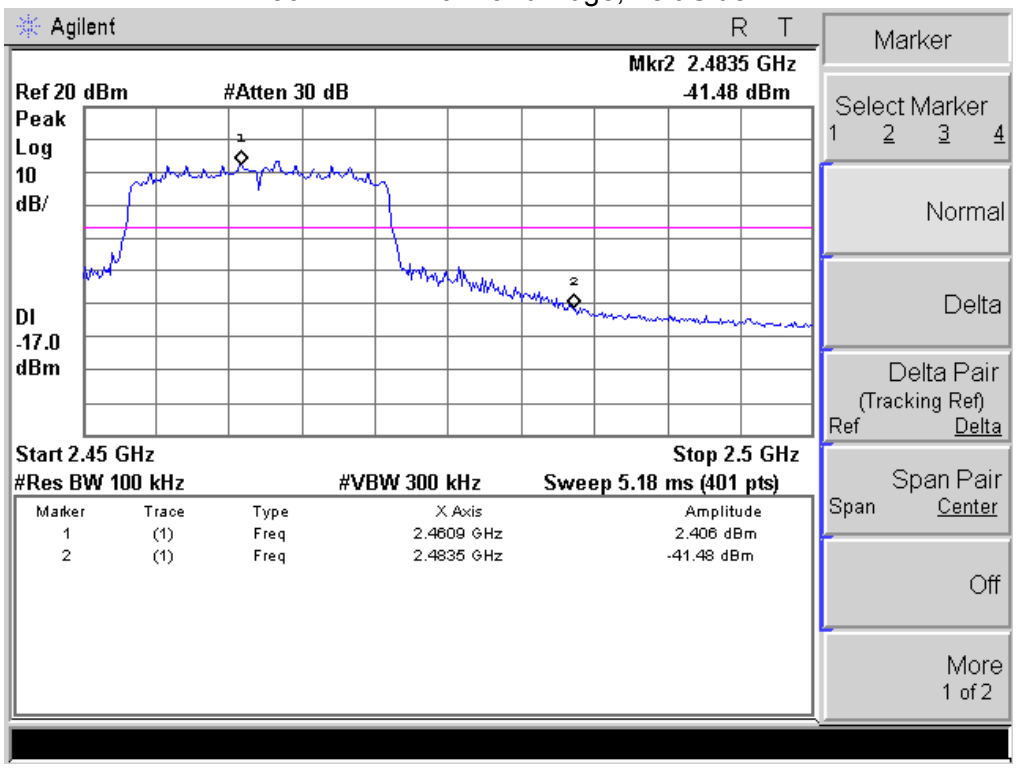
802.11g: Band Edge, Left Side



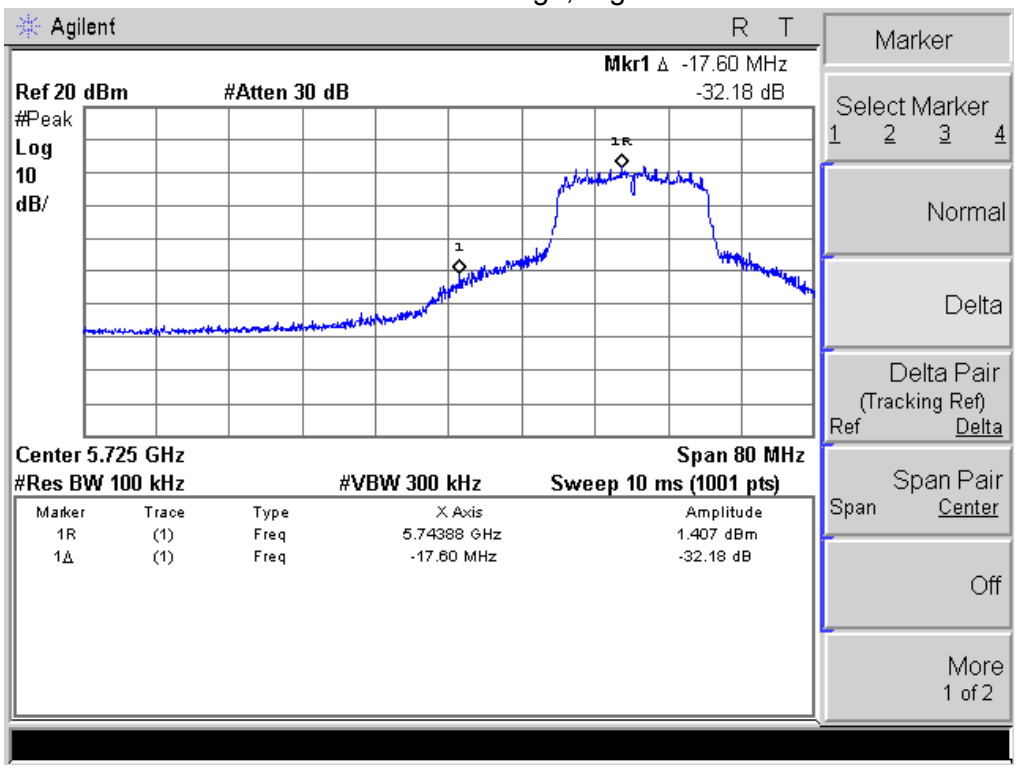
802.11n-HT20: Band Edge, Right Side



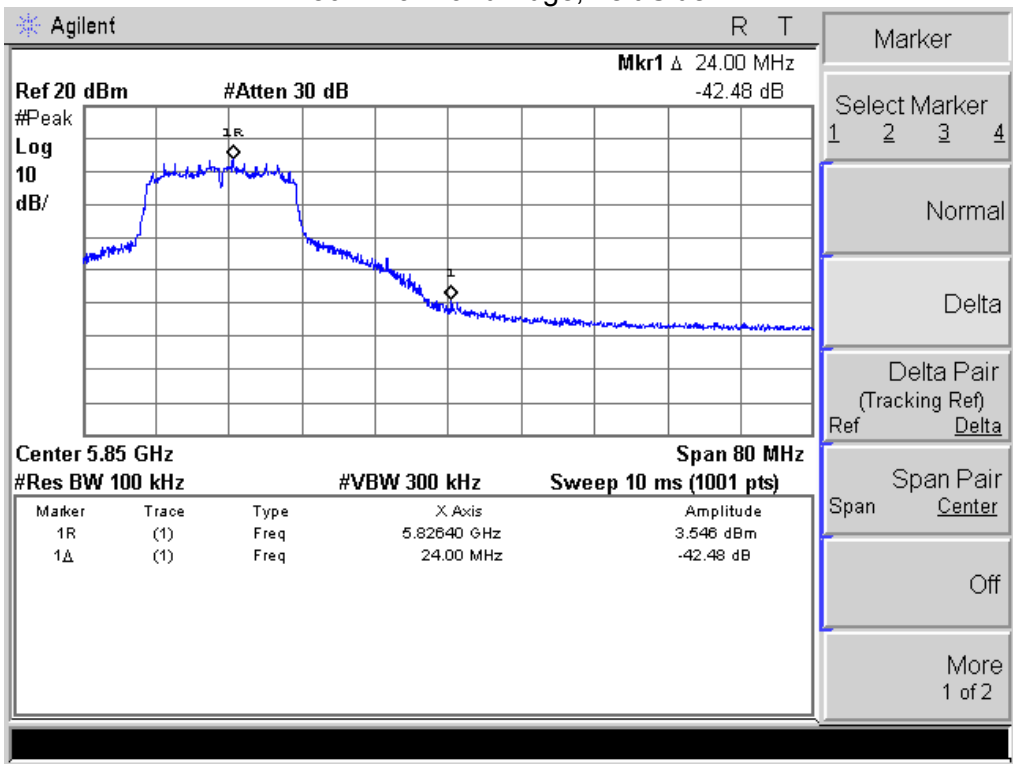
802.11n-HT20: Band Edge, Left Side



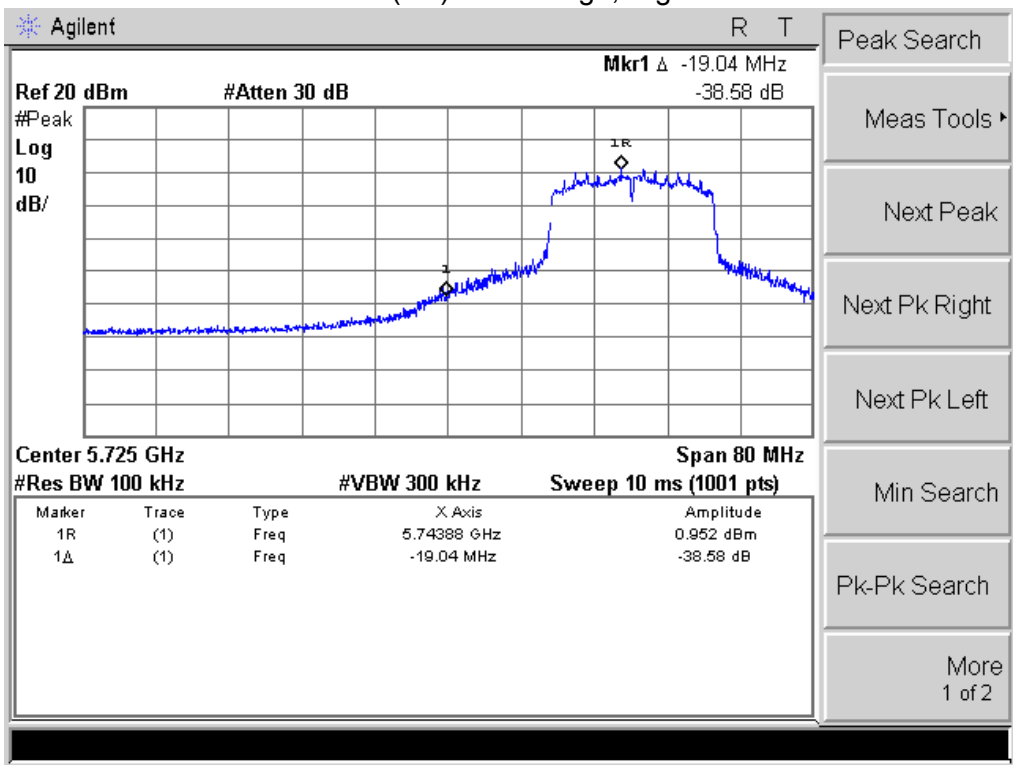
802.11a: Band Edge, Right Side



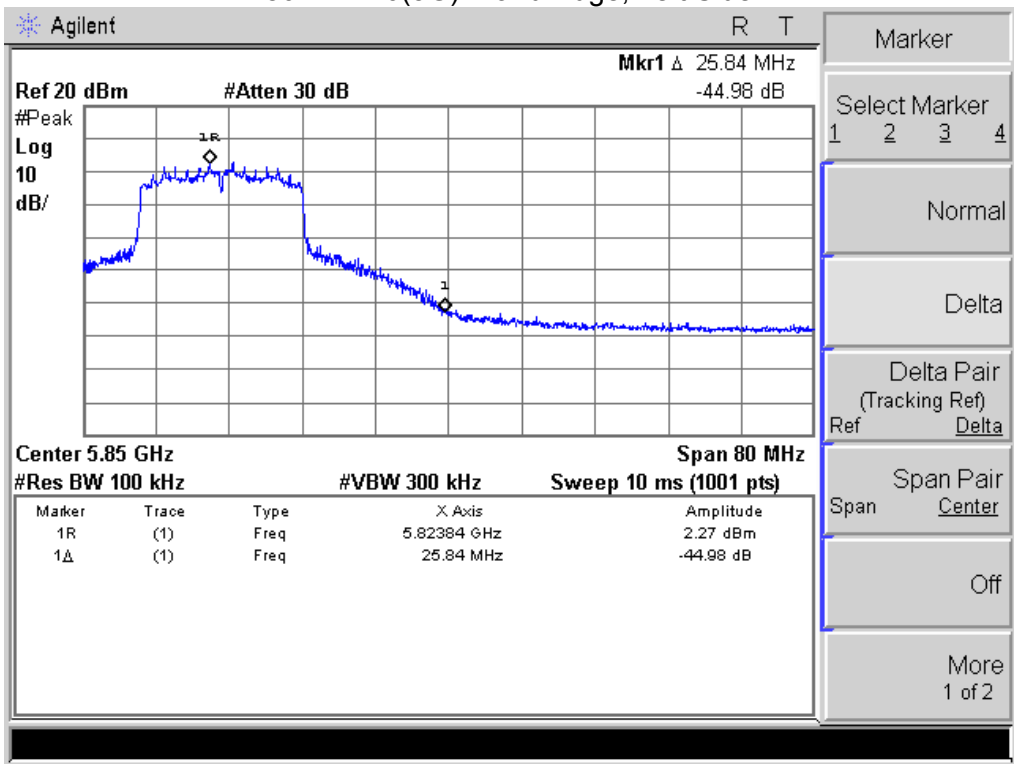
802.11a: Band Edge, Left Side



802.11n20(5G): Band Edge, Right Side



802.11n20(5G): Band Edge, Left Side



8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

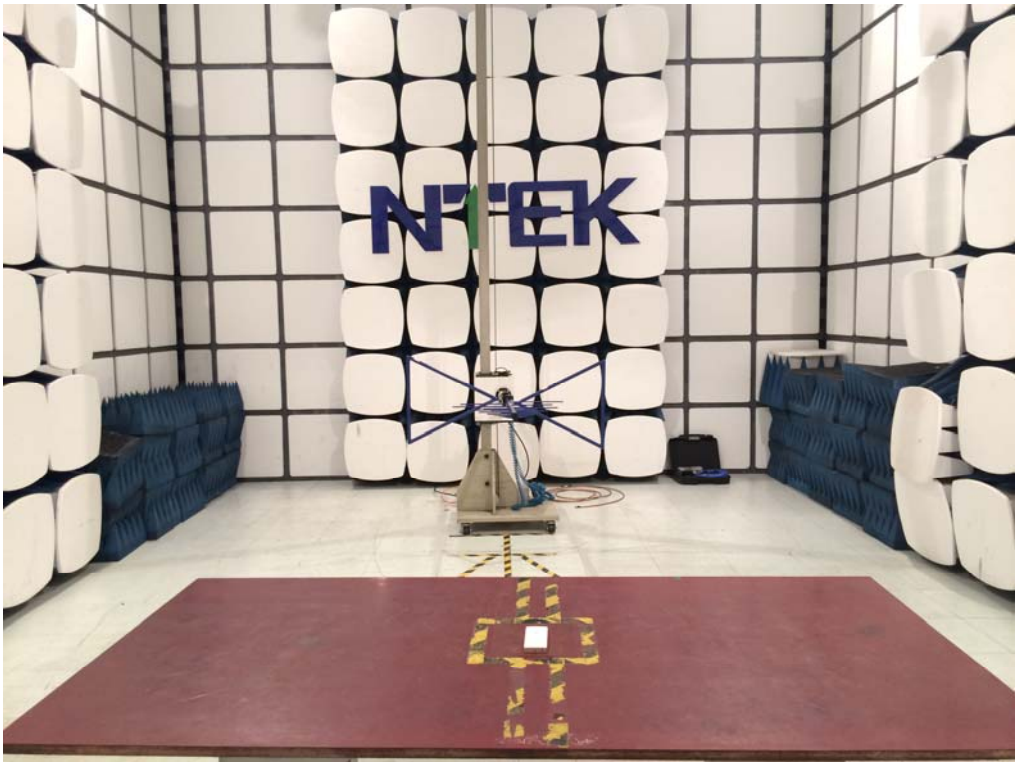
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

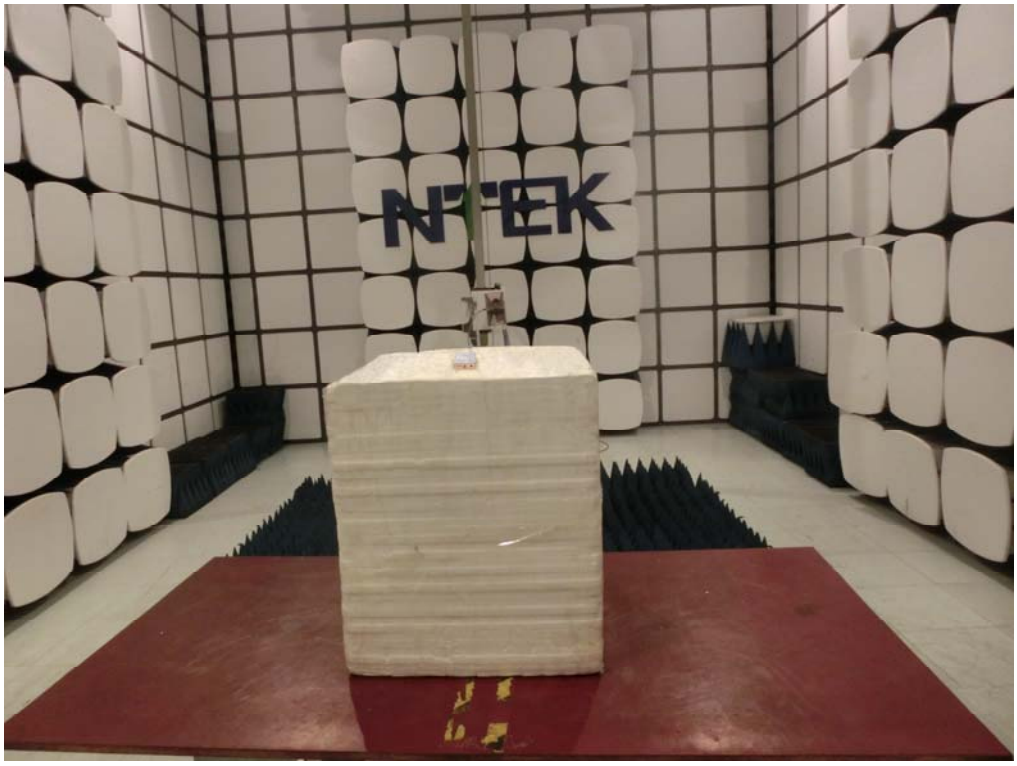
8.2 EUT ANTENNA

The EUT antenna is permanent attached antenna. It comply with the standard requirement.

9. EUT TEST PHOTO

Radiated Measurement Photos





Conducted Measurement Photos