

S

T

S

L

A

B



RADIO TEST REPORT

Report No.: STS1811224W01

Issued for

Binatone Electronics International Ltd.

Floor 23A, 9 Des Voeux Road West, Sheung Wan, Hong Kong

Product Name:	3.5" Video Baby Monitor With Wi-Fi® (Parent Unit)
Brand Name:	motorola
Model Name:	MBP668CONNECTPU
Series Model:	N/A
FCC ID:	VLJ-MBP668PU
IC ID:	4522A-MBP668PU
HVIN:	MBP668PU
Test Standard:	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 CFR47 FCC Part 15: Subpart B Section 15.107 CFR47 FCC Part 15: Subpart B Section 15.109 RSS-247 Issue 2 February 2017 RSS-Gen Issue 5 April 2018 ICES-003 Issue 6 January 2016

Any reproduction of this document must be done in full. No single part of this document may be reproduced without permission from STS, All Test Data Presented in this report is only applicable to presented Test sample.





TEST RESULT CERTIFICATION

Applicant's name : **Binatone Electronics International Ltd.**
 Address : Floor 23A, 9 Des Voeux Road West, Sheung Wan, Hong Kong
Manufacturer's Name : **VTech (Dongguan) Telecommunications Ltd.**
 Address : VTech Science Park Xia Ling Bei Management Zone, Liaobu, Dongguan, Guangdong 523411, China

Product description

Product Name : 3.5" Video Baby Monitor With Wi-Fi® (Parent Unit)
 Brand Name : motorola
 Model Name : MBP668CONNECTPU
 Series Model : N/A

Test Standards : CFR47 FCC Part 15: Subpart C Section 15.247
 CFR47 FCC Part 15: Subpart C Section 15.207
 CFR47 FCC Part 15: Subpart C Section 15.209
 CFR47 FCC Part 15: Subpart B Section 15.107
 CFR47 FCC Part 15: Subpart B Section 15.109
 RSS-247 Issue 2 February 2017
 RSS-Gen Issue 5 April 2018
 ICES-003 Issue 6 January 2016

Test procedure : ANSI C63.10: 2013, ANSI C63.4: 2014

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/IC requirements. And it is applicable only to the tested sample identified in the report.


This report shall not be reproduced except in full, without the written approval of STS, this document only be altered or revised by STS, personal only, and shall be noted in the revision of the document.


Date of Test

Date (s) of performance of tests : 26 Nov. 2018 -11 Dec. 2018

Date of Issue : 12 Dec. 2018

Test Result : **Pass**

Testing Engineer : 
 (Chris Chen)

Technical Manager : 
 (Sunday Hu)


Authorized Signatory : 
 (Vita Li)





Table of Contents

Page

1	SUMMARY OF TEST RESULTS	6
1.1	TEST FACTORY	7
1.2	MEASUREMENT UNCERTAINTY	7
2	GENERAL INFORMATION	8
2.1	GENERAL DESCRIPTION OF EUT.....	8
2.2	DESCRIPTION OF TEST MODES	10
2.3	BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	11
2.4	DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS	11
2.5	EQUIPMENTS LIST.....	12
3	EMC EMISSION TEST	14
3.1	CONDUCTED EMISSION MEASUREMENT	14
3.2	RADIATED EMISSION MEASUREMENT	26
3.3	RADIATED SPURIOUS EMISSION MEASUREMENT.....	40
4	CONDUCTED SPURIOUS & BAND EDGE EMISSION	54
4.1	APPLIED PROCEDURES / LIMIT	54
4.2	TEST PROCEDURE	54
4.3	DEVIATION FROM STANDARD	54
4.4	TEST SETUP	54
4.5	EUT OPERATION CONDITIONS.....	54
4.6	TEST RESULTS	55
5	NUMBER OF HOPPING CHANNEL	59
5.1	APPLIED PROCEDURES / LIMIT	59
5.2	TEST PROCEDURE	59
5.3	DEVIATION FROM STANDARD	59
5.4	TEST SETUP	59
5.5	EUT OPERATION CONDITIONS.....	59
5.6	TEST RESULTS	60
6	AVERAGE TIME OF OCCUPANCY	61
6.1	APPLIED PROCEDURES / LIMIT	61
6.2	TEST PROCEDURE	61
6.3	DEVIATION FROM STANDARD	61
6.4	TEST SETUP	61
6.5	EUT OPERATION CONDITIONS.....	61
6.6	TEST RESULTS	62



7	HOPPING CHANNEL SEPARATION MEASUREMENT	63
7.1	APPLIED PROCEDURES / LIMIT	63
7.2	TEST PROCEDURE	63
7.3	DEVIATION FROM STANDARD	63
7.4	TEST SETUP	63
7.5	EUT OPERATION CONDITIONS	63
7.6	TEST RESULTS	64
8	BANDWIDTH TEST	66
8.1	APPLIED PROCEDURES / LIMIT	66
8.2	TEST PROCEDURE	66
8.3	DEVIATION FROM STANDARD	66
8.4	TEST SETUP	66
8.5	EUT OPERATION CONDITIONS	66
8.6	TEST RESULTS	67
9	PEAK OUTPUT POWER TEST	69
9.1	APPLIED PROCEDURES / LIMIT	69
9.2	TEST PROCEDURE	69
9.3	DEVIATION FROM STANDARD	69
9.4	TEST SETUP	69
9.5	EUT OPERATION CONDITIONS	69
9.6	TEST RESULTS	70
10	ANTENNA REQUIREMENT	71
10.1	STANDARD REQUIREMENT	71
10.2	EUT ANTENNA	71
11	FREQUENCY STABILITY	72
11.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT	72
11.2	TEST PROCEDURE	72
11.3	TEST RESULT	72
12	APPENDIX - PHOTOS OF TEST SETUP	73



Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	12 Dec. 2018	STS1811224W01	ALL	Initial Issue





1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

KDB 558074 D01 DTS Meas Guidance v05

FCC Part 15, Subpart C RSS-247 Issue 2			
Standard Section	Test Item	Judgment	Remark
FCC Part 15.207(a) RSS-Gen Clause 8.8	Conducted Emission	PASS	
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(b)	20dB Bandwidth	PASS	
RSS-Gen Clause 6.7	99% Bandwidth	PASS	
FCC Part 15.247(a)(1) RSS-247 Clause 5.4(b)	Output Power	PASS	
FCC Part 15.247(d) RSS-247 Clause 3.3	Radiated Spurious Emission	PASS	
FCC Part 15.247(d) RSS-247 Clause 5.5	Conducted Spurious & Band Edge Emission	PASS	
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(b)	Hopping Channel Separation	PASS	
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(d)	Number of Hopping Frequency	PASS	
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(d)	Dwell Time	PASS	
FCC Part 15.205	Restricted Band Edge Emission	PASS	
FCC Part 15.247(d) & 15.209(a) RSS-247 Clause 5.5	Band Edge Emission	PASS	
FCC Part 15.247(b)(4) & 15.203	Antenna Requirement	PASS	
RSS-Gen Clause 6.11	Frequency Stability	PASS	

FCC Part 15, Subpart B ICES-003 Issue 6			
StandardSection	Test Item	Judgment	Remark
FCC Part 15.107(a) ICES-003	Conducted Emission	PASS	Class B limit
FCC Part 15.109(a) ICES-003	Radiated Emission	PASS	Class B limit

NOTE:

- 1) 'N/A' denotes test is not applicable in this test report
- 2) All tests were performed according to the procedures in ANSI C63.10: 2013 and ANSI C63.4: 2014.



1.1 TEST FACTORY

Shenzhen STS Test Services Co., Ltd.
Add. : 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

FCC Registration No.: 625569

IC Registration No.: 12108A

A2LA Certificate No.: 4338.01

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded 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	± 0.71 dB
2	Unwanted Emissions,conducted	± 0.63 dB
3	All emissions,radiated 30-200MHz	± 3.43 dB
4	All emissions,radiated 200MHz-1GHz	± 3.57 dB
5	All emissions,radiated>1G	± 4.13 dB
6	Conducted Emission(9KHz-150KHz)	± 3.18 dB
7	Conducted Emission(150KHz-30MHz)	± 2.70 dB



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name	3.5" Video Baby Monitor With Wi-Fi® (Parent Unit)	
Trade Name	motorola	
Model Name	MBP668CONNECTPU	
Series Model	N/A	
Model Difference	N/A	
Product Description	The EUT is a parent unit (monitor) of one of the Video Baby Monitor With Wi-Fi® which supports 2.4GHz FHSS wireless technology.	
	Operation Frequency:	2402 - 2477 MHz
	Modulation Type:	GFSK
	Bit Rate of Transmitter:	1 Mbps
	Number Of Channel:	22 channels
	Antenna Designation:	Please see Note 4
Antenna Gain (dBi):	2dBi	
Channel List	Please refer to the Note 2.	
Adapter 1#	Model: S005BNU0500100 (Tenpao) Input: AC 100-240V~50/60Hz, 0.15A Output: DC 5.0V@1000mA	
Adapter 2#	Model: BLJ06W050100P1-U (BLJ) Input: AC 100-240V~50/60Hz, 0.2A Output: DC 5.0V@1000mA	
Battery 1#	Model: AAA (JUSTHIGH) DC 3.6V@900mAh/Ni-MH battery	
Hardware version	N/A	
Software version	N/A	
RF Power Setting TEST Software (power class)	1	



Note:

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

2

RF Channel and Frequency			
RF Channel	Freq.(MHz)	RF Channel	Freq.(MHz)
01	2402	12	2445
02	2404	13	2450
03	2406	14	2455
04	2408	15	2460
05	2410	16	2465
06	2415	17	2467
07	2420	18	2469
08	2425	19	2471
09	2430	20	2473
10	2435	21	2475
11	2440	22	2477

3 Note:

- 1) In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test;
- 2) Test frequencies are lowest channel: 2402 MHz, middle channel: 2440 MHz and highest channel: 2477 MHz

4

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	MBP668CONN ECTPU	Integral Antenna	N/A	2	2.4G Antenna



2.2 DESCRIPTION OF TEST MODES

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

Worst Mode	Description	Data Rate
Mode 1	TX GFSK CH1	/
Mode 2	TX GFSK CH11	/
Mode 3	TX GFSK CH22	/
Mode 4	Transmitting mode	/
Mode 5	Charging mode	/

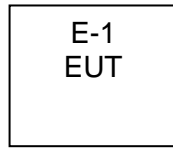
Note:

- 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
- 3) Controlled using a bespoke application on the laptop PC supplied by the customer. The application was used to enable a continuous transmission mode and to select the test channels, data rates and modulation schemes as required.

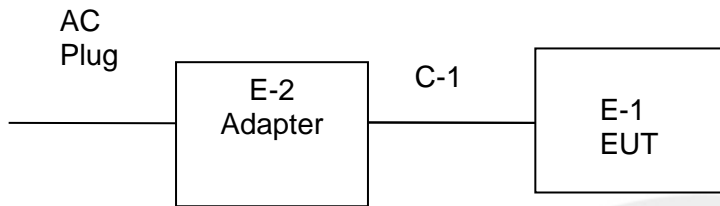


2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiation Test Set



Conduction Test Set



2.4 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.

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note
E-2	Adapter	Tenpao	S005BNU0500100	N/A	Accessories Equipment
E-2	Adapter	BLJ	BLJ06W050100P1-U	N/A	
E-4	Battery	JUSTHIGH	AAA	N/A	
E-5	Battery	GP	GPRHCH93C021 HRMR03	N/A	
E-3	Personal computer	HP	500-320cx	4CV428DQYN	Auxiliary Equipment

Item	Shielded Type	Ferrite Core	Length	Note
C-1	Adapter DC Cable	NO	200cm	N/A

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.
- 3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.



2.5 EQUIPMENTS LIST

Radiation Test Equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Test Receiver	R&S	ESCI	101427	2018.10.13	2019.10.12
Bilog Antenna	TESEQ	CBL6111D	34678	2019.10.31	2020.11.01
Horn Antenna	Schwarzbeck	BBHA 9120D(1201)	9120D-1343	2018.10.11	2019.10.12
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	N/A	2018.03.11	2021.03.10
Temperature & Humidity	HH660	Mieo	N/A	2018.10.09	2019.10.10
Temperature & Humidity	HH660	Mieo	N/A	2018.10.09	2019.10.10
Pre-mpifier (0.1M-3GHz)	EM	EM330	N/A	2018.03.09	2019.03.08
PreAmplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK201808090 1	2018.10.13	2019.10.12
Passive Loop (9K--30MHz)	ZHINAN	ZN30900C	16035	2017.03.11	2020.03.10
Low frequency cable	EM	R01	N/A	2018.10.13	2019.10.12
Low frequency cable	EM	R06	N/A	2018.10.13	2019.10.12
High frequency cable	SCHWARZBECK	R04	N/A	2018.10.13	2019.10.12
High frequency cable	SCHWARZBECK	R02	N/A	2018.10.13	2019.10.12
Semi-anechoic chamber	Changling	966	N/A	2018.10.24	2020.10.23
trun table	EM	SC100_1	60531	N/A	N/A
Antnna mast	EM	SC100	N/A	N/A	N/A
Max-full Antenna Corp	MF	MFA-440H	N/A	N/A	N/A

Conduction Test Equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Test Receiver	R&S	ESCI	101427	2018.10.13	2019.10.12
LISN	R&S	ENV216	101242	2018.10.13	2019.10.12
conduction Cable	EM	C01	N/A	2018.10.13	2019.10.12
Temperature & Humidity	Mieo	HH660	N/A	2018.10.09	2019.10.10



RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
USB RF power sensor	DARE	RPR3006W	15I00041SNO03	2018.10.13	2019.10.12
Spectrum Analyzer	Agilent	N9020A	MY51110105	2018.03.08	2019.03.07
Spectrum Analyzer	Agilent	N9020A	MY49100060	2018.10.13	2019.10.12

Note:

The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.





3 EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

operating frequency band. In case the emission fall within the restricted band specified on Part 15. 207(a), 107(a), RSS-Gen Table3 and ICES-003 Table2 limit in the table below has to be followed.

This item was performed according to the procedures in ANSI C63.10: 2013 and ANSI C63.4: 2014.

FREQUENCY (MHz)	Conducted Emission limit (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

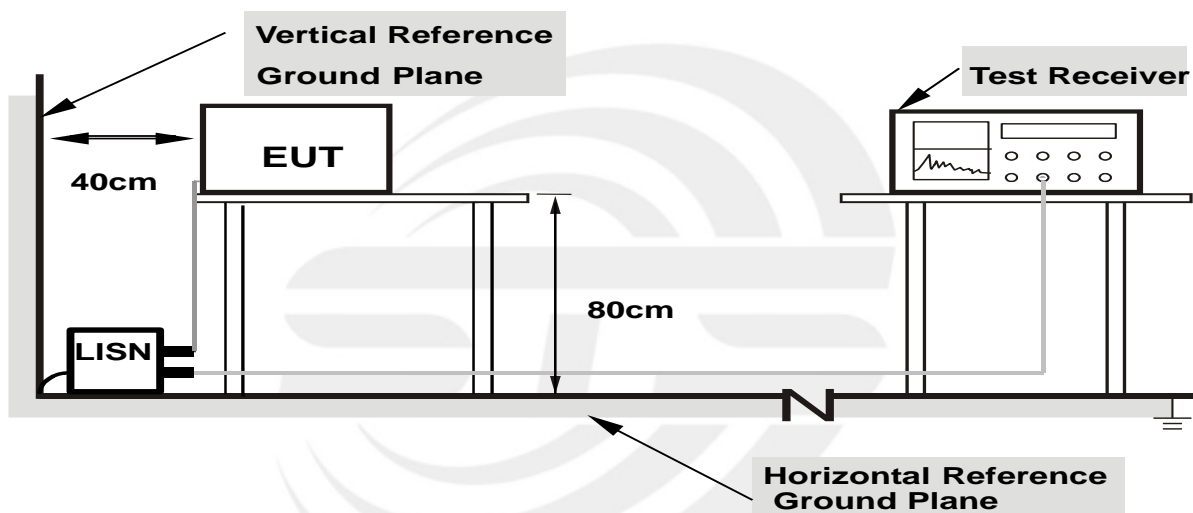
Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz



3.1.2 TEST PROCEDURE

- The EUT was 0.8 meters from the horizontal ground plane and 0.4 meters from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 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

3.1.4 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.



3.1.5 TEST RESULT

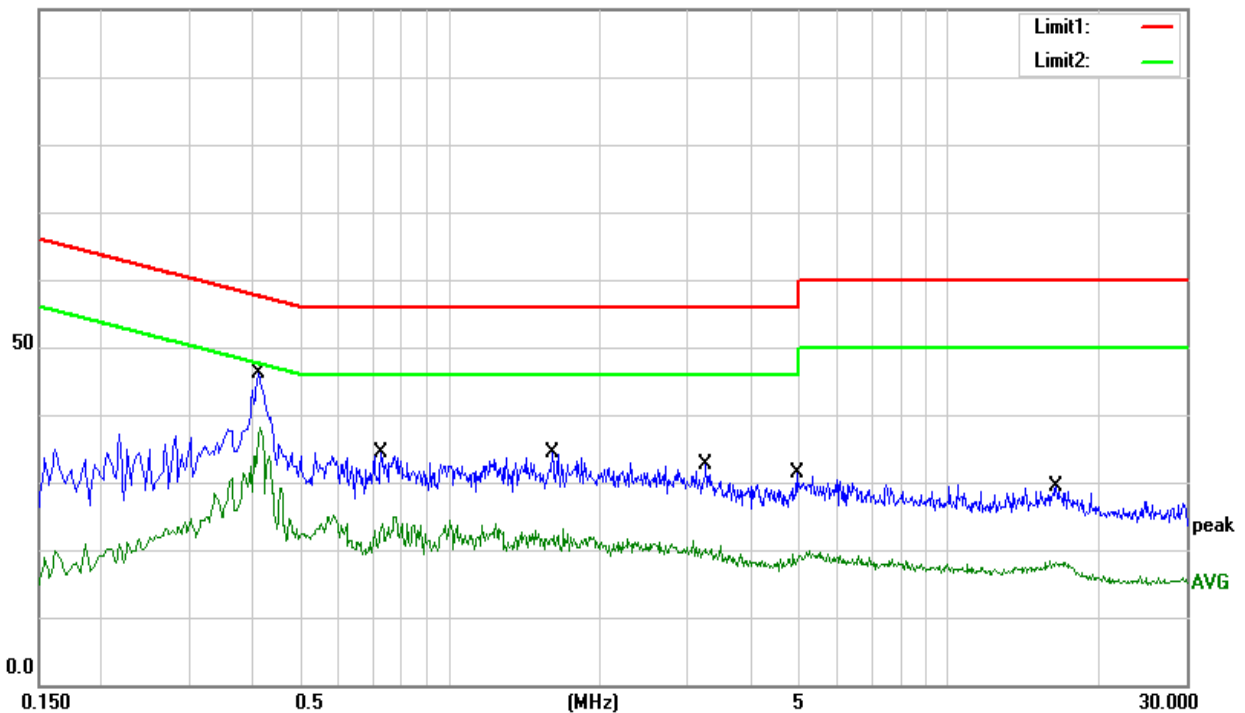
Temperature:	24.5 °C	Relative Humidity:	59%
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 4		
Note:	Tenpao + JUSTHIGH		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.4140	25.71	20.49	46.20	57.57	-11.37	QP
0.4140	17.68	20.49	38.17	47.57	-9.40	AVG
0.7300	14.21	20.24	34.45	56.00	-21.55	QP
0.7300	4.74	20.24	24.98	46.00	-21.02	AVG
1.6020	14.28	20.10	34.38	56.00	-21.62	QP
1.6020	2.94	20.10	23.04	46.00	-22.96	AVG
3.2620	12.66	19.98	32.64	56.00	-23.36	QP
3.2620	0.71	19.98	20.69	46.00	-25.31	AVG
4.9740	11.37	19.95	31.32	56.00	-24.68	QP
4.9740	-0.18	19.95	19.77	46.00	-26.23	AVG
16.4300	9.47	19.97	29.44	60.00	-30.56	QP
16.4300	-1.60	19.97	18.37	50.00	-31.63	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit

100.0 dBuV





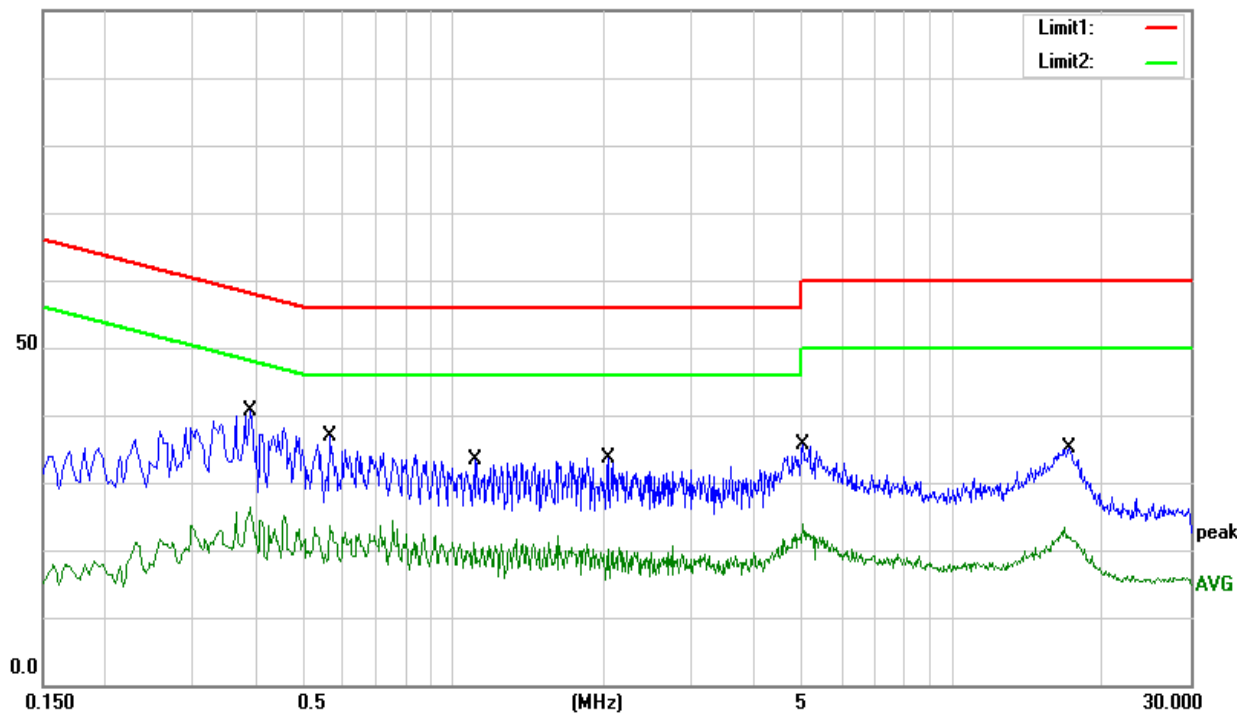
Temperature:	24.5 °C	Relative Humidity:	59%
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 4		
Note:	Tenpao + JUSTHIGH		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.3900	19.96	20.55	40.51	58.06	-17.55	QP
0.3900	5.86	20.55	26.41	48.06	-21.65	AVG
0.5660	16.58	20.38	36.96	56.00	-19.04	QP
0.5660	3.29	20.38	23.67	46.00	-22.33	AVG
1.1060	13.33	20.16	33.49	56.00	-22.51	QP
1.1060	2.02	20.16	22.18	46.00	-23.82	AVG
2.0420	13.43	20.15	33.58	56.00	-22.42	QP
2.0420	0.44	20.15	20.59	46.00	-25.41	AVG
5.0260	15.72	20.02	35.74	60.00	-24.26	QP
5.0260	3.78	20.02	23.80	50.00	-26.20	AVG
17.1380	15.37	19.87	35.24	60.00	-24.76	QP
17.1380	3.56	19.87	23.43	50.00	-26.57	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result = Reading + Factor) – Limit

100.0 dBuV





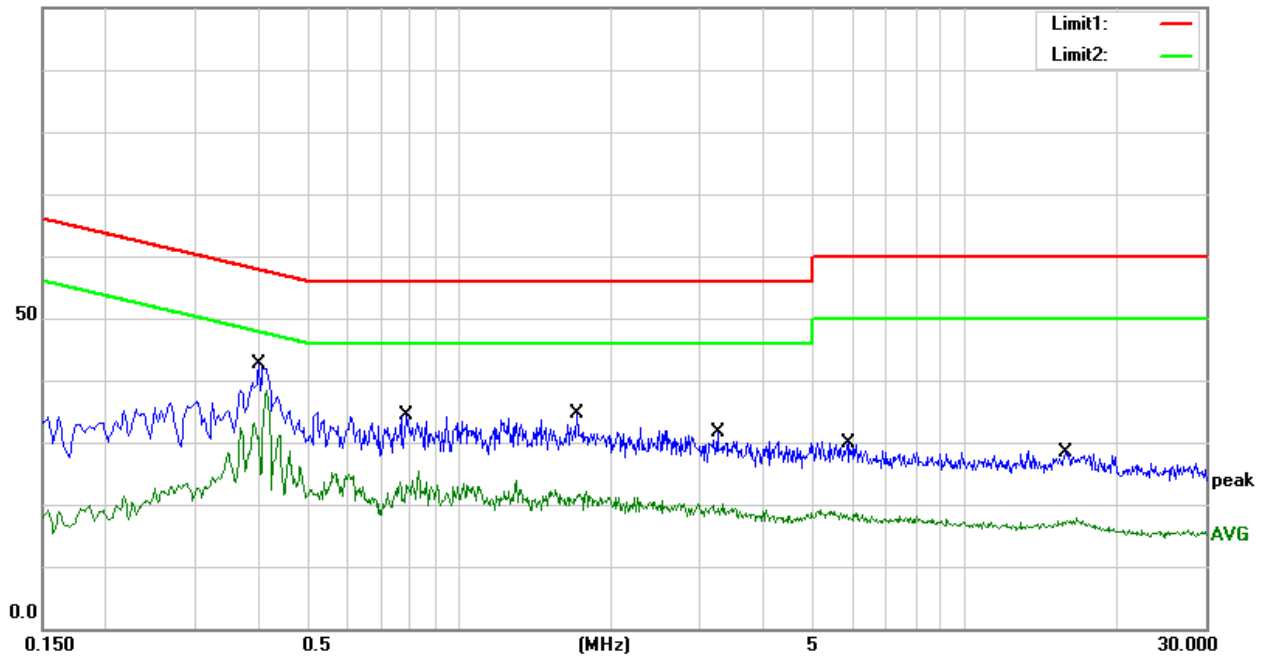
Temperature:	24.2 °C	Relative Humidity:	56%
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 5 (Part 15B & ICES-003)		
Note:	Tenpao + JUSTHIGH		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.4020	22.05	20.49	42.54	57.81	-15.27	QP
0.4020	17.79	20.49	38.28	47.81	-9.53	AVG
0.7900	14.08	20.23	34.31	56.00	-21.69	QP
0.7900	5.22	20.23	25.45	46.00	-20.55	AVG
1.7140	14.64	20.09	34.73	56.00	-21.27	QP
1.7140	2.00	20.09	22.09	46.00	-23.91	AVG
3.2460	11.77	19.97	31.74	56.00	-24.26	QP
3.2460	0.10	19.97	20.07	46.00	-25.93	AVG
5.8860	9.94	19.90	29.84	60.00	-30.16	QP
5.8860	-1.19	19.90	18.71	50.00	-31.29	AVG
15.8820	8.39	19.97	28.36	60.00	-31.64	QP
15.8820	-2.14	19.97	17.83	50.00	-32.17	AVG

Remark:

- All readings are Quasi-Peak and Average values.
- Margin = Result (Result =Reading + Factor)–Limit

100.0 dBuV





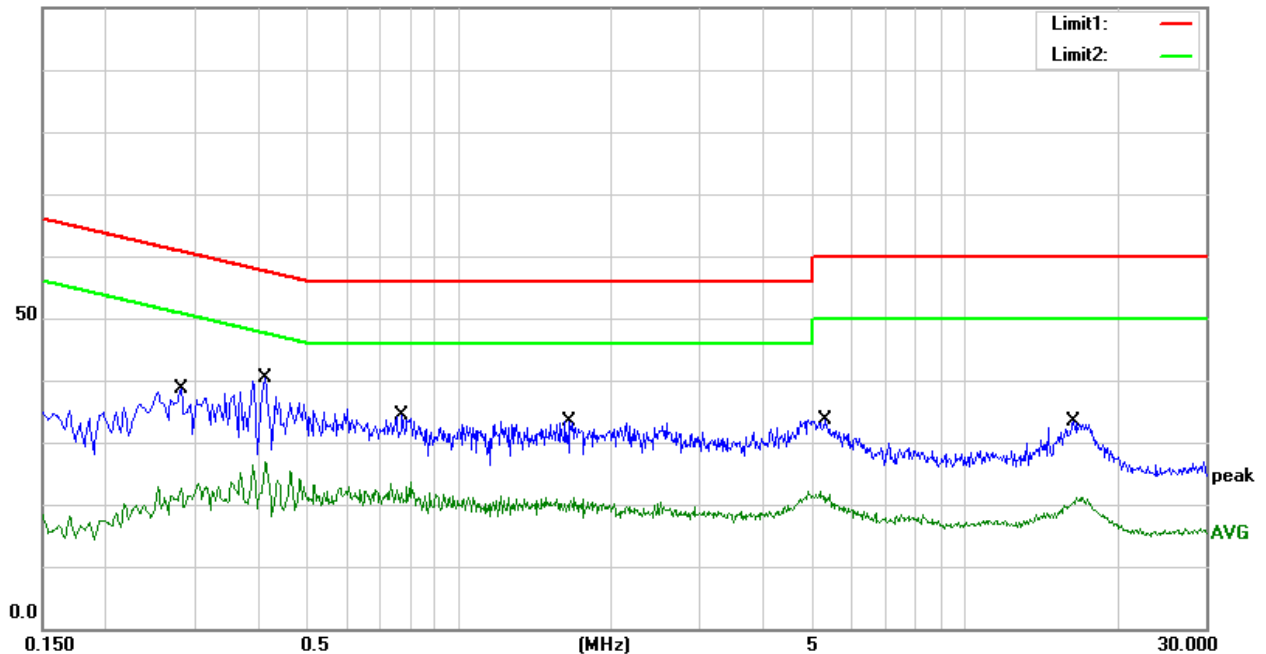
Temperature:	24.2 °C	Relative Humidity:	56%
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 5 (Part 15B& ICES-003)		
Note:	Tenpao + JUSTHIGH		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.2820	18.05	20.68	38.73	60.76	-22.03	QP
0.2820	2.57	20.68	23.25	50.76	-27.51	AVG
0.4140	19.83	20.51	40.34	57.57	-17.23	QP
0.4140	6.39	20.51	26.90	47.57	-20.67	AVG
0.7740	14.07	20.25	34.32	56.00	-21.68	QP
0.7740	3.45	20.25	23.70	46.00	-22.30	AVG
1.6620	13.15	20.16	33.31	56.00	-22.69	QP
1.6620	0.89	20.16	21.05	46.00	-24.95	AVG
5.2820	13.67	20.00	33.67	60.00	-26.33	QP
5.2820	1.54	20.00	21.54	50.00	-28.46	AVG
16.4660	13.45	19.87	33.32	60.00	-26.68	QP
16.4660	1.33	19.87	21.20	50.00	-28.80	AVG

Remark:

- All readings are Quasi-Peak and Average values.
- Margin = Result (Result =Reading + Factor)–Limit

100.0 dBuV





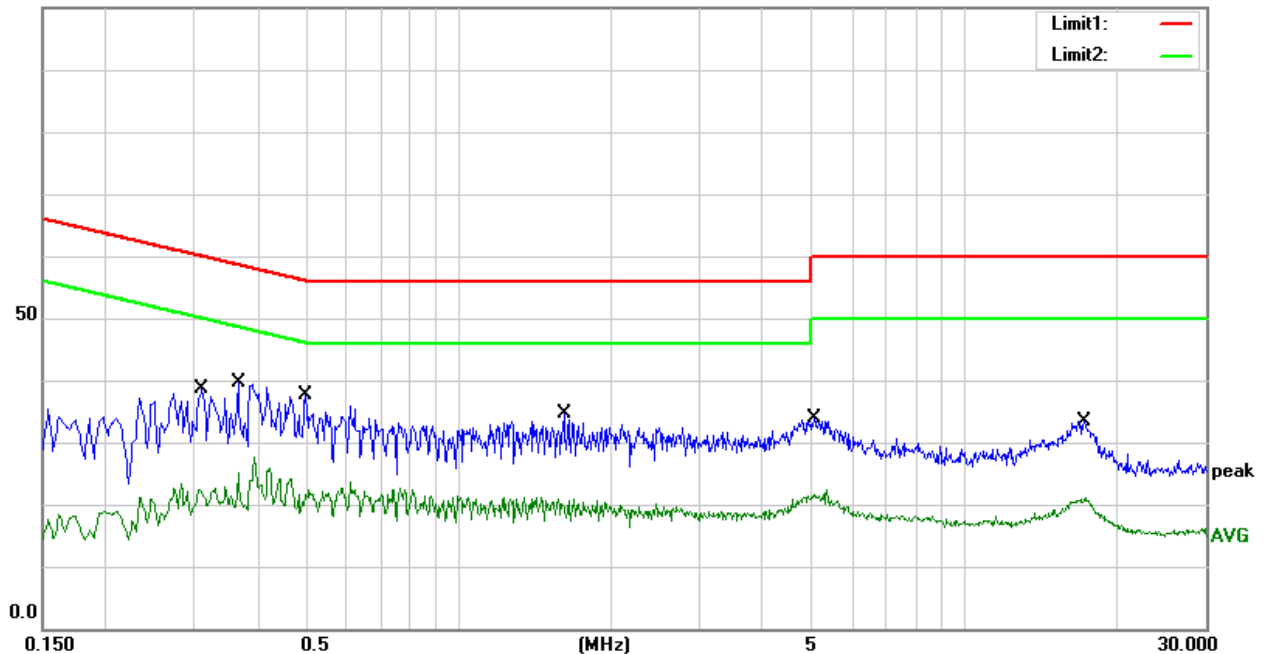
Temperature:	24.2 °C	Relative Humidity:	56%
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 5 (Part 15B & ICES-003)		
Note:	Tenpao + GP		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.3100	17.89	20.70	38.59	59.97	-21.38	QP
0.3100	1.87	20.70	22.57	49.97	-27.40	AVG
0.3660	19.02	20.57	39.59	58.59	-19.00	QP
0.3660	6.94	20.57	27.51	48.59	-21.08	AVG
0.4980	17.03	20.48	37.51	56.03	-18.52	QP
0.4980	3.13	20.48	23.61	46.03	-22.42	AVG
1.6180	14.45	20.10	34.55	56.00	-21.45	QP
1.6180	0.70	20.10	20.80	46.00	-25.20	AVG
5.0500	13.83	19.95	33.78	60.00	-26.22	QP
5.0500	2.34	19.95	22.29	50.00	-27.71	AVG
17.2540	13.34	19.97	33.31	60.00	-26.69	QP
17.2540	1.12	19.97	21.09	50.00	-28.91	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit

100.0 dBuV





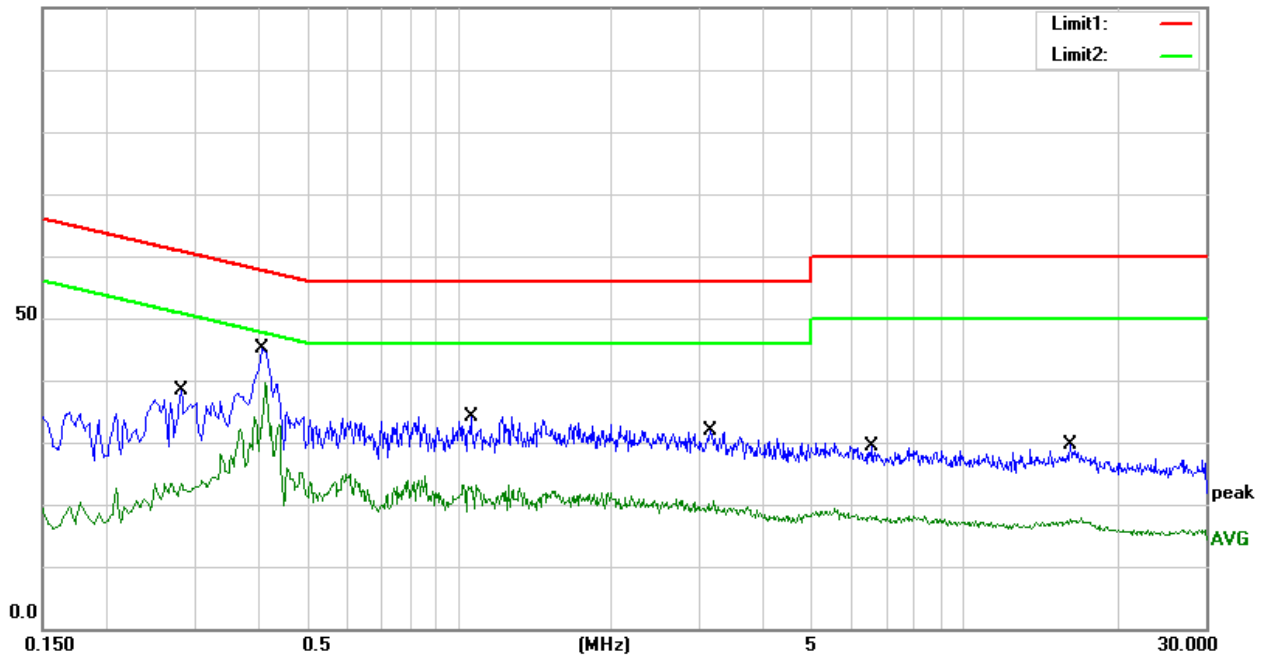
Temperature:	24.2 °C	Relative Humidity:	56%
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 5 (Part 15B& ICES-003)		
Note:	Tenpao + GP		

Frequency (MHz)	Reading (dBUV)	Correct Factor(dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Remark
0.2820	17.66	20.63	38.29	60.76	-22.47	QP
0.2820	3.25	20.63	23.88	50.76	-26.88	AVG
0.4100	24.58	20.49	45.07	57.65	-12.58	QP
0.4100	19.10	20.49	39.59	47.65	-8.06	AVG
1.0580	14.06	20.16	34.22	56.00	-21.78	QP
1.0580	3.08	20.16	23.24	46.00	-22.76	AVG
3.1420	11.95	19.97	31.92	56.00	-24.08	QP
3.1420	0.65	19.97	20.62	46.00	-25.38	AVG
6.5820	9.40	19.91	29.31	60.00	-30.69	QP
6.5820	-0.57	19.91	19.34	50.00	-30.66	AVG
16.1580	9.64	19.97	29.61	60.00	-30.39	QP
16.1580	-2.86	19.97	17.11	50.00	-32.89	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit

100.0 dBUV



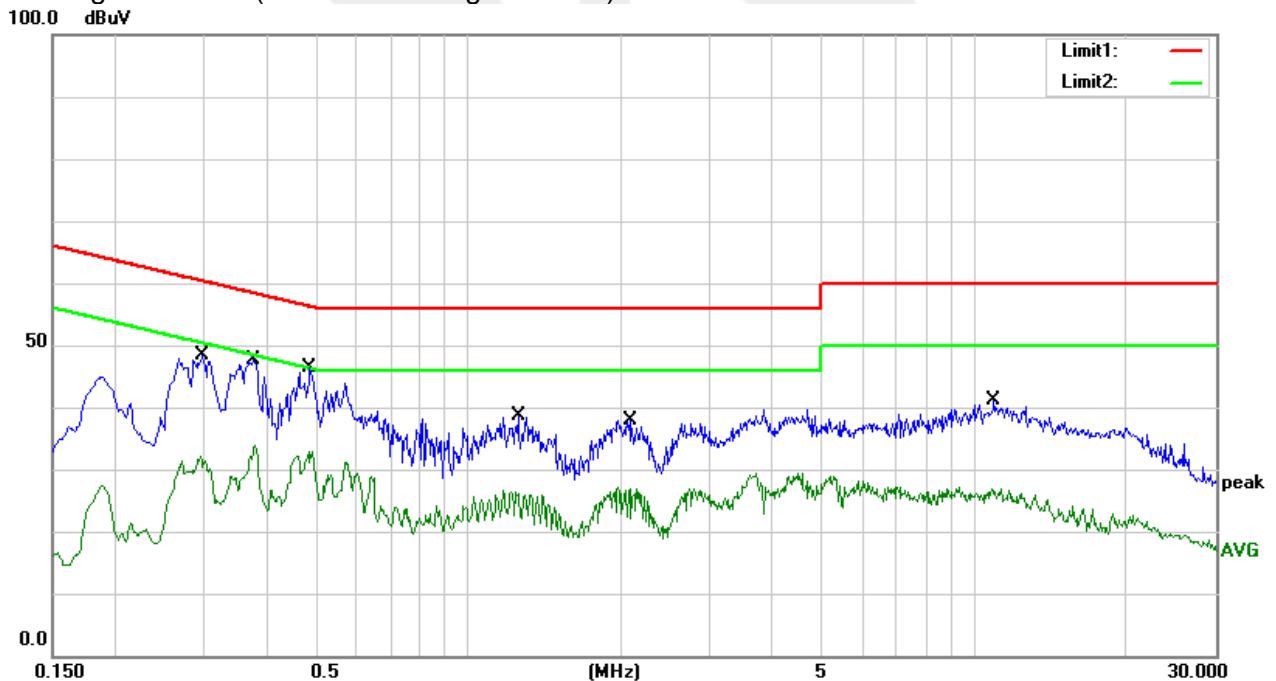


Temperature:	24.2 °C	Relative Humidity:	56%
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 5 (Part 15B & ICES-003)		
Note:	BLJ + JUSTHIGH		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.2980	27.50	20.75	48.25	60.30	-12.05	QP
0.2980	11.31	20.75	32.06	50.30	-18.24	AVG
0.3740	27.02	20.59	47.61	58.41	-10.80	QP
0.3740	13.33	20.59	33.92	48.41	-14.49	AVG
0.4860	25.83	20.44	46.27	56.24	-9.97	QP
0.4860	12.51	20.44	32.95	46.24	-13.29	AVG
1.2540	18.45	20.16	38.61	56.00	-17.39	QP
1.2540	6.57	20.16	26.73	46.00	-19.27	AVG
2.0780	17.80	20.14	37.94	56.00	-18.06	QP
2.0780	6.95	20.14	27.09	46.00	-18.91	AVG
10.9060	21.33	19.85	41.18	60.00	-18.82	QP
10.9060	7.35	19.85	27.20	50.00	-22.80	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



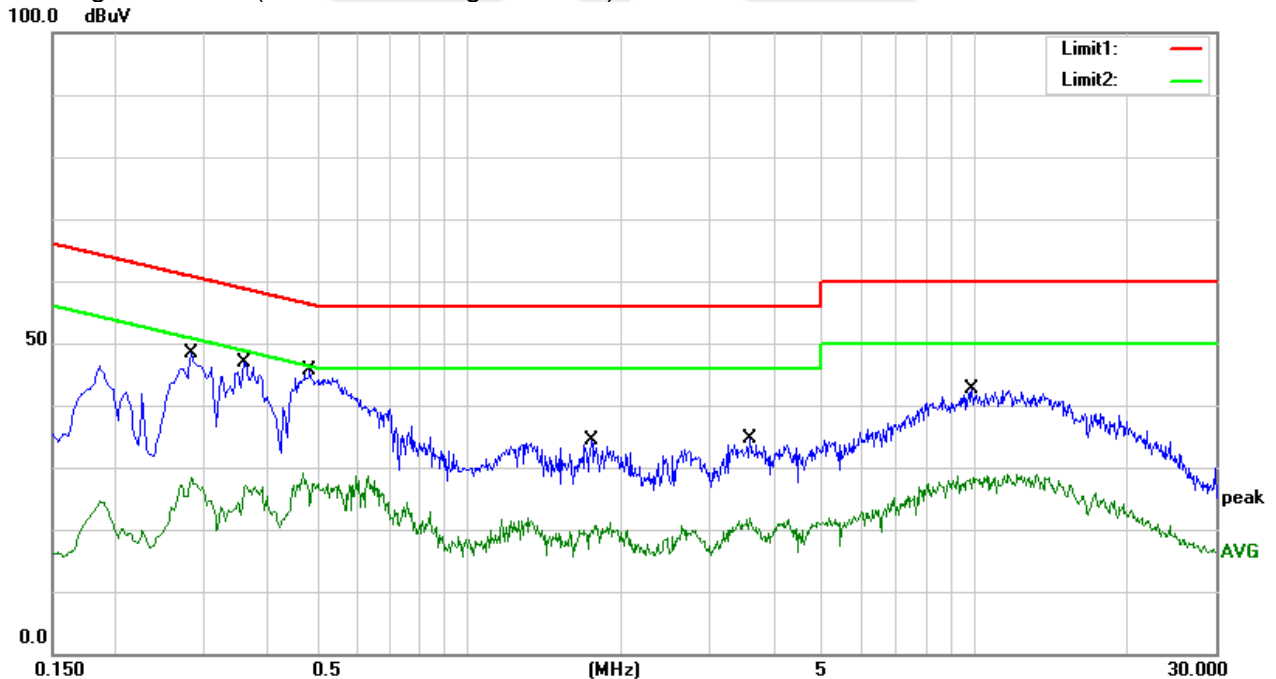


Temperature:	24.2 °C	Relative Humidity:	56%
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 5 (Part 15B& ICES-003)		
Note:	BLJ + JUSTHIGH		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.2820	27.64	20.63	48.27	60.76	-12.49	QP
0.2820	7.82	20.63	28.45	50.76	-22.31	AVG
0.3580	26.30	20.59	46.89	58.77	-11.88	QP
0.3580	6.62	20.59	27.21	48.77	-21.56	AVG
0.4860	25.15	20.48	45.63	56.24	-10.61	QP
0.4860	8.04	20.48	28.52	46.24	-17.72	AVG
1.7500	14.30	20.08	34.38	56.00	-21.62	QP
1.7500	0.97	20.08	21.05	46.00	-24.95	AVG
3.5860	14.63	19.96	34.59	56.00	-21.41	QP
3.5860	1.80	19.96	21.76	46.00	-24.24	AVG
9.8780	22.47	20.12	42.59	60.00	-17.41	QP
9.8780	8.70	20.12	28.82	50.00	-21.18	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



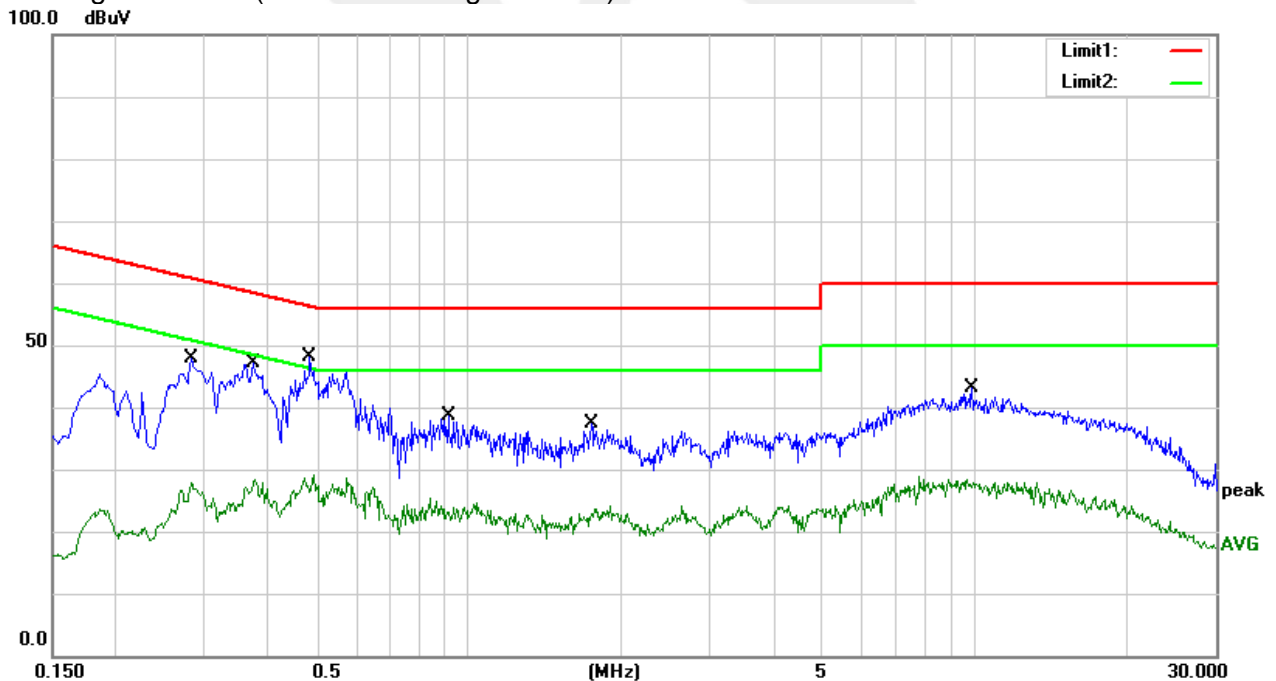


Temperature:	24.2 °C	Relative Humidity:	56%
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 5 (Part 15B & ICES-003)		
Note:	BLJ + GP		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.2820	27.14	20.63	47.77	60.76	-12.99	QP
0.2820	7.32	20.63	27.95	50.76	-22.81	AVG
0.3740	26.69	20.55	47.24	58.41	-11.17	QP
0.3740	7.85	20.55	28.40	48.41	-20.01	AVG
0.4860	27.65	20.48	48.13	56.24	-8.11	QP
0.4860	8.52	20.48	29.00	46.24	-17.24	AVG
0.9100	18.47	20.19	38.66	56.00	-17.34	QP
0.9100	4.35	20.19	24.54	46.00	-21.46	AVG
1.7500	17.30	20.08	37.38	56.00	-18.62	QP
1.7500	3.97	20.08	24.05	46.00	-21.95	AVG
9.8780	22.97	20.12	43.09	60.00	-16.91	QP
9.8780	8.21	20.12	28.33	50.00	-21.67	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



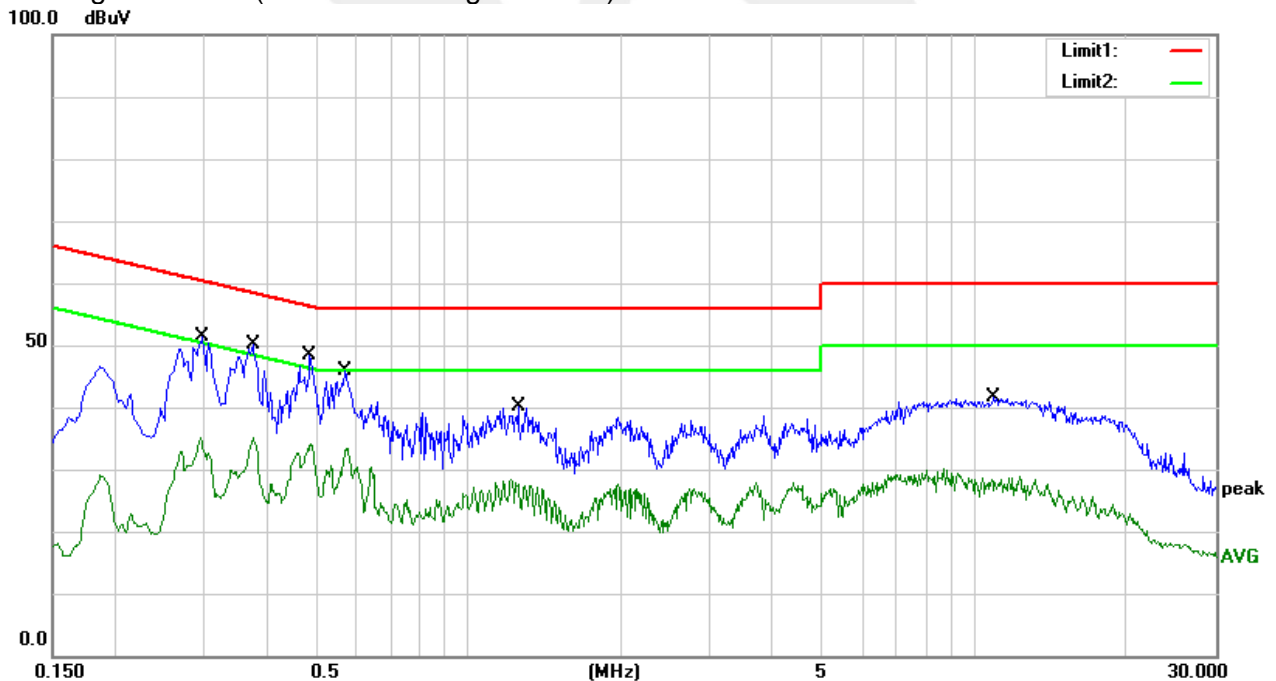


Temperature:	24.2 °C	Relative Humidity:	56%
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 5 (Part 15B& ICES-003)		
Note:	BLJ + GP		

Frequency (MHz)	Reading (dBUV)	Correct Factor(dB)	Result (dBUV)	Limit (dBUV)	Margin (dB)	Remark
0.2980	30.50	20.75	51.25	60.30	-9.05	QP
0.2980	14.31	20.75	35.06	50.30	-15.24	AVG
0.3740	29.52	20.59	50.11	58.41	-8.30	QP
0.3740	14.43	20.59	35.02	48.41	-13.39	AVG
0.4860	27.83	20.44	48.27	56.24	-7.97	QP
0.4860	13.72	20.44	34.16	46.24	-12.08	AVG
0.5700	25.54	20.38	45.92	56.00	-10.08	QP
0.5700	13.10	20.38	33.48	46.00	-12.52	AVG
1.2540	19.95	20.16	40.11	56.00	-15.89	QP
1.2540	7.31	20.16	27.47	46.00	-18.53	AVG
10.9060	21.83	19.85	41.68	60.00	-18.32	QP
10.9060	10.19	19.85	30.04	50.00	-19.96	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit





3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

Frequencies (MHz)	Class A (at 10m) dBuV/m	Class B (at 3m) dBuV/m
30~88	39.0	40.0
88~216	43.5	43.5
216~960	46.5	46.0
Above 960	49.5	54.0

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m) (at 3M)		Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80	60	74	54

Note:

- 1) The tighter limit applies at the band edges.
- 2) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

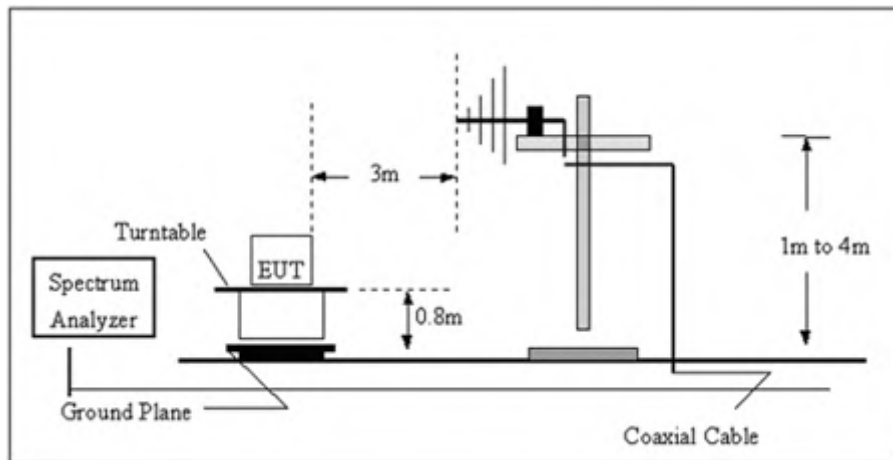
- a) The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated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

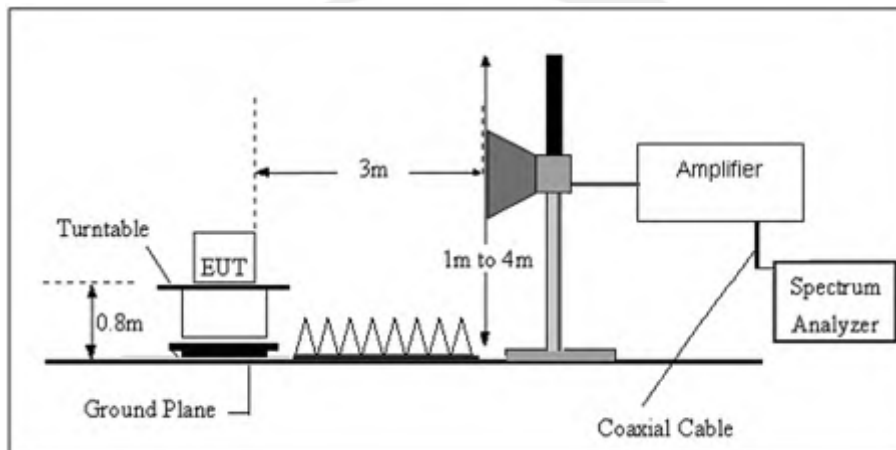


3.2.3 TEST SETUP

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



b) Radiated Emission Test-Up Frequency Above 1GHz



3.2.4 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.



3.2.5 TEST RESULTS

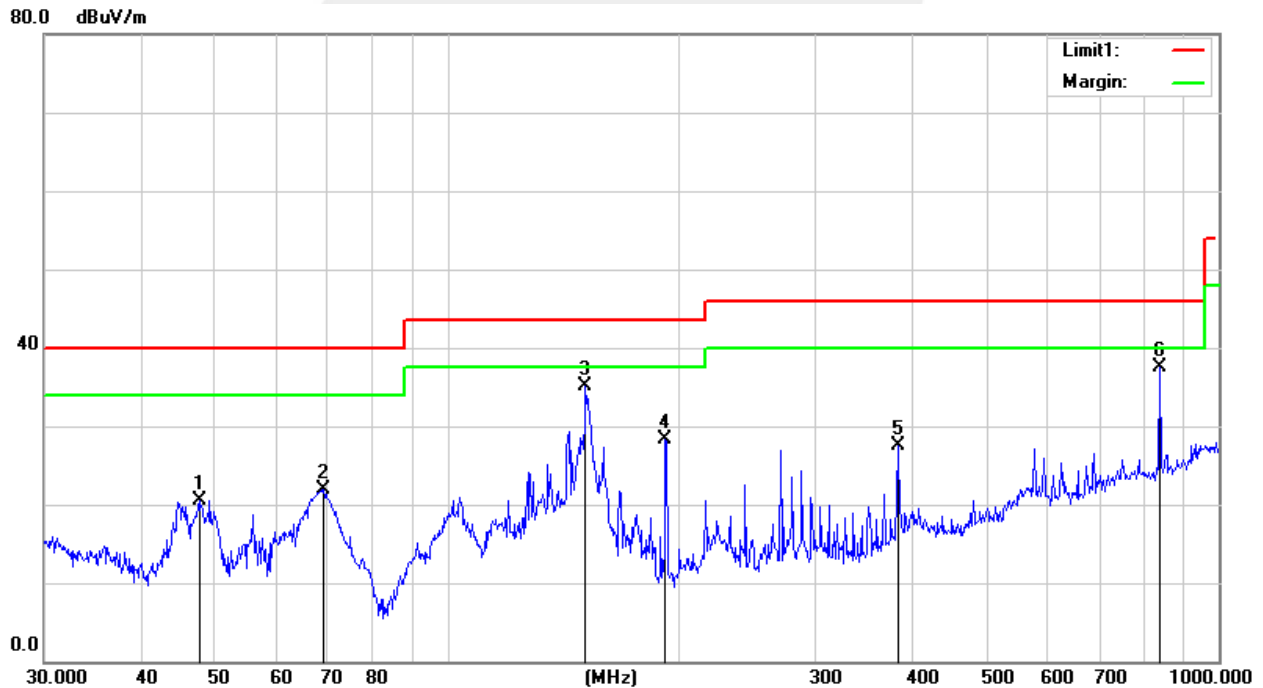
Between 30-1000MHz:

Temperature:	25.4 °C	Relative Humidity:	43%
Pressure:	1010hPa	Phase:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 5 (Part 15B & ICES-003)
Note:	Tenpao + JUSTHIGH		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.6586	40.78	-20.27	20.51	40.00	-19.49	QP
2	69.1141	45.94	-24.12	21.82	40.00	-18.18	QP
3	151.0666	53.04	-18.03	35.01	43.50	-8.49	QP
4	191.7450	48.45	-20.24	28.21	43.50	-15.29	QP
5	383.9318	39.83	-12.35	27.48	46.00	-18.52	QP
6	839.1818	40.35	-2.78	37.57	46.00	-8.43	QP

Remark:

1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)-Limit



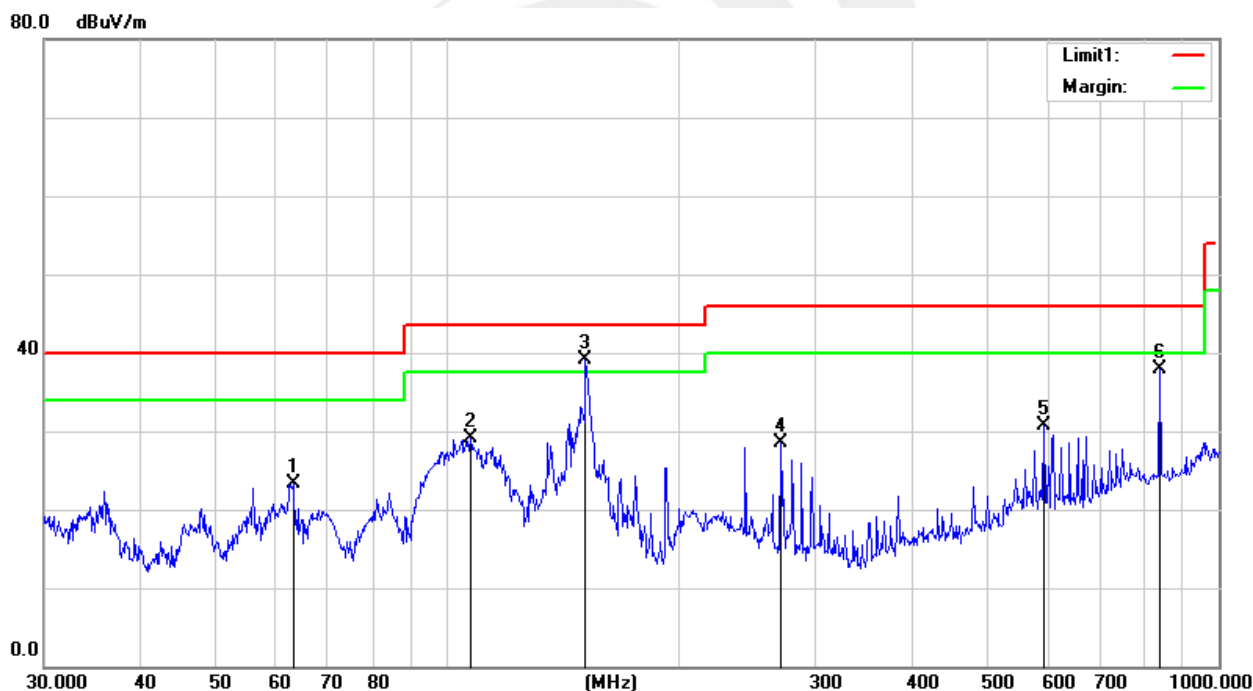


Temperature:	25.4 °C	Relative Humidity:	43%
Pressure:	1010hPa	Phase:	Vertical
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 5 (Part 15B & ICES-003)
Note:	Tenpao + JUSTHIGH		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	63.0916	47.66	-24.27	23.39	40.00	-16.61	QP
2	107.1337	47.67	-18.58	29.09	43.50	-14.41	QP
3	151.0666	57.16	-18.03	39.13	43.50	-4.37	QP
4	270.3748	44.02	-15.48	28.54	46.00	-17.46	QP
5	593.0497	37.74	-7.00	30.74	46.00	-15.26	QP
6	839.1818	40.61	-2.78	37.83	46.00	-8.17	QP

Remark:

1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)-Limit





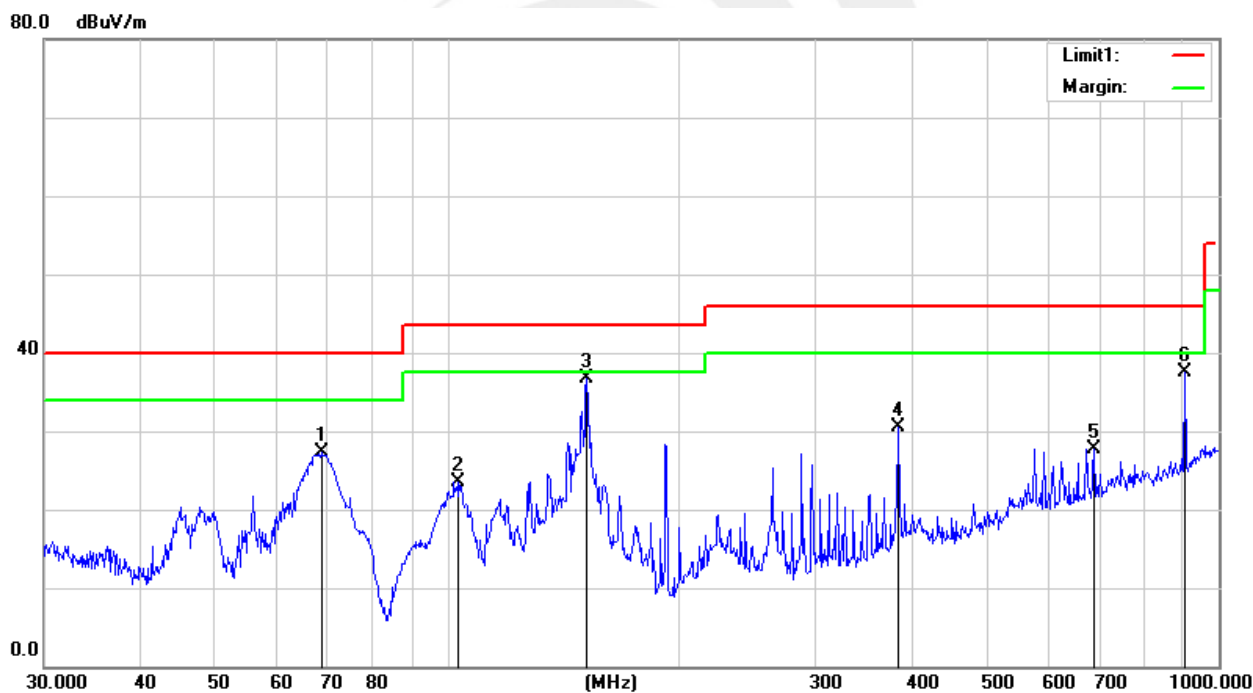
Temperature:	25.4 °C	Relative Humidity:	43%
Pressure:	1010hPa	Phase:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 5 (Part 15B & ICES-003)
Note:	Tenpao + GP		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	68.6310	51.37	-24.14	27.23	40.00	-12.77	QP
2	103.0800	42.47	-18.93	23.54	43.50	-19.96	QP
3	151.5972	54.84	-18.05	36.79	43.50	-6.71	QP
4	383.9318	42.93	-12.35	30.58	46.00	-15.42	QP
5	689.5644	33.32	-5.57	27.75	46.00	-18.25	QP
6	903.3094	39.70	-2.14	37.56	46.00	-8.44	QP

Remark:

1. All readings are Quasi-Peak .

2. Margin = Result (Result =Reading + Factor)-Limit



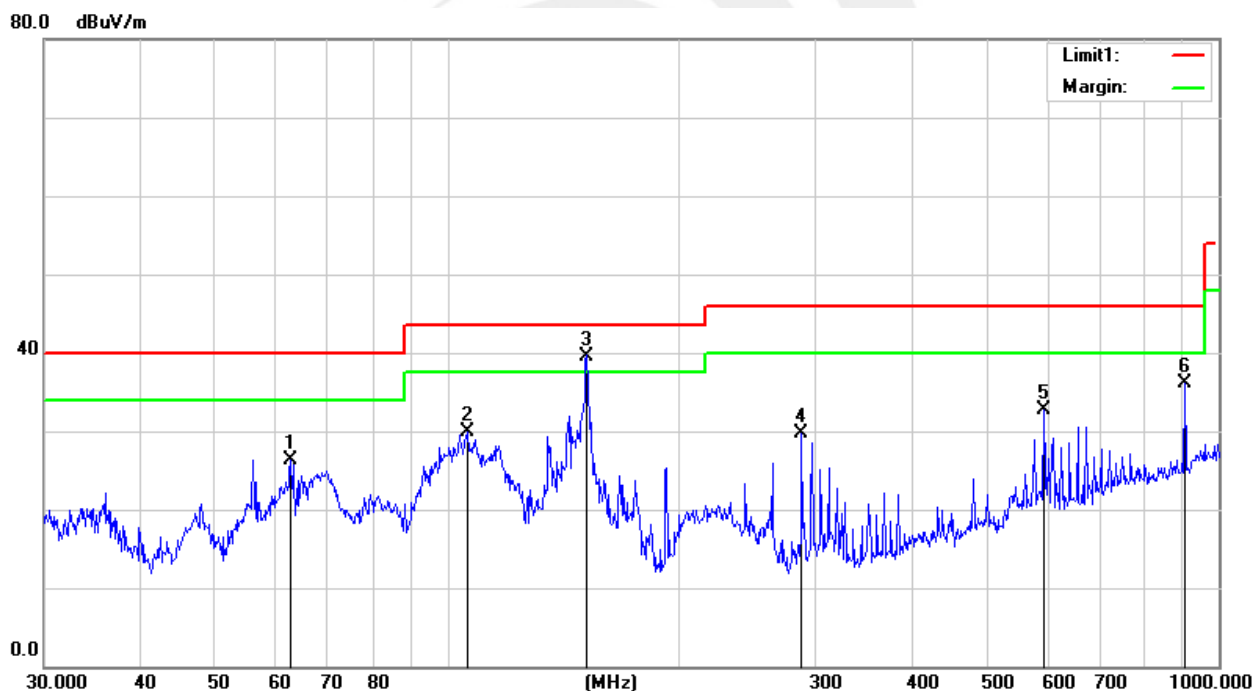


Temperature:	25.4 °C	Relative Humidity:	43%
Pressure:	1010hPa	Phase:	Vertical
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 5 (Part 15B & ICES-003)
Note:	Tenpao + GP		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	62.6507	50.65	-24.28	26.37	40.00	-13.63	QP
2	106.3850	48.45	-18.64	29.81	43.50	-13.69	QP
3	151.5972	57.65	-18.05	39.60	43.50	-3.90	QP
4	287.9904	45.26	-15.49	29.77	46.00	-16.23	QP
5	593.0497	39.67	-7.00	32.67	46.00	-13.33	QP
6	903.3094	38.19	-2.14	36.05	46.00	-9.95	QP

Remark:

1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)-Limit



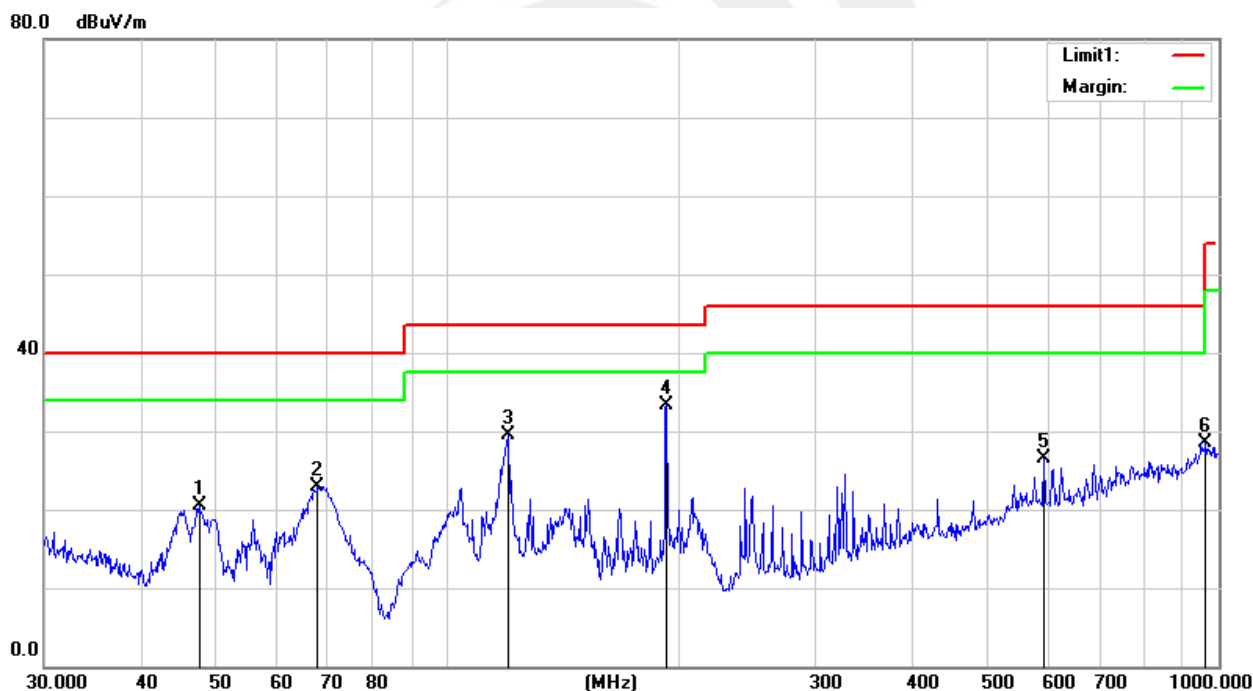


Temperature:	25.4 °C	Relative Humidity:	43%
Pressure:	1010hPa	Phase:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 5 (Part 15B & ICES-003)
Note:	BLJ + JUSTHIGH		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.6586	40.73	-20.27	20.46	40.00	-19.54	QP
2	67.9130	47.08	-24.15	22.93	40.00	-17.07	QP
3	119.8556	47.28	-17.70	29.58	43.50	-13.92	QP
4	192.4186	53.47	-20.24	33.23	43.50	-10.27	QP
5	593.0497	33.46	-7.00	26.46	46.00	-19.54	QP
6	962.1623	28.70	-0.12	28.58	54.00	-25.42	QP

Remark:

1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)-Limit



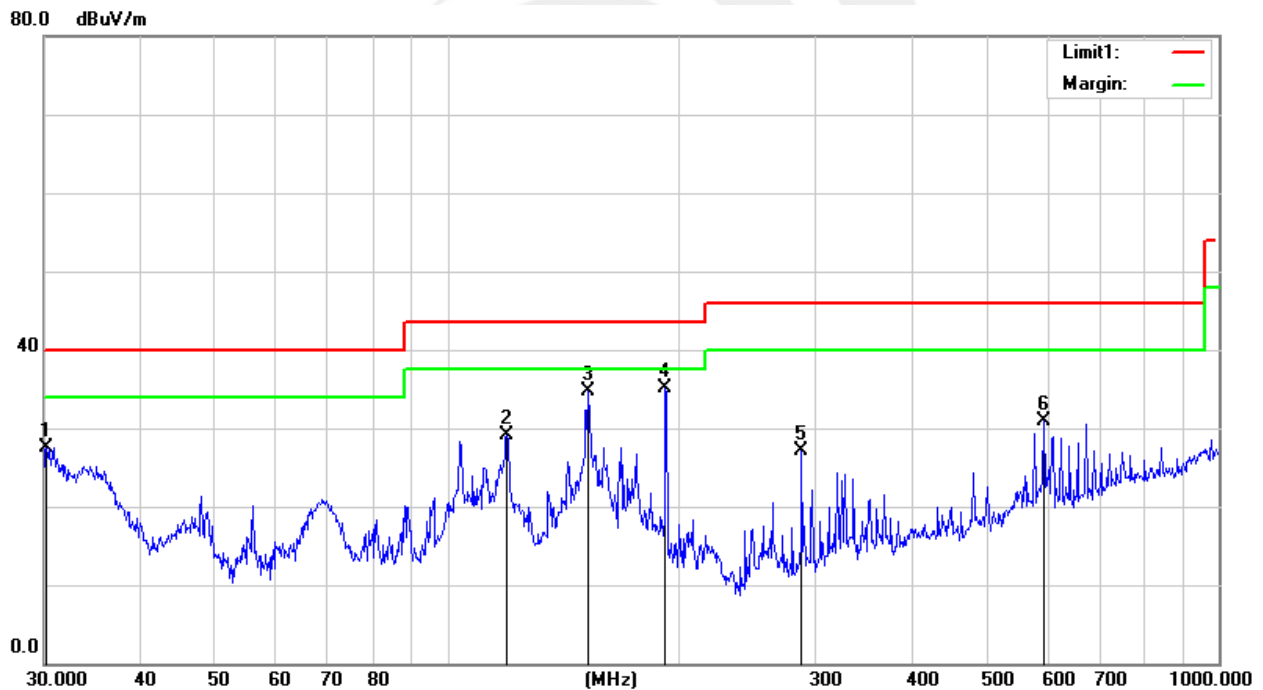


Temperature:	25.4 °C	Relative Humidity:	43%
Pressure:	1010hPa	Phase:	Vertical
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 5 (Part 15B & ICES-003)
Note:	BLJ + JUSTHIGH		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.2111	38.85	-11.30	27.55	40.00	-12.45	QP
2	119.4361	46.77	-17.72	29.05	43.50	-14.45	QP
3	152.1297	52.87	-18.08	34.79	43.50	-8.71	QP
4	191.7450	55.27	-20.24	35.03	43.50	-8.47	QP
5	287.9904	42.65	-15.49	27.16	46.00	-18.84	QP
6	593.0497	37.97	-7.00	30.97	46.00	-15.03	QP

Remark:

1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)-Limit



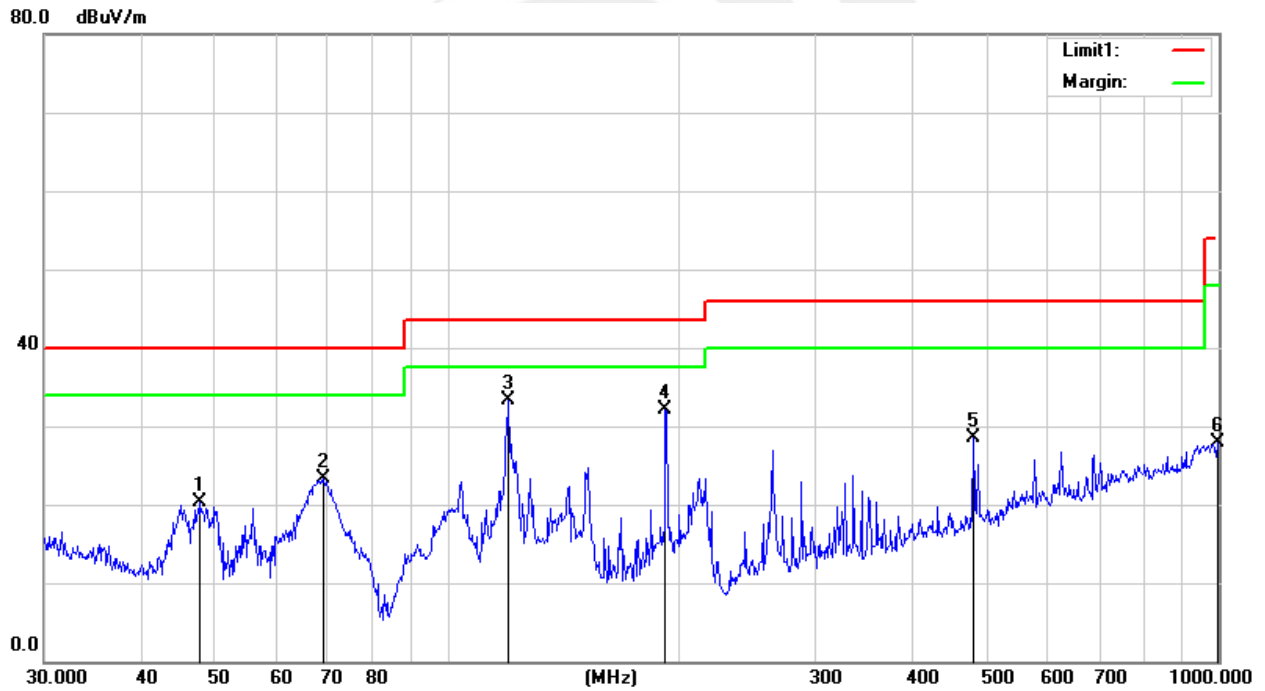


Temperature:	25.4 °C	Relative Humidity:	43%
Pressure:	1010hPa	Phase:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 5 (Part 15B & ICES-003)
Note:	BLJ + GP		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.8260	40.71	-20.36	20.35	40.00	-19.65	QP
2	69.1141	47.46	-24.12	23.34	40.00	-16.66	QP
3	119.8556	51.03	-17.70	33.33	43.50	-10.17	QP
4	191.7450	52.34	-20.24	32.10	43.50	-11.40	QP
5	480.5276	37.83	-9.38	28.45	46.00	-17.55	QP
6	996.4996	27.91	-0.09	27.82	54.00	-26.18	QP

Remark:

1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)-Limit



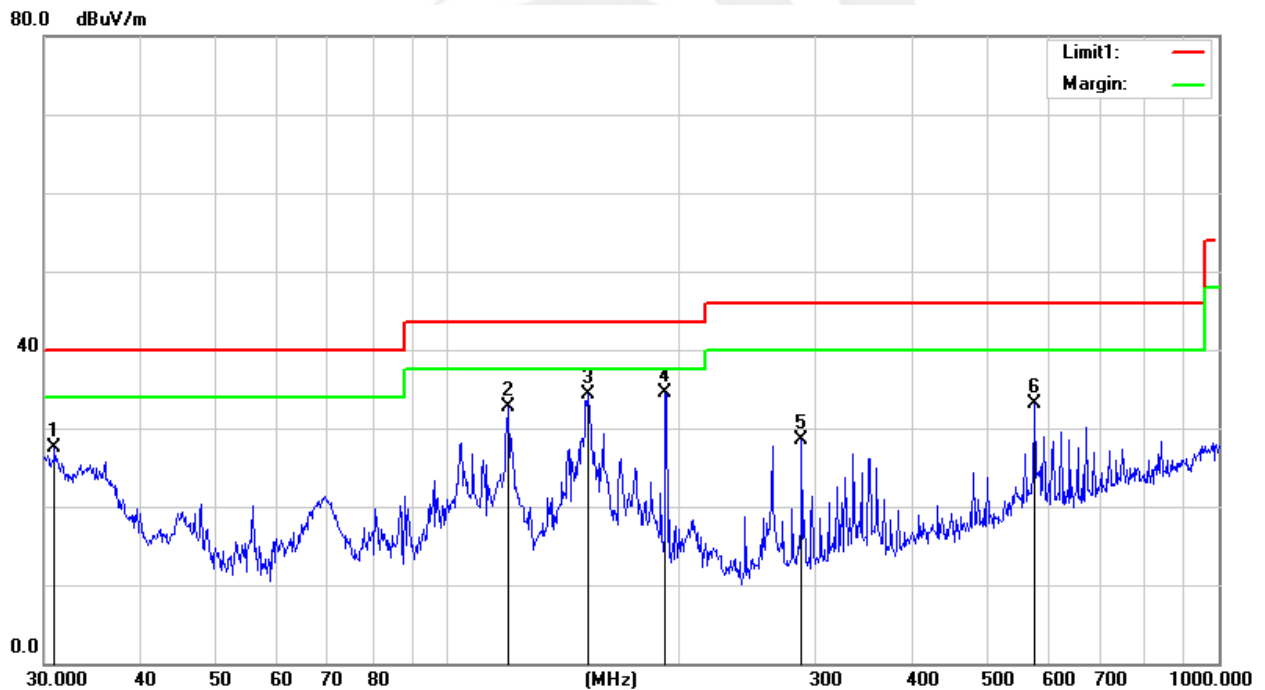


Temperature:	25.4 °C	Relative Humidity:	43%
Pressure:	1010hPa	Phase:	Vertical
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 5 (Part 15B & ICES-003)
Note:	BLJ + GP		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.9620	39.15	-11.68	27.47	40.00	-12.53	QP
2	119.8556	50.36	-17.70	32.66	43.50	-10.84	QP
3	152.1297	52.37	-18.08	34.29	43.50	-9.21	QP
4	191.7450	54.80	-20.24	34.56	43.50	-8.94	QP
5	287.9904	44.01	-15.49	28.52	46.00	-17.48	QP
6	576.6443	39.82	-6.69	33.13	46.00	-12.87	QP

Remark:

1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)-Limit

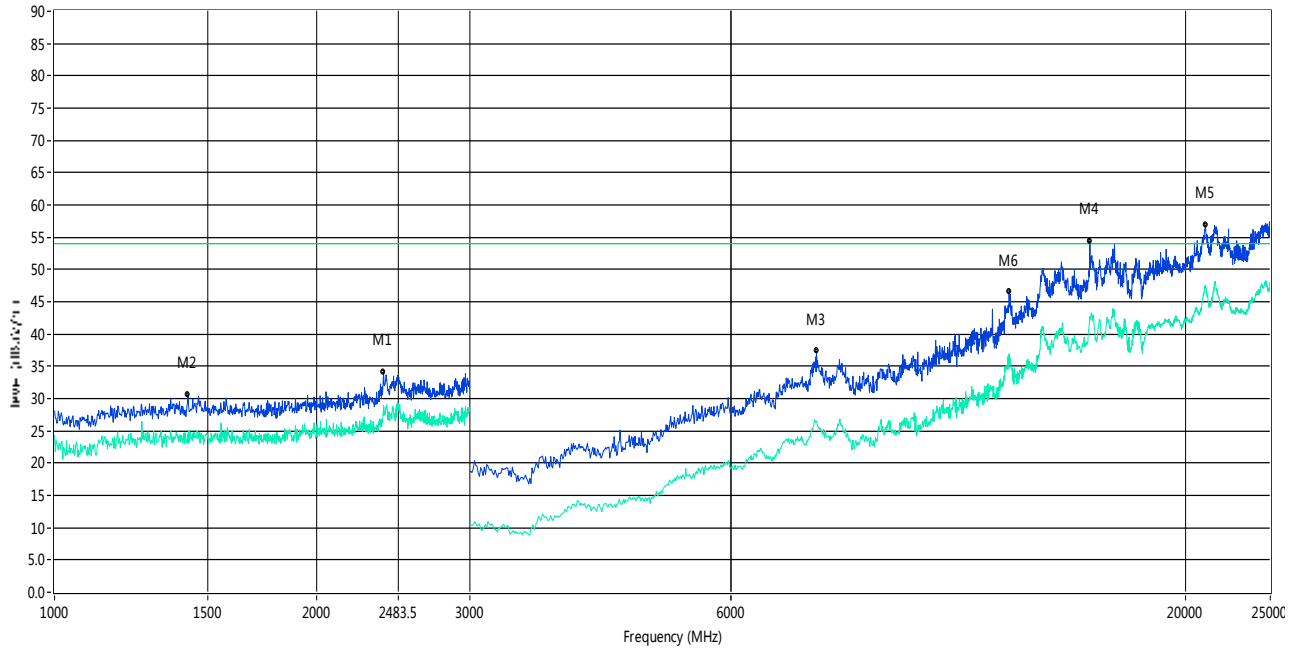




Between 1GHz – 6GHz:

Temperature:	24 °C	Relative Humidity:	61%
Pressure:	1010hPa	Phase:	Horizontal
Note:	Tenpao + JUSTHIGH		

RE_FCC Test Case_FCC 15B 1GHz-25GHz

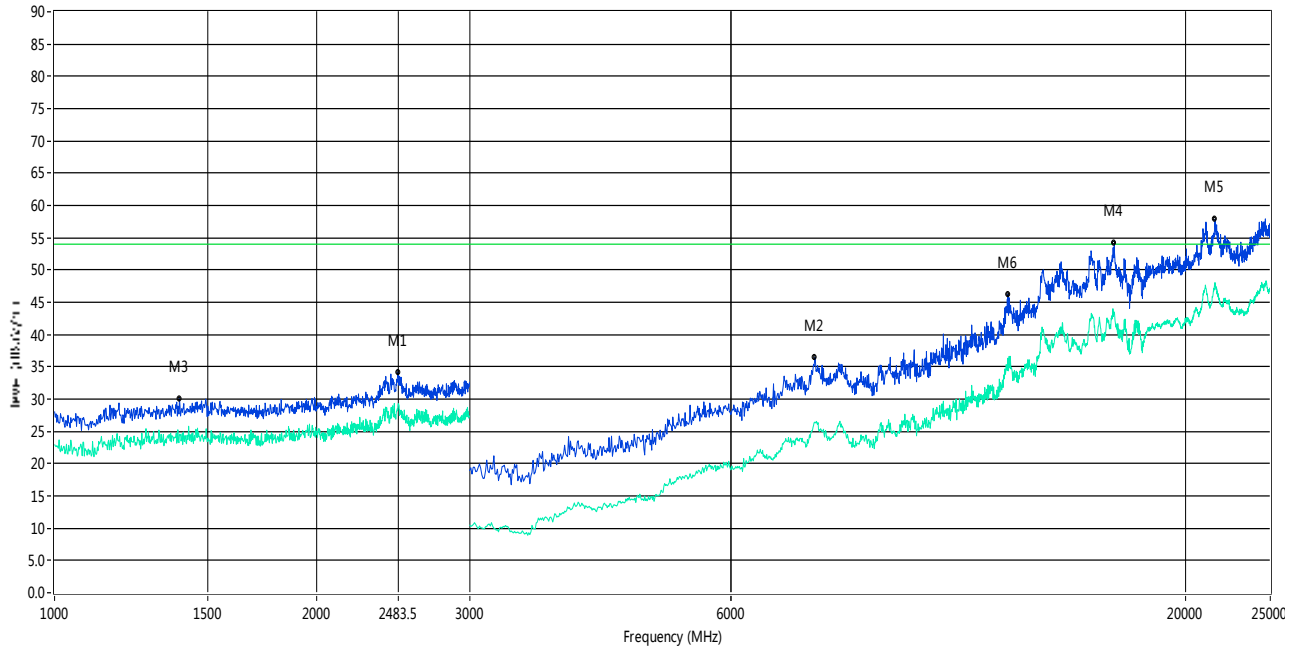


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	2390.000	28.92	-14.39	54.0	-25.08	AV	11.00	100	H	Pass
1	2390.000	34.11	-14.39	74.0	-39.89	Peak	11.00	100	H	Pass
2**	1424.000	23.02	-19.14	54.0	-30.98	AV	15.00	100	H	Pass
2	1424.000	30.58	-19.14	74.0	-43.42	Peak	15.00	100	H	Pass
3**	7520.000	26.52	10.71	54.0	-27.48	AV	9.00	100	H	Pass
3	7520.000	37.32	10.71	74.0	-36.68	Peak	9.00	100	H	Pass
4**	15508.000	42.71	23.39	54.0	-11.29	AV	9.00	100	H	Pass
4	15508.000	54.39	23.39	74.0	-19.61	Peak	9.00	100	H	Pass
5**	21052.000	47.31	24.12	54.0	-6.69	AV	7.00	100	H	Pass
5	21052.000	56.90	24.12	74.0	-17.10	Peak	7.00	100	H	Pass
6**	12519.999	36.93	19.89	54.0	-17.07	AV	4.00	100	H	Pass
6	12519.999	46.52	19.89	74.0	-27.48	Peak	4.00	100	H	Pass



Temperature:	24 °C	Relative Humidity:	61%
Pressure:	1010hPa	Phase:	Vertical
Note:	Tenpao + JUSTHIGH		

RE_FCC Test Case_FCC 15B 1GHz-25GHz

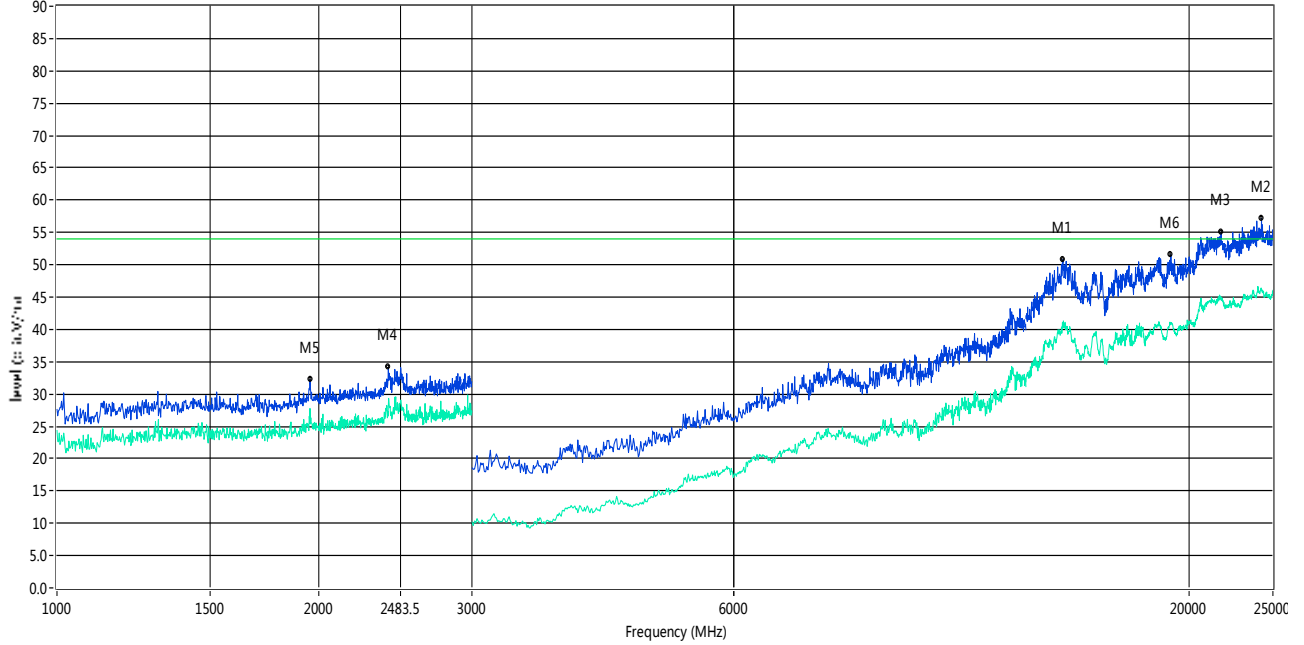


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	2482.000	28.71	-13.59	54.0	-25.29	AV	10.00	100	V	Pass
1	2482.000	34.19	-13.59	74.0	-39.81	Peak	10.00	100	V	Pass
2**	7490.000	26.45	10.47	54.0	-27.55	AV	5.00	100	V	Pass
2	7490.000	36.51	10.47	74.0	-37.49	Peak	5.00	100	V	Pass
3**	1392.000	24.56	-19.29	54.0	-29.44	AV	15.00	100	V	Pass
3	1392.000	30.07	-19.29	74.0	-43.93	Peak	15.00	100	V	Pass
4**	16540.000	43.37	22.12	54.0	-10.63	AV	2.00	100	V	Pass
4	16540.000	54.16	22.12	74.0	-19.84	Peak	2.00	100	V	Pass
5**	21604.000	47.94	23.98	54.0	-6.06	AV	14.00	100	V	Pass
5	21604.000	57.88	23.98	74.0	-16.12	Peak	14.00	100	V	Pass
6**	12480.000	36.33	19.51	54.0	-17.67	AV	7.00	100	V	Pass
6	12480.000	46.25	19.51	74.0	-27.75	Peak	7.00	100	V	Pass



Temperature:	24 °C	Relative Humidity:	61%
Pressure:	1010hPa	Phase:	Horizontal
Note:	BLJ + JUSTHIGH		

RE_FCC Test Case_FCC 15B 1GHz-25GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	14343.999	40.31	24.17	54.0	-13.69	AV	13.00	100	H	Pass
1	14343.999	50.85	24.17	74.0	-23.15	Peak	13.00	100	H	Pass
2**	24256.000	46.17	23.22	54.0	-7.83	AV	15.00	100	H	Pass
2	24256.000	57.20	23.22	74.0	-16.80	Peak	15.00	100	H	Pass
3**	21796.000	44.53	23.94	54.0	-9.47	AV	15.00	100	H	Pass
3	21796.000	55.03	23.94	74.0	-18.97	Peak	15.00	100	H	Pass
4**	2404.000	28.21	-14.19	54.0	-25.79	AV	6.00	100	H	Pass
4	2404.000	34.13	-14.19	74.0	-39.87	Peak	6.00	100	H	Pass
5**	1954.000	27.78	-17.41	54.0	-26.22	AV	3.00	100	H	Pass
5	1954.000	32.22	-17.41	74.0	-41.78	Peak	3.00	100	H	Pass
6**	19083.999	40.97	21.86	54.0	-13.03	AV	10.00	100	H	Pass
6	19083.999	51.56	21.86	74.0	-22.44	Peak	10.00	100	H	Pass



Temperature:	24 °C	Relative Humidity:	61%
Pressure:	1010hPa	Phase:	Vertical
Note:	BLJ + JUSTHIGH		

RE_FCC Test Case_FCC 15B 1GHz-25GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	2464.000	27.74	-13.72	54.0	-26.26	AV	13.00	100	V	Pass
1	2464.000	33.61	-13.72	74.0	-40.39	Peak	13.00	100	V	Pass
2**	1948.000	25.70	-17.42	54.0	-28.30	AV	13.00	100	V	Pass
2	1948.000	31.57	-17.42	74.0	-42.43	Peak	13.00	100	V	Pass
3**	14356.000	41.22	25.12	54.0	-12.78	AV	5.00	100	V	Pass
3	14356.000	51.46	25.12	74.0	-22.54	Peak	5.00	100	V	Pass
4**	24220.000	46.37	23.23	54.0	-7.63	AV	12.00	100	V	Pass
4	24220.000	56.41	23.23	74.0	-17.59	Peak	12.00	100	V	Pass
5**	21376.000	44.43	24.04	54.0	-9.57	AV	3.00	100	V	Pass
5	21376.000	55.31	24.04	74.0	-18.69	Peak	3.00	100	V	Pass
6**	18292.001	40.63	23.39	54.0	-13.37	AV	2.00	100	V	Pass
6	18292.001	51.19	23.39	74.0	-22.81	Peak	2.00	100	V	Pass



3.3 RADIATED SPURIOUS EMISSION MEASUREMENT

3.3.1 RADIATED 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) and RSS-247 Issue 2 limit in the table and according to ANSI C63.10-2013 below has to be followed.

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

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
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).

For Radiated Emission

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	1 MHz /3MHz

For Band edge

Spectrum Parameter	Setting
Detector	Peak/AV
Start/Stop Frequency	Lower Band Edge: 2300 to 2422 MHz Upper Band Edge: 2452 to 2500 MHz
RB / VB (emission in restricted band)	1 MHz /3MHz



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

3.3.2 TEST PROCEDURE

- The measuring distance of at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters(above 1GHz is 1.5 m) above the ground at a 3 meter anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- 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 polarizations of the antenna are set to make the measurement
- 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.
- 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.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

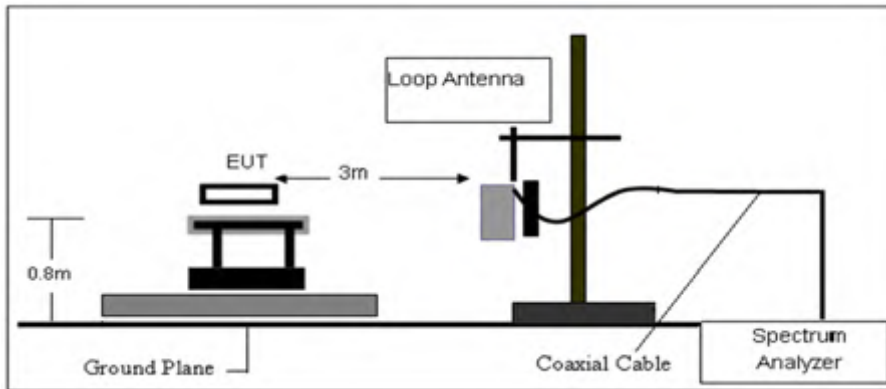
Note:

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

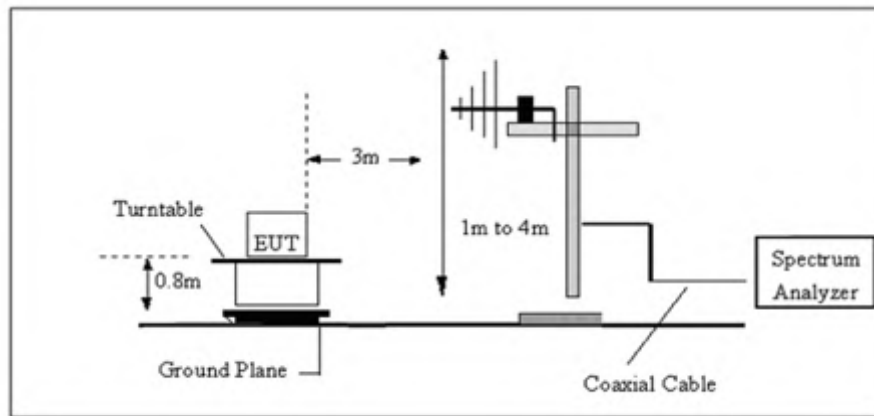


3.3.3 TEST SETUP

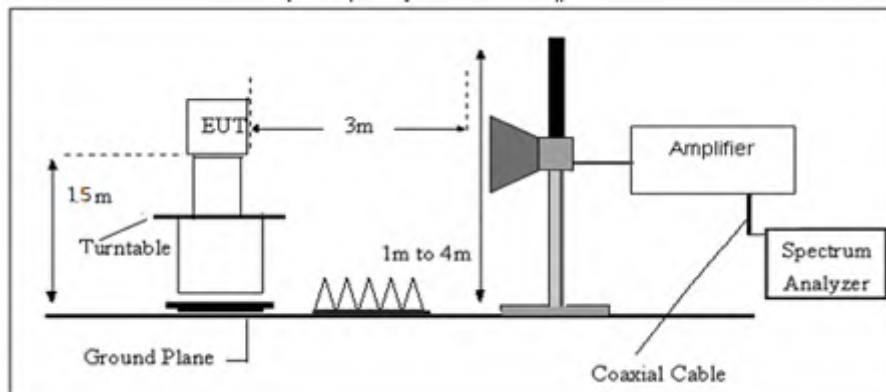
a) Radiated Emission Test-Up Frequency Below 30MHz



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



c) Radiated Emission Test-Up Frequency Above 1GHz



3.3.4 EUT OPERATING CONDITIONS

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



3.3.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier 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)	(dB μ V/m)	(dB μ V/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

$$\text{Factor} = \text{AF} + \text{CL} - \text{AG}$$

3.3.6 TEST RESULT

9KHz-30MHz

Temperature:	26.1 °C	Relative Humidity:	53%
Test Voltage:	DC 3.6V	Polarization:	--
Test Mode:	TX Mode		

Freq.	Reading	Limit	Margin	State	Test Result
(MHz)	(dB μ V/m)	(dB μ V/m)	(dB)	P/F	
--	--	--	--	--	PASS
--	--	--	--	--	PASS

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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

Limit line = specific limits(dB μ v) + distance extrapolation factor.



(30MHz - 1000MHz)

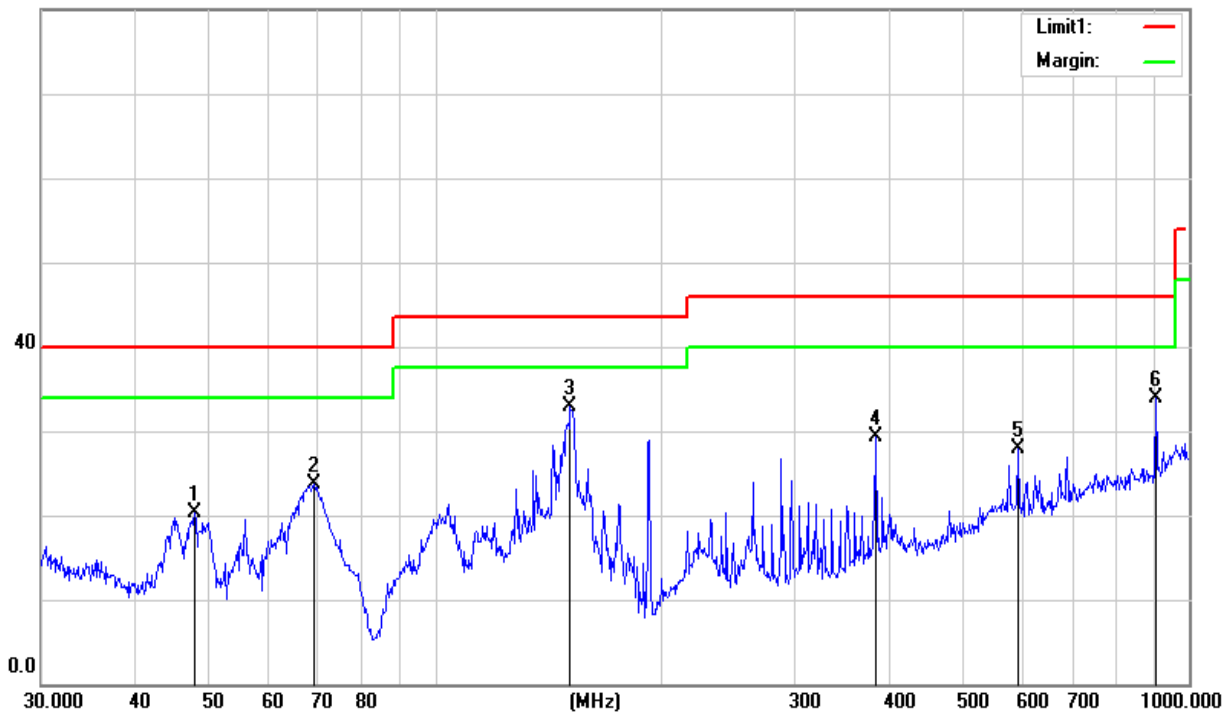
Temperature:	26.1 °C	Relative Humidity:	53%
Test Voltage:	DC 3.6V	Polarization:	Horizontal
Test Mode:	Mode 1/2/3 (Mode 1 worst mode)		
Note:	Tenpao + JUSTHIGH		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
47.9940	40.66	-20.45	20.21	40.00	-19.79	QP
69.1141	47.81	-24.12	23.69	40.00	-16.31	QP
151.0666	51.00	-18.03	32.97	43.50	-10.53	QP
383.9318	41.74	-12.35	29.39	46.00	-16.61	QP
593.0497	34.85	-7.00	27.85	46.00	-18.15	QP
903.3094	36.05	-2.14	33.91	46.00	-12.09	QP

Remark:

1. Margin = Result (Result = Reading + Factor) – Limit

80.0 dBuV/m





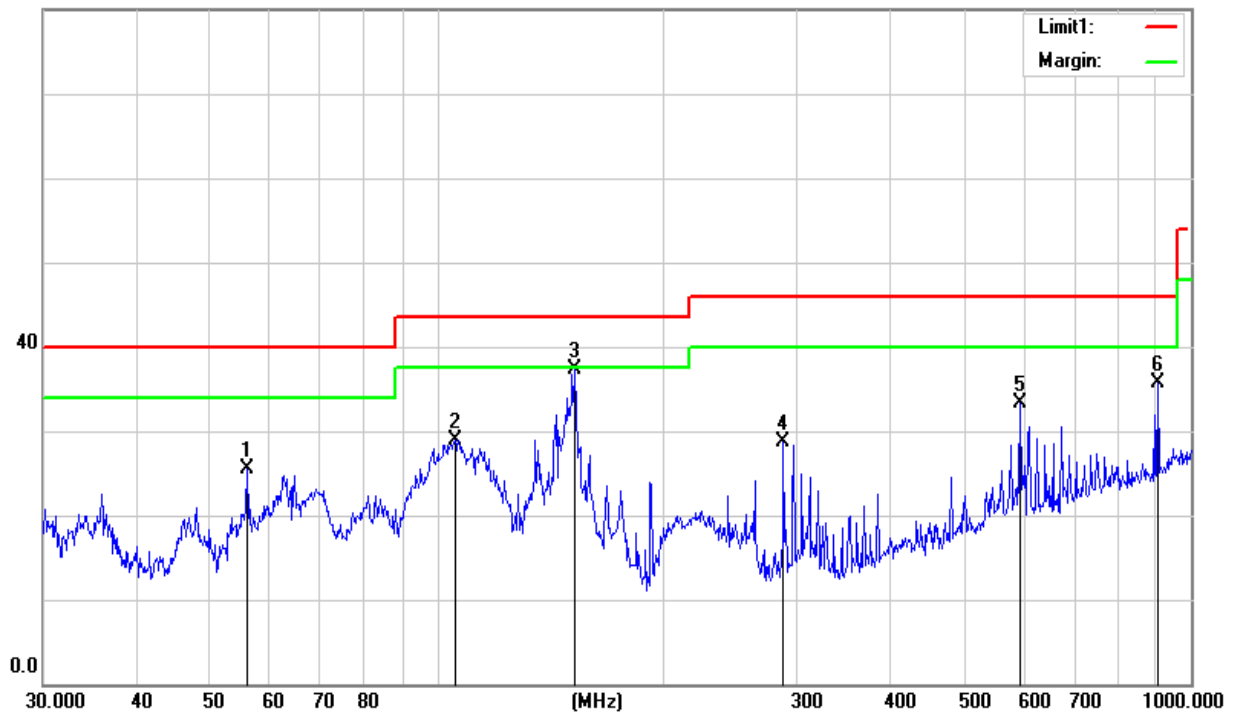
Temperature:	26.1 °C	Relative Humidity:	53%
Test Voltage:	DC 3.6V	Polarization:	Vertical
Test Mode:	Mode 1/2/3 (Mode 1 worst mode)		
Note:	Tenpao + JUSTHIGH		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
56.0007	48.74	-23.19	25.55	40.00	-14.45	QP
105.6415	47.69	-18.71	28.98	43.50	-14.52	QP
152.1297	55.30	-18.08	37.22	43.50	-6.28	QP
287.9904	44.27	-15.49	28.78	46.00	-17.22	QP
593.0497	40.24	-7.00	33.24	46.00	-12.76	QP
903.3094	37.79	-2.14	35.65	46.00	-10.35	QP

Remark:.

1. Margin = Result (Result =Reading + Factor)–Limit

80.0 dBuV/m





(1000MHz-25GHz) Restricted band and Spurious emission Requirements



德普华检测中心 Shenzhen STS Test Services Co., Ltd. 2
 Zhuoke Science Park, Chongqing Road, Fuyong, Baoan District, Shenzhen, China
 Tel: (86)-0755-36886288 FAX: (86)-0755-36886277 <http://www.stsapp.com>

Test result

Project Number: STS1811224

Test Time: 2018-12-06_18.21.40

EUT Name: 3.5" Video Baby Monitor With Wi-Fi® Test Engineer: Barry

Mode: 2.4G-2402 Test Standard: FCC 15C

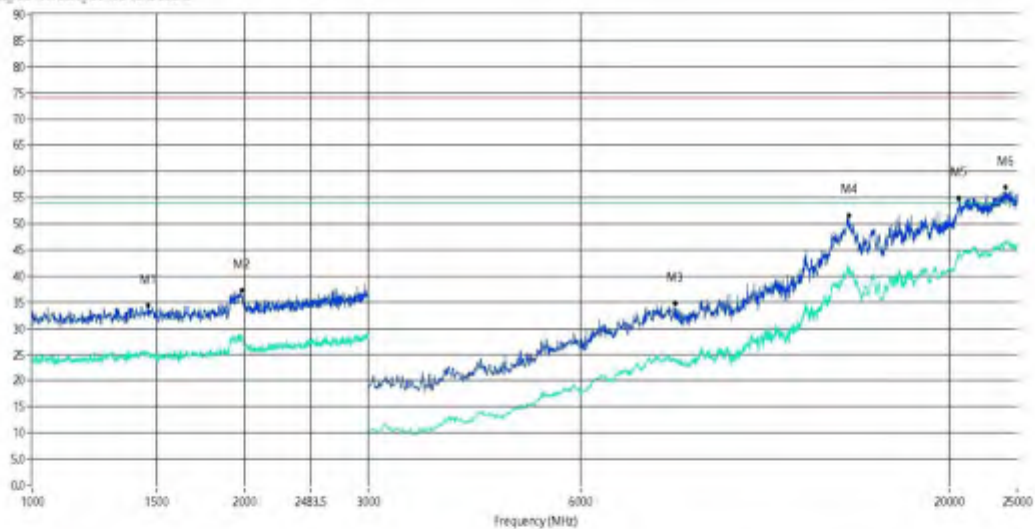
Model: MBP668CONNECTPU Work Addition: Normal

Temp.(oC): 25 Load:

Hum.: 65% Remark:

Manufacturer:

RSE_FCC Test Case_FCC 15C 1GHz-25GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1458.000	24.59	-4.23	54.0	-29.41	AV	8.00	100	V	Pass
1	1458.000	34.43	-4.23	74.0	-39.57	Peak	8.00	100	V	Pass
2**	1982.000	28.77	-0.44	54.0	-25.23	AV	5.00	100	V	Pass
2	1982.000	37.32	-0.44	74.0	-36.68	Peak	5.00	100	V	Pass
3**	8180.000	23.63	10.03	54.0	-30.37	AV	2.00	100	V	Pass
3	8180.000	34.77	10.03	74.0	-39.23	Peak	2.00	100	V	Pass
4**	14404.000	40.82	24.76	54.0	-13.18	AV	9.00	100	V	Pass
4	14404.000	51.66	24.76	74.0	-22.34	Peak	9.00	100	V	Pass
5**	20656.001	44.82	23.85	54.0	-9.18	AV	7.00	100	V	Pass
5	20656.001	54.82	23.85	74.0	-19.18	Peak	7.00	100	V	Pass
6**	24028.000	46.73	23.30	54.0	-7.27	AV	4.00	100	V	Pass
6	24028.000	57.02	23.30	74.0	-16.98	Peak	4.00	100	V	Pass



德普华检测中心 Shenzhen STS Test Services Co., Ltd. 3
 Zhuoke Science Park, Chongqing Road, Fuyong, Baoan District, Shenzhen, China
 Tel: (86) 0755-36886288 FAX: (86) 0755-36886277 <http://www.stsapp.com>

Test result

Project Number: STS1811224

Test Time: 2018-12-06_18.25.08

EUT Name: 3.5" Video Baby Monitor With Wi-Fi® Test Engineer: Barry

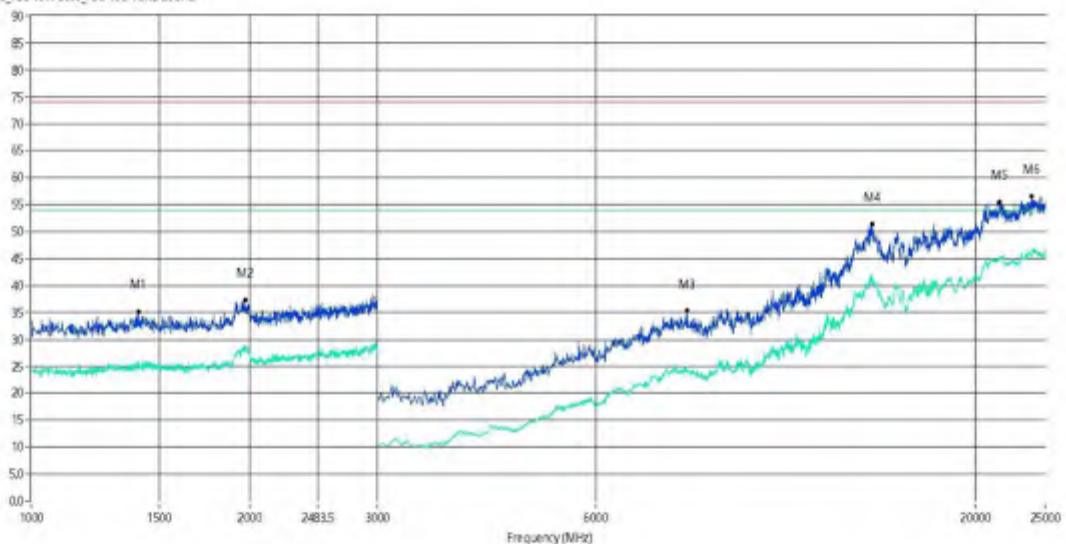
Mode: 2.4G-2402 Test Standard: FCC 15C

Model: MBP868CONNECTPU Work Addition: Normal

Temp.(oC): 25 Load:

Hum.: 65% Remark:
 Manufacturer:

RSE_FCC Test Case FCC 15C 1GHz-25GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1404.000	25.92	-4.39	54.0	-28.08	AV	6.00	100	H	Pass
1	1404.000	35.08	-4.39	74.0	-38.92	Peak	6.00	100	H	Pass
2**	1972.000	28.91	-0.52	54.0	-25.09	AV	15.00	100	H	Pass
2	1972.000	37.35	-0.52	74.0	-36.65	Peak	15.00	100	H	Pass
3**	8010.000	24.27	10.42	54.0	-29.73	AV	13.00	100	H	Pass
3	8010.000	35.25	10.42	74.0	-38.75	Peak	13.00	100	H	Pass
4**	14428.000	41.23	25.10	54.0	-12.77	AV	1.00	100	H	Pass
4	14428.000	51.37	25.10	74.0	-22.63	Peak	1.00	100	H	Pass
5**	21592.001	44.99	23.99	54.0	-9.01	AV	15.00	100	H	Pass
5	21592.001	55.43	23.99	74.0	-18.57	Peak	15.00	100	H	Pass
6**	23956.001	45.64	23.32	54.0	-8.36	AV	8.00	100	H	Pass
6	23956.001	56.54	23.32	74.0	-17.46	Peak	8.00	100	H	Pass



德普华检测中心 Shenzhen STS Test Services Co., Ltd. 3
 Zhuoke Science Park, Chongqing Road, Fuyong, Baoan District, Shenzhen, China
 Tel: (86) 0755-36886288 FAX: (86) 0755-36886277 <http://www.stsapp.com>

Test result

Project Number: STS1811224

Test Time: 2018-12-07_23.59.48

EUT Name: 3.5" Video Baby Monitor With Wi-Fi® Test Engineer: Barry

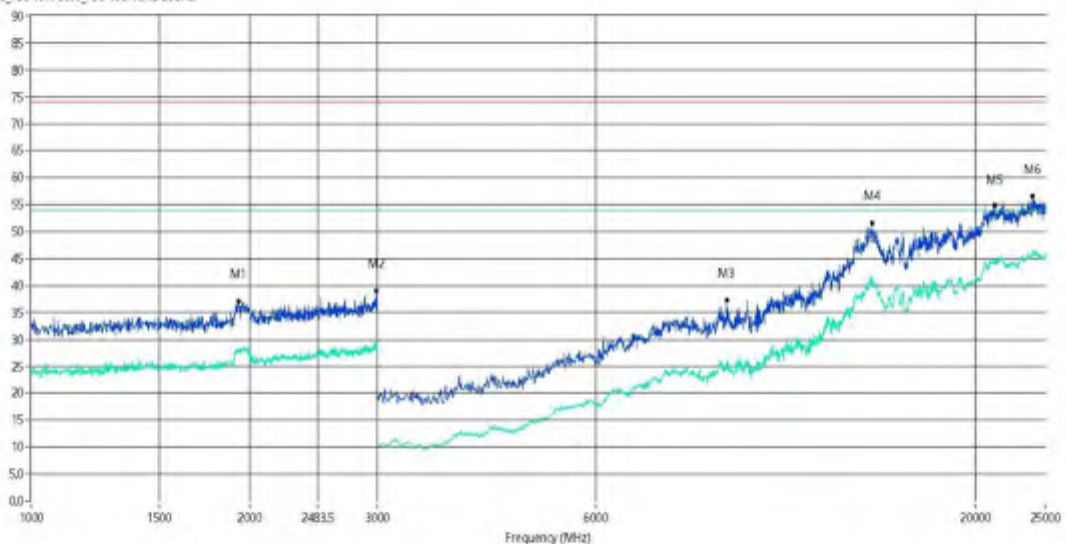
Mode: 2.4G-2440 Test Standard: FCC 15C

Model: MBP868CONNECTPU Work Addition: Normal

Temp.(oC): 25 Load:

Hum.: 65% Remark:
 Manufacturer:

RSE_FCC Test Case FCC 15C 1GHz-25GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1930.000	27.95	-0.98	54.0	-26.05	AV	4.00	100	H	Pass
1	1930.000	37.14	-0.98	74.0	-36.86	Peak	4.00	100	H	Pass
2**	2994.000	28.70	1.99	54.0	-25.30	AV	10.00	100	H	Pass
2	2994.000	38.96	1.99	74.0	-35.04	Peak	10.00	100	H	Pass
3**	9090.000	25.21	12.63	54.0	-28.79	AV	3.00	100	H	Pass
3	9090.000	37.35	12.63	74.0	-36.65	Peak	3.00	100	H	Pass
4**	14416.000	41.57	25.52	54.0	-12.43	AV	5.00	100	H	Pass
4	14416.000	51.50	25.52	74.0	-22.50	Peak	5.00	100	H	Pass
5**	21268.001	44.72	24.07	54.0	-9.28	AV	11.00	100	H	Pass
5	21268.001	54.77	24.07	74.0	-19.23	Peak	11.00	100	H	Pass
6**	23992.001	46.26	23.31	54.0	-7.74	AV	4.00	100	H	Pass
6	23992.001	56.58	23.31	74.0	-17.42	Peak	4.00	100	H	Pass



德普华检测中心 Shenzhen STS Test Services Co., Ltd. 3
 Zhuoke Science Park, Chongqing Road, Fuyong, Baoan District, Shenzhen, China
 Tel: (86) 0755-36886288 FAX: (86) 0755-36886277 <http://www.stsapp.com>

Test result

Project Number: STS1811224

Test Time: 2018-12-07_23.54.33

EUT Name: 3.5" Video Baby Monitor With Wi-Fi® Test Engineer: Barry

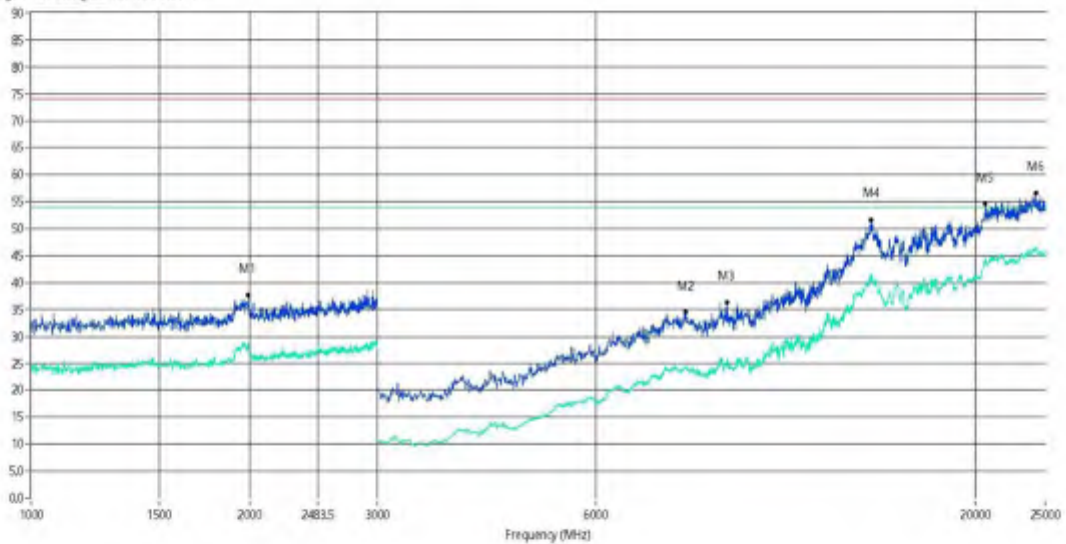
Mode: 2.4G-2440 Test Standard: FCC 15C

Model: MBP868CONNECTPU Work Addition: Normal

Temp.(oC): 25 Load:

Hum.: 65% Remark:
 Manufacturer:

RSE_FCC Test Case FCC 15C 1GHz-25GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1990.000	28.77	-0.40	54.0	-25.23	AV	11.00	100	V	Pass
1	1990.000	37.60	-0.40	74.0	-36.40	Peak	11.00	100	V	Pass
2**	7970.000	24.08	10.25	54.0	-29.92	AV	2.00	100	V	Pass
2	7970.000	34.48	10.25	74.0	-39.52	Peak	2.00	100	V	Pass
3**	9100.000	25.92	13.19	54.0	-28.08	AV	12.00	100	V	Pass
3	9100.000	36.40	13.19	74.0	-37.60	Peak	12.00	100	V	Pass
4**	14356.000	41.66	25.12	54.0	-12.34	AV	15.00	100	V	Pass
4	14356.000	51.65	25.12	74.0	-22.35	Peak	15.00	100	V	Pass
5**	20656.001	44.81	23.85	54.0	-9.19	AV	11.00	100	V	Pass
5	20656.001	54.69	23.85	74.0	-19.31	Peak	11.00	100	V	Pass
6**	24231.999	46.12	23.23	54.0	-7.88	AV	12.00	100	V	Pass
6	24231.999	56.53	23.23	74.0	-17.47	Peak	12.00	100	V	Pass



德普华检测中心 Shenzhen STS Test Services Co., Ltd. 3
 Zhuoke Science Park, Chongqing Road, Fuyong, Baoan District, Shenzhen, China
 Tel: (86) 0755-36886288 FAX: (86) 0755-36886277 <http://www.stsapp.com>

Test result

Project Number: STS1811224

Test Time: 2018-12-06_18.29.13

EUT Name: 3.5" Video Baby Monitor With Wi-Fi® Test Engineer: Barry

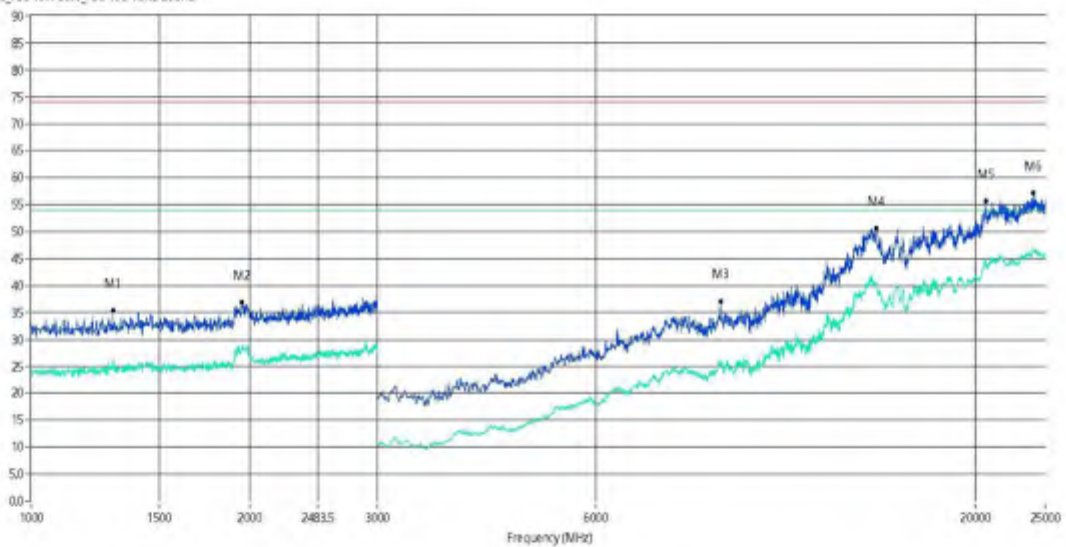
Mode: 2.4G-2477 Test Standard: FCC 15C

Model: MBP868CONNECTPU Work Addition: Normal

Temp.(oC): 25 Load:

Hum.: 65% Remark:
 Manufacturer:

RSE_FCC Test Case FCC 15C 1GHz-25GHz



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1296.000	24.61	-4.42	54.0	-29.39	AV	6.00	100	H	Pass
1	1296.000	35.41	-4.42	74.0	-38.59	Peak	6.00	100	H	Pass
2**	1950.000	28.01	-0.73	54.0	-25.99	AV	8.00	100	H	Pass
2	1950.000	36.96	-0.73	74.0	-37.04	Peak	8.00	100	H	Pass
3**	8920.001	26.26	12.66	54.0	-27.74	AV	9.00	100	H	Pass
3	8920.001	37.10	12.66	74.0	-36.90	Peak	9.00	100	H	Pass
4**	14631.999	39.90	23.56	54.0	-14.10	AV	9.00	100	H	Pass
4	14631.999	50.69	23.56	74.0	-23.31	Peak	9.00	100	H	Pass
5**	20668.000	44.96	23.87	54.0	-9.04	AV	15.00	100	H	Pass
5	20668.000	55.70	23.87	74.0	-18.30	Peak	15.00	100	H	Pass
6**	24028.000	46.50	23.30	54.0	-7.50	AV	12.00	100	H	Pass
6	24028.000	57.10	23.30	74.0	-16.90	Peak	12.00	100	H	Pass



德普华检测中心 Shenzhen STS Test Services Co., Ltd. 3
 Zhuoke Science Park, Chongqing Road, Fuyong, Baoan District, Shenzhen, China
 Tel: (86) 0755-36886288 FAX: (86) 0755-36886277 <http://www.stsapp.com>

Test result

Project Number: STS1811224

Test Time: 2018-12-06_18.33.22

EUT Name: 3.5" Video Baby Monitor With Wi-Fi® Test Engineer: Barry

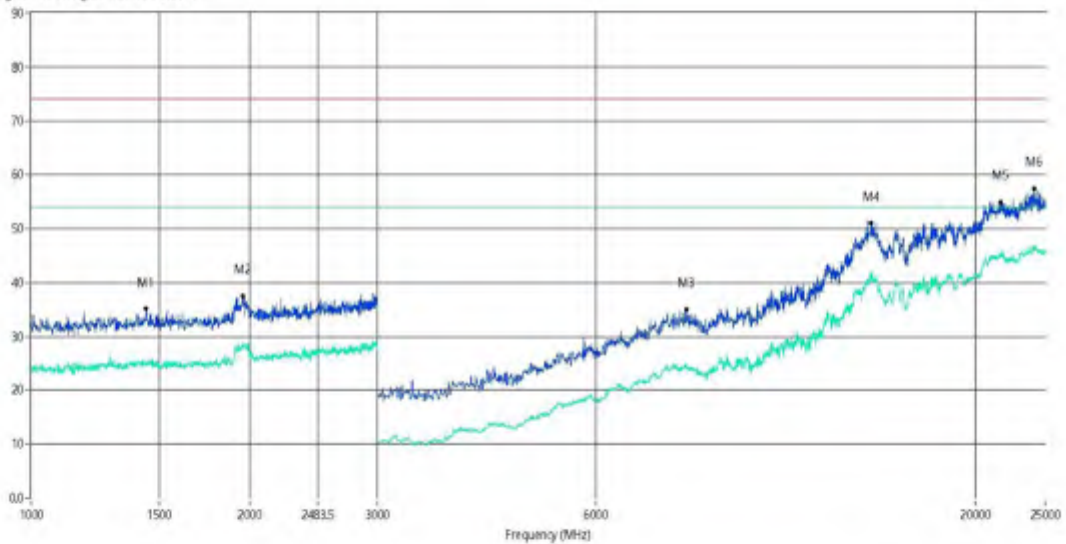
Mode: 2.4G-2477 Test Standard: FCC 15C

Model: MBP868CONNECTPU Work Addition: Normal

Temp.(oC): 25 Load:

Hum.: 65% Remark:
 Manufacturer:

RSE_FCC Test Case FCC 15C 1GHz-25GHz

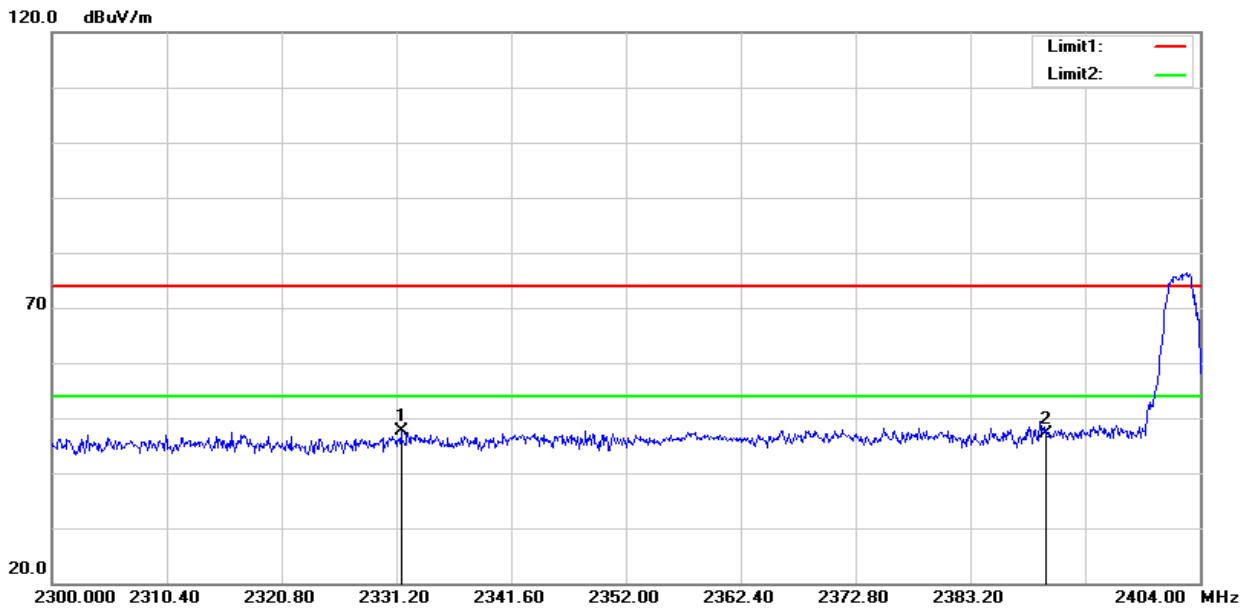


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1440.000	24.94	-4.13	54.0	-29.06	AV	6.00	100	V	Pass
1	1440.000	35.06	-4.13	74.0	-38.94	Peak	6.00	100	V	Pass
2**	1958.000	28.45	-0.64	54.0	-25.55	AV	7.00	100	V	Pass
2	1958.000	37.45	-0.64	74.0	-36.55	Peak	7.00	100	V	Pass
3**	7990.000	24.91	10.65	54.0	-29.09	AV	9.00	100	V	Pass
3	7990.000	35.03	10.65	74.0	-38.97	Peak	9.00	100	V	Pass
4**	14200.001	40.68	24.06	54.0	-13.32	AV	13.00	100	V	Pass
4	14200.001	51.36	24.06	74.0	-22.64	Peak	13.00	100	V	Pass
5**	21688.001	45.18	23.96	54.0	-8.82	AV	3.00	100	V	Pass
5	21688.001	54.90	23.96	74.0	-19.10	Peak	3.00	100	V	Pass
6**	24100.000	46.49	23.27	54.0	-7.51	AV	12.00	100	V	Pass
6	24100.000	57.42	23.27	74.0	-16.58	Peak	12.00	100	V	Pass



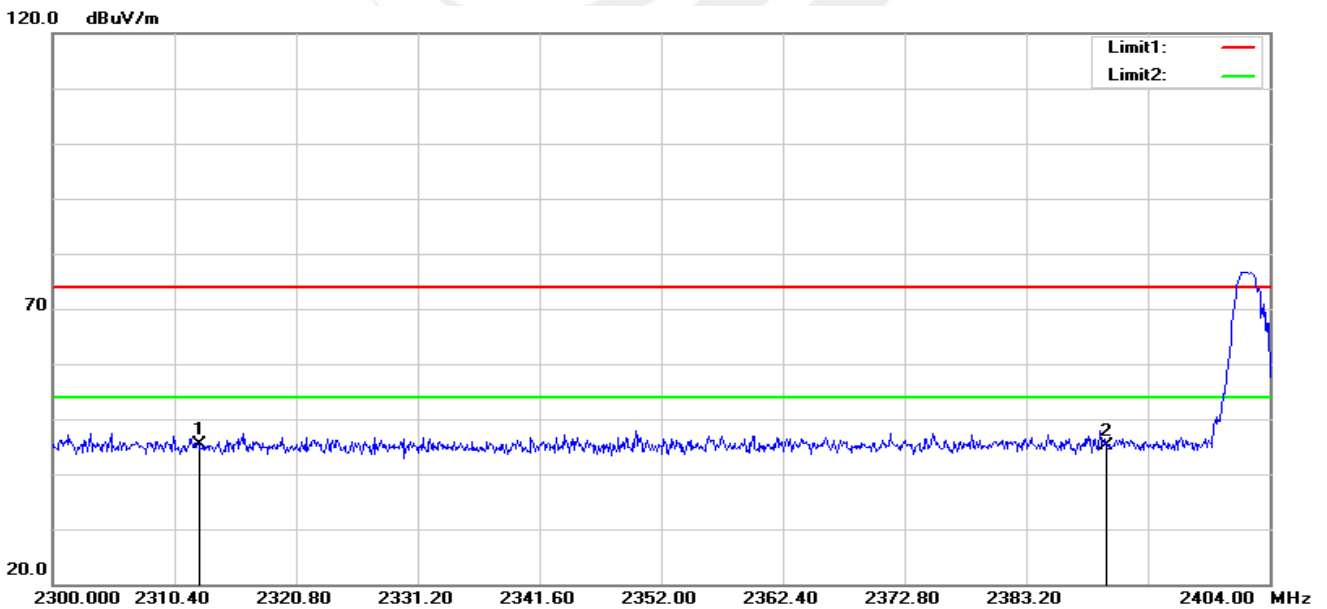
3.3.7 TEST RESULTS (RESTRICTED BAND)

Low
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2331.616	58.72	-11.13	47.59	74.00	-26.41	peak
2	2390.000	57.80	-10.75	47.05	74.00	-26.95	peak

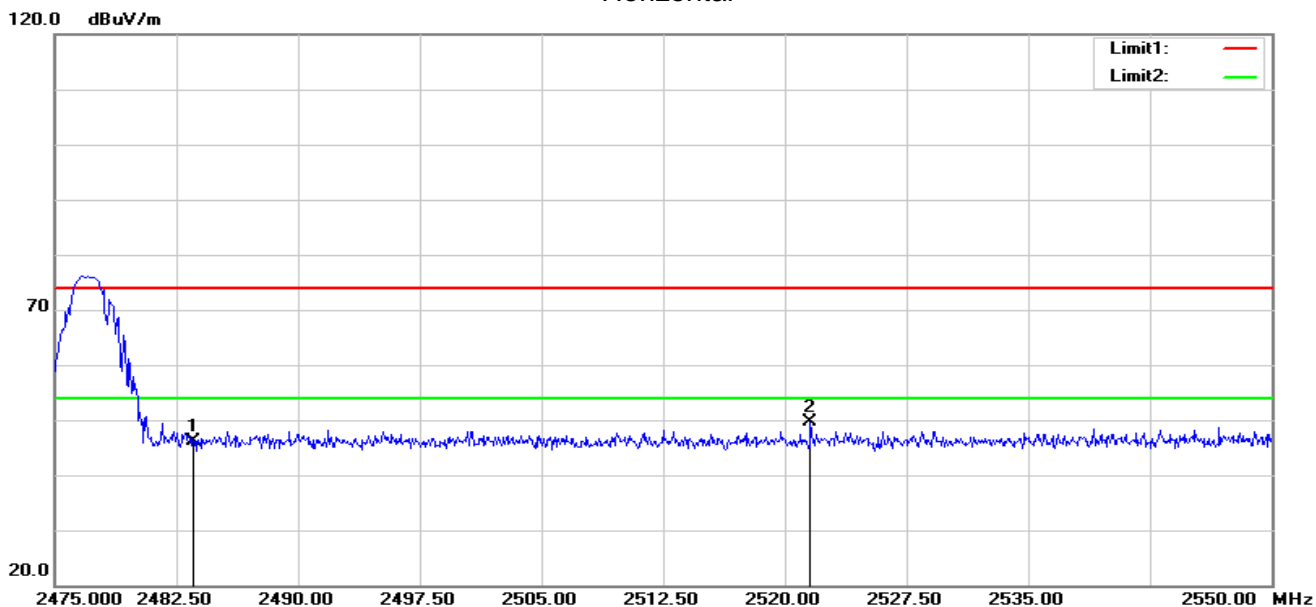
Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2312.480	56.60	-11.26	45.34	74.00	-28.66	peak
2	2390.000	55.80	-10.75	45.05	74.00	-28.95	peak

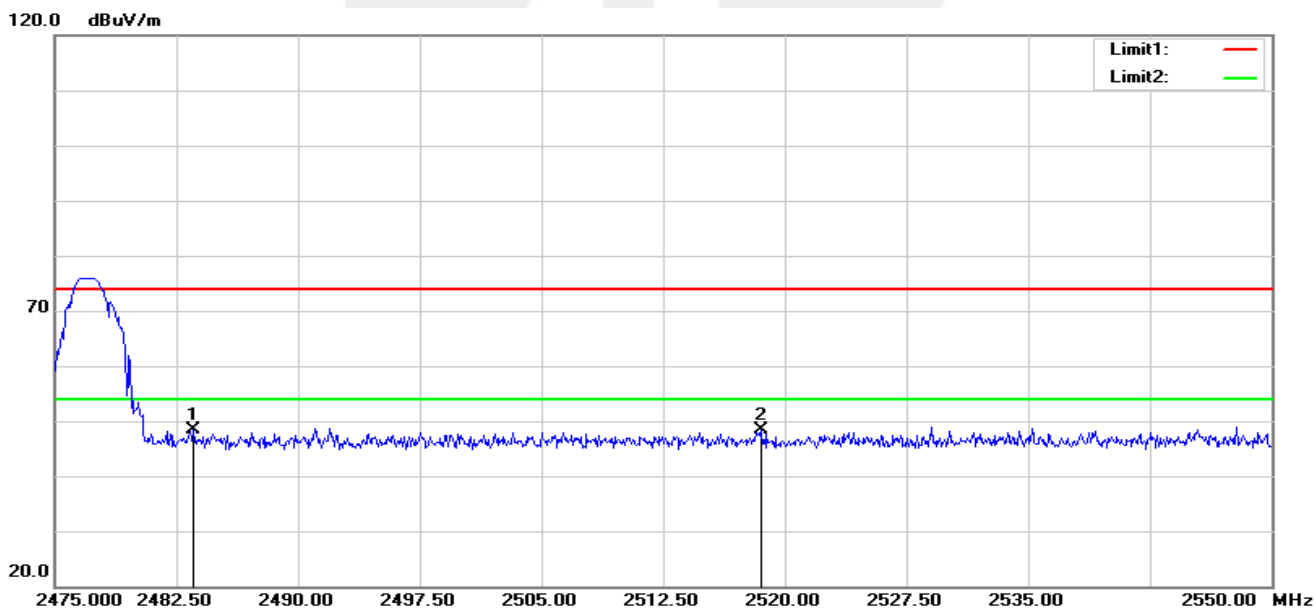


High Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	56.42	-10.29	46.13	74.00	-27.87	peak
2	2521.575	59.87	-10.15	49.72	74.00	-24.28	peak

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	58.57	-10.29	48.28	74.00	-25.72	peak
2	2518.500	58.61	-10.16	48.45	74.00	-25.55	peak



4 CONDUCTED SPURIOUS & BAND EDGE EMISSION

4.1 APPLIED PROCEDURES / LIMIT

According to FCC Part 15.247(d) and RSS-247 Clause 5.5, in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

4.2 TEST PROCEDURE

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

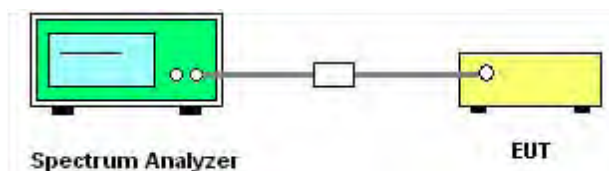
For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 2300 to 2422 MHz Upper Band Edge: 2452 to 2500 MHz
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

4.5 EUT OPERATION CONDITIONS

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



4.6 TEST RESULTS

Temperature :	25 °C	Relative Humidity :	60%
Test Voltage :	DC 3.6V	Test Mode :	TX Mode /CH01, CH11, CH22

CH 01

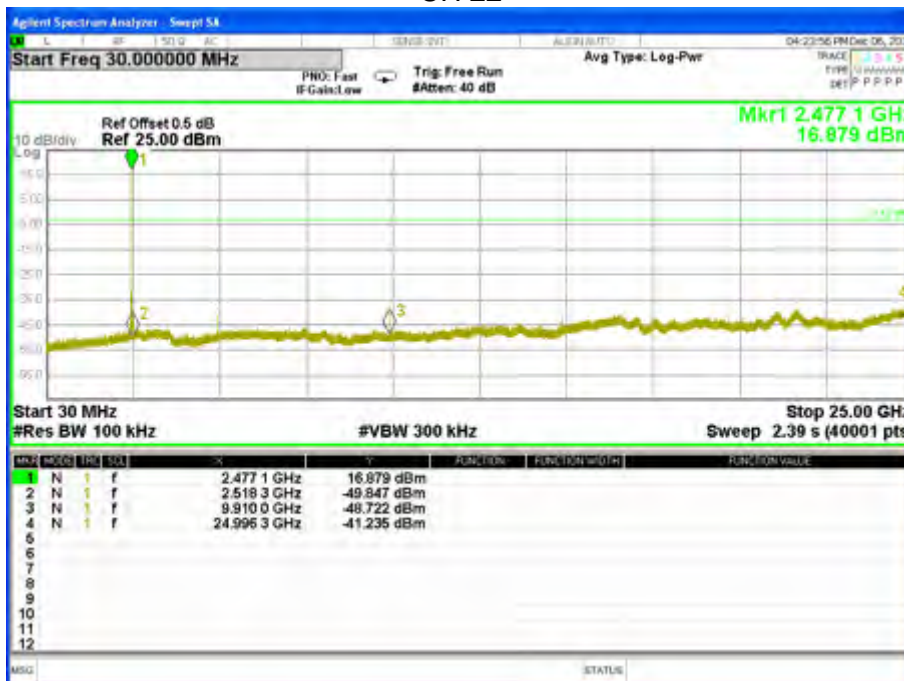


CH 11





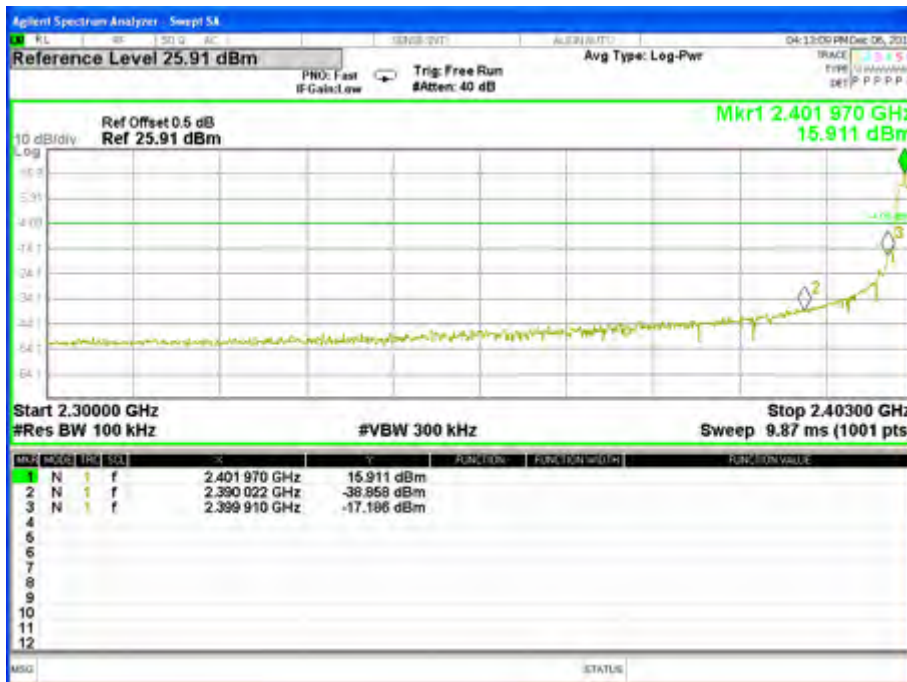
CH 22



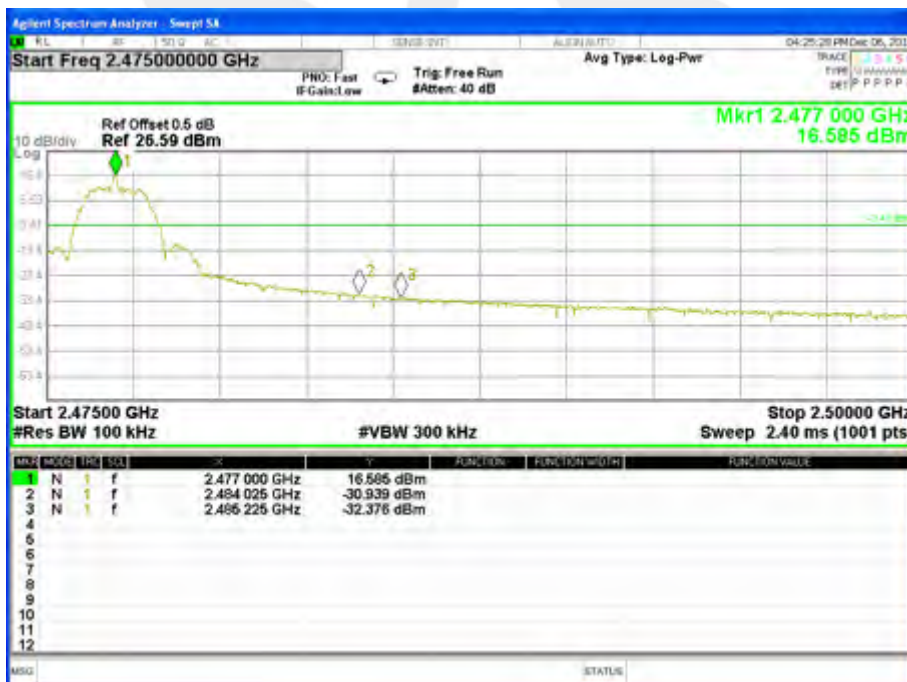


Band edge

CH 01



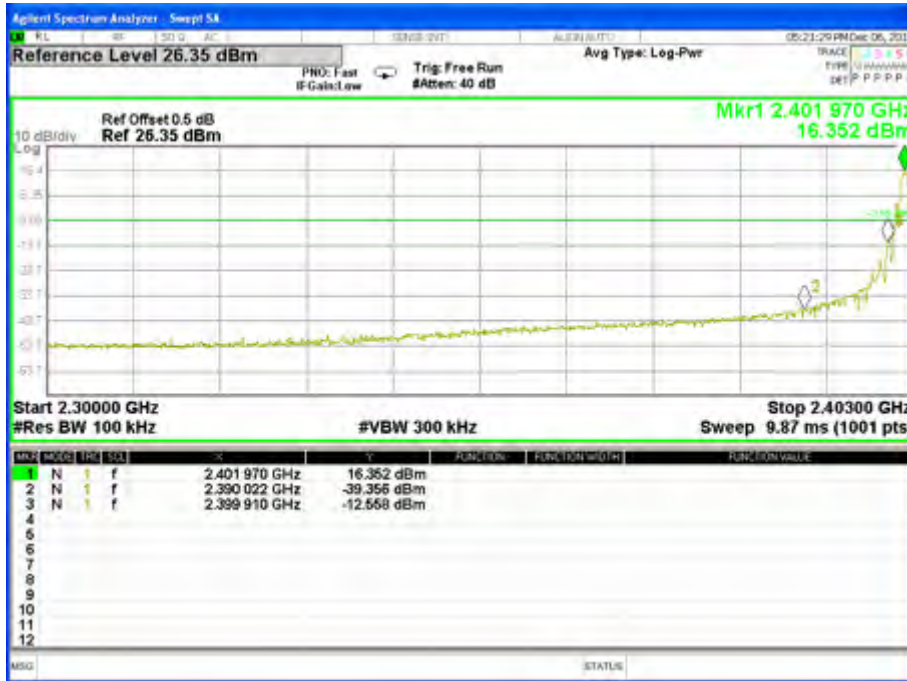
CH 22





Hopping Band edge

CH 01



CH 22

9





5 NUMBER OF HOPPING CHANNEL

5.1 APPLIED PROCEDURES / LIMIT

FCC Part 15.247, Subpart C RSS-247 Issue 2				
Section	Test Item	Limit	Frequency Range (MHz)	Result
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(d)	Number of Hopping Channel	≥15	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RB	1MHz
VB	1MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.2 TEST PROCEDURE

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

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

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



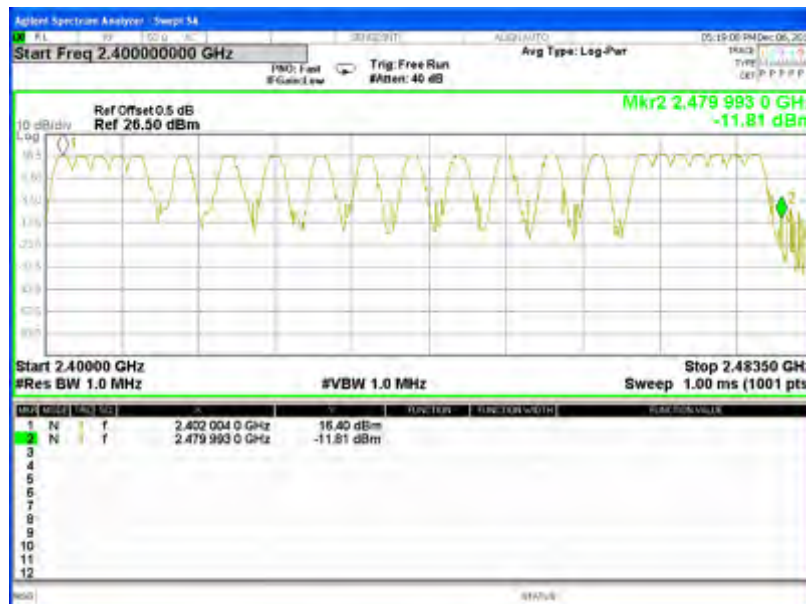
5.6 TEST RESULTS

Temperature:	25 °C	Relative Humidity:	60%
Test Voltage:	DC 3.6V	Test Mode:	Hopping mode

Number of Hopping Channel

22

Hopping channel





6 AVERAGE TIME OF OCCUPANCY

6.1 APPLIED PROCEDURES / LIMIT

FCC Part 15.247, Subpart C RSS-247 Issue 2				
Section	Test Item	Limit	Frequency Range (MHz)	Result
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(d)	Average Time of Occupancy	0.4sec	2400-2483.5	PASS

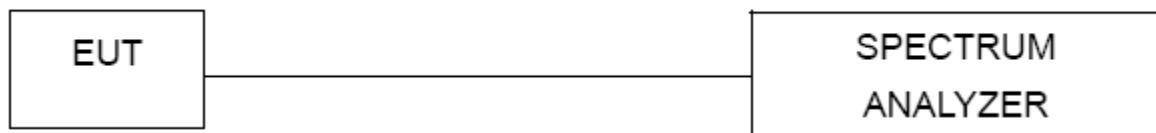
6.2 TEST PROCEDURE

- 1) The transmitter output (antenna port) was connected to the spectrum analyzer
- 2) Set RBW =1MHz/VBW =3MHz.
- 3) Use a video trigger with the trigger level set to enable triggering only on full pulses.
- 4) Sweep Time is more than once pulse time.
- 5) Set the center frequency on any frequency would be measure and set the frequency span to zero span.
- 6) Measure the maximum time duration of one single pulse.
- 7) Measure the maximum burst number of one hopping period.
- 8) A Period Time = $22 \times 0.4 = 8.8$ S

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

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



6.6 TEST RESULTS

Temperature:	25 °C	Relative Humidity:	60%
Test Voltage:	DC 3.6V	Test Mode:	Hopping mode

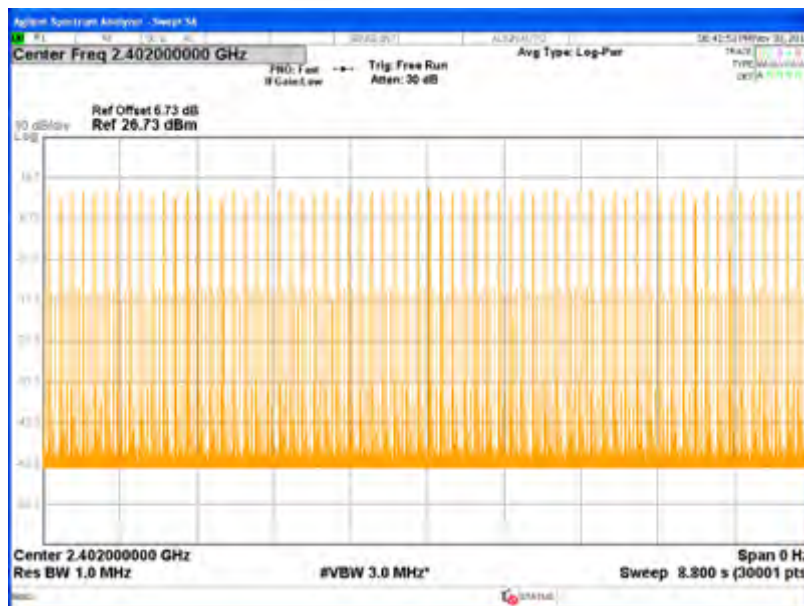
Frequency (MHz)	Pulse Duration(ms)	Pulse number	Dwell Time(s)	Limits(s)
2402MHz	0.21	134	0.028	0.4

CH01

Pulse Duration



Pulse number





7 HOPPING CHANNEL SEPARATION MEASUREMENT

7.1 APPLIED PROCEDURES / LIMIT

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> 20 dB Bandwidth or Channel Separation
RB	30 kHz (20dB Bandwidth) / 30 kHz (Channel Separation)
VB	100 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

7.2 TEST PROCEDURE

- 1) The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
- 2) The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for 20 dB bandwidth measurement.
- 3) The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for channel separation measurement.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.



7.6 TEST RESULTS

Temperature:	25 °C	Relative Humidity:	60%
Test Voltage:	DC 3.6V	Test Mode:	Hopping mode

Test Mode	Frequency	Ch. Separation (MHz)	Limit	Result
TX	2402 MHz	2.016	1.369	Complies
	2441 MHz	5.000	1.367	Complies
	2480 MHz	2.000	1.401	Complies

Ch. Separation Limits: > two-thirds 20dB bandwidth

CH01





CH11



CH22





8 BANDWIDTH TEST

8.1 APPLIED PROCEDURES / LIMIT

FCC Part 15.247,Subpart C RSS-247 Issue 2 & RSS-Gen Issue 5				
Section	Test Item	Limit	Frequency Range (MHz)	Result
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(b)	Bandwidth	(20dB Bandwidth)	2400-2483.5	PASS
RSS-Gen Clause 6.7	99% Bandwidth	-	2400-2483.5	PASS

8.2 TEST PROCEDURE

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 1% - 5% OBW, VBW≥3RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be ≥6 dB.

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

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



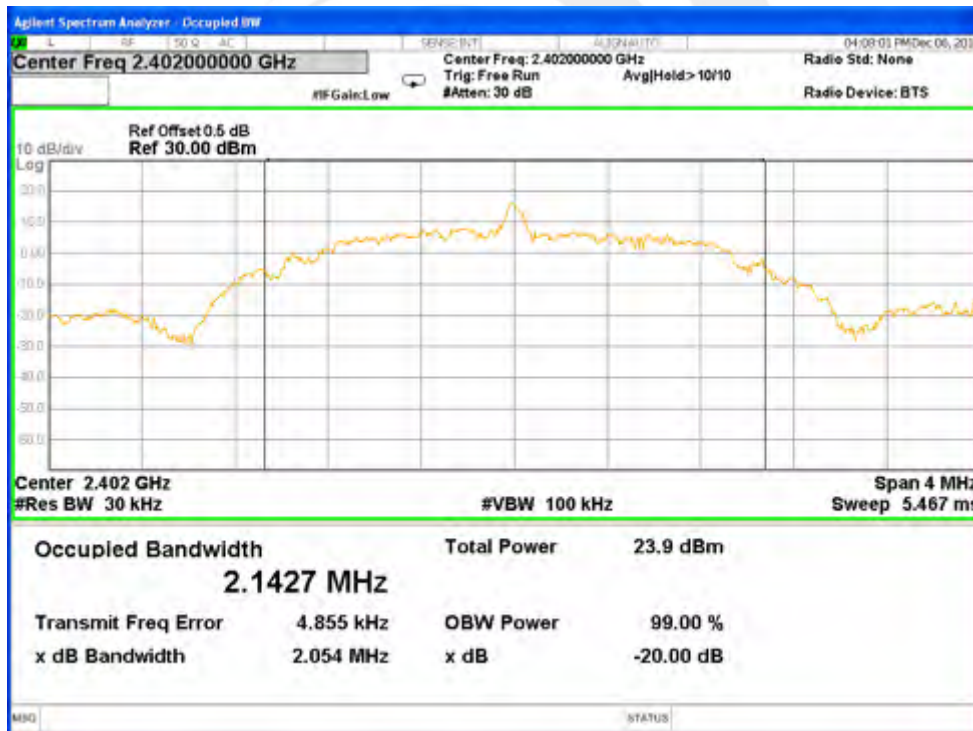
8.6 TEST RESULTS

Temperature:	25 °C	Relative Humidity:	60%
Test Voltage:	DC 3.6V	Test Mode:	TX b Mode /CH01, CH11, CH22

Remark: PEAK DETECTOR IS USED

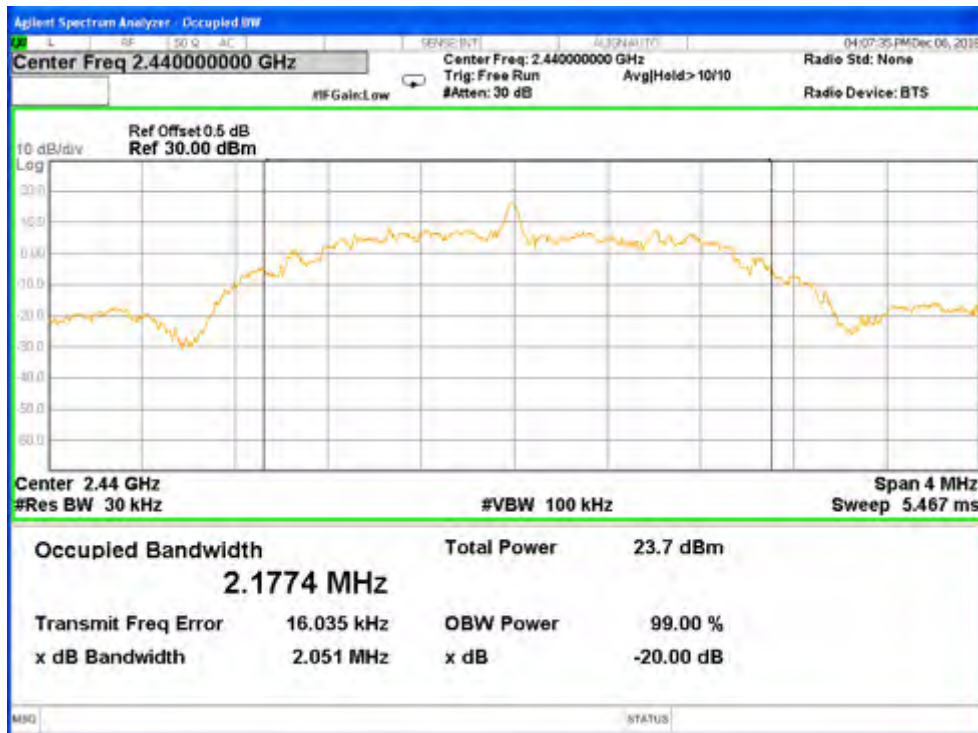
Test Mode	Frequency (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit of 20dB Bandwidth (MHz)	Result
TX	2402.00	2.054	2.1427	N/A	PASS
	2440.00	2.051	2.1774	N/A	PASS
	2477.00	2.102	2.2122	N/A	PASS

TX CH 01

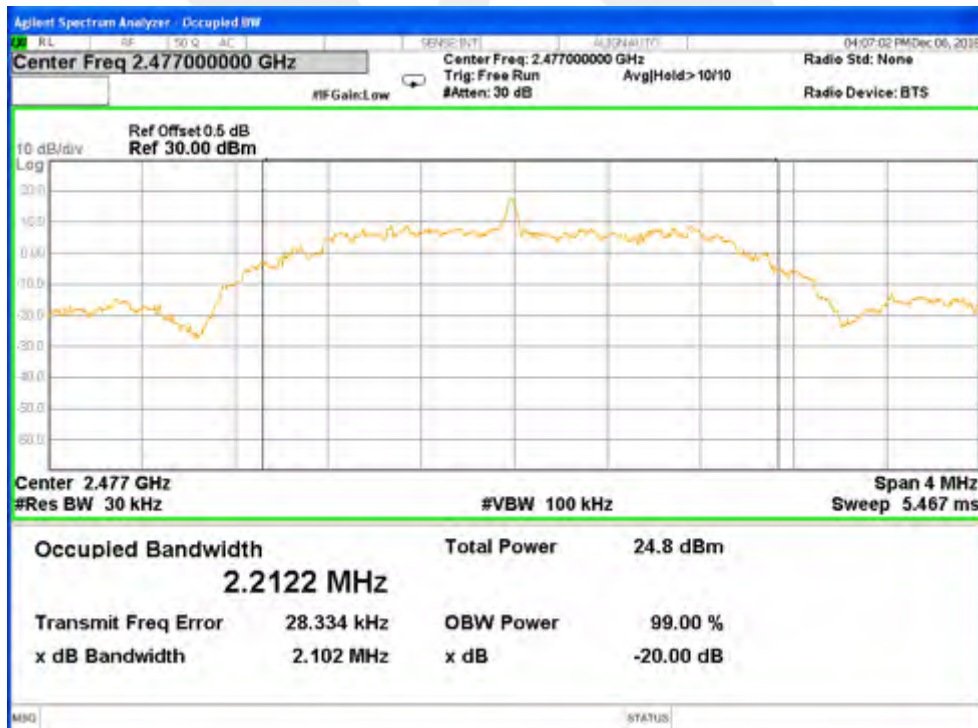




TX CH 11



TX CH 22





9 PEAK OUTPUT POWER TEST

9.1 APPLIED PROCEDURES / LIMIT

FCC Part 15.247,Subpart C RSS-247 Issue 2				
Section	Test Item	Limit	Frequency Range (MHz)	Result
FCC Part 15.247(a)(1) RSS-247 Clause 5.4(b)	Output Power	1 W or 0.125W if channel separation > 2/3 bandwidth provided the systems operate with an output power no greater than 125 mW(20.97dBm)	2400-2483.5	PASS

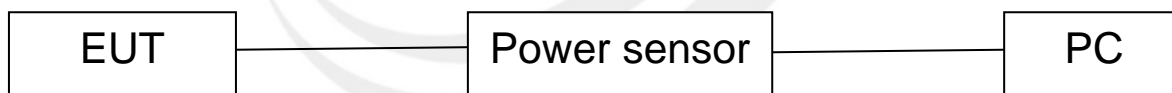
9.2 TEST PROCEDURE

a. The EUT was directly connected to the Power Sensor&PC

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP



9.5 EUT OPERATION CONDITIONS

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



9.6 TEST RESULTS

Temperature :	25 °C	Relative Humidity :	60%
Test Voltage :	DC 3.6V		

Test Channel	Frequency (MHz)	Conducted Output Power		Limit (dBm)
		Peak(dBm)	AVG(dBm)	
CH01	2402.00	16.58	4.87	20.97
CH11	2440.00	16.64	5.06	20.97
CH22	2477.00	16.90	5.33	20.97

Note:

- 1) The cable loss and antenna gain are taken into account in results.
- 2) Antenna gain(G): 2 dBi





10 ANTENNA REQUIREMENT

10.1 STANDARD REQUIREMENT

15.203 and RSS-Gen Issue 5 requirement: For intentional device, according to 15.203 and RSS-Gen Issue 5: 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.

10.2 EUT ANTENNA

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





11 FREQUENCY STABILITY

11.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within +/-0.02% of the operating frequency over a temperature variation of -30 degrees to 50 degrees C at normal supply voltage, and for a variation in primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees.

11.2 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2. Turn the EUT on and couple its output to spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

11.3 TEST RESULT

Channel 11 (2440MHz)

Voltage vs. Frequency Stability

Voltage vs. Frequency Stability Voltage(V)	Measurement Frequency(MHz)
4.14	2440.0020
3.6	2440.0017
3.06	2440.0016
Max.Deviation(MHz)	0.0020
Max.Deviation(ppm)	0.82

Rated working voltage: DC 3.6V

Temperature vs. Frequency Stability

Temperature(°C)	Measurement Frequency(MHz)
-30	2440.0025
-20	2440.0022
-10	2440.0016
0	2440.0015
10	2440.0015
20	2440.0019
30	2440.0024
40	2440.0024
50	2440.0019
Max.Deviation(MHz)	0.0025
Max.Deviation(ppm)	1.02