

TEST REPORT

Report No.: BCTC2009000318-2E

Applicant: Shenzhen Maniway Electronics Limited.

Product Name: 5.1 Soundbar with Wireless Surround
Speakers and Wireless Subwoofer

Model/Type Ref.: S5

Tested Date: Sep. 04, 2020 to Oct. 26, 2020

Issued Date: Oct. 26, 2020

Shenzhen BCTC Testing Co., Ltd.



FCC ID: OG5MW-MANIWAY

Product Name: 5.1 Soundbar with Wireless Surround Speakers and Wireless Subwoofer
Trademark: MANIWAY, MONOPRICE
Model/Type Ref.: S5
42011
Prepared For: Shenzhen Maniway Electronics Limited.
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Manufacturer: Shenzhen Maniway Electronics Limited.
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Prepared By: Shenzhen BCTC Testing Co., Ltd.
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Sample Received Date: Sep. 04, 2020
Sample tested Date: Sep. 04, 2020 to Oct. 26, 2020
Issue Date: Oct. 26, 2020
Report No.: BCTC2009000318-2E
Test Standards: FCC Part15.249
ANSI C63.10-2013
Test Results: PASS

Tested by:



Sam zeng/Project Handler

Approved by:



Zero Zhou/Reviewer

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(Note: N/A means not applicable)

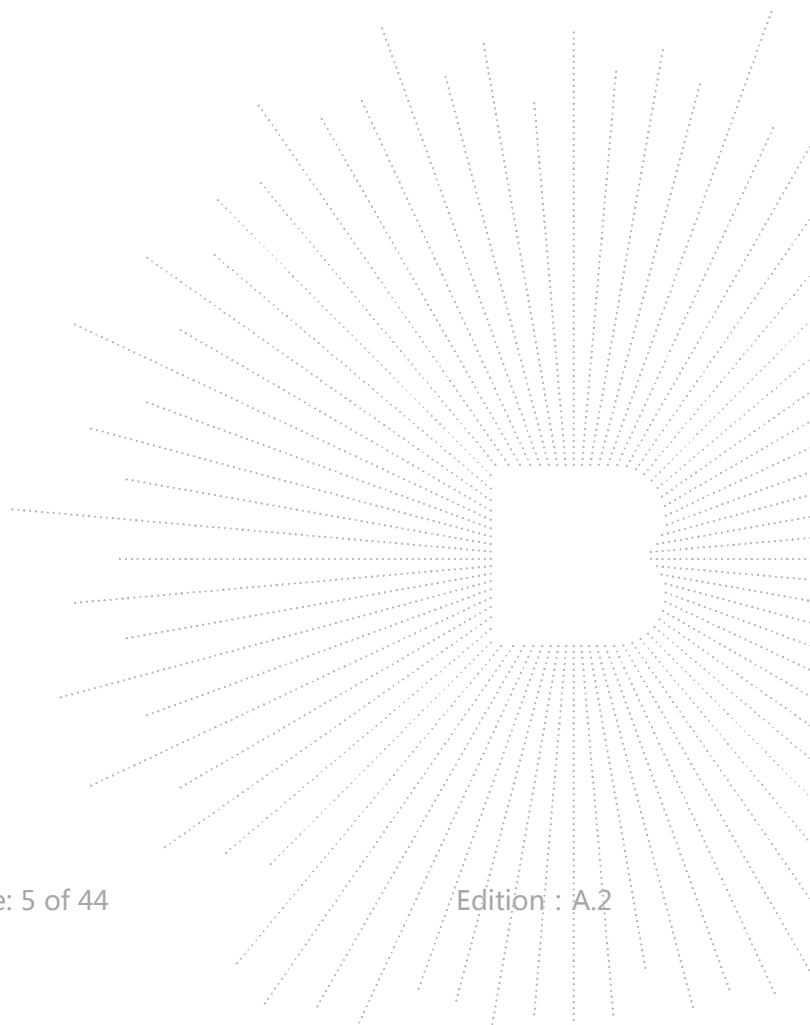
1. VERSION

Report No.	Issue Date	Description	Approved
BCTC2009000318-2E	Oct. 26, 2020	Original	Valid

2. TEST SUMMARY

The Product has been tested according to the following specifications:

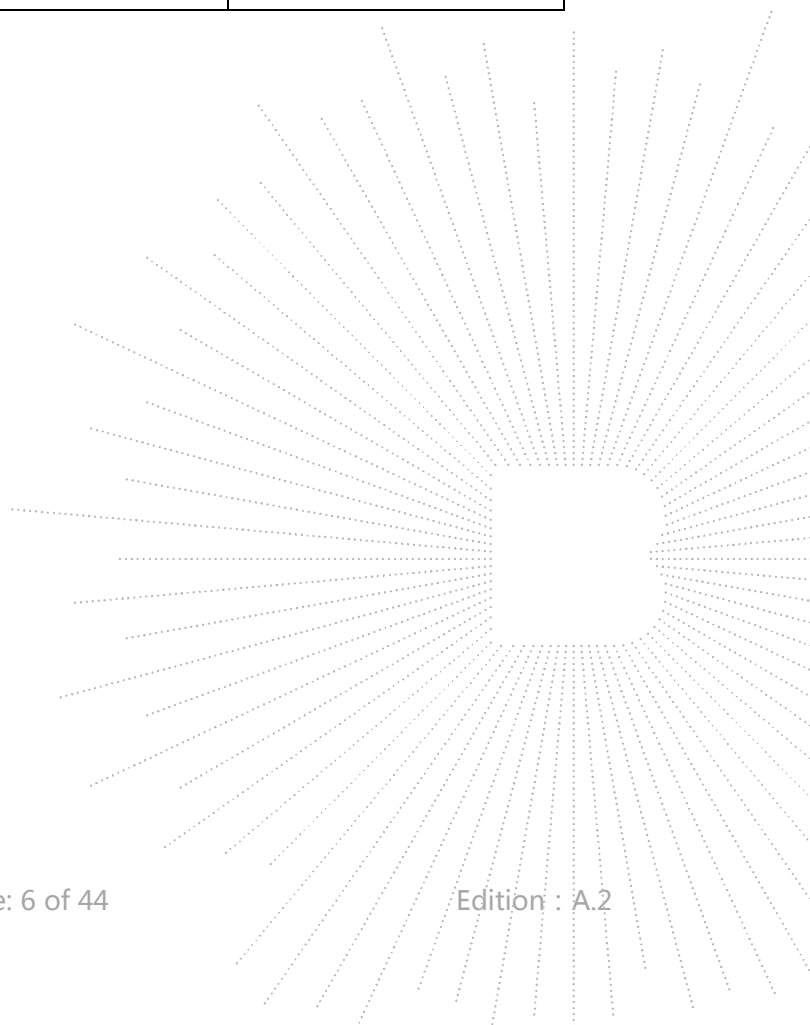
FCC Part15 (15.249) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.215	20dB Bandwidth	PASS	
15.249	Fundamental &Radiated Spurious Emission Measurement	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	



3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
2	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
3	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
4	Conducted Adjacent channel power	U=1.38dB
5	Conducted output power uncertainty Above 1G	U=1.576dB
6	Conducted output power uncertainty below 1G	U=1.28dB
7	humidity uncertainty	U=5.3%
8	Temperature uncertainty	U=0.59°C



4. PRODUCT INFORMATION AND TEST SETUP

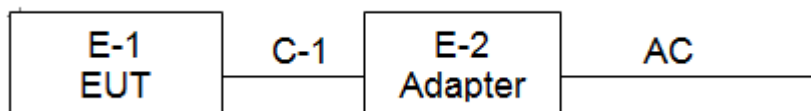
4.1 Product Information

Model/Type Ref.:	S5 42011
Model differences:	All the model are the same circuit and RF module, except model names.
Hardware Version:	N/A
Software Version:	N/A
Operation Frequency:	5727-5848MHz
Type of Modulation:	GFSK
Number Of Channel	3CH
Antenna installation:	Internal antenna
Antenna Gain:	0dBi
Ratings:	DC 20V from adapter
Adapter:	MODEL:YNQX36G200180UL INPUT:100-240V~50/60Hz 1A OUTPUT:20V 1.8A 36W
Note:	The 5.8G module is a single antenna and does not support MIMO mode

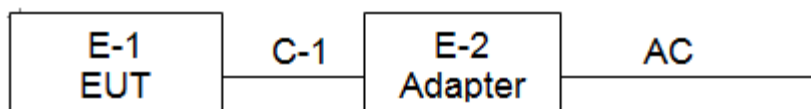
4.2 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

Conducted Emission:



Radiated Spurious Emission



+

4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Data Cable	Power Cord
E-1	5.1 Sound System	Kogan, MONOP RICE	S5 / MANIWAY	N/A	EUT	E-1
E-2	Adapter	N/A	YNQX36G2 00180UL	N/A	Auxiliary	E-2

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.2M	DC cable unshielded

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	5727	02	5780	03	5848

4.5 Test Mode

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.

For All Mode	Description	Modulation Type
Mode 1	CH01	GFSK
Mode 2	CH02	
Mode 3	CH03	
Mode 4	Link mode (Conducted emission and Radiated emission)	

Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) Fully-charged battery is used during the test

4.6 Table of parameters of text software setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters

Test software Version	Pixart Utility		
Frequency	5727 MHz	5780 MHz	5848 MHz
Parameters	DEF	DEF	DEF

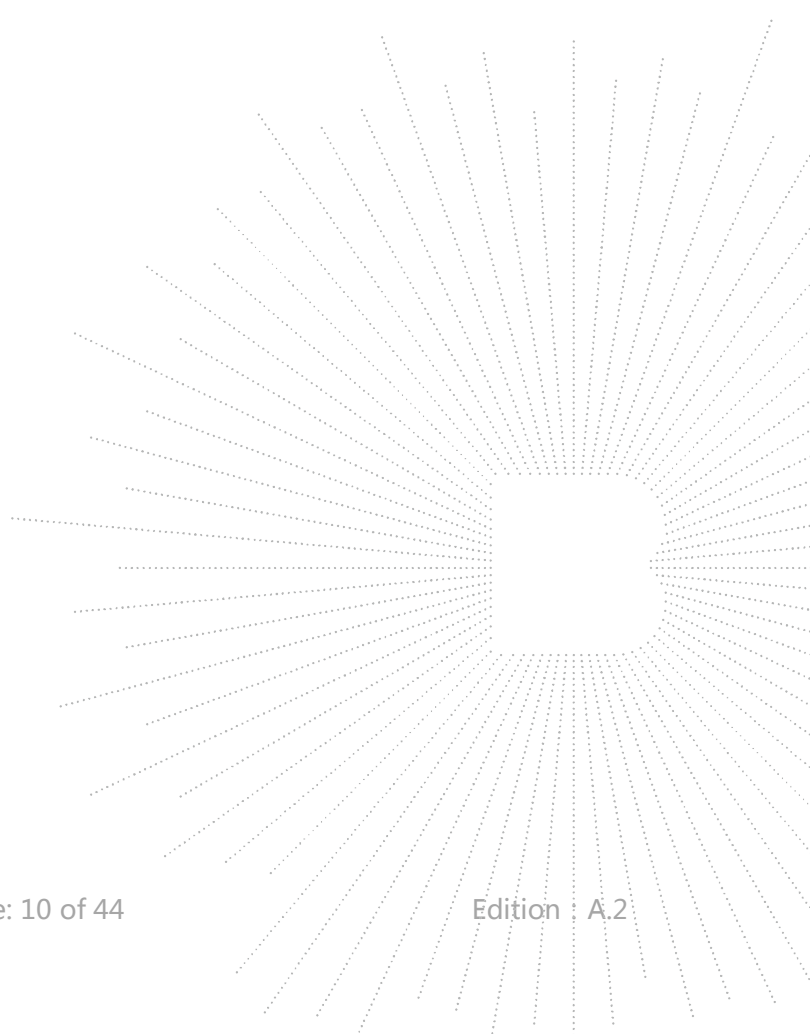
5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850

IC Registered No.: 23583



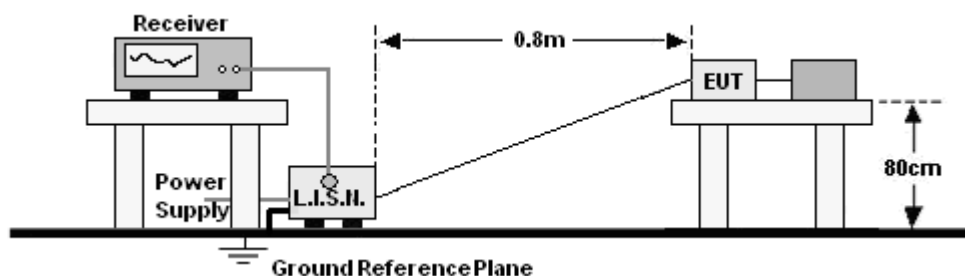
5.2 Test Instrument Used

Conducted emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	Jun. 08, 2020	Jun. 07, 2021
LISN	R&S	ENV216	101375	Jun. 04, 2020	Jun. 03, 2021
ISN	HPX	ISN T800	S150900 1	Jun. 04, 2020	Jun. 03, 2021
Software	Frad	EZ-EMC	EMC-CO N 3A1	\	\

Radiated emissions Test (966 chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	Jun. 06. 2020	Jun. 05, 2023
Receiver	R&S	ESR3	102075	Jun. 08, 2020	Jun. 07, 2021
Receiver	R&S	ESRP	101154	Jun. 08, 2020	Jun. 07, 2021
Amplifier	Schwarzbeck	BBV9718	9718-309	Jun. 04, 2020	Jun. 03, 2021
Amplifier	Schwarzbeck	BBV9744	9744-0037	Jun. 04, 2020	Jun. 03, 2021
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	VULB9163-942	Jun. 08, 2020	Jun. 07, 2021
Horn Antenna	SCHWARZBECK	BBHA9120 D	1541	Jun. 10, 2020	Jun. 09, 2021
Horn Antenna (18GHz-40 GHz)	SCHWARZBECK	BBHA9170	822	Jun. 10, 2020	Jun. 09, 2021
Amplifier (18GHz-40 GHz)	MITEQ	TTA1840-3 5-HG	2034381	Jun. 08, 2020	Jun. 07, 2021
Loop Antenna (9KHz-30M Hz)	SCHWARZBECK	FMZB1519 B	014	Jun. 08, 2020	Jun. 07, 2021
RF cables1 (9kHz-30MHz)	Huber+Suhnar	9kHz-30M Hz	B1702988-0008	Jun. 08, 2020	Jun. 07, 2021
RF cables2 (30MHz-1G Hz)	Huber+Suhnar	30MHz-1G Hz	1486150	Jun. 08, 2020	Jun. 07, 2021
RF cables3 (1GHz-40G Hz)	Huber+Suhnar	1GHz-40G Hz	1607106	Jun. 08, 2020	Jun. 07, 2021
Power Metter	Keysight	E4419B	\	Jun. 08, 2020	Jun. 07, 2021
Power Sensor (AV)	Keysight	E9 300A	\	Jun. 08, 2020	Jun. 07, 2021
Signal Analyzer 20kHz-26.5 GHz	KEYSIGHT	N9020A	MY491000 60	Jun. 04, 2020	Jun. 03, 2021
Spectrum Analyzer 9kHz-40G Hz	Agilent	FSP40	100363	Jun. 08, 2020	Jun. 07, 2021
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

6. CONDUCTED EMISSIONS

6.1 Block Diagram Of Test Setup



6.2 Limit

FREQUENCY (MHz)	Limit (dBuV)	
	Quas-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

Notes:
1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

6.3 Test procedure

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

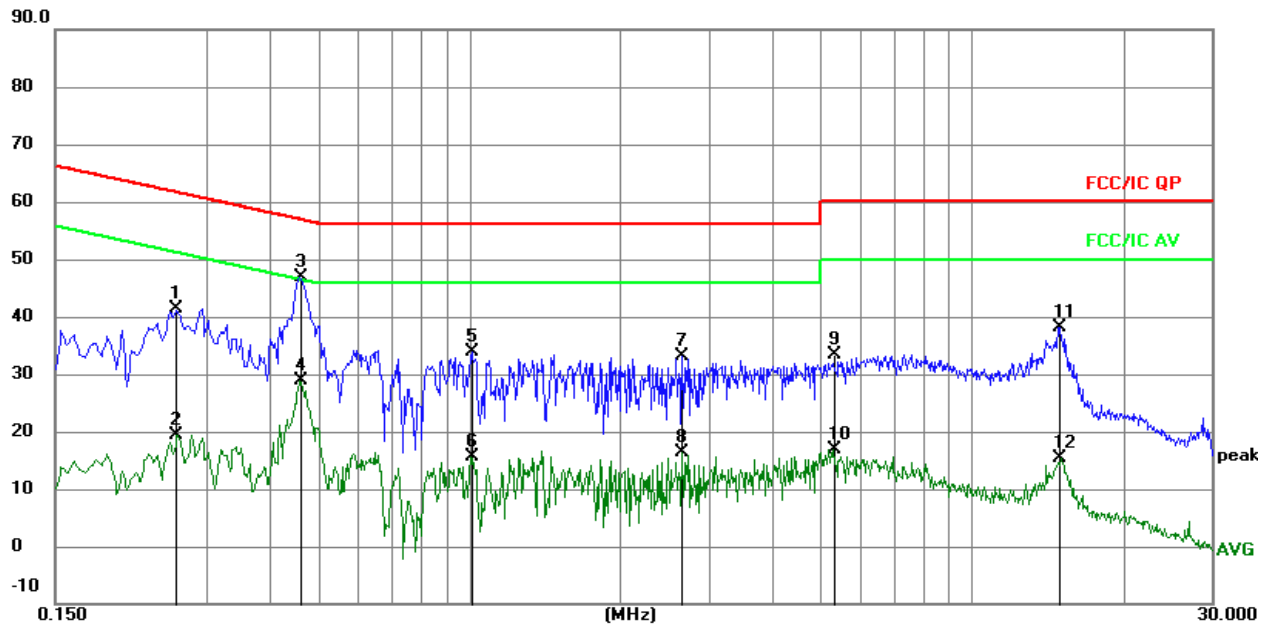
- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

6.4 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.

6.5 Test Result

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 4

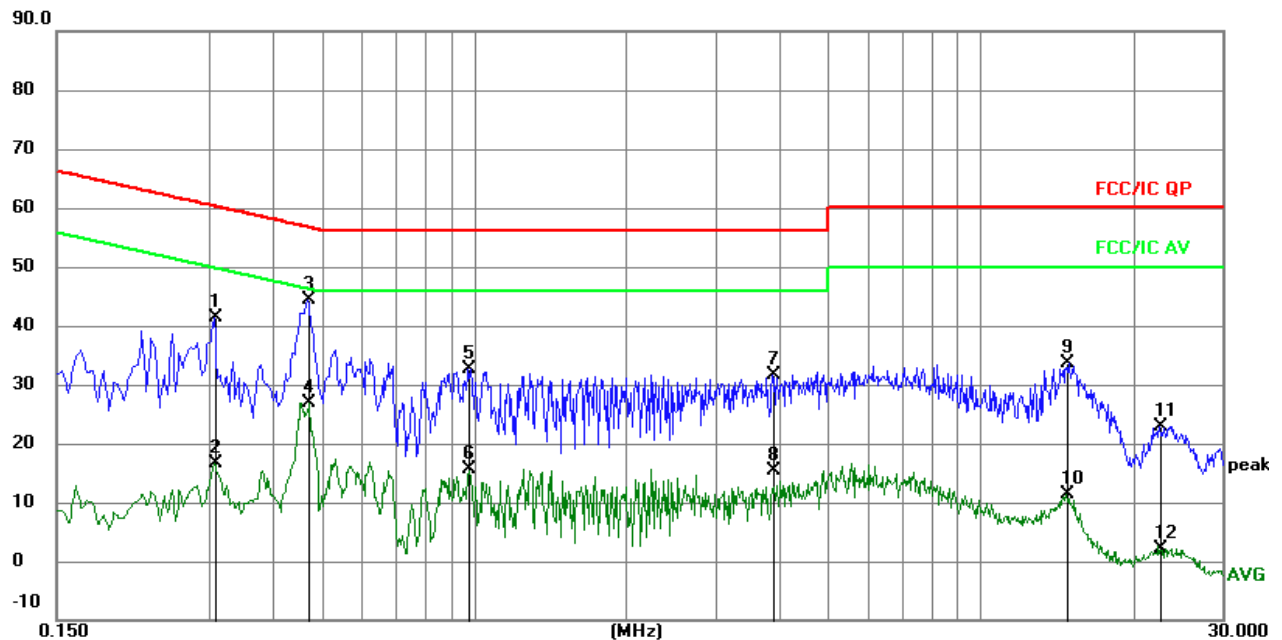


Remark:

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

No.	Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2615	31.95	9.53	41.48	61.38	-19.90	QP	
2		0.2615	9.90	9.53	19.43	51.38	-31.95	AVG	
3	*	0.4588	37.27	9.55	46.82	56.71	-9.89	QP	
4		0.4588	19.23	9.55	28.78	46.71	-17.93	AVG	
5		1.0050	24.19	9.57	33.76	56.00	-22.24	QP	
6		1.0050	5.94	9.57	15.51	46.00	-30.49	AVG	
7		2.6500	23.47	9.64	33.11	56.00	-22.89	QP	
8		2.6500	6.76	9.64	16.40	46.00	-29.60	AVG	
9		5.3050	23.60	9.79	33.39	60.00	-26.61	QP	
10		5.3050	7.13	9.79	16.92	50.00	-33.08	AVG	
11		14.9860	28.48	9.70	38.18	60.00	-21.82	QP	
12		14.9860	5.58	9.70	15.28	50.00	-34.72	AVG	

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 4



Remark:

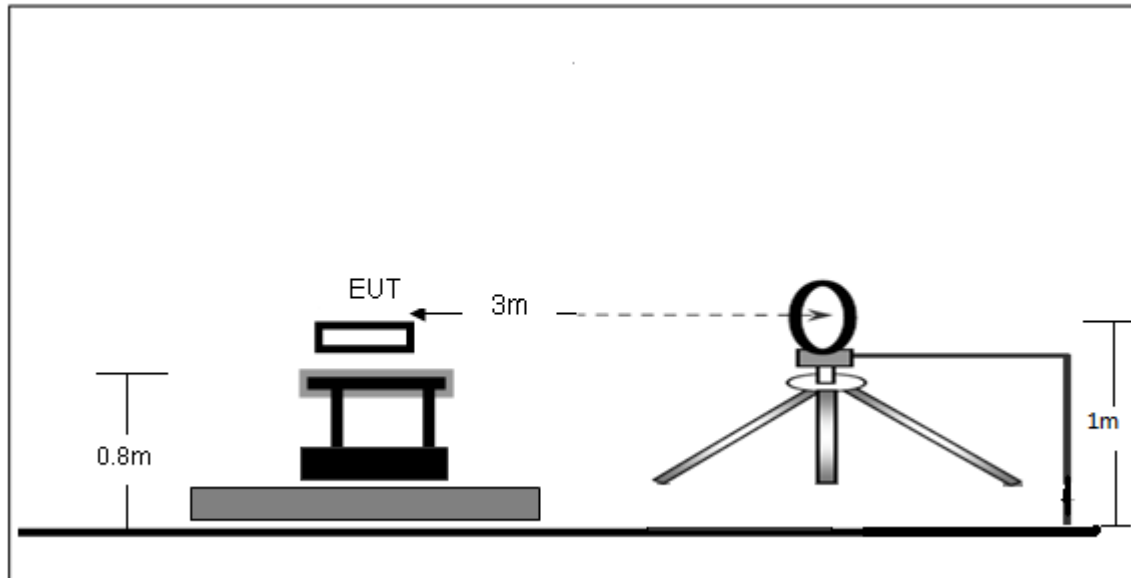
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.3075	31.87	9.57	41.44	60.04	-18.60	QP	
2		0.3075	7.04	9.57	16.61	50.04	-33.43	AVG	
3	*	0.4695	34.70	9.56	44.26	56.52	-12.26	QP	
4		0.4695	17.40	9.56	26.96	46.52	-19.56	AVG	
5		0.9780	23.01	9.58	32.59	56.00	-23.41	QP	
6		0.9780	5.99	9.58	15.57	46.00	-30.43	AVG	
7		3.8850	21.87	9.72	31.59	56.00	-24.41	QP	
8		3.8850	5.63	9.72	15.35	46.00	-30.65	AVG	
9		14.7840	23.85	9.70	33.55	60.00	-26.45	QP	
10		14.7840	1.73	9.70	11.43	50.00	-38.57	AVG	
11		22.5419	13.17	9.77	22.94	60.00	-37.06	QP	
12		22.5419	-7.71	9.77	2.06	50.00	-47.94	AVG	

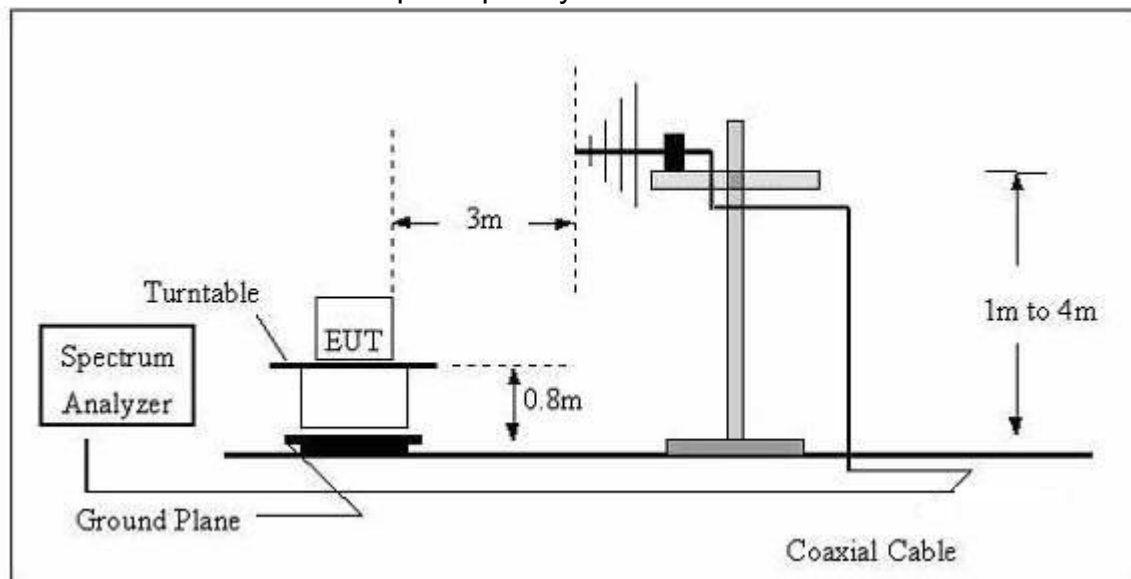
7. RADIATED EMISSIONS

7.1 Block Diagram Of Test Setup

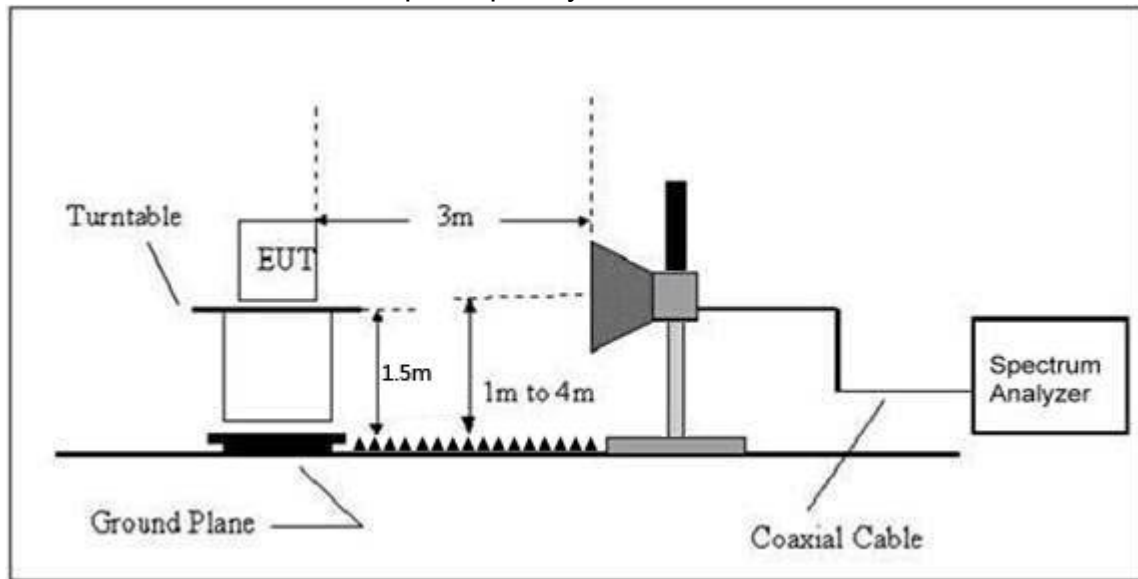
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



7.2 Limit

50dBc 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.

Frequency	Field Strength	Distance	Field Strength Limit at 3m Distance	
(MHz)	uV/m	(m)	uV/m	dBuV/m
0.009 ~ 0.490	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log^{(24000/F(\text{kHz}))} + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1)The limit for radiated test was performed according to FCC PART 15C.

(2)The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	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

7.3 Test procedure

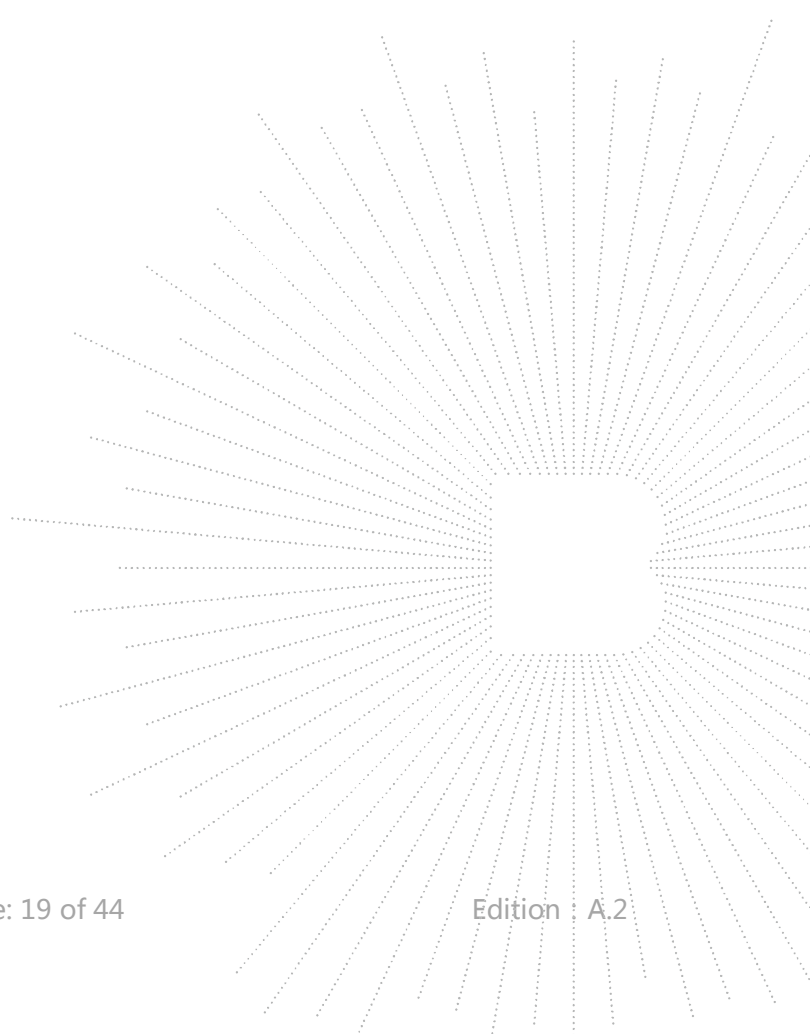
- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 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 pretest to three orthogonal axis. The worst case emissions were reported

7.4 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.



7.5 Test Result

Between 9KHz – 30 MHz

Temperature:	26℃	Relative Humidity:	24%
Pressure:	101 kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode 4	Polarization :	--

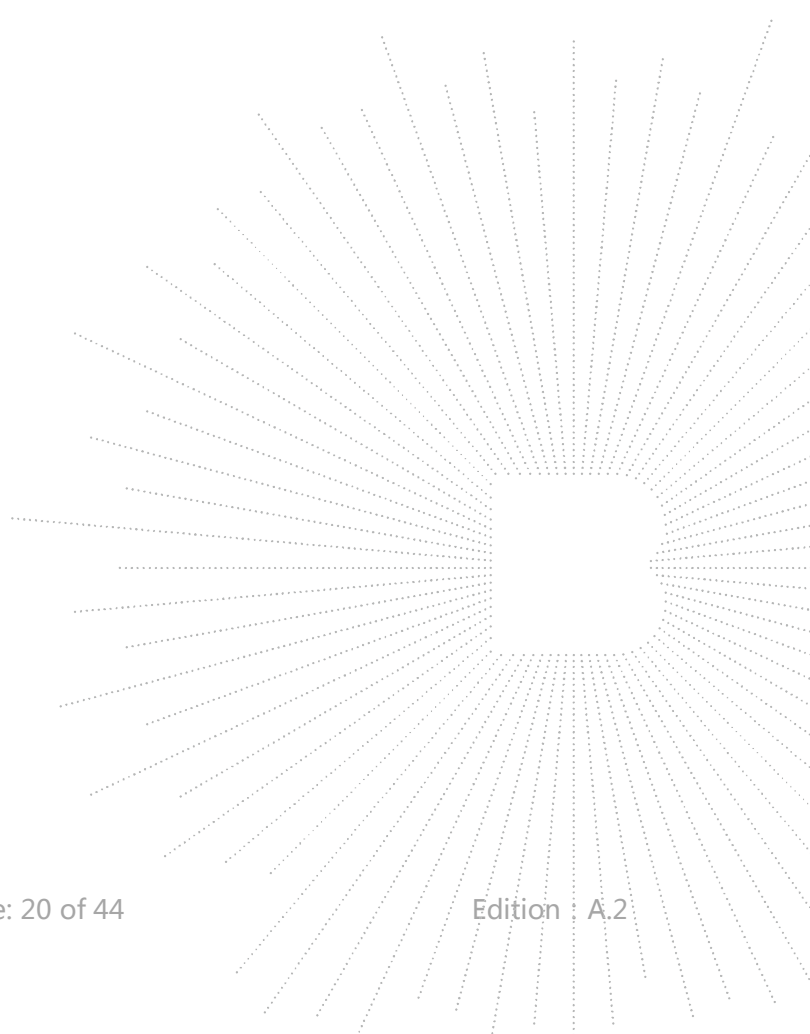
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

Note:

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

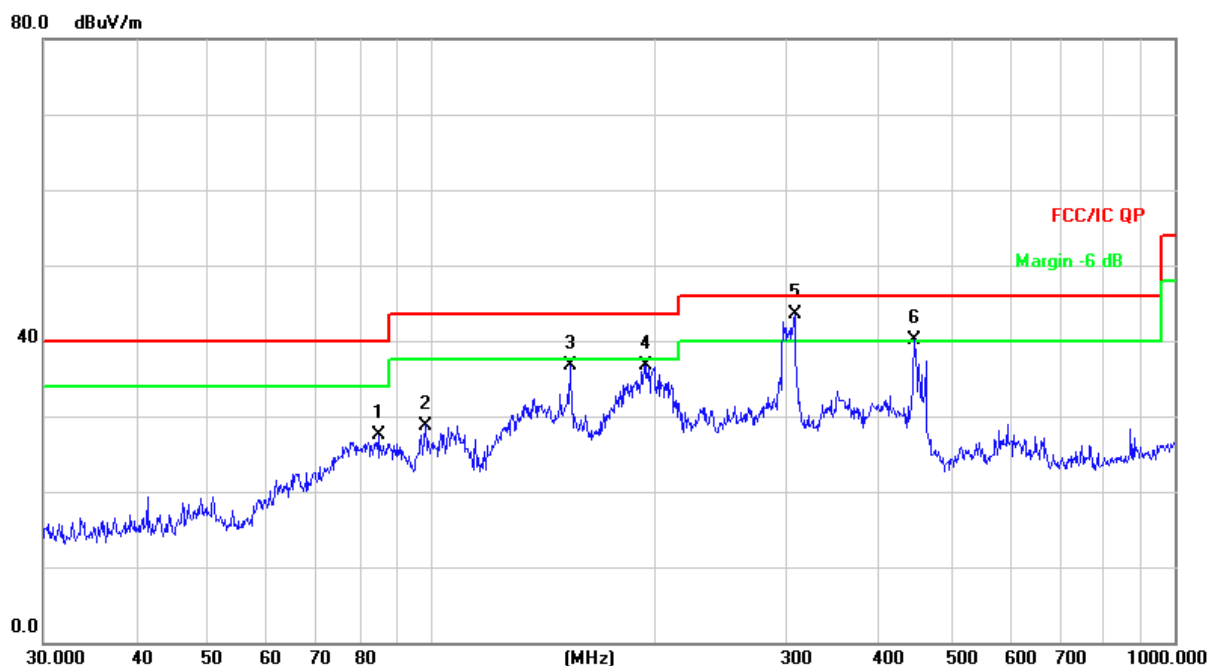
Distance extrapolation factor = $40 \log (\text{specific distance}/\text{test distance})$ (dB);

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



Between 30MHz – 1GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode 4	Polarization :	Horizontal

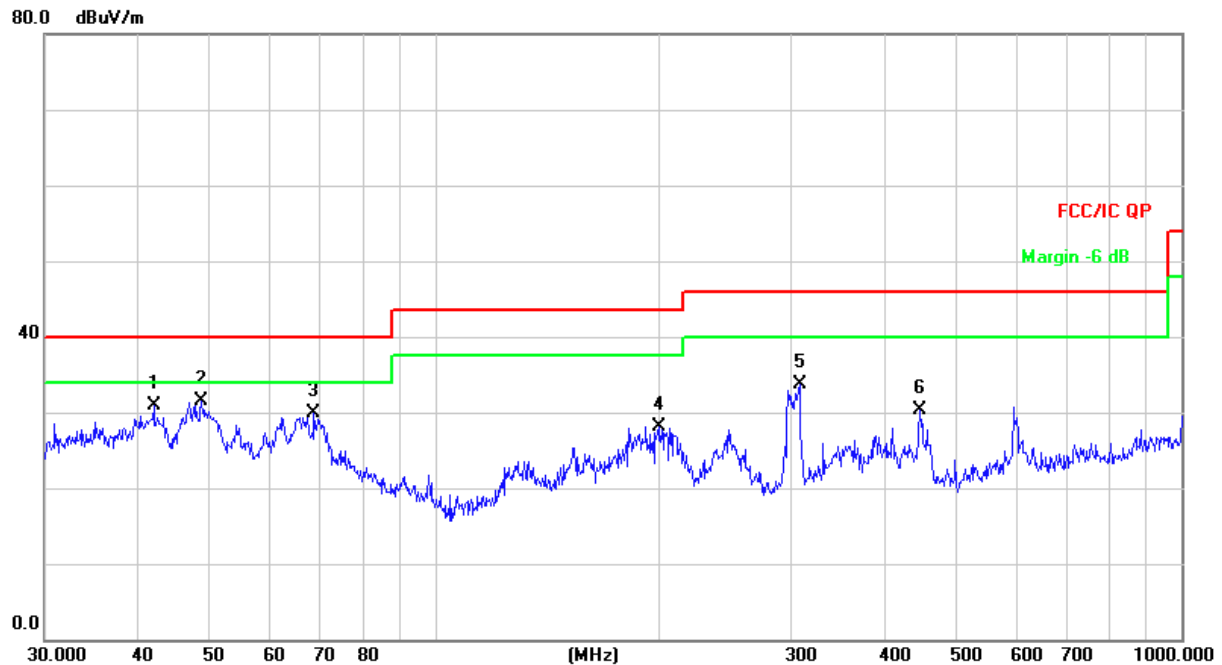


Remark:

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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		84.7018	41.75	-14.23	27.52	40.00	-12.48	QP
2		98.1419	42.05	-13.25	28.80	43.50	-14.70	QP
3		153.7385	44.74	-8.10	36.64	43.50	-6.86	QP
4		194.4534	47.73	-11.05	36.68	43.50	-6.82	QP
5	*	307.8313	51.16	-7.58	43.58	46.00	-2.42	QP
6	!	446.4141	43.10	-3.00	40.10	46.00	-5.90	QP

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kpa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode 4	Polarization :	Vertical



Remark:

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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		42.0066	41.23	-10.30	30.93	40.00	-9.07	QP
2	*	48.6719	41.80	-10.36	31.44	40.00	-8.56	QP
3		68.8721	42.77	-12.82	29.95	40.00	-10.05	QP
4		199.2855	39.40	-11.26	28.14	43.50	-15.36	QP
5		307.8313	41.19	-7.58	33.61	46.00	-12.39	QP
6		446.4141	33.21	-3.00	30.21	46.00	-15.79	QP

Between 1GHz – 40GHz

GFSK							
Polar (H/V)	Frequency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector Type
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/ m)	(dB)	
Low channel							
V	11454.00	53.88	-0.43	53.45	74.00	-20.55	PK
V	11454.00	43.31	-0.43	42.88	54.00	-11.12	AV
V	17181.00	43.12	8.31	51.43	74.00	-22.57	PK
V	17181.00	32.32	8.31	40.63	54.00	-13.37	AV
H	11454.00	49.24	-0.43	48.81	74.00	-25.19	PK
H	11454.00	40.02	-0.43	39.59	54.00	-14.41	AV
H	17181.00	41.25	8.31	49.56	74.00	-24.44	PK
H	17181.00	32.66	8.31	40.97	54.00	-13.03	AV
Middle channel							
V	11560.00	50.27	-0.38	49.89	74.00	-24.11	PK
V	11560.00	42.63	-0.38	42.25	54.00	-11.75	AV
V	17340.00	39.99	8.83	48.82	74.00	-25.18	PK
V	17340.00	30.97	8.83	39.80	54.00	-14.20	AV
H	11560.00	48.53	-0.38	48.15	74.00	-25.85	PK
H	11560.00	38.64	-0.38	38.26	54.00	-15.74	AV
H	17340.00	37.73	8.83	46.56	74.00	-27.44	PK
H	17340.00	30.67	8.83	39.50	54.00	-14.50	AV
High channel							
V	11696.00	52.87	-0.32	52.55	74.00	-21.45	PK
V	11696.00	43.70	-0.32	43.38	54.00	-10.62	AV
V	17544.00	44.35	9.35	53.70	74.00	-20.30	PK
V	17544.00	33.98	9.35	43.33	54.00	-10.67	AV
H	11696.00	50.76	-0.32	50.44	74.00	-23.56	PK
H	11696.00	40.09	-0.32	39.77	54.00	-14.23	AV
H	17544.00	42.44	9.35	51.79	74.00	-22.21	PK
H	17544.00	33.58	9.35	42.93	54.00	-11.07	AV

Remark:

1. Emission Level = Meter Reading + Factor,
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Over = Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
5. This report only shows the worst case test data.

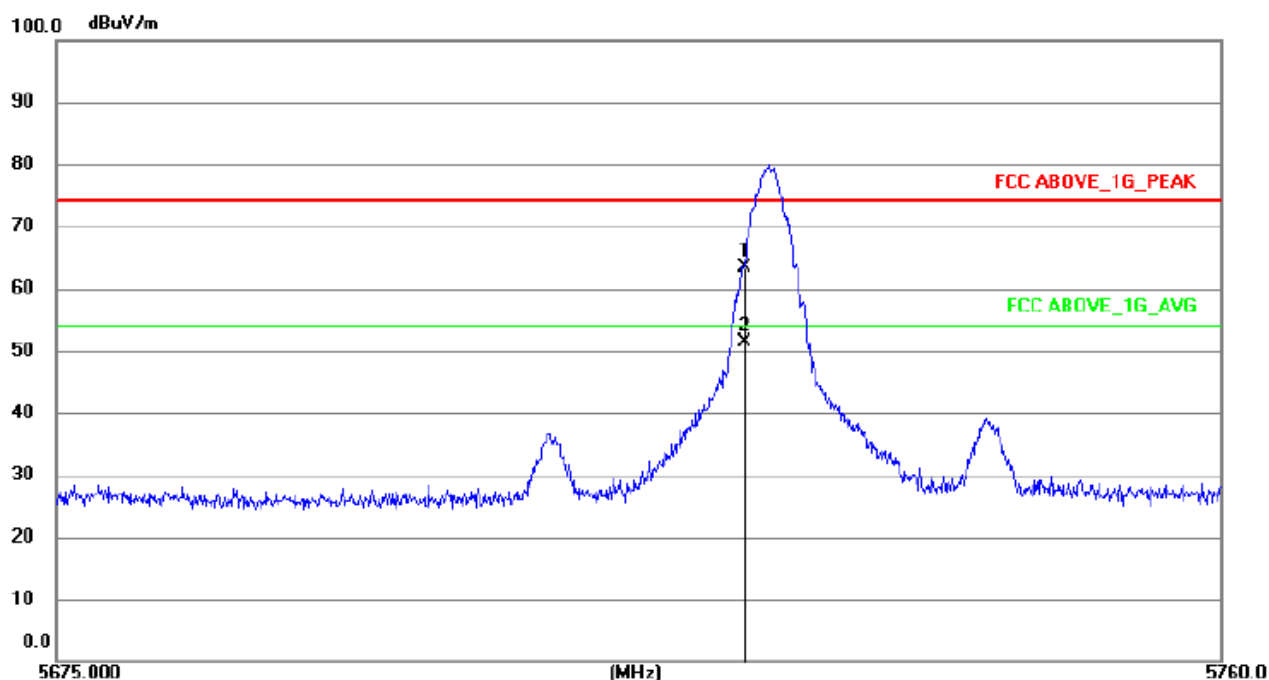
Bandedge Plot

The test plots are attached as below. From the below plots, the field strength of any emissions outside of the specified frequency band are attenuated to the general radiated emission limits in section 15.209. It fulfils the requirement of 15.249(d).

Peak Measurement

Restricted-band band-edge tests shall be performed as radiated measurements, i.e (Band-edge Plot).

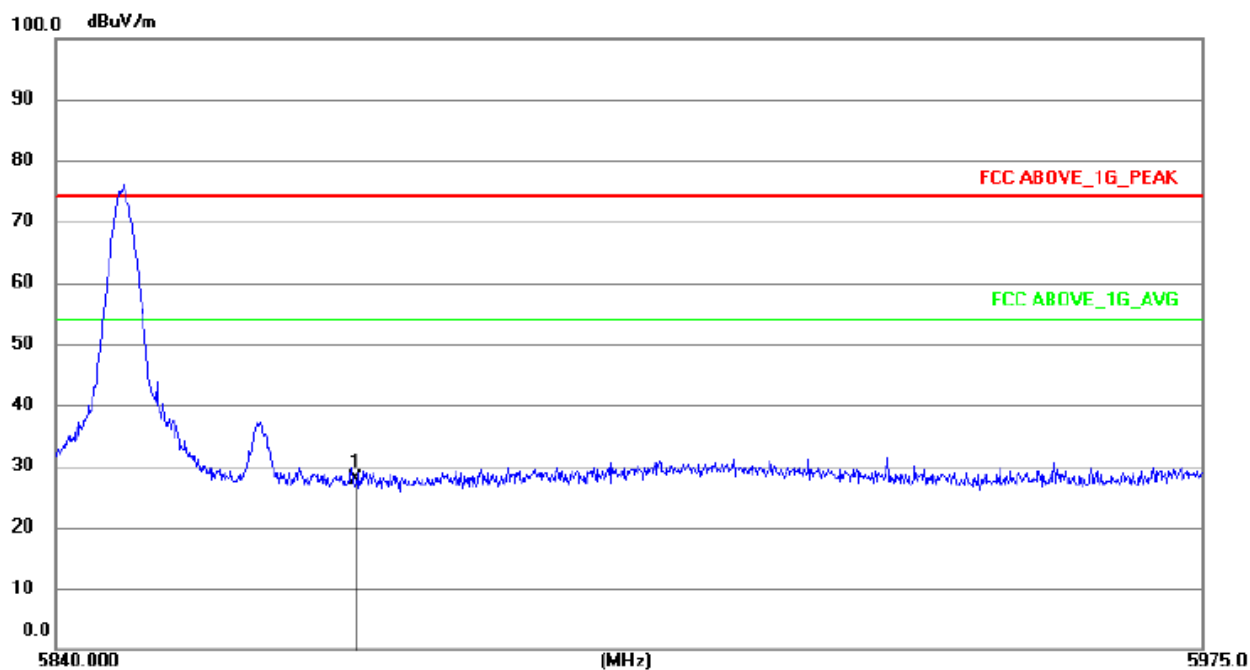
Lower channel 5725.000 MHz:



No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment	Limit	Over dB	Detector	Comment
1		5725.000	60.66	2.79	63.45	74.00	-10.55	peak	
2	*	5725.000	48.57	2.79	51.36	54.00	-2.64	AVG	

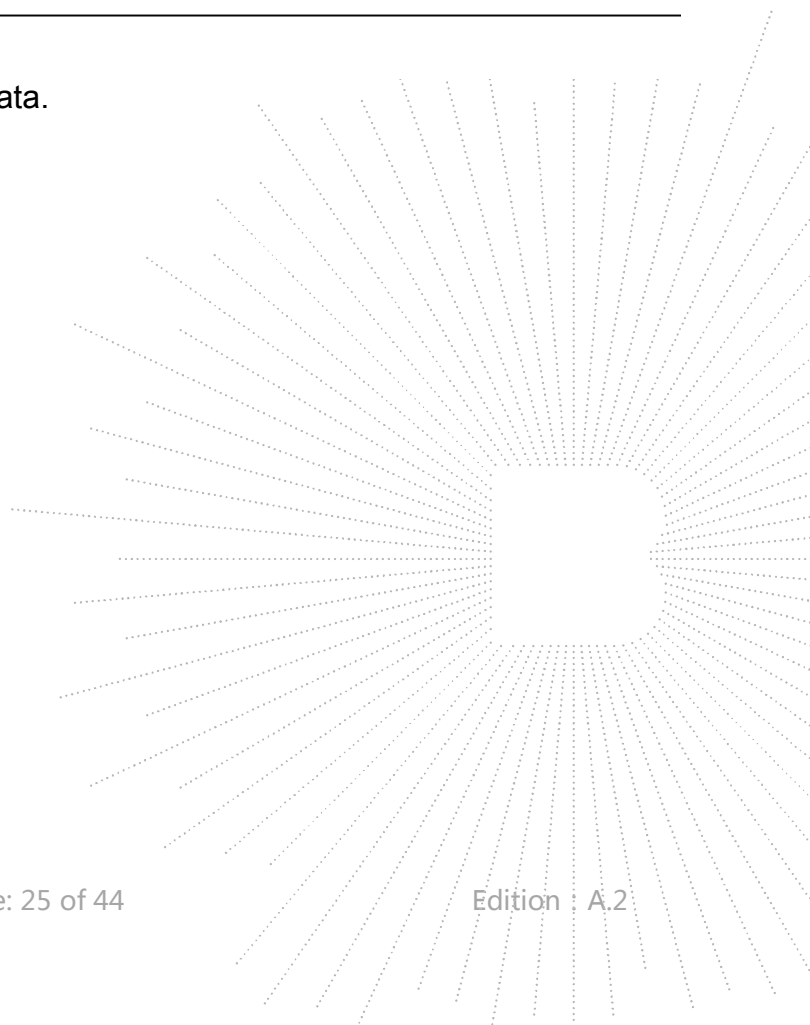
This report only shows the worst case test data.

Upper channel 5848.000 MHz:



No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment	Limit	Over dB	Detector	Comment
1	*	5875.000	24.37	3.43	27.80	74.00	-46.20	peak	

This report only shows the worst case test data.

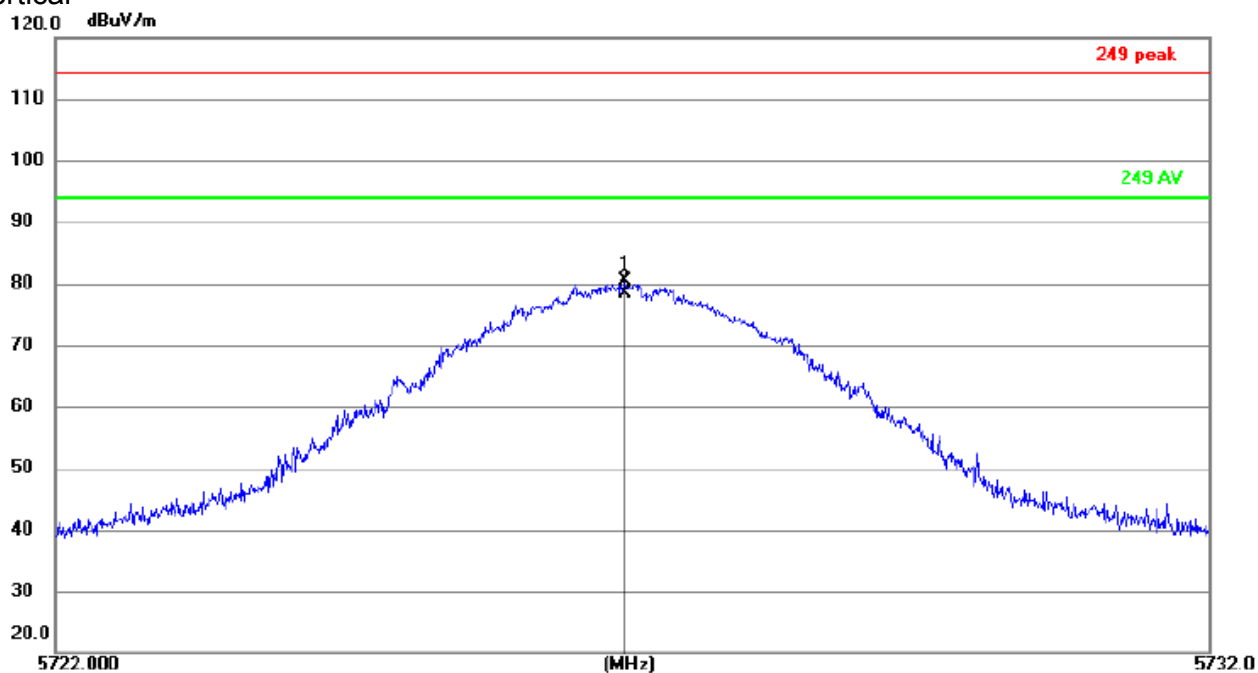


7.6 Field Strength

Test Result

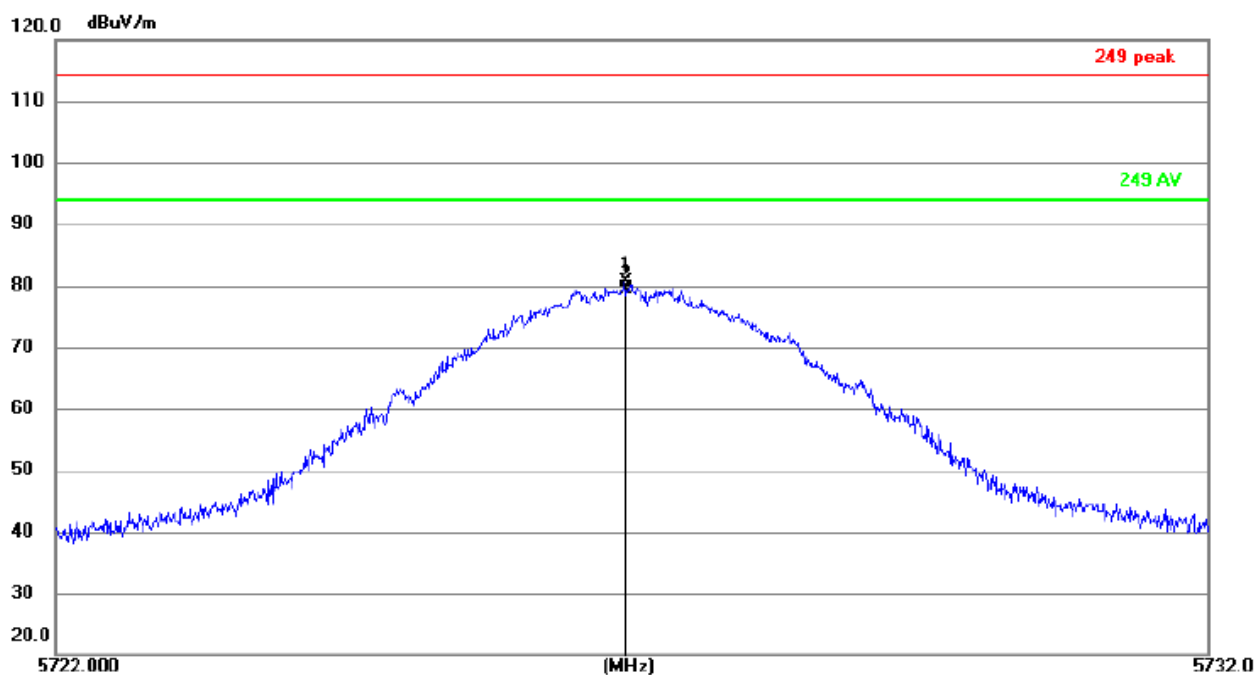
Lower channel:

Vertical

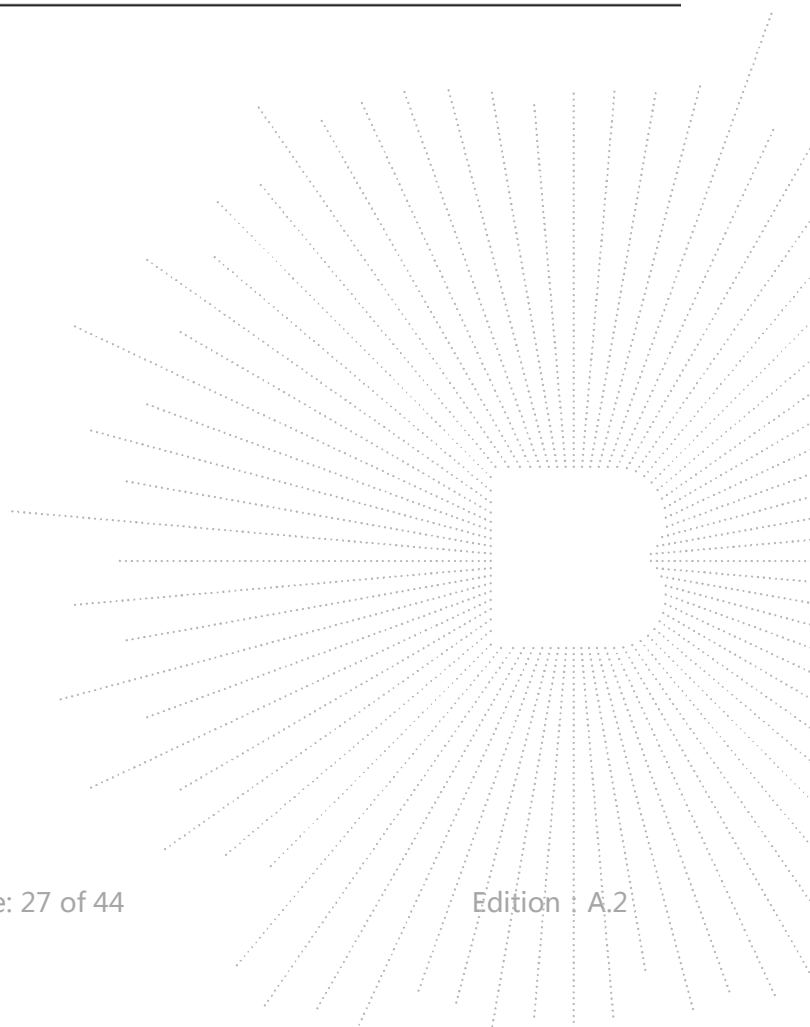


No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment	Limit	Over dB	Detector	Comment
1		5726.930	77.51	2.80	80.31	114.0	-33.69	peak	
2	*	5726.930	75.54	2.80	78.34	94.00	-15.66	AVG	

Horizontal

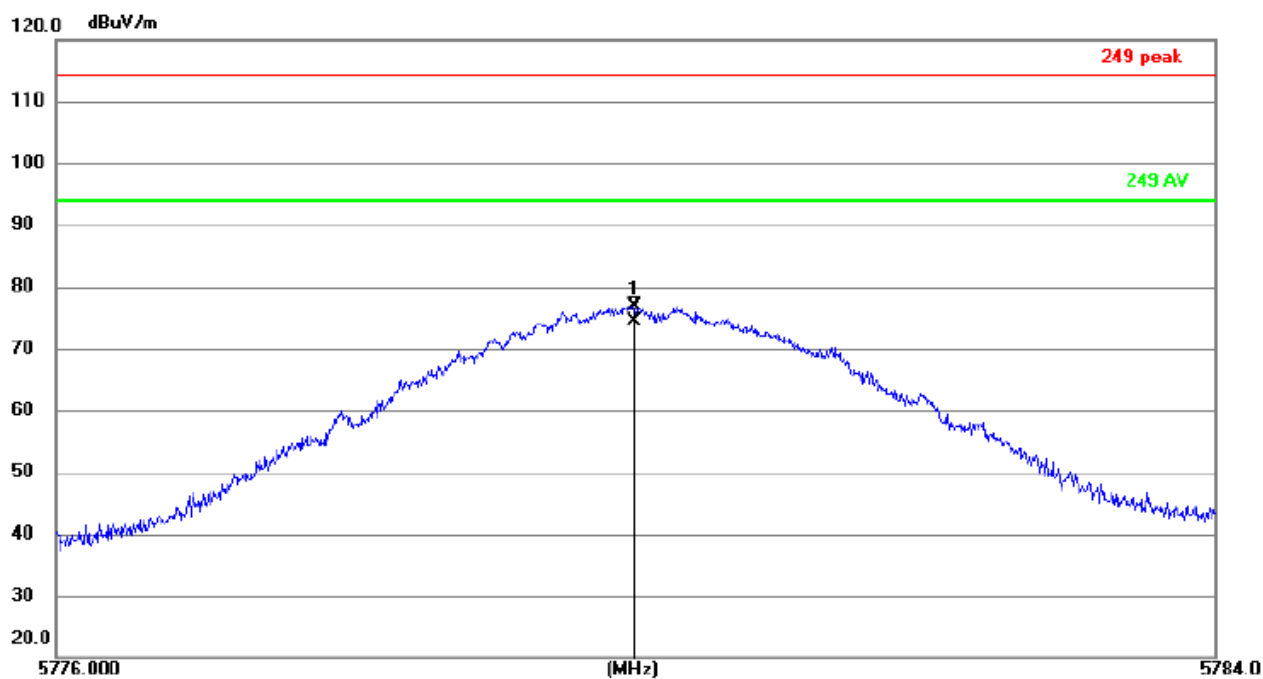


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz						Detector	Comment
1		5726.940	77.78	2.80	80.58	114.0	-33.42	peak	
2	*	5726.940	76.69	2.80	79.49	94.00	-14.51	AVG	



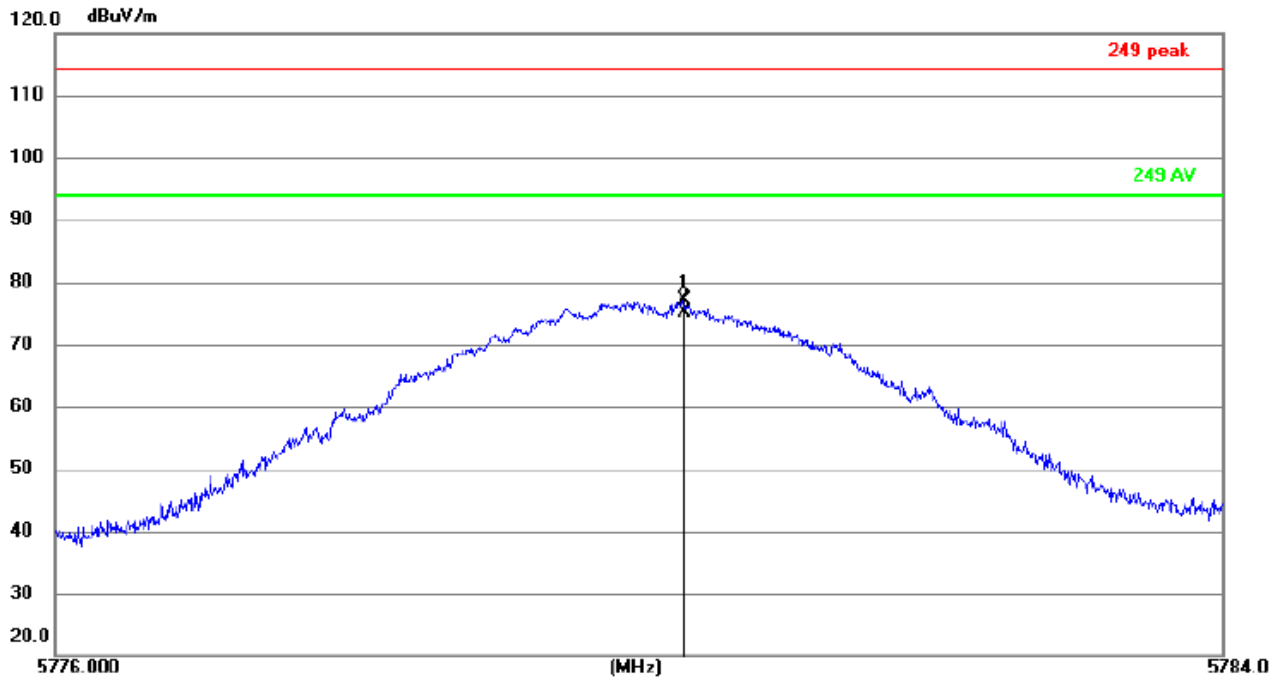
Mid Channel:

Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz						Detector	Comment
1		5779.984	73.89	3.02	76.91	114.0	-37.09	peak	
2	*	5779.984	71.45	3.02	74.47	94.00	-19.53	AVG	

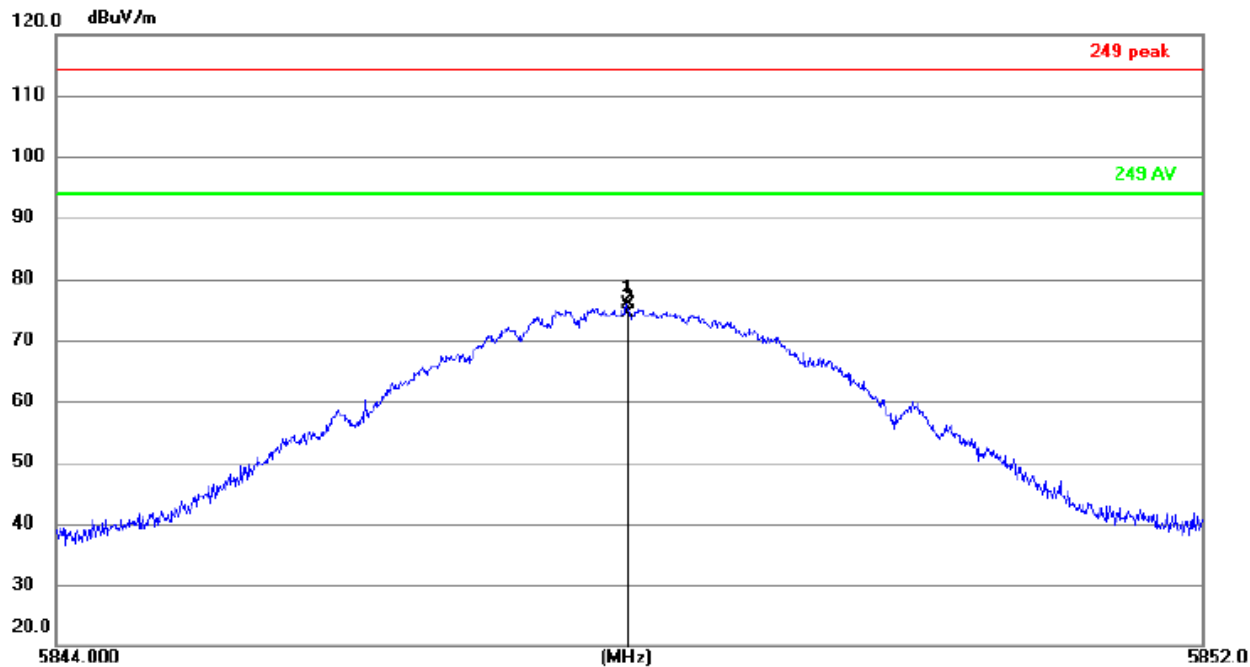
Horizontal



No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment	Limit	Over dB	Detector	Comment
1		5780.304	74.08	3.03	77.11	114.0	-36.89	peak	
2	*	5780.304	72.15	3.03	75.18	94.00	-18.82	AVG	

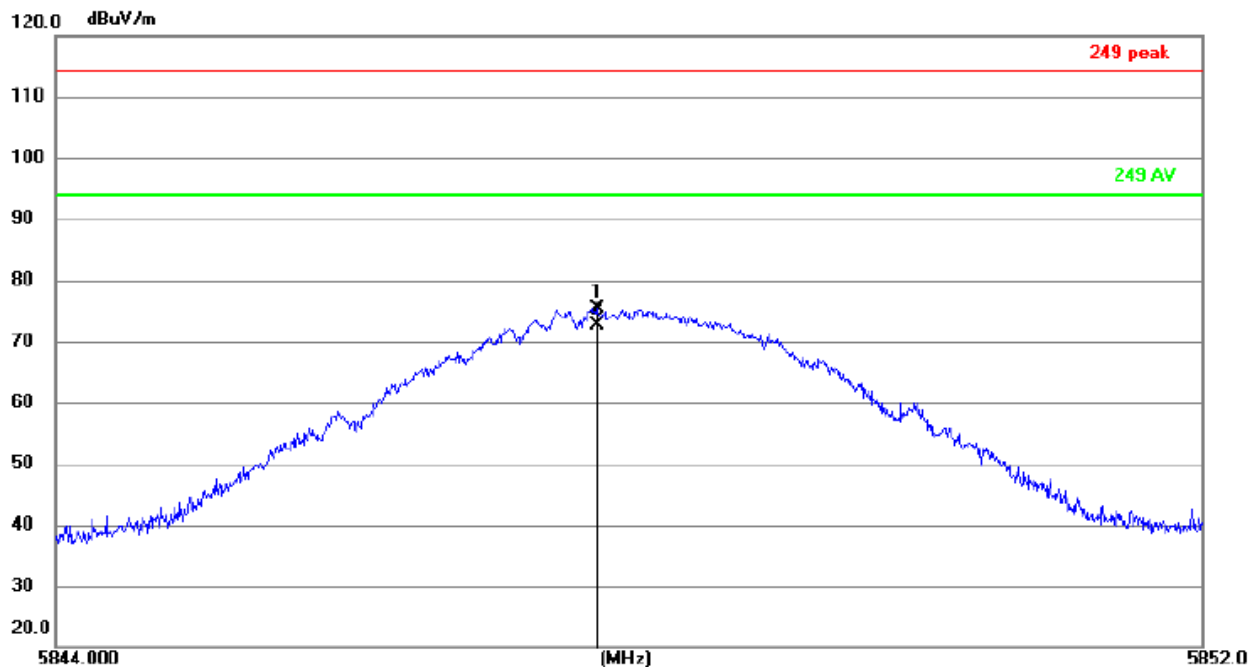
High Channel:

Vertical



No.	Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment	Limit	Over dB	Detector	Comment
1		5847.984	72.52	3.31	75.83	114.0	-38.17	peak	
2	*	5847.984	71.12	3.31	74.43	94.00	-19.57	AVG	

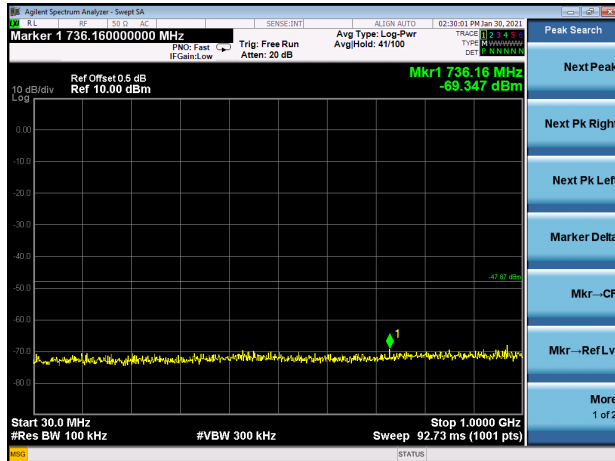
Horizontal



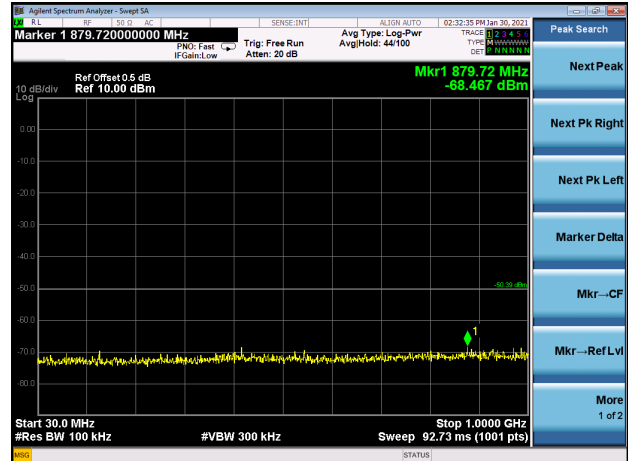
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz		dB			dB	Detector	Comment
1		5847.776	71.97	3.31	75.28	114.0	-38.72	peak	
2	*	5847.776	69.26	3.31	72.57	94.00	-21.43	AVG	

8.6 CONDUCTED EMISSION MEASUREMENTⁱ

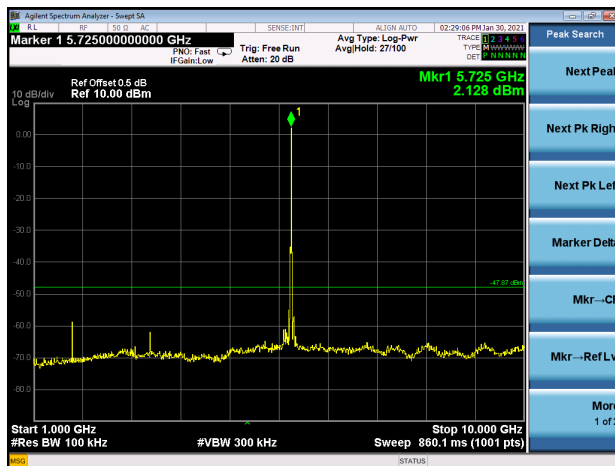
Low Channel 5727MHz



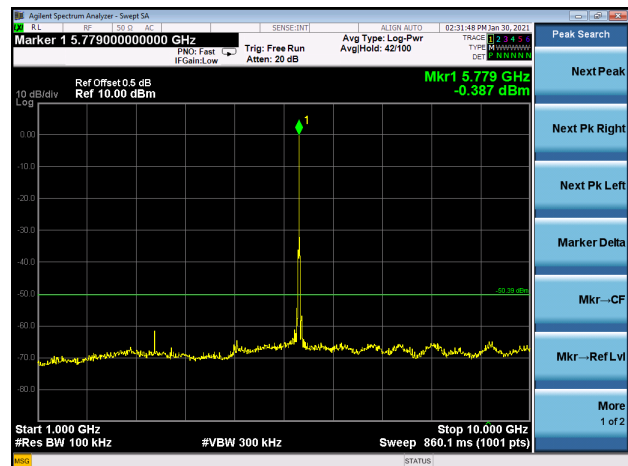
Mid Channel 5780MHz



Low Channel 5727MHz



Mid Channel 5780MHz



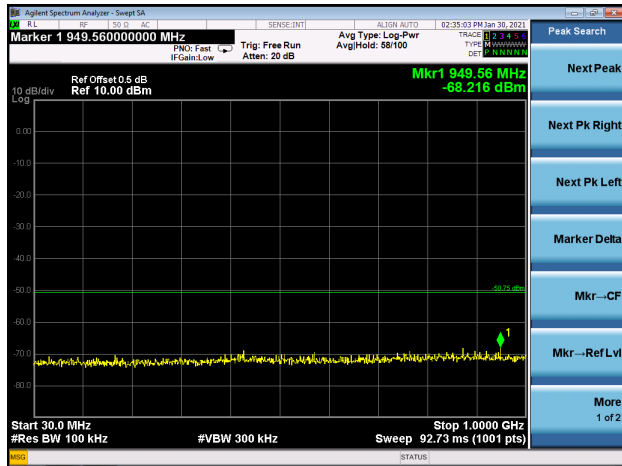
Low Channel 5727MHz



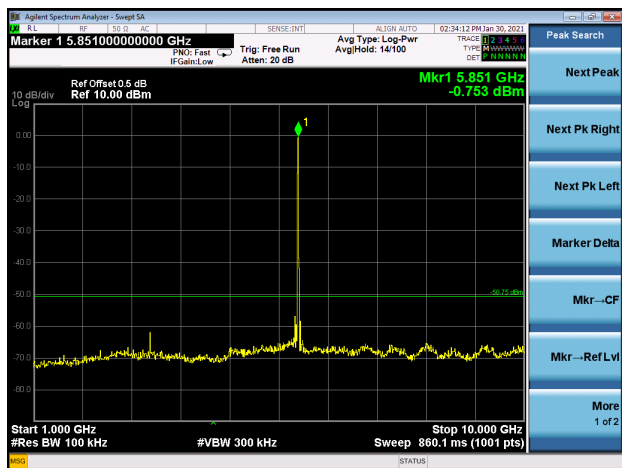
Mid Channel 5780MHz



High Channel 5848MHz



High Channel 5848MHz

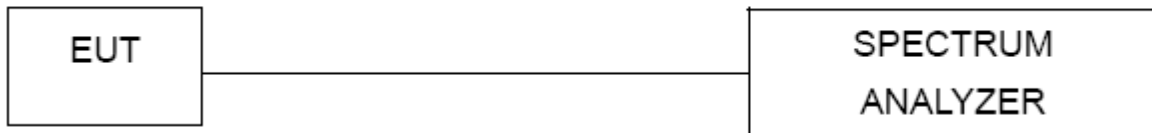


High Channel 5848MHz



8. BANDWIDTH TEST

8.1 Block Diagram Of Test Setup



8.2 Limit

FCC Part15 (15.249) , Subpart C			
Section	Test Item	Frequency Range (MHz)	Result
15.249	Bandwidth	5727~5848	PASS

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

8.3 Test procedure

1. Set resolution bandwidth (RBW) = 1-5% or DTS BW, not to exceed 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission..

8.4 EUT operating Conditions

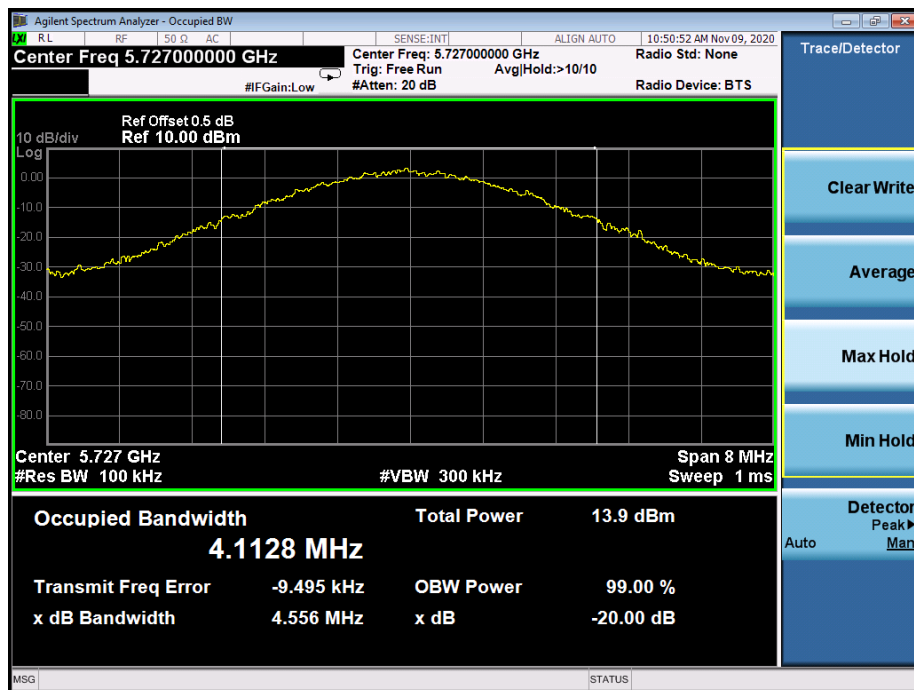
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

8.5 Test Result

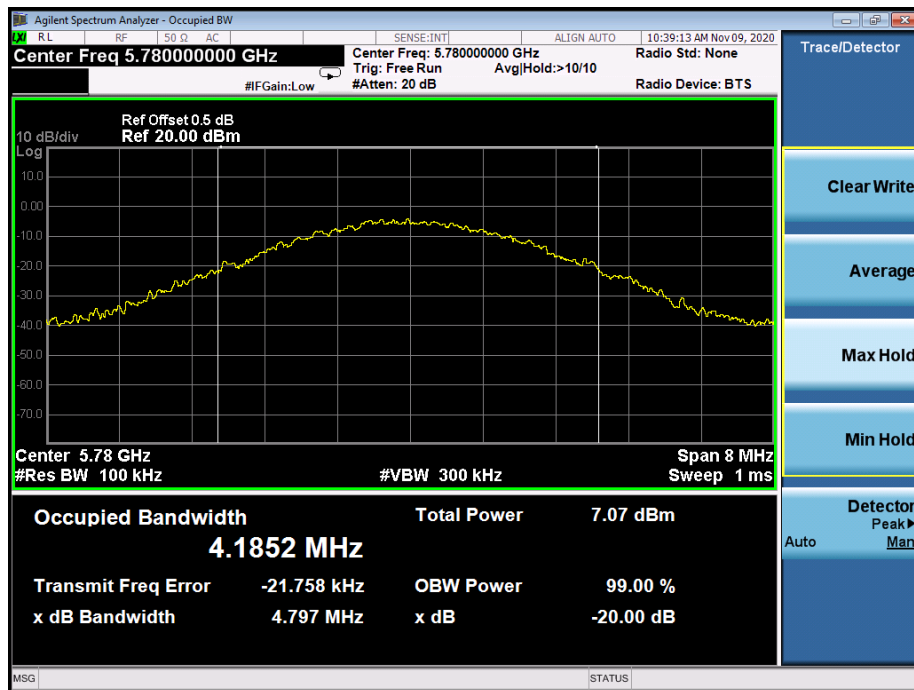
Temperature:	26°C	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX Mode		

Frequency	Frequency (MHz)	20dB bandwidth (MHz)
01	5727	4.56
02	5780	4.80
03	5848	4.20

CH01



CH02



CH03



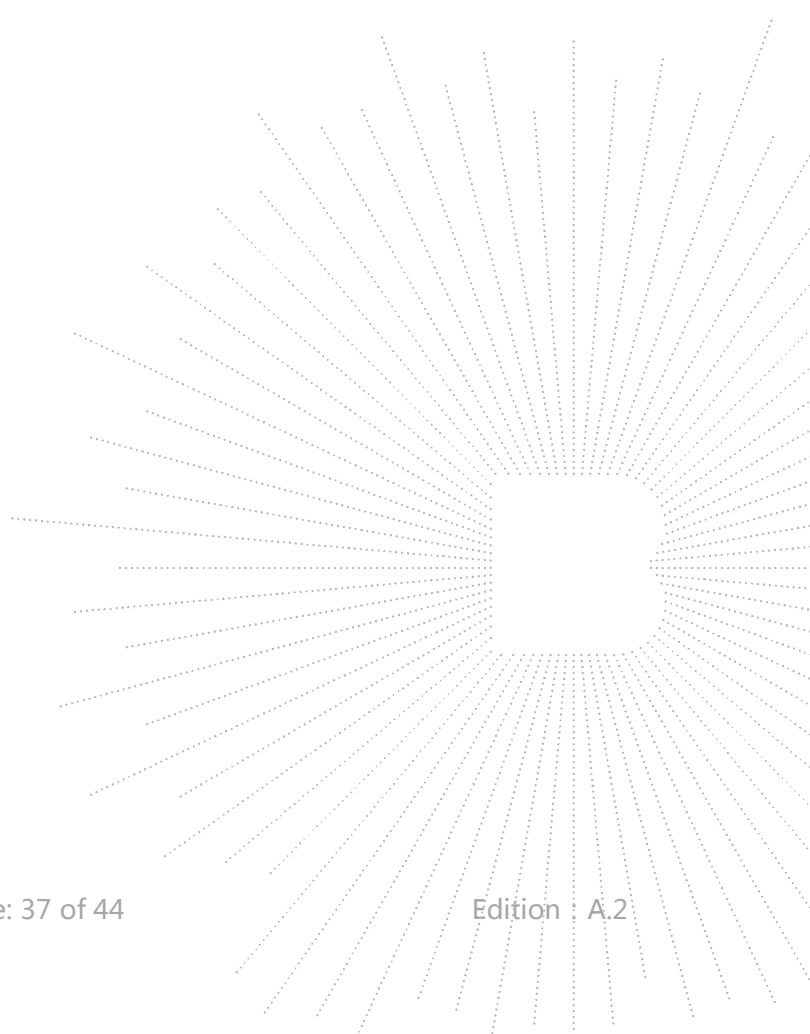
9. ANTENNA REQUIREMENT

9.1 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.

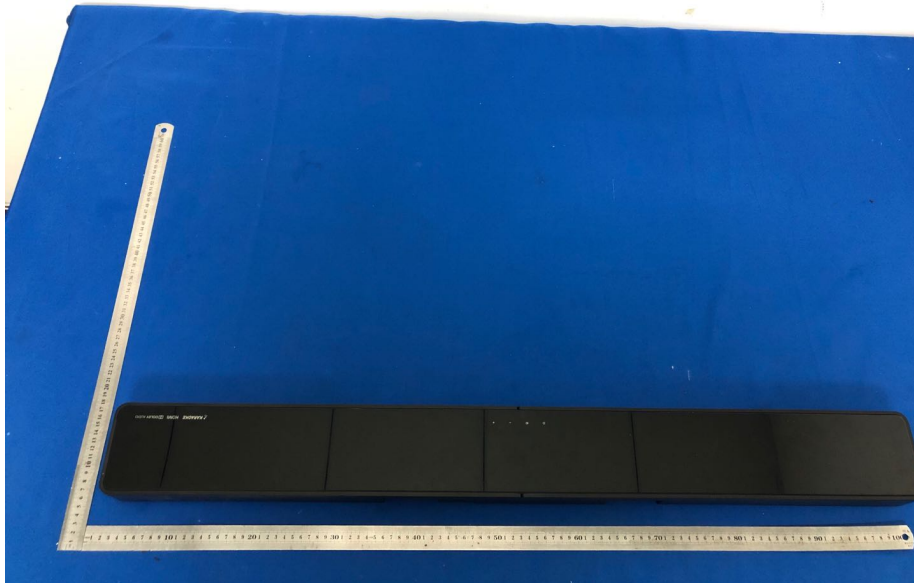
9.2 EUT ANTENNA

The EUT antenna is Internal antenna. It comply with the standard requirement.



10. EUT PHOTOGRAPHS

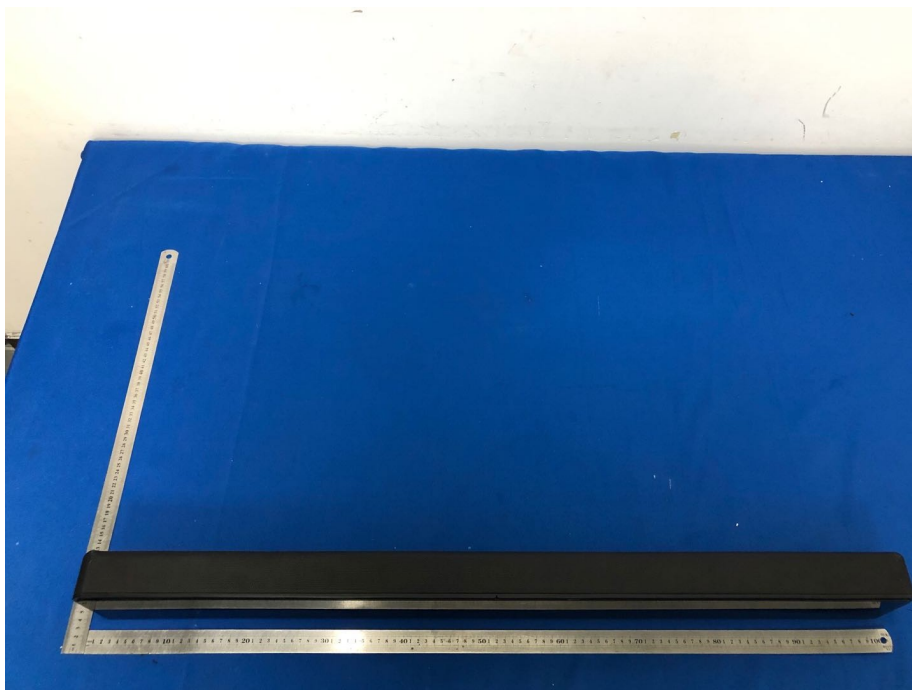
EUT Photo 1



EUT Photo 2



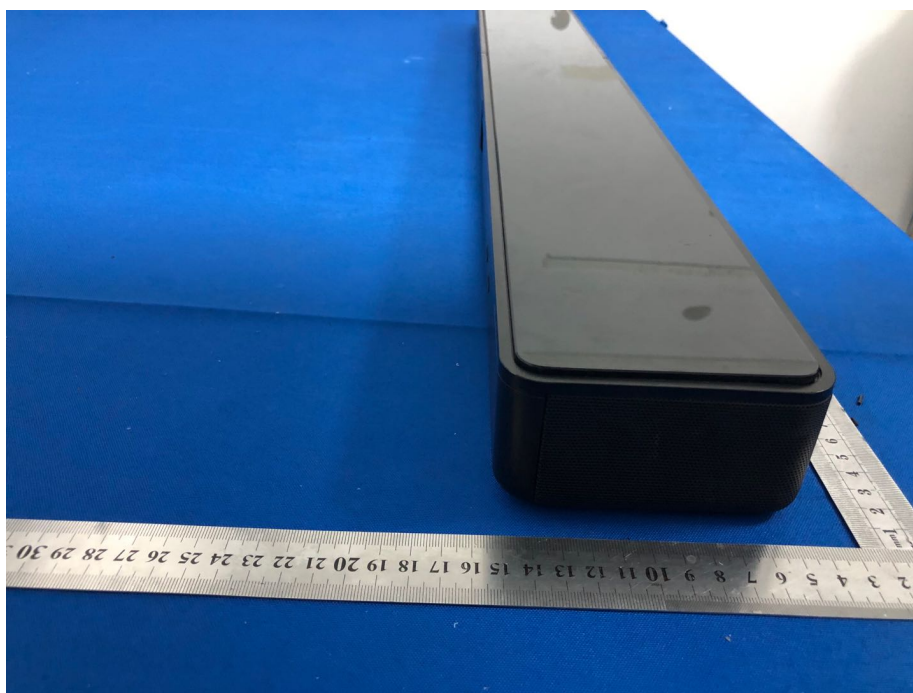
EUT Photo 3



EUT Photo 4



EUT Photo 5



EUT Photo 6



EUT Photo 7

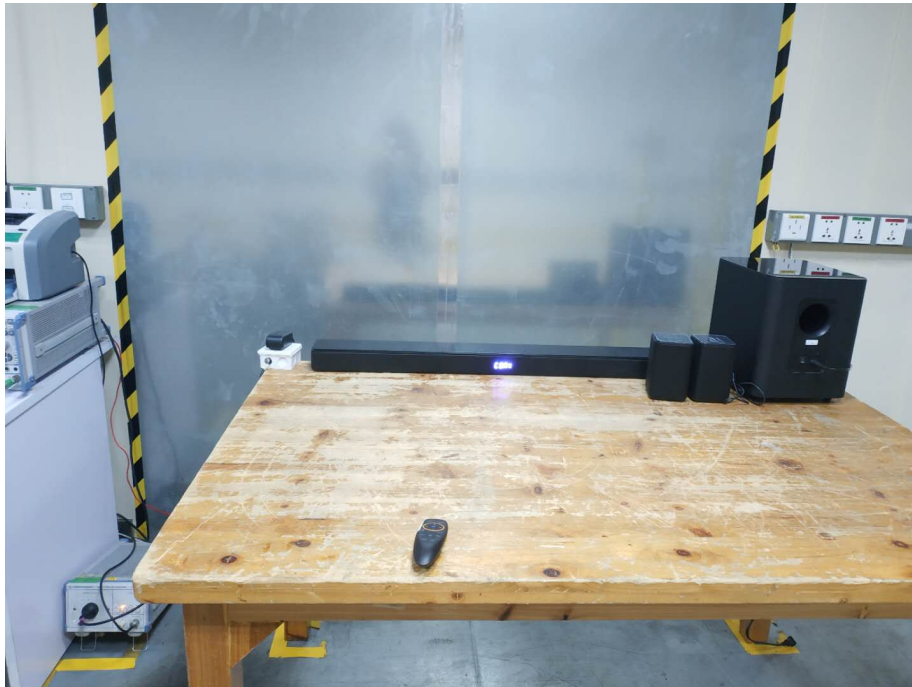


EUT Photo 8

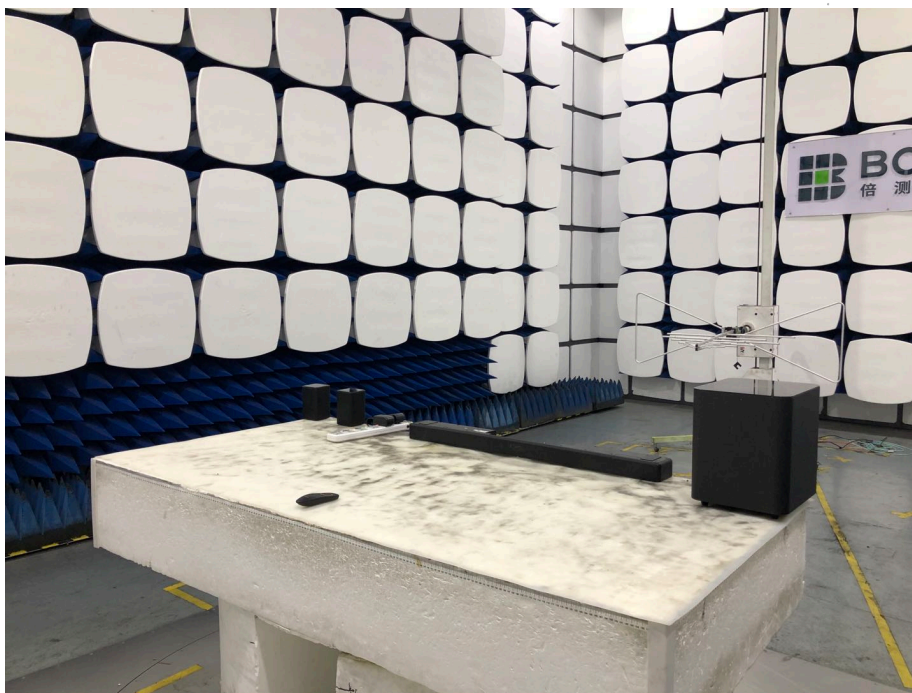


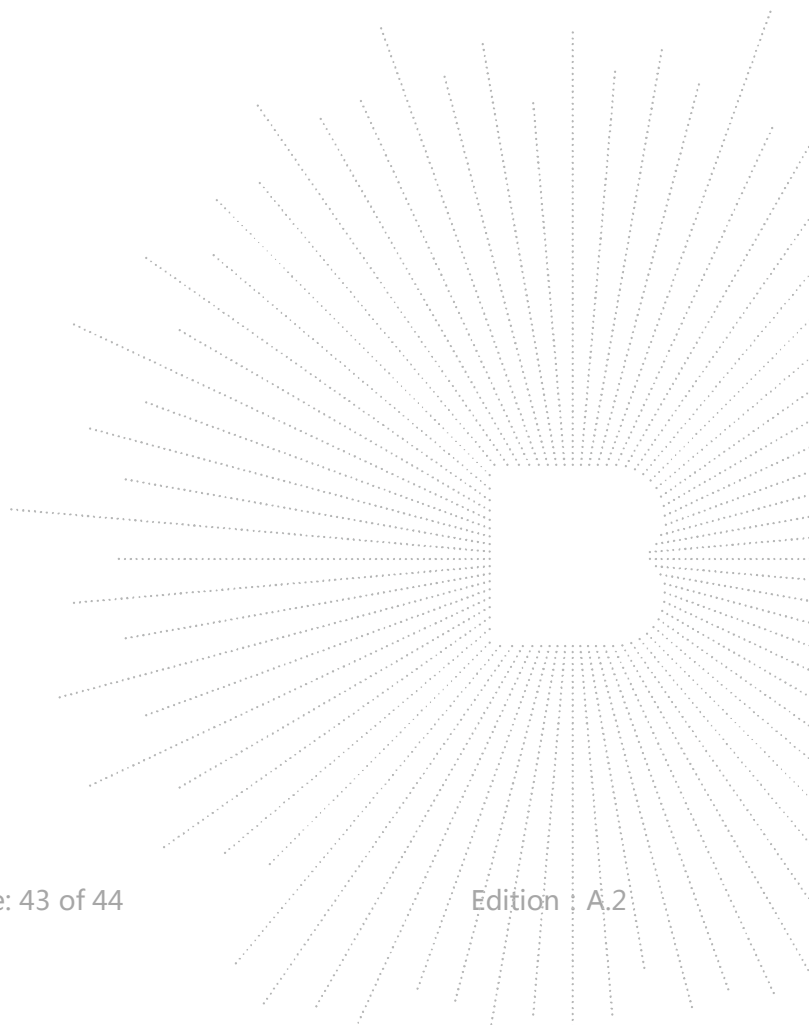
11. EUT TEST SETUP PHOTOGRAPHS

Conducted emissions



Radiated Measurement Photos





STATEMENT

- 1.The equipment lists are traceable to the national reference standards.
- 2.The test report can not be partially copied unless prior written approval is issued from our lab.
- 3.The test report is invalid without stamp of laboratory.
- 4.The test report is invalid without signature of person(s) testing and authorizing.
- 5.The test process and test result is only related to the Unit Under Test.
- 6.The quality system of our laboratory is in accordance with ISO/IEC17025.
- 7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2F, East of B Building, Pengzhou Industrial Park, Fuyuan 1st Road, Qiaotou, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

TEL : 400-788-9558

P.C.: 518103

FAX : 0755-33229357

Website : <http://www.bctc-lab.com>

E-Mail : bctc@bctc-lab.com.cn

***** END *****