

TEST REPORT

Report No.: BCTC2009000041E

Applicant: Enping Lane Electronics Technology Co.,Ltd.

Product Name: WIRELESS MICROPHONE

Model/Type Ref.: LR-874DR
LR-11, LR-12, LR-1B, LR-1C, LR-71, LR-72,
LR-81, LR-82, LR-205, LR-616, LR-625, LR-627,
LR-612, U-712, LR-661, LR-662, LR-664, LR-805,
A-380

Tested Date: 2021-05-07 to 2021-05-28

Issued Date: 2021-06-30

Shenzhen BCTC Testing Co., Ltd.



FCC ID: V63LR-874DR

Product Name: WIRELESS MICROPHONE
Trademark: LANE
LR-874DR
Model/Type Ref.: LR-11, LR-12, LR-1B, LR-1C, LR-71, LR-72, LR-81, LR-82, LR-205,
LR-616, LR-625, LR-627, LR-612, U-712, LR-661, LR-662, LR-664,
LR-805, A-380
Prepared For: Enping Lane Electronics Technology Co.,Ltd.
Address: No. 11/B, Enping Foreign and Private Capital Industry Zone,
GuangDong, China
Manufacturer: Enping Lane Electronics Technology Co.,Ltd.
Address: No. 11/B, Enping Foreign and Private Capital Industry Zone,
GuangDong, China
Prepared By: Shenzhen BCTC Testing Co., Ltd.
Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st
Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen,
Guangdong, China
Sample Received Date: 2021-05-07
Sample tested Date: 2021-05-07 to 2021-05-28
Issue Date: 2021-06-30
Report No.: BCTC2009000041E
Test Standards FCC Part 15.236
Test Results PASS

Tested by:



Eric Yang/Project Handler

Approved by:



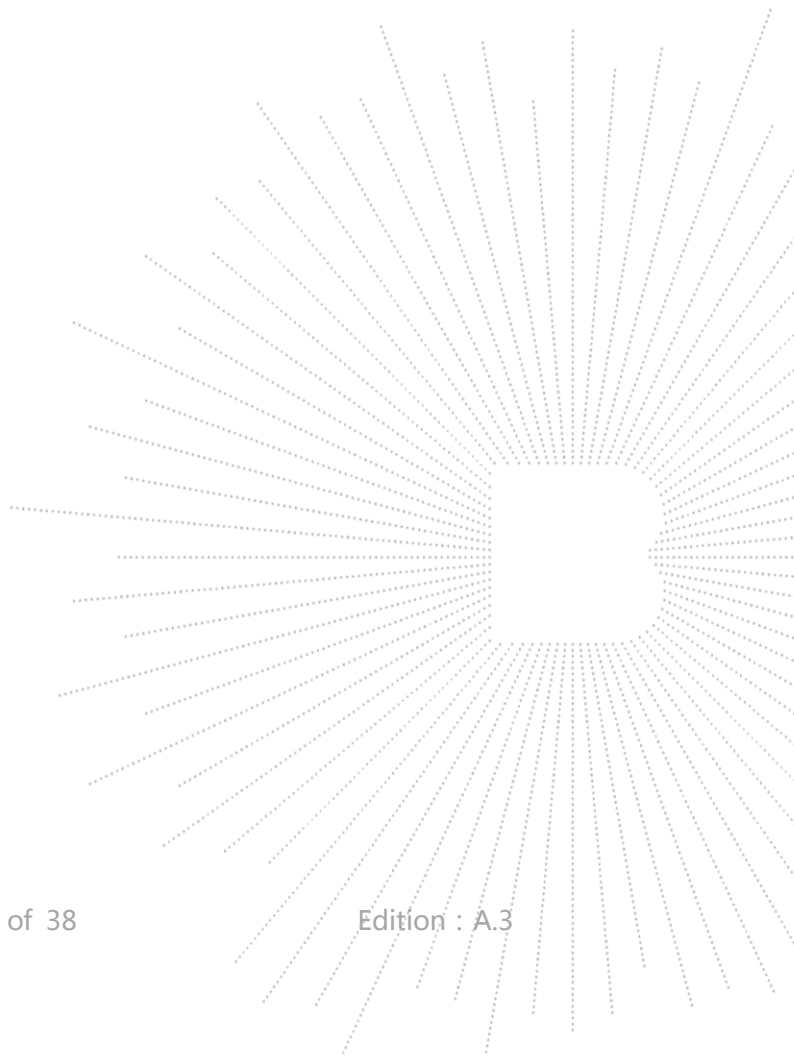
Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

	Page
Table of Contents	
1 . SUMMARY OF TEST RESULTS	4
1.1 TEST FACILITY	5
1.2 MEASUREMENT UNCERTAINTY	5
2 . GENERAL INFORMATION	6
2.1 GENERAL DESCRIPTION OF EUT	6
2.2 DESCRIPTION OF TEST MODES	7
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	7
2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	8
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	9
3 . EMC EMISSION TEST	10
3.1 CONDUCTED EMISSION MEASUREMENT	10
3.1.1 POWER LINE CONDUCTED EMISSION LIMITS	10
3.1.2 TEST PROCEDURE	10
3.1.3 DEVIATION FROM TEST STANDARD	10
3.1.4 TEST SETUP	11
3.1.5 EUT OPERATING CONDITIONS	11
3.2 RADIATED SPURIOUS EMISSIONS	12
3.2.1 TEST REQUIREMENT	12
3.2.2 TEST PROCEDURE	13
3.2.3 DEVIATION FROM TEST STANDARD	13
3.2.4 TEST SETUP	14
3.2.5 EUT OPERATING CONDITIONS	15
3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)	16
3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)	17
4 . RF OUTPUT POWER	20
4.1 TEST REQUIREMENT:	20
4.1.1 TEST PROCEDURE	20
4.1.2 DEVIATION FROM STANDARD	20
4.1.3 TEST SETUP	20
4.1.4 EUT OPERATION CONDITIONS	20
4.1.5 TEST RESULTS	21
5 . BANDWIDTH TEST & EMISSION MASK	23
5.1 APPLIED PROCEDURES / LIMIT	23
5.1.1 TEST PROCEDURE	23

Table of Contents

5.1.2 DEVIATION FROM STANDARD	25
5.1.3 TEST SETUP	25
5.1.4 EUT OPERATION CONDITIONS	25
5.1.5 TEST RESULTS	26
6 . FREQUENCY STABILITY	30
6.1 APPLICABLE STANDARD	30
6.2 TEST PROCEDURE	30
6.3 DEVIATION FROM STANDARD	30
7.4 TEST SETUP	30
7.5 EUT OPERATION CONDITIONS	30
7 . ANTENNA REQUIREMENT	33
7.1 STANDARD REQUIREMENT	33
7.2 EUT ANTENNA	33
8 . EUT TEST PHOTO	34
9 . EUT PHOTO	35
APPENDIX-PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS	



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.236) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	
15.236(d)(1)	Output Power Measurement	PASS	
15.236(f)(2)	Occupied Bandwidth Emission	PASS	
15.236(g)	Necessary Bandwidth	PASS	
15.236(g)	Radiated Spurious Emission	PASS	
15.236(f)(3)	Frequency Tolerance	PASS	

1.1 TEST FACILITY

Shenzhen BCTC Testing Co., Ltd.

Add.: 1-2/F, Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

FCC Test Firm Registration Number: 712850

IC Registered No.: 23583

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	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

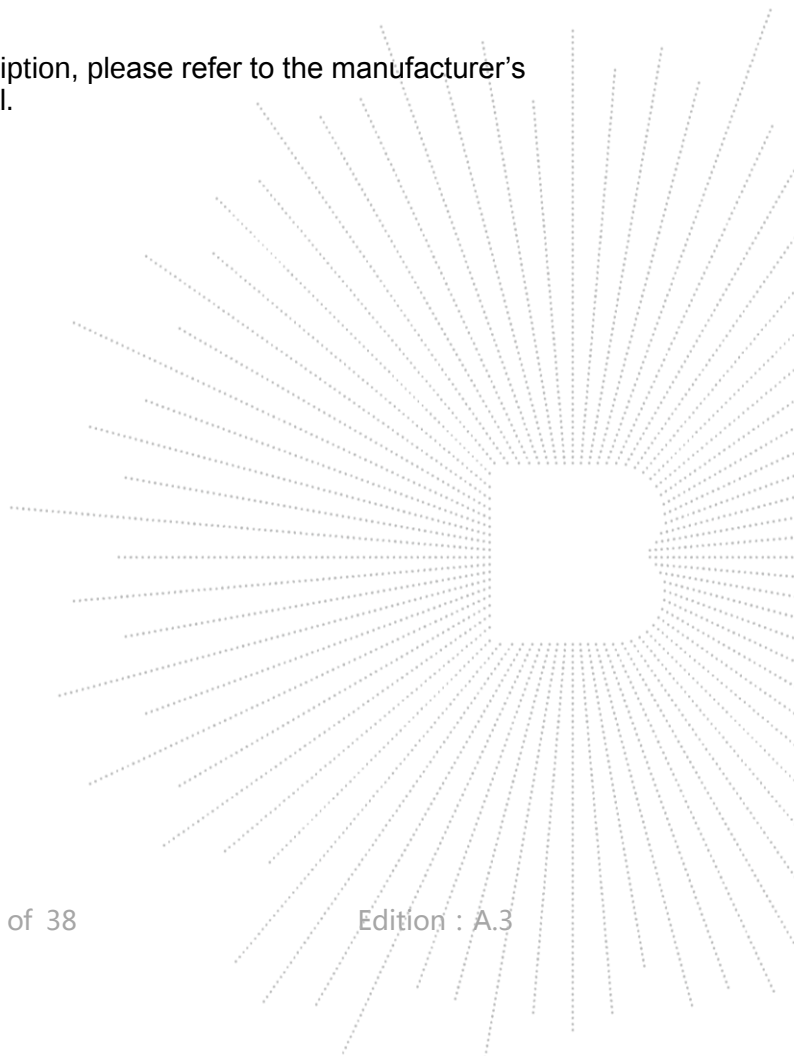
2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	WIRELESS MICROPHONE	
Trade Name	LANE	
Model Name	LR-874DR LR-11, LR-12, LR-1B, LR-1C, LR-71, LR-72, LR-81, LR-82, LR-205, LR-616, LR-625, LR-627, LR-612, U-712, LR-661, LR-662, LR-664, LR-805, A-380	
Model Difference	All the model have the same RF module circuit, except model names.	
Product Description	The EUT is a WIRELESS MICROPHONE	
	Operation Frequency:	543.472-588.0MHz
	Modulation Type:	FM
	Number Of Channel	2CH
	Antenna Designation:	Please see Note 3.
Channel List	Please refer to the Note 2.	
Power Source	DC 3.0V	

Note:

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



2.

Channel List			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	543.472	02	588.0

3.

Table for Internal Antenna

Ant.	Brand	Model Name	Antenna Type	Gain (dBi)
1	N/A	N/A	Internal antenna	0

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

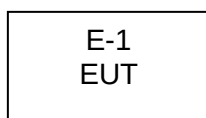
For All Mode	Description	Modulation Type
Mode 1	CH01	FM(Transmitting)
Mode 2	CH02	

Note:

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

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

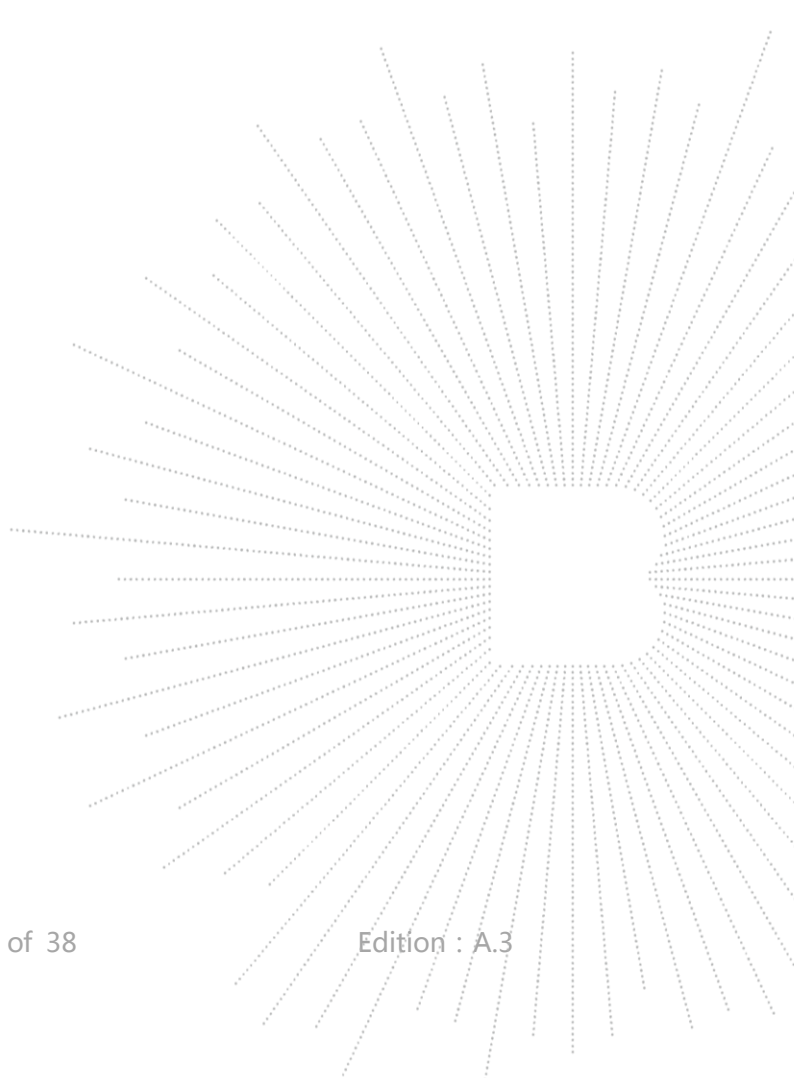
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Device Type	Brand	Model	Series No.	Note

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

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	SCHWARZB ECK	BBHA9120 D	1201	Jun. 10, 2020	Jun. 09, 2021
Horn Antenna (18GHz-40GHz)	SCHWARZB ECK	BBHA9170	822	Jun. 10, 2020	Jun. 09, 2021
Amplifier (18GHz-40GHz)	MITEQ	TTA1840-3 5-HG	2034381	Jun. 08, 2020	Jun. 07, 2021
Loop Antenna (9KHz-30MHz)	SCHWARZB ECK	FMZB1519 B	014	Jun. 08, 2020	Jun. 07, 2021
RF cables1 (9kHz-30MHz)	Huber+Suhna r	9kHz-30MH z	B1702988-0 008	Jun. 08, 2020	Jun. 07, 2021
RF cables2 (30MHz-1GHz)	Huber+Suhna r	30MHz-1G Hz	1486150	Jun. 08, 2020	Jun. 07, 2021
RF cables3 (1GHz-40GHz)	Huber+Suhna r	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-26.5GHz	KEYSIGHT	N9020A	MY4910006 0	Jun. 04, 2020	Jun. 03, 2021
Spectrum Analyzer 9kHz-40GHz	Agilent	FSP40	100363	Jun. 13, 2020	Jun. 12, 2021
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quas -peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

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

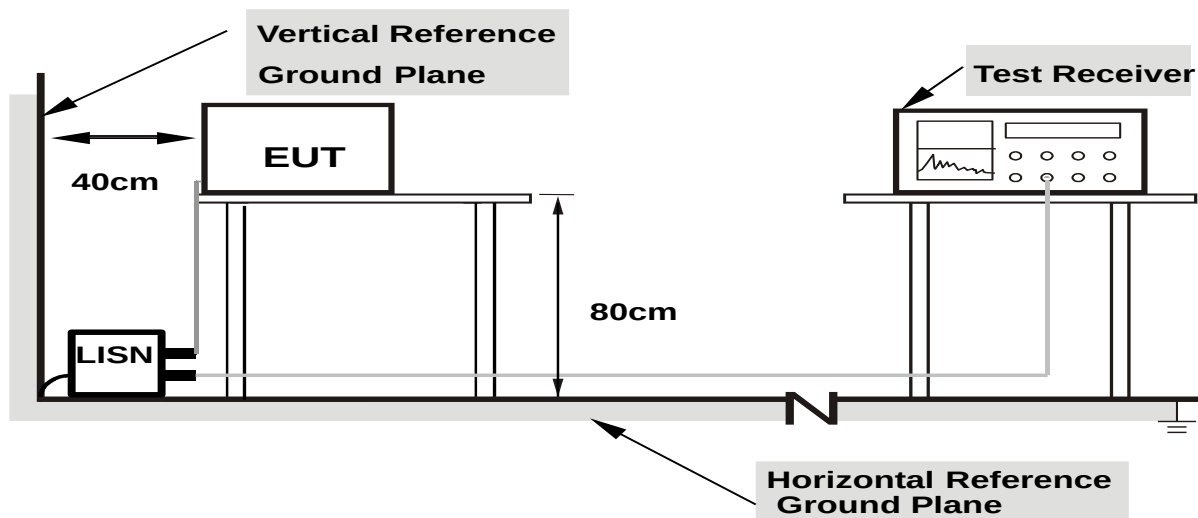
3.1.2 TEST PROCEDURE

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

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

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

3.1.6 TEST RESULTS

Note: The EUT is powered by the DC battery only, the test item is not applicable.

3.2 RADIATED SPURIOUS EMISSIONS

3.2.1 TEST REQUIREMENT

According to FCC 15.236(g), Emission within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in Section 8.3 of ETSI EN 300 422-1 V1.4.2(2011-08). Emissions outside this band shall comply with the limit specified at the edges of the ETSI mask.

Table 3: Limits for spurious emissions

State	Frequency		
	47 MHz to 74 MHz 87,5 MHz to 137 MHz 174 MHz to 230 MHz 470 MHz to 862 MHz	Other Frequencies below 1 000 MHz	Frequencies above 1 000 MHz
Operation	4 nW	250 nW	1 µW
Standby	2 nW	2 nW	20 nW

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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	12750MHz
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

3.2.2 TEST PROCEDURE

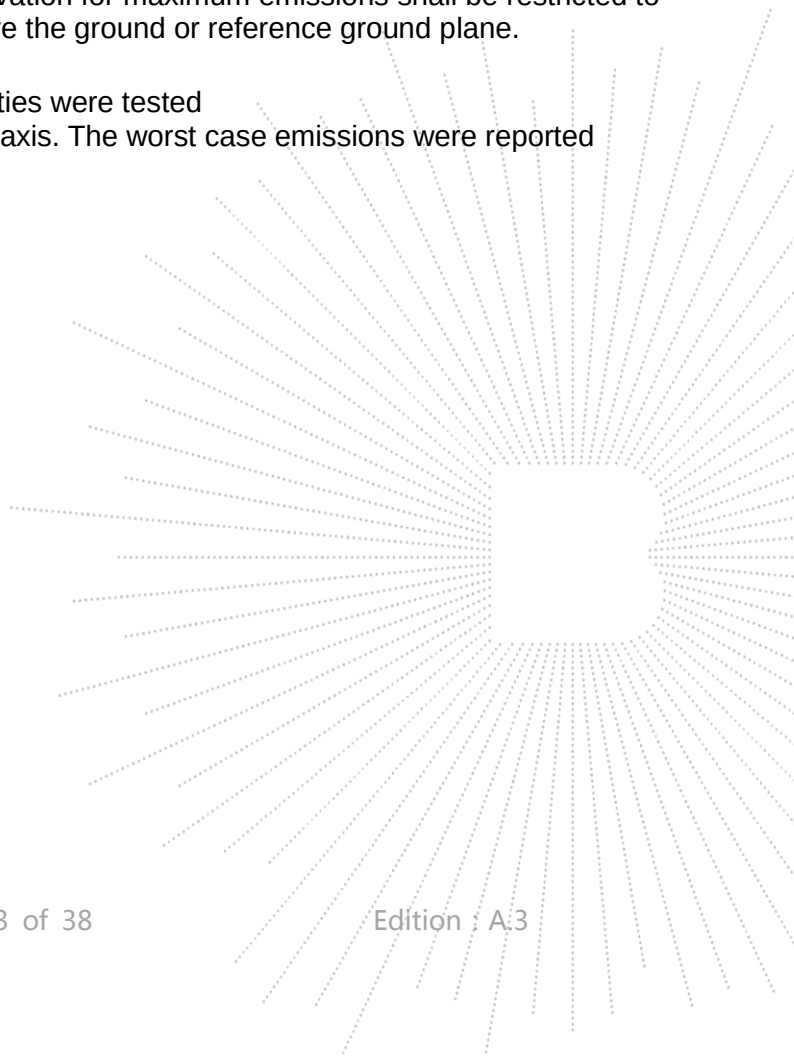
- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 25GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-chamber test. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8m; above 1GHz, the height was 1.5m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.
- g. For the radiated emission test above 1GHz:
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.
The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

Note:

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

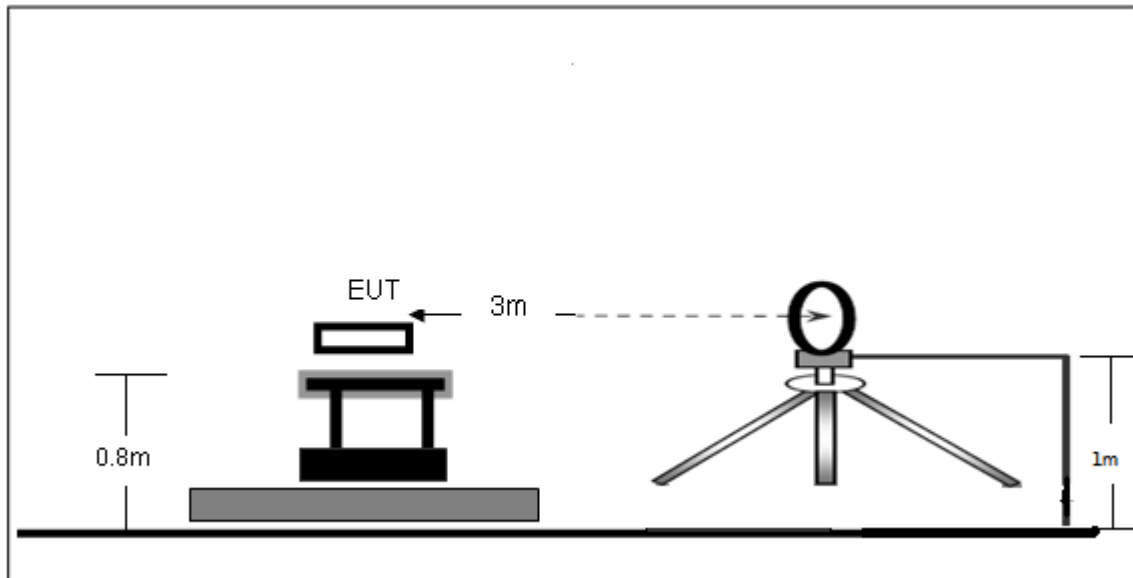
3.2.3 DEVIATION FROM TEST STANDARD

No deviation

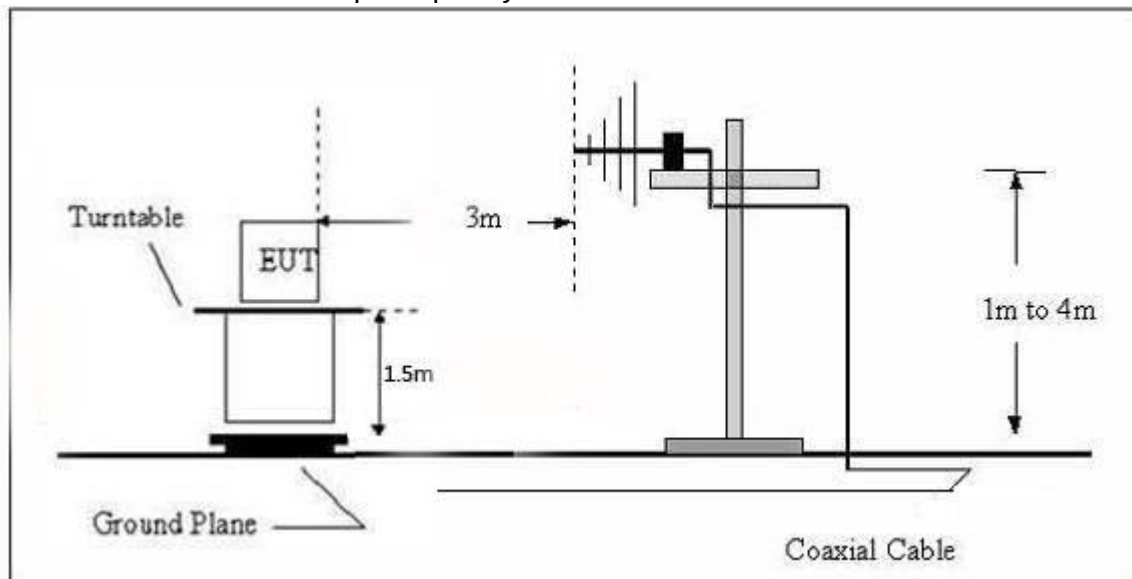


3.2.4 TEST SETUP

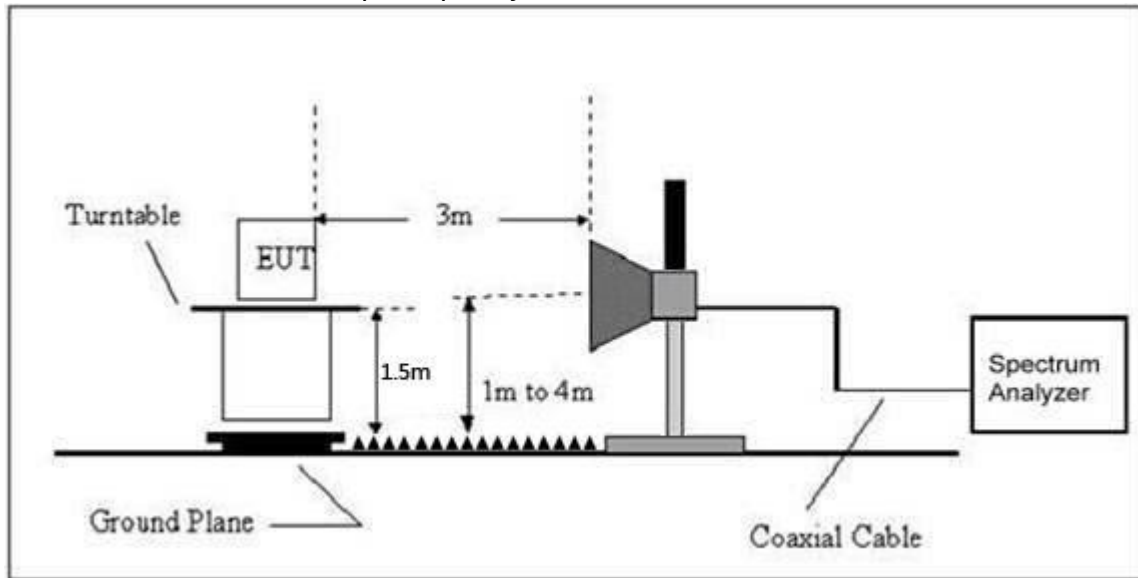
(A) Radiated Emission Test-Up Frequency Below 30MHz



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

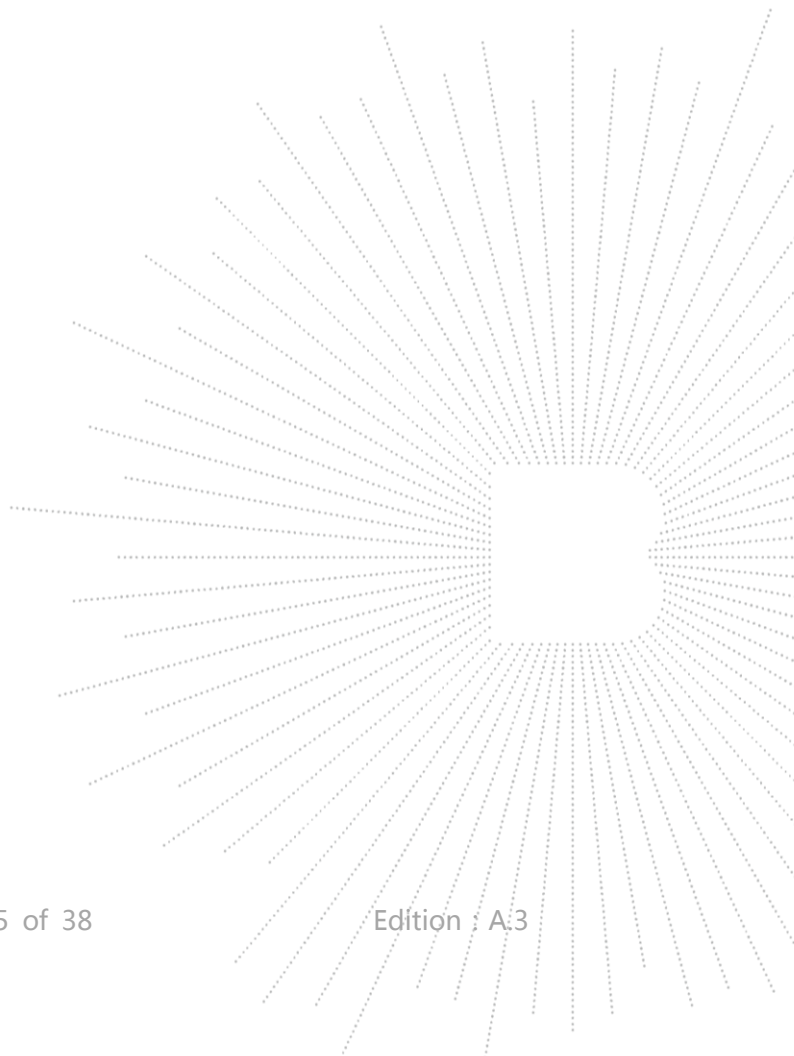


(C) Radiated Emission Test-Up Frequency Above 1GHz



3.2.5 EUT OPERATING CONDITIONS

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



3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Test Voltage :	DC 3V
Test Mode :	Mode 1	Polarization :	--

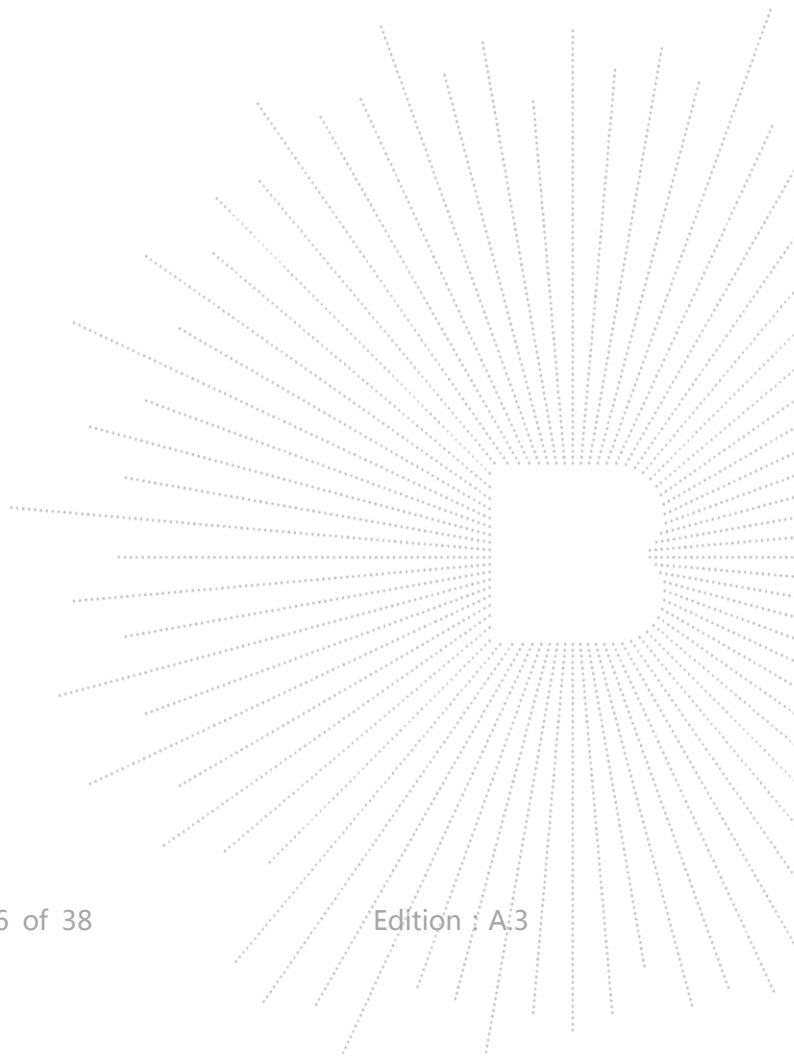
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

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

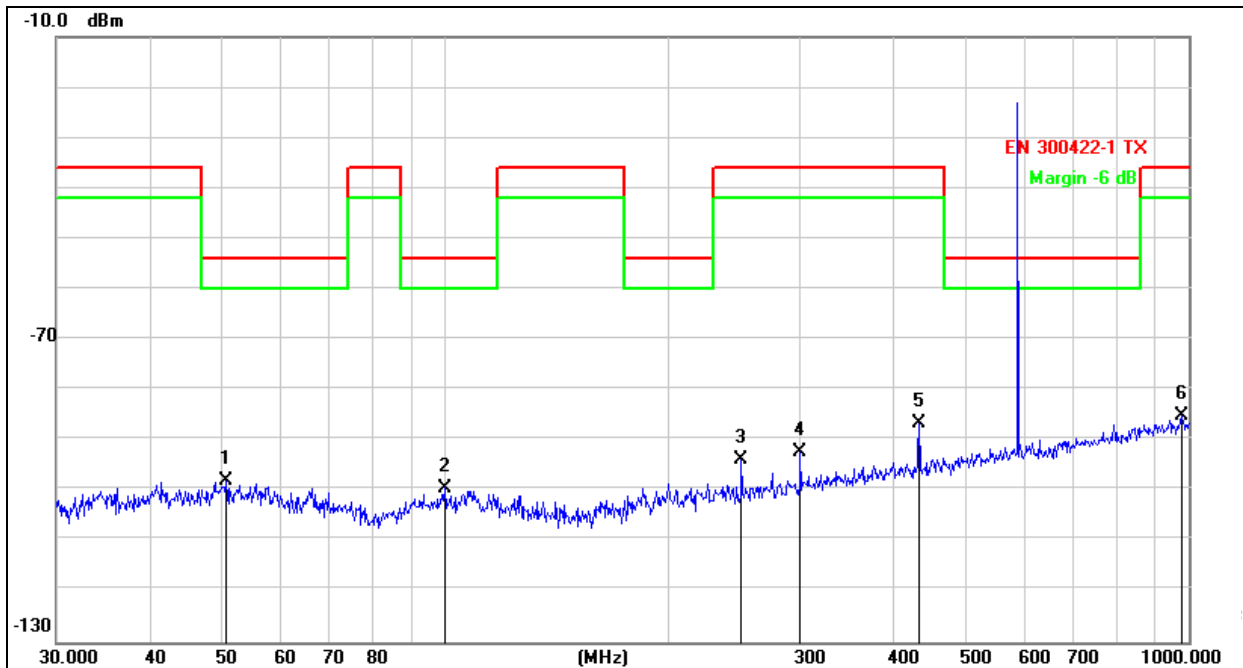
Distance extrapolation factor = $40 \log (\text{specific distance/test distance})$ (dB);

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



3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Horizontal
Test Voltage :	DC 3V		
Test Mode :	Mode 2		



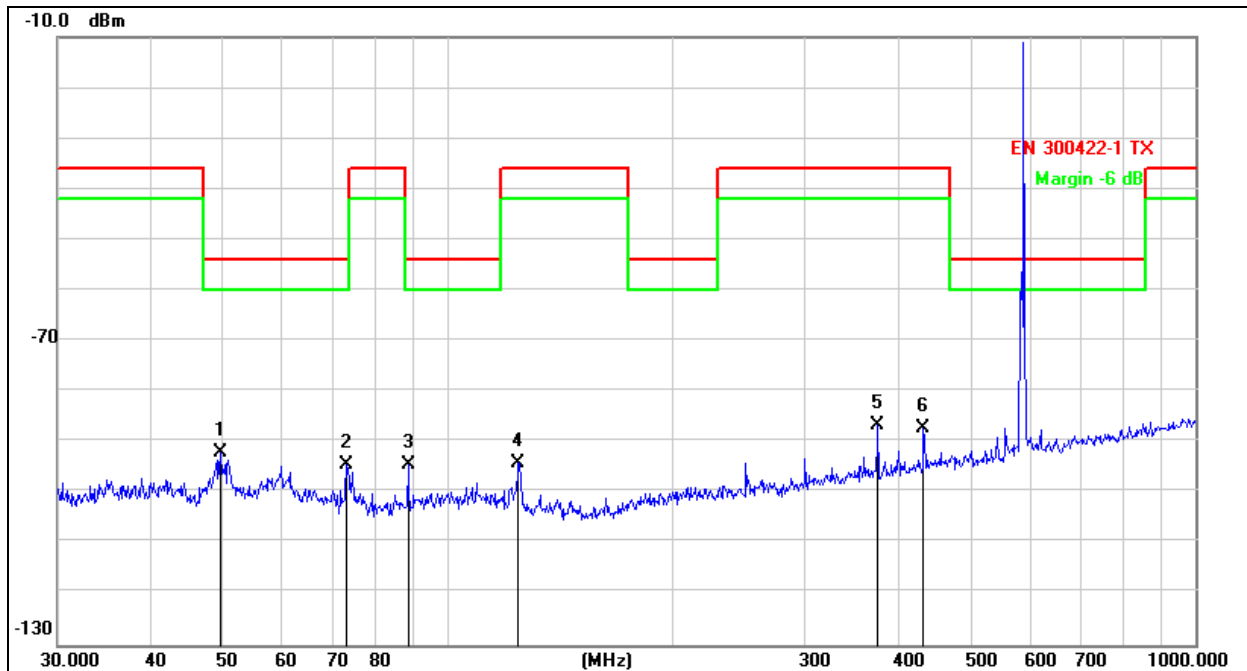
Remark:

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

Exceeding the limit is the main wave.

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dB	Over dB	Detector
1	*	50.7637	-83.10	-14.93	-98.03	-54.00	-44.03	QP
2		99.8777	-83.10	-16.30	-99.40	-54.00	-45.40	QP
3		250.3012	-78.84	-15.14	-93.98	-36.00	-57.98	QP
4		300.3672	-78.66	-13.59	-92.25	-36.00	-56.25	QP
5		434.0651	-76.37	-10.33	-86.70	-36.00	-50.70	QP
6		979.1804	-84.13	-0.93	-85.06	-36.00	-49.06	QP

Temperature :	26°C	Relative Humidity :	54%
Pressure :	101kPa	Polarization :	Vertical
Test Voltage :	DC 3V		
Test Mode :	Mode 2		



Remark:

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

Exceeding the limit is the main wave.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBm	dB	dBm	dB	dB	Detector
1	*	49.5328	-77.06	-14.88	-91.94	-54.00	-37.94	QP
2		73.1025	-75.52	-18.88	-94.40	-54.00	-40.40	QP
3		88.3421	-76.09	-18.48	-94.57	-54.00	-40.57	QP
4		124.1330	-76.37	-17.83	-94.20	-36.00	-58.20	QP
5		375.9385	-75.16	-11.64	-86.80	-36.00	-50.80	QP
6		432.5457	-76.84	-10.36	-87.20	-36.00	-51.20	QP

Remark:

Test all the modes and only worst case was reported.

3.2.8 TEST RESULTS (1GHz~12.75GHz)

Frequency	Receiver Reading	Turn table Angle	RX Antenna		Correct	Absolute Level	Result	
			Height	Polar	Factor		Limit	Margin
(MHz)	(dBm)	Degree	(m)	(H/V)	(dBm)	(dBm)	(dBm)	(dB)
CH01								
1316.00	-48.25	26	1.9	H	-9.42	-57.67	-30	-27.67
1316.00	-49.36	340	1.9	V	-9.42	-58.78	-30	-28.78
1974.00	-47.59	236	1.0	H	-6.42	-54.01	-30	-24.01
1974.00	-48.39	89	1.6	V	-6.42	-54.81	-30	-24.81
2632.00	-51.22	6	1.5	H	-6.94	-58.16	-30	-28.16
2632.00	-54.51	219	1.3	V	-6.94	-61.45	-30	-31.45
CH02								
1318.00	-47.88	240	1.4	H	-9.41	-57.29	-30	-27.29
1318.00	-48.63	144	1.6	V	-9.41	-58.04	-30	-28.04
1977.00	-47.44	240	1.2	H	-6.40	-53.84	-30	-23.84
1977.00	-49.34	49	1.9	V	-6.40	-55.74	-30	-25.74
2636.00	-50.73	290	1.5	H	-6.95	-57.68	-30	-27.68
2636.00	-55.21	217	1.5	V	-6.95	-62.16	-30	-32.16

Remark:

Absolute Level = Receiver Reading + Factor

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

4. RF OUTPUT POWER

4.1 TEST REQUIREMENT:

FCC Part15 (15.236) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.236	EIRP	50mW	470-608	PASS

4.1.1 TEST PROCEDURE

1. The maximum peak output power was measured with a Spectrum Analyzer connected to the antenna terminal while EUT was operating in unmodulated situation.
2. Power was supplied to the battery input connector a power supply. The power supply was set for +3VDC. The Spectrum Analyzer was connected at antenna terminal to measure RF power of the carrier.
3. A Multimeter was connected in series with final RF Stage to measure the current; A Multimeter was used to measure final RF Stage supply voltage. Then the voltage v.s. current of the final RF Stage can be showed.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP

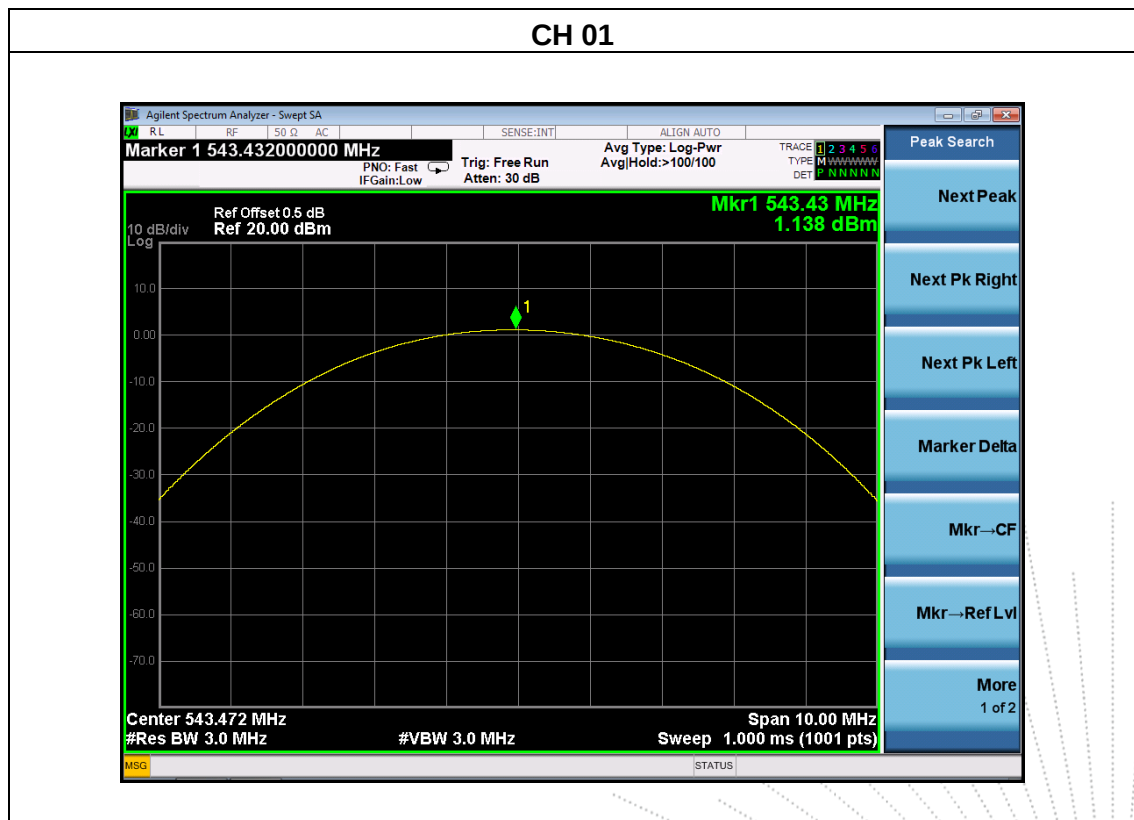


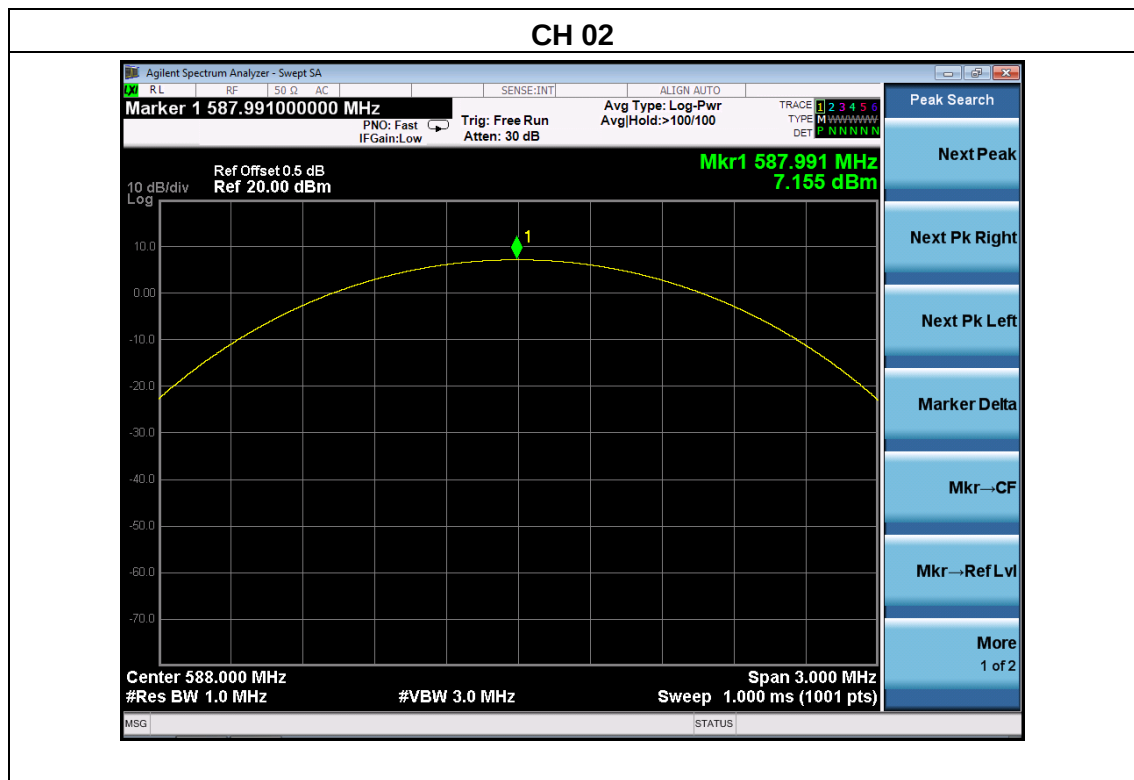
4.1.4 EUT OPERATION CONDITIONS

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

4.1.5 TEST RESULTS

Channel	Frequency (MHz)	Conducted power (dBm)	Antenna gain(dBi)	EIRP (dBm)	Limit (dBm)
01	543.472	1.138	0	1.138	17
02	588.0	7.155	0	7.155	17





5. BANDWIDTH TEST & EMISSION MASK

5.1 APPLIED PROCEDURES / LIMIT

According to FCC 15.236(f), The operating frequency within a permissible band of operation as defined in paragraph (c) must comply with the following requirements.

- (1) The frequency selection shall be offset from the upper or lower band limits by 25 kHz or an integral multiple thereof.
- (2) One or more adjacent 25 kHz segments within the assignable frequencies may be combined to form a channel whose maximum bandwidth shall not exceed 200 kHz. The operating bandwidth shall not exceed 200 kHz.

Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in Section 8.3 of ETSI EN 300 422-1 V1.4.2 (2011-08) (incorporated by reference, see §15.38). Emissions outside this band shall comply with the limit specified at the edges of the ETSI mask

5.1.1 TEST PROCEDURE

According to TIA-603 for additional Test Set-Up procedures, the occupied bandwidth of emission was measured with a Spectrum Analyzer connected to the antenna terminal while EUT was operating in 2.5kHz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation. Then mark the 99% Occupied Bandwidth and record it..

Emission Mask test procedure:

Necessary Bandwidth (BN) for Analogue Systems

Method of Measurement

The arrangement of test equipment as shown in figure B.1 shall be used. Note that the noise meter conforms to (quasi peak) without weighting filter (flat).

With the Low Frequency (LF) audio signal generator set to 500 Hz, the audio input level to the EUT shall be adjusted to 8 dB below the limiting threshold (-8 dB (lim)) as declared by the manufacturer.

The corresponding audio output level from the demodulator shall be measured and recorded.

The input impedance of the noise meter shall be sufficiently high to avoid more than 0,1 dB change in input level when the meter is switched between input and output. The audio input level shall be increased by 20 dB, i.e. to +12 dB (lim), and the corresponding change in output level shall be measured.

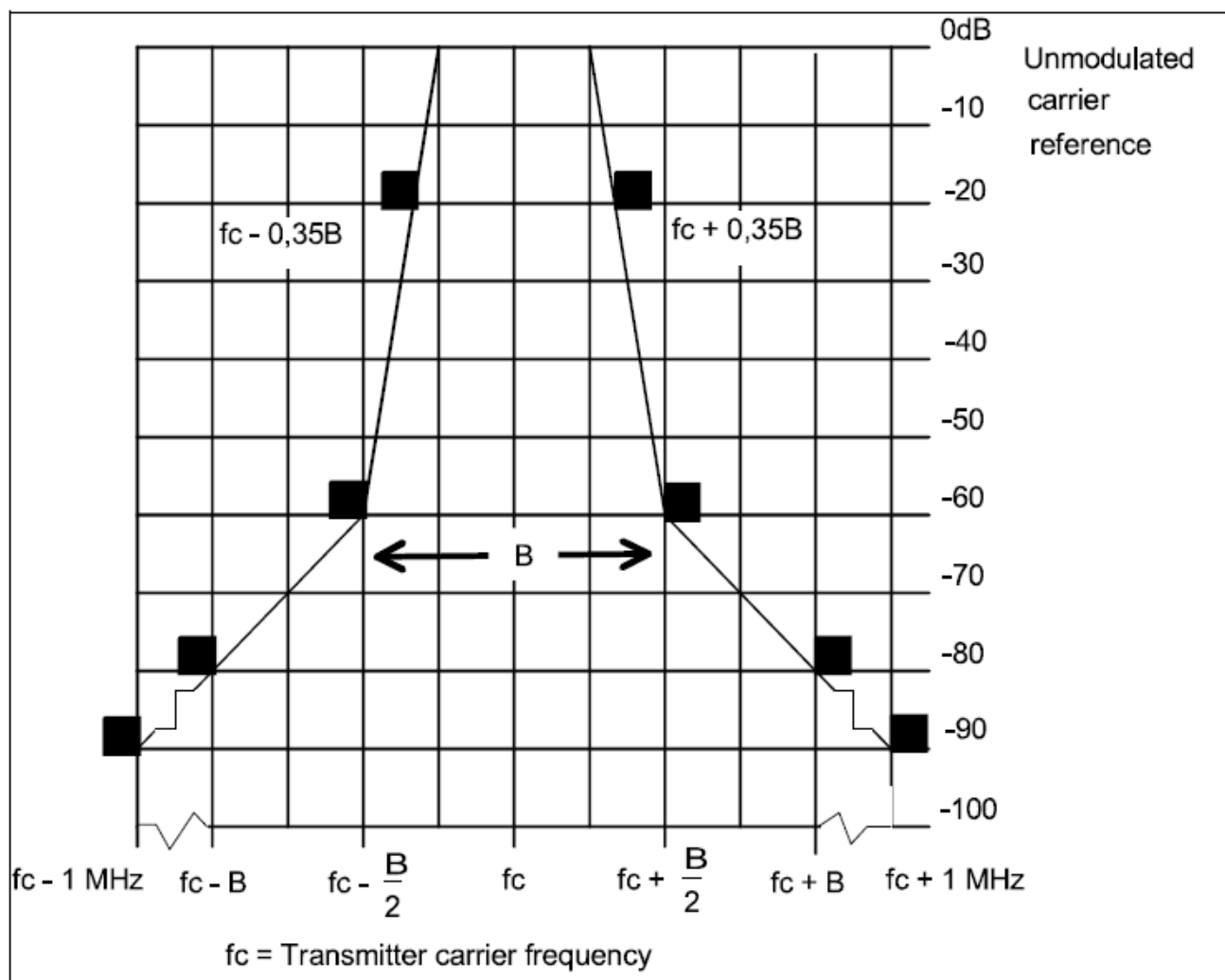
It shall be checked that the audio output level has increased by ≤ 10 dB.

If this condition is not met, the initial audio input level shall be increased from -8 dB (lim) in 1 dB steps until the above condition is fulfilled, and the input level recorded in the test report. This level replaces the value derived from the manufacturer's declaration and is defined as -8 dB (lim).

If the transmitter incorporates more than one audio input, e.g. stereo systems, the second and subsequent channels shall be simultaneously driven from the same noise source, attenuated to a level of -6 dB (lim).

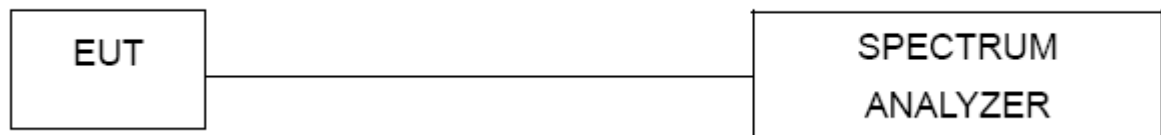
The transmitter RF output spectrum shall be measured, using a spectrum analyser with the following settings:

centre frequency:	fc: Transmitter (Tx) nominal frequency;
dispersion (Span):	fc - 1 MHz to fc + 1 MHz;
Resolution BandWidth (RBW):	1 kHz;
Video BandWidth (VBW):	1 kHz;
detector:	Peak hold.



5.1.2 DEVIATION FROM STANDARD

No deviation.

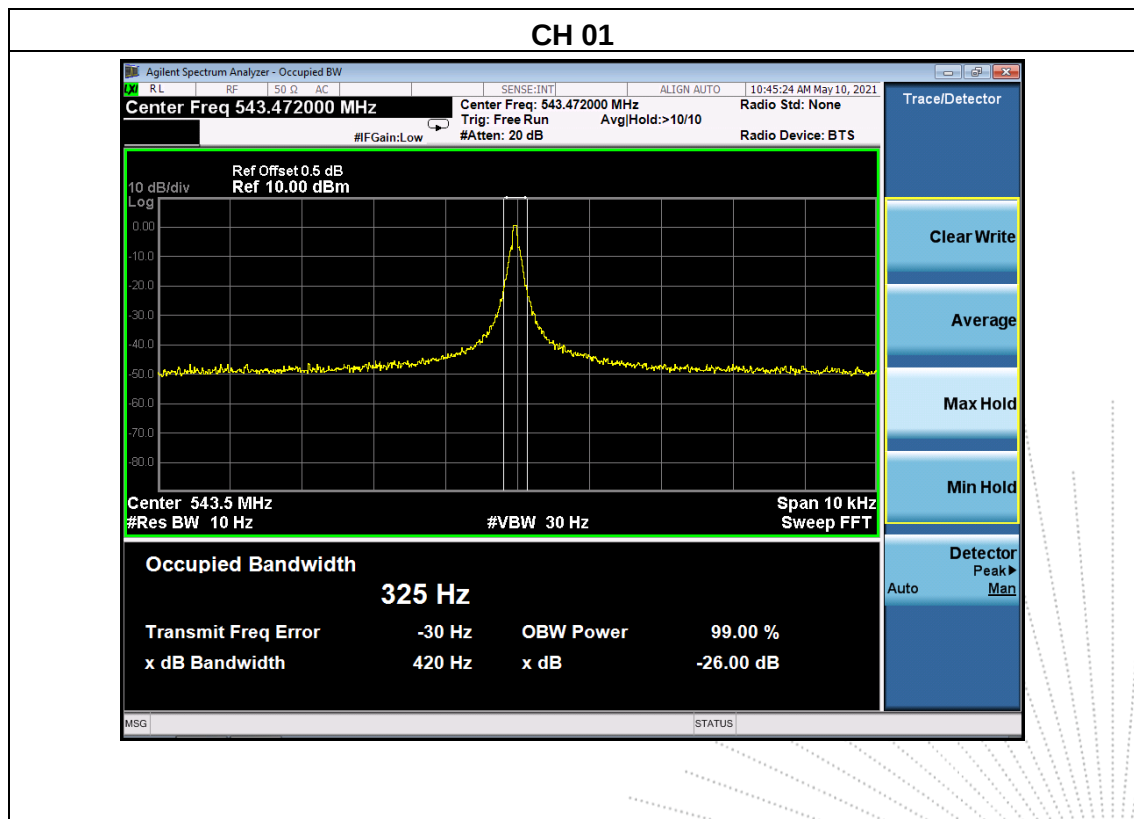
5.1.3 TEST SETUP**5.1.4 EUT OPERATION CONDITIONS**

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

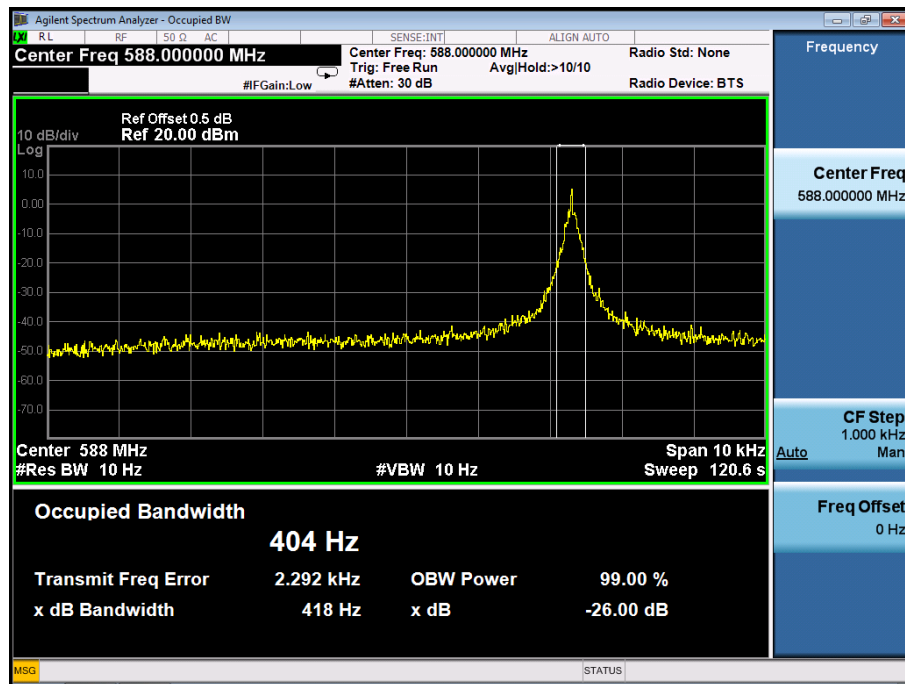
5.1.5 TEST RESULTS

Temperature :	26°C	Relative Humidity :	54%
Test Mode :	FM	Test Voltage :	DC 3V

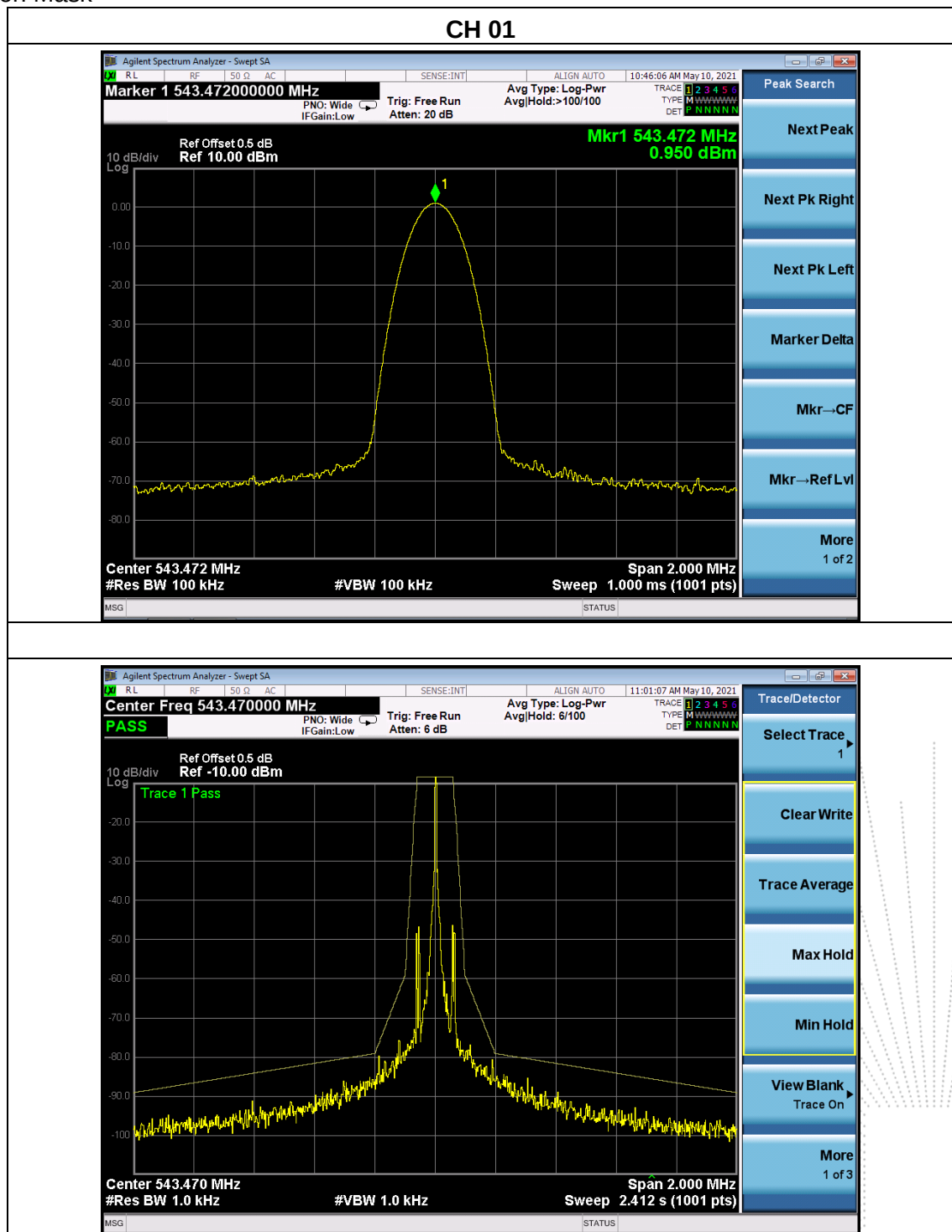
Frequency (MHz)	-26dB bandwidth (Hz)	99% Bandwidth (Hz)	Limit (kHz)	Result
543.472	420	325	200	Pass
588.0	418	404	200	Pass



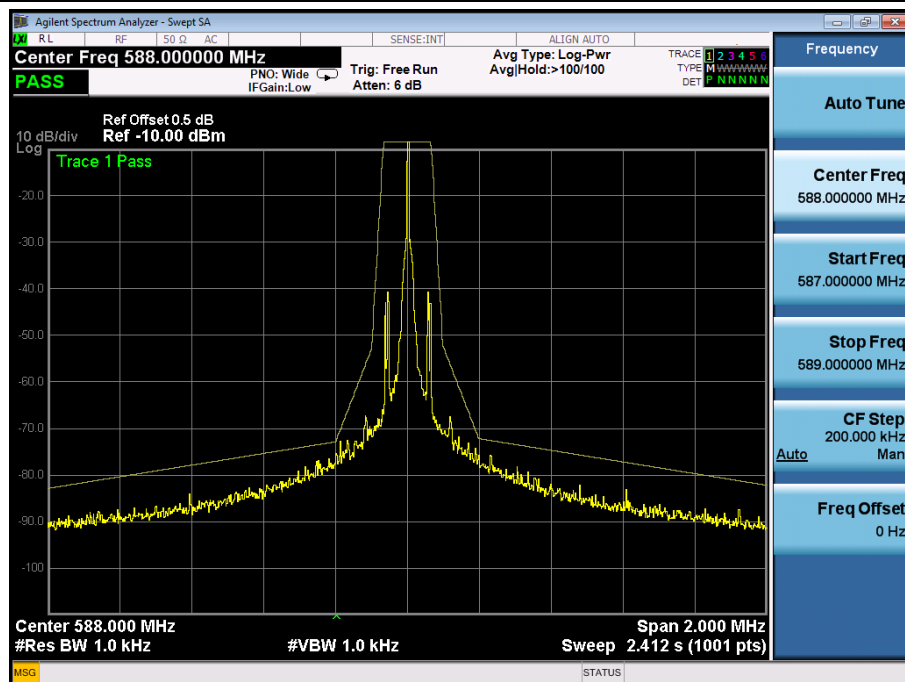
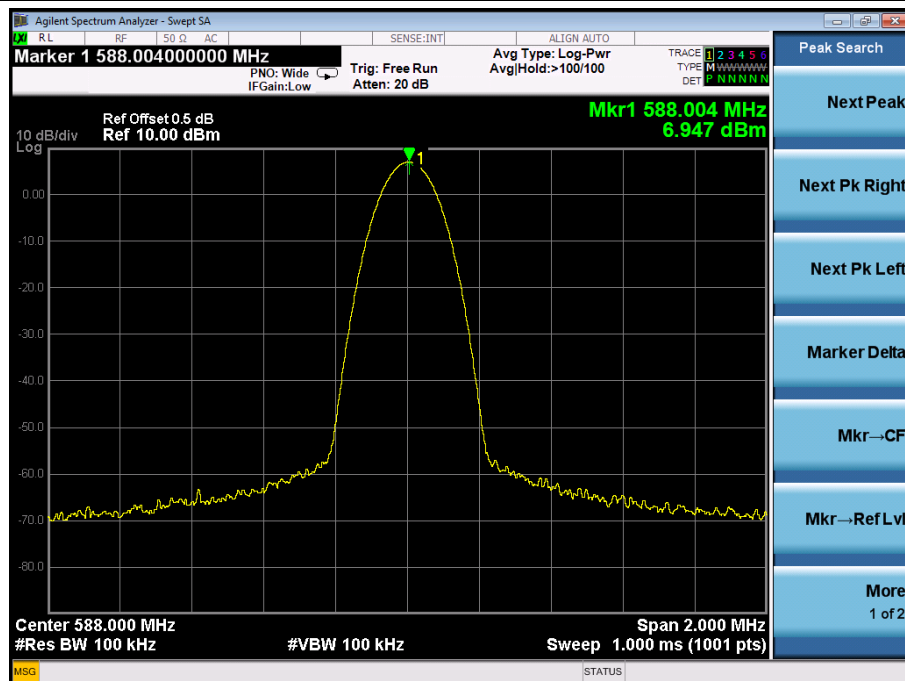
CH 02



Emission Mask



CH 02



6. FREQUENCY STABILITY

6.1 APPLICABLE STANDARD

According to FCC 15.236(f)(3), The frequency tolerance of the carrier signal shall be maintained within $\pm 0.005\%$ of the operating frequency over a temperature variation of -20 degrees to $+50$ degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. Battery operated equipment shall be tested using a new battery.

6.2 TEST PROCEDURE

- 1, Setup the configuration of the ambient temperature form -20°C to 50°C with sufficient time. And measure the different power of the EUT with an artificial power from highest to end point voltage.
- 2, Set frequency counter center frequency to the right frequency needs to be measured.

6.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

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

7.6 TEST RESULTS

Test conditions		Frequency Error
		543.472 MHz
T _{nom} (20°C)	V _{min} (3.15V)	543.4721
	V _{max} (4.26V)	543.4724
T(-20°C)	V _{nom} (3.7V)	543.4723
T(-10°C)	V _{nom} (3.7V)	543.4724
T(0°C)	V _{nom} (3.7V)	543.4725
T(10°C)	V _{nom} (3.7V)	543.4724
T _{nom} (20°C)	V _{nom} (3.7V)	543.4722
T(30°C)	V _{nom} (3.7V)	543.4726
T(40°C)	V _{nom} (3.7V)	543.4724
T(50°C)	V _{nom} (3.7V)	543.4723
T _{nom} (20°C)	V _{min} (3.15V)	543.4722
	V _{max} (4.26V)	543.4724
Max. frequency error (ppm)		1.10
Limit (ppm)		±50ppm
End Point		DC 3V

Test conditions		Frequency Error
		588.0 MHz
T _{nom} (20°C)	V _{min} (3.15V)	588.0042
	V _{max} (4.26V)	588.0041
T(-20°C)	V _{nom} (3.7V)	588.0045
T(-10°C)	V _{nom} (3.7V)	588.0044
T(0°C)	V _{nom} (3.7V)	588.0044
T(10°C)	V _{nom} (3.7V)	588.0043
T _{nom} (20°C)	V _{nom} (3.7V)	588.0043
T(30°C)	V _{nom} (3.7V)	588.0045
T(40°C)	V _{nom} (3.7V)	588.0044
T(50°C)	V _{nom} (3.7V)	588.0046
T _{nom} (20°C)	V _{min} (3.15V)	588.0042
	V _{max} (4.26V)	588.0043
Max. frequency error (ppm)		7.82
Limit (ppm)		±50ppm
End Point		DC 3V

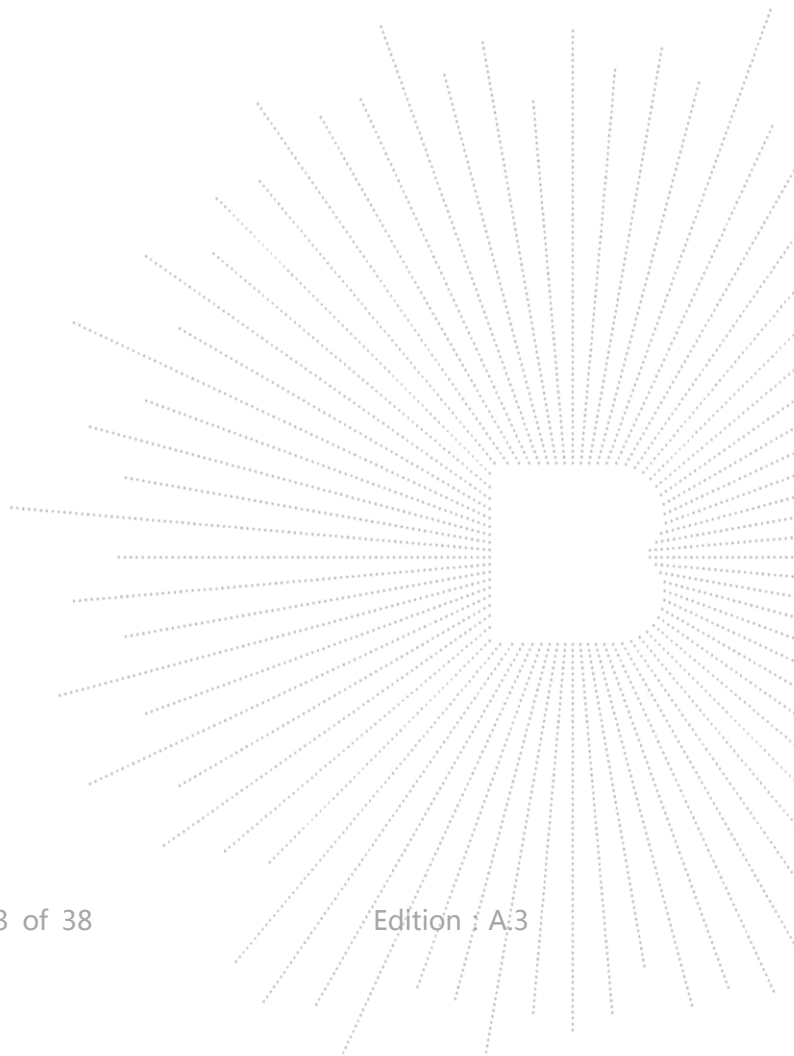
7. ANTENNA REQUIREMENT

7.1 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.

7.2 EUT ANTENNA

The EUT antenna is Internal antenna, fulfill the requirement of this section.



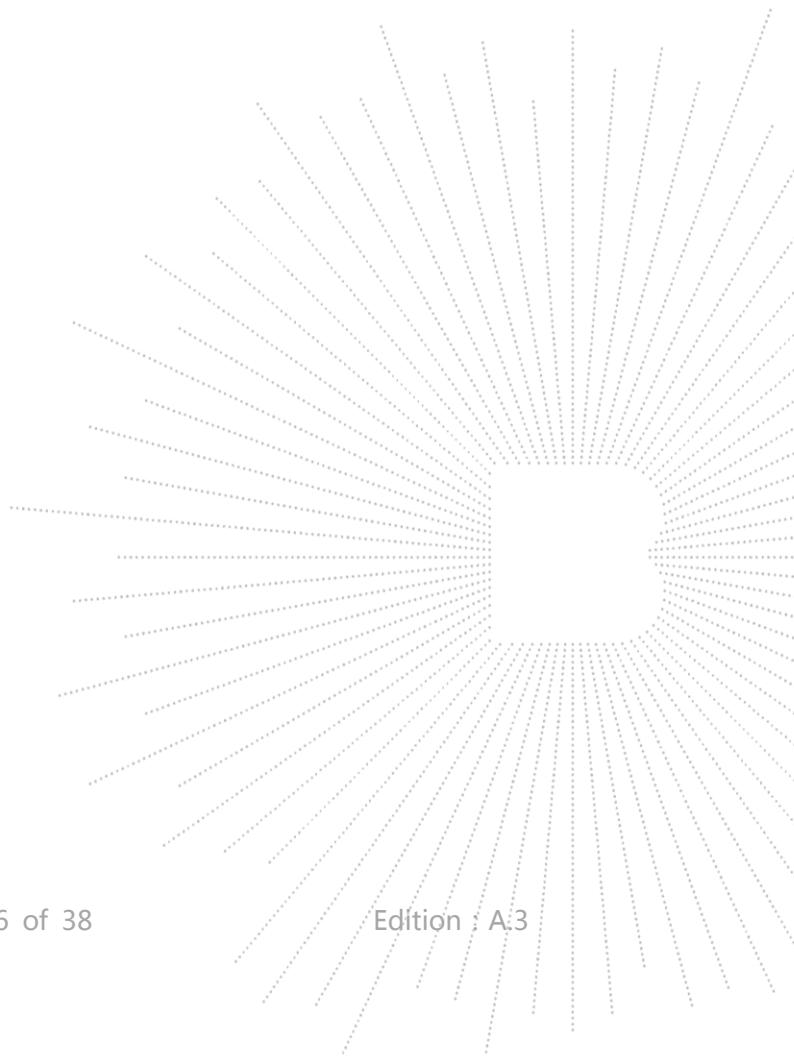
8. EUT TEST PHOTO

Radiated Measurement Photos



9. EUT PHOTO





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:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL : 400-788-9558

P. C.: 518103

FAX : 0755-33229357

Website : <http://www.chnbctc.com>

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

***** END *****