

# Shenzhen Toby Technology Co., Ltd.



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# RF Test Report FCC ID: 2BH8N-UHF888

**Report No.** : TBR-C-202403-0335-10

**Applicant**: Dongguan Jieqiang Computer Co., Ltd

**Equipment Under Test (EUT)** 

**EUT Name**: Microphone

Model No. : UHF888

Series Model No. : UHF888-A, UHF888-B, UHF888-C, UHF888-D, UHF888-E,

UHF888-F, UHF888-G

Brand Name : JUDIO

Sample ID : HC-C-202403-0335-01-01-1#&HC-C-202403-0335-01-01-2#

**Receipt Date** : 2024-08-09

**Test Date** : 2024-08-09 to 2024-08-27

**Issue Date** : 2024-08-27

Standards : FCC Part 15, Subpart C (15.236)

**Test Method** : ANSI C63.10:2013

Conclusions : PASS

In the configuration tested, the EUT complied with the standards specified above.

Wade. Lw

Tested By : 24 show

Approved By : WAN SV

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1.0



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# **Revision History**

Report No.	Version	Description	Issued Date
TBR-C-202403-0335-10	Rev.01	Initial issue of report	2024-08-27
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The same			LOS SERVICES
			TO THE
TO I	1087		6000





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### 1. General Information about EUT

#### 1.1 Client Information

Applicant : Dongguan Jieqiang Computer Co., Ltd		
Address : Room 1422, No. 605, Tangxia Section, Dongshen Road, Tangxia To Dongguan City, Guangdong Province, China		Room 1422, No. 605, Tangxia Section, Dongshen Road, Tangxia Town, Dongguan City, Guangdong Province, China
Manufacturer : Dongguan Jieqiang Computer Co., Ltd		Dongguan Jieqiang Computer Co., Ltd
Address : Room 1422, No. 605, Tangxia Section, Dongshen Road, Dongshen R		Room 1422, No. 605, Tangxia Section, Dongshen Road, Tangxia Town, Dongguan City, Guangdong Province, China

### 1.2 General Description of EUT (Equipment Under Test)

UHF888-E, UHF888-	UHF888-B, UHF888-C, UHF888-D, F, UHF888-G dentical in the same PCB, layout and only difference is different names for different	
: electrical circuit, the c		
Operation Frequency: 566MHz~585MHz		
Number of Channel: 20 Channels		
: Antenna Gain:	0dBi FPC Antenna	
Equipment System:	Digital systems	
Modulation:	Pi/4-QPSK	
	echargeable Li-ion battery	
:		
	Operation Frequency: Number of Channel: 2  : Antenna Gain:     Equipment System:     Modulation:  USB Input: DC 5V/1A	

#### Remark:

- (1) The antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.
- (2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- (3) The above antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
- (4) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

#### Note:

Applicable Standards: FCC CFR 47 Part 2, & 15, KDB 206256 D01 vO2, ANSI C63.10- 2013,





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ANSI C63.26 2015





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### (5) Channel List:

Channel	Frequency (MHz)
01	566
02	567
03	568
04	569
05	570
06	571
07	572
08	573
09	574
10	575
11	576
12	577
13	578
14	579
15	580
16	581
17	582
18	583
19	584
20	585

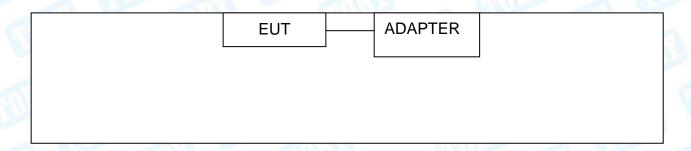




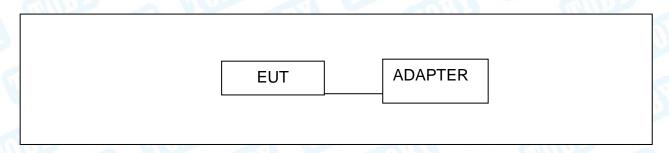
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### 1.3 Block Diagram Showing the Configuration of System Tested

#### **Conducted Test**



#### **Radiated Test**



### 1.4 Description of Support Units

Equipment Information  Name Model FCC ID/SDOC Manufacturer Used "√"							
							Adapter X552 UGREEN √
Cable Information							
Number Shielded Type Ferrite Core Length Note							
Cable1	W TO THE REAL PROPERTY OF THE PERTY OF THE P	-	0.5M	U/17			
Remark: The cables and adapter is provided by Toby test lab.							





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#### 1.5 Description of 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 follow was evaluated respectively.

For Radiated Test				
Final Test Mode	Description			
Mode 1	TX Mode(Channel 01/10/20)			

#### Note:

For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

- (1)According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels.
- (2)During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a portable unit; it was pre-tested on the positioned of each 3 axis, X-plane, Y-plane and Z-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.

#### 1.6 Description of Test Software Setting

Control by pressing the button. 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 of RF mode.





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#### 1.7 Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U_1$ , where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty (U <sub>Lab</sub> )
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	±3.50 dB ±3.10 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.50 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.20 dB

#### 1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1/F., Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

#### **CNAS (L5813)**

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

#### A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351. Designation Number: CN1223.

#### IC Registration No.: (11950A)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A. CAB identifier: CN0056.



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## 2. Test Summary

FCC Part 15 Subpart C(15.236)						
Standard Section	Test Item	Test Sample(s)	Judgment	Remark		
15.207(a)	Conducted Emission	HC-C-202403-0335-01-01-1#	PASS	N/A		
15.236(d)(2)	RF Power Output	HC-C-202403-0335-01-01-2#	PASS	N/A		
15.236(f)(2)	Occupied Bandwidth	HC-C-202403-0335-01-01-2#	PASS	N/A		
15.236(g) 8.3 of ETSI EN 300 422-1	Emission Mask	HC-C-202403-0335-01-01-2#	PASS	N/A		
15.236(g) 8.4 of ETSI EN 300 422-1	(1) Radiated Spurious Emission	HC-C-202403-0335-01-01-2#	PASS	N/A		
15.236(f)(3)	Frequency Stability vs. Temperature Frequency Stability vs. Voltage	HC-C-202403-0335-01-01-2#	PASS	N/A		

**Note:** N/A is an abbreviation for Not Applicable.

### 3. Test Software

Test Item	Test Software	Manufacturer	Version No.
Conducted Emission	EZ-EMC	EZ	CDI-03A2
Radiation Emission	EZ-EMC	EZ	FA-03A2RE
Radiation Emission	EZ-EMC	EZ	FA-03A2RE+
RF Conducted Measurement	MTS-8310	MWRFtest	V2.0.0.0
RF Test System	JS1120	Tonscend	V3.2.22





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# 4. Test Equipment and Test Site

Test Site						
No. Test Site		Manufacturer	Specification	Used		
TB-EMCSR001	Shielding Chamber #1	YIHENG	7.5*4.0*3.0 ( m )	V		
TB-EMCSR002	Shielding Chamber #2	YIHENG	8.0*4.0*3.0 ( m )	X		
TB-EMCCA001	3m Anechoic Chamber #A	ETS	9.0*6.0*6.0 ( m )	X		
TB-EMCCB002	3m Anechoic Chamber #B	YIHENG	9.0*6.0*6.0 ( m )	V		

Conducted Emissi	on Test				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jun. 17, 2024	Jun. 16, 2025
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jun. 17, 2024	Jun. 16, 2025
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jun. 17, 2024	Jun. 16, 2025
LISN	Rohde & Schwarz	ENV216	101131	Jun. 17, 2024	Jun. 16, 2025
<b>Radiation Emissio</b>	n Test (B Site)				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100060	Aug. 30, 2023	Aug. 29, 2024
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 17, 2024	Jun. 16, 2025
EMI Test Receiver	Rohde & Schwarz	ESU-8	100472/008	Feb. 23, 2024	Feb. 22, 2025
Bilog Antenna	SCHWARZBECK	VULB 9168	1225	Nov. 13, 2023	Nov. 12, 2025
Horn Antenna	SCHWARZBECK	BBHA 9120 D	2463	Jun. 14, 2024	Jun. 13, 2026
Horn Antenna	SCHWARZBECK	BBHA 9170	1118	Feb. 27, 2024	Feb. 26, 2026
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jun. 14, 2024	Jun. 13, 2026
HF Amplifier	Tonscend	TAP9E6343	AP21C806117	Aug. 30, 2023	Aug. 29, 2024
HF Amplifier	Tonscend	TAP051845	AP21C806141	Aug. 30, 2023	Aug. 29, 2024
HF Amplifier	Tonscend	TAP0184050	AP21C806129	Aug. 30, 2023	Aug. 29, 2024
Highpass Filter	CD	HPM-6.4/18G		N/A	N/A
Highpass Filter	CD	HPM-2.8/18G		N/A	N/A
Highpass Filter	XINBO	XBLBQ-HTA67(8-25G)	22052702-1	N/A	N/A
Antenna Conducte	ed Emission				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 17, 2024	Jun. 16, 2025
MXA Signal Analyzer	KEYSIGHT	N9020B	MY60110172	Aug. 30, 2023	Aug. 29, 2024
MXA Signal Analyzer	Agilent	N9020A	MY47380425	Aug. 30, 2023	Aug. 29, 2024
Vector Signal Generator	Agilent	N5182A	MY50141294	Aug. 30, 2023	Aug. 29, 2024
Analog Signal Generator	Agilent	N5181A	MY48180463	Aug. 30, 2023	Aug. 29, 2024
Vector Signal Generator	KEYSIGHT	N5182B	MY59101429	Aug. 30, 2023	Aug. 29, 2024





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Analog Signal Generator	KEYSIGHT	N5173B	MY61252685	Aug. 30, 2023	Aug. 29, 2024
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Aug. 30, 2023	Aug. 29, 2024
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Aug. 30, 2023	Aug. 29, 2024
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Aug. 30, 2023	Aug. 29, 2024
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Aug. 30, 2023	Aug. 29, 2024
RF Control Unit	Tonsced	JS0806-1	21C8060380	N/A	N/A
RF Control Unit	Tonsced	JS0806-2	21F8060439	Aug. 30, 2023	Aug. 29, 2024
Power Control Box	Tonsced	JS0806-4ADC	21C8060387	N/A	N/A





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### 5. Conducted Emission Test

#### 5.1 Test Standard and Limit

5.1.1 Test Standard FCC Part 15.207

#### 5.1.2 Test Limit

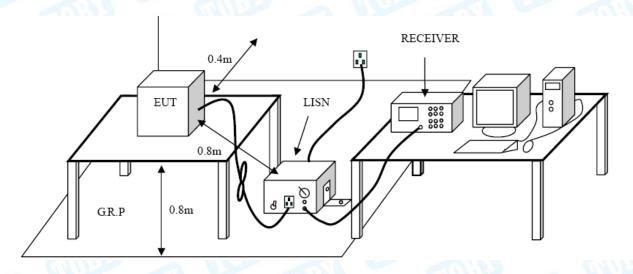
#### **Conducted Emission Test Limit**

Francisco College	Maximum RF Line Voltage (dBμV)			
Frequency	Quasi-peak Level	Average Level		
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *		
500kHz~5MHz	56	46		
5MHz~30MHz	60	50		

#### Notes:

- (1) \*Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

#### 5.2 Test Setup







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#### 5.3 Test Procedure

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.

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 is at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

#### 5.4 Deviation From Test Standard

No deviation

#### 5.5 EUT Operating Mode

Please refer to the description of test mode.

#### 5.6 Test Data

Please refer to the Attachment A.





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### 6. RF Output Power Test

- 6.1 Test Standard and Limit
- 6.1.1 Test Standard:

FCC Part 15.236(d)(2)

6.1.2 Test Limit

§15.236 Operation of wireless microphones in the bands 54-72 MHz, 76-88 MHz, 174-216 MHz, 470-608 MHz and 614-698 MHz.

- (d) The maximum radiated power shall not exceed the following values:
- (2) In the 600 MHz guard band and the 600 MHz duplex gap: 20 mW EIRP.

**Procedure:** KDB 971168 D01 Average Power Measurements section 5.2.1

Power Limit 50mW= 17dBm

#### 6.2 Test Setup



#### 6.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above.

- (2) Set the RBW ≥Bandwidth
- (3) Set VBW≥3\*RBW
- (4) Set Span≥3\*RBW
- (5) Sweep time=auto
- (6) Measurement points ≥ 2 span / RBW
- (7) Detector=Average
- (8) Trace mode= max hold.

Allow trace to fully stabilize, and then use peak marker function to determine the Average amplitude level.

(9) Radiated RF power= Conduction measurement Level + Ant. Gain





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#### 6.4 Deviation From Test Standard

No deviation

### 6.5 EUT Operating Condition

The EUT was set to Continual Transmitting in maximum power, and new batteries are used during testing.

#### 6.6 Test Data

Please refer to the Attachment B.





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### 7. Bandwidth Test

#### 7.1 Test Standard and Requirement

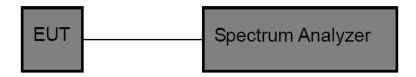
7.1.1 Test Standard FCC Part 15.236(f)(2)

71.2 Test Limit

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.

7.1.3 Requirement: ANSI C63.26 sec. 5.4.3

#### 7.2 Test Setup



#### 7.2 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting:

Bandwidth: RBW=30 kHz, VBW=100kHz.

(3) The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.

#### 7.4 Deviation From Test Standard

No deviation

### 7.5 EUT Operating Condition

The EUT was set to continuously transmitting for the Bandwidth Test.

#### 7.6 Test Data

Please refer to the Attachment C.





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### 8. Emission Mask Test

#### 8.1 Test Standard

(g) Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in §8.3 of ETSI EN 300 422-1 V1.4.2 (2011-08), Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; Part 1: Technical characteristics and methods of measurement. Emissions outside of this band shall comply with the limits specified in section 8.4 of ETSI EN 300 422-1 V1.4.2 (2011-08).

#### 8.2 Test Limit



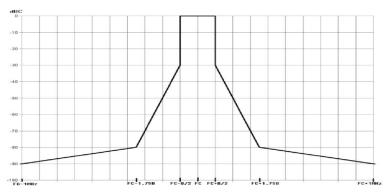
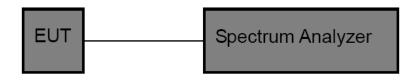


Figure 4: Spectrum mask for digital systems below 1 GHz

### 8.3 Test Setup



#### 8.4 Test Procedure

Measure the "Maximum Relative Level (dBc) at Specified Carrier Offsets" with the following spectrum analyser setup:

- Centre Frequency = fc
- Span ≥ 5 × B
- Detector = RMS
- Trace Mode = Peak Hold
- RBW&VBW = 1 kHz
- Sweep time ≥ 2 s





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#### 8.5 Deviation From Test Standard

No deviation

8.6 Test Data

Please refer to the Attachment D.





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### 9. Radiated Spurious Emission Test

#### 9.1 Test Standard and Limit

9.1.1 Test Standard: FCC Part 15.236(g)

Requirement: ETSI EN 300 422-1 V1.4.2

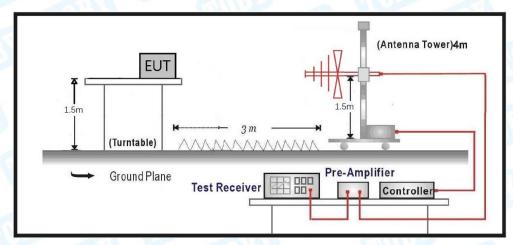
(g) Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in §8.3 of ETSI EN 300 422-1 V1.4.2 (2011-08), *Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; Part 1: Technical characteristics and methods of measurement.* Emissions outside of this band shall comply with the limits specified in section 8.4 of ETSI EN 300 422-1 V1.4.2 (2011-08).

#### 9.1.2 Limits

State		Frequency					
	1	Other Frequencies below 1 000 MHz	Frequencies above 1 000 MHz				
Operation	4 nW	250 nW	1 μW				
Standby	2 nW	2 nW	20 <b>nW</b>				

#### 9.2 Test Setup

A. Radiated Emission Test Set-Up Frequency Below 1 GHz.

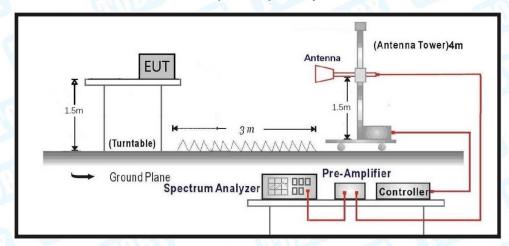






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#### B. Radiated Emission Test Set-Up Frequency Above1 GHz.



#### 9.3 Test Procedure

- 1. The EUT was placed on the top of the turntable in chamber.
- 2. The test shall be made in the transmitting mode. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. This measurement shall be repeated with the transmitter in standby mode where applicable.
- 4. For spurious emissions measurement, the broad band bi-log receiving antenna was placed 3 meters far away from the turntable.
- 5. The broadband receiving antenna was fixed on the same height with the EUT to find each suspected emissions of both horizontal and vertical polarization. Each recorded suspected value is indicated as Read Level (Raw).
- 6. Replace the EUT by standard antenna and feed the RF port by signal generator.
- 7. Adjust the frequency of the signal generator to the suspected emission and slightly rotate the turntable to locate the position with maximum reading.
- 8. Adjust the power level of the signal generator to reach the same reading with Read Level (Raw).
- 9. The level of the spurious emission is the power level of (8) plus the gain of the standard antenna in dBi and minus the loss of the cable used between the signal generator and the standard antenna.
- 10. The measurement shall be repeated at the lowest and the highest channel of the stated frequency range.

#### 9.4 Deviation From Test Standard

No deviation

#### 9.5 Test Data

Please refer to the Attachment E.





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### 10. Frequency stability

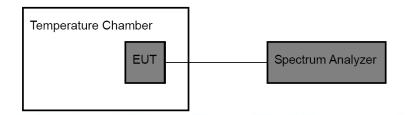
#### 10.1 Test Standard and Limit

10.1.1 Test Standard: FCC 15.236(f)(3)

#### 10.1.2 Test Limit

The frequency tolerance of the carrier signal shall be maintained within ±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.

#### 10.2 Test Setup



#### 10.3 Test Procedure

The test was conducted as follows: The transmitter was placed in the temperature chamber at 25 °C and allowed to stabilize for one hour. The transmitter was keyed ON for one minute during which four frequency readings were recorded at 15-second intervals. The worst case number used in the table below. The assigned channel frequency was considered to be the reference frequency. The temperature was then reduced to -20 °C after which the transmitter was again allowed to stabilize for one hour. The transmitter was keyed ON for one minute, and again frequency readings were noted at 15-second intervals. The worst-case number was again used in the table below. This procedure was repeated in 10-degree increments up to + 50 °C.

#### 10.4 Deviation From Test Standard

No deviation

#### 10.5 Test Data

Please refer to the Attachment F.





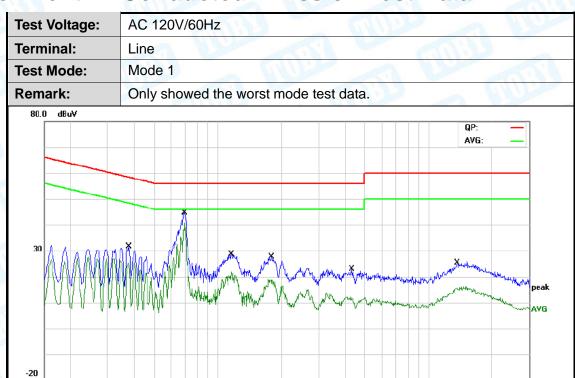
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30.000

Humidity:

49 %

### **Attachment A--Conducted Emission Test Data**



(MHz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB	dBuV	dBuV	dB	Detector
1		0.3780	6.94	9.93	16.87	58.32	-41.45	QP
2		0.3780	3.88	9.93	13.81	48.32	-34.51	AVG
3		0.6900	28.73	9.91	38.64	56.00	-17.36	QP
4	*	0.6900	18.77	9.91	28.68	46.00	-17.32	AVG
5		1.1620	13.20	10.06	23.26	56.00	-32.74	QP
6		1.1620	6.18	10.06	16.24	46.00	-29.76	AVG
7		1.7980	13.56	10.05	23.61	56.00	-32.39	QP
8		1.7980	5.55	10.05	15.60	46.00	-30.40	AVG
9		4.3339	5.43	10.12	15.55	56.00	-40.45	QP
10		4.3339	-1.24	10.12	8.88	46.00	-37.12	AVG
11		13.6419	9.36	11.01	20.37	60.00	-39.63	QP
12		13.6419	4.03	11.01	15.04	50.00	-34.96	AVG

Temperature:

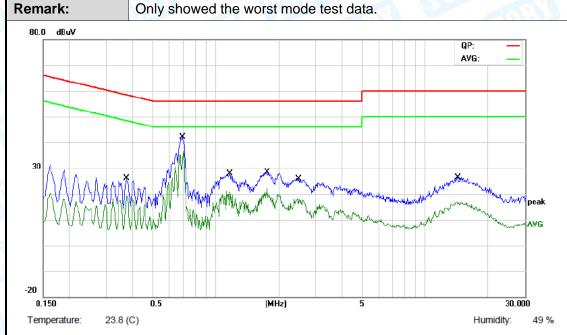
23.8 (C)

- 1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)





1	Test Voltage:	AC 120V/60Hz
	Terminal:	Neutral
	Test Mode:	Mode 1



No. M	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	0.3740	4.89	9.94	14.83	58.41	-43.58	QP
2	0.3740	0.00	9.94	9.94	48.41	-38.47	AVG
3	0.6900	29.01	9.89	38.90	56.00	-17.10	QP
4 *	0.6900	19.03	9.89	28.92	46.00	-17.08	AVG
5	1.1700	14.04	9.90	23.94	56.00	-32.06	QP
6	1.1700	6.78	9.90	16.68	46.00	-29.32	AVG
7	1.7700	12.16	9.93	22.09	56.00	-33.91	QP
8	1.7700	4.23	9.93	14.16	46.00	-31.84	AVG
9	2.4940	8.06	10.04	18.10	56.00	-37.90	QP
10	2.4940	0.95	10.04	10.99	46.00	-35.01	AVG
11	14.3259	9.67	11.04	20.71	60.00	-39.29	QP
12	14.3259	4.13	11.04	15.17	50.00	-34.83	AVG

- 1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)





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### **Attachment B--Power Output Test Data**

Frequency (MHz)	Conduction measurement Level (dBm)	Ant. Gain(dBi)	Radiated RF power(dBm)	Limit(dBm)	Margin (dB)
566	-2.221	0	-2.221	50mw(17dBm)	-19.221
575	-2.887	0	-2.887	50mw(17dBm)	-19.887
585	-3.786	0	-3.786	50mw(17dBm)	-20.786







Note: Radiated RF power= Conduction measurement Level + Ant. Gain



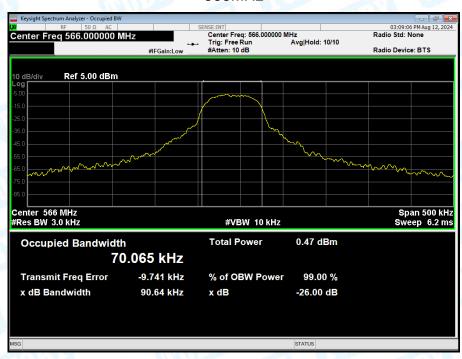


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### **Attachment C--Bandwidth Test Data**

Channel Frequency (MHz)	99% Bandwidth (KHz)	26dB Bandwidth (KHz)		
566	70.065	90.64		
575	69.446	85.90		
585	69.601	88.74		

#### 566MHz

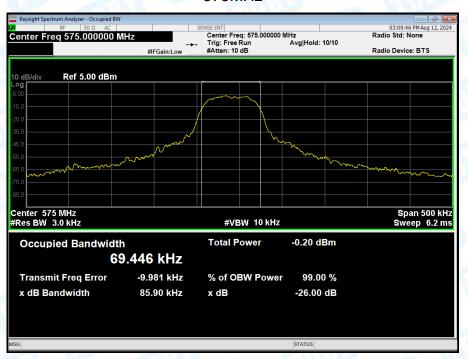




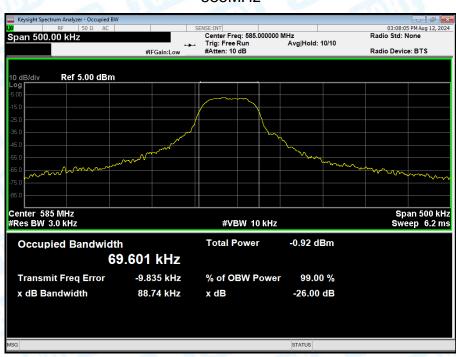


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#### 575MHz



#### 585MHz



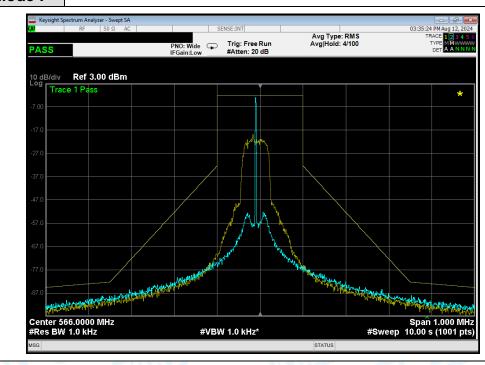




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### **Attachment D--Emission Mask Test Data**

Temperature:	26°C	Relative Humidity:	60%
Pressure:	1020hPa	Test Voltage :	DC 3.7V
Result:	PASS		
Test Mode :	TX 566MHz		

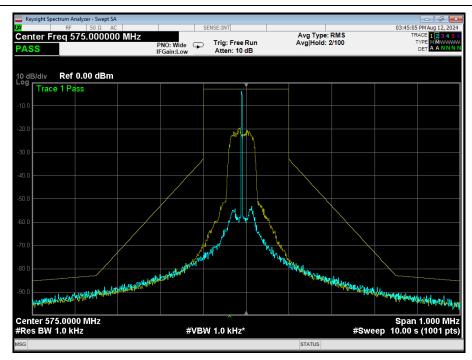




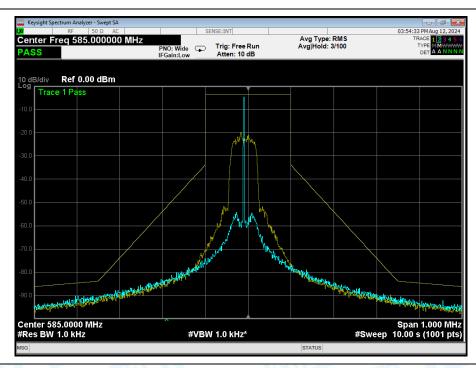


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#### 585MHz





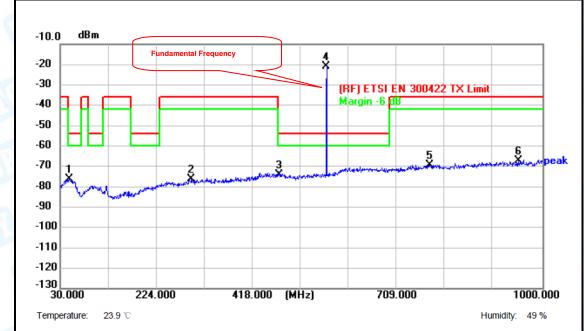


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### **Attachment E--Radiated Spurious Emission Test Date**

#### **Below 1 GHz**

	B1 B1 L2	
	Test Voltage:	DC 3.7V
	Ant. Pol.	Horizontal
	Test Mode:	TX Mode 566MHz
	Remark:	All channels were tested and only the worst channels were shown in
	Remark.	the report.



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	48.4300	-67.90	-8.22	-76.12	-54.00	-22.12	peak
2	293.8400	-67.67	-8.47	-76.14	-36.00	-40.14	peak
3	470.3800	-68.84	-5.24	-74.08	-54.00	-20.08	peak
4 *	566.4099	-16.32	-4.54	-20.86	Fundamental Fro	equency	peak
5	773.0200	-68.73	-0.56	-69.29	-36.00	-33.29	peak
6	951.5000	-68.50	1.25	-67.25	-36.00	-31.25	peak

#### Remark:

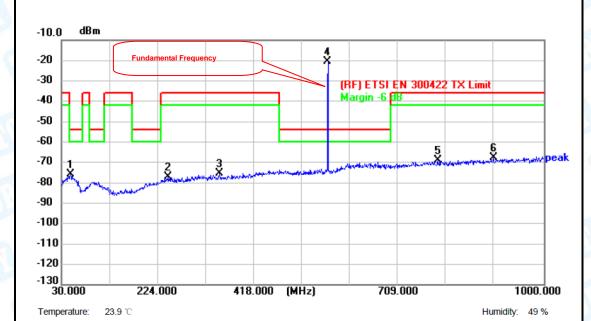
- 1. Corr. = Antenna Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =Peak(dBm)-Limit (dBm)





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Test Voltage:	DC 3.7V
Ant. Pol.	Vertical
Test Mode:	TX Mode 566MHz
Remark:	All channels were tested and only the worst channels were shown in
Reiliai K.	the report.



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	48.4300	-66.15	-9.74	-75.89	-54.00	-21.89	peak
2	245.3400	-66.05	-11.02	-77.07	-36.00	-41.07	peak
3	348.1600	-67.99	-7.52	-75.51	-36.00	-39.51	peak
4 *	566.4099	-16.58	-4.08	-20.66	Fundamental Fr	equency	peak
5	786.6000	-68.40	-0.68	-69.08	-36.00	-33.08	peak
6	899.1200	-68.49	0.93	-67.56	-36.00	-31.56	peak

#### Remark

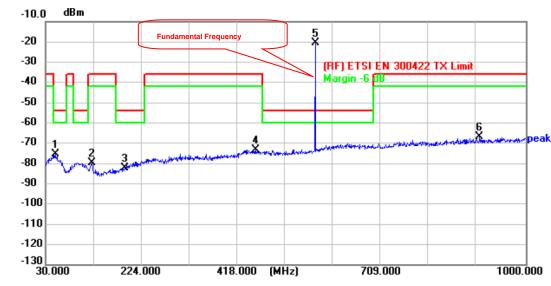
- 1. Corr. = Antenna Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =Peak(dBm)-Limit (dBm)





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Test Voltage:	DC 3.7V
Ant. Pol.	Horizontal
Test Mode:	TX Mode 575MHz
Remark:	All channels were tested and only the worst channels were shown in
Remark:	the report.



23.9 ℃ Humidity: 49 % Temperature:

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	49.4000	-67.01	-8.16	-75.17	-54.00	-21.17	peak
2	123.1200	-64.46	-14.98	-79.44	-36.00	-43.44	peak
3	190.0500	-68.90	-13.35	-82.25	-54.00	-28.25	peak
4	453.8900	-67.58	-5.44	-73.02	-36.00	-37.02	peak
5 *	575.1400	-16.18	-4.31	-20.49	Fundamental F	requency	peak
6	906.8800	-67.82	0.83	-66.99	-36.00	-30.99	peak

#### Remark:

- 1. Corr. = Antenna Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =Peak(dBm)-Limit (dBm)

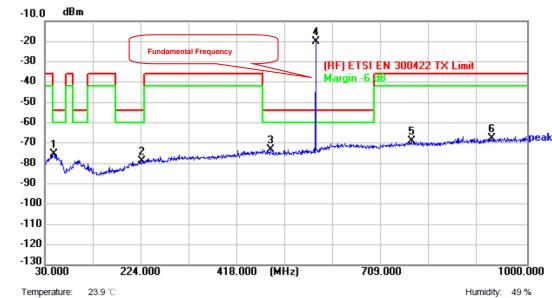




Humidity: 49 %

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DC 3.7V
Vertical
TX Mode 575MHz
All channels were tested and only the worst channels were shown in the report.



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	48.4300	-65.79	-9.74	-75.53	-54.00	-21.53	peak
2	225.9400	-66.56	-12.20	-78.76	-54.00	-24.76	peak
3	483.9600	-67.28	-5.79	-73.07	-54.00	-19.07	peak
4 *	575.1400	-16.47	-3.80	-20.27	Fundamental Fr	equency	peak
5	767.2000	-68.24	-0.58	-68.82	-36.00	-32.82	peak
6	928.2200	-68.94	1.26	-67.68	-36.00	-31.68	peak

- 1. Corr. = Antenna Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =Peak(dBm)-Limit (dBm)

23.9 ℃





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-31.89

-32.58

peak

peak

-36.00

-36.00

		11 19 1			1				
Test Vo	ltage:	DC 3	3.7V			CIII)	1013		
Ant. Po	l.	Horizontal							
Test Mo	de:	TX	Mode 585N	lHz			1 W		
Remark	<b>(:</b>		hannels we eport.	ere tested a	nd only	the w	orst channe	els were s	hown in
-10.0	dBm								
-20			Fundamental Freq	uency	4 *				
-30					IF	ELETSI	EN 300422 T	X Limit	
-40	p ⊏					argin -6			
-50									
-60		Щ.					5 X	6	
-70	l K	2		3	Marketon Marketon	والمعارب والمحاول المساورة	Andread	market when the same	<sub>Arves</sub> , pea
-80	Janes Land	- AND THE PARTY OF	April and a second						
-90 -100									
-110									
-120									
-130		204.00		110 000 (111		7/	2000		1000 000
30.0 Tempera		224.00	U 4	118.000 (MH	zj	71	9.000	Humidit	<b>1000.000</b> y: 49 %
No.	Freque (MH	•	Reading (dBm)	Factor (dB)		vel Bm)	Limit (dBm)	Margin (dB)	Detector
1	57.16	600	-66.59	-9.89	-76	6.48	-54.00	-22.48	peak
2	202.6	600	-66.75	-11.85	-78	3.60	-54.00	-24.60	peak
3	389.8	700	-68.92	-7.11	-76	6.03	-36.00	-40.03	peak
4 *	584.8	400	-15.98	-3.74	-19	9.72	Fundamental Fre	equency	peak

5

6

1. Corr. = Antenna Factor (dB) + Cable Loss (dB)

-67.30

-68.92

-0.59

0.34

-67.89

-68.58

2. Margin (dB) =Peak(dBm)-Limit (dBm)

780.7800

855.4700





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Test Vol Ant. Pol		DC 3.7\ Vertical	MAN.					
Test Mo	de:	TX Mod	e 585MH	łz		2 W		
Remark:  All channels were tested and only the worst channels were show the report.					shown in			
-10.0	dBm							
-20					4 *			
-30		Fund	lamental Freque	ency	(BELETS)	EN 300422 TX	₹ Limit	
-40					Margin -6		· Ellin	
-50								_
-60						5	6	
-70		2		3	and the state of t	5	<u> </u>	peak
-70 <u>1</u> -80		2	المرابع والمرابع والمرابع	3 X	Andrew of March State of State	5 Season of the Control	6	peak
-70 -80 -90		2	Part of the State	3	And the state of t	5	6	peak مسررينو
-70 -80 -90 -100		2	A STATE OF THE PARTY OF THE PAR	3 Xindadalandah	Andrew State of State	5	6	peak
-70 -80 -90 -100 -110		2	. Note the second second second	3 Marketer vision of side	And the state of t	5 September 1985 Anna Parket 1985 Anna P	6 Annahillarah	peak
-70		2	and the second second	3 Xunturus andr	Andrew Strawalter	5	6 Anna speedands	peak
-70 -80 -90 -100 -110	- Common of the	224.000	411	3 X	Harry Mark of Mary Mary	9.000		peak
-70 -80 -90 -100 -110 -120 -130	00	224.000	418		70			000.000

No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	52.3100	-66.06	-9.78	-75.84	-54.00	-21.84	peak
2	229.8200	-66.43	-12.04	-78.47	-54.00	-24.47	peak
3	428.6700	-67.97	-6.09	-74.06	-36.00	-38.06	peak
4 *	584.8400	-16.37	-3.26	-19.63	Fundamental Fre	equency	peak
5	734.2199	-68.34	-1.12	-69.46	-36.00	-33.46	peak
6	860.3200	-68.12	0.18	-67.94	-36.00	-31.94	peak

#### Remark:

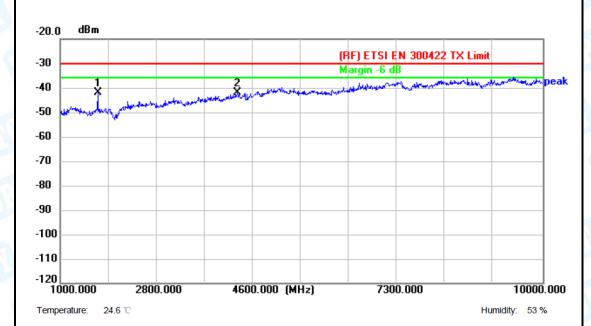
- 1. Corr. = Antenna Factor (dB) + Cable Loss (dB)
  2. Margin (dB) =Peak(dBm)-Limit (dBm)



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#### Above 1 GHz

Test Voltage:	DC 3.7V
Ant. Pol.	Horizontal
Test Mode:	TX Mode 566MHz
Remark:	All channels were tested and only the worst channels were shown in
Remark.	the report.



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1 *	1702.000	-45.88	4.04	-41.84	-30.00	-11.84	peak
2	4312.000	-54.29	12.30	-41.99	-30.00	-11.99	peak

#### Remark:

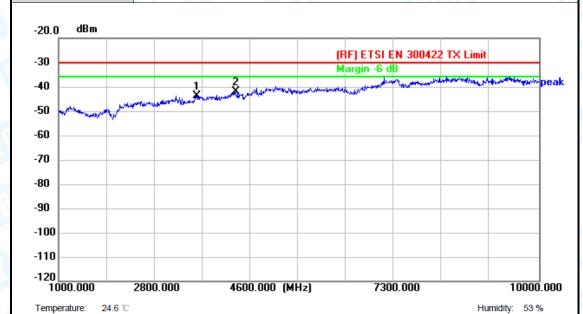
- 1. Corr. = Antenna Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =Peak(dBm)-Limit (dBm)
- 3. The tests evaluated 1~10GHz, Test with highpass filter (Pass Frequency: 2.8-18G).
- 4. No report for the emission which below the prescribed limit.





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Test Voltage:	DC 3.7V
Ant. Pol.	Vertical
Test Mode:	TX Mode 566MHz
Remark:	All channels were tested and only the worst channels were shown in
Remark:	the report.



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	3592.000	-54.12	10.46	-43.66	-30.00	-13.66	peak
2 *	4321.000	-54.46	12.34	-42.12	-30.00	-12.12	peak

#### Remark

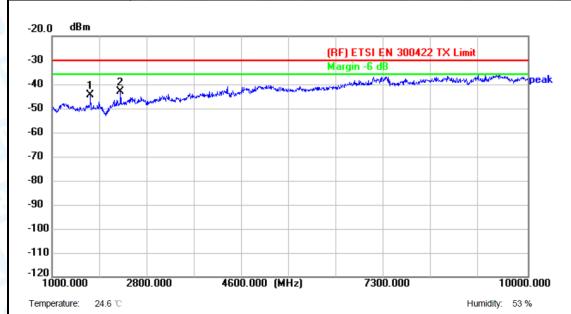
- 1. Corr. = Antenna Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =Peak(dBm)-Limit (dBm)
- 3. The tests evaluated 1~10GHz, Test with highpass filter (Pass Frequency: 2.8-18G).
- 4. No report for the emission which below the prescribed limit.





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Test Voltage:	DC 3.7V
Ant. Pol.	Horizontal
Test Mode:	TX Mode 575MHz
Remark:	All channels were tested and only the worst channels were shown in
Remark:	the report.



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1729.000	-48.61	4.21	-44.40	-30.00	-14.40	peak
2 *	2296.000	-49.12	6.18	-42.94	-30.00	-12.94	peak

#### Remark

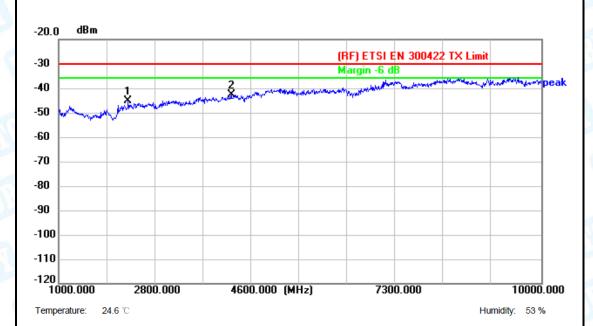
- 1. Corr. = Antenna Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =Peak(dBm)-Limit (dBm)
- 3. The tests evaluated 1~10GHz, Test with highpass filter (Pass Frequency: 2.8-18G).
- 4. No report for the emission which below the prescribed limit.





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Test Voltage:	DC 3.7V
Ant. Pol.	Vertical
Test Mode:	TX Mode 575MHz
Remark:	All channels were tested and only the worst channels were shown in
Remark.	the report.



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	2296.000	-51.52	6.26	-45.26	-30.00	-15.26	peak
2 *	4222.000	-54.02	11.48	-42.54	-30.00	-12.54	peak

#### Remark:

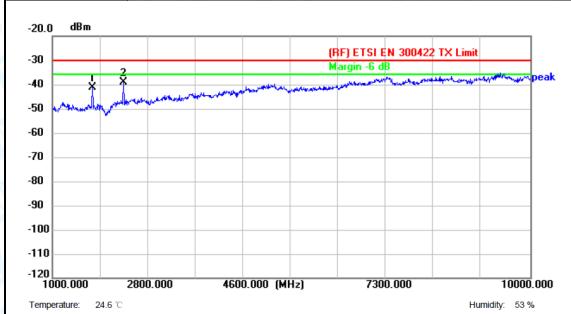
- 1. Corr. = Antenna Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =Peak(dBm)-Limit (dBm)
- 3. The tests evaluated 1~10GHz, Test with highpass filter (Pass Frequency: 2.8-18G).
- 4. No report for the emission which below the prescribed limit.





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Test Voltage:	DC 3.7V
Ant. Pol.	Horizontal
Test Mode:	TX Mode 585MHz
Remark:	All channels were tested and only the worst channels were shown in
Remark:	the report.



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1756.000	-45.64	4.37	-41.27	-30.00	-11.27	peak
2 *	2341.000	-45.46	6.23	-39.23	-30.00	-9.23	peak

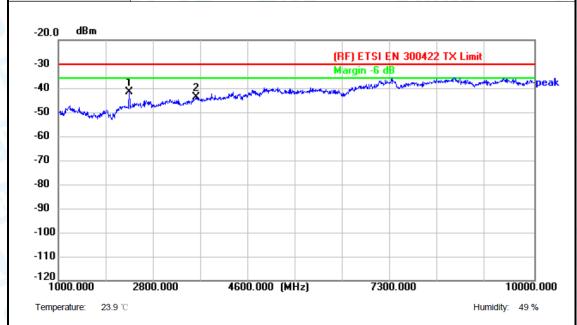
- 1. Corr. = Antenna Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =Peak(dBm)-Limit (dBm)
- 3. The tests evaluated 1~10GHz, Test with highpass filter (Pass Frequency: 2.8-18G).
- 4. No report for the emission which below the prescribed limit.





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Test Voltage:	DC 3.7V
Ant. Pol.	Vertical
Test Mode:	TX Mode 585MHz
Remark:	All channels were tested and only the worst channels were shown in
Remark:	the report.



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1 *	2341.000	-48.04	6.30	-41.74	-30.00	-11.74	peak
2	3601.000	-54.34	10.59	-43.75	-30.00	-13.75	peak

#### Remark

- 1. Corr. = Antenna Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =Peak(dBm)-Limit (dBm)
- 3. The tests evaluated 1~10GHz, Test with highpass filter (Pass Frequency: 2.8-18G).
- 4. No report for the emission which below the prescribed limit.





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## **Attachment F--Frequency Stability Test Data**

TX 566MHz			Test Voltage :				
TX 566MHz (Modulation)							
Remark: All channels were tested and only the worst channels were shown							
ions	Measurement	Test (	Conditions	Measurement			
Test Voltage	Frequency(MHz)	Test Voltage Test Tempera		Frequency(MHz)			
Alla	566	85%		566.013			
	566	95%	20°C	566.012			
0.50	566	100%		566.015			
DC 3.7V	566	105%		566.015			
	566	110%		566.014			
ann's	566	115%		566.015			
	566						
TOP!	566		(III)				
luency		400		0.015			
Max. Frequency Error							
Limits							
Result							
1	DC 3.7V	Income one one of the first Voltage         Measurement Frequency(MHz)           566         566           566         566           566         566           566         566           566         566           566         566           566         566           566         566           566         566	Test Voltage	Test Voltage			

operating frequency.





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Pressure:	1020hPa	100	Test Voltage :		DC 3.7V		
Test Mode :	TX 575MHz	(Modulation)					
Remark:	All channels	All channels were tested and only the worst channels were shown in the report.					
Test Cond	itions	Measurement	Test (	Conditions	Measurement		
Test Temperature	Test Voltage	Frequency(MHz)	Test Voltage	Test Temperature	Frequency(MHz)		
-20°C	angu	575	85%	VICE	575.012		
-10°C		575	95%	The state of the s	575.011		
0°C	A VRO	575	100%	20°C	575.012		
10°C		575	105%		575.012		
20°C	DC 3.7V	575	110%		575.015		
30°C	033	575	115%		575.015		
40°C	Will war	575	200				
50°C	3	575					
Max. Deviation Fre	equency		The same	1	0.015		
Max. Frequency E	rror	MURP	a Cur		0.003%		
Limits	±0.005%						
Result			000		PASS		
Note: The frequer		of the carrier sig	nal shall be m	aintained within ±0	0.005% of the		





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Pressure:	1020hPa	Pa Test Voltage :			DC 3.7V		
Test Mode :	TX 585MHz	(Modulation)					
Remark:	n in the report.						
Test Cond	itions	Measurement	Test (	Conditions	Measurement		
Test Temperature	Test Voltage	Frequency(MHz)	Test Voltage Test Temperature		Frequency(MHz)		
-20°C	an Bu	585	85%	VICE	585.012		
-10°C		585	95%		585.013		
0°C	ORY A	585	100%	20°C	585.012		
10°C	DC 3.7V	585	105%		585.017		
20°C		585	110%		585.013		
30°C	323	585	115%		585.014		
40°C	400	585	10				
50°C	3	585	THE WAY				
Max. Deviation Fre	equency		No.	1 100	0.017		
Max. Frequency E	rror	WAR.	a Winn		0.003%		
Limits	±0.005%						
Result	PASS						
Note: The frequer operating frequer		of the carrier sig	nal shall be m	aintained within ±0	0.005% of the		

----END OF THE REPORT-

