

# Shenzhen Toby Technology Co., Ltd.



Report No.: TBR-C-202405-0081-42

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# Radio Test Report

Report No. : TBR-C-202405-0081-42

Applicant : Hangzhou MMGB Trading Co., Ltd.

**Equipment Under Test (EUT)** 

AIHAIR GROWTH SMART DEVICE WITH SCALP

EUT Name : DETECTOR

Model No. : MT1

Series Model No. : ----

Brand Name : ----

Sample ID : 202405-0081-1-1# & 202405-0081-1-2#

**Receipt Date** : 2024-05-28

**Test Date** : 2024-05-28 to 2024-06-21

Issue Date : 2024-06-21

Standards: FCC Part 15, Subpart C 15.225

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

Conclusions : PASS

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

Test By

: Countle 4

Mike Yan

**Reviewed By** 

: WAN SU

Camille Li

**Approved By** 

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-202405-0081-42	Rev.01	Initial issue of report	2024-06-21
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## 1. General Information about EUT

#### 1.1 Client Information

Applicant		Hangzhou MMGB Trading Co., Ltd.
Address : Room 1030, Building 1, No. 10 Hangzhou City, Zhejiang Provin		Room 1030, Building 1, No. 10 Yue Shuai Bridge, Gongshu District, Hangzhou City, Zhejiang Province, China.
Manufacturer		Shenzhen Jianchao Intelligent Technology Co., Ltd.
Address		Rm301, Building No. 25, Baoxianghe Industrial Park, No. 68 Hexiu West Road, Zhancheng Community, Fuhai Sub-district, Bao'an District, Shenzhen, China

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

EUT Name	):	AIHAIR GROWTH SMART DEVICE WITH SCALP DETECTOR			
HVIN/Models No.		MT1			
Model Different	9				
9000		Operation Frequency:	NFC: 13.56MHz		
Product		Number of Channel:	1 channel		
Description		Antenna Gain:	0dBi Coil Antenna		
		Modulation Type:	ASK		
Power Rating	-	Input: DC 5V/1A	Input: DC 5V/1A		
Li-ion Polymer Battery	b	3.7V by 1600mAh Rechargeable Li-ion battery			
<b>Software Version</b>		V2.43			
Hardware Version	1	V1.5			

#### Remark:

- (1) The antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.
- (2) 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.

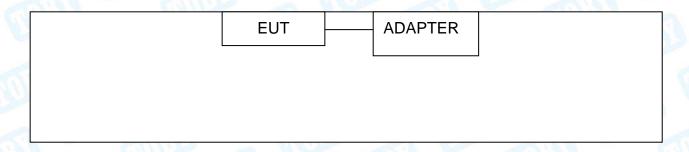




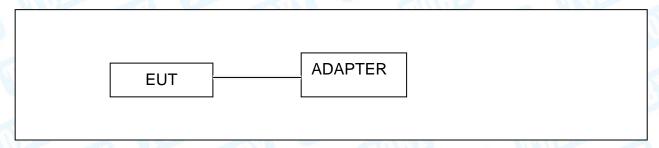
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## 1.3 Block Diagram Showing the Configuration of System Tested

#### **Conducted Test**



#### **Radiated Test**



## 1.4 Description of Support Units

Equipment Information       Name     Model     FCC ID/VOC     Manufacturer     Used "√"							
							(11)
Cable Information							
Number	Number Shielded Type Ferrite Core Length Note						
Cable 1			(41)05	Accessory			
	Remark:	The adapter is provided b	y the Lab.	U.S.			





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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 Conducted Test					
Final Test Mode Description					
Mode 1 USB Charging + NFC TX Mode					
	For Radiated Test				
Final Test Mode Description					
Mode 3	NFC TX Mode				

#### Note:

(1) 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.

According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

TX Mode: Transmitting mode.

- (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; in normal use it was positioned on X-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.





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#### 1.6 Description of Test 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 of RF setting.

Test Software Version	N/A
Frequency	13.56 MHz
NFC	DEF

#### 1.7 Measurement Uncertainty

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

Test Item	Parameters	Expanded Uncertainty (U <sub>Lab</sub> )	
Conducted Emission	Level Accuracy: ±3.50 dB 9kHz~150kHz		
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	





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#### 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(15.225)						
Standard Section FCC	Test Item Test Sample(s)		Judgment	Remark		
15.207(a)	Conducted Emission	202405-0081-1-1#	PASS	N/A		
15.209(a)&15.225	Radiated emissions	202405-0081-1-1#	PASS	N/A		
15.225(a)	Fundamental field strength limit	202405-0081-1-2#	PASS	N/A		
15.225(e)	Fundamental frequency tolerance	202405-0081-1-2#	PASS	N/A		
15.225	Band edge compliance	202405-0081-1-2#	PASS	N/A		
15.215(c)	Occupied bandwidth	202405-0081-1-2#	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
RF Conducted Measurement	MTS-8310	MWRFtest	V2.0.0.0
RF Test System	JS1120	Tonscend	V2.6.88.0336





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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 )	1		
TB-EMCSR002	Shielding Chamber #2	YIHENG	8.0*4.0*3.0 ( m )	V		
TB-EMCCA001	3m Anechoic Chamber #A	ETS	9.0*6.0*6.0 ( m )	×		
TB-EMCCB002	3m Anechoic Chamber #B	YIHENG	9.0*6.0*6.0 ( m )	1		

<b>Conducted Emiss</b>	sion 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
ISN	SCHWARZBECK	NTFM 8131	8131-193	Jun. 17, 2024	Jun. 16, 2025
ISN	SCHWARZBECK	CAT3 8158	cat3 5158-0094	Jun. 17, 2024	Jun. 16, 2025
ISN	SCHWARZBECK	NTFM5158	NTFM5158 0145	Jun. 17, 2024	Jun. 16, 2025
ISN	SCHWARZBECK	CAT 8158	cat5 8158-179	Jun. 17, 2024	Jun. 16, 2025
Radiation Emissi	on 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. 26, 2022	Jun.25, 2024
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 Conduct	ted 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





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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
Analog Signal Generator	KEYSIGHT	N5173B	MY61252685	Aug. 30, 2023	Aug. 29, 2024
TU	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Aug. 30, 2023	Aug. 29, 2024
	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
Wideband Radio Comunication Tester	Rohde & Schwarz	CMW500	144382	Aug. 30, 2023	Aug. 29, 2024
Universal Radio Communication Tester	Rohde&Schwarz	CMW500	168796	Feb. 23, 2024	Feb.22, 2025
Temperature and Humidity Chamber	ZhengHang	ZH-QTH-1500	ZH2107264	Jun. 14, 2024	Jun. 13, 2026





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## 5. Conducted Emission Test

#### 5.1 Test Standard and Limit

5.1.1Test Standard FCC Part 15.207

#### 5.1.2 Test Limit

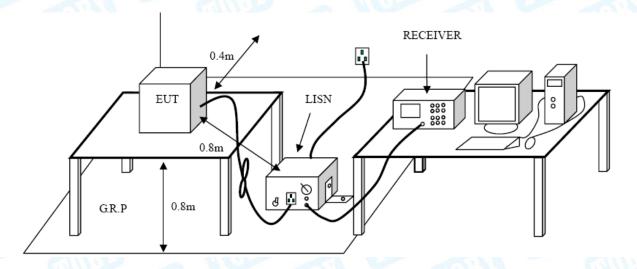
#### **Conducted Emission Test Limit**

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

The bandwidth of EMI test receiver is set at 9 kHz, 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. Radiated Emission Test

#### 6.1 Test Standard and Limit

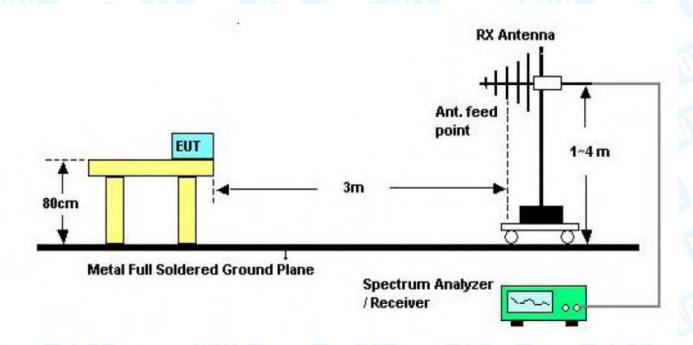
6.1.1 Test Standard FCC Part 15.209(a)&15.225

6.1.2 Test Limit

#### Radiated Emission Limits (30MHz~1000MHz)

Frequency Range (MHz)	E-field Strength Limit @ 3m (mV/m)	E-field Strength Limit @ 3m (dBµV/m)	E-field Strength Limit @ 10m (dBµV/m)
30-88	100	40	30
88-216	150	43.5	33.5
216-960	200	46	36
960-1000	500	54	44

#### 6.2 Test Setup



Below 1000MHz Test Setup





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#### 6.3 Test Procedure

(1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.

- (2) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (3) 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.
- (4) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (5) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (6) For the actual test configuration, please see the test setup photo.

#### 6.4 Deviation From Test Standard

No deviation

#### 6.5 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

#### 6.6 Test Data

Please refer to the Attachment B.





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# 7. Electric Field Strength of Fundamental and Outside the Allocated bands

#### 7.1 Test Standard and Limit

7.1.1 Test Standard FCC Part 15.225(a) FCC Part 15.225

7.1.2 Test Limit

#### **Electric Field Strength of Fundamental**

3	Frequency Range (MHz)	E-field Strength Limit @ 30m	E-field Strength Limit @ 3m	
4		(μ <b>V/m)</b>	(dBµV/m)	
	0.009-0.490	2400/F(kHz)	129-94	
	0.490-1.705	24000/F(kHz)	74-63	
	1.705-30	30	70	

Note: Where the limits have been defined at one distance, and a signal level measured at another, the limits have been extrapolated using the following formula:  $\text{Extrapolation}(\text{dB}) = 40\log_{10}(\text{Measurement Distance}/\text{Specification Distance})$ 

#### **Outside the Allocated bands**

F D (MII-)	E-field Strength Limit @ 30 m	E-field Strength Limit @ 3 m	
Frequency Range (MHz)	(μ <b>V/m</b> )	(dBµV/m)	
13.560 ± 0.007	+15,848	124	
13.410 to 13.553	+334	00	
13.567 to 13.710	+334	90	
13.110 to 13.410	+106	91	
13.710 to 14.010	+106	81	

Note: Where the limits have been defined at one distance, and a signal level measured at another, the limits have been extrapolated using the following formula:

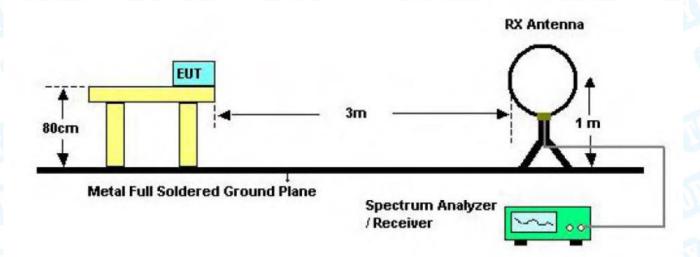
Extrapolation(dB) =  $40\log_{10}$  (Measurement Distance/Specification Distance)





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#### 7.2 Test Setup



#### 7.3 Test Procedure

The transmitter carrier output levels (E-Field) from the EUT are measured in a semi-anechoic chamber. The EUT is placed on a non-conductive stand of 80cm high, and at a measurement distance of 3m from the receiving antenna. The center of the receiving loop antenna is 1.0 meter above the ground. The E-field is measured with a shielded loop antenna connected to a measurement receiver. Detected E-field was maximized by rotating the EUT through 360° and adjusting the receiving antenna polarizations. The maximization processes were repeated with the EUT positioned respectively in its three orthogonal axes. The measurements were performed with the peak detector and if required, the quasi-peak detector.

#### 7.4 Deviation From Test Standard

No deviation

#### 7.5 EUT Operating Condition

The measurement of EUT is carried out under the transmit state of NFC.

#### 7.6 Test Data

Please refer to the Attachment C.





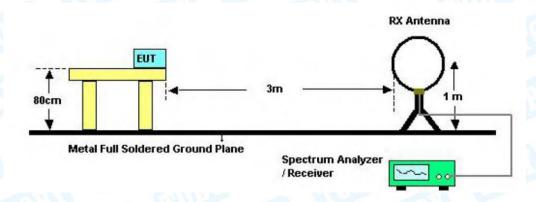
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## 8. Occupied Bandwidth Test

#### 8.1 Test Standard and Limit

8.1.1 Test Standard FCC Part 15.215 (c)

#### 8.2 Test Setup



#### 8.3 Test Procedure

The EUT is turned ON and connected to measurement instrument; the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

- 1. RBW used in the range of 1% to 5% of the anticipated emission bandwidth
- 2. Set the video bandwidth (VBW)  $\geq$  3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = Max Hold.
- 5. Sweep = Auto couple.
- 6. Allow the trace to stabilize.
- 7. OBW 99% function of spectrum analyzer used

#### 8.4 Deviation From Test Standard

No deviation

## 8.5 EUT Operating Condition

The measurement of EUT is carried out under the transmit state of NFC.

#### 8.6 Test Data

Please refer to the Attachment D.





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## 9. Fundamental Frequency Tolerance

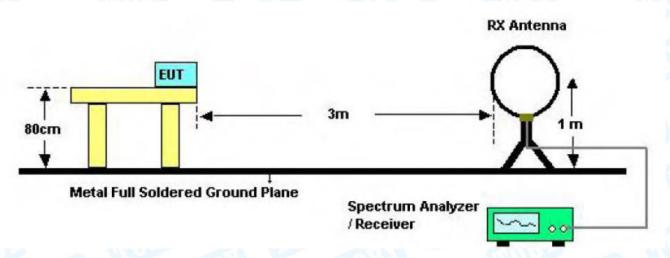
#### 9.1 Test Standard and Limit

9.1.1 Test Standard FCC Part 15.225 (e)

9.1.2 Test Limit

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency.

#### 9.2 Test Setup



#### 9.3 Test Procedure

The transmitter output signal was picked up by coil antenna connected to the frequency counter. The center frequency was measured with 30Hz RBW and 1kHz span. During the test, the EUT was placed in a thermal chamber until thermal balance and lasting appropriate time.

#### 9.4 Deviation From Test Standard

No deviation

#### 9.5 EUT Operating Condition

The EUT was set to continuously transmitting in the max power during the test.

#### 9.6 Test Data

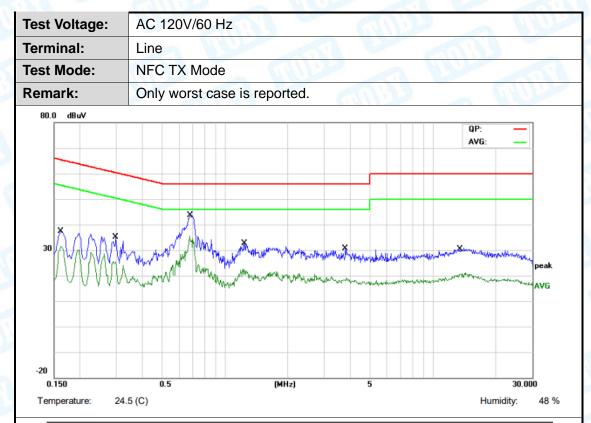
Please refer to the Attachment E.





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



No. M	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	0.1620	24.42	9.84	34.26	65.36	-31.10	QP
2	0.1620	21.12	9.84	30.96	55.36	-24.40	AVG
3	0.2979	19.93	9.79	29.72	60.30	-30.58	QP
4	0.2979	12.93	9.79	22.72	50.30	-27.58	AVG
5	0.6780	33.76	9.83	43.59	56.00	-12.41	QP
6 *	0.6780	25.77	9.83	35.60	46.00	-10.40	AVG
7	1.2419	18.95	10.01	28.96	56.00	-27.04	QP
8	1.2419	11.59	10.01	21.60	46.00	-24.40	AVG
9	3.7860	12.71	9.88	22.59	56.00	-33.41	QP
10	3.7860	7.29	9.88	17.17	46.00	-28.83	AVG
11	13.4618	15.20	10.04	25.24	60.00	-34.76	QP
12	13.4618	9.89	10.04	19.93	50.00	-30.07	AVG

#### Remark:

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





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Test Voltage:	AC 120V/60 Hz	MAGE					
Terminal:	Neutral	eutral					
Test Mode:	NFC TX Mode						
Remark:	Only worst case is re	ported.					
80.0 dBuV							
30 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Mary and Mar	He garden garden gerinde gerin	want for the first of the second of the seco	QP:			
0.150	0.5	(MHz)	5	30.000			
Temperature: 24.5 (0	C)			Humidity: 48 %			

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.2878	20.24	10.04	30.28	60.59	-30.31	QP
2		0.2878	13.42	10.04	23.46	50.59	-27.13	AVG
3		0.6898	33.33	10.15	43.48	56.00	-12.52	QP
4	*	0.6898	24.99	10.15	35.14	46.00	-10.86	AVG
5		1.1898	18.53	9.84	28.37	56.00	-27.63	QP
6		1.1898	11.40	9.84	21.24	46.00	-24.76	AVG
7		3.6539	12.14	9.94	22.08	56.00	-33.92	QP
8		3.6539	6.80	9.94	16.74	46.00	-29.26	AVG
9		6.8539	10.89	9.95	20.84	60.00	-39.16	QP
10		6.8539	6.27	9.95	16.22	50.00	-33.78	AVG
11		13.4337	15.31	9.83	25.14	60.00	-34.86	QP
12		13.4337	9.95	9.83	19.78	50.00	-30.22	AVG

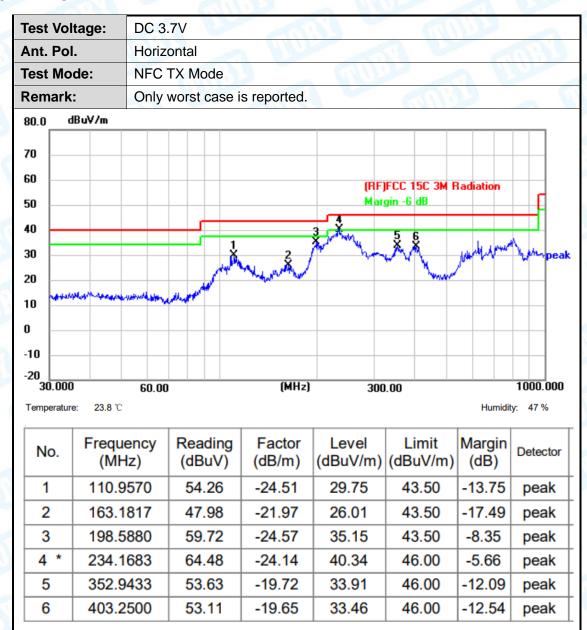
- Remark:
  1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
- 2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)



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#### Attachment B-- Radiated Emission Test Data

#### 30MHz~1GHz



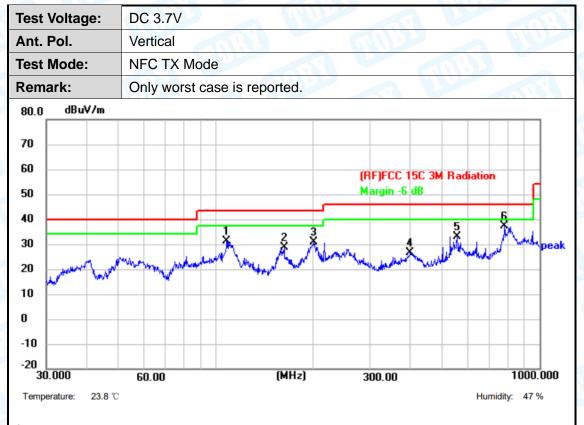
#### Remark

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = QuasiPeak (dB $\mu$ V/m)-Limit QPK(dB $\mu$ V/m)





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No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	108.2667	55.96	-24.55	31.41	43.50	-12.09	peak
2	162.6106	50.89	-21.98	28.91	43.50	-14.59	peak
3	200.6881	55.68	-24.63	31.05	43.50	-12.45	peak
4	399.0302	46.62	-19.91	26.71	46.00	-19.29	peak
5	556.7744	47.59	-14.40	33.19	46.00	-12.81	peak
6 *	779.6068	48.92	-11.61	37.31	46.00	-8.69	peak

#### Remark:

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB) 2. QuasiPeak (dB $\mu$ V/m)= Corr. (dB/m)+ Read Level (dB $\mu$ V)
- 3. Margin (dB) = QuasiPeak (dB $\mu$ V/m)-Limit QPK(dB $\mu$ V/m)





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# **Attachment C--Electric Field Strength of Fundamental and Outside the Allocated bands**

(1) Electric Field Strength of Fundamental

	HILL		A CONTRACTOR OF THE PARTY OF TH	111		50	
Temperatu	re: 24.6℃	WILL ST	Re	elative Humi	dity:	52%	
Test Voltag	ge: DC 3.7	<b>7</b> \					
Ant. Pol.	Ant. 0°		A December 1		No.		135
Test Mode	: NFC T	X Mode		MILL		I W	
Remark:	N/A					9	A MARCHANIA
140.0 dBuV/m							
130							
120				_			
110					(RF) FCC	`T5C 9KH≥-30L	4Hz
100					Margin -6	dB	
90							
70							
60	1 2 X						
50	Mary A	3	*				
40	Alex now	Market Just	an a land		5 6		
30		. 1111191919	LandruMhean Julyles	WWW. March march	wash lighting	harry a a	
20						MALNY	www.Apeak
0.0							
0.009			(MHz)				0.150
		Reading	Correct	Measure-			
No. Mk	. Freq.	Level	Factor	ment	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	0.0120	71.95	-11.19	60.76	126.4	-65.72	peak
2 *	0.0154	73.02	-11.17	61.85	124.3	-62.45	peak
3	0.0240	58.53	-11.14	47.39	120.4	-73.02	peak
4	0.0352	62.02	-11.09	50.93	117.0	-66.13	peak
5	0.0728	50.50	-11.24	39.26	110.7	-71.44	peak
6	0.0840	48.80	-11.25	37.55	109.4	-71.89	peak

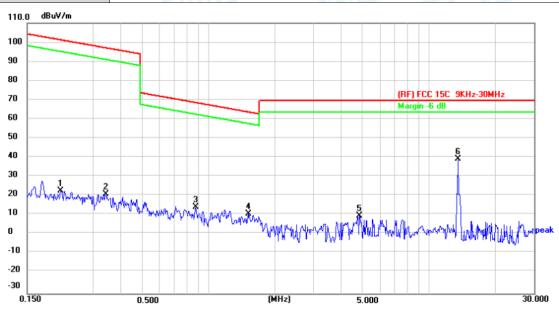
- Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
   QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = QuasiPeak (dB $\mu$ V/m)-Limit QPK(dB $\mu$ V/m)





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Temperature:	24.6℃	Relative Humidity:	52%
Test Voltage:	DC 3.7V		A HILL
Ant. Pol.	Ant. 0°		7:35
Test Mode:	NFC TX Mode		
Remark:	N/A		THUE



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		0.2127	34.32	-10.96	23.36	101.3	-77.95	peak
2		0.3410	32.70	-11.05	21.65	97.17	-75.52	peak
3		0.8709	25.98	-11.10	14.88	68.93	-54.05	peak
4		1.5113	22.48	-11.15	11.33	64.06	-52.73	peak
5		4.8224	21.68	-11.33	10.35	70.00	-59.65	peak
6	*	13.5509	52.10	-12.32	39.78	70.00	-30.22	peak

#### Remark:

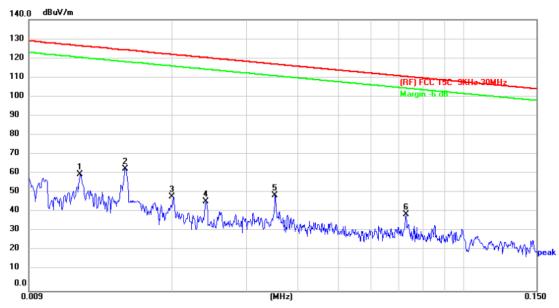
- Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
   QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = QuasiPeak (dB $\mu$ V/m)-Limit QPK(dB $\mu$ V/m)





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Temperature:	24.6℃	Relative Humidity:	52%
Test Voltage:	DC 3.7V		A HILL
Ant. Pol.	Ant. 90°		
Test Mode:	NFC TX Mode		
Remark:	N/A		JANO S



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		0.0120	71.45	-11.19	60.26	126.4	-66.22	peak
2	*	0.0154	74.52	-11.17	63.35	124.3	-60.95	peak
3		0.0200	59.88	-11.16	48.72	122.0	-73.29	peak
4		0.0240	57.43	-11.14	46.29	120.4	-74.12	peak
5		0.0352	60.52	-11.09	49.43	117.0	-67.63	peak
6		0.0728	51.00	-11.24	39.76	110.7	-70.94	peak

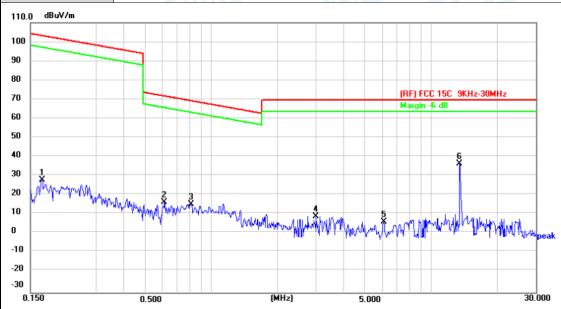
- Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
   QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = QuasiPeak (dB $\mu$ V/m)-Limit QPK(dB $\mu$ V/m)





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4	Temperature:	24.6℃	Relative Humidity:	52%
V	Test Voltage:	DC 3.7V		A A MILL
	Ant. Pol.	Ant. 90°		T:33
	Test Mode:	NFC TX Mode	The state of the	
2	Remark:	N/A		THU.



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	0.1693	39.58	-10.92	28.66	103.3	-74.65	peak
2	0.6108	28.11	-11.10	17.01	72.06	-55.05	peak
3	0.8086	26.96	-11.10	15.86	69.58	-53.72	peak
4	2.9935	21.08	-11.27	9.81	70.00	-60.19	peak
5	6.0884	18.24	-11.42	6.82	70.00	-63.18	peak
6 *	13.4792	49.27	-12.32	36.95	70.00	-33.05	peak

#### Remark:

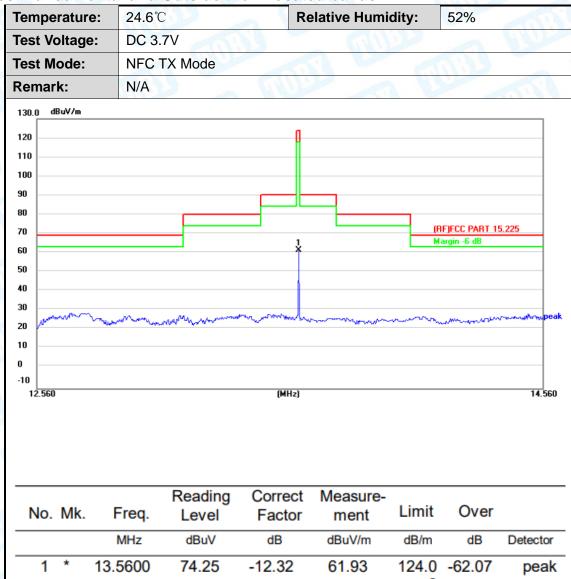
- Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
   QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = QuasiPeak (dB $\mu$ V/m)-Limit QPK(dB $\mu$ V/m)





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#### (2) Test Fundamental and Outside the Allocated bands



#### Remark:

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = QuasiPeak (dB $\mu$ V/m)-Limit QPK(dB $\mu$ V/m)





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## **Attachment D-- Bandwidth Test Data**

nperature:	<b>24.6</b> ℃	- F	Relative Humidity	<b>/</b> :	52%	
t Voltage:	DC 3.7V	W				
t Mode:	NFC TX Mo	de	MILLER		Allo	
Channel Fre	equency(MHz)		-20dB Bandwidth(l	KHz)	99% Band	dwidth(KHz
13	3.56		2.868		2.	636
			13.56 MHz	,		
Keysight Spectrum Analy	0 1100					
CXI R.L RF	50 Ω AC	SENSE:INT	ALIGN AUTO/NO RF Center Freq: 13.560000 MHz		05:50:39 AM Jun 03, 20 Radio Std: None	024 Mode
Center Freq 13.	.560000 MHZ		Trig: Free Run Avg Hold: 10	0/40	Radio Sta. Hone	
	#IEG		#Atten: 0 dB	3/10	Radio Device: BTS	
	#IFG	Gain:Low	#Atten: 0 dB	3110	Radio Device: BTS	Mode Setup
	#IFG		#Atten: 0 dB		Radio Device: BTS	Mode Setup Meas
15.0			#Atten: 0 dB		Radio Device: BTS	
15.0 0.00			#Atten: 0 dB		Radio Device: BTS	Meas  Marker →
15.0			#Atten: 0 dB		Radio Device: BTS	Meas
15.0 0.00 -15.0 30.0 45.0			#Atten: 0 dB		Radio Device: BTS	Meas  Marker →
15.0 0.00 -15.0 -30.0 -45.0 -80.0			#Atten: 0 dB		Radio Device: BTS	Marker →  Marker Function
15.0 0.00 -15.0 30.0 45.0			#Atten: 0 dB		Radio Device: BTS	Micas  Marker  Marker Function  Single  Cont
150 0.00 -150 -300 -450 -750			#Atten: 0 dB		Radio Device: BTS	Meas  Marker →  Marker Function  Single
Log 0.00 150 300 450 600 155 Center 13.56000	30.00 dBm		#Atten: 0 dB		Span 10.00 kl	Marker Marker Marker Marker Function Single Cont SPAN X Soile HZ Counts
Log 150 000 -150 -300 -450 -750 -800 -105	30.00 dBm		#Atten: 0 dB			Meise  Marker  Maker of  Function  Single  Cont  XFSAN  XFSAN  Couple  DS
Log 0.00 150 300 450 600 155 Center 13.56000	0 MHz		#VBW 3 kHz		Span 10.00 kl	Morker Marker Make Function Single Cont SPAN X Scale Auto Couple Source
Log 150 300 450 450 750 Center 13.56000 #Res BW 1 kHz	7 30.00 dBm	Gain:Low	#VBW 3 kHz		Span 10.00 kl	Meise  Marker  Maker of  Function  Single  Cont  XFSAN  XFSAN  Couple  DS
Log 150 300 450 450 750 Center 13.56000 #Res BW 1 kHz	30.00 dBm  0 MHz  Sandwidth  2.636 kHz	Total Po	#VBW 3 kHz		Span 10.00 kl	Morker Marker Make Function Single Cont SPAN X Scale Auto Couple Source
Log 0.00 300 45.0 45.0 75.0 900 105 Center 13.56000 #Res BW 1 kHz	30.00 dBm  0 MHz  Bandwidth 2.636 kHz q Error 576 Hz	Total Po	#VBW 3 kHz		Span 10.00 kl	Meise  Marker  Marker  Marker  Marker  Marker  Marker  Marker  Marker  Marker  Single  Cont  Single  Cont  Single  Cont  Single  Cont  Single  Single  Cont  Singl
Log 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	30.00 dBm  0 MHz  Bandwidth 2.636 kHz q Error 576 Hz	Total Po	#VBW 3 kHz  #VBW 3 kHz  Wer -6.94 dBm  W Power 99.00 %		Span 10.00 kl	Melas  Manker  Manker  Manker  Manker  Function  Single  Cont  SPAN  X Scale  Atto  Couple  Source  File
Log 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	30.00 dBm  0 MHz  Bandwidth 2.636 kHz q Error 576 Hz	Total Po	#VBW 3 kHz  #VBW 3 kHz  Wer -6.94 dBm  W Power 99.00 %		Span 10.00 kl	Meise  Marker  Marker  Marker  Marker  Marker  Marker  Marker  Marker  Marker  Single  Cont  Single  Cont  Single  Cont  Single  Cont  Single  Single  Cont  Singl





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## **Attachment E--Fundamental Frequency Tolerance**

Measured Frequency								
Temperature	Power Supply(V)	Frequency	Drift	Limit	Result			
(℃)	Power Supply(v)	(MHz)	%	%	Result			
50		13.5601901	0.00140188	0.01	PASS			
40		13.5601621	0.00119577	0.01	PASS			
30		13.5601699	0.00125321	0.01	PASS			
20		13.5601978	0.00145837	0.01	PASS			
10	DC 3.7V	13.5601134	0.00083612	0.01	PASS			
0		13.5601694	0.00124903	0.01	PASS			
-10		13.5601141	0.00084144	0.01	PASS			
-20		13.5601486	0.00109570	0.01	PASS			
	Frequency	Stability Vers	us Temperati	ıre				
Temperature		Measured	Frequency	Limit				
(℃)	Power Supply(V)	Frequency	Drift		Result			
(0)		(MHz)	%	%				
	DC 3.1	13.5601577	0.00116298	0.01	PASS			
20	DC 3.7	13.5601746	0.00128751	0.01	PASS			
	DC 4.2	13.5601509	0.00111308	0.01	PASS			

-- END OF REPORT--

