



 Project No.:
 TM-2207000170P

 Report No.:
 TMTN2207000956NR

FCC ID: XO8-FS917

Page: 1 / 40 Rev.: 00

# FCC 47 CFR PART 15 SUBPART C ANSI C63.10: 2013

# **TEST REPORT**

For

# Fall Sensor

Model: FS917

# Data Applies To: N/A

Brand:

Test Report Number: TMTN2207000956NR

Issued to:

### Instant Care, Inc.

2080 Wineridge PI.Suite A, Escondido, California, United States, 92029

Issued by:

**Compliance Certification Services Inc.** 

Tainan Lab.

No.8, Jiucengling, Xinhua Dist., Tainan City , Taiwan Issued Date: September 02, 2022

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Page: 2 / 40 Rev.: 00

# **REVISION HISTORY**

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	September 02, 2022	Initial Issue	ALL	Gina Lin



Page: 3 / 40 Rev.: 00

# TABLE OF CONTENTS

1.	TEST RESULT CERTIFICATION	. 4
2.	EUT DESCRIPTION	. 5
3 3 3 3	TEST METHODOLOGY3.1 EUT CONFIGURATION3.2 EUT EXERCISE3.3 GENERAL TEST PROCEDURES3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS3.5 DESCRIPTION OF TEST MODES	. 6 . 6 . 6 . 7
	INSTRUMENT CALIBRATION	
4	<ul> <li>.1 MEASURING INSTRUMENT CALIBRATION</li> <li>.2 MEASUREMENT EQUIPMENT USED</li> <li>.3 MEASUREMENT UNCERTAINTY</li> </ul>	. 8
	FACILITIES AND ACCREDITATIONS	
5 5	<ul> <li>5.1 FACILITIES</li> <li>5.2 EQUIPMENT</li> <li>5.3 LABORATORY ACCREDITATIONS LISTING</li> <li>5.4 TABLE OF ACCREDITATIONS AND LISTINGS</li> </ul>	10 10
6.	SETUP OF EQUIPMENT UNDER TEST	12
6 6	<ul> <li>SETUP CONFIGURATION OF EUT</li> <li>SUPPORT EQUIPMENT</li> <li>CONFIGURATION OF SYSTEM UNDER TEST</li> <li>EUT OPERATING CONDITION</li> </ul>	12 13
7.	FCC PART 15.249 REQUIREMENTS	14
7 7	<ul> <li>20 dB BANDWIDTH</li> <li>2 DUTY CYCLE</li> <li>3 SPURIOUS EMISSION</li> <li>4 POWERLINE CONDUCTED EMISSIONS</li> </ul>	17 20
AP	PENDIX I - PHOTOGRAPHS OF TEST SETUP	32
AP	PENDIX II PHOTOGRPHS OF EUT	36



Page: 4 / 40 Rev.: 00

Pass

N/A

Report No.: TMTN2207000956NR

# 1. TEST RESULT CERTIFICATION

Product: Fall Sensor

Model: FS917

Data Applies To: N/A

**Brand Name:** 

Instant Care

#### Applicant: Instant Care, Inc.

2080 Wineridge PI.Suite A, Escondido, California, United States, 92029

#### Manufacturer: Vision Automobile Electronics Industrial Co Ltd

No.78, Gongye 3rd Rd., Technology Industrial Park, Tainan , Taiwan , 70955

Tested: July 20, 2022

APPLICABLE STANDARDS				
STANDARD TEST RESULT				
FCC 47 CFR Part 15 Subpart C ANSI C63.10: 2013 No non-complianc			e noted	
		Statements	of Conformity	
•	•		the results of the compliance ement instrumentation uncerta	
FCC Standard Section	Report Section		Test Item	Result
15.215(c)	7.1	20dB BANDW	IDTH	Pass
-	7.3	DUTY CYCLE		-

#### We hereby certify that:

7.4

7.5

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements emission limits of FCC Rules Part 15.107, 15.109,15.207, 15.209 and 15.249.

POWERLINE CONDUCTED EMISSIONS

SPURIOUS EMISSION

The test results of this report relate only to the tested sample identified in this report.

Approved by:

15.249(a)

15.207(a)

John Chen Supervisor



Page: 5 / 40 Rev.: 00

## 2. EUT DESCRIPTION

Product	Fall Sensor
Model Number	FS917
Data Applies To	N/A
Brand Name	Instant Care
Received Date	July 12, 2022
Reported Date	August 01, 2022
Operation Frequency	917MHz±20kHz 919MHz±20kHz 921MHz±20kHz
Transmit Peak Power	91.20dBuV/m
Transmit Data Rate	4.8Kbps
Type of Modulation	2FSK
Number of Channels	3 Channels
Power Supply	DC 3V (Powered from battery)
Antenna Type	Type: PCB Antenna Model: FS917 Manufacturer: N/A Gain: -3.9 dBi
MCU CHIP Brand /Model	(U3) Microchip / PIC16LF1825
RF Module Brand /Model	(U1) TI / CC115L
Hardware Version	Rev.0
Software Version	Rev.0
Temperature Range	-20°C ~ +60°C

#### Remark:

1. Client consigns only one model sample to test (Model Number: **FS917**). Therefore, the testing Lab. just guarantees the unit, which has been tested.

- 2. This submittal(s) (test report) is intended for FCC ID: **X08-FS917** filing to comply with Section 15.207, 15.209, 15.249.
- 3. For more details, please refer to the User's manual of the EUT.



Page: 6 / 40 Rev.: 00

Report No.: TMTN2207000956NR

# 3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209 and 15.249.

# 3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

## 3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209, 15.249 under the FCC Rules Part 15 Subpart C.

## 3.3 GENERAL TEST PROCEDURES

#### **Conducted Emissions**

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2.2 of ANSI C63.10 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

#### **Radiated Emissions**

The EUT is placed on a turn table, which is 0.8 m and 1.5 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.5.4 and Section 6.6.4.2 of ANSI C63.10.



### 3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

1. Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 <b>-</b> 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 <b>-</b> 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 <b>-</b> 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 <b>-</b> 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 <b>-</b> 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 <b>-</b> 8.366	156.52475 <b>-</b>	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 <b>-</b> 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 <b>-</b> 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	(2)
13.36 - 13.41	322 - 335.4		

<sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup> Above 38.6

2. Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

### 3.5 DESCRIPTION OF TEST MODES

The EUT (**Model: FS917**) had been tested under engineering test mode condition and the EUT staying in continuous transmitting mode.

Note :

The field strength of spurious emission was measured in the following position:

1) The field strength of spurious emission was measured in the following position: EUT stand-up position (Y axis), lie-down position (X, Z axis). The worst emission was found in lie-down position (Z axis) and the worst case was recorded.



# 4. INSTRUMENT CALIBRATION

## 4.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

### 4.2 MEASUREMENT EQUIPMENT USED

Chamber Room #966							
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due		
Active Loop Antenna	ETS-LINDREN	6502	8905-2356	09/06/2021	09/05/2023		
Attenuator	MCL	BW-S15W5	0535	01/28/2022	01/27/2023		
Band Reject Filter	MICRO-TRONIC S	HPM13525	006	01/28/2022	01/27/2023		
Bilog Antenna With 6dB Attenator	SUNOL SCIENCES & EMCI	JB1 & N-6-06	A070506-1 & AT-N0681	10/07/2021	10/06/2022		
Cable	Suhner	SUCOFLEX1 04PEA	20520/4PEA&O 6	01/28/2022	01/27/2023		
EMI Test Receiver	R&S	ESCI 7	100856	06/21/2022	06/20/2023		
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY54430216	07/22/2021	01/21/2023		
Double Ridged Guide Horn Antenna	COM-POWER	AH-118	071032	05/16/2022	05/15/2023		
Pre-Amplifier	EMCI	EMC012645	980098	01/28/2022	01/27/2023		
Pre-Amplifier	HP	8447F	2443A01683	01/18/2022	01/17/2023		
Type N coaxial cable	Suhner	CHA9513	6	01/18/2022	01/17/2023		
Software	E	Excel(ccs-o6-2	2020 v1.1),e3	(v6.101222)			

#### Equipment Used for Emissions Measurement

**Remark:** Each piece of equipment is scheduled for calibration once a year.



Page: 9 / 40 Rev.: 00

### 4.3 MEASUREMENT UNCERTAINTY

Parameter	Uncertainty
Radiated Emission, 30 to 200 MHz Test Site : CB966	±3.1dB
Radiated Emission, 200 to 1000 MHz Test Site : CB966	±2.7dB
Radiated Emission, 1 to 6 GHz	± 2.7dB
Radiated Emission, 6 to 18 GHz	± 2.7dB
Radiated Emission, 18 to 26.5 GHz	± 2.7dB
Radiated Emission, 26 to 40 GHz	± 3.7dB
Power Line Conducted Emission	± 2.0dB

Uncertainty figures are valid to a confidence level of 95%, k=2



Page: 10 / 40 Rev.: 00

# 5. FACILITIES AND ACCREDITATIONS

## 5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

⊠ No.8, Jiucengling, Xinhua Dist., Tainan City 712, Taiwan (R.O.C.)

The sites are constructed in conformance with the requirements of ANSI C63.7:1992, ANSI C63.10: 2013 and CISPR Publication 22.

### 5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

### 5.3 LABORATORY ACCREDITATIONS LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by Taiwan Accreditation Foundation for the specific scope of accreditation under Lab Code: 1109 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements. No part of this report may be used to claim or imply product endorsement by TAF or any agency of the Government. In addition, the test facilities are listed with Federal Communications Commission (registration no: TW1109).



Page: 11 / 40 Rev.: 00

### 5.4 TABLE OF ACCREDITATIONS AND LISTINGS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

Taiwan TAF

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	Industry Canada
Germany	TUV NORD
Taiwan	BSMI
USA	FCC



## 6. SETUP OF EQUIPMENT UNDER TEST

### 6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix I for the actual connections between EUT and support equipment.

### 6.2 SUPPORT EQUIPMENT

[RF]	
------	--

	-						
No.	Product	Manufacturer	Model No.	Certify No.	Signal cable		
1	N/A	N/A	N/A	N/A	N/A		
No.	No. Signal cable description						
А	N/A	N/A					

#### [EMC]

No.	Product	Manufacturer	Model No.	Certify No.	Signal cable	
1	N/A	N/A	N/A	N/A	N/A	
No.	No. Signal cable description					
А	N/A	N/A				

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



Page: 13 / 40 Rev.: 00

# 6.3 CONFIGURATION OF SYSTEM UNDER TEST

### [RF]



## 6.4 EUT OPERATING CONDITION

#### **RF Setup**

- 1. Set up a whole system as the setup diagram.
- 2. Turn on power.



Page: 14 / 40 Rev.: 00

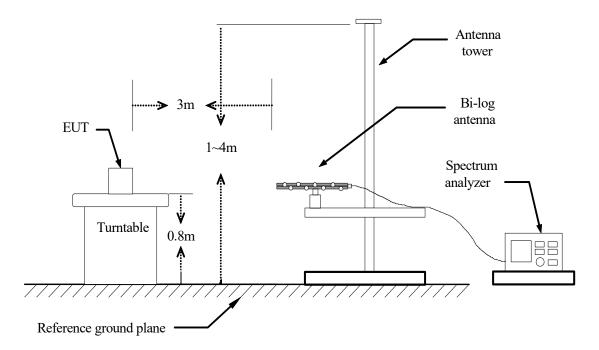
## 7. FCC PART 15.249 REQUIREMENTS

### 7.1 20 dB BANDWIDTH

#### LIMIT

None; for reporting purposes only.

### **TEST CONFIGURATION**



### TEST PROCEDURE

- 1. The EUT is placed on a turntable, which is 0.8m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Set the spectrum analyzer in the following setting as: RBW is set to 3 kHz and VBW is set 10kHz.



Page: 15 / 40 Rev.: 00

### **TEST RESULTS**

No non-compliance noted.

#### TEST DATA

<b>Operation Mode:</b>	ТХ	Test Date:	07/18/2022
Temperature:	29.4°C	Tested by:	Peter Chu
Humidity:	55% RH	Polarity:	Ver. / Hor.

Frequency (MHz)	20 dB Bandwidth (MHz)
917	0.01
921	0.01



#### TEST PLOT

		917	′MHz		
📕 Keysight Spectrum Analyzer - Swep	t SA				
RF 50 Ω Center Freq 917.0000		SENSE:INT	ALIGN AUT Avg Type: Log-Pw Avg Hold:>10/10		
	PNO: Close 🖵 IFGain:Low	#Atten: 10 dB	Avg Hold.>10/10	DET P P A N N N	4
10 dB/div Ref 86.99 dl	BuV		Mki	<sup>-1</sup> 917.008 0 MHz 64.863 dBµV	Auto Tune
77.0	•				
67.0					Center Fred 917.000000 MHz
57.0		f			
47.0		×3		44.69 dBµV	Start Fred
27.0		. AN	A A		916.950000 MH;
37.0 27.0 17.0 6.99 <mark>辺(羽浜小いかんかか)にいっかい</mark> 3.01	when when and prover the	Marthan a	1 4 Japan	haller and have a franching a	Stop Free
-3.01					917.050000 MH
Center 917.00000 MHz #Res BW 300 Hz		1.0 kHz	Swee	Span 100.0 kHz p 1.054 s (1001 pts)	2.402000000 GH
MKR MODE TRC SCL	Х	Y	FUNCTION FUNCTION WID	TH FUNCTION VALUE	Auto <u>Mar</u>
1 N 1 f 2 Δ3 1 f (Δ)	917.008 0 MHz 10.1 kHz (Δ)	64.863 dBµV -0.737 dB			E 0/
3 F 1 f	917.002 9 MHz	43.662 dBµV			Freq Offset
5				E	
7 8					
9					
11				•	
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ISG			STA	TUS	

	921MHz																					
<b>〕</b> (Key 【XI	/sight !		m Anah RF	/zer - Sw 50 Ω							SENSE	INT			ALIGN AUTO	11	-15-50	PM Jul 11	2 2022			
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Mkr1 921.007 8 MHz 10 dΒ/div Ref 86.99 dΒμV 66.161 dΒμV										AL	ito Tun											
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77.0 67.0												<b>1</b>										Nter Free 0000 MH
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-3.01							_											_			921.05	0000 MH
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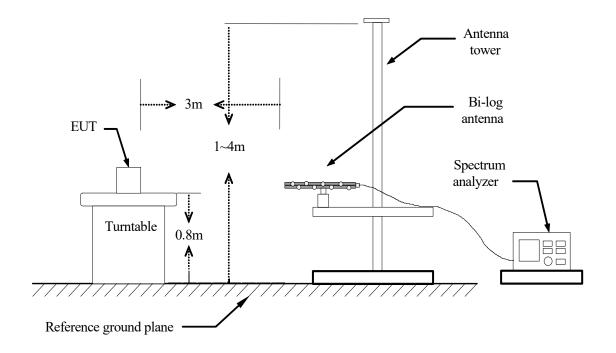
#### Page: 17 / 40 Rev.: 00

# 7.2 DUTY CYCLE

### <u>LIMIT</u>

Nil (No dedicated limit specified in the Rules)

### **TEST CONFIGURATION**



### **TEST PROCEDURE**

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Set center frequency of spectrum analyzer = operating frequency.
- 3. Set the spectrum analyzer as RBW=1MHz, VBW=3MHz, Span = 0Hz, a suitable Sweep Time.
- 4. Repeat above procedures until all frequency measured were complete.

### **TEST RESULTS**

No non-compliance noted.



Page: 18 / 40 Rev.: 00

#### TEST DATA

<b>Operation Mode:</b>	ТΧ
Temperature:	29.4°C
Humidity:	55% RH

Test Date: 07/18/2022 Tested by: Peter Chu Polarity: Ver. / Hor.

#### 908 MHz

	us	Times	Ton	Total Ton time(ms)
Ton1	38800.000	1	38800.000	38.800
Ton2		0	0.000	
Ton3		0	0.000	
Тр				100.000

Ton	38.800
Tp(Ton+Toff)	100.000
Duty Cycle	0.388
Duty Factor	-8.223



Page: 19 / 40 Rev.: 00

#### TEST PLOT

	917	'MHz		
🗾 Keysight Spectrum Analyzer - Swept SA				
Center Freq 917.000000 MH	Trig Delay-5.000 ms	ALIGN AUTO Avg Type: Log-Pwr	09:46:17 PM Jul 18, 2022 TRACE 1 2 3 4 5 6	Frequency
- P	NO: Fast +++ Trig: Video Gain:Low #Atten: 10 dB		TYPE WWHWWW DET P P A N N N	
		Δ	Mkr1 38.80 ms	Auto Tune
10 dB/div Ref 106.99 dBµV			43.84 dB	
				Center Free
97.0				917.000000 MH
87.0				Start Free
77.0	▲1∆2			917.000000 MH
11.0				
67.0				Stop Free
				917.000000 MH
57.0			TRIG LVL	
47.0				CF Ste
47.0				2.402000000 GH Auto Ma
37.0				
*****×2	happy white the second and the second	White the transfer of the transfer of the transfer	ง <sub>สถ</sub> ุษณ <sub>์</sub> นุนทางสีแจงกลมเมษณ์ท <sub>ี่ไหน</sub>	Freq Offse
27.0				0 H
17.0				
17.0				
			Snan Cili-	
Center 917.000000 MHz Res BW 1.0 MHz	#VBW 3.0 MHz	Sweep 1	Span 0 Hz (1001 pts)	
MSG		STATUS		<u>I</u> L

		nalyzer - Swept SA								
ent Cent	ter Freq 9		NO: Fast 🔸	Trig Dela Trig: Vide			ALIGN AUTO : Log-Pwr	TRA	M Jul 18, 2022 CE 1 2 3 4 5 6 PE WWMWWW ET P P A N N N	Frequency
0 dE	3/div Ref	⊪ 106.99 dBμV	Gain:Low	#Atten: 1	0 dB		Δ	Mkr1 3	8.80 ms 0.35 dB	Auto Tur
.og 97.0										Center Fre 921.000000 Mi
87.0 77.0				1∆2 -						Start Fre 921.000000 Mi
67.0 57.0										<b>Stop Fr</b> 921.000000 M
47.0									TRIG LVL	CF Ste 2.40200000 G Auto <u>M</u>
37.0 27.0	Mall 2			k-hteriykyn	uby-ykanaflapush	nshadada ya ku	defrifakilenden	aphinneddaeth	Lalente alle la	Freq Offs
17.0										
	er 921.000 BW 1.0 MH			3.0 MHz					Span 0 Hz (1001 pts)	



## 7.3 SPURIOUS EMISSION

# <u>LIMIT</u>

1. In the section 15.249(a):

Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental Field Strength (mV/m)	Field Strength of Harmonics (µV/m)
902-928 MHz	50	500
2400 - 2483.5 MHz	50	500
5725 - 5875 MHz	50	500
24.0 - 24.25 GHz	250	2500

2. Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (µV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

**Remark:** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

3. In the above emission table, the tighter limit applies at the band edges.

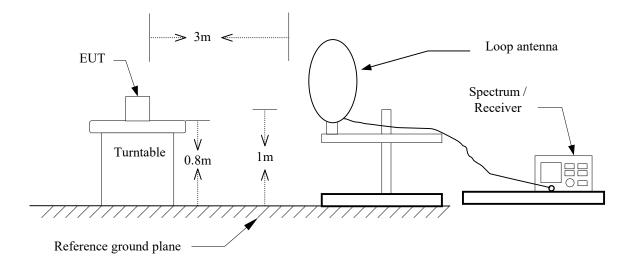
Frequency (MHz)	Field Strength (µV/m at 3-meter)	Field Strength (dBµV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54



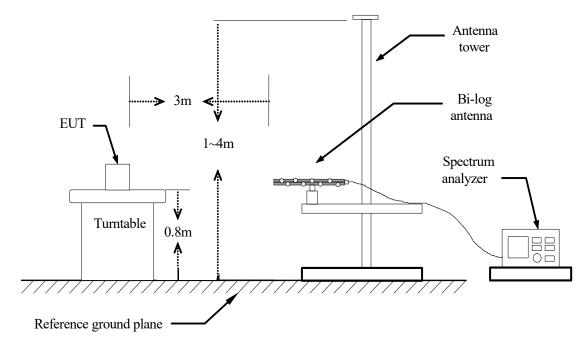
Page: 21 / 40 Rev.: 00

### **TEST CONFIGURATION**

9kHz ~ 30MHz



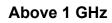
#### $30MHz \sim 1GHz$

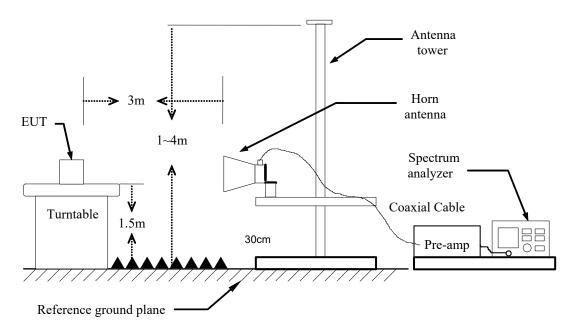




Page: 22 / 40 Rev.: 00

Report No.: TMTN2207000956NR





## TEST PROCEDURE

- 1. The EUT is placed on a turntable, which is 0.8/1.5m above ground plane.
- 2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Set the spectrum analyzer in the following setting as: Below 1GHz:

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz:

- (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
- (b) AVERAGE: Peak Level + Duty Factor
- 7. Repeat above procedures until the measurements for all frequencies are complete.



Page: 23 / 40 Rev.: 00

Test Date: 07/19/2022

Tested by: Peter Chu

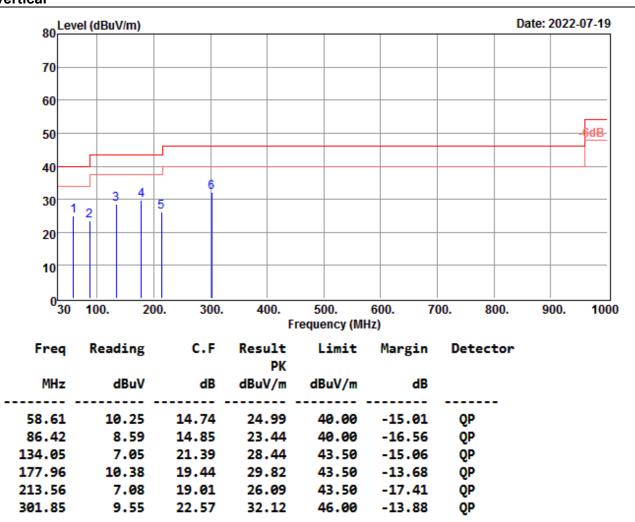
Ver. / Hor.

Polarity:

<b>Operation Mode:</b> TX

Humidity: 57% RH

Vertical



Remark:

1. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.

3. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.

- 4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 5. Margin (dB) = Remark result (dBuV/m) Quasi-peak limit (dBuV/m).
- 6. That the limit for signals below 1GHz is a QP limit and peak readings are below the QP limit.

7. The fundamental signal is not shown in the test data because measurements at fundamental frequency are shown separately and were ignored during the 30 – 1000 MHz scan.



Operation Mode:	ТΧ
Temperature:	29.4°C

Humidity: 57% RH

Horizontal

Test Date: 07/19/2022 Tested by: Peter Chu Polarity: Ver. / Hor.

Page: 24 / 40

00

Rev.:

80 Lev	el (dBuV/m)					D	ate: 2022-07-19
70							
60							
50							-6dB
40		+					
30	3 4	4 <u>5</u>					
20	2						
10							
0 <mark></mark> 30	100. 2	00. 300.		500. requency (MI		00. 800.	900. 1000
Freq	Reading	C.F	Result PK	Limit	Margin	Detector	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
48.30	5.06	15.81	20.87	40.00	-19.13	QP	
76.27	6.08	15.48	21.56	40.00	-18.44	QP	
132.58 194.08	8.70 10.32	21.45 20.40	30.15 30.72	43.50	-13.35 -12.78	QP	
233.28	9.05	19.90	28.95	45.50	-12.78	QP QP	
						<b>V</b> .	

Remark:

1. No emission found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz).

2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.

3. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.

4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

5. Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).

6. That the limit for signals below 1GHz is a QP limit and peak readings are below the QP limit.

7. The fundamental signal is not shown in the test data because measurements at fundamental frequency are shown separately and were ignored during the 30 – 1000 MHz scan.



Page: 25 / 40 Rev.: 00

#### The fundamental signal

<b>Operation Mode:</b>	917MHz	Test Date: 07/18/2022
Temperature:	29.4°C	Tested by: Peter Chu
Humidity:	55% RH	Polarity: Ver. / Hor.

Horizontal

Freq.	Reading	AF	Cable Loss	Pre-amp	Filter	Level	Limit	Margin	Mark
(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	(P/Q/A)
917.000	79.299	28.753	6.803	24.409	0.000	90.446	114.000	-23.554	Р
917.000	78.716	28.753	6.803	24.409	0.000	89.863	94.000	-4.137	Q

Vertical

Freq.	Reading	AF	Cable Loss	Pre-amp	Filter	Level	Limit	Margin	Mark
(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	(P/Q/A)
917.000	76.661	28.753	6.803	24.409	0.000	87.808	114.000	-26.192	Р
917.000	75.948	28.753	6.803	24.409	0.000	87.095	94.000	-6.905	Q

#### Remark:

Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).



Page: 26 / 40 Rev.: 00

Report No.: TMTN2207000956NR

<b>Operation Mode:</b>	921MHz
Temperature:	29.4°C
Humidity:	55% RH

Test Date:07/18/2022Tested by:Peter ChuPolarity:Ver. / Hor.

#### Horizontal

Freq.	Reading	AF	Cable Loss	Pre-amp	Filter	Level	Limit	Margin	Mark
(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	(P/Q/A)
921.00	80.01	28.79	6.82	24.42	0.00	91.20	114.00	-22.80	Р
921.00	79.47	28.79	6.82	24.42	0.00	90.65	94.00	-3.35	Q

#### Vertical

Freq.	Reading	AF	Cable Loss	Pre-amp	Filter	Level	Limit	Margin	Mark
(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	(P/Q/A)
921.00	77.46	28.79	6.82	24.42	0.00	88.65	114.00	-25.35	Р
921.00	76.59	28.79	6.82	24.42	0.00	87.78	94.00	-6.22	Q

#### Remark:

Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).



Page: 27 / 40 Rev.: 00

Report No.: TMTN2207000956NR

#### Above 1 GHz

Operation Mode:	917MHz
Temperature:	29.4°C
Humidity:	55% RH

### Test Date: 07/18/2022 Tested by: Peter Chu Polarity: Ver. / Hor.

#### Horizontal

	Freq.	Reading	AF	Cable Loss	Pre-amp	Filter	Level	Limit	Margin	Mark
	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	(P/Q/A)
	1834.35	69.88	29.21	3.50	44.28	0.41	58.71	74.00	-15.29	Р
	1834.35	59.56	29.21	3.50	44.28	0.41	48.39	54.00	-5.61	А
*	3667.48	56.88	30.67	4.67	42.89	0.33	49.66	74.00	-24.34	Р
*	3667.48	47.02	30.67	4.67	42.89	0.33	39.80	54.00	-14.20	А
	5502.06	59.11	34.10	5.87	42.67	0.26	56.67	74.00	-17.33	Р
	5502.06	53.31	34.10	5.87	42.67	0.26	50.87	54.00	-3.13	А
*	7335.92	55.61	39.18	6.59	42.27	0.49	59.60	74.00	-14.40	Р
*	7335.92	46.46	39.18	6.59	42.27	0.49	50.45	54.00	-3.55	А
*	9170.19	54.17	38.50	6.97	40.12	0.68	60.20	74.00	-13.80	Р
*	9170.19	46.41	38.50	6.97	40.12	0.68	52.44	54.00	-1.56	А
	1834.35	69.88	29.21	3.50	44.28	0.41	58.71	74.00	-15.29	Р
	1834.35	59.56	29.21	3.50	44.28	0.41	48.39	54.00	-5.61	А

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m). Peak detector mode and average detector mode of the emission shown in Result column.
- 7. Average level=Peak level + Duty factor.
- 8. \*=Restricted bands of operation



Page: 28 / 40 Rev.: 00

Report No.: TMTN2207000956NR

<b>Operation Mode:</b>	917MHz
Temperature:	29.4°C
Humidity:	55% RH

Test Date: 07/18/2022 Tested by: Peter Chu Polarity: Ver. / Hor.

#### Vertical

	Freq.	Reading	AF	Cable Loss	Pre-amp	Filter	Level	Limit	Margin	Mark
	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	(P/Q/A)
	1834.54	71.45	29.21	3.50	44.28	0.41	60.28	74.00	-13.72	Р
	1834.54	61.33	29.21	3.50	44.28	0.41	50.16	54.00	-3.84	А
*	2751.13	58.39	30.15	4.12	43.49	0.25	49.42	74.00	-24.58	Р
*	2751.13	50.95	30.15	4.12	43.49	0.25	41.98	54.00	-12.02	А
*	3668.09	57.32	30.67	4.67	42.89	0.33	50.10	74.00	-23.90	Р
*	3668.09	49.39	30.67	4.67	42.89	0.33	42.17	54.00	-11.83	А
	5502.06	59.42	34.10	5.87	42.67	0.26	56.98	74.00	-17.02	Р
	5502.06	53.46	34.10	5.87	42.67	0.26	51.02	54.00	-2.98	А
*	7335.98	55.51	39.18	6.59	42.27	0.49	59.50	74.00	-14.50	Р
*	7335.98	45.82	39.18	6.59	42.27	0.49	49.81	54.00	-4.19	А
*	9170.07	53.91	38.50	6.97	40.12	0.68	59.94	74.00	-14.06	Р
*	9170.07	43.99	38.50	6.97	40.12	0.68	50.02	54.00	-3.98	А

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m). Peak detector mode and average detector mode of the emission shown in Result column.
- 7. Average level=Peak level + Duty factor.
- 8. \*=Restricted bands of operation



Page: 29 / 40 Rev.: 00

<b>Operation Mode:</b>	921MHz	Test Date: 07/18/2022
Temperature:	29.4°C	Tested by: Peter Chu
Humidity:	55% RH	Polarity: Ver. / Hor.

#### Horizontal

	Freq.	Reading	AF	Cable Loss	Pre-amp	Filter	Level	Limit	Margin	Mark
	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	(P/Q/A)
	1842.02	68.72	29.27	3.51	44.27	0.41	57.63	74.00	-16.37	Р
	1842.02	58.32	29.27	3.51	44.27	0.41	47.23	54.00	-6.77	А
*	3683.86	57.26	30.68	4.68	42.88	0.32	50.08	74.00	-23.92	Р
*	3683.86	47.12	30.68	4.68	42.88	0.32	39.94	54.00	-14.06	А
	5526.02	59.23	34.12	5.87	42.67	0.26	56.81	74.00	-17.19	Р
	5526.02	53.06	34.12	5.87	42.67	0.26	50.64	54.00	-3.36	А
*	7367.86	55.79	39.32	6.60	42.22	0.50	59.99	74.00	-14.01	Р
*	7367.86	46.70	39.32	6.60	42.22	0.50	50.90	54.00	-3.10	А
	9210.17	54.28	38.53	6.99	40.13	0.68	60.35	74.00	-13.65	Р
	9210.17	45.52	38.53	6.99	40.13	0.68	51.59	54.00	-2.41	А
	1842.02	68.72	29.27	3.51	44.27	0.41	57.63	74.00	-16.37	Р
	1842.02	58.32	29.27	3.51	44.27	0.41	47.23	54.00	-6.77	А

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m). Peak detector mode and average detector mode of the emission shown in Result column.
- 7. Average level=Peak level + Duty factor.
- 8. \*=Restricted bands of operation



Operation Mode:	921MHz
Temperature:	29.4°C
Humidity:	55% RH

Page: 30 / 40 Rev.: 00

Test Date:	07/18/2022
Tested by:	Peter Chu
Polarity:	Ver. / Hor.

#### Vertical

	Freq.	Reading	AF	Cable Loss	Pre-amp	Filter	Level	Limit	Margin	Mark
	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	(P/Q/A)
	1841.93	69.75	29.27	3.51	44.27	0.41	58.66	74.00	-15.34	Р
	1841.93	58.77	29.27	3.51	44.27	0.41	47.68	54.00	-6.32	А
*	2762.75	58.07	30.15	4.13	43.48	0.25	49.12	74.00	-24.88	Р
*	2762.75	50.06	30.15	4.13	43.48	0.25	41.11	54.00	-12.89	А
*	3663.95	56.97	30.66	4.67	42.89	0.33	49.74	74.00	-24.26	Р
*	3663.95	48.18	30.66	4.67	42.89	0.33	40.95	54.00	-13.05	А
	5526.03	60.96	34.12	5.87	42.67	0.26	58.54	74.00	-15.46	Р
	5526.03	55.00	34.12	5.87	42.67	0.26	52.58	54.00	-1.42	А
*	7367.80	55.62	39.32	6.60	42.22	0.50	59.82	74.00	-14.18	Р
*	7367.80	46.21	39.32	6.60	42.22	0.50	50.41	54.00	-3.59	А
	9209.85	53.49	38.53	6.99	40.13	0.68	59.56	74.00	-14.44	Р
	9209.85	43.53	38.53	6.99	40.13	0.68	49.60	54.00	-4.40	А

- 1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- 2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
- 6. Margin (dB) = Remark result (dBuV/m) Average limit (dBuV/m). Peak detector mode and average detector mode of the emission shown in Result column.
- 7. Average level=Peak level + Duty factor.
- 8. \*=Restricted bands of operation



# 7.4 POWERLINE CONDUCTED EMISSIONS

## <u>LIMIT</u>

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50  $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range	Limits (dBµV)				
(MHz)	Quasi-peak	Average			
0.15 to 0.50	66 to 56	56 to 46			
0.50 to 5	56	46			
5 to 30	60	50			

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

### MEASUREMENT EQUIPMENT USED

Conducted Emission room #1									
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due				
-	-	-	-	-	-				
-	-	-	-	-	-				
-	-	-	-	-	-				
-	-	-	-	-	-				
-	-	-	-	-	-				
Test S/W			-		1				

**Remark:** Each piece of equipment is scheduled for calibration once a year.

### TEST RESULTS

#### ※ This EUT is not connected to AC Source directly. No applicability for this test.

===End of Test Report===