

TEST REPORT

Application No.: SHEM2012010787CR
FCC ID: 2AYKB-IRD301
Applicant: Amsino International, Inc.
Address of Applicant: 708 Corporate Center Drive Pomona CA 91768 USA
Manufacturer: Amsino Medical (Shanghai) Co., Ltd.
Address of Manufacturer: Building #1-3, 16, Lane 355 Huazhe Rd., Songjiang Export Processing Zone, Shanghai China 201613
Factory: Amsino Medical (Shanghai) Co., Ltd.
Address of Factory: Building #1-3, 16, Lane 355 Huazhe Rd., Songjiang Export Processing Zone, Shanghai China 201613

Equipment Under Test (EUT):

EUT Name: Digital Surgical Suction System-Docking Station
Trade Name: iReceptal
Model No.: iRD301
Standard(s) : 47 CFR Part 18
 RSS-Gen Issue 5, March 2019 Amendment 1

Date of Receipt: 2020-12-28
Date of Test: 2021-08-02 to 2021-08-03
Date of Issue: 2021-08-06

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Parlam Zhan

Parlam Zhan
Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



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Testing Center EMC Laboratory

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Revision Record			
Version	Description	Date	Remark
00	Original	2021-08-06	/

Authorized for issue by:				
		Bill Wu		
		Bill Wu / Project Engineer		
		Parlam Zhan		
		Parlam Zhan / Reviewer		



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2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 18	FCC OST/MP-5:1986	Class B	Pass
Radiated Emissions (30MHz-1GHz)	47 CFR Part 18	FCC OST/MP-5:1986	Class B	Pass
Radiated Emissions (Magnetic field Strength) (9kHz-30MHz)	47 CFR Part 18	FCC OST/MP-5:1986	Class B	Pass

InternalSource	UpperFrequency
Below 1.705MHz	30MHz
1.705MHz to 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5th harmonic of the highest frequency or 40GHz, whichever is lower



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4 General Information

4.1 Details of E.U.T.

Power supply:	AC100V-240V ~ 50/60Hz
Test voltage:	AC 120V/60Hz
Operation frequency:	125 kHz
Wireless Output Power:	120W(Max)
Antenna type:	Inductive Loop Coil Antenna
Modulation Type	Load Modulation

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
iReceptal Digital Surgical Suction System-Rover	Amsino	iRR301	/

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conducted Emission at mains port using AMN	2.6dB (9kHz to 150kHz)
		2.4dB (150kHz to 30MHz)
2	Conducted Emission at mains port using VP	1.8 dB (9kHz to 30MHz)
3	Conducted Emission at telecommunication port using AAN	4.2 dB (150kHz to 30MHz)
4	Radiated Power	3.2dB
5	Radiated Emission	4.5dB (30MHz-1GHz)
		5.1dB (1GHz-6GHz)
		5.4dB (6GHz-18GHz)
6	Radiated Disturbance (disturbance current in a LLAS)	2.4dB (9kHz to 30MHz)

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



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4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 6332.01)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA).

- **FCC (Designation Number: CN1301)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

- **ISED (CAB Identifier: CN0020)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 8617A

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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5 Equipment List

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESR7	SHEM162-1	2020-12-20	2021-12-19
Line impedance stabilization network	SCHWARZBECK	NSLK8127	SHEM061-1	2020-12-20	2021-12-19
Line impedance stabilization network	EMCO	3816/2	SHEM019-1	2020-12-20	2021-12-19
Pulse limiter	Rohde & Schwarz	ESH3-Z2	SHEM029-1	2020-12-20	2021-12-19
Shielding Room	ZHONGYU	8*4*3M	SHEM079-2	2020-12-20	2023-12-19
CE test Cable	/	/	CE01	2020-12-20	2021-12-19

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2020-12-20	2021-12-19
CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM048-1	2019-10-14	2021-10-13
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2020-05-25	2023-05-24
Pre-Amplifier	HP	8447D	SHEM236-1	2021-05-27	2022-05-26

Radiated Emissions (Magnetic field Strength) (9kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2020-12-20	2021-12-19
CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
Loop antenna	Schwarzbeck - Mess-Elektronik	FMZB1519	SHEM135-1	2020-12-20	2021-12-19
Pre-Amplifier	HP	8447D	SHEM236-1	2021-05-27	2022-05-26

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Digital pressure meter	YONGZHI	DYM3-01	SHEM082-1	2021-01-22	2024-01-21
Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	SHEM042-1~6	2020-09-11	2021-09-10
Digital Multimeter	FLUKE	17B	SHEM043-3	2020-09-09	2021-09-08
Autoformer regulator	Guangzhou bao de	TDGC2-5KVA	SHEM150-1	N/A	N/A
Multi-purpose tong tester	FLUKE	316	SHEM001-1	2020-12-20	2021-12-19



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6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement:	47 CFR Part 18
Test Method:	FCC OST/MP-5:1986
Frequency Range:	150kHz to 30MHz
Limit:	
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

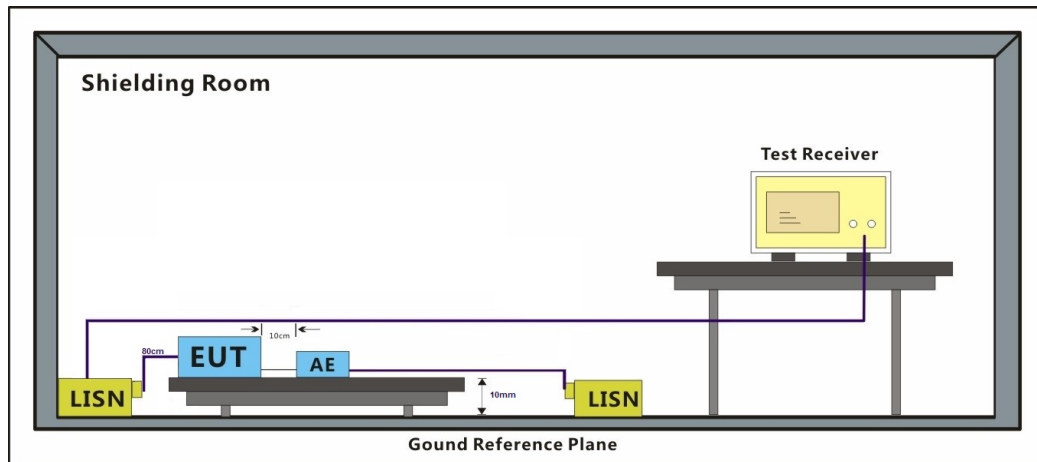
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar

Test mode a: Wireless discharging mode_Keep the EUT discharging continuously, All power rate(120W;60W;0W) have been tested and found the worst case mode, Only the data of worst case power rate 120W is recorded in the report.

6.1.2 Test Setup Diagram



6.1.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.



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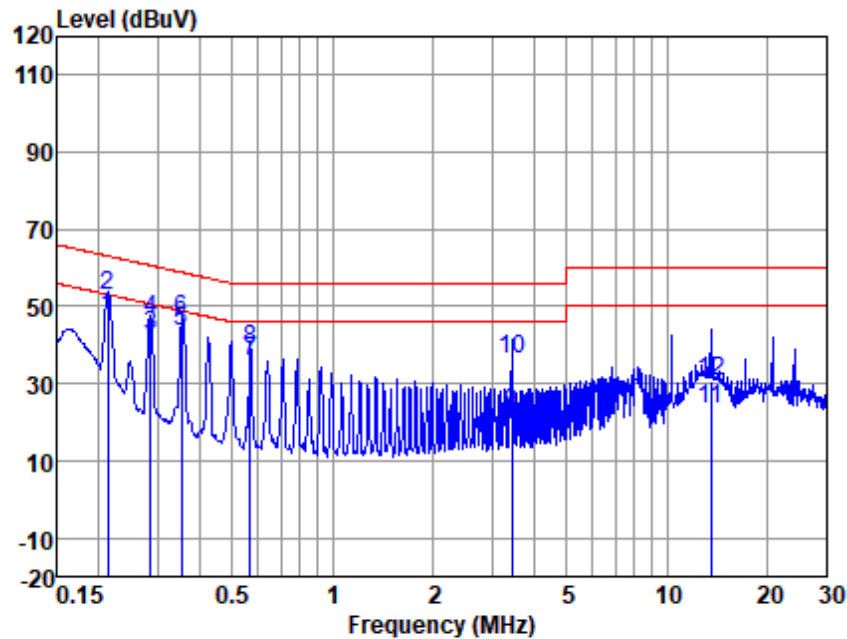
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Mode:a; Line:Live Line



LISN : LINE
 EUT/Project No : 0787CR
 Test Mode :

	Freq (MHz)	Read level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.21	37.02	0.20	9.93	47.15	53.10	-5.95	Average
2	0.21	42.53	0.20	9.93	52.66	63.10	-10.44	QP
3	0.28	32.26	0.20	9.94	42.40	50.68	-8.28	Average
4	0.28	36.52	0.20	9.94	46.66	60.68	-14.02	QP
5	0.35	33.46	0.20	9.93	43.59	48.87	-5.28	Average
6	0.35	36.64	0.20	9.93	46.77	58.87	-12.10	QP
7	0.57	25.73	0.20	9.92	35.85	46.00	-10.15	Average
8	0.57	28.56	0.20	9.92	38.68	56.00	-17.32	QP
9	3.44	12.00	0.20	9.99	22.19	46.00	-23.81	Average
10	3.44	26.32	0.20	9.99	36.51	56.00	-19.49	QP
11	13.55	12.87	0.45	10.12	23.44	50.00	-26.56	Average
12	13.55	20.17	0.45	10.12	30.74	60.00	-29.26	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



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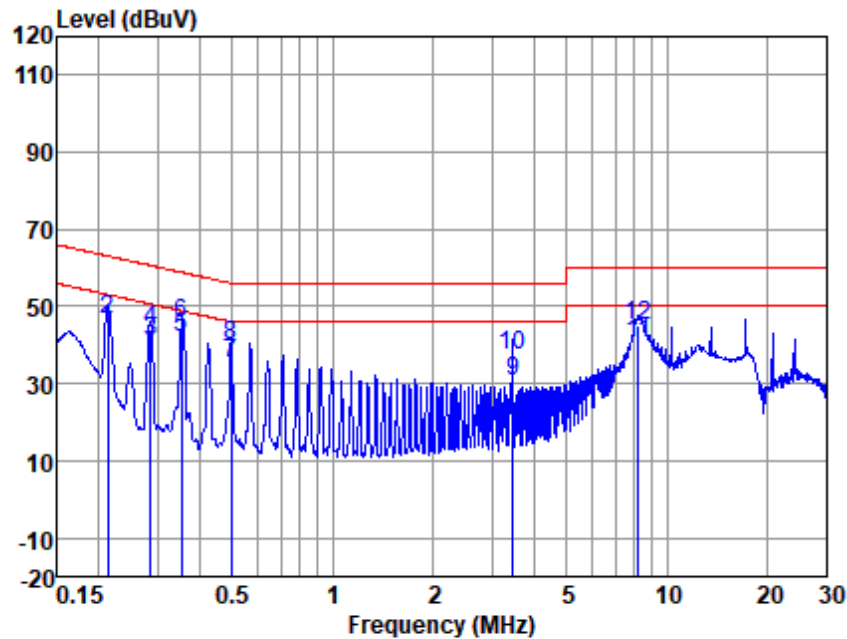
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Mode:a; Line:Neutral Line



LISN : NEUTRAL

EUT/Project No : 0787CR

Test Mode :

	Freq (MHz)	Read level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.21	33.42	0.20	9.93	43.55	53.10	-9.55	Average
2	0.21	36.36	0.20	9.93	46.49	63.10	-16.61	QP
3	0.28	30.80	0.20	9.94	40.94	50.68	-9.74	Average
4	0.28	33.81	0.20	9.94	43.95	60.68	-16.73	QP
5	0.35	31.93	0.20	9.93	42.06	48.87	-6.81	Average
6	0.35	35.43	0.20	9.93	45.56	58.87	-13.31	QP
7	0.50	24.95	0.20	9.93	35.08	46.05	-10.97	Average
8	0.50	29.96	0.20	9.93	40.09	56.05	-15.96	QP
9	3.45	20.35	0.20	9.99	30.54	46.00	-15.46	Average
10	3.45	27.40	0.20	9.99	37.59	56.00	-18.41	QP
11	8.24	30.24	0.25	10.05	40.54	50.00	-9.46	Average
12	8.24	34.97	0.25	10.05	45.27	60.00	-14.73	QP

Notes: Emission Level = Read Level + LISN Factor + Cable loss



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6.2 Radiated Emissions (30MHz-1GHz)

Test Requirement: 47 CFR Part 18
Test Method: FCC OST/MP-5:1986
Frequency Range: 30MHz to 1GHz
Measurement Distance: 3m
Limit:
30MHz -88MHz 40.0(dBμV/m) quasi-peak
88MHz-216MHz 43.5(dBμV/m) quasi-peak
216MHz-1000MHz 46.0(dBμV/m) quasi-peak
Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz

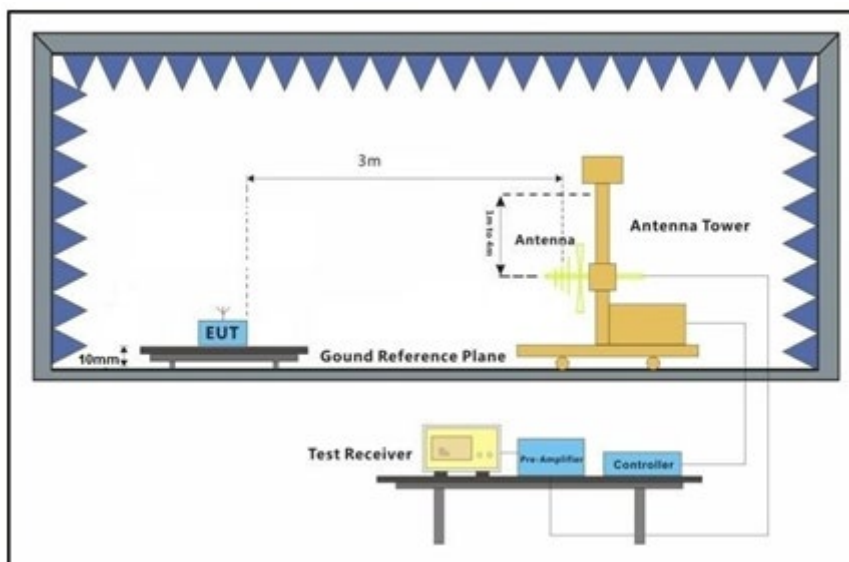
6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar

Test mode a: Wireless discharging mode_Keep the EUT discharging continuously,All power rate(120W;60W;0W) have been tested and found the worst case mode, Only the data of worst case power rate 120W is recorded in the report.

6.2.2 Test Setup Diagram



6.2.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.



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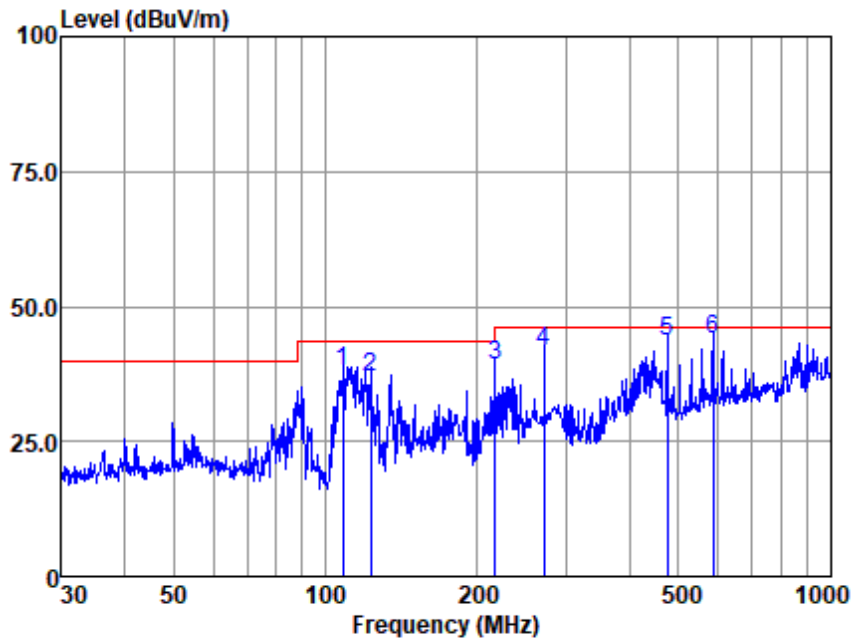
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Mode:a; Polarization:Horizontal



Antenna Polarity :HORIZONTAL

EUT/Project :10787CR

Test mode :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	108.267	58.33	9.85	1.56	31.60	38.14	43.50	-5.36	QP
2	122.834	55.59	11.24	1.66	31.62	36.87	43.50	-6.63	QP
3	216.783	58.26	9.70	2.36	31.19	39.13	46.00	-6.87	QP
4	271.325	57.78	12.55	2.72	31.29	41.76	46.00	-4.24	QP
5	475.499	53.57	17.20	3.46	30.73	43.50	46.00	-2.50	QP
6	584.790	51.29	19.22	3.86	30.46	43.91	46.00	-2.09	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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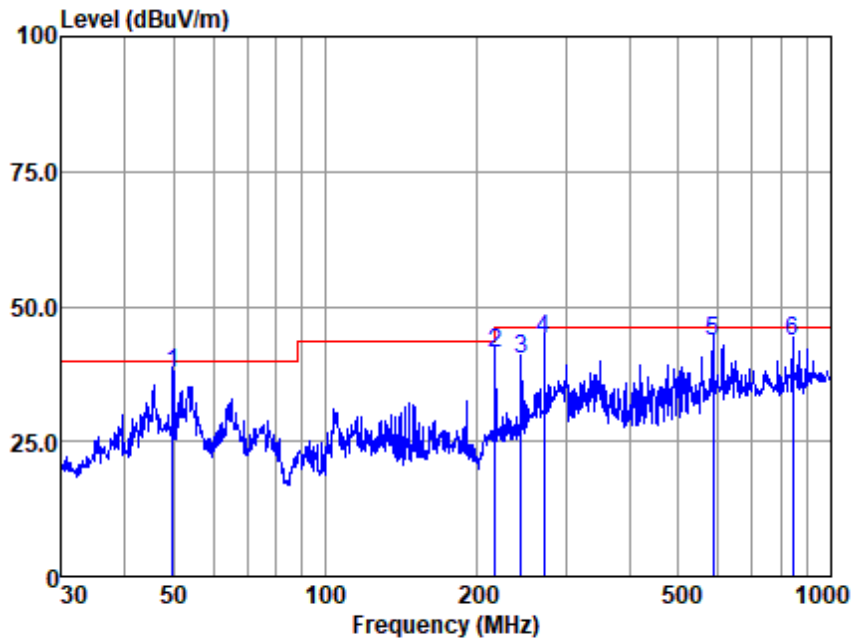
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Mode:a; Polarization:Vertical



Antenna Polarity :VERTICAL

EUT/Project :10787CR

Test mode :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	49.881	54.95	13.69	1.00	32.06	37.58	40.00	-2.42	QP
2	216.783	60.44	9.70	2.36	31.19	41.31	46.00	-4.69	QP
3	244.232	57.43	11.21	2.56	31.09	40.11	46.00	-5.89	QP
4	271.325	59.95	12.55	2.72	31.29	43.93	46.00	-2.07	QP
5	584.790	50.97	19.22	3.86	30.46	43.59	46.00	-2.41	QP
6	842.130	48.22	22.55	4.62	32.01	43.38	46.00	-2.62	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



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6.3 Radiated Emissions (Magnetic field Strength) (9kHz-30MHz)

Test Requirement: 47 CFR Part 18
 Test Method: FCC OST/MP-5:1986
 Frequency Range: 9kHz to 30MHz
 Measurement Distance: 3m
 Limit:

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (uV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous)	Any frequency non-ISM frequency	Below 500 500 or more	15 $15 \times \sqrt{\text{power}/500}$	300 1300

¹Field strength may not exceed 10 $\mu\text{V/m}$ at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.

Frequency band in which device operates (MHz)	Range of frequency measurements	
	Lowest frequency	Highest frequency
Below 1.705	Lowest frequency generated in the device, but not lower than 9 kHz	30 MHz.
1.705 to 30	Lowest frequency generated in the device, but not lower than 9 kHz	400 MHz.
30 to 500	Lowest frequency generated in the device or 25 MHz, whichever is lower	Tenth harmonic or 1,000 MHz, whichever is higher.
500 to 1,000	Lowest frequency generated in the device or 100 MHz, whichever is lower	Tenth harmonic.

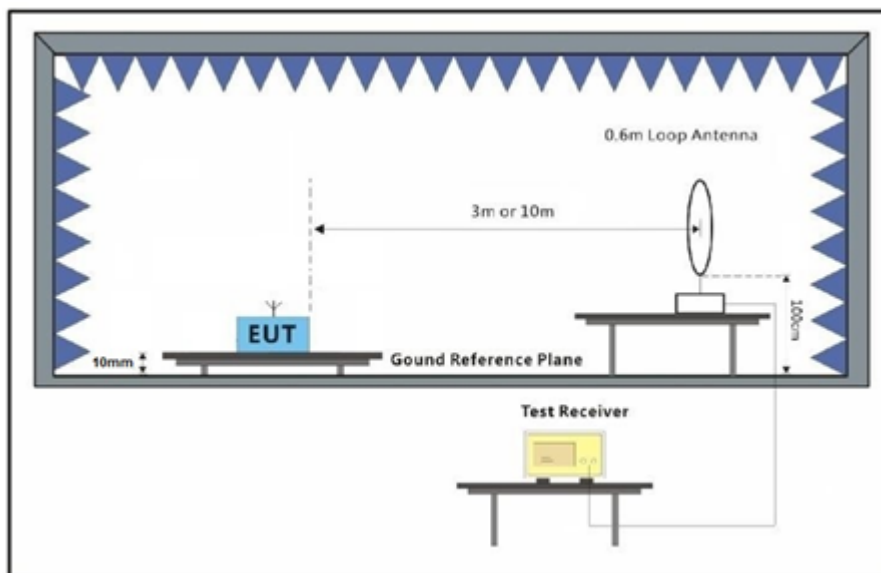
6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1001 mbar

Test mode a: Wireless discharging mode_Keep the EUT discharging continuously,All power rate(120W;60W;0W) have been tested and found the worst case mode, Only the data of worst case power rate 120W is recorded in the report.

6.3.2 Test Setup Diagram



6.3.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.



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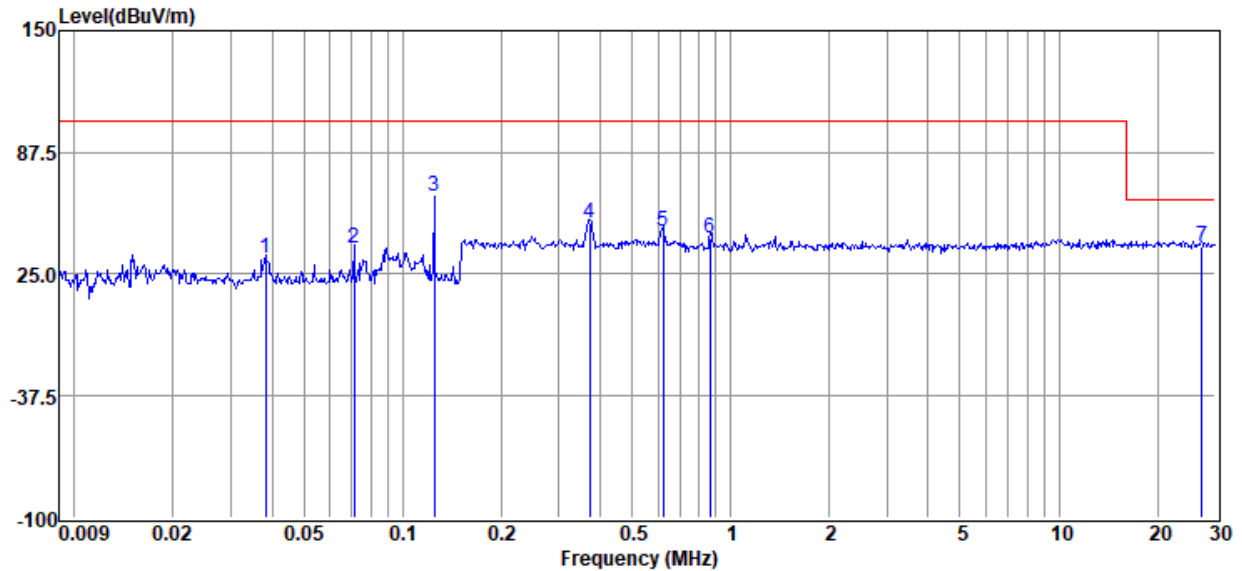
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Mode:a; Polarization:Horizontal



Item	Freq.	Read Level	Antenna Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	0.038	13.14	19.90	0.04	33.08	103.50	-70.42	QP
2	0.071	18.31	19.82	0.04	38.17	103.50	-65.33	QP
3	0.125	45.21	20.00	0.05	65.26	103.50	-38.24	Peak
4	0.373	31.14	20.00	0.08	51.22	103.50	-52.28	QP
5	0.621	26.89	20.10	0.10	47.09	103.50	-56.41	QP
6	0.866	23.38	20.17	0.11	43.66	103.50	-59.84	QP
7	27.217	17.81	20.20	0.80	38.81	63.50	-24.69	QP

Remark:

Emission Level=Read Level+ Antenna Factor+ Cable Loss

Over Limit= Emission Level-Limit line



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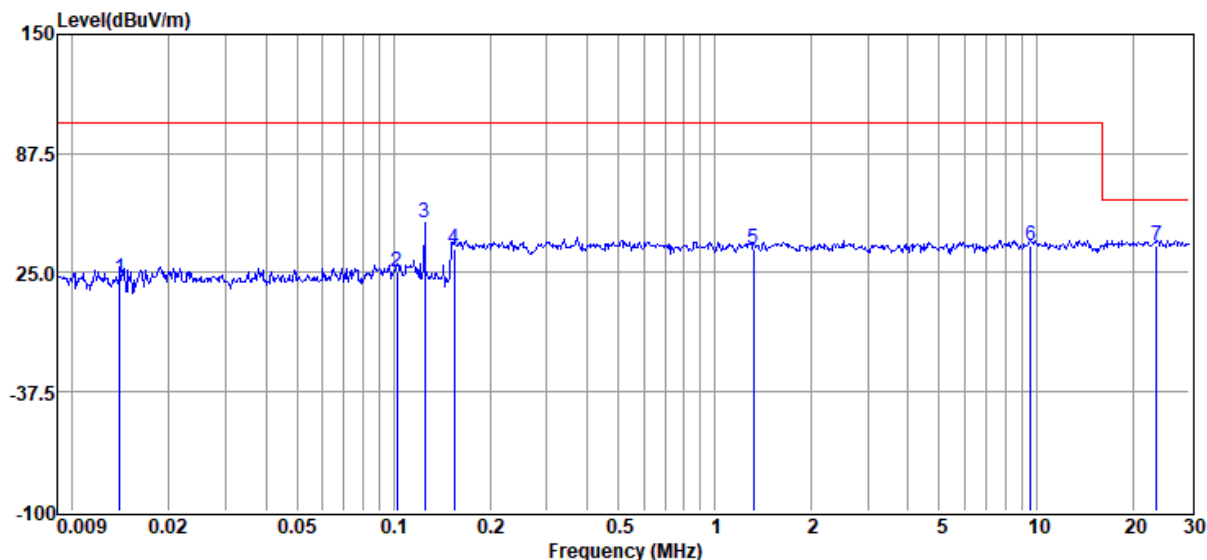
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Mode:a; Polarization:Vertical



Item	Freq.	Read Level	Antenna Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	0.014	2.02	20.00	0.02	22.04	103.50	-81.46	QP
2	0.103	5.01	20.00	0.05	25.06	103.50	-78.44	QP
3	0.125	31.21	20.00	0.05	51.26	103.50	-52.24	Peak
4	0.154	17.70	20.00	0.05	37.75	103.50	-65.75	QP
5	1.321	17.41	20.24	0.16	37.81	103.50	-65.69	QP
6	9.636	18.70	19.90	0.42	39.02	103.50	-64.48	QP
7	23.711	18.02	20.20	0.75	38.97	63.50	-24.53	QP

Remark:

Emission Level=Read Level+ Antenna Factor+ Cable Loss

Over Limit= Emission Level-Limit line



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7 Test Setup Photographs

Refer to the < Test Setup photos-FCC >.

8 EUT Constructional Details

Refer to the < External Photos > & < Internal Photos >.

- End of the Report -



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