FCC TEST REPORT
FCC ID: 2BALN-F-MBZ1

Report Number	**ZKT-220321L0835**
Date of Test	Mar. 14, 2023 - Mar. 22, 2023
Date of issue	Mar. 22, 2023
Total number of pages	23
Test Result	PASS

Testing Laboratory	**Shenzhen ZKT Technology Co., Ltd.**
Address	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

Applicant's name	Shenzhen Feyree Technology Co.,Ltd
Address	Room 201-202, the 2th Floor, Block 2A, ZhongHaiXin Industrial Park, 2nd ShengBao Road, NanWan Street, LongGang District, ShenZhen, China

Manufacturer's name	Shenzhen Feyree Technology Co.,Ltd
Address	Room 201-202, the 2th Floor, Block 2A, ZhongHaiXin Industrial Park, 2nd ShengBao Road, NanWan Street, LongGang District, ShenZhen, China

Test specification:	
Standard	FCC CFR Title 47 Part 15 Subpart C Section 15.225 ANSI C63.10:2013
Test procedure	/
Non-standard test method	N/A

Test Report Form No.	TRF-EL-108_V0
Test Report Form(s) Originator	ZKT Testing
Master TRF	Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Product name	**Household EV Charging Station**
Trademark	feyree 菲尔雷 / 菲尔雷® feyree®
Model/Type reference	F-MBZ1-AC-1P32, F-MBZ1-AC-1P40, F-MBZ1-AC-1P50, F-MBZ2-AC-1P32, F-MBZ2-AC-1P40, F-MBZ2-AC-1P50, F-MBZ3-AC-1P32, F-MBZ3-AC-1P40, F-MBZ3-AC-1P50, F-MBZ4-AC-1P32, F-MBZ4-AC-1P40, F-MBZ4-AC-1P50, F-OBZ1-AC-1P32, F-OBZ1-AC-3P16, F-OBZ1-AC-3P32, F-MBZ2-AC-1P32, F-MBZ2-AC-3P16, F-MBZ2-AC-3P32, F-MBZ3-AC-1P32, F-MBZ3-AC-3P16, F-MBZ3-AC-3P32, F-MBZ4-AC-1P32, F-MBZ4-AC-3P16, F-MBZ4-AC-3P32
Ratings	AC120V 50/60Hz

Testing procedure and testing location:

Testing Laboratory..... :	**Shenzhen ZKT Technology Co., Ltd.**
Address	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Tested by (name + signature) ..... :	Aron He
Reviewer (name + signature)..... :	Joe Lin
Approved (name + signature) ..... :	Shenzhen ZKT Technology Co., Ltd. Approved Gabe Xie

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1. VERSION

Report No.	Version	Description	Approved
ZKT-220321L0835	Rev.01	Initial issue of report	Mar. 22, 2023

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.225) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.225	Fundamental Emission Measurement	PASS	
15.225(d)&15.209	Radiated Emission Measurement	PASS	
2.1049	20dB Bandwidth	PASS	
15.225(e)	Frequency Stability	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.
Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225
Designation Number: CN1299
IC Registered No.: 27033

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ± 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 %.

No.	Item	Uncertainty
1	3m camber Radiated spurious emission (9KHz – 30MHz)	U=3.1dB
2	3m camber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	Conducted Adjacent channel power	U=1.38dB
5	Conducted output power uncertainty Above 1G	U=1.576dB
6	Conducted output power uncertainty below 1G	U=1.28dB
7	humidity uncertainty	U=5.3%
8	Temperature uncertainty	U=0.59℃
9	Radiated disturbance(30MHz- 1000MHz)	U=4.8dB
10	Radiated disturbance(1GHz- 6GHz)	U=4.9dB
11	Radiated disturbance(1GHz- 18GHz)	U=5.0dB

3.错误!未指定书签。**GENERAL INFORMATION**

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Household EV Charging Station
Trade Name	菲尔雷® feyree®
Model Name	F-MBZ1-AC-1P32,
Serial Model	F-MBZ1-AC-1P40, F-MBZ1-AC-1P50, F-MBZ2-AC-1P32, F-MBZ2-AC-1P40, F-MBZ2-AC-1P50, F-MBZ3-AC-1P32, F-MBZ3-AC-1P40, F-MBZ3-AC-1P50, F-MBZ4-AC-1P32, F-MBZ4-AC-1P40, F-MBZ4-AC-1P50, F-OBZ1-AC-1P32, F-OBZ1-AC-3P16, F-OBZ1-AC-3P32, F-MBZ2-AC-1P32, F-MBZ2-AC-3P16, F-MBZ2-AC-3P32, F-MBZ3-AC-1P32, F-MBZ3-AC-3P16, F-MBZ3-AC-3P32, F-MBZ4-AC-1P32, F-MBZ4-AC-3P16, F-MBZ4-AC-3P32
Test sample	Sample S/N code is 22U1071P32AEN01
Hardware version	V1.0
Software version	V1.0
Operation Frequency:	13.56MHz
Modulation Type:	ASK
Antenna Type:	Induction coil Antenna
Antenna Gain:	/
Ratings	AC120V 50/60Hz

3.2 DESCRIPTION OF TEST MODES

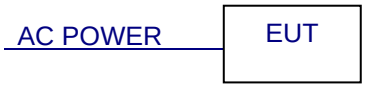
For All Emission	
Final Test Mode	Description
Transmitting mode	Keep the EUT in continuously transmitting mode

Note:

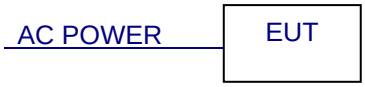
(1) Fully-charged battery is used during the test

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

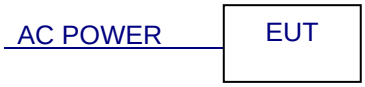
Conducted Emission Test



Radiated Emission



Spurious Emissions



3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	NFC card	Shenzhen Feyree Technology Co.,Ltd	/	/	SDOC
E-2					

Item	Shielded Type	Ferrite Core	Length	Note

Note:

(1) The support equipment was authorized by Declaration of Confirmation.

(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY55370835	Oct. 18, 2022	Oct. 17, 2023
2	Spectrum Analyzer (1GHz-40GHz)	R&S	FSQ	100363	Oct. 17, 2022	Oct. 16, 2023
3	EMI Test Receiver (9kHz-7GHz)	R&S	ESCI7	101169	Oct. 18, 2022	Oct. 17, 2023
4	Bilog Antenna (30MHz-1500MHz)	Schwarzbeck	VULB9168	N/A	Oct. 17, 2022	Oct. 16, 2023
5	Horn Antenna (1GHz-18GHz)	Agilent	AH-118	071145	Oct. 17, 2022	Oct. 16, 2023
6	Loop Antenna	TESEQ	HLA6121	58357	Oct. 17, 2022	Oct. 16, 2023
7	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	060747	Oct. 17, 2022	Oct. 16, 2023
8	Amplifier (1GHz-26.5GHz)	Agilent	8449B	3008A00315	Oct. 18, 2022	Oct. 17, 2023
9	RF cables1 (9kHz-30MHz)	N/A	9kHz-30MHz	N/A	Oct. 18, 2022	Oct. 17, 2023
10	RF cables2 (30MHz-1GHz)	N/A	30MHz-1GHz	N/A	Oct. 18, 2022	Oct. 17, 2023
11	RF cables3 (1GHz-40GHz)	N/A	1GHz-40GHz	N/A	Oct. 18, 2022	Oct. 17, 2023
12	ESG Signal Generator	Agilent	E4421B	N/A	Oct. 18, 2022	Oct. 17, 2023
13	Signal Generator	Agilent	N5182A	N/A	Oct. 22, 2022	Oct. 21, 2023
14	Magnetic Field Probe Tester	Narda	ELT-400	0-0344	Oct. 17, 2022	Oct. 16, 2023
15	MWRF Power Meter Test system	MW	MW100-RPCB	N/A	Oct. 22, 2022	Oct. 21, 2023
16	Power sensor	KEYSIGHT	U200H	MY51190005	Oct. 22, 2022	Oct. 21, 2023
17	D.C. Power Supply	LongWei	TPR-6405D	N/A	\	\
18	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	\	\
19	RF Software	MW	MTS8310	V2.0.0.0	\	\
20	Turntable	MF	MF-7802BS	N/A	\	\
21	Antenna tower	MF	MF-7802BS	N/A	\	\

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	Oct. 22, 2022	Oct. 21, 2023
2	LISN	CYBERTEK	EM5040A	E1850400149	Oct. 22, 2022	Oct. 21, 2023
3	Test Cable	N/A	C01	N/A	Oct. 18, 2022	Oct. 17, 2023
4	Test Cable	N/A	C02	N/A	Oct. 18, 2022	Oct. 17, 2023
5	EMI Test Receiver	R&S	ESCI3	101393	Oct. 17, 2022	Oct. 16, 2023
6	EMC Software	Frad	EZ-EMC	Ver.EMC-CON 3A1.1	\	\

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207& RSS-Gen [8.8]
Test Method:	ANSI C63.10:2013 and RSS-Gen
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

4.1.1 POWER LINE CONDUCTED EMISSION Limits

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

Note: (1) *Decreases with the logarithm of the frequency.

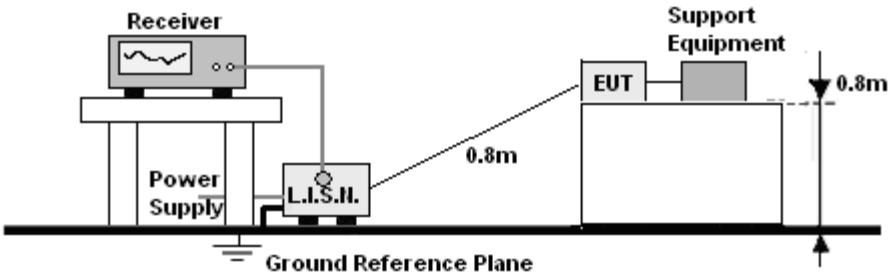
4.1.2 TEST PROCEDURE

a. The EUT was placed 0.1 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP

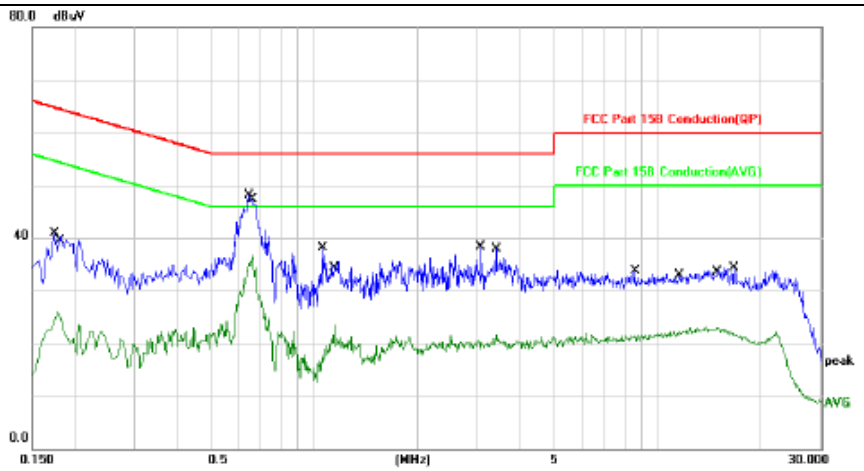


4.1.5 EUT OPERATING CONDITIONS

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

4.1.6 TEST RESULT

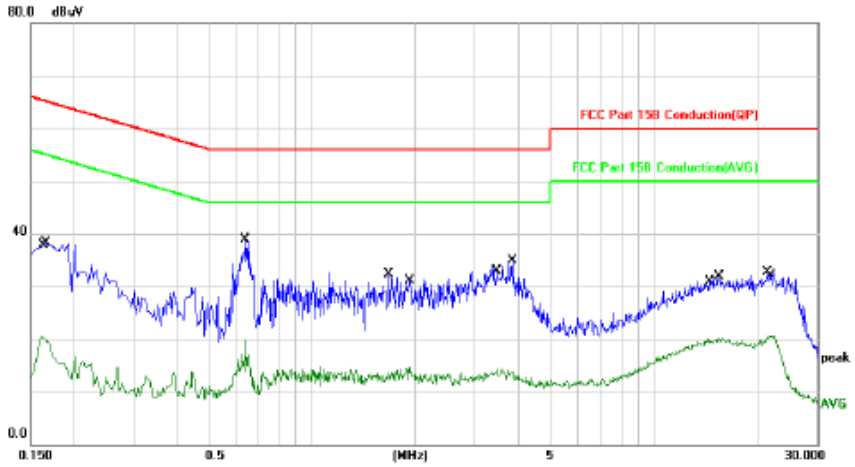
Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Phase:	L
Test Voltage:	AC 120V/60Hz		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1740	31.17	9.75	40.92	64.76	-23.84	QP	
2		0.1780	16.39	9.75	26.14	54.57	-28.43	AVG	
3	*	0.6460	38.19	9.83	48.02	56.00	-7.98	QP	
4		0.6620	26.87	9.83	36.70	46.00	-9.30	AVG	
5		1.0580	28.34	9.75	38.09	56.00	-17.91	QP	
6		1.1420	13.72	9.74	23.46	46.00	-22.54	AVG	
7		3.0620	28.68	9.70	38.38	56.00	-17.62	QP	
8		3.3900	11.95	9.69	21.64	46.00	-24.36	AVG	
9		8.6259	24.02	9.70	33.72	60.00	-26.28	QP	
10		11.5539	12.63	9.76	22.39	50.00	-27.61	AVG	
11		14.8299	13.26	9.67	22.93	50.00	-27.07	AVG	
12		16.8299	24.60	9.61	34.21	60.00	-25.79	QP	

Notes:
1.An initial pre-scan was performed on the line and neutral lines with peak detector.
2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3.Mesurement Level = Reading level + Correct Factor

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Phase:	N
Test Voltage:	AC 120V/60Hz		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1620	10.76	9.75	20.51	55.36	-34.85	AVG	
2		0.1660	28.59	9.75	38.34	65.15	-26.81	QP	
3	*	0.6380	29.03	9.83	38.86	56.00	-17.14	QP	
4		0.6380	10.00	9.83	19.83	46.00	-26.17	AVG	
5		1.6780	22.71	9.68	32.39	56.00	-23.61	QP	
6		1.9380	4.98	9.65	14.63	46.00	-31.37	AVG	
7		3.4580	4.64	9.69	14.33	46.00	-31.67	AVG	
8		3.8500	25.18	9.68	34.86	56.00	-21.14	QP	
9		14.5939	21.21	9.68	30.89	60.00	-29.11	QP	
10		15.4499	10.73	9.65	20.38	50.00	-29.62	AVG	
11		21.3900	23.21	9.51	32.72	60.00	-27.28	QP	
12		21.9220	11.30	9.50	20.80	50.00	-29.20	AVG	

Notes:
1.An initial pre-scan was performed on the line and neutral lines with peak detector.
2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3.Mesurement Level = Reading level + Correct Factor

4.2 RADIATED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 25GHz
Test site:	Measurement Distance: 3m
Receiver setup:	

Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

4.2.1 RADIATED EMISSION LIMITS

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.231(b) limit in the table below has to be followed.

Frequencies(MHz)	Field Strength(micorvolts/meter)	Measurement Distance(meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

FUNDAMENTAL AND HARMONICS EMISSION LIMITS

Fundamental Frequency (MHz)	Field Strength of Fundamental (microvolts/meter)	Field Strength of Spurious Emissions (microvolts/meter)
40.66 - 40.70	2,250	225
70 - 130	1,250	125
130 - 174	1,250 to 3,750 **	125 to 375 **
174 - 260	3,750	375
260 - 470	3,750 to 12,500 **	375 to 1,250 **
Above 470	12,500	1,250

** linear interpolations

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174 MHz, μV/m at 3 meters = 56.81818(F) - 6136.3636; for the band 260-470 MHz, μV/m at 3 meters = 41.6667(F) - 7083.3333. The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW setting	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.2.2 TEST PROCEDURE

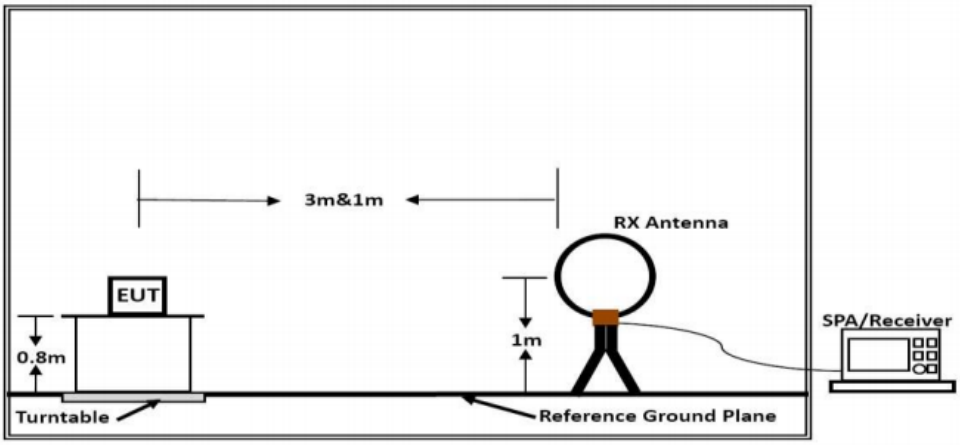
a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; above 1GHz, the height was 1.5m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

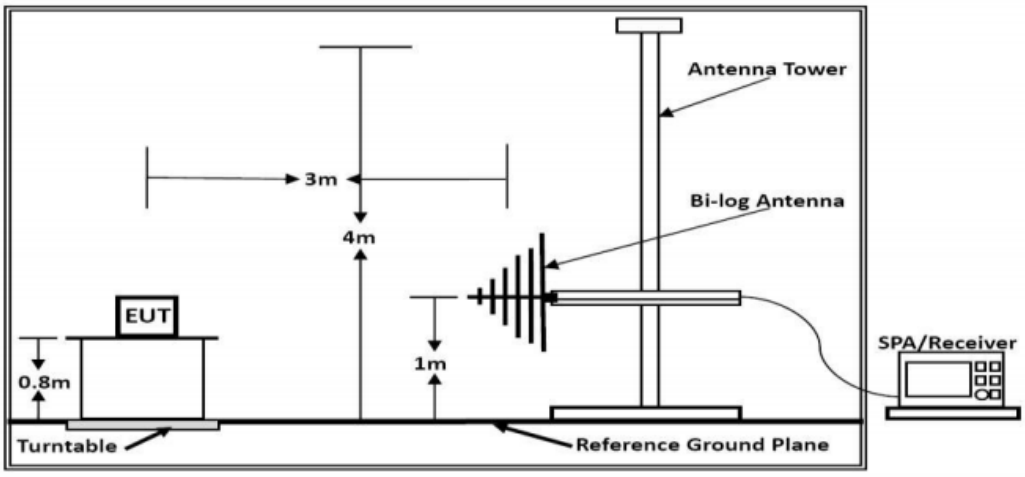
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case was X axis and the emissions were reported

4.2.3 TEST SETUP

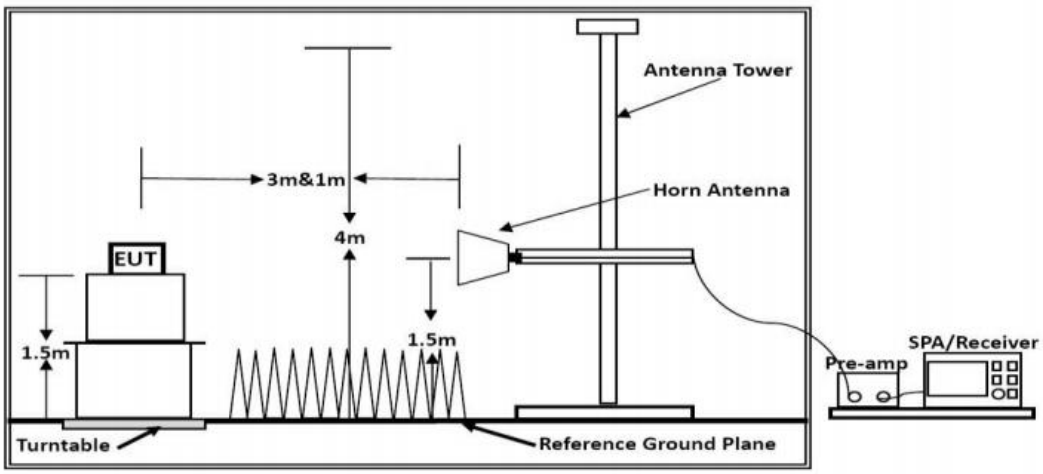
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



4.2.4 EUT OPERATING CONDITIONS

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

4.2.5 TEST RESULT

Radiated Spurious Emission (Below 9KHz – 30MHz)

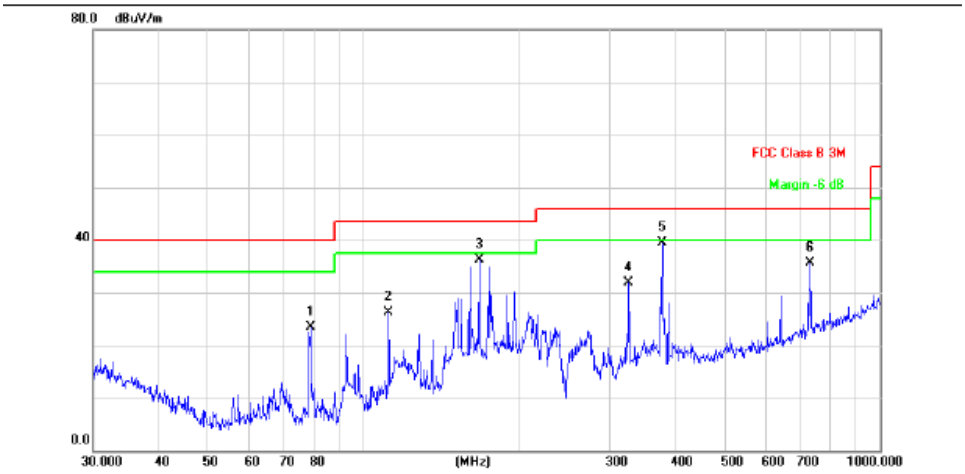
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101 kPa	Polarization：	---
Test Voltage ：	AC120V 60Hz		
Test Mode ：	TX Mode		

Fre. MHz	Reading dBuV	Factor dB	Measured dBuV/m	Limit dBuV/m	Margin dB	Remark
0.56	--	--	--	92.64	--	--
2.48	29.85	20.75	50.6	69.5	-18.9	QP
6.43	29.94	20.78	50.72	69.5	-18.78	QP
13.56	37.28	20.64	57.92	124.0	-66.08	QP
21.08	26.37	20.78	47.15	69.5	-22.35	QP
23.05	27.12	20.41	47.53	69.5	-21.97	QP
25.84	25.32	20.41	45.73	69.5	-23.77	QP

NOTE:
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

Radiated Spurious Emission (Between 30MHz – 1GHz)

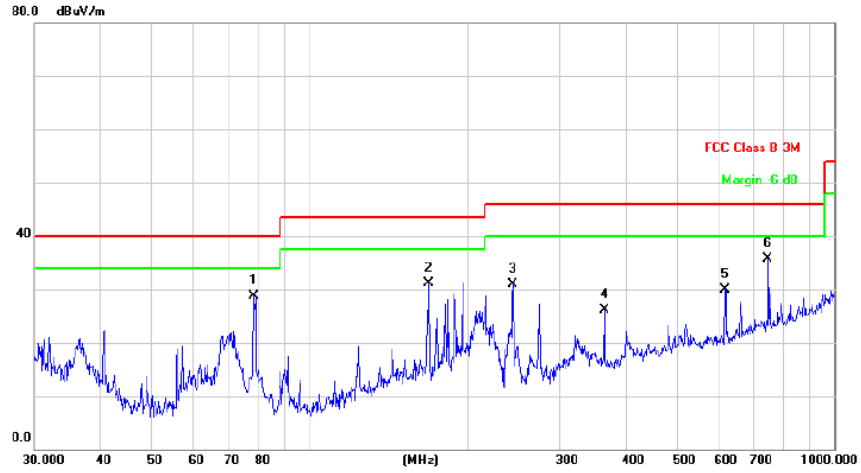
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101 kPa	Polarization：	Horizontal
Test Voltage ：	AC120V 60Hz		
Test Mode ：	TX Mode		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		78.9651	38.77	-15.18	23.59	40.00	-16.41	QP	100	14	
2		111.7379	38.17	-11.96	26.21	43.50	-17.29	QP	100	109	
3		167.8242	46.52	-10.31	36.21	43.50	-7.29	QP	100	339	
4		326.7395	39.36	-7.44	31.92	46.00	-14.08	QP	100	360	
5	*	378.5842	45.67	-6.24	39.43	46.00	-6.57	QP	100	277	
6		731.9202	34.98	0.80	35.78	46.00	-10.22	QP	100	360	

Remarks:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101 kPa	Polarization：	Vertical
Test Voltage ：	AC120V 60Hz		
Test Mode ：	TX Mode		

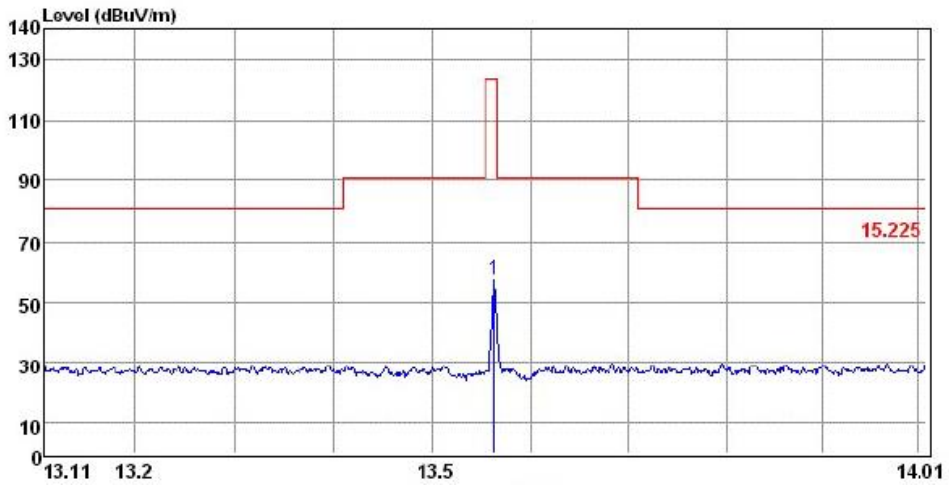


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	cm	degree	Comment
1		78.4133	43.87	-15.18	28.69	40.00	-11.31	QP	100	348	
2		169.0054	41.50	-10.36	31.14	43.50	-12.36	QP	100	289	
3		244.2321	41.48	-10.65	30.83	46.00	-15.17	QP	100	264	
4		364.2595	32.60	-6.56	26.04	46.00	-19.96	QP	100	26	
5		618.5368	31.61	-1.68	29.93	46.00	-16.07	QP	100	16	
6	*	747.4825	34.74	1.02	35.76	46.00	-10.24	QP	100	360	

Remarks:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

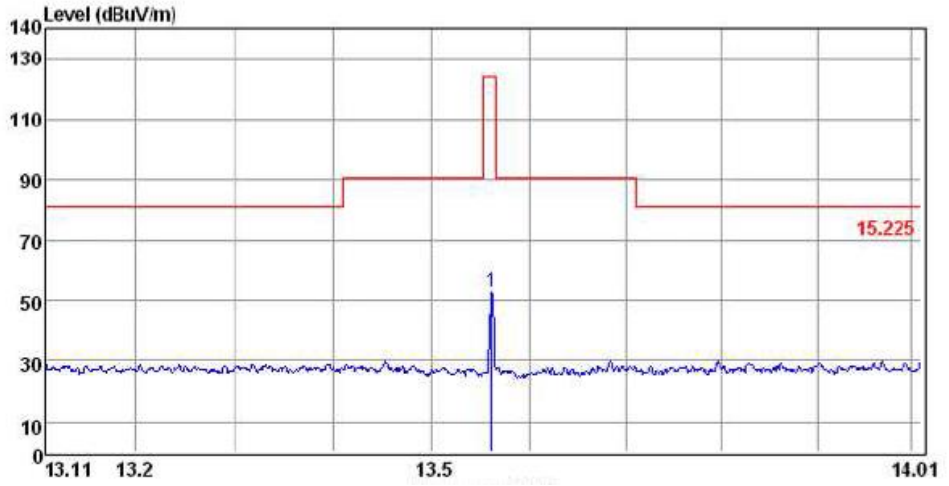
Field Strength of Fundamental Emissions and Mask Measurement

Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101 kPa	Polarization：	Horizontal(90degree)
Test Voltage ：	AC120V 60Hz	Test Mode ：	TX Mode



Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Polarization	Remark
13.56	37.28	20.64	57.92	124	H	QP

Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101 kPa	Polarization：	Horizontal(0degree)
Test Voltage ：	AC120V 60Hz	Test Mode ：	TX Mode



Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Polarization	Remark
13.56	33.24	20.64	53.88	124	H	QP

Notes: Factor=Antenna Factor + Cable Loss

Emission level (dBuV/m) = 20 log Emission level(uV/m)

Measured distance is 3m

5. BANDWIDTH OF THE OPERATION FREQUENCY

5.1 APPLIED PROCEDURES / LIMIT

Intentional radiators must be designed to ensure that the 20 dB bandwidth of the emissions in the specific band (13.553~ 13.567MHz).

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	50KHz
RBW	3KHz
VBW	VBW>=RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

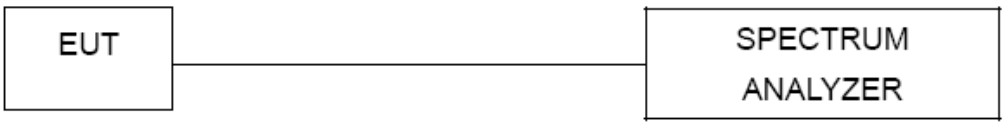
5.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 3KHz, VBW≥ RBW, Sweep time = Auto.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

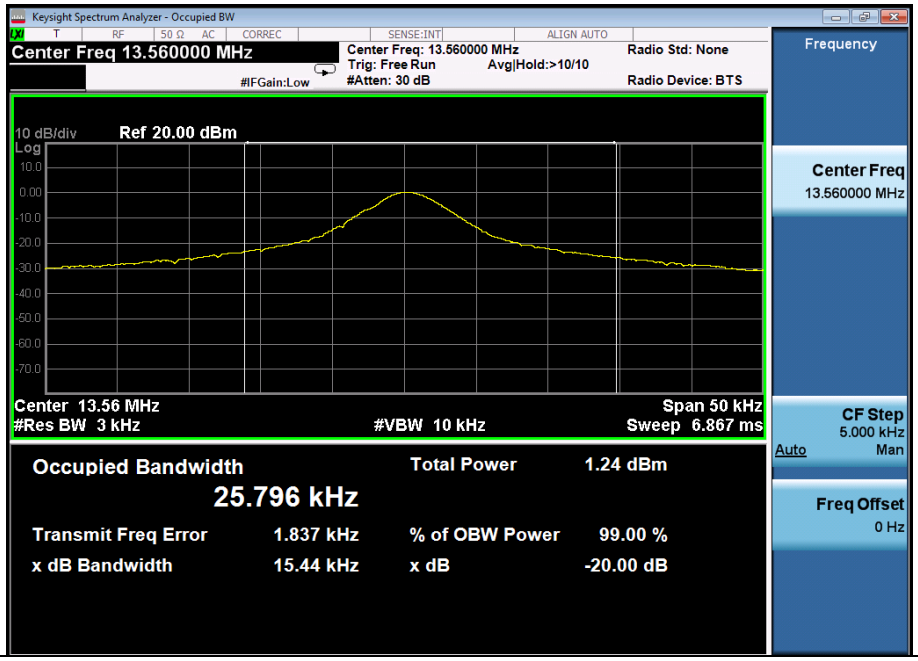
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.6 TEST RESULT

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101kPa	Test Voltage :	AC120V
Test Mode:	TX Mode		

Frequency	20dB Bandwidth (kHz)	Limit (MHz)	Result
13.56MHz	15.44	/	PASS

TX Mode


Keysight Spectrum Analyzer - Occupied BW
Center Freq 13.560000 MHz
Center Freq: 13.560000 MHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 13.56 MHz
#Res BW 3 kHz
#VBW 10 kHz
Span 50 kHz
Sweep 6.867 ms
Occupied Bandwidth
25.796 kHz
Total Power 1.24 dBm
Transmit Freq Error 1.837 kHz
% of OBW Power 99.00 %
x dB Bandwidth 15.44 kHz
x dB -20.00 dB
Center Freq
13.560000 MHz
CF Step
5.000 kHz
Auto
Man
Freq Offset
0 Hz

6. FREQUENCY STABILITY

6.1 Standard Applicable

The frequency tolerance of the carrier signal shall be maintained within +/-0.01% (100ppm) of the operating frequencv over a temperature variation of-20 degrees to +50 degrees C at normal supplv 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. For battery operated equipment, the equipment tests shall beperformed using a full charged battery.

6.2 Test Results

Voltage vs. Frequency Stability

Voltage(V)	Measurement frequency(MHz)	Deviation (KHz)	Deviation (ppm)	Limit (ppm)
AC120	13.56050	0.50	36.56	100
AC102	13.56039	0.39	28.67	100
AC138	13.56046	0.46	33.89	100

Temperature vs. Frequency Stability

temperature(℃)	Measurement frequency(MHz)	Deviation (KHz)	Deviation (ppm)	Limit (ppm)
-20	13.055	0.55	40.70	100
-10	13.033	0.33	24.30	100
0	13.047	0.47	34.59	100
10	13.050	0.50	37.15	100
20	13.047	0.47	34.95	100
30	13.059	0.59	43.62	100
40	13.035	0.35	25.55	100
50	13.053	0.53	38.75	100

8. ANTENNA REQUIREMENT

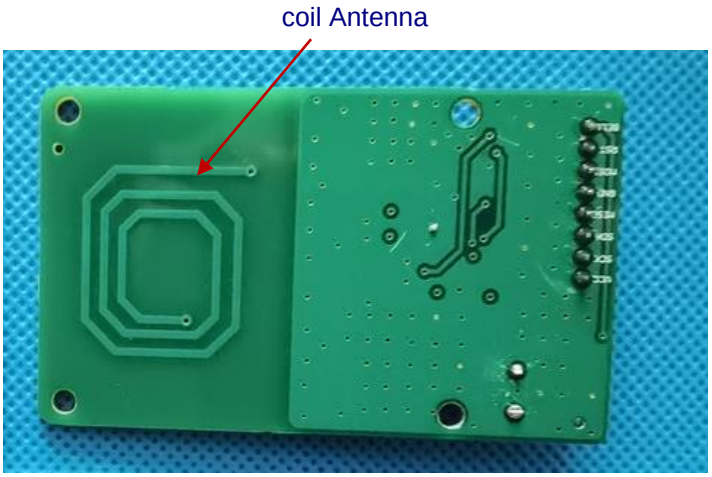
Standard requirement:	FCC Part15 C Section 15.203

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antennas is Induction coil Antenna, the best case gain of the antennas are 0dBi, reference to the EUT photos.



9. TEST SETUP PHOTO

10. EUT CONSTRUCTIONAL DETAILS

Please refer to externa file and internal photo file

※※※※※ **END OF REPORT** ※※※※※