TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart C (Section 15.225)** **47 CFR FCC Part 15, Subpart C (Section 15.215)**
Report No.:	RFBEOE-WTW-P23120072-4
FCC ID:	MQT-AT150ED
Product:	Terminal
Brand:	XAC
Model No.:	xCL_AT-150-ED
Received Date:	2023/12/5
Test Date:	2024/1/2 ~ 2024/1/10
Issued Date:	2024/1/22
Applicant:	XAC AUTOMATION CORP.
Address:	4F, No. 30, INDUSTRY E. RD. IX, SCIENCE-BASED INDUSTRIAL PARK,HSINCHU,TAIWAN
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

Approved by: _____ , **Date:** 2024/1/22

May Chen / Manager

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Prepared by : Phoenix Huang / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBEOE-WTW-P23120072-4	Original release.	2024/1/22

1 Certificate

Product:	Terminal
Brand:	XAC
Test Model:	xCL_AT-150-ED
Sample Status:	Engineering sample
Applicant:	XAC AUTOMATION CORP.
Test Date:	2024/1/2 ~ 2024/1/10
Standard:	47 CFR FCC Part 15, Subpart C (Section 15.225) 47 CFR FCC Part 15, Subpart C (Section 15.215)
Measurement procedure:	ANSI C63.10-2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.225, 15.215)			
Standard / Clause	Test Item	Result	Remark
15.207	AC Power Conducted Emissions	Pass	Minimum passing margin is -9.74 dB at 20.57031 MHz
15.225 (a)	The field strength of any emissions within the band 13.553-13.567 MHz	Pass	Minimum passing margin is -45.53 dB at 13.560 MHz
15.225 (b)	The field strength of any emissions within the bands 13.410-13.553 MHz and 13.567-13.710 MHz	Pass	Meet the requirement of limit.
15.225 (c)	The field strength of any emissions within the bands 13.110-13.410 MHz and 13.710-14.010 MHz	Pass	Meet the requirement of limit.
15.225 (d)	The field strength of any emissions appearing outside of the 13.110-14.010 MHz band below 30MHz	Pass	Minimum passing margin is -9.87 dB at 24.364 MHz
15.225 (d)	The field strength of any emissions appearing outside of the 13.110-14.010 MHz band above 30MHz	Pass	Minimum passing margin is -3.5 dB at 710.19 MHz
15.225 (e)	Frequency Stability	Pass	Meet the requirement of limit.
15.215 (c)	20 dB Bandwidth	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Specification	Expanded Uncertainty (k=2) (±)
AC Power Conducted Emissions	150 kHz ~ 30 MHz	1.9 dB
The field strength of any emissions within the band 13.553-13.567 MHz	9 kHz ~ 30 MHz	3.1 dB
The field strength of any emissions appearing outside of the 13.110-14.010 MHz band above 30MHz	30 MHz ~ 1 GHz	5.5 dB
Frequency Stability	-	0.16 ppm
20 dB Bandwidth	-	1050.00 Hz

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description

Product	Terminal
Brand	XAC
Test Model	xCL_AT-150-ED
Status of EUT	Engineering sample
Power Supply Rating	12 Vdc from power adapter
Modulation Type	ASK
Transfer Rate	106 kbit/s
Operating Frequency	13.56 MHz
Number of Channel	1
Field Strength Of Fundamental	78.47 dBuV/m (Quasi-Peak) at 3 meters

Note:

1. There are Bluetooth、WLAN (2.4 GHz & 5 GHz) and NFC technology used for the EUT.
2. Simultaneously transmission condition.

Condition	Technology		
1	WLAN (2.4 GHz)	WLAN (5 GHz)	NFC
2	WLAN (5 GHz)	Bluetooth	NFC
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.			

3. The EUT has one type according to NFC technology as following table:

Mode	Type	Modulation	Data rate
Active	A	100%, ASK	106 kbit/s

4. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

NFC						
Antenna No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type
1	XAC	PTOS	5	13.56MHz	Loop	none

* Due to radiated measurements are made and the antenna gain is already accounted for this device, so provide an antenna datasheet and/or antenna measurement report is not required. The antenna dimensions and pictures (include antenna wire length if have) are stated in EUT photo exhibit.

3.3 Channel List

1 channel is provided to this EUT:

Channel	Frequency (MHz)
1	13.56

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

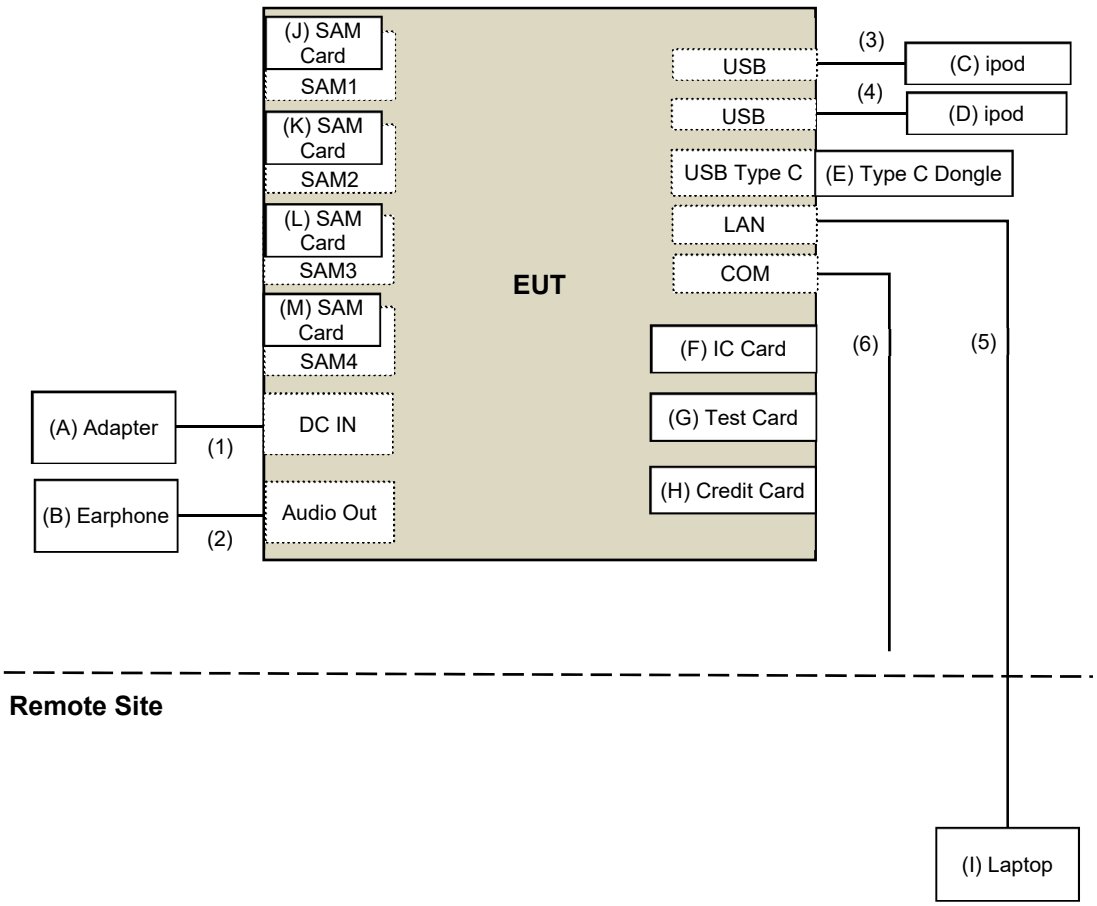
Following channel(s) was (were) selected for the final test as listed below:

Test Item	Type	Modulation	Data Rate Parameter
AC Power Conducted Emissions	A	100%, ASK	106 kbit/s
Radiated Emissions below 30 MHz	A	100%, ASK	106 kbit/s
Radiated Emissions above 30 MHz	A	100%, ASK	106 kbit/s
Frequency Stability	A	unmodulated	-
20 dB Bandwidth	A	100%, ASK	106 kbit/s

3.5 Test Program Used and Operation Descriptions

Controlling software (E.P.T.exe) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.6 Connection Diagram of EUT and Peripheral Devices



3.7 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Adapter	DEE VAN ENTERPRISE	DSA-36PFN-12FCA 120300	N/A	N/A	Supplied by applicant
B	Earphone	SONY	MDR-XB50AP	N/A	N/A	Provided by Lab
C	ipod	Apple	MD778TA/A	CC4JL03FF41	N/A	Provided by Lab
D	ipod	Apple	MC749TA/A	CC4DN25WDFDM	N/A	Provided by Lab
E	Type C Dongle	SanDisk	SDDDC4	N/A	N/A	Provided by Lab
F	IC Card	XAC	N/A	N/A	N/A	Supplied by applicant
G	Test Card	XAC	N/A	N/A	N/A	Supplied by applicant
H	Credit Card	XAC	N/A	N/A	N/A	Supplied by applicant
I	Laptop	HP	TPN-Q186	5CD8212YYK	DoC	Provided by Lab
J	SAM Card	XAC	N/A	N/A	N/A	Supplied by applicant
K	SAM Card	XAC	N/A	N/A	N/A	Supplied by applicant
L	SAM Card	XAC	N/A	N/A	N/A	Supplied by applicant
M	SAM Card	XAC	N/A	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC cable	1	1.5	No	0	Supplied by applicant
2	Audio Cable	1	1.2	No	0	Provided by Lab
3	USB cable	1	0.1	Yes	0	Provided by Lab
4	USB cable	1	0.1	Yes	0	Provided by Lab
5	RJ-45 Cable	1	10	No	0	Provided by Lab
6	RJ-12 Cable	1	1.5	No	0	Provided by Lab

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal resistance Telegartner	50 ohm	3	2023/10/20	2024/10/19
EMI Test Receiver R&S	ESCS 30	847124/029	2023/10/18	2024/10/17
Fixed Attenuator STI	STI02-2200-10	005	2023/7/1	2024/6/30
LISN R&S	ESH3-Z5	835239/001	2023/4/6	2024/4/5
		848773/004	2023/10/13	2024/10/12
RF Coaxial Cable JYEBAO	5D-FB	COCCAB-001	2023/7/1	2024/6/30
Software BVADT	BVADT_Cond_V7.3.7.4	N/A	N/A	N/A

Notes:

1. The test was performed in Conduction 1
2. Tested Date: 2024/1/10

4.2 Radiated Emissions below 30 MHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Loop Antenna Electro-Metrics	EM-6879	264	2023/2/21	2024/2/20
MXA Signal Analyzer Keysight	N9020B	MY60112408	2023/3/6	2024/3/5
MXE EMI Receiver Keysight	N9038A	MY59050100	2023/6/13	2024/6/12
Preamplifier EMCI	EMC001340	980142	2023/5/8	2024/5/7
RF Coaxial Cable JYEBAO	5D-FB	LOOPCAB-001	2023/12/12	2024/12/11
		LOOPCAB-002	2023/12/12	2024/12/11
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 4.
2. Tested Date: 2024/1/2

4.3 Radiated Emissions above 30 MHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-406	2023/10/13	2024/10/12
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-03	2023/12/12	2024/12/11
MXA Signal Analyzer Keysight	N9020B	MY60112408	2023/3/6	2024/3/5
MXE EMI Receiver Keysight	N9038A	MY59050100	2023/6/13	2024/6/12
Preamplifier EMCI	EMC330N	980701	2023/2/18	2024/2/17
RF Coaxial Cable PEWC	8D	966-4-1	2023/2/18	2024/2/17
		966-4-2	2023/2/18	2024/2/17
		966-4-3	2023/2/18	2024/2/17
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 4.
2. Tested Date: 2024/1/2

4.4 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
DC Power Supply Topward	6603D	795558	N/A	N/A
MXA Signal Analyzer Keysight	N9020B	MY60112409	2023/2/18	2024/2/17
Software	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	2023/12/20	2024/12/19
True RMS Clamp Meter FLUKE	325	31130711WS	2023/6/8	2024/6/7

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2024/1/5

4.5 20 dB Bandwidth

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
MXA Signal Analyzer Keysight	N9020B	MY60112409	2023/2/18	2024/2/17
Software	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2024/1/5

5 Limits of Test Items

5.1 AC Power Conducted Emissions

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Notes:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

5.2 Radiated Emissions below 30 MHz

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209 as below table:

Frequencies (MHz)	Field Strength (microvolts/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

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, and the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

5.3 Radiated Emissions above 30 MHz

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

5.4 Frequency Stability

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of –20 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

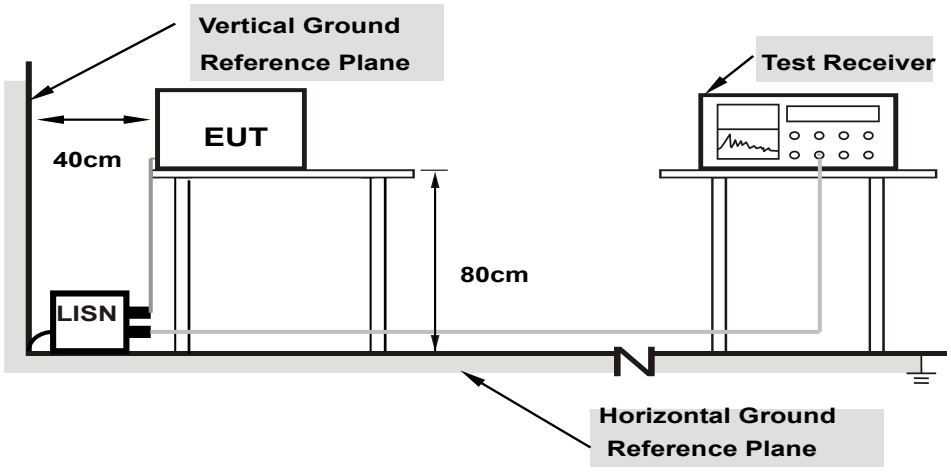
5.5 20 dB Bandwidth

The 20dB bandwidth shall be specified in operating frequency band.

6 Test Arrangements

6.1 AC Power Conducted Emissions

6.1.1 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.1.2 Test Procedure

a. The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

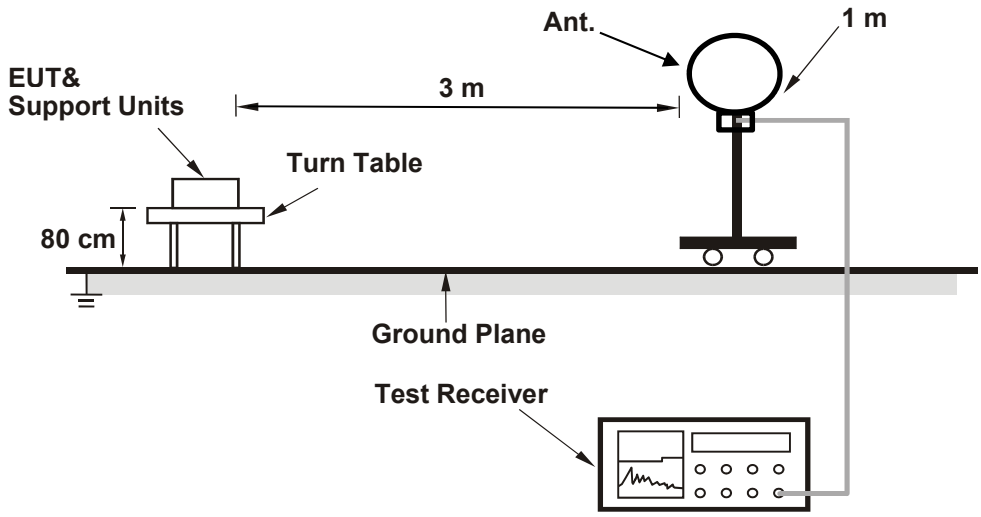
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz-30 MHz.

6.2 Radiated Emissions below 30 MHz

6.2.1 Test Setup

For Radiated emission below 30 MHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.2.2 Test Procedure

For Radiated emission below 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

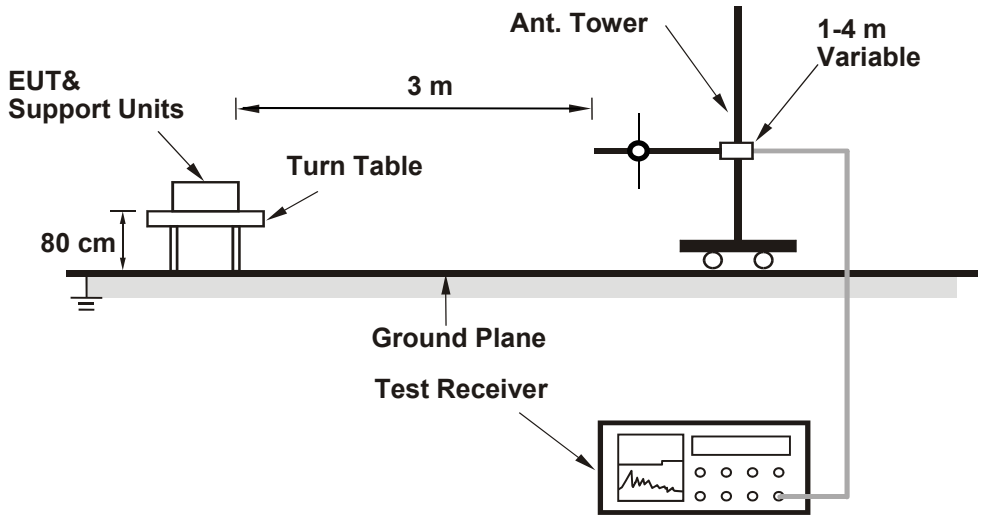
Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

6.3 Radiated Emissions above 30 MHz

6.3.1 Test Setup

For Radiated emission above 30 MHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.3.2 Test Procedure

For Radiated emission above 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

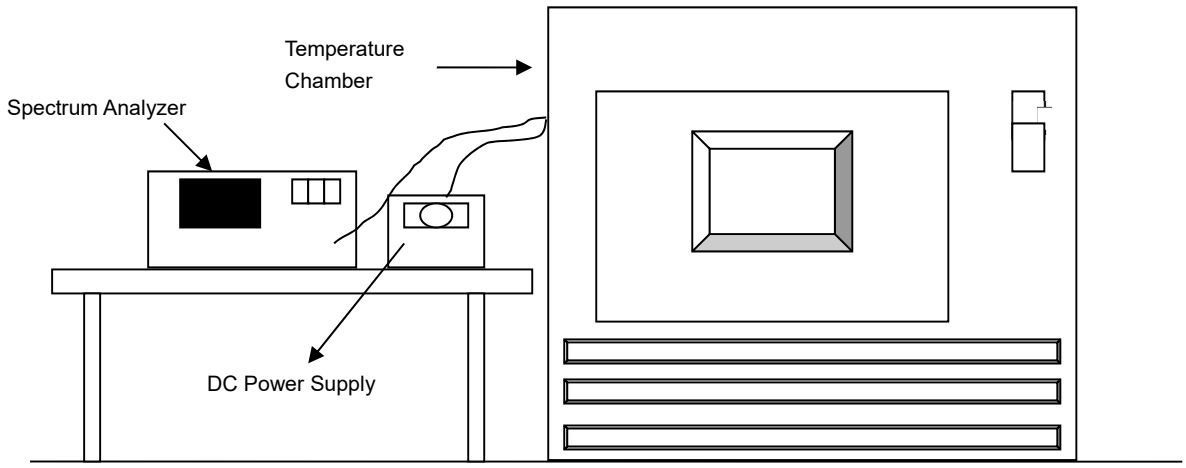
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

6.4 Frequency Stability

6.4.1 Test Setup



6.4.2 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.

b. Turn the EUT on and couple its output to a spectrum analyzer.

c. Turn the EUT off and set the chamber to the highest temperature specified.

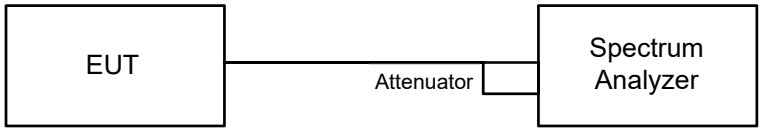
d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.

e. Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.

f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

6.5 20 dB Bandwidth

6.5.1 Test Setup



6.5.2 Test Procedure

a. Set resolution bandwidth (RBW) = 1% to 5% of the OBW
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission

7 Test Results of Test Item

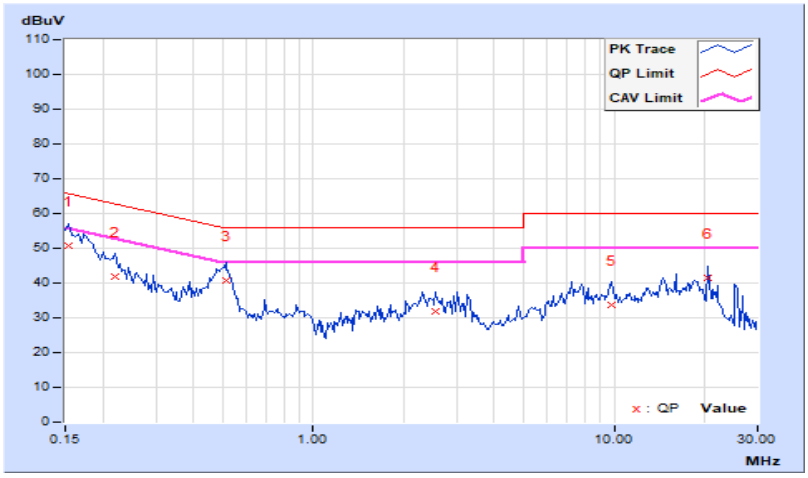
7.1 AC Power Conducted Emissions

RF Mode	NFC	**Channel**	CH 1：13.56 MHz
Frequency Range	150 kHz ~ 30 MHz	**Detector Function & Resolution Bandwidth**	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	23°C, 75% RH
Tested By	Willy Lin		

Phase Of Power : Line (L)										
No	**Frequency (MHz)**	**Correction Factor (dB)**	**Reading Value (dBuV)**		**Emission Level (dBuV)**		**Limit (dBuV)**		**Margin (dB)**	
			Q.P.	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.15391	9.93	40.84	28.92	50.77	38.85	65.79	55.79	-15.02	-16.94
2	0.22031	9.93	32.00	16.98	41.93	26.91	62.81	52.81	-20.88	-25.90
3	0.51328	9.95	30.73	25.04	40.68	34.99	56.00	46.00	-15.32	-11.01
4	2.55859	10.03	21.69	15.33	31.72	25.36	56.00	46.00	-24.28	-20.64
5	9.86719	10.44	23.18	17.49	33.62	27.93	60.00	50.00	-26.38	-22.07
6	**20.57031**	**11.16**	**30.50**	**29.10**	**41.66**	**40.26**	**60.00**	**50.00**	**-18.34**	**-9.74**

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

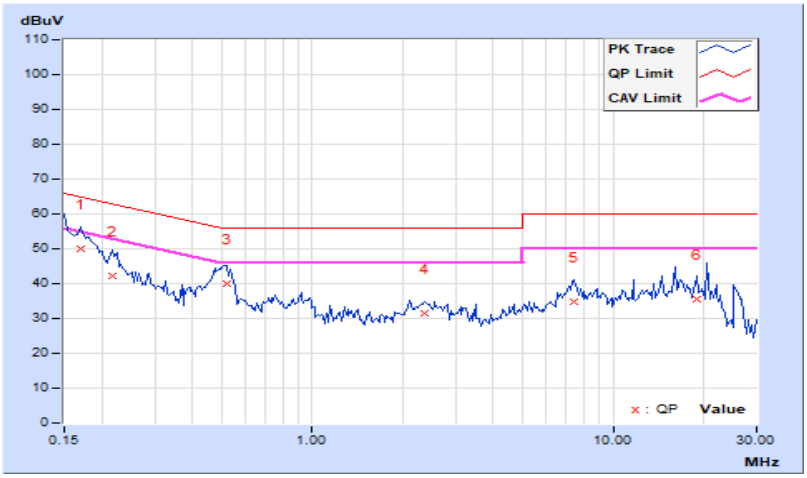


RF Mode	NFC	Channel	CH 1：13.56 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	23°C, 75% RH
Tested By	Willy Lin		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	9.99	39.85	28.33	49.84	38.32	64.98	54.98	-15.14	-16.66
2	0.21641	9.99	32.40	19.17	42.39	29.16	62.96	52.96	-20.57	-23.80
3	0.52109	10.00	30.16	23.75	40.16	33.75	56.00	46.00	-15.84	-12.25
4	2.37500	10.07	21.49	16.06	31.56	26.13	56.00	46.00	-24.44	-19.87
5	7.39453	10.29	24.62	18.35	34.91	28.64	60.00	50.00	-25.09	-21.36
6	19.05859	10.84	24.73	20.23	35.57	31.07	60.00	50.00	-24.43	-18.93

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



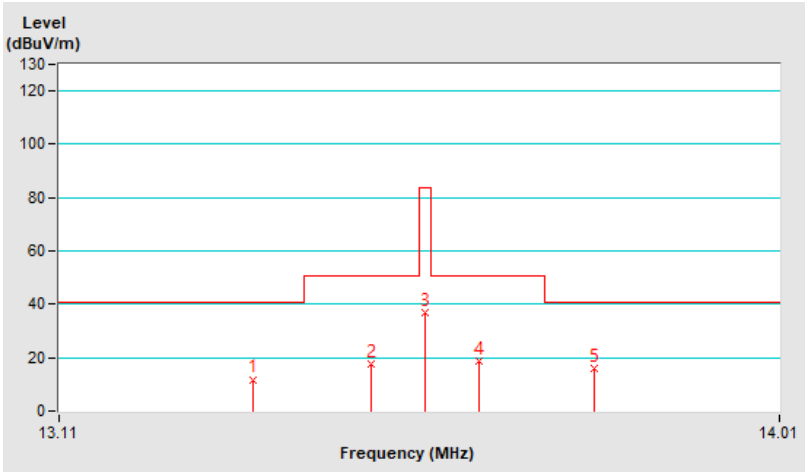
7.2 Radiated Emissions below 30 MHz

Test Mode	Tx		
RF Mode	NFC	**Channel**	CH 1：13.56 MHz
Frequency Range	13.11 MHz ~ 14.01 MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Test Date	Sampson Chen		

Antenna Polarity : Parallel								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	13.347	11.83 QP	40.51	-28.68	1.00	231	54.35	-42.52
2	13.492	17.71 QP	50.47	-32.76	1.00	255	60.26	-42.55
3	*13.560	36.82 QP	84.00	-47.18	1.00	151	79.37	-42.55
4	13.627	18.81 QP	50.47	-31.66	1.00	25	61.37	-42.56
5	13.773	16.03 QP	40.51	-24.48	1.00	333	58.60	-42.57

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. The test distance for 0.49 ~ 30 MHz is 3 m, extrapolate the measured field strength to a distance of 30 meters.
   Distance factor@3 m = 40*log(3/30) = -40 dB

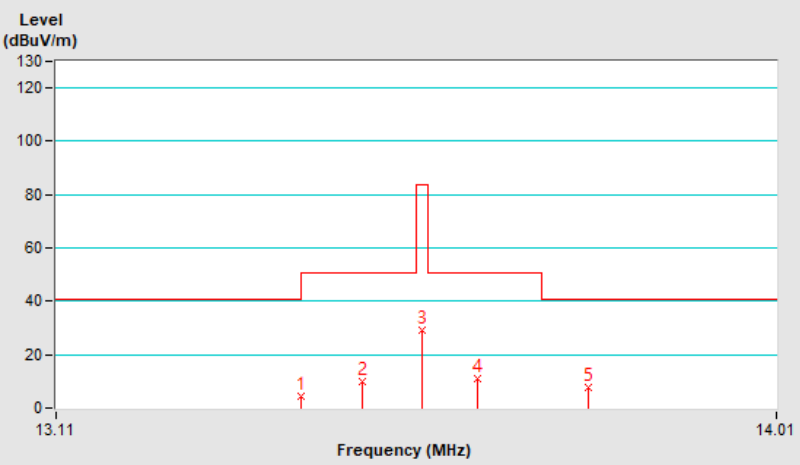


Test Mode	Tx		
RF Mode	NFC	**Channel**	CH 1：13.56 MHz
Frequency Range	13.11 MHz ~ 14.01 MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Test Date	Sampson Chen		

Antenna Polarity : Perpendicular								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	13.410	4.47 QP	40.51	-36.04	1.00	162	47.00	-42.53
2	13.486	9.67 QP	50.47	-40.80	1.00	304	52.22	-42.55
3	*13.560	28.92 QP	84.00	-55.08	1.00	360	71.47	-42.55
4	13.629	10.94 QP	50.47	-39.53	1.00	134	53.50	-42.56
5	13.770	7.75 QP	40.51	-32.76	1.00	13	50.32	-42.57

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. The test distance for 0.49 ~ 30 MHz is 3 m, extrapolate the measured field strength to a distance of 30 meters.
   Distance factor@3 m = 40*log(3/30) = -40 dB

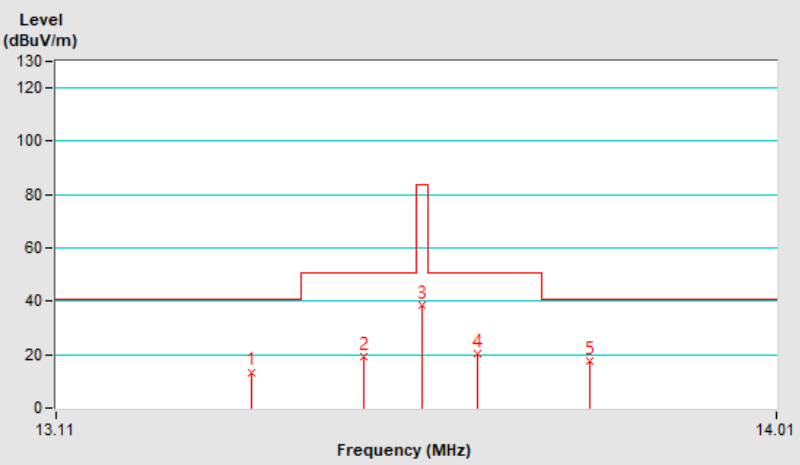


Test Mode	Tx		
RF Mode	NFC	**Channel**	CH 1：13.56 MHz
Frequency Range	13.11 MHz ~ 14.01 MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Test Date	Sampson Chen		

Antenna Polarity : Ground-parallel								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	13.348	13.47 QP	40.51	-27.04	1.00	301	55.99	-42.52
2	13.488	19.30 QP	50.47	-31.17	1.00	214	61.85	-42.55
3	***13.560**	**38.47 QP**	**84.00**	**-45.53**	**1.00**	**297**	**81.02**	**-42.55**
4	13.629	20.45 QP	50.47	-30.02	1.00	141	63.01	-42.56
5	13.771	17.45 QP	40.51	-23.06	1.00	255	60.02	-42.57

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. The test distance for 0.49 ~ 30 MHz is 3 m, extrapolate the measured field strength to a distance of 30 meters.
   Distance factor@3 m = 40*log(3/30) = -40 dB

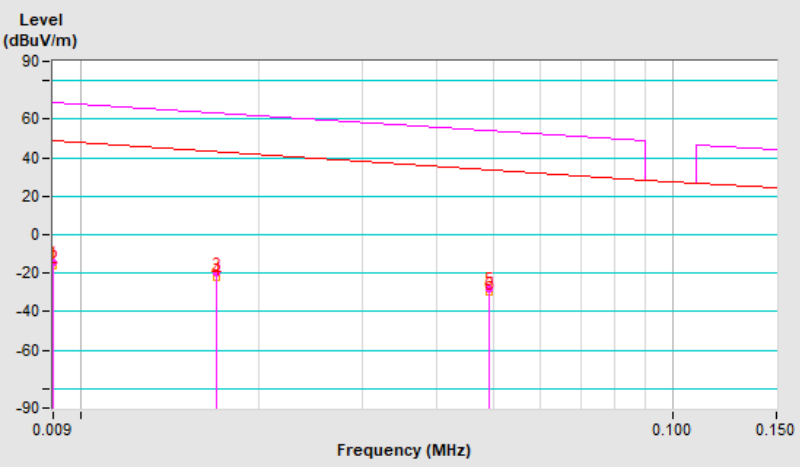


Test Mode	Tx		
RF Mode	NFC	**Channel**	CH 1：13.56 MHz
Frequency Range	9 kHz ~ 150 kHz	**Detector Function & Bandwidth**	Peak (PK) / Average (AV), 200 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Test Date	Sampson Chen		

Antenna Polarity : Parallel								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	0.009	-14.22 PK	68.52	-82.74	1.00	321	28.21	-42.43
2	0.009	-16.31 AV	48.52	-64.83	1.00	321	26.12	-42.43
3	0.017	-20.04 PK	62.99	-83.03	1.00	258	26.41	-46.45
4	0.017	-22.23 AV	42.99	-65.22	1.00	258	24.22	-46.45
5	0.049	-27.95 PK	53.79	-81.74	1.00	39	27.94	-55.89
6	0.049	-30.05 AV	33.79	-63.84	1.00	39	25.84	-55.89

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. The test distance for below 0.49 MHz is 3 m, extrapolate the measured field strength to a distance of 300 meters. Distance factor@3 m = 40*log(3/300) = -80 dB

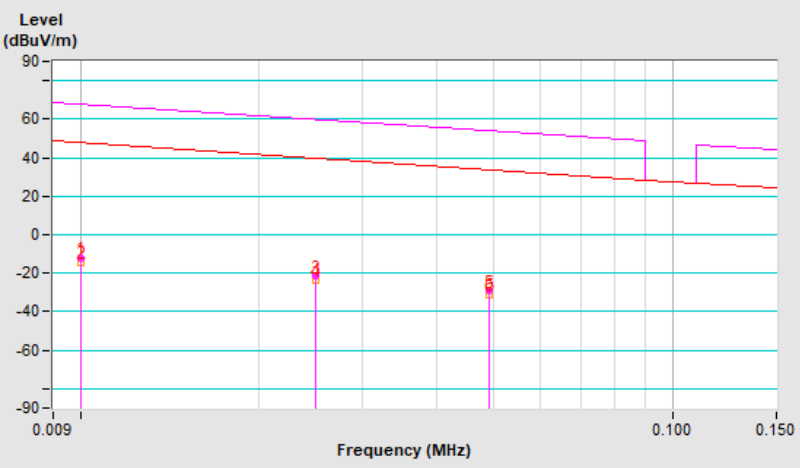


Test Mode	Tx		
RF Mode	NFC	**Channel**	CH 1：13.56 MHz
Frequency Range	9 kHz ~ 150 kHz	**Detector Function & Bandwidth**	Peak (PK) / Average (AV), 200 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Test Date	Sampson Chen		

Antenna Polarity : Perpendicular								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	0.010	-12.12 PK	67.60	-79.72	1.00	65	31.75	-43.87
2	0.010	-14.31 AV	47.60	-61.91	1.00	65	29.56	-43.87
3	0.025	-21.44 PK	59.64	-81.08	1.00	97	27.97	-49.41
4	0.025	-23.45 AV	39.64	-63.09	1.00	97	25.96	-49.41
5	0.049	-29.07 PK	53.79	-82.86	1.00	258	26.82	-55.89
6	0.049	-31.16 AV	33.79	-64.95	1.00	258	24.73	-55.89

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. The test distance for below 0.49 MHz is 3 m, extrapolate the measured field strength to a distance of 300 meters. Distance factor@3 m = 40*log(3/300) = -80 dB

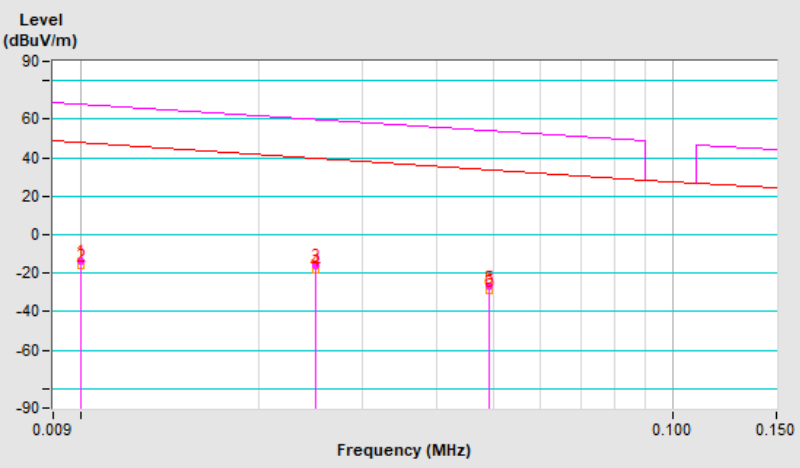


Test Mode	Tx		
RF Mode	NFC	**Channel**	CH 1：13.56 MHz
Frequency Range	9 kHz ~ 150 kHz	**Detector Function & Bandwidth**	Peak (PK) / Average (AV), 200 Hz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Test Date	Sampson Chen		

Antenna Polarity : Ground-parallel								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	0.010	-13.70 PK	67.60	-81.30	1.00	299	30.17	-43.87
2	0.010	-15.83 AV	47.60	-63.43	1.00	299	28.04	-43.87
3	0.025	-15.93 PK	59.64	-75.57	1.00	201	33.48	-49.41
4	0.025	-18.11 AV	39.64	-57.75	1.00	201	31.30	-49.41
5	0.049	-26.77 PK	53.79	-80.56	1.00	309	29.12	-55.89
6	0.049	-28.83 AV	33.79	-62.62	1.00	309	27.06	-55.89

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. The test distance for below 0.49 MHz is 3 m, extrapolate the measured field strength to a distance of 300 meters. Distance factor@3 m = 40*log(3/300) = -80 dB

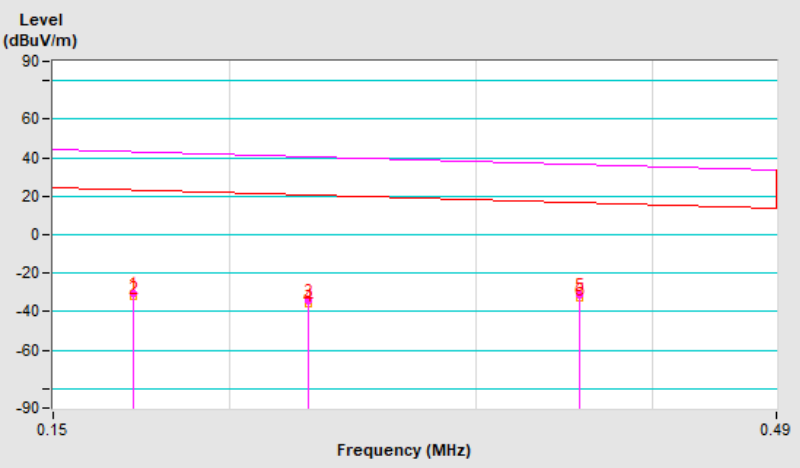


Test Mode	Tx		
RF Mode	NFC	**Channel**	CH 1：13.56 MHz
Frequency Range	150 kHz ~ 490 kHz	**Detector Function & Bandwidth**	Peak (PK) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Test Date	Sampson Chen		

Antenna Polarity : Parallel								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	0.171	-30.21 PK	42.94	-73.15	1.00	321	36.30	-66.51
2	0.171	-32.31 AV	22.94	-55.25	1.00	321	34.20	-66.51
3	0.228	-34.03 PK	40.44	-74.47	1.00	194	34.86	-68.89
4	0.228	-36.16 AV	20.44	-56.60	1.00	194	32.73	-68.89
5	0.355	-31.07 PK	36.60	-67.67	1.00	46	41.63	-72.70
6	0.355	-33.08 AV	16.60	-49.68	1.00	46	39.62	-72.70

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. The test distance for below 0.49 MHz is 3 m, extrapolate the measured field strength to a distance of 300 meters. Distance factor@3 m = 40*log(3/300) = -80 dB

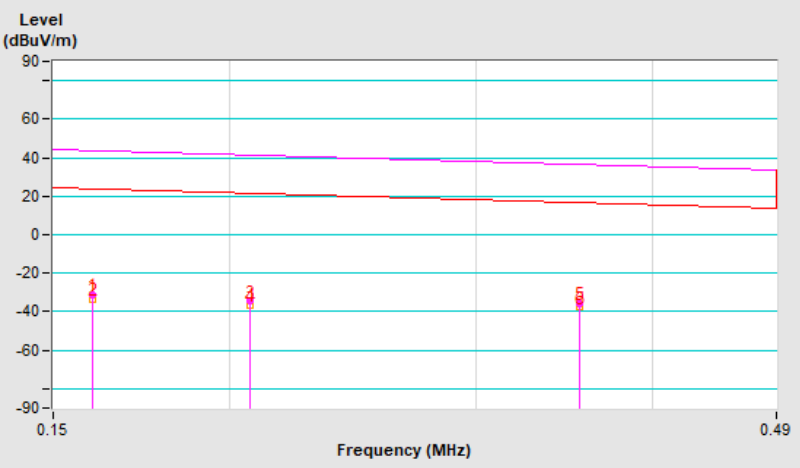


Test Mode	Tx		
RF Mode	NFC	Channel	CH 1：13.56 MHz
Frequency Range	150 kHz ~ 490 kHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 68% RH
Test Date	Sampson Chen		

Antenna Polarity : Perpendicular								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.160	-31.24 PK	43.52	-74.76	1.00	317	34.80	-66.04
2	0.160	-33.39 AV	23.52	-56.91	1.00	317	32.65	-66.04
3	0.207	-34.46 PK	41.28	-75.74	1.00	157	33.58	-68.04
4	0.207	-36.54 AV	21.28	-57.82	1.00	157	31.50	-68.04
5	0.355	-35.59 PK	36.60	-72.19	1.00	90	37.11	-72.70
6	0.355	-37.70 AV	16.60	-54.30	1.00	90	35.00	-72.70

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. The test distance for below 0.49 MHz is 3 m, extrapolate the measured field strength to a distance of 300 meters. Distance factor@3 m = 40*log(3/300) = -80 dB

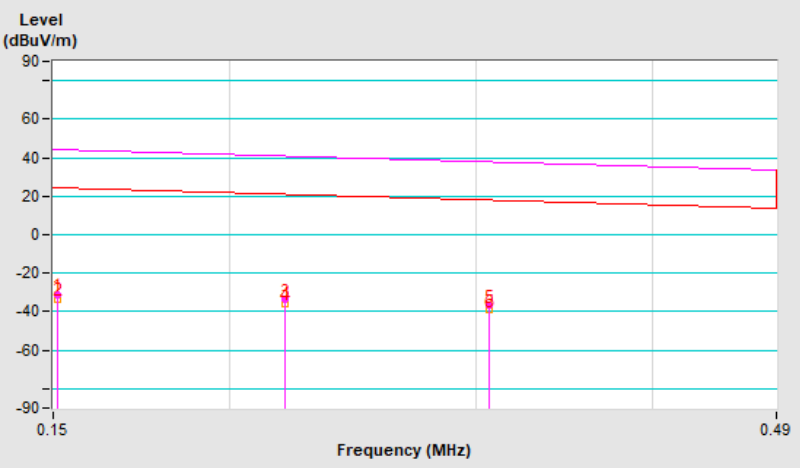


Test Mode	Tx		
RF Mode	NFC	**Channel**	CH 1：13.56 MHz
Frequency Range	150 kHz ~ 490 kHz	**Detector Function & Bandwidth**	Peak (PK) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Test Date	Sampson Chen		

Antenna Polarity : Ground-parallel								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	0.151	-31.16 PK	44.02	-75.18	1.00	22	34.49	-65.65
2	0.151	-33.31 AV	24.02	-57.33	1.00	22	32.34	-65.65
3	0.219	-33.78 PK	40.79	-74.57	1.00	204	34.75	-68.53
4	0.219	-35.86 AV	20.79	-56.65	1.00	204	32.67	-68.53
5	0.306	-36.92 PK	37.89	-74.81	1.00	177	34.98	-71.90
6	0.306	-39.06 AV	17.89	-56.95	1.00	177	32.84	-71.90

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. The test distance for below 0.49 MHz is 3 m, extrapolate the measured field strength to a distance of 300 meters. Distance factor@3 m = 40*log(3/300) = -80 dB

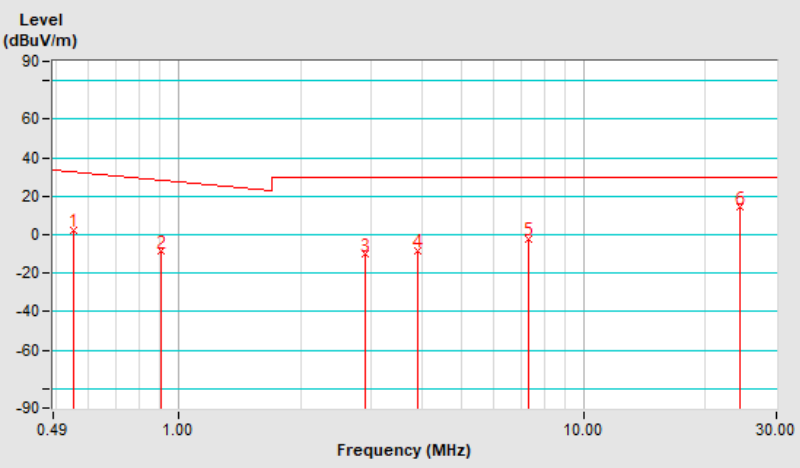


Test Mode	Tx		
RF Mode	NFC	**Channel**	CH 1：13.56 MHz
Frequency Range	490 kHz ~ 30 MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Test Date	Sampson Chen		

Antenna Polarity : Parallel								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	0.549	2.65 QP	32.81	-30.16	1.00	321	38.14	-35.49
2	0.903	-8.45 QP	28.49	-36.94	1.00	324	29.79	-38.24
3	2.880	-10.05 QP	29.54	-39.59	1.00	111	32.72	-42.77
4	3.913	-8.09 QP	29.54	-37.63	1.00	211	35.23	-43.32
5	7.336	-1.93 QP	29.54	-31.47	1.00	207	41.00	-42.93
6	24.364	14.19 QP	29.54	-15.35	1.00	50	56.63	-42.44

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. The test distance for 0.49 ~ 30 MHz is 3 m, extrapolate the measured field strength to a distance of 30 meters.
   Distance factor@3 m = 40*log(3/30) = -40 dB

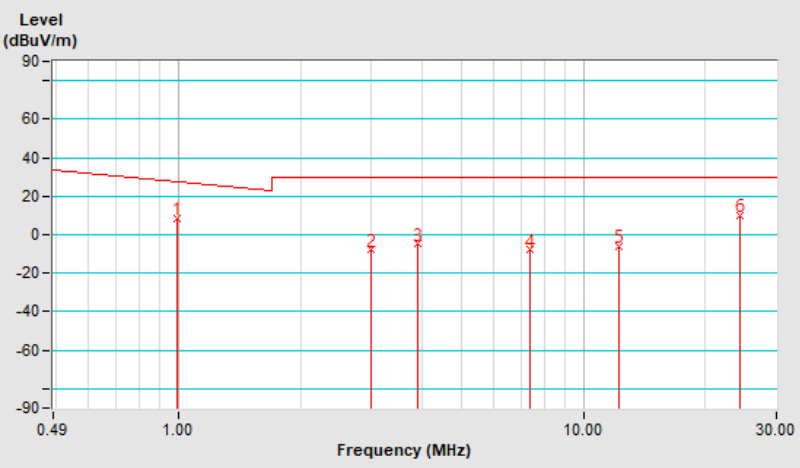


Test Mode	Tx		
RF Mode	NFC	**Channel**	CH 1：13.56 MHz
Frequency Range	490 kHz ~ 30 MHz	**Detector Function & Bandwidth**	Quasi-Peak (QP), 9 kHz
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	22°C, 68% RH
Test Date	Sampson Chen		

Antenna Polarity : Perpendicular								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	0.992	8.70 QP	27.67	-18.97	1.00	111	47.64	-38.94
2	2.998	-7.85 QP	29.54	-37.39	1.00	239	35.17	-43.02
3	3.913	-4.66 QP	29.54	-34.20	1.00	164	38.66	-43.32
4	7.395	-7.76 QP	29.54	-37.30	1.00	54	35.15	-42.91
5	12.205	-5.90 QP	29.54	-35.44	1.00	337	36.50	-42.40
6	24.364	10.27 QP	29.54	-19.27	1.00	23	52.71	-42.44

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. The test distance for 0.49 ~ 30 MHz is 3 m, extrapolate the measured field strength to a distance of 30 meters.
   Distance factor@3 m = 40*log(3/30) = -40 dB

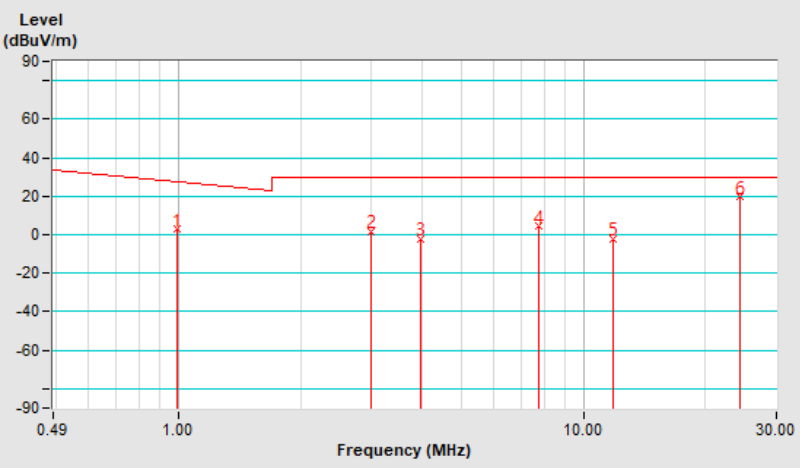


Test Mode	Tx		
RF Mode	NFC	Channel	CH 1：13.56 MHz
Frequency Range	490 kHz ~ 30 MHz	Detector Function & Bandwidth	Quasi-Peak (QP), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22°C, 68% RH
Test Date	Sampson Chen		

Antenna Polarity : Ground-parallel								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	0.992	2.92 QP	27.67	-24.75	1.00	40	41.86	-38.94
2	2.998	1.64 QP	29.54	-27.90	1.00	333	44.66	-43.02
3	3.972	-1.97 QP	29.54	-31.51	1.00	300	41.37	-43.34
4	7.789	4.30 QP	29.54	-25.24	1.00	28	47.10	-42.80
5	11.881	-1.92 QP	29.54	-31.46	1.00	31	40.44	-42.36
6	**24.364**	**19.67 QP**	**29.54**	**-9.87**	**1.00**	**128**	**62.11**	**-42.44**

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + Distance Factor
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. The test distance for 0.49 ~ 30 MHz is 3 m, extrapolate the measured field strength to a distance of 30 meters.
   Distance factor@3 m = 40*log(3/30) = -40 dB



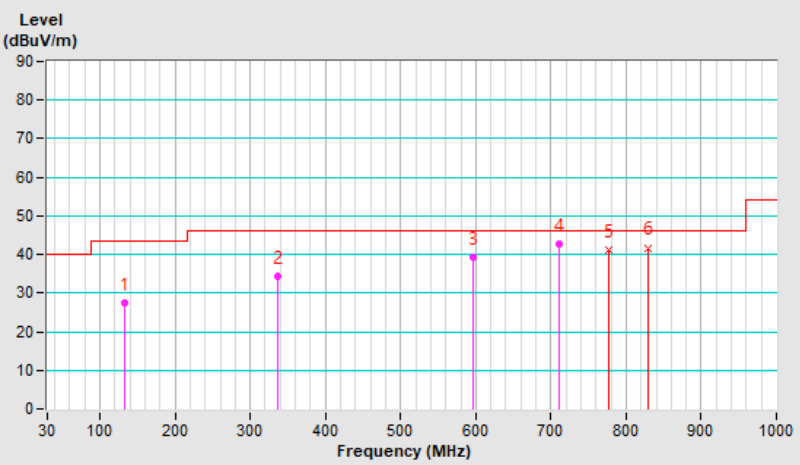
7.3 Radiated Emissions above 30 MHz

RF Mode	NFC	**Channel**	CH 1：13.56 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	**Environmental Conditions**	20°C, 67% RH
Tested By	Sampson Chen		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	132.48	27.6 QP	43.5	-15.9	1.50 H	52	41.6	-14.0
2	336.01	34.4 QP	46.0	-11.6	1.00 H	113	45.9	-11.5
3	596.24	39.1 QP	46.0	-6.9	1.50 H	187	44.6	-5.5
4	**710.19**	**42.5 QP**	**46.0**	**-3.5**	**1.00 H**	**209**	**46.4**	**-3.9**
5	776.41	41.0 QP	46.0	-5.0	1.00 H	243	43.3	-2.3
6	829.13	41.8 QP	46.0	-4.2	1.00 H	28	44.0	-2.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.

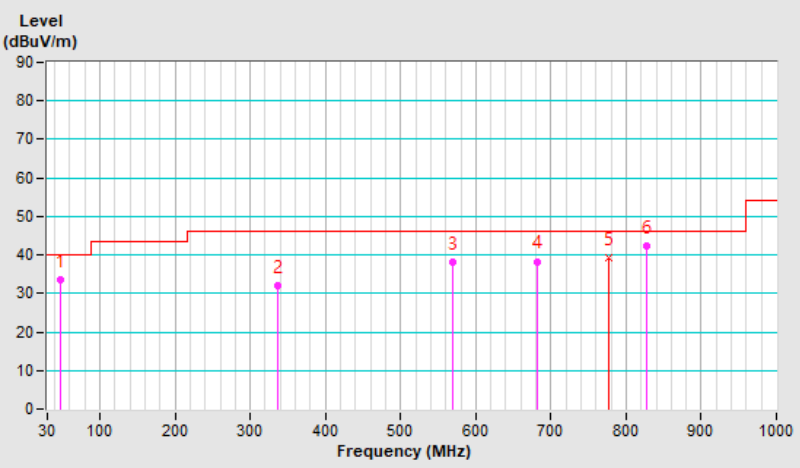


RF Mode	NFC	Channel	CH 1：13.56 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	20°C, 67% RH
Tested By	Sampson Chen		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	48.16	33.7 QP	40.0	-6.3	1.50 V	360	46.7	-13.0
2	336.01	32.0 QP	46.0	-14.0	1.50 V	184	43.5	-11.5
3	569.03	38.2 QP	46.0	-7.8	1.00 V	157	44.6	-6.4
4	682.57	38.3 QP	46.0	-7.7	1.00 V	200	42.5	-4.2
5	776.80	39.1 QP	46.0	-6.9	1.50 V	45	41.4	-2.3
6	827.83	42.2 QP	46.0	-3.8	2.00 V	2	44.4	-2.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.



7.4 Frequency Stability

Input Power:	12 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko

Frequency Stability Versus Temperature									
Operating Frequency: 13.56 MHz									
Temp. (℃)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Reading (MHz)	Drift (%)	Reading (MHz)	Drift (%)	Reading (MHz)	Drift (%)	Reading (MHz)	Drift (%)
50	12	13.56006	0.00044	13.56006	0.00044	13.56005	0.00037	13.56006	0.00044
40	12	13.56003	0.00022	13.56002	0.00015	13.56002	0.00015	13.56002	0.00015
30	12	13.56001	0.00007	13.56001	0.00007	13.56001	0.00007	13.56001	0.00007
20	12	13.56004	0.00029	13.56004	0.00029	13.56004	0.00029	13.56004	0.00029
10	12	13.55994	-0.00044	13.55994	-0.00044	13.55994	-0.00044	13.55993	-0.00052
0	12	13.56006	0.00044	13.56006	0.00044	13.56006	0.00044	13.56006	0.00044
-10	12	13.56006	0.00044	13.56005	0.00037	13.56006	0.00044	13.56006	0.00044
-20	12	13.55997	-0.00022	13.55997	-0.00022	13.55997	-0.00022	13.55997	-0.00022

Frequency Stability Versus Voltage									
Operating Frequency: 13.56 MHz									
Temp. (℃)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Reading (MHz)	Drift (%)	Reading (MHz)	Drift (%)	Reading (MHz)	Drift (%)	Reading (MHz)	Drift (%)
20	13.8	13.56004	0.00029	13.56004	0.00029	13.56004	0.00029	13.56004	0.00029
	12	13.56004	0.00029	13.56004	0.00029	13.56004	0.00029	13.56004	0.00029
	10.2	13.56004	0.00029	13.56004	0.00029	13.56004	0.00029	13.56004	0.00029

7.5 20 dB Bandwidth

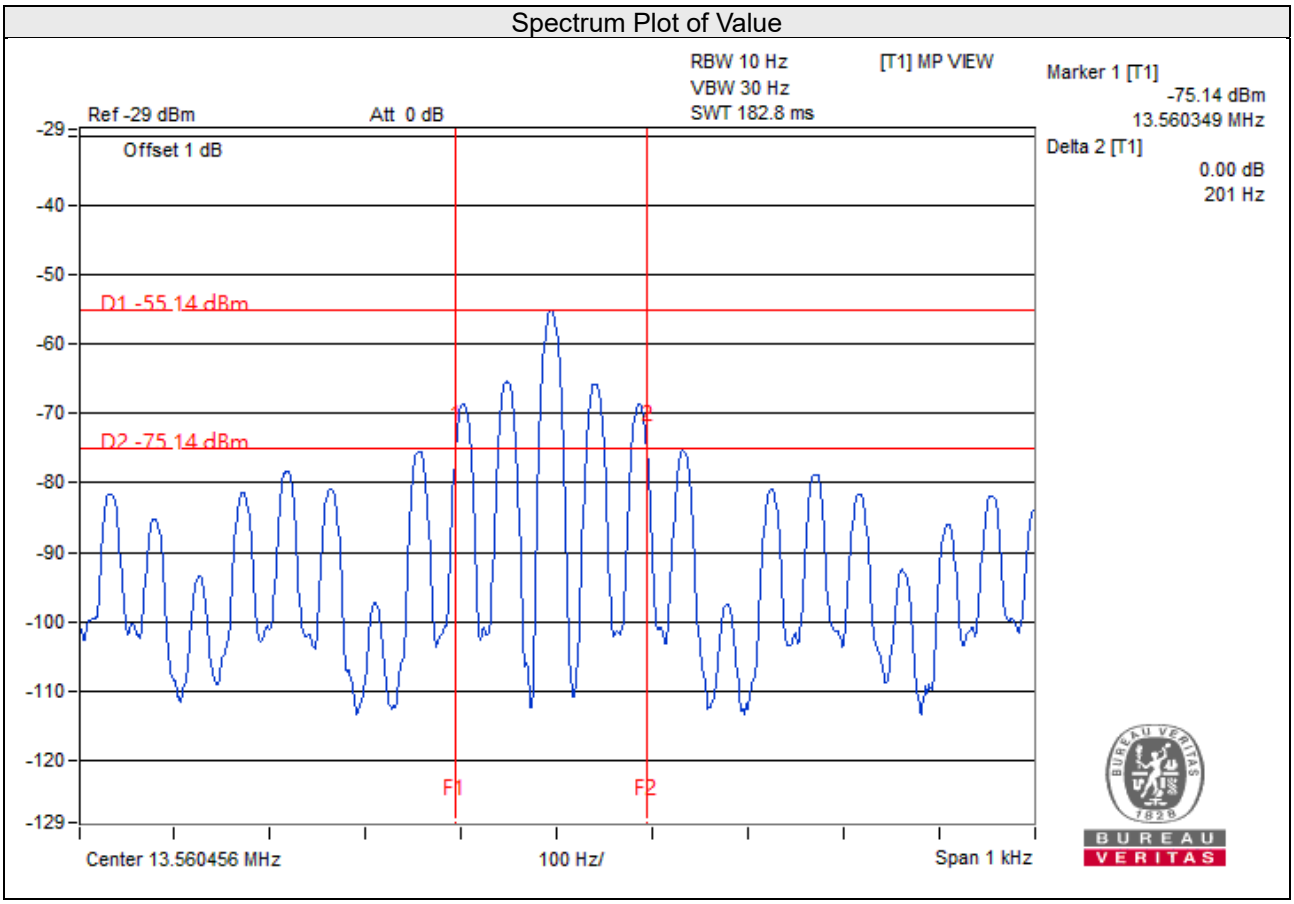
Input Power:	12 Vdc	Environmental Conditions:	25°C, 60% RH	Tested By:	Kevin Ko

Channel	Channel Frequency (MHz)	20 dB Bandwidth (MHz)	Measured Frequencies		Operating Frequency Band (MHz)	Test Result
			FL (MHz)	FH (MHz)		
1	13.56	0.000201	13.560349	13.56055	13.11 ~ 14.01	Pass

Notes:

1. FL is the lowest frequency of the 20 dB bandwidth of power envelope.
2. FH is the highest frequency of the 20 dB bandwidth of power envelope.

Spectrum Plot of Value



8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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