

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.225)
Report No.: RFBEOE-WTW-P23120072A-5
FCC ID: MQT-AT150ED7
Product: Terminal
Brand: XAC, Fiserv
Model No.: xCL_AT-150-ED
Received Date: 2025/8/5
Test Date: 2025/8/12 ~ 2025/9/6
Issued Date: 2025/9/17
Applicant: XAC AUTOMATION CORP.
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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Hsin Chu Laboratory
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FCC Registration / 723255 / TW2022
Designation Number:

Approved by: _____

Wen Yu / Assistant Manager

, Date: 2025/9/17

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Prepared by : Claire Kuan / Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBEOE-WTW-P23120072A-5	Original release.	2025/9/17

1 Certificate

Product: Terminal

Brand: XAC, Fiserv

Test Model: xCL_AT-150-ED

Sample Status: Engineering sample

Applicant: XAC AUTOMATION CORP.

Test Date: 2025/8/12 ~ 2025/9/6

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.225)

**Measurement
procedure:** ANSI C63.10-2020

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)			
Standard / Clause	Test Item	Result	Remark
15.207	AC Power Conducted Emissions	Pass	Minimum passing margin is -19.32 dB at 0.17734 MHz
15.225 (a)	The field strength of any emissions within the band 13.553-13.567 MHz	Pass	Meet the requirement of limit.
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	Meet the requirement of limit.
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 -4.3 dB at 730.32 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	Antenna connector is I-PEX MHF1 not a standard connector.

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
Radiated Emissions below 30 MHz	9 kHz ~ 30 MHz	3.1 dB
Radiated Emissions above 30 MHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.1 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, Fiserv
Test Model	xCL_AT-150-ED
Status of EUT	Engineering sample
Power Supply Rating	12 Vdc from power adapter
Modulation Type	ASK
Data Rate	106 kbit/s
Operating Frequency	13.56 MHz
Number of Channel	1
Field Strength Of Fundamental	35.30 dBuV/m (Quasi-Peak) at 30 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 (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. The AC Adapter has the following models: DSA-36PFN-12FCA 120300 / ADP-36PH B. Pre-scan these models of AC Adapters and find the worst case as a representative test condition. 2. 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).
Worst Case:	1. AC Adapter Worst Condition:ADP-36PH B

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

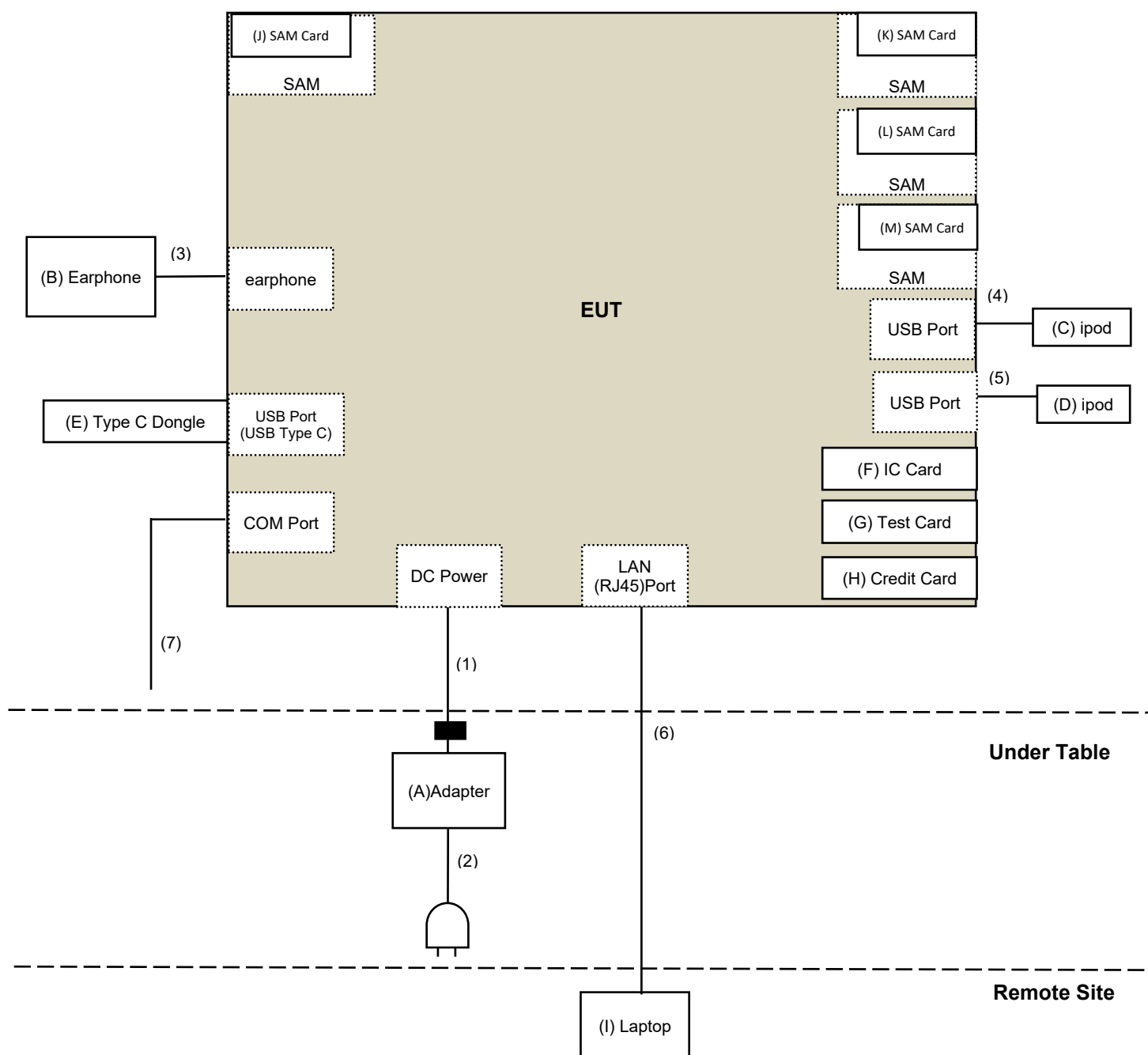
Test Item	Type	Tested Channel	Modulation	Data Rate Parameter
AC Power Conducted Emissions	A	1	100%, ASK	106 kbit/s
Radiated Emissions below 30 MHz	A	1	100%, ASK	106 kbit/s
Radiated Emissions above 30 MHz	A	1	100%, ASK	106 kbit/s
Frequency Stability	A	1	unmodulated	-
20 dB Bandwidth	A	1	100%, ASK	106 kbit/s

3.5 Test Program Used and Operation Descriptions

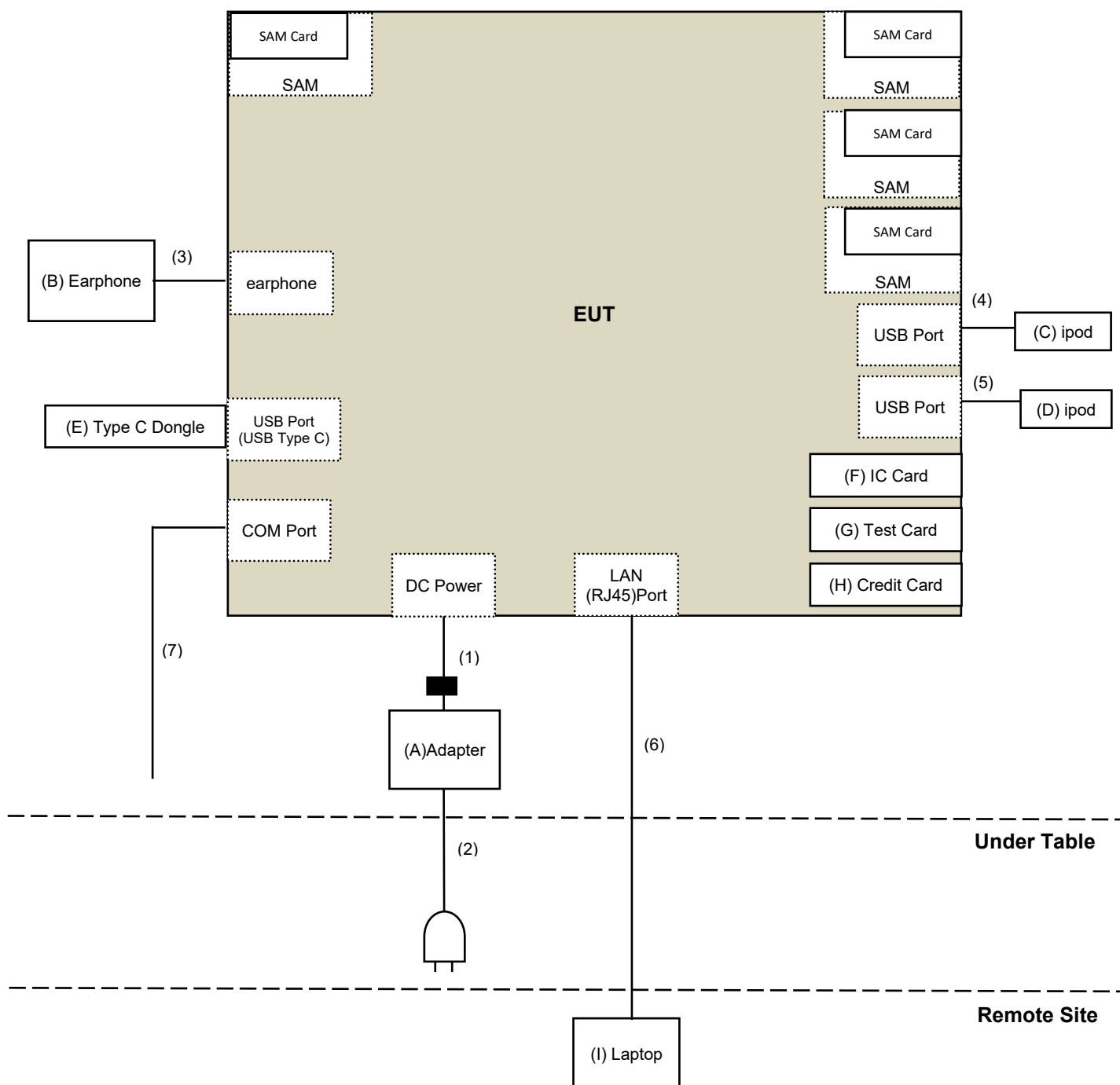
Controlling software (NFC:E.P.T) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.6 Connection Diagram of EUT and Peripheral Devicesaa

For Unwanted Emissions test:



For AC Power Conducted Emission test:



3.7 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Adapter	DELTA ELECTRONICS	ADP-36PH B	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	TP00120A	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	1.8	No	1	Supplied by applicant
2	AC Cable	1	1.2	No	0	Supplied by applicant
3	Audio Cable	1	1.2	No	0	Provided by Lab
4	USB Cable	1	0.1	Yes	0	Provided by Lab
5	USB Cable	1	0.1	Yes	0	Provided by Lab
6	RJ-45	1	10	No	0	Provided by Lab
7	RJ-12	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	2024/11/1	2025/10/31
EMI Test Receiver R&S	ESCS 30	100375	2025/5/21	2026/5/20
Fixed Attenuator STI	STI02-2200-10	005	2025/2/17	2026/2/16
LISN R&S	ESH3-Z5	835239/001	2025/3/27	2026/3/26
		848773/004	2024/10/7	2025/10/6
RF Coaxial Cable JYEBAO	5D-FB	COCCAB-001	2025/2/17	2026/2/16
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: 2025/9/6

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
EMI Test Receiver R&S	ESR7	102026	2025/3/25	2026/3/24
Loop Antenna TESEQ	HLA 6121	63620	2024/10/17	2025/10/16
Preamplifier EMCI	EMC001340	980142	2025/2/17	2026/2/16
PXA Signal Analyzer Keysight	N9030B	MY57141948	2025/5/20	2026/5/19
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2025/8/12

4.3 Radiated Emissions above 30 MHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-0842	2024/10/8	2025/10/7
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
EMI Test Receiver R&S	ESR7	102026	2025/3/25	2026/3/24
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	2025/3/29	2026/3/28
Loop Antenna TESEQ	HLA 6121	63620	2024/10/17	2025/10/16
Preamplifier EMCI	EMC330N	980538	2025/3/29	2026/3/28
	EMC001340	980142	2025/2/17	2026/2/16
PXA Signal Analyzer Keysight	N9030B	MY57141948	2025/5/20	2026/5/19
RF Coaxial Cable PEWC	8D	966-5-1	2025/3/29	2026/3/28
		966-5-2	2025/3/29	2026/3/28
		966-5-3	2025/3/29	2026/3/28
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 5.
2. Tested Date: 2025/9/6

4.4 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
AC Power Source GOOD WILL	6905S	1991551	N/A	N/A
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2025/5/23	2026/5/22
PXA Signal Analyzer Keysight	N9030A	MY55330160	2025/1/16	2026/1/15
Software	ADT_RF Test Software V8	N/A	N/A	N/A
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	2024/12/19	2025/12/18
True RMS Clamp Meter FLUKE	325	31130711WS	2025/6/12	2026/6/11

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2025/8/27

4.5 20 dB Bandwidth

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2025/5/23	2026/5/22
PXA Signal Analyzer Keysight	N9030A	MY55330160	2025/1/16	2026/1/15
Software	ADT_RF Test Software V8	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2025/8/27

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:

Frequency (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 detect or 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.

Frequency (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 $\pm 0.01\%$ 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.

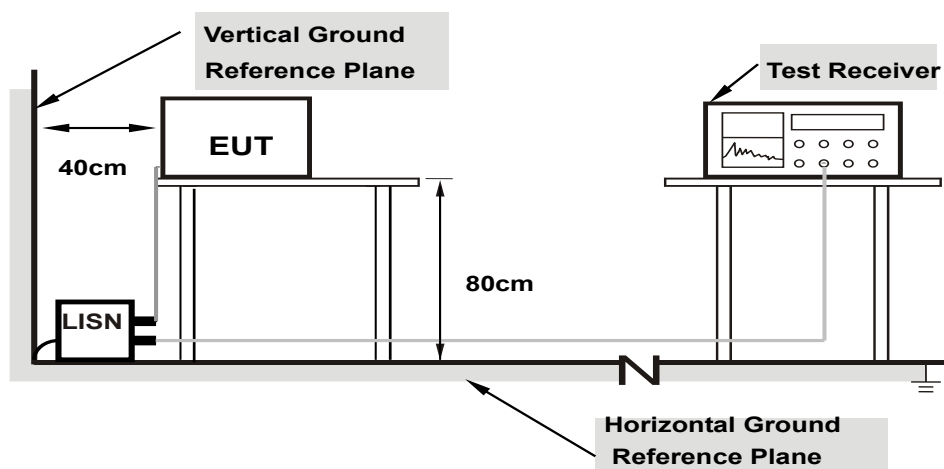
5.5 20 dB Bandwidth

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

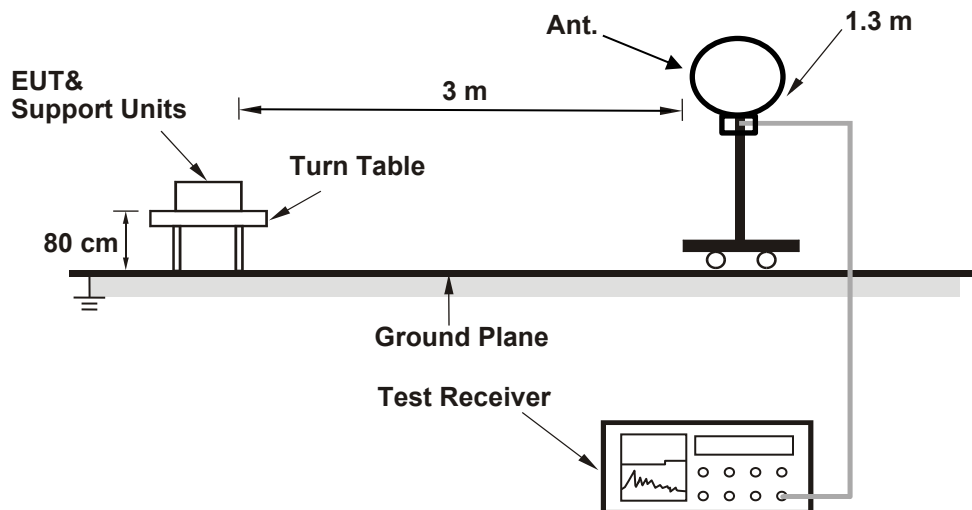
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The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

- 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.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- 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.
- 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.

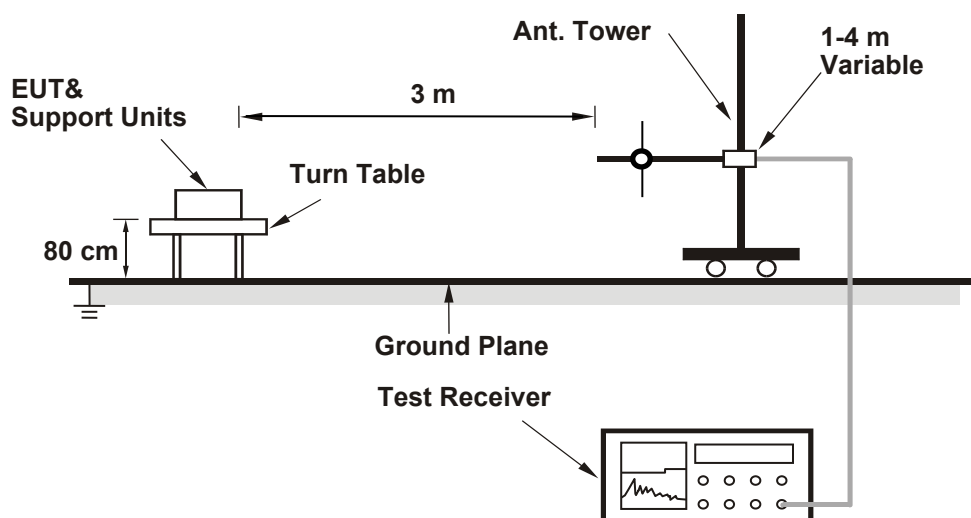
Notes:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
- 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

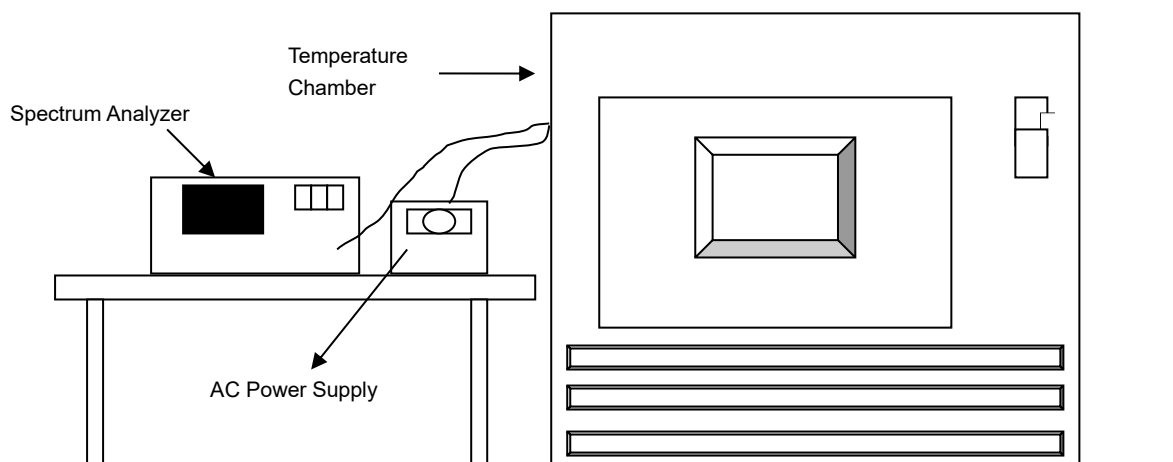
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequencies less than or equal to 1 GHz..

Notes:

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

6.4 Frequency Stability

6.4.1 Test Setup

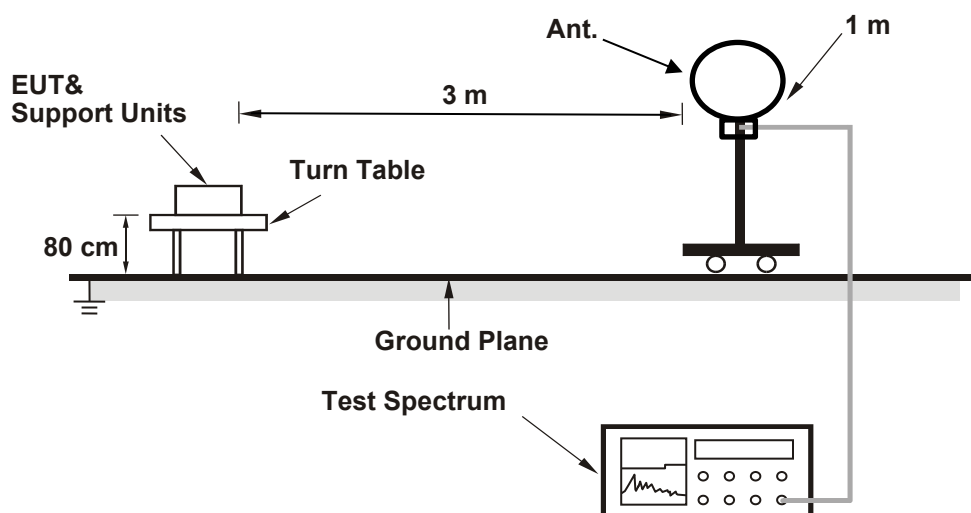


6.4.2 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- 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.
- Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
- 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



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

6.5.2 Test Procedure

Radiated Measurement:

- 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.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- 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.
- Set resolution bandwidth (RBW) = 1% to 5% of the OBW.
- Set the video bandwidth at least 3 x RBW,
- Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Use the 99% power bandwidth function of the instrument..

7 Test Results of Test Item

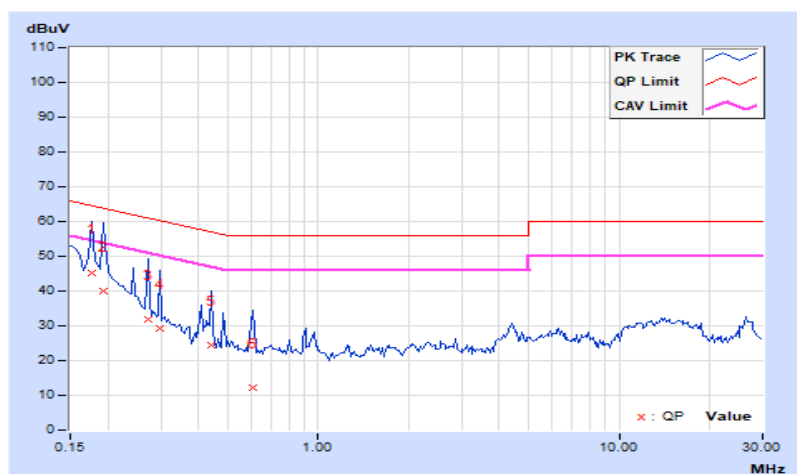
7.1 AC Power Conducted Emissions

RF Mode	NFC-13.56MHz	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	22 °C, 50% RH
Tested By	Roy Mai		

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	0.17734	9.97	35.32	17.97	45.29	27.94	64.61	54.61	-19.32	-26.67
2	0.19297	9.99	30.10	13.38	40.09	23.37	63.91	53.91	-23.82	-30.54
3	0.27109	9.99	21.72	4.49	31.71	14.48	61.08	51.08	-29.37	-36.60
4	0.29844	9.99	19.41	2.46	29.40	12.45	60.29	50.29	-30.89	-37.84
5	0.44297	9.99	14.29	2.87	24.28	12.86	57.01	47.01	-32.73	-34.15
6	0.60313	10.00	2.24	-5.67	12.24	4.33	56.00	46.00	-43.76	-41.67

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

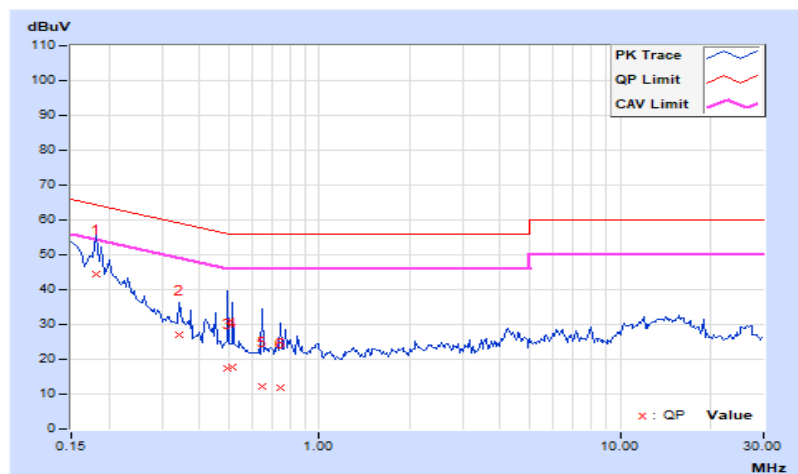


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	22 °C, 50% RH
Tested By	Roy Mai		

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	0.18125	10.01	34.32	16.51	44.33	26.52	64.43	54.43	-20.10	-27.91
2	0.34141	10.01	16.89	1.32	26.90	11.33	59.17	49.17	-32.27	-37.84
3	0.49766	10.01	7.32	-2.56	17.33	7.45	56.04	46.04	-38.71	-38.59
4	0.51719	10.01	7.73	-1.47	17.74	8.54	56.00	46.00	-38.26	-37.46
5	0.64609	10.02	2.14	-7.03	12.16	2.99	56.00	46.00	-43.84	-43.01
6	0.74375	10.03	1.77	-4.75	11.80	5.28	56.00	46.00	-44.20	-40.72

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



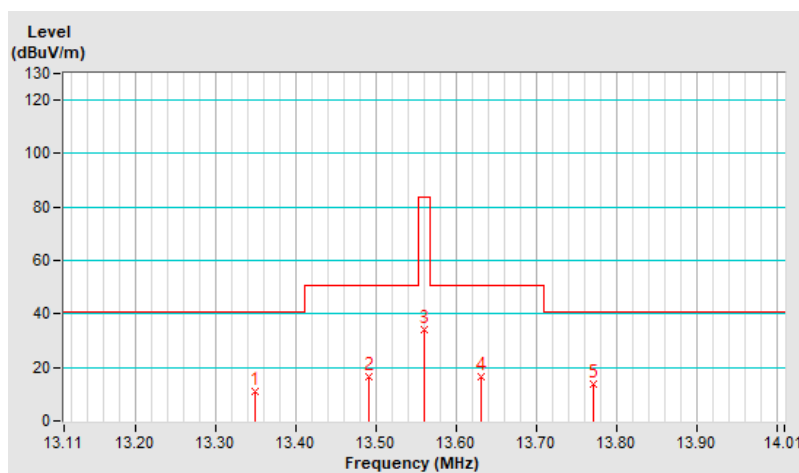
7.2 Radiated Emissions below 30 MHz

RF Mode	NFC-13.56MHz	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	24 °C, 68% RH
Tested By	Roy Mai		

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	13.348	10.90 QP	40.50	-29.60	1.00	30	28.30	-17.40
2	13.491	16.40 QP	50.50	-34.10	1.00	360	33.80	-17.40
3	*13.560	34.30 QP	84.00	-49.70	1.00	8	51.70	-17.40
4	13.631	16.60 QP	50.50	-33.90	1.00	360	34.00	-17.40
5	13.771	13.90 QP	40.50	-26.60	1.00	41	31.30	-17.40

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 = $40 \cdot \log(3/30) = -40$ dB

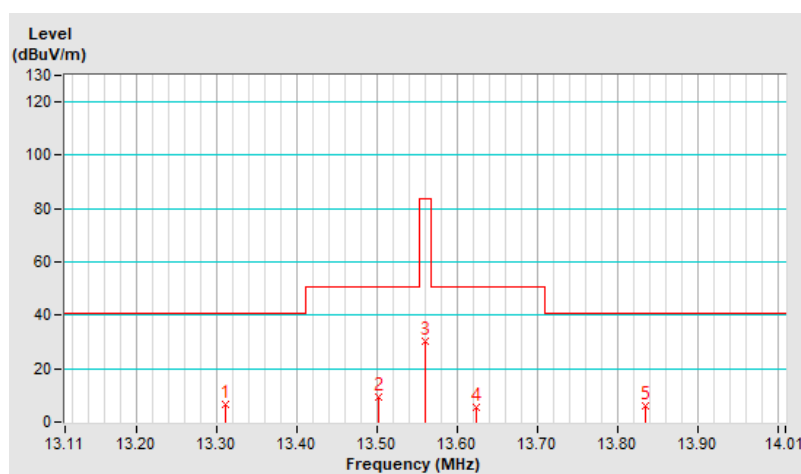


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	13.11 MHz ~ 14.01 MHz	Detector Function & Bandwidth	Quasi-Peak (QP), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Roy Mai		

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	13.310	6.70 QP	40.50	-33.80	1.00	242	24.10	-17.40
2	13.502	9.50 QP	50.50	-41.00	1.00	89	26.90	-17.40
3	*13.560	30.10 QP	84.00	-53.90	1.00	96	47.50	-17.40
4	13.623	5.70 QP	50.50	-44.80	1.00	198	23.10	-17.40
5	13.835	6.00 QP	40.50	-34.50	1.00	91	23.40	-17.40

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 = $40 \times \log(3/30) = -40$ dB

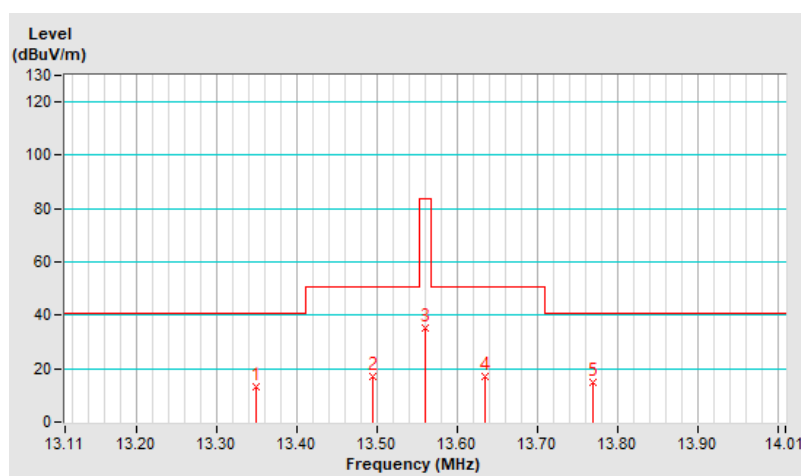


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	13.11 MHz ~ 14.01 MHz	Detector Function & Bandwidth	Quasi-Peak (QP), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Roy Mai		

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	13.30 QP	40.50	-27.20	1.00	27	30.70	-17.40
2	13.495	16.90 QP	50.50	-33.60	1.00	2	34.30	-17.40
3	*13.560	35.30 QP	84.00	-48.70	1.00	3	52.70	-17.40
4	13.634	17.10 QP	50.50	-33.40	1.00	10	34.50	-17.40
5	13.769	14.60 QP	40.50	-25.90	1.00	3	32.00	-17.40

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 = $40 \cdot \log(3/30) = -40$ dB

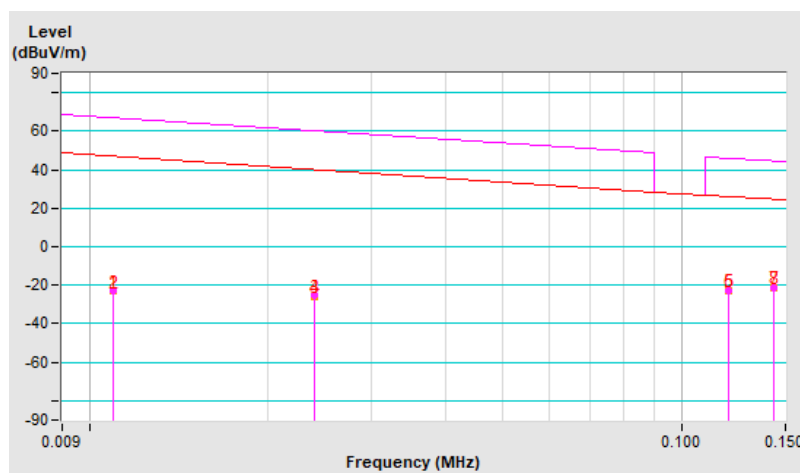


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	9 kHz ~ 150 kHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Roy Mai		

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	0.011	-23.10 PK	66.78	-89.88	1.00	2	39.86	-62.96
2	0.011	-23.24 AV	46.78	-70.02	1.00	2	39.72	-62.96
3	0.024	-25.48 PK	60.00	-85.48	1.00	137	35.85	-61.33
4	0.024	-25.62 AV	40.00	-65.62	1.00	137	35.71	-61.33
5	0.120	-22.53 PK	46.02	-68.55	1.00	171	38.38	-60.91
6	0.120	-22.67 AV	26.02	-48.69	1.00	171	38.24	-60.91
7	0.143	-21.04 PK	44.49	-65.53	1.00	204	39.79	-60.83
8	0.143	-21.18 AV	24.49	-45.67	1.00	204	39.65	-60.83

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 = $40 \cdot \log(3/300) = -80$ dB

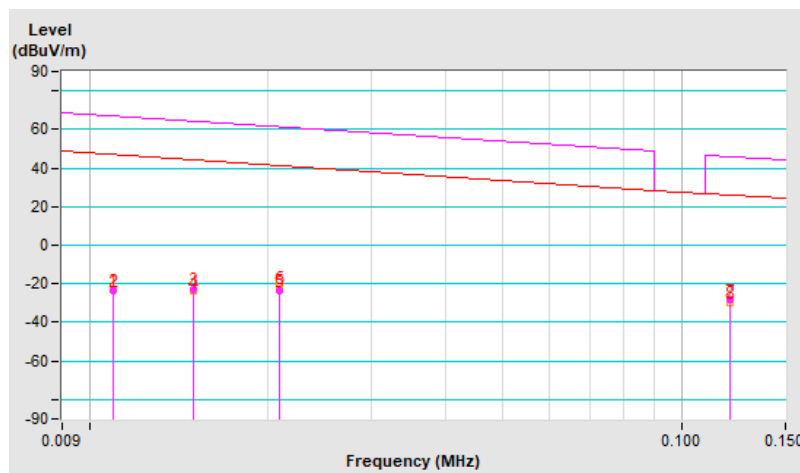


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	9 kHz ~ 150 kHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Roy Mai		

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	0.011	-23.60 PK	66.78	-90.38	1.00	170	39.36	-62.96
2	0.011	-23.10 AV	46.78	-69.88	1.00	170	39.86	-62.96
3	0.015	-22.83 PK	64.08	-86.91	1.00	186	39.63	-62.46
4	0.015	-23.94 AV	44.08	-68.02	1.00	186	38.52	-62.46
5	0.021	-23.64 PK	61.16	-84.80	1.00	17	38.07	-61.71
6	0.021	-21.44 AV	41.16	-62.60	1.00	17	40.27	-61.71
7	0.121	-28.33 PK	45.94	-74.27	1.00	336	32.58	-60.91
8	0.121	-29.44 AV	25.94	-55.38	1.00	336	31.47	-60.91

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 = $40 \cdot \log(3/300) = -80$ dB

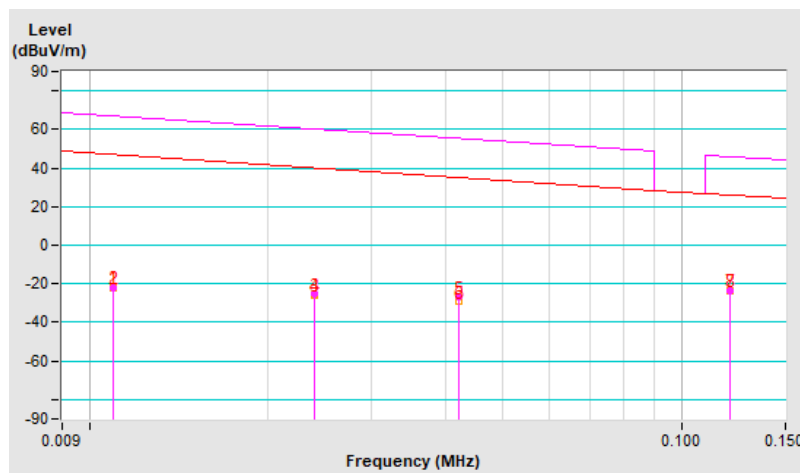


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	9 kHz ~ 150 kHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 200 Hz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Roy Mai		

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	0.011	-21.95 PK	66.78	-88.73	1.00	286	41.01	-62.96
2	0.011	-22.10 AV	46.78	-68.88	1.00	286	40.86	-62.96
3	0.024	-25.48 PK	60.00	-85.48	1.00	148	35.85	-61.33
4	0.024	-25.63 AV	40.00	-65.63	1.00	148	35.70	-61.33
5	0.042	-26.88 PK	55.13	-82.01	1.00	239	32.73	-59.61
6	0.042	-29.03 AV	35.13	-64.16	1.00	239	30.58	-59.61
7	0.121	-23.40 PK	45.94	-69.34	1.00	55	37.51	-60.91
8	0.121	-23.50 AV	25.94	-49.44	1.00	55	37.41	-60.91

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 = $40 \cdot \log(3/300) = -80$ dB

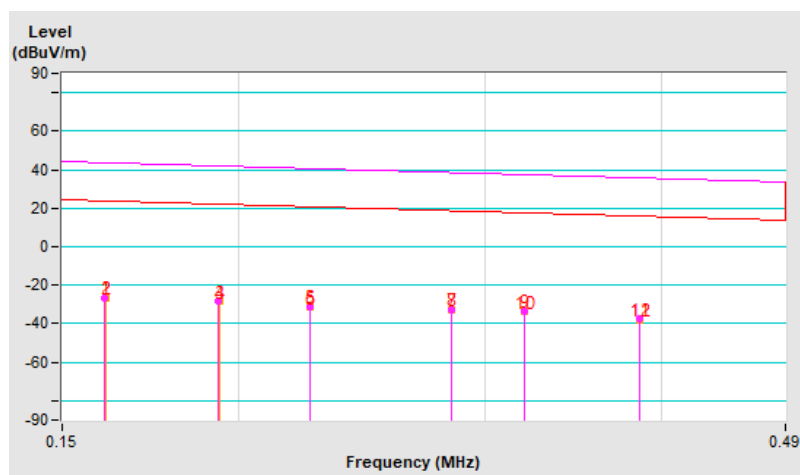


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	150 kHz ~ 490 kHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Roy Mai		

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	0.161	-26.60 PK	43.47	-70.07	1.00	168	34.18	-60.78
2	0.161	-26.73 AV	23.47	-50.20	1.00	168	34.05	-60.78
3	0.194	-28.29 PK	41.85	-70.14	1.00	215	32.39	-60.68
4	0.194	-28.42 AV	21.85	-50.27	1.00	215	32.26	-60.68
5	0.225	-31.30 PK	40.56	-71.86	1.00	44	29.29	-60.59
6	0.225	-31.43 AV	20.56	-51.99	4.00	44	29.16	-60.59
7	0.284	-32.49 PK	38.54	-71.03	1.00	263	27.91	-60.40
8	0.284	-32.62 AV	18.54	-51.16	1.00	263	27.78	-60.40
9	0.320	-33.49 PK	37.50	-70.99	1.00	164	26.85	-60.34
10	0.320	-33.62 AV	17.50	-51.12	1.00	164	26.72	-60.34
11	0.386	-37.72 PK	35.87	-73.59	1.00	306	22.58	-60.30
12	0.386	-37.85 AV	15.87	-53.72	1.00	306	22.45	-60.30

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 = $40 \cdot \log(3/300) = -80$ dB

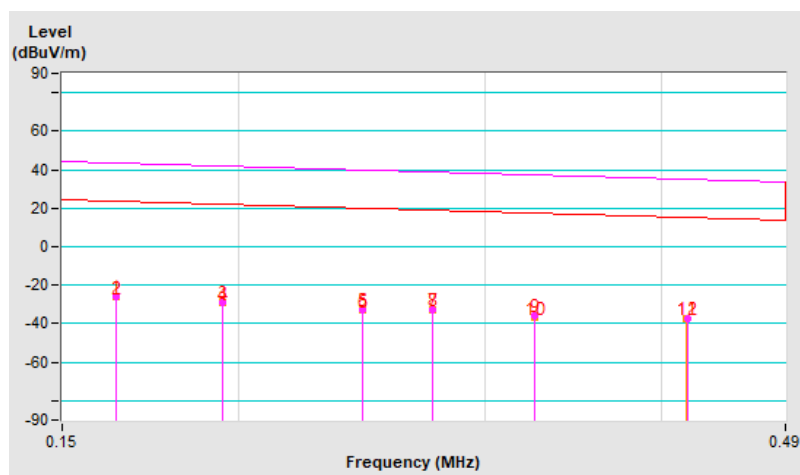


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	150 kHz ~ 490 kHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Roy Mai		

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	0.164	-25.87 PK	43.31	-69.18	1.00	296	34.90	-60.77
2	0.164	-26.03 AV	23.31	-49.34	1.00	296	34.74	-60.77
3	0.195	-29.00 PK	41.80	-70.80	1.00	295	31.67	-60.67
4	0.195	-29.16 AV	21.80	-50.96	1.00	295	31.51	-60.67
5	0.245	-32.80 PK	39.82	-72.62	1.00	242	27.72	-60.52
6	0.245	-32.96 AV	19.82	-52.78	1.00	242	27.56	-60.52
7	0.275	-32.45 PK	38.82	-71.27	1.00	1	27.97	-60.42
8	0.275	-32.61 AV	18.82	-51.43	1.00	1	27.81	-60.42
9	0.325	-35.69 PK	37.37	-73.06	1.00	6	24.65	-60.34
10	0.325	-36.85 AV	17.37	-54.22	1.00	6	23.49	-60.34
11	0.417	-37.23 PK	35.20	-72.43	1.00	286	23.05	-60.28
12	0.417	-37.39 AV	15.20	-52.59	1.00	286	22.89	-60.28

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 = $40 \cdot \log(3/300) = -80$ dB

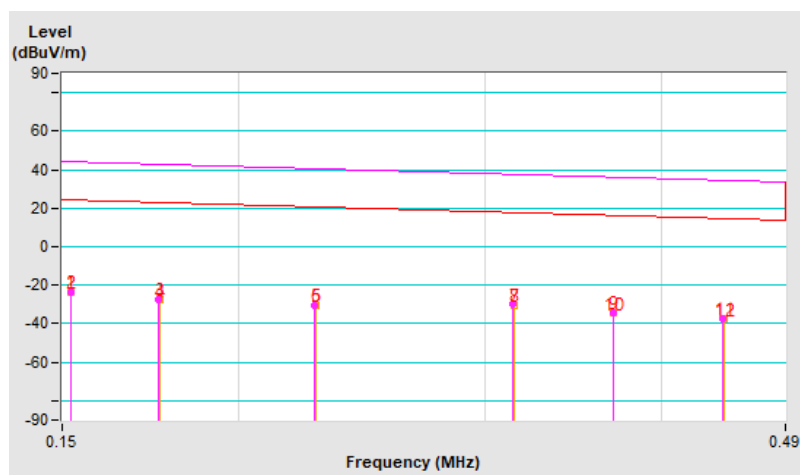


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	150 kHz ~ 490 kHz	Detector Function & Bandwidth	Peak (PK) / Average (AV), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Roy Mai		

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	0.152	-23.35 PK	43.96	-67.31	1.00	360	37.45	-60.80
2	0.152	-23.47 AV	23.96	-47.43	1.00	360	37.33	-60.80
3	0.176	-27.45 PK	42.69	-70.14	1.00	352	33.28	-60.73
4	0.176	-27.57 AV	22.69	-50.26	1.00	352	33.16	-60.73
5	0.227	-30.38 PK	40.48	-70.86	1.00	74	30.20	-60.58
6	0.227	-30.50 AV	20.48	-50.98	1.00	74	30.08	-60.58
7	0.314	-30.10 PK	37.66	-67.76	1.00	305	30.24	-60.34
8	0.314	-30.22 AV	17.66	-47.88	1.00	305	30.12	-60.34
9	0.370	-34.32 PK	36.24	-70.56	1.00	148	25.98	-60.30
10	0.370	-34.44 AV	16.24	-50.68	1.00	148	25.86	-60.30
11	0.443	-37.30 PK	34.68	-71.98	1.00	189	22.97	-60.27
12	0.443	-37.42 AV	14.68	-52.10	1.00	189	22.85	-60.27

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 = $40 \cdot \log(3/300) = -80$ dB

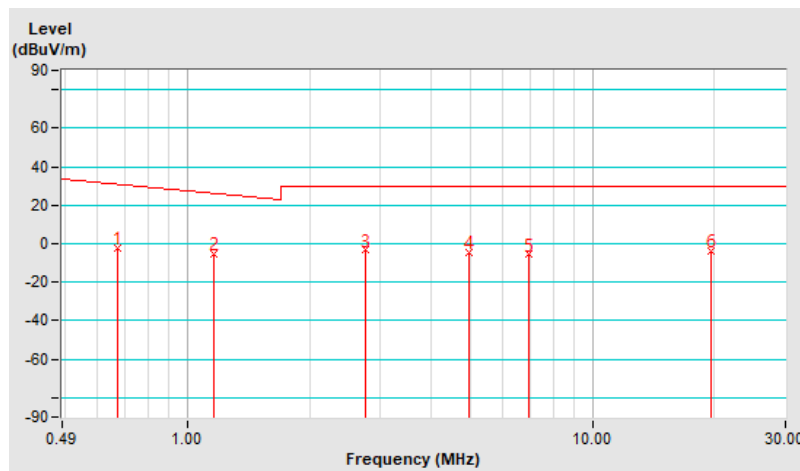


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	490 kHz ~ 30 MHz	Detector Function & Bandwidth	Quasi-Peak (QP), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Roy Mai		

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	0.673	-2.25 QP	31.04	-33.29	1.00	198	17.98	-20.23
2	1.161	-5.23 QP	26.30	-31.53	1.00	313	14.96	-20.19
3	2.759	-3.31 QP	29.54	-32.85	1.00	232	16.72	-20.03
4	4.944	-4.42 QP	29.54	-33.96	1.00	80	15.33	-19.75
5	6.979	-5.44 QP	29.54	-34.98	1.00	359	13.57	-19.01
6	19.635	-3.58 QP	29.54	-33.12	1.00	360	13.04	-16.62

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 = $40 \cdot \log(3/30) = -40$ dB

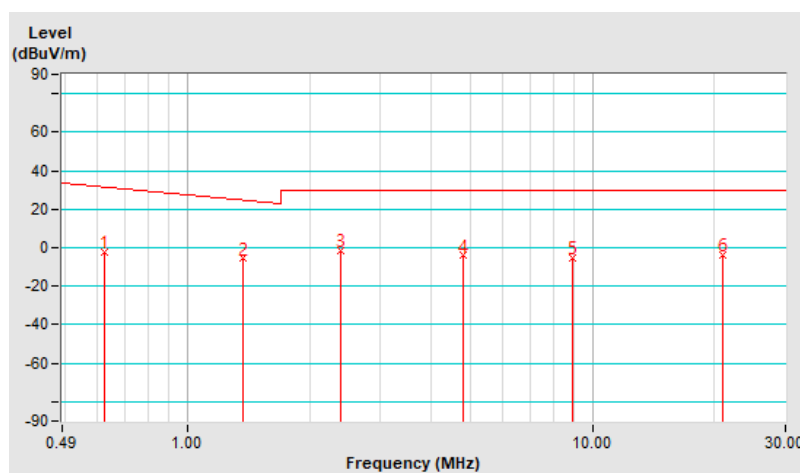


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	490 kHz ~ 30 MHz	Detector Function & Bandwidth	Quasi-Peak (QP), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Roy Mai		

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	0.623	-2.33 QP	31.71	-34.04	1.00	186	17.90	-20.23
2	1.367	-5.41 QP	24.88	-30.29	1.00	138	14.76	-20.17
3	2.387	-1.42 QP	29.54	-30.96	1.00	306	18.64	-20.06
4	4.806	-4.08 QP	29.54	-33.62	1.00	336	15.69	-19.77
5	8.952	-4.97 QP	29.54	-34.51	1.00	295	13.31	-18.28
6	20.934	-3.64 QP	29.54	-33.18	1.00	87	12.91	-16.55

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 = $40 \cdot \log(3/30) = -40$ dB

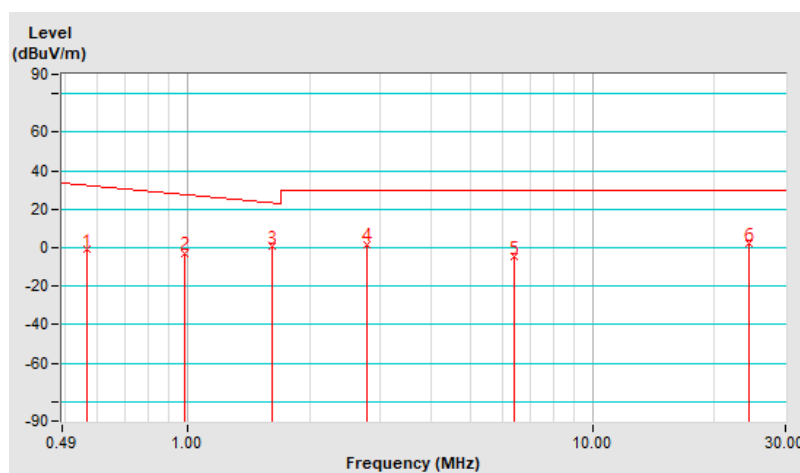


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	490 kHz ~ 30 MHz	Detector Function & Bandwidth	Quasi-Peak (QP), 9 kHz
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	24 °C, 68% RH
Tested By	Roy Mai		

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	0.563	-0.99 QP	32.59	-33.58	1.00	317	19.24	-20.23
2	0.987	-2.96 QP	27.71	-30.67	1.00	236	17.25	-20.21
3	1.617	0.69 QP	23.42	-22.73	1.00	213	20.83	-20.14
4	2.773	1.51 QP	29.54	-28.03	1.00	118	21.54	-20.03
5	6.411	-4.69 QP	29.54	-34.23	1.00	36	14.53	-19.22
6	24.370	2.03 QP	29.54	-27.51	1.00	183	18.49	-16.46

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 = $40 \cdot \log(3/30) = -40$ dB



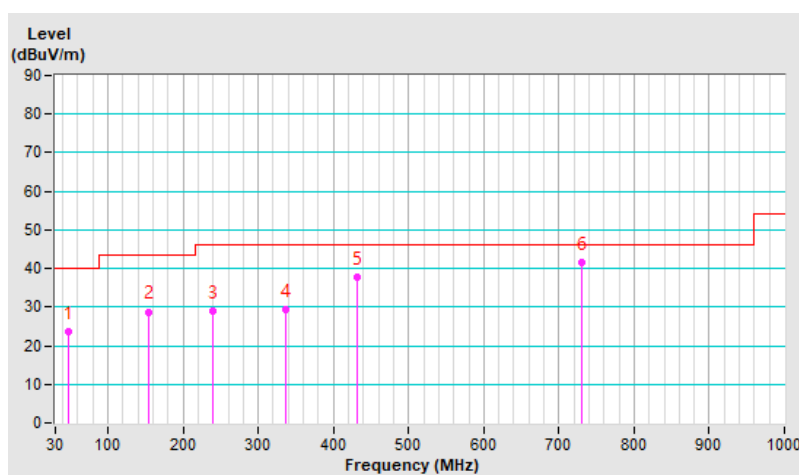
7.3 Radiated Emissions above 30 MHz

RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120 kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	20 °C, 64% RH
Tested By	Roy Mai		

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	47.29	23.6 QP	40.0	-16.4	2.00 H	360	36.1	-12.5
2	154.50	28.8 QP	43.5	-14.7	2.00 H	297	40.9	-12.1
3	239.98	29.1 QP	46.0	-16.9	1.50 H	1	42.9	-13.8
4	335.99	29.2 QP	46.0	-16.8	1.00 H	112	40.0	-10.8
5	431.99	37.8 QP	46.0	-8.2	1.00 H	7	45.9	-8.1
6	730.32	41.7 QP	46.0	-4.3	1.00 H	89	43.9	-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 of frequency range 30 MHz ~ 1 GHz.

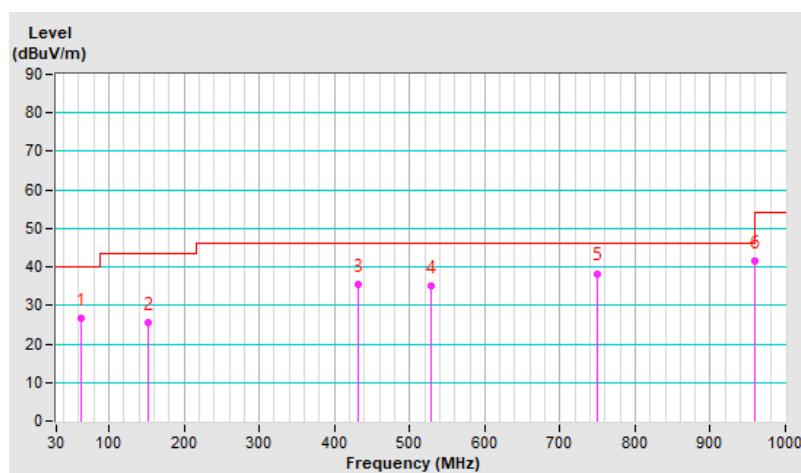


RF Mode	NFC-13.56MHz	Channel	CH 1 : 13.56 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	QP: RB=120 kHz, DET=Quasi-Peak
Input Power (System)	120 Vac, 60 Hz	Environmental Conditions	20 °C, 64% RH
Tested By	Roy Mai		

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	63.93	26.5 QP	40.0	-13.5	2.00 V	298	40.1	-13.6
2	152.44	25.5 QP	43.5	-18.0	2.00 V	60	37.9	-12.4
3	431.99	35.4 QP	46.0	-10.6	1.50 V	46	43.5	-8.1
4	528.00	35.0 QP	46.0	-11.0	1.50 V	360	41.2	-6.2
5	750.15	38.3 QP	46.0	-7.7	2.00 V	154	40.2	-1.9
6	960.00	41.4 QP	46.0	-4.6	1.00 V	104	39.6	1.8

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 of frequency range 30 MHz ~ 1 GHz.



7.4 Frequency Stability

Input Power:	12 Vdc	Environmental Conditions:	27°C, 63% RH	Tested By:	Dolly Chung
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Frequency Stability Versus Temperature									
Operating Frequency: 13.56 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
50	12	13.56009	0.00066	13.56006	0.00044	13.56011	0.00081	13.56008	0.00059
40	12	13.56006	0.00044	13.55995	-0.00037	13.56004	0.00029	13.56004	0.00029
30	12	13.55995	-0.00037	13.56002	0.00015	13.55994	-0.00044	13.55998	-0.00015
20	12	13.55999	-0.00007	13.56004	0.00029	13.56	0.00000	13.56001	0.00007
10	12	13.56009	0.00066	13.56008	0.00059	13.56007	0.00052	13.56012	0.00088
0	12	13.56002	0.00015	13.56008	0.00059	13.56001	0.00007	13.56002	0.00015
-10	12	13.55995	-0.00037	13.55996	-0.00029	13.56	0.00000	13.55992	-0.00059
-20	12	13.55995	-0.00037	13.55997	-0.00022	13.55996	-0.00029	13.5599	-0.00074

Frequency Stability Versus Voltage									
Operating Frequency: 13.56 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	13.8	13.55999	-0.00007	13.56004	0.00029	13.56	0.00000	13.56001	0.00007
	12	13.55999	-0.00007	13.56004	0.00029	13.56	0.00000	13.56001	0.00007
	10.2	13.55999	-0.00007	13.56004	0.00029	13.56	0.00000	13.56001	0.00007

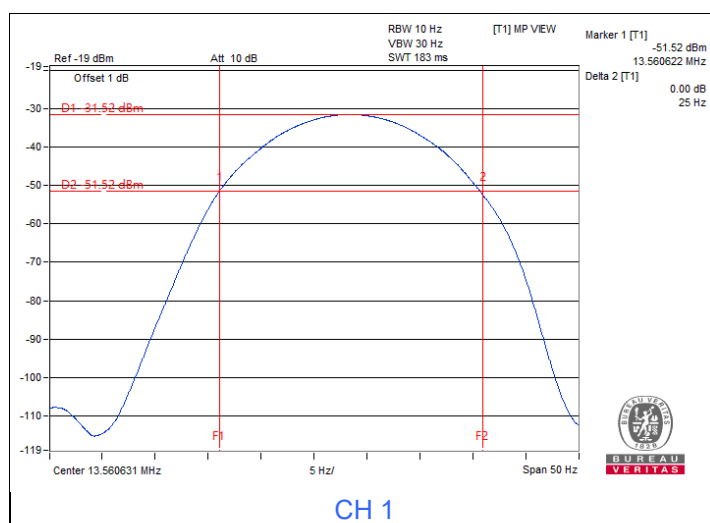
7.5 20 dB Bandwidth

Input Power:	12 Vdc	Environmental Conditions:	27°C, 63% RH	Tested By:	Dolly Chung
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Channel	Channel Frequency (MHz)	20 dB Bandwidth (kHz)	Measured Frequencies		Operating Frequency Band (MHz)	Test Result
			FL (kHz)	FH (kHz)		
1	13.56	0.025	13.560622	13.560647	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.



Note: The signal look like CW signal, so RBW can't be match 1~5 % OBW.

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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Hsin Chu EMC/RF/Telecom Lab

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Email: service.adt@bureauveritas.com

Web Site: <http://ee.bureauveritas.com.tw>

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

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