



EMC TEST REPORT

Report No.: 20240617G10762X-W1

Product Name: VISTA Thermal Imaging Monocular

FCC ID: 2BHFB-3C-00

Main Model No. : VISTA H50R

Series Model No. : VISTA H50, VISTA H35, VISTA H35R

Applicant: Inlumen Technologies Co., Ltd.

Address: Building B3, NO.800 Wangjiang West Road, National High-tech Industry Development District, Hefei, Anhui, China.

Received Date: 2024.06.18

Dates of Testing: 2024.06.18~2024.06.21

Issued by: CCIC Southern Testing Co., Ltd.

Lab Location: Electronic Testing Building, No.43, Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China.

Tel: 86-755-26627338 **E-Mail:** manager@ccic-set.com

This test report consists of **16** pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product endorsement by CCIC-SET. The test results in the report only apply to the tested sample. The test report shall be invalid without all the signatures of testing engineers, reviewer and approver. Any objections must be raised to CCIC-SET within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit.



Test Report

Product Name..... VISTA Thermal Imaging Monocular

Model No. VISTA H50R

Trade name..... Nocpix

Applicant..... Inlumen Technologies Co., Ltd.

Applicant Address..... Building B3, NO.800 Wangjiang West Road, National High-tech Industry Development District, Hefei, Anhui, China.

Manufacturer..... Inlumen Technologies Co., Ltd.

Manufacturer Address..... Building B3, NO.800 Wangjiang West Road, National High-tech Industry Development District, Hefei, Anhui, China.

Test Standards..... 47 CFR Part 15 Subpart B

Test Result..... PASS

Tested by Sun Jiaohui
Sun Jiaohui, Test Engineer 2024.09.02

Reviewed by..... Chris You
Chris You, Senior Engineer 2024.09.02

Approved by..... Wang Shijie
Wang Shijie, Manager 2024.09.02



TABLE OF CONTENTS

1.	GENERAL INFORMATION	4
1.1	EUT Description	4
1.2	Test Standards and Results	5
1.3	Facilities and Accreditations	6
1.3.1	Facilities	6
1.3.2	Test Environment Conditions	6
1.3.3	Measurement Uncertainty	6
2.	TEST CONDITIONS SETTING	7
2.1	Test Peripherals	7
2.2	Test Mode	7
2.3	Test Setup and Equipments List	8
2.3.1	Radiated Emission	8
3.	47 CFR PART 15B REQUIREMENTS	10
3.1	Radiated Emission	10
3.1.1	Requirement	10
3.1.2	Test Description	11
3.1.3	Test Result	11
	APPENDIX II: PHOTOGRAPHS OF EMC TEST CONFIGURATION	16

Change History		
Issue	Date	Reason for change
1.0	2024.09.02	First edition



1. GENERAL INFORMATION

1.1 EUT Description

EUT Name.....:	VISTA Thermal Imaging Monocular
Trade Name.....:	Nocpix
Hardware Version.....:	V1.0_D
Software Version.....:	1.3.4
Power supply:	Battery Product Name: IBP-7 Nominal Voltage: 3.6V Rated Capacity: 4.4Ah Manufactory: Jinqu Electronics (Zhejiang) Co., Ltd.

Note1: The EUT is a VISTA Thermal Imaging Monocular;

Note2: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



1.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart B:

No.	Identity	Document Title
1	47 CFR Part 15 Subpart B	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Result
1	15.107	Conducted Emission	N.A
2	15.109	Radiated Emission	PASS

NOTE:

- (1) The EUT has been tested according to 47 CFR Part 15 Subpart B, Class B. The test procedure is according to ANSI C63.4:2014.
- (2) AC conduction is not applicable because the product is 3.6V DC power supply.



1.3 Facilities and Accreditations

1.3.1 Facilities

FCC-Registration No.: CN1283

CCIC Southern Testing Co., Ltd EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN1283, valid time is until Jun 30, 2025.

ISED Registration: 11185A-1

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on Aug. 04, 2016, valid time is until Jun 30, 2025.

A2LA Code: 5721.01

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025. The accreditation certificate number is 5721.01.

1.3.2 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15°C - 35°C
Relative Humidity (%):	25% -75%
Atmospheric Pressure (kPa):	86kPa-106kPa

1.3.3 Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Uncertainty of Conducted Emission:	Uc = 3.2 dB (k=2)
Uncertainty of Radiated Emission: (30MHz~1GHz)	Uc = 5.8 dB (k=2)
Uncertainty of Radiated Emission: (1~6GHz)	Uc = 5.1 dB (k=2)
Uncertainty of Radiated Emission: (6~18GHz)	Uc = 5.5 dB (k=2)

2. TEST CONDITIONS SETTING

2.1 Test Peripherals

The following is a listing of the EUT and peripherals utilized during the performance of EMC test:

Support Equipment:

Description	Brand name	Model	Serial No.	FCCID
Adapter	/	VC56JBCH	/	/

Support Cable:

Description	Shield Type	Ferrite Core	Length
DC Power Cable	Un- shielding	/	3.5m
Data Connection Cable	Un- shielding	/	5m

2.2 Test Mode

The EUT have the following typical setups during the test:

Setup1: 2.4G WIFI + Charger;

Setup2: 2.4G WIFI + Battery;

Setup3: EUT + PC Notebook + DATA;

Setup4: Idle + Charger;

Note1: The VISTA H50 / VISTA H35 / VISTA H35R have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction, with VISTA H50R. The difference lies only in lens focal length or removes the laser module of the different models. All the patterns have been tested and only the worst results are recorded in the report.

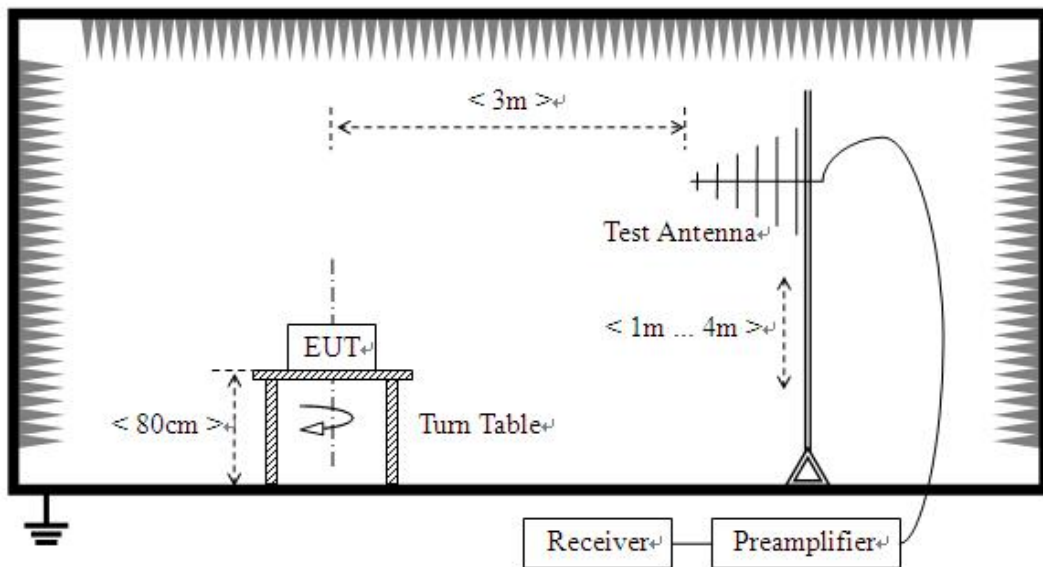
Note2: All models are tested and the worst results are provided in the report.

2.3 Test Setup and Equipments List

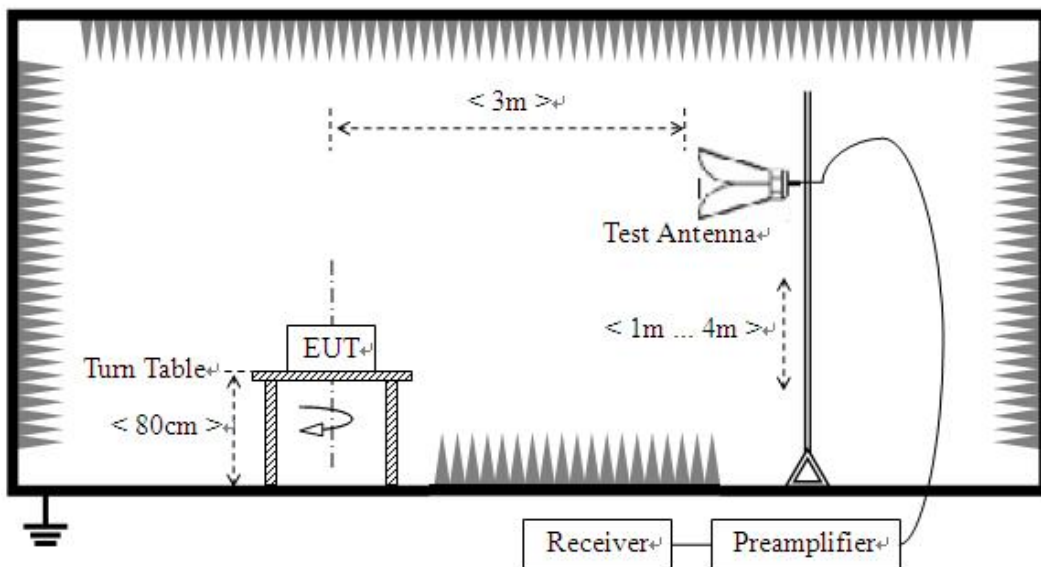
2.3.1 Radiated Emission

A. Test Setup:

- 1) For radiated emissions from 30MHz to 1GHz



- 2) For radiated emissions above 1GHz



**B. Test Procedure**

The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor, cable loss and so on of the site (factors) is calculated to correct the reading. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on a variable-height antenna master tower.

For the test Antenna:

- 1) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

C. Equipments List:

Description	Manufacturer	Model	Serial No.	Calibration Date	Calibration Due. Date
EMI Test Receiver	ROHDE&SCHWARZ	ESIB7	A0501375	2024.02.29	2025.02.28
Broadband Ant.	ETC	MCTD2786	A240204135	2024.01.19	2025.01.18
3M Anechoic Chamber	Albatross	SAC-3MAC 9*6*6m	A0412375	2024.02.28	2027.02.27
EMI Test Receiver	ROHDE&SCHWARZ	ESW26	A180502935	2024.05.24	2025.05.23
5M Anechoic Chamber	Albatross	SAC-5MAC 12.8x6.8x6.4m	A0304210	2023.08.02	2026.08.01
EMI Horn Ant.	ROHDE&SCHWARZ	HF906	A0304225	2022.04.12	2025.04.11

3. 47 CFR PART 15B REQUIREMENTS

3.1 Radiated Emission

3.1.1 Requirement

According to FCC section 15.109, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency range (MHz)	Field Strength		Field Strength Limitation at 3m Measurement Dist	
	$\mu\text{V/m}$	Dist	($\mu\text{V/m}$)	($\text{dB}\mu\text{V/m}$)
30.0 - 88.0	100	3m	100	20log 100
88.0 - 216.0	150	3m	150	20log 150
216.0 - 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500

Frequency range (MHz)	Field Strength Limitation at 3m Measurement Dist	
	Class A(3m) QP ($\text{dB}\mu\text{V/m}$)	Class B(3m) QP ($\text{dB}\mu\text{V/m}$)
30 - 88	49.0	40.0
88 - 216	53.5	43.5
216 - 230	56.5	46.0
230 - 960	56.5	46.0
960-1000	59.5	54.0
Frequency range (MHz)	Field Strength Limitation at 3m Measurement Dist	
	Class A(3m) ($\text{dB}\mu\text{V/m}$)	Class B(3m) ($\text{dB}\mu\text{V/m}$)
Above 1G	60(AV) /80(PK)	54(AV) /74(PK)

- For frequencies above 1000MHz, the field strength limits are based on average detector. When average radiated emission measurements are specified in this part, including emission measurements below 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.
- Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.
- For below 1G: QP detector RBW 120 kHz, VBW 300 kHz.



For Above 1G: PK detector RBW 1MHz, VBW 3MHz for PK value; AV detector RBW 1MHz, VBW 10Hz for AV value.

Note:

- 1) The tighter limit shall apply at the boundary between two frequency ranges.
- 2) Limitation expressed in dBuV/m is calculated by $20\log$ Emission Level (uV/m).
- 3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of $Ld1 = Ld2 * (d2/d1)^2$.

Example:

F.S Limit at 30m distance is 30uV/m, then F.S Limitation at 3m distance is adjusted as

$$Ld1 = L1 = 30\text{uV/m} * (10)^2 = 100 * 30\text{uV/m}.$$

3.1.2 Test Description

See section 2.3.2 of this report.

3.1.3 Test Result

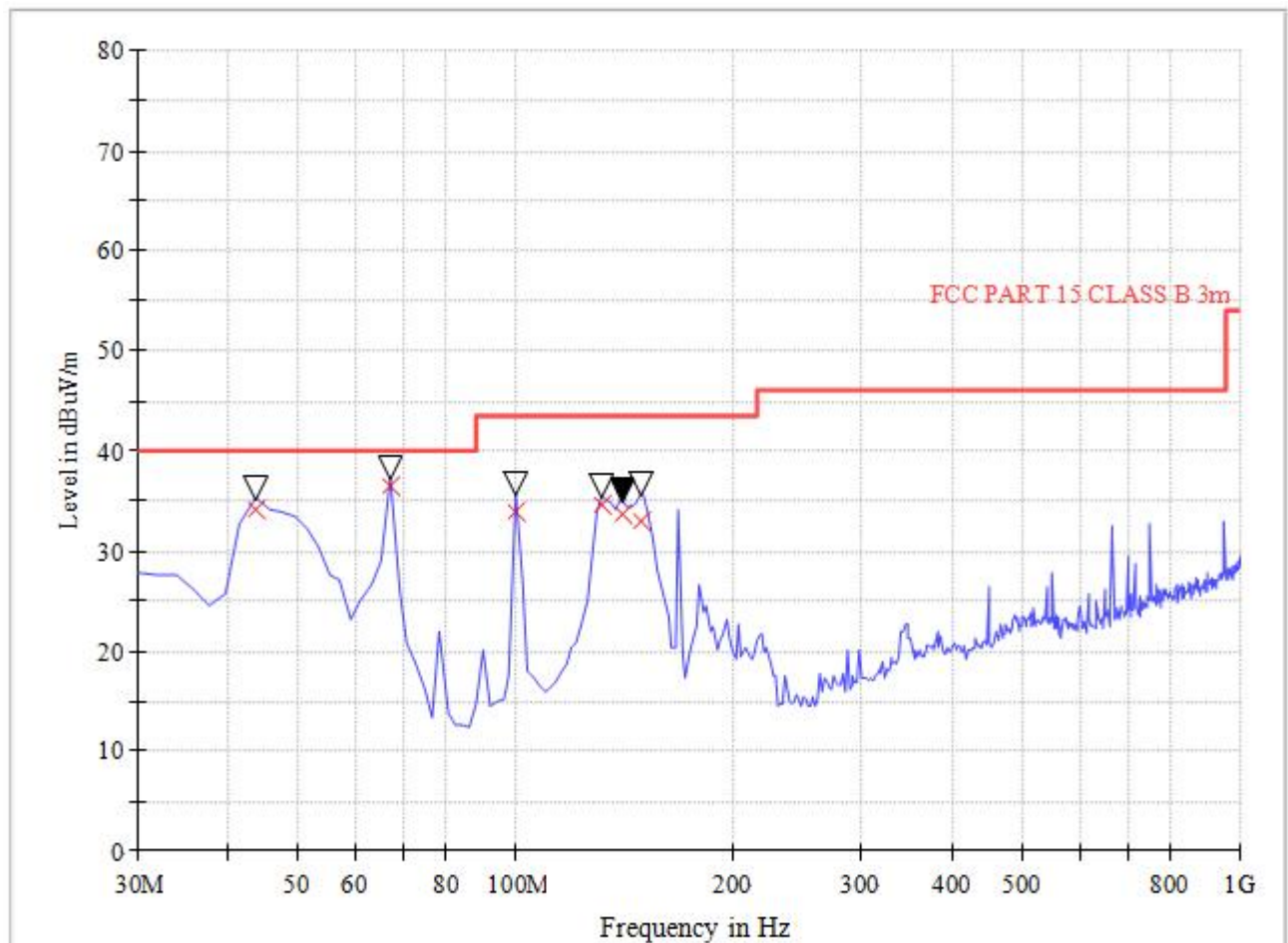
The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with AV and QP detectors. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform the tests. All test modes are considered, refer to recorded points and plots below.

The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.

Note:

1. All radiated emission tests were performed in X, Y, Z axis direction, and only the worst axis test condition was recorded in this test report.

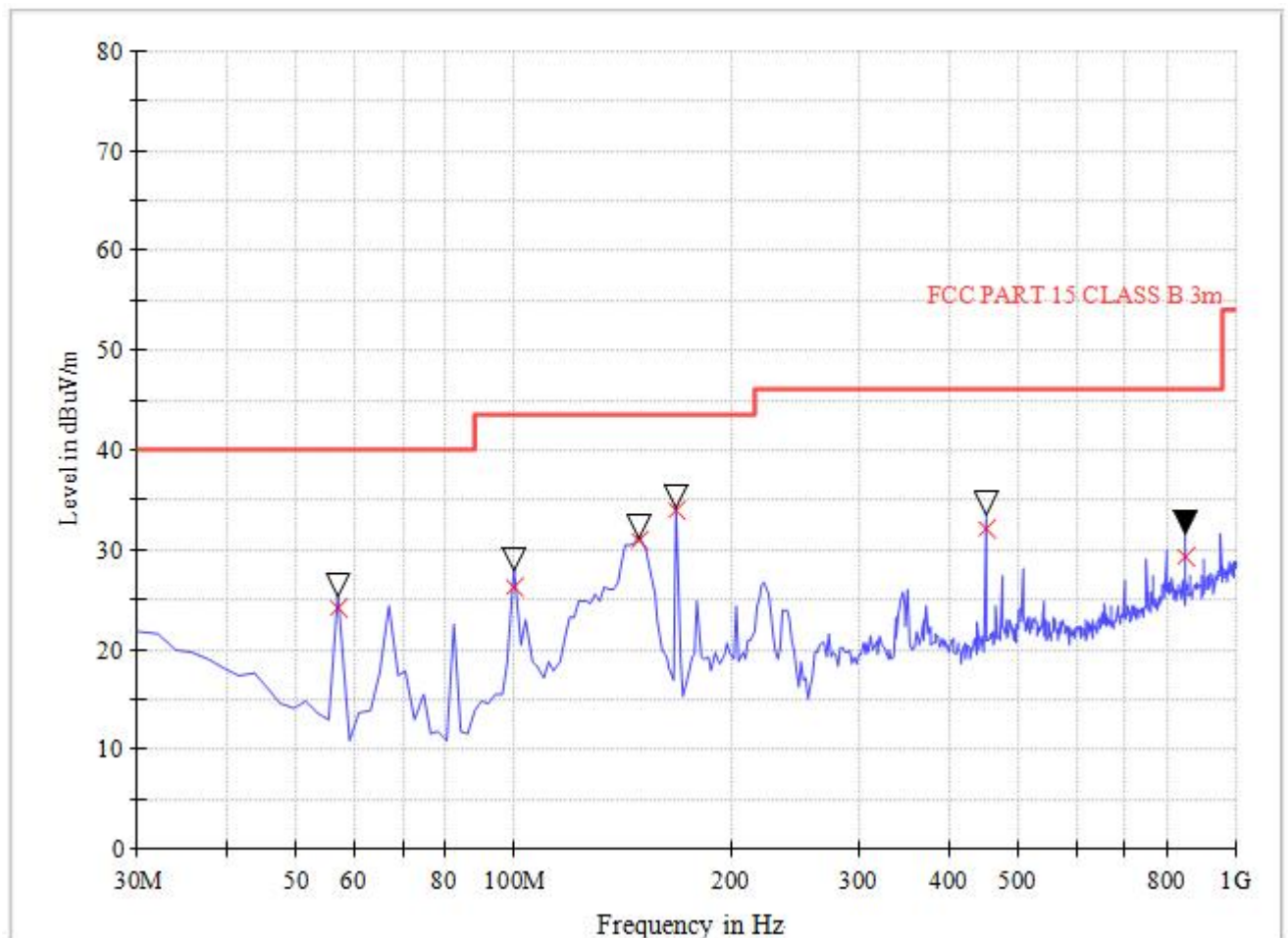
A. Radiation disturbances, antenna polarization: Vertical, Setup1



(Plot C: Test Antenna Vertical 30M - 1G)

Frequency (MHz)	QuasiPeak (dB μ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dB μ V/m)	Margin (dB)	Antenna	Cable Loss(dB)	ANT. Factor(dB)	Verdict
43.60	34.08	120.000	105	40.00	5.92	Vertical	0.5	11.3	Pass
66.92	36.51	120.000	103	40.00	3.49	Vertical	0.8	5.8	Pass
99.96	34.00	120.000	107	43.50	9.50	Vertical	0.8	10.0	Pass
131.08	34.52	120.000	102	43.50	8.98	Vertical	1.0	11.6	Pass
140.80	33.67	120.000	105	46.00	9.83	Vertical	1.0	11.6	Pass
148.56	32.91	120.000	101	46.00	10.59	Vertical	1.0	11.5	Pass

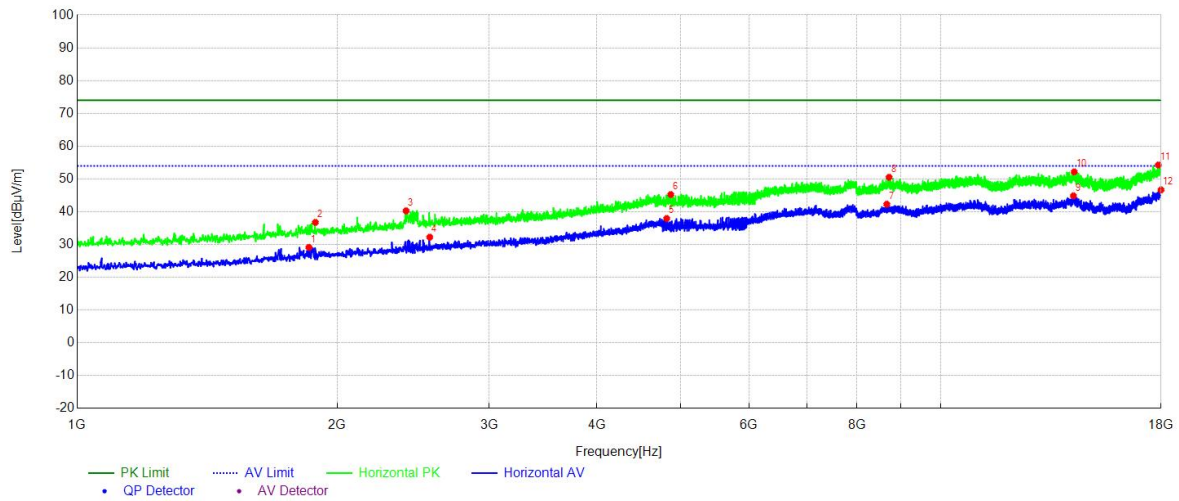
B. Radiation disturbances, antenna polarization: Horizontal, Setup1



(Plot D: Test Antenna Horizontal 30M - 1G)

Frequency (MHz)	QuasiPeak (dB μ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dB μ V/m)	Margin (dB)	Antenna	Cable Loss(dB)	ANT. Factor(dB)	Verdict
57.20	24.03	120.000	104	40.00	15.97	Horizontal	0.7	5.9	Pass
99.96	26.24	120.000	102	40.00	17.26	Horizontal	0.8	10.0	Pass
148.56	30.80	120.000	107	43.50	12.70	Horizontal	1.0	11.5	Pass
168.00	33.94	120.000	104	43.50	9.56	Horizontal	1.2	10.8	Pass
449.88	32.07	120.000	106	46.00	13.93	Horizontal	1.5	17.3	Pass
850.32	29.24	120.000	103	46.00	16.76	Horizontal	2.0	21.9	Pass

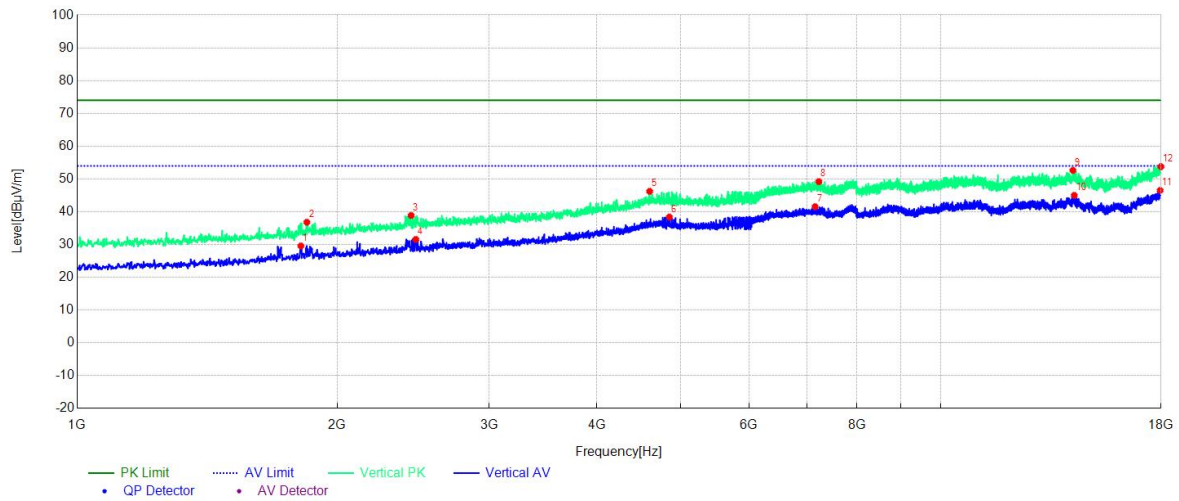
A. Radiation disturbances, antenna polarization: Horizontal, Setup1



(Plot M: Test Antenna Horizontal 1G – 18G)

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin[dB μV/m]	Trace	Height [cm]	Angle [°]	Polarity
1	1855.19	29.13	-12.49	54.00	24.87	AV	104	84	Horizontal
2	1887.49	36.76	-12.34	74.00	37.24	PK	108	303	Horizontal
3	2404.34	40.28	-10.64	74.00	33.72	PK	103	255	Horizontal
4	2560.76	32.25	-10.07	54.00	21.75	AV	104	192	Horizontal
5	4816.88	37.95	-0.94	54.00	16.05	AV	105	114	Horizontal
6	4869.59	45.25	-1.27	74.00	28.75	PK	101	306	Horizontal
7	8662.67	42.29	4.42	54.00	11.71	AV	103	122	Horizontal
8	8715.37	50.52	4.37	74.00	23.48	PK	106	324	Horizontal
9	14249.42	44.86	9.66	54.00	9.14	AV	109	341	Horizontal
10	14280.03	52.17	9.80	74.00	21.83	PK	108	266	Horizontal
11	17870.79	54.26	14.32	74.00	19.74	PK	101	245	Horizontal
12	18000.00	46.67	14.86	54.00	7.33	AV	105	272	Horizontal

B. Radiation disturbances, antenna polarization: Vertical, Setup1



(Plot N: Test Antenna Vertical 1G – 18G)

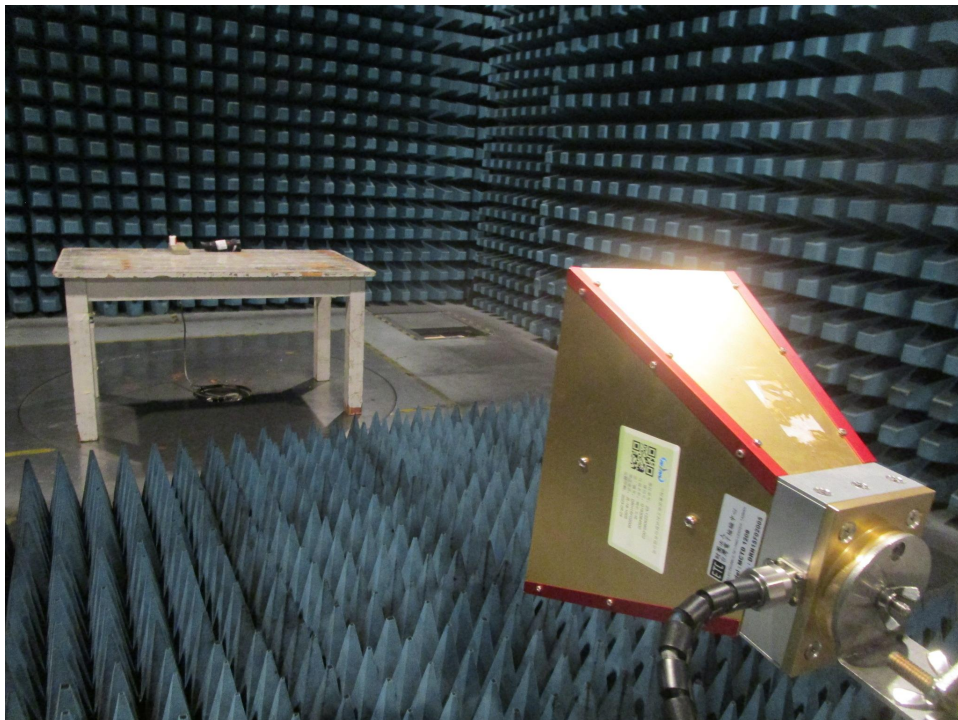
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin[dB μV/m]	Trace	Height [cm]	Angle [°]	Polarity
1	1816.08	29.57	-12.67	54.00	24.43	AV	108	351	Vertical
2	1844.98	36.80	-12.54	74.00	37.20	PK	104	193	Vertical
3	2436.64	38.86	-10.51	74.00	35.14	PK	105	95	Vertical
4	2467.25	31.55	-10.39	54.00	22.45	AV	107	314	Vertical
5	4602.66	46.24	-1.51	74.00	27.76	PK	103	306	Vertical
6	4850.89	38.39	-1.15	54.00	15.61	AV	102	12	Vertical
7	7154.62	41.53	3.46	54.00	12.47	AV	106	337	Vertical
8	7226.02	49.20	3.46	74.00	24.80	PK	109	248	Vertical
9	14230.72	52.62	9.58	74.00	21.38	PK	104	45	Vertical
10	14280.03	44.99	9.80	54.00	9.01	AV	105	334	Vertical
11	17957.50	46.52	14.77	54.00	7.48	AV	101	342	Vertical
12	17993.20	53.76	14.85	74.00	20.24	PK	102	339	Vertical

Appendix II: Photographs of EMC Test Configuration

1. Radiated Emission Measurement below 1GHz



2. Radiated Emission Measurement above 1GHz



-----End of Report-----