

Test Report No.:  
**FCC2022-0047-RF3**

## **RF Test Report**

<b>EUT</b>	<b>:</b>	<b>Wall Switch</b>
<b>MODEL</b>	<b>:</b>	<b>WS501-915M</b>
<b>BRAND NAME</b>	<b>:</b>	<b>Milesight</b>
<b>APPLICANT</b>	<b>:</b>	<b>Xiamen Milesight IoT Co., Ltd.</b>
<b>CLASSIFICATION OF TEST</b>	<b>:</b>	<b>N/A</b>


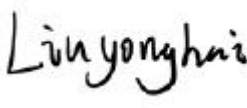

**CVC Testing Technology Co., Ltd.**



# CVC Testing Technology Co., Ltd.

Test Report No.: FCC2022-0047-RF3

Page 2 of 29

<b>Applicant</b>	Name: Xiamen Milesight IoT Co., Ltd. Address: Building C09, Software Park Phase III, Xiamen 361024, Fujian, China		
<b>Manufacturer</b>	Name: Xiamen Milesight IoT Co., Ltd. Address: Building C09, Software Park Phase III, Xiamen 361024, Fujian, China		
<b>Equipment Under Test</b>	Name: Wall Switch Model/Type: WS501-915M Additional Model/Type: See Section 2.2 Brand: Milesight Serial No.: N/A Sampe No.: 3-1		
Date of Receipt.	2022.08.17	Date of Testing	2022.08.17~2022.11.29
<b>Test Specification</b>		<b>Test Result</b>	
FCC Part 15, Subpart C, Section 15.225		PASS	
<b>Evaluation of Test Result</b>	The equipment under test was found to comply with the requirements of the standards applied.  Seal of CVC <b>Issue Date: 2022.12.01</b>		
Tested by:  <b>Xu ZhenFei</b> Name      Signature	Reviewed by:  <b>Liu YongHai</b> Name      Signature	Approved by:  <b>Chen HuaWen</b> Name      Signature	
<b>Other Aspects: NONE.</b>			
Abbreviations: OK, Pass= passed      Fail = failed      N/A= not applicable      EUT= equipment, sample(s) under tested			

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.



## TABLE OF CONTENTS

<b>1</b>	<b>SUMMARY OF TEST RESULTS .....</b>	<b>5</b>
1.1	LIST OF TEST AND MEASUREMENT INSTRUMENTS .....	6
1.2	MEASUREMENT UNCERTAINTY .....	7
1.3	TEST LOCATION .....	7
<b>2</b>	<b>GENERAL INFORMATION .....</b>	<b>8</b>
2.1	GENERAL PRODUCT INFORMATION .....	8
2.2	ADDITIONAL MODEL/TYPE .....	8
2.3	OTHER INFORMATION .....	8
2.4	TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL .....	9
2.5	GENERAL DESCRIPTION OF APPLIED STANDARDS .....	11
2.6	DESCRIPTION OF SUPPORT UNITS .....	11
<b>3</b>	<b>TEST TYPES AND RESULTS .....</b>	<b>12</b>
3.1	CONDUCTED EMISSION .....	12
3.1.1	LIMITS OF CONDUCTED EMISSION .....	12
3.1.2	TEST PROCEDURES .....	12
3.1.3	TEST SETUP .....	12
3.1.4	TEST RESULTS .....	13
3.2	RADIATED EMISSIONS .....	15
3.2.1	LIMITS .....	15
3.2.2	MEASUREMENT PROCEDURE .....	15
3.2.3	TEST SETUP .....	16
3.2.4	TEST RESULTS .....	17
3.3	FREQUENCY TOLERANCE .....	23
3.3.1	LIMIT OF FREQUENCY TOLERANCE .....	23
3.3.2	TEST PROCEDURES .....	23
3.3.3	TEST SETUP .....	23
3.3.4	TEST RESULTS .....	24
3.4	20DB BANDWIDTH .....	25
3.4.1	LIMITS OF 20DB BANDWIDTH .....	25
3.4.2	TEST PROCEDURE .....	25
3.4.3	TEST SETUP .....	25
3.4.4	TEST RESULTS .....	26
<b>4</b>	<b>PHOTOGRAPHS OF TEST SETUP .....</b>	<b>27</b>
<b>5</b>	<b>PHOTOGRAPHS OF THE EUT .....</b>	<b>28</b>



## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCC2022-0047-RF3	Original release	2022.12.01



## 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C Section 15.225			
FCC STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Line Conducted Emission	PASS	Meet the requirement of limit.
15.225 (a)&(b)&(c)	The field strength of Fundamental Emission	PASS	Meet the requirement of limit.
15.225 (d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit.
15.225 (e)	Frequency tolerance	PASS	Meet the requirement of limit.
15.215 (c)	20dB Bandwidth	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.



## 1.1 LIST OF TEST AND MEASUREMENT INSTRUMENTS

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due
WIFI & Bluetooth Test System 1					/
Communication Shielded Room 2	4m*3m*3m	CRTDSWKS44301	VGDS-0700	CRT	2024/04/24
Bluetooth system integration	/	/	-	Tonscend	/
Spectrum Analyzer	FSV40	101580	DZ-000238-3	R&S	2023/06/05
Comprehensive Test Instrument	CMW270	100304	DZ-000240-1	R&S	2023/12/06
Analog Signal Generator	SMB100A	181858	DZ-000238-2	R&S	2023/06/05
Vector Signal Generator	SGT100A	111661	DZ-000238-1	R&S	2023/06/05
RF Radio Frequency Switch	JS0806-2	19H9080187	'	Tonscend	2023/06/06
Programmable DC Power Supply	E3644A	MY58036222	DZ-000178	KEYSIGHT	2023/04/21
Radiation Spurious Test System					/
3m Semi-Anechoic Chamber	FACT-4	ST08035	WKNA-0024	ETS	2024/12/12
Spectrum Analyzer	N9010B	MY57470323	DZ-000174	KEYSIGHT	2023/03/02
EMI Test Receiver	N9038A-508	MY532290079	EM-000397	Agilent	2023/03/02
Broadband Antenna	VULB 9163	9163-530	EM-000342	SCHWARZBECK	2023/06/25
Waveguide Horn Antenna	HF906	360306/008	EM-000093	R&S	2023/03/04
Waveguide Horn Antenna	BBHA9170	00949	DZ-000209-2	SCHWARZBECK	2023/07/31
Preamplifier	BBV 9721	9721-050	DZ-000209-1	SCHWARZBECK	2023/06/05
5G Bandstop Filters	WRCJV12-4900-5100-5900-6100-50EE	851770	DZ-000186	WI	2023/12/06
Comprehensive tester	CMW500	159000	DZ-000240-2	R&S	2023/12/06
Conducted emission					/
EMI Test Receiver	ESCI	100857	WKNB-0081	R&S	2023-12-08
EMI Test Receiver	ESR3	102394	VG DY-0705	R&S	2023-03-04
LISN	NSLK 8127	8127644	VG DY-0150	SCHWARZBECK	2023-09-04
LISN	NSLK 8128	8128-316	VG DY-0149	SCHWARZBECK	2023-09-04
LISN	NSLK 8129	8129-268	EM-000388	SCHWARZBECK	2023-03-03
Plus Limiter (#1)	VTSD 9561 F-N	00515	VG DY-0808	SCHWARZBECK	2023-03-04
Plus Limiter (#2)	VTSD 9561	9561-F017	VG DY-0152	SCHWARZBECK	2024-09-04
Impedance Stabilization Network	ISN T800	27095	WKNE-0195	TESEQ	2023-09-04
Impedance Stabilization Network	NTFM8158	8158-0092	VG DY-0356	SCHWARZBECK	2023-06-07
ImpedanceStabilizationNetwork	NTFM8131	#184	EM-000498	SCHWARZBECK	2023-06-07
Voltage Probe	TK9420	9420-499	VG DY-0128	SCHWARZBECK	2023-03-04
Power Divider	4901.17.B	22643830	DB-0016	HUBER+SUHNER	2023-09-01
Video Signal Generator	GV-798+	151064920001	VGDS-0215	PROMAX	2023-05-30
Audio Signal Generator	GAG-810	EK871591	EM-000309	GW	2023-12-08
Shielding Room(#1)	GP1A	001	WKNF-0001	LEINING	2024-08-08
Shielding Room(#2)	GP1A	002	WKNF-0006	LEINING	2024-08-08
Current probe	EZ-17	0816.2063.02	EM-000567	R&S	2023-01-16



## 1.2 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:

No.	ITEM	FREQUENCY	UNCERTAINTY
1	Conducted Emissions	9kHz~30MHz	±2.66dB
2	Radiated Spurious Emissions	9KHz ~ 30MHz	±0.769dB
		30MHz ~ 1GMHz	±0.877dB
		1GHz ~ 18GHz	±0.777dB
		18GHz ~ 40GHz	±1.315dB

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

## 1.3 TEST LOCATION

The tests and measurements refer to this report were performed by EMC testing Lab. of CVC Testing Technology Co., Ltd.

Address: No.3,TiantaiyiRoad,KaitaiAvenue,ScienceCity,Guangzhou,China

Post Code: 510663 Tel: 020-32293888

FAX: 020-32293889 E-mail: office@cvc.org.cn



## 2 GENERAL INFORMATION

### 2.1 GENERAL PRODUCT INFORMATION

PRODUCT	Wall Switch
BRAND	Milesight
MODEL	WS501-915M
ADDITIONAL MODEL	See Section 2.2
FCC ID	2AYHY-WS50X
POWER SUPPLY	AC 120V/60Hz
MODULATION TYPE	ASK
OPERATING FREQUENCY	13.56MHz
NUMBER OF CHANNEL	1
ANTENNA TYPE (Remark 4)	Loop antenna
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A
Remark: 1. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report. 3. EUT photo refer to the report (Report NO.: FCC2022-0047-E). 4. Please refer to the antenna report.	

### 2.2 ADDITIONAL MODEL/TYPE

Models	
1	NE501-915M
2	WS501-9M
3	NE501-9M
Note: The only differences are silk-screen 、 trade name and model no. for trading purpose.	

### 2.3 OTHER INFORMATION

The EUT only have one channel.

CHANNEL	FREQUENCY (MHz)
1	13.56





## 2.4 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports

The worst case was found when positioned on X axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE	FT	PLC	BW	
A	√	√	√	√	NFC link

Where RE: Radiated Emission

FT: Frequency tolerance

PLC: Power Line Conducted Emission

BW: 20dB Bandwidth

### RADIATED EMISSION TEST:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	TESTED CHANNEL	TESTED FREQUENCY (MHZ)	MODULATION TYPE	AXIS
A	1	13.56	ASK	X

### FREQUENCY TOLERANCE:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	TESTED CHANNEL	TESTED FREQUENCY (MHZ)	MODULATION TYPE	AXIS
A	1	13.56	ASK	X



## **POWER LINE CONDUCTED EMISSION TEST:**

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	TESTED CONDITION
A	NFC link

## **20dB BANDWIDTH:**

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	TESTED CHANNEL	TESTED FREQUENCY (MHZ)	MODULATION TYPE	AXIS
A	1	13.56	ASK	X

## **TEST CONDITION:**

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE (SYSTEM)	TESTED BY
RE	24.6deg. C, 53%RH	AC 120V/60Hz	Li JiaLing
FT	25.4deg. C, 57%RH	AC 120V/60Hz	Li JiaLing
PLC	25.4deg. C, 55%RH	AC 120V/60Hz	Li JiaLing
BW	25.1deg. C, 50%RH	AC 120V/60Hz	Li JiaLing



## 2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

**FCC PART 15, Subpart C. Section 15.225**  
**ANSI C63.10-2020**

All test items have been performed and recorded as per the above standards

## 2.6 DESCRIPTION OF SUPPORT UNITS

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

Support Equipment							
NO	Description	Brand		Model No.	Serial Number		Supplied by
1	Mobile Phone	iQOO		Z1	8608920450777798		Lab
Support Cable							
NO	Description	Quantity (Number)	Length (m)	Detachable (Yes/ No)	Shielded (Yes/ No)	Cores (Number)	Supplied by
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

## 3 TEST TYPES AND RESULTS

### 3.1 Conducted Emission

#### 3.1.1 Limits Of Conducted Emission

TEST STANDARD: FCC Part 15, Subpart B (Section: 15.107)

Frequency (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.  
 NOTE: 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.  
 NOTE: 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

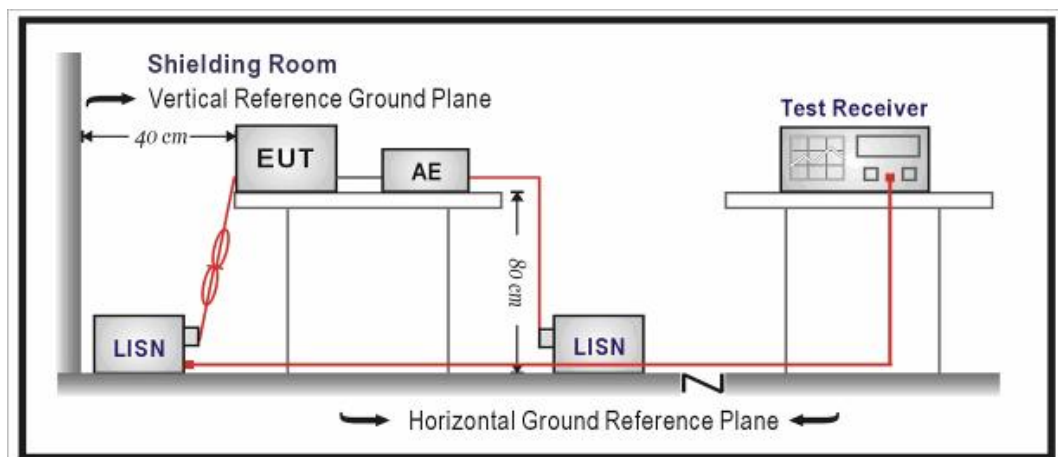
#### 3.1.2 Test Procedures

The basic test procedure was in accordance with ANSI C63.4:2014 (section 7).

- The EUT was 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/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The test results of conducted emissions at mains ports are recorded of six worst margins for quasi-peak (mandatory) [and average (if necessary)] values against the limits at frequencies of interest unless the margin is 20 dB or greater.

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

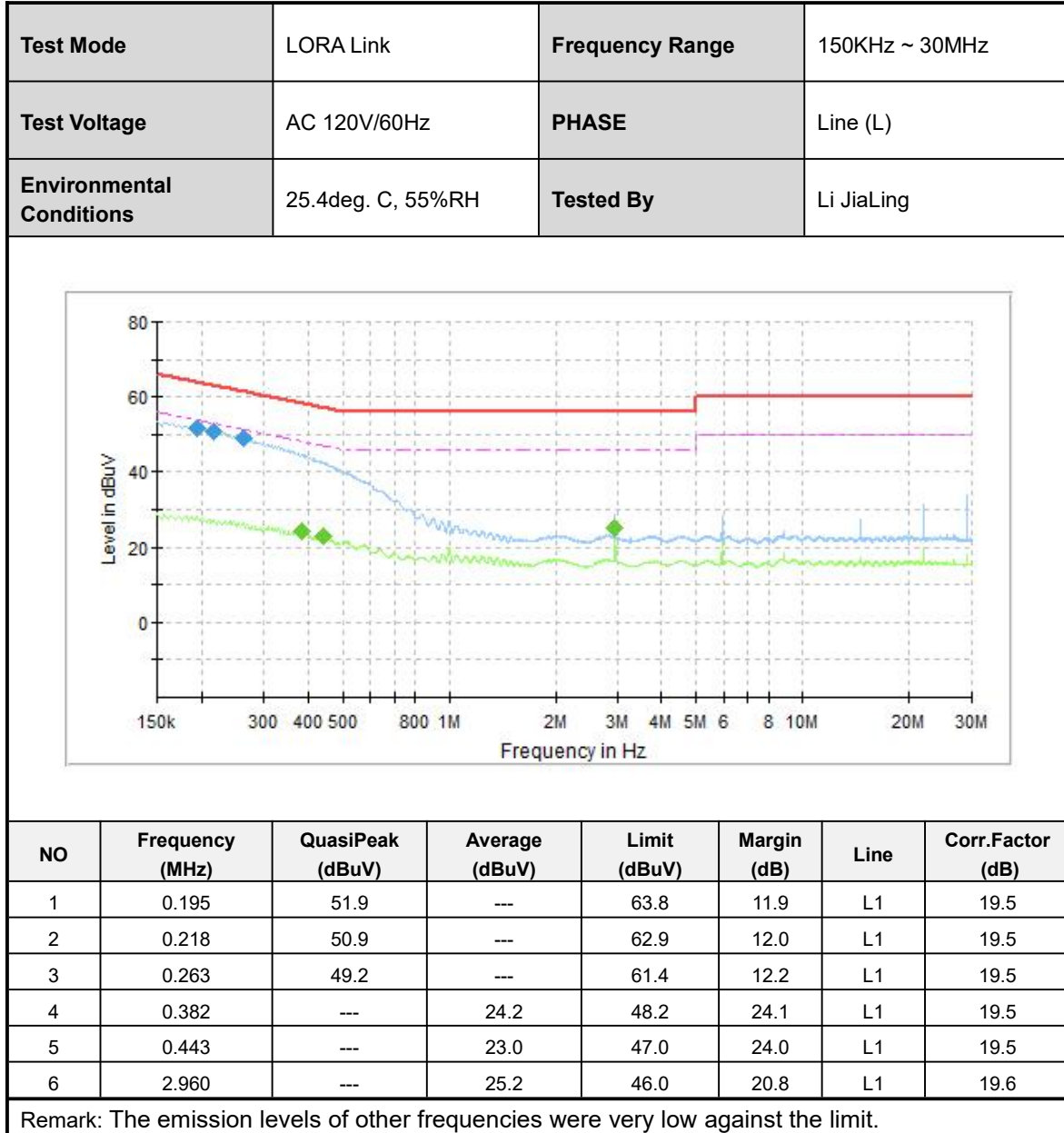
#### 3.1.3 Test setup





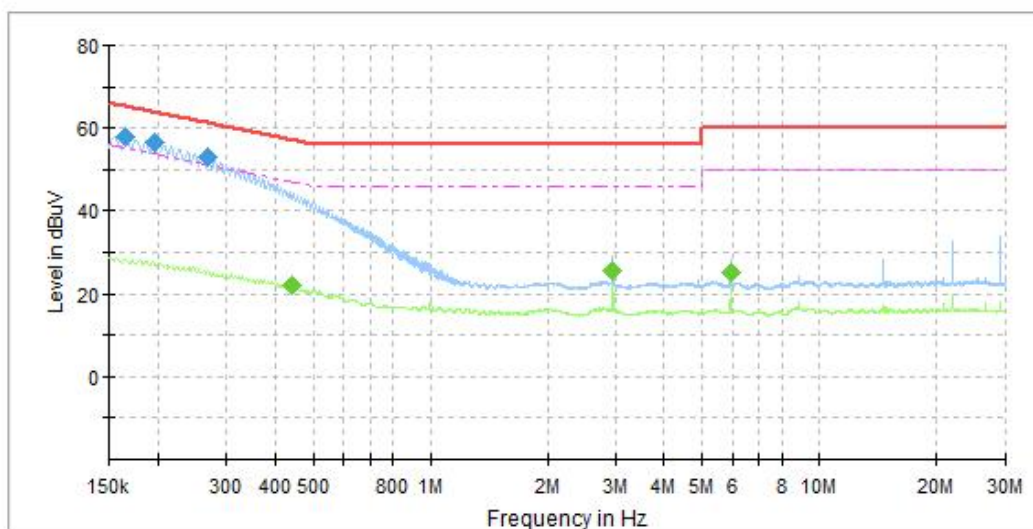
## 3.1.4 Test Results

CONDUCTED WORST-CASE DATA:





Test Mode	LORA Link	Frequency Range	150KHz ~ 30MHz
Test Voltage	AC 120V/60Hz	PHASE	Line (L)
Environmental Conditions	25.4deg. C, 55%RH	Tested By	Li JiaLing



NO	Frequency (MHz)	QuasiPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr.Factor (dB)
1	0.166	57.9	---	65.2	7.3	N	19.5
2	0.197	56.4	---	63.7	7.3	N	19.5
3	0.269	52.9	---	61.1	8.2	N	19.6
4	0.443	---	21.9	47.0	25.1	N	19.6
5	2.960	---	25.7	46.0	20.3	N	19.6
6	5.919	---	25.0	50.0	25.0	N	19.7

Remark: The emission levels of other frequencies were very low against the limit.



## 3.2 RADIATED EMISSIONS

### 3.2.1 Limits

- (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.

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
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

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

### 3.2.2 Measurement procedure

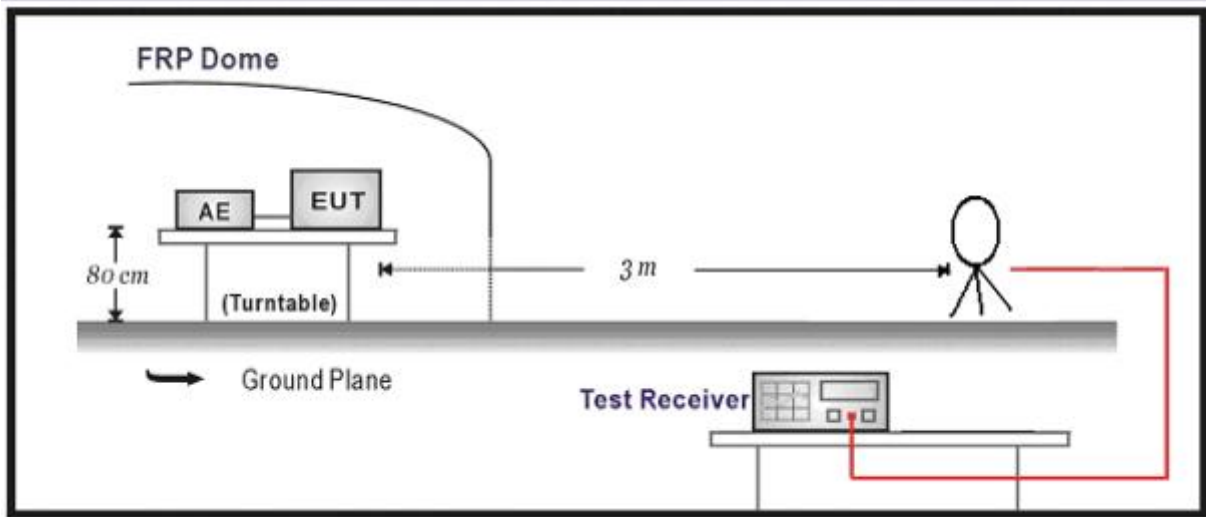
- The EUT was placed on the top of a rotating table 1.5 meters (above 1GHz) and 0.8 meters (below 1GHz) above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- For below 1GHz was used bilog antenna, and above 1GHz was used horn antenna, and its height 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- For below 30MHz, a loop antenna with its vertical plane is placed 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.
- During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be performed using fresh batteries. The turntable was rotated to maximize the emission level.

**NOTE:**

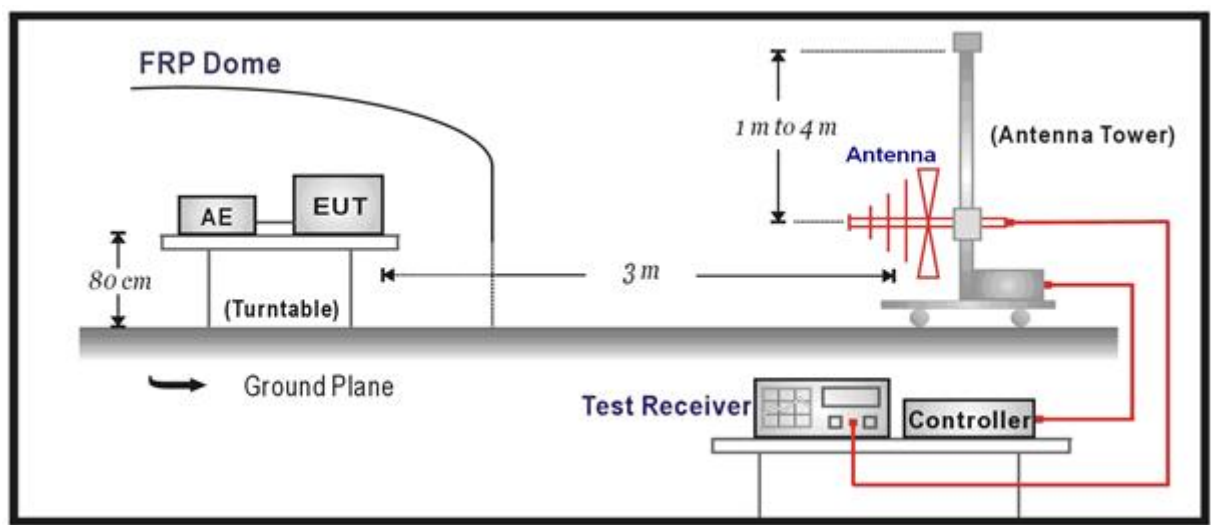
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The testing of the EUT was performed on all 3 orthogonal axes; the worst-case test configuration was reported on the file test setup photo.

### 3.2.3 Test setup

Below 30MHz Test Setup:



Below 1GHz Test Setup:

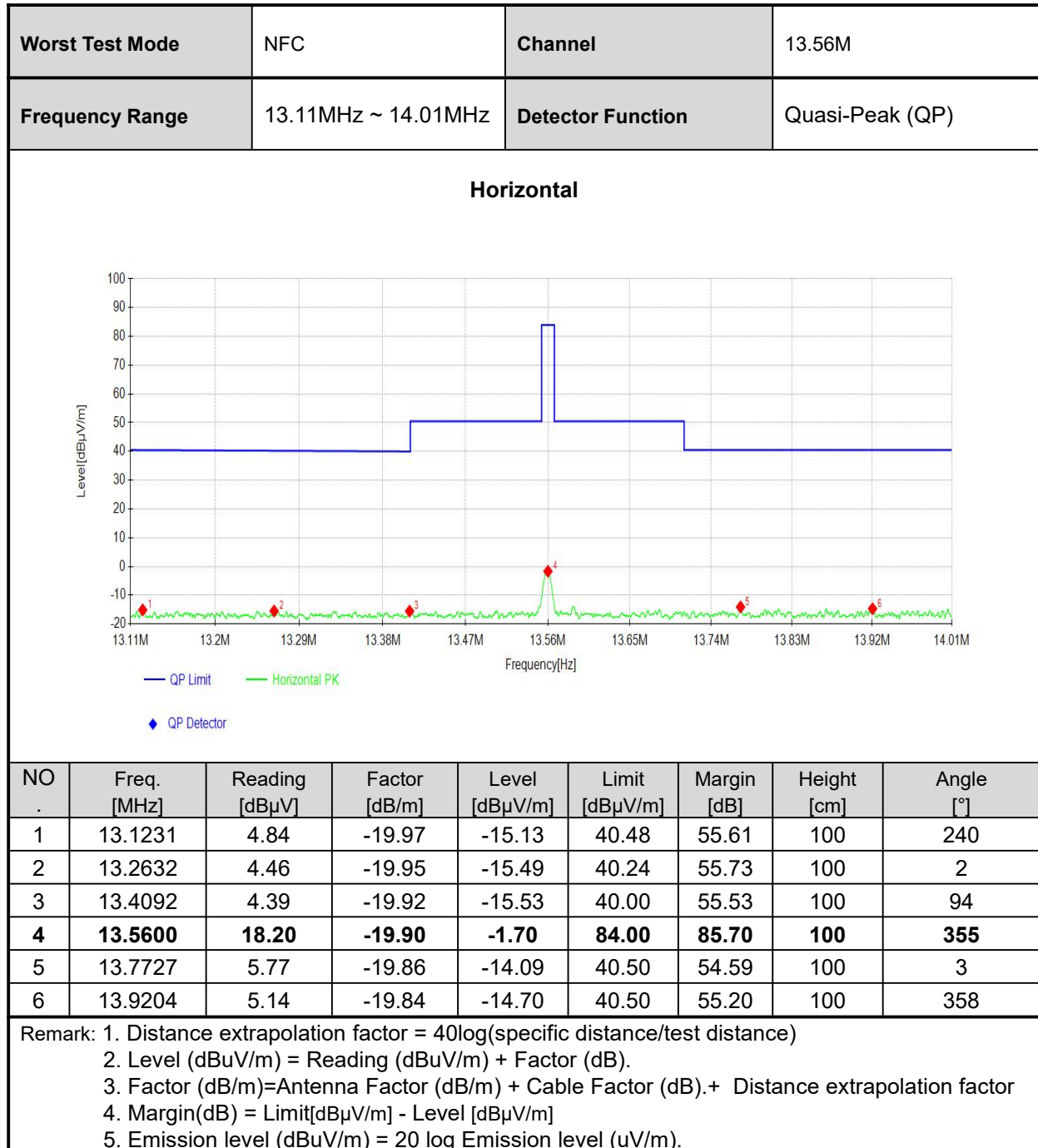


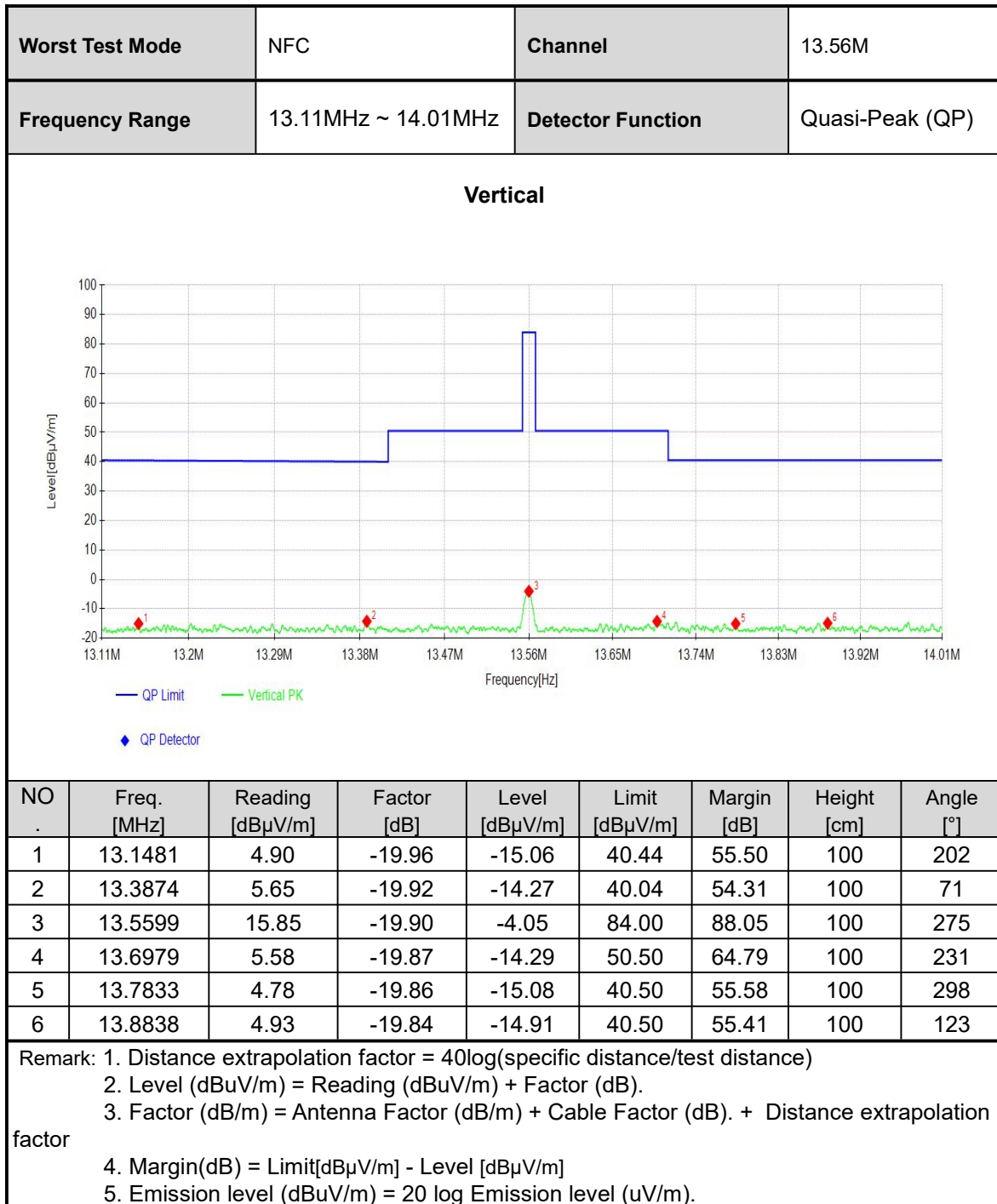




## 3.2.4 Test results

Result of The field strength of Fundamental Emission



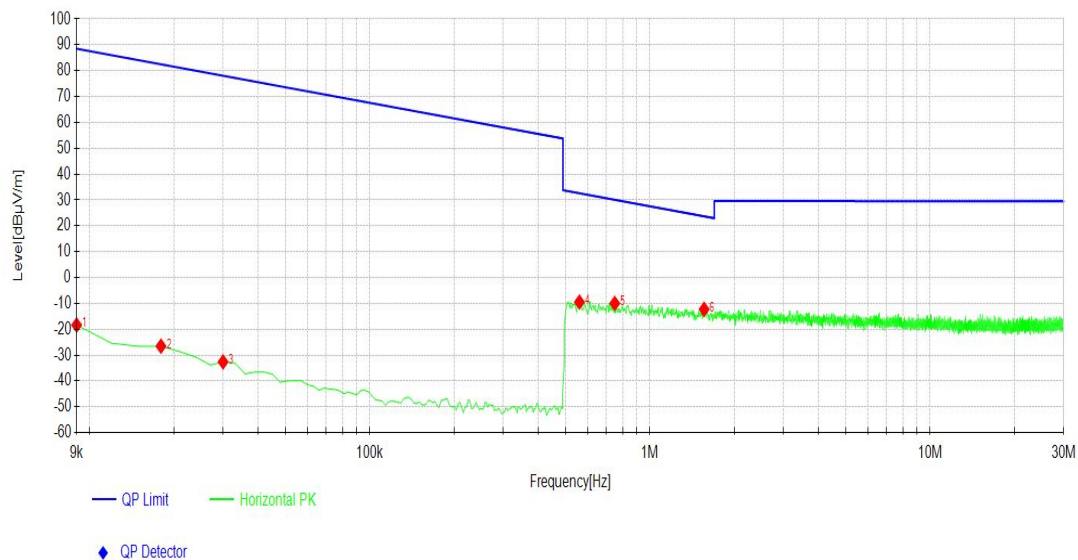




## Result of Radiated Emissions(9kHz~30MHz)

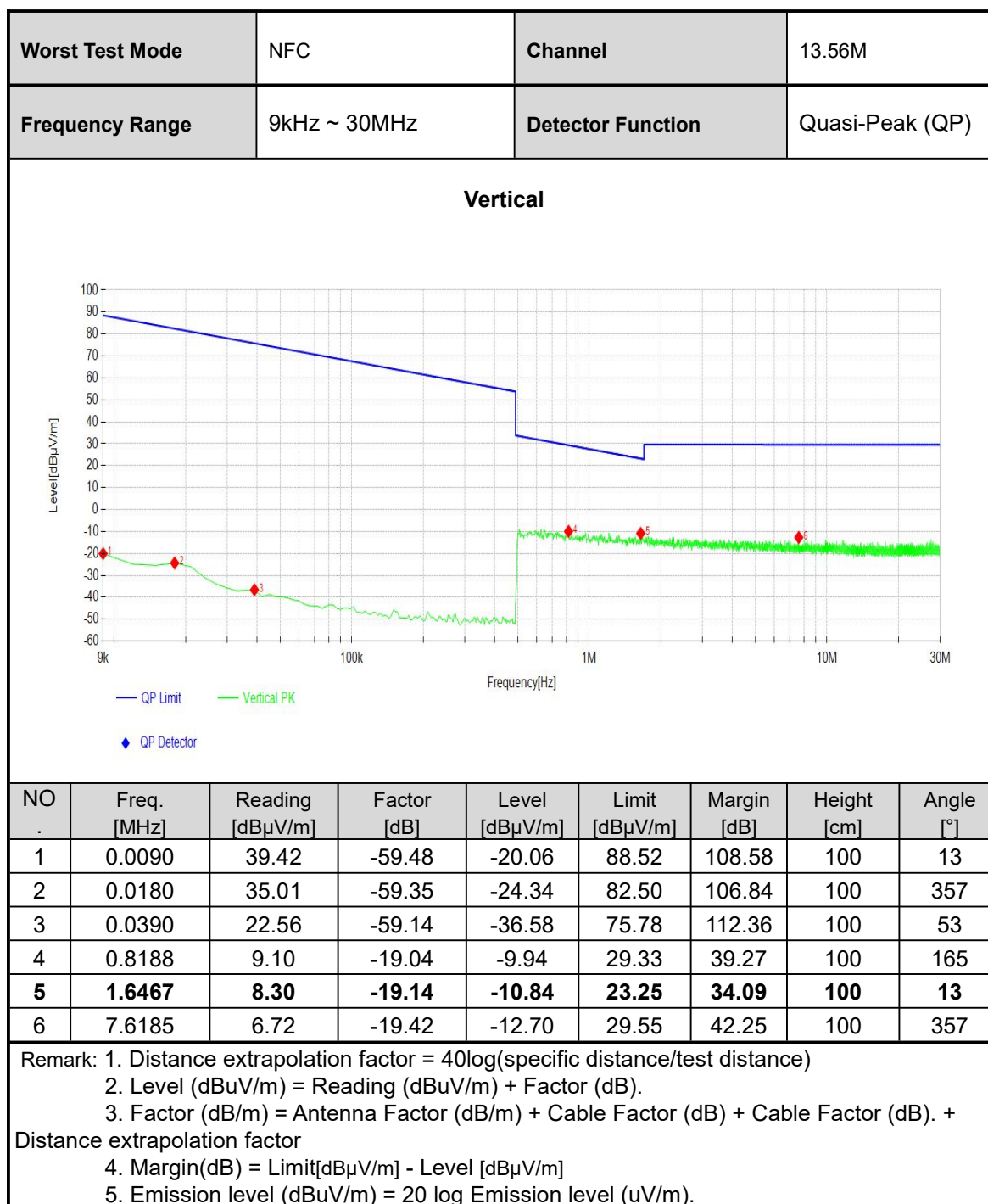
Worst Test Mode	NFC	Channel	13.56M
Frequency Range	9kHz ~ 30MHz	Detector Function	Quasi-Peak (QP)

### Horizontal



NO	Freq. [MHz]	Reading [dBuV/m]	Factor [dB]	Level [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [°]
1	0.0090	41.13	-59.48	-18.35	88.52	106.87	100	223
2	0.0180	32.83	-59.35	-26.52	82.50	109.02	100	43
3	0.0300	26.58	-59.18	-32.60	78.06	110.66	100	301
4	0.5609	9.31	-18.77	-9.46	32.62	42.08	100	212
5	0.7499	8.99	-18.97	-9.98	30.10	40.08	100	133
6	1.5627	6.89	-19.15	-12.26	23.70	35.96	100	161

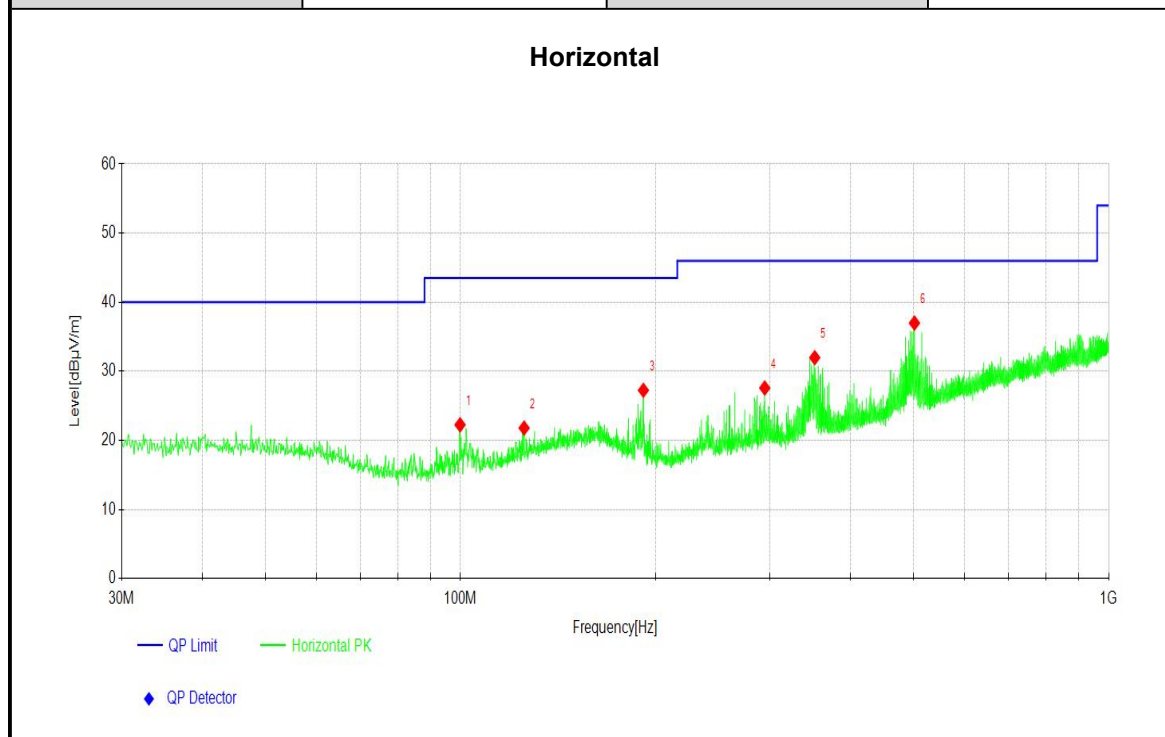
Remark: 1. Distance extrapolation factor =  $40\log(\text{specific distance}/\text{test distance})$   
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).  
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) + Cable Factor (dB). + Distance extrapolation factor  
4. Margin(dB) = Limit[dBuV/m] - Level [dBuV/m]  
5. Emission level (dBuV/m) =  $20 \log$  Emission level (uV/m).





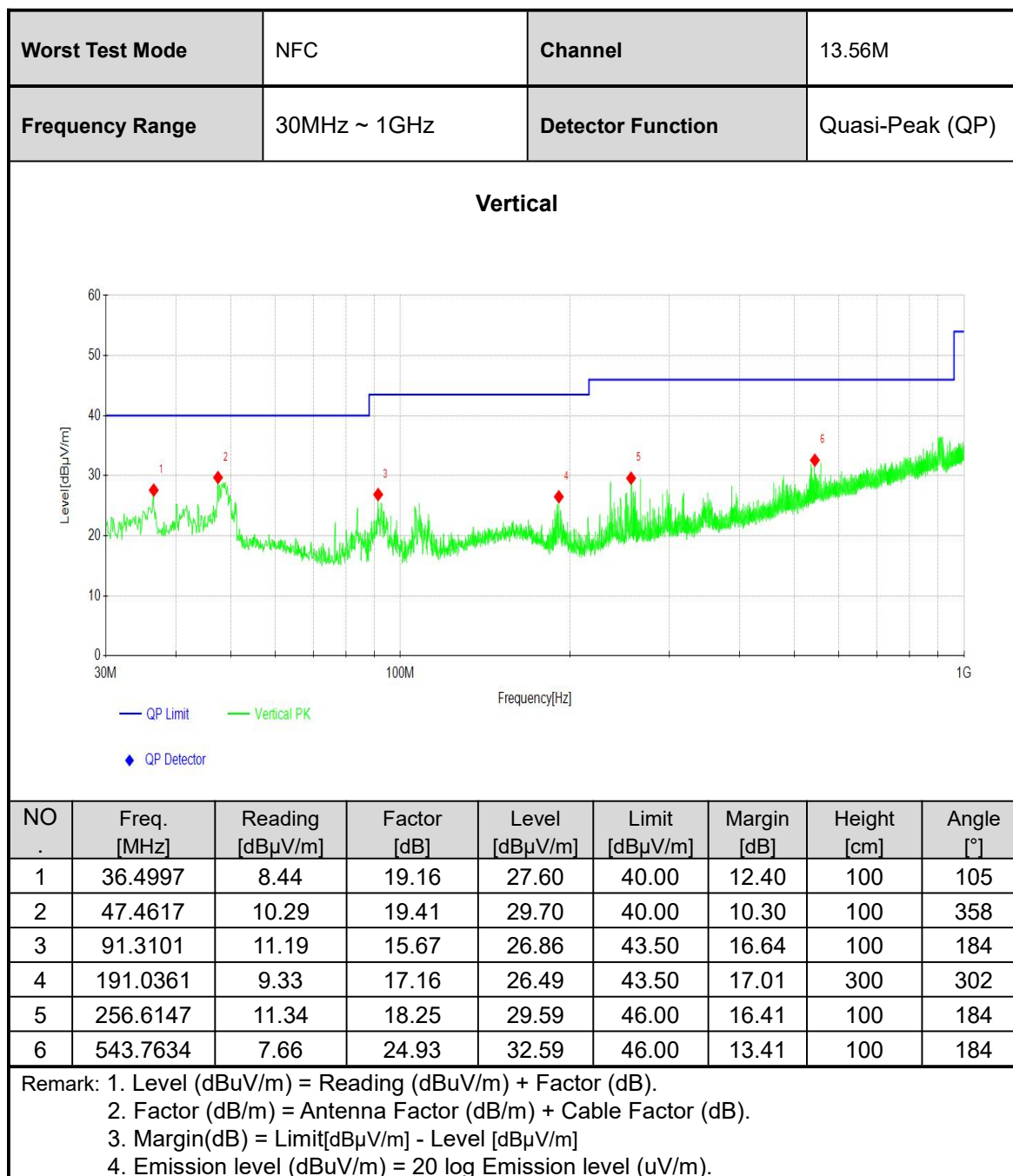
## Result of Radiated Emissions(30MHz~1GHz)

Worst Test Mode	NFC	Channel	13.56M
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)



NO	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]
1	99.8470	5.93	16.32	22.25	43.50	21.25	300	182
2	125.3605	3.54	18.25	21.79	43.50	21.71	300	358
3	191.5212	10.10	17.15	27.25	43.50	16.25	100	276
4	294.7395	7.75	19.83	27.58	46.00	18.42	100	276
5	351.9752	11.19	20.78	31.97	46.00	14.03	100	276
6	501.6612	13.11	23.88	36.99	46.00	9.01	200	99

Remark: 1. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).  
2. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).  
3. Margin(dB) = Limit[dBuV/m] - Level [dBuV/m]  
4. Emission level (dBuV/m) = 20 log Emission level (uV/m).



## 3.3 FREQUENCY TOLERANCE

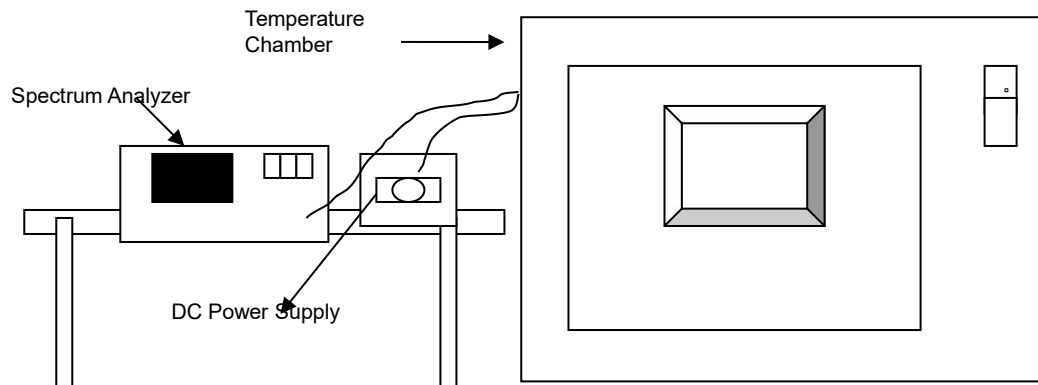
### 3.3.1 LIMIT OF FREQUENCY TOLERANCE

The frequency tolerance of the carrier signal shall be maintained within  $\pm 0.01\%$  (100ppm) 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. For battery operated equipment, the equipment tests shall be performed using a new battery.

### 3.3.2 TEST PROCEDURES

Refer to ANSI C63.10-2020

### 3.3.3 TEST SETUP





## 3.3.4 TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
TEMP. (°C)	POWER SUPPLY (V)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	(ppm)	(MHz)	(ppm)	(MHz)	(ppm)	(MHz)	(ppm)
50	120	13.560605	44.62	13.560606	44.69	13.560619	45.65	13.560612	45.13
40	120	13.560608	44.84	13.560604	44.54	13.560618	45.58	13.560620	45.72
30	120	13.560612	45.13	13.560618	45.58	13.560617	45.50	13.560609	44.91
20	120	13.560619	45.65	13.560610	44.99	13.560605	44.62	13.560618	45.58
10	120	13.560604	44.54	13.560605	44.62	13.560622	45.87	13.560614	45.28
0	120	13.560611	45.06	13.560621	45.80	13.560611	45.06	13.560609	44.91
-10	120	13.560620	45.72	13.560610	44.99	13.560617	45.50	13.560607	44.76
-20	120	13.560608	44.84	13.560606	44.69	13.560617	45.50	13.560618	45.58
20	102	13.560610	44.99	13.560614	45.28	13.560611	45.06	13.560611	45.06
	138	13.560619	45.65	13.560611	45.06	13.560612	45.13	13.560609	44.91





## 3.4 20dB BANDWIDTH

### 3.4.1 LIMITS OF 20dB BANDWIDTH

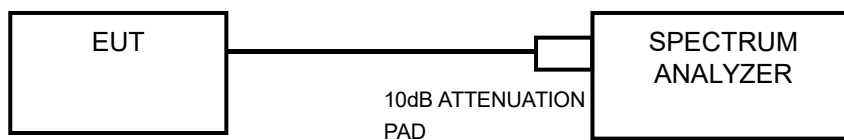
The 20dB bandwidth shall be specified in operating frequency band. (13.11MHz – 14.01MHz)

### 3.4.2 TEST PROCEDURE

- Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- The resolution bandwidth of 1kHz and the video bandwidth of 3kHz were used.
- Measured spectrum width with power higher than 20dB below carrier.

Note: Because the measured signal is CW or CW-like adjust the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately the RBW

### 3.4.3 TEST SETUP

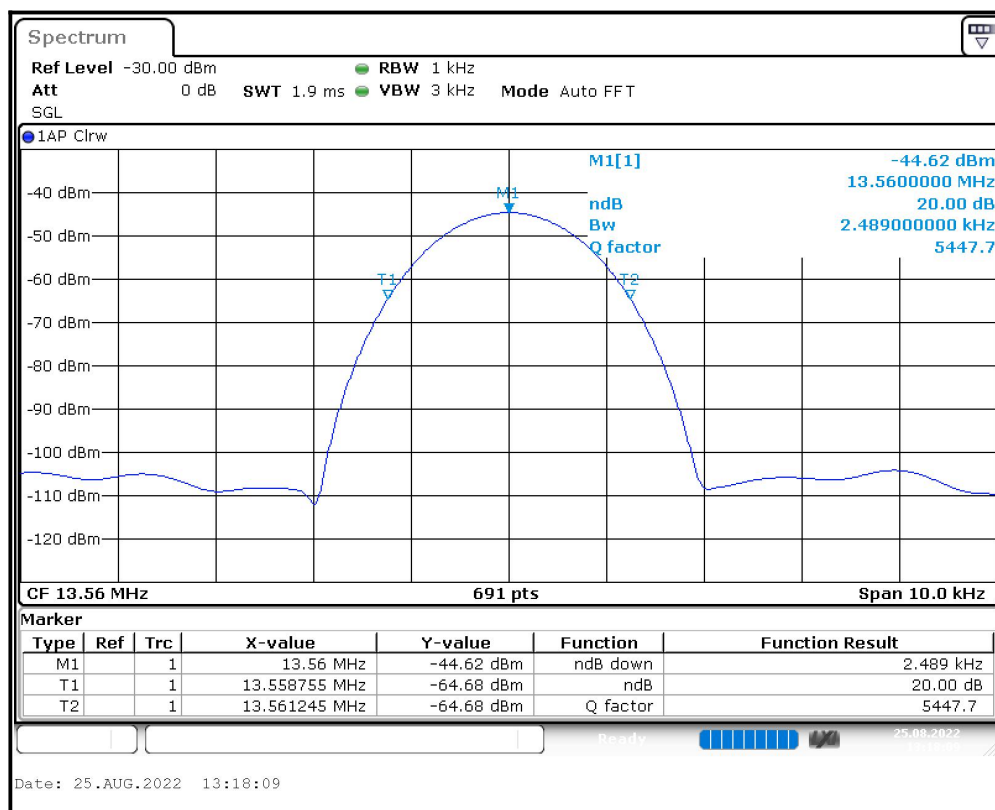




## 3.4.4 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (KHz)
1	13.56	2.489

Lower & Upper Test Frequency Point (MHz)	Test Frequency (MHz)	P/F
Lower	13.5588	PASS
Upper	13.5612	PASS





## 4 PHOTOGRAPHS OF TEST SETUP

Please refer to the attached file (Test Photos).



## 5 PHOTOGRAPHS OF THE EUT

Please refer to the attached file (External Photos report and Internal Photos).



## Important

- (1) The test report is valid without the official stamp of CVC;
- (2) Any part photocopies of the test report are forbidden without the written permission from CVC;
- (3) The test report is invalid without the signatures of Approval and Reviewer;
- (4) The test report is invalid if altered;
- (5) Objections to the test report must be submitted to CVC within 15 days.
- (6) Generally, commission test is responsible for the tested samples only.
- (7) As for the test result “-” or “N” means “not applicable”, “/” means “not test”, “P” means “pass” and “F” means “fail”

*\*\*The test data and test results given in this test report should only be used for purposes of scientific research, teaching and internal quality control when the CMA symbol is not presented.\*\**

Laboratory: CVC Testing Technology Co., Ltd.

Address: No.3, TiantaiyiRoad, KaitaiAvenue, ScienceCity, Guangzhou, China

Post Code: 510663      Tel: 020-32293888

FAX: 020-32293889      E-mail: office@cvc.org.cn