



# EMC TEST REPORT

**Report No.:** 20230817G10789X-W1

**FCC ID:** 2AYHY-VS350

**Product Name:** Passage People Counter

**Model No. :** VS350-915M, NF350-915M, VS350-9M, NF350-9M,  
VS350,NF350

**Applicant:** Xiamen Milesight IoT Co.,Ltd.

**Address:** Building C09, Software Park Phase III, Xiamen 361024,Fujian,  
China

**Received Date:** 2023.08.28

**Dates of Testing:** 2023.08.30~2023.09.04

**Issued by:** CCIC Southern Testing Co., Ltd.

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

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### Test Report

**Product Name**..... Passage People Counter

**Model No.** ..... VS350-915M, NF350-915M, VS350-9M, NF350-9M,  
VS350,NF350

**Trade name**..... Milesight

**Applicant**..... Xiamen Milesight IoT Co., Ltd.

**Applicant Address**..... Building C09, Software Park Phase III,Xiamen 361024, Fujian,  
China

**Manufacturer** ..... Xiamen Milesight IoT Co., Ltd.

**Manufacturer Address** .... Building C09, Software Park Phase III,Xiamen 361024,Fujian,  
China

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

**Test Result**..... PASS

**Tested by** ..... Ruihong Xie

Ruihong Xie Test Engineer 2023.09.05

**Reviewed by** ..... Chris You

Chris You Senior Engineer 2023.09.05

**Approved by** ..... Yang Fan

Yang Fan, Manager 2023.09.05



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Change History		
Issue	Date	Reason for change
1.0	2023.09.05	First edition





## Facilities and Accreditations

### 1.2.1 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 Sep.30, 2023.

#### **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 Sep.30, 2023.

#### **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.

### 1.2.2 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

### 1.2.3 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
/	/	/	/	/

#### Support Cable:

Description	Shield Type	Ferrite Core	Length
/	/	/	/

### 2.2 Test Mode

The EUT have the following typical setups during the test:

Setup1: EUT + Battery;

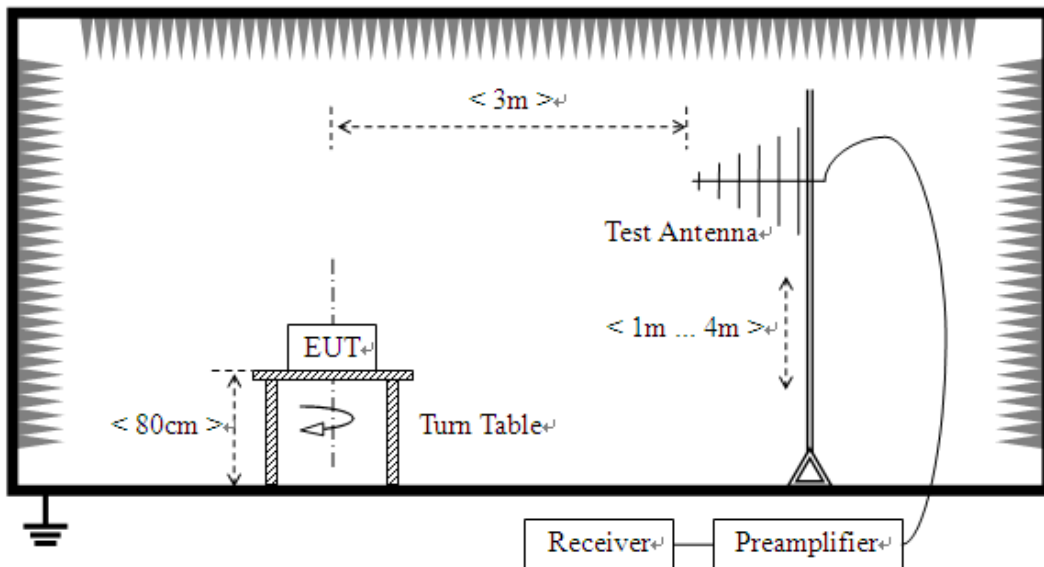
*Note 1:* Model No.: VS350-915M, NF350-915M, VS350-9M, NF350-9M, VS350, NF350 Electrically the same inside the device, with only difference being model name.

## 2.3 Test Setup and Equipments List

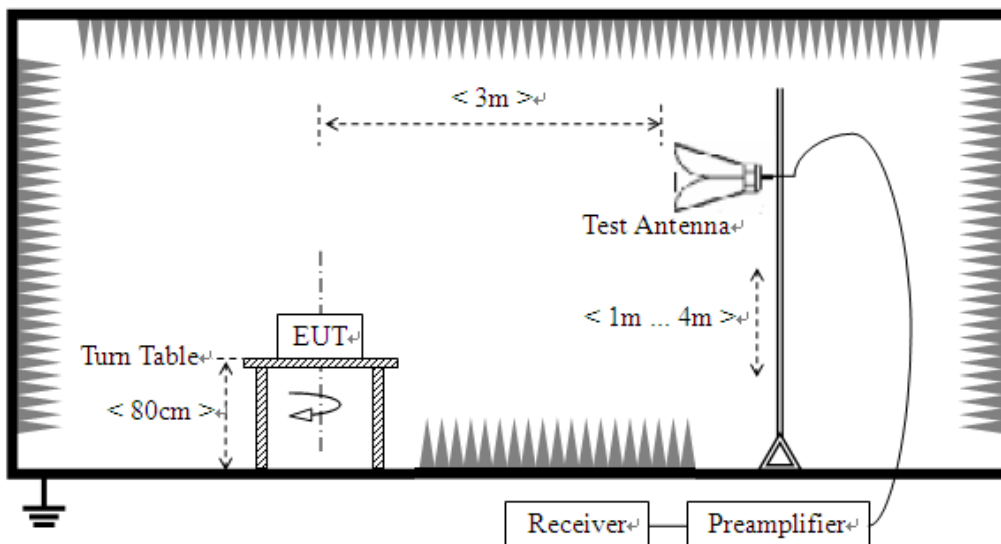
### 2.3.1 Radiated Emission

#### 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	2023.03.16	2024.03.15
Broadband Ant.	ETC	2786	A150402239	2021.03.04	2024.03.03
3M Anechoic Chamber	Albatross	SAC-3MAC 9*6*6m	A0412375	2021.03.26	2024.03.25
EMI Test Receiver	ROHDE&SCHWARZ	ESW26	A180502935	2023.06.08	2024.06.07
5M Anechoic Chamber	Albatross	SAC-5MAC 12.8x6.8x6.4m	A0304210	2022.03.25	2025.06.07
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	( $\mu\text{V/m}$ )	( $\text{dBuV/m}$ )
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

- 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 120kHz ,VBW 300kHz.

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

**Note:**

- The tighter limit shall apply at the boundary between two frequency range.
- Limitation expressed in  $\text{dBuV/m}$  is calculated by  $20\log$  Emission Level( $\mu\text{V/m}$ ).
- 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  $30\mu\text{V/m}$ , then F.S Limitation at 3m distance is adjusted as

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



### **3.1.2 Test Description**

See section 2.3.2 of this report.

### **3.1.3 Test Result**

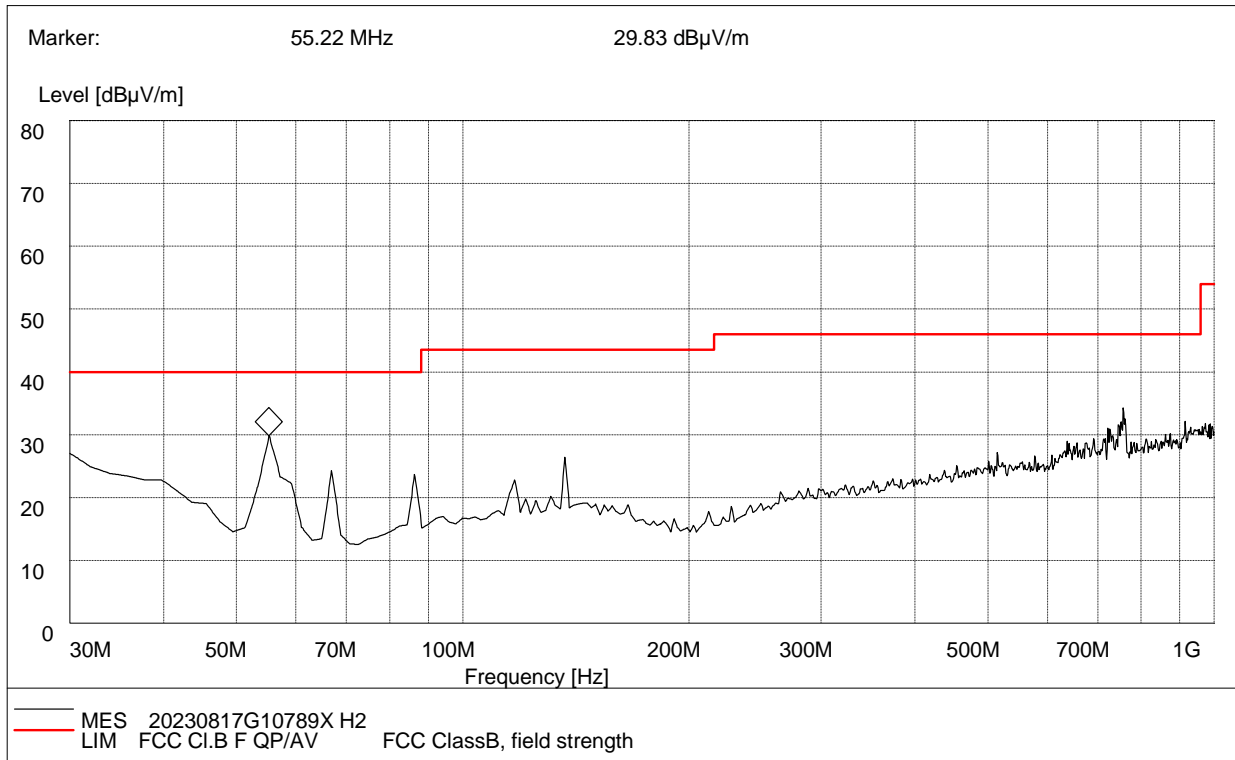
The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with AV and QP detectors. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform 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: 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: Horizontal,Setup1**

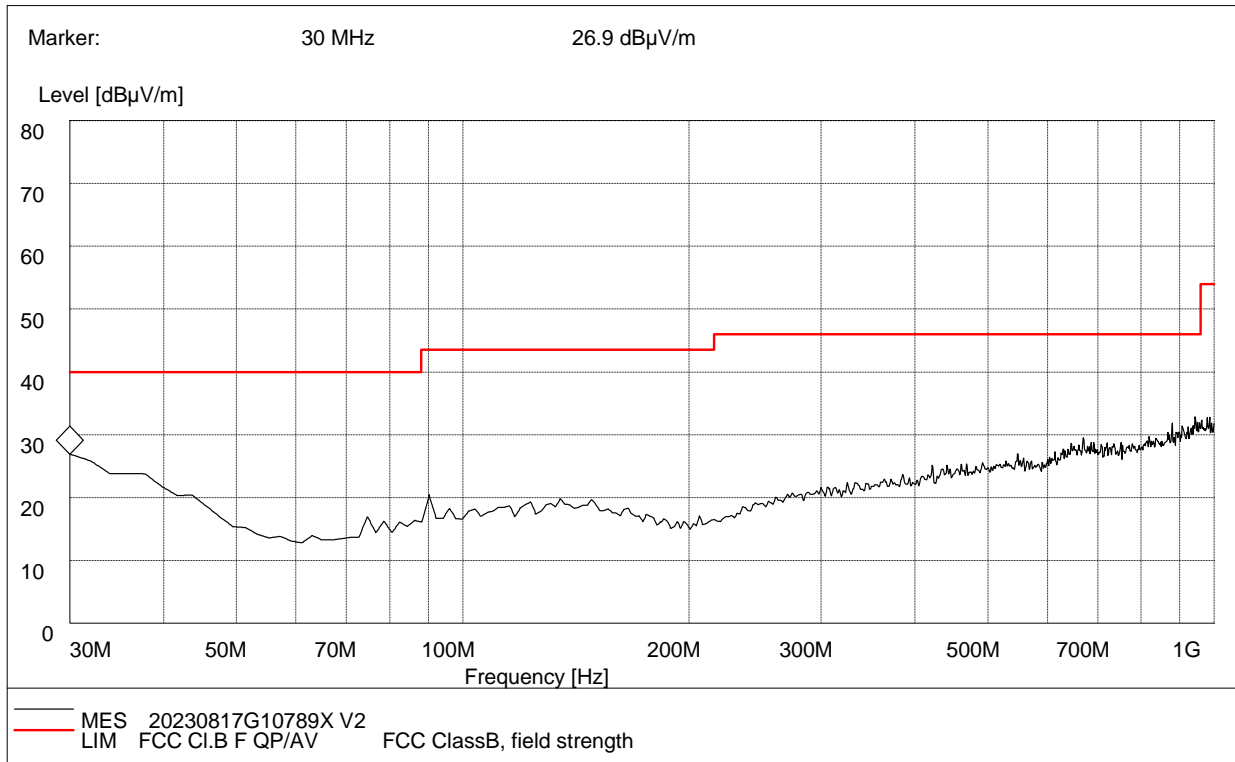


(PlotA: Test Antenna Vertical 30M - 1G)

Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµV/m)	Margin (dB)	Antenna	Cable Loss(dB)	ANT. Factor(dB )	Verdict
30.31	26.02	120.000	102	40.00	13.98	Vertical	0.5	18.8	Pass
55.22	28.83	120.000	101	40.00	11.17	Vertical	0.5	8.7	Pass
117.30	21.79	120.000	101	40.00	18.21	Vertical	1	10.9	Pass
136.74	25.40	120.000	105	43.50	18.10	Vertical	1	11.8	Pass
722.58	30.05	120.000	100	46.00	15.95	Vertical	1.8	20.4	Pass
757.50	33.26	120.000	102	46.00	12.74	Vertical	1.8	20.3	Pass



**B.Radiation disturbances, antenna polarization: Vertical,Setup1**

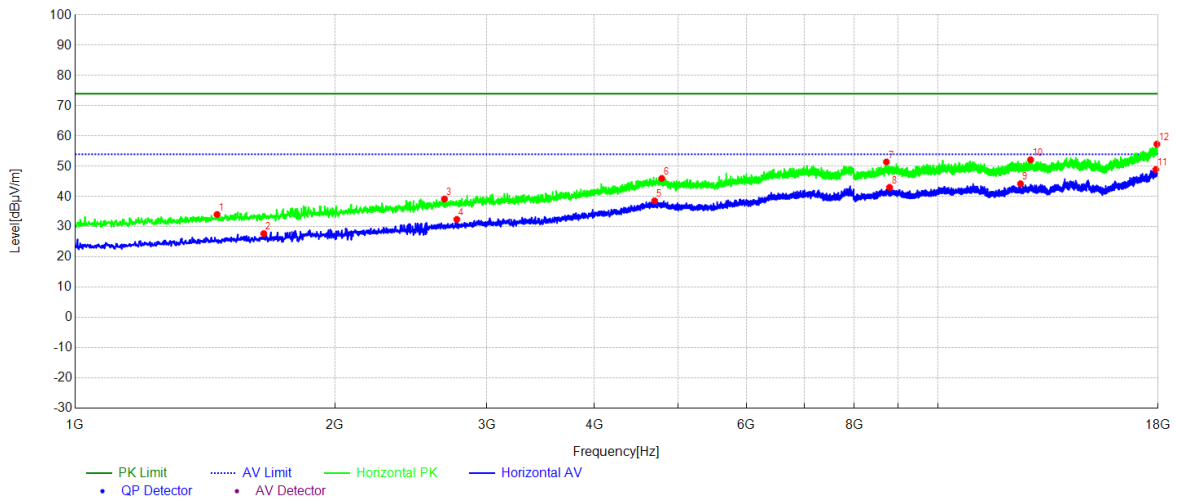


(PlotB: Test Antenna Horizontal 30M - 1G)

Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµV/m)	Margin (dB)	Antenna	Cable Loss(dB)	ANT. Factor(dB)	Verdict
30.14	25.90	120.000	101	40.00	14.10	Horizontal	0.5	18.8	Pass
37.76	22.76	120.000	101	40.00	17.24	Horizontal	0.5	13.2	Pass
90.35	19.44	120.000	104	43.50	20.56	Horizontal	0.8	9.1	Pass
134.53	18.78	120.000	102	43.50	24.72	Horizontal	1.0	11.6	Pass
547.98	25.94	120.000	106	46.00	20.06	Horizontal	1.5	18.6	Pass
670.20	28.50	120.000	106	46.00	17.50	Horizontal	1.6	20.0	Pass



**A.Radiation disturbances, antenna polarization: Horizontal,Setup1**

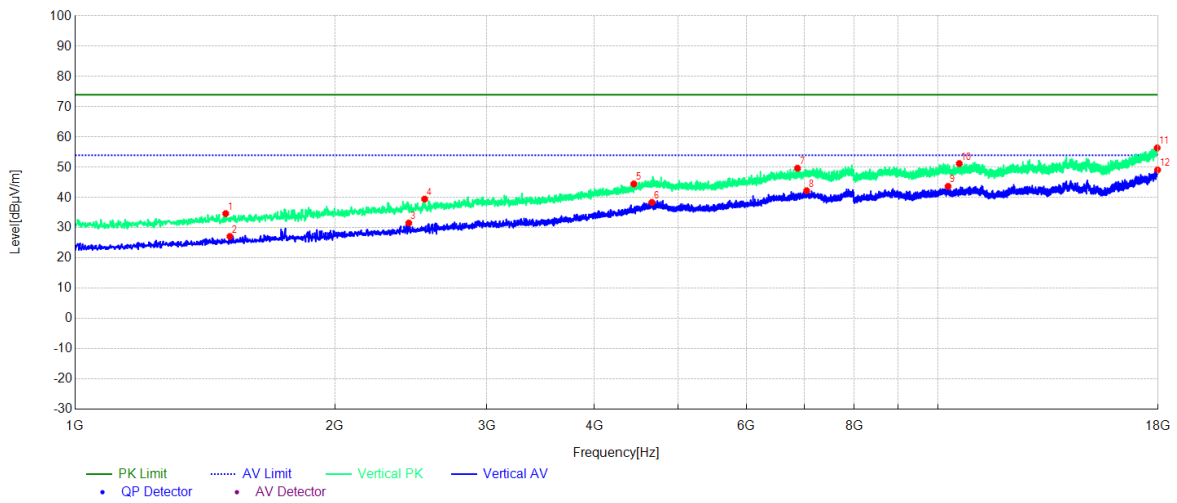


(Plot C: Test Antenna Horizontal 1G – 18G)

NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin[dB µV/m]	Trace	Height [cm]	Angle [°]	Polarity
1	1460.75	34.10	-14.13	74.00	39.90	PK	104	321	Horizontal
2	1654.57	27.80	-13.38	54.00	26.20	AV	104	272	Horizontal
3	2679.77	39.20	-9.37	74.00	34.80	PK	102	130	Horizontal
4	2769.88	32.49	-9.15	54.00	21.51	AV	103	315	Horizontal
5	4696.17	38.61	-0.80	54.00	15.39	AV	106	124	Horizontal
6	4786.28	46.02	-0.66	74.00	27.98	PK	104	116	Horizontal
7	8717.07	51.46	4.42	74.00	22.54	PK	106	118	Horizontal
8	8791.88	43.06	4.50	54.00	10.94	AV	106	120	Horizontal
9	12469.35	44.26	6.85	54.00	9.74	AV	102	24	Horizontal
10	12809.38	52.18	7.53	74.00	21.82	PK	103	282	Horizontal
11	17891.19	48.97	15.88	54.00	5.03	AV	107	190	Horizontal
12	17942.19	57.35	16.06	74.00	16.65	PK	105	265	Horizontal



**B.Radiation disturbances, antenna polarization: Vertical,Setup1**



(Plot D: 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	1494.75	34.72	-13.99	74.00	39.28	PK	104	344	Vertical
2	1511.75	27.17	-13.90	54.00	26.83	AV	104	32	Vertical
3	2436.64	31.61	-10.52	54.00	22.39	AV	102	245	Vertical
4	2542.05	39.52	-10.07	74.00	34.48	PK	105	230	Vertical
5	4442.84	44.54	-2.26	74.00	29.46	PK	103	56	Vertical
6	4662.17	38.43	-0.92	54.00	15.57	AV	102	171	Vertical
7	6875.79	49.72	3.19	74.00	24.28	PK	107	90	Vertical
8	7045.80	42.29	3.46	54.00	11.71	AV	109	352	Vertical
9	10276.13	43.72	5.84	54.00	10.28	AV	109	151	Vertical
10	10588.96	51.25	6.39	74.00	22.75	PK	106	263	Vertical
11	17957.50	56.43	16.08	74.00	17.57	PK	105	150	Vertical
12	17977.90	49.14	16.12	54.00	4.86	AV	103	52	Vertical

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