



Shenzhen General Testing & Inspection Technology Co.,Ltd.

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TEST REPORT

Report No.: **GTI20182001F**

FCC ID.....: **NKS-S597**

Applicant.....: **PeopleNet Communications Corporation**

Address.....: 4400 Baker Road, Minnetonka, Minnesota, United States

Manufacturer.....: STONKAM CO.,LTD.

Address.....: 5/F., #3 Building, Huangzhou Industrial Park, Chebei Rd., Tianhe Dist., 510665 Guangzhou, China

Product Name.....: **DVR S597**

Trade Mark.....: N/A

Model/Type reference.....: E-006-0597

Listed Model(s): N/A

Standard.....: **47 CFR FCC Part 15 Subpart B - Unintentional Radiators**

Date of receipt of test sample...: 2018-10-23

Date of testing.....: 2018-10-24 to 2018-11-05

Date of issue.....: 2018-11-06

Result.....: **PASS**

Compiled by:

(Printed name+signature)

Terry Su

Terry Su

Supervised by:

(Printed name+signature)

Cary Luo

Cary Luo

Approved by:

(Printed name+signature)

Walter Chen

Walter Chen

Testing Laboratory Name..... **Shenzhen General Testing & Inspection Technology Co.,Ltd.**

Address 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park,
Shenzhen, Guangdong, China

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Table of Contents

Page

1. TEST SUMMARY.....	3
1.1. TEST STANDARDS.....	3
1.2. REPORT VERSION.....	3
1.3. TEST DESCRIPTION.....	4
1.4. TEST FACILITY	5
1.5. MEASUREMENT UNCERTAINTY	5
1.6. ENVIRONMENTAL CONDITIONS	6
2. GENERAL INFORMATION.....	7
2.1. CLIENT INFORMATION	7
2.2. GENERAL DESCRIPTION OF EUT	7
2.3. ACCESSORY EQUIPMENT INFORMATION	7
2.4. DESCRIPTION OF TEST MODES	8
2.5. MEASUREMENT INSTRUMENTS LIST	9
3. EMC EMISSION TEST	10
3.1. RADIATED EMISSION	10
3.2. CONDUCTED EMISSION (AC MAINS)	16
4. EUT TEST PHOTOS.....	17
5. PHOTOGRAPHS OF EUT CONSTRUCTIONAL	18



1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

[47 CFR FCC Part 15 Subpart B](#): Unintentional Radiators.

[ANSI C63.4: 2014](#): American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz.

1.2. Report version

Revised No.	Date of issue	Description
01	2018-11-06	Original



1.3. Test Description

FCC CFR Title 47 FCC Part 15 Subpart B			
Test Item	Standard Section	Result	Test Engineer
Conducted Emissions Test	15.107	N/A	N/A
Radiated Emission Test	15.109	Pass	Will Chen

Note: "N/A" is no application.

The measurement uncertainty is not included in the test result.



1.4. Test Facility

Address of the report laboratory

Shenzhen General Testing & Inspection Technology Co., Ltd.

Add: 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L5365

Shenzhen General Testing & Inspection Technology Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: CN1208

Shenzhen General Testing & Inspection Technology Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

IC Registration No.: 9783A-1

The 3m alternate test site of Shenzhen General Testing & Inspection Technology Co., Ltd. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC-Registration No.: 951311

Shenzhen General Testing & Inspection Technology 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. Registration 951311, Aug 26, 2017

1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the Shenzhen General Testing & Inspection Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Below is the best measurement capability for Shenzhen General Testing & Inspection Technology Co., Ltd.



Test Items	Measurement Uncertainty	Notes
Conducted Emissions 9kHz~30MHz	3.20 dB	(1)
Radiated Emissions 30~1000MHz	4.70 dB	(1)
Radiated Emissions 1~18GHz	5.00 dB	(1)
Radiated Emissions 18~40GHz	5.54 dB	(1)

Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=1.96$.

1.6. Environmental conditions

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

Normal Temperature:	25°C
Relative Humidity	55 %
Air Pressure	989 hPa



2. GENERAL INFORMATION

2.1. Client Information

Applicant:	PeopleNet Communications Corporation
Address:	4400 Baker Road, Minnetonka, Minnesota, United States
Manufacturer:	STONKAM CO.,LTD.
Address:	5/F., #3 Building, Huangzhou Industrial Park, Chebei Rd., Tianhe Dist., 510665 Guangzhou, China

2.2. General Description of EUT

Product Name:	DVR S597
Model/Type reference:	E-006-0597
Marketing Name:	N/A
Listed Model(s):	N/A
Power supply:	12Vdc from Li-ion Battery
Hardware version:	Rev 1.5
Software version:	DV423V1.0.0

2.3. Accessory Equipment information

Equipment Information			
Name	Model	S/N	Manufacturer
/	/	/	/
Cable Information			
Name	Shielded Type	Ferrite Core	Length
/	/	/	/



2.4. Description of Test Modes

Test mode	Camera
1	■

Note:

1. ■ is operation mode.

Test item	Test mode
Conducted emission	N/A
Radiated emission	Mode 1



2.5. Measurement Instruments List

Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	LISN	R&S	ENV216	101112	Jan. 04, 2019
2	LISN	R&S	ENV216	101113	Jan. 04, 2019
3	EMI Test Receiver	R&S	ESCI	100920	Jan. 04, 2019
4	UNIVERSAL RADIO COMMUNICATION	Rohde & Schwarz	CMU200	114694	Jan. 04, 2019

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Log-Bicon Antenna	Schwarzbeck	CBL6141A	4180	Jan. 04, 2019
2	Spectrum Analyzer	HP	8563E	02052	Jan. 04, 2019
3	Horn Antenna	Schwarzbeck	BBHA 9120D	648	Jan. 04, 2019
4	Pre-Amplifier	HP	8447D	1937A03050	Jan. 04, 2019
5	Pre-Amplifier	EMCI	EMC051835	980075	Jan. 04, 2019
6	EMI Test Receiver	R&S	ESCI	100658	Jan. 04, 2019
7	Antenna Mast	UC	UC3000	N/A	N/A
8	Turn Table	UC	UC3000	N/A	N/A
9	UNIVERSAL RADIO COMMUNICATION	Rohde & Schwarz	CMU200	114694	Jan. 04, 2019

The Cal. Interval was one year.

3. EMC EMISSION TEST

3.1. Radiated Emission

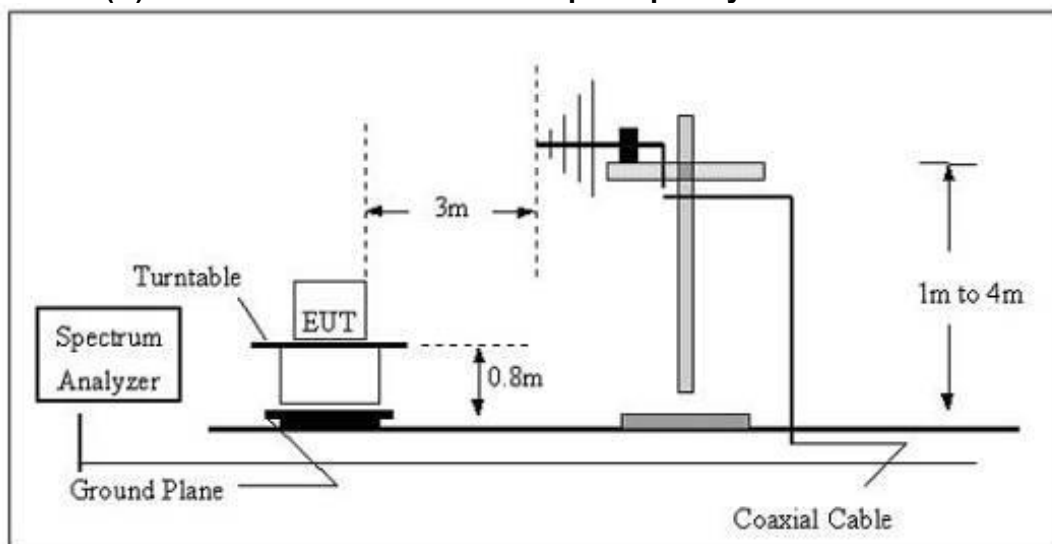
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.109:

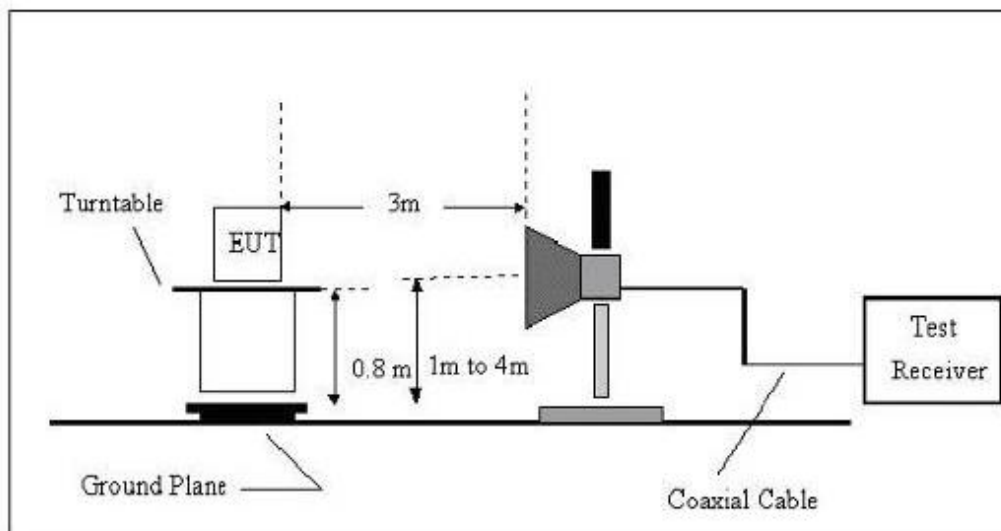
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

(B) Radiated Emission Test Set-Up Frequency below 1 GHz



(B) Radiated Emission Test Set-Up Frequency above 1GHz



TEST PROCEDURE

1. The EUT was tested according to ANSI C63.4:2014.
2. The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna.
5. Use the following spectrum analyzer settings
Span shall wide enough to fully capture the emission being measured;
- 1) Below 1GHz, RBW=120KHz, VBW=300KHz, Sweep=auto, Detector function=peak, Trace=max hold;
- 2) If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
- 3) Above 1GHz, RBW=1MHz, VBW=3MHz

TEST MODE:

Please refer to the clause 2.3.

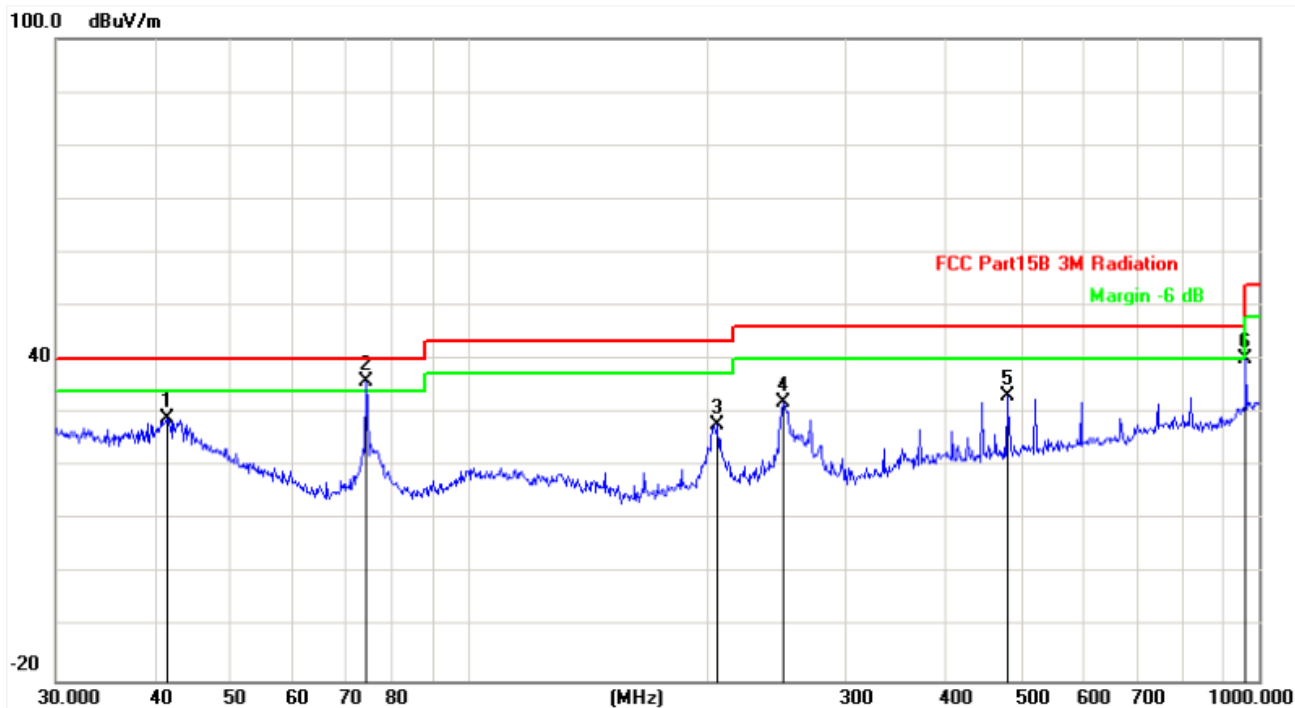
TEST RESULTS



30MHz-1GHz

Polarization

Horizontal

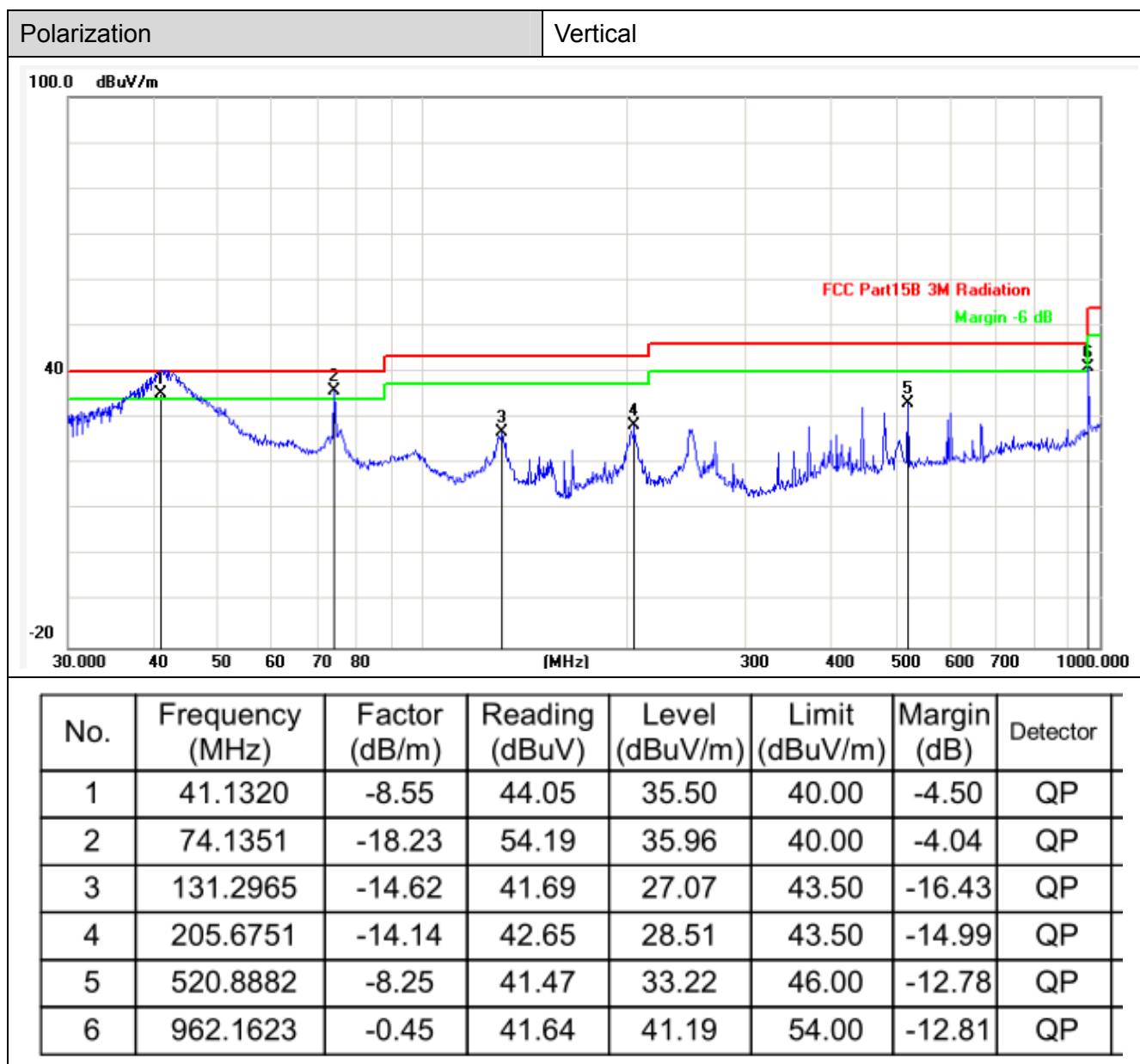


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	41.4215	-8.62	37.58	28.96	40.00	-11.04	QP
2	74.1351	-18.23	54.04	35.81	40.00	-4.19	QP
3	206.3976	-14.11	41.93	27.82	43.50	-15.68	QP
4	250.3012	-15.54	47.53	31.99	46.00	-14.01	QP
5	480.5276	-9.24	42.47	33.23	46.00	-12.77	QP
6	962.1623	-0.45	40.70	40.25	54.00	-13.75	QP

Remark:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value



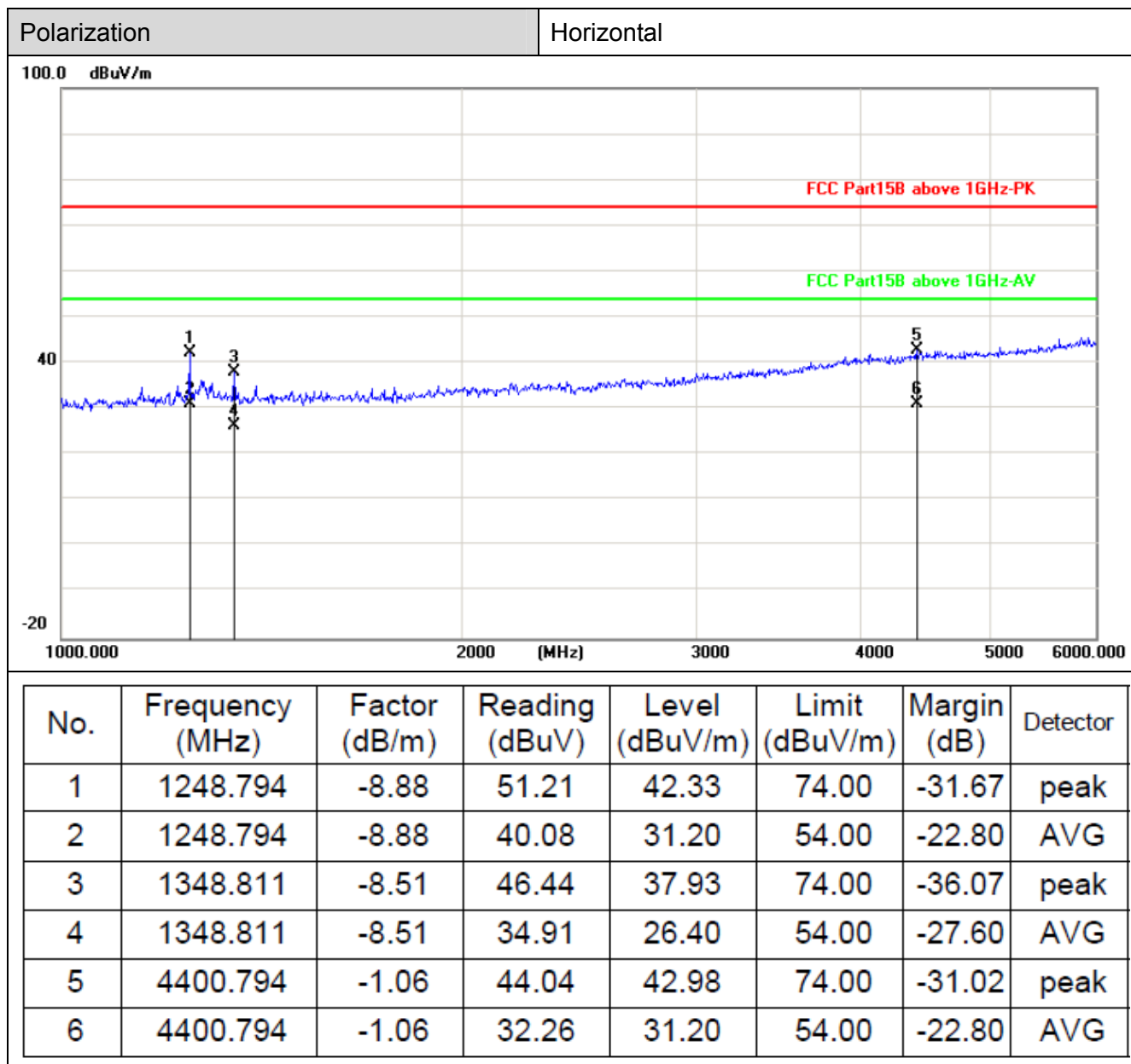
Remark:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value



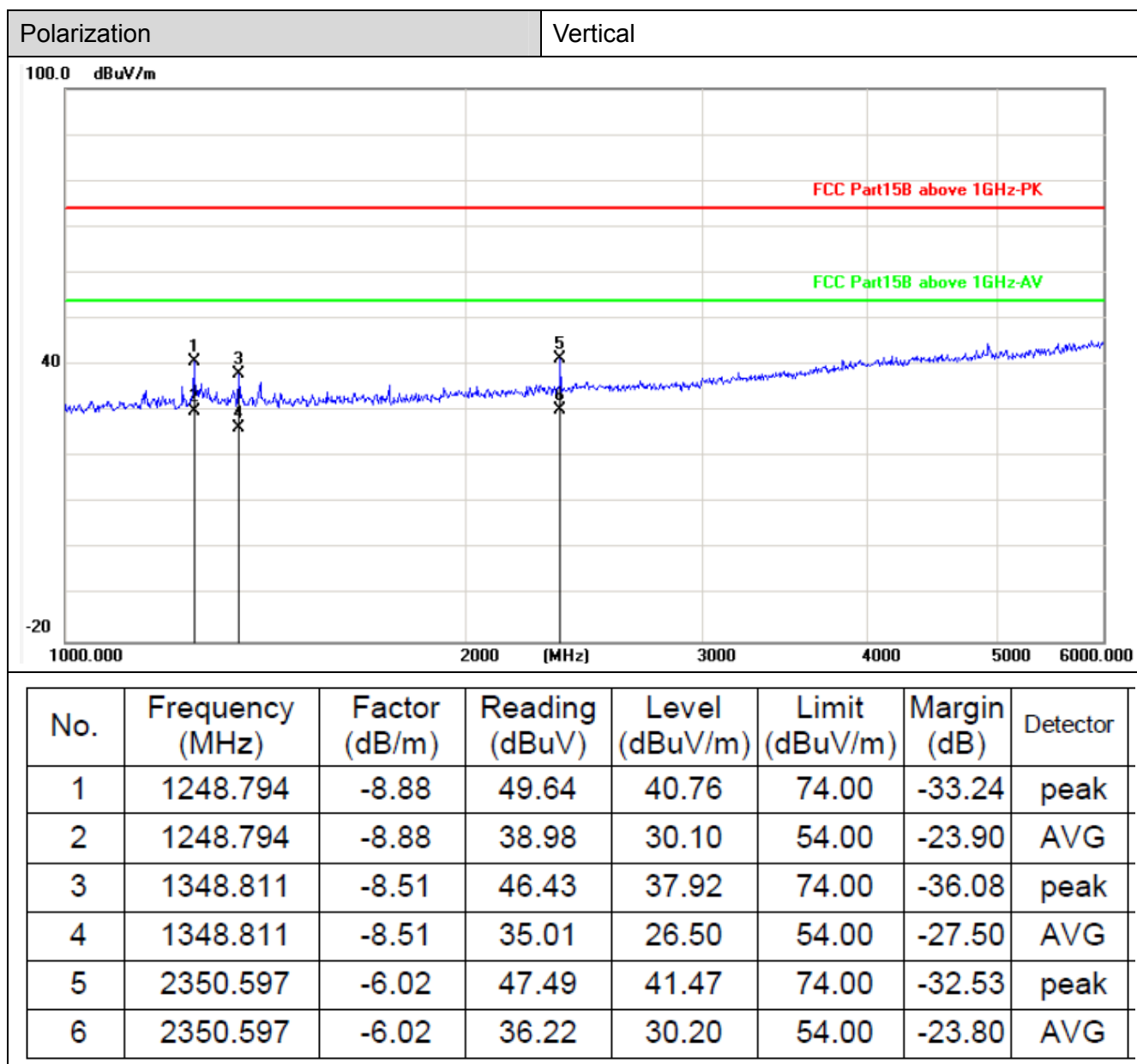
1GHz-6GHz



Remark:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value



Remark:

1. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) - Pre-amplifier Factor

2. Margin value = Level - Limit value

3.2. Conducted Emission (AC Mains)

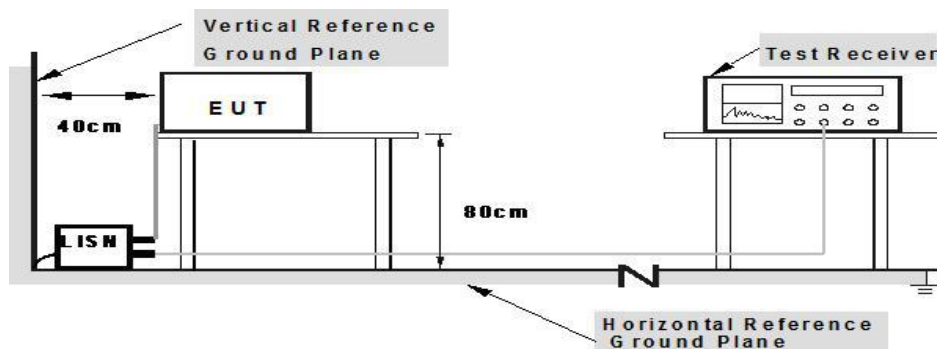
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.107:

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



**Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes**

TEST PROCEDURE

1. The EUT was setup according to ANSI C63.4-2014.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST MODE

Please refer to the clause 2.3.

TEST RESULTS

No Applicable.



4. EUT TEST PHOTOS

Reference to the document No.: Test Photographs 1.



5. PHOTOGRAPHS OF EUT CONSTRUCTIONAL

Reference to the document No.: External Photographs and Internal Photographs.

*****THE END*****