



TEST REPORT

Appli	cant:	Grandstream	Networks,	Inc.
Thhu	cant.	Of anusti cam	110000000000000000000000000000000000000	III

Address: 126 Brookline Ave., 3rd Floor Boston, MA 02215, USA

FCC ID: YZZGWN7812P

Product Name: Enterprise Layer 3 Managed Network Switch

Model Number: GWN7812P

Standard(s): 47 CFR Part 15 Subpart B ANSI C63.4-2014

The above equipment has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: CR230311135-00A

Date Of Issue: 2023/4/6

Reviewed By: Sun Zhong

Sun 2hong

Title: Manager

Test Laboratory: China Certification ICT Co., Ltd (Dongguan) No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China Tel: +86-769-82016888

Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "▲". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

This report cannot be reproduced except in full, without prior written approval of the Company.

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

This report may contain data that are not covered by the accreditation scope and shall be marked with an asterisk " \star ".

CONTENTS

Test Facility	2
DECLARATIONS	
DOCUMENT REVISION HISTORY	4
1. GENERAL INFORMATION	5
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	5
1.2 DESCRIPTION OF TEST CONFIGURATION	
1.2.2 Support Equipment List and Details	
1.2.3 Support Cable List and Details	6
1.2.4 Block Diagram of Test Setup	
1.3 MEASUREMENT UNCERTAINTY	8
2. SUMMARY OF TEST RESULTS	9
3. REQUIREMENTS AND TEST PROCEDURES	
3.1 AC LINE CONDUCTED EMISSIONS	
3.1.1 EUT Setup	
3.1.2 EMI Test Receiver Setup	
3.1.3 Test Procedure	11
3.1.4 Corrected Amplitude & Margin Calculation	
3.2 RADIATION SPURIOUS EMISSIONS	
3.2.1 EUT Setup	
3.2.2 EMI Test Receiver Setup	
3.2.3 Test Procedure	
3.2.4 Corrected Amplitude & Margin Calculation	
4. TEST DATA AND RESULTS	14
4.1 AC LINE CONDUCTED EMISSIONS	
4.2 RADIATION SPURIOUS EMISSIONS	21

Report No.: CR230311135-00A

DOCUMENT REVISION HISTORY

Revision Number Report Number		Description of Revision	Date of Revision	
	1.0	CR230311135-00A	Original Report	2023/4/6

Page 4 of 33

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name: Enterprise Layer 3 Managed Network Switch				
EUT Model:	GWN7812P			
Highest Operation Frequency:	800 MHz			
Rated Input Voltage:	AC 120V			
Serial Number:	22YD_1			
EUT Received Date: 2023/3/15				
EUT Received Status: Good				
Note: EUT can configure with three different power modules, power #1(RB260W04), power #2(UES267-SPA-M2-				

Note: EUT can configure with three different power modules, power #1(RB260W04), power #2(UES267-SPA-M2-OP) and power #3(G0591)

Accessory Information:

Accessory Description Manufacturer		Model	Parameters
		/	/

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition:

EUT Operation Mode:	The system was configured for testing in Typical Use Mode, which was provided by the manufacturer. Test Mode: M1: Operation from power #1 (RB260W04) M2: Operation from power #2 (UES267-SPA-M2-OP) M3: Operation from power #3 (G0591)			
Equipment Modifications:	No			
EUT Exercise Software:	No			

1.2.2 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Unknown	POE Load	Unknown	CR234632

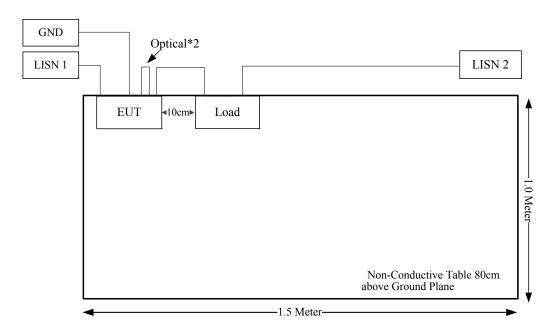
1.2.3 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	То
RJ45 Cable*16	No	No	0.6	EUT	POE Load
Optical *2	No	No	4	EUT	EUT
Earth Line	No	No	1	EUT	GND
Power Cable	No	No	1.5	POE Load	LISN2
Power Cable	No	No	1.2	EUT	LISN1

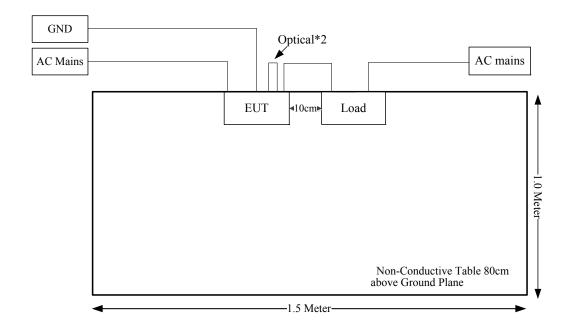
Report No.: CR230311135-00A

1.2.4 Block Diagram of Test Setup

Conducted emissions:



Radiated emissions:



1.3 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty		
Unwanted Emissions, radiated	30M~200MHz: 4.15 dB,200M~1GHz: 5.61 dB,1G~6GHz: 5.14 dB,		
Oliwalited Emissions, radiated	6G~18GHz: 5.93 dB,18G~26.5G:5.47 dB,26.5G~40G:5.63 dB		
Temperature	±1°C		
Humidity	±5%		
AC Power Lines Conducted Emission	2.8 dB (150 kHz to 30 MHz)		

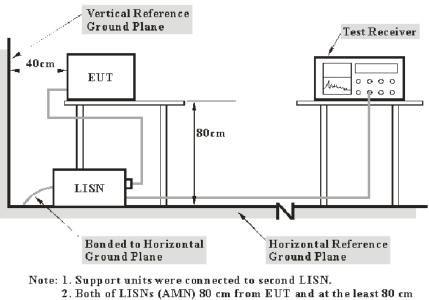
2. SUMMARY OF TEST RESULTS

Standard Clause	Description of Test	Test Result	
§15.107 Conducted emissions		Compliant	
§15.109 Radiated emissions		Compliant	

3. REQUIREMENTS AND TEST PROCEDURES

3.1 AC Line Conducted Emissions

3.1.1 EUT Setup



from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15 B Class A limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The EUT was connected to the main LISN with a 120 V/60 Hz AC power source.

3.1.2 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W	
150 kHz – 30 MHz	9 kHz	

3.1.3 Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT, the report shall list the six emissions with the smallest margin relative to the limit, unless the margin is greater than 20 dB.

All data was recorded in the Quasi-peak and average detection mode.

The report shall list the six emissions with the smallest margin relative to the limit, unless the margin is greater than 20 dB.

3.1.4 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor Factor = attenuation caused by cable loss + voltage division factor of AMN

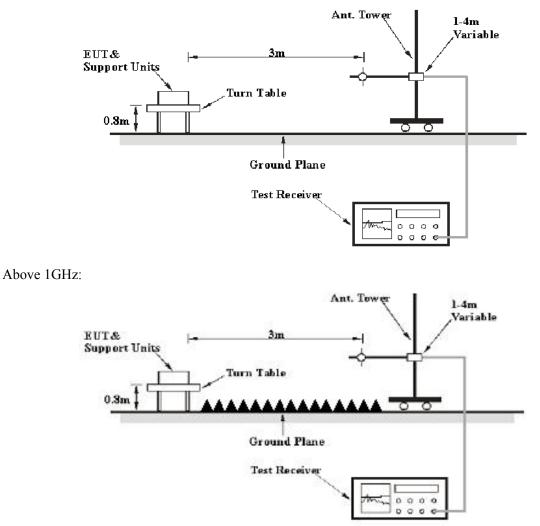
The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit - Result

3.2 Radiation Spurious Emissions

3.2.1 EUT Setup

Below 1GHz:



The radiated emission tests were performed in the 3 meters chamber, using the setup accordance with the ANSI C63.4-2014. The specification used was with the FCC Part 15 B Class A limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

3.2.2 EMI Test Receiver Setup

The system was investigated from 30 MHz to 5 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	Peak
	1 MHz	Reduced video bandwidth	/	AVG

If the maximized peak measured value complies with under the limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

3.2.3 Test Procedure

During the radiated emissions, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The data was recorded in the Quasi-peak detection mode for below 1 GHz, peak and average detection mode above 1 GHz.

All emissions under the average limit and under the noise floor have not recorded in the report.

3.2.4 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor Factor = Antenna Factor + Cable Loss- Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

4. TEST DATA AND RESULTS

4.1 AC Line Conducted Emissions

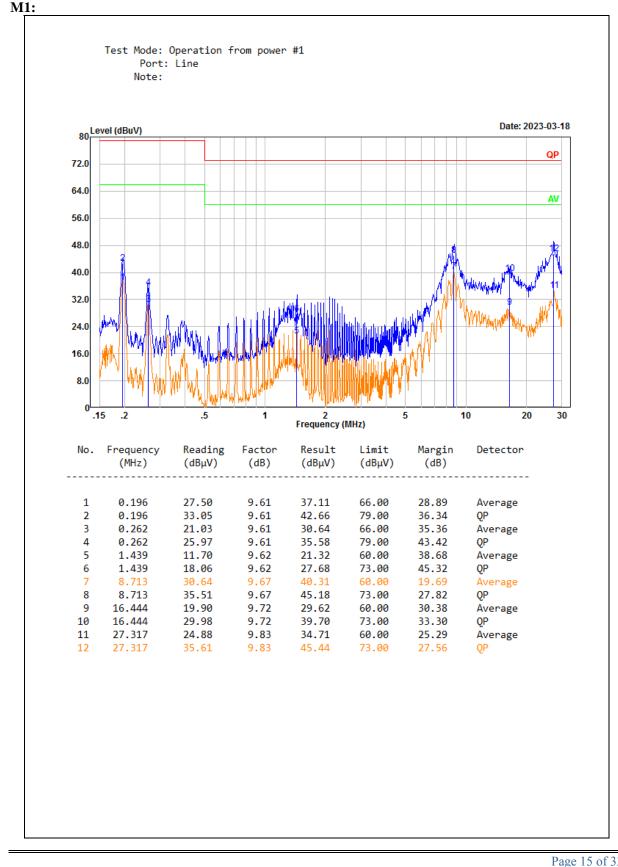
Serial Number:	22YD_1	Test Date:	2023/3/18
Test Site:	CE	Test Mode:	M1, M2, M3
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	24.4	Relative Humidity: (%)	65	ATM Pressure: (kPa)	101.8

Test Equipment List and Details:

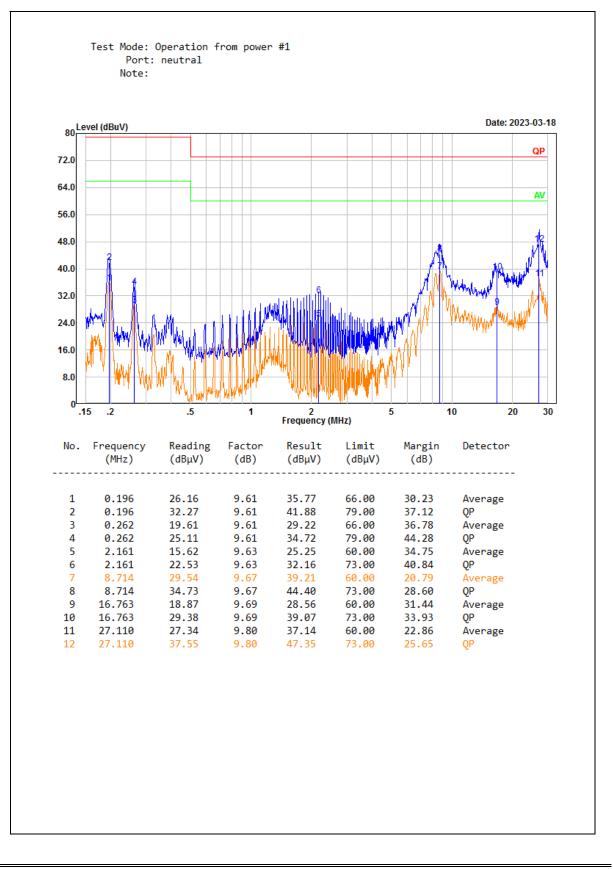
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2022/04/01	2023/03/31
R&S	LISN	ENV216	101132	2022/04/01	2023/03/31
R&S	EMI Test Receiver	ESR3	102726	2022/07/15	2023/07/14
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2022/08/07	2023/08/06
Audix	Test Software	E3	190306 (V9)	N/A	N/A

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

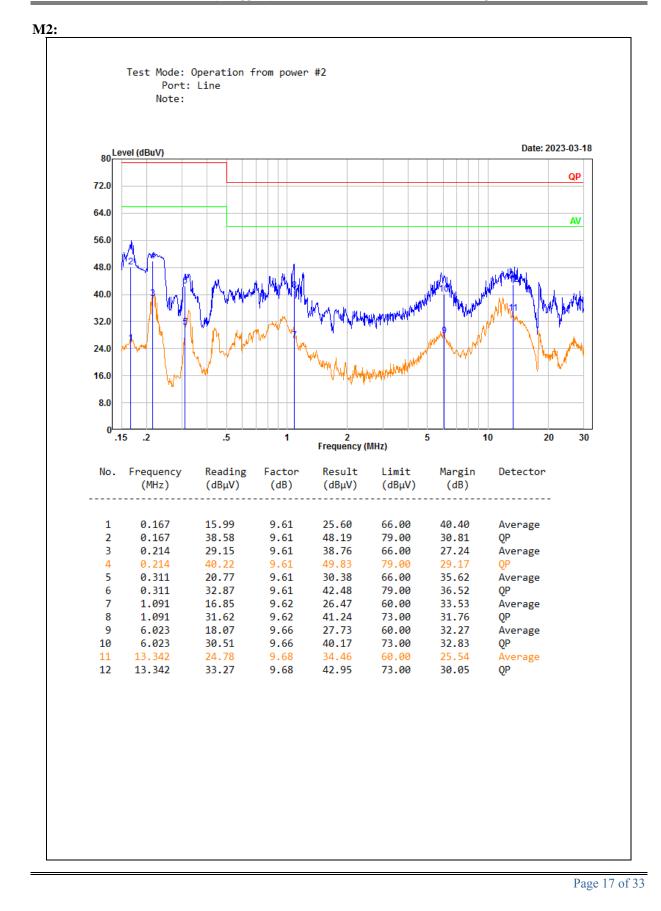


Page 15 of 33

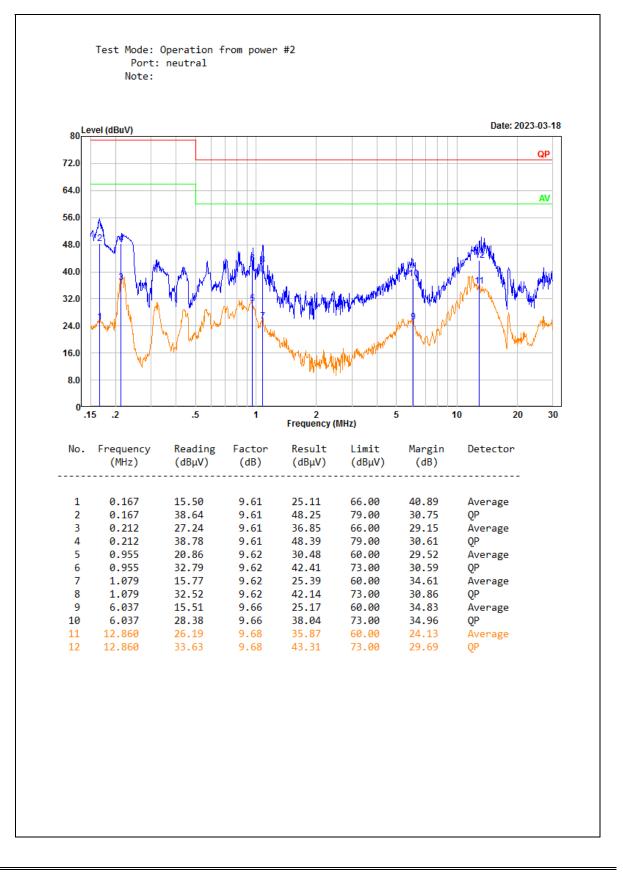
Report No.: CR230311135-00A



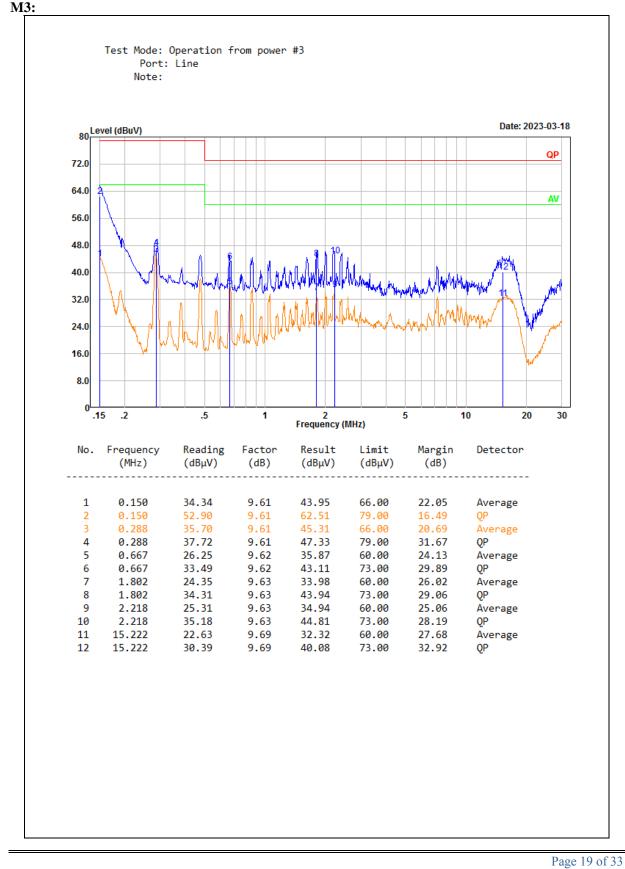
Page 16 of 33



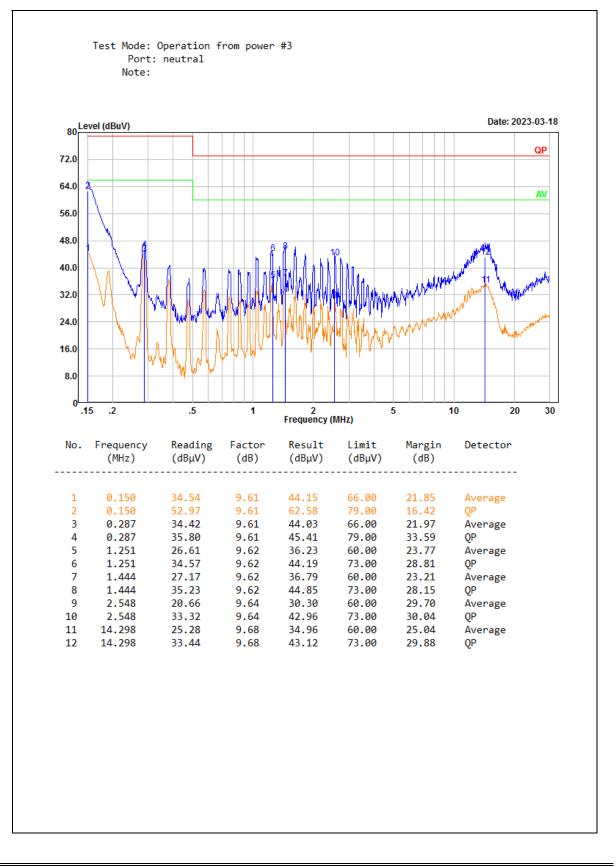
Report No.: CR230311135-00A



Page 18 of 33



Report No.: CR230311135-00A



Page 20 of 33

Report No.: CR230311135-00A

4.2 Radiation Spurious Emissions

Serial Number:	22YD_1	Test Date:	2023/3/17~2023/3/22
Test Site:	966-1, 966-2	Test Mode:	M1-M3
Tester:	Carl Xue, coco Tian	Test Result:	Pass

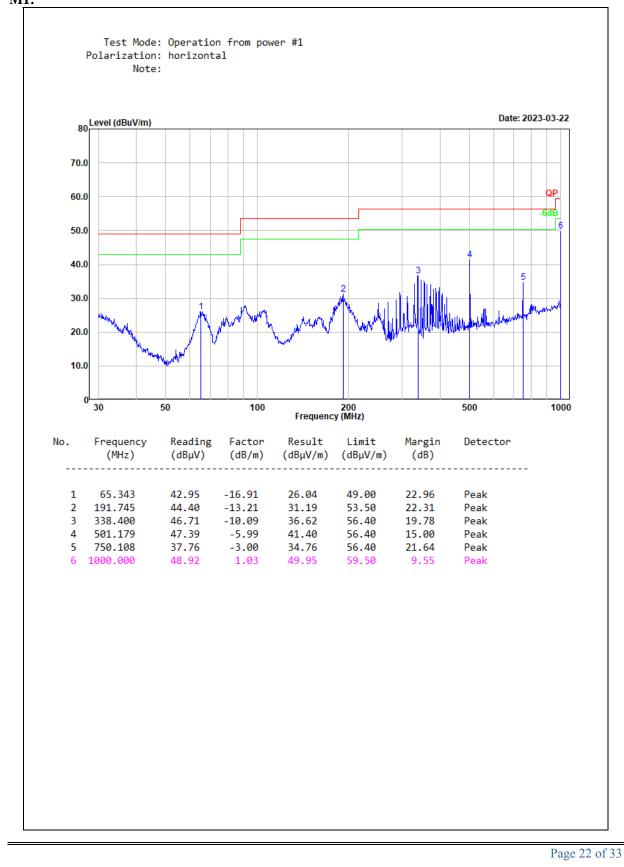
Environmental Conditions:					
Temperature: (°C)	22.8~25.8	Relative Humidity: (%)	46~51	ATM Pressure: (kPa)	100.7~101.1

Test Equipment List and Details:

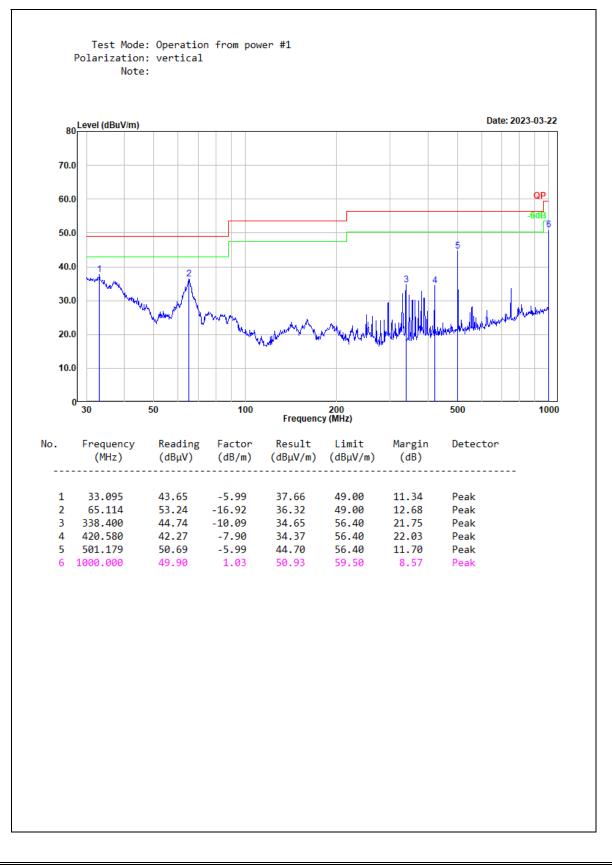
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020/10/19	2023/10/18
R&S	EMI Test Receiver	ESR3	102724	2022/07/15	2023/07/14
TIMES MICROWAVE	Coaxial Cable	LMR-600- UltraFlex	C-0470-02	2022/07/17	2023/07/16
TIMES MICROWAVE	Coaxial Cable	LMR-600- UltraFlex	C-0780-01	2022/07/17	2023/07/16
Sonoma	Amplifier	310N	186165	2022/07/17	2023/07/16
Audix	Test Software	E3	201021 (V9)	N/A	N/A
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020/10/13	2023/10/12
R&S	Spectrum Analyzer	FSV40	101591	2022/07/15	2023/07/14
MICRO-COAX	Coaxial Cable	UFA210A-1- 1200-70U300	217423-008	2022/08/07	2023/08/06
MICRO-COAX	Coaxial Cable	UFA210A-1- 2362-300300	235780-001	2022/08/07	2023/08/06
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2022/11/09	2023/11/08

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

1) 30MHz-1GHz: **M1:**

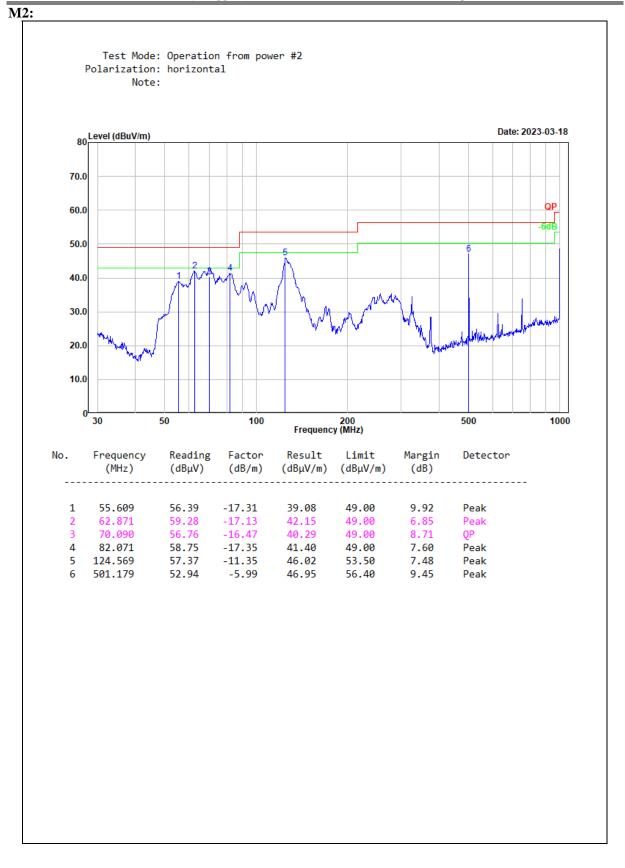


Report No.: CR230311135-00A



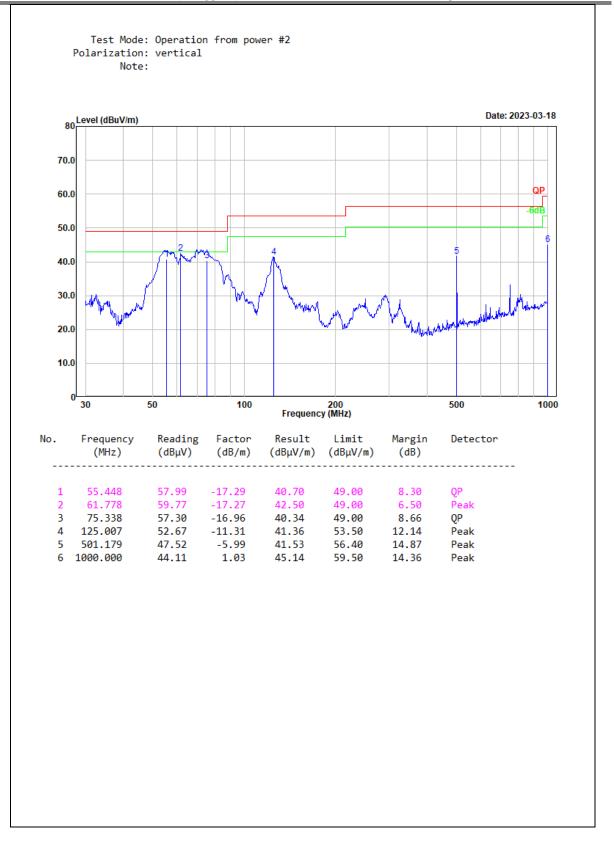
Page 23 of 33

Report No.: CR230311135-00A



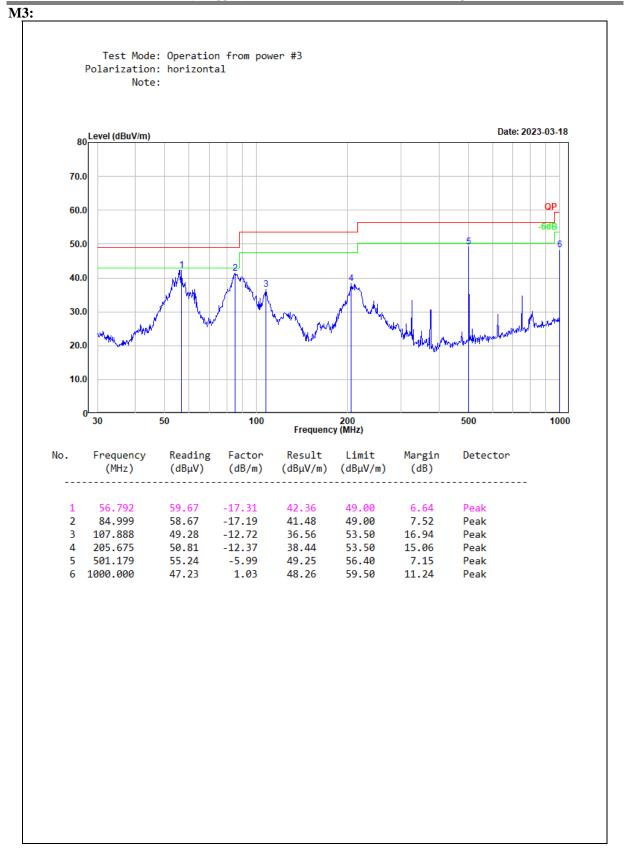
Page 24 of 33

Report No.: CR230311135-00A



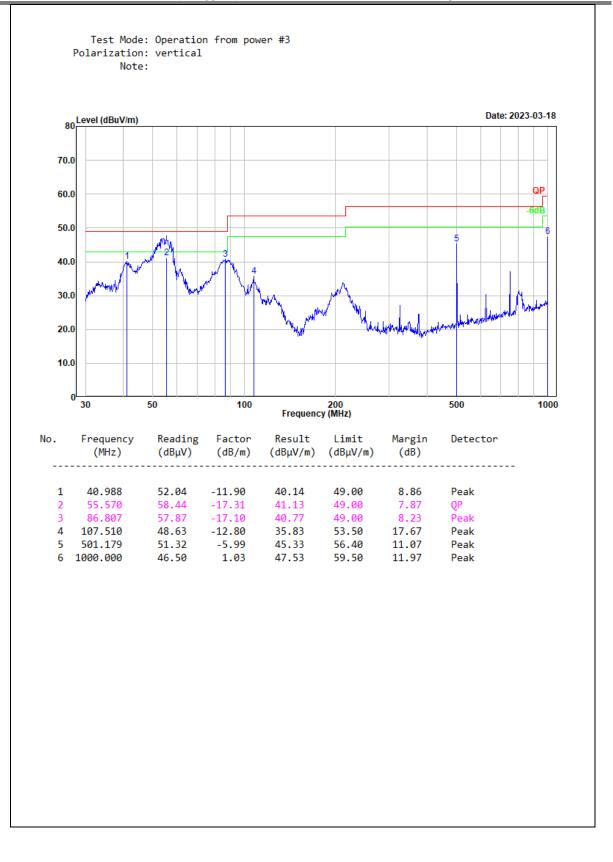
Page 25 of 33

Report No.: CR230311135-00A



Page 26 of 33

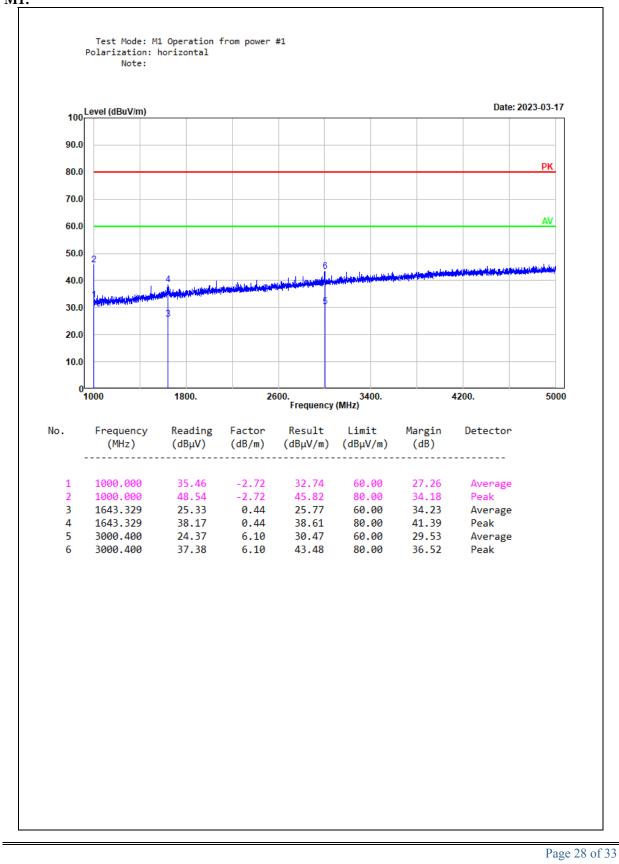
Report No.: CR230311135-00A



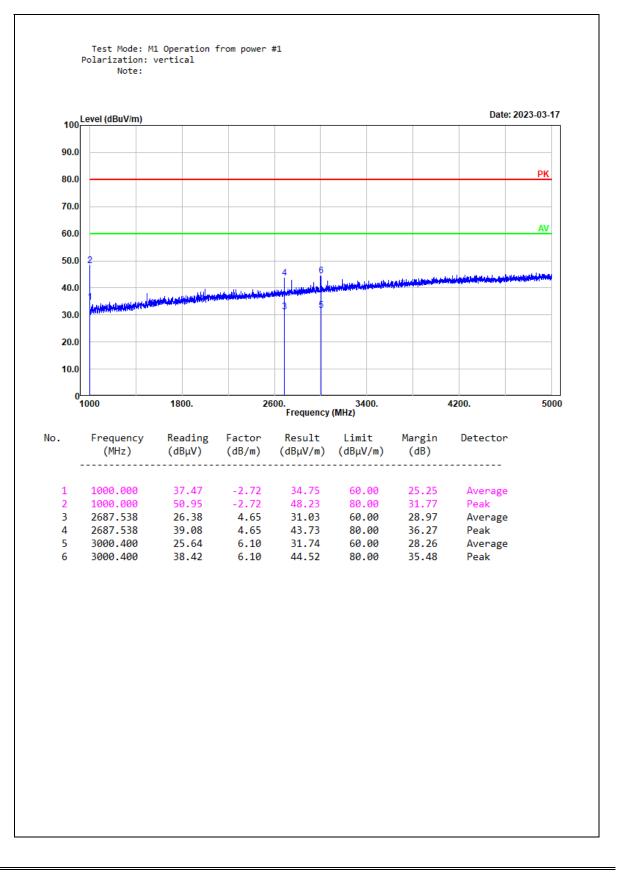
Page 27 of 33

Report No.: CR230311135-00A

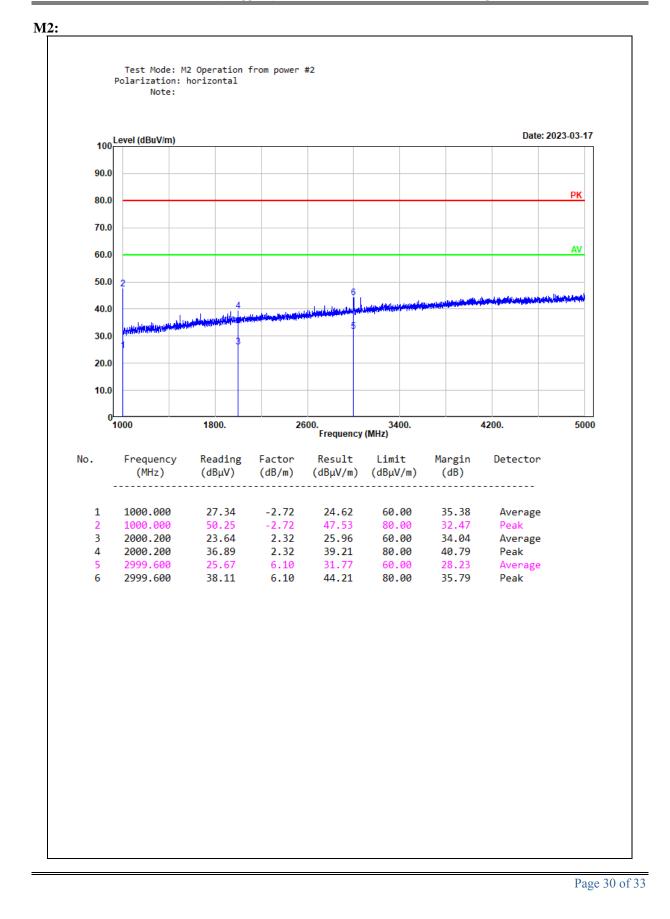
2) 1GHz-5GHz: M1:



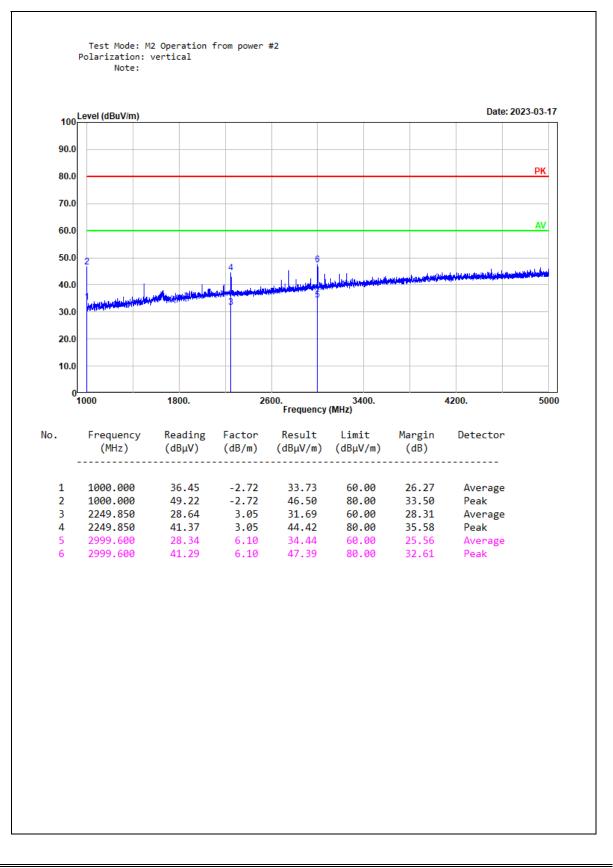
Report No.: CR230311135-00A



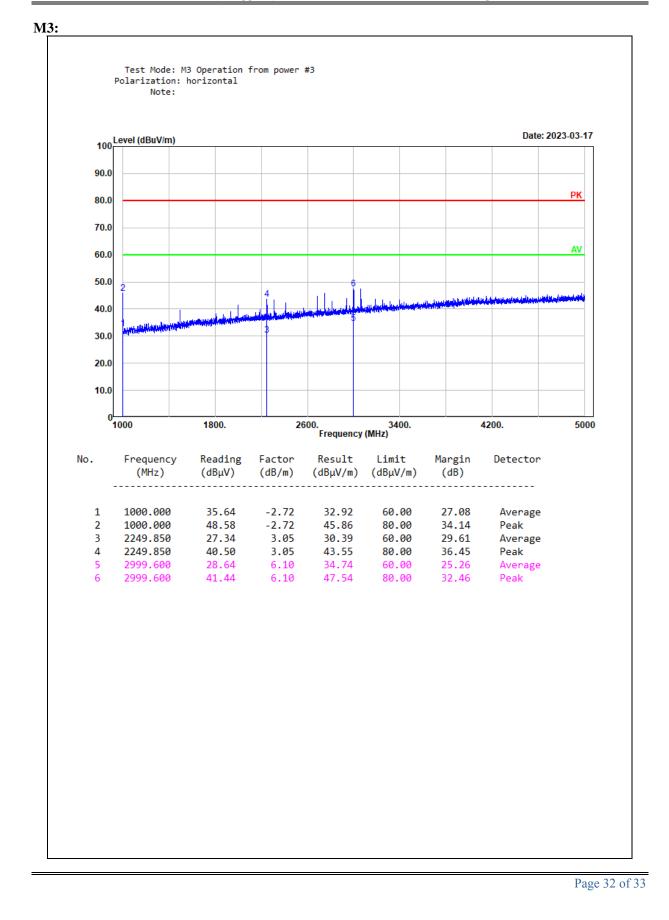
Page 29 of 33



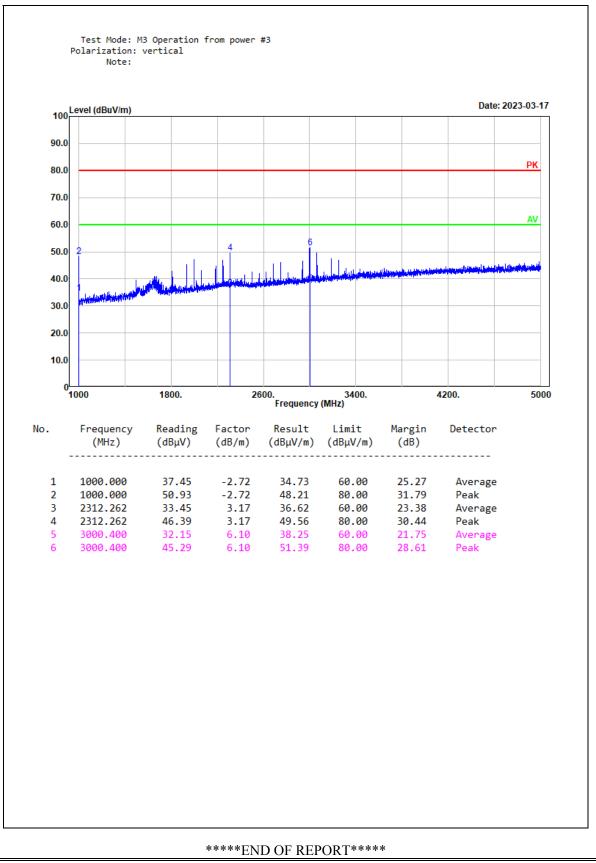
Report No.: CR230311135-00A



Page 31 of 33



Report No.: CR230311135-00A



Page 33 of 33