



中认信通
CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: Grandstream Networks, Inc.

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

FCC ID: YZZGWN7816P

Product Name: Enterprise Layer 3 Managed Network Switch

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

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

Report Number: CR230848329-00A

Date Of Issue: 2023/9/28

Reviewed By: Calvin Chen

Calvin Chen

Title: RF Engineer

Approved By: Sun Zhong

Sun Zhong

Title: Manager

Test Laboratory: China Certification ICT Co., Ltd (Dongguan)

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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.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR230848329-00A	Original Report	2023/9/28

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

Product Name:	Enterprise Layer 3 Managed Network Switch
Test Model:	GWN7816P
Highest Operation Frequency:	1000 MHz
Rated Input Voltage:	AC 120V/60Hz
Serial Number:	2A59-1(Scheme 1), 2A5A-2(Scheme 2)
EUT Received Date:	2023/8/21
EUT Received Status:	Good

EUT Scheme Detail

Scheme	PSE chip Model	Specification/Parameter	Manufacturer
1	RTL8239	IC,8-PORT IEEE 802.3bt PSE CONTROLLER FOR POE SYSTEMS, QFN-56	REALTEK
	RTL8238B	IC,8-PORT PSE CONTROLLER FOR POE SYSTEMS,QFN-48	
2	IP8008	IC,4-PORT IEEE 802.3bt PSE CONTROLLER FOR POE SYSTEMS,QFN-56	IC PLUS
	IP808AR	IC,8-PORT PSE CONTROLLER FOR POE SYSTEMS,QFN-48	

Accessory Information:

Accessory Description	Manufacturer	Model
/	/	/

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: PSU1 input& POE out& LAN Port Loop transmission M2: PSU2 input& POE out& LAN Port Loop transmission M3: PSU1& PSU2 input& POE out& LAN Port Loop transmission
Equipment Modifications:	No
EUT Exercise Software:	No

1.2.2 Support Equipment List and Details

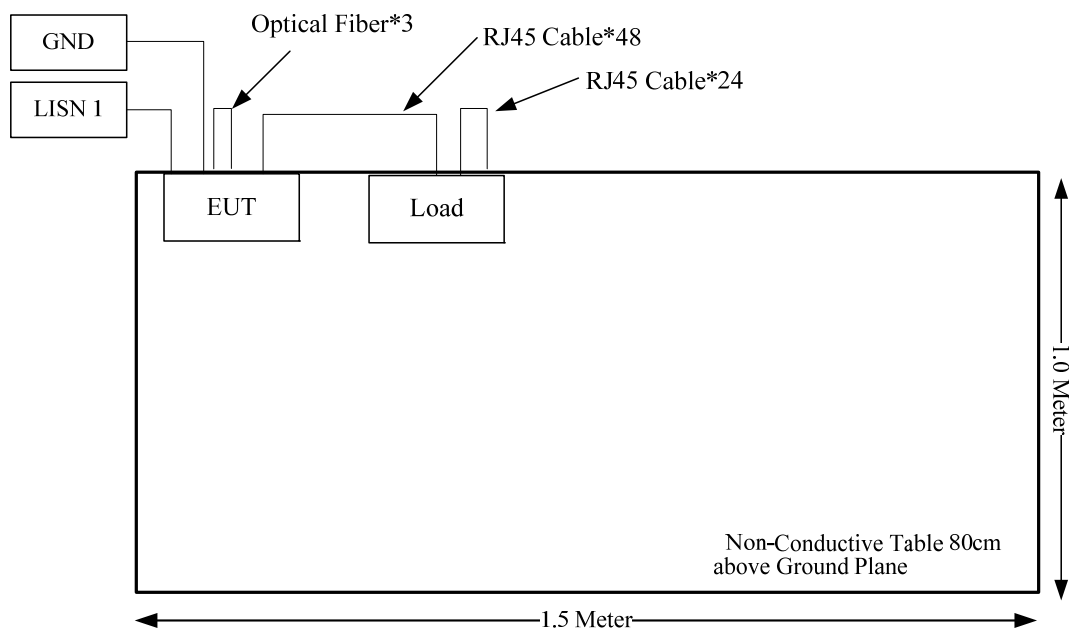
Manufacturer	Description	Model	Serial Number
Unknown	POE Load	Unknown	Unknown
Unknown	Socket	Unknown	Unknown
Gospower	Power Supply	G1482-0920WNA	1482921n0A230700058

1.2.3 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
RJ45 Cable*48	No	No	0.2	EUT	POE Load
RJ45 Cable*24	No	No	0.2	POE Load	POE Load
Optical Fiber*3	No	No	1.2	EUT	EUT
Earth Line	No	No	1.5	EUT	GND
Power Cable*2	No	No	1	Socket	EUT

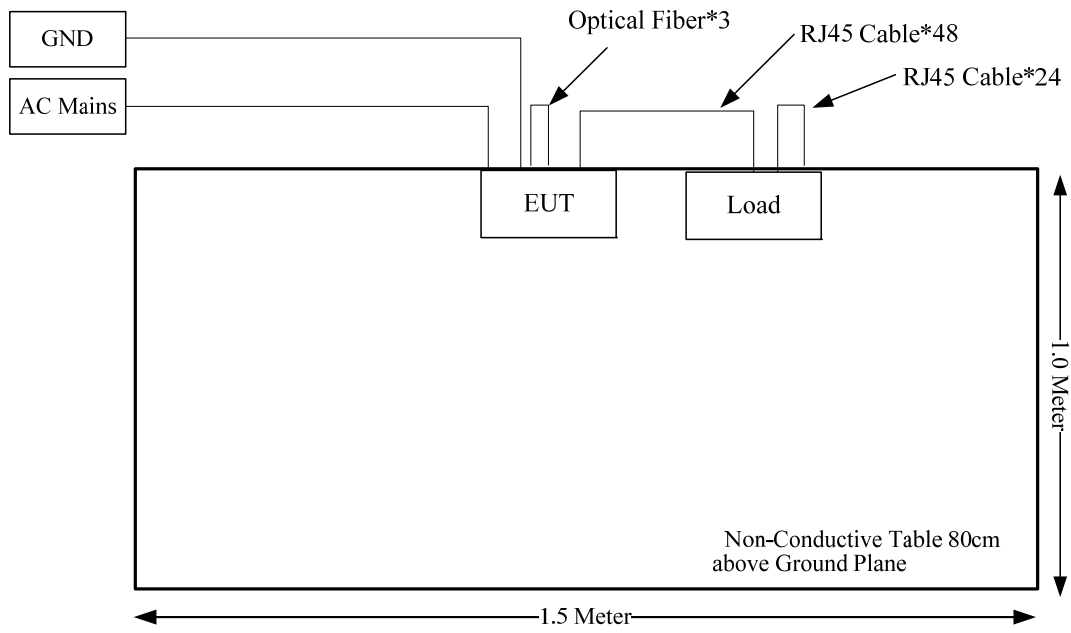
1.2.4 Block Diagram of Test Setup

Conducted emissions:
M1-M3:



Radiated emissions:

M1-M3:



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, 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)

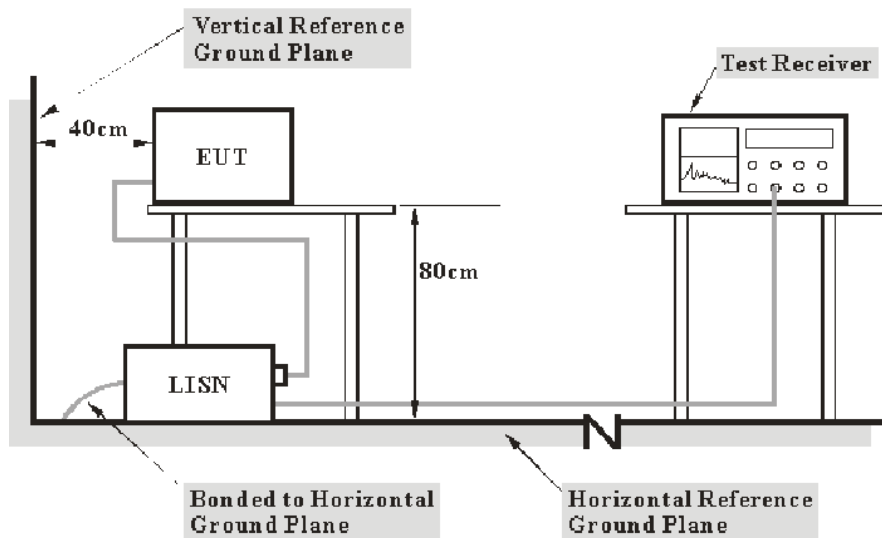
2. SUMMARY OF TEST RESULTS

Standard(s) Section	Description of 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



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm 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.

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

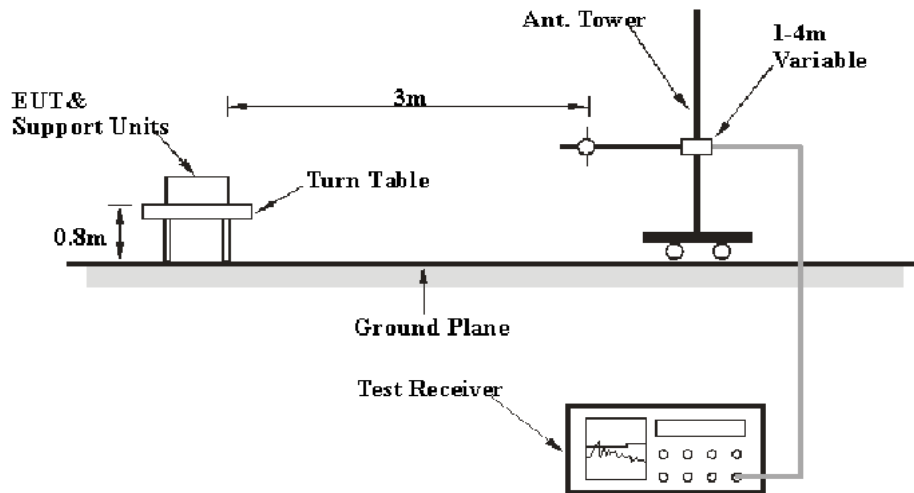
The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

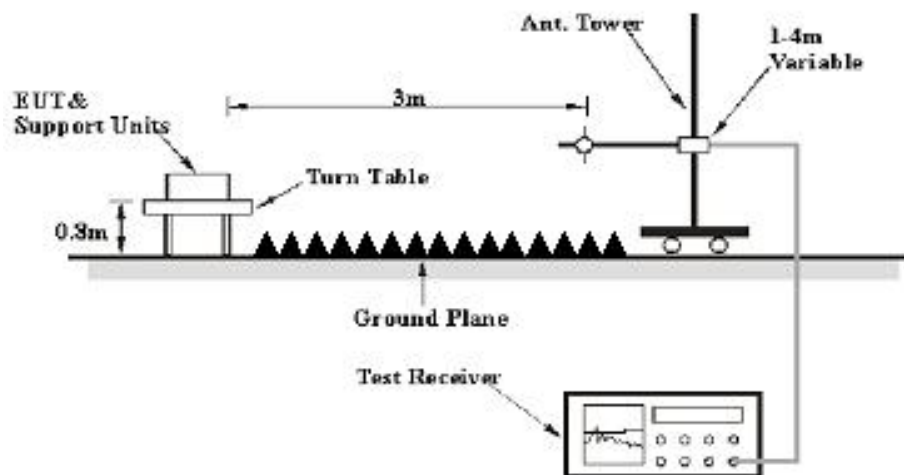
3.2 Radiation Spurious Emissions

3.2.1 EUT Setup

Below 1GHz:



Above 1GHz:



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

3.2.2 Equipment Setup

The system was investigated from 30 MHz to 5 GHz.

During the radiated emission test, the test equipment 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	10Hz	/	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.

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:	2A59-1, 2A5A-2	Test Date:	2023/9/8-2023/9/15
Test Site:	CE	Test Mode:	M1, M2, M3
Tester:	Vic Du, David Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.2~24.4	Relative Humidity: (%)	55~65	ATM Pressure: (kPa)	100.1
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Test Equipment List and Details:

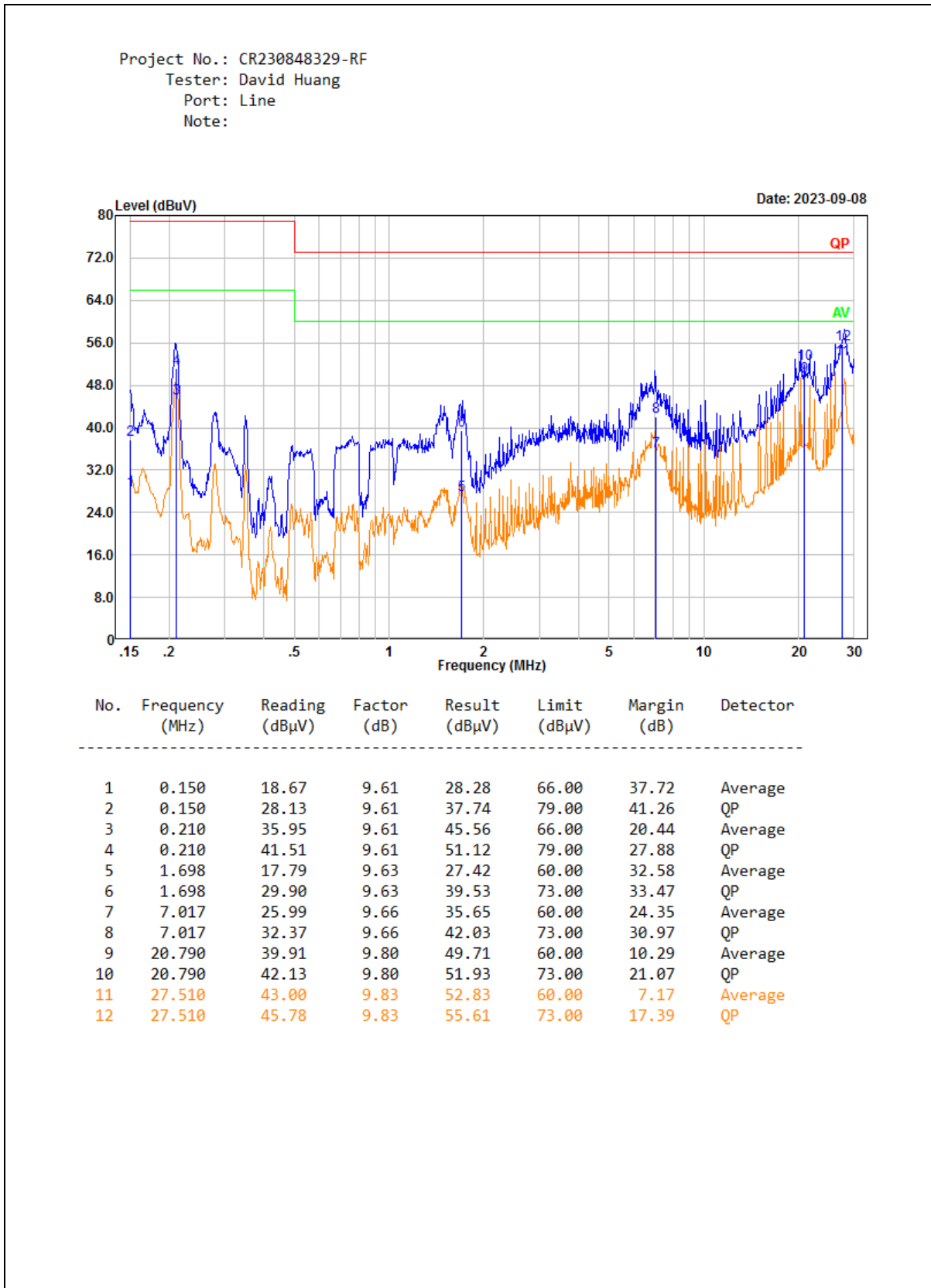
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2023/03/31	2024/03/30
R&S	EMI Test Receiver	ESR3	102726	2023/03/31	2024/03/30
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2023/08/06	2024/08/05
Audix	Test Software	E3	190306 (V9)	N/A	N/A

* 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).

Test Data:

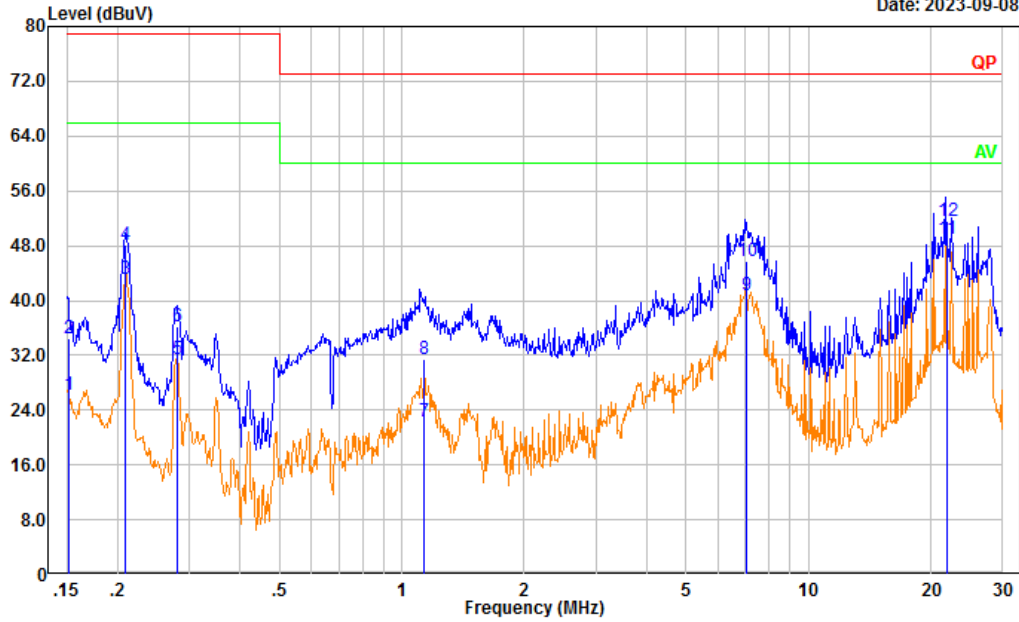
Scheme 1:

M1:



Project No.: CR230848329-RF
 Tester: David Huang
 Port: neutral
 Note:

Date: 2023-09-08

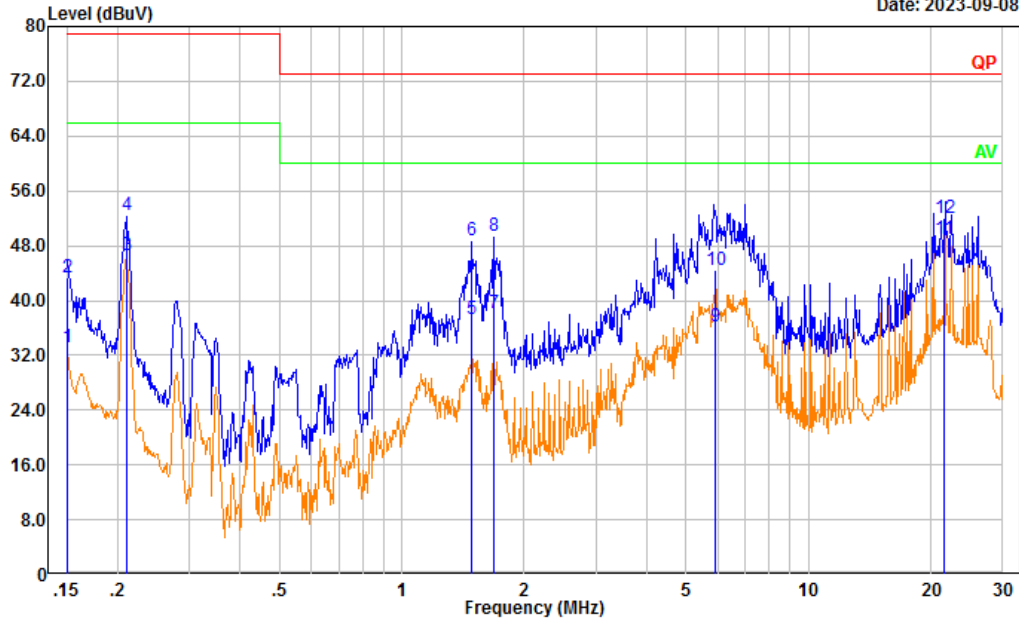


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.152	16.60	9.61	26.21	66.00	39.79	Average
2	0.152	24.86	9.61	34.47	79.00	44.53	QP
3	0.209	33.44	9.61	43.05	66.00	22.95	Average
4	0.209	38.48	9.61	48.09	79.00	30.91	QP
5	0.280	21.74	9.61	31.35	66.00	34.65	Average
6	0.280	26.53	9.61	36.14	79.00	42.86	QP
7	1.131	12.80	9.62	22.42	60.00	37.58	Average
8	1.131	21.76	9.62	31.38	73.00	41.62	QP
9	7.012	31.01	9.66	40.67	60.00	19.33	Average
10	7.012	36.08	9.66	45.74	73.00	27.26	QP
11	21.838	39.26	9.73	48.99	60.00	11.01	Average
12	21.838	41.93	9.73	51.66	73.00	21.34	QP

M2:

Project No.: CR230848329-RF
 Tester: David Huang
 Port: Line
 Note:

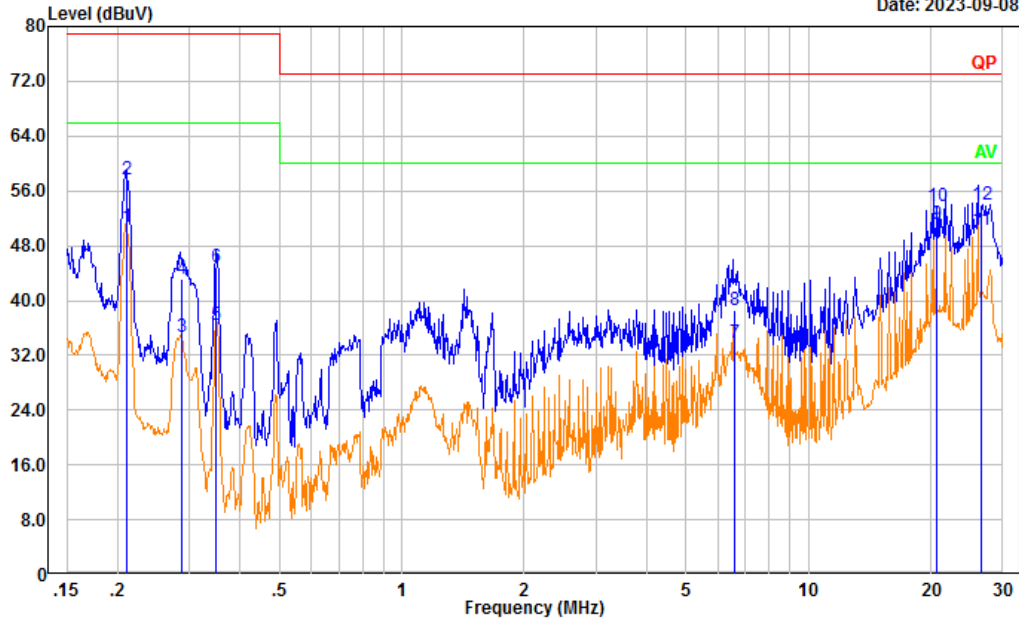
Date: 2023-09-08



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.150	23.53	9.61	33.14	66.00	32.86	Average
2	0.150	33.79	9.61	43.40	79.00	35.60	QP
3	0.210	37.05	9.61	46.66	66.00	19.34	Average
4	0.210	42.85	9.61	52.46	79.00	26.54	QP
5	1.482	27.70	9.62	37.32	60.00	22.68	Average
6	1.482	39.18	9.62	48.80	73.00	24.20	QP
7	1.686	28.44	9.63	38.07	60.00	21.93	Average
8	1.686	39.84	9.63	49.47	73.00	23.53	QP
9	5.884	26.64	9.66	36.30	60.00	23.70	Average
10	5.884	34.79	9.66	44.45	73.00	28.55	QP
11	21.558	39.21	9.81	49.02	60.00	10.98	Average
12	21.558	42.12	9.81	51.93	73.00	21.07	QP

Project No.: CR230848329-RF
 Tester: David Huang
 Port: Neutral
 Note:

Date: 2023-09-08

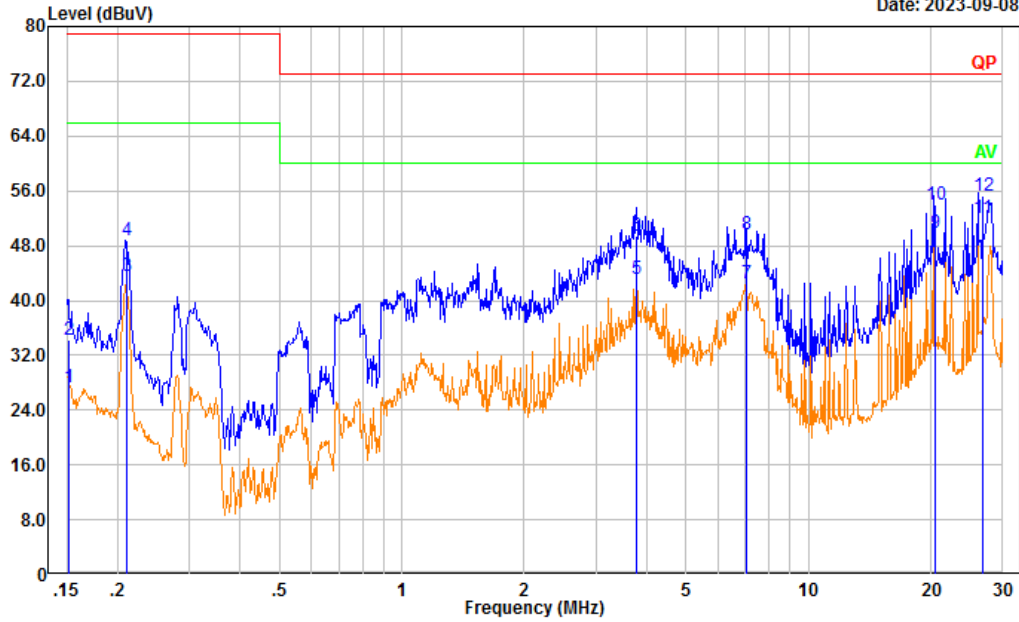


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.210	41.16	9.61	50.77	66.00	15.23	Average
2	0.210	48.02	9.61	57.63	79.00	21.37	QP
3	0.287	25.03	9.61	34.64	66.00	31.36	Average
4	0.287	33.58	9.61	43.19	79.00	35.81	QP
5	0.349	26.77	9.61	36.38	66.00	29.62	Average
6	0.349	35.35	9.61	44.96	79.00	34.04	QP
7	6.579	24.26	9.66	33.92	60.00	26.08	Average
8	6.579	28.83	9.66	38.49	73.00	34.51	QP
9	20.721	41.47	9.71	51.18	60.00	8.82	Average
10	20.721	44.08	9.71	53.79	73.00	19.21	QP
11	26.532	40.42	9.80	50.22	60.00	9.78	Average
12	26.532	44.17	9.80	53.97	73.00	19.03	QP

M3:

Project No.: CR230848329-RF
 Tester: David Huang
 Port: Line
 Note:

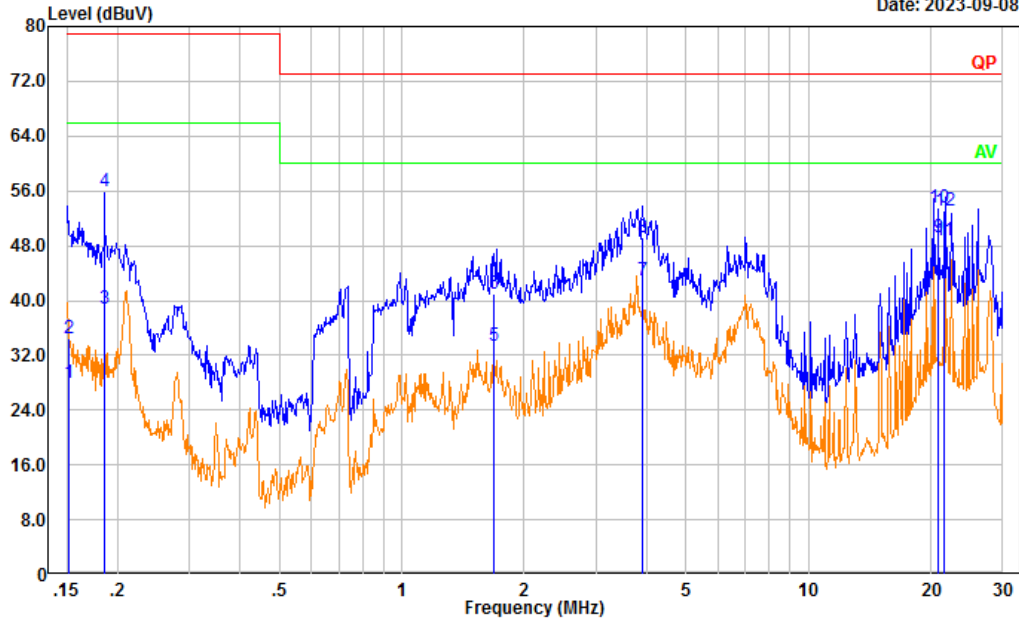
Date: 2023-09-08



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.152	17.60	9.61	27.21	66.00	38.79	Average
2	0.152	24.57	9.61	34.18	79.00	44.82	QP
3	0.210	33.99	9.61	43.60	66.00	22.40	Average
4	0.210	39.08	9.61	48.69	79.00	30.31	QP
5	3.779	33.60	9.65	43.25	60.00	16.75	Average
6	3.779	39.76	9.65	49.41	73.00	23.59	QP
7	7.058	32.79	9.66	42.45	60.00	17.55	Average
8	7.058	40.02	9.66	49.68	73.00	23.32	QP
9	20.510	39.98	9.80	49.78	60.00	10.22	Average
10	20.510	44.16	9.80	53.96	73.00	19.04	QP
11	26.810	42.14	9.83	51.97	60.00	8.03	Average
12	26.810	45.41	9.83	55.24	73.00	17.76	QP

Project No.: CR230848329-RF
 Tester: David Huang
 Port: neutral
 Note:

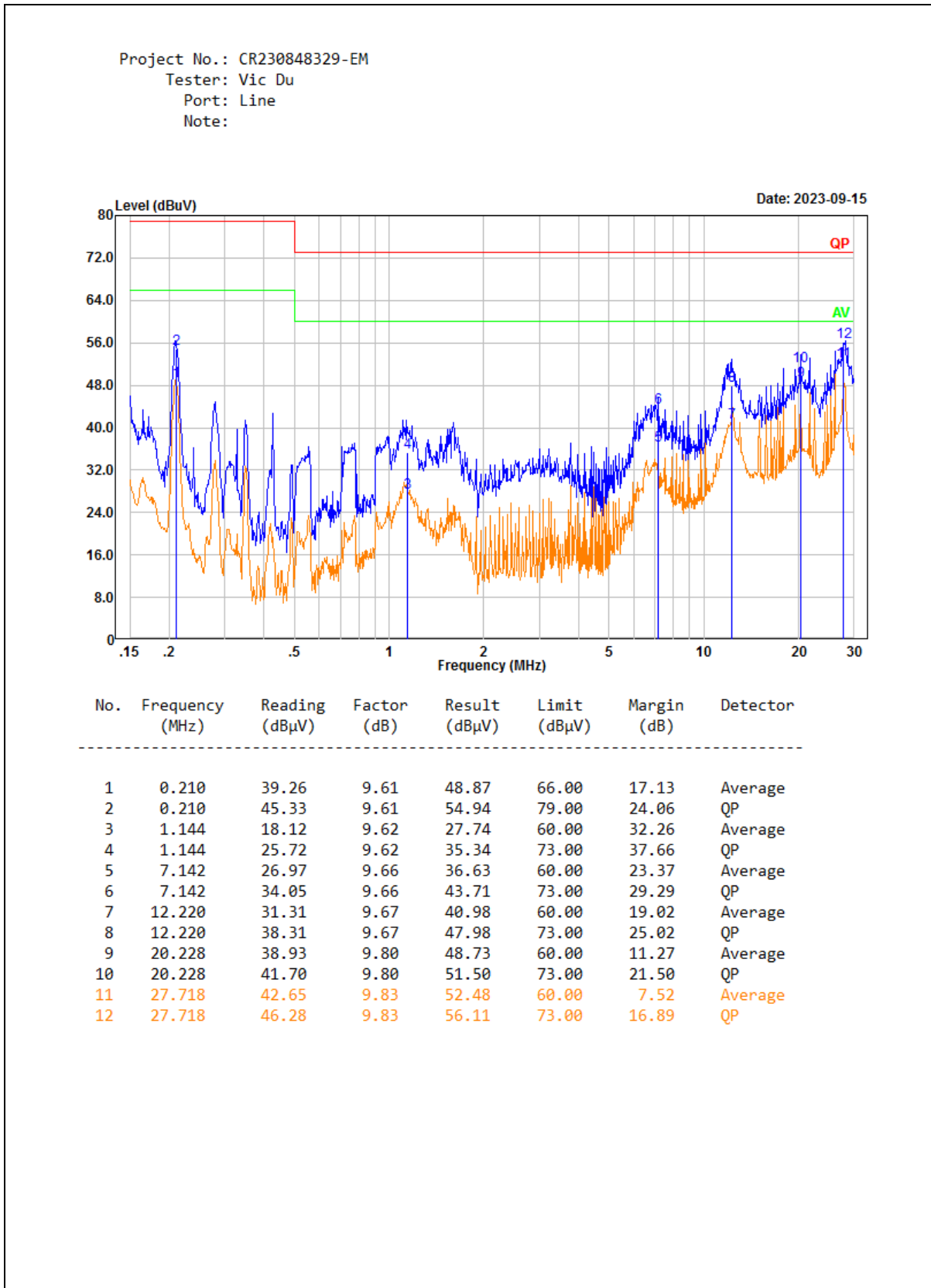
Date: 2023-09-08



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.152	18.34	9.61	27.95	66.00	38.05	Average
2	0.152	24.93	9.61	34.54	79.00	44.46	QP
3	0.185	29.14	9.61	38.75	66.00	27.25	Average
4	0.185	46.42	9.61	56.03	79.00	22.97	QP
5	1.678	23.76	9.63	33.39	60.00	26.61	Average
6	1.678	31.35	9.63	40.98	73.00	32.02	QP
7	3.919	33.18	9.65	42.83	60.00	17.17	Average
8	3.919	39.56	9.65	49.21	73.00	23.79	QP
9	20.790	39.60	9.71	49.31	60.00	10.69	Average
10	20.790	43.79	9.71	53.50	73.00	19.50	QP
11	21.490	39.03	9.71	48.74	60.00	11.26	Average
12	21.490	43.47	9.71	53.18	73.00	19.82	QP

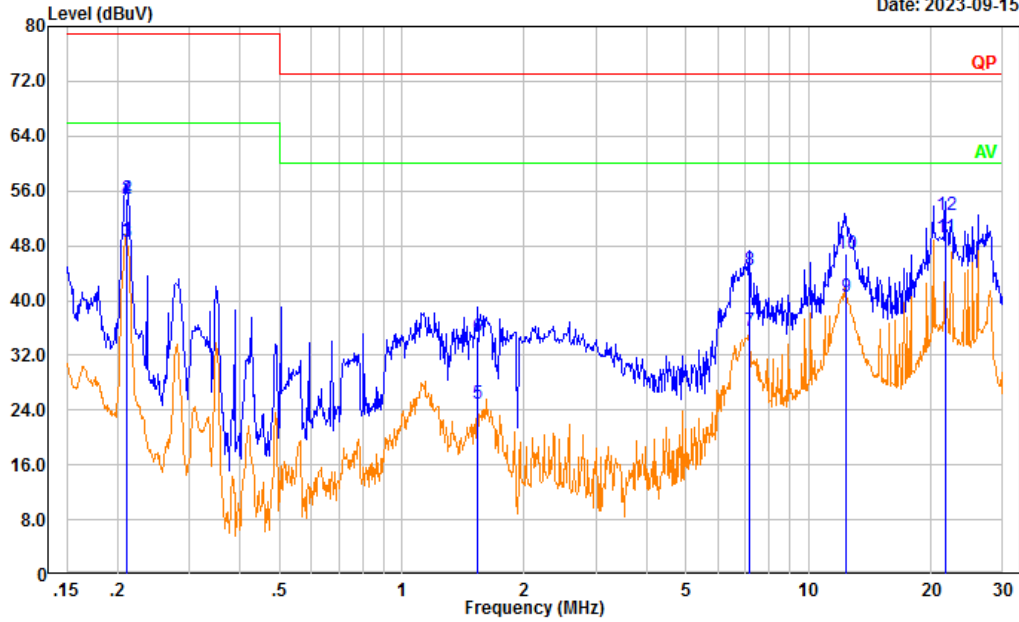
Scheme 2 :

M1:



Project No.: CR230848329-EM
 Tester: Vic Du
 Port: neutral
 Note:

Date: 2023-09-15

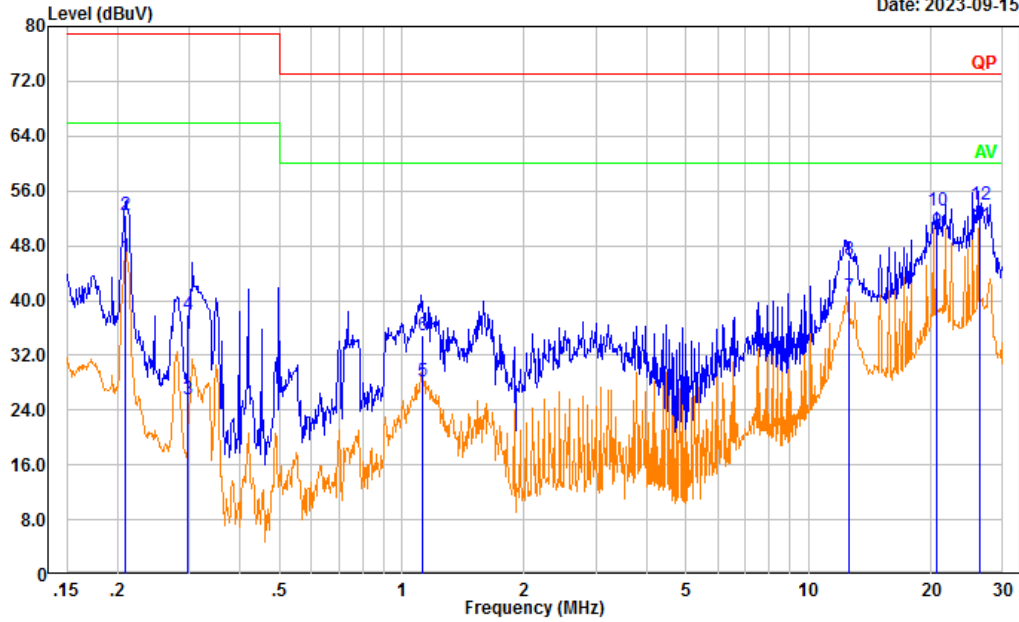


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.210	39.09	9.61	48.70	66.00	17.30	Average
2	0.210	45.17	9.61	54.78	79.00	24.22	QP
3	0.211	39.03	9.61	48.64	66.00	17.36	Average
4	0.211	45.23	9.61	54.84	79.00	24.16	QP
5	1.539	15.26	9.63	24.89	60.00	35.11	Average
6	1.539	25.14	9.63	34.77	73.00	38.23	QP
7	7.181	25.81	9.66	35.47	60.00	24.53	Average
8	7.181	34.69	9.66	44.35	73.00	28.65	QP
9	12.334	30.78	9.67	40.45	60.00	19.55	Average
10	12.334	37.23	9.67	46.90	73.00	26.10	QP
11	21.701	39.46	9.73	49.19	60.00	10.81	Average
12	21.701	42.69	9.73	52.42	73.00	20.58	QP

M2:

Project No.: CR230848329-EM
 Tester: Vic Du
 Port: Line
 Note:

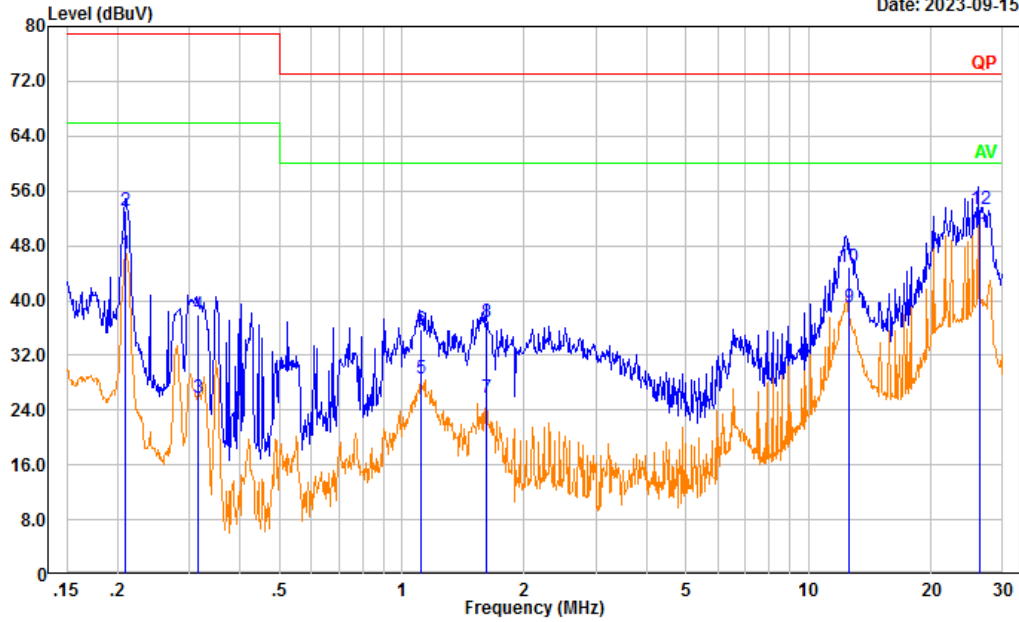
Date: 2023-09-15



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.210	36.86	9.61	46.47	66.00	19.53	Average
2	0.210	42.96	9.61	52.57	79.00	26.43	QP
3	0.298	16.06	9.61	25.67	66.00	40.33	Average
4	0.298	28.32	9.61	37.93	79.00	41.07	QP
5	1.121	18.57	9.62	28.19	60.00	31.81	Average
6	1.121	25.21	9.62	34.83	73.00	38.17	QP
7	12.530	30.89	9.68	40.57	60.00	19.43	Average
8	12.530	36.34	9.68	46.02	73.00	26.98	QP
9	20.722	40.29	9.80	50.09	60.00	9.91	Average
10	20.722	43.23	9.80	53.03	73.00	19.97	QP
11	26.460	41.07	9.82	50.89	60.00	9.11	Average
12	26.460	44.26	9.82	54.08	73.00	18.92	QP

Project No.: CR230848329-EM
 Tester: Vic Du
 Port: neutral
 Note:

Date: 2023-09-15

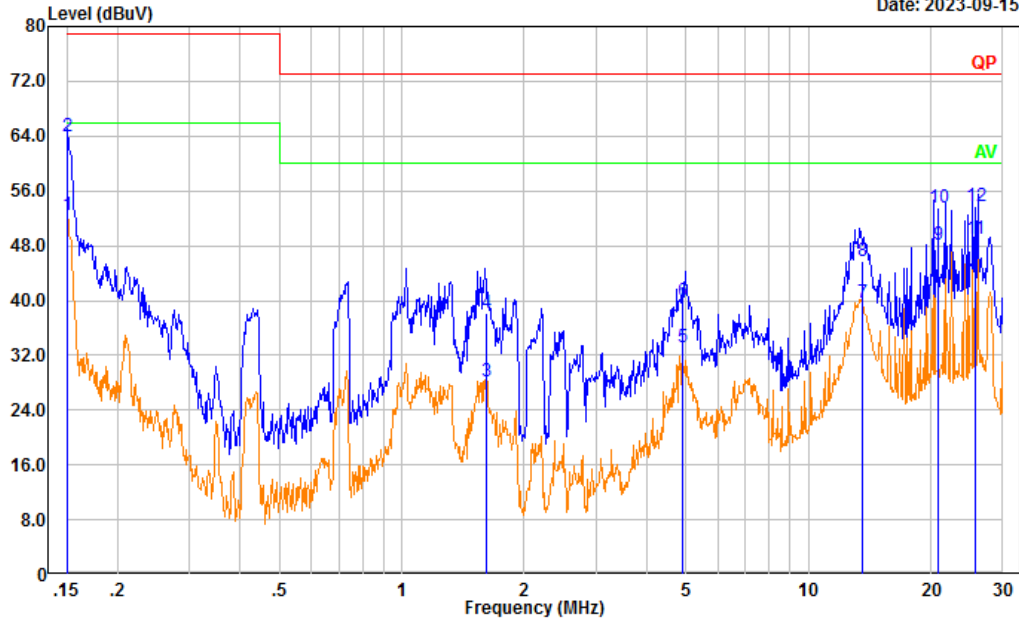


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.210	37.27	9.61	46.88	66.00	19.12	Average
2	0.210	43.50	9.61	53.11	79.00	25.89	QP
3	0.317	16.15	9.61	25.76	66.00	40.24	Average
4	0.317	28.43	9.61	38.04	79.00	40.96	QP
5	1.118	18.99	9.62	28.61	60.00	31.39	Average
6	1.118	26.05	9.62	35.67	73.00	37.33	QP
7	1.614	16.08	9.63	25.71	60.00	34.29	Average
8	1.614	27.13	9.63	36.76	73.00	36.24	QP
9	12.525	29.27	9.68	38.95	60.00	21.05	Average
10	12.525	35.12	9.68	44.80	73.00	28.20	QP
11	26.322	40.02	9.78	49.80	60.00	10.20	Average
12	26.322	43.64	9.78	53.42	73.00	19.58	QP

M3:

Project No.: CR230848329-EM
 Tester: Vic Du
 Port: neutral
 Note:

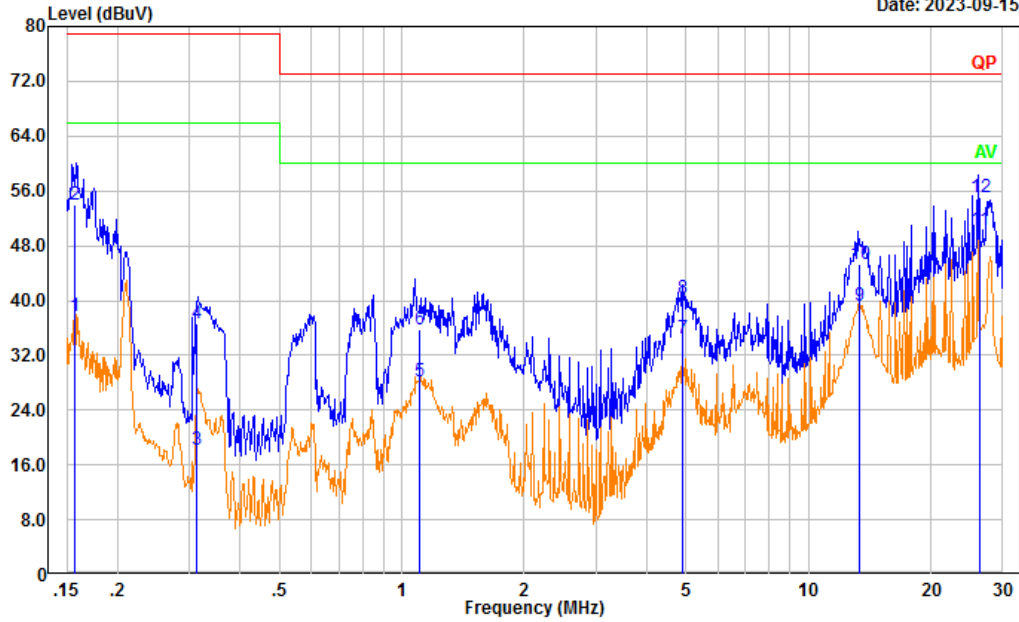
Date: 2023-09-15



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.150	42.86	9.61	52.47	66.00	13.53	Average
2	0.150	54.24	9.61	63.85	79.00	15.15	QP
3	1.612	18.53	9.63	28.16	60.00	31.84	Average
4	1.612	28.45	9.63	38.08	73.00	34.92	QP
5	4.899	23.56	9.66	33.22	60.00	26.78	Average
6	4.899	30.21	9.66	39.87	73.00	33.13	QP
7	13.533	29.94	9.68	39.62	60.00	20.38	Average
8	13.533	36.00	9.68	45.68	73.00	27.32	QP
9	20.790	38.52	9.71	48.23	60.00	11.77	Average
10	20.790	43.77	9.71	53.48	73.00	19.52	QP
11	25.689	39.29	9.78	49.07	60.00	10.93	Average
12	25.689	43.93	9.78	53.71	73.00	19.29	QP

Project No.: CR230848329-EM
 Tester: Vic Du
 Port: Line
 Note:

Date: 2023-09-15



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.157	28.05	9.61	37.66	66.00	28.34	Average
2	0.157	44.28	9.61	53.89	79.00	25.11	QP
3	0.312	8.70	9.61	18.31	66.00	47.69	Average
4	0.312	26.99	9.61	36.60	79.00	42.40	QP
5	1.104	18.48	9.62	28.10	60.00	31.90	Average
6	1.104	26.10	9.62	35.72	73.00	37.28	QP
7	4.902	24.76	9.66	34.42	60.00	25.58	Average
8	4.902	30.71	9.66	40.37	73.00	32.63	QP
9	13.335	29.66	9.68	39.34	60.00	20.66	Average
10	13.335	35.69	9.68	45.37	73.00	27.63	QP
11	26.319	40.51	9.82	50.33	60.00	9.67	Average
12	26.319	45.27	9.82	55.09	73.00	17.91	QP

4.2 Radiation Spurious Emissions

Serial Number:	2A59-1	Test Date:	2023/9/3~2023/9/22
Test Site:	966-1, 966-2	Test Mode:	M1, M2, M3
Tester:	Vic Du ,Mack Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	26.2~27.9	Relative Humidity: (%)	59~68	ATM Pressure: (kPa)	99.6~100.5
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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	2023/3/31	2024/3/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2023/7/16	2024/7/15
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/7/16	2024/7/15
Sonoma	Amplifier	310N	186165	2023/7/16	2024/7/15
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	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2023/8/6	2024/8/5
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2023/8/6	2024/8/5
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2022/11/9	2023/11/8

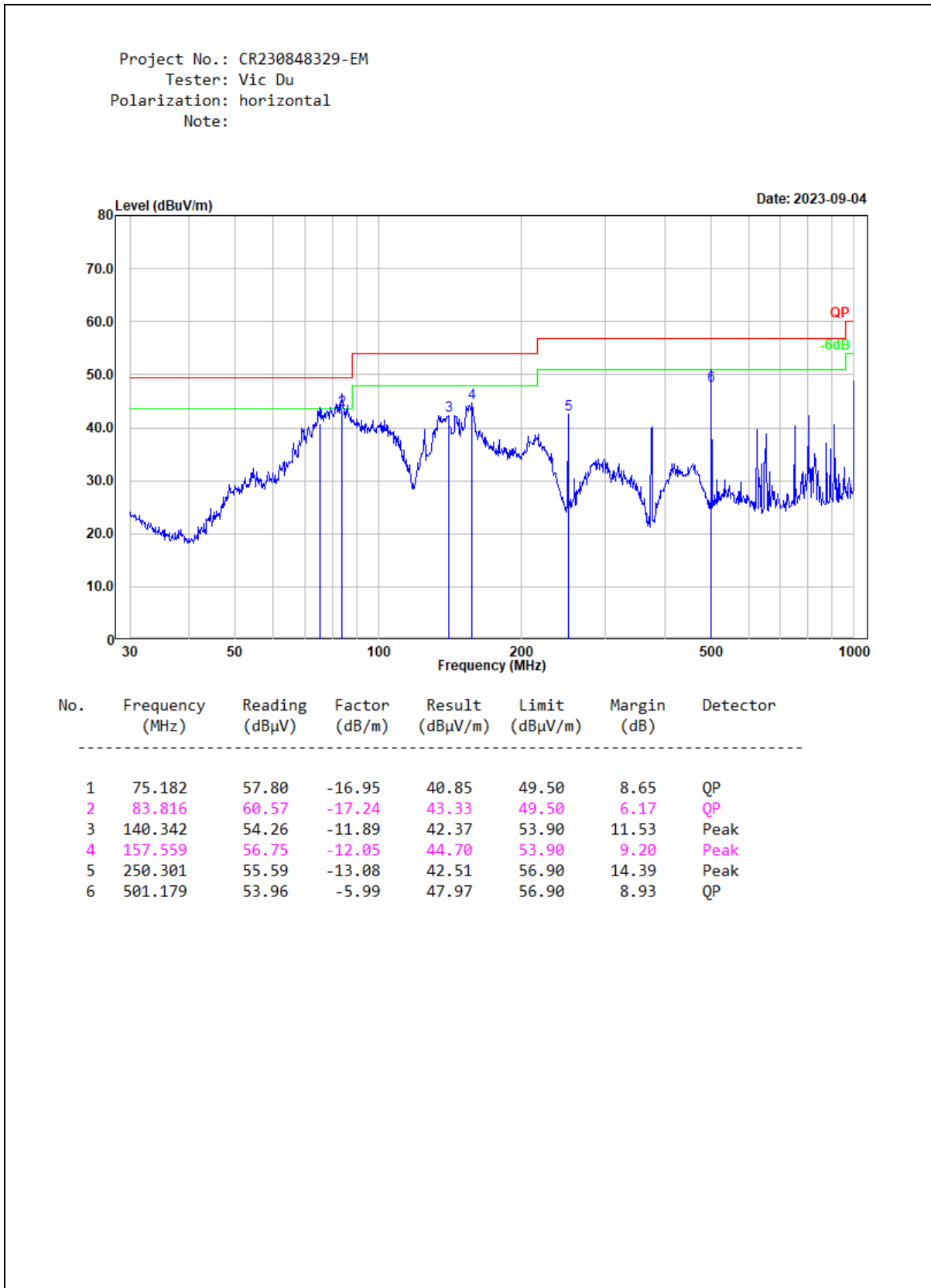
* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

1) 30MHz-1GHz:

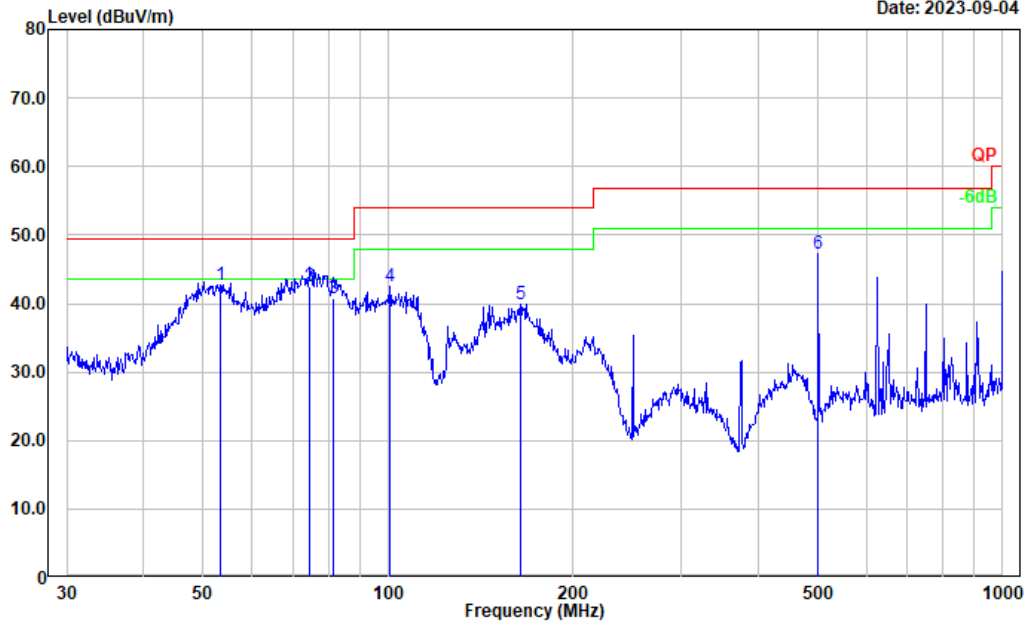
Scheme 1:

M1:



Project No.: CR230848329-EM
 Tester: Vic Du
 Polarization: vertical
 Note:

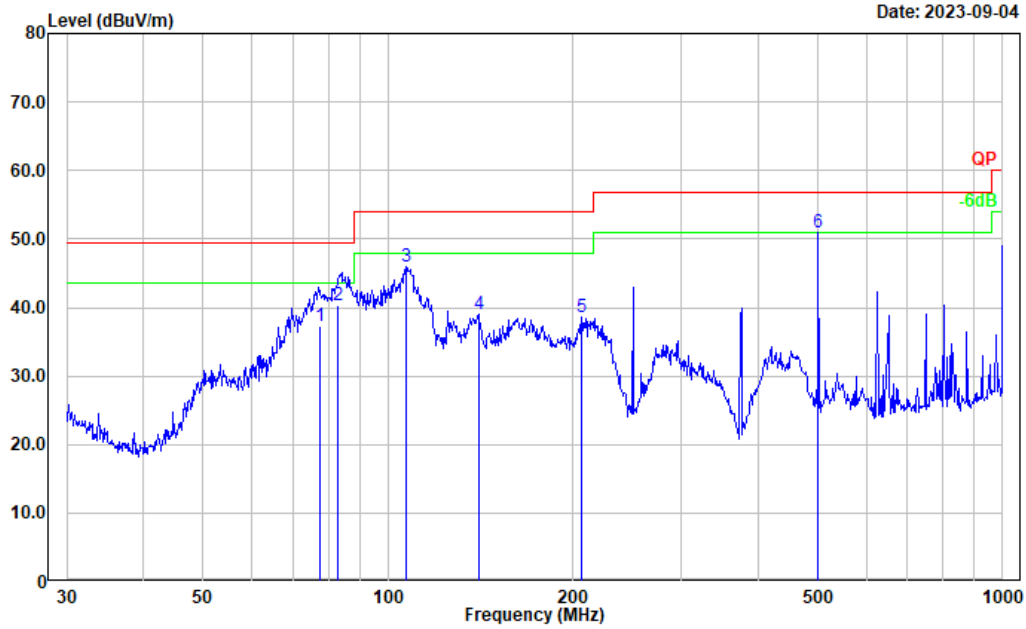
Date: 2023-09-04



No.	Frequency (MHz)	Reading (dB μ V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	53.318	60.04	-17.24	42.80	49.50	6.70	Peak
2	74.657	59.31	-16.92	42.39	49.50	7.11	QP
3	81.497	58.08	-17.37	40.71	49.50	8.79	QP
4	100.581	56.67	-14.19	42.48	53.90	11.42	Peak
5	164.330	52.41	-12.44	39.97	53.90	13.93	Peak
6	501.179	53.30	-5.99	47.31	56.90	9.59	Peak

M2:

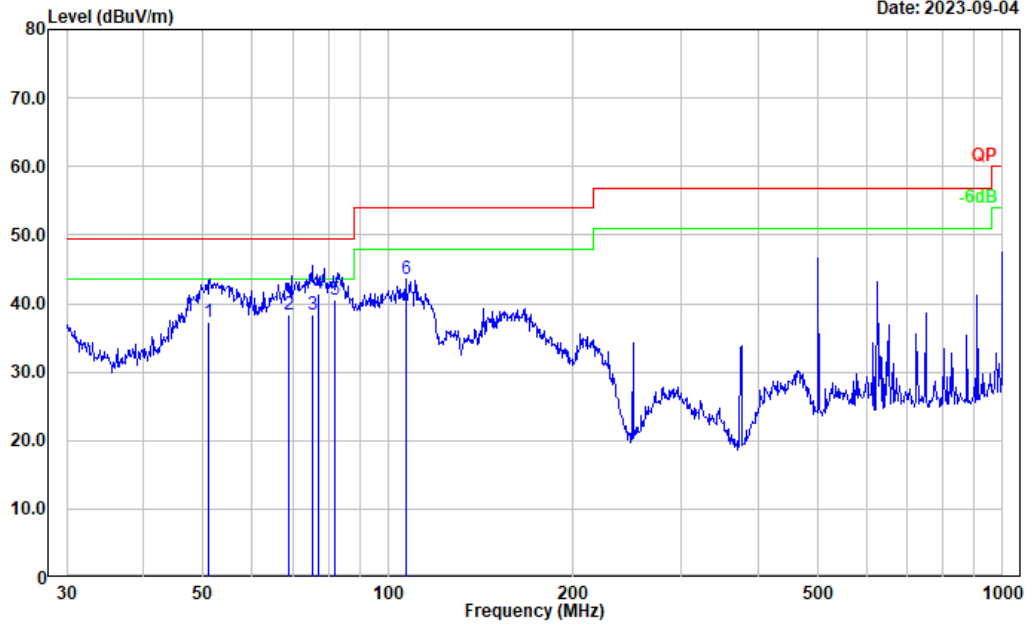
Project No.: CR230848329-EM
 Tester: Vic Du
 Polarization: horizontal
 Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	77.608	54.61	-17.21	37.40	49.50	12.10	QP
2	82.692	57.53	-17.27	40.26	49.50	9.24	QP
3	107.134	58.87	-12.87	46.00	53.90	7.90	Peak
4	140.342	50.95	-11.89	39.06	53.90	14.84	Peak
5	206.398	50.92	-12.39	38.53	53.90	15.37	Peak
6	499.977	56.87	-5.99	50.88	56.90	6.02	QP

Project No.: CR230848329-EM
 Tester: Vic Du
 Polarization: vertical
 Note:

Date: 2023-09-04

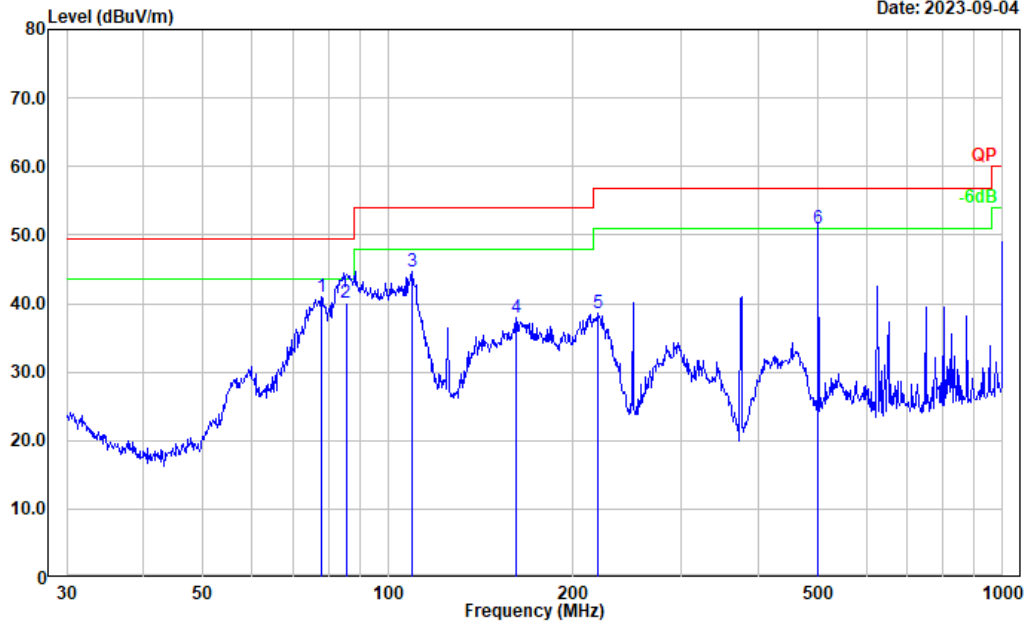


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	50.927	54.52	-17.21	37.31	49.50	12.19	QP
2	69.069	54.87	-16.59	38.28	49.50	11.22	QP
3	75.549	55.38	-16.97	38.41	49.50	11.09	QP
4	77.189	58.58	-17.16	41.42	49.50	8.08	QP
5	82.027	57.84	-17.36	40.48	49.50	9.02	QP
6	106.759	56.61	-12.96	43.65	53.90	10.25	Peak

M3:

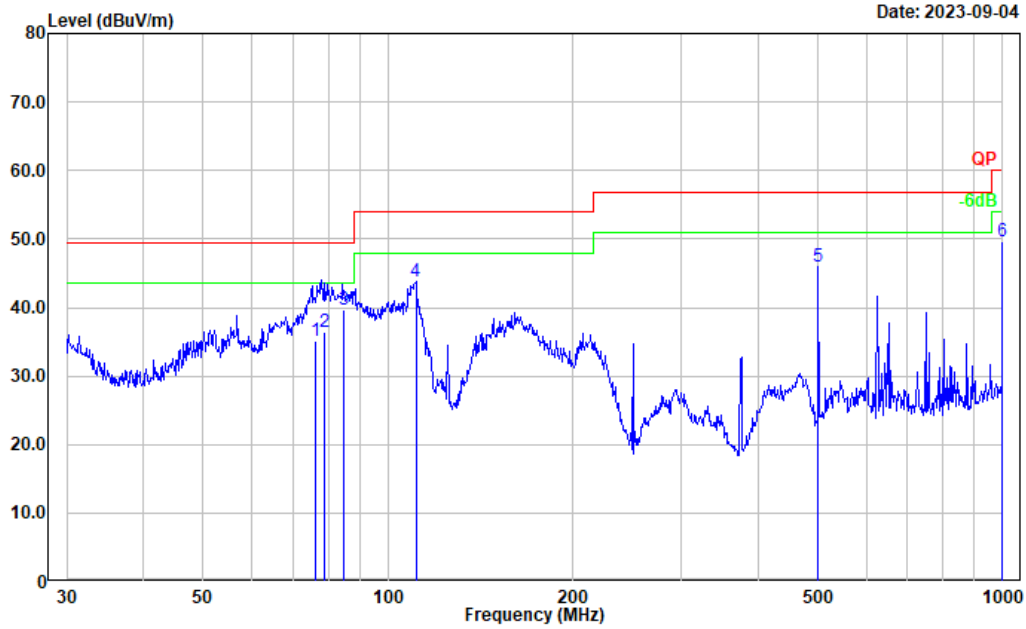
Project No.: CR230848329-EM
 Tester: Vic Du
 Polarization: horizontal
 Note:

Date: 2023-09-04



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	77.865	58.17	-17.25	40.92	49.50	8.58	Peak
2	85.406	57.38	-17.18	40.20	49.50	9.30	QP
3	109.412	57.16	-12.41	44.75	53.90	9.15	Peak
4	161.474	50.06	-12.21	37.85	53.90	16.05	Peak
5	219.845	51.50	-12.82	38.68	56.90	18.22	Peak
6	499.977	56.84	-5.99	50.85	56.90	6.05	QP

Project No.: CR230848329-EM
 Tester: Vic Du
 Polarization: vertical
 Note:



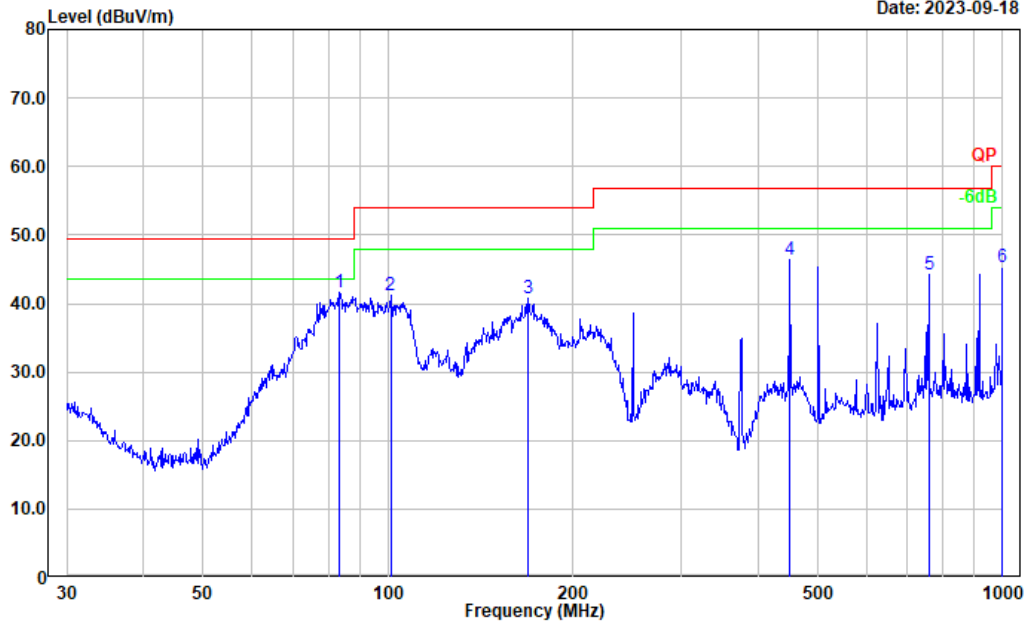
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	76.063	52.15	-17.03	35.12	49.50	14.38	QP
2	78.581	53.66	-17.31	36.35	49.50	13.15	QP
3	84.925	56.86	-17.19	39.67	49.50	9.83	QP
4	110.957	56.10	-12.25	43.85	53.90	10.05	Peak
5	501.179	51.93	-5.99	45.94	56.90	10.96	Peak
6	1000.000	48.67	1.03	49.70	60.00	10.30	Peak

Scheme 2:

M1:

Project No.: CR230848329-EM
 Tester: Vic Du
 Polarization: horizontal
 Note:

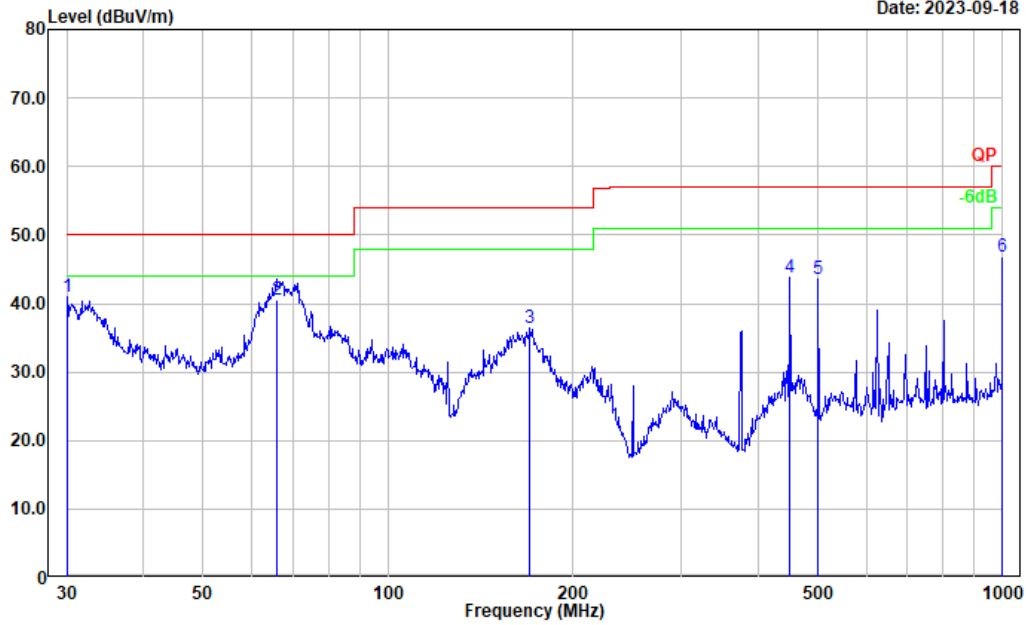
Date: 2023-09-18



No.	Frequency (MHz)	Reading (dB μ V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	83.230	58.88	-17.23	41.65	49.50	7.85	Peak
2	100.934	55.27	-14.10	41.17	53.90	12.73	Peak
3	169.005	53.57	-12.87	40.70	53.90	13.20	Peak
4	451.135	53.39	-6.91	46.48	56.90	10.42	Peak
5	758.041	47.09	-2.90	44.19	56.90	12.71	Peak
6	1000.000	44.25	1.03	45.28	60.00	14.72	Peak

Project No.: CR230848329-EM
 Tester: Vic Du
 Polarization: vertical
 Note:

Date: 2023-09-18

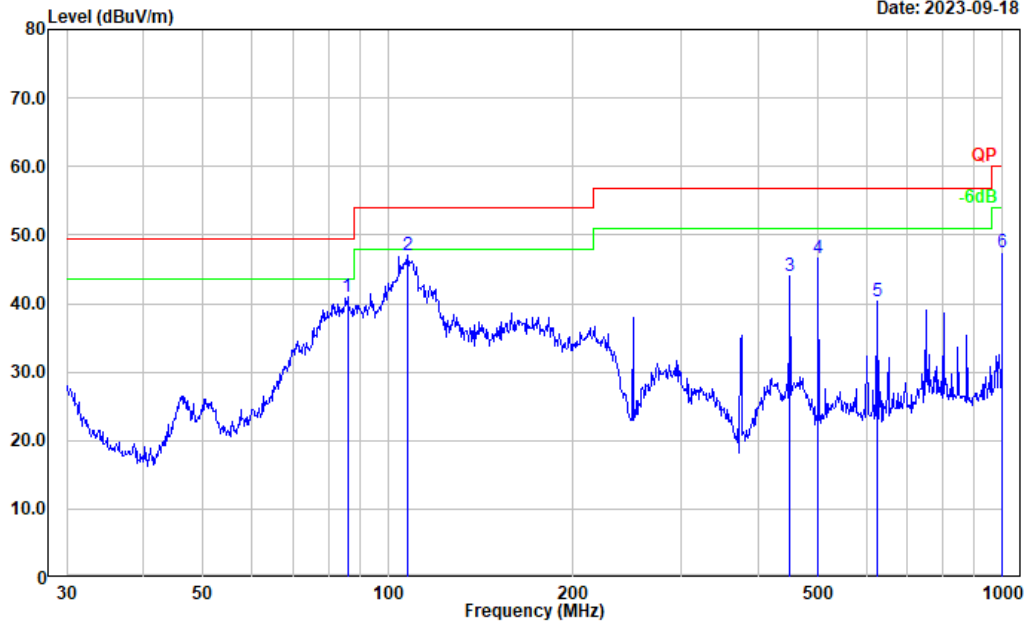


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.105	44.65	-3.68	40.97	50.00	9.03	Peak
2	65.803	57.51	-16.88	40.63	50.00	9.37	QP
3	170.195	49.46	-12.96	36.50	54.00	17.50	Peak
4	451.135	50.66	-6.91	43.75	57.00	13.25	Peak
5	501.179	49.67	-5.99	43.68	57.00	13.32	Peak
6	1000.000	45.85	1.03	46.88	60.00	13.12	Peak

M2:

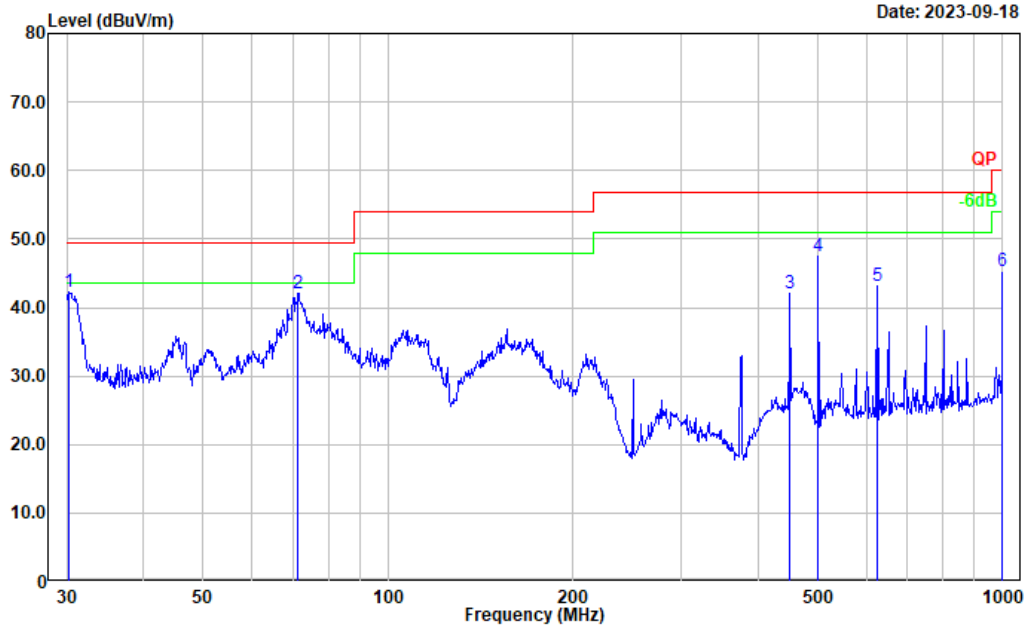
Project No.: CR230848329-EM
 Tester: Vic Du
 Polarization: horizontal
 Note:

Date: 2023-09-18



No.	Frequency (MHz)	Reading (dB μ V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	85.898	58.11	-17.15	40.96	49.50	8.54	Peak
2	107.888	59.70	-12.72	46.98	53.90	6.92	Peak
3	451.135	50.95	-6.91	44.04	56.90	12.86	Peak
4	501.179	52.67	-5.99	46.68	56.90	10.22	Peak
5	625.078	44.86	-4.60	40.26	56.90	16.64	Peak
6	1000.000	46.50	1.03	47.53	60.00	12.47	Peak

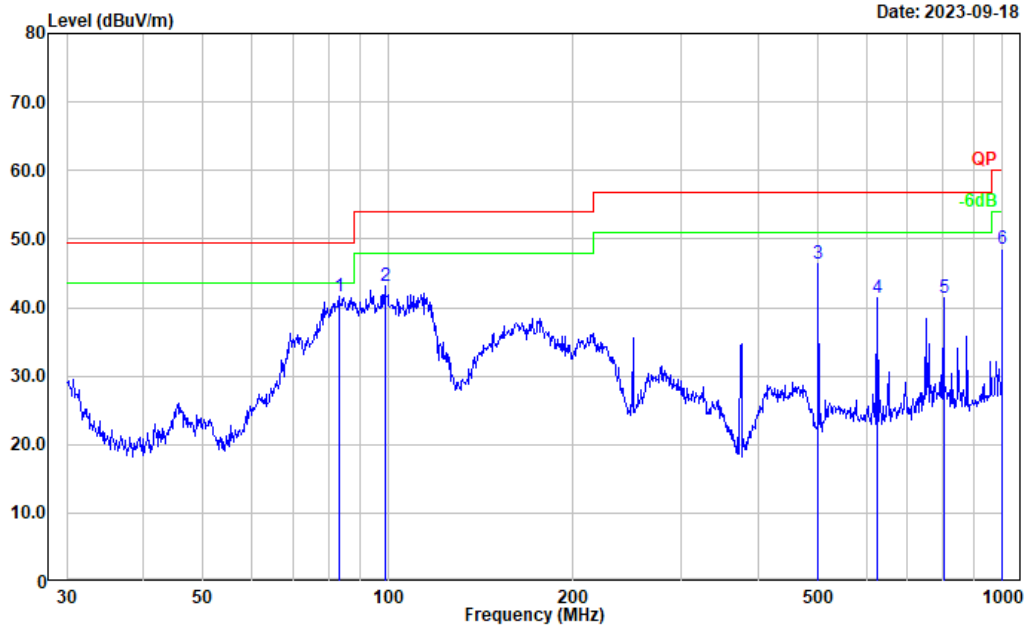
Project No.: CR230848329-EM
 Tester: Vic Du
 Polarization: vertical
 Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.317	46.23	-3.85	42.38	49.50	7.12	Peak
2	71.330	58.75	-16.61	42.14	49.50	7.36	Peak
3	451.135	49.03	-6.91	42.12	56.90	14.78	Peak
4	501.179	53.48	-5.99	47.49	56.90	9.41	Peak
5	625.078	47.84	-4.60	43.24	56.90	13.66	Peak
6	1000.000	44.31	1.03	45.34	60.00	14.66	Peak

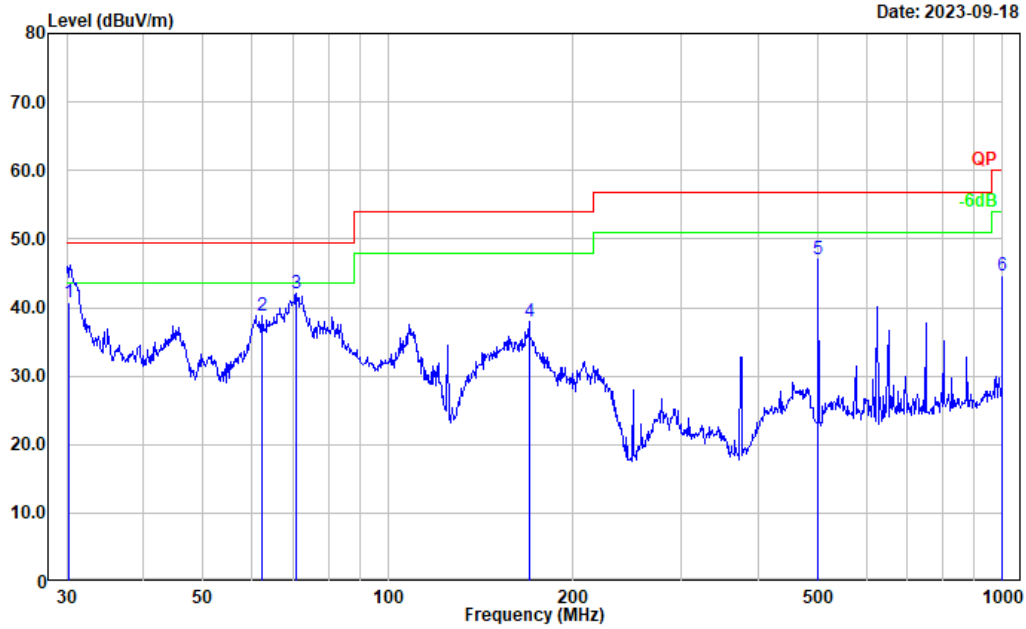
M3:

Project No.: CR230848329-EM
 Tester: Vic Du
 Polarization: horizontal
 Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	83.230	58.83	-17.23	41.60	49.50	7.90	Peak
2	98.833	57.63	-14.59	43.04	53.90	10.86	Peak
3	501.179	52.30	-5.99	46.31	56.90	10.59	Peak
4	625.078	46.03	-4.60	41.43	56.90	15.47	Peak
5	801.786	43.49	-2.14	41.35	56.90	15.55	Peak
6	1000.000	47.48	1.03	48.51	60.00	11.49	Peak

Project No.: CR230848329-EM
 Tester: Vic Du
 Polarization: vertical
 Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.279	44.53	-3.82	40.71	49.50	8.79	QP
2	62.213	56.09	-17.22	38.87	49.50	10.63	Peak
3	70.832	58.62	-16.55	42.07	49.50	7.43	Peak
4	169.599	50.79	-12.92	37.87	53.90	16.03	Peak
5	501.179	53.13	-5.99	47.14	56.90	9.76	Peak
6	1000.000	43.54	1.03	44.57	60.00	15.43	Peak

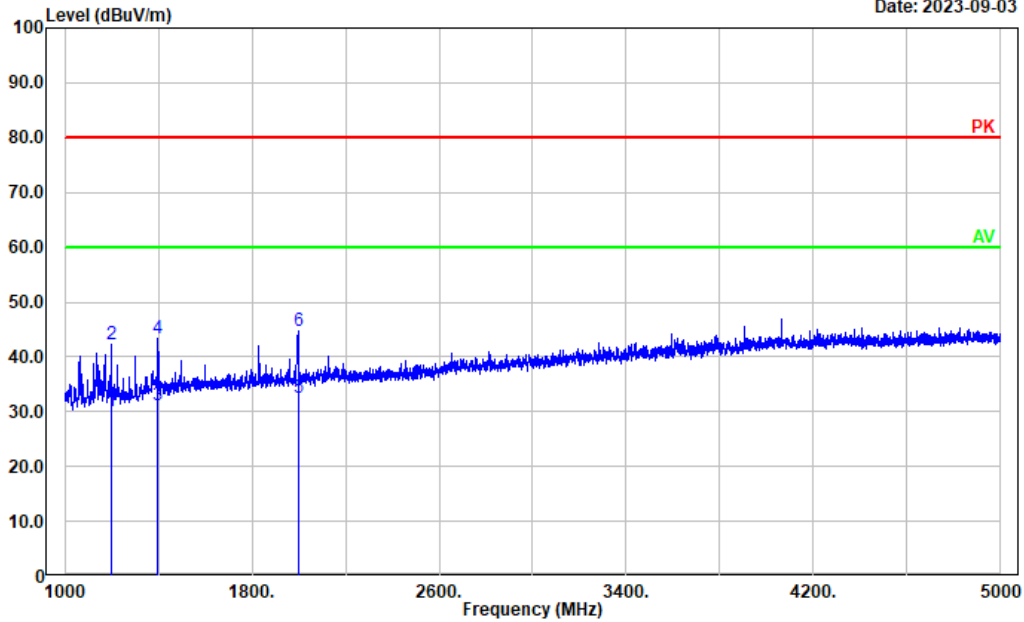
2) Above 1GHz:

Scheme 1:

M1:

Project No.: CR230848329-EM
 Tester: Mack Huang
 Test Mode: PSU1 input& POE out& LAN Port Loop transmission
 Polarization: horizontal
 Note:

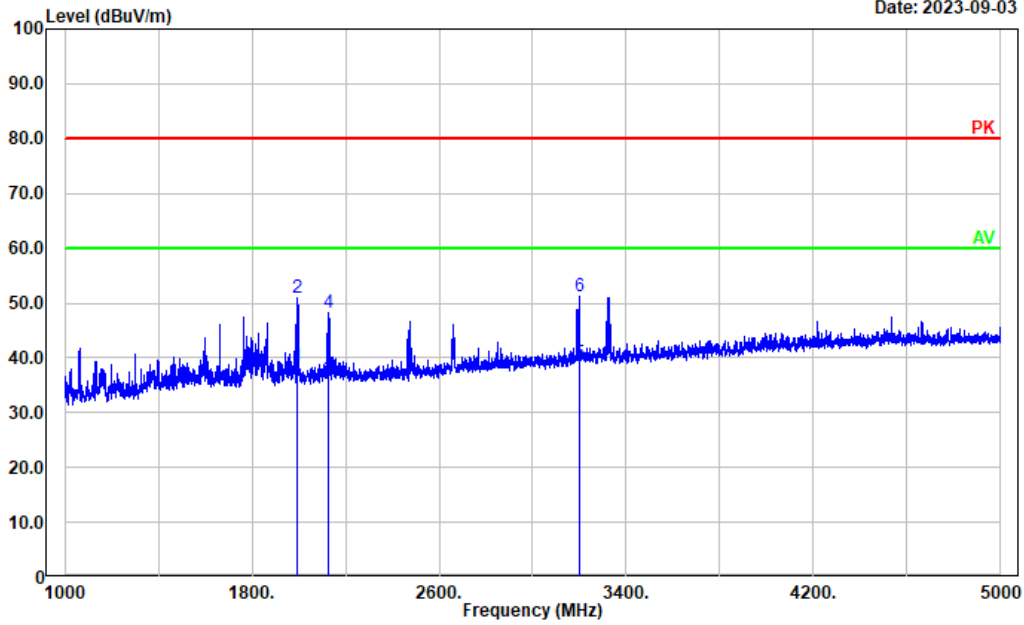
Date: 2023-09-03



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1200.040	31.80	-1.71	30.09	60.00	29.91	Average
2	1200.040	43.88	-1.71	42.17	80.00	37.83	Peak
3	1399.280	32.11	-0.88	31.23	60.00	28.77	Average
4	1399.280	44.33	-0.88	43.45	80.00	36.55	Peak
5	1999.400	30.11	2.32	32.43	60.00	27.57	Average
6	1999.400	42.53	2.32	44.85	80.00	35.15	Peak

Project No.: CR230848329-EM
 Tester: Mack Huang
 Test Mode: PSU1 input& POE out& LAN Port Loop transmission
 Polarization: vertical
 Note:

Date: 2023-09-03

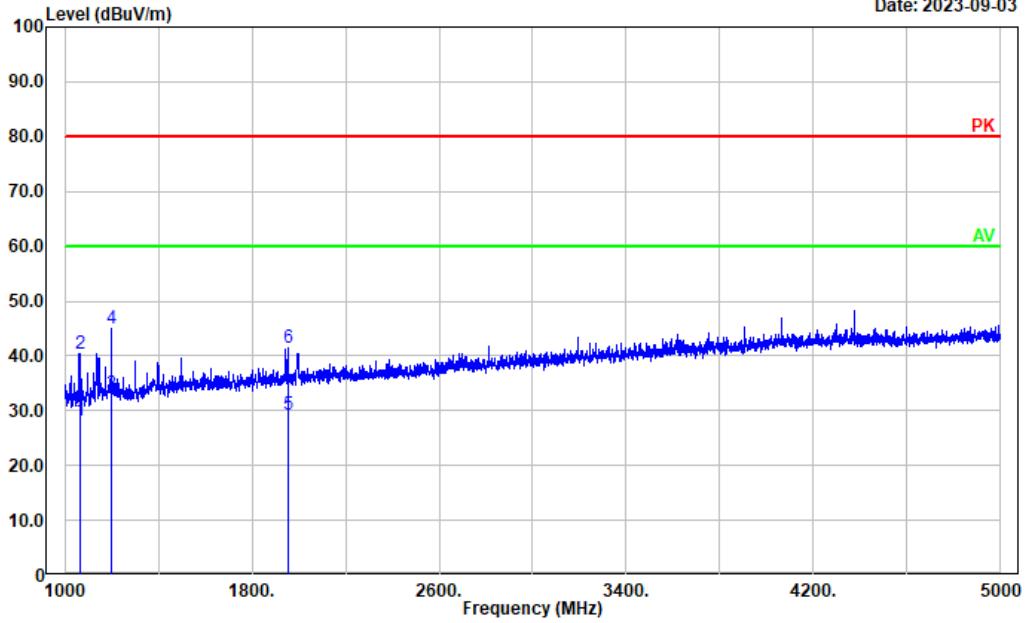


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1995.399	36.13	2.30	38.43	60.00	21.57	Average
2	1995.399	48.57	2.30	50.87	80.00	29.13	Peak
3	2129.026	33.41	2.74	36.15	60.00	23.85	Average
4	2129.026	45.55	2.74	48.29	80.00	31.71	Peak
5	3198.040	32.31	6.76	39.07	60.00	20.93	Average
6	3198.040	44.38	6.76	51.14	80.00	28.86	Peak

M2:

Project No.: CR230848329-EM
 Tester: Mack Huang
 Test Mode: PSU2 input& POE out& LAN Port Loop transmission
 Polarization: horizontal
 Note:

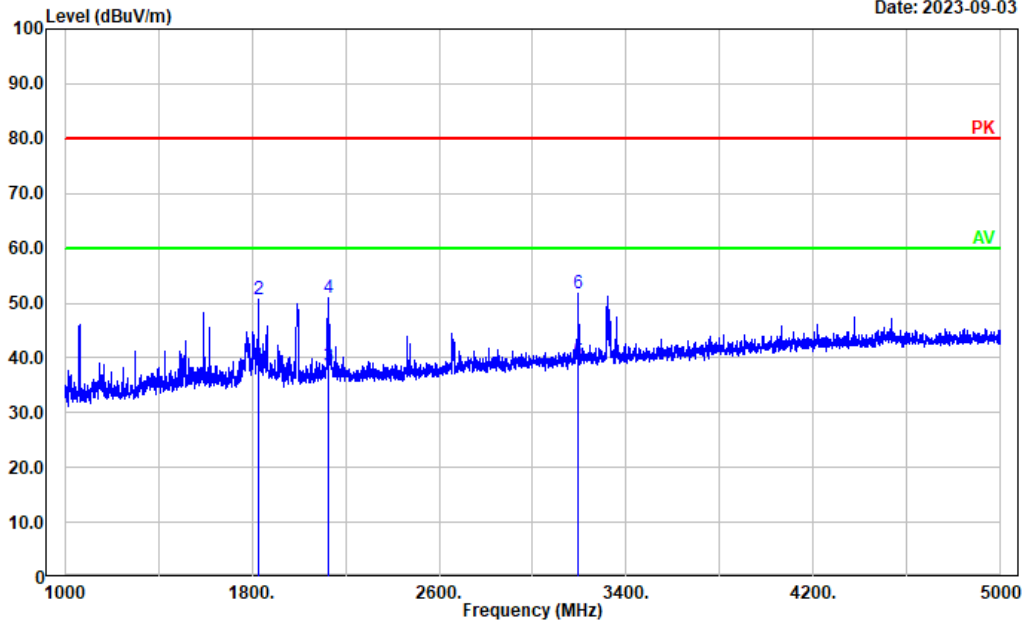
Date: 2023-09-03



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1064.813	30.56	-2.36	28.20	60.00	31.80	Average
2	1064.813	42.75	-2.36	40.39	80.00	39.61	Peak
3	1200.040	34.75	-1.71	33.04	60.00	26.96	Average
4	1200.040	46.79	-1.71	45.08	80.00	34.92	Peak
5	1954.591	27.20	2.10	29.30	60.00	30.70	Average
6	1954.591	39.49	2.10	41.59	80.00	38.41	Peak

Project No.: CR230848329-EM
 Tester: Mack Huang
 Test Mode: PSU2 input& POE out& LAN Port Loop transmission
 Polarization: vertical
 Note:

Date: 2023-09-03

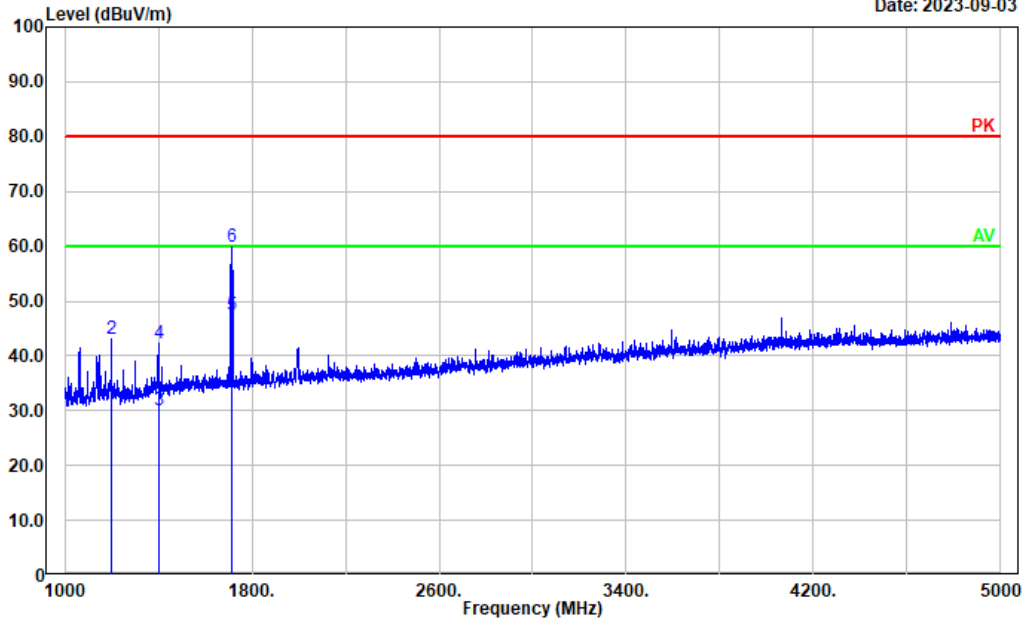


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1830.566	36.93	1.43	38.36	60.00	21.64	Average
2	1830.566	49.29	1.43	50.72	80.00	29.28	Peak
3	2125.825	35.77	2.73	38.50	60.00	21.50	Average
4	2125.825	48.26	2.73	50.99	80.00	29.01	Peak
5	3195.639	32.65	6.74	39.39	60.00	20.61	Average
6	3195.639	45.04	6.74	51.78	80.00	28.22	Peak

M3:

Project No.: CR230848329-EM
 Tester: Mack Huang
 Test Mode: PSU1& PSU2 input& POE out& LAN Port Loop transmission
 Polarization: horizontal
 Note:

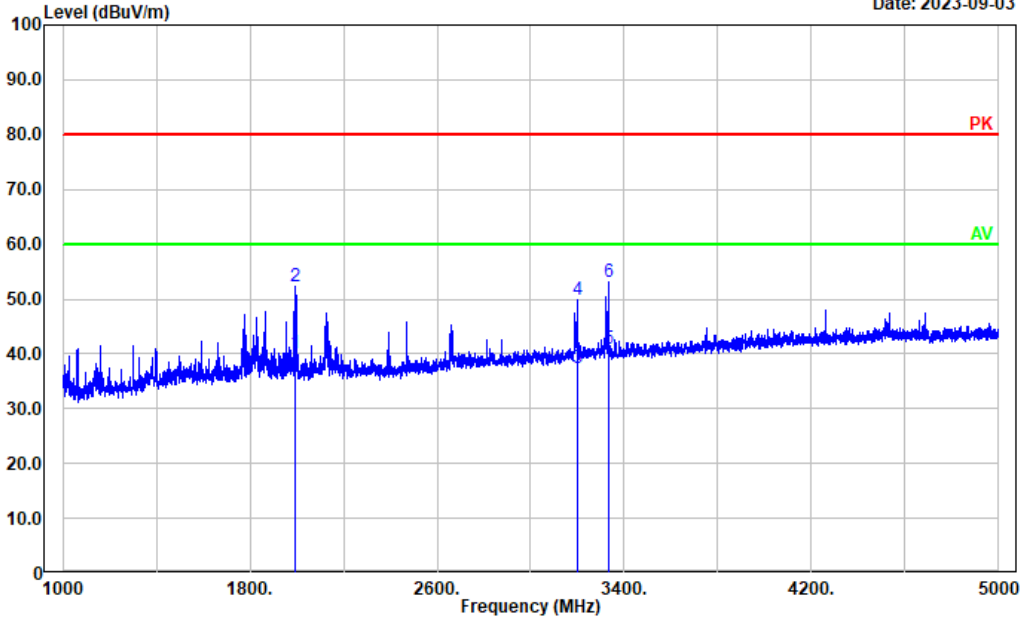
Date: 2023-09-03



No.	Frequency (MHz)	Reading (dB μ V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	1200.040	32.77	-1.71	31.06	60.00	28.94	Average
2	1200.040	44.82	-1.71	43.11	80.00	36.89	Peak
3	1400.080	31.05	-0.88	30.17	60.00	29.83	Average
4	1400.080	43.22	-0.88	42.34	80.00	37.66	Peak
5	1712.943	46.65	0.78	47.43	60.00	12.57	Average
6	1712.943	59.07	0.78	59.85	80.00	20.15	Peak

Project No.: CR230848329-EM
 Tester: Mack Huang
 Test Mode: PSU1& PSU2 input& POE out& LAN Port Loop transmission
 Polarization: vertical
 Note:

Date: 2023-09-03



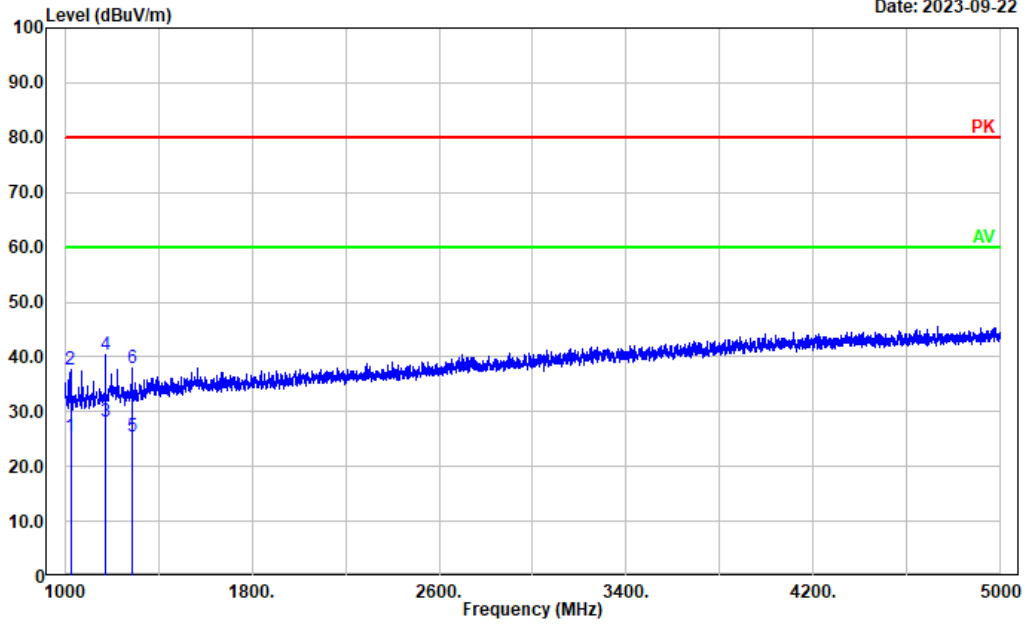
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1991.398	37.92	2.28	40.20	60.00	19.80	Average
2	1991.398	50.11	2.28	52.39	80.00	27.61	Peak
3	3198.040	30.72	6.76	37.48	60.00	22.52	Average
4	3198.040	43.21	6.76	49.97	80.00	30.03	Peak
5	3330.866	33.93	7.09	41.02	60.00	18.98	Average
6	3330.866	45.94	7.09	53.03	80.00	26.97	Peak

Scheme 2:

M1:

Project No.: CR230848329-EM
 Tester: Mack Huang
 Test Mode: PSU1 input& POE out& LAN Port Loop transmission
 Polarization: horizontal
 Note:

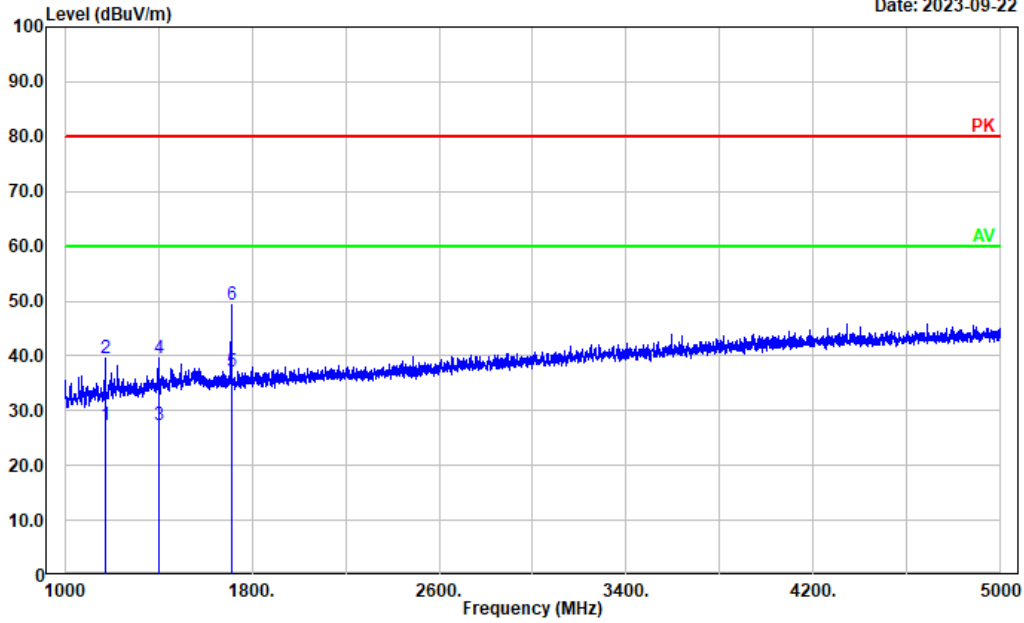
Date: 2023-09-22



No.	Frequency (MHz)	Reading (dB μ V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	1024.805	27.96	-2.59	25.37	60.00	34.63	Average
2	1024.805	40.33	-2.59	37.74	80.00	42.26	Peak
3	1174.435	29.97	-1.82	28.15	60.00	31.85	Average
4	1174.435	42.11	-1.82	40.29	80.00	39.71	Peak
5	1286.457	27.15	-1.72	25.43	60.00	34.57	Average
6	1286.457	39.59	-1.72	37.87	80.00	42.13	Peak

Project No.: CR230848329-EM
 Tester: Mack Huang
 Test Mode: PSU1 input& POE out& LAN Port Loop transmission
 Polarization: vertical
 Note:

Date: 2023-09-22

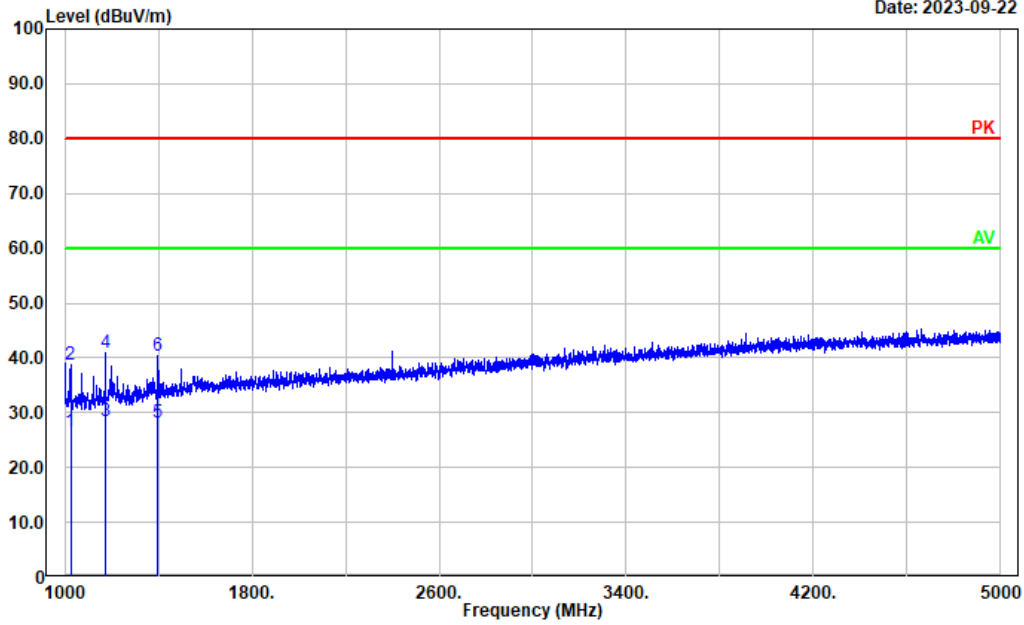


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1174.435	29.07	-1.82	27.25	60.00	32.75	Average
2	1174.435	41.31	-1.82	39.49	80.00	40.51	Peak
3	1401.680	28.17	-0.87	27.30	60.00	32.70	Average
4	1401.680	40.47	-0.87	39.60	80.00	40.40	Peak
5	1713.743	36.32	0.79	37.11	60.00	22.89	Average
6	1713.743	48.43	0.79	49.22	80.00	30.78	Peak

M2:

Project No.: CR230848329-EM
 Tester: Mack Huang
 Test Mode: PSU2 input& POE out& LAN Port Loop transmission
 Polarization: horizontal
 Note:

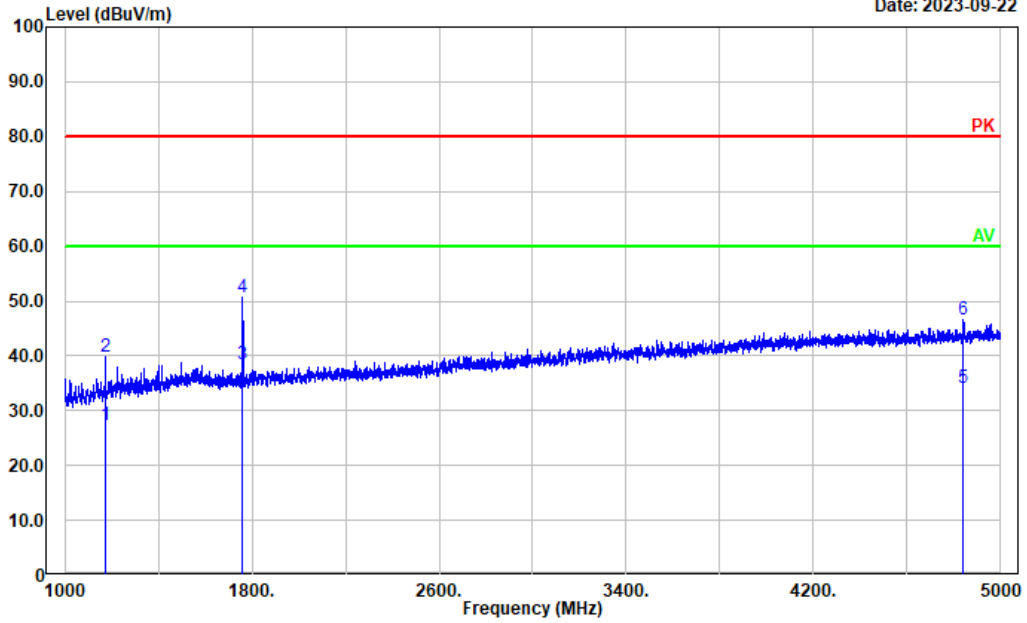
Date: 2023-09-22



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1024.805	29.02	-2.59	26.43	60.00	33.57	Average
2	1024.805	41.46	-2.59	38.87	80.00	41.13	Peak
3	1174.435	30.30	-1.82	28.48	60.00	31.52	Average
4	1174.435	42.78	-1.82	40.96	80.00	39.04	Peak
5	1398.480	29.11	-0.90	28.21	60.00	31.79	Average
6	1398.480	41.31	-0.90	40.41	80.00	39.59	Peak

Project No.: CR230848329-EM
 Tester: Mack Huang
 Test Mode: PSU2 input& POE out& LAN Port Loop transmission
 Polarization: vertical
 Note:

Date: 2023-09-22

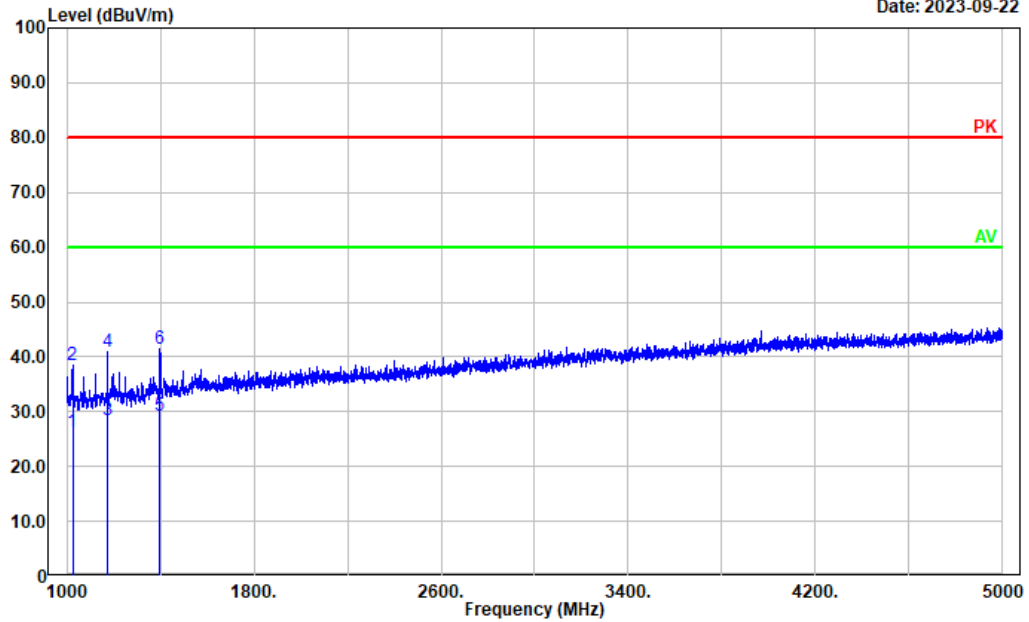


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1174.435	29.28	-1.82	27.46	60.00	32.54	Average
2	1174.435	41.74	-1.82	39.92	80.00	40.08	Peak
3	1760.152	37.36	1.04	38.40	60.00	21.60	Average
4	1760.152	49.75	1.04	50.79	80.00	29.21	Peak
5	4839.168	23.31	10.96	34.27	60.00	25.73	Average
6	4839.168	35.57	10.96	46.53	80.00	33.47	Peak

M3:

Project No.: CR230848329-EM
 Tester: Mack Huang
 Test Mode: PSU1& PSU2 input& POE out& LAN Port Loop transmission
 Polarization: horizontal
 Note:

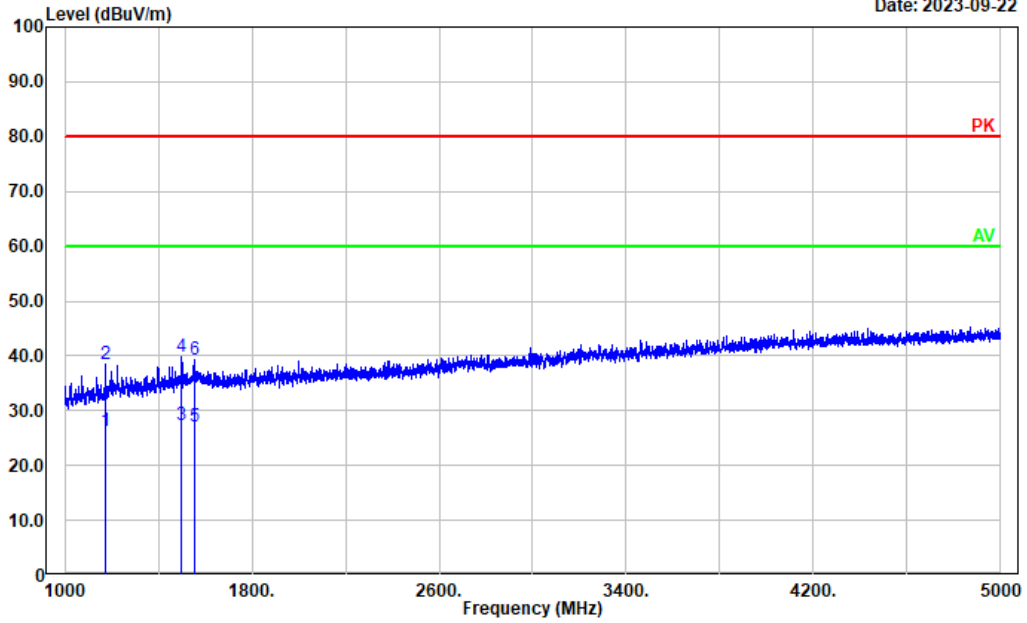
Date: 2023-09-22



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1024.805	28.78	-2.59	26.19	60.00	33.81	Average
2	1024.805	40.97	-2.59	38.38	80.00	41.62	Peak
3	1174.435	30.27	-1.82	28.45	60.00	31.55	Average
4	1174.435	42.71	-1.82	40.89	80.00	39.11	Peak
5	1399.280	30.12	-0.88	29.24	60.00	30.76	Average
6	1399.280	42.36	-0.88	41.48	80.00	38.52	Peak

Project No.: CR230848329-EM
 Tester: Mack Huang
 Test Mode: PSU1& PSU2 input& POE out& LAN Port Loop transmission
 Polarization: vertical
 Note:

Date: 2023-09-22



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1174.435	28.04	-1.82	26.22	60.00	33.78	Average
2	1174.435	40.25	-1.82	38.43	80.00	41.57	Peak
3	1499.300	27.93	-0.47	27.46	60.00	32.54	Average
4	1499.300	40.42	-0.47	39.95	80.00	40.05	Peak
5	1556.111	27.26	-0.10	27.16	60.00	32.84	Average
6	1556.111	39.42	-0.10	39.32	80.00	40.68	Peak

5. EUT PHOTOGRAPHS

Please refer to the attachment CR230848329-EXP EUT EXTERNAL PHOTOGRAPHS and CR230848329-
INP EUT INTERNAL PHOTOGRAPHS

6. TEST SETUP PHOTOGRAPHS

Please refer to the attachment CR230848329-00A-TSP TEST SETUP PHOTOGRAPHS.

******* END OF REPORT *******