

Project No.: TM-2307000041P
Report No.: TMXD2307002605DE

Ref No.: TMXD2302000390DE

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FCC TEST REPORT

for

Human-machine Interface

MODEL: PM2071B51; PM2071C51; PM2070C51; PM2070B51; PM207-C21; WOP-107E-NAE;
PM207-xxx1; FM207-xxx1; RM207-xxx1; KM207-xxx1; GM207-xxx1; Xpm207-xxx1;
LCM207-xxx1; IPM207-xxx1; PMM207-xxx1; LKM207-xxx1; SM207-xxx1; HM207-xxx1;
WM207-xxx1; UM207-xxx1; CM207-xxx1; VM207-xxx1; MHM207-xxx1; GPM207-xxx1;
SPM207-xxx1 (The first x represents the number 0 or 1, "0" means LCM 800*480, "1" means LCM 1024*600; The second x represents the letters A,B,C or D, "A" represents the work gauge screen LCM (-30~70°C), "B" represents the work gauge screen LCM (-10~60°C), "C" represents the business gauge LCM (0~50°C), "D" represents the custom specification LCM; The third x represents the number 2 for build-in 2 serial ports / 3 for build-in 3 serial ports / 4 for build-in 2 serial ports & extension bus / 5 for build-in 3 serial ports & extension bus)

Issued to:

Cermate Technologies Inc.

7F-1, No.168, Lien Cheng Rd., Chung-Ho District,
New Taipei City, Taiwan 235

Issued by:

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Issued Date: August 21, 2023

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	March 23, 2023	Initial Issue	ALL	Wendy Wang
01	August 21, 2023	Retest for model PM2070B51	ALL	Wendy Wang

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1 TEST RESULT CERTIFICATION

Product: Human-machine Interface

Model: PM2071B51; PM2071C51; PM2070C51; PM2070B51; PM207-C21; WOP-107E-NAE; PM207-xxx1; FM207-xxx1; RM207-xxx1; KM207-xxx1; GM207-xxx1; Xpm207-xxx1; LCM207-xxx1; IPM207-xxx1; PMM207-xxx1; LKM207-xxx1; SM207-xxx1; HM207-xxx1; WM207-xxx1; UM207-xxx1; CM207-xxx1; VM207-xxx1; MHM207-xxx1; GPM207-xxx1; SPM207-xxx1 (The first x represents the number 0 or 1, "0" means LCM 800*480, "1" means LCM 1024*600; The second x represents the letters A,B,C or D, "A" represents the work gauge screen LCM (-30~70℃), "B" represents the work gauge screen LCM (-10~60℃), "C" represents the business gauge LCM (0~50℃), "D" represents the custom specification LCM; The third x represents the number 2 for build-in 2 serial ports / 3 for build-in 3 serial ports / 4 for build-in 2 serial ports & extension bus / 5 for build-in 3 serial ports & extension bus)

Brand: Cermate

Applicant: Cermate Technologies Inc.
7F-1, No.168, Lien Cheng Rd., Chung-Ho District,
New Taipei City, Taiwan 235

Manufacturer: Cermate Technologies Inc.
7F-1, No.168, Lien Cheng Rd., Chung-Ho District,
New Taipei City, Taiwan 235

Tested: February 13, 2023 ~ July 31, 2023

EMISSION			
Standard	Item	Result	Remarks
FCC 47 CFR Part 15 Subpart B, ICES-003 Issue 7-2020 ANSI C63.4-2014	Conducted (Power Port)	PASS	Meet Class A limit
	Radiated	PASS	Meet Class A limit

Statements of Conformity
Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by:



Jason Lee
Section Manager

Reviewed by:



Eva Fan
Supervisor of report document dept.

2 EUT DESCRIPTION

Product	Human-machine Interface
Brand Name	Cermate
Model	PM2071B51; PM2071C51; PM2070C51; PM2070B51; PM207-C21; WOP-107E-NAE; PM207-xxx1; FM207-xxx1; RM207-xxx1; KM207-xxx1; GM207-xxx1; Xpm207-xxx1; LCM207-xxx1; IPM207-xxx1; PMM207-xxx1; LKM207-xxx1; SM207-xxx1; HM207-xxx1; WM207-xxx1; UM207-xxx1; CM207-xxx1; VM207-xxx1; MHM207-xxx1; GPM207-xxx1; SPM207-xxx1 (The first x represents the number 0 or 1, "0" means LCM 800*480, "1" means LCM 1024*600; The second x represents the letters A,B,C or D, "A" represents the work gauge screen LCM (-30~70℃), "B" represents the work gauge screen LCM (-10~60℃), "C" represents the business gauge LCM (0~50℃), "D" represents the custom specification LCM; The third x represents the number 2 for build-in 2 serial ports / 3 for build-in 3 serial ports / 4 for build-in 2 serial ports & extension bus / 5 for build-in 3 serial ports & extension bus)
Applicant	Cermate Technologies Inc.
Housing material	Plastic
Received Date	July 11, 2023
EUT Power Rating	24VDC from DC Power Supply
DC Power During Test	24VDC

Model Differences

Model Name	Difference	Test (Check)
PM2071B51	1024x600B Spec	<input checked="" type="checkbox"/>
PM2071C51	1024x600C Spec	<input checked="" type="checkbox"/>
PM2070C51	800x480C Spec	<input checked="" type="checkbox"/>
PM2070B51	800x480B Spec	<input checked="" type="checkbox"/>
PM207-C21; WOP-107E-NAE; PM207-xxx1; FM207-xxx1; RM207-xxx1; KM207-xxx1; GM207-xxx1; Xpm207-xxx1; LCM207-xxx1; IPM207-xxx1; PMM207-xxx1; LKM207-xxx1; SM207-xxx1; HM207-xxx1; WM207-xxx1; UM207-xxx1; CM207-xxx1; VM207-xxx1; MHM207-xxx1; GPM207-xxx1; SPM207-xxx1	<p>1. The first x represents the number 0 or 1, "0" means LCM 800*480, "1" means LCM 1024*600; The second x represents the letters A,B,C or D, "A" represents the work gauge screen LCM (-30~70℃), "B" represents the work gauge screen LCM (-10~60℃), "C" represents the business gauge LCM (0~50℃), "D" represents the custom specification LCM; The third x represents the number 2 for build-in 2 serial ports / 3 for build-in 3 serial ports / 4 for build-in 2 serial ports & extension bus / 5 for build-in 3 serial ports & extension bus)</p> <p>2. For marketing purpose only</p>	<input type="checkbox"/>

I/O PORT

I/O PORT TYPES	Q'TY	TESTED WITH
1. Serial Port	2	2
2. USB Port	2	2
3. LAN Port	2	2

Note: None.

3 TEST METHODOLOGY

3.1. DECISION OF FINAL TEST MODE

The EUT was tested together with the below additional components, and a configuration, which produced the worst emission levels, was selected and recorded in this report.

The test configuration/ modes are as the following:

Conduction Modes:

1	PM2071B51	DC Power Mode
2	PM2071C51	
3	PM2070C51	
4	PM2070B51	

Radiation Modes:

1	PM2071B51	Normal Mode
		Normal Mode / 1-18GHz
2	PM2071C51	Normal Mode
		Normal Mode / 1-18GHz
3	PM2070C51	Normal Mode
		Normal Mode 1-18GHz
4	PM2070B51	Normal Mode
		Normal Mode / 1-18GHz

Worst:

Conduction: Mode 4

Radiation (Below 1GHz): Mode 2

Radiation (Above 1GHz): Mode 1

3.2. EUT SYSTEM OPERATION

1. All peripherals connect EUT to test.
2. Run LanTest20 to test lan port, Server IP: 192.168.10.10 (Server PC).

Note: Test program is self-repeating throughout the test.

4 SETUP OF EQUIPMENT UNDER TEST

4.1. 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.

EUT Devices:

No.	Equipment	Model No.	Brand Name
1	Mother Board	070H0D-16 Ver1.2	Cermate
2	CPU (360MHz)	NUC972DF71YC	NUVOTON
3	Memory (DDR2-128Mbyte)	NA	Cermate
4	Storage (NAND-Flash 128MByte)	NA	Cermate

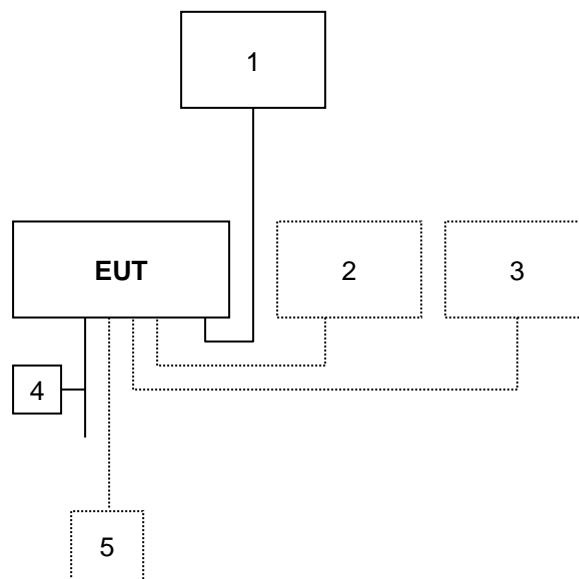
Peripherals Devices:

No.	Equipment	Model No.	Serial No.	FCC ID / BSMI ID	Brand Name	Data Cable	Power Cord
1	USB HDD	ESD240C	F48948-0017	D33193	Transcend	Shielded, 1.8m	N/A
2	Human-machine Interface	PM2071B51	N/A	N/A	CREMATE	Unshielded, 3.32m X2	Unshielded, 1.8m
3	Server PC	T3610	57TT032	R33002	Dell	Unshielded, 20m x2	Unshielded, 1.8m
4	USB Cable	N/A	N/A	N/A	N/A	Shielded, 1.7m	N/A
5	DC Power Supply	RD-125-2412	N/A	N/A	N/A	Unshielded, 1.28m	Unshielded, 1.8m

Note:

- 1) All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2) Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.2. CONFIGURATION OF SYSTEM UNDER TEST



5 FACILITIES AND ACCREDITATIONS

5.1. FACILITIES

All measurement facilities used to collect the measurement data are located at CCS Taiwan Xindian Lab. at No.163-1, Jhongsheng Rd., Xindian Dist., New Taipei City, Taiwan.

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-3, CISPR 16-1-4 and CISPR 16-1-5.

5.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

Taiwan	TAF
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The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	Industry Canada
Japan	VCCI
Taiwan	BSMI
USA	FCC

5.3. 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:

Measurement	Frequency	Uncertainty
Conducted emissions	0.15MHz ~ 30MHz	± 2.8
Radiated emissions	30MHz ~ 1000MHz	± 5.1
	1000MHz ~ 18000MHz	± 4.6
	18000MHz ~ 40000MHz	± 3.8

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Consistent with industry standard (e.g. CISPR 22: 2005, clause 11, Measurement Uncertainty) determining compliance with the limits shall be base on the results of the compliance measurement. Consequently the measure emissions being less than the maximum allowed emission result in this be a compliant test or passing test.

The acceptable measurement uncertainty value without requiring revision of the compliance statement is base on conducted and radiated emissions being less than U_{CISPR} which is 3.8dB(AMN); 5.2dB(OATS) and 5.5dB(1-18GHz) respectively. CCS values (called U_{Lab} in CISPR 16-4-2) is less than U_{CISPR} as shown in the table above. Therefore, MU need not be considered for compliance.

6 CONDUCTED EMISSION MEASUREMENT

6.1. LIMITS OF CONDUCTED EMISSION MEASUREMENT

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.
- (2) The limit decreases in line with the logarithm of the frequency in the range 0.15 to 0.50 MHz.
- (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.

6.2. TEST INSTRUMENTS

(PM2071B51 & PM2071C51 & PM2070C51)

Conducted Emission room # A				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Pulse Limiter	Schwarzbeck	VTSD 9561-F	BNC#211	03/21/2023
BNC CABLE	EMEC	EMG178	BNC#A9	03/21/2023
EMI Test Receiver	R&S	ESCI	100234	04/25/2023
LISN	Schwarzbeck	NNLK 8129	8129-286	07/20/2023
LISN(EUT)	Schwarzbeck	NSLK 8127	8127527	07/20/2023
Thermo-Hygro Meter	Wisewind	201A	SD-R038	06/21/2023
Test S/W	EZ-EMC Ver.CCS-03A1			

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. N.C.R = No Calibration Request

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(PM2070B51)

Conducted Emission room # A				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Pulse Limiter	Schwarzbeck	VTSD 9561-F	BNC#211	03/19/2024
BNC CABLE	EMEC	EMG178	BNC#A9	03/19/2024
EMI Test Receiver	R&S	ESCI	100234	04/18/2024
LISN	Schwarzbeck	NNLK 8129	8129-286	07/17/2024
LISN(EUT)	Schwarzbeck	NSLK 8127	8127526	07/17/2024
Thermo-Hygro Meter	Wisewind	201A	SD-R038	06/19/2024
Test S/W	EZ-EMC Ver.CCS-03A1			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. N.C.R = No Calibration Request.

6.3. TEST PROCEDURES

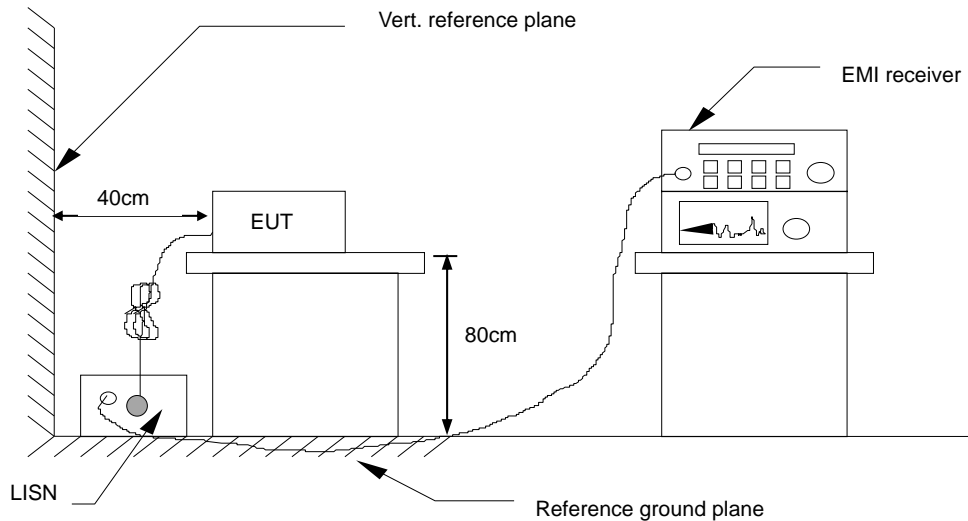
Procedure of Preliminary Test

- The EUT and support equipment, if needed, were set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor standing equipment, it is placed on the ground plane, which has a 12 mm non-conductive covering to insulate the EUT from the ground plane.
- All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- The test equipment EUT installed by AC 120VAC/60Hz main power, through a Line Impedance Stabilization Network (LISN), which was supplied power source and was grounded to the ground plane.
- All support equipment power by from a second LISN.
- The test program of the EUT was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
- The Receiver scanned from 150kHz to 30MHz for emissions in each of the test modes.
- During the above scans, the emissions were maximized by cable manipulation.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test.
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The worst configuration of EUT and cable of the above highest emission level were recorded for reference of the final test.

Procedure of Final Test

- EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.
- The test data of the worst-case condition(s) was recorded.

6.4. TEST SETUP



- For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

6.5. DATA SAMPLE

Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
x.xx	42.95	0.55	43.50	73	-29.50	Q	L1

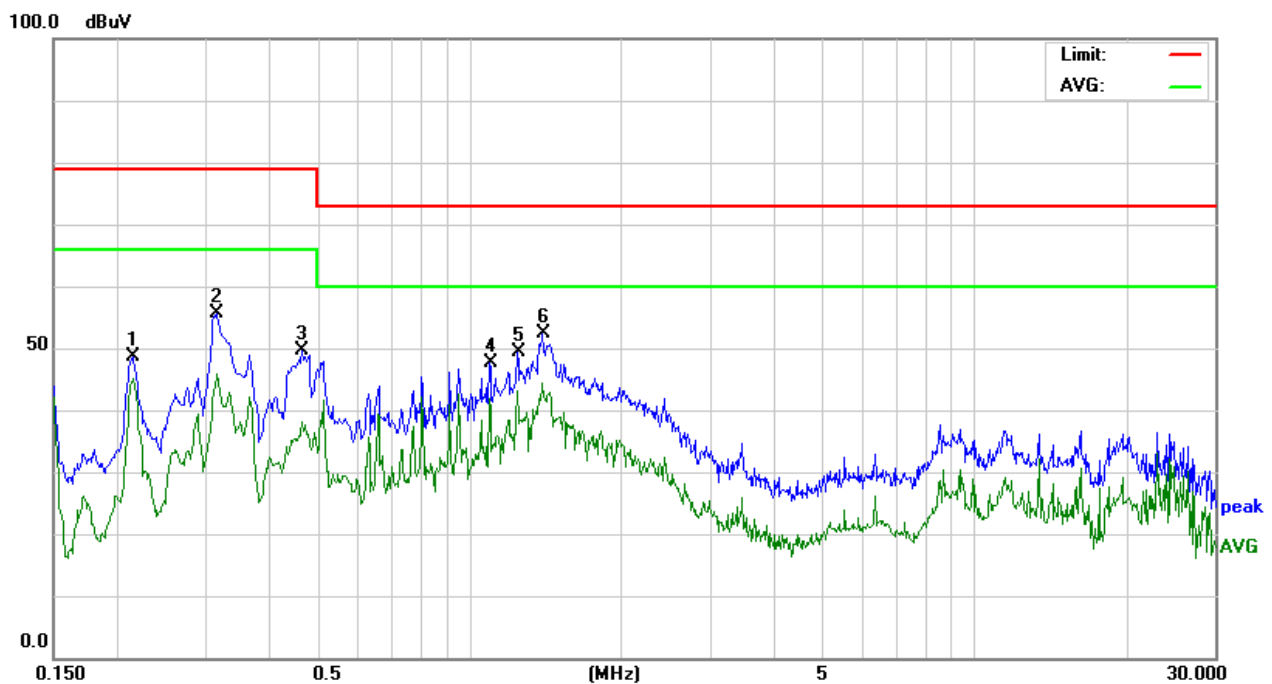
Freq. = Emission frequency in MHz
 Reading = Uncorrected Analyzer/Receiver reading
 Factor = Insertion loss of LISN + Cable Loss + Pulse Limit
 Result = Reading + Factor
 Limit = Limit stated in standard
 Margin = Reading in reference to limit
 P = Peak Reading
 Q = Quasi-peak Reading
 A = Average Reading
 L1 = Hot side
 L2 = Neutral side

Calculation Formula

Margin (dB) = Result (dBuV) – Limit (dBuV)

6.6. TEST RESULTS

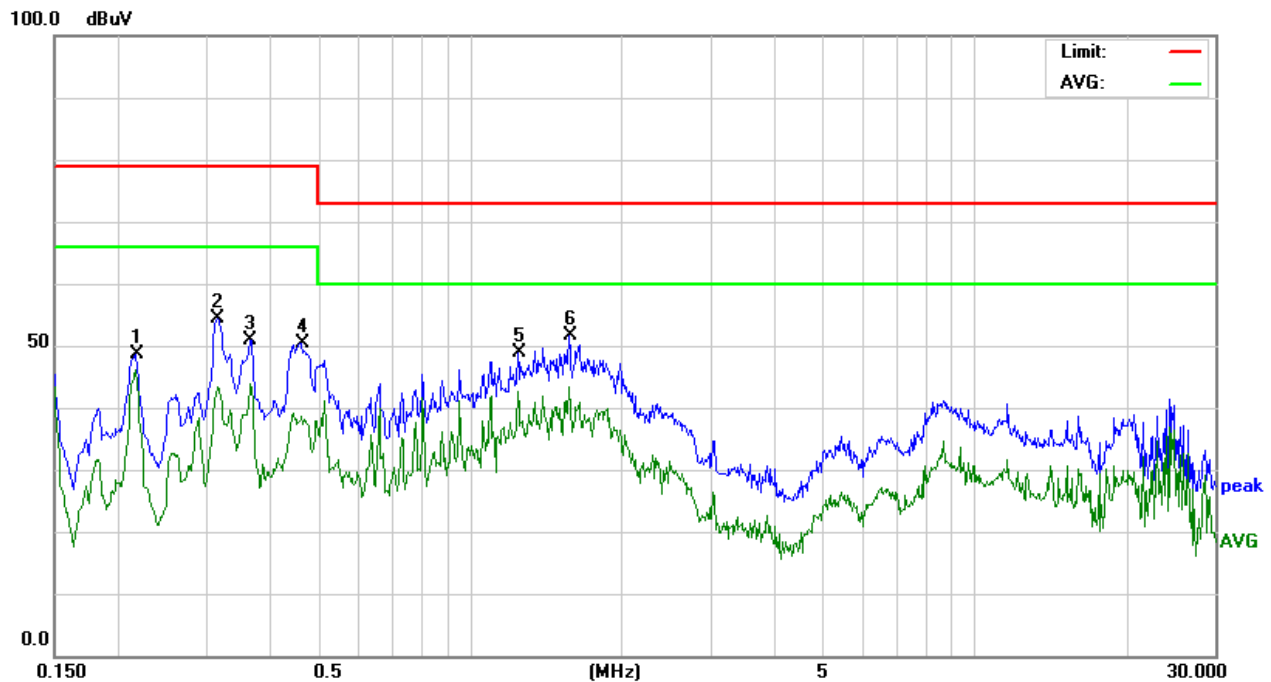
Model No.	PM2071B51	6dB Bandwidth	9 kHz
Environmental Conditions	25.3°C, 56% RH	Test Mode	Mode 1
Tested by	Jacky Lin	Phase	L1
Standard	FCC CLASS A / ICES-003 CLASS A		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.2149	38.40	10.29	48.69	79.00	-30.31	P	L1
0.3165	45.25	10.33	55.58	79.00	-23.42	P	L1
0.4661	39.24	10.34	49.58	79.00	-29.42	P	L1
1.0991	37.15	10.40	47.55	73.00	-25.45	P	L1
1.2479	38.93	10.42	49.35	73.00	-23.65	P	L1
1.3964	41.95	10.43	52.38	73.00	-20.62	P	L1

Note: L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

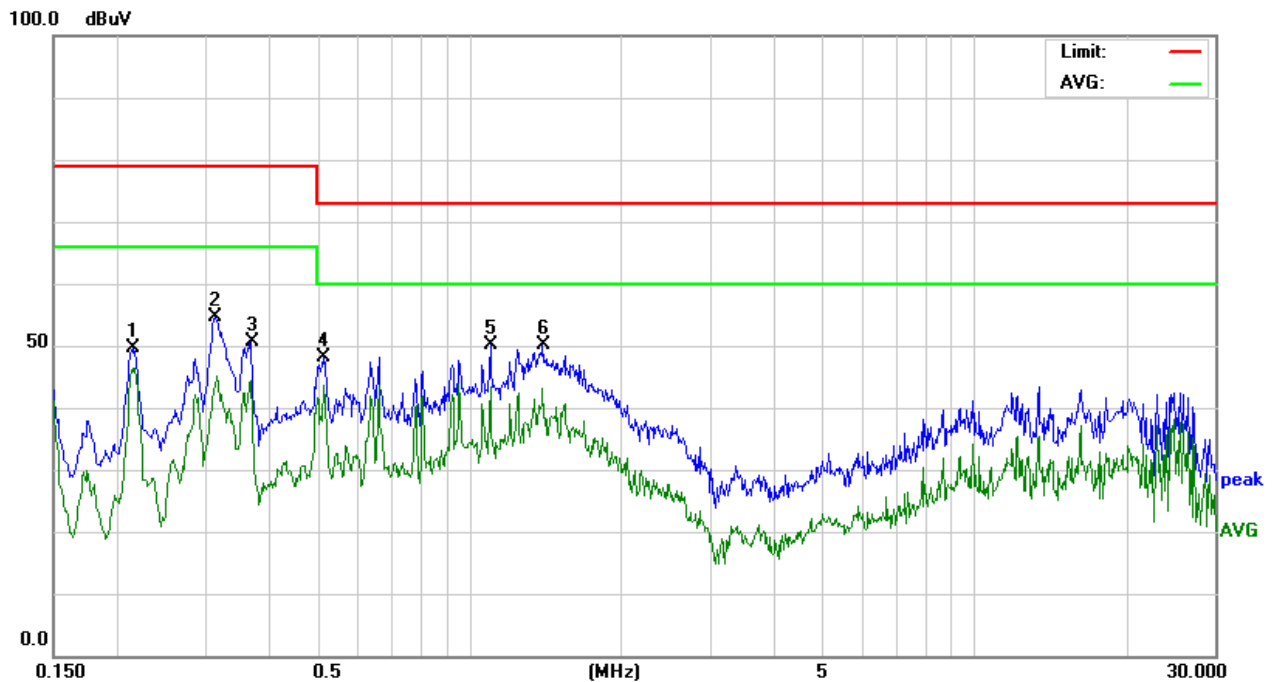
Model No.	PM2071B51	6dB Bandwidth	9 kHz
Environmental Conditions	25.3°C, 56% RH	Test Mode	Mode 1
Tested by	Jacky Lin	Phase	L2
Standard	FCC CLASS A / ICES-003 CLASS A		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.2174	38.38	10.26	48.64	79.00	-30.36	P	L2
0.3165	44.14	10.30	54.44	79.00	-24.56	P	L2
0.3672	40.62	10.29	50.91	79.00	-28.09	P	L2
0.4650	40.09	10.31	50.40	79.00	-28.60	P	L2
1.2479	38.51	10.37	48.88	73.00	-24.12	P	L2
1.5764	41.27	10.41	51.68	73.00	-21.32	P	L2

Note: L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

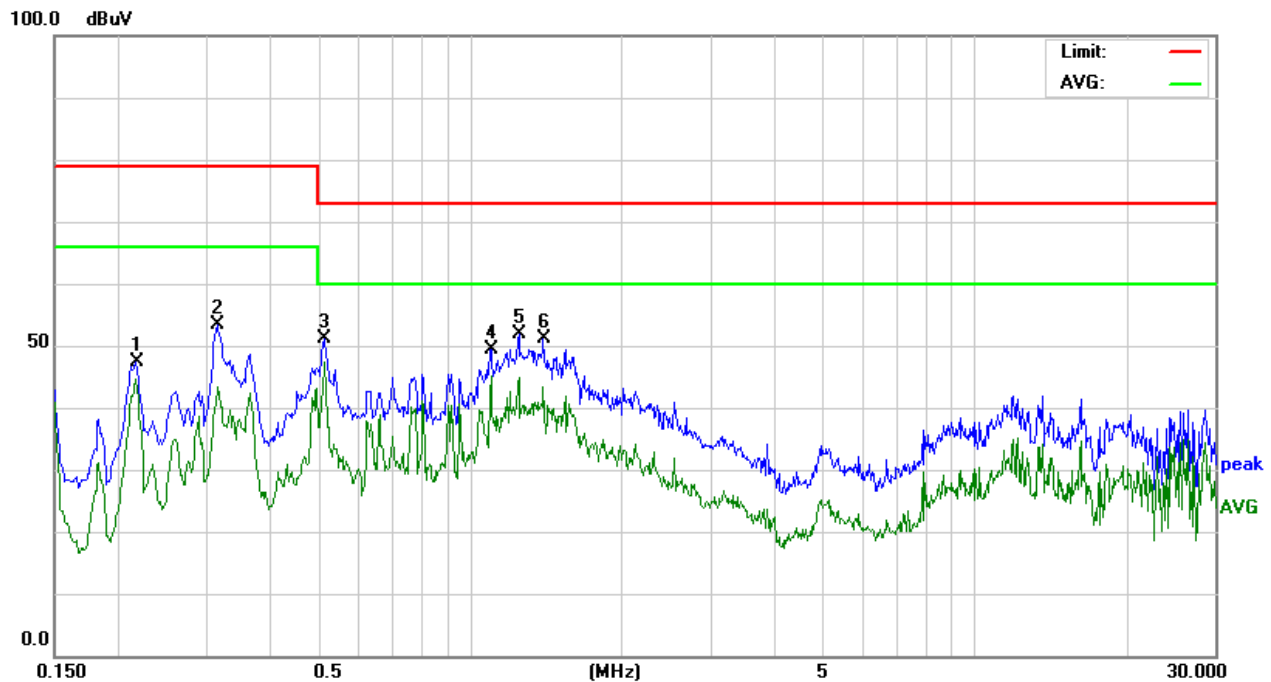
Model No.	PM2071C51	6dB Bandwidth	9 kHz
Environmental Conditions	25.3°C, 56% RH	Test Mode	Mode 2
Tested by	Jacky Lin	Phase	L1
Standard	FCC CLASS A / ICES-003 CLASS A		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.2149	39.35	10.29	49.64	79.00	-29.36	P	L1
0.3130	44.41	10.33	54.74	79.00	-24.26	P	L1
0.3704	40.34	10.32	50.66	79.00	-28.34	P	L1
0.5141	37.89	10.34	48.23	73.00	-24.77	P	L1
1.1038	39.63	10.40	50.03	73.00	-22.97	P	L1
1.3964	39.69	10.43	50.12	73.00	-22.88	P	L1

Note: L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

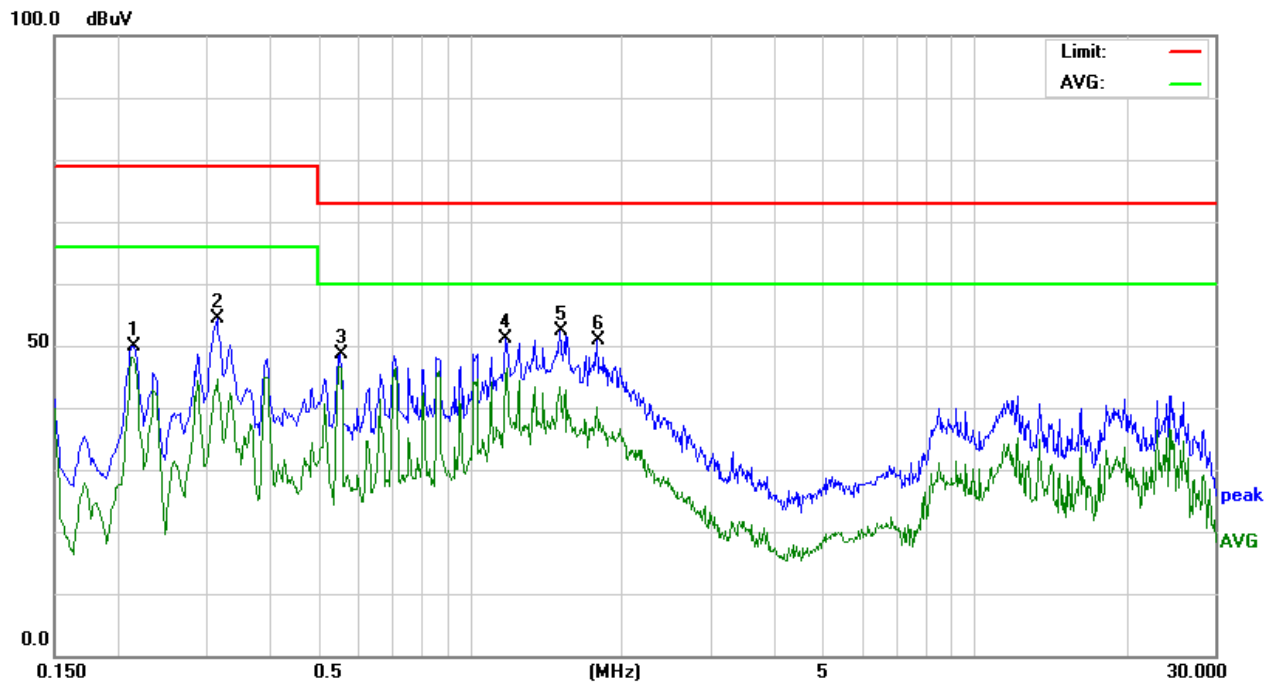
Model No.	PM2071C51	6dB Bandwidth	9 kHz
Environmental Conditions	25.3°C, 56% RH	Test Mode	Mode 2
Tested by	Jacky Lin	Phase	L2
Standard	FCC CLASS A / ICES-003 CLASS A		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.2174	37.18	10.26	47.44	79.00	-31.56	P	L2
0.3165	43.03	10.30	53.33	79.00	-25.67	P	L2
0.5141	40.72	10.31	51.03	73.00	-21.97	P	L2
1.0990	39.02	10.36	49.38	73.00	-23.62	P	L2
1.2520	41.49	10.37	51.86	73.00	-21.14	P	L2
1.3964	40.63	10.39	51.02	73.00	-21.98	P	L2

Note: L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

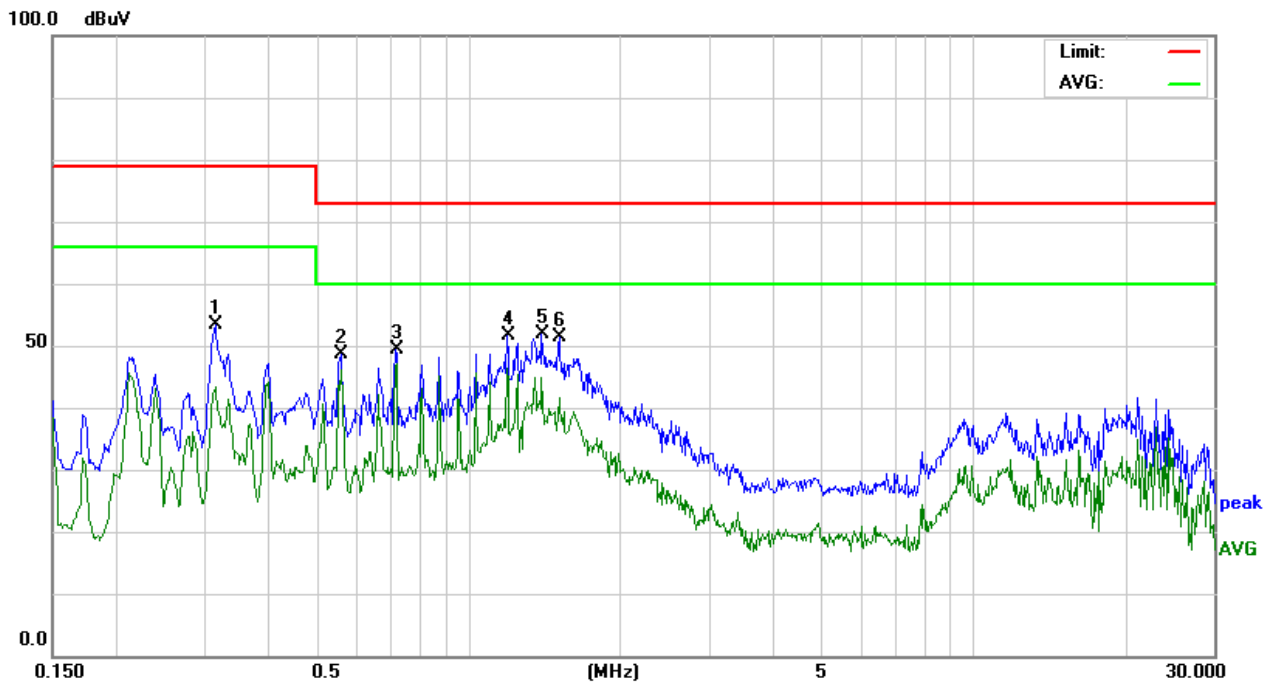
Model No.	PM2070C51	6dB Bandwidth	9 kHz
Environmental Conditions	25.3°C, 56% RH	Test Mode	Mode 3
Tested by	Jacky Lin	Phase	L1
Standard	FCC CLASS A / ICES-003 CLASS A		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.2162	39.58	10.29	49.87	79.00	-29.13	P	L1
0.3165	44.01	10.33	54.34	79.00	-24.66	P	L1
0.5545	38.33	10.35	48.68	73.00	-24.32	P	L1
1.1755	40.69	10.41	51.10	73.00	-21.90	P	L1
1.5040	41.82	10.46	52.28	73.00	-20.72	P	L1
1.7834	40.47	10.47	50.94	73.00	-22.06	P	L1

Note: L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

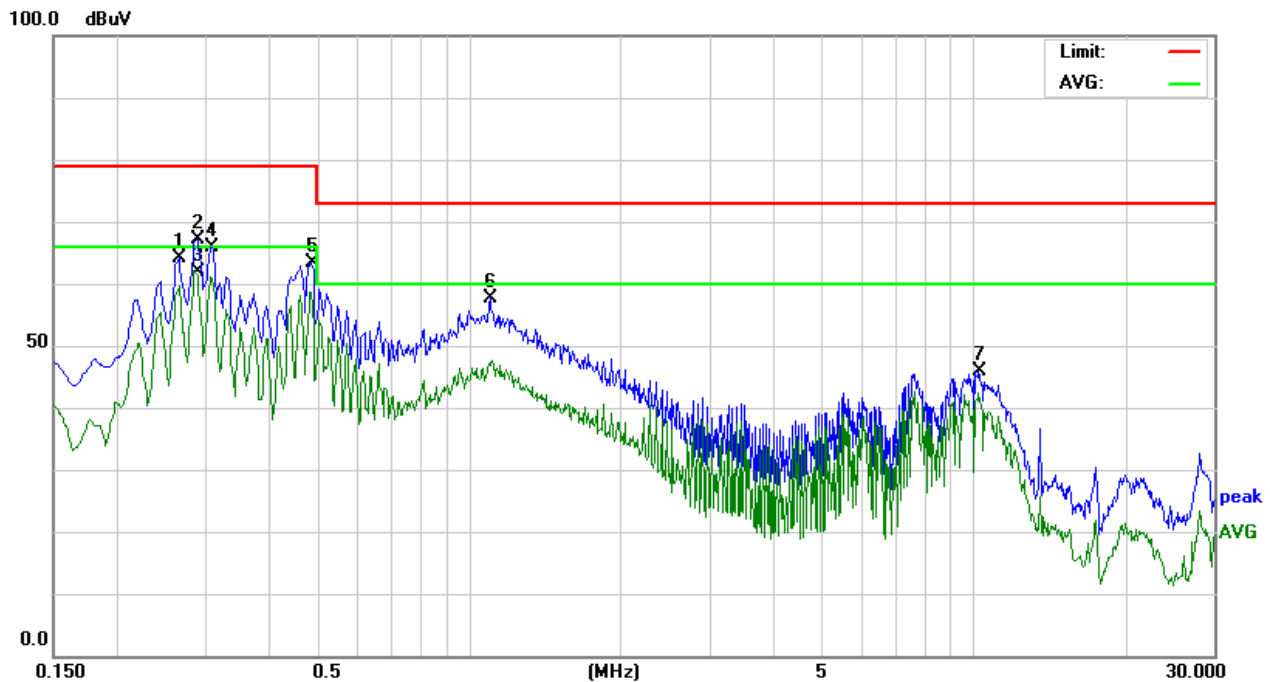
Model No.	PM2070C51	6dB Bandwidth	9 kHz
Environmental Conditions	25.3°C, 56% RH	Test Mode	Mode 3
Tested by	Jacky Lin	Phase	L2
Standard	FCC CLASS A / ICES-003 CLASS A		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.3165	43.08	10.30	53.38	79.00	-25.62	P	L2
0.5594	38.31	10.31	48.62	73.00	-24.38	P	L2
0.7167	38.98	10.34	49.32	73.00	-23.68	P	L2
1.1935	41.34	10.36	51.70	73.00	-21.30	P	L2
1.4008	41.57	10.39	51.96	73.00	-21.04	P	L2
1.5179	40.97	10.41	51.38	73.00	-21.62	P	L2

Note: L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

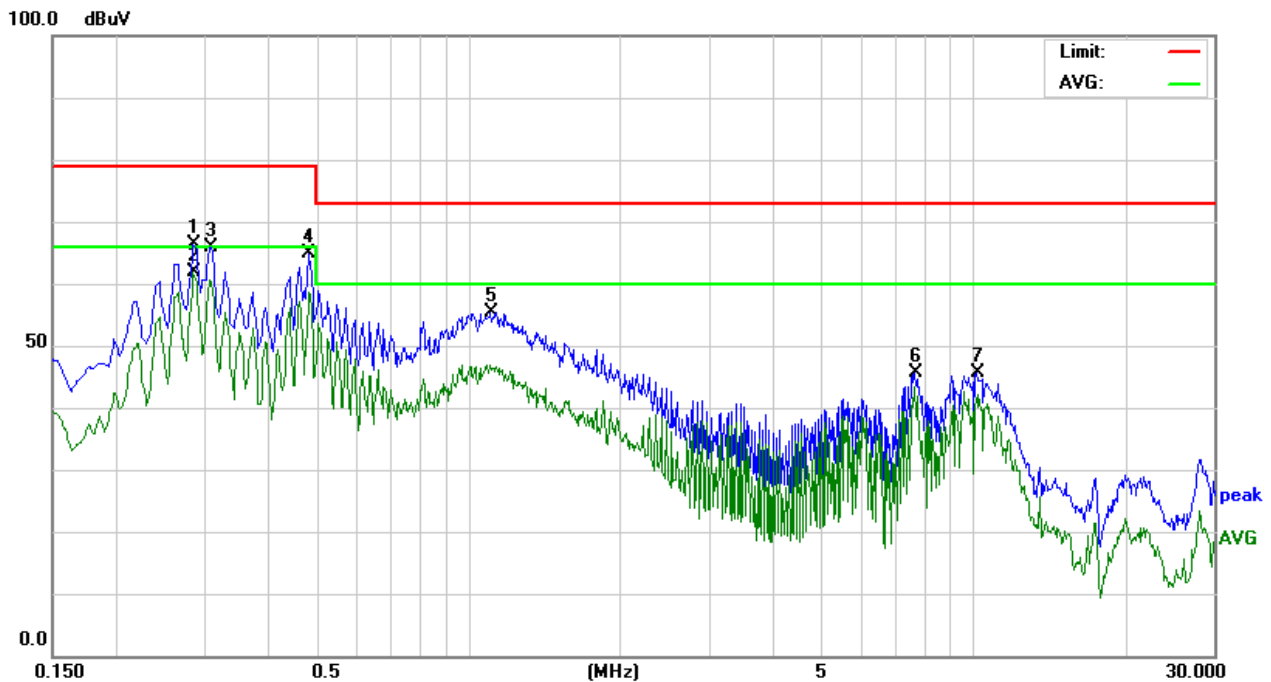
Model No.	PM2070B51	6dB Bandwidth	9 kHz
Environmental Conditions	22.3°C, 62% RH	Test Mode	Mode 4 / Worst
Tested by	Ian Su	Phase	L1
Standard	FCC CLASS A / ICES-003 CLASS A		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.2670	53.96	10.21	64.17	79.00	-14.83	P	L1
0.2895	56.94	10.22	67.16	79.00	-11.84	P	L1
0.2895	51.78	10.22	62.00	66.00	-4.00	A	L1
0.3075	55.70	10.22	65.92	79.00	-13.08	P	L1
0.4875	53.21	10.24	63.45	79.00	-15.55	P	L1
1.1040	47.46	10.29	57.75	73.00	-15.25	P	L1
10.2615	35.46	10.47	45.93	73.00	-27.07	P	L1

Note: L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

Model No.	PM2070B51	6dB Bandwidth	9 kHz
Environmental Conditions	22.3°C, 62% RH	Test Mode	Mode 4 / Worst
Tested by	Ian Su	Phase	L2
Standard	FCC CLASS A / ICES-003 CLASS A		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.2850	56.20	10.22	66.42	79.00	-12.58	P	L2
0.2850	51.56	10.22	61.78	66.00	-4.22	A	L2
0.3075	55.67	10.22	65.89	79.00	-13.11	P	L2
0.4830	54.57	10.24	64.81	79.00	-14.19	P	L2
1.1085	45.09	10.29	55.38	73.00	-17.62	P	L2
7.6650	35.09	10.43	45.52	73.00	-27.48	P	L2
10.1355	35.09	10.46	45.55	73.00	-27.45	P	L2

Note: L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

7 RADIATED EMISSION MEASUREMENT

7.1. LIMITS OF RADIATED EMISSION MEASUREMENT

FCC 47 CFR Part 15 Subpart B

Below 1GHz (for digital device / CISPR 22)

FREQUENCY (MHz)	dBuV/m (At 10m)	
	Class A	Class B
30 ~ 230	40	30
230 ~ 1000	47	37

Limit tables for non-digital device:

Class A Radiated Emission limit at 10m (for others)

Frequency (MHZ)	Field Strength Limit (uV/m)Q.P.	Field Strength Limit (dBuV/m)Q.P.
30 - 88	90	39
88 - 216	150	43.5
216 – 960	210	46.4
Above 960	300	49.5

Class B Radiated Emission limit at 3m (for others)

Frequency (MHZ)	Field Strength Limit (uV/m)Q.P.	Field Strength Limit (dBuV/m)Q.P.
30 - 88	100	40
88 - 216	150	43.5
216 – 960	200	46
Above 960	500	54

Above 1GHz(for all device)

Frequency (MHZ)	Class A (dBuV/m) (At 10m)		Class B (dBuV/m) (At 3m)	
	Average	Peak	Average	Peak
Above 1000	49.5	69.5	54	74

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

(3) The measurement above 1GHz is at close-in distances 3m, and determine the limit L_2 corresponding to the close-in distance d_2 by applying the following relation: $L_2 = L_1 (d_1/d_2)$, where L_1 is the specified limit in microvolts per metre (uV/m) at the distance d_1 (10m), L_2 is the new limit for distance d_2 (3m).

So the new Class A limit above 1GHz at 3m is as following table:

Frequency (MHZ)	Class A (dBuV/m) (At 3m)	
	Average	Peak
Above 1000	60	80

According to FCC Part 15.33 (b), for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5 th harmonic of the highest frequency or 40GHz, whichever is lower

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Below 1GHz

Class A Radiated Emission limit

Frequency (MHZ)	(dBuV/m)Q.P. Distances (3m)	(dBuV/m)Q.P. Distances (10m)
30 - 88	50	40
88 - 216	54	43.5
216 - 230	56.9	46.4
230 - 960	57	47
960 - 1000	60	49.5

Class B Radiated Emission limit

Frequency (MHZ)	(dBuV/m)Q.P. Distances (3m)	(dBuV/m)Q.P. Distances (10m)
30 - 88	40	30
88 - 216	43.5	33.1
216 - 230	46	35.6
230 - 960	47	37
960 - 1000	54	43.5

Above 1GHz

Frequency (MHZ)	Class A (dBuV/m) (At 3m)		Class B (dBuV/m) (At 3m)	
	Average	Peak	Average	Peak
Above 1000	60	80	54	74

Required highest measurement frequency for radiated emissions

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Fx-108	1000
108-500	2000
500-1000	5000
Above 1000	5 x FX up to a maximum of 40 GHz

Note: Fx is the highest fundamental frequency generated and/or used in the ITE or digital apparatus under test.

7.2. TEST INSTRUMENTS

(PM2071B51 & PM2071C51 & PM2070C51)

Open Area Test Site # H				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Bilog Antenna	Teseq	CBL 6112D	35411	05/17/2023
Cable	EMEC	CFD400E-LW	SD-R074	08/10/2023
EMI Test Receiver	R&S	ESCI	101340	02/03/2024
Pre-Amplifier	HP	8447D	1937A01554	09/21/2023
Thermo-Hygro Meter	Wisewind	201A	No. 03	05/17/2023
Test S/W	EZ-EMC Ver.CCS-03A1			
Above 1GHz Used				
Horn Antenna	ETS	3117	00139062	07/05/2023
Microflex Cable x 7m	EMCI	EMC107-NM-NM-7000	SD-R077	07/04/2023
K-Type Cable x 1m	EMCI	EMC101G-KM-KM-1000	SD-R075	07/04/2023
Pre-Amplifier	Com-Power	PAM-118A	551041	06/27/2023
Signal Analyzer	R&S	FSV40	101269	06/23/2023
Thermo-Hygro Meter	Wisewind	201A	SD-R046	07/31/2023
Test S/W	EZ-EMC Ver.CCS-03A1			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. N.C.R = No Calibration Request

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Open Area Test Site # H				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Bilog Antenna	Teseq	CBL 6112D	35411	05/03/2024
Cable	EMEC	CFD400E-LW	SD-R074	08/10/2023
EMI Test Receiver	R&S	ESCI	101340	02/03/2024
Pre-Amplifier	HP	8447D	1937A01554	09/21/2023
Thermo-Hygro Meter	Wisewind	201A	No. 03	05/22/2024
Test S/W	EZ-EMC Ver.CCS-03A1			
Above 1GHz Used				
Horn Antenna	ETS-Lindgren	3117	00139062	06/07/2024
Microflex Cable x 7m	JMT	LF01	SD-R089	06/06/2024
K-Type Cable x 1m	JMT	LK01	SD-R087	06/06/2024
Pre-Amplifier	Com-Power	PAM-118A	551041	06/06/2024
Signal Analyzer	R&S	FSV40	101269	06/06/2024
Thermo-Hygro Meter	Wisewind	201A	SD-R046	07/31/2023
Test S/W	EZ-EMC Ver.CCS-03A1			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. N.C.R = No Calibration Request.

7.3. TEST PROCEDURES

Procedure of Preliminary Test

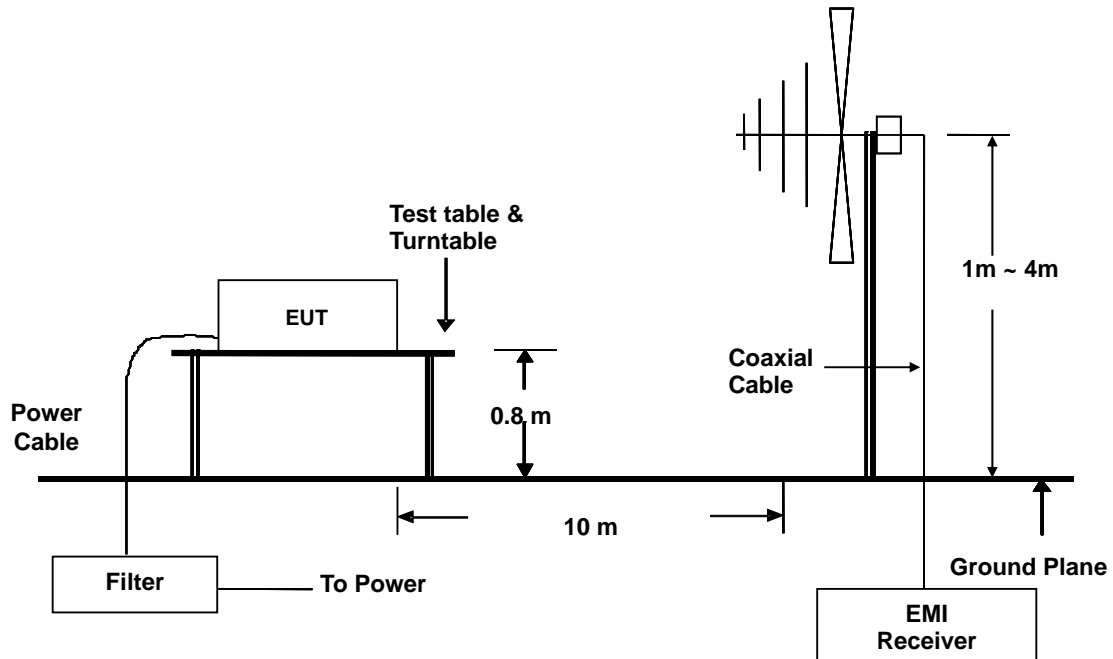
- The equipment was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane. When the EUT is a floor standing equipment, it is placed on the ground plane which has a 12 mm non-conductive covering to insulate the EUT from the ground plane.
- Support equipment, if needed, was placed as per ANSI C63.4.
- All I/O cables were positioned to simulate typical usage as per ANSI C63.4.
- The EUT received AC 120VAC/60Hz power source from the outlet socket under the turntable. All support equipment power received from another socket under the turntable.
- The antenna was placed at 3 or 10 meter away from the EUT as stated in ANSI C63.4. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.
- The Analyzer / Receiver quickly scanned from 30MHz to 40GHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test:
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The worst configuration of EUT and cable of the above highest emission level were recorded for reference of the final test.

Procedure of Final Test

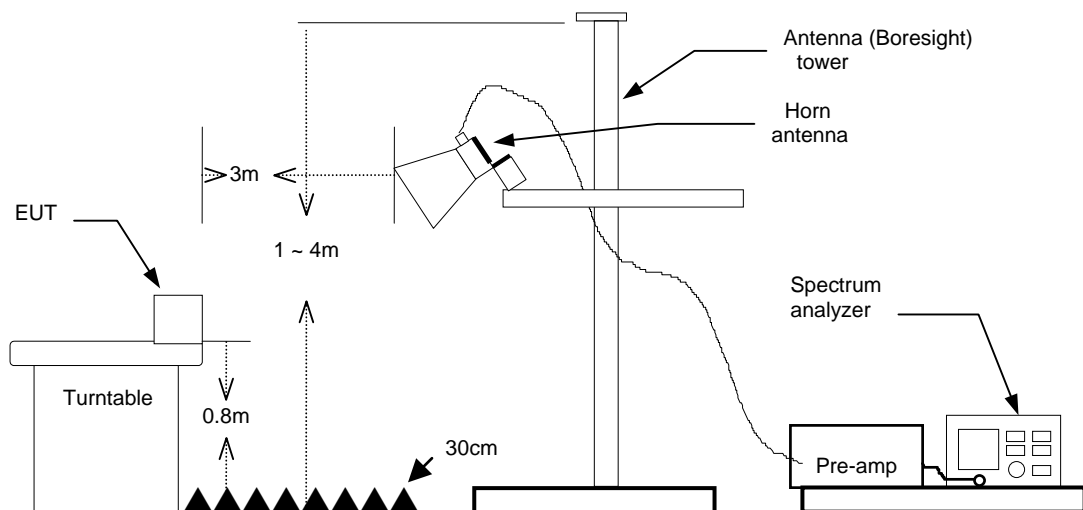
- EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.
- The Analyzer / Receiver scanned from 30MHz to 40GHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- Recording at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. Below 1GHz the Q.P. reading and above 1GHz the Peak and Average reading are presented.
- The test data of the worst-case condition(s) was recorded.

7.4. TEST SETUP

Below 1GHz



Above 1GHz



- For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.5. DATA SAMPLE

Below 1GHz

Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/Q)	Pol. (H/V)
x.xx	14.0	12.2	26.2	40	-13.8	Q	H

Above 1GHz

Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
x.xx	42.95	0.55	43.50	60	-16.50	A	H

Freq. = Emission frequency in MHz
 Reading = Uncorrected Analyzer/Receiver reading
 Factor = Antenna Factor + Cable Loss - Amplifier Gain
 Result = Reading + Factor
 Limit = Limit stated in standard
 Margin = Reading in reference to limit
 P = Peak Reading
 Q = Quasi-peak Reading
 A = Average Reading
 H = Antenna Polarization: Horizontal
 V = Antenna Polarization: Vertical

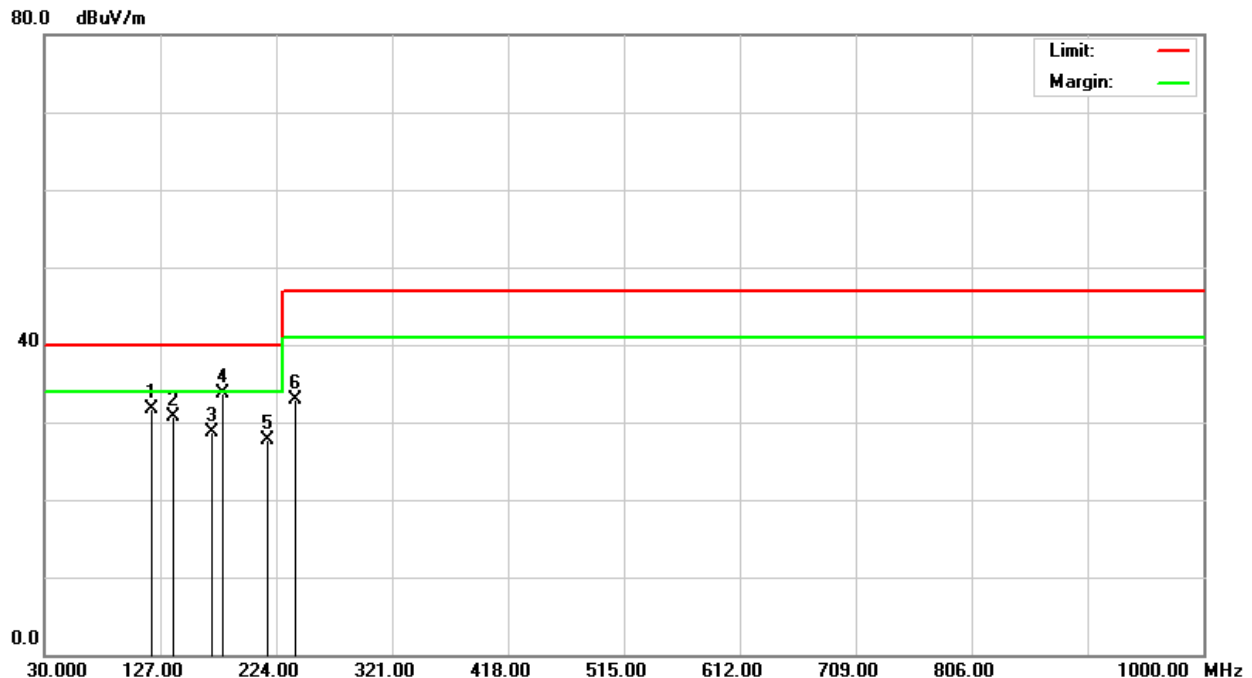
Calculation Formula

Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)

7.6. TEST RESULTS

FCC 47 CFR Part 15 Subpart B Below 1GHz

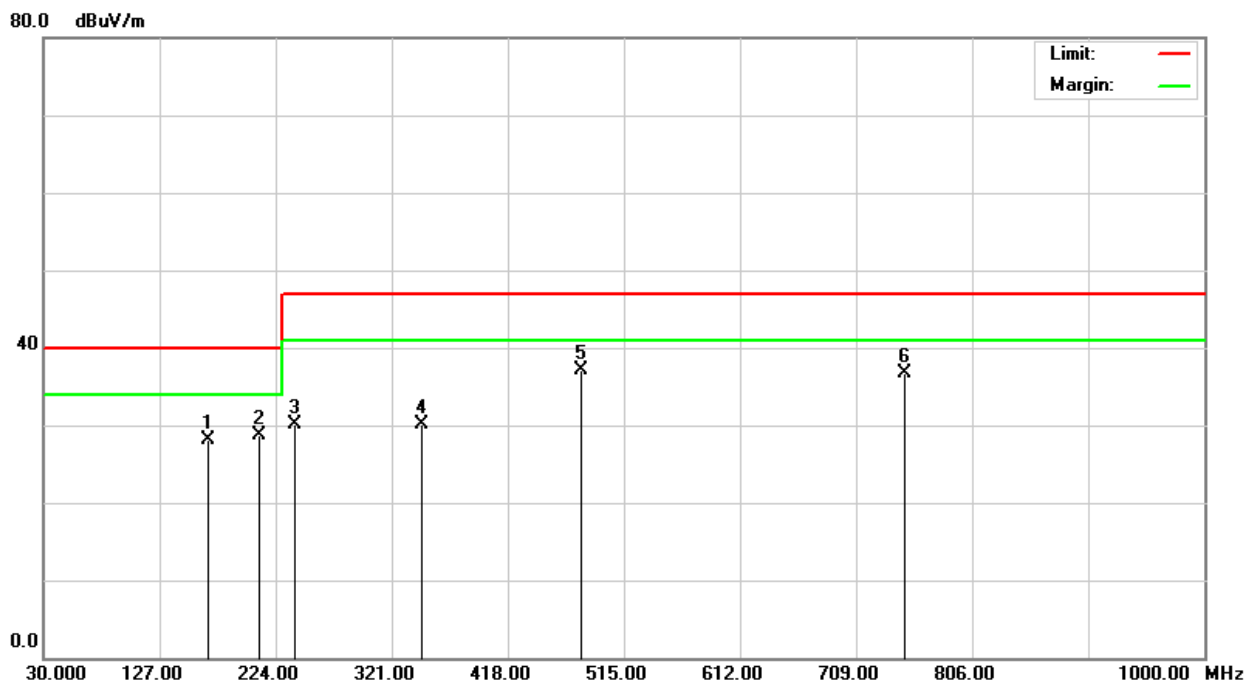
Model No.	PM2071B51	Test Mode	Mode 1
Environmental Conditions	22.3°C, 68% RH	6dB Bandwidth	120 kHz
Antenna Pole	Vertical	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Kevin Cheng
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT		



Radiated Emission Readings									
Frequency Range Investigated					30 MHz to 1000 MHz at 10m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
120.0020	39.70	-7.91	31.79	40.00	-8.21	100	123	Q	V
138.3200	39.40	-8.68	30.72	40.00	-9.28	100	255	Q	V
170.9400	39.00	-10.37	28.63	40.00	-11.37	100	84	Q	V
180.0020	44.40	-10.72	33.68	40.00	-6.32	100	305	Q	V
216.5000	38.20	-10.57	27.63	40.00	-12.37	100	149	Q	V
240.0040	41.20	-8.38	32.82	47.00	-14.18	100	282	Q	V

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.
2. P= Peak Reading; Q= Quasi-peak Reading.

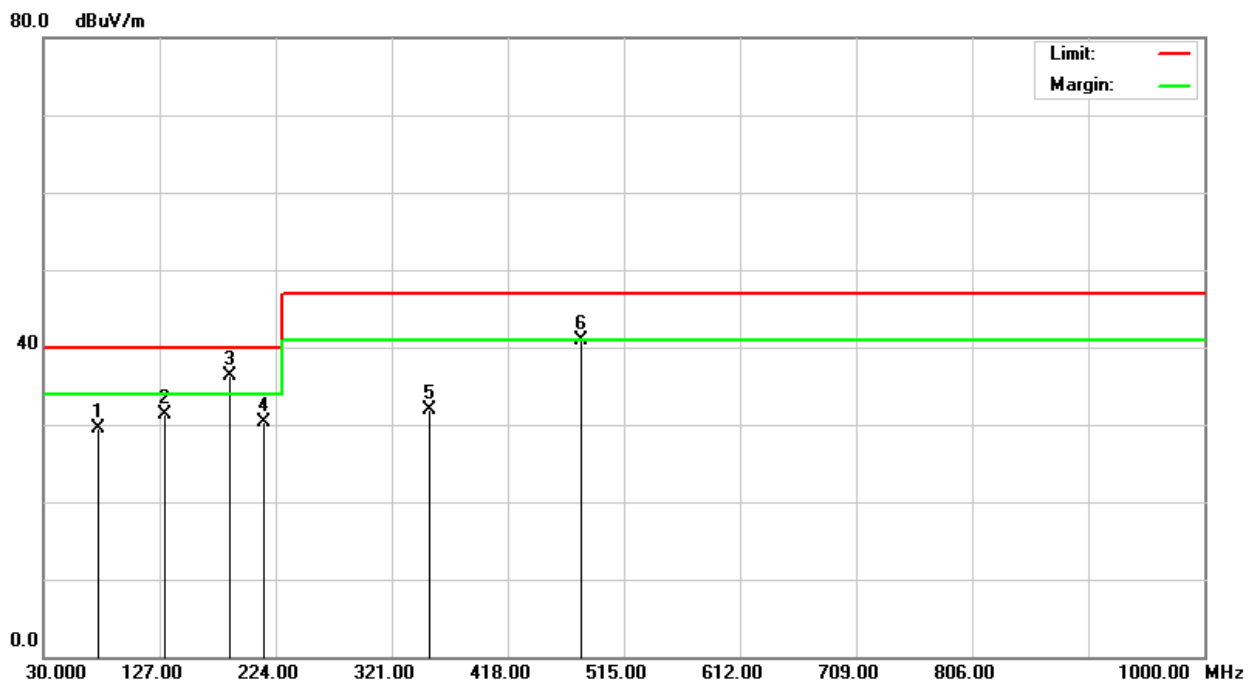
Model No.	PM2071B51	Test Mode	Mode 1
Environmental Conditions	22.3°C, 68% RH	6dB Bandwidth	120 kHz
Antenna Pole	Horizontal	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Kevin Cheng
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT		



Radiated Emission Readings									
Frequency Range Investigated					30 MHz to 1000 MHz at 10m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
167.4600	38.40	-10.29	28.11	40.00	-11.89	400	111	Q	H
210.0020	39.00	-10.39	28.61	40.00	-11.39	400	57	Q	H
240.0020	38.50	-8.38	30.12	47.00	-16.88	400	292	Q	H
345.6400	35.00	-4.84	30.16	47.00	-16.84	400	345	Q	H
480.0020	38.30	-1.19	37.11	47.00	-9.89	100	61	Q	H
750.0020	34.50	2.23	36.73	47.00	-10.27	100	206	Q	H

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.
2. P= Peak Reading; Q= Quasi-peak Reading.

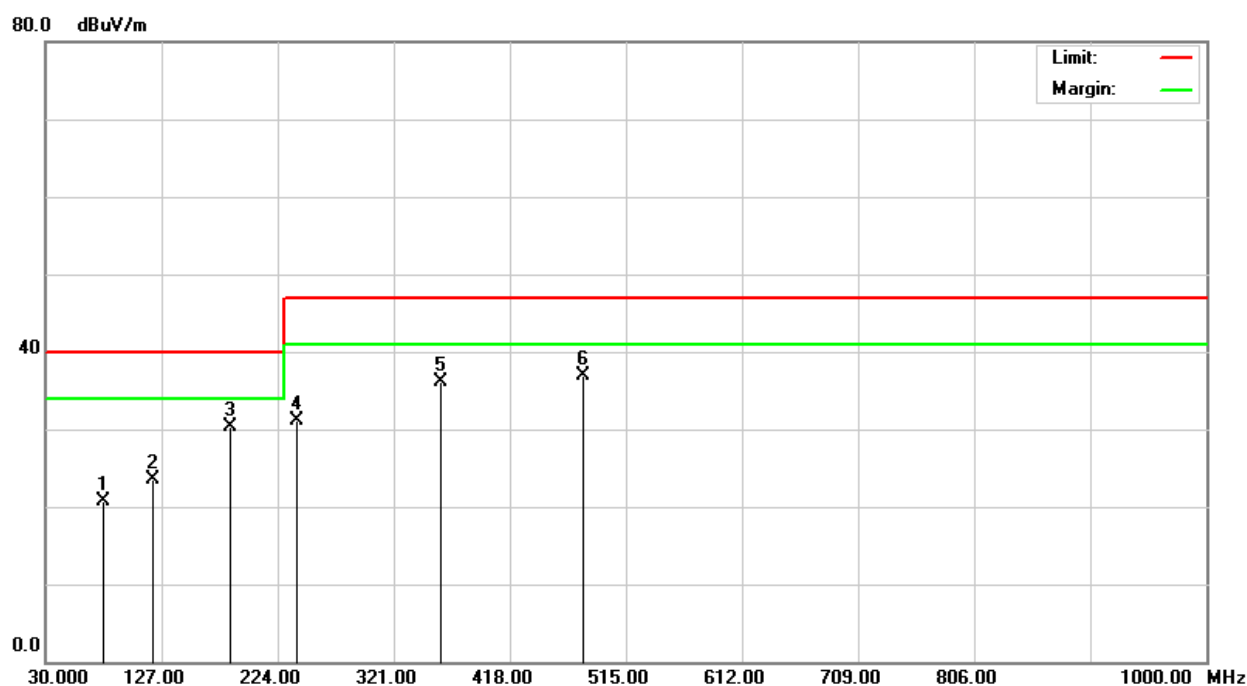
Model No.	PM2071C51	Test Mode	Mode 2 / Worst
Environmental Conditions	22.3°C, 68% RH	6dB Bandwidth	120 kHz
Antenna Pole	Vertical	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Kevin Cheng
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT		



Radiated Emission Readings									
Frequency Range Investigated					30 MHz to 1000 MHz at 10m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
75.3399	43.50	-14.07	29.43	40.00	-10.57	100	272	Q	V
131.2800	39.50	-8.15	31.35	40.00	-8.65	100	193	Q	V
185.9600	47.30	-10.97	36.33	40.00	-3.67	100	55	Q	V
213.9600	41.00	-10.61	30.39	40.00	-9.61	100	264	Q	V
352.2600	36.50	-4.63	31.87	47.00	-15.13	100	338	Q	V
480.0020	42.00	-1.19	40.81	47.00	-6.19	400	81	Q	V

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.
2. P= Peak Reading; Q= Quasi-peak Reading.

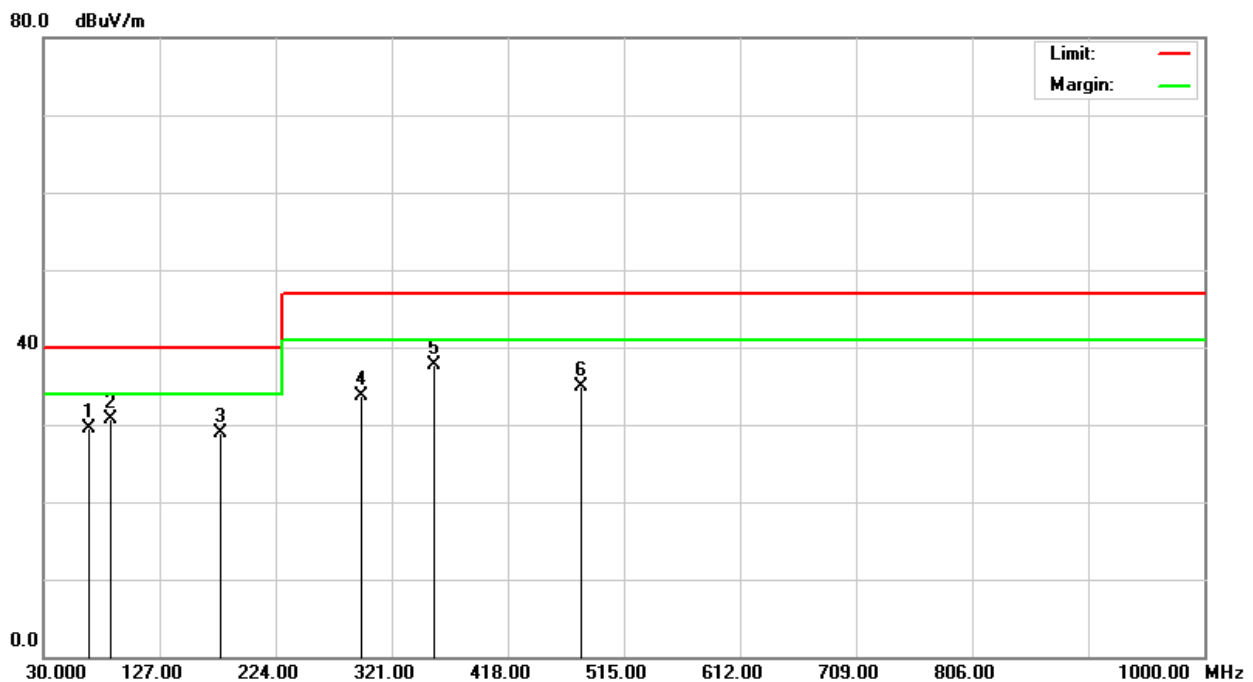
Model No.	PM2071C51	Test Mode	Mode 2 / Worst
Environmental Conditions	22.3°C, 68% RH	6dB Bandwidth	120 kHz
Antenna Pole	Horizontal	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Kevin Cheng
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT		



Radiated Emission Readings									
Frequency Range Investigated					30 MHz to 1000 MHz at 10m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
77.8600	34.60	-13.98	20.62	40.00	-19.38	400	349	Q	H
120.0020	31.50	-7.91	23.59	40.00	-16.41	400	77	Q	H
184.9800	41.10	-10.87	30.23	40.00	-9.77	400	225	Q	H
240.0040	39.40	-8.38	31.02	47.00	-15.98	400	164	Q	H
360.0020	40.30	-4.20	36.10	47.00	-10.90	400	273	Q	H
480.0000	38.10	-1.19	36.91	47.00	-10.09	100	190	Q	H

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.
2. P= Peak Reading; Q= Quasi-peak Reading.

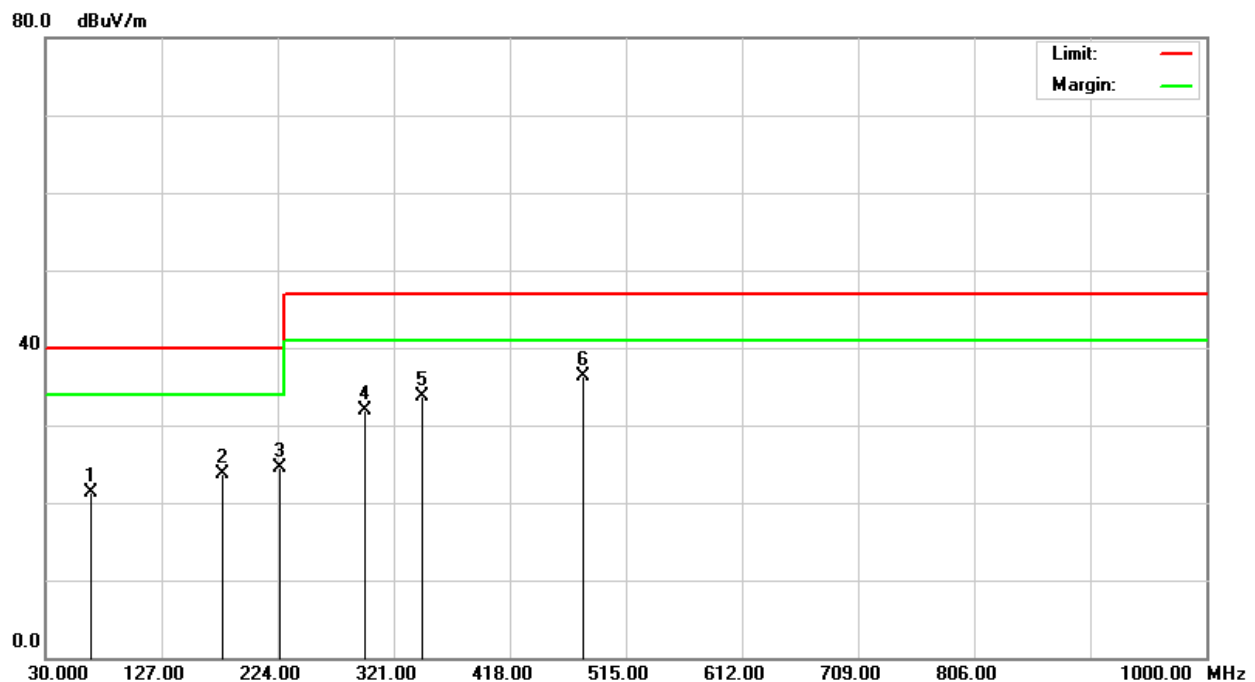
Model No.	PM2070C51	Test Mode	Mode 3
Environmental Conditions	22.3°C, 68% RH	6dB Bandwidth	120 kHz
Antenna Pole	Vertical	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Kevin Cheng
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT		



Radiated Emission Readings									
Frequency Range Investigated					30 MHz to 1000 MHz at 10m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
68.6400	43.70	-14.13	29.57	40.00	-10.43	100	317	Q	V
85.9200	43.40	-12.74	30.66	40.00	-9.34	100	48	Q	V
177.9200	39.70	-10.71	28.99	40.00	-11.01	100	266	Q	V
295.5200	39.80	-6.06	33.74	47.00	-13.26	100	193	Q	V
357.0040	42.10	-4.39	37.71	47.00	-9.29	100	275	Q	V
480.0000	36.00	-1.19	34.81	47.00	-12.19	400	150	Q	V

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.
2. P= Peak Reading; Q= Quasi-peak Reading.

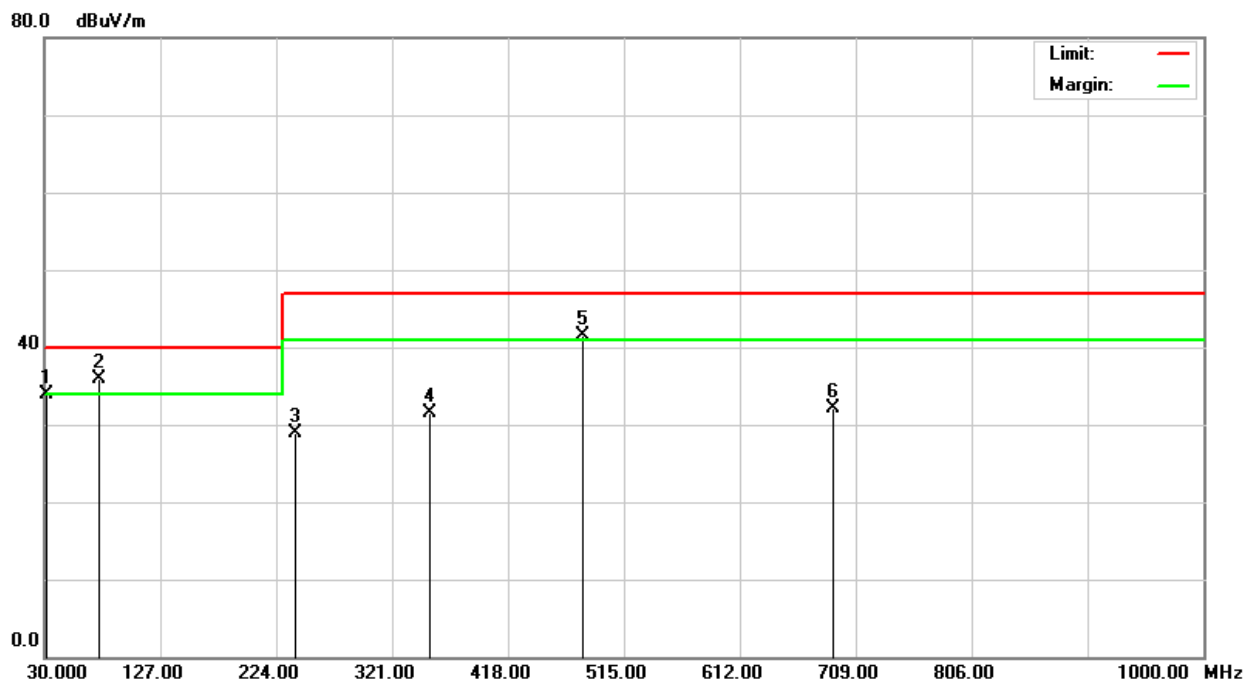
Model No.	PM2070C51	Test Mode	Mode 3
Environmental Conditions	22.3°C, 68% RH	6dB Bandwidth	120 kHz
Antenna Pole	Horizontal	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Kevin Cheng
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT		



Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
68.5800	35.50	-14.11	21.39	40.00	-18.61	400	271	Q	H
177.6600	34.40	-10.66	23.74	40.00	-16.26	400	155	Q	H
226.2800	34.30	-9.82	24.48	40.00	-15.52	400	239	Q	H
297.0200	38.00	-6.02	31.98	47.00	-15.02	400	340	Q	H
344.7400	38.50	-4.86	33.64	47.00	-13.36	400	56	Q	H
480.0020	37.40	-1.19	36.21	47.00	-10.79	100	122	Q	H

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.
2. P= Peak Reading; Q= Quasi-peak Reading

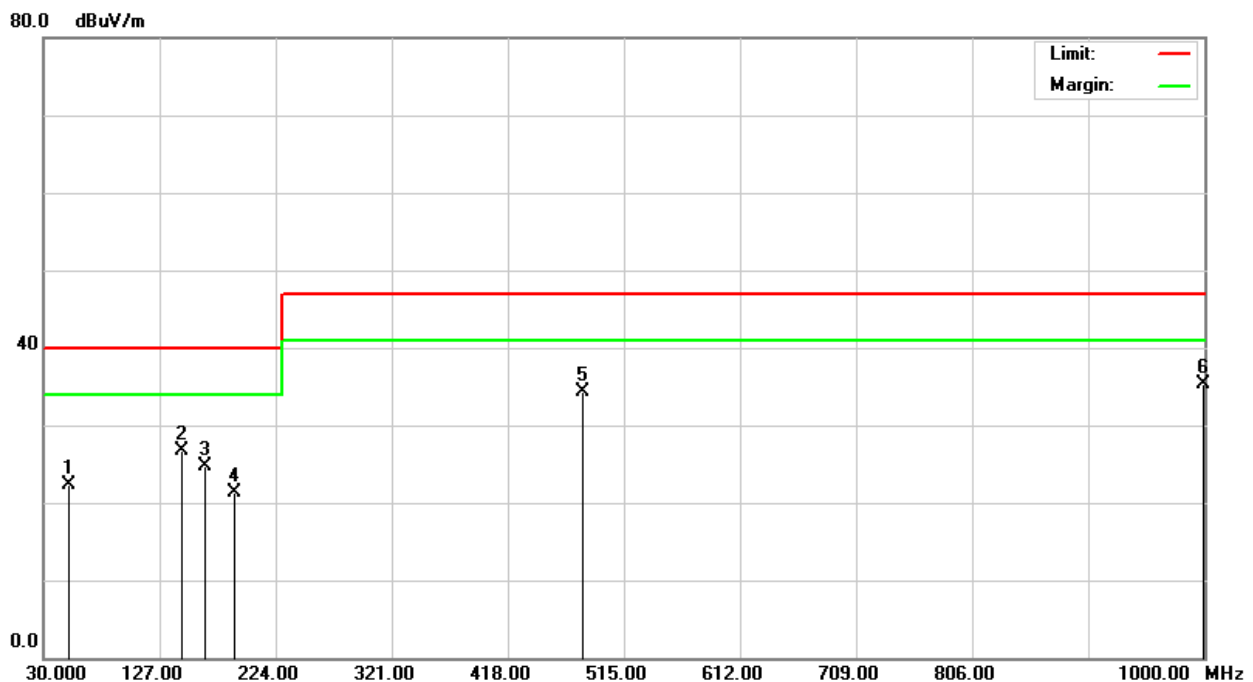
Model No.	PM2070B51	Test Mode	Mode 4
Environmental Conditions	31.7°C, 64% RH	6dB Bandwidth	120 kHz
Antenna Pole	Vertical	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Ian Su
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT		



Radiated Emission Readings									
Frequency Range Investigated					30 MHz to 1000 MHz at 10m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
32.4400	37.10	-3.22	33.88	40.00	-6.12	100	124	Q	V
75.4100	49.60	-13.72	35.88	40.00	-4.12	100	56	Q	V
239.6800	37.20	-8.22	28.98	47.00	-18.02	100	98	Q	V
352.1400	36.20	-4.63	31.57	47.00	-15.43	100	134	Q	V
480.1600	42.50	-1.09	41.41	47.00	-5.59	400	44	Q	V
690.4699	30.30	1.72	32.02	47.00	-14.98	400	174	Q	V

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.
2. P= Peak Reading; Q= Quasi-peak Reading.

Model No.	PM2070B51	Test Mode	Mode 4
Environmental Conditions	31.7°C, 64% RH	6dB Bandwidth	120 kHz
Antenna Pole	Horizontal	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Ian Su
Standard	FCC CLASS A W/ CISPR 22 CLASS A LIMIT		



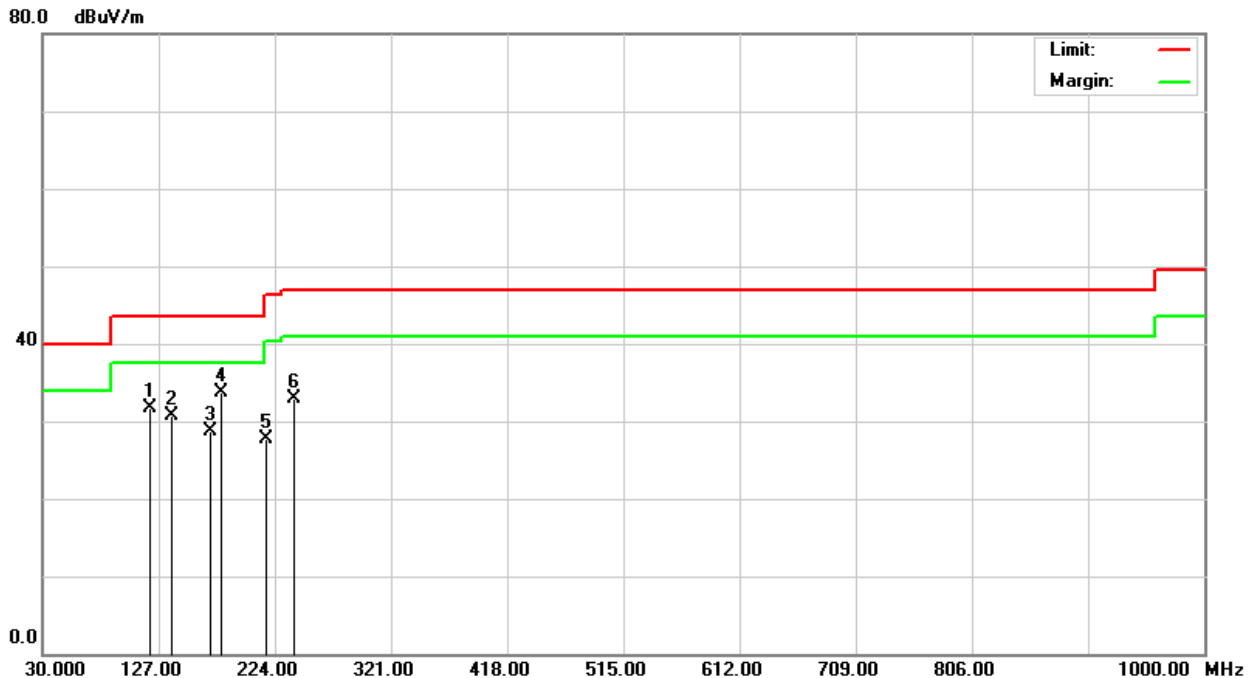
Radiated Emission Readings									
Frequency Range Investigated					30 MHz to 1000 MHz at 10m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
51.0200	34.60	-12.31	22.29	40.00	-17.71	400	152	Q	H
145.3600	35.80	-9.14	26.66	40.00	-13.34	400	68	Q	H
165.5800	34.70	-10.04	24.66	40.00	-15.34	400	134	Q	H
189.3700	32.10	-10.70	21.40	40.00	-18.60	400	56	Q	H
480.2600	35.30	-1.08	34.22	47.00	-12.78	100	98	Q	H
999.6900	30.70	4.52	35.22	47.00	-11.78	100	114	Q	H

Note: 1. 30MHz to 1000MHz test is Applicable CISPR 22 standard.
2. P= Peak Reading; Q= Quasi-peak Reading.

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Below 1GHz

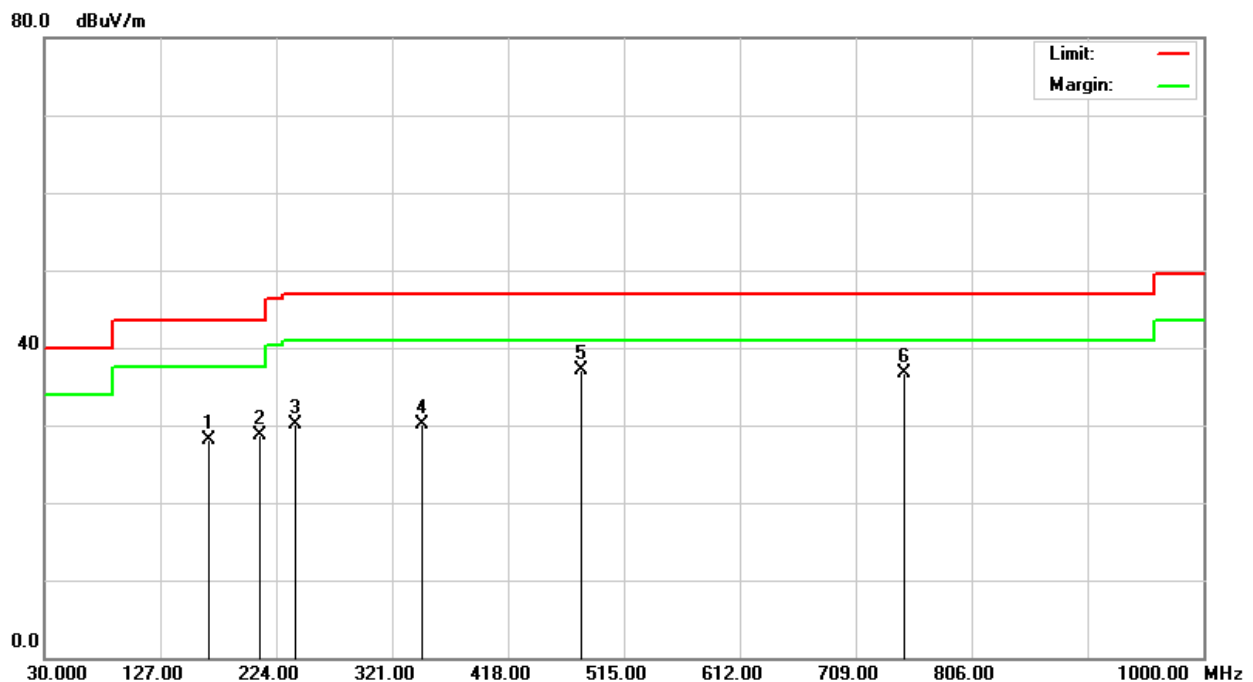
Model No.	PM2071B51	Test Mode	Mode 1
Environmental Conditions	22.3°C, 68% RH	6dB Bandwidth	120 kHz
Antenna Pole	Vertical	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Kevin Cheng
Standard	ICES-003 CLASS A		



Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
120.0020	39.70	-7.91	31.79	43.50	-11.71	100	123	Q	V
138.3200	39.40	-8.68	30.72	43.50	-12.78	100	255	Q	V
170.9400	39.00	-10.37	28.63	43.50	-14.87	100	84	Q	V
180.0020	44.40	-10.72	33.68	43.50	-9.82	100	305	Q	V
216.5000	38.20	-10.57	27.63	46.40	-18.77	100	149	Q	V
240.0040	41.20	-8.38	32.82	47.00	-14.18	100	282	Q	V

Note: P= Peak Reading; Q= Quasi-peak Reading.

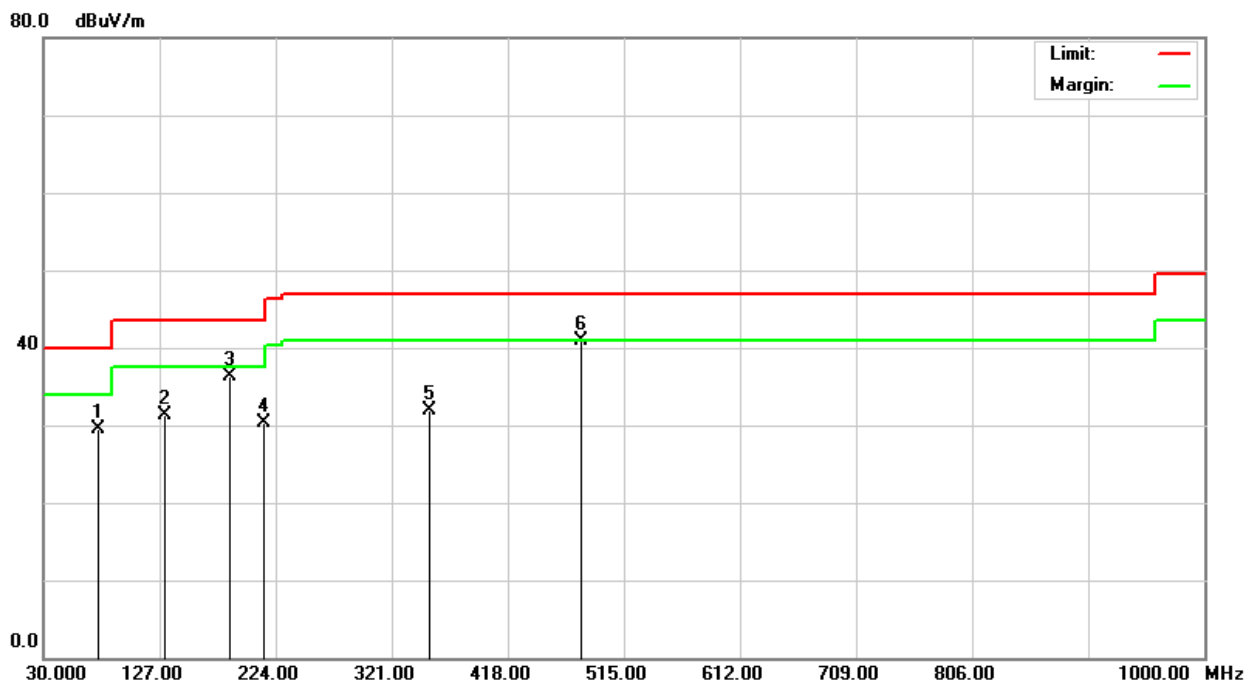
Model No.	PM2071B51	Test Mode	Mode 1
Environmental Conditions	22.3°C, 68% RH	6dB Bandwidth	120 kHz
Antenna Pole	Horizontal	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Kevin Cheng
Standard	ICES-003 CLASS A		



Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
167.4600	38.40	-10.29	28.11	43.50	-15.39	400	111	Q	H
210.0020	39.00	-10.39	28.61	43.50	-14.89	400	57	Q	H
240.0020	38.50	-8.38	30.12	47.00	-16.88	400	292	Q	H
345.6400	35.00	-4.84	30.16	47.00	-16.84	400	345	Q	H
480.0020	38.30	-1.19	37.11	47.00	-9.89	100	61	Q	H
750.0020	34.50	2.23	36.73	47.00	-10.27	100	206	Q	H

Note: P= Peak Reading; Q= Quasi-peak Reading.

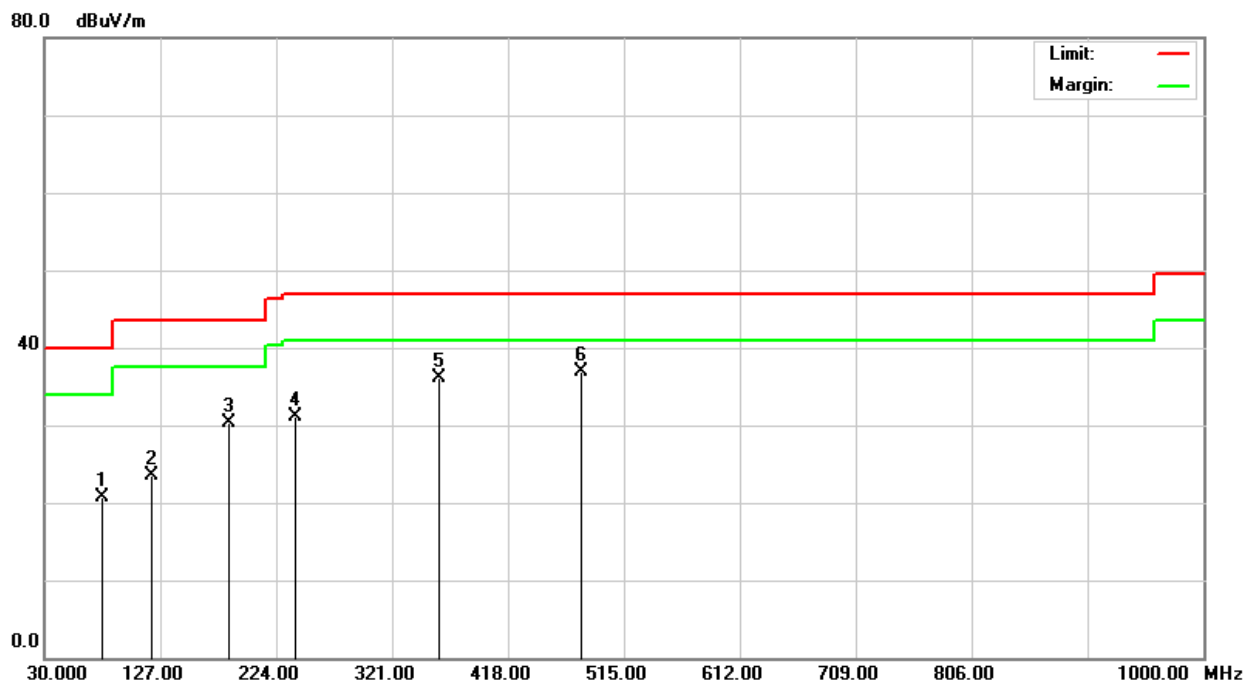
Model No.	PM2071C51	Test Mode	Mode 2 / Worst
Environmental Conditions	22.3°C, 68% RH	6dB Bandwidth	120 kHz
Antenna Pole	Vertical	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Kevin Cheng
Standard	ICES-003 CLASS A		



Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
75.3399	43.50	-14.07	29.43	40.00	-10.57	100	272	Q	V
131.2800	39.50	-8.15	31.35	43.50	-12.15	100	193	Q	V
185.9600	47.30	-10.97	36.33	43.50	-7.17	100	55	Q	V
213.9600	41.00	-10.61	30.39	43.50	-13.11	100	264	Q	V
352.2600	36.50	-4.63	31.87	47.00	-15.13	100	338	Q	V
480.0020	42.00	-1.19	40.81	47.00	-6.19	400	81	Q	V

Note: P= Peak Reading; Q= Quasi-peak Reading.

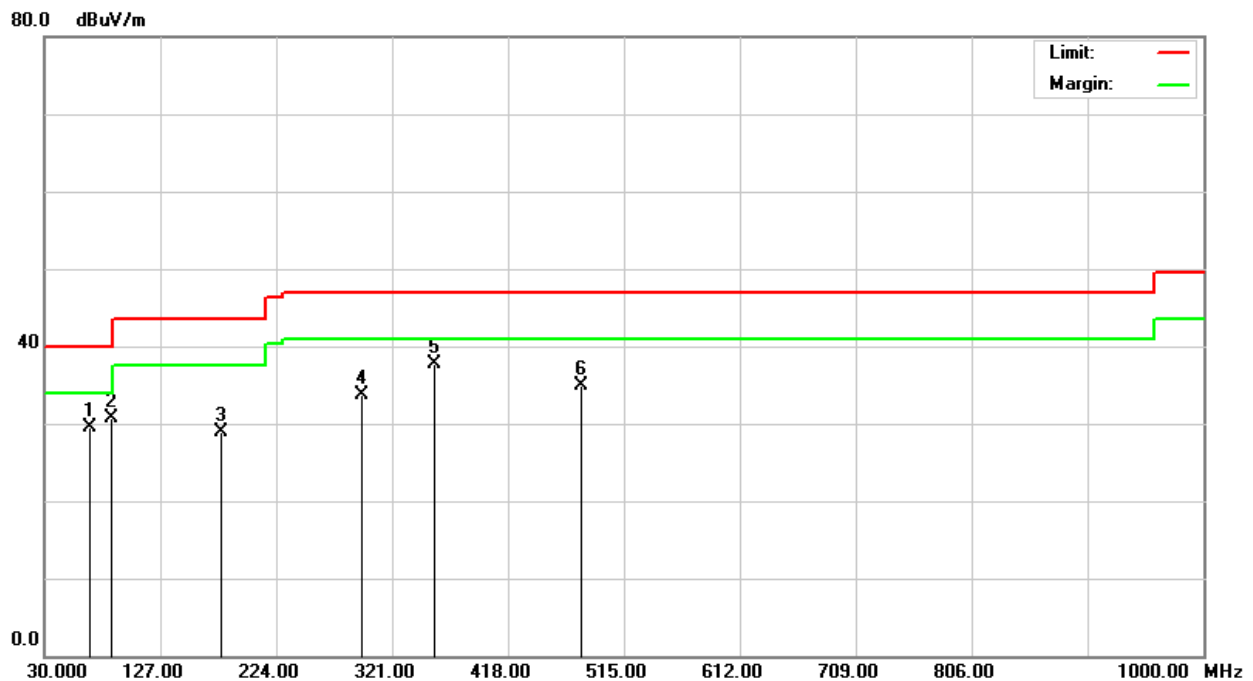
Model No.	PM2071C51	Test Mode	Mode 2 / Worst
Environmental Conditions	22.3°C, 68% RH	6dB Bandwidth	120 kHz
Antenna Pole	Horizontal	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Kevin Cheng
Standard	ICES-003 CLASS A		



Radiated Emission Readings									
Frequency Range Investigated					30 MHz to 1000 MHz at 10m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
77.8600	34.60	-13.98	20.62	40.00	-19.38	400	349	Q	H
120.0020	31.50	-7.91	23.59	43.50	-19.91	400	77	Q	H
184.9800	41.10	-10.87	30.23	43.50	-13.27	400	225	Q	H
240.0040	39.40	-8.38	31.02	47.00	-15.98	400	164	Q	H
360.0020	40.30	-4.20	36.10	47.00	-10.90	400	273	Q	H
480.0000	38.10	-1.19	36.91	47.00	-10.09	100	190	Q	H

Note: P= Peak Reading; Q= Quasi-peak Reading.

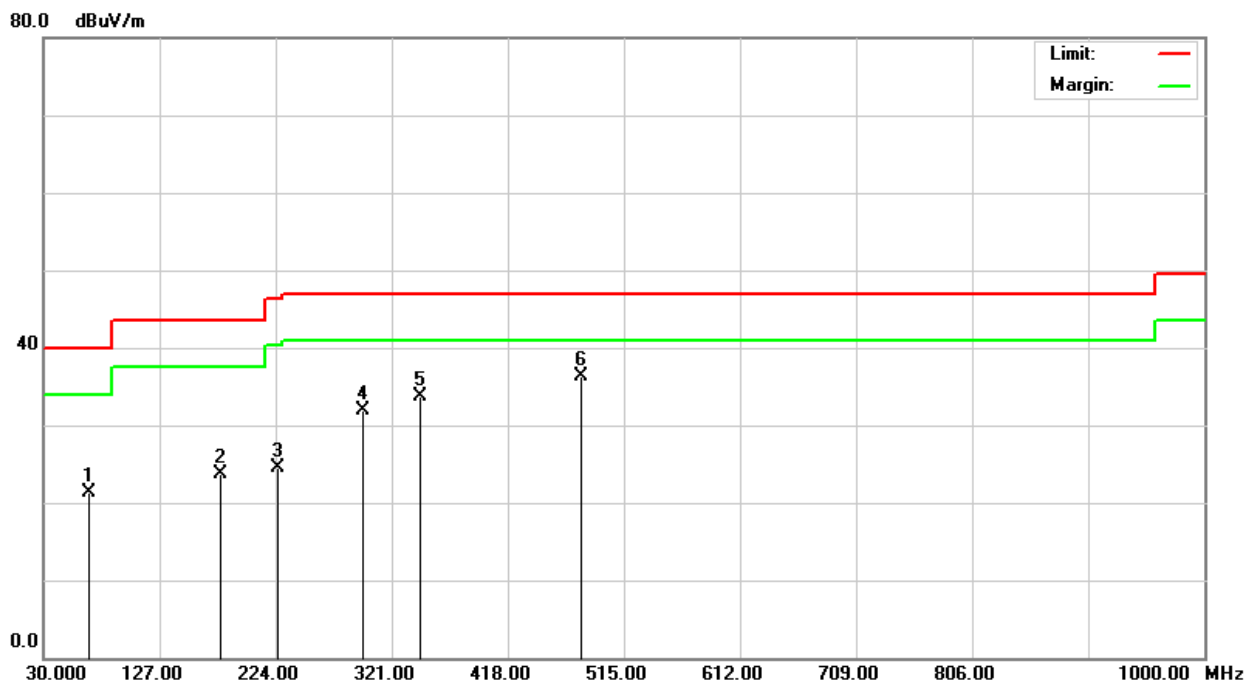
Model No.	PM2070C51	Test Mode	Mode 3
Environmental Conditions	22.3°C, 68% RH	6dB Bandwidth	120 kHz
Antenna Pole	Vertical	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Kevin Cheng
Standard	ICES-003 CLASS A		



Radiated Emission Readings									
Frequency Range Investigated					30 MHz to 1000 MHz at 10m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
68.6400	43.70	-14.13	29.57	40.00	-10.43	100	317	Q	V
85.9200	43.40	-12.74	30.66	40.00	-9.34	100	48	Q	V
177.9200	39.70	-10.71	28.99	43.50	-14.51	100	266	Q	V
295.5200	39.80	-6.06	33.74	47.00	-13.26	100	193	Q	V
357.0040	42.10	-4.39	37.71	47.00	-9.29	100	275	Q	V
480.0000	36.00	-1.19	34.81	47.00	-12.19	400	150	Q	V

Note: P= Peak Reading; Q= Quasi-peak Reading.

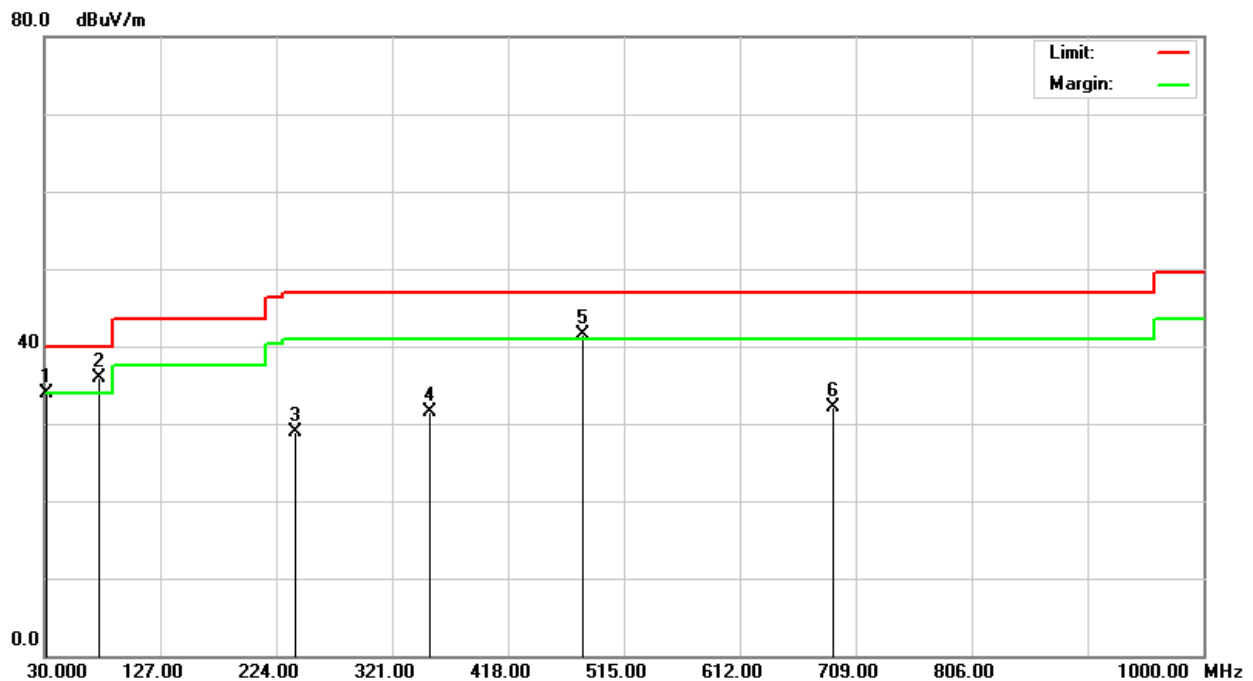
Model No.	PM2070C51	Test Mode	Mode 3
Environmental Conditions	22.3°C, 68% RH	6dB Bandwidth	120 kHz
Antenna Pole	Horizontal	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Kevin Cheng
Standard	ICES-003 CLASS A		



Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
68.5800	35.50	-14.11	21.39	40.00	-18.61	400	271	Q	H
177.6600	34.40	-10.66	23.74	43.50	-19.76	400	155	Q	H
226.2800	34.30	-9.82	24.48	46.40	-21.92	400	239	Q	H
297.0200	38.00	-6.02	31.98	47.00	-15.02	400	340	Q	H
344.7400	38.50	-4.86	33.64	47.00	-13.36	400	56	Q	H
480.0020	37.40	-1.19	36.21	47.00	-10.79	100	122	Q	H

Note: P= Peak Reading; Q= Quasi-peak Reading.

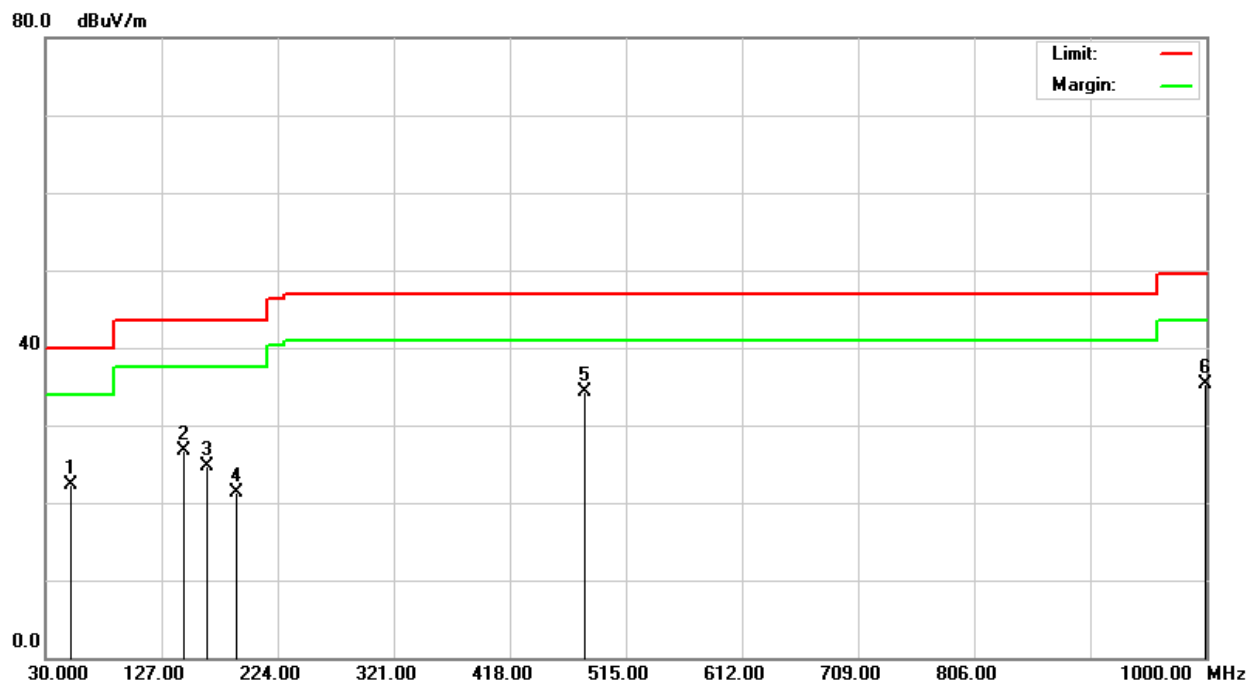
Model No.	PM2070B51	Test Mode	Mode 4
Environmental Conditions	31.7°C, 64% RH	6dB Bandwidth	120 kHz
Antenna Pole	Vertical	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Ian Su
Standard	ICES-003 CLASS A		



Radiated Emission Readings									
Frequency Range Investigated					30 MHz to 1000 MHz at 10m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
32.4400	37.10	-3.22	33.88	40.00	-6.12	100	124	Q	V
75.4100	49.60	-13.72	35.88	40.00	-4.12	100	56	Q	V
239.6800	37.20	-8.22	28.98	47.00	-18.02	100	98	Q	V
352.1400	36.20	-4.63	31.57	47.00	-15.43	100	134	Q	V
480.1600	42.50	-1.09	41.41	47.00	-5.59	400	44	Q	V
690.4699	30.30	1.72	32.02	47.00	-14.98	400	174	Q	V

Note: P= Peak Reading; Q= Quasi-peak Reading.

Model No.	PM2070B51	Test Mode	Mode 4
Environmental Conditions	31.7°C, 64% RH	6dB Bandwidth	120 kHz
Antenna Pole	Horizontal	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Ian Su
Standard	ICES-003 CLASS A		

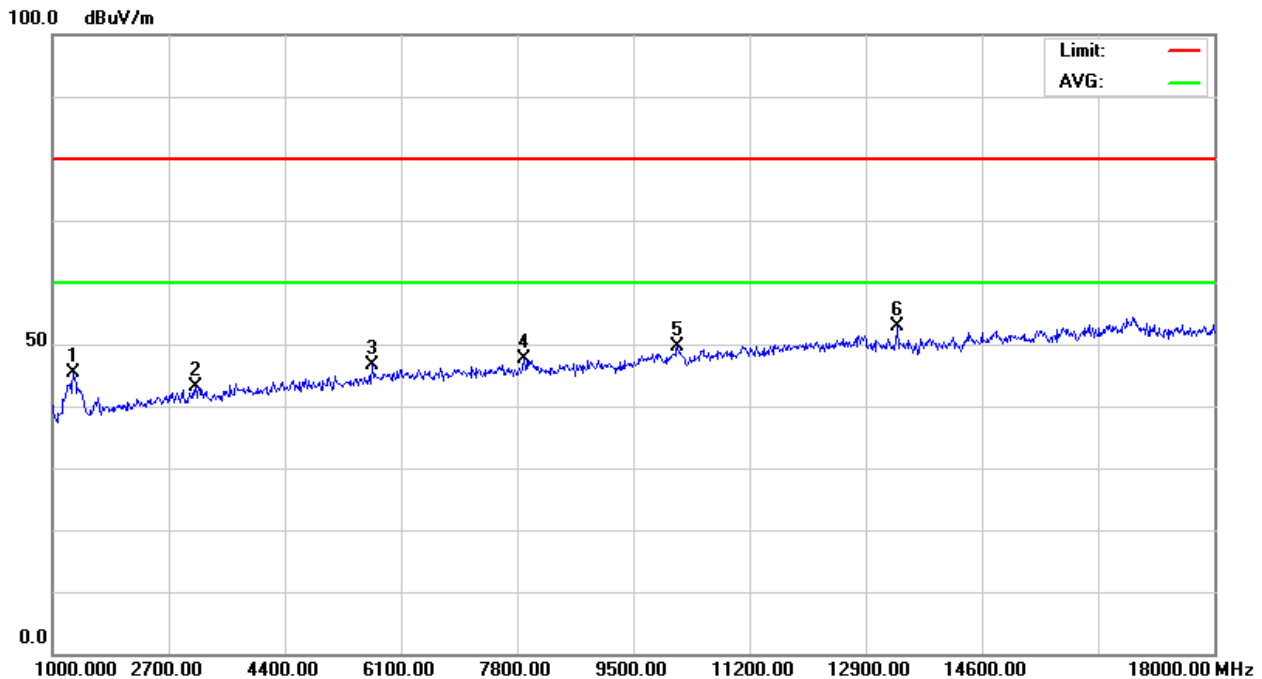


Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
51.0200	34.60	-12.31	22.29	40.00	-17.71	400	152	Q	H
145.3600	35.80	-9.14	26.66	43.50	-16.84	400	68	Q	H
165.5800	34.70	-10.04	24.66	43.50	-18.84	400	134	Q	H
189.3700	32.10	-10.70	21.40	43.50	-22.10	400	56	Q	H
480.2600	35.30	-1.08	34.22	47.00	-12.78	100	98	Q	H
999.6900	30.70	4.52	35.22	49.50	-14.28	100	114	Q	H

Note: P= Peak Reading; Q= Quasi-peak Reading.

Above 1GHz

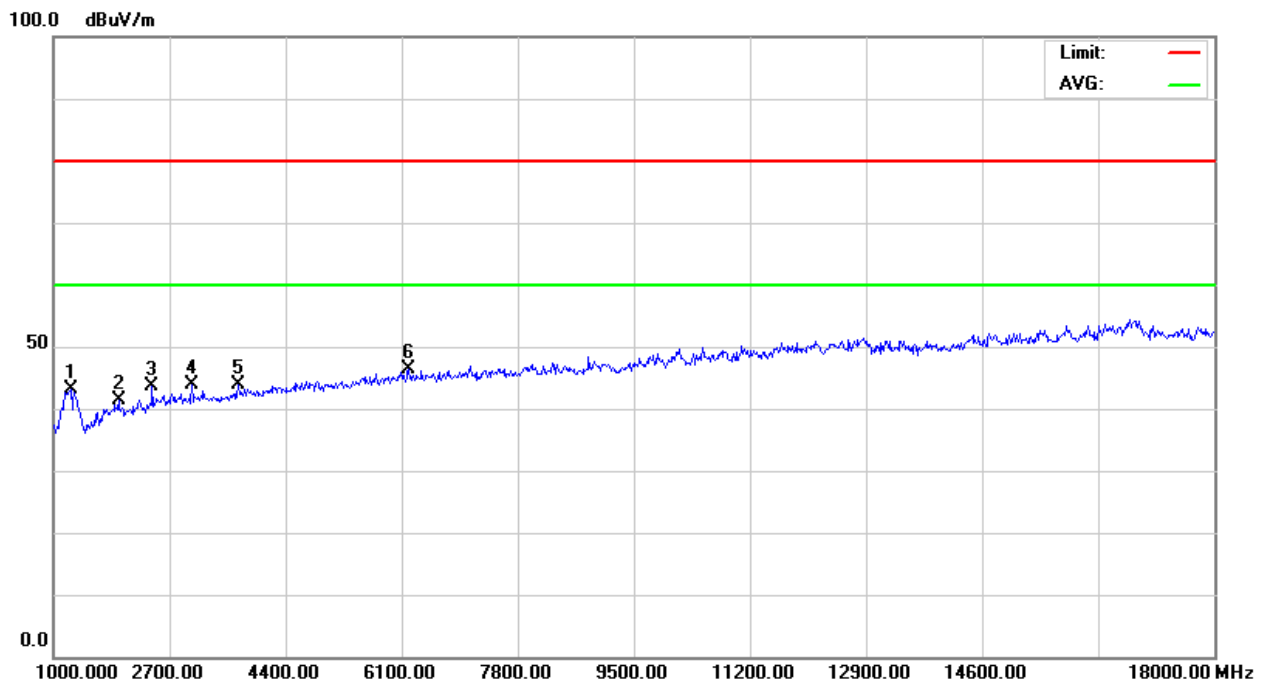
Model No.	PM2071B51	Test Mode	Mode 1 / Worst
Environmental Conditions	21.6°C, 72% RH	6dB Bandwidth	1 MHz
Antenna Pole	Vertical	Antenna Distance	3m
Highest frequency generated or used	360MHz	Upper frequency	18000MHz
Detector Function	Peak and average.	Tested by	Pipo Hou
Standard	FCC CLASS A / ICES-003 CLASS A		



Radiated Emission Readings							
Frequency Range Investigated				Above 1GHz at 3m			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1306.000	53.00	-7.60	45.40	80.00	-34.60	P	V
3091.000	46.50	-3.36	43.14	80.00	-36.86	P	V
5675.000	46.65	-0.10	46.55	80.00	-33.45	P	V
7902.000	46.43	1.10	47.53	80.00	-32.47	P	V
10146.000	46.33	3.35	49.68	80.00	-30.32	P	V
13359.000	47.54	5.28	52.82	80.00	-27.18	P	V

Note: P= Peak Reading; A= Average Reading.

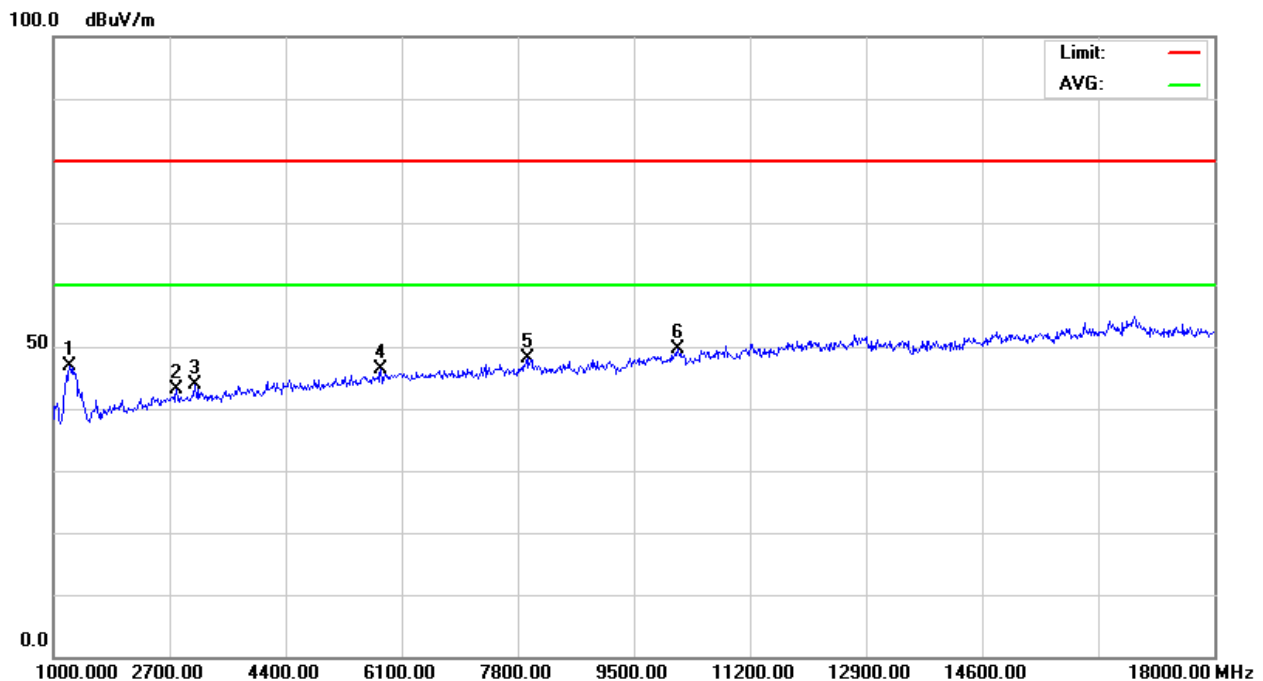
Model No.	PM2071B51	Test Mode	Mode 1 / Worst
Environmental Conditions	21.6°C, 72% RH	6dB Bandwidth	1 MHz
Antenna Pole	Horizontal	Antenna Distance	3m
Highest frequency generated or used	360MHz	Upper frequency	18000MHz
Detector Function	Peak and average.	Tested by	Pipo Hou
Standard	FCC CLASS A / ICES-003 CLASS A		



Radiated Emission Readings							
Frequency Range Investigated				Above 1GHz at 3m			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1255.000	50.84	-7.68	43.16	80.00	-36.84	P	H
1952.000	46.07	-4.69	41.38	80.00	-38.62	P	H
2445.000	47.63	-4.05	43.58	80.00	-36.42	P	H
3023.000	47.59	-3.71	43.88	80.00	-36.12	P	H
3703.000	46.93	-3.13	43.80	80.00	-36.20	P	H
6202.000	45.55	0.85	46.40	80.00	-33.60	P	H

Note: P= Peak Reading; A= Average Reading.

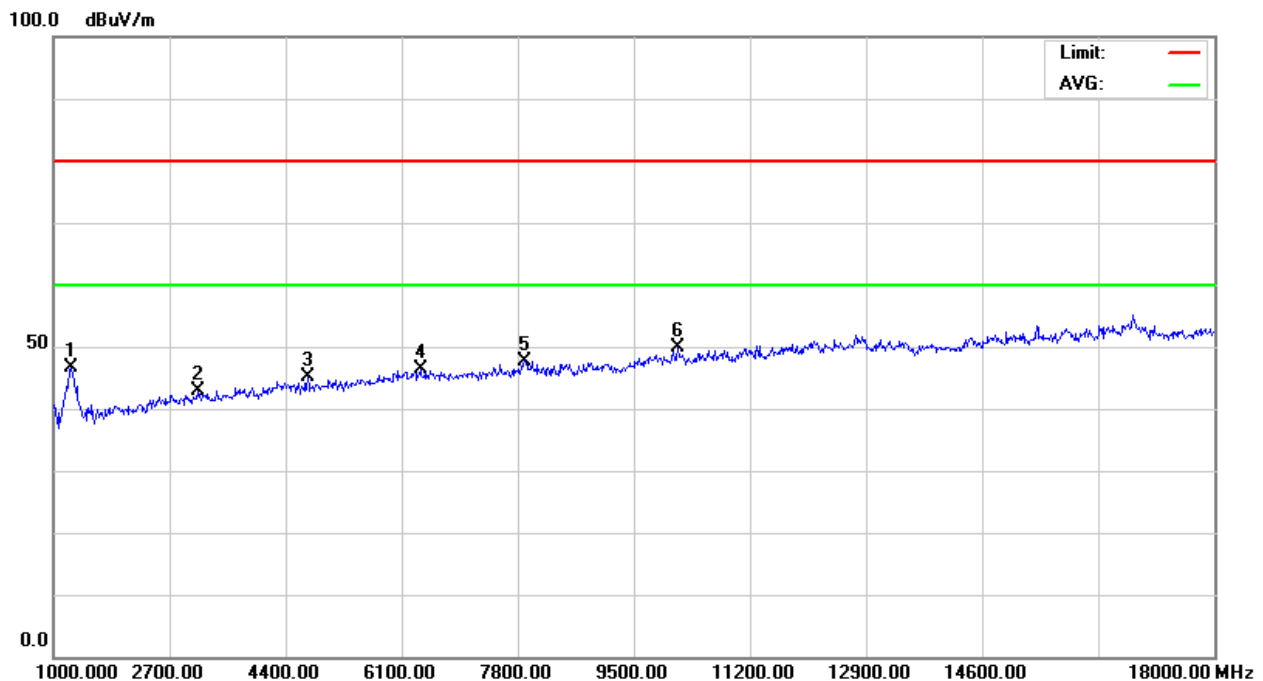
Model No.	PM2071C51	Test Mode	Mode 2
Environmental Conditions	21.6°C, 72% RH	6dB Bandwidth	1 MHz
Antenna Pole	Vertical	Antenna Distance	3m
Highest frequency generated or used	360MHz	Upper frequency	18000MHz
Detector Function	Peak and average.	Tested by	Pipo Hou
Standard	FCC CLASS A / ICES-003 CLASS A		



Radiated Emission Readings							
Frequency Range Investigated				Above 1GHz at 3m			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1238.000	54.66	-7.68	46.98	80.00	-33.02	P	V
2802.000	46.85	-3.75	43.10	80.00	-36.90	P	V
3074.000	47.23	-3.47	43.76	80.00	-36.24	P	V
5794.000	46.03	0.23	46.26	80.00	-33.74	P	V
7936.000	47.05	1.05	48.10	80.00	-31.90	P	V
10146.000	46.22	3.35	49.57	80.00	-30.43	P	V

Note: P= Peak Reading; A= Average Reading.

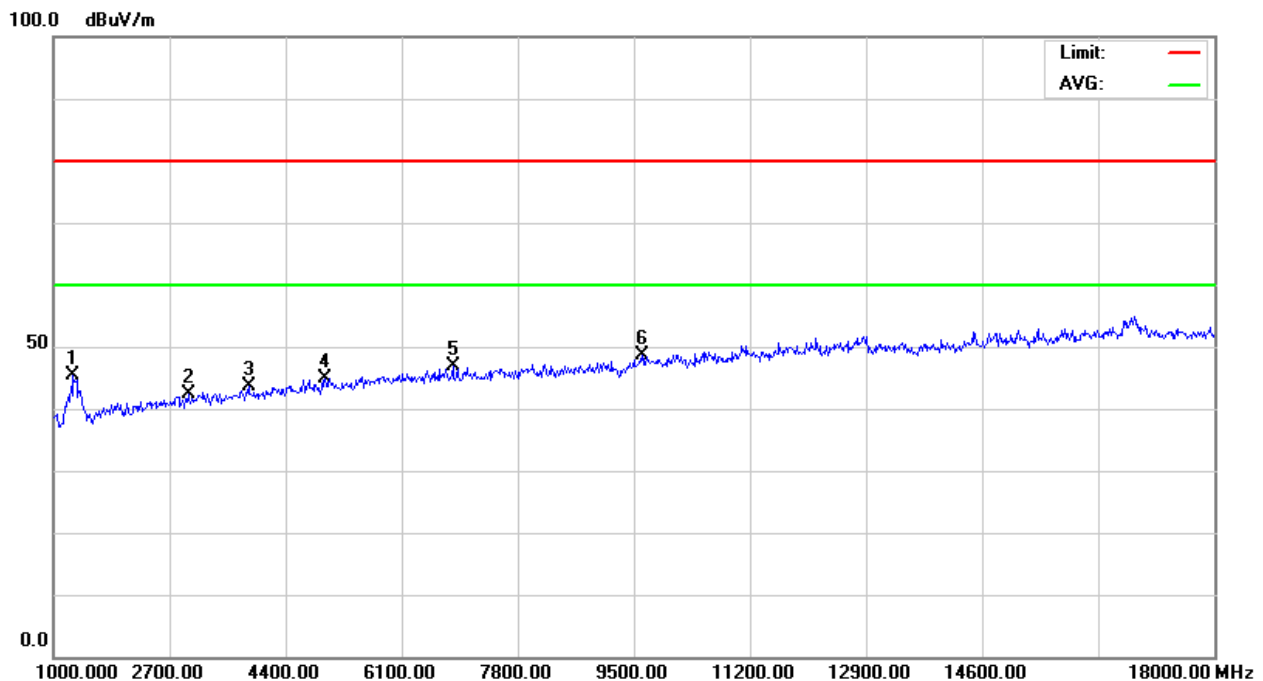
Model No.	PM2071C51	Test Mode	Mode 2
Environmental Conditions	21.6°C, 72% RH	6dB Bandwidth	1 MHz
Antenna Pole	Horizontal	Antenna Distance	3m
Highest frequency generated or used	360MHz	Upper frequency	18000MHz
Detector Function	Peak and average.	Tested by	Pipo Hou
Standard	FCC CLASS A / ICES-003 CLASS A		



Radiated Emission Readings							
Frequency Range Investigated				Above 1GHz at 3m			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1255.000	54.39	-7.68	46.71	80.00	-33.29	P	H
3108.000	46.13	-3.34	42.79	80.00	-37.21	P	H
4723.000	46.73	-1.72	45.01	80.00	-34.99	P	H
6372.000	45.32	1.06	46.38	80.00	-33.62	P	H
7902.000	46.65	1.10	47.75	80.00	-32.25	P	H
10146.000	46.49	3.35	49.84	80.00	-30.16	P	H

Note: P= Peak Reading; A= Average Reading.

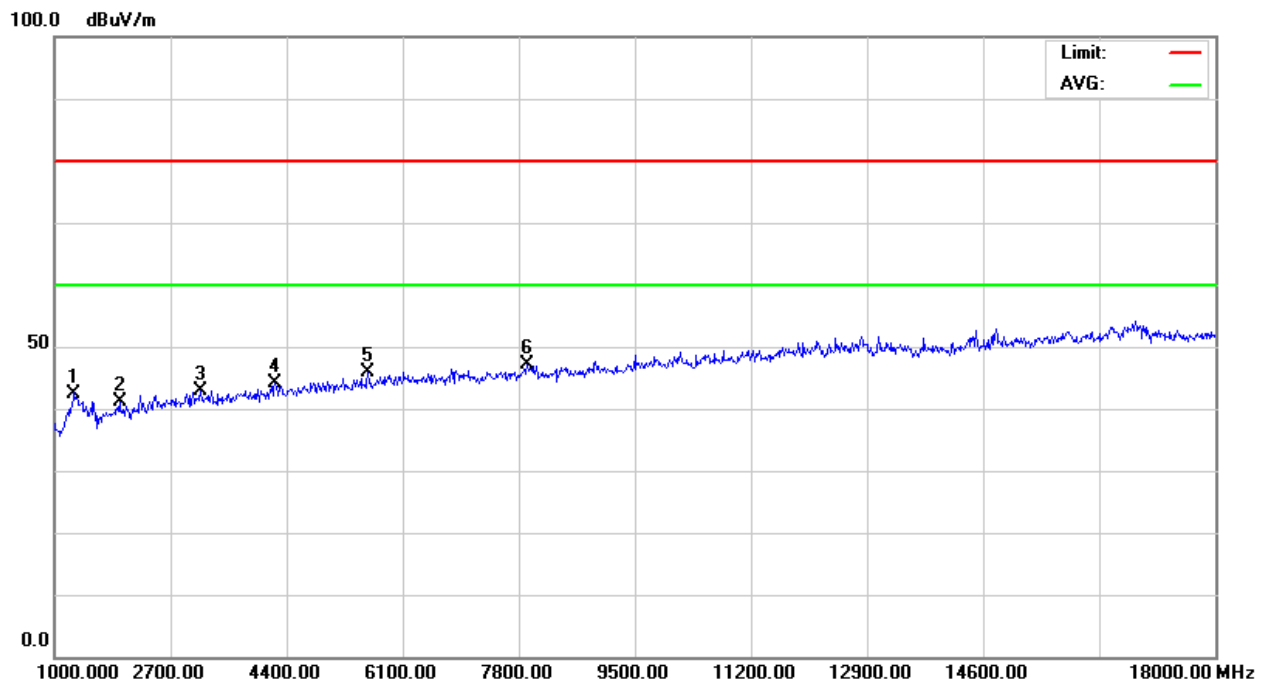
Model No.	PM2070C51	Test Mode	Mode 3
Environmental Conditions	21.6°C, 72% RH	6dB Bandwidth	1 MHz
Antenna Pole	Vertical	Antenna Distance	3m
Highest frequency generated or used	360MHz	Upper frequency	18000MHz
Detector Function	Peak and average.	Tested by	Pipo Hou
Standard	FCC CLASS A / ICES-003 CLASS A		



Radiated Emission Readings							
Frequency Range Investigated				Above 1GHz at 3m			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1289.000	53.00	-7.60	45.40	80.00	-34.60	P	V
2972.000	46.17	-3.85	42.32	80.00	-37.68	P	V
3856.000	46.76	-3.21	43.55	80.00	-36.45	P	V
4978.000	46.00	-1.18	44.82	80.00	-35.18	P	V
6848.000	45.56	1.21	46.77	80.00	-33.23	P	V
9619.000	46.35	2.34	48.69	80.00	-31.31	P	V

Note: P= Peak Reading; A= Average Reading.

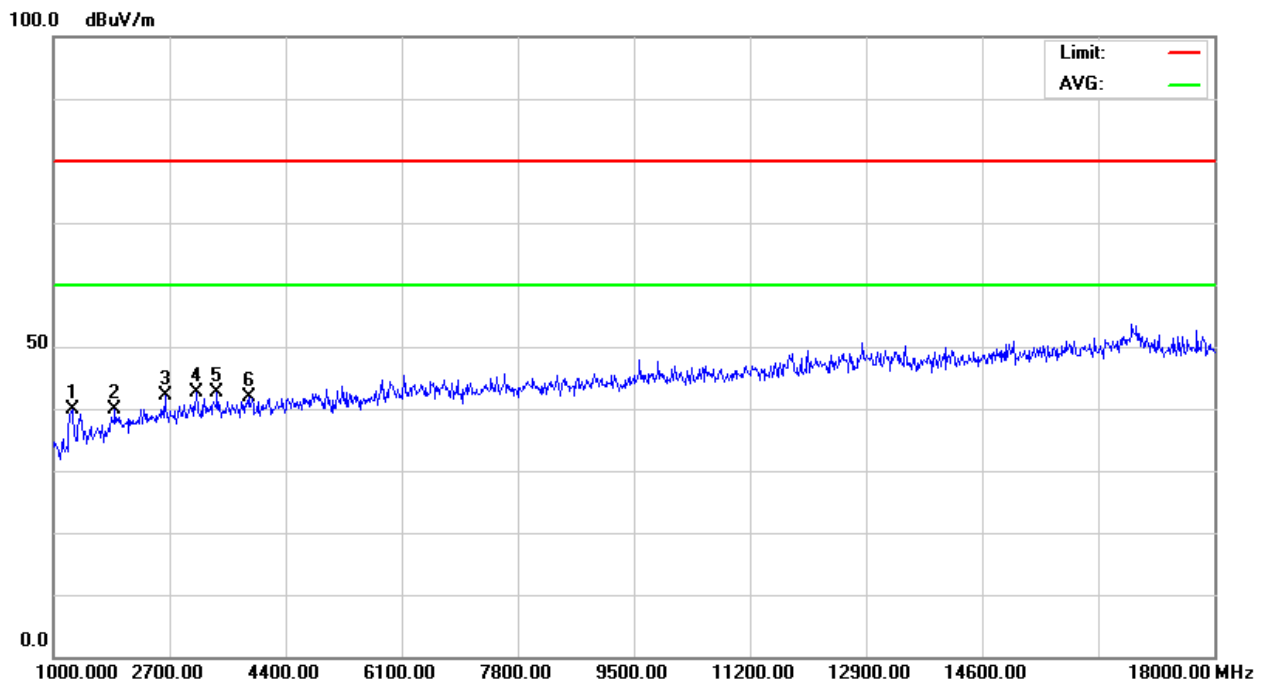
Model No.	PM2070C51	Test Mode	Mode 3
Environmental Conditions	21.6°C, 72% RH	6dB Bandwidth	1 MHz
Antenna Pole	Horizontal	Antenna Distance	3m
Highest frequency generated or used	360MHz	Upper frequency	18000MHz
Detector Function	Peak and average.	Tested by	Pipo Hou
Standard	FCC CLASS A / ICES-003 CLASS A		



Radiated Emission Readings							
Frequency Range Investigated				Above 1GHz at 3m			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1289.000	50.10	-7.60	42.50	80.00	-37.50	P	H
1952.000	45.78	-4.69	41.09	80.00	-38.91	P	H
3142.000	46.43	-3.48	42.95	80.00	-37.05	P	H
4230.000	46.59	-2.51	44.08	80.00	-35.92	P	H
5590.000	46.02	-0.14	45.88	80.00	-34.12	P	H
7919.000	46.00	1.07	47.07	80.00	-32.93	P	H

Note: P= Peak Reading; A= Average Reading.

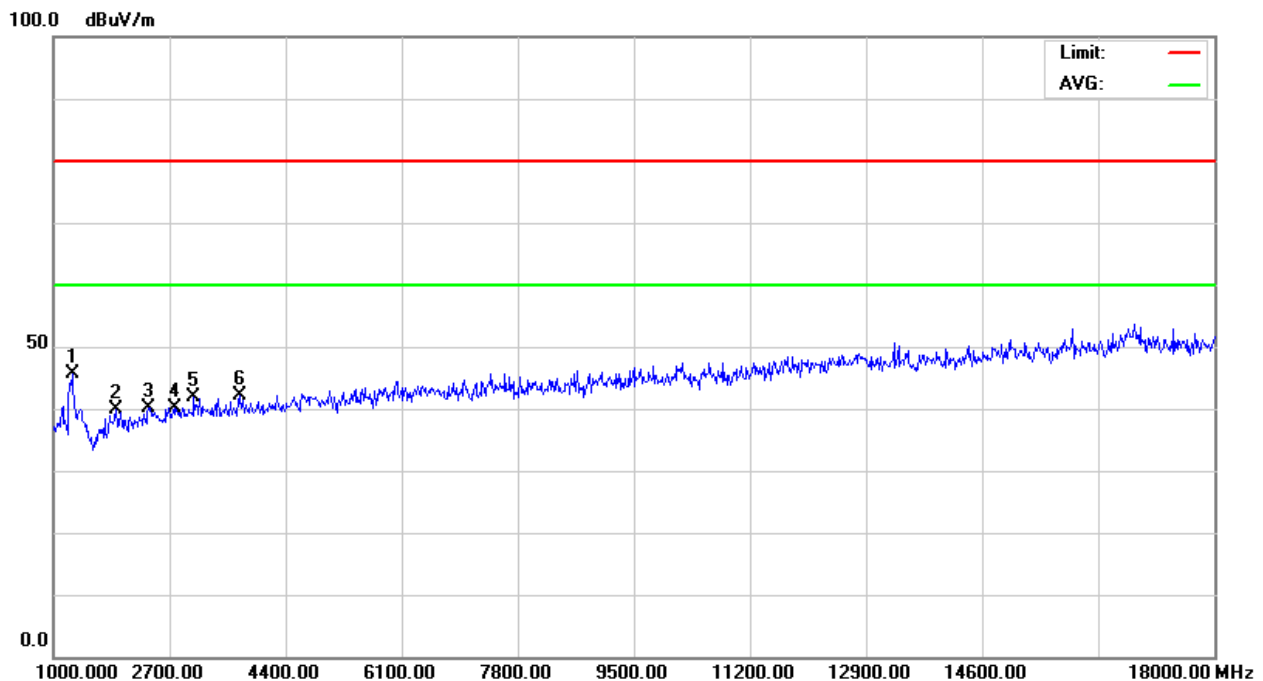
Model No.	PM2070B51	Test Mode	Mode 4
Environmental Conditions	22.9°C, 62% RH	6dB Bandwidth	1 MHz
Antenna Pole	Vertical	Antenna Distance	3m
Highest frequency generated or used	360MHz	Upper frequency	18000MHz
Detector Function	Peak and average.	Tested by	Ian Su
Standard	FCC CLASS A / ICES-003 CLASS A		



Radiated Emission Readings							
Frequency Range Investigated				Above 1GHz at 3m			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1272.000	48.25	-8.30	39.95	80.00	-40.05	P	V
1901.000	44.90	-5.10	39.80	80.00	-40.20	P	V
2632.000	46.62	-4.43	42.19	80.00	-37.81	P	V
3091.000	45.80	-3.29	42.51	80.00	-37.49	P	V
3397.000	46.43	-3.85	42.58	80.00	-37.42	P	V
3873.000	45.65	-3.70	41.95	80.00	-38.05	P	V

Note: P= Peak Reading; A= Average Reading.

Model No.	PM2070B51	Test Mode	Mode 4
Environmental Conditions	23.4°C, 61% RH	6dB Bandwidth	1 MHz
Antenna Pole	Horizontal	Antenna Distance	3m
Highest frequency generated or used	360MHz	Upper frequency	18000MHz
Detector Function	Peak and average.	Tested by	Ian Su
Standard	FCC CLASS A / ICES-003 CLASS A		



Radiated Emission Readings							
Frequency Range Investigated				Above 1GHz at 3m			
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector (P/A)	Pol. (H/V)
1272.000	53.82	-8.30	45.52	80.00	-34.48	P	H
1918.000	44.89	-5.10	39.79	80.00	-40.21	P	H
2394.000	44.86	-4.84	40.02	80.00	-39.98	P	H
2768.000	44.27	-4.18	40.09	80.00	-39.91	P	H
3057.000	46.10	-4.10	42.00	80.00	-38.00	P	H
3737.000	45.90	-3.67	42.23	80.00	-37.77	P	H

Note: P= Peak Reading; A= Average Reading.

8 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST



RADIATED EMISSION TEST (Below 1GHz)

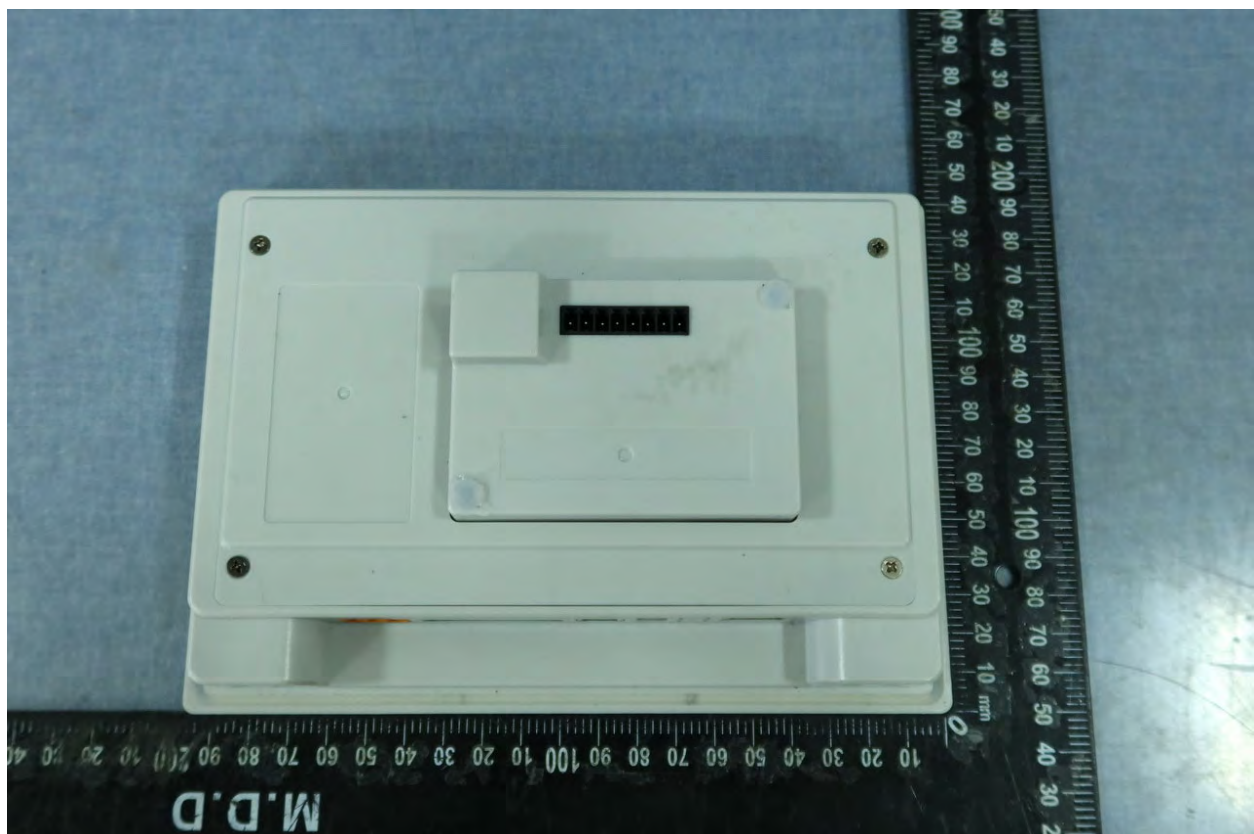


RADIATED EMISSION TEST (Above 1GHz)



APPENDIX 1 - PHOTOGRAPHS OF EUT

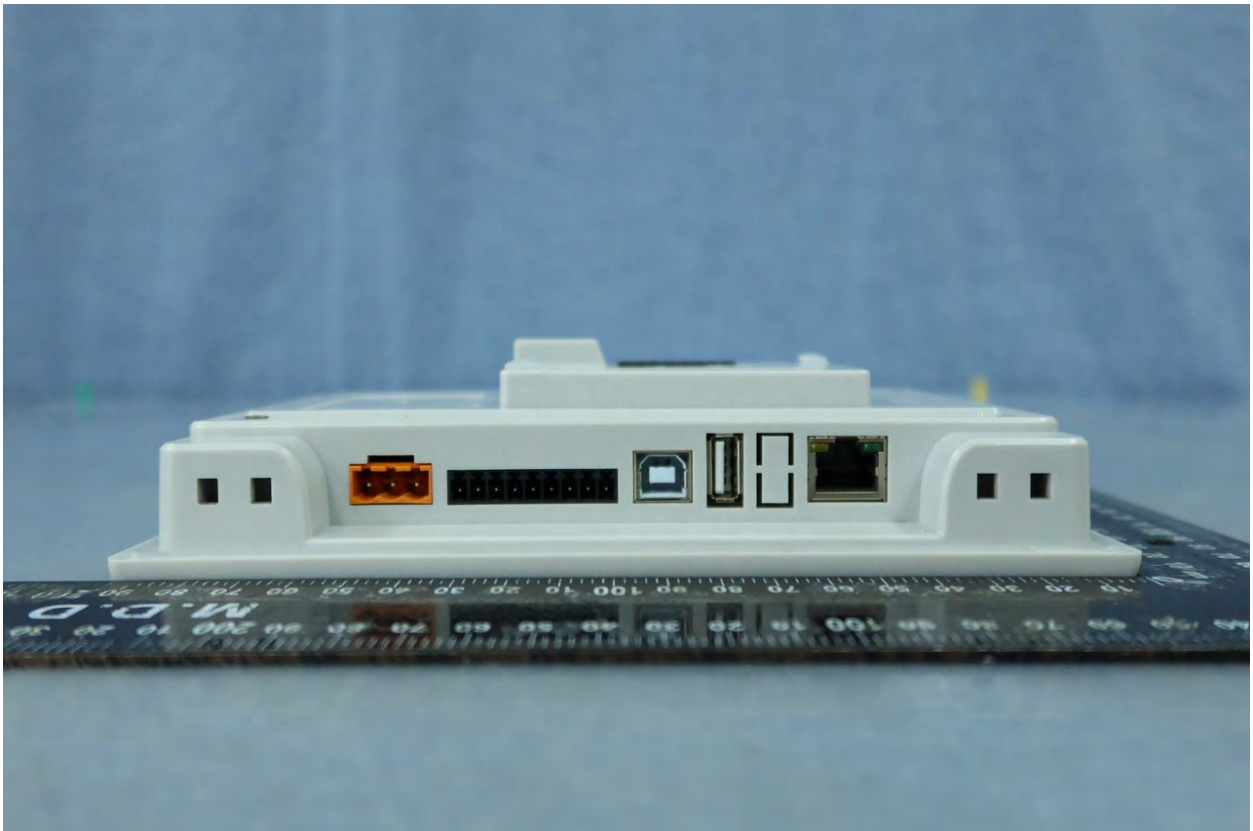
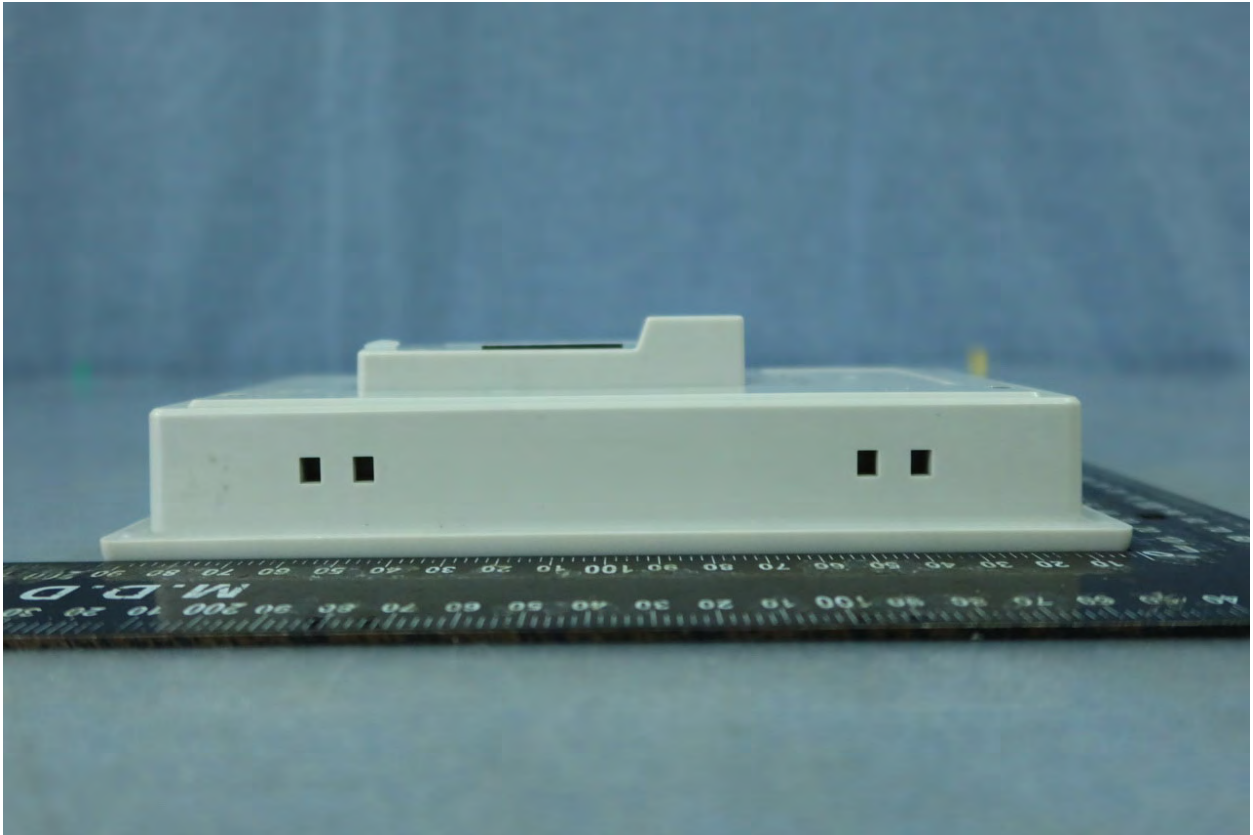
Model: PM2071B51

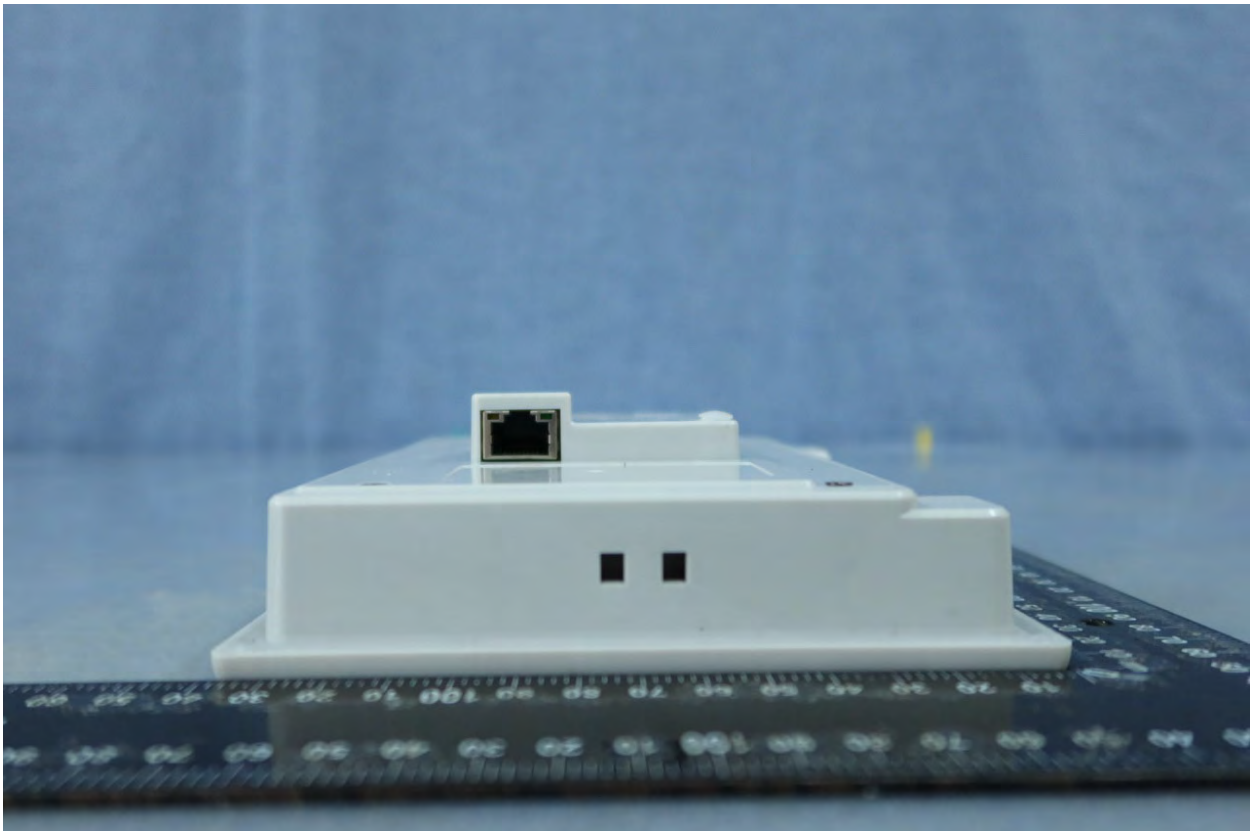
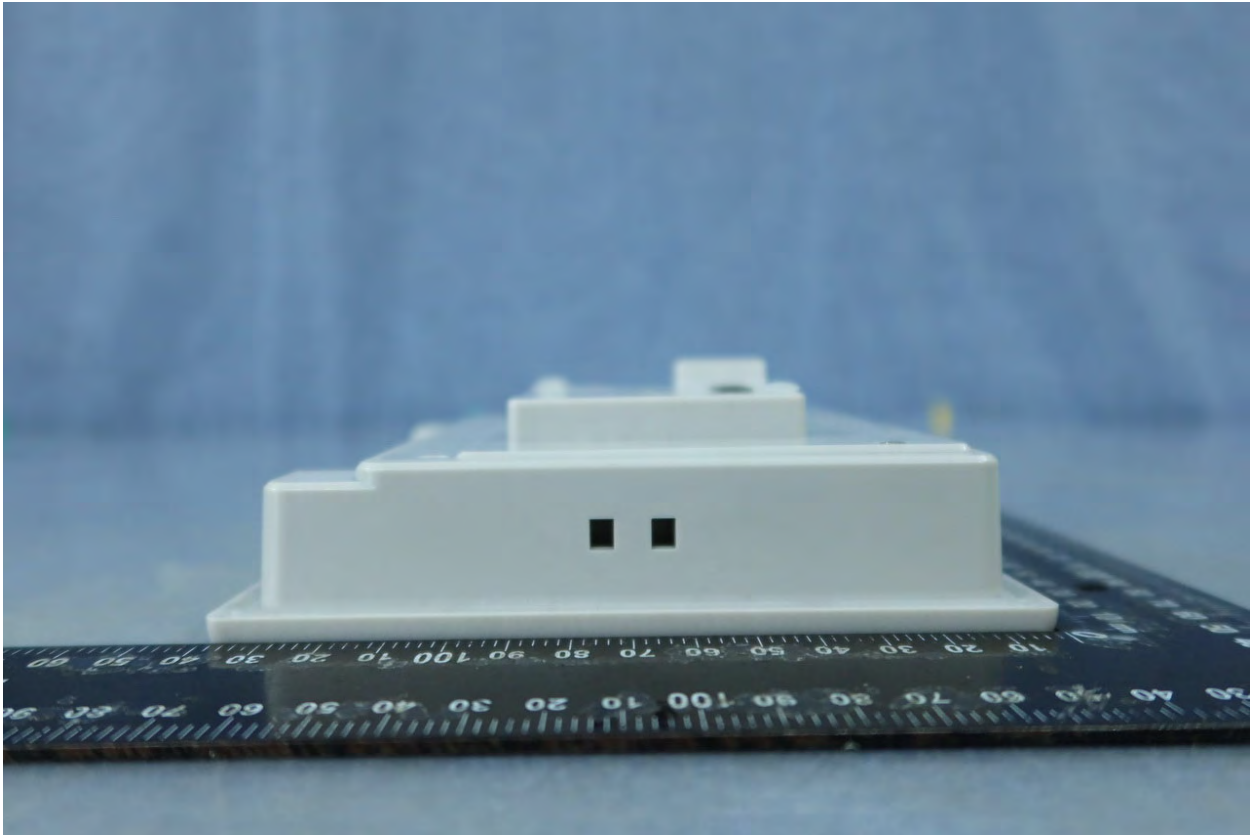


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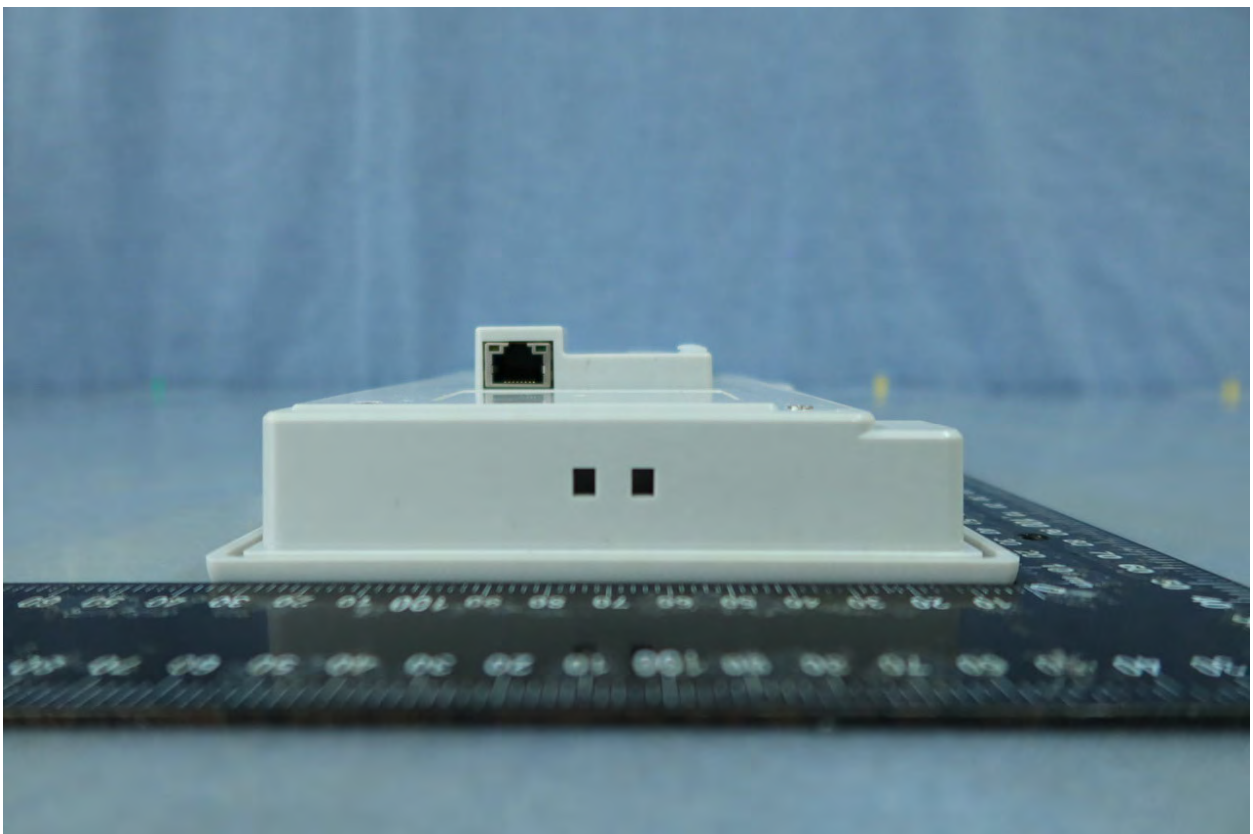
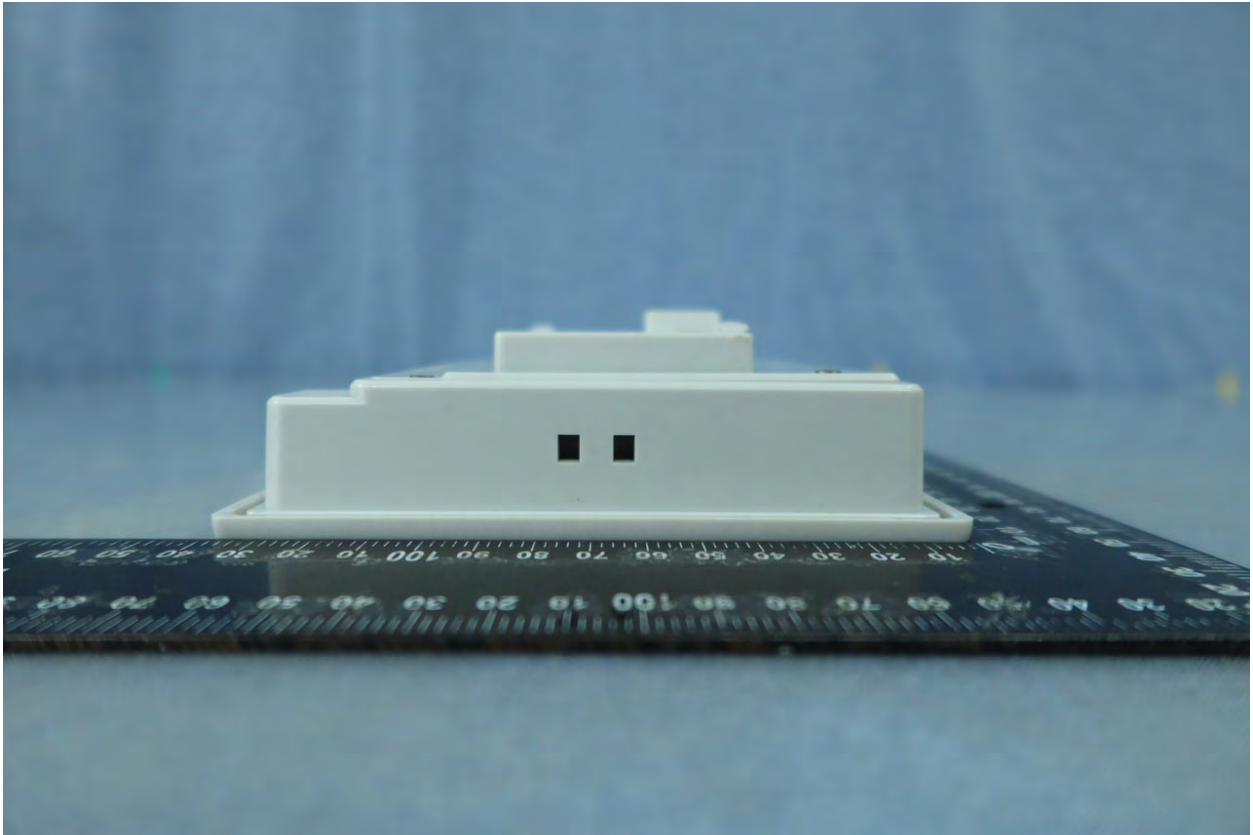
Report No.: TMXD2307002605DE

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Model: PM2071C51

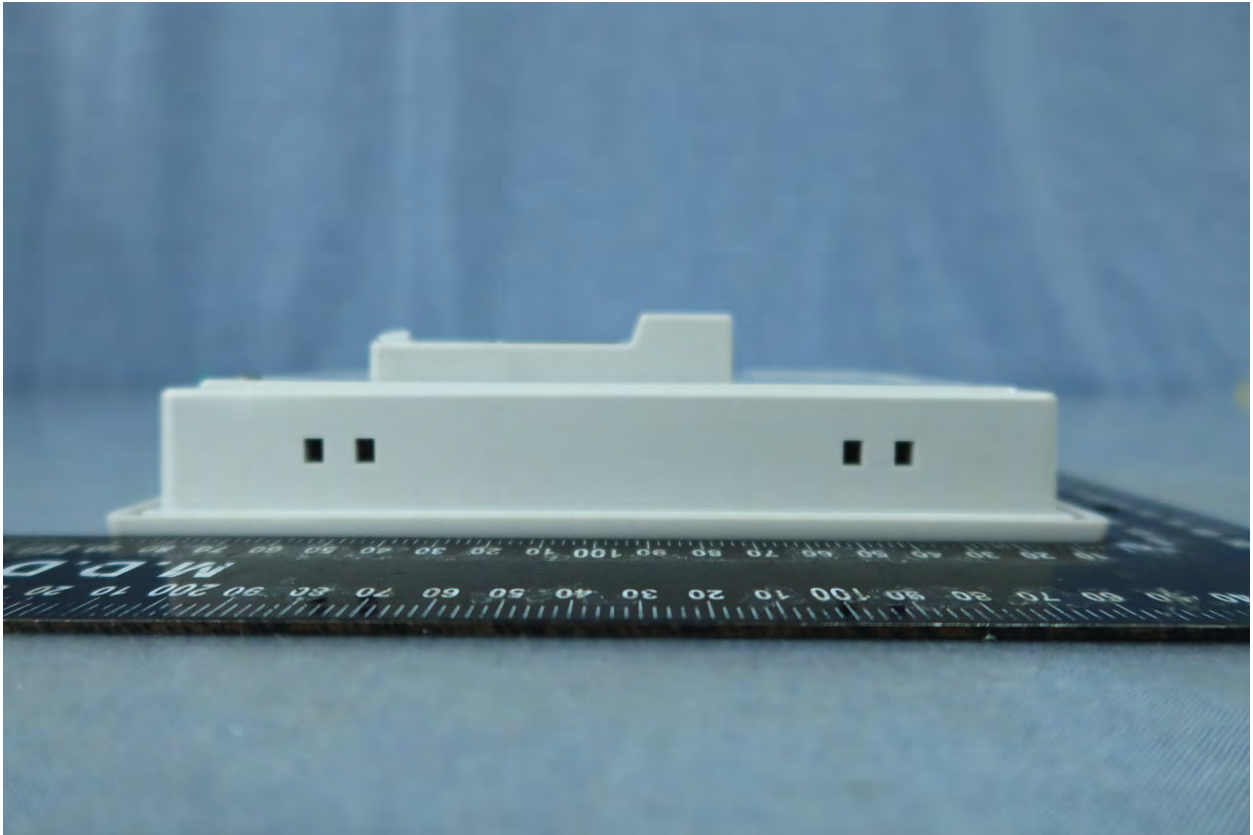




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Ref No.: TMXD2302000390DE

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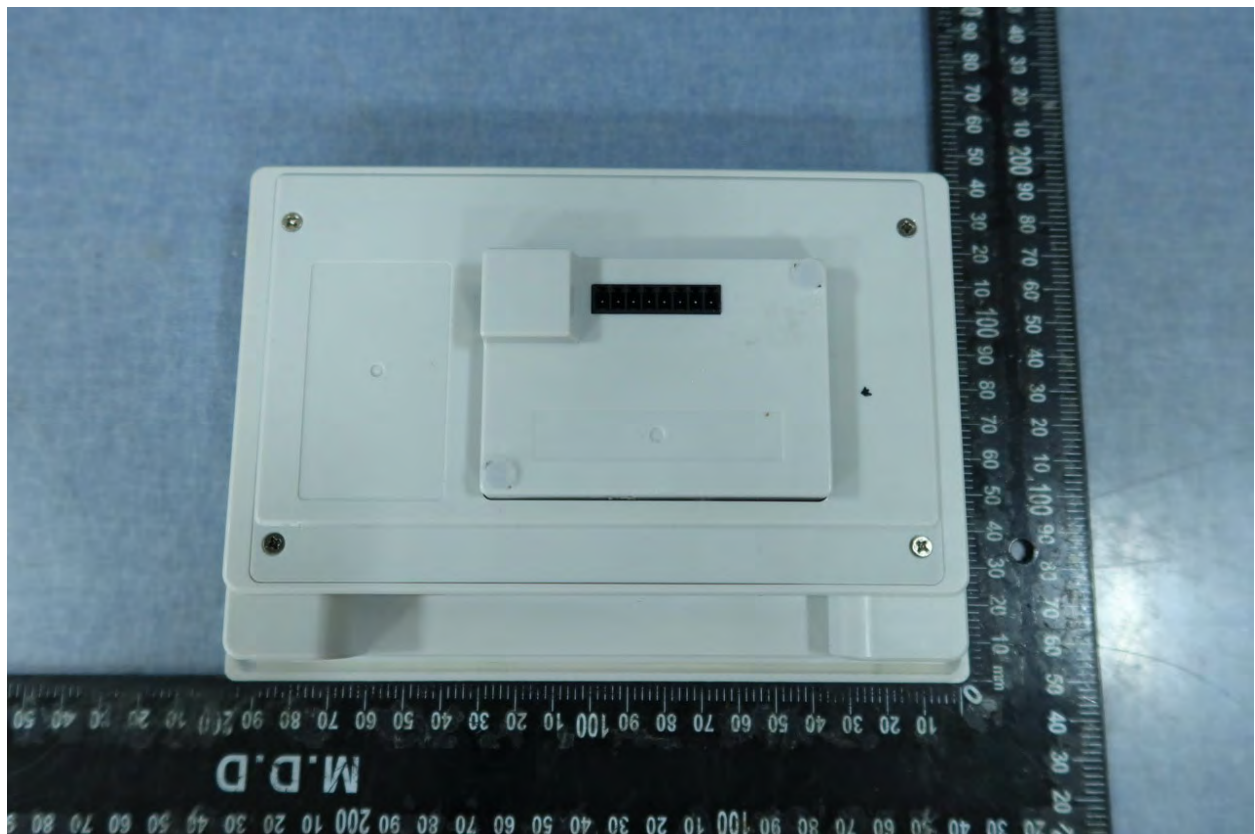
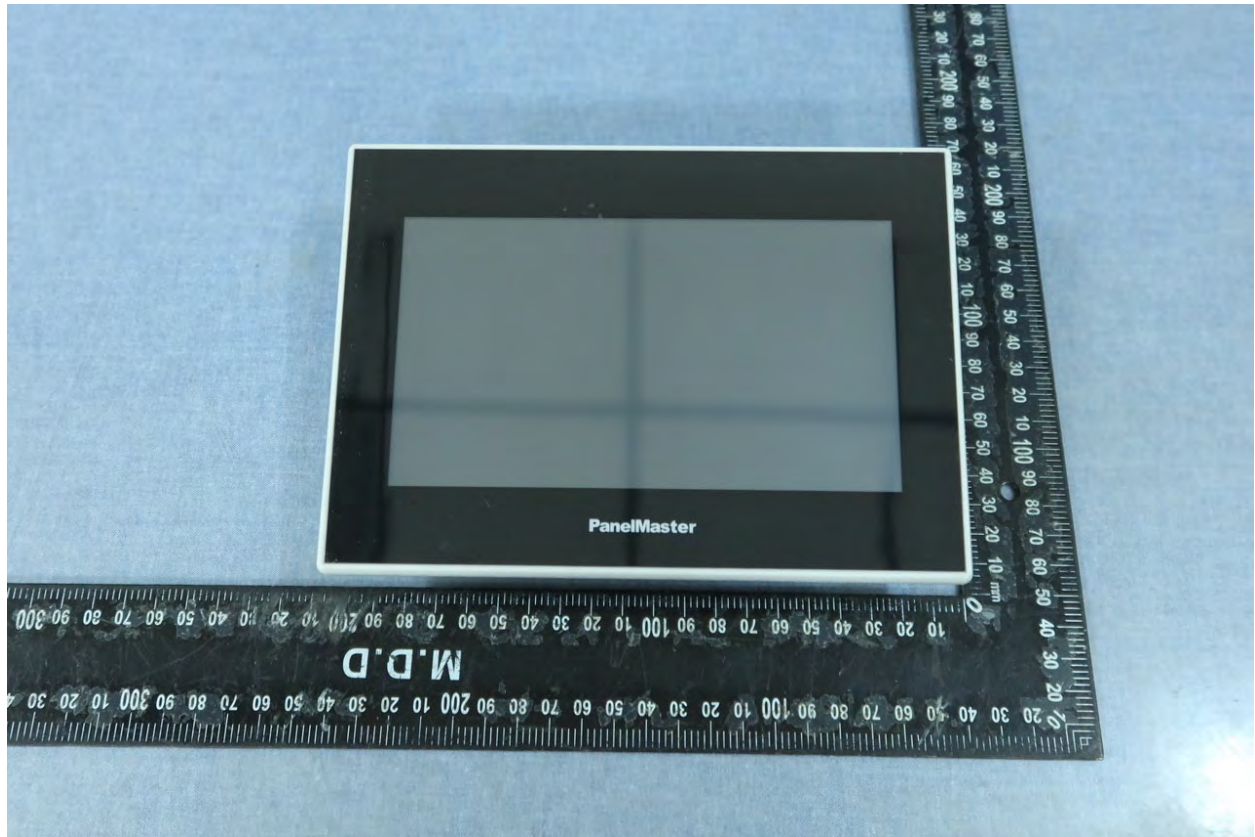


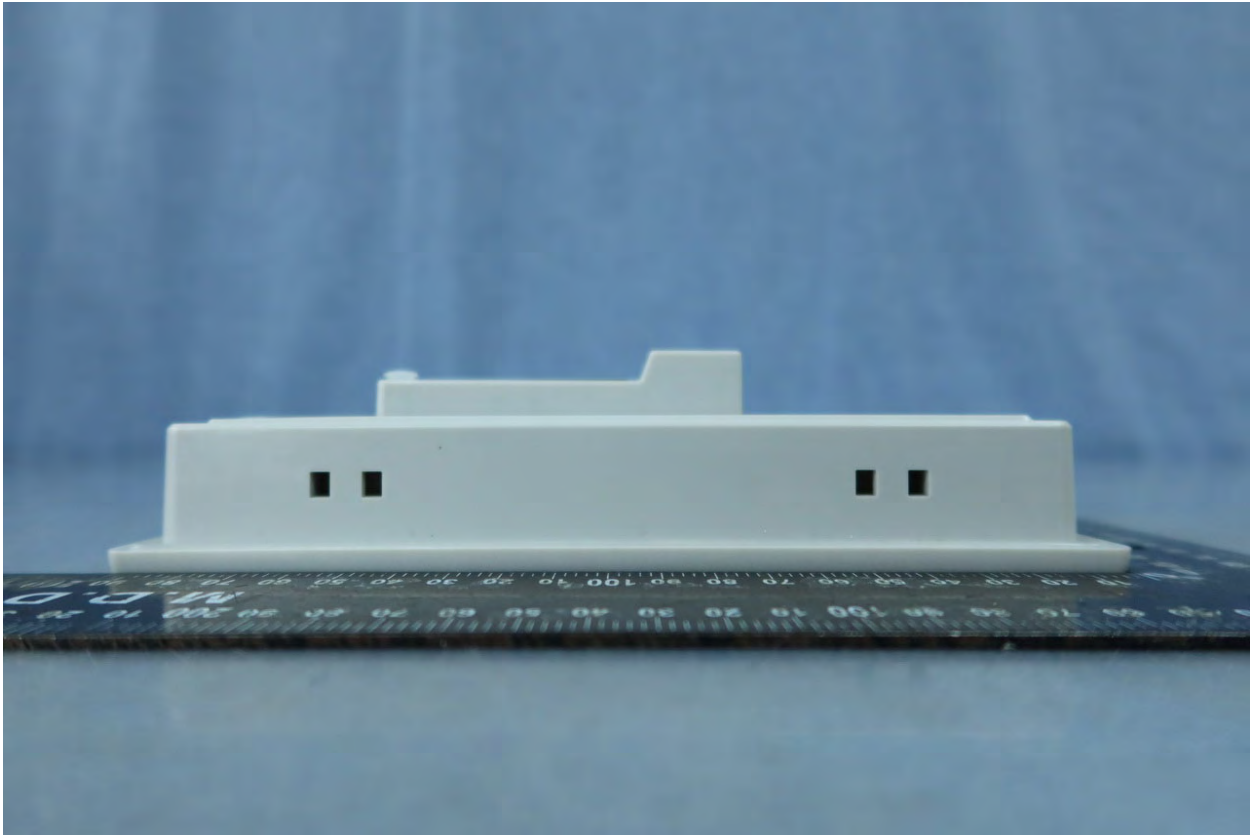
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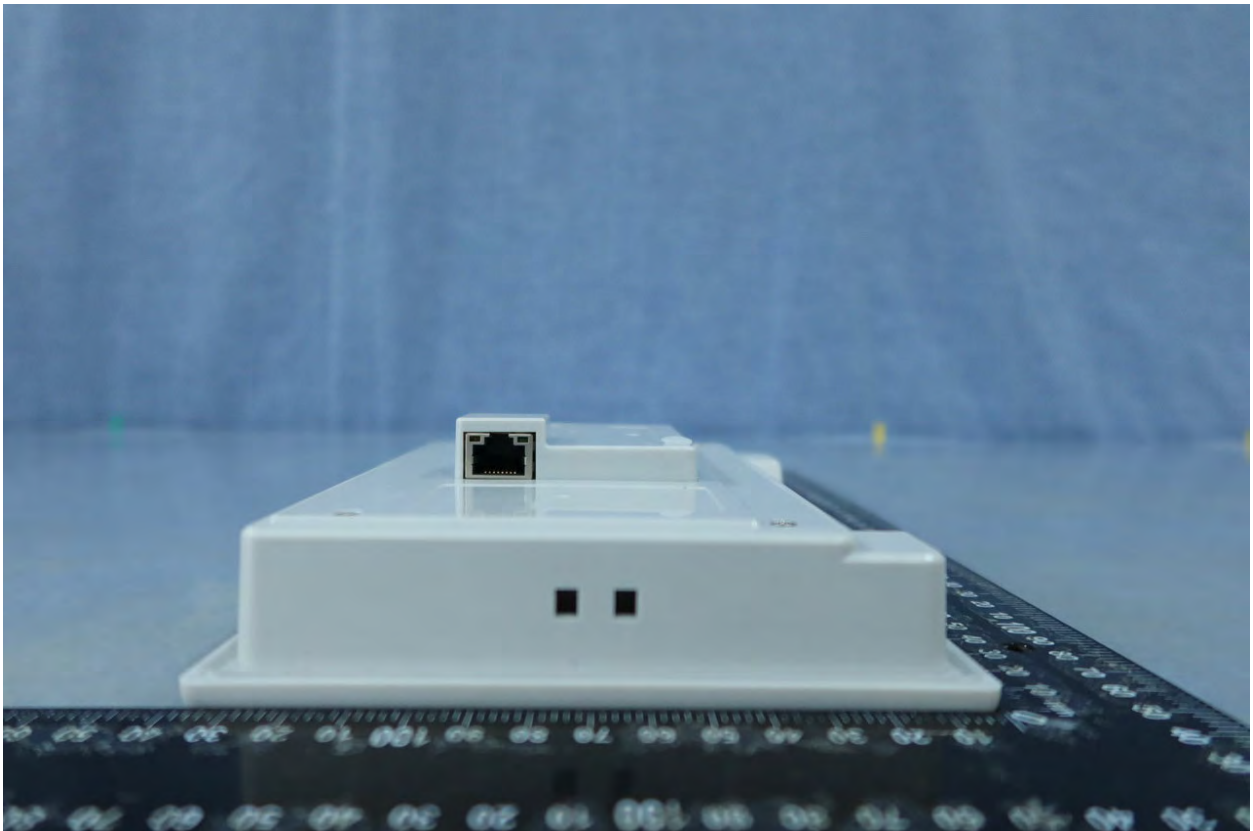
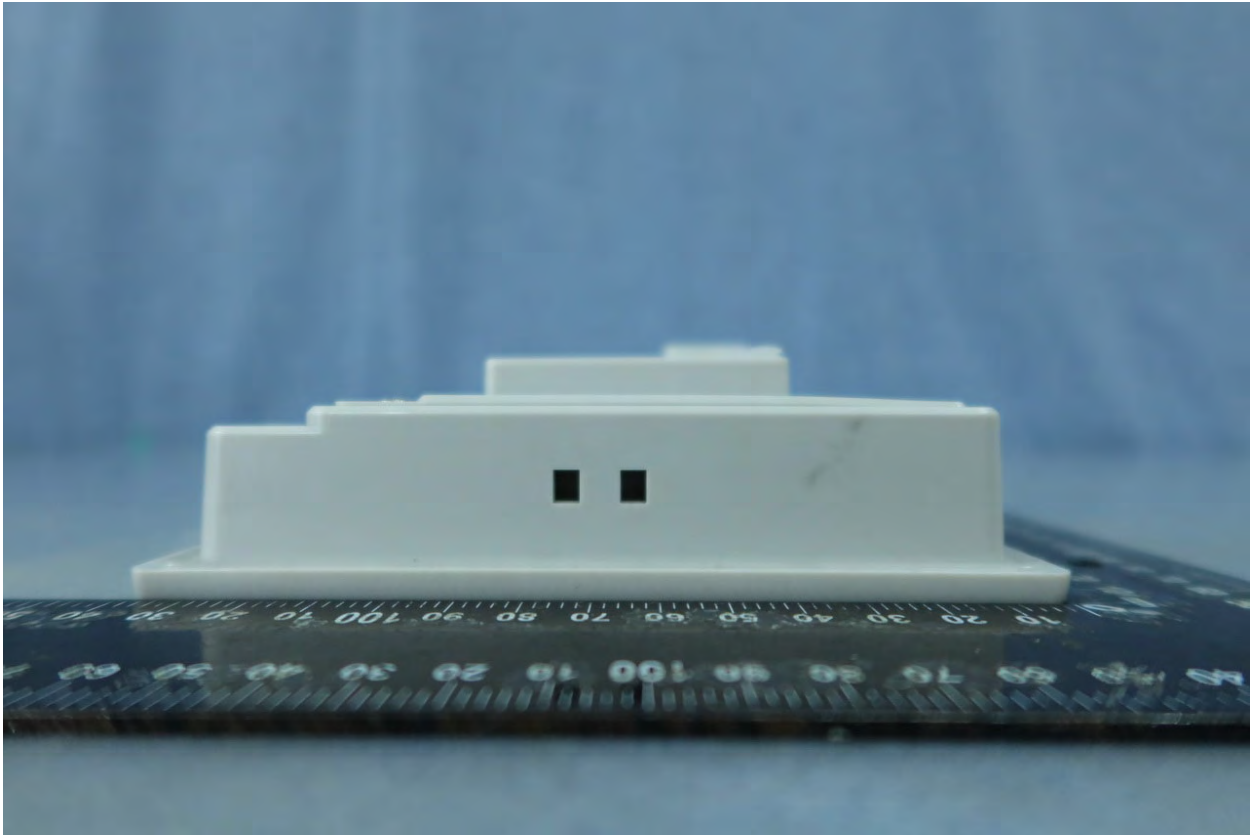
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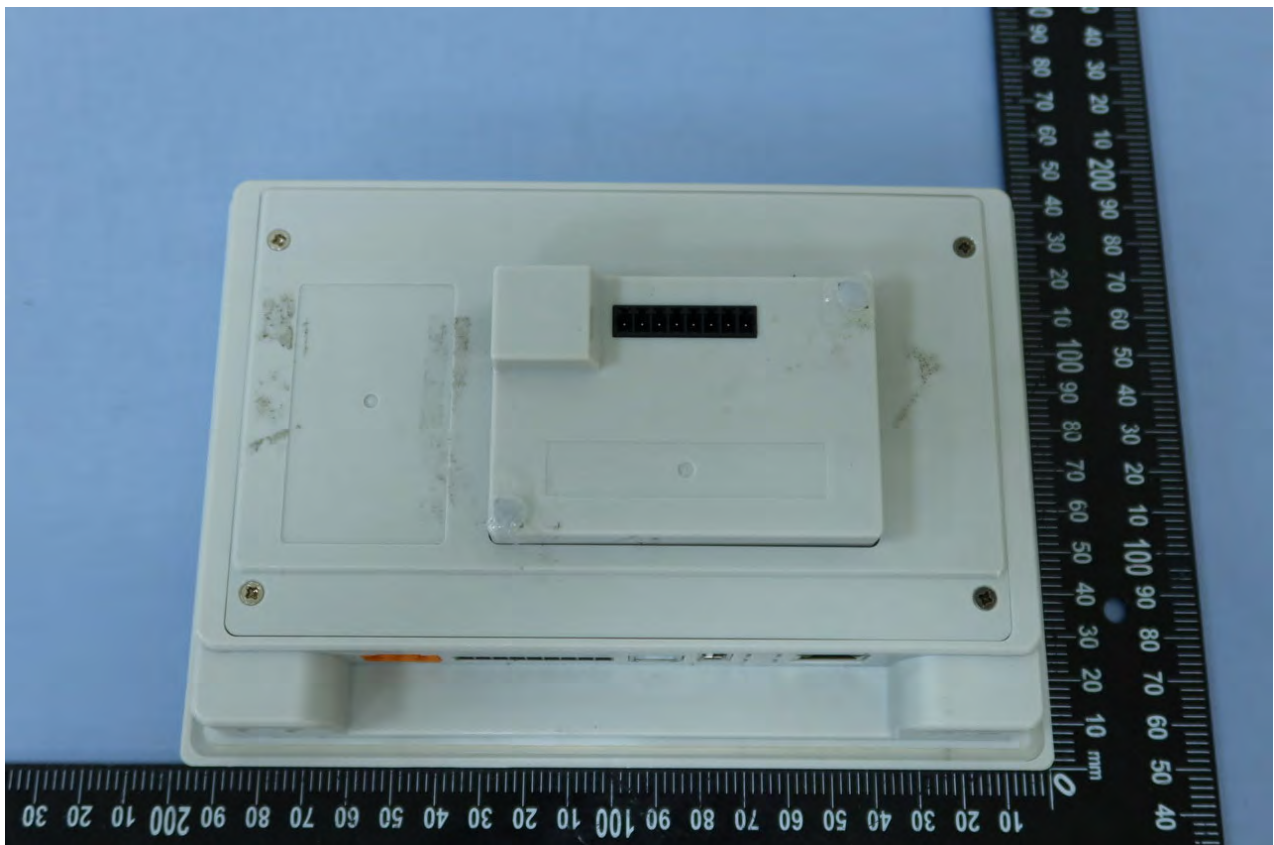
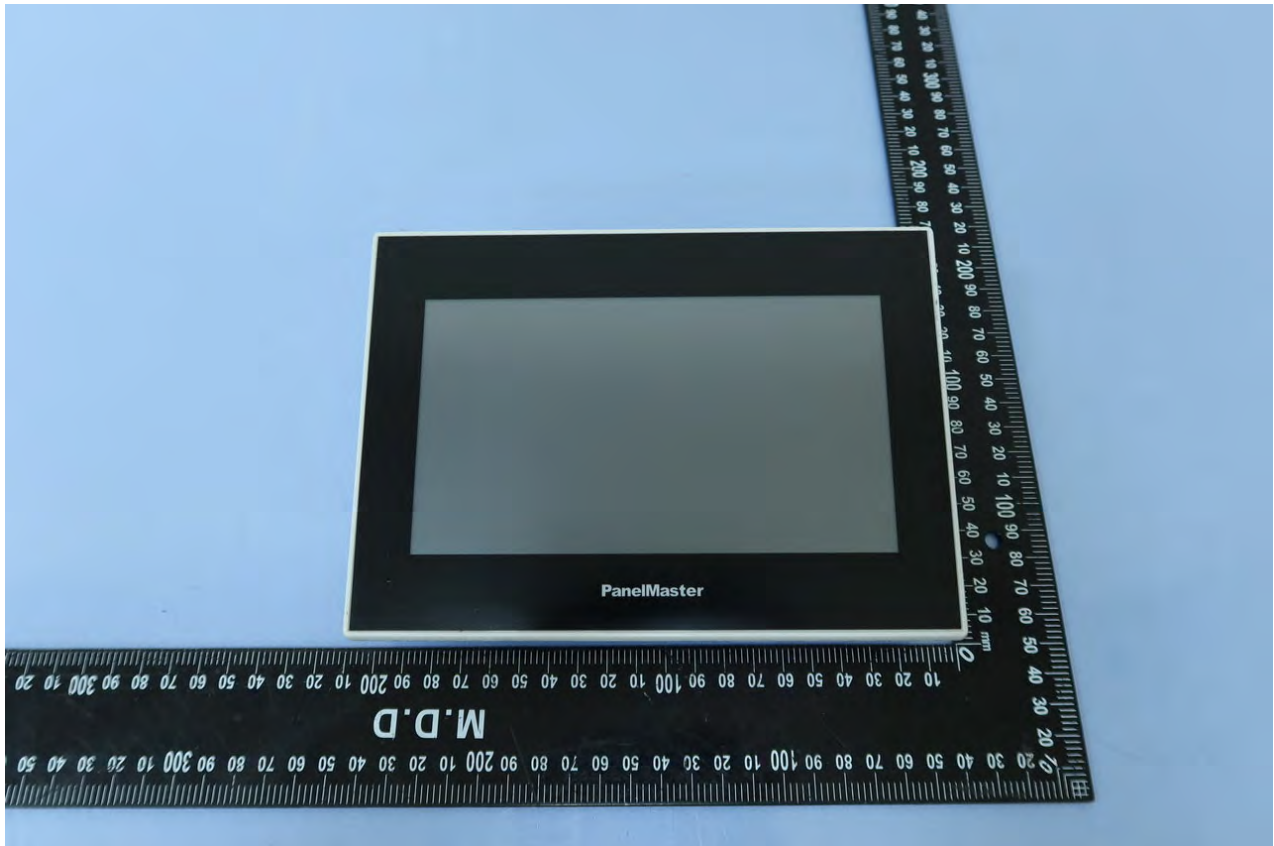


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