



Prüfbericht-Nr.: Test report no.:	CN230AOU (P15C-125k) 001	Auftrags-Nr.: Order no.:	48222061	Seite 1 von 20 Page 1 of 20
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2023-05-30	
Auftraggeber: Client:	Microchip Technology Inc. 2355 West Chandler Blvd. Chandler, Arizona 85224-6199, United States			
Prüfgegenstand: Test item:	EV79V24A			
Bezeichnung / Typ-Nr.: Identification / Type no.:	ATA5293-XPRO			
Auftrags-Inhalt: Order content:	FCC Part 15C Test report			
Prüfgrundlage: Test specification:	FCC 47CFR Part 15: Subpart C Section 15.207 and 15.209			
Wareneingangsdatum: Date of sample receipt:	2023-07-17			
Prüfmuster-Nr.: Test sample no:	A003519207-015 A003519207-013			
Prüfzeitraum: Testing period:	2023-08-15 - 2023-08-16			
Ort der Prüfung: Place of testing:	EMC/RF Taipei Testing Site			
Prüflaboratorium: Testing laboratory:	Taipei Testing Laboratories			
Prüfergebnis*: Test result*:	Pass			
zusammengestellt von: compiled by:			genehmigt von: authorized by:	
Datum: Date:	2023-09-11	Ausstellungsdatum: Issue date:	2023-09-11	
Stellung / Position:	Senior Project Manager	Stellung / Position:	Senior Project Manager	
Sonstiges / Other:				
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar
* Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory F(ail) = failed a.m. test specification(s)	4 = sufficient N/A = not applicable
5 = mangelhaft N/T = nicht getestet				
5 = poor N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

V05

TEST SUMMARY

Report Section	FCC Clause	Test Item	Result
5.1.1	15.203	Antenna Requirement	Pass
5.1.2	15.209	Radiated Spurious Emissions	Pass
5.2.1	15.207	Mains Conducted Emission	Pass

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Contents

HISTORY OF THIS TEST REPORT	4
1. GENERAL REMARKS	5
1.1 COMPLEMENTARY MATERIALS.....	5
1.2 DECISION RULE OF CONFORMITY	5
2. TEST SITES	6
2.1 TEST LABORATORY	6
2.2 TEST FACILITY.....	6
2.3 TRACEABILITY	7
2.4 CALIBRATION	7
2.5 MEASUREMENT UNCERTAINTY	7
3. GENERAL PRODUCT INFORMATION.....	8
3.1 PRODUCT FUNCTION AND INTENDED USE	8
3.2 SYSTEM DETAILS AND RATINGS.....	8
3.3 NOISE GENERATING AND NOISE SUPPRESSING PARTS	9
3.4 SUBMITTED DOCUMENTS.....	9
4. TEST SET-UP AND OPERATION MODES.....	10
4.1 PRINCIPLE OF CONFIGURATION SELECTION	10
4.2 TEST OPERATION AND TEST SOFTWARE.....	10
4.3 SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT	11
4.4 TEST SETUP DIAGRAM	12
5. TEST RESULTS	13
5.1 TRANSMITTER REQUIREMENT & TEST SUITES	13
5.1.1 Antenna Requirement	13
5.1.2 Radiated Spurious Emissions	14
5.2 MAINS EMISSIONS.....	19
5.2.1 Mains Conducted Emissions.....	19
APPENDIX A - TEST RESULT OF RADIATED EMISSIONS & MAINS CONDUCTED EMISSION	
APPENDIX SP - PHOTOGRAPHS OF TEST SETUP	
APPENDIX EP – PHOTOGRAPHS OF EUT	

Prüfbericht - Nr.: CN23OAOU (P15C-125k) 001
Test Report No.

Seite 4 von 20
Page 4 of 20

HISTORY OF THIS TEST REPORT

Report No.	Description	Date Issued
CN23OAOU (P15C-125k) 001	Original Release	2023-09-11

1. General Remarks

1.1 Complementary Materials

The following attachments are integral parts of this test report:

Appendix A - Test Result of Radiated Emissions & Mains Conducted Emission

Appendix SP - Photographs of Test Setup

Appendix EP – Photographs of EUT

Test Specifications

The following standards were applied.

Applied Standard and Test Levels

Radio
FCC 47CFR Part 15: Subpart C Section 15.207 and 15.209
ANSI C63.10:2013

1.2 Decision Rule of Conformity

The decision rule of conformity of this test report is following the requirements of the requested standard in the quotation, and agreed among testing laboratory and manufacturer (applicant) to exclude the consideration of Measurement Uncertainty, unless it is required by the specific standard.

2. Test Sites

2.1 Test Laboratory

Taipei Testing Laboratories

11F. No.758, Sec. 4, Bade Rd., Songshan Dist.
Taipei City 105
Taiwan (R.O.C.)

2.2 Test Facility

Taipei Testing Laboratories

No.458-18, Sec. 2, Fenliao Rd., Linkou Dist.,
New Taipei City 244
Taiwan (R.O.C.)
FCC Registration No.: 180491
ISED Registration No.: 25563

2.3 Traceability

All measurement equipment calibrations are traceable to NML(Taiwan)/NIST(USA) or where calibration is performed outside Taiwan, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically in a suitably accredited Calibration Lab. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

All measurement uncertainty values are shown with a coverage factor of $k=2$ to indicate a 95% level of confidence.

Emission Measurement Uncertainty

Parameter	Uncertainty
Radiated Emission (9 kHz ~ 30 MHz)	± 1.15 dB
Radiated Emission (30 MHz ~ 200 MHz)	± 1.30 dB
Radiated Emission (200 MHz ~ 1 GHz)	± 1.30 dB
Mains Conducted Emission	± 1.65 dB

3. General Product Information

3.1 Product Function and Intended Use

The EUT EV79V24A (ATA5293-XPRO) is a Passive Entry, Passive Start (PEPS) antenna driver / immobilizer base station evaluation board operating in the 125kHz low frequency (LF) band. For details refer to the User Guide, Data Sheet and Circuit Diagram.

3.2 System Details and Ratings

Basic Information of EUT

Item	EUT information
Kind of Equipment/Test Item	EV79V24A
Type Identification	ATA5293-XPRO
FCC ID	2ADHK79V24

Technical Specification of EUT

Item	EUT information
Operating Frequency	125 kHz
Operation Voltage	12Vdc
Modulation	OOK
Antenna Information	Refer to 5.1.1
Accessory Device	Refer to 4.3

3.3 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.4 Submitted Documents

- Circuit Diagram
- Instruction Manual
- Rating Label
- Technical Description

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum emission level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Setup for testing: Test samples are provided with firmware for channel testing. Channel switching is by means of buttons, switching sequentially.

Test Software	None.
---------------	-------

The samples were used as follows:

A003519207-015

A003519207-013

Full test was applied on all test modes, but only worst case was shown.

EUT Configure Mode	Applicable To		Description
	Radiated Spurious Emissions	Mains Conducted Emission	
-	√	√	-

Note: "-" means no effect.

Radiated Spurious Emissions

- ☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Frequency (kHz)	Tested Frequency (kHz)
-	125	125

Mains Conducted Emission

- ☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Frequency (kHz)	Tested Frequency (kHz)
-	125	125

Test Condition

Test Item	Ambient Temperature	Relative Humidity	Tested by
Radiated Spurious Emissions	19.8-20.9 °C	52-57 %	Chuan Chu
Mains Conducted Emission	21.1-24.9 °C	51.7-54.9 %	Ray Huang

4.3 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

Accessory of EUT

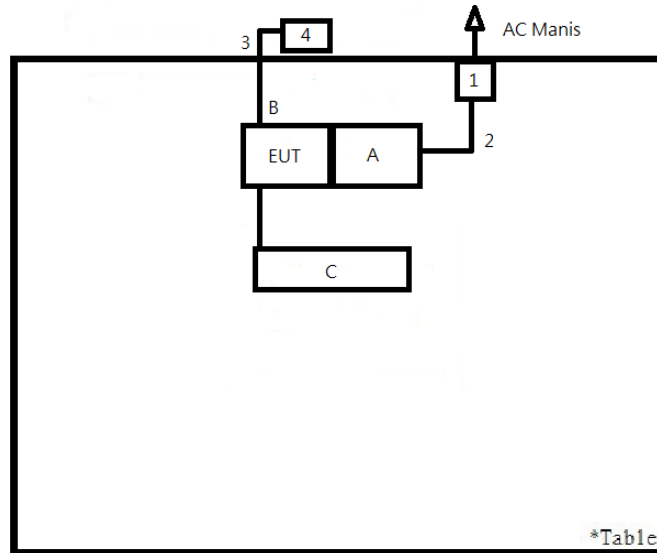
None.

Support Unit

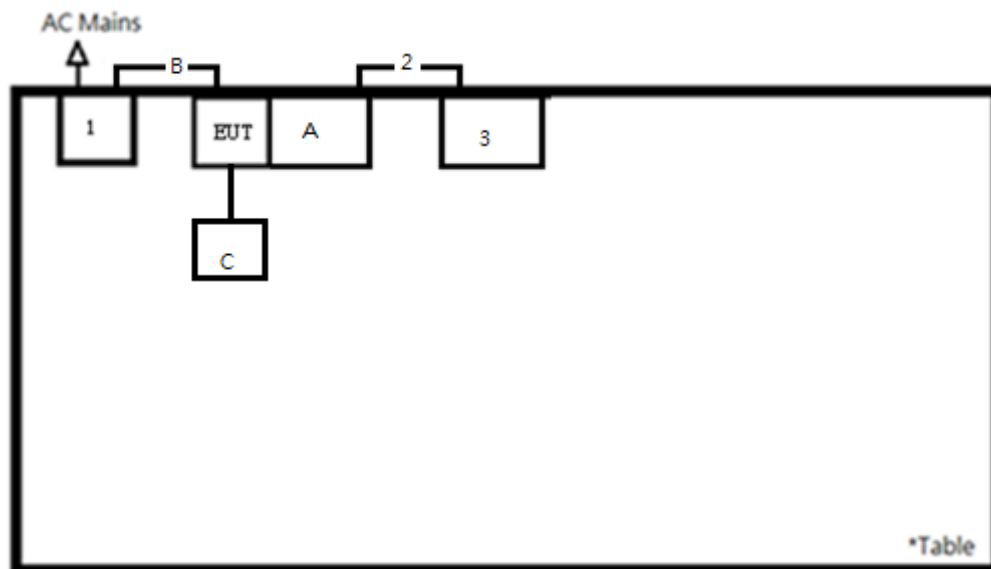
No.	Description	Brand	Model	S/N	Remark
Radiated Test					
A	Main board	Microchip	ATSAMC21 Xplained Pro	-	A003519207-019
B	Cable	-	-	-	100cm length
C	Coil Antenna	PREMO	KGEA-BFCR-B-0500J	-	A003519207-013
1	Adapter	OPPO	VC56JACH	J119492AC1 009359	-
2	Cable	TUV	TUV-001	-	60cm length
3	Cable	TUV	TUV-002	-	100cm length
4	Power supply	GWINSTEK	GPS-3303	-	-
Mains Conduction Test					
A	Main board	Microchip	ATSAMC21 Xplained Pro	-	A003519207-019
B	Cable	-	-	-	100cm length
C	Coil Antenna	PREMO	KGEA-BFCR-B-0500J	-	A003519207-013
1	Power supply	GWINSTEK	GPS-3303	-	-
2	Cable	TUV	TUV-001	-	60cm length
3	Adapter	OPPO	VC56JACH	-	-

4.4 Test Setup Diagram

<Radiated Spurious Emissions mode>



<Mains Conducted Emission mode>



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

Requirement Use of approved antennas only

The antenna is a PKE Antenna with no possibility of replacement with a non-approved antenna by the end-user. Therefore, the EUT is considered to comply with this provision.

Refer to EUT photo for details.

5.1.2 Radiated Spurious Emissions

Limit

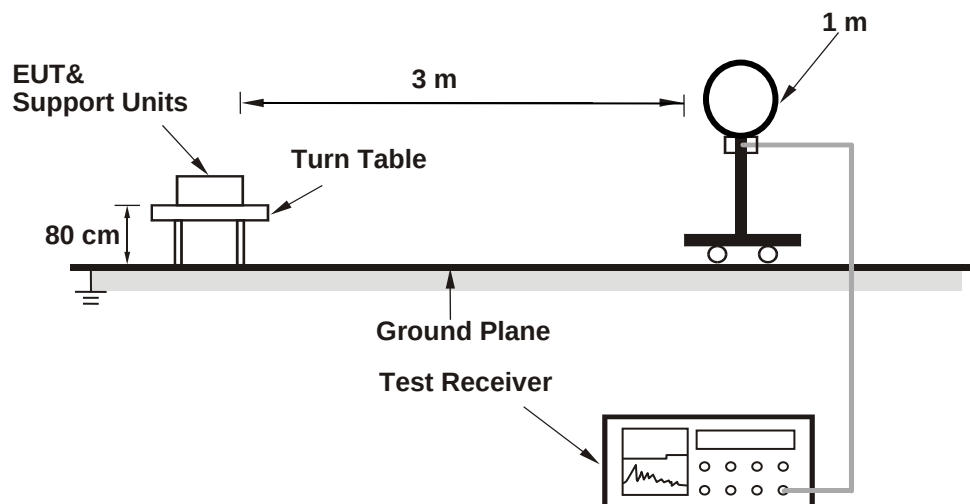
The field strength of any emissions shall not exceed the general radiated emission limits in §15.209 as below table:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1.705	24000/F (kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

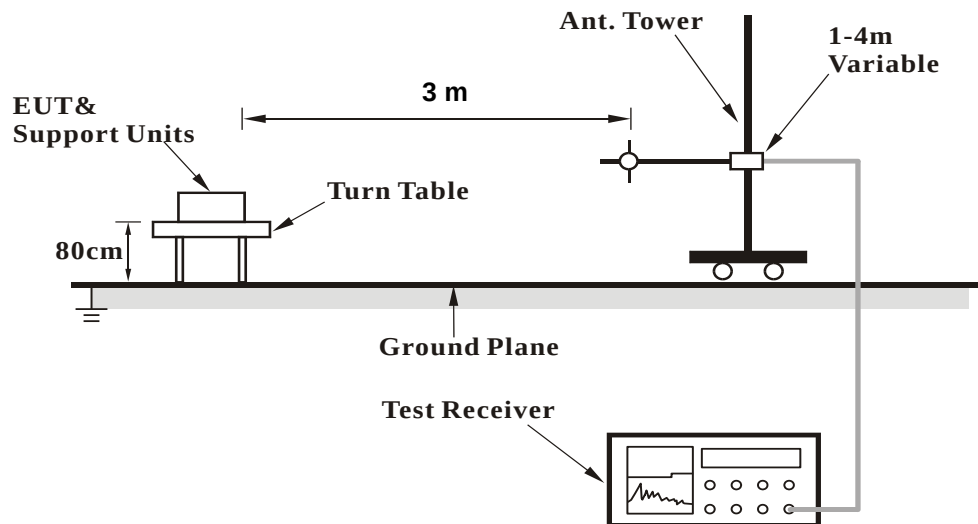
Kind of Test Site 3m Semi-Anechoic Chamber

Test Setup

<Radiated Emissions below 30 MHz>



<Radiated Emissions 30 MHz to 1 GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

Prüfbericht - Nr.: CN23OAOU (P15C-125k) 001
Test Report No.
Seite 16 von 20
Page 16 of 20
Test Instruments

Test Date: 2023/8/15

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Above 1GHz					
Signal Analyzer	R&S	FSV40	101508	2023/4/20	2024/4/18
Horn Antenna	ETS-Lindgren	3117	00218929	2022/12/8	2023/12/7
HF-AMP + AC source	EMCI	EMC051845SE	980633	2023/2/22	2024/2/21
HF-AMP + AC source	EMCI	EMC184045SE	980657	2023/2/16	2024/2/15
Horn Antenna	SCHWARZBECK	BBHA 9170	00218930	2022/12/8	2023/12/7
30MHz-1GHz					
Receiver	R&S	ESR7	102109	2023/2/24	2024/2/23
Bilog Antenna	SCHWARZBECK	VULB-9168	00951	2023/3/31	2024/3/29
LF-AMP	Agilent	8447D	2944A107722	2023/3/22	2024/3/20
Below 1GHz					
Receiver	R&S	ESR7	102109	2023/2/24	2024/2/23
Loop Antenna	SCHWARZBECK	FMZB 1519B	00215	2023/1/4	2024/1/3

Test Procedures**For Radiated Emissions below 30 MHz**

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel (OPEN), perpendicular (CLOSE), and ground-parallel (GROUND) orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz at frequency below 30 MHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated Emissions above 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30 MHz ~ 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. All modes of operation were investigated and the worst-case emissions are reported.
3. The Radiated Emissions testing was performed in the X, Y and Z axis orientation. The worst-case Axis orientation is recorded in this test report.
4. The emission levels of other frequencies (including the 10th harmonic of the highest fundamental frequency) are very lower than the limit and are not shown in the test report.

Prüfbericht - Nr.: CN23OAOU (P15C-125k) 001
Test Report No.

Seite 18 von 20
Page 18 of 20

Test Results

Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)

Level (dBuV/m) = Reading (dBuV) + Factor (dB/m)

Please refer to Appendix A.

5.2 Mains Emissions

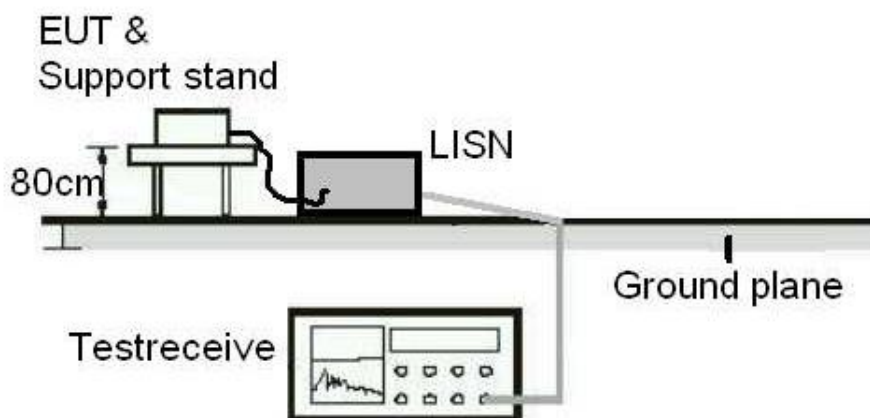
5.2.1 Mains Conducted Emissions

Limit

Mains Conducted emissions as defined in §15.207 must comply with the mains conducted emission limits.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Test Date: 2023/8/16

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Two-Line V-Network	Rohde & Schwarz	ENV216	101938	2022/9/22	2023/9/21
EMI Test Receiver	R&S	ESCI	101094	2022/11/24	2023/11/23

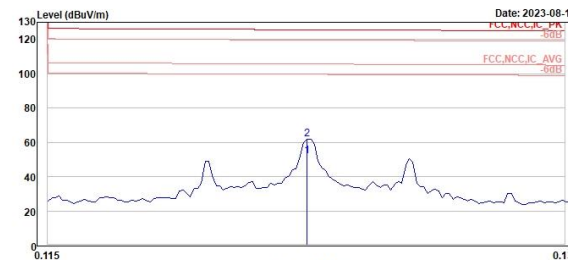
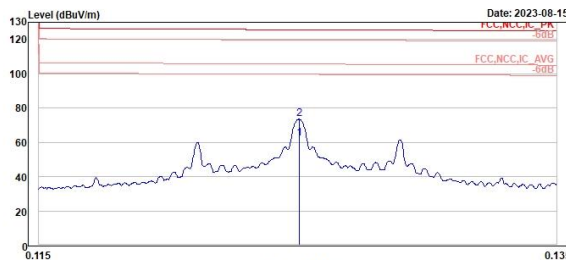
Test Procedures

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50 uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz – 30 MHz.

Test Results

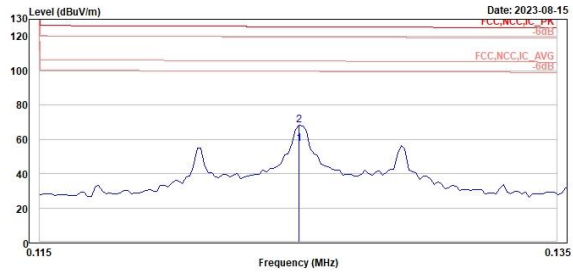
Please refer to Appendix A.

Ground					Open																																																																																				
 TUV Rheinland Taiwan Ltd. No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.) Tel: +886-2172-1000 Fax: +886-2172-1322					 TUV Rheinland Taiwan Ltd. No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.) Tel: +886-2172-1000 Fax: +886-2172-1322																																																																																				
Level (dBuV/m)  Date: 2023-08-15 <table> <tr> <th>Freq</th><th>Level</th><th>Read</th><th>Limit</th><th>Over</th><th>APos</th><th>TPos</th><th>Remark</th><th>Pol/Phase</th><th>Note</th></tr> <tr> <th>MHz</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dBuV/m</th><th>dB</th><th>cm</th><th>deg</th><th></th><th></th></tr> <tr> <td>1</td><td>0.125</td><td>51.81</td><td>33.78</td><td>18.03</td><td>105.66</td><td>-53.85</td><td>100</td><td>280 Average</td><td>Ground</td></tr> <tr> <td>2</td><td>0.125</td><td>61.92</td><td>43.89</td><td>18.03</td><td>125.66</td><td>-63.74</td><td>100</td><td>280 Peak</td><td>Ground</td></tr> </table>					Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			1	0.125	51.81	33.78	18.03	105.66	-53.85	100	280 Average	Ground	2	0.125	61.92	43.89	18.03	125.66	-63.74	100	280 Peak	Ground	Level (dBuV/m)  Date: 2023-08-15 <table> <tr> <th>Freq</th><th>Level</th><th>Read</th><th>Limit</th><th>Over</th><th>APos</th><th>TPos</th><th>Remark</th><th>Pol/Phase</th><th>Note</th></tr> <tr> <th>MHz</th><th>dBuV/m</th><th>dBuV</th><th>dB/m</th><th>dBuV/m</th><th>dB</th><th>cm</th><th>deg</th><th></th><th></th></tr> <tr> <td>1</td><td>0.125</td><td>62.43</td><td>44.40</td><td>18.03</td><td>105.66</td><td>-43.23</td><td>100</td><td>82 Average</td><td>Open</td></tr> <tr> <td>2</td><td>0.125</td><td>73.47</td><td>55.44</td><td>18.03</td><td>125.66</td><td>-52.19</td><td>100</td><td>82 Peak</td><td>Open</td></tr> </table>					Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			1	0.125	62.43	44.40	18.03	105.66	-43.23	100	82 Average	Open	2	0.125	73.47	55.44	18.03	125.66	-52.19	100	82 Peak	Open
Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note																																																																																
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MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg																																																																																		
1	0.125	62.43	44.40	18.03	105.66	-43.23	100	82 Average	Open																																																																																
2	0.125	73.47	55.44	18.03	125.66	-52.19	100	82 Peak	Open																																																																																

Close



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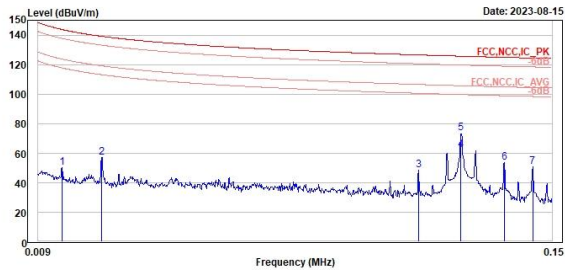
	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	0.125	57.29	39.26	18.03	105.66	-48.37		100	12	Average	Close	
2	0.125	68.03	50.00	18.03	125.66	-57.63		100	12	Peak	Close	

Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

9kHz~150kHz(Open)



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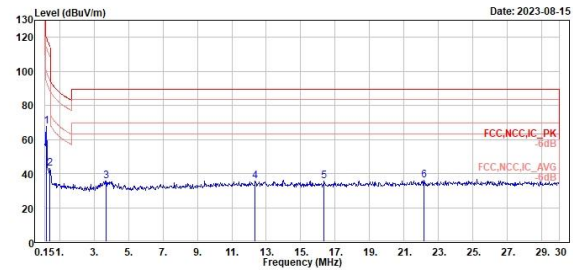


	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.02	50.14	32.01	18.13	143.71	-93.57	100	244 Peak	Open	
2	0.03	57.05	38.10	18.95	139.13	-82.08	100	188 Peak	Open	
3	0.11	48.26	30.28	17.98	126.51	-78.25	100	78 Peak	Open	
4	0.13	62.43	44.40	18.03	105.66	-43.23	100	82 Average	Open	
5	0.13	73.47	55.44	18.03	125.66	-52.19	100	82 Peak	Open	
6	0.14	53.54	35.46	18.08	124.87	-71.33	100	90 Peak	Open	
7	0.14	50.88	32.77	18.11	124.39	-73.51	100	78 Peak	Open	

150kHz~30MHz(Open)



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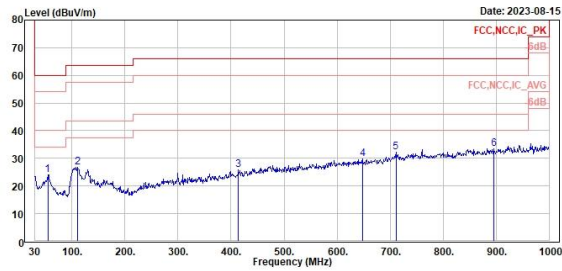
	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.24	67.73	49.24	18.49	120.01	-52.28	100	223 Peak	Open	
2	0.45	43.14	24.32	18.82	114.57	-71.43	100	193 Peak	Open	
3	3.70	35.55	15.96	19.59	89.50	-53.95	100	172 Peak	Open	
4	12.36	35.42	13.70	21.72	89.50	-54.08	100	112 Peak	Open	
5	16.36	35.40	13.41	21.99	89.50	-54.10	100	170 Peak	Open	
6	22.15	36.04	13.78	22.26	89.50	-53.46	100	152 Peak	Open	

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

Horizontal



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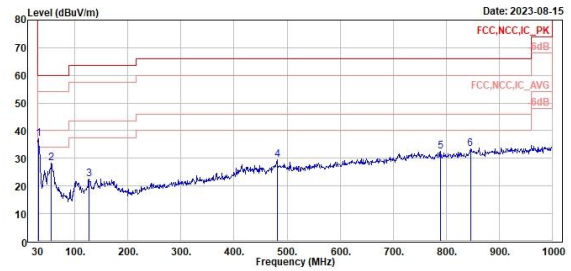


	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	54.25	24.01	31.00	-6.99	60.00	-35.99	400	38 Peak	Horizontal	
2	110.51	26.79	37.79	-11.00	63.50	-36.71	300	197 Peak	Horizontal	
3	414.12	25.74	29.88	-4.14	66.00	-40.26	200	0 Peak	Horizontal	
4	647.89	29.66	29.36	0.30	66.00	-36.34	200	200 Peak	Horizontal	
5	710.94	32.33	30.64	1.69	66.00	-33.67	200	252 Peak	Horizontal	
6	895.24	33.53	29.33	4.20	66.00	-32.47	200	91 Peak	Horizontal	

Vertical



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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	30.97	37.20	46.19	-8.99	60.00	-22.80	100	204 Peak	Vertical	
2	55.22	28.17	35.36	-7.19	60.00	-31.83	100	258 Peak	Vertical	
3	126.03	22.48	32.24	-9.76	63.50	-41.02	100	142 Peak	Vertical	
4	481.05	29.52	32.45	-2.93	66.00	-36.48	100	7 Peak	Vertical	
5	789.51	32.52	29.44	3.08	66.00	-33.48	100	21 Peak	Vertical	
6	845.77	33.47	29.77	3.70	66.00	-32.53	200	2 Peak	Vertical	

Mains Conducted Emission, Tx Mode, 150kHz ~ 30MHz

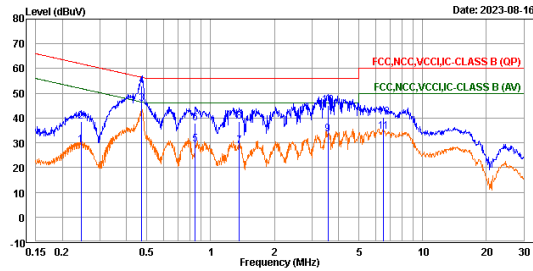
Worst Band

(Line)

(Neutral)



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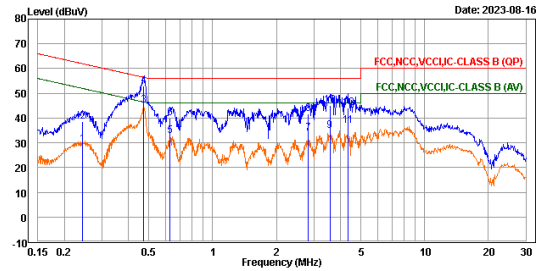


Trace: 1

	Freq	Level	Read	Level	Factor	Limit	Over			
	MHz	dBuV	dBuV	dB		dBuV	dB	Remark	Pol/Phase	Note
1	0.24	28.95	19.33	9.62	51.94	-22.99	Average	line1		
2	0.24	38.55	28.93	9.62	61.94	-23.39	QP	line1		
3	0.47	45.80	36.17	9.63	46.48	-0.68	Average	line1		
4	0.47	52.80	43.17	9.63	56.48	-3.68	QP	line1		
5	0.85	29.34	19.70	9.64	46.00	-16.66	Average	line1		
6	0.85	37.81	28.17	9.64	56.00	-18.19	QP	line1		
7	1.36	28.78	19.14	9.64	46.00	-17.22	Average	line1		
8	1.36	38.59	28.95	9.64	56.00	-17.41	QP	line1		
9	3.57	33.60	23.92	9.68	46.00	-12.40	Average	line1		
10	3.57	45.11	35.43	9.68	56.00	-10.89	QP	line1		
11	6.53	34.57	24.85	9.72	50.00	-15.43	Average	line1		
12	6.53	40.35	30.63	9.72	60.00	-19.65	QP	line1		



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Trace: 1

	Freq	Level	Read	Level	Factor	Limit	Over			
	MHz	dBuV	dBuV	dB		dBuV	dB	Remark	Pol/Phase	Note
1	0.24	29.48	19.86	9.62	51.98	-22.50	Average	neutral		
2	0.24	38.70	29.08	9.62	61.98	-23.28	QP	neutral		
3	0.47	44.96	35.33	9.63	46.48	-1.52	Average	neutral		
4	0.47	52.92	43.29	9.63	56.48	-3.56	QP	neutral		
5	0.85	32.65	23.02	9.63	46.00	-13.35	Average	neutral		
6	0.85	39.85	30.22	9.63	56.00	-16.15	QP	neutral		
7	2.81	33.84	24.16	9.68	46.00	-12.16	Average	neutral		
8	2.81	41.66	31.98	9.68	56.00	-14.34	QP	neutral		
9	3.57	34.89	25.20	9.69	46.00	-11.11	Average	neutral		
10	3.57	45.12	35.43	9.69	56.00	-10.88	QP	neutral		
11	4.34	36.82	27.11	9.71	46.00	-9.18	Average	neutral		
12	4.34	44.21	34.50	9.71	56.00	-11.79	QP	neutral		