



Prüfbericht-Nr.: <i>Test report no.:</i>	CN216SHF(P15C-125kHz) 001	Auftrags-Nr.: <i>Order no.:</i>	238492924	Seite 1 von 22 Page 1 of 22
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2020-10-19	
Auftraggeber: <i>Client:</i>	Microchip Technology Inc. 2355 West Chandler Blvd. Chandler, AZ 85224-6199, USA			
Prüfgegenstand: <i>Test item:</i>	ATA5291-XPRO			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	EV73R53A			
Auftrags-Inhalt: <i>Order content:</i>	FCC Part 15C Test report			
Prüfgrundlage: <i>Test specification:</i>	FCC 47CFR Part 15: Subpart C Section 15.207 and 15.209			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2020-10-20			
Prüfmuster-Nr.: <i>Test sample no.:</i>	A002935351-002 A002935351-004			
Prüfzeitraum: <i>Testing period:</i>	2020-11-11 - 2020-11-27			
Ort der Prüfung: <i>Place of testing:</i>	EMC/RF Taipei Testing Site			
Prüflaboratorium: <i>Testing laboratory:</i>	Taipei Testing Laboratories			
Prüfergebnis*: <i>Test result*:</i>	Pass			
überprüft von: <i>reviewed by:</i>	genehmigt von: <i>authorized by:</i>			
Datum: <i>Date:</i> 2020-12-16	 Jack Chang		 Brenda Chen	
Stellung / Position:	Senior Project Manager		Senior Project Manager	
Sonstiges / Other:				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
<p>* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet</p> <p>* Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested</p>				
<p>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></p>				

V05

TEST SUMMARY

Report Section	FCC Clause	Test Item	Result
5.1.1	15.203	Antenna Requirement	Pass
5.1.2	15.215(c)	Occupied Bandwidth	Pass
5.1.3	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.

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HISTORY OF THIS TEST REPORT

Report No.	Description	Date Issued
CN216SHF(P15C-125kHz) 001	Original Release	2020-12-16

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.: 226631
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 is an ATA5291-XPRO, is a Passive Entry, Passive Start (PEPS) antenna driver / immobilizer 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	ATA5291-XPRO
Type Identification	EV73R53A
FCC ID	2ADHK73R53

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

Nothing mentioned explicitly. Please 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:
A002935351-002 for radiated
A002935351-004 for radiated

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

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

Note: "-" means no effect.

Occupied Bandwidth

- ☒ 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 (MHz)	Tested Frequency (MHz)
-	125	125

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
Occupied Bandwidth	21.2°C	50.6 %	Temo Chen
Radiated Spurious Emissions	22 °C	55.4 %	Simon Tsai
Mains Conducted Emission	24~26 °C	63~65 %	Temo Chen

4.3 Special Accessories and Auxiliary Equipment

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

Accessory of EUT

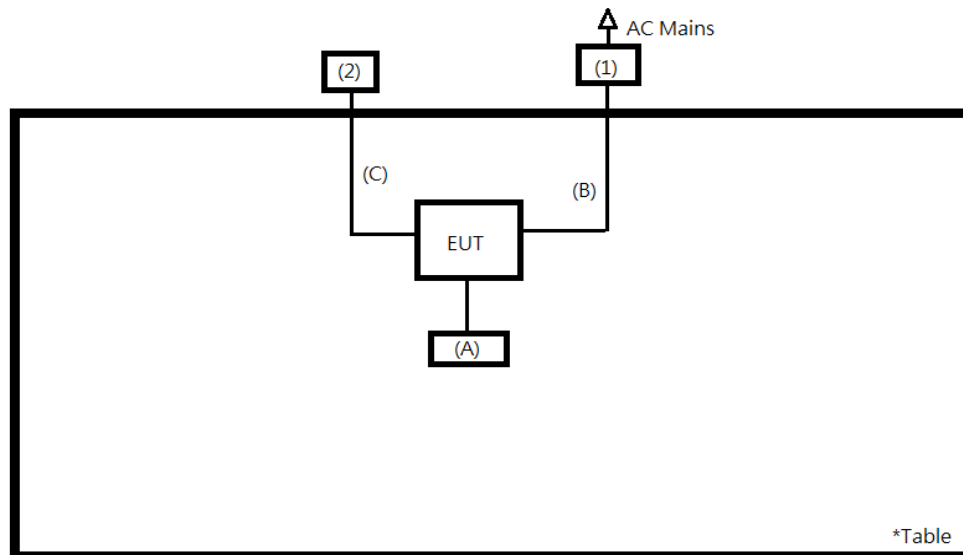
None.

Support Unit

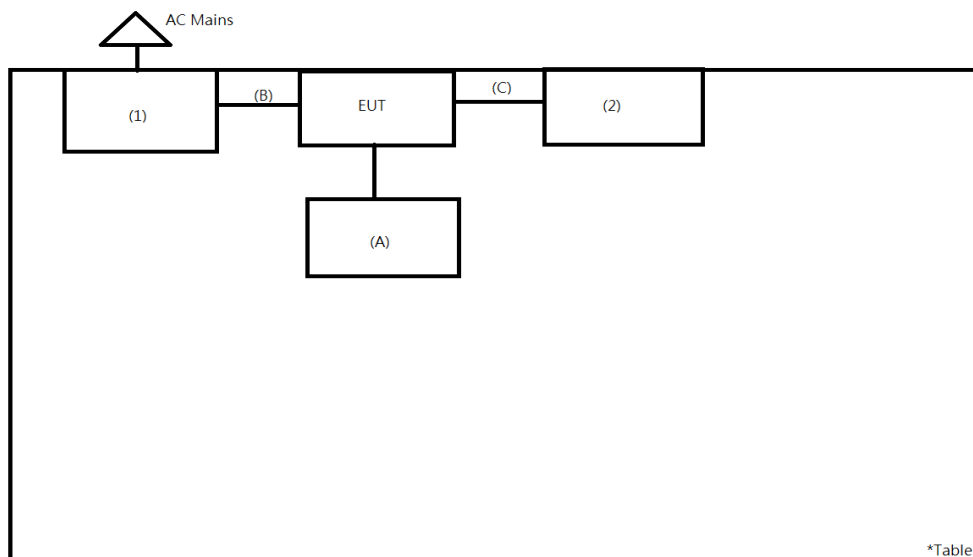
Radiated Test and Mains Conducted Test					
No.	Description	Brand	Model	S/N	Remark
A	Antenna	Microchip	ATAB-LFTX-V4.0	-	25 cm shielded cable with core
B	USB to Power Cable	-	-	-	180 cm shielded cable with core
C	Power Cable	-	-	-	100 cm shielded cable with core
1	Power Supply	PeakTech	2250	-	-
2	Battery	YUASA	NP7-12	-	-

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 ferrite rod 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.

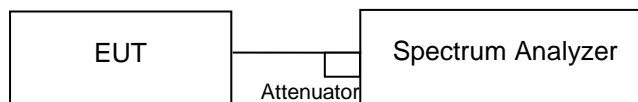
5.1.2 Occupied Bandwidth

Limit

The occupied bandwidth shall be specified in operating frequency band.

Kind of Test Site Shielded room

Test Setup



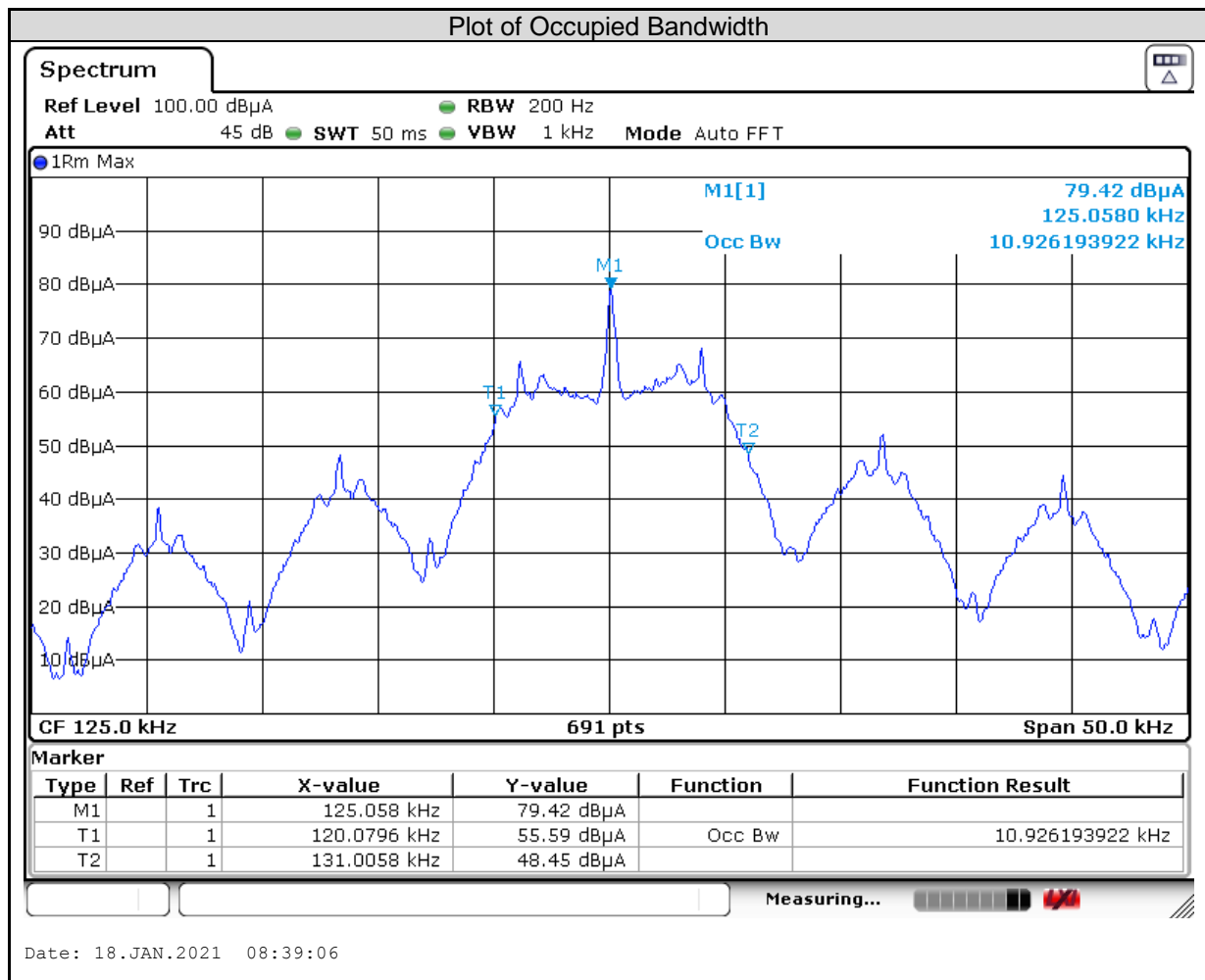
Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Spectrum Analyzer	Agilent	N9010A	MY53470241	2020/6/2	2021/6/1	2021/1/18	2021/1/18

Test Procedures

- Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
- Repeat above procedures until all frequencies measured were complete.
- For occupied bandwidth, the transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1 % to 5 % of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to Sampling. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

Test Results



5.1.3 Radiated Spurious Emissions

Limit

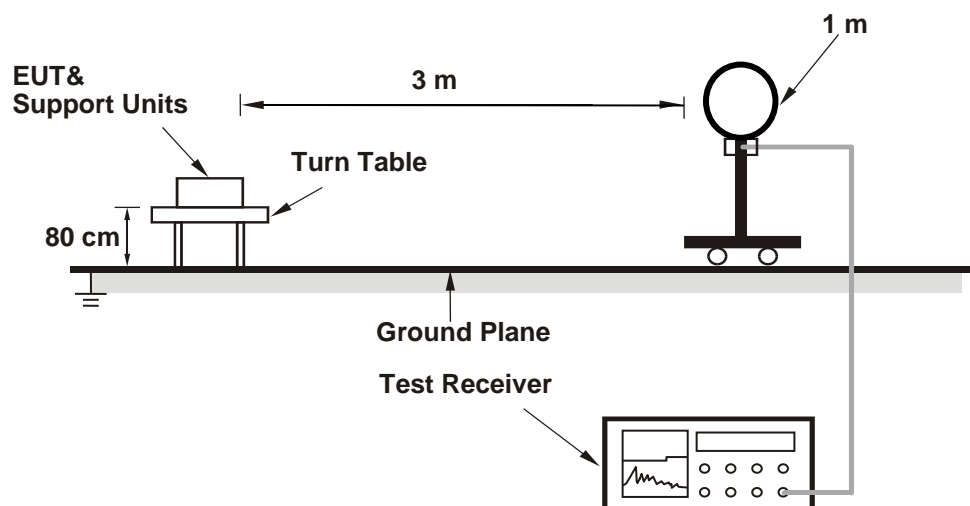
The field strength of any emissions shall not exceed the general radiated emission limits in §15.209 as below table:

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

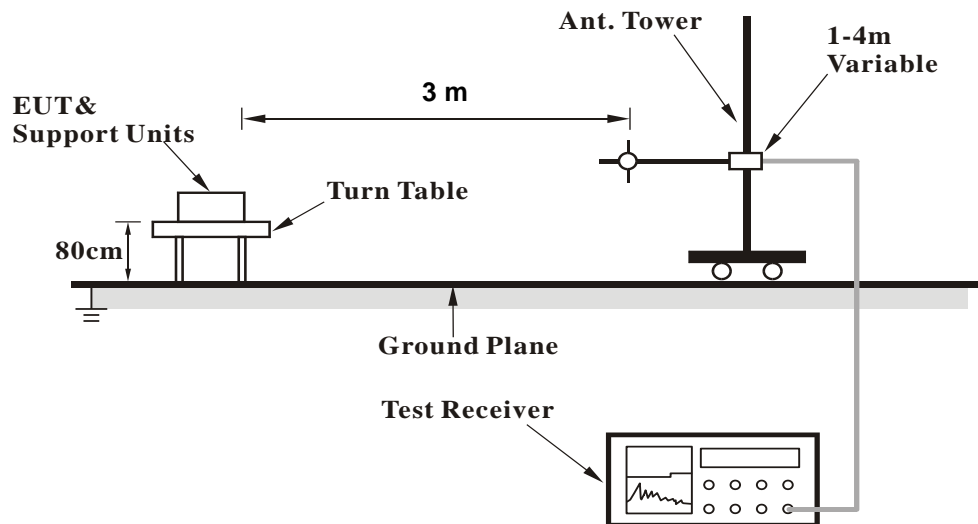
Kind of Test Site 3m Semi-Anechoic Chamber

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).

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Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Receiver	R&S	ESR7	102108	2020/4/22	2021/4/21
Bilog Antenna	SCHWARZBECK	VULB-9168	00951	2020/2/14	2021/2/12
LF-AMP	Agilent	8447D	2944A10772	2020/2/11	2021/2/9
Microwave Cable	HUBER+SUHNER	SUCOFLEX 104EA	800056/4EA	2020/3/25	2021/3/24
Microwave Cable	HUBER+SUHNER	SUCOFLEX 104	804680/4	2020/3/25	2021/3/24
Microwave Cable	HUBER+SUHNER	SUCOFLEX 104	MY37202/4	2020/3/25	2021/3/24
Loop Antenna	Chance Most	EMCILPA600 +calibration	287	2020/1/9	2021/1/7

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.

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Test Results $\text{Factor (dB/m)} = \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)}$ $\text{Level (dBuV/m)} = \text{Reading (dBuV)} + \text{Factor (dB/m)}$

Please refer to Appendix A.

5.2 Mains Emissions

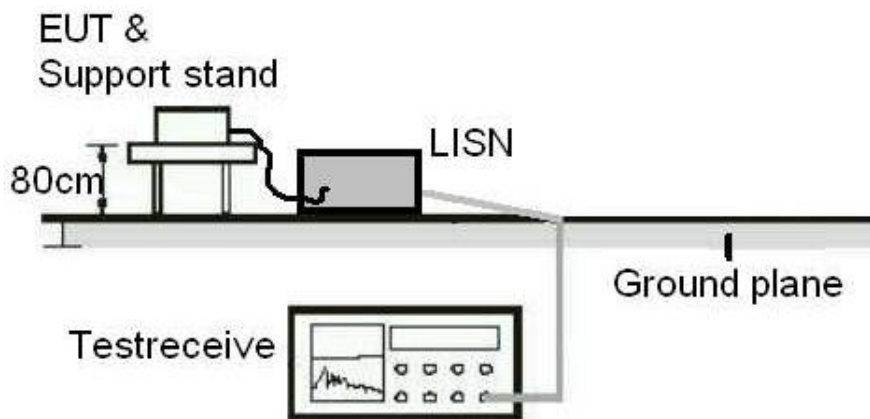
5.2.1 Mains Conducted Emissions

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

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Two-Line V-Network (for EUT)	Rohde & Schwarz	ENV216	101262	2020/08/04	2021/08/04
EMI Test Receiver	R&S	ESR7	102108	2020/4/22	2021/4/21
10dB attenuation	SCHHWARZBECK	VTSD 9561 F-N	660	2020/2/24	2021/2/23
Measurement Software	EZ	EZ EMC (Version NB-03A)	N/A	N/A	N/A

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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.



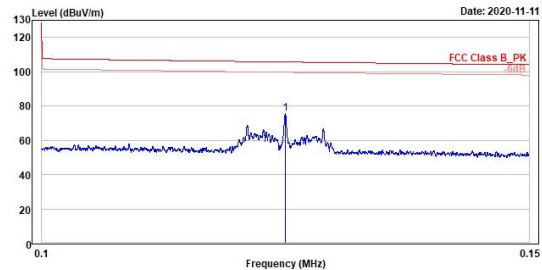
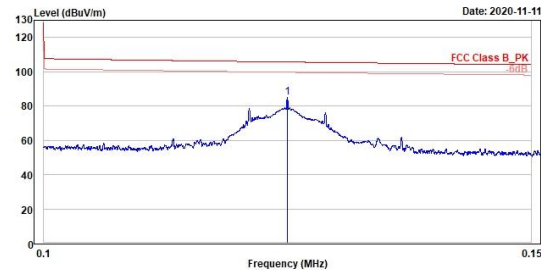
Test Results

Please refer to Appendix A.

Appendix A: Test Results of Radiated Spurious Emissions & Mains

Conducted Emission Test

Fundamental, 125kHz

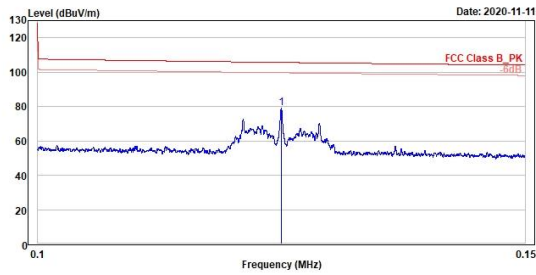
SRD 125kHz																																																																																			
Grounding						(Open) Horizontal																																																																													
<div><p>TUV Rheinland Taiwan Ltd. No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.) Tel: +886-2172-1000 Fax: +886-2172-1322</p></div>						<div><p>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</p></div>																																																																													
<div><p>Level (dBuV/m)</p><p>Date: 2020-11-11</p><p>Frequency (MHz)</p></div>						<div><p>Level (dBuV/m)</p><p>Date: 2020-11-11</p><p>Frequency (MHz)</p></div>																																																																													
<table><tr><th>Freq</th><th>Level</th><th>Read</th><th>Level</th><th>Factor</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></th><th>cm</th><th>deg</th><th></th><th></th><th></th></tr><tr><td>1</td><td>0.12</td><td>75.67</td><td>17.87</td><td>57.80</td><td>105.66</td><td>-29.99</td><td>100</td><td>262</td><td>QP</td><td>Ground</td><td></td></tr></table>						Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		cm	deg				1	0.12	75.67	17.87	57.80	105.66	-29.99	100	262	QP	Ground		<table><tr><th>Freq</th><th>Level</th><th>Read</th><th>Level</th><th>Factor</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></th><th>cm</th><th>deg</th><th></th><th></th><th></th></tr><tr><td>1</td><td>0.13</td><td>84.97</td><td>27.17</td><td>57.80</td><td>105.66</td><td>-20.69</td><td>100</td><td>251</td><td>QP</td><td>Open</td><td></td></tr></table>						Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		cm	deg				1	0.13	84.97	27.17	57.80	105.66	-20.69	100	251	QP	Open	
Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note																																																																								
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		cm	deg																																																																											
1	0.12	75.67	17.87	57.80	105.66	-29.99	100	262	QP	Ground																																																																									
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MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB		cm	deg																																																																											
1	0.13	84.97	27.17	57.80	105.66	-20.69	100	251	QP	Open																																																																									

SRD 125kHz

(Close) Vertical



TÜV Rheinland Taiwan Ltd.
No. 438-18, Sec. 2, Fenhua Rd., Linshui Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel: +886-2172-1000 Fax: +886-2172-1322



Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.12	79.08	21.28	57.80	105.66	-26.58	100	349 QP	Close

Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

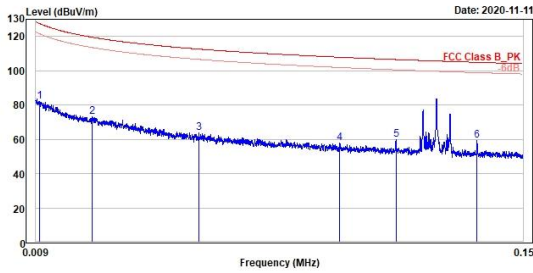
SRD 125kHz

(Horizontal) 9kHz~150kHz

(Vertical) 150kHz~30MHz



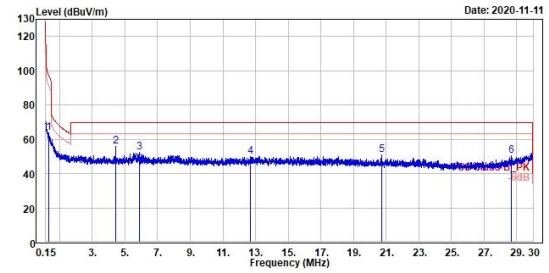
TÜV Rheinland Taiwan Ltd.
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Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	0.01	81.91	3.12	78.79	127.52	-45.61	100	291	QP	Open	
2	0.03	73.00	1.50	71.50	119.52	-46.44	100	300	QP	Open	
3	0.06	63.60	-0.59	64.19	112.60	-49.00	100	211	QP	Open	
4	0.10	58.07	-1.54	59.61	107.86	-49.79	100	1	QP	Open	
5	0.11	59.83	1.35	58.48	106.51	-46.68	100	75	QP	Open	
6	0.14	59.23	2.11	57.12	104.88	-45.65	100	75	QP	Open	



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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	cm	deg				
1	0.33	63.53	13.68	49.85	97.26	-33.73	100	307	QP	Open	
2	4.43	55.80	17.47	38.33	69.50	-13.70	100	9	QP	Open	
3	5.89	52.21	13.86	38.35	69.50	-17.29	100	284	QP	Open	
4	12.67	49.91	12.53	37.38	69.50	-19.59	100	148	QP	Open	
5	20.71	50.76	14.64	36.12	69.50	-18.74	100	351	QP	Open	
6	28.70	50.30	15.71	36.59	69.50	-19.20	100	359	QP	Open	

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

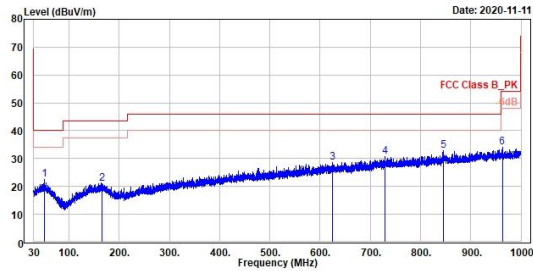
SRD 125kHz

(Horizontal)

(Vertical)



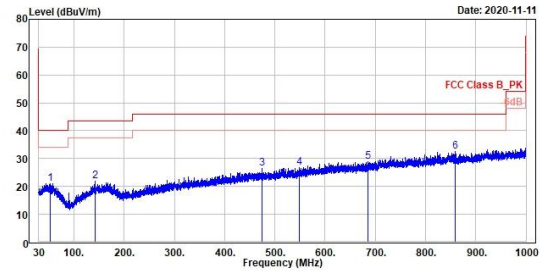
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	Freq	Level	Read	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	51.34	22.47	29.92	-7.45	40.00	-17.53	400	239 QP	horizontal		
2	166.19	21.05	28.28	-7.23	43.50	-22.45	200	54 QP	horizontal		
3	624.61	28.48	29.28	-0.80	46.00	-17.52	300	115 QP	horizontal		
4	729.66	30.80	30.10	0.70	46.00	-15.20	300	211 QP	horizontal		
5	845.29	32.72	30.38	2.34	46.00	-13.28	100	296 QP	horizontal		
6	962.95	34.20	29.80	4.40	54.00	-19.80	300	269 QP	horizontal		



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	Freq	Level	Read	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	53.47	21.07	28.64	-7.57	40.00	-18.93	100	66 QP	vertical		
2	142.91	21.90	29.58	-7.68	43.50	-21.60	100	66 QP	vertical		
3	474.55	26.45	30.11	-3.66	46.00	-19.55	100	217 QP	vertical		
4	548.47	26.73	29.17	-2.44	46.00	-19.27	100	298 QP	vertical		
5	684.75	29.02	29.11	-0.09	46.00	-16.98	300	314 QP	vertical		
6	858.87	32.61	30.12	2.49	46.00	-13.39	400	42 QP	vertical		

Mains Conducted Emission, 150kHz ~ 30MHz

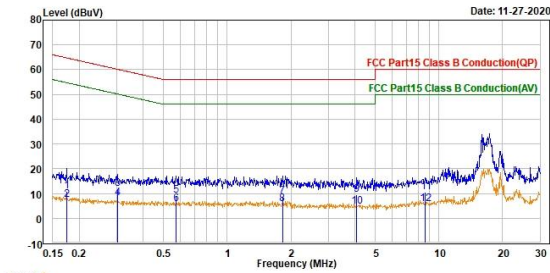
Worst Band

(Line)

(Neutral)



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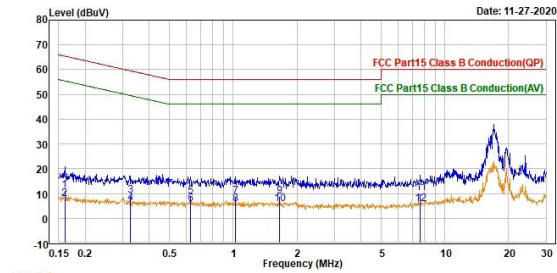


Trace: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dB	dBuV	dBuV	dB			
1	0.174	1.32	9.67	10.99	64.76	-53.77	QP	line1	
2	0.174	-2.13	9.67	7.54	54.76	-47.22	Average	line1	
3	0.303	2.10	9.67	11.77	60.16	-48.39	QP	line1	
4	0.303	-1.65	9.67	8.02	50.16	-42.14	Average	line1	
5	0.573	-0.67	9.68	9.01	56.00	-46.99	QP	line1	
6	0.573	-3.86	9.68	5.82	46.00	-40.18	Average	line1	
7	1.822	-1.00	9.71	8.71	56.00	-47.29	QP	line1	
8	1.822	-4.09	9.71	5.62	46.00	-40.38	Average	line1	
9	4.086	-0.33	9.73	9.40	56.00	-46.60	QP	line1	
10	4.086	-4.99	9.73	4.74	46.00	-41.26	Average	line1	
11	8.629	0.86	9.77	10.63	60.00	-49.37	QP	line1	
12	8.629	-3.89	9.77	5.88	50.00	-44.12	Average	line1	



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Trace: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dB	dBuV	dBuV	dB			
1	0.160	1.56	9.69	11.25	65.46	-54.21	QP	neutral	
2	0.160	-1.95	9.69	7.74	55.46	-47.72	Average	neutral	
3	0.326	-0.36	9.67	9.31	59.54	-50.23	QP	neutral	
4	0.326	-3.47	9.67	6.20	49.54	-43.34	Average	neutral	
5	0.630	-0.75	9.68	8.93	56.00	-47.07	QP	neutral	
6	0.630	-3.84	9.68	5.84	46.00	-40.16	Average	neutral	
7	1.022	-0.92	9.70	8.78	56.00	-47.22	QP	neutral	
8	1.022	-3.96	9.70	5.74	46.00	-40.26	Average	neutral	
9	1.658	-1.01	9.72	8.71	56.00	-47.29	QP	neutral	
10	1.658	-4.08	9.72	5.64	46.00	-40.36	Average	neutral	
11	7.656	0.54	9.80	10.34	60.00	-49.66	QP	neutral	
12	7.656	-4.20	9.80	5.60	50.00	-44.40	Average	neutral	