

Test report No:
2520983R.706

FCC TEST REPORT

Product Name	Smart Controller
Trademark	N/A
Model and /or type reference	TENSO-DUAL
FCC ID	2A8JK-TENSO-2BAND
Applicant's name / address	ACSL Ltd. Hulic Kasai Rinkai Building 2F, 3-6-4 Rinkaicho, Edogawa-ku, Tokyo 134-0086, Japan
Test method requested, standard	47 CFR FCC Part 15 (Section 15.407) ANSI C63.10: 2013
Verdict Summary	IN COMPLIANCE
Documented by (name / position & signature)	Tim Cao / Project Manager 
Approved by (name / position & signature)	Frank He / Technical Manager 
Date of issue	2025-04-20
Report Version	V1.0
Report template No	Template_FCC Part 15C-RF-V1.0

INDEX

	page
General conditions	4
Environmental conditions	4
Possible test case verdicts	5
Abbreviations.....	5
Document History.....	6
Remarks and Comments	6
Used Equipment.....	7
Uncertainty	11
1 General Information	12
1.1 General Description of the Item(s).....	12
1.2 Channel List.....	13
2 Description of Test Setup.....	14
2.1 Auxiliary equipment / Test software for the EUT	14
3 Verdict summary section.....	15
3.1 Standards	15
3.2 Deviation(s) from the Standard(s) / Test Specification(s).....	15
3.3 Overview of results	16
3.4 Test Facility.....	17
4 Test Items Of Limit/Setup/Procedure.....	18
4.1 Maximum Conducted Output Power.....	18
4.1.1 Limit	18
4.1.2 Test Setup	18
4.1.3 Test Procedure	19
4.2 Band Edge Measurements	20
4.2.1 Limit	20
4.2.2 Test Setup	21
4.2.3 Test Procedure	21
4.3 Emissions in Restricted Bands	23
4.3.1 Limit	23
4.3.2 Test Setup	24
4.3.3 Test Procedure	25
4.4 AC Power Line Conducted Emission.....	27
4.4.1 Limit	27
4.4.2 Test Setup	27



	4.4.3 Test Procedure	27
5	Test setup photo and EUT Photo	28
6	Test Result	29
	Appendix A: Maximum Conducted output power	29
	Appendix B: Band edge measurements	30
	Appendix C: Emissions in Restricted Bands.....	36
	Appendix D: AC Power Line Conducted Emission	48

COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

GENERAL CONDITIONS

Test Location A	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Test Location B	No. 8213, Fanhua Avenue, Baohe District, Hefei City, Anhui Province, China
Date(receive sample)	Feb. 20, 2025
Date (start test)	Mar. 10, 2025
Date (finish test)	Mar. 30, 2025

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
QP	: Quasi-Peak
CAV	: CISPR Average
AV	: Average
CDN	: Coupling Decoupling Network
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
BW	: Bandwidth
AM	: Amplitude Modulation
PM	: Pulse Modulation
HCP	: Horizontal Coupling Plane
VCP	: Vertical Coupling Plane
U_N	: Nominal voltage
Tx	: Transmitter
Rx	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2520983R.706	V1.0	Initial issue of report.	2025-04-20

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. This report is a limited report on the installation of a test module in a Smart Controller, and the customer declares that the RF parameters of the module installed in the host computer are exactly the same as those of the certified module. We verified the RF output power and radiated emissions of the equipment. For other test data, please refer to FCC ID: 2A8JK-FIDES-LINKE2. These test results on a sample of the device are for the purpose of demonstrating Compliance with 47 CFR FCC Part 15 (Section 15.407).
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result.
4. The test results presented in this report relate only to the object tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.
7. DEKRA declines any responsibility with the following test data provided by customer that may affect the validity of result:
 - Chapter 1.1 General Description of the Item(s);
 - Chapter 1.2 Channel List.

USED EQUIPMENT

Test Location A :AC Power Line Conducted Emission / TR1

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100726	2024.07.06	2025.07.05
Two-Line V-Network	R&S	ENV 216	101044	2024.10.26	2025.10.25
Two-Line V-Network	R&S	ENV 216	101189	2024.07.06	2025.07.05
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2024.04.20	2025.04.19
Coaxial Cable	Huber+Suhner	RG 223	TR1-C1	2024.04.27	2025.04.26
Impedance Stabilization Network	Teseq GmbH	ISN T800	57318	2024.02.27	2025.02.26
Impedance Stabilization Network	Teseq GmbH	ISN T800	57318	2025.02.25	2026.02.24
Temperature/Humidity Meter	RTS	RTS-8S	EMC01	2024.07.04	2025.07.03
Dekra test software	Dekra	N/A	N/A	N/A	N/A

Test Location A :Conducted Test/ TR8

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Wireless Connectivity Tester	R&S	CMW 270	102593	2024.05.15	2025.05.14
Coaxial Cable	N/A	N/A	2477	2024.06.11	2025.06.10
Coaxial Cable	N/A	N/A	2478	2024.06.11	2025.06.10
High and low temperature and fast temperature change test box	ASTUOD	ASTD-FBT-225K	N/A	2024.04.21	2025.04.20
Temperature/Humidity Meter	RTS	RTS-8S	RF07	2024.07.04	2025.07.03
Test system					
Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
MAX Signal Analyzer	Keysight	N9010A	MY48030494	2024.10.26	2025.10.25
RF Control Unit	Tonscend	JS0806-2	22G8060594	2025.01.26	2026.01.25
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY61252529	2024.05.12	2025.05.11
Frequency extender for EXG or MXG	Keysight	N5182BX07	MY59362500	2024.05.12	2025.05.11
EXG-B MW Analog Signal Generator	Keysight	N5173B	MY61252566	2024.07.06	2025.07.05
Test Software	Tonscend	TS1120	JS1120-3	N/A	N/A

Test Location A :Radiated Emission(9KHz-1GHz) / AC2

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
------------	--------------	-----------	------------	-----------	----------------

EMI Test Receiver	R&S	ESCI	100176	2024.05.12	2025.05.11
Loop Antenna	R&S	HFH2-Z2E	101149	2024.03.27	2025.03.26
Bilog Antenna	Teseq GmbH	CBL6112D	27613	2024.09.08	2025.09.07
Temperature/Humidity Meter	RTS	RTS-8S	AC2-TH	2024.07.04	2025.07.03
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2024.04.27	2025.04.26
Dekra test software	Dekra	N/A	N/A	N/A	N/A

Test Location B: Radiated Emission Band Edge / AC103

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal analyzer	keysight	N9020B	MY63490118	2024.07.26	2025.07.25
Bilog Antenna	TESEQ	CBL6112D	64164	2024.11.23	2025.11.22
Horn Antenna	RF SPIN	DRH18-E	KV2D11A18ES	2024.11.02	2025.11.01
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	01312	2024.10.28	2025.10.27
Amplifier	ESE	LNA0118	LNA23100009	2024.08.10	2025.08.09
Amplifier	Tonscend	TAP01018048S	AP23J8060307	2024.11.16	2025.11.15
Band Reject Filter Group	Tonscend	JS0806-F	23G806F0701	2024.11.20	2025.11.19
Temperature/Humidity Meter	RTS	RTS-8S	026	2024.09.04	2025.09.03
Test Software	Tonscend	JS36	N/A	N/A	N/A

Test Location A :AC Power Line Conducted Emission / TR1

Instrument	Manufacturer	Model No.	Serial No.	Firmware Version	Software version
EMI Test Receiver	R&S	ESCI	100726	4.42 SP1	N/A
Two-Line V-Network	R&S	ENV 216	101044	N/A	N/A
Two-Line V-Network	R&S	ENV 216	101189	N/A	N/A
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
Coaxial Cable	Huber+Suhner	RG 223	TR1-C1	N/A	N/A
Impedance Stabilization Network	Teseq GmbH	ISN T800	57318	N/A	N/A
Impedance Stabilization Network	Teseq GmbH	ISN T800	57318	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	EMC01	N/A	N/A
Dekra test software	Dekra	N/A	N/A	N/A	N/A

Test Location A :Conducted Test/ TR8

Instrument	Manufacturer	Model No.	Serial No.	Firmware Version	Software version
Wireless Connectivity Tester	R&S	CMW 270	102593	V 4.0.60	N/A
Coaxial Cable	N/A	N/A	2477	N/A	N/A
Coaxial Cable	N/A	N/A	2478	N/A	N/A
High and low temperature and fast temperature change test box	ASTUOD	ASTD-FBT-225K	N/A	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	RF07	N/A	N/A

Test system

Instrument	Manufacturer	Model No.	Serial No.	Firmware Version	Software version
MAX Signal Analyzer	Keysight	N9010A	MY48030494	A.14.03	N/A
RF Control Unit	Tonscend	JS0806-2	22G8060594	N/A	N/A
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY61252529	B.01.96	N/A
Frequency extender for EXG or MXG	Keysight	N5182BX07	MY59362500	N/A	N/A
EXG-B MW Analog Signal Generator	Keysight	N5173B	MY61252566	B.01.95	N/A
Test Software	Tonscend	TS1120	JS1120-3	N/A	V3.0.22

Test Location A :Radiated Emission(9KHz-1GHz) / AC2

Instrument	Manufacturer	Model No.	Serial No.	Firmware Version	Software version
EMI Test Receiver	R&S	ESCI	100176	4.42 SP3	N/A
Loop Antenna	R&S	HFH2-Z2E	101149	N/A	N/A

Bilog Antenna	Teseq GmbH	CBL6112D	27613	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	AC2-TH	N/A	N/A
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	N/A	N/A
Dekra test software	Dekra	N/A	N/A	N/A	3

Test Location B: Radiated Emission Band Edge / AC103

Instrument	Manufacturer	Model No.	Serial No.	Firmware Version	Software version
Signal analyzer	keysight	N9020B	MY63490118	A 08.54	N/A
Bilog Antenna	TESEQ	CBL6112D	64164	N/A	N/A
Horn Antenna	RF SPIN	DRH18-E	KV2D11A18ES	N/A	N/A
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	01312	N/A	N/A
Amplifier	ESE	LNA0118	LNA23100009	N/A	N/A
Amplifier	Tonscend	TAP01018048S	AP23J8060307	N/A	N/A
Band Reject Filter Group	Tonscend	JS0806-F	23G806F0701	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	026	N/A	N/A
Test Software	Tonscend	JS36	N/A	N/A	5.0.0

UNCERTAINTY

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95% .

Test item Test Location A	Uncertainty
AC Power Line Conducted Emission	9kHz~150kHz: 2.8 dB 150kHz~30MHz: 2.4 dB
Peak Power Output	± 1.3 dB
Radiated Emission(30MHz~1GHz)	Horizontal: 30MHz~300MHz: 3.5 dB, 300MHz~1GHz: 3.6 dB Vertical: 30MHz~300MHz: 3.6 dB, 300MHz~1GHz: 3.5 dB
Radiated Emission(1GHz~40GHz)	Horizontal: 1GHz~40GHz: 5.0 dB Vertical: 1GHz~40GHz: 4.8 dB
RF antenna conducted test	± 1.3 dB
Radiated Emission Band Edge	± 5.0 dB
DTS Bandwidth	± 1 kHz
Occupied Bandwidth	± 1 kHz
Power Density	± 1.3 dB

Test item Test Location B	Uncertainty
Radiated Emission(30MHz~1GHz)	Horizontal: 30MHz~300MHz: 4.9 dB, 300MHz~1GHz: 4.9 dB Vertical: 30MHz~300MHz: 4.9 dB, 300MHz~1GHz: 4.9 dB
Radiated Emission(1GHz~40GHz)	Horizontal: 1GHz~40GHz: 6.0 dB Vertical: 1GHz~40GHz: 5.8 dB
Radiated Emission Band Edge	± 6.0 dB

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Product Name	Smart Controller	
Trademark	N/A	
Model No.	TENSO-DUAL	
FCC ID.....	2A8JK-TENSO-2BAND	
Hardware Version.....	V1.1	
Software Version	T44	
Operating Temperature	-40°C ~ 70°C	
Power Supply	DC 3.3 V, 4.5 A 15 W from internal rechargeable battery which can be charged by AC/DC adapter.	
Manufacturer	Aerora North America, Inc.	
Manufacturer address	2445 Augustine Drive, Suites 150, Santa Clara, CA 95054	
Factory.....	ROTOTEK VIETNAM CO., LTD	
Factory address.....	House S4_2nd floor, Hap Linh Industrial Park, Bac Ninh City, Vietnam	
Test Matrix/ IMEI	RF Conducted	G55V462337F3B00203
	RSE	G55V462337F3B00216
Wireless specification	SRD 5.8G	
Operating frequency range(s)	5735~5835MHz	
Antenna Type	Dipole	
Antenna Gain	5 dBi	

1.2 Channel List

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	5735 MHz	2	5760 MHz	3	5785 MHz	4	5810 MHz
5	5835 MHz	N/A	N/A	N/A	N/A	N/A	N/A

Note: The General Description of the Item , antenna information and Channel List for the EUT in clause 1 are provided and confirmed by the client.

2 DESCRIPTION OF TEST SETUP

2.1 Auxiliary equipment / Test software for the EUT

Auxiliary equipment	Type / Version	Manufacturer	Supplied by
(1) N/A	N/A	N/A	N/A
(2) N/A	N/A	N/A	N/A
(3) N/A	N/A	N/A	N/A
software	Type / Version	Manufacturer	Supplied by
QRCT	N/A	N/A	N/A

3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
CFR 47, FCC Part 15 C	2024	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.
ANSI C63.10	2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
KDB 789033	2017	This document provides guidance for determining emissions compliance of U-NII devices under Part 15, Subpart E of the FCC rules.
KDB 662911	2020	Provision to Allow Measurement of Directional Gain of Multi-Antenna Systems for Compliance Verification

3.2 Deviation(s) from the Standard(s) / Test Specification(s)

The following deviation(s) was / were made from the published requirements of the listed standards: N/A.

(Please define the deviations from the standard(s) if applicable)

3.3 Overview of results

Test Item	FCC rules No.	Test Requirements	Result
Antenna Requirement	15.203/15.407(a)	--	PASS ¹⁾
26dB Emission Bandwidth	15.407(a)	No limit.	PASS ¹⁾
6dB Emission Bandwidth	15.407(e)	≥ 500 kHz.	PASS ¹⁾
Duty Cycle	--	No limit.	PASS ¹⁾
Maximum Conducted Output Power	15.407(a)(3)	< 1W	PASS
Maximum Power Spectral Density	15.407(a)(3)	<30dBm/500KHz	PASS ¹⁾
Unwanted Emissions that fall Out of the Restricted Bands (Radiated)	15.407(b) 15.209	-27 dBm/MHz EIRP -17 dBm/MHz EIRP	PASS
Unwanted Emissions in the Restricted Bands (Radiated)	15.209	---	PASS
AC Power Line Conducted Emissions	15.207	---	PASS
Supplementary information: 1) Only the Conducted Output Power and Band-Edge and Radiated Spurious were fully tested. These items please refer to the SRD 5.8G Module report 2412TW0114-U2. The FCC ID is 2A8JK-FIDES-LINK2 has been certified, and the test report issued by MRT Technology (Taiwan)Co., Ltd. on 01/06/2025.			

Requirement – Test Item	Tset Location	Remark
Maximum Conducted Output Power	A	Test data please refer to Appendix A
Band edge measurements	B	Test data please refer to Appendix B
Emissions in Restricted Bands	B	Test data please refer to Appendix C
AC Power Line Conducted Emission	A	Test data please refer to Appendix D

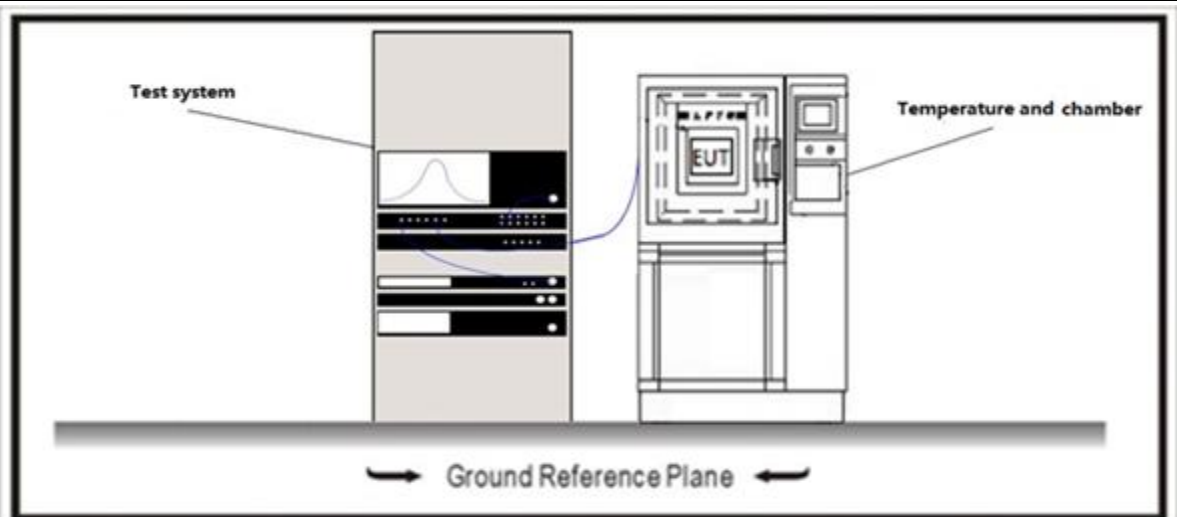
3.4 Test Facility

Tset Location A	:	FCC Designation Number: CN1199
Tset Location B	:	FCC Designation Number: CN1321

4 TEST ITEMS OF LIMIT/SETUP/PROCEDURE

4.1 Maximum Conducted Output Power	VERDICT: PASS
------------------------------------	---------------

4.1.1 Limit	
Standard	FCC Part 15 Subpart E Paragraph 15.407 (a)
☒	For the band 5.725-5.85 GHz:
☒	Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$
☐	Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W
Note 1 : GTX directional gain of transmitting antennas.	
Note 2 : Pout is maximum conducted output power .	

4.1.2 Test Setup


4.1.3 Test Procedure

	References Rule		Chapter	Description
☒	ANSI C63.10		12.3	Maximum conducted output power
	☒	ANSI C63.10	12.3.2	Maximum conducted output power measurement using a spectrum analyzer (SA) or EMI receiver
		☐ ANSI C63.10	12.3.2.2	Method SA-1
		☐ ANSI C63.10	12.3.2.3	Method SA-1A (alternative)
		☒ ANSI C63.10	12.3.2.4	Method SA-2
		☐ ANSI C63.10	12.3.2.5	Method SA-2A (alternative)
		☐ ANSI C63.10	12.3.2.6	Method SA-3
		☐ ANSI C63.10	12.3.2.7	Method SA-3A (alternative)
	☒	ANSI C63.10	12.3.3	Maximum conducted output power using a power meter
		☐ ANSI C63.10	12.3.3.1	Method PM
		☒ ANSI C63.10	12.3.3.2	Method PM-G

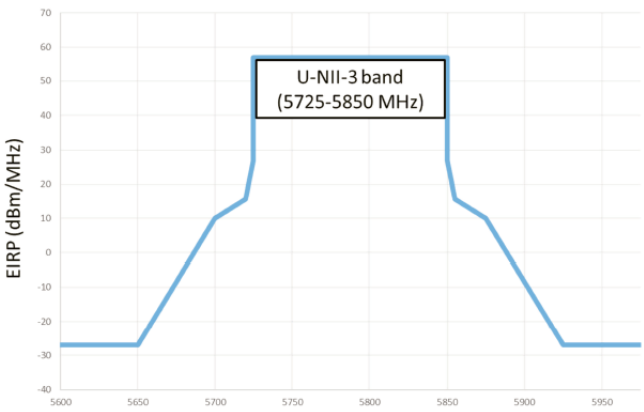
4.2 Band Edge Measurements	VERDICT: PASS
-----------------------------------	----------------------

4.2.1 Limit

Standard		FCC Part 15 Subpart C Paragraph 15.205	
Restricted Bands of operation			
Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.81425 – 8.81475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975–12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675–12.57725	322 – 335.4	3600 – 4400	
13.36 – 13.41			

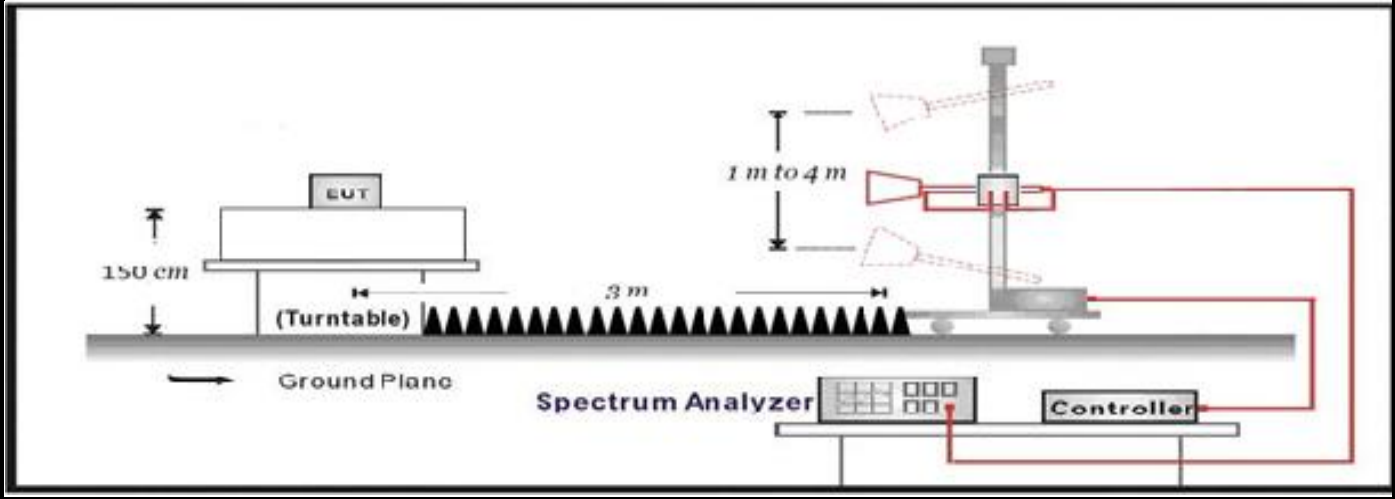
Restricted Band Emissions Limit			
FCC Part 15 Subpart C Paragraph 15.209			
Frequency (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 _(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 _(Note 1)
1.705 - 30	30	29.5	30 _(Note 1)
30 - 88	100	40	3 _(Note 2)
88 - 216	150	43.5	3 _(Note 2)
216 - 960	200	46	3 _(Note 2)
Above 960	500	54	3 _(Note 2)
Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment.			

Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

FCC Part 15 Subpart C Paragraph 15.407(5)(b) (Unrestricted Band Emissions Limit)		
Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dBμV/m)
5150 - 5250	-27	68.3
5250 - 5350	-27	68.3
5470 - 5725	-27	68.3
Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	
5725 - 5850		

4.2.2 Test Setup

Above 1GHz Test Setup:



4.2.3 Test Procedure			
	References Rule	Chapter	Description
☐	ANSI C63.10	12.7.3	Emissions in non-restricted frequency bands

☒	ANSI C63.10	12.7.2	Emissions in restricted frequency bands
☐	ANSI C63.10	12.7.5	Radiated emission measurements
☒	ANSI C63.10	12.7.6	Procedure for peak unwanted emissions measurements above 1000 MHz
☒	ANSI C63.10	12.7.7	Procedures for average unwanted emissions measurements above 1000 MHz
☐	ANSI C63.10	12.7.7.2	Method AD (average detection)—primary method
☒	ANSI C63.10	12.7.7.3	Method VB-A (Alternative)
☐	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
☐	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
☐	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
☐	FCC KDB 789033 D02v02r01	G.2	Unwanted Emissions that fall Outside of the Restricted Bands
☐	FCC KDB 789033 D02v02r01	G.1	Unwanted Emissions in the Restricted Bands
☐	FCC KDB 789033 D02v02r01	G.4	Procedure for Unwanted Emissions Measurements below 1000 MHz
☐	FCC KDB 789033 D02v02r01	G.5	Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz
☐	FCC KDB 789033 D02v02r01	G.6	Procedures for Average Unwanted Emissions Measurements above 1000 MHz
☐	FCC KDB 789033 D02v02r01	G.6.c	Method AD (Average detection)—primary method
☐	FCC KDB 789033 D02v02r01	G.6.d	Method VB (Averaging using reduced video bandwidth): Alternative method.

4.3 Emissions in Restricted Bands**VERDICT: PASS****4.3.1 Limit****Standard** FCC Part 15 Subpart C Paragraph 15.205

Restricted Bands of operation

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.81425 – 8.81475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975 – 12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675 – 12.57725	322 – 335.4	3600 – 4400	
13.36 – 13.41			

Restricted Band Emissions Limit

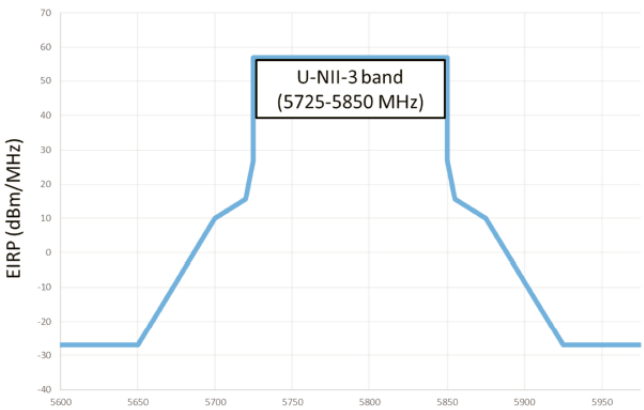
FCC Part 15 Subpart C Paragraph 15.209

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 _(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 _(Note 1)
1.705 - 30	30	29.5	30 _(Note 1)
30 - 88	100	40	3 _(Note 2)
88 - 216	150	43.5	3 _(Note 2)
216 - 960	200	46	3 _(Note 2)
Above 960	500	54	3 _(Note 2)

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

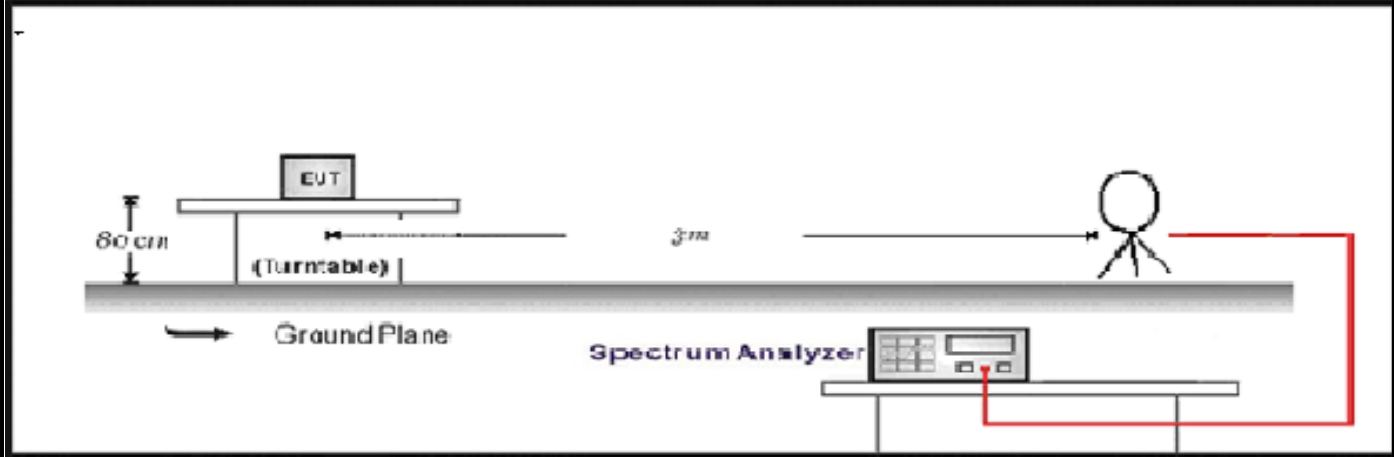
Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment.

Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

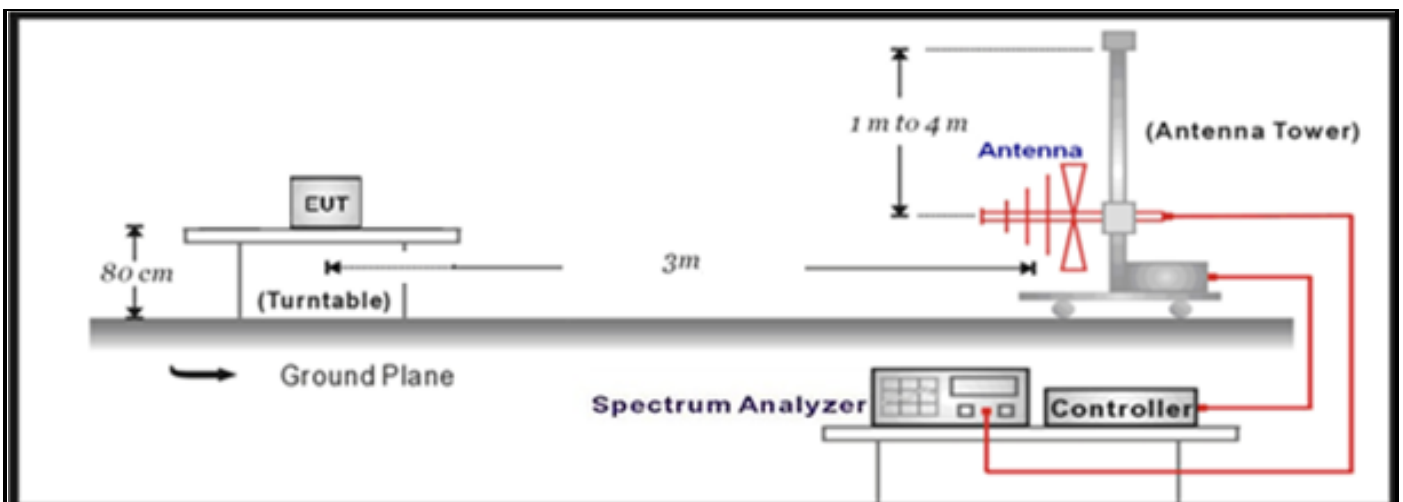
FCC Part 15 Subpart C Paragraph 15.407(5)(b) (Unrestricted Band Emissions Limit)		
Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dBμV/m)
5150 - 5250	-27	68.3
5250 - 5350	-27	68.3
5470 - 5725	-27	68.3
Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	
5725 - 5850		

4.3.2 Test Setup

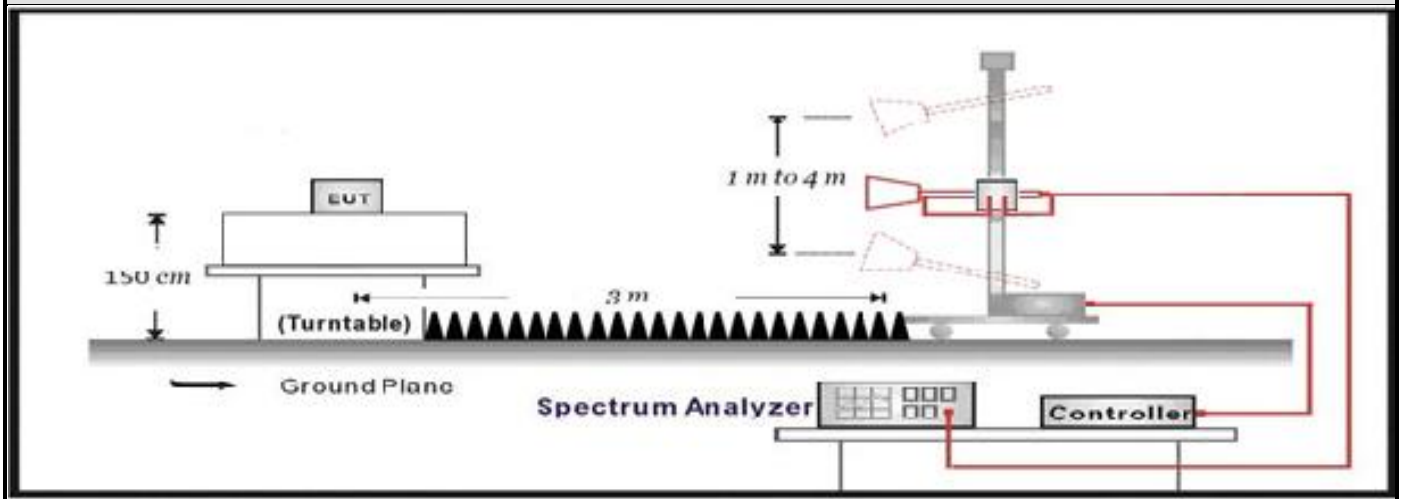
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.3.3 Test Procedure

	References Rule	Chapter	Description
☐	ANSI C63.10	12.7.3	Emissions in non-restricted frequency bands
☒	ANSI C63.10	12.7.2	Emissions in restricted frequency bands
☐	ANSI C63.10	12.7.5	Radiated emission measurements
☒	ANSI C63.10	12.7.6	Procedure for peak unwanted emissions measurements above 1000 MHz
☒	ANSI C63.10	12.7.7	Procedures for average unwanted emissions measurements above 1000 MHz
☐	ANSI C63.10	12.7.7.2	Method AD (average detection)—primary method
☒	ANSI C63.10	12.7.7.3	Method VB-A (Alternative)
☐	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
☐	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range

				of 30 MHz to 1000 MHz
	☐	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz
☐		FCC KDB 789033 D02v02r01	G.2	Unwanted Emissions that fall Outside of the Restricted Bands
☐		FCC KDB 789033 D02v02r01	G.1	Unwanted Emissions in the Restricted Bands
	☐	FCC KDB 789033 D02v02r01	G.4	Procedure for Unwanted Emissions Measurements below 1000 MHz
	☐	FCC KDB 789033 D02v02r01	G.5	Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz
	☐	FCC KDB 789033 D02v02r01	G.6	Procedures for Average Unwanted Emissions Measurements above 1000 MHz
	☐	FCC KDB 789033 D02v02r01	G.6.c	Method AD (Average detection)—primary method
	☐	FCC KDB 789033 D02v02r01	G.6.d	Method VB (Averaging using reduced video bandwidth): Alternative method.

4.4 AC Power Line Conducted Emission

VERDICT: PASS

4.4.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.207 ;	
Frequency range [MHz]	Limit: QP [dB(μV) ¹⁾]	Limit: AV [dB(μV) ¹⁾]
0,15 - 0,50	66 – 56 ²⁾	56 - 46 ²⁾
0,50 - 5,0	56	46
5,0 - 30	60	50

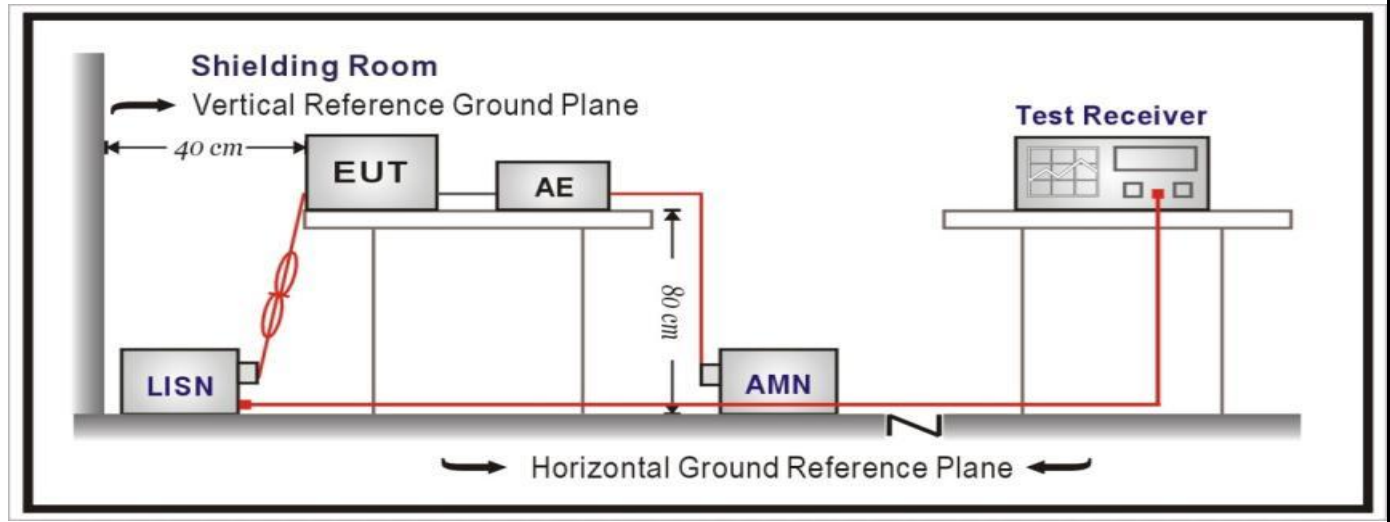
¹⁾ At the transition frequency, the lower limit applies.

²⁾ The limit decreases linearly with the logarithm of the frequency.

NOTE 1: The exclusion band for transmitters shall be considered for transmitters operating at frequencies below 30 MHz.

NOTE 2: Where the AC output port is directly connected (or via a circuit breaker) to the AC power input port of the EUT the AC power output port need not to be tested.

4.4.2 Test Setup



4.4.3 Test Procedure

	References Rule	Chapter	Item
☒	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices

5 TEST SETUP PHOTO AND EUT PHOTO

Remark: The test setup photo and EUT Photo please see appendix.

6 TEST RESULT

Appendix A: Maximum Conducted output power

Test Mode	Frequency [MHz]	Conducted Power [dBm]	Limit [dBm]	Verdict
SRD 5.8G	5735	21.67	≤ 30	PASS
	5760	21.70	≤ 30	PASS
	5785	21.72	≤ 30	PASS
	5810	21.45	≤ 30	PASS
	5835	21.25	≤ 30	PASS

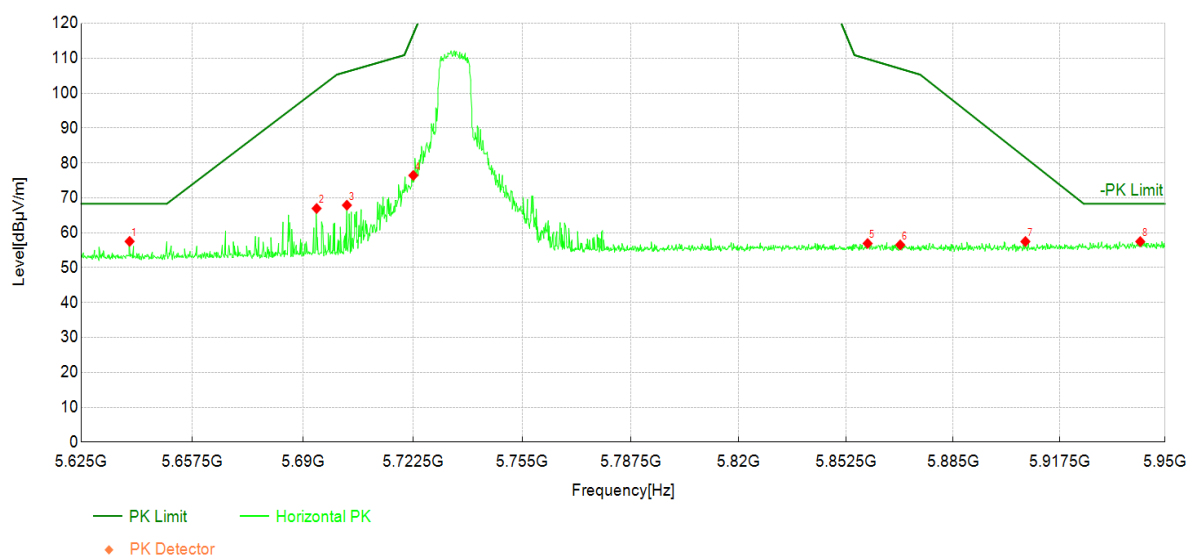
Appendix B: Band edge measurements

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5735MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:			

Test Graph



Suspected Data List

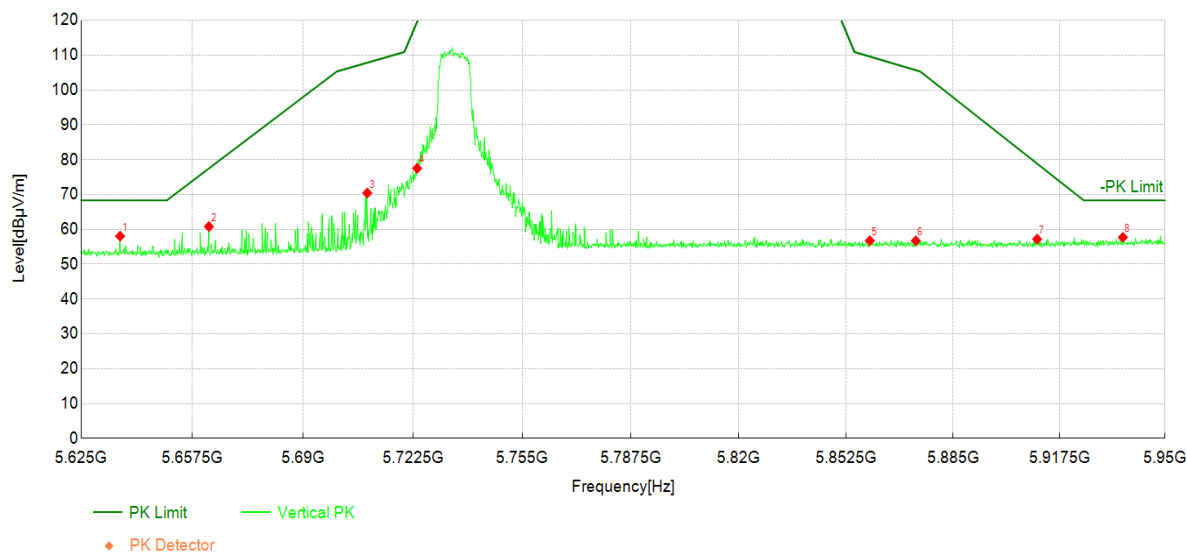
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	5639.14	39.42	57.52	18.10	68.30	10.78	PK	Horizo	PASS
2	5694.06	48.31	66.96	18.65	100.92	33.96	PK	Horizo	PASS
3	5703.00	49.18	67.89	18.71	106.14	38.25	PK	Horizo	PASS
4	5722.66	57.76	76.43	18.67	116.97	40.54	PK	Horizo	PASS
5	5859.00	37.91	56.93	19.02	109.78	52.85	PK	Horizo	PASS
6	5868.91	37.43	56.52	19.09	107.00	50.48	PK	Horizo	PASS
7	5907.10	38.08	57.48	19.40	81.51	24.03	PK	Horizo	PASS
8	5942.36	37.81	57.47	19.66	68.30	10.83	PK	Horizo	PASS

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5735MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:			

Test Graph



Suspected Data List

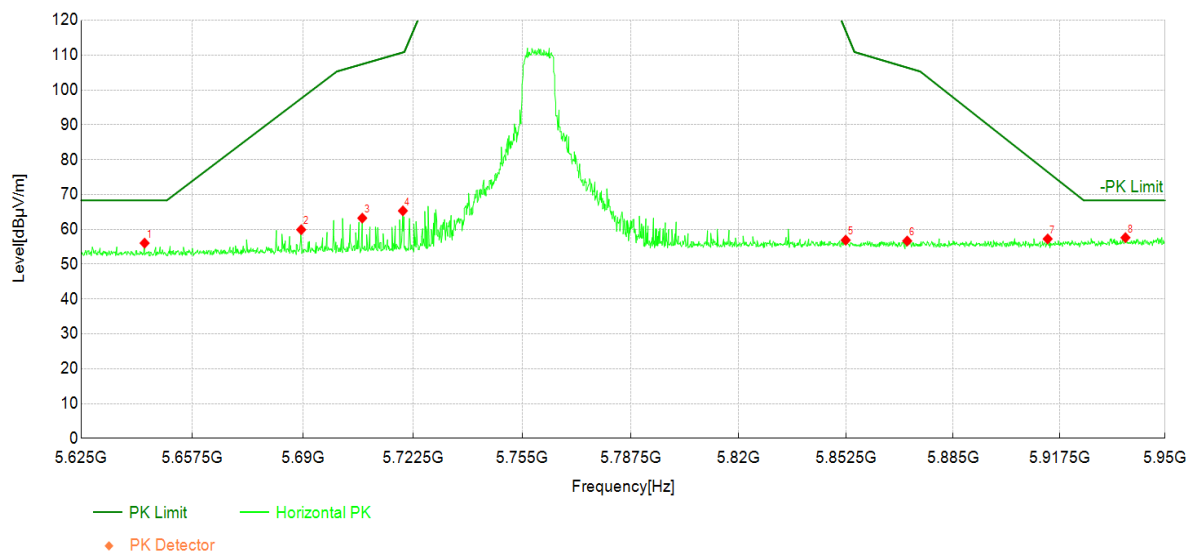
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	5636.38	39.97	58.04	18.07	68.30	10.26	PK	Vertic	PASS
2	5662.38	42.47	60.80	18.33	77.49	16.69	PK	Vertic	PASS
3	5709.01	51.74	70.43	18.69	107.83	37.40	PK	Vertic	PASS
4	5723.80	58.85	77.51	18.66	119.56	42.05	PK	Vertic	PASS
5	5859.65	37.71	56.73	19.02	109.60	52.87	PK	Vertic	PASS
6	5873.63	37.57	56.70	19.13	105.68	48.98	PK	Vertic	PASS
7	5910.68	37.76	57.18	19.42	78.87	21.69	PK	Vertic	PASS
8	5937.00	38.07	57.70	19.63	68.30	10.60	PK	Vertic	PASS

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5760MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:			

Test Graph



Suspected Data List

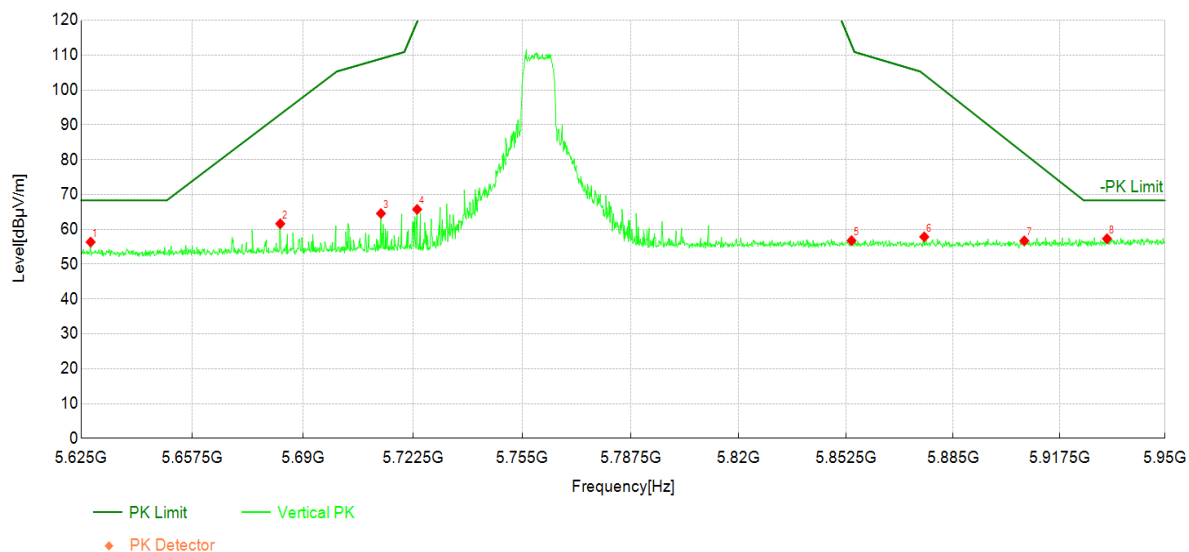
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	5643.53	37.90	56.05	18.15	68.30	12.25	PK	Horizo	PASS
2	5689.51	41.29	59.90	18.61	97.57	37.67	PK	Horizo	PASS
3	5707.55	44.52	63.22	18.70	107.42	44.20	PK	Horizo	PASS
4	5719.58	46.63	65.31	18.68	110.78	45.47	PK	Horizo	PASS
5	5852.34	37.93	56.89	18.96	116.97	60.08	PK	Horizo	PASS
6	5871.03	37.56	56.66	19.10	106.41	49.75	PK	Horizo	PASS
7	5913.93	37.81	57.25	19.44	76.47	19.22	PK	Horizo	PASS
8	5937.81	37.98	57.61	19.63	68.30	10.69	PK	Horizo	PASS

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5760MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:			

Test Graph



Suspected Data List

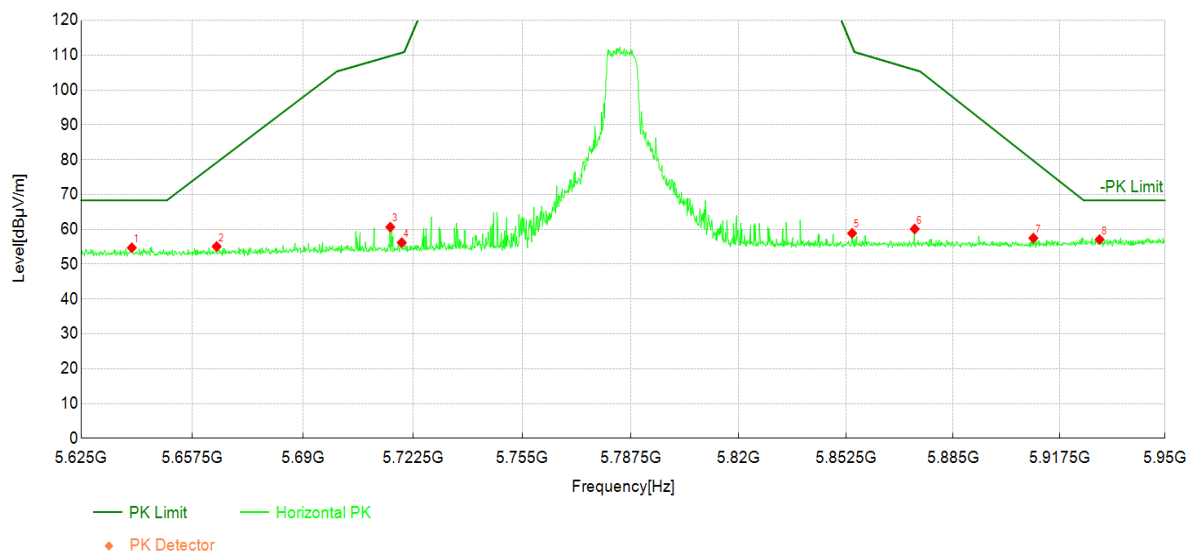
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	5627.76	38.37	56.35	17.98	68.30	11.95	PK	Vertic	PASS
2	5683.34	43.07	61.61	18.54	93.01	31.40	PK	Vertic	PASS
3	5713.08	45.85	64.54	18.69	108.96	44.42	PK	Vertic	PASS
4	5723.80	47.06	65.72	18.66	119.56	53.84	PK	Vertic	PASS
5	5854.13	37.78	56.75	18.97	112.89	56.14	PK	Vertic	PASS
6	5876.23	38.68	57.83	19.15	104.39	46.56	PK	Vertic	PASS
7	5906.78	37.29	56.69	19.40	81.75	25.06	PK	Vertic	PASS
8	5932.13	37.72	57.30	19.58	68.30	11.00	PK	Vertic	PASS

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5785MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:			

Test Graph



Suspected Data List

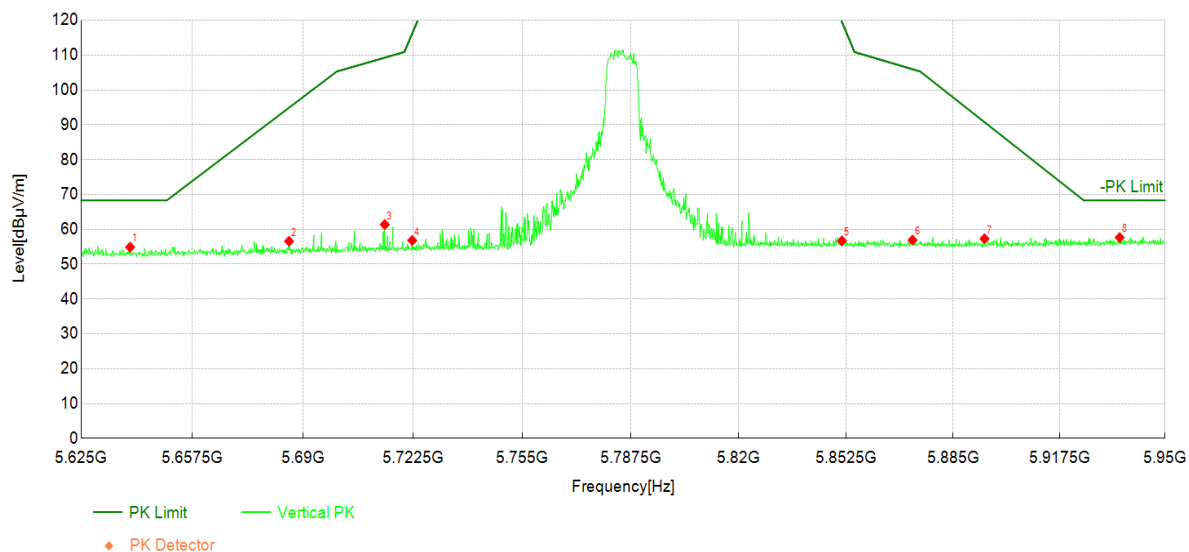
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	5639.79	36.59	54.70	18.11	68.30	13.60	PK	Horizo	PASS
2	5664.65	36.71	55.07	18.36	79.17	24.10	PK	Horizo	PASS
3	5715.84	41.95	60.64	18.69	109.74	49.10	PK	Horizo	PASS
4	5719.25	37.52	56.19	18.67	110.69	54.50	PK	Horizo	PASS
5	5854.29	39.91	58.88	18.97	112.52	53.64	PK	Horizo	PASS
6	5873.30	40.97	60.10	19.13	105.78	45.68	PK	Horizo	PASS
7	5909.54	38.07	57.48	19.41	79.71	22.23	PK	Horizo	PASS
8	5929.85	37.50	57.07	19.57	68.30	11.23	PK	Horizo	PASS

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5785MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:			

Test Graph



Suspected Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	5639.30	36.78	54.88	18.10	68.30	13.42	PK	Vertic	PASS
2	5685.94	38.01	56.58	18.57	94.93	38.35	PK	Vertic	PASS
3	5714.21	42.69	61.37	18.68	109.28	47.91	PK	Vertic	PASS
4	5722.34	38.15	56.82	18.67	116.23	59.41	PK	Vertic	PASS
5	5851.20	37.72	56.67	18.95	119.56	62.89	PK	Vertic	PASS
6	5872.65	37.81	56.93	19.12	105.96	49.03	PK	Vertic	PASS
7	5894.59	38.00	57.30	19.30	90.77	33.47	PK	Vertic	PASS
8	5936.03	38.03	57.64	19.61	68.30	10.66	PK	Vertic	PASS

Note:

1. Level = Reading + Factor .

2. Margin = Limit - Level.

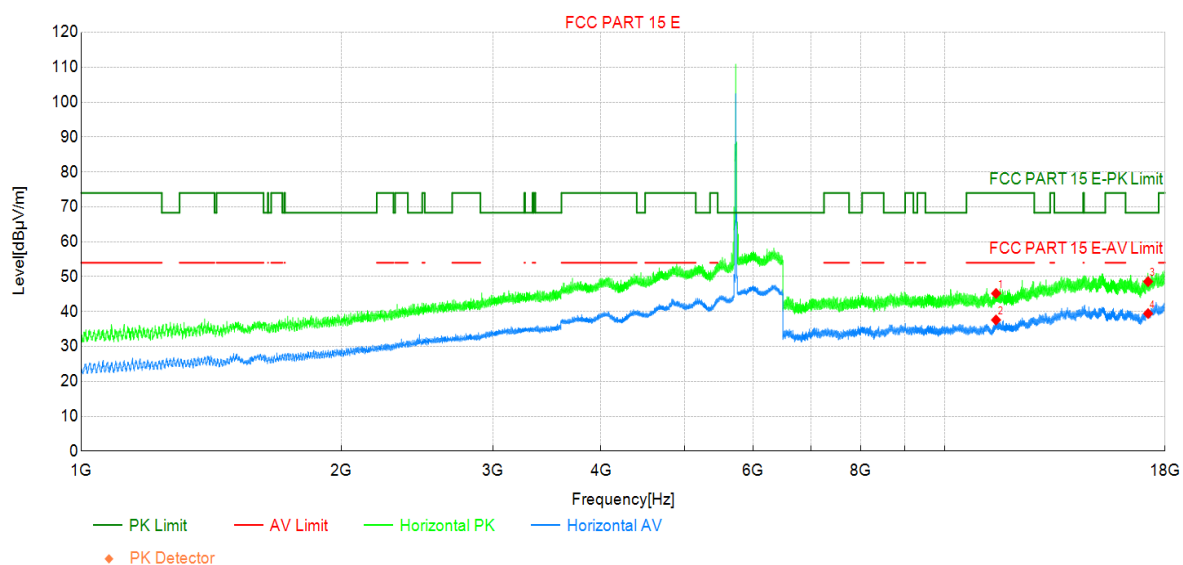
Appendix C: Emissions in Restricted Bands

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5735MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:	FCC PART 15 E		

Test Graph



Suspected Data List

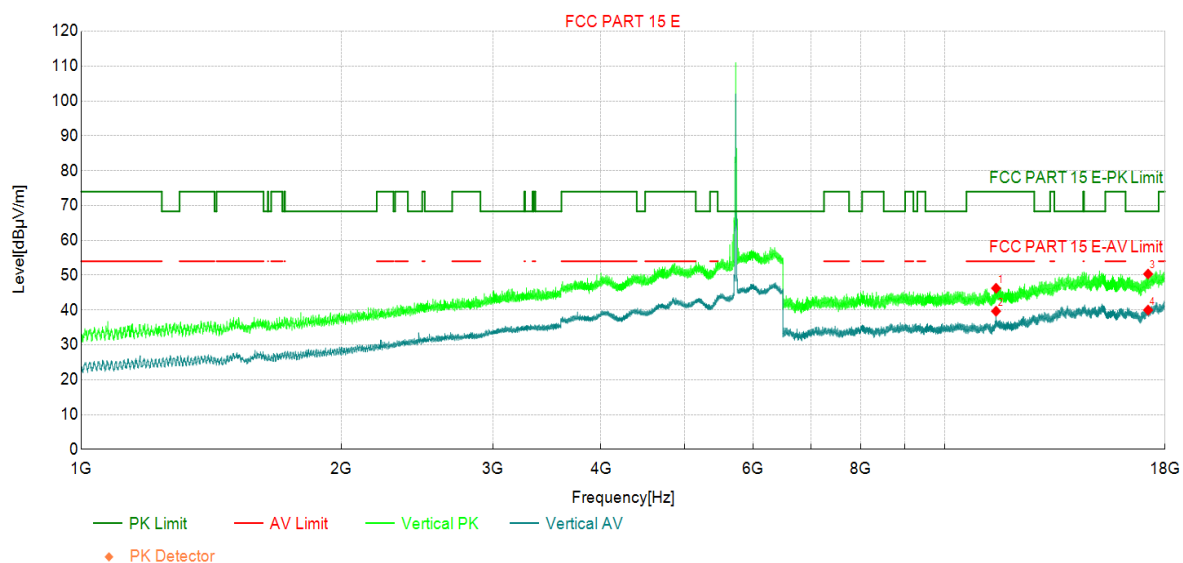
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	11470.00	36.93	45.19	8.26	74.00	28.81	PK	Horizo	PASS
2	11470.00	29.33	37.59	8.26	54.00	16.41	AV	Horizo	PASS
3	17205.00	33.19	48.60	15.41	68.30	19.70	PK	Horizo	PASS
4	17205.00	24.02	39.43	15.41	-	-	AV	Horizo	NA

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5735MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:	FCC PART 15 E		

Test Graph



Suspected Data List

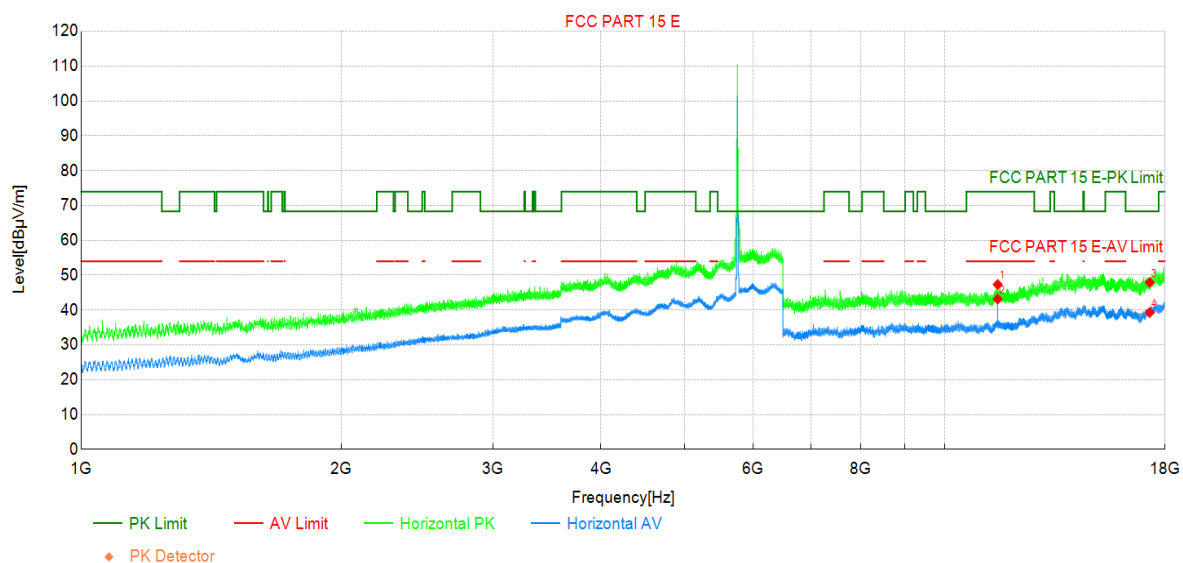
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	11470.00	37.98	46.24	8.26	74.00	27.76	PK	Vertic	PASS
2	11470.00	31.40	39.66	8.26	54.00	14.34	AV	Vertic	PASS
3	17205.00	34.93	50.34	15.41	68.30	17.96	PK	Vertic	PASS
4	17205.00	24.57	39.98	15.41	-	-	AV	Vertic	NA

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5760MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:	FCC PART 15 E		

Test Graph



Suspected Data List

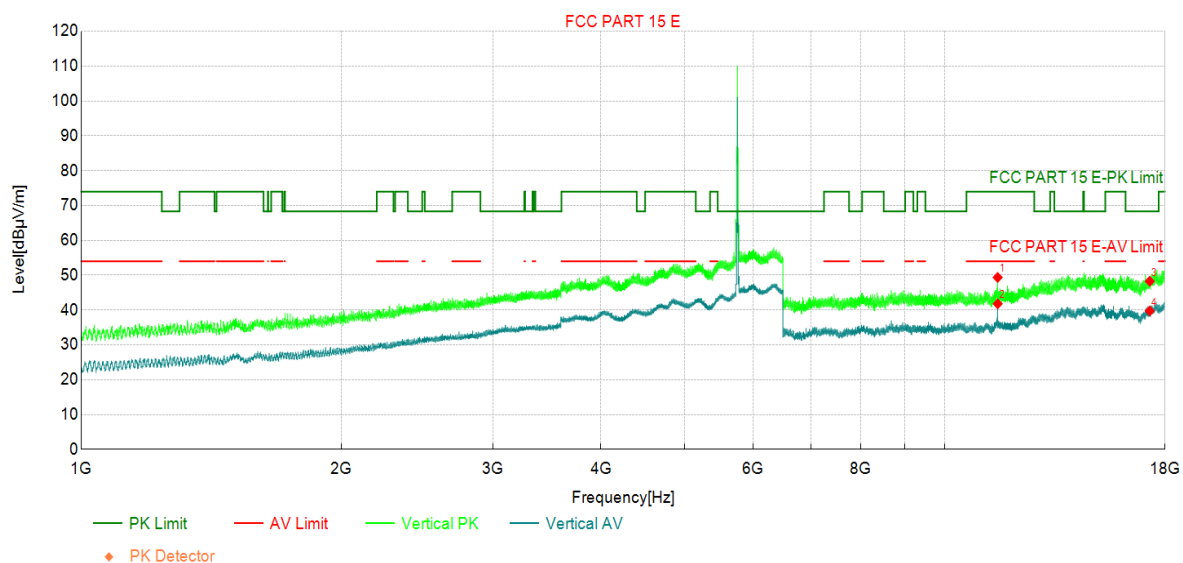
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	11520.00	38.81	47.33	8.52	74.00	26.67	PK	Horizo	PASS
2	11520.00	34.64	43.16	8.52	54.00	10.84	AV	Horizo	PASS
3	17280.00	32.39	47.93	15.54	68.30	20.37	PK	Horizo	PASS
4	17280.00	23.75	39.29	15.54	-	-	AV	Horizo	NA

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5760MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:	FCC PART 15 E		

Test Graph



Suspected Data List

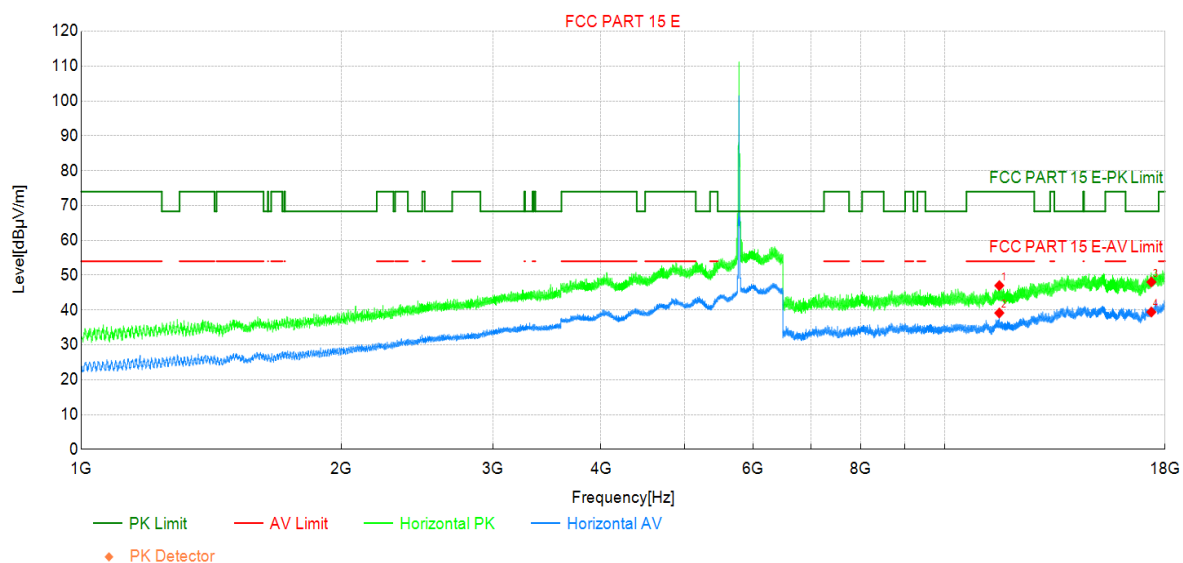
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	11520.00	40.83	49.35	8.52	74.00	24.65	PK	Vertic	PASS
2	11520.00	33.27	41.79	8.52	54.00	12.21	AV	Vertic	PASS
3	17280.00	32.72	48.26	15.54	68.30	20.04	PK	Vertic	PASS
4	17280.00	24.20	39.74	15.54	-	-	AV	Vertic	NA

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5785MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:	FCC PART 15 E		

Test Graph



Suspected Data List

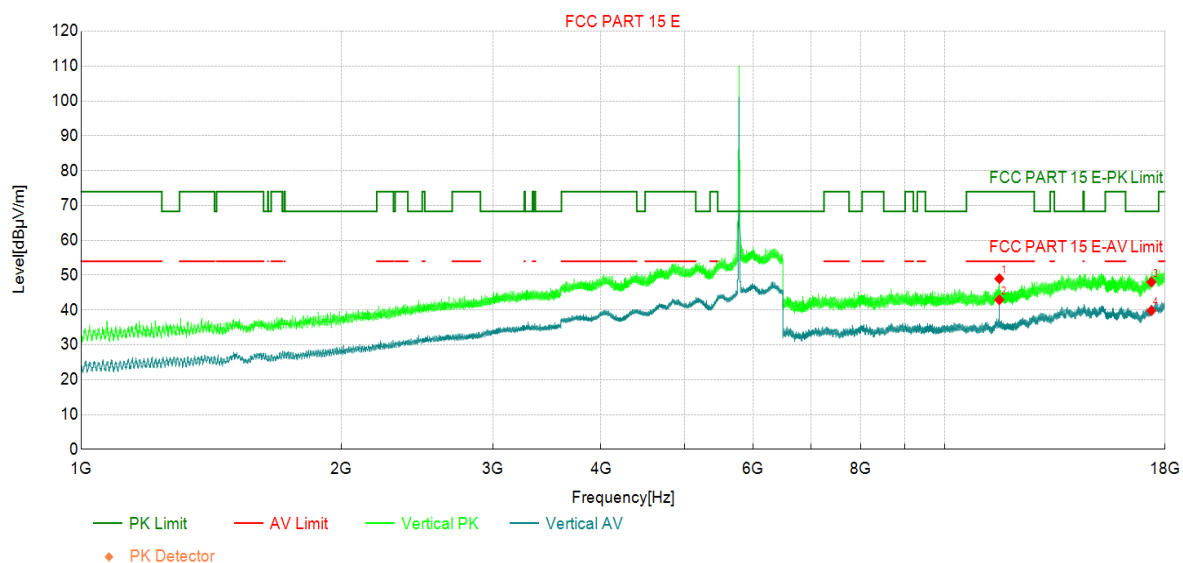
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	11570.00	38.34	47.02	8.68	74.00	26.98	PK	Horizo	PASS
2	11570.00	30.48	39.16	8.68	54.00	14.84	AV	Horizo	PASS
3	17355.00	31.82	48.04	16.22	68.30	20.26	PK	Horizo	PASS
4	17355.00	23.19	39.41	16.22	-	-	AV	Horizo	NA

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5785MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:	FCC PART 15 E		

Test Graph



Suspected Data List

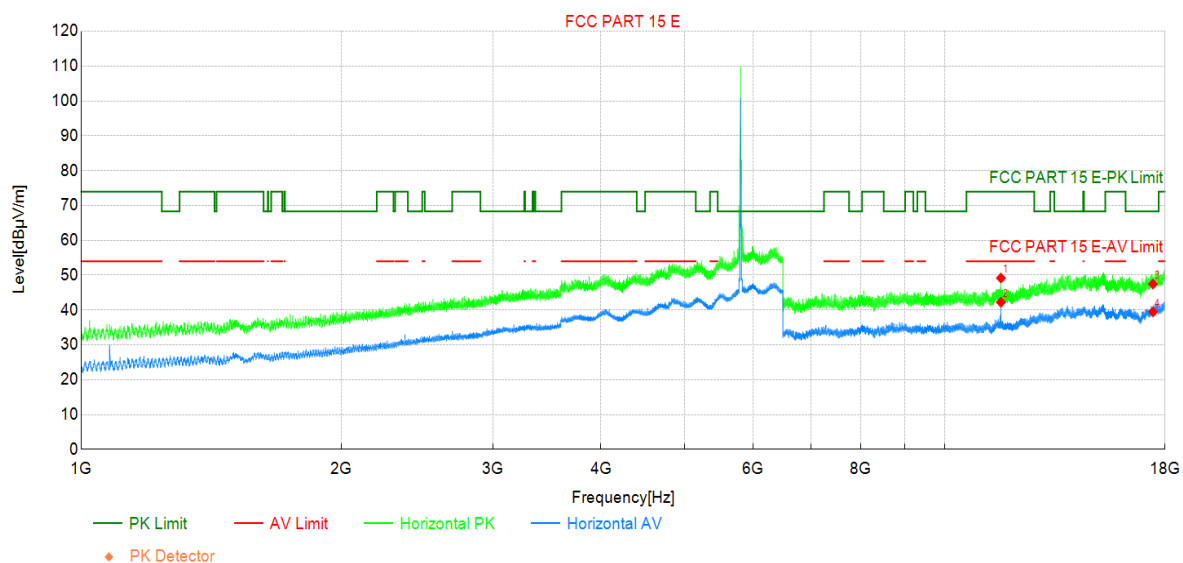
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	11570.00	40.32	49.00	8.68	74.00	25.00	PK	Vertic	PASS
2	11570.00	34.25	42.93	8.68	54.00	11.07	AV	Vertic	PASS
3	17355.00	31.81	48.03	16.22	68.30	20.27	PK	Vertic	PASS
4	17355.00	23.59	39.81	16.22	-	-	AV	Vertic	NA

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5810MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:	FCC PART 15 E		

Test Graph



Suspected Data List

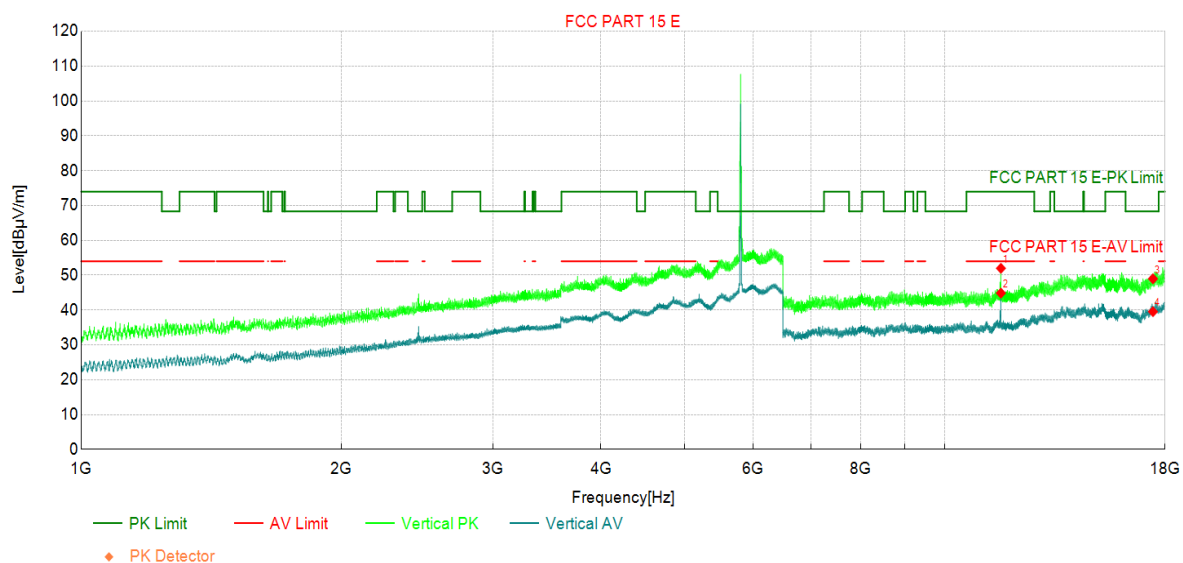
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	11620.00	40.41	49.17	8.76	74.00	24.83	PK	Horizo	PASS
2	11620.00	33.49	42.25	8.76	54.00	11.75	AV	Horizo	PASS
3	17430.00	30.57	47.45	16.88	68.30	20.85	PK	Horizo	PASS
4	17430.00	22.60	39.48	16.88	-	-	AV	Horizo	NA

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5810MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:	FCC PART 15 E		

Test Graph



Suspected Data List

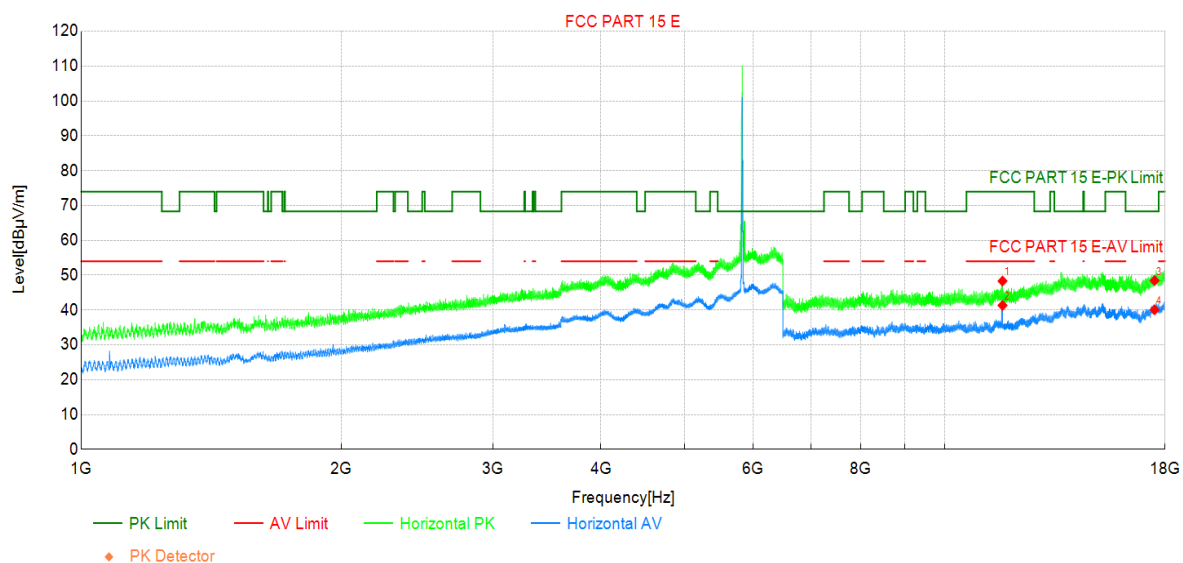
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	11620.00	43.21	51.97	8.76	74.00	22.03	PK	Vertic	PASS
2	11620.00	36.09	44.85	8.76	54.00	9.15	AV	Vertic	PASS
3	17430.00	32.08	48.96	16.88	68.30	19.34	PK	Vertic	PASS
4	17430.00	22.65	39.53	16.88	-	-	AV	Vertic	NA

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5835MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:	FCC PART 15 E		

Test Graph



Suspected Data List

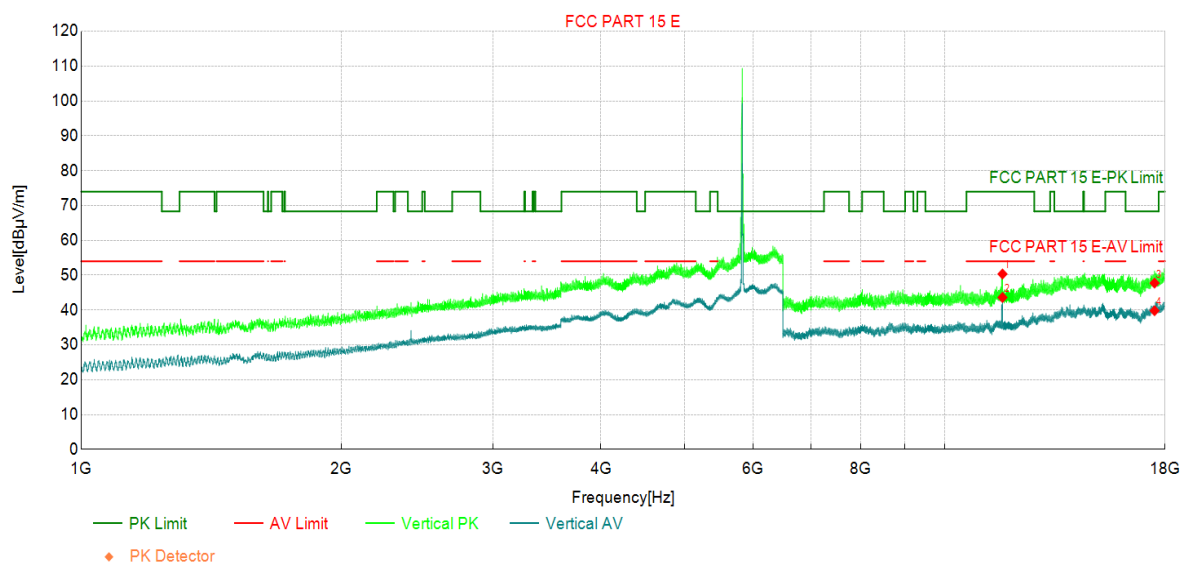
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	11670.00	39.59	48.32	8.73	74.00	25.68	PK	Horizo	PASS
2	11670.00	32.60	41.33	8.73	54.00	12.67	AV	Horizo	PASS
3	17505.00	31.16	48.45	17.29	68.30	19.85	PK	Horizo	PASS
4	17505.00	22.78	40.07	17.29	-	-	AV	Horizo	NA

Test Report

Project Information

Profile:	2520983R	EUT:	Smart Controller
Mode:	Mode1:Transmit at 5835MHz by SRD	Volta	120 Vac / 60 Hz
Environment:	Temp: 25°C ; Humi:60%	Engi	Reyn Chen
Test Standard:	FCC PART 15 E		

Test Graph

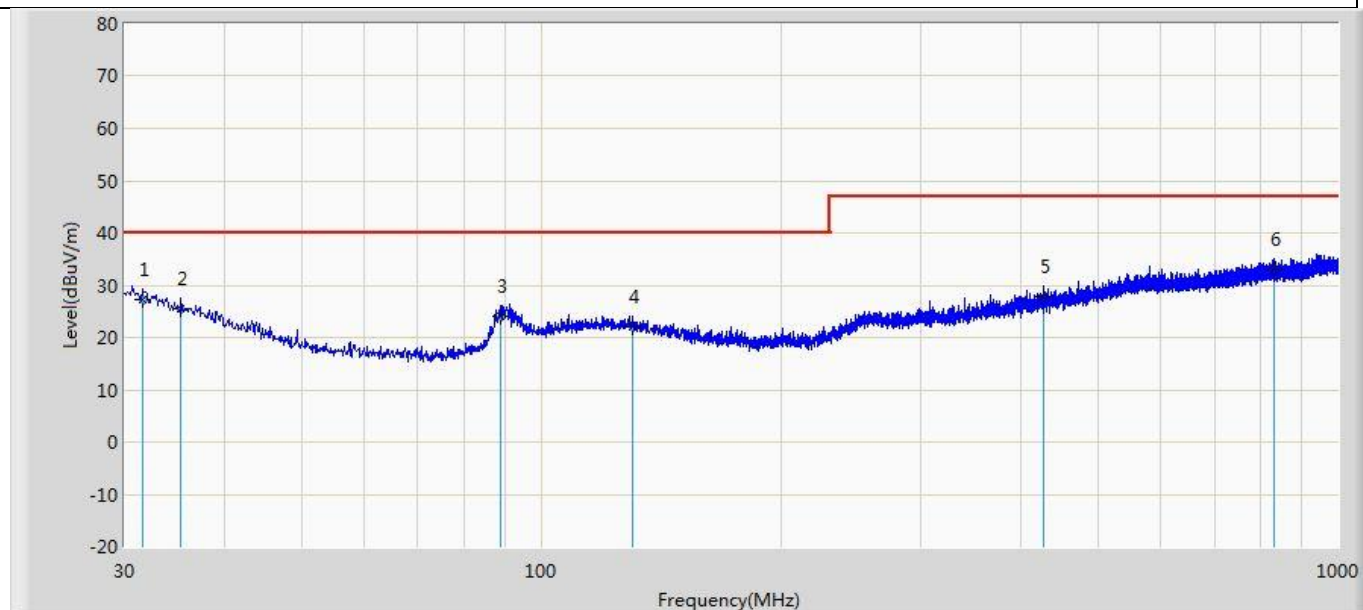


Suspected Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	11670.00	41.61	50.34	8.73	74.00	23.66	PK	Vertic	PASS
2	11670.00	34.88	43.61	8.73	54.00	10.39	AV	Vertic	PASS
3	17505.00	30.44	47.73	17.29	68.30	20.57	PK	Vertic	PASS
4	17505.00	22.51	39.80	17.29	-	-	AV	Vertic	NA

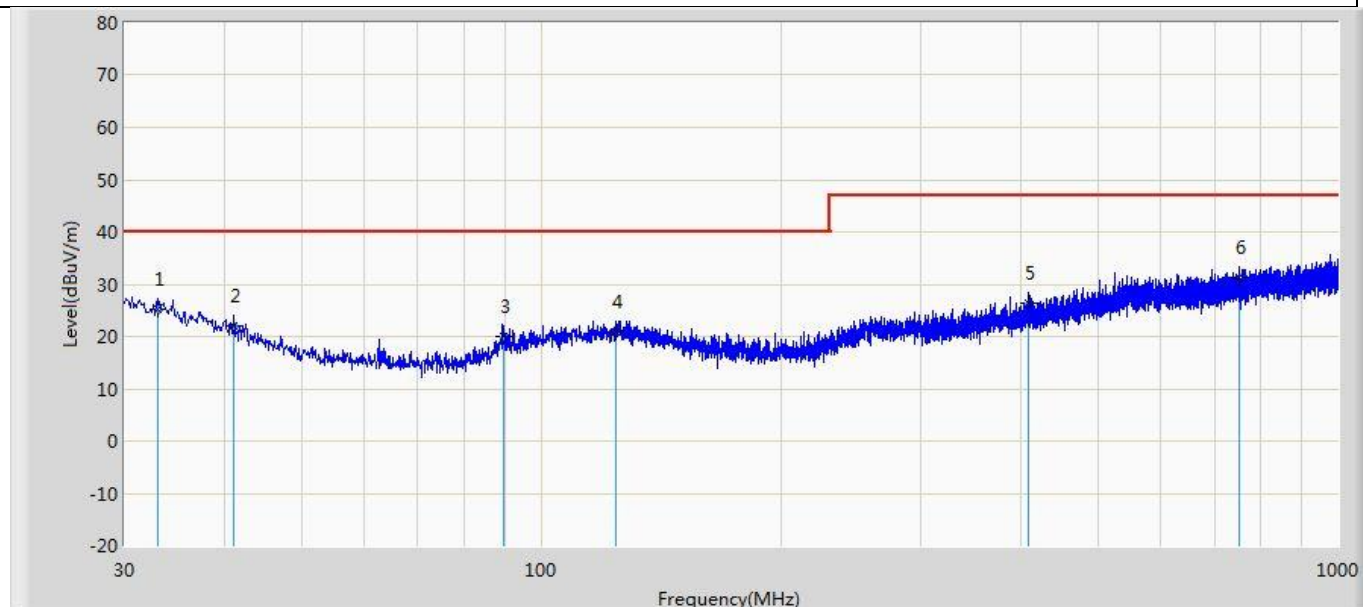
The worst case of Radiated Emission below 1GHz :

Profile: 2520983R	Page No.: 1
Engineer: Yuliu	
Site: AC2	Time: 2025/03/26
Limit: EN 55032_RE (3m)_Class B	Margin: 0
Probe: CBL6112D_27613(30-1000MHz)	Polarity: Vertical
EUT: Smart Controller	Power: 120 Vac / 60 Hz
Note: Transmit by SRD	



N o	Mar k	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	31.576	27.276	3.090	-12.724	40.000	24.186	QP
2		35.335	25.445	3.247	-14.555	40.000	22.198	QP
3		89.049	24.115	8.327	-15.885	40.000	15.787	QP
4		130.152	22.059	2.931	-17.941	40.000	19.128	QP
5		427.579	27.819	3.555	-19.181	47.000	24.264	QP
6		830.614	33.083	3.779	-13.917	47.000	29.304	QP

Profile: 2520983R	Page No.: 2
Engineer: Yuliu	
Site: AC2	Time: 2025/03/26
Limit: EN 55032_RE (3m)_Class B	Margin: 0
Probe: CBL6112D_27613(30-1000MHz)	Polarity: Horizontal
EUT: Smart Controller	Power: 120 Vac / 60 Hz
Note: Transmit by SRD	



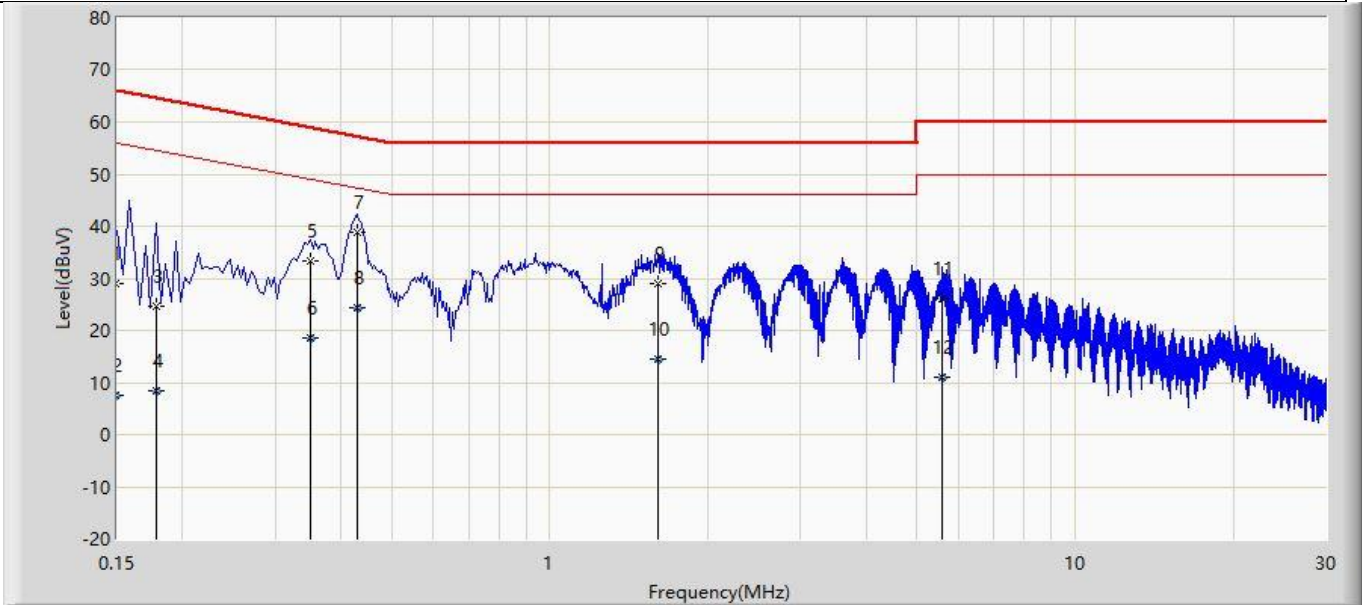
N o	Mar k	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	33.031	25.227	1.704	-14.773	40.000	23.524	QP
2		41.155	22.145	3.133	-17.855	40.000	19.012	QP
3		89.655	20.103	4.174	-19.897	40.000	15.929	QP
4		123.969	20.859	1.441	-19.141	40.000	19.418	QP
5		408.179	26.325	2.444	-20.675	47.000	23.881	QP
6		753.014	31.373	2.875	-15.627	47.000	28.498	QP

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp)
3. The test frequency range, 9kHz~30MHz, worst case are at least 20dB below the limits, therefore no data appear in the report.
4. If the test result on peak is lower than average limit, then average measurement needn't be performed.
5. All test data above 18GHz are noise base, so no data shown in this report.
6. In the report, below 1G, only the verification test is carried out for the worst channel of 1~18G worst mode.
7. The below 1G test data was measured on the worst-case configuration selected from each transmission mode on the low and high channel.

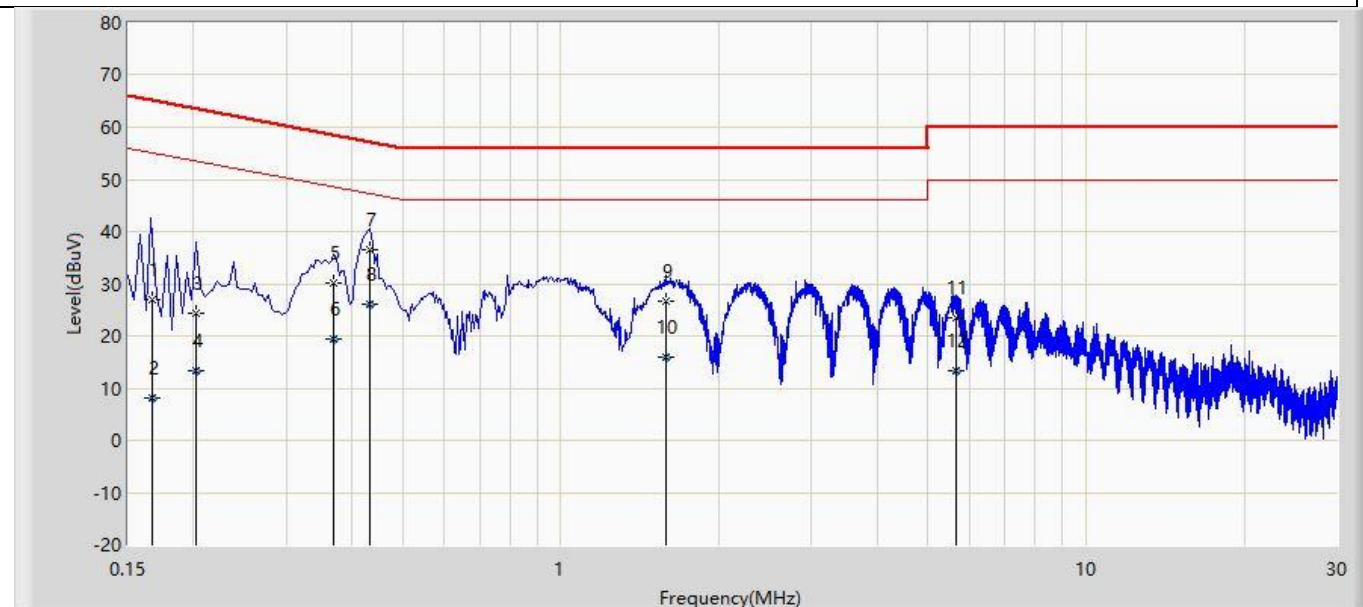
Appendix D: AC Power Line Conducted Emission

Profile: 2520983R	Page No.: 9
Engineer: Yu Liu	
Site: TR1	Time: 2025/03/26
Limit: FCC_Part 15.207	Margin: 0
Probe: ENV216_101189(0.009-30MHz)	Polarity: Line
EUT: Smart Controller	Power: 120 Vac / 60 Hz
Note: Transmit by SRD	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.149	29.024	19.314	NaN	NaN	9.710	QP
2		0.149	7.513	-2.198	NaN	NaN	9.710	AV
3		0.178	24.639	14.940	-39.940	64.578	9.699	QP
4		0.178	8.400	-1.299	-46.179	54.578	9.699	AV
5		0.350	33.212	23.492	-25.750	58.962	9.719	QP
6		0.350	18.547	8.827	-30.416	48.962	9.719	AV
7	*	0.430	38.754	29.020	-18.498	57.253	9.734	QP
8		0.430	24.452	14.717	-22.801	47.253	9.734	AV
9		1.606	28.991	19.208	-27.009	56.000	9.783	QP
10		1.606	14.599	4.815	-31.401	46.000	9.783	AV
11		5.574	25.990	16.124	-34.010	60.000	9.867	QP
12		5.574	10.899	1.032	-39.101	50.000	9.867	AV

Profile: 2520983R	Page No.: 10
Engineer: Yu Liu	
Site: TR1	Time: 2025/03/26
Limit: FCC_Part 15.207	Margin: 0
Probe: ENV216_101189(0.009-30MHz)	Polarity: Neutral
EUT: Smart Controller	Power: 120 Vac / 60 Hz
Note: Transmit by SRD	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.167	26.857	17.137	-38.248	65.105	9.720	QP
2		0.167	8.122	-1.598	-46.983	55.105	9.720	AV
3		0.202	24.484	14.796	-39.044	63.528	9.688	QP
4		0.202	13.198	3.510	-40.330	53.528	9.688	AV
5		0.370	30.051	20.394	-28.450	58.501	9.656	QP
6		0.370	19.285	9.629	-29.216	48.501	9.656	AV
7	*	0.434	36.417	26.770	-20.759	57.176	9.647	QP
8		0.434	26.223	16.577	-20.953	47.176	9.647	AV
9		1.590	26.609	16.875	-29.391	56.000	9.733	QP
10		1.590	15.998	6.264	-30.002	46.000	9.733	AV
11		5.642	23.588	13.713	-36.412	60.000	9.875	QP
12		5.642	13.428	3.554	-36.572	50.000	9.875	AV

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

The End