DEKRA Testing and Certification (Suzhou) Co., Ltd.
No. 668, Jiangling Nanxiang Road, Wujiang District, Suzhou City, Jiangsu Province,
215200 People's Republic of China
TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098

Test report No:
2680448R.702A

FCC TEST REPORT

Product Name	AI Spatial Camera
Trademark	Kosmo
Model and /or type reference	Kosmo One
FCC ID	2ASO2-KOSMOONE
Applicant´s name / address	Hesai Technology Co.,Ltd No. 3188 Baoqian Highway，Jiading District，Shanghai, P.R. China
Test method requested, standard	47 CFR FCC Part 15 (Section 15.407) ANSI C63.10: 2020
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	2026-10-20
Report Version	V1.0
Report template No.	Template_FCC Part 15C-RF-V1.0

INDEX

page

General conditions 3
Document History 4
Test Summary 5
Used Equipment 7
Uncertainty 9
1 General Information 10
Power setting in test 11
2 Description of Test Setup 13
3 Verdict summary section 14
3.1 Standards 14
3.2 Deviation(s) from the Standard(s) / Test Specification(s) 14
4 Test Items Of Limit/Setup/Procedure 15
4.1 AC Power Line Conducted Emission 15
4.2 Radiated Emissions 16
4.3 Power Output 20
4.4 Radiated Emission Band Edge 22
4.5 Dynamic Frequency Selection (DFS) 25
4.6 Antenna Requirement 34
5 Test setup photo and EUT Photo 35
AC Power Line Conducted Emission 37
Unwanted Emissions in the Restricted Bands (Radiated) 41
Maximum Conducted Output Power 171
Radiated Emission Band Edge 173
Dynamic Frequency Selection 303

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	No. 668, Jiangling Nanxiang Road, Wujiang District, Suzhou City, Jiangsu Province, 215200 People's Republic of China
Test Facility	A2LA (Certificate No. 3235.01) CNAS (Certificate No. L5313) FCC - Designation Number: CN1199 Test Firm Registration Number: 566524 ISED - CAB identifier: CN0040 IC#: 4075B
Date (receive sample)	Aug. 16, 2026
Date (start test)	Aug. 20, 2026
Date (finish test)	Sep. 10, 2026

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.
5. 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.

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2680448R.702A	V1.0	Initial issue of report.	2026-10-20

TEST SUMMARY

Test Item	Band[1]	FCC rules No.	Test Requirements	Result
Antenna Requirement	--	15.203/15.407(a)	--	**See Remark**
26dB Emission Bandwidth	Band I	15.407(a)(1)	No limit.	**See Remark**
	Band II-A	15.407(a)(2)		
	Band II-C	15.407(a)(2)		
6dB Emission Bandwidth	Band III	15.407(e)	≥ 500 kHz.	**See Remark**
99% Occupied Bandwidth	Band I	KDB 789033 D02§ D	No limit.	**See Remark**
	Band II-A			
	Band II-C			
	Band III			
Duty Cycle	Band I Band II-A Band II-C Band III	--	No limit.	**See Remark**
Maximum Conducted Output Power	Band I	15.407(a)	< 250mW	**PASS**
	Band II-A	15.407(a)(2)	<MIN{250mW,11dBm+10*lg(EBW)}	
	Band II-C			
	Band III	15.407(a)(3)	< 1W	
Maximum Power Spectral Density	Band I	15.407(a)	<11dBm/MHz	**See Remark**
	Band II-A	15.407(a)(2)	<11dBm/MHz	
	Band II-C			
	Band III	15.407(a)(3)	<30dBm/500KHz	
Unwanted Emissions that fall Out of the Restricted Bands (Radiated)	Band I	15.209 15.407(b)	F<1GHz: §15.209/§7.2.5 limit (QP). F≥1GHz & out-restricted: <-27dBm/MHz PK e.i.r.p. (exl. 5.15-5.35 GHz). F≥1GHz & in-restricted: §15.209/§7.2.5 limit (AV&PK).	**See Remark**
	Band II-A	15.407(b) 15.209	F<1GHz: §15.209/§7.2.5 limit (QP). F≥1GHz & out-restricted: <-27dBm/MHz PK e.i.r.p. (exl. 5.25-5.35 GHz). F≥1GHz & in-restricted: §15.209/§7.2.5 limit (AV&PK).	**See Remark**
	Band II-C	15.407(b) 15.209	F<1GHz: §15.209/§7.2.5 limit (QP). F≥1GHz & out-restricted: <-27dBm/MHz PK e.i.r.p. (exl. 5.47-5.725 GHz). F≥1GHz & in-restricted: §15.209/§7.2.5 limit (AV&PK).	**See Remark**
	Band III	15.407(b) 15.209	F<1GHz: §15.209/§7.2.5 limit (QP) F≥1GHz &out-restricted:(QP) a) 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges; b) 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges; c) 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27	**See Remark**

			dBm/MHz at 75 MHz above or below the band edges; and d) -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges. F≥1GHz & in-restricted: §15.209/§7.2.5 limit (AV&PK).	
Unwanted Emissions in the Restricted Bands (Radiated)	Band I Band II-A Band II-C Band III	15.209	---	**PASS**
AC Power Line Conducted Emissions	Band I Band II-A Band II-C Band III	15.207	---	**PASS**
Frequency Stability	Band I Band II-A Band II-C Band III	15.407(g)	Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual	**N/A**
Dynamic Frequency Selection (DFS)	Band II-A Band II-C	15.407(h)	---	**PASS**

Remark:
Band I: 5150-5250MHz
Band II-A: 5250-5350MHz
Band II-C: 5470-5725MHz
Band III: 5725-5850MHz
Note 1: Frequency stability is claimed by the equipment manufacturer to ensure that the transmitted signal remains within the operating frequency band under all normal operating conditions specified in the user manual.
Note 2: Only the Maximum Conducted Output Power and Radiated Spurious Emission and DFS were fully tested. These items please refer to the Wi-Fi 5G Module report BTL-FCCP-4_2603H008 and BTL-FCCP-5_2603H008.
Note 3: The FCC ID is TLZ-XM612PUR has been certified, and the test report issued by BTL Inc. (Shanghai). on 05/28/2026.

Requirement – Test case	**Remark**
Unwanted Emissions in the Restricted Bands (Radiated)	Test data please refer to **Appendix**
Maximum Conducted Output Power	Test data please refer to **Appendix**
Radiated Emission Band Edge	Test data please refer to **Appendix**
AC Power Line Conducted Emissions	Test data please refer to **Appendix**
Dynamic Frequency Selection (DFS)	Test data please refer to **Appendix**
Antenna Requirement	---

USED EQUIPMENT

Conducted Test

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielded room	Maorui	5m*4m*3m	SR103	2023.08.23	2028.08.22
Wideband Radio Communication	R&S	CMW 500	163864	2026.05.08	2027.05.07
Signal Generator	R&S	SMR 20	100654	2026.05.08	2027.05.07
MAX Signal Analyzer	Keysight	N9020B	MY63490118	2026.08.04	2027.08.03
RF Control Unit	Tonscend	JS0806-2	806JS2X021710251017	2026.06.23	2027.06.22
Frequency extender for EXG or MXG	Keysight	N5182BX07	MY59362500	2026.06.17	2027.06.16
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY61252529	2026.06.17	2027.06.16
Test Software	Tonscend	TS1120	JS1120-3	N/A	N/A

Radiated Emission (9KHz-1GHz)

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
semi-anechoic chamber	Maorui	9m*6m*6m	AC102	2023.08.23	2028.08.22
Bilog Antenna	TESEQ	CBL6112D	57867	2026.05.11	2027.05.10
EMI test receiver	R&S	ESR7	102753	2026.05.08	2027.05.07
Temperature/Humidity Meter	RITERS	RTS-8S	13	2026.08.29	2027.08.28
Temperature/Humidity Meter	RITERS	RTS-8S	15	2026.08.25	2027.08.24
Dekra test software	Dekra	N/A	N/A	N/A	N/A

AC Power Line Conducted Emission

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielded room	Maorui	9m*4m*4m	SR104	2023.08.23	2028.08.22
V-network	R&S	ENV216	101516	2026.05.10	2027.05.09
EMI test receiver	R&S	ESR3	103140	2026.05.07	2027.05.06
V-LISN	R&S	ENV4200	100748	2026.05.10	2027.05.09
Temperature/Humidity Meter	RITERS	RTS-8S	026	2026.08.29	2027.08.28
Dekra test software	Dekra	N/A	N/A	N/A	N/A

Radiated Emission Band Edge (1GHz-40GHz)

Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Fully-anechoic chamber	Maorui	9m*6m*6m	AC103	2023.08.23	2028.08.22
MAX Signal Analyzer	Keysight	N9020B	MY63490118	2026.08.04	2027.08.03
Horn Antenna	RF SPIN	DRH18-E	KV2D11A18ES	2025.10.19	2026.10.18
Low Noise Amplifier	Tonscend	TAP01018048S	AP23J8060307	2025.10.16	2026.10.15
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	01312	2025.10.24	2026.10.23
Low Noise Amplifier	ESE	LNA1840	LNA23070301	2025.10.16	2026.10.15
Temperature/Humidity Meter	RITERS	RTS-8S	010	2026.08.25	2027.08.24
Test Software	Tonscend	J536	JS36-RSE	N/A	N/A

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	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~200MHz: 3.5 dB 300MHz~1GHz: 3.6 dB Vertical: 30MHz~200MHz: 3.6 dB 300MHz~1GHz: 3.5 dB
Radiated Emission(1GHz~26.5GHz)	Horizontal: 1GHz~18GHz: 5.0 dB Vertical: 1GHz~18GHz: 4.8 dB Horizontal: 18GHz~26.5GHz: 5.3 dB Vertical: 18GHz~26.5GHz: 4.9 dB
RF antenna conducted test	± 1.3 dB
Carrier Frequency Separation	± 1.0 kHz
Number of Hopping Frequencies	± 1.0 kHz
Time of Occupancy (Dwell Time)	± 0.10 us
Radiated Emission Band Edge	± 3.9 dB
DTS Bandwidth	±1.0 kHz
Occupied Bandwidth	±1.0 kHz
Power Density	±1.3 dB

1 GENERAL INFORMATION

Product Name ..... :	AI Spatial Camera			
Model No. ..... :	Kosmo One			
Trademark. ..... :	Kosmo			
FCC ID..... :	2ASO2-KOSMOONE			
Hardware Version..... :	NA			
Software Version ..... :	NA			
Manufacturer ..... :	Hesai Technology Co.,Ltd			
Manufacturer Address ..... :	No. 3188 Baoqian Highway，Jiading District，Shanghai, P.R. China			
Power Supply ..... :	12.74 Vdc, EUT is equipped with an adapter to power it via AC/DC. 100-240 Vac, 50/60 Hz (For Adapter) 5V⎓3A 9V⎓3A 12V⎓3A 15V⎓3A 20V⎓5A (For EUT)			
SN..... :	RF Conducted	KT3FCD51933FCD51		
	RSE	KT3FCE52933FCE52		
Wireless specifiction..... :	Wi-Fi			
Frequency Range..... :	U-NII-1: 5150 MHz to 5250 MHz			
	U-NII-2A: 5250 MHz to 5350 MHz			
	U-NII-2C: 5470 MHz to 5725 MHz			
	U-NII-3: 5725 MHz to 5850 MHz			
Channel Spacing ..... :	802.11a 20 MHz 802.11n 20 MHz, 40 MHz 802.11ac 20 MHz, 40 MHz, 80 MHz 802.11ax 20 MHz, 40 MHz, 80 MHz			
Modulation technology ..... :	OFDM / OFDMA			
Smart System..... :	☒	SISO		
	☒	MIMO-CDD		
DFS Function..... :	☐	Master device		
	☐	Slave with radar detection		
	☒	Slave without radar detection		
TPC Function:	☒	Support	☐	Not Support
Antenna type ..... :	PIFA			
Antenna Gain ..... :	Frequency	Antenna 1 (dBi)	Antenna 2 (dBi)	
	5150 MHz to 5250 MHz	1.69	3.27	
	5250 MHz to 5350 MHz	2.70	2.66	
	5470 MHz to 5725 MHz	3.83	1.58	
	5725 MHz to 5850 MHz	2.84	0.96	
Remark: As above information is provided and confirmed by the applicant. DEKRA is not liable to the accuracy, suitability, reliability or/and integrity of the information.				

Power setting in test

	Mode	Channel	Frequency (MHz)	Power Setting
5GHz WLAN	802.11a 6Mbps	36	5180	13
		40	5200	13
		48	5240	13
		52	5260	18
		56	5280	18
		64	5320	18
		100	5500	16
		116	5580	17
		140	5700	16
		149	5745	17
		157	5785	17
		165	5825	19
	802.11ac 20M	36	5180	12
		40	5200	12
		48	5240	13
		52	5260	17
		56	5280	18
		64	5320	18
		100	5500	15
		116	5580	16
		140	5700	15
		149	5745	19
		157	5785	19
		165	5825	19
	802.11ac 40M	38	5190	13
		46	5230	14
		54	5270	20
		62	5310	14
		102	5510	13
		118	5590	20
		134	5670	18
		151	5755	18
		159	5795	18
	802.11ac 80M	42	5210	15
		58	5290	14
		106	5530	12
		122	5610	12
		155	5775	16
	802.11ax 20M	36	5180	11
		40	5200	11
		48	5240	11
		52	5260	19
		56	5280	20
		64	5320	17
		100	5500	16
		116	5580	19
		140	5700	13
		149	5745	18
		157	5785	20
		165	5825	20
	802.11ax 40M	38	5190	14
		46	5230	14
		54	5270	20
		62	5310	14

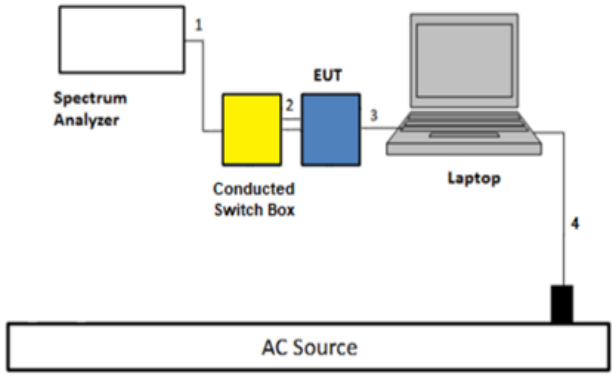
		102	5510	14
		118	5590	20
		134	5670	18
		151	5755	18
		159	5795	18
	802.11ax 80M	42	5210	15
		58	5290	14
		106	5530	12
		122	5610	12
		155	5775	16

Note:

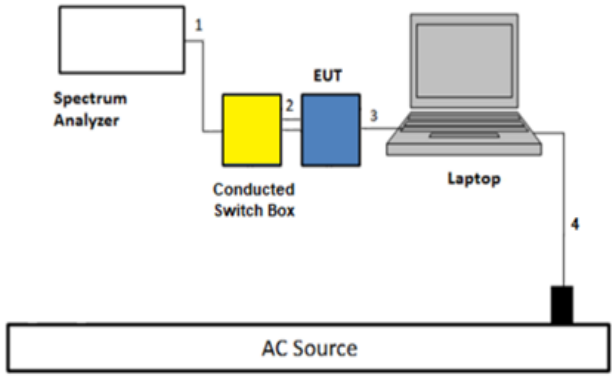
1. Low data rate was used to test on antenna port conducted tests and radiated spurious emissions since it has the highest maximum power.
2. EUT supports Ant 1 antenna mode, Ant 2 mode and MIMO Ant 1+2 mode. What is shown in the report is the data of the worst antenna mode.
3. The modulation and bandwidth are similar for 802.11n mode for 20 MHz (40 MHz) and 802.11ac/ax mode for 20 MHz (40 MHz, 80 MHz) the refore the manufacturer will control the power for 802.11n mode is same as the 802.11ac/ax mode or more lower than it and investigated worst case to representative mode in test report.

2 DESCRIPTION OF TEST SETUP

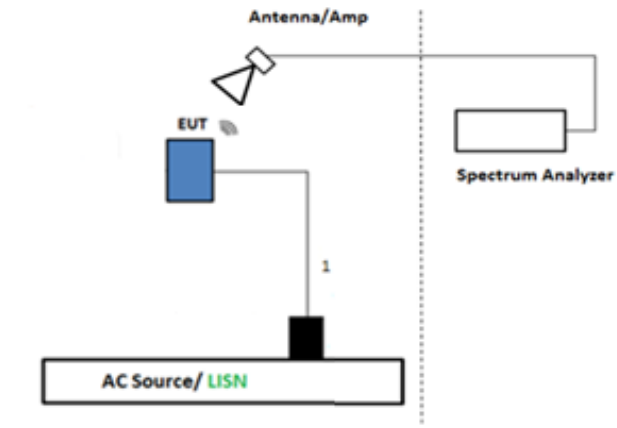
Auxiliary equipment	Type / Version	Manufacturer	Supplied by
(1) Notebook	Think pad x220	Lenovo	Adapter
(2) Ethernet cable	N/A	N/A	N/A
(3) Ethernet cable	N/A	N/A	N/A
Software	Type / Version	Manufacturer	Supplied by
WiFiHostPC	N/A	N/A	N/A



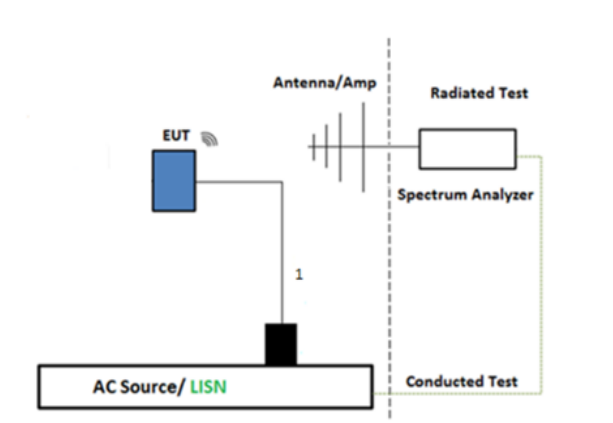
AC Power Line Conducted Emission



Conducted RF



Radiated Test Above 1GHz



Radiated Test Below 1GHz

Accessories Information	Cable		
	Length used during test [m]	Attached during test	Shielded
(2) Ethernet cable	1	☒	☒
(3) Ethernet cable	8	☒	☒

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
FCC CFR Title 47 Part 15 Subpart E	2024	FCC CFR Title 47 Part 15 Subpart E
ANSI C63.10	2020	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
KDB 789033 D02V02r01	2017	This document provides guidance for determining emissions compliance of U-NII devices under Part 15, Subpart E of the FCC rules.
KDB 662911 D01V02r01	2020	Provision to Allow Measurement of Directional Gain of Multi-Antenna Systems for Compliance Verification
KDB 905462 D02V02	2016	UNII DFS Compliance Procedures New Rules

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)

4 TEST ITEMS OF LIMIT/SETUP/PROCEDURE

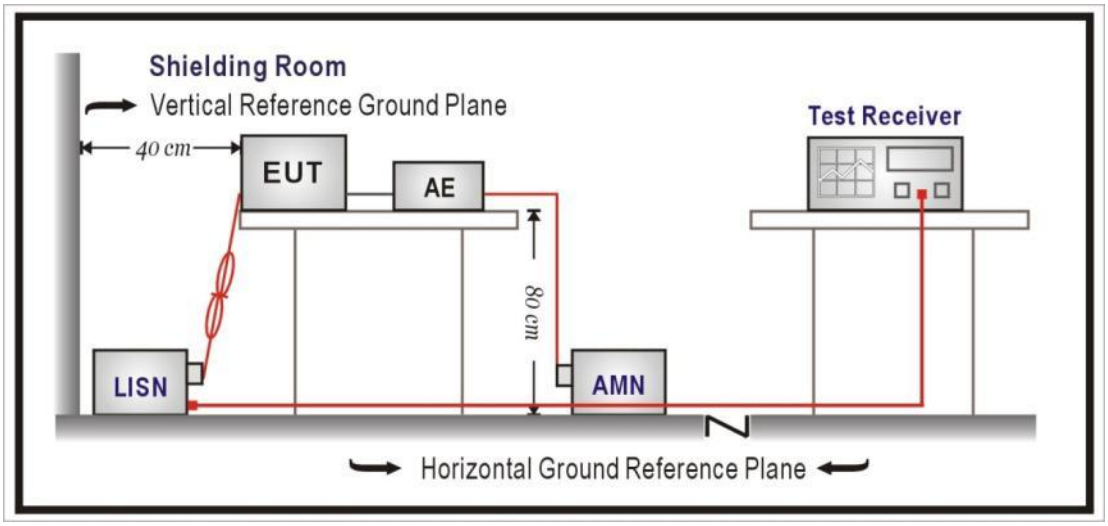
4.1 AC Power Line Conducted Emission	VERDICT: PASS

4.1.1 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.

4.1.2 Test Setup



4.1.3 Test Procedure

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

4.2 Radiated Emissions — VERDICT: PASS

4.2.1 Limit

Standard | FCC Part 15 Subpart C Paragraph 15.205

Restricted Bands of operation

MHz	MHz	MHz	GHz
0. 090–0. 110	16. 42–16. 423	399. 9–410	4. 5–5. 15
[1]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. 41425–8. 41475	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	([2])
13. 36–13. 41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

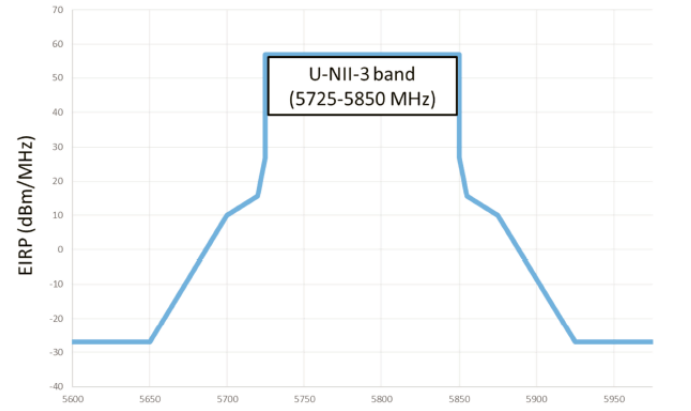
[2]Above 38.6

FCC Part 15 Subpart C Paragraph 15.209 (Restricted Band Emissions Limit)

Frequency (MHz)	Field strength (μV/m)	Field strength (dB μV/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)

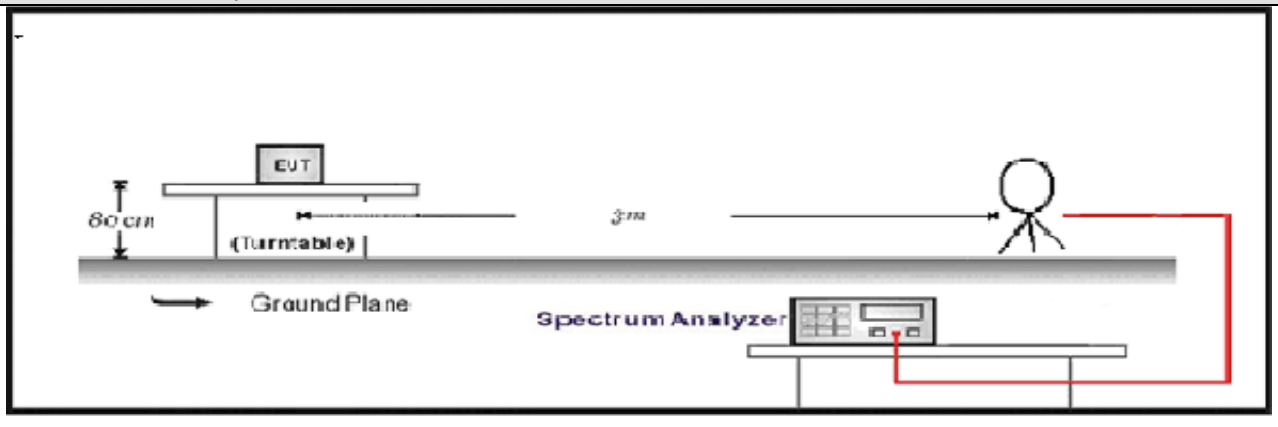
Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed 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).

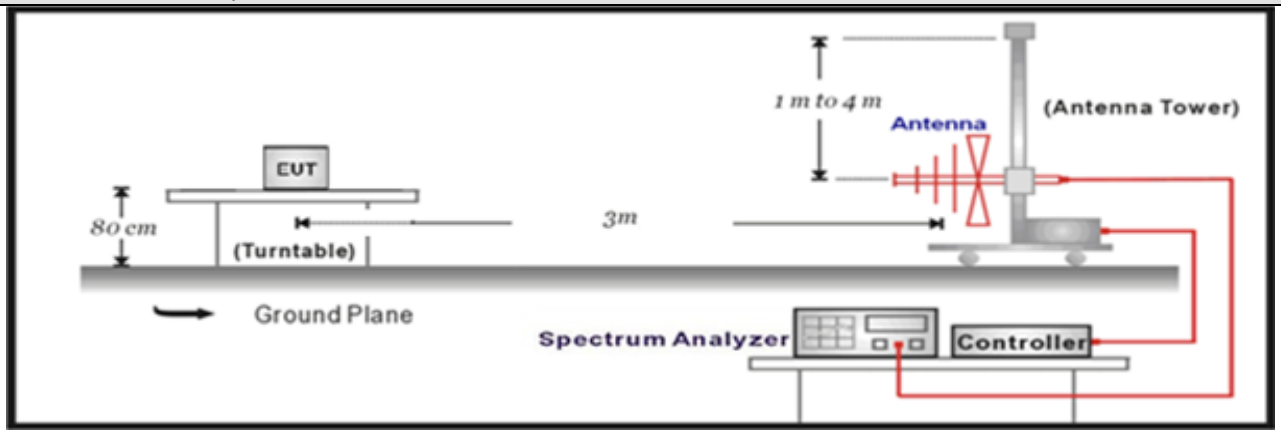
FCC Part 15 Subpart C Paragraph 15.407(5)(b) (Unrestricted Band Emissions Limit)		
Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dBμV/m)
5150 - 5250	-27	68.3
5250 - 5350	-27	68.3
5470 - 5725	-27	68.3
Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	
5725 - 5850		

4.2.2 Test Setup

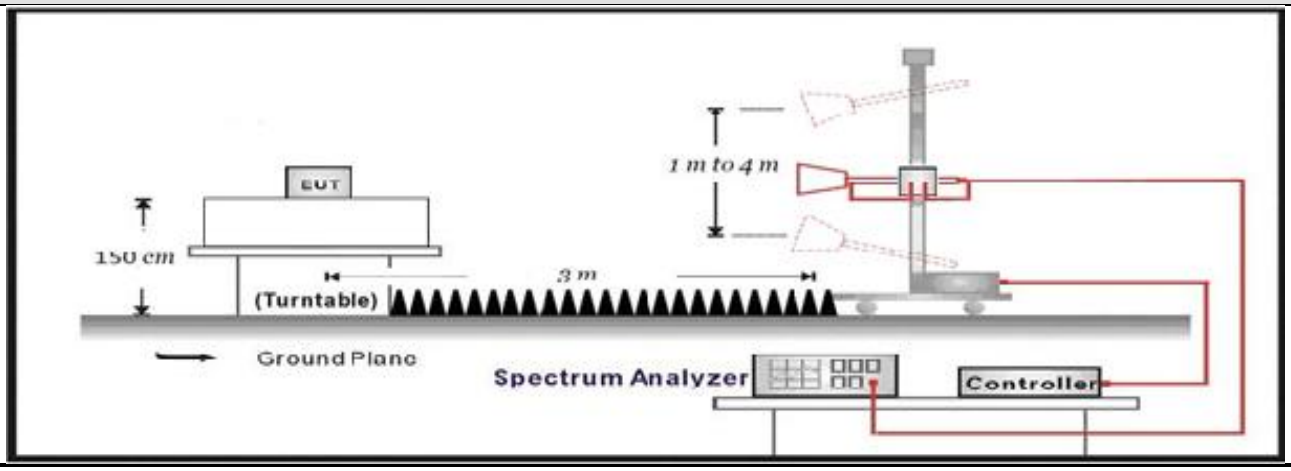
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.2.3 Test Procedure

Test Method

	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

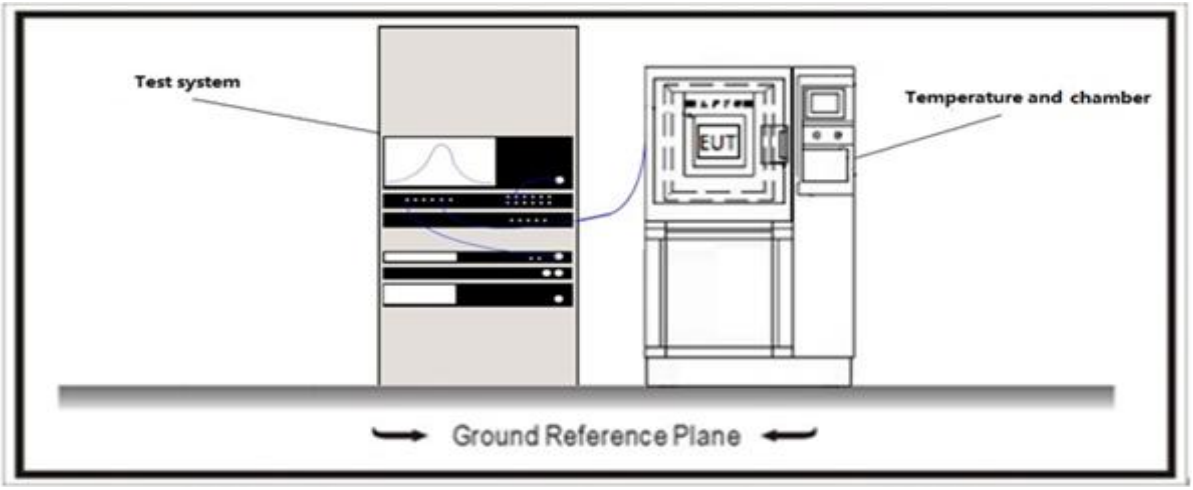
4.3 Power Output — VERDICT: PASS

4.3.1 Limit

Standard		FCC Part 15 Subpart E Paragraph 15.407 (a)
☒	For the band 5.15-5.25 GHz	
	☒	Client Devices: the maximum conducted output power shall not exceed 250 mW. If G_{TX}>6dBi
☒	For the band 5.25-5.35 GHz:	
	☒	The maximum conducted output power shall not exceed 250mW or 11dBm+10 Log B, where B is the 26dB emission bandwidth in MHz. If G_{TX} > 6dBi, then Pout ≤ (The lesser of 24 or 11dBm+10 Log B) - (GTX - 6)
☒	For the 5.47-5.725 GHz:	
	☒	The maximum conducted output power shall not exceed 250mW or 11dBm+10 Log B, where B is the 26dB emission bandwidth in MHz. If G_{TX}>6dBi, then Pout ≤ (The lesser of 24 or 11dBm+10 Log B) - (G_{TX} - 6)
☒	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 .

4.3.2 Test Setup



4.3.3 Test Procedure

	References Rule			Chapter	Description
☒	ANSI C63.10			12.4	Maximum conducted output power
	☒	ANSI C63.10		12.4.2	Maximum conducted output power measurement using a spectrum analyzer (SA) or EMI receiver
		☐	ANSI C63.10	12.4.2.2	Method SA-1

		☐	ANSI C63.10	12.4.2.3	Method SA-1A (alternative)
		☒	ANSI C63.10	12.4.2.4	Method SA-2
		☐	ANSI C63.10	12.4.2.5	Method SA-2A (alternative)
		☐	ANSI C63.10	12.4.2.6	Method SA-3
		☐	ANSI C63.10	12.4.2.7	Method SA-3A (alternative)

Directional Gain Calculations for In-Band test method				
	References Rule		Chapter	Description
☐	KDB 662911		F2)a)	Basic methodology
	☐	KDB 662911	F2)a) (i)	transmit signals are correlated
	☐	KDB 662911	F2)a) (ii)	transmit signals are uncorrelated
☐	KDB 662911		F2)b)	Sectorized antenna systems.
☐	KDB 662911		F2)c)	Cross-polarized antennas
	☐	ANSI C63.10	F2)c) (i)	Cross-polarized antennas
	☐	ANSI C63.10	F2)c) (ii)	Multiple antennas
☐	KDB 662911		F2)e)	Spatial stream
	☐	KDB 662911	F2)e) (i)	Antennas have the same gain
	☐	KDB 662911	F2)e) (ii)	Antenna have the different gain with one spatial stream
	☐	KDB 662911	F2)e) (iii)	Antenna have the different gain with more than one spatial stream
☒	KDB 662911		F2)f)	Cyclic Delay Diversity (CDD)
	☒	KDB 662911	F2)f) (i)	Antennas have the same gain
	☐	KDB 662911	F2)f) (ii)	Antenna have the different gain with one spatial stream
	☐	KDB 662911	F2)f) (iii)	Antenna have the different gain with more than one spatial stream

4.4 Radiated Emission Band Edge

VERDICT: PASS

4.4.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.205

Restricted Bands of operation

MHz	MHz	MHz	GHz
0. 090–0. 110	16. 42–16. 423	399. 9–410	4. 5–5. 15
[1]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. 41425–8. 41475	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	([2])
13. 36–13. 41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2]Above 38.6

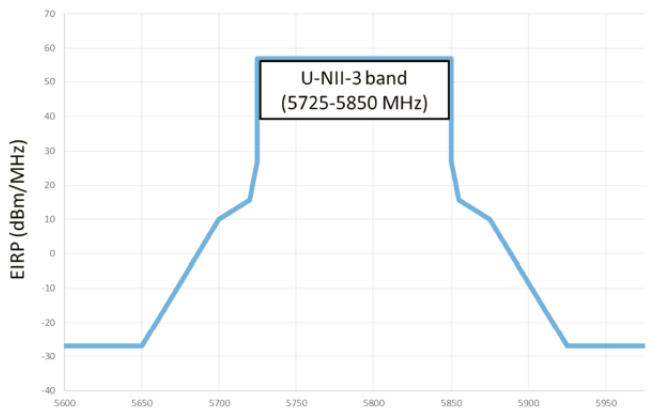
FCC Part 15 Subpart C Paragraph 15.209 (Restricted Band Emissions Limit)

Frequency (MHz)	Field strength (μ V/m)	Field strength (dB μ V/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

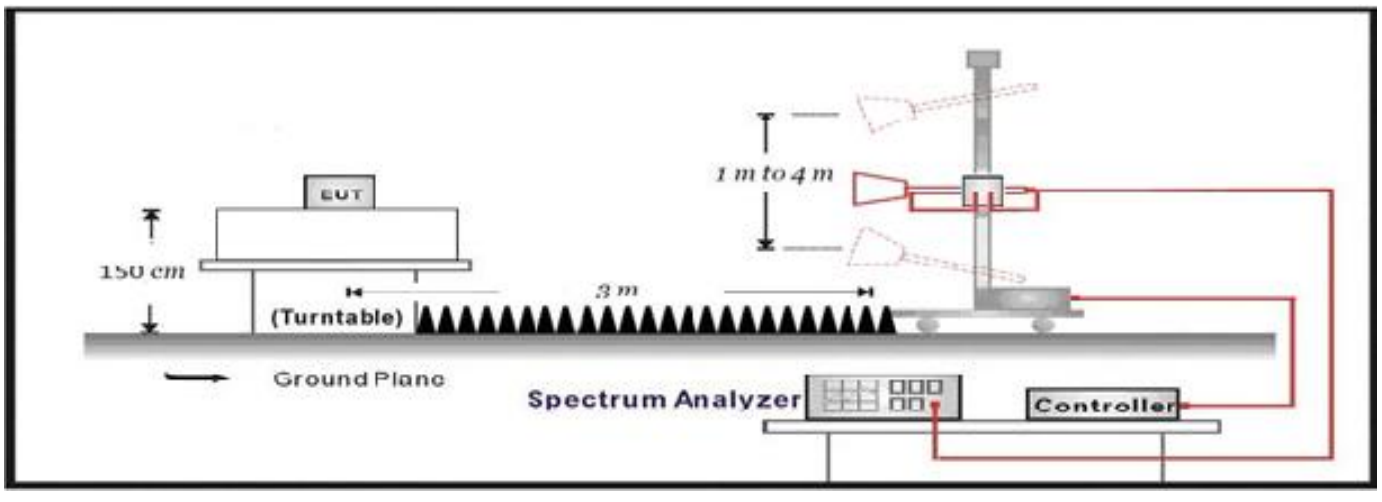
distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

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		

4.4.2 Test Setup

Above 1GHz Test Setup:



4.4.3 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.

4.5 Dynamic Frequency Selection (DFS)	VERDICT: PASS

4.10.1 Limit	
Standard	FCC Part 15 Subpart E Paragraph 15.407(h)
Channel Availability Check (CAC)	
60 Seconds	
Radar Detection Threshold Level	
EIRP ≥ 200 milliwatt, level value: -64 dBm EIRP < 200 milliwatt and power spectral density < 10 dBm/MHz, level value: -62 dBm EIRP < 200 milliwatt that do not meet the power spectral density requirement, level value: -62 dBm Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna. Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note3: EIRP is based on the highest antenna gain. For MIMO devices refer to KDB Publication 662911 D01.	
U-NII Detection Bandwidth	
Minimum 100% of the UNII 99% transmission power bandwidth. See Note Note: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	
In-Service Monitoring	
the RLAN device shall be capable of detecting any of the radar test signals. Detection Probability (P_d): 60%	
Channel Shutdown - Channel Move Time.	
10 Seconds	
Channel Shutdown - Channel Closing Transmission Time	
200 milliseconds + an aggregate of 60 milliseconds over remaining 10 second period.(See Notes 1 and 2) Note 1: Channel Move Time and the Channel Closing Transmission Time should be performed with Radar Type 0.The measurement timing begins at the end of the Radar Type 0 burst. Note 2: The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate a Channel move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions. Note 3: During the U-NII Detection Bandwidth detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	
Non-Occupancy Period	
Minimum 30 minutes	

4.10.2 Test Setup

UNII Device Description

The UUT operates in the following band:
1. 5250-5350 MHz
2. 5470-5725 MHz.

The UUT is a Client Device that does not have radar detection capability and ad-hoc function. The highest gain antenna assembly utilized with the EUT has a maximum gain refer to clause 1.1. The 50-ohm Tx/Rx antenna port is connected to the test system to perform conducted tests. TPC is not required since the maximum EIRP is less than 500mW (27dBm).

The UUT utilizes 802.11a/n/ac/ax IP based architecture. Three nominal channel bandwidths, 20 MHz, 40MHz and 80MH are implemented.

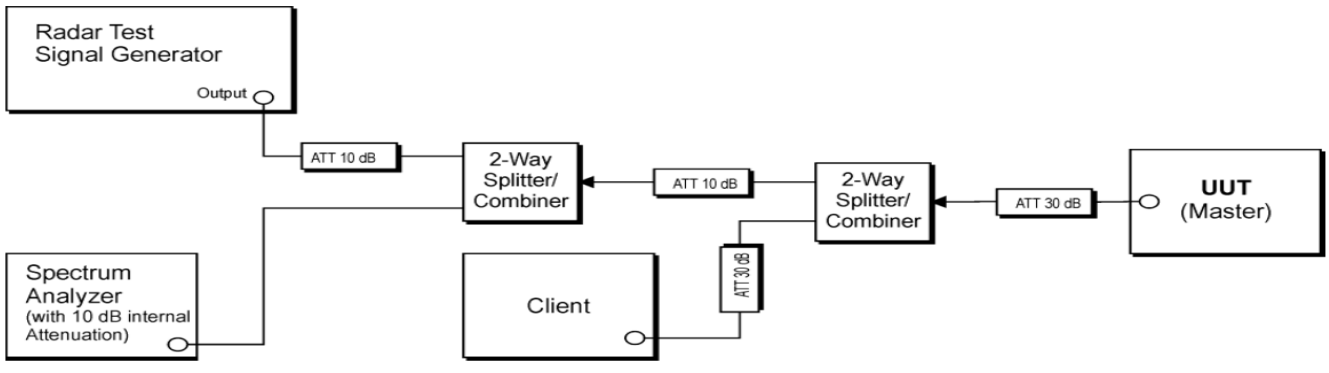
The master device is an ASUS 802.11a/b/g/n/ac/ax/be Access Point. The ASUS Access Point
FCC ID: MSQ-RTBE6X00.

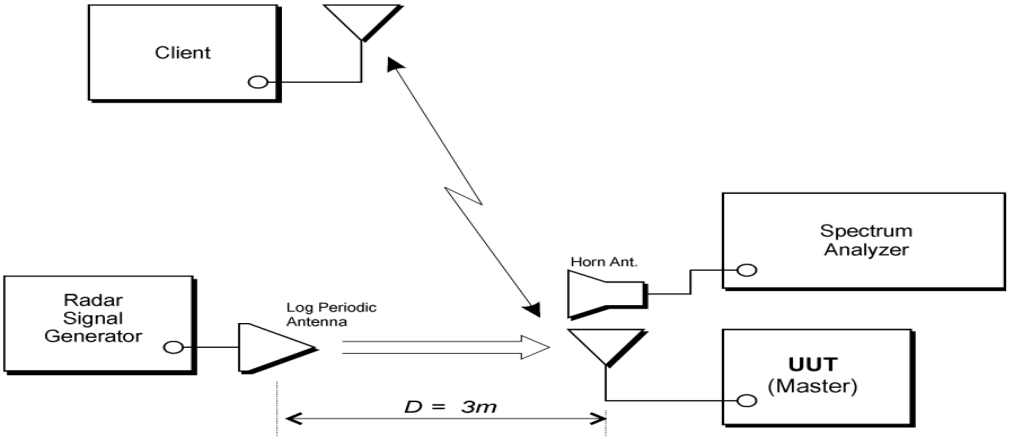
The time required for the master and slave devices to fully start is 120 seconds.

The UUT is a client device without radar detection therefore the interference threshold level is not required.

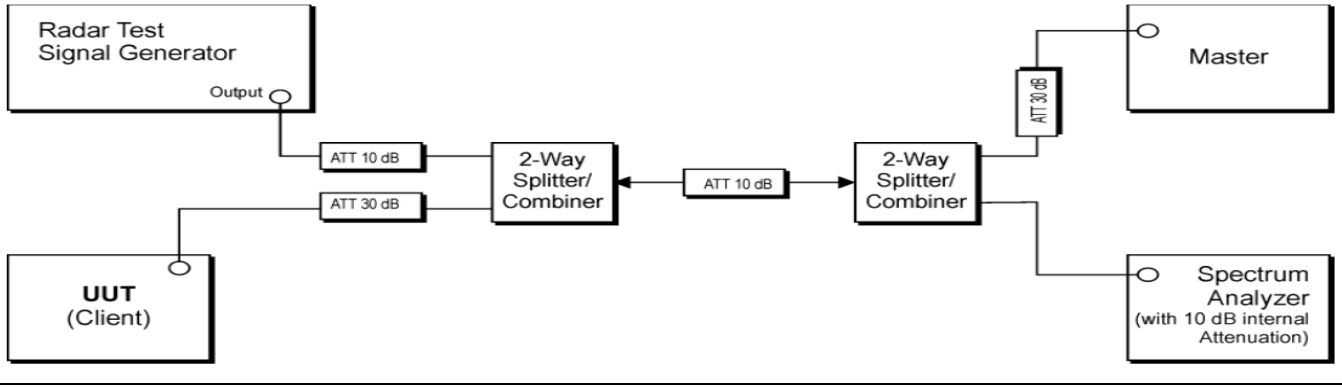
Statement: Information regarding the parameters of the detected Radar Waveforms is not available to the end user.

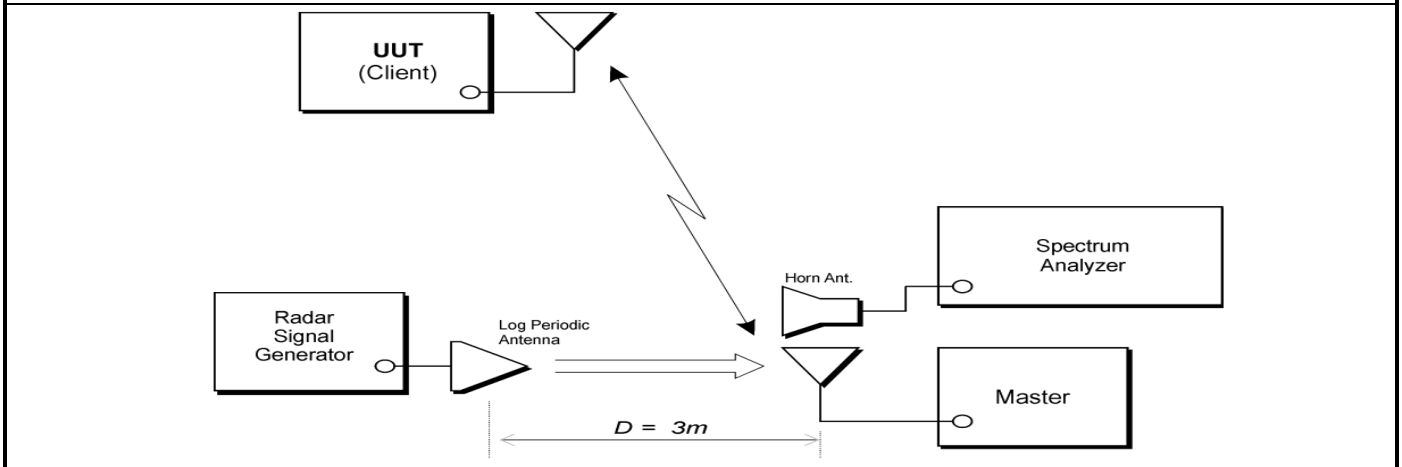
Master with injection at the Master



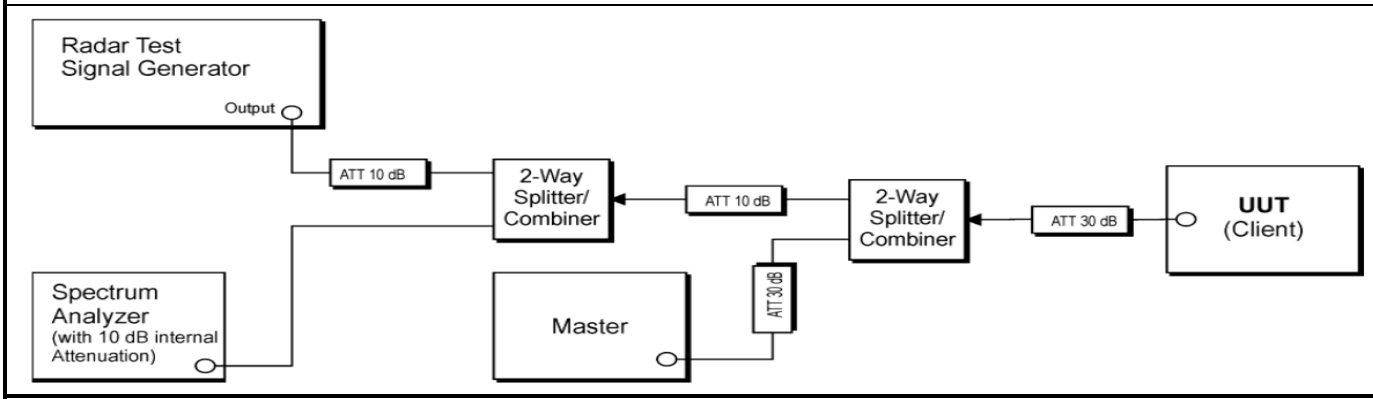


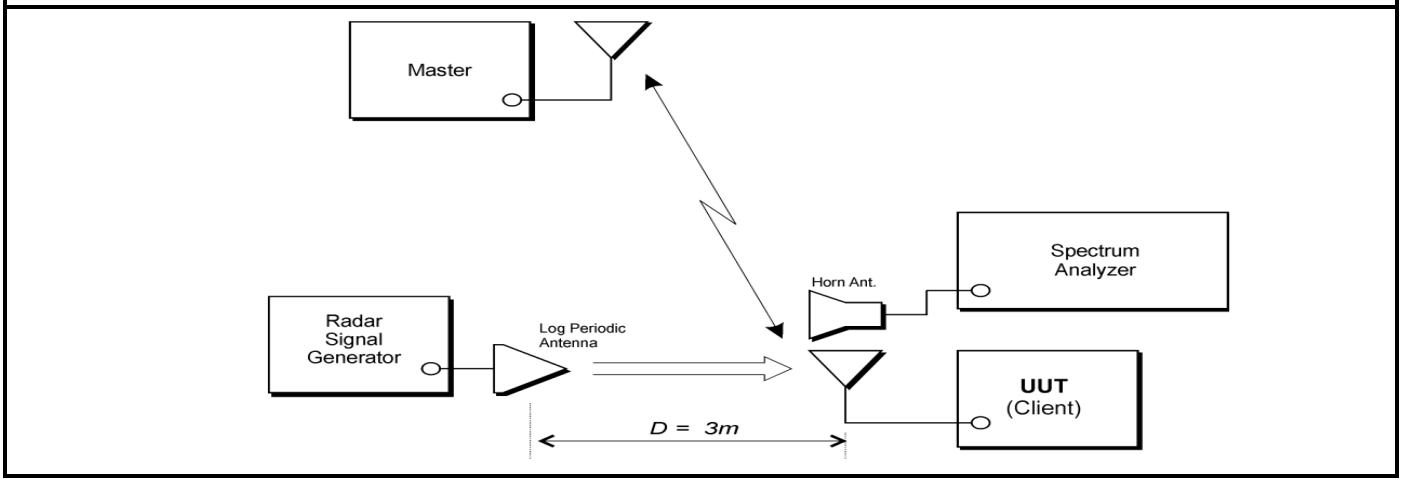
Client with injection at the Master





Client with injection at the Client





4.10.3 Test Procedure

References Rule	Description
☒ KDB 905462 D02	Dynamic Frequency Selection (DFS)

For a UUT with antenna connector(s) and using dedicated external antenna(s), or for a UUT with integral antenna(s) but with a temporary antenna connector(s) provided, conducted measurements shall be used.
When performing DFS testing on smart antenna systems, a power splitter/combiner shall be used to combine all the receive chains (antenna inputs) into a single test point. The insertion loss of the splitter/combiner shall be taken into account.
The UUT shall be configured to operate at the highest transmitter output power setting.
Beamforming gain Y of smart antenna systems, operating in a mode where beamforming is active, is ignored in order to test the worst case.
The centre frequencies of the radar test signals used in the test procedures below shall fall within the central 80 % of the Occupied Channel Bandwidth of the RLAN channel under test.

Tests with a radar burst at the beginning of the Channel Availability Check Time

a)The signal generator and UUT are connected using Set-up A as described in clause 5.4.8.1.3.1. The power of the UUT is switched off.
b)The UUT is powered on at T0. T1 denotes the instant when the UUT has completed its power-up sequence (T_{power_up}) and is ready to start the radar detection. The *Channel Availability Check* is expected to commence on Ch_r at instant T1 and is expected to end no sooner than T1 + $T_{ch_avail_check}$ unless the radar test signal is detected sooner. Additional verification may be needed to define T1 in case it is not exactly known or indicated by the UUT.
c) A single radar burst is generated on Chr using the reference test signal defined in table D.3 at a level of up to 10 dB above the level defined in clause 5.4.8.2.1.1. This single-burst radar test signal shall commence within 2 s after time T1.
d) It shall be recorded if the radar test signal was detected.
e) A timing trace or description of the observed timing and behaviour of the UUT shall be recorded.

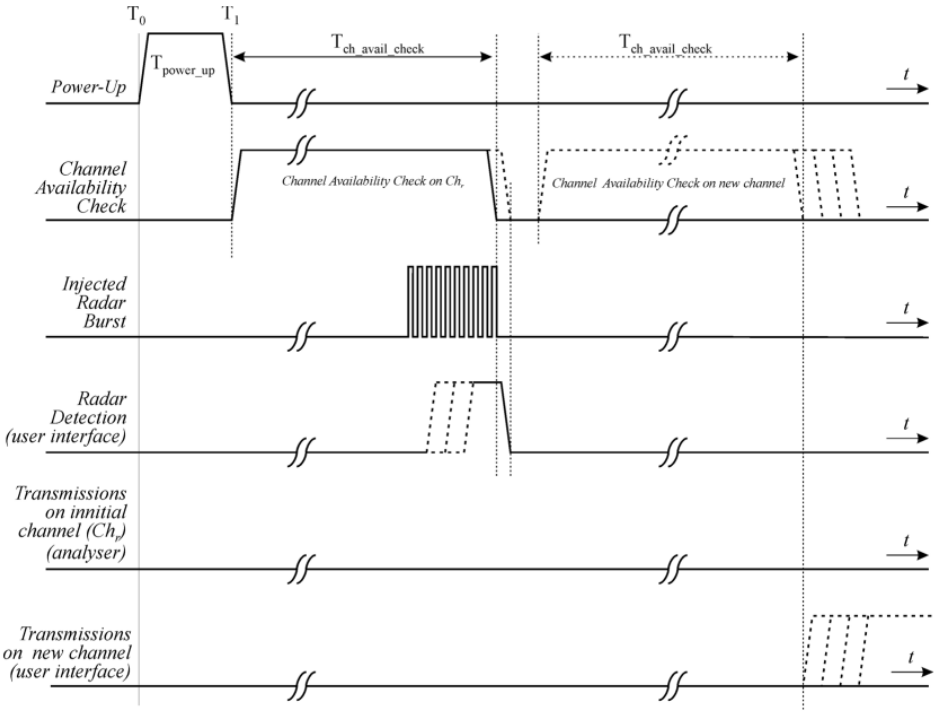


Figure 9: Example of timing for radar testing towards the end of the Channel Availability Check Time

In-Service Monitoring for Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period

These tests define how the following DFS parameters are verified during *In-Service Monitoring;*

- *Channel Closing Transmission Time*
- *Channel Move Time*
- *Non-Occupancy Period*

The steps below define the procedure to determine the above mentioned parameters when a radar Burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the UNII device (In- Service Monitoring).

a) One frequency will be chosen from the Operating Channels of the UUT within the 5250-5350 MHz or 5470-5725 MHz bands. For 802.11 devices, the test frequency must contain control signals. This can be verified by disabling channel loading and monitoring the spectrum analyzer. If no control signals are detected, another frequency must be selected within the emission bandwidth where control signals are detected.

b) In case the UUT is a U-NII device operating as a Client Device (with or without DFS), a U-NII device operating as a Master Device will be used to allow the UUT (Client device) to Associate with the Master Device. In case the UUT is a Master Device, a U-NII device operating as a Client Device will be used and it is assumed that the Client will Associate with the UUT (Master). In both cases for conducted tests, the Radar Waveform generator will be connected to the Master Device. For radiated tests, the emissions of the Radar Waveform generator will be directed towards the Master Device. If the Master Device has antenna gain, the main beam of the antenna will be directed toward the radar emitter. Vertical polarization is used for testing.

c) Stream the channel loading test file from the Master Device to the Client Device on the test Channel for the entire period of the test.

d) At time T0 the Radar Waveform generator sends a Burst of pulses for one of the Radar Type 0 in **Table 5** at levels defined in **Table 3**, on the Operating Channel. An additional 1 dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.

e) Observe the transmissions of the UUT at the end of the radar Burst on the Operating Channel for duration greater than 10 seconds. Measure and record the transmissions from the UUT during the observation time (Channel Move Time). Measure and record the Channel Move Time and Channel Closing Transmission Time if radar detection occurs. **Figure 17** illustrates Channel Closing Transmission Time.

f) When operating as a Master Device, monitor the UUT for more than 30 minutes following instant T2 to verify that the UUT does not resume any transmissions on this Channel. Perform this test once and record the measurement result.

g) In case the UUT is a U-NII device operating as a Client Device with In-Service Monitoring, perform steps a) to f).

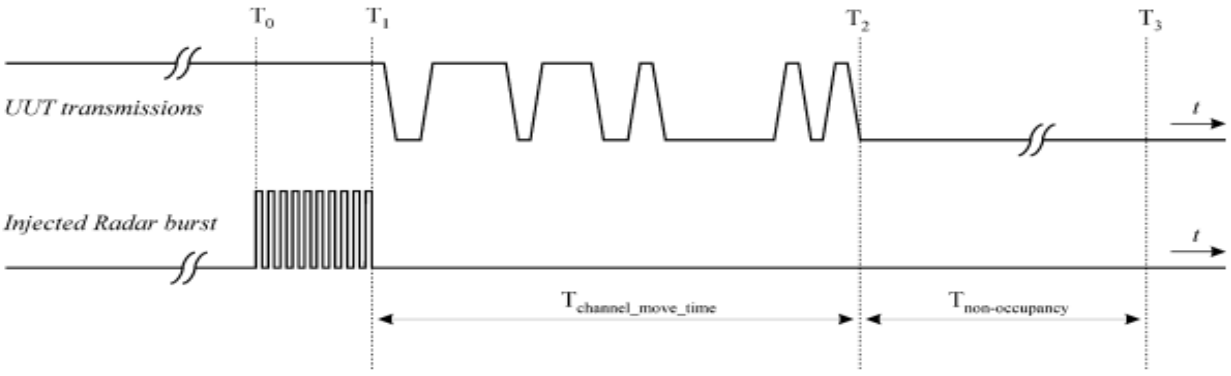


Figure 17: Example of Channel Closing Transmission Time & Channel Closing Time

Statistical Performance Check

The steps below define the procedure to determine the minimum percentage of successful detection requirements found in **Tables 5-7** when a radar burst with a level equal to the DFS Detection Threshold + 1dB is generated on the Operating Channel of the U-NII device (In- Service Monitoring).

a) One frequency will be chosen from the Operating Channels of the UUT within the 5250-5350 MHz or 5470-5725 MHz bands.
b) In case the UUT is a U-NII device operating as a Client Device (with or without Radar Detection), a U-NII device operating as a Master Device will be used to allow the UUT (Client device) to Associate with the Master Device. In case the UUT is a Master Device, a U-NII device operating as a Client Device will be used and it is assumed that the Client will Associate with the UUT (Master). In both cases for conducted tests, the Radar Waveform generator will be connected to the Master Device. For radiated tests, the emissions of the Radar Waveform generator will be directed towards the Master Device. If the Master Device has antenna gain, the main beam of the antenna will be directed toward the radar emitter. Vertical polarization is used for testing.
c) Stream the channel loading test file from the Master Device to the Client Device on the test Channel for the entire period of the test.
d) At time T0 the Radar Waveform generator sends the individual waveform for each of the Radar Types 1- 6 in **Tables 5-7**, at levels defined in **Table 3**, on the Operating Channel. An additional 1 dB is added to the radar test signal to ensure it is at or above the DFS Detection Threshold, accounting for equipment variations/errors.
e) Observe the transmissions of the UUT at the end of the Burst on the Operating Channel for duration greater than 10 seconds for Radar Type 0 to ensure detection occurs.
f) Observe the transmissions of the UUT at the end of the Burst on the Operating Channel for duration greater than 22 seconds for Long Pulse Radar Type 5 to ensure detection occurs.
g) In case the UUT is a U-NII device operating as a Client Device with In-Service Monitoring, perform steps a) to f).

Radar Detection Threshold Level (during Off-Channel CAC)

a) The signal generator, the UUT (master device) and a slave device associated with the UUT, are connected using *Set-up A* described in clause 5.4.8.1.3.1.
b) The UUT shall transmit a test transmission sequence in accordance with clause 5.3.1.2 on (all) the *Operating Channel(s)*.
c) A multi burst radar test signal is generated on Chr using any of the radar test signals defined in table D.4 at a level defined in clause 5.4.8.2.1.1. The radar test signal used shall be recorded in the report. This multi burst radar test signal shall commence at T3 and shall continue for the total duration of the *Off-Channel CAC Time* ($T_{Off\text{-}Channel_CAC}$) as declared by the manufacturer in accordance with table D.1. For channels within the 5 600 MHz to 5 650 MHz band test signals #3 and #4 shall not be used and the Burst Interval Time (BIT) during the test shall be varied between 8 min and 10 min. For channels outside this band, the Burst Interval Time (BIT) during the test shall be varied between 45 s and 60 s.
d) The UUT shall detect the radar test signal before the end of the *Off-Channel CAC Time* and this shall be recorded. For the purpose of reducing test time, the test may be terminated immediately once the UUT has reported detection of the radar test signal.

Detection Probability (P_d)

This test may be facilitated by disabling the *Channel Shutdown* feature for the duration of the test.
For channels outside the 5 600 MHz to 5 650 MHz band, the test in clause 5.4.8.2.1.4.2 is sufficient to demonstrate that the UUT meets the Detection Probability (Pd) defined in table D.5.
Where the declared channel plan includes channels whose nominal bandwidth falls completely or partly within the 5 600 MHz to 5 650 MHz band, the procedure in the steps below has to be performed on one of these channels. See clause 5.3.2.
a) A multi burst radar test signal is generated on Chr using any of the radar test signals defined in table D.4 (except signals #3 and #4) at a level of 10 dB above the level defined in clause 5.4.8.2.1.1. The radar test signal used shall be recorded in the report. This multi burst radar test signal shall commence at T3 and shall continue for the total duration of the Off-Channel CAC Time ($T_{Off\text{-}Channel_CAC}$) as declared by the manufacturer in accordance with table D.1. The Burst Interval Time (BIT) during the test shall be varied between 8 minutes and 10 minutes.

b) It shall be recorded how many bursts have been detected by the UUT at the end of the *Off-Channel CAC Time*.
The minimum number of bursts that the UUT shall detect in order to comply with the detection probability defined for this frequency range in table D.5 is given by table 12.
For the purpose of reducing test time, the test may be terminated immediately the UUT has reported the minimum number of burst detections required.

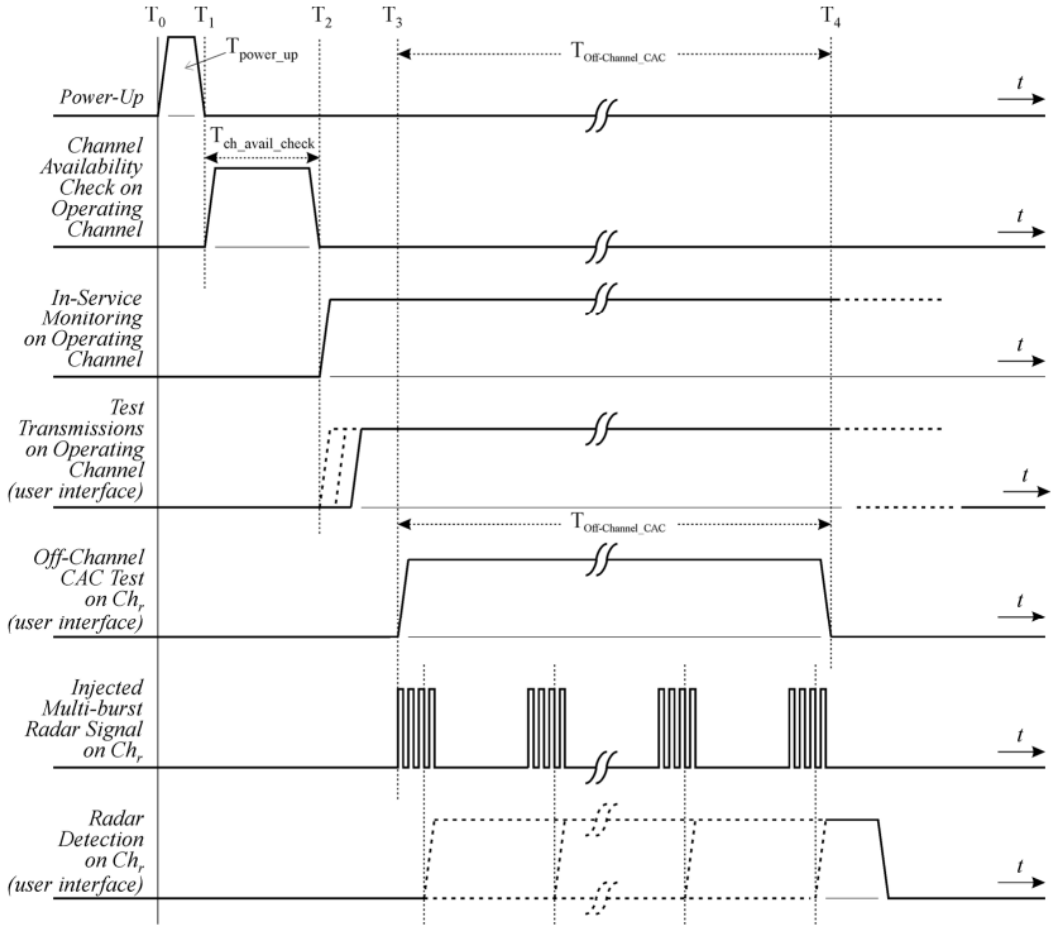


Figure 11: Example of timing for radar testing during the Off-Channel CAC

In-Service Monitoring

The steps below define the procedure to verify the *In-Service Monitoring* and the *Radar Detection Threshold Level* during the *In-Service Monitoring*.
The channel, on which the *In-Service Monitoring* test will be performed, shall be selected in accordance with clause 5.3.2. This channel, designated as Chr, is an *Operating Channel*.
a) When the UUT is a master device, a slave device will be used that associates with the UUT. The signal generator and the UUT are connected using *Set-up A* described in clause 5.4.8.1.3.1.
When the UUT is a slave device with a *Radar Interference Detection* function, the UUT shall associate with a master device. The signal generator and the UUT are connected using *Set-up C* described in clause 5.4.8.1.3.3.
b) The UUT shall transmit a test transmission sequence in accordance with clause 5.3.1.2 on the selected channel Ch_r. While the testing is performed on Chr, the equipment is allowed to have simultaneous transmissions on other adjacent or non-adjacent *Operating Channels*.
c) At a certain time T0, a single burst radar test signal is generated on Chr using radar test signal #1 defined in table D.4 and at a level defined in clause 5.4.8.2.1.1. T1 denotes the end of the radar burst.
d) It shall be recorded if the radar test signal was detected.
e) Step b) to step d) shall be performed 20 times, each time a random value shall be chosen for pulse width and pulse repetition frequency from the corresponding ranges provided in table D.4. For radar test signal #5 and radar

test signal #6 provided in table D.4 the number of PRF values shall vary between 2 or 3. The radar test signal shall be detected at least 12 times out of the 20 trials in order to comply with the detection probability specified in table D.5.
f) Step b) to step e) shall be repeated for each of the radar test signals defined in table D.4 and as described in clause 5.4.8.1.2.

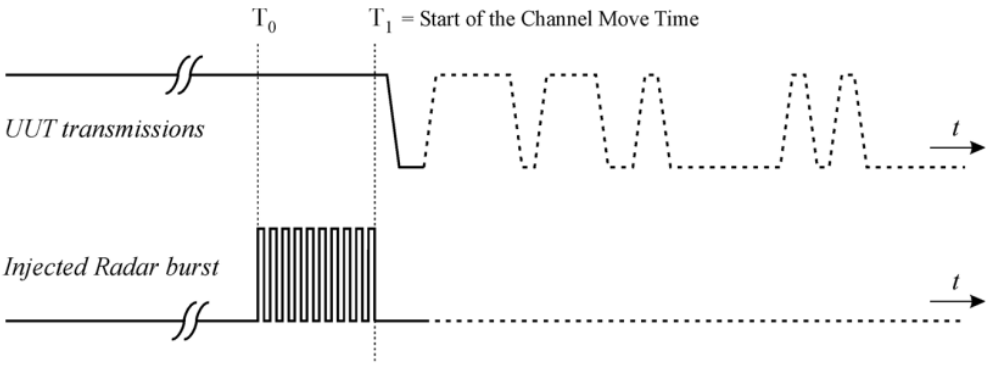


Figure 12: Example of timing for radar testing during In-Service Monitoring

Channel Shutdown and Non-Occupancy period

The steps below define the procedure to verify the *Channel Shutdown* process and to determine the *Channel Closing Transmission Time*, the *Channel Move Time* and the *Non-Occupancy Period.* This is illustrated in figure 13.
The channel, on which these tests will be performed, shall be selected in accordance with clause 5.3.2. This channel, designated as Chr, is an *Operating Channel*.
a) When the UUT is a master device, a slave device will be used that associates with the UUT. The signal generator and the UUT shall be connected using *Set-up A* described in clause 5.4.8.1.3.1.
When the UUT is a slave device (with or without a *Radar Interference Detection* function), the UUT shall associate with a master device. The signal generator and the UUT shall be connected using *Set-up B* described in clause 5.4.8.1.3.2.
In both cases, it is assumed that the channel selection mechanism for the *Uniform Spreading* requirement is disabled in the master.
b) The UUT shall transmit a test transmission sequence in accordance with clause 5.3.1.2 on the selected channel Ch_r. While the testing is performed on Chr, the equipment is allowed to have simultaneous transmissions on other adjacent or non-adjacent *Operating Channels*.
c) At a certain time T0, a single burst test signal is generated on Chr using the reference DFS test signal defined in table D.3 and at a level of up to 10 dB above the level defined in clause 5.4.8.2.1.1 on the selected channel. T1 denotes the end of the radar burst.
d) The transmissions of the UUT following instant T1 on the selected channel Chr shall be observed for a period greater than or equal to the *Channel Move Time* defined in table D.1. The aggregate duration (*Channel Closing Transmission Time)* of all transmissions from the UUT on Chr during the *Channel Move Time* shall be compared to the limit defined in table D.1. For equipment capable of having simultaneous transmissions on multiple (adjacent or non-adjacent) *Operating Channels*, the equipment is allowed to continue transmissions on other *Operating Channels* (different from Chr).
The aggregate duration of all transmissions of the UUT does not include quiet periods in between transmissions of the UUT.
e) T2 denotes the instant when the UUT has ceased all transmissions on the channel Chr. The time difference between T1 and T2 shall be measured. This value *(Channel Move Time*) shall be noted and compared with the limit defined in table D.1.
f) Following instant T2, the selected channel Chr shall be observed for a period equal to the *Non-Occupancy Period* (T3-T2) to verify that the UUT does not resume any transmissions on this channel.

g) When the UUT is a slave device with a *Radar Interference Detection* function step b) to step f) shall be repeated with the generator connected to the UUT using *Set-up C* as described in clause 5.4.8.1.3.3. See also note 2 in table D.2.

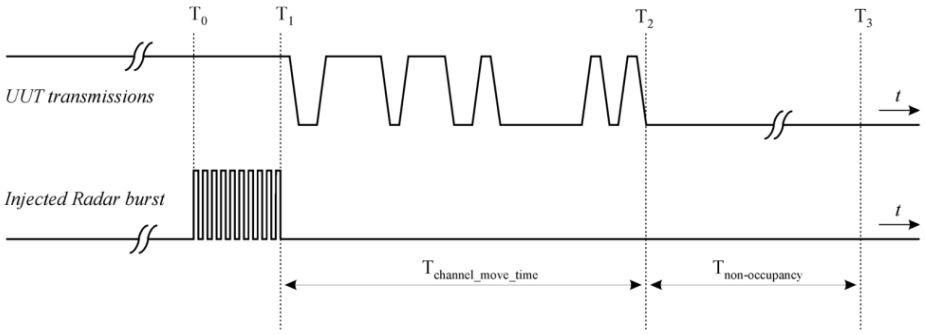


Figure 13: Channel Closing Transmission Time, Channel Move Time and Non-Occupancy Period

4.6 Antenna Requirement	VERDICT: PASS

4.11.1 Limit:	
Standard	FCC Part 15 Subpart C Paragraph 15.203;
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.	

4.11.2 Antenna Connector Construction:	
☒	The use of a permanently attached antenna
☐	The antenna use of a unique coupling to the intentional radiator
☐	The use of a nonstandard antenna jack or electrical connector
Please refer to the attached document "Internal Photograph" to show the antenna connector.	

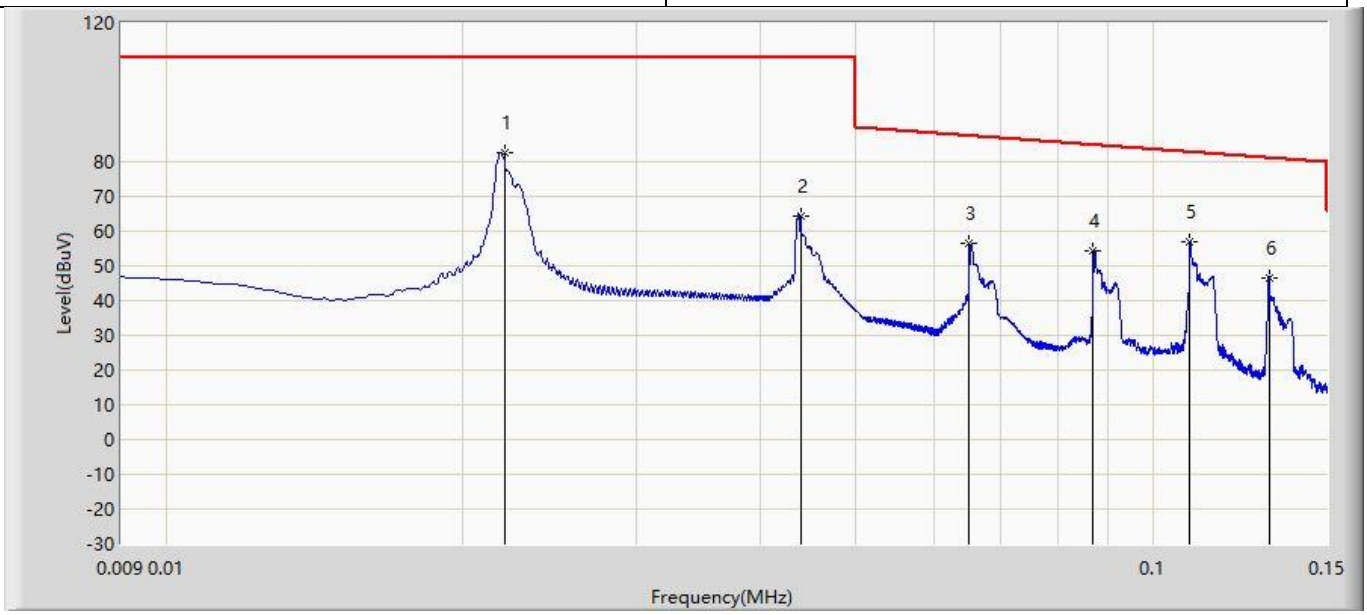
5 TEST SETUP PHOTO AND EUT PHOTO

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

Appendix

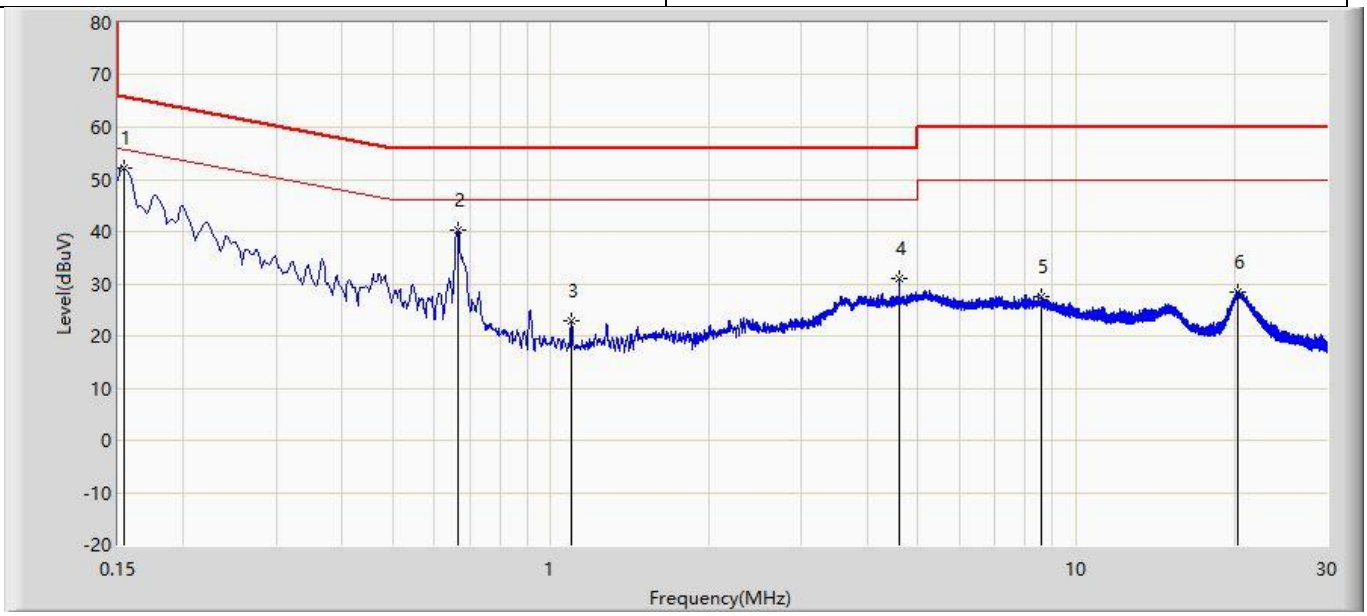
AC Power Line Conducted Emission

Probe: ENV216_101189(0.009-30MHz)	Polarity: Line
Note: Transmit at 5180MHz by 802.11a	Power: AC 120V/60Hz



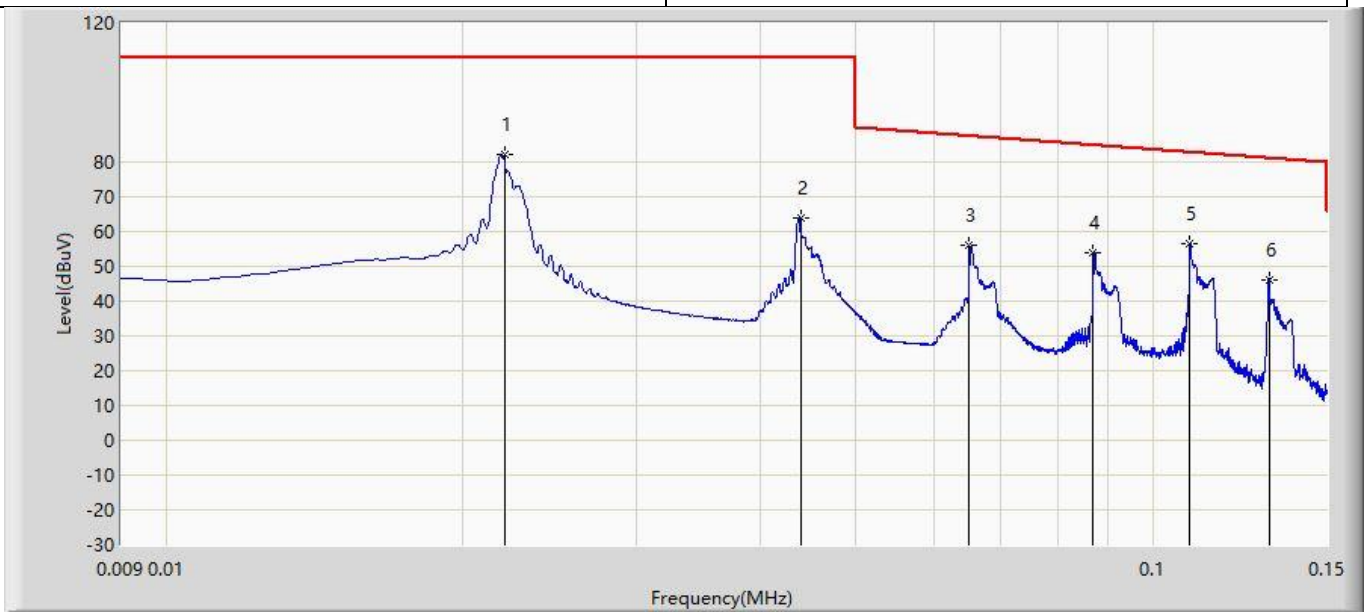
No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.022	82.565	72.467	-27.435	110.000	10.098	QP
2		0.044	64.546	54.809	-45.454	110.000	9.737	QP
3		0.065	56.687	46.973	-30.924	87.612	9.714	QP
4		0.087	54.424	44.725	-30.535	84.958	9.699	QP
5	*	0.109	56.929	47.242	-25.977	82.906	9.687	QP
6		0.131	46.724	37.046	-34.509	81.233	9.678	QP

Probe: ENV216_101189(0.009-30MHz)	Polarity: Line
Note: Transmit at 5180MHz by 802.11a	Power: AC 120V/60Hz



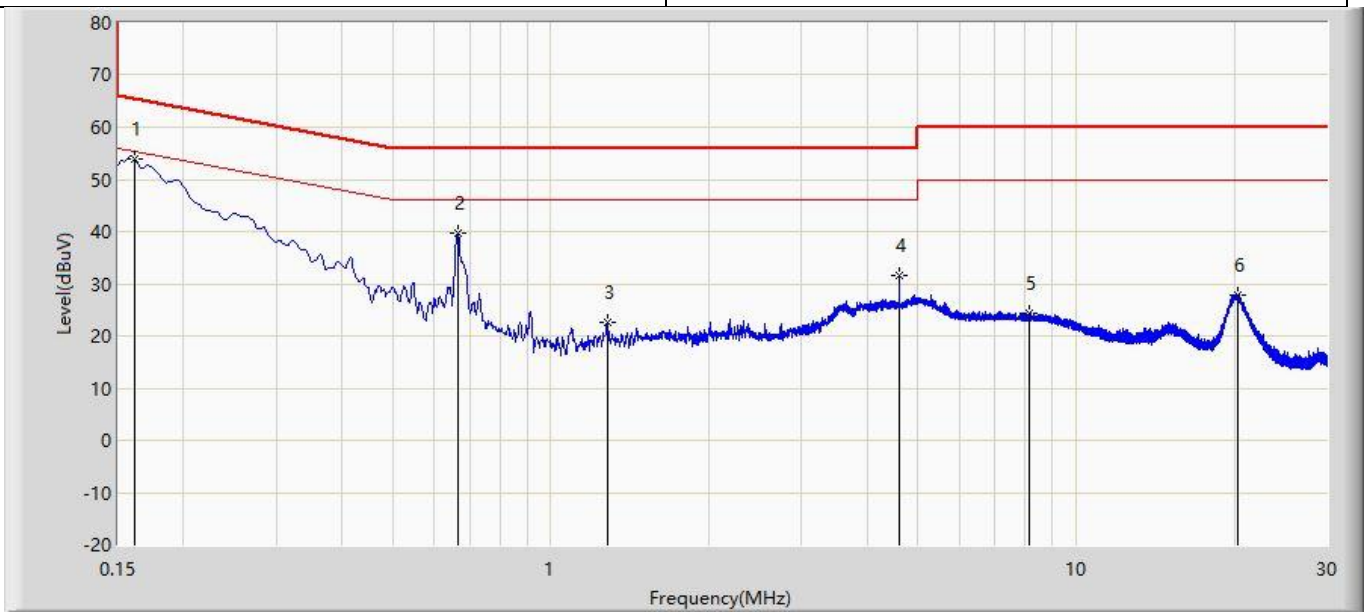
No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	*	0.154	52.313	42.643	-13.469	65.781	9.670	QP
2		0.665	40.302	30.634	-15.698	56.000	9.668	QP
3		1.095	22.815	13.109	-33.185	56.000	9.706	QP
4		4.605	31.115	21.308	-24.885	56.000	9.807	QP
5		8.599	27.676	17.747	-32.324	60.000	9.929	QP
6		20.348	28.370	17.862	-31.630	60.000	10.508	QP

Probe: ENV216_101189(0.009-30MHz)	Polarity: Neutral
Note: Transmit at 5180MHz by 802.11a	Power: AC 120V/60Hz



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.022	82.058	71.935	-27.942	110.000	10.123	QP
2		0.044	63.941	54.200	-46.059	110.000	9.741	QP
3		0.065	55.909	46.202	-31.702	87.612	9.707	QP
4		0.087	53.750	44.078	-31.209	84.958	9.672	QP
5	*	0.109	56.503	46.842	-26.403	82.906	9.661	QP
6		0.131	46.245	36.564	-34.988	81.233	9.681	QP

Probe: ENV216_101189(0.009-30MHz)	Polarity: Neutral
Note: Transmit at 5180MHz by 802.11a	Power: AC 120V/60Hz



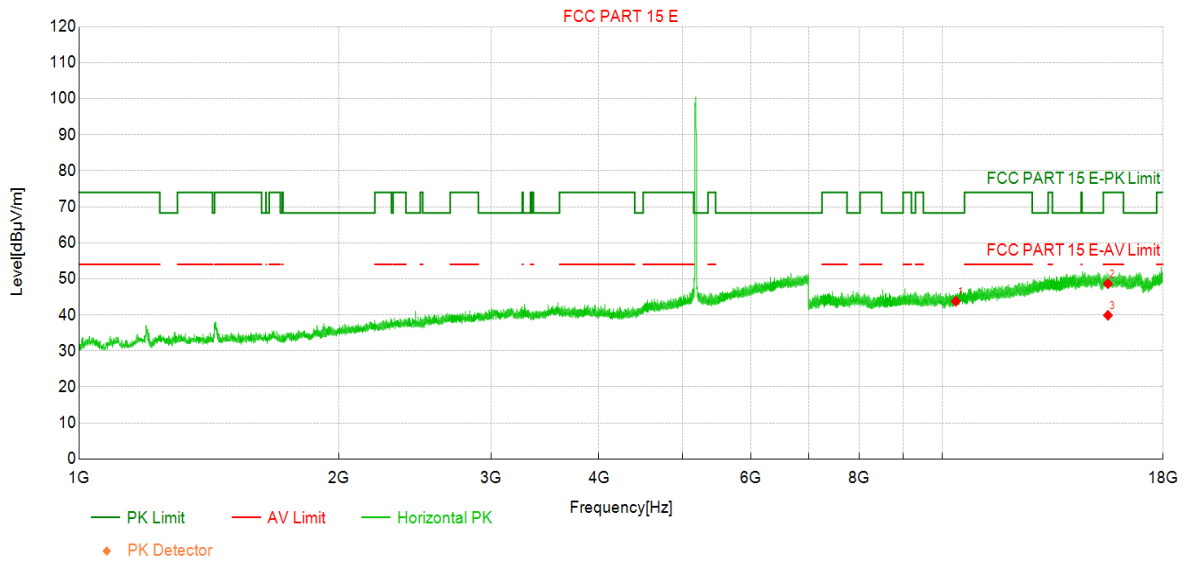
No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1	*	0.161	54.029	44.340	-11.384	65.412	9.689	QP
2		0.665	39.655	30.015	-16.345	56.000	9.640	QP
3		1.280	22.595	12.911	-33.405	56.000	9.684	QP
4		4.605	31.516	21.727	-24.484	56.000	9.789	QP
5		8.115	24.285	14.344	-35.715	60.000	9.940	QP
6		20.238	27.868	17.464	-32.132	60.000	10.404	QP

Note: Level = Reading + Factor (Antenna factor + Amplifier factor + Cable loss)

Unwanted Emissions in the Restricted Bands (Radiated)

Transmit at 5180MHz by 802.11a with Ant SISO

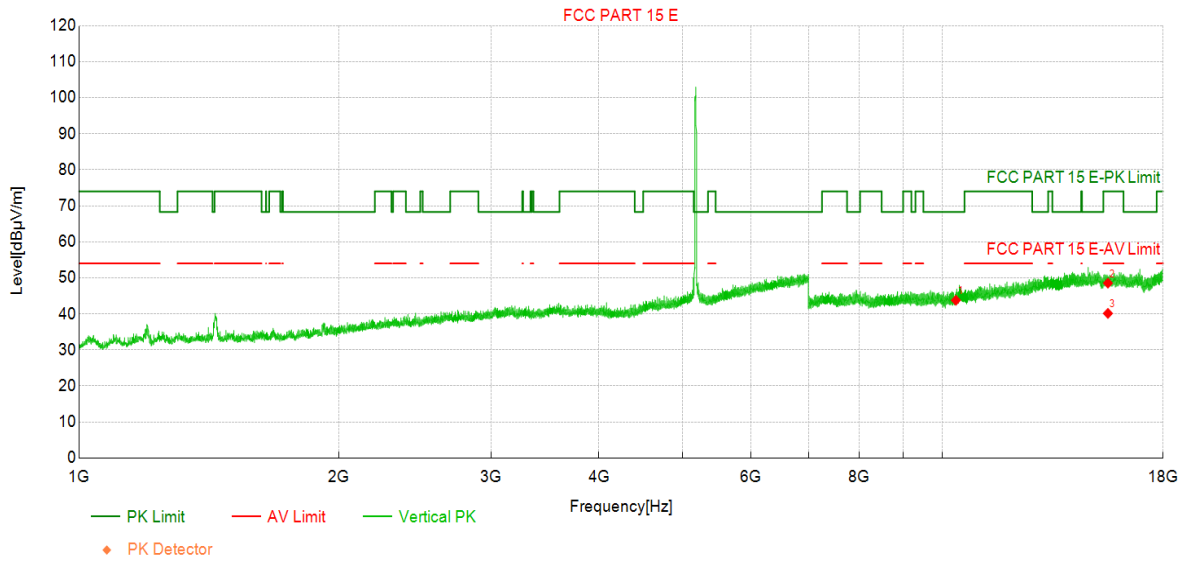
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10360.00	41.0	43.77	2.760	68.30	24.53	PK	Horizo	PASS
2	15540.00	37.9	48.65	10.800	74.00	25.35	PK	Horizo	PASS
3	15540.00	29.1	39.88	10.800	54.00	14.12	AV	Horizo	PASS

Transmit at 5180MHz by 802.11a with Ant SISO

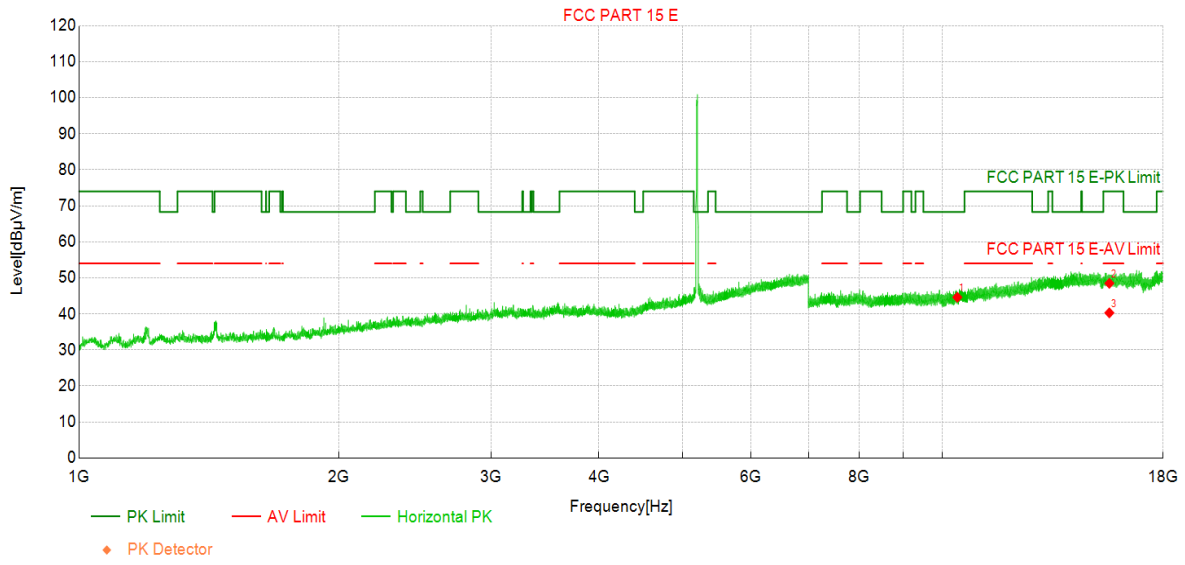
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10360.00	41.0	43.77	2.760	68.30	24.53	PK	Vertic	PASS
2	15540.00	37.7	48.53	10.800	74.00	25.47	PK	Vertic	PASS
3	15540.00	29.3	40.14	10.800	54.00	13.86	AV	Vertic	PASS

Transmit at 5200MHz by 802.11a with Ant SISO

Test Graph

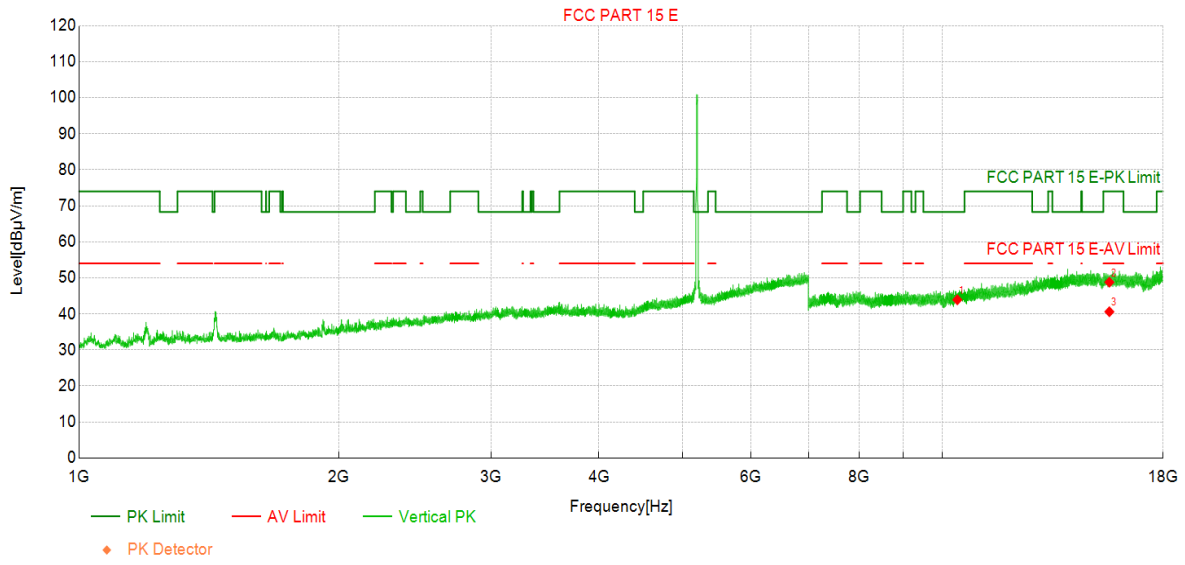


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10400.00	41.9	44.61	2.760	68.30	23.69	PK	Horizo	PASS
2	15600.00	37.7	48.48	10.740	74.00	25.52	PK	Horizo	PASS
3	15600.00	29.6	40.29	10.740	54.00	13.71	AV	Horizo	PASS

Transmit at 5200MHz by 802.11a with Ant SISO

Test Graph

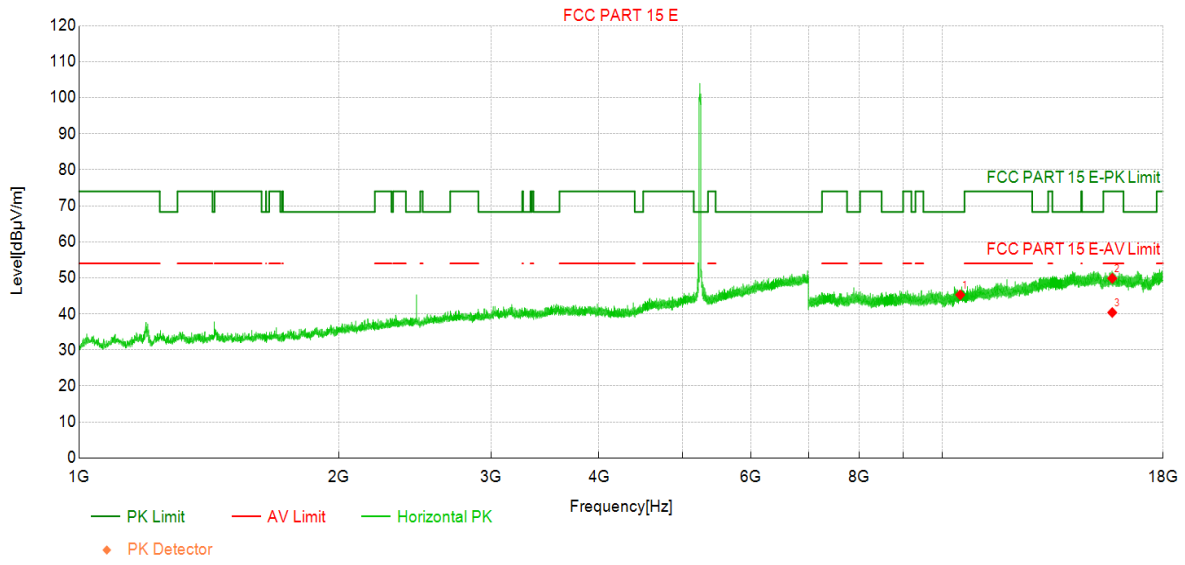


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10400.00	41.2	43.91	2.760	68.30	24.39	PK	Vertic	PASS
2	15600.00	38.1	48.79	10.740	74.00	25.21	PK	Vertic	PASS
3	15600.00	29.9	40.60	10.740	54.00	13.40	AV	Vertic	PASS

Transmit at 5240MHz by 802.11a with Ant SISO

Test Graph

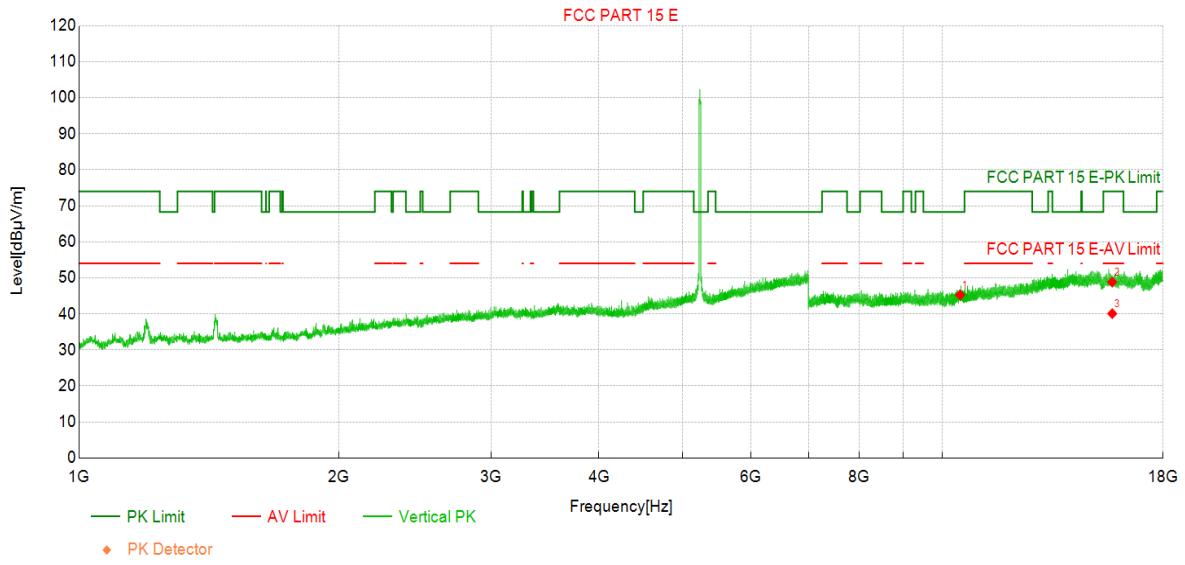


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10480.00	42.4	45.29	2.940	68.30	23.01	PK	Horizo	PASS
2	15720.00	39.2	49.86	10.630	74.00	24.14	PK	Horizo	PASS
3	15720.00	29.8	40.38	10.630	54.00	13.62	AV	Horizo	PASS

Transmit at 5240MHz by 802.11a with Ant SISO

Test Graph

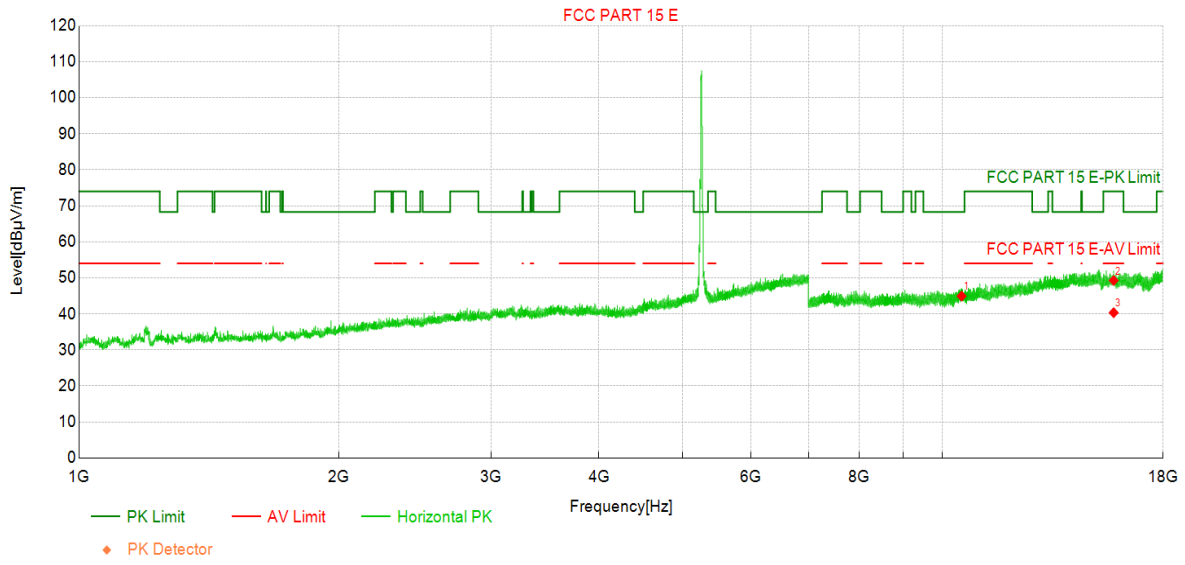


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10480.00	42.3	45.25	2.940	68.30	23.05	PK	Vertic	PASS
2	15720.00	38.2	48.82	10.630	74.00	25.18	PK	Vertic	PASS
3	15720.00	29.4	40.07	10.630	54.00	13.93	AV	Vertic	PASS

Transmit at 5260MHz by 802.11a with Ant SISO

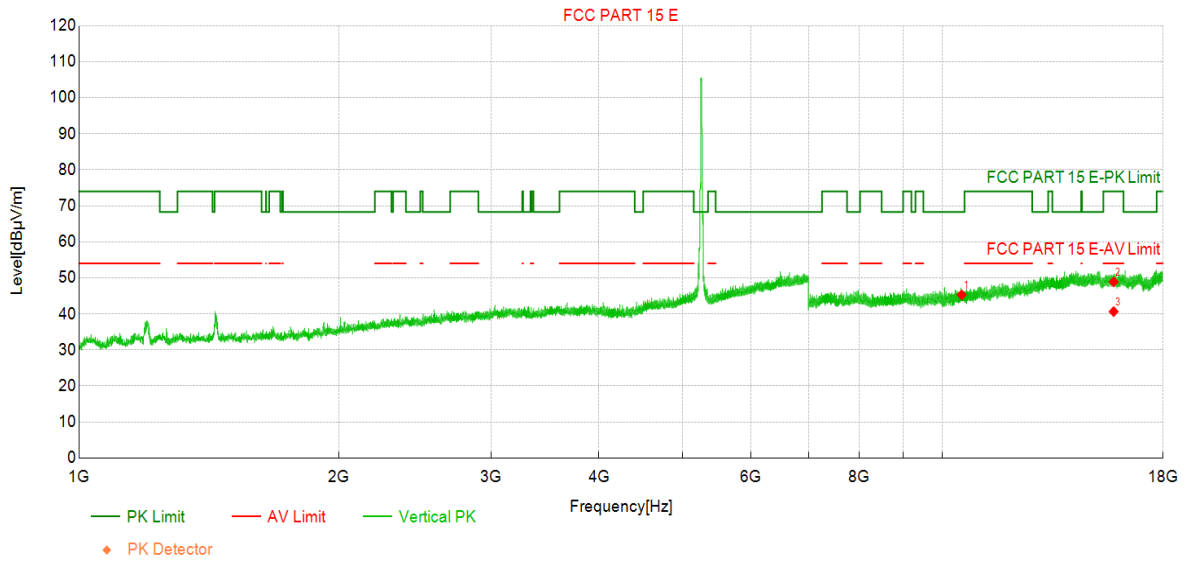
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10520.00	42.0	44.93	2.980	68.30	23.37	PK	Horizo	PASS
2	15780.00	38.8	49.28	10.480	74.00	24.72	PK	Horizo	PASS
3	15780.00	29.9	40.34	10.480	54.00	13.66	AV	Horizo	PASS

Transmit at 5260MHz by 802.11a with Ant SISO

Test Graph

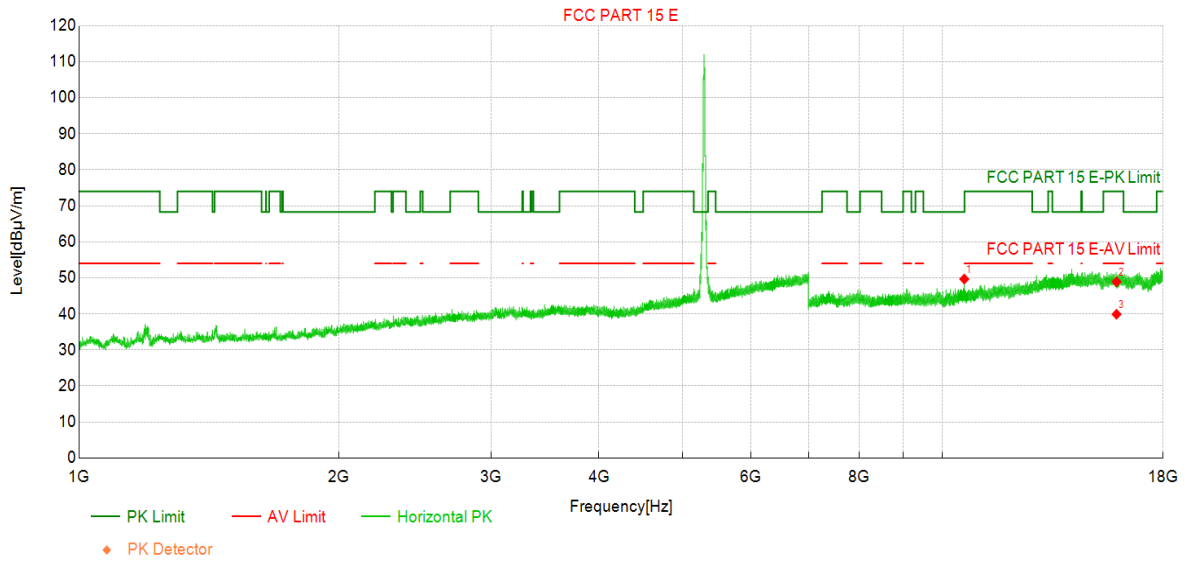


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10520.00	42.3	45.29	2.980	68.30	23.01	PK	Vertic	PASS
2	15780.00	38.4	48.90	10.480	74.00	25.10	PK	Vertic	PASS
3	15780.00	30.2	40.64	10.480	54.00	13.36	AV	Vertic	PASS

Transmit at 5300MHz by 802.11a with Ant SISO

Test Graph

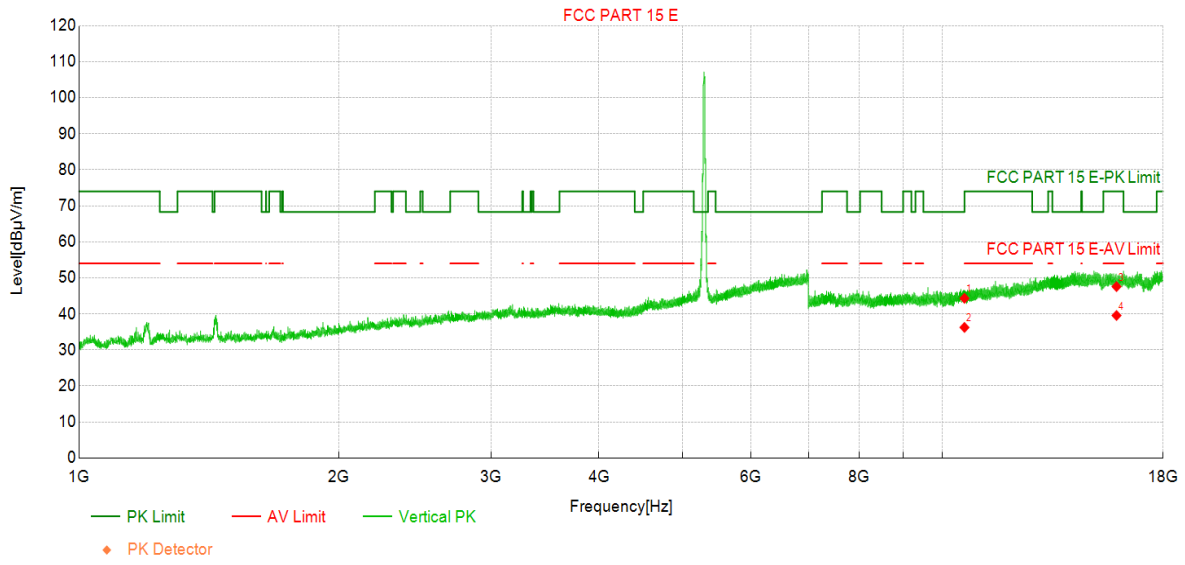


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10594.71	46.7	49.66	2.940	68.30	18.64	PK	Horizo	PASS
2	15900.00	38.2	48.91	10.740	74.00	25.09	PK	Horizo	PASS
3	15900.00	29.2	39.90	10.740	54.00	14.10	AV	Horizo	PASS

Transmit at 5300MHz by 802.11a with Ant SISO

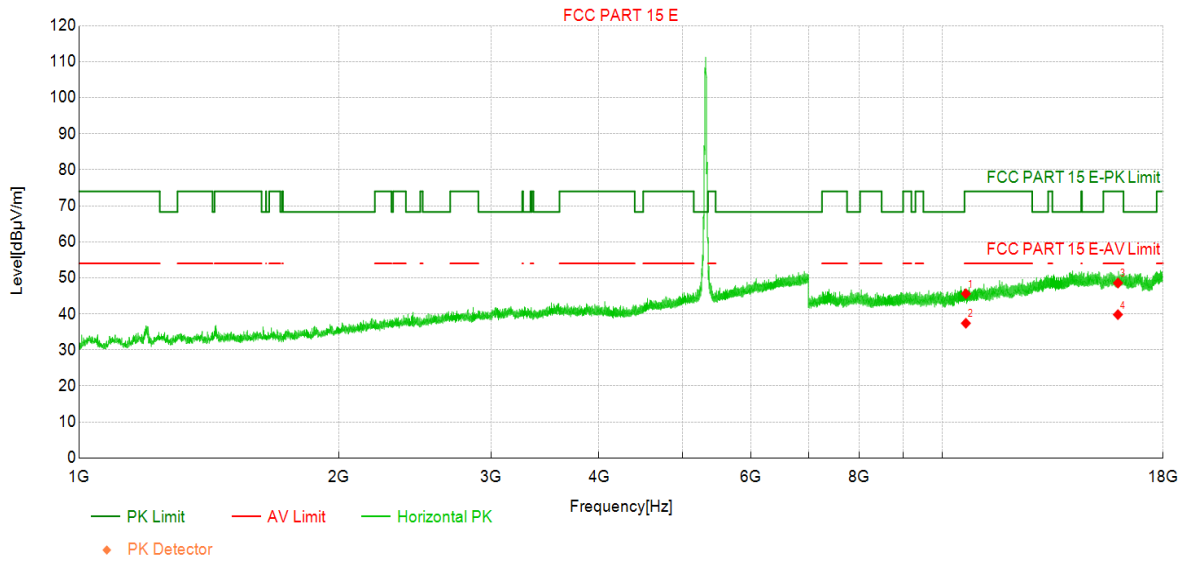
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10600.00	41.4	44.32	2.940	68.30	23.98	PK	Vertic	PASS
2	10600.00	33.3	36.25	2.940	54.00	17.75	AV	Vertic	PASS
3	15900.00	36.8	47.58	10.740	74.00	26.42	PK	Vertic	PASS
4	15900.00	28.8	39.56	10.740	54.00	14.44	AV	Vertic	PASS

Transmit at 5320MHz by 802.11a with Ant SISO

Test Graph

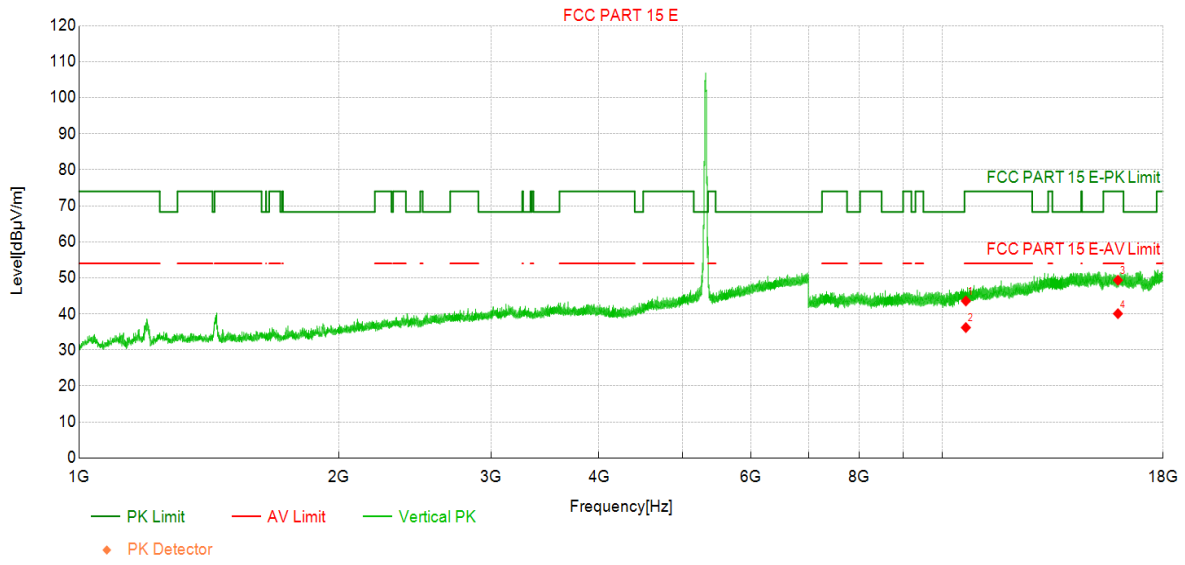


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10640.00	42.5	45.60	3.130	74.00	28.40	PK	Horizo	PASS
2	10640.00	34.3	37.40	3.130	54.00	16.60	AV	Horizo	PASS
3	15960.00	37.4	48.56	11.150	74.00	25.44	PK	Horizo	PASS
4	15960.00	28.7	39.80	11.150	54.00	14.20	AV	Horizo	PASS

Transmit at 5320MHz by 802.11a with Ant SISO

Test Graph

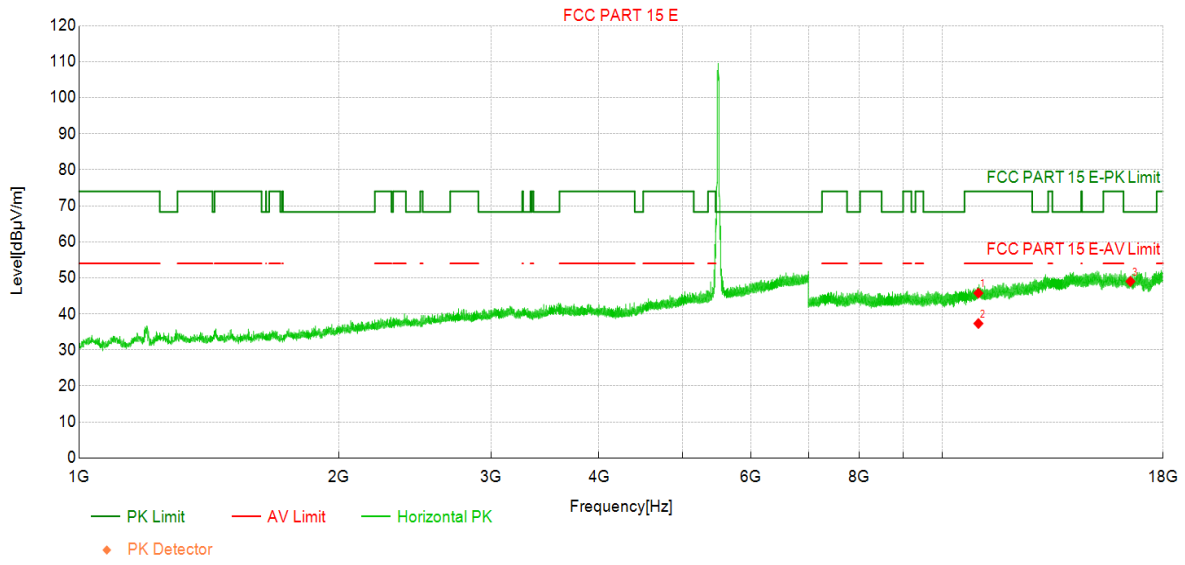


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10640.00	40.5	43.58	3.130	74.00	30.42	PK	Vertic	PASS
2	10640.00	33.1	36.21	3.130	54.00	17.79	AV	Vertic	PASS
3	15960.00	38.2	49.35	11.150	74.00	24.65	PK	Vertic	PASS
4	15960.00	28.9	40.06	11.150	54.00	13.94	AV	Vertic	PASS

Transmit at 5500MHz by 802.11a with Ant SISO

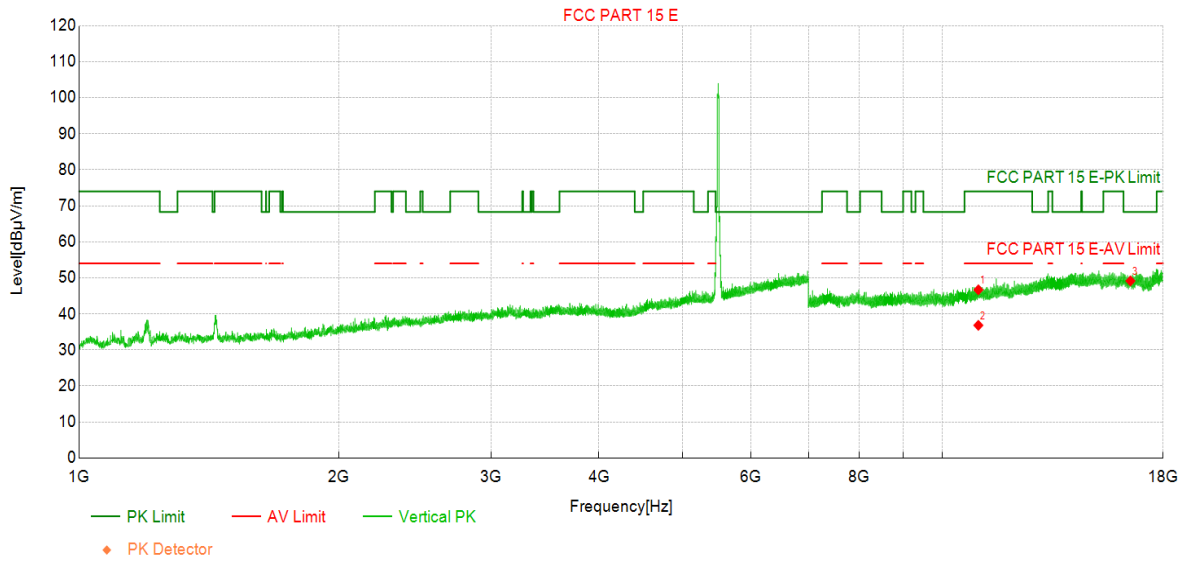
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11000.00	41.7	45.76	4.020	74.00	28.24	PK	Horizo	PASS
2	11000.00	33.3	37.33	4.020	54.00	16.67	AV	Horizo	PASS
3	16500.00	38.0	49.02	11.010	68.30	19.28	PK	Horizo	PASS

Transmit at 5500MHz by 802.11a with Ant SISO

Test Graph

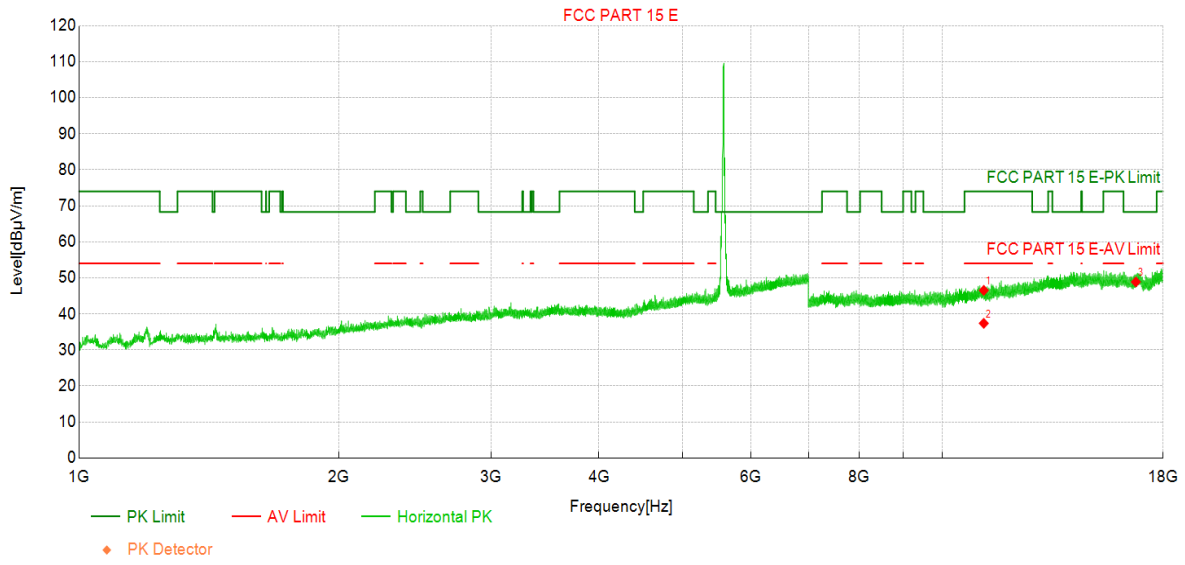


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11000.00	42.7	46.69	4.020	74.00	27.31	PK	Vertic	PASS
2	11000.00	32.8	36.83	4.020	54.00	17.17	AV	Vertic	PASS
3	16500.00	38.1	49.15	11.010	68.30	19.15	PK	Vertic	PASS

Transmit at 5580MHz by 802.11a with Ant SISO

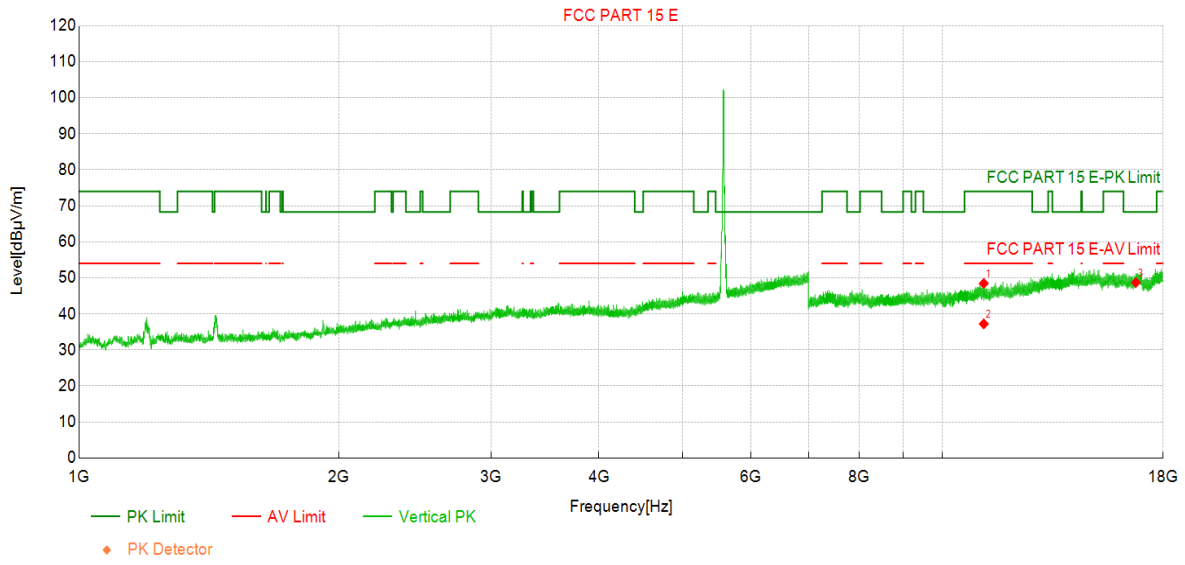
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11160.00	42.1	46.52	4.410	74.00	27.48	PK	Horizo	PASS
2	11160.00	33.0	37.38	4.410	54.00	16.62	AV	Horizo	PASS
3	16740.00	37.6	48.87	11.310	68.30	19.43	PK	Horizo	PASS

Transmit at 5580MHz by 802.11a with Ant SISO

Test Graph

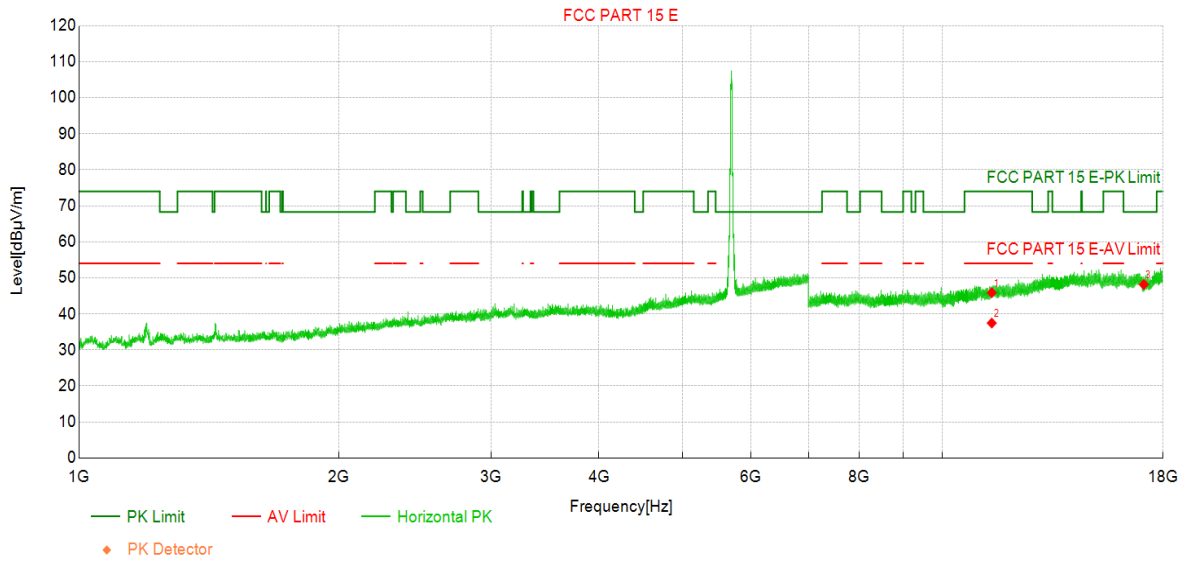


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11160.00	44.0	48.45	4.410	74.00	25.55	PK	Vertic	PASS
2	11160.00	32.8	37.23	4.410	54.00	16.77	AV	Vertic	PASS
3	16740.00	37.4	48.69	11.310	68.30	19.61	PK	Vertic	PASS

Transmit at 5700MHz by 802.11a with Ant SISO

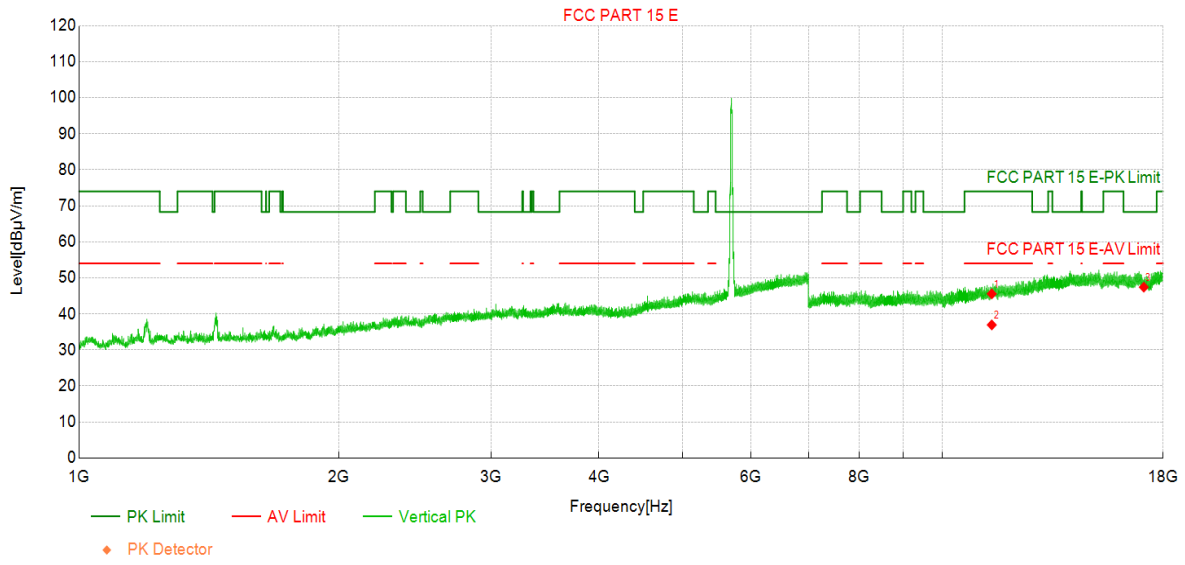
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11400.00	40.9	45.88	4.950	74.00	28.12	PK	Horizo	PASS
2	11400.00	32.5	37.46	4.950	54.00	16.54	AV	Horizo	PASS
3	17100.00	37.6	48.16	10.560	68.30	20.14	PK	Horizo	PASS

Transmit at 5700MHz by 802.11a with Ant SISO

Test Graph

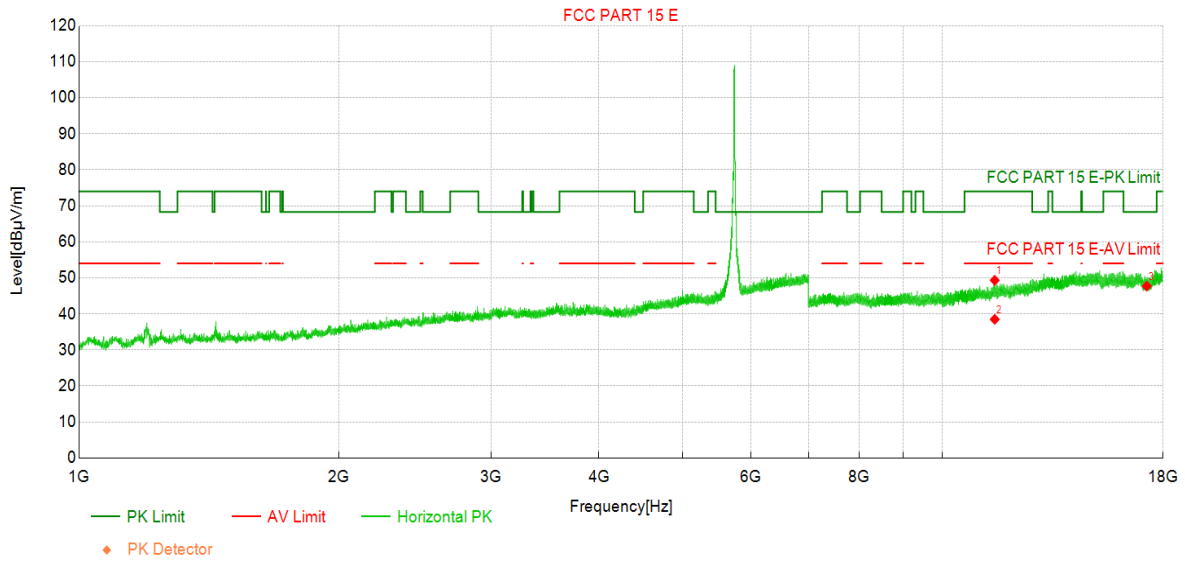


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11400.00	40.6	45.56	4.950	74.00	28.44	PK	Vertic	PASS
2	11400.00	32.0	36.94	4.950	54.00	17.06	AV	Vertic	PASS
3	17100.00	36.9	47.42	10.560	68.30	20.88	PK	Vertic	PASS

Transmit at 5745MHz by 802.11a with Ant SISO

Test Graph

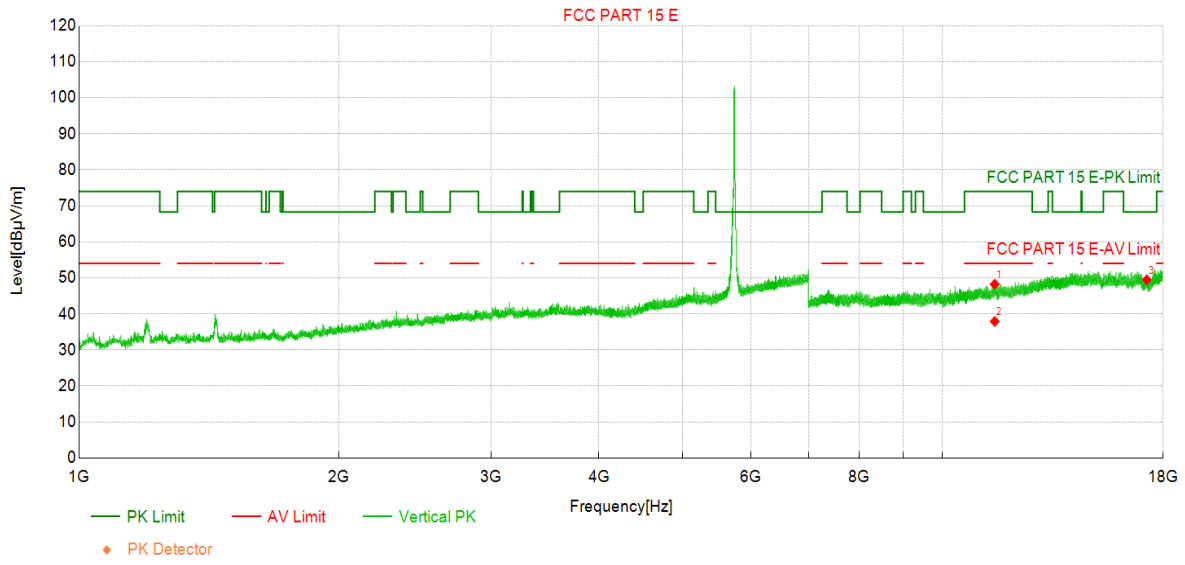


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11490.00	44.3	49.33	5.070	74.00	24.67	PK	Horizo	PASS
2	11490.00	33.4	38.50	5.070	54.00	15.50	AV	Horizo	PASS
3	17235.00	36.5	47.71	11.180	68.30	20.59	PK	Horizo	PASS

Transmit at 5745MHz by 802.11a with Ant SISO

Test Graph

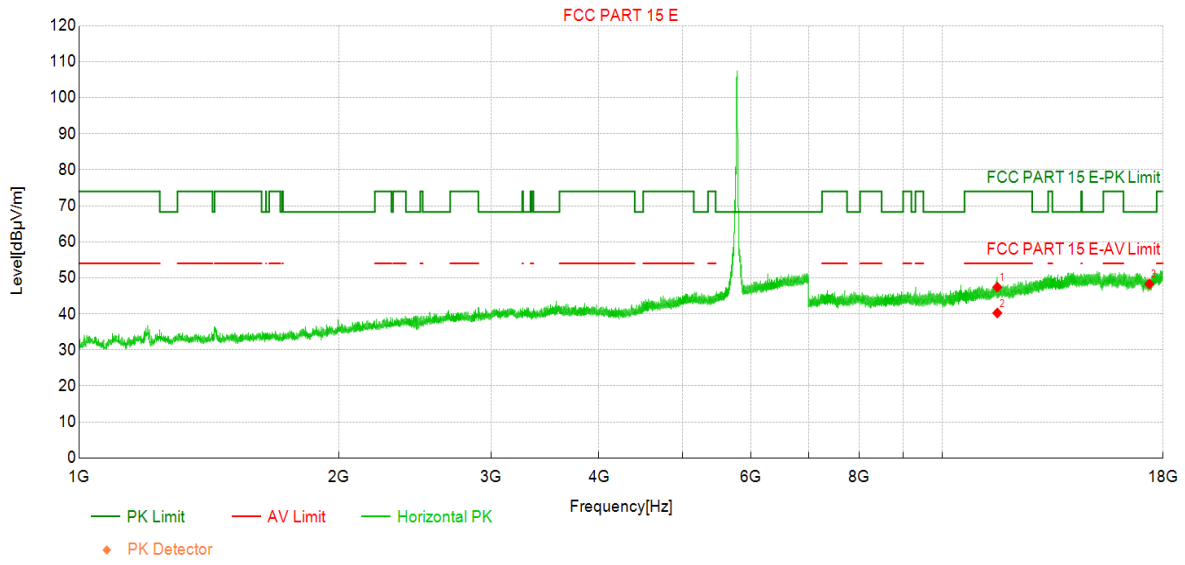


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11490.00	43.2	48.23	5.070	74.00	25.77	PK	Vertic	PASS
2	11490.00	32.9	37.92	5.070	54.00	16.08	AV	Vertic	PASS
3	17235.00	38.3	49.46	11.180	68.30	18.84	PK	Vertic	PASS

Transmit at 5785MHz by 802.11a with Ant SISO

Test Graph

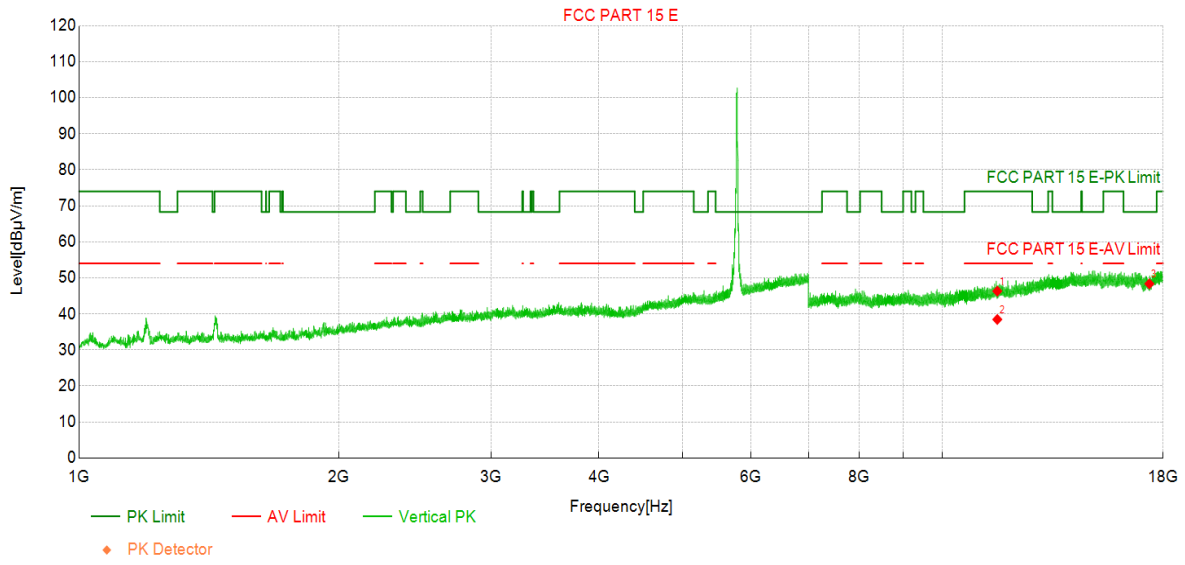


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11570.00	42.6	47.42	4.870	74.00	26.58	PK	Horizo	PASS
2	11570.00	35.4	40.25	4.870	54.00	13.75	AV	Horizo	PASS
3	17355.00	37.6	48.32	10.740	68.30	19.98	PK	Horizo	PASS

Transmit at 5785MHz by 802.11a with Ant SISO

Test Graph

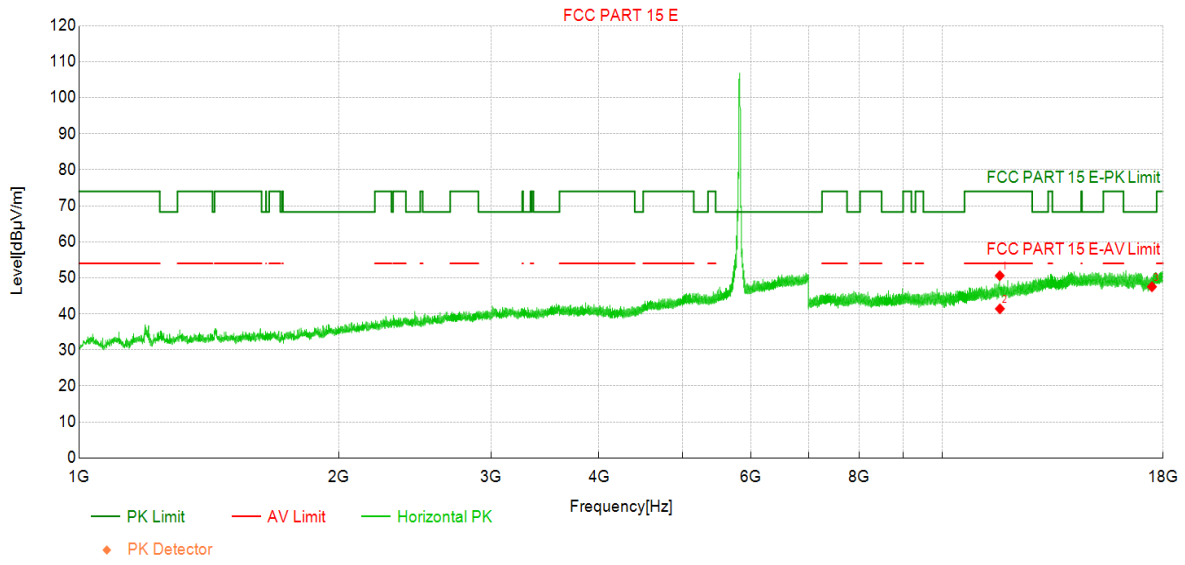


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11570.00	41.5	46.32	4.870	74.00	27.68	PK	Vertic	PASS
2	11570.00	33.6	38.46	4.870	54.00	15.54	AV	Vertic	PASS
3	17355.00	37.6	48.35	10.740	68.30	19.95	PK	Vertic	PASS

Transmit at 5825MHz by 802.11a with Ant SISO

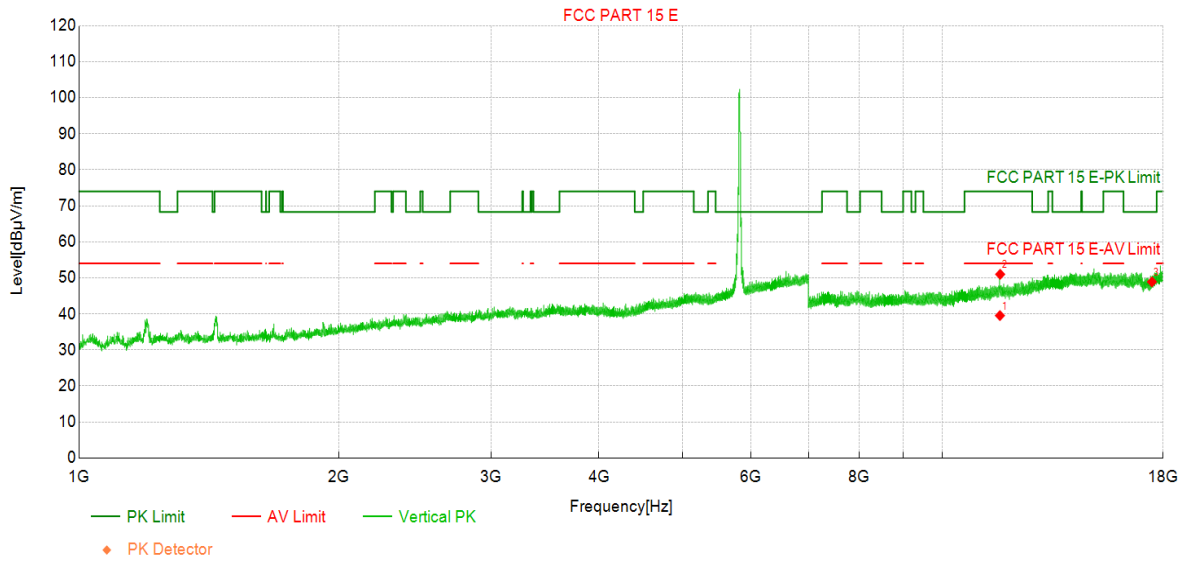
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11645.67	45.6	50.60	5.020	74.00	23.40	PK	Horizo	PASS
2	11650.00	36.4	41.42	5.040	54.00	12.58	AV	Horizo	PASS
3	17475.00	36.4	47.53	11.180	68.30	20.77	PK	Horizo	PASS

Transmit at 5825MHz by 802.11a with Ant SISO

Test Graph

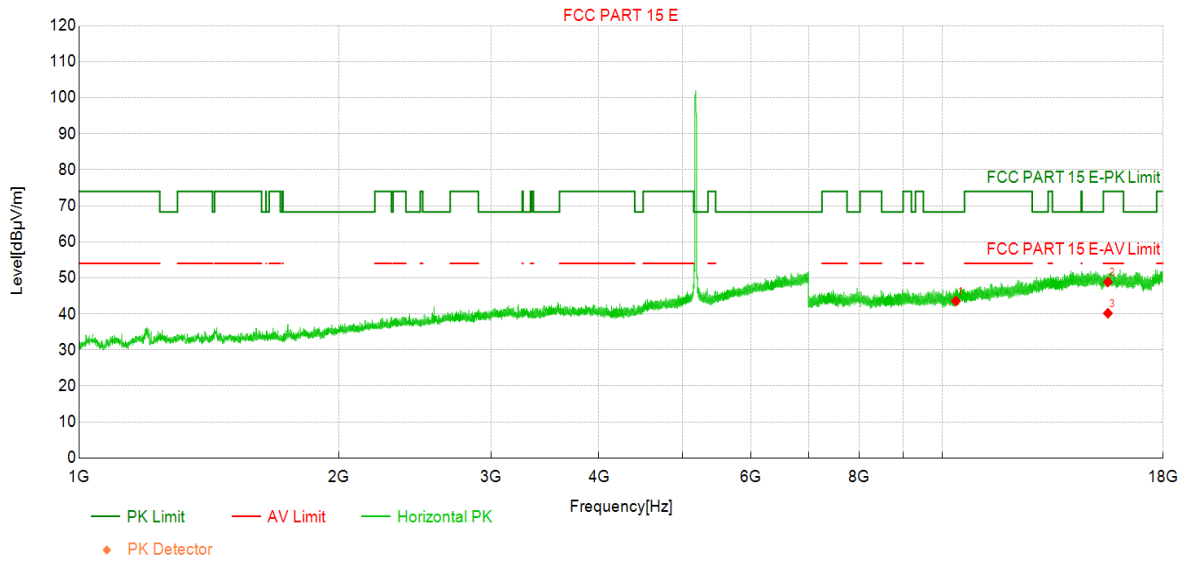


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11650.00	34.5	39.53	5.040	54.00	14.47	AV	Vertic	PASS
2	11660.33	45.9	50.99	5.100	74.00	23.01	PK	Vertic	PASS
3	17475.00	37.7	48.90	11.180	68.30	19.40	PK	Vertic	PASS

Transmit at 5180MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

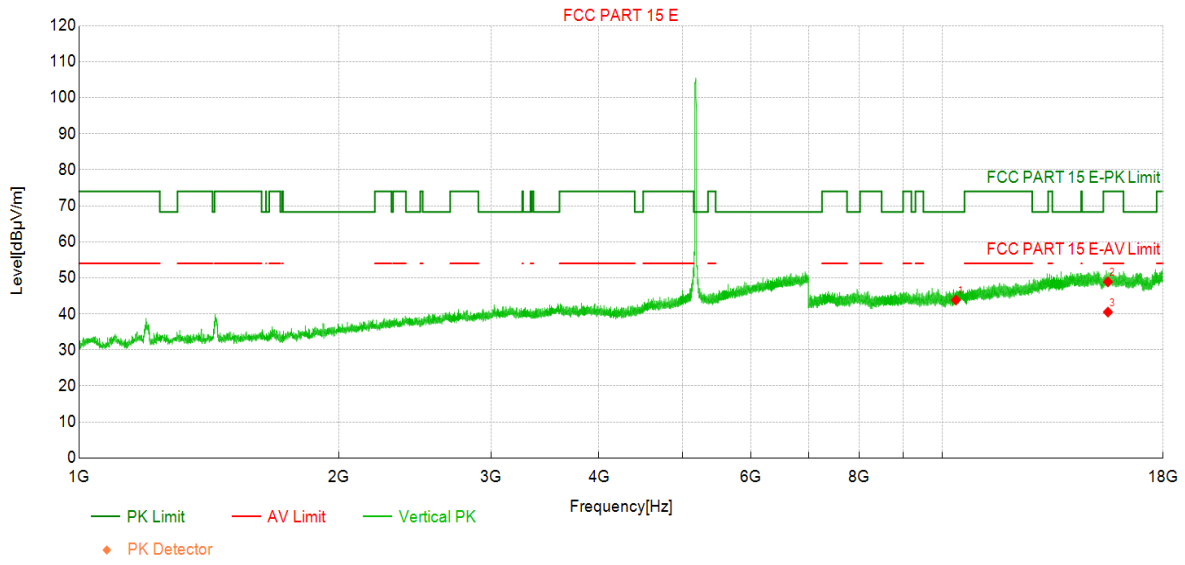


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10360.00	40.8	43.54	2.760	68.30	24.76	PK	Horizo	PASS
2	15540.00	38.1	48.86	10.800	74.00	25.14	PK	Horizo	PASS
3	15540.00	29.4	40.17	10.800	54.00	13.83	AV	Horizo	PASS

Transmit at 5180MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

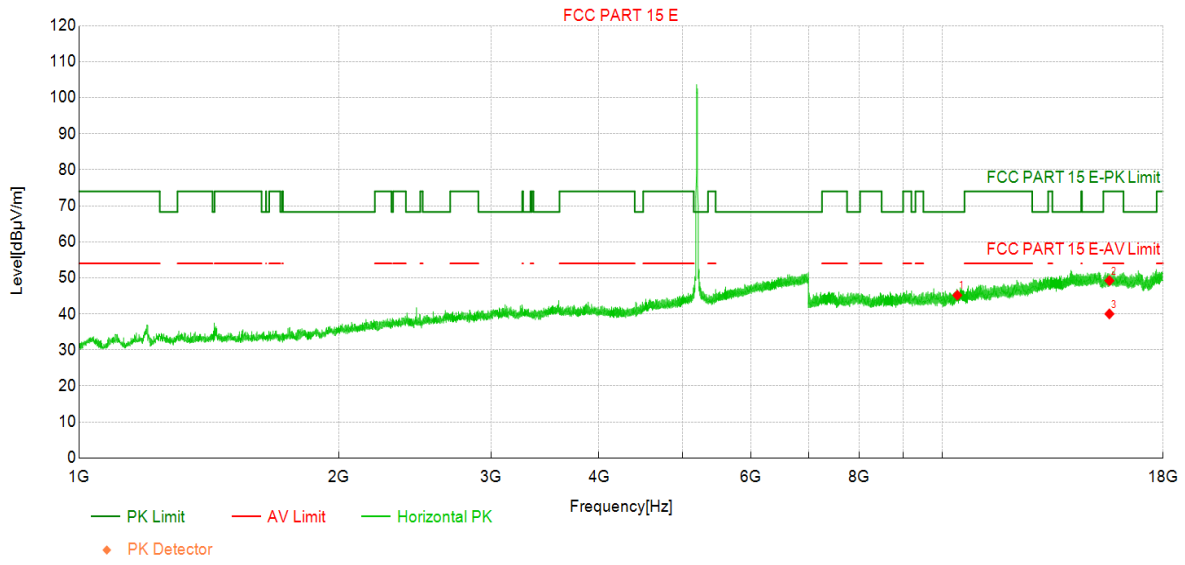


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10360.00	41.1	43.83	2.760	68.30	24.47	PK	Vertic	PASS
2	15540.00	38.1	48.89	10.800	74.00	25.11	PK	Vertic	PASS
3	15540.00	29.7	40.50	10.800	54.00	13.50	AV	Vertic	PASS

Transmit at 5200MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

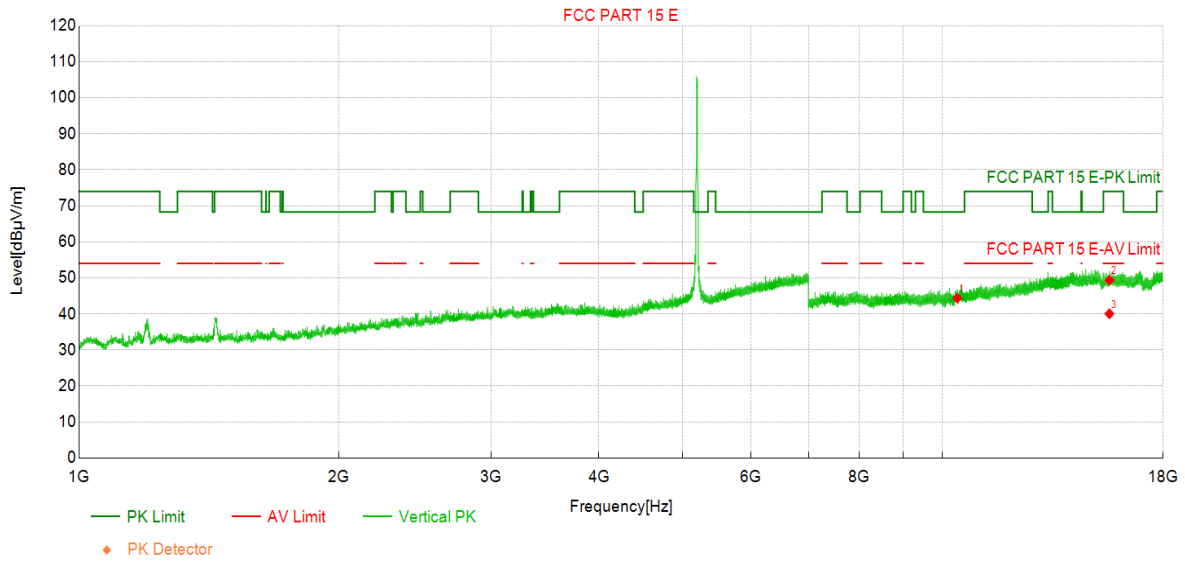


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10400.00	42.4	45.17	2.760	68.30	23.13	PK	Horizo	PASS
2	15600.00	38.5	49.22	10.740	74.00	24.78	PK	Horizo	PASS
3	15600.00	29.3	40.00	10.740	54.00	14.00	AV	Horizo	PASS

Transmit at 5200MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

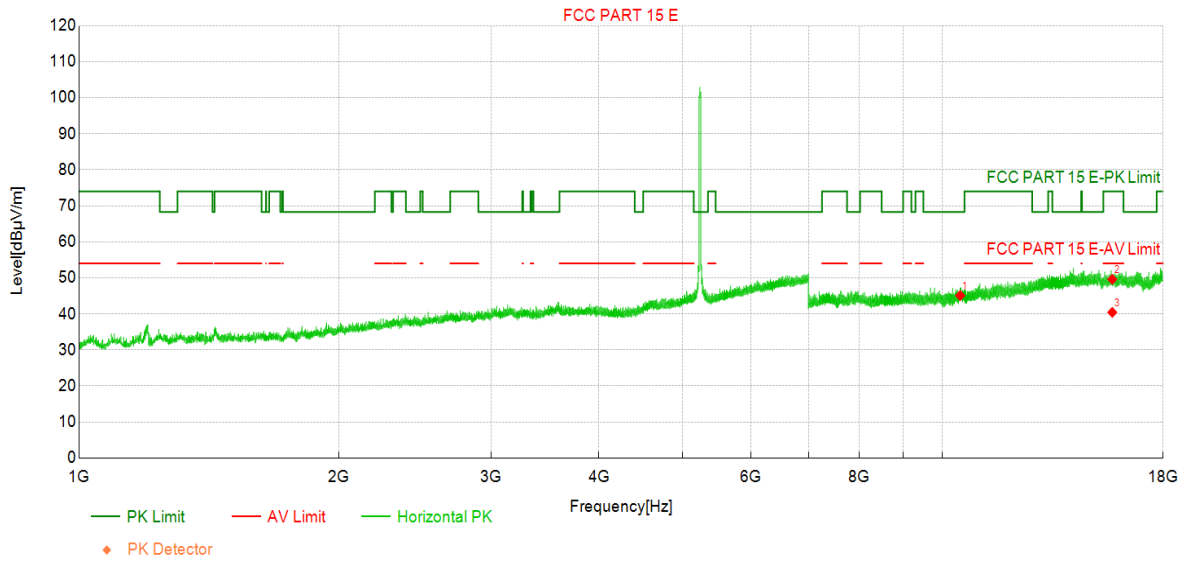


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10400.00	41.6	44.37	2.760	68.30	23.93	PK	Vertic	PASS
2	15600.00	38.6	49.33	10.740	74.00	24.67	PK	Vertic	PASS
3	15600.00	29.3	40.03	10.740	54.00	13.97	AV	Vertic	PASS

Transmit at 5240MHz by 802.11ac(20MHz) with Ant MIMO

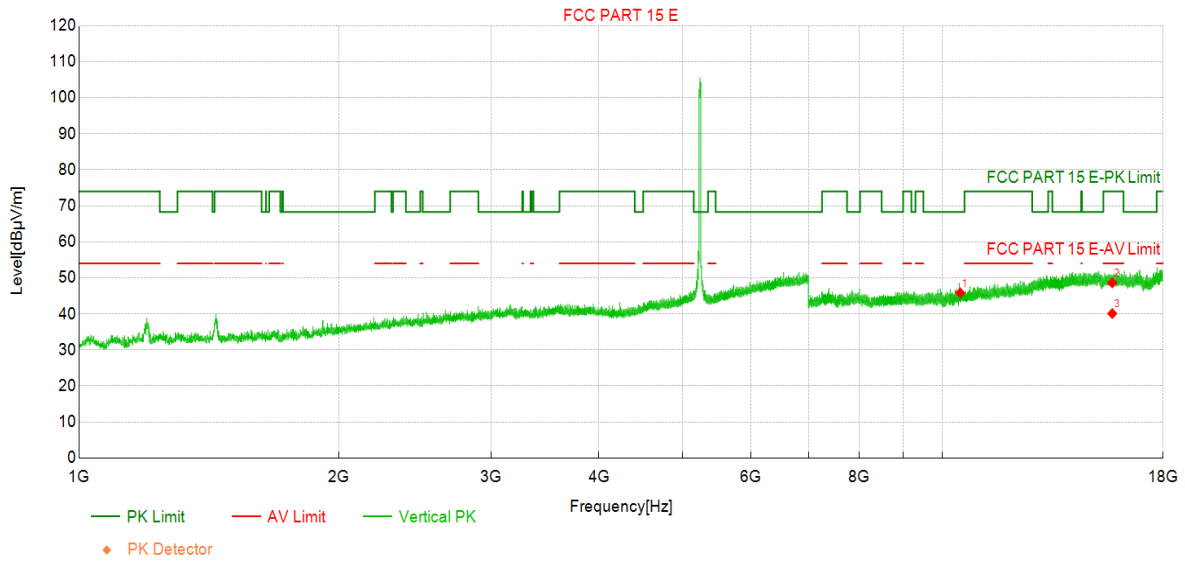
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10480.00	42.2	45.10	2.940	68.30	23.20	PK	Horizo	PASS
2	15720.00	39.0	49.59	10.630	74.00	24.41	PK	Horizo	PASS
3	15720.00	29.8	40.42	10.630	54.00	13.58	AV	Horizo	PASS

Transmit at 5240MHz by 802.11ac(20MHz) with Ant MIMO

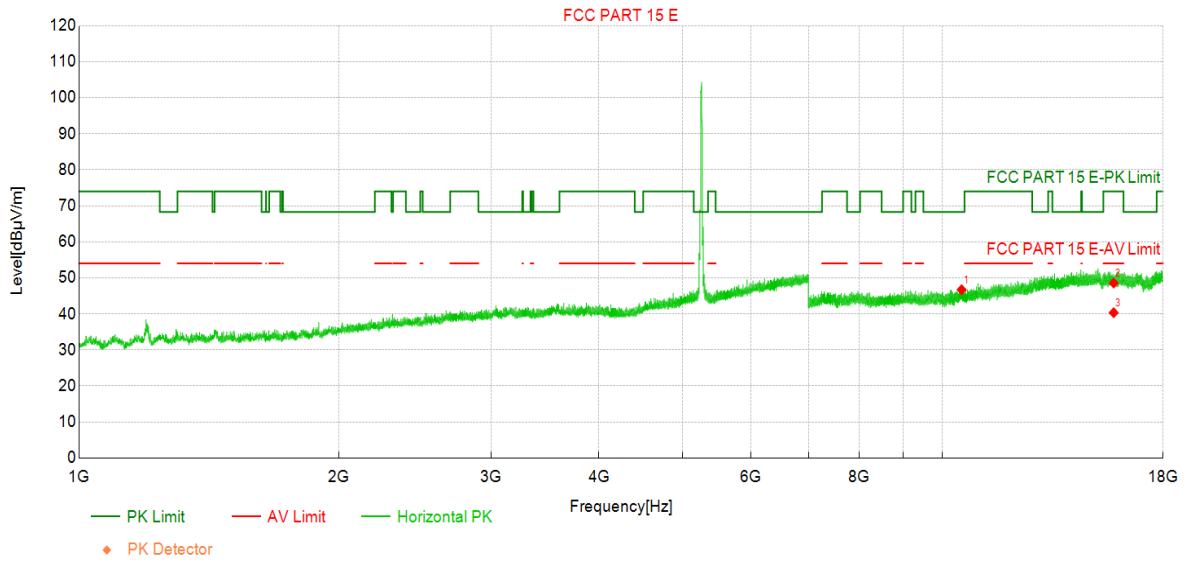
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10480.00	42.9	45.84	2.940	68.30	22.46	PK	Vertic	PASS
2	15720.00	38.0	48.62	10.630	74.00	25.38	PK	Vertic	PASS
3	15720.00	29.5	40.09	10.630	54.00	13.91	AV	Vertic	PASS

Transmit at 5260MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

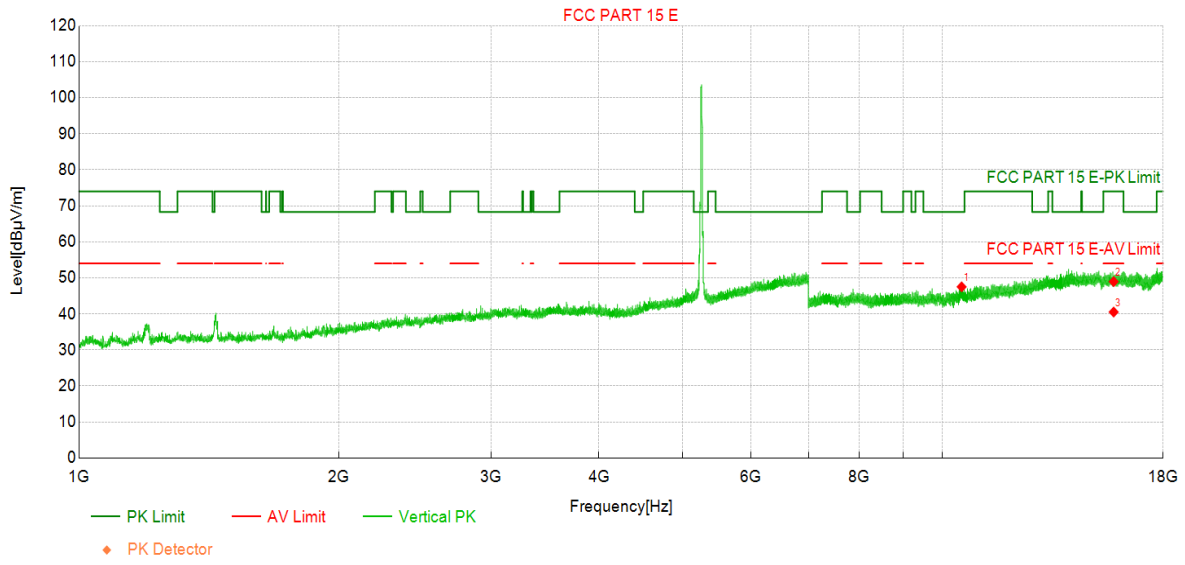


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10520.00	43.7	46.71	2.980	68.30	21.59	PK	Horizo	PASS
2	15780.00	38.1	48.56	10.480	74.00	25.44	PK	Horizo	PASS
3	15780.00	29.9	40.34	10.480	54.00	13.66	AV	Horizo	PASS

Transmit at 5260MHz by 802.11ac(20MHz) with Ant MIMO

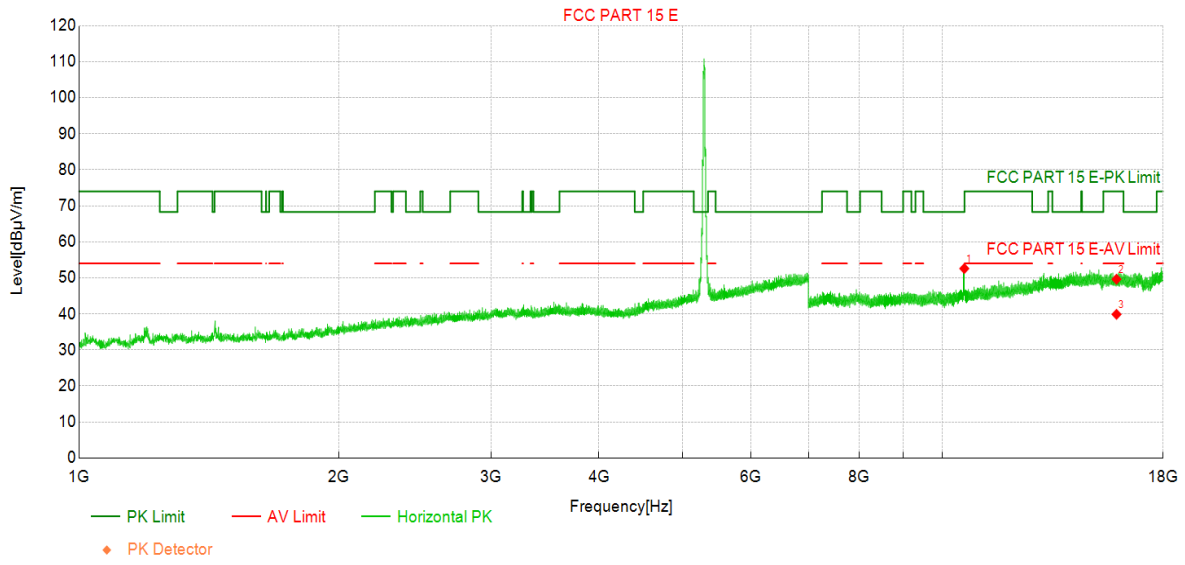
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10520.00	44.5	47.51	2.980	68.30	20.79	PK	Vertic	PASS
2	15780.00	38.5	48.96	10.480	74.00	25.04	PK	Vertic	PASS
3	15780.00	30.0	40.52	10.480	54.00	13.48	AV	Vertic	PASS

Transmit at 5300MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

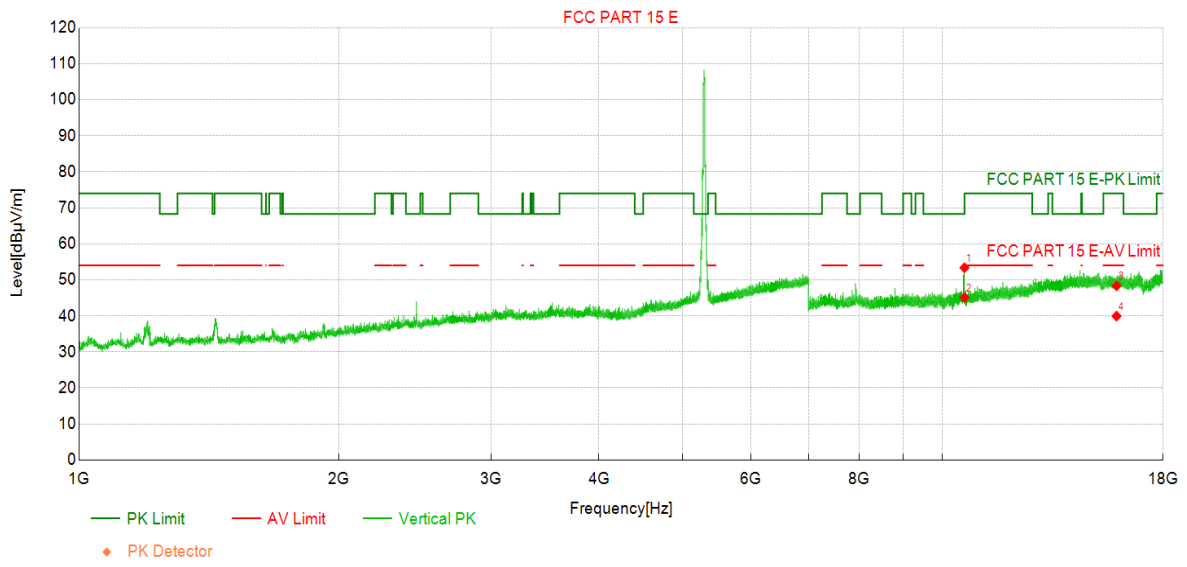


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10596.08	49.6	52.58	2.940	68.30	15.72	PK	Horizo	PASS
2	15900.00	38.9	49.62	10.740	74.00	24.38	PK	Horizo	PASS
3	15900.00	29.1	39.88	10.740	54.00	14.12	AV	Horizo	PASS

Transmit at 5300MHz by 802.11ac(20MHz) with Ant MIMO

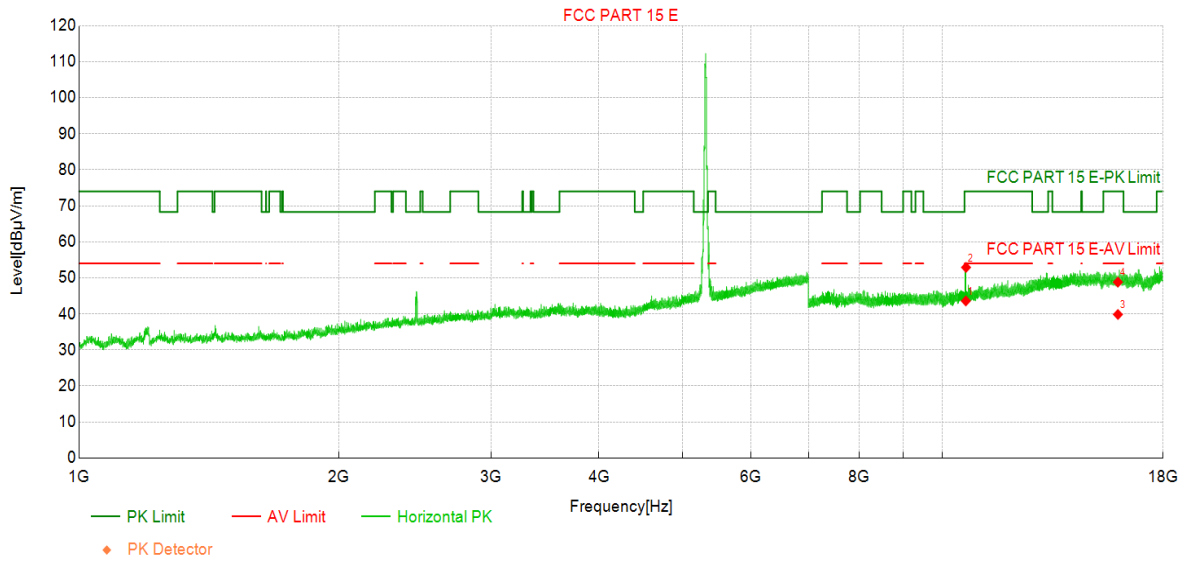
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10599.29	50.4	53.35	2.940	68.30	14.95	PK	Vertic	PASS
2	10602.04	42.2	45.10	2.950	54.00	8.90	AV	Vertic	PASS
3	15900.00	37.6	48.34	10.740	74.00	25.66	PK	Vertic	PASS
4	15900.00	29.2	39.94	10.740	54.00	14.06	AV	Vertic	PASS

Transmit at 5320MHz by 802.11ac(20MHz) with Ant MIMO

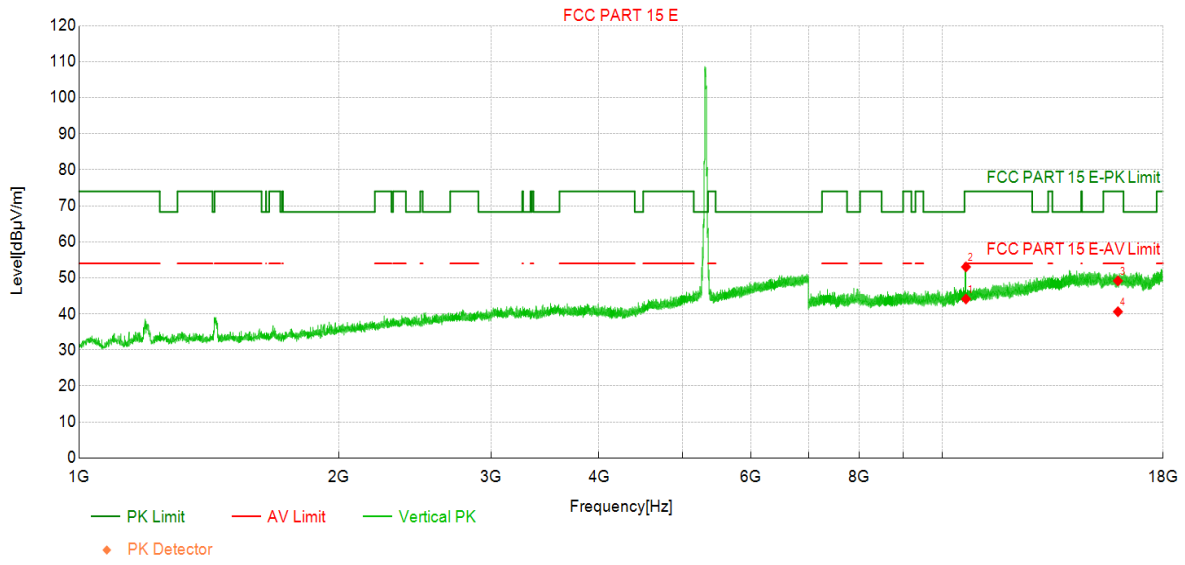
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10639.17	40.5	43.59	3.130	54.00	10.41	AV	Horizo	PASS
2	10644.21	49.8	52.90	3.150	74.00	21.10	PK	Horizo	PASS
3	15960.00	28.7	39.84	11.150	54.00	14.16	AV	Horizo	PASS
4	15960.00	37.7	48.82	11.150	74.00	25.18	PK	Horizo	PASS

Transmit at 5320MHz by 802.11ac(20MHz) with Ant MIMO

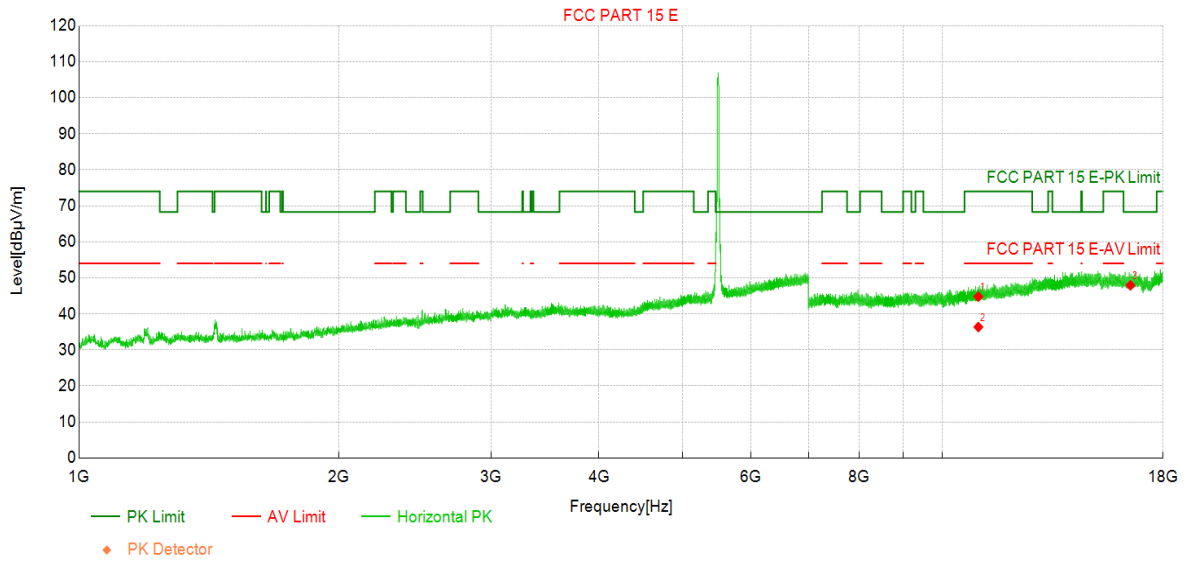
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10641.92	41.0	44.14	3.140	54.00	9.86	AV	Vertic	PASS
2	10642.83	49.9	53.04	3.140	74.00	20.96	PK	Vertic	PASS
3	15960.00	38.0	49.18	11.150	74.00	24.82	PK	Vertic	PASS
4	15960.00	29.5	40.61	11.150	54.00	13.39	AV	Vertic	PASS

Transmit at 5500MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

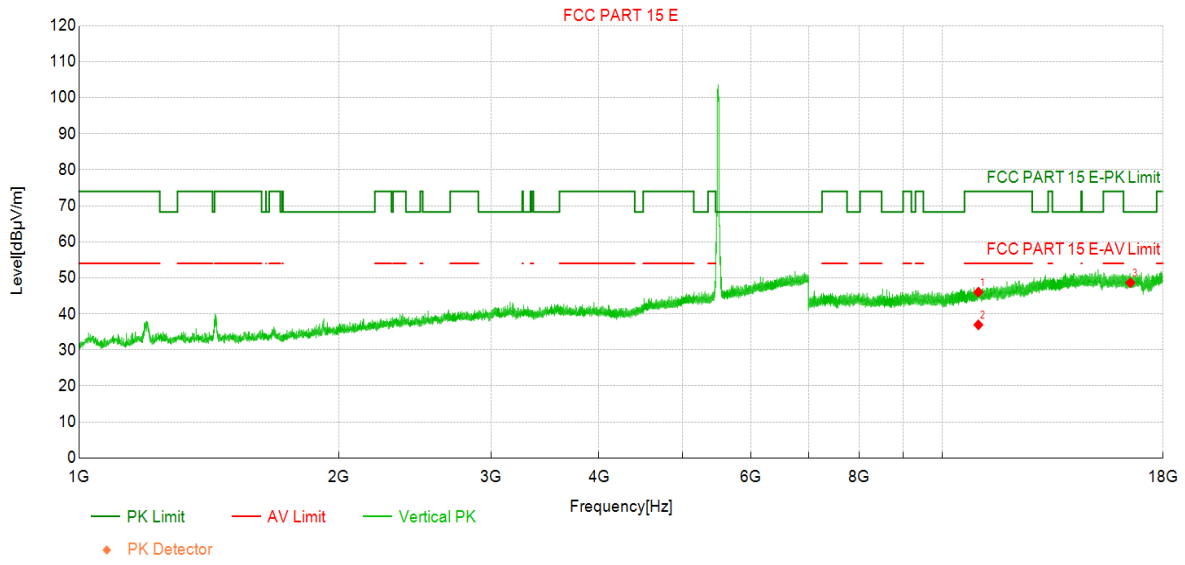


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11000.00	40.8	44.78	4.020	74.00	29.22	PK	Horizo	PASS
2	11000.00	32.3	36.35	4.020	54.00	17.65	AV	Horizo	PASS
3	16500.00	36.9	47.93	11.010	68.30	20.37	PK	Horizo	PASS

Transmit at 5500MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

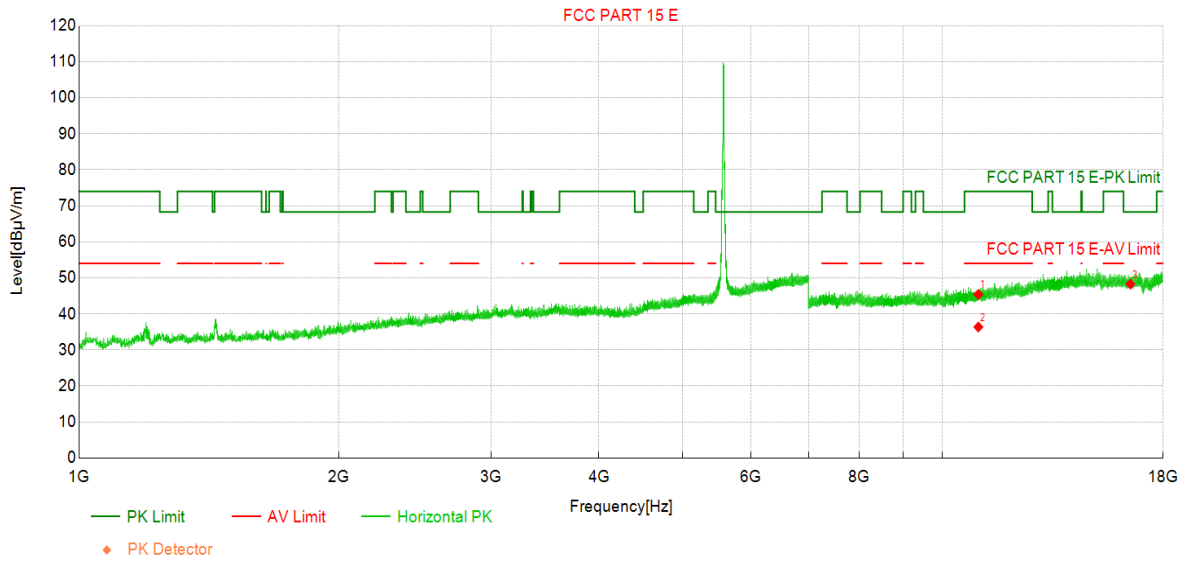


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11000.00	42.0	46.05	4.020	74.00	27.95	PK	Vertic	PASS
2	11000.00	32.9	36.96	4.020	54.00	17.04	AV	Vertic	PASS
3	16500.00	37.6	48.65	11.010	68.30	19.65	PK	Vertic	PASS

Transmit at 5500MHz by 802.11ac(20MHz) with Ant MIMO

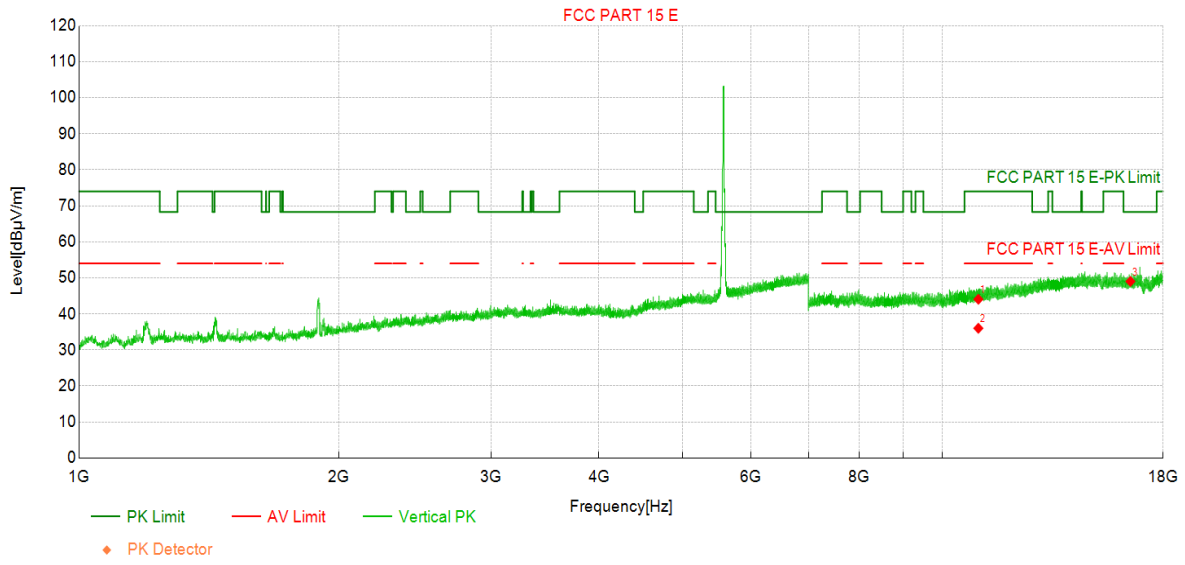
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11000.00	41.4	45.42	4.020	74.00	28.58	PK	Horizo	PASS
2	11000.00	32.4	36.37	4.020	54.00	17.63	AV	Horizo	PASS
3	16500.00	37.3	48.26	11.010	68.30	20.04	PK	Horizo	PASS

Transmit at 5500MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

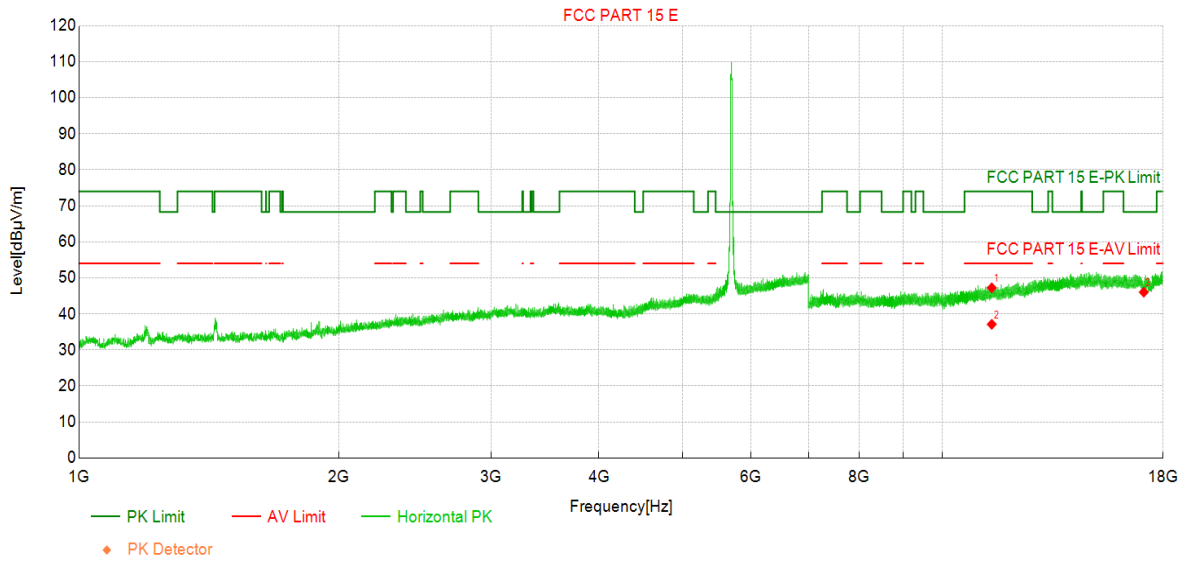


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11000.00	40.0	44.06	4.020	74.00	29.94	PK	Vertic	PASS
2	11000.00	32.0	36.01	4.020	54.00	17.99	AV	Vertic	PASS
3	16500.00	38.0	49.02	11.010	68.30	19.28	PK	Vertic	PASS

Transmit at 5700MHz by 802.11ac(20MHz) with Ant MIMO

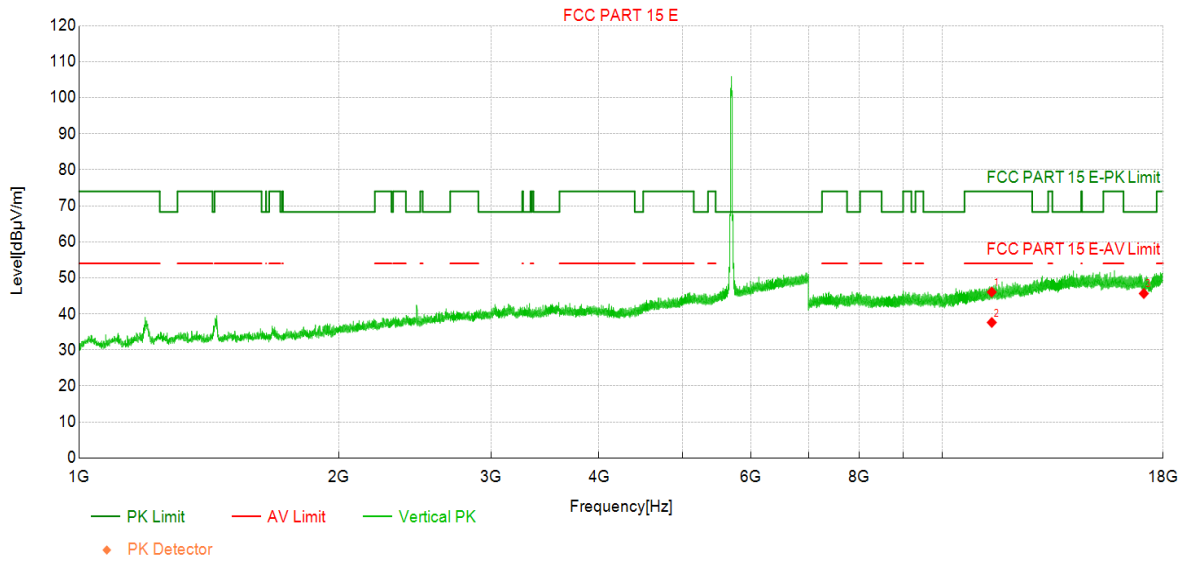
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11400.00	42.3	47.22	4.950	74.00	26.78	PK	Horizo	PASS
2	11400.00	32.2	37.11	4.950	54.00	16.89	AV	Horizo	PASS
3	17100.00	35.5	46.02	10.560	68.30	22.28	PK	Horizo	PASS

Transmit at 5700MHz by 802.11ac(20MHz) with Ant MIMO

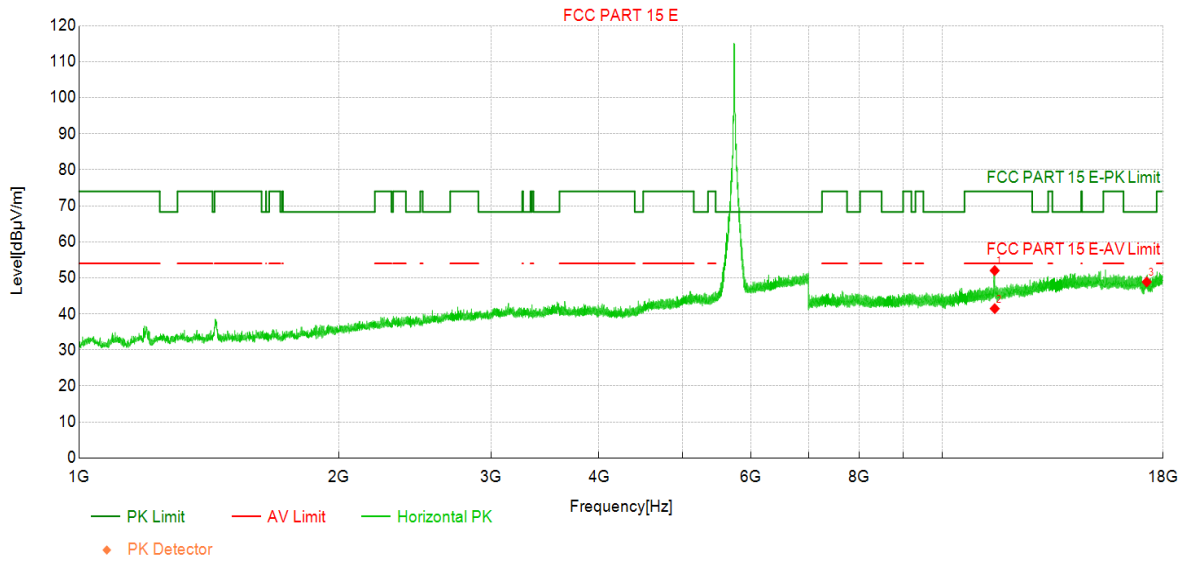
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11400.00	41.1	46.06	4.950	74.00	27.94	PK	Vertic	PASS
2	11400.00	32.7	37.62	4.950	54.00	16.38	AV	Vertic	PASS
3	17100.00	35.1	45.65	10.560	68.30	22.65	PK	Vertic	PASS

Transmit at 5745MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

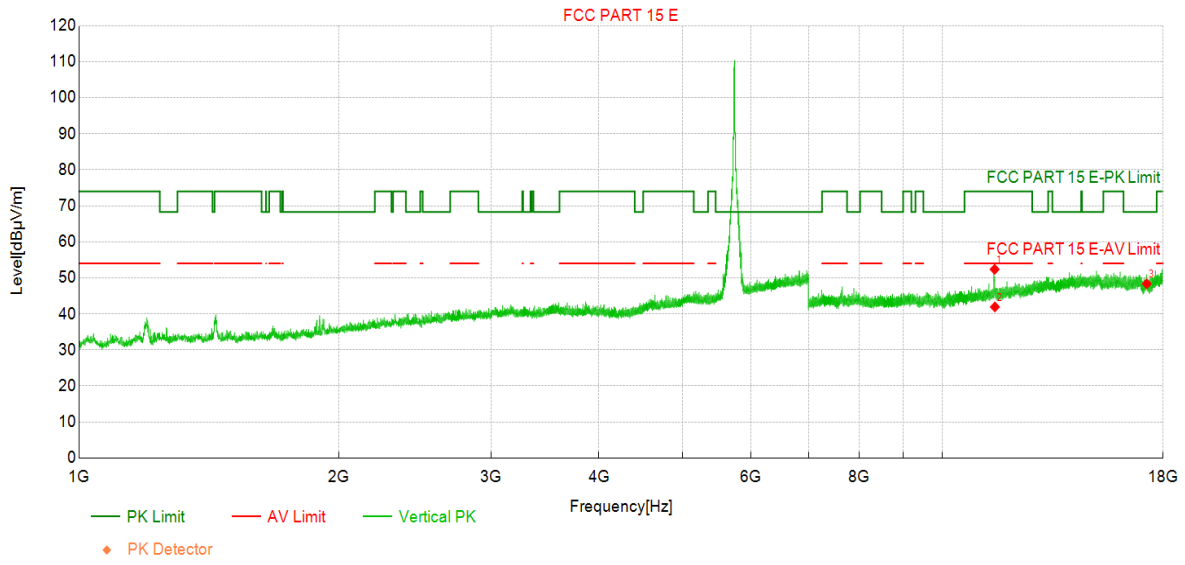


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11488.92	47.0	52.02	5.070	74.00	21.98	PK	Horizo	PASS
2	11490.00	36.4	41.46	5.070	54.00	12.54	AV	Horizo	PASS
3	17235.00	37.7	48.87	11.180	68.30	19.43	PK	Horizo	PASS

Transmit at 5745MHz by 802.11ac(20MHz) with Ant MIMO

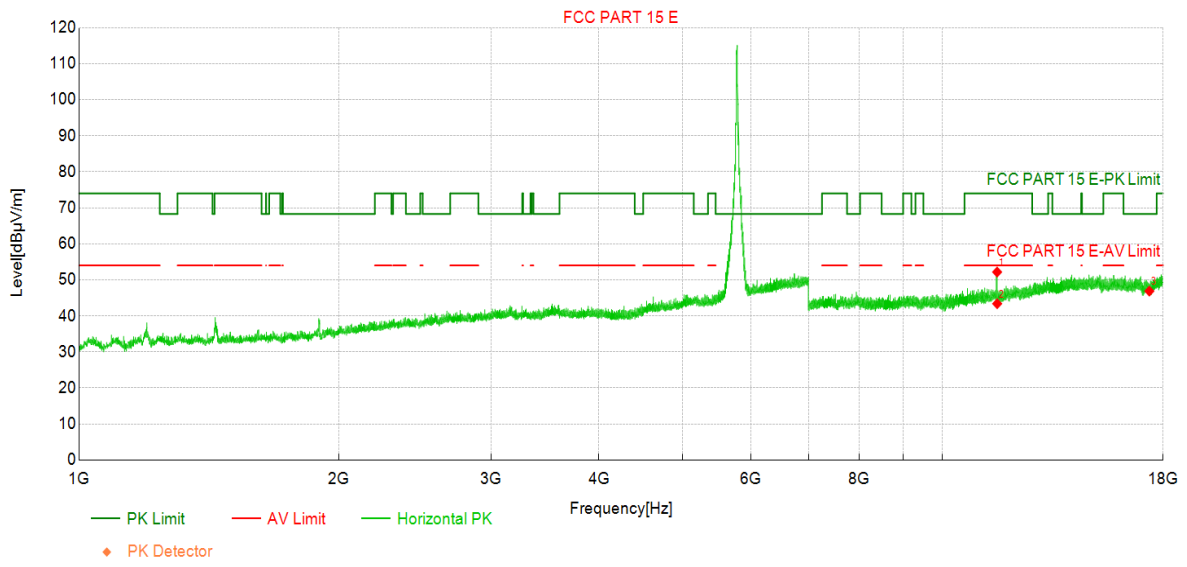
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11486.63	47.3	52.37	5.060	74.00	21.63	PK	Vertic	PASS
2	11496.71	36.9	41.94	5.080	54.00	12.06	AV	Vertic	PASS
3	17235.00	37.2	48.36	11.180	68.30	19.94	PK	Vertic	PASS

Transmit at 5785MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

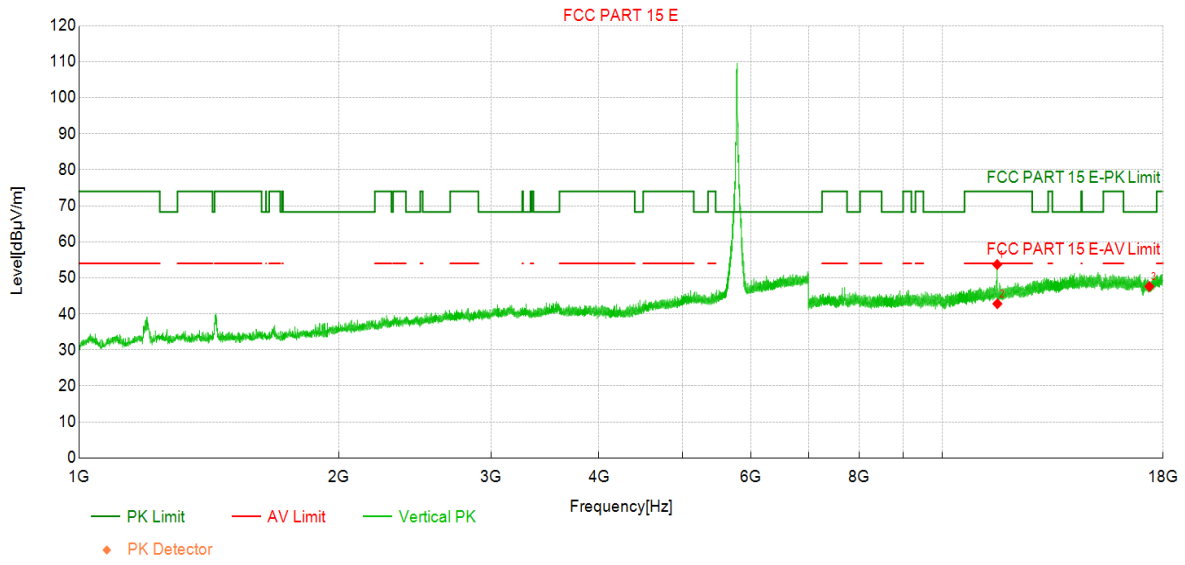


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11563.63	47.3	52.17	4.900	74.00	21.83	PK	Horizo	PASS
2	11566.38	38.5	43.38	4.890	54.00	10.62	AV	Horizo	PASS
3	17355.00	36.1	46.87	10.740	68.30	21.43	PK	Horizo	PASS

Transmit at 5785MHz by 802.11ac(20MHz) with Ant MIMO

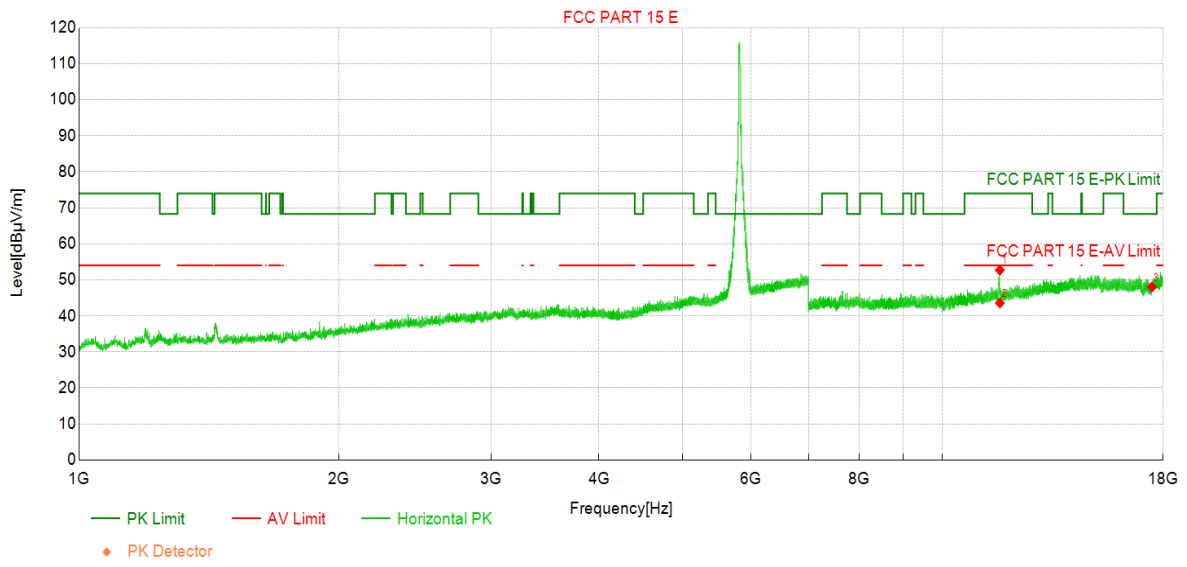
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11566.38	48.8	53.71	4.890	74.00	20.29	PK	Vertic	PASS
2	11571.88	38.0	42.81	4.860	54.00	11.19	AV	Vertic	PASS
3	17355.00	36.9	47.60	10.740	68.30	20.70	PK	Vertic	PASS

Transmit at 5825MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

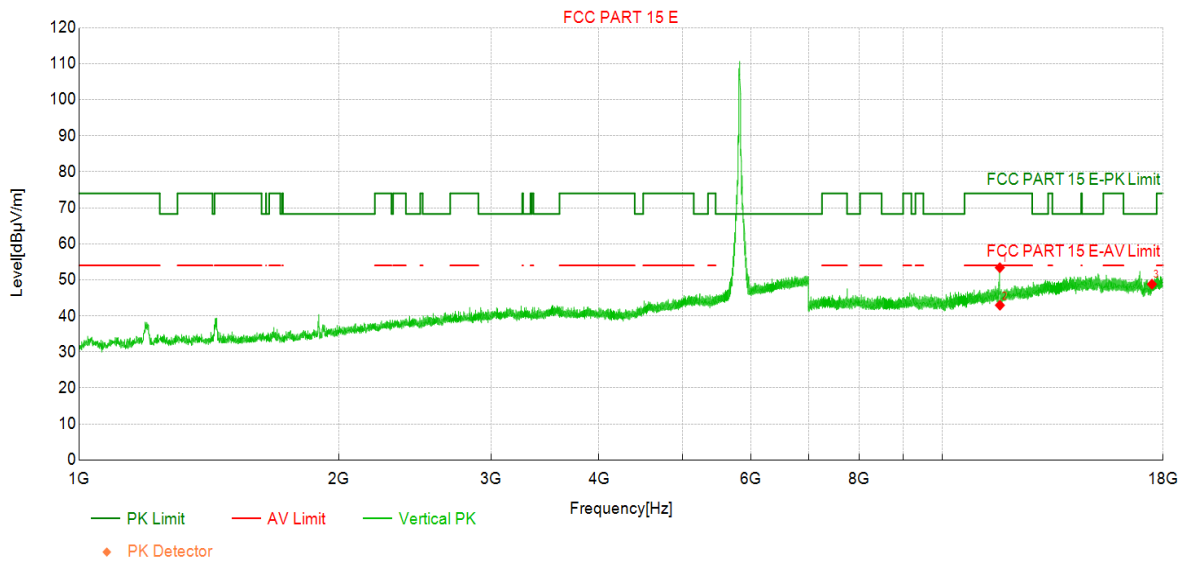


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11648.42	47.7	52.70	5.030	74.00	21.30	PK	Horizo	PASS
2	11648.88	38.5	43.57	5.030	54.00	10.43	AV	Horizo	PASS
3	17475.00	36.9	48.04	11.180	68.30	20.26	PK	Horizo	PASS

Transmit at 5825MHz by 802.11ac(20MHz) with Ant MIMO

Test Graph

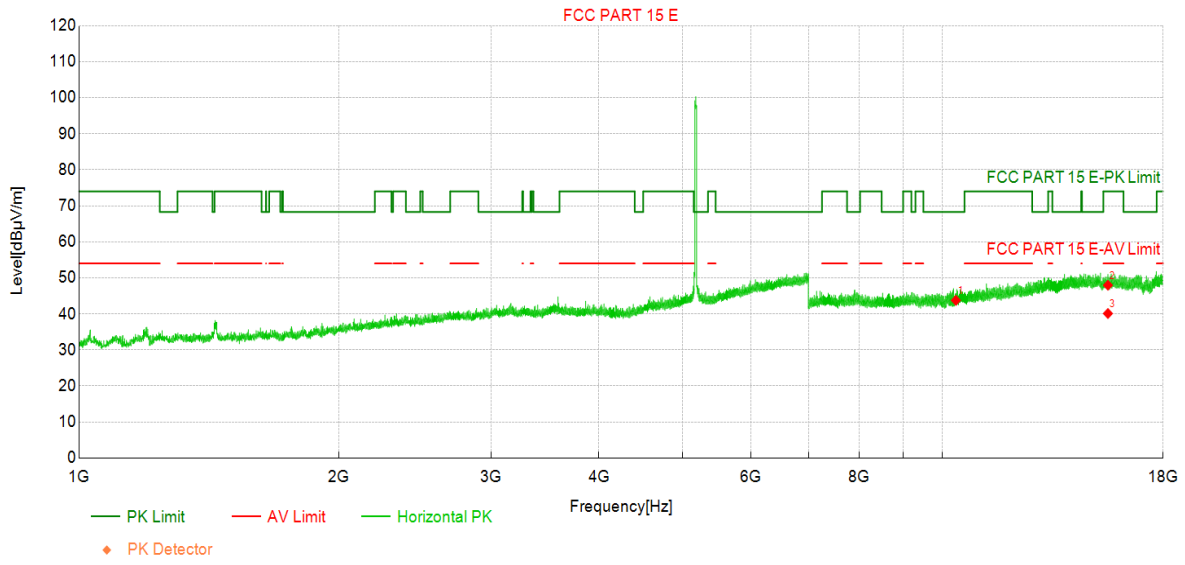


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11647.50	48.4	53.38	5.030	74.00	20.62	PK	Vertic	PASS
2	11650.00	37.9	42.95	5.040	54.00	11.05	AV	Vertic	PASS
3	17475.00	37.6	48.81	11.180	68.30	19.49	PK	Vertic	PASS

Transmit at 5180MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

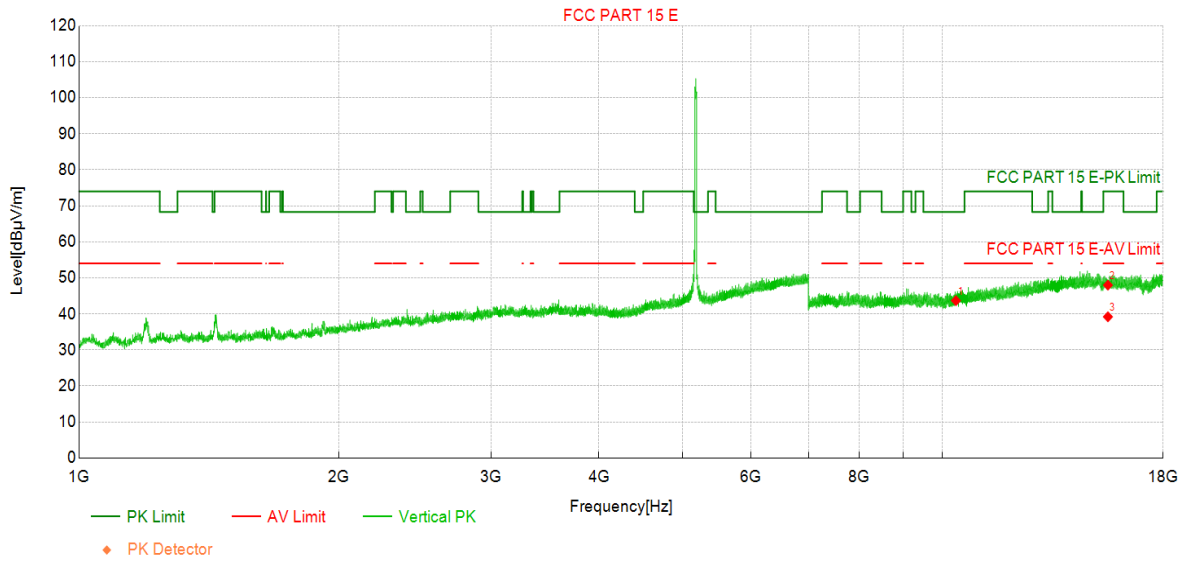


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10360.00	41.0	43.75	2.760	68.30	24.55	PK	Horizo	PASS
2	15540.00	37.2	47.96	10.800	74.00	26.04	PK	Horizo	PASS
3	15540.00	29.3	40.11	10.800	54.00	13.89	AV	Horizo	PASS

Transmit at 5180MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

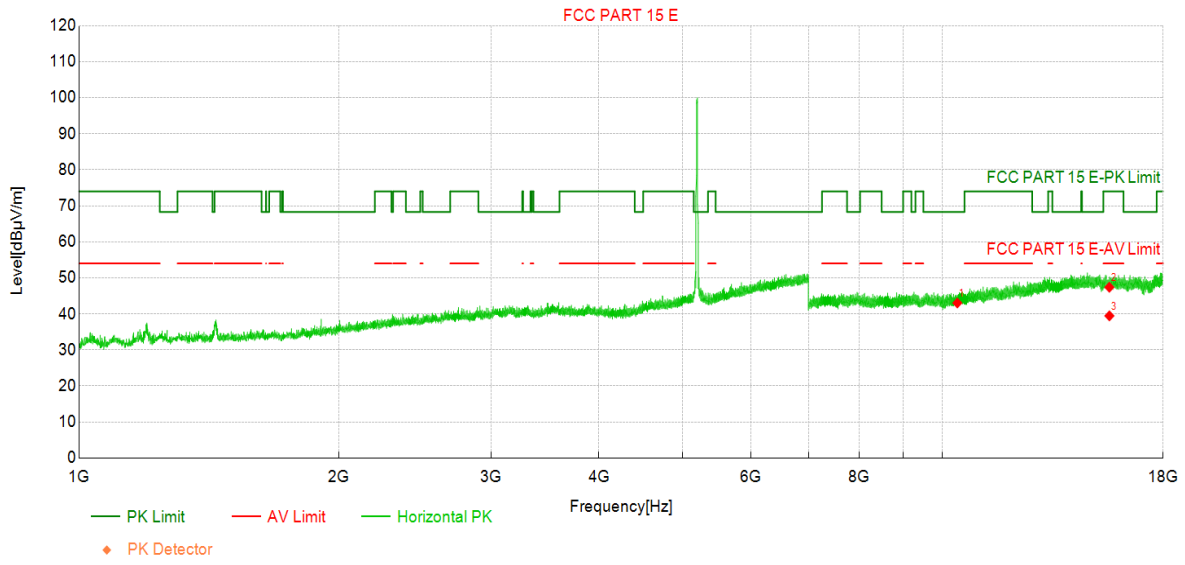


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10360.00	40.9	43.67	2.760	68.30	24.63	PK	Vertic	PASS
2	15540.00	37.2	47.99	10.800	74.00	26.01	PK	Vertic	PASS
3	15540.00	28.4	39.20	10.800	54.00	14.80	AV	Vertic	PASS

Transmit at 5200MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

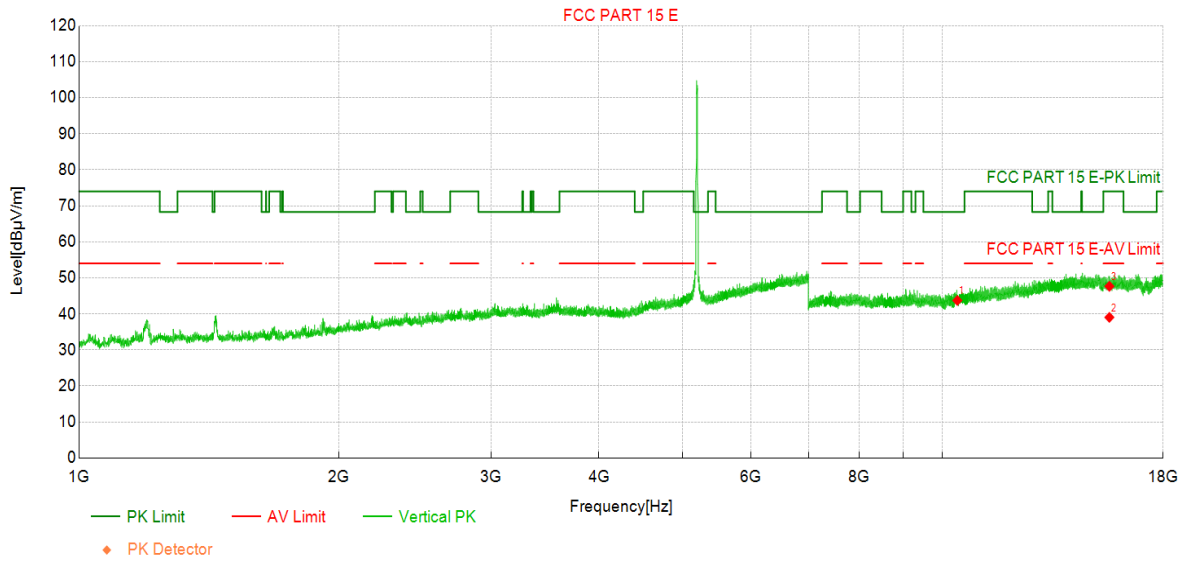


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10400.00	40.3	43.02	2.760	68.30	25.28	PK	Horizo	PASS
2	15600.00	36.7	47.39	10.740	74.00	26.61	PK	Horizo	PASS
3	15600.00	28.7	39.46	10.740	54.00	14.54	AV	Horizo	PASS

Transmit at 5200MHz by 802.11ax(20MHz) with Ant MIMO

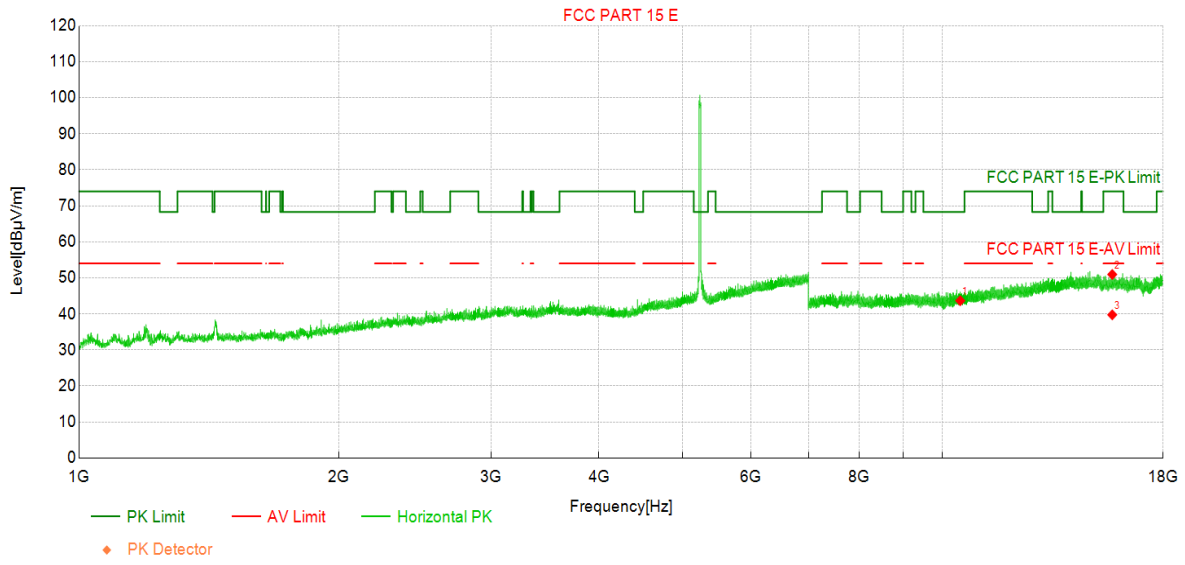
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10400.00	41.0	43.72	2.760	68.30	24.58	PK	Vertic	PASS
2	15600.00	28.3	39.04	10.740	54.00	14.96	AV	Vertic	PASS
3	15600.00	36.9	47.65	10.740	74.00	26.35	PK	Vertic	PASS

Transmit at 5240MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

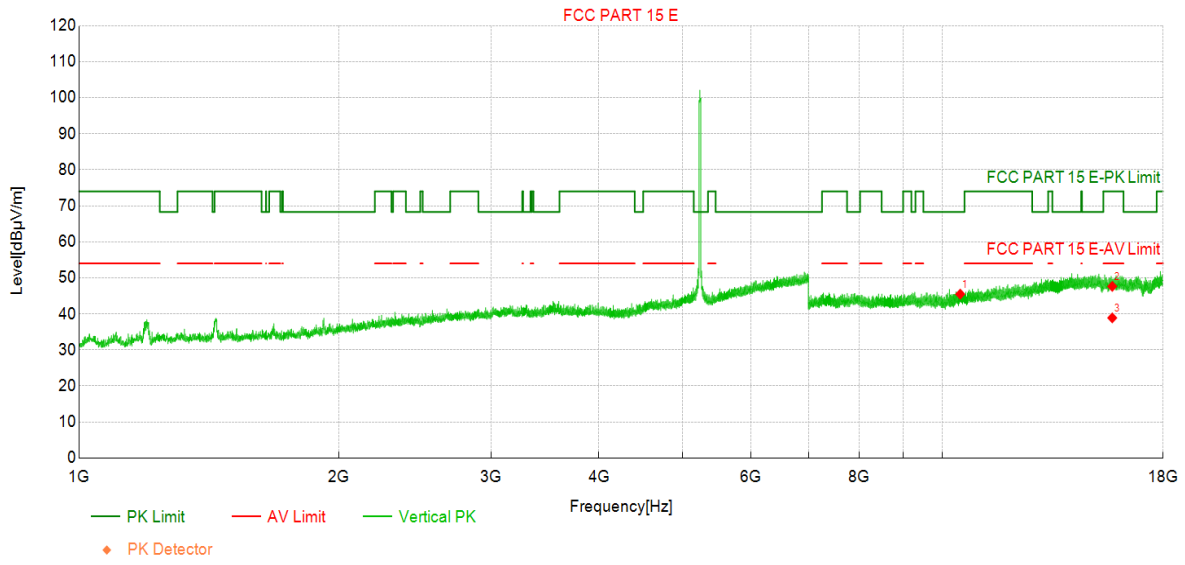


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10480.00	40.7	43.66	2.940	68.30	24.64	PK	Horizo	PASS
2	15720.00	40.3	50.95	10.630	74.00	23.05	PK	Horizo	PASS
3	15720.00	29.1	39.75	10.630	54.00	14.25	AV	Horizo	PASS

Transmit at 5240MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

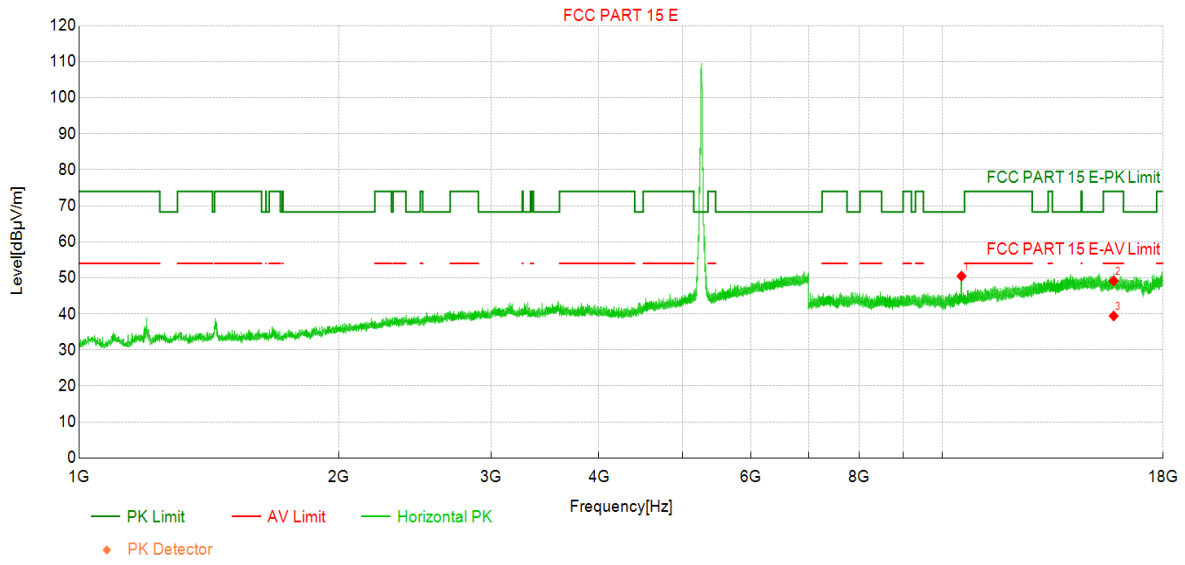


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10480.00	42.6	45.49	2.940	68.30	22.81	PK	Vertic	PASS
2	15720.00	37.0	47.63	10.630	74.00	26.37	PK	Vertic	PASS
3	15720.00	28.3	38.90	10.630	54.00	15.10	AV	Vertic	PASS

Transmit at 5260MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

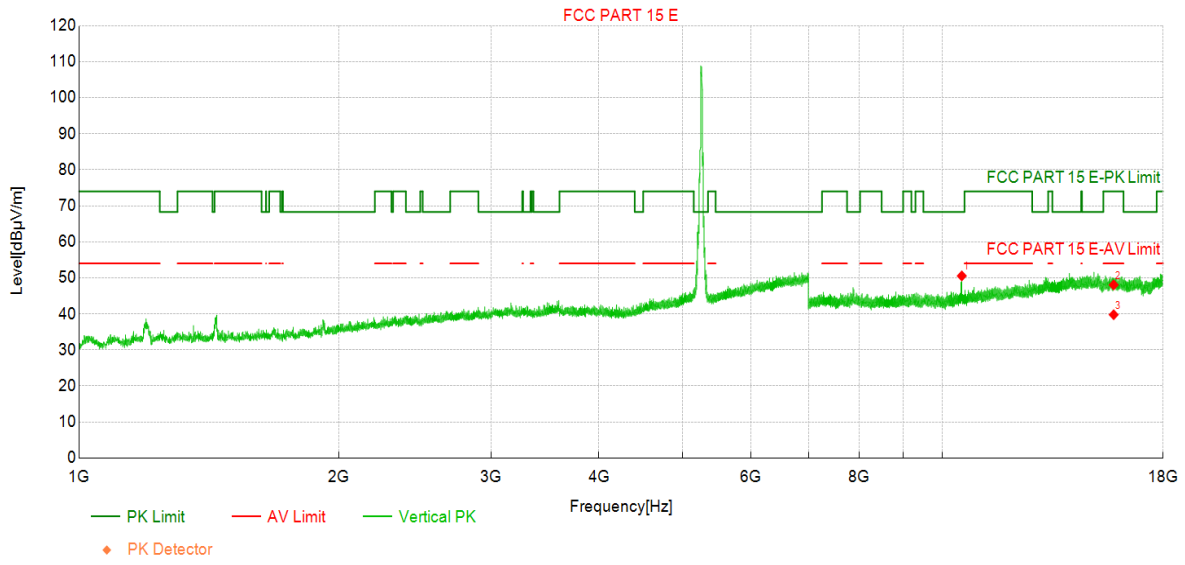


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10516.33	47.5	50.47	2.980	68.30	17.83	PK	Horizo	PASS
2	15780.00	38.7	49.17	10.480	74.00	24.83	PK	Horizo	PASS
3	15780.00	28.9	39.42	10.480	54.00	14.58	AV	Horizo	PASS

Transmit at 5260MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

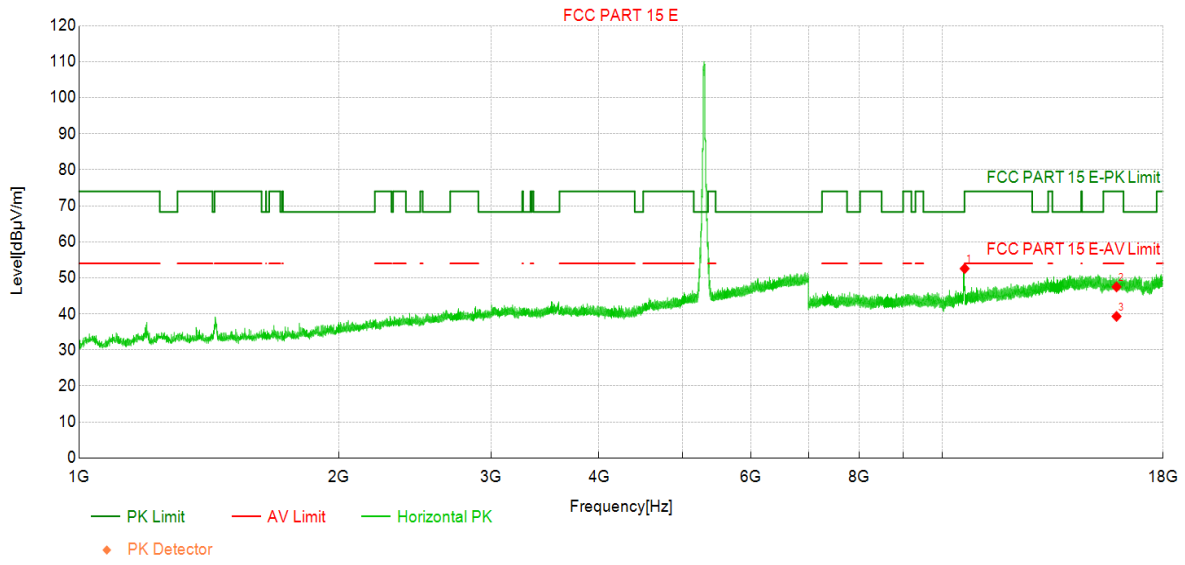


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10524.13	47.6	50.54	2.980	68.30	17.76	PK	Vertic	PASS
2	15780.00	37.6	48.04	10.480	74.00	25.96	PK	Vertic	PASS
3	15780.00	29.3	39.77	10.480	54.00	14.23	AV	Vertic	PASS

Transmit at 5300MHz by 802.11ax(20MHz) with Ant MIMO

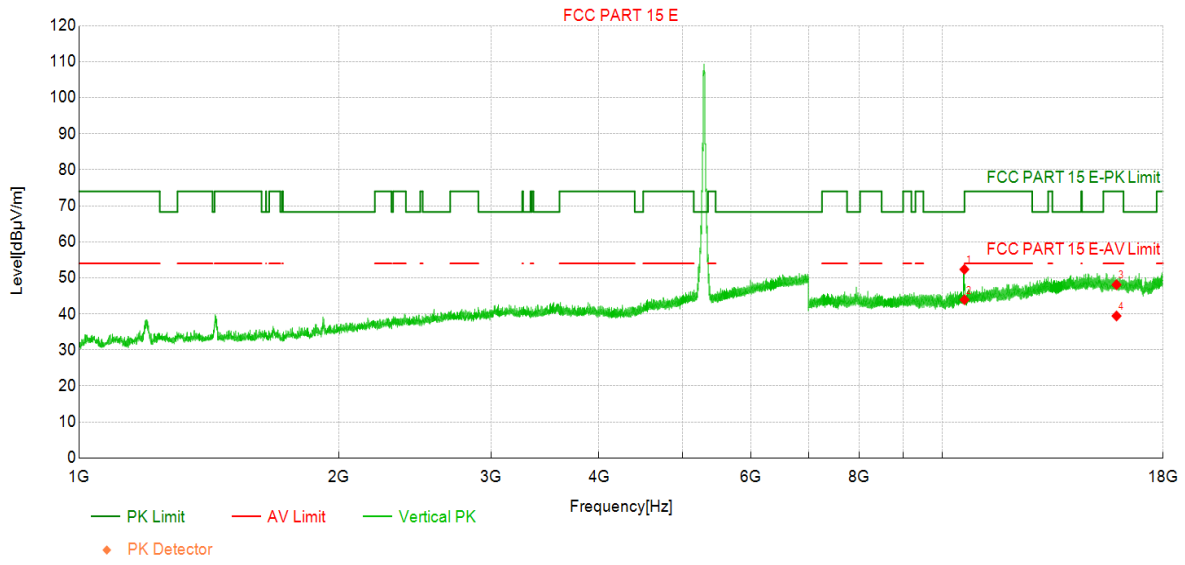
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10605.25	49.6	52.57	2.970	74.00	21.43	PK	Horizo	PASS
2	15900.00	36.8	47.50	10.740	74.00	26.50	PK	Horizo	PASS
3	15900.00	28.6	39.31	10.740	54.00	14.69	AV	Horizo	PASS

Transmit at 5300MHz by 802.11ax(20MHz) with Ant MIMO

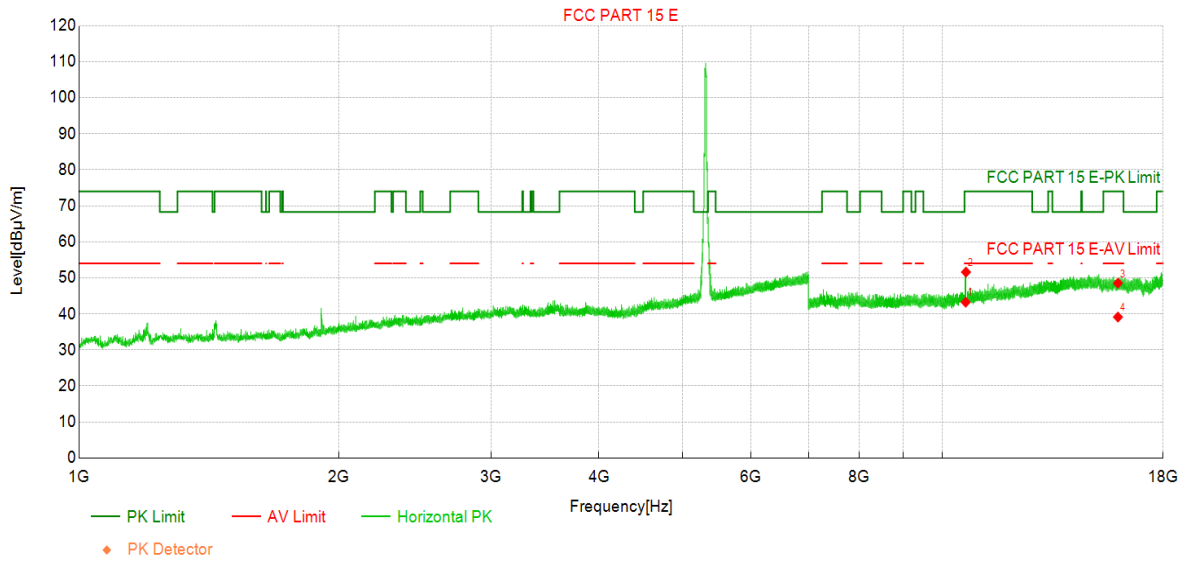
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10598.38	49.4	52.35	2.940	68.30	15.95	PK	Vertic	PASS
2	10600.00	41.0	43.94	2.940	54.00	10.06	AV	Vertic	PASS
3	15900.00	37.4	48.10	10.740	74.00	25.90	PK	Vertic	PASS
4	15900.00	28.7	39.42	10.740	54.00	14.58	AV	Vertic	PASS

Transmit at 5320MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

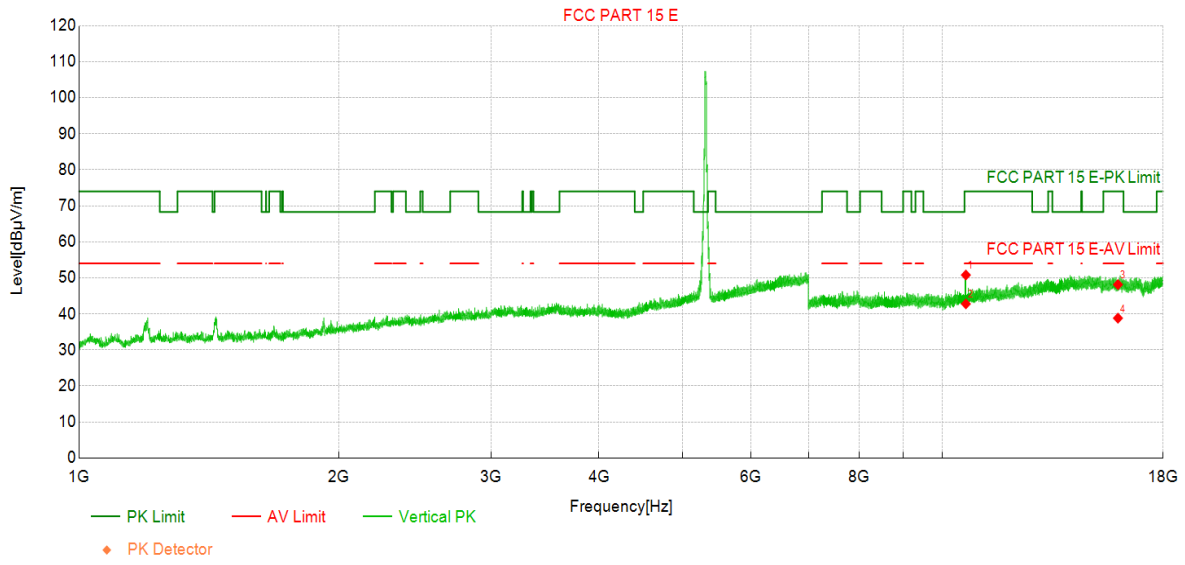


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10635.04	40.1	43.25	3.110	54.00	10.75	AV	Horizo	PASS
2	10642.38	48.5	51.59	3.140	74.00	22.41	PK	Horizo	PASS
3	15960.00	37.4	48.54	11.150	74.00	25.46	PK	Horizo	PASS
4	15960.00	28.0	39.12	11.150	54.00	14.88	AV	Horizo	PASS

Transmit at 5320MHz by 802.11ax(20MHz) with Ant MIMO

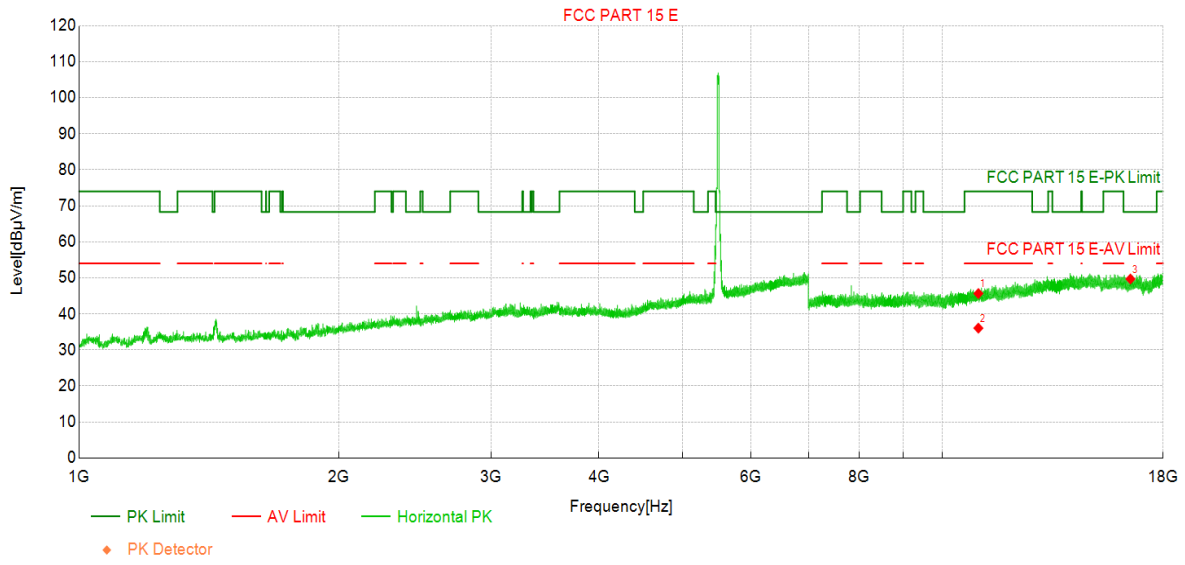
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	10640.00	47.7	50.79	3.130	74.00	23.21	PK	Vertic	PASS
2	10640.00	39.7	42.78	3.130	54.00	11.22	AV	Vertic	PASS
3	15960.00	37.0	48.14	11.150	74.00	25.86	PK	Vertic	PASS
4	15960.00	27.7	38.82	11.150	54.00	15.18	AV	Vertic	PASS

Transmit at 5500MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

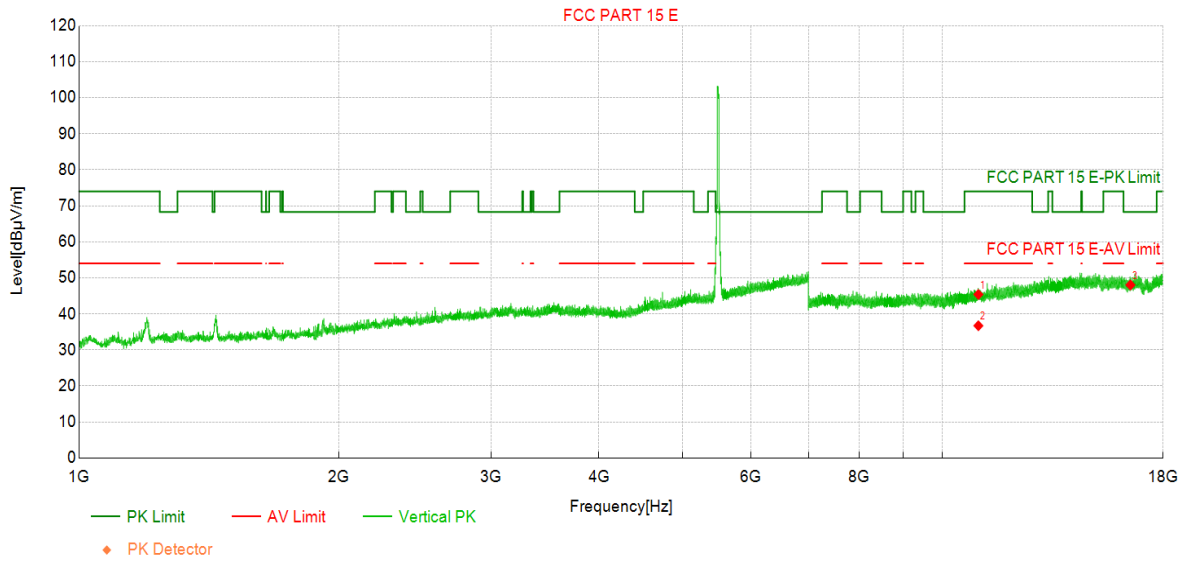


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11000.00	41.6	45.65	4.020	74.00	28.35	PK	Horizo	PASS
2	11000.00	32.0	36.05	4.020	54.00	17.95	AV	Horizo	PASS
3	16500.00	38.7	49.68	11.010	68.30	18.62	PK	Horizo	PASS

Transmit at 5500MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

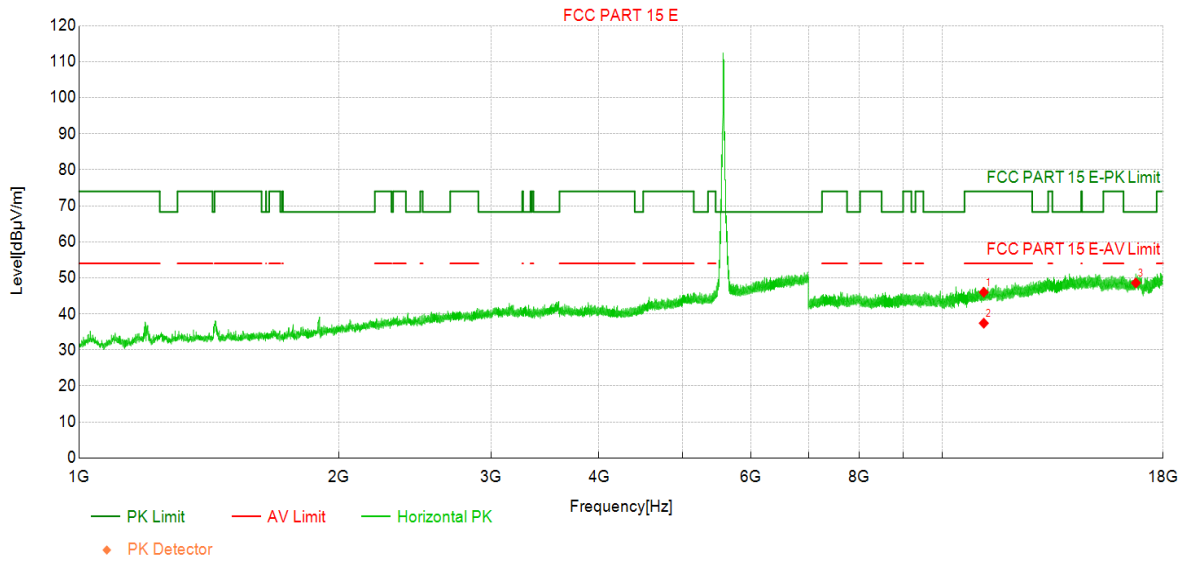


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11000.00	41.4	45.40	4.020	74.00	28.60	PK	Vertic	PASS
2	11000.00	32.7	36.72	4.020	54.00	17.28	AV	Vertic	PASS
3	16500.00	37.0	48.03	11.010	68.30	20.27	PK	Vertic	PASS

Transmit at 5580MHz by 802.11ax(20MHz) with Ant MIMO

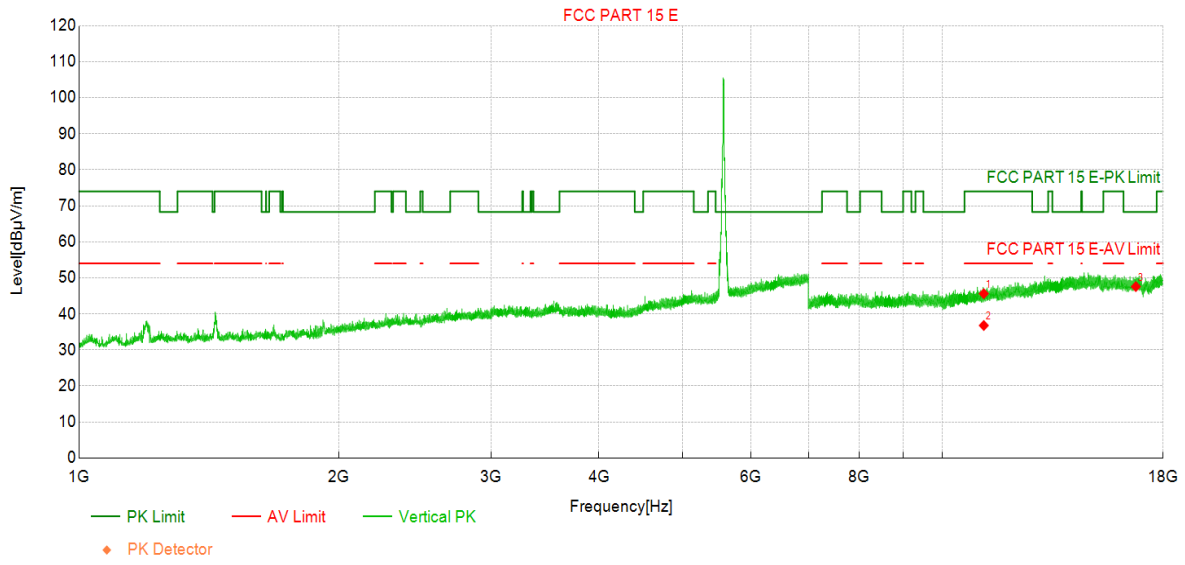
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11160.00	41.6	46.02	4.410	74.00	27.98	PK	Horizo	PASS
2	11160.00	33.0	37.42	4.410	54.00	16.58	AV	Horizo	PASS
3	16740.00	37.3	48.60	11.310	68.30	19.70	PK	Horizo	PASS

Transmit at 5580MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

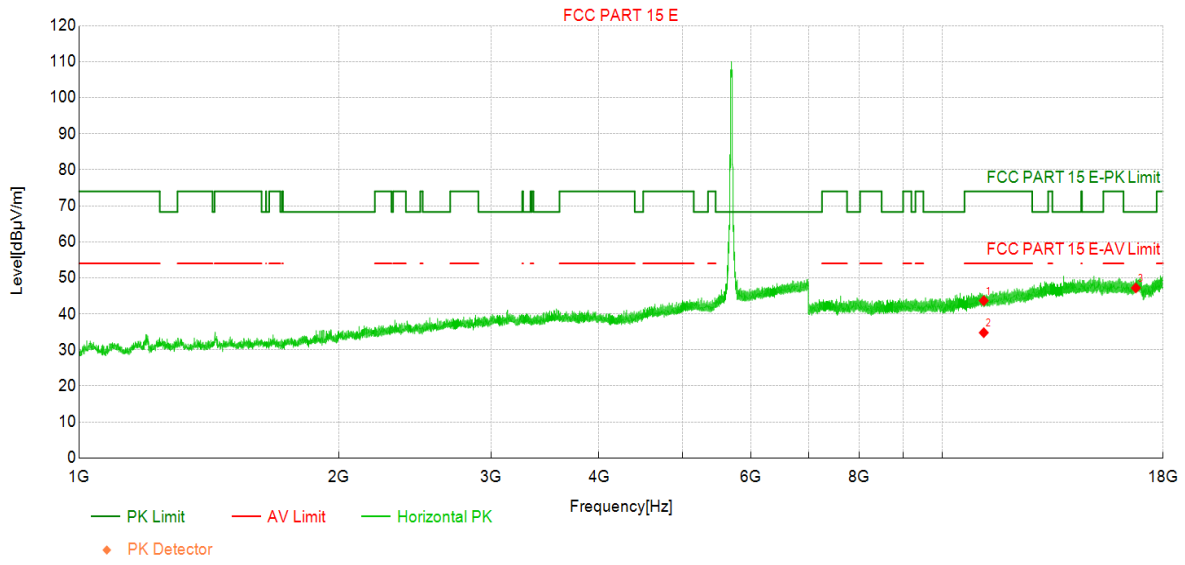


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11160.00	41.2	45.61	4.410	74.00	28.39	PK	Vertic	PASS
2	11160.00	32.4	36.78	4.410	54.00	17.22	AV	Vertic	PASS
3	16740.00	36.3	47.57	11.310	68.30	20.73	PK	Vertic	PASS

Transmit at 5580MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

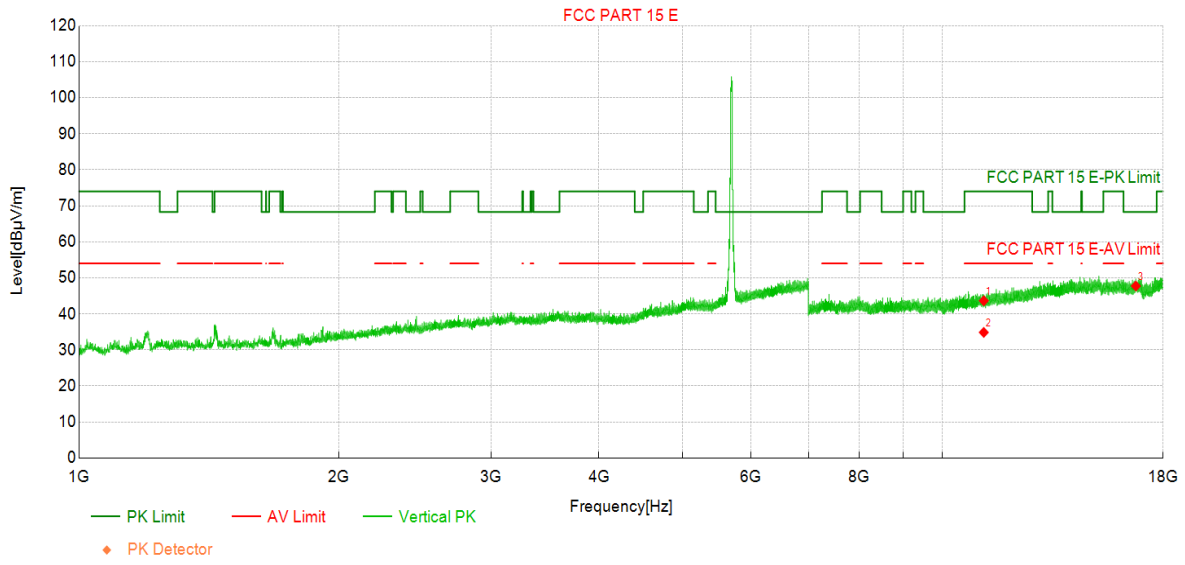


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11160.00	39.3	43.66	4.410	74.00	30.34	PK	Horizo	PASS
2	11160.00	30.4	34.79	4.410	54.00	19.21	AV	Horizo	PASS
3	16740.00	35.9	47.20	11.310	68.30	21.10	PK	Horizo	PASS

Transmit at 5580MHz by 802.11ax(20MHz) with Ant MIMO

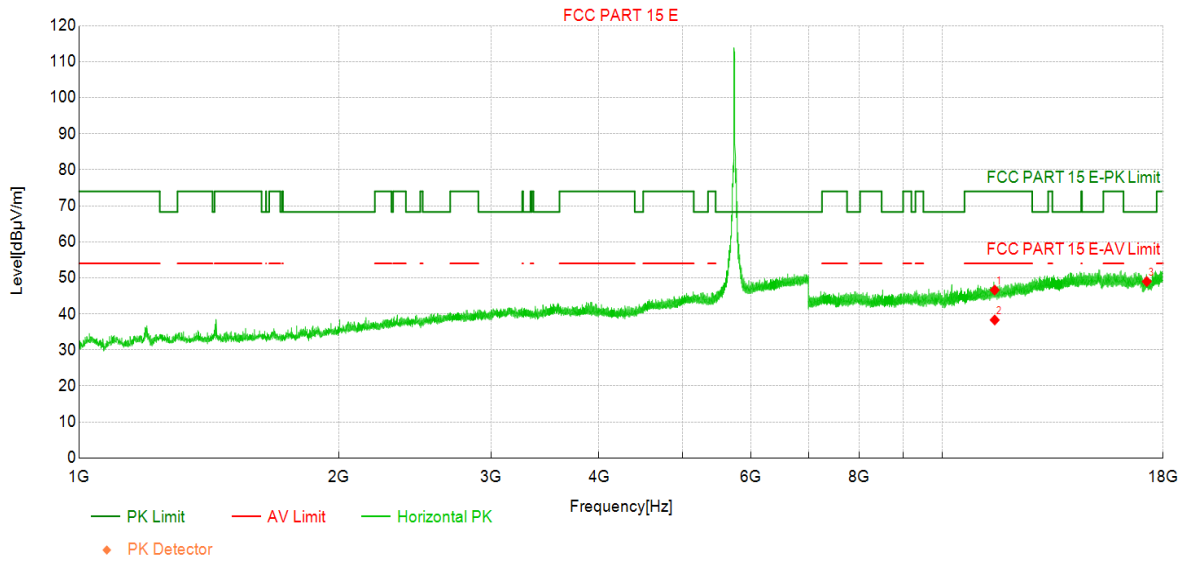
Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11160.00	39.2	43.65	4.410	74.00	30.35	PK	Vertic	PASS
2	11160.00	30.5	34.86	4.410	54.00	19.14	AV	Vertic	PASS
3	16740.00	36.4	47.73	11.310	68.30	20.57	PK	Vertic	PASS

Transmit at 5745MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

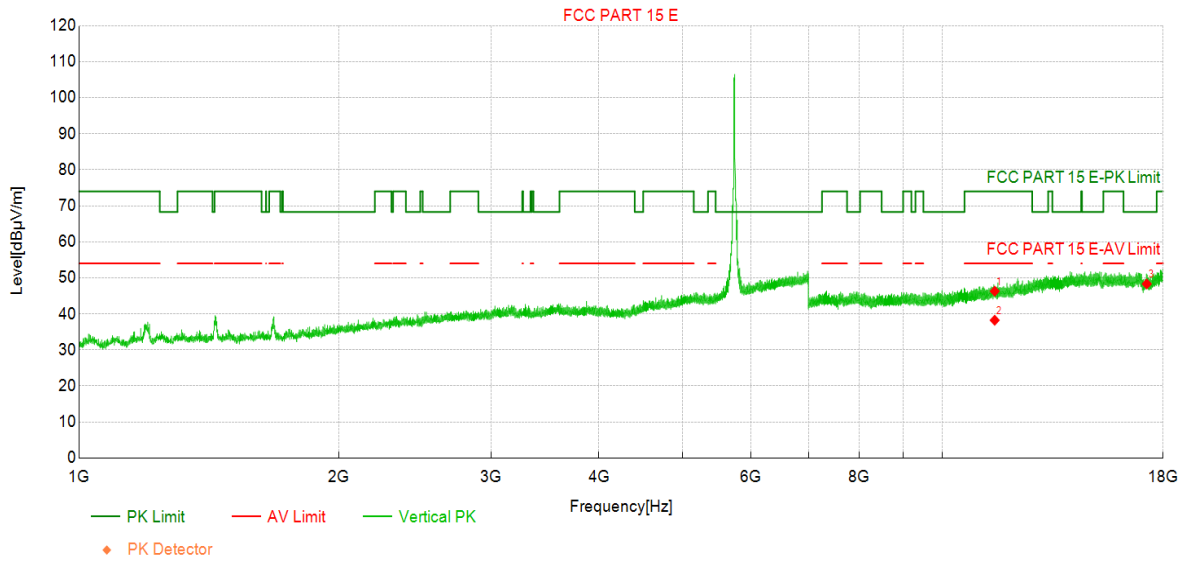


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11490.00	41.5	46.61	5.070	74.00	27.39	PK	Horizo	PASS
2	11490.00	33.2	38.31	5.070	54.00	15.69	AV	Horizo	PASS
3	17235.00	37.8	48.99	11.180	68.30	19.31	PK	Horizo	PASS

Transmit at 5745MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

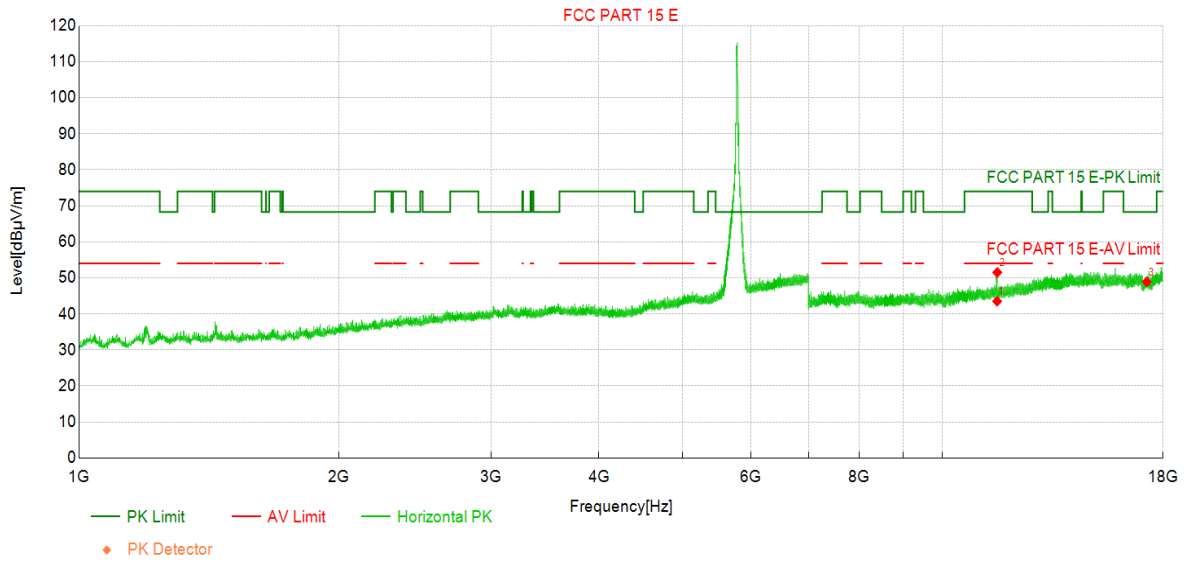


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11490.00	41.2	46.31	5.070	74.00	27.69	PK	Vertic	PASS
2	11490.00	33.2	38.24	5.070	54.00	15.76	AV	Vertic	PASS
3	17235.00	37.1	48.32	11.180	68.30	19.98	PK	Vertic	PASS

Transmit at 5785MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph

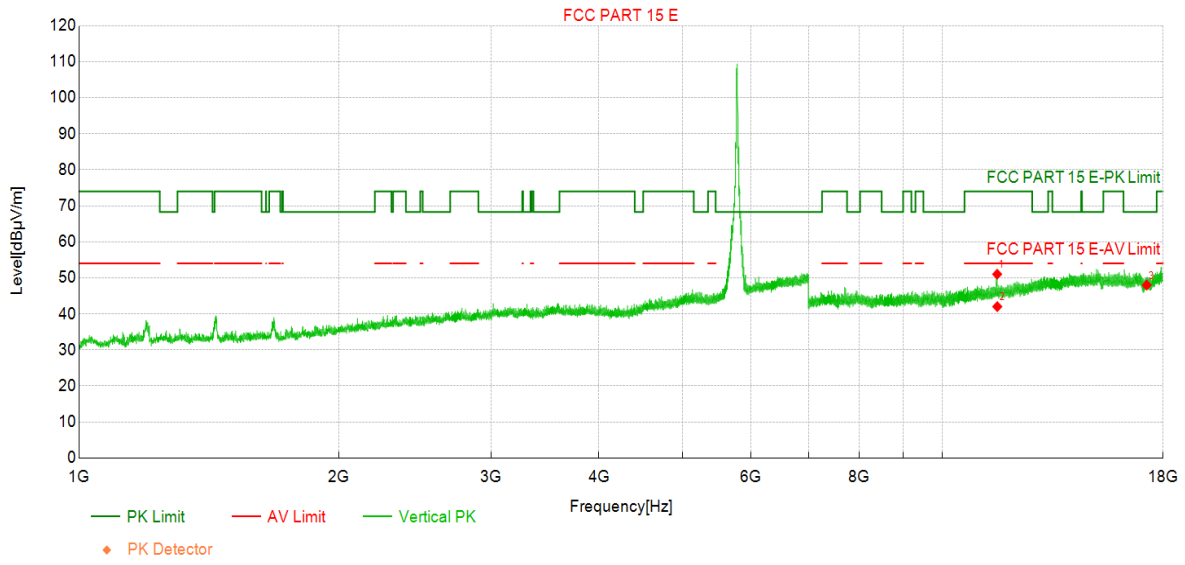


Data List

NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11564.54	38.6	43.51	4.900	54.00	10.49	AV	Horizo	PASS
2	11569.58	46.6	51.51	4.870	74.00	22.49	PK	Horizo	PASS
3	17235.00	37.7	48.89	11.180	68.30	19.41	PK	Horizo	PASS

Transmit at 5785MHz by 802.11ax(20MHz) with Ant MIMO

Test Graph



Data List									
NO.	Frequency [MHz]	Reading [dBµV]	Level [dBµV/m]	Factor [dB/m]	Limit [dBµV/m]	Margin [dB]	Det	Pol	Verdict
1	11566.38	46.1	51.02	4.890	74.00	22.98	PK	Vertic	PASS
2	11569.13	37.2	42.02	4.870	54.00	11.98	AV	Vertic	PASS
3	17235.00	36.8	48.00	11.180	68.30	20.30	PK	Vertic	PASS