FCC CERTIFICATION TEST REPORT

Applicant:	Sahara Presentation Systems Ltd
Address:	Europa House, Littlebrook DC1, Shield Road, Dartford, Kent DA1 5UR, United Kingdom
Manufacturer:	Sahara Presentation Systems Ltd
Address:	Europa House, Littlebrook DC1, Shield Road, Dartford, Kent DA1 5UR, United Kingdom
Product Description:	Clevershare Hub, CleverHub
Brand Name:	CLEVERTOUCH
Tested Model:	CleverHub
FCC ID:	2APKO-WB05
Report No.:	JCF230411201-004
Received Date:	Apr. 11, 2023
Tested Date:	Apr. 11, 2023 ~ Sep. 11, 2023
Issued Date:	Sep. 11, 2023
Test Standards:	FCC Rules and Regulations Part 15 Subpart E
Test Procedure:	ANSI C63.10:2013, 789033 D02 General U-NII Test Procedures New Rules v02r01, 662911 D01 Multiple Transmitter Output v02r01
Test Result:	Pass

Prepared By:

Kennys Zhang/Engineer **Date:** Sep. 11, 2023

Reviewed By:

Roger Li/Engineer **Date:** Sep. 11, 2023

Approved By:

Talent Zhang/Engineer **Date:** Sep. 11, 2023

Note: The test results in this report apply exclusively to the tested model / sample. Without written approval of Guangzhou Jingce Testing Technology Co., Ltd. the test report shall not be reproduced except in full.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Sep. 11, 2023	Original Report	/

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1. Test Report Declare

Applicant:	Sahara Presentation Systems Ltd
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Manufacturer:	Sahara Presentation Systems Ltd
Address:	Europa House, Littlebrook DC1, Shield Road, Dartford, Kent DA1 5UR, United Kingdom
Product Name:	Clevershare Hub, CleverHub
Brand Name:	CLEVERTOUCH
Model Name:	Clevershare Hub, CleverHub
Difference Description:	The products with all the models covered in this report are the same as each other, except for different model name.

We Declare:

The equipment described above is tested by Guangzhou Jingce Testing Technology Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Guangzhou Jingce Testing Technology Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

2. Summary of test results

The EUT have been tested according to the applicable standards as referenced below.			
Clause	**Description of Test Item**	**Standard**	**Verdict**
1	6/26dB Bandwidth	FCC 15.407 (a)&(e)	Pass
2	99% Occupied Bandwidth	--	Pass
3	Maximum Conducted Output Power	FCC 15.407 (a)	Pass
4	Power Spectral Density	FCC 15.407 (a)	Pass
5	Frequency Stability Measurement	FCC 15.407 (g)	Pass
6	Radiated Band edge and Spurious Emission	FCC 15.407 (b) FCC 15.209 FCC 15.205	Pass
7	Power Line Conducted Emission	FCC 15.207	Pass
8	Antenna requirement	FCC 15.203	Pass
9	Dynamic Frequency Selection	FCC 15.407 (h)	NA
Note: This report changes the client module's matching circuit and antenna gain on the basis of report DDT-R22112825-1E04 which does not affect RF function. So all above test items are reference report DDT-R2211285-1E04 except Clause 6 and Clause 7.			

3. Test Laboratory

Guangzhou Jingce Testing Technology Co., Ltd.

Add.: No.192, Kezhu Road, Huangpu District, Guangzhou, Guangdong, China

Association for Laboratory Accreditation(A2LA). Certificate Number: 6594.01

FCC Designation Number: CN1331. Test Firm Registration Number: 360543

IC Test Firm Registration Number: 28796

Conformity Assessment Body identifier: CN0138

4. Equipment Under Test

4.1. Description of EUT

EUT Name:	Clevershare Hub, CleverHub
Model Number:	CleverHub
EUT Function Description:	Please refer the user's manual.
Power Supply:	Input: 100-240V ~ 50/60Hz 1.0A Max
Radio Specification:	IEEE 802.11a/n/ac/ax
Operation Frequency:	IEEE 802.11a: 5180MHz—5240MHz, 5745MHz—5825MHz IEEE 802.11n HT20: 5180MHz—5240MHz, 5745MHz—5825MHz IEEE 802.11n HT40: 5190MHz—5230MHz, 5755MHz—5795MHz IEEE 802.11ac VHT20: 5180MHz—5240MHz, 5745MHz—5825MHz IEEE 802.11ac VHT40: 5190MHz—5230MHz, 5755MHz—5795MHz IEEE 802.11ax HEW20: 5180MHz—5240MHz, 5745MHz—5825MHz IEEE 802.11ax HEW40: 5190MHz—5230MHz, 5755MHz—5795MHz
Modulation:	IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac (VHT20/40): OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax (HEW20/40): OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)
Data Rate:	IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps IEEE 802.11n HT20: 7.2, 14.2, 21.7, 28.9, 43.3, 57.8, 65, 72.2 Mbps IEEE 802.11n HT40: 15, 30, 45, 60, 90, 120, 135, 150 Mbps IEEE 802.11ac VHT20: 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2, 86.7 Mbps IEEE 802.11ac VHT40: 15, 30, 45, 60, 90, 120, 135, 150, 180, 200 Mbps IEEE 802.11ax HEW20: 8.6, 17.2, 25.8, 34.4, 51.6, 68.8, 77.4, 86, 103.2, 114.7, 129, 143.4Mbps IEEE 802.11ax HEW40: 17.2, 34.4, 51.6, 68.8, 103.2, 137.6, 154.9, 172.1, 206.5, 229.4, 258.1, 286.8Mbps
Antenna Type:	FPC Antenna, MAX. Gain: 4.77 dBi

Note 1: EUT is the ab. of equipment under test.

Note 2: The antenna gain is declared by the customer and the laboratory is not responsible for the accuracy of the antenna gain.

4.2. Channel List

UNII-1 (For Bandwidth = 20 MHz)		UNII-1 (For Bandwidth = 40 MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	/	/
48	5240	/	/

UNII-3 (For Bandwidth = 20 MHz)		UNII-3 (For Bandwidth = 40 MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	151	5755
153	5765	159	5795

157	5785	/	/
161	5805	/	/
165	5825	/	/

4.3. Test Channel Configuration

Mode	Data rate (Mbps) (see Note)	Test Channel and Frequency
802.11a TX Mode	6	CH36, 5180
	6	CH44, 5220
	6	CH48, 5240
	6	CH149, 5745
	6	CH157, 5785
	6	CH165, 5825
802.11n HT20 TX Mode	MCS 0	CH36, 5180
	MCS 0	CH44, 5220
	MCS 0	CH48, 5240
	MCS 0	CH149, 5745
	MCS 0	CH157, 5785
	MCS 0	CH165, 5825
802.11ac VHT20 TX Mode	MCS 0	CH36, 5180
	MCS 0	CH44, 5220
	MCS 0	CH48, 5240
	MCS 0	CH149, 5745
	MCS 0	CH157, 5785
	MCS 0	CH165, 5825
802.11ac VHT40 TX Mode	MCS 0	CH38, 5190
	MCS 0	CH46, 5230
	MCS 0	CH151, 5755
	MCS 0	CH159, 5795
802.11ax HEW20 TX Mode	MCS 0	CH36, 5180
	MCS 0	CH44, 5220
	MCS 0	CH48, 5240
	MCS 0	CH149, 5745
	MCS 0	CH157, 5785
	MCS 0	CH165, 5825
802.11ax HEW40 TX Mode	MCS 0	CH38, 5190
	MCS 0	CH46, 5230
	MCS 0	CH151, 5755
	MCS 0	CH159, 5795
RX Mode	MCS 0	/

4.4. Test Environment Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	21-25 ℃
Humidity range:	40-75%
Pressure range:	86-106 kPa

4.5. The Worse Case Power Setting Parameter

The Worse Case Power Setting Parameter			
Test Software	Secure CRT		
Mode	Rate	Channel	Soft set value
			Ant1
802.11a	6 MHz	36	Default
		44	Default
		48	Default
		149	Default
		157	Default
		165	Default
802.11n HT20	MCS 0	36	Default

		44	Default
		48	Default
		149	Default
		157	Default
		165	Default
802.11n HT40	MCS 0	38	Default
		46	Default
		151	2 0 8
		159	2 08
802.11ac VHT20	MCS 0	36	Default
		44	Default
		48	Default
		149	Default
		157	Default
		165	Default
802.11ac VHT40	MCS 0	38	2 0 8
		46	2 0 8
		151	2 0 8
		159	2 0 8
802.11ax HEW20	MCS 0	36	Default
		44	Default
		48	Default
		149	Default
		157	Default
		165	Default
802.11ax HEW40	MCS 0	38	2 0 8
		46	2 0 8
		151	2 0 8
		159	2 0 8

4.6. Description of Available Antennas

Test Mode	Transmit and Receive Mode	Description
802.11a	☒ 1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
802.11n HT20	☒ 1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
802.11n HT40	☒ 1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
802.11ac VHT20	☒ 1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
802.11ac VHT40	☒ 1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
802.11ax HEW20	☒ 1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
802.11ax HEW40	☒ 1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.

5. Description of Test Setup

5.1. Accessory

Description of Accessories	Manufacturer	Model Number	Description	Remark
Switching adapter	GangQi	GQ36-120300-Ax	Input: 100-240V 50/60Hz 1.0A Max Output: DC 12V3A 36.0W	/

5.2. Support Equipment

Equipment	Brand Name	Model Name	P/N
PC	Lenovo	T480	/

5.3. Test Setup

The EUT can work in Fixed Frequency mode.

5.4. Setup Diagram for Tests

6. Measurement uncertainty

Test Item	Uncertainty
AC Power Conduction emission	1.37 dB
All Radiated emissions	5.4dB
Conducted emissions	3.09 dB
Occupied Channel Bandwidth	1.1%
Conducted Output power	0.82dB
Power Spectral Density	0.82dB
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k = 2.	

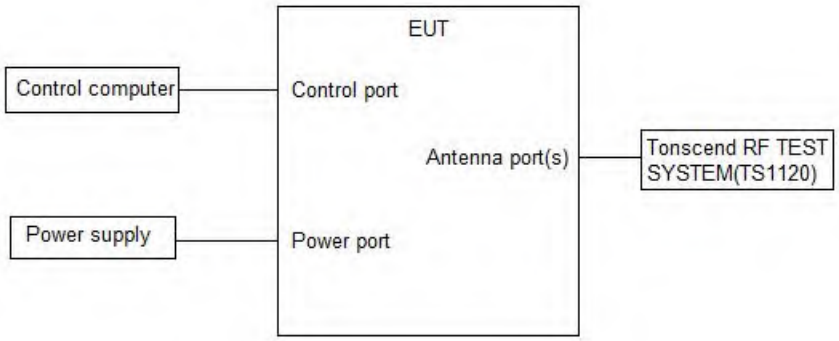
7. Measuring Instrument and Software Used

TS Test System						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☑	Spectrum Analyzer	Keysight	N9030B	MY56320512	Jul. 10, 2023	Jul. 09, 2024
☑	Vector Signal Generator	Keysight	N5182B	MY57300334	Nov. 24, 2022	Nov. 23, 2023
☑	Signal Generator	Keysight	N5171B	MY57280639	Nov. 24, 2022	Nov. 23, 2023
☑	DC POWER	Keysight	E342A	MY59020356	Jul. 14, 2023	Jul. 13, 2024
☑	Incubator thermometer	GWS	EL-02JA	21107288	Nov. 03, 2022	Nov. 02, 2023
☑	Control unit(Power sensor)	Tonscend	JS0806-2	/	Jul. 10, 2023	Jul. 09, 2024
☑	Wideband radio communication tester	R&S	CMW500	163478	Jul. 11, 2023	Jul. 10, 2024
☑	Spectrum Analyzer	Keysight	N9020B	MY60112206	Nov. 24, 2022	Nov. 23, 2023
☑	Control unit(Power sensor)	Tonscend	JS0806-2	21H8060465	Nov. 25, 2022	Nov. 24, 2023
Software						
Used	Description	Manufacturer	Name		Version	
☑	Test software	TS+	JS1120-3		V3.3.10	
RSE Test System						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☑	EMI Receiver	R&S	ESW	101685	Jul. 12, 2023	Jul. 11, 2024
☑	Bilog Antenna	Schwarzbeck	VULB 9163	01416	Mar. 21, 2023	Mar. 20, 2024
☑	Horn Antenna 1	Schwarzbeck	BBHA 9120 D	01673	Nov. 23, 2022	Nov. 22, 2023
☑	Horn Antenna 2	ETS	3116C	00217677	Sep. 19, 2022	Sep. 18, 2023
☑	Signal Pre-Amplifier	Tonscend	TAP01018050	AP21C806122	Jul. 10, 2023	Jul. 09, 2024
☑	Signal Pre-Amplifier	Tonscend	TAP9K3G32	AP20K806104	Jul. 10, 2023	Jul. 09, 2024
☑	Signal Pre-Amplifier	ETS	3116C-PA	00217677	Aug. 21, 2023	Aug. 20, 2023
☑	3m Fully-anechoic Chamber	ETS	RFD-100	/	Apr. 24, 2021	Apr. 23, 2024
Software						
Used	Description	Manufacturer	Name		Version	
☑	Test software	TS+	TS+		V3.0.0.4	
Conducted Emission Test For AC Power Port						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☑	LISN	R&S	ENV216	102154	Jul. 10, 2023	Jul. 09, 2024
☑	EMI Receiver	R&S	ESR3	102509	Jul. 12, 2023	Jul. 11, 2024
Software						
Used	Description	Manufacturer	Name		Version	

☑	Test software	EZ	EZ-EMC		EMEC-3A1	
Other Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
☑	Temperature & Humidity	Temperature	HTC-1	/	Nov. 25, 2022	Nov. 24, 2023

8. Duty Cycle

8.1. Block Diagram of Test Setup



8.2. Limits

None; for reporting purposes only.

8.3. Procedure

Refer to KdB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.B.

The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal.

Set the center frequency of the instrument to the center frequency of the transmission.

Set RBW ≥ EBW if possible; otherwise,

set RBW to the largest available value. Set VBW ≥ RBW.

Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in II.B.1.a), and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T ≤ 16.7 microseconds.)

8.4. Results

Reference report DDT-R2212825-1E04

9. 26dB Bandwidth, 6dB Bandwidth and 99% Bandwidth

9.1. Block Diagram of Test Setup

Same as section 8.1

9.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Bandwidth	26 dB Bandwidth	5150 - 5250
	26 dB Bandwidth	5250 - 5350
	26 dB Bandwidth	For FCC: 5470 - 5725 For IC: 5470 - 5600 5650 - 5725
	Minimum 500 kHz 6 dB Bandwidth	5725 - 5850
	For reporting purposes only.	For IC: 5150 ~ 5825

9.3. Test Procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	For 6 dB Bandwidth: RBW=100 kHz For 26 dB Bandwidth: approximately 1% of the emission bandwidth. For 99 % Occupied Bandwidth: approximately 1 % ~ 5 % of the OBW.
VBW	For 6 dB Bandwidth: VBW=300 kHz For 26 dB Bandwidth: >3*RBW For 99 % Bandwidth: >3*RBW
Trace	Max hold
Sweep	Auto couple

(2) Allow the trace to stabilize, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB and 6 dB relative to the maximum level measured in the fundamental emission.

(3) Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.

9.4. Test Result

Reference report DDT-R2212825-1E04

10. Maximum Output Power

10.1. Block Diagram of Test Setup

Same as section 8.1

10.2. Limits

FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Conducted Output Power	☐ Outdoor Access Point: 1 W (30 dBm)	5150-5250
	☐ Indoor Access Point: 1 W (30 dBm)	
	☐ Fixed Point-To-Point Access Points: 1 W (30 dBm)	
	☒ Client Devices: 250 mW (24 dBm)	
	Shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.	5250-5350 5470-5725
	Shall not exceed 1 Watt (30 dBm).	5725-5850

Note: The above limits are based upon the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

10.3. Test Procedure

(1) Connect each EUT's antenna output to power meter by RF cable and attenuator

(2) Add each antenna port's results to get the total output power of EUT.

10.4. Test Result

Reference report DDT-R2212825-1E04

11. Power Spectral Density

11.1. Block Diagram of Test Setup

Same as section 8.1

11.2. Limits

CFR 47 FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	☐ Outdoor Access Point: 17 dBm/MHz ☐ Indoor Access Point: 17 dBm/MHz ☐ Fixed Point-To-Point Access Points: 17 dBm/MHz ☒ Client Devices: 11 dBm/MHz	5150-5250
	11 dBm/MHz	5250-5350 5470-5725
	30 dBm/500 kHz	5725-5850

Note: The above limits are based upon the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

11.3. Test Procedure

The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1MHz RBW and 3MHz VBW.

Connect the UUT to the spectrum analyzer and use the following settings:

5150 MHz~5250 MHz, 5250 MHz~5350 MHz, 5470 MHz~5725 MHz

Center Frequency	The centre frequency of the channel under test
Detector	RMS
RBW	1MHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

5725 MHz-5850 MHz

Center Frequency	The centre frequency of the channel under test
Detector	RMS
RBW	500 kHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

Note:

1. For UNII-3, according to KdB publication 789033 D02 General U-NII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 1 MHz and VBW at 3 MHz if the spectrum analyzer does not have 500 kHz RBW.

2. The value measured with RBW=1MHz is to be added with 10log(500kHz/1MHz) which is - 3dB. For example, if the measured value is +30 dBm using RBW=500kHz (that is +30 dBm/500kHz), then the converted value will be +33 dBm/1MHz.

3. Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

11.4. Test Result

Reference report DDT-R2212825-1E04

12. Frequency Stability Measurement

12.1. Block Diagram of Test Setup

Same as section 8.1

12.2. Limit of Frequency Stability

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 user's manual.

12.3. Test Procedures

(1) To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.

(2) The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10 dB lower than the measured peak value.

(3) The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

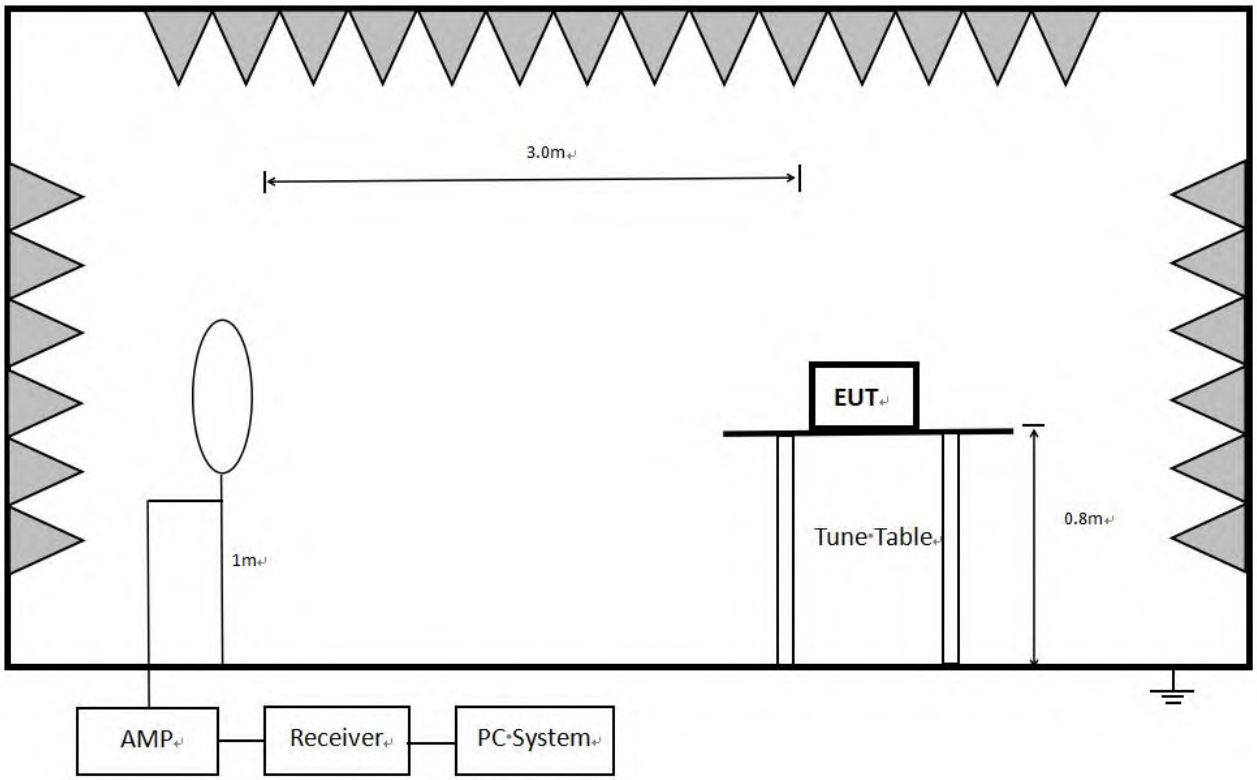
12.4. Test Result

Reference report DDT-R2212825-1E04

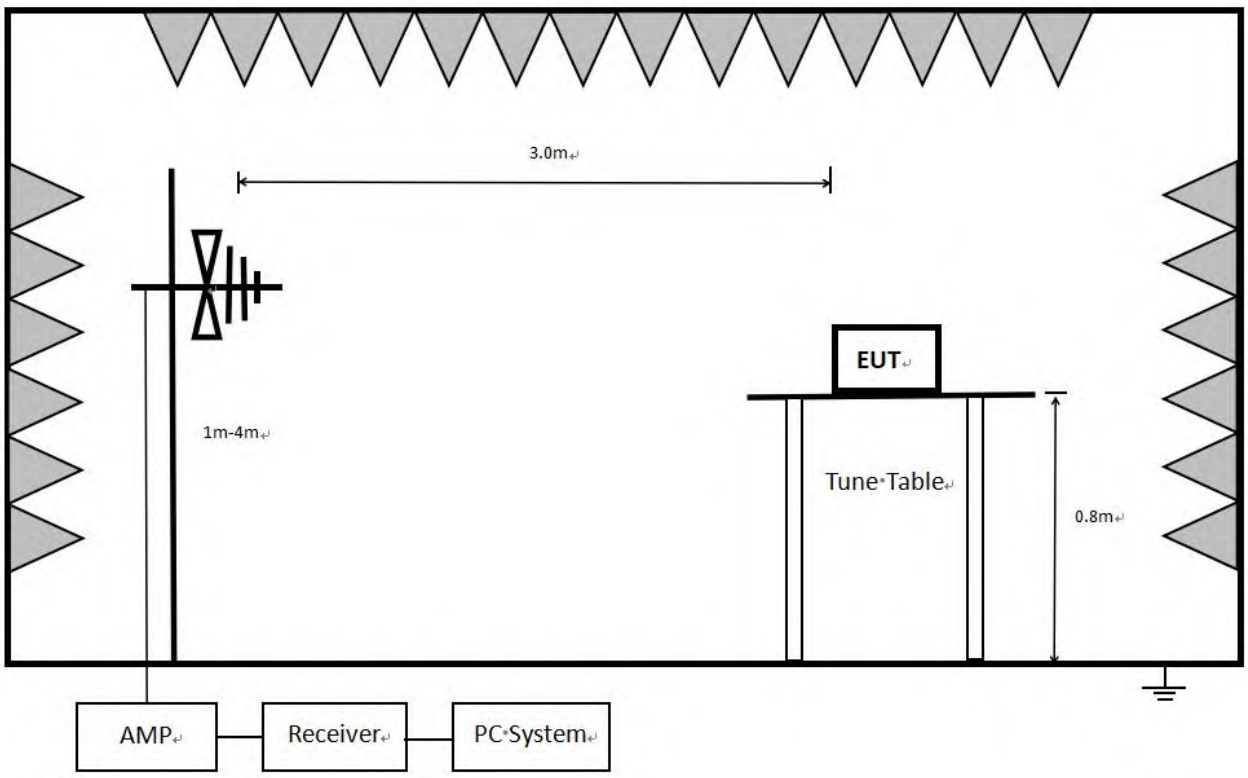
13. Radiated Emission

13.1. Block Diagram of Test Setup

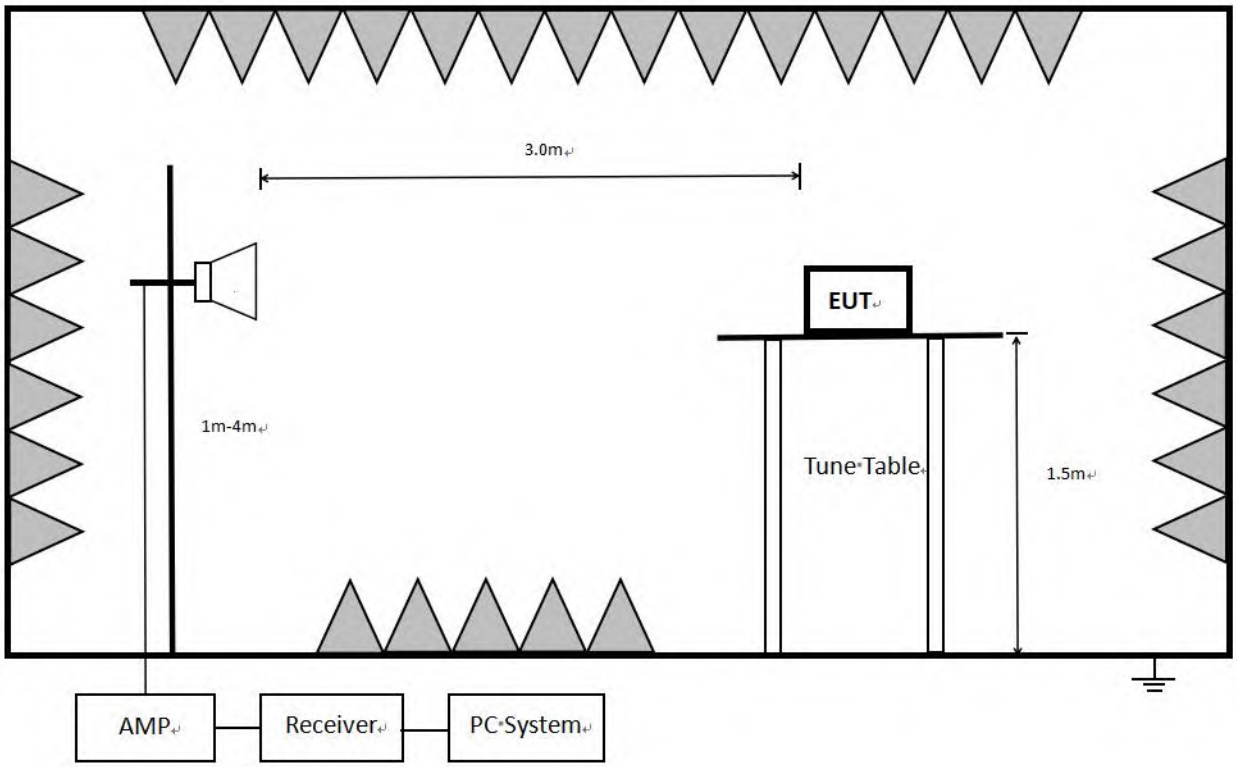
In 3 m Anechoic Chamber, test setup diagram for 9 kHz - 30 MHz:



In 3 m Anechoic Chamber, test setup diagram for 30 MHz – 1 GHz:



In 3 m Anechoic Chamber, test setup diagram for frequency above 1 GHz:



Note: For harmonic emissions test an appropriate high pass filter was inserted in the input port of AMP.

13.2. Limit

(1) FCC 15.205 Restricted frequency band

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
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&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

(2) FCC 15.209 Limit.

Frequency MHz	Distance Meters	Field strengths limit	
		μV/m	dB(μV)/m
0.009 ~ 0.490	300	2400/F(kHz)	67.6-20log(F)
0.490 ~ 1.705	30	24000/F(kHz)	87.6-20log(F)
1.705 ~ 30.0	30	30	29.54
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm / MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm / MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/ MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm / MHz.

(5) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(6) The provisions of §15.205 apply to intentional radiators operating under this section.

-27 dBm/MHz Limit=95.2+EIRP (dBm)=95.2-27=68.2 dBμV/m

Note:

(1) The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz.Radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30MHz, measurement may be performed at a distance closer than that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$Limit_{3m}(dBuV/m) = Limit_{30m}(dBuV/m) + 40Log(30m/3m)$

(3) Limit for this EUT

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions or comply with 15.209 limits.

13.3. Test Procedure

Below 30 MHz：

The setting of the spectrum Analyzer

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm meter above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of 1 meter height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KdB 414788.

Below 1 GHz and above 30 MHz：

The setting of the spectrum Analyzer

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1 GHz：

RBW	1 MHz
VBW	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 1.5m above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for AVG measurements. For the Duty Cycle please refer to clause 8.1.ON TIME AND DUTY CYCLE.

7. Restriction band: Investigated frequency range from 5.15-5.25 GHz, 5250-5350 GHz, 5470-5725 GHz, 5.725-5.85 GHz.

All restriction band should comply with 15.209, other emission should be at least 20 dB below the fundamental.

Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

Note 2: The EUT does not support simultaneous transmission.

Note 3: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

13.4. Test Result

PASS. (See below detailed test result)

All the emissions except fundamental emission from 9kHz to 40GHz were comply with 15.209 limit.

Note1: According exploratory test, the emission levels are 20 dB below the limit detected from 9 kHz to 30 MHz and 18 GHz to 40 GHz, so the final test was performed with frequency range from 30 MHz to 18 GHz and recorded in below.

Note2: For emissions below 1 GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1 GHz, the final test was only performed with EUT working in 11a mode.

Note3: For below test data, when the limit tabular marked "/" means this frequency point is the fundamental emission and no need comply with this limit.

Note 4: As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit

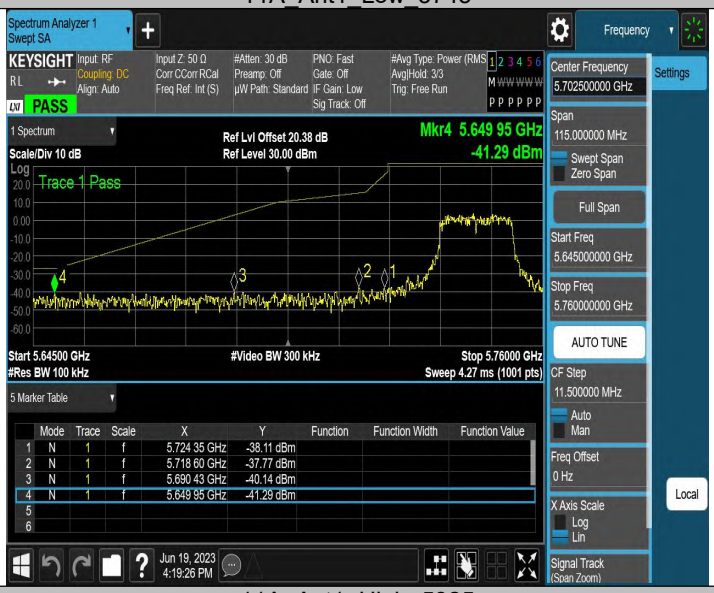
Note 5: For emissions Above 1 GHz, all mode have been tested, 11a mode is worse case and recorded in report.

13.5. Original Test Data

Below 1 GHz and above 30 MHz test data Refer to appendix A

Above 1 GHz test data Refer to appendix B

11A_Ant1_Low_5745



11A_Ant1_High_5825

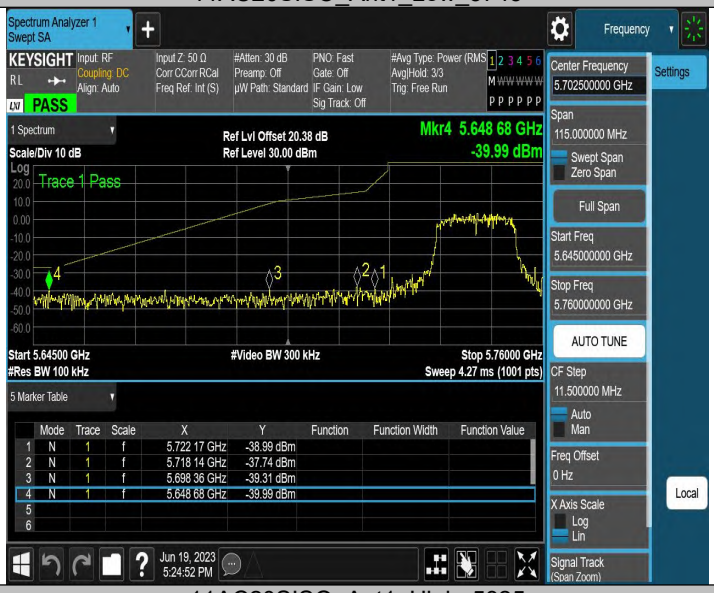
11N20SISO_Ant1_Low_5745

11N20SISO_Ant1_High_5825

11N40SISO_Ant1_Low_5755

11N40SISO_Ant1_High_5795

11AC20SISO_Ant1_Low_5745

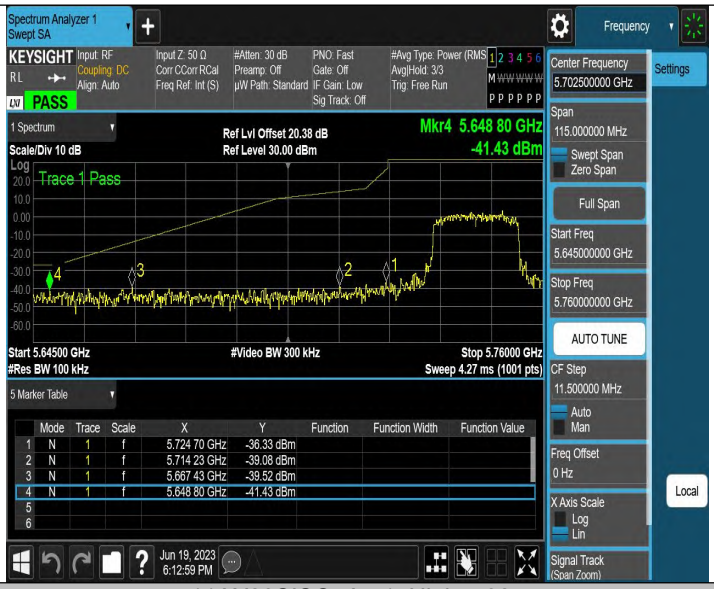


11AC20SISO_Ant1_High_5825

11AC40SISO_Ant1_Low_5755

11AC40SISO_Ant1_High_5795

11AX20SISO_Ant1_Low_5745



11AX20SISO_Ant1_High_5825

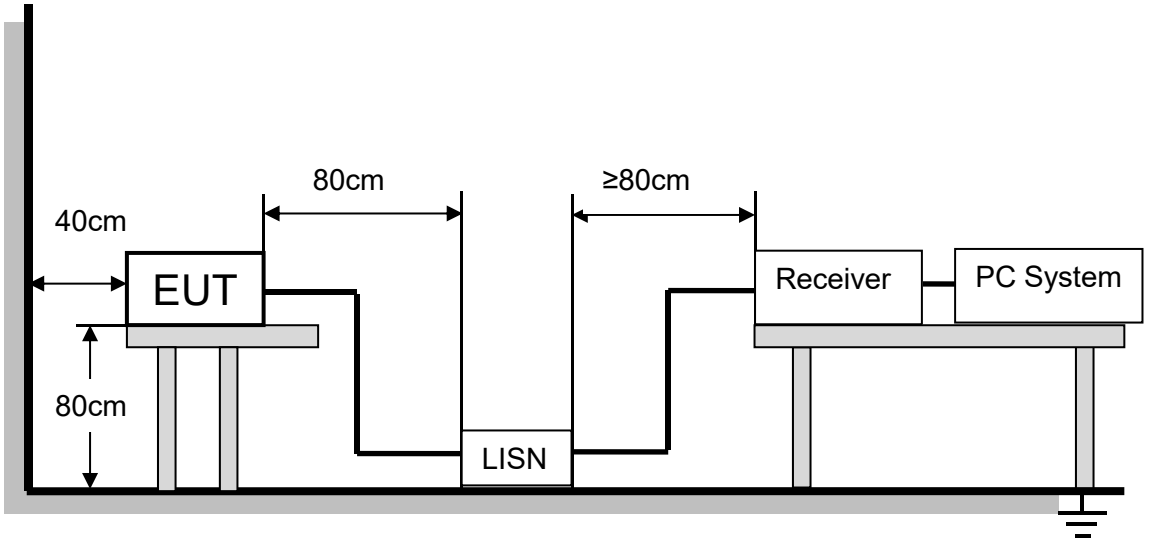
11AX40SISO_Ant1_Low_5755

11AX40SISO_Ant1_High_5795


Spectrum Analyzer 1
Swept SA
KEYSIGHT
PASS
Trace 1 Pass
Ref Lvl Offset 20.30 dB
Ref Level 30.00 dBm
Mkr4 5.929 720 GHz
-41.02 dBm
Scale/Div 10 dB
Start 5.77000 GHz
#Res BW 100 kHz
#Video BW 300 kHz
Stop 5.93500 GHz
Sweep 6.07 ms (1001 pts)
5 Marker Table
1 N 1 f 5.853 820 GHz -41.91 dBm
2 N 1 f 5.873 125 GHz -39.96 dBm
3 N 1 f 5.891 770 GHz -39.58 dBm
4 N 1 f 5.929 720 GHz -41.02 dBm
Frequency
Center Frequency
5.852500000 GHz
Span
165.000000 MHz
Swept Span
Zero Span
Full Span
Start Freq
5.770000000 GHz
Stop Freq
5.935000000 GHz
AUTO TUNE
CF Step
16.500000 MHz
Auto
Man
Freq Offset
0 Hz
X Axis Scale
Log
Lin
Signal Track
(Span Zoom)
Settings
Local
Jun 19, 2023
6:33:14 PM

14. AC Power Line Conducted Emissions

14.1. Block Diagram of Test Setup



The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

14.2. Limits

Please refer to CFR 47 FCC §15.207 (a).

Frequency (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

14.3. Test Procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 10.2 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

14.4. Test Result

Pass. (See below detailed test result)

Note1: All emissions not reported below are too low against the prescribed limits.

Note2: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded worse case.

14.5. Original test data

AC Power Line Conducted Emission Test Data Refer to appendix C

15. Antenna Requirements

15.1. Applicable Requirements

Please refer to FCC §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.

Please refer to FCC §15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

15.2. Result

The antenna used for this product is FPC antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is 4.77 dBi

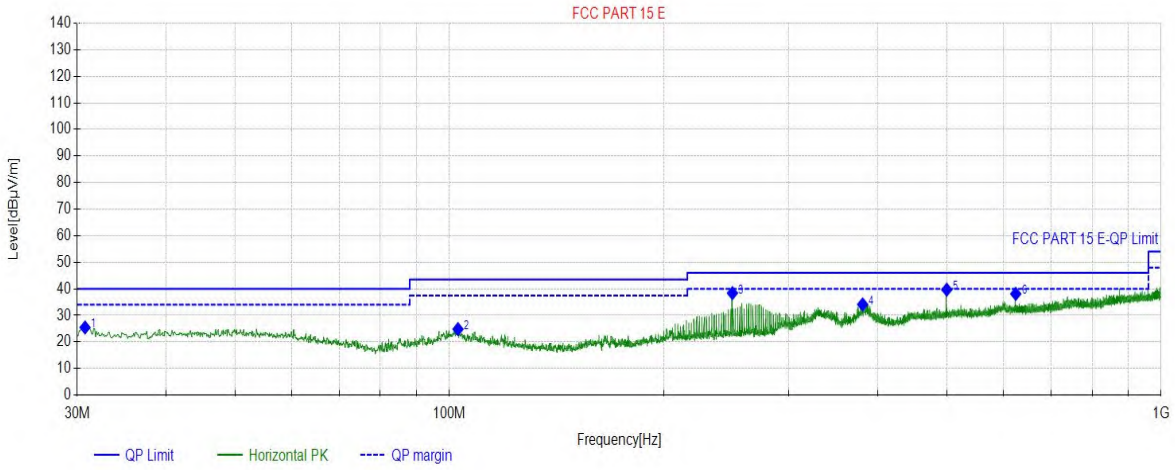
APPENDIX A – Radiated Emission Below 1GHz Test Data

Test Report

Project Information			
Customer:	Clevershare Hub Clever	EUT:	Clevershare Hub Clever
Model:	CleverHub	SN:	
Mode:	11A5180	Voltage:	120V 60Hz
Environment:	24.2℃ 54%	Engineer:	roger
Remark:			
Test Standard:			

Start of Test: 2023-07-04 18:42:12

Test Graph



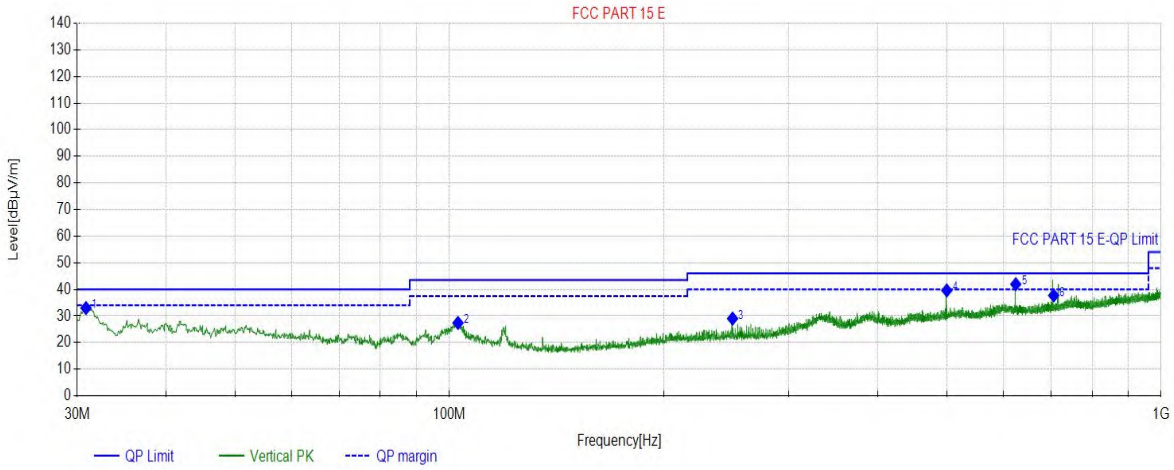
QP Final Data List								
NO.	Freq. (MHz)	Factor (dB)	QP Value (dBµV/m)	QP Limit (dBµV/m)	QP Margin (dB)	Height (cm)	Angle (°)	Polarity
1	30.7761	19.01	25.45	40.00	14.55	100	129	Horizontal
2	102.8543	20.61	24.83	43.50	18.67	100	286	Horizontal
3	249.9210	21.54	38.41	46.00	7.59	100	90	Horizontal
4	380.7871	25.26	34.14	46.00	11.86	100	156	Horizontal
5	500.0120	27.70	39.70	46.00	6.30	100	180	Horizontal
6	624.9605	30.39	38.11	46.00	7.89	100	2	Horizontal

Test Report

Project Information			
Customer:	Clevershare Hub Clever	EUT:	Clevershare Hub Clever
Model:	CleverHub	SN:	
Mode:	11A5180	Voltage:	120V 60Hz
Environment:	24.2℃ 54%	Engineer:	roger
Remark:			
Test Standard:			

Start of Test: 2023-07-04 18:42:56

Test Graph



QP Final Data List								
NO.	Freq. (MHz)	Factor (dB)	QP Value (dBµV/m)	QP Limit (dBµV/m)	QP Margin (dB)	Height (cm)	Angle (°)	Polarity
1	30.8731	19.03	32.99	40.00	7.01	100	275	Vertical
2	102.8543	20.61	27.41	43.50	16.09	100	196	Vertical
3	250.0180	21.54	29.05	46.00	16.95	100	186	Vertical
4	500.0120	27.70	39.62	46.00	6.38	100	331	Vertical
5	624.9980	30.39	41.95	46.00	4.05	100	325.5	Vertical
6	706.5145	31.00	37.72	46.00	8.28	119.9	42.5	Vertical

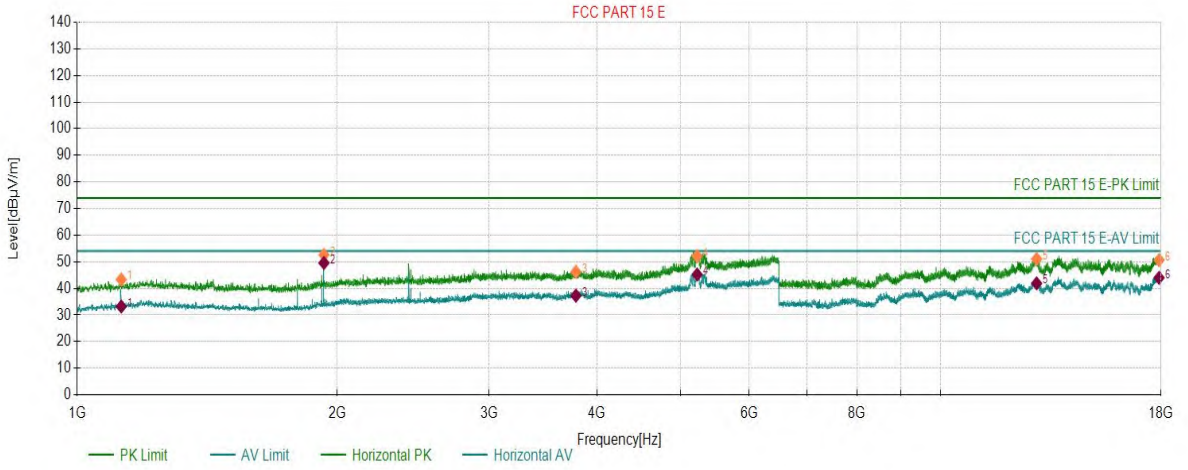
APPENDIX B – Radiated Emission Above 1GHz Test Data

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5180	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 14:58:20

Test Graph



PK Final Data List								
NO.	Freq. (MHz)	Factor (dB)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1124.8625	1.54	43.32	74.00	30.68	150	350	Horizontal
2	1931.2431	4.51	52.61	74.00	21.39	150	109	Horizontal
3	3781.6282	11.47	46.24	74.00	27.76	150	350	Horizontal
4	5224.4224	20.80	52.14	74.00	21.86	150	302	Horizontal
5	12918.7919	10.62	51.08	74.00	22.92	150	5	Horizontal
6	17904.5405	15.19	50.64	74.00	23.36	150	175	Horizontal

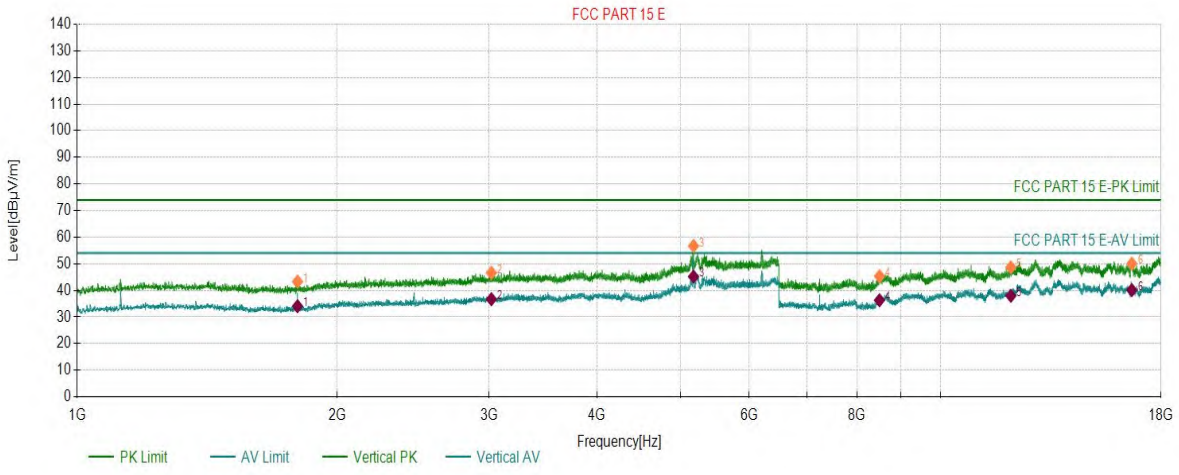
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1124.8625	1.54	33.20	54.00	20.80	150	350	Horizontal
2	1931.2431	4.51	49.56	54.00	4.44	150	109	Horizontal
3	3781.6282	11.47	37.28	54.00	16.72	150	350	Horizontal
4	5224.4224	20.80	45.22	54.00	8.78	150	302	Horizontal
5	12918.7919	10.62	41.89	54.00	12.11	150	5	Horizontal
6	17904.5405	15.19	44.00	54.00	10.00	150	175	Horizontal

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5180	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 14:59:43

Test Graph



PK Final Data List								
NO.	Freq. (MHz)	Factor (dB)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1799.7800	3.42	43.31	74.00	30.69	150	119	Vertical
2	3018.1518	9.20	46.60	74.00	27.40	150	187	Vertical
3	5174.3674	20.79	56.70	74.00	17.30	150	2	Vertical
4	8495.4495	1.45	45.32	74.00	28.68	150	358	Vertical
5	12060.8061	6.00	48.68	74.00	25.32	150	247	Vertical
6	16652.0652	10.59	50.06	74.00	23.94	150	358	Vertical

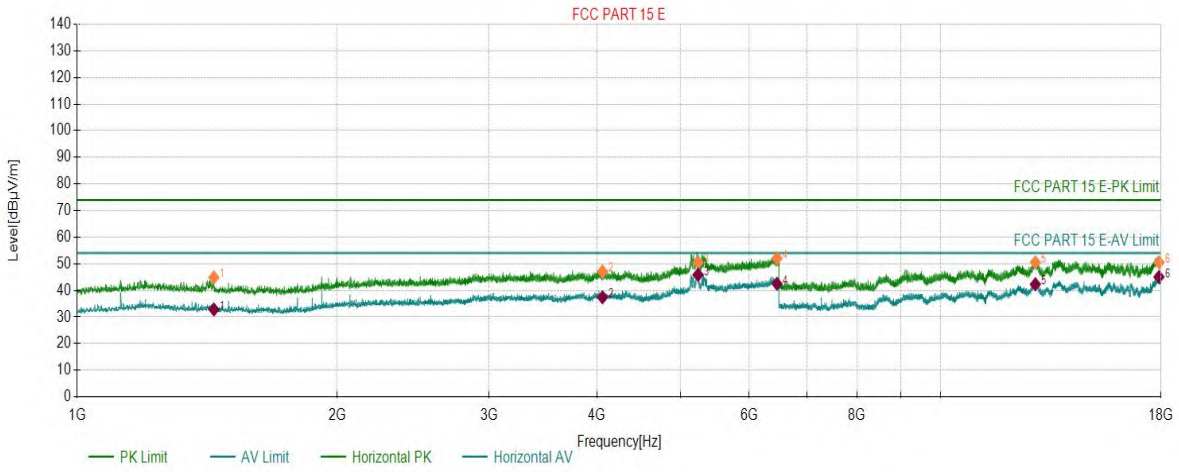
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1799.7800	3.42	34.05	54.00	19.95	150	119	Vertical
2	3018.1518	9.20	36.70	54.00	17.30	150	187	Vertical
3	5174.3674	20.79	45.19	54.00	8.81	150	2	Vertical
4	8495.4495	1.45	36.31	54.00	17.69	150	358	Vertical
5	12060.8061	6.00	37.95	54.00	16.05	150	247	Vertical
6	16652.0652	10.59	40.11	54.00	13.89	150	358	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5200	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 15:20:13

Test Graph



PK Final Data List								
NO.	Freq. (MHz)	Factor (dB)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1440.0440	2.60	44.84	74.00	29.16	150	232	Horizontal
2	4058.8559	12.70	47.06	74.00	26.94	150	181	Horizontal
3	5237.0737	20.83	50.53	74.00	23.47	150	4	Horizontal
4	6463.1463	21.78	52.05	74.00	21.95	150	66	Horizontal
5	12873.9374	10.38	50.56	74.00	23.44	150	341	Horizontal
6	17899.9400	15.22	50.52	74.00	23.48	150	55	Horizontal

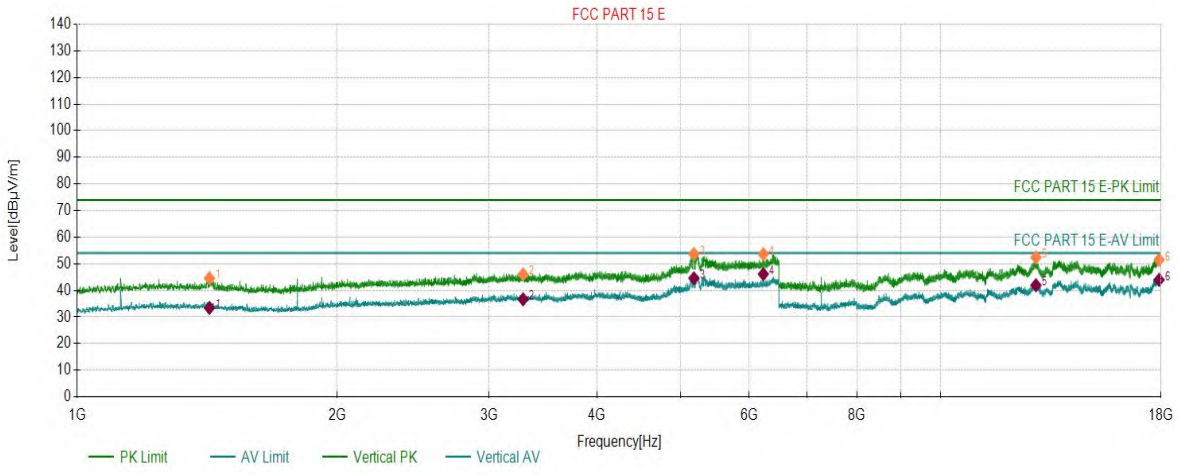
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1440.0440	2.60	32.84	54.00	21.16	150	232	Horizontal
2	4058.8559	12.70	37.41	54.00	16.59	150	181	Horizontal
3	5237.0737	20.83	45.88	54.00	8.12	150	4	Horizontal
4	6463.1463	21.78	42.49	54.00	11.51	150	66	Horizontal
5	12873.9374	10.38	42.30	54.00	11.70	150	341	Horizontal
6	17899.9400	15.22	45.07	54.00	8.93	150	55	Horizontal

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5200	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 15:21:39

Test Graph



PK Final Data List								
NO.	Freq. (MHz)	Factor (dB)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1422.9923	3.48	44.55	74.00	29.45	150	268	Vertical
2	3284.3784	9.88	46.01	74.00	27.99	150	195	Vertical
3	5179.8680	20.78	53.66	74.00	20.34	150	88	Vertical
4	6232.6733	20.79	53.61	74.00	20.39	150	329	Vertical
5	12894.6395	10.72	52.38	74.00	21.62	150	107	Vertical
6	17903.3903	15.01	51.50	74.00	22.50	150	116	Vertical

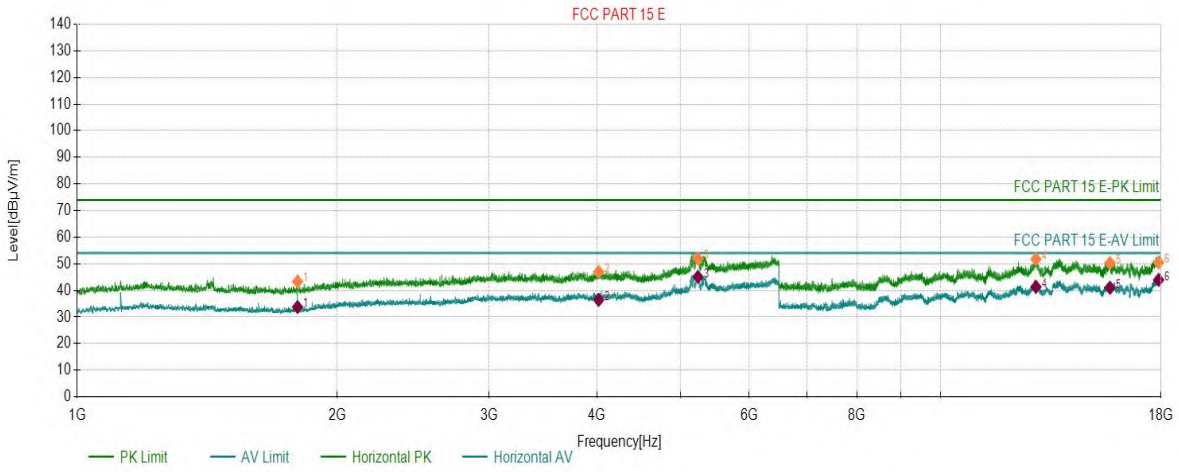
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1422.9923	3.48	33.41	54.00	20.59	150	268	Vertical
2	3284.3784	9.88	36.65	54.00	17.35	150	195	Vertical
3	5179.8680	20.78	44.55	54.00	9.45	150	88	Vertical
4	6232.6733	20.79	46.11	54.00	7.89	150	329	Vertical
5	12894.6395	10.72	41.93	54.00	12.07	150	107	Vertical
6	17903.3903	15.01	43.95	54.00	10.05	150	116	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5240	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 15:26:16

Test Graph



PK Final Data List								
NO.	Freq. (MHz)	Factor (dB)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1799.7800	3.02	43.36	74.00	30.64	150	273	Horizontal
2	4017.6018	12.56	46.98	74.00	27.02	150	96	Horizontal
3	5235.4235	20.82	51.98	74.00	22.02	150	156	Horizontal
4	12894.6395	10.75	51.77	74.00	22.23	150	360	Horizontal
5	15708.9709	11.43	50.30	74.00	23.70	150	356	Horizontal
6	17884.9885	15.01	50.52	74.00	23.48	150	358	Horizontal

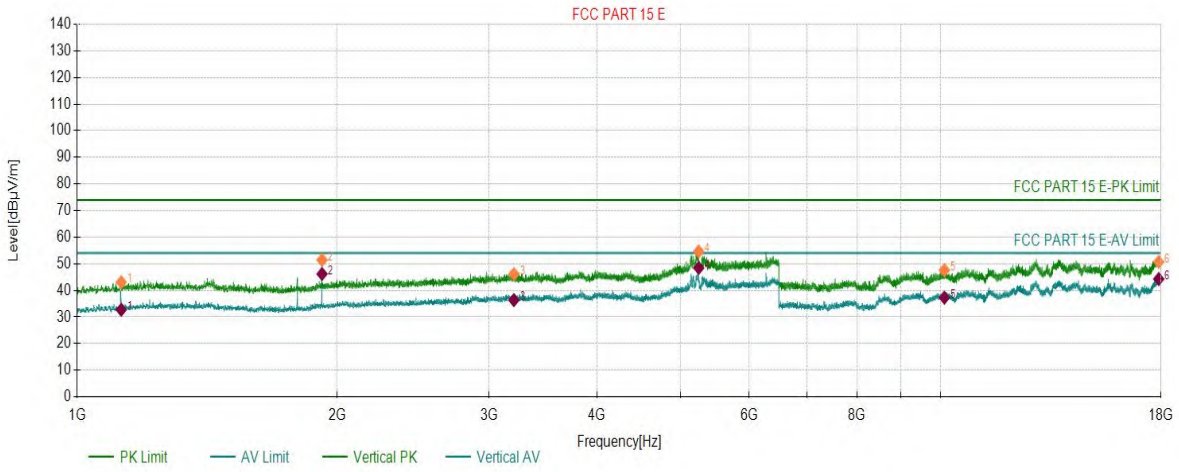
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1799.7800	3.02	33.75	54.00	20.25	150	273	Horizontal
2	4017.6018	12.56	36.43	54.00	17.57	150	96	Horizontal
3	5235.4235	20.82	45.09	54.00	8.91	150	156	Horizontal
4	12894.6395	10.75	41.33	54.00	12.67	150	360	Horizontal
5	15708.9709	11.43	41.00	54.00	13.00	150	356	Horizontal
6	17884.9885	15.01	43.96	54.00	10.04	150	358	Horizontal

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5240	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 15:27:39

Test Graph



PK Final Data List								
NO.	Freq. (MHz)	Factor (dB)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1124.8625	1.58	43.08	74.00	30.92	150	251	Vertical
2	1921.3421	4.62	51.47	74.00	22.53	150	71	Vertical
3	3205.1705	9.68	46.13	74.00	27.87	150	115	Vertical
4	5246.4246	20.80	54.66	74.00	19.34	150	0	Vertical
5	10101.0101	5.14	47.62	74.00	26.38	150	208	Vertical
6	17889.5890	14.90	50.73	74.00	23.27	150	336	Vertical

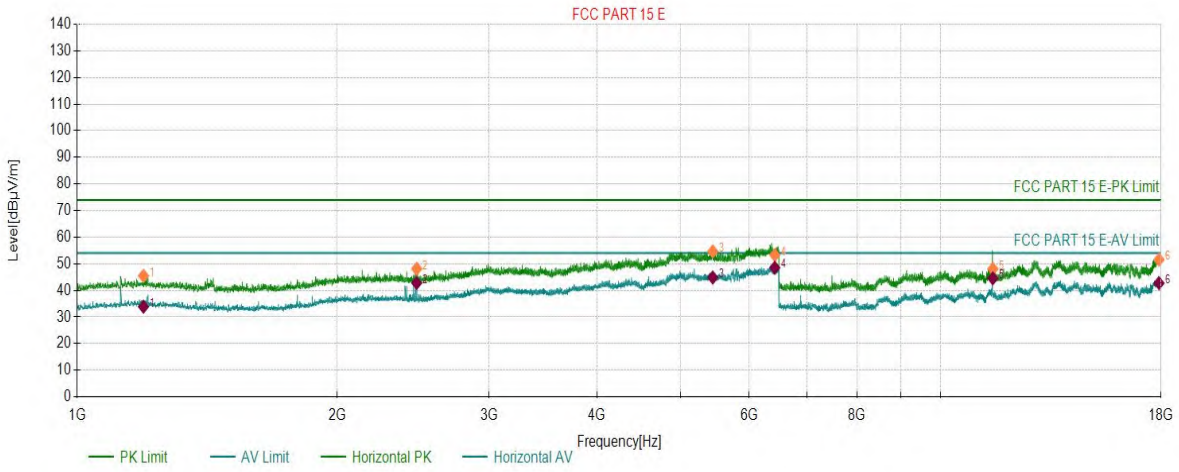
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1124.8625	1.58	32.74	54.00	21.26	150	251	Vertical
2	1921.3421	4.62	46.17	54.00	7.83	150	71	Vertical
3	3205.1705	9.68	36.35	54.00	17.65	150	115	Vertical
4	5246.4246	20.80	48.44	54.00	5.56	150	0	Vertical
5	10101.0101	5.14	37.26	54.00	16.74	150	208	Vertical
6	17889.5890	14.90	44.29	54.00	9.71	150	336	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5745	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 17:41:03

Test Graph



PK Final Data List								
NO.	Freq. (MHz)	Factor (dB)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1193.6194	3.59	45.45	74.00	28.55	150	1	Horizontal
2	2473.0473	8.33	48.11	74.00	25.89	150	9	Horizontal
3	5446.0946	22.32	54.67	74.00	19.33	150	228	Horizontal
4	6425.7426	25.95	53.28	74.00	20.72	150	338	Horizontal
5	11493.7994	6.02	48.06	74.00	25.94	150	186	Horizontal
6	17902.2402	15.20	51.56	74.00	22.44	150	238	Horizontal

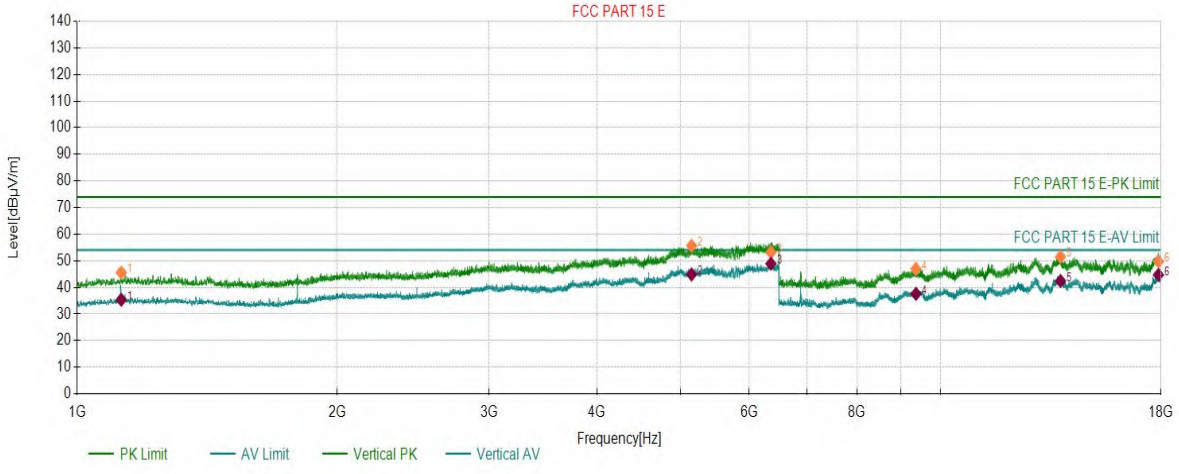
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1193.6194	3.59	33.89	54.00	20.11	150	1	Horizontal
2	2473.0473	8.33	42.79	54.00	11.21	150	9	Horizontal
3	5446.0946	22.32	44.83	54.00	9.17	150	228	Horizontal
4	6425.7426	25.95	48.54	54.00	5.46	150	338	Horizontal
5	11493.7994	6.02	44.53	54.00	9.47	150	186	Horizontal
6	17902.2402	15.20	42.73	54.00	11.27	150	238	Horizontal

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5745	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 17:42:28

Test Graph



PK Final Data List								
NO.	Freq. (MHz)	Factor (dB)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1124.8625	2.86	45.58	74.00	28.42	150	260	Vertical
2	5147.4147	22.49	55.65	74.00	18.35	150	354	Vertical
3	6360.2860	25.80	53.18	74.00	20.82	150	198	Vertical
4	9363.7864	3.85	46.96	74.00	27.04	150	178	Vertical
5	13767.5768	11.16	51.52	74.00	22.48	150	136	Vertical
6	17876.9377	14.73	49.76	74.00	24.24	150	360	Vertical

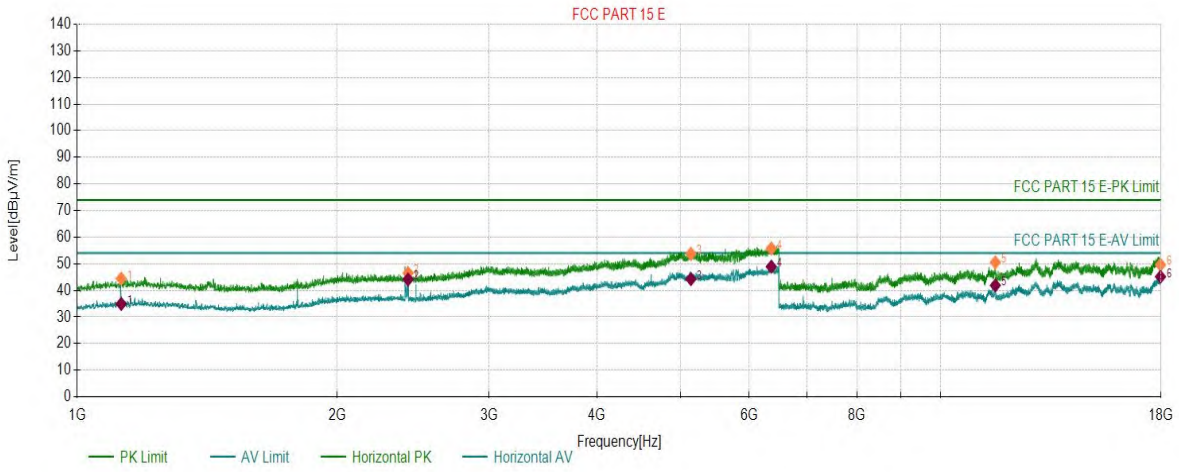
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1124.8625	2.86	35.37	54.00	18.63	150	260	Vertical
2	5147.4147	22.49	44.88	54.00	9.12	150	354	Vertical
3	6360.2860	25.80	48.93	54.00	5.07	150	198	Vertical
4	9363.7864	3.85	37.59	54.00	16.41	150	178	Vertical
5	13767.5768	11.16	42.42	54.00	11.58	150	136	Vertical
6	17876.9377	14.73	44.70	54.00	9.30	150	360	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5785	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 17:45:12

Test Graph



PK Final Data List								
NO.	Freq. (MHz)	Factor (dB)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1124.8625	2.82	44.43	74.00	29.57	150	0	Horizontal
2	2416.9417	8.22	46.50	74.00	27.50	150	0	Horizontal
3	5138.0638	22.46	53.74	74.00	20.26	150	251	Horizontal
4	6366.8867	25.79	55.73	74.00	18.27	150	344	Horizontal
5	11570.8571	5.21	50.53	74.00	23.47	150	192	Horizontal
6	17973.5474	14.65	49.65	74.00	24.35	150	360	Horizontal

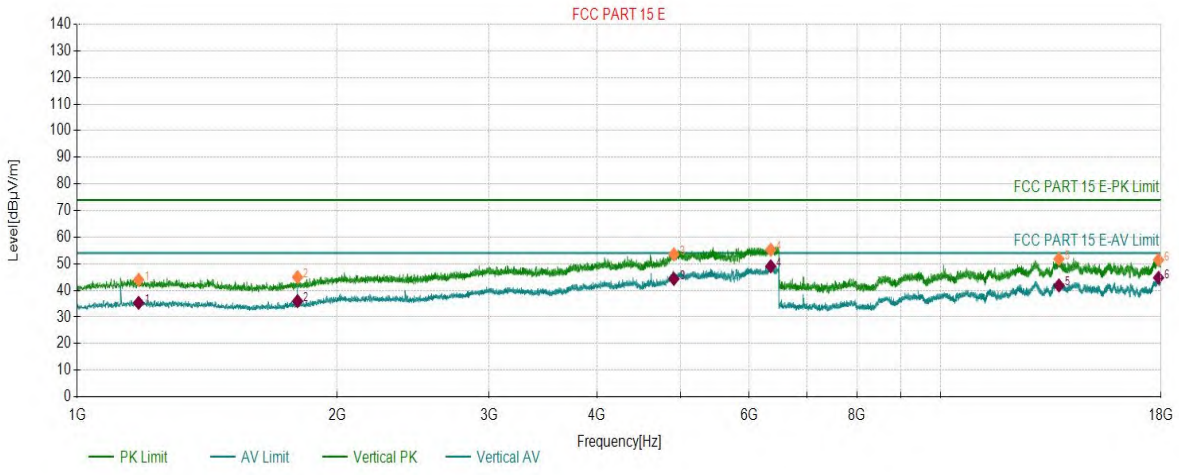
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1124.8625	2.82	34.93	54.00	19.07	150	0	Horizontal
2	2416.9417	8.22	44.14	54.00	9.86	150	0	Horizontal
3	5138.0638	22.46	44.26	54.00	9.74	150	251	Horizontal
4	6366.8867	25.79	48.92	54.00	5.08	150	344	Horizontal
5	11570.8571	5.21	41.88	54.00	12.12	150	192	Horizontal
6	17973.5474	14.65	45.15	54.00	8.85	150	360	Horizontal

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5785	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 17:46:39

Test Graph



PK Final Data List								
NO.	Freq. (MHz)	Factor (dB)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1178.2178	3.43	43.99	74.00	30.01	150	295	Vertical
2	1799.7800	4.96	44.97	74.00	29.03	150	295	Vertical
3	4909.7910	22.07	53.54	74.00	20.46	150	118	Vertical
4	6357.5358	25.80	55.26	74.00	18.74	150	17	Vertical
5	13710.0710	11.79	51.82	74.00	22.18	150	263	Vertical
6	17882.6883	14.81	51.46	74.00	22.54	150	332	Vertical

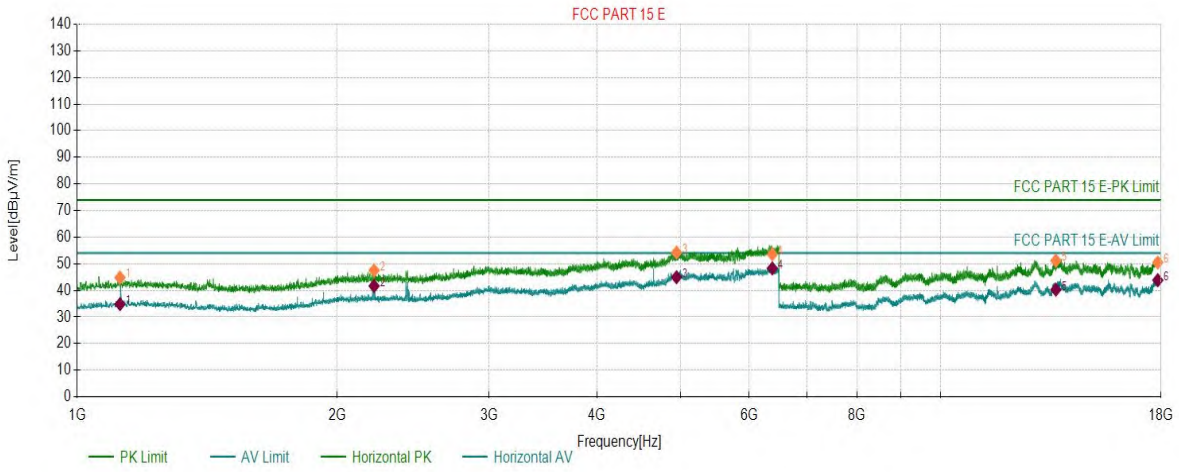
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1178.2178	3.43	35.34	54.00	18.66	150	295	Vertical
2	1799.7800	4.96	35.96	54.00	18.04	150	295	Vertical
3	4909.7910	22.07	44.34	54.00	9.66	150	118	Vertical
4	6357.5358	25.80	49.07	54.00	4.93	150	17	Vertical
5	13710.0710	11.79	41.88	54.00	12.12	150	263	Vertical
6	17882.6883	14.81	44.74	54.00	9.26	150	332	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5825	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 17:49:02

Test Graph



PK Final Data List								
NO.	Freq. (MHz)	Factor (dB)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1121.0121	2.78	44.82	74.00	29.18	150	345	Horizontal
2	2207.3707	8.10	47.51	74.00	26.49	150	1	Horizontal
3	4944.9945	22.31	54.22	74.00	19.78	150	358	Horizontal
4	6383.9384	25.84	53.60	74.00	20.40	150	279	Horizontal
5	13599.6600	10.57	51.19	74.00	22.81	150	151	Horizontal
6	17843.5844	14.45	50.50	74.00	23.50	150	142	Horizontal

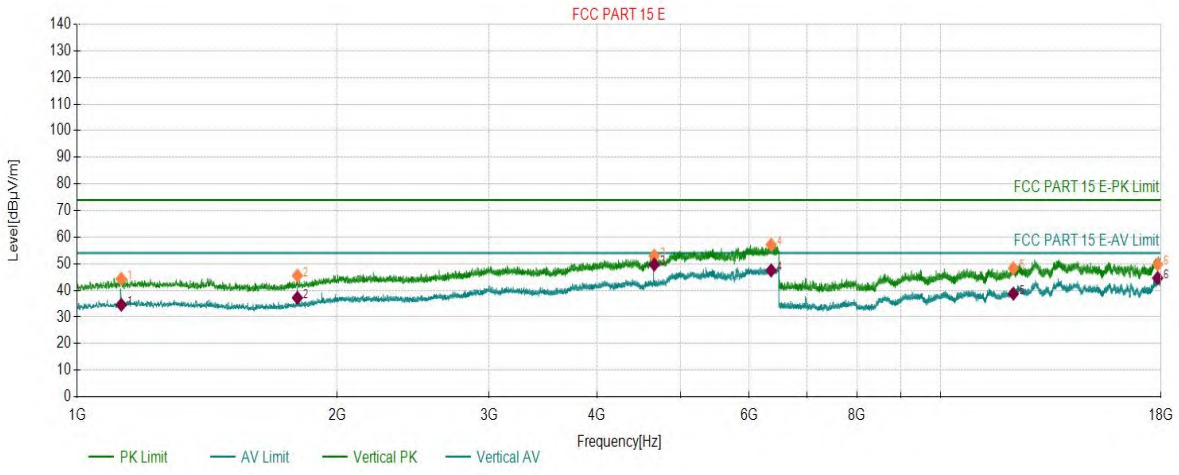
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1121.0121	2.78	34.83	54.00	19.17	150	345	Horizontal
2	2207.3707	8.10	41.67	54.00	12.33	150	1	Horizontal
3	4944.9945	22.31	44.95	54.00	9.05	150	358	Horizontal
4	6383.9384	25.84	48.27	54.00	5.73	150	279	Horizontal
5	13599.6600	10.57	40.29	54.00	13.71	150	151	Horizontal
6	17843.5844	14.45	43.84	54.00	10.16	150	142	Horizontal

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5825	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 17:50:28

Test Graph



PK Final Data List								
NO.	Freq. (MHz)	Factor (dB)	PK Value (dBµV/m)	PK Limit (dBµV/m)	PK Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1124.8625	2.86	44.35	74.00	29.65	150	252	Vertical
2	1799.2299	4.95	45.53	74.00	28.47	150	303	Vertical
3	4660.0660	20.15	52.97	74.00	21.03	150	336	Vertical
4	6364.1364	25.81	57.17	74.00	16.83	150	336	Vertical
5	12142.4642	6.45	48.31	74.00	25.69	150	161	Vertical
6	17840.1340	14.23	49.78	74.00	24.22	150	332	Vertical

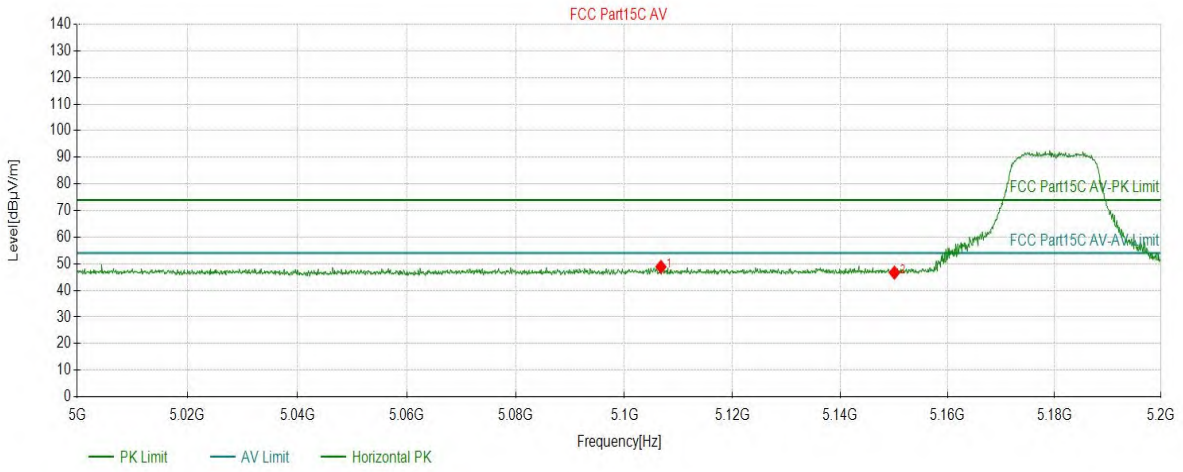
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	1124.8625	2.86	34.61	54.00	19.39	150	252	Vertical
2	1799.2299	4.95	37.21	54.00	16.79	150	303	Vertical
3	4660.0660	20.15	49.74	54.00	4.26	150	336	Vertical
4	6364.1364	25.81	47.51	54.00	6.49	150	336	Vertical
5	12142.4642	6.45	38.78	54.00	15.22	150	161	Vertical
6	17840.1340	14.23	44.63	54.00	9.37	150	332	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5180	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 15:12:10

Test Graph



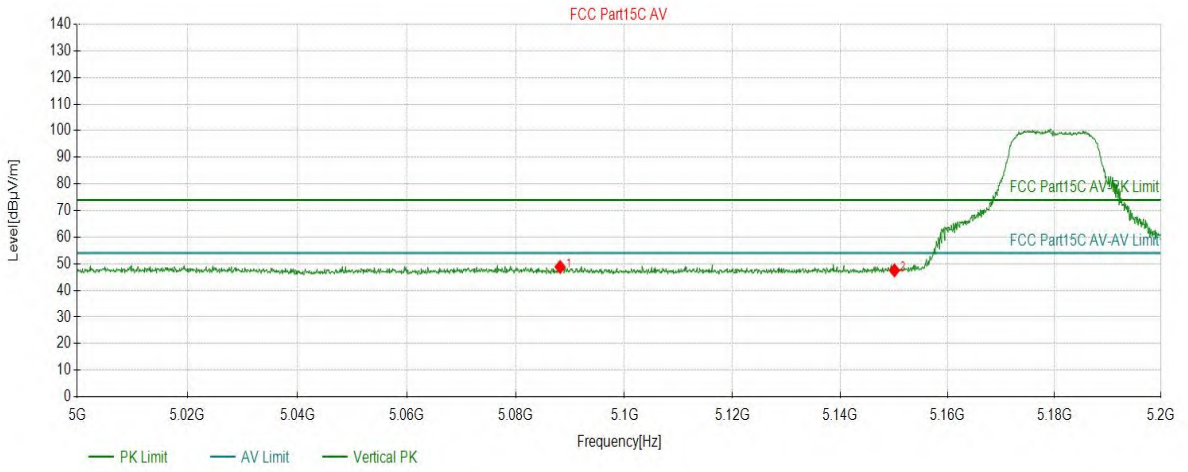
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5106.7534	48.86	16.47	74.00	25.14	150	254	PK	Horizont
2	5150.0750	46.65	16.36	74.00	27.35	150	165	PK	Horizont

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A-5180	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 15:12:58

Test Graph



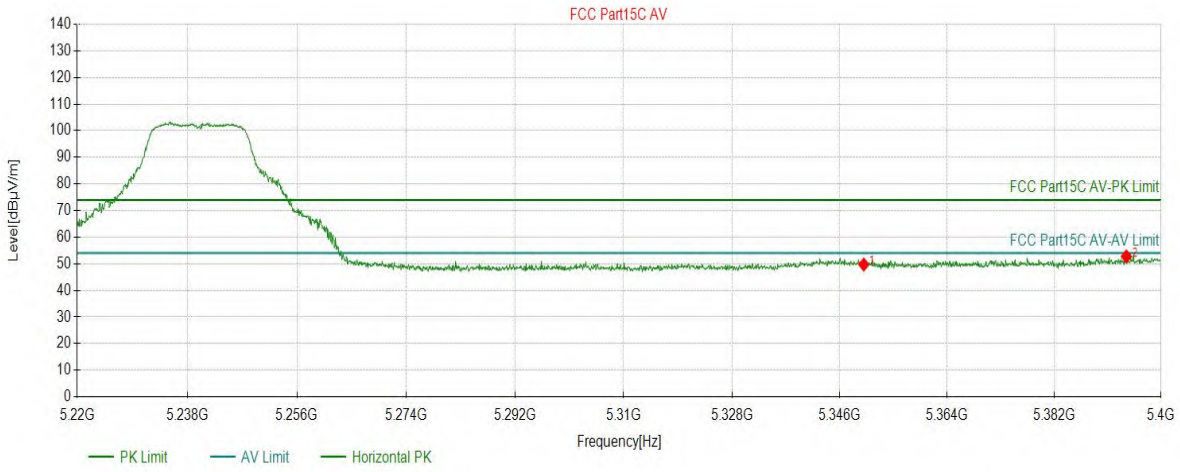
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5088.1441	48.81	16.57	74.00	25.19	150	346	PK	Vertical
2	5150.0750	47.51	16.41	74.00	26.49	150	359	PK	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A_5240	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-12 14:45:04

Test Graph



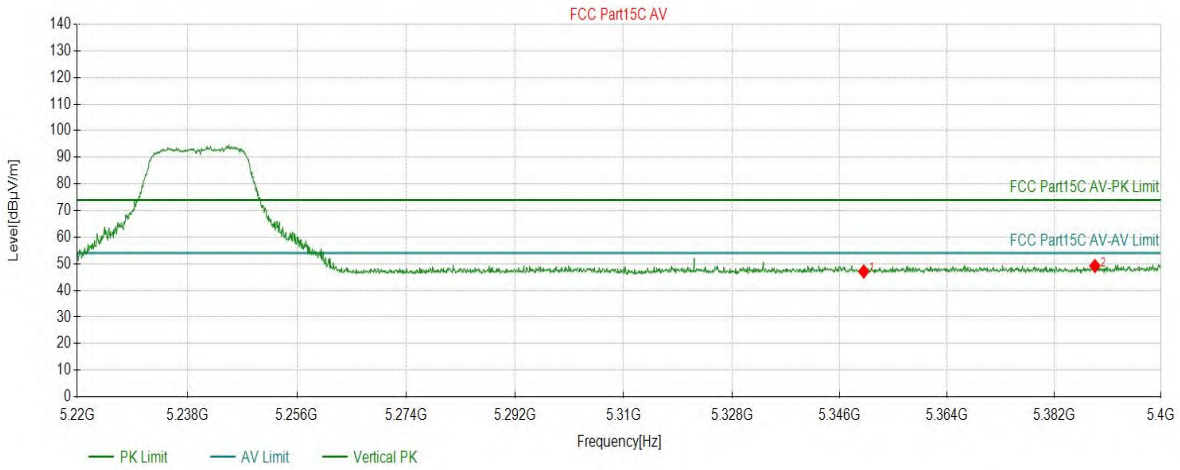
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0250	49.73	16.70	74.00	24.27	150	356	PK	Horizont
2	5394.1471	52.72	16.91	74.00	21.28	150	339	PK	Horizont

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11A_5240	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-12 14:45:49

Test Graph



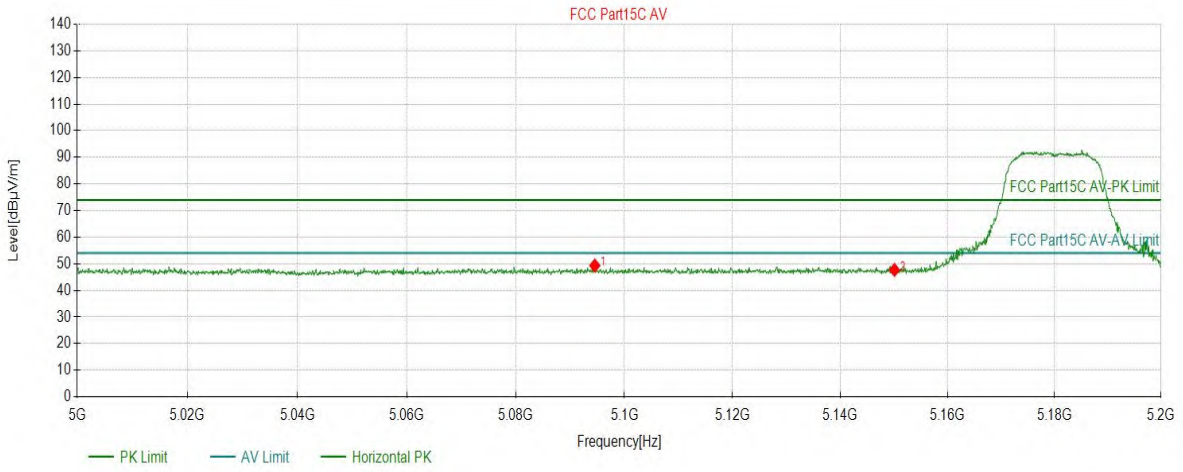
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0250	47.10	16.55	74.00	26.90	150	207	PK	Vertical
2	5388.8344	49.18	16.70	74.00	24.82	150	7	PK	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11N20-5180	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 17:55:43

Test Graph



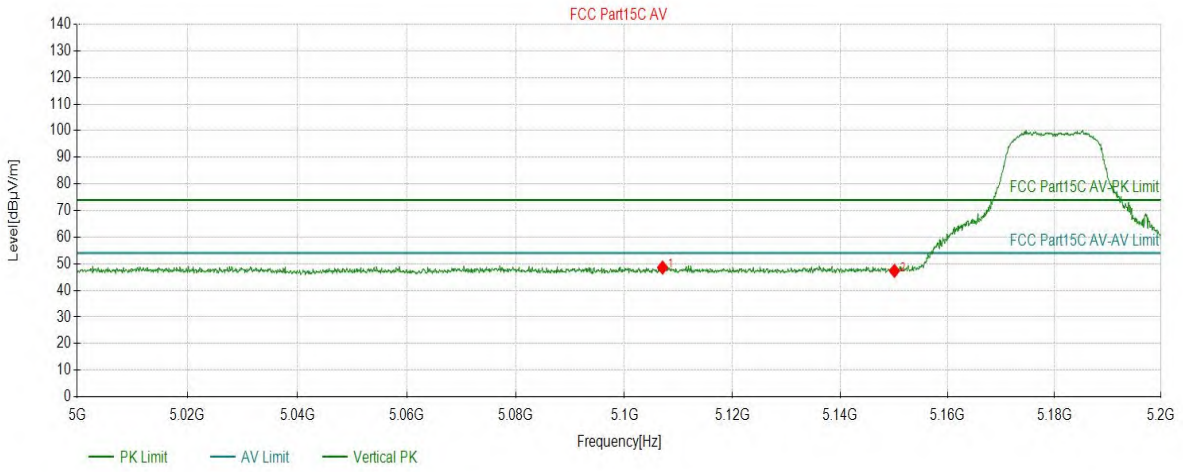
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5094.5473	49.33	16.48	74.00	24.67	150	173	PK	Horizont
2	5150.0750	47.71	16.36	74.00	26.29	150	29	PK	Horizont

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11N20-5180	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-03 17:56:31

Test Graph



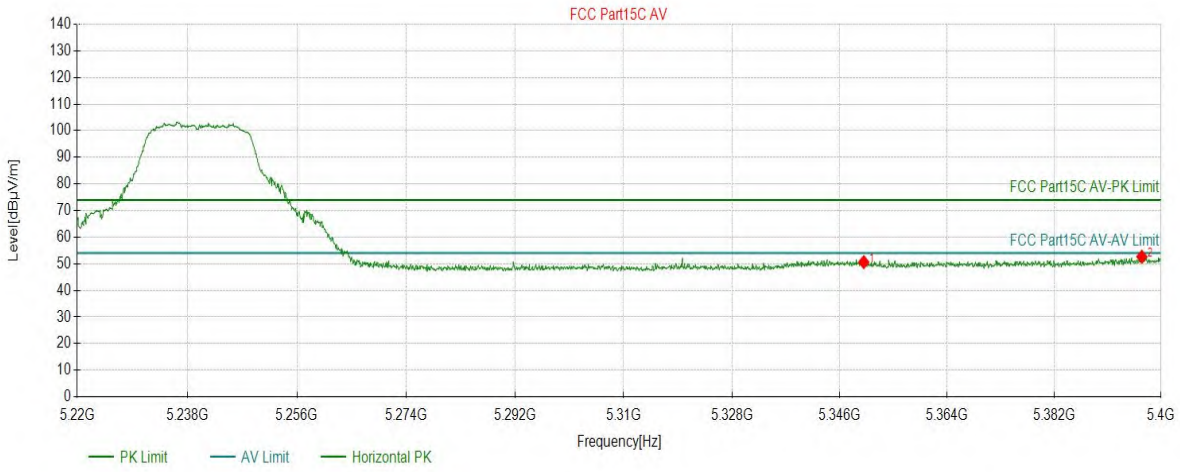
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5107.0535	48.58	16.57	74.00	25.42	150	199	PK	Vertical
2	5150.0750	47.32	16.41	74.00	26.68	150	242	PK	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11N20_5240	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-12 14:48:25

Test Graph



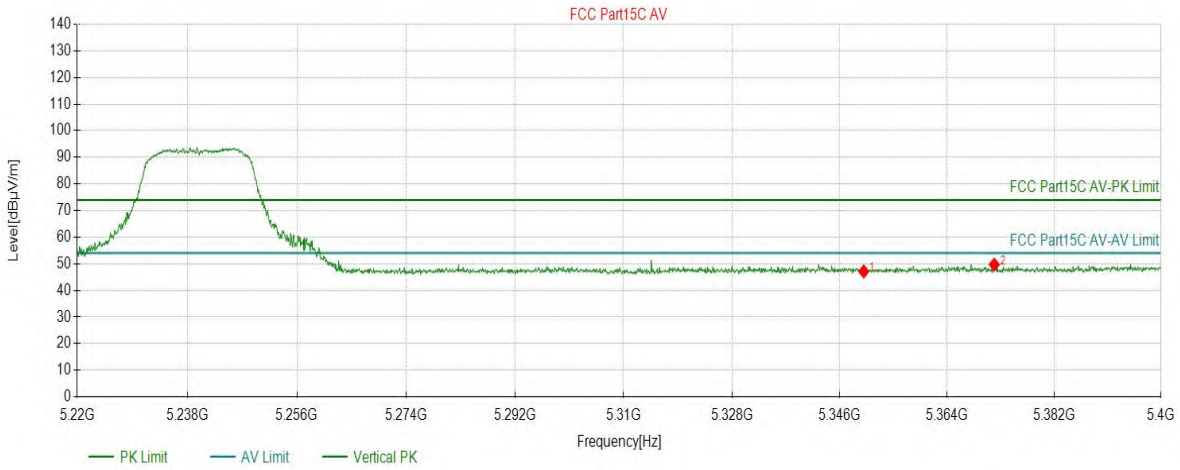
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0250	50.63	16.70	74.00	23.37	150	359	PK	Horizont
2	5396.7584	52.65	16.92	74.00	21.35	150	340	PK	Horizont

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11N20_5240	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-12 14:49:13

Test Graph



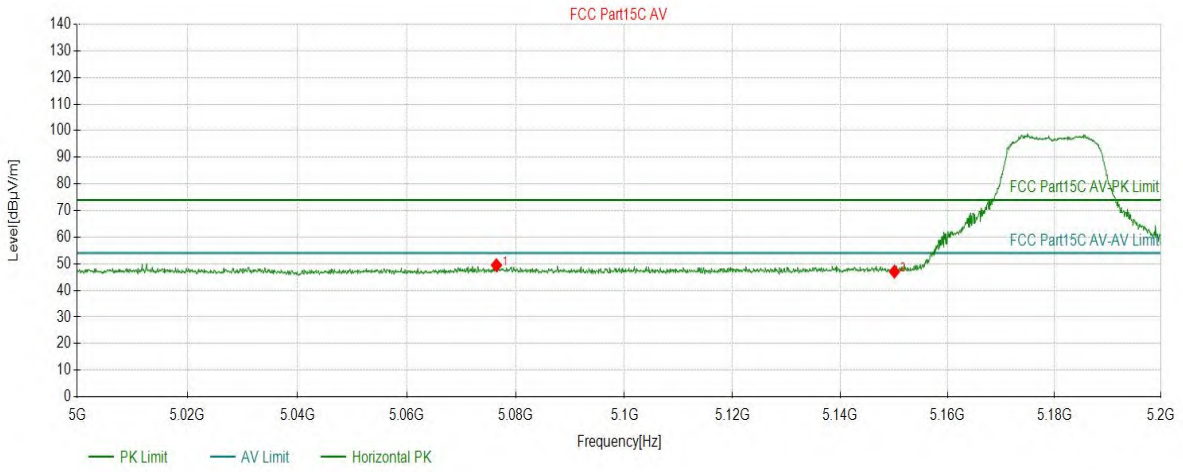
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0250	47.12	16.55	74.00	26.88	150	49	PK	Vertical
2	5371.9060	49.70	16.63	74.00	24.30	150	0	PK	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11AC20-5180	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-04 15:39:06

Test Graph



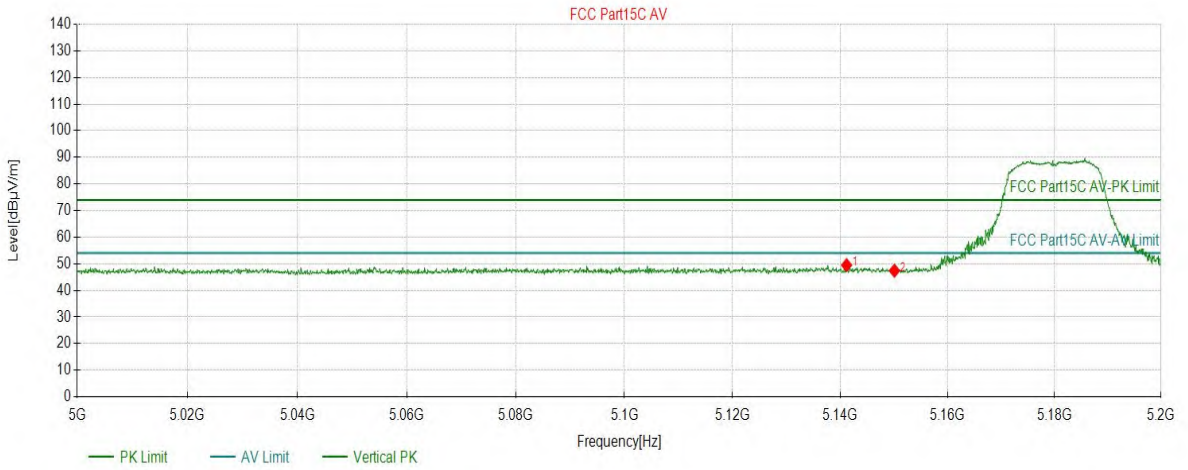
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5076.4382	49.48	16.43	74.00	24.52	150	48	PK	Horizont
2	5150.0750	47.06	16.36	74.00	26.94	150	26	PK	Horizont

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11AC20-5180	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-04 15:39:54

Test Graph



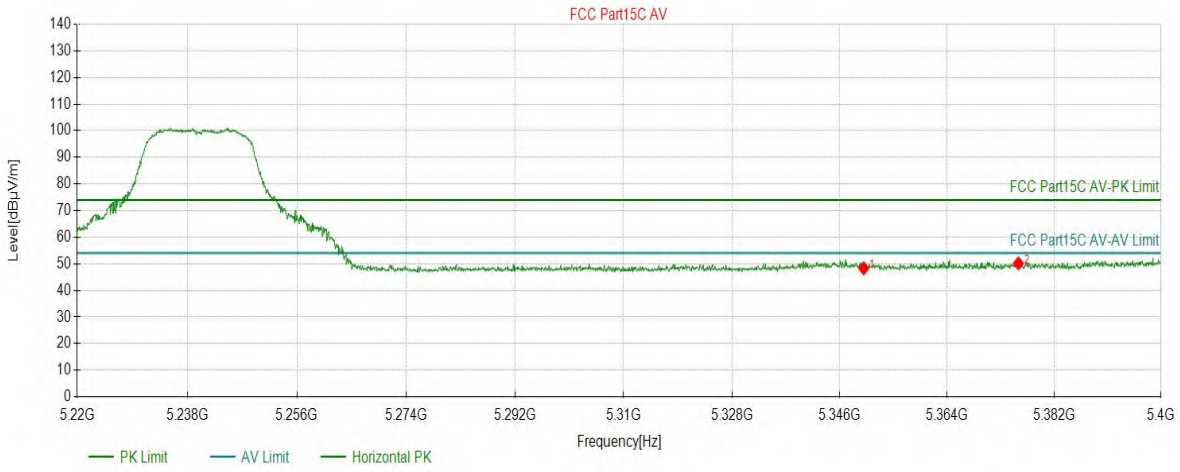
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5141.1706	49.51	16.45	74.00	24.49	150	77	PK	Vertical
2	5150.0750	47.39	16.41	74.00	26.61	150	90	PK	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11AC20_5240	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-12 14:59:23

Test Graph



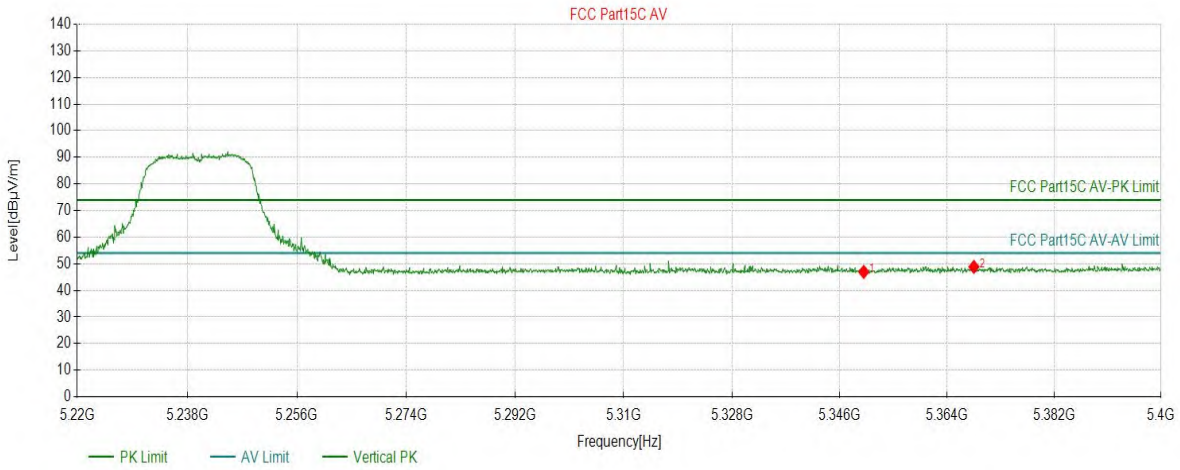
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0250	48.31	16.70	74.00	25.69	150	359	PK	Horizont
2	5375.9580	50.18	16.82	74.00	23.82	150	338	PK	Horizont

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11AC20_5240	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-12 15:01:06

Test Graph



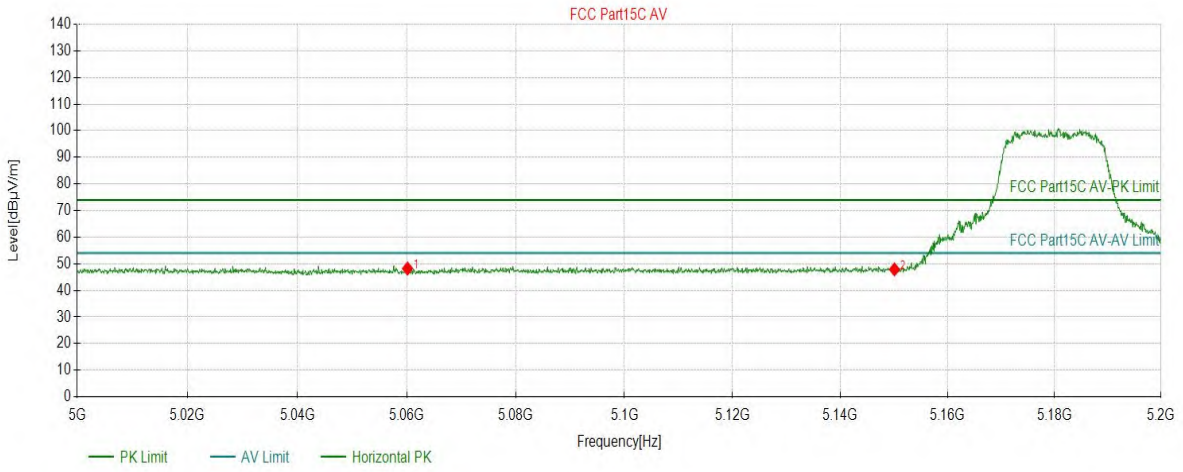
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0250	46.96	16.55	74.00	27.04	150	12	PK	Vertical
2	5368.4842	48.84	16.62	74.00	25.16	150	358	PK	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11AX20-5180	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-04 16:14:27

Test Graph



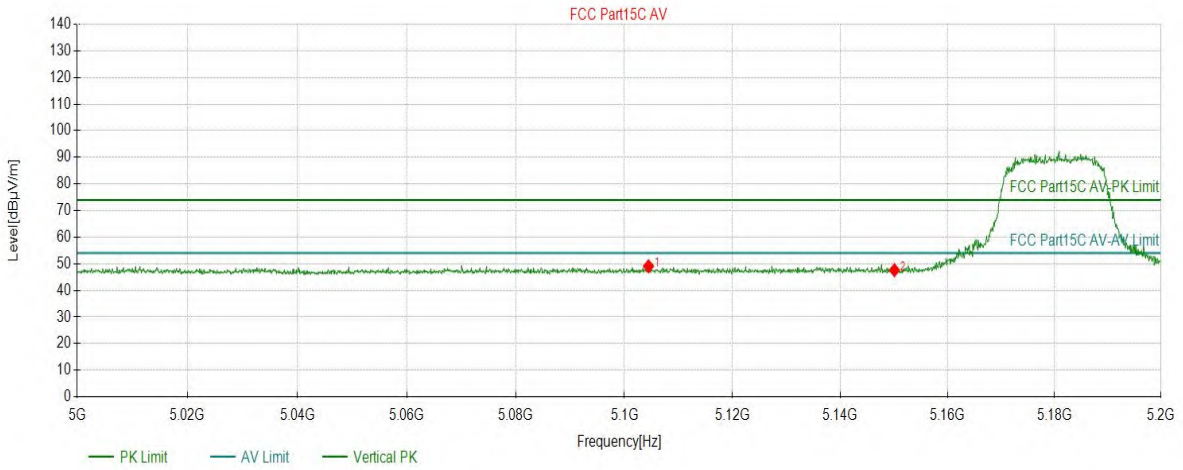
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5060.1301	48.22	16.39	74.00	25.78	150	30	PK	Horizont
2	5150.0750	47.88	16.36	74.00	26.12	150	297	PK	Horizont

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11AX20-5180	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-04 16:15:15

Test Graph



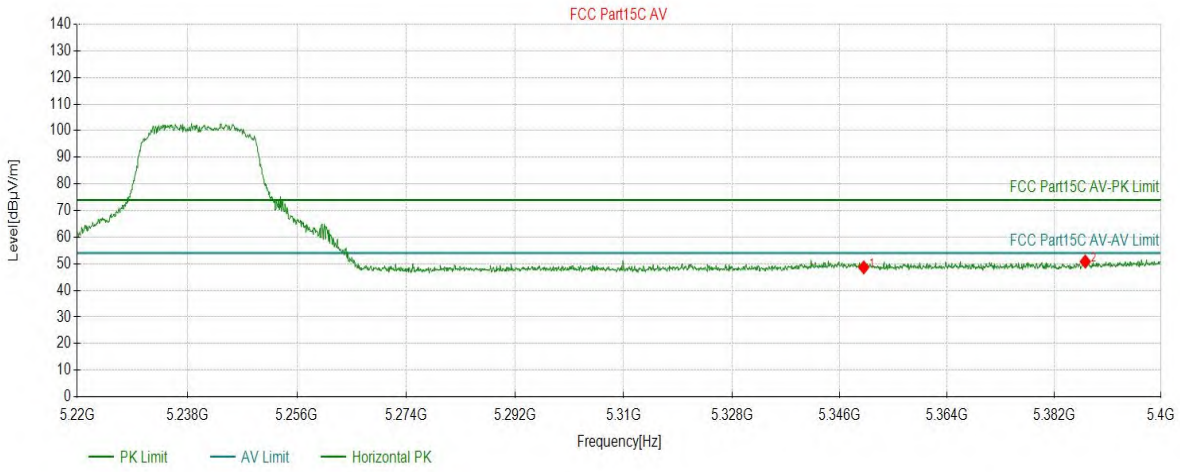
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5104.4522	49.10	16.57	74.00	24.90	150	90	PK	Vertical
2	5150.0750	47.61	16.41	74.00	26.39	150	359	PK	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11AX20_5240	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-12 15:11:56

Test Graph



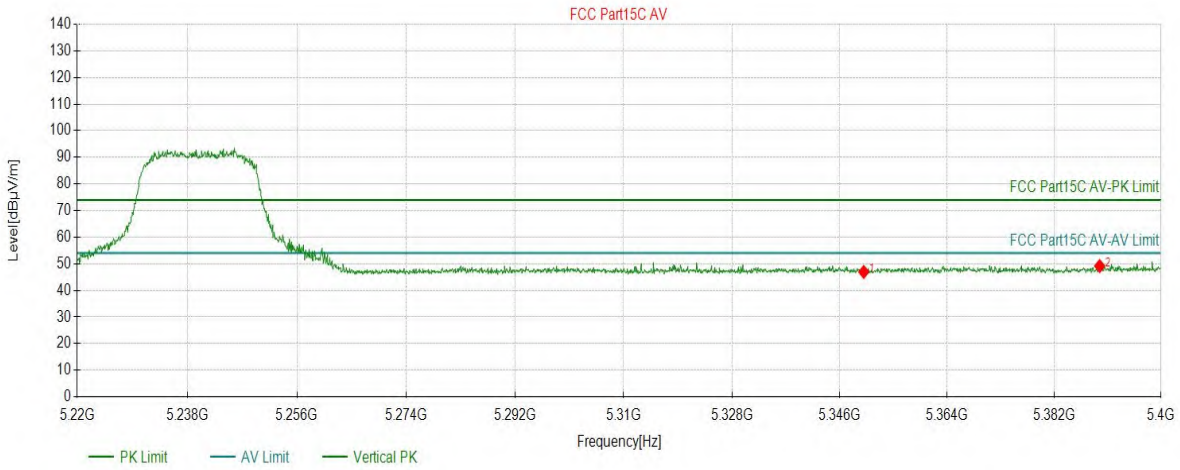
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0250	48.66	16.70	74.00	25.34	150	351	PK	Horizont
2	5387.2136	50.86	16.88	74.00	23.14	150	327	PK	Horizont

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11AX20_5240	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-12 15:12:43

Test Graph



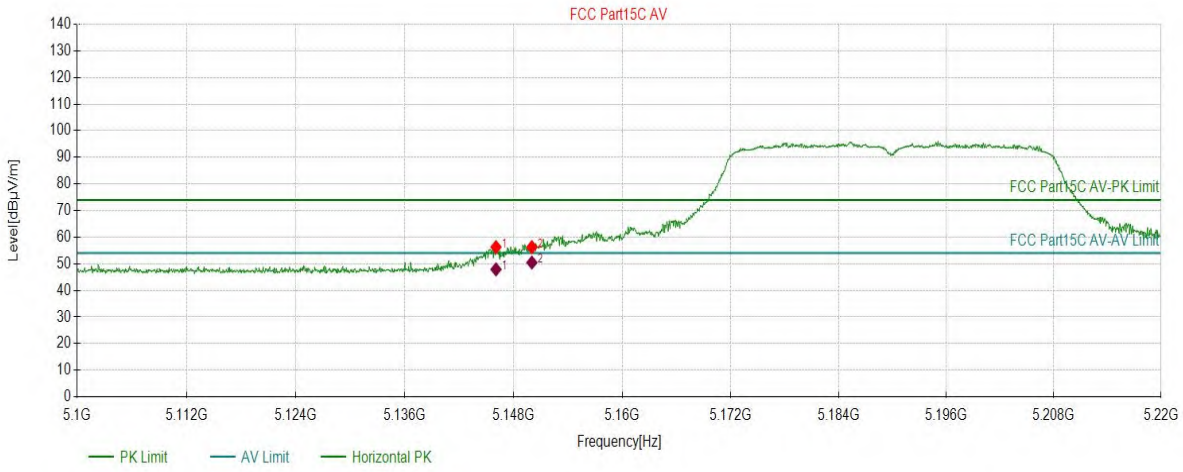
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0250	46.93	16.55	74.00	27.07	150	267	PK	Vertical
2	5389.6448	49.15	16.70	74.00	24.85	150	100	PK	Vertical

Test Report

Project Information			
EUT:	360° All-in-one-Conference Camera	Environment:	24.2℃ 54%
Model:	MD20A	SN:	
Mode:	11N40-5190	Voltage:	AC 120V/60Hz
Customer:		Engineer:	
Remark:			

Start of Test: 2023-07-09 10:12:35

Test Graph



Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5146.0430	56.29	16.37	74.00	17.71	150	2	PK	Horizont
2	5150.0050	56.26	16.36	74.00	17.74	150	359	PK	Horizont

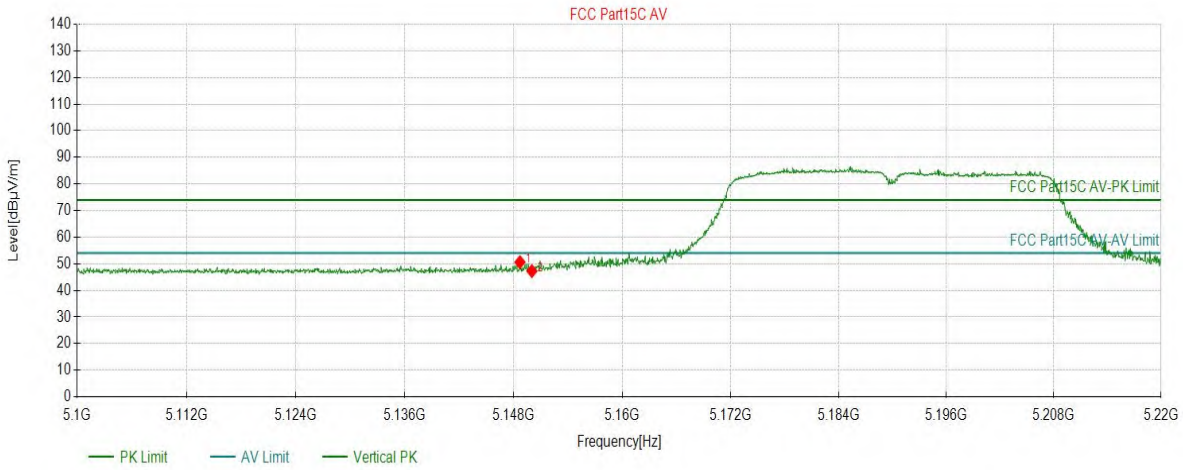
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	5146.0430	16.37	47.89	54.00	6.11	150	2	Horizontal
2	5150.0050	16.36	50.48	54.00	3.52	150	359	Horizontal

Test Report

Project Information			
EUT:	360° All-in-one-Conference Camera	Environment:	24.2℃ 54%
Model:	MD20A	SN:	
Mode:	11N40-5190	Voltage:	AC 120V/60Hz
Customer:		Engineer:	
Remark:			

Start of Test: 2023-07-09 10:13:15

Test Graph



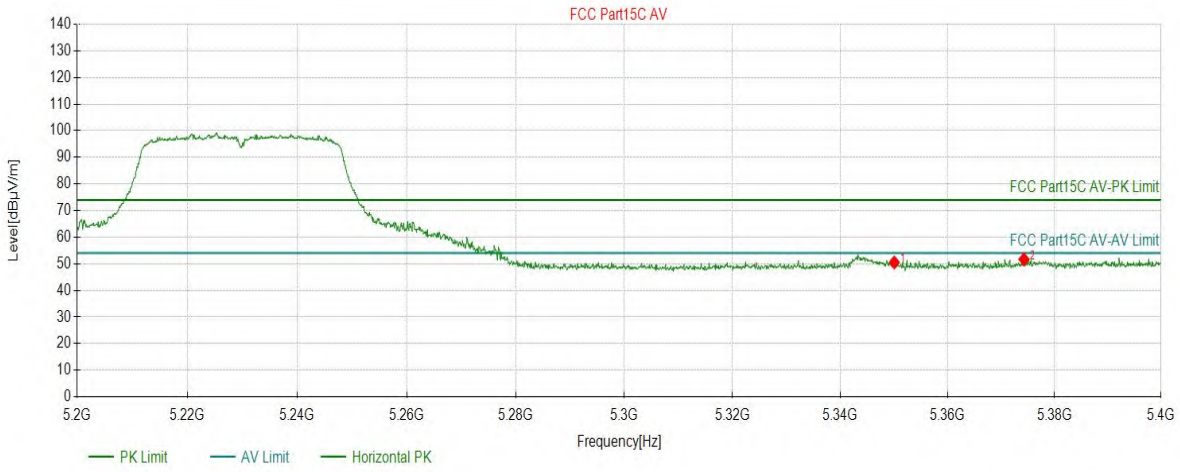
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5148.6843	50.60	16.42	74.00	23.40	150	262	PK	Vertical
2	5150.0050	47.25	16.41	74.00	26.75	150	24	PK	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.1℃/46%
Model:	CleverHub	SN:	
Mode:	11N40_5230	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-13 14:10:26

Test Graph



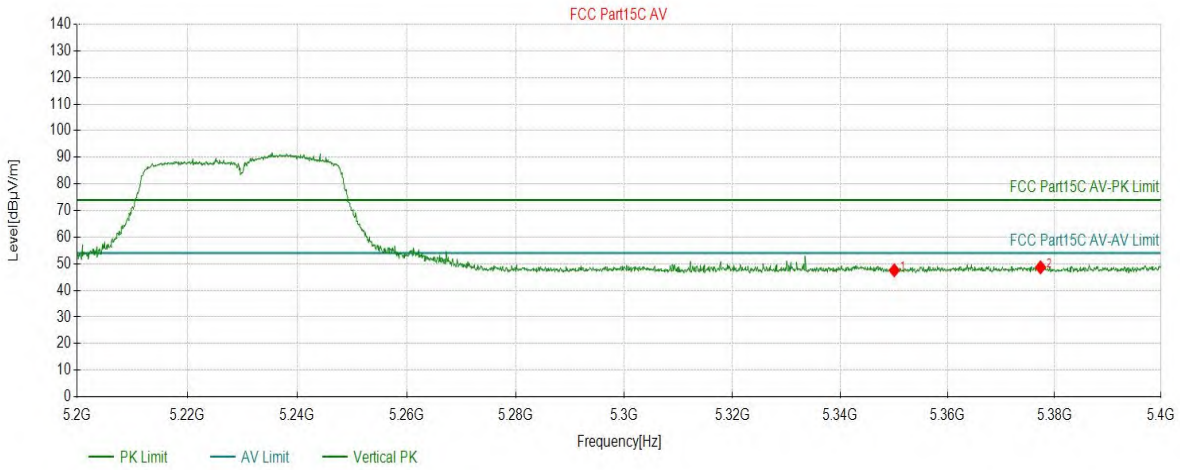
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0750	50.52	16.70	74.00	23.48	150	337	PK	Horizont
2	5374.2871	51.67	16.82	74.00	22.33	150	348	PK	Horizont

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.1℃/46%
Model:	CleverHub	SN:	
Mode:	11N40_5230	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-13 14:11:14

Test Graph



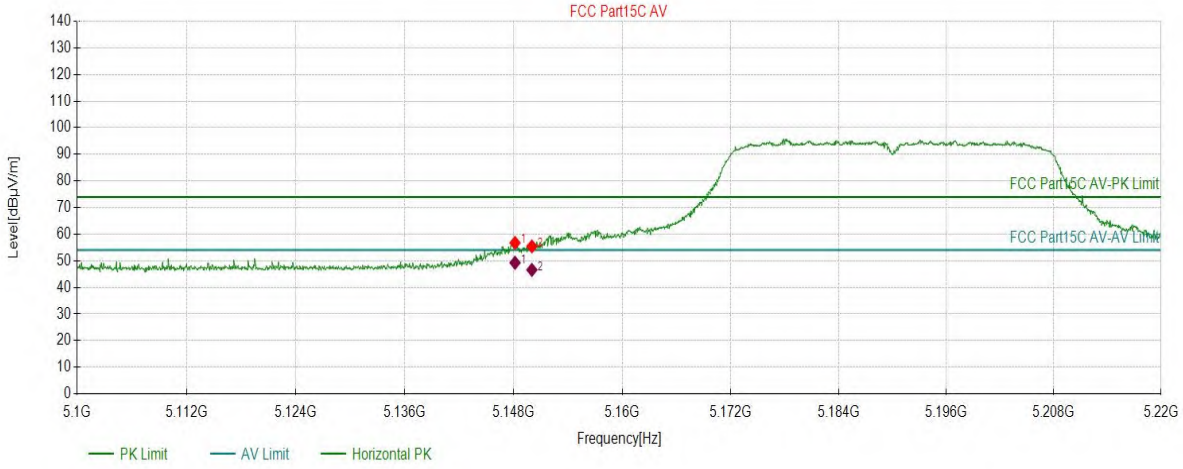
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0750	47.54	16.55	74.00	26.46	150	0	PK	Vertical
2	5377.3887	48.67	16.65	74.00	25.33	150	1	PK	Vertical

Test Report

Project Information			
EUT:	360° All-in-one-Conference Camera	Environment:	24.2℃ 54%
Model:	MD20A	SN:	
Mode:	11AC40-5190	Voltage:	AC 120V/60Hz
Customer:		Engineer:	
Remark:			

Start of Test: 2023-07-09 10:39:00

Test Graph



Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5148.1441	56.74	16.37	74.00	17.26	150	11	PK	Horizont
2	5150.0050	55.40	16.36	74.00	18.60	150	352	PK	Horizont

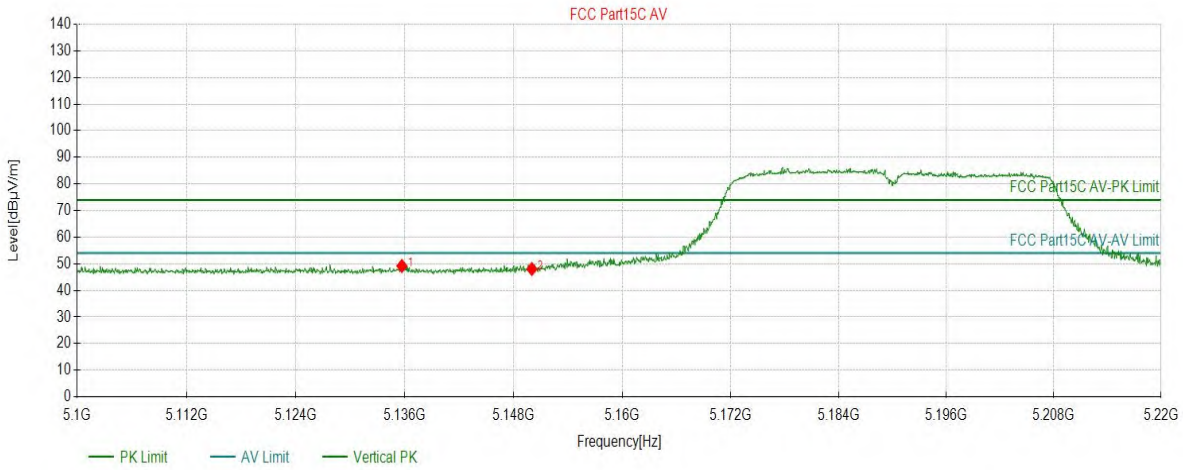
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	5148.1441	16.37	49.26	54.00	4.74	150	11	Horizontal
2	5150.0050	16.36	46.59	54.00	7.41	150	352	Horizontal

Test Report

Project Information			
EUT:	360° All-in-one-Conference Camera	Environment:	24.2℃ 54%
Model:	MD20A	SN:	
Mode:	11AC40-5190	Voltage:	AC 120V/60Hz
Customer:		Engineer:	
Remark:			

Start of Test: 2023-07-09 10:39:48

Test Graph



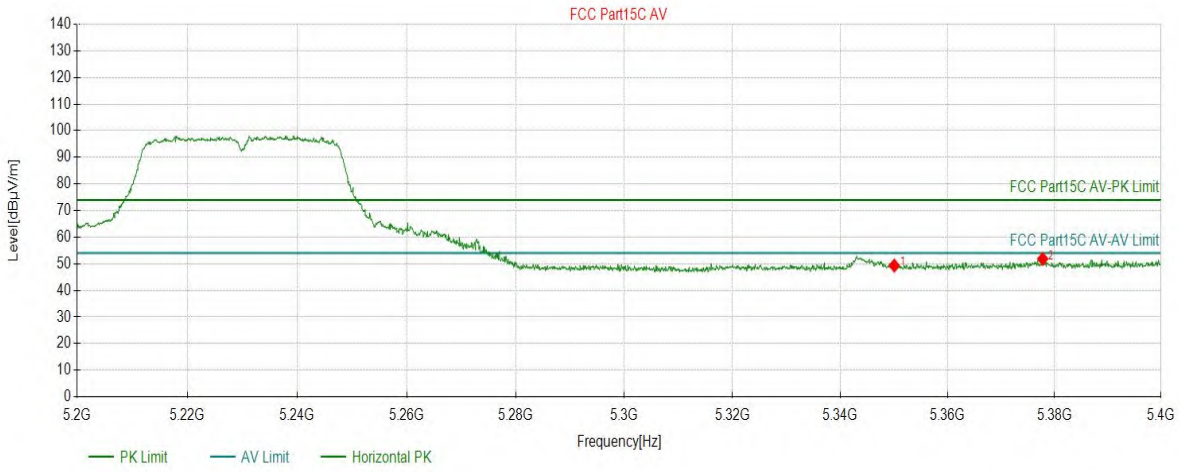
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5135.6578	49.20	16.47	74.00	24.80	150	243	PK	Vertical
2	5150.0050	48.03	16.41	74.00	25.97	150	134	PK	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.1℃/46%
Model:	CleverHub	SN:	
Mode:	11AC40_5230	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-13 14:16:13

Test Graph



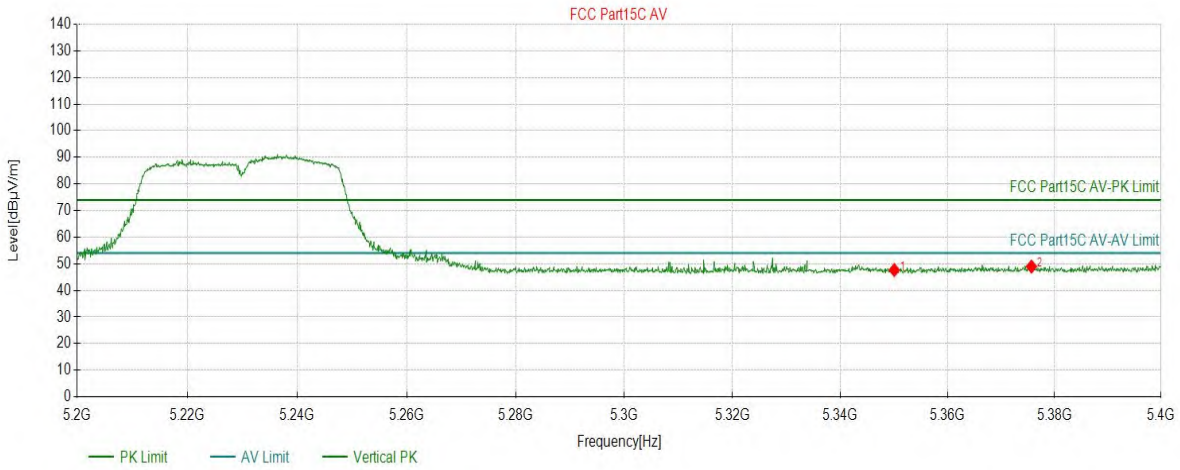
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0750	49.32	16.70	74.00	24.68	150	338	PK	Horizont
2	5377.7889	51.84	16.83	74.00	22.16	150	344	PK	Horizont

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.1℃/46%
Model:	CleverHub	SN:	
Mode:	11AC40_5230	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-13 14:17:00

Test Graph



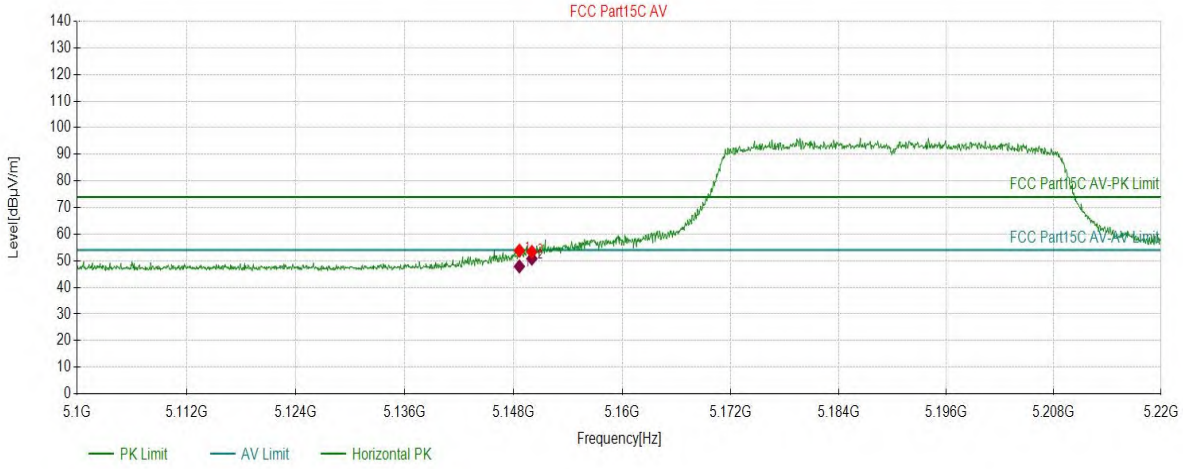
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0750	47.66	16.55	74.00	26.34	150	103	PK	Vertical
2	5375.6878	48.97	16.65	74.00	25.03	150	51	PK	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11_5190	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-11 16:50:54

Test Graph



Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5148.6243	53.84	16.37	74.00	20.16	150	0	PK	Horizont
2	5150.0050	53.36	16.36	74.00	20.64	150	356	PK	Horizont

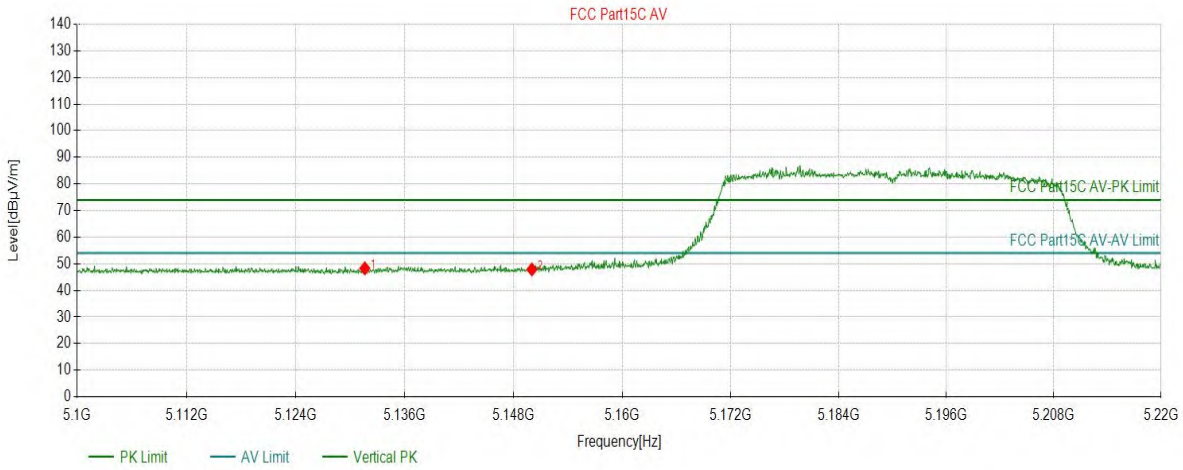
AV Final Data List								
NO.	Freq. (MHz)	Factor (dB)	AV Value (dBµV/m)	AV Limit (dBµV/m)	AV Margin (dB)	Height (cm)	Angle (°)	Polarity
1	5148.6243	16.37	47.87	54.00	6.13	150	0	Horizontal
2	5150.0050	16.36	50.82	54.00	3.18	150	356	Horizontal

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.2℃ 54%
Model:	CleverHub	SN:	
Mode:	11AX_5190	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-11 16:51:34

Test Graph



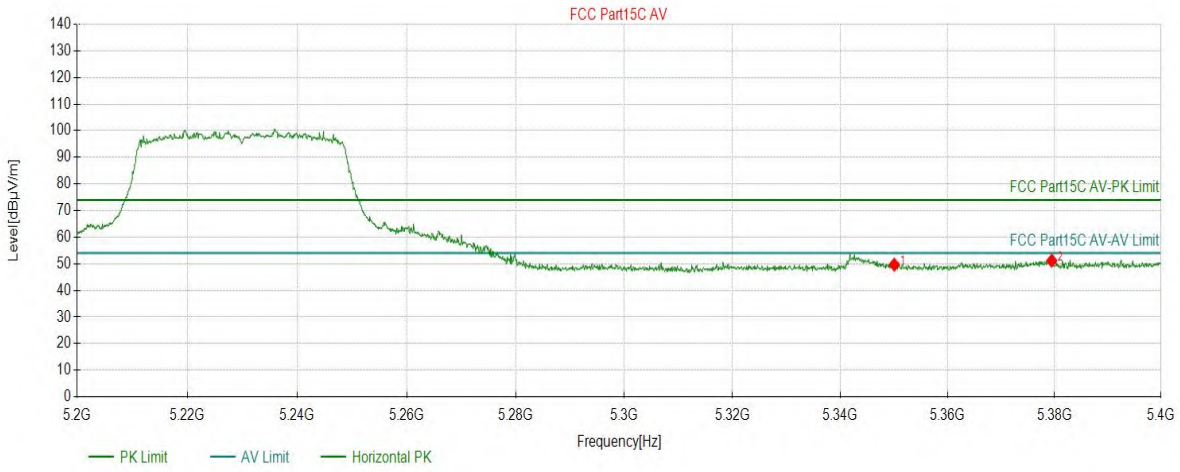
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5131.5758	48.29	16.48	74.00	25.71	150	304	PK	Vertical
2	5150.0050	47.87	16.41	74.00	26.13	150	4	PK	Vertical

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.1℃/46%
Model:	CleverHub	SN:	
Mode:	11AX40_5230	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

Start of Test: 2023-07-13 14:19:19

Test Graph



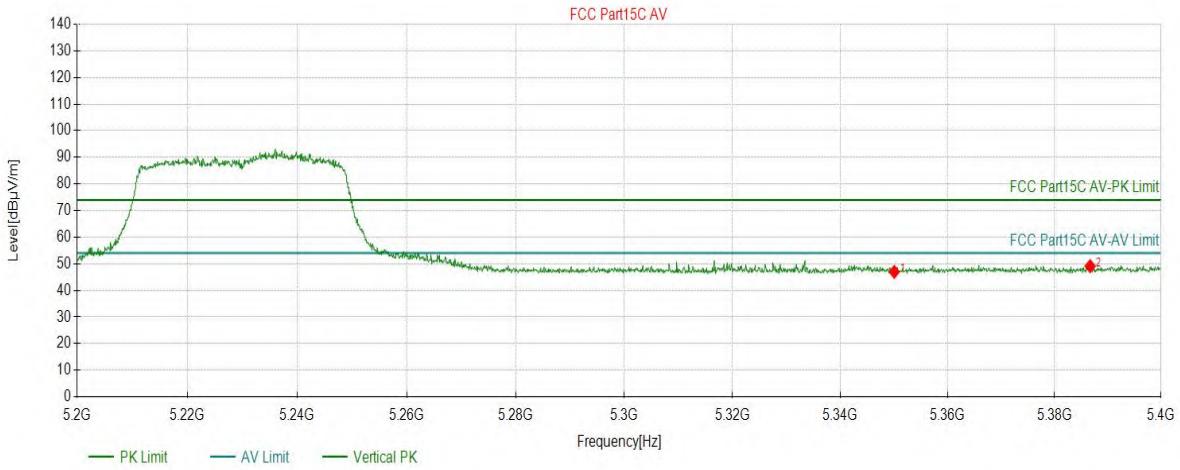
Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0750	49.67	16.70	74.00	24.33	150	359	PK	Horizont
2	5379.4897	51.18	16.84	74.00	22.82	150	359	PK	Horizont

Test Report

Project Information			
EUT:	Clevershare Hub Clever Hub	Environment:	24.1℃/46%
Model:	CleverHub	SN:	
Mode:	11AX40_5230	Voltage:	120V 60Hz
Customer:		Engineer:	Roger
Remark:			

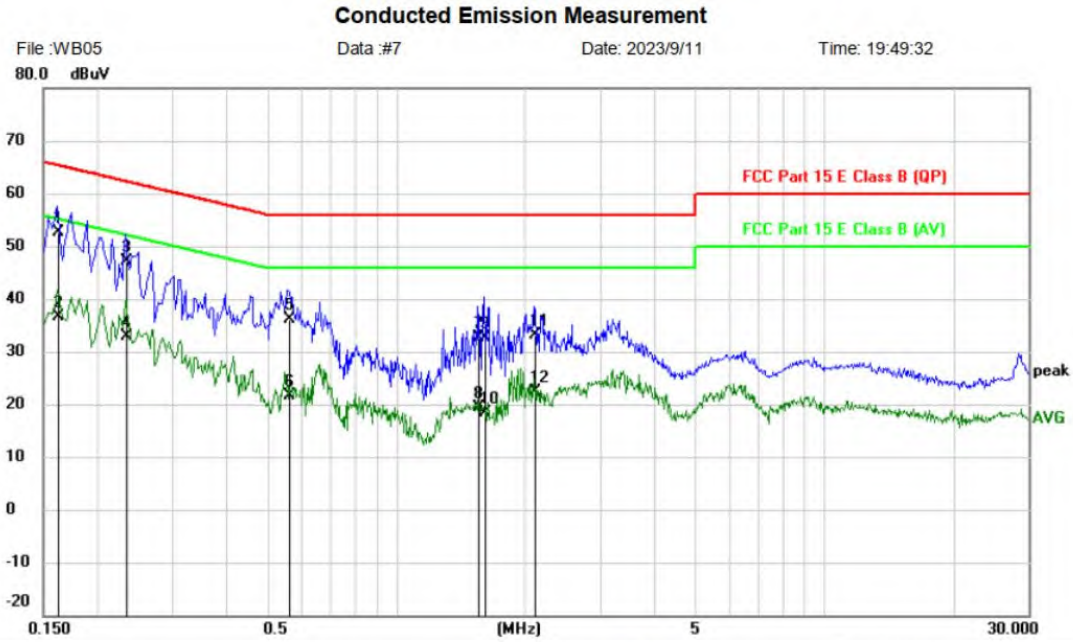
Start of Test: 2023-07-13 14:20:07

Test Graph



Suspected Data List									
NO.	Freq. (MHz)	Level (dBµV/m)	Factor (dB)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Angle (°)	Detector	Polarity
1	5350.0750	46.98	16.55	74.00	27.02	150	357	PK	Vertical
2	5386.6933	49.12	16.69	74.00	24.88	150	270	PK	Vertical

APPENDIX C – AC Power Line Conducted Emission Test Data



Site
Limit: FCC Part 15 E Class B (QP)
EUT: Clever Hub CleverHub
M/N: CleverHub
Mode: 5G WIFI Mode
Note:

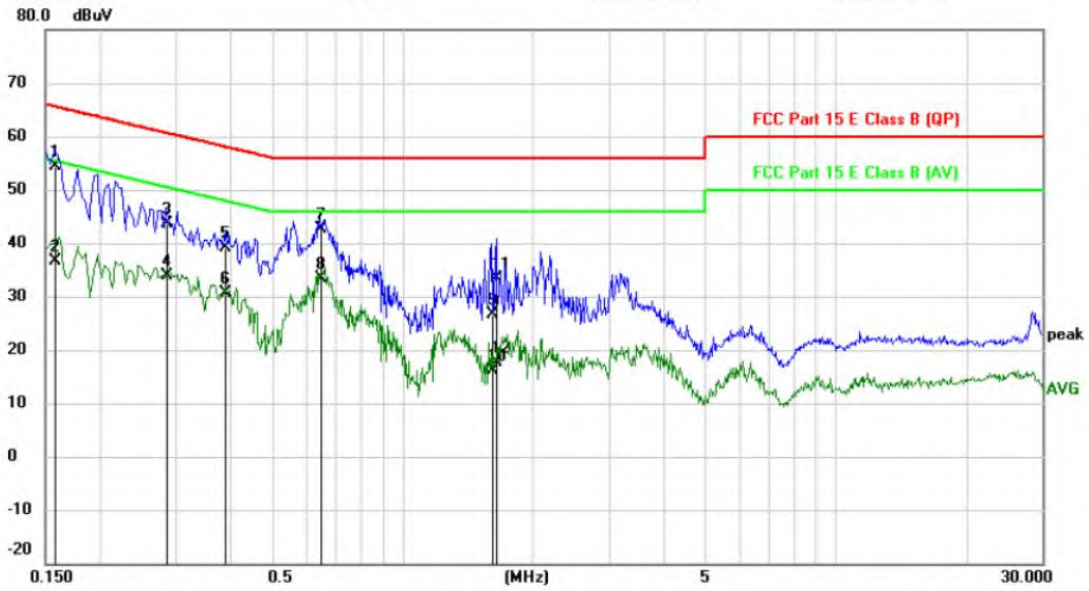
Phase: *L1*
Power: AC 120V/60Hz

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1620	43.08	9.65	52.73	65.36	-12.63	QP	
2		0.1620	26.90	9.65	36.55	55.36	-18.81	AVG	
3		0.2340	37.36	9.66	47.02	62.31	-15.29	QP	
4		0.2340	23.26	9.66	32.92	52.31	-19.39	AVG	
5		0.5620	26.42	9.77	36.19	56.00	-19.81	QP	
6		0.5620	11.74	9.77	21.51	46.00	-24.49	AVG	
7		1.5580	22.75	9.76	32.51	56.00	-23.49	QP	
8		1.5580	9.74	9.76	19.50	46.00	-26.50	AVG	
9		1.6060	22.85	9.76	32.61	56.00	-23.39	QP	
10		1.6060	8.58	9.76	18.34	46.00	-27.66	AVG	
11		2.1060	23.50	9.75	33.25	56.00	-22.75	QP	
12		2.1060	12.63	9.75	22.38	46.00	-23.62	AVG	

Conducted Emission Measurement

File :WB05 Data :#8 Date: 2023/9/11 Time: 19:52:41



Site Phase: N Temperature: 26

Limit: FCC Part 15 E Class B (QP) Power: AC 120V/60Hz Humidity: 60 %

EUT: Clever Hub CleverHub

M/N: CleverHub

Mode: 5G WIFI Mode

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1580	44.72	9.65	54.37	65.57	-11.20	QP	
2		0.1580	27.00	9.65	36.65	55.57	-18.92	AVG	
3		0.2860	33.98	9.66	43.64	60.64	-17.00	QP	
4		0.2860	24.16	9.66	33.82	50.64	-16.82	AVG	
5		0.3899	29.44	9.66	39.10	58.07	-18.97	QP	
6		0.3899	20.96	9.66	30.62	48.07	-17.45	AVG	
7		0.6460	32.97	9.76	42.73	56.00	-13.27	QP	
8		0.6460	23.73	9.76	33.49	46.00	-12.51	AVG	
9		1.6060	16.92	9.75	26.67	56.00	-29.33	QP	
10		1.6060	6.27	9.75	16.02	46.00	-29.98	AVG	
11		1.6460	23.65	9.75	33.40	56.00	-22.60	QP	
12		1.6460	7.84	9.75	17.59	46.00	-28.41	AVG	

END OF REPORT