

FCC PART 15E TEST REPORT FOR CERTIFICATION
On Behalf of

Outlaw Audio, LLC

Stereo Retro Receiver

Model Number: RR2160 Mk II

FCC ID: 2AWOL-2162

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Transmit Power	:	U-NII-1	IEEE 802.11a: 13.10 IEEE 802.11n HT20: 12.81dBm IEEE 802.11n HT40: 12.83dBm IEEE 802.11ac VHT20: 12.79dBm IEEE 802.11ac VHT40: 12.66dBm IEEE 802.11ac VHT80: 12.08dBm
		U-NII-2A	IEEE 802.11a: 12.99dBm IEEE 802.11n HT20: 12.74dBm IEEE 802.11n HT40: 12.77dBm IEEE 802.11ac VHT20: 12.72dBm IEEE 802.11ac VHT40: 12.65dBm IEEE 802.11ac VHT80: 12.02dBm
		U-NII-2C	IEEE 802.11a: 11.89dBm IEEE 802.11n HT20: 11.45dBm IEEE 802.11n HT40: 11.75dBm IEEE 802.11ac VHT20: 11.66dBm IEEE 802.11ac VHT40: 11.75dBm IEEE 802.11ac VHT80: 10.73dBm
		U-NII-3	IEEE 802.11a: 12.18dBm IEEE 802.11n HT20: 11.81dBm IEEE 802.11n HT40: 11.98dBm IEEE 802.11ac VHT20: 11.80dBm IEEE 802.11ac VHT40: 11.98dBm IEEE 802.11ac VHT80: 11.38dBm
Sample Type	:	Prototype production	

Note:

For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

1.2. The antenna information for EUT

Ant No.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	integral antenna	N/A	2

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

FCC ID	:	2AWOL-2162
Product Name	:	Stereo Retro Receiver
Model Number	:	RR2160 Mk II
Software Version	:	A98:3.6.218063 MCU:13
Hardware Version	:	PP1
Operation frequency	:	U-NII-1: 5150 MHz~5250 MHz U-NII-2A: 5250 MHz~5350 MHz U-NII-2C: 5470 MHz~5725 MHz U-NII-3: 5725 MHz~5850 MHz
Number of channel	:	U-NII-1: IEEE 802.11a / n HT20 / ac VHT20: 4 Channels; IEEE 802.11n HT40 / ac VHT40: 2 Channels; IEEE 802.11ac VHT80: 1 Channel. U-NII-2A: IEEE 802.11a / n HT20 / ac VHT20: 4 Channels; IEEE 802.11n HT40 / ac VHT40: 2 Channels; IEEE 802.11ac VHT80: 1 Channel. U-NII-2C: IEEE 802.11a / n HT20 / ac VHT20: 11 Channels; IEEE 802.11n HT40 / ac VHT40: 5 Channels; IEEE 802.11ac VHT80: 2 Channel. U-NII-3: IEEE 802.11a / n HT20 / ac VHT20: 5 Channels; IEEE 802.11n HT40 / ac VHT40: 2 Channels; IEEE 802.11ac VHT80: 1 Channel.
Modulation	:	OFDM(QPSK, BPSK, 16-QAM, 64-QAM,256-QAM)
Transmit Data Rate	:	IEEE 802.11a: 54, 48, 36, 24, 18, 12, 9, 6Mbps; IEEE 802.11n: up 150Mbps; IEEE 802.11ac: up to 433.3Mbps;
Channels Spacing	:	IEEE 802.11a: 20MHz; IEEE 802.11n HT20: 20MHz; IEEE 802.11n HT40: 40MHz; IEEE 802.11ac VHT20: 20MHz; IEEE 802.11ac VHT40: 40MHz; IEEE 802.11ac VHT80: 80MHz;

Transmit Power	:	U-NII-1	IEEE 802.11a: 13.10 IEEE 802.11n HT20: 12.81dBm IEEE 802.11n HT40: 12.83dBm IEEE 802.11ac VHT20: 12.79dBm IEEE 802.11ac VHT40: 12.66dBm IEEE 802.11ac VHT80: 12.08dBm
		U-NII-2A	IEEE 802.11a: 12.99dBm IEEE 802.11n HT20: 12.74dBm IEEE 802.11n HT40: 12.77dBm IEEE 802.11ac VHT20: 12.72dBm IEEE 802.11ac VHT40: 12.65dBm IEEE 802.11ac VHT80: 12.02dBm
		U-NII-2C	IEEE 802.11a: 11.89dBm IEEE 802.11n HT20: 11.45dBm IEEE 802.11n HT40: 11.75dBm IEEE 802.11ac VHT20: 11.66dBm IEEE 802.11ac VHT40: 11.75dBm IEEE 802.11ac VHT80: 10.73dBm
		U-NII-3	IEEE 802.11a: 12.18dBm IEEE 802.11n HT20: 11.81dBm IEEE 802.11n HT40: 11.98dBm IEEE 802.11ac VHT20: 11.80dBm IEEE 802.11ac VHT40: 11.98dBm IEEE 802.11ac VHT80: 11.38dBm
Sample Type	:	Prototype production	

Note:

For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

1.2. The antenna information for EUT

Ant No.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Internal	N/A	2

2. SUMMARY OF TEST

2.1. Summary of test result

Report Section	Description of Test Item	FCC Standard Section	Results
3	6dB Bandwidth & 26dB Bandwidth & 99% Occupied Bandwidth	15.407(a) 15.407(e)	PASS
4	Maximum Conducted Output Power	15.407(a)	PASS
5	Peak Power Spectral Density	15.407(a)	PASS
6	Unwanted Emissions and Band Edge	15.205 15.209 15.407(b)	PASS
7	Frequency Stability	15.407(g)	PASS
8	AC Power Line Conducted Emissions	15.207 15.407(b)(6)	PASS
9	Antenna Requirement	15.203	PASS

Note:

(1) "N/A" denotes test is not applicable in this test report

2.2. Test Facilities

EMC Lab	: Certificated by CNAS, CHINA Registration No.: L5288 Date of registration: November 13, 2017 Certificated by FCC, USA Designation Number: CN1215 Test Firm Registration Number: 722932 Date of registration: November 21, 2017 Certificated by A2LA, USA Registration No.: 4366.01 Date of registration: November 07, 2017 Certificated by Industry Canada CAB identifier No.: CN0035 Date of registration: January 04, 2019 Certificated by VCCI, Japan Registration No.: R-13663; C-14103 Date of registration: July 25, 2017 This Certificate is valid until: July 24, 2020 Certificated by TUV Rheinland, Germany Registration No.: UA 50413872 0001 Date of registration: July 31, 2018 Certificated by TUV/PS, Shenzhen Registration No.: SCN1017 Date of registration: January 27, 2011 Certificated by Intertek ETL SEMKO Registration No.: 2011-RTL-L2-64 Date of registration: April 28, 2011 Certificated by Nemko, Hong Kong Registration No.: 175193 Date of registration: May 4, 2011
Name of Firm	: EST Technology Co., Ltd.
Site Location	: Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China

2.3. Measurement uncertainty for EST Technology Co., Ltd.

Test Item	Uncertainty
Uncertainty for Conduction emission test	2.54dB
Uncertainty for Radiation Emission test (30MHz-1GHz)	3.62
Uncertainty for Radiation Emission test (1GHz to 18GHz)	4.86
Uncertainty for spurious emissions test (18GHz to 40GHz)	4.67
Uncertainty for radio frequency	7×10^{-8}
Uncertainty for conducted RF Power	0.20dB
Uncertainty for Power density test	0.26dB
Temperature	$\pm 0.6^{\circ}\text{C}$
Humidity	$\pm 4.0\%$
Volatage DC	$\pm 1.0\%$
Volatage (AC, <10KHz)	$\pm 1.5\%$

Note:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

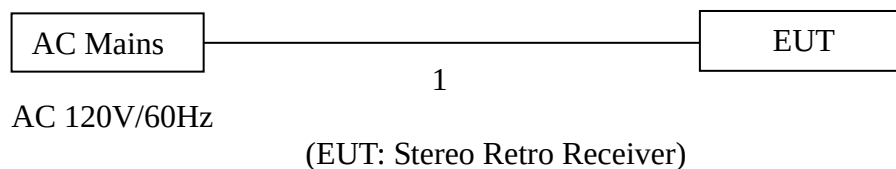
2.4. Assistant equipment used for test

Item	Equipment	Brand	Model Name/Type No.	FCC ID	Series No.
-	-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.6m	AC Cable

2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 (or 1.5) meter high above ground.



2.6. Test Mode

Pre-scan has been combined all possible modulations and data rates to determine the worst case test mode, the worst case test mode was selected for the final test as listed below.

Test Item	Test Mode	Channel	Modulation	Data rate
6dB Bandwidth	IEEE 802.11a	149/157/165	OFDM	6Mbps
	IEEE 802.11n HT20	149/157/165	OFDM	MCS0
	IEEE 802.11n HT40	151/159	OFDM	MCS0
	IEEE 802.11ac VHT20	149/157/165	OFDM	MCS0
	IEEE 802.11ac VHT40	151/159	OFDM	MCS0
	IEEE 802.11ac VHT80	155	OFDM	MCS0
26dB Bandwidth	IEEE 802.11a	36/40/48/52/60/64/100/116/140	OFDM	6Mbps
	IEEE 802.11n HT20	36/40/48/52/60/64/100/116/140	OFDM	MCS0
	IEEE 802.11n HT40	38/46/54/62/102/114/134	OFDM	MCS0
	IEEE 802.11ac VHT20	36/40/48/52/60/64/100/116/140	OFDM	MCS0
	IEEE 802.11ac VHT40	38/46/54/62/102/114/134	OFDM	MCS0
	IEEE 802.11ac VHT80	42/58/106/122	OFDM	MCS0
99% Occupied Bandwidth	IEEE 802.11a	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	6Mbps
	IEEE 802.11n HT20	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	MCS0
	IEEE 802.11n HT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT20	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	MCS0
	IEEE 802.11ac VHT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT80	42/58/106/122/155	OFDM	MCS0
Maximum Conducted Output Power	IEEE 802.11a	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	6Mbps
	IEEE 802.11n HT20	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	MCS0
	IEEE 802.11n HT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT20	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	MCS0
	IEEE 802.11ac VHT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT80	42/58/106/122/155	OFDM	MCS0

Peak Power Spectral Density	IEEE 802.11a	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	6Mbps
	IEEE 802.11n HT20	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	MCS0
	IEEE 802.11n HT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT20	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	MCS0
	IEEE 802.11ac VHT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT80	42/58/106/122/155	OFDM	MCS0
Unwanted Emissions and Band Edge(Above 1GHz)	IEEE 802.11a	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	6Mbps
	IEEE 802.11n HT20	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	MCS0
	IEEE 802.11n HT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT20	36/40/48/52/60/64/100/116/140/149/157/165	OFDM	MCS0
	IEEE 802.11ac VHT40	38/46/54/62/102/114/134/151/159	OFDM	MCS0
	IEEE 802.11ac VHT80	42/58/106/122/155	OFDM	MCS0
Unwanted Emissions Below 1GHz	IEEE 802.11a	100	OFDM	6Mbps
Frequency Stability	IEEE 802.11a	36/64/100/149	OFDM	6Mbps
AC Power Line Conducted Emissions	IEEE 802.11a	100	OFDM	6Mbps

Note:

1. In radiated measurement, the EUT had been pre-scan on the positioned of each 3 axis(X,Y,Z), the worst case was found when positioned on **X-plane**.

2.7. Channel List

Band	Mode	Channel	Frequency (MHz)
U-NII-1	IEEE 802.11a & n HT20 & ac VHT20	36	5180
		40	5200
		44	5220
		48	5240
	IEEE 802.11n HT40 & ac VHT40	38	5190
		46	5230
	IEEE 802.11ac VHT80	42	5210
U-NII-2A	IEEE 802.11a & n HT20 & ac VHT20	52	5260
		56	5280
		60	5300
		64	5320
	IEEE 802.11n HT40 & ac VHT40	54	5270
		62	5310
	IEEE 802.11ac VHT80	58	5290
U-NII-2C	IEEE 802.11a & n HT20 & ac VHT20	100	5500
		104	5520
		108	5540
		112	5560
		116	5580
		120	5600
		124	5620
		128	5640
		132	5660
		136	5680
		140	5700
	IEEE 802.11n HT40 & ac VHT40	102	5510
		110	5550
		118	5590
		126	5630
		134	5670
	IEEE 802.11ac VHT80	106	5530
		122	5610
U-NII-3	IEEE 802.11a & n HT20 & ac VHT20	149	5745
		153	5765
		157	5785
		161	5805
		165	5825
	IEEE 802.11n HT40 & ac VHT40	151	5755
		159	5795
	IEEE 802.11ac VHT80	155	5775

2.8. Power Setting of Test Software

Software Name	cktszsss32		
U-NII-1			
Frequency(MHz)	5180	5200	5240
IEEE 802.11a Setting	56,12	56,12	56,12
IEEE 802.11n HT20 Setting	56,12	56,12	56,12
IEEE 802.11ac VHT20 Setting	56,12	56,12	56,12
Frequency(MHz)	5190	5230	
IEEE 802.11n HT40 Setting	56,12	56,12	
IEEE 802.11ac VHT40 Setting	56,12	56,12	
Frequency(MHz)	5210		
IEEE 802.11ac VHT80 Setting	56,12		
U-NII-2A			
Frequency(MHz)	5260	5300	5320
IEEE 802.11a Setting	56,12	56,12	56,12
IEEE 802.11n HT20 Setting	56,12	56,12	56,12
IEEE 802.11ac VHT20 Setting	56,12	56,12	56,12
Frequency(MHz)	5270	5310	
IEEE 802.11n HT40 Setting	56,12	56,12	
IEEE 802.11ac VHT40 Setting	56,12	56,12	
Frequency(MHz)	5290		
IEEE 802.11ac VHT80 Setting	56,12		
U-NII-2C			
Frequency(MHz)	5500	5580	5700
IEEE 802.11a Setting	56,12	56,12	56,12
IEEE 802.11n HT20 Setting	56,12	56,12	56,12
IEEE 802.11ac VHT20 Setting	56,12	56,12	56,12
Frequency(MHz)	5510	5590	5670
IEEE 802.11n HT40 Setting	56,12	56,12	56,12
IEEE 802.11ac VHT40 Setting	56,12	56,12	56,12
Frequency(MHz)	5530	5610	
IEEE 802.11ac VHT80 Setting	56,12	56,12	
U-NII-3			
Frequency(MHz)	5745	5785	5825
IEEE 802.11a Setting	56,12	56,12	56,12
IEEE 802.11n HT20 Setting	56,12	56,12	56,12
IEEE 802.11ac VHT20 Setting	56,12	56,12	56,12
Frequency(MHz)	5755	5795	
IEEE 802.11n HT40 Setting	56,12	56,12	
IEEE 802.11ac VHT40 Setting	56,12	56,12	
Frequency(MHz)	5775		
IEEE 802.11ac VHT80 Setting	56,12		

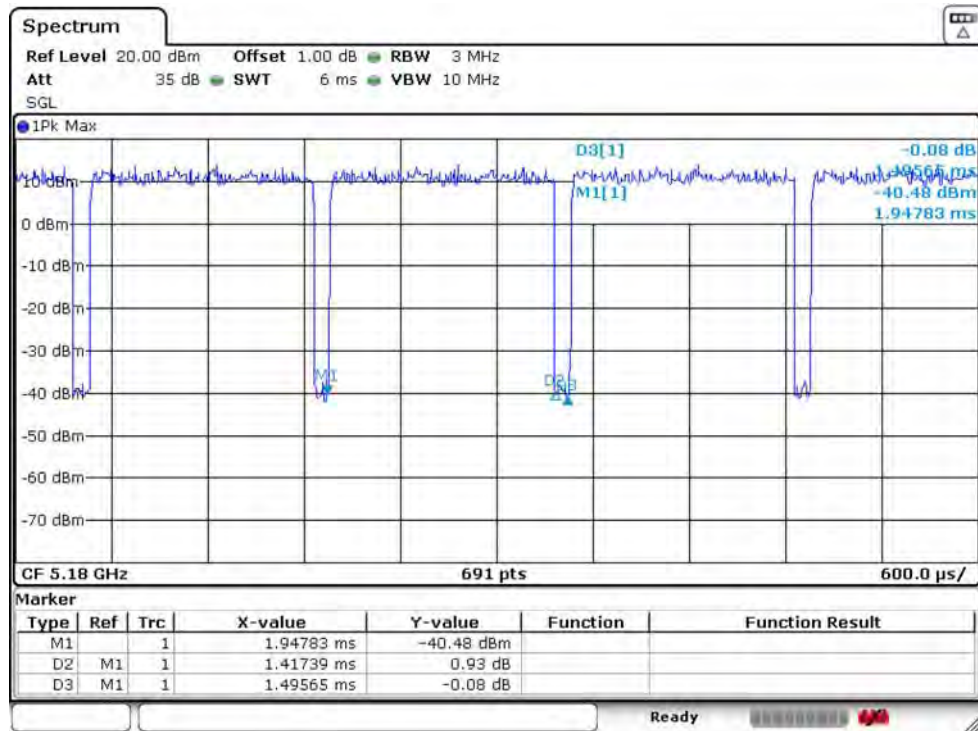
2.9. Duty Cycle of Test Signal

Temperature	25.5℃	Relative Humidity		52%	Test Voltage		120V/60Hz
Mode	Frequency (MHz)	On time (ms)	Total Time (ms)	Duty Cycle (%)	Duty Factor (dB)	1/T (Hz)	VBW Setting (Hz)
IEEE 802.11a	5180	1.41739	1.49565	94.77	0.23	706	706
IEEE 802.11n HT20	5180	1.33043	1.41739	93.86	0.27	752	752
IEEE 802.11n HT40	5190	1.33913	1.41739	94.48	0.25	747	747
IEEE 802.11ac VHT20	5180	0.66957	0.74783	89.54	0.48	1493	1493
IEEE 802.11ac VHT40	5190	0.67826	0.76522	88.64	0.52	1474	1474
IEEE 802.11ac VHT80	5210	0.34783	0.42609	81.63	0.88	2875	2875

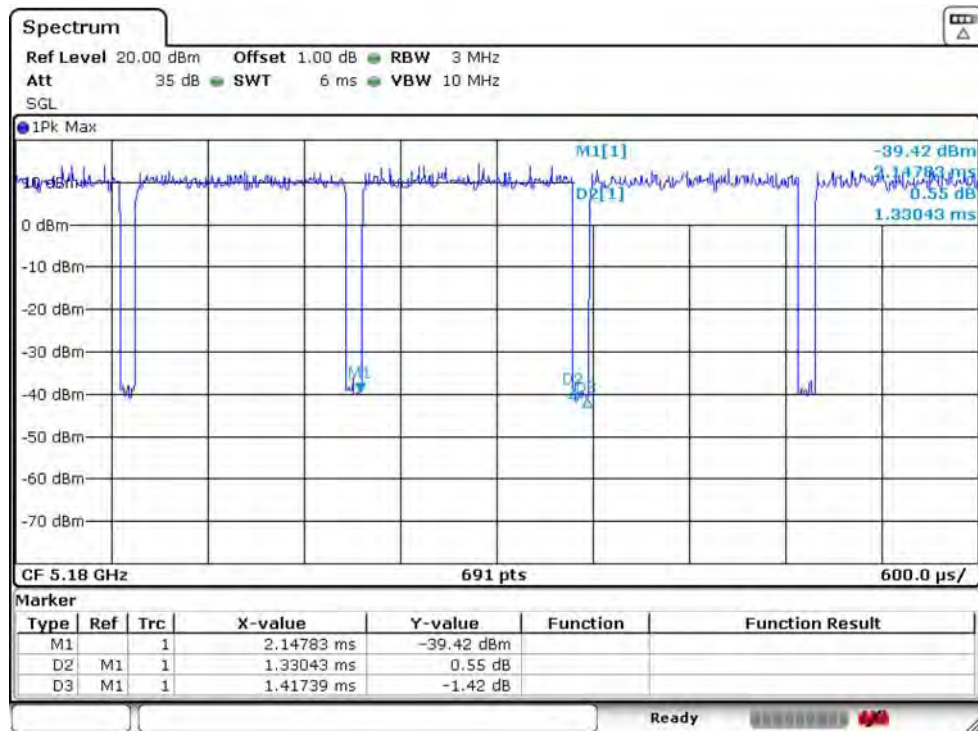
Note:

1. Duty Cycle=On Time/Total Time×100%.
2. Duty Factor=10×LOG(1/Duty Cycle).
3. If duty cycle <98 %, the conducted average output power and average power spectral density should be add duty factor.
4. If duty cycle ≥98 %,the EUT is consider to be transmitting continuously,the conducted average output power and average power spectral density no need to add duty factor.
5. The on-time time is transmission duration(T).
6. The VBW Setting is use for RMS measurement in Unwanted Emissions and Band Edge(Above 1GHz) Test.

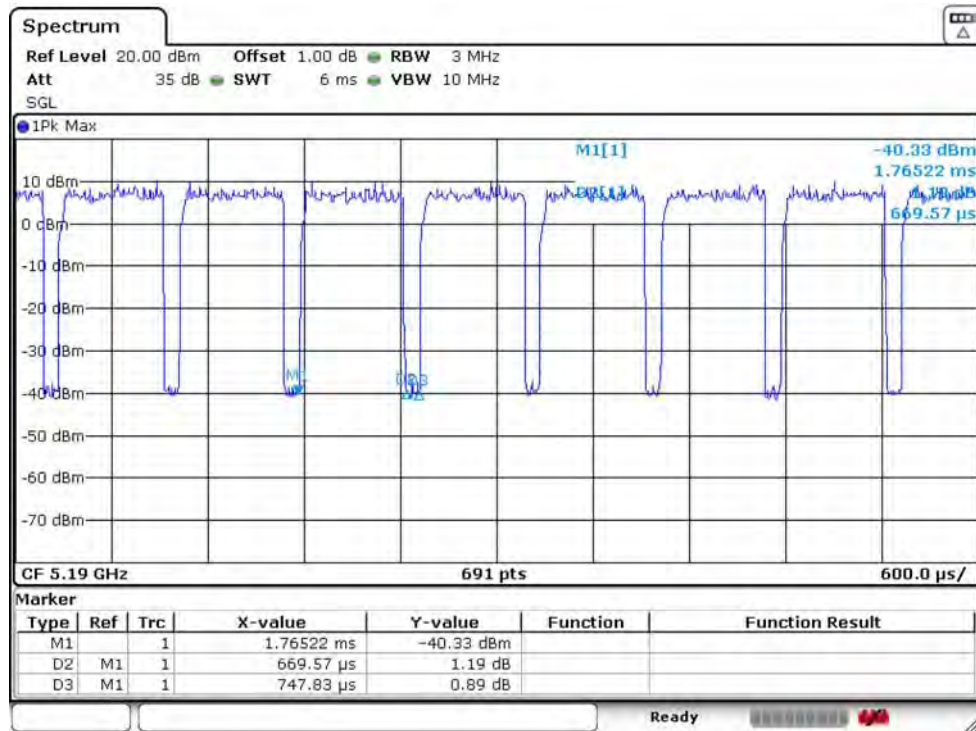
IEEE 802.11a 5180MHz



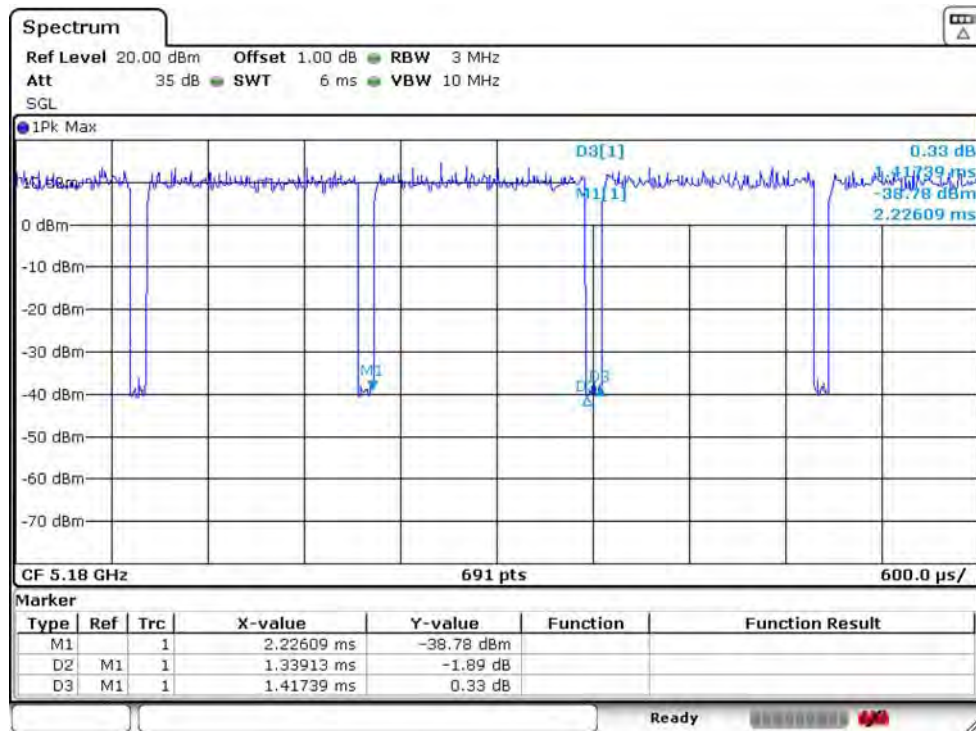
IEEE 802.11n HT20 5180MHz



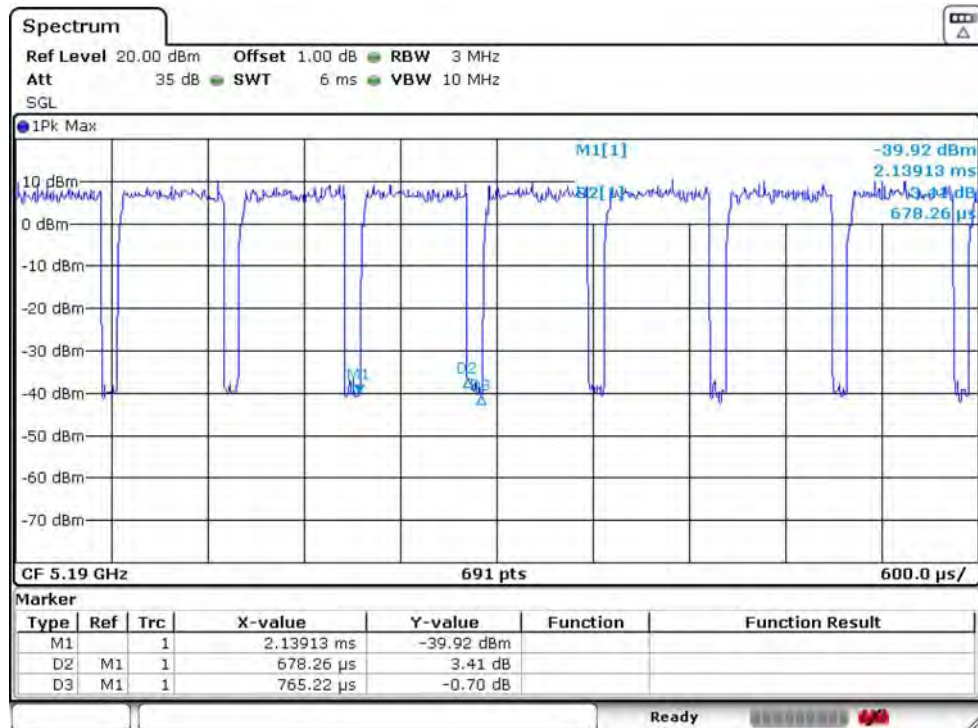
IEEE 802.11n HT40 5190MHz



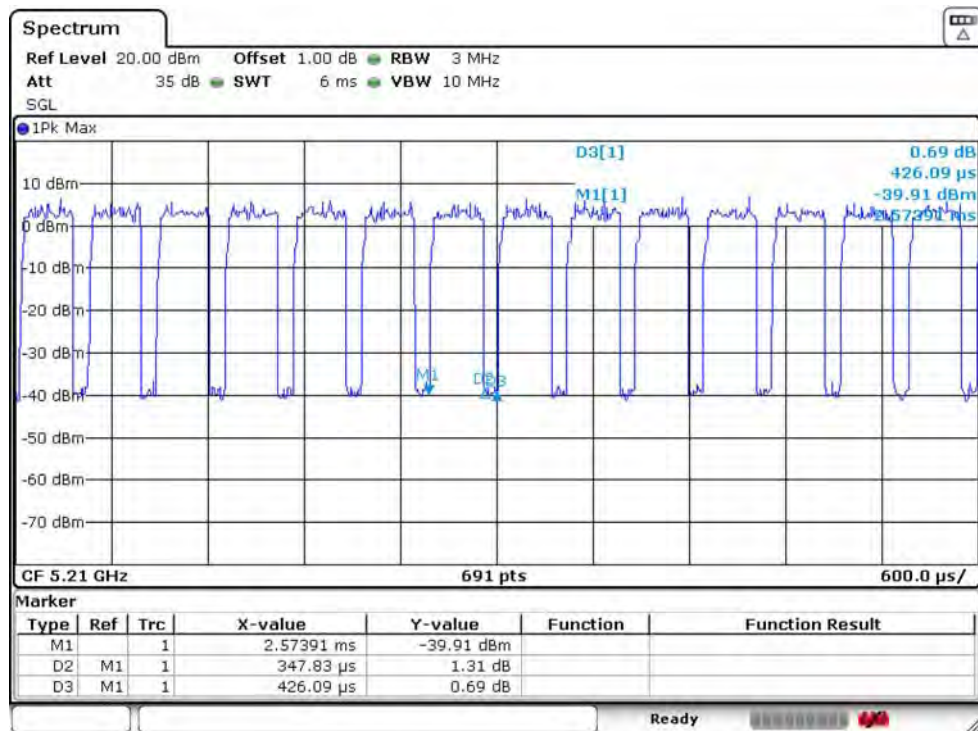
IEEE 802.11ac VHT20 5180MHz



IEEE 802.11ac VHT40 5190MHz



IEEE 802.11ac VHT80 5210MHz



2.10. Test Equipment List

For AC power conducted emissions test						
Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESHS30	EST-E001	LISAI	June 13,20	1 Year
Artificial Mains Network	Rohde & Schwarz	ENV216	EST-E002	LISAI	June 13,20	1 Year
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	EST-E078	LISAI	June 13,20	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A

For radiated emissions test(9KHz-30MHz)						
Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR7	EST-E047	LISAI	June 13,20	1 Year
Active Loop Antenna	SCHWARZB ECK	FMZB 1519B	EST-E054	LISAI	June 13,20	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A
9kHz-30MHz Cable	N/A	EST-001	N/A	N/A	N/A	N/A

For radiated emissions test(30MHz-1000MHz)						
Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESR7	EST-E047	LISAI	June 13,20	1 Year
Bilog Antenna	Teseq	CBL 6111D	EST-E034	LISAI	June 13,20	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A
30-1000MHz Cable	N/A	EST-002	N/A	N/A	N/A	N/A

For radiated emissions test(Above 1000MHz)						
Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
Horn Antenna	SCHWARZB ECK	BBHA 9120 D	EST-E031	LISAI	June 13,20	1 Year
Signal Amplifier	SCHWARZB ECK	BBV9718	EST-E032	LISAI	June 13,20	1 Year
Spectrum Analyzer	Rohde & Schwarz	FSV40	EST-E069	LISAI	June 13,20	1 Year
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A
Above 1GHz Cable	N/A	EST-003	N/A	N/A	N/A	N/A

For connect EUT antenna terminal test						
Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.
TS 8997	Rohde & Schwarz	/	/	/	/	/
Open Switch and Control Unit	Rohde & Schwarz	OSP-B157WB	EST-E036	LISAI	June 13,20	1Year
Signal and Spectrum Analyzer	Rohde & Schwarz	FSV	EST-E037	LISAI	June 13,20	1 Year
Signal Generator	Rohde & Schwarz	SMB100A	EST-E038	LISAI	June 13,20	1 Year
Vector Signal Generator	Rohde & Schwarz	SMBV100A	EST-E039	LISAI	June 13,20	1Year
Test Software	Rohde & Schwarz	WMS32	V10.50.00	N/A	N/A	N/A
Temperature controller	Terchy	MHQ	EST-E101	LISAI	June 13,20	1 Year

3. 6dB BANDWIDTH & 26dB BANDWIDTH & 99% OCCUPIED BANDWIDTH

3.1. Limit

Band	Frequency (MHz)	Test Item	Limit
U-NII-1	5150-5250	26dB Bandwidth&99% Occupied Bandwidth	N/A
U-NII-2A	5250-5350	26dB Bandwidth&99% Occupied Bandwidth	N/A
U-NII-2C	5470-5725	26dB Bandwidth&99% Occupied Bandwidth	N/A
U-NII-3	5725-5850	6dB Bandwidth&99% Occupied Bandwidth	6dB Bandwidth $\geq$ 500KHz

3.2. Test Setup



3.3. Spectrum Analyzer Setting

6dB Bandwidth	
Spectrum Parameters	Setting
RBW	100KHz
VBW	300KHz
Span	40MHz(20MHz Bandwidth mode) 60MHz(40MHz Bandwidth mode) 120MHz(80MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

26dB Bandwidth	
Spectrum Parameters	Setting
RBW	approximately 1% of the emission bandwidth
VBW	> RBW
Span	40MHz(20MHz Bandwidth mode) 60MHz(40MHz Bandwidth mode) 120MHz(80MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

99% Occupied Bandwidth	
Spectrum Parameters	Setting
RBW	1% to 5% of the OBW
VBW	approximately three times the RBW
Span	between 1.5 times and 5.0 times the OBW
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

3.4. Test Procedure

For 26dB Bandwidth Measurement :

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 3.3.
- Set the EUT transmit continuously with maximum output power.
- Allow trace to stabilize, measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
- Repeat above procedures until all modes and channels were measured.
- Record the results in the test report.

For 6dB Bandwidth Measurement :

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 3.3.
- Set the EUT transmit continuously with maximum output power.
- Allow 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 6 dB relative to the maximum level measured in the fundamental emission.
- Repeat above procedures until all modes and channels were measured.
- Record the results in the test report.

For 99% Occupied Bandwidth Measurement :

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 3.3.
- Set the EUT transmit continuously with maximum output power.
- Allow trace to stabilize, use the 99% power bandwidth function to measure bandwidth.
- Repeat above procedures until all modes and channels were measured.
- Record the results in the test report.

3.5. Test Result

Temperature	25.5℃	Relative Humidity		52%	Test Voltage	120V/60Hz
26dB Bandwidth&99% Occupied Bandwidth						
BAND	Test Mode	Fre (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Calculate Power Limit (W)	Calculate Power Limit (dBm)
U-NII-1	IEEE 802.11a	5180	21.48	16.96		
		5200	21.65	16.96		
		5240	21.42	16.85		
	IEEE 802.11n HT20	5180	21.82	18.12		
		5200	21.53	17.89		
		5240	21.53	17.95		
	IEEE 802.11ac VHT20	5180	21.65	17.95		
		5200	21.53	18.00		
		5240	21.53	18.12		
	IEEE 802.11n HT40	5190	40.20	36.82		
		5230	40.03	36.70		
	IEEE 802.11ac VHT40	5190	40.12	36.70		
		5230	40.20	36.70		
	IEEE 802.11ac VHT80	5210	81.97	76.07		
U-NII-2A	IEEE 802.11a	5260	21.36	16.73	0.2500	23.98
		5300	21.25	16.79	0.2500	23.98
		5320	21.48	16.90	0.2500	23.98
	IEEE 802.11n HT20	5260	21.65	18.12	0.2500	23.98
		5300	21.77	17.95	0.2500	23.98
		5320	21.65	18.12	0.2500	23.98
	IEEE 802.11ac VHT20	5260	21.53	18.00	0.2500	23.98
		5300	21.65	17.89	0.2500	23.98
		5320	21.71	18.06	0.2500	23.98
	IEEE 802.11n HT40	5270	39.86	36.82	0.2500	23.98
		5310	39.94	36.70	0.2500	23.98
	IEEE 802.11ac VHT40	5270	40.03	36.70	0.2500	23.98
		5310	40.03	36.70	0.2500	23.98
	IEEE 802.11ac VHT80	5290	81.45	75.54	0.2500	23.98

BAND	Test Mode	Fre (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Calculate Power Limit (W)	Calculate Power Limit (dBm)
U-NII-2C	IEEE 802.11a	5500	21.48	16.96	0.2500	23.98
		5580	21.36	16.96	0.2500	23.98
		5700	21.53	16.90	0.2500	23.98
	IEEE 802.11n HT20	5500	21.48	17.89	0.2500	23.98
		5580	21.30	17.89	0.2500	23.98
		5700	21.65	18.18	0.2500	23.98
	IEEE 802.11ac VHT20	5500	21.59	17.89	0.2500	23.98
		5580	21.48	17.89	0.2500	23.98
		5700	21.77	17.89	0.2500	23.98
	IEEE 802.11n HT40	5510	40.12	36.58	0.2500	23.98
		5590	39.94	36.82	0.2500	23.98
		5670	40.12	36.70	0.2500	23.98
	IEEE 802.11ac VHT40	5510	39.86	36.58	0.2500	23.98
		5590	40.20	36.58	0.2500	23.98
		5670	40.12	36.70	0.2500	23.98
	IEEE 802.11ac VHT80	5530	81.62	75.54	0.2500	23.98
		5610	81.97	75.54	0.2500	23.98

Temperature	25.5℃	Relative Humidity	52%	Test Voltage	120V/60Hz	
6dB Bandwidth&99% Occupied Bandwidth						
BAND	Test Mode	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	6dB BW Min Limit (MHz)	Result
U-NII-3	IEEE 802.11a	5745	16.31	16.79	0.5	PASS
		5785	16.31	16.90	0.5	PASS
		5825	16.31	17.02	0.5	PASS
	IEEE 802.11n HT20	5745	17.55	17.95	0.5	PASS
		5785	17.52	17.77	0.5	PASS
		5825	17.30	17.95	0.5	PASS
	IEEE 802.11ac VHT20	5745	17.55	17.95	0.5	PASS
		5785	17.52	18.29	0.5	PASS
		5825	17.52	18.00	0.5	PASS
	IEEE 802.11n HT40	5755	36.10	36.70	0.5	PASS
		5795	36.26	36.70	0.5	PASS
	IEEE 802.11ac VHT40	5755	36.26	36.70	0.5	PASS
		5795	36.27	36.70	0.5	PASS
	IEEE 802.11ac VHT80	5775	75.48	75.72	0.5	PASS

Note :

For Band U-NII-2A and U-NII-2C,the maximum conducted output power limit is 250mw or $11+10 \times \log B$, which is lesser,where B is the 26dB Bandwidth in MHz.So in this section,the maximum conducted output power limit can calculate with 26dB Bandwidth.

3.6. Test Result

U-NII-1 IEEE 802.11a 5180MHz

26dB Bandwidth



99% Occupied Bandwidth



U-NII-1 IEEE 802.11a 5200MHz

26dB Bandwidth



99% Occupied Bandwidth



U-NII-1 IEEE 802.11a 5240MHz

26dB Bandwidth



99% Occupied Bandwidth



U-NII-1 IEEE 802.11n HT20 5180MHz**26dB Bandwidth****99% Occupied Bandwidth****U-NII-1 IEEE 802.11n HT20 5200MHz****26dB Bandwidth****99% Occupied Bandwidth****U-NII-1 IEEE 802.11n HT20 5240MHz****26dB Bandwidth****99% Occupied Bandwidth**

U-NII-1 IEEE 802.11ac VHT20 5180MHz**26dB Bandwidth****99% Occupied Bandwidth****U-NII-1 IEEE 802.11ac VHT20 5200MHz****26dB Bandwidth****99% Occupied Bandwidth****U-NII-1 IEEE 802.11ac VHT20 5240MHz****26dB Bandwidth****99% Occupied Bandwidth**

U-NII-1 IEEE 802.11n HT40 5190MHz**26dB Bandwidth****99% Occupied Bandwidth****U-NII-1 IEEE 802.11n HT40 5230MHz****26dB Bandwidth****99% Occupied Bandwidth****U-NII-1 IEEE 802.11ac VHT40 5190MHz****26dB Bandwidth****99% Occupied Bandwidth**

U-NII-1 IEEE 802.11ac VHT40 5230MHz

26dB Bandwidth



99% Occupied Bandwidth

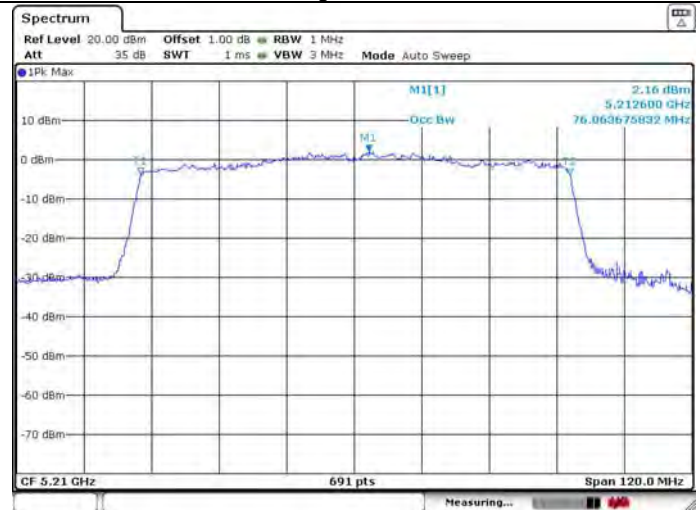


U-NII-1 IEEE 802.11ac VHT80 5210MHz

26dB Bandwidth



99% Occupied Bandwidth



U-NII-2A IEEE 802.11a 5260MHz

26dB Bandwidth



99% Occupied Bandwidth



U-NII-2A IEEE 802.11a 5300MHz

26dB Bandwidth



99% Occupied Bandwidth



U-NII-2A IEEE 802.11a 5320MHz

26dB Bandwidth

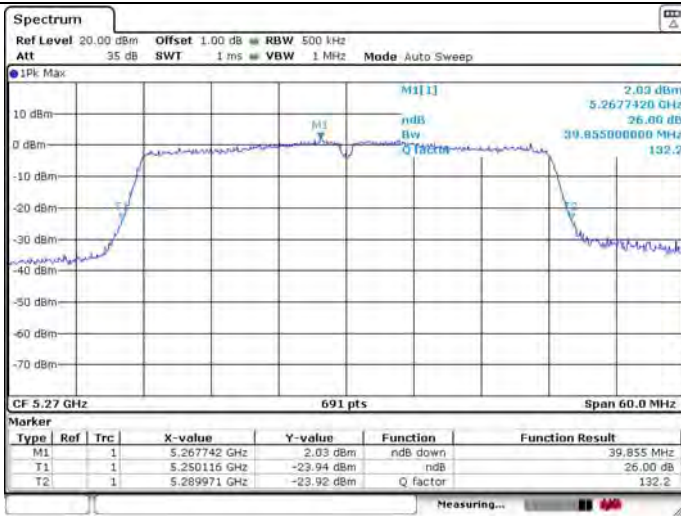
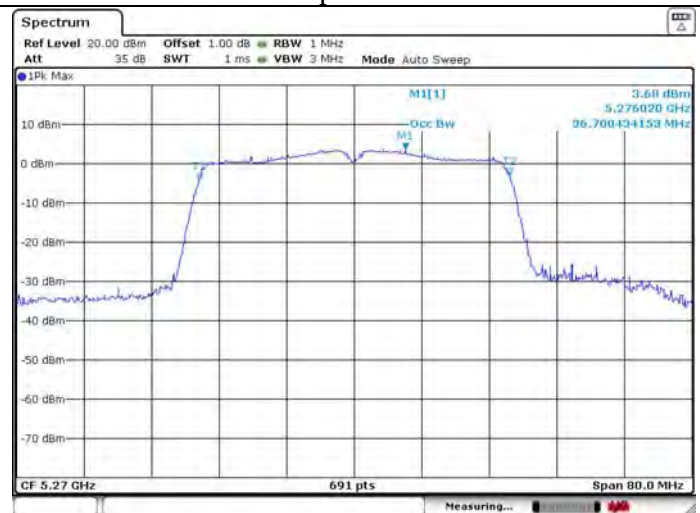


99% Occupied Bandwidth



U-NII-2A IEEE 802.11n HT20 5260MHz**26dB Bandwidth****99% Occupied Bandwidth****U-NII-2A IEEE 802.11n HT20 5300MHz****26dB Bandwidth****99% Occupied Bandwidth****U-NII-2A IEEE 802.11n HT20 5320MHz****26dB Bandwidth****99% Occupied Bandwidth**

U-NII-2A IEEE 802.11ac VHT20 5260MHz**26dB Bandwidth****99% Occupied Bandwidth****U-NII-2A IEEE 802.11ac VHT20 5300MHz****26dB Bandwidth****99% Occupied Bandwidth****U-NII-2A IEEE 802.11ac VHT20 5320MHz****26dB Bandwidth****99% Occupied Bandwidth**

U-NII-2A IEEE 802.11n HT40 5270MHz**26dB Bandwidth****99% Occupied Bandwidth****U-NII-2A IEEE 802.11n HT40 5310MHz****26dB Bandwidth****99% Occupied Bandwidth****U-NII-2A IEEE 802.11ac VHT40 5270MHz****26dB Bandwidth****99% Occupied Bandwidth**

U-NII-2A IEEE 802.11ac VHT40 5310MHz**26dB Bandwidth****99% Occupied Bandwidth****U-NII-2A IEEE 802.11ac VHT80 5290MHz****26dB Bandwidth****99% Occupied Bandwidth**

U-NII-2C IEEE 802.11a 5500MHz**26dB Bandwidth****99% Occupied Bandwidth****U-NII-2C IEEE 802.11a 5580MHz****26dB Bandwidth****99% Occupied Bandwidth****U-NII-2C IEEE 802.11a 5700MHz****26dB Bandwidth****99% Occupied Bandwidth**

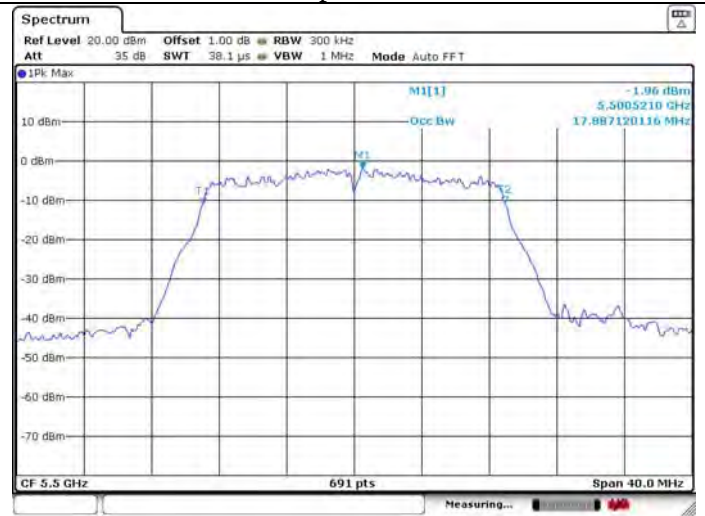
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U-NII-2C IEEE 802.11ac VHT20 5500MHz

26dB Bandwidth



99% Occupied Bandwidth



U-NII-2C IEEE 802.11ac VHT20 5580MHz

26dB Bandwidth

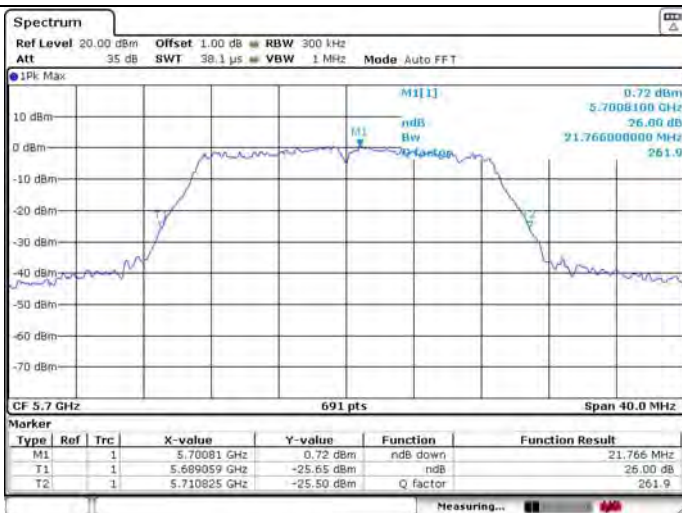


99% Occupied Bandwidth



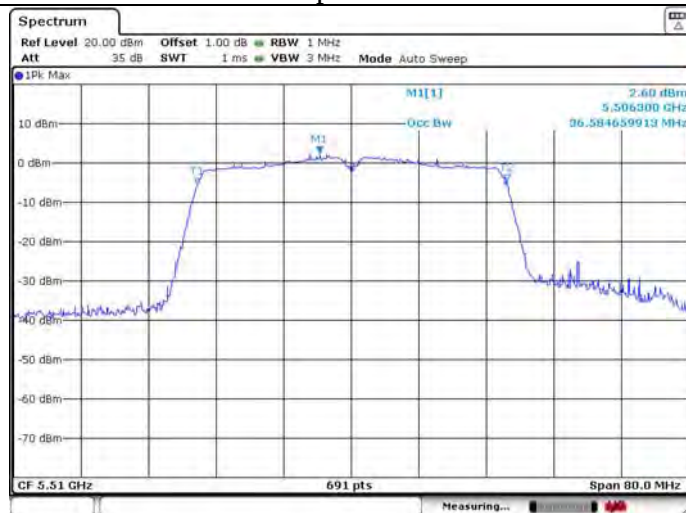
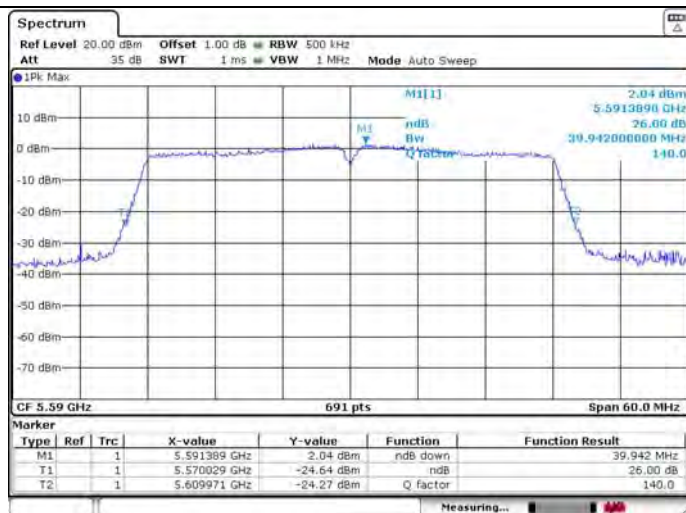
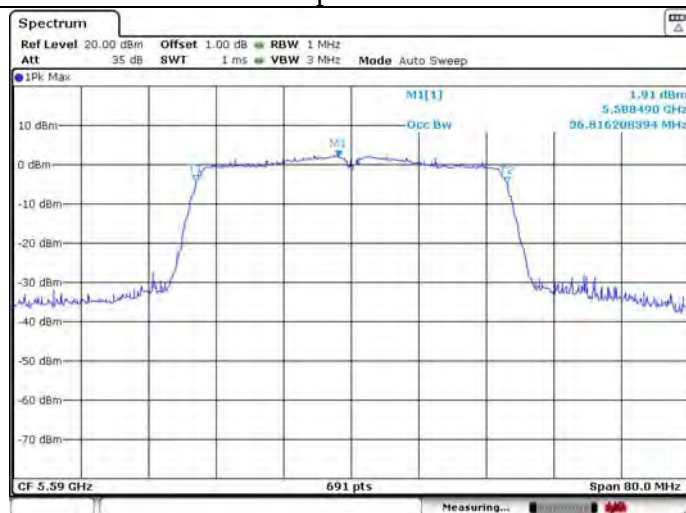
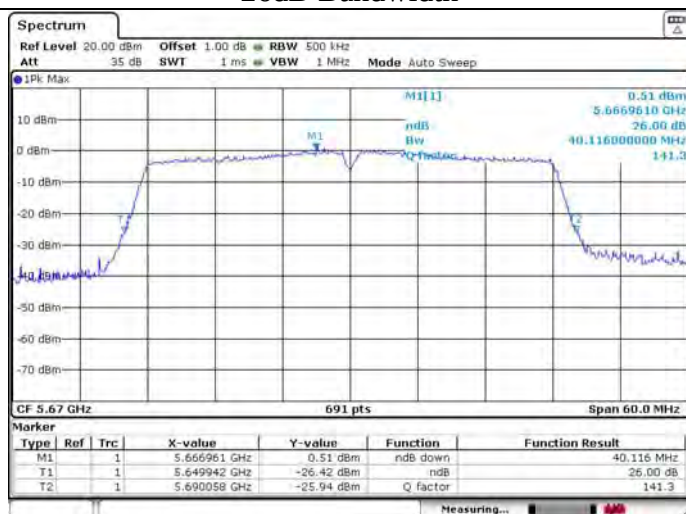
U-NII-2C IEEE 802.11ac VHT20 5700MHz

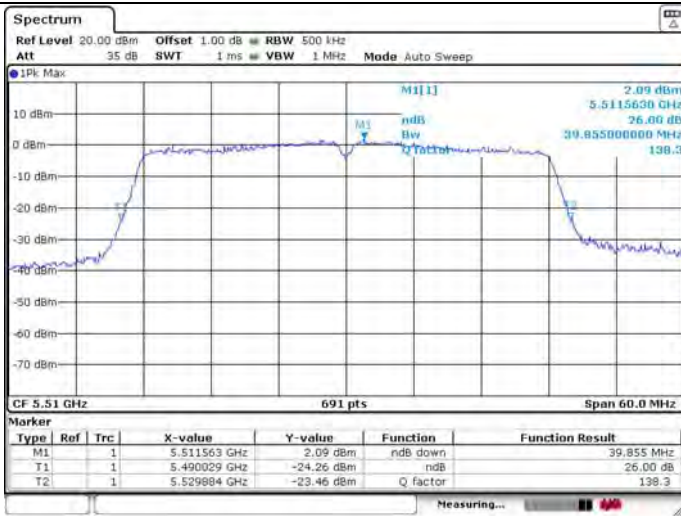
26dB Bandwidth

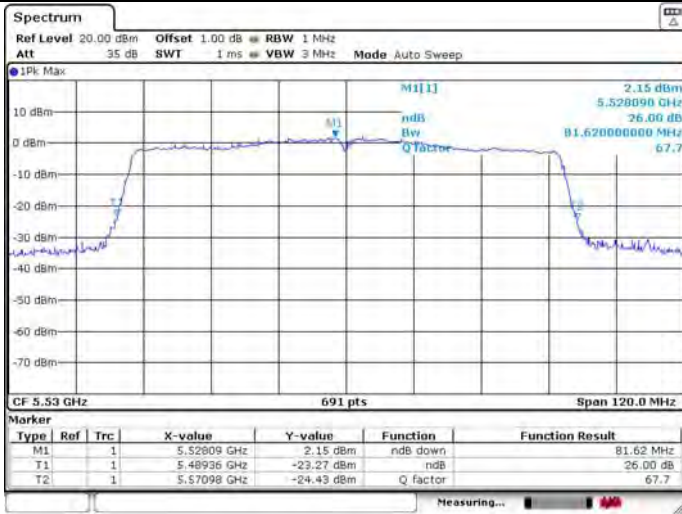
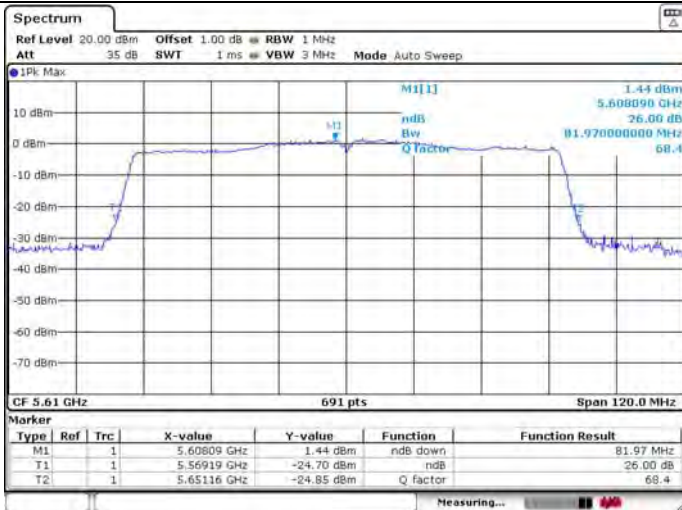


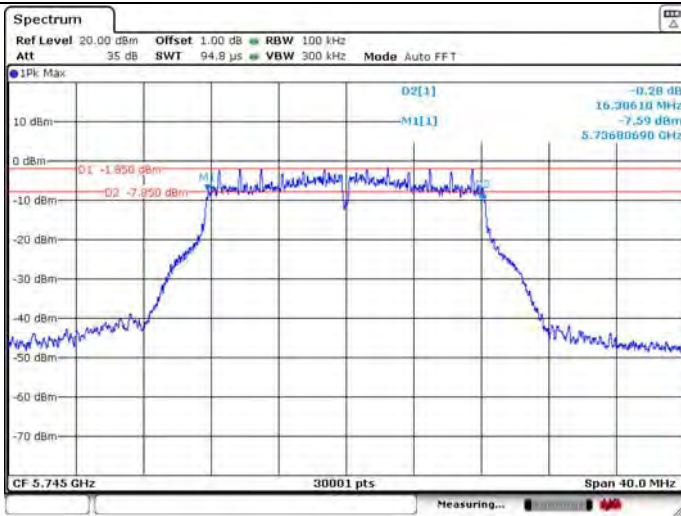
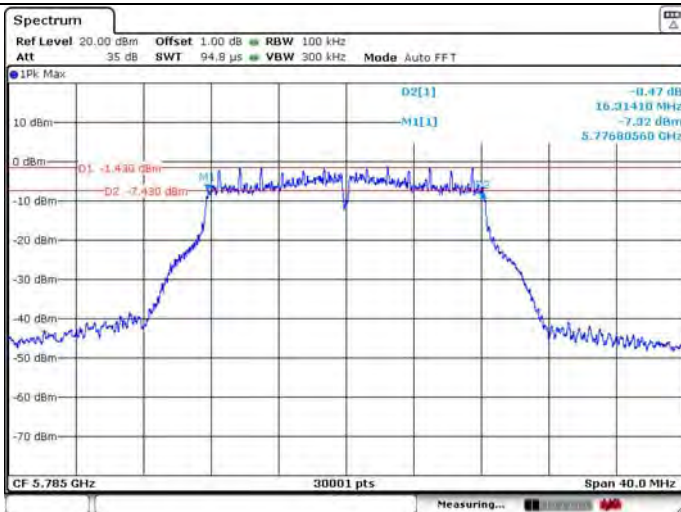
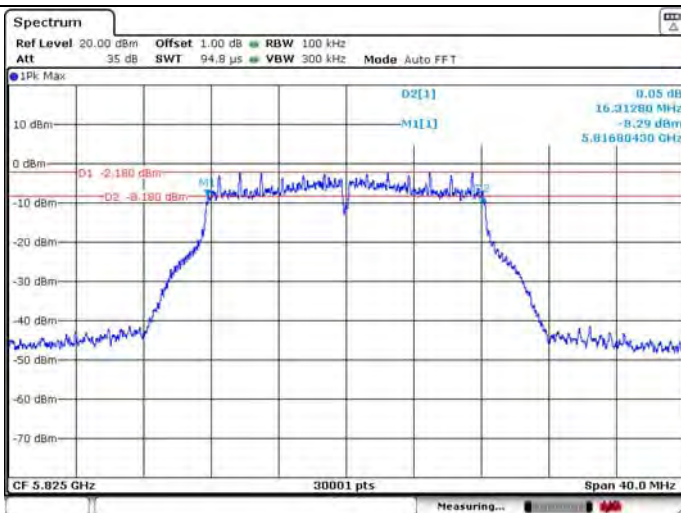
99% Occupied Bandwidth

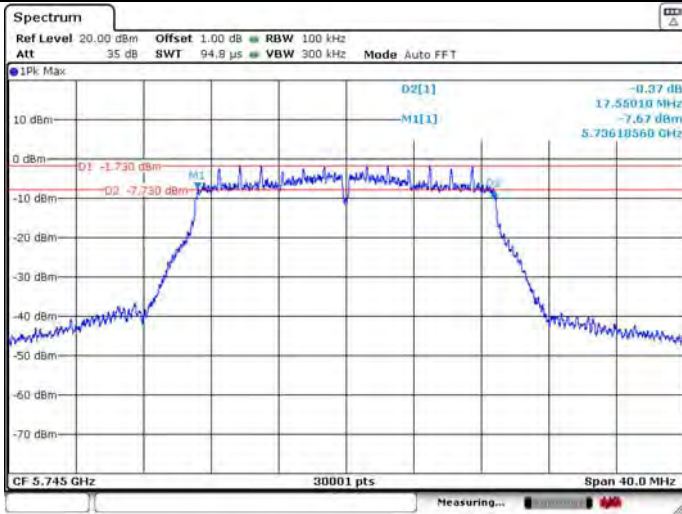
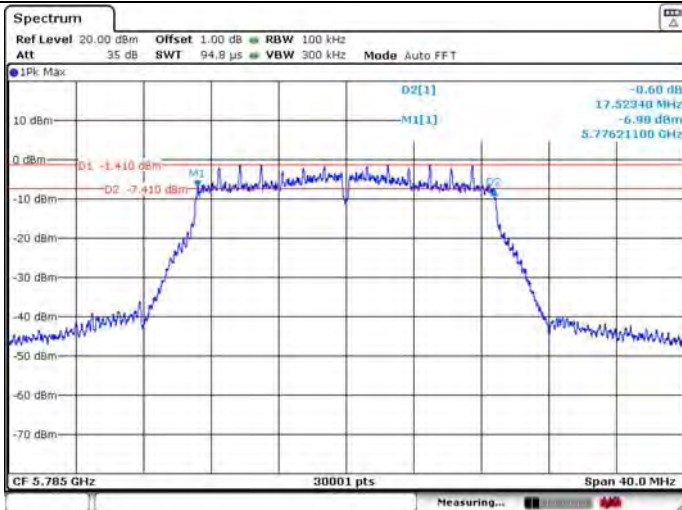
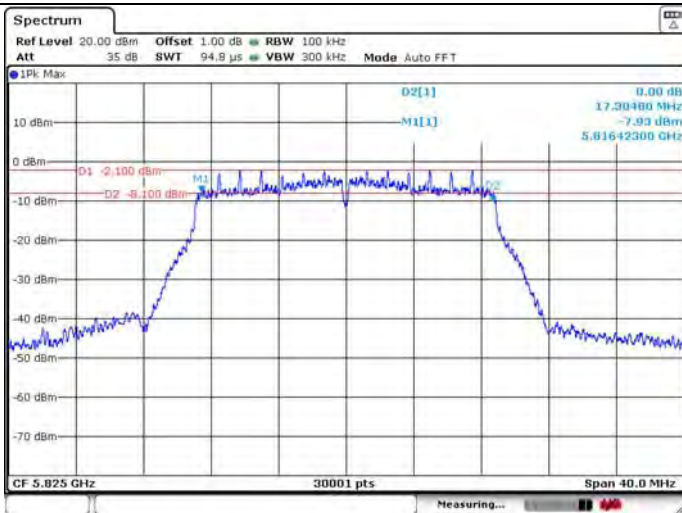


U-NII-2C IEEE 802.11n HT40 5510MHz**26dB Bandwidth****99% Occupied Bandwidth****U-NII-2C IEEE 802.11n HT40 5590MHz****26dB Bandwidth****99% Occupied Bandwidth****U-NII-2C IEEE 802.11n HT40 5670MHz****26dB Bandwidth****99% Occupied Bandwidth**

U-NII-2C IEEE 802.11ac VHT40 5510MHz**26dB Bandwidth****99% Occupied Bandwidth****U-NII-2C IEEE 802.11ac VHT40 5590MHz****26dB Bandwidth****99% Occupied Bandwidth****U-NII-2C IEEE 802.11ac VHT40 5670MHz****26dB Bandwidth****99% Occupied Bandwidth**

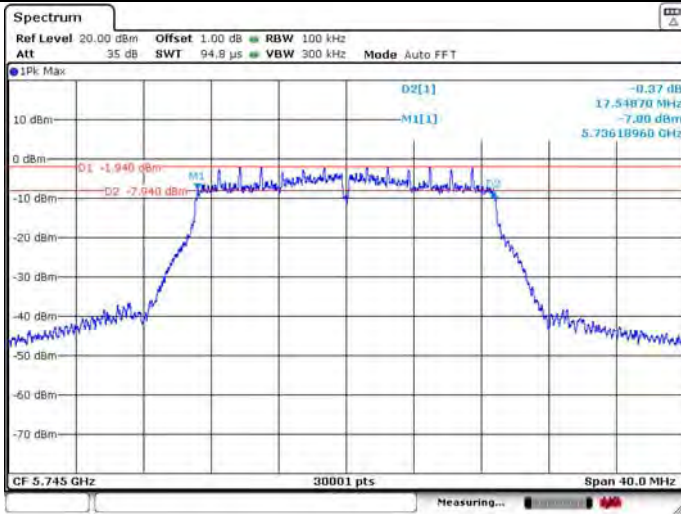
U-NII-2C IEEE 802.11ac VHT80 5530MHz**26dB Bandwidth****99% Occupied Bandwidth****U-NII-2C IEEE 802.11ac VHT80 5610MHz****26dB Bandwidth****99% Occupied Bandwidth**

U-NII-3 IEEE 802.11a 5745MHz**6dB Bandwidth****99% Occupied Bandwidth****U-NII-3 IEEE 802.11a 5785MHz****6dB Bandwidth****99% Occupied Bandwidth****U-NII-3 IEEE 802.11a 5825MHz****6dB Bandwidth****99% Occupied Bandwidth**

U-NII-3 IEEE 802.11n HT20 5745MHz**6dB Bandwidth****99% Occupied Bandwidth****U-NII-3 IEEE 802.11n HT20 5785MHz****6dB Bandwidth****99% Occupied Bandwidth****U-NII-3 IEEE 802.11n HT20 5825MHz****6dB Bandwidth****99% Occupied Bandwidth**

U-NII-3 IEEE 802.11ac VHT20 5745MHz

6dB Bandwidth

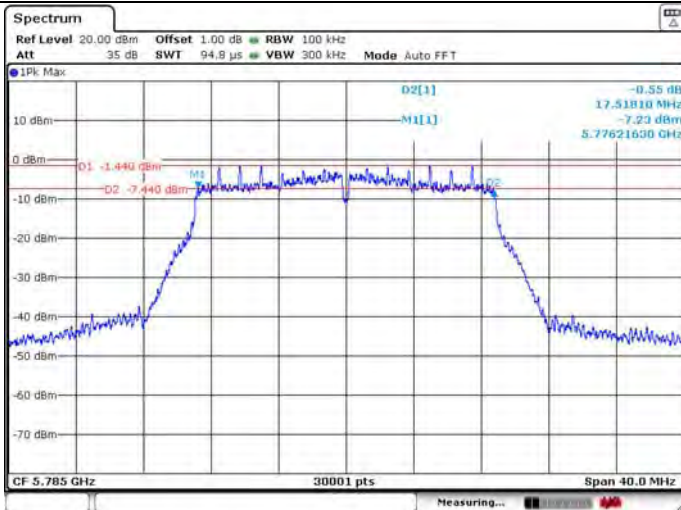


99% Occupied Bandwidth



U-NII-3 IEEE 802.11ac VHT20 5785MHz

6dB Bandwidth

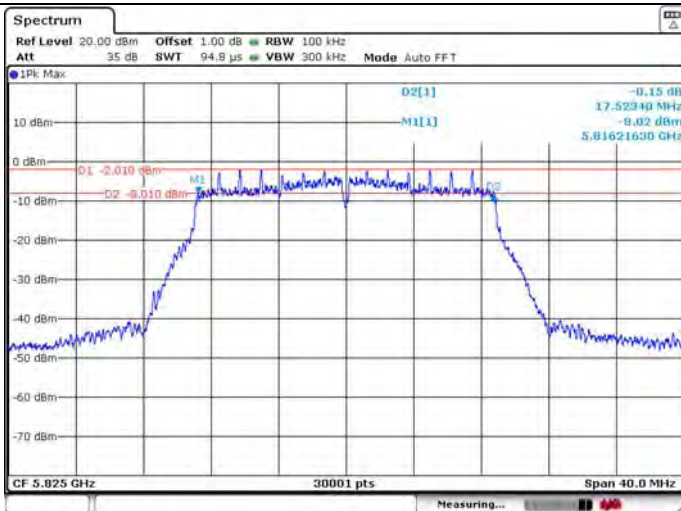


99% Occupied Bandwidth



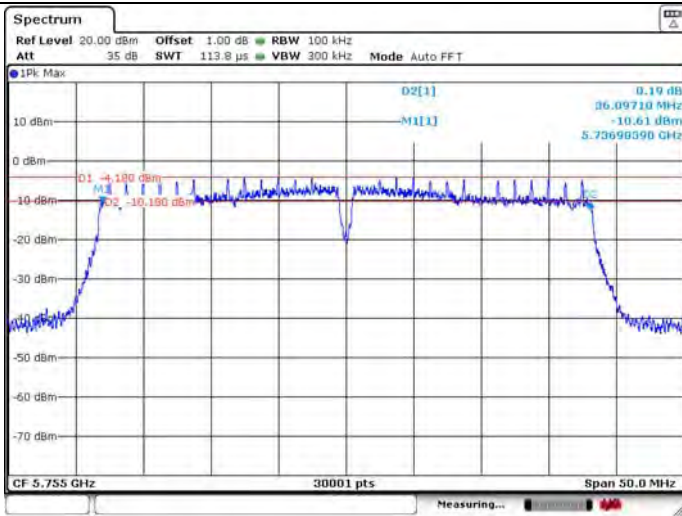
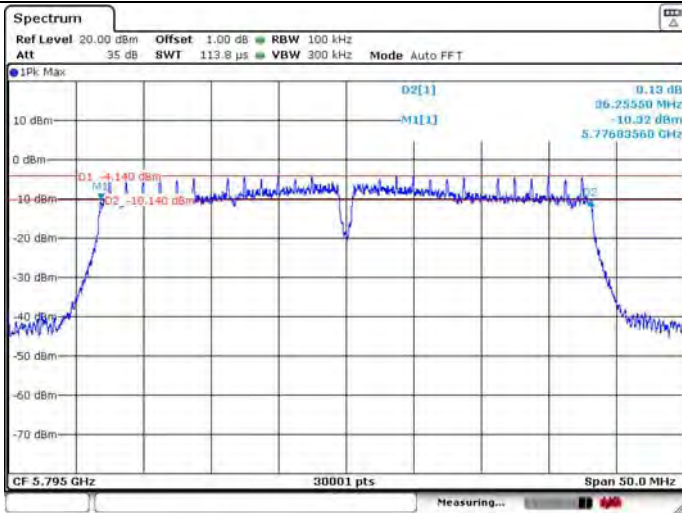
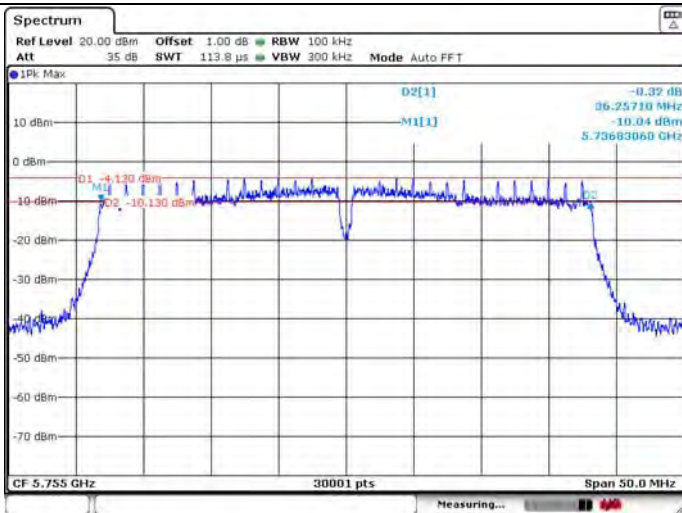
U-NII-3 IEEE 802.11ac VHT20 5825MHz

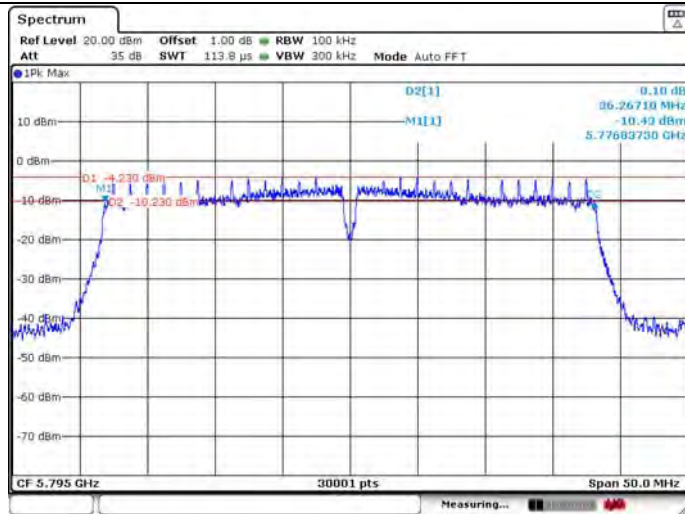
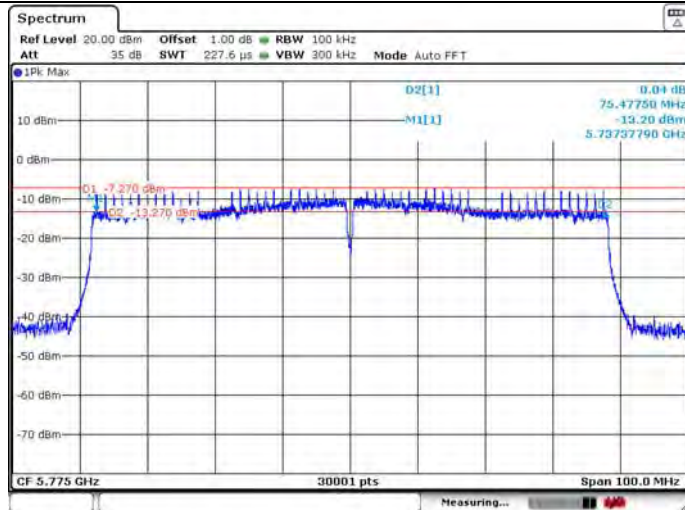
6dB Bandwidth



99% Occupied Bandwidth



U-NII-3 IEEE 802.11n HT40 5755MHz**6dB Bandwidth****99% Occupied Bandwidth****U-NII-3 IEEE 802.11n HT40 5795MHz****6dB Bandwidth****99% Occupied Bandwidth****U-NII-3 IEEE 802.11ac VHT40 5755MHz****6dB Bandwidth****99% Occupied Bandwidth**

U-NII-3 IEEE 802.11ac VHT40 5795MHz**6dB Bandwidth****99% Occupied Bandwidth****U-NII-3 IEEE 802.11ac VHT80 5775MHz****6dB Bandwidth****99% Occupied Bandwidth**

4. MAXIMUM CONDUCTED OUTPUT POWER

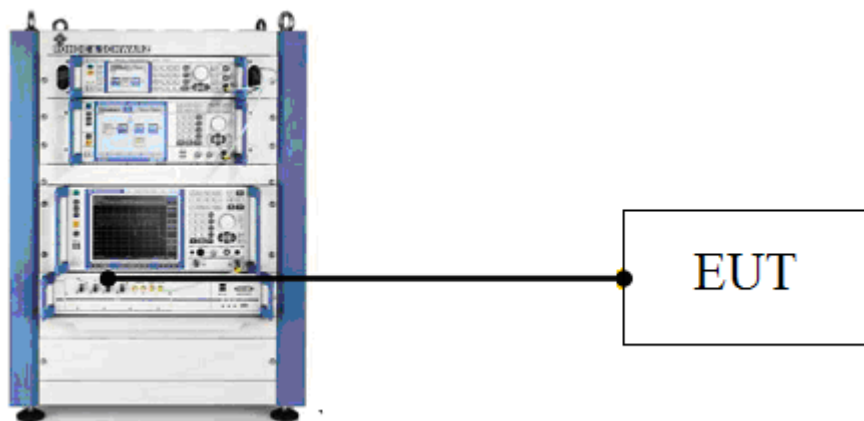
4.1. Limit

Band	EUT Type	Limit
U-NII-1	Outdoor Access Point	1W(30dBm) (Max. e.i.r.p $\leq$ 125mW at any elevation angle above 30 degrees as measured from the horizon)
	Indoor Access Point	1W(30dBm)
	Fixed point-to-point Access Point	1W(30dBm)
	Mobile and Portable Client Device	250mW(23.98dBm)
U-NII-2A	All Device	250mW(23.98dBm) or $11\text{dBm} + 10 \log B$, Which is lesser. (B is 26dB Bandwidth in MHz)
U-NII-2C	All Device	250mW(23.98dBm) or $11\text{dBm} + 10 \log B$, Which is lesser. (B is 26dB Bandwidth in MHz)
U-NII-3	All Device	1W(30dBm)

Note:

For the Band U-NII-2A and U-NII-2C, the maximum conducted output power limit calculate result refer to section 3.5.

4.2. Test Setup



4.3. Test Procedure

- Connect EUT antenna terminal to the OSP-B157WB with RF cable.
- Set the EUT transmit continuously with maximum output power.
- Through the test software in TS 8897 to control a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Because the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.
- Repeat above procedures until all modes and channels were measured.
- Record the results in the test report.

4.4. Test Result

Temperature	25.5℃	Relative Humidity		52%	Test Voltage	120V/60Hz
BAND	Test Mode	Frequency (MHz)	Conducted AVG Output Power (dBm)	Conducted AVG Output Power (W)	Limit (dBm)	Result
U-NII-1	IEEE 802.11a	5180	13.10	0.0204	23.98	PASS
		5200	12.94	0.0197	23.98	PASS
		5240	13.04	0.0201	23.98	PASS
	IEEE 802.11n HT20	5180	12.81	0.0191	23.98	PASS
		5200	12.69	0.0186	23.98	PASS
		5240	12.66	0.0184	23.98	PASS
	IEEE 802.11ac VHT20	5180	12.79	0.0190	23.98	PASS
		5200	12.54	0.0179	23.98	PASS
		5240	12.60	0.0182	23.98	PASS
	IEEE 802.11n HT40	5190	12.83	0.0192	23.98	PASS
		5230	12.53	0.0179	23.98	PASS
	IEEE 802.11ac VHT40	5190	12.66	0.0184	23.98	PASS
		5230	12.43	0.0175	23.98	PASS
	IEEE 802.11ac VHT80	5210	12.08	0.0161	23.98	PASS
U-NII-2A	IEEE 802.11a	5260	12.99	0.0199	23.98	PASS
		5300	12.71	0.0187	23.98	PASS
		5320	12.24	0.0167	23.98	PASS
	IEEE 802.11n HT20	5260	12.74	0.0188	23.98	PASS
		5300	12.27	0.0168	23.98	PASS
		5320	12.13	0.0163	23.98	PASS
	IEEE 802.11ac VHT20	5260	12.72	0.0187	23.98	PASS
		5300	12.33	0.0171	23.98	PASS
		5320	12.07	0.0161	23.98	PASS
	IEEE 802.11n HT40	5270	12.77	0.0189	23.98	PASS
		5310	12.17	0.0165	23.98	PASS
	IEEE 802.11ac VHT40	5270	12.65	0.0184	23.98	PASS
		5310	12.17	0.0165	23.98	PASS
	IEEE 802.11ac VHT80	5290	12.02	0.0159	23.98	PASS

BAND	Test Mode	Frequency (MHz)	Conducted AVG Output Power (dBm)	Conducted AVG Output Power (W)	Limit (dBm)	Result
U-NII-2C	IEEE 802.11a	5500	11.59	0.0144	23.98	PASS
		5580	11.89	0.0155	23.98	PASS
		5700	11.87	0.0154	23.98	PASS
	IEEE 802.11n HT20	5500	11.32	0.0135	23.98	PASS
		5580	11.42	0.0139	23.98	PASS
		5700	11.45	0.0140	23.98	PASS
	IEEE 802.11ac VHT20	5500	11.27	0.0134	23.98	PASS
		5580	11.66	0.0147	23.98	PASS
		5700	11.50	0.0141	23.98	PASS
	IEEE 802.11n HT40	5510	11.01	0.0126	23.98	PASS
		5670	11.64	0.0146	23.98	PASS
	IEEE 802.11ac VHT40	5510	11.75	0.0150	23.98	PASS
		5670	11.02	0.0126	23.98	PASS
U-NII-3	IEEE 802.11a	5530	11.41	0.0138	23.98	PASS
		5610	11.75	0.0149	23.98	
	IEEE 802.11n HT20	5745	11.84	0.0153	30.00	PASS
		5785	12.18	0.0165	30.00	PASS
		5825	11.72	0.0149	30.00	PASS
	IEEE 802.11ac VHT20	5745	11.51	0.0142	30.00	PASS
		5785	11.81	0.0152	30.00	PASS
		5825	11.41	0.0138	30.00	PASS
	IEEE 802.11n HT40	5745	11.51	0.0142	30.00	PASS
		5785	11.80	0.0151	30.00	PASS
		5825	11.42	0.0139	30.00	PASS
	IEEE 802.11ac VHT40	5745	11.69	0.0148	30.00	PASS
		5785	11.98	0.0158	30.00	PASS
		5795	11.98	0.0158	30.00	PASS
	IEEE 802.11ac VHT80	5755	11.66	0.0147	30.00	PASS
		5795	11.98	0.0158	30.00	PASS
	IEEE 802.11ac VHT80	5775	11.38	0.0137	30.00	PASS

5. PEAK POWER SPECTRAL DENSITY

5.1. Limit

Band	EUT Type	Limit
U-NII-1	Outdoor Access Point	17dBm/MHz
	Indoor Access Point	17dBm/MHz
	Fixed point-to-point Access Point	17dBm/MHz
	Mobile and Portable Client Device	11dBm/MHz
U-NII-2A	All Device	11dBm/MHz
U-NII-2C	All Device	11dBm/MHz
U-NII-3	All Device	30dBm/500KHz

5.2. Test Setup



5.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	1MHz(For U-NII-1&U-NII-2A&U-NII-2C) 500KHz(For U-NII-3)
VBW	3MHz(For U-NII-1&U-NII-2A&U-NII-2C) 2MHz(For U-NII-3)
Span	encompass the entire 26 dB EBW or 99% OBW of the signal
Sweep Time	Auto
Number of Sweep Point	$\geq 2 \times \text{SPAN/RBW}$
Detector	RMS(power averaging)
Trace Average	≥ 100 traces

5.4. Test Procedure

- Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- Spectrum analyzer setting parameters in accordance with section 5.3.
- Set the EUT transmit continuously with maximum output power.
- Allow trace to stabilize, use the marker-to-peak function to set the marker to the average of the emission.
- If the duty cycle of test signal $< 98\%$, the result = max measured value + $10 \times \log(1/\text{duty cycle})$;
If the duty cycle of test signal $\geq 98\%$, the result = max measured value.
- Repeat above procedures until all modes and channels were measured.
- Record the results in the test report.

5.5. Test Result

Temperature	25.5°C	Relative Humidity	52%	Test Voltage	120V/60Hz
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BAND	Test Mode	Fre (MHz)	Power Density (dBm/MHz)	Duty Factor (dB)	Total Power Density (dBm/MHz)	Limit (dBm/MHz)	Result
U-NII-1	IEEE 802.11a	5180	5.26	0.23	5.49	11.00	PASS
		5200	4.85	0.23	5.08	11.00	PASS
		5240	4.30	0.23	4.53	11.00	PASS
	IEEE 802.11n HT20	5180	4.53	0.27	4.80	11.00	PASS
		5200	4.17	0.27	4.44	11.00	PASS
		5240	3.84	0.27	4.11	11.00	PASS
	IEEE 802.11ac VHT20	5180	4.18	0.25	4.43	11.00	PASS
		5200	4.03	0.25	4.28	11.00	PASS
		5240	3.58	0.25	3.83	11.00	PASS
	IEEE 802.11n HT40	5190	1.72	0.48	2.20	11.00	PASS
		5230	1.12	0.48	1.60	11.00	PASS
	IEEE 802.11ac VHT40	5190	1.52	0.52	2.04	11.00	PASS
		5230	1.07	0.52	1.59	11.00	PASS
	IEEE 802.11ac VHT80	5210	-2.11	0.88	-1.23	11.00	PASS
U-NII-2A	IEEE 802.11a	5260	4.20	0.23	4.43	11.00	PASS
		5300	4.03	0.23	4.26	11.00	PASS
		5320	3.58	0.23	3.81	11.00	PASS
	IEEE 802.11n HT20	5260	4.45	0.27	4.72	11.00	PASS
		5300	3.96	0.27	4.23	11.00	PASS
		5320	4.26	0.27	4.53	11.00	PASS
	IEEE 802.11ac VHT20	5260	3.42	0.25	3.67	11.00	PASS
		5300	4.02	0.25	4.27	11.00	PASS
		5320	2.66	0.25	2.91	11.00	PASS
	IEEE 802.11n HT40	5270	1.07	0.48	1.55	11.00	PASS
		5310	1.17	0.48	1.65	11.00	PASS
	IEEE 802.11ac VHT40	5270	0.89	0.52	1.41	11.00	PASS
		5310	0.51	0.52	1.03	11.00	PASS
	IEEE 802.11ac VHT80	5290	-2.95	0.88	-2.07	11.00	PASS
U-NII-2C	IEEE 802.11a	5500	1.81	0.23	2.04	11.00	PASS
		5580	2.69	0.23	2.92	11.00	PASS
		5700	1.18	0.23	1.41	11.00	PASS
	IEEE 802.11n HT20	5500	1.03	0.27	1.30	11.00	PASS
		5580	1.45	0.27	1.72	11.00	PASS
		5700	-0.14	0.27	0.13	11.00	PASS
	IEEE 802.11ac VHT20	5500	1.57	0.25	1.82	11.00	PASS
		5580	1.86	0.25	2.11	11.00	PASS
		5700	-0.05	0.25	0.20	11.00	PASS
	IEEE 802.11n HT40	5510	-1.18	0.48	-0.70	11.00	PASS
		5590	-1.27	0.48	-0.79	11.00	PASS
		5670	-2.03	0.48	-1.55	11.00	PASS
	IEEE 802.11ac VHT40	5510	-1.45	0.52	-0.93	11.00	PASS
		5590	-0.96	0.52	-0.44	11.00	PASS
		5670	-2.17	0.52	-1.65	11.00	PASS
	IEEE 802.11ac VHT80	5530	-4.59	0.88	-3.71	11.00	PASS
		5610	-4.56	0.88	-3.68	11.00	PASS

BAND	Test Mode	Fre (MHz)	Power Density (dBm/500KHz)	Duty Factor (dB)	Total Power Density (dBm/500KHz)	Limit (dBm/500KHz)	Result
U-NII-3	IEEE 802.11a	5745	-0.14	0.23	0.09	30.00	PASS
		5785	0.18	0.23	0.41	30.00	PASS
		5825	0.35	0.23	0.58	30.00	PASS
	IEEE 802.11n HT20	5745	-0.53	0.27	-0.26	30.00	PASS
		5785	0.33	0.27	0.60	30.00	PASS
		5825	-0.15	0.27	0.12	30.00	PASS
	IEEE 802.11ac VHT20	5745	-0.50	0.25	-0.25	30.00	PASS
		5785	-0.02	0.25	0.23	30.00	PASS
		5825	-0.52	0.25	-0.27	30.00	PASS
	IEEE 802.11n HT40	5755	-3.19	0.48	-2.71	30.00	PASS
		5795	-2.24	0.48	-1.76	30.00	PASS
	IEEE 802.11ac VHT40	5755	-2.15	0.52	-1.63	30.00	PASS
		5795	-2.68	0.52	-2.16	30.00	PASS
	IEEE 802.11ac VHT80	5775	-5.69	0.88	-4.81	30.00	PASS

U-NII-1 IEEE 802.11a 5180MHz



U-NII-1 IEEE 802.11a 5200MHz



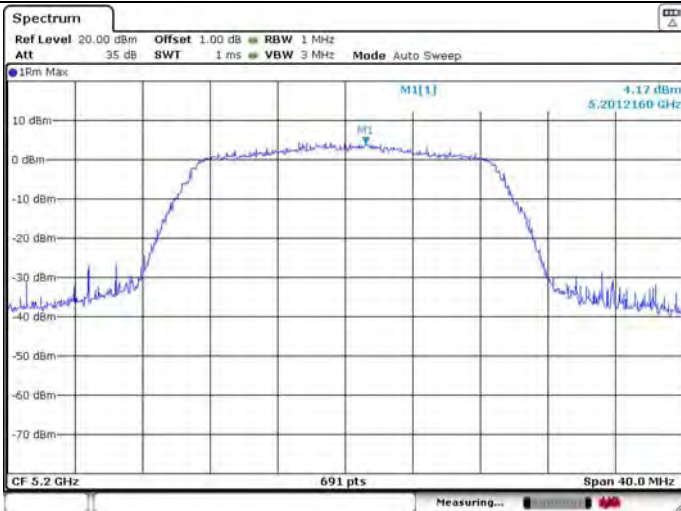
U-NII-1 IEEE 802.11a 5240MHz



U-NII-1 IEEE 802.11n HT20 5180MHz

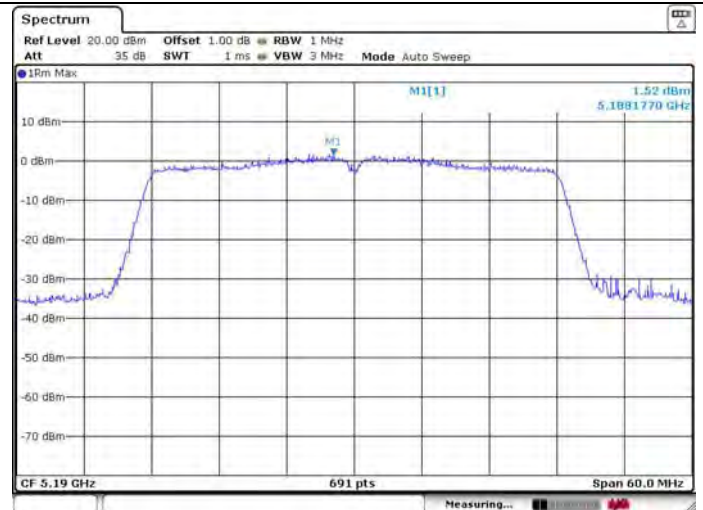


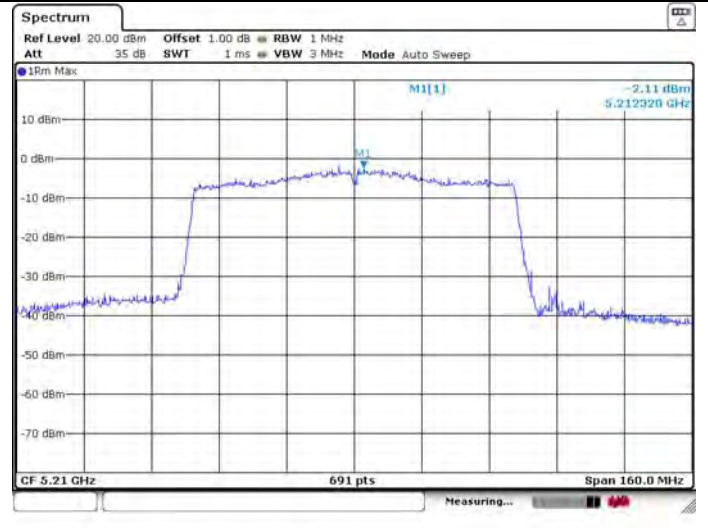
U-NII-1 IEEE 802.11n HT20 5200MHz



U-NII-1 IEEE 802.11n HT20 5240MHz



U-NII-1 IEEE 802.11ac VHT20 5180MHz**U-NII-1 IEEE 802.11ac VHT20 5200MHz****U-NII-1 IEEE 802.11ac VHT20 5240MHz****U-NII-1 IEEE 802.11n HT40 5190MHz****U-NII-1 IEEE 802.11n HT40 5230MHz****U-NII-1 IEEE 802.11ac VHT40 5190MHz**

U-NII-1 IEEE 802.11ac VHT40 5230MHz**U-NII-1 IEEE 802.11ac VHT80 5210MHz**

U-NII-2A IEEE 802.11a 5260MHz



U-NII-2A IEEE 802.11a 5300MHz



U-NII-2A IEEE 802.11a 5320MHz



U-NII-2A IEEE 802.11n HT20 5260MHz

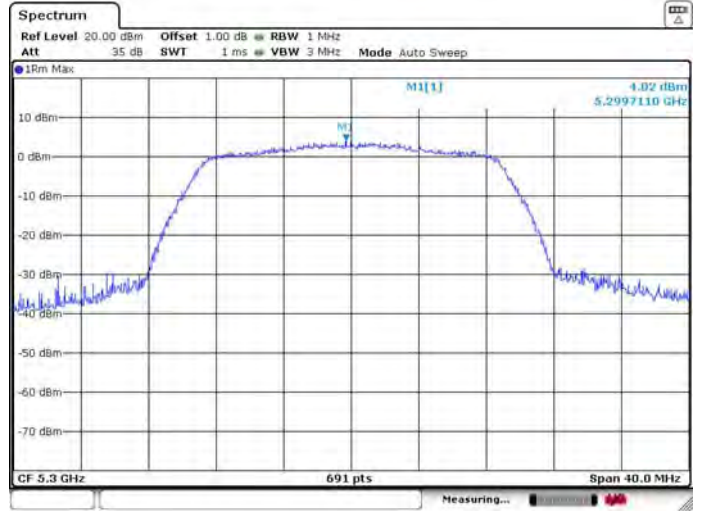


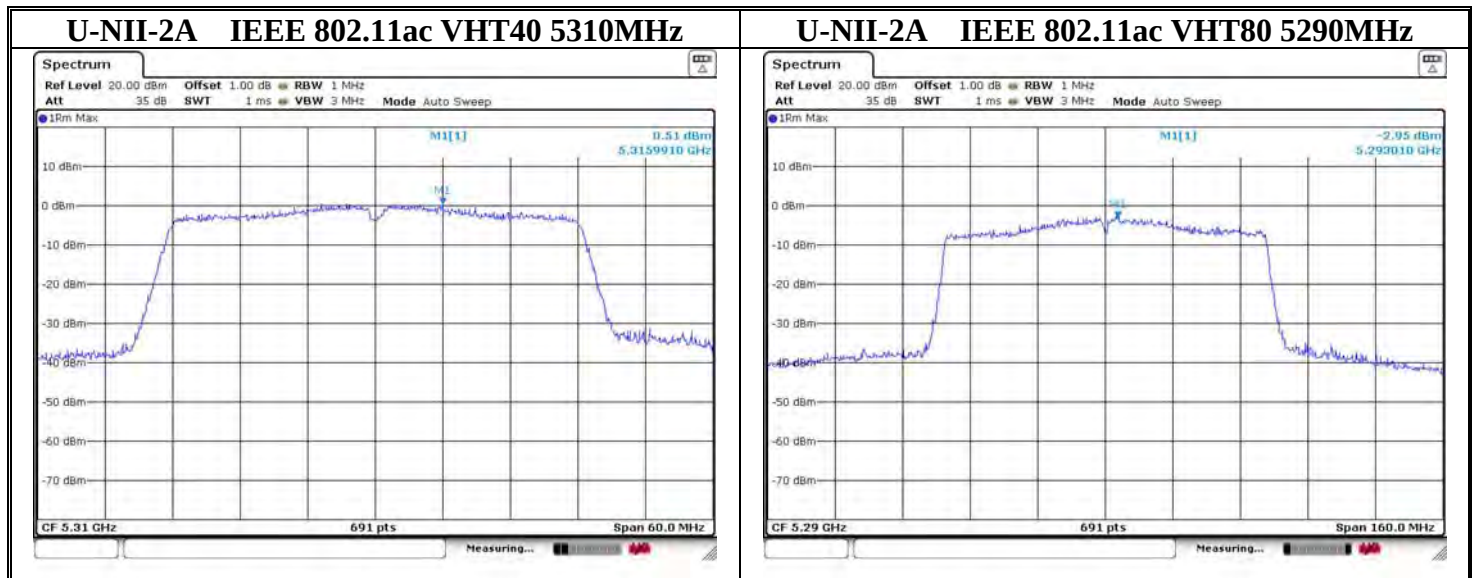
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U-NII-2A IEEE 802.11n HT20 5320MHz

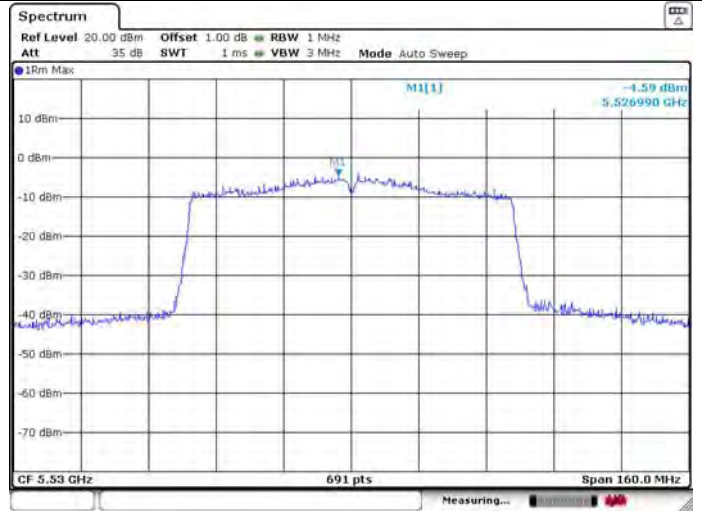


U-NII-2A IEEE 802.11ac VHT20 5260MHz**U-NII-2A IEEE 802.11ac VHT20 5300MHz****U-NII-2A IEEE 802.11ac VHT20 5320MHz****U-NII-2A IEEE 802.11n HT40 5270MHz****U-NII-2A IEEE 802.11n HT40 5310MHz****U-NII-2A IEEE 802.11ac VHT40 5270MHz**



U-NII-2C IEEE 802.11a 5500MHz**U-NII-2C IEEE 802.11a 5580MHz****U-NII-2C IEEE 802.11a 5700MHz****U-NII-2C IEEE 802.11n HT20 5500MHz****U-NII-2C IEEE 802.11n HT20 5580MHz****U-NII-2C IEEE 802.11n HT20 5700MHz**

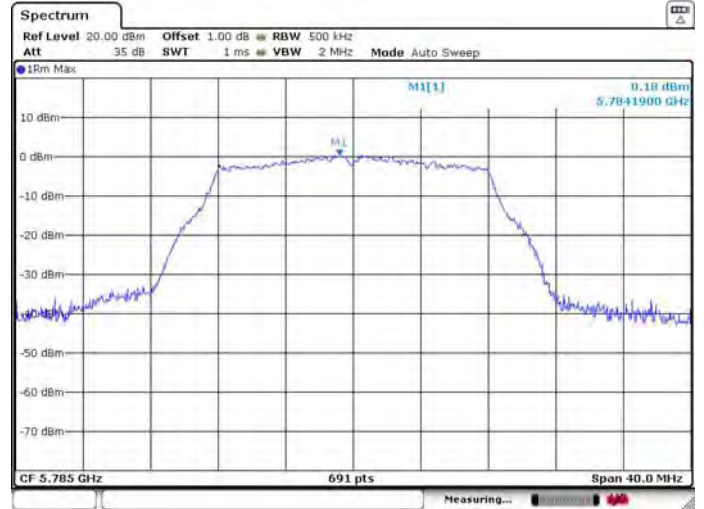
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U-NII-2C IEEE 802.11ac VHT40 5510MHz**U-NII-2C IEEE 802.11ac VHT40 5590MHz****U-NII-2C IEEE 802.11ac VHT40 5670MHz****U-NII-2C IEEE 802.11ac VHT80 5530MHz****U-NII-2C IEEE 802.11ac VHT80 5610MHz**

U-NII-3 IEEE 802.11a 5745MHz



U-NII-3 IEEE 802.11a 5785MHz



U-NII-3 IEEE 802.11a 5825MHz



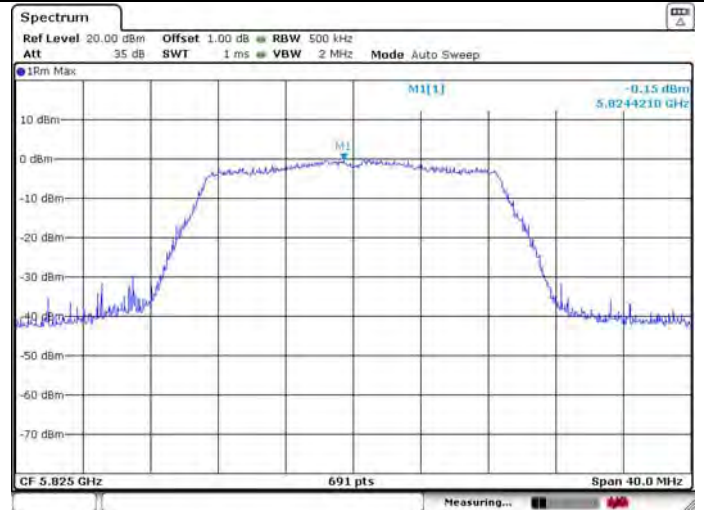
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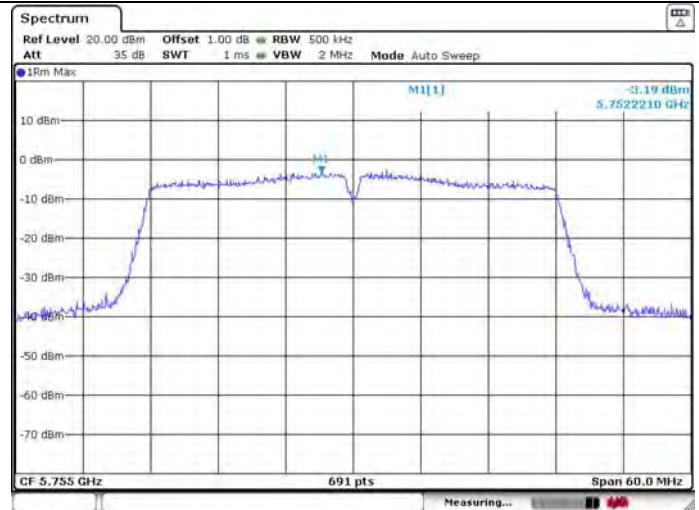
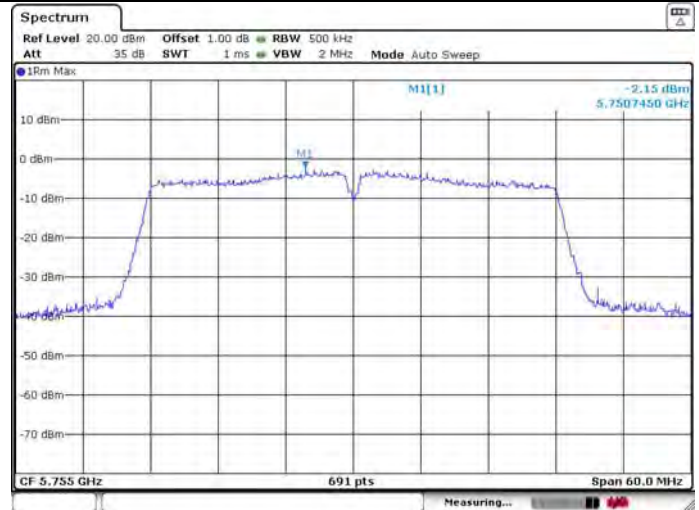


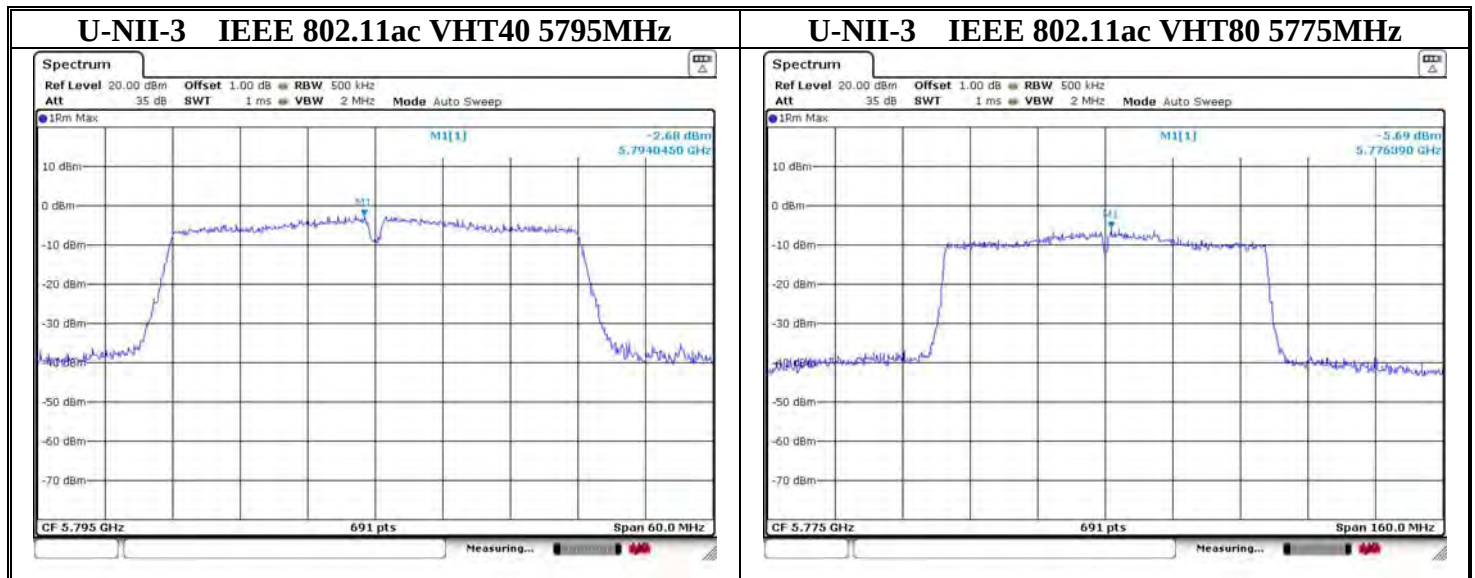
U-NII-3 IEEE 802.11n HT20 5785MHz



U-NII-3 IEEE 802.11n HT20 5825MHz



U-NII-3 IEEE 802.11ac VHT20 5745MHz**U-NII-3 IEEE 802.11ac VHT20 5785MHz****U-NII-3 IEEE 802.11ac VHT20 5825MHz****U-NII-3 IEEE 802.11n HT40 5755MHz****U-NII-3 IEEE 802.11n HT40 5795MHz****U-NII-3 IEEE 802.11ac VHT40 5755MHz**



6. UNWANTED EMISSIONS AND BAND EDGE

6.1. Limit

The maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (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 shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

The unwanted emissions which fall in Restricted bands shall not exceed the field strength levels specified in the following table:

15.209 Radiated emission limits

Frequency (MHz)	Field Strength(μ V/m)	Distance(m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

15.205 Restricted frequency band

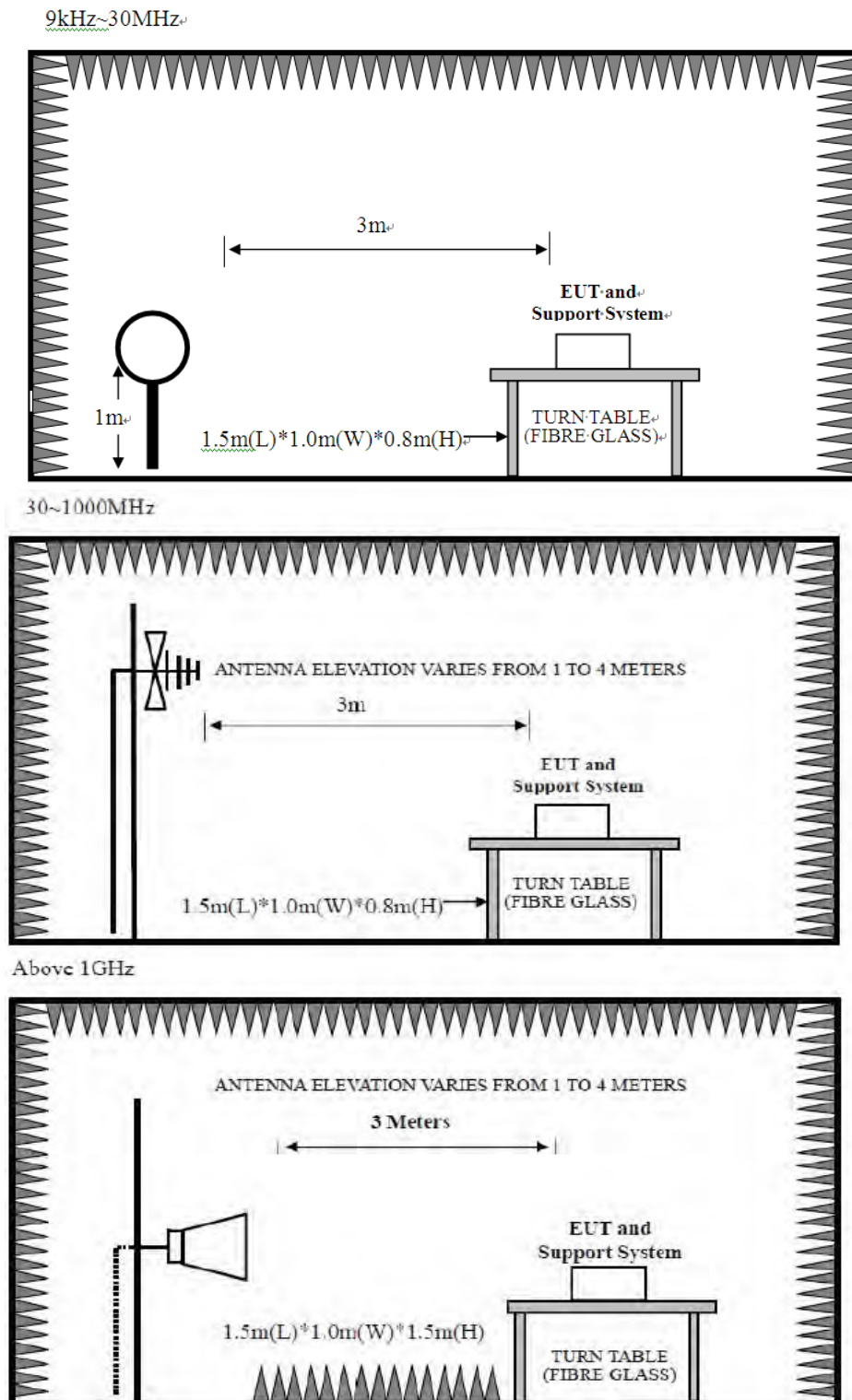
MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 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)

Note:

1. $\text{dB}\mu\text{V/m} = 20\text{Log}(\mu\text{V/m})$
2. Above 1GHz the formula is used to convert the EIRP to field strength

$$E[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] - 20 \log(d[\text{m}]) + 104.77,$$
 where E is field strength and d is distance at which the field strength limit is specified in the applicable requirements.
 for example, 3m field strength($\text{dB}\mu\text{V/m}$)= $\text{EIRP}-20\log(3)+104.77=\text{EIRP}+95.2$

6.2. Test Setup



6.3. Spectrum Analyzer Setting

For 9KHz-150KHz

Spectrum Parameters	Setting
RBW	300Hz(for Peak&AVG)/CISPR 200Hz(for QP)
VBW	300Hz(for Peak&AVG)/CISPR 200Hz(for QP)
Start frequency	9KHz
Stop frequency	150KHz
Sweep Time	Auto
Detector	PEAK/QP/AVG
Trace Mode	Max Hold

Note : For 9KHz-90KHz&110KHz-150KHz,the detector is average,other frequency is CISPR QP detector.

For 150KHz-30MHz

Spectrum Parameters	Setting
RBW	9KHz
VBW	9KHz
Start frequency	150KHz
Stop frequency	30MHz
Sweep Time	Auto
Detector	QP
Trace Mode	Max Hold

Note : For 150KHz-490KHz,the detector is average,other frequency is CISPR QP detector.

For 30MHz-1GHz

Spectrum Parameters	Setting
RBW	120KHz
VBW	300KHz
Start frequency	30MHz
Stop frequency	1GHz
Sweep Time	Auto
Detector	QP
Trace Mode	Max Hold

For Above 1GHz

Spectrum Parameters	Setting	
RBW	1MHz	
VBW	PEAK Measurement	AVG Measurement
	3MHz	Duty cycle $\geq 98\%$, VBW=10Hz Duty cycle $< 98\%$, VBW $\geq 1/T$ Video bandwidth mode=RMS (power averaging)
Start frequency	1GHz	
Stop frequency	40GHz	
Sweep Time	Auto	
Detector	PEAK	
Trace Mode	Max Hold	

Note : T is the on-time time of the duty cycle,when EUT transmit continuously with maximum output power,unit is seconds. reference section 2.7 for the on-time time.

6.4. Test Procedure

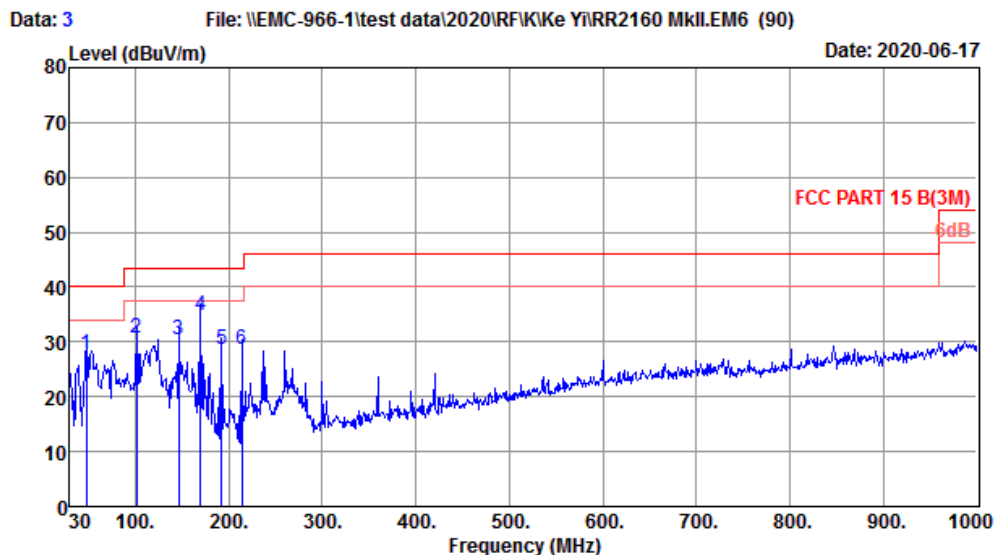
- a. EUT was placed on a turn table, which is 0.8 meter high above ground for below 1GHz test, and which is 1.5 meter high above ground for above 1GHz test.
- b. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower.
- c. Set the EUT transmit continuously with maximum output power.
- d. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
- e. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.
- f. Spectrum analyzer setting parameters in accordance with section 6.3.
- g. Repeat above procedures until all channels were measured.
- h. Record the results in the test report.

6.5. Test Result

Radiated Emissions Below 1GHz

EST Technology

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Houjie, Dongguan, Guangdong, China
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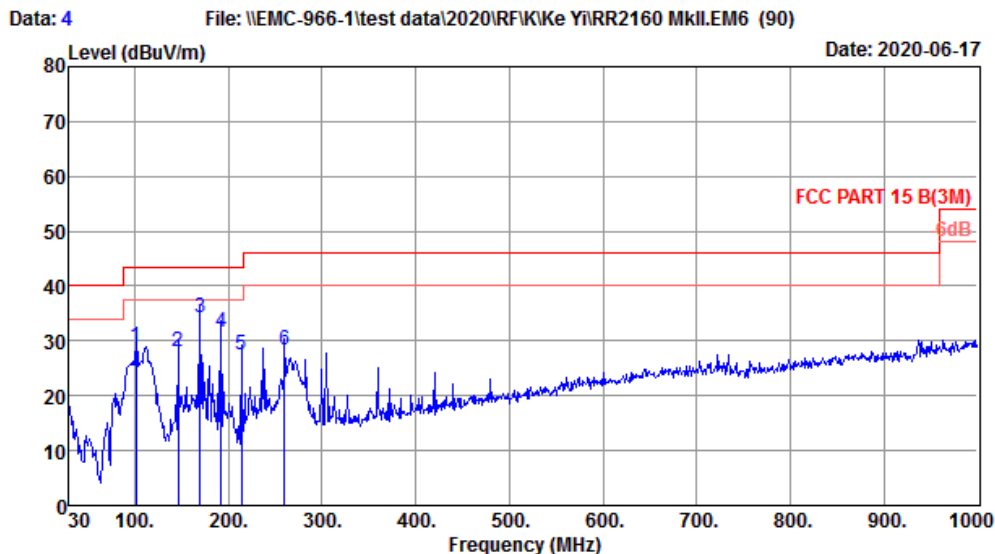
Site no. : 1# 966 Chamber Data no. : 3
 Dis. / Ant. : 3m 37062 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : TX Mode

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	47.46	9.60	0.29	17.83	27.72	40.00	12.28	QP
2	101.78	9.90	0.87	19.96	30.73	43.50	12.77	QP
3	146.40	11.68	1.05	17.80	30.53	43.50	12.97	QP
4	169.68	9.70	1.19	24.00	34.89	43.50	8.61	QP
5	191.99	8.86	1.26	18.47	28.59	43.50	14.91	QP
6	214.30	9.26	1.39	17.87	28.52	43.50	14.98	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

EST Technology

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Houjie, Dongguan, Guangdong, China
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Fax: +86-769-83081878



Site no. : 1# 966 Chamber Data no. : 4
 Dis. / Ant. : 3m 37062 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B(3M)
 Env. / Ins. : Temp:23.6'; Humi:56%; Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : TX Mode

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	101.78	9.90	0.87	18.04	28.81	43.50	14.69	QP
2	146.40	11.68	1.05	15.32	28.05	43.50	15.45	QP
3	169.68	9.70	1.19	23.50	34.39	43.50	9.11	QP
4	191.99	8.86	1.26	21.43	31.55	43.50	11.95	QP
5	214.30	9.26	1.39	16.71	27.36	43.50	16.14	QP
6	259.89	13.60	1.69	13.03	28.32	46.00	17.68	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

Note:

1. The amplitude of 9KHz to 30MHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.
2. All channels had been pre-test, only the worst case was reported.

Radiated Emissions Above 1G

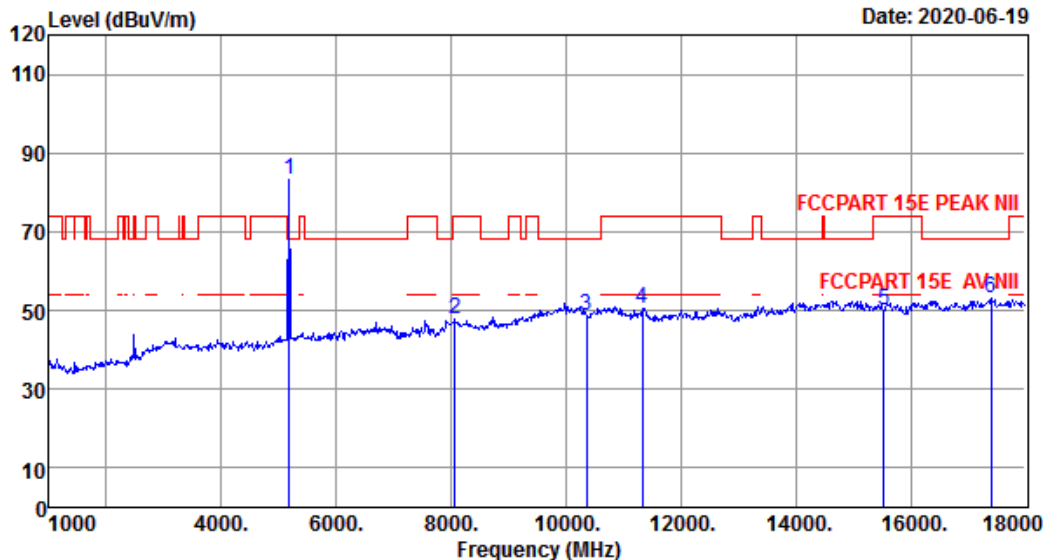
EST Technology

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Data: 59

File: \\EMC-966-1\test data\2020\RF\K\Ke Yi\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 59
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3'; Humi:54%; Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 Mk II
 Test Mode : IEEE 802.11a TX 5180MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5180.00	32.20	3.52	34.63	81.96	83.05	68.20	-14.85	Peak
2	8072.00	36.90	5.73	34.87	40.07	47.83	74.00	26.17	Peak
3	10360.00	39.27	5.99	34.31	37.63	48.58	68.20	19.62	Peak
4	11336.00	39.90	6.14	34.60	39.17	50.61	74.00	23.39	Peak
5	15540.00	40.31	6.46	34.39	37.86	50.24	74.00	23.76	Peak
6	17405.00	44.15	7.82	34.36	35.40	53.01	68.20	15.19	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. Margin= Limit - Emission Level.

3. The emission levels that are 20dB below the official limit are not reported.

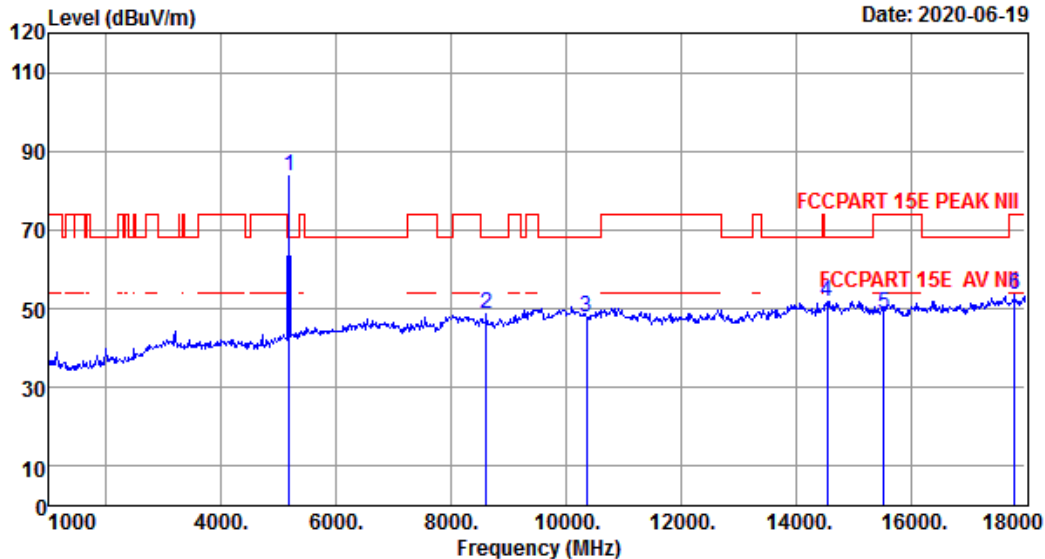
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Data: 60

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 60
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5180MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5180.00	32.20	3.52	34.63	82.42	83.51	68.20	-15.31	Peak
2	8616.00	36.90	5.21	34.59	41.12	48.64	68.20	19.56	Peak
3	10360.00	39.27	5.99	34.31	36.93	47.88	68.20	20.32	Peak
4	14549.00	40.99	6.89	34.46	38.52	51.94	68.20	16.26	Peak
5	15540.00	40.31	6.46	34.39	36.54	48.92	74.00	25.08	Peak
6	17813.00	47.41	8.12	34.32	32.22	53.43	74.00	20.57	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

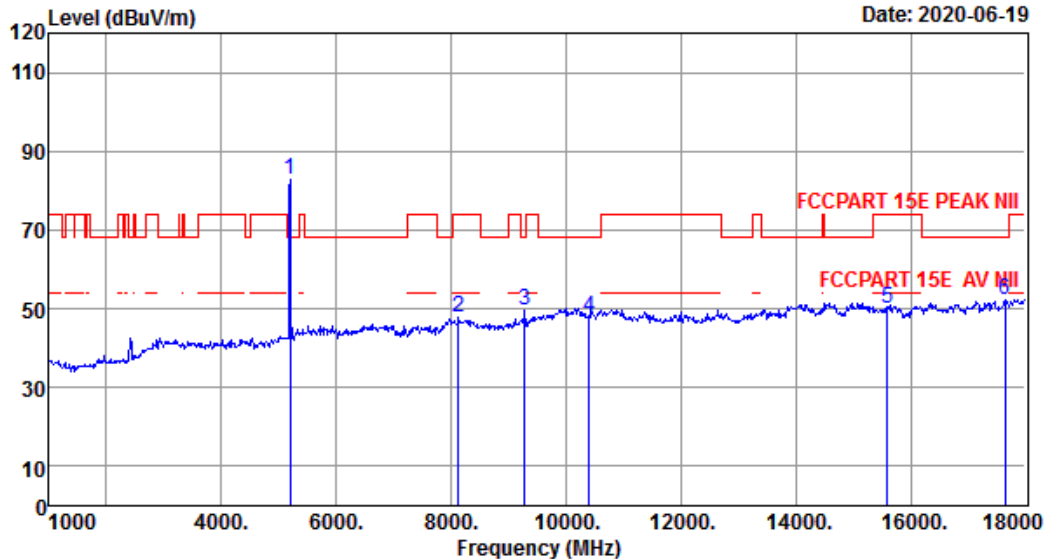
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Data: 61

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 61
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5200MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5200.00	32.24	3.53	34.62	81.86	83.01	68.20	-14.81	Peak
2	8123.00	36.90	5.67	34.84	40.09	47.82	74.00	26.18	Peak
3	9279.00	37.45	5.41	34.34	41.18	49.70	68.20	18.50	Peak
4	10400.00	39.31	5.99	34.32	36.74	47.72	68.20	20.48	Peak
5	15600.00	40.24	6.53	34.36	37.63	50.04	74.00	23.96	Peak
6	17643.00	46.05	8.01	34.34	32.59	52.31	68.20	15.89	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

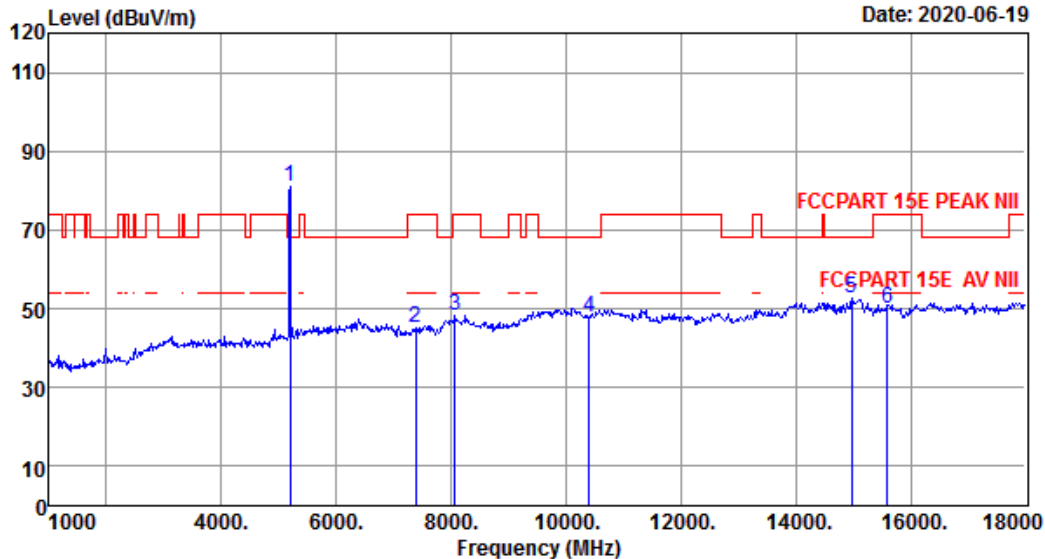
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Data: 62

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 62
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5200MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5200.00	32.24	3.53	34.62	79.83	80.98	68.20	-12.78	Peak
2	7375.00	36.56	5.24	34.84	38.06	45.02	74.00	28.98	Peak
3	8072.00	36.90	5.73	34.87	40.44	48.20	74.00	25.80	Peak
4	10400.00	39.31	5.99	34.32	36.67	47.65	68.20	20.55	Peak
5	14974.00	40.91	6.82	34.59	39.45	52.59	68.20	15.61	Peak
6	15600.00	40.24	6.53	34.36	37.66	50.07	74.00	23.93	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

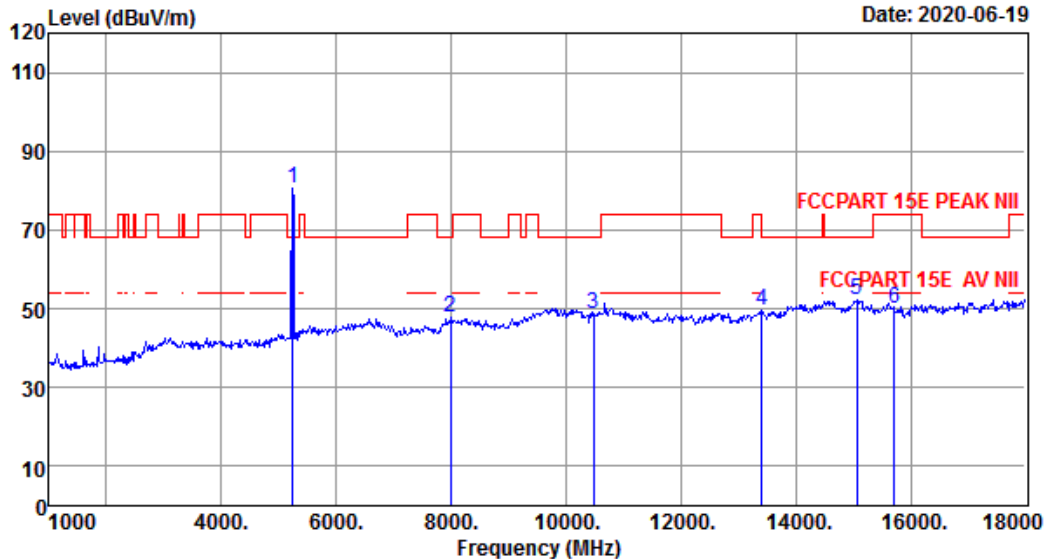
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Data: 63

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 63
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCCPART 15E PEAK NII
Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
Engineer : Carlos
EUT : Stereo Retro Receiver
Power : AC 120V/60Hz
M/N : RR2160 MkII
Test Mode : IEEE 802.11a TX 5240MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5240.00	32.31	3.55	34.61	79.23	80.48	68.20	-12.28	Peak
2	7987.00	36.90	5.80	34.90	39.82	47.62	68.20	20.58	Peak
3	10480.00	39.39	6.02	34.35	37.69	48.75	68.20	19.45	Peak
4	13410.00	40.09	6.32	34.36	37.38	49.43	68.20	18.77	Peak
5	15059.00	40.84	6.77	34.58	39.17	52.20	68.20	16.00	Peak
6	15720.00	40.10	6.65	34.31	37.53	49.97	74.00	24.03	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

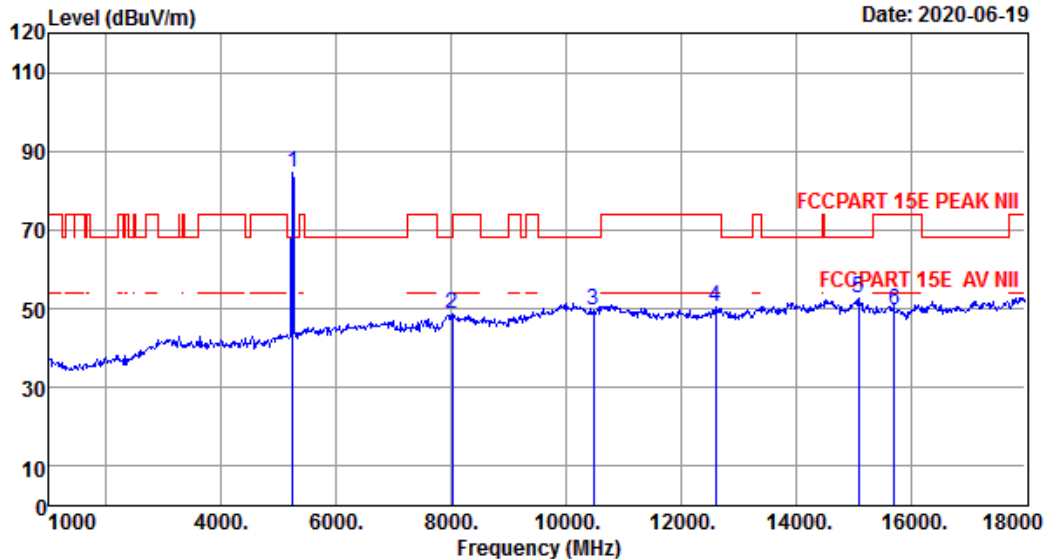
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Data: 64

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 64
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5240MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5240.00	32.31	3.55	34.61	83.28	84.53	68.20	-16.33	Peak
2	8021.00	36.90	5.80	34.89	40.85	48.66	68.20	19.54	Peak
3	10480.00	39.39	6.02	34.35	38.41	49.47	68.20	18.73	Peak
4	12611.00	39.59	6.22	34.56	39.41	50.66	74.00	23.34	Peak
5	15093.00	40.81	6.74	34.57	39.60	52.58	68.20	15.62	Peak
6	15720.00	40.10	6.65	34.31	37.37	49.81	74.00	24.19	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

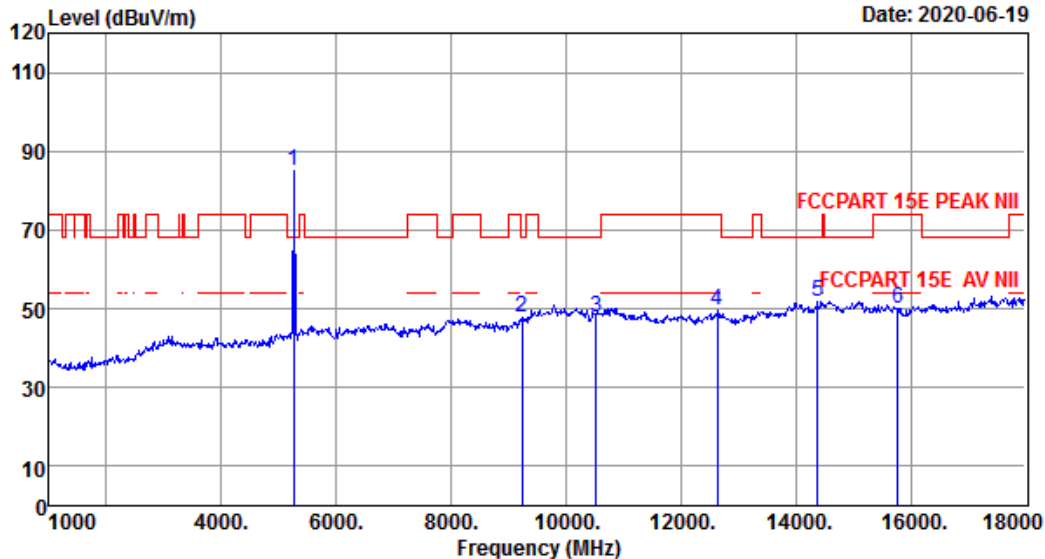
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Data: 65

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 65
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCCPART 15E PEAK NII
Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
Engineer : Carlos
EUT : Stereo Retro Receiver
Power : AC 120V/60Hz
M/N : RR2160 MkII
Test Mode : IEEE 802.11a TX 5260MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5250.00	32.35	3.56	34.60	83.53	84.84	68.20	-16.64	Peak
2	9228.00	37.35	5.38	34.36	39.29	47.66	68.20	20.54	Peak
3	10520.00	39.43	6.02	34.36	36.95	48.04	68.20	20.16	Peak
4	12628.00	39.59	6.23	34.55	38.33	49.60	74.00	24.40	Peak
5	14379.00	41.03	6.81	34.41	38.59	52.02	68.20	16.18	Peak
6	15773.00	40.05	6.69	34.29	37.74	50.19	74.00	23.81	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

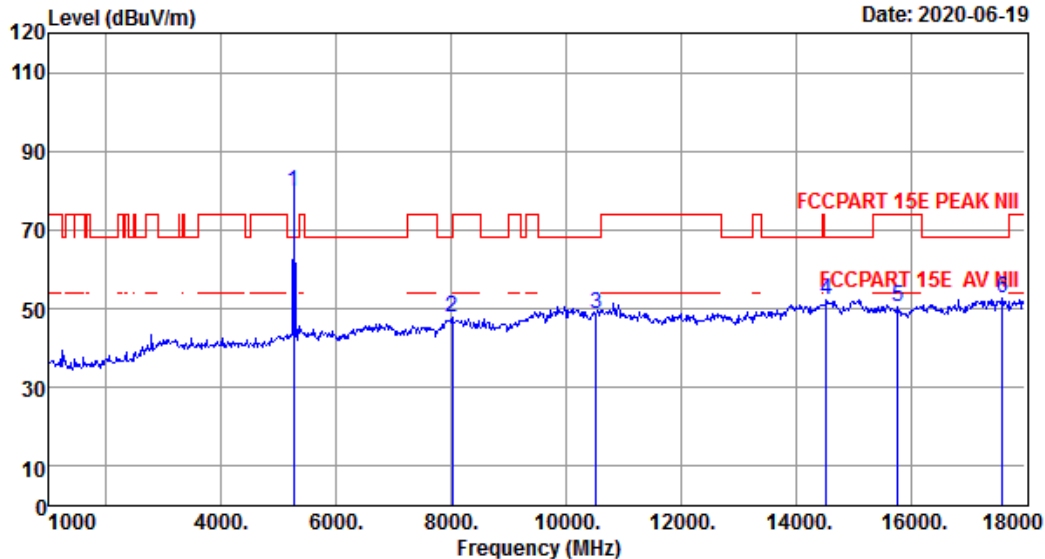
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Data: 66

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 66
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCCPART 15E PEAK NII
Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
Engineer : Carlos
EUT : Stereo Retro Receiver
Power : AC 120V/60Hz
M/N : RR2160 MkII
Test Mode : IEEE 802.11a TX 5260MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5260.00	32.39	3.57	34.59	78.52	79.89	68.20	-11.69	Peak
2	8021.00	36.90	5.80	34.89	39.81	47.62	68.20	20.58	Peak
3	10520.00	39.43	6.02	34.36	37.83	48.92	68.20	19.28	Peak
4	14532.00	40.99	6.89	34.46	38.90	52.32	68.20	15.88	Peak
5	15780.00	40.05	6.69	34.29	38.16	50.61	74.00	23.39	Peak
6	17592.00	45.65	7.98	34.34	33.41	52.70	68.20	15.50	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

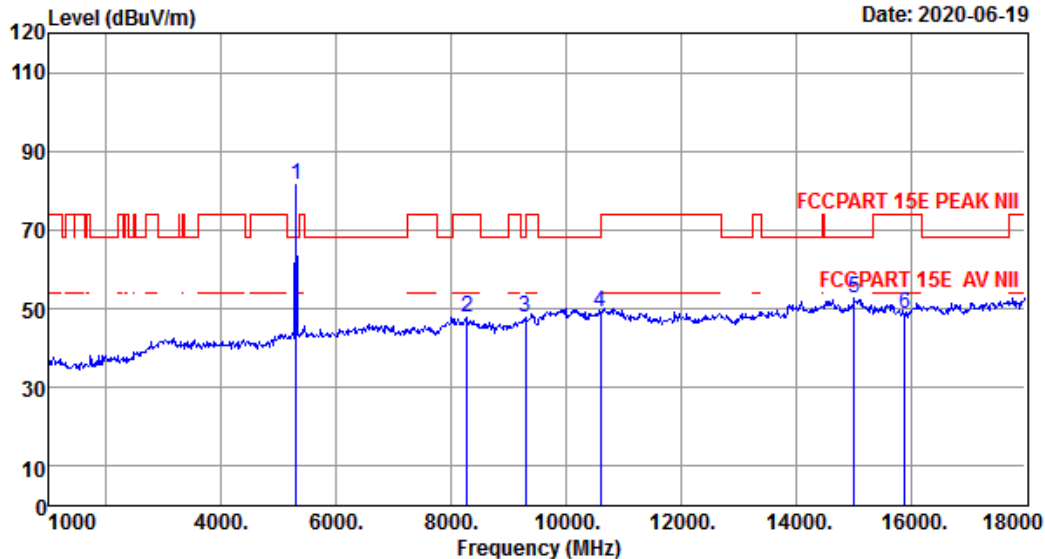
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Data: 67

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 67
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5300MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5300.00	32.46	3.59	34.58	79.95	81.42	68.20	-13.22	Peak
2	8276.00	36.90	5.47	34.76	40.14	47.75	74.00	26.25	Peak
3	9296.00	37.49	5.41	34.34	39.41	47.97	68.20	20.23	Peak
4	10600.00	39.51	6.04	34.38	37.88	49.05	68.20	19.15	Peak
5	15025.00	40.88	6.80	34.59	39.58	52.67	68.20	15.53	Peak
6	15900.00	39.91	6.81	34.24	36.23	48.71	74.00	25.29	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

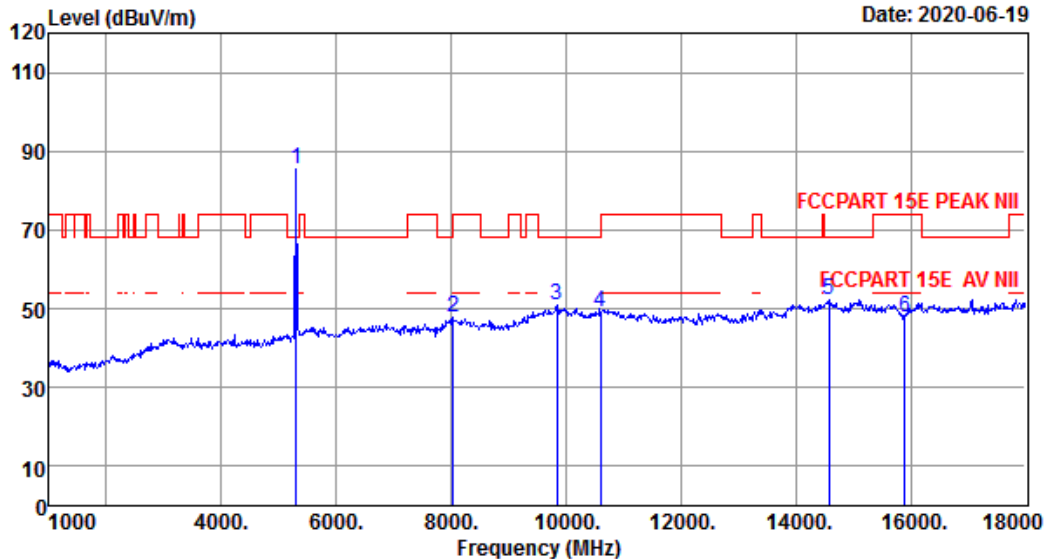
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Data: 68

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 68
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCCPART 15E PEAK NII
Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
Engineer : Carlos
EUT : Stereo Retro Receiver
Power : AC 120V/60Hz
M/N : RR2160 MkII
Test Mode : IEEE 802.11a TX 5300MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5300.00	32.46	3.59	34.58	83.90	85.37	68.20	-17.17	Peak
2	8038.00	36.90	5.78	34.88	39.94	47.74	74.00	26.26	Peak
3	9840.00	38.59	5.77	34.23	40.86	50.99	68.20	17.21	Peak
4	10600.00	39.51	6.04	34.38	38.09	49.26	68.20	18.94	Peak
5	14583.00	40.98	6.89	34.47	38.94	52.34	68.20	15.86	Peak
6	15900.00	39.91	6.81	34.24	35.53	48.01	74.00	25.99	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. Margin= Limit - Emission Level.
3. The emission levels that are 20dB below the official limit are not reported.

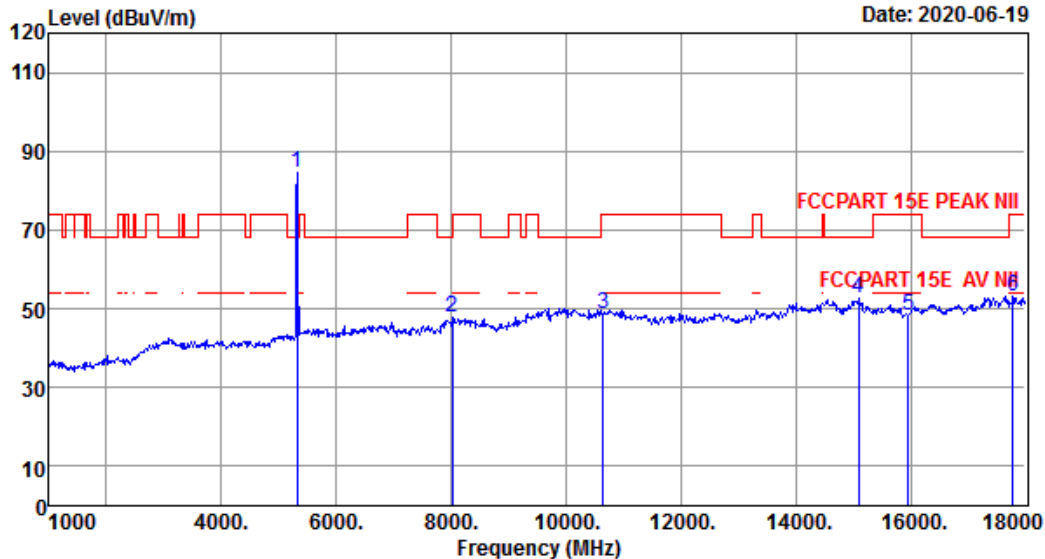
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Data: 69

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 69
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5320MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5320.00	32.50	3.60	34.57	82.98	84.51	68.20	-16.31	Peak
2	8021.00	36.90	5.80	34.89	40.17	47.98	68.20	20.22	Peak
3	10640.00	39.54	6.04	34.39	37.60	48.79	74.00	25.21	Peak
4	15093.00	40.81	6.74	34.57	39.87	52.85	68.20	15.35	Peak
5	15960.00	39.84	6.88	34.21	35.87	48.38	74.00	25.62	Peak
6	17779.00	47.14	8.10	34.32	32.18	53.10	74.00	20.90	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

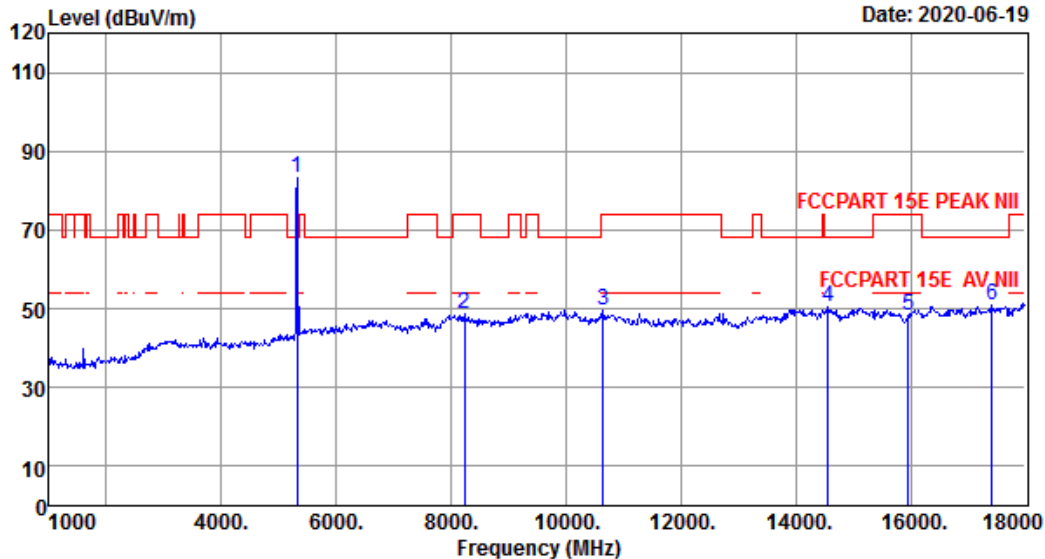
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Data: 70

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 70
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5320MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5320.00	32.50	3.60	34.57	81.68	83.21	68.20	-15.01	Peak
2	8225.00	36.90	5.54	34.79	41.09	48.74	74.00	25.26	Peak
3	10640.00	39.54	6.04	34.39	38.46	49.65	74.00	24.35	Peak
4	14566.00	40.99	6.89	34.47	36.89	50.30	68.20	17.90	Peak
5	15960.00	39.84	6.88	34.21	35.74	48.25	74.00	25.75	Peak
6	17422.00	44.29	7.84	34.36	33.09	50.86	68.20	17.34	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

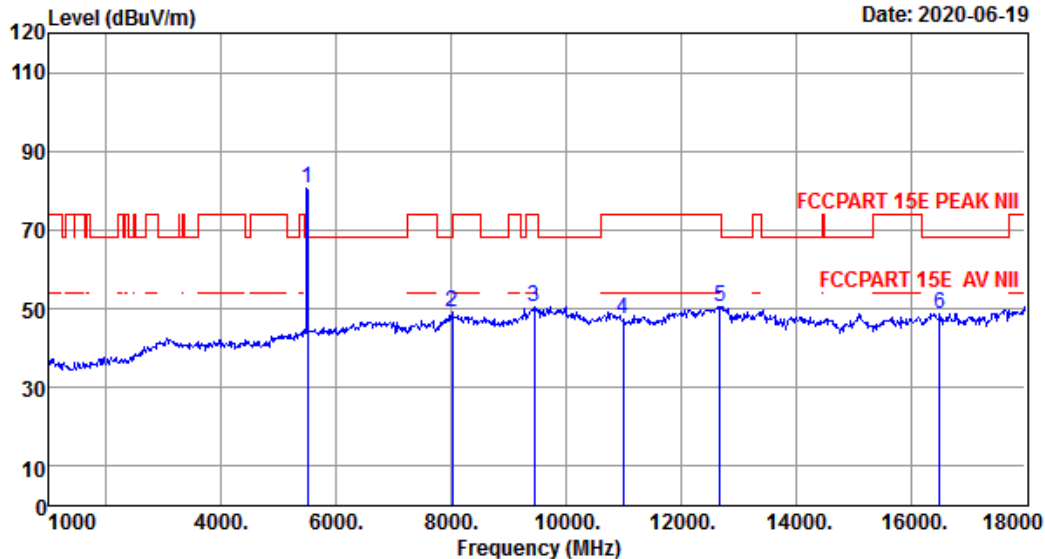
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Data: 71

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 71
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5500MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5500.00	32.90	3.71	34.50	78.54	80.65	68.20	-12.45	Peak
2	8021.00	36.90	5.80	34.89	41.13	48.94	68.20	19.26	Peak
3	9449.00	37.80	5.48	34.31	41.33	50.30	74.00	23.70	Peak
4	11000.00	39.90	6.11	34.50	35.94	47.45	74.00	26.55	Peak
5	12679.00	39.56	6.23	34.53	39.32	50.58	74.00	23.42	Peak
6	16500.00	40.36	7.12	34.30	35.46	48.64	68.20	19.56	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

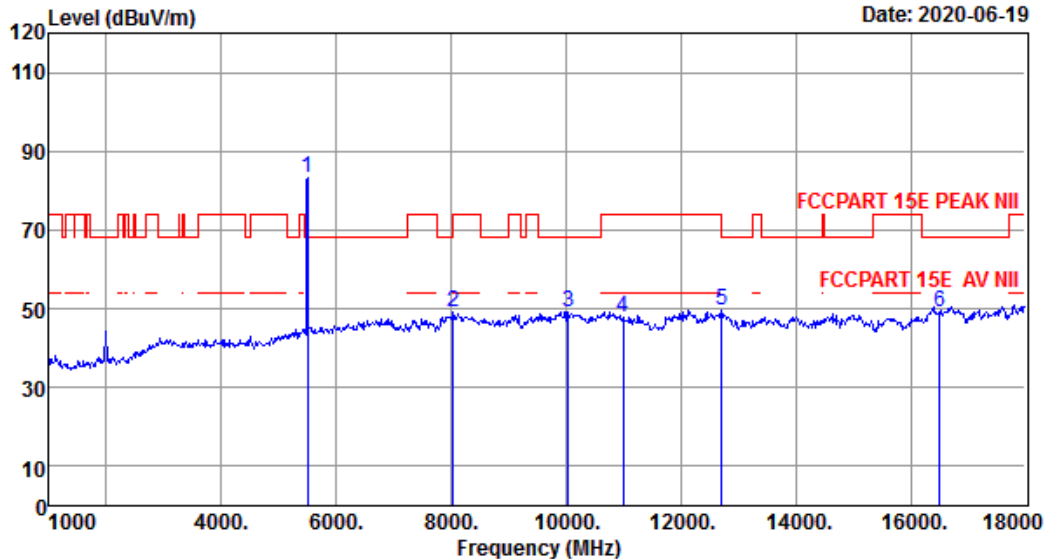
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Data: 72

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 72
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5500MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5500.00	32.90	3.71	34.50	81.31	83.42	68.20	-15.22	Peak
2	8038.00	36.90	5.78	34.88	41.53	49.33	74.00	24.67	Peak
3	10044.00	38.95	5.90	34.22	38.70	49.33	68.20	18.87	Peak
4	11000.00	39.90	6.11	34.50	36.39	47.90	74.00	26.10	Peak
5	12713.00	39.54	6.24	34.52	38.15	49.41	68.20	18.79	Peak
6	16500.00	40.36	7.12	34.30	36.06	49.24	68.20	18.96	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

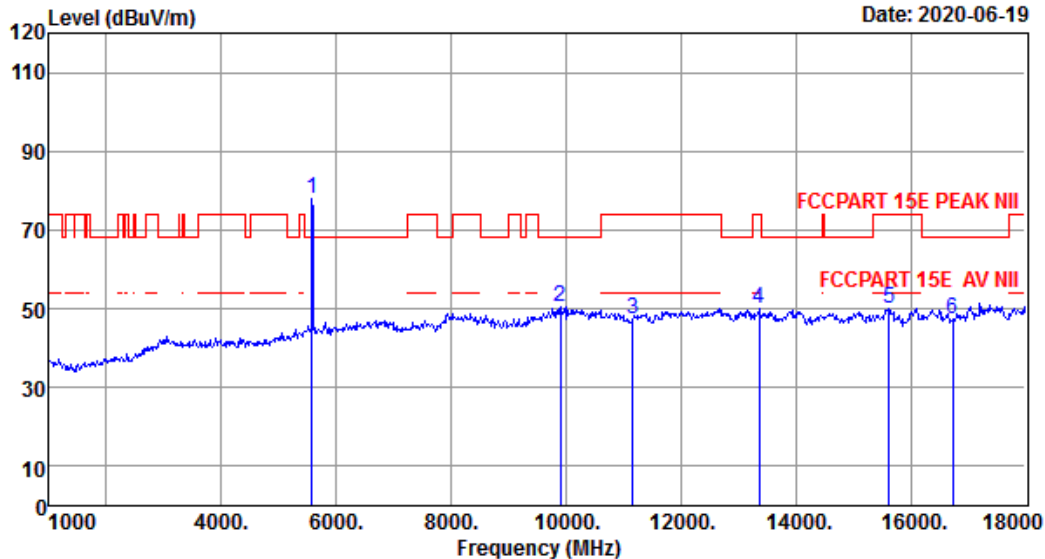
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Data: 73

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 73
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5580MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5580.00	32.89	3.79	34.47	75.70	77.91	68.20	-9.71	Peak
2	9908.00	38.73	5.82	34.22	40.02	50.35	68.20	17.85	Peak
3	11160.00	39.90	6.12	34.55	35.78	47.25	74.00	26.75	Peak
4	13359.00	40.01	6.31	34.36	38.12	50.08	74.00	23.92	Peak
5	15620.00	40.22	6.55	34.35	37.58	50.00	74.00	24.00	Peak
6	16740.00	40.62	7.26	34.35	33.72	47.25	68.20	20.95	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

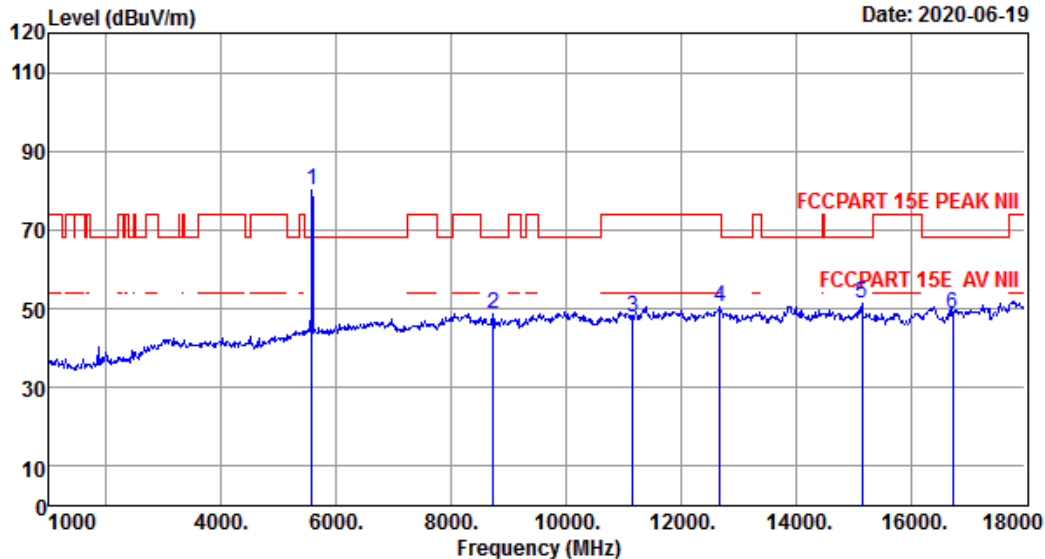
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Data: 74

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 74
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5580MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5580.00	32.89	3.79	34.47	77.72	79.93	68.20	-11.73	Peak
2	8735.00	36.90	5.24	34.54	41.18	48.78	68.20	19.42	Peak
3	11160.00	39.90	6.12	34.55	36.31	47.78	74.00	26.22	Peak
4	12679.00	39.56	6.23	34.53	39.26	50.52	74.00	23.48	Peak
5	15161.00	40.73	6.69	34.54	38.57	51.45	68.20	16.75	Peak
6	16740.00	40.62	7.26	34.35	34.99	48.52	68.20	19.68	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

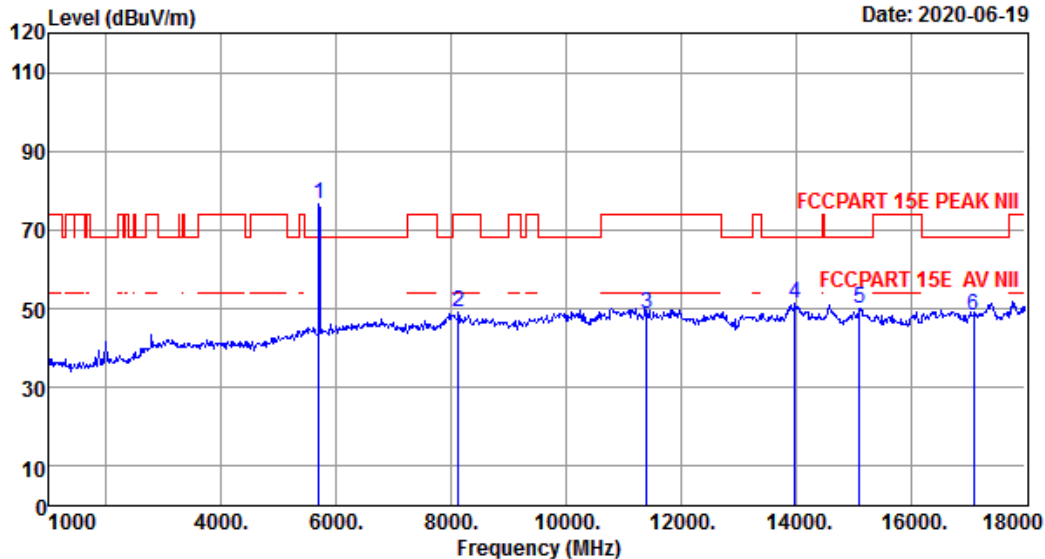
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Data: 75

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 75
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5700MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5700.00	32.86	3.94	34.42	74.16	76.54	68.20	-8.34	Peak
2	8123.00	36.90	5.67	34.84	41.28	49.01	74.00	24.99	Peak
3	11400.00	39.90	6.14	34.62	37.07	48.49	74.00	25.51	Peak
4	13988.00	41.07	6.52	34.30	38.04	51.33	68.20	16.87	Peak
5	15110.00	40.79	6.73	34.56	37.25	50.21	68.20	17.99	Peak
6	17100.00	41.71	7.52	34.39	33.36	48.20	68.20	20.00	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

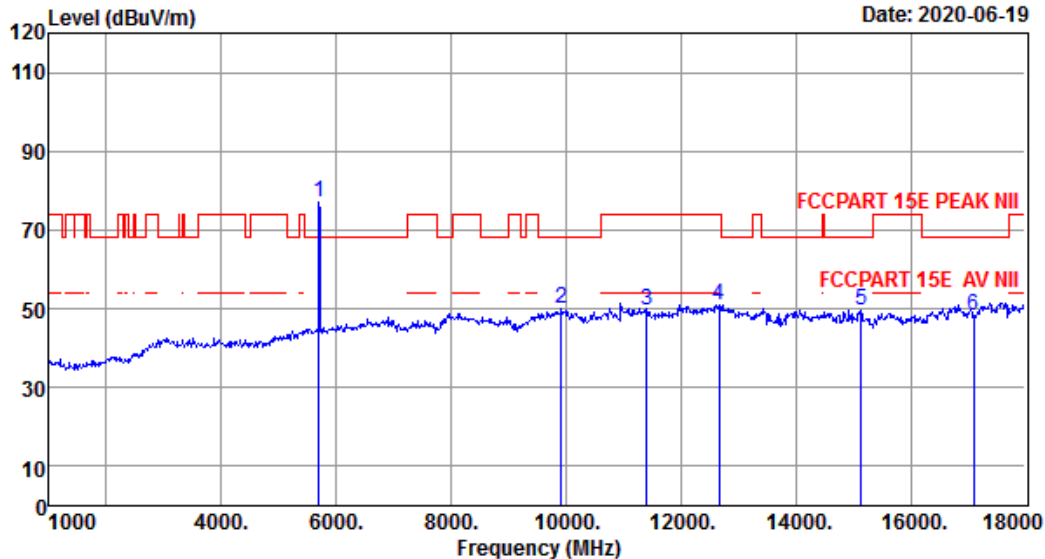
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Data: 76

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 76
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5700MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5700.00	32.86	3.94	34.42	74.62	77.00	68.20	-8.80	Peak
2	9925.00	38.76	5.84	34.21	39.61	50.00	68.20	18.20	Peak
3	11400.00	39.90	6.14	34.62	38.04	49.46	74.00	24.54	Peak
4	12662.00	39.57	6.23	34.54	39.62	50.88	74.00	23.12	Peak
5	15144.00	40.75	6.71	34.54	36.66	49.58	68.20	18.62	Peak
6	17100.00	41.71	7.52	34.39	33.60	48.44	68.20	19.76	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

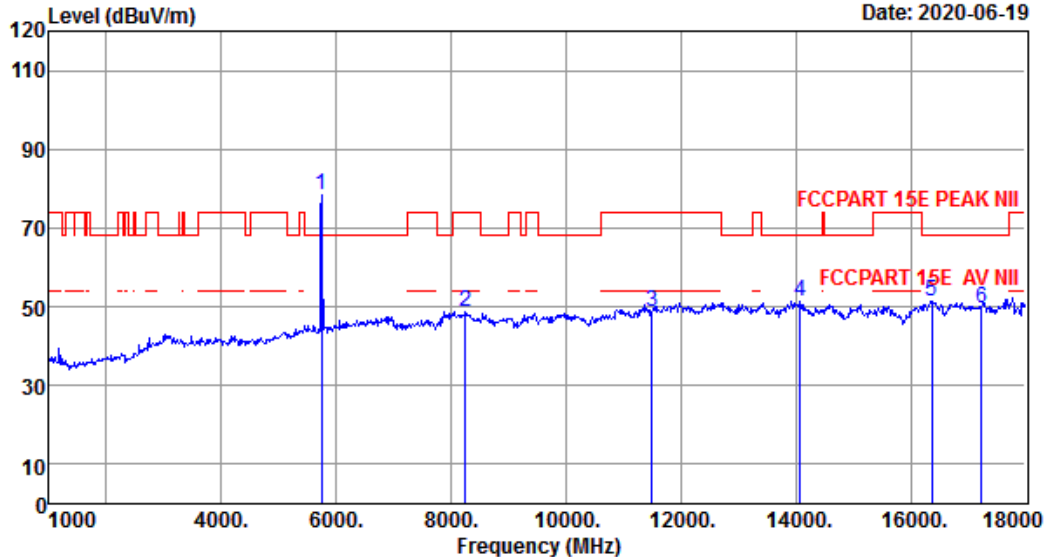
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Data: 77

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 77
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5745MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5745.00	32.85	4.00	34.40	76.07	78.52	68.20	-10.32	Peak
2	8242.00	36.90	5.52	34.78	41.18	48.82	74.00	25.18	Peak
3	11490.00	39.90	6.15	34.65	37.34	48.74	74.00	25.26	Peak
4	14073.00	41.09	6.58	34.32	38.01	51.36	68.20	16.84	Peak
5	16368.00	40.21	7.06	34.27	38.40	51.40	68.20	16.80	Peak
6	17235.00	42.80	7.65	34.38	33.55	49.62	68.20	18.58	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

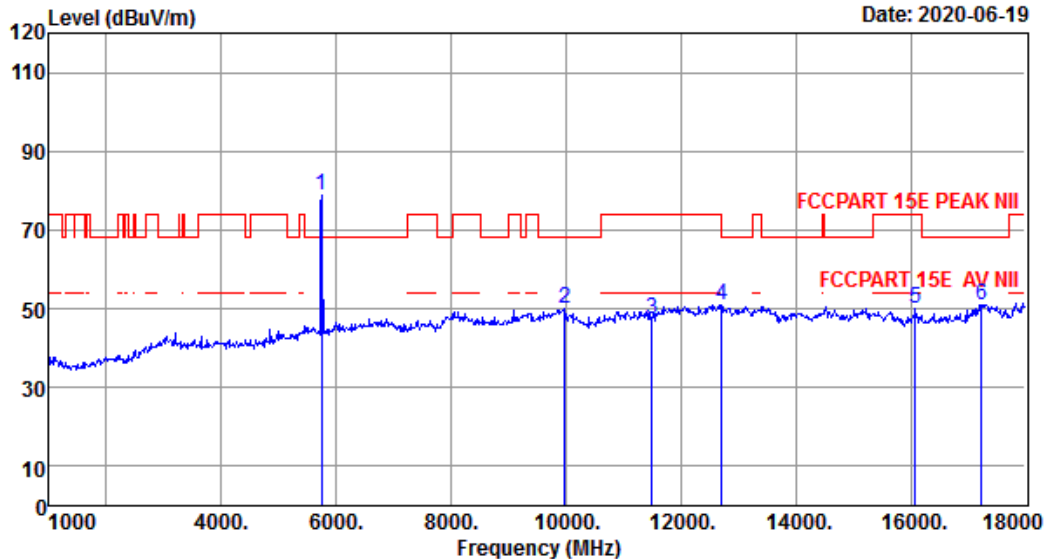
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Data: 78

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 78
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5745MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5745.00	32.85	4.00	34.40	76.56	79.01	68.20	-10.81	Peak
2	9976.00	38.87	5.88	34.20	39.33	49.88	68.20	18.32	Peak
3	11489.00	39.90	6.15	34.65	36.04	47.44	74.00	26.56	Peak
4	12713.00	39.54	6.24	34.52	39.50	50.76	68.20	17.44	Peak
5	16079.00	39.89	6.94	34.22	37.65	50.26	74.00	23.74	Peak
6	17235.00	42.80	7.65	34.38	34.69	50.76	68.20	17.44	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

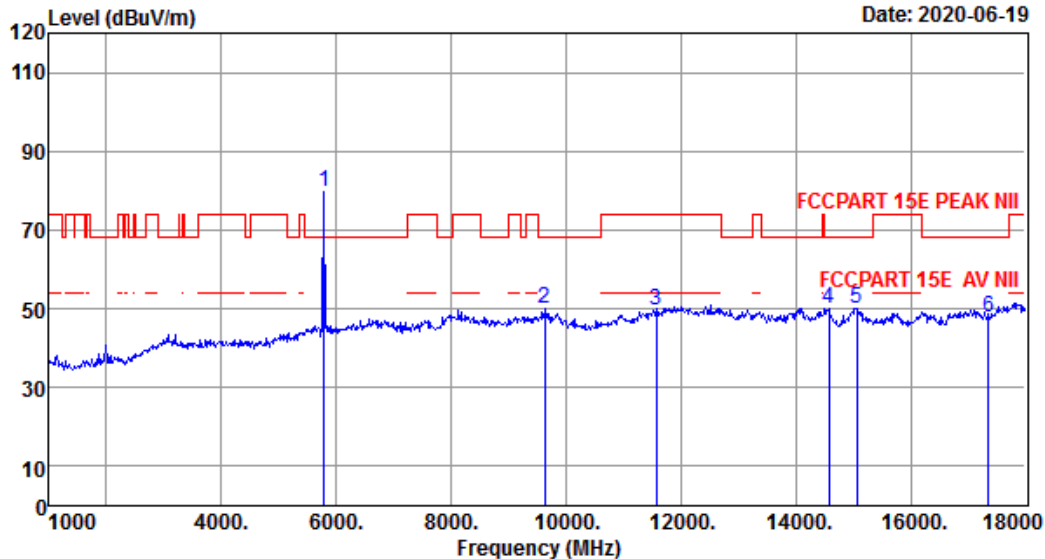
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Data: 79

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 79
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5785MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5785.00	32.84	4.05	34.39	77.27	79.77	68.20	-11.57	Peak
2	9636.00	38.18	5.61	34.27	40.33	49.85	68.20	18.35	Peak
3	11570.00	39.90	6.12	34.67	38.12	49.47	74.00	24.53	Peak
4	14583.00	40.98	6.89	34.47	36.79	50.19	68.20	18.01	Peak
5	15059.00	40.84	6.77	34.58	37.19	50.22	68.20	17.98	Peak
6	17355.00	43.75	7.77	34.36	30.69	47.85	68.20	20.35	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

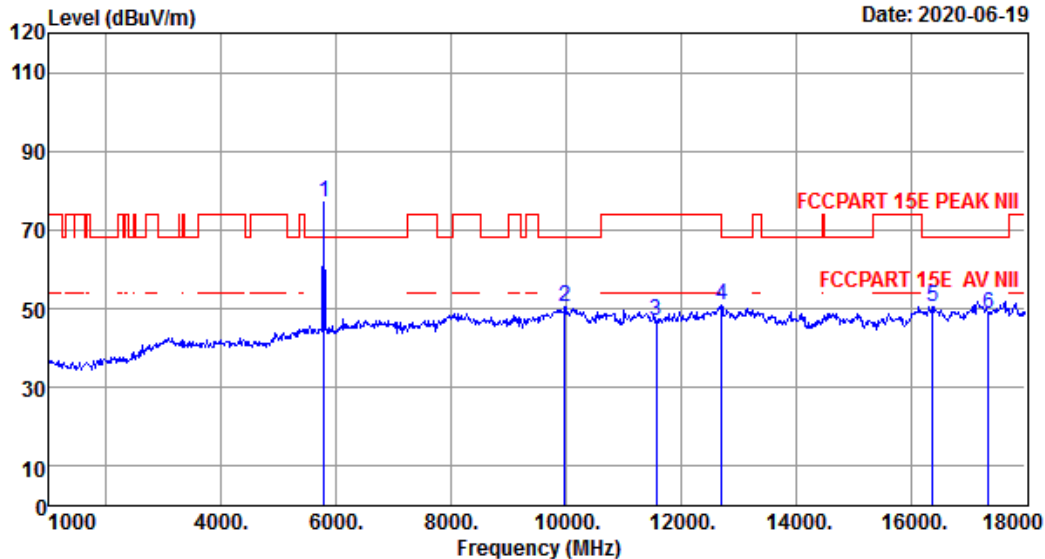
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Data: 80

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 80
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5785MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5785.00	32.84	4.05	34.39	74.35	76.85	68.20	-8.65	Peak
2	9976.00	38.87	5.88	34.20	39.97	50.52	68.20	17.68	Peak
3	11570.00	39.90	6.12	34.67	35.40	46.75	74.00	27.25	Peak
4	12713.00	39.54	6.24	34.52	39.59	50.85	68.20	17.35	Peak
5	16385.00	40.23	7.07	34.28	37.50	50.52	68.20	17.68	Peak
6	17355.00	43.75	7.77	34.36	31.55	48.71	68.20	19.49	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

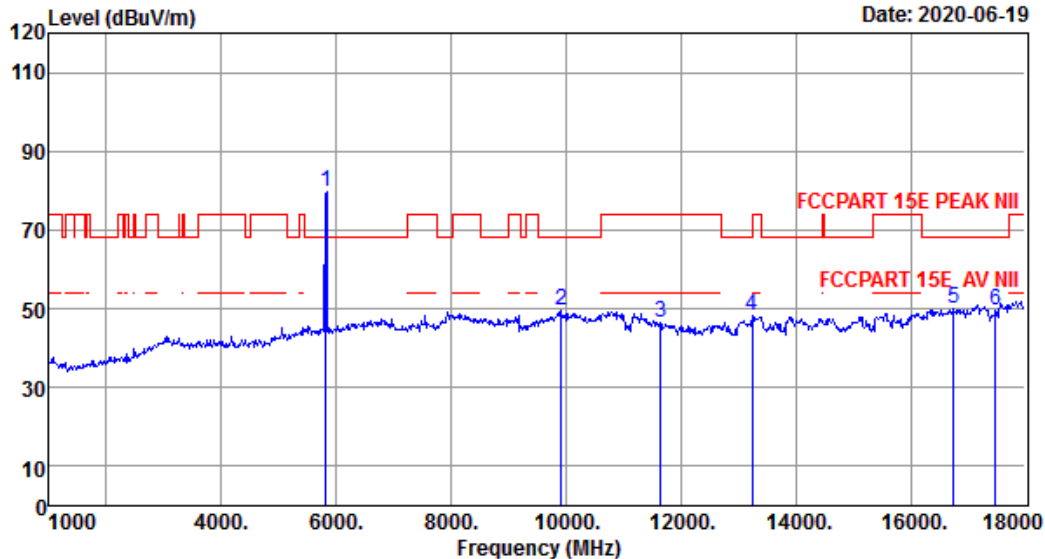
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Data: 81

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

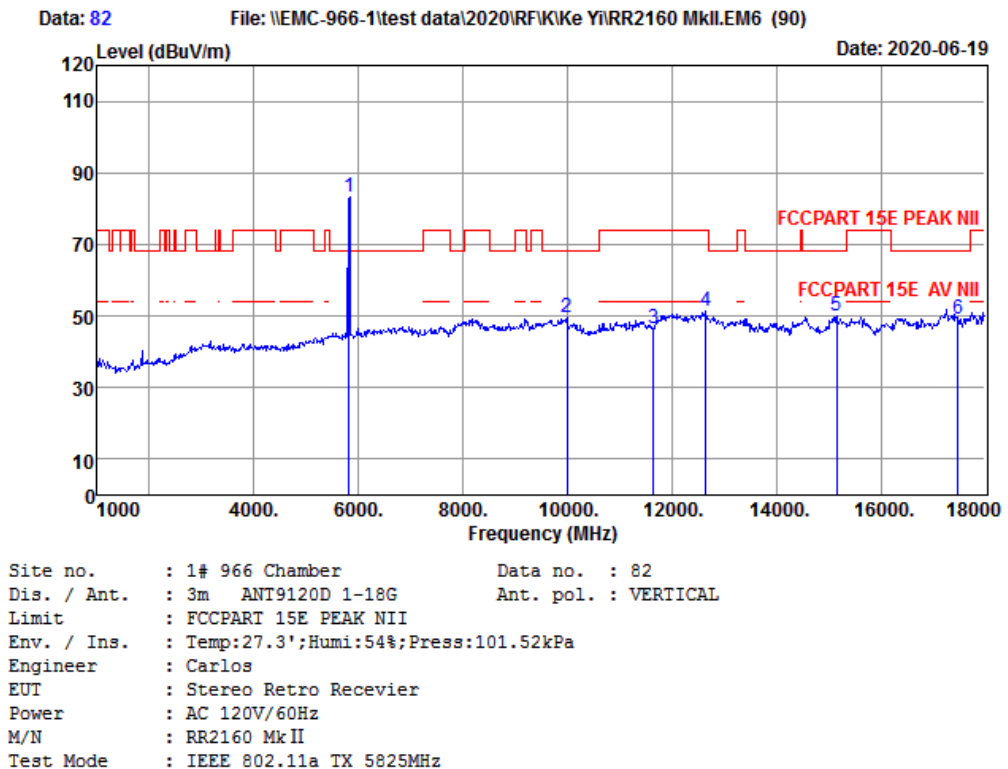
Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 81
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5825MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5825.00	32.83	4.11	34.37	77.31	79.88	68.20	-11.68	Peak
2	9925.00	38.76	5.84	34.21	39.06	49.45	68.20	18.75	Peak
3	11650.00	39.90	6.08	34.69	35.02	46.31	74.00	27.69	Peak
4	13240.00	39.80	6.30	34.38	36.69	48.41	68.20	19.79	Peak
5	16742.00	40.62	7.26	34.35	36.40	49.93	68.20	18.27	Peak
6	17475.00	44.70	7.89	34.35	31.54	49.78	68.20	18.42	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.



	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5825.00	32.83	4.11	34.37	80.70	83.27	68.20	-15.07	Peak
2	9993.00	38.90	5.89	34.20	38.98	49.57	68.20	18.63	Peak
3	11650.00	39.90	6.08	34.69	35.39	46.68	74.00	27.32	Peak
4	12645.00	39.58	6.23	34.54	40.14	51.41	74.00	22.59	Peak
5	15161.00	40.73	6.69	34.54	36.96	49.84	68.20	18.36	Peak
6	17475.00	44.70	7.89	34.35	30.79	49.03	68.20	19.17	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

Note:

1. The amplitude of 18GHz to 40GHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.
2. All test mode had been pre-test, only Low/Middle/High Channel of the worst case modulation mode was reported

Band Edge

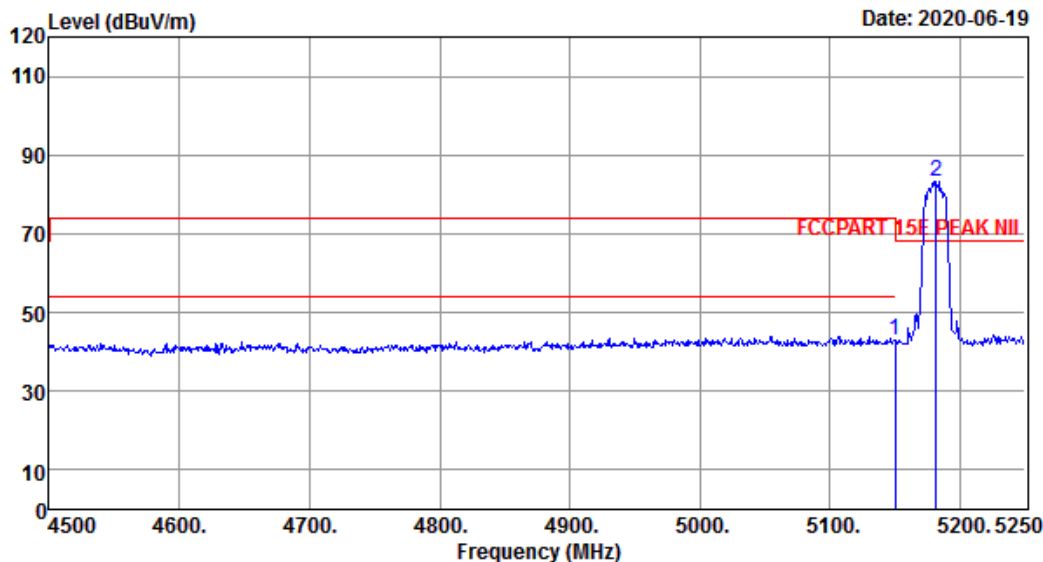
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Data: 83

File: \\EMC-966-1\test data\2020\RF\K\Ke Yi\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 83
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Recevier
 Power : AC 120V/60Hz
 M/N : RR2160 Mk II
 Test Mode : IEEE 802.11a TX 5180MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5150.00	32.13	3.50	34.64	41.95	42.94	68.20	25.26	Peak
2	5181.75	32.20	3.52	34.63	82.32	83.41	68.20	-15.21	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official
 limit are not reported.

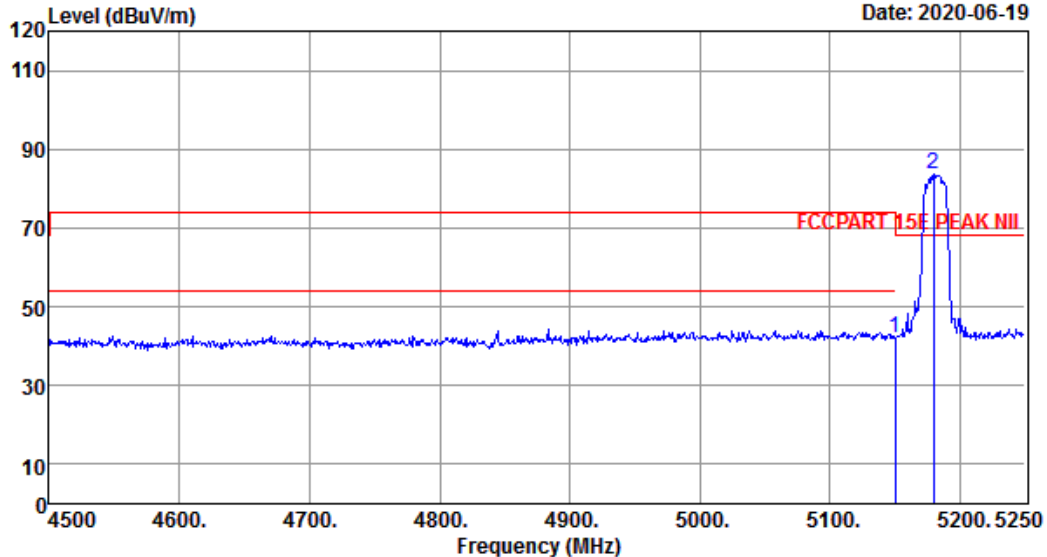
EST Technology

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Data: 84

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 84
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5180MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5150.00	32.13	3.50	34.64	40.95	41.94	68.20	26.26	Peak
2	5179.50	32.20	3.52	34.63	82.64	83.73	68.20	-15.53	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

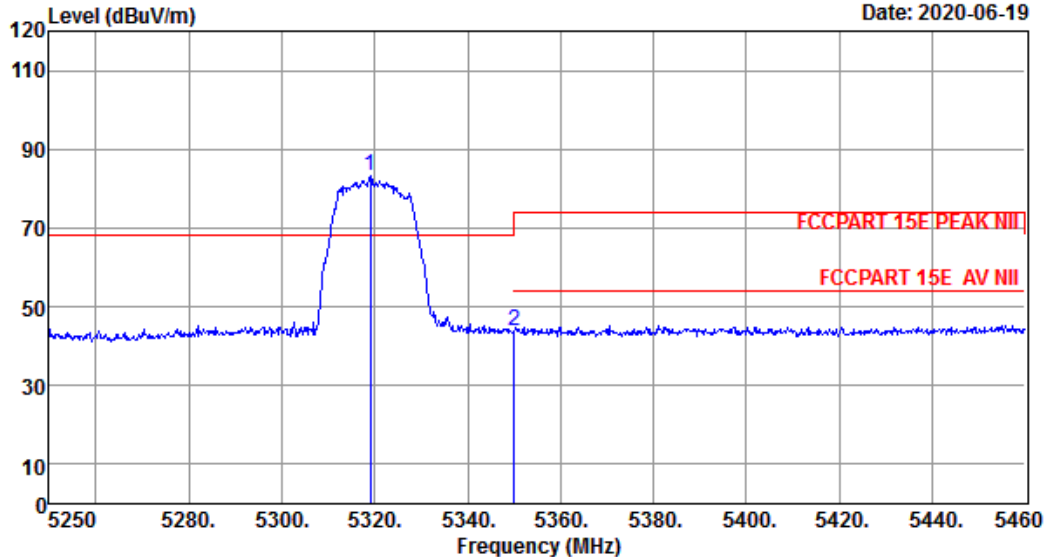
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Data: 85

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 85
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5320MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5319.09	32.50	3.60	34.57	81.59	83.12	68.20	-14.92	Peak
2	5350.00	32.57	3.62	34.56	42.03	43.66	68.20	24.54	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

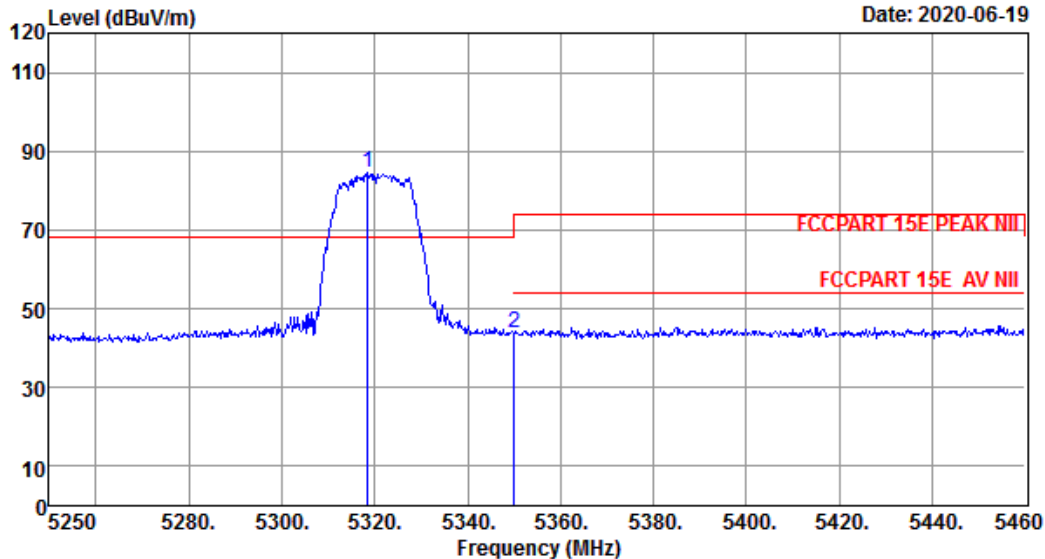
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Data: 86

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 86
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5320MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5318.46	32.50	3.60	34.57	83.01	84.54	68.20	-16.34	Peak
2	5350.00	32.57	3.62	34.56	42.09	43.72	68.20	24.48	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

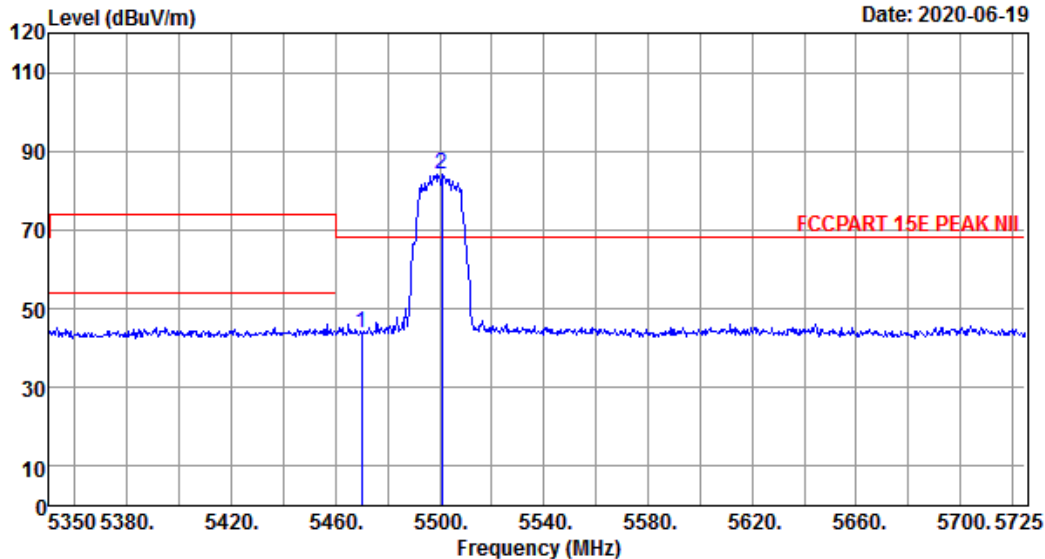
EST Technology

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Data: 87

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 87
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5500MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5470.00	32.83	3.69	34.51	41.64	43.65	68.20	24.55	Peak
2	5500.75	32.90	3.71	34.50	82.14	84.25	68.20	-16.05	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

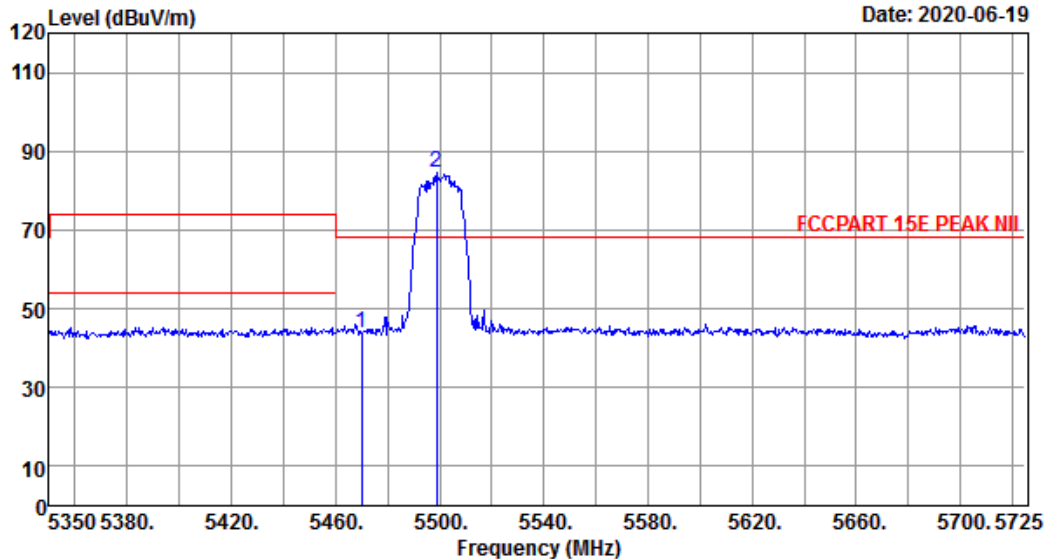
EST Technology

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Data: 88

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 88
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5500MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5470.00	32.83	3.69	34.51	41.86	43.87	68.20	24.33	Peak
2	5498.88	32.90	3.71	34.50	82.61	84.72	68.20	-16.52	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

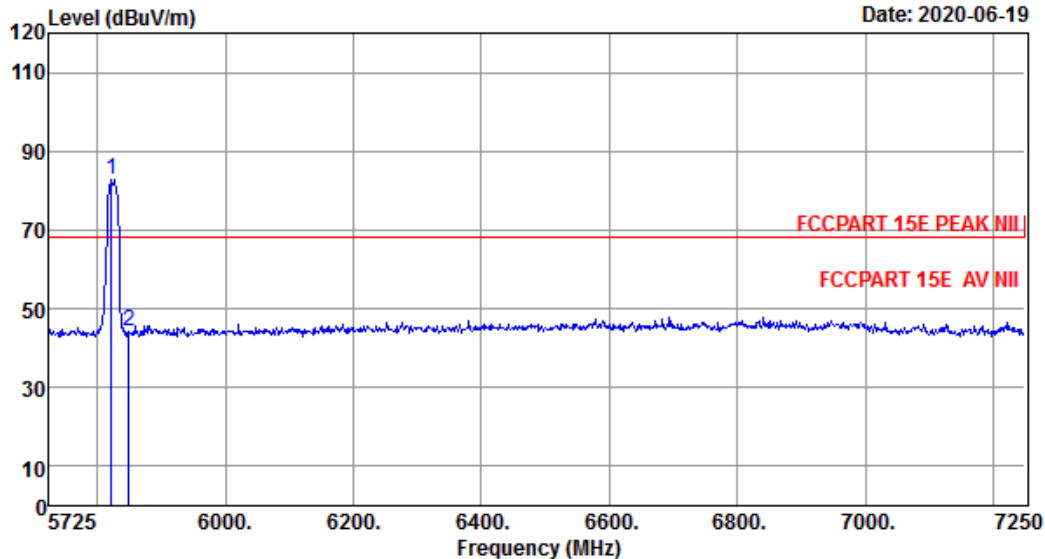
EST Technology

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Data: 89

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19



Site no. : 1# 966 Chamber Data no. : 89
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3';Humi:54%;Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5825MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5822.60	32.83	4.11	34.37	80.25	82.82	68.20	-14.62	Peak
2	5850.05	32.83	4.13	34.36	41.61	44.21	68.20	23.99	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

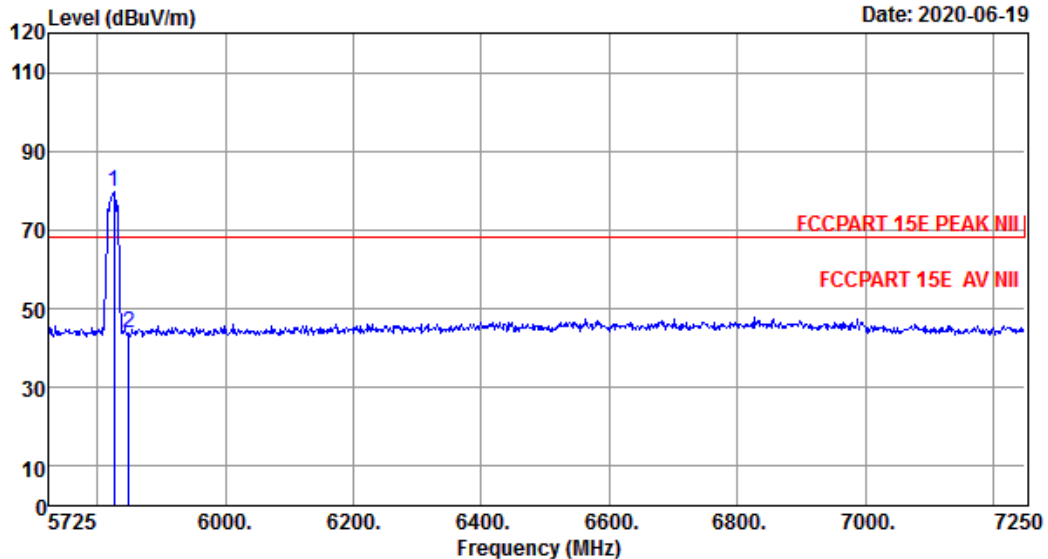
EST Technology

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Data: 90

File: \\EMC-966-1\\test data\\2020\\RF\\K\\Ke Yi\\RR2160 MkII.EM6 (90)

Date: 2020-06-19

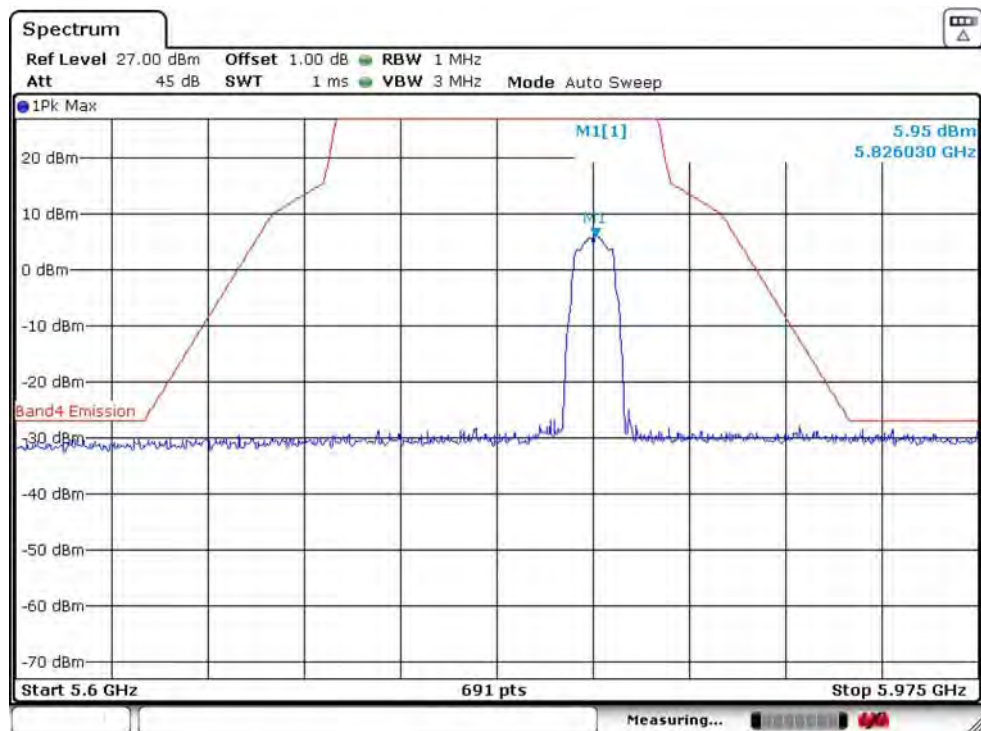
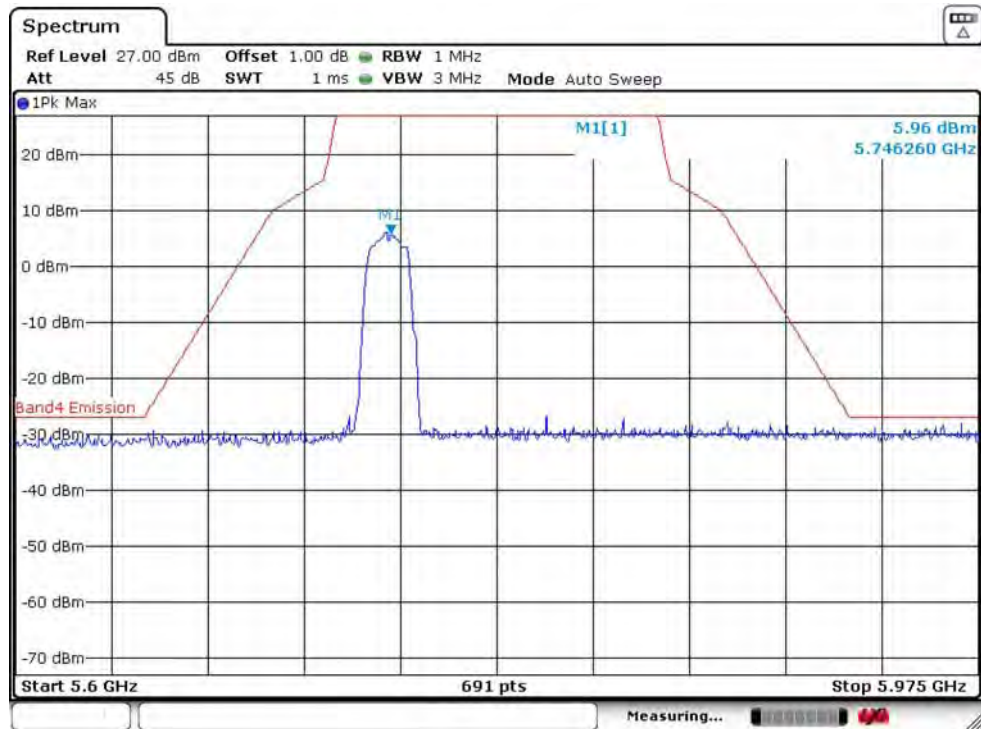


Site no. : 1# 966 Chamber Data no. : 90
 Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
 Limit : FCCPART 15E PEAK NII
 Env. / Ins. : Temp:27.3'; Humi:54%; Press:101.52kPa
 Engineer : Carlos
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 MkII
 Test Mode : IEEE 802.11a TX 5825MHz

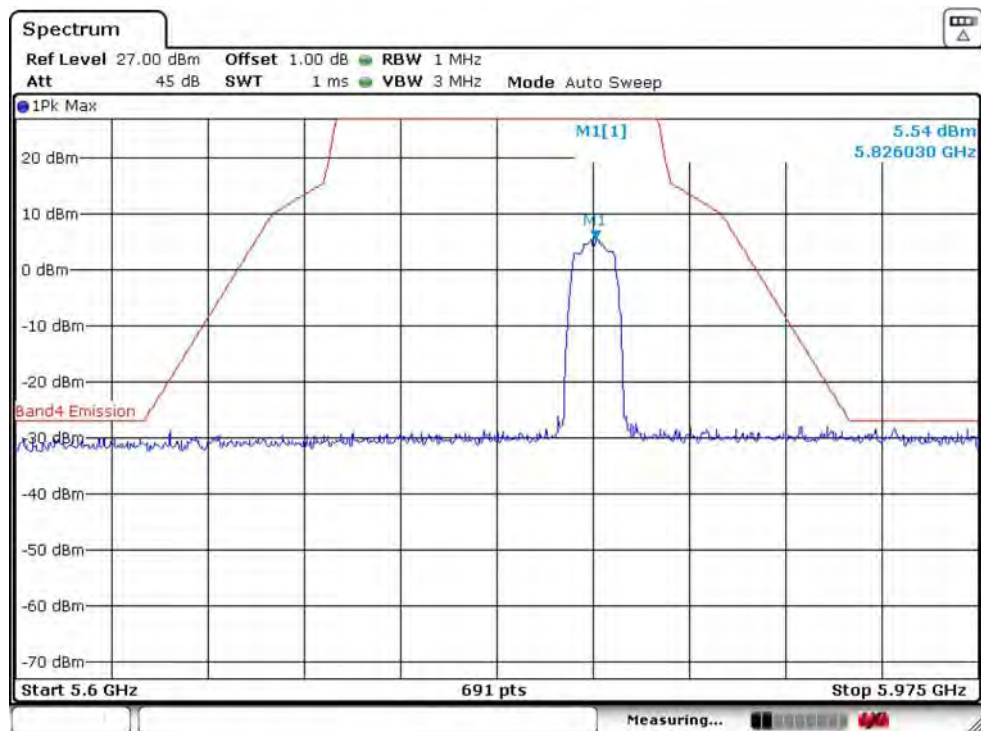
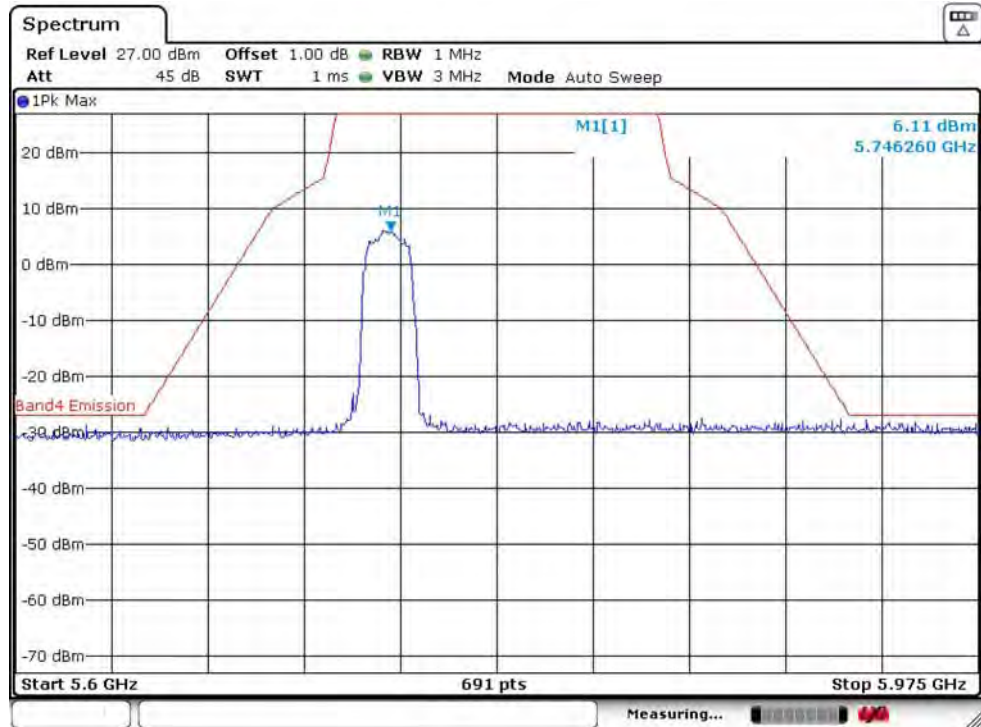
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	5825.65	32.83	4.11	34.37	77.27	79.84	68.20	-11.64	Peak
2	5850.05	32.83	4.13	34.36	41.30	43.90	68.20	24.30	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. Margin= Limit - Emission Level.
 3. The emission levels that are 20dB below the official limit are not reported.

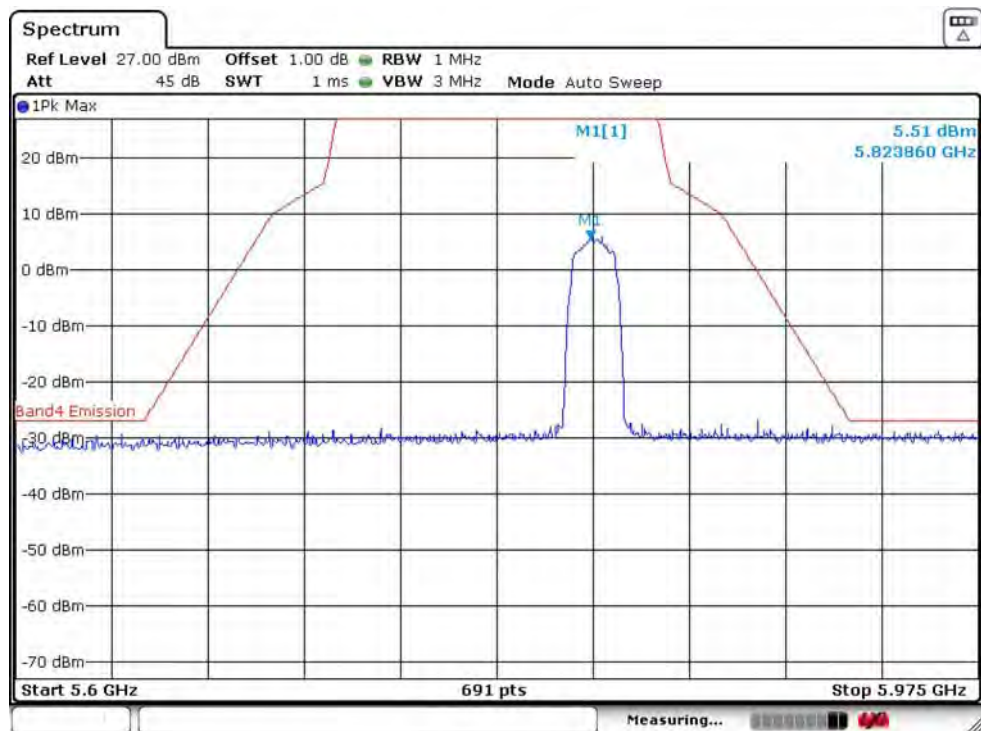
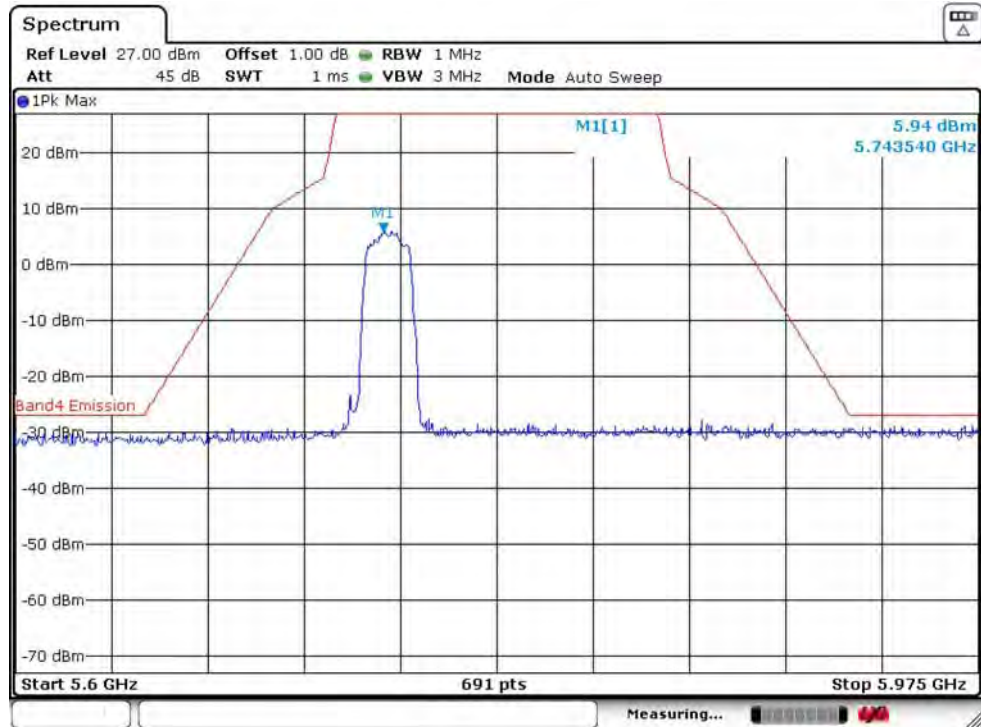
IEEE 802.11a



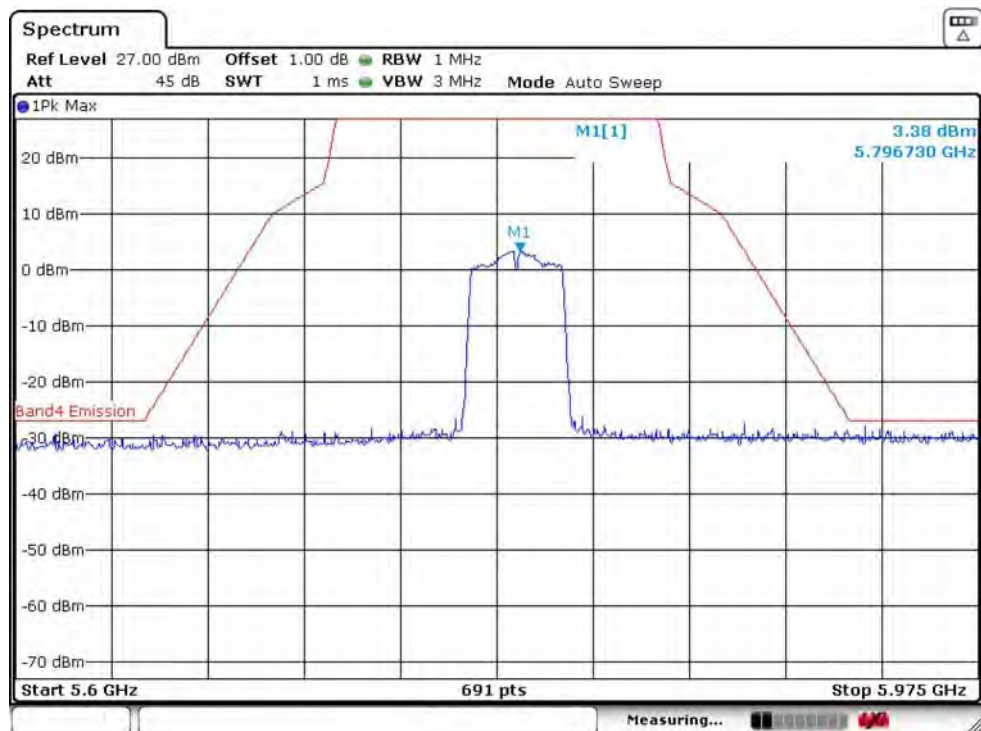
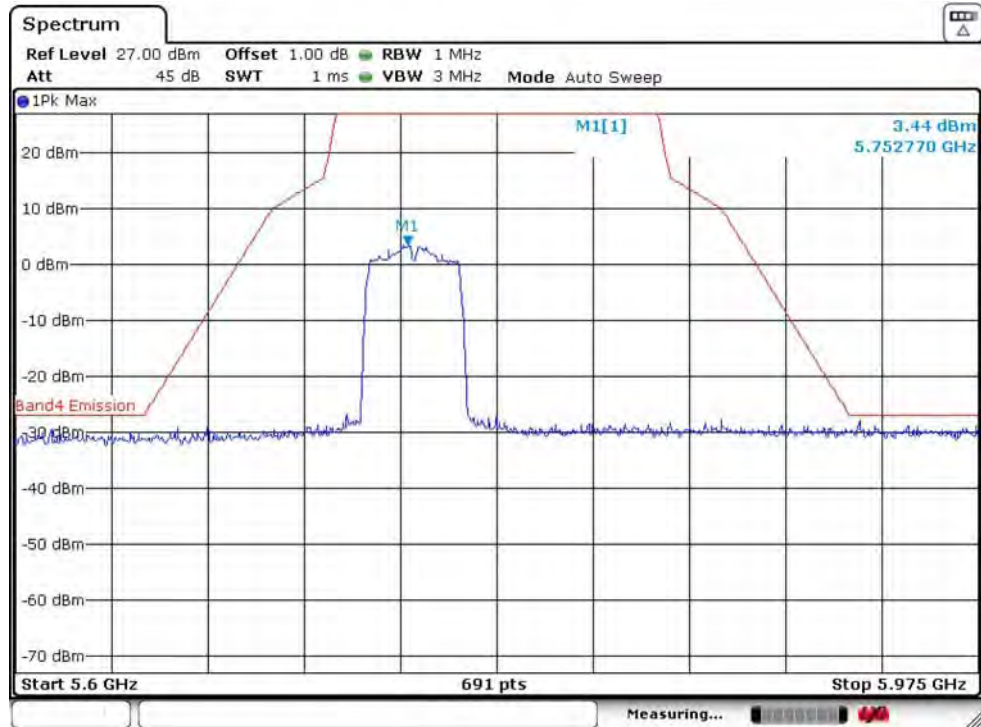
IEEE 802.11n HT20



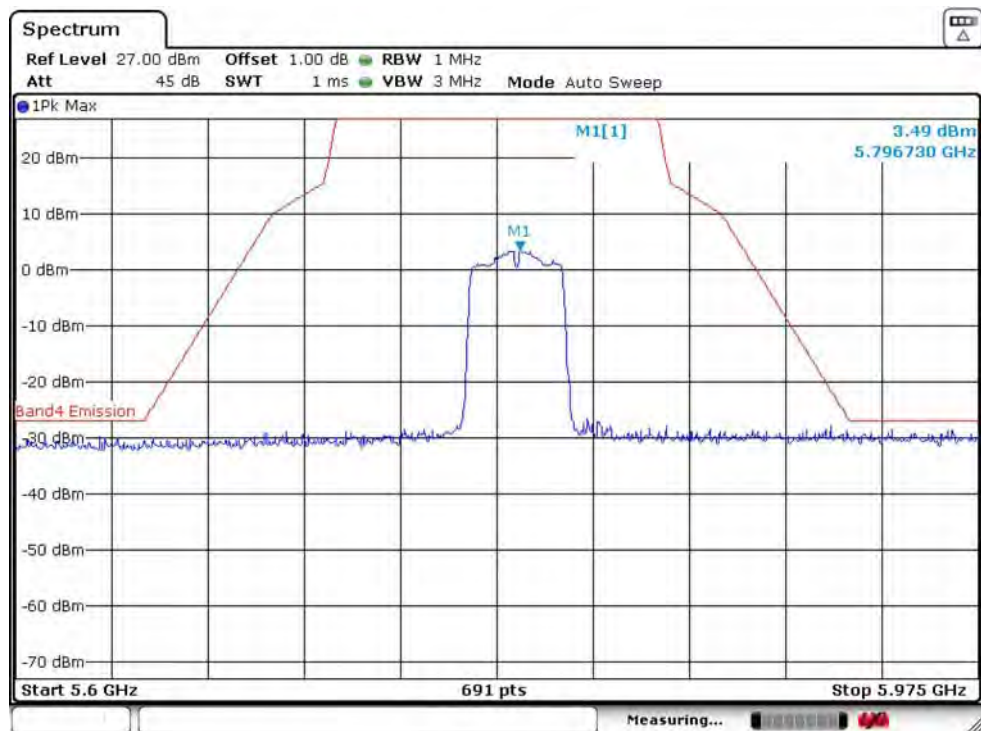
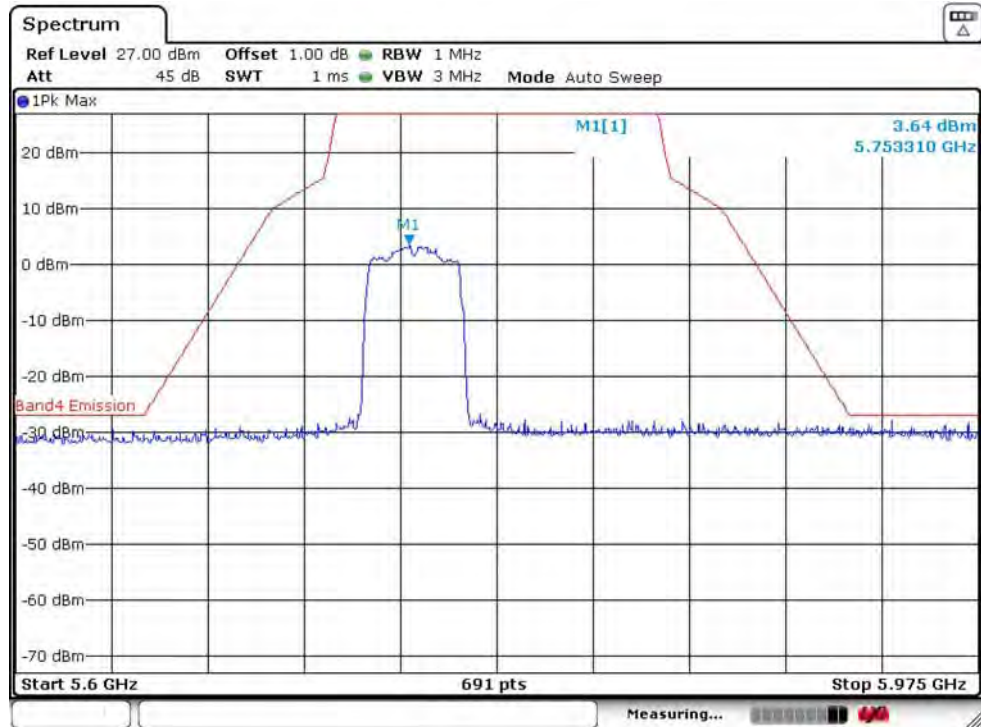
IEEE 802.11ac VHT20



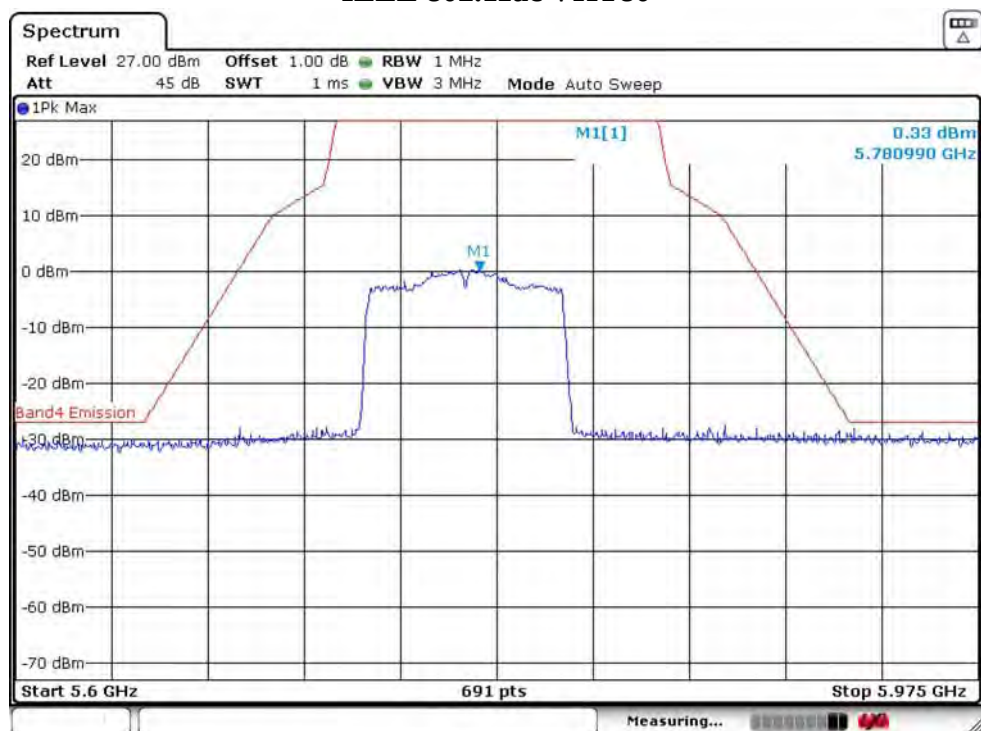
IEEE 802.11n HT40



IEEE 802.11ac VHT40



IEEE 802.11ac VHT80



All modulations are all tested ,only worse case is reported

18000MHz-40000MHz

Pass

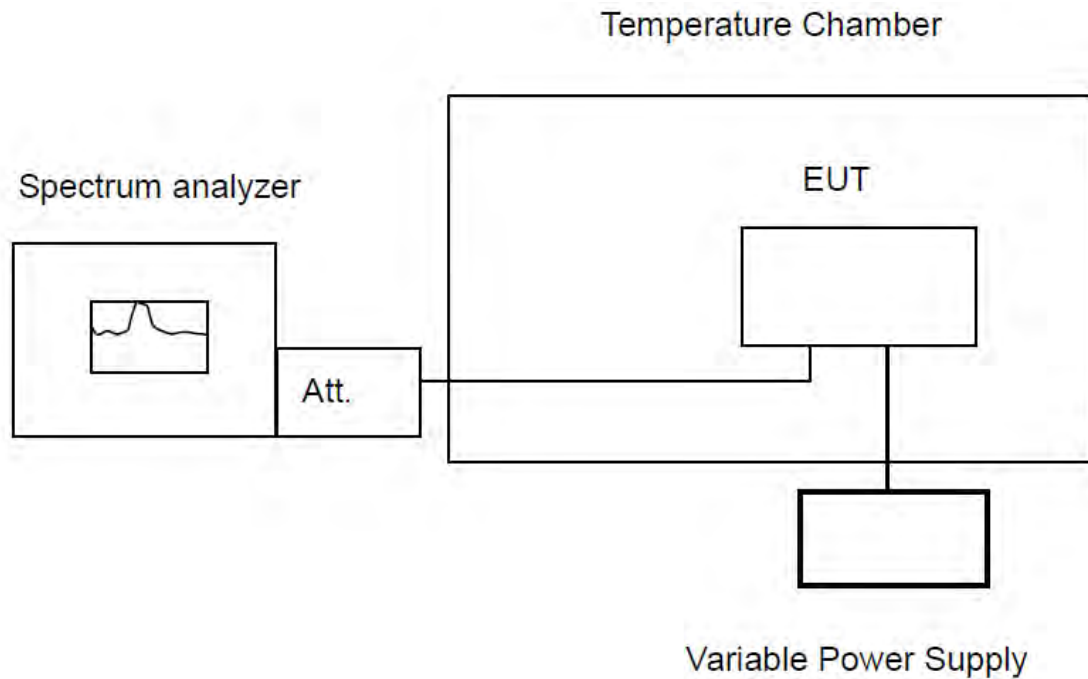
Note: The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

7. FREQUENCY STABILITY

7.1. Limit

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 operational description.

7.2. Test Setup



7.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	10KHz
VBW	10KHz
Span	200KHz
Sweep Time	Auto
Detector	PEAK
Trace Mode	Max Hold

7.4. Test Procedure

For measurement frequency stability under temperature variation :

- a. Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT.
- b. Turn the EUT OFF and place it inside the environmental temperature chamber.
- c. Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- d. Spectrum analyzer setting parameters in accordance with section 7.3.
- e. Set the temperature control on the chamber to the Specified temperature and allow the oscillator heater and the chamber temperature to stabilize.
- f. Turn the EUT ON with the rated voltage, and the EUT transmit continuously with maximum output power.
- g. Record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized.
- h. Repeat step d through step f to measured the temperature form -20°C to $+50^{\circ}\text{C}$ in 10°C steps.

For frequency stability under voltage variation:

- a. Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT.
- b. Turn the EUT OFF and place it inside the environmental temperature chamber.
- c. Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- d. Spectrum analyzer setting parameters in accordance with section 7.3.
- e. Unless otherwise specified, set the temperature control on the chamber to the ambient room temperature ($+15^{\circ}\text{C}$ to $+25^{\circ}\text{C}$) and allow the oscillator heater and the chamber temperature to stabilize.
- f. Turn the EUT ON with the rated voltage, and the EUT transmit continuously with maximum output power.
- g. Record the operating frequency.
- h. Repeat step d through step f to measured the varied from 85% to 115% of the rated voltage.

7.5. Test Result

Frequency (MHz)	Voltage (V)	Temperature (°C)	Time (minutes)	Measurement Value (MHz)	Frequency Error (ppm)
5180	120	50	0	5179.9674740	-6.28
			2	5179.9476413	-10.11
			5	5179.9673213	-6.31
			10	5179.9713355	-5.53
	120	40	0	5179.9670040	-6.37
			2	5179.9735431	-5.11
			5	5179.9738765	-5.04
			10	5179.9789952	-4.05
	120	30	0	5179.9674740	-6.28
			2	5179.9735712	-5.10
			5	5179.9792587	-4.00
			10	5179.9715936	-5.48
	120	20	0	5179.9690040	-5.98
			2	5179.9832165	-3.24
			5	5179.9878946	-2.34
			10	5179.9836987	-3.15
	120	10	0	5179.9674740	-6.28
			2	5179.9812369	-3.62
			5	5179.9885237	-2.22
			10	5179.9891479	-2.10
	120	0	0	5179.9674740	-6.28
			2	5179.9810022	-3.67
			5	5179.9832000	-3.24
			10	5179.9810224	-3.66
	120	-10	0	5179.9674740	-6.28
			2	5179.9800124	-3.86
			5	5179.9800215	-3.86
			10	5179.9836500	-3.16
	120	-20	0	5179.9804730	-3.77
			2	5179.9800154	-3.86
			5	5179.9800325	-3.85
			10	5179.9875320	-2.41
	120	20	/	5179.9670040	-6.37
	102	20	/	5179.9867530	-2.56
	138	20	/	5179.9832196	-3.24
	MAX Frquency Error(ppm)				-2.10

Frequency (MHz)	Voltage (V)	Temperature (°C)	Time (minutes)	Measurement Value (MHz)	Frequency Error (ppm)
5320	120	50	0	5319.9680040	-6.01
			2	5319.9811124	-3.55
			5	5319.9814725	-3.48
			10	5319.9833756	-3.12
	120	40	0	5319.9680040	-6.01
			2	5319.9784561	-4.05
			5	5319.9796358	-3.83
			10	5319.9853148	-2.76
	120	30	0	5319.9674740	-6.11
			2	5319.9821005	-3.36
			5	5319.9825004	-3.29
			10	5319.9823005	-3.33
	120	20	0	5319.9674740	-6.11
			2	5319.9801436	-3.73
			5	5319.9801238	-3.74
			10	5319.9807895	-3.61
	120	10	0	5319.9674740	-6.11
			2	5319.9810246	-3.57
			5	5319.9852127	-2.78
			10	5319.9863688	-2.56
	120	0	0	5319.9680040	-6.01
			2	5319.9853697	-2.75
			5	5319.9812347	-3.53
			10	5319.9843185	-2.95
	120	-10	0	5319.9674740	-6.11
			2	5319.9824154	-3.31
			5	5319.9877534	-2.30
			10	5319.3653978	-119.29
	120	-20	0	5319.9680040	-6.01
			2	5319.9836536	-3.07
			5	5319.9875341	-2.34
			10	5319.9854322	-2.74
	120	20	/	5319.9866652	-2.51
	102	20	/	5319.9844216	-2.93
	138	20	/	5319.9837783	-3.05
	MAX Frquency Error(ppm)				-2.30

Frequency (MHz)	Voltage (V)	Temperature (°C)	Time (minutes)	Measurement Value (MHz)	Frequency Error (ppm)
5500	120	50	0	5499.9654750	-6.28
			2	5499.9811255	-3.43
			5	5499.9822146	-3.23
			10	5499.9833515	-3.03
	120	40	0	5499.9654740	-6.28
			2	5499.9815447	-3.36
			5	5499.9813458	-3.39
			10	5499.9831654	-3.06
	120	30	0	5499.9654750	-6.28
			2	5499.9832148	-3.05
			5	5499.9876658	-2.24
			10	5499.9822354	-3.23
	120	20	0	5499.9670040	-6.00
			2	5499.9820011	-3.27
			5	5499.9830021	-3.09
			10	5499.9830048	-3.09
	120	10	0	5499.9664740	-6.10
			2	5499.9835667	-2.99
			5	5499.9844352	-2.83
			10	5499.9833215	-3.03
	120	0	0	5499.9664740	-6.10
			2	5499.9835587	-2.99
			5	5499.9832246	-3.05
			10	5499.9822146	-3.23
	120	-10	0	5499.9654750	-6.28
			2	5499.9821146	-3.25
			5	5499.9830016	-3.09
			10	5499.9820014	-3.27
	120	-20	0	5499.9660040	-6.18
			2	5499.9851447	-2.70
			5	5499.9833200	-3.03
			10	5499.9834479	-3.01
	120	20	/	5499.9832249	-3.05
	102	20	/	5499.9811248	-3.43
	138	20	/	5499.9833548	-3.03
MAX Frquency Error(ppm)					-2.24

Frequency (MHz)	Voltage (V)	Temperature (°C)	Time (minutes)	Measurement Value (MHz)	Frequency Error (ppm)
5745	120	50	0	5744.9630040	-6.44
			2	5744.9733212	-4.64
			5	5744.9753322	-4.29
			10	5744.9755812	-4.25
	120	40	0	5744.9634750	-6.36
			2	5744.9788512	-3.68
			5	5744.9844581	-2.71
			10	5744.9846322	-2.67
	120	30	0	5744.9634750	-6.36
			2	5744.9733678	-4.64
			5	5744.9785555	-3.73
			10	5744.9785564	-3.73
	120	20	0	5744.9644750	-6.18
			2	5744.9711255	-5.03
			5	5744.9785513	-3.73
			10	5744.9775568	-3.91
	120	10	0	5744.9640040	-6.27
			2	5744.9763322	-4.12
			5	5744.9753322	-4.29
			10	5744.9751126	-4.33
	120	0	0	5744.9634750	-6.36
			2	5744.9711258	-5.03
			5	5744.9732216	-4.66
			10	5744.9721555	-4.85
	120	-10	0	5744.9634750	-6.36
			2	5744.9763219	-4.12
			5	5744.9752216	-4.31
			10	5744.9753449	-4.29
	120	-20	0	5744.9634750	-6.36
			2	5744.9711158	-5.03
			5	5744.9722159	-4.84
			10	5744.9725568	-4.78
	120	20	/	5744.9781584	-3.80
	102	20	/	5744.9758874	-4.20
	138	20	/	5744.9754486	-4.27
MAX Frquency Error(ppm)					-2.67

8. AC POWER LINE CONDUCTED EMISSIONS

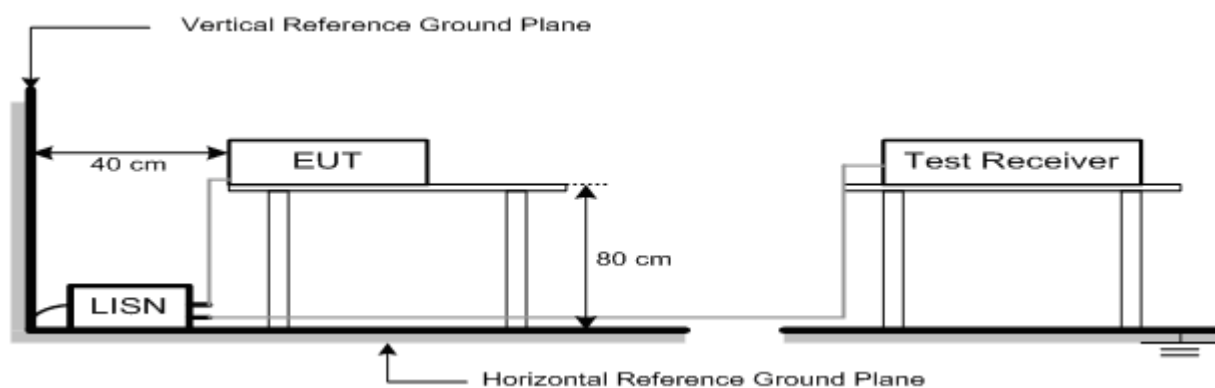
8.1. Limit

Frequency			Maximum RF Line Voltage	
			Quasi-Peak Level dB(μ V)	Average Level dB(μ V)
150kHz	~	500kHz	66 ~ 56*	56 ~ 46*
500kHz	~	5MHz	56	46
5MHz	~	30MHz	60	50

Notes:

1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

8.2. Test Setup



8.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	9KHz
VBW	9KHz
Start frequency	150KHz
Stop frequency	30MHz
Sweep Time	Auto
Detector	QP/AVG
Trace Mode	Max Hold

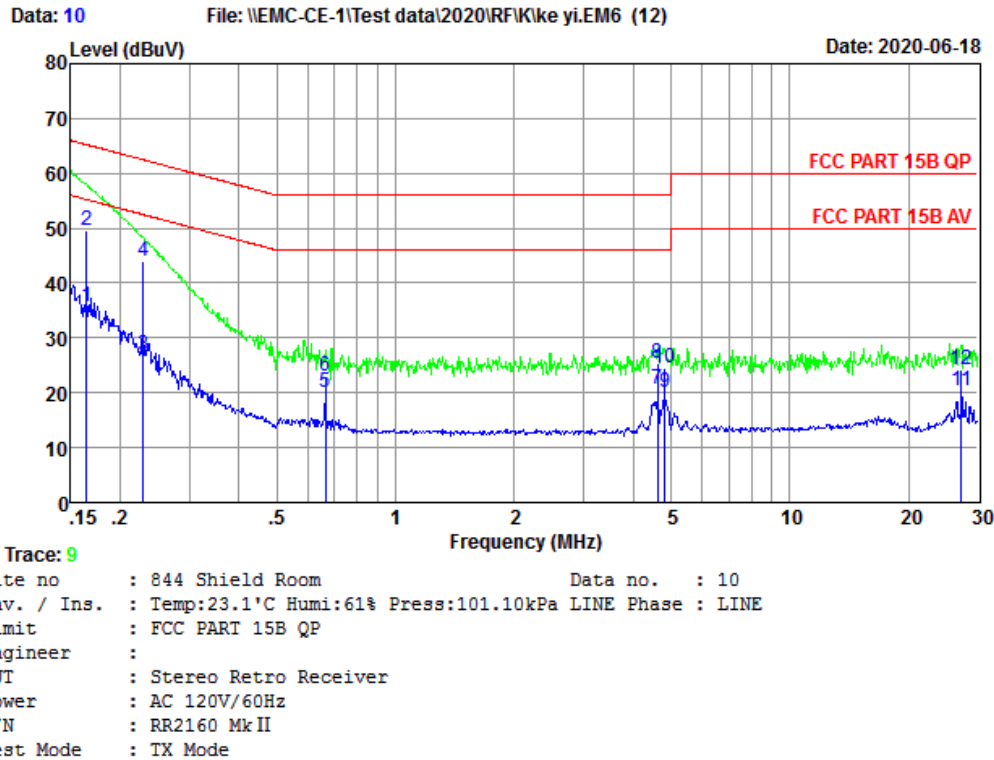
8.4. Test Procedure

- a. The EUT was placed on a non-metallic table, 80cm above the ground plane.
- b. The EUT Power connected to the power mains through a line impedance stabilization network.
- c. Provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs).
- d. Set the EUT transmit continuously with maximum output power.
- e. Spectrum analyzer setting parameters in accordance with section 8.3.
- f. The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Test.
- g. Record the results in the test report.

8.5. Test Result

EST Technology

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Houjie, Dongguan, Guangdong, China
Tel: +86-769-83081888
Fax: +86-769-83081878



	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.164	9.79	9.69	16.10	35.58	55.25	19.67	Average
2	0.164	9.79	9.69	30.25	49.73	65.25	15.52	QP
3	0.229	9.75	9.84	7.40	26.99	52.48	25.49	Average
4	0.229	9.75	9.84	24.25	43.84	62.48	18.64	QP
5	0.665	9.82	9.92	0.28	20.02	46.00	25.98	Average
6	0.665	9.82	9.92	3.25	22.99	56.00	33.01	QP
7	4.622	9.86	10.00	0.70	20.56	46.00	25.44	Average
8	4.622	9.86	10.00	5.47	25.33	56.00	30.67	QP
9	4.822	9.86	10.00	0.28	20.14	46.00	25.86	Average
10	4.822	9.86	10.00	4.69	24.55	56.00	31.45	QP
11	27.271	9.90	10.16	0.21	20.27	50.00	29.73	Average
12	27.271	9.90	10.16	4.28	24.34	60.00	35.66	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
2. Margin=Limit - Emission Level.
3. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

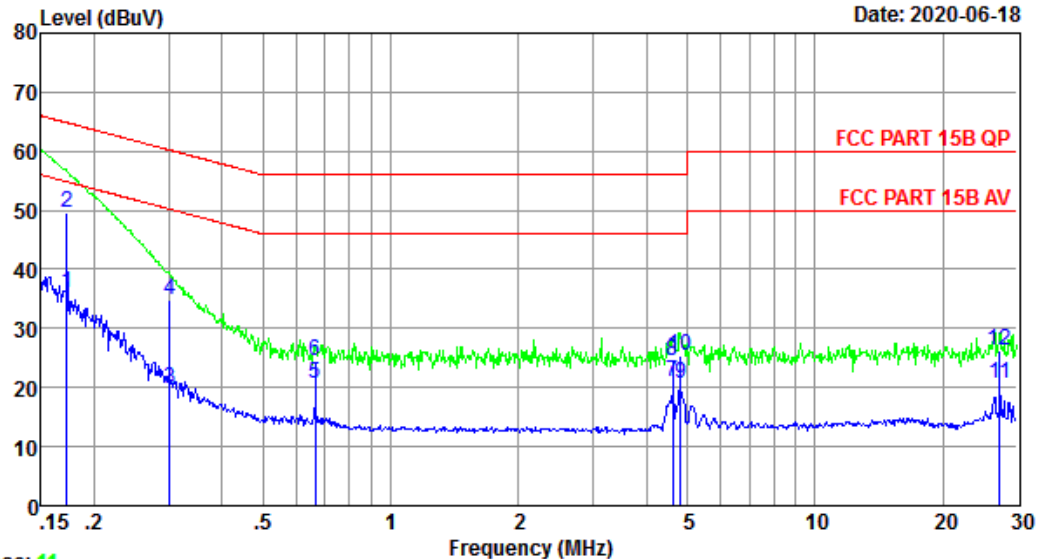
EST Technology

Chilingxiang, Qishantou, Santun,
Houjie, Dongguan, Guangdong, China
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Data: 12

File: \\EMC-CE-1\Test data\2020\RF\Kike yi.EM6 (12)

Date: 2020-06-18



Trace: 11

Site no : 844 Shield Room Data no. : 12
 Env. / Ins. : Temp:23.1'C Humi:61% Press:101.10kPa LINE Phase : NEUTRAL
 Limit : FCC PART 15B QP
 Engineer :
 EUT : Stereo Retro Receiver
 Power : AC 120V/60Hz
 M/N : RR2160 Mk II
 Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.172	9.62	9.69	16.58	35.89	54.86	18.97	Average
2	0.172	9.62	9.69	30.24	49.55	64.86	15.31	QP
3	0.302	9.73	9.92	0.18	19.83	50.19	30.36	Average
4	0.302	9.73	9.92	15.05	34.70	60.19	25.49	QP
5	0.665	9.75	9.92	0.98	20.65	46.00	25.35	Average
6	0.665	9.75	9.92	4.70	24.37	56.00	31.63	QP
7	4.622	9.86	10.00	0.96	20.82	46.00	25.18	Average
8	4.622	9.86	10.00	4.58	24.44	56.00	31.56	QP
9	4.822	9.86	10.00	0.94	20.80	46.00	25.20	Average
10	4.822	9.86	10.00	5.47	25.33	56.00	30.67	QP
11	27.271	9.79	10.16	0.74	20.69	50.00	29.31	Average
12	27.271	9.79	10.16	6.28	26.23	60.00	33.77	QP

Remarks: 1. Emission Level= LISN Factor + Cable Loss + Reading.
 2. Margin=Limit - Emission Level.
 3. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

9. ANTENNA REQUIREMENTS

9.1. Limit

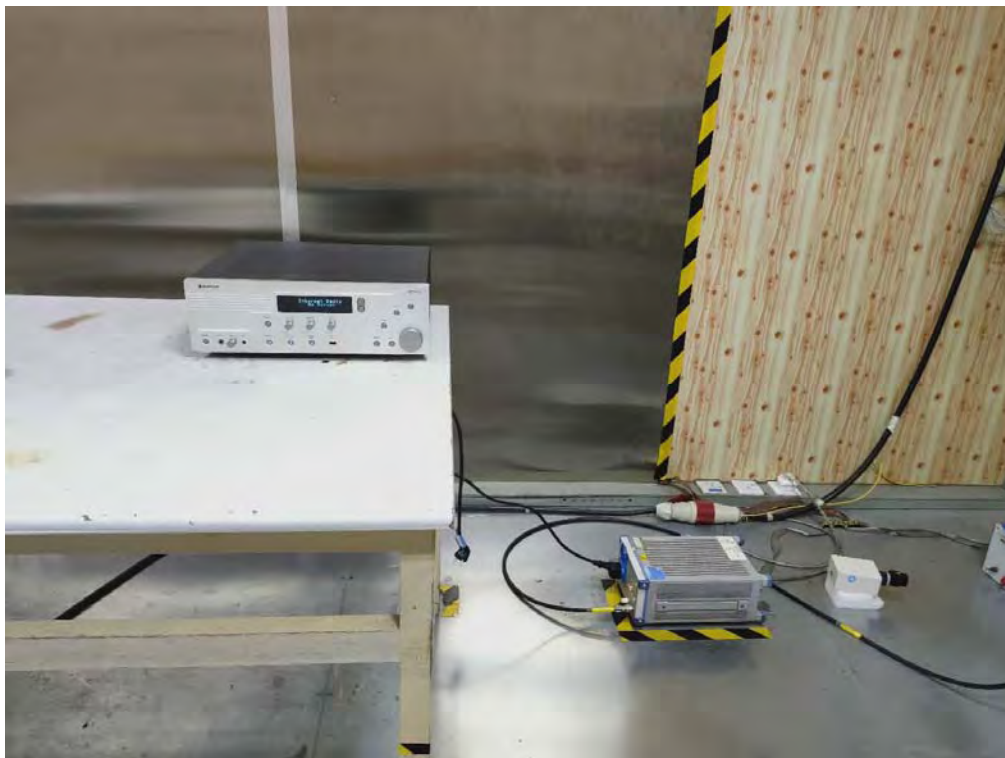
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply 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, 15.221, or §15.236. 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.

9.2. Test Result

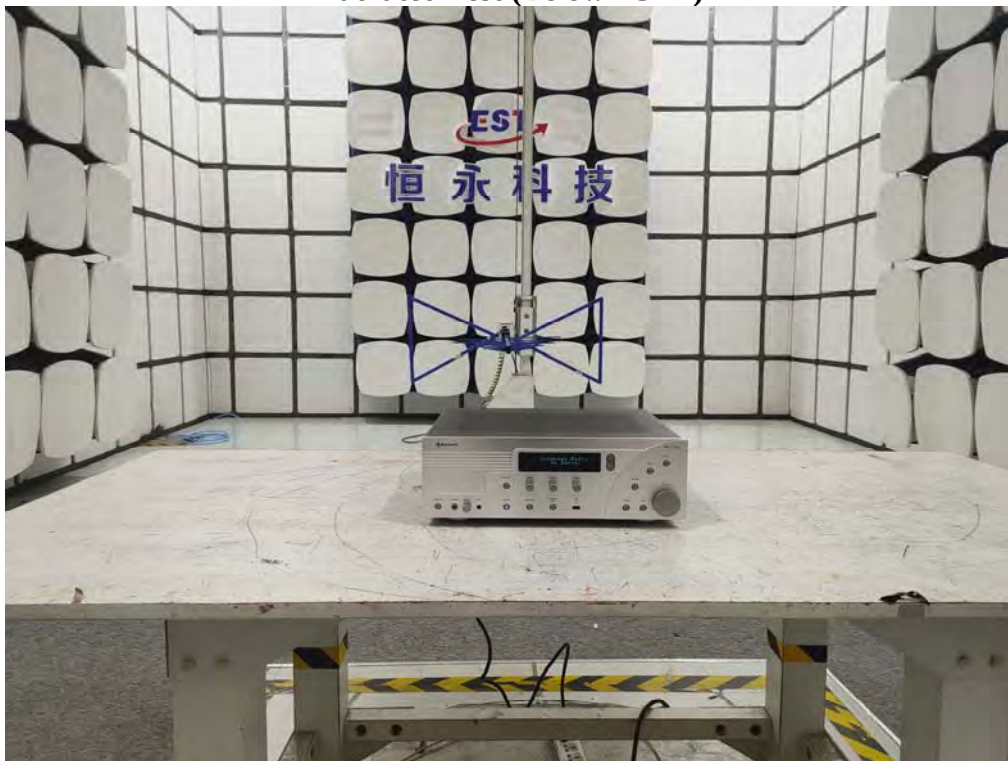
The antennas used for this product is internal antenna, so compliance with antenna requirements.
(Please refer to the EUT photo for details)

10. TEST SETUP PHOTO

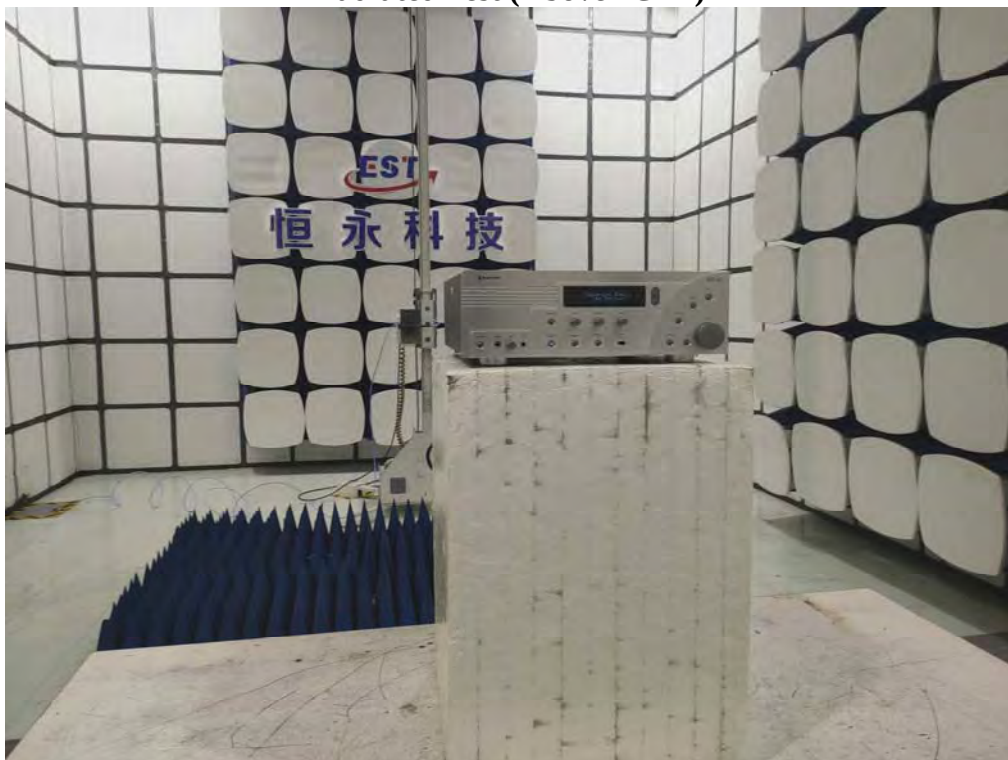
Conducted Test



Radiated Test (Below 1GHz)

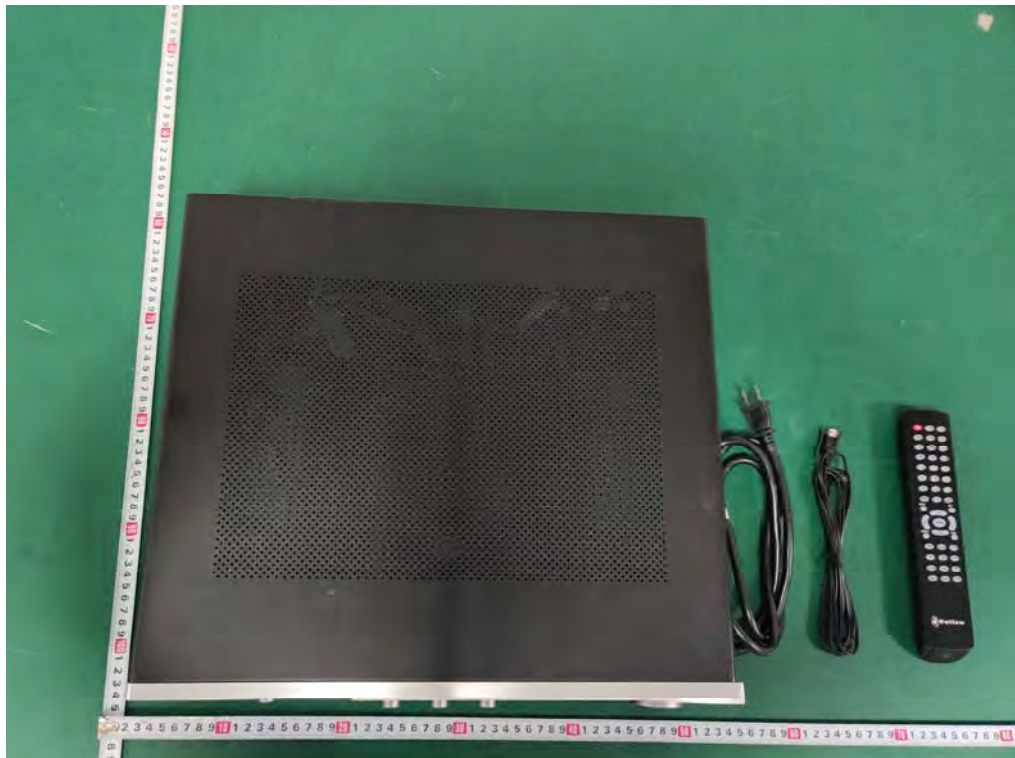


Radiated Test (Above 1GHz)



11. EUT PHOTO

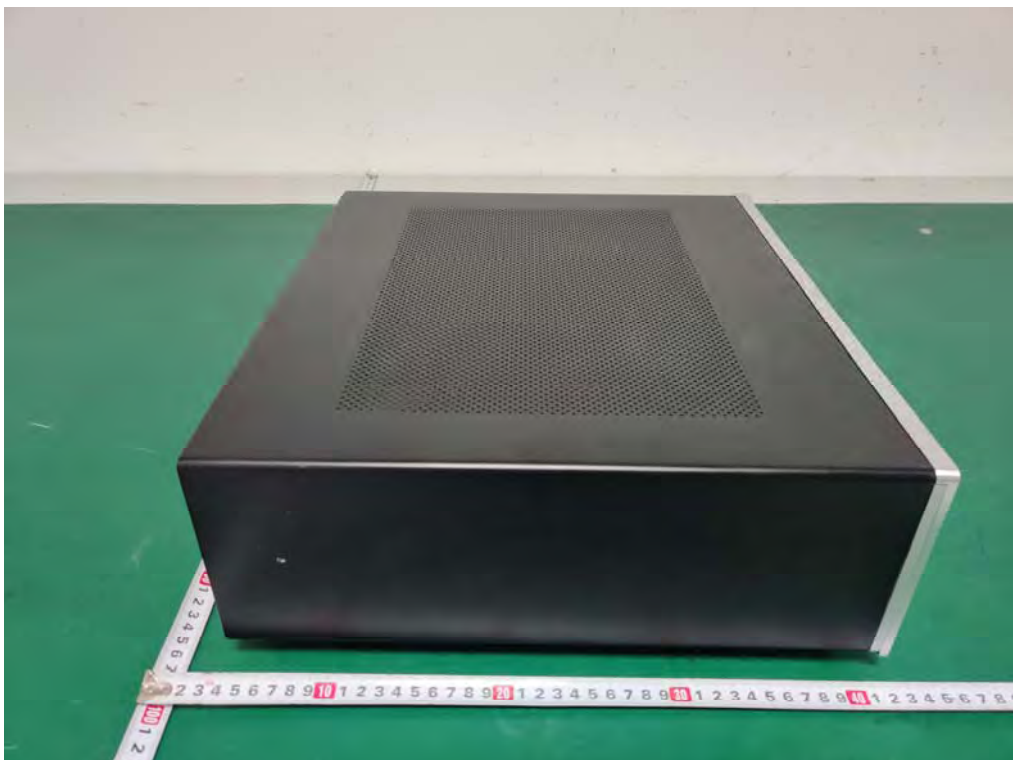
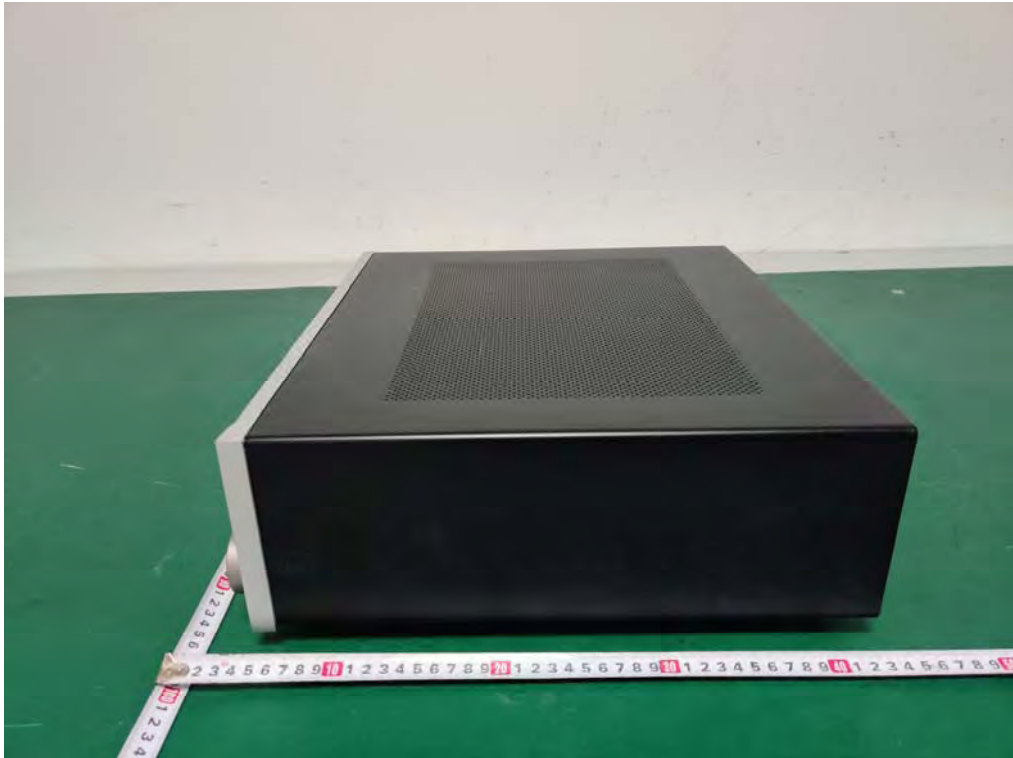
External Photos M/N: RR2160 MklI



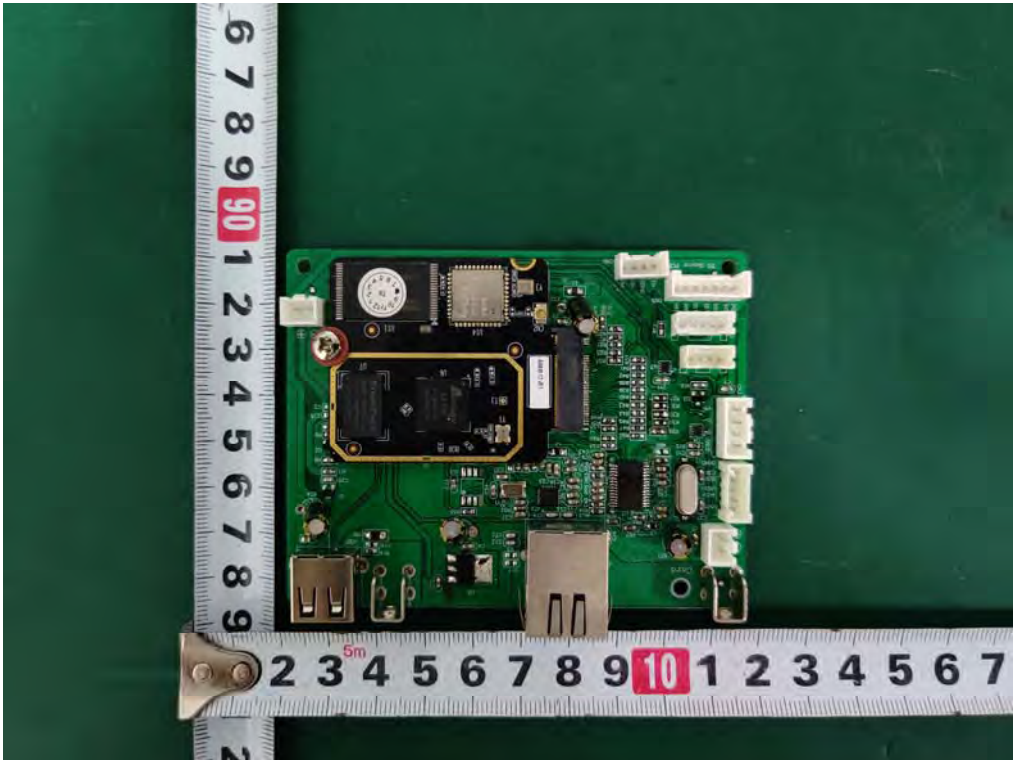
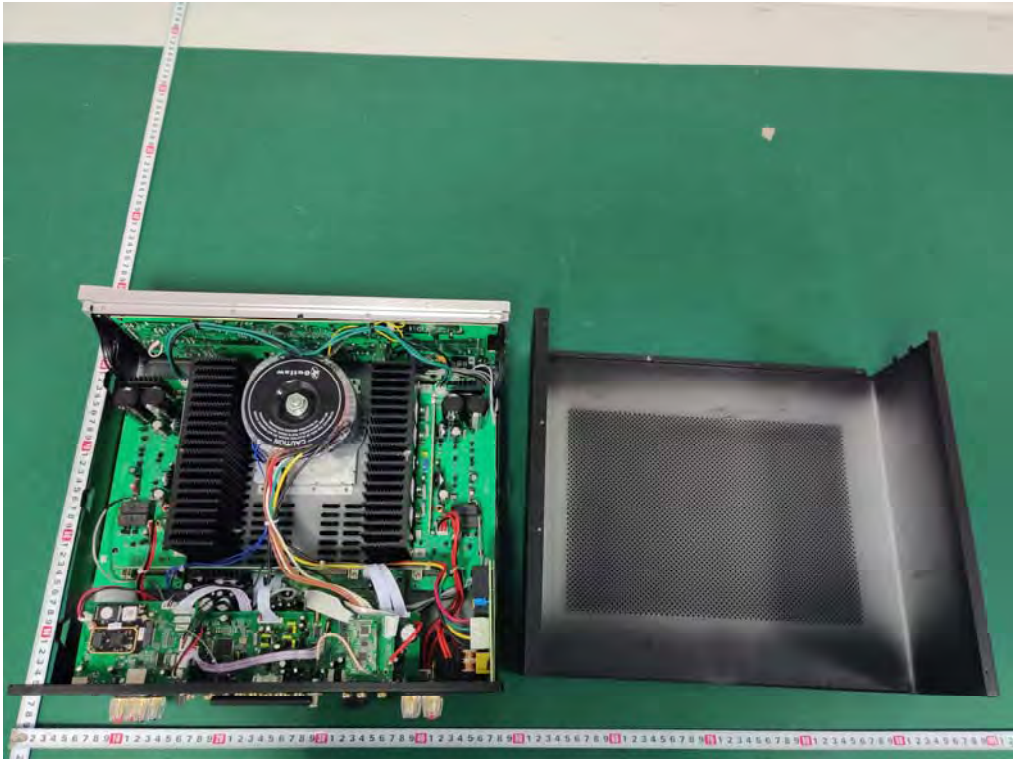
External Photos
M/N: RR2160 MkII



External Photos
M/N: RR2160 MklI



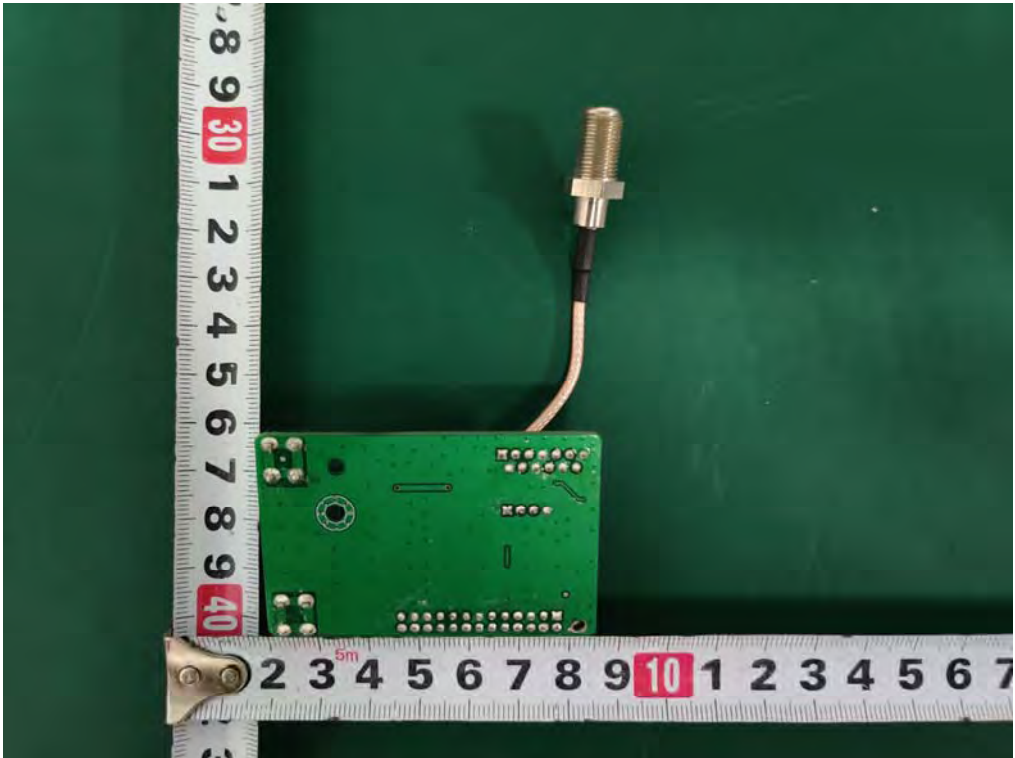
Internal Photos
M/N: RR2160 MkII



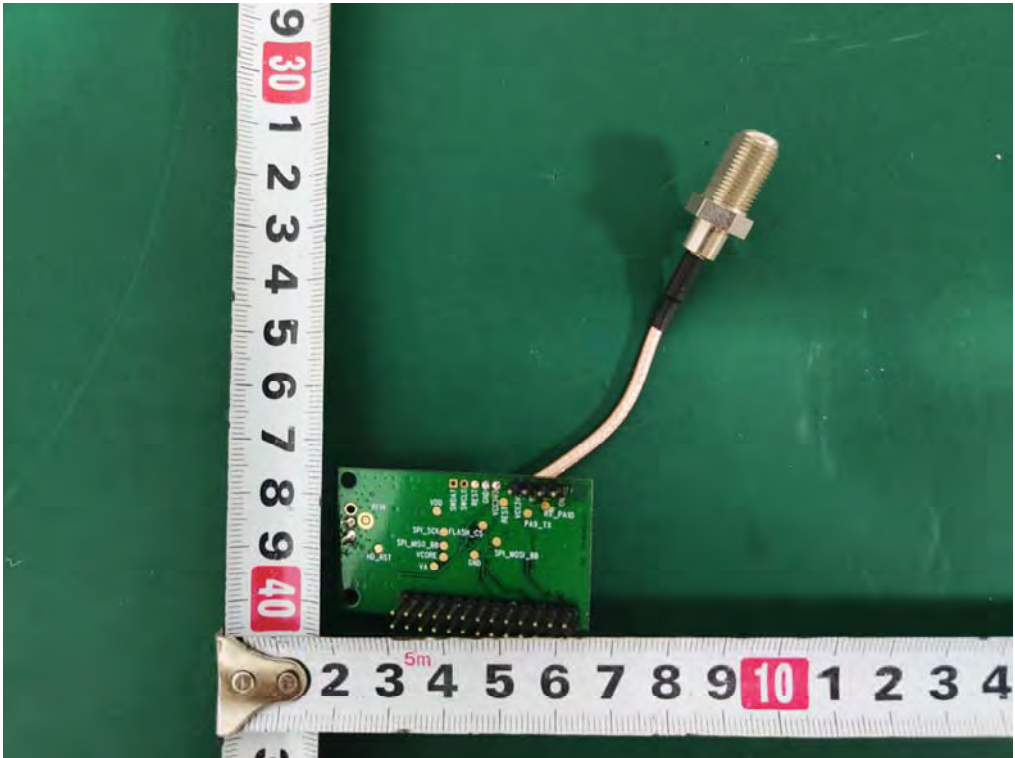
Internal Photos
M/N: RR2160 MkII



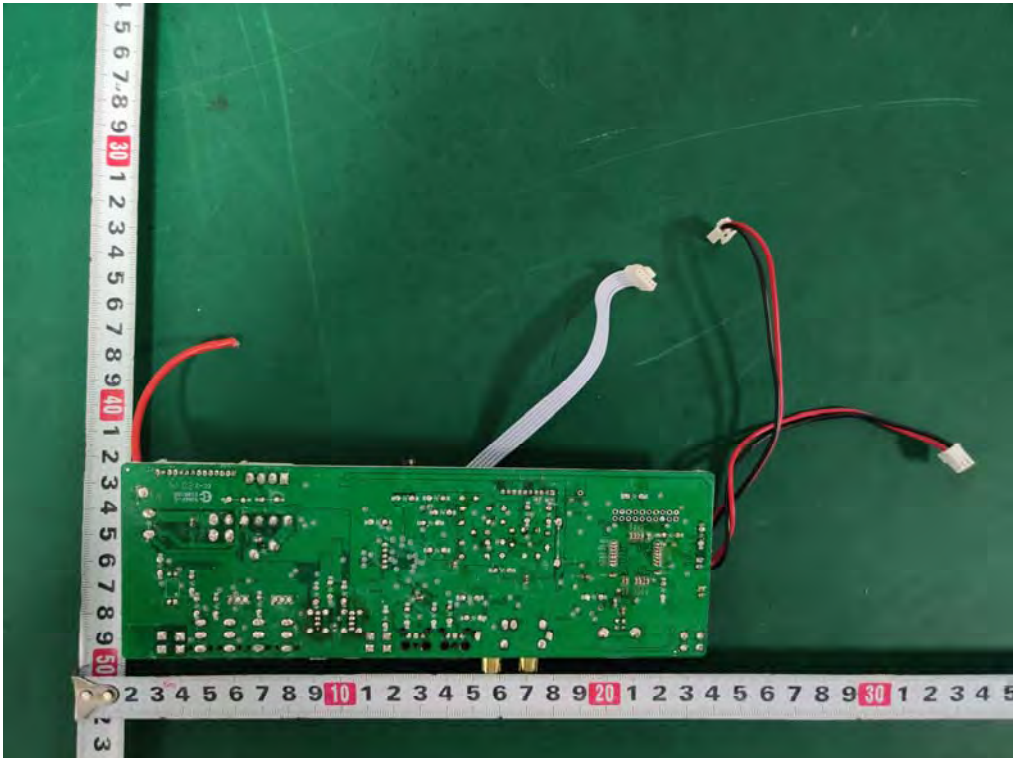
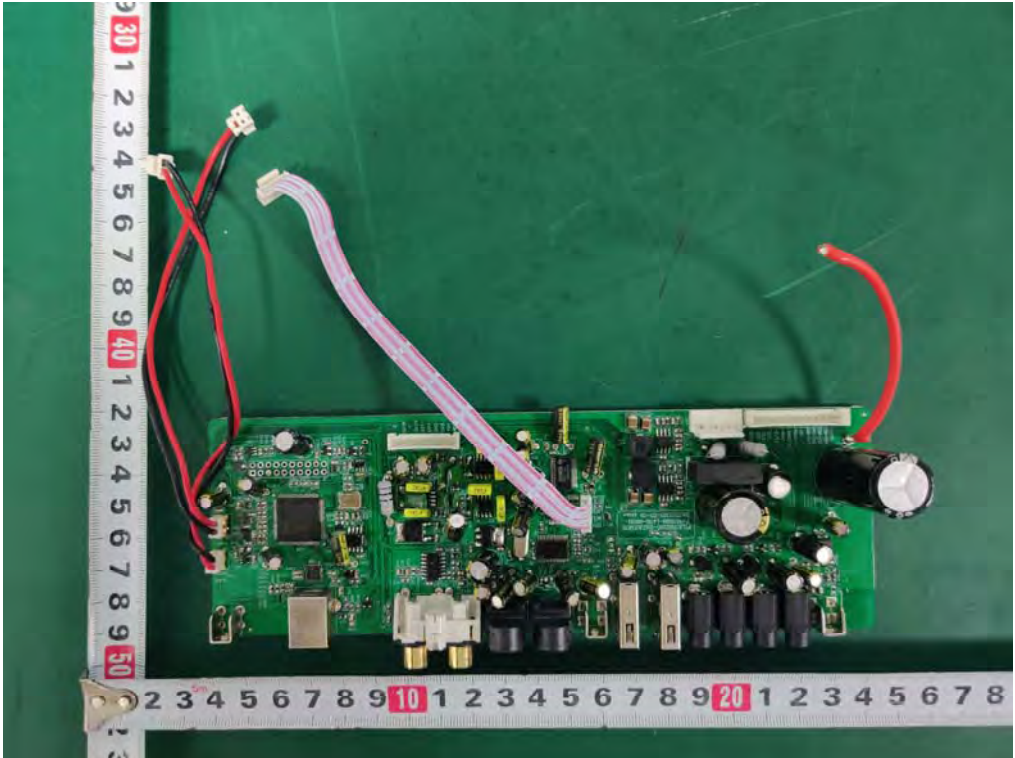
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M/N: RR2160 MkII



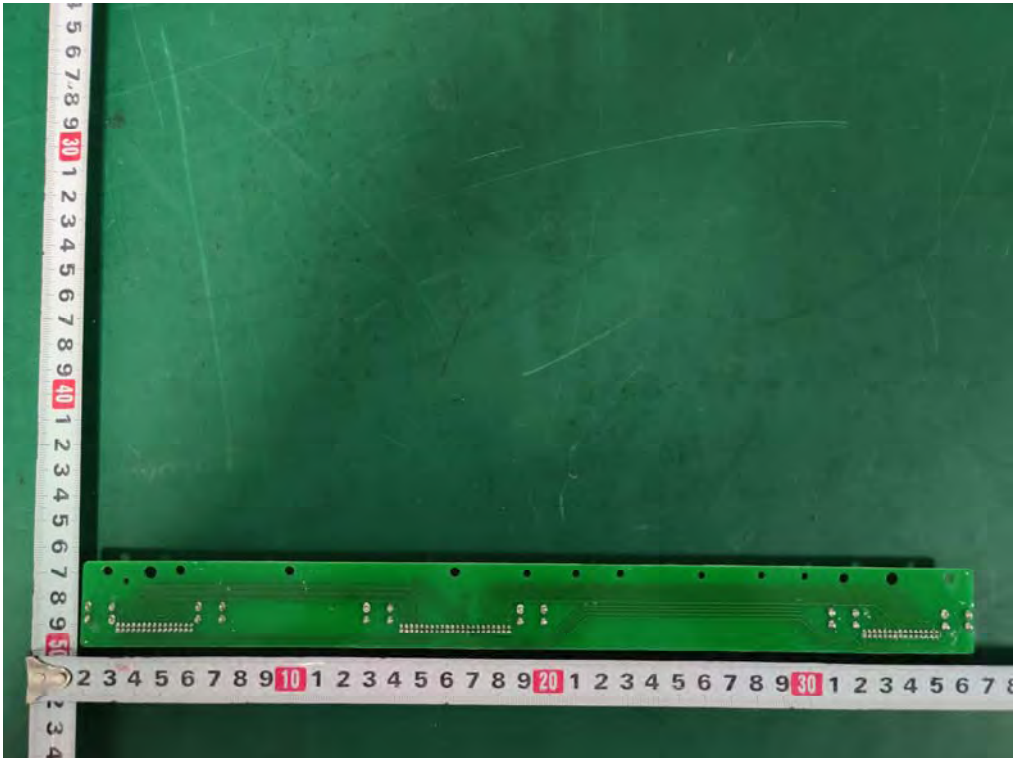
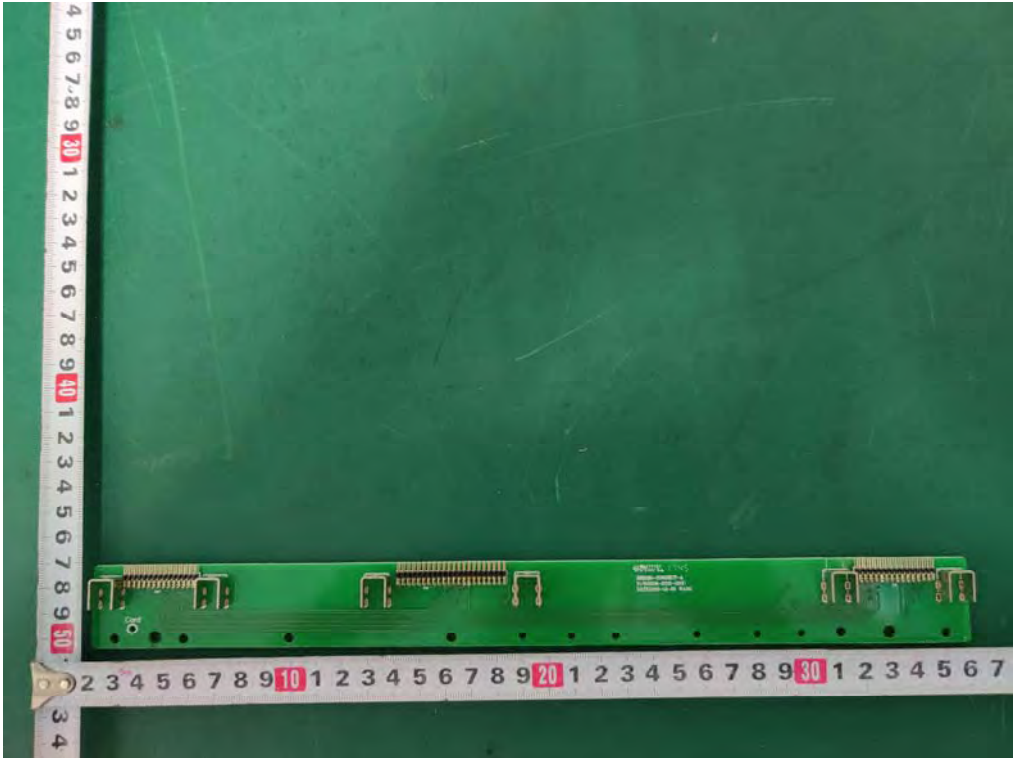
Internal Photos
M/N: RR2160 MkII



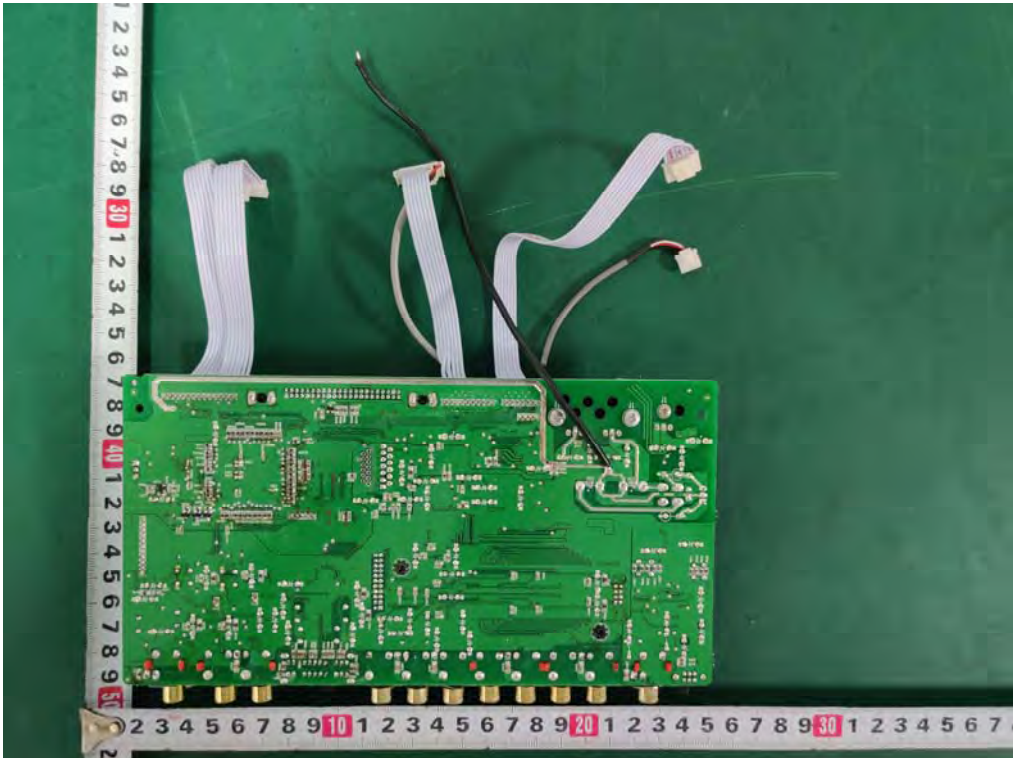
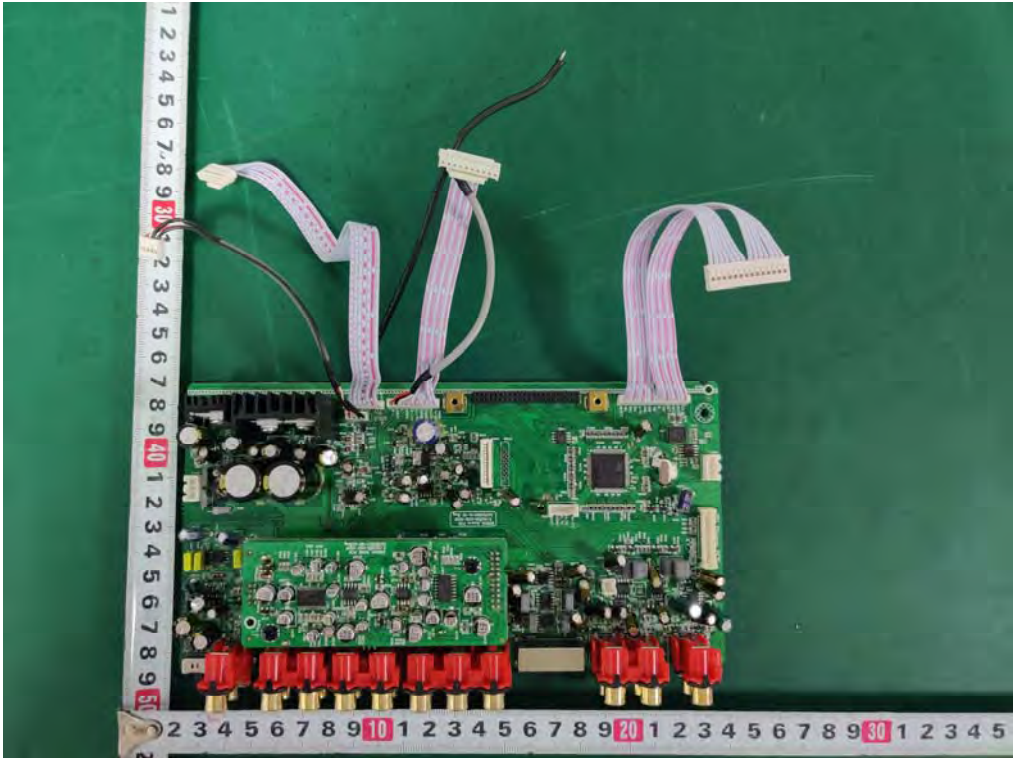
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M/N: RR2160 MklI



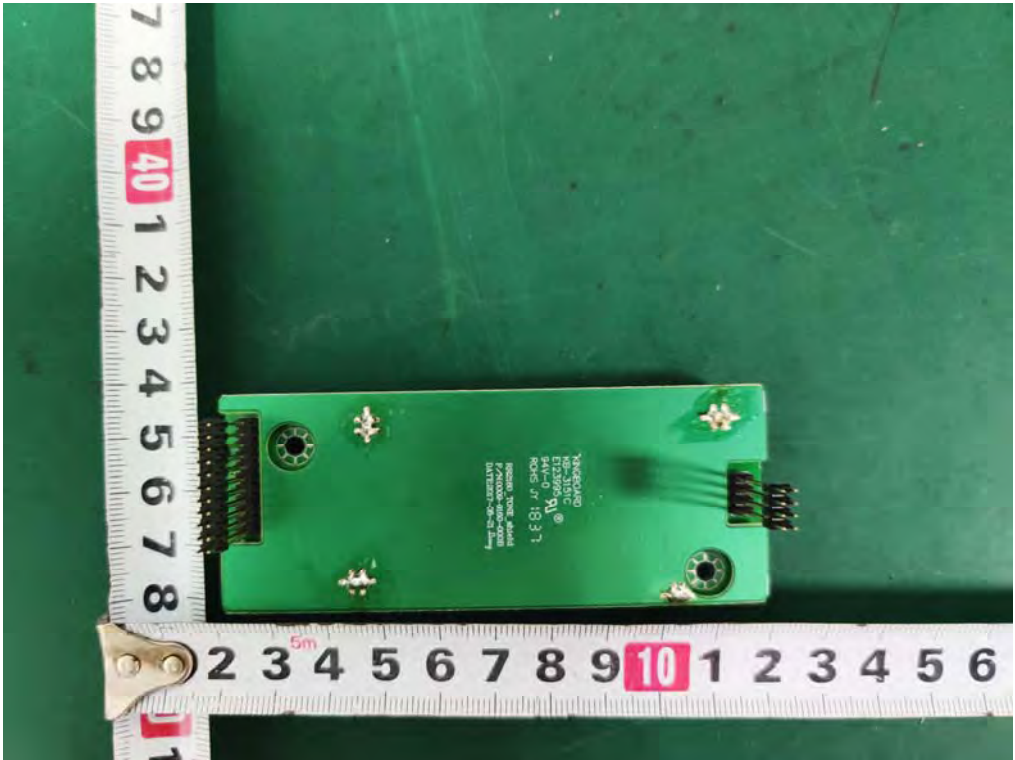
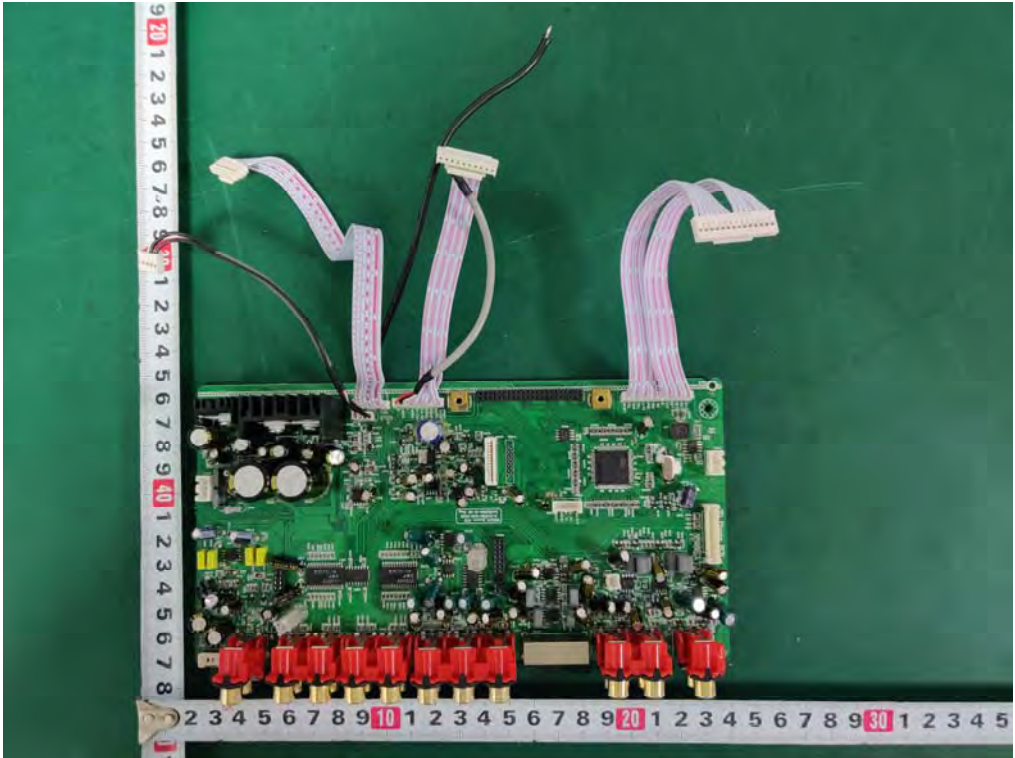
Internal Photos
M/N: RR2160 MklI



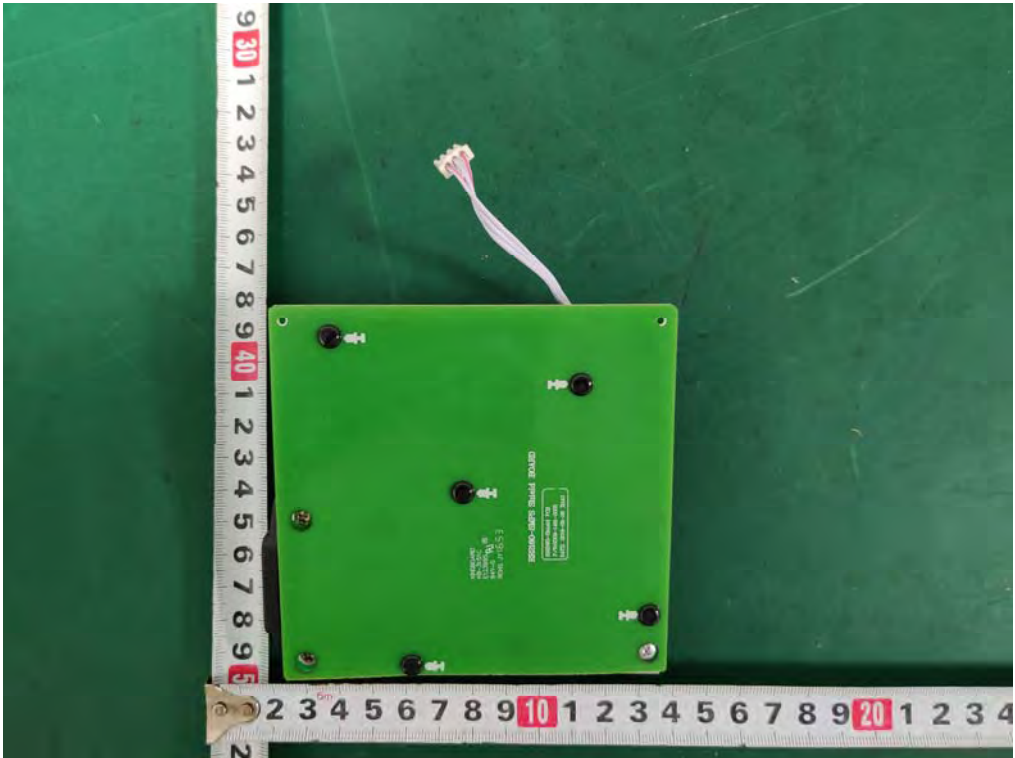
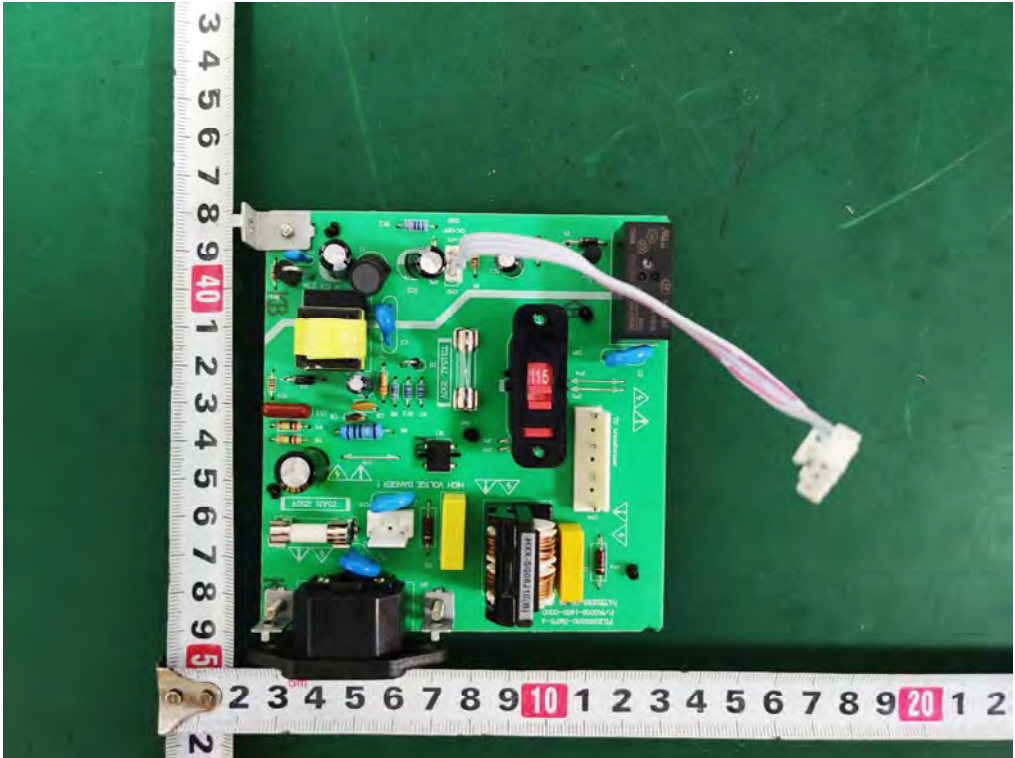
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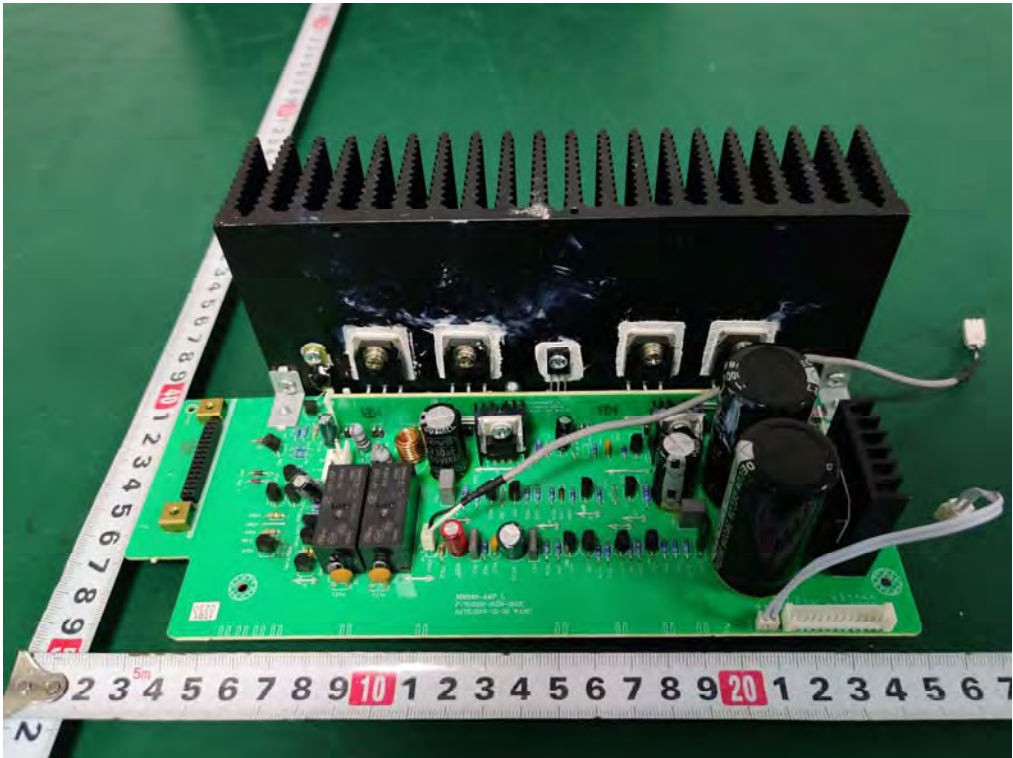
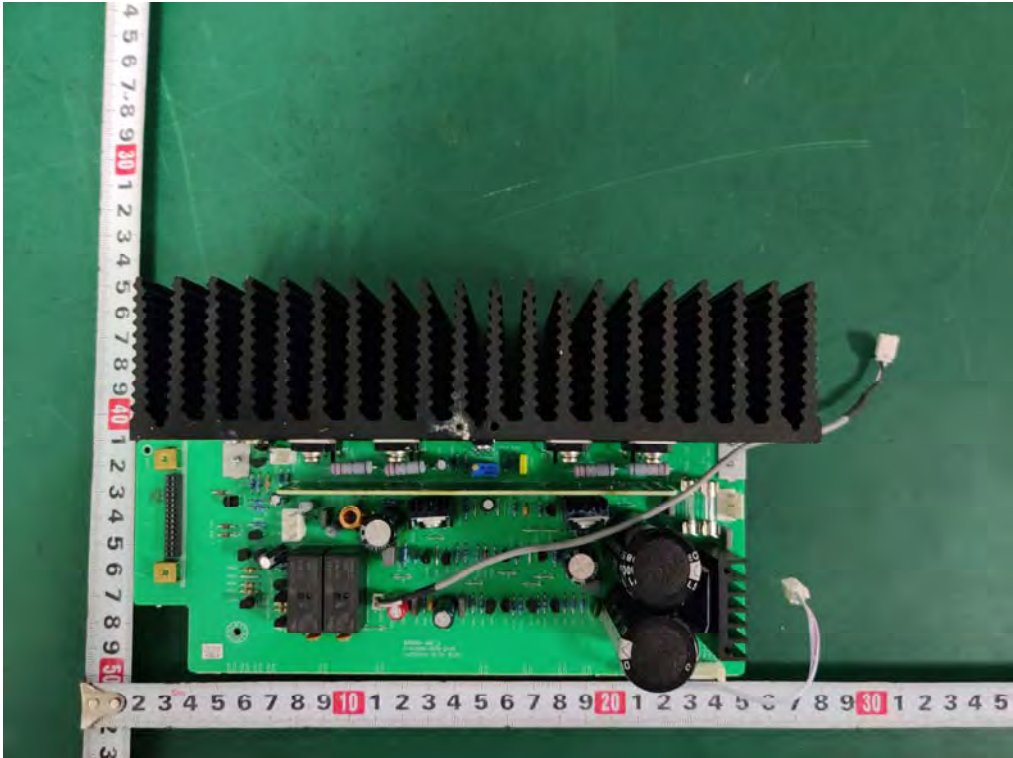
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M/N: RR2160 MkII



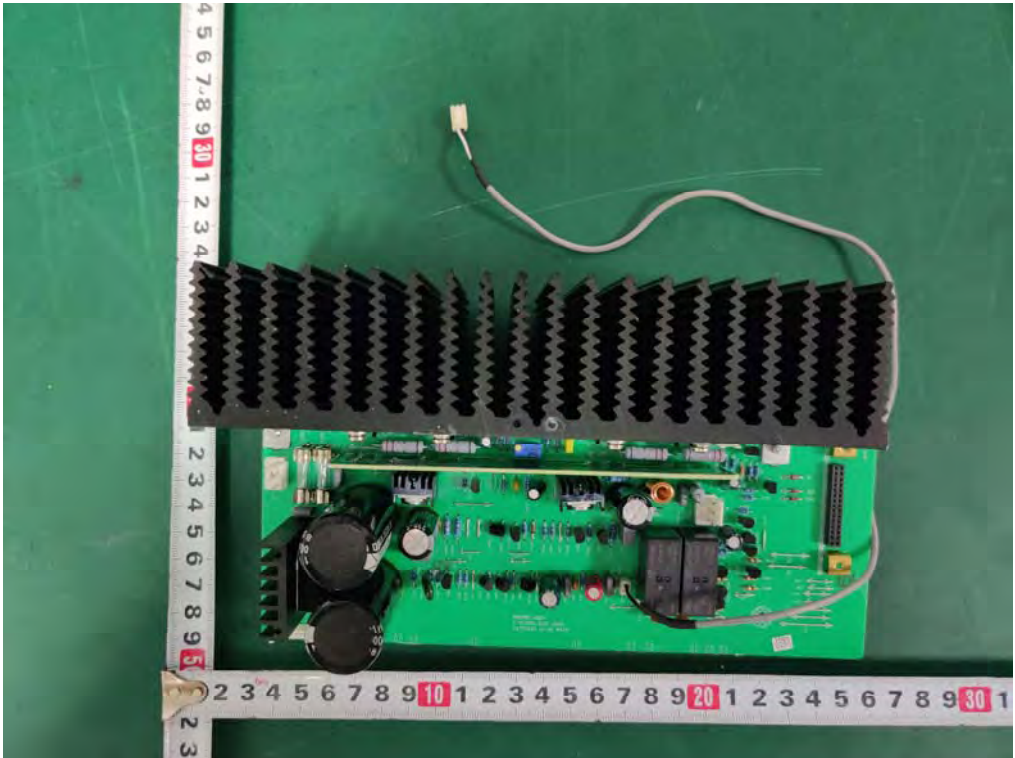
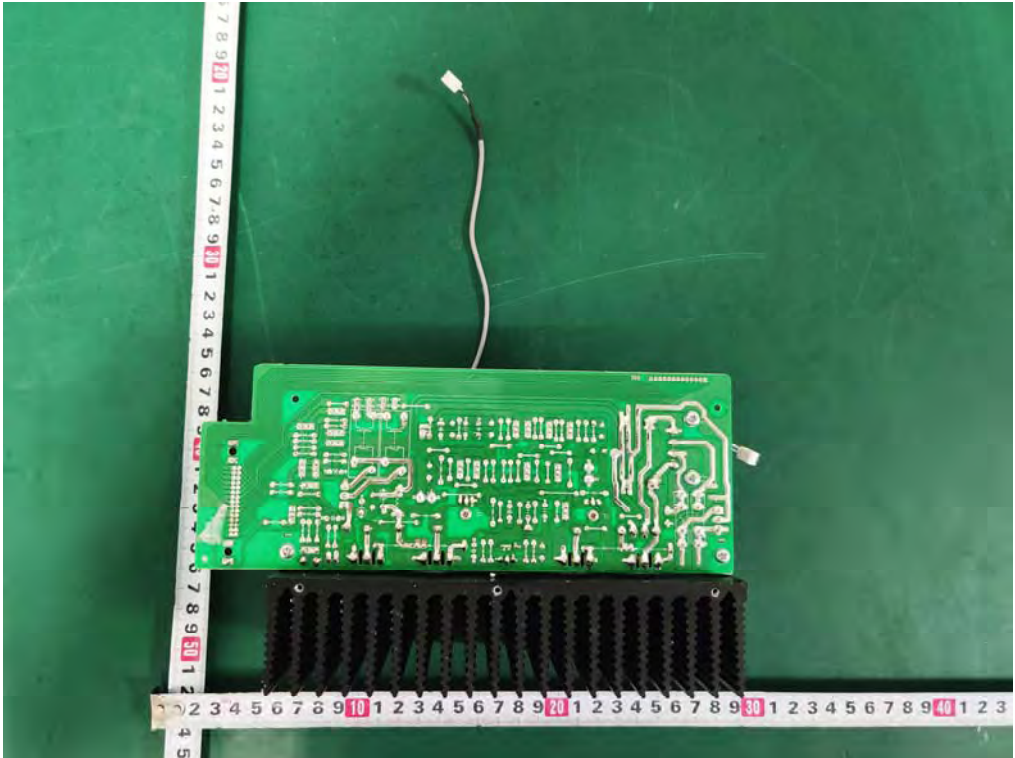
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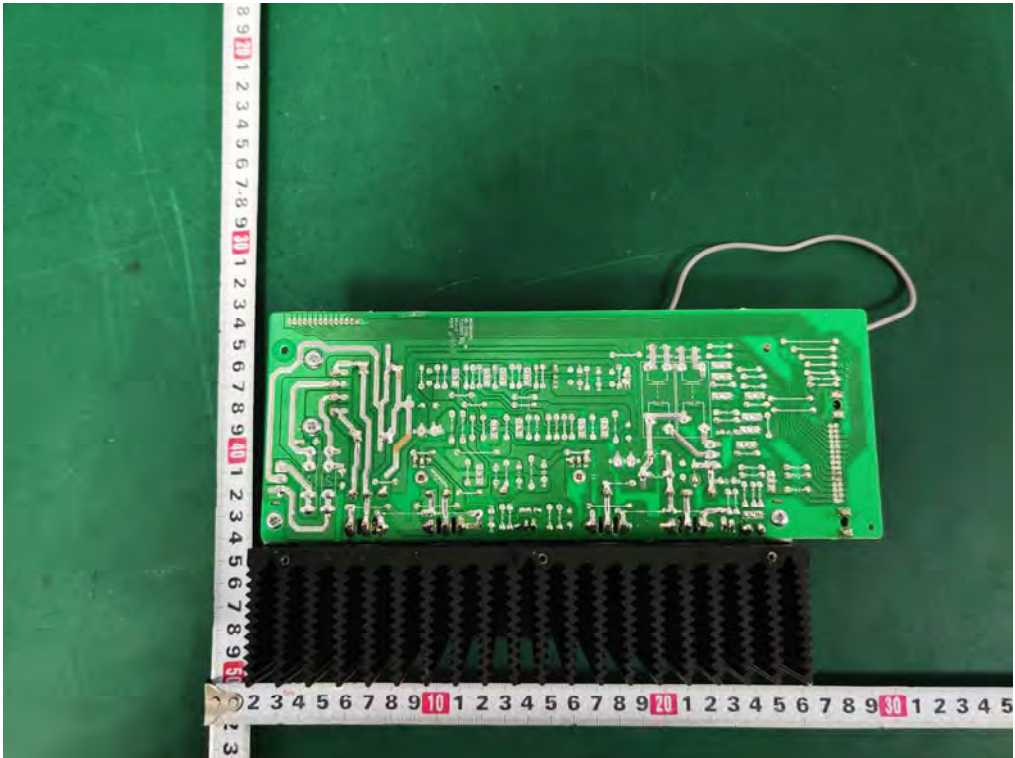
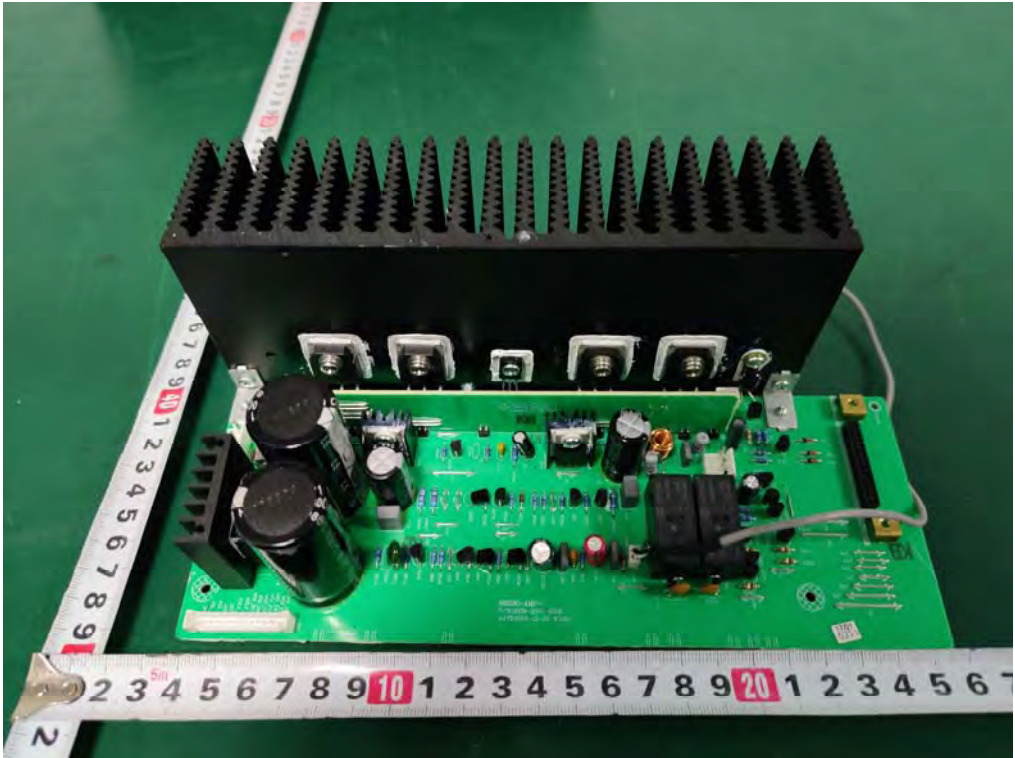
Internal Photos
M/N: RR2160 MkII



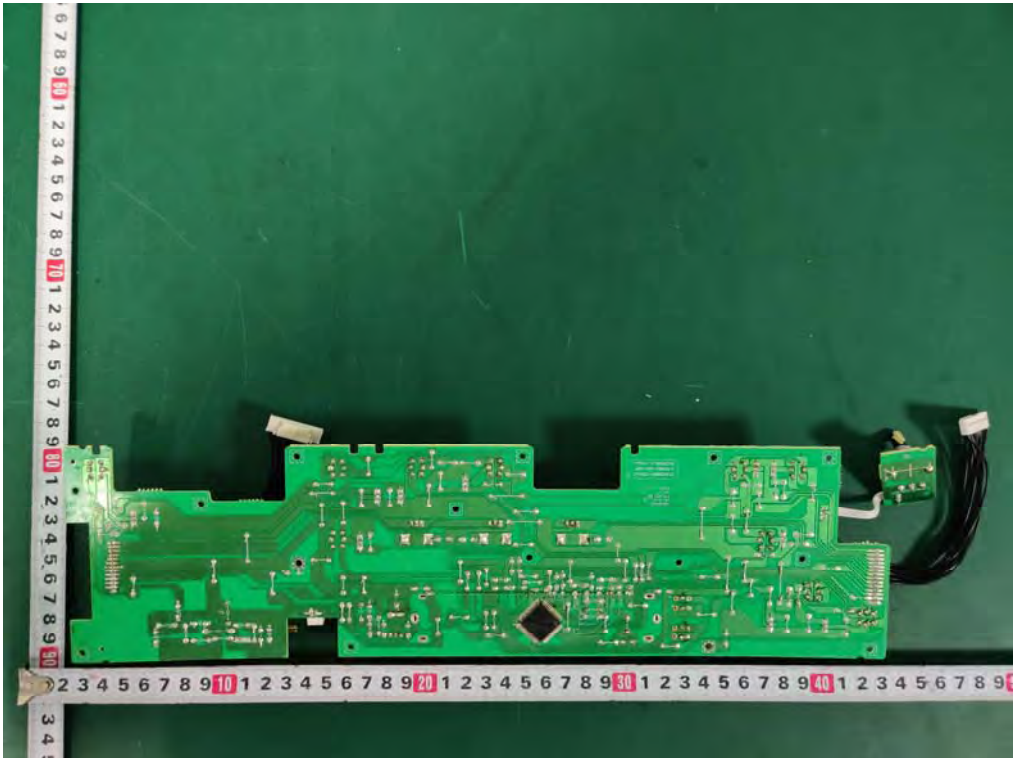
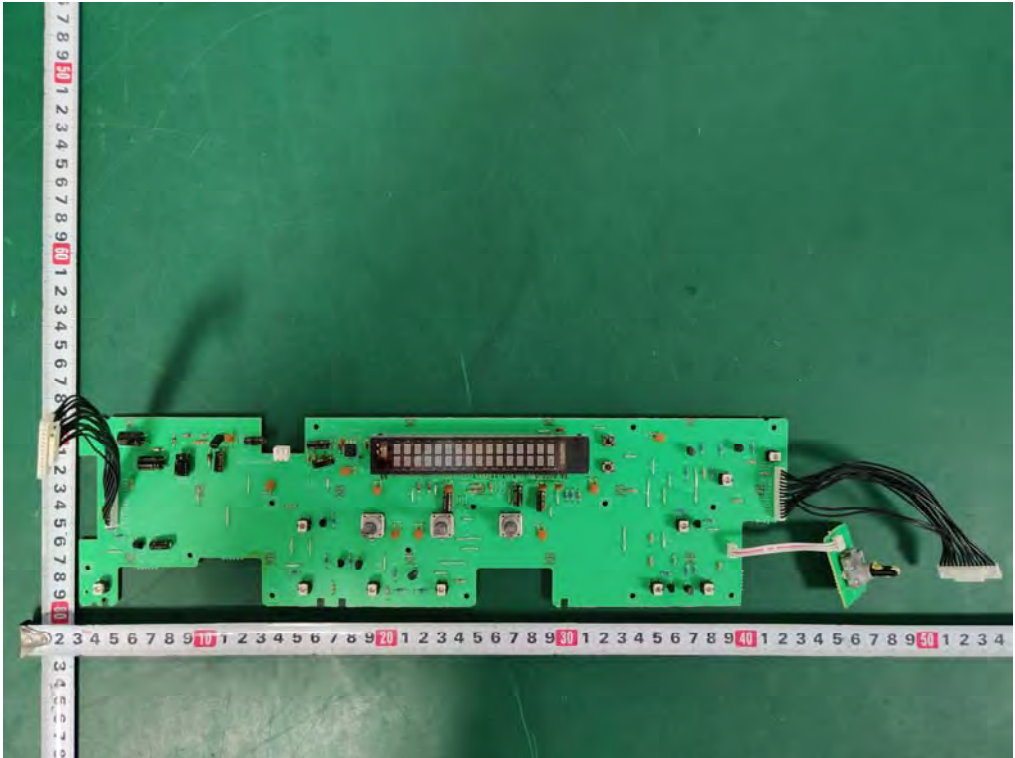
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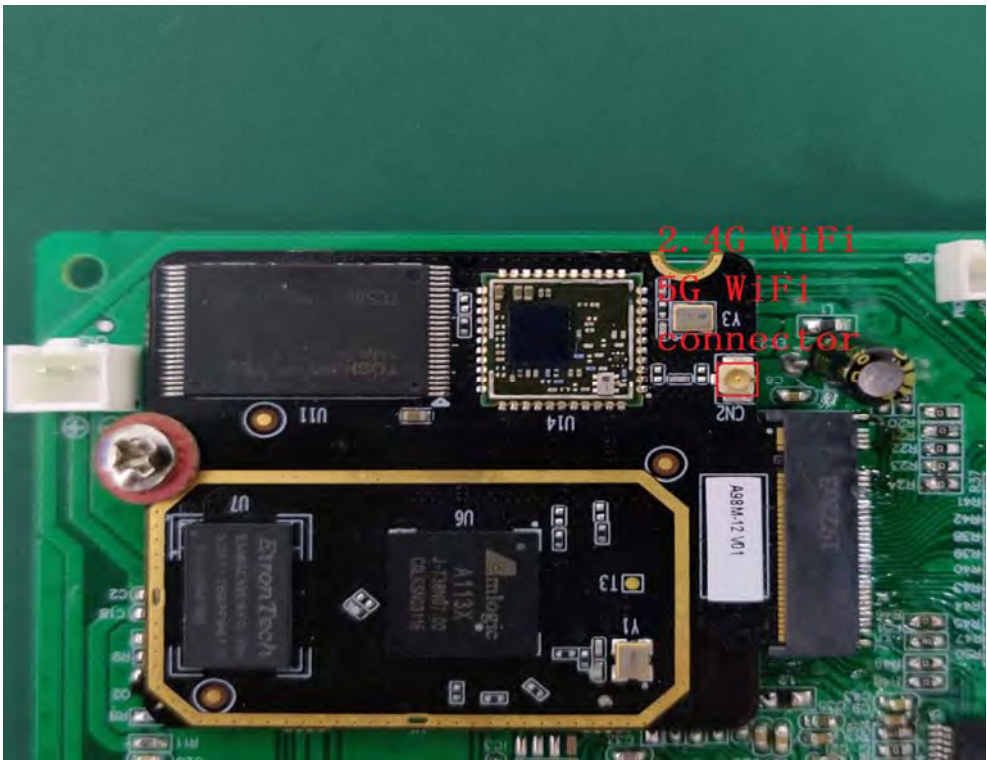
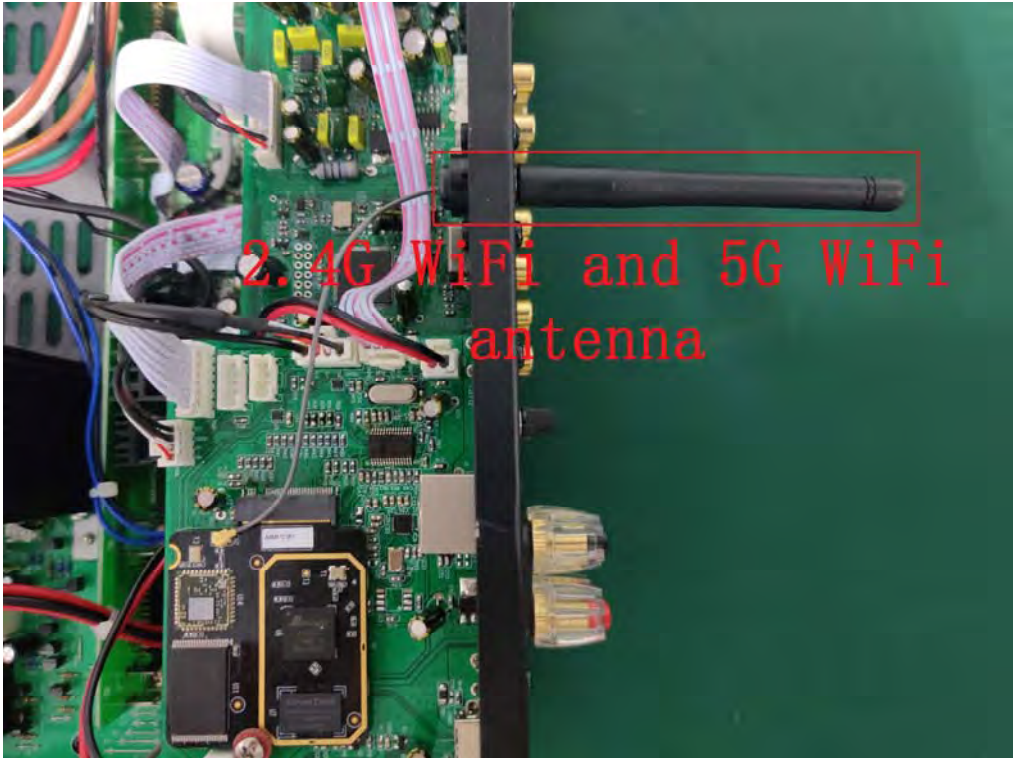
Internal Photos
M/N: RR2160 MklI



Internal Photos
M/N: RR2160 MklI



Internal Photos
M/N: RR2160 MkII



Internal Photos
M/N: RR2160 MkII



End of Test Report