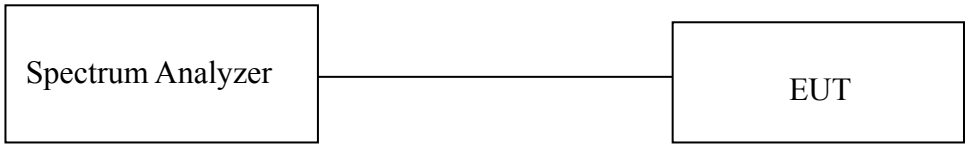
5. POWER SPECTRAL DENSITY

5.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

5.2. Test Setup



5.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	3KHz
VBW	10KHz
Span	30MHz(20MHz Bandwidth mode)/60MHz(40MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

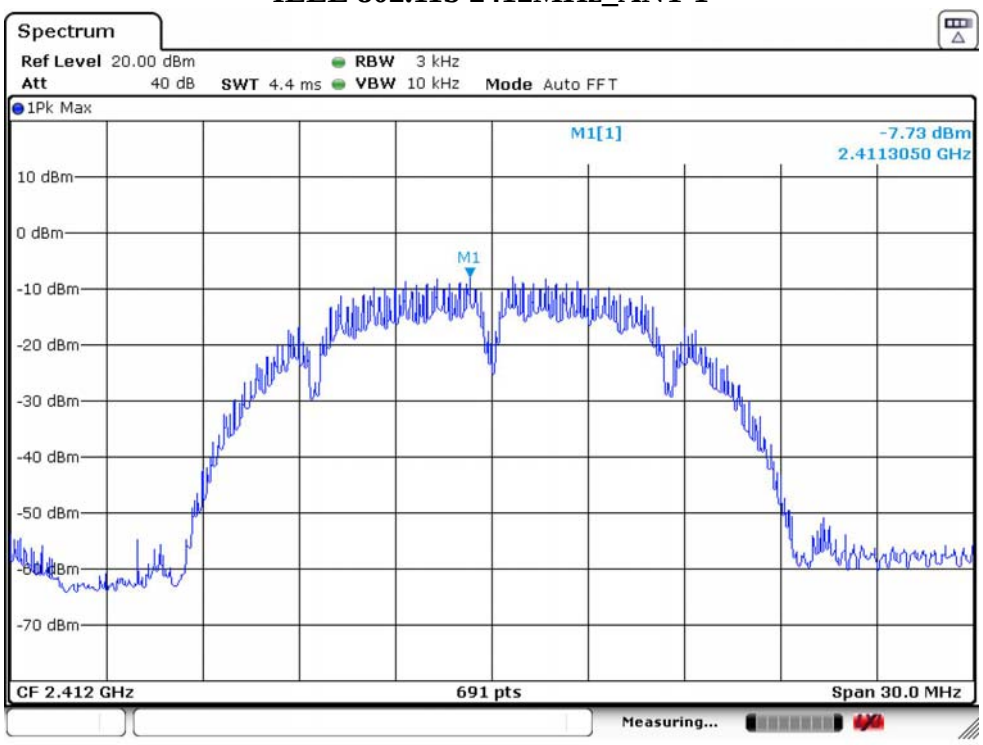
5.4. Test Procedure

a. Connect EUT antenna terminal to the spectrum analyzer with RF cable.
b. Spectrum analyzer setting parameters in accordance with section 5.3.
c. Set the EUT transmit continuously with maximum output power.
d. Allow trace to stabilize, use the marker-to-peak function to set the marker to the peak of the emission.
e. Repeat above procedures until all modes and channels were measured.
f. Record the results in the test report.

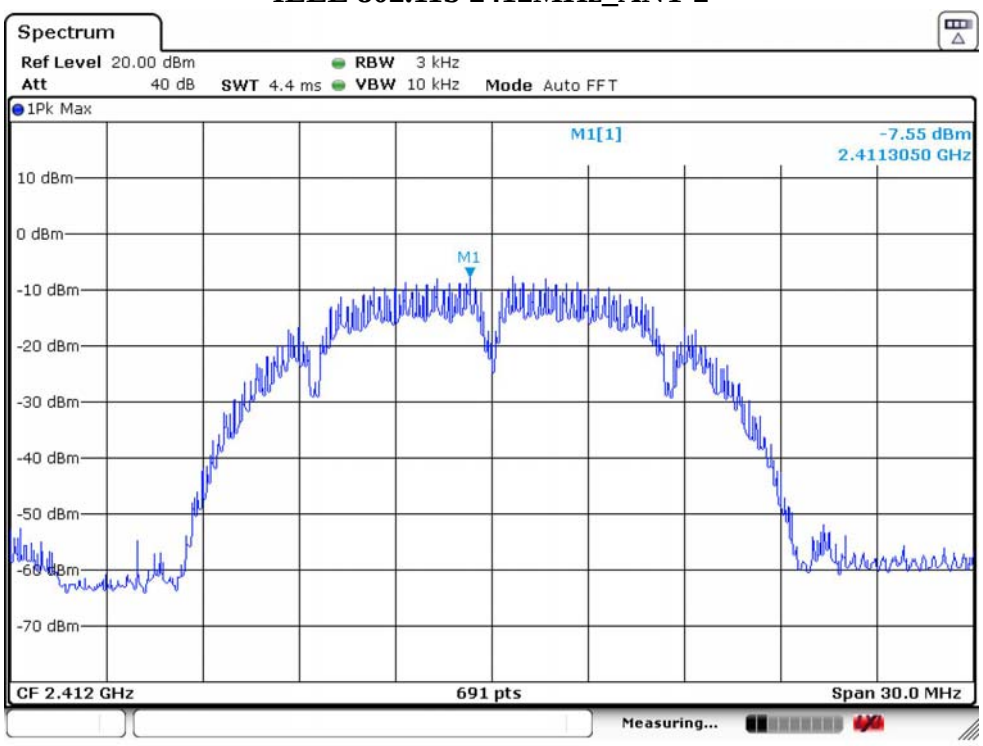
5.5. Test Result

Temperature	27℃	Relative Humidity		54%	Test Voltage	120V/60Hz
Mode	Freq (MHz)	Power Density (dBm/3KHz)		Max Power Density (dBm/3KHz)	Limit (dBm/3KHz)	Result
		ANT 1	ANT 2			
IEEE 802.11b	2412	-7.73	-7.55	-7.55	8.00	PASS
	2437	-7.94	-7.75	-7.75	8.00	PASS
	2462	-8.12	-7.93	-7.93	8.00	PASS
IEEE 802.11g	2412	-13.92	-14.16	-13.92	8.00	PASS
	2437	-14.47	-14.34	-14.34	8.00	PASS
	2462	-14.61	-14.37	-14.37	8.00	PASS
IEEE 802.11n HT20	2412	-12.28	-11.79	-11.79	8.00	PASS
	2437	-13.63	-12.00	-12.00	8.00	PASS
	2462	-12.04	-13.67	-12.04	8.00	PASS
IEEE 802.11n HT40	2422	-16.68	-16.42	-16.42	8.00	PASS
	2437	-16.69	-15.80	-15.80	8.00	PASS
	2452	-16.38	-16.29	-16.29	8.00	PASS

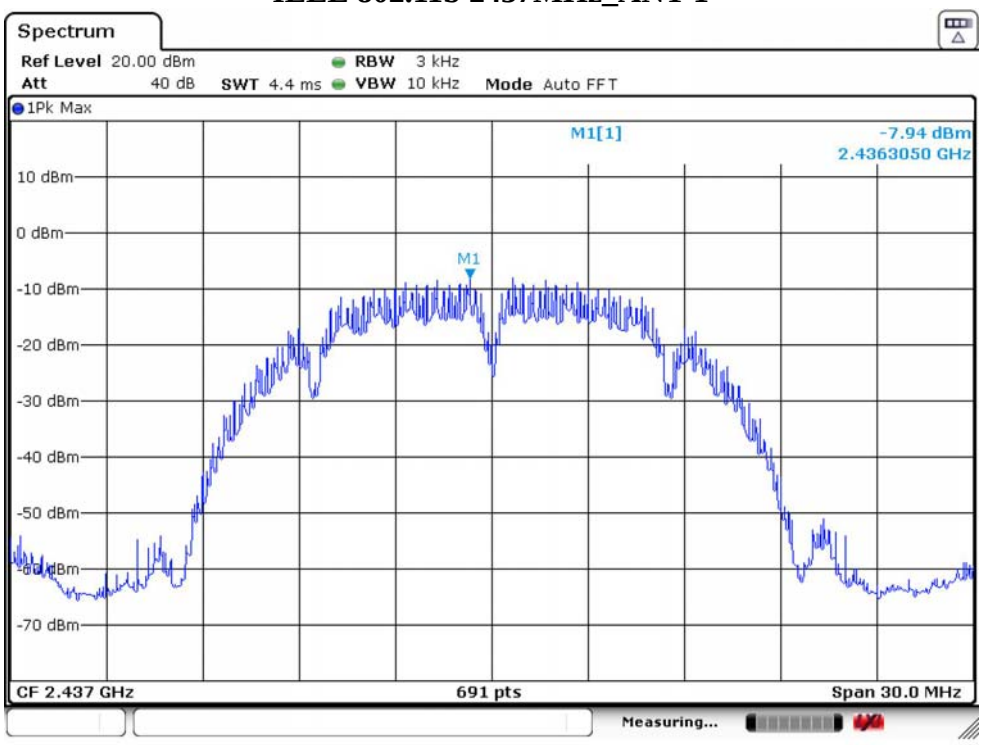
IEEE 802.11b 2412MHz_ANT 1



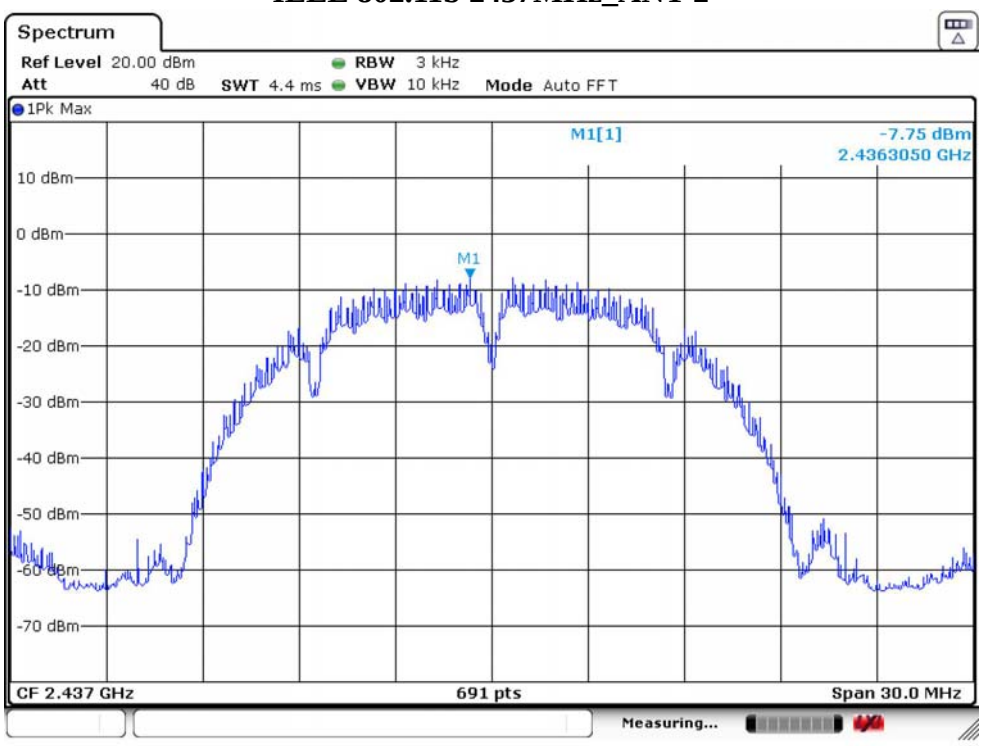
IEEE 802.11b 2412MHz_ANT 2



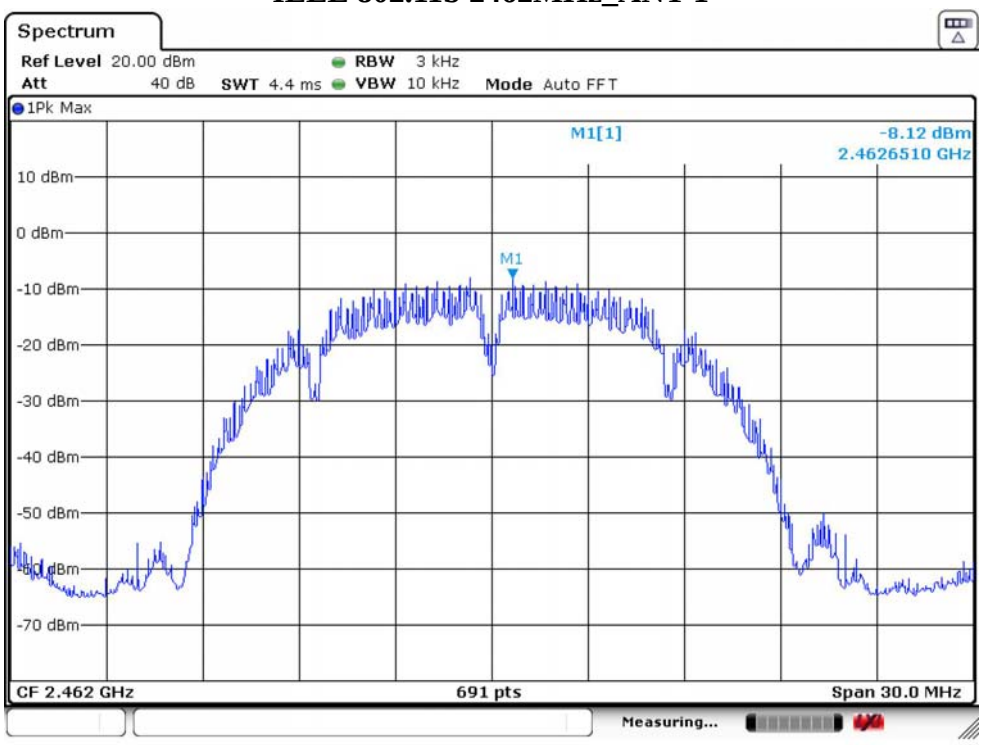
IEEE 802.11b 2437MHz_ANT 1



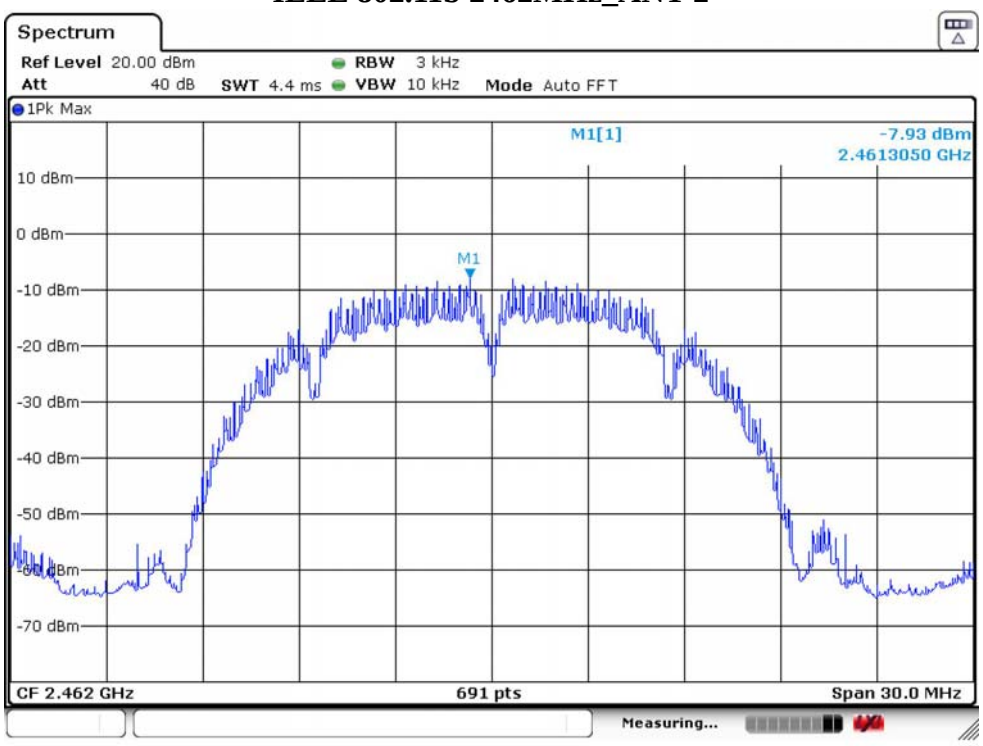
IEEE 802.11b 2437MHz_ANT 2



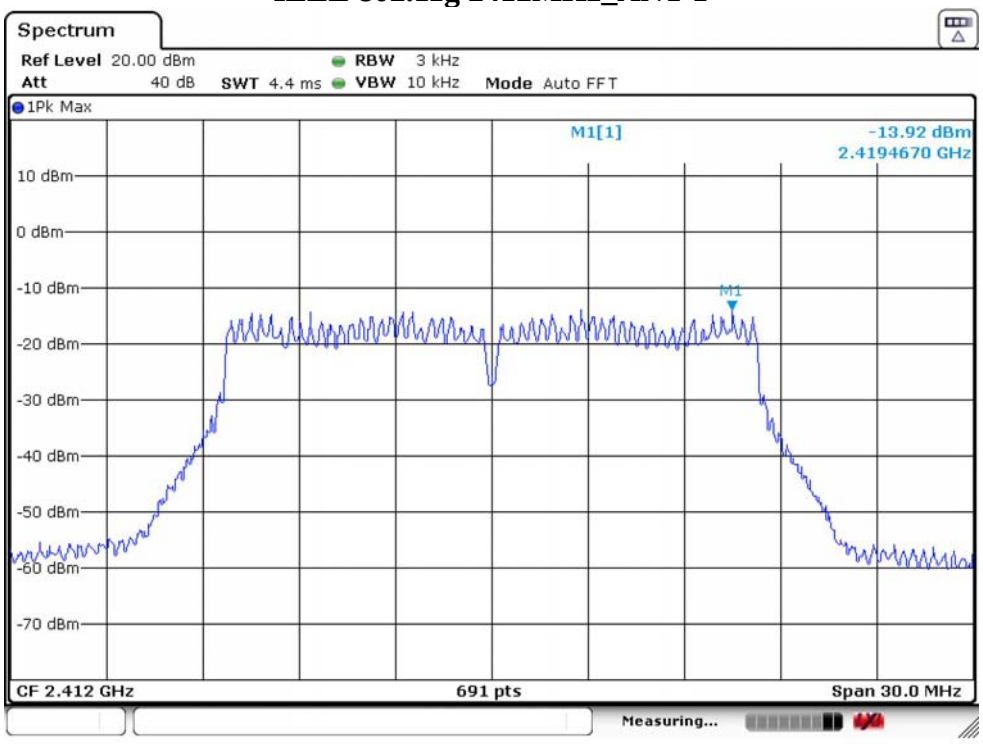
IEEE 802.11b 2462MHz_ANT 1



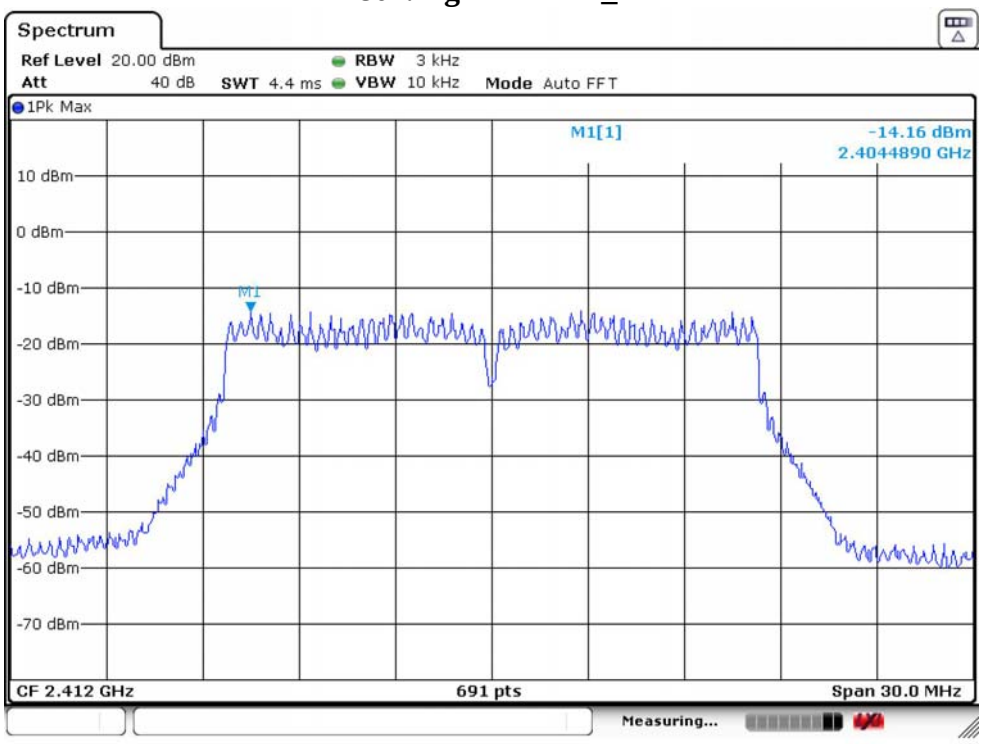
IEEE 802.11b 2462MHz_ANT 2



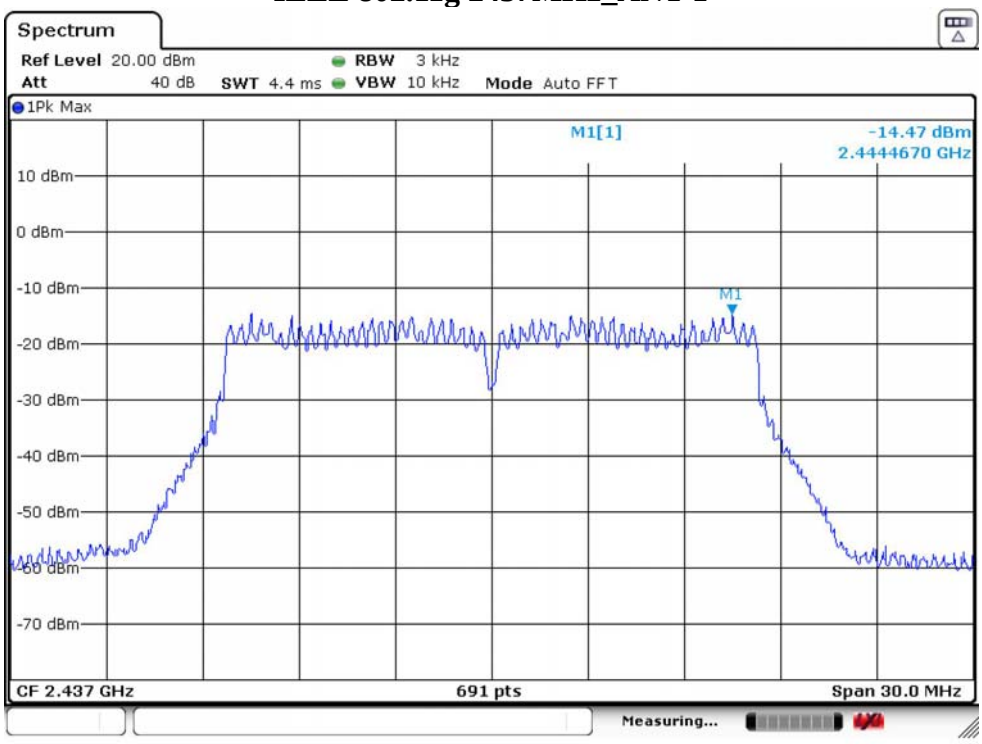
IEEE 802.11g 2412MHz_ANT 1



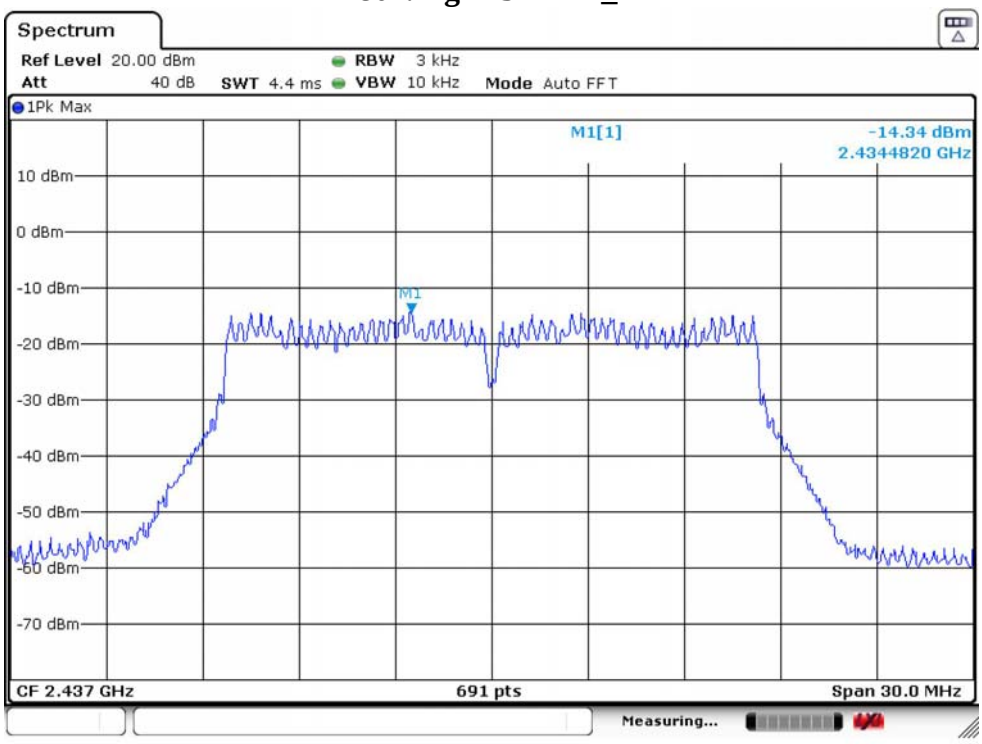
IEEE 802.11g 2412MHz_ANT 2



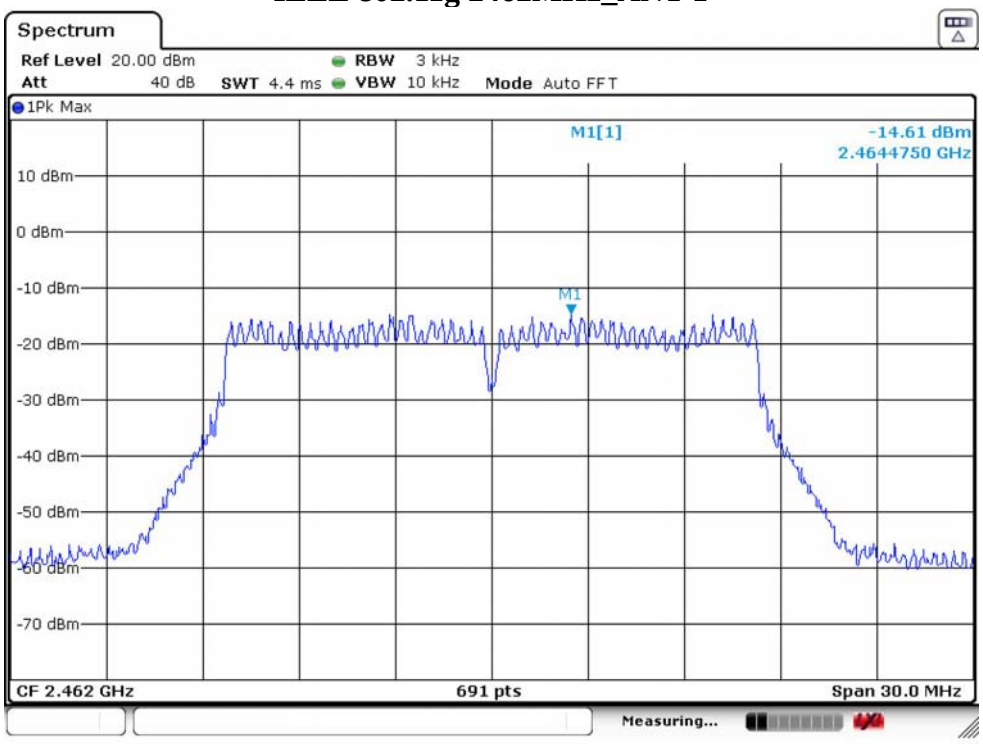
IEEE 802.11g 2437MHz_ANT 1



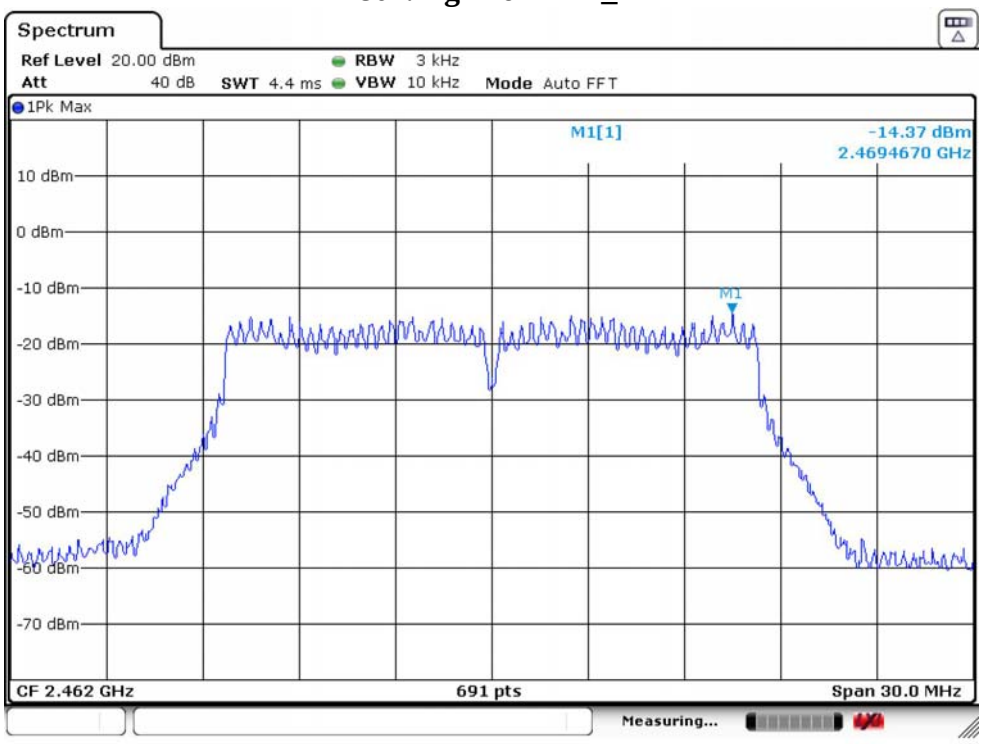
IEEE 802.11g 2437MHz_ANT 2



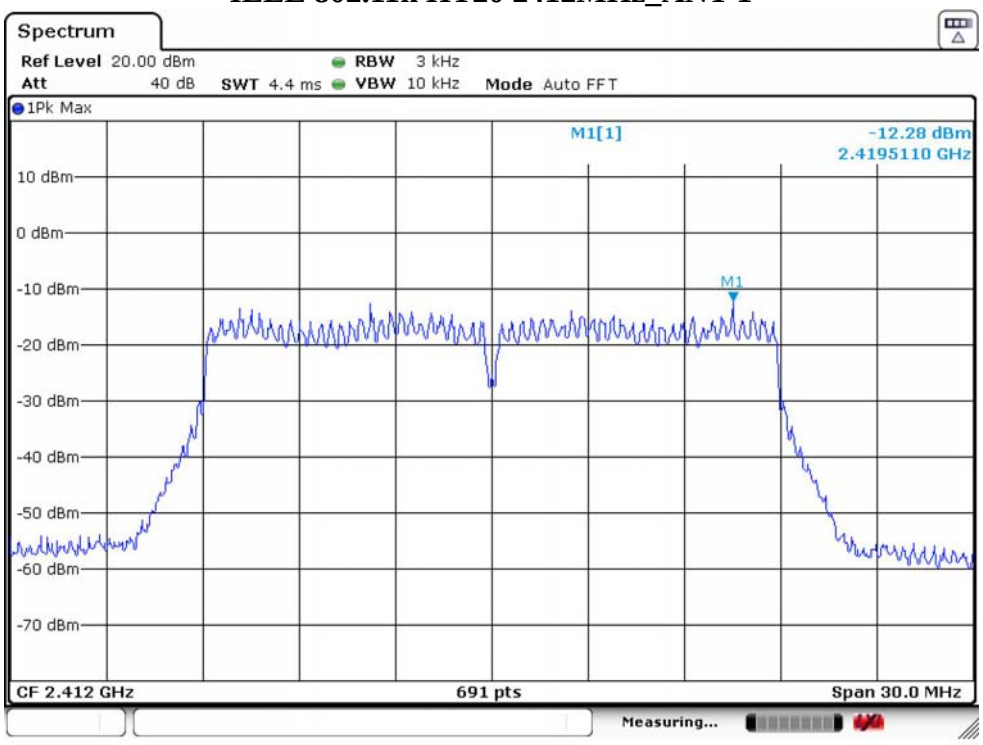
IEEE 802.11g 2462MHz_ANT 1



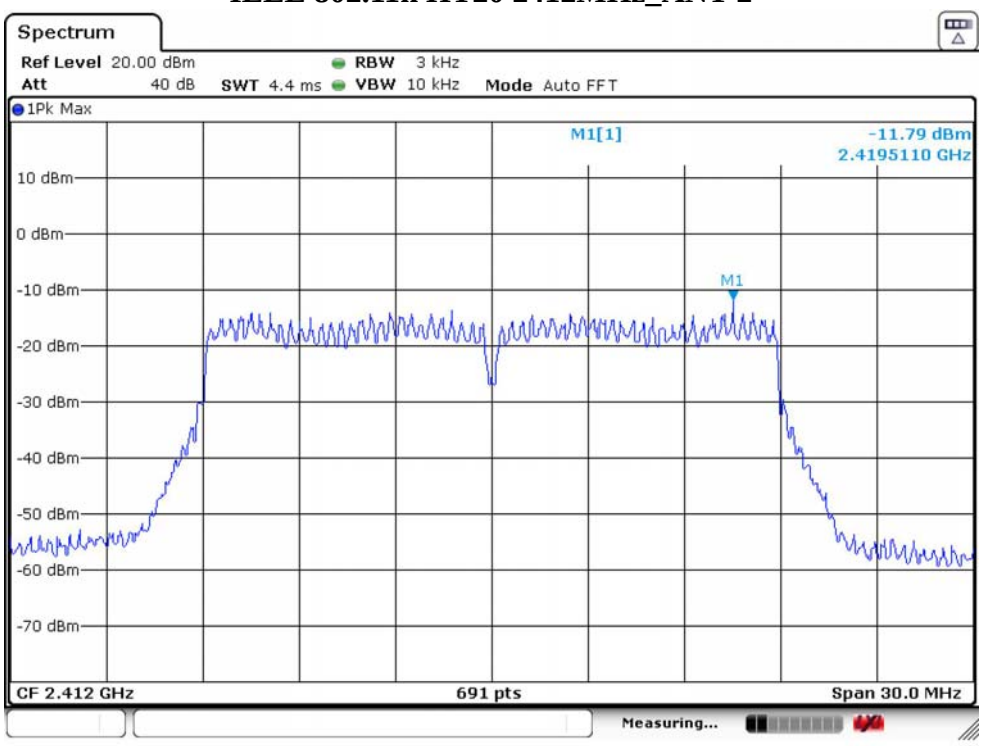
IEEE 802.11g 2462MHz_ANT 2



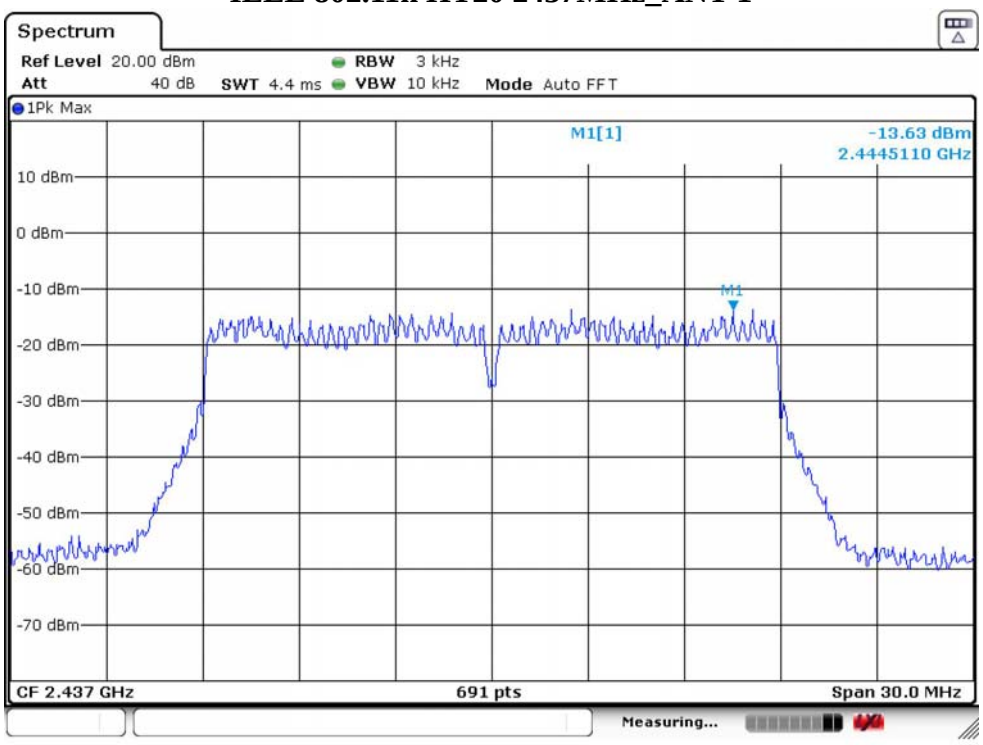
IEEE 802.11n HT20 2412MHz_ANT 1



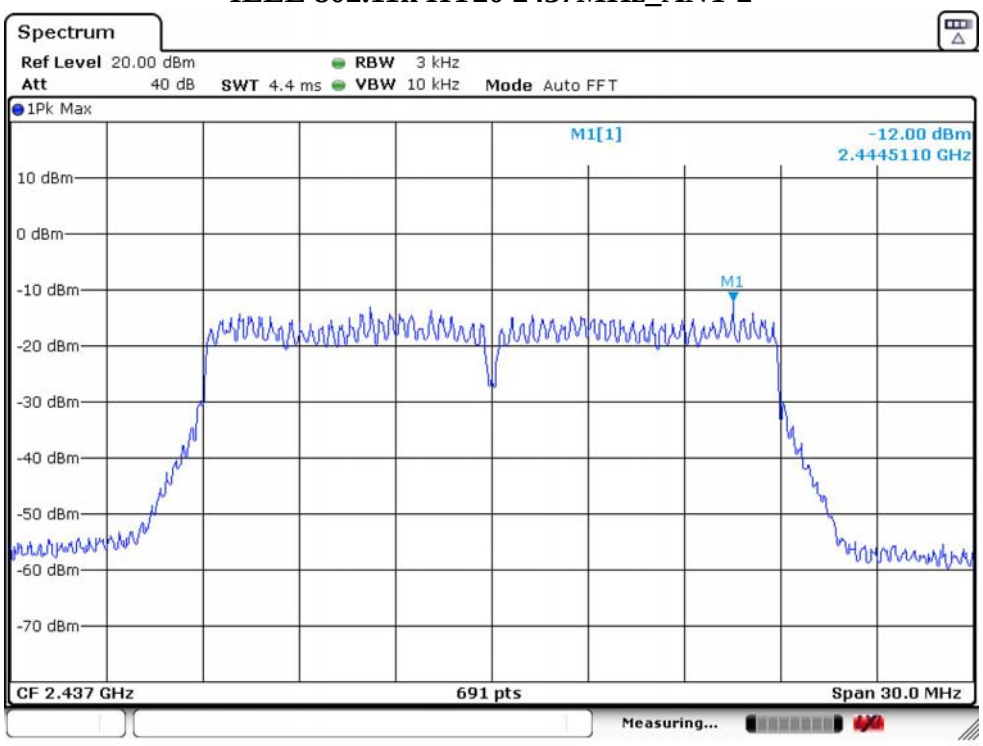
IEEE 802.11n HT20 2412MHz_ANT 2



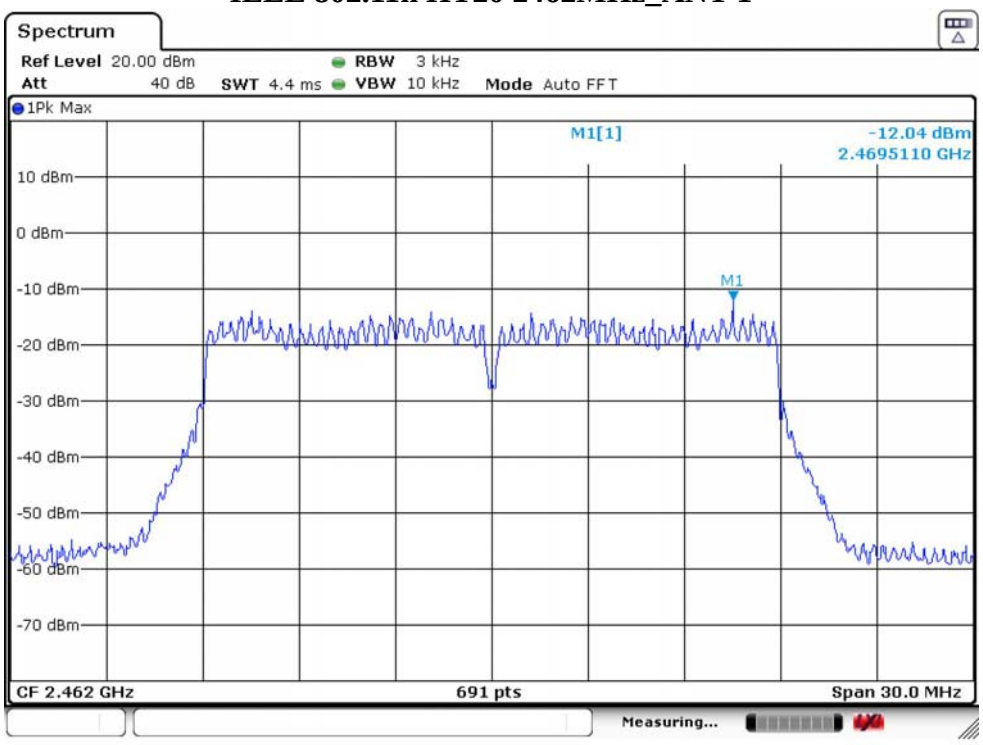
IEEE 802.11n HT20 2437MHz_ANT 1



IEEE 802.11n HT20 2437MHz_ANT 2



IEEE 802.11n HT20 2462MHz_ANT 1



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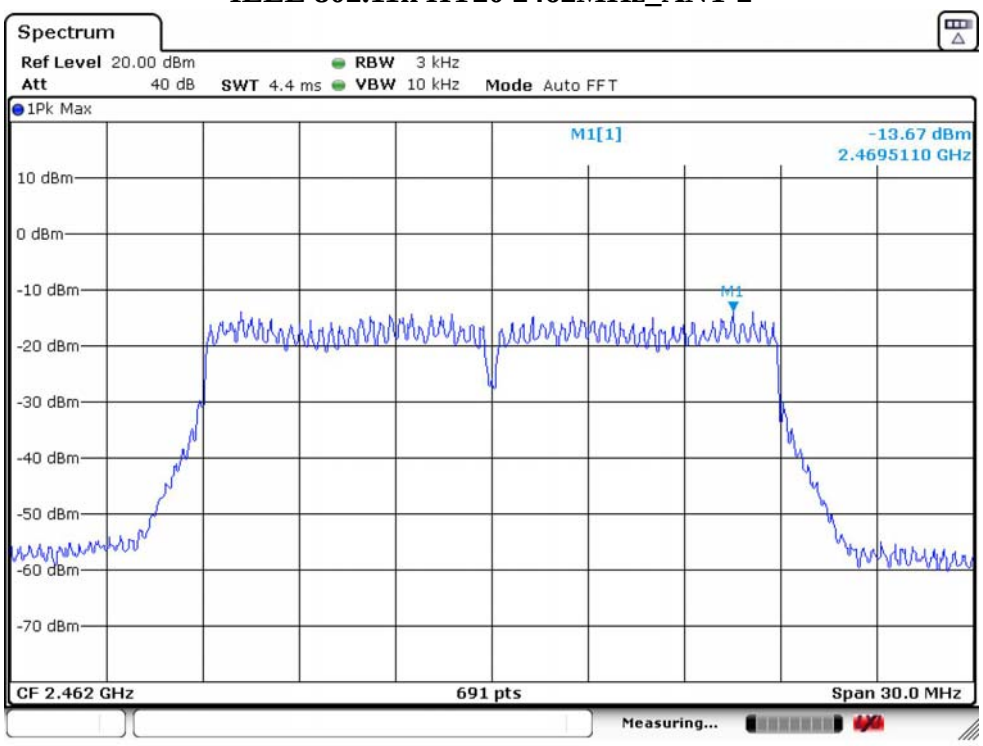
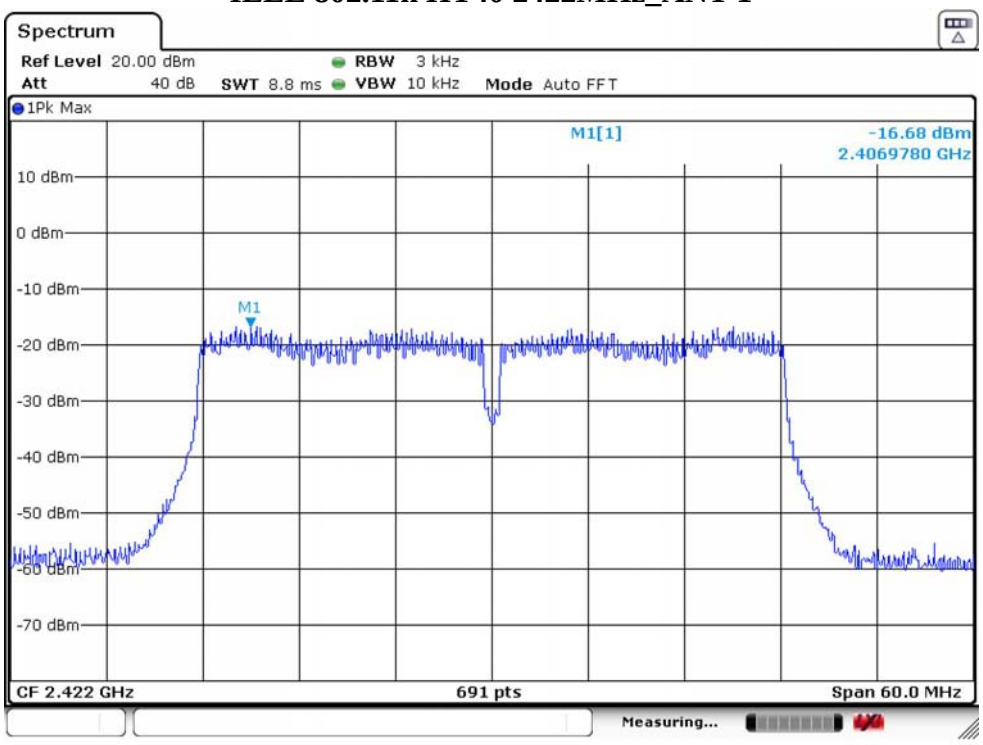
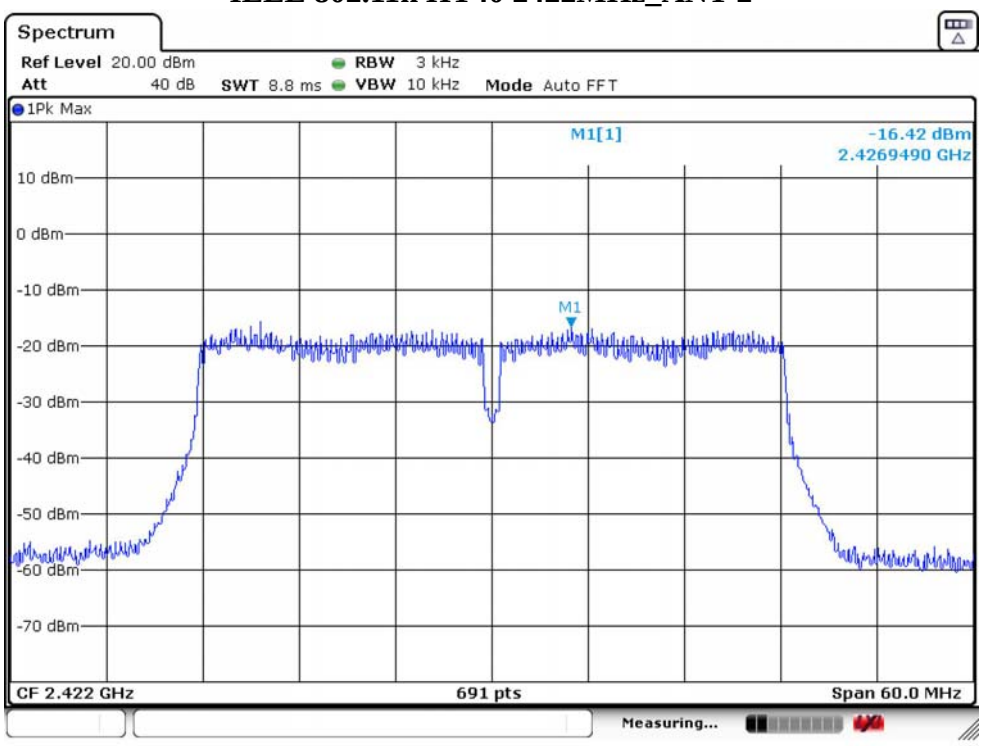


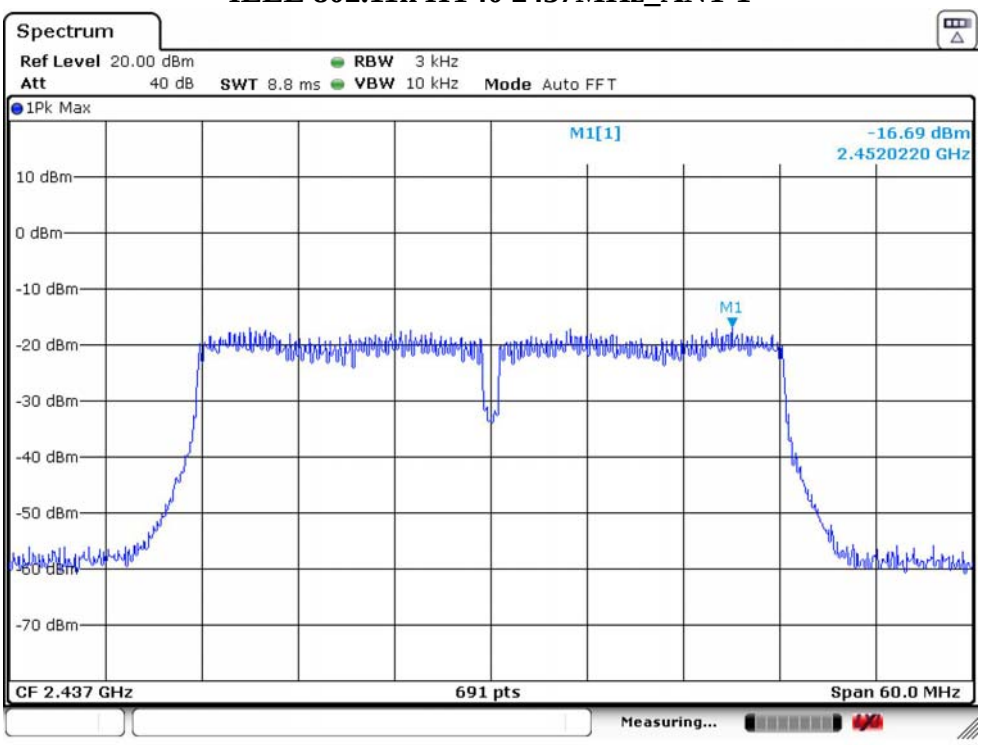
IEEE 802.11n HT40 2422MHz_ANT 1



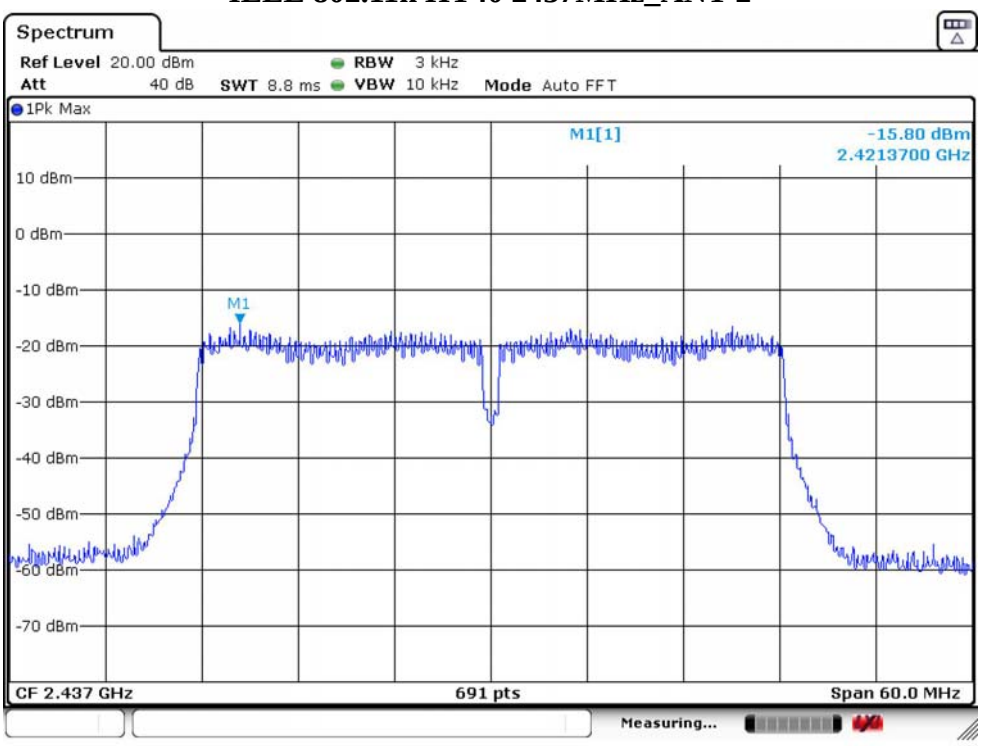
IEEE 802.11n HT40 2422MHz_ANT 2



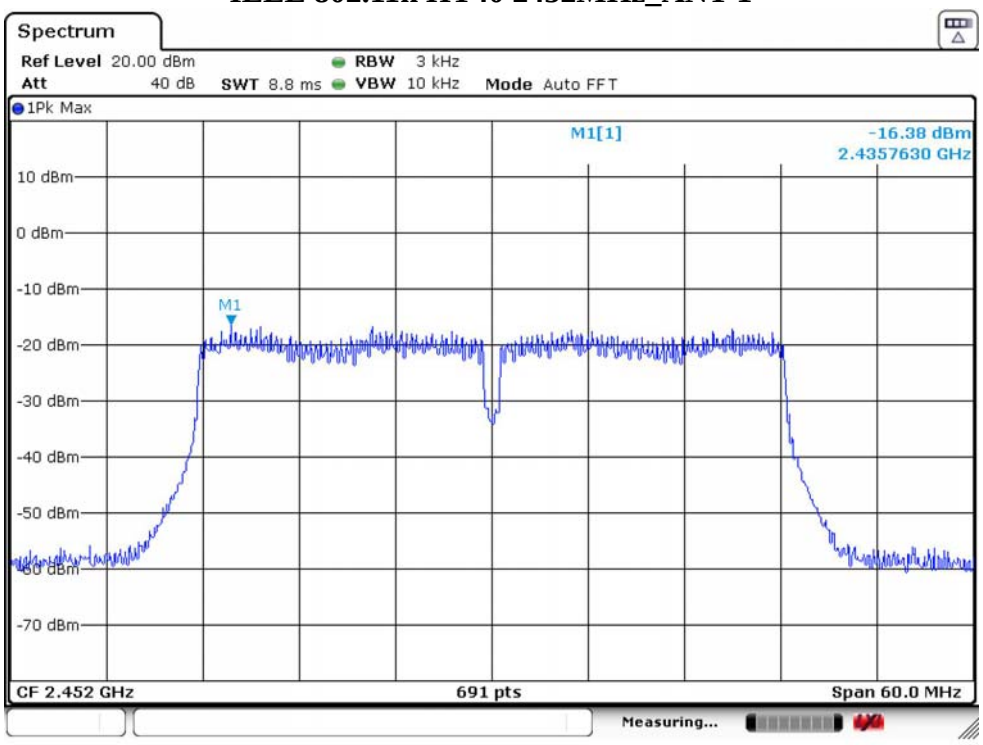
IEEE 802.11n HT40 2437MHz_ANT 1



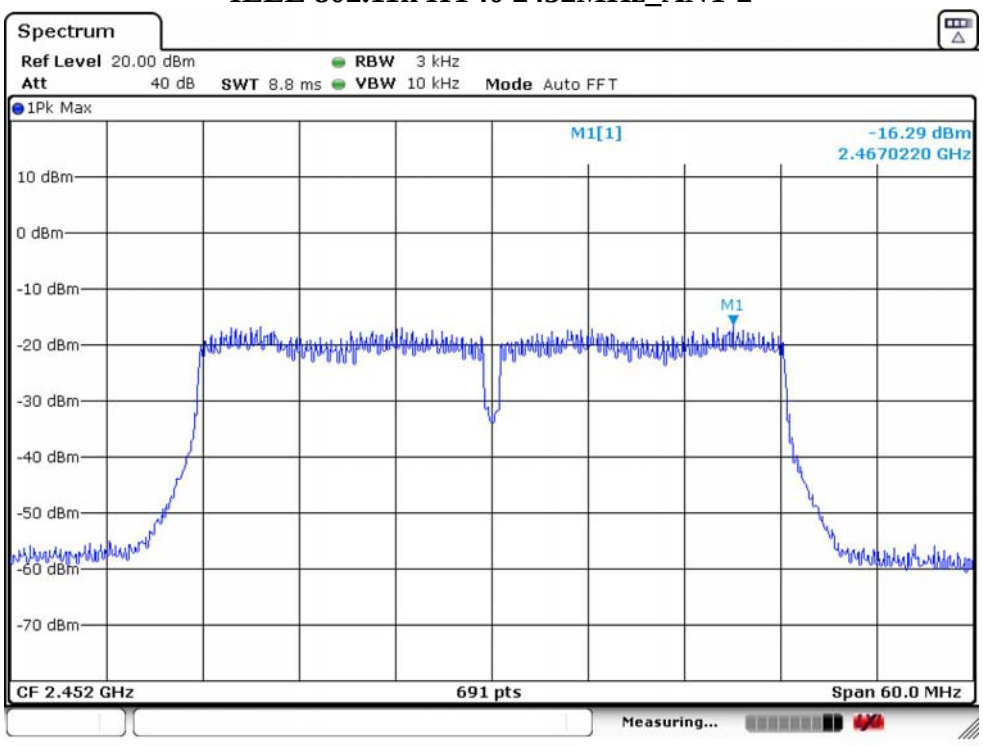
IEEE 802.11n HT40 2437MHz_ANT 2



IEEE 802.11n HT40 2452MHz_ANT 1



IEEE 802.11n HT40 2452MHz_ANT 2

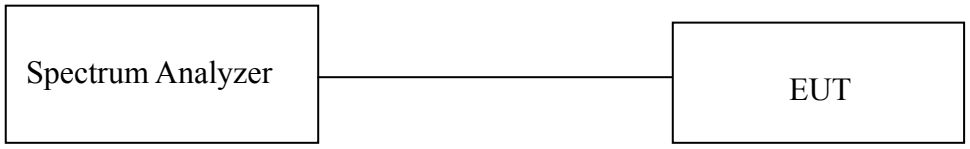


6. CONDUCTED BAND EDGE

6.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

6.2. Test Setup



6.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	100KHz
VBW	300KHz
Span	100MHz(20MHz Bandwidth mode)/200MHz(40MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

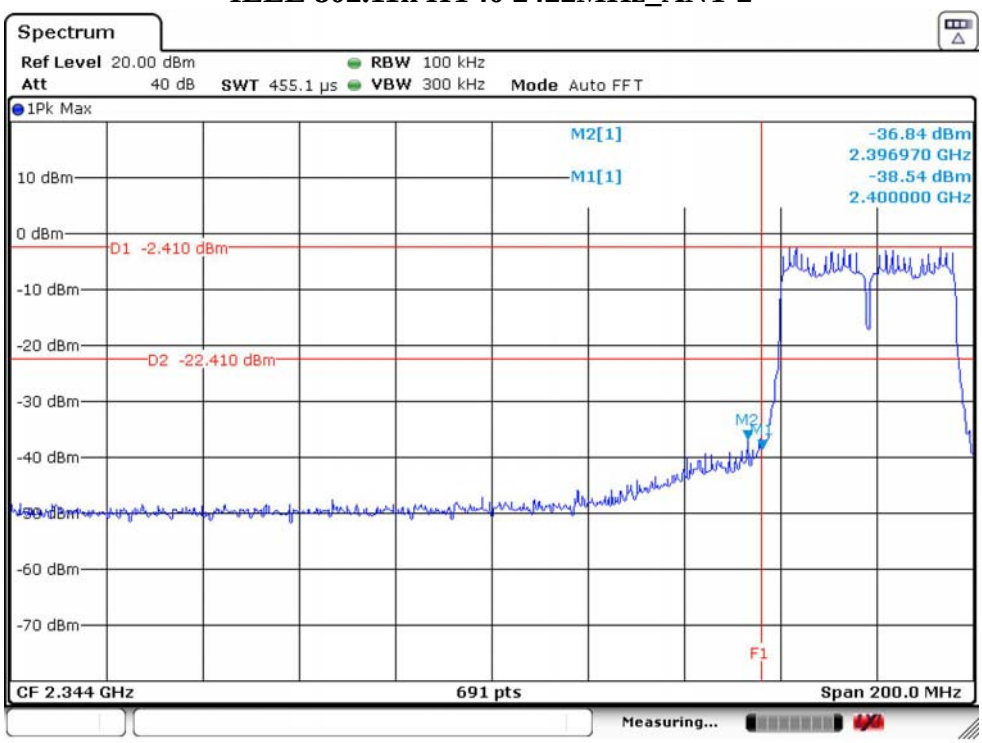
6.4. Test Procedure

a. Connect EUT antenna terminal to the spectrum analyzer with RF cable.
b. Spectrum analyzer setting parameters in accordance with section 6.3.
c. Set the EUT transmit continuously with maximum output power.
d. Allow trace to stabilize, use the marker function to mark the highest emission level outside the authorized band.
e. Repeat above procedures until all modes and channels were measured.
f. Record the results in the test report.

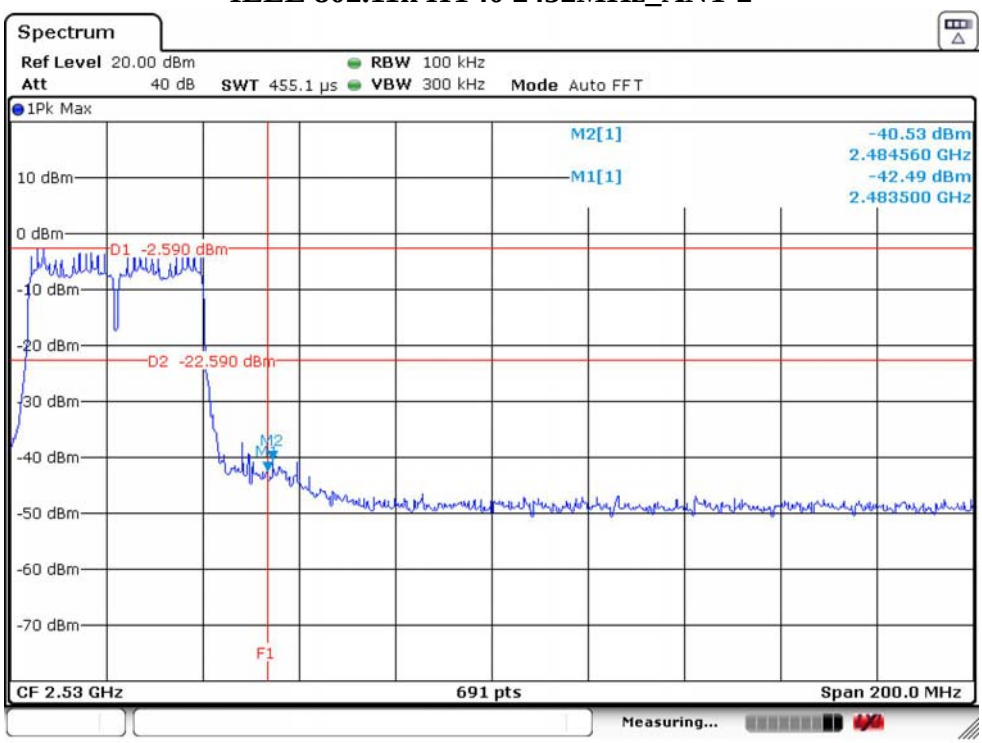
6.5. Test Result

Temperature	27℃	Relative Humidity	54%	Test Voltage	120V/60Hz
Result	PASS				

IEEE 802.11n HT40 2422MHz_ANT 2



IEEE 802.11n HT40 2452MHz_ANT 2



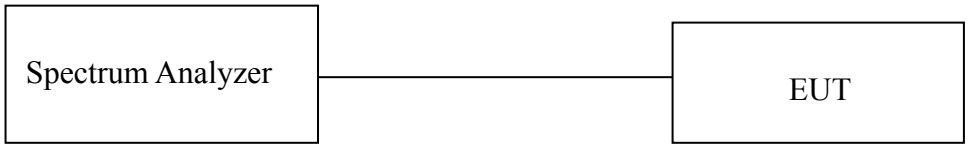
All modulations are all tested ,only worse case is reported

7. CONDUCTED SPURIOUS EMISSIONS

7.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.2. Test Setup



7.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	100KHz
VBW	300KHz
Start frequency	30MHz
Stop frequency	25GHz
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

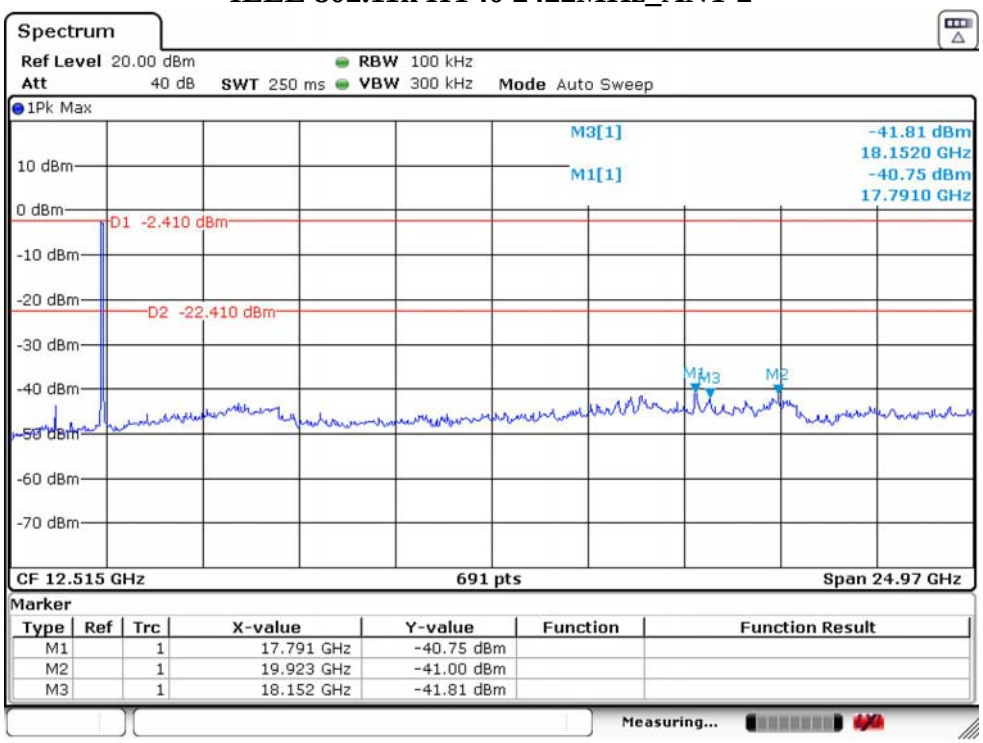
7.4. Test Procedure

a. Connect EUT antenna terminal to the spectrum analyzer with RF cable.
b. Spectrum analyzer setting parameters in accordance with section 7.3.
c. Set the EUT transmit continuously with maximum output power.
d. Allow trace to stabilize, use the marker function to mark the highest emission level outside the authorized band.
e. Repeat above procedures until all modes and channels were measured.
f. Record the results in the test report.

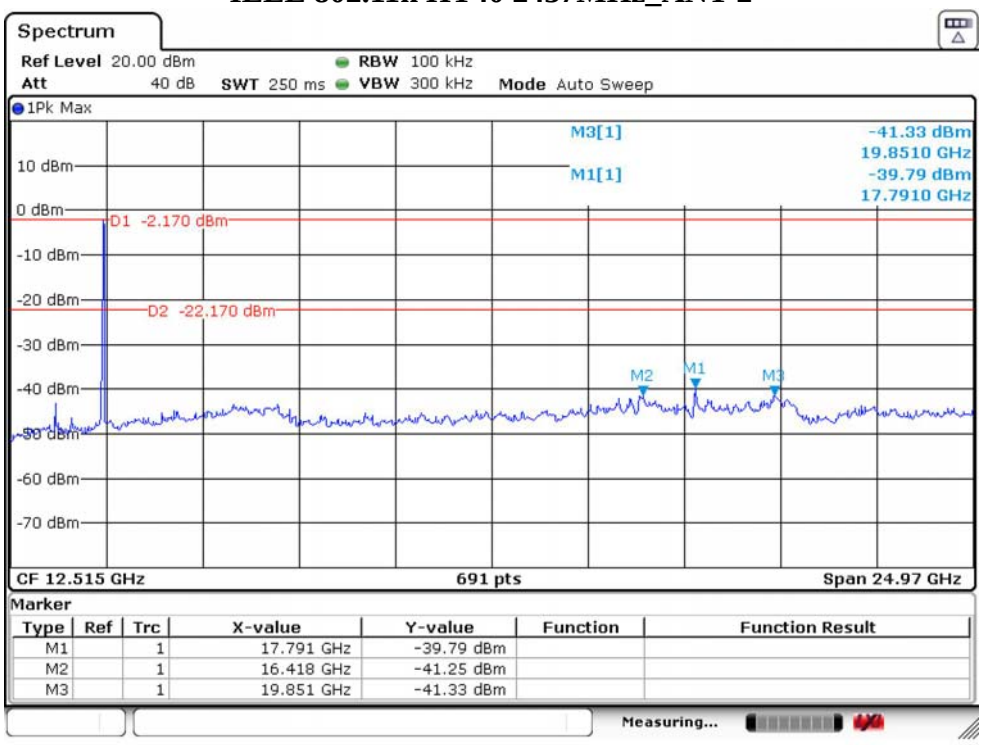
7.5. Test Result

Temperature	27℃	Relative Humidity	54%	Test Voltage	120V/60Hz
Result	PASS				

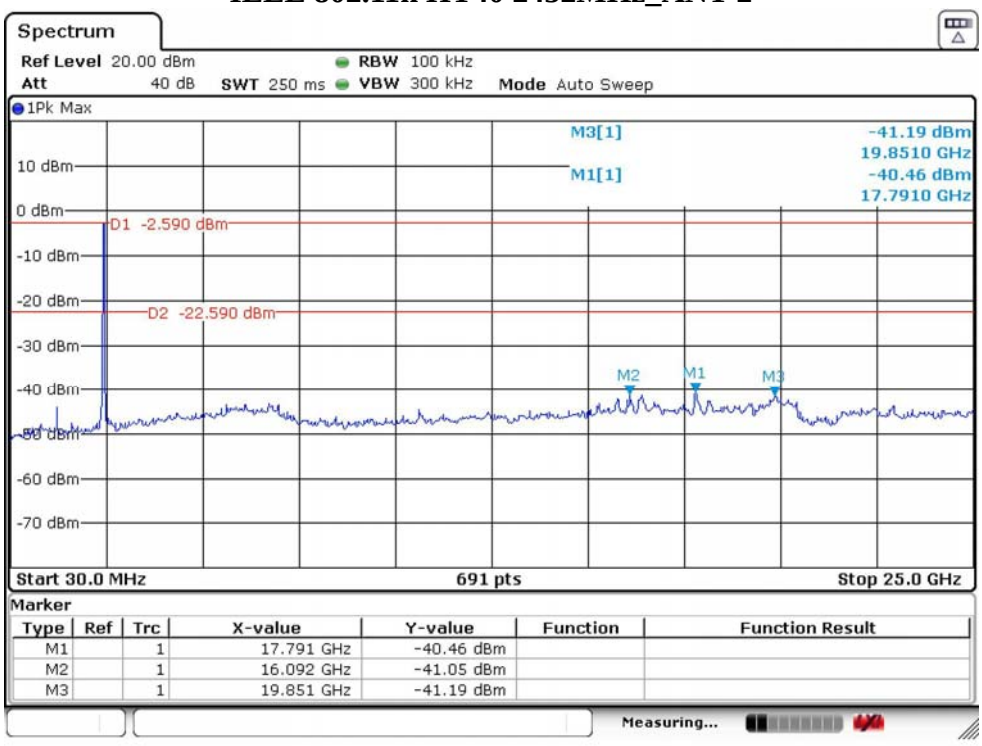
IEEE 802.11n HT40 2422MHz_ANT 2



IEEE 802.11n HT40 2437MHz_ANT 2



IEEE 802.11n HT40 2452MHz_ANT 2



All modulations are all tested ,only worse case is reported

8. RADIATED SPURIOUS EMISSIONS AND BAND EDGE

8.1. Limit

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

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])

15.209 Limit

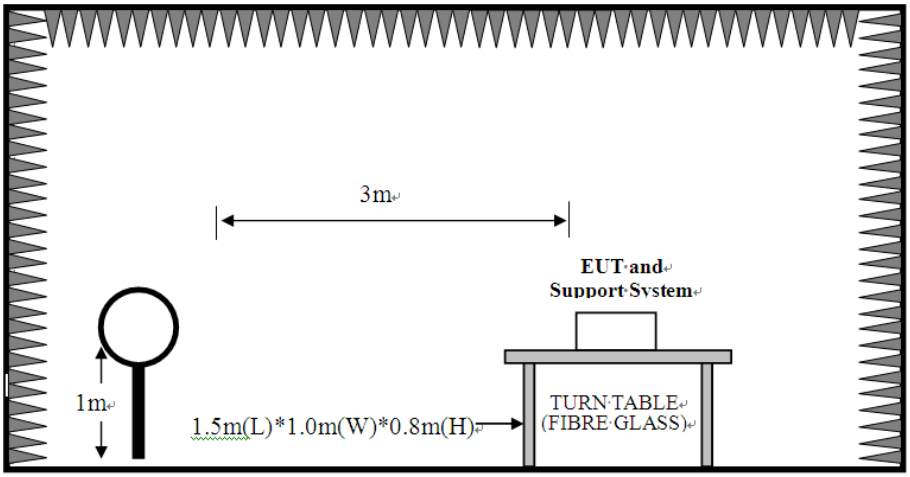
Frequency (MHz)	Field Strength(μV/m)	Distance(m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Note:

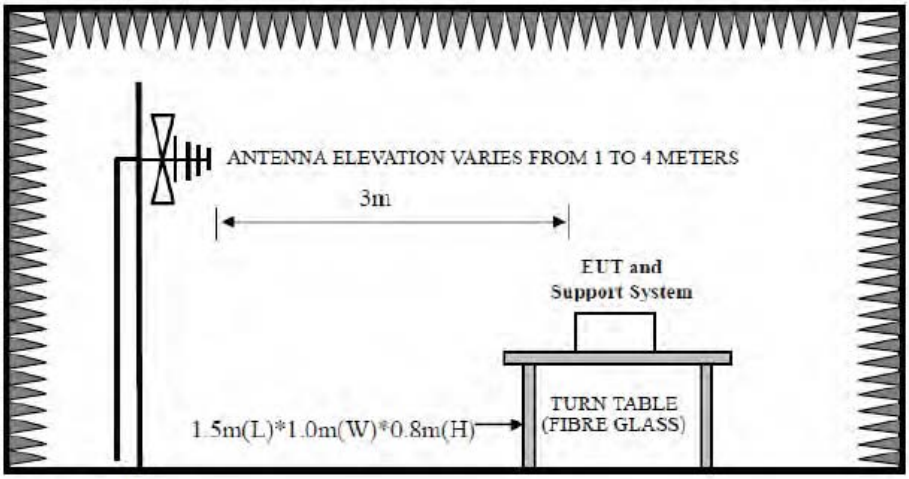
(1) Emission level dBμV = 20 log Emission level μV/m.
(2) The smaller limit shall apply at the cross point between two frequency bands.
(3) Distance is the distance in meters between the measuring instrument,antenna and the closest point of any part of the device or system.

8.2. Test Setup

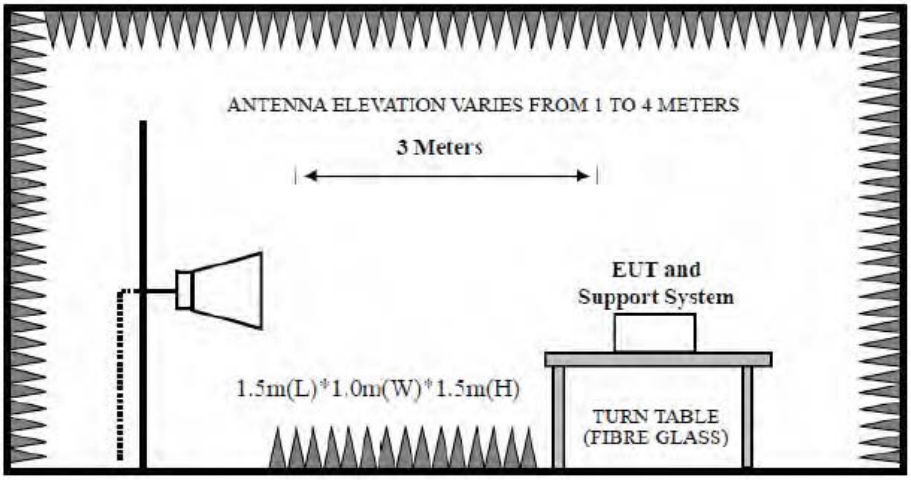
9kHz~30MHz



30~1000MHz



Above 1GHz



8.3. 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

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

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≥98%,VBW=10Hz
		Duty cycle＜98%,VBW≥1/T
Start frequency	1GHz	
Stop frequency	25GHz	
Sweep Time	Auto	
Detector	PEAK	
Trace Mode	Max Hold	

Note :

1. T is the on-time time of the duty cycle,when EUT transmit continuously with maximum output power,unit is seconds. reference section 2.8 for the on-time time.

8.4. 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 8.3.
g. Repeat above procedures until all channels were measured.
h. Record the results in the test report.

Note:

1. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
2. The frequency 2412MHz/2422MHz/2437MHz/2452MHz/2462MHz are fundamental frequency,which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

8.5. Test Result

Radiated Emissions Below 1GHz

EST Technology

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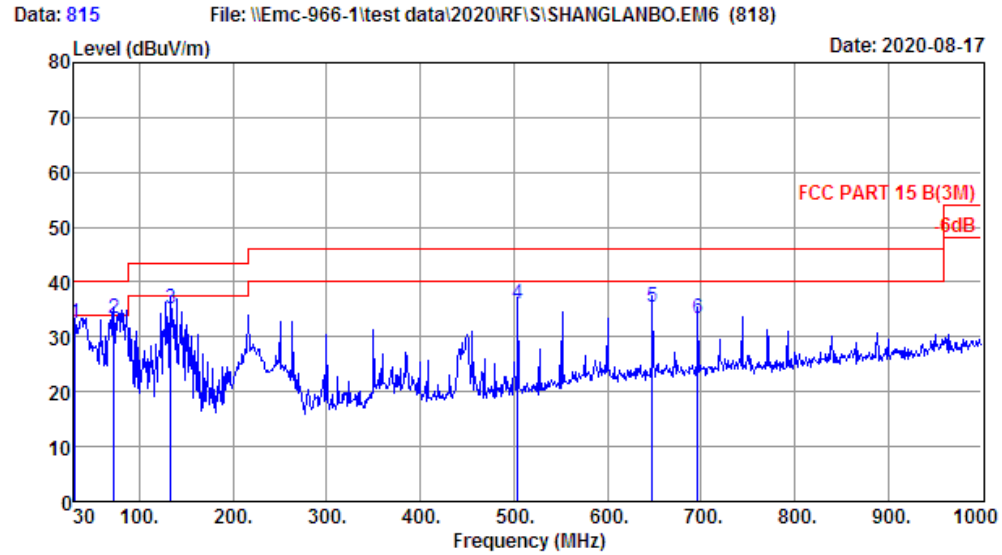

Site no. : 1# 966 Chamber Data no. : 815
Dis. / Ant. : 3m 37062 Ant. pol. : VERTICAL
Limit : FCC PART 15 B(3M)
Env. / Ins. : Temp:27.7';Humi:59.1%;Press:101.52kPa
Engineer : Pablo
EUT : Soundbar
Power : AC 120V/60Hz
M/N : Klipsch Cinema 1200 Sound Bar
Test Mode : TX Mode

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.970	17.60	0.14	14.74	32.48	40.00	7.52	QP
2	72.680	6.62	0.57	26.14	33.33	40.00	6.67	QP
3	133.790	11.62	0.99	22.51	35.12	43.50	8.38	QP
4	504.330	18.38	2.68	15.07	36.13	46.00	9.87	QP
5	647.890	21.38	3.18	10.97	35.53	46.00	10.47	QP
6	696.390	21.66	3.23	8.52	33.41	46.00	12.59	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.

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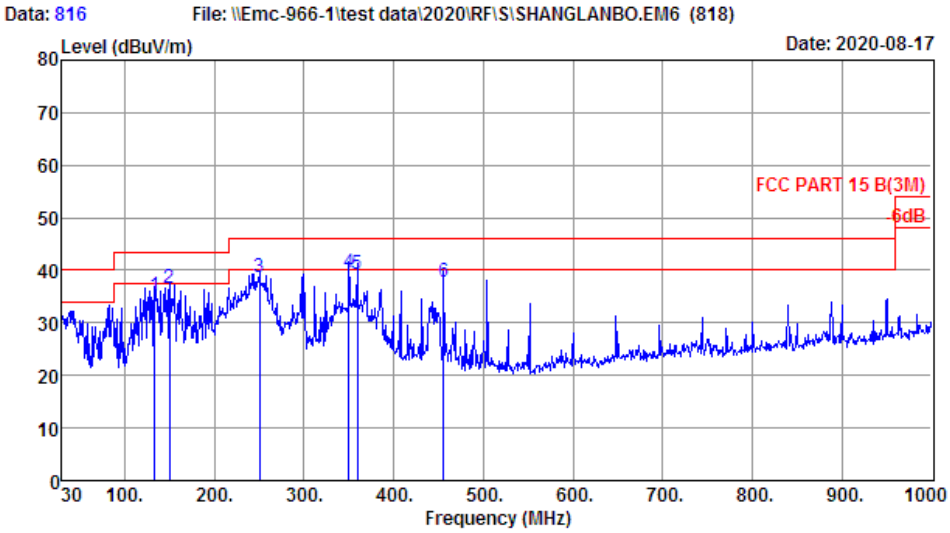

Site no. : 1# 966 Chamber Data no. : 816
Dis. / Ant. : 3m 37062 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 B(3M)
Env. / Ins. : Temp:27.7';Humi:59.1%;Press:101.52kPa
Engineer : Pablo
EUT : Soundbar
Power : AC 120V/60Hz
M/N : Klipsch Cinema 1200 Sound Bar
Test Mode : TX Mode

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	133.790	11.62	0.99	22.43	35.04	43.50	8.46	QP
2	150.280	11.60	1.09	23.93	36.62	43.50	6.88	QP
3	250.190	12.40	1.62	24.53	38.55	46.00	7.45	QP
4	350.100	15.40	2.11	21.99	39.50	46.00	6.50	QP
5	359.800	15.20	2.16	21.93	39.29	46.00	6.71	QP
6	455.830	17.42	2.56	17.93	37.91	46.00	8.09	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(ANT 2)

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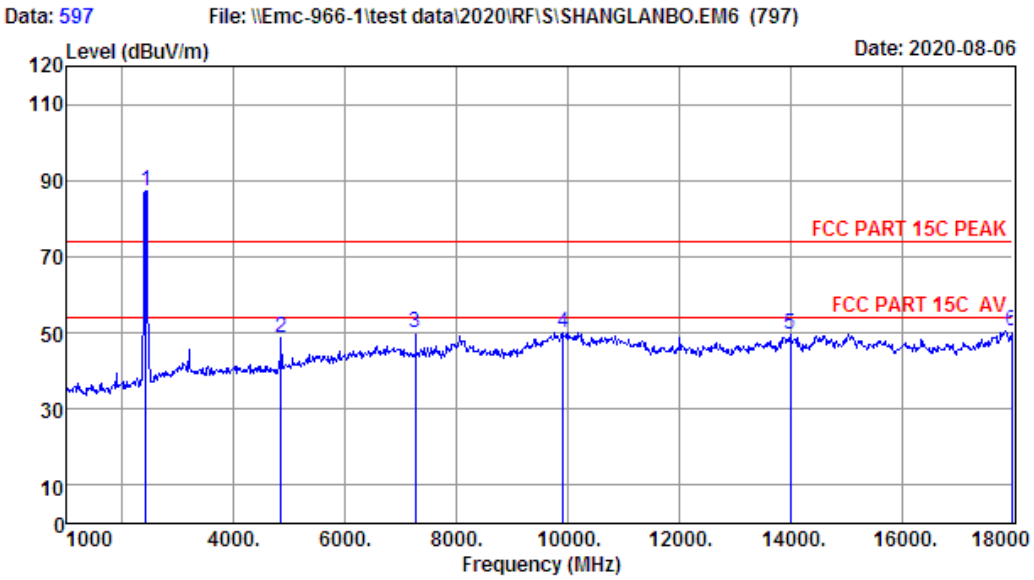

Site no. : 1# 966 Chamber Data no. : 597
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:22.2';Humi:53%;Press:101.82kPa
Engineer : Pablo
EUT : Soundbar
Power : AC 120V/60Hz
M/N : Klipsch Cinema 1200 Sound Bar
Test Mode : IEEE 802.11N40 TX 2422MHz

	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	2422.00	27.30	1.46	34.63	93.10	87.23	74.00	-13.23	Peak
2	4844.00	31.24	3.28	34.67	49.06	48.91	74.00	25.09	Peak
3	7266.00	36.35	5.21	34.83	43.36	50.09	74.00	23.91	Peak
4	9925.00	38.76	5.84	34.21	39.70	50.09	74.00	23.91	Peak
5	14005.00	41.10	6.53	34.30	36.13	49.46	74.00	24.54	Peak
6	17983.00	48.76	8.23	34.30	27.96	50.65	74.00	23.35	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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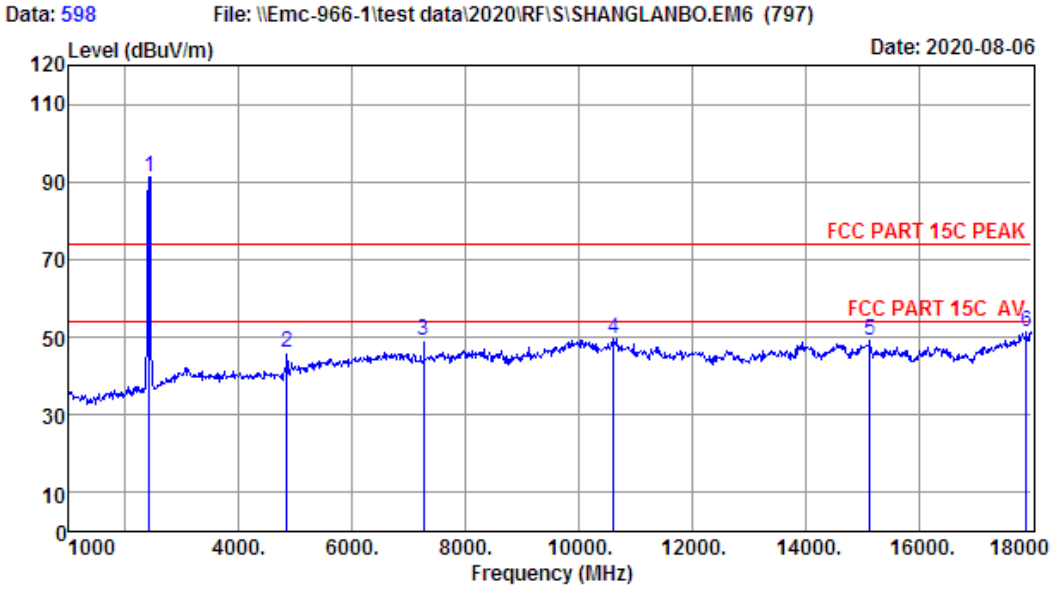

Site no. : 1# 966 Chamber Data no. : 598
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:22.2';Humi:53%;Press:101.82kPa
Engineer : Pablo
EUT : Soundbar
Power : AC 120V/60Hz
M/N : Klipsch Cinema 1200 Sound Bar
Test Mode : IEEE 802.11N40 TX 2422MHz

	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	2422.00	27.30	1.46	34.63	97.14	91.27	74.00	-17.27	Peak
2	4844.00	31.24	3.28	34.67	46.30	46.15	74.00	27.85	Peak
3	7266.00	36.35	5.21	34.83	42.54	49.27	74.00	24.73	Peak
4	10622.00	39.53	6.04	34.39	38.39	49.57	74.00	24.43	Peak
5	15144.00	40.75	6.71	34.54	36.29	49.21	74.00	24.79	Peak
6	17898.00	48.09	8.17	34.31	29.62	51.57	74.00	22.43	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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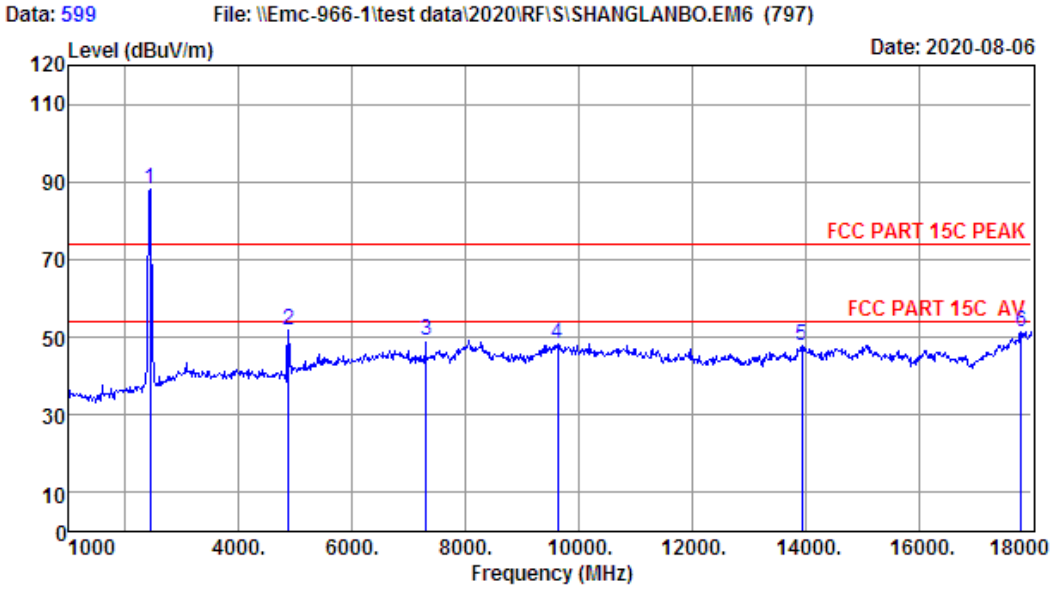

Site no. : 1# 966 Chamber Data no. : 599
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:22.2';Humi:53%;Press:101.82kPa
Engineer : Pablo
EUT : Soundbar
Power : AC 120V/60Hz
M/N : Klipsch Cinema 1200 Sound Bar
Test Mode : IEEE 802.11N40 TX 2437MHz

	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	2437.00	27.33	1.47	34.62	93.99	88.17	74.00	-14.17	Peak
2	4874.00	31.37	3.31	34.68	51.85	51.85	74.00	22.15	Peak
3	7311.00	36.42	5.22	34.83	42.40	49.21	74.00	24.79	Peak
4	9636.00	38.18	5.61	34.27	38.93	48.45	74.00	25.55	Peak
5	13937.00	40.98	6.50	34.31	34.74	47.91	74.00	26.09	Peak
6	17813.00	47.41	8.12	34.32	30.05	51.26	74.00	22.74	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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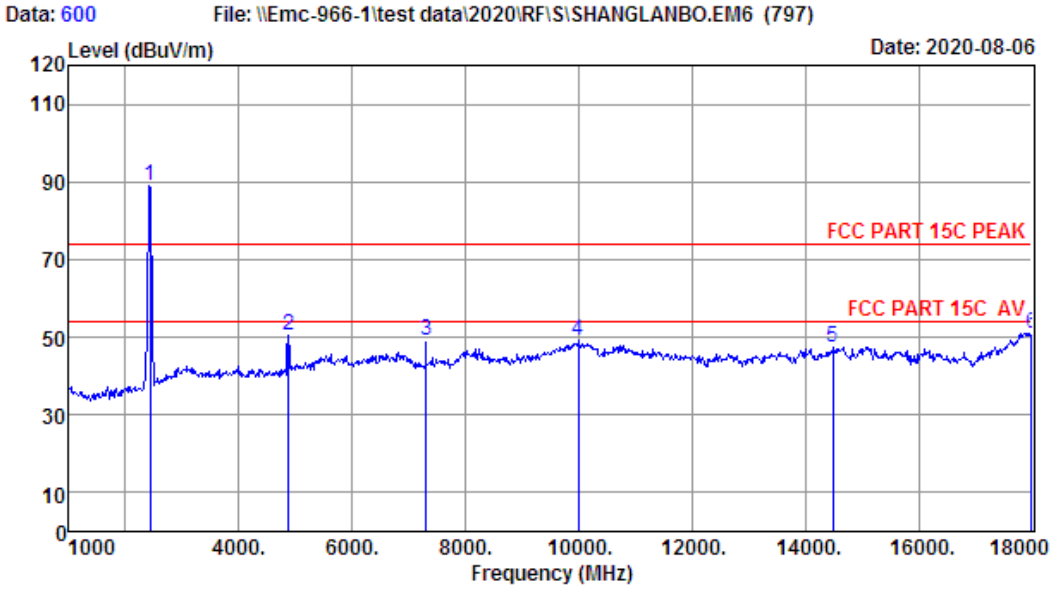


```
Site no.      : 1# 966 Chamber              Data no.  : 600
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:22.2';Humi:53%;Press:101.82kPa
Engineer      : Pablo
EUT           : Soundbar
Power         : AC 120V/60Hz
M/N           : Klipsch Cinema 1200 Sound Bar
Test Mode     : IEEE 802.11N40 TX 2437MHz
```

	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	2437.00	27.33	1.47	34.62	94.75	88.93	74.00	-14.93	Peak
2	4874.00	31.37	3.31	34.68	50.37	50.37	74.00	23.63	Peak
3	7311.00	36.42	5.22	34.83	42.35	49.16	74.00	24.84	Peak
4	9993.00	38.90	5.89	34.20	38.57	49.16	74.00	24.84	Peak
5	14481.00	41.01	6.89	34.44	33.94	47.40	74.00	26.60	Peak
6	18000.00	48.90	8.24	34.30	28.11	50.95	74.00	23.05	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.

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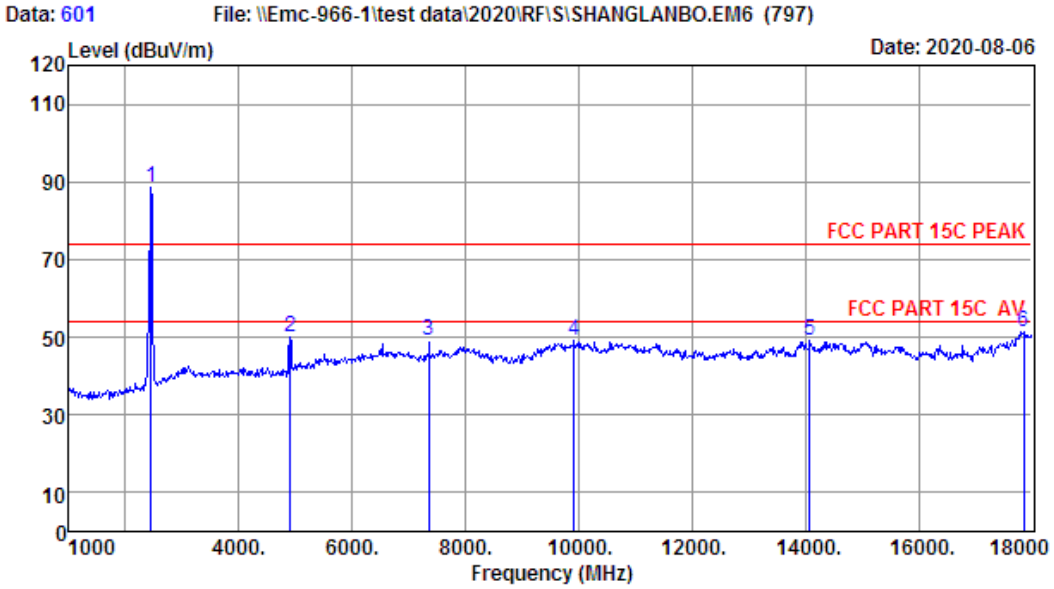


```
Site no.      : 1# 966 Chamber              Data no.  : 601
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:22.2';Humi:53%;Press:101.82kPa
Engineer      : Pablo
EUT           : Soundbar
Power         : AC 120V/60Hz
M/N           : Klipsch Cinema 1200 Sound Bar
Test Mode     : IEEE 802.11N40 TX 2452MHz
```

	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	2452.00	27.33	1.47	34.62	94.44	88.62	74.00	-14.62	Peak
2	4904.00	31.49	3.34	34.68	49.97	50.12	74.00	23.88	Peak
3	7356.00	36.52	5.23	34.84	42.03	48.94	74.00	25.06	Peak
4	9925.00	38.76	5.84	34.21	38.55	48.94	74.00	25.06	Peak
5	14073.00	41.09	6.58	34.32	35.86	49.21	74.00	24.79	Peak
6	17864.00	47.82	8.15	34.31	29.52	51.18	74.00	22.82	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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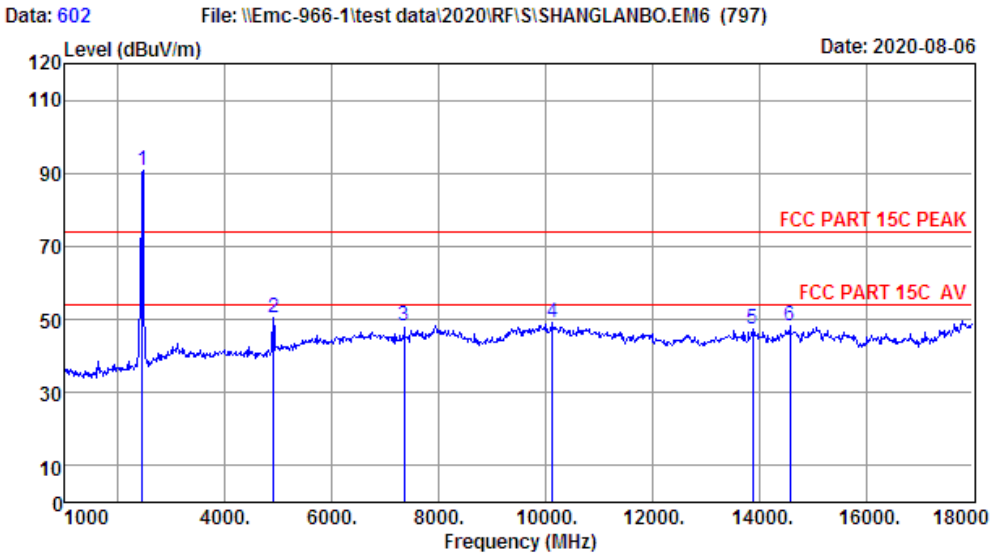


```
Site no.      : 1# 966 Chamber              Data no.  : 602
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:22.2';Humi:53%;Press:101.82kPa
Engineer      : Pablo
EUT           : Soundbar
Power         : AC 120V/60Hz
M/N           : Klipsch Cinema 1200 Sound Bar
Test Mode     : IEEE 802.11N40 TX 2452MHz
```

	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	2452.00	27.33	1.47	34.62	96.53	90.71	74.00	-16.71	Peak
2	4904.00	31.49	3.34	34.68	50.27	50.42	74.00	23.58	Peak
3	7356.00	36.52	5.23	34.84	41.48	48.39	74.00	25.61	Peak
4	10129.00	39.04	5.92	34.24	38.38	49.10	74.00	24.90	Peak
5	13886.00	40.90	6.48	34.31	34.11	47.18	74.00	26.82	Peak
6	14583.00	40.98	6.89	34.47	34.66	48.06	74.00	25.94	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 25GHz 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.

Radiated Band Edge(ANT 2)

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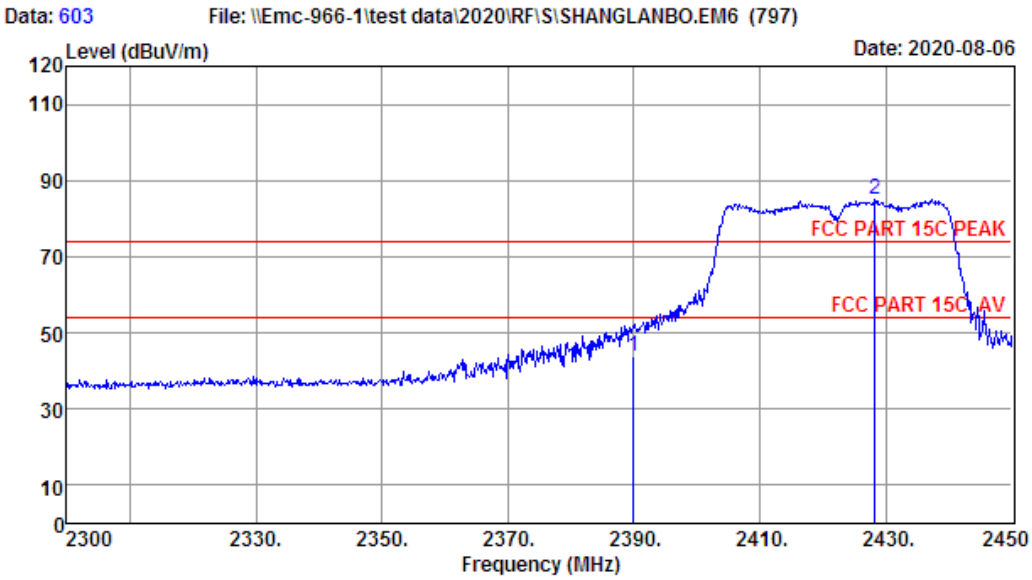


```
Site no.      : 1# 966 Chamber              Data no.  : 603
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:22.2';Humi:53%;Press:101.82kPa
Engineer      : Pablo
EUT           : Soundbar
Power         : AC 120V/60Hz
M/N           : Klipsch Cinema 1200 Sound Bar
Test Mode     : IEEE 802.11N40 TX 2422MHz
```

	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	2390.00	27.26	1.45	34.64	49.74	43.81	54.00	10.19	Average
2	2428.25	27.30	1.46	34.63	90.85	84.98	74.00	-10.98	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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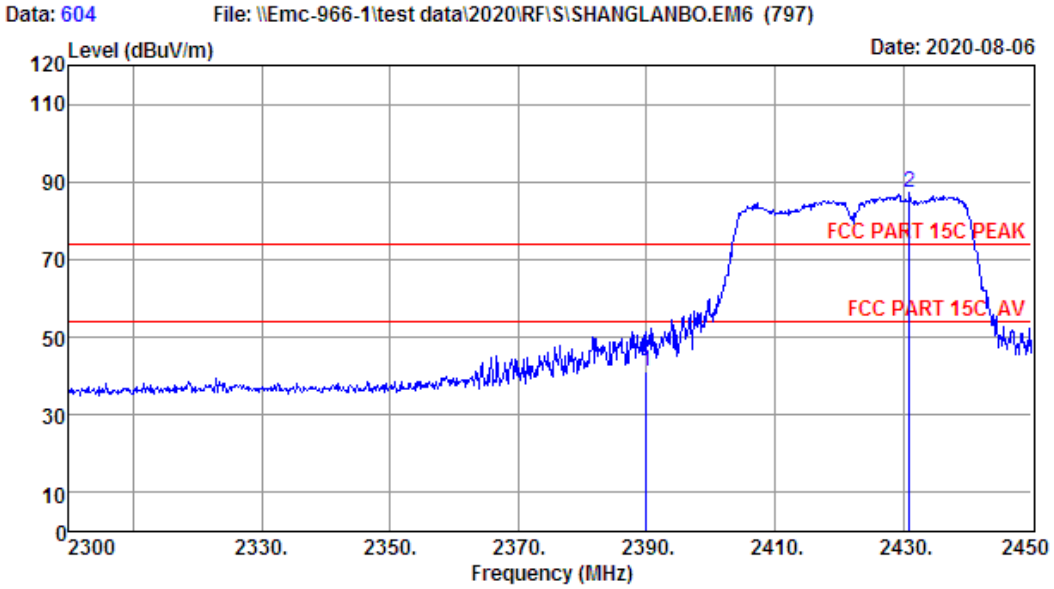

Site no. : 1# 966 Chamber Data no. : 604
Dis. / Ant. : 3m ANT9120D 1-18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:22.2';Humi:53%;Press:101.82kPa
Engineer : Pablo
EUT : Soundbar
Power : AC 120V/60Hz
M/N : Klipsch Cinema 1200 Sound Bar
Test Mode : IEEE 802.11N40 TX 2422MHz

	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	2390.00	27.26	1.45	34.64	47.09	41.16	54.00	12.84	Average
2	2430.95	27.30	1.46	34.63	92.98	87.11	74.00	-13.11	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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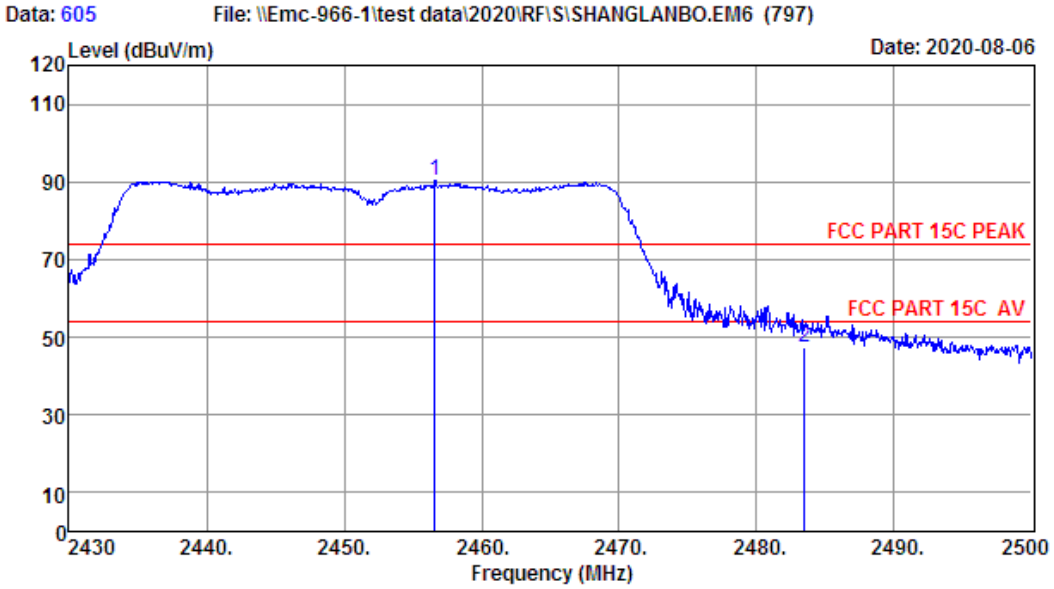


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Site no.      : 1# 966 Chamber              Data no.  : 605
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:22.2';Humi:53%;Press:101.82kPa
Engineer      : Pablo
EUT           : Soundbar
Power         : AC 120V/60Hz
M/N           : Klipsch Cinema 1200 Sound Bar
Test Mode     : IEEE 802.11N40 TX 2452MHz
```

	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	2456.60	27.35	1.48	34.62	96.13	90.34	74.00	-16.34	Peak
2	2483.50	27.38	1.48	34.61	52.97	47.22	54.00	6.78	Average

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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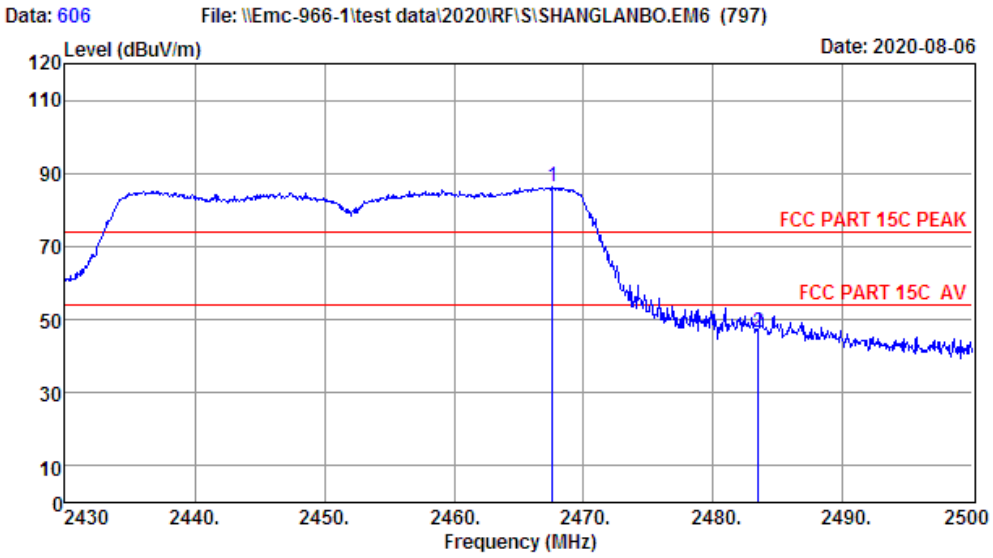



```
Site no.      : 1# 966 Chamber              Data no.  : 606
Dis. / Ant.   : 3m   ANT9120D 1-18G         Ant. pol. : HORIZONTAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : Temp:22.2';Humi:53%;Press:101.82kPa
Engineer      : Pablo
EUT           : Soundbar
Power         : AC 120V/60Hz
M/N           : Klipsch Cinema 1200 Sound Bar
Test Mode     : IEEE 802.11N40 TX 2452MHz
```

	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	2467.59	27.35	1.48	34.62	91.95	86.16	74.00	-12.16	Peak
2	2483.50	27.38	1.48	34.61	52.08	46.33	74.00	27.67	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. All channels had been pre-test,only of the worst case channels were reported.

9. AC POWER LINE CONDUCTED EMISSIONS

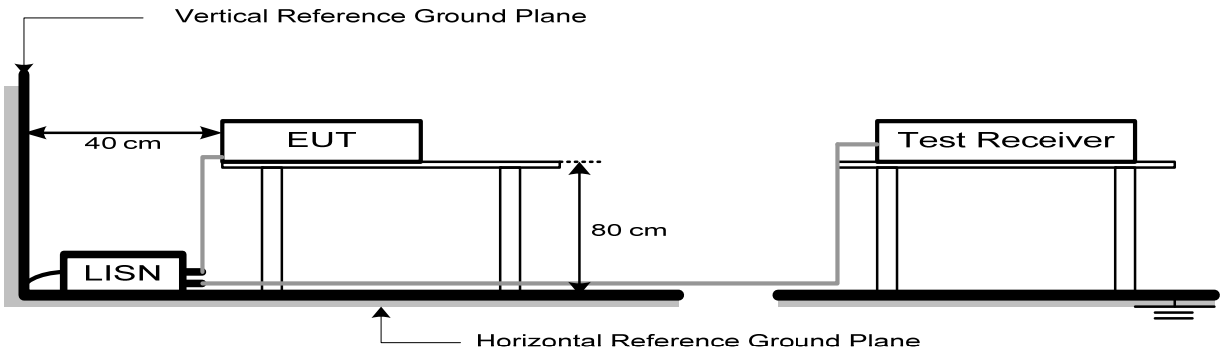
9.1. Limit

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

Note:

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

9.2. Test Setup



9.3. 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

9.4. 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 9.3.
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.

9.5. Test Result

EST Technology

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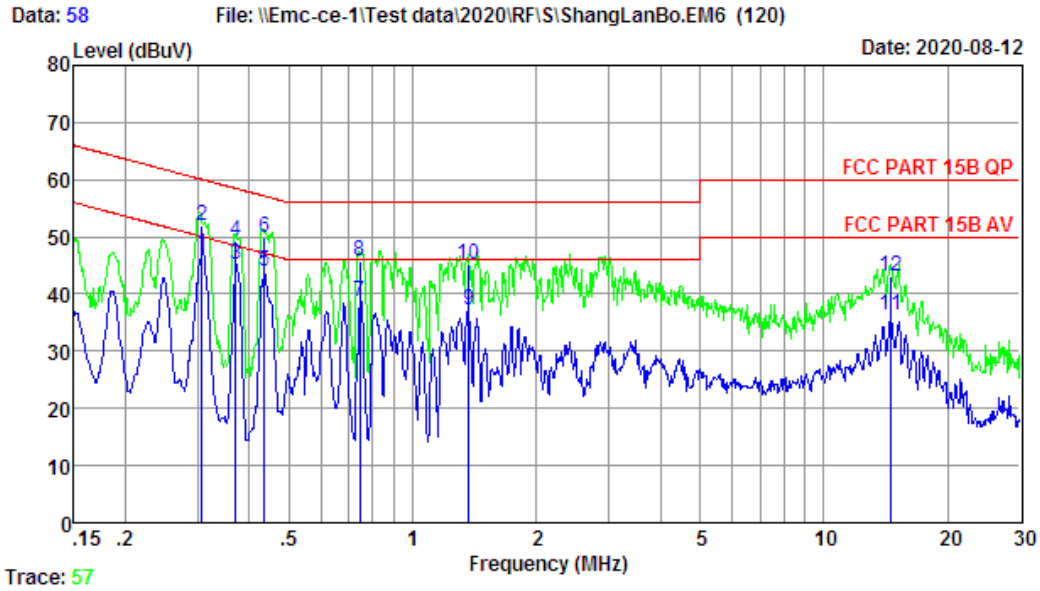

Site no : 844 Shield Room Data no. : 58
Env. / Ins. : Temp:23.3'C Humi:53% Press:101.20kPa LINE Phase : LINE
Limit : FCC PART 15B QP
Engineer : ZSX
EUT : Soundbar
Power : AC 240V/60Hz
M/N : Klipsch Cinema 1200 Sound Bar
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.3067	9.72	9.92	27.32	46.96	50.06	3.10	Average
2	0.3067	9.72	9.92	32.30	51.94	60.06	8.12	QP
3	0.3712	9.72	9.92	25.66	45.30	48.47	3.17	Average
4	0.3712	9.72	9.92	29.60	49.24	58.47	9.23	QP
5	0.4351	9.72	9.92	24.23	43.87	47.15	3.28	Average
6	0.4351	9.72	9.92	30.23	49.87	57.15	7.28	QP
7	0.7430	9.72	9.93	19.10	38.75	46.00	7.25	Average
8	0.7430	9.72	9.93	26.10	45.75	56.00	10.25	QP
9	1.3665	9.73	9.95	17.57	37.25	46.00	8.75	Average
10	1.3665	9.73	9.95	25.50	45.18	56.00	10.82	QP
11	14.5171	9.87	10.12	16.24	36.23	50.00	13.77	Average
12	14.5171	9.87	10.12	23.19	43.18	60.00	16.82	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

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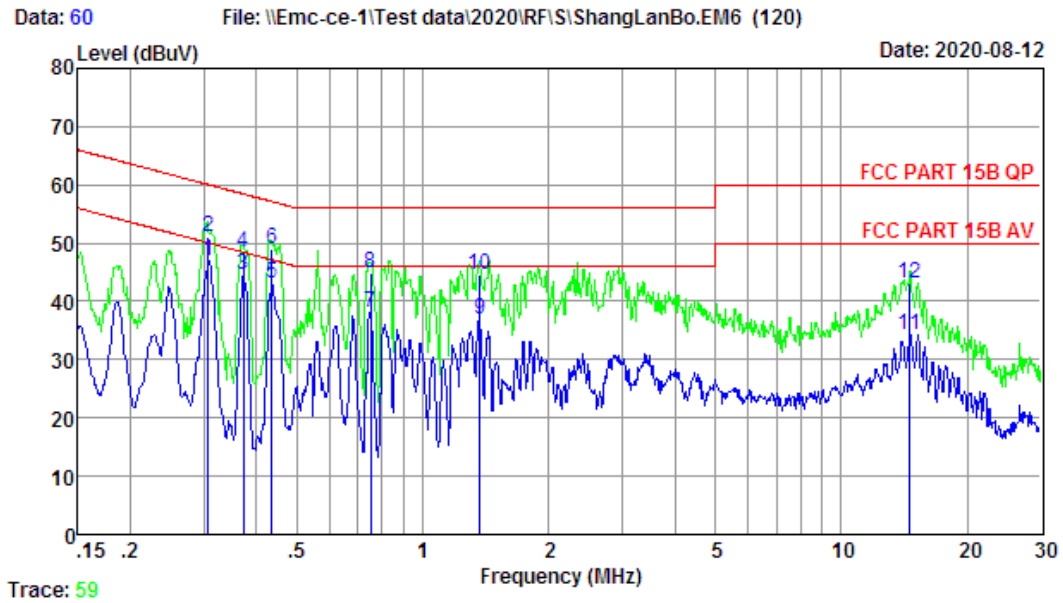

Site no : 844 Shield Room Data no. : 60
Env. / Ins. : Temp:23.3'C Humi:53% Press:101.20kPa LINE Phase : NEUTRAL
Limit : FCC PART 15B QP
Engineer : ZSX
EUT : Soundbar
Power : AC 240V/60Hz
M/N : Klipsch Cinema 1200 Sound Bar
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.3067	9.63	9.92	27.42	46.97	50.06	3.09	Average
2	0.3067	9.63	9.92	31.40	50.95	60.06	9.11	QP
3	0.3731	9.64	9.92	25.04	44.60	48.43	3.83	Average
4	0.3731	9.64	9.92	28.99	48.55	58.43	9.88	QP
5	0.4351	9.64	9.92	23.59	43.15	47.15	4.00	Average
6	0.4351	9.64	9.92	29.58	49.14	57.15	8.01	QP
7	0.7509	9.70	9.93	18.32	37.95	46.00	8.05	Average
8	0.7509	9.70	9.93	25.32	44.95	56.00	11.05	QP
9	1.3665	9.77	9.95	17.06	36.78	46.00	9.22	Average
10	1.3665	9.77	9.95	25.00	44.72	56.00	11.28	QP
11	14.5942	10.09	10.12	14.04	34.25	50.00	15.75	Average
12	14.5942	10.09	10.12	23.03	43.24	60.00	16.76	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

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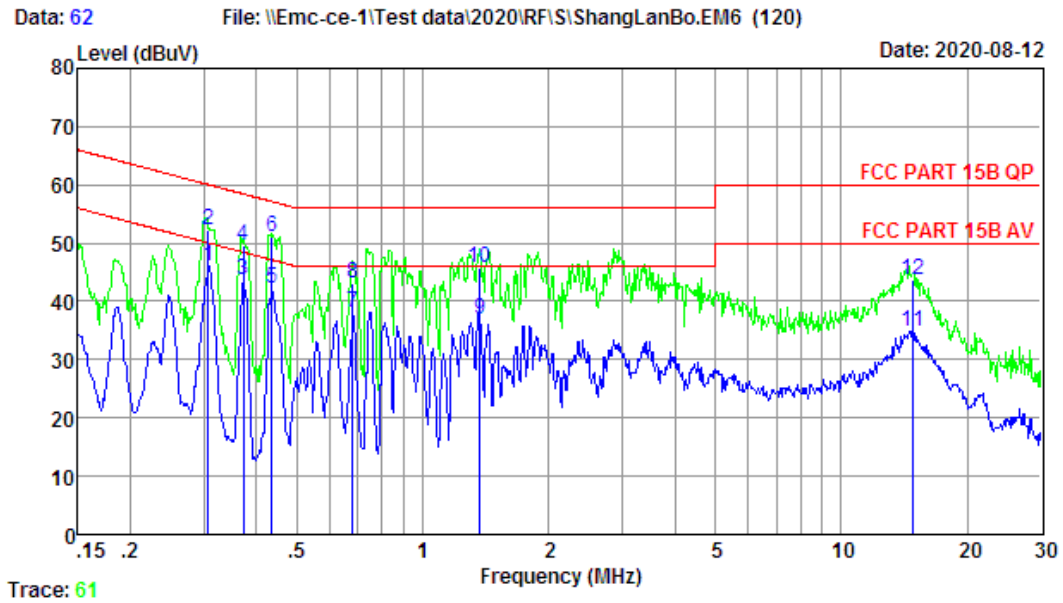

Site no : 844 Shield Room Data no. : 62
Env. / Ins. : Temp:23.3'C Humi:53% Press:101.20kPa LINE Phase : LINE
Limit : FCC PART 15B QP
Engineer : ZSX
EUT : Soundbar
Power : AC 120V/60Hz
M/N : Klipsch Cinema 1200 Sound Bar
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.3067	9.72	9.92	26.51	46.15	50.06	3.91	Average
2	0.3067	9.72	9.92	32.50	52.14	60.06	7.92	QP
3	0.3731	9.72	9.92	23.92	43.56	48.43	4.87	Average
4	0.3731	9.72	9.92	29.90	49.54	58.43	8.89	QP
5	0.4351	9.72	9.92	22.45	42.09	47.15	5.06	Average
6	0.4351	9.72	9.92	31.45	51.09	57.15	6.06	QP
7	0.6790	9.72	9.92	18.42	38.06	46.00	7.94	Average
8	0.6790	9.72	9.92	23.40	43.04	56.00	12.96	QP
9	1.3665	9.73	9.95	17.19	36.87	46.00	9.13	Average
10	1.3665	9.73	9.95	26.10	45.78	56.00	10.22	QP
11	14.8281	9.87	10.12	14.89	34.88	50.00	15.12	Average
12	14.8281	9.87	10.12	23.80	43.79	60.00	16.21	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

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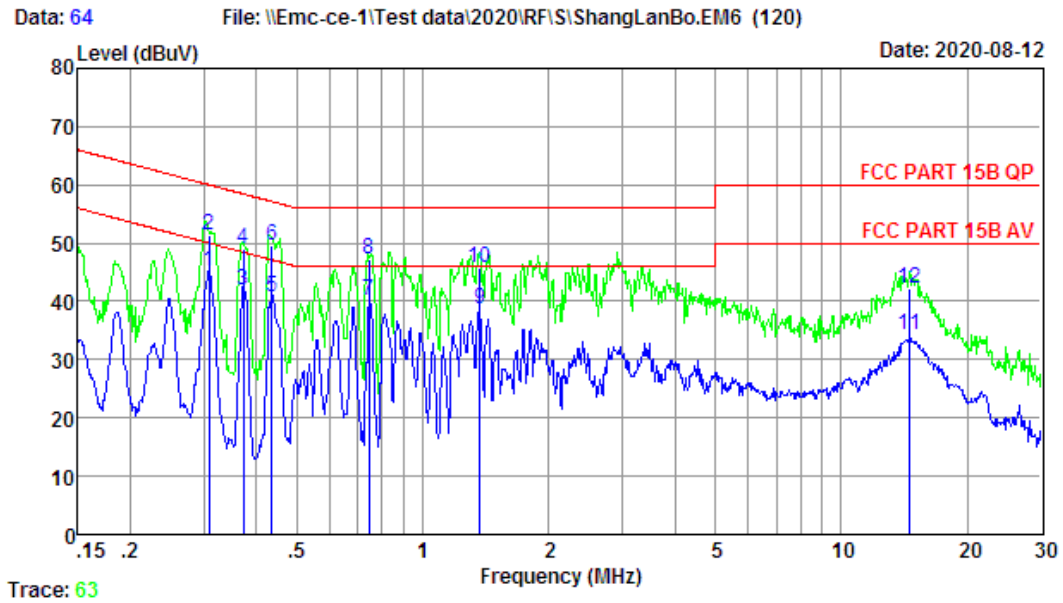


Site no : 844 Shield Room Data no. : 64
Env. / Ins. : Temp:23.3'C Humi:53% Press:101.20kPa LINE Phase : NEUTRAL
Limit : FCC PART 15B QP
Engineer : ZSX
EUT : Soundbar
Power : AC 120V/60Hz
M/N : Klipsch Cinema 1200 Sound Bar
Test Mode : TX Mode

	Freq. (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv)	Limits (dBuv)	Margin (dB)	Remark
1	0.3083	9.63	9.92	25.75	45.30	50.02	4.72	Average
2	0.3083	9.63	9.92	31.70	51.25	60.02	8.77	QP
3	0.3731	9.64	9.92	22.50	42.06	48.43	6.37	Average
4	0.3731	9.64	9.92	29.49	49.05	58.43	9.38	QP
5	0.4351	9.64	9.92	21.10	40.66	47.15	6.49	Average
6	0.4351	9.64	9.92	30.09	49.65	57.15	7.50	QP
7	0.7430	9.69	9.93	20.58	40.20	46.00	5.80	Average
8	0.7430	9.69	9.93	27.57	47.19	56.00	8.81	QP
9	1.3665	9.77	9.95	18.99	38.71	46.00	7.29	Average
10	1.3665	9.77	9.95	25.90	45.62	56.00	10.38	QP
11	14.5942	10.09	10.12	13.96	34.17	50.00	15.83	Average
12	14.5942	10.09	10.12	21.95	42.16	60.00	17.84	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.

10. ANTENNA REQUIREMENTS

10.1. Limit

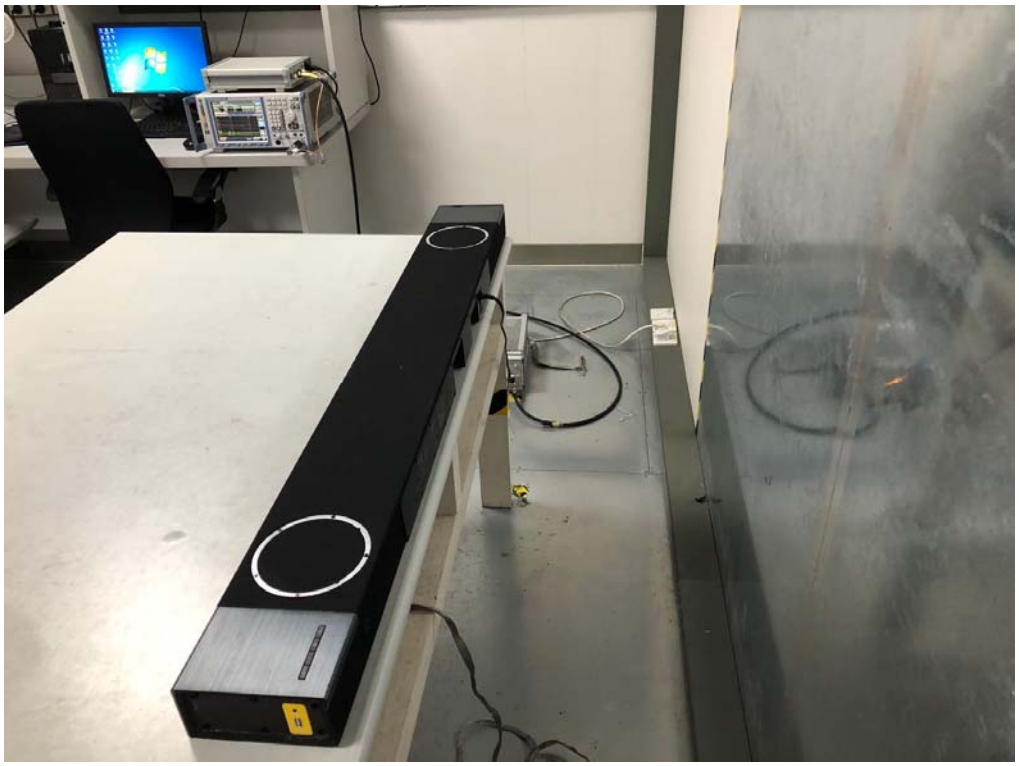
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply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

10.2. Test Result

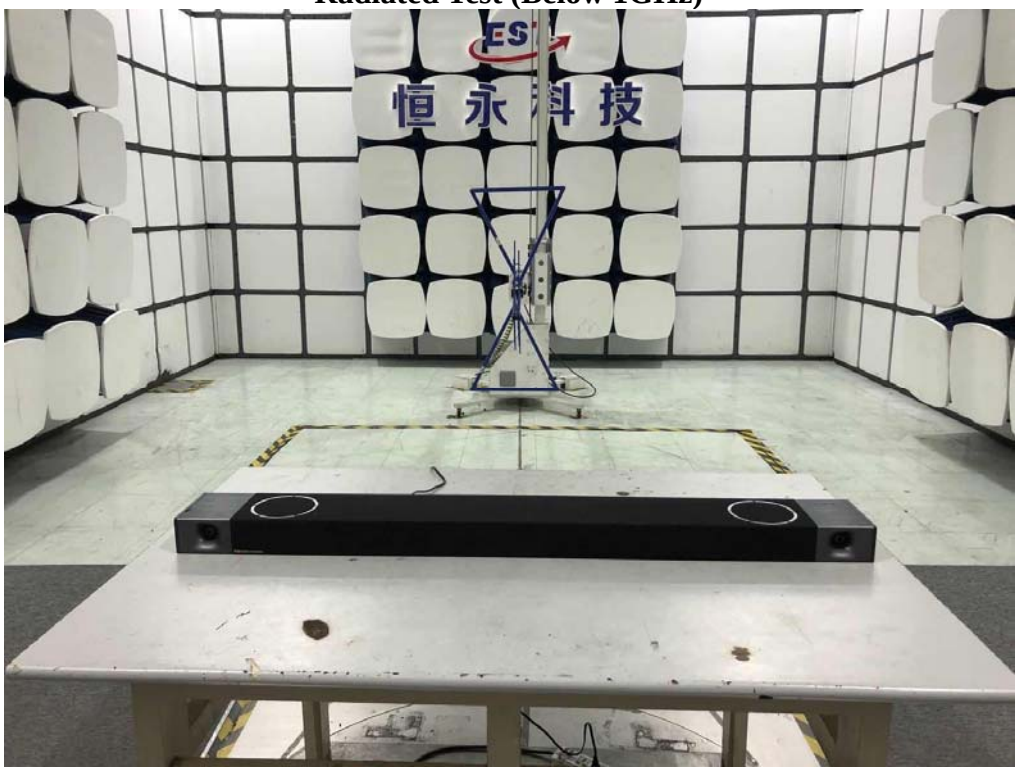
The antennas used for this product is Internal antenna ,so compliance with antenna requirements.
(Please refer to the EUT photo for details)

11. TEST SETUP PHOTO

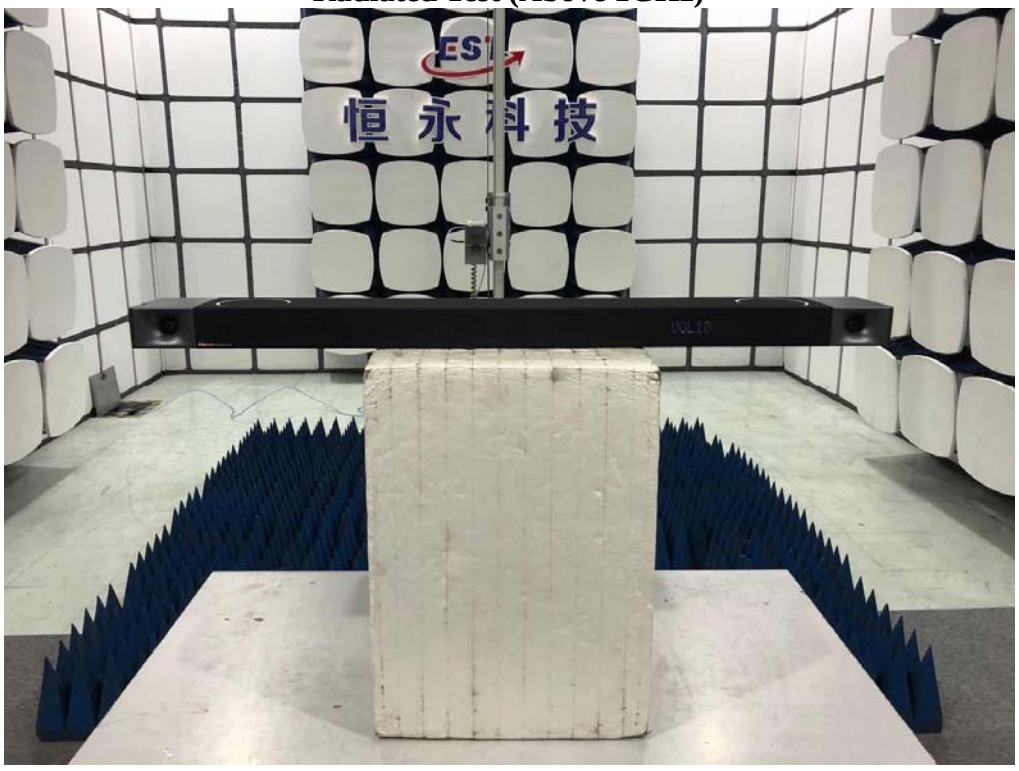
Conducted Test



Radiated Test (Below 1GHz)



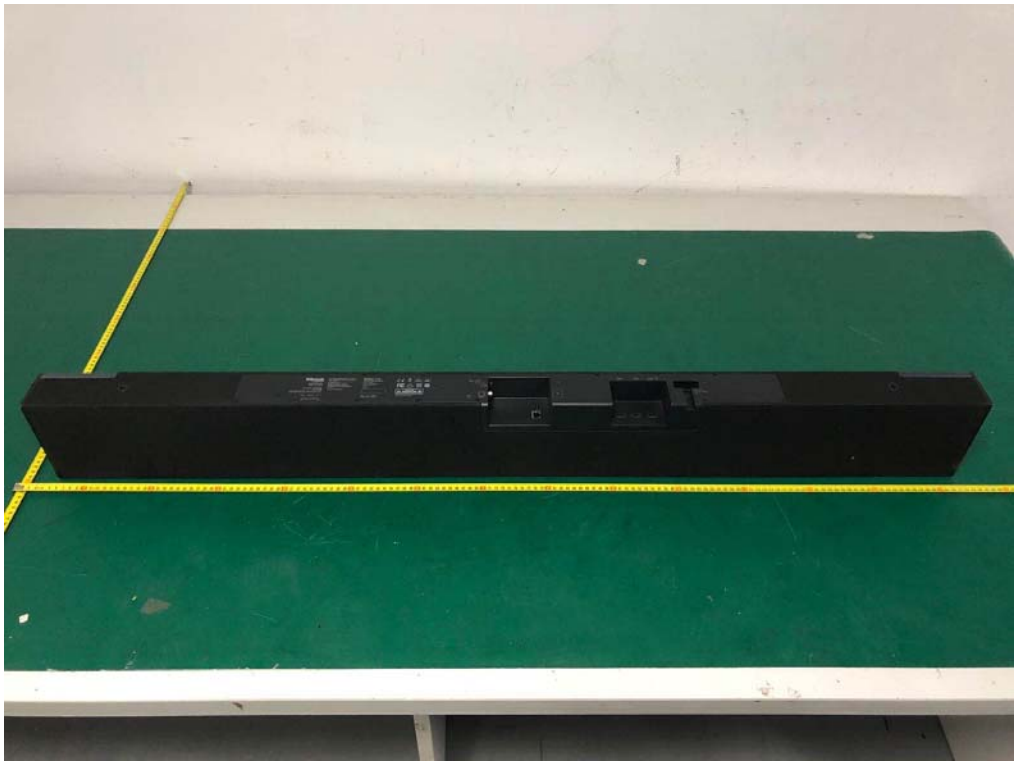
Radiated Test (Above 1GHz)



12.EUT PHOTO

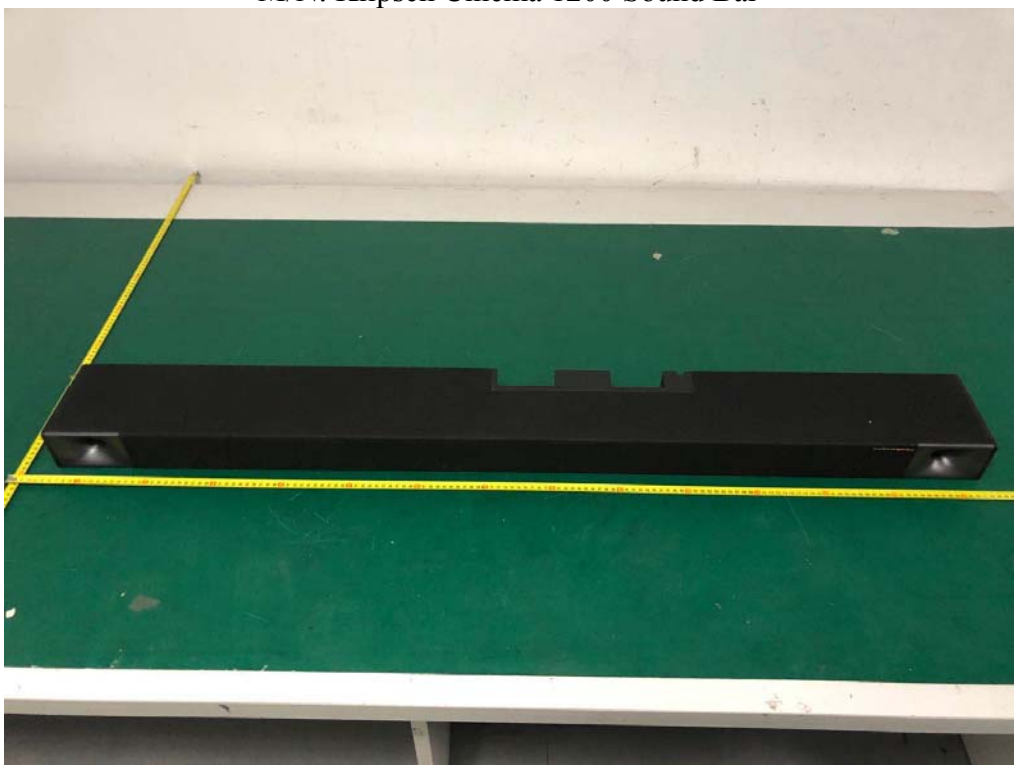
External Photos

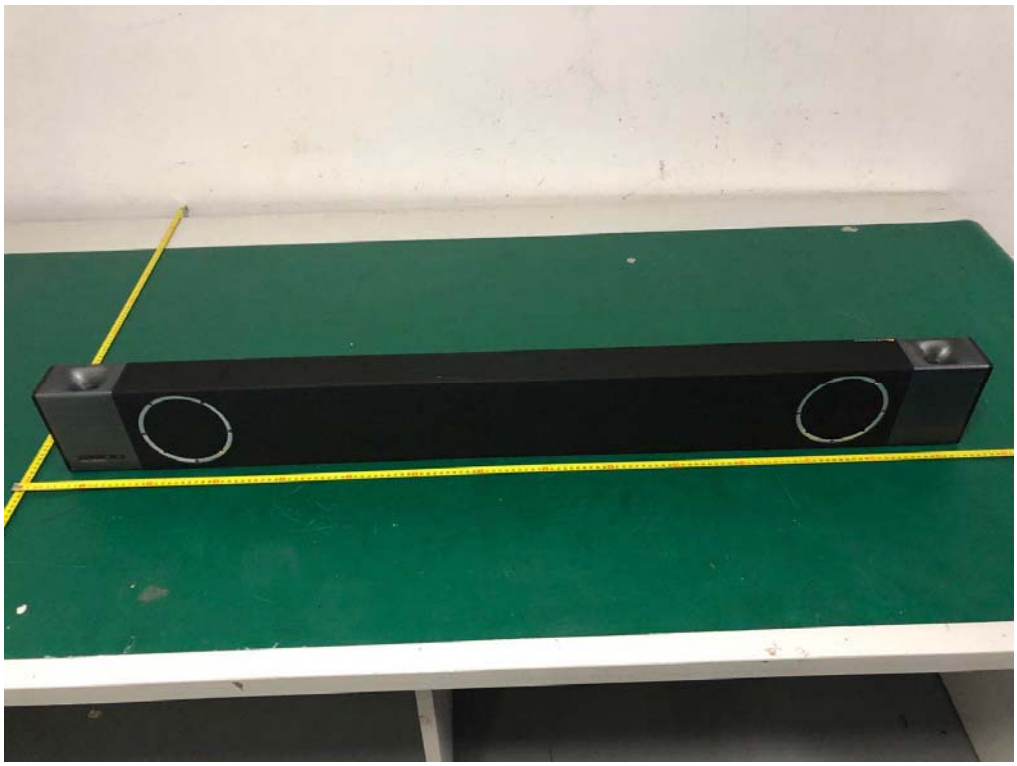
M/N: Klipsch Cinema 1200 Sound Bar



External Photos

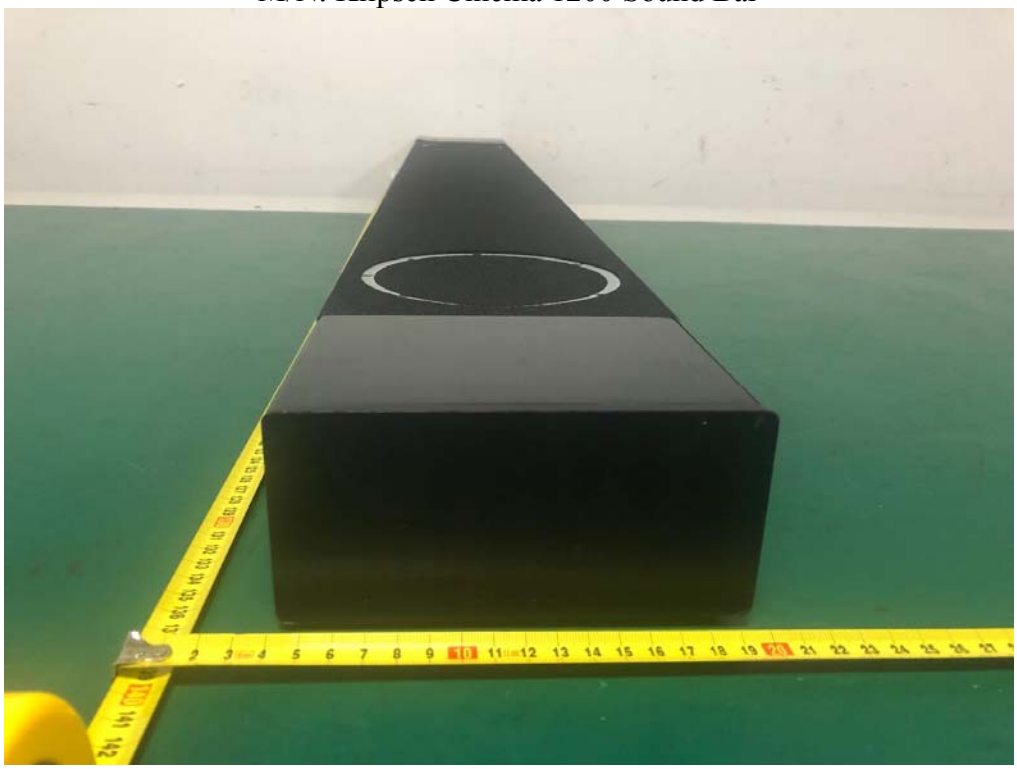
M/N: Klipsch Cinema 1200 Sound Bar

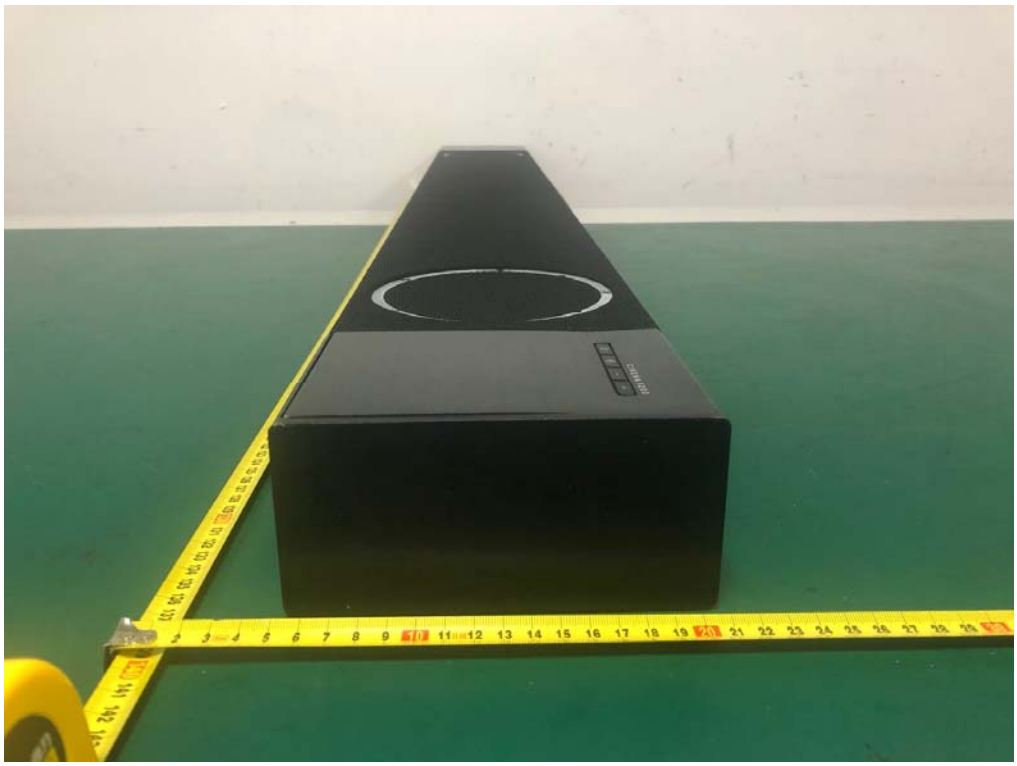




External Photos

M/N: Klipsch Cinema 1200 Sound Bar





External Photos

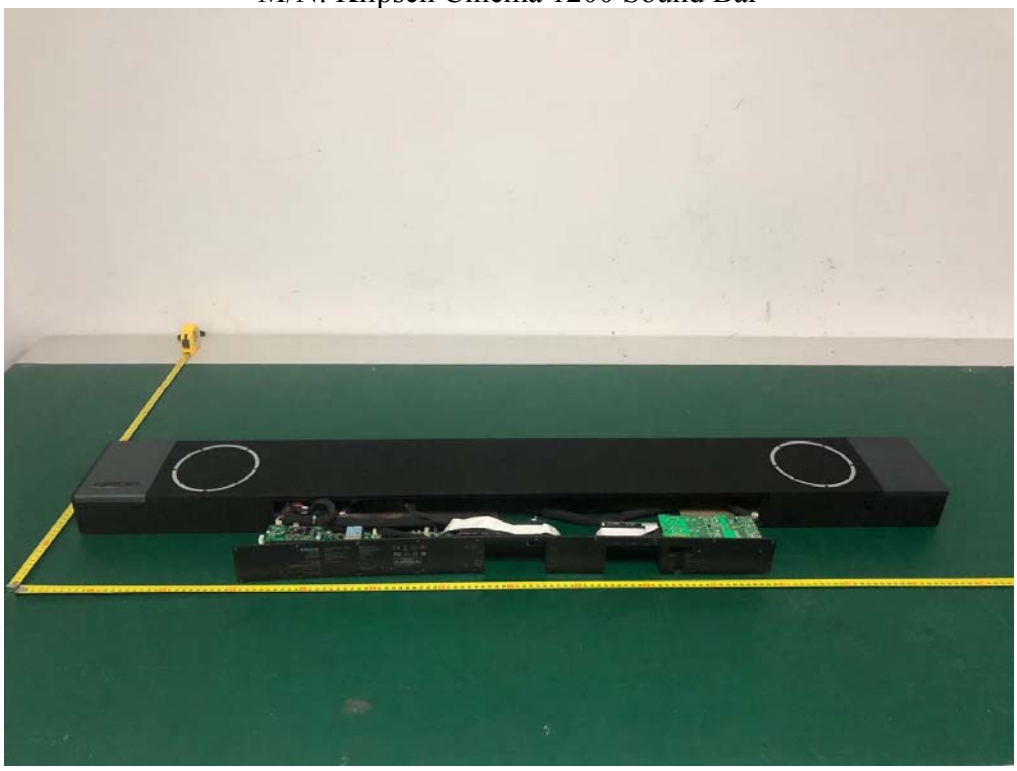
M/N: Klipsch Cinema 1200 Sound Bar

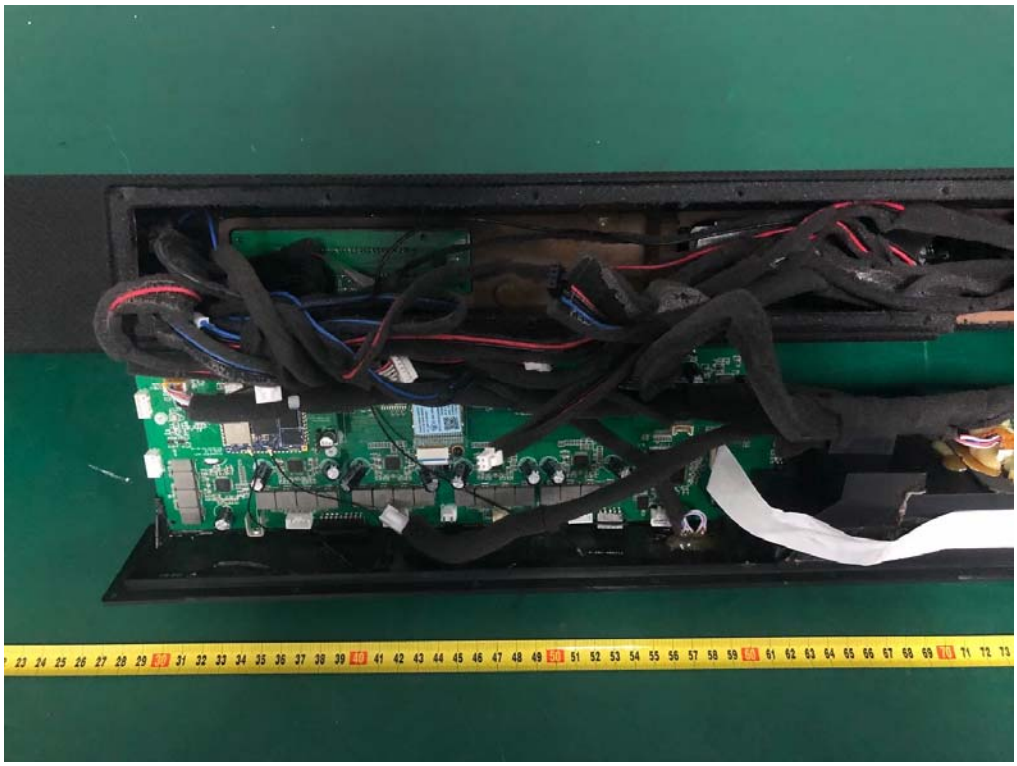
External Photos

M/N: Klipsch Cinema 1200 Sound Bar

Internal Photos

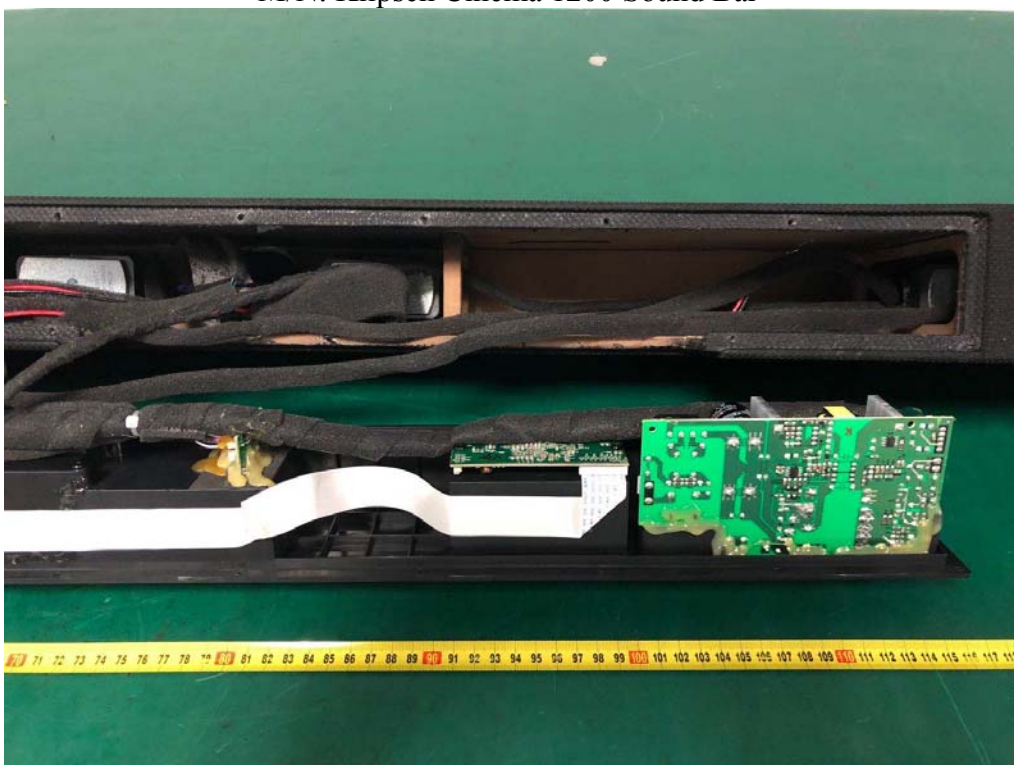
M/N: Klipsch Cinema 1200 Sound Bar

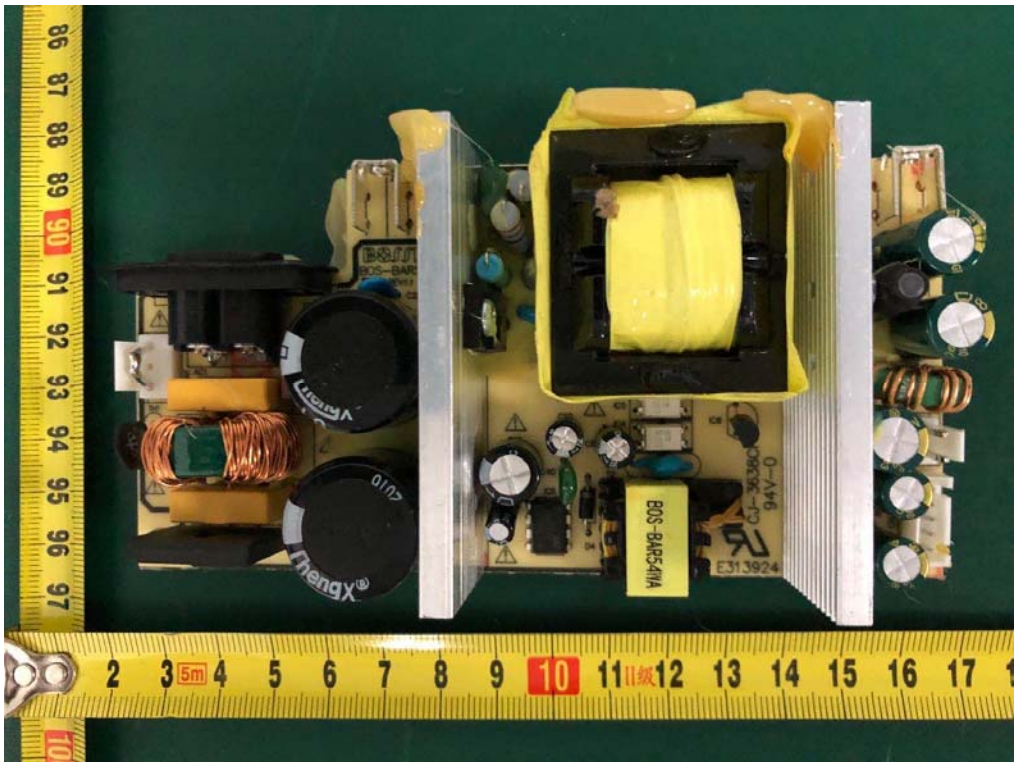




Internal Photos

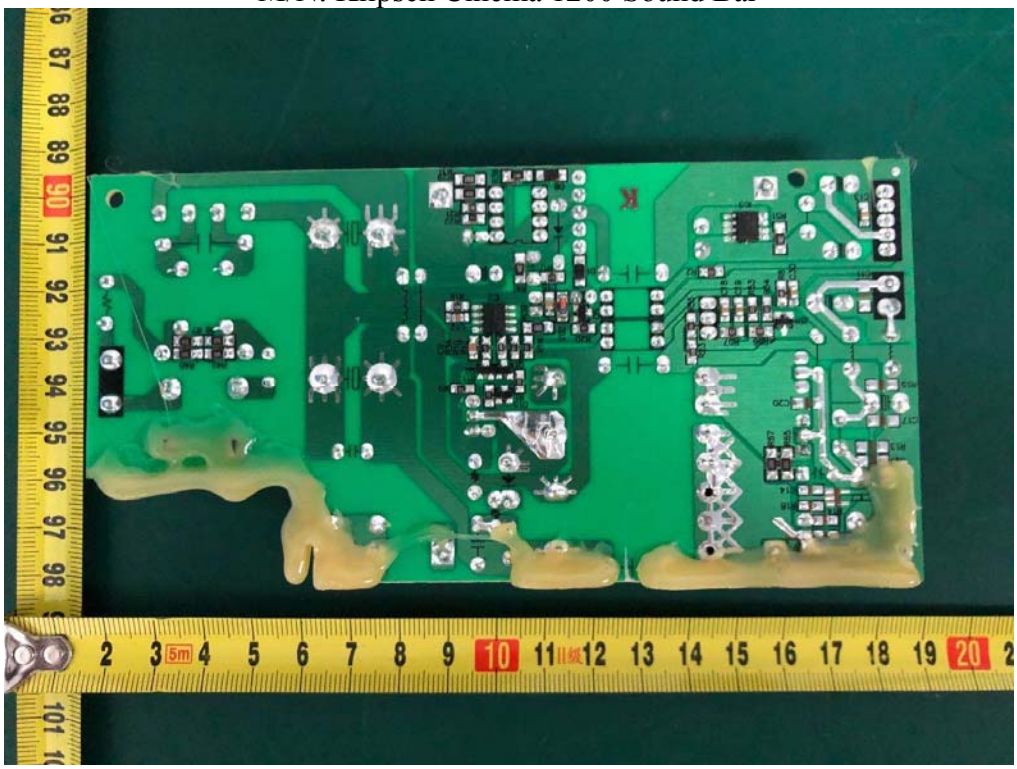
M/N: Klipsch Cinema 1200 Sound Bar





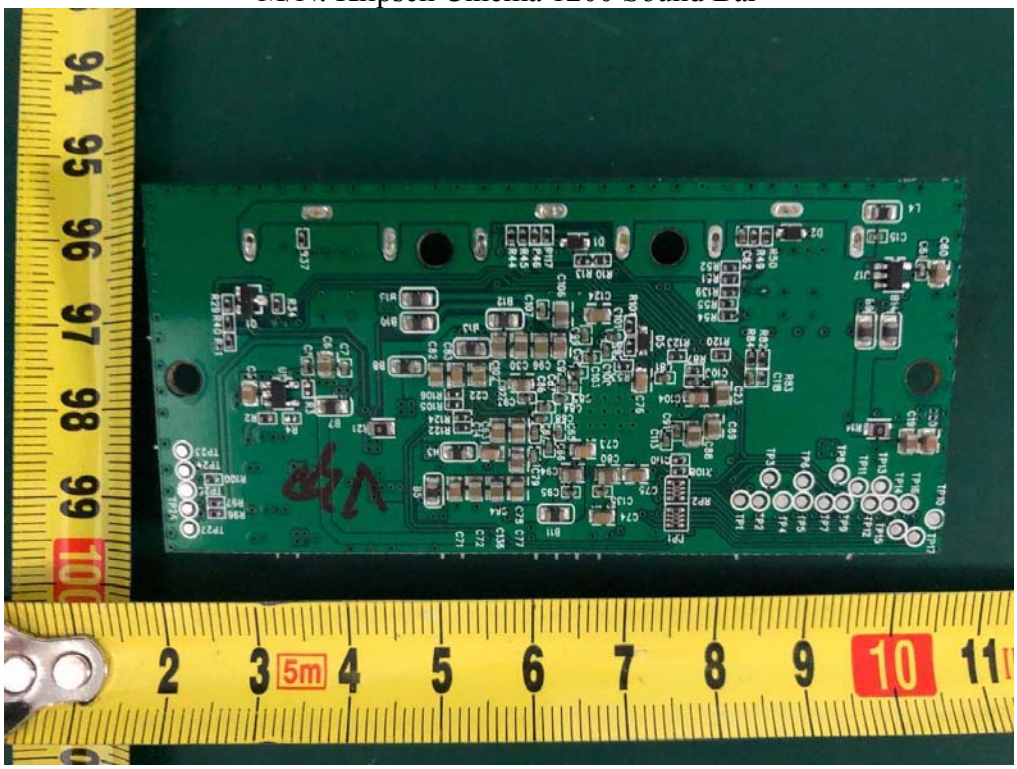
Internal Photos

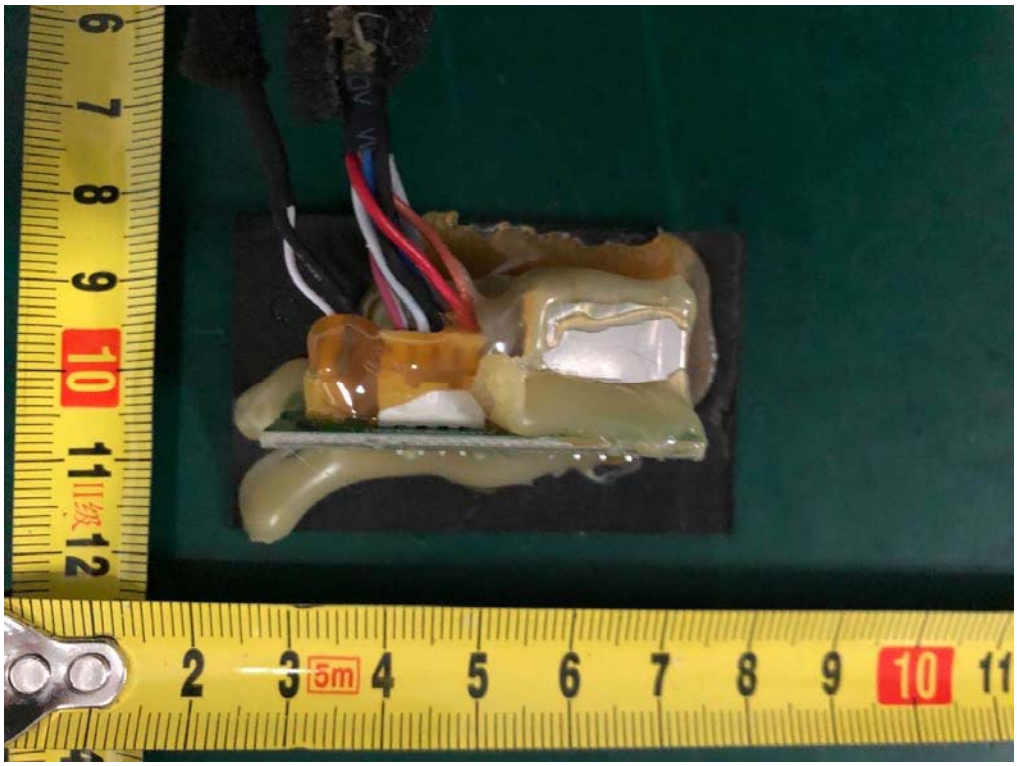
M/N: Klipsch Cinema 1200 Sound Bar



Internal Photos

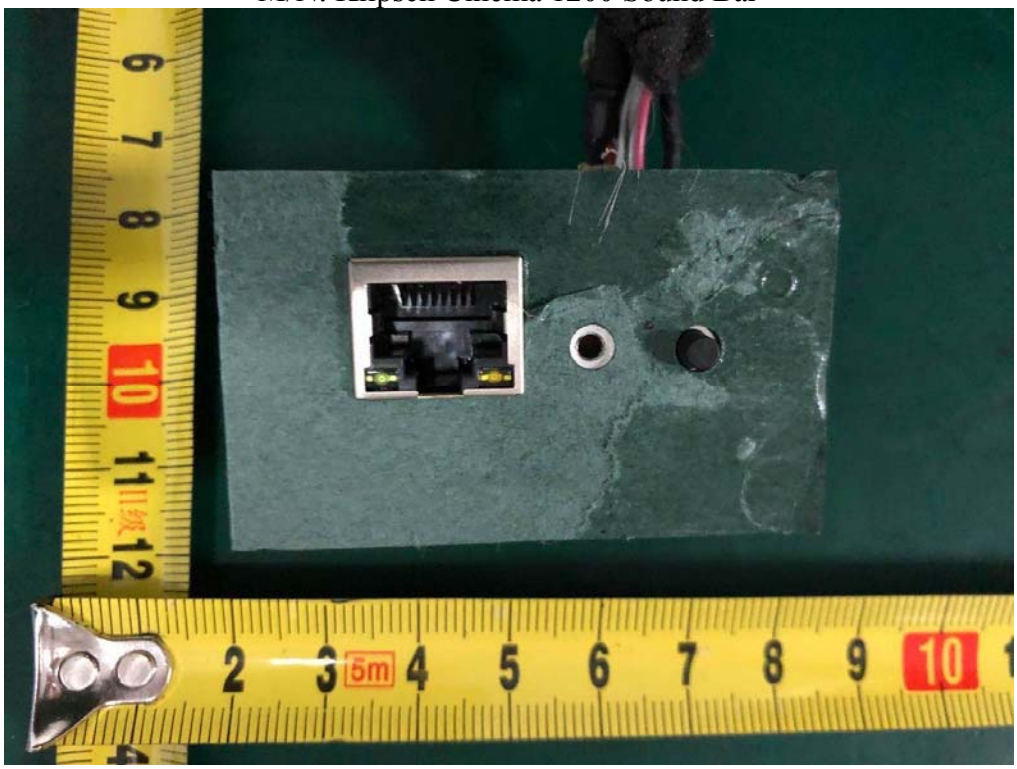
M/N: Klipsch Cinema 1200 Sound Bar

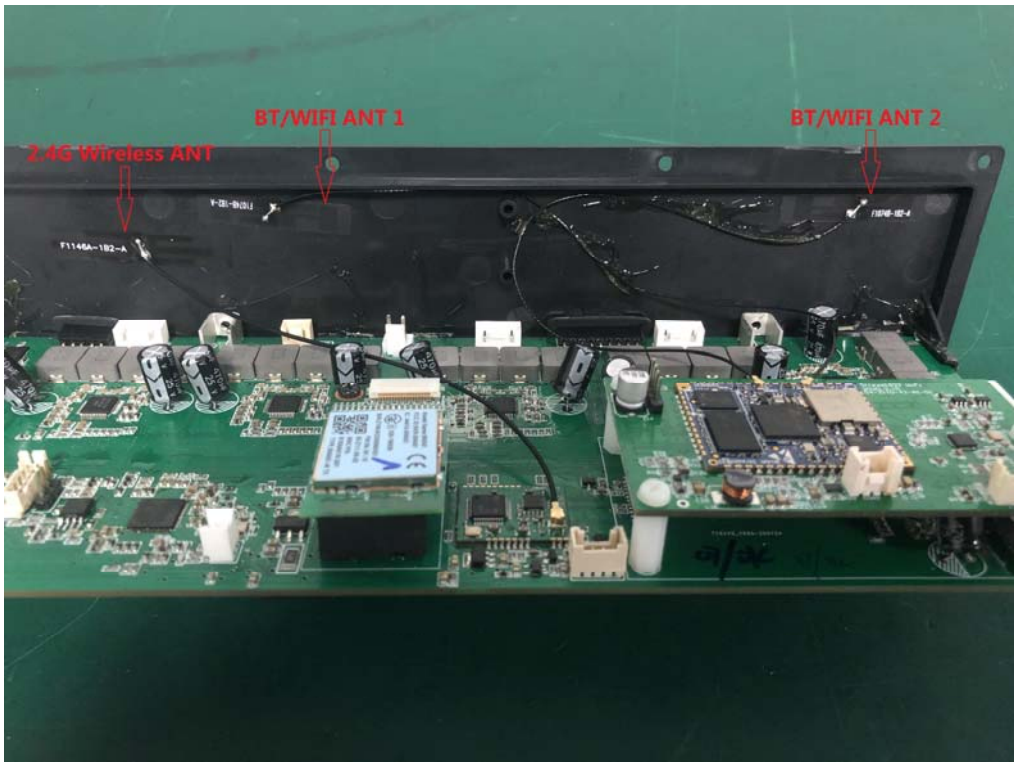




Internal Photos

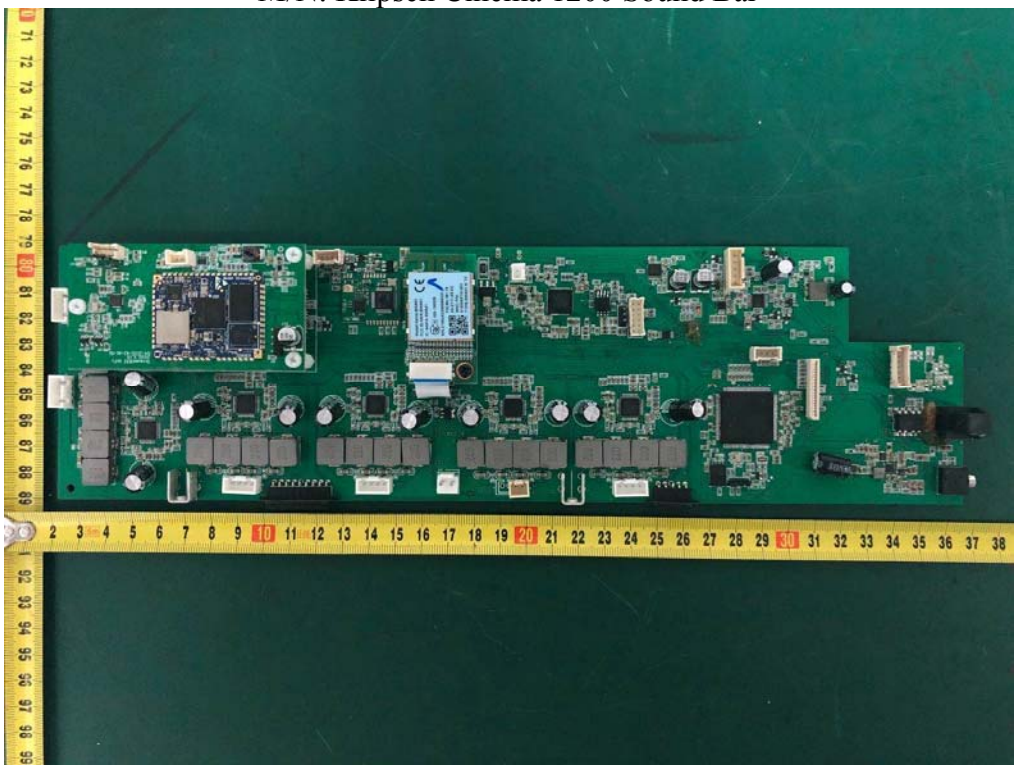
M/N: Klipsch Cinema 1200 Sound Bar

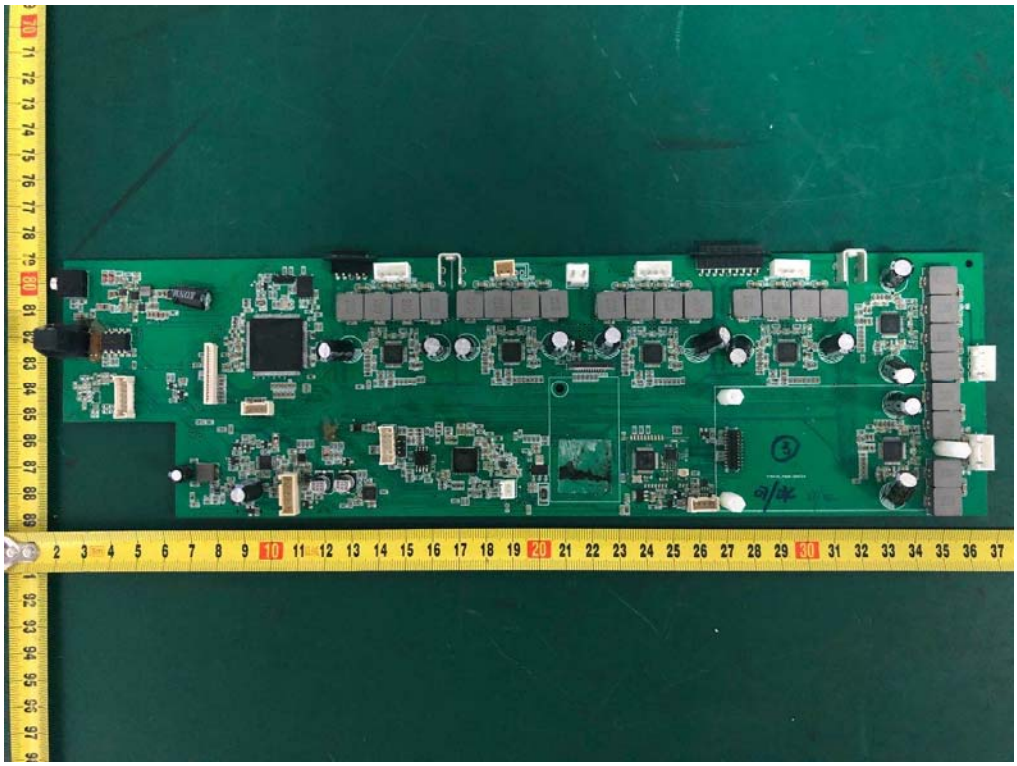




Internal Photos

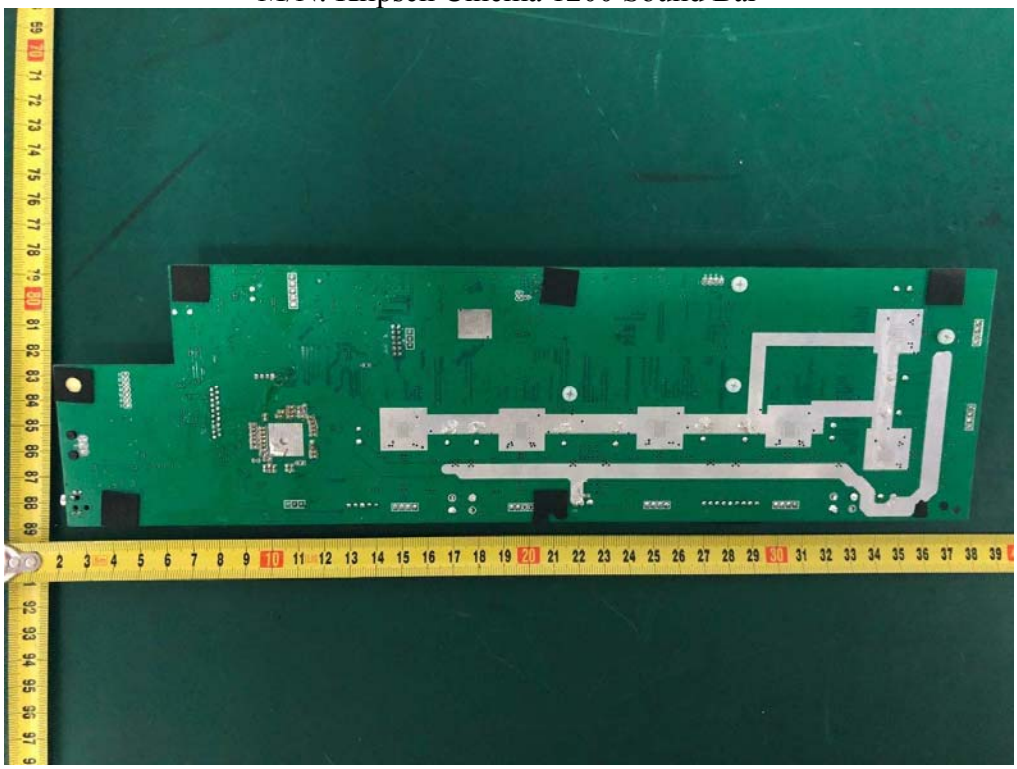
M/N: Klipsch Cinema 1200 Sound Bar

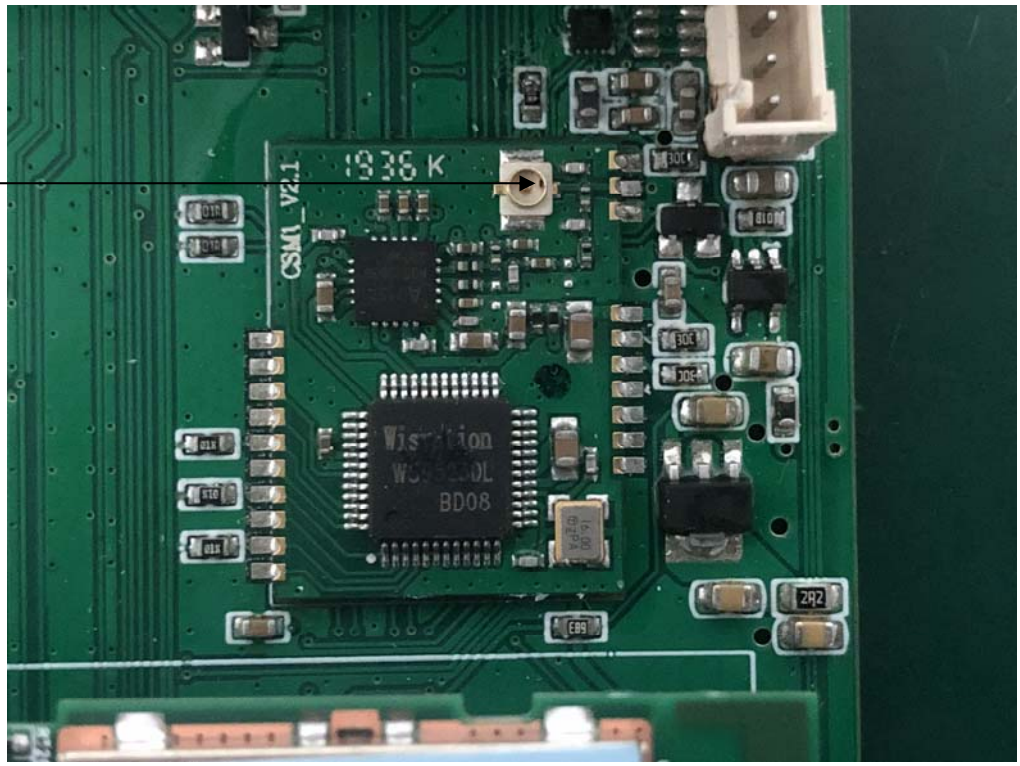




Internal Photos

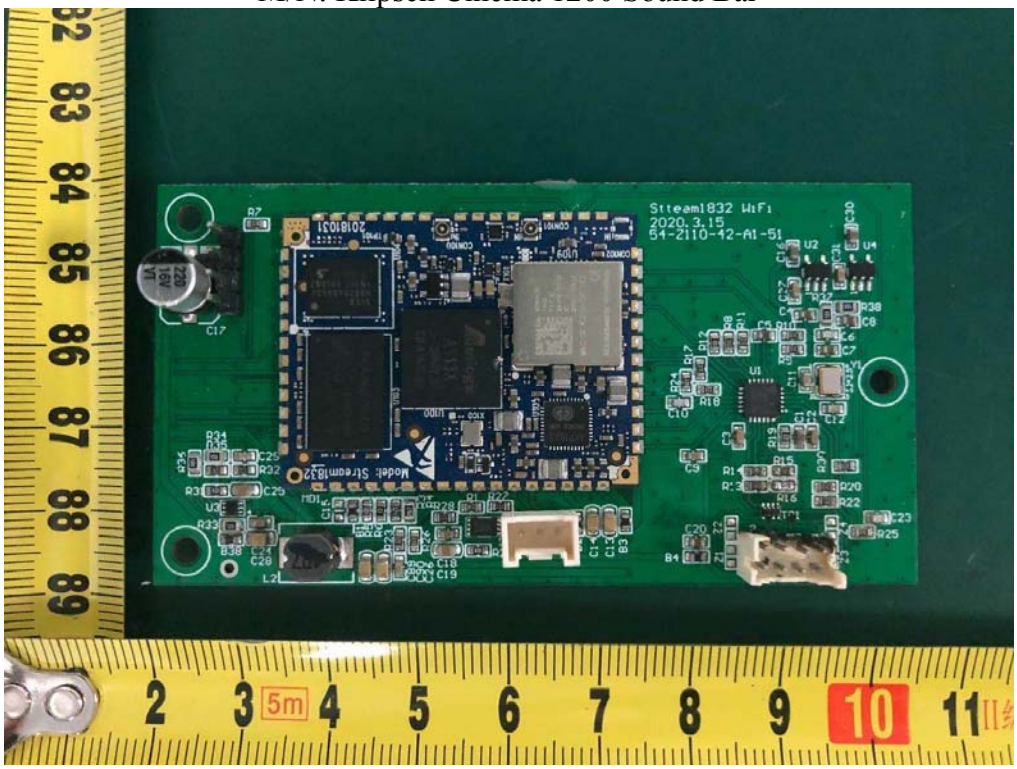
M/N: Klipsch Cinema 1200 Sound Bar

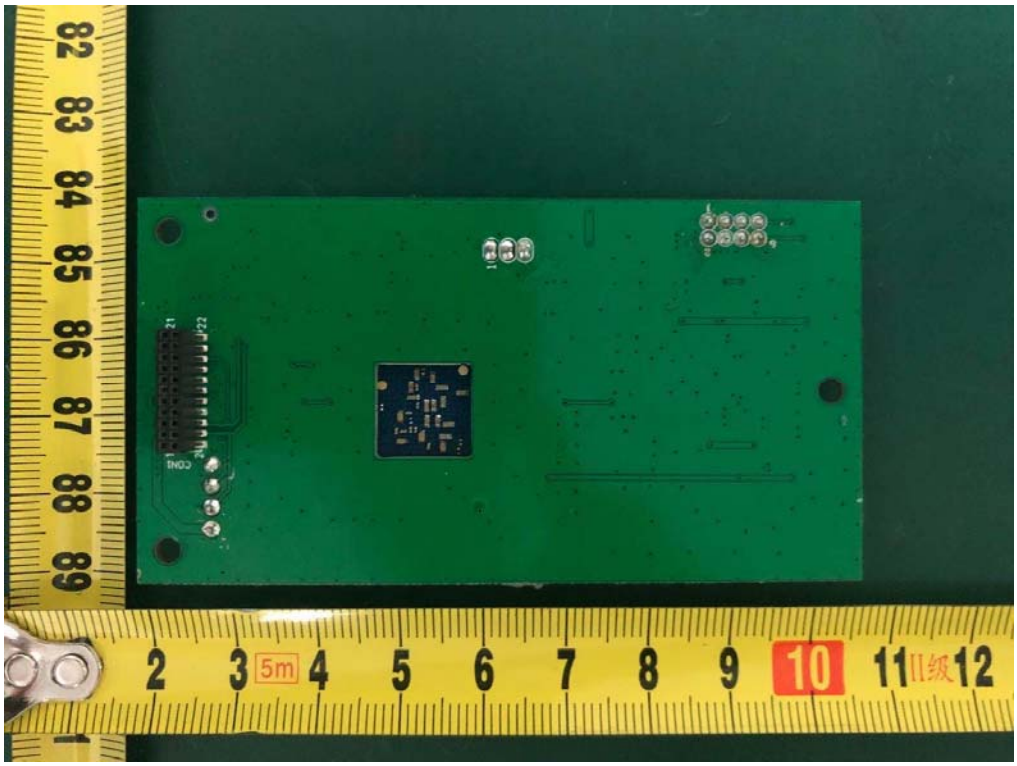




Internal Photos

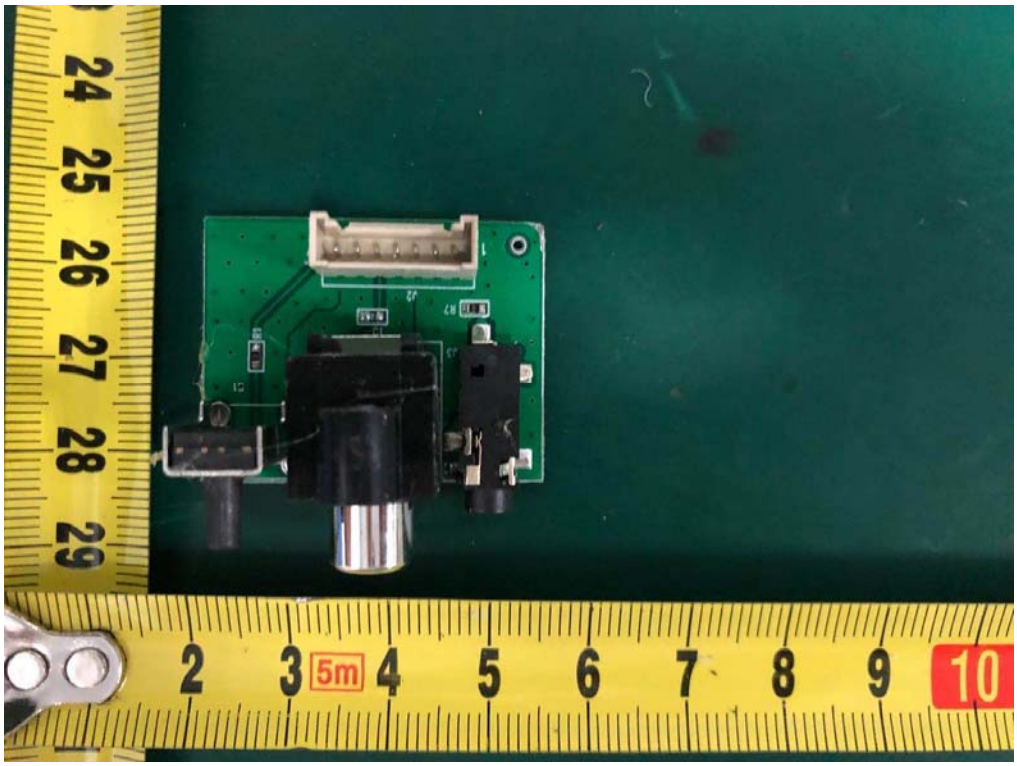
M/N: Klipsch Cinema 1200 Sound Bar





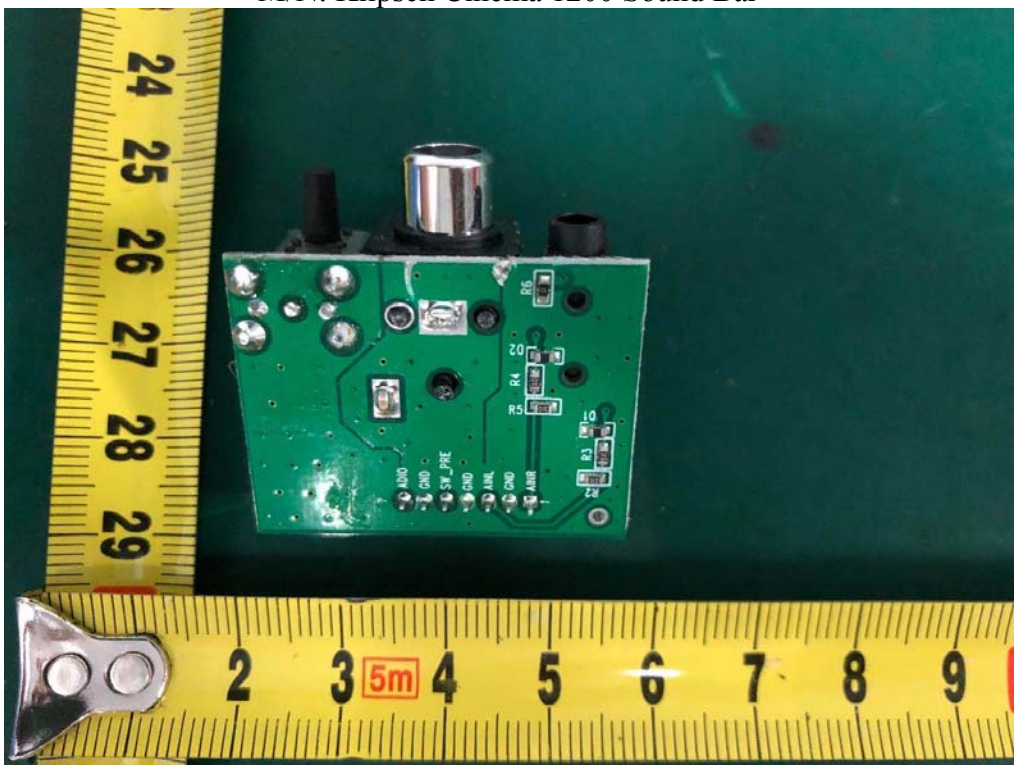
Internal Photos

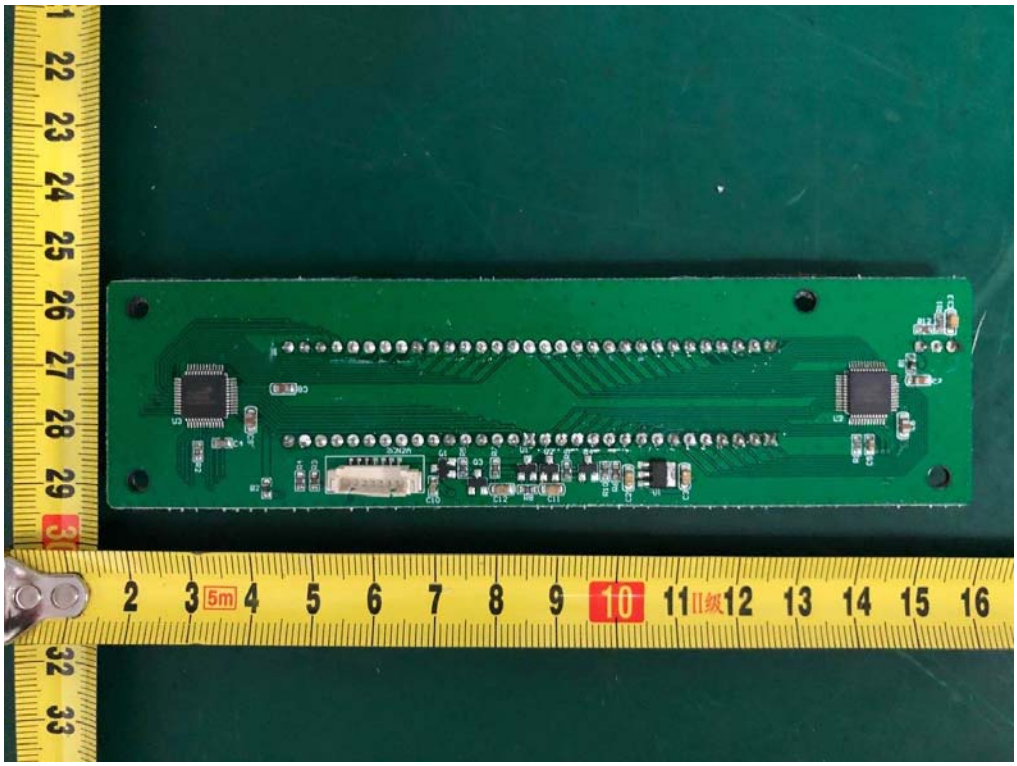
M/N: Klipsch Cinema 1200 Sound Bar



Internal Photos

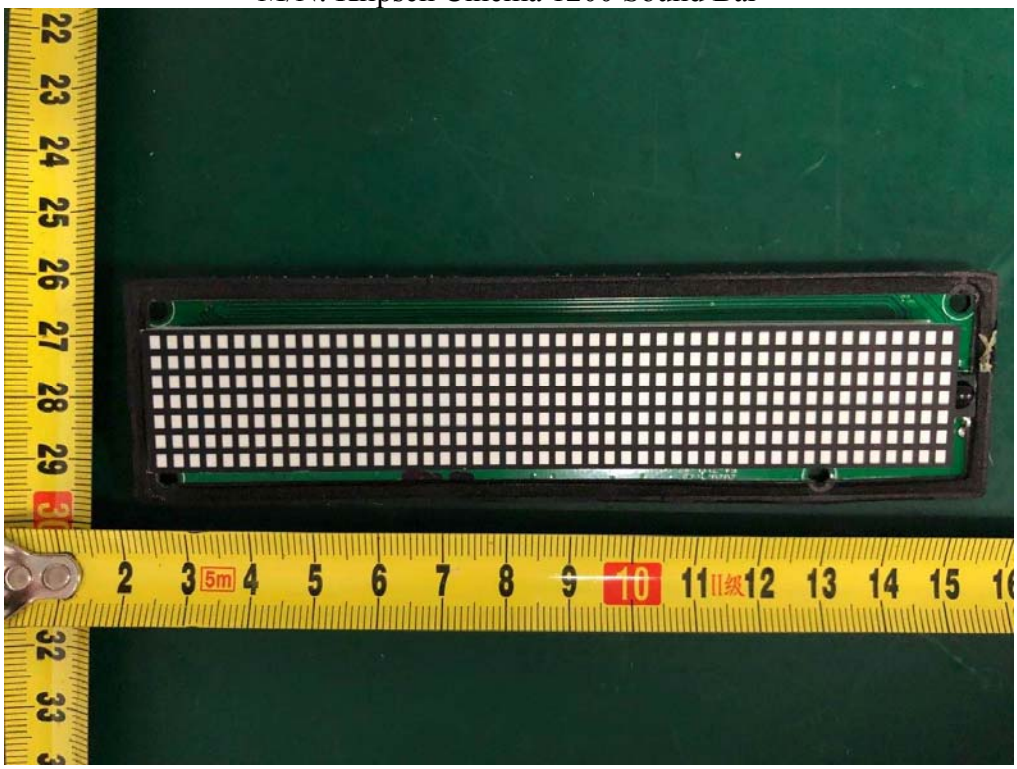
M/N: Klipsch Cinema 1200 Sound Bar

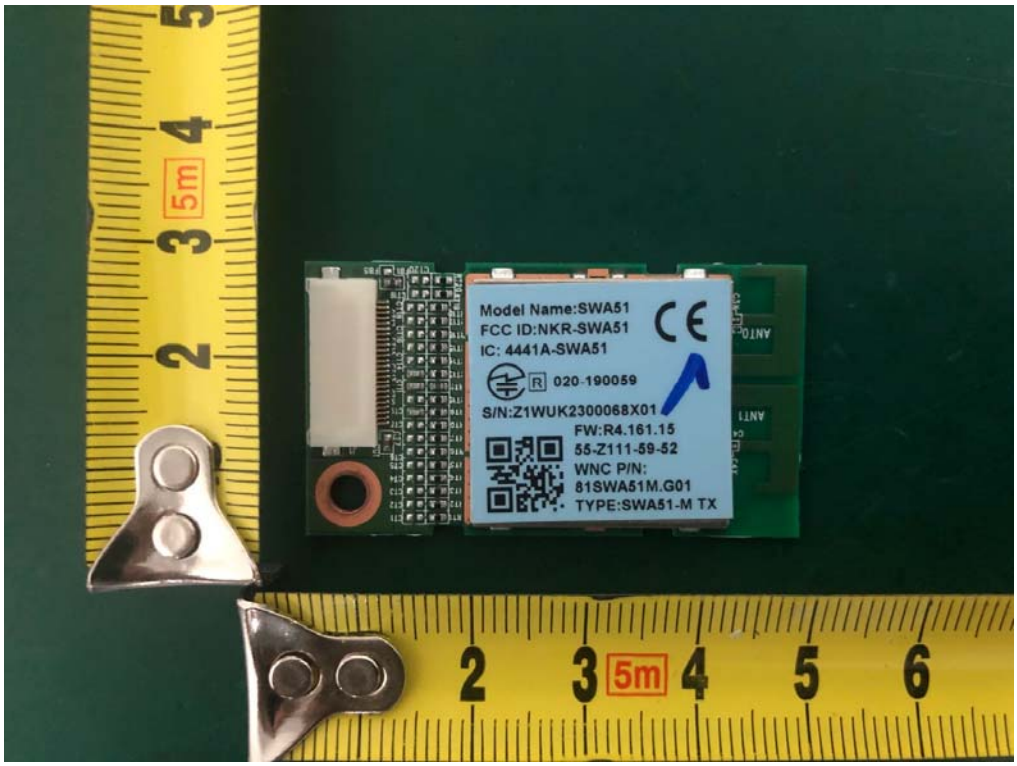




Internal Photos

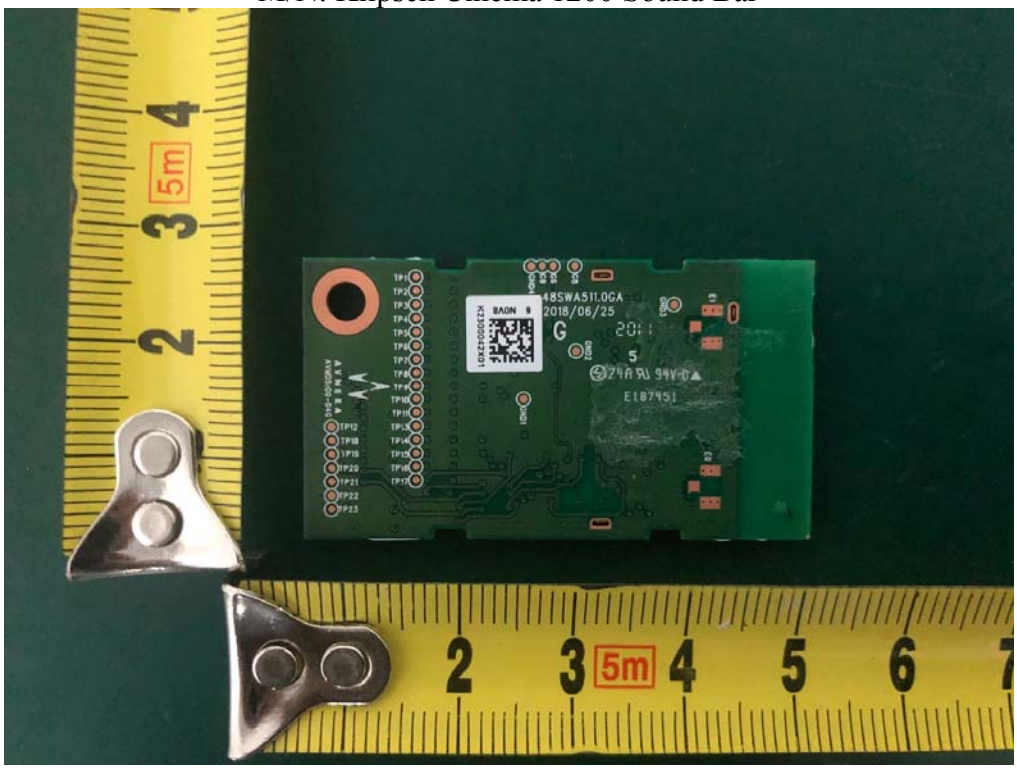
M/N: Klipsch Cinema 1200 Sound Bar

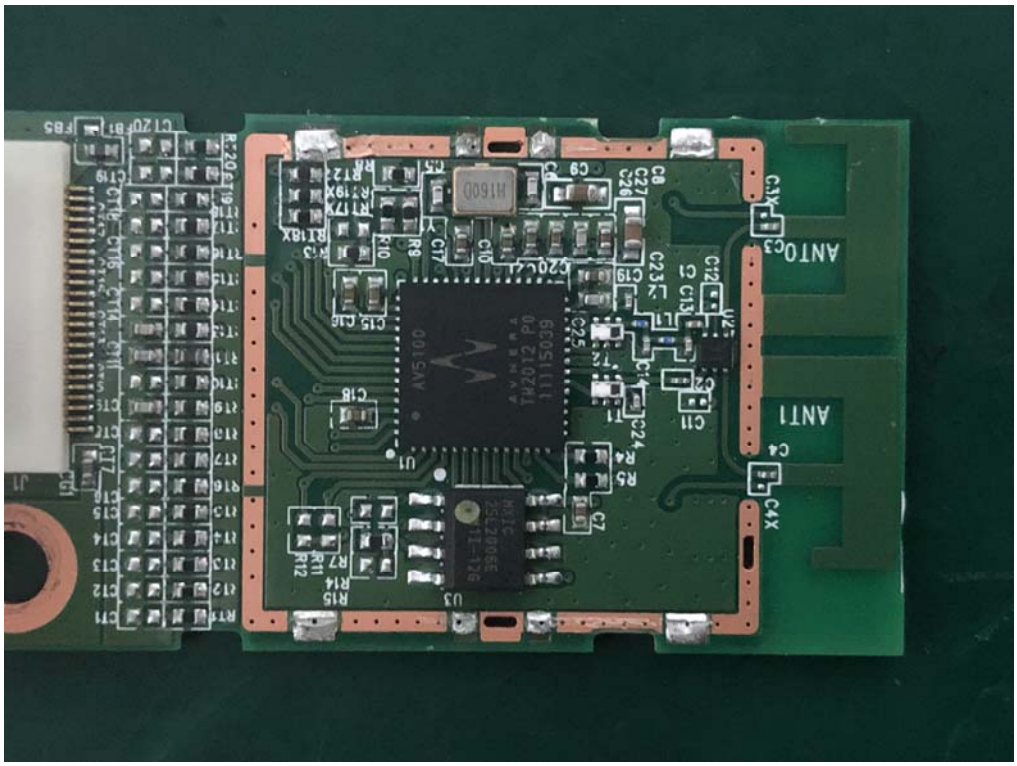




Internal Photos

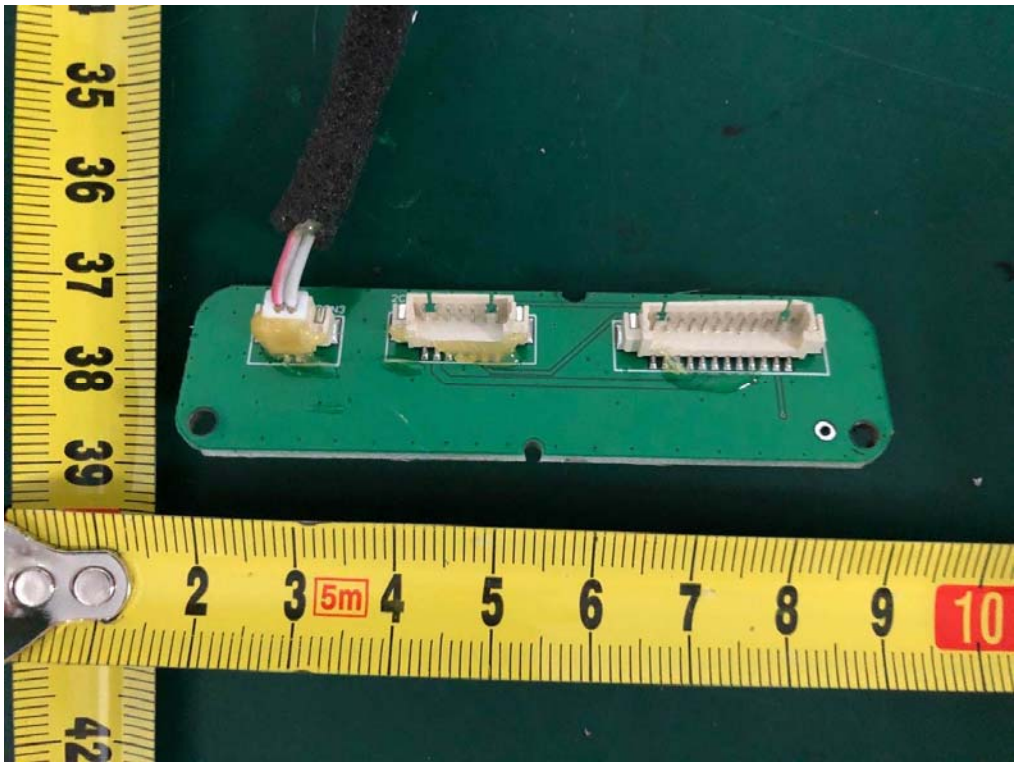
M/N: Klipsch Cinema 1200 Sound Bar





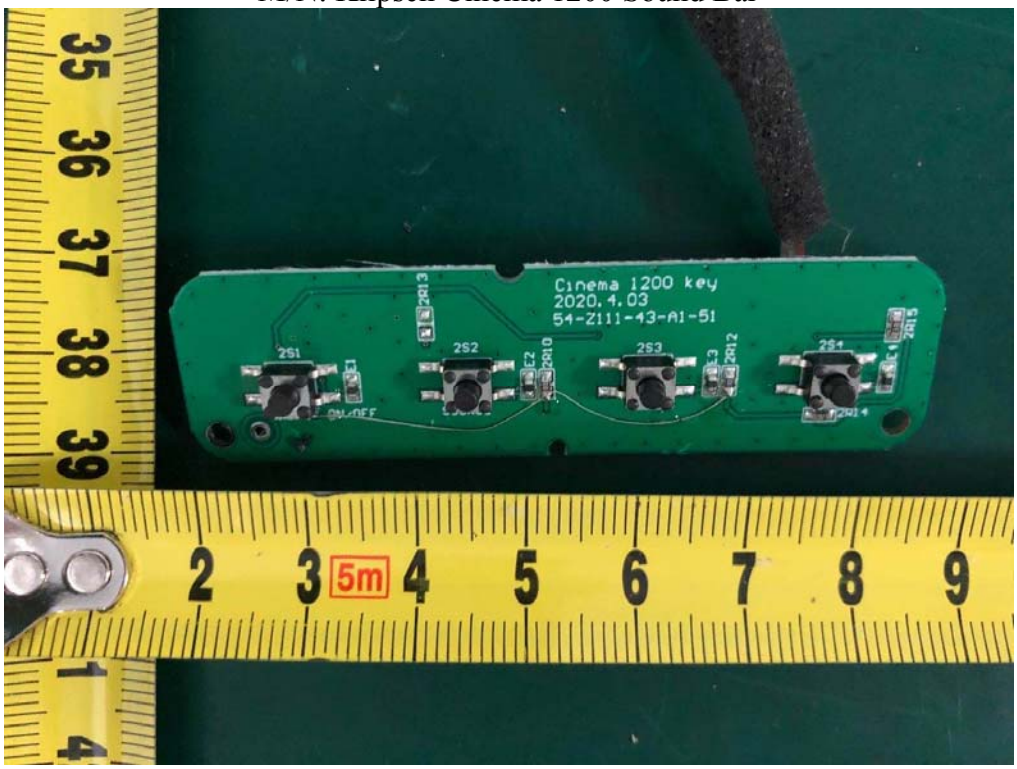
Internal Photos

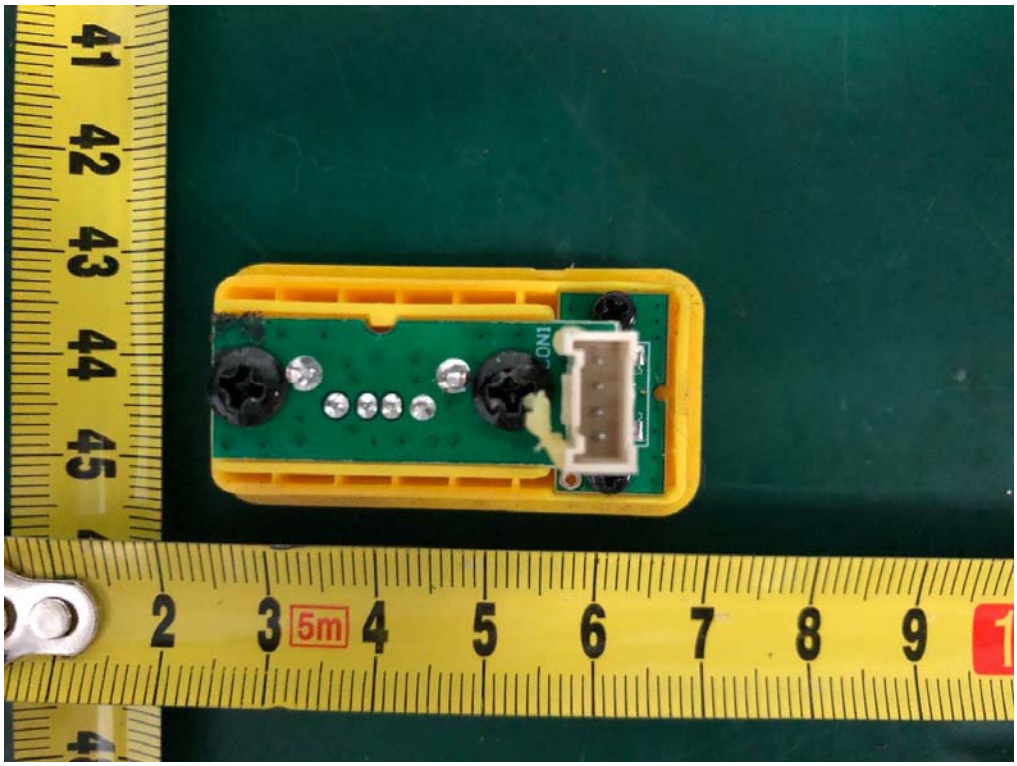
M/N: Klipsch Cinema 1200 Sound Bar



Internal Photos

M/N: Klipsch Cinema 1200 Sound Bar





End of Test Report