

#### TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

#### ctrum Analyzer - Swept SA **Peak Search** Marker 1 2.460732843321 GHz Avg Type: RMS Avg|Hold:>100/100 Trig: Free Run #Atten: 30 dB TYF PNO: Fast 😱 IFGain:Low Next Peak Mkr1 2.460 732 8 GHz -4.285 dBm Ref 20.00 dBm 10 dB/div Next Pk Right Next Pk Left NN WWWWWWWWWWWW \*\*\*\* Marker Delta **11**. ALLAN . Mkr→CF N. W. MANANANANAN NWWWWWWWWWWWW Mkr→RefLv More 1 of 2 Center 2.46200 GHz #Res BW 20 kHz Span 30.00 MHz Sweep 93.33 ms (40000 pts) #VBW 62 kHz\*

TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



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Add: 2/F., Building 2, Sanwei Chaxi Industrial Park, Sanwei Community,

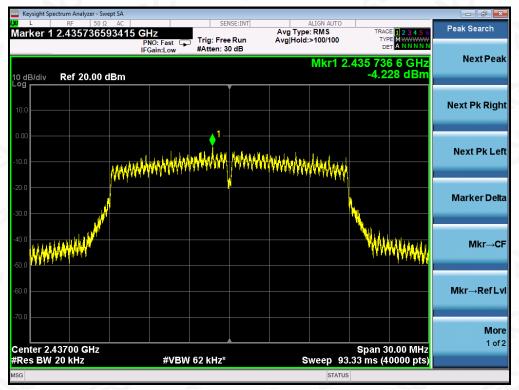
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## 802.11n 20 TEST RESULT AT CHAIN 1 TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



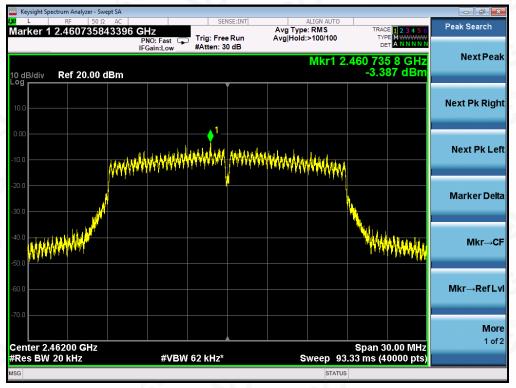
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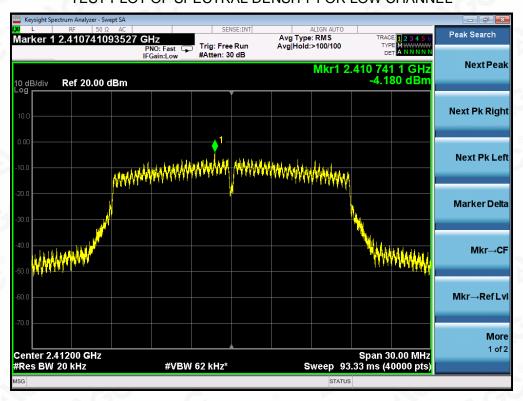
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TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

#### 802.11n 20 TEST RESULT AT CHAIN 2 TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



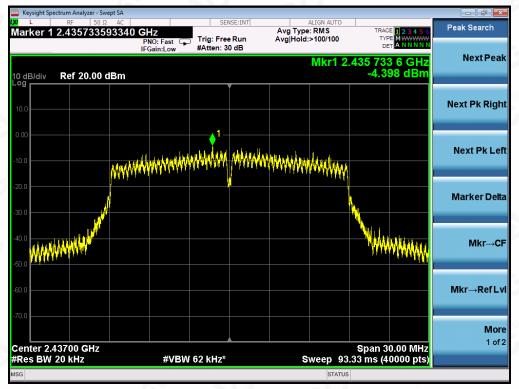
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## TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

#### ight Spectrum Analyzer - Swept SA Marker 1 2.460738093452 GHz **Peak Search** Avg Type: RMS Avg|Hold:>100/100 Trig: Free Run #Atten: 30 dB PNO: Fast 😱 IFGain:Low Next Peak Mkr1 2.460 738 1 GHz -3.730 dBm Ref 20.00 dBm 10 dB/div Next Pk Right Next Pk Left ..... Marker Delta ALLANDAR LAND Mkr→CF A MANAGER WWW Mkr→RefLv More 1 of 2 Center 2.46200 GHz #Res BW 20 kHz Span 30.00 MHz Sweep 93.33 ms (40000 pts) #VBW 62 kHz\*

TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

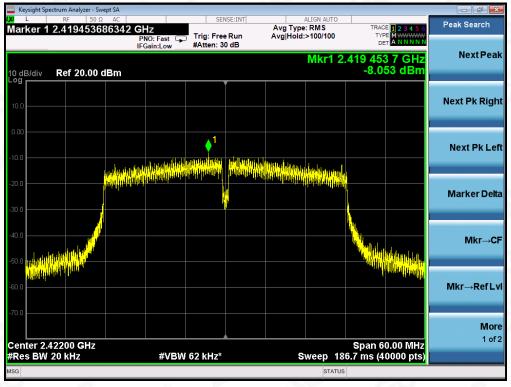


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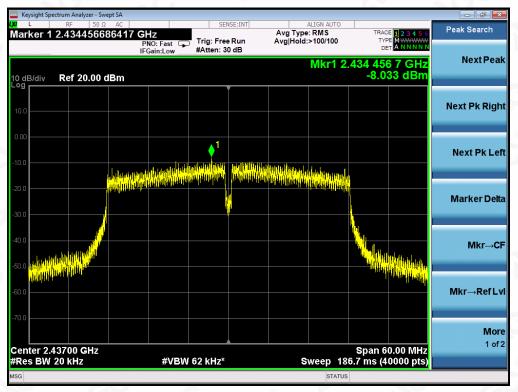
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## 802.11n 40 TEST RESULT AT CHAIN 1 TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

#### TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



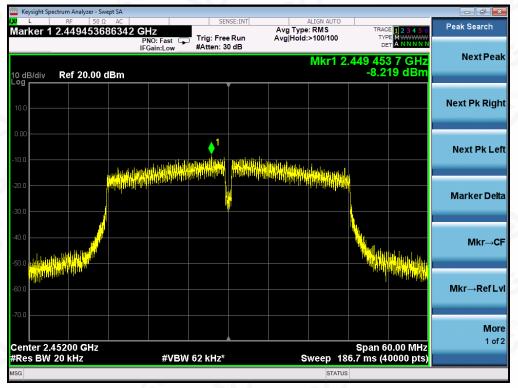


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Add: 2/F., Building 2, Sanwei Chaxi Industrial Park, Sanwei Community,

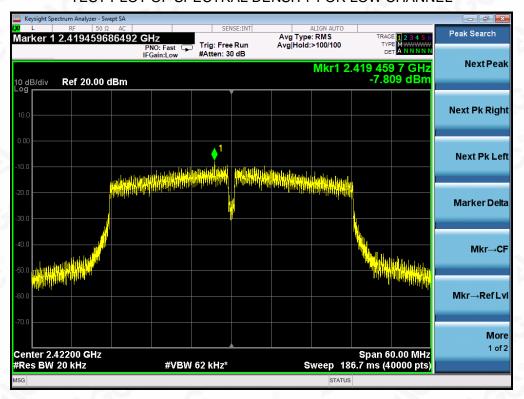
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## TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

#### 802.11n 40 TEST RESULT AT CHAIN 2 TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



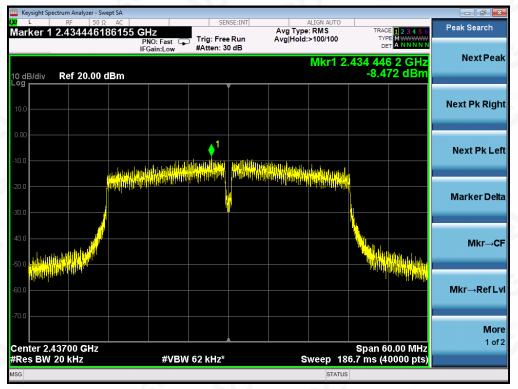


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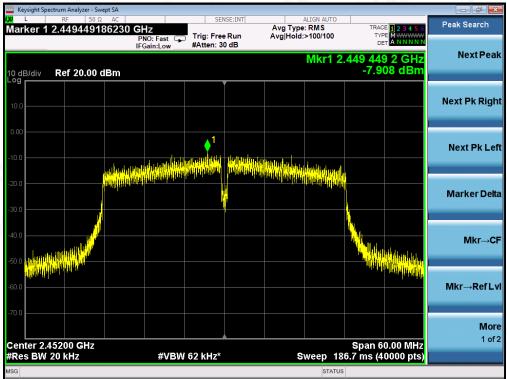
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## TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

## TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL





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## **11. RADIATED EMISSION**

#### **11.1. MEASUREMENT PROCEDURE**

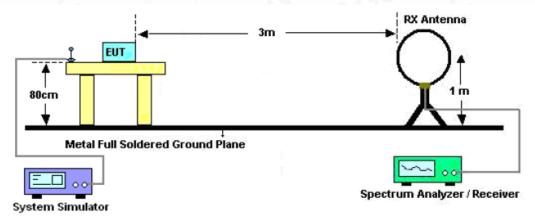
- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8.If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.



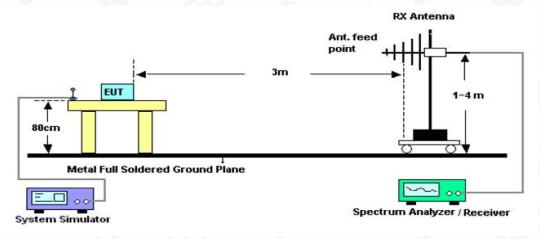


## 11.2. TEST SETUP

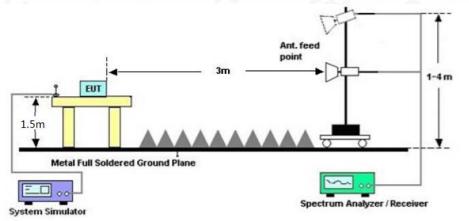
Radiated Emission Test-Setup Frequency Below 30MHz



#### RADIATED EMISSION TEST SETUP 30MHz-1000MHz



#### RADIATED EMISSION TEST SETUP ABOVE 1000MHz





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Service Hotline:400 089 2118

## **11.3. LIMITS AND MEASUREMENT RESULT**

#### 15.209(a) Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note: All modes were tested For restricted band radiated emission,

the test records reported below are the worst result compared to other modes.

## 11.4. TEST RESULT

## **RADIATED EMISSION BELOW 30MHZ**

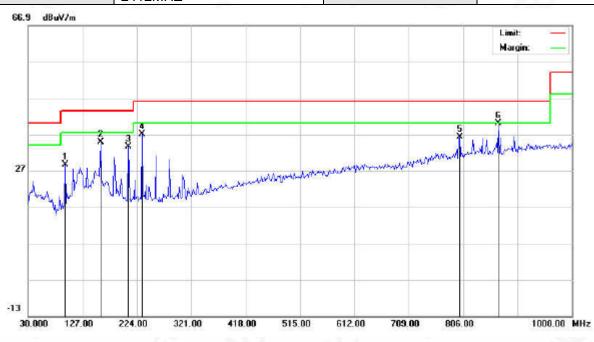
No emission found between lowest internal used/generated frequencies to 30MHz.





#### **RADIATED EMISSION BELOW 1GHZ**

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Horizontal



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1		96.2833	12.95	15.63	28.58	43.50	-14.92	peak			
2		159.3333	15.58	19.19	34.77	43.50	-8.73	peak			
3		209.4500	16.93	16.62	33.55	43.50	-9.95	peak			
4		233.7000	18.86	18.21	37.07	46.00	-8.93	peak			
5		799.5333	5.81	30.40	36.21	46.00	-9.79	peak			
6	*	869.0500	8.76	31.30	40.06	46.00	-5.94	peak			

#### **RESULT: PASS**

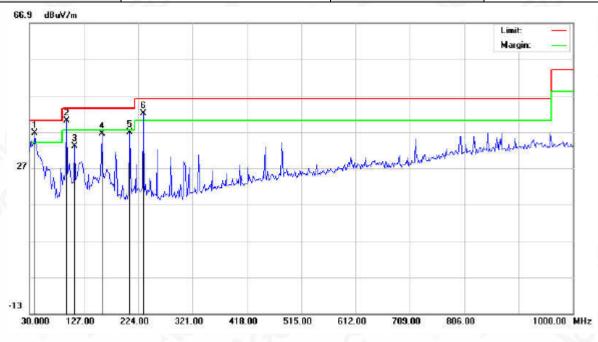


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EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Vertical



No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	39.7000	16.66	19.98	36.64	40.00	-3.36	peak			
2	Ţ	96.2832	24.35	15.63	39.98	43.50	-3.52	peak			
3		110.8333	15.93	17.07	33.00	43.50	-10.50	peak			
4		159.3333	17.14	19.19	36.33	43.50	-7.17	peak			
5		209.4500	20.23	16.62	36.85	43.50	-6.65	peak			
6	1	233.7000	23.74	18.21	41.95	46.00	-4.05	peak			

# RESULT: PASS

Note:

- 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.
- 2. The "Factor" value can be calculated automatically by software of measurement system.
- 3. All test modes had been pre-tested. The 802.11b at low channel is the worst case and recorded in the report.





#### Report No.: AGC02150190601FE05 Page 62 of 102

## **RADIATED EMISSION ABOVE 1GHZ**

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
4824.062	48.02	3.72	51.74	74.00	-22.26	peak
4824.062	42.12	3.72	45.84	54.00	-8.16	AVG
7236.093	36.54	8.15	44.69	74.00	-29.31	peak
7236.093	32.92	8.15	41.07	54.00	-12.93	AVG
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Factor = Antenna Factor + Cable Loss - Pre-amplifier.

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Vertical

(MHz)         (dBµV)         (dB)         (dBµV/m)         (dBµV/m)         (dB)           4824.062         50.12         3.72         53.84         74.00         -20.16         -20.16           4824.062         43.33         3.72         47.05         54.00         -6.95         -6.95           7236.093         38.54         8.15         46.69         74.00         -27.31         -27.31	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
4824.062         43.33         3.72         47.05         54.00         -6.95           7236.093         38.54         8.15         46.69         74.00         -27.31	(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
7236.093 38.54 8.15 46.69 74.00 -27.31	4824.062	50.12	3.72	53.84	74.00	-20.16	peak
	4824.062	43.33	3.72	47.05	54.00	-6.95	AVG
	7236.093	38.54	8.15	46.69	74.00	-27.31	peak
7236.093 36.51 8.15 44.66 54.00 -9.34	7236.093	36.51	8.15	44.66	54.00	-9.34	AVG
			- 6	6			- 6

#### Remark:

Factor = Antenna Factor + Cable Loss - Pre-amplifier.





#### Report No.: AGC02150190601FE05 Page 63 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Trees
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
4874.062	46.72	3.75	50.47	74.00	-23.53	peak
4874.062	43.06	3.75	46.81	54.00	-7.19	AVG
7311.093	41.31	8.16	49.47	74.00	-24.53	peak
7311.093	39.32	8.16	47.48	54.00	-6.52	AVG
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EUT WIFI SPEAKER ASC-S5 **Model Name** 25°C Temperature **Relative Humidity** 55.4% 960hPa Normal Voltage Pressure **Test Voltage** 802.11b with date rate 1 **Test Mode** Vertical Antenna 2437MHZ

Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(dBµV)	(dB) 💿	(dBµV/m)	(dBµV/m)	(dB)	value Type
47.96	3.75	51.71	74.00	-22.29	peak
44.34	3.75	48.09	54.00	-5.91	AVG
40.99	8.16	49.15	74.00	-24.86	peak
38.53	8.16	46.69	54.00	-7.31	AVG
	20				60
	(dBµV) 47.96 44.34 40.99	(dBµV)         (dB)           47.96         3.75           44.34         3.75           40.99         8.16	(dBµV)         (dB)         (dBµV/m)           47.96         3.75         51.71           44.34         3.75         48.09           40.99         8.16         49.15	(dBµV)         (dB)         (dBµV/m)         (dBµV/m)           47.96         3.75         51.71         74.00           44.34         3.75         48.09         54.00           40.99         8.16         49.15         74.00	(dBµV)         (dB)         (dBµV/m)         (dBµV/m)         (dB)           47.96         3.75         51.71         74.00         -22.29           44.34         3.75         48.09         54.00         -5.91           40.99         8.16         49.15         74.00         -24.86



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#### Report No.: AGC02150190601FE05 Page 64 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Cimits	Margin	Value Trees
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
4924.062	46.90	3.81	50.71	74.00	-23.29	peak
4924.062	43.80	3.81	47.61	54.00	-6.39	AVG
7386.093	39.85	8.19	48.04	74.00	-25.96	peak
7386.093	37.72	8.19	45.91	54.00	-8.09	AVG
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ASC-S5 EUT WIFI SPEAKER **Model Name Temperature** 25°C **Relative Humidity** 55.4% 960hPa Pressure **Test Voltage** Normal Voltage 802.11b with date rate 1 **Test Mode** Antenna Vertical 2462MHZ

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Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4924.062	46.66	3.81	50.47	74.00	-23.53	💿 peak 💆
4924.062	44.80	3.81	48.61	54.00	-5.39	AVG
7386.093	39.42	8.19	47.61	74.00	-26.39	peak
7386.093	36.86	8.19	45.05	54.00	-8.96	AVG
-	1					
		$\odot$				0

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

#### **RESULT: PASS**

Note:

Other emissions from 1G to 25 GHz are considered as ambient noise. No recording in the test report. Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

The "Factor" value can be calculated automatically by software of measurement system.

All test modes had been pre-tested. The 802.11b mode is the worst case and recorded in the report.



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## **12. BAND EDGE EMISSION**

#### **12.1. MEASUREMENT PROCEDURE**

Radiated restricted band edge measurements

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting

#### 12.2. TEST SET-UP

same as 11.2

Note:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level

2. The factor had been edited in the "Input Correction" of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB( $\mu$ V) to represent the Amplitude. Use the F dB( $\mu$ V/m) to represent the Field Strength. So A=F.





#### 12.3. Test Result

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Horizontal

ΡK



AV



**RESULT: PASS** 



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Service Hotline:400 089 2118



#### Report No.: AGC02150190601FE05 Page 67 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Vertical

ΡK



#### AV



**RESULT: PASS** 





#### Report No.: AGC02150190601FE05 Page 68 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Horizontal

ΡK



AV



**RESULT: PASS** 





#### Report No.: AGC02150190601FE05 Page 69 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Vertical

ΡK



AV



**RESULT: PASS** 

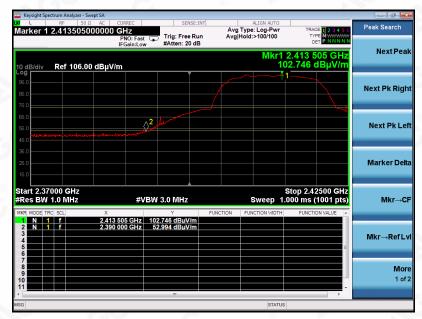




#### Report No.: AGC02150190601FE05 Page 70 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Horizontal

ΡK



AV



**RESULT: PASS** 





#### Report No.: AGC02150190601FE05 Page 71 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Vertical

ΡK



AV



**RESULT: PASS** 





#### Report No.: AGC02150190601FE05 Page 72 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Horizontal

ΡK



AV



**RESULT: PASS** 





#### Report No.: AGC02150190601FE05 Page 73 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Vertical

ΡK



AV



**RESULT: PASS** 

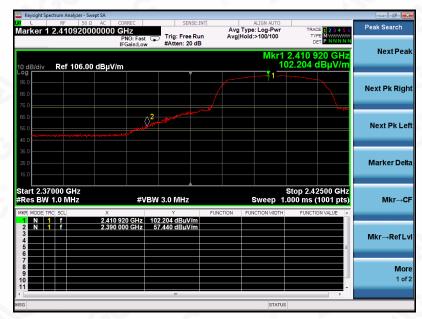




#### Report No.: AGC02150190601FE05 Page 74 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	Antenna	Horizontal

ΡK



AV



**RESULT: PASS** 





#### Report No.: AGC02150190601FE05 Page 75 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	Antenna	Vertical

ΡK



AV



**RESULT: PASS** 





#### Report No.: AGC02150190601FE05 Page 76 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	Antenna	Horizontal

ΡK



AV



**RESULT: PASS** 





#### Report No.: AGC02150190601FE05 Page 77 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	Antenna	Vertical

ΡK



AV



**RESULT: PASS** 



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#### Report No.: AGC02150190601FE05 Page 78 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2422MHZ	Antenna	Horizontal

ΡK



AV



**RESULT: PASS** 





#### Report No.: AGC02150190601FE05 Page 79 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2422MHZ	Antenna	Vertical

ΡK



#### AV



**RESULT: PASS** 



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#### Report No.: AGC02150190601FE05 Page 80 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40with data rate 13.5 2452MHZ	Antenna	Horizontal

ΡK

arker 1	RF 2.4552	50 Ω AC 70000000	CORREC GHz PNO: Fast IFGain:Low	Trig: Free		Avg 1 Avg H	ALIGN AUTO Type: Log-Pwr Iold:>100/100	TY	CE 1 2 3 4 5 6 PE MWWWW ET P N N N N N	Peak Search
I0 dB/div	Ref 10	6.00 dBµV							27 GHz IBµV/m	Next Pea
96.0 86.0 76.0				1						Next Pk Rig
66.0 56.0						N. J. J.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Mar mal Sandy of	the state of the s	Next Pk Lo
36.0 26.0 16.0										Marker De
	3000 GHz 1.0 MHz	X		BW 3.0 MHz	FUNC	TION	Sweep 1	.000 ms (	0000 GHz 1001 pts)	Mkr→
2 N 3 4 5	1 f 1 f		55 27 GHz 33 50 GHz	101.728 dBµV/i 63.610 dBµV/i					=	Mkr→RefL
6 7 8 9 10										<b>M</b> c 1 c
sg				ш					F	

AV



**RESULT: PASS** 





#### Report No.: AGC02150190601FE05 Page 81 of 102

EUT	WIFI SPEAKER	Model Name	ASC-S5
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2452MHZ	Antenna	Vertical

ΡK



AV



**RESULT: PASS** 



## **13. FCC LINE CONDUCTED EMISSION TEST**

## **13.1. LIMITS OF LINE CONDUCTED EMISSION TEST**

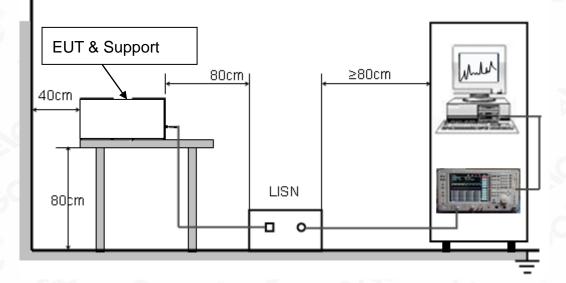
Frequency	Maximum RF Line Voltage				
Frequency	Q.P.( dBuV)	Average( dBuV)			
150kHz~500kHz	66-56	56-46			
500kHz~5MHz	56	46			
5MHz~30MHz	60	50			

Note:

1. The lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

## **13.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST**







## **13.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST**

- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2. Support equipment, if needed, was placed as per ANSI C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. All support equipments received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received charging voltage by adapter which received 120V/60Hzpower by a LISN..
- 6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.
- 9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

#### 13.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

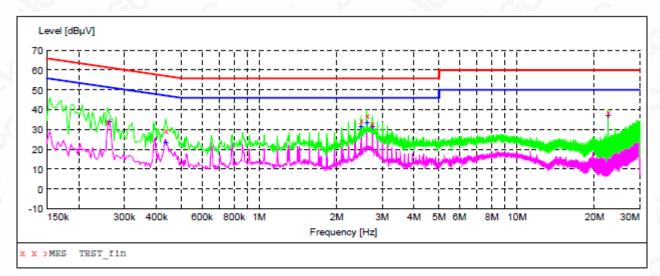
- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 3. The test data of the worst case condition(s) was reported on the Summary Data page.





#### 13.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST





#### MEASUREMENT RESULT: "TEST fin"

7/3/2019 10:00 Frequency MHz	DPM Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.258000 0.434000 2.490000 2.622000 2.746000 22.578000	34.20 29.40 34.80 37.00 33.00 38.60	10.9 10.6 11.5 11.5 11.5 12.6	62 57 56 56 60	27.3 27.8 21.2 19.0 23.0 21.4	QP QP QP QP QP	L1 L1 L1 L1 L1 L1	FLO FLO FLO FLO FLO FLO

#### MEASUREMENT RESULT: "TEST fin2"

7/3/2019 10:0	0 PM						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
MHz	dBµV	dB	dBµV	dB			
0.262000	34.30	10.9	51	17.1	AV	L1	FLO
0.434000	23.60	10.6	47	23.6	AV	L1	FLO
2.490000	31.80	11.5	46	14.2	AV	L1	FLO
2.618000	33.40	11.5	46	12.6	AV	L1	FLO
2.750000	31.30	11.5	46	14.7	AV	L1	FLO
22.578000	36.90	12.6	50	13.1	AV	L1	FLO

## **RESULT: PASS**

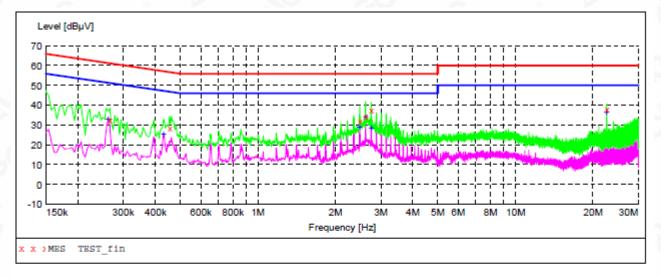


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Report No.: AGC02150190601FE05 Page 85 of 102



Line Conducted Emission Test Line 2-N

#### MEASUREMENT RESULT: "TEST fin"

7/3/2019 10:	12PM						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
MHz	dBuV	dB	dBuV	dB			
0.266000	32.50	10.9	61	28.7	OP	N	FLO
0.454000	28.30	10.8	57	28.5	ÕP	N	FLO
2.486000	32.00	11.5	56	24.0	ÕP	N	FLO
2,618000	34.70	11.5	56	21.3	ÕP	N	FLO
2,754000	37.80	11.5	56	18.2	ÕP	N	FLO
22.578000	38.40	12.6	60	21.6	ÕP	N	FLO
221270000	20.10				×-		

#### MEASUREMENT RESULT: "TEST fin2"

7/3/2019 10:	12PM						
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	ΡE
0.262000	33.10	10.9	51	18.3	AV	N	FLO
0.430000	25.50	10.6	47	21.8	AV	N	FLO
2.486000	29.10	11.5	46	16.9	AV	N	FLO
2.622000	34.50	11.5	46	11.5	AV	N	FLO
2.750000	28.70	11.5	46	17.3	AV	N	FLO
22.578000	36.80	12.6	50	13.2	AV	N	FLO

## **RESULT: PASS**



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Report No.: AGC02150190601FE05 Page 86 of 102

## APPENDIX A: PHOTOGRAPHS OF TEST SETUP FCC LINE CONDUCTED EMISSION TEST SETUP



FCC RADIATED EMISSION TEST SETUP BELOW 1GHZ







Report No.: AGC02150190601FE05 Page 87 of 102



FCC RADIATED EMISSION TEST SETUP ABOVE 1GHZ





Report No.: AGC02150190601FE05 Page 88 of 102

## APPENDIX B: PHOTOGRAPHS OF EUT ALL VIEW OF EUT

