

Zhong Shan City Richsound Electronic Industrial Ltd.

TEST REPORT

SCOPE OF WORK

FCC TESTING–TB662DW5 MK2, STAGE-AT312

REPORT NUMBER

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RF TEST REPORT

Report No. : 220722060SZN-002
Product : Dolby Atmos Sound Bar System with Wireless Subwoofer
Model No. : TB662DW5 MK2, STAGE-AT312
FCC ID : Z8M-TB662D5M2

Applicant: Zhong Shan City Richsound Electronic Industrial Ltd.
No.16, East Shagang Road, Gangkou, Zhongshan, Guangdong,
China.

**Test Method/
Standard:** FCC Part 15 Subpart E;
KDB 789033 D02 v02r01;
ANSI C63.10-2013

Test By: Intertek Testing Services Shenzhen Ltd. Longhua Branch
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Summary of Tests

FCC Parts	Test	Section	Results
15.203	Antenna Requirement	1.3	Pass
15.407 a (1)/(3)	Maximum output power test	3	Pass
15.407 a (1)/(3)	Power Spectrum Density test	4	Pass
15.407 e	6dB Bandwidth	5	Pass
15.407 b, 15.205, 15.209	Radiated spurious emission test	6	Pass
15.207	AC line conducted emission test	7	Pass
15.407 g	Frequency Stability	8	Pass

1. General information

1.1 Identification of the EUT

Product: Dolby Atmos Sound Bar System with Wireless Subwoofer

Model No.: TB662DW5 MK2, STAGE-AT312

Type of Device: Slave device

Nominal Channel Bandwidth: 5MHz

Frequency range: 5727MHz~5819MHz

Channel Number and Operating Frequency: 47 channels for 5727 MHz ~ 5819 MHz

Modulation: FSK

Rated Power: AC 100-240V~ 50/60Hz

Test Date(s): 22 July 2022 to 24 August 2022
19 April 2024 to 23 April 2024

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Note 2: When determining the test conclusion, the Measurement Uncertainty of test has been considered.

1.2 Additional information about the EUT

The equipment under test (EUT) is a Dolby Atmos Sound Bar System with Wireless Subwoofer with Bluetooth FHSS technology operating in 2402-2480MHz and 5.8G function operating at 5727-5819MHz. For more detail information pls. refer to the user manual.

The Model: STAGE-AT312 is the same as the Model: TB662DW5 MK2 in hardware and electrical aspect. The differences in model number and trademark serves as packaging and marketing purpose only.

For more detail features, please refer to User's description as file name "descri.pdf".

Related Submittal(s) Grants

This is an application for certification of transceiver for the Dolby Atmos Sound Bar System with Wireless Subwoofer which has Bluetooth function and 5.8GHz Transmitter Function. Bluetooth Function were reported in the certification report: 220722060SZN-001. Other digital functions were reported in the SDoC report: 220722060SZN-004.

1.3 Antenna description (15.203)

The EUT uses Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

Antenna Gain: 2dBi Max for 5.8G. (This information is provided by applicant, and the applicant is responsible for the authenticity of the provided information.)

For electronic filing, Antenna specifications is refer to filename: Antenna specification. pdf.
Antenna photos is refer to filename: description. pdf.

1.4 Peripherals equipment

Description	Manufacturer	Remark
USB Memory	SanDisk (provided by Intertek)	SDCZ36-002G-P36
Remote controller	MEDION	N/A
Dummy Load	N/A (provided by Intertek)	Audio Port: 1000Ω Video Port: 75 Ω HDMI Port: 100 Ω
HDMI Cable*3	N/A (Provided by Intertek)	Unshielded, Length 150cm
AC power cord*1	N/A	Unshielded, Length 150cm
Optical Cable	N/A (Provided by Intertek)	Unshielded, Length 150cm
Aux In Cable	N/A	Unshielded, Length 150cm
Coaxial Cable	N/A (Provided by Intertek)	Unshielded, Length 150cm

2. Test specifications

2.1 Test standard

The EUT was performed according to the procedures in FCC Part 15 E, Section 15.203, 15.207, 15.209, 15.407 and ANSI C63.10/2013, method of measurement: KDB 789033.

The test of radiated measurements according to FCC Part 15 Section 15.33(a) had been conducted and the field strength of this frequency band was all meet limit requirement, thus we evaluate the EUT pass the specified test.

The AC power conducted emissions was investigated over the frequency range from 0.15 MHz to 30 MHz using a receiver bandwidth of 9 kHz (15.207 paragraph).

Radiated emissions were investigated cover the frequency range from 9KHz to 30MHz using a receiver RBW of 9kHz, from 30 MHz to 1000 MHz using a receiver RBW of 120 kHz record QP reading, and the frequency over 1 GHz using a spectrum analyzer RBW of 1 MHz, VBW of 3MHz, Detector=Peak record for Peak reading, RBW of 1 MHz, VBW of 3MHz, Detector=RMS record for Average reading recorded on the report.

The EUT setup configurations please refer to the photo of radiated setup photos.pdf & conducted setup photos.pdf.

2.2 Operation mode

The EUT was supplied by and it was run in TX mode that was controlled by client provided RF testing program.

The EUT was transmitted continuously during the test. The worst case test result was showed in the report.

2.3 EUT Exercising Software

The EUT exercise program (provided by client) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The worst case configuration is used in all specified testing.

Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

There was no special software to exercise the device.

3. Maximum Output Power test (FCC 15.407)

3.1 Operating environment

Temperature: 25 °C
Relative Humidity: 55 %
Atmospheric Pressure: 1011 hPa

3.2 Test setup & procedure

The power output per FCC §15.407(a) was measured on the EUT using a 50 ohm SMA cable connected to Power Meter and the measurement method refer to 789033 D02. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

3.3 Limit

Frequency range (MHz)	Max Conducted TX Power	Max EIRP
5725~5850	30dBm (1W)	4W (36dBm) with 6dBi antenna

Remark:

- 1) The device was declared as Slave device.
- 2) Tx Power Reduction (dBm-by-dBi) required when antenna exceeds 6dBi.

3.4 Measured data of Maximum Output Power test results

Max Conducted TX Power

The more detail please refer to "Appendix of 220722060SZN-002" Appendix B1.

Max EIRP

The more detail please refer to "Appendix of 220722060SZN-002" Appendix B2.

4. Power Spectrum Density test (FCC 15.407)

4.1 Operating environment

Temperature: 25 °C
Relative Humidity: 50 %
Atmospheric Pressure: 1013 hPa

4.2 Test setup & procedure

Method of Measurement:

The power spectrum density per FCC §15.407(a) was measured from the antenna port of the EUT using a 50 ohm spectrum analyzer with the resolution bandwidth set at 1MHz/500KHz, the video bandwidth set at 3 MHz/2MHz (measurement method refer to KDB 789033 D02). Power spectrum density was read directly and cable loss reading to obtain power at the EUT antenna terminals.

4.3 Limit

Frequency range(MHz)	Max Conducted Power Spectral Density
5725~5850	30dBm/500KHz

Remark: 1) The device was declared as Slave device.
2) Tx Power Reduction (dBm-by-dBi) required when antenna exceeds 6dBi.

4.4 Measured data of Power Spectrum Density test results

The more detail please refer to "Appendix of 220722060SZN-002" Appendix C.

5. Minimum 6 dB RF Bandwidth (FCC 15.407)

5.1 Operating environment

Temperature: 25 °C
Relative Humidity: 50 %
Atmospheric Pressure: 1011 hPa

5.2 Test setup & procedure

The Minimum 6 dB RF Bandwidth per 789033 D02 was measured from the antenna port of the EUT using a 50 ohm spectrum analyzer with the resolution bandwidth set at 100KHz, and set the video bandwidth (VBW) $\geq 3 \times$ RBW. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

For 26dB down Emission Bandwidth

The 26dB down Emission Bandwidth per 789033 D02 was measured from the antenna port of the EUT using a 50 ohm spectrum analyzer with the resolution bandwidth set RBW = approximately 1% of the emission bandwidth. Set the VBW $>$ RBW, Detector = Peak, Trace mode = max hold (Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%).

For 99% Occupied Bandwidth

The 99% Occupied Bandwidth per 789033 D02 was measured from the antenna port of the EUT using a 50 ohm spectrum analyzer with the resolution bandwidth set center frequency to the nominal EUT channel center frequency, set span = 1.5 times to 5.0 times the OBW, set RBW = 1 % to 5 % of the OBW, set VBW $\geq 3 \times$ RBW, The 99% occupied bandwidth was determined from where the channel output spectrum intersected the display line.

5.3 Limit

Frequency range(MHz)	Minimum 6 dB RF Bandwidth Limit
5150~5250	N/A
5250~5350	N/A
5470~5725	N/A
5725~ 5850	$\geq 500\text{KHz}$

5.4 Measured data of 6dB down Emission Bandwidth test results

The more detail please refer to “Appendix of 220722060SZN-002” Appendix A3.

Note: 99% Occupied Bandwidth within the U-NII-1 band and 26dB Emission Bandwidth for reference. The more detail please refer to “Appendix of 220722060SZN-002” Appendix A2 and Appendix A1.

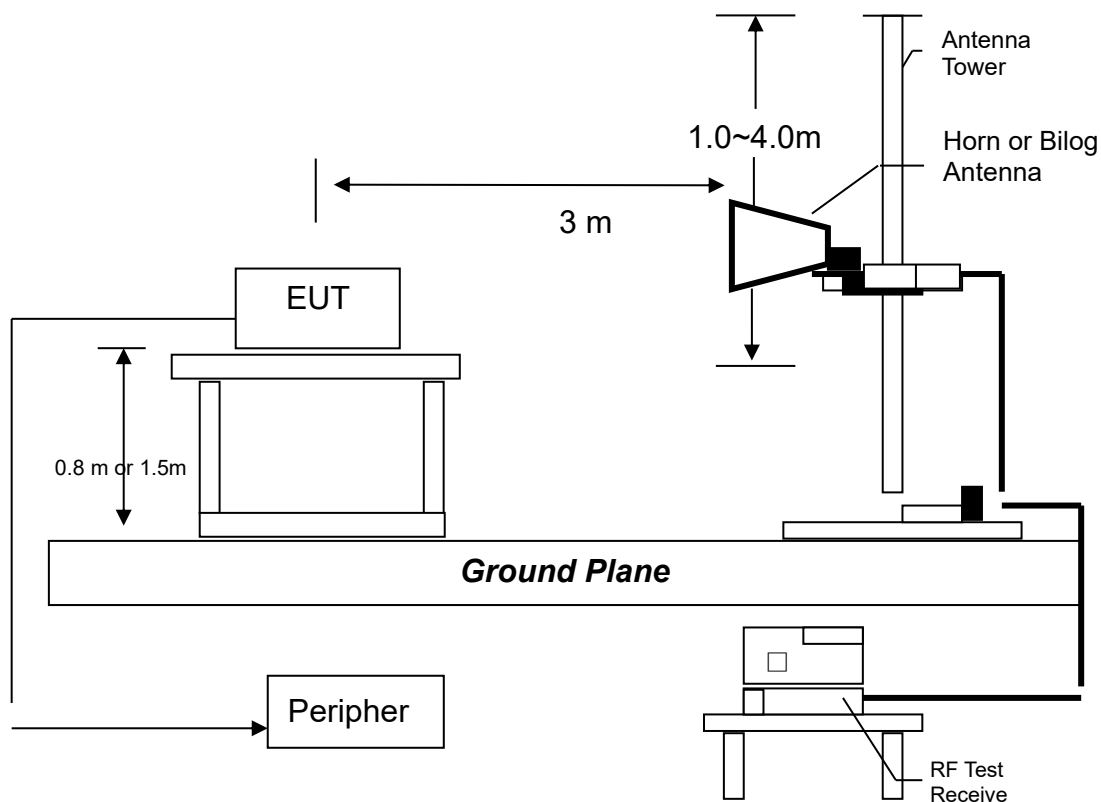
6. Radiated Emission test (FCC 15.205 & 15.209 & 15.407)

6.1 Operating environment

Temperature:	23	°C
Relative Humidity:	56	%
Atmospheric Pressure	1011	hPa

6.2 Test setup & procedure

The Diagram below shows the test setup, which is utilized to make these measurements.



Radiated emission measurements were performed from 9KHz to tenth harmonic or 40GHz.

The EUT for testing is arranged on a styrene turntable with the height of 0.8m up to 1GHz and 1.5m above 1GHz. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meters and down to 1 meter.

The measurement for radiated emission will be done at the distance of three meters unless the signal level is too low to measure at that distance. In the case of the reading under noise floor, a pre-amplifier is used and/or the test is conducted at a closer distance. And then all readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance.

Testing settings (refer to KDB 789033 D02)

Peak Measurements below 1GHz

- 1, Analyzer center frequency was set to the frequency of the radiated spurious emission.
- 2, Span=encompass the entire emission
- 3, RBW=120KHz
- 4, Detector=Quasi-Peak
- 5, Trace was allowed to stabilize

Peak Measurements above 1GHz

- 1, Analyzer center frequency was set to the frequency of the radiated spurious emission.
- 2, Span=encompass the entire emission
- 3, RBW=1MHz
- 4, VBW=3MHz
- 4, Detector= Peak (Max-hold)
- 5, Trace was allowed to stabilize

Average Measurements above 1GHz

- 1, Analyzer center frequency was set to the frequency of the radiated spurious emission.
- 2, Span=encompass the entire emission
- 3, RBW=1MHz
- 4, VBW=3MHz
- 4, Detector= RMS (Max-hold)
- 5, Trace was allowed to stabilize

6.3 Limit

The spurious Emission shall test through the 10th harmonic or 40GHz (whichever is lower). 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).

Notes:

- 1, For the band 5.725-5.85GHz, 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.
- 2, The spectrum is measured from 9KHz to the 10th harmonic of the fundamental frequency of the transmitter using QP detector below 1GHz, above 1GHz, average & peak measurements were taken using for test. The worst-case emission are reported however emission whose levels were not within 20dB of the respective limited were not reported.
- 3, The test was performed on EUT under continuously transmitting mode. Simultaneous transmitting was considered during the testing. All mode had been tested, but only the worst-case is recorded in the following graph and table.

6.3.1 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD$$

Where FS = Field Strength in dB μ V/m
 RA = Receiver Amplitude (including preamplifier) in dB μ V
 CF = Cable Attenuation Factor in dB
 AF = Antenna Factor in dB/m
 AG = Amplifier Gain in dB
 PD = Pulse Desensitization in dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD$$

Example

Assume a receiver reading of 62.0 dB μ V is obtained. The antenna factor of 7.4 dB/m and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB. The net field strength for comparison to the appropriate emission limit is 32 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$\begin{aligned} RA &= 62.0 \text{ dB}\mu\text{V} \\ AF &= 7.4 \text{ dB/m} \\ CF &= 1.6 \text{ dB} \\ AG &= 29.0 \text{ dB} \\ PD &= 0 \text{ dB} \\ FS &= 62 + 7.4 + 1.6 - 29 + 0 = 42 \text{ dB}\mu\text{V/m} \end{aligned}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm } [(42 \text{ dB}\mu\text{V/m})/20] = 125.9 \mu\text{V/m}$$

6.4 Radiated spurious emission test data

6.4.1 Measurement results: frequencies equal to or less than 1 GHz

Applicant: Zhong Shan City Richsound Electronic Industrial Ltd.

Date of Test: 24 August 2022

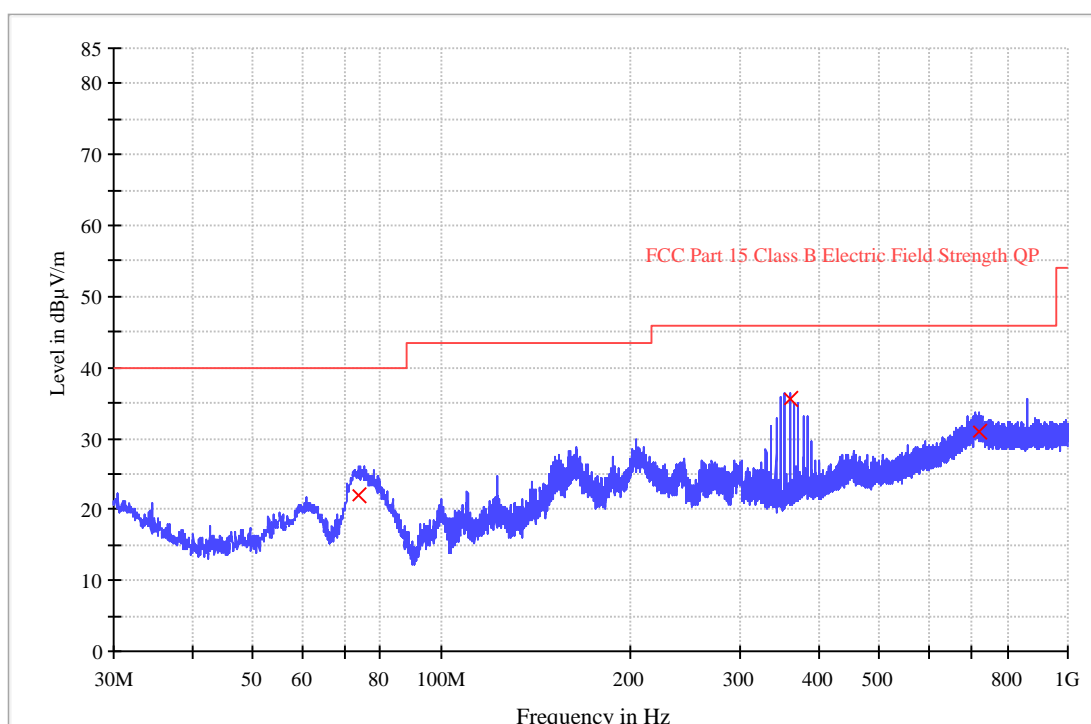
Model: TB662DW5 MK2

Worst Case Operating Mode: Simultaneous transmission

Radiated Emissions

ANT Polarity: Horizontal

FCC Part 15



Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
74.005667	22.0	1000.0	120.000	100.0	H	13.7	18.0	40.0
360.000000	35.5	1000.0	120.000	100.0	H	23.2	10.5	46.0
720.316667	31.0	1000.0	120.000	100.0	H	32.0	15.0	46.0

NOTES:

1. Quasi-Peak detector is used for frequency below 1GHz.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. All emissions are below the QP limit.

Applicant: Zhong Shan City Richsound Electronic Industrial Ltd.

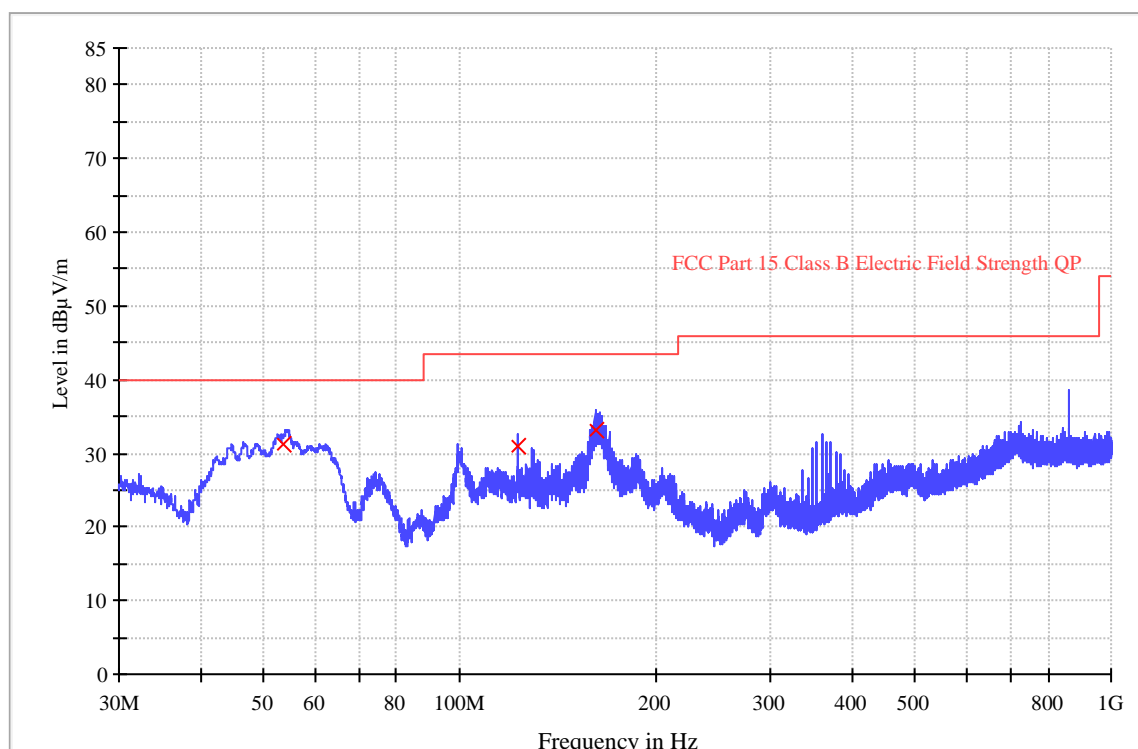
Date of Test: 24 August 2022

Model: TB662DW5 MK2

Worst Case Operating Mode: Simultaneous transmission

Radiated Emissions

ANT Polarity: Vertical



Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
53.732667	31.1	1000.0	120.000	100.0	V	13.2	8.9	40.0
122.861333	31.0	1000.0	120.000	100.0	V	14.4	12.5	43.5
161.400000	33.1	1000.0	120.000	100.0	V	17.3	10.4	43.5

NOTES:

1. Quasi-Peak detector is used for frequency below 1GHz.
2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
3. Negative value in the margin column shows emission below limit.
4. All emissions are below the QP limit.

6.4.2 Measurement results: frequency above 1GHz

Channel 5727MHz

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	11454.000	57.8	36.3	38.9	60.4	74.0	-13.6
Vertical	17181.000	49.9	34.7	41.0	56.2	68.2	-12.0

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	11454.000	48.4	36.3	38.9	51.0	54.0	-3.0
Vertical	17181.000	36.6	34.7	41.0	42.9	54.0	-11.1

Channel 5819MHz

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Vertical	11638.000	54.4	36.3	38.9	57.0	74.0	-17.0
Vertical	17457.000	51.1	34.7	41.0	57.4	68.2	-10.8

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Vertical	11638.000	45.5	36.3	38.9	48.1	54.0	-5.9
Vertical	17457.000	37.6	34.7	41.0	43.9	54.0	-10.1

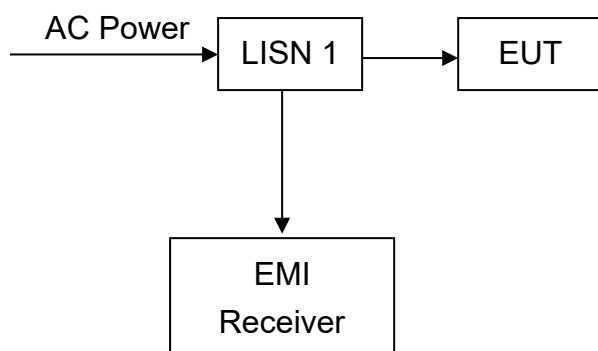
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function. All unwanted emissions outside of the 5725-5850 bands are complied with the limit.

7. Power Line Conducted Emission test

7.1 Operating environment

Temperature:	24	°C
Relative Humidity:	55	%
Atmospheric Pressure	1011	hPa

7.2 Test setup & procedure



The EUT are connected to the main power through a line impedance stabilization network (LISN). This provides a 50 ohm/50 uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 ohm/50 uH coupling impedance with 50 ohm termination.

Both sides (Line and Neutral) of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10/2013 on conducted measurement.

The bandwidth of the field strength meter (R & S Test Receiver ESCI 30) is set at 9 kHz.

7.3 Limit

Frequency (MHz)	Conducted Limit (dBuV)	
	Q.P.	Ave.
0.15~0.50	66 – 56*	56 – 46*
0.50~5.00	56	46
5.00~30.0	60	50

*Decreases with the logarithm of the frequency.

7.4 Power Line Conducted Emission test data

Applicant: Zhong Shan City Richsound Electronic Industrial Ltd.

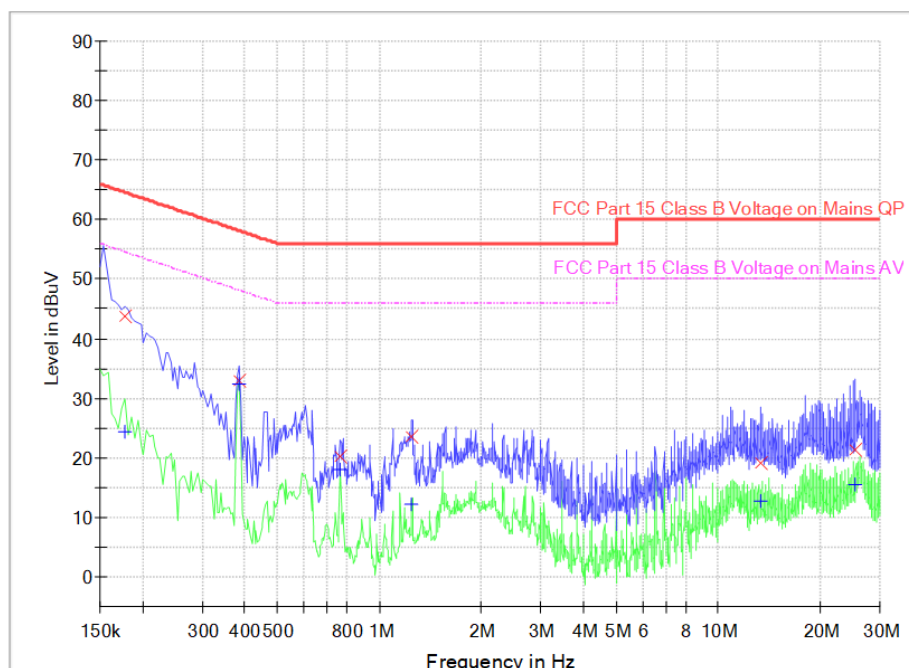
Date of Test: 24 August 2022

Model: TB662DW5 MK2

Worst Case Operating Mode:

Simultaneous transmission

Phase: Live



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.178000	43.8	9.000	L1	9.6	20.8	64.6
0.386000	32.9	9.000	L1	9.6	25.2	58.1
0.770000	20.2	9.000	L1	9.7	35.8	56.0
1.250000	23.4	9.000	L1	9.7	32.6	56.0
13.306000	19.0	9.000	L1	10.1	41.0	60.0
25.458000	21.4	9.000	L1	10.8	38.6	60.0

Limit and Margin AV

Frequency (MHz)	Average (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.178000	24.5	9.000	L1	9.6	30.1	54.6
0.386000	32.3	9.000	L1	9.6	15.8	48.1
0.770000	17.9	9.000	L1	9.7	28.1	46.0
1.250000	12.2	9.000	L1	9.7	33.9	46.0
13.306000	12.8	9.000	L1	10.1	37.3	50.0
25.458000	15.5	9.000	L1	10.8	34.5	50.0

Remark:

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)

2. Margin (dB) = Limit (dBuV) – Level (dBuV)

Applicant: Zhong Shan City Richsound Electronic Industrial Ltd.

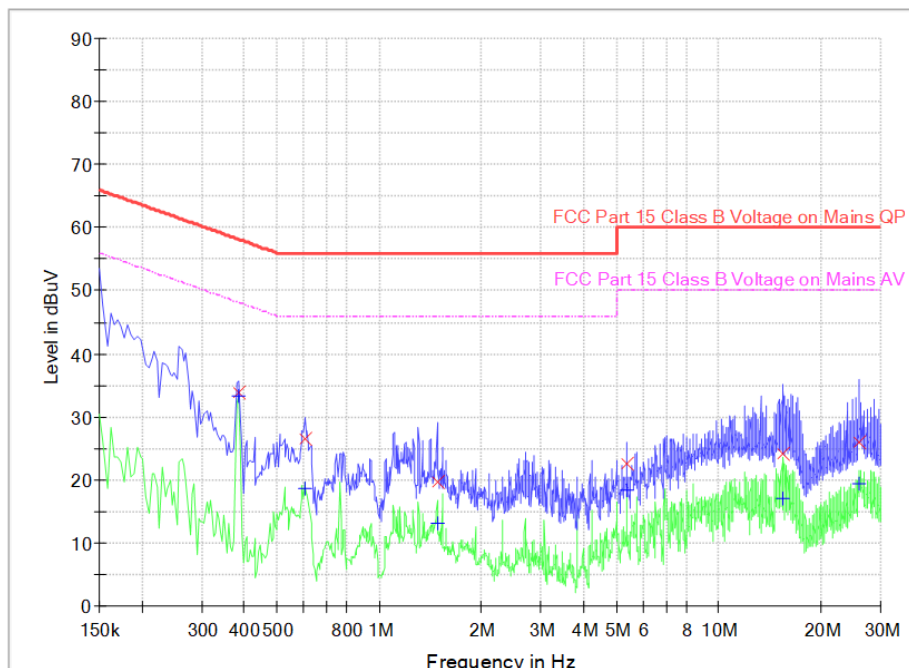
Date of Test: 24 August 2022

Model: TB662DW5 MK2

Worst Case Operating Mode:

Simultaneous transmission

Phase: Neutral



Limit and Margin QP

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.386000	33.9	9.000	N	9.6	24.2	58.1
0.602000	26.5	9.000	N	9.6	29.5	56.0
1.482000	19.7	9.000	N	9.6	36.3	56.0
5.378000	22.6	9.000	N	9.8	37.4	60.0
15.530000	24.1	9.000	N	10.2	35.9	60.0
25.786000	26.0	9.000	N	10.8	34.0	60.0

Limit and Margin AV

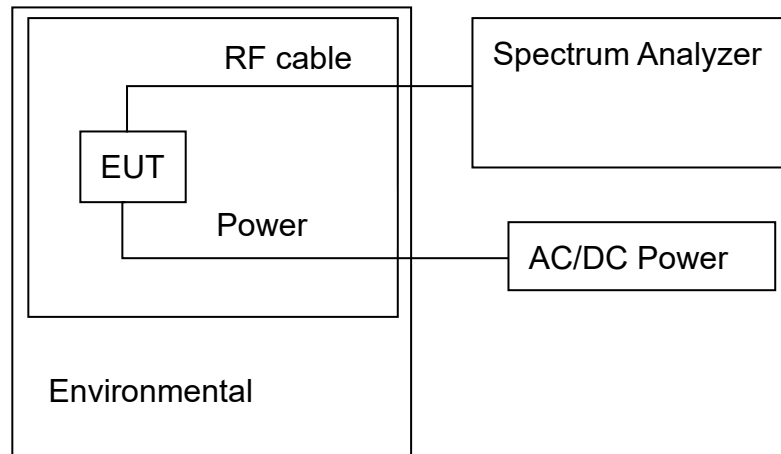
Frequency (MHz)	Average (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.386000	33.2	9.000	N	9.6	14.9	48.1
0.602000	18.5	9.000	N	9.6	27.5	46.0
1.482000	13.1	9.000	N	9.6	32.9	46.0
5.378000	18.4	9.000	N	9.8	31.6	50.0
15.530000	17.0	9.000	N	10.2	33.0	50.0
25.786000	19.3	9.000	N	10.8	30.7	50.0

Remark:

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Limit (dBuV) – Level (dBuV)

8. Frequency Stability Test

8.1 Test setup & procedure



Note1: The frequency stability is measured with the temperature variation range of 0°C to +45°C, and voltage supply variation range of 85% to 115% of nominal AC supply voltage.

Note2: To ensure emission at the band-edge is maintained within the authorized band, the frequency 5727MHz, 5773MHz, 5819MHz are selected to test and the worst case was reported.

8.2 Frequency Stability Test Data

20°C is taken as temperature in normal condition (NT).

120.0 VAC is normal voltage (NV)

102.0 VAC is low voltage (LV)

138 VAC is high voltage (HV)

The more detail please refer to “Appendix of 220722060SZN-002” Appendix D.

Note: All emissions are maintained within the band of operation under all conditions of normal operation as specified in the user manual. It fulfills the requirement of 15.407(g).

Appendix A: Test equipment list

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ182-02	RF Power Meter	Anritsu	ML2496A	1302005	2023-04-28	2024-04-28
SZ182-02-01	Pulse Power Sensor	Anritsu	MA2411B	1207429	2023-04-28	2024-04-28
SZ070-20	Combiner	Mini-Circuits	ZN2PD-63-S+	---	2023-04-27	2024-04-27
SZ070-21	Combiner	Mini-Circuits	ZN2PD-63-S+	---	2023-04-27	2024-04-27
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	2022-05-16 2023-04-27	2023-05-16 2024-04-27
SZ180-13	MXG Vector Signal Generator	Keysight	N5182B	MY53051328	2023-09-25	2024-09-25
SZ061-12	BiConiLog Antenna	ETS	3142E	00166158	2021-08-04	2024-08-04
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	2021-05-18	2024-05-18
SZ061-08	Horn Antenna	ETS	3115	00092346	2021-09-05	2024-09-05
SZ061-07	Pyramidal Horn Antenna	ETS	3160-09	00083067	2022-08-31	2025-05-31
SZ185-03	EMI Receiver	R&S	ESR7	101975	2021-12-20 2023-04-27	2022-12-20 2024-04-27
SZ056-06	Signal Analyzer	R&S	FSV 40	101101	2021-12-20 2023-12-13	2022-12-20 2024-12-13
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	2022-05-16 2023-04-27	2023-05-16 2024-04-27
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	2021-12-12	2024-12-12
SZ062-23	RF Cable	RADIALL	SF104PE	--	2021-10-26 2023-09-26	2022-10-26 2024-09-26
SZ062-35	RF Cable	RADIALL	A50-3.5M3.5M-8M	--	2021-10-26 2023-09-26	2022-10-26 2024-09-26
SZ062-30	RF Cable	RADIALL	A50-3.5M3.5M-4.5M	--	2021-10-26 2023-09-26	2022-10-26 2024-09-26
SZ062-31	RF Cable	RADIALL	A50-3.5M3.5M-1M		2021-10-26 2023-09-26	2022-10-26 2024-09-26
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	2022-05-17 2023-04-27	2023-05-17 2024-04-27
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	2021-11-02 2023-10-18	2022-11-02 2024-10-18
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	2022-07-08 2023-07-08	2023-07-08 2024-07-08
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	2022-05-09 2023-04-27	2023-05-09 2024-04-27
SZ188-03	Shielding Room	ETS	RFD-100	4100	2020-01-07 2022-12-20	2023-01-07 2025-12-20
SZ062-16	RF Cable	HUBER+SUHNER	CBL2-BN-1m	110127-2231000	2021-10-26 2023-07-11	2022-10-26 2024-07-11
SZ016-12	Programmable Temperature & Humidity Chamber	Taili	MHK-120NK	AB0105	2022-12-23 2023-12-14	2023-12-23 2024-12-14

Expanded uncertainty of radiated emission measurement is ± 4.8 dB.

Expanded uncertainty of conducted emission measurement is ± 3.2 dB.

***** End of Report *****