FCC PART 15 SUBPART C TEST REPORT

FCC PART 15.227

Report Reference No..... :	**BSL24010115P01-R01**
FCC ID..... :	**2BE4SYJ99-1**
Compiled by (position+printed name+signature).. :	Engineer/ Cindy Zheng Cindy zheng
Supervised by (position+printed name+signature).. :	Manager/Haley Wen Haley wen
Approved by (position+printed name+signature).. :	RF Manager/ Vivian Jiang Vivian Jiang
Date of issue.....:	January 29, 2024
Testing Laboratory Name ..... :	**BSL Testing Co., Ltd.**
Address..... :	1/F, Building B, Xinshidai GR Park,Shiyan Street, Bao'an District, Shenzhen,Guangdong, 518052, People's Republic of China
Applicant's name.....:	**Shantou Chenghai Yijia Toy Factory**
Address..... :	5th Floor, No. 4 Binjiang Road 1st Road, Chenghua Meidai, Chenghai District, Shantou City, Guangdong Province
Test specification.....:	
Standard.....:	**FCC Part 15.227**

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Test item description.....:	**Toy series**
Trade Mark.....:	N/A
Manufacturer.....:	Shantou Chenghai Yijia Toy Factory
Model/Type reference..... :	YJ99-1
Listed Models ..... :	YJ99-2,YJ99-3,YJ99-4,YJ99-5,YJ99-6,YJ99-7,YJ99-8, YJ99- 9,YJ99-10,YJ99-11,YJ99-12,YJ99-13,YJ99-14, YJ99-15,YJ99-16,YJ99-17,YJ99-18,YJ99-19,YJ99-20, YJ99-21,YJ99-22,YJ99-23,YJ99-24, YJ99-25, YJ99-26, YJ-99-28, YJ99-29, YJ-99-30, YJ99-31, YJ-99-32, YJ99-33, YJ-99-34, YJ99-35, YJ-99-36, YJ99-37, YJ-99-38, YJ99-39, YJ-99-40, YJ99-41, YJ-99-42, YJ99-43, YJ-99-44, YJ99-45, YJ-99-46, YJ99-47, YJ-99-48, YJ99-49, YJ-99-50
Ratings.....:	FSK
Modulation ..... :	27.145 MHz
Frequency.....	DC 3.0V From Battery
Result.....:	**PASS**

TEST REPORT

Equipment under Test	:	Toy series
Model /Type	:	YJ99-1
Listed Models	:	YJ99-2,YJ99-3,YJ99-4,YJ99-5,YJ99-6,YJ99-7,YJ99-8, YJ99- 9,YJ99-10,YJ99-11,YJ99-12,YJ99-13,YJ99-14, YJ99-15,YJ99-16,YJ99-17,YJ99-18,YJ99-19,YJ99-20, YJ99-21,YJ99-22,YJ99-23,YJ99-24, YJ99-25, YJ99-26, YJ-99-28, YJ99-29, YJ-99-30, YJ99-31, YJ-99-32, YJ99-33, YJ-99-34, YJ99-35, YJ-99-36, YJ99-37, YJ-99-38, YJ99-39, YJ-99-40, YJ99-41, YJ-99-42, YJ99-43, YJ-99-44, YJ99-45, YJ-99-46, YJ99-47, YJ-99-48, YJ99-49, YJ-99-50
Model Declaration	:	All the models are electrical identical including the same software parameter and hardware design, same mechanical structure and design, the only difference is the model named different.
Applicant	:	**Shantou Chenghai Yijia Toy Factory**
Address	:	5th Floor, No. 4 Binjiang Road 1st Road, Chenghua Meidai, Chenghai District, Shantou City, Guangdong Province
Manufacturer	:	**Shantou Chenghai Yijia Toy Factory**
Address	:	Chenghai District, Shantou City, Guangdong Province, China

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15.227:Operation within the band 26.96-27.28 MHz.
ANSI C63.10:2013 : American National Standard for Testing Unlicensed Wireless Devices

2 SUMMARY

2.1 General Remarks

Date of receipt of test sample	:	January 18, 2024
Testing commenced on	:	January 18, 2024
Testing concluded on	:	January 29, 2024

2.2 Product Description

Product Name:	Toy series
Model/Type reference:	YJ99-1
Listed Models:	YJ99-2,YJ99-3,YJ99-4,YJ99-5,YJ99-6,YJ99-7,YJ99-8, YJ99- 9,YJ99-10,YJ99-11,YJ99-12,YJ99-13,YJ99-14, YJ99-15,YJ99-16,YJ99-17,YJ99-18,YJ99-19,YJ99-20, YJ99-21,YJ99-22,YJ99-23,YJ99-24, YJ99-25, YJ99-26, YJ-99-28, YJ99-29, YJ-99-30, YJ99-31, YJ-99-32, YJ99-33, YJ-99-34, YJ99-35, YJ-99-36, YJ99-37, YJ-99-38, YJ99-39, YJ-99-40, YJ99-41, YJ-99-42, YJ99-43, YJ-99-44, YJ99-45, YJ-99-46, YJ99-47, YJ-99-48, YJ99-49, YJ-99-50
Testing sample ID:	BSL24010115P01-R01-1# (Engineer sample), BSL24010115P01-R01-2#(Normal sample)
Power supply:	DC 3.0V From Battery
Modulation:	FSK
Operation frequency:	27.145 MHz
Channel number:	1
Antenna type:	Metal Antenna
Antenna gain:	0 dBi

2.3 Equipment Under Test

Power supply system utilised

Power supply voltage	:	○	230V / 50 Hz	○	120V / 60Hz
		○	12 V DC	○	24 V DC
		●	Other (specified in blank below)		

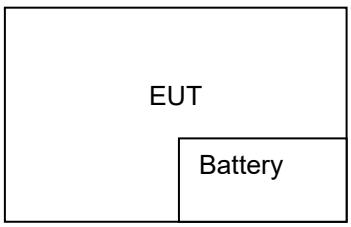
DC 3.0V From Battery

2.4 Short description of the Equipment under Test (EUT)

This is a Toy series.

For more details, refer to the user's manual of the EUT.

2.5 Block Diagram of Test Setup



2.6 Special Accessories

Follow auxiliary equipment(s) test with EUT that provided by the manufacturer or laboratory is listed as follow:

Description	Manufacturer	Model	Technical Parameters	Certificate	Provided by
/	/	/	/	/	/

2.7 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for the device filing to comply with Section 15.227 of the FCC Part 15, Subpart C Rules.

2.8 Modifications

No modifications were implemented to meet testing criteria.

3 TEST ENVIRONMENT

3.1 Address of the test laboratory

BSL Testing Co., Ltd.
1/F, Building B, Xinshidai GR Park,Shiyan Street, Bao'an District, Shenzhen,Guangdong, 518052, People’s Republic of China

3.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 562200 Designation Number: CN1338
BSL Testing Co.,Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

Industry Canada Registration Number. Is: 11093A CAB identifier: CN0019
The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

A2LA-Lab Cert. No.: 4707.01
BSL Testing Co.,Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

3.3 Environmental conditions

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

Radiated Emission:

Temperature:	25 ° C
Humidity:	45 %
Atmospheric pressure:	950-1050mbar

Conducted testing：

Temperature:	25 ° C
Humidity:	44 %
Atmospheric pressure:	950-1050mbar

3.4 Summary of measurement results

FCC Requirements		
FCC Part 15.207	Conducted Emission	N/A
FCC Part 15.203	Antenna requirement	PASS
FCC Part 15.215	-20dB bandwidth	PASS
FCC Part 15.227	Field Strength of the Fundamental Signal	PASS
FCC Part 15.227(b)/ 15.209	Radiated Emissions	PASS

Remark: The measurement uncertainty is not included in the test result.
" N/A" denotes test is not applicable in this test report.

3.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the BSL Testing Co.,Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.
Hereafter the best measurement capability for BSL Testing Co.,Ltd. :

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	9KHz~30MHz	3.20 dB	(1)
Radiated Emission	30~1000MHz	4.10 dB	(1)
Radiated Emission	1~18GHz	4.32 dB	(1)
Radiated Emission	18-40GHz	5.54 dB	(1)
Conducted Disturbance	0.9KHz~30MHz	3.12 dB	(1)
Occupied Channel Bandwidth	/	5%	(1)
RF Frequency	/	$0.082*10^{-7}$	(1)
RF output power, conducted	/	0. 73 dB	(1)
Unwanted Emission, conducted	/	1 .6dB	(1)
AC Power Lines Conducted Emissions|	/	2. 72dB	(1)

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

3.6 Equipments Used during the Test

Conducted Emission					
Test Equipment	**Manufacturer**	**Model**	**Serial No.**	**Date of Cal.**	**Due Date**
Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	BSL252	2023-10-28	2024-10-27
EMI Test Receiver	R&S	ESCI 7	BSL552	2023-10-28	2024-10-27
Coaxial Switch	ANRITSU CORP	MP59B	BSL225	2023-10-28	2024-10-27
ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	BSL226	2023-10-28	2024-10-27
Coaxial Cable	BSL	N/A	BSL227	N/A	N/A
EMI Test Software	AUDIX	E3	N/A	N/A	N/A
Thermo meter	KTJ	TA328	BSL233	2023-10-28	2024-10-27
Absorbing clamp	Elektronik-Feinmechanik	MDS21	BSL229	2023-10-28	2024-10-27
LISN	R&S	ENV216	308	2023-10-28	2024-10-27
LISN	R&S	ENV216	314	2023-10-28	2024-10-27

Radiation Test equipment					
Test Equipment	**Manufacturer**	**Model**	**Serial No.**	**Date of Cal.**	**Due Date**
3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	BSL250	2023-10-28	2024-10-27
Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	BSL251	N/A	N/A
EMI Test Receiver	Rohde & Schwarz	ESU26	BSL203	2023-10-28	2024-10-27
BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	BSL214	2023-10-28	2024-10-27
Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	BSL208	2023-10-28	2024-10-27
Horn Antenna	ETS-LINDGREN	3160	BSL217	2023-10-28	2024-10-27
EMI Test Software	AUDIX	E3	N/A	N/A	N/A
Coaxial Cable	BSL	N/A	BSL213	2023-10-28	2024-10-27
Coaxial Cable	BSL	N/A	BSL211	2023-10-28	2024-10-27
Coaxial cable	BSL	N/A	BSL210	2023-10-28	2024-10-27
Coaxial Cable	BSL	N/A	BSL212	2023-10-28	2024-10-27
Amplifier(100kHz-3GHz)	HP	8347A	BSL204	2023-10-28	2024-10-27
Amplifier(2GHz-20GHz)	HP	84722A	BSL206	2023-10-28	2024-10-27
Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	BSL218	2023-10-28	2024-10-27
Band filter	Amindeon	82346	BSL219	2023-10-28	2024-10-27
Power Meter	Anritsu	ML2495A	BSL540	2023-10-28	2024-10-27
Power Sensor	Anritsu	MA2411B	BSL541	2023-10-28	2024-10-27
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	BSL575	2023-10-28	2024-10-27

Splitter	Agilent	11636B	BSL237	2023-10-28	2024-10-27
Loop Antenna	ZHINAN	ZN30900A	BSL534	2023-10-28	2024-10-27
Breitband hornantenne	SCHWARZBECK	BBHA 9170	BSL579	2023-10-28	2024-10-27
Amplifier	TDK	PA-02-02	BSL574	2023-10-28	2024-10-27
Amplifier	TDK	PA-02-03	BSL576	2023-10-28	2024-10-27
PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	BSL578	2023-10-28	2024-10-27

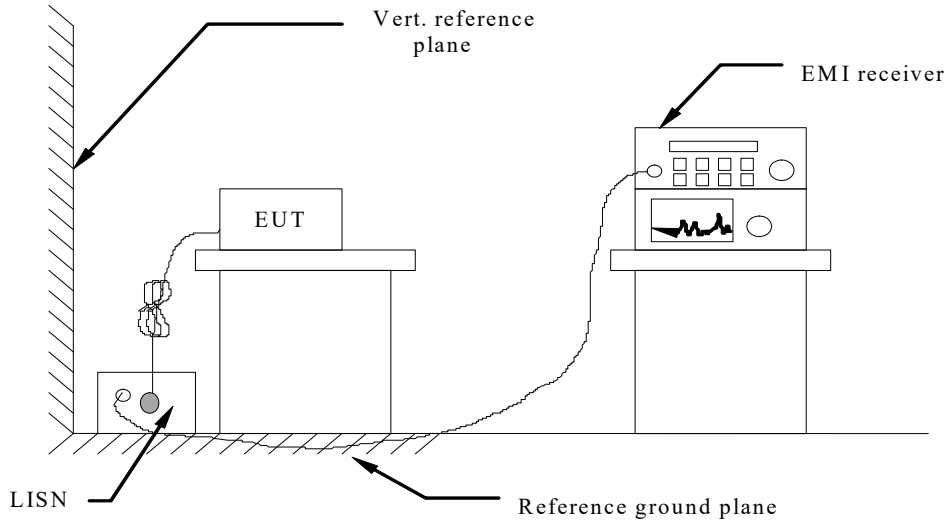
RF Conducted Test:					
Test Equipment	**Manufacturer**	**Model**	**Serial No.**	**Date of Cal.**	**Due Date**
MXA Signal Analyzer	Agilent	N9020A	BSL566	2023-10-28	2024-10-27
EMI Test Receiver	R&S	ESCI 7	BSL552	2023-10-28	2024-10-27
Spectrum Analyzer	Agilent	E4440A	BSL533	2023-10-28	2024-10-27
MXG vector Signal Generator	Agilent	N5182A	BSL567	2023-10-28	2024-10-27
ESG Analog Signal Generator	Agilent	E4428C	BSL568	2023-10-28	2024-10-27
USB RF Power Sensor	DARE	RPR3006W	BSL569	2023-10-28	2024-10-27
RF Switch Box	Shongyi	RFSW3003328	BSL571	2023-10-28	2024-10-27
Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	BSL572	2023-10-28	2024-10-27

Note: The Cal.Interval was one year.

4 TEST CONDITIONS AND RESULTS

4.1 AC Power Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. 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 C63.10-2013.
2 Support equipment, if needed, was placed as per ANSI C63.10-2013
3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10-2013
4 The EUT received DC 12V power from adapter, the adapter received AC120V/60Hz and AC 240V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5 All support equipments received AC power from a second LISN, if any.
6 The EUT 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.

AC Power Conducted Emission Limit

For intentional device, according to § 15.207(a) AC Power Conducted Emission Limits is as following：

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

TEST RESULTS

The EUT is powered by the Battery,So this test item is not applicable for the EUT.

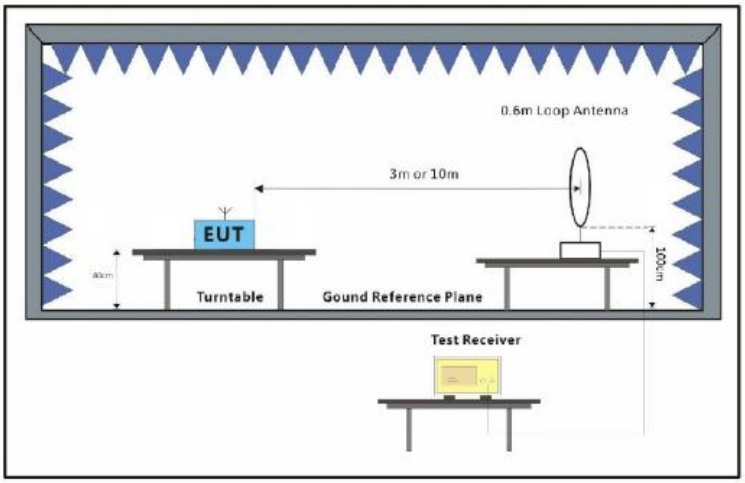
4.2 Field Strength of the Fundamental Signal

Limit

According to Part 15, Subpart C 15.227(a)

≤ 10000 microvolts/meter at 3 meters, the emission limit is based on measurement instrumentation employing an average Detector:. The provisions in §15.35 for limiting peak emissions apply.

Test Configuration



Measurement Procedure and Data

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1Ghz at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

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

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

150kHz-30MHz

EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

Test result

Temperature	23.7℃	Humidity	52.1%
Test Engineer	/	Configurations	TX

Spurious Emission below 30MHz (150KHz to 30MHz)

Frequency (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Detector	Remark
27.145	54.80	-8.57	46.23	100.00	-53.77	Vertical	PK	Fundamental
27.145	44.14	-8.57	35.57	80.00	-44.43	Vertical	AVG	
27.145	50.24	-6.41	43.83	100.00	-56.17	Horizontal	PK	
27.145	40.35	-6.41	33.94	80.00	-46.06	Horizontal	AVG	
26.960	32.21	-8.57	23.64	69.54	-45.90	Vertical	PK	Band edge
27.280	30.15	-6.38	23.77	69.54	-45.77	Vertical	PK	
26.960	28.63	-8.57	20.06	69.54	-49.48	Horizontal	PK	
27.280	26.52	-6.38	20.14	69.54	-49.40	Horizontal	PK	

Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

4.3 Radiated Emission

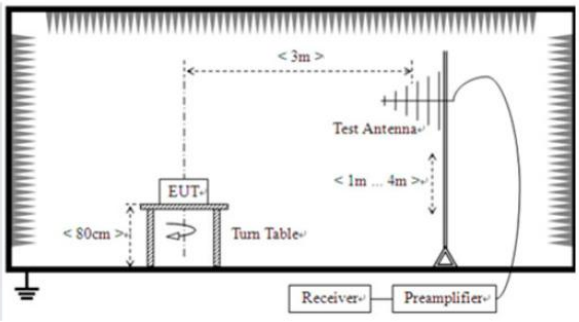
Limit

For intentional device, according to 15..227(b) & C 15.209 the general requirement of field strength of radiated emission from intentional radiators at a distance of 3 meters shall not exceed the following table.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.49	2400/F(KHz)	300
0.49-1.705	24000/F(KHz)	30
1.705-30	30	30
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz and 110-490kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.		
Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for above 1000MHz. Radiated emission limits above 1000MHz is based on measurements employing an average detector.		

In addition to the provisions of 15.227(b), the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

TEST CONFIGURATION



Measurement Procedure and Data

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1GHz at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

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

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Spurious Emission below 150kHz (9KHz to 150kHz)

Note: The measurements with active loop antenna were greater than 20dB below the limit, so the test data were not recorded in the test report.

Spurious Emission below 30MHz (150KHz to 30MHz)

All mode have been tested, and the worst result was report as below(Polarization X):

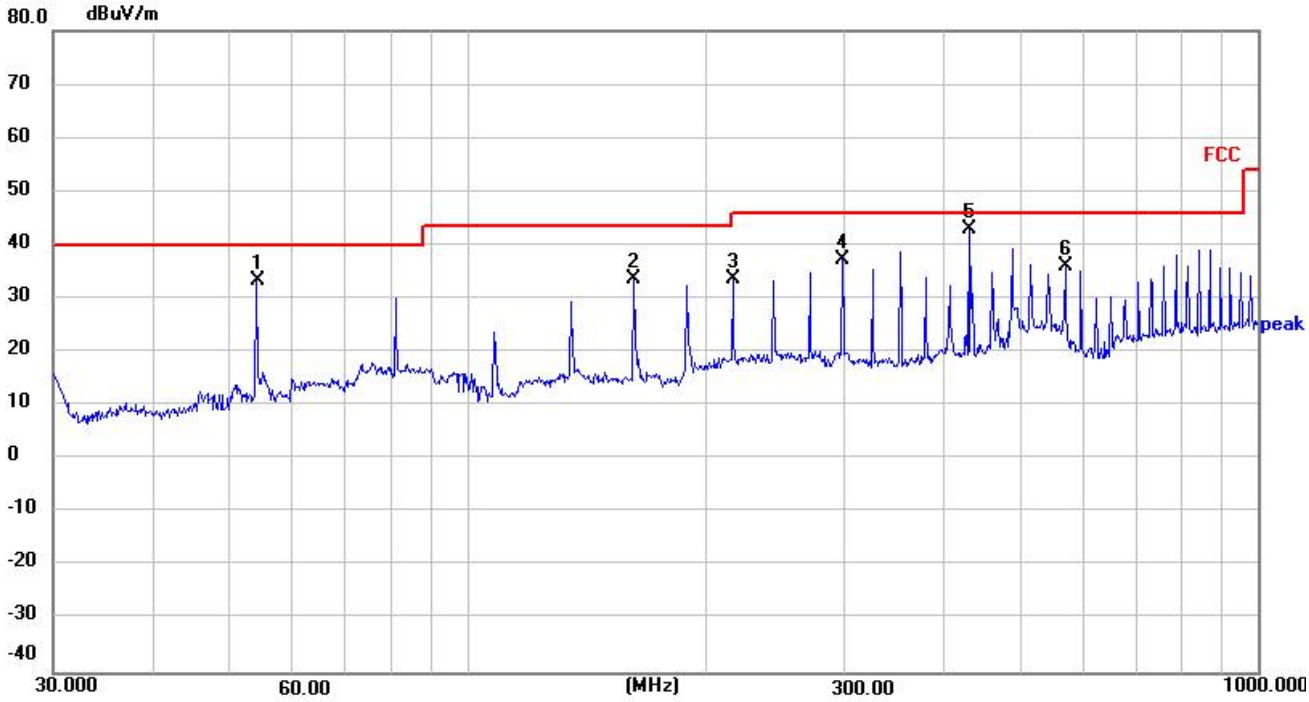
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1	1.6450	74.92	-27.30	47.62	63.27	-15.65	peak	100	360	P
2	3.7594	67.42	-23.07	44.35	69.54	-25.19	peak	100	360	P
3	7.8516	72.51	-30.56	41.95	69.54	-27.59	peak	100	360	P
4	8.6832	69.02	-30.56	38.46	69.54	-31.08	peak	100	360	P
5	15.7179	64.34	-30.41	33.93	69.54	-35.61	peak	100	360	P
6 *	27.2711	84.41	-29.61	54.80	100.00	-45.20	peak	100	360	P

Frequency (MHz)	Peak Level (dBuV/m)	Correct Factor (dB)	Measurement (dBuV/m)	Limitd (dBuV/m)	Margin PK(dB)	Conclusi on
27.145	54.80	-12.65	42.15	100	-57.85	PASS

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Measurement Result=Reading Level +Correct Factor;
Over Limit= Measurement Result- Limit;

Spurious Emission above 30MHz (30MHz~1GHz)

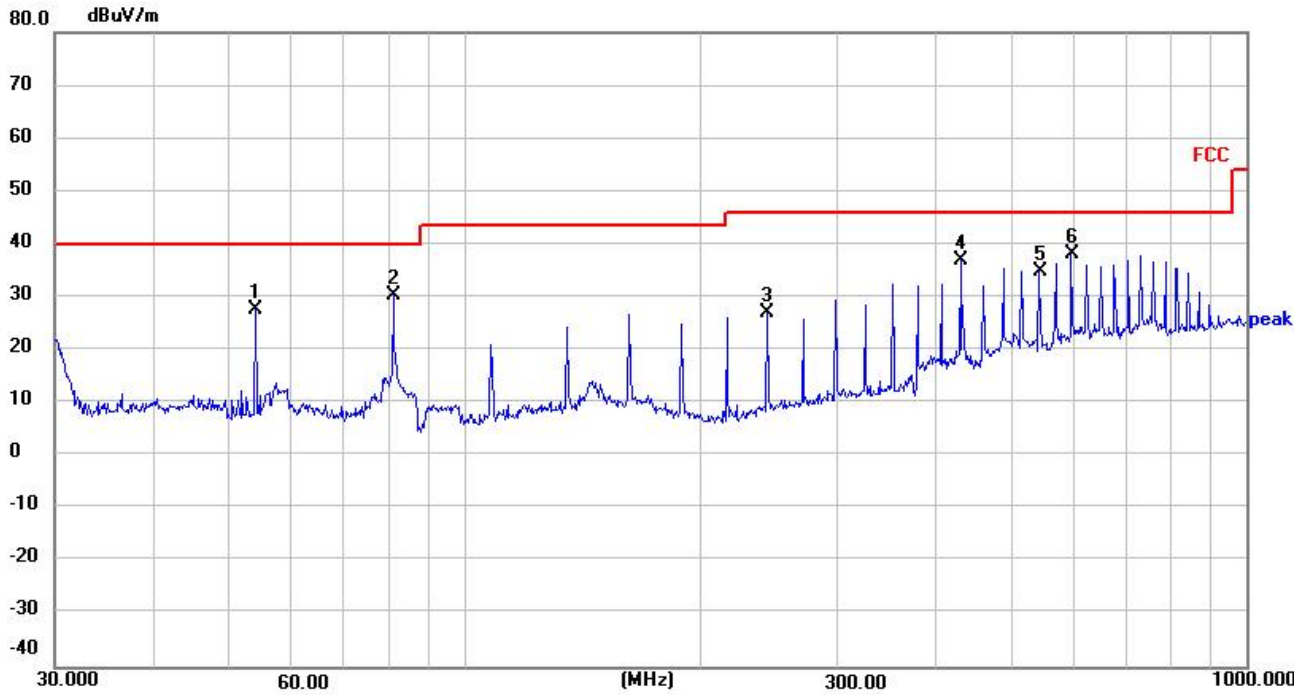
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	54.2609	50.02	-16.77	33.25	40.00	-6.75	QP
2	162.6105	49.52	-16.00	33.52	43.50	-9.98	QP
3	216.7828	52.86	-19.34	33.52	46.00	-12.48	QP
4	298.2681	52.79	-15.63	37.16	46.00	-8.84	QP
5 *	431.0315	55.06	-12.20	42.86	46.00	-3.14	QP
6	570.6100	44.69	-8.70	35.99	46.00	-10.01	QP

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Measurement Result=Reading Level +Correct Factor;
Over Limit= Measurement Result- Limit;

Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	54.0710	44.54	-16.75	27.79	40.00	-12.21	QP
2	81.2117	50.86	-20.64	30.22	40.00	-9.78	QP
3	244.2321	44.70	-17.59	27.11	46.00	-18.89	QP
4	431.0315	49.17	-12.20	36.97	46.00	-9.03	QP
5	543.2742	44.27	-9.48	34.79	46.00	-11.21	QP
6 *	597.2234	45.98	-7.93	38.05	46.00	-7.95	QP

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Measurement Result=Reading Level +Correct Factor;
Over Limit= Measurement Result- Limit;

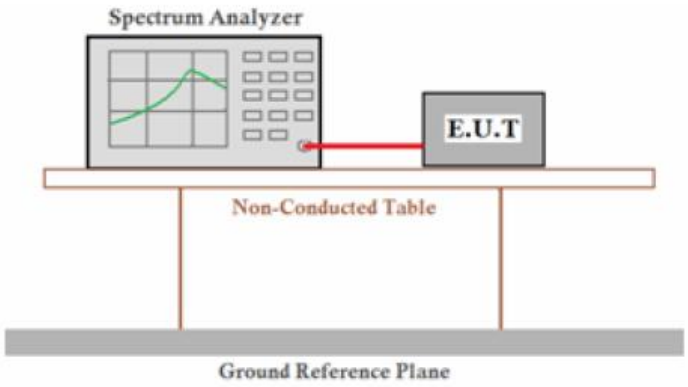
4.4 20dB Bandwidth

Limit

According to FCC Part15 C Section part 15.215(c):

Per 15.215 (C), Intentional radiators operating under the altermative provisions to the general emission limits, as contained in 815.217 through 15.257 and in subpart E of this part, must bc designed to cnsure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is opcrated. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Test Configuration



Test Procedure

The 20dB bandwidth and 99% bandwidth is measured with a spectrum analyzer connected via a receive antenna placed near the EUT while the EUT is operating in transmission mode.

The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

The occupied bandwidth (OBW), that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

EUT Operation during Test

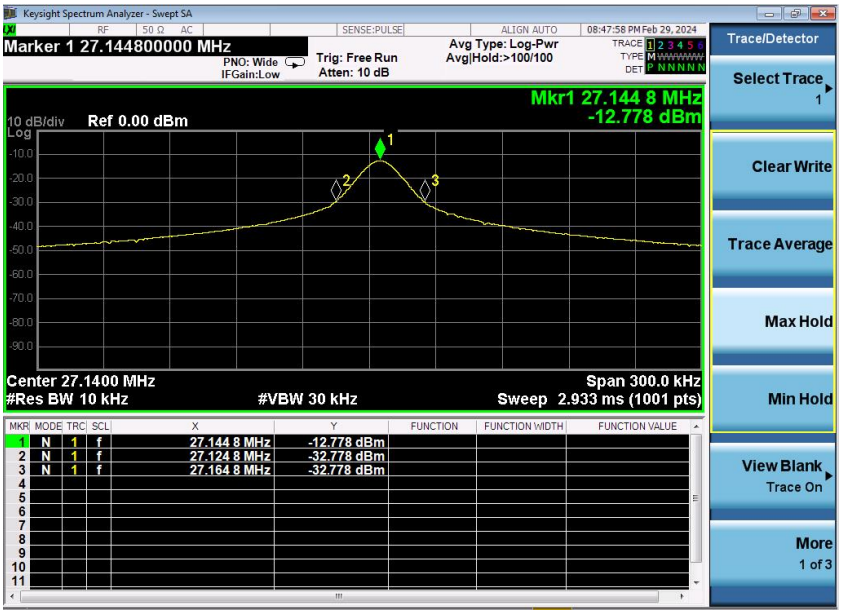
The EUT was programmed to be in continuously transmitting mode.

Test Results

Mode	Frequency (MHz)	-20dB bandwidth (KHz)	Limit (kHz)	Result
TX	27.145	40	N/A	Pass

Test plot as follows:

27.145 MHz



4.5 Antenna Requirement

Standard Applicable

According to FCC Part 15C 15.203

An intentional radiator shall be de-signed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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.

Refer to statement below for compliance.

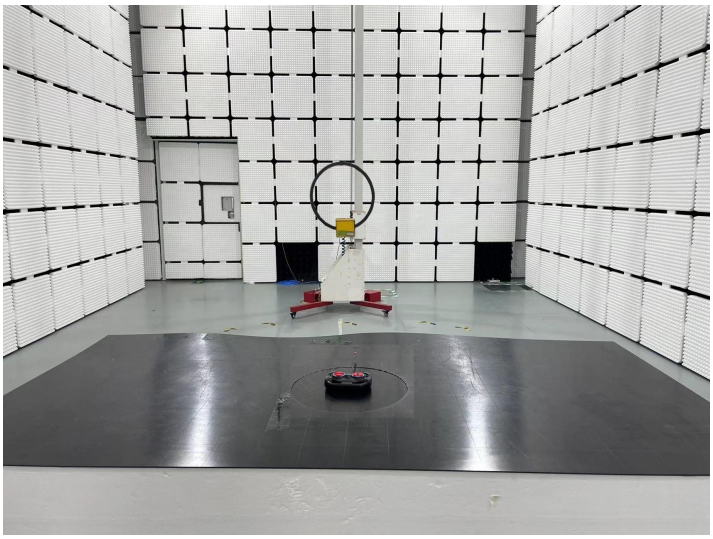
The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

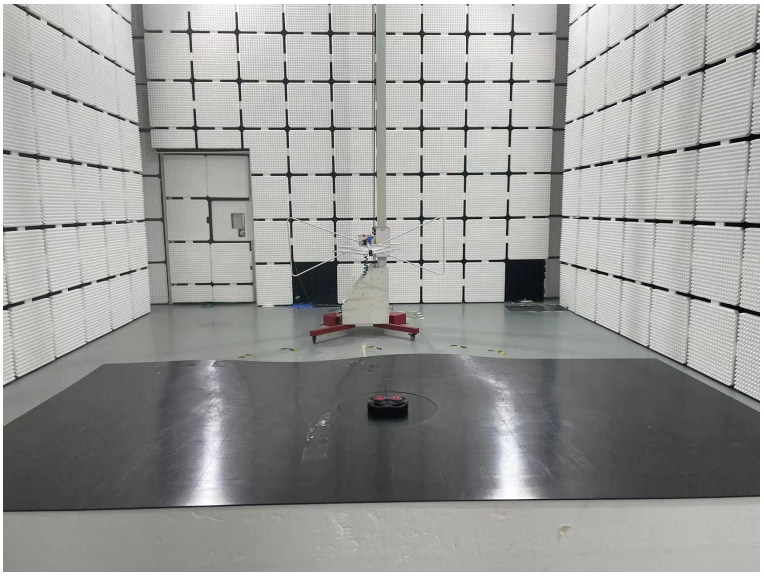
Antenna Connected Construction

The antenna used in this product is a Metal Antenna, The directional gains of antenna used for transmitting is 0 dBi.

Remark:The antenna gain is provided by the customer , if the data provided by the customer is not accurate, BSL Testing Co., Ltd. does not assume any responsibility.

5 Test Setup Photos of the EUT





6 Photos of the EUT

Reference to the report ANNEX A of external photos and ANNEX B of internal photos.

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