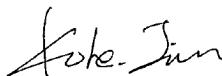


**TEST REPORT**

**Application No.:** GZCR2110021265AT  
**Applicant:** The House of Marley. LLC  
**Address of Applicant:** 3000 Pontiac Trail, Commerce Township, Michigan 48390 United States  
**Manufacturer:** The House of Marley. LLC  
**Address of Manufacturer:** 3000 Pontiac Trail, Commerce Township, Michigan 48390 United States  
**Factory:** Guangdong Leetac Electronics Technology Co., Ltd.  
**Address of Factory:** No.15 Danli Road, South District, Zhongshan, Guangdong, China.  
**Equipment Under Test (EUT):**  
**EUT Name:** GET TOGETHER DUO  
**Model No.:** EM-JA019L  
**Trade Mark:**  
  
**Standard(s) :** 47 CFR Part 15, Subpart C 15.247  
**Date of Receipt:** 2021-10-21  
**Date of Test:** 2021-10-26 to 2021-11-11  
**Date of Issue:** 2020-12-02 (For the original report: GZEM200901523902)  
2021-12-10 (For the copy report: GZEM200901523907)

<b>Test Result:</b>	<b>Pass*</b>
---------------------	--------------

\* In the configuration tested, the EUT complied with the standards specified above.



Kobe Jian  
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2020-12-02		Original
02		2021-12-10		Copy report: Changed IC

Authorized for issue by:			
		Kevin Zhang	
		Kevin Zhang/Project Engineer	
		Ricky Liu	
		Ricky Liu/Reviewer	

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## 2 Test Summary

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Radiated Spurious Emissions (Below 1GHz)		ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass

**Note:**

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

**Remark for copy report GZEM200901523907:**

The report GZEM200901523907 was a copy report based on original report GZEM200901523902.

With the follow changes:

1. Changed IC as below for details:

The digital amplifier IC(IC6) was changed from TAS5805M to NTP8849.

Considered the changed IC, Conducted Emissions at AC Power Line (150kHz-30MHz) and Radiated Spurious Emissions (Below 1GHz) tests were performed on the model EM-JA019L.

Therefore, the new test data was kept in this report GZEM200901523907. For original data please refer to report GZEM200901523902 for more details.



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## 4 General Information

### 4.1 Details of E.U.T.

Power Supply:	DC 15 V powered by AC/DC adapter as below
Model:	ASSA107W-150080
INPUT:	AC 100-240 V, 50/60Hz, 0.45A
OUTPUT:	DC 15 V, 0.8 A
Test Voltage:	AC 120 V, 60 Hz
Cable:	DC input ports
	AUX IN ports
	LINE IN ports with unshielded cables (1.3 m)
Antenna Gain:	0 dBi declared by applicant
Antenna Type:	PCB antenna
Channel Spacing:	1MHz
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channels:	79
Operation Frequency:	2402MHz to 2480MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)
Hardware:	E-9BA1A-01-01
Software:	SV01
S/N:	GZ_SP_20201156068
Test Software	BT_Tool.exe V1.0.5
Power Setting	3 dBm can not be changed by user

### 4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
iPod nano	APPLE	A1446	DCYJRBVF0GP
iPad Air	APPLE	A1474	DMPL92MCFK14
AUX Cable (0.5m length)	/	/	/

### 4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	±2.76dB
Radiated Spurious Emissions (Below 1GHz)	± 5.00dB (3m) ± 4.38dB (10m)

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## 4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,  
198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District,  
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

## 4.5 Test Facility

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

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

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**4.6 Deviation from Standards**

None

**4.7 Abnormalities from Standard Conditions**

None



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## 5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	N/A	N/A
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2021-09-24	2022-09-23
Coaxial Cable	HangTianXing	2m	EMC0107	2020-09-09	2022-09-08
Test Software E3c	Audix	Ver. 5.4.1221b	GZE100-62	N/A	N/A
EMI Test Receiver(9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2021-06-01	2022-05-31

Radiated Spurious Emissions (Below 1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Chamber cable	HangTianXing	N/A	EMC0542	2020-09-09	2022-09-08
Trilog Broadband Antenna(25MHz-1GHz)-Lab	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	SEM003-18	2019-02-22	2022-02-22
Amplifier(9kHz-1.3GHz)	HP	8447F	EMC2065	2021-05-19	2022-05-18
Active Loop Antenna-RED	ETS-Lindgren	6502	EMC2190	2019-12-27	2021-12-26
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
EMI Test Receiver(1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2021-05-26	2022-05-25

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2021-07-05	2022-07-05

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## 6 Radio Spectrum Matter Test Results

### 6.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

Frequency of emission (MHz)	Conducted limit(dB $\mu$ V)	
	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.

Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

#### 6.1.1 E.U.T. Operation

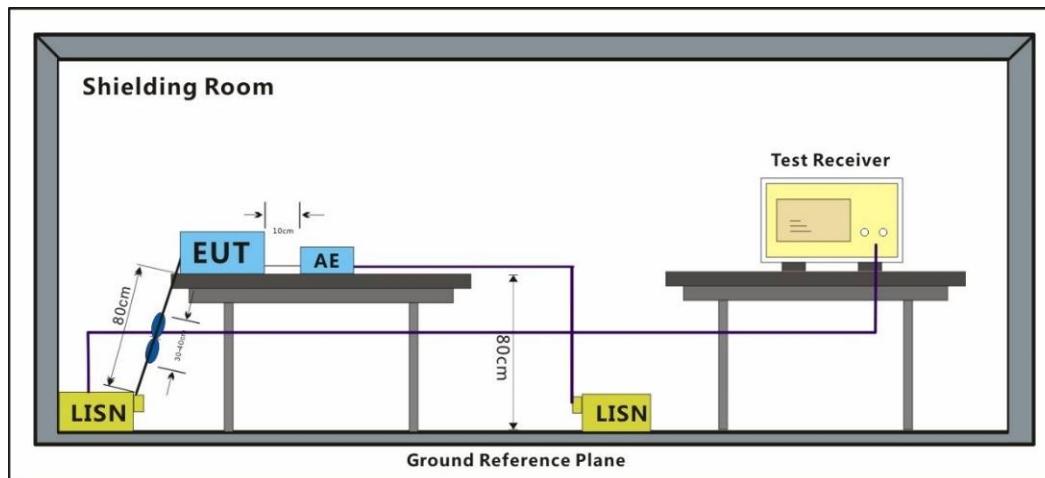
Operating Environment:

Temperature: 25.6 °C      Humidity: 52 % RH      Atmospheric Pressure: 1003 mbar

#### 6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	Charge + TX_non-Hop mode_Keep the EUT in charging and continuously transmitting mode with GFSK modulation, pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report for EM-JA019L only.

#### 6.1.3 Test Setup Diagram



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**6.1.4 Measurement Procedure and Data**

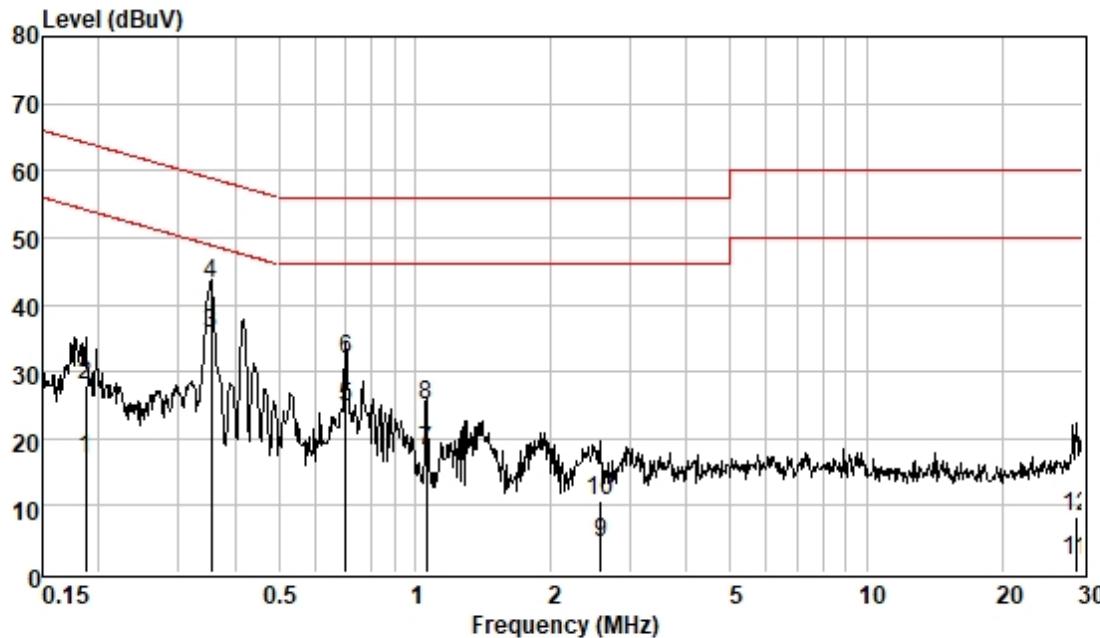
- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) 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 on conducted measurement.

The red line show in graphic is the limit in standard used in this section.

Remark: Measured Level=Read Level+ Cable Loss+ LISN Factor



Test Mode: 01; Line: Live line



Pol :LINE

Mode :

Model :L

Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
0.19	7.21	0.06	9.63	16.90	54.15	-37.25	Average
0.19	18.12	0.06	9.63	27.81	64.15	-36.34	QP
0.35	25.99	0.06	9.63	35.68	48.87	-13.19	Average
0.35	33.34	0.06	9.63	43.03	58.87	-15.84	QP
0.70	14.89	0.07	9.63	24.59	46.00	-21.41	Average
0.70	22.12	0.07	9.63	31.82	56.00	-24.18	QP
1.06	8.46	0.07	9.62	18.15	46.00	-27.85	Average
1.06	15.26	0.07	9.62	24.95	56.00	-31.05	QP
2.58	-5.31	0.14	9.62	4.45	46.00	-41.55	Average
2.58	0.80	0.14	9.62	10.56	56.00	-45.44	QP
29.06	-8.56	0.44	9.97	1.85	50.00	-48.15	Average
29.06	-1.98	0.44	9.97	8.43	60.00	-51.57	QP

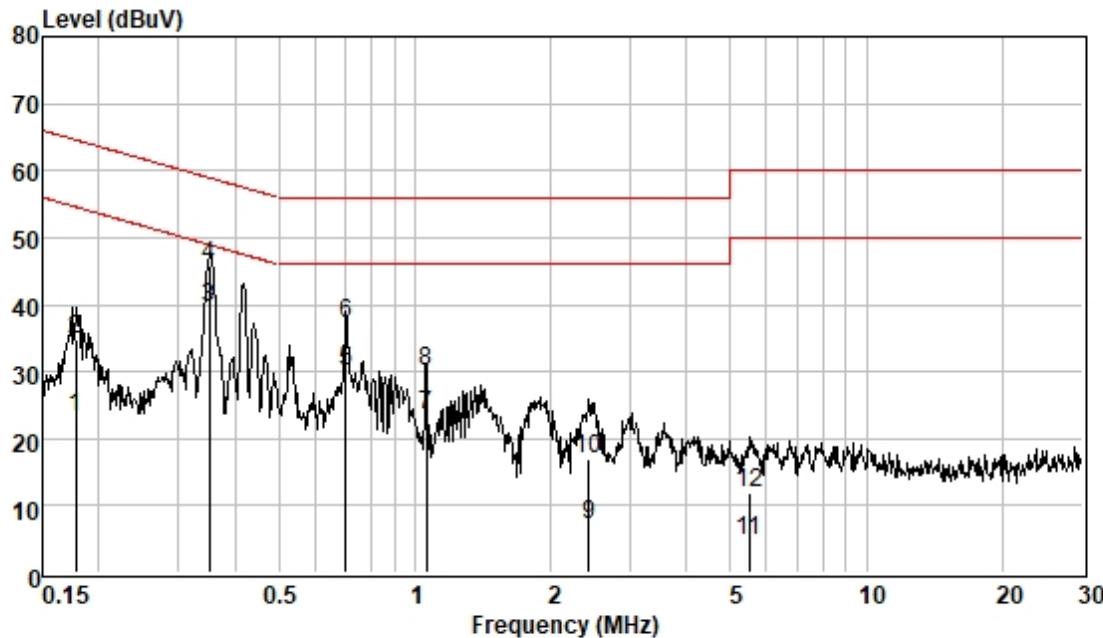
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Test Mode: 01; Line: Neutral Line



Pol :NEUTRAL

Mode :

Model :L

Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
0.18	13.57	0.06	9.55	23.18	54.59	-31.41	Average
0.18	25.24	0.06	9.55	34.85	64.59	-29.74	QP
0.35	30.02	0.06	9.54	39.62	48.96	-9.34	Average
0.35	36.27	0.06	9.54	45.87	58.96	-13.09	QP
0.70	20.37	0.07	9.55	29.99	46.00	-16.01	Average
0.70	27.64	0.07	9.55	37.26	56.00	-18.74	QP
1.06	13.81	0.07	9.55	23.43	46.00	-22.57	Average
1.06	20.48	0.07	9.55	30.10	56.00	-25.90	QP
2.42	-2.41	0.13	9.54	7.26	46.00	-38.74	Average
2.42	7.18	0.13	9.54	16.85	56.00	-39.15	QP
5.51	-5.06	0.19	9.57	4.70	50.00	-45.30	Average
5.51	2.17	0.19	9.57	11.93	60.00	-48.07	QP

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**6.2 Radiated Spurious Emissions (Below 1GHz)**

Test Requirement 47 CFR Part 15, Subpart C 15.205 &amp; 15.209

Test Method: ANSI C63.10 (2013) Section 6.4,6.5,6.6

Test Distance: 3 m

Limit:

Frequency (MHz)	Field strength(microvolts/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

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, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

**6.2.1 E.U.T. Operation**

Operating Environment:

Temperature: 23.9 °C

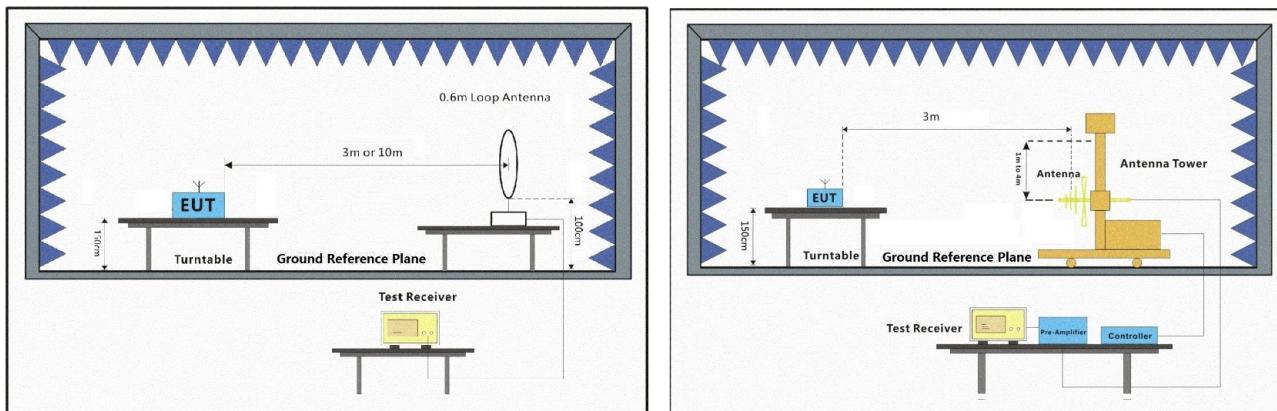
Humidity: 47.5 % RH

Atmospheric Pressure: 1018 mbar

**6.2.2 Test Mode Description**Pre-scan / Mode  
Final test Code**Description**

Final test 07

Charge + TX\_non-Hop mode\_Keep the EUT in charging and continuously transmitting mode with GFSK modulation, p/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report for EM-JA019L and EM-JA019R together.

**6.2.3 Test Setup Diagram**

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**6.2.4 Measurement Procedure and Data**

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 or 10 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. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

**Remark:**

- 1) Through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

- 3) Scan from 9kHz to 1 GHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

The red line show in graphic is the limit in standard used in this section.



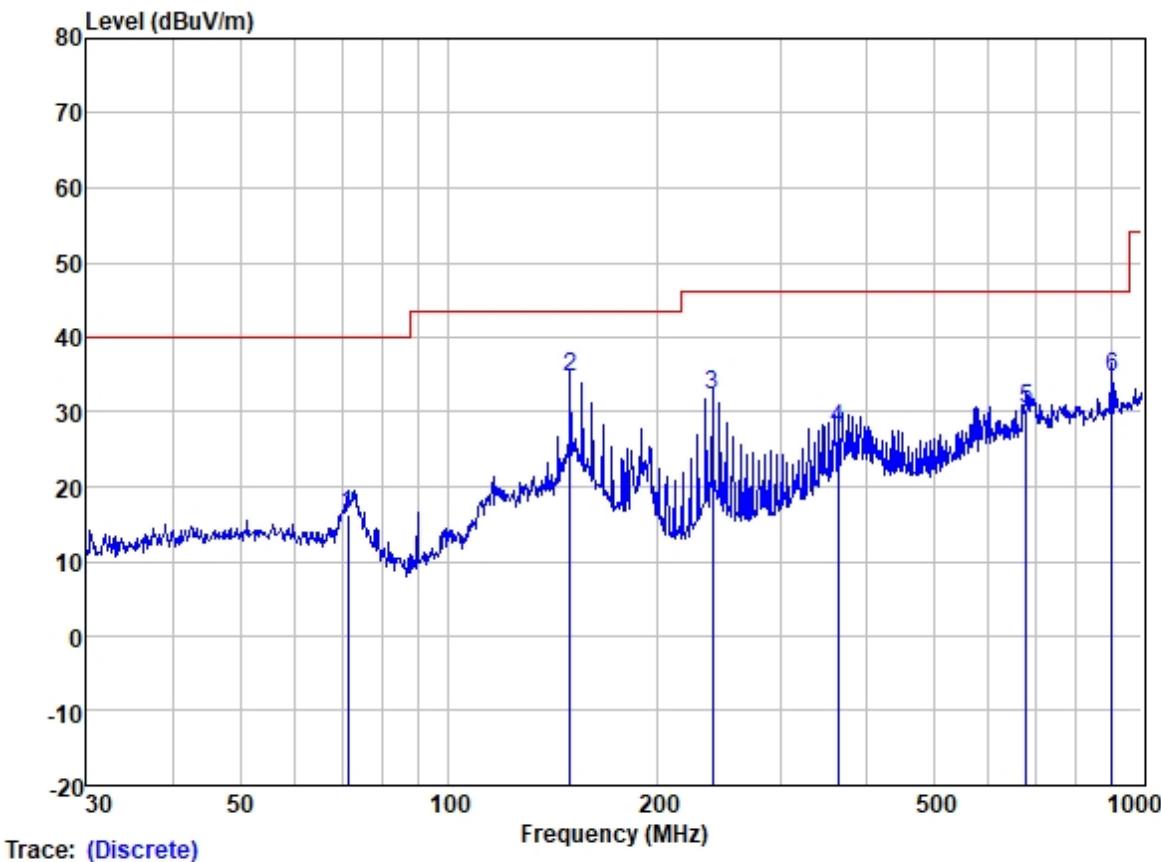
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Test Mode: 07; Polarity: Horizontal



Site : SGS  
Job :  
Model : EM-JA019R EM-JA019L  
Power :  
Test Mode : RT BT

Freq	Read	Antenna	Cable	Preamp	Measured	Limit	Over	Pol/	Remark
	Level	Factor	Loss	Factor	Level	Line	Limit	Phase	
1	71.58	30.47	11.59	1.42	27.12	16.36	40.00	-23.64	HORIZONTAL QP
2	149.49	45.61	13.78	2.22	26.84	34.77	43.50	-8.73	HORIZONTAL QP
3	239.99	44.24	11.90	2.81	26.66	32.29	46.00	-13.71	HORIZONTAL QP
4	364.26	36.25	14.98	3.73	27.15	27.81	46.00	-18.19	HORIZONTAL QP
5	679.96	32.12	20.80	5.70	28.17	30.45	46.00	-15.55	HORIZONTAL QP
6	903.31	32.20	23.33	6.92	27.84	34.61	46.00	-11.39	HORIZONTAL QP

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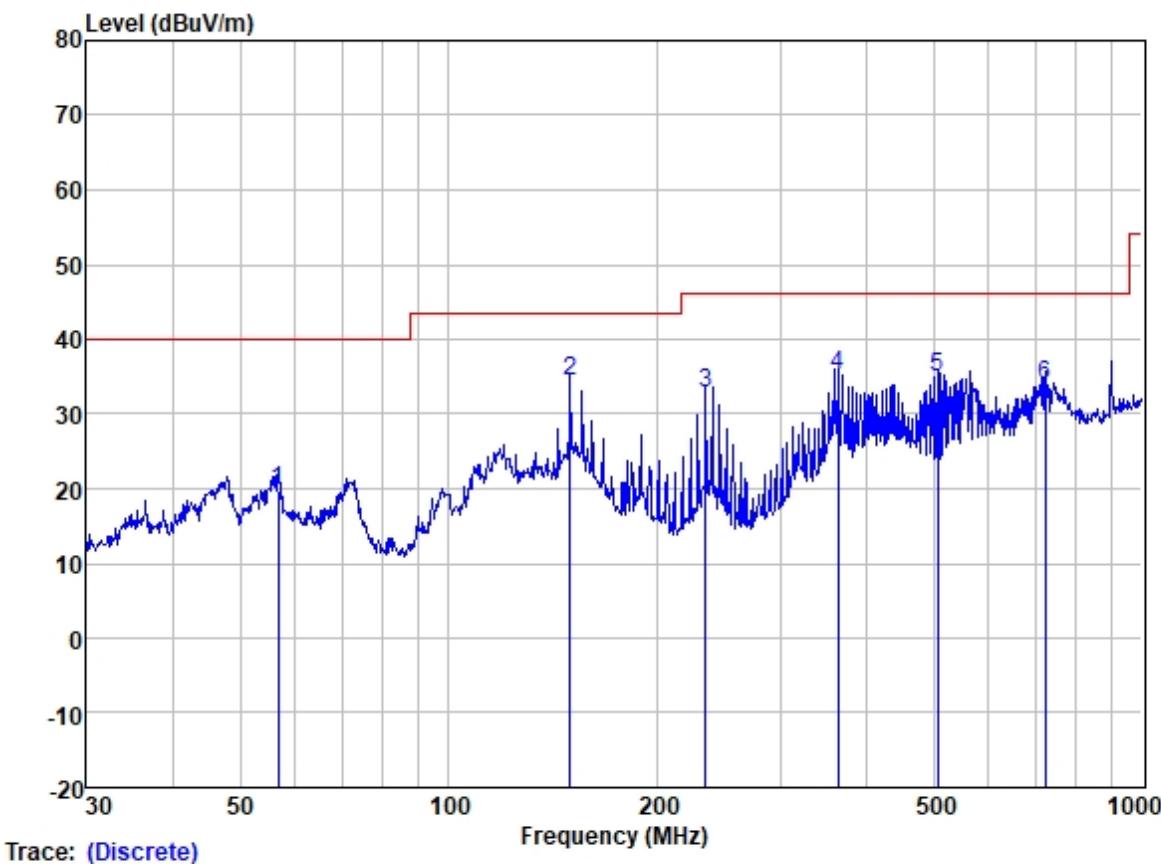
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Test Mode: 07; Polarity: Vertical



Site : SGS  
Job :  
Model : EM-JA019R EM-JA019L  
Power :  
Test Mode : RT BT

Freq	Read	Antenna	Cable	Preamp	Measured	Limit	Over	Pol/	Remark
	Level	Factor	Loss	Factor	Level	Line	Limit	Phase	
1	56.79	31.99	13.66	1.21	27.16	19.70	40.00	-20.30	VERTICAL QP
2	149.49	45.35	13.78	2.22	26.84	34.51	43.50	-8.99	VERTICAL QP
3	234.17	45.48	11.26	2.76	26.68	32.82	46.00	-13.18	VERTICAL QP
4	364.26	43.56	14.98	3.73	27.15	35.12	46.00	-10.88	VERTICAL QP
5	506.48	40.42	18.04	4.43	27.99	34.90	46.00	-11.10	VERTICAL QP
6	724.26	34.36	21.65	5.86	28.13	33.74	46.00	-12.26	VERTICAL QP

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## 7 Test Setup Photo

Refer to Appendix\_SetupPhoto for GZEM200901523907



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## 8 EUT Constructional Details (EUT Photos)

Refer to Appendix – External and Internal Photo for GZCR2110021265AT

- End of the Report -



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