FCC Part15, Subpart B

TEST REPORT

For

LED Driver

MODEL NUMBER: LF-GMD035YSⅤxxxxy, LF-GMD035YBⅤxxxxy
LF-GMD045YSⅤxxxxy, LF-GMD045YBⅤxxxxy
LF-GMD055YSⅤxxxxy, LF-GMD055YBⅤxxxxy
LF-GMD065YSⅤxxxxy, LF-GMD065YBⅤxxxxy

REPORT NUMBER: 4789146341-1

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Prepared for

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	11/20/2019	Initial Issue	

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Summary of Test Results				
Standard	**Test Item**	**Limit**	**Result**	**Remark**
FCC Part15, Subpart B ANSI C63.4-2014	Conducted Disturbance	Class B	PASS	
	Radiated Disturbance below 1 GHz	Class B	PASS	
	Radiated Disturbance above 1 GHz	Class B	N/A	**NOTE (1) NOTE (3)**

Note:
(1) “N/A” denotes test is not applicable in this test report.
(2) This test is only applicable for devices which can be charged or powered by AC power cable.
(3) If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz. If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, measurement shall only be made up to 5 GHz. If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz, whichever is less.

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Lifud Technology Co., Ltd.
Address:	(1/F-3/F, Building F, Kutto Industrial Park) 1/F-3/F, Building B, No.26 Xinhe Road, Xinqiao Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong. 518104. China

Manufacturer Information

Company Name:	Lifud Technology Co., Ltd.
Address:	(1/F-3/F, Building F, Kutto Industrial Park) 1/F-3/F, Building B, No.26 Xinhe Road, Xinqiao Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong. 518104. China

EUT Information

EUT Name:	LED Driver
Serial Model:	LF-GMD035YSⅤxxxxy,LF-GMD035YBⅤxxxxy LF-GMD045YSⅤxxxxy,LF-GMD045YBⅤxxxxy LF-GMD055YSⅤxxxxy,LF-GMD055YBⅤxxxxy LF-GMD065YSⅤxxxxy,LF-GMD065YBⅤxxxxy
Brand:	LiFud®
Sample Received Date:	November 11, 2019
Sample Status:	Normal
Sample ID:	2680714
Date of Tested:	November 11, 2019~ November 20, 2019

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC Part15, Subpart B	PASS

Prepared By:

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2. TEST METHODOLOGY

All tests were performed in accordance with the standard FCC Part15 Subpart B & ANSI C63.4-2014.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Recognized No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules **IC (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320. **VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011

Note: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China

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4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Measurement Frequency Range	K	U(dB)
Conducted emissions from the AC mains power ports	0.15MHz ~ 30MHz	2	3.62
Radiated emissions	30MHz ~ 1GHz	2	4.00
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.			

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	LED Driver
Series Model	LF-GMD035YS V xxxxy,LF-GMD035YB V xxxxy LF-GMD045YS V xxxxy,LF-GMD045YB V xxxxy LF-GMD055YS V xxxxy,LF-GMD055YB V xxxxy LF-GMD065YS V xxxxy,LF-GMD065YB V xxxxy
Model Difference	Please see note.
Brand Name	LiFud®
Rating	Please see note.
Tested Model	LF-GMD045YB V 1100U, LF-GMD045YS V 1100U, LF-GMD065YB V 1650U, LF-GMD065YS V 1650U,The modes have the highest rated power with the same transformer and layout we selected to do the representative test.

Note:

NO.	Model	Vin (VAC)	I in (A Max)	Pin (W Max)	Vout (VDC)	I rated (mA)	U out	Transformer	Layout
1	LF-GMD035YS V xxxxy	100-277	0.4	40	25-42	100-800	55	T1	L1
2	LF-GMD035YB V xxxxy	100-277	0.4	40	25-42	100-800	55	T2	L2
3	LF-GMD045YS V xxxxy	100-277	0.6	55	25-42	800-1100	55	T1	L1
4	LF-GMD045YB V xxxxy	100-277	0.6	55	25-42	800-1100	55	T2	L2
5	LF-GMD055YS V xxxxy	100-277	0.7	68	25-42	1100-1300	55	T3	L1
6	LF-GMD055YB V xxxxy	100-277	0.7	68	25-42	1100-1300	55	T4	L2
7	LF-GMD065YS V xxxxy	100-277	0.9	86	25-42	1100-1650	55	T3	L1
8	LF-GMD065YB V xxxxy	100-277	0.90	86	25-42	1100-1650	55	T4	L2

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5.2. TEST MODE

Test Mode	Description
Mode 1	Connect a LED panel lamp at output of LF-GMD045YB V 1100U with highest luminance
Mode 2	Connect a LED panel lamp at output of LF-GMD045YS V 1100U with highest luminance
Mode 3	Connect a LED panel lamp at output of LF-GMD065YB V 1650U with highest luminance
Mode 4	Connect a LED panel lamp at output of LF-GMD065YS V 1650U with highest luminance

5.3. EUT ACCESSORY

I/O PORTS AND CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	/	/	/	/	/

ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	/	/	/	/

5.4. SETUP DIAGRAM AND SUPPORT UNITS FOR SYSTEM TEST

Mode 1~ Mode 4

C-1

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The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Specification	Series No.	Note
1	LED panel lamp	/	/	55W, max		
2	LED panel lamp	/	/	86W, max		

The following cables were used to form a representative test configuration during the tests.

Item	Type of cable	Shielded Type	Ferrite Core	Length
1	DC	NO	NO	1.0m

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6. MEASURING EQUIPMENT AND SOFTWARE USED

Conducted Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
EMI Test Receiver	R&S	ESR3	101961	Dec. 10, 2018	Dec. 10, 2019
Two-Line V-Network	R&S	ENV216	101983	Dec. 10, 2018	Dec. 10, 2019
Software					
Description			Manufacturer	Name	Version
Test Software for Conducted Emissions			Farad	EZ-EMC	Ver. UL-3A1
Radiated Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Dec. 10, 2018	Dec. 10, 2019
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Sept. 17, 2018	Sept. 17, 2021
Preamplifier	HP	8447D	2944A09099	Dec. 10, 2018	Dec. 10, 2019
Software					
Description			Manufacturer	Name	Version
Test Software for Radiated Emissions			Farad	EZ-EMC	Ver. UL-3A1

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7. EMISSION TEST

7.1. CONDUCTED EMISSIONS MEASUREMENT

LIMITS

CFR 47 FCC Part15 Subpart B ICES-003 Issue 6				
FREQUENCY (MHz)	Class A (dBμV)		Class B (dBμV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46*
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

TEST PROCEDURE

1. The testing follows the guidelines in ANSI C63.4-2014.

2. The EUT was placed on the top of a rotating table 0.8 meters above the horizontal ground plane and being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

3. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

4. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

5. Cables of hand-operated devices, such as keyboards and mice, shall be placed as for normal used.

6. LISN at least 80 cm from nearest part of EUT chassis.

7. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

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TEST SETUP

For the actual test configuration, please refer to Appendix I: Photographs of Test Configuration.

TEST ENVIRONMENT

Temperature	22.0°C	Relative Humidity	51%
Atmosphere Pressure	101kPa		

TEST MODE

Pre-test Mode:	Mode 1 ~ Mode 4
Final Test Mode:	Mode 1 ~ Mode 4

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TEST RESULTS

Conducted Emissions			
Test Mode:	Mode 1	Phase:	Line
Test Voltage	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1508	40.92	9.61	50.53	65.96	-15.43	QP
2	0.1508	22.22	9.61	31.83	55.96	-24.13	AVG
3	0.3706	22.46	9.60	32.06	58.49	-26.43	QP
4	0.3706	9.46	9.60	19.06	48.49	-29.43	AVG
5	0.5171	21.14	9.60	30.74	56.00	-25.26	QP
6	0.5171	8.87	9.60	18.47	46.00	-27.53	AVG
7	0.5924	22.13	9.60	31.73	56.00	-24.27	QP
8	0.5924	7.40	9.60	17.00	46.00	-29.00	AVG
9	4.6054	21.20	9.67	30.87	56.00	-25.13	QP
10	4.6054	12.71	9.67	22.38	46.00	-23.62	AVG
11	18.0138	34.07	10.02	44.09	60.00	-15.91	QP
12	18.0138	25.14	10.02	35.16	50.00	-14.84	AVG

Note: 1. Result = Reading +Correct (Insertion Loss + Cable Loss + Attenuator Factor)
2. Margin = Result - Limit

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Conducted Emissions			
Test Mode:	Mode 1	Phase:	Neutral
Test Voltage	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	41.00	9.60	50.60	66.00	-15.40	QP
2	0.1500	22.90	9.60	32.50	56.00	-23.50	AVG
3	0.2210	32.10	9.60	41.70	62.78	-21.08	QP
4	0.2210	21.50	9.60	31.10	52.78	-21.68	AVG
5	0.2816	26.12	9.60	35.72	60.77	-25.05	QP
6	0.2816	11.26	9.60	20.86	50.77	-29.91	AVG
7	0.5912	20.37	9.60	29.97	56.00	-26.03	QP
8	0.5912	6.99	9.60	16.59	46.00	-29.41	AVG
9	6.4530	22.43	9.71	32.14	60.00	-27.86	QP
10	6.4530	13.96	9.71	23.67	50.00	-26.33	AVG
11	19.1772	39.16	10.19	49.35	60.00	-10.65	QP
12	19.1772	31.35	10.19	41.54	50.00	-8.46	AVG

Note: 1. Result = Reading +Correct (Insertion Loss + Cable Loss + Attenuator Factor)
2. Margin = Result – Limit

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Conducted Emissions			
Test Mode:	Mode 2	Phase:	Line
Test Voltage	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1768	46.79	9.61	56.40	64.63	-8.23	QP
2	0.1768	28.87	9.61	38.48	54.63	-16.15	AVG
3	0.2630	34.79	9.60	44.39	61.34	-16.95	QP
4	0.2630	14.43	9.60	24.03	51.34	-27.31	AVG
5	0.5596	23.79	9.60	33.39	56.00	-22.61	QP
6	0.5596	7.39	9.60	16.99	46.00	-29.01	AVG
7	1.8380	20.63	9.62	30.25	56.00	-25.75	QP
8	1.8380	10.79	9.62	20.41	46.00	-25.59	AVG
9	5.2472	26.09	9.67	35.76	60.00	-24.24	QP
10	5.2472	13.34	9.67	23.01	50.00	-26.99	AVG
11	19.0996	30.77	10.07	40.84	60.00	-19.16	QP
12	19.0996	17.30	10.07	27.37	50.00	-22.63	AVG

Note: 1. Result = Reading +Correct (Insertion Loss + Cable Loss + Attenuator Factor)
2. Margin = Result - Limit

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Conducted Emissions			
Test Mode:	Mode 2	Phase:	Neutral
Test Voltage	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1542	48.49	9.60	58.09	65.77	-7.68	QP
2	0.1542	30.26	9.60	39.86	55.77	-15.91	AVG
3	0.1771	46.89	9.60	56.49	64.62	-8.13	QP
4	0.1771	30.12	9.60	39.72	54.62	-14.90	AVG
5	0.2359	40.20	9.60	49.80	62.24	-12.44	QP
6	0.2359	27.21	9.60	36.81	52.24	-15.43	AVG
7	0.2953	39.61	9.60	49.21	60.37	-11.16	QP
8	0.2953	24.26	9.60	33.86	50.37	-16.51	AVG
9	0.3975	32.95	9.60	42.55	57.91	-15.36	QP
10	0.3975	16.37	9.60	25.97	47.91	-21.94	AVG
11	5.6245	26.60	9.69	36.29	60.00	-23.71	QP
12	5.6245	13.71	9.69	23.40	50.00	-26.60	AVG

Note: 1. Result = Reading +Correct (Insertion Loss + Cable Loss + Attenuator Factor)
2. Margin = Result - Limit

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Conducted Emissions			
Test Mode:	Mode 3	Phase:	Line
Test Voltage	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	47.87	9.61	57.48	66.00	-8.52	QP
2	0.1500	37.84	9.61	47.45	56.00	-8.55	AVG
3	0.1620	44.33	9.61	53.94	65.36	-11.42	QP
4	0.1620	31.07	9.61	40.68	55.36	-14.68	AVG
5	0.1833	46.94	9.61	56.55	64.33	-7.78	QP
6	0.1833	29.94	9.61	39.55	54.33	-14.78	AVG
7	0.2179	40.55	9.60	50.15	62.90	-12.75	QP
8	0.2180	26.55	9.60	36.15	52.89	-16.74	AVG
9	0.2757	40.46	9.60	50.06	60.94	-10.88	QP
10	0.2758	30.46	9.60	40.06	50.94	-10.88	AVG
11	6.6779	22.46	9.71	32.17	60.00	-27.83	QP
12	6.6779	11.46	9.71	21.17	50.00	-28.83	AVG

Note: 1. Result = Reading +Correct (Insertion Loss + Cable Loss + Attenuator Factor)
2. Margin = Result - Limit

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Conducted Emissions			
Test Mode:	Mode 3	Phase:	Neutral
Test Voltage	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	47.74	9.60	57.34	66.00	-8.66	QP
2	0.1500	39.15	9.60	48.75	56.00	-7.25	AVG
3	0.1844	45.54	9.60	55.14	64.29	-9.15	QP
4	0.1864	37.85	9.60	47.45	54.20	-6.75	AVG
5	0.2268	41.16	9.60	50.76	62.57	-11.81	QP
6	0.2268	32.55	9.60	42.15	52.57	-10.42	AVG
7	0.2467	40.87	9.60	50.47	61.87	-11.40	QP
8	0.2467	26.37	9.60	35.97	51.87	-15.90	AVG
9	0.4304	31.45	9.60	41.05	57.24	-16.19	QP
10	0.4304	18.88	9.60	28.48	47.24	-18.76	AVG
11	6.5300	24.68	9.70	34.38	60.00	-25.62	QP
12	6.5300	12.75	9.70	22.45	50.00	-27.55	AVG

Note: 1. Result = Reading +Correct (Insertion Loss + Cable Loss + Attenuator Factor)
2. Margin = Result - Limit

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Conducted Emissions			
Test Mode:	Mode 4	Phase:	Line
Test Voltage	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1580	46.39	9.61	56.00	65.57	-9.57	QP
2	0.1580	28.89	9.61	38.50	55.57	-17.07	AVG
3	0.1741	46.58	9.61	56.19	64.76	-8.57	QP
4	0.1741	29.03	9.61	38.64	54.76	-16.12	AVG
5	0.3913	33.72	9.60	43.32	58.04	-14.72	QP
6	0.3913	16.52	9.60	26.12	48.04	-21.92	AVG
7	3.2515	34.89	9.64	44.53	56.00	-11.47	QP
8	3.2515	23.80	9.64	33.44	46.00	-12.56	AVG
9	6.3821	34.53	9.71	44.24	60.00	-15.76	QP
10	6.3821	23.92	9.71	33.63	50.00	-16.37	AVG
11	21.1709	34.17	10.08	44.25	60.00	-15.75	QP
12	21.1709	21.33	10.08	31.41	50.00	-18.59	AVG

Note: 1. Result = Reading +Correct (Insertion Loss + Cable Loss + Attenuator Factor)
2. Margin = Result - Limit

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Conducted Emissions			
Test Mode:	Mode 4	Phase:	Neutral
Test Voltage	AC 120V/60Hz		

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1502	49.55	9.60	59.15	65.99	-6.84	QP
2	0.1502	26.75	9.60	36.35	55.99	-19.64	AVG
3	0.1747	46.51	9.60	56.11	64.73	-8.62	QP
4	0.1747	29.05	9.60	38.65	54.73	-16.08	AVG
5	0.2329	38.45	9.60	48.05	62.35	-14.30	QP
6	0.2329	23.94	9.60	33.54	52.35	-18.81	AVG
7	3.7897	27.30	9.66	36.96	56.00	-19.04	QP
8	3.7897	16.53	9.66	26.19	46.00	-19.81	AVG
9	6.5319	28.60	9.70	38.30	60.00	-21.70	QP
10	6.5319	18.45	9.70	28.15	50.00	-21.85	AVG
11	20.4760	28.43	10.23	38.66	60.00	-21.34	QP
12	20.4760	15.01	10.23	25.24	50.00	-24.76	AVG

Note: 1. Result = Reading +Correct (Insertion Loss + Cable Loss + Attenuator Factor)
2. Margin = Result - Limit

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7.2. RADIATED EMISSIONS MEASUREMENT

LIMITS

Below 1 GHz

CFR 47 FCC Part15 Subpart B ICES-003 Issue 6			
Frequency (MHz)	Class A		Class B
	Field strength (uV/m) (at 10m)	Field strength (dBuV/m) (at 3m)	Field strength (dBuV/m) (at 3m)
30 - 88	90	49.5	40
88 - 216	150	53.9	43.5
216 - 960	210	56.9	46
Above 960	300	60	54

Above 1 GHz

CFR 47 FCC Part15 Subpart B ICES-003 Issue 6						
Frequency (MHz)	Class A				Class B	
	(dBuV/m) (at 3m)		(dBuV/m) (at 10m)		(dBuV/m) (at 3m)	
	Peak	Average	Peak	Average	Peak	Average
Above 1000	80	60	69.5	49.5	74	54

Test Frequency Range of Radiated Disturbance Measurement

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 - 108	1000
108 - 500	2000
500 - 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

NOTE:

(1) The limit for radiated test was performed according to FCC Part 15, Subpart B;
(2) The tighter limit applies at the band edges;
(3) Emission level (dBuV/m) = 20log Emission level (uV/m),
3m Emission level = 10m Emission level + 20log(10m/3m);

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TEST SETUP AND PROCEDURE

Below 1G and above 30MHz

The setting of the spectrum analyser

RBW	120K
VBW	300K
Sweep	Auto
Detector	Peak and QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.4-2014.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp was used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm above ground.

4. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

5. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

6. Cables of hand-operated devices, such as keyboards and mice, shall be placed as for normal used.

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

8. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

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TEST ENVIRONMENT

Radiated Emissions - Below 1 GHz		Radiated Emissions - Above 1 GHz	
Temperature:	25.0°C	Temperature:	/
Humidity:	54%	Humidity:	/
Atmosphere Pressure	101kPa	Atmosphere Pressure	/

TEST MODE

Radiated Emissions - Below 1 GHz		Radiated Emissions - Above 1 GHz	
Pre-test Mode:	Mode 1 & Mode 4	Pre-test Mode:	/
Final Test Mode:	Mode 1 & Mode 4	Final Test Mode:	/

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TEST RESULTS

Radiated Emissions – Below 1GHz			
Measurement Method	Radiated	Polar:	Horizontal
Test Mode:	Mode 1	Test Voltage:	AC 120V/60Hz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.0000	43.54	-17.00	26.54	40.00	-13.46	QP
2	91.1100	37.13	-21.16	15.97	43.50	-27.53	QP
3	151.2500	45.36	-18.20	27.16	43.50	-16.34	QP
4	196.8400	43.75	-16.32	27.43	43.50	-16.07	QP
5	309.3599	45.05	-13.80	31.25	46.00	-14.75	QP
6	357.8599	47.85	-13.06	34.79	46.00	-11.21	QP

Note: 1. Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
2. Margin = Result - Limit

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Radiated Emissions – Below 1GHz			
Measurement Method	Radiated	Polar:	Vertical
Test Mode:	Mode 1	Test Voltage:	AC 120V/60Hz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.0000	48.75	-17.00	31.75	40.00	-8.25	QP
2	98.8700	41.13	-21.74	19.39	43.50	-24.11	QP
3	152.2200	47.93	-18.14	29.79	43.50	-13.71	QP
4	200.7200	42.08	-16.18	25.90	43.50	-17.60	QP
5	328.7600	48.46	-13.57	34.89	46.00	-11.11	QP
6	357.8599	49.89	-13.06	36.83	46.00	-9.17	QP

Note: 1. Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
2. Margin = Result – Limit

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Radiated Emissions – Below 1GHz			
Measurement Method	Radiated	Polar:	Horizontal
Test Mode:	Mode 2	Test Voltage:	AC 120V/60Hz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.0000	39.71	-17.00	22.71	40.00	-17.29	QP
2	145.4299	53.04	-18.70	34.34	43.50	-9.16	QP
3	226.9100	57.72	-17.42	40.30	46.00	-5.70	QP
4	385.0200	55.43	-12.58	42.85	46.00	-3.15	QP
5	519.8500	36.29	-9.98	26.31	46.00	-19.69	QP
6	756.5300	28.86	-5.85	23.01	46.00	-22.99	QP

Note: 1. Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
2. Margin = Result - Limit

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Radiated Emissions – Below 1GHz			
Measurement Method	Radiated	Polar:	Vertical
Test Mode:	Mode 2	Test Voltage:	AC 120V/60Hz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.0000	47.80	-17.00	30.80	40.00	-9.20	QP
2	79.4700	47.32	-20.48	26.84	40.00	-13.16	QP
3	235.6400	56.23	-17.60	38.63	46.00	-7.37	QP
4	384.0500	52.91	-12.60	40.31	46.00	-5.69	QP
5	516.9400	35.85	-10.04	25.81	46.00	-20.19	QP
6	738.1000	28.93	-6.10	22.83	46.00	-23.17	QP

Note: 1. Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
2. Margin = Result - Limit

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Radiated Emissions – Below 1GHz			
Measurement Method	Radiated	Polar:	Horizontal
Test Mode:	Mode 3	Test Voltage:	AC 120V/60Hz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.5800	44.52	-18.04	26.48	40.00	-13.52	QP
2	95.9600	53.19	-21.51	31.68	43.50	-11.82	QP
3	191.0200	42.41	-16.45	25.96	43.50	-17.54	QP
4	244.3700	48.02	-16.64	31.38	46.00	-14.62	QP
5	374.3500	48.52	-12.73	35.79	46.00	-10.21	QP
6	604.2400	24.64	-8.38	16.26	46.00	-29.74	QP

Note: 1. Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
2. Margin = Result - Limit

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Radiated Emissions – Below 1GHz			
Measurement Method	Radiated	Polar:	Vertical
Test Mode:	Mode 3	Test Voltage:	AC 120V/60Hz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	41.6400	55.88	-18.01	37.87	40.00	-2.13	QP
2	95.9600	54.25	-21.51	32.74	43.50	-10.76	QP
3	151.2500	44.88	-18.20	26.68	43.50	-16.82	QP
4	228.8500	49.70	-17.50	32.20	46.00	-13.80	QP
5	348.1600	49.02	-13.21	35.81	46.00	-10.19	QP
6	611.0300	26.09	-8.25	17.84	46.00	-28.16	QP

Note: 1. Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
2. Margin = Result - Limit

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Radiated Emissions – Below 1GHz			
Measurement Method	Radiated	Polar:	Horizontal
Test Mode:	Mode 4	Test Voltage:	AC 120V/60Hz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	96.9300	56.39	-21.58	34.81	43.50	-8.69	QP
2	236.6100	54.00	-17.47	36.53	46.00	-9.47	QP
3	338.4600	39.77	-13.40	26.37	46.00	-19.63	QP
4	366.5900	41.41	-12.88	28.53	46.00	-17.47	QP
5	527.6100	32.47	-9.82	22.65	46.00	-23.35	QP
6	698.3300	29.42	-6.58	22.84	46.00	-23.16	QP

Note: 1. Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
2. Margin = Result - Limit

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Radiated Emissions – Below 1GHz			
Measurement Method	Radiated	Polar:	Vertical
Test Mode:	Mode 4	Test Voltage:	AC 120V/60Hz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	37.7599	50.14	-17.79	32.35	40.00	-7.65	QP
2	97.9000	59.55	-21.66	37.89	43.50	-5.61	QP
3	239.5200	53.96	-17.07	36.89	46.00	-9.11	QP
4	367.5600	45.54	-12.86	32.68	46.00	-13.32	QP
5	535.3700	38.57	-9.67	28.90	46.00	-17.10	QP
6	713.8500	30.81	-6.28	24.53	46.00	-21.47	QP

Note: 1. Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
2. Margin = Result - Limit

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APPENDIX I: PHOTOGRAPHS OF TEST CONFIGURATION

Conducted Emissions test setup photo

LF-GMD045YS & LF-GMD045YB

LF-GMD045YS & LF-GMD045YB

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LF-GMD065YS & LF-GMD065YB

LF-GMD065YS & LF-GMD065YB

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Radiated Emissions below 1GHz test setup photo

LF-GMD045YS & LF-GMD045YB

LF-GMD045YS & LF-GMD045YB

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LF-GMD065YS & LF-GMD065YB

LF-GMD065YS & LF-GMD065YB

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APPENDIX II: PHOTOGRAPHS OF THE EUT

External Photos

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Internal Photos

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