TEST REPORT

Applicant:	Shenzhen Baolujie Bicycle Co., LTD. Dongguan Branch
Address of Applicant:	3 / F, Building A, Gongye 3rd Road, Hengjiangxia Village, Changping Town, Dongguan City
Manufacturer:	Shenzhen Baolujie Bicycle Co., LTD. Dongguan Branch
Address of Applicant:	3 / F, Building A, Gongye 3rd Road, Hengjiangxia Village, Changping Town, Dongguan City

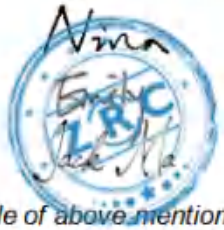
Equipment Under Test (EUT)

Product Name:	Electric bicycle
Model No.:	BLJ-DZ2001,BLJ-DZ2005,BLJ-DZ-2017,DP-2609,DP-2601,DZ-2003,DP-2610,DZ-2020,DZ-2028,DZ-2026,DS-2606,DS-2607, DP-2608,DP-2614,DZ-2027,DZ-2005,DZ-2021,DZ-2029, DZ-2012,DZ-2603,DP-2610,DZ-2008,DP-2609,DP-2615, DP-2616,DS-2608,DP-2003-1,DP-2003-2,BLJ2029,DZ-2001, DS-1201
Applicable standards:	EN IEC 61000-6-1:2019; EN IEC 61000-6-3:2021 ; EN IEC 61000-3-2:2019+A1:2021;EN 61000-3-3:2013+A1:2019
Date of sample receipt:	Oct. 13, 2022
Date of Test:	Oct. 13, 2022 To Oct. 19, 2022
Date of report issued:	Oct. 19, 2022
Test Result :	PASS *

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

CE

Prepared by(Engineer):	Nina Deng
Reviewer(Supervisor):	Emily Wang
Approved(Manager):	Jack Ma



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of ZRC International Certification (Shenzhen) Co., Ltd

Version

Version No.	Date	Description
00	*Oct. 19, 2022*	*Original*

2 Contents

3 Test Summary

Test Item	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission	EN 61000-6-3	CISPR 16-2-3	Class B	PASS
Conducted Emission	EN 61000-6-3	CISPR 16-2-1	Class B	PASS
Harmonic Current Emission	EN 61000-3-2	EN 61000-3-2	Class A	N/A
Voltage Fluctuations and Flicker	EN 61000-3-3	EN 61000-3-3	Clause 5 of EN 61000-3-3	N/A
Electrostatic discharges	EN 61000-6-1	EN 61000-4-2	Contact ±2, 4 kV Air±2, 4, 8 kV	PASS
Radiated Immunity	EN 61000-6-1	EN 61000-4-3	3V/m 80%, 1kHz, AM	PASS
Electrical Fast Transients	EN 61000-6-1	EN 61000-4- 4	AC±1.0kV Earth ±2.0kV Signal Line 0.5kV	PASS
Surges	EN 61000-6-1	EN 61000-4-5	1kV Line to Line 2kV Line to Ground	PASS
Conducted Immunity	EN 61000-6-1	EN 61000-4-6	3Vrms (emf), 80%, 1kHz Amp. Mod.	PASS
Voltage Dips and Interruptions	EN 61000-6-1	EN 61000-4-11	0 % U_T* for 0.5per 0 % U_T* for 1per 0 % U_T* for 250per 70 % U_T* for 25per	PASS

Remark:
Pass: Comply with the essential requirements in the standard.
UT is the nominal supply voltage.*
N/A:Not applicable.

4 General Information

4.1 Client Information

Applicant:	Shenzhen Baolujie Bicycle Co., LTD. Dongguan Branch
Address of Applicant:	3 / F, Building A, Gongye 3rd Road, Hengjiangxia Village, Changping Town, Dongguan City
Manufacturer:	Shenzhen Baolujie Bicycle Co., LTD. Dongguan Branch
Address of Manufacturer:	3 / F, Building A, Gongye 3rd Road, Hengjiangxia Village, Changping Town, Dongguan City

4.2 General Description of E.U.T

Product Name:	Electric bicycle
Model No.:	BLJ-DZ2001,BLJ-DZ2005,BLJ-DZ-2017,DP-2609,DP-2601,DZ-2003, DP-2610,DZ-2020,DZ-2028,DZ-2026,DS-2606,DS-2607,DP-2608, DP-2614,DZ-2027,DZ-2005,DZ-2021,DZ-2029,DZ-2012,DZ-2603, DP-2610,DZ-2008,DP-2609,DP-2615,DP-2616,DS-2608,DP-2003-1, DP-2003-2,BLJ2029,DZ-2001,DS-1201
Trademark:	BAOLUJIE & GERPSI
Power Supply:	54.6Vdc,2A form power charger or 48Vdc, 12Ah form battery

4.3 Test mode

Test mode: T2-GBT	
Mode:	Keep the EUT in Normal mode

4.4 Description of Support Units

None.

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Monitoring of EUT for All Immunity Test

Visual:	Monitor the EUT output voltage.
Audio:	N/A

5 Test Instruments List

Radiated Emission						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	ULTRA-BROADBAND ANTENNA	Schwarzbeck	VULB9163	ZRC-310	2022/08/07	2023/08/06
2	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	ZRC-306	2022/08/07	2023/08/06
3	Horn Antenna	Schwarzbeck	BBHA 9120D	ZRC-309	2022/08/07	2023/08/06
4	Universal Radio Communication	CMW500	R&S	ZRC-302	2022/08/07	2023/08/06
5	Band-reject filter	Xi'an Xingbo Technology Co.,Ltd	XBLBQ-DZA66	ZRC-410	2022/08/07	2023/08/06
6	Band-reject filter	Xi'an Xingbo Technology Co.,Ltd	XBLBQ-DZA64	ZRC-411	2022/08/07	2023/08/06
7	Band-reject filter	Xi'an Xingbo Technology Co.,Ltd	XBLBQ-DZA63	ZRC-411	2022/08/07	2023/08/06
8	High-pass filter	Xi'an Xingbo Technology Co.,Ltd	XBLBQ-GTA10	ZRC-412	2022/08/07	2023/08/06
9	High-pass filter	Xi'an Xingbo Technology Co.,Ltd	XBLBQ-GTA18	ZRC-402	2022/08/07	2023/08/06
10	EMI Test Software	Tonscend	TS®JS32-RE	N/A	N/A	N/A

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	EMI Test Receiver	R&S	ESPI	ZRC-307	2022/08/07	2023/08/06
2	Artificial Mains	R&S	ENV-216	ZRC-308	2022/08/07	2023/08/06
3	Artificial Mains	R&S	ENV-216	ZRC-314	2022/08/07	2023/08/06
4	ISN	Schwarzbeck	NTFM8158	ZRC-407	2022/08/07	2023/08/06
5	ISN	Schwarzbeck	CAT58158	ZRC-408	2022/08/07	2023/08/06
6	ISN	Schwarzbeck	CAT38158	ZRC-409	2022/08/07	2023/08/06
7	Universal Radio Communication	R&S	CMW500	ZRC-302	2022/08/07	2023/08/06
8	EMI Test Software	Tonscend	TS®JS32-CE	N/A	N/A	N/A

Electrical Fast Transient						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	Fast Transient Burst Simulator	Prima	EFT61004TA	ZRC-316	2022/08/07	2023/08/06
2	Coupling Clamp	Prima	EFT-CLAMP	ZRC-317	2022/08/07	2023/08/06
3	Universal Radio Communication	R&S	CMW500	ZRC-302	2022/08/07	2023/08/06

Harmonic Current/ Voltage Fluctuation and Flicker						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	Harmonic and Flicker Analyzer	Voltech	PM6000	ZRC-339	2022/08/07	2023/08/06
2	Universal Radio Communication	R&S	CMW500	ZRC-302	2022/08/07	2023/08/06

Electrostatic Discharge						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	ESD Simulators	NOISEKEN	ESS-100L(A)	ZRC-315	2022/08/07	2023/08/06
2	Universal Radio Communication	R&S	CMW500	ZRC-302	2022/08/07	2023/08/06

Surge						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	Lightning Surge Generator	Prima	SUG61005TB	ZRC-318	2022/08/07	2023/08/06
2	Lightning Surge Generator	Prima	SUG10/700TA	ZRC-319	2022/08/07	2023/08/06
3	Universal Radio Communication	R&S	CMW500	ZRC-302	2022/08/07	2023/08/06

Dips						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	Cycle Sag Simulator	Prima	DRP61011TA	ZRC-321	2022/08/07	2023/08/06
2	Universal Radio Communication	R&S	CMW500	ZRC-302	2022/08/07	2023/08/06

RF Field Strength Susceptibility						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	SIGNAL GENERATOR	Agilent	N5182A	ZRC-305	2022/08/07	2023/08/06
2	POWER AMPLIFIER	AR	150W1000	ZRC-413	2022/08/07	2023/08/06
3	POWER AMPLIFIER	Mictop	MPA-1000-6000-100	ZRC-414	2022/08/07	2023/08/06
4	DUAL DIRECTIONAL COUPLER	AR	DC6080	ZRC-415	2022/08/07	2023/08/06
5	POWER METER	Agilent	E4419B	ZRC-416	2022/08/07	2023/08/06
6	Power sensor	Agilent	E9301A	ZRC-417	2022/08/07	2023/08/06
7	Power sensor	Agilent	8483A	ZRC-418	2022/08/07	2023/08/06
8	TRANSMITTING ANTENNA	AR	AT1080	ZRC-419	2022/08/07	2023/08/06
9	TRANSMITTING ANTENNA	Schwarzbeck	STLP 9149	ZRC-420	2022/08/07	2023/08/06
10	Radio Communication Tester	R&S	CMW500	ZRC-302	2022/08/07	2023/08/06
11	Audio Analyzer	R&S	UPL	ZRC-421	2022/08/07	2023/08/06

Conducted Susceptibility						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	CS Test system	Schloder	CDG 6000-75	ZRC-322	2021/08/06	2022/08/05
2	CDN M2+M3	Zhinan	ZN3750	ZRC-323	2021/08/06	2022/08/05
3	6dB Attenuator	Schloder	CDG60100	ZRC-324	2021/08/06	2022/08/05
4	EM Clamp	Schloder	EMCL-20	ZRC-325	2021/08/06	2022/08/05
5	Audio Analyzer	R&S	UPL	ZRC-421	2021/08/06	2022/08/05
6	Universal Radio Communication	R&S	CMW500	ZRC-302	2021/08/06	2022/08/05

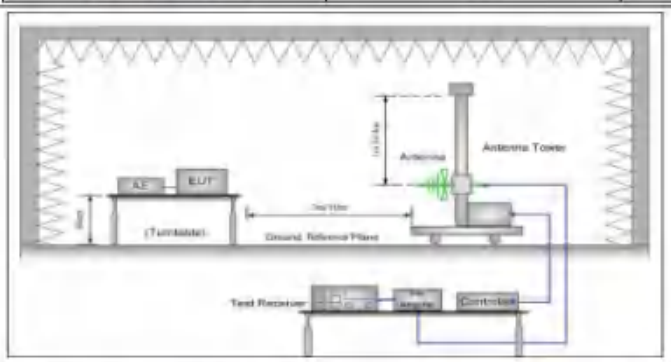
Disturbance power						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	Absorbing Clamp	LÜTHI	MDS-21	ZRC-422	2021/08/06	2022/08/05
2	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	ZRC-307	2021/08/06	2022/08/05

Click						
Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Last Cal.	Cal.Due
1	Click Analyzer	AFJ	CL55C	ZRC-422	2021/08/06	2022/08/05
2	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	ZRC-307	2021/08/06	2022/08/05
3	Artificial Mains	ROHDE & SCHWARZ	ENV-216	ZRC-308	2021/08/06	2022/08/05

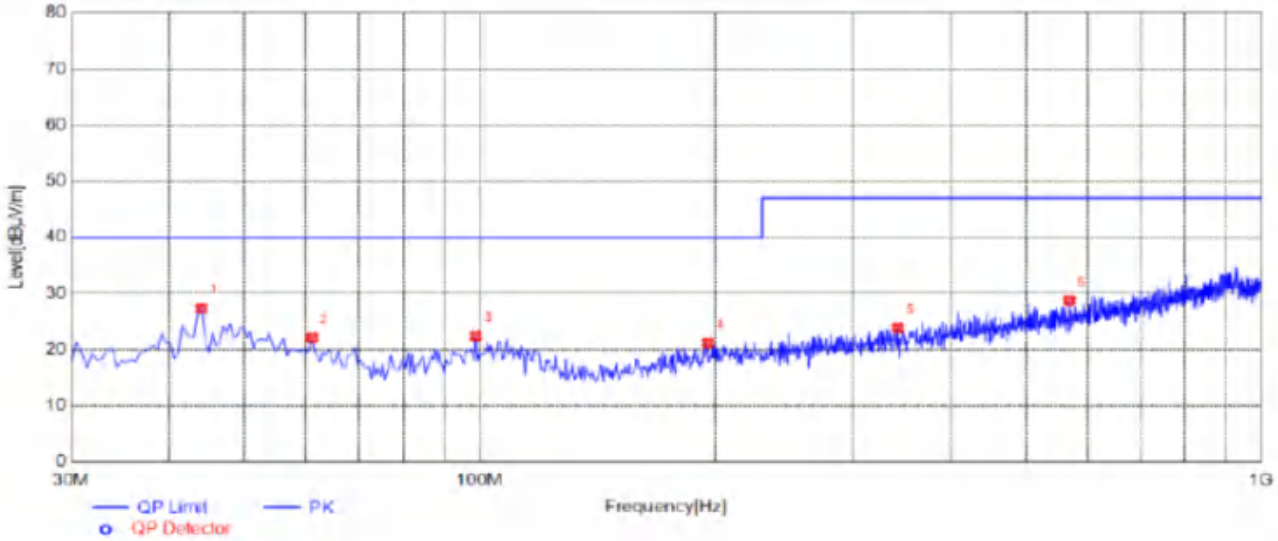
The calibration interval was one year.

6 Emission Test Results

6.1 Radiated Emission

Test Requirement:	EN 61000-6-3
Test Method:	CISPR 16-2-3
Test Frequency Range:	30MHz to 1GHz
Class / Severity:	Class B
Measurement Distance:	3m
Limit:	Frequency / Limit (dBμV/m @3m) / Value 30MHz-230MHz / 40.00 / Quasi-peak 230MHz-1GHz / 47.00 / Quasi-peak
Test setup:	
Test Procedure:	1. The radiated emissions test was conducted in a semi-anechoic chamber. 2. 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, but separated from metallic contact with the ground reference plane by 0.1m of insulation. 3. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT. 4. The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.
Test environment:	Temp.: 25 °C / Humid.: 52% / Press.: 1 012mbar
Measurement Record:	**Uncertainty: ± 4.50dB**
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.3 for details, only show the test data of the worst case mode
Test results:	Pass

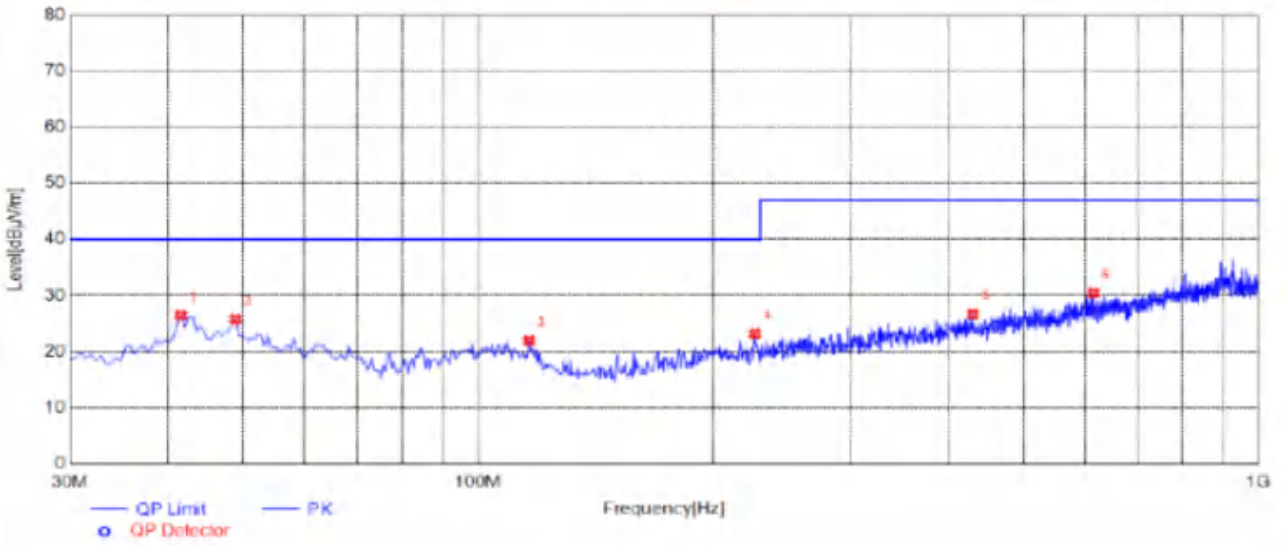
Test mode:	Normal	Polarization	Horizontal



Suspected List

NO.	Frequency [MHz]	Reading [dBµV/m]	Factor [dB]	Result [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity	Remark
1	44.0650	33.89	-6.53	27.36	40.00	12.64	100	50	PK	Horizonta	PASS
2	61.0400	30.79	-8.66	22.13	40.00	17.87	100	20	PK	Horizonta	PASS
3	98.8700	30.94	-8.54	22.40	40.00	17.60	100	30	PK	Horizonta	PASS
4	195.8700	30.50	-9.30	21.20	40.00	18.80	100	50	PK	Horizonta	PASS
5	342.8250	30.05	-6.16	23.89	47.00	23.11	100	50	PK	Horizonta	PASS
6	568.3500	31.37	-2.62	28.75	47.00	18.25	100	40	PK	Horizonta	PASS

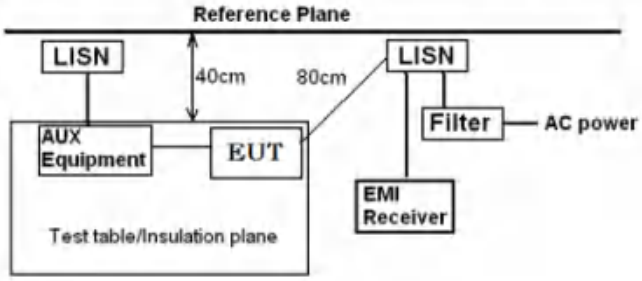
Test mode:	Normal	Polarization	Vertical



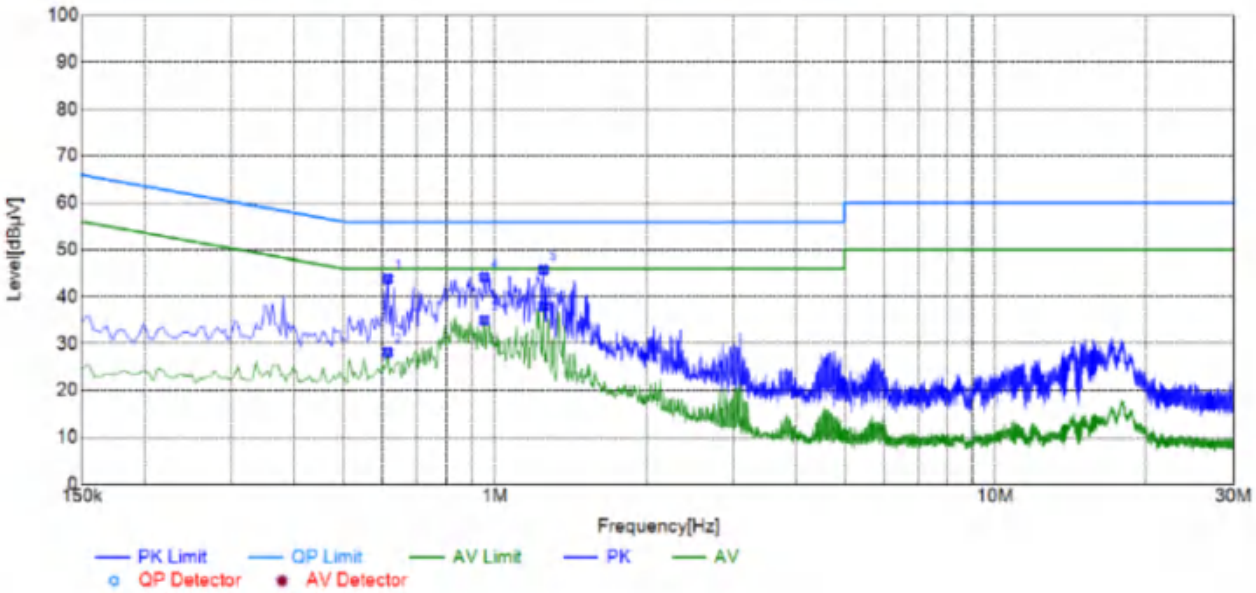
Suspected List

NO.	Frequency [MHz]	Reading [dBμV/m]	Factor [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity	Remark
1	41.6400	33.38	-6.94	26.44	40.00	13.56	100	4	PK	Vertical	PASS
2	48.9150	32.22	-6.45	25.77	40.00	14.23	100	2	PK	Vertical	PASS
3	116.3300	31.61	-9.70	21.91	40.00	18.09	100	2	PK	Vertical	PASS
4	226.4250	32.20	-9.03	23.17	40.00	16.83	100	10	PK	Vertical	PASS
5	430.6100	31.38	-4.72	26.66	47.00	20.34	100	6	PK	Vertical	PASS
6	614.4250	31.93	-1.47	30.46	47.00	16.54	100	10	PK	Vertical	PASS

7.2 Conducted Emission

Test Requirement:	EN 61000-6-3
Test Method:	CISPR 16-2-3
Test Frequency Range:	150kHz to 30MHz
Class / Severity:	Class B
Limit:	Frequency range (MHz) / Limit (dBμV): 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 setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (LISN). The provide a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs). 3. Both sides of A.C. 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 EN55032 Class B on conducted measurement.
Test environment:	Temp.: 24 °C / Humid.: 51% / Press.: 1012mbar
Measurement Record:	**Uncertainty: ±3.45dB**
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

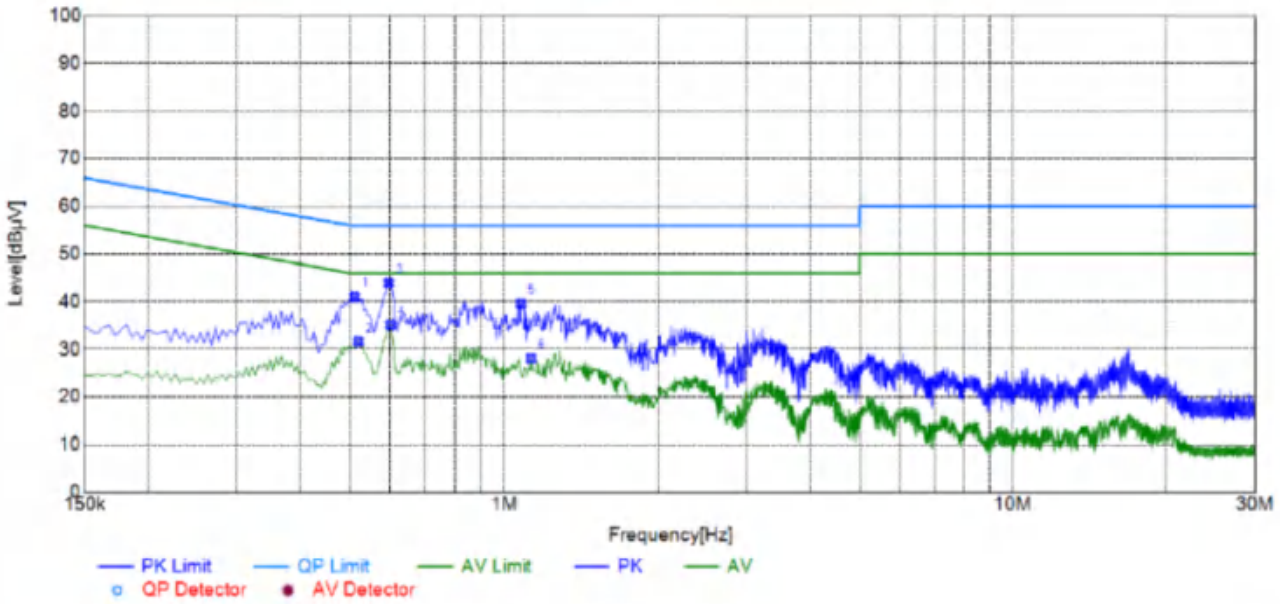
Test mode:	Mode 1	Polarization	L



Suspected List

NO.	Frequency [MHz]	Reading [dBµV]	Factor [dB]	Result [dBµV]	Limit [dBµV]	Margin [dB]	Detector	Line	Remark
1	0.6135	33.65	10.20	43.85	56.00	12.15	Qp	L1	PASS
2	0.6135	17.98	10.20	28.18	46.00	17.82	AV	L1	PASS
3	0.9510	24.76	10.21	34.97	46.00	11.03	AV	L1	PASS
4	0.9510	33.99	10.21	44.20	56.00	11.80	Qp	L1	PASS
5	1.2480	35.51	10.22	45.73	56.00	10.27	Qp	L1	PASS
6	1.2480	27.68	10.22	37.90	46.00	8.10	AV	L1	PASS

Test mode:	Mode 1	Polarization	N



Suspected List

NO.	Frequency [MHz]	Reading [dBµV]	Factor [dB]	Result [dBµV]	Limit [dBµV]	Margin [dB]	Detector	Line	Remark
1	0.5100	30.80	10.25	41.05	56.00	14.95	Qp	N	PASS
2	0.5190	21.34	10.24	31.58	46.00	14.42	AV	N	PASS
3	0.5955	33.74	10.19	43.93	56.00	12.07	Qp	N	PASS
4	0.6000	24.90	10.19	35.09	46.00	10.91	AV	N	PASS
5	1.0770	29.33	10.21	39.54	56.00	16.46	Qp	N	PASS
6	1.1265	17.93	10.21	28.14	46.00	17.86	AV	N	PASS

7.3 Harmonics Test Results

Test Requirement:	EN 61000-3-2
Test Method:	N/A (See Remark)
Remark:	There is no need for Harmonics test to be performed on this product (rated power is less than 75W) in accordance with EN 61000-3-2. For further details, please refer to Clause 7, Note 1 of EN 61000-3-2 which states: "For the following categories of equipment limits are not specified in this edition of the standard. Note 1: Equipment with a rated power of 75W or less, other than lighting equipment."

7.4 Flicker Test Result

Test Requirement:	EN 61000-3-3		
Test Method:	EN 61000-3-3		
Class/Severity:	Clause 5 of EN 61000-3-3		
Measurement Time:	10 min		
Detector:	As per EN 61000-3-3		
Test environment:	Temp.: 24°C	Humid.: 51%	Press.: 1012mbar
Test Instruments:	Refer to section 6 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	N/A		

Measurement Data

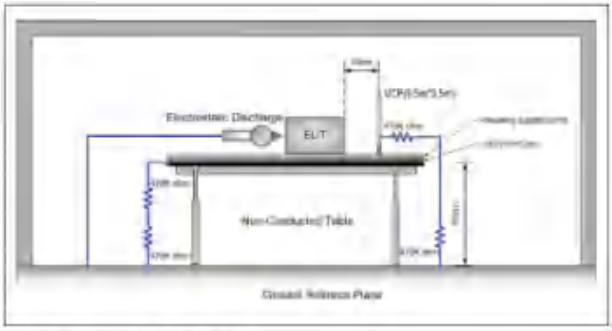
	EUT values	Limit	Result

7 Immunity Test Results

7.1 Performance Criteria Description in EN 61000-6-1

Criterion A:	The apparatus shall continue to operate as intended during and after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.	The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
Criterion B:	The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.	After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test. If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
Criterion C:	Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls	Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

7.2 Electrostatic Discharge

Test Requirement:	EN 61000-6-1
Test Method:	EN 61000-4-2
Discharge Voltage:	Contact Discharge:±2kV, ±4kV Air Discharge: ±2kV, ±4kV, ±8kV HCP/VCP: ±2kV, ±4kV
Polarity:	Positive & Negative
Number of Discharge:	Minimum 10 times at each test point.
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum
Performance Criterion:	B
Test setup:	
Test Procedure:	**1. Air discharge:** The test was applied on non-conductive surfaces of EUT. The round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT. After each discharge, the discharge electrode was removed from the EUT. The generator was re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure was repeated until all the air discharge completed **2. Contact Discharge:** The test was applied on conductive surfaces of EUT. the generator was re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. the tip of the discharge electrode was touch the EUT before the discharge switch was operated. **3. Indirect discharge for horizontal coupling plane** At least 10 single discharges shall be applied at the front edge of each HCP opposite the centre point of each unit of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge. Consideration should be given to exposing all sides of the EUT. **4. Indirect discharge for vertical coupling plane** At least 10 single discharges were applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, was placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges were applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.
Test environment:	Temp.: 24 °C ; Humid.: 51% ; Press.: 1012mbar
Test mode:	Refer to section 6 for details

Test Instruments:	Refer to section 5.3 for details
Test results:	Passed

Measurement Record:

Test points:	I: N/A
	II: Seams, USB Port, Indicator light, DC Input Port

Direct discharge

Discharge Voltage (KV)	Type of discharge	Test points	Observations (Performance Criterion)	Result
± 4	Contact	I	N/A	N/A
± 8	Air	II	A	Pass

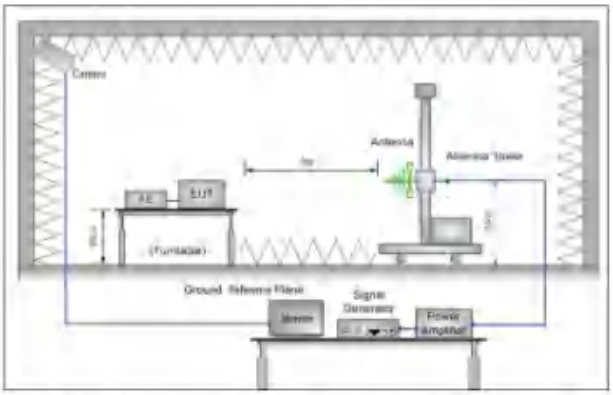
Indirect discharge

Discharge Voltage (KV)	Type of discharge	Test points	Observation Performance	Result
± 4	HCP-Bottom/Top/ Front/Back/Left/Right	Edge of the HCP	A	Pass
± 4	VCP-Front/Back /Left/Right	Center of the VCP	A	Pass

Remark:

A: No degradation in performance of the EUT was observed.

7.3 Radiated Immunity

Test Requirement:	EN 61000-6-1		
Test Method:	EN 61000-4-3		
Frequency range:	80MHz to 1GHz, 1.4GHz to 2GHz		
Test Level:	3V/m		
Modulation:	80%, 1kHz Amplitude Modulation		
Performance Criterion:	A		
Test setup:			
Test Procedure:	1. For table-top equipment, the EUT was placed in the chamber on a non-conductive table 0.8m high. For arrangement of floor-standing equipment, the EUT was mounted on a non-conductive support 0.1m above the supporting plane. For human body-mounted equipment, the EUT may be tested in the same manner as table top items. 2. If possible, a minimum of 1 m of cable is exposed to the electromagnetic field. Excess length of cables interconnecting units of the EUT shall be bundled low-inductively in the approximate center of the cable to form a bundle 30 cm to 40 cm in length. 3. The EUT was initially placed with one face coincident with the calibration plane. The EUT face being illuminated was contained within the UFA (Uniform Field Area). 4. The frequency ranges to be considered were swept with the signal modulated and pausing to adjust the RF signal level or to switch oscillators and antennas as necessary. Were the frequency range was swept incrementally, the step size was not exceed 1 % of the preceding frequency value. 5. The dwell time of the amplitude modulated carrier at each frequency was not be less than the time necessary for the EUT to be exercised and to respond, and was not less than 0,5 s. 6. The test normally was performed with the generating antenna facing each side of the EUT. 7. The polarization of the field generated by each antenna necessitates testing each selected side twice, once with the antenna positioned vertically and again with the antenna positioned horizontally. 8. The EUT was performed in a configuration to actual installation conditions, a video camera and/or a audio monitor were used to monitor the performance of the EUT.		
Test environment:	Temp.: 25°C	Humid.: 52%	Press.: 1012mbar
Test Instruments:	Refer to section 6 for details		
Test mode:	Refer to section 5.3 for details		

Test results:	Passed

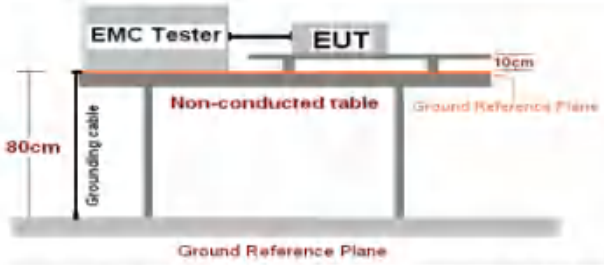
Measurement Record:

Frequency	Level (V/m)	EUT Face	Dwell time	Observations	Result
80MHz-1GHz	3	Front	2s	A	Pass
		Back		A	Pass
		Left		A	Pass
		Right		A	Pass
		Top		A	Pass
		Underside		A	Pass
1.4GHz-2GHz	3	Front	2s	A	Pass
		Back		A	Pass
		Left		A	Pass
		Right		A	Pass
		Top		A	Pass
		Underside		A	Pass

Remarks:

A: No degradation in the performance of the E.U.T. was observed.

7.4 Electrical Fast Transients

Test Requirement:	EN 61000-6-1
Test Method:	EN 61000-4-4
Test Level:	1.0kV on AC port 2.0kV on Earth 0.5kV on Signal Lines
Polarity:	Positive & Negative
Repetition Frequency:	5kHz
Burst Period:	300ms
Test Duration:	2 minute per level & polarity
Performance Criterion:	B
Test setup:	
Test Procedure:	1. The EUT and its simulators were placed on the ground reference plane and were insulated from it by a wood support 0.1m + 0.01m thick. The ground reference plane was 1m*1m metallic sheet with 0.65mm minimum thickness. 2. This reference ground plane was project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane was more than 0.5m. 3. All cables to the EUT was placed on the wood support, cables not subject to EFT/B was routed as far as possible from the cable under test to minimize the coupling between the cables. 4. The length of power lines between the coupling device and the EUT is 0.5m 5. The EUT is connected to the power mains through a coupling device that directly couples the EFT/B interference signal. 6. Test on Signal Ports, Telecommunication Ports and Control Ports: The EUT interference signal is through a coupling clamp device couples to the signal and control lines of the EUT with burst noise for 2 minutes. 7. Test on power supply ports: The EUT is connected to the power mains through a coupling device that directly couples the EFT/B interference signal. 8. Each of the Line and Neutral conductors is impressed with burst noise for 2 minutes. 9. The length of the signal and power lines between the coupling device and the EUT is 0.5m
Test environment:	Temp.: 26 °C ¦ Humid.: 54% ¦ Press.: 1012mbar
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.3 for details

Test results:	Passed

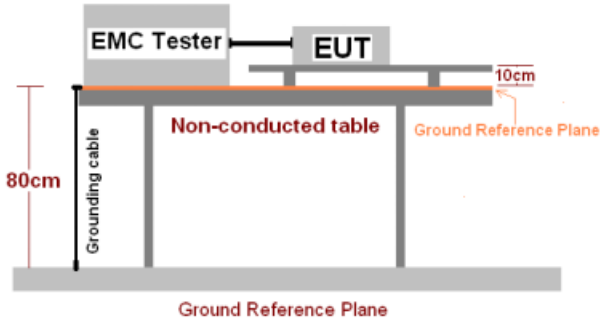
Measurement Record:

Lead under Test	Level (kV)	Coupling Direct/Clamp	Observations (Performance Criterion)	Result
L	± 1.0	Direct	A	Pass
N	± 1.0	Direct	A	Pass
L-N	± 1.0	Direct	A	Pass

Remark:

A: No degradation in the performance of the E.U.T. was observed.

7.5 Surges

Test Requirement:	EN 61000-6-1
Test Method:	EN 61000-4-5
Test Level:	1kV line to line: Differential mode 2kV line to earth: Common mode
Polarity:	Positive & Negative
Generator source impedance:	2Ω (line-line coupling) 12Ω (line-earth coupling)
Test signal specification:	Rise time=1.2us, Duration time=50us; Test Interval: 60s between each surge;
No. of surges:	5 positive, 5 negative at 0°, 90°, 180°, 270°.
Performance Criterion:	Criterion B
Test setup:	
Test Procedure:	1. For line-to-line coupling mode, provide a 1kV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points, and for active line / neutral lines to ground are same except test level is 2kV. 2. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are applied during test. 3. Different phase angles are done individually. 4. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.
Test environment:	Temp.: 26 °C / Humid.: 53% / Press.: 1012mbar
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

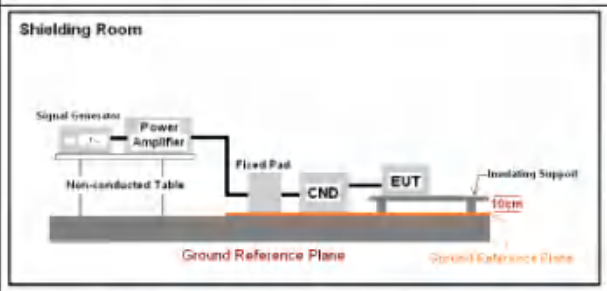
Measurement Record:

Location	Level(kV)	Pulse No	Surge Interval	Phase(deg)	Observations (Performance Criterion)
L-N	±1 kV	5	60s	0, 90, 180, 270	A

Remark:

A: No degradation in the performance of the E.U.T. was observed.

7.6 Conducted Immunity

Test Requirement:	EN 61000-6-1		
Test Method:	EN 61000-4-6		
Frequency range:	0.15MHz to 80MHz		
Test Level:	3V rms on AC Ports (unmodulated emf into 150Ω) 3V rms on Signal Lines (unmodulated emf into 150Ω)		
Modulation:	80%, 1kHz Amplitude Modulation		
Performance Criterion:	A		
Test setup:			
Test Procedure:	1. Let the EUT work in test mode and test it. 2. The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placedon the ground plane about 0.3m from EUT. Cables between CDN andEUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible). 3. The disturbance signal described below is injected to EUT through CDN. 4. The EUT operates within its operational mode(s) under intendedclimatic conditions after power on. 5. The frequency range is swept from 0.150MHz to 80MHz using 3Vsignal level, and with the disturbance signal 80% amplitude modulatedwith a 1kHz sine wave. 6. The rate of sweep shall notexceed 1.5*10-3decades/s. Where thefrequency is swept incrementally; thestep size shall not exceed 1% ofthe start and thereafter 1% of the preceding frequency value. 7. Recording the EUT operating situation during compliance testing anddecide the EUT immunity criterion.		
Test environment:	Temp.: 24 °C	Humid.: 51%	Press.: 1012mbar
Test Instruments:	Refer to section 6 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Passed		

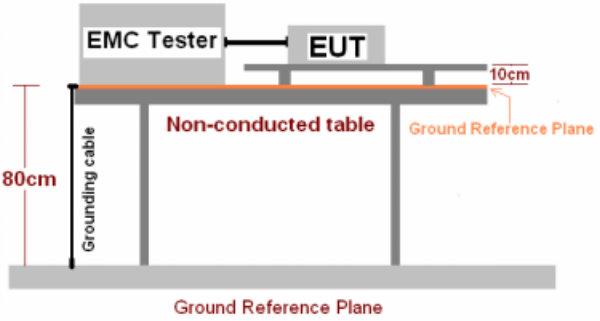
Measurement Record:

Frequency	Injected Position	Test Level	Modulation	Step Size	Dwell Time	Observations (Performance Criterion)
150kHz to 80MHz	AC Main	3Vrms	80%, 1kHz Amp. Mod.	1%	2s	A

Remark:

A: No loss of function was observed.

7.7 Voltage Dips and Voltage Interruptions

Test Requirement:	EN 61000-6-1		
Test Method:	EN 61000-4-11		
No. of Dips /Interruptions:	3 per Level		
Performance Criterion:	0% of UT (Supply Voltage) for 0.5 Periods: B; 0% of UT for 1 Periods: B; 0% of UT for 250 Periods: C; 70% of UT for 25 Periods: C;		
Test setup:			
Test Procedure:	1. The EUT and test generator were setup as shown on above setup photo. 2. The interruptions are introduced at selected phase angles with specified duration. 3. Record any degradation of performance.		
Test environment:	Temp.: 26 °C	Humid.: 53%	Press.: 1012mbar
Test Instruments:	Refer to section 6 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Passed		

Measurement Record:

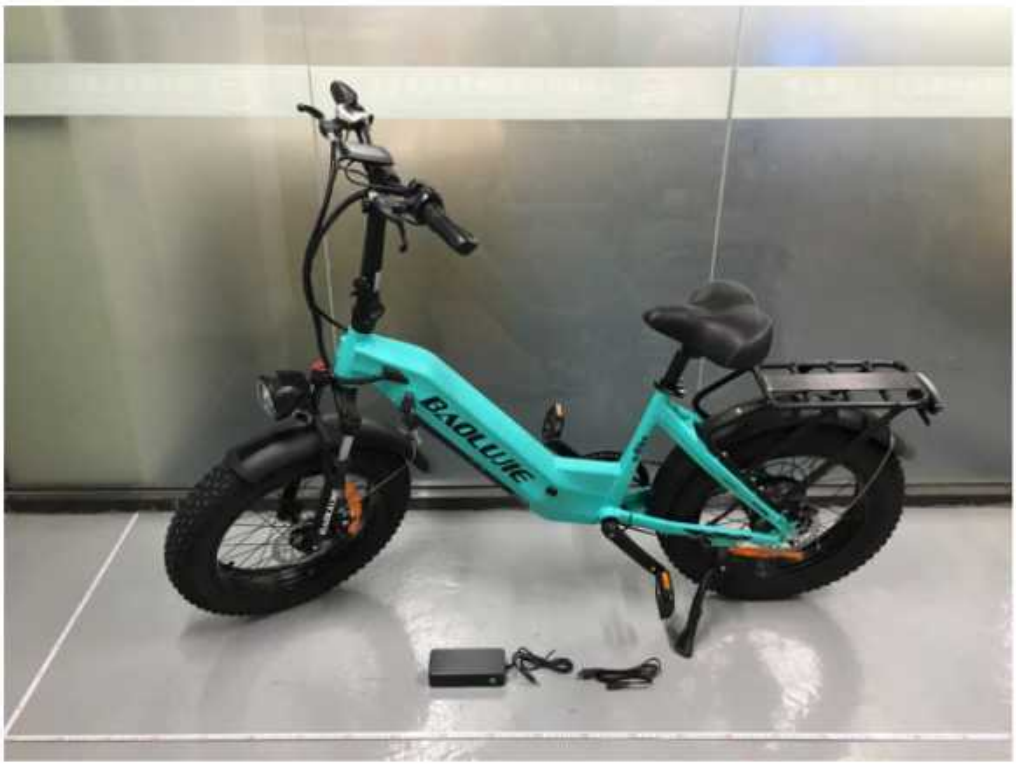
Test Level % U_T	Duration (Periods)	Phase angle	No of dropout	Observations (Performance Criterion)
0	0.5	0°, 90°, 180°, 270°	3	A
0	1	0°, 90°, 180°, 270°	3	A
70	25	0°, 90°, 180°, 270°	3	A
0	250	0°, 90°, 180°, 270°	3	B

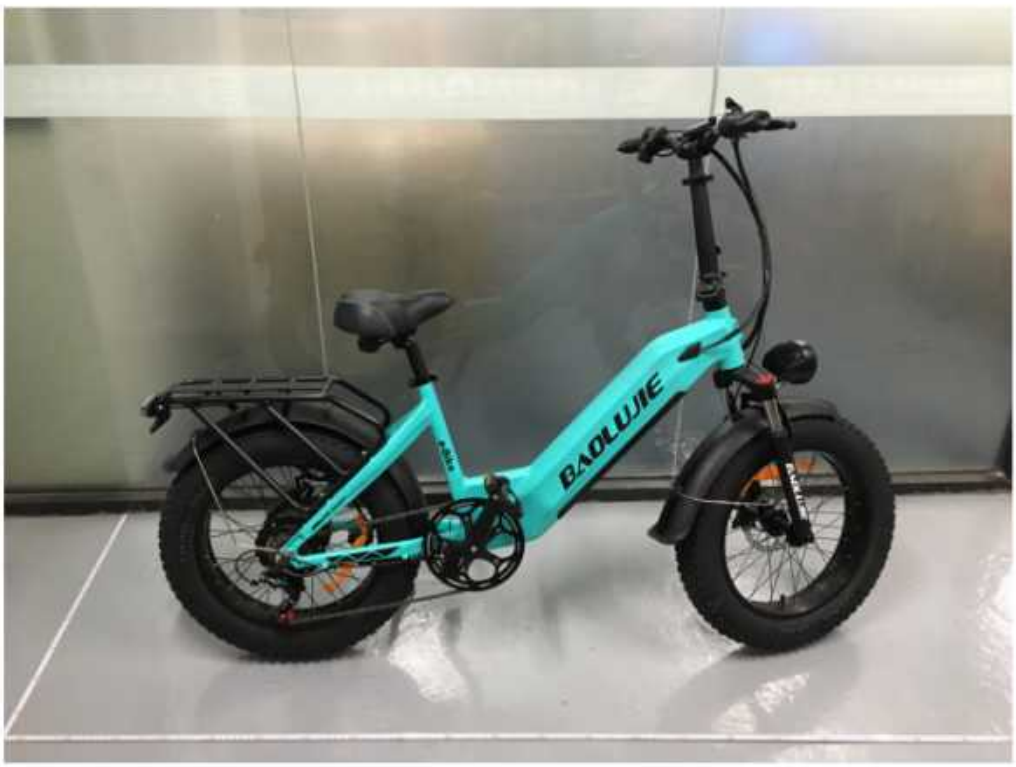
Remark:

A: No loss of function was observed.

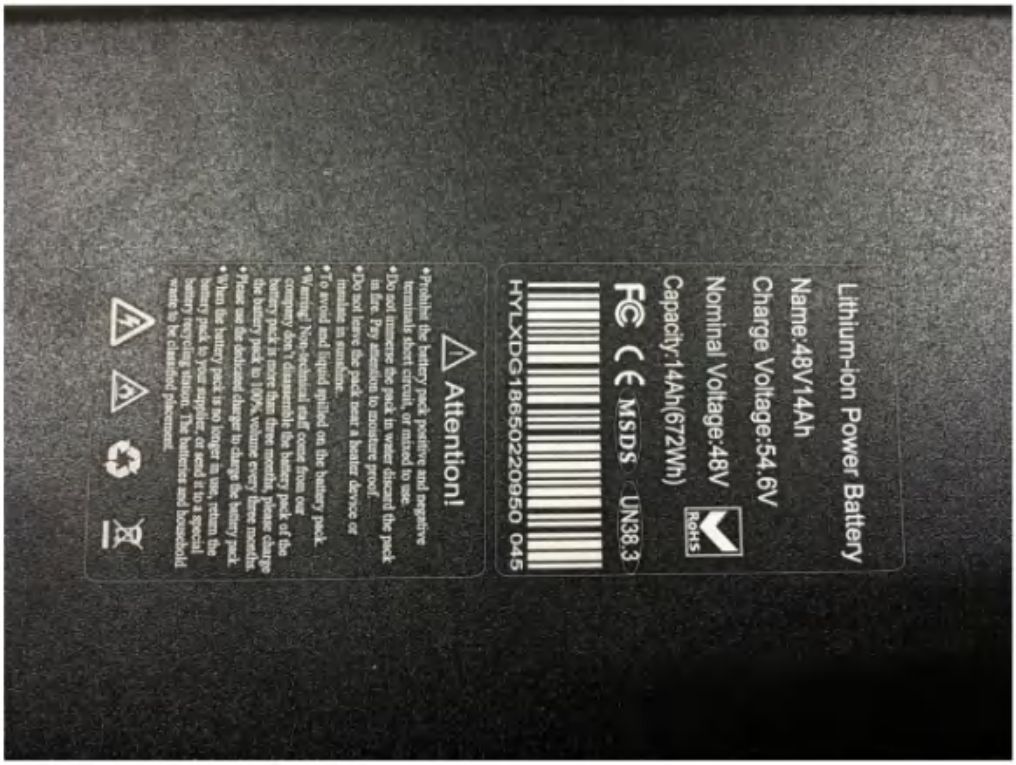
B: Dips to 0%, Duration 250P, EUT stopped operation, but it can be resumed by itself after test.

8 Photographs of the EUT






BAOLUJIE


Lithium-ion Power Battery
Name:48V14Ah
Charge Voltage:54.6V
Nominal Voltage:48V
Capacity:14Ah(672Wh)
RoHS
FC CE MSDS UN38.3
HYLXDG18650220950 045
Attention!
•Prohibit the battery pack positive and negative terminals short circuit, or mixed to use.
•Do not immerse the pack in water discard the pack in fire. Pay attention to moisture proof.
•Do not leave the pack near a heater device or medium in emulsion.
•To avoid seal liquid spilled on the battery pack.
•Warning! Non-technical staff cannot from our company don't disassemble the battery pack of the battery pack is more than three months, please charge the battery pack to 100% volume every three months.
•Please use the dedicated charger to charge the battery pack.
•When the battery pack is no longer in use, return the battery pack to your supplier, or send it to a special battery recycling station. The batteries and household waste to be classified placement

-----End-----