

EMC Test Report



Product : Operation panel

Model Number : BJ01-J05, BJ01-J05L, BJ01-J06, BJ01-J08, BJ01-J08L, BJ01-J10, BJ01-JT01, BJ01-Z01, BJ01-Z05, BJ01-Z08

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2 Test Summary

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
EN 55032:2015/AC:2016-07	Conducted Emission On AC And Telecom Port 150kHz to 30MHz	Class B	PASS	
	Radiated Emission 30MHz to 1000MHz	Class B	PASS	
	Radiated Emission 1GHz to 6GHz	Class B	N/A	NOTE (1)
EN61000-3-2:2014	Harmonic Current Emission	Class A	PASS	
EN 61000-3-3:2013	Voltage Fluctuations & Flicker	-----	PASS	
EMC Immunity				
Section EN 55024:2010/A1:2015	Test Item	Performance Criteria	Judgment	Remark
EN 61000-4-2:2009	Electrostatic Discharge	B	PASS	
EN 61000-4-3:2006/A2:2010	RF electromagnetic field	A	PASS	
EN 61000-4-4:2012	Fast transients	B	PASS	
EN 61000-4-5:2014	Surges	B	PASS	
EN 61000-4-6:2014/AC:2015	Injected Current	A	PASS	
EN 61000-4-8:2010	Power Frequency Magnetic Field	A	PASS	
EN 61000-4-11:2004	Volt. Interruptions Volt. Dips	B	PASS	

NOTE:

- (1) 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 6 GHz, whichever is less.
- (2) The power consumption of EUT is less than 75W and no Limits apply.
- (3) Voltage dip: 100% reduction – Performance Criteria **B**
Voltage dip: 30% reduction – Performance Criteria **C**
Voltage Interruption: 100% Interruption – Performance Criteria **C**
- (4) For client's request and manual description, the test will not be executed.
- (5) "N/A" denotes test is not applicable in this Test Report

3 General Information

3.1 General Description of EUT

Manufacturer:	SHANGHAI BINJIE MECHANICAL AND ELECTRICAL CO.,LTD
Manufacturer Address:	NO.1588, XIN GAO ROAD, QINGPU DISTRICT, SHANGHAI, CHINA
EUT Name:	Operation panel
Brand Name:	NGU
Model No:	BJ01-J05
Attached No.:	BJ01-J05L, BJ01-J06, BJ01-J08, BJ01-J08L, BJ01-J10, BJ01-JT01, BJ01-Z01, BJ01-Z05, BJ01-Z08
Power Supply Range:	Input: DC 24V 0.2A 5W
Test Power Supply:	Input: DC 24V 0.2A 5W

4 Equipments List for All Test Items

No.	Equipment	Manufacturer	Model No.	S/N	Cal date
1	EMI Test Receiver	R&S	ESCI	100612	2017-05-31
2	EMI Test Receiver	R&S	ESPI	100067	2017-05-31
3	Amplifier	HP	8447D	1937A02415	2017-05-31
4	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07118	2017-05-31
5	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	9163-387	2017-05-31
6	Horn Antenna	SCHWARZBECK	BBHA9120A	B08000991-0021	2017-05-31
7	High Field Biconical Antenna	ELECTRO-METRICS	EM-6913	169	2017-05-31
8	Log Periodic Antenna	ELECTRO-METRICS	EM-6950	818	2017-05-31
9	Remote Active Vertical Antenna	ELECTRO-METRICS	EM-6892	354	2017-05-31
10	Power Clamp	SCHWARZBECK	MDS-21	3898	2017-05-31
11	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISPR25	07254	2017-05-31
12	Teo Line Single Phase Module	SCHWARZBECK	NSLK8128	D-69124	2017-05-31
13	Positioning Controller	C&C	CC-C-1F	MF7802155	2017-05-31
14	Electrostatic Discharge Simulator	TESEQ	NSG437	128	2017-05-31
15	Fast Transient Burst Generator	SCHAFFNER	MODULA6150	34587	2017-05-31
16	Fast Transient Noise Simulator	Noiseken	FNS-105AX	31438	2017-05-31
17	Capacitive Coupling Clamp	TESEQ	CDN8014	25115	2017-05-31
18	Color TV Pattern Genenator	PHILIPS	PM5418	TM209966	N/A
19	Power Frequency Magnetic Field Gene	EVERFINE	EMS61000-8K	608085	2017-05-31
20	Triple-Loop Antenna	EVERFINE	LLA-2	607035	2017-05-31
21	10dB attenuator	SCHWARZBECK	MTAIMP-136	R65.90.0009	2017-05-31
22	AC Power Source	California Instrumnets	5001ix-400-N0	HK53570	2017-05-31
23	Power Analyzer	California Instrumnets	PACS-1	X71719	2017-05-31

5 Emission Test Results

5.1 Mains Terminals Disturbance Voltage Measurement

Frequency Range:	150kHz to 30MHz
Limits:	Table 2 of EN 55032
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximized peak within 6dB of Average Limit

5.1.1 E.U.T. Operation

Operating Environment:

Temperature:	24°C	Humidity:	55% RH	Atmospheric Pressure:	101	Kpa
EUT Operation:	Normal					

5.1.2 Test Specification

EUT was placed upon a wooden test table 0.8m above the horizontal metal reference plane and 0.4m from the vertical ground plane, and it was connected to an AMN. The closest distance between the boundary of the EUT and the surface of the AMN is 0.8m. All peripherals were connected to another AMN, and placed at a distance of 10cm from each other. A spectrum and receiver was connected to the RF Input Port of the AMN. Both average and quasi-peak value were detected.

Associated with the conducted emission test data in this report is a ± 1.54 dB measurement uncertainty.

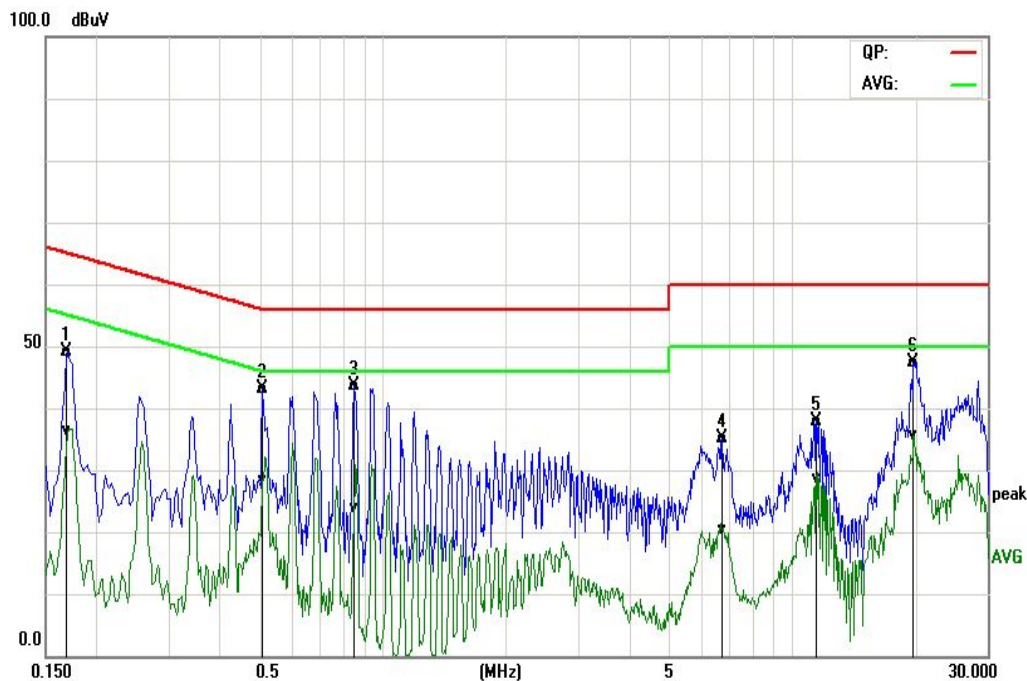
5.1.3 Measurement Data

An initial pre-scan was performed on the live and neutral lines.

Quasi-peak or average measurements were performed at the frequency which maximum peak emissions were detected.

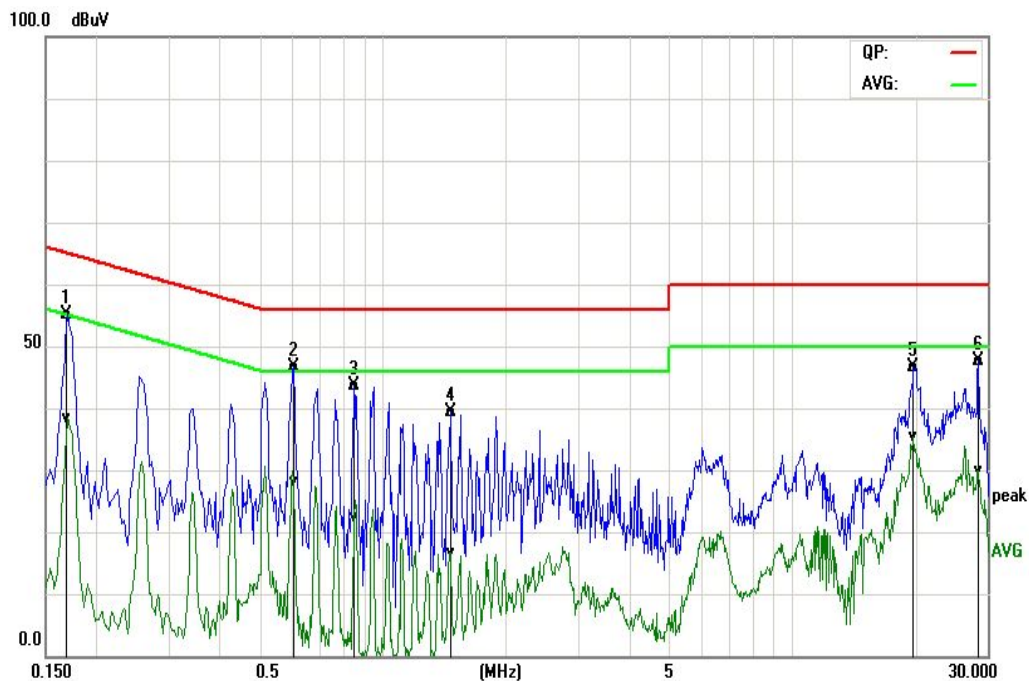
Please refer to the attached quasi-peak & average measurement data for reference.

EUT:	Operation panel	Model No.:	BJ01-J05
Temperature:	24 °C	Relative Humidity:	55%
Probe:	L	Test Power:	DC 24V
Standard:	EN 55032 Class B Conduction(QP)	Test Result:	Pass
Test Mode:	Normal Operation	Test By:	King



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	QuasiPeak limit (dBuV)	QuasiPeak margin (dB)	Remark
1	0.1700	49.21	0.04	49.25	64.96	-15.71	Pass
2	0.5100	43.00	0.04	43.04	56.00	-12.96	Pass
3*	0.8500	43.46	0.06	43.52	56.00	-12.48	Pass
4	6.7420	34.86	0.17	35.03	60.00	-24.97	Pass
5	11.4580	37.56	0.22	37.78	60.00	-22.22	Pass
6	19.8020	47.14	0.30	47.44	60.00	-12.56	Pass

EUT:	Operation panel	Model No.:	BJ01-J05
Temperature:	24 °C	Relative Humidity:	55%
Probe:	N	Test Power:	DC 24V
Standard:	EN 55032 Class B Conduction(QP)	Test Result:	Pass
Test Mode:	Normal Operation	Test By:	King



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	QuasiPeak limit (dBuV)	QuasiPeak margin (dB)	Remark
1	0.1700	55.04	0.04	55.08	64.96	-9.88	Pass
2*	0.6060	46.63	0.05	46.68	56.00	-9.32	Pass
3	0.8500	43.48	0.06	43.54	56.00	-12.46	Pass
4	1.4660	39.22	0.08	39.30	56.00	-16.70	Pass
5	19.8020	46.38	0.30	46.68	60.00	-13.32	Pass
6	28.4860	47.18	0.36	47.54	60.00	-12.46	Pass

5.2 Radiated Emissions Measurement

Frequency Range:	30MHz to 1GHz
Measurement Distance:	3 m
Limits:	40.0 dB μ V/m between 30MHz & 230MHz
	47.0 dB μ V/m between 230MHz & 1000MHz
Detector:	Peak for pre-scan (120kHz resolution bandwidth)
	Quasi-Peak if maximum peak within 6dB of limit

5.2.1 E.U.T. Operation

Operating Environment:

Temperature:	24.2°C	Humidity:	54% RH	Atmospheric Pressure:	101	Kpa
EUT Operation:	Normal					

5.2.2 Test Specification

EUT was placed upon a wooden test table which was placed on the turn table 0.8m above the horizontal metal ground plane, and operating in the mode as mentioned above. A receiving antenna was placed 3m away from the EUT. During testing, turn around the turn table and move the antenna from 1m to 4m to find the maximum field-strength reading. All peripherals were placed at a distance of 10cm between each other. Both horizontal and vertical antenna polarities were tested.

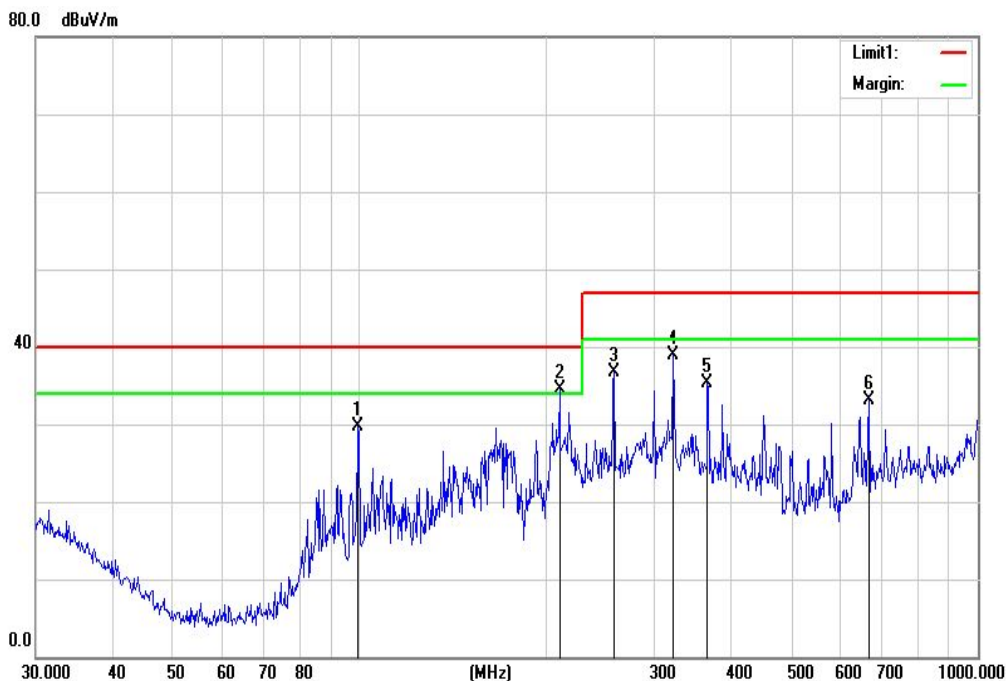
Associated with the radiated emission test data in this report is a ± 3.08 dB measurement uncertainty.

5.2.3 Measurement Data

An initial pre-scan was performed in the 3m chamber using the spectrum analyzers in peak detection mode. The EUT was measured by Biology antenna with 2 orthogonal polarities and peak emissions from the EUT were detected within 6dB of the class B limit line.

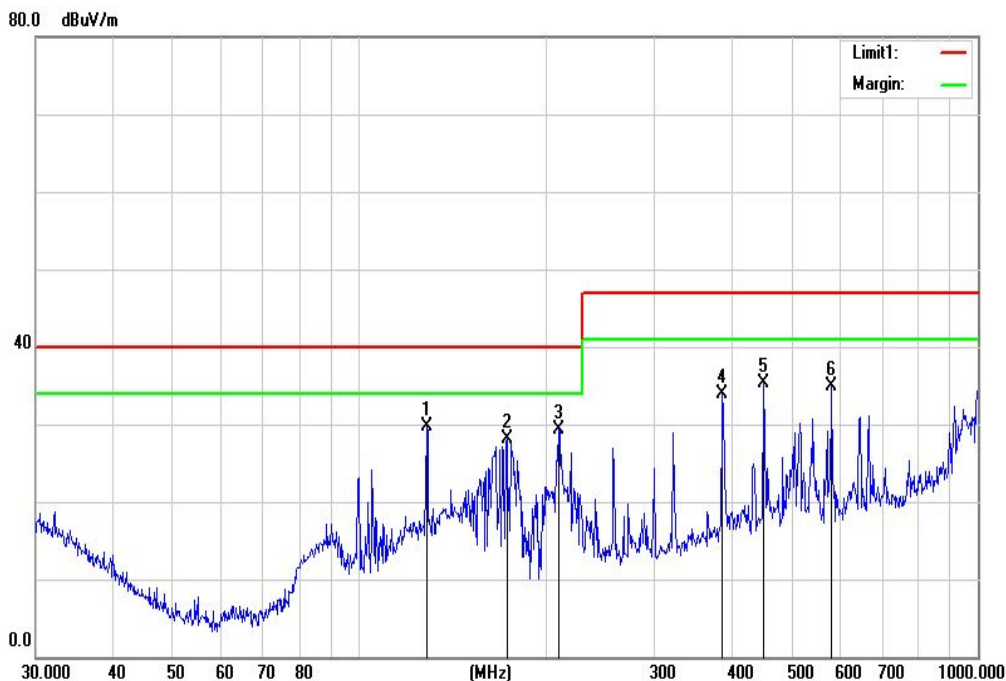
The following quasi-peak measurements were performed on the EUT.

EUT:	Operation panel	Model No.:	BJ01-J05
Temperature:	24.2℃	Relative Humidity:	54%
Distance:	3m	Test Power:	DC 24V
Polarization:	Horizontal	Test Result:	Pass
Standard:	EN 55032 Class B	Test By:	King
Test Mode:	Normal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	99.5281	47.94	-18.20	29.74	40.00	-10.26	QP
2	210.7860	52.22	-17.80	34.42	40.00	-5.58	QP
3	258.3264	52.28	-15.65	36.63	47.00	-10.37	QP
4*	321.0608	52.07	-13.22	38.85	47.00	-8.15	QP
5	365.5391	48.09	-12.80	35.29	47.00	-11.71	QP
6	665.8035	41.38	-8.19	33.19	47.00	-13.81	QP

EUT:	Operation panel	Model No.:	BJ01-J05
Temperature:	24.2℃	Relative Humidity:	54%
Distance:	3m	Test Power:	DC 24V
Polarization:	Vertical	Test Result:	Pass
Standard:	EN 55032 Class B	Test By:	King
Test Mode:	Normal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	128.5630	44.09	-14.35	29.74	40.00	-10.26	QP
2	173.2051	45.59	-17.39	28.20	40.00	-11.80	QP
3*	210.0482	47.16	-17.81	29.35	40.00	-10.65	QP
4	386.6338	46.37	-12.47	33.90	47.00	-13.10	QP
5	451.1350	47.02	-11.73	35.29	47.00	-11.71	QP
6	580.7026	44.95	-10.05	34.90	47.00	-12.10	QP

5.3 Harmonics

Frequency Range:	100Hz to 2kHz
Test Requirement:	EN 61000-3-2

5.3.1 E.U.T. Operation

Operating Environment:

Temperature:	24.2°C	Humidity:	56% RH	Atmospheric Pressure:	102.0	Kpa
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EUT Operation:	Normal
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5.3.2 Test specification

EUT operated in the mode as mentioned above, and connected to Harmonic/Flicker measuring equipment which was connected to an AC power source. Measurement was performed after EUT operating in static state for 10 seconds. Each order harmonics found to meet the relevant limits.

5.3.3 Measurement Data

PASS

5.4 Voltage changes, voltage fluctuations and flicker

Test Requirement:	EN 61000-3-3
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5.4.1 E.U.T. Operation

Operating Environment:

Temperature:	24.1°C	Humidity:	56% RH	Atmospheric Pressure:	102.0	Kpa
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EUT Operation:	Normal
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5.4.2 Test specification

EUT was operated in the mode as mentioned above, and connected to Harmonic/Flicker measuring equipment which was connected to an AC power source.

5.4.3 Measurement Data

PASS

6 Immunity Test Results

6.1 Electrostatic discharge immunity test

Acceptable Performance Criterion:	B
Discharge Impedance:	330 Ω / 150 pF
Discharge Voltage:	Air Discharge: ± 8 kV
	Contact Discharge: ± 4 kV
	VCP, HCP: ± 4 kV
Polarity:	Positive & Negative
Minimum discharge Interval:	1 second

6.1.1 E.U.T. Operation

Operating Environment:						
Temperature:	24 °C	Humidity:	55% RH	Atmospheric Pressure:	101	Kpa
EUT Operation:	Normal					

6.1.2 Test specification

EUT was operated in the mode as mentioned above. Both contact and air discharge was executed. Contact discharge to the conductive surfaces and to coupling planes; air discharge at insulating surfaces. Each test point shall be subjected to 10 discharges at least (For each voltage and polarity).

6.1.3 Measurement Data

Test Record

Electrostatic Discharge Immunity Test Results				
Applicant: <u>SHANGHAI BINJIE MECHANICAL AND ELECTRICAL CO.,LTD</u> EUT: Operation panel M/N: BJ01-J05 Power Supply: Input: DC 24V			Test Date: Jan. 24, 2018 Test Result: ■ Pass □ Fail Temp: 24 ℃ , Humi: <u>55</u> % Atmospheric Pressure: 101 Kpa	
Operating Mode	Normal			Criterion
Test Level	Air Discharge(A) <u>± 8</u> KV , Contact Discharge (C) <u>± 4</u> KV			
Test Position	Discharge Mode	Points	Discharges for each Point (for each Voltage And polarity)	Result
HCP	C	4	25	Pass
VCP	C	4	25	Pass
Shell	C	4	25	Pass
Note : “A” means Air Discharge, “C” means Contact Discharge, Horizontal Coupling Plane(HCP) and Vertical Coupling plane(VCP).				

6.2 RF field strength immunity test

Acceptable Performance Criterion:	A
Test Level	3 V/m
Test Distance	3 m
Frequency Range	80MHz~1000MHz
Polarity:	Horizontal & Vertical

6.2.1 E.U.T. Operation

Operating Environment:

Temperature:	24℃	Humidity:	54% RH	Atmospheric Pressure:	101	Kpa
EUT Operation:	Normal					

6.2.2 Test specification

Test was executed in a fully Anechoic chamber. An antenna was used to transmit interference signal. EUT was placed upon a wooden table above the reference ground 0.8m, and was positioned so that the four sides of the EUT shall be exposed to the electromagnetic field in a sequence. In each position the performance of the EUT was investigated. A camera was used to monitor the loss of function or degradation of performance of the EUT.

6.2.3 Measurement Data

Test Record

Radiated Frequency Field Strength Immunity Test Results					
Applicant: <u>SHANGHAI BINJIE MECHANICAL AND ELECTRICAL CO.,LTD</u> EUT: <u>Operation panel</u> M/N: <u>BJ01-J05</u> Power Supply: <u>Input: DC 24V</u>			Test Date: <u>Jan. 24, 2018</u> Test Result: ☒ Pass ☐ Fail Temp: <u>24</u> °C , Humi: <u>54</u> % Atmospheric Pressure: <u>101</u> Kpa		
Test Port	Input Port				
Operating Mode	Normal				
Test Level	<u>3</u> V/m (r.m.s) (unmodulated)			Criterion	A
Frequency Range(MHz)	Antenna polarity	Modulation	EUT position	Result	
80~1000	Horizontal	1kHz, 80%, AM	Front	Pass	
			Rear	Pass	
			Left	Pass	
			Right	Pass	
80~1000	Vertical	1kHz, 80%, AM	Front	Pass	
			Rear	Pass	
			Left	Pass	
			Right	Pass	
Note : None					

6.3 Electrical fast transient/burst immunity test

Acceptable
Performance Criterion:

B

Test Level:

0.5, 1.0, kV on AC Line; 0.5 kV on Signal Line

Repetition Frequency:

5 kHz

Burst Duration:

300 ms

Test Duration:

2 minutes for each level & polarity

6.3.1 E.U.T. Operation

Operating Environment:

Temperature:

24°C

Humidity:

55% RH

Atmospheric Pressure:

101

Kpa

EUT Operation:

Normal

6.3.2 Test specification

EUT was placed on a metal ground reference plane and was insulated from it by a wooden support which is 0.1m thick. The ground reference plane is connected to the protective earth. The test generator and the coupling/decoupling network were placed directly on, and bonded to the ground reference plane.

6.3.3 Measurement Data

Test Record

Electrical Fast Transient/Burst Test Results			
Applicant: <u>SHANGHAI BINJIE MECHANICAL AND ELECTRICAL CO.,LTD</u>		Test Date: <u>Jan. 24, 2018</u>	
EUT: <u>Operation panel</u>		Test Result: ☒ Pass ☐ Fail	
M/N: <u>BJ01-J05</u>		Temp: <u>24</u> °C, Humi: <u>55</u> %	
Power Supply: <u>Input: DC 24V</u>		Atmospheric Pressure: <u>101</u> Kpa	
Operating Mode	Normal		Criterion B
Test Signal	5/50ns, repetition frequency : ☒ 5KHz / ☐ 100 KHz		
Coupling Line	Test Level (KV)	Test Duration (S)	Result
L	1	120	PASS
N	1	120	PASS
PE	1	120	PASS
L+N	1	120	PASS
L+PE	1	120	PASS
N+PE	1	120	PASS
L+N+PE	1	120	PASS
DC/Signal/control Line	N/A	N/A	N/A
Note: None			

6.4 Surge immunity test

Acceptable Performance Criterion:	B
Test Level:	0.5, 1kV Live to Neutral
	0.5, 1, 2kV Live, Neutral to Earth
Polarity:	Positive & Negative
Generator source impedance:	2 Ω & 12 Ω
Trigger Mode:	Internal
No. of surges:	5 positive & 5 negative at 0°, 90°, 180°, 270°.

6.4.1 E.U.T. Operation

Operating Environment:

Temperature:	24.1°C	Humidity:	55% RH	Atmospheric Pressure:	101.0	Kpa
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EUT Operation: Normal

6.4.2 Test specification

EUT was placed on a wooden table which is 0.8m above the ground and operated in the mode as mentioned above. The power cord between the EUT and the coupling/decoupling network was bundled so as to make it less than 2 m in length.

6.4.3 Measurement Data

Test Record

Surge Immunity Test Results					
Applicant: <u>SHANGHAI BINJIE MECHANICAL AND ELECTRICAL CO.,LTD</u> EUT: <u>Operation panel</u> M/N: <u>BJ01-J05</u> Power Supply: <u>Input: DC 24V</u>				Test Date: <u>Jan. 24, 2018</u> Test Result: ☒ Pass ☐ Fail Temp: <u>24.1</u> °C , Humi: <u>55</u> % Atmospheric Pressure: <u>101</u> Kpa	
Operating Mode	Normal			Criterion	B
Test Port	Input Port				
Test Signal	☒ 1.2/50 μs ☐ 10/700μs				
Coupling Line	Test Level (KV)	Phase	Pulse	Interval (s)	Result
L-N	1	0°~270°	10	60	Pass
L-PE	1	0°~270°	10	60	Pass
N-PE	1	0°~270°	10	60	Pass
Signal Line	N/A	N/A	N/A	N/A	N/A
Note: None					

6.5 Conducted disturbance immunity Test

Acceptable Performance Criterion:	A
Test Level	3 V
Frequency Range	0.150MHz~80MHz

6.5.1 E.U.T. Operation

Operating Environment:

Temperature:	24°C	Humidity:	55% RH	Atmospheric Pressure:	101	Kpa
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EUT Operation: Normal

6.5.2 Test specification

The equipment to be tested was placed on an insulating support of 0,1m height above a ground reference Plane. The minimum distance between the EUT and all other conductive structures, except the ground reference plane is more than 0.5m. All relevant cables were provided with the appropriate coupling and decoupling devices at a distance between 0.1m and 0.3m from the projected geometry of the EUT.

6.5.3 Measurement Data

Test Record

Conducted Disturbance Immunity Test Results					
Applicant: <u>SHANGHAI BINJIE MECHANICAL AND ELECTRICAL CO.,LTD</u>			Test Date: <u>Jan. 25, 2018</u>		
EUT: <u>Operation panel</u>			Test Result: ☒ Pass ☐ Fail		
M/N: <u>BJ01-J05</u>			Temp: <u>24</u> °C , Humi: <u>55</u> %		
Power Supply: <u>Input: DC 24V</u>			Atmospheric Pressure: <u>101</u> Kpa		
Test Port	Input Port				
Operating Mode	Normal				
Test Level (V)	<u>3</u> V(r.m.f) (unmodulated)			Criterion	A
Step Size	<u>1</u> %	Dwell Time (S)	<u>1</u>		
Frequency Range (MHz)		Modulation		Result	
0.15~80		1k Hz, 80%, AM		Pass	
N/A		N/A		N/A	
Note: None.					

6.6 Power frequency magnetic field immunity test

Acceptable

Performance Criterion:

A

Test Level:

1 A/m

Coil Orientation:

X & Y & Z

Test Duration:

5 Minutes for each orientation

6.6.1 E.U.T. Operation

Operating Environment:

Temperature:

24°C

Humidity:

56% RH

Atmospheric Pressure:

101

Kpa

EUT Operation:

Normal

6.6.2 Test specification

The equipment is configured and connected to satisfy its functional requirements. It was placed on the ground reference plane with the interposition of a 0.1 m thickness wooden support and was placed in the center of the induction coil. All cables (include power cord and signal line) were exposed to the magnetic field for at least 1m of their length.

6.6.3 Measurement Data

Test Record

Power Frequency Magnetic Field Immunity Test Results				
Applicant: <u>SHANGHAI BINJIE MECHANICAL AND ELECTRICAL CO.,LTD</u> EUT: <u>Operation panel</u> M/N: <u>BJ01-J05</u> Power Supply: <u>Input: DC 24V</u>			Test Date: <u>Jan. 25, 2018</u> Test Result: ☒ Pass ☐ Fail Temp: <u>24</u> °C , Humi: <u>56</u> % Atmospheric Pressure: <u>101</u> Kpa	
Operating Mode	Normal			
Test Level	Test Duration	Coil Orientation	Criterion	Result
<u>1</u> A/m	<u>5</u> minus	X	A	Pass
<u>1</u> A/m	<u>5</u> minus	Y	A	Pass
<u>1</u> A/m	<u>5</u> minus	Z	A	Pass
Notes: None				

6.7 Voltage dips and interruptions immunity test

Acceptable

Performance Criterion:

B & C

Test Level:

<5% of U_T (Supply Voltage) for 0.5 and 250 Periods

70 % of U_T (Supply Voltage) for 25 Periods

No. of Dips / Interruptions:

3 per Level

6.7.1 E.U.T. Operation

Operating Environment:

Temperature:

24.2°C

Humidity:

55% RH

Atmospheric Pressure:

101

Kpa

EUT Operation:

Normal

6.7.2 Test specification

EUT connected to the test generator with the shortest power supply cable as specified by the EUT manufacturer. The rated voltage of the EUT was used as the basis for voltage test level specification. After each group of tests, a full functional check was performed.

6.7.3 Measurement Data

Test Record

Voltage Dips And Interruptions Test Results					
Applicant: <u>SHANGHAI BINJIE MECHANICAL AND ELECTRICAL CO.,LTD</u> EUT: <u>Operation panel</u> M/N: <u>BJ01-J05</u> Power Supply: <u>Input: DC 24V</u>				Test Date: <u>Jan. 25, 2018</u> Test Result: ☒ Pass ☐ Fail Temp: <u>24.2</u> °C , Humi: <u>55</u> % Atmospheric Pressure: <u>101</u> Kpa	
Test Port	Input Port				
Operating Mode	Normal				
Level (%U _T)	Interruption & Dips (%U _T)	Duration (Cyc)	Phase	Criterion	Result
<5	>95	0.5	0°	A	Pass
40	60	10	0°	B	Pass
70	30	25	0°	C	Pass
>95	<5	250	0°	C	Pass
Note: None.					

7 APPENDIX-Photographs of EUT Constructional Details



Photo 1



Photo 2

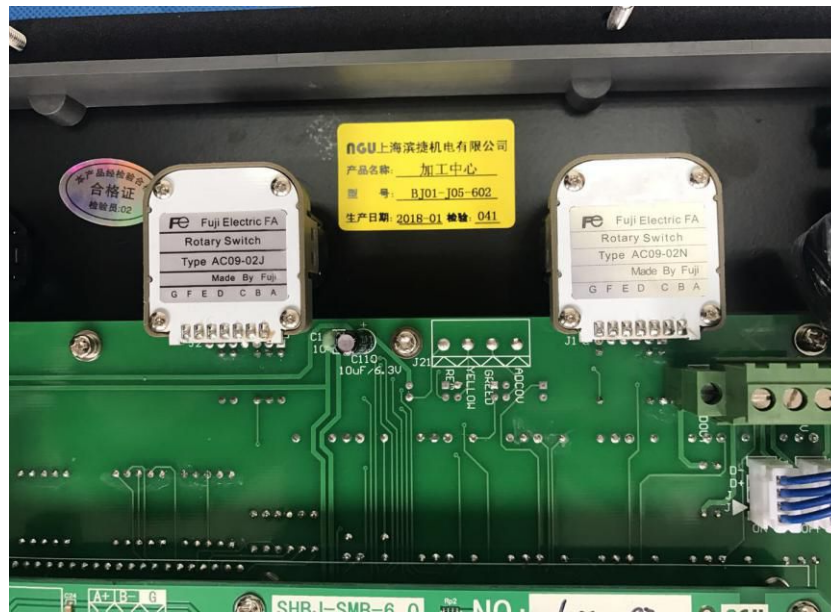


Photo 3

End of Report