

EMC Test Report

Report No.: AGC11262210401EE01

PRODUCT DESIGNATION	: PBX Appliance
BRAND NAME	: Call4tel
MODEL NAME	: SBC-NX-32, SBC-NX-64
APPLICANT	: Call4tel Pte Ltd
DATE OF ISSUE	: May 14, 2021
STANDARD(S)	EN 55032:2015/A11:2020 EN IEC 61000-3-2:2019 EN 61000-3-3:2013/A1:2019 EN 55035:2017/A11:2020
REPORT VERSION	: V1.0

Attestation of Global Compliance(Shenzhen) Co., Ltd



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGE. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuence of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

 Attestation of Global Compliance(Shenzhen)Co., Ltd

 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

 Tel: +86-755 2523 4088
 E-mail: agc@agc-cert.com



REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	1.0	May 14, 2021	Valid	Initial release

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Pestro/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter approvation of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Report No.: AGC11262210401EE01 Page 3 of 51

TABLE OF CONTENTS

1 VERIFICATION OF CONFORMITY	5
2 SYSTEM DESCRIPTION	6
3 MEASUREMENT UNCERTAINTY	6
4 PRODUCT INFORMATION	
5 SUPPORT EQUIPMENT	8
	0
6 TEST FACILITY	
7 TEST EQUIPMENT LIST	9
8 TESTSUMMARY LIST	11
9 EN 55032 LINE CONDUCTED EMISSION TEST	
9.1 LIMITS OF LINE CONDUCTED EMISSION TEST	
9.2 BLOCK DIAGRAM OF TEST SETUP	
9.3 PROCEDURE OF LINE CONDUCTED EMISSION TEST	
9.4 TEST RESULT OF LINE CONDUCTED EMISSION TEST	
10 EN 55032 RADIATED EMISSION TEST	
10.1 LIMITS OF RADIATED DISTURBANCES	
10.2 BLOCK DIAGRAM OF TEST SETUP	
10.3 PROCEDURE OF RADIATED EMISSION TEST	
10.4 TEST RESULT OF RADIATED EMISSION TEST	
11 EN IEC 61000-3-2 POWER HARMONICS TEST	
11.1 BLOCK DIAGRAM OF TEST SETUP	
11.2 RESULT	
12 EN 61000-3-3 VOLTAGE FLUCTUATION / FLICKER TEST	
12.1 BLOCK DIAGRAM OF TEST SETUP	
12.2 RESULT	
13 EN 61000-4-2 ESD IMMUNITY TEST	
13.1 BLOCK DIAGRAM OF TEST SETUP	
13.2 TEST PROCEDURE	
13.3 PERFORMANCE & RESULT	
14 EN 61000-4-3 RS IMMUNITY TEST	

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter aphorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



Report No.: AGC11262210401EE01 Page 4 of 51

14.1 BLOCK DIAGRAM OF TEST SETUP	
14.2 TEST PROCEDURE	
14.3 PERFORMANCE & RESULT	
15 EN 61000-4-4 EFT IMMUNITY TEST	
15.1 BLOCK DIAGRAM OF TEST SETUP	
15.2 TEST PROCEDURE	
15.3 PERFORMANCE & RESULT	
16 EN 61000-4-5 SURGE IMMUNITY TEST	
16.1 BLOCK DIAGRAM OF TEST SETUP	
16.2 TEST PROCEDURE	
16.3 PERFORMANCE & RESULT	
17 EN 61000-4-6 CS IMMUNITY TEST	
17.1 BLOCK DIAGRAM OF TEST SETUP	
17.2 TEST PROCEDURE	
17.3 PERFORMANCE & RESULT	
18 EN 61000-4-11 DIPS IMMUNITY TEST	
18.1 BLOCK DIAGRAM OF TEST SETUP	
18.2 TEST PROCEDURE	
18.3 INTERPRETATION	
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	
APPENDIX B: PHOTOGRAPHS OF EUT	

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the bedicated restriction of Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approval of AGC the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuer of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



1 VERIFICATION OF CONFORMITY

Applicant	Call4tel Pte Ltd			
Address	#03-06, Novalty TechPoint, 27 New industrial Road, Singapore 536212			
Manufacturer	Call4tel Pte Ltd			
Address	#03-06, Novalty TechPoint, 27 New industrial Road, Singapore 536212			
Factory	SGM Telecom Limited LTD			
Address	No.248 HongWu Road, Nanjing, China			
Product Designation	PBX Appliance			
Brand Name	Call4tel			
Test Model	SBC-NX-32			
Series Model	SBC-NX-64			
Difference description	All the same except for the model name and the color.			
Date of test	Mar. 23, 2021 to May 14, 2021			
Deviation	None any deviation from the test method.			
Condition of Test Sample	Normal			
Test Result	Pass			

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. for compliance with the requirements set forth in the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Prepared By

Jack tom

Jack Gui (Project Engineer)

May 14, 2021

Reviewed By

sin

Calvin Liu (Reviewer)

May 14, 2021

Approved By

Former

Forrest Lei (Authorized Officer)

May 14, 2021

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuese of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



2 SYSTEM DESCRIPTION

TEST MODE DESCRIPTION				
NO.	TEST MODE DESCRIPTION	WORST		
1	Normal operation	V		
Note: 1. V means EMI v	vorst mode.	- d0 - d		

3 MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in measurement" (GUM) published by ISO.

- Uncertainty of Conducted Emission, Uc = ±3.1dB
- Uncertainty of Radiated Emission, Uc = ±4.0dB
- Uncertainty of Radiated Emission above 1GHz, Uc = ±5.4dB

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Bedicated Pesting Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter approver, and the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days alterative issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



4 PRODUCT INFORMATION

Housing Type	Plastic and metal	à 14	1
EUT Input Rating	DC12V by adapter	S	
Adapter Model name	JY120100AEU3D		0
Adapter Input Rating	AC 100-240V 50/60Hz 0.26A	5 2	1
Adapter output Rating	DC 12V 1.0A	- CC .	- G

I/O Port Information (Applicable International Internation

I/O Port of EUT					
I/O Port Type	Number	Cable Description	Tested With		
DC IN	1	1.2m Unshielded	1		
WAN	1 0	20 - Z	1		
USB	2	OY	2		
HDMI	G 1G	1 2 2	1		
LAN	1	- 6 ² 6	1		

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the speciated restruction Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approval freshorization of AGC the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



5 SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
Displayer	DELL	0 - 2		10 <u>-</u>	-Q- 1
LAN cable	A = A	Š.	20 - 2	- 6	× - ~
HDMI cable	, o - ,	-	14 14 14	- O-	1 - 1
USB disk	G	25		C	G

Note:

1 All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated resting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter aphonization of AGE, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



6 TEST FACILITY

Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao 'an District, Shenzhen, Guangdong, China

7 TEST EQUIPMENT LIST

TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Test Receiver	R&S	ESPI	101206	May 11, 2021	May 10, 2022
LISN	R&S	ESH2-Z5	100086	Jul. 03, 2020	Jul. 02, 2021
8-Wire ISN CAT 5	Schwarzbeck	CAT5 8158	#158	Dec. 09, 2020	Dec. 08, 2021
Test software	R&S	ES-K1(Ver.V1.7.1)	N/A	N/A	N/A

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Test Receiver	R&S	ESCI	10096	Mar. 15, 2021	Mar. 14, 2022
Antenna	SCHWARZBECK	VULB9168	494	Jan. 08, 2021	Jan. 07, 2023
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	Mar. 23, 2021	Mar. 22, 2023
EXA Signal Analyzer	Agilent	N9010A	MY53470504	Dec. 07, 2020	Dec. 06, 2021
Test software	FARA	EZ-EMC (Ver.RA-03A)	N/A	N/A	N/A
Test software	Tonscend	JS32-RE(Ver.2.5)	N/A	N/A	N/A

TEST EQUIPMENT OF POWER HARMONICS / VOLTAGE FLUCTUATION / FLICKER

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Signal Conditioning Unit	Schaffner	CCN1000-1	72431	Jul. 15, 2020	Jul. 14, 2022
AC Source	Schaffner	NSG1007	56825	Jul. 15, 2020	Jul. 14, 2022

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "bedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approval. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



TEST EQUIPMENT OF SURGE/EFT/DIPSTEST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
EFT Surge Generator	Schaffner	Modula 6150	34437	Jul. 03, 2020	Jul. 02, 2021

TEST EQUIPMENT OF ESD TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
ESD Simulator	Schaffner	NSG 438	782	Jan. 08, 2021	Jan. 07, 2022

TEST EQUIPMENT OF RS IMMUNITY TEST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Signal Generator	R&S	E4421B	MY43351603	Jun. 08 2020	Jun. 07, 2021
Power Sensor	R&S	URV5-Z4	100124	May 22, 2020	May 21, 2021
Power Meter	R&S	NRVD	8323781027	May 22, 2020	May 21, 2022
Power Amplifier	KALMUS	7100LC	04-02/17-06-00 1	N/A	N/A
Power Amplifier	Milmega	AS0104-55_55	1004793	N/A	N/A
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May 17, 2019	May 16, 2021
Antenna	SCHWARZBEC K	VULB9168	494	Jan. 08, 2021	Jan. 07, 2023
Power Amplifier	rflight	NTWPA-256010 0	17063183	N/A	N/A
Broadband High Gain Horn Antenna	SCHWARZBEC K	BBHA 9120 J	00073	N/A	N/A

TEST EQUIPMENT OF CS IMMUNITY TEST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Power Amplifier	AR	75A250	18464	N/A	N/A
CDN	ZHINAN	ZN3751	15004	Sep. 03, 2020	Sep. 02, 2022
6dB attenuator	ZHINAN	E-002	N/A	Sep. 03, 2020	Sep. 02, 2022
Power Sensor	R&S	URV5-Z4	100124	May 22, 2020	May 21, 2021
Power Meter	R&S	NRVD	8323781027	May 22, 2020	May 21, 2021
Signal Generator	R&S	E4421B	MY43351603	Jun. 08 2020	Jun. 07, 2021

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the bedicated Festure/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



8 TESTSUMMARY LIST

Test item	Test Requirement	Test Method	Class/Severity	Result
Conducted emission	EN 55032	EN 55032	Class B	Pass
Radiated emission	EN 55032	EN 55032	Class B	Pass
Harmonic current emission	EN IEC 61000-3-2	EN IEC 61000-3-2	Class A	N/A
Voltage fluctuations & flicker	EN 61000-3-3	EN 61000-3-3	§5 of EN 61000-3-3	Pass
Electrostatic Discharge Immunity	EN 55035	EN 61000-4-2	± 8.0 kV (Air Discharge) ± 4.0 kV (Contact Discharge) ± 4.0 kV (Indirect Discharge)	Pass
Radiated RF Electromagnetic	EN 55035	EN 61000-4-3	3V/m with 80% AM. 1kHz Modulation.	Pass
Electrical fast transient/burst Immunity-AC Power port	EN 55035	EN 61000-4-4	+/- 1kV for Power Supply Lines	Pass
Electrical fast transient/burst Immunity Signal Port	EN 55035	EN 61000-4-4	+/- 0.5kV	Pass
Surge immunity-AC Power port	EN 55035	EN 61000-4-5	+/- 1kV (Line to Line) +/- 2kV (Line to Ground)	Pass
Immunity to Conducted Disturbances Induced by RF fields-AC Power port	EN 55035	EN 61000-4-6	3V(0.15MHz-10MHz) 3V-1V(10MHz-30MHz) 1V(30MHz-80MHz) with 80% AM. 1 kHz Modulation	Pass
Immunity to Conducted Disturbances Induced by RF fields- Signal Port	EN 55035	EN 61000-4-6	3V(0.15MHz-10MHz) 3V-1V(10MHz-30MHz) 1V(30MHz-80MHz) with 80% AM. 1 kHz Modulation	Pass
Power frequency magnetic field	EN 55035	EN 61000-4-8	1A/m 50Hz or 60Hz	N/A
Voltage dips and short interruptions immunity	EN 55035	EN 61000-4-11	Odegrees	Pass

Note :

- 1. N/A means not applicable.
- 2. Power frequency magnetic field: Applicable only to EUT containing devices susceptible to magnetic fields, such as CRT monitors, Hall elements, electrodynamic microphones, magnetic field sensors, etc.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Bedicated Festure/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written aphorization of AGE" the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



9 EN 55032 LINE CONDUCTED EMISSION TEST

9.1 LIMITS OF LINE CONDUCTED EMISSION TEST

AT AC MAINS POWER PORT

Fromosov	Maximum RF Line Voltage				
Frequency	Q.P.(dBuV)	Average(dBuV)			
150kHz-500kHz	66-56	56-46			
500kHz-5MHz	56	46			
5MHz-30MHz	60	50			

Note:

1. The lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz.

AT telecommunication PORT

Erequency	Maximum RF Line Voltage				
Frequency	Q.P.(dBuV)	Average(dBuV)			
150kHz-500kHz	84-74	74-64			
500kHz-30MHz	74	64			

9.2 BLOCK DIAGRAM OF TEST SETUP



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of ACE. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.





9.3 PROCEDURE OF LINE CONDUCTED EMISSION TEST

- (1)The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per EN 55032 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 10cm non-conductive covering to insulate the EUT from the ground plane.
- (2) Support equipment, if needed, was placed as per EN 55032.
- (3) All I/O cables were positioned to simulate typical actual usage as per EN 55032.
- (4)The EUT received DC 12V power from adapter which received AC 230V/50Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- (5) All support equipments received power from a second LISN supplying power of AC230V and 110V/50Hz, if any.
- (6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- (7) Analyzer / Receiver scanned from 150kHz to 30MHz for emissions in each of the test modes.
- (8) During the above scans, the emissions were maximized by cable manipulation.
- (9) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions.
- (10) Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGE. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



9.4 TEST RESULT OF LINE CONDUCTED EMISSION TEST



MEASUREMENT RESULT: "agc_fin"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.158000	44.10	12.4	66	21.5	QP	г1
0.282000	44.80	12.4	61	16.0	QP	г1
0.394000	45.20	12.4	58	12.8	QP	г1
0.422000	36.40	12.4	57	21.0	QP	ъ1
0.586000	36.10	12.4	56	9.9	QP	г1
18.282000	30.70	14.7	60	29.3	QP	г1

MEASUREMENT RESULT: "agc fin2"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.150000 0.306000 0.422000 0.462000 0.578000 24.186000	33.90 24.30 29.60 29.10 24.50 26.60	12.4 12.4 12.4 12.4 12.4 12.4 15.1	56 50 47 47 46 50	22.1 25.8 17.8 17.6 21.5 23.4	AV AV AV AV AV	L1 L1 L1 L1 L1 L1

RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



Report No.: AGC11262210401EE01 Page 15 of 51



LINE CONDUCTED EMISSION TEST-N

MEASUREMENT RESULT: "agc_fin"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.150000	38.90	12.4	66	27.1	QP	N
0.418000	35.20	12.4	58	22.3	QP	Ν
0.458000	35.70	12.4	57	21.0	QP	N
1.218000	30.70	12.4	56	25.3	QP	N
2.098000	29.40	12.5	56	26.6	QP	N
16.522000	33.60	14.5	60	26.4	QP	N

MEASUREMENT RESULT: "agc_fin2"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.150000	33.90	12.4	56	22.1	AV	Ν
0.422000	31.30	12.4	47	16.1	AV	Ν
0.458000	34.30	12.4	47	12.4	AV	Ν
1.222000	24.60	12.4	46	21.4	AV	Ν
2.138000	26.40	12.5	46	19.6	AV	N
17.590000	18.90	14.6	50	31.1	AV	Ν

RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



Report No.: AGC11262210401EE01 Page 16 of 51

AT TELECOMMUNICATION PORT



MEASUREMENT RESULT: "agc fin"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.466000	62.10	12.4	75	12.5	QP	LAN
0.514000	52.70	12.4	74	21.3	QP	LAN
7.578000	49.10	12.7	74	24.9	QP	LAN
9.254000	36.10	12.8	74	37.9	QP	LAN
9.354000	37.30	12.8	74	36.7	QP	LAN
9.502000	39.60	12.8	74	34.4	QP	LAN

MEASUREMENT RESULT: "agc fin2"

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.466000	57.30	12.4	65	7.3	AV	LAN
9.334000	27.30	12.8	64	36.7	AV	LAN
9.458000	28.10	12.8	64	35.9	AV	LAN
18.242000	53.40	14.6	64	10.6	AV	LAN
20.258000	51.80	14.8	64	12.2	VA	LAN
23.130000	53.70	15.0	64	10.3	AV	LAN

RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



10 EN 55032 RADIATED EMISSION TEST

10.1 LIMITS OF RADIATED DISTURBANCES

Limits for radiated disturbance 30M to1 GHz at a measurement distance of 3 m

Frequency range (MHz)	Quasi peak limits(dBuV/m), for Class B ITE, at 3m measurement distance
30 - 230	40
230 - 1000	47

Limits for radiated disturbance above 1 GHz at a measurement distance of 3 m

Frequency range (MHz)	Limits (dBuV/m), Class B ITE				
	Peak	Average			
1000-3000	70	50			
3000-6000	74	54			

Notes:

1. The lower limit shall apply at the transition frequency.

2. Additional provisions may be required for cases where interference occurs.

10.2 BLOCK DIAGRAM OF TEST SETUP

System Diagram of Connections between EUT and Simulators



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Festive/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGE, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



10.3 PROCEDURE OF RADIATED EMISSION TEST

- (1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per EN 55032 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 10cm non-conductive covering to insulate the EUT from the ground plane.
- (2) Support equipment, if needed, was placed as per EN 55032.
- (3) All I/O cables were positioned to simulate typical actual usage as per EN 55032.
- (4) The EUT received DC12V power from adapter which received AC230V/50Hz power from socket under the turntable.
- (5) The antenna was placed at 3 meter away from the EUT as stated in EN 55032. The antenna connected to the Analyzer via a cable and at times a pre-amplifier would be used.
- (6) The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- (7) The test mode(s) were scanned during the test:
- (8) Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P./Peak reading is presented.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuence of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



72.0 dBuV/m Limit Margin Administration of the second of 32 -8 30.000 127.00 224.00 321.00 418.00 515.00 612.00 709.00 806.00 1000.00 MHz

10.4 TEST RESULT OF RADIATED EMISSION TEST



40.00

47.00

47.00

47.00

47.00

-6.22

-8.68

-4.05

-6.58

-3.27

peak

peak

peak

peak

peak

33.78

38.32

42.95

40.42

43.73

Radiated Emission Test at 3m Distance-(30MHz-1000MHz) Horizontal

RESULT: PASS

2

3

4

5

6

148.3400

288.0200

445.1600

650.8000

742.9500

13.40

17.77

17.97

12.86

14.61

20.38

20.55

24.98

27.56

29.12

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Bedicated Fest Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGE presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance /Inspection The test results of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.





Radiated Emission Test at 3m Distance-(30MHz-1000MHz) Vertical

37.99 3 288.9900 47.00 -9.01 17.36 20.63 peak 360.7700 14.92 23.60 47.00 4 38.52 -8.48 peak 5 445.1600 18.76 24.98 43.74 47.00 -3.26 peak 533.4300 47.00 6 12.74 25.65 38.39 -8.61 peak

RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Festive/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGE, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.





Radiated Emission Test at 3m Distance-Above 1G –Horizontal

NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1240.2402	36.96	-16.88	70.00	33.04	100	300	Horizontal
2	1545.5455	35.85	-16.65	70.00	34.15	100	90	Horizontal
3	2011.0110	40.48	-11.77	70.00	29.52	100	150	Horizontal
4	2931.9319	42.54	-9.38	70.00	27.46	100	300	Horizontal
5	3587.5876	45.80	-7.41	74.00	28.20	100	230	Horizontal
6	5014.0140	46.92	-4.74	74.00	27.08	100	270	Horizontal

RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "bedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approval. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.





Radiated Emission Test at 3m Distance Above 1G –Vertical

NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1225.2252	39.30	-16.86	70.00	30.70	100	240	Vertical
2	1605.6056	36.13	-16.01	70.00	33.87	100	30	Vertical
3	2156.1562	42.11	-11.16	70.00	27.89	100	340	Vertical
4	3127.1271	42.78	-8.89	74.00	31.22	100	290	Vertical
5	4083.0831	45.05	-6.28	74.00	28.95	100	50	Vertical
6	4798.7988	46.19	-4.91	74.00	27.81	100	260	Vertical

RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "bedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approval. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



11 EN IEC 61000-3-2 POWER HARMONICS TEST

POWER HARMONICS MEASUREMENT					
Port	AC mains				
Basic Standard	EN IEC 61000-3-2				
Limits	⊠CLASS A ;□CLASS B; □CLASS C; □CLASS D				
Temperature	25°C				
Humidity	55% RH				

11.1 BLOCK DIAGRAM OF TEST SETUP

Harmonics & Flicker Analyzer	i i		
+	Power cord		
Power Source		EUT	Support Units
2. 1			
200 . 00	0.8m		200 . 00
	191 . 19		
- O - 2			- G I

11.2 RESULT

Note: Owning to the power of EUT is less than 75W, so test is not applicable.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "bedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approval. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



12 EN 61000-3-3 VOLTAGE FLUCTUATION / FLICKER TEST

VOLTAGE FLUCTUATION/FLICKER MEASUREMENT

Port	AC mains
Basic Standard	EN 61000-3-3
Limits	§5 of EN 61000-3-3
Temperature	23.6°C
Humidity	57.5% RH

12.1 BLOCK DIAGRAM OF TEST SETUP

Harmonics & Flicker Analyzer	d d			
+	Power cord			
Power Source		EUT	Support Units	
200	0.8m			
	197 10			- 6
-O 2				

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the speciated restruction Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approval freshorization of AGC the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

AGC®

Report No.: AGC11262210401EE01 Page 25 of 51

12.2 RESULT



Flicker Test Summary per EN/IEC61000-3-3 (Run time)

Parameter values recorded during the test:					
Vrms at the end of test (Volt):	229.99				
Highest dt (%):	0.00				
Time(mS) >dt:	0.0				
Highest dc (%):	0.00				
Highest dmax (%):	0.00				
Highest Pst (10 min. period):	0.160				
Highest Plt (2 hr. period):	0.070				

Test limit (%):	3.30	Pass
Test limit (mS):	500.0	Pass
Test limit (%):	3.30	Pass
Test limit (%):	4.00	Pass
Test limit:	1.000	Pass
Test limit:	0.650	Pass

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated resting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGE, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuese of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



13 EN 61000-4-2 ESD IMMUNITY TEST

ELECTROSTATIC DISCHARGE (ESD) IMMUNITY TEST

Port	Enclosure
Basic Standard	EN 61000-4-2
Test Level	± 8.0 kV (Air Discharge) ± 4.0 kV (Contact Discharge) ± 4.0 kV (Indirect Discharge)
Standard require	В
Temperature	22.3°C
Humidity	58.4% RH

13.1 BLOCK DIAGRAM OF TEST SETUP

(The 470 k ohm resistors are installed per standard requirement)



Ground Reference Plane₽

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Festive/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter aphorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuese of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



13.2 TEST PROCEDURE

The test procedure shall be in accordance with EN 61000-4-2. Electrostatic discharges shall be applied only to points and surfaces of the EUT which are expected to be touched during normal operation, including user access operations specified in the user manual, for example cleaning or adding consumables when the EUT is powered. The application of discharges to the contacts of open connectors is not required.

The number of test points is EUT dependent. Sub clause 8.3.1 and Clause A.5 of EN 61000-4-2 shall be taken into consideration when selecting test points, paying particular attention to keyboards, dialling pads, power switches, mice, drive slots, card slots, the areas around communication ports, etc.

When applying direct discharges to a portable or handheld battery-powered EUT with a display screen, it may not be possible to observe the screen for a given EUT orientation. If observation of the screen is necessary during this test, the EUT may be mounted vertically using non-metallic supports.

Note: As per the A2 to EN 61000-4-2, a bleed resistor cable is connected between the EUT and HCP during the test. The electrostatic discharges were applied as follows:

Voltage	Coupling	Test Performance	Result
±4kV	Contact Discharge	No function loss	A
±4kV	Indirect Discharge HCP (Front)	No function loss	А
±4kV	Indirect Discharge HCP (Left)	No function loss	A
±4kV	Indirect Discharge HCP (Back)	No function loss	A
±4kV	Indirect Discharge HCP (Right)	No function loss	A
±4kV	Indirect Discharge VCP (Front)	No function loss	A
±4kV	Indirect Discharge VCP (Left)	No function loss	А
±4kV	Indirect Discharge VCP (Back)	No function loss	A
±4kV	Indirect Discharge VCP (Right)	No function loss	A
±8kV	Air Discharge	No function loss	А

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approver, or having not been stamped by the "Dedicated Festing/Inspection presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



13.3 PERFORMANCE & RESULT

Criteria A:	The apparatus continues to operate as intended. 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. In some cases the performance level may be replaced by a permissible loss of performance.
Criteria B:	The apparatus continues 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. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
Criteria C:	Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

PASS DFAIL

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.

 Attestation of Global Compliance(Shenzhen)Co., Ltd

 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

 Tel: +86-755 2523 4088
 E-mail: agc@agc-cert.com



14 EN 61000-4-3 RS IMMUNITY TEST

RADIATED ELECTROMAGNETIC FIELD IMMUNITY TEST

Port	Enclosure
Basic Standard	EN 61000-4-3
Test Level:	3V/m with 80% AM. 1kHz Modulation.
Standard require	A
Temperature	22.1°C
Humidity	57.5% RH

14.1 BLOCK DIAGRAM OF TEST SETUP



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Festive/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter aphorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuese of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



14.2 TEST PROCEDURE

The EUT was located at the edge of supporting table keep 3 meter away from transmitting antenna, it just the calibrated square area of field uniformity. The support units were located outside of the uniformity area, but the cable(s) connected with EUT were exposed to the calibrated field as per EN 61000-4-3.

EUT worked with resistance load, and make sure EUT worked normally.

Setting the testing parameters of RS test software per EN 61000-4-3.

Performing the test at each side of with specified level (3V/m) at 1% steps and test frequency from 80MHz to 1000MHz

Recording the test result in following table.

EN 61000-4-3 Final test conditions:

Test level: 3V/m

Steps: 1 % of fundamental Dwell Time: 1 sec

Range (MHz)	Field	Modulation	Polarity	Position	Test Performance	Result
80-1000	3V/m	AM	H/V	Front	No function loss	А
80-1000	3V/m	AM	H/V	Left	No function loss	А
80-1000	3V/m	AM	H/V	Back	No function loss	А
80-1000	3V/m	AM	H/V	Right	No function loss	А
1800,2600, 3500,5000	3V/m	AM	H/V	Front	No function loss	А
1800,2600, 3500,5000	3V/m	AM	H/V	Left	No function loss	А
1800,2600, 3500,5000	3V/m	AM	H/V	Back	No function loss	А
1800,2600, 3500,5000	3V/m	AM	H/V	Right	No function loss	A

Frequency (±1 %) for Spot test.

14.3 PERFORMANCE & RESULT

Criteria A:	The apparatus continues to operate as intended. 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. In some cases the performance level may be replaced by a permissible loss of performance.
Criteria B:	The apparatus continues 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. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
Criteria C:	Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

PASS

_|FAIL

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

Attestation of Global Compliance(Shenzhen)Co., Ltd

Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Web: http://cn.agc-cert.com/



15 EN 61000-4-4 EFT IMMUNITY TEST

ELECTRICAL FAST TRANSIENTS/BURST IMMUNITY TEST

Port	On Power Supply Lines	- C
Basic Standard	EN 61000-4-4	9
Test Level	+/- 1kV for Power Supply Lines +/- 0.5kV for signal port	
Standard require	В	
Temperature	22.7°C	
Humidity	58.0% RH	

15.1 BLOCK DIAGRAM OF TEST SETUP

			EUT	Support Units	
AC Line	EFT/Burst/Surge Generator	↑ └ 80cm ↓	Non-Con	ductive Table	5

Controller Computer

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the speciated restruction Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approval freshorization of AGC the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



15.2 TEST PROCEDURE

The EUT and support units were located on a wooden table 0.8m away from ground reference plane.

A 1.0 meter long power cord was attached to EUT during the test.

The length of communication cable between communication port and clamp was keeping within 1 meter.

EUT worked with resistance load, and make sure EUT worked normally.

Related peripherals work during the test.

Recording the test result as shown in following table.

Test conditions:

Impulse Frequency: 5kHz

Tr/Th: 5/50ns

Burst Duration: 15ms

Burst Period: 300ms

Inject Line	Voltage kV	Inject Method	Test Performance	Result
L+N	+/- 1	Direct	No function loss	А
Signal	+/- 0.5	Coupling	No function loss	A

15.3 PERFORMANCE & RESULT

Criteria A:	The apparatus continues to operate as intended. 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. In some cases the performance level may be replaced by a permissible loss of performance.
Criteria B:	The apparatus continues 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. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
Criteria C:	Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

PASS [FAIL]

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGE, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



16 EN 61000-4-5 SURGE IMMUNITY TEST

SURGE IMMUNITY TEST	
Port	On Power Supply Lines
Basic Standard	EN 61000-4-5
Requirements	+/- 1kV (Line to Line)
Standard require	В
Temperature	22.7°C
Humidity	58.0% RH

16.1 BLOCK DIAGRAM OF TEST SETUP



Controller Computer

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



16.2 TEST PROCEDURE

The EUT and support units were located on a wooden table 0.8 m away from ground floor.

EUT worked with resistance load, and make sure EUT worked normally.

Recording the test result as shown in following table.

Test conditions:

Voltage Waveform	1.2/50 <i>u</i> s
Current Waveform	8/20 <i>u</i> s
Polarity	Positive/Negative
Phase angle	90°,270°
Number of Test	5

Coupling Line	Voltage (kV)	Polarity	Coupling Method	Test Performance	Result
L1-N	1	Positive	Capacitive	No function loss	А
L1-N	1	Negative	Capacitive	No function loss	А

16.3 PERFORMANCE & RESULT

Criteria A:	The apparatus continues to operate as intended. 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. In some cases the performance level may be replaced by a permissible loss of performance.
Criteria B:	The apparatus continues 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. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
Criteria C:	Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

⊠PASS

FAIL

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "bedicated Festive/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written aphrorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuese of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



17 EN 61000-4-6 CS IMMUNITY TEST

Port	On Power Supply Lines
Basic Standard	EN 61000-4-6
Requirements	3V(0.15MHz-10MHz) 3V-1V(10MHz-30MHz) 1V(30MHz-80MHz) with 80% AM. 1 kHz Modulation
Standard require	A
Temperature	24.1°C
Humidity	56.7% RH

17.1 BLOCK DIAGRAM OF TEST SETUP



Ground Reference Plane

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.





17.2 TEST PROCEDURE

The EUT and support units were located at a ground reference plane with the interposition of a 0.1 m thickness insulating support and the CDN was located on GRP directly.

EUT worked with resistance load, and make sure EUT worked normally.

Related peripherals work during the test.

Setting the testing parameters of CS test software per EN 61000-4-6.

Recording the test result in following table.

Test conditions for AC power port and signal port:

Frequency Range	0.15MHz-80MHz	60	0 2	
Frequency Step	1% of fundamental	. 27	200	9.5
Dwell Time	3 sec	G 2	× .	Nº N

Range (MHz)	Strength	Modulation	Result
0.15-10	3V	AM	A
10-30	3V-1V	AM	А
30-80	1V	AM	A

17.3 PERFORMANCE & RESULT

Criteria A:	The apparatus continues to operate as intended. 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. In some cases the performance level may be replaced by a permissible loss of performance.
Criteria B:	The apparatus continues 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. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
Criteria C:	Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

⊠PASS

FAIL

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of ACE. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



18 EN 61000-4-11 DIPS IMMUNITY TEST

VOLTAGE DIPS, SHORT INTERRUPTIONS AND VOLTAGE VARIATIONS IMMUNITY TEST

Port	On Power Supply Lines
Basic Standard	EN 61000-4-11
Requirements	PHASE ANGLE 0degrees
Test Interval	Min. 10 sec.
Temperature	22.7°C
Humidity	58.0% RH

	Test Level % U _T	Reduction (%)	Duration (periods)	Performance Criteria
Voltage Dips	<5	>95	0.5	В
	70	30	25	С

Voltage	Test Level	Reduction	Duration	Performance
	% U _T	(%)	(periods)	Criteria
Interruptions	<5	>95	250	С

18.1 BLOCK DIAGRAM OF TEST SETUP

To AC Source	->	Dips/Interruption and Variations Simulator		EUT &	
	10	0		Support Units	1
,ċ	6	20- 200	80 cm	NO N	6 ⁰

Controller Computer

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.





18.2 TEST PROCEDURE

The EUT and support units were located on a wooden table, 0.8 m away from ground floor.

EUT worked with resistance load, and make sure EUT worked normally.

Setting the parameter of tests and then perform the test software of test simulator.

Conditions changes to occur at 0 degree crossover point of the voltage waveform.

Recording the test result in test record form.

Test conditions:

The duration with a sequence of three dips/interruptions with interval of 10 s minimum (Between each test event)

Voltage Dips:

Test Level % U _T	Reduction (%)	Duration (periods)	Observation	Performance Result
<5	>95	0.5	Normal	A
70	30	25	Normal	А

Voltage Interruptions:

Test Level	Reduction	Duration	Observation	Performance
% U⊤	(%)	(periods)		Result
<5	>95	250	The EUT stopped working during the test, but it can be recovered by itself after test.	В

18.3 INTERPRETATION

Criteria A:	I he apparatus continues to operate as intended. 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. In some cases the performance level may be replaced by a permissible loss of performance.
Criteria B:	The apparatus continues 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. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
Criteria C:	Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

PASS

FAIL

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Boundard Pestro/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGE. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



Report No.: AGC11262210401EE01 Page 39 of 51

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

EN 55032 CONDUCTED EMISSION TEST SETUP



EN 55032 CONDUCTED EMISSION TEST SETUP (LAN)



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Festive/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written aphroization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Report No.: AGC11262210401EE01 Page 40 of 51



EN 55032 RADIATED EMISSION TEST SETUP 1G-

EN 55032 RADIATED EMISSION TEST SETUP 1G+

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Bedicated Festure/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written aphorization of AGE" the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

Report No.: AGC11262210401EE01 Page 41 of 51

EN 61000-3-3 VOLTAGE HARMONICS/FLUCTUATION / FLICKER TEST

EN 61000-4-2 ESD IMMUNITY TEST SETUP

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the speciated restruction Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approval freshorization of AGC the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

Report No.: AGC11262210401EE01 Page 42 of 51

EN 61000-4-3 RS IMMUNITY TEST SETUP

EFT SURGE and DIPS IMMUNITY TEST SETUP-AC POWER PORT

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Festive/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter aphorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuese of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.

Report No.: AGC11262210401EE01 Page 43 of 51

EFT IMMUNITY TEST SETUP- SIGNAL PORT

EN 61000-4-6 CS IMMUNITY TEST SETUP- SIGNAL PORT

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "bedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approval. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.

Report No.: AGC11262210401EE01 Page 44 of 51

EN 61000-4-6 CS IMMUNITY TEST SETUP-AC POWER PORT

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Pasting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter application of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.

Report No.: AGC11262210401EE01 Page 45 of 51

APPENDIX B: PHOTOGRAPHS OF EUT

ALL VIEW OF EUT

TOP VIEW OF EUT

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the stead restriction of Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approver, and the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

Report No.: AGC11262210401EE01 Page 46 of 51

BOTTOM VIEW OF EUT

FRONT VIEW OF EUT

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Festive/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter aphorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuese of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.

Report No.: AGC11262210401EE01 Page 47 of 51

BACK VIEW OF EUT

LEFT VIEW OF EUT

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated resting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGE, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuese of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

Report No.: AGC11262210401EE01 Page 48 of 51

RIGHT VIEW OF EUT

OPEN VIEW OF EUT

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated resting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGE, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuese of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

Report No.: AGC11262210401EE01 Page 49 of 51

NTERNAL VIEW OF EUT-1

INTERNAL VIEW OF EUT-2

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Pestro/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter aphotization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

Report No.: AGC11262210401EE01 Page 50 of 51

INTERNAL VIEW OF EUT-3

INTERNAL VIEW OF EUT-4

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Bedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written approver, he test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

Report No.: AGC11262210401EE01 Page 51 of 51

ADAPTER OF EUT

----END OF REPORT----

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issues of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").

2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.

3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

4. The non-CMA report issued by AGC is only permitted to be used by the client as internal reference use and shall not be used for public demonstration purpose.

5. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

6. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

7. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.

8. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

9. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.

10. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Feature/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuese of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.