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Shenzhen Branch**

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TEST REPORT

Application No.: SZEM1606004389IT
Applicant: ROHM Semiconductor USA, LLC
Address of Applicant: 2323 Owen Street, Santa Clara, CA 95054
Equipment Under Test (EUT):
EUT Name: ROHM Sensor Shield
Model No.: SENSORSHLD1-EVK-101
Trade mark: ROHM
Standards: EN 55022:2010
EN 55024:2010+A1:2015
Date of Receipt: 2016-06-12
Date of Test: 2016-06-15 to 2016-06-17
Date of Issue: 2016-06-21

Test Result :	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.



Jack Zhang
EMC Laboratory Manager



The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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2 Test Summary

Item	Standard	Method	Class	Result
Conducted Disturbance at Mains Terminals (150kHz-30MHz)	EN 55022:2010	EN 55022:2010	Class B	Pass
Radiated Disturbance (30MHz-1GHz)	EN 55022:2010	EN 55022:2010	Class B	Pass
Electrostatic Discharge	EN 55024:2010 +A1:2015	EN 61000-4-2:2009	4kV Contact Discharge 8kV Air Discharge	Pass
Radiated Immunity (80MHz-1GHz)	EN 55024:2010 +A1:2015	EN 61000-4-3:2006 +A1:2008+A2:2010	3V/m, 80%, 1kHz Amp. Mod.	Pass
Electrical Fast Transients/Burst at Power Port	EN 55024:2010 +A1:2015	EN 61000-4-4:2012	1kV 5/50ns Tr/Th 5kHz Repetition Frequency	Pass
Surge at Power Port	EN 55024:2010 +A1:2015	EN 61000-4-5:2014	1.2/50µs Tr/Th 1kV Line to Line 2kV Line to Ground	Pass
Conducted Immunity at Power Port (150kHz-80MHz)	EN 55024:2010 +A1:2015	EN 61000-4-6:2014	3Vrms (emf),80%,1kHz Amp. Mod.	Pass
Voltage Dips and Interruptions	EN 55024:2010 +A1:2015	EN 61000-4-11:2004	0 % UT for 0.5per 0 % UT for 250per 70 % UT for 25per UT is Supply Voltage	Pass



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4 General Information

4.1 Details of E.U.T.

Power Supply: Supply by PC
Internal source 0.4MHz

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Laptop	Lenovo	T430u	REF. No.SEA1800
Router	NETGEAR	DGN2200	REF. No.SEA2200
Base test board	ARDUINO	UNO R3	---
USB cable	Supply by client	120cm shielded with one ferrite core	---



4.3 Standards Applicable for Testing

Table 1 : Tests Carried Out Under EN 55022:2010

Method	Item	Status
EN 55022:2010	Conducted Disturbance at Mains Terminals (150kHz-30MHz)	√
EN 55022:2010	Conducted Disturbance at Telecommunication Port (150kHz-30MHz)	×
EN 55022:2010	Radiated Disturbance (30MHz-1GHz)	√
EN 55022:2010	Radiated Disturbance (above 1GHz)	×

Table 2 : Tests Carried Out Under EN 55024:2010+A1:2015

Method	Item	Status
EN 61000-4-2:2009	Electrostatic Discharge	√
EN 61000-4-3:2006 +A1:2008+A2:2010	Radiated Immunity (80MHz-1GHz)	√
EN 61000-4-4:2012	Electrical Fast Transients/Burst at Power Port	√
EN 61000-4-4:2012	Electrical Fast Transients/Burst at Signal Port	×
EN 61000-4-5:2014	Surge at Power Port	√
EN 61000-4-5:2014	Surge at Signal Port	×
EN 61000-4-6:2014	Conducted Immunity at Power Port (150kHz-80MHz)	√
EN 61000-4-6:2014	Conducted Immunity at Signal Port (150kHz-80MHz)	×
EN 61000-4-8:2010	Power Frequency Magnetic Field	×
EN 61000-4-11:2004	Voltage Dips and Interruptions	√

×

Indicates that the test is not applicable

√

Indicates that the test is applicable



4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch E&E Lab,

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.
518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

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

• **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

• **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

4.8 Monitoring of EUT for All Immunity Test

Visual: Monitored the light and communication status of the EUT

Audio: None



5 Equipment List

Conducted Disturbance at Mains Terminals(150kHz-30MHz)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	Shielding Room	ChangZhou ZhongYu	GB-88	SEM001-06	2016-05-13	2017-05-13
2	LISN	Rohde & Schwarz	ENV216	SEM007-01	2015-10-09	2016-10-09
3	LISN	ETS-LINDGREN	3816/2	SEM007-02	2016-04-25	2017-04-25
4	EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2016-04-25	2017-04-25

Radiated Disturbance(30MHz-1GHz)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2016-05-13	2017-05-13
2	EMI Test Receiver (9k-3GHz)	Rohde & Schwarz	ESCI	SEM004-01	2016-04-25	2017-04-25
3	Trilog-Broadband Antenna (30M-1GHz)	Schwarzbeck	VULB9168	SEM003-17	2016-01-26	2017-01-26
4	Pre-amplifier	Sonoma Instrument Co	310N	SEM005-03	2016-04-25	2017-04-25

Electrostatic Discharge						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	ESD Simulator	SCHAFFNER	NSG 438	SEM019-01	2016-03-16	2017-03-16
2	ESD Ground Plane	SGS(3m*3m)	N/A	SEN006-01	N/A	N/A



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Radiated Immunity(80MHz-1GHz)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	Fully-Anechoic Chamber 2	Chang Zhou Zhong Shuo	854	SEM001-05	2014-06-10	2017-06-10
2	Signal Generator	Rohde & Schwarz	SMB100A	SEM006-11	2016-04-25	2017-04-25
3	Broadband Amplifier (80MHz-1GHz)	Rohde & Schwarz	BBA150-BC250	SEM005-12	2015-10-31	2016-10-31
4	Broadband Amplifier (800MHz-3GHz)	Rohde & Schwarz	BBA150-D110	SEM005-13	2015-10-31	2016-10-31
5	Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-09	2016-04-25	2017-04-25
6	Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-08	2016-04-25	2017-04-25
7	Log-periodic Antenna (0.07-3GMHz)	Schwarzbeck	VUSLP9111E	SEM003-19	N/A	N/A
8	Open Switch and Control Unit	Rohde & Schwarz	OSP130	SEN007-01	2015-10-31	2016-10-31

Electrical Fast Transients/Burst at Power Port						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	EMC Immunity Test System	Thermo ELECTRON	EMCPro Plus	SEM018-01	2015-10-09	2016-10-09

Surge at Power Port						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	EMC Immunity Test System	Thermo ELECTRON	EMCPro Plus	SEM018-01	2015-10-09	2016-10-09

Conducted Immunity at Power Port(150kHz-80MHz)						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	RF-Generator	SCHAFFNER	NSG 2070	SEM006-01	2015-10-09	2016-10-09
2	Coupling/Decoupling Network	SCHAFFNER	CDN M016	SEM007-03	2015-10-09	2016-10-09



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Voltage Dips and Interruptions						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	EMC Immunity Test System	Thermo ELECTRON	EMCPro Plus	SEM018-01	2015-10-09	2016-10-09

General used equipment						
Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2015-10-12	2016-10-12
2	Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2015-10-12	2016-10-12
3	Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2015-10-12	2016-10-12
4	Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2016-04-25	2017-04-25

6 Emission Test Results

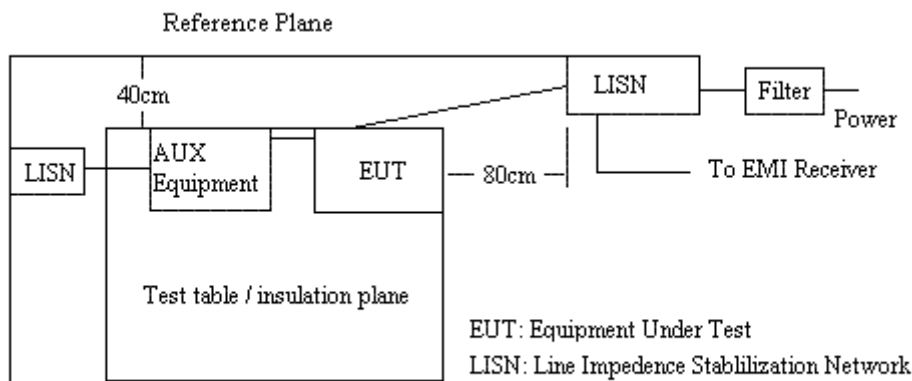
6.1 Conducted Disturbance at Mains Terminals(150kHz-30MHz)

Test Requirement:	EN 55022:2010
Test Method:	EN 55022:2010
Frequency Range:	150kHz to 30MHz
Limit:	
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

6.1.1 E.U.T. Operation

Operating Environment:					
Temperature:	26.0 °C	Humidity:	57 % RH	Atmospheric Pressure:	1005 mbar
Test mode:	a: PC mode, build the connectiob between EUT and PC through base test board, keep data exchanging.				
The worst case for final test:	a: PC mode, build the connectiob between EUT and PC through base test board, keep data exchanging.				

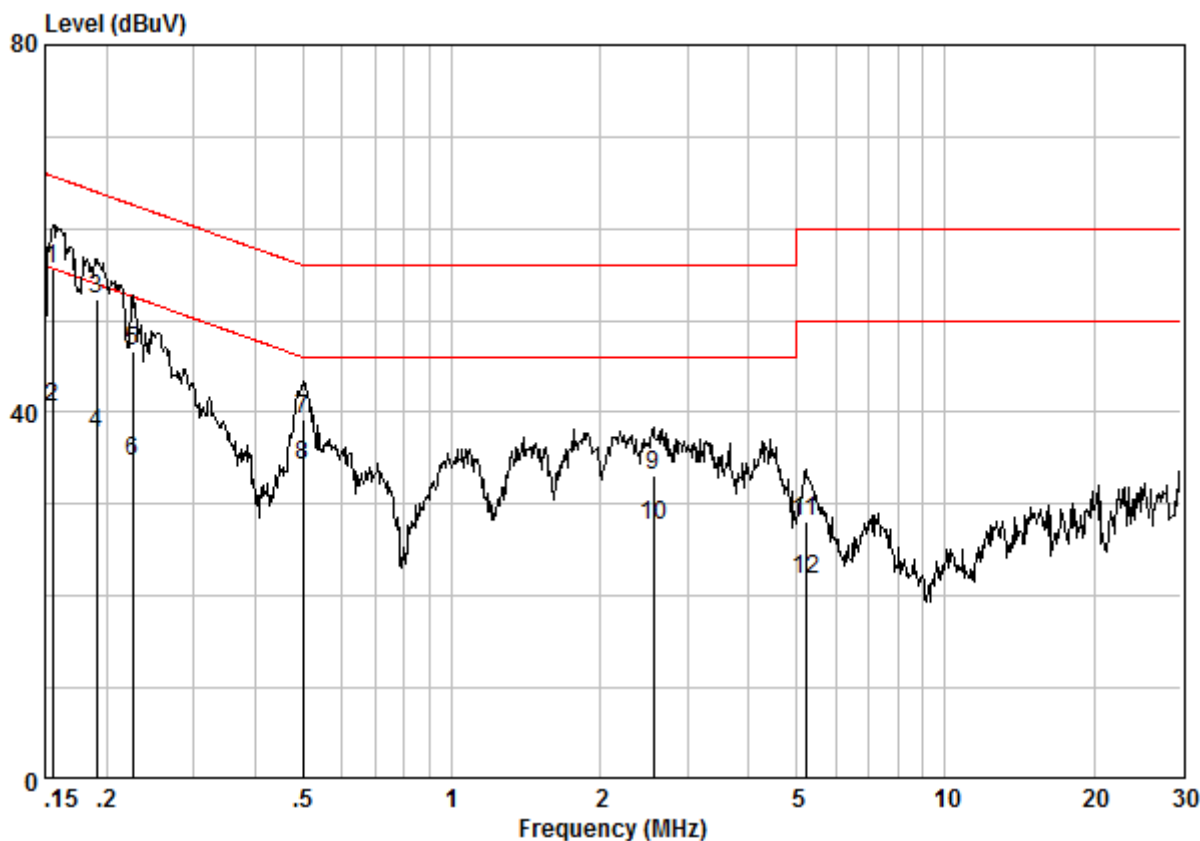
6.1.2 Test Setup



6.1.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

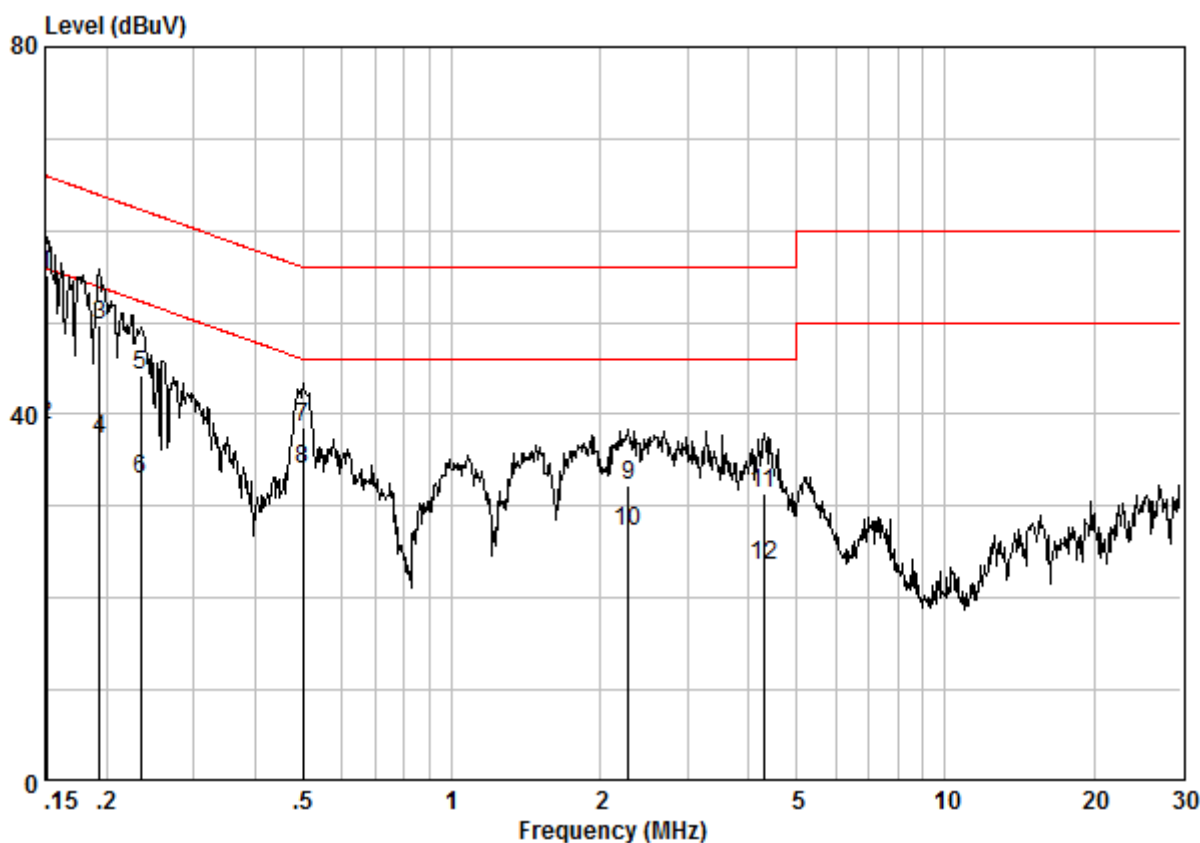
Mode:a;Line:Live Line



Site : Shielding Room
Condition : CE LINE
Job No. : 4389IT
Test Mode : a

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 @	0.15567	0.02	9.59	45.98	55.59	65.69	-10.10	QP
2	0.15567	0.02	9.59	30.99	40.60	55.69	-15.09	AVERAGE
3	0.19039	0.02	9.60	42.62	52.24	64.02	-11.78	QP
4	0.19039	0.02	9.60	28.06	37.68	54.02	-16.34	AVERAGE
5	0.22556	0.02	9.60	37.13	46.75	62.61	-15.87	QP
6	0.22556	0.02	9.60	25.06	34.68	52.61	-17.93	AVERAGE
7	0.49937	0.01	9.59	29.53	39.13	56.01	-16.88	QP
8	0.49937	0.01	9.59	24.70	34.30	46.01	-11.71	AVERAGE
9	2.567	0.02	9.62	23.42	33.06	56.00	-22.94	QP
10	2.567	0.02	9.62	17.98	27.62	46.00	-18.38	AVERAGE
11	5.221	0.01	9.65	18.49	28.15	60.00	-31.85	QP
12	5.221	0.01	9.65	12.07	21.73	50.00	-28.27	AVERAGE

Mode:a;Line:Neutral Line



Site : Shielding Room
Condition : CE NEUTRAL
Job No. : 4389IT
Test Mode : a

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 @	0.15080	0.02	9.62	45.45	55.09	65.96	-10.87	QP
2	0.15080	0.02	9.62	29.24	38.88	55.96	-17.08	AVERAGE
3	0.19344	0.02	9.62	40.04	49.68	63.89	-14.21	QP
4	0.19344	0.02	9.62	27.58	37.21	53.89	-16.68	AVERAGE
5	0.23409	0.02	9.61	34.52	44.15	62.30	-18.16	QP
6	0.23409	0.02	9.61	23.25	32.88	52.30	-19.42	AVERAGE
7	0.49937	0.01	9.63	28.86	38.50	56.01	-17.51	QP
8	0.49937	0.01	9.63	24.46	34.10	46.01	-11.91	AVERAGE
9	2.285	0.02	9.67	22.65	32.33	56.00	-23.67	QP
10	2.285	0.02	9.67	17.66	27.35	46.00	-18.65	AVERAGE
11	4.292	0.01	9.69	21.77	31.47	56.00	-24.53	QP
12	4.292	0.01	9.69	13.80	23.50	46.00	-22.50	AVERAGE



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6.2 Radiated Disturbance(30MHz-1GHz)

Test Requirement: EN 55022:2010
Test Method: EN 55022:2010
Frequency Range: 30MHz to 1GHz
Limit:
30MHz-230MHz 30 dB(μ V/m) quasi-peak
230MHz-1GHz 37 dB(μ V/m) quasi-peak
Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

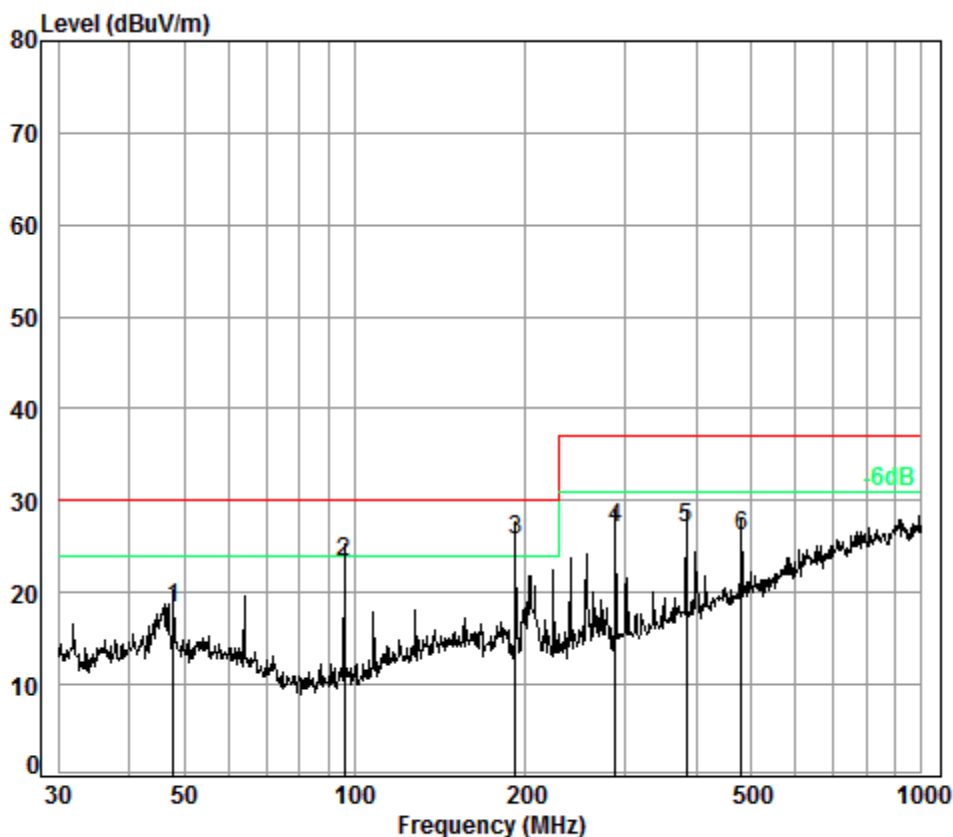
6.2.1 E.U.T. Operation

Operating Environment:						
Temperature:	25.0 °C	Humidity:	51 % RH	Atmospheric Pressure:	1010	mbar
Test mode:	a: PC mode, build the connectiob between EUT and PC through base test board, keep data exchanging.					
The worst case for final test:	a: PC mode, build the connectiob between EUT and PC through base test board, keep data exchanging.					

6.2.2 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

Mode:a;Polarization:Horizontal



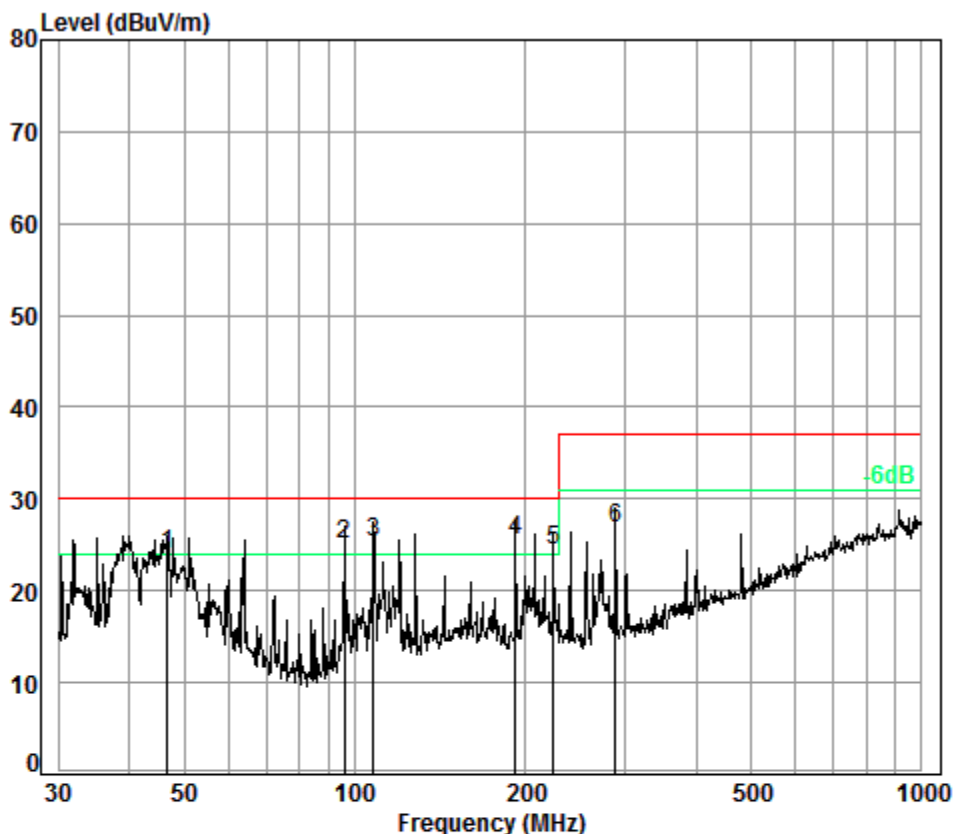
Condition: 10m HORIZONTAL

Job No. : 4389IT

Test Mode: a

	Freq	Cable Loss	Ant Factor	Preamplifier Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	47.99	6.86	12.83	33.00	31.62	18.31	30.00	-11.69
2	96.10	7.20	9.13	32.81	39.84	23.36	30.00	-6.64
3 pp	191.75	7.56	9.70	32.71	41.12	25.67	30.00	-4.33
4	287.99	8.02	12.36	32.61	39.27	27.04	37.00	-9.96
5	383.93	8.30	14.56	32.60	36.83	27.09	37.00	-9.91
6	480.53	8.50	16.53	32.60	33.65	26.08	37.00	-10.92

Mode:a;Polarization:Vertical



Condition: 10m VERTICAL

Job No. : 4389IT

Test Mode: a

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	46.67	6.83	12.86	33.00	37.30	23.99	30.00	-6.01
2	95.76	7.20	9.10	32.81	41.57	25.06	30.00	-4.94
3	107.89	7.24	10.17	32.79	40.76	25.38	30.00	-4.62
4 pp	191.75	7.56	9.70	32.71	41.03	25.58	30.00	-4.42
5	223.73	7.72	10.39	32.67	38.92	24.36	30.00	-5.64
6	287.99	8.02	12.36	32.61	39.13	26.90	37.00	-10.10

7 Immunity Test Results

7.1 Performance Criteria Description in EN 55024:2010+A1:2015

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



7.2 Electrostatic Discharge

Test Requirement: EN 55024:2010+A1:2015
Test Method: EN 61000-4-2:2009
Performance Criterion: B
Discharge Impedance: 330Ω/150pF
Number of Discharge: Minimum of four test points (a minimum of 50 discharges at each point)
Discharge Mode: Single Discharge
Discharge Period: 1 second minimum

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °C Humidity: 53 % RH Atmospheric Pressure: 1010 mbar

Test mode: a: PC mode, build the connection between EUT and PC through base test board, keep data exchanging.

7.2.2 Test Results:

Observations: Test Point:

1. All insulated enclosure and seams.
2. All accessible metal parts of the enclosure.
3. All side

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Horizontal Coupling	4	+	3	A
Horizontal Coupling	4	-	3	A
Vertical Coupling	4	+	3	A
Vertical Coupling	4	-	3	A

Results:

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

Remark: EUT is PCBA, hence test HCP and VCP required by client.



7.3 Radiated Immunity(80MHz-1GHz)

Test Requirement: EN 55024:2010+A1:2015
Test Method: EN 61000-4-3:2006+A1:2008+A2:2010
Performance Criterion: A
Frequency Range: 80MHz to 1GHz
Antenna Polarisation: Vertical and Horizontal
Modulation 1kHz,80% Amp. Mod,1% increment

7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C Humidity: 56 % RH Atmospheric Pressure: 1005 mbar

Test mode: a: PC mode, build the connectiob between EUT and PC through base test board, keep data exchanging.

7.3.2 Test Results:

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

Results:

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



7.4 Electrical Fast Transients/Burst at Power Port

Test Requirement: EN 55024:2010+A1:2015
Test Method: EN 61000-4-4:2012
Performance Criterion: B
Repetition Frequency: 5kHz
Burst Period: 300ms
Test Duration: 2 minute per level & polarity

7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar

Test mode: a: PC mode, build the connectiob between EUT and PC through base test board, keep data exchanging.

7.4.2 Test Results:

Test Line	Level (kV)	Polarity	Direct/Coupling	Result / Observations
AC power port	1	+	Direct	A
AC power port	1	-	Direct	A

Results:

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



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7.5 Surge at Power Port

Test Requirement: EN 55024:2010+A1:2015
Test Method: EN 61000-4-5:2014
Performance Criterion: B
Interval: 60s between each surge
No. of surges: 5 positive, 5 negative at 0°, 90°, 180°, 270°.

7.5.1 E.U.T. Operation

Operating Environment:
Temperature: 25.0 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar
Test mode: a: PC mode, build the connection between EUT and PC through base test board, keep data exchanging.

7.5.2 Test Results:

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	1	+	0°	A
L-N	1	-	0°	A
L-N	1	+	90°	A
L-N	1	-	90°	A
L-N	1	+	180°	A
L-N	1	-	180°	A
L-N	1	+	270°	A
L-N	1	-	270°	A
L-PE	2	+	0°	A
L-PE	2	-	0°	A
L-PE	2	+	90°	A
L-PE	2	-	90°	A
L-PE	2	+	180°	A
L-PE	2	-	180°	A
L-PE	2	+	270°	A
L-PE	2	-	270°	A
N-PE	2	+	0°	A
N-PE	2	-	0°	A
N-PE	2	+	90°	A
N-PE	2	-	90°	A
N-PE	2	+	180°	A
N-PE	2	-	180°	A
N-PE	2	+	270°	A
N-PE	2	-	270°	A

Results:

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



7.6 Conducted Immunity at Power Port(150kHz-80MHz)

Test Requirement: EN 55024:2010+A1:2015
Test Method: EN 61000-4-6:2014
Performance Criterion: A
Frequency Range: 0.15MHz to 80MHz
Modulation: 80%, 1kHz Amplitude Modulation
Step Size 1%

7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar

Test mode: a: PC mode, build the connectiob between EUT and PC through base test board, keep data exchanging.

7.6.2 Test Results:

Cable port	Level (Vrms)	Direct/Coupling	Dwell time	Result / Observations
AC power port	3	Direct	2s	A

Results:

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



7.7 Voltage Dips and Interruptions

Test Requirement: EN 55024:2010+A1:2015
Test Method: EN 61000-4-11:2004
Performance Criterion: 0% of UT (Supply Voltage) for 0.5 Periods:B; 0% of UT for 250 Periods:C;
70 % of UT for 25 Periods:C
No. of Dips / Interruptions: 3 per Level
Time between dropout 10s

7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0 °C Humidity: 50 % RH Atmospheric Pressure: 1005 mbar

Test mode: a: PC mode, build the connection between EUT and PC through base test board, keep data exchanging.

7.7.2 Test Results:

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
0	0°	0.5 Periods	3	A
0	180°	0.5 Periods	3	A
0	0°	250 Periods	3	A
0	180°	250 Periods	3	A
70	0°	25 Periods	3	A
70	180°	25 Periods	3	A

Results:

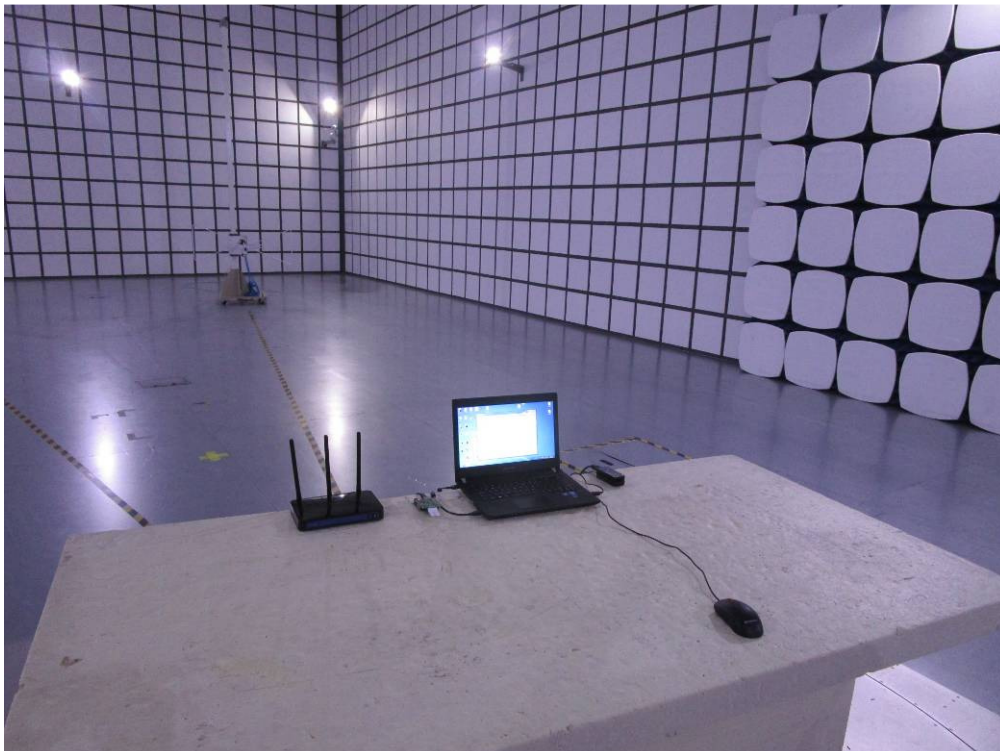
A: No degradation in the performance of the EUT was observed.

8 Photographs

8.1 Conducted Disturbance at Mains Terminals(150kHz-30MHz) Test Setup



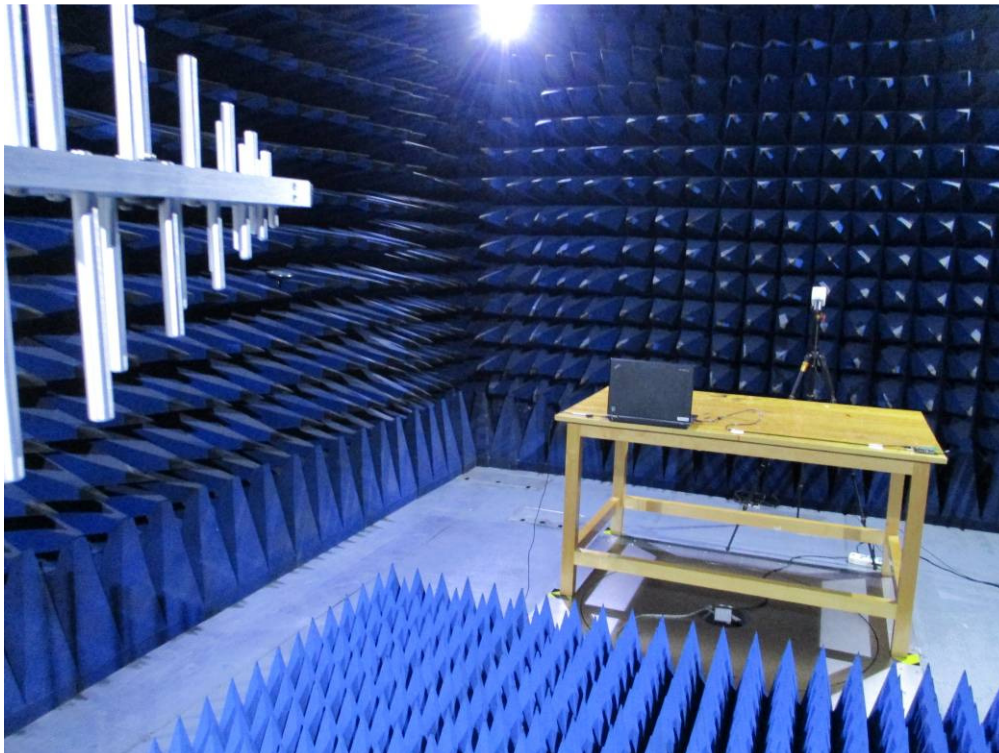
8.2 Radiated Disturbance(30MHz-1GHz) Test Setup



8.3 Electrostatic Discharge Test Setup



8.4 Radiated Immunity(80MHz-1GHz) Test Setup



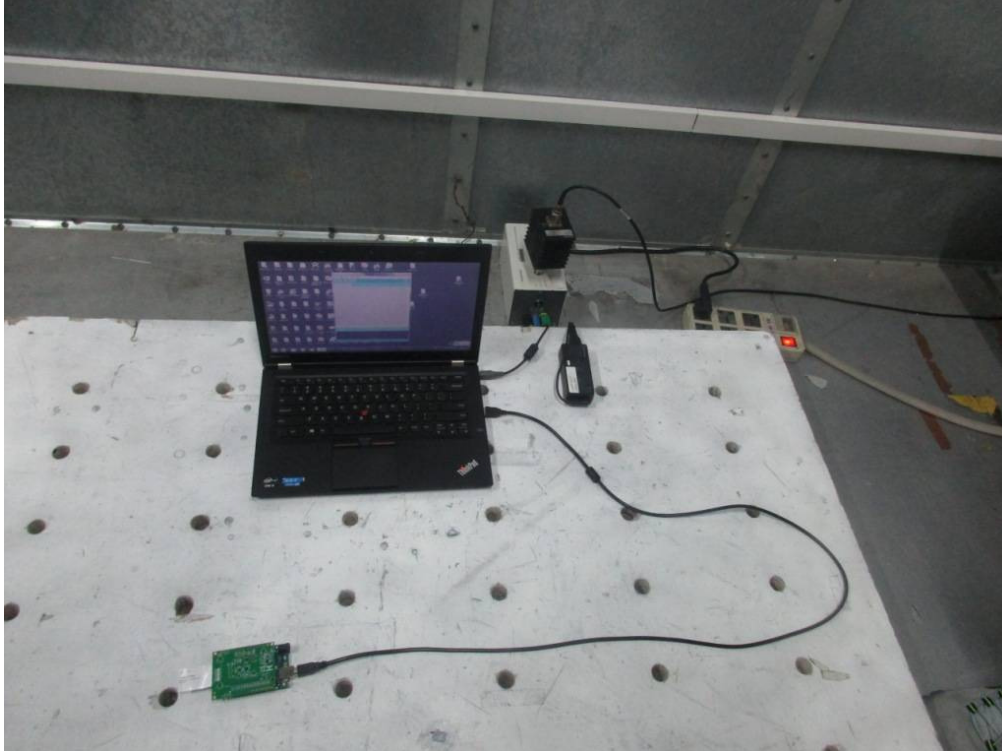
8.5 Electrical Fast Transients/Burst at Power Port Test Setup



8.6 Surge at Power Port Test Setup



8.7 Conducted Immunity at Power Port(150kHz-80MHz) Test Setup



8.8 Voltage Dips and Interruptions Test Setup



8.9 EUT Constructional Details

