TEST REPORT

Product Name : High Voltage Battery System
Model Number : APX 5.0P-S0, APX 10.0P-S0, APX 15.0P-S0, APX 20.0P-S0, APX 25.0P-S0, APX 30.0P-S0

Prepared for	:	Shenzhen Growatt New Energy Co., Ltd.
Address	:	4-13/F, Building A, Sino-German(Europe) Industrial Park, Hangcheng Ave, Bao'an District, Shenzhen, China
Prepared by	:	EMTEK (SHENZHEN) CO., LTD.
Address	:	Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China
		Tel: (0755) 26954280 Fax: (0755) 26954282

Report Number	:	ENS2304260171E00101R
Date of Test	:	May 15, 2023 to May 26, 2023
Date of Report	:	May 26, 2023

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Test Report Description Page

APPENDIX (Photos of EUT) (2 Pages)

TEST REPORT DESCRIPTION

Applicant	:	Shenzhen Growatt New Energy Co., Ltd.
Manufacturer	:	Shenzhen Growatt New Energy Co., Ltd.
Trade Mark	:	GROWATT
EUT	:	High Voltage Battery System
Model No.	:	APX 5.0P-S0, APX 10.0P-S0, APX 15.0P-S0, APX 20.0P-S0, APX 25.0P-S0, APX 30.0P-S0
Rating	:	System Model: APX 30.0P-S0 High Voltage Controller: APX 55022-P0 Number of high voltage controller: 1 Battery module: APX 5.0P-B1 Battery module energy: 5kWh Number of Battery Modules: 6 Nominal energy: 30kWh Rate energy: 27kWh Max. output power: 6.2kW Peak output power: 10kW,60s Nominal voltage(single phase system)note③: 400V Operating voltage range(single phase system): 380V～550V

Measurement Procedure Used:

EN IEC 61000-6-3: 2021, EN IEC 61000-6-4: 2019
EN IEC 61000-6-1: 2019, EN IEC 61000-6-2: 2019
(IEC 61000-4-2:2008, IEC 61000-4-3:2006+A1:2007+A2:2010, IEC 61000-4-8:2009)

The device described above is tested by EMTEK (SHENZHEN) CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK (SHENZHEN) CO., LTD. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the EN IEC 61000-6-3, EN IEC 61000-6-4, EN IEC 61000-6-1 and EN IEC 61000-6-2 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of EMTEK (SHENZHEN) CO., LTD.

Date of Test : May 15, 2023 to May 26, 2023

Prepared by : Junqin Cai/Editor

Reviewer : Kaimin Guo/Supervisor

Approved & Authorized Signer : Lisa Wang/Manager

Modified Information

Version	Report No.	Revision Date	Summary
Ver.1.0	ENS2304260171E00101R	/	Original Report

1. SUMMARY OF TEST RESULTS

EMISSION				
Description of Test Item		Standard	Limits	Results
Conducted Emissions at Mains Terminals	AC Mains port	EN IEC 61000-6-3:2021 EN IEC 61000-6-4:2019	--	N/A
	DC Power port ☒V-AN ☐△-AN	EN IEC 61000-6-3:2021 EN IEC 61000-6-4:2019	--	N/A
Discontinuous disturbance at mains terminals		Cited from CISPR 14-1	CISPR 14-1	N/A
Conducted Emissions at wired network ports		Cited from CISPR 32	Table 6	N/A
Radiated emissions at frequencies up to 1 GHz		EN IEC 61000-6-3:2021 EN IEC 61000-6-4:2019	--	Pass
Radiated emissions at frequencies above 1 GHz		EN IEC 61000-6-3:2021 EN IEC 61000-6-4:2019	--	N/A
DC power port terminal disturbance for class b GCPC-Proportion relation approach		Cited from CISPR 11	Table C.1	N/A
DC power port terminal disturbance for class b GCPC-Current-to-voltage Conversion approach		Cited from CISPR 32	Table C.2	N/A

IMMUNITY (EN IEC 61000-6-1: 2019, EN IEC 61000-6-2: 2019)				
Description of Test Item		Basic Standard	Performance Criteria	Results
Electrostatic Discharge (ESD)		IEC 61000-4-2:2008	B	Pass
Radio-Frequency, Continuous Radiated Disturbance		IEC 61000-4-3:2006+A1:2007+A2: 2010	A	Pass
EFT/B Immunity	Signal/control ports	IEC61000-4-4:2012	B	N/A
	DC power ports			N/A
	AC power ports			N/A
Surge Immunity	Signal/control ports	IEC 61000-4-5:2014	B	N/A
	DC power ports			N/A
	AC power ports			N/A
Conducted RF Immunity	Signal/control ports	IEC 61000-4-6:2013	A	N/A
	DC power ports			N/A
	AC power ports			N/A
Power Frequency Magnetic Field		IEC 61000-4-8:2009	A	Pass
Voltage Dips, >95% Reduction		IEC 61000-4-11:2004	B	N/A
Voltage Dips, 30% Reduction			C	N/A
Voltage Interruptions			C	N/A
Note: N/A means not applicable.				

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	:	High Voltage Battery System
Model Number	:	APX 5.0P-S0, APX 10.0P-S0, APX 15.0P-S0, APX 20.0P-S0, APX 25.0P-S0, APX 30.0P-S0 (Note: These models are identical in circuitry and electrical, mechanical and physical construction; the only difference is the energy. We prepare APX 30.0P-S0.)
Sample number	:	1#
Applicant	:	Shenzhen Growatt New Energy Co., Ltd.
Address	:	4-13/F, Building A, Sino-German(Europe) Industrial Park, Hangcheng Ave, Bao'an District, Shenzhen, China
Manufacturer	:	Shenzhen Growatt New Energy Co., Ltd.
Address	:	4-13/F, Building A, Sino-German(Europe) Industrial Park, Hangcheng Ave, Bao'an District, Shenzhen, China
Factory	:	Huizhou Growatt Smart Energy Co., Ltd.
Address	:	No. 4-6 Plant, No.5 Xingju West Road, Dongjiang Science and Technology Park, Dongxing Area, Zhongkai High-tech Zone, Huizhou, Guangdong, China
Date of Received	:	May 15, 2023
Date of Test	:	May 15, 2023 to May 26, 2023

2.2. Independent Operation Modes

A. On
   1. Charging
   2. Discharging

2.3. Test Manner

Test Items	Test Voltage	Operation Modes	Worst case
Radiated emissions at frequencies up to 1 GHz	DC 450V	Mode A	Mode A.1
Electrostatic Discharge	DC 450V	Mode A	\
Continuous RF electromagnetic field disturbances	DC 450V	Mode A	\
Power frequency magnetic field	DC 450V	Mode A	\

2.4. Description of Test Facility

Site Description

EMC Lab. : **Accredited by CNAS**
The Certificate Registration Number is L2291.
The Laboratory has been assessed and proved to be in compliance with CNAS-CL01 (identical to ISO/IEC 17025:2017)

Accredited by FCC
Designation Number: CN1204
Test Firm Registration Number: 882943

Accredited by A2LA
The Certificate Number is 4321.01.

Accredited by Industry Canada
The Conformity Assessment Body Identifier is CN0008

Name of Firm : EMTEK (SHENZHEN) CO., LTD.
Site Location : Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

2.5. Description of Support Device

N/A

2.6. Measurement Uncertainty

Test Item		Uncertainty
Radiated Emission Uncertainty (10m Chamber)	:	4.58dB (30M~1GHz Polarize: H) 4.54dB (30M~1GHz Polarize: V)
Uncertainty for R/S Test	:	2.10dB(80MHz-200MHz) 1.76dB(200MHz-1000MHz)
Uncertainty for test site temperature and humidity	:	0.6℃ 4%

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. For Radiated Emission Measurement (10m)

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Loop Antenna	Schwarzbeck	FMZB1519	1519-012	May 12, 2023	2 Year
☑	Bilog Antenna	Schwarzbeck	VULB9163	661	June 12, 2021	2 Year
☑	Bilog Antenna	Schwarzbeck	VULB9163	660	June 12, 2021	2 Year
☑	EMI Test Receiver	Rohde & Schwarz	ESR3	101707	May 11, 2023	1 Year
☑	EMI Test Receiver	Rohde & Schwarz	ESR3	101706	May 11, 2023	1 Year
☑	Pre-Amplifier	Lunar EM	LNA10M1G-40	J1011131126001	May 11, 2023	1 Year
☑	Pre-Amplifier	Lunar EM	LNA10M1G-40	J1011131126002	May 11, 2023	1 Year

3.2. For Electrostatic Discharge Immunity Test

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	ESD Tester	EMTEST	Dito	CR46527B	Nov. 01, 2022	1 Year

3.3. For RF Strength Susceptibility Test

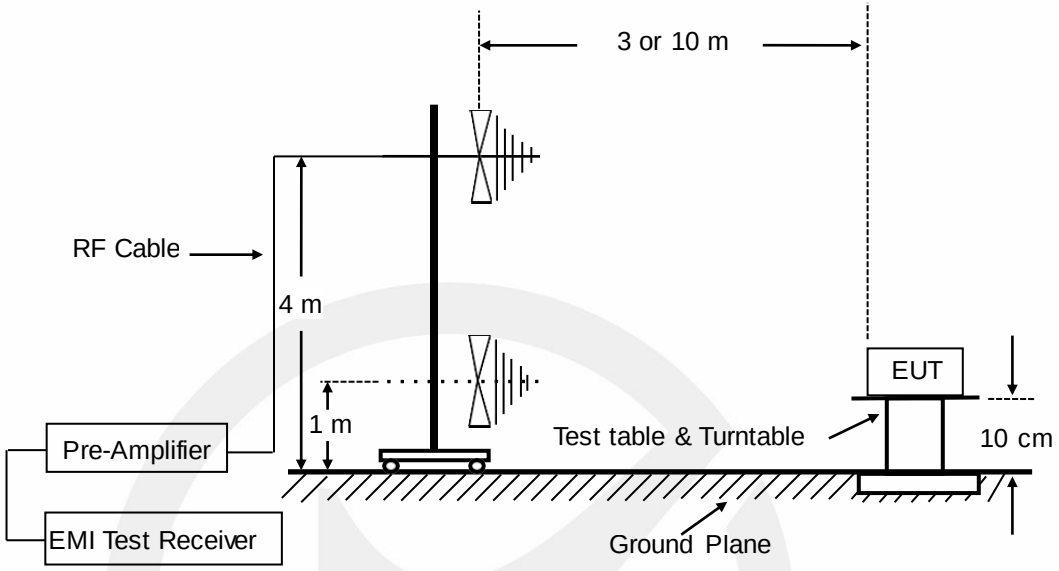
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Power Amplifier	MILMEGA	AS0102-55	1018770	May 13, 2023	1 Year
☑	RF Power Meter. Dual Channel	BOONTON	4232A	10539	May 13, 2023	1 Year
☑	Log.-Per. Antenna	SCHWARZBECK	STLP 9129-7/16	3050	N/A	N/A
☑	Signal Generator	Agilent	N5181A	MY50145187	May 13, 2023	1 Year
☑	50ohm Diode Power Sensor	BOONTON	51011EMC	36164	May 13, 2023	1 Year
☑	Field Strength Meter	DARE	RSS1006A	10I00037SNO22	May 23, 2022	1 Year
☑	Multi-function interface system	DARE	CTR1009B	12I00250SNO72	N/A	N/A
☑	Automatic switch group	DARE	RSW1004A	N/A	N/A	N/A
☑	Power Amplifier	MILMEGA	AS1860-50	1059346	May 13, 2023	1 Year
☑	Power Amplifier	Vectawave	VBA 1000-600C	133627	Oct. 31, 2022	1 Year
☑	Directional Coupler	BONN	BDC 0810-50/1500	2229689	Oct. 31, 2022	1 Year

3.4. For Magnetic Field Immunity Test

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Magnetic Field Tester	HAEFELY	MAG100	250040.1	May 10, 2023	1 Year

4. RADIATED EMISSION MEASUREMENT

4.1. Block Diagram of Test Setup



4.2. Measuring Standard

EN IEC 61000-6-3: 2021
EN IEC 61000-6-4: 2019

4.3. Radiated Emission Limits

EN IEC 61000-6-3: 2021

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT (dBμV/m)
30 ~ 230	10	30
230 ~ 1000	10	37

EN IEC 61000-6-4: 2019

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT (dBμV/m)
30 ~ 230	10	40
230 ~ 1000	10	47

Note: (1) The smaller limit shall apply at the combination point between two frequency bands.
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.

4.4. EUT Configuration of Measurement

The EN IEC 61000-6-3 regulations test method must be used to find the maximum emission during radiated emission measurement.

EUT	:	High Voltage Battery System
Model Number	:	APX 30.0P-S0

4.5. Test Procedure

The EUT is placed on a turntable which is 0.1 meter high above the ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 10 meters away from the receiving antenna that is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna (calibrated by Dipole Antenna) is used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test.

The bandwidth of the Receiver (ESU 26) is set at 120kHz.

All the scanning waveform is put in the following pages.

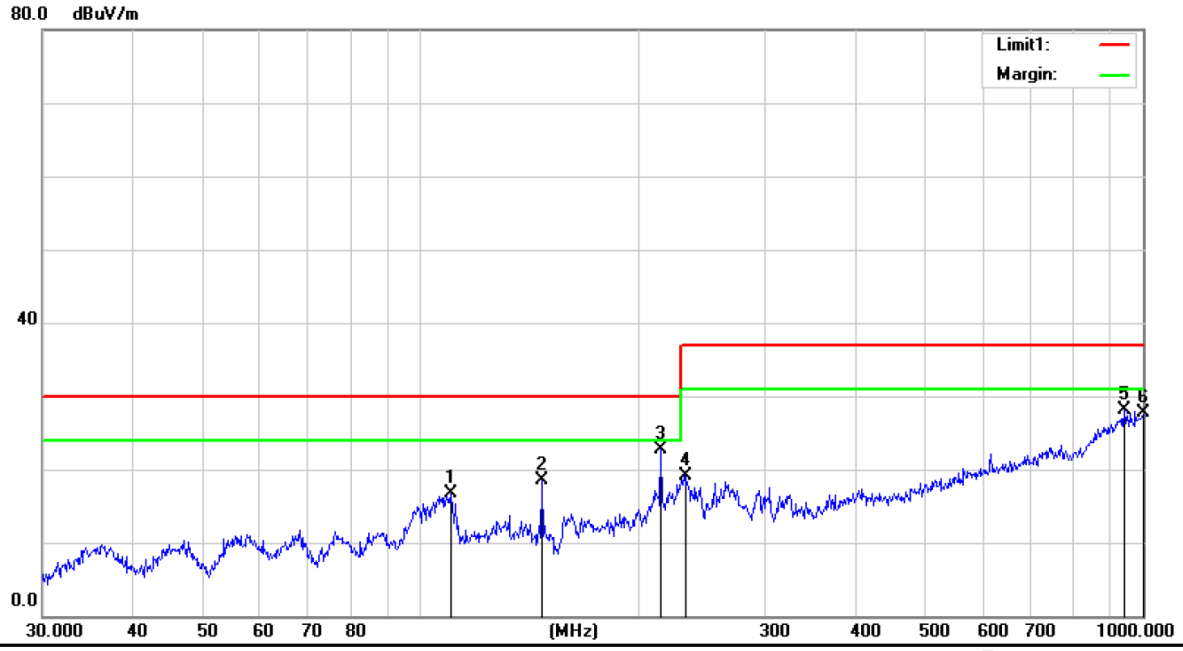
4.6. Measuring Results

PASS.

The frequency range from 30MHz to 1000MHz is investigated.

All the modes were tested and the data of the worst modes are attached the following pages.

Temperature	:	25.3 °C
Humidity	:	54%
Atmospheric Pressure	:	101kpa
Test Engineer	:	LJ
Test Date	:	2023-05-15



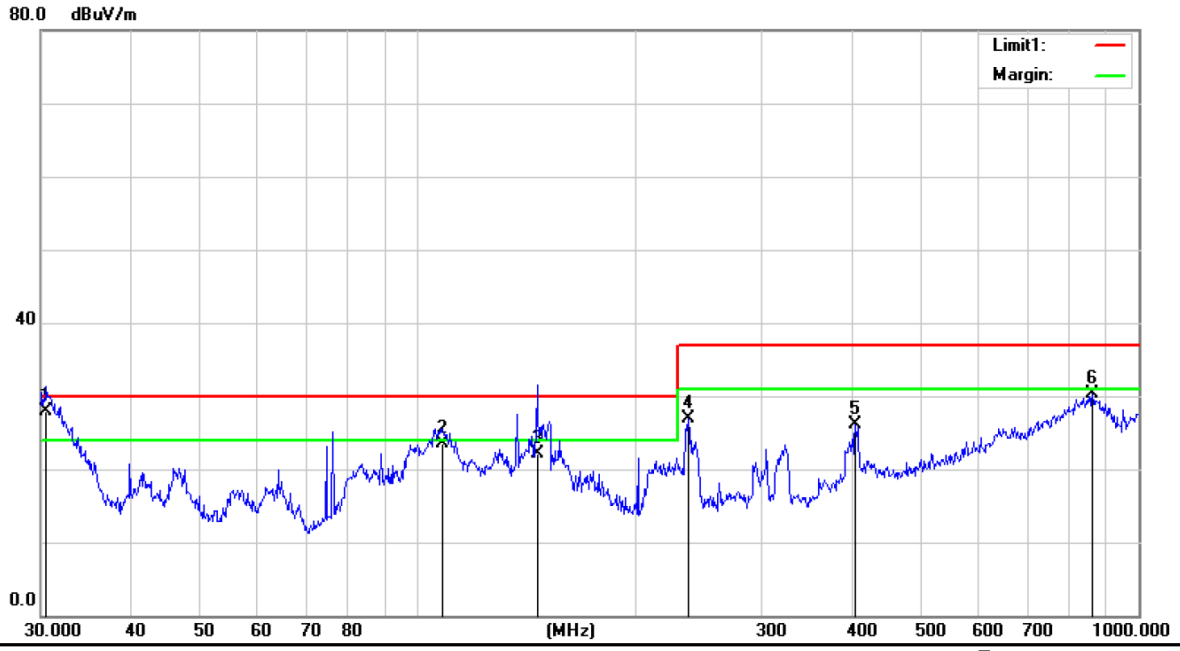
Site 10m Chamber 1# Polarization: *Horizontal* Temperature: 25.3

Limit: (RE10M)EN61000-6-3 Power: DC 450V Humidity: 54 %

Mode:charging

Note:

No.	Mk.	Freq.	Reading Level	Ant. Factor	Pre Amp Gain	Cable loss	Measure-ment	Limit	Over		HI	Degree	
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	Detector	cm	deg.	Comment
1		110.1816	47.61	11.07	43.69	1.68	16.67	30.00	-13.33	QP	400	25	
2		147.4036	51.59	8.76	43.82	1.97	18.50	30.00	-11.50	QP	181	136	
3	*	215.2678	52.18	11.8	43.79	2.49	22.68	30.00	-7.32	QP	400	195	
4		233.3487	47.80	12.27	43.54	2.62	19.15	37.00	-17.85	QP	400	186	
5		942.1305	38.79	22.81	40.27	6.76	28.09	37.00	-8.91	QP	181	231	
6		1000.000	37.37	23.3	40.08	7.05	27.64	37.00	-9.36	QP	400	0	



Site 10m Chamber 1# Polarization: *Vertical* Temperature: 25.3

Limit: (RE10M)EN61000-6-3 Power: DC 450V Humidity: 54 %

Mode:charging

Note:

No.	Mk.	Freq.	Reading Level	Ant. Factor	Pre Amp Gain	Cable loss	Measure-ment	Limit	Over		HI	Degree	
		MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	Detector	cm	deg.	Comment
1	*	30.5306	59.51	10.38	43.27	1.27	27.89	30.00	-2.11	QP	100	318	
2		108.2667	55.15	9.38	43.44	2.41	23.50	30.00	-6.50	QP	199	313	
3		146.3735	53.11	9.76	43.48	2.79	22.18	30.00	-7.82	QP	100	38	
4		237.4760	55.47	11.02	43.31	3.63	26.81	37.00	-10.19	QP	100	359	
5		404.6664	45.77	16.58	41.18	4.91	26.08	37.00	-10.92	QP	100	40	
6		863.0561	38.13	24.8	40.44	7.81	30.30	37.00	-6.70	QP	199	0	

5. IMMUNITY PERFORMANCE CRITERIA DESCRIPTION

Performance Level

The test results shall be classified in terms of the loss of function or degradation of performance of the equipment under test, relative to a performance level by its manufacturer or the requestor of the test, or the agreed between the manufacturer and the purchaser of the product.

Definition related to the performance level:
1. Based on the used product standard
2. Based on the declaration of the manufacturer, requestor or purchaser

Criterion A:

The apparatus shall continue to operate as intended during and after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.

Criterion B:

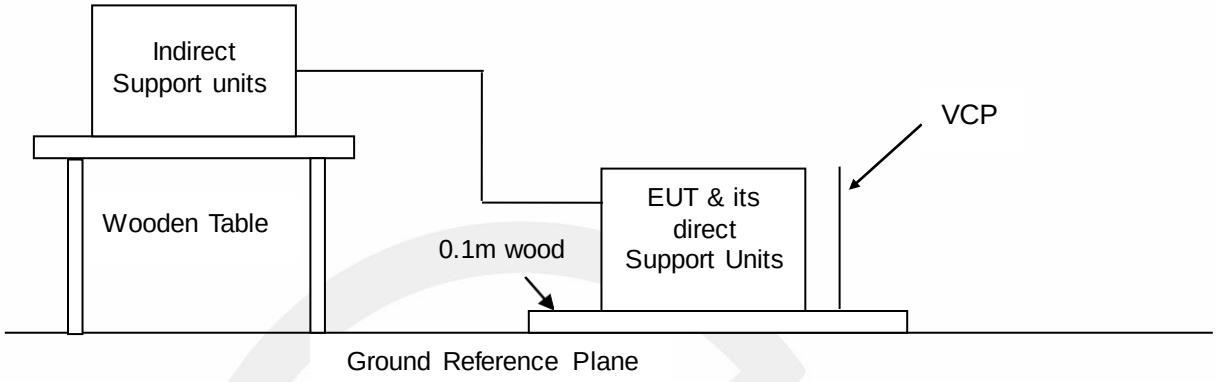
The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from the apparatus if used as intended.

Criterion C:

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

6. ELECTROSTATIC DISCHARGE IMMUNITY TEST

6.1. Block Diagram of Test Setup



6.2. Test Standard

EN IEC 61000-6-1: 2019
EN IEC 61000-6-2: 2019
(IEC 61000-4-2:2008 Severity Level: 3 / Air Discharge: ±8kV
Level: 2 / Contact Discharge: ±4kV)

6.3. Severity Levels and Performance Criterion

6.3.1. Severity level

Level	Test Voltage Contact Discharge (kV)	Test Voltage Air Discharge (kV)
1	±2	±2
2	±4	±4
3	±6	±8
4	±8	±15
X	Special	Special

6.3.2. Performance criterion: B

6.4. Operating Condition of EUT

6.4.1. Setup the EUT as shown on Section 6.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in test mode (Charging, Discharging) and test it.

6.5. Test Procedure

6.5.1. Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

6.5.2. Contact Discharge:

All procedure shall be the same as Section 6.5.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

6.5.3. Indirect discharge for horizontal coupling plane

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

6.5.4. Indirect discharge for vertical coupling plane

At least 10 singles discharge (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m×0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

6.6. Test Results

PASS.

Please refer to the following page.

Electrostatic Discharge Test Result

EMTEK (SHENZHEN) CO., LTD.

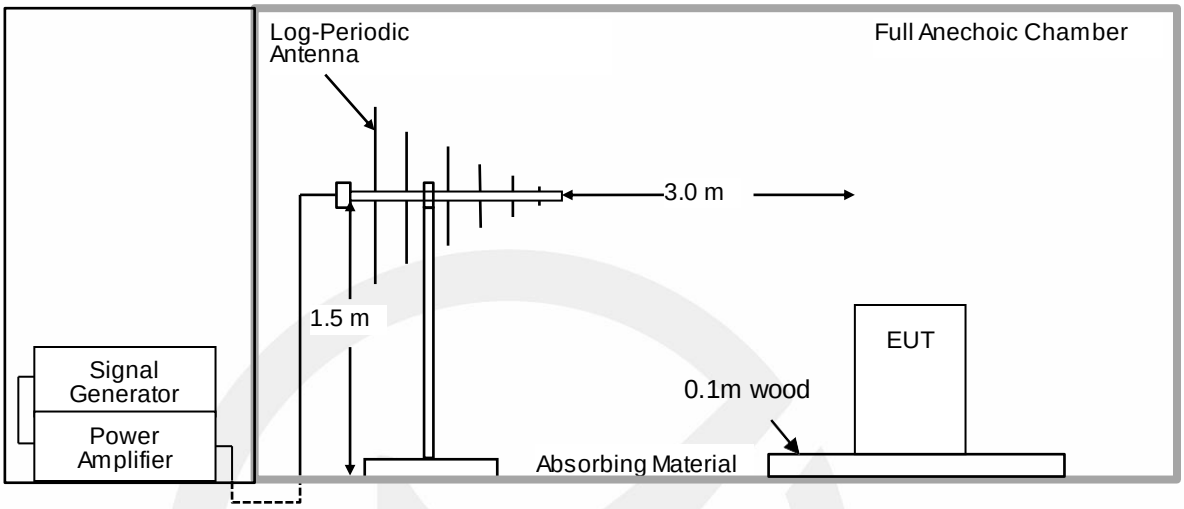
Applicant	:	Shenzhen Growatt New Energy Co., Ltd.			
EUT	:	High Voltage Battery System	Test Date	:	2023-05-22
M/N	:	APX 30.0P-S0	Temperature	:	24.2℃
Power Supply	:	DC 450V	Humidity	:	49%
Air discharge	:	± 8.0kV	Atmospheric Pressure	:	101 kPa
Contact discharge:		± 4.0kV	Criterion	:	B
Test Mode	:	Charging, Discharging			

Location	**Kind** A-Air Discharge C-Contact Discharge	**Result**
Metal/ Screw	C	A
Slot/ Button	A	A
HCP	C	A
VCP of front	C	A
VCP of rear	C	A
VCP of left	C	A
VCP of right	C	A

Note:

7. RF FIELD STRENGTH SUSCEPTIBILITY TEST

7.1. Block Diagram of Test Setup



7.2. Test Standard

EN IEC 61000-6-1: 2019
EN IEC 61000-6-2: 2019
(IEC 61000-4-3:2006+A1:2007+A2:2010, Severity Level: 3V/m, 10V/m)

7.3. Severity Levels and Performance Criterion

7.3.1. Severity Levels

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

7.3.2. Performance Criterion: A

7.4. Operating Condition of EUT

7.4.1. Setup the EUT as shown on Section 7.1.

7.4.2. Turn on the power of all equipment.

7.4.3. Let the EUT work in test mode (Charging, Discharging) and test it.

7.5. Test Procedure

The EUT is placed on a table that is 0.1 meter high above the ground. The EUT is set 3 meters away from the transmitting antenna that is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna is set on test. Each of the four sides of the EUT must be faced this transmitting antenna and measured individually.
In order to judge the EUT performance, a CCD camera is used to monitor it.
All the scanning conditions are as following:

Condition of Test	Remark
1. Fielded Strength	3V/m (Severity Level 2) 10V/m (Severity Level 3)
2. Radiated Signal	Modulated
3. Scanning Frequency	80-6000MHz
4. Sweep time of radiated	0.0015 Decade/s
5. Dwell Time	1 Sec.

7.6. Test Results

PASS.

Please refer to the following page.

RF Field Strength Susceptibility Test Results

EMTEK (SHENZHEN) CO., LTD.

Applicant	:	Shenzhen Growatt New Energy Co., Ltd.			
EUT	:	High Voltage Battery System	Test Date	:	2023-05-22
M/N	:	APX 30.0P-S0	Temperature	:	20.4℃
Field Strength	:	10 V/m, 3 V/m	Humidity	:	50%
Power Supply	:	DC 450V	Criterion	:	A
Test Mode	:	Charging, Discharging	Frequency Range	:	80 MHz to 1000 MHz 1400 MHz to 6000 MHz

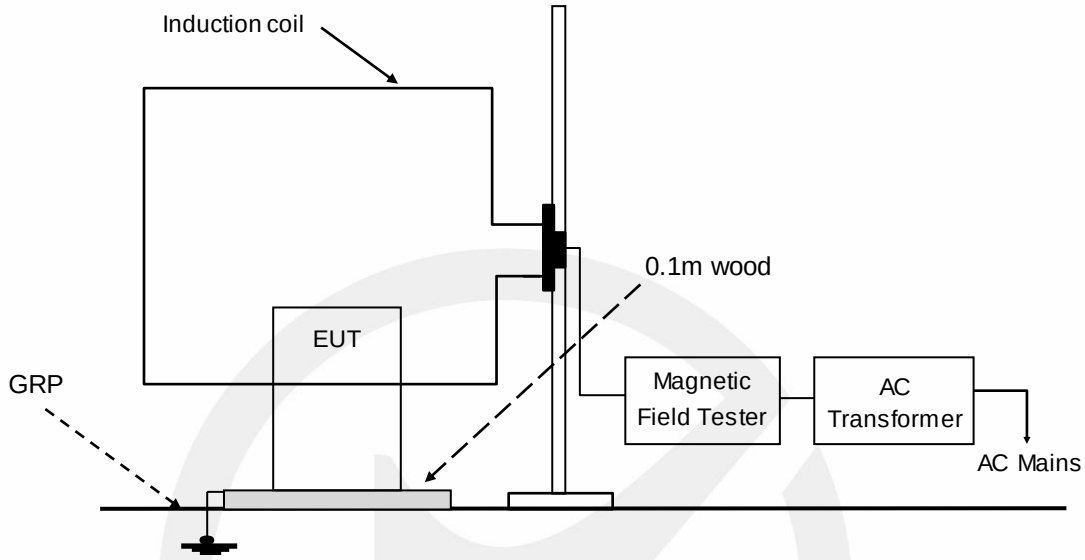
Modulation: ☐ None ☐ Pulse ☒ AM 1kHz 80%

	Frequency Rang 1: 80~ 1000MHz(10 V/m, 3 V/m)		Frequency Rang 2: 1400~ 6000 MHz(3 V/m)	
Steps	1%			
	Horizontal	Vertical	Horizontal	Vertical
Front	A	A	A	A
Right	A	A	A	A
Rear	A	A	A	A
Left	A	A	A	A

Note:

8. MAGNETIC FIELD SUSCEPTIBILITY TEST

8.1. Block Diagram of Test Setup



GRP: Ground reference plane
EUT: Equipment under test

8.2. Test Standard

EN IEC 61000-6-1: 2019
EN IEC 61000-6-2: 2019
(IEC 61000-4-8:2009, Severity Level: 3A / m, 30A / m)

8.3. Severity Levels and Performance Criterion

8.3.1. Severity Levels

Level	Field Strength A/m
1	1
2	3
3	10
4	30
5	100
X	Special

8.3.2. Performance Criterion: A

8.4. Operating Condition of EUT

8.4.1. Setup the EUT as shown on Section 8.1.

8.4.2. Turn on the power of all equipment.

8.4.3. Let the EUT work in test mode (Charging, Discharging) and test it.

8.5. Test Procedure

The EUT is placed in the middle of a induction coil (1*1m), under which is a 1*1*0.1m (high) table, this small table is also placed on a larger table, above the ground. Both horizontal and vertical polarization of the induction coil is set on test, so that each side of the EUT is affected by the magnetic field. Also can reach the same aim by change the position of the EUT.

8.6. Test Results

PASS.

Please refer to the following page.

Magnetic Field Immunity Test Result

EMTEK (SHENZHEN) CO., LTD.

Standard: ☒ IEC 61000-4-8	Result: ☒ PASS / ☐ FAIL

Applicant : Shenzhen Growatt New Energy Co., Ltd.

EUT : High Voltage Battery System

M/N : APX 30.0P-S0

Input Voltage : DC 450V

Date of Test : 2023-05-22

Ambient Condition : Temp : 22.7℃ Humid: 54%

Criterion: A

Operation Mode: Charging, Discharging

Test Level (A/m)	Testing Duration	Coil Orientation	Criterion	Result
30	5 mins	X	A	A
30	5 mins	Y	A	A
30	5 mins	Z	A	A

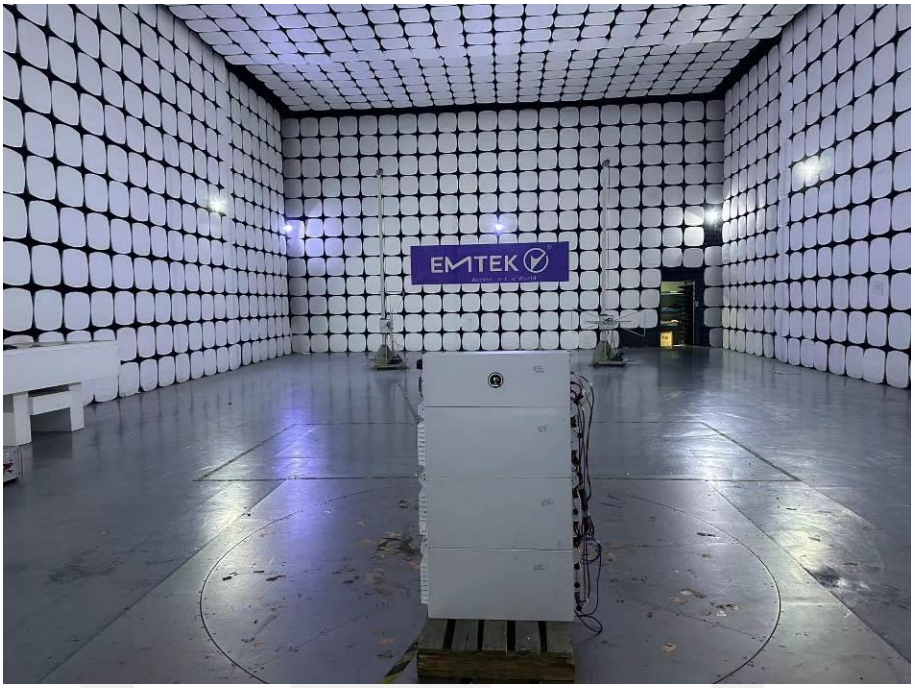
Operation Mode: Charging, Discharging

Test Level (A/m)	Testing Duration	Coil Orientation	Criterion	Result
3	5 mins	X	A	A
3	5 mins	Y	A	A
3	5 mins	Z	A	A

Note:

9. PHOTOGRAPHS

9.1. Photos of Radiation Emission Measurement

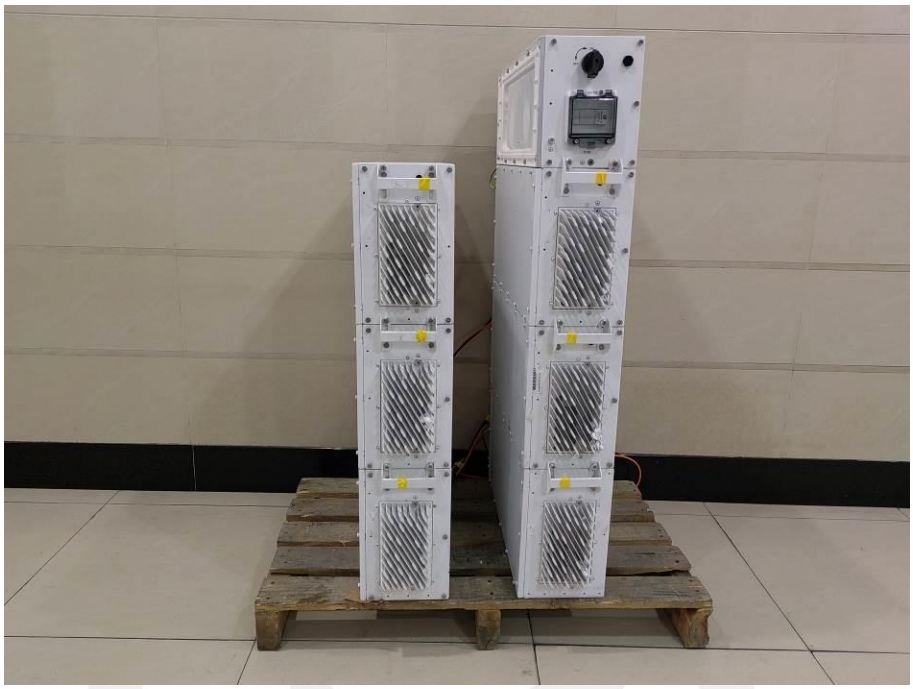


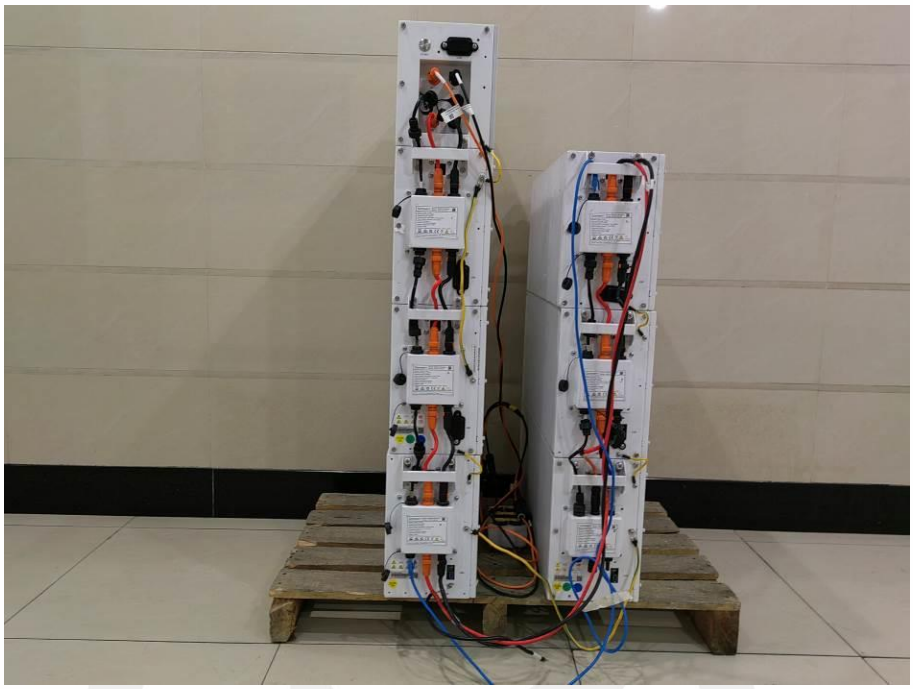
9.2.Photo of Electrostatic Discharge Test

9.3.Photo of RF Field Strength Susceptibility Test

9.4.Photo of Magnetic Field Immunity Test

APPENDIX
(Photos of EUT)





End of Report

Statement

1．This report is invalid without the signature of the authorized approver and "special seal for testing".

2．This report shall not be copied partly without authorization.

3．The test results or observations are applicable only to tested sample. Client shall be responsible for representativeness of the sample and authenticity of the material.

4．The observations or tests with special mark fall outside the scope of accreditation, and are only used for purpose of commission, research, training, internal quality control etc.

5．The test results or observations are provided in accordance with measured value, without taking risks caused by uncertainty into account. Without explicit stipulation in special agreements, standards or regulations, EMTEK shall not assume any responsibility.

6．Objections shall be raised within 20 days from the date receiving the report.