

EMC TEST REPORT

For

GoodWe Technologies Co., Ltd.

Hybrid Inverter

Model No.: (1)GW3000-ES-20 (2)GW3600-ES-20 (3)GW3600M-ES-20
(4)GW5000-ES-20 (5)GW5000M-ES-20 (6)GW6000-ES-20 (7)GW6000M-ES-20
(8)GW3600-SBP-20 (9)GW5000-SBP-20 (10)GW6000-SBP-20

Brand: GOODWE

Prepared for

GoodWe Technologies Co., Ltd.

No.90 Zi Jin Rd., New District, Suzhou, 215011, China

Prepared by

Audix Technology (Wujiang) Co., Ltd. EMC Dept.

No. 1289, Jiangxing East Road, the Eastern Part of Wujiang Economic Development Zone,
Jiangsu, China 215200

Tel.: +86-512-63403993

Fax: +86-512-63403339

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Date of Test : Mar.30~Jun.15, 2022

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APPENDIX Photos of EUT

TEST REPORT VERIFICATION

Applicant : GoodWe Technologies Co., Ltd.
 Manufacturer : GoodWe Technologies Co., Ltd.
 EUT Description : Hybrid Inverter
 (A) Model No. : (1)GW3000-ES-20 (2)GW3600-ES-20 (3)GW3600M-ES-20
 (4)GW5000-ES-20 (5)GW5000M-ES-20 (6)GW6000-ES-20
 (7)GW6000M-ES-20 (8)GW3600-SBP-20 (9)GW5000-SBP-20
 (10)GW6000-SBP-20
 (B) Brand : GOODWE
 (C) Test Voltage : AC 230V/50Hz, DC 200V&500V, Battery 50V

Applicable standards:

Emission: EN IEC 61000-6-3:2021, EN 61000-6-3:2007+A1:2011+AC:2012
 EN IEC 61000-6-4:2019, EN 61000-6-4:2007+A1:2011
 (IEC 61000-6-3:2020, IEC 61000-6-4:2018) and
 AS/NZS 61000.6.3:2012, AS/NZS 61000.6.4:2020
 EN 55011:2016+A11:2020, EN 55011:2016+A2:2021
 EN 61000-2-2:2002+A2:2019, CISPR11:2015+AMD1:2016+AMD2:2019CSV
 EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-2:2014
 EN 61000-3-3:2013+A1:2019, EN 61000-3-3:2013
 EN 61000-3-12:2011+AC:2013, EN 61000-3-12:2011
 EN IEC 61000-3-11:2019, EN 61000-3-11:2011
 (IEC 61000-3-2:2018+A1:2020, IEC 61000-3-3:2021
 IEC 61000-3-12:2011, IEC 61000-3-11:2017)

Immunity: EN IEC 61000-6-1:2019, EN 61000-6-1:2007
 EN IEC 61000-6-2:2019, EN 61000-6-2:2005+AC:2005
 (IEC 61000-6-1:2016, IEC 61000-6-2:2016)
 (IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012,
 IEC 61000-4-5:2014+A1:2017, IEC 61000-4-6:2013+COR1:2015,
 IEC 61000-4-8:2009, IEC 61000-4-11:2020+COR1:2020,
 IEC 61000-4-34:2005+A1:2009)

(Note: The EN IEC 61000-6-3:2021 & EN IEC 61000-6-4:2019 emission measurement results are deemed satisfactory evidence of compliance with AS/NZS 61000.6.3 & AS/NZS 61000.6.4 regulations)

The device described above is tested by Audix Technology (Wujiang) Co., Ltd. EMC Dept. to determine the Maximum emission levels emanating from the device, its ensured severity levels, and performance criterion. This test report contains the measurement results, and Audix Technology (Wujiang) Co., Ltd. EMC Dept. assumes full responsibility for the accuracy and completeness of these measurements. Also, this test report shows that the EUT is technically compliance with the requirements of EN IEC 61000-6-1, -2, -3, -4 and IEC 61000-6-1, -2, -3, -4 and EN 61000-3-2, -3, -11, -12 and IEC 61000-3-2, -3, -11, -12 standards.

This test report applies to above tested sample only and shall not be reproduced in part without written approval of Audix Technology (Wujiang) Co., Ltd. EMC Dept.

Date of Test: Mar.30~Jun.15, 2022

Date of Report: Jun.17, 2022

Prepared by

:


 (Emma Hu/Assistant Administrator)

Approved & Authorized Signer

:


 (Ken Lu/Vice General Manager)



1 DESCRIPTION OF VERSION

Edition No.	Date of Rev.	Summary	Report No.
0	Jun.17, 2022	Original Report	ACWE-E2204026

2 SUMMARY OF STANDARDS AND RESULTS

2.1 Description of Standards and Results

The EUT has been tested according to the applicable standards and test results are referred as below.

EMISSION				
Description of Test Item	Standard	Limits	Results	Remark
Conducted disturbance at AC main terminal	EN 61000-2-2:2002+A2:2019	Table 3 & 4	PASS	Minimum passing margin is 9.36dB at 0.072MHz
	EN IEC 61000-6-3:2021, EN 61000-6-3:2007+A1:2011 +AC:2012, IEC 61000-6-3:2020	Table 4	PASS	Minimum passing margin is 3.32dB at 15.661MHz
	EN IEC 61000-6-4:2019, EN 61000-6-4:2007+A1:2011, IEC 61000-6-4:2018	Table 4		
	EN 55011:2016+A11:2020 EN 55011:2016+A2:2021	Table 4		
Conducted disturbance at DC main terminal	EN 55011:2016+A11:2020 EN 55011:2016+A2:2021	Table 5	PASS	Minimum passing margin is 7.57dB at 3.205MHz
Conducted common mode disturbance at telecommunication port	EN IEC 61000-6-3:2021, EN 61000-6-3:2007+A1:2011 +AC:2012, IEC 61000-6-3:2020	Table 6	PASS	Minimum passing margin is 8.32dB at 5.910MHz
	EN IEC 61000-6-4:2019, EN 61000-6-4:2007+A1:2011, IEC 61000-6-4:2018	Table 5		
Radiated disturbance	EN IEC 61000-6-3:2021, EN 61000-6-3:2007+A1:2011 +AC:2012, IEC 61000-6-3:2020	Table 3	PASS	Minimum passing margin is 4.77dB at 33.324MHz
	EN IEC 61000-6-4:2019, EN 61000-6-4:2007+A1:2011, IEC 61000-6-4:2018	Table 3		
	EN 55011:2016+A11:2020 EN 55011:2016+A2:2021	Table 7		
Harmonic current emissions	EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-2:2014, IEC 61000-3-2:2018+A1:2020	Class A	PASS	Meets the requirement
	EN 61000-3-12:2011+AC:2013, EN 61000-3-12:2011, IEC 61000-3-12:2011	Table 2, Rsce=33		

Voltage fluctuations & flicker	EN 61000-3-3:2013+A1:2019, EN 61000-3-3:2013, IEC 61000-3-3:2021 EN IEC 61000-3-11:2019, EN 61000-3-11:2011, IEC 61000-3-11:2017	$P_{st}=1$ $dc(\%)=3.3\%$ $dMax(\%)=4\%$ $T_{max}>3.3\% \leq 500ms$	PASS	Meets the requirement
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IMMUNITY

Description of Test Item	Basic Standard	Results	Performance Criteria	Observation Criteria
Electrostatic discharge (ESD)	IEC 61000-4-2:2008	PASS	B	A
Radio-frequency, Continuous radiated disturbance	IEC 61000-4-3:2020	PASS	A	A
Electrical fast transient (EFT)	IEC 61000-4-4:2012	PASS	B	A
Surge(For AC mains)	IEC 61000-4-5:2014+A1:2017	PASS	B	A
Surge(For telecommunication)			C	A
Radio-frequency, Continuous conducted disturbance	IEC 61000-4-6:2013+COR1:2015	PASS	A	A
Power frequency magnetic field	IEC 61000-4-8:2009	PASS	A	A
Voltage dips, 100% reduction	IEC 61000-4-11:2020+ COR1:2020, IEC 61000-4-34:2005+A1:2009	PASS	B	B
Voltage dips, 30% reduction		PASS	C	C
Voltage dips, 60% reduction		PASS	C	B
Voltage interruptions		PASS	C	C

Note1: A port generally intended for interconnection of components of an ITE system under test (e.g. RS-232, RS-485, field buses in the scope of IEC 61158, IEEE Standard 1284 (parallel printer), Universal Serial Bus (USB), IEEE Standard 1394 ("Fire Wire"), etc.) and used in accordance with its functional specifications (e.g. for the maximum length of cable connected to it), is not considered to be a telecommunications port.

Note2: The uncertainties value is not used in determining the result.

2.2 Description of Performance Criteria

The variety and the diversity of the apparatus within the scope of this standard makes it difficult to define precise criteria for the evaluation of the immunity test results.

If, as a result of the application of the tests defined in this standard, the apparatus becomes dangerous or unsafe, the apparatus shall be deemed to have failed the test.

A functional description and a definition of performance criteria, during or as a consequence of the EMC testing, shall be provided by the manufacturer and noted in the test report, based on one of the following criteria for each test as specified in 2.2.1 to 2.2.3.

2.2.1 Performance 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.

2.2.2 Performance 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.

2.2.3 Performance criterion C

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

3 GENERAL INFORMATION

3.1 Description of Device (EUT)

Product : Hybrid Inverter

Model Number : (1)GW3000-ES-20 (2)GW3600-ES-20 (3)GW3600M-ES-20
(4)GW5000-ES-20 (5)GW5000M-ES-20 (6)GW6000-ES-20
(7)GW6000M-ES-20 (8)GW3600-SBP-20 (9)GW5000-SBP-20
(10)GW6000-SBP-20
Remark: The difference of the models is power rating.

Test Model : GW3000-ES-20, GW6000-ES-20

Brand : GOODWE

Applicant : GoodWe Technologies Co., Ltd.
No.90 Zi Jin Rd., New District, Suzhou, 215011, China

Manufacturer : GoodWe Technologies Co., Ltd.
No.90 Zi Jin Rd., New District, Suzhou, 215011, China

I/O Ports : PV port*4
Battery port*1
USB port*1
LAN port*2
AC Output port *2
COM Port*1

Date of Receipt of Sample : Apr.01, 2022

3.2 EUT's Specifications under test

Technical Data	GW3000-ES-20	GW3600-ES-20	GW3600M-ES-20	GW5000-ES-20	GW5000M-ES-20	GW6000-ES-20	GW6000M-ES-20
Battery Input Data							
Battery Type ^{*1}	Li-Ion						
Nominal Battery Voltage (V)	48						
Battery Voltage Range (V)	40~60						
Max. Continuous Charging Current (A) ^{*1}	60	75	60	120	60	120	60
Max. Continuous Discharging Current (A) ^{*1}	60	75	60	120	60	120	60
Max. Charge Power (W) ^{*1}	3,000	3,600	3,000	5,000	3,000	6,000	3,000
Max. Discharge Power (W)	3,200	3,900	3,200	5,300	3,200	6,300	3,200
PV String Input Data							
Max. Input Power (W) ^{*2}	4,500	5,400	5,400	7,500	7,500	9,000	9,000
Max. Input Voltage (V)	600						
MPPT Operating Voltage Range (V)	60~550						
MPPT Voltage Range at Nominal Power (V)	220~500	150~500	150~500	200~500	200~500	220~500	200~500
Start-up Voltage (V)	58						
Nominal Input Voltage (V)	360						
Max. Input Current per MPPT (A)	16						
Max. Short Circuit Current per MPPT (A)	23						
Max. Backfeed Current to The Array (A)	0						
Number of MPP Trackers	1	2	2	2	2	2	2
Number of Strings per MPPT	1						
AC Output Data (On-grid)							
Nominal Apparent Power Output to Utility	3,000	3,680	3,680	5000 ^{*3}	5000 ^{*3}	6,000	6,000
Max. Apparent Power Output to Utility Grid	3,000	3,680	3,680	5000 ^{*4}	5000 ^{*4}	6,000	6,000
Nominal Apparent Power from Utility Grid (VA)	3,000	3,680	3,680	5,000	5,000	6,000	6,000
Max. Apparent Power from Utility Grid (VA)	6,000	7,360	3,680	10,000	5,000	10,000	6,000
Nominal Output Voltage (V)	220/230/240						
Output Voltage Range (V)	170~280						
Nominal AC Grid Frequency (Hz)	50/60						
AC Grid Frequency Range (Hz)	45~55 / 55~65						
Max. AC Current Output to Utility Grid (A)	13.6	16.7	16.7	22.7	22.7	27.3	27.3
Max. AC Current From Utility Grid (A)	27.3	33.5	16.7	43.5	22.7	43.5	27.3
Nominal AC Current From Utility Grid (A)	13	16	16	21.7	21.7	26.1	26.1
Max. Output Fault Current (Peak and Duration)							
Inrush Current (Peak and Duration) (A)	继电器最大冲击电流及时间						
Nominal Output Current (A)	13.0	16.0	16	21.7	21.7	26.1	26.1
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)						
Max. Total Harmonic Distortion	<3%						
Maximum Output Overcurrent Protection (A)	60						
Type of Voltage (a.c. or d.c.)	a.c.						
AC Output Data (Back-up)							
Back-up Nominal Apparent Power (VA)	3,000	3,680	3,680	5,000	5,000	6,000	6,000
Max. Output Apparent Power (VA)	3,000	3,680	3,680	5,000	5,000	6,000	6,000
Nominal Output Current (A)	13.0	16.0	16	21.7	21.7	26.1	26.1
Max. Output Current (A)	13.6	16.7	16.7	22.7	22.7	27.3	27.3
Max. Output Fault Current (Peak and Duration)							
Inrush Current (Peak and Duration) (A)							
Maximum Output Overcurrent Protection (A)	60						
Nominal Output Voltage (V)	220/230/240						
Nominal Output Frequency (Hz)	50/60						
Output THDv (@Linear Load)	<3%						
*1: The actual charge and discharge current/power also depends on the battery.							
*2 : The max power is the actual power of PV.							
*3: 4600 for VDE-AR-N4105 & NRS 097-2-1.							
*4: 4600 for VDE-AR-N4105 & NRS 097-2-1.							

Technical Data	GW3600-SBP-20	GW5000-SBP-20	GW6000-SBP-20
Battery Input Data			
Battery Type* ¹	Li-Ion		
Nominal Battery Voltage (V)	48		
Battery Voltage Range (V)	40~60		
Max. Continuous Charging Current (A)* ¹	75	120	120
Max. Continuous Discharging Current (A)* ¹	75	120	120
Max. Charge Power (W)* ¹	3,600	5,000	6,000
Max. Discharge Power (W)	3,900	5,300	6,300
AC Output Data (On-grid)			
Nominal Apparent Power Output to Utility Grid	3,680	5000* ²	6,000
Max. Apparent Power Output to Utility Grid (VA)	3,680	5000* ³	6,000
Nominal Apparent Power from Utility Grid (VA)	3,680	5,000	6,000
Max. Apparent Power from Utility Grid (VA)	7,360	10,000	10,000
Nominal Output Voltage (V)	220/230/240		
Output Voltage Range (V)	170~280		
Nominal AC Grid Frequency (Hz)	50/60		
AC Grid Frequency Range (Hz)	45~55 / 55~65		
Max. AC Current Output to Utility Grid (A)	16.7	22.7	27.3
Max. AC Current From Utility Grid (A)	33.5	43.5	43.5
Nominal AC Current From Utility Grid (A)	16	21.7	26.1
Max. Output Fault Current (Peak and Duration) (A)			
Inrush Current (Peak and Duration) (A)	继电器最大冲击电流及时间		
Nominal Output Current (A)	16	21.7	26.1
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
Max. Total Harmonic Distortion	<3%		
Maximum Output Overcurrent Protection (A)	60	80	80
Type of Voltage (a.c. or d.c.)	a.c.		
AC Output Data (Back-up)			
Back-up Nominal Apparent Power (VA)	3,680	5,000	6,000
Max. Output Apparent Power (VA)	3,680	5,000	6,000
Nominal Output Current (A)	16	21.7	26.1
Max. Output Current (A)	16.7	22.7	27.3
Max. Output Fault Current (Peak and Duration) (A)			
Inrush Current (Peak and Duration) (A)			
Maximum Output Overcurrent Protection (A)	60	80	80
Nominal Output Voltage (V)	220/230/240		
Nominal Output Frequency (Hz)	50/60		
Output THDv (@Linear Load)	<3%		
*1: The actual charge and discharge current/power also depends on the battery.			
*2: 4600 for VDE-AR-N4105 & NRS 097-2-1.			
*3: 4600 for VDE-AR-N4105 & NRS 097-2-1.			

3.3 Operating Condition of EUT

- 3.3.1 Set up the EUT as showed each respective block diagram of test setup.
- 3.3.2 Turn on all equipment.
- 3.3.3 Adjust the output of the DC power supply which made the EUT working in full load for conducted emission and radiated emission tests, PV Grid-Connected full load for harmonics and flicker tests, PV Grid-Connected 10% load for EMS test.

3.4 Tested Supporting System Details (AE)

3.4.1 DC Power Supply

Manufacturer/Brand : ITECH
 Model Number : IT6018C-800-75
 Input Power : 3~, 380~480Vac, 50/60Hz, 33A
 Output Power : 0-800Vdc, -75A~+75A, -18KW~+18KW

3.4.2 Notebook

Manufacturer/Brand : DELL
 Model Number : Vostro 14-5459
 Serial Number : 8P9C4K2

3.4.3 Battery

Brand	Series	Model
GoodWe	SECU-A	SECU-A5.4L*1
		SECU-A5.4L*2
		SECU-A5.4L*3
		SECU-A5.4L*4
		SECU-A5.4L*5
		SECU-A5.4L*6
	Lynx Home U	LX U5.4-L*1
		LX U5.4-L*2
		LX U5.4-L*3
		LX U5.4-L*4
		LX U5.4-L*5
		LX U5.4-L*6
BYD	Battery-Box Premium LVS	LVS 4.0
		LVS 8.0
		LVS 12.0
		LVS 16.0
		LVS 20.0
		LVS 24.0
	Battery-Box Premium LVL	LVL 15.4
LG	RESU LV	RESU 3.3
		RESU 6.5
		RESU 10
		RESU 12
		RESU 13
PYLON	FORCE-L1	
	FORCE-L2	
	US2000	
	US3000	
	US2000C	
	US3000C	

3.5 Description of Test Facility

Name of Firm : **Audix Technology (Wujiang) Co., Ltd. EMC Dept.**

Site Location : No. 1289, Jiangxing East Road, the Eastern Part of Wujiang Economic Development Zone, Jiangsu, China 215200

Test Facilities : **No.1 10m Semi-anechoic Chamber**
No. 2 Conducted Shielding Enclosure
The Complex Immunity Test Room
RS & CS Test Room

NVLAP Lab Code : 200786-0
Valid until on Sep.30, 2022
(NVLAP is a signatory member of ILAC MRA)
Remark: This report shall not be imply endorsement, certification or approval by NVLAP, NIST, or any agency of the U.S. Federal Government.

3.6 Measurement Uncertainty

Test Item	Range Frequency	Uncertainty
No.2 Conducted Shielding Enclosure		
Conducted Disturbance Measurement at mains port	0.15MHz ~ 30MHz	$\pm 3.32\text{dB}$
No.1 10m Semi-Anechoic Chamber		
Radiated Disturbance Measurement (Distance 10m)	30MHz~300MHz	$\pm 4.40\text{dB}$ (Horizontal)
		$\pm 4.28\text{dB}$ (Vertical)
	300MHz~1GHz	$\pm 3.48\text{dB}$ (Horizontal)
		$\pm 3.56\text{dB}$ (Vertical)
Radiated Disturbance Measurement (Distance 3m)	1GHz ~ 6GHz	$\pm 4.44\text{dB}$
	6GHz ~ 18GHz	$\pm 4.46\text{dB}$

Remark: Uncertainty = $ku_c(y)$

The standards listed in this report only require the uncertainty to be listed, and the measurement uncertainty is not required to be calculated in the measurement results. Therefore, the conformance judgment results are in accordance with the quality document TMC-205, and the test results in this report meet the requirements of the standards listed in this report.

4 CONDUCTED DISTURBANCE MEASUREMENT

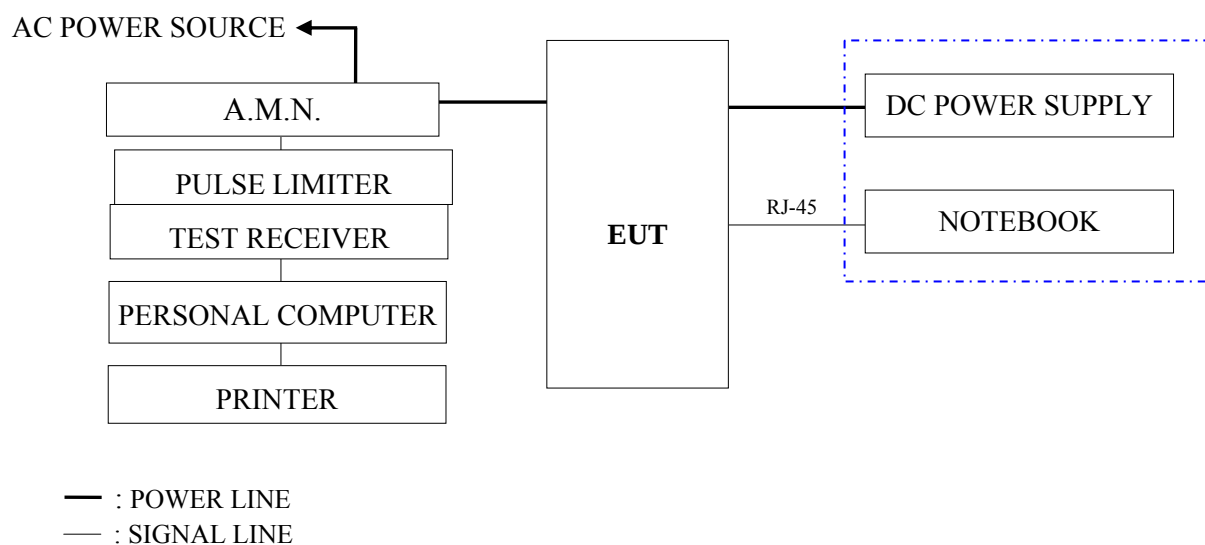
4.1 Test Equipment

The following test equipments were used during the conducted emission measurement:

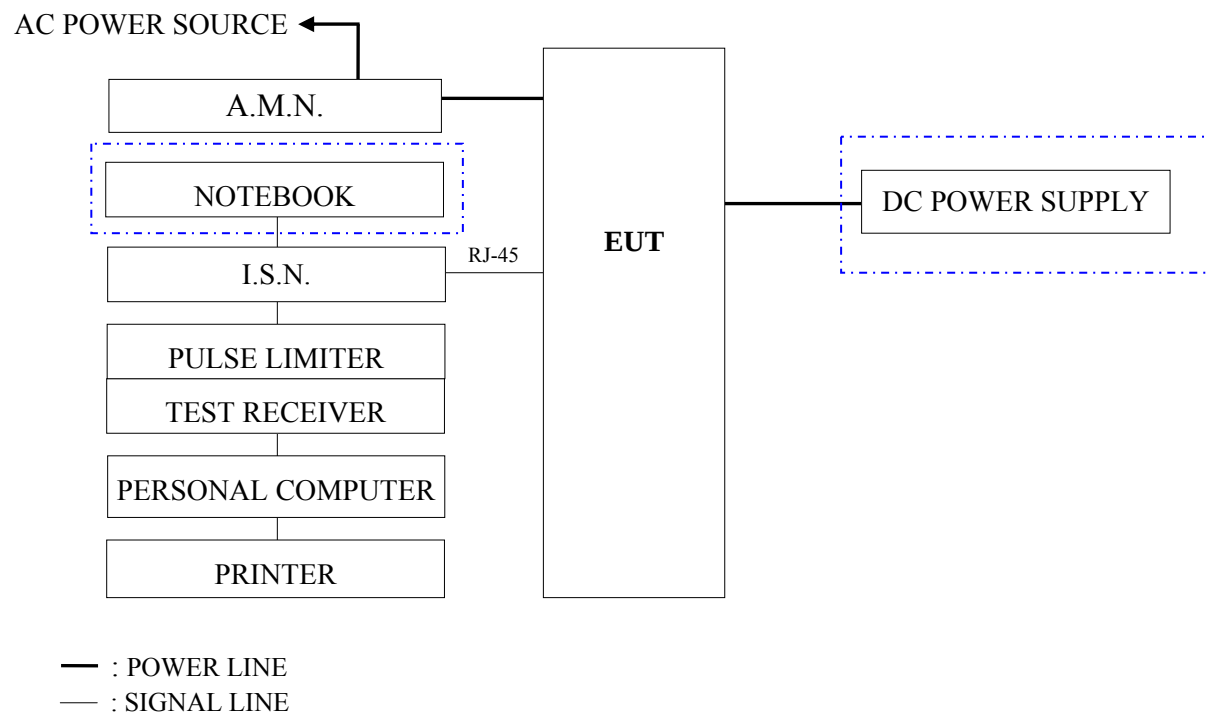
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	Test Receiver	R & S	ESCI	100839	2022-03-29	1 Year
2.	A.M.N.	Schwarzbeck	NNLK 8129	8129-164	2022-03-01	1 Year
3.	DC A.M.N.	Schwarzbeck	PVDC 8300	8300-00046	2021-04-19	1 Year
4.	L.I.S.N.	Kyoritsu	KNW-407	8-1793-4	2022-03-25	1 Year
5.	I.S.N.	TESEQ	T800	58414	2022-03-29	1 Year
6.	High-pass filter	PHX	HP-015M30M	200101	2021-12-29	1 Year
7.	Switch	Anritsu	MP59B	6200547937	2021-12-29	1 Year
8.	50Ω Terminator	Tektronis	MS4630B	003-CON	2021-12-29	1 Year
9.	RF Cable	Shengxuan	ROS400	59/3	2021-12-29	1 Year
10.	Software	Audix /e3 (9.160323)				

4.2 Block Diagram of Test Setup

4.2.1 Block Diagram of Test Setup for AC mains Port



4.2.2 Block Diagram of Test Setup for Telecommunication Port



4.3 Limits for Conducted Disturbance Voltage

Frequency	Compatibility Levels
EN 61000-2-2	
9kHz ~ 30kHz	129.5 to 122
30kHz ~ 50kHz	122 to 119
50kHz ~ 150kHz	113 to 89

- Remark 1. For EMC coordination in the setting of emission limits for unsymmetrical voltage distortion, see 4.12.1.
2. At the transition frequency, the lower level applies.
3. The level decreases linearly with the logarithm of the frequency in the ranges 9kHz to 30kHz and 30kHz to 50kHz and 50kHz to 150kHz.

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
EN61000-6-3&EN55011 For AC Mains		
0.15MHz ~ 0.5MHz	66 ~ 56 dB μ V	56 ~ 46 dB μ V
0.5MHz ~ 5MHz	56 dB μ V	46 dB μ V
5MHz ~ 30MHz	60 dB μ V	50 dB μ V
EN61000-6-4 For AC Mains		
0.15MHz~0.5MHz	79 dB μ V	66 dB μ V
0.5MHz~30MHz	73 dB μ V	60 dB μ V
EN55011 For DC Mains		
0.15MHz~0.5MHz	84 dB μ V Decreasing linearly with logarithm of frequency to 74 dB μ V	74 dB μ V Decreasing linearly with logarithm of frequency to 64 dB μ V
0.5MHz~30MHz	74 dB μ V	64 dB μ V

- Remark 1. If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.
2. The lower limit applies at the band edges.
3. The limits of the EN61000-6-3 is same as the EN55011 limit.

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
EN61000-6-3&EN55011 For Telecommunication Port		
0.15MHz ~ 0.5MHz	84 ~ 74 dB μ V	74 ~ 64 dB μ V
	40 ~ 30 dB μ A	30 ~ 20 dB μ A
0.5MHz ~ 30MHz	74 dB μ V	64 dB μ V
	30 dB μ A	20 dB μ A
EN61000-6-4 For Telecommunication Port		
0.15MHz~0.5MHz	97~87 dB μ V	84~74 dB μ V
	53~43 dB μ A	40~30 dB μ A
0.5MHz~30MHz	87 dB μ V	74 dB μ V
	43 dB μ A	30 dB μ A

4.4 Test Procedure

The measuring process is according to EN IEC 61000-6-3:2021, EN 61000-6-3:2007+A1:2011 +AC:2012, EN IEC 61000-6-4:2019, EN 61000-6-4:2007+A1:2011 (IEC 61000-6-3:2020, IEC 61000-6-4:2018), EN 55011:2016+A11:2020, EN 55011:2016+A2:2021, EN 61000-2-2:2002+A2:2019, CISPR16-2-1:2014+COR1:2020 and laboratory internal procedure TKC-301-004.

4.4.1 For AC Mains Port

In the conducted emission measurement, the EUT and all peripheral devices were set up on a non-metallic table which was 0.8 meter height above the ground plane, and 0.4 meter far away from the vertical plane. The mains cable of the EUT connected to one Artificial Main Network (AMN). All other unit of the EUT and AE connected to a second Line Impedance Stabilization Network (L.I.S.N.). The telecommunication cable connected to the AE through a Impedance Stabilization Network (ISN) which terminated a 50Ω resistor. For the measurement, the A.M.N measuring port was terminated by a 50Ω measuring equipment and the second L.I.S.N measuring port was terminated by a 50Ω terminator. All measurements were done between the phase lead and the reference ground, and between the neutral lead and the reference ground. All cables or wires placement were verified to find out the maximum emission.

4.4.2 For DC Mains Port

In the conducted emission measurement, the EUT and all peripheral devices were set up on a non-metallic table which was 0.8 meter height above the ground plane, and 0.4 meter far away from the vertical plane. The mains cable of the EUT connected to one DC Artificial Main Network (DC AMN). All other unit of the EUT and AE connected to a second Line Impedance Stabilization Network (L.I.S.N.). The telecommunication cable connected to the AE through a Impedance Stabilization Network (ISN) which terminated a 50Ω resistor. For the measurement, the DC A.M.N measuring port was terminated by a 50Ω measuring equipment and the second L.I.S.N measuring port was terminated by a 50Ω terminator. All measurements were done between the phase lead and the reference ground, and between the neutral lead and the reference ground. All cables or wires placement were verified to find out the maximum emission.

4.4.3 For Telecommunication Port

The setup is the same as AC mains measurement, For the measurement, the ISN measuring port was terminated by a 50Ω test receiver and the measuring port of AMN was terminated by a 50Ω terminator.

The resolution bandwidth of measuring receiver was set at 9 kHz.

The required frequency band (0.15 MHz ~ 30 MHz) was pre-scanned with peak detector, the final measurement was measured with quasi-peak detector and average detector.

The emission level is calculated automatically by the test system which uses the following equation:

$$\text{Emission level (dB}\mu\text{V)} = \text{Reading (dB}\mu\text{V)} + \text{A.M.N /I.S.N factor (dB)} + \text{Cable loss (dB).}$$

(Cable loss includes High pass filter + Switch + Cable)

4.5 Measurement Results

PASSED.

The details of test modes and reference test data are as follows:

4.5.1 Low-frequency conducted disturbances Measurement Results

Test Date: Apr.01, 2022

Temperature: 25.1°C

Humidity: 55%

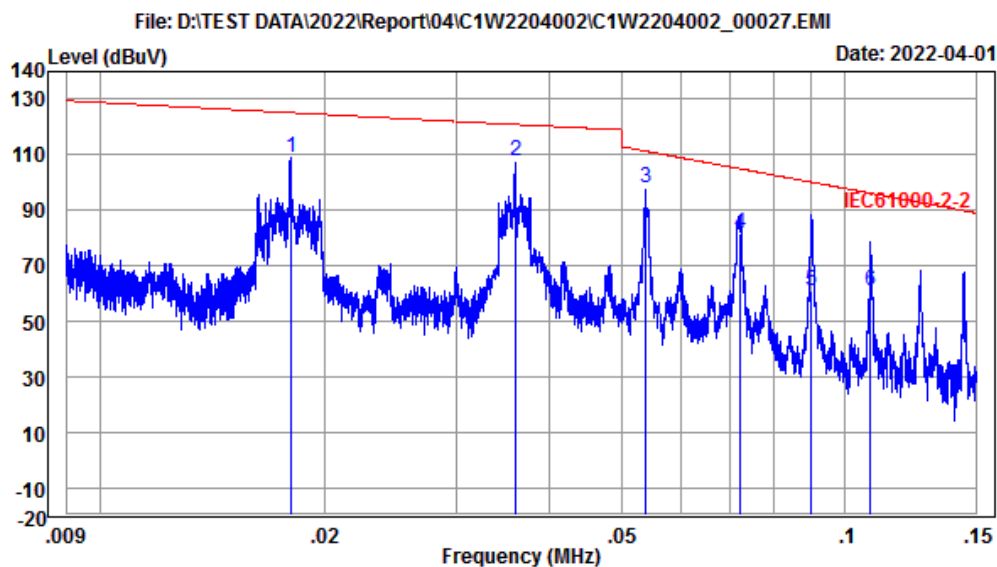
Item	Power Rating	Test Mode	Reference Test Data No.	
			Neutral	Line
1	BAT 50Vdc/120A 230Vac	AC charge to BAT	# 27	# 28
2	BAT 50Vdc/120A 230Vac	BAT discharge to GRID	# 30	# 29
3	PV1+PV2 200Vdc/30A 230Vac	PV discharge to GRID	# 31	# 32
4	PV1+PV2 500Vdc/12A 230Vac	PV discharge to GRID	# 34	※# 33

NOTE 1 - ‘※’ means the worst test mode.

NOTE 2 - The worst emission is detected at 0.072MHz with emission level of 95.68dB (μV) (limit is 105.04dB (μV)) with QP detector, when the Line of the EUT is connected to A.M.N.



Audix Technology (Wu Jiang) Co.,Ltd
 No.1289,Jiang Xing East Road,The Eastern Part of WuJiang
 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339



Site NO. : NO.2 shielded Room
 AMN / LISN. : NNLK8129-2203
 Limit : IEC61000-2-2
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50Vdc/120A 230Vac
 Test Mode : AC CHARGE TO BAT
 Memo :

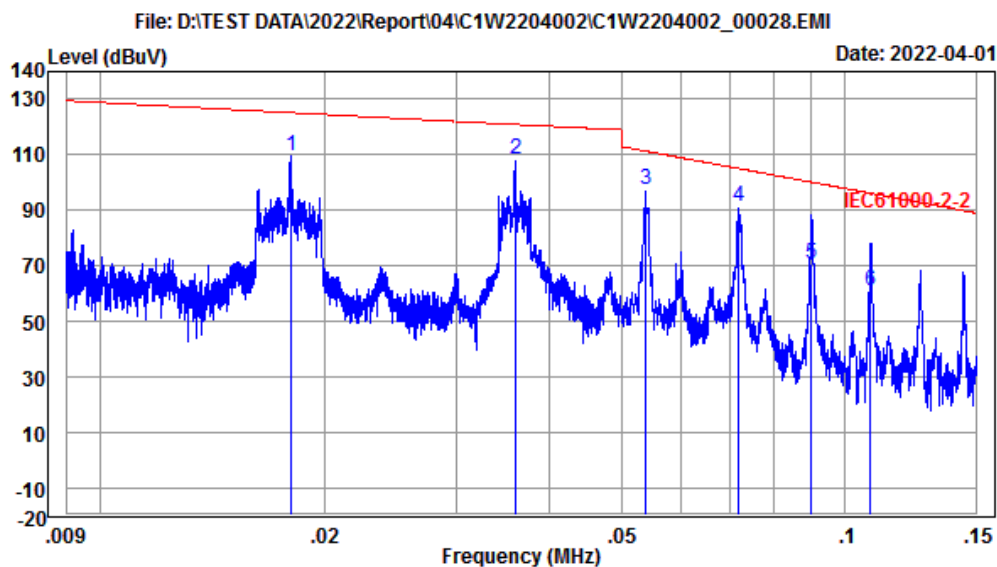
phase.: Neutral Data NO.:27
 Engineer : YangZuoli

Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.018	1.26	9.91	97.92	109.09	125.18	16.09	QP
0.036	0.76	9.91	97.34	108.01	120.92	12.91	QP
0.054	0.32	9.91	87.73	97.96	111.39	13.43	QP
0.072	0.22	9.92	71.24	81.38	105.03	23.65	QP
0.090	0.20	9.92	50.98	61.10	100.16	39.06	QP
0.108	0.31	9.92	50.84	61.07	96.18	35.11	QP

Remarks:Emission Level = AMN factor+Cable loss(Cable+High Pass Filter+Switch)+Reading



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 No.1289,Jiang Xing East Road,The Eastern Part of WuJiang
 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339



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 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50Vdc/120A 230Vac
 Test Mode : AC CHARGE TO BAT
 Memo :

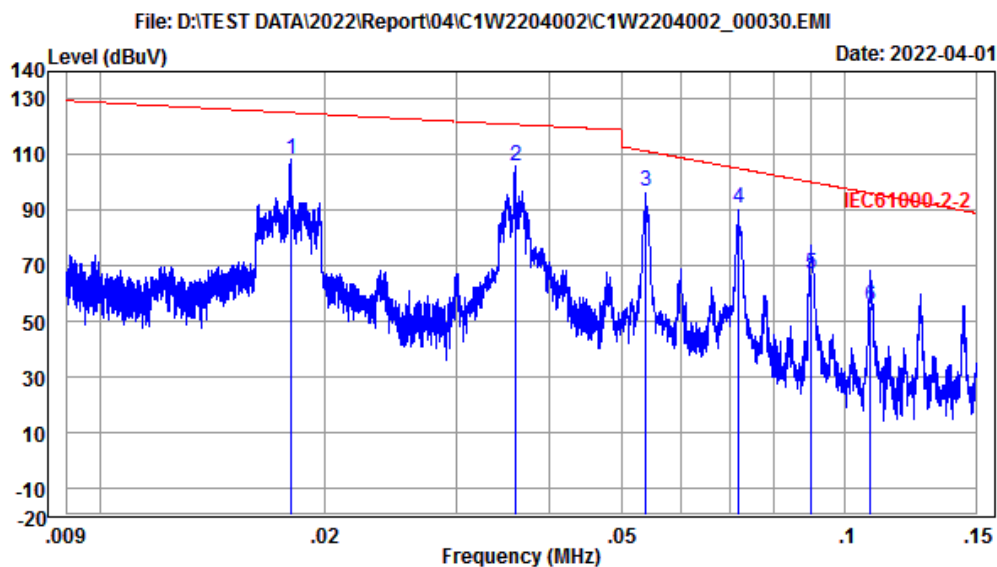
phase.: Line1 Data NO.:28
 Engineer : YangZuoli

Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.018	1.55	9.91	97.93	109.39	125.18	15.79	QP
0.036	0.94	9.91	97.40	108.25	120.92	12.67	QP
0.054	0.43	9.91	87.11	97.45	111.38	13.93	QP
0.072	0.28	9.92	81.19	91.39	105.03	13.64	QP
0.090	0.22	9.92	60.74	70.88	100.16	29.28	QP
0.108	0.18	9.92	50.69	60.79	96.15	35.36	QP

Remarks:Emission Level = AMN factor+Cable loss(Cable+High Pass Filter+Switch)+Reading



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 No.1289,Jiang Xing East Road,The Eastern Part of WuJiang
 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339



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 Limit : IEC61000-2-2
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50Vdc/120A 230Vac
 Test Mode : BAT DISCHARGE TO GRID
 Memo :

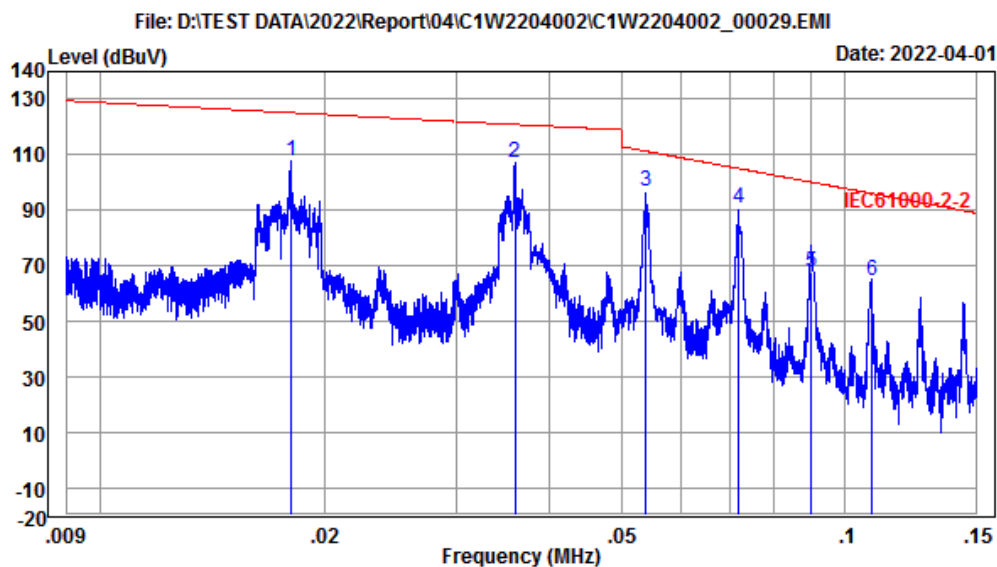
phase.: Neutral Data NO.:30
 Engineer : YangZuoli

Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.018	1.26	9.91	97.34	108.51	125.18	16.67	QP
0.036	0.76	9.91	95.34	106.01	120.93	14.92	QP
0.054	0.32	9.91	86.58	96.81	111.33	14.52	QP
0.072	0.22	9.92	80.80	90.94	105.09	14.15	QP
0.090	0.20	9.92	57.09	67.21	100.16	32.95	QP
0.108	0.31	9.92	45.41	55.64	96.18	40.54	QP

Remarks:Emission Level = AMN factor+Cable loss(Cable+High Pass Filter+Switch)+Reading



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 No.1289,Jiang Xing East Road,The Eastern Part of WuJiang
 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339



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 AMN / LISN. : NNLK8129-2203
 Limit : IEC61000-2-2
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50Vdc/120A 230Vac
 Test Mode : BAT DISCHARGE TO GRID
 Memo :

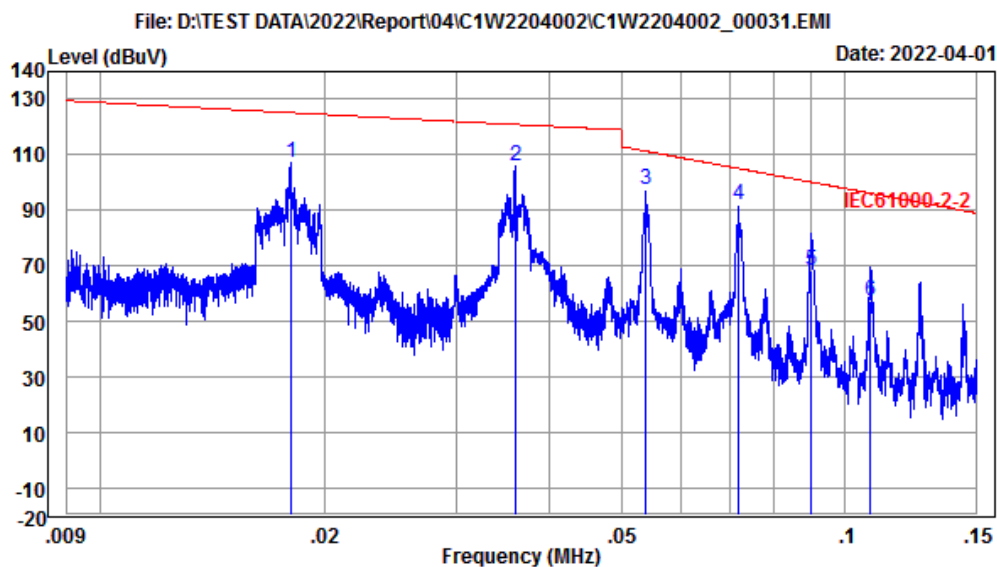
phase.: Line1 Data NO.:29
 Engineer : YangZuoli

Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.018	1.55	9.91	96.60	108.06	125.17	17.11	QP
0.036	0.94	9.91	96.07	106.92	120.93	14.01	QP
0.054	0.43	9.91	86.42	96.76	111.33	14.57	QP
0.072	0.28	9.92	80.68	90.88	105.09	14.21	QP
0.090	0.22	9.92	57.22	67.36	100.16	32.80	QP
0.108	0.18	9.92	54.49	64.59	96.13	31.54	QP

Remarks:Emission Level = AMN factor+Cable loss(Cable+High Pass Filter+Switch)+Reading



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 No.1289,Jiang Xing East Road,The Eastern Part of WuJiang
 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339



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 AMN / LISN. : NNLK8129-2203
 Limit : IEC61000-2-2
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1+PV2 200Vdc/30A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

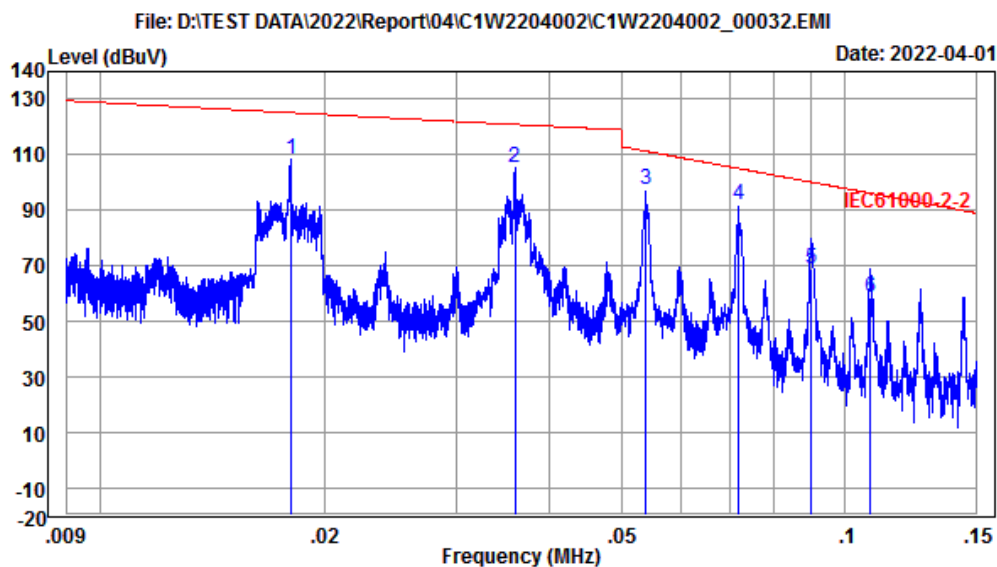
phase.: Neutral Data NO.:31
 Engineer : YangZuoli

Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.018	1.26	9.91	96.21	107.38	125.18	17.80	QP
0.036	0.76	9.91	95.34	106.01	120.93	14.92	QP
0.054	0.32	9.91	87.15	97.38	111.34	13.96	QP
0.072	0.22	9.92	81.61	91.75	105.10	13.35	QP
0.090	0.20	9.92	58.19	68.31	100.14	31.83	QP
0.108	0.30	9.92	46.96	57.18	96.21	39.03	QP

Remarks:Emission Level = AMN factor+Cable loss(Cable+High Pass Filter+Switch)+Reading



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 No.1289,Jiang Xing East Road,The Eastern Part of WuJiang
 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339



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 AMN / LISN. : NNLK8129-2203
 Limit : IEC61000-2-2
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1+PV2 200Vdc/30A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

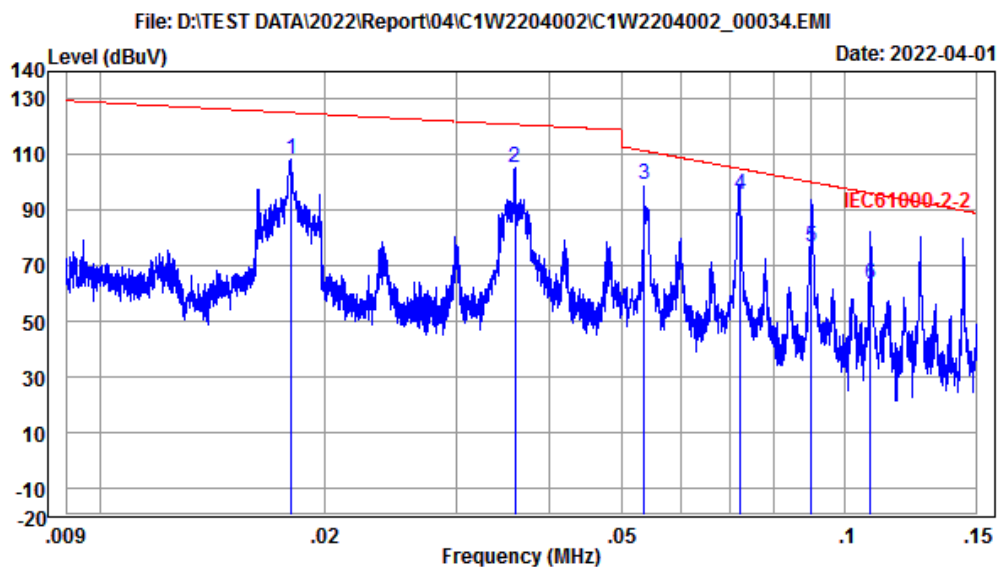
phase.: Line1 Data NO.:32
 Engineer : YangZuoli

Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.018	1.55	9.91	96.63	108.09	125.18	17.09	QP
0.036	0.94	9.91	94.34	105.19	120.93	15.74	QP
0.054	0.43	9.91	87.06	97.40	111.33	13.93	QP
0.072	0.28	9.92	81.52	91.72	105.09	13.37	QP
0.090	0.22	9.92	58.90	69.04	100.16	31.12	QP
0.108	0.18	9.92	48.39	58.49	96.18	37.69	QP

Remarks:Emission Level = AMN factor+Cable loss(Cable+High Pass Filter+Switch)+Reading



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 No.1289,Jiang Xing East Road,The Eastern Part of WuJiang
 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339



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 AMN / LISN. : NNLK8129-2203
 Limit : IEC61000-2-2
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1+PV2 500Vdc/12A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

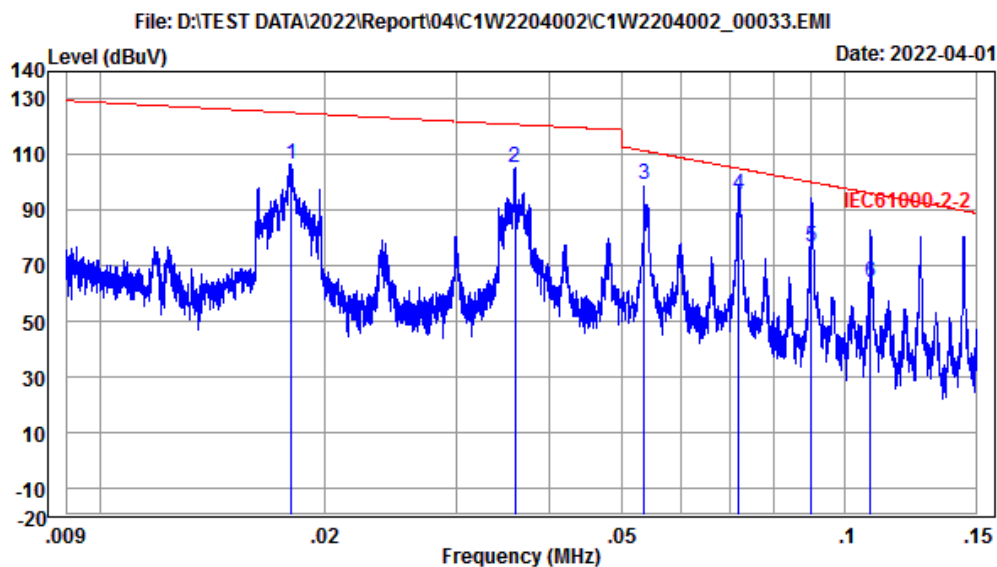
phase.: Neutral Data NO.:34
 Engineer : YangZuoli

Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.018	1.26	9.91	96.98	108.15	125.18	17.03	QP
0.036	0.76	9.91	94.43	105.10	120.93	15.83	QP
0.054	0.32	9.91	89.07	99.30	111.43	12.13	QP
0.072	0.22	9.92	85.42	95.56	105.01	9.45	QP
0.090	0.20	9.92	66.51	76.63	100.16	23.53	QP
0.108	0.31	9.92	53.37	63.60	96.18	32.58	QP

Remarks:Emission Level = AMN factor+Cable loss(Cable+High Pass Filter+Switch)+Reading



Audix Technology (Wu Jiang) Co.,Ltd
 No.1289,Jiang Xing East Road,The Eastern Part of WuJiang
 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339



Site NO. : NO.2 shielded Room
 AMN / LISN. : NNLK8129-2203
 Limit : IEC61000-2-2
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1+PV2 500Vdc/12A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: Line1 Data NO.:33
 Engineer : YangZuoli

Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.018	1.55	9.91	95.12	106.58	125.18	18.60	QP
0.036	0.94	9.91	94.28	105.13	120.93	15.80	QP
0.054	0.43	9.91	89.16	99.50	111.43	11.93	QP
0.072	0.28	9.92	85.48	95.68	105.04	9.36	QP
0.090	0.22	9.92	66.70	76.84	100.16	23.32	QP
0.108	0.18	9.92	53.57	63.67	96.17	32.50	QP

Remarks:Emission Level = AMN factor+Cable loss(Cable+High Pass Filter+Switch)+Reading

4.5.2 AC main Ports Measurement Results

Test Date: Apr.01, 2022

Temperature: 25.1°C

Humidity: 55%

Item	Power Rating	Test Mode	Reference Test Data No.	
			Neutral	Line
1	BAT 50Vdc/120A 230Vac	AC charge to BAT	# 4	# 3
2	BAT 50Vdc/120A 230Vac	BAT discharge to GRID	※# 1	# 2
3	PV1+PV2 200Vdc/30A 230Vac	PV discharge to GRID	# 6	# 5
4	PV1+PV2 500Vdc/12A 230Vac	PV discharge to GRID	# 7	# 8

NOTE 1 - ‘※’ means the worst test mode.

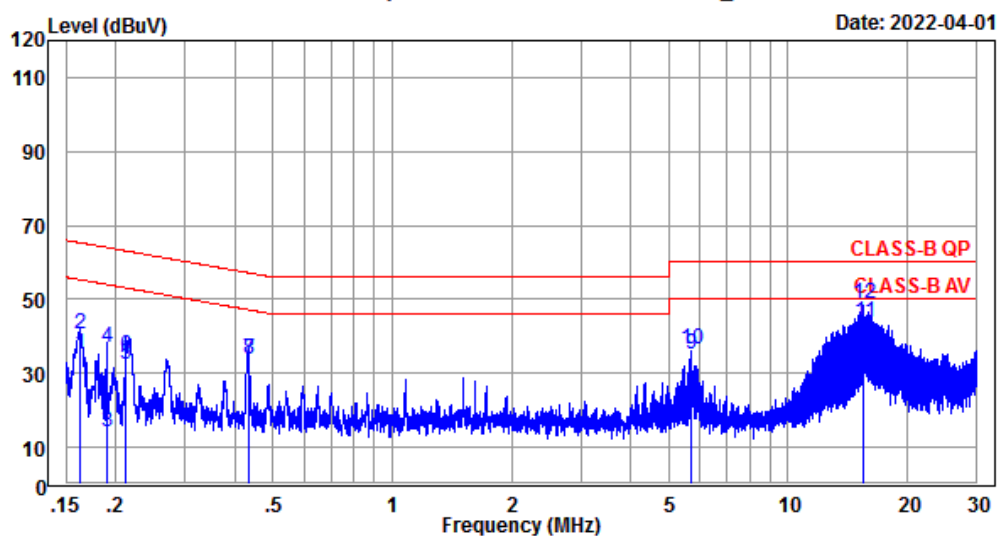
NOTE 2 - The worst emission is detected at 15.661MHz with emission level of 46.68dB (μV) (Limit is 50.00dB (μV)) with AV detector, when the Neutral of the EUT is connected to A.M.N.

NOTE 3 - Because EN IEC 61000-6-3(IEC 61000-6-3) limit is more rigorous, so when the test results satisfy EN IEC 61000-6-3(IEC 61000-6-3) requests, regards as simultaneously compliance with the requirements of EN IEC 61000-6-4(IEC 61000-6-4), therefore does not need to retest.



Audix Technology (Wu Jiang) Co.,Ltd
 No.1289,Jiang Xing East Road,The Eastern Part of WuJiang
 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339

File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00004.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : NNLK8129-2203
 Limit : CLASS-B QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50Vdc/120A 230Vac
 Test Mode : AC CHARGE TO BAT
 Memo :

phase.: Neutral Data NO.:4
 Engineer : YangZuoli

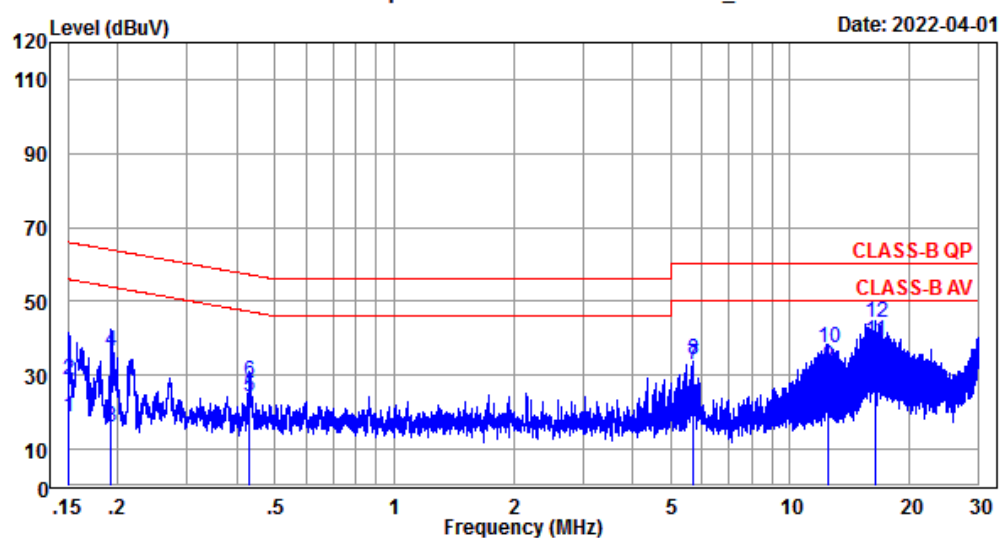
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.163	0.70	12.37	22.17	35.24	55.32	20.08	Average
0.163	0.70	12.37	27.59	40.66	65.32	24.66	QP
0.190	0.25	9.54	4.20	13.99	54.05	40.06	Average
0.190	0.25	9.54	26.95	36.74	64.05	27.31	QP
0.213	0.07	9.22	23.32	32.61	53.10	20.49	Average
0.213	0.07	9.22	25.31	34.60	63.10	28.50	QP
0.433	0.05	8.68	24.83	33.56	47.20	13.64	Average
0.433	0.05	8.68	24.93	33.66	57.20	23.54	QP
5.672	0.14	8.26	26.61	35.01	50.00	14.99	Average
5.672	0.14	8.26	27.99	36.39	60.00	23.61	QP
15.554	0.39	8.43	35.13	43.95	50.00	6.05	Average
15.554	0.39	8.43	39.91	48.73	60.00	11.27	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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 No.1289,Jiang Xing East Road,The Eastern Part of WuJiang
 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339

File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00003.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : NNLK8129-2203
 Limit : CLASS-B QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50Vdc/120A 230Vac
 Test Mode : AC CHARGE TO BAT
 Memo :

phase.: Line1 Data NO.:3
 Engineer : YangZuoli

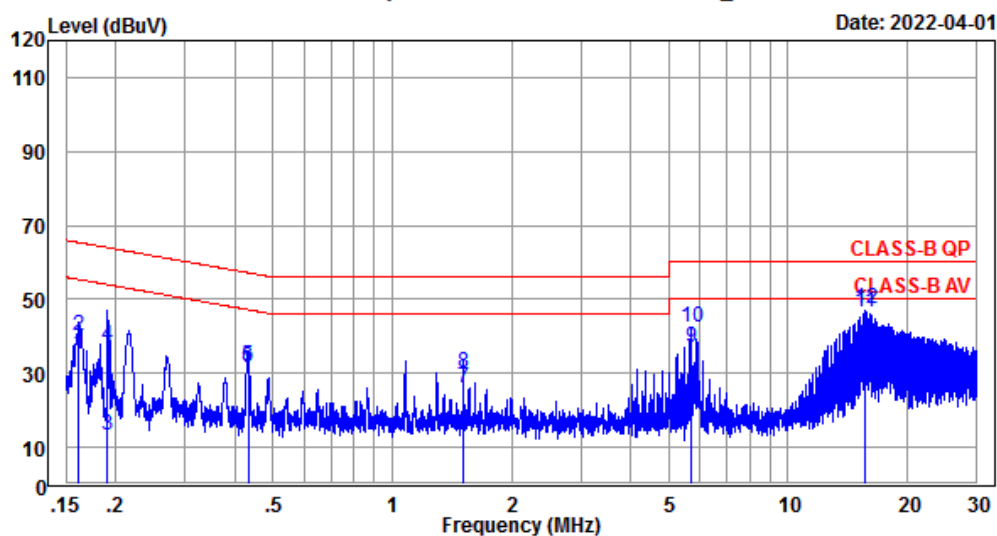
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.150	0.11	16.33	2.49	18.93	55.99	37.06	Average
0.150	0.11	16.33	12.46	28.90	65.99	37.09	QP
0.193	0.08	9.44	6.28	15.80	53.90	38.10	Average
0.193	0.08	9.44	27.01	36.53	63.90	27.37	QP
0.432	0.08	8.68	15.50	24.26	47.22	22.96	Average
0.432	0.08	8.68	19.57	28.33	57.22	28.89	QP
5.672	0.15	8.26	24.29	32.70	50.00	17.30	Average
5.672	0.15	8.26	25.61	34.02	60.00	25.98	QP
12.532	0.31	8.38	23.78	32.47	50.00	17.53	Average
12.532	0.31	8.38	28.69	37.38	60.00	22.62	QP
16.417	0.51	8.46	30.48	39.45	50.00	10.55	Average
16.417	0.51	8.46	35.39	44.36	60.00	15.64	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00001.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : NNLK8129-2203
 Limit : CLASS-B QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50Vdc/120A 230Vac
 Test Mode : BAT DISCHARGE TO GRID
 Memo :

phase.: Neutral Data NO.:1
 Engineer : YangZuoli

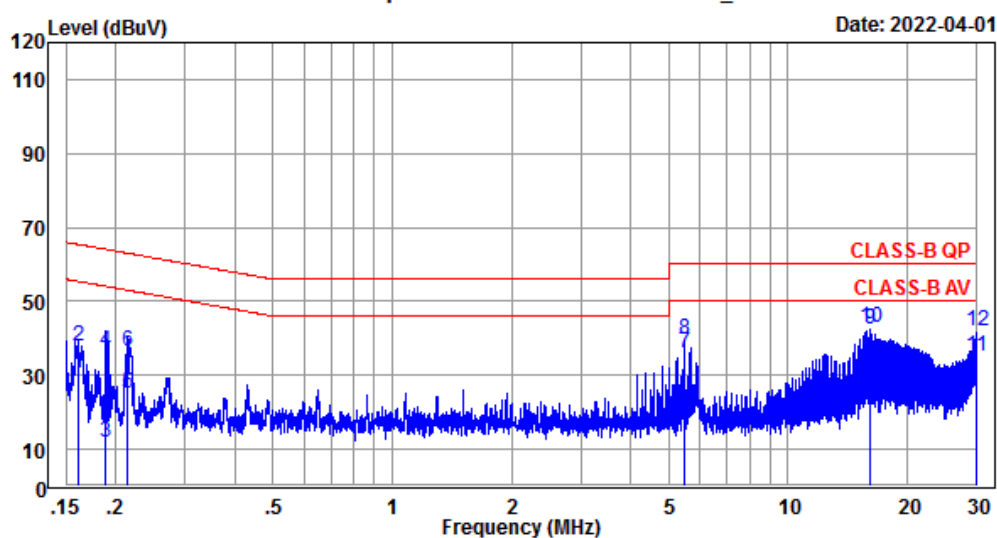
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.161	0.74	13.01	21.53	35.28	55.43	20.15	Average
0.161	0.74	13.01	26.31	40.06	65.43	25.37	QP
0.191	0.22	9.51	3.72	13.45	54.00	40.55	Average
0.191	0.22	9.51	27.71	37.44	64.00	26.56	QP
0.432	0.05	8.68	23.05	31.78	47.21	15.43	Average
0.432	0.05	8.68	22.90	31.63	57.21	25.58	QP
1.512	0.06	8.30	17.73	26.09	46.00	19.91	Average
1.512	0.06	8.30	21.89	30.25	56.00	25.75	QP
5.672	0.14	8.26	28.78	37.18	50.00	12.82	Average
5.672	0.14	8.26	33.87	42.27	60.00	17.73	QP
15.661	0.40	8.44	37.84	46.68	50.00	3.32	Average
15.661	0.40	8.44	38.64	47.48	60.00	12.52	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00002.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : NNLK8129-2203
 Limit : CLASS-B QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50Vdc/120A 230Vac
 Test Mode : BAT DISCHARGE TO GRID
 Memo :

phase.: Line1 Data NO.:2
 Engineer : YangZuoli

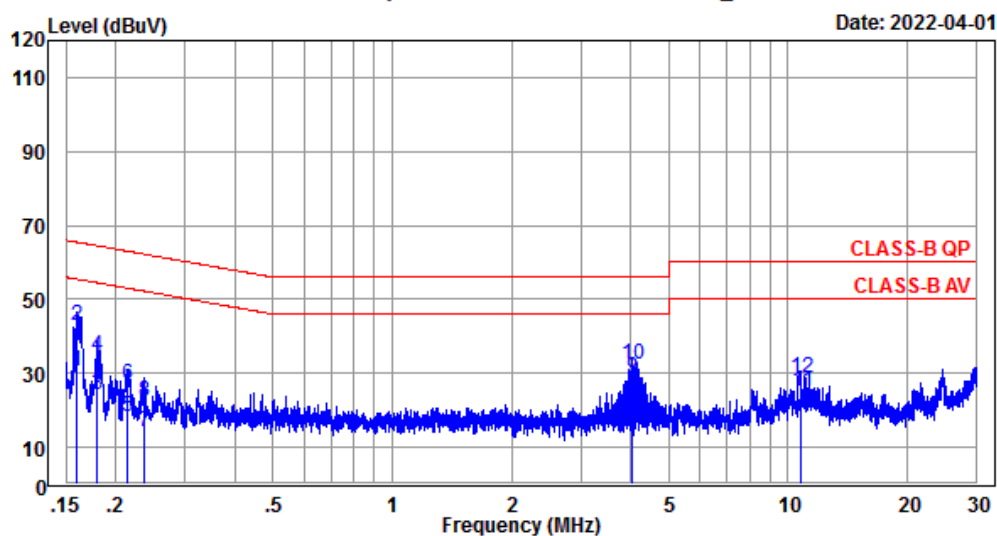
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.161	0.10	12.91	17.67	30.68	55.41	24.73	Average
0.161	0.10	12.91	25.08	38.09	65.41	27.32	QP
0.189	0.09	9.55	2.23	11.87	54.07	42.20	Average
0.189	0.09	9.55	26.99	36.63	64.07	27.44	QP
0.214	0.08	9.21	15.71	25.00	53.03	28.03	Average
0.214	0.08	9.21	27.01	36.30	63.03	26.73	QP
5.455	0.15	8.26	27.78	36.19	50.00	13.81	Average
5.455	0.15	8.26	31.29	39.70	60.00	20.30	QP
16.094	0.48	8.45	33.38	42.31	50.00	7.69	Average
16.094	0.48	8.45	34.13	43.06	60.00	16.94	QP
29.973	0.79	8.77	25.41	34.97	50.00	15.03	Average
29.973	0.79	8.77	32.46	42.02	60.00	17.98	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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Site NO. : NO.2 shielded Room
 AMN / LISN. : NNLK8129-2203
 Limit : CLASS-B QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1+PV2 200Vdc/30A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: Neutral Data NO.:6
 Engineer : YangZuoli

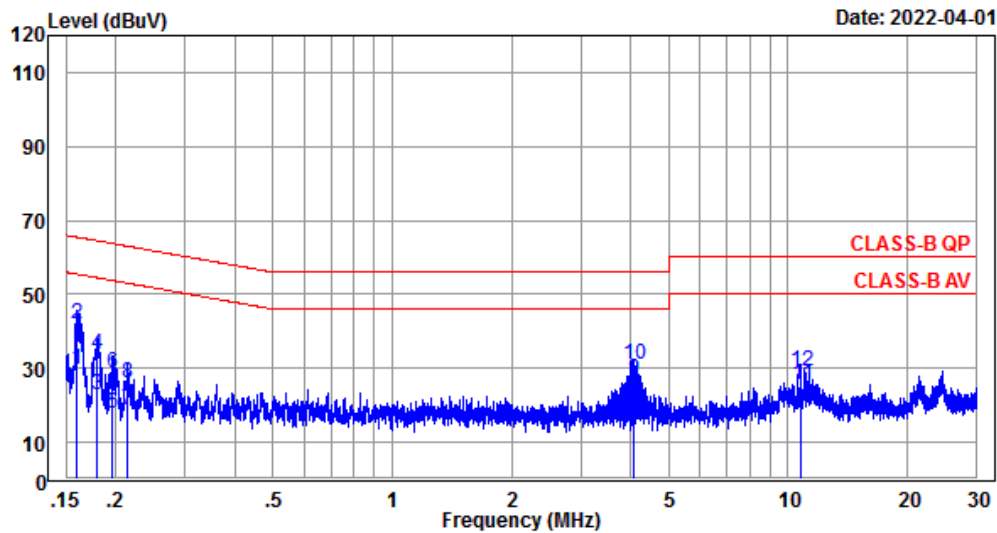
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.160	0.76	13.37	16.23	30.36	55.49	25.13	Average
0.160	0.76	13.37	28.54	42.67	65.49	22.82	QP
0.180	0.42	9.82	14.06	24.30	54.50	30.20	Average
0.180	0.42	9.82	24.47	34.71	64.50	29.79	QP
0.214	0.07	9.21	8.86	18.14	53.04	34.90	Average
0.214	0.07	9.21	17.82	27.10	63.04	35.94	QP
0.235	0.07	9.16	4.95	14.18	52.26	38.08	Average
0.235	0.07	9.16	13.20	22.43	62.26	39.83	QP
4.033	0.11	8.25	20.21	28.57	46.00	17.43	Average
4.033	0.11	8.25	24.19	32.55	56.00	23.45	QP
10.797	0.24	8.34	16.42	25.00	50.00	25.00	Average
10.797	0.24	8.34	20.30	28.88	60.00	31.12	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00005.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : NNLK8129-2203
 Limit : CLASS-B QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1+PV2 200Vdc/30A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: Line1 Data NO.:5
 Engineer : YangZuoli

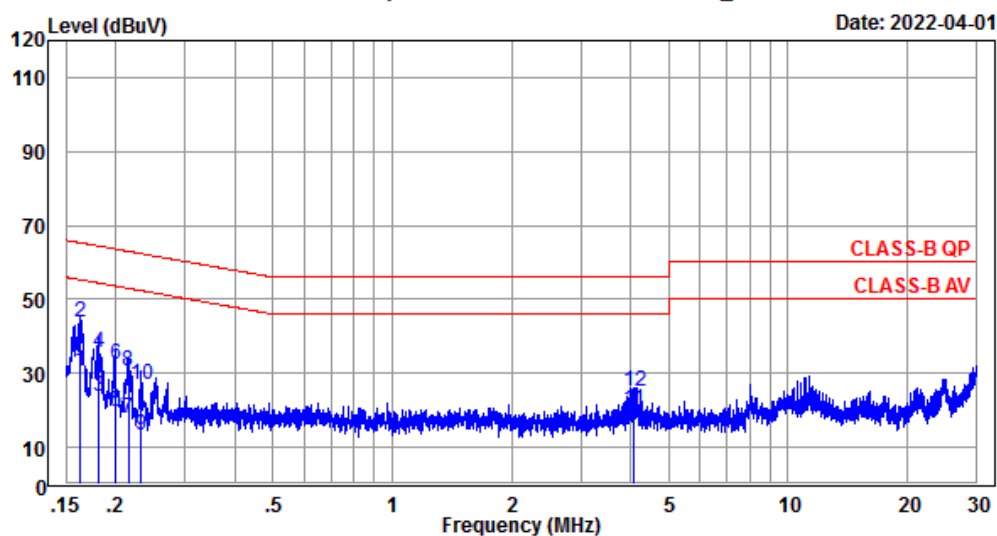
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.160	0.10	13.24	16.12	29.46	55.47	26.01	Average
0.160	0.10	13.24	28.52	41.86	65.47	23.61	QP
0.180	0.09	9.81	13.12	23.02	54.48	31.46	Average
0.180	0.09	9.81	23.90	33.80	64.48	30.68	QP
0.197	0.08	9.34	8.49	17.91	53.74	35.83	Average
0.197	0.08	9.34	19.40	28.82	63.74	34.92	QP
0.215	0.08	9.21	9.45	18.74	53.02	34.28	Average
0.215	0.08	9.21	16.94	26.23	63.02	36.79	QP
4.068	0.13	8.25	18.45	26.83	46.00	19.17	Average
4.068	0.13	8.25	22.53	30.91	56.00	25.09	QP
10.797	0.25	8.34	16.81	25.40	50.00	24.60	Average
10.797	0.25	8.34	20.78	29.37	60.00	30.63	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00007.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : NNLK8129-2203
 Limit : CLASS-B QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1+PV2 500Vdc/12A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: Neutral Data NO.:7
 Engineer : YangZuoli

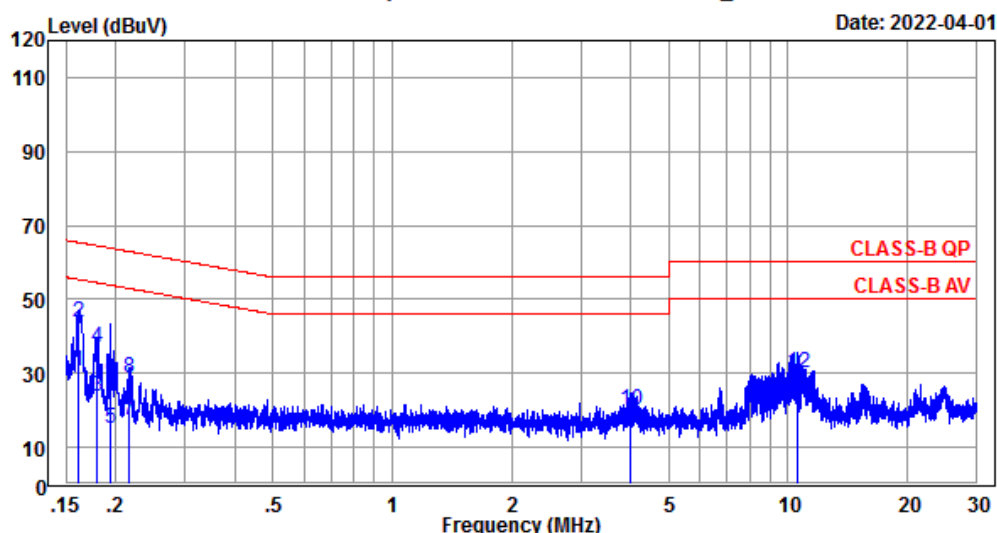
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.163	0.71	12.44	17.23	30.38	55.33	24.95	Average
0.163	0.71	12.44	30.48	43.63	65.33	21.70	QP
0.181	0.39	9.78	13.39	23.56	54.43	30.87	Average
0.181	0.39	9.78	25.62	35.79	64.43	28.64	QP
0.199	0.08	9.27	10.42	19.77	53.65	33.88	Average
0.199	0.08	9.27	22.95	32.30	63.65	31.35	QP
0.215	0.07	9.21	8.50	17.78	53.00	35.22	Average
0.215	0.07	9.21	21.26	30.54	63.00	32.46	QP
0.232	0.07	9.17	3.85	13.09	52.39	39.30	Average
0.232	0.07	9.17	17.46	26.70	62.39	35.69	QP
4.068	0.11	8.25	11.90	20.26	46.00	25.74	Average
4.068	0.11	8.25	16.61	24.97	56.00	31.03	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00008.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : NNLK8129-2203
 Limit : CLASS-B QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1+PV2 500Vdc/12A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: Line1 Data NO.:8
 Engineer : YangZuoli

Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.162	0.10	12.67	17.70	30.47	55.37	24.90	Average
0.162	0.10	12.67	31.07	43.84	65.37	21.53	QP
0.179	0.09	9.83	13.74	23.66	54.51	30.85	Average
0.179	0.09	9.83	26.83	36.75	64.51	27.76	QP
0.194	0.08	9.43	5.61	15.12	53.88	38.76	Average
0.194	0.08	9.43	18.80	28.31	63.88	35.57	QP
0.217	0.08	9.21	8.11	17.40	52.93	35.53	Average
0.217	0.08	9.21	19.65	28.94	62.93	33.99	QP
3.998	0.13	8.25	7.15	15.53	46.00	30.47	Average
3.998	0.13	8.25	11.71	20.09	56.00	35.91	QP
10.550	0.24	8.34	14.57	23.15	50.00	26.85	Average
10.550	0.24	8.34	21.44	30.02	60.00	29.98	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading

4.5.3 DC main Ports Measurement Results

Test Date: Apr.01, 2022

Temperature: 25.1°C

Humidity: 55%

Item	Power Rating	Test Mode	Reference Test Data No.			
			A	B	CM	DM
1	PV1 200Vdc/15A 230Vac	PV discharge to GRID	# 16	# 15	# 14	# 13
2	PV1 500Vdc/6A 230Vac		# 9	# 10	# 11	# 12
3	PV2 200Vdc/15A 230Vac		※# 17	# 18	# 19	# 20
4	PV2 500Vdc/6A 230Vac		# 24	# 23	# 22	# 21

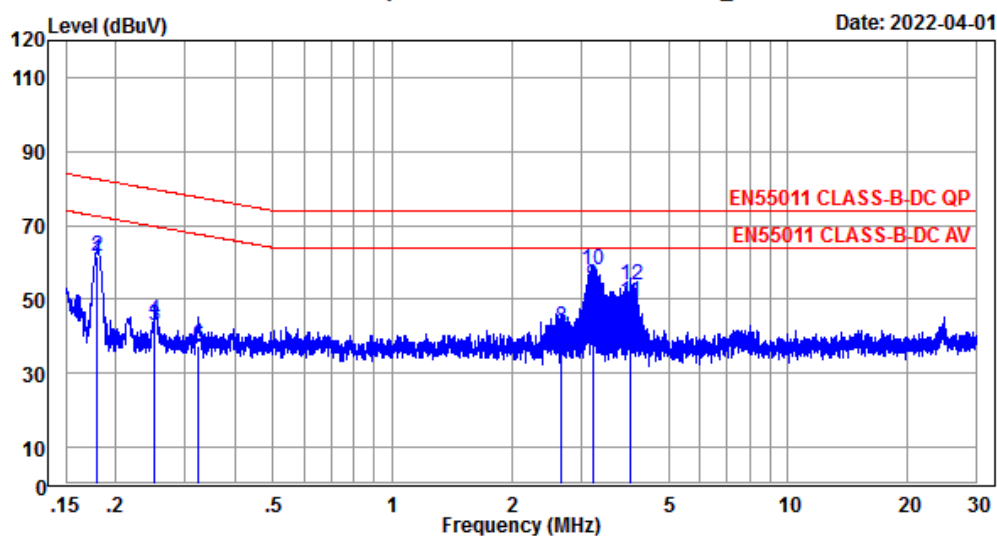
NOTE 1 - ‘※’means the worst test mode.

NOTE 2 - The worst emission is detected at 3.205MHz with emission level of 56.43dB (μV) (limit is 64.00dB (μV)) with AV detector, when the A of the EUT is connected to DC A.M.N



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File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00016.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1 200Vdc/15A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: A Data NO.:16
 Engineer : YangZuoli

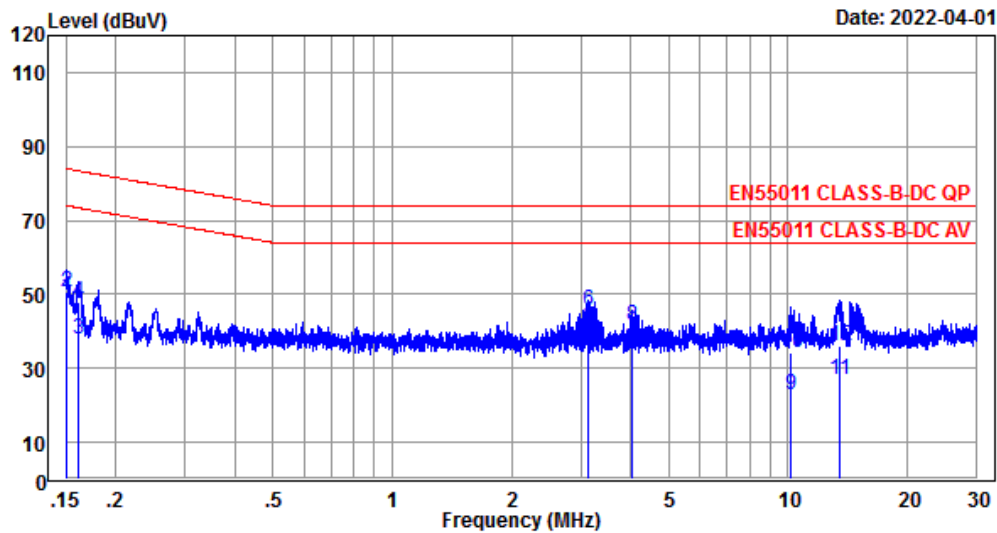
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.180	20.77	9.81	30.29	60.87	72.49	11.62	Average
0.180	20.77	9.81	31.23	61.81	82.49	20.68	QP
0.251	20.31	9.12	13.34	42.77	69.73	26.96	Average
0.251	20.31	9.12	14.79	44.22	79.73	35.51	QP
0.323	20.18	8.95	7.81	36.94	67.64	30.70	Average
0.323	20.18	8.95	8.28	37.41	77.64	40.23	QP
2.662	19.87	8.24	11.12	39.23	64.00	24.77	Average
2.662	19.87	8.24	14.36	42.47	74.00	31.53	QP
3.205	19.88	8.24	25.52	53.64	64.00	10.36	Average
3.205	19.88	8.24	29.74	57.86	74.00	16.14	QP
3.996	19.88	8.25	21.03	49.16	64.00	14.84	Average
3.996	19.88	8.25	25.75	53.88	74.00	20.12	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00015.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1 200Vdc/15A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: B Data NO.:15
 Engineer : YangZuoli

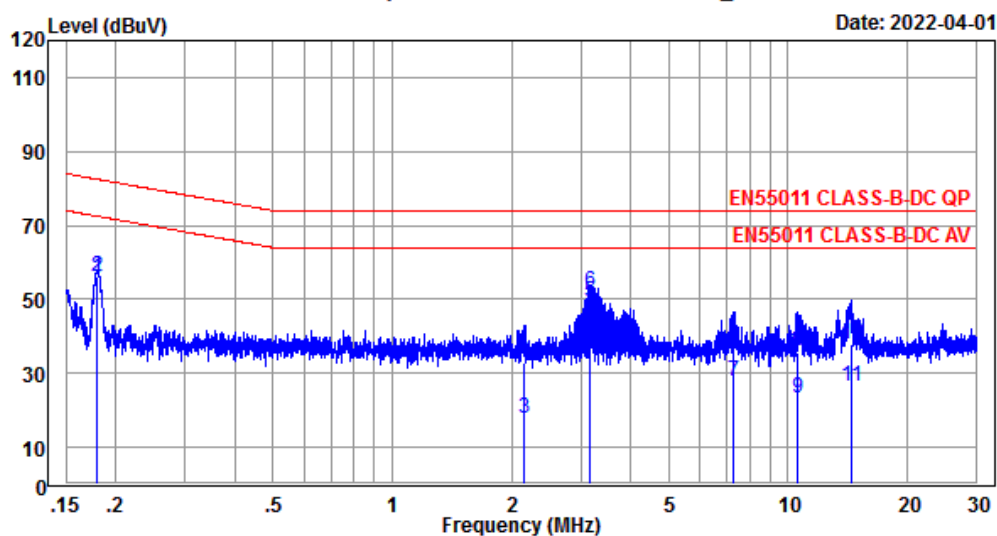
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.150	21.22	16.33	11.77	49.32	73.99	24.67	Average
0.150	21.22	16.33	12.89	50.44	83.99	33.55	QP
0.160	21.06	13.07	3.54	37.67	73.44	35.77	Average
0.160	21.06	13.07	13.56	47.69	83.44	35.75	QP
3.133	19.76	8.24	12.66	40.66	64.00	23.34	Average
3.133	19.76	8.24	17.49	45.49	74.00	28.51	QP
4.033	19.80	8.25	7.19	35.24	64.00	28.76	Average
4.033	19.80	8.25	13.47	41.52	74.00	32.48	QP
10.193	19.95	8.33	-5.47	22.81	64.00	41.19	Average
10.193	19.95	8.33	5.94	34.22	74.00	39.78	QP
13.497	19.94	8.39	-1.44	26.89	64.00	37.11	Average
13.497	19.94	8.39	7.74	36.07	74.00	37.93	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00014.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1 200Vdc/15A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: CM Data NO.:14
 Engineer : YangZuoli

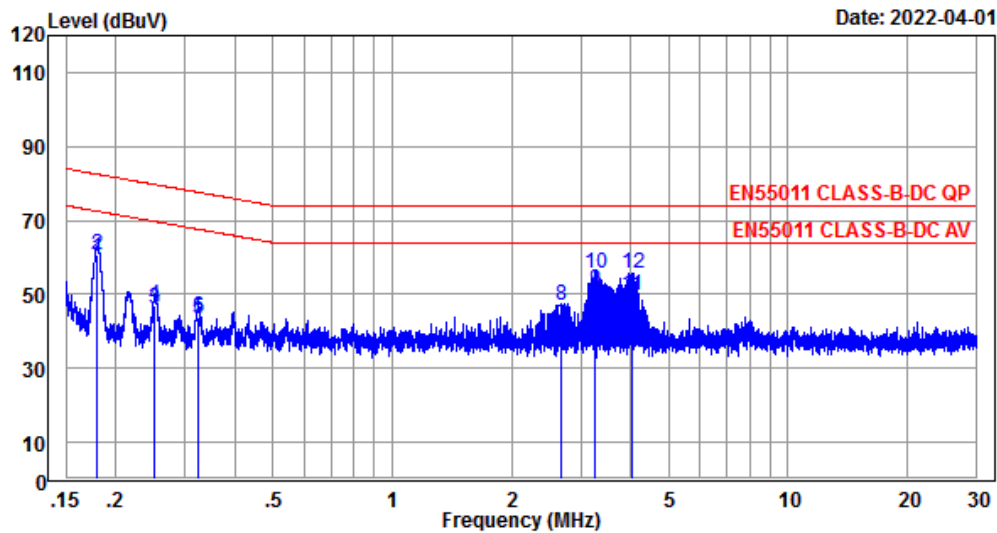
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.180	20.29	9.81	25.36	55.46	72.49	17.03	Average
0.180	20.29	9.81	26.02	56.12	82.49	26.37	QP
2.152	19.76	8.24	-10.11	17.89	64.00	46.11	Average
2.152	19.76	8.24	4.79	32.79	74.00	41.21	QP
3.169	19.73	8.24	21.09	49.06	64.00	14.94	Average
3.169	19.73	8.24	24.25	52.22	74.00	21.78	QP
7.310	19.48	8.29	0.06	27.83	64.00	36.17	Average
7.310	19.48	8.29	9.24	37.01	74.00	36.99	QP
10.543	19.53	8.34	-4.59	23.28	64.00	40.72	Average
10.543	19.53	8.34	7.71	35.58	74.00	38.42	QP
14.450	19.62	8.41	-1.62	26.41	64.00	37.59	Average
14.450	19.62	8.41	9.63	37.66	74.00	36.34	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00013.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1 200Vdc/15A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: DM Data NO.:13
 Engineer : YangZuoli

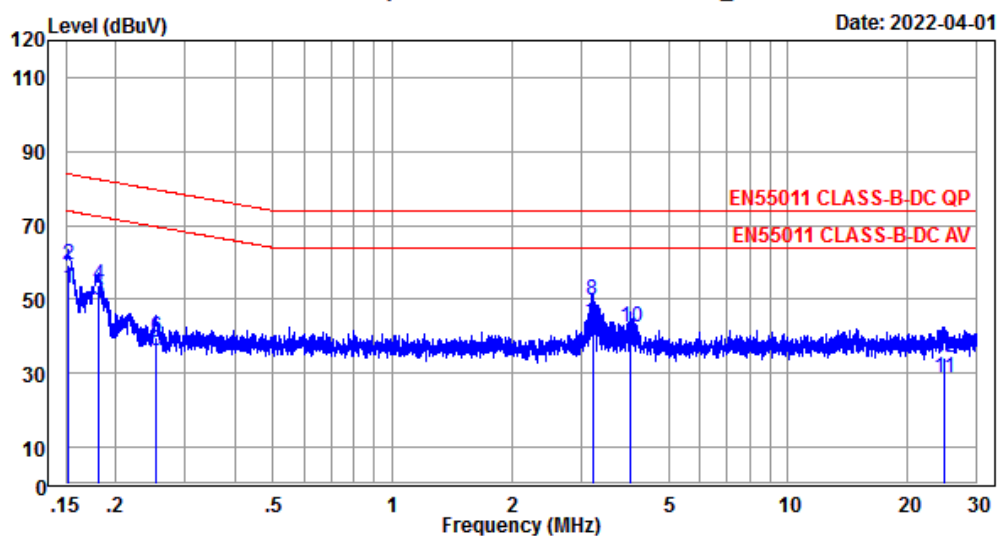
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.179	21.56	9.83	28.30	59.69	72.51	12.82	Average
0.179	21.56	9.83	29.52	60.91	82.51	21.60	QP
0.250	21.02	9.13	16.00	46.15	69.74	23.59	Average
0.250	21.02	9.13	16.87	47.02	79.74	32.72	QP
0.323	20.86	8.95	13.58	43.39	67.62	24.23	Average
0.323	20.86	8.95	13.87	43.68	77.62	33.94	QP
2.664	20.10	8.24	13.26	41.60	64.00	22.40	Average
2.664	20.10	8.24	18.75	47.09	74.00	26.91	QP
3.240	20.12	8.24	22.67	51.03	64.00	12.97	Average
3.240	20.12	8.24	27.23	55.59	74.00	18.41	QP
4.033	20.15	8.25	21.43	49.83	64.00	14.17	Average
4.033	20.15	8.25	27.04	55.44	74.00	18.56	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00009.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1 500Vdc/6A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: A Data NO.:9
 Engineer : YangZuoli

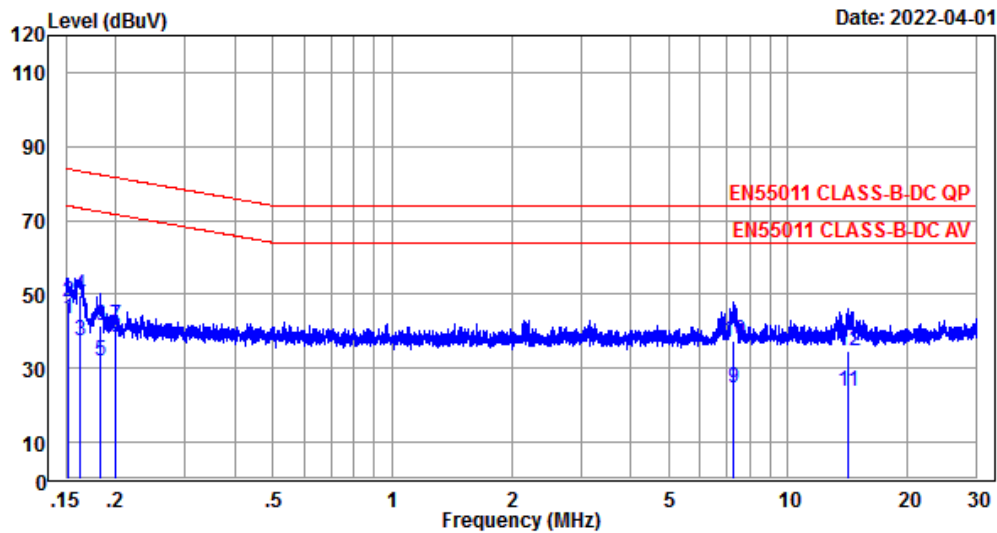
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.152	21.27	15.70	15.95	52.92	73.88	20.96	Average
0.152	21.27	15.70	22.45	59.42	83.88	24.46	QP
0.181	20.76	9.79	18.97	49.52	72.46	22.94	Average
0.181	20.76	9.79	23.12	53.67	82.46	28.79	QP
0.253	20.31	9.12	6.60	36.03	69.65	33.62	Average
0.253	20.31	9.12	10.42	39.85	79.65	39.80	QP
3.205	19.88	8.24	14.87	42.99	64.00	21.01	Average
3.205	19.88	8.24	21.60	49.72	74.00	24.28	QP
3.996	19.88	8.25	8.57	36.70	64.00	27.30	Average
3.996	19.88	8.25	14.44	42.57	74.00	31.43	QP
24.807	19.85	8.66	0.03	28.54	64.00	35.46	Average
24.807	19.85	8.66	5.65	34.16	74.00	39.84	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1 500Vdc/6A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: B Data NO.:10
 Engineer : YangZuoli

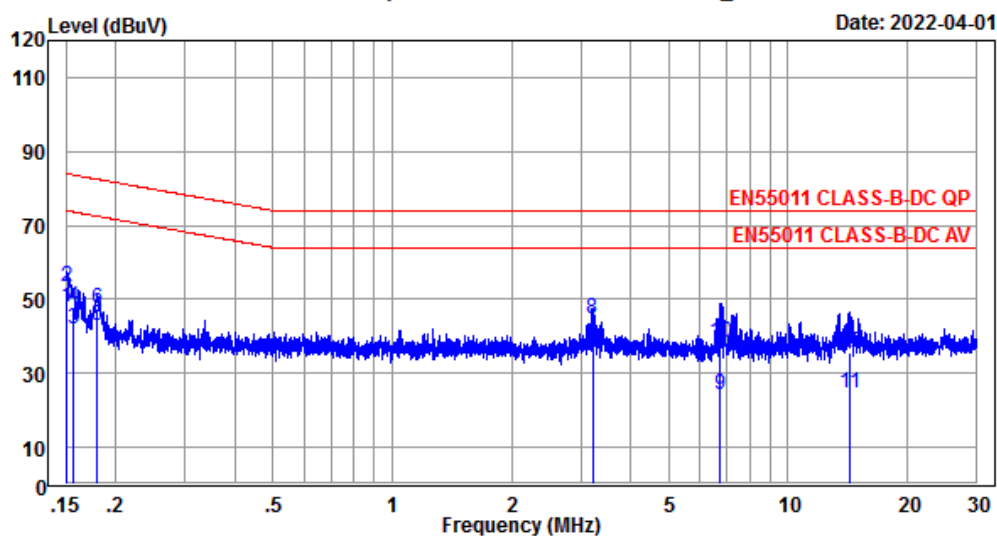
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.151	21.20	15.89	6.15	43.24	73.92	30.68	Average
0.151	21.20	15.89	10.95	48.04	83.92	35.88	QP
0.163	21.02	12.30	4.12	37.44	73.31	35.87	Average
0.163	21.02	12.30	16.38	49.70	83.31	33.61	QP
0.183	20.70	9.72	1.50	31.92	72.34	40.42	Average
0.183	20.70	9.72	10.90	41.32	82.34	41.02	QP
0.200	20.44	9.25	11.82	41.51	71.60	30.09	Average
0.200	20.44	9.25	8.82	38.51	81.60	43.09	QP
7.290	19.88	8.29	-3.52	24.65	64.00	39.35	Average
7.290	19.88	8.29	9.26	37.43	74.00	36.57	QP
14.166	19.94	8.40	-4.84	23.50	64.00	40.50	Average
14.166	19.94	8.40	6.15	34.49	74.00	39.51	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1 500Vdc/6A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: CM Data NO.:11
 Engineer : YangZuoli

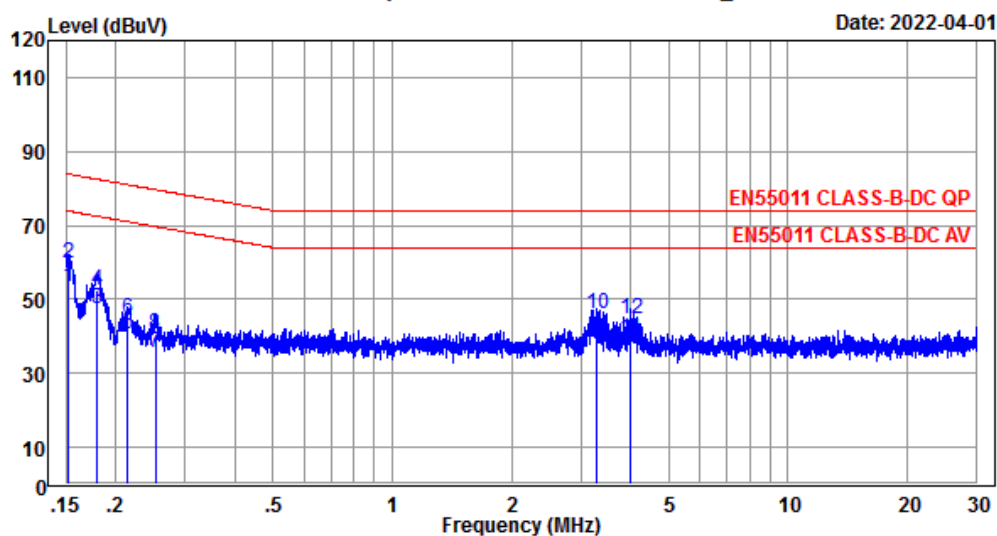
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.151	20.56	16.08	11.22	47.86	73.95	26.09	Average
0.151	20.56	16.08	16.81	53.45	83.95	30.50	QP
0.156	20.51	14.32	7.25	42.08	73.65	31.57	Average
0.156	20.51	14.32	12.96	47.79	83.65	35.86	QP
0.180	20.29	9.81	12.77	42.87	72.48	29.61	Average
0.180	20.29	9.81	17.38	47.48	82.48	35.00	QP
3.205	19.73	8.24	8.68	36.65	64.00	27.35	Average
3.205	19.73	8.24	16.76	44.73	74.00	29.27	QP
6.760	19.49	8.28	-3.50	24.27	64.00	39.73	Average
6.760	19.49	8.28	10.63	38.40	74.00	35.60	QP
14.345	19.62	8.41	-3.56	24.47	64.00	39.53	Average
14.345	19.62	8.41	7.72	35.75	74.00	38.25	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV1 500Vdc/6A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: DM Data NO.:12
 Engineer : YangZuoli

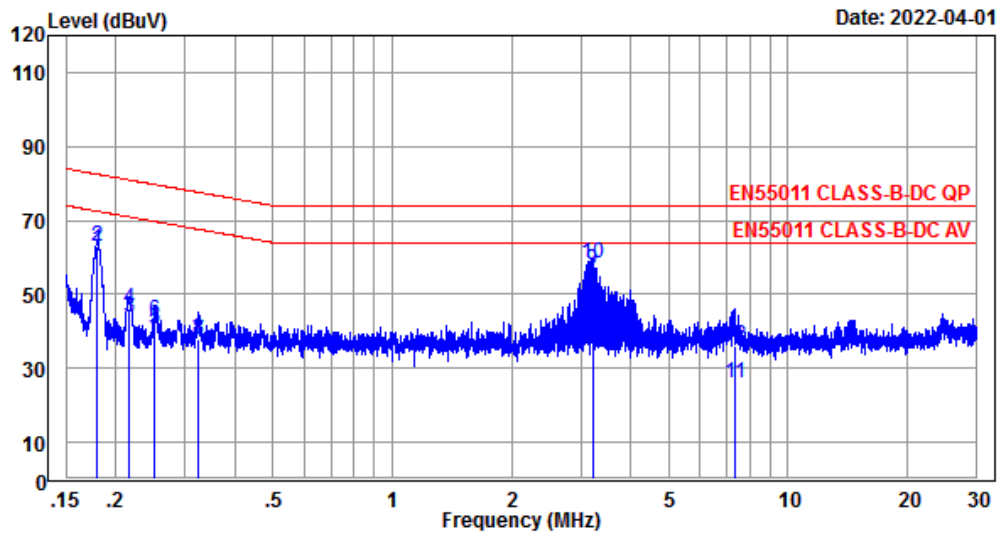
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.152	22.14	15.86	15.58	53.58	73.91	20.33	Average
0.152	22.14	15.86	21.87	59.87	83.91	24.04	QP
0.179	21.57	9.85	16.26	47.68	72.55	24.87	Average
0.179	21.57	9.85	21.23	52.65	82.55	29.90	QP
0.215	21.10	9.21	10.34	40.65	71.01	30.36	Average
0.215	21.10	9.21	14.18	44.49	81.01	36.52	QP
0.252	21.02	9.12	5.64	35.78	69.70	33.92	Average
0.252	21.02	9.12	10.62	40.76	79.70	38.94	QP
3.278	20.12	8.24	11.17	39.53	64.00	24.47	Average
3.278	20.12	8.24	17.85	46.21	74.00	27.79	QP
3.996	20.15	8.25	10.64	39.04	64.00	24.96	Average
3.996	20.15	8.25	16.53	44.93	74.00	29.07	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV2 200Vdc/15A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: A Data NO.:17
 Engineer : YangZuoli

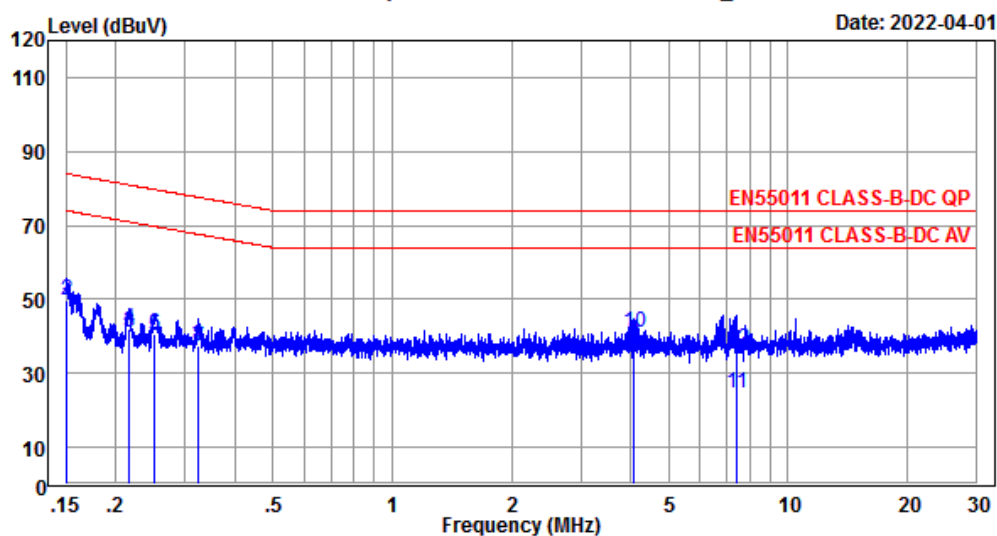
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.180	20.77	9.81	31.49	62.07	72.49	10.42	Average
0.180	20.77	9.81	32.21	62.79	82.49	19.70	QP
0.215	20.38	9.21	14.26	43.85	70.99	27.14	Average
0.215	20.38	9.21	16.70	46.29	80.99	34.70	QP
0.251	20.32	9.13	11.25	40.70	69.74	29.04	Average
0.251	20.32	9.13	13.38	42.83	79.74	36.91	QP
0.325	20.18	8.94	8.20	37.32	67.59	30.27	Average
0.325	20.18	8.94	8.87	37.99	77.59	39.60	QP
3.205	19.88	8.24	28.31	56.43	64.00	7.57	Average
3.205	19.88	8.24	30.37	58.49	74.00	15.51	QP
7.314	19.84	8.29	-2.29	25.84	64.00	38.16	Average
7.314	19.84	8.29	7.80	35.93	74.00	38.07	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV2 200Vdc/15A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: B Data NO.:18
 Engineer : YangZuoli

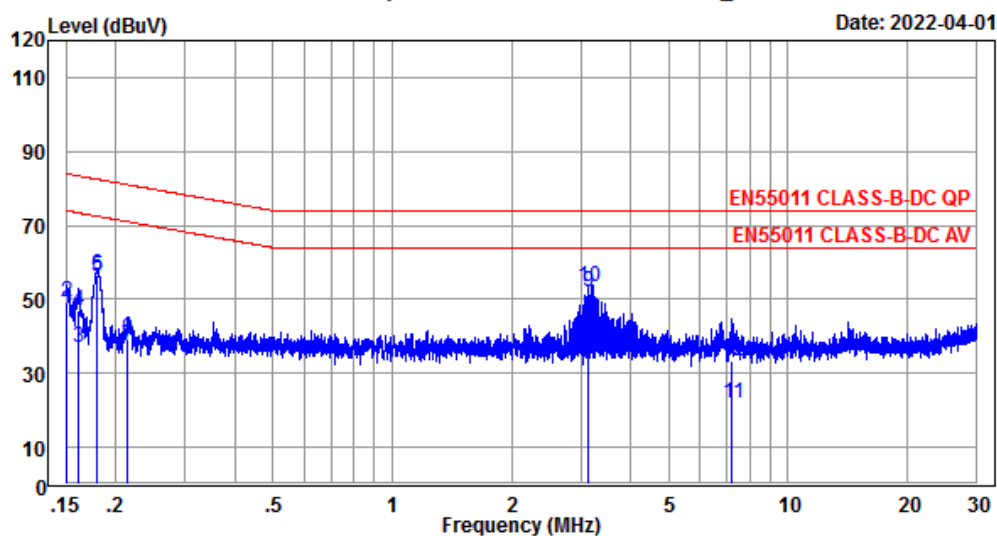
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.150	21.22	16.36	10.82	48.40	74.00	25.60	Average
0.150	21.22	16.36	12.07	49.65	84.00	34.35	QP
0.216	20.41	9.21	11.30	40.92	70.95	30.03	Average
0.216	20.41	9.21	12.39	42.01	80.95	38.94	QP
0.250	20.34	9.13	10.73	40.20	69.75	29.55	Average
0.250	20.34	9.13	11.00	40.47	79.75	39.28	QP
0.323	20.19	8.95	7.89	37.03	67.64	30.61	Average
0.323	20.19	8.95	8.11	37.25	77.64	40.39	QP
4.068	19.80	8.25	10.58	38.63	64.00	25.37	Average
4.068	19.80	8.25	13.23	41.28	74.00	32.72	QP
7.407	19.88	8.29	-3.58	24.59	64.00	39.41	Average
7.407	19.88	8.29	8.40	36.57	74.00	37.43	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV2 200Vdc/15A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: CM Data NO.:19
 Engineer : YangZuoli

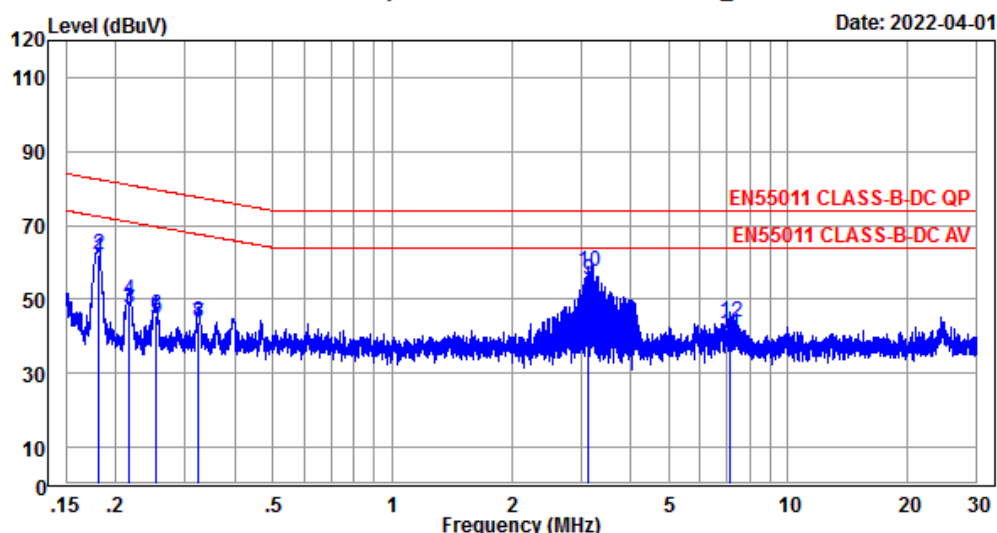
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.151	20.56	16.08	11.02	47.66	73.95	26.29	Average
0.151	20.56	16.08	12.59	49.23	83.95	34.72	QP
0.162	20.46	12.74	3.67	36.87	73.38	36.51	Average
0.162	20.46	12.74	13.96	47.16	83.38	36.22	QP
0.180	20.29	9.81	25.85	55.95	72.48	16.53	Average
0.180	20.29	9.81	26.59	56.69	82.48	25.79	QP
0.215	20.08	9.21	8.24	37.53	71.02	33.49	Average
0.215	20.08	9.21	9.84	39.13	81.02	41.89	QP
3.131	19.73	8.24	23.84	51.81	64.00	12.19	Average
3.131	19.73	8.24	25.44	53.41	74.00	20.59	QP
7.218	19.47	8.29	-5.88	21.88	64.00	42.12	Average
7.218	19.47	8.29	5.50	33.26	74.00	40.74	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV2 200Vdc/15A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: DM Data NO.:20
 Engineer : YangZuoli

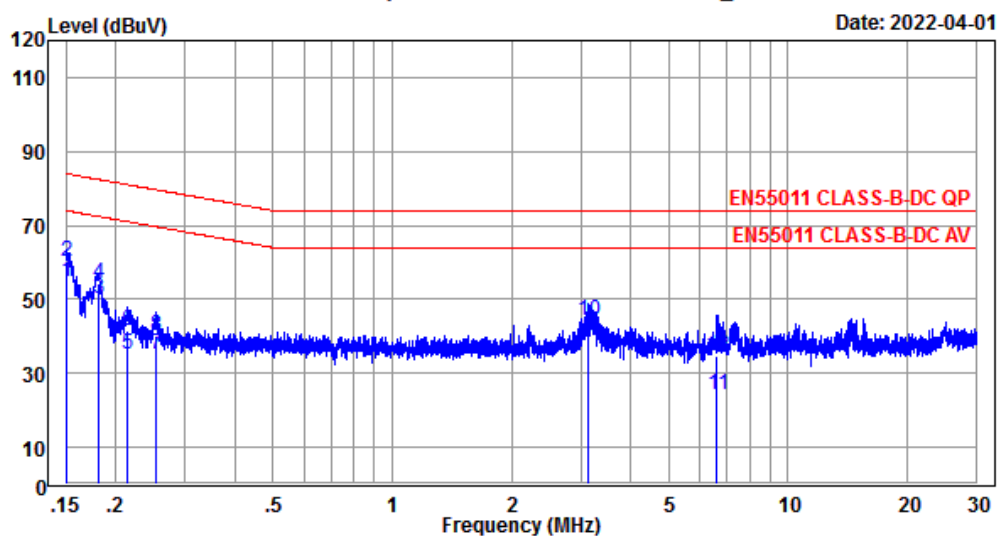
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.181	21.53	9.78	29.74	61.05	72.44	11.39	Average
0.181	21.53	9.78	30.76	62.07	82.44	20.37	QP
0.216	21.09	9.21	17.11	47.41	70.96	23.55	Average
0.216	21.09	9.21	19.59	49.89	80.96	31.07	QP
0.253	21.01	9.12	14.46	44.59	69.65	25.06	Average
0.253	21.01	9.12	15.37	45.50	79.65	34.15	QP
0.325	20.86	8.94	13.60	43.40	67.59	24.19	Average
0.325	20.86	8.94	13.90	43.70	77.59	33.89	QP
3.133	20.12	8.24	26.69	55.05	64.00	8.95	Average
3.133	20.12	8.24	29.08	57.44	74.00	16.56	QP
7.128	20.26	8.29	12.16	40.71	64.00	23.29	Average
7.128	20.26	8.29	15.28	43.83	74.00	30.17	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV2 500Vdc/6A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: A Data NO.:24
 Engineer : YangZuoli

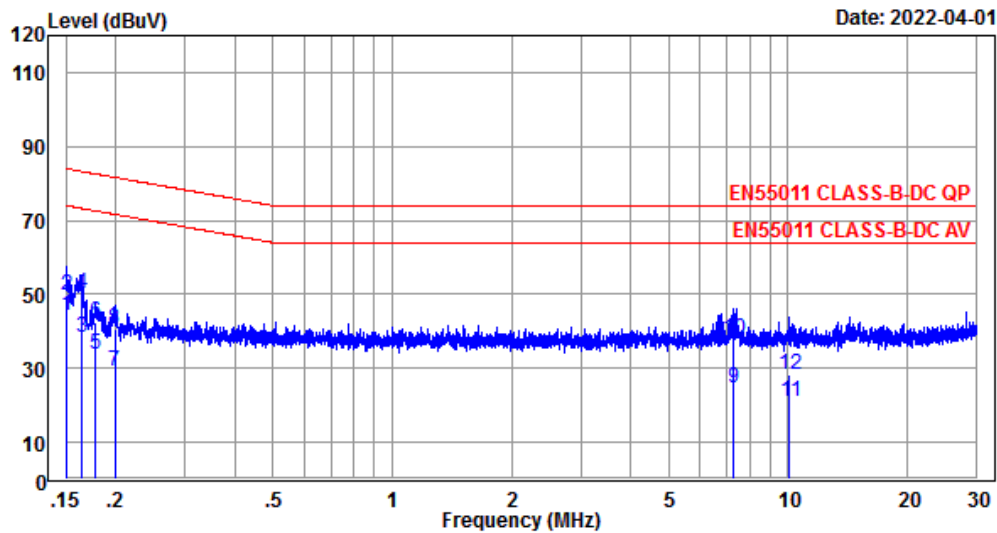
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.151	21.30	16.14	17.17	54.61	73.96	19.35	Average
0.151	21.30	16.14	22.59	60.03	83.96	23.93	QP
0.181	20.76	9.79	19.75	50.30	72.45	22.15	Average
0.181	20.76	9.79	23.90	54.45	82.45	28.00	QP
0.215	20.38	9.21	5.57	35.16	71.01	35.85	Average
0.215	20.38	9.21	11.74	41.33	81.01	39.68	QP
0.253	20.31	9.12	5.58	35.01	69.65	34.64	Average
0.253	20.31	9.12	10.70	40.13	79.65	39.52	QP
3.133	19.88	8.24	11.74	39.86	64.00	24.14	Average
3.133	19.88	8.24	16.13	44.25	74.00	29.75	QP
6.627	19.84	8.28	-3.89	24.23	64.00	39.77	Average
6.627	19.84	8.28	6.53	34.65	74.00	39.35	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV2 500Vdc/6A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: B Data NO.:23
 Engineer : YangZuoli

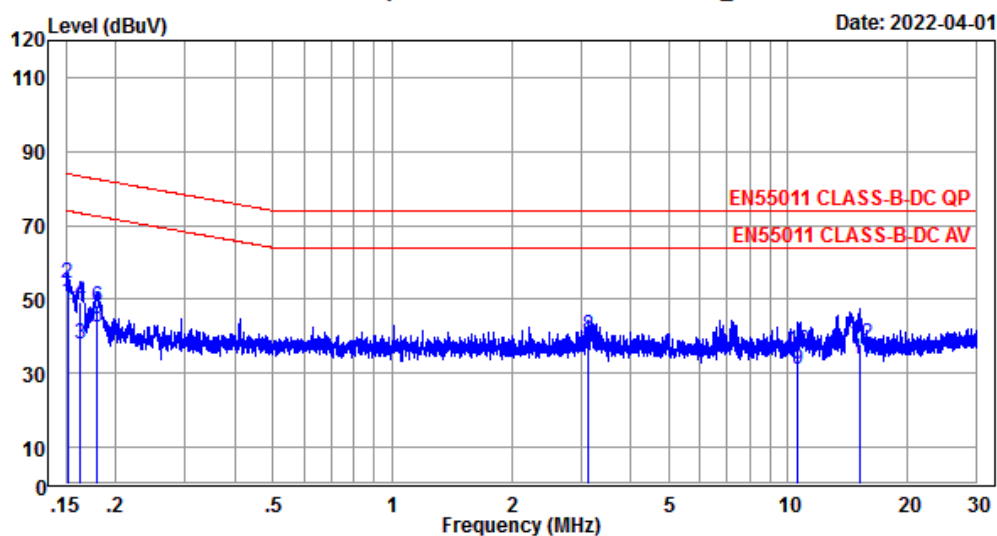
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.150	21.22	16.36	6.64	44.22	74.00	29.78	Average
0.150	21.22	16.36	12.12	49.70	84.00	34.30	QP
0.163	21.01	12.13	5.13	38.27	73.28	35.01	Average
0.163	21.01	12.13	17.08	50.22	83.28	33.06	QP
0.178	20.79	9.87	2.90	33.56	72.59	39.03	Average
0.178	20.79	9.87	11.57	42.23	82.59	40.36	QP
0.199	20.46	9.28	-0.52	29.22	71.66	42.44	Average
0.199	20.46	9.28	10.75	40.49	81.66	41.17	QP
7.310	19.88	8.29	-3.69	24.48	64.00	39.52	Average
7.310	19.88	8.29	9.51	37.68	74.00	36.32	QP
10.079	19.95	8.33	-7.35	20.93	64.00	43.07	Average
10.079	19.95	8.33	0.15	28.43	74.00	45.57	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV2 500Vdc/6A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: CM Data NO.:22
 Engineer : YangZuoli

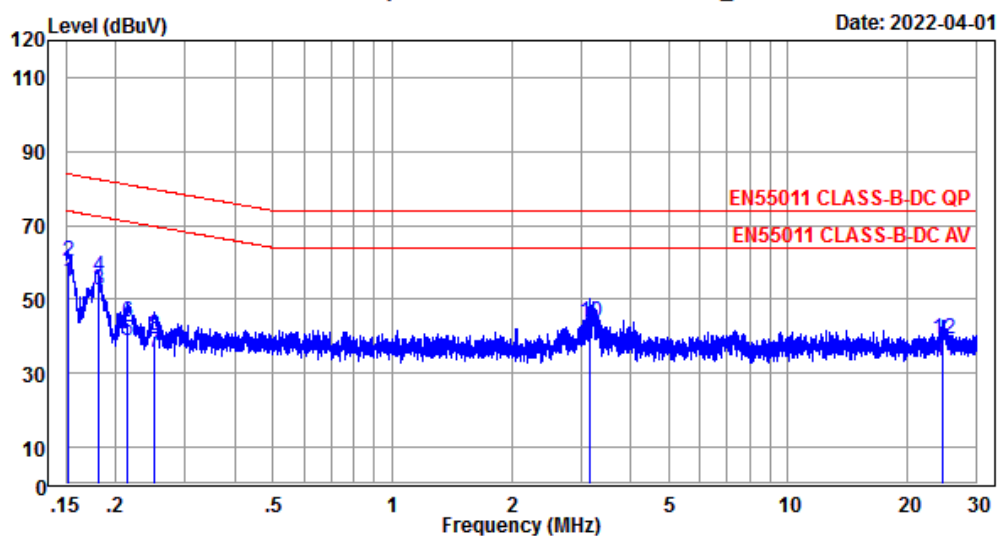
Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.151	20.56	16.02	12.62	49.20	73.94	24.74	Average
0.151	20.56	16.02	17.70	54.28	83.94	29.66	QP
0.163	20.45	12.34	4.97	37.76	73.32	35.56	Average
0.163	20.45	12.34	16.33	49.12	83.32	34.20	QP
0.180	20.29	9.82	12.51	42.62	72.50	29.88	Average
0.180	20.29	9.82	17.89	48.00	82.50	34.50	QP
3.131	19.73	8.24	7.73	35.70	64.00	28.30	Average
3.131	19.73	8.24	12.22	40.19	74.00	33.81	QP
10.620	19.53	8.34	3.06	30.93	64.00	33.07	Average
10.620	19.53	8.34	8.27	36.14	74.00	37.86	QP
15.236	19.62	8.43	5.56	33.61	64.00	30.39	Average
15.236	19.62	8.43	9.99	38.04	74.00	35.96	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading



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 Tel : (0512)63403993 Fax:(0512)63403339

File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00021.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : PVDC8300-2104
 Limit : EN55011 CLASS-B-DC QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV2 500Vdc/6A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo :

phase.: DM Data NO.:21
 Engineer : YangZuoli

Freq. MHz	AMN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
0.152	22.12	15.67	16.83	54.62	73.88	19.26	Average
0.152	22.12	15.67	22.35	60.14	83.88	23.74	QP
0.180	21.54	9.80	21.09	52.43	72.47	20.04	Average
0.180	21.54	9.80	24.66	56.00	82.47	26.47	QP
0.214	21.10	9.21	8.61	38.92	71.03	32.11	Average
0.214	21.10	9.21	13.47	43.78	81.03	37.25	QP
0.249	21.02	9.13	5.66	35.81	69.78	33.97	Average
0.249	21.02	9.13	10.06	40.21	79.78	39.57	QP
3.163	20.12	8.24	12.15	40.51	64.00	23.49	Average
3.163	20.12	8.24	15.63	43.99	74.00	30.01	QP
24.692	19.36	8.65	5.24	33.25	64.00	30.75	Average
24.692	19.36	8.65	11.16	39.17	74.00	34.83	QP

Remarks: Emission Level = AMN factor + Cable loss (Cable + pulse Att + Switch) + Reading

4.5.4 Telecommunication Ports Measurement Results

Test Date: Apr.01, 2022

Temperature: 25.1°C

Humidity: 55%

Item	Test Voltage	Test Condition	Reference Test Data No.
1	PV1 500Vdc/6A 230Vac	PV discharge to GRID LAN Port 10Mbps	# 25
2		PV discharge to GRID LAN Port 100Mbps	※# 26

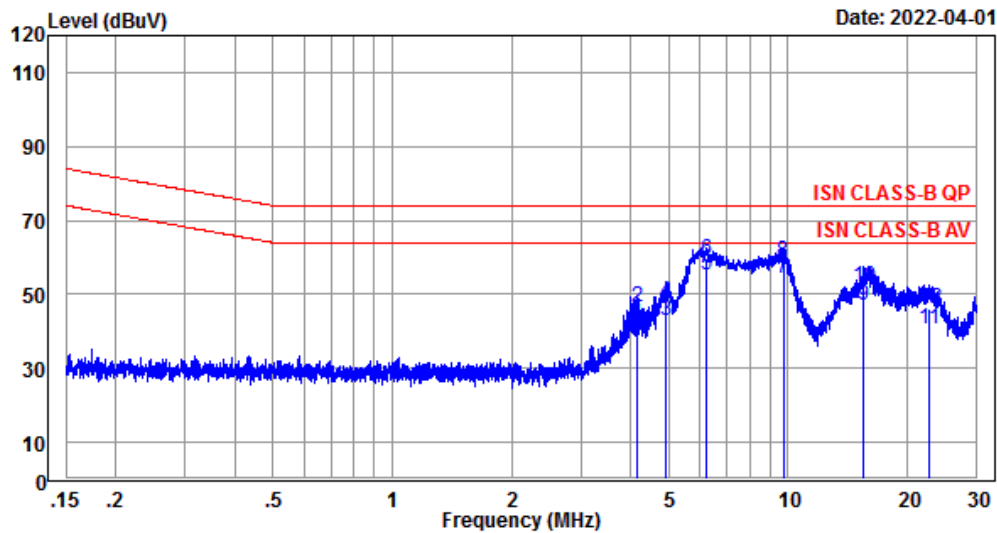
NOTE 1 - ‘※’ means the worst test mode.

NOTE 2 - The worst emission is detected at 5.910MHz emission level of 55.68dB (μV) and with AV detector (limit is 64.00dB (μV)), when the RJ-45 port (under 100M/bps) of the EUT is connected to I.S.N.



Audix Technology (Wu Jiang) Co.,Ltd
 No.1289,Jiang Xing East Road,The Eastern Part of WuJiang
 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339

File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00025.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : Factor-2022\T80058414-Cat5-2204.csv
 Limit : ISN CLASS-B QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV2 500Vdc/6A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo : LAN Port 10Mbps

phase.:
 Engineer : YangZuoli

Data NO.:25

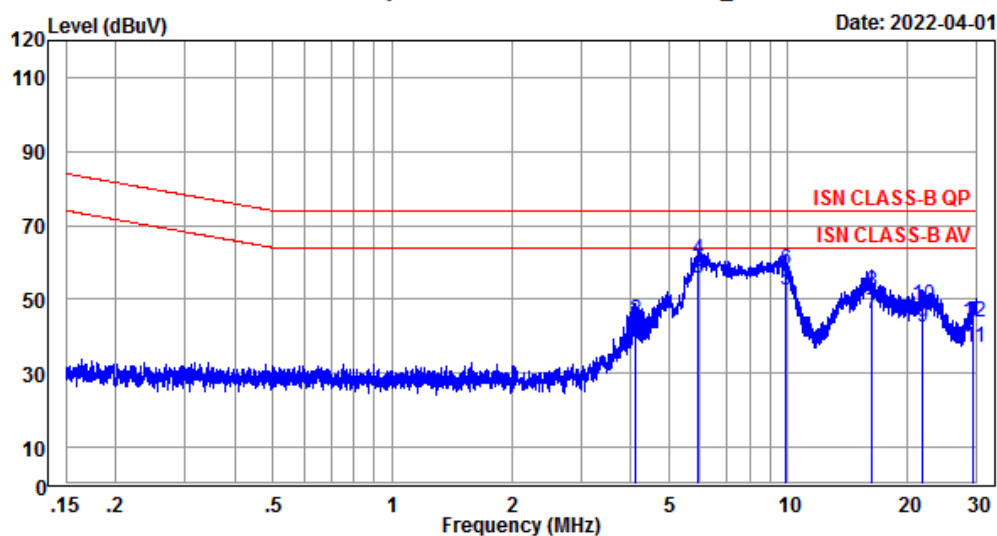
Freq. MHz	ISN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
4.141	9.20	10.06	22.61	41.87	64.00	22.13	Average
4.141	9.20	10.06	27.22	46.48	74.00	27.52	QP
4.936	9.20	10.07	23.62	42.89	64.00	21.11	Average
4.936	9.20	10.07	28.81	48.08	74.00	25.92	QP
6.198	9.20	10.09	36.03	55.32	64.00	8.68	Average
6.198	9.20	10.09	40.10	59.39	74.00	14.61	QP
9.724	9.20	10.17	34.99	54.36	64.00	9.64	Average
9.724	9.20	10.17	39.68	59.05	74.00	14.95	QP
15.480	9.25	10.21	27.38	46.84	64.00	17.16	Average
15.480	9.25	10.21	32.73	52.19	74.00	21.81	QP
22.760	9.38	10.25	20.94	40.57	64.00	23.43	Average
22.760	9.38	10.25	26.49	46.12	74.00	27.88	QP

Remarks: Emission Level = ISN factor + Cable loss (pulse Att + Cable + Switch) + Reading



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 No.1289,Jiang Xing East Road,The Eastern Part of WuJiang
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File: D:\TEST DATA\2022\Report\04\C1W2204002\C1W2204002_00026.EMI



Site NO. : NO.2 shielded Room
 AMN / LISN. : Factor-2022\T80058414-Cat5-2204.csv
 Limit : ISN CLASS-B QP
 Env. / Ins. : 25.1C&55%/ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV2 500Vdc/6A 230Vac
 Test Mode : PV DISCHARGE TO GRID
 Memo : LAN Port 100Mbps

phase.: Data NO.:26
 Engineer : YangZuoli

Freq. MHz	ISN. Factor dB	Cable Loss dB	Reading dBuV	Emission Level dBuV	Limits dBuV	Margin dB	Remark
4.108	9.20	10.06	20.26	39.52	64.00	24.48	Average
4.108	9.20	10.06	25.08	44.34	74.00	29.66	QP
5.910	9.20	10.09	36.39	55.68	64.00	8.32	Average
5.910	9.20	10.09	41.52	60.81	74.00	13.19	QP
9.854	9.20	10.18	33.27	52.65	64.00	11.35	Average
9.854	9.20	10.18	38.45	57.83	74.00	16.17	QP
16.312	9.26	10.21	26.76	46.23	64.00	17.77	Average
16.312	9.26	10.21	32.39	51.86	74.00	22.14	QP
21.961	9.36	10.24	22.87	42.47	64.00	21.53	Average
21.961	9.36	10.24	28.56	48.16	74.00	25.84	QP
29.488	9.58	10.29	17.32	37.19	64.00	26.81	Average
29.488	9.58	10.29	23.80	43.67	74.00	30.33	QP

Remarks: Emission Level = ISN factor + Cable loss (pulse Att + Cable + Switch) + Reading

5 RADIATED DISTURBANCE MEASUREMENT

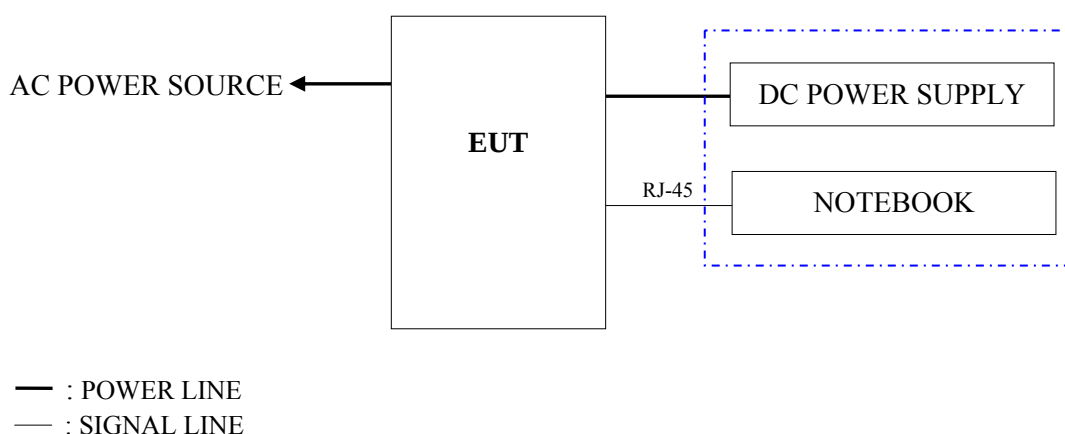
5.1 Test Equipment

The following test equipments were used during the radiated emission measurement:
(At 10m Semi-Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	Signal and Spectrum Analyzer	R&S	FSV4	103380	2022-03-29	1 Year
2.	Signal and Spectrum Analyzer	R&S	FSV4	103379	2022-03-29	1 Year
3.	Pre-Amplifier	Chengyi dianzi	EMC9135	980374	2021-12-14	1 Year
4.	Pre-Amplifier	Chengyi dianzi	EMC9135	980373	2021-12-14	1 Year
5.	Bi-log Antenna (Horizontal)	SCHWARZBECK	VULB 9168	703	2021-10-26	1 Year
6.	Bi-log Antenna (Vertical)	SCHWARZBECK	VULB 9168	705	2021-12-28	1 Year
7.	Test Receiver	R&S	ESCI	100352	2022-03-29	1 Year
8.	RF SWITCH	ANRITSU	N/A	S(6201676231)	2021-12-14	1 Year
9.	RF SWITCH	ANRITSU	N/A	S(6201676229)	2021-12-14	1 Year
10.	RF Cable	Shengxuan	Rosnol	N1C50-ROS400-N1C50(3+22-1)	2021-08-23	1 Year
11.	RF Cable	Shengxuan+ Ming Qiao	Rosnol	180326-3(3+13)	2021-08-23	1 Year
12.	PXA signal analyzer	Agilent	N9030A	MY53120367	2021-07-16	1 Year
13.	Microwave Amplifier	Agilent	8449B	3008A02234	2022-03-25	1 Year
14.	Horn Antenna	ETS	3115	00062593	2021-10-12	1 Year
15.	RF Cable	Chengyi	EMC104-SF-N M-1000+5000	190934+ 190935	2021-10-22	1 Year
16.	Software	Audix /e3 (9.160323)				

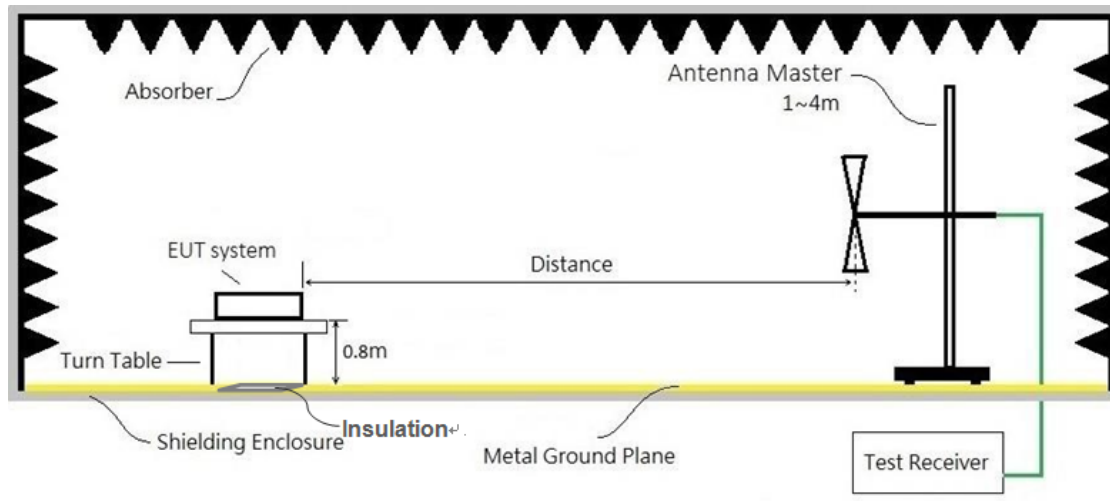
5.2 Block Diagram of Test Setup

5.2.1 Block Diagram of connection between EUT and simulators



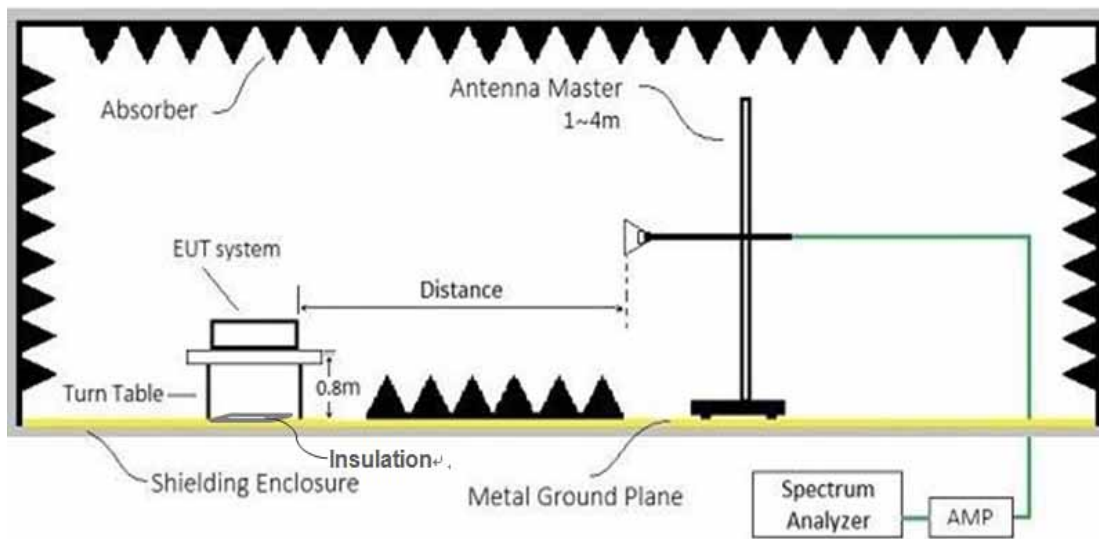
5.2.2 No.1 10m Semi-Anechoic Chamber Setup Diagram (Test distance: 10m)

For 30MHz~1GHz



5.2.3 No.1 10m Semi-Anechoic Chamber Setup Diagram (Test distance: 3m)

For Above 1GHz



5.3 Limits for Radiated Disturbance

5.3.1 Limits for Radiated Disturbance (30MHz~1GHz)

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dB μ V/m)
EN61000-6-3&EN55011		
30 ~ 230	10	30
230 ~ 1000	10	37
EN61000-6-4		
30 ~ 230	10	40
230 ~ 1000	10	47

Note: (1) The tighter limit shall apply at the edge 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 E.U.T.
 (3) The limits of the EN61000-6-3 is same as the EN55011 limit.

5.3.2 Limits for Radiated Disturbance (Above 1GHz)

FREQUENCY (GHz)	DISTANCE (Meters)	AVERAGE LIMIT (dB μ V/m)	PEAK LIMIT (dB μ V/m)
1~ 3	3	50	70
3~ 6	3	54	74

Note: The lower limit applies at the transition frequency.

5.3.3 Limits for Radiated Disturbance (1~18GHz) EN 55011

FREQUENCY (GHz)	Peak (dB μ V/m)	Weighted (dB μ V/m)
1 ~ 18	70	-
1 ~ 2.4	-	60
2.5 ~ 5.725	-	60
5.875 ~ 18	-	60

Note: (1) Peak measurements with a resolution bandwidth of 1 MHz and a video signal bandwidth (VBW) higher than or equal to 1 MHz. The recommended VBW is 3 MHz.
 (2) Weighted measurements shall be performed with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz.

5.4 Test Procedure

The measuring process is according to the standard of EN IEC 61000-6-3:2021, EN 61000-6-3:2007+A1:2011+AC:2012, EN IEC 61000-6-4:2019, EN 61000-6-4:2007+A1:2011, EN 55011:2016+A11:2020, (IEC 61000-6-3:2020, IEC 61000-6-4:2018), and laboratory internal procedure TKC-301-001.

In the radiated disturbance measurement, the EUT and all simulators were set up on a non-metallic turn table which was 0.8 meter above the ground plane. Measurement distance between EUT and receiving antennas was set at 10 meters at 30MHz~1GHz and 3 meters at 1GHz~6GHz. The measurement distance is the shortest horizontal distance between an imaginary circular periphery which consists of EUT periphery and cables and the reference point of the antenna. During the radiated measurement, the EUT was rotated 360° and receiving antennas were moved from 1 ~ 4 meters for finding maximum emission. Two receiving antennas were used for both horizontal and vertical polarization detection for 30MHz~1GHz, One receiving antennas was used for both horizontal and vertical polarization detection for 1GHz~6GHz (the absorbing material was added when testing of 1GHz~6GHz was done). All cables or wires placement were verified to find out the maximum emission.

The bandwidth of measuring receiver (or spectrum analyzer) was set to:

RBW (120kHz), VBW (300kHz) for QP detector below 1GHz
 RBW (1MHz), VBW (1MHz) for Peak detector above 1GHz
 RBW (1MHz), VBW (1Hz) for Average detector above 1GHz

which is defined against CISPR16-1-1 section.

The required frequency band (30MHz ~ 6GHz) was pre-scanned with peak detector; all final measurements were measured with quasi-peak detector below 1GHz, measured with average detector and peak detector above 1GHz.

The emission level is calculated automatically by the test system which uses the following equation:

$$\text{Emission Level (dB}\mu\text{V/m)} = \text{Reading (dB}\mu\text{V)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Pre-amplifier factor (dB}\mu\text{V)}$$

In chapter 7.6.6.1 the standard EN 55016-2-3 requires to include the values of w in the test report: “ w : The dimension of the line tangent to the EUT formed by $\theta_{3\text{dB}}$ at the measurement distance d . Equation (10) shall be used to calculate w for each actual antenna and measurement distance used. The values of w shall be included in the test report. This calculation may be based on the manufacturer-provided receive-antenna beamwidth specifications:

$$w = 2 \times d \times \tan(0,5 \times \theta_{3\text{dB}})$$

Frequency	3115 Horn	
GHz	$\theta_{3\text{dB}}$	$d=3\text{m}$
	(°)	w (M)
1.00	66	3.90
2.00	54	3.06
4.00	50	2.80
6.00	34	1.83

The values of w . are greater than chapter 7.6.6.1 of Table 2, the minimum dimension of w . (w_{min}) requirements.

5.5 Measurement Results

PASSED.

The details of test modes and reference test data are as follows:

5.5.1 For 30MHz~1GHz frequency range

Test Date: Mar.30, 2022

Temperature: 23.9°C

Humidity: 53%

Test Date: Jun.15, 2022

Temperature: 21°C

Humidity: 53%

Item	Test Module	Power Rating	Test Mode	Reference Test Data No.	
				Horizontal	Vertical
1	WIFI/LAN Kit	BAT 50Vdc/120A	BAT discharge to GRID	# 38	# 37
2		BAT 50Vdc/120A	BAT charge to GRID	# 40	# 39
3		PV 200Vdc/30A	PV discharge to GRID	# 42	# 41
4		PV 500Vdc/15A	PV discharge to GRID	# 44	# 43
5		BAT 50Vdc/120A PV 200Vdc	PV charge to BAT	# 46	# 45
6		BAT 50Vdc/120A PV 500Vdc	PV charge to BAT	# 48	# 47
7		BAT 50Vdc/60A PV 500Vdc/6A	PV+BAT discharge to GRID	# 50	※# 49
8		BAT 50Vdc/60A PV 200Vdc/15A	PV+BAT discharge to GRID	# 52	# 51
9		BAT 50Vdc/120A	BAT discharge to BACK-UP	# 54	# 53
10		PV 200Vdc/15A	PV discharge to BACK-UP	# 56	# 55
11		PV 500Vdc/6A	PV discharge to BACK-UP	# 58	# 57
12	WIFI Kit	BAT 50Vdc/60A PV 200Vdc/15A	PV+BAT discharge to GRID	# 2	# 1
13	4G Kit	BAT 50Vdc/60A PV 200Vdc/15A	PV+BAT discharge to GRID	# 60	# 59

NOTE 1 - '※' means the worst test mode.

NOTE 2 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 3 - The worst emission at horizontal polarization was detected at 31.360MHz with emission level of 24.52dBμV/m (limit is 30.00 dBμV/m). The worst emission at vertical polarization was detected at 33.324MHz with emission level of 25.23 μV/m (limit is 30.00 dBμV/m).

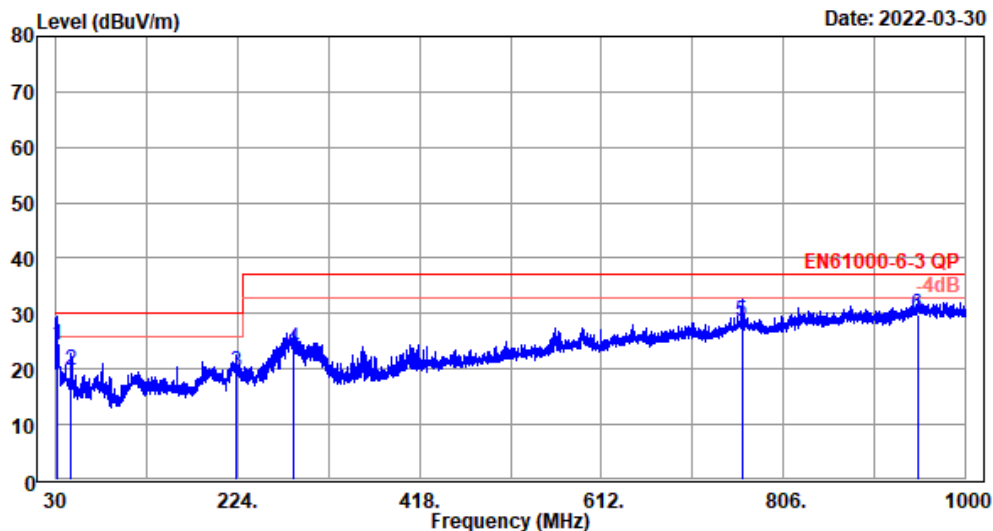
NOTE 4 - Because EN IEC 61000-6-3(IEC 61000-6-3) limit is more rigorous, so when the test results satisfies EN IEC 61000-6-3(IEC 61000-6-3) requests, regards as simultaneously compliance with the requirements of EN IEC 61000-6-4(IEC 61000-6-4), therefore does not need to retest.



Audix Technology (Wu Jiang) Co.,Ltd
 No.1289,Jiang Xing East Road,The Eastern Part of Wujiang
 Economic Development Zone,JiangSu,China
 Tel : (0512)63403993 Fax:(0512)63403339

File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00038.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
 Dis. / Ant. : 9168-703-2110
 Limit : EN61000-6-3 QP
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50Vdc 120A
 Test Mode : BAT Discharge To Grid
 Memo : with WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:38
 Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
31.509	20.46	1.01	40.00	37.24	24.23	30.00	5.77	QP
46.296	19.41	1.15	36.35	37.16	19.75	30.00	10.25	QP
222.642	16.92	2.27	36.42	36.25	19.36	30.00	10.64	QP
284.528	18.87	2.57	38.50	36.31	23.63	37.00	13.37	QP
761.380	27.91	4.73	33.17	37.29	28.52	37.00	8.48	QP
948.396	29.78	5.54	31.72	37.27	29.77	37.00	7.23	QP

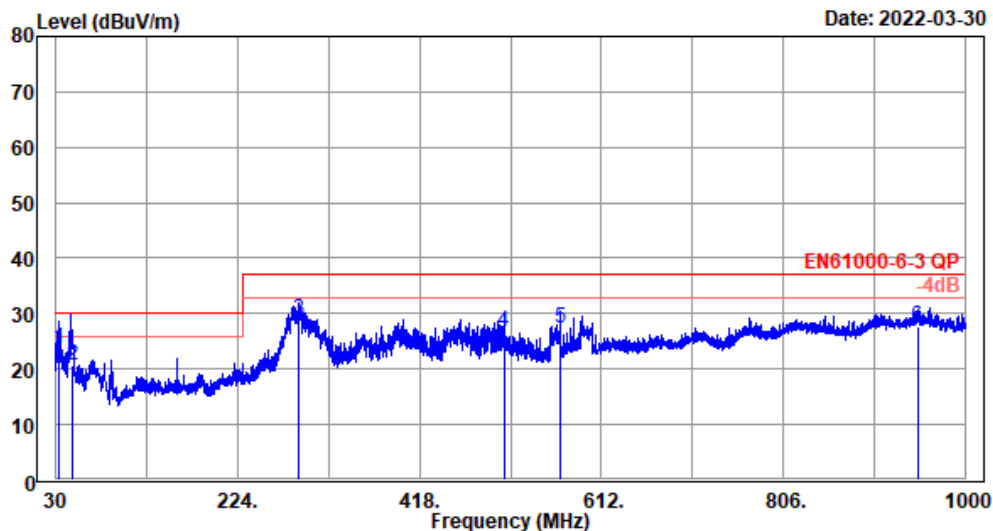
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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Economic Development Zone,JiangSu,China
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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00037.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-705-2112
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50Vdc 120A
Test Mode : BAT Discharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Vertical Data NO.:37
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBUV	Preamp Factor dB	Emission Level dBUV/m	Limits dBUV/m	Margin dB	Remark
33.544	18.70	0.82	41.79	37.50	23.81	30.00	6.19	QP
49.000	19.69	0.92	37.36	37.38	20.59	30.00	9.41	QP
288.796	18.79	2.06	44.44	36.40	28.89	37.00	8.11	QP
507.822	23.63	2.93	37.17	36.83	26.90	37.00	10.10	QP
568.544	24.67	3.13	36.47	36.93	27.34	37.00	9.66	QP
948.396	29.48	4.39	30.98	37.26	27.59	37.00	9.41	QP

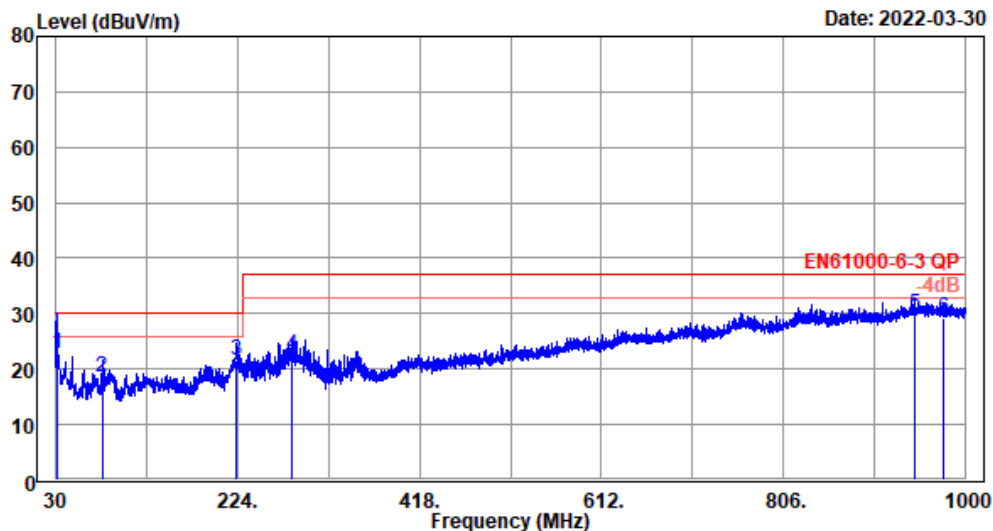
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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 Economic Development Zone,JiangSu,China
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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00040.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
 Dis. / Ant. : 9168-703-2110
 Limit : EN61000-6-3 QP
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50Vdc 120A
 Test Mode : BAT charge To Grid
 Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:40
 Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
31.463	20.47	1.01	38.68	37.24	22.92	30.00	7.08	QP
79.858	15.84	1.39	38.24	36.92	18.55	30.00	11.45	QP
222.836	16.92	2.27	38.65	36.25	21.59	30.00	8.41	QP
282.976	18.82	2.56	37.57	36.30	22.65	37.00	14.35	QP
946.262	29.75	5.53	31.73	37.27	29.74	37.00	7.26	QP
975.556	29.80	5.67	30.87	37.26	29.08	37.00	7.92	QP

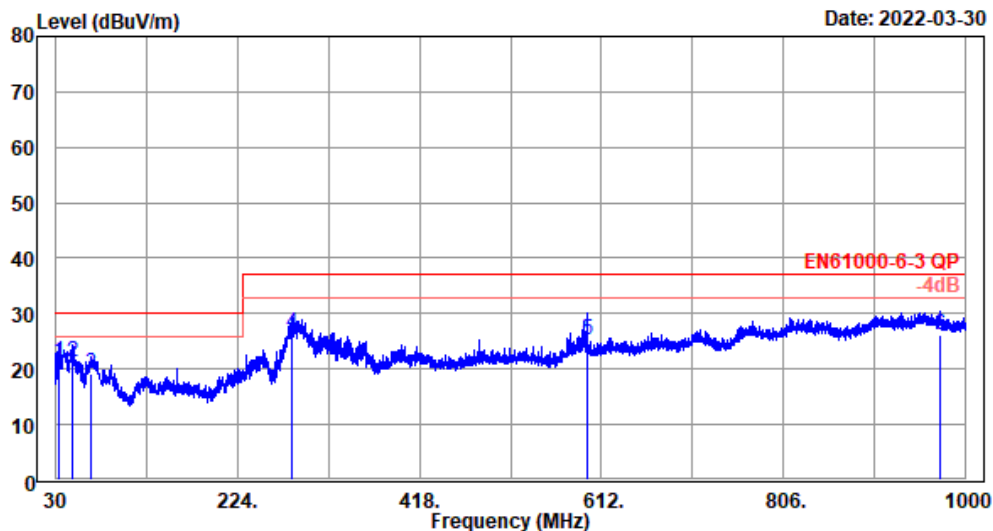
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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Economic Development Zone,JiangSu,China
Tel : (0512)63403993 Fax:(0512)63403339

File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00039.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-705-2112
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50Vdc 120A
Test Mode : BAT charge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Vertical Data NO.:39
Engineer : Zhaolin

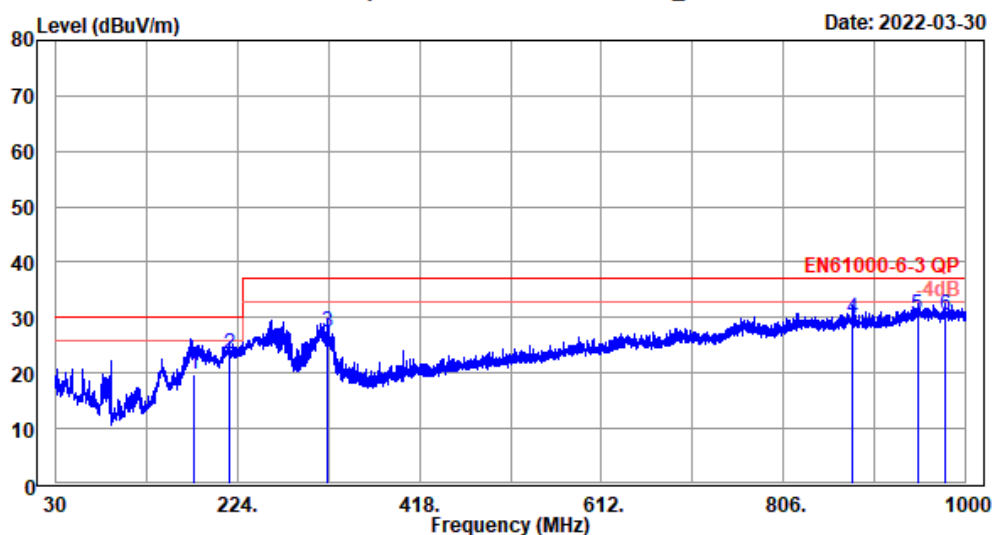
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
33.298	18.66	0.82	39.32	37.50	21.30	30.00	8.70	QP
49.012	19.69	0.92	38.07	37.38	21.30	30.00	8.70	QP
68.218	17.65	1.05	37.86	37.28	19.28	30.00	10.72	QP
282.976	18.62	2.04	42.30	36.41	26.55	37.00	10.45	QP
596.286	25.23	3.22	33.71	36.97	25.19	37.00	11.81	QP
971.870	29.59	4.48	29.50	37.27	26.30	37.00	10.70	QP

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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Economic Development Zone,JiangSu,China
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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00042.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 9168-703-2110
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 200Vdc 30A
Test Mode : PV Discharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:42
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
177.789	18.38	2.02	35.82	36.34	19.88	30.00	10.12	QP
215.464	16.66	2.23	40.67	36.24	23.32	30.00	6.68	QP
319.836	19.62	2.73	41.34	36.35	27.34	37.00	9.66	QP
879.914	28.86	5.23	33.15	37.29	29.95	37.00	7.05	QP
948.396	29.78	5.54	32.40	37.27	30.45	37.00	6.55	QP
978.466	29.80	5.68	32.26	37.26	30.48	37.00	6.52	QP

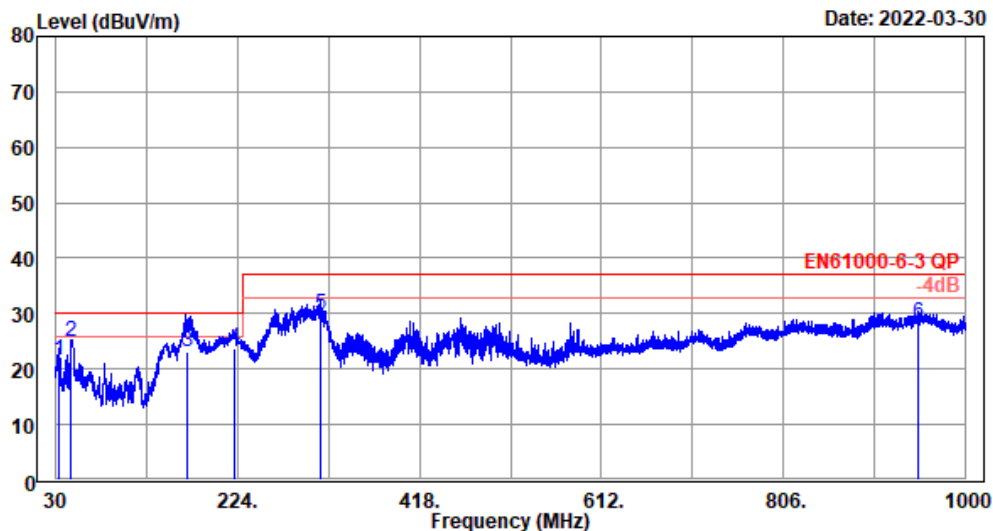
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00041.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-705-2112
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 200Vdc 30A
Test Mode : PV Discharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Vertical Data NO.:41
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBUV	Preamp Factor dB	Emission Level dBUV/m	Limits dBUV/m	Margin dB	Remark
34.462	18.82	0.83	39.49	37.49	21.65	30.00	8.35	QP
47.072	19.67	0.91	41.75	37.39	24.94	30.00	5.06	QP
170.282	18.47	1.56	39.78	36.58	23.23	30.00	6.77	QP
221.570	16.51	1.78	41.93	36.42	23.80	30.00	6.20	QP
313.046	19.33	2.16	44.85	36.42	29.92	37.00	7.08	QP
948.784	29.49	4.40	31.68	37.26	28.31	37.00	8.69	QP

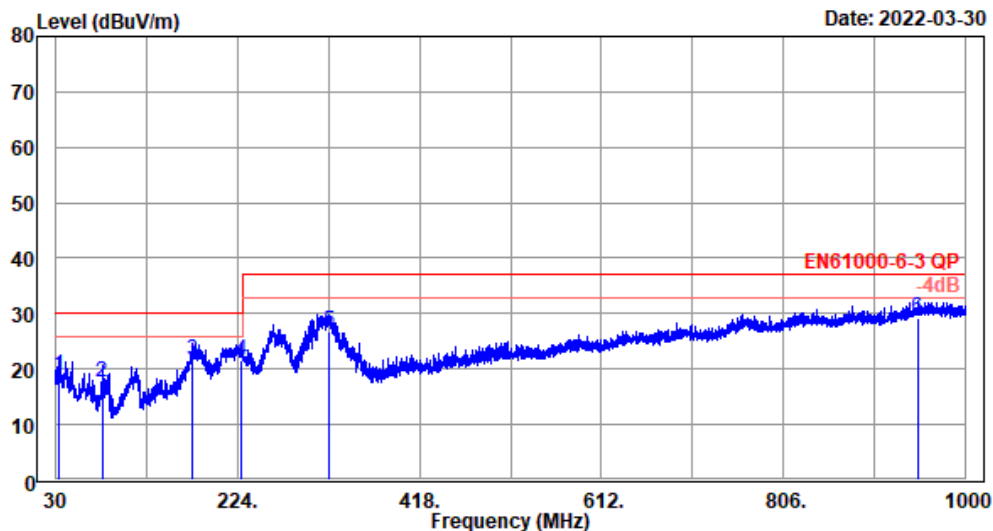
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00044.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-703-2110
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 500Vdc 15A
Test Mode : PV Discharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:44
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
33.492	20.14	1.03	35.01	37.23	18.95	30.00	11.05	QP
79.858	15.84	1.39	37.41	36.92	17.72	30.00	12.28	QP
176.664	18.47	2.01	37.60	36.34	21.74	30.00	8.26	QP
227.492	17.09	2.29	38.47	36.25	21.60	30.00	8.40	QP
322.552	19.66	2.74	40.66	36.36	26.70	37.00	10.30	QP
948.396	29.78	5.54	31.11	37.27	29.16	37.00	7.84	QP

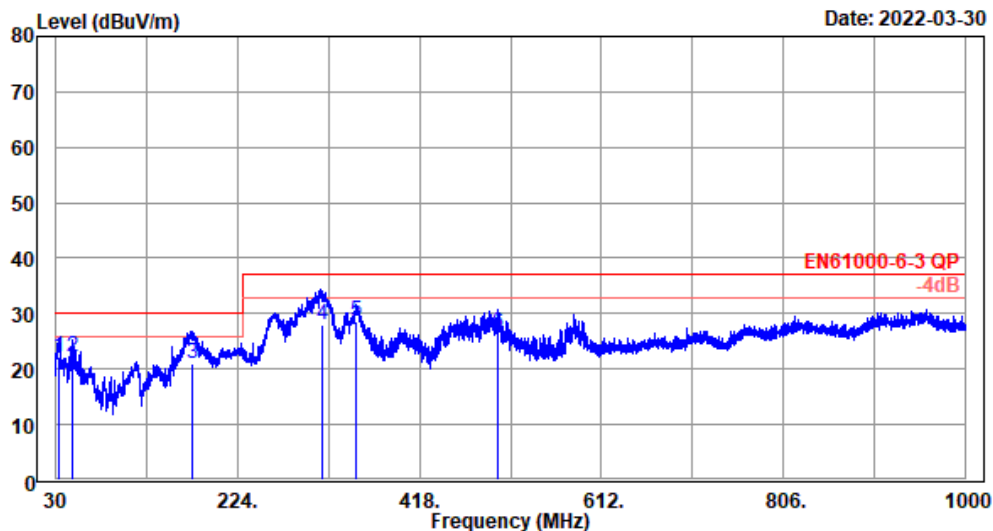
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00043.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-705-2112
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 500Vdc 15A
Test Mode : PV Discharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Vertical Data NO.:43
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
33.298	18.66	0.82	40.34	37.50	22.32	30.00	7.68	QP
47.654	19.68	0.91	39.12	37.39	22.32	30.00	7.68	QP
175.726	17.98	1.59	38.06	36.56	21.07	30.00	8.93	QP
313.998	19.35	2.17	43.02	36.42	28.12	37.00	8.88	QP
351.070	20.03	2.32	42.75	36.47	28.63	37.00	8.37	QP
501.614	23.53	2.91	36.99	36.82	26.61	37.00	10.39	QP

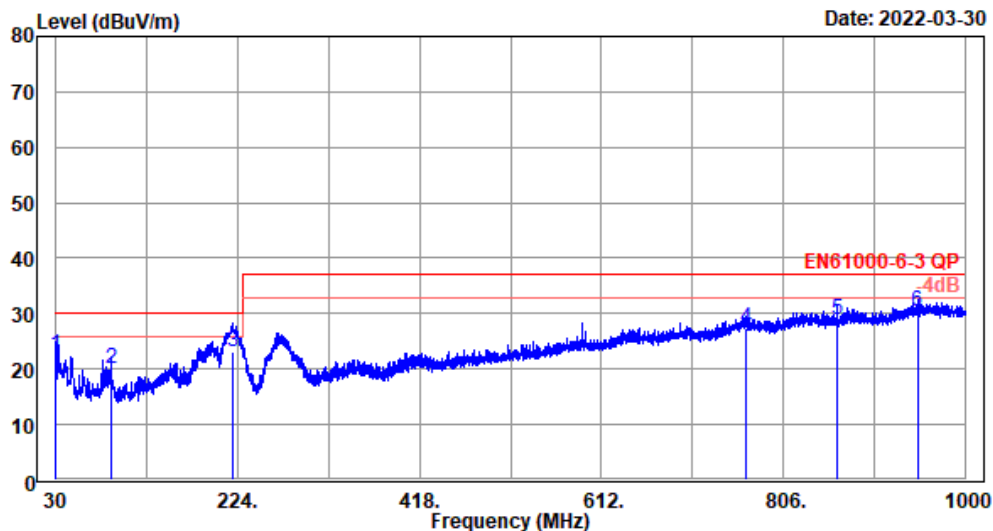
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00046.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
 Dis. / Ant. : 9168-703-2110
 Limit : EN61000-6-3 QP
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50V 120A PV 200Vdc
 Test Mode : PV Charge To BAT
 Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:46
 Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
30.776	20.58	1.01	38.25	37.25	22.59	30.00	7.41	QP
88.976	14.45	1.45	40.93	36.83	20.00	30.00	10.00	QP
218.854	16.78	2.25	40.47	36.25	23.25	30.00	6.75	QP
766.036	27.96	4.75	31.98	37.29	27.40	37.00	9.60	QP
862.842	28.65	5.16	32.50	37.30	29.01	37.00	7.99	QP
948.396	29.78	5.54	32.24	37.27	30.29	37.00	6.71	QP

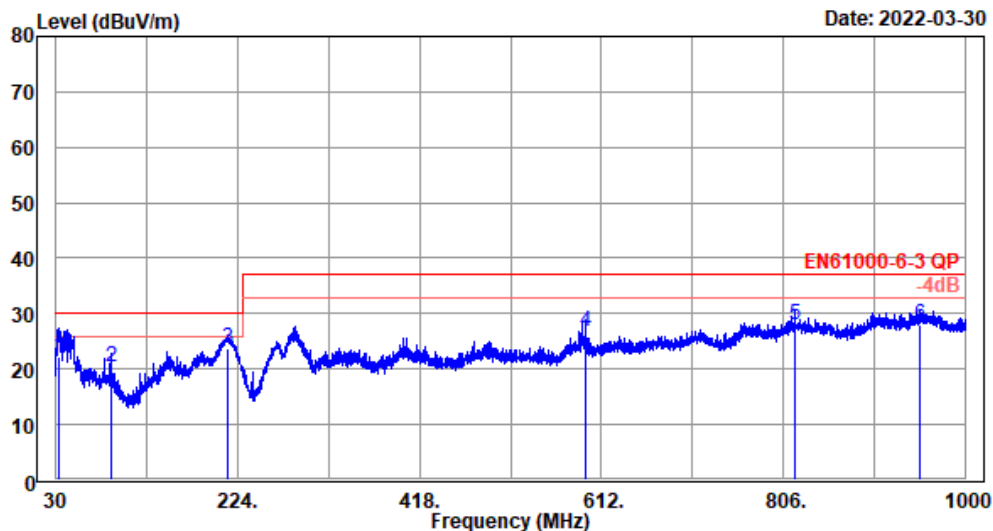
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00045.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-705-2112
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A PV 200Vdc
Test Mode : PV Charge To BAT
Memo : With WIFI Lan Kit

Ant. pol.: Vertical Data NO.:45
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
33.354	18.67	0.82	40.34	37.50	22.33	30.00	7.67	QP
88.976	13.91	1.18	42.47	37.10	20.46	30.00	9.54	QP
214.494	16.21	1.75	42.14	36.43	23.67	30.00	6.33	QP
594.734	25.19	3.21	35.27	36.97	26.70	37.00	10.30	QP
817.446	28.20	3.93	33.23	37.29	28.07	37.00	8.93	QP
951.112	29.50	4.40	31.48	37.27	28.11	37.00	8.89	QP

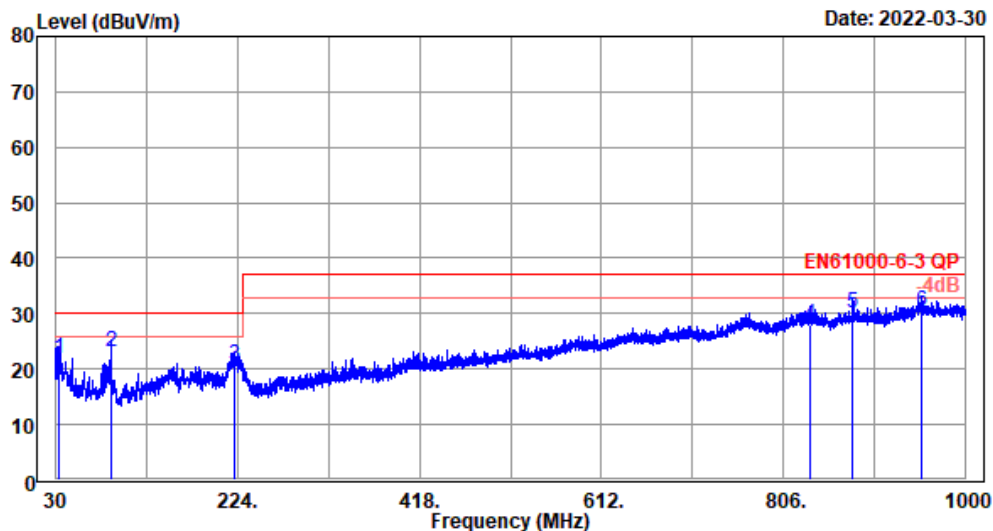
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00048.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
 Dis. / Ant. : 9168-703-2110
 Limit : EN61000-6-3 QP
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50V 120A PV 500Vdc
 Test Mode : PV Charge To BAT
 Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:48
 Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBUV	Preamp Factor dB	Emission Level dBUV/m	Limits dBUV/m	Margin dB	Remark
34.462	19.99	1.04	38.15	37.23	21.95	30.00	8.05	QP
88.976	14.45	1.45	44.08	36.83	23.15	30.00	6.85	QP
220.508	16.84	2.26	37.84	36.25	20.69	30.00	9.31	QP
833.936	28.44	5.04	31.88	37.30	28.06	37.00	8.94	QP
879.914	28.86	5.23	33.40	37.29	30.20	37.00	6.80	QP
953.052	29.80	5.56	32.31	37.27	30.40	37.00	6.60	QP

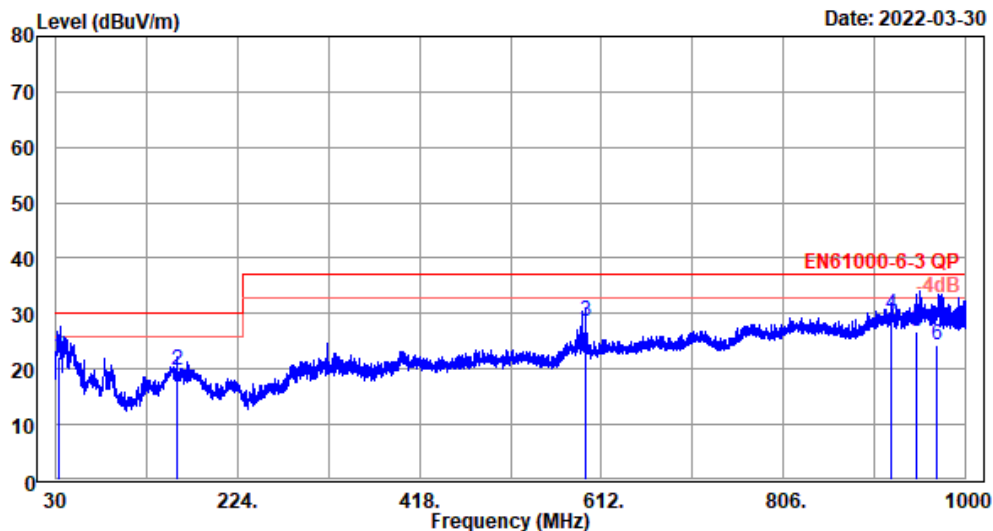
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00047.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-705-2112
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A PV 500Vdc
Test Mode : PV Charge To BAT
Memo : With WIFI Lan Kit

Ant. pol.: Vertical Data NO.:47
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBUV	Preamp Factor dB	Emission Level dBUV/m	Limits dBUV/m	Margin dB	Remark
33.497	18.69	0.82	40.31	37.50	22.32	30.00	7.68	QP
159.980	19.20	1.52	35.82	36.64	19.90	30.00	10.10	QP
595.122	25.20	3.21	37.27	36.97	28.71	37.00	8.29	QP
920.266	29.20	4.29	33.57	37.26	29.80	37.00	7.20	QP
948.313	29.48	4.39	30.06	37.26	26.67	37.00	10.33	QP
969.183	29.58	4.47	27.60	37.27	24.38	37.00	12.62	QP

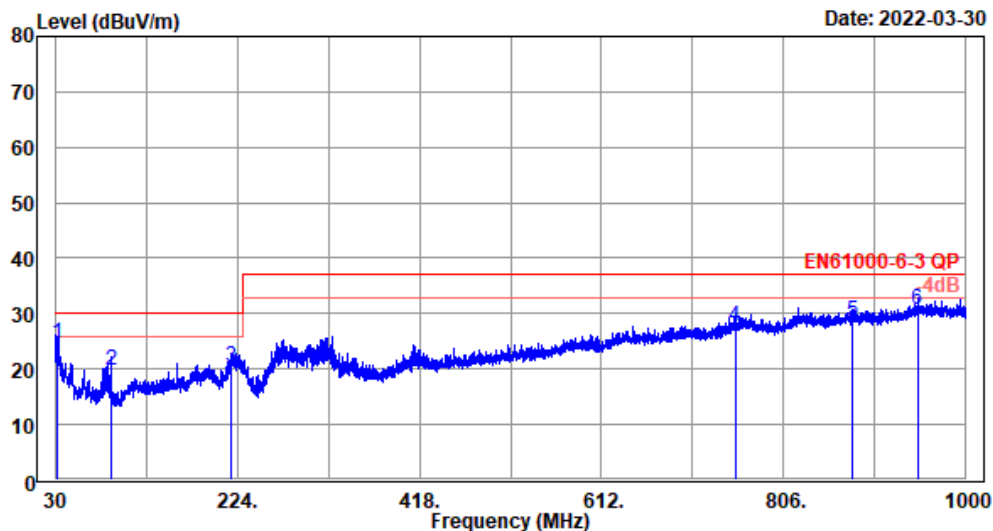
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-703-2110
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 500Vdc 6A
Test Mode : PV+BAT DisCharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:50
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBUV	Preamp Factor dB	Emission Level dBUV/m	Limits dBUV/m	Margin dB	Remark
31.360	20.48	1.01	40.27	37.24	24.52	30.00	5.48	QP
88.976	14.45	1.45	40.84	36.83	19.91	30.00	10.09	QP
217.986	16.75	2.25	37.56	36.25	20.31	30.00	9.69	QP
754.202	27.84	4.70	32.54	37.28	27.80	37.00	9.20	QP
879.914	28.86	5.23	31.80	37.29	28.60	37.00	8.40	QP
948.396	29.78	5.54	32.58	37.27	30.63	37.00	6.37	QP

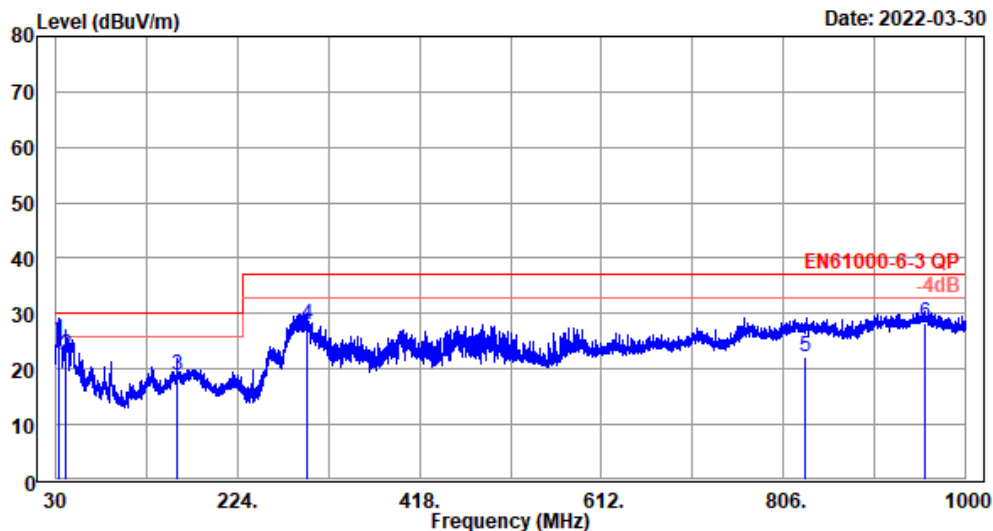
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00049.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
 Dis. / Ant. : 9168-705-2112
 Limit : EN61000-6-3 QP
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50V 60A PV 500Vdc 6A
 Test Mode : PV+BAT DisCharge To Grid
 Memo : With WIFI Lan Kit

Ant. pol.: Vertical Data NO.:49
 Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBUV	Preamp Factor dB	Emission Level dBUV/m	Limits dBUV/m	Margin dB	Remark
33.324	18.67	0.82	43.24	37.50	25.23	30.00	4.77	QP
41.878	19.62	0.88	39.52	37.43	22.59	30.00	7.41	QP
159.980	19.20	1.52	34.77	36.64	18.85	30.00	11.15	QP
297.914	19.04	2.10	43.11	36.40	27.85	37.00	9.15	QP
828.305	28.20	3.97	27.28	37.29	22.16	37.00	14.84	QP
956.544	29.53	4.42	31.47	37.27	28.15	37.00	8.85	QP

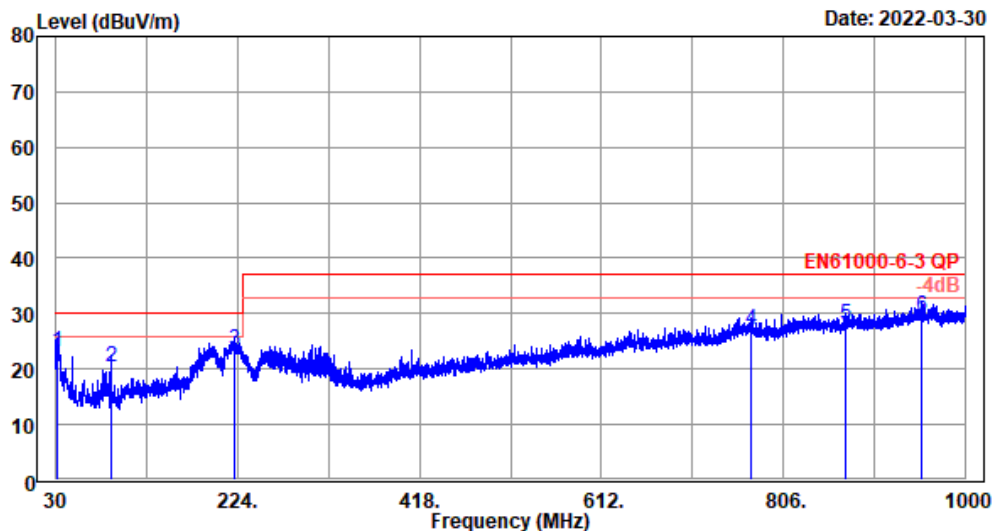
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-703-2110
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 200Vdc 15A
Test Mode : PV+BAT DisCharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:52
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBUV	Preamp Factor dB	Emission Level dBUV/m	Limits dBUV/m	Margin dB	Remark
31.358	20.48	1.01	38.99	37.24	23.24	30.00	6.76	QP
88.976	14.45	1.45	41.29	36.83	20.36	30.00	9.64	QP
221.284	16.87	2.26	40.62	36.25	23.50	30.00	6.50	QP
772.050	28.02	4.78	31.63	37.29	27.14	37.00	9.86	QP
871.572	28.76	5.20	31.29	37.30	27.95	37.00	9.05	QP
953.246	29.80	5.56	31.50	37.27	29.59	37.00	7.41	QP

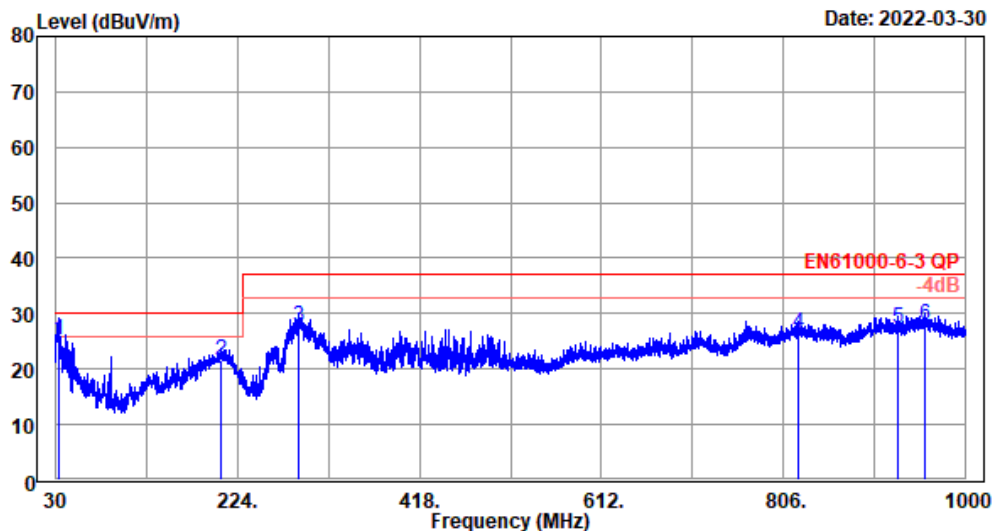
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-705-2112
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 200Vdc 15A
Test Mode : PV+BAT DisCharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Vertical Data NO.:51
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
33.690	18.72	0.82	43.11	37.50	25.15	30.00	4.85	QP
207.316	15.91	1.72	40.41	36.43	21.61	30.00	8.39	QP
290.154	18.82	2.07	43.08	36.40	27.57	37.00	9.43	QP
821.326	28.20	3.94	31.56	37.29	26.41	37.00	10.59	QP
927.056	29.27	4.31	30.98	37.26	27.30	37.00	9.70	QP
956.932	29.53	4.43	31.22	37.27	27.91	37.00	9.09	QP

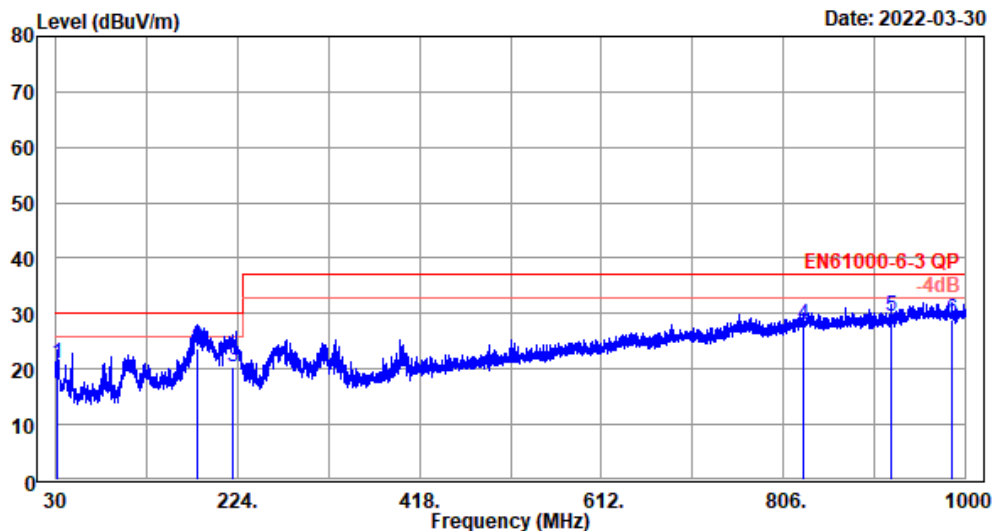
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00054.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
 Dis. / Ant. : 9168-703-2110
 Limit : EN61000-6-3 QP
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50V 120A
 Test Mode : BAT DisCharge Back-UP
 Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:54
 Engineer : Zhaolin

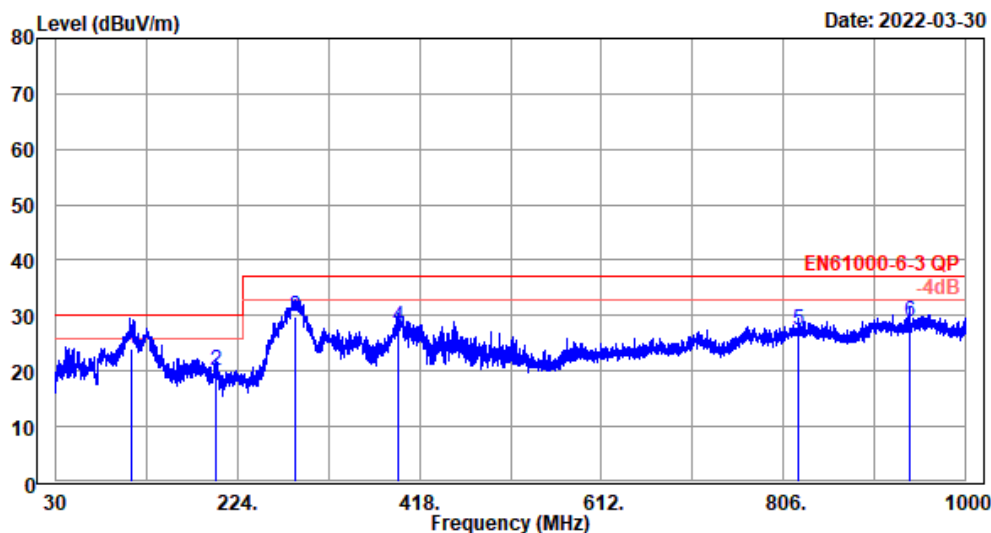
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBUV	Preamp Factor dB	Emission Level dBUV/m	Limits dBUV/m	Margin dB	Remark
31.746	20.42	1.02	36.92	37.24	21.12	30.00	8.88	QP
180.854	18.11	2.04	40.03	36.32	23.86	30.00	6.14	QP
218.999	16.78	2.25	37.60	36.25	20.38	30.00	9.62	QP
826.758	28.41	5.01	31.97	37.30	28.09	37.00	8.91	QP
920.072	29.38	5.41	32.05	37.28	29.56	37.00	7.44	QP
984.868	29.80	5.71	30.57	37.26	28.82	37.00	8.18	QP

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00053.EMI



Site NO. : 10M Chamber
 Dis. / Ant. : 9168-705-2112
 Limit : EN61000-6-3 QP
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50V 120A
 Test Mode : BAT DisCharge Back-UP
 Memo : with WIFI Lan Kit

Ant. pol.: Vertical
 Engineer : Zhaolin
 Data NO.:53

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
110.962	15.85	1.31	43.79	36.89	24.06	30.00	5.94	QP
201.690	15.67	1.70	39.21	36.43	20.15	30.00	9.85	QP
285.498	18.69	2.05	45.34	36.40	29.68	37.00	7.32	QP
394.720	21.07	2.51	41.08	36.52	28.14	37.00	8.86	QP
822.296	28.20	3.95	32.58	37.29	27.44	37.00	9.56	QP
939.472	29.39	4.36	32.55	37.26	29.04	37.00	7.96	QP

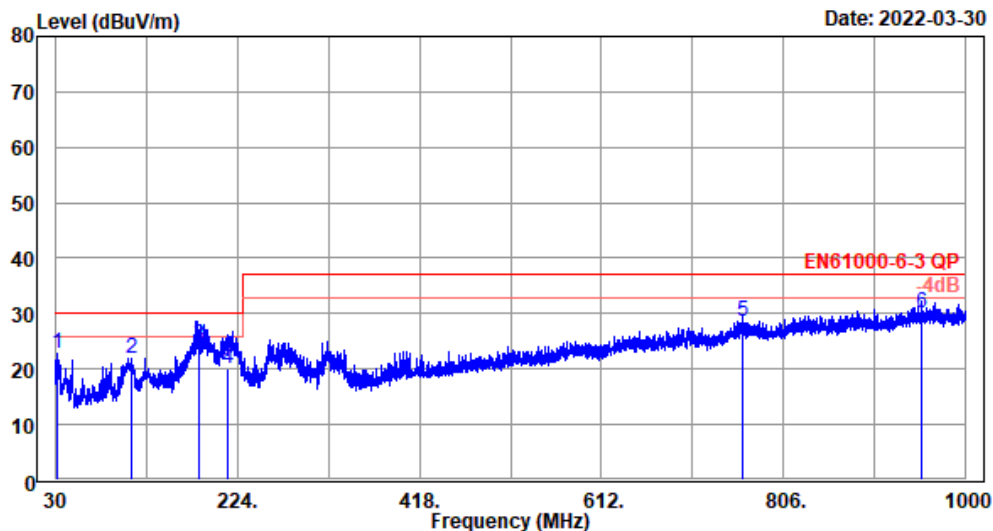
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00056.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-703-2110
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 200V 15A
Test Mode : PV DisCharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:56
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
31.552	20.45	1.01	38.68	37.24	22.90	30.00	7.10	QP
111.286	17.14	1.60	39.92	36.66	22.00	30.00	8.00	QP
182.828	17.92	2.05	40.64	36.31	24.30	30.00	5.70	QP
214.013	16.60	2.23	37.60	36.24	20.19	30.00	9.81	QP
762.932	27.93	4.74	33.18	37.29	28.56	37.00	8.44	QP
952.858	29.80	5.56	32.07	37.27	30.16	37.00	6.84	QP

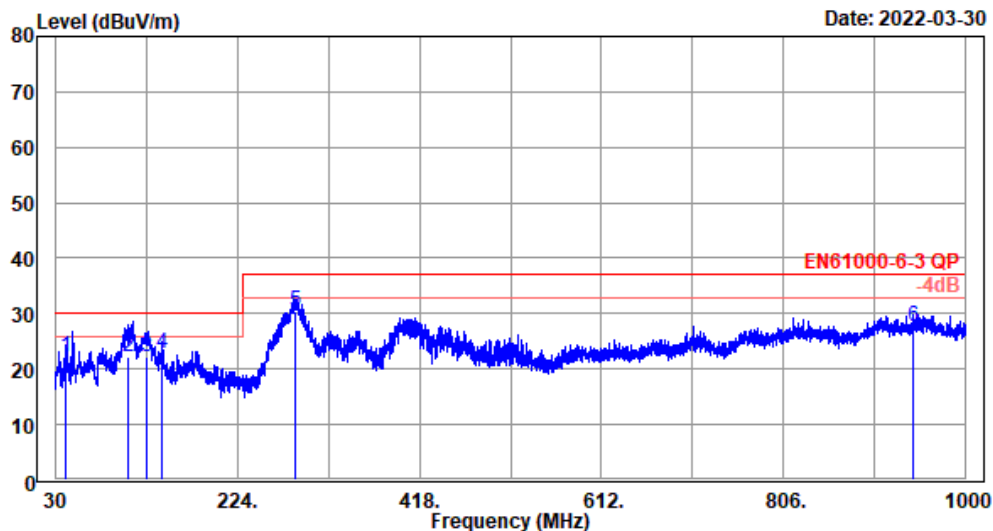
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00055.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-705-2112
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 200V 15A
Test Mode : PV DisCharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Vertical Data NO.:55
Engineer : Zhaolin

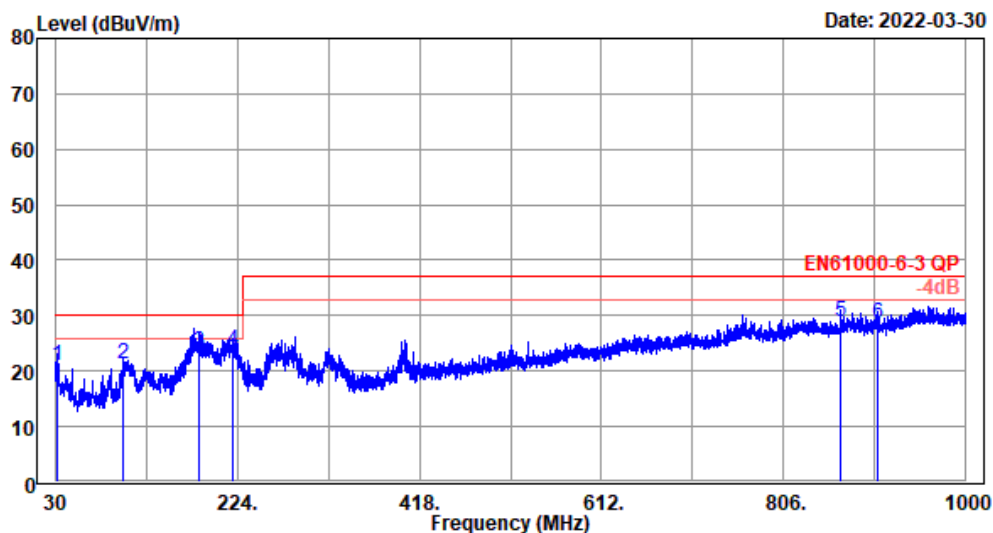
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
42.028	19.62	0.88	39.08	37.43	22.15	30.00	7.85	QP
108.311	15.61	1.30	42.11	36.91	22.11	30.00	7.89	QP
127.591	17.21	1.38	40.53	36.81	22.31	30.00	7.69	QP
143.490	18.81	1.45	39.31	36.72	22.85	30.00	7.15	QP
286.080	18.71	2.05	46.20	36.40	30.56	37.00	6.44	QP
944.710	29.45	4.38	31.19	37.26	27.76	37.00	9.24	QP

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00058.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 9168-703-2110
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 500V 6A
Test Mode : PV DisCharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:58
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
31.552	20.45	1.01	36.64	37.24	20.86	30.00	9.14	QP
102.944	16.04	1.55	40.46	36.70	21.35	30.00	8.65	QP
182.639	17.94	2.05	39.60	36.31	23.28	30.00	6.72	QP
219.926	16.82	2.26	40.93	36.25	23.76	30.00	6.24	QP
865.946	28.69	5.17	32.40	37.30	28.96	37.00	8.04	QP
906.492	29.19	5.35	31.32	37.29	28.57	37.00	8.43	QP

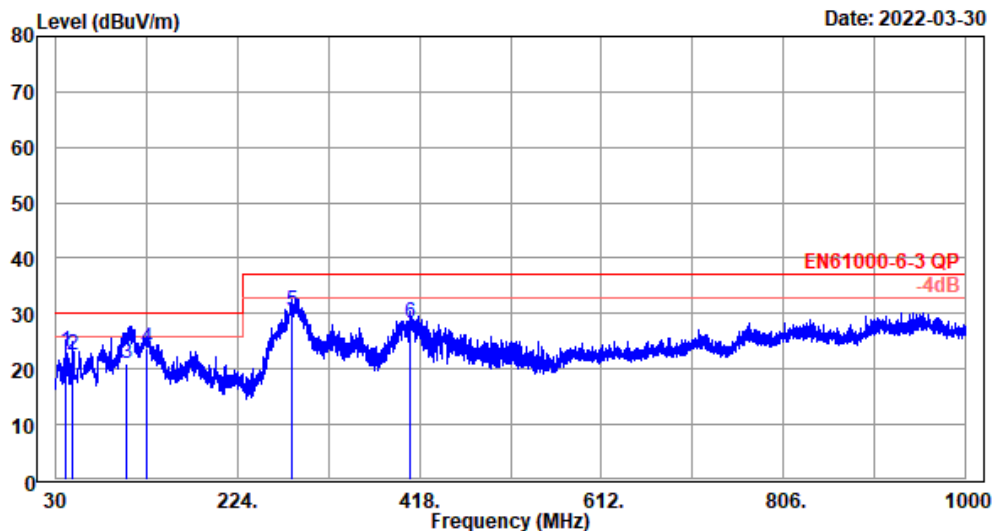
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00057.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-705-2112
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 500V 6A
Test Mode : PV DisCharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Vertical Data NO.:57
Engineer : Zhaolin

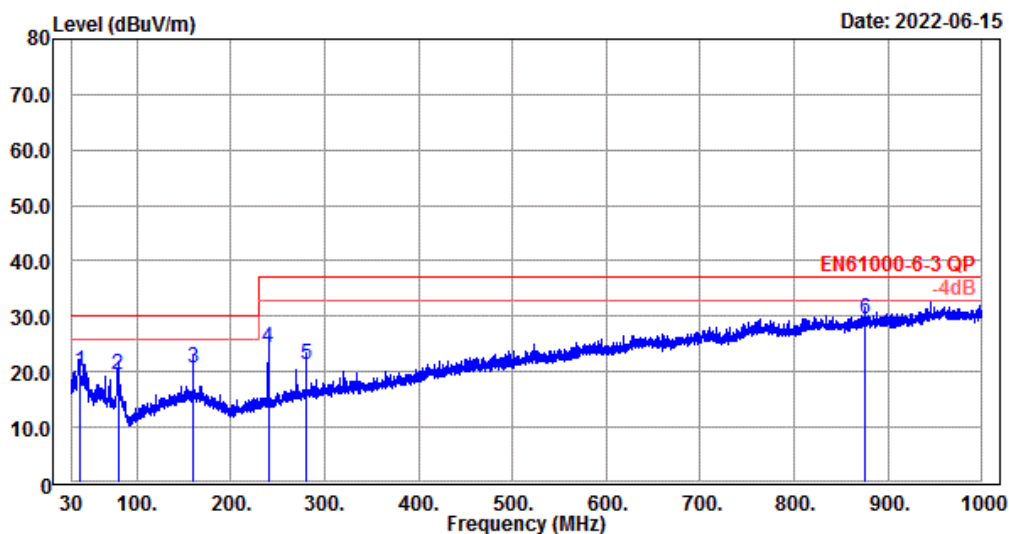
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
41.446	19.61	0.87	40.01	37.44	23.05	30.00	6.95	QP
48.624	19.69	0.92	39.37	37.38	22.60	30.00	7.40	QP
106.128	15.37	1.29	41.25	36.92	20.99	30.00	9.01	QP
127.776	17.23	1.38	41.94	36.81	23.74	30.00	6.26	QP
282.976	18.62	2.04	46.19	36.41	30.44	37.00	6.56	QP
408.882	21.50	2.56	40.79	36.56	28.29	37.00	8.71	QP

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: E:\Test DATA\2022\Report\04\C1W2204002\C1W2204002_00002.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 9168-703-2110
Limit : EN61000-6-3 QP
Env. / Ins. : 21°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V/60A,PV 200V/15A
Test Mode : PV+BAT Discharge to GRID
Memo : Wifi Kit

Ant. pol.: Horizontal Data NO.:2
Engineer : zhaolin

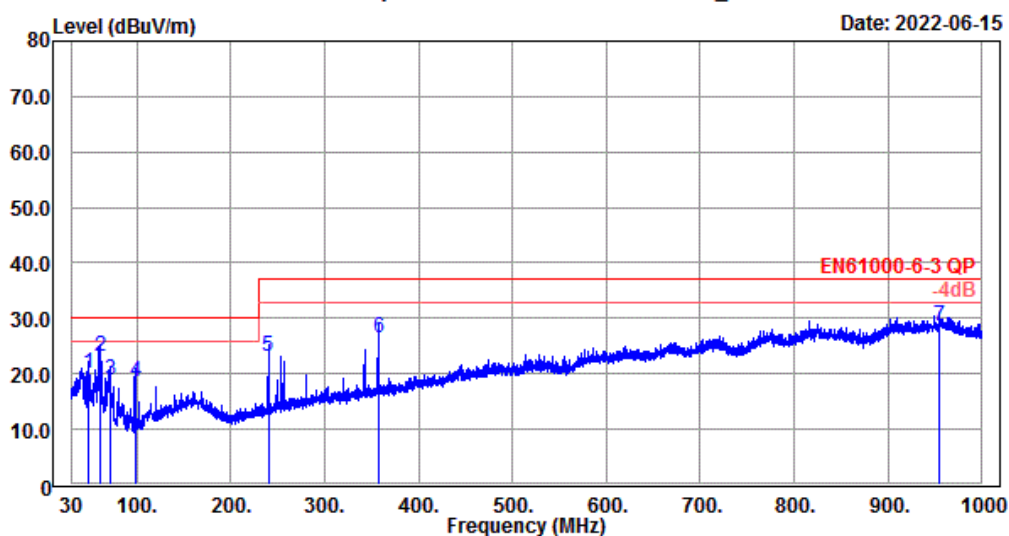
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
38.924	19.27	1.08	36.80	37.20	19.95	30.00	10.05	QP
79.858	15.84	1.39	39.25	36.92	19.56	30.00	10.44	QP
159.980	19.30	1.91	35.97	36.42	20.76	30.00	9.24	QP
239.908	17.54	2.35	40.69	36.27	24.31	37.00	12.69	QP
279.872	18.74	2.54	36.25	36.30	21.23	37.00	15.77	QP
874.870	28.80	5.21	32.66	37.30	29.37	37.00	7.63	QP

Remarks: Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: E:\Test DATA\2022\Report\04\C1W2204002\C1W2204002_00001.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 9168-705-2112
Limit : EN61000-6-3 QP
Env. / Ins. : 21°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V/60A,PV 200V/15A
Test Mode : PV+BAT Discharge to GRID
Memo : Wifi Kit

Ant. pol.: Vertical
Engineer : zhaolin
Data NO.:1

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
48.042	19.68	0.92	36.88	37.39	20.09	30.00	9.91	QP
60.264	18.76	1.00	40.61	37.32	23.05	30.00	6.95	QP
70.934	17.17	1.06	38.02	37.27	18.98	30.00	11.02	QP
98.094	14.53	1.25	39.84	36.98	18.64	30.00	11.36	QP
239.908	17.28	1.86	40.33	36.42	23.05	37.00	13.95	QP
356.890	20.17	2.35	40.51	36.47	26.56	37.00	10.44	QP
954.798	29.52	4.42	32.01	37.27	28.68	37.00	8.32	QP

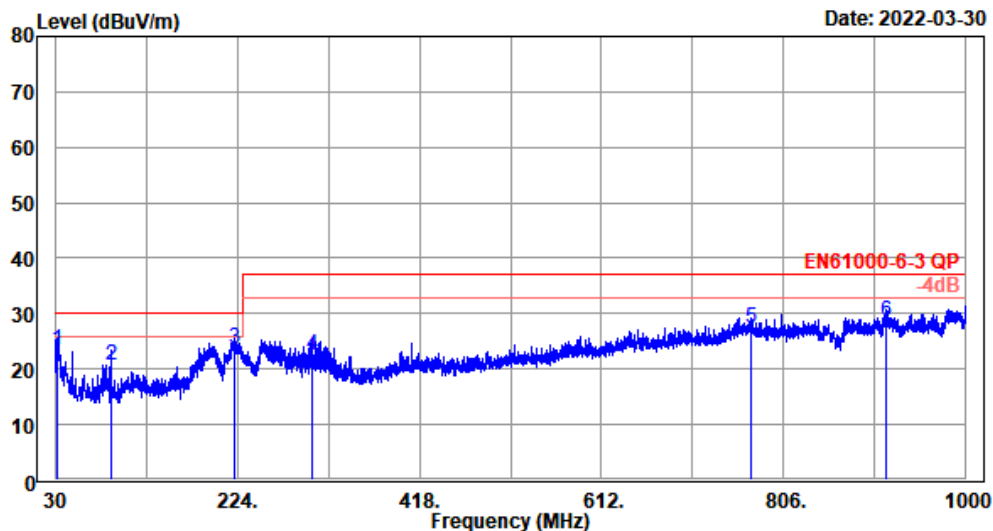
Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00060.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-703-2110
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 200Vdc 15A
Test Mode : PV+BAT DisCharge To Grid
Memo : With 4G Kit

Ant. pol.: Horizontal Data NO.:60
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
31.358	20.48	1.01	39.19	37.24	23.44	30.00	6.56	QP
88.976	14.45	1.45	41.49	36.83	20.56	30.00	9.44	QP
221.284	16.87	2.26	40.82	36.25	23.70	30.00	6.30	QP
303.734	19.36	2.66	36.67	36.33	22.36	37.00	14.64	QP
772.050	28.02	4.78	31.83	37.29	27.34	37.00	9.66	QP
915.804	29.32	5.39	31.24	37.28	28.67	37.00	8.33	QP

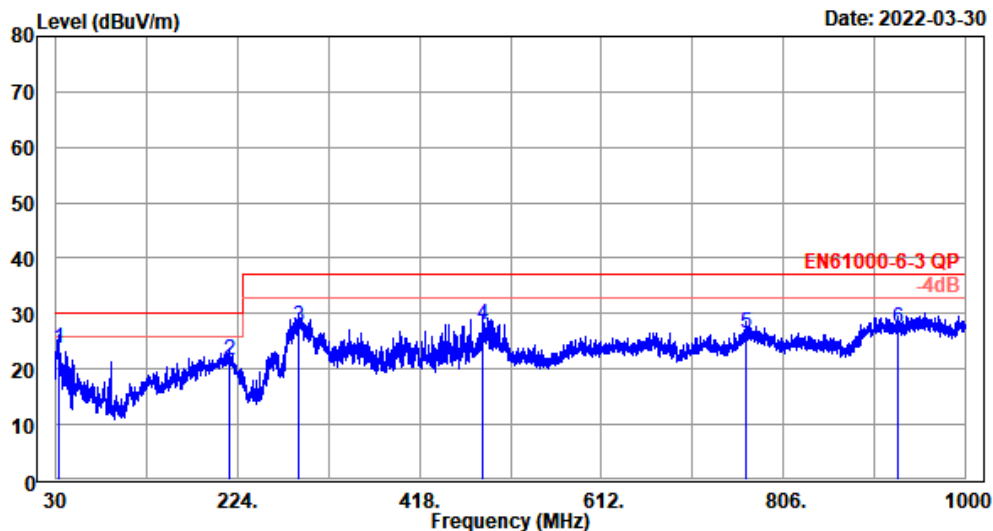
remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00059.EMI

Date: 2022-03-30



Site NO. : 10M Chamber
Dis. / Ant. : 9168-705-2112
Limit : EN61000-6-3 QP
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 200Vdc 15A
Test Mode : PV+BAT DisCharge To Grid
Memo : With 4G Kit

Ant. pol.: Vertical Data NO.:59
Engineer : Zhaolin

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
33.298	18.66	0.82	41.69	37.50	23.67	30.00	6.33	QP
216.434	16.29	1.76	39.87	36.43	21.49	30.00	8.51	QP
290.154	18.82	2.07	43.28	36.40	27.77	37.00	9.23	QP
485.512	23.33	2.85	38.52	36.78	27.92	37.00	9.08	QP
765.066	27.78	3.76	32.24	37.25	26.53	37.00	10.47	QP
927.056	29.27	4.31	31.18	37.26	27.50	37.00	9.50	QP

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

5.5.2 For 1GHz~6GHz frequency range

Test Date: Apr.06, 2022

Temperature: 23.9°C

Humidity: 53%

Test Date: Jun.15, 2022

Temperature: 21°C

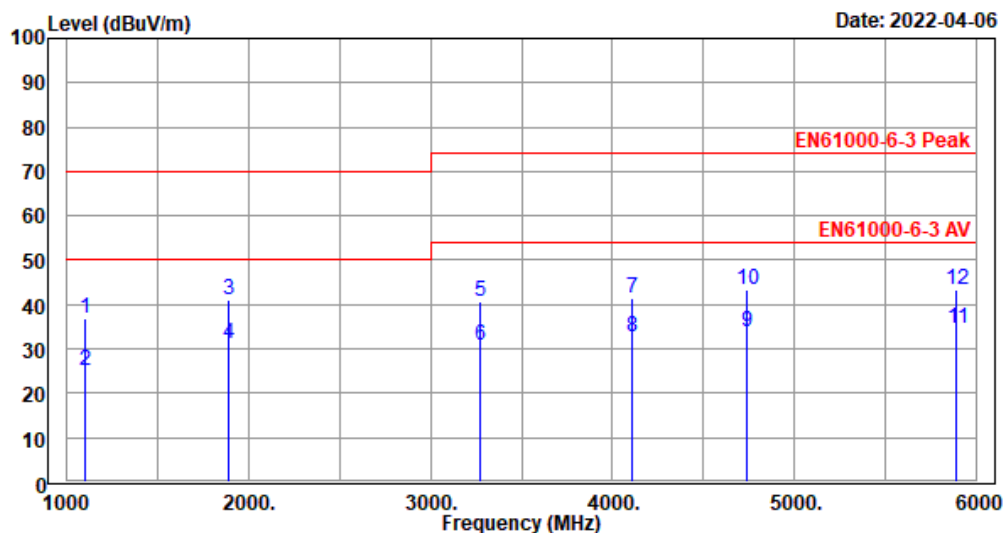
Humidity: 53%

Item	Test Module	Power Rating	Test Mode	Reference Test Data No.	
				Horizontal	Vertical
1	WIFI/LAN Kit	BAT 50Vdc/120A	AC charge to BAT	# 1	# 2
2		BAT 50Vdc/120A PV 200Vdc	PV charge to BAT	# 4	# 3
3		BAT 50Vdc/120A	BAT discharge to GRID	# 5	# 6
4		PV 200Vdc/30A	PV discharge to GRID	# 8	# 7
5		PV 200Vdc/30A	PV discharge to BACK-UP	# 9	# 10
6		BAT 50Vdc/120A	BAT discharge to BACK-UP	# 12	# 11
7		BAT 50Vdc/60A PV 200Vdc/15A	PV+BAT discharge to BACK-UP	# 13	# 14
8		BAT 50Vdc/60A PV 200Vdc/15A	PV+BAT discharge to GRID	# 15	# 16
9	WIFI Kit	BAT 50Vdc/60A PV 200Vdc/15A	PV+BAT discharge to GRID	# 4	# 3
10	4G Kit	BAT 50Vdc/60A PV 200Vdc/15A	PV+BAT discharge to GRID	# 35	# 36



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00001.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A
Test Mode : AC Charge To BAT
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:1
Engineer : Zhaolin

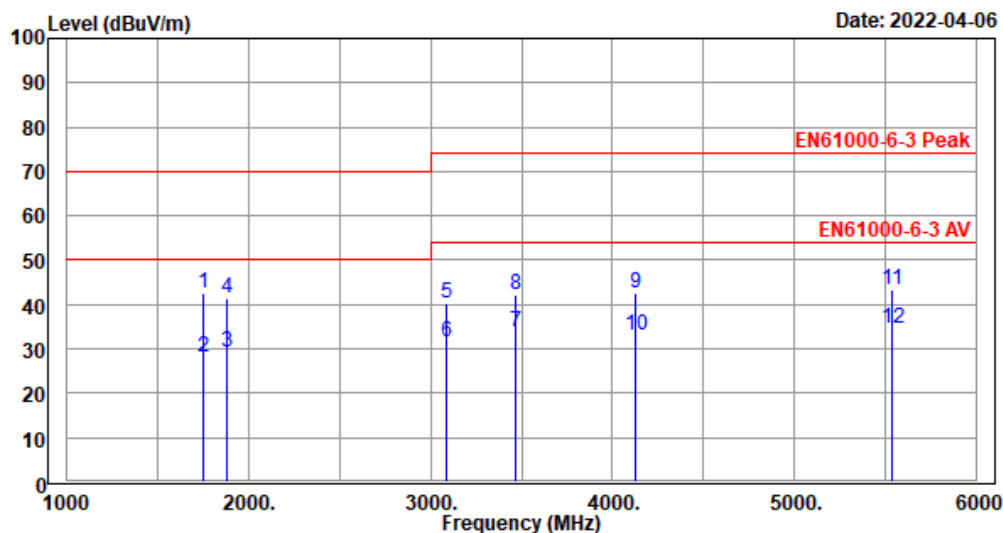
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1100.000	24.40	1.79	46.26	35.70	36.75	70.00	33.25	Peak
1101.885	24.42	1.79	34.59	35.70	25.10	50.00	24.90	Average
1890.000	27.68	2.43	46.63	35.70	41.04	70.00	28.96	Peak
1891.550	27.70	2.43	36.58	35.70	31.01	50.00	18.99	Average
3270.000	31.04	2.77	41.21	34.45	40.57	74.00	33.43	Peak
3271.969	31.04	2.77	31.59	34.45	30.95	54.00	23.05	Average
4110.000	32.46	2.98	40.30	34.15	41.59	74.00	32.41	Peak
4111.742	32.45	2.98	31.59	34.14	32.88	54.00	21.12	Average
4739.542	32.66	3.33	31.59	33.83	33.75	54.00	20.25	Average
4740.000	32.66	3.33	41.06	33.83	43.22	74.00	30.78	Peak
5889.550	33.96	3.69	30.59	33.70	34.54	54.00	19.46	Average
5890.000	33.96	3.69	39.46	33.70	43.41	74.00	30.59	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00002.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A
Test Mode : AC Charge To BAT
Memo : With WIFI Lan Kit

Ant. pol.: Vertical Data NO.:2
Engineer : Zhaolin

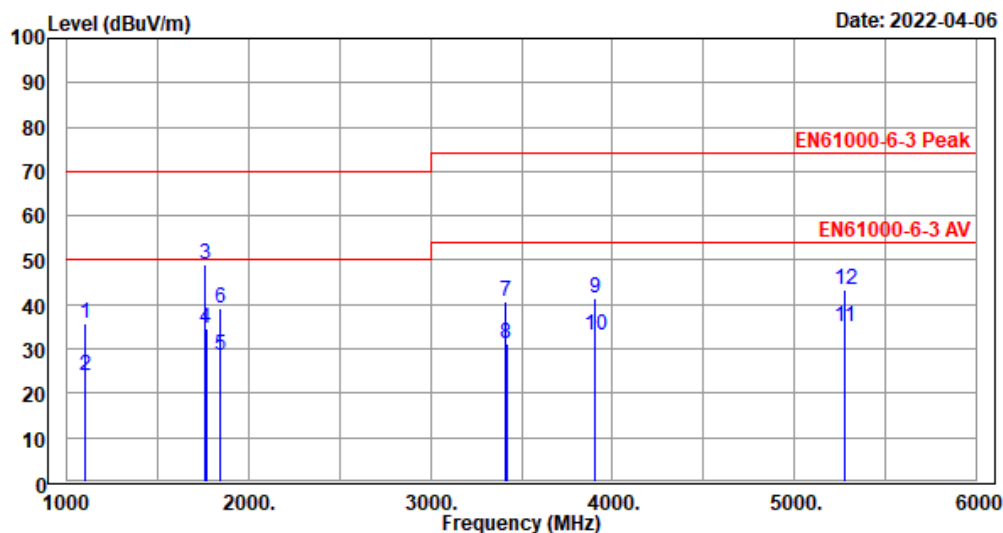
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1750.000	26.20	2.32	49.62	35.70	42.44	70.00	27.56	Peak
1751.776	26.21	2.32	35.25	35.70	28.08	50.00	21.92	Average
1879.895	27.56	2.42	34.86	35.70	29.14	50.00	20.86	Average
1880.000	27.56	2.42	47.25	35.70	41.53	70.00	28.47	Peak
3085.000	30.61	2.74	41.31	34.51	40.15	74.00	33.85	Peak
3086.519	30.62	2.74	32.86	34.51	31.71	54.00	22.29	Average
3467.984	31.41	2.81	33.86	34.38	33.70	54.00	20.30	Average
3470.000	31.42	2.81	42.18	34.38	42.03	74.00	31.97	Peak
4125.000	32.40	2.99	41.18	34.14	42.43	74.00	31.57	Peak
4127.519	32.39	2.99	31.86	34.14	33.10	54.00	20.90	Average
5530.000	33.94	3.61	39.54	33.70	43.39	74.00	30.61	Peak
5531.520	33.94	3.61	30.85	33.70	34.70	54.00	19.30	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00004.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A PV 200Vdc
Test Mode : PV Charge To BAT
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:4
Engineer : Zhaolin

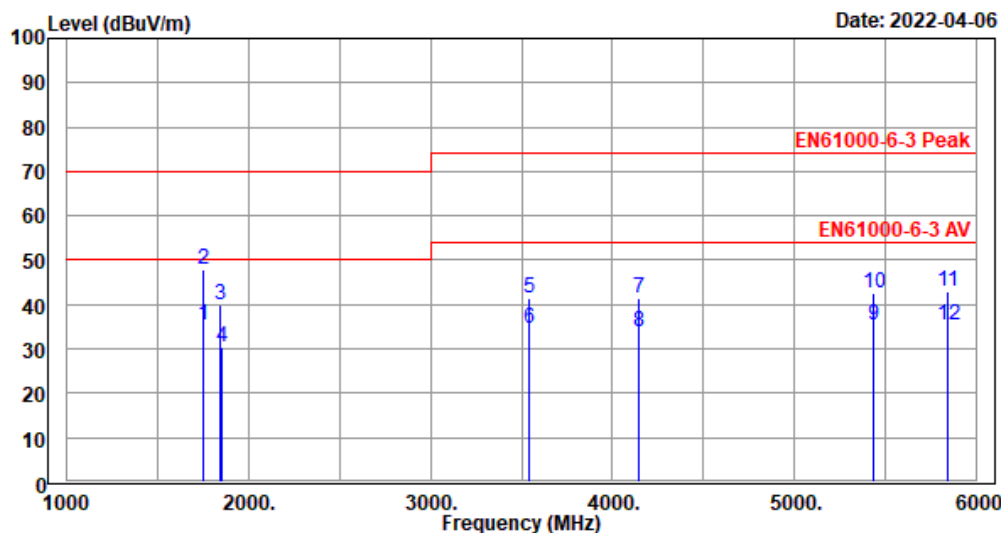
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1100.000	24.40	1.79	45.35	35.70	35.84	70.00	34.16	Peak
1101.685	24.42	1.79	33.55	35.70	24.06	50.00	25.94	Average
1765.000	26.32	2.33	56.08	35.70	49.03	70.00	20.97	Peak
1766.855	26.33	2.33	41.56	35.70	34.52	50.00	15.48	Average
1849.549	27.19	2.40	34.55	35.70	28.44	50.00	21.56	Average
1850.000	27.20	2.40	45.45	35.70	39.35	70.00	30.65	Peak
3415.000	31.16	2.80	41.14	34.40	40.70	74.00	33.30	Peak
3416.952	31.17	2.80	31.55	34.40	31.12	54.00	22.88	Average
3900.000	32.70	2.90	40.01	34.23	41.38	74.00	32.62	Peak
3902.685	32.69	2.90	31.55	34.23	32.91	54.00	21.09	Average
5273.592	33.65	3.55	31.54	33.70	35.04	54.00	18.96	Average
5275.000	33.65	3.55	39.75	33.70	43.25	74.00	30.75	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00003.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A PV 200Vdc
Test Mode : PV Charge To BAT
Memo : With WIFI Lan Kit

Ant. pol.: Vertical
Engineer : Zhaolin
Data NO.:3

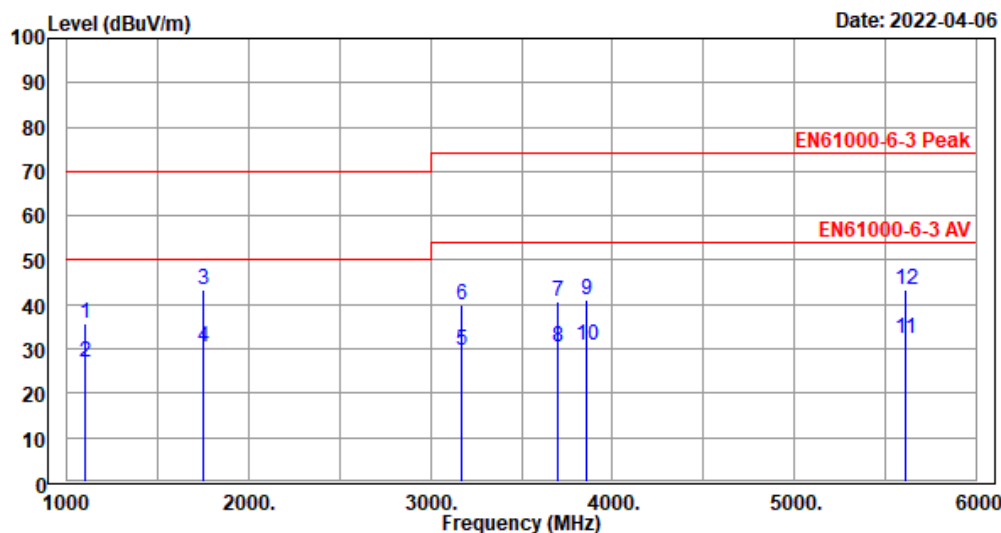
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1754.594	26.24	2.32	42.55	35.70	35.41	50.00	14.59	Average
1755.000	26.24	2.32	55.00	35.70	47.86	70.00	22.14	Peak
1850.000	27.20	2.40	46.11	35.70	40.01	70.00	29.99	Peak
1851.684	27.22	2.40	36.55	35.70	30.47	50.00	19.53	Average
3540.000	31.60	2.83	41.45	34.36	41.52	74.00	32.48	Peak
3541.689	31.60	2.83	34.55	34.36	34.62	54.00	19.38	Average
4140.000	32.34	3.00	40.10	34.13	41.31	74.00	32.69	Peak
4141.542	32.33	3.00	32.55	34.13	33.75	54.00	20.25	Average
5434.891	33.97	3.58	31.55	33.70	35.40	54.00	18.60	Average
5435.000	33.97	3.58	38.90	33.70	42.75	74.00	31.25	Peak
5840.000	33.78	3.68	39.29	33.70	43.05	74.00	30.95	Peak
5841.689	33.78	3.68	31.55	33.70	35.31	54.00	18.69	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00005.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A
Test Mode : BAT Discharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:5
Engineer : Zhaolin

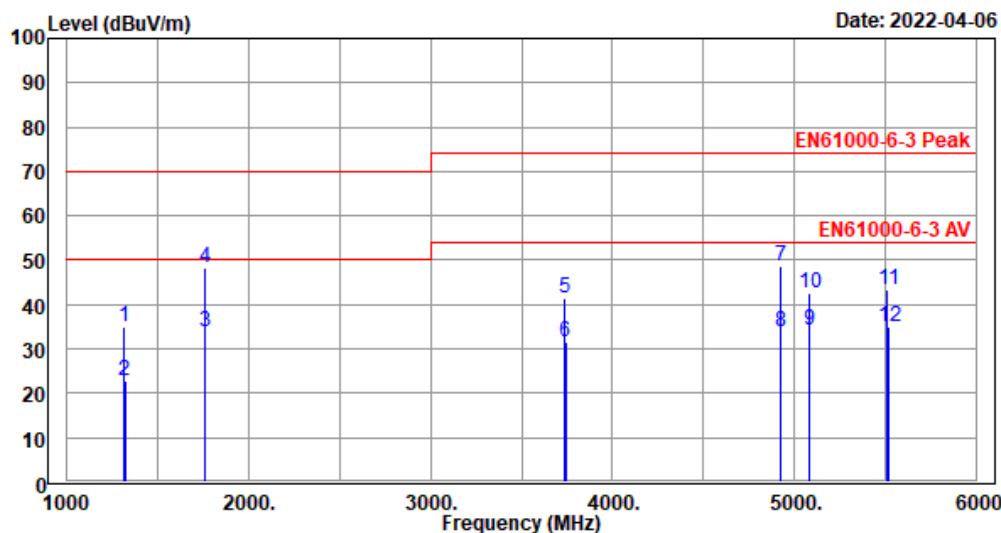
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1100.000	24.40	1.79	45.28	35.70	35.77	70.00	34.23	Peak
1101.998	24.42	1.79	36.52	35.70	27.03	50.00	22.97	Average
1755.000	26.24	2.32	50.46	35.70	43.32	70.00	26.68	Peak
1756.985	26.26	2.32	37.52	35.70	30.40	50.00	19.60	Average
3169.981	30.90	2.75	30.59	34.48	29.76	54.00	24.24	Average
3170.000	30.90	2.75	40.94	34.48	40.11	74.00	33.89	Peak
3700.000	32.10	2.86	40.19	34.30	40.85	74.00	33.15	Peak
3701.168	32.10	2.86	29.59	34.30	30.25	54.00	23.75	Average
3855.000	32.52	2.89	39.94	34.25	41.10	74.00	32.90	Peak
3855.416	32.52	2.89	29.59	34.25	30.75	54.00	23.25	Average
5609.619	33.76	3.63	28.58	33.70	32.27	54.00	21.73	Average
5610.000	33.76	3.63	39.54	33.70	43.23	74.00	30.77	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00006.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A
Test Mode : BAT Discharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Vertical
Engineer : Zhaolin
Data NO.:6

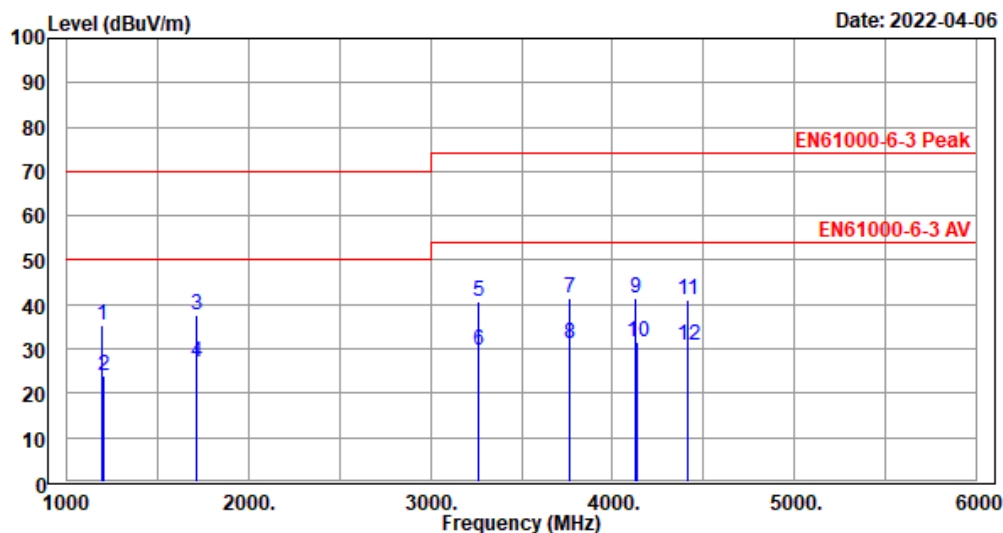
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1320.000	25.72	1.97	43.00	35.70	34.99	70.00	35.01	Peak
1321.775	25.71	1.97	30.94	35.70	22.92	50.00	27.08	Average
1759.549	26.28	2.33	40.93	35.70	33.84	50.00	16.16	Average
1760.000	26.28	2.33	55.22	35.70	48.13	70.00	21.87	Peak
3740.000	32.18	2.87	40.56	34.29	41.32	74.00	32.68	Peak
3741.094	32.18	2.87	30.94	34.29	31.70	54.00	22.30	Average
4925.000	33.25	3.44	45.69	33.74	48.64	74.00	25.36	Peak
4926.519	33.25	3.44	30.95	33.74	33.90	54.00	20.10	Average
5084.776	33.40	3.50	30.94	33.70	34.14	54.00	19.86	Average
5085.000	33.40	3.50	39.24	33.70	42.44	74.00	31.56	Peak
5510.000	33.98	3.60	39.43	33.70	43.31	74.00	30.69	Peak
5512.794	33.97	3.60	30.95	33.70	34.82	54.00	19.18	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00008.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 200Vdc 30A
Test Mode : PV Discharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:8
Engineer : Zhaolin

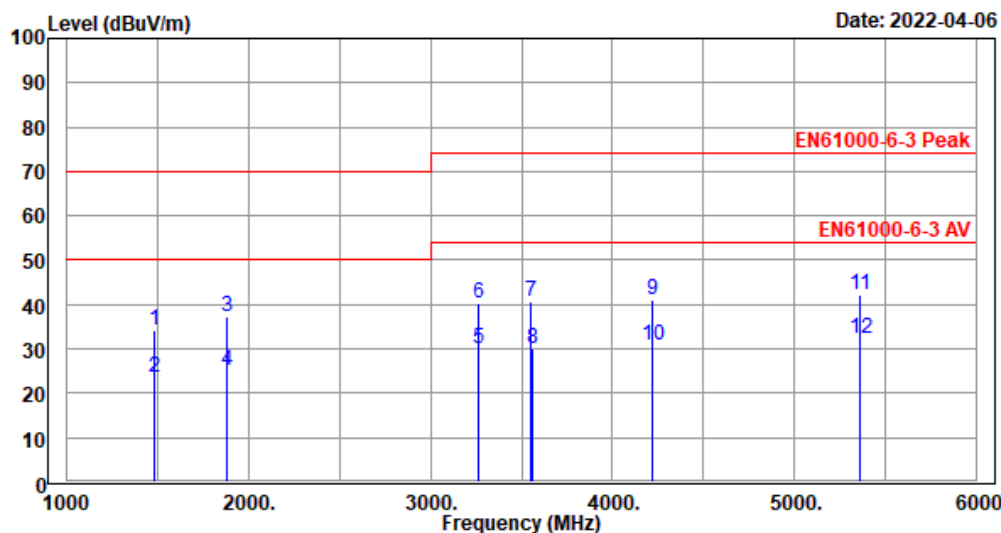
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1200.000	25.40	1.87	43.64	35.70	35.21	70.00	34.79	Peak
1201.774	25.40	1.87	32.50	35.70	24.07	50.00	25.93	Average
1715.000	26.06	2.29	45.02	35.70	37.67	70.00	32.33	Peak
1715.746	26.06	2.29	34.50	35.70	27.15	50.00	22.85	Average
3260.000	31.02	2.77	41.16	34.45	40.50	74.00	33.50	Peak
3261.794	31.02	2.77	30.50	34.45	29.84	54.00	24.16	Average
3760.000	32.22	2.87	40.49	34.28	41.30	74.00	32.70	Peak
3761.591	32.22	2.87	30.50	34.28	31.31	54.00	22.69	Average
4130.000	32.38	2.99	40.18	34.14	41.41	74.00	32.59	Peak
4131.859	32.37	2.99	30.50	34.13	31.73	54.00	22.27	Average
4410.000	32.30	3.15	39.52	33.99	40.98	74.00	33.02	Peak
4411.981	32.30	3.15	29.49	33.99	30.95	54.00	23.05	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00007.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 200Vdc 30A
Test Mode : PV Discharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Vertical
Engineer : Zhaolin
Data NO.:7

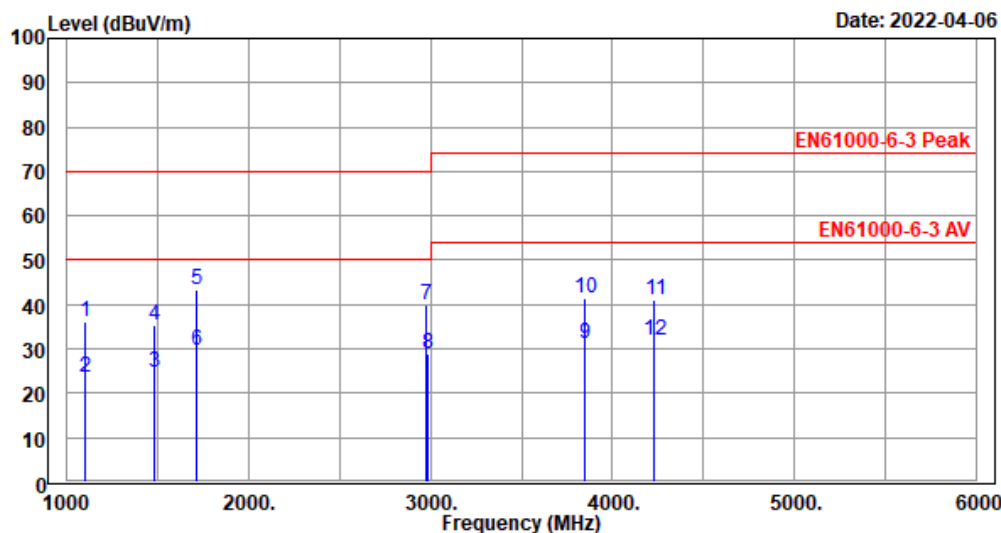
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1480.000	25.44	2.10	42.42	35.70	34.26	70.00	35.74	Peak
1481.762	25.44	2.10	31.77	35.70	23.61	50.00	26.39	Average
1880.000	27.56	2.42	42.88	35.70	37.16	70.00	32.84	Peak
1881.550	27.58	2.42	30.78	35.70	25.08	50.00	24.92	Average
3259.498	31.02	2.77	30.77	34.45	30.11	54.00	23.89	Average
3260.000	31.02	2.77	40.85	34.45	40.19	74.00	33.81	Peak
3555.000	31.62	2.83	40.57	34.35	40.67	74.00	33.33	Peak
3556.519	31.63	2.83	29.77	34.35	29.88	54.00	24.12	Average
4220.000	32.16	3.04	39.96	34.09	41.07	74.00	32.93	Peak
4221.577	32.16	3.04	29.78	34.09	30.89	54.00	23.11	Average
5355.000	33.81	3.57	38.63	33.70	42.31	74.00	31.69	Peak
5356.771	33.81	3.57	28.77	33.70	32.45	54.00	21.55	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00009.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 200Vdc 30A
Test Mode : PV Discharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:9
Engineer : Zhaolin

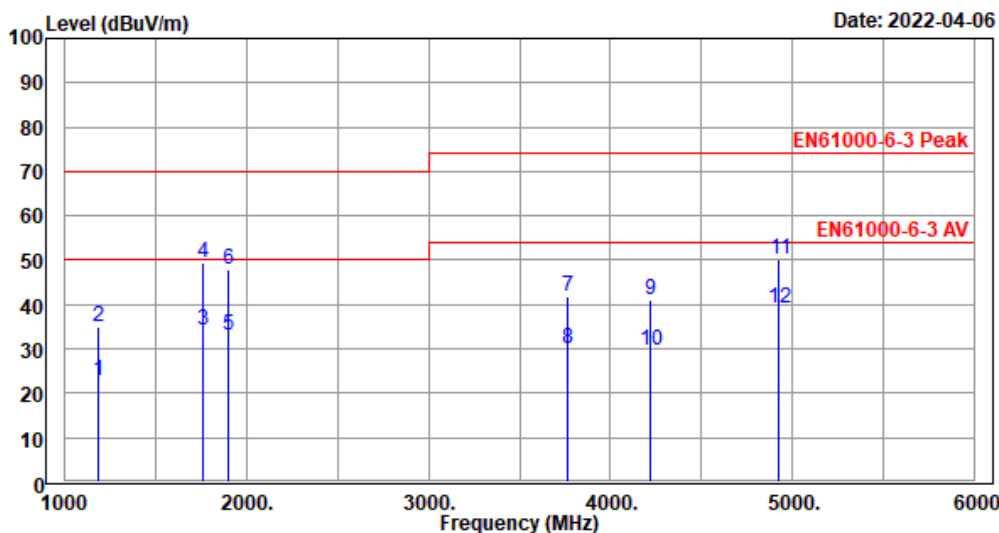
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1100.000	24.40	1.79	45.62	35.70	36.11	70.00	33.89	Peak
1101.742	24.42	1.79	32.89	35.70	23.40	50.00	26.60	Average
1481.891	25.44	2.10	32.89	35.70	24.73	50.00	25.27	Average
1485.000	25.43	2.10	43.38	35.70	35.21	70.00	34.79	Peak
1715.000	26.06	2.29	50.76	35.70	43.41	70.00	26.59	Peak
1716.519	26.07	2.29	36.89	35.70	29.55	50.00	20.45	Average
2980.000	29.94	2.72	41.94	34.56	40.04	70.00	29.96	Peak
2981.564	29.95	2.72	30.89	34.56	29.00	50.00	21.00	Average
3849.517	32.50	2.89	29.89	34.25	31.03	54.00	22.97	Average
3850.000	32.50	2.89	40.15	34.25	41.29	74.00	32.71	Peak
4230.000	32.14	3.05	39.92	34.08	41.03	74.00	32.97	Peak
4231.668	32.14	3.05	30.88	34.08	31.99	54.00	22.01	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00010.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 200Vdc 30A
Test Mode : PV Discharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Vertical
Engineer : Zhaolin
Data NO.:10

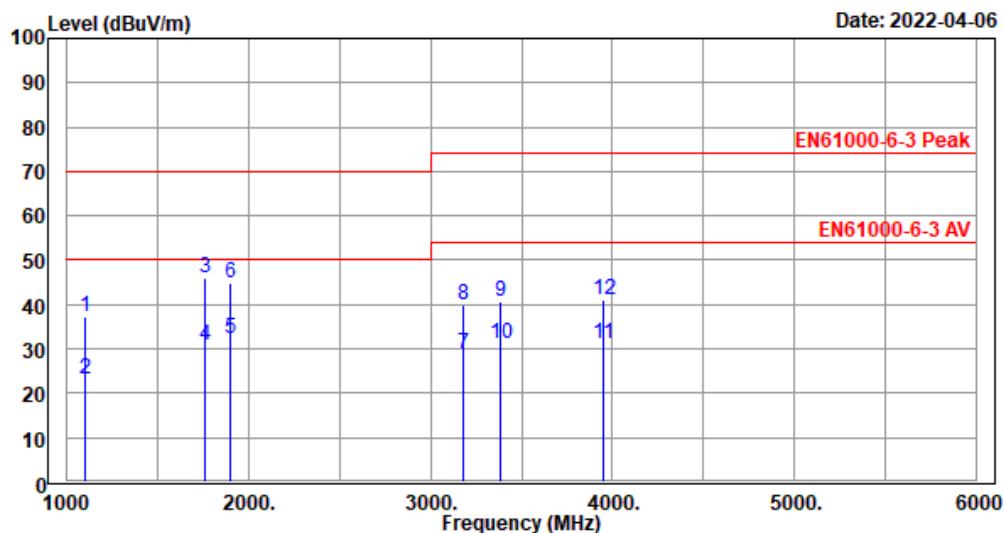
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1189.594	25.30	1.86	31.39	35.70	22.85	50.00	27.15	Average
1190.000	25.30	1.86	43.67	35.70	35.13	70.00	34.87	Peak
1759.242	26.27	2.32	41.40	35.70	34.29	50.00	15.71	Average
1760.000	26.28	2.33	56.36	35.70	49.27	70.00	20.73	Peak
1903.522	27.80	2.44	38.39	35.70	32.93	50.00	17.07	Average
1905.000	27.80	2.44	53.51	35.70	48.05	70.00	21.95	Peak
3765.000	32.23	2.87	41.07	34.28	41.89	74.00	32.11	Peak
3766.882	32.23	2.87	29.40	34.28	30.22	54.00	23.78	Average
4220.000	32.16	3.04	40.10	34.09	41.21	74.00	32.79	Peak
4221.600	32.16	3.04	28.39	34.09	29.50	54.00	24.50	Average
4925.000	33.25	3.44	47.37	33.74	50.32	74.00	23.68	Peak
4926.151	33.25	3.44	36.39	33.74	39.34	54.00	14.66	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00012.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A
Test Mode : BAT Discharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:12
Engineer : Zhaolin

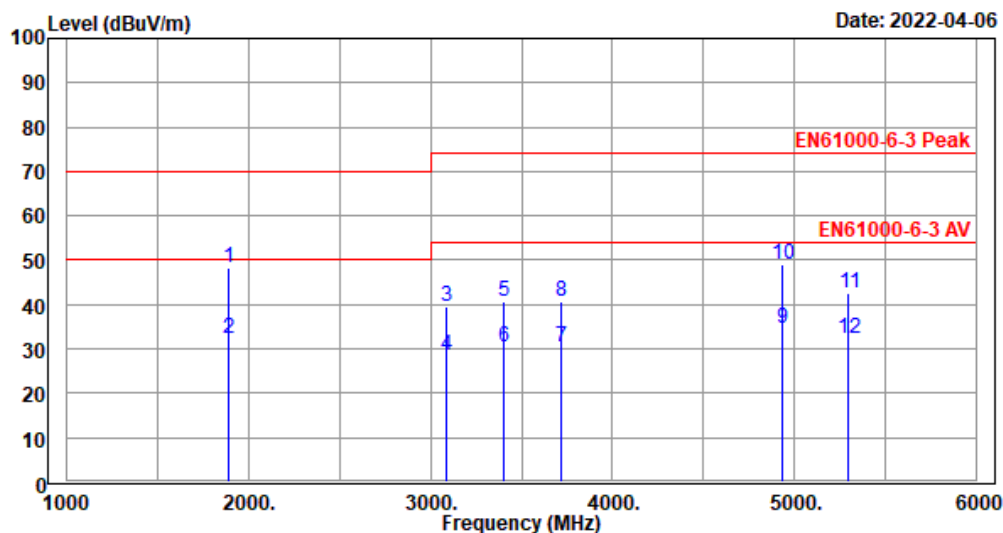
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1100.000	24.40	1.79	46.85	35.70	37.34	70.00	32.66	Peak
1101.894	24.42	1.79	32.74	35.70	23.25	50.00	26.75	Average
1760.000	26.28	2.33	52.92	35.70	45.83	70.00	24.17	Peak
1761.965	26.30	2.33	37.73	35.70	30.66	50.00	19.34	Average
1904.591	27.80	2.44	37.74	35.70	32.28	50.00	17.72	Average
1905.000	27.80	2.44	50.40	35.70	44.94	70.00	25.06	Peak
3179.815	30.90	2.76	29.74	34.48	28.92	54.00	25.08	Average
3180.000	30.90	2.76	40.92	34.48	40.10	74.00	33.90	Peak
3380.000	31.06	2.80	41.32	34.41	40.77	74.00	33.23	Peak
3381.774	31.06	2.80	31.74	34.41	31.19	54.00	22.81	Average
3949.859	32.60	2.91	29.74	34.22	31.03	54.00	22.97	Average
3950.000	32.60	2.91	39.92	34.22	41.21	74.00	32.79	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00011.EMI



Site NO. : 10M Chamber
 Dis. / Ant. : 3115-593-2110
 Limit : EN61000-6-3 Peak
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50V 120A
 Test Mode : BAT Discharge Back-UP
 Memo : With WIFI Lan Kit

Ant. pol.: Vertical
 Engineer : Zhaolin
 Data NO.:11

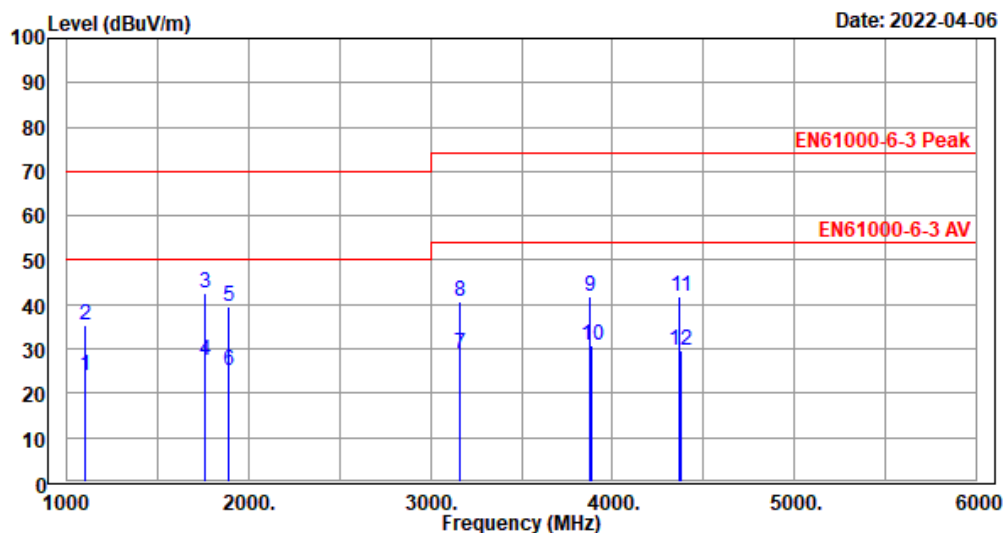
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1890.000	27.68	2.43	53.77	35.70	48.18	70.00	21.82	Peak
1891.774	27.70	2.43	37.75	35.70	32.18	50.00	17.82	Average
3090.000	30.64	2.74	40.67	34.51	39.54	74.00	34.46	Peak
3091.496	30.65	2.74	29.74	34.51	28.62	54.00	25.38	Average
3400.000	31.10	2.80	41.02	34.40	40.52	74.00	33.48	Peak
3401.795	31.11	2.80	30.74	34.40	30.25	54.00	23.75	Average
3719.542	32.14	2.86	29.75	34.30	30.45	54.00	23.55	Average
3720.000	32.14	2.86	39.89	34.30	40.59	74.00	33.41	Peak
4934.875	33.27	3.44	31.74	33.73	34.72	54.00	19.28	Average
4935.000	33.27	3.44	45.92	33.73	48.90	74.00	25.10	Peak
5295.000	33.69	3.55	39.07	33.70	42.61	74.00	31.39	Peak
5296.742	33.69	3.55	28.75	33.70	32.29	54.00	21.71	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00013.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 200Vdc 15A
Test Mode : PV+BAT Discharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:13
Engineer : Zhaolin

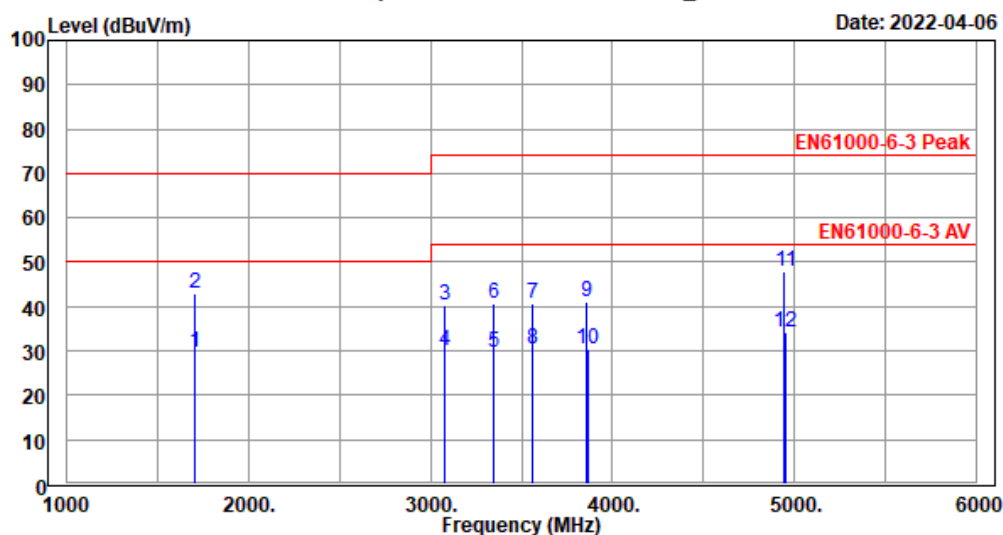
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1099.789	24.40	1.79	33.55	35.70	24.04	50.00	25.96	Average
1100.000	24.40	1.79	44.75	35.70	35.24	70.00	34.76	Peak
1760.000	26.28	2.33	49.77	35.70	42.68	70.00	27.32	Peak
1761.984	26.30	2.33	34.54	35.70	27.47	50.00	22.53	Average
1890.000	27.68	2.43	45.20	35.70	39.61	70.00	30.39	Peak
1891.599	27.70	2.43	30.55	35.70	24.98	50.00	25.02	Average
3164.981	30.90	2.75	29.55	34.48	28.72	54.00	25.28	Average
3165.000	30.90	2.75	41.67	34.48	40.84	74.00	33.16	Peak
3880.000	32.62	2.90	40.45	34.24	41.73	74.00	32.27	Peak
3881.495	32.63	2.90	29.54	34.24	30.83	54.00	23.17	Average
4370.000	32.18	3.13	40.57	34.01	41.87	74.00	32.13	Peak
4371.774	32.19	3.13	28.52	34.01	29.83	54.00	24.17	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00014.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 200Vdc 15A
Test Mode : PV+BAT Discharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Vertical
Engineer : Zhaolin
Data NO.:14

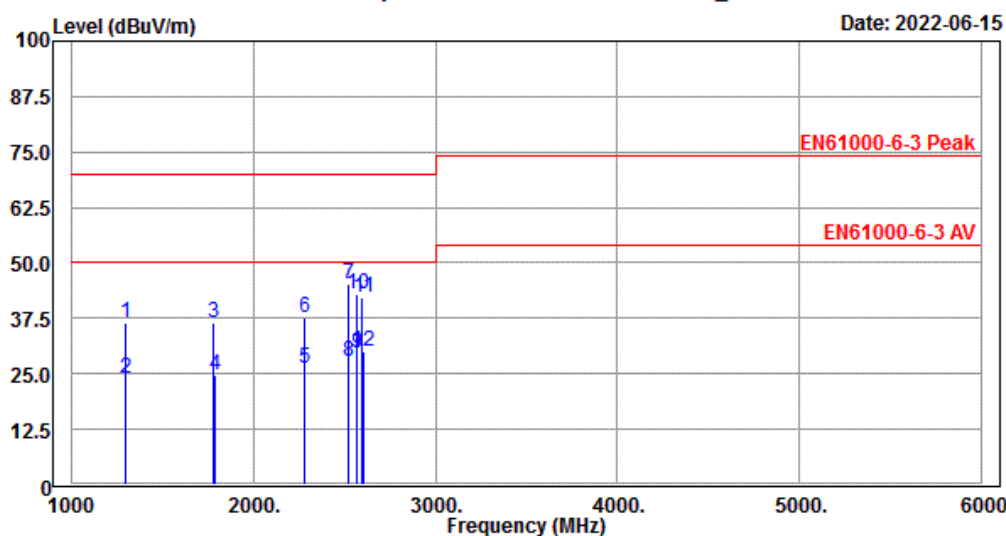
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1709.549	26.04	2.28	37.22	35.70	29.84	50.00	20.16	Average
1710.000	26.04	2.29	50.15	35.70	42.78	70.00	27.22	Peak
3080.000	30.58	2.74	41.62	34.51	40.43	74.00	33.57	Peak
3081.592	30.59	2.74	31.21	34.51	30.03	54.00	23.97	Average
3344.951	31.01	2.79	30.21	34.42	29.59	54.00	24.41	Average
3345.000	31.01	2.79	41.39	34.42	40.77	74.00	33.23	Peak
3560.000	31.64	2.83	40.51	34.35	40.63	74.00	33.37	Peak
3561.771	31.65	2.83	30.22	34.35	30.35	54.00	23.65	Average
3860.000	32.54	2.89	40.02	34.25	41.20	74.00	32.80	Peak
3861.898	32.55	2.89	29.22	34.25	30.41	54.00	23.59	Average
4945.000	33.29	3.45	45.00	33.73	48.01	74.00	25.99	Peak
4946.062	33.29	3.45	31.22	33.73	34.23	54.00	19.77	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: E:\Test DATA\2022\Report\04\C1W2204002\C1W2204002_00004.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 21°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V/60A,PV 200V/15A
Test Mode : PV+BAT Discharge to GRID
Memo : Wifi Kit

Ant. pol.: Horizontal Data NO.:4
Engineer : zhaolin

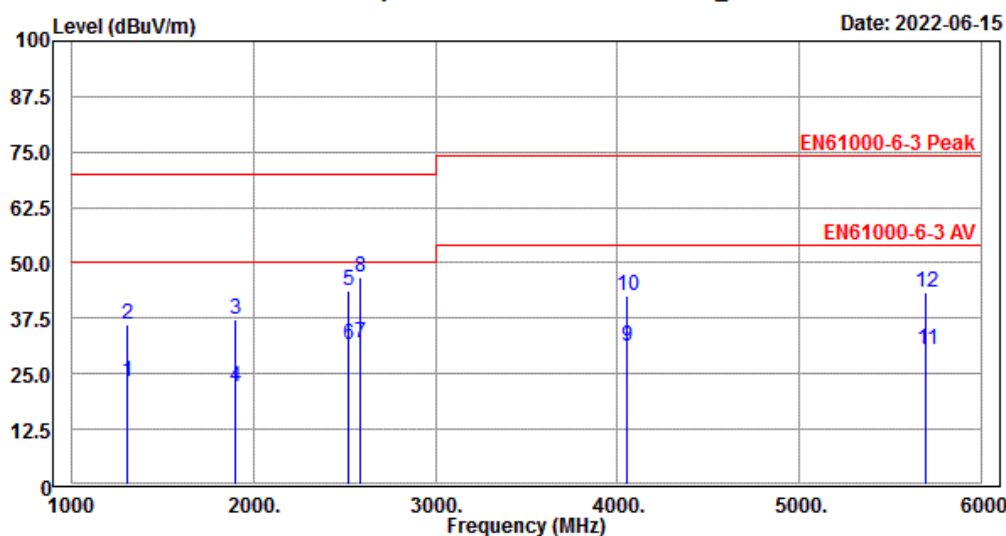
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1300.000	25.80	1.95	44.41	35.70	36.46	70.00	33.54	Peak
1301.813	25.79	1.95	31.87	35.70	23.91	50.00	26.09	Average
1785.000	26.48	2.35	43.35	35.70	36.48	70.00	33.52	Peak
1786.376	26.49	2.35	31.40	35.70	24.54	50.00	25.46	Average
2284.318	28.14	2.58	30.94	35.37	26.29	50.00	23.71	Average
2285.000	28.14	2.58	42.25	35.37	37.60	70.00	32.40	Peak
2520.000	28.54	2.62	49.26	35.10	45.32	70.00	24.68	Peak
2522.122	28.54	2.62	31.82	35.09	27.89	50.00	22.11	Average
2569.350	28.72	2.63	33.48	35.04	29.79	50.00	20.21	Average
2570.000	28.72	2.63	46.58	35.04	42.89	70.00	27.11	Peak
2600.000	28.90	2.64	45.82	35.00	42.36	70.00	27.64	Peak
2601.362	28.90	2.64	33.69	35.00	30.23	50.00	19.77	Average

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: E:\Test DATA\2022\Report\04\C1W2204002\C1W2204002_00003.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 21°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V/60A,PV 200V/15A
Test Mode : PV+BAT Discharge to GRID
Memo : Wifi Kit

Ant. pol.: Vertical
Engineer : Zhaolin
Data NO.:3

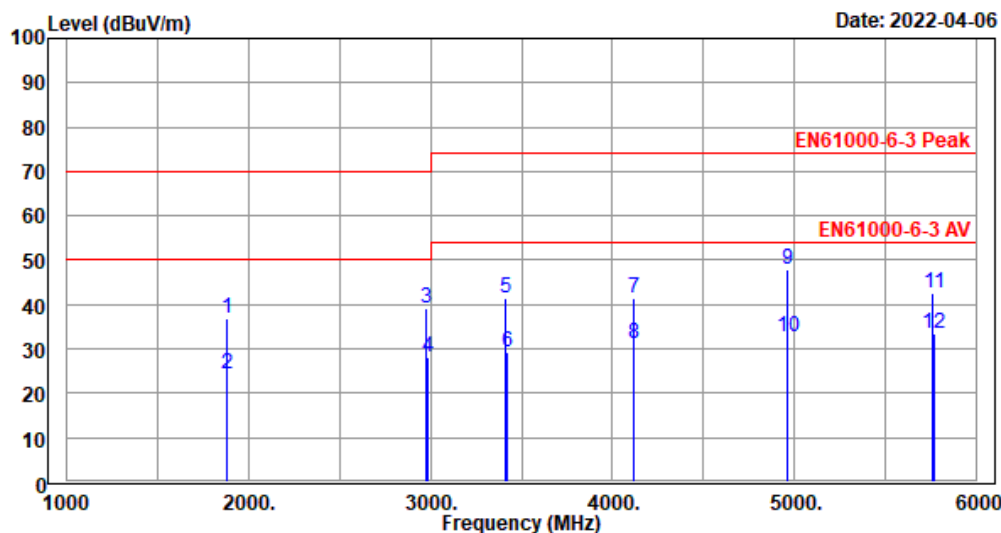
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1304.265	25.78	1.96	31.28	35.70	23.32	50.00	26.68	Average
1305.000	25.78	1.96	43.90	35.70	35.94	70.00	34.06	Peak
1900.000	27.80	2.44	42.81	35.70	37.35	70.00	32.65	Peak
1901.314	27.80	2.44	27.36	35.70	21.90	50.00	28.10	Average
2520.000	28.54	2.62	47.81	35.10	43.87	70.00	26.13	Peak
2521.168	28.54	2.62	35.63	35.10	31.69	50.00	18.31	Average
2589.112	28.83	2.64	35.66	35.02	32.11	50.00	17.89	Average
2590.000	28.84	2.64	50.21	35.02	46.67	70.00	23.33	Peak
4049.296	32.50	2.95	29.81	34.18	31.08	54.00	22.92	Average
4050.000	32.50	2.95	41.24	34.17	42.52	74.00	31.48	Peak
5694.276	33.69	3.65	26.69	33.70	30.33	54.00	23.67	Average
5695.000	33.69	3.65	39.81	33.70	43.45	74.00	30.55	Peak

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 200Vdc 15A
Test Mode : PV+BAT Discharge to Grid
Memo : With 4G Kit

Ant. pol.: Horizontal Data NO.:15
Engineer : Zhaolin

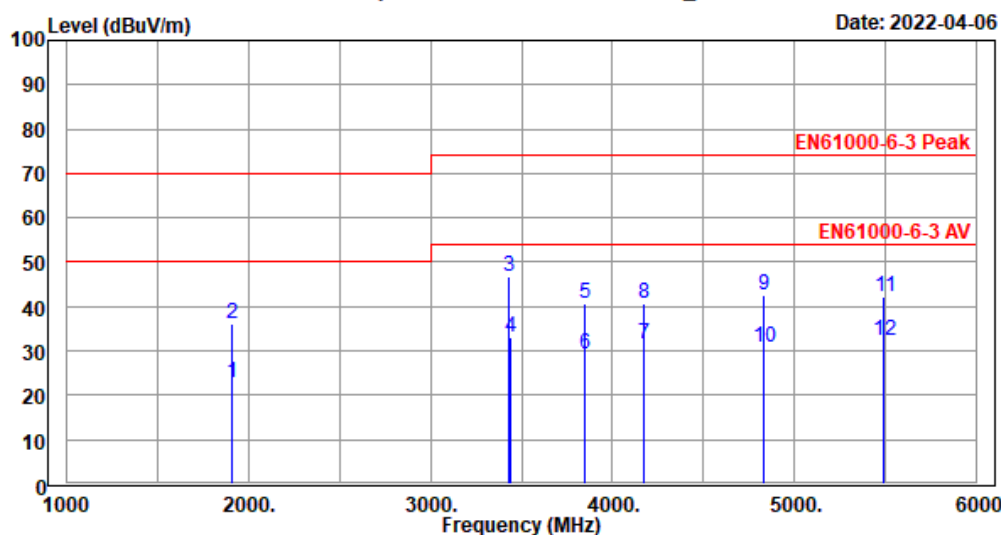
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1880.000	27.56	2.42	42.47	35.70	36.75	70.00	33.25	Peak
1881.775	27.58	2.42	29.86	35.70	24.16	50.00	25.84	Average
2980.000	29.94	2.72	41.18	34.56	39.28	70.00	30.72	Peak
2981.860	29.95	2.72	29.85	34.56	27.96	50.00	22.04	Average
3415.000	31.16	2.80	41.87	34.40	41.43	74.00	32.57	Peak
3416.984	31.17	2.80	29.86	34.40	29.43	54.00	24.57	Average
4115.000	32.44	2.98	40.33	34.14	41.61	74.00	32.39	Peak
4117.594	32.43	2.99	29.85	34.14	31.13	54.00	22.87	Average
4960.000	33.28	3.46	44.88	33.72	47.90	74.00	26.10	Peak
4961.742	33.28	3.46	29.85	33.72	32.87	54.00	21.13	Average
5760.000	33.62	3.66	39.17	33.70	42.75	74.00	31.25	Peak
5761.849	33.62	3.66	29.86	33.70	33.44	54.00	20.56	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN61000-6-3 Peak
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 200Vdc 15A
Test Mode : PV+BAT Discharge to Grid
Memo : With 4G Kit

Ant. pol.: Vertical
Engineer : Zhaolin
Data NO.:16

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1909.855	27.80	2.45	28.25	35.70	22.80	50.00	27.20	Average
1910.000	27.80	2.45	41.62	35.70	36.17	70.00	33.83	Peak
3435.000	31.24	2.81	46.99	34.39	46.65	74.00	27.35	Peak
3436.249	31.24	2.81	33.25	34.39	32.91	54.00	21.09	Average
3845.000	32.48	2.89	39.69	34.25	40.81	74.00	33.19	Peak
3846.550	32.49	2.89	28.24	34.25	29.37	54.00	24.63	Average
4169.595	32.26	3.01	30.26	34.12	31.41	54.00	22.59	Average
4170.000	32.26	3.02	39.67	34.12	40.83	74.00	33.17	Peak
4830.000	33.02	3.38	39.79	33.78	42.41	74.00	31.59	Peak
4830.717	33.02	3.39	28.24	33.78	30.87	54.00	23.13	Average
5490.000	34.00	3.60	38.35	33.70	42.25	74.00	31.75	Peak
5491.592	34.00	3.60	28.25	33.70	32.15	54.00	21.85	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

5.5.3 For 1GHz~18GHz frequency range

Test Date: Apr.06, 2022

Temperature: 23.9°C

Humidity: 53%

Test Date: Jun.15, 2022

Temperature: 21°C

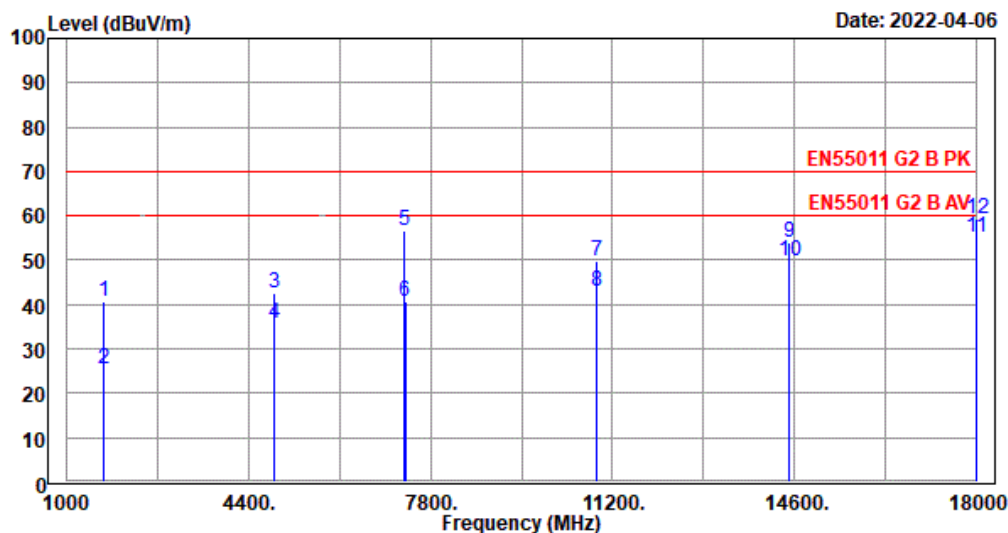
Humidity: 53%

Item	Test Module	Power Rating	Test Mode	Reference Test Data No.	
				Horizontal	Vertical
1	WIFI/LAN Kit	BAT 50Vdc/60A PV 200Vdc/15A	PV+BAT discharge to GRID	# 19	# 20
2		BAT 50Vdc/120A	AC charge to BAT	# 22	# 21
3		BAT 50Vdc/120A PV 200Vdc	PV charge to BAT	# 23	# 24
4		BAT 50Vdc/120A	BAT discharge to GRID	# 26	# 25
5		PV 200Vdc/30A	PV discharge to GRID	# 27	# 28
6		PV 200Vdc/30A	PV discharge to BACK-UP	# 29	# 30
7		BAT 50Vdc/120A	BAT discharge to BACK-UP	# 32	# 31
8		BAT 50Vdc/60A PV 200Vdc/15A	PV+BAT discharge to BACK-UP	# 33	# 34
9	WIFI Kit	BAT 50Vdc/60A PV 200Vdc/15A	PV+BAT discharge to GRID	# 6	# 5
10	4G Kit	BAT 50Vdc/60A PV 200Vdc/15A	PV+BAT discharge to GRID	# 18	# 17



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00019.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 200Vdc 15A
Test Mode : PV+BAT Discharge to Grid
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:19
Engineer : Zhaolin

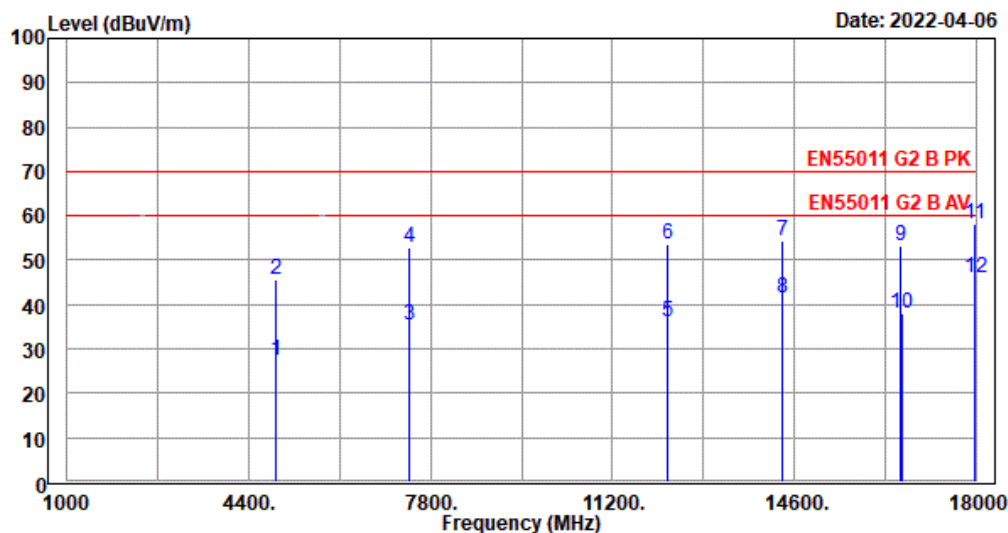
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
1714.000	26.06	2.29	47.99	35.70	40.64	70.00	29.36	Peak
1714.855	26.06	2.29	32.89	35.70	25.54	60.00	34.46	Average
4876.000	33.15	3.41	39.83	33.76	42.63	70.00	27.37	Peak
4877.525	33.16	3.41	32.89	33.76	35.70	60.00	24.30	Average
7324.000	36.65	4.77	48.79	33.56	56.65	70.00	13.35	Peak
7325.550	36.65	4.77	32.89	33.56	40.75	60.00	19.25	Average
0894.000	38.39	5.67	39.52	33.84	49.74	70.00	20.26	Peak
0895.900	38.39	5.67	32.90	33.84	43.12	60.00	16.88	Average
4498.000	42.50	6.86	37.11	32.45	54.02	70.00	15.98	Peak
4499.460	42.50	6.86	32.89	32.45	49.80	60.00	10.20	Average
7997.980	46.68	7.45	32.89	32.04	54.98	60.00	5.02	Average
8000.000	46.70	7.45	37.28	32.04	59.39	70.00	10.61	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00020.EMI



Site NO. : 10M Chamber
 Dis. / Ant. : 3115-593-2110
 Limit : EN55011 G2 B PK
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50V 60A PV 200Vdc 15A
 Test Mode : PV+BAT Discharge to Grid
 Memo : With WIFI Lan Kit

Ant. pol.: Vertical
 Engineer : Zhaolin
 Data NO.:20

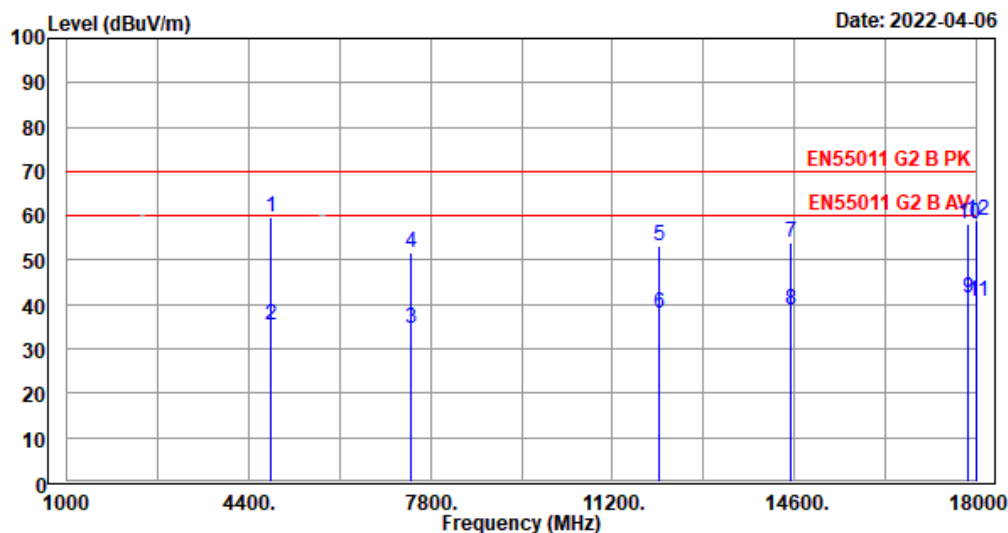
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4926.242	33.25	3.44	24.55	33.74	27.50	60.00	32.50	Average
4927.000	33.25	3.44	42.81	33.74	45.76	70.00	24.24	Peak
7391.498	36.62	4.79	27.54	33.60	35.35	60.00	24.65	Average
7392.000	36.62	4.79	45.06	33.60	52.87	70.00	17.13	Peak
2219.220	38.90	6.09	24.55	33.53	36.01	60.00	23.99	Average
2220.000	38.90	6.09	42.26	33.53	53.72	70.00	16.28	Peak
4379.000	42.36	6.86	37.69	32.35	54.56	70.00	15.44	Peak
4381.000	42.36	6.86	24.55	32.36	41.41	60.00	18.59	Average
6589.000	39.96	7.19	39.49	33.54	53.10	70.00	16.90	Peak
6591.740	39.97	7.19	24.55	33.54	38.17	60.00	21.83	Average
7949.000	46.19	7.44	36.69	32.12	58.20	70.00	11.80	Peak
7951.880	46.22	7.44	24.55	32.11	46.10	60.00	13.90	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00022.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A
Test Mode : AC Charge To BAT
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:22
Engineer : Zhaolin

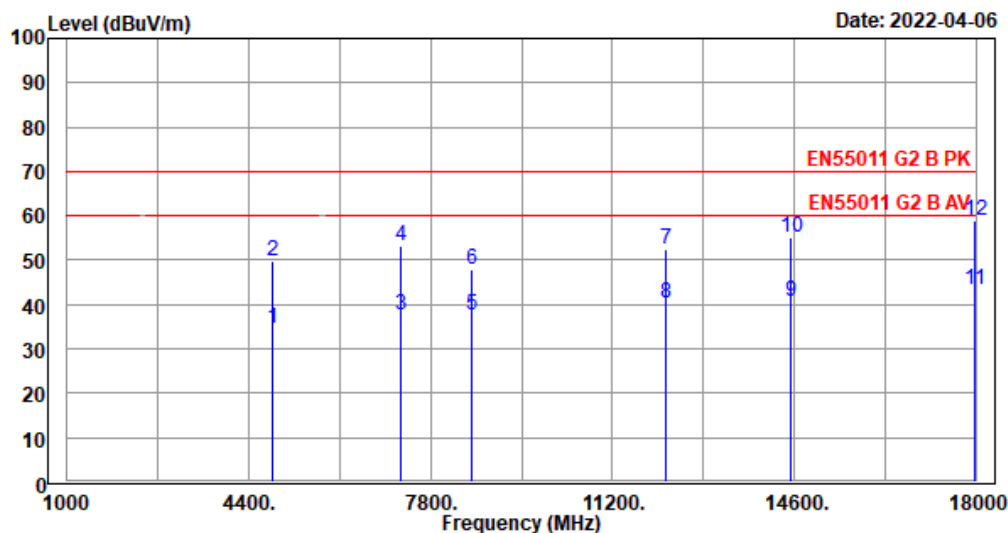
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4825.000	33.00	3.38	57.02	33.79	59.61	70.00	10.39	Peak
4826.822	33.01	3.38	32.78	33.79	35.38	60.00	24.62	Average
7442.881	36.60	4.80	26.77	33.63	34.54	60.00	25.46	Average
7443.000	36.60	4.80	43.81	33.63	51.58	70.00	18.42	Peak
2067.000	39.03	6.00	42.01	33.76	53.28	70.00	16.72	Peak
2069.090	39.03	6.00	26.78	33.76	38.05	60.00	21.95	Average
4515.000	42.50	6.87	37.09	32.47	53.99	70.00	16.01	Peak
4515.940	42.50	6.87	21.77	32.47	38.67	60.00	21.33	Average
7846.410	45.32	7.43	20.78	32.27	41.26	60.00	18.74	Average
7847.000	45.33	7.43	37.75	32.27	58.24	70.00	11.76	Peak
7998.900	46.69	7.45	18.77	32.04	40.87	60.00	19.13	Average
8000.000	46.70	7.45	36.81	32.04	58.92	70.00	11.08	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00021.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A
Test Mode : AC Charge To BAT
Memo : With WIFI Lan Kit

Ant. pol.: Vertical
Engineer : Zhaolin
Data NO.:21

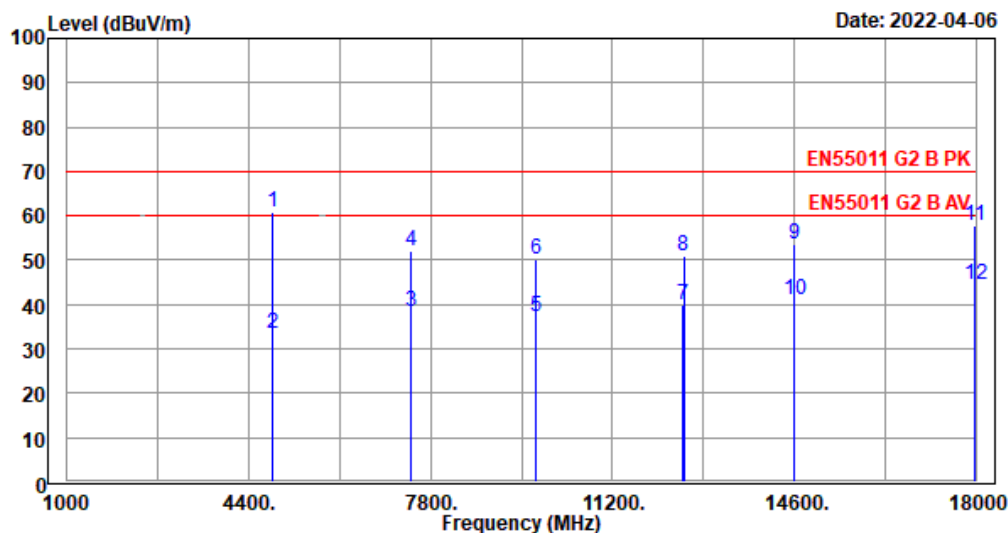
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4841.775	33.07	3.39	31.89	33.78	34.57	60.00	25.43	Average
4842.000	33.07	3.39	47.03	33.78	49.71	70.00	20.29	Peak
7237.549	36.33	4.74	29.89	33.51	37.45	60.00	22.55	Average
7239.000	36.33	4.74	45.78	33.51	53.34	70.00	16.66	Peak
8564.981	37.60	5.19	28.89	34.12	37.56	60.00	22.44	Average
8565.000	37.60	5.19	39.41	34.12	48.08	70.00	21.92	Peak
2186.000	38.91	6.07	41.08	33.58	52.48	70.00	17.52	Peak
2188.000	38.91	6.07	28.90	33.58	40.30	60.00	19.70	Average
4531.740	42.50	6.87	23.89	32.48	40.78	60.00	19.22	Average
4532.000	42.50	6.87	38.14	32.48	55.03	70.00	14.97	Peak
7948.740	46.19	7.44	21.89	32.12	43.40	60.00	16.60	Average
7949.000	46.19	7.44	37.45	32.12	58.96	70.00	11.04	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00023.EMI



Site NO. : 10M Chamber
 Dis. / Ant. : 3115-593-2110
 Limit : EN55011 G2 B PK
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50V 120A PV 200Vdc
 Test Mode : PV Charge To BAT
 Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:23
 Engineer : Zhaolin

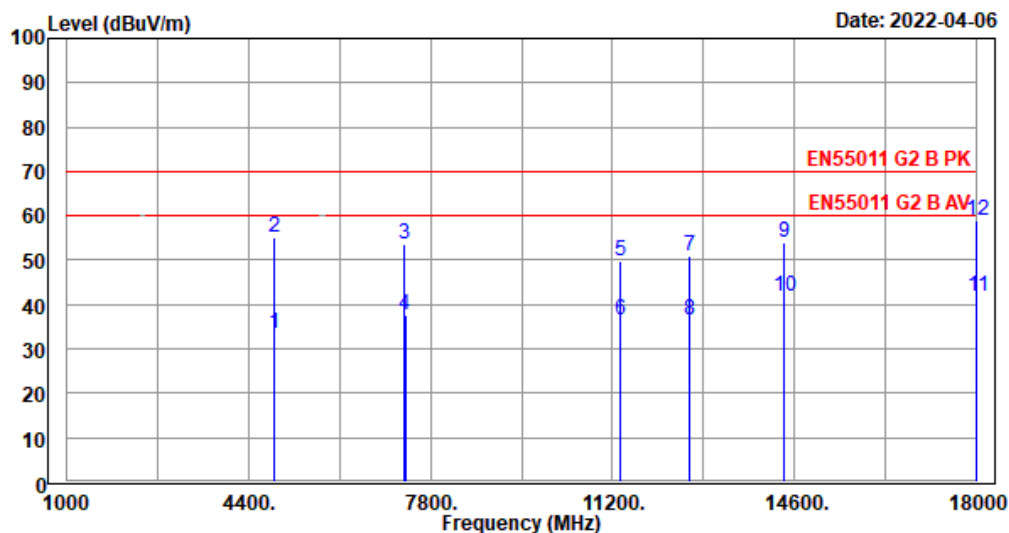
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4842.000	33.07	3.39	58.13	33.78	60.81	70.00	9.19	Peak
4843.981	33.08	3.39	30.74	33.78	33.43	60.00	26.57	Average
7442.995	36.60	4.80	30.74	33.63	38.51	60.00	21.49	Average
7443.000	36.60	4.80	44.34	33.63	52.11	70.00	17.89	Peak
9771.951	37.84	5.56	28.75	34.87	37.28	60.00	22.72	Average
9772.000	37.84	5.56	41.79	34.87	50.32	70.00	19.68	Peak
2525.450	39.03	6.28	27.74	33.08	39.97	60.00	20.03	Average
2526.000	39.03	6.28	38.71	33.08	50.94	70.00	19.06	Peak
4583.000	42.50	6.87	36.94	32.52	53.79	70.00	16.21	Peak
4584.440	42.50	6.87	24.41	32.53	41.25	60.00	18.75	Average
7966.000	46.36	7.45	36.15	32.09	57.87	70.00	12.13	Peak
7967.740	46.38	7.45	22.74	32.09	44.48	60.00	15.52	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00024.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A PV 200Vdc
Test Mode : PV Charge To BAT
Memo : With WIFI Lan Kit

Ant. pol.: Vertical
Engineer : Zhaolin
Data NO.:24

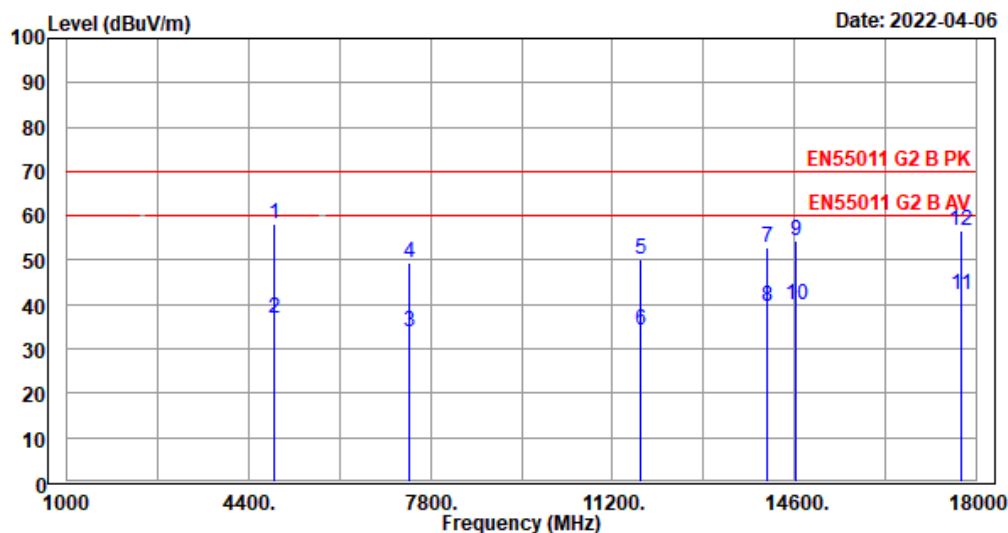
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4892.742	33.19	3.42	30.74	33.75	33.60	60.00	26.40	Average
4893.000	33.19	3.42	52.27	33.75	55.13	70.00	14.87	Peak
7324.000	36.65	4.77	45.57	33.56	53.43	70.00	16.57	Peak
7325.951	36.65	4.77	29.74	33.56	37.60	60.00	22.40	Average
1336.000	38.67	5.77	38.93	33.75	49.62	70.00	20.38	Peak
1337.850	38.68	5.77	25.74	33.75	36.44	60.00	23.56	Average
2628.000	39.27	6.34	38.17	32.92	50.86	70.00	19.14	Peak
2629.890	39.28	6.34	23.75	32.92	36.45	60.00	23.55	Average
4413.000	42.41	6.86	37.11	32.38	54.00	70.00	16.00	Peak
4414.880	42.41	6.86	24.75	32.38	41.64	60.00	18.36	Average
7999.130	46.69	7.45	19.74	32.04	41.84	60.00	18.16	Average
8000.000	46.70	7.45	36.84	32.04	58.95	70.00	11.05	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00026.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A
Test Mode : BAT Discharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:26
Engineer : Zhaolin

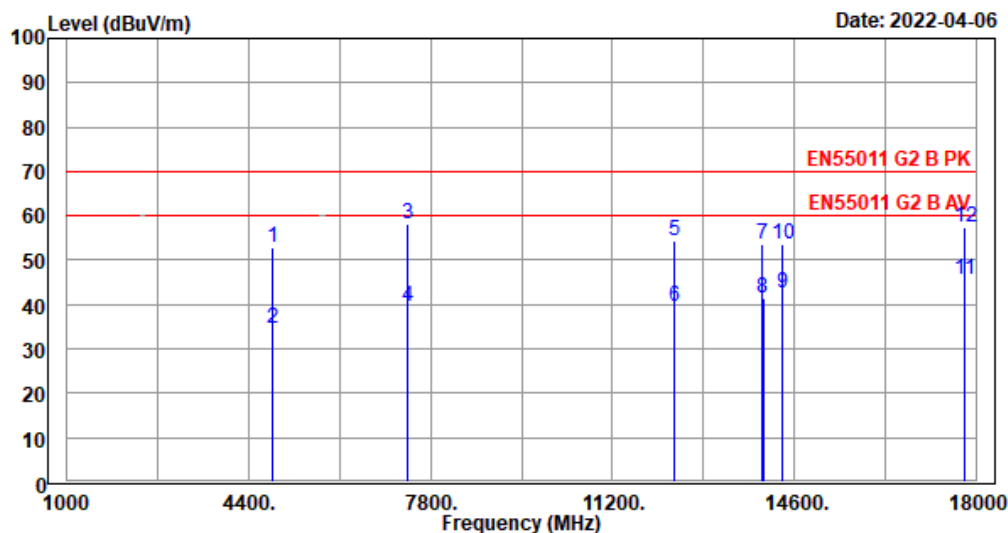
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4876.000	33.15	3.41	55.36	33.76	58.16	70.00	11.84	Peak
4877.522	33.16	3.41	33.98	33.76	36.79	60.00	23.21	Average
7408.816	36.60	4.79	25.98	33.61	33.76	60.00	26.24	Average
7409.000	36.60	4.79	41.75	33.61	49.53	70.00	20.47	Peak
1710.000	39.21	5.88	38.96	33.81	50.24	70.00	19.76	Peak
1711.880	39.21	5.88	22.98	33.81	34.26	60.00	25.74	Average
4090.000	41.98	6.84	36.02	32.11	52.73	70.00	17.27	Peak
4091.750	41.98	6.84	23.00	32.12	39.70	60.00	20.30	Average
4617.000	42.45	6.87	37.53	32.55	54.30	70.00	15.70	Peak
4618.890	42.44	6.87	22.98	32.55	39.74	60.00	20.26	Average
7693.980	44.35	7.41	22.98	32.50	42.24	60.00	17.76	Average
7694.000	44.35	7.41	37.49	32.50	56.75	70.00	13.25	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00025.EMI



Site NO. : 10M Chamber
 Dis. / Ant. : 3115-593-2110
 Limit : EN55011 G2 B PK
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50V 120A
 Test Mode : BAT Discharge To Grid
 Memo : With WIFI Lan Kit

Ant. pol.: Vertical
 Engineer : Zhaolin
 Data NO.:25

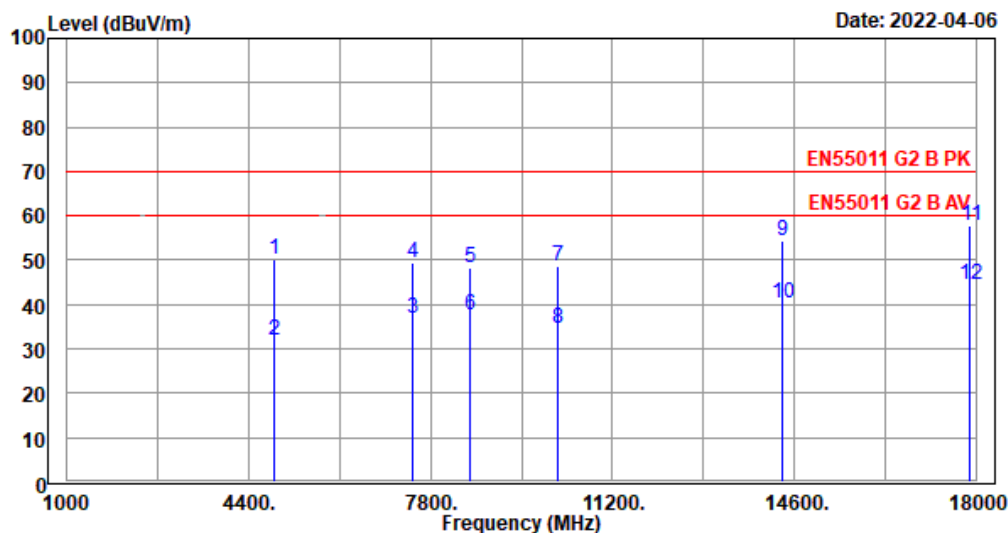
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4842.000	33.07	3.39	50.25	33.78	52.93	70.00	17.07	Peak
4843.984	33.08	3.39	31.78	33.78	34.47	60.00	25.53	Average
7375.000	36.65	4.78	50.19	33.59	58.03	70.00	11.97	Peak
7376.620	36.65	4.78	31.77	33.59	39.61	60.00	20.39	Average
2356.000	38.96	6.18	42.59	33.33	54.40	70.00	15.60	Peak
2357.550	38.96	6.18	27.77	33.33	39.58	60.00	20.42	Average
4005.000	41.81	6.84	36.88	32.04	53.49	70.00	16.51	Peak
4006.980	41.81	6.84	24.78	32.05	41.38	60.00	18.62	Average
4377.650	42.36	6.86	25.77	32.35	42.64	60.00	17.36	Average
4379.000	42.36	6.86	36.91	32.35	53.78	70.00	16.22	Peak
7761.890	44.77	7.42	25.78	32.40	45.57	60.00	14.43	Average
7762.000	44.77	7.42	37.57	32.40	57.36	70.00	12.64	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00027.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 200Vdc 30A
Test Mode : PV Discharge To Grid
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:27
Engineer : Zhaolin

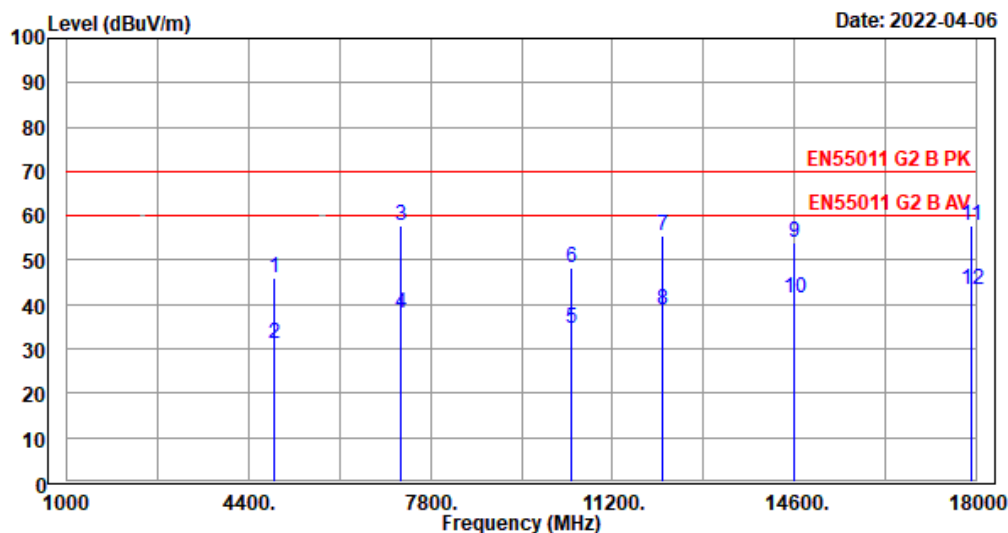
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4876.000	33.15	3.41	47.41	33.76	50.21	70.00	19.79	Peak
4877.951	33.16	3.41	29.19	33.76	32.00	60.00	28.00	Average
7459.569	36.62	4.80	29.19	33.64	36.97	60.00	23.03	Average
7460.000	36.62	4.80	41.71	33.65	49.48	70.00	20.52	Peak
8531.000	37.56	5.17	39.68	34.11	48.30	70.00	21.70	Peak
8532.955	37.57	5.17	29.19	34.11	37.82	60.00	22.18	Average
0180.000	38.26	5.63	39.50	34.82	48.57	70.00	21.43	Peak
0181.720	38.26	5.63	25.55	34.81	34.63	60.00	25.37	Average
4379.000	42.36	6.86	37.58	32.35	54.45	70.00	15.55	Peak
4380.220	42.36	6.86	23.55	32.36	40.41	60.00	19.59	Average
7881.000	45.57	7.43	36.88	32.22	57.66	70.00	12.34	Peak
7882.600	45.58	7.43	23.78	32.22	44.57	60.00	15.43	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00028.EMI



Site NO. : 10M Chamber
 Dis. / Ant. : 3115-593-2110
 Limit : EN55011 G2 B PK
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV 200Vdc 30A
 Test Mode : PV Discharge To Grid
 Memo : With WIFI Lan Kit

Ant. pol.: Vertical
 Engineer : Zhaolin
 Data NO.:28

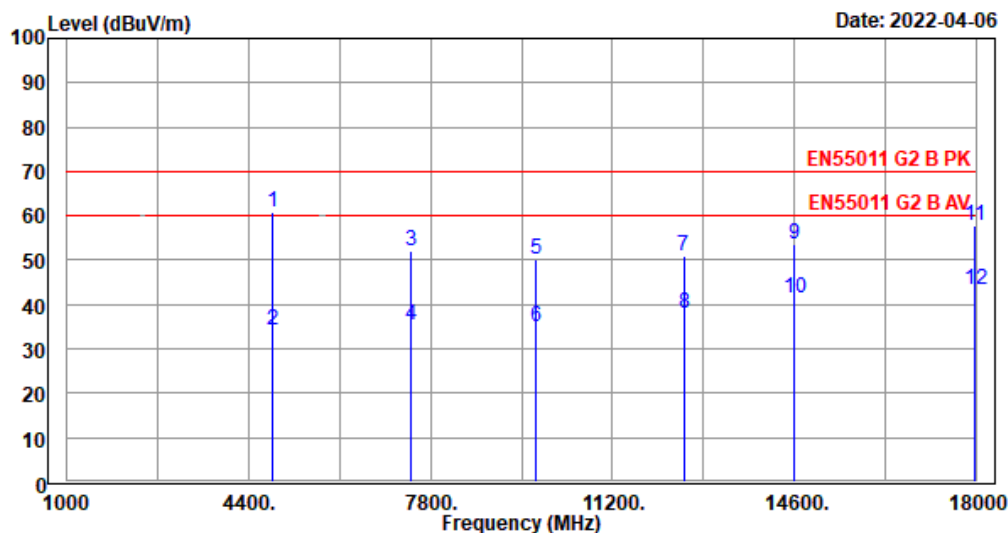
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4893.000	33.19	3.42	43.05	33.75	45.91	70.00	24.09	Peak
4893.599	33.19	3.42	28.49	33.75	31.35	60.00	28.65	Average
7239.000	36.33	4.74	50.17	33.51	57.73	70.00	12.27	Peak
7240.955	36.35	4.75	30.49	33.51	38.08	60.00	21.92	Average
0433.960	38.00	5.65	25.49	34.47	34.67	60.00	25.33	Average
0435.000	38.00	5.65	39.27	34.47	48.45	70.00	21.55	Peak
2135.000	38.97	6.04	44.05	33.66	55.40	70.00	14.60	Peak
2136.820	38.96	6.04	27.51	33.66	38.85	60.00	21.15	Average
4583.000	42.50	6.87	37.26	32.52	54.11	70.00	15.89	Peak
4584.510	42.50	6.87	24.50	32.53	41.34	60.00	18.66	Average
7898.000	45.69	7.44	36.76	32.19	57.70	70.00	12.30	Peak
7898.720	45.69	7.44	22.49	32.19	43.43	60.00	16.57	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00029.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : PV 200Vdc 30A
Test Mode : PV Discharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:29
Engineer : Zhaolin

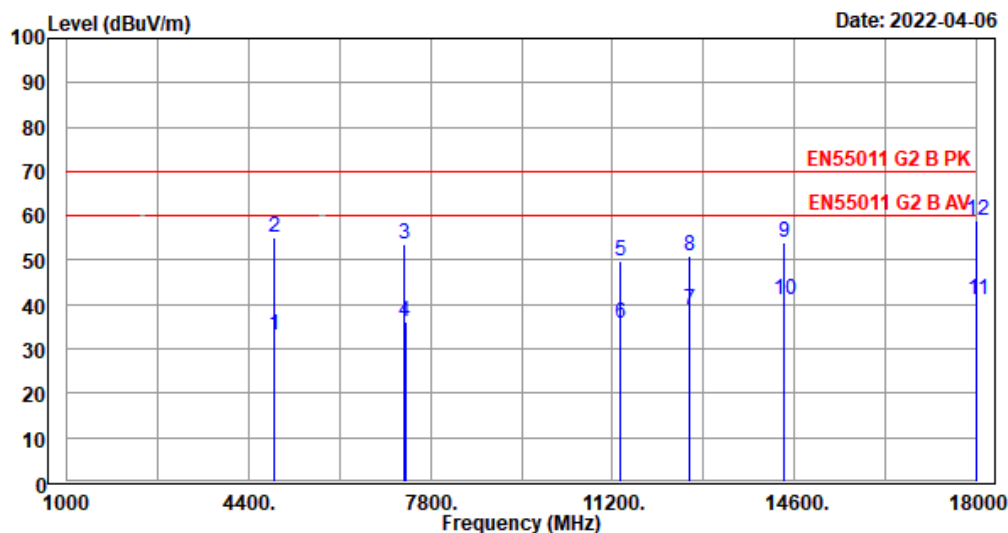
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4842.000	33.07	3.39	58.13	33.78	60.81	70.00	9.19	Peak
4842.795	33.07	3.39	31.60	33.78	34.28	60.00	25.72	Average
7443.000	36.60	4.80	44.34	33.63	52.11	70.00	17.89	Peak
7443.984	36.60	4.80	27.60	33.64	35.36	60.00	24.64	Average
9772.000	37.84	5.56	41.79	34.87	50.32	70.00	19.68	Peak
9773.891	37.85	5.56	26.60	34.87	35.14	60.00	24.86	Average
2526.000	39.03	6.28	38.71	33.08	50.94	70.00	19.06	Peak
2527.810	39.03	6.28	25.59	33.07	37.83	60.00	22.17	Average
4583.000	42.50	6.87	36.94	32.52	53.79	70.00	16.21	Peak
4583.960	42.50	6.87	24.59	32.52	41.44	60.00	18.56	Average
7966.000	46.36	7.45	36.15	32.09	57.87	70.00	12.13	Peak
7967.210	46.37	7.45	21.60	32.09	43.33	60.00	16.67	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00030.EMI



Site NO. : 10M Chamber
 Dis. / Ant. : 3115-593-2110
 Limit : EN55011 G2 B PK
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : PV 200Vdc 30A
 Test Mode : PV Discharge Back-UP
 Memo : With WIFI Lan Kit

Ant. pol.: Vertical
 Engineer : Zhaolin
 Data NO.:30

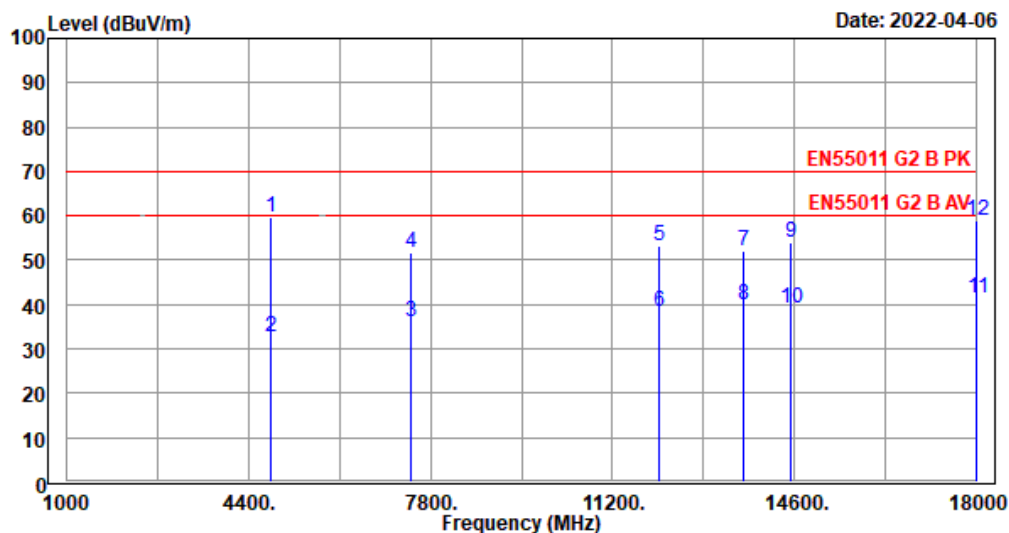
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4892.731	33.19	3.42	30.10	33.75	32.96	60.00	27.04	Average
4893.000	33.19	3.42	52.27	33.75	55.13	70.00	14.87	Peak
7324.000	36.65	4.77	45.57	33.56	53.43	70.00	16.57	Peak
7325.908	36.65	4.77	28.11	33.56	35.97	60.00	24.03	Average
1336.000	38.67	5.77	38.93	33.75	49.62	70.00	20.38	Peak
1337.490	38.67	5.77	25.11	33.75	35.80	60.00	24.20	Average
2627.870	39.27	6.34	26.10	32.92	38.79	60.00	21.21	Average
2628.000	39.27	6.34	38.17	32.92	50.86	70.00	19.14	Peak
4413.000	42.41	6.86	37.11	32.38	54.00	70.00	16.00	Peak
4414.440	42.41	6.86	24.11	32.38	41.00	60.00	19.00	Average
7999.050	46.69	7.45	19.11	32.04	41.21	60.00	18.79	Average
8000.000	46.70	7.45	36.84	32.04	58.95	70.00	11.05	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00032.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A
Test Mode : BAT Discharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:32
Engineer : Zhaolin

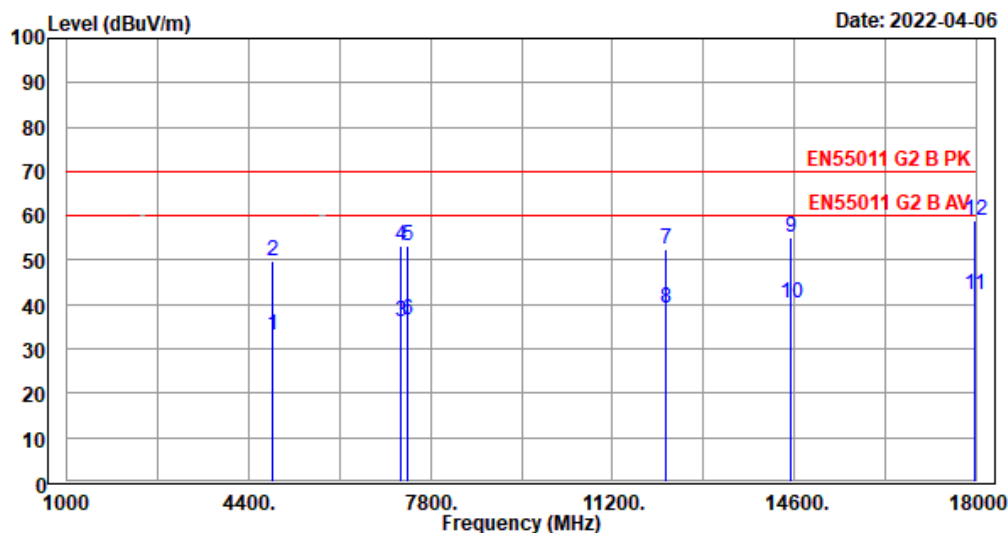
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4825.000	33.00	3.38	57.02	33.79	59.61	70.00	10.39	Peak
4826.898	33.01	3.38	30.25	33.79	32.85	60.00	27.15	Average
7442.818	36.60	4.80	28.24	33.63	36.01	60.00	23.99	Average
7443.000	36.60	4.80	43.81	33.63	51.58	70.00	18.42	Peak
2067.000	39.03	6.00	42.01	33.76	53.28	70.00	16.72	Peak
2069.870	39.03	6.00	27.26	33.76	38.53	60.00	21.47	Average
3648.000	40.90	6.74	36.43	32.16	51.91	70.00	18.09	Peak
3649.250	40.90	6.75	24.25	32.16	39.74	60.00	20.26	Average
4515.000	42.50	6.87	37.09	32.47	53.99	70.00	16.01	Peak
4516.180	42.50	6.87	22.25	32.47	39.15	60.00	20.85	Average
7998.360	46.68	7.45	19.25	32.04	41.34	60.00	18.66	Average
8000.000	46.70	7.45	36.81	32.04	58.92	70.00	11.08	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00031.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 120A
Test Mode : BAT Discharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Vertical
Engineer : Zhaolin
Data NO.:31

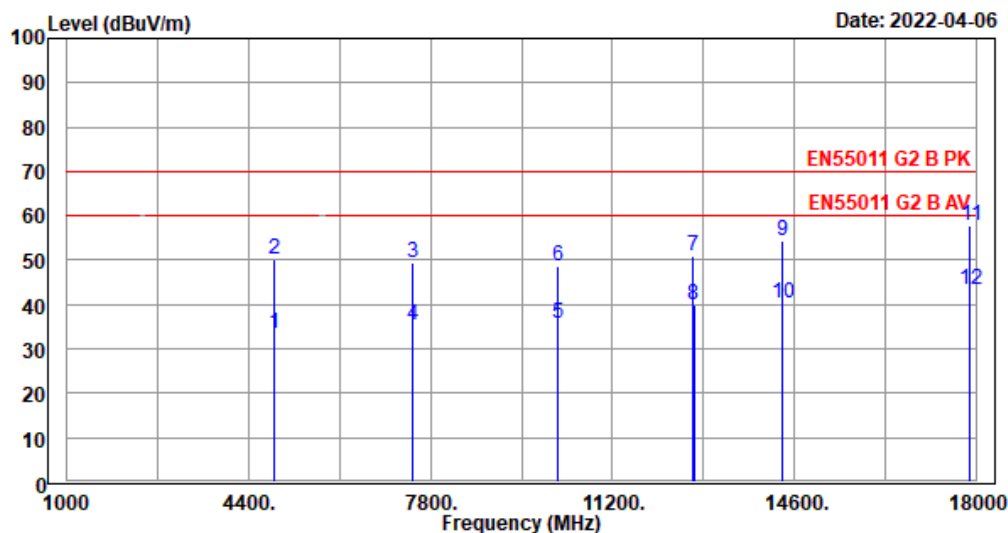
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4841.509	33.07	3.39	30.57	33.78	33.25	60.00	26.75	Average
4842.000	33.07	3.39	47.03	33.78	49.71	70.00	20.29	Peak
7238.744	36.33	4.74	28.58	33.51	36.14	60.00	23.86	Average
7239.000	36.33	4.74	45.78	33.51	53.34	70.00	16.66	Peak
7375.000	36.65	4.78	45.36	33.59	53.20	70.00	16.80	Peak
7376.859	36.65	4.78	28.56	33.59	36.40	60.00	23.60	Average
2186.000	38.91	6.07	41.08	33.58	52.48	70.00	17.52	Peak
2186.420	38.91	6.07	27.57	33.58	38.97	60.00	21.03	Average
4532.000	42.50	6.87	38.14	32.48	55.03	70.00	14.97	Peak
4533.090	42.50	6.87	23.56	32.48	40.45	60.00	19.55	Average
7948.880	46.19	7.44	20.57	32.12	42.08	60.00	17.92	Average
7949.000	46.19	7.44	37.45	32.12	58.96	70.00	11.04	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00033.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 200Vdc 15A
Test Mode : PV+BAT Discharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Horizontal Data NO.:33
Engineer : Zhaolin

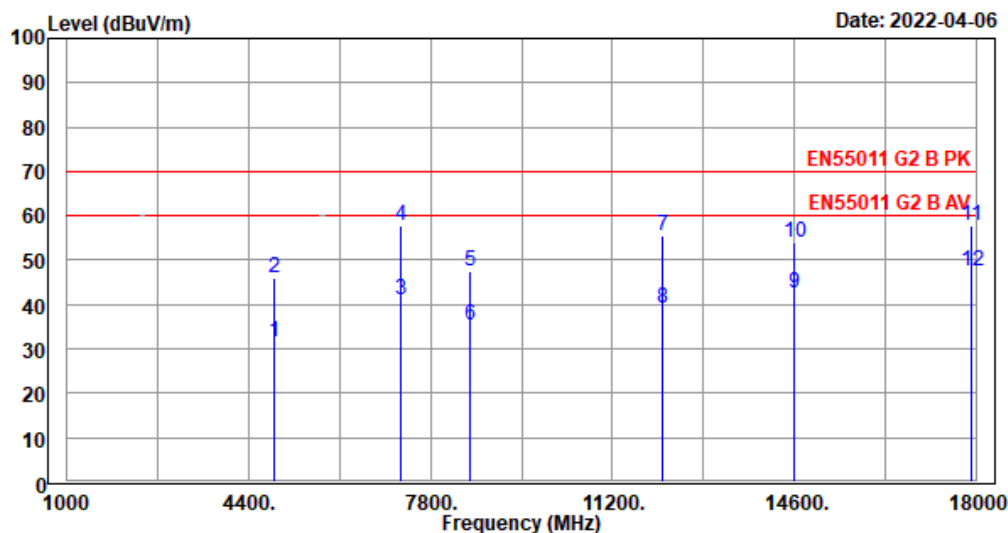
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4875.995	33.15	3.41	30.59	33.76	33.39	60.00	26.61	Average
4876.000	33.15	3.41	47.41	33.76	50.21	70.00	19.79	Peak
7460.000	36.62	4.80	41.71	33.65	49.48	70.00	20.52	Peak
7461.951	36.62	4.80	27.60	33.65	35.37	60.00	24.63	Average
0179.290	38.26	5.63	26.59	34.82	35.66	60.00	24.34	Average
0180.000	38.26	5.63	39.50	34.82	48.57	70.00	21.43	Peak
2713.000	39.66	6.39	37.82	32.80	51.07	70.00	18.93	Peak
2714.690	39.66	6.40	26.59	32.80	39.85	60.00	20.15	Average
4379.000	42.36	6.86	37.58	32.35	54.45	70.00	15.55	Peak
4381.220	42.36	6.86	23.60	32.36	40.46	60.00	19.54	Average
7881.000	45.57	7.43	36.88	32.22	57.66	70.00	12.34	Peak
7882.880	45.58	7.43	22.60	32.22	43.39	60.00	16.61	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00034.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 200Vdc 15A
Test Mode : PV+BAT Discharge Back-UP
Memo : With WIFI Lan Kit

Ant. pol.: Vertical
Engineer : Zhaolin
Data NO.:34

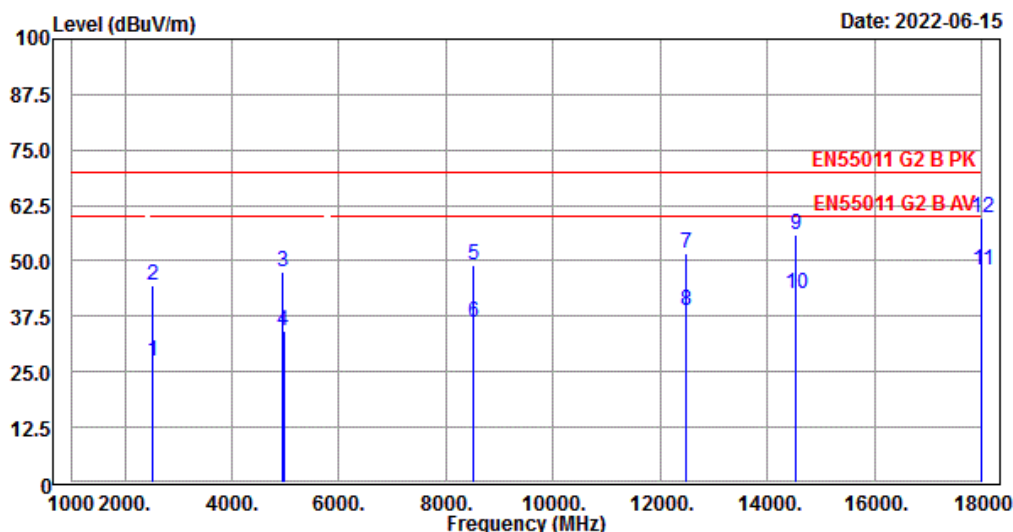
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4892.764	33.19	3.42	28.67	33.75	31.53	60.00	28.47	Average
4893.000	33.19	3.42	43.05	33.75	45.91	70.00	24.09	Peak
7237.597	36.33	4.74	33.68	33.51	41.24	60.00	18.76	Average
7239.000	36.33	4.74	50.17	33.51	57.73	70.00	12.27	Peak
8531.000	37.56	5.17	39.02	34.11	47.64	70.00	22.36	Peak
8532.757	37.57	5.17	26.68	34.11	35.31	60.00	24.69	Average
2135.000	38.97	6.04	44.05	33.66	55.40	70.00	14.60	Peak
2136.810	38.96	6.04	27.69	33.66	39.03	60.00	20.97	Average
4582.370	42.50	6.87	25.68	32.52	42.53	60.00	17.47	Average
4583.000	42.50	6.87	37.26	32.52	54.11	70.00	15.89	Peak
7898.000	45.69	7.44	36.76	32.19	57.70	70.00	12.30	Peak
7899.660	45.70	7.44	26.68	32.19	47.63	60.00	12.37	Average

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: E:\Test DATA\2022\Report\04\C1W2204002\C1W2204002_00006.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 21°C±53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V/60A,PV 200V/15A
Test Mode : PV+BAT Discharge to GRID
Memo : Wifi Kit

Ant. pol.: Horizontal Data NO.:6
Engineer : Zhaolin

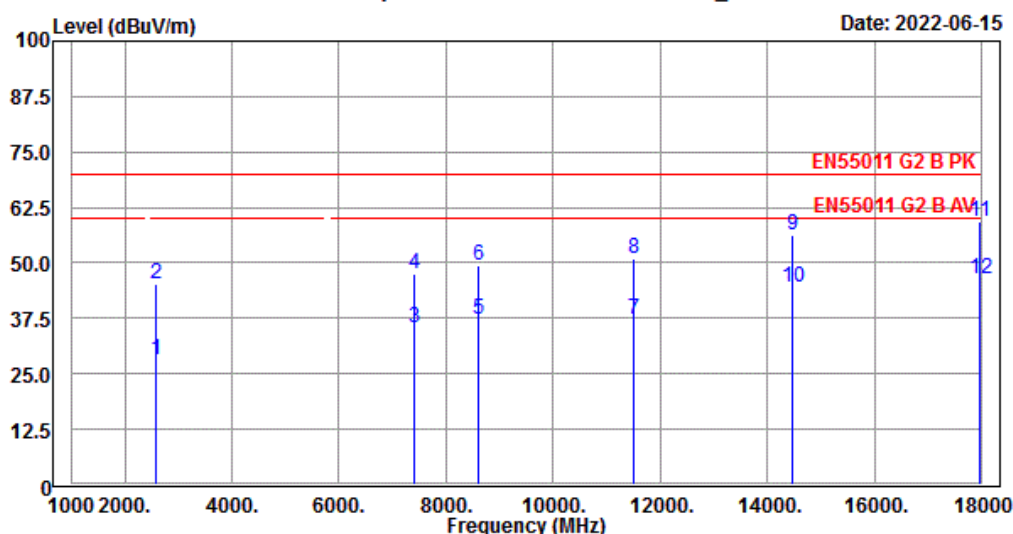
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
2522.446	28.54	2.62	31.34	35.09	27.41	60.00	32.59	Average
2530.000	28.56	2.63	48.39	35.09	44.49	70.00	25.51	Peak
4961.000	33.28	3.46	44.51	33.72	47.53	70.00	22.47	Peak
4962.813	33.27	3.46	31.30	33.72	34.31	60.00	25.69	Average
8497.000	37.49	5.16	40.61	34.10	49.16	70.00	20.84	Peak
8498.843	37.50	5.16	27.51	34.10	36.07	60.00	23.93	Average
12475.000	39.00	6.25	39.76	33.15	51.86	70.00	18.14	Peak
12476.250	39.00	6.25	26.83	33.15	38.93	60.00	21.07	Average
14532.000	42.50	6.87	38.96	32.48	55.85	70.00	14.15	Peak
14533.250	42.50	6.87	25.67	32.48	42.56	60.00	17.44	Average
17999.170	46.69	7.45	25.85	32.04	47.95	60.00	12.05	Average
18000.000	46.70	7.45	37.61	32.04	59.72	70.00	10.28	Peak

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: E:\Test DATA\2022\Report\04\C1W2204002\C1W2204002_00005.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 21°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V/60A,PV 200V/15A
Test Mode : PV+BAT Discharge to GRID
Memo : Wifi Kit

Ant. pol.: Vertical Data NO.:5
Engineer : Zhaolin

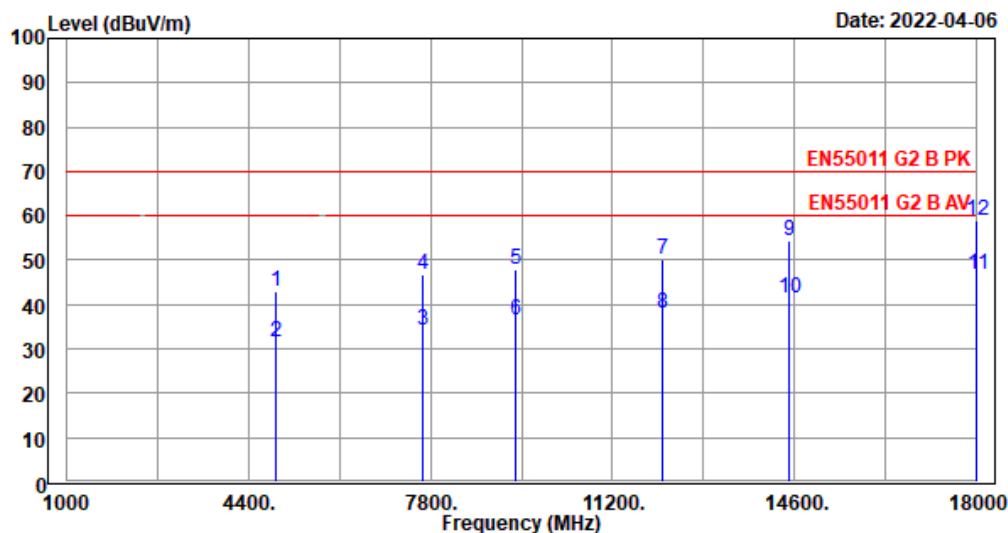
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
2572.264	28.73	2.63	31.65	35.04	27.97	60.00	32.03	Average
2581.000	28.79	2.64	48.95	35.03	45.35	70.00	24.65	Peak
7391.841	36.62	4.79	27.74	33.60	35.55	60.00	24.45	Average
7392.000	36.62	4.79	39.72	33.60	47.53	70.00	22.47	Peak
8598.232	37.60	5.20	28.65	34.12	37.33	60.00	22.67	Average
8599.000	37.60	5.20	40.60	34.12	49.28	70.00	20.72	Peak
11505.960	39.00	5.82	26.37	33.78	37.41	60.00	22.59	Average
11506.000	39.00	5.82	39.77	33.78	50.81	70.00	19.19	Peak
14464.000	42.46	6.86	39.23	32.43	56.12	70.00	13.88	Peak
14465.370	42.47	6.86	27.59	32.43	44.49	60.00	15.51	Average
17949.000	46.19	7.44	37.75	32.12	59.26	70.00	10.74	Peak
17950.170	46.20	7.44	24.98	32.11	46.51	60.00	13.49	Average

Remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00018.EMI



Site NO. : 10M Chamber
Dis. / Ant. : 3115-593-2110
Limit : EN55011 G2 B PK
Env. / Ins. : 23.9°C&53% /ESCI
EUT : Hybrid Inverter
M/N : GW6000-ES-20
Power Rating : BAT 50V 60A PV 200Vdc 15A
Test Mode : PV+BAT Discharge to Grid
Memo : With 4G Kit

Ant. pol.: Horizontal Data NO.:18
Engineer : Zhaolin

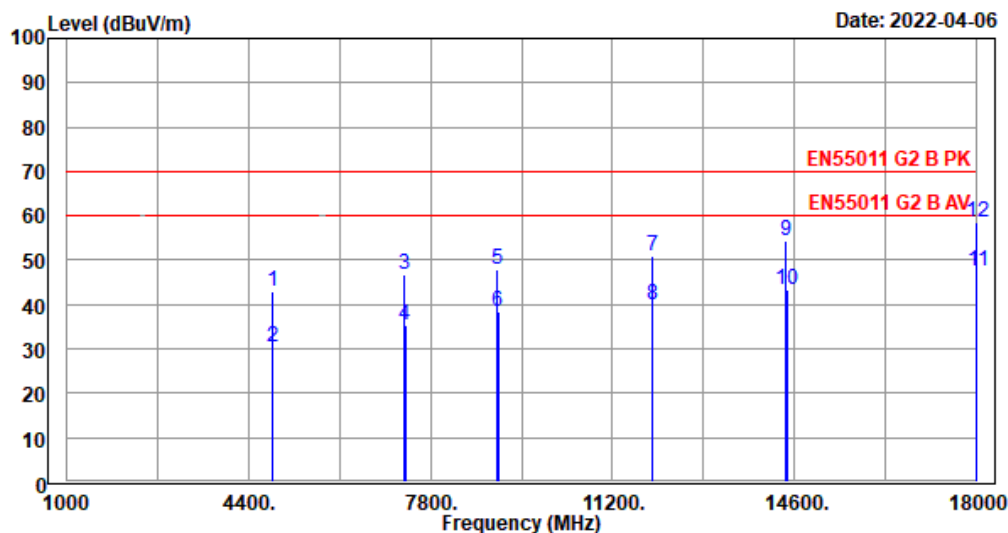
Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4927.000	33.25	3.44	40.10	33.74	43.05	70.00	26.95	Peak
4928.250	33.26	3.44	28.59	33.74	31.55	60.00	28.45	Average
7663.742	36.50	4.86	26.59	33.77	34.18	60.00	25.82	Average
7664.000	36.50	4.86	39.25	33.77	46.84	70.00	23.16	Peak
9381.000	37.92	5.47	39.17	34.54	48.02	70.00	21.98	Peak
9382.771	37.93	5.47	27.59	34.54	36.45	60.00	23.55	Average
2135.000	38.97	6.04	38.80	33.66	50.15	70.00	19.85	Peak
2136.600	38.96	6.04	26.60	33.66	37.94	60.00	22.06	Average
4498.000	42.50	6.86	37.49	32.45	54.40	70.00	15.60	Peak
4499.240	42.50	6.86	24.59	32.45	41.50	60.00	18.50	Average
7999.950	46.70	7.45	24.59	32.04	46.70	60.00	13.30	Average
8000.000	46.70	7.45	36.71	32.04	58.82	70.00	11.18	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor



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File: F:\TEST DATA\2022\report\C1W2204002\C1W2204002_00017.EMI



Site NO. : 10M Chamber
 Dis. / Ant. : 3115-593-2110
 Limit : EN55011 G2 B PK
 Env. / Ins. : 23.9°C&53% /ESCI
 EUT : Hybrid Inverter
 M/N : GW6000-ES-20
 Power Rating : BAT 50V 60A PV 200Vdc 15A
 Test Mode : PV+BAT Discharge to Grid
 Memo : With 4G Kit

Ant. pol.: Vertical
 Engineer : Zhaolin

Data NO.:17

Freq. MHz	Ant. Factor dB/m	Cable Loss dB	Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limits dBuV/m	Margin dB	Remark
4859.000	33.12	3.40	40.26	33.77	43.01	70.00	26.99	Peak
4860.719	33.12	3.40	27.55	33.77	30.30	60.00	29.70	Average
7324.000	36.65	4.77	38.88	33.56	46.74	70.00	23.26	Peak
7325.891	36.65	4.77	27.55	33.56	35.41	60.00	24.59	Average
9058.000	37.80	5.38	38.97	34.27	47.88	70.00	22.12	Peak
9059.498	37.80	5.38	29.55	34.27	38.46	60.00	21.54	Average
1948.000	39.20	5.95	39.60	33.85	50.90	70.00	19.10	Peak
1949.770	39.20	5.95	28.54	33.85	39.84	60.00	20.16	Average
4447.000	42.45	6.86	37.63	32.41	54.53	70.00	15.47	Peak
4448.870	42.45	6.86	26.55	32.41	43.45	60.00	16.55	Average
7998.530	46.69	7.45	25.54	32.04	47.64	60.00	12.36	Average
8000.000	46.70	7.45	36.29	32.04	58.40	70.00	11.60	Peak

remarks:Emission Level = Antenna factor+Cable loss+Reading-Preamp Factor

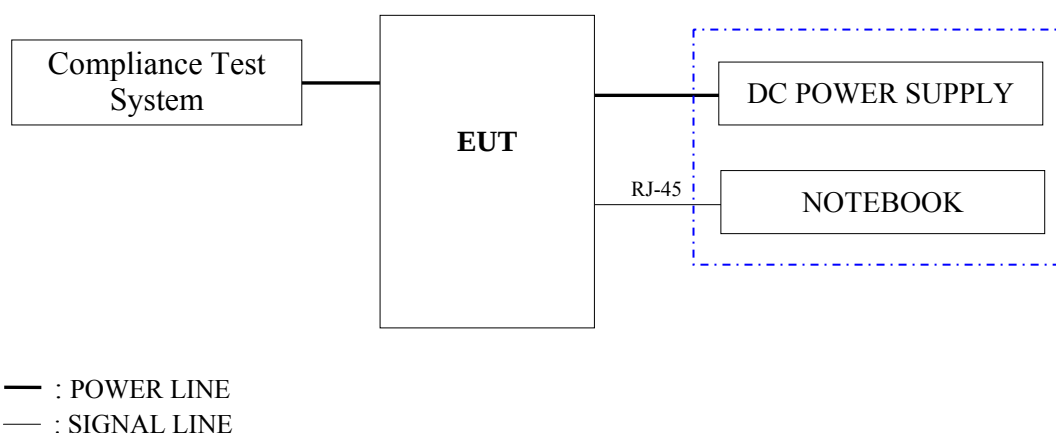
6 POWER HARMONICS AND FLICKER MEASUREMENT

6.1 Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	AC power source	TESEQ	NSG1007-45	1236A00705	2022-03-01	1 Year
2.	Signal Conditioning Unit	TESEQ	CCN1000-3/I NA2197	1236A00705	2022-03-01	1 Year
3.	Three phase Impedance Network	DUFEI	INA2196	1302018	NCR	NCR

NCR: Non-Calibration Requirement

6.2 Block Diagram of Test Setup



6.3 Test Standard

EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A1:2019
 EN 61000-3-12:2011+AC:2013, EN IEC 61000-3-11:2019

6.4 Test Procedure

The measuring process is according to EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A1:2019 and EN 61000-3-12:2011+AC:2013, EN IEC 61000-3-11:2019 and laboratory internal procedure TKC-301-011&-012.

6.5 Test Results

PASSED.

EUT with the following test modes were measured during this section testing and all the test results are listed in next page.

Item	Test Model	Test Condition
1	GW3000-ES-20	Full Load
2	GW6000-ES-20	

Ametek CTS
Reinach, Switzerland

Harmonics – Class-A per Ed. 5.0 (2018)(Run time)

EUT: Hybrid Inverter

Test category: Class-A per Ed. 5.0 (2018) (European limits)

Test date: 2022/4/8

Start time: 16:51:10

Test duration (min): 5

Data file name: WIN2105_H-000049.cts_data

Comment: MN:GW3000-ES-20 Test Mode:Full load

Customer: GoodWe Technologies Co.,Ltd.

Tested by: Jinsiqi

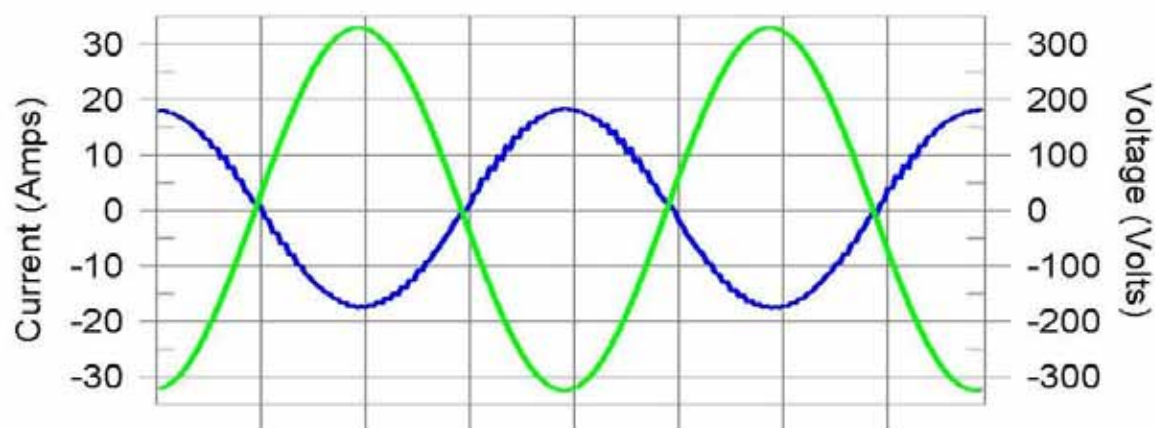
Test Margin: 100

End time: 16:56:22

Test Result: Pass

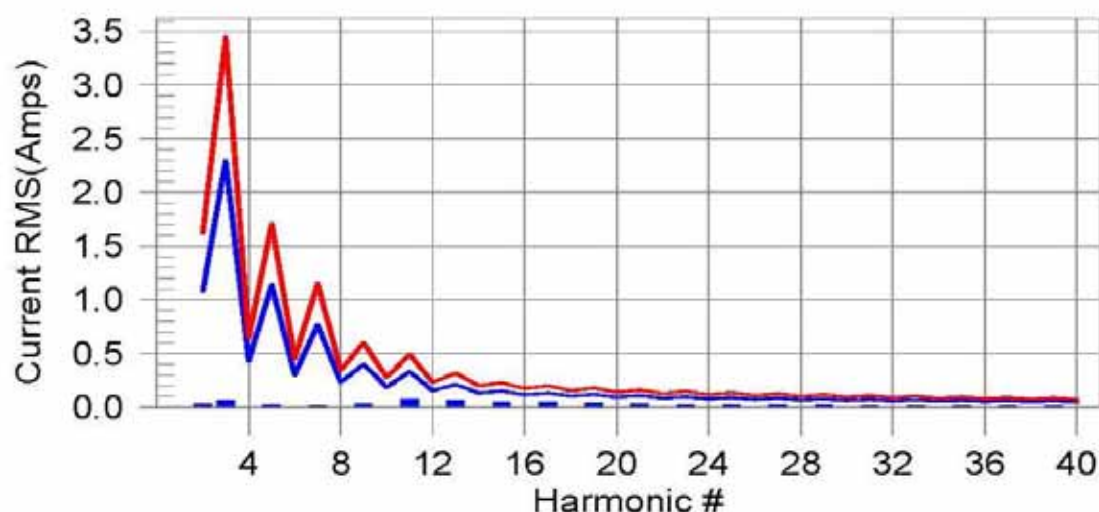
Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass Worst harmonics H15-22.8% of 150% limit, H15-33.4% of 100% limit.

Ametek CTS
Reinach, Switzerland

Current Test Result Summary (Run time)

EUT: Hybrid Inverter
Test category: Class-A per Ed. 5.0 (2018) (European limits)
Test date: 2022/4/8 Start time: 16:51:10
Test duration (min): 5 Data file name: WIN2105_H-000049.cts_data
Comment: MN:GW3000-ES-20 Test Mode:Full load
Customer: GoodWe Technologies Co.,Ltd.

Tested by: Jinsiqi
Test Margin: 100
End time: 16:56:22

Test Result: Pass Source qualification: Normal
THC(A): 0.157 I-THD(%): 1.3 POHC(A): 0.057 POHC Limit(A): 0.251

Highest parameter values during test:

V_RMS (Volts): 231.106
I_Peak (Amps): 18.552
I_Fund (Amps): 12.491
Power (Watts): -2880.0
Frequency(Hz): 50.00
I_RMS (Amps): 12.515
Crest Factor: 1.483
Power Factor: -0.997

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.024	1.080	2.2	0.031	1.620	1.9	Pass
3	0.063	2.300	2.7	0.070	3.450	2.0	Pass
4	0.005	0.430	N/A	0.007	0.645	N/A	Pass
5	0.022	1.140	1.9	0.024	1.710	1.4	Pass
6	0.006	0.300	N/A	0.007	0.450	N/A	Pass
7	0.015	0.770	2.0	0.018	1.155	1.5	Pass
8	0.005	0.230	N/A	0.006	0.345	N/A	Pass
9	0.027	0.400	6.8	0.029	0.600	4.8	Pass
10	0.005	0.184	N/A	0.007	0.276	N/A	Pass
11	0.077	0.330	23.3	0.078	0.495	15.8	Pass
12	0.004	0.153	N/A	0.005	0.230	N/A	Pass
13	0.063	0.210	30.1	0.064	0.315	20.4	Pass
14	0.004	0.131	N/A	0.005	0.197	N/A	Pass
15	0.050	0.150	33.4	0.051	0.225	22.8	Pass
16	0.002	0.115	N/A	0.003	0.173	N/A	Pass
17	0.042	0.132	32.0	0.043	0.198	21.8	Pass
18	0.002	0.102	N/A	0.003	0.153	N/A	Pass
19	0.033	0.118	28.1	0.034	0.178	19.2	Pass
20	0.002	0.092	N/A	0.003	0.138	N/A	Pass
21	0.030	0.107	28.1	0.031	0.161	19.3	Pass
22	0.001	0.084	N/A	0.002	0.125	N/A	Pass
23	0.024	0.098	24.4	0.025	0.147	16.7	Pass
24	0.001	0.077	N/A	0.002	0.115	N/A	Pass
25	0.022	0.090	23.9	0.022	0.135	16.6	Pass
26	0.003	0.071	N/A	0.004	0.107	N/A	Pass
27	0.019	0.083	22.3	0.019	0.125	15.4	Pass
28	0.003	0.066	N/A	0.004	0.099	N/A	Pass
29	0.017	0.078	22.3	0.018	0.116	15.8	Pass
30	0.003	0.061	N/A	0.005	0.092	N/A	Pass
31	0.014	0.073	18.7	0.015	0.109	13.4	Pass
32	0.004	0.058	N/A	0.006	0.086	N/A	Pass
33	0.013	0.068	19.2	0.014	0.102	14.1	Pass
34	0.004	0.054	N/A	0.006	0.081	N/A	Pass
35	0.011	0.064	17.0	0.013	0.096	13.0	Pass
36	0.004	0.051	N/A	0.005	0.077	N/A	Pass
37	0.011	0.061	17.6	0.013	0.091	14.1	Pass
38	0.005	0.048	N/A	0.006	0.073	N/A	Pass
39	0.009	0.058	15.3	0.010	0.087	11.9	Pass
40	0.004	0.046	N/A	0.005	0.069	N/A	Pass

Ametek CTS
Reinach, Switzerland

Voltage Source Verification Data (Run time)

EUT: Hybrid Inverter
Test category: Class-A per Ed. 5.0 (2018) (European limits)
Test date: 2022/4/8 Start time: 16:51:10 End time: 16:56:22
Test duration (min): 5 Data file name: WIN2105_H-000049.cts_data
Comment: MN:GW3000-ES-20 Test Mode:Full load
Customer: GoodWe Technologies Co.,Ltd.

Test Result: Pass Source qualification: Normal
Measured source distortion is within the requirements of the standards
Measurements are compliant with IEC/EN61000-3-2 Ed. 5 & IEC/EN61000-4-7 Ed. 2.1

Highest parameter values during test:

Voltage (Vrms):	231.106	Frequency(Hz):	50.00
I_Peak (Amps):	18.552	I_RMS (Amps):	12.515
I_Fund (Amps):	12.491	Crest Factor:	1.483
Power (Watts):	-2880.0	Power Factor:	-0.997

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.104	0.462	22.51	OK
3	0.131	2.080	6.31	OK
4	0.039	0.462	8.45	OK
5	0.059	0.924	6.34	OK
6	0.014	0.462	3.11	OK
7	0.054	0.693	7.86	OK
8	0.017	0.462	3.67	OK
9	0.068	0.462	14.71	OK
10	0.016	0.462	3.50	OK
11	0.097	0.231	42.14	OK
12	0.018	0.231	7.70	OK
13	0.086	0.231	37.04	OK
14	0.021	0.231	8.97	OK
15	0.074	0.231	31.90	OK
16	0.017	0.231	7.14	OK
17	0.061	0.231	26.49	OK
18	0.014	0.231	6.26	OK
19	0.054	0.231	23.44	OK
20	0.018	0.231	7.62	OK
21	0.055	0.231	23.81	OK
22	0.009	0.231	3.96	OK
23	0.045	0.231	19.39	OK
24	0.010	0.231	4.32	OK
25	0.041	0.231	17.55	OK
26	0.014	0.231	5.89	OK
27	0.036	0.231	15.46	OK
28	0.011	0.231	4.82	OK
29	0.033	0.231	14.29	OK
30	0.010	0.231	4.49	OK
31	0.029	0.231	12.67	OK
32	0.013	0.231	5.42	OK
33	0.029	0.231	12.54	OK
34	0.011	0.231	4.85	OK
35	0.025	0.231	10.80	OK
36	0.011	0.231	4.79	OK
37	0.024	0.231	10.34	OK
38	0.014	0.231	5.93	OK
39	0.028	0.231	12.28	OK
40	0.016	0.231	6.87	OK

Ametek CTS
Reinach, Switzerland

Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

EUT: Hybrid Inverter

Test category: dt,dmax,dc and Pst (European limits)

Test date: 2022/4/8

Start time: 17:08:01

Tested by: Jinsiqi

Test Margin: 100

End time: 17:18:28

Test duration (min): 10

Data file name: WIN2105_F-000051.cts_data

Comment: MN:GW3000-ES-20 Test Mode:Full load

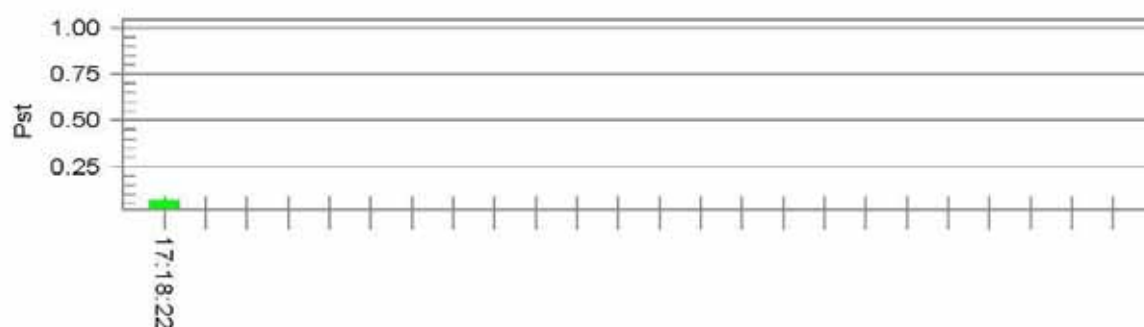
Customer: GoodWe Technologies Co.,Ltd.

Test Result: Pass

Status: Test Completed

Pst_t and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt): 234.10

T-max (mS): 0.0

Highest dc (%): 0.00

Highest dmax (%): -0.12

Highest Pst (10 min. period): 0.064

Test limit (mS): 500.0 Pass

Test limit (%): 3.30 Pass

Test limit (%): 4.00 Pass

Test limit: 1.000 Pass

Ametek CTS
Reinach, Switzerland

Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

EUT: Hybrid Inverter
Test category: All parameters (European limits)
Test date: 2022/4/14 Start time: 18:36:11
Test duration (min): 120 Data file name: WIN2105_F-000072.cts_data
Comment: MN:GW3000-ES-20 Test Mode:Full load
Customer: GoodWe Technologies Co.,Ltd.

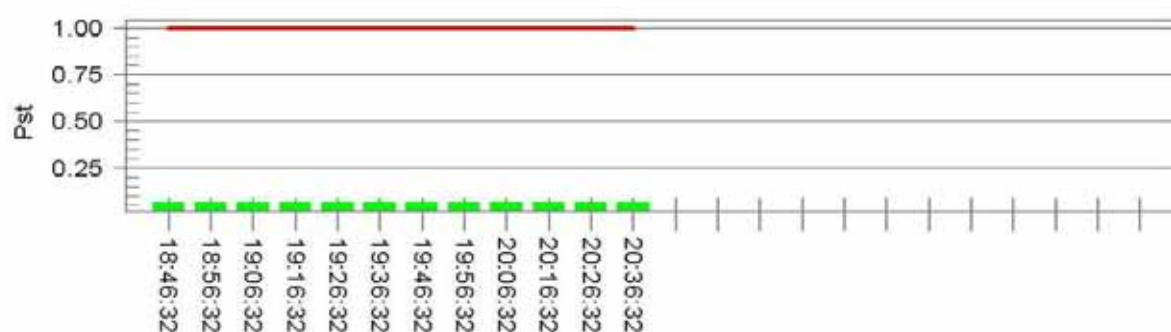
Tested by: Jinsiqi
Test Margin: 100
End time: 20:37:45

Test Result: Pass

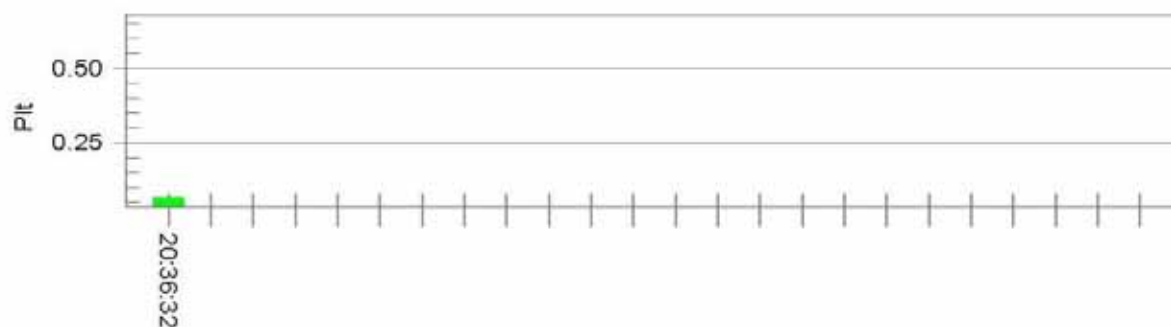
Status: Test Completed

Pst and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	234.16		
T-max (mS):	0.0	Test limit (mS):	500.0 Pass
Highest dc (%):	0.00	Test limit (%):	3.30 Pass
Highest dmax (%):	0.07	Test limit (%):	4.00 Pass
Highest Pst (10 min. period):	0.064	Test limit:	1.000 Pass
Highest Plt (2 hr. period):	0.064	Test limit:	0.650 Pass

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4542 Luterbach, Switzerland

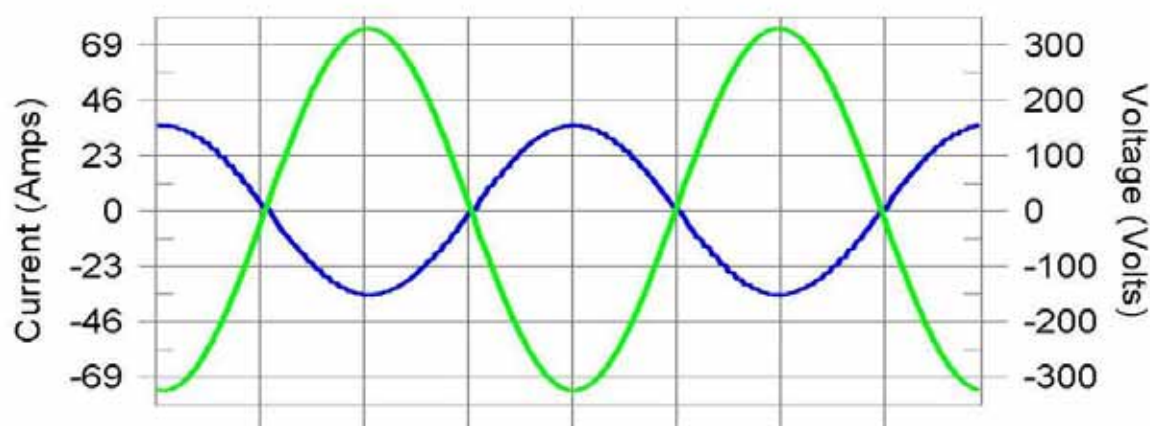
Harmonics – Per EN/IEC61000-3-12, Ed. 2.0(Run time)

EUT: Hybrid Inverter
Test category: Table:3, Rsce=33,
Test date: 2022/4/8 Start time: 16:17:09 Test Margin: 100
Test duration (min): 5 Data file name: WIN2106_H-000114.cts_data End time: 16:22:21
Comment: MN:GW6000-ES-20 Test Mode:Full load
Customer: GoodWe Technologies Co.,Ltd.

Test Result: Pass

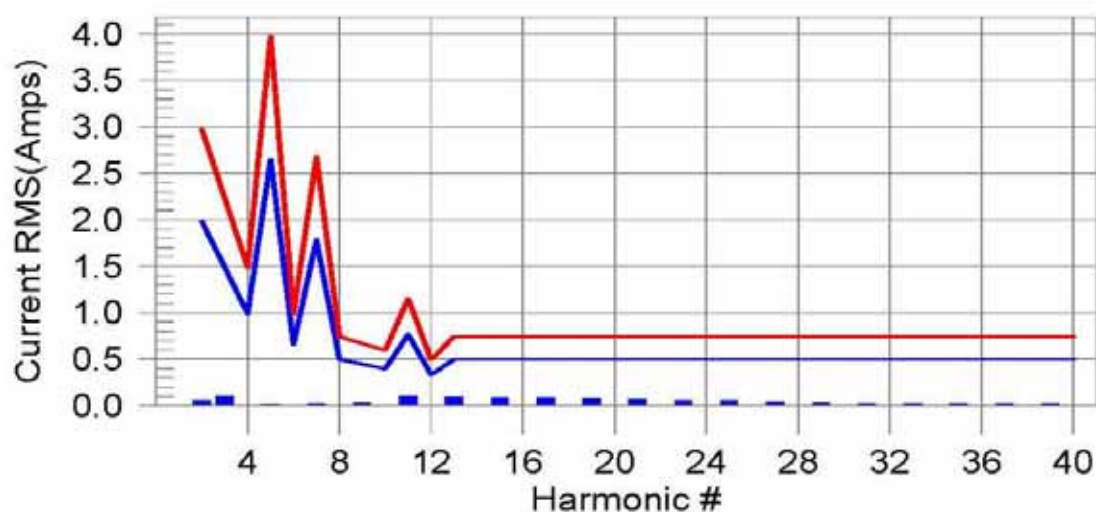
Source qualification: Normal

Current & voltage waveforms



Harmonics and Class 3 limit line

European Limits



Test result: Pass Worst harmonics H13-13.4% of 150% limit, H13-19.9% of 100% limit.

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Current Test Result Summary (Run time)

EUT: Hybrid Inverter Tested by: Jinsiqi
Test category: Table:3, Rsce=33, Test Margin: 100
Test date: 2022/4/8 Start time: 16:17:09 End time: 16:22:21
Test duration (min): 5 Data file name: WIN2106_H-000114.cts_data
Comment: MN:GW6000-ES-20 Test Mode:Full load
Customer: GoodWe Technologies Co.,Ltd.

Test Result: Pass Measured Iref: 24.769(Amps) Source: Normal
THC/Iref (%): 0.0 Limit (%): 13.0 PWHC/Iref (%): 0.0 PWHC Limit (%): 22.0

Highest parameter values during test:

V_RMS (Volts): 231.04 Frequency (Hz): 50.00
I_Peak (Amps): 36.044 I_RMS (Amps): 24.787
I_Fund (Amps): 24.762(avg) Crest Factor: 1.455
Power (Watts): -5719 Power Factor: -0.998

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.054	1.982	2.7	0.060	2.972	2.0	Pass
3	0.110	N/A	N/A	0.117	N/A	N/A	N/A
4	0.004	0.991	N/A	0.006	1.486	N/A	Pass
5	0.011	2.650	0.4	0.013	3.975	0.3	Pass
6	0.003	0.661	N/A	0.004	0.991	N/A	Pass
7	0.020	1.783	1.1	0.022	2.675	0.8	Pass
8	0.004	0.495	N/A	0.005	0.743	N/A	Pass
9	0.035	N/A	N/A	0.037	N/A	N/A	N/A
10	0.005	0.396	1.3	0.006	0.594	1.1	Pass
11	0.104	0.768	13.5	0.105	1.152	9.2	Pass
12	0.006	0.330	1.7	0.007	0.495	1.4	Pass
13	0.099	0.495	19.9	0.100	0.743	13.4	Pass
14	0.006	N/A	N/A	0.008	N/A	N/A	N/A
15	0.088	N/A	N/A	0.089	N/A	N/A	N/A
16	0.006	N/A	N/A	0.007	N/A	N/A	N/A
17	0.081	N/A	N/A	0.082	N/A	N/A	N/A
18	0.006	N/A	N/A	0.007	N/A	N/A	N/A
19	0.072	N/A	N/A	0.073	N/A	N/A	N/A
20	0.007	N/A	N/A	0.008	N/A	N/A	N/A
21	0.065	N/A	N/A	0.067	N/A	N/A	N/A
22	0.006	N/A	N/A	0.008	N/A	N/A	N/A
23	0.056	N/A	N/A	0.058	N/A	N/A	N/A
24	0.005	N/A	N/A	0.007	N/A	N/A	N/A
25	0.048	N/A	N/A	0.050	N/A	N/A	N/A
26	0.004	N/A	N/A	0.005	N/A	N/A	N/A
27	0.040	N/A	N/A	0.043	N/A	N/A	N/A
28	0.004	N/A	N/A	0.005	N/A	N/A	N/A
29	0.033	N/A	N/A	0.034	N/A	N/A	N/A
30	0.002	N/A	N/A	0.004	N/A	N/A	N/A
31	0.026	N/A	N/A	0.028	N/A	N/A	N/A
32	0.002	N/A	N/A	0.003	N/A	N/A	N/A
33	0.023	N/A	N/A	0.025	N/A	N/A	N/A
34	0.002	N/A	N/A	0.003	N/A	N/A	N/A
35	0.020	N/A	N/A	0.021	N/A	N/A	N/A
36	0.003	N/A	N/A	0.004	N/A	N/A	N/A
37	0.021	N/A	N/A	0.022	N/A	N/A	N/A
38	0.003	N/A	N/A	0.005	N/A	N/A	N/A
39	0.018	N/A	N/A	0.020	N/A	N/A	N/A
40	0.003	N/A	N/A	0.006	N/A	N/A	N/A

Note: Measured I-ref was applied for this test.

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Voltage Source Verification Data (Run time)

EUT: Hybrid Inverter Tested by: Jinsiqi
Test category: Table:3, Rsce=33, Test Margin: 100
Test date: 2022/4/8 Start time: 16:17:09 End time: 16:22:21
Test duration (min): 5 Data file name: WIN2106_H-000114.cts_data
Comment: MN:GW6000-ES-20 Test Mode:Full load
Customer: GoodWe Technologies Co.,Ltd.

Test Result: Pass Source qualification: Normal
Measured source distortion is within the requirements of the standards
Measurements are compliant with IEC/EN61000-3-12 Ed. 2.0 & IEC/EN61000-4-7 Ed. 2.1

Highest parameter values during test:

Voltage (Vrms):	231.04	Frequency (Hz):	50.00
I_Peak (Amps):	36.044	I_RMS (Amps):	24.787
I_Fund (Amps):	24.762(avg)	Crest Factor:	1.455
Power (Watts):	-5719	Power Factor:	-0.998

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.104	0.924	11.26	OK
3	0.192	2.888	6.64	OK
4	0.037	0.924	3.97	OK
5	0.164	3.466	4.73	OK
6	0.018	0.924	1.97	OK
7	0.158	2.888	5.45	OK
8	0.027	0.924	2.94	OK
9	0.159	1.386	11.47	OK
10	0.025	0.924	2.73	OK
11	0.162	1.617	10.02	OK
12	0.022	0.693	3.15	OK
13	0.158	1.386	11.38	OK
14	0.026	0.693	3.82	OK
15	0.160	0.693	23.08	OK
16	0.028	0.693	3.98	OK
17	0.153	0.693	22.03	OK
18	0.033	0.693	4.70	OK
19	0.150	0.693	21.65	OK
20	0.039	0.693	5.70	OK
21	0.163	0.693	23.46	OK
22	0.044	0.693	6.33	OK
23	0.154	0.693	22.16	OK
24	0.041	0.693	5.93	OK
25	0.135	0.693	19.42	OK
26	0.036	0.693	5.24	OK
27	0.131	0.693	18.94	OK
28	0.046	0.693	6.64	OK
29	0.125	0.693	18.01	OK
30	0.041	0.693	5.96	OK
31	0.102	0.693	14.72	OK
32	0.025	0.693	3.68	OK
33	0.084	0.693	12.12	OK
34	0.022	0.693	3.11	OK
35	0.073	0.693	10.57	OK
36	0.027	0.693	3.83	OK
37	0.069	0.693	9.93	OK
38	0.035	0.693	5.00	OK
39	0.066	0.693	9.59	OK
40	0.037	0.693	5.34	OK

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4542 Luterbach, Switzerland

Flicker Test Summary Per EN/IEC61000-3-11, Ed. 1.0(Run time) per EN/IEC61000-3-11 IEC61000-3-11 Ed. 1.0 (2000)

EUT: Hybrid Inverter

Test category: dt, dmax, dc and Pst

Test date: 2022/4/8

Start time: 16:28:50

Tested by: Jinsiqi

Test Margin: 100

End time: 16:39:17

Test duration (min): 10

Data file name: WIN2106_F-000115.cts_data

Comment: MN:GW6000-ES-20 Test Mode:Full Load

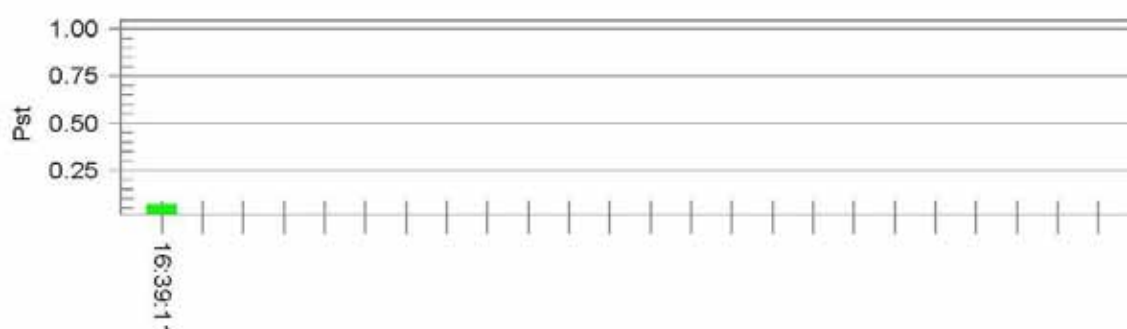
Customer: GoodWe Technologies Co.,Ltd.

Z-test = (0.400 + j 0.250 Ohm)

Test Result: Pass

Status: Test Completed

Pst and limit line



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt): 233.41

T-max (mS):	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.05	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.064	Test limit:	1.000	Pass

Calculated dmax(%): 0.000

Calculated dc(%): 0.000

Calculated Pst : 0.064

The maximum permissible system impedance Zsys:

Z = 24.772 Ohm + j 15.482 Ohm (24.772 Ohm + 49282 ?H)

Teseq Proflin
4542 Luterbach, Switzerland

Flicker Test Summary Per EN/IEC61000-3-11, Ed. 1.0(Run time) per EN/IEC61000-3-11 IEC61000-3-11 Ed. 1.0 (2000)

EUT: Hybrid Inverter

Test category: All parameters

Test date: 2022/4/14

Start time: 16:14:56

Tested by: Jinsiqi

Test Margin: 100

End time: 18:16:29

Test duration (min): 120

Data file name: WIN2106_F-000117.cts_data

Comment: MN:GW6000-ES-20 Test Mode: Full Load

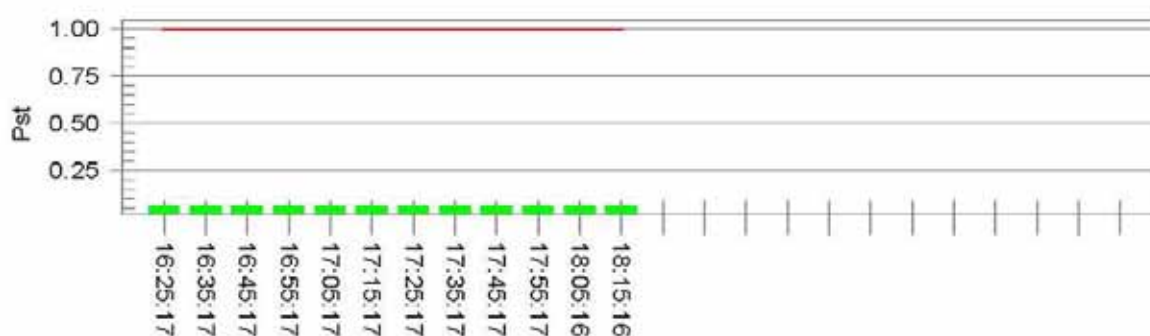
Customer: GoodWe Technologies Co., Ltd.

Z-test = (0.400 + j 0.250 Ohm)

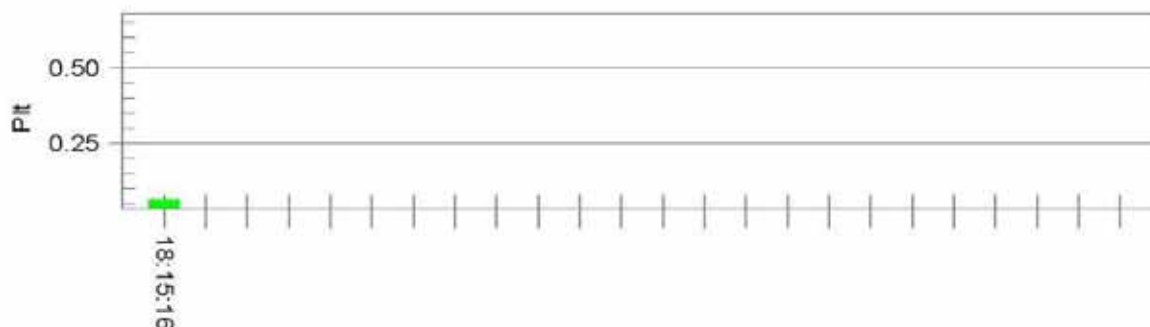
Test Result: Pass

Status: Test Completed

Pst and limit line



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt): 233.50

T-max (mS):	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.07	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.064	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.064	Test limit:	0.650	Pass

Calculated dmax(%): 0.000

Calculated dc(%): 0.000

Calculated Pst : 0.064

Calculated Plt : 0.064

The maximum permissible system impedance Zsys:

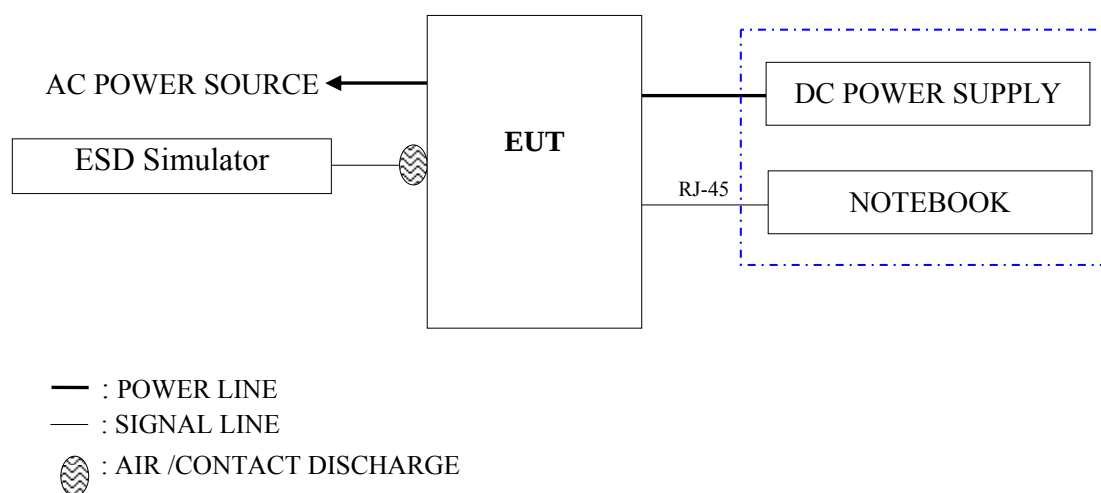
Z = 12.982 Ohm + j 8.113 Ohm (12.982 Ohm + 25826 ?H)

7 ELECTROSTATIC DISCHARGE IMMUNITY TEST

7.1 Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	ESD Simulator	EM TEST	DITO	V0503100054	2022-03-28	1 Year

7.2 Block Diagram of Test Setup



7.3 Test Standard

EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2)
[IEC 61000-4-2:2008]

7.4 Severity Levels and Performance Criterion

7.4.1 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

Test Level: Contact Discharge (level 2): $\pm 4\text{kV}$, Air Discharge (level 3): $\pm 8\text{kV}$

7.4.2 Performance criterion: B

7.5 Test Procedure

The measuring process is according to EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2) (IEC 61000-4-2:2008) and laboratory internal procedure TKC-301-015.

7.5.1 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 until contact the EUT. After each discharge, the ESD generator discharge electrode shall be removed from the EUT. The generator is then ret rigged for a new single discharge and repeated 10 discharges each at positive and negative polarity for each reselected test point. This procedure shall be repeated until all the air discharge completed.

7.5.2 Contact Discharge:

All the procedure shall be same as 7.5.1. Except that the tip of the discharge electrode shall touch the EUT conductive surfaces & repeated 10 discharges each at positive and negative polarity for each test point before the discharge switch is operated.

7.5.3 Indirect discharge for horizontal coupling plane:

At least 10 discharges each at positive and negative polarity shall be applied to the horizontal coupling plane, at points on each side of the EUT. The ESD generator positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

7.5.4 Indirect discharge for vertical coupling plane:

At least 10 discharges each at positive and negative 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.

7.5.5 For above tests, the voltage was increased from the minimum to the selected test level.

7.6 Test Results

PASSED.

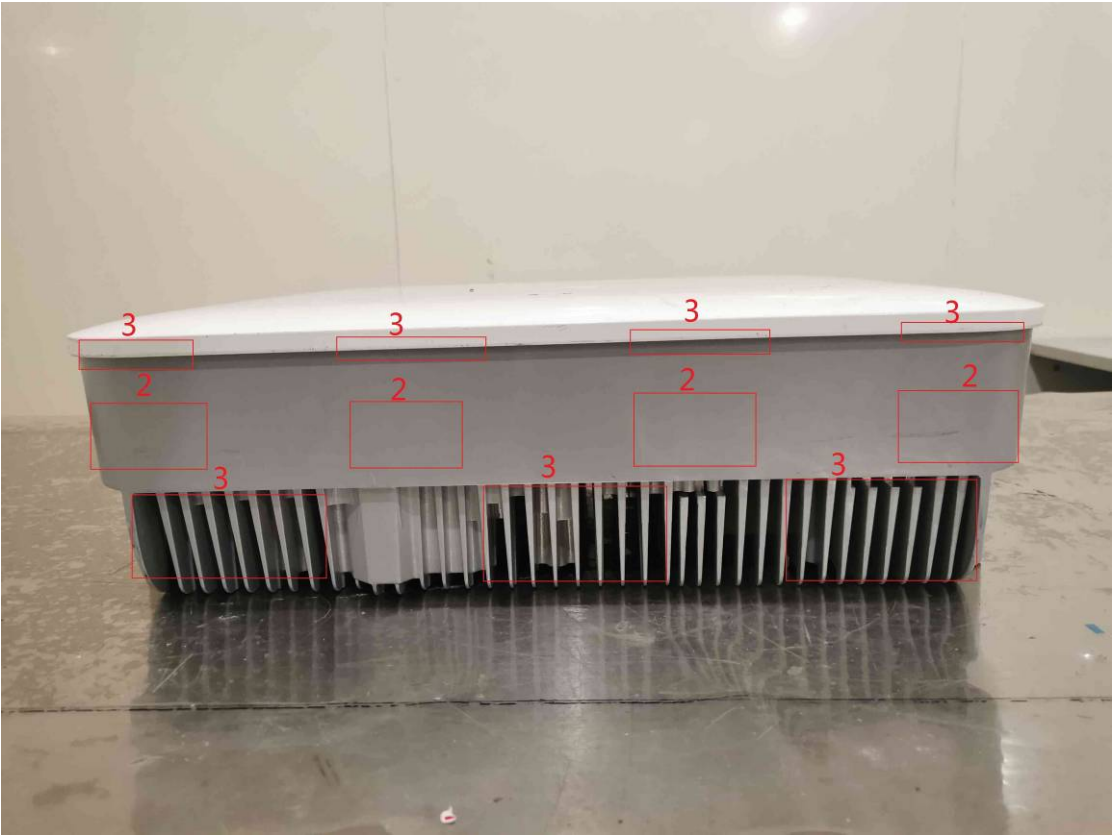
EUT was tested with the following test mode and all the test results are listed in next page.

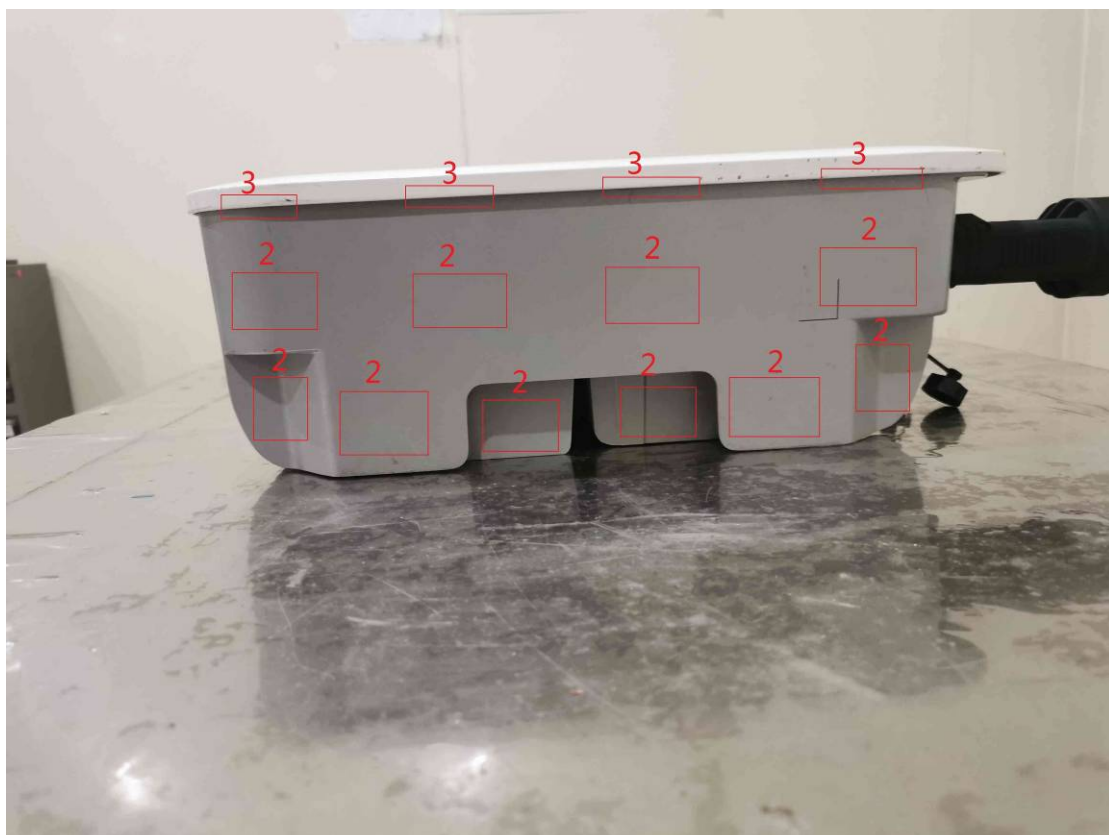
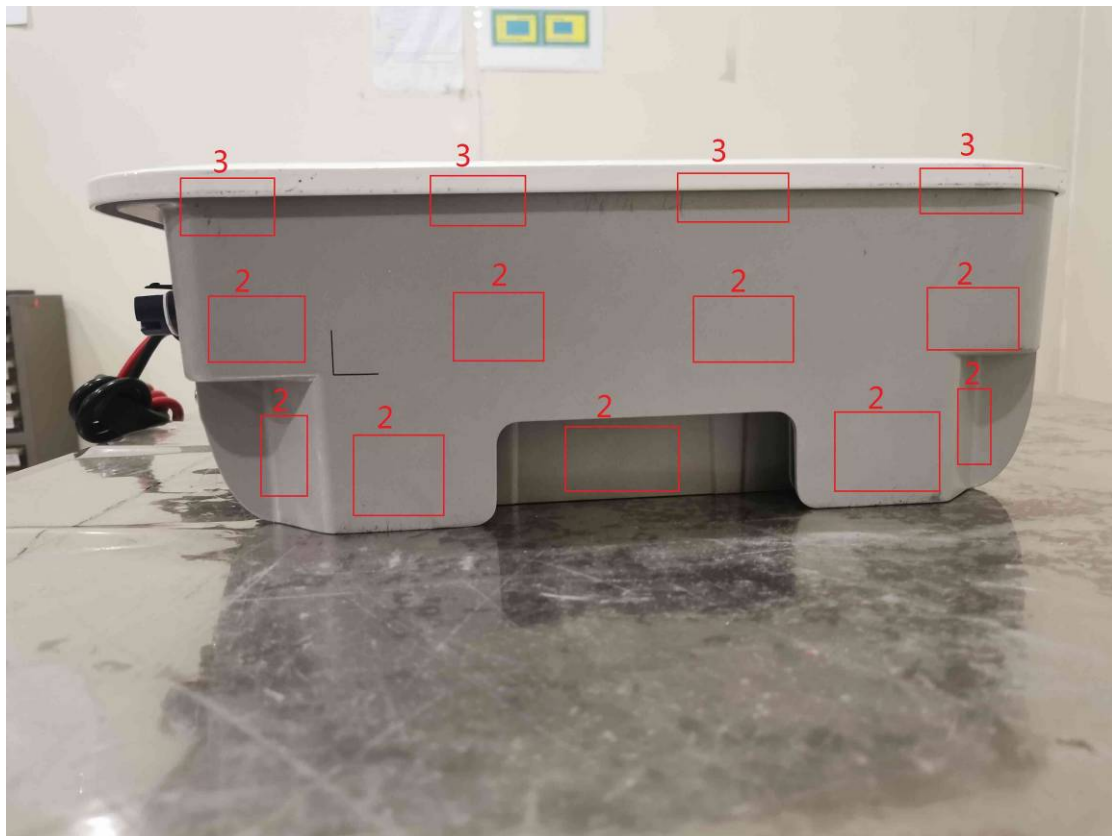
Note : Because the power of the EUT is out of the range of the test equipment, so we choose 10% load to test for EMS items.

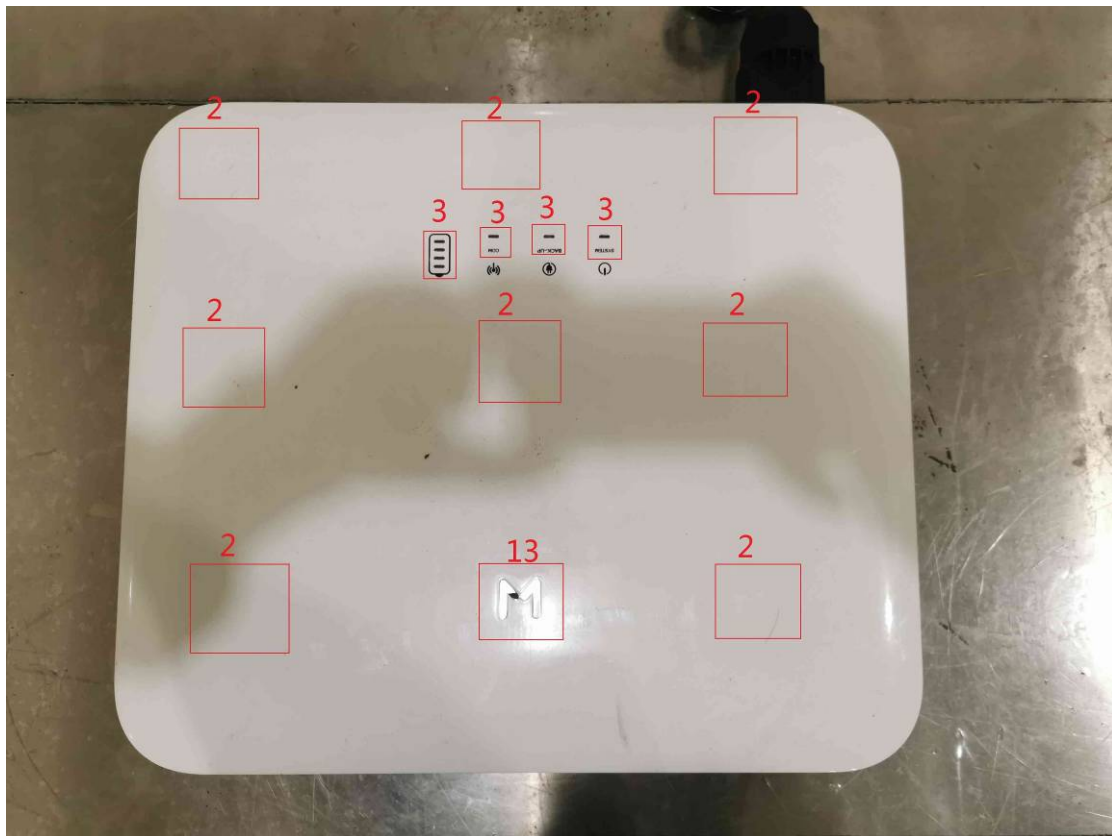
Electrostatic Discharge Immunity Test Results

Applicant	GoodWe Technologies Co., Ltd.		Date of Test		2022.04.14			
EUT	Hybrid Inverter		Input Volt		200Vdc		Output Volt	230Vac/50Hz
Model No.	GW6000-ES-20		Temp	21.7 °C	Humidity	45%	Pressure	101KPa
Test Mode	10% Load							
Working Condition	Operating				Results		PASS	
Item		Discharges of each polarity	Discharge Voltage				Observation Criterion	
Contact Discharge		25	+2kV,+4kV				A	
			-2kV,-4kV					
Air Discharge		10	+2kV,+4kV,+6kV +8kV				A	
			-2kV,-4kV, -6 kV ,-8kV					
Indirect Discharge (HCP)		10	+2kV,+4kV				A	
			-2kV,-4kV					
Indirect Discharge (VCP Front)		10	+2kV,+4kV				A	
			-2kV,-4kV					
Indirect Discharge (VCP Left)		10	+2kV,+4kV				A	
			-2kV,-4kV					
Indirect Discharge (VCP Back)		10	+2kV,+4kV				A	
			-2kV,-4kV					
Indirect Discharge (VCP Right)		10	+2kV,+4kV				A	
			-2kV,-4kV					
Measurement Points		1.	Screw X9	Contact Discharge		2.	Insulation surface X31	Air Discharge
		3.	GAP X22	Air Discharge		4.	BATTERY	Air Discharge
		5.	EMS	Air Discharge		6.	METER	Air Discharge
		7.	COM1	Air Discharge		8.	COM2	Air Discharge
		9.	PV X4	Air Discharge		10.	ON/OFF	Air Discharge
		11.	BACK-UP	Air Discharge		12.	ON-GRID	Air Discharge
		13.	LOGO	Air Discharge				
Note:								
				Engineer: Shu Lina				

Photos of Discharge Points:







8 RF FIELD STRENGTH IMMUNITY TEST

8.1 Test Equipment

For 80MHz~1GHz Test

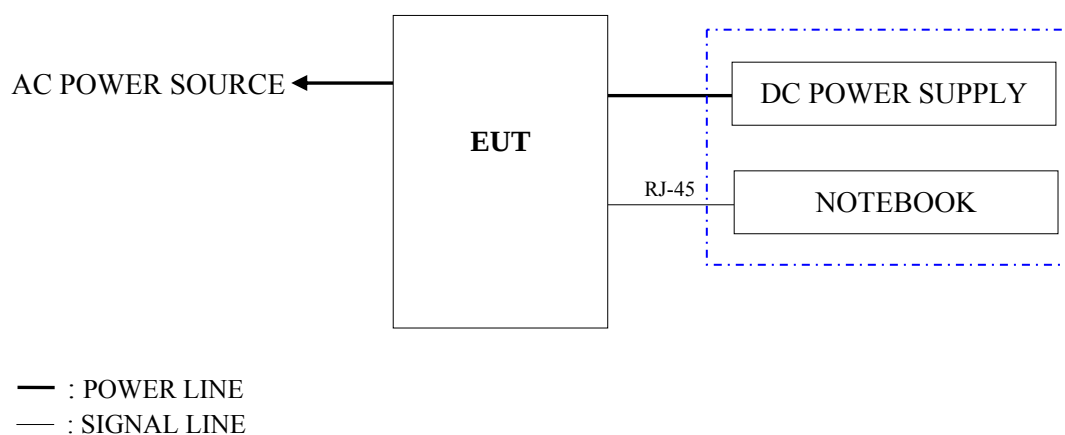
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	Signal Generator	Agilent	E8257D	MY46130140	2021-07-16	1 Year
2.	Power Amplifier	RFLIGHT	NTWPA-008 10300	20083172	NCR	NCR
3.	Log-Periodic Antenna	AR	AT1080	0323131	NCR	NCR
4.	Direction Coupler	AR	DC6180A	322333	2021-04-18	1 Year
5.	Power Meter+ Power Sensor	Agilent	E4418B+848 1A	MY45102094 +US38296235	2022-03-01	1 Year
6.	Test Software	Audix/i2(5.8.1)				

For 1GHz~6GHz Test

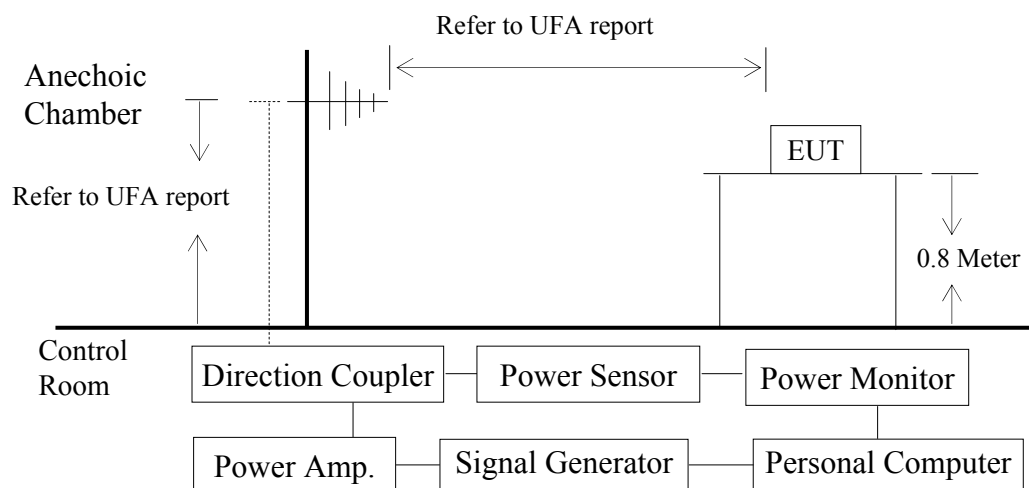
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	Signal Generator	Agilent	E8257D	MY46130140	2021-07-16	1 Year
2.	LINEAR POWER AMPLIFIER	MILMEGA	AS0104-200- 200	1016528	NCR	NCR
3.	Power Amplifier	MILMEGA	AS1860-50	1055611	NCR	NCR
4.	Horn Antenna	AR	AT4002A	322311	NCR	NCR
5.	Direction Coupler	AR	DC7144A	322193	2021-04-18	1 Year
6.	Power Meter+ Power Sensor	Agilent	E4418B+848 1A	MY45102094 +US38296235	2022-03-01	1 Year
7.	Test Software	Audix/i2(5.8.1)				

8.2 Block Diagram of Test Setup

8.2.1 Block Diagram of connection between EUT and simulators.



8.2.2 R/S Test Setup



8.3 Test Standard

EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2)
[IEC 61000-4-3:2020]

8.4 Severity Levels and Performance Criterion

8.4.1 Severity level

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

Test Level: Field strength: 3/10 V/m

8.4.2 Performance criterion: **A**

8.5 Test Procedure

The measuring process is according to EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2) (IEC 61000-4-3:2020) and laboratory internal procedure TKC-301-016.

The field sensor is placed on the EUT table (0.8 meter above the ground) which is 3 meters for frequency range 80MHz-1GHz and 1meter for frequency range 1.4GHz~6.0GHz away from the transmitting antenna. Through the signal generator, power amplifier and transmitting antenna to produce a uniformity field strength (3 V/m measured by field sensor) around the EUT table from frequency range 80MHz-1000MHz, 1.4GHz~6.0GHz and records the signal generator's output level at the same time for whole measured frequency range. Then, put EUT and its simulators on the EUT turn table and keep them 3 meters away from the transmitting antenna which is mounted on an antenna tower and fixes at 1 meter height above the ground. Using the recorded signal generator's output level to measure the EUT from frequency range 80MHz-1000MHz, 1.4GHz~6.0GHz and both horizontal & vertical polarization of antenna must be set and measured. Each of the four sides of EUT must be faced this transmitting antenna and measures individually.

In this report, chose the most sensible side to measure that is right side to face transmitting antenna.

A CCD camera was put inside the chamber and through its display to monitor the EUT operational situation to judge the EUT performance criterion during measurement.

All the scanning conditions are as follows:

Condition of Test	Remarks
1. Fielded Strength	3/10V/m
2. Amplitude Modulated	1kHz, 80%AM
3. Scanning Frequency	80MHz~1GHz; 1GHz~6GHz
4. Step Size	1% increments
5. The Rate of Sweep	0.0015 decade/s
6. Dwell Time	3 sec.

8.6 Test Results

PASSED.

EUT was tested with the following test mode and all the test results are listed in next page.

RF Field Strength Immunity Test Results

Applicant	GoodWe Technologies Co., Ltd.			Date of Test	2022.04.11		
EUT	Hybrid Inverter			Input Volt	200Vdc	Output Volt	230Vac/50Hz
Model No.	GW6000-ES-20			Temp.	24 °C	Humidity	40%
Test Mode	10% Load						
Working Condition	Operating				Results		PASS
Frequency Range (MHz)	E.U.T. Position (Angle)	Ant. Polarity (Hor. or Ver.)	Field Strength (V/m)	Observation Criterion		Remark	
80~1000	0	H	3	A			
80~1000	90	H	3	A			
80~1000	180	H	3	A			
80~1000	270	H	3	A			
80~1000	0	V	3	A			
80~1000	90	V	3	A			
80~1000	180	V	3	A			
80~1000	270	V	3	A			
Note: EN IEC 61000-6-1 Modulation Condition: 80% AM(1kHz) Dwell Time:3s Stepped Frequency:1%							
			Engineer: Yang Zuoli				

RF Field Strength Immunity Test Results

Applicant	GoodWe Technologies Co., Ltd.	Date of Test	2022.04.11		
EUT	Hybrid Inverter	Input Volt	200Vdc	Output Volt	230Vac/50Hz
Model No.	GW6000-ES-20	Temp.	24 °C	Humidity	40%
Test Mode	10% Load				
Working Condition	Operating			Results	PASS
Frequency Range (MHz)	E.U.T. Position (Angle)	Ant. Polarity (Hor. or Ver.)	Field Strength (V/m)	Observation Criterion	Remark
80~1000	0	H	10	A	
80~1000	90	H	10	A	
80~1000	180	H	10	A	
80~1000	270	H	10	A	
80~1000	0	V	10	A	
80~1000	90	V	10	A	
80~1000	180	V	10	A	
80~1000	270	V	10	A	
Note: EN IEC 61000-6-2 Modulation Condition: 80% AM(1kHz) Dwell Time: 3s Stepped Frequency: 1%			Engineer: Yang Zuoli		

RF Field Strength Immunity Test Results

<i>Applicant</i>	<i>GoodWe Technologies Co., Ltd.</i>		<i>Date of Test</i>	<i>2022.04.11</i>	
<i>EUT</i>	<i>Hybrid Inverter</i>		<i>Input Volt</i>	<i>200Vdc</i>	<i>Output Volt</i> <i>230Vac/50Hz</i>
<i>Model No.</i>	<i>GW6000-ES-20</i>		<i>Temp.</i>	<i>24 °C</i>	<i>Humidity</i> <i>40%</i>
<i>Test Mode</i>	<i>10% Load</i>				
<i>Working Condition</i>	<i>Operating</i>			<i>Results</i>	<i>PASS</i>
<i>Frequency Range (MHz)</i>	<i>E.U.T. Position (Angle)</i>	<i>Ant. Polarity (Hor. or Ver.)</i>	<i>Field Strength (V/m)</i>	<i>Observation Criterion</i>	<i>Remark</i>
<i>1000~2000</i>	<i>0</i>	<i>H</i>	<i>3</i>	<i>A</i>	
<i>1000~2000</i>	<i>90</i>	<i>H</i>	<i>3</i>	<i>A</i>	
<i>1000~2000</i>	<i>180</i>	<i>H</i>	<i>3</i>	<i>A</i>	
<i>1000~2000</i>	<i>270</i>	<i>H</i>	<i>3</i>	<i>A</i>	
<i>1000~2000</i>	<i>0</i>	<i>V</i>	<i>3</i>	<i>A</i>	
<i>1000~2000</i>	<i>90</i>	<i>V</i>	<i>3</i>	<i>A</i>	
<i>1000~2000</i>	<i>180</i>	<i>V</i>	<i>3</i>	<i>A</i>	
<i>1000~2000</i>	<i>270</i>	<i>V</i>	<i>3</i>	<i>A</i>	
<i>Note:</i> <i>EN IEC 61000-6-1& EN IEC 61000-6-2</i> <i>Dwell Time:3s</i> <i>Stepped Frequency:1%</i> <i>Test distance: 1m</i>					
			<i>Engineer: Yang Zuoli</i>		

RF Field Strength Immunity Test Results

<i>Applicant</i>	<i>GoodWe Technologies Co., Ltd.</i>		<i>Date of Test</i>	<i>2022.04.11</i>	
<i>EUT</i>	<i>Hybrid Inverter</i>		<i>Input Volt</i>	<i>200Vdc</i>	<i>Output Volt</i> <i>230Vac/50Hz</i>
<i>Model No.</i>	<i>GW6000-ES-20</i>		<i>Temp.</i>	<i>24 °C</i>	<i>Humidity</i> <i>40%</i>
<i>Test Mode</i>	<i>10% Load</i>				
<i>Working Condition</i>	<i>Operating</i>			<i>Results</i>	<i>PASS</i>
<i>Frequency Range (MHz)</i>	<i>E.U.T. Position (Angle)</i>	<i>Ant. Polarity (Hor. or Ver.)</i>	<i>Field Strength (V/m)</i>	<i>Observation Criterion</i>	<i>Remark</i>
<i>2000~6000</i>	<i>0</i>	<i>H</i>	<i>3</i>	<i>A</i>	
<i>2000~6000</i>	<i>90</i>	<i>H</i>	<i>3</i>	<i>A</i>	
<i>2000~6000</i>	<i>180</i>	<i>H</i>	<i>3</i>	<i>A</i>	
<i>2000~6000</i>	<i>270</i>	<i>H</i>	<i>3</i>	<i>A</i>	
<i>2000~6000</i>	<i>0</i>	<i>V</i>	<i>3</i>	<i>A</i>	
<i>2000~6000</i>	<i>90</i>	<i>V</i>	<i>3</i>	<i>A</i>	
<i>2000~6000</i>	<i>180</i>	<i>V</i>	<i>3</i>	<i>A</i>	
<i>2000~6000</i>	<i>270</i>	<i>V</i>	<i>3</i>	<i>A</i>	
<i>Note:</i> <i>EN IEC 61000-6-1& EN IEC 61000-6-2</i> <i>Dwell Time:3s</i> <i>Stepped Frequency:1%</i> <i>Test distance: 1m</i>					
			<i>Engineer: Yang Zuoli</i>		

9 ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

9.1 Test Equipment

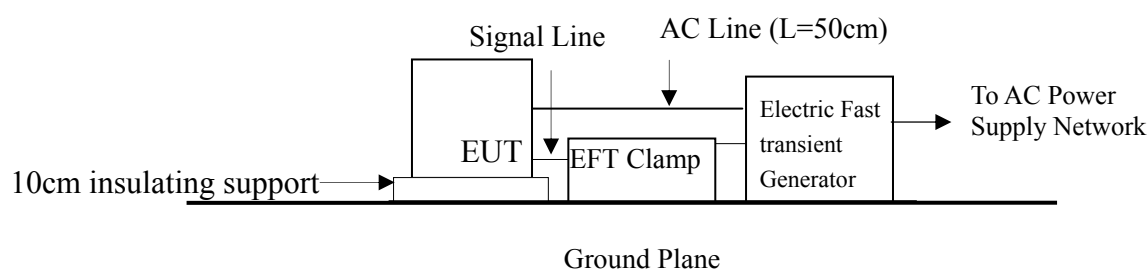
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	Electric Fast Transient Generator	3C TEST	EFT-4003G	EC0471226	2022-03-25	1 Year
2.	EFT Clamp	KEYTEK	PRO-CCL	604287	2022-03-25	1 Year

9.2 Block Diagram of Test Setup

9.3 Block Diagram of connection between EUT and simulators.

Same as section 8.2.1.

9.3.1 EFT Test Setup



Remark: Combination wave generator and decoupling networks are included in test.

9.4 Test Standard

EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2)
[IEC 61000-4-4:2012]

9.5 Severity Levels and Performance Criterion

9.5.1 Severity levels

Open circuit output test voltage and repetition rate of the impulses				
Level	On power port, PE		On I/O (input/output) signal, data and control ports	
	Voltage peak kV	Repetition rate kHz	Voltage peak kV	Repetition rate kHz
1.	0.5	5 or 100	0.25	5 or 100
2.	1	5 or 100	0.5	5 or 100
3.	2	5 or 100	1	5 or 100
4.	4	5 or 100	2	5 or 100
X ^a	Special	Special	Special	Special
Note 1 : Use of 5kHz repetition rates is traditional; however, 100kHz is closer to reality. Product committees should determine which frequencies are relevant for specific products or product types. Note 2 : With some products, there may be no clear distinction between power ports and I/O ports, in which case it is up to product committees to make this determination for test purposes.				
^a “X” is an open level. The level has to be specified in the dedicated equipment specification.				

Test Level: 2, 5/50 Tr/Th ns, 5kHz

9.5.2 Performance criterion: **B**

9.6 Test Procedure

The measuring process is according to EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2) (IEC 61000-4-4:2012) and laboratory internal procedure TKC-301-017.

The EUT and its simulators shall be placed 0.1m high above the ground reference plane which was a min. 1m*1m metallic sheet with 0.65mm minimum thickness. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

9.6.1 For AC Mains port

The EUT was powered by coupling network of the EFT generator. The distance between coupling devices and the EUT shall be (0.5-0/+0.1)m for table-top equipment, and (1.0±0.1)m for floor standing equipment. The cable between the EUT and the coupling device, if detachable, shall be as short as possible to comply with this requirement. If the manufacturer provides a cable exceeding the distance between the coupling device and the point of entry of the EUT, the excess of this cable shall be bundled and situated at a distance of 0.1m above the ground reference plane.

9.6.2 For telecommunication port

This test is for the length of the interconnecting cables is more than 3m. The I/O interface cable of the EUT is connected to its simulator through a capacitive coupling clamp. The capacitive coupling clamp is impressed with burst noise for 1min and indirectly couples burst to I/O interface cable.

9.7 Test Results

PASSED.

EUT was tested with the following test mode and all the test results are listed in next page.

Electrical Fast Transient / Burst Immunity Test Results

Applicant	GoodWe Technologies Co., Ltd.				Date of Test	2022.04.13				
EUT	Hybrid Inverter				Input Volt	200Vdc	Output Volt	230Vac/50Hz		
Model No.	GW6000-ES-20				Temp.	20 °C	Humidity	53%		
Test Mode	10% Load									
Working Condition	Operating					Results	PASS			
Inject Place: AC Mains Input Port					Inject Place: I/O Cable					
Inject Line	Voltage (kV)	Inject Time(s)	Inject Method	Observation Criterion	Inject Line	Voltage (kV)	Inject Time(s)	Inject Method	Observation Criterion	
L1	±1.0, ±2.0	60	Direct	A	LAN	±1.0	60	Clamp	A	
N	±1.0, ±2.0	60	Direct	A						
PE	±1.0, ±2.0	60	Direct	A						
L1,N	±1.0, ±2.0	60	Direct	A						
L1,PE	±1.0, ±2.0	60	Direct	A						
N,PE	±1.0, ±2.0	60	Direct	A						
L1,N,PE	±1.0, ±2.0	60	Direct	A						
Note: EN IEC 61000-6-1& EN IEC 61000-6-2					Engineer: Xu Weifei					

Electrical Fast transient / Burst Immunity Test Results

Applicant	GoodWe Technologies Co., Ltd.	Date of Test	2022.04.13						
EUT	Hybrid Inverter	Input Volt	200Vdc	Output Volt	230Vac/50Hz				
Model No.	GW6000-ES-20	Temp.	20 °C		Humidity	53%			
Test Mode	10% Load								
Working Condition	Operating				Results		PASS		
Inject Place: DC Mains Input Port					Inject Place: I/O Cable				
Inject Line	Voltage (kV)	Inject Time(s)	Inject Method	Observation Criterion	Inject Line	Voltage (kV)	Inject Time(s)	Inject Method	Observation Criterion
PV+	+0.5,+1.0	60	Direct	A					
PV+	-0.5,-1.0	60	Direct	A					
PV-	+0.5,+1.0	60	Direct	A					
PV-	-0.5,-1.0	60	Direct	A					
PV+,PV-	+0.5,+1.0	60	Direct	A					
PV+,PV-	-0.5,-1.0	60	Direct	A					
Note: EN IEC 61000-6-1& EN IEC 61000-6-2					Engineer: Xu Weifei				

10 SURGE IMMUNITY TEST

10.1 Test Equipment

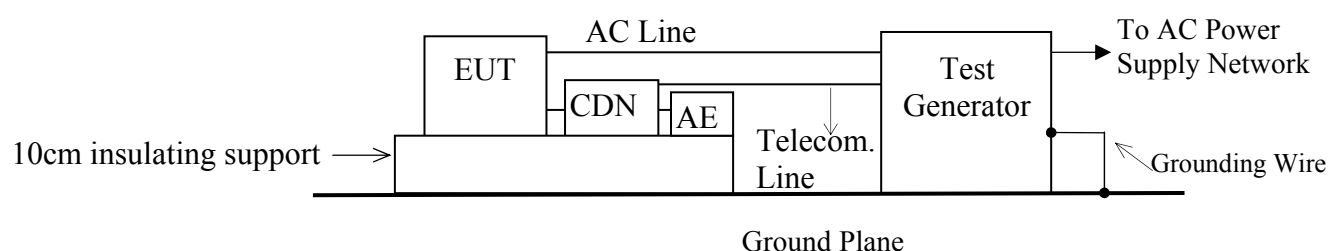
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	Surge Generator	3C TEST	SG-5010G	EC5531208	2021-04-18	1 Year
2.	Telecom CDN	3C TEST	CDN 405T8A1	ES2731504	2021-04-18	1 Year

10.2 Block Diagram of Test Setup

10.2.1 Block Diagram of connection between EUT and simulators.

Same as section 8.2.1.

10.2.2 Test Setup



Remark: Test generator includes control center, surge combination and coupler.

10.3 Test Standard

EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2)
[IEC 61000-4-5:2014+A1:2017]

10.4 Severity Levels and Performance Criterion

10.4.1 Test Levels

Level	Open-circuit test Voltage +/- 10%, kV
1.	0.5
2.	1.0
3.	2.0
4.	4.0
X	Special

Test Level:

For AC Main: line to earth - ± 2 kV, line to line - ± 1 kV, waveform 1.2/50 (8/20) Tr/Th μ s.

For DC Main: PV+ to PV- ± 1 kV, waveform 1.2/50 (8/20) Tr/Th μ s.

For Telecom port: ± 1 kV (may directly connect to outdoor cable and without primary protection), wave form 10/700 Tr/Th μ s.

10.4.2 Performance Criterion:

(1) For AC/DC Main: B

(2) For Telecom Port: C

10.5 Test Procedure

The measuring process is according to EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2) (IEC 61000-4-5:2014+A1:2017) and laboratory internal procedure TKC-301-018.

For AC Mains ports:

- 10.5.1 Set up the EUT and test generator as shown on section 10.2.1 & 10.2.2.
- 10.5.2 For line to line coupling mode, provided a 0.5/1kV 1.2/50 μ s voltage surge (at open-circuit condition) and 8/20 μ s current surge to EUT selected points.
- 10.5.3 At least 5 positive and 5 negative (polarity) tests with a Maximum 1/min repetition rate were conducted during test.
- 10.5.4 Four phase angles (0°, 90°, 180°, 270°) were done individually.
- 10.5.5 Repeat procedure 10.5.2. to 10.5.4. except the open-circuit test voltages 0.5kV/1kV/2kV for line to earth coupling mode test.
- 10.5.6 Record the EUT Operating situation during compliance test and decide the EUT immunity criterion for above each test.

For DC Mains ports:

- 10.5.7 Set up the EUT and test generator as shown on section 10.2.1 & 10.2.2.
- 10.5.8 For PV+ to PV- coupling mode, provided a 0.5kV 1.2/50 μ s voltage surge (at open-circuit condition) and 8/20 μ s current surge to EUT selected points.
- 10.5.9 At least 5 positive and 5 negative (polarity) tests with a Maximum 1/min repetition rate were conducted during test.
- 10.5.10 Repeat procedure 10.5.8. to 10.5. 9. except the open-circuit test voltages 1kV for line to earth coupling mode test.
- 10.5.11 Record the EUT Operating situation during compliance test and decide the EUT immunity criterion for above each test.

For Telecommunication ports:

- 10.5.12 Set up the EUT and test generator as shown on section 10.2.
- 10.5.13 For line to line coupling mode, provided a 0.5/1kV 10/700 μ s voltage surge (at open-circuit condition) and 5/320 μ s current surge to EUT selected points.
- 10.5.14 At least 5 positive and 5 negative (polarity) tests with a Maximum 1/min repetition rate were conducted during test.
- 10.5.15 Repeat procedure 10.5.13. to 10.5.14 for line to earth coupling mode test.
- 10.5.16 Record the EUT Operating situation during compliance test and decide the EUT immunity criterion for above each test.

10.6 Test Results

PASSED.

EUT was tested with the following test mode and all the test results are listed in next page.

Surge Immunity Test Results

Applicant	GoodWe Technologies Co., Ltd.	Date of Test	2022.04.13			
EUT	Hybrid Inverter	Input Volt	200Vdc	Output Volt	230Vac/50Hz	
Model No.	GW6000-ES-20	Temp.	25 °C	Humidity	53%	
Test Mode	10% Load					
Working Condition	Operating		Results	PASS		
Output AC Power Port						
Combination wave ☒ 1.2/50 μ s ☐ 10/700 μ s						
Location	Polarity	Phase Angle	No of Pulse	Pulse Voltage kV	Impedance	Observation Criterion
L1-N	+	0	5	0.5,1.0	2 Ω	A
	+	90	5	0.5,1.0		A
	+	180	5	0.5,1.0		A
	+	270	5	0.5,1.0		A
	—	0	5	0.5,1.0		A
	—	90	5	0.5,1.0		A
	—	180	5	0.5,1.0		A
	—	270	5	0.5,1.0		A
L1-PE	+	0	5	1.0,2.0	12 Ω	A
	+	90	5	1.0,2.0		A
	+	180	5	1.0,2.0		A
	+	270	5	1.0,2.0		A
	—	0	5	1.0,2.0		A
	—	90	5	1.0,2.0		A
	—	180	5	1.0,2.0		A
	—	270	5	1.0,2.0		A
N-PE	+	0	5	1.0,2.0	12 Ω	A
	+	90	5	1.0,2.0		A
	+	180	5	1.0,2.0		A
	+	270	5	1.0,2.0		A
	—	0	5	1.0,2.0		A
	—	90	5	1.0,2.0		A
	—	180	5	1.0,2.0		A
	—	270	5	1.0,2.0		A
Note: EN IEC 61000-6-1 & EN IEC 61000-6-2						
			Engineer: Xu Weifei			

Surge Immunity Test Results

Applicant	GoodWe Technologies Co., Ltd.	Date of Test	2022.04.13			
EUT	Hybrid Inverter	Input Volt	200Vdc	Output Volt	230Vac/50Hz	
Model No.	GW6000-ES-20	Temp.	25 °C	Humidity	53%	
Test Mode	10% Load					
Working Condition	Operating		Results	PASS		
Input DC Power Port						
Combination wave ☒ 1.2/50 μ s ☐ 10/700 μ s						
Location	Polarity	Phase Angle	No of Pulse	Pulse Voltage kV	Impedance	Observation Criterion
PV+,PV-	+	N/A	5	0.5	2 Ω	A
	-	N/A	5	0.5		A
PV+,PE	+	N/A	5	1.0	12 Ω	A
	-	N/A	5	1.0		A
PV-,PE	+	N/A	5	1.0	12 Ω	A
	-	N/A	5	1.0		A
Note: EN IEC 61000-6-1 & EN IEC 61000-6-2			Engineer: Xu Weifei			

Surge Immunity Test Results

Applicant	GoodWe Technologies Co., Ltd.	Date of Test	2022.04.13		
EUT	Hybrid Inverter	Input Volt	200Vdc	Output Volt	230Vac/50Hz
Model No.	GW6000-ES-20	Temp.	25 °C	Humidity	53%
Test Mode	10% Load				
Working Condition	Operating		Results	PASS	
[]DC Input and Output Power Port/[√]I/O Signal Cable					
Combination wave ☐ 1.2/50 μs ☒ 10/700μs					
Common Mode	Polarity	No of Pulse	Pulse Voltage (kV)	Impedance	Observation Criterion
RJ-45	+	5	0.5	15+25*8 Ω	A
	-	5	0.5		A
Note: EN IEC 61000-6-1 & EN IEC 61000-6-2					
			Engineer: Xu Weifei		

11 CONDUCTED DISTURBANCE IMMUNITY TEST

11.1 Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	Signal Generator	Agilent	E8257D	MY46130040	2021-07-16	1 Year
2.	Power Amplifier	EMPOWER	2012-BBSOD3FEL	1013D/C0715	NCR	NCR
3.	Attenuator	ShanghaiHuaxiang	DTS250	17110301	2021-10-08	1 Year
4.	CDN	FCC	FCC-801-M3-25A	06041	2021-12-14	1 Year
5.	CDN	FCC	FCC-801-M3-25A	06042	2021-12-14	1 Year
6.	CDN	TESEQ	CDN ST08A	36281	2021-10-08	1 Year
7.	Software	Audix/i2(5.8.1)				

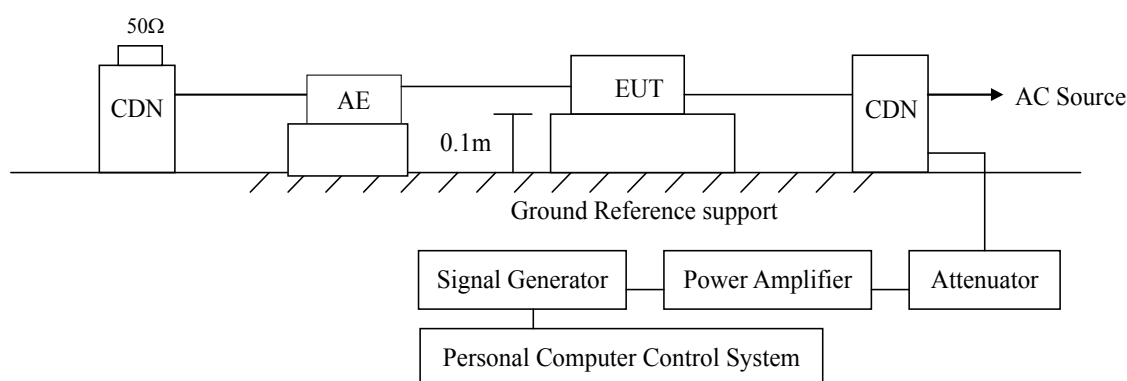
NCR: Non-Calibration Requirement.

11.2 Block Diagram of Test Setup

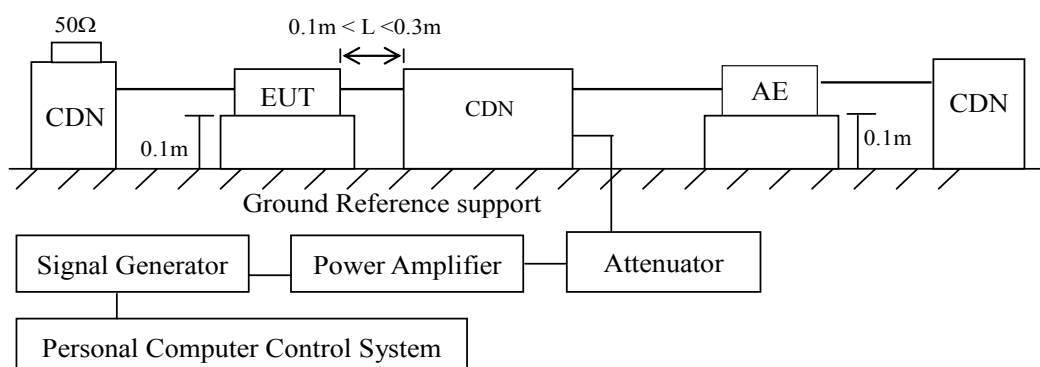
11.2.1 Block Diagram of connection between EUT and simulators.

Same as Section 8.2.1.

11.2.2 Common Mode Test Setup



11.2.3 CDN Mode Test Setup



11.3 Test Standard

EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2)
[IEC 61000-4-6:2013+COR1:2015]

11.4 Severity Levels and Performance Criterion

11.4.1 Severity levels

Frequency range 0.15MHz - 80MHz		
Level	Voltage level (e.m.f.)	
	U_0 dB(μV)	U_0 V
1.	120	1
2.	130	3
3.	140	10
X ^a	Special	
^a X is an open level.		

Test Level: 0.15-80MHz, 3/10V, 80%AM (1kHz)

11.4.2 Performance criterion: A

11.5 Test Procedure

The measuring process is according to EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2) (IEC 61000-4-6:2013+COR1:2015) and laboratory internal procedure TKC-301-019.

For AC Mains port

- 11.5.1 Set up the EUT, CDN and test generators as shown on section 11.2.2.
- 11.5.2 The EUT and supporting equipment were placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) was placed on the ground plane making contact with it at about 0.1-0.3m from EUT. Cables between CDN and EUT were as short as possible.
- 11.5.3 The disturbance signal described below was injected to EUT through CDN.
- 11.5.4 The EUT operates within its operational mode(s) under intended climatic conditions after power on.
- 11.5.5 The frequency range was swept from 150 kHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave.
- 11.5.6 The rate of sweep shall not exceed 1.5×10^{-3} decades/s. Where the frequency was swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
- 11.5.7 Recording the EUT Operating situation during compliance testing and decide the EUT immunity criterion.

For Telecommunication Port

- 11.5.8 Set up the EUT, EM Injection Clamp and test generators as shown on section 11.2.3.
- 11.5.9 The EUT and supporting equipment were placed on an insulating support 0.1m high above a ground reference plane. EM Injection Clamp (coupling and decoupling device) was placed on the ground plane making contact with it at about 0.1-0.3m from EUT. Cables between CDN and EUT were as short as possible.
- 11.5.10 The CDN was placed on between AE and EUT, the EUT and AE of power through CDN, CDN terminated with 50 Ω at the RF disturbance input port.
- 11.5.11 The disturbance signal described below was injected to EUT though EM Injection Clamp.
- 11.5.12 Repeat above procedure from 11.5.9 to 11.5.11.

11.6 Test Results

PASSED.

EUT was tested with the following test mode and all the test results are listed in next page.

Inject Currents Immunity Test Results

Applicant	GoodWe Technologies Co., Ltd.	Date of Test	2022.04.11		
EUT	Hybrid Inverter	Input Volt	200Vdc	Output Volt	230Vac/50Hz
Model No.	GW6000-ES-20	Temp.	24 ℃	Humidity	40%
Test Mode	10% Load				
Working Condition	Operating		Results		PASS
Frequency Range (MHz)	Inject Position	Strength(V/m)	Observation Criterion		Remark
0.15MHz~80MHz	AC Port	3	A		CDN
0.15MHz~80MHz	DC Port	3	A		CDN
0.15MHz~80MHz	LAN Port	3	A		CDN
Note: EN IEC 61000-6-1 Modulation Condition: 80% AM(1kHz) Dwell Time:3s Step Frequency:1%					
		Engineer: Yang Zuoli			

Inject Currents Immunity Test Results

Applicant	GoodWe Technologies Co., Ltd.	Date of Test	2022.04.11		
EUT	Hybrid Inverter	Input Volt	200Vdc	Output Volt	230Vac/50Hz
Model No.	GW6000-ES-20	Temp.	24 °C	Humidity	40%
Test Mode	10% Load				
Working Condition	Operating		Results		PASS
Frequency Range (MHz)	Inject Position	Strength(V/m)	Observation Criterion		Remark
0.15MHz~80MHz	AC Port	10	A		CDN
0.15MHz~80MHz	DC Port	10	A		CDN
0.15MHz~80MHz	LAN Port	10	A		CDN
Note: EN IEC 61000-6-2 Modulation Condition: 80% AM(1kHz) Dwell Time:3s Step Frequency:1%					
		Engineer: Yang Zuoli			

12 POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST

12.1 Test Equipment

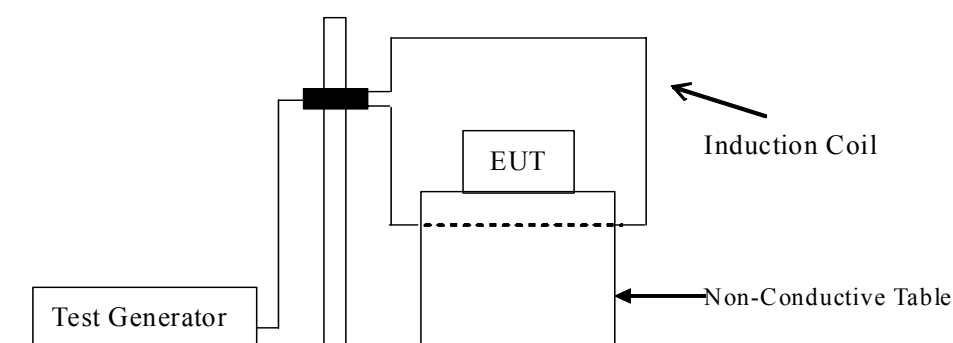
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	Power Frequency Magnetic Field Generator	3C TEST	PFMF-6108G	EC0881205	2021-08-23	1 Year

12.2 Block Diagram of Test Setup

12.2.1 Block Diagram of connection between EUT and simulators.

Same as section 8.2.1.

12.2.2 Test Setup



12.3 Test Standard

EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2)
[IEC 61000-4-8:2009]

12.4 Severity Levels and Performance Criterion

12.4.1 Severity level

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

Test Level: 50Hz, 3/30A/m

Performance criterion: **A**

12.5 Test Procedure

The measuring process is according to EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2) (IEC 61000-4-8:2009) and laboratory internal procedure TKC-301-020.

The EUT was placed on 1m high table that above the ground reference plane which is the min. size 1m x 1m and 0.65mm thickness metallic. And subjected to the test magnetic field by using the induction coil of standard dimensions (1m x 1m). The induction coil rotated by 90 degrees in order to expose the EUT to the test field with different orientations. All cables of EUT exposed to magnetic field for 1m of their length.

12.6 Test Results

PASSED.

EUT was tested with the following test mode and all the test results are listed in next page.

Power frequency magnetic field Test Results

Applicant	GoodWe Technologies Co., Ltd.	Date of Test	2022.04.14		
EUT	Hybrid Inverter	Input Volt	200Vdc	Output Volt	230Vac/50Hz
Model No.	GW6000-ES-20	Temp.	23 °C	Humidity	50%
Test Mode	10% Load				
Working Condition	Operating		Results	PASS	
<i>Power Frequency Magnetic Field</i>		<i>Testing Duration</i>	<i>Coil Orientation</i>	<i>Observation Criterion</i>	<i>Remark</i>
50Hz, 3A/m		1 Min	X-axis	A	
50Hz, 3A/m		1 Min	Y-axis	A	
50Hz, 3A/m		1 Min	Z-axis	A	
Note: EN IEC 61000-6-1			Engineer: Jin Siqi		

Power Frequency Magnetic Field Test Results

Applicant	GoodWe Technologies Co., Ltd.	Date of Test	2022.04.14		
EUT	Hybrid Inverter	Input Volt	200Vdc	Output Volt	230Vac/50Hz
Model No.	GW6000-ES-20	Temp.	23 °C	Humidity	50%
Test Mode	10% Load				
Working Condition	Operating		Results	PASS	
<i>Power Frequency Magnetic Field</i>	<i>Testing Duration</i>	<i>Coil Orientation</i>	<i>Observation Criterion</i>		<i>Remark</i>
50Hz, 30A/m	1 Min	X-axis	A		
50Hz, 30A/m	1 Min	Y-axis	A		
50Hz, 30A/m	1 Min	Z-axis	A		
Note: EN IEC 61000-6-2			Engineer: Jin Siqi		

13 VOLTAGE DIPS AND INTERRUPTIONS IMMUNITY TEST

13.1 Test Equipment

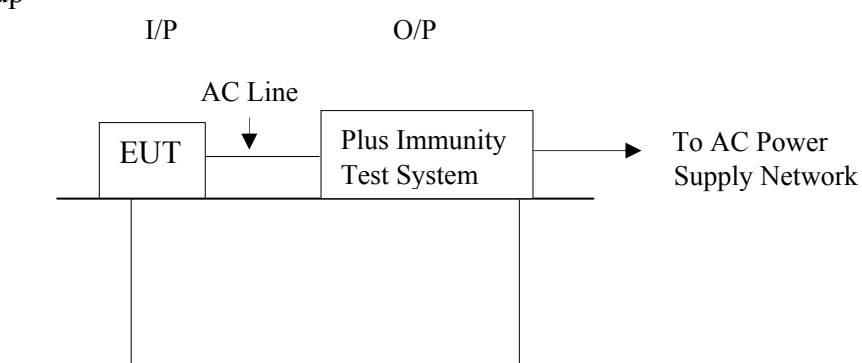
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Period
1.	AC power source	TESEQ	NSG1007-45	1236A00705	2022-03-01	1 Year
2.	Proflin 2100 AC switching Unit	TESEQ AG	NSG2200-3	A22712	2022-03-01	1 Year

13.2 Block Diagram of Test Setup

13.2.1 Block Diagram of connection between EUT and simulators.

Same as section 8.2.1.

13.2.2 Test Setup



13.3 Test Standard

EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2)
[IEC 61000-4-11:2020+COR1:2020, IEC 61000-4-34:2005+A1:2009]

13.4 Severity Levels and Performance Criterion

13.4.1 Preferred severity levels and durations for voltage dips

Class ^a	Test level and durations for voltage dips (t_v) (50Hz/60Hz)				
Class 1	Case-by-case according to the equipment requirements				
Class 2	0% during ½ cycle	0% during 1 cycle	70% during 25/30 ^c cycles		
Class 3	0% during ½ cycle	0% during 1 cycle	40% during 10/12 ^c cycles	70% during 25/30 ^c cycles	80% during 250/300 ^c cycles
Class X ^b	X	X	X	X	X
^a Classes as per IEC 61000-2-4. ^b To be defined by product committee. For equipment connected directly or indirectly to the public network, the levels must not be less severe than Class 2. ^c “25/30 cycles” means “25 cycles for 50Hz test” and “30 cycles for 60Hz test”.					

13.4.2 Preferred severity levels and durations for short interruptions

Class ^a	Test level and durations for short interruptions (t_s) (50Hz/60Hz)
Class 1	Case-by-case according to the equipment requirements
Class 2	0% during 250/300 ^c cycles
Class 3	80% during 250/300 ^c cycles
Class X ^b	X
^a Classes as per IEC 61000-2-4. ^b To be defined by product committee. For equipment connected directly or indirectly to the public network, the levels must not be less severe than Class 2. ^c “250/300 cycles” means “250 cycles for 50Hz test” and “300 cycles for 60Hz test”.	

Severity Level:

EN 61000-6-1(IEC 61000-6-1) Voltage dips: Voltage interruptions 100% reduction: 250 period;
Dips 30% reduction: 25 period; 100% reduction: 0.5period; 100% reduction: 1.0period

EN 61000-6-2(IEC 61000-6-2) Voltage dips: Voltage interruptions 100% reduction: 250 period;
Dips 30% reduction: 25 period; 60% reduction: 10 period; 100% reduction: 1.0period

13.4.3 Performance criterion:

- 1) Voltage dips 100% reduction performance criterion **B**.
- 2) Voltage dips 60% reduction performance criterion **C**.
- 3) Voltage dips 30% reduction performance criterion **C**.
- 4) Voltage interruption 100% reduction performance criterion **C**.

13.5 Test Procedure

The measuring process is according to EN IEC 61000-6-1 & EN IEC 61000-6-2 (IEC 61000-6-1 & IEC 61000-6-2) (IEC 61000-4-11:2020+COR1:2020, IEC 61000-4-34:2005+A1:2009) and laboratory internal procedure TKC-301-021.

13.5.1 Set up the EUT and test generator as shown on section 13.2.

13.5.2 The interruption was introduced at selected phase angles with specified duration. There was a 10s minimum interval between each test event.

13.5.3 After each test a full functional check was performed before the next test.

13.5.4 Repeat procedures 13.5.2. & 13.5.3. for voltage dips, only the test level and duration was changed.

13.5.5 Record any degradation of performance.

13.6 Test Results

PASSED.

EUT was tested with the following test mode and all the test results are listed in next page.

Voltage Dips and Interruptions Immunity Test Results

Applicant	GoodWe Technologies Co., Ltd.		Date of Test	2022.04.14			
EUT	Hybrid Inverter		Input Volt	200Vdc	Output Volt	230Vac/50Hz	
Model No.	GW6000-ES-20		Temp.	23.8 °C		Humidity	45%
Test Mode	10% Load						
Working Condition	Operating		Results	PASS			
Type of Test	Test Voltage				Observation Criterion		
		Phase Angle	%Reduction	Period			
Voltage Interruption	230Vac	0	100%	250	C		
		45	100%	250	C		
		90	100%	250	C		
		135	100%	250	C		
		180	100%	250	C		
		225	100%	250	C		
		270	100%	250	C		
		315	100%	250	C		
Voltage Dips	230Vac	0	30%	25	B		
		45	30%	25	B		
		90	30%	25	B		
		135	30%	25	B		
		180	30%	25	B		
		225	30%	25	B		
		270	30%	25	B		
		315	30%	25	B		
	230Vac	0	100%	0.5	B		
		45	100%	0.5	B		
		90	100%	0.5	B		
		135	100%	0.5	B		
		180	100%	0.5	B		
		225	100%	0.5	B		
		270	100%	0.5	B		
		315	100%	0.5	B		
	230Vac	0	100%	1	B		
		45	100%	1	B		
		90	100%	1	B		
		135	100%	1	B		
		180	100%	1	B		
		225	100%	1	B		
		270	100%	1	B		
		315	100%	1	B		
Note: EN IEC 61000-6-1 The performance criterion C means that the power of the EUT decreases, it can't recover until by operator's action during the test interval. The performance criterion B means that the power of the EUT decreases, but it can recover by itself during the test interval.			Engineer: Jin Siqu				

Voltage Dips and Interruptions Immunity Test Results

Applicant	GoodWe Technologies Co., Ltd.		Date of Test	2022.04.14			
EUT	Hybrid Inverter		Input Volt	200Vdc	Output Volt	230Vac/50Hz	
Model No.	GW6000-ES-20		Temp.	23.8 °C		Humidity	45%
Test Mode	10% Load						
Working Condition	Operating		Results	PASS			
Type of Test	Test Voltage				Observation Criterion		
		Phase Angle	%Reduction	Period			
Voltage Interruption	230Vac	0	100%	250	C		
		45	100%	250	C		
		90	100%	250	C		
		135	100%	250	C		
		180	100%	250	C		
		225	100%	250	C		
		270	100%	250	C		
		315	100%	250	C		
Voltage Dips	230Vac	0	30%	25	B		
		45	30%	25	B		
		90	30%	25	B		
		135	30%	25	B		
		180	30%	25	B		
		225	30%	25	B		
		270	30%	25	B		
		315	30%	25	B		
	230Vac	0	60%	10	B		
		45	60%	10	B		
		90	60%	10	B		
		135	60%	10	B		
		180	60%	10	B		
		225	60%	10	B		
		270	60%	10	B		
		315	60%	10	B		
	230Vac	0	100%	1	B		
		45	100%	1	B		
		90	100%	1	B		
		135	100%	1	B		
		180	100%	1	B		
		225	100%	1	B		
		270	100%	1	B		
		315	100%	1	B		
Note: EN IEC 61000-6-2 The performance criterion C means that the power of the EUT decreases, it can't recover until by operator's action during the test interval. The performance criterion B means that the power of the EUT decreases, but it can recover by itself during the test interval.			Engineer: Jin Siqi				

14 PHOTOGRAPHS

14.1 Photos of Conducted Disturbance Measurement

4G kit



Front View of Conducted Measurement (AC Mains Port)



Front View of Conducted Measurement (AC Mains Port)



Front View of Conducted Measurement (DC Mains Port)



Front View of Conducted Measurement (DC Mains Port)

WIFI/LAN kit



Front View of Conducted Measurement (AC Mains Port)



Front View of Conducted Measurement (AC Mains Port)



Front View of Conducted Measurement (DC Mains Port)



Front View of Conducted Measurement (DC Mains Port)



Front View of Conducted Measurement (Telecommunication Port)



Front View of Conducted Measurement (Telecommunication Port)

WIFI kit



Front View of Conducted Measurement (AC Mains Port)



Front View of Conducted Measurement (AC Mains Port)



Front View of Conducted Measurement (DC Mains Port)



Front View of Conducted Measurement (DC Mains Port)

14.2 Photos of Radiated Disturbance Measurement

For 30MHz ~1GHz

4G kit



Front View of Radiated Disturbance Measurement



Back View of Radiated Disturbance Measurement

WIFI/LAN kit



Front View of Radiated Disturbance Measurement



Back View of Radiated Disturbance Measurement

WIFI kit



Front View of Radiated Disturbance Measurement



Back View of Radiated Disturbance Measurement

For above 1GHz
4G kit

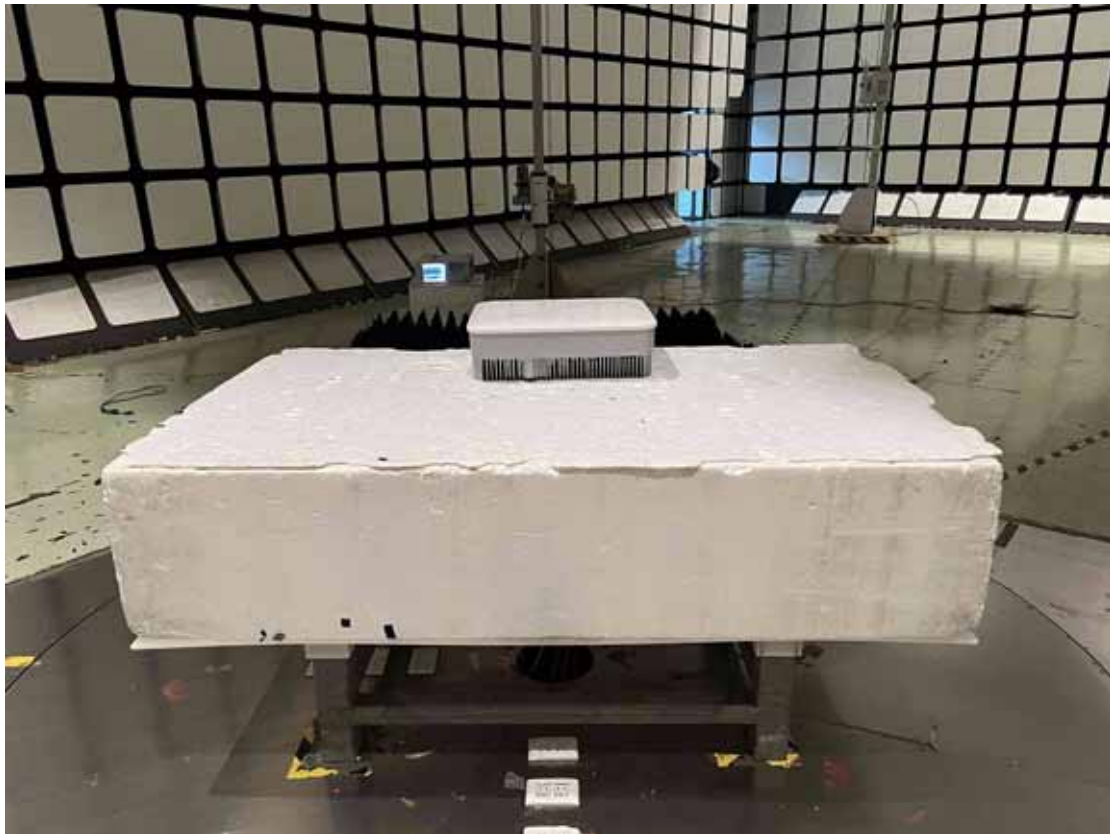


Front View of Radiated Disturbance Measurement

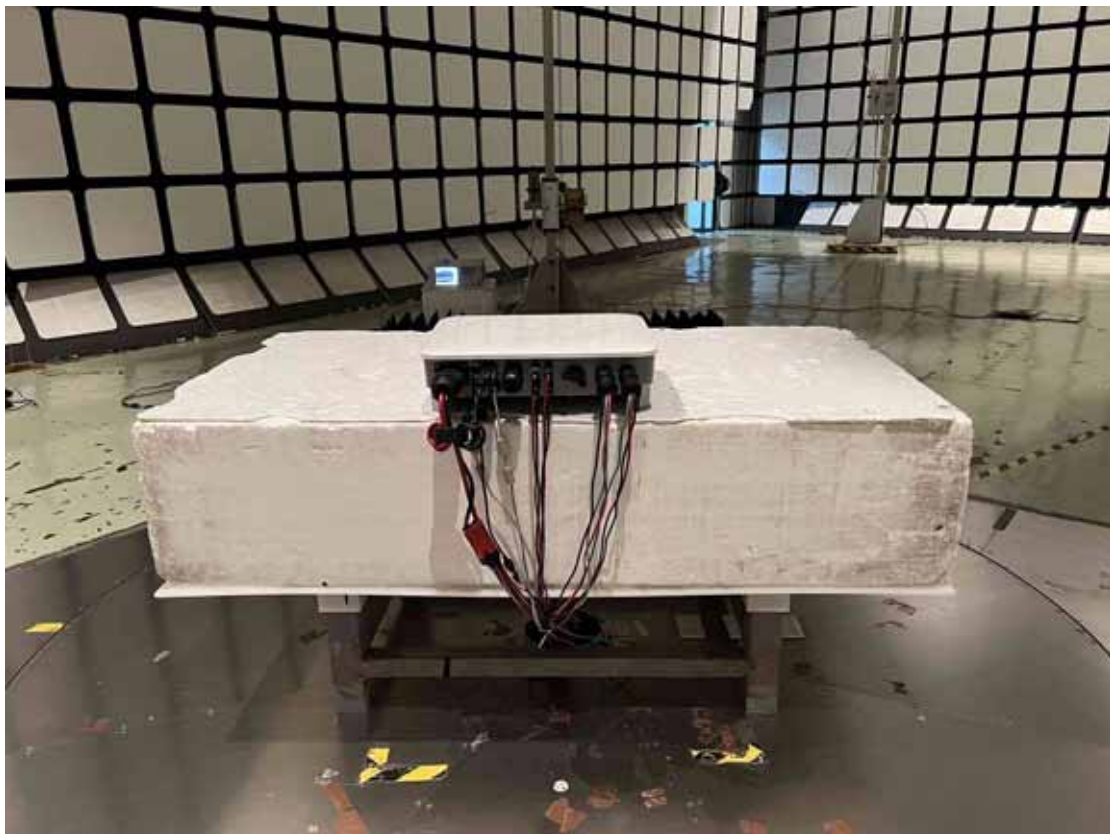


Back View of Radiated Disturbance Measurement

WIFI/LAN kit



Front View of Radiated Disturbance Measurement



Back View of Radiated Disturbance Measurement

WIFI kit



Front View of Radiated Disturbance Measurement



Back View of Radiated Disturbance Measurement

14.3 Photos of Harmonic & Flicker Measurement 4G kit



WIFI/LAN kit



WIFI kit



14.4 Photos of Electrostatic Discharge Immunity Test

4G kit



Contact & Air Discharge



VCP & HCP

WIFI/LAN kit



Contact & Air Discharge



VCP & HCP

WIFI kit



Contact & Air Discharge



VCP & HCP

14.5 Photos of RF Field Strength Immunity Test

4G kit



Front View of R/S Test (80MHz~1GHz)



Front View of R/S Test (Above 1GHz)



Back View of R/S Test

WIFI/LAN kit



Front View of R/S Test (80MHz~1GHz)

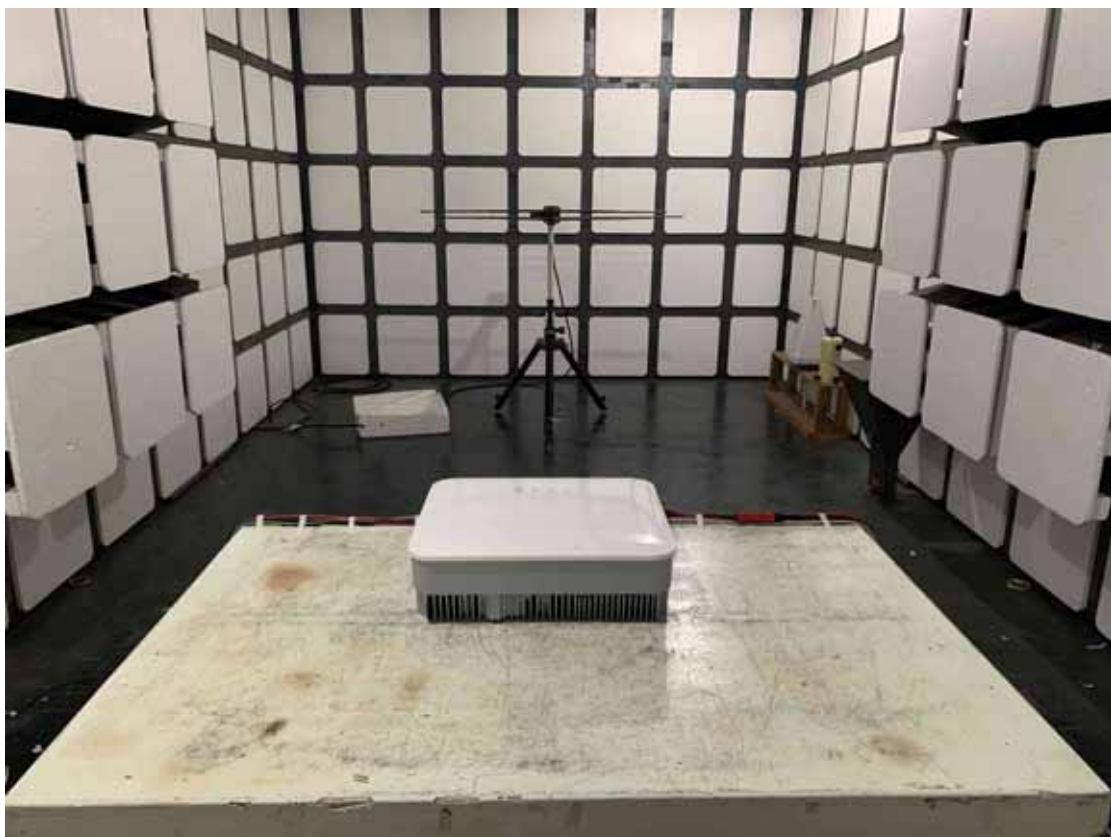


Front View of R/S Test (Above 1GHz)



Back View of R/S Test

WIFI kit



Front View of R/S Test (80MHz~1GHz)



Front View of R/S Test (Above 1GHz)



Back View of R/S Test

14.6 Photos of Electrical Fast Transient Immunity Test

4G kit



For AC Mains port



For DC Mains port

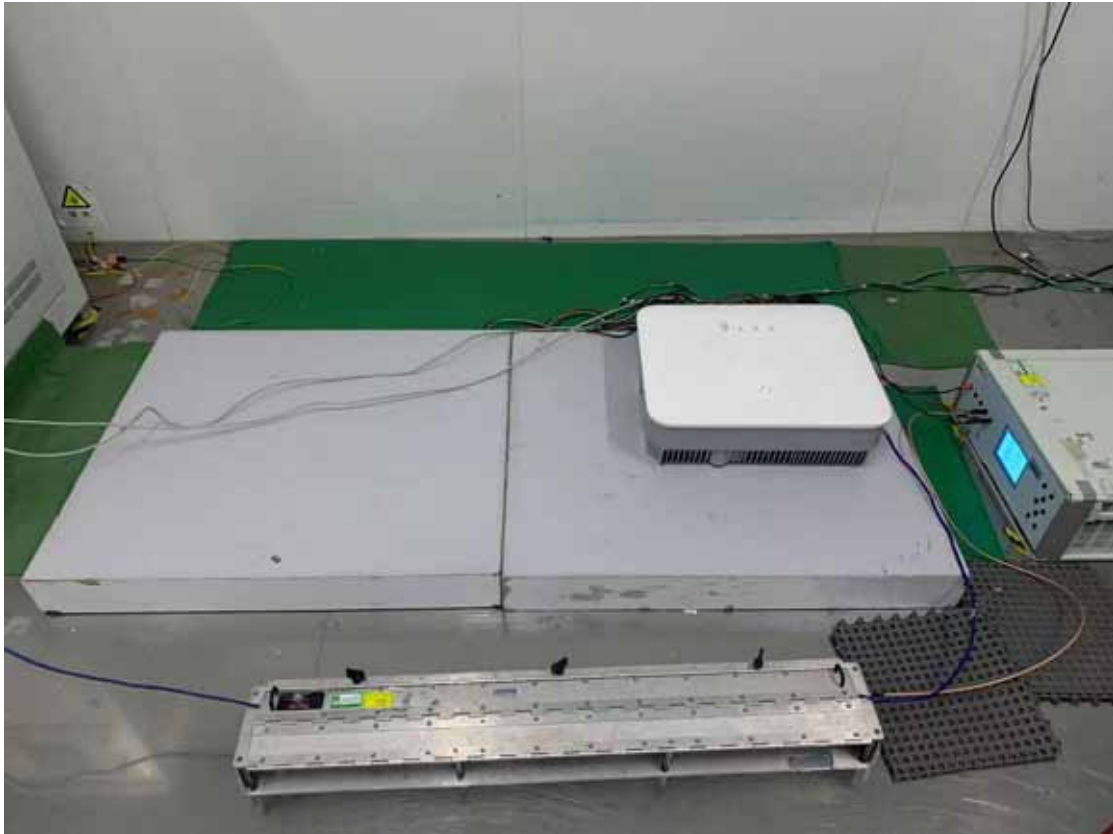
WIFI/LAN kit



For AC Mains port



For DC Mains port



For Telecommunication port

WIFI kit



For AC Mains port



For DC Mains port

14.7 Photos of Surge Immunity Test

4G kit



For AC Mains port



For DC Mains port

WIFI/LAN kit



For AC Mains port



For DC Mains port



For Telecommunication port

WIFI kit



For AC Mains port



For DC Mains port

14.8 Photos of Conducted Disturbance Immunity Test

4G kit



For AC Mains port



For DC Mains port

WIFI/LAN kit



For AC Mains port



For DC Mains port



For Telecommunication port

WIFI kit



For AC Mains port



For DC Mains port

14.9 Photos of Power Frequency Magnetic Field Immunity Test 4G kit



WIFI/LAN kit



WIFI kit



14.10 Photos of Voltage Dips and Interruptions Immunity Test

4G kit



WIFI/LAN kit



WIFI kit



APPENDIX

Photos of EUT

Figure 1
General Appearance (Top View)



Figure 2
General Appearance (Bottom View)



Figure 3
General Appearance (Side View)



Figure 4
General Appearance (Side View)



Figure 5
General Appearance (Side View)



Figure 6
General Appearance (I/O Ports)



Figure 7
Internal View

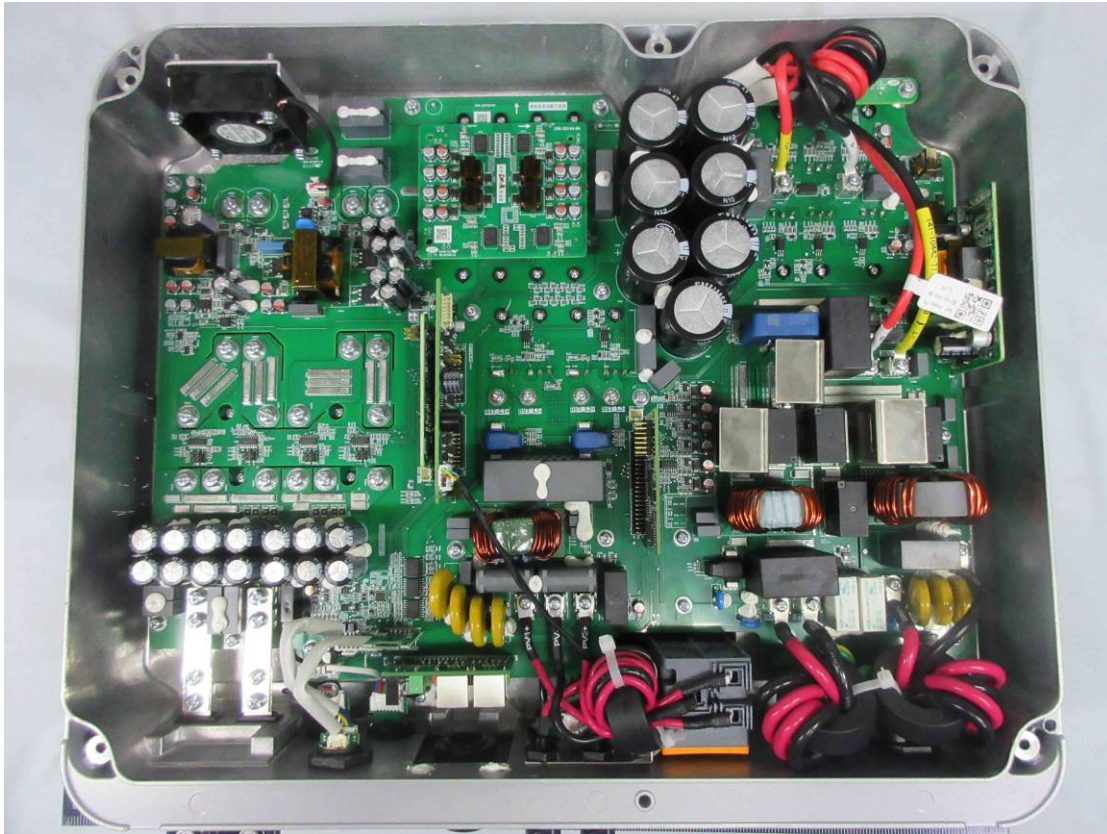


Figure 8
PCB Board (Component Side)

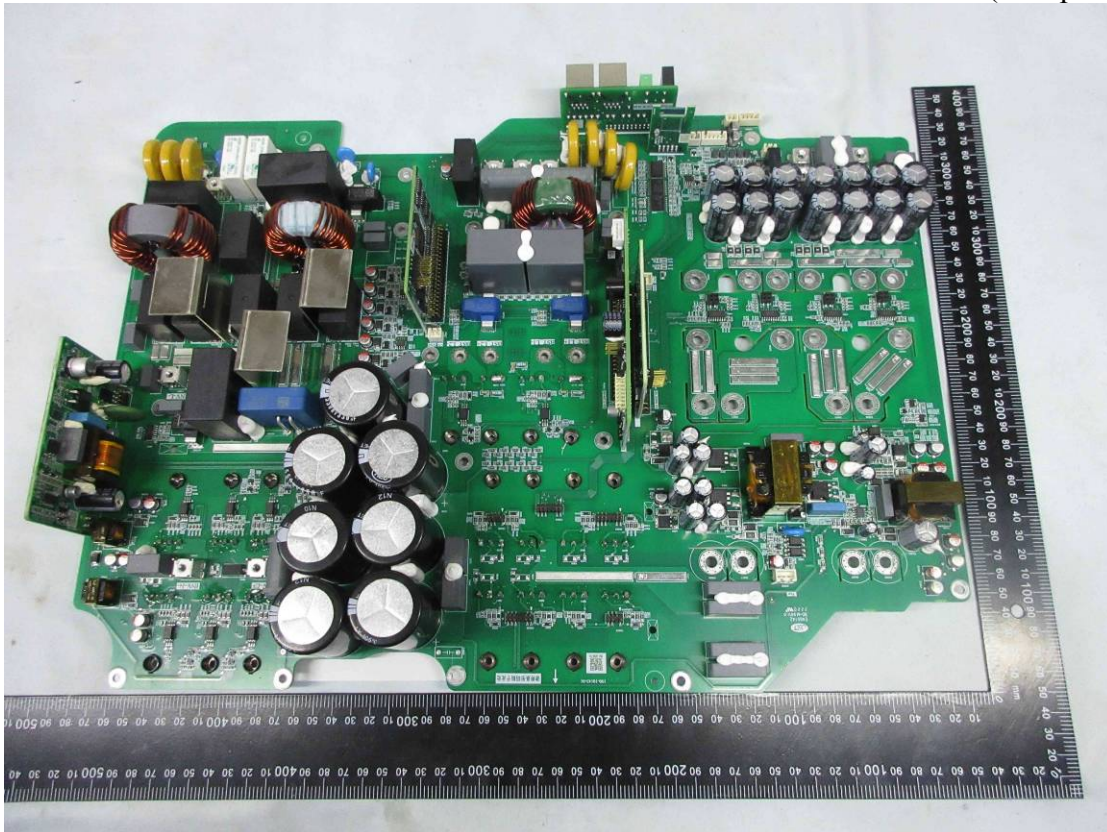


Figure 9
PCB Board (Solder Side)

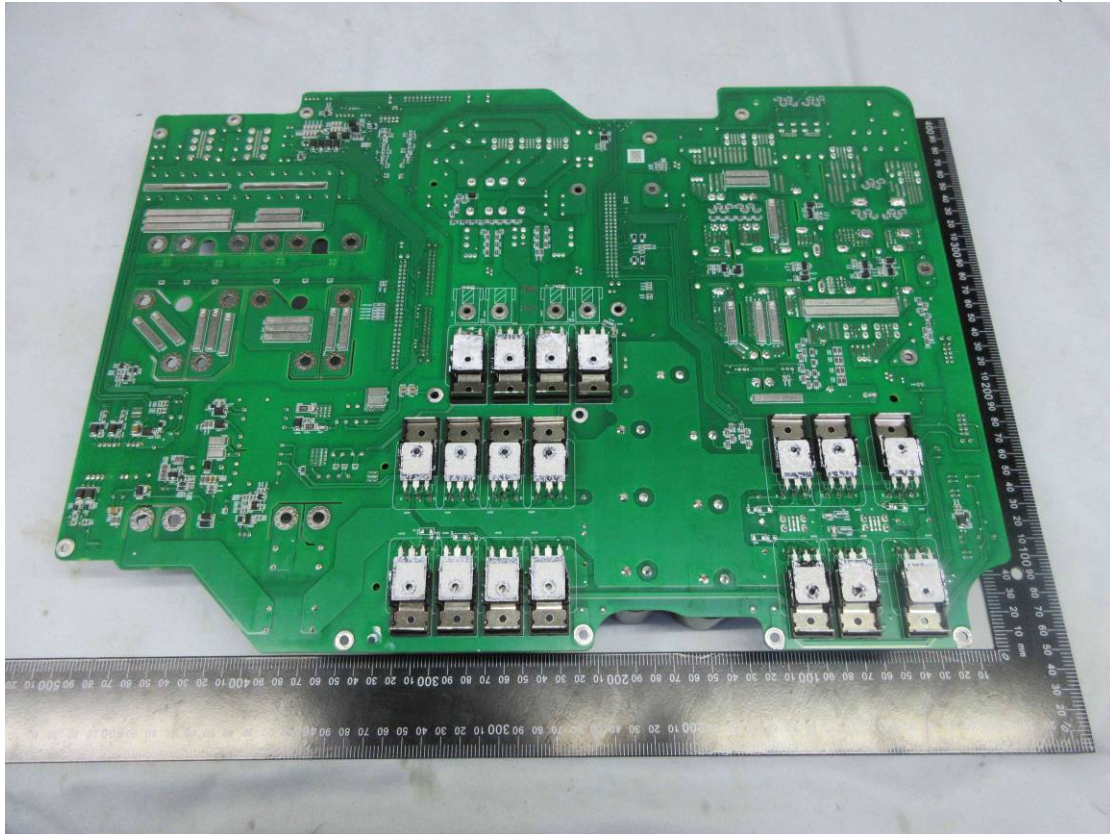


Figure 10
PCB Board (Component Side)

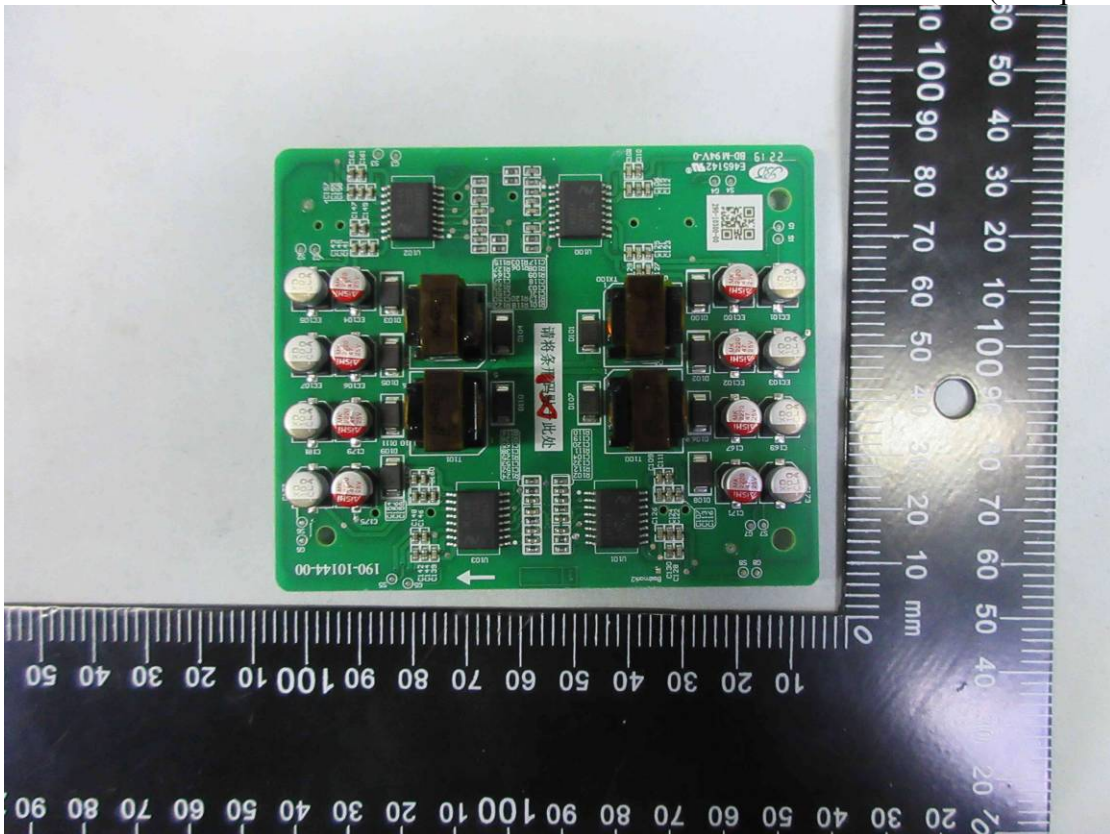


Figure 11
PCB Board (Solder Side)

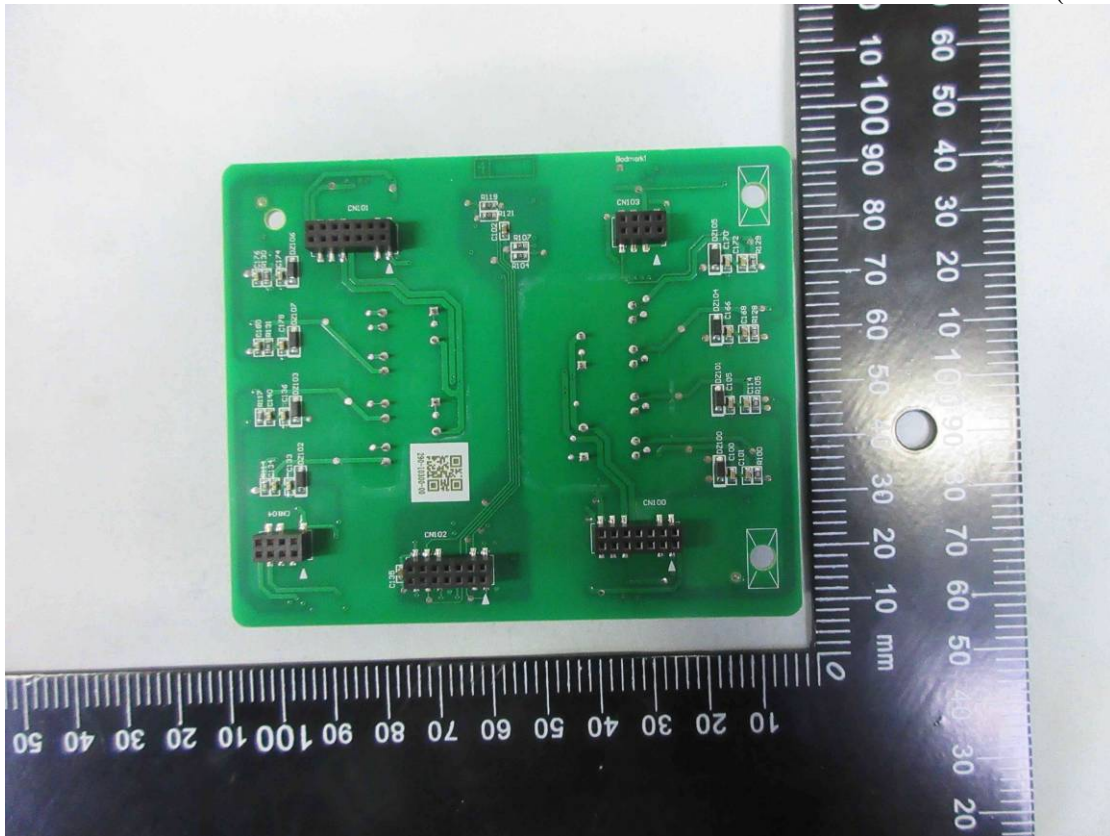


Figure 12
PCB Board (Component Side)



Figure 13
PCB Board (Solder Side)

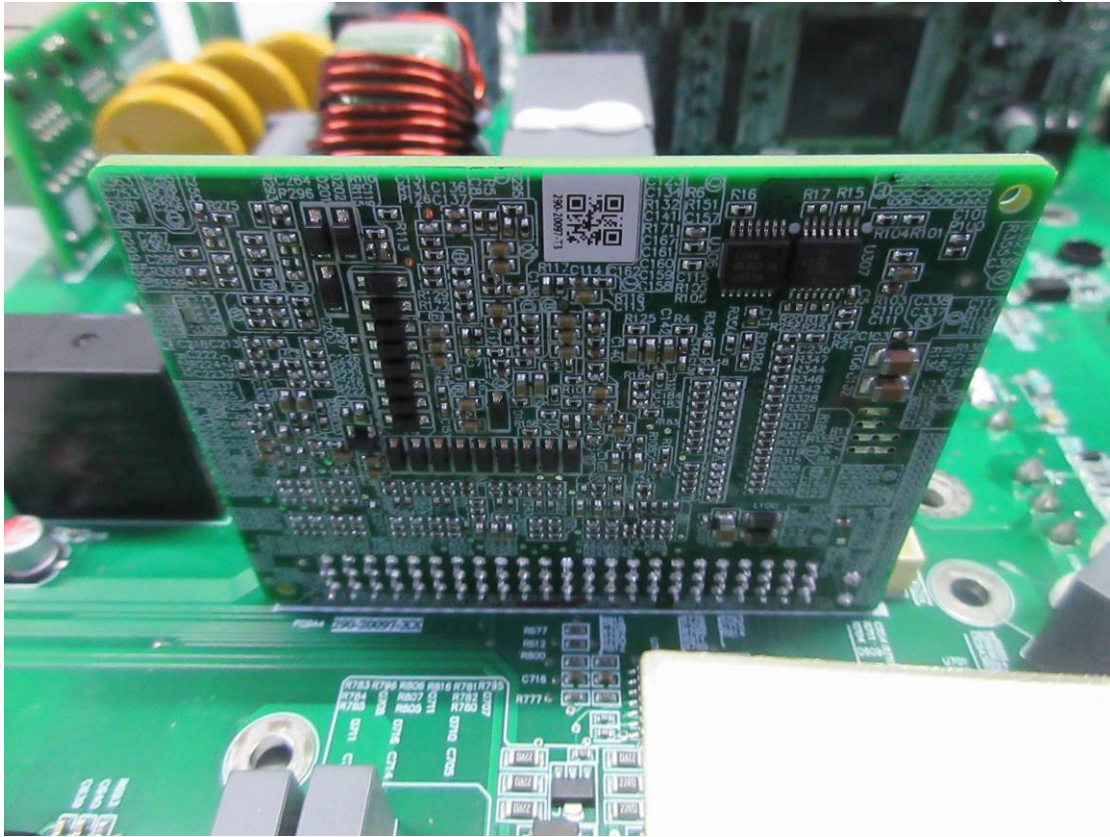


Figure 14
PCB Board (Crystal Oscillator)

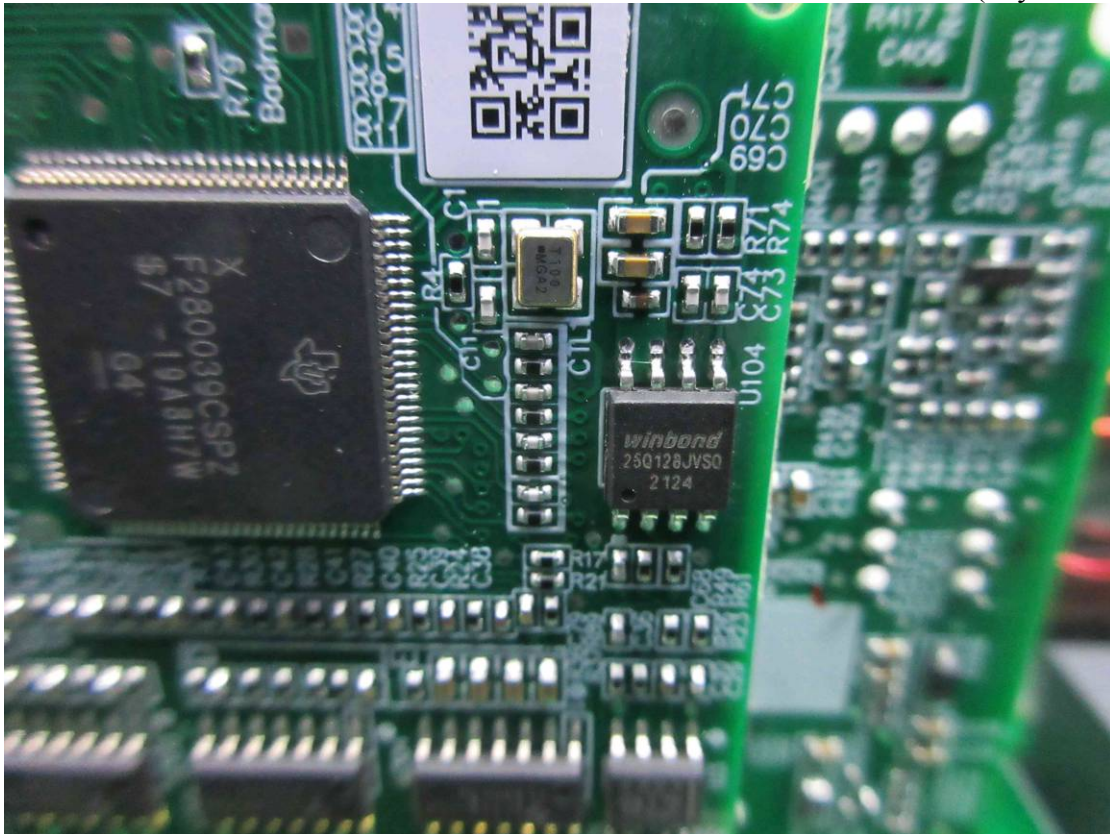


Figure 15
PCB Board (Component Side)

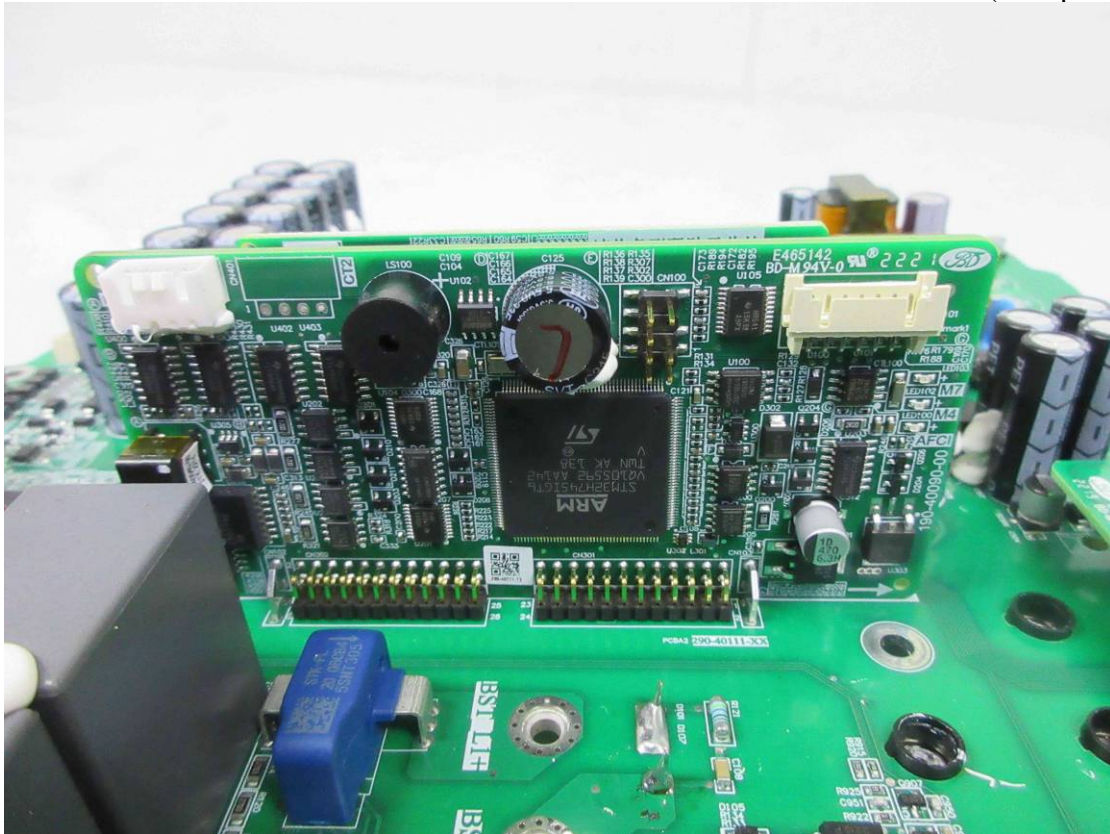


Figure 16
PCB Board (Crystal Oscillator)

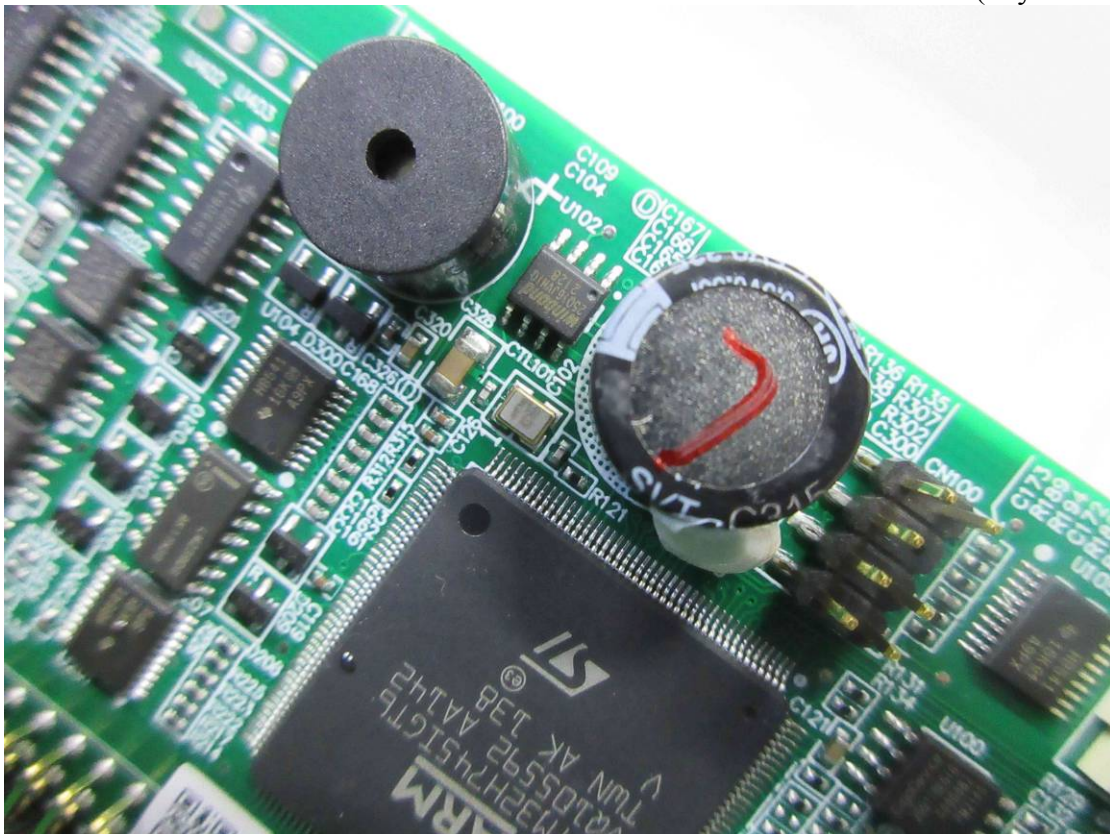


Figure 17
PCB Board (Component Side)



Figure 18
PCB Board (Crystal Oscillator)

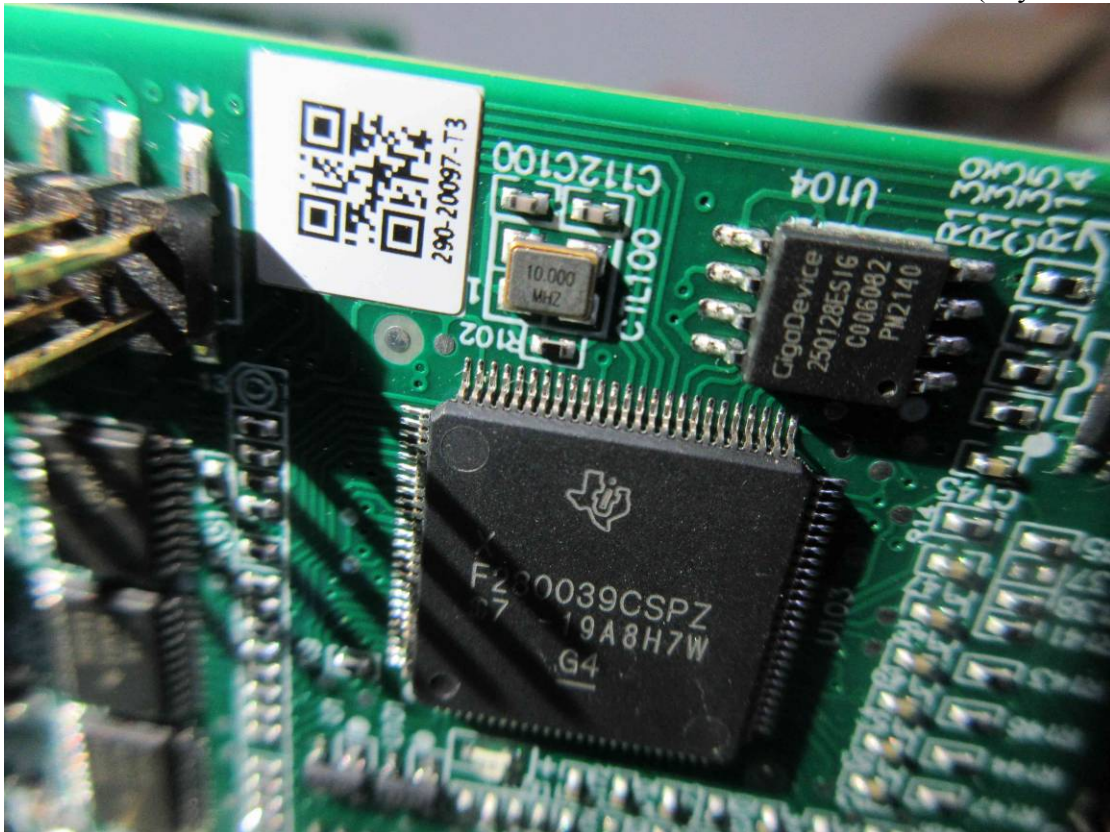


Figure 19
PCB Board (Component Side)



Figure 20
PCB Board (Solder Side)

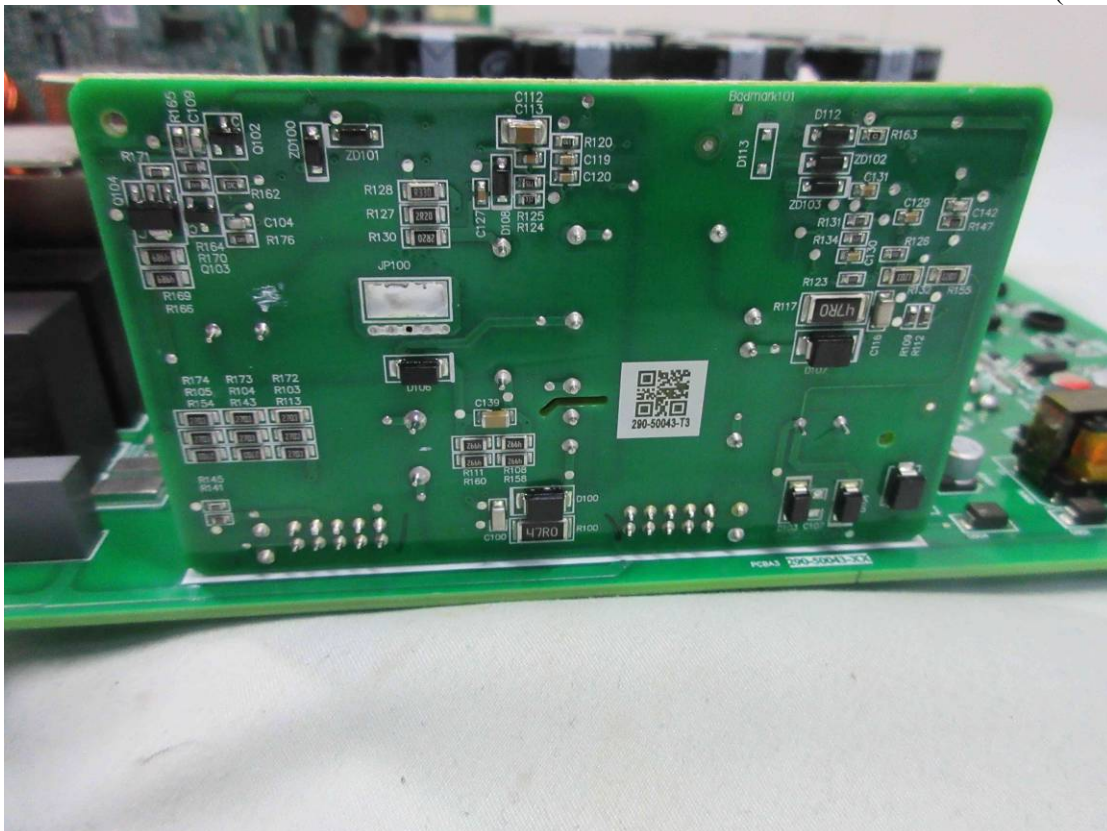


Figure 21
PCB Board (Component Side)

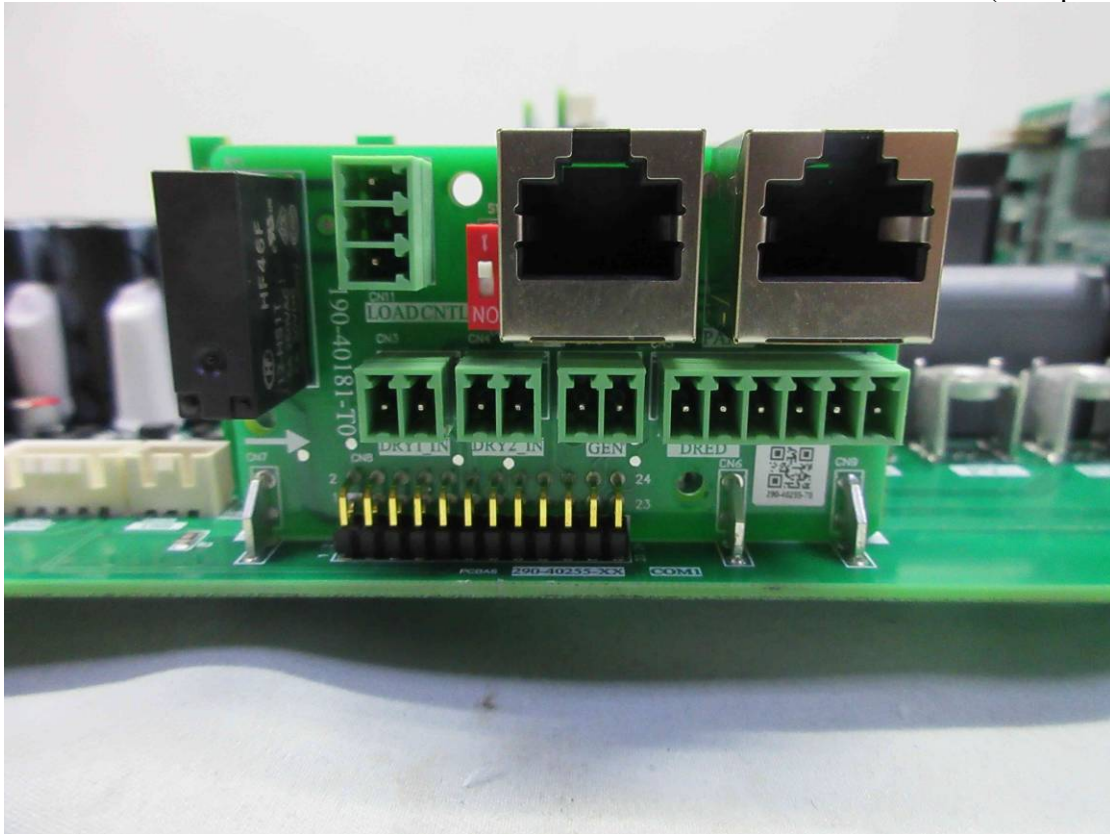


Figure 22
PCB Board (Component Side)

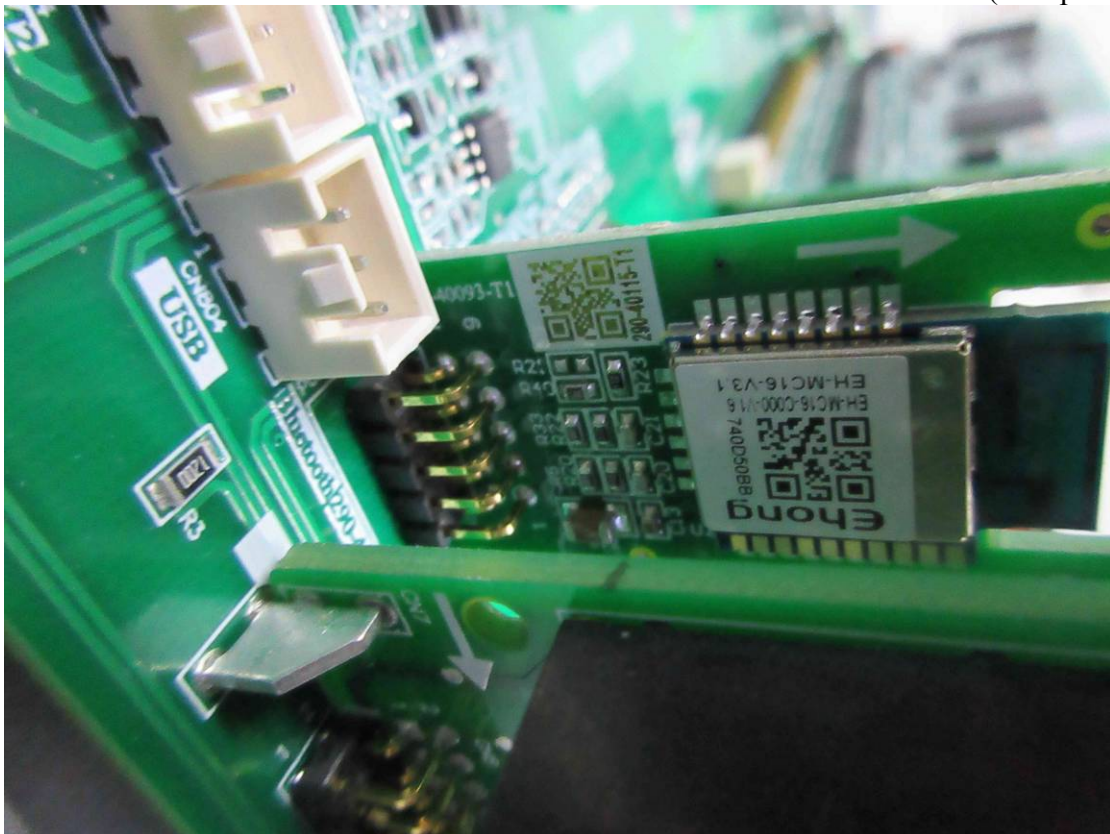


Figure 23
PCB Board (Solder Side)



Figure 24
WIFI/LAN Kit (Front View)



Figure 25
WIFI/LAN Kit (Back View)



Figure 26
WIFI/LAN Kit (Side View)



Figure 27
WIFI/LAN Kit (PCB Board/Component Side)

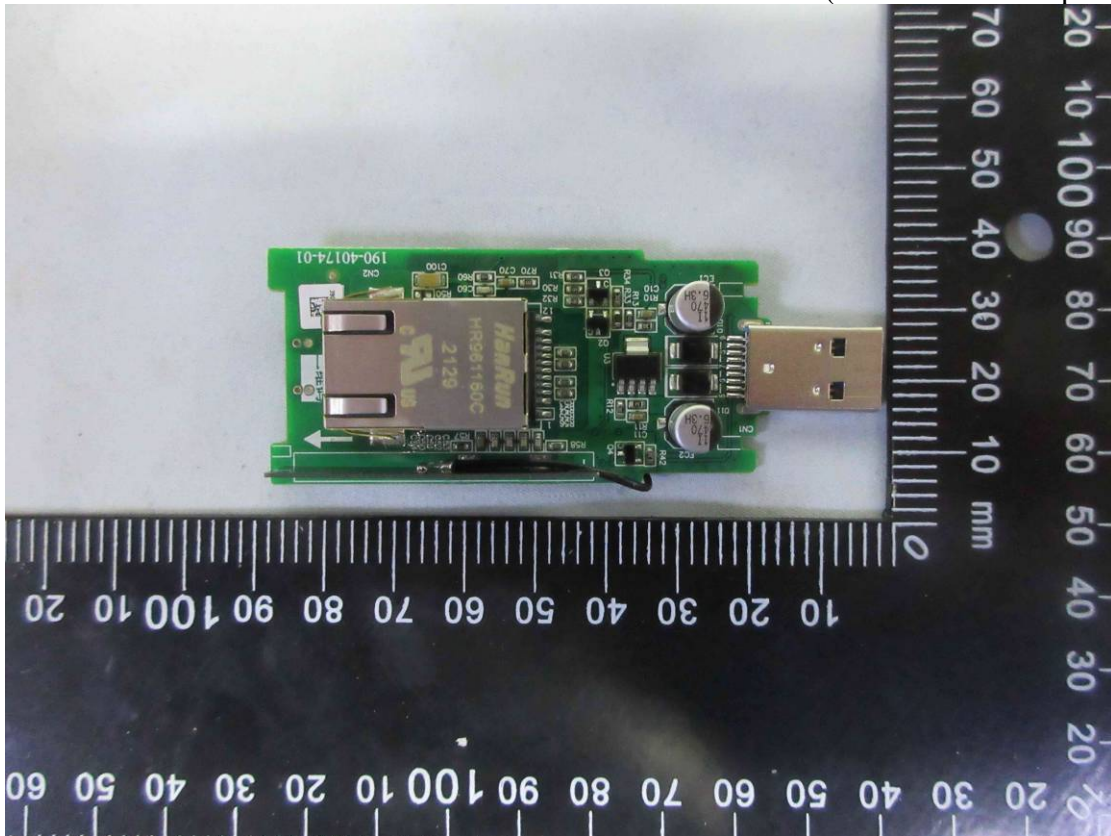


Figure 28
WIFI/LAN Kit (PCB Board/Solder Side)



Figure 29
4G Kit (Front View)



Figure 30
4G Kit (Back View)



Figure 31
4G Kit (PCB Board/Component Side)

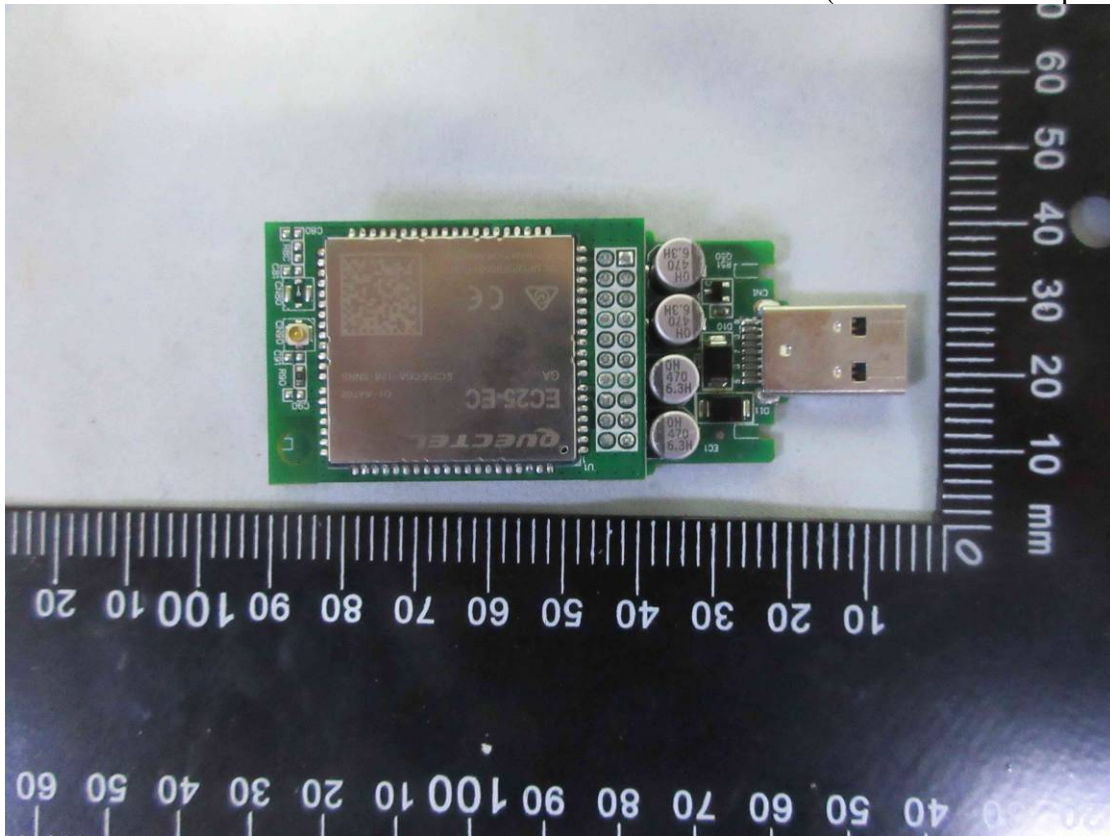


Figure 32
4G Kit (PCB Board/Solder Side)

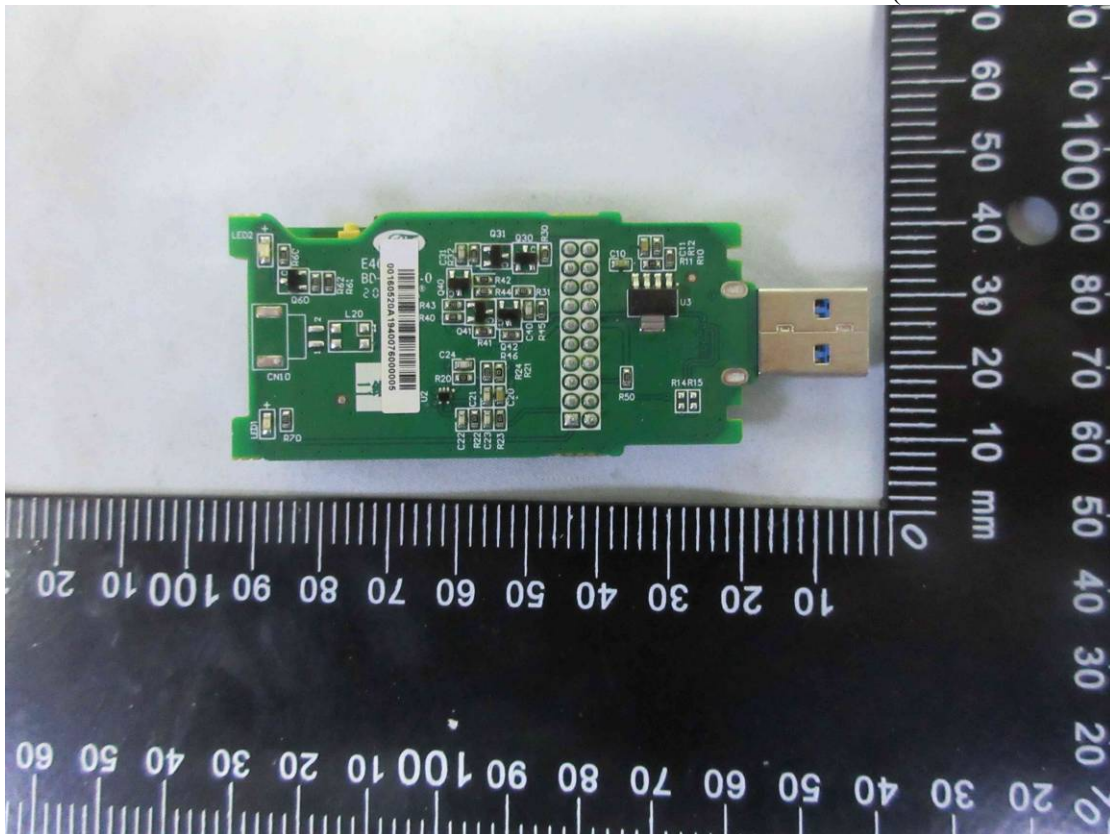


Figure 33
WIFI Kit (Front View)



Figure 34
WIFI Kit (Back View)



Figure 35
WIFI Kit (PCB Board/Component Side)

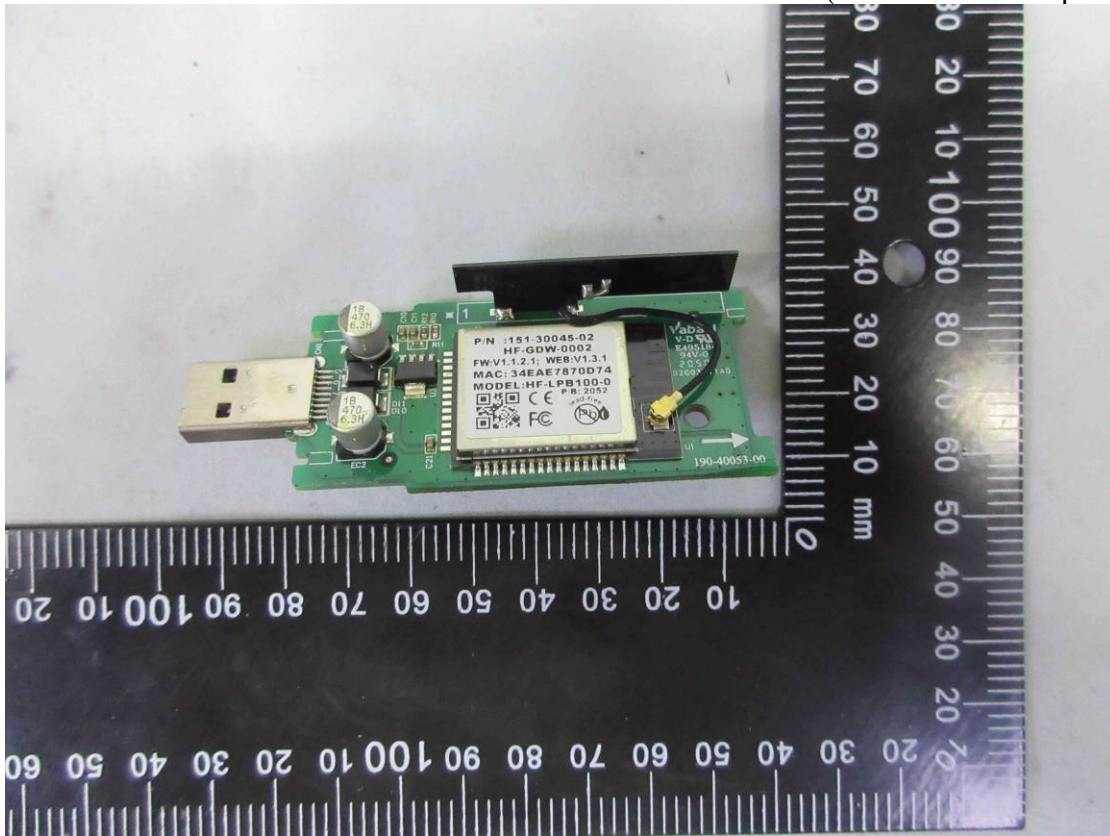


Figure 36
WIFI Kit (PCB Board/Solder Side)

