

Technical Compliance Statement



Ref. No.: ACWE-RC180175(C1W1811005)

For the following equipment

Applicant : Jiangsu Goodwe Power Supply Technology Co.,Ltd.
Manufacturer : Jiangsu Goodwe Power Supply Technology Co.,Ltd.
Product : Grid-Connected PV Inverter
Model Number : (1) GW60K-MT (2) GW50K-MT
(3) GW60KN-MT (4) GW50KN-MT
Brand : GOODWE

We, **AUDIX Technology (Wujiang) Co., Ltd. EMC Dept.** hereby certify that the above product has been tested by us with the listed standards and found in compliance with the council EMC directive 2014/30/EU. The test data & results are issued on the EMC test report No. **ACWE- E1707011B**.

Emission: **EN 61000-6-4:2007+A1:2011 (IEC 61000-6-4:2016+A1:2010)**
EN 61000-3-11:2000 and EN 61000-3-12:2011+AC:2013
(IEC 61000-3-11:2017 and IEC 61000-3-12:2011)

Immunity: **EN 61000-6-2:2005 (IEC 61000-6-2:2016)**
(IEC 61000-4-2:2008, IEC 61000-4-3:2006+A2:2010,
IEC 61000-4-4:2012, IEC 61000-4-5:2014,
IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2004)

Dec. 17, 2018

Ken Lu/ Assistant General Manager

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

The statement is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo.



Deutsche
Akkreditierungsstelle
D-PL-18968-01-00

EMC TEST REPORT

For

Jiangsu Goodwe Power Supply Technology Co.,Ltd.

Grid-Connected PV Inverter

Model No. : (1) GW60K-MT (2) GW50K-MT (3) GW60KN-MT (4) GW50KN-MT

Brand: GOODWE

Prepared for

Jiangsu Goodwe Power Supply Technology Co.,Ltd.

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Prepared by

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Report Number : ACWE-E1707011B

Date of Test : Jul. 03~14, 2017

Date of Report : Nov. 06, 2018

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TEST REPORT VERIFICATION

Applicant : Jiangsu Goodwe Power Supply Technology Co.,Ltd.
 Manufacturer : Jiangsu Goodwe Power Supply Technology Co.,Ltd.
 EUT Description : Grid-Connected PV Inverter
 (A) Model No. : (1) GW60K-MT (2) GW50K-MT
 (3) GW60KN-MT (4) GW50KN-MT
 (B) Brand : GOODWE
 (C) Test Voltage : AC 400V, 50Hz

Applicable standards:

Emission: **EN 61000-6-4:2007+A1:2011 (IEC 61000-6-4:2016+A1:2010)**
EN 61000-3-11:2000 and EN 61000-3-12:2011+AC:2013
(IEC 61000-3-11:2017 and IEC 61000-3-12:2011)

Immunity: **EN 61000-6-2:2005 (IEC 61000-6-2:2016)**
 (IEC 61000-4-2:2008, IEC 61000-4-3:2006+A2:2010,
 IEC 61000-4-4:2012, IEC 61000-4-5:2014,
 IEC 61000-4-6:2013, IEC 61000-4-8:2009, IEC 61000-4-11:2004)

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 report shows that the EUT is technically compliance with the requirements of EN 61000-6-2:2005, EN 61000-6-4:2007+A1:2011, EN 61000-3-11:2000, EN 61000-3-12:2011+AC:2013, IEC 61000-6-2:2016, IEC 61000-6-4:2016+A1:2010, IEC 61000-3-11:2017, IEC 61000-3-12:2011.

This 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: Jul. 03~14, 2017

Date of Report: Nov. 06, 2018

Prepared by :


 (Emma Hu/Assistant Administrator)

Approved & Authorized Signer :


 (Ken Lu/Assistant General Manager)

1 DESCRIPTION OF VERSION

| Edition No. | Date of Rev. | Summary | Report No. |
|-------------|---------------|---|----------------|
| 0 | Jul. 31, 2017 | Original Report. | ACWE-E1707011 |
| Rev. A | May 28, 2018 | Add the standards: IEC 61000-6-4: 2006+A1:2010, IEC 61000-6-2:2016, IEC 61000-3-11:2017, IEC 61000-3-12:2011. | ACWE-E1707011A |
| Rev. B | Nov. 06, 2018 | 1. Change the EUT name from Solar Inverter to Grid-Connected PV Inverter. 2. Add two new models: GW60KN-MT, GW50KN-MT. The difference of all the models is for different parts of specifications and key components. | ACWE-E1707011B |

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 (EN 61000-6-4:2007+A1:2011) (IEC 61000-6-4: 2006+A1:2010) | | | | |
|---|---|---|-----------------------------|---|
| Description of Test Item | Standard | Limits | Results | Remark |
| Conducted disturbance at main terminal | EN 61000-6-4:2007+A1:2011 (IEC 61000-6-4: 2006+A1:2010) | Table 1 | PASS | Minimum passing margin is 7.75 dB at 25.19 MHz |
| Radiated disturbance | EN 61000-6-4:2007+A1:2011 (IEC 61000-6-4: 2006+A1:2010) | Table 4 | PASS | Minimum passing margin is 11.55 dB at 74.46 MHz |
| Harmonic current emissions | EN 61000-3-11:2000 (IEC 61000-3-11:2017) | Class A | PASS | Meets the Class A requirement |
| Voltage fluctuations & flicker | EN 61000-3-12:2011+AC:2013 (IEC 61000-3-12:2011) | $P_{st}=1$ dc(%)=3.3% dMax.(%)=4% $T_{max}>3.3\% \leq 500ms$ | PASS | Meets the requirement |
| IMMUNITY (EN 61000-6-2:2005) (IEC 61000-6-2:2016) | | | | |
| 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 61000-4-3:2006+A2:2010 | PASS | A | A |
| Electrical fast transient (EFT) | IEC 61000-4-4:2012 | PASS | B | A |
| Surge | IEC 61000-4-5:2014 | PASS | B | A |
| Radio-frequency, Continuous conducted disturbance | IEC 61000-4-6:2013 | PASS | A | A |
| Power frequency magnetic field | IEC 61000-4-8:2009 | PASS | A | A |
| Voltage dips, 100% reduction | IEC 61000-4-11:2004 | PASS | B | B |
| Voltage dips, 30% reduction | | PASS | C | B |

| | | | | |
|-----------------------|--|------|---|---|
| Voltage interruptions | | PASS | C | B |
|-----------------------|--|------|---|---|

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 Tables 1 to 4.

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 | : | Grid-Connected PV Inverter |
| Model Number | : | (1)GW60K-MT (2)GW50K-MT (3) GW60KN-MT (4) GW50KN-MT Remark: The difference of all the models is for different parts of specifications and key components. |
| Test Model | : | GW60K-MT |
| Highest Working Frequency | : | 50Hz |
| Brand | : | GOODWE |
| Applicant | : | Jiangsu Goodwe Power Supply Technology Co.,Ltd. No.189 Kun Lun Shan Road, Suzhou New District, Jiangsu, China |
| Manufacturer | : | Jiangsu Goodwe Power Supply Technology Co.,Ltd. No.189 Kun Lun Shan Road, Suzhou New District, Jiangsu, China |
| I/O Ports | : | BACK-UP port*1 ON-GRID port*1 RS485*1 |
| Date of Receipt of Sample | : | Jun. 01, 2017 |
| Date of Test | : | Jul. 03~14, 2017 |

Remark for Rev. B

1. This report is based on the version ACWE-E1707011 & ACWE-E1707011A.
2. This update report is to change the EUT name from Solar Inverter to Grid-Connected PV Inverter and add two new models: GW60KN-MT, GW50KN-MT. The difference of all the models is for different parts of specifications and key components. The electrical distance between some wires on the PCB board is broadened, but the layout is the same. It has no effect on the test result, so there's no need to retest it. All the test data are recorded in the report ACWE-E1707011 & ACWE-E1707011A.

3.2 EUT's Specifications under test

| Technical Data | GW50K-MT | GW60K-MT | GW50KN-MT | GW60KN-MT |
|--------------------------------------|---|-------------------|---------------------|---------------------|
| DC Input Data | | | | |
| Max. PV Power (W) | 65000 | 80000 | 65000 | 80000 |
| Max. DC Input Voltage (V) | 1000 | | 1100 | |
| MPPT Range(V) | 200~850 | | 200~1000 | |
| Starting Voltage (V) | 200 | | 200 | |
| MPPT Range for Full Loaded (V) | 435~850 | 480~850 | 520~850 | 520~850 |
| Nominal DC Input Voltage(V) | 600 | | 620 | |
| Max. Input Current(A) | 30/30/30/30 | 30/30/30/40 | 33/33/22/22 | 33/33/33/33 |
| Max. Short Current (A) | 37.5/37.5/37.5/37.5 | 37.5/37.5/37.5/50 | 41.5/41.5/27.5/27.5 | 41.5/41.5/41.5/41.5 |
| No. of MPP Trackers | 4 | | | |
| No. of Input Strings per MPP Tracker | 3/3/3/3 | 3/3/3/4 | 3/3/2/2 | 3/3/3/3 |
| AC Output Data | | | | |
| Nominal Output Power(W) | 50000 | 60000 | 50000 | 60000 |
| Max. Output Power(W) | 55000 | 66000 | 55000 | 66000 |
| Max. Output Apparent Power (VA) | 55000 | 66000 | 55000 | 66000 |
| Nominal Output Voltage (V) | 380,3L/N/PE;3L/PE | | 400,3L/N/PE;3L/PE | |
| Nominal Output Frequency (Hz) | 50 | 60 | 50 | 60 |
| Max. Output Current(A) | 80 | 96 | 80 | 96 |
| Output Power Factor | ~1 (Adjustable from 0.8 leading to 0.8 lagging) | | | |
| Output THDi (@Nominal Output) | <3% | | | |
| Efficiency | | | | |
| Max. Efficiency | 98.7% | 98.8% | 98.7% | 98.8% |
| Europe Efficiency | 98.3% | 98.5% | 98.3% | 98.5% |
| MPPT Efficiency | 99.9% | | | |

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 and Half Load for EMI test, 5% load for EMS test.

Details as below:

| Load \ M/N | GW60K-MT | GW50K-MT |
|------------|----------|-----------|
| Full Load | 670V/90A | 640 V/80A |
| Half Load | 670V/45A | 640V/40A |
| 5% Load | 600V/10A | 500V/10A |

3.4 Tested Supporting System Details

3.4.1 DC Power Supply

| | | |
|---------------|---|-------------------------|
| Manufacturer | : | TopCon |
| Model Number | : | TC.P.32.1000.400.PV.HMI |
| Serial Number | : | 1442CC348 |
| Input Power | : | 3*400Vac,48-62Hz,3*60A |
| Output | : | 0-32KW,0-1000Vdc,0-40A |

3.5 The key components list

The key components list is different between the original models and new models. The key components for model GW60K-MT & GW50K-MT are listed in the report ACWE-E1707011 & ACWE-E1707011A. The key components for model GW60KN-MT & GW50KN-MT are listed as follows:

| No. | Object/Part | Model | Technical data | Brand/Manufacturer | Standard | Remark |
|-----|-------------|---|--|--|--------------------------------------|-----------------------------|
| 1 | 输入线缆 | AWG10 / AWG12 | UL1032,90°C 1000V AWG10 | LTK WIRING CO.,LTD | UL 758 | E148000 |
| | | AWG10 / AWG12 | UL1032,90°C1000VA WG12 UL1032,90°C1000VA WG10 | Guangdong Hichain Electricity Co., Ltd | UL 758 | E304337 |
| | | AWG10 / AWG12 | UL1032 90°C 1000V AWG12 UL1032 90°C 1000V AWG10 | 3Q WIRE&CABLE Co., LTD. | UL 758 | E341104 |
| 2 | 输入端子 | H4CFD4TMS, H4CMD4TMS, H4CMB4TMS, H4CFB4TMS | 4mm ² , 45A, 1000Vdc,IP68, 94-V0 | Amphenol Technology (Shenzhen) CO. LTD. | DIN V VDE V 0126-3/12.2 006 | TUV R 50157783 |
| | | PV-CF-S, PV-CM-S, PV-FT-CM-C, PV-FT-CF-C | 2.5-6mm ² , 40A, 1100Vdc, IP67 | Nanjing Phoenix Contact CO.LTD. | EN 50521:2008 | TUV R 60029159 |
| | | PV-KST4, PV-ADSP4-S2/6, PV-ADBP4-S2/6 | 4-6mm ² , 30A, 1000Vdc, IP67 | Multi-contact AG Basel | DIN V VDE V 0126-3/12.2 006 | TUV R 60017180 |
| | | QC4.3-ab1, QC4.10 | 4-6mm ² , 30A, 1000Vdc, | QC SOLAR (SUZHOU) CORP | UL 6703 | E340004 |
| 3 | 直流断路器 | XA100.16R4E-D | 1000V 16A | Santon International B.V. | IEC60947- 1/3 | KEMA 2136668.01 |
| | | XA100.16D8E-D | 1000V 16A | Santon International B.V. | IEC60947- 1/3 | KEMA 2136668.01 |
| | | X100.40D8E-D | 1000V 40A | Santon International B.V. | IEC60947- 1/3 | KEMA 2136668.01 |
| | | GHX5-32P/4P100 | 1000V 32A | 北京人民电器有限公司 | En 60947-1,3 | TUV B 17 10 83266 036 |

| | | | | | | |
|---|-----------------|------------------------|--|---|-----------------------------------|------------------------------|
| 4 | 共模电感(直 流侧) | 141-11002 | CHOKE 1.3mH 2.0 φ 2P 9TS T42*26*18C R12 | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| | 共模电感(直 流侧) | 141-11032 (80KW) | CHOKE 1.3mH 2.4 φ 2P 8TS H42*26*18C R12K | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| | 滤波电容 | B32778G0406K | 40uF±10% 1100V@70°C -40°C~105°C 20.3*52.5mm | EPCOS(ZHUHAI FTZ) CO., LTD | UL1414 | E97863 |
| | | EZPE1B406MTA | 40uF±10% 1100V@850 °C | Panasonic Electric Works Co. Ltd | UL508 | E43028 |
| | X 电容(直流 侧) | C323B334KB1C4 50 | C-MPP 0.33μF 1250Vdc(500Vac)K 27.5mm -55°C ~105°C,-40 °C ~105 °C | XIAMEN FARATRONIC CO.,LTD. | --- | --- |
| | Y 电容(直流 侧) | YU1AH472M130 L20COH | C Y5U 4.7nF Y1 400VAC LS 10.0mm -25 °C~125 °C | 华科电子科技有限公司 | ANSI/UL 60384-14 | E146544 VDE 40001804 |
| | Y 电容(直流 侧) | YP1AH471K070L 20COH | C Y5P 471K Y1 400VAC LS 10.0mm -25 °C/125 °C | 华科电子科技有限公司 | ANSI/UL 60384-14 | E146544 VDE 40001804 |
| | X电容(交流 侧) | C4BR2225KBWC 450 | 2.2uF 350VAC K RAD P:27.5mm -40 °C~110 °C X2 | XIAMEN FARATRONIC CO.,LTD. | UL1414 | E247953/ VDE 40014111 |
| | | B32924C4225K00 0 | 2.2uF 350VAC K RAD P:27.5mm +110 °C MAX X2 | EPCOS(ZHUHAI FTZ) CO., LTD | UL1414 | VDE 40010694 / E97863 |
| | | C4BR2105K9WC 450 | 1uF 350VAC K RAD P:22.5mm -40 °C~110 °C X2 | XIAMEN FARATRONIC CO.,LTD. | UL1414 | VDE 40014111 / E247953 |
| | | B32924B4105K00 0 | 1uF 350VAC K RAD P:27.5mm 110 °C MAX X2 | EPCOS(ZHUHAI FTZ) CO., LTD | UL1414 | VDE 40010694 / E97863 |
| | Y电容(交流 侧) | YU1AH472M130 L20COH | C Y5U 4.7nF Y1 400VAC LS 10.0mm -25 °C~125 °C | 华科电子科技有限公司 | ANSI/UL 60384-14 | E146544 VDE 40001804 |
| | Y电容(交流 侧) | YP1AH102K100L 20COH | C Y5P 1nF Y1 400VAC LS 10.0mm -25 °C~125 °C | 华科电子科技有限公司 | ANSI/UL 60384-14 | E146544 VDE 40001804 |
| | Y电容(交流 侧) | B81123C1103M | 10nF/500VAC LS 22.5mm 110 °C Y1 | EPCOS(ZHUHAI FTZ) CO., LTD | EN 60384-14 IEC 60384-14 | UL E97863 |
| 5 | 浪涌吸收电 容 | C323B334KB1C4 50 | C-MPP 0.33μF 1250Vdc(500Vac) K 27.5mm -55°C ~105°C | XIAMEN FARATRONIC CO.,LTD. | --- | --- |

| | | | | | | |
|---|-----------------|--|---|--|---------------------|----------------|
| | | | -40 °C ~105 °C | | | |
| 6 | 直流避雷器 | ERT40-T2-1000-S-PV | DC Type II | Shanghai Eurotect Electric Co.Ltd. | --- | --- |
| | | VAL-MS-CN 1000DC-PV-2+V-FM 2801311 | DC Type II VAL-MS-CN 1000DC-PV-2+V-FM 2801311 | Nanjing Phoenix Contact CO.LTD. | --- | --- |
| | | PV20K-500 | AC Type II Up:1.5kV In:10kA(8/20us); Imax:20kA(8/20us); | SHENZHEN HAIPENGXIN ELECTRONICS CO.,LTD. | --- | --- |
| | | PV20K-670 | AC Type II Up:1.8kV In:10kA(8/20us); Imax:20kA(8/20us); | SHENZHEN HAIPENGXIN ELECTRONICS CO.,LTD. | --- | --- |
| | | SDD-7311 | 500VDC Type II | Shanghai Eurotect Electric Co.Ltd. | --- | --- |
| | | SDD-7312 | 585VDC Type II | Shanghai Eurotect Electric Co.Ltd. | --- | --- |
| | | ZGGS20-500PVh 1c1 | 500VDC Type II | SICHUAN ZHONGGUANG LIGHTNING PROTECTION TECHNOLOGIES CO LTD | --- | --- |
| | | ZGGS20-670PVh 1b1 | 670VDC Type II | SICHUAN ZHONGGUANG LIGHTNING PROTECTION TECHNOLOGIES CO LTD | --- | --- |
| | | GTSP-MAV385 | 500VDC Type II | 安徽金力 | --- | --- |
| | | GTSP-MDV670 | 670VDC Type II | 安徽金力 | --- | --- |
| 7 | 残余电流保护器 (RCD) | 141-10045 | AC GFCI 电感 | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| 8 | 压敏电阻 | GNR20D821KG | VAR 670VDC 1W | CERAMATE TECHNICAL CO LTD | UL 1449 | E315429 |
| 9 | 熔断器 | PV-15A10F | 1000Vdc 15A | Cooper Bussmann | UL 512 | E14853 |
| | | HC10PV | 1000Vdc 15A | 上海赫立电子科技有限公司 | UL 248-1 UL 2579 | E345479 |
| | | HP15M15 | 1000Vdc 15A | 美尔森电气保护系统 (上海) 有限公司 | UL 2579 | E333668 |
| | | 10gPV15U11 | 1100Vdc 15A | HOLLYLAND (XIAMEN) TECHNOLOGY COR.ltd | EN 60269-6 : 2011 | TUV R 50263929 |

| | | | | | | |
|----|-----------------|-----------------------|--|---|------------------------------------|----------------------------|
| | | PV-20A10F | 1000Vdc/20A | Bussmann | UL 2579 | E335324 |
| | | SPF SERIES | 1000Vdc/20A | Little fuse | UL 2579 EN 60269-6 : 2011 | E339112 VDE4003309 8 |
| 10 | 母线电容 | EZPE55117MTA | C-MPP 110 μ F 550V K RAD 56mm -40 $^{\circ}$ C ~+70 $^{\circ}$ C | Panasonic Corporation | --- | --- |
| | | EZPE1B406MTA | C MKP 140 μ F \pm 10% 1100V@850C | Panasonic Electric Works CO., LTD | --- | --- |
| | | B32778G0406K | C MKP 40 μ F \pm 10% 1100V@70 $^{\circ}$ C -40 $^{\circ}$ C~+105 $^{\circ}$ C 20.3*52.5mm | EPCOS(ZHUHAI FTZ) CO., LTD | --- | --- |
| 11 | IGBT/功率变 换器件 | F3L200R12W2H3 _B11 | 1200V 200A -40 $^{\circ}$ C ~125 $^{\circ}$ C | 英飞凌科技有限公司 | --- | --- |
| 12 | BOOST电感 | 141-10131 | 497.64 μ H 1.3*7mm*1P | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| | | 141-10132 | 497.64 μ H 1.3*7mm*1P | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| | | 141-10133 | 497.64 μ H 1.3*7mm*1P | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| | | 141-10134 | 650 μ H Φ 2.3*2P | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| | | 141-10126 (80KW) | 365mH Φ 2.3mm*3P | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| 13 | 逆变电感 | 141-10076 | 250 μ H +/-10%,155degC | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| | | 141-10077 | 250 μ H +/-10%,155degC | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| | | 141-10078 | 250 μ H +/-10%,155degC | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| 14 | 交流EMI滤 波器 | 141-19006 | 3P COM- CHOKE 495 μ H 3*6mm Mn Zn ferrite R7K EMI | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| | | 141-10042 | AC CHOKE Φ 2.6mm*4P*5.5Ts | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| | | 141-19000 | AC CHOKE 3.0mm*6mm*1P*7Ts | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |

| | | | | | | |
|----|---------|--------------------------|---|---|---------|----------|
| 15 | 交流避雷器 | PV20K-500 | AC Type II Up:1.5kV In:10kA(8/20us); Imax:20kA(8/20us); | SHENZHEN HAIPENGXIN ELECTRONICS CO.,LTD. | --- | --- |
| | | PV20K-670 | AC Type II Up:1.8kV In:10kA(8/20us); Imax:20kA(8/20us); | SHENZHEN HAIPENGXIN ELECTRONICS CO.,LTD. | --- | --- |
| | | SDD-7311 | 500VDC Type II | Shanghai Eurotect Electric Co.Ltd. | --- | --- |
| | | SDD-7312 | 585VDC Type II | Shanghai Eurotect Electric Co.Ltd. | --- | --- |
| | | ZGGS20-500PVh1 c1 | 500VDC Type II | 四川中光防雷科技股份 有限公司 | UL1449 | E339436 |
| | | ZGGS20-670PVh1 b1 | 670VDC Type II | 四川中光防雷科技股份 有限公司 | UL1449 | E339436- |
| 16 | 输出端子 | WFF70 | 1000V,175A | WEIDMUELLER INTERFACE GMBH & CO KG | UL 1059 | E60693 |
| 17 | 主板 | 290-10075 | PCBA | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| 18 | 控制板 | 290-20005 | PCBA | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| 19 | 通信板 | 290-40039 | PCBA | Jiangsu Goodwe Power Supply Technology Co.,Ltd. | --- | --- |
| 20 | LCD 显示屏 | NS781A-FHW-X0 1 | KCN0010WW-GB -20 °C ~70 °C 139.2*91*12.3 | 常州市力铭光电科技有 限公司 | --- | --- |
| | | XT35404A | -30 °C ~85 °C 87.04*62.28*20 | 浙江新力光电科技有限 公司 | --- | --- |
| 21 | 印制板材料 | WS888 | 130°C , V-0 , CTI : min.175 | 汕头凯星印制板有限公 司 | UL 796 | E301869 |
| | | HC-M,HC-5 | 130°C , V-0 , CTI : min.175 | KUNSHAN HUACHEN ELECTRONICS LO.,LTD. | UL 796 | E315182 |
| | | DFD-4 | 130°C , V-0 , CTI : min.175 | 江苏迪飞达电子有限公 司 | UL 796 | E213009 |
| | | HS-3/HXF-M | 130°C , V-0 , CTI : min.175 | 昆山市华新电路板公司 | UL 796 | E227809 |
| | | SH-M1(II)/ SH-M1(III) | 130°C , V-0 , CTI : min.175 | 江苏苏杭电子集团有限 公司 | UL 796 | E154554 |
| | | BY-002 | 130°C , V-0 , CTI : min.175 | SHENZHEN BEYOND SCI-TECH CO LTD | UL 796 | E243002 |
| | | M3(d)/ M4(d) | 130°C , V-0 , CTI : | 广州兴森快捷电路科技 | UL 796 | E204460 |

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| | | | min.175 | 有限责任公司 | | |
| | | WZ-2 | 130°C , V-0 , CTI : min.175 | 昆山万正电路板有限公司 | UL 796 | E211670 |
| | | M2-A M2 | 130°C , V-0 , CTI : min.175 | Q&D CIRCUITS CO.,LTD. | UL 796 | E251497 |
| | | ZPMV2 | 130°C , V-0 , CTI : min.175 | KUNSHAN RES E-TECH CO.,LTD. | UL 796 | E334460 |
| | | HT-D (双面板) | 130°C , V-0 , CTI : min.175 | 昆山市华涛电子有限公司 | UL 796 | E318580 |
| | | HT-M (多层板) | 130°C , V-0 , CTI : min.175 | 昆山市华涛电子有限公司 | UL 796 | E318580 |
| | | HT-D (双面板) | 130°C , V-0 , CTI : min.175 | 昆山多达高新电子有限公司 | UL 796 | E318580 |
| | | HT-M (多层板) | 130°C , V-0 , CTI : min.175 | 昆山多达高新电子有限公司 | UL 796 | E318580 |
| | | KH-M 002V0 | 130°C , V-0 , CTI : min.175 | 昆山铨莹电子有限公司 | UL 796 | E198444 |
| | | M (多层板) | 130°C , V-0 , CTI : min.175 | 昆山广谦电子有限公司 | UL 796 | E335082 |
| 22 | 风扇 | 3610VL04WB76B R1 | 12Vdc 0.92A -10°C ~70°C | NMB Technologies Corporation | EN/IEC 60950 | VDE 118626 |
| | | 9GA0812P4H001 | 12Vdc IP68 -20°C ~70°C,0.22A | SANYO DENKI CO., LTD | --- | --- |
| | | 3615RL04WB46E R1 | 12Vdc 1.5A -10°C ~70°C | NMB Technologies Corporation | EN/IEC 60950 | VDE 118626 |
| | | 9WP094891J0011 | 48Vdc IP68 -10°C ~70°C,0.32A | SANYO DENKI CO., LTD | --- | --- |
| 23 | 继电器 | 511HP1-1AH-F-C | 100A 400VAC | SongChuan Percision Co.,Ltd | UL60947-4 -1 | UL E88991 |
| | | HE1aN-W-DC12V -Y6 | 80A 277VAC | Panasonic Corporation | EN 61810/ UL508 | VDE 40006681/ UL E43028 |
| | | AZSR1120L- 1AE-12D | Relay ZETTLER/AZSR112 0L- 1AE-12D 12V 100A 250VAC | Zettler Relay (Xiamen) Co.,Ltd | EN61801-1 / VDE0435 | VDE 40044305 |
| | | AZSR180-1AE-12 D | RELAYZETTLER/A ZSR180-1AE-12D 120A 250VAC | Zettler Relay (Xiamen) Co.,Ltd | EN61801-1 / VDE0435 | VDE 40044305 |
| | | HF167F/12-HF | RELAY HF/HF167F-12-HF 90A 400VAC | Xiamen Hongfa Electroacoustic Co. ,Ltd | UL508 | E133481 |
| | | HF172F-100 | RELAY HF/HF172F-100 100A 600VAC | Xiamen Hongfa Electroacoustic Co. ,Ltd | UL508 | E133481 |
| | | CHAR-112A100T | RELAY CHUROD ELECTRONICS/CH AR-112A100T 100A 400VAC | Churod Electronics Co.,Ltd | UL 60947-4-1 | E341422 |
| | | CHAR-112A130 | RELAY CHUROD | Churod Electronics | UL | E341422 |

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| | | | ELECTRONICS/CH AR-112A130 130A 400VAC | Co.,Ltd | 60947-4-1 | |
| 24 | 电流传感器 | HXN 25-P | LEM 25A | LEM Switzerland S A | --- | --- |
| | | L18P025D15 | HCT 25A | Tamura Corporation | --- | --- |
| | | CASR 25-NP | HCT 25A 0.625V/25A | LEM Switzerland S A | --- | --- |
| | | T60404-N4646-X6 61 | HCT 25A 0.625V/25A | Vacuumschmelze GMBH& CO. KG | UL508 | E317483-- |
| | | SHK-25-LTS | 5V 25A | 宁波希磁电子科技有限 公司 | --- | --- |
| | | QFO08MC MC-25T | QFO08MC MC-25T | 上海勤丰电子科技有限 公司 | --- | --- |
| | | JCB 25A | JCB 25A | 浙江巨磁智能技术有限 公司 | --- | --- |
| | | T60404-N4646-X1 01 | T60404-N4646-X101 | Vacuumschmelze GMBH& CO. KG | --- | --- |
| | | STK-32PL | HCT 32A STK-32PL -40°C~105°C | SINOMAGS | --- | --- |
| | | HLSR 32-P | HCT 32A LEM/HLSR 32-P -40 °C - 105 °C | LEM Switzerland S A | --- | --- |
| 25 | 外壳塑料部 分 | HRA222F | ASA/PC, 90°C , V-0 | SABIC INNOVATIVE PLASTICS B V | UL94 | E45329 |

3.6 Description of Test Facility

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|-----------------|---|--|
| 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, 2019 (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. |

3.7 Measurement Uncertainty

| Test Item | Range Frequency | Uncertainty |
|---|------------------------|-------------|
| No.2 Conducted Shielding Enclosure | | |
| Conducted Disturbance Measurement at mains port | 0.15MHz ~ 30MHz | ± 2.93dB |
| At 10m Semi-Anechoic Chamber | | |
| Radiated Disturbance Measurement (Distance 10m) | Below 1GHz(Horizontal) | ± 3.65dB |
| | Below 1GHz (Vertical) | ± 3.74dB |

Remark : Uncertainty = $ku_c(y)$