# CERTIFICATE OF COMPLIANCE

**No. C13A012**

**Holder of Certificate: GREE Electric Appliances Inc. of zhuhai**
**Jinji West Road, Qianshan, Zhuhai, Guangdong 519070, P. R. China**
**Product: Air Conditioner**
**Model/Type: GKH24K3FI；GKH30K3FI**
**GTH24K3FI；GTH30K3FI**
**GFH24K3FI；GFH30K3FI**
**GUHD24NK3FO；GUHD30NK3FO**

**Is complied with:**

**EMC Directive: 2004/108/EC**

**Test acc. To: EN55014-1: 2006+A1:2009+A2:2011**
**EN55014-2: 1997+A1: 2001+A2:2008**
**EN61000-3-2: 2006+A1:2009+A2:2009**
**EN61000-3-3: 2008**
**EN61000-3-11: 2000**
**EN61000-3-12: 2005**

**Report Number: GER13A012E**

This certificate of conformity is based on the adequate technical documentation and the tests in Testing Laboratory of Gree Electric Appliances Inc. of Zhuhai. This declaration becomes invalid if technical or operational modifications are introduced without the manufacturer's consent.
Note: Testing Laboratory of Gree Electric Appliances Inc. of Zhuhai is accredited by TUV Rheinland, CNAS, VDE, etc.

(Authorized signature)
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Date: 2013-01-12

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# EMC TEST REPORT

| | | |
|---|---|---|
| **Product Name** | : | Split-type Room Air Conditioner |
| **Product Model** | : | GKH24K3FI(indoor unit)；GKH30K3FI(indoor unit)<br>GTH24K3FI(indoor unit)；GTH30K3FI(indoor unit)<br>GFH24K3FI(indoor unit)；GFH30K3FI(indoor unit)<br>GUHD24NK3FO（outdoor unit）；GUHD30NK3FO（outdoor unit） |
| **Serial No.** | : | Pre-production model |
| **Date of Receipt** | : | 2013.01.11 |
| **Test Period** | : | 2013.01.11~12 |
| **Applicant** | : | Gree Electric Appliances, Inc. of Zhuhai |
| **Testing Location** | : | Gree EMC Testing Lab. |

**Applicable The Following Selected Harmonized Standards:**

EN55014-1: 2006+A1:2009+A2:2011
EN55014-2: 1997+A1: 2001+A2:2008
EN61000-3-2: 2006+A1:2009+A2:2009
EN61000-3-3: 2008
EN61000-3-11: 2000
EN61000-3-12: 2005

| | | | |
|---|---|---|---|
| **Tested by** : | Liujie | 刘杰 | 2013-01-12 |
| | *Printed Name* | *Signature* | *Date((YY-MM-DD)* |
| **Reviewed by** : | Li zhikun | 李志坤 | 2013-01-12 |
| | *Printed Name* | *Signature* | *Date((YY-MM-DD)* |

**EMC LABORATORY OF GREE ELETRIC APPLIANCES INC. OF ZHUHAI**

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*THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB*

# Contents


**CONTENTS** **2**

**1. TEST SUMMARY** **3**

**2. PRODUCTS DESCRIPTION** **4**

**3. LIST OF TEST AND MEASUREMENT INSTRUMENTS** **5**

**4. EMISSION TEST** **6**

4.1 Main and Additional Terminal Continuous Disturbance Voltage 6

4.2 Discontinuous Interference on AC Mains 29

4.3 Disturbance Power 32

4.4 Harmonics on AC Mains 50

4.5 Voltage Fluctuation on AC Mains 57

**5. IMMUNITY TESTS** **58**

5.1 Electrostatic Discharge (ESD) 58

5.2 Electrical Fast Transient/Burst (EFT) 60

5.3 Surge 61

5.4 Immunity to conducted Disturbances, induced by RF fields 62

5.5 Voltage Dips and Short interruptions 63


**Remark:**

**Principle of Configuration Selection of test set-up and operation mode**

**Emission:** The Equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

**Immunity:** The Equipment under test (EUT) was configured to have its highest possible susceptibility against the tested phenomena. The test modes were adapted accordingly in reference to the instructions for use.

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# 1. Test Summary

## 4. EMISSION TESTS:

### 4.1 Mains and additional Terminal Continuous Disturbance Voltage

**Test Result:** Pass

### 4.2 Discontinuous Interference on AC Mains

**Test Result:** Pass

### 4.3 Disturbance Power

**Test Result:** Pass

### 4.4 Harmonics on AC Mains

**Test Result:** Pass

### 4.5 Voltage Fluctuation on AC Mains

**Test Result:** Pass

## 5. IMMUNITY TESTS:

### 5.1 Electrostatic Discharge (ESD)

**Test Result:** Pass

### 5.2 Electrical Fast Transient/Burst (EFT)

**Test Result:** Pass

### 5.3 Surge

**Test Result:** Pass

### 5.4 Immunity to conducted Disturbances, induced by RF fields

**Test Result:** Pass

### 5.5 Voltage Dips and Short interruptions

**Test Result:** Pass

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# 2. Products Description

**Power Supply** : AC 220-240V , 50Hz

**Power Cord** : Unshielded

**Interconnection Line** : Unshielded

**Additional Equipment** : IR Remote Controller

**Protection** : Class Ⅰ

**Operation Mode** : Standby
Fan
Cool
Heat
Dry
Auto

**General Description** :

For these current models, they are split-type models consisting of two parts, one indoor unit and one common outdoor unit, For the common outdoor unit (GUHD24NK3FO), it can match three different model indoor units (GKH24K3FI, GTH24K3FI and GFH24K3FI) to work; For the common outdoor unit (GUHD30NK3FO), it can match three different model indoor units (GKH30K3FI, GTH30K3FI and GFH30K3FI) to work, and the power are supplied from the indoor and outdoor units respectively, the model GFH24K3FI is the same as model GFH30K3FI; the model GUHD24NK3FO is the same as model GUHD30NK3FO ，the difference between GFH30K3FI and GTH30K3FI is shaft length of indoor fan motor (there is no influence for EMC test), all EMS test (Immunity item) are applied to the three different combination for indoor and outdoor units.

About the particular information of the modes, please refer to Technical Construction Document, user manual, etc

The test model list

| |
|---|
| GUHD30NK3FO |
| GKH24K3FI |
| GTH24K3FI |
| GKH30K3FI |
| GTH30K3FI |

Electric wiring between indoor and outdoor units

# 3. List of Test and Measurement Instruments

| Equipment | Manufacturer | Model No. | Serial No. | Calibrated until |
|---|---|---|---|---|
| EMI Test Receiver | R&S | ESCS30 | 100353 | 07/07/2013 |
| L.I.S.N | R&S | ENV4200 | 100031 | 07/07/2013 |
| Pulse limiter | R&S | ESH3-Z2 | 100066 | 07/07/2013 |
| Absorbing Clamp | R&S | MDS-21 | 100194 | 07/07/2013 |
| Voltage Probe | Schwarbeck | TK9420 | 9426-235 | 07/07/2013 |
| Clicks Analyzer | Schaffner | DIA1512D | 21534 | 07/07/2013 |
| Harmonic/Flicker Testing system | CI | PACS-3 | 72823 | 03/23/2013 |
| ESD Simulator System | TESTQ | NSG438 | 1198 | 08/13/2013 |
| EFT/B Generator | Schaffner | NSG2025-4 | 1237 | 07/07/2013 |
| Capacitive Coupling Clamp | Schaffner | CDN126 | 532 | 07/07/2013 |
| RF-Generator | Schaffner | NSG2070 | 1022 | 07/07/2013 |
| Coupling/Decoupling Network | Schaffner | CDN M316 | 15072 | 07/07/2013 |
| EM clamp | Schaffner | KEMZ801 | 15792 | 07/07/2013 |
| Voltage Swell/DIP/Interrupt Source | KeyTek ECAT | EP62 | 0512181 | 11/30/2013 |
| Surge Generator-Combination Wave | KeyTek ECAT | 510A | 0512182 | 11/30/2013 |
| Coupling/Decoupling Network | KeyTek ECAT | E4554A | 0512183 | 11/30/2013 |

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# 4. Emission Test

## 4.1 Main and Additional Terminal Continuous Disturbance Voltage

| | | |
|---|---|---|
| **Date of testing** | : | 2013.01.11 |
| **Temperature** | : | 26°C/18°C |
| **Operational mode** | : | Cool /Heat, High speed |
| **Humidity** | : | 65%RH~67%RH |
| **Test procedure** | : | EN55014-1: 2006+A1:2009+A2:2011 |
| **Frequency range** | : | 0.15M - 30MHz |
| **Kind of test site** | : | Shielded room |
| **Test result** | : | Pass |

1.Test Setup:

The EUT is on an insulating plane (height=80cm)
The distance between EUT and L.I.S.N is 80cm.
The distance between EUT and other metal conductors grounded is at least 80cm.

2.If the result of the measurement with the Quasi Peak detector is below the Average limit, the measurement with Average Detector has been omitted.
Disturbances other than those mentioned are small or not detectable.

Receiver setup:
**Detector:Peak+Average; IF-BW: 9kHz; Step: 4.5kHz; M-Time: 20ms**
The test data are as follows:

**At main terminal: Pass**

**Model:** GUHD30NK3FO（outdoor unit）

**Cooling mode** **Port: Power Cord- L line**

**Final measurement results**

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 162 kHz | 52.42 | L1 gnd | -12.93 |
| 2 | Average | 162 kHz | 45.45 | L1 gnd | -12.71 |
| 1 | Quasi Peak | 502 kHz | 39.86 | L1 gnd | -16.13 |
| 2 | Average | 502 kHz | 35.64 | L1 gnd | -10.35 |
| 1 | Quasi Peak | 2.002 MHz | 45.19 | L1 gnd | -10.80 |
| 2 | Average | 2.002 MHz | 39.69 | L1 gnd | -6.30 |
| 1 | Quasi Peak | 3.526 MHz | 47.39 | L1 gnd | -8.61 |
| 2 | Average | 3.686 MHz | 42.36 | L1 gnd | -3.63 |
| 2 | Average | 9.794 MHz | 39.18 | L1 gnd | -10.81 |
| 1 | Quasi Peak | 9.834 MHz | 43.54 | L1 gnd | -16.46 |
| 1 | Quasi Peak | 26.242 MHz | 41.48 | L1 gnd | -18.51 |
| 2 | Average | 26.558 MHz | 35.12 | L1 gnd | -14.87 |

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**Model:** GUHD30NK3FO（outdoor unit）

**Cooling mode** **Port: Power Cord- N line**

**Final measurement results**

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 162 kHz | 52.07 | L1 gnd | -13.29 |
| 2 | Average | 162 kHz | 45.68 | L1 gnd | -12.48 |
| 1 | Quasi Peak | 742 kHz | 39.18 | L1 gnd | -16.81 |
| 2 | Average | 742 kHz | 34.06 | L1 gnd | -11.93 |
| 1 | Quasi Peak | 1.802 MHz | 44.26 | L1 gnd | -11.73 |
| 2 | Average | 2.002 MHz | 39.77 | L1 gnd | -6.22 |
| 1 | Quasi Peak | 3.446 MHz | 47.30 | L1 gnd | -8.69 |
| 2 | Average | 3.446 MHz | 41.77 | L1 gnd | -4.22 |
| 1 | Quasi Peak | 5.146 MHz | 39.46 | L1 gnd | -20.53 |
| 2 | Average | 9.814 MHz | 35.11 | L1 gnd | -14.88 |
| 1 | Quasi Peak | 24.41 MHz | 39.70 | L1 gnd | -20.29 |
| 2 | Average | 26.142 MHz | 32.86 | L1 gnd | -17.13 |

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**Model:** GUHD30NK3FO（outdoor unit）

**Heating mode** **Port: Power Cord- L line**

**Final measurement results**

| | TRACE | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 162 kHz | 52.52 | L1 gnd | -12.84 |
| 2 | Average | 162 kHz | 46.12 | L1 gnd | -12.04 |
| 1 | Quasi Peak | 482 kHz | 39.19 | L1 gnd | -17.11 |
| 2 | Average | 502 kHz | 35.22 | L1 gnd | -10.77 |
| 1 | Quasi Peak | 2.062 MHz | 45.45 | L1 gnd | -10.54 |
| 2 | Average | 2.062 MHz | 39.66 | L1 gnd | -6.33 |
| 1 | Quasi Peak | 3.582 MHz | 46.55 | L1 gnd | -9.44 |
| 2 | Average | 3.582 MHz | 41.82 | L1 gnd | -4.17 |
| 1 | Quasi Peak | 9.79 MHz | 39.99 | L1 gnd | -20.00 |
| 2 | Average | 9.85 MHz | 35.32 | L1 gnd | -14.67 |
| 1 | Quasi Peak | 26.398 MHz | 41.03 | L1 gnd | -18.96 |
| 2 | Average | 26.418 MHz | 34.91 | L1 gnd | -15.09 |

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**Model:** GUHD30NK3FO（outdoor unit）

**Heating mode** **Port: Power Cord- N line**

**Final measurement results**

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 162 kHz | 52.29 | L1 gnd | -13.06 |
| 2 | Average | 162 kHz | 45.88 | L1 gnd | -12.28 |
| 1 | Quasi Peak | 502 kHz | 39.46 | L1 gnd | -16.53 |
| 2 | Average | 502 kHz | 35.26 | L1 gnd | -10.73 |
| 2 | Average | 2.022 MHz | 39.97 | L1 gnd | -6.02 |
| 1 | Quasi Peak | 2.026 MHz | 43.45 | L1 gnd | -12.54 |
| 1 | Quasi Peak | 3.75 MHz | 45.90 | L1 gnd | -10.09 |
| 2 | Average | 3.75 MHz | 40.15 | L1 gnd | -5.84 |
| 1 | Quasi Peak | 5.222 MHz | 38.82 | L1 gnd | -21.17 |
| 2 | Average | 9.822 MHz | 31.83 | L1 gnd | -18.16 |
| 1 | Quasi Peak | 23.762 MHz | 40.38 | L1 gnd | -19.62 |
| 2 | Average | 26.498 MHz | 32.68 | L1 gnd | -17.31 |

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**Model:** GKH24K3FI(indoor unit)

**Cooling mode** **Port: Power Cord- L line**

**Final measurement results**

| | TRACE | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 350 kHz | 39.40 | L1 gnd | -19.55 |
| 2 | Average | 350 kHz | 36.96 | L1 gnd | -12.89 |
| 1 | Quasi Peak | 470 kHz | 44.75 | L1 gnd | -11.75 |
| 2 | Average | 470 kHz | 42.28 | L1 gnd | -4.38 |
| 2 | Average | 1.11 MHz | 34.61 | L1 gnd | -11.39 |
| 1 | Quasi Peak | 1.866 MHz | 35.22 | L1 gnd | -20.77 |
| 1 | Quasi Peak | 4.998 MHz | 38.14 | L1 gnd | -17.85 |
| 2 | Average | 4.998 MHz | 32.73 | L1 gnd | -13.26 |
| 1 | Quasi Peak | 11.726 MHz | 49.18 | L1 gnd | -10.82 |
| 2 | Average | 11.818 MHz | 43.70 | L1 gnd | -6.29 |
| 2 | Average | 14.202 MHz | 40.49 | L1 gnd | -9.50 |
| 1 | Quasi Peak | 14.286 MHz | 46.31 | L1 gnd | -13.68 |

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**Model:** GKH24K3FI(indoor unit)

**Cooling mode** **Port: Power Cord- N line**

**Final measurement results**

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 350 kHz | 38.71 | L1 gnd | -20.24 |
| 2 | Average | 354 kHz | 34.98 | L1 gnd | -14.74 |
| 2 | Average | 466 kHz | 42.15 | L1 gnd | -4.60 |
| 1 | Quasi Peak | 470 kHz | 43.97 | L1 gnd | -12.53 |
| 2 | Average | 1.082 MHz | 34.92 | L1 gnd | -11.07 |
| 1 | Quasi Peak | 1.958 MHz | 35.47 | L1 gnd | -20.52 |
| 1 | Quasi Peak | 4.93 MHz | 39.24 | L1 gnd | -16.75 |
| 2 | Average | 4.938 MHz | 34.96 | L1 gnd | -11.03 |
| 1 | Quasi Peak | 10.706 MHz | 42.01 | L1 gnd | -17.98 |
| 2 | Average | 11.782 MHz | 45.46 | L1 gnd | -4.53 |
| 2 | Average | 12.55 MHz | 41.46 | L1 gnd | -8.53 |
| 1 | Quasi Peak | 13.79 MHz | 48.42 | L1 gnd | -11.57 |

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**Model:** GKH24K3FI(indoor unit)

**Heating mode** **Port: Power Cord- L line**

**Final measurement results**

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 350 kHz | 39.81 | L1 gnd | -19.15 |
| 2 | Average | 350 kHz | 37.03 | L1 gnd | -12.81 |
| 1 | Quasi Peak | 470 kHz | 44.43 | L1 gnd | -12.07 |
| 2 | Average | 470 kHz | 41.94 | L1 gnd | -4.71 |
| 2 | Average | 1.054 MHz | 34.20 | L1 gnd | -11.80 |
| 1 | Quasi Peak | 1.202 MHz | 36.05 | L1 gnd | -19.94 |
| 2 | Average | 4.918 MHz | 31.74 | L1 gnd | -14.25 |
| 1 | Quasi Peak | 4.982 MHz | 36.43 | L1 gnd | -19.56 |
| 2 | Average | 11.866 MHz | 44.07 | L1 gnd | -5.92 |
| 1 | Quasi Peak | 11.942 MHz | 49.46 | L1 gnd | -10.53 |
| 1 | Quasi Peak | 14.094 MHz | 47.63 | L1 gnd | -12.37 |
| 2 | Average | 14.362 MHz | 40.31 | L1 gnd | -9.68 |

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**Model:** GKH24K3FI(indoor unit)

**Heating mode** **Port: Power Cord- N line**

**Final measurement results**

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 322 kHz | 39.17 | L1 gnd | -20.48 |
| 2 | Average | 350 kHz | 38.30 | L1 gnd | -11.54 |
| 1 | Quasi Peak | 466 kHz | 44.94 | L1 gnd | -11.64 |
| 2 | Average | 470 kHz | 42.05 | L1 gnd | -4.60 |
| 1 | Quasi Peak | 1.11 MHz | 37.32 | L1 gnd | -18.67 |
| 2 | Average | 1.198 MHz | 34.76 | L1 gnd | -11.23 |
| 1 | Quasi Peak | 4.99 MHz | 38.42 | L1 gnd | -17.57 |
| 2 | Average | 4.994 MHz | 33.81 | L1 gnd | -12.19 |
| 2 | Average | 11.838 MHz | 44.08 | L1 gnd | -5.91 |
| 1 | Quasi Peak | 12.05 MHz | 48.53 | L1 gnd | -11.46 |
| 1 | Quasi Peak | 13.898 MHz | 47.41 | L1 gnd | -12.58 |
| 2 | Average | 14.202 MHz | 41.33 | L1 gnd | -8.66 |

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**Model:** GTH24K3FI(indoor unit)

**Cooling mode** **Port: Power Cord- L line**

**Cooling mode** **Port: Power Cord- N line**

**Model:** GTH24K3FI(indoor unit)

**Heating mode** **Port: Power Cord- L line**

**Heating mode** **Port: Power Cord- N line**

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**Model:** GKH30K3FI(indoor unit)

**Cooling mode** **Port: Power Cord- L line**

Final measurement results

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 2 | Average | 150 kHz | 48.94 | L1 gnd | -10.05 |
| 1 | Quasi Peak | 166 kHz | 57.47 | L1 gnd | -7.68 |
| 1 | Quasi Peak | 466 kHz | 45.49 | L1 gnd | -11.08 |
| 2 | Average | 466 kHz | 42.06 | L1 gnd | -4.69 |
| 1 | Quasi Peak | 1.842 MHz | 40.49 | L1 gnd | -15.50 |
| 2 | Average | 1.95 MHz | 34.87 | L1 gnd | -11.12 |
| 2 | Average | 3.718 MHz | 37.36 | L1 gnd | -8.63 |
| 1 | Quasi Peak | 3.754 MHz | 45.22 | L1 gnd | -10.77 |
| 1 | Quasi Peak | 11.346 MHz | 45.84 | L1 gnd | -14.15 |
| 2 | Average | 11.934 MHz | 43.59 | L1 gnd | -6.40 |
| 2 | Average | 12.41 MHz | 41.99 | L1 gnd | -8.00 |
| 1 | Quasi Peak | 12.518 MHz | 45.40 | L1 gnd | -14.59 |

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**Model:** GKH30K3FI(indoor unit)

**Cooling mode** **Port: Power Cord- N line**

Final measurement results

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 150 kHz | 58.16 | L1 gnd | -7.83 |
| 2 | Average | 150 kHz | 50.61 | L1 gnd | -8.38 |
| 1 | Quasi Peak | 462 kHz | 43.68 | L1 gnd | -12.97 |
| 2 | Average | 466 kHz | 42.00 | L1 gnd | -4.75 |
| 1 | Quasi Peak | 1.026 MHz | 40.42 | L1 gnd | -15.57 |
| 2 | Average | 1.938 MHz | 33.93 | L1 gnd | -12.06 |
| 1 | Quasi Peak | 3.638 MHz | 45.37 | L1 gnd | -10.62 |
| 2 | Average | 3.758 MHz | 39.17 | L1 gnd | -6.82 |
| 1 | Quasi Peak | 11.846 MHz | 48.89 | L1 gnd | -11.10 |
| 2 | Average | 11.846 MHz | 43.18 | L1 gnd | -6.81 |
| 2 | Average | 12.414 MHz | 41.64 | L1 gnd | -8.35 |
| 1 | Quasi Peak | 12.67 MHz | 47.39 | L1 gnd | -12.60 |

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**Model:** GKH30K3FI(indoor unit)

**Heating mode** **Port: Power Cord- L line**

Final measurement results

| | TRACE | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 150 kHz | 57.43 | L1 gnd | -8.56 |
| 2 | Average | 166 kHz | 47.85 | L1 gnd | -10.05 |
| 1 | Quasi Peak | 458 kHz | 42.37 | L1 gnd | -14.35 |
| 2 | Average | 470 kHz | 41.71 | L1 gnd | -4.95 |
| 1 | Quasi Peak | 1.954 MHz | 41.72 | L1 gnd | -14.27 |
| 2 | Average | 1.954 MHz | 35.83 | L1 gnd | -10.16 |
| 1 | Quasi Peak | 3.654 MHz | 44.45 | L1 gnd | -11.54 |
| 2 | Average | 3.682 MHz | 37.09 | L1 gnd | -8.90 |
| 2 | Average | 11.498 MHz | 44.14 | L1 gnd | -5.85 |
| 1 | Quasi Peak | 11.698 MHz | 48.08 | L1 gnd | -11.91 |
| 2 | Average | 12.558 MHz | 40.90 | L1 gnd | -9.09 |
| 1 | Quasi Peak | 12.578 MHz | 46.52 | L1 gnd | -13.47 |

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**Model:** GFH24K3FI(indoor unit)

**Heating mode** **Port: Power Cord- N line**

Final measurement results

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 166 kHz | 58.07 | L1 gnd | -7.08 |
| 2 | Average | 166 kHz | 48.80 | L1 gnd | -9.10 |
| 1 | Quasi Peak | 466 kHz | 44.68 | L1 gnd | -11.90 |
| 2 | Average | 466 kHz | 41.82 | L1 gnd | -4.93 |
| 2 | Average | 1.022 MHz | 37.06 | L1 gnd | -8.93 |
| 1 | Quasi Peak | 1.954 MHz | 43.01 | L1 gnd | -12.98 |
| 1 | Quasi Peak | 3.662 MHz | 46.40 | L1 gnd | -9.59 |
| 2 | Average | 3.754 MHz | 39.28 | L1 gnd | -6.71 |
| 2 | Average | 11.406 MHz | 42.69 | L1 gnd | -7.30 |
| 1 | Quasi Peak | 11.83 MHz | 47.78 | L1 gnd | -12.21 |
| 1 | Quasi Peak | 12.414 MHz | 47.47 | L1 gnd | -12.52 |
| 2 | Average | 12.414 MHz | 42.05 | L1 gnd | -7.94 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model:** GTH30K3FI(indoor unit)

**Cooling mode** **Port: Power Cord- L line**

Final measurement results

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 166 kHz | 47.77 | L1 gnd | -17.37 |
| 2 | Average | 338 kHz | 31.84 | L1 gnd | -18.38 |
| 1 | Quasi Peak | 450 kHz | 40.32 | L1 gnd | -16.54 |
| 2 | Average | 450 kHz | 35.31 | L1 gnd | -11.82 |
| 2 | Average | 1.094 MHz | 30.00 | L1 gnd | -15.99 |
| 1 | Quasi Peak | 1.162 MHz | 33.34 | L1 gnd | -22.65 |
| 1 | Quasi Peak | 4.058 MHz | 30.81 | L1 gnd | -25.18 |
| 2 | Average | 4.95 MHz | 26.49 | L1 gnd | -19.50 |
| 1 | Quasi Peak | 12.326 MHz | 41.07 | L1 gnd | -18.92 |
| 2 | Average | 12.374 MHz | 37.61 | L1 gnd | -12.38 |
| 2 | Average | 13.17 MHz | 45.08 | L1 gnd | -4.91 |
| 1 | Quasi Peak | 13.202 MHz | 52.67 | L1 gnd | -7.32 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model:** GTH30K3FI(indoor unit)

**Cooling mode** **Port: Power Cord- N line**

Final measurement results

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 150 kHz | 49.56 | L1 gnd | -16.43 |
| 2 | Average | 314 kHz | 32.15 | L1 gnd | -18.86 |
| 1 | Quasi Peak | 478 kHz | 40.58 | L1 gnd | -15.79 |
| 2 | Average | 478 kHz | 35.68 | L1 gnd | -10.80 |
| 1 | Quasi Peak | 882 kHz | 33.33 | L1 gnd | -22.66 |
| 2 | Average | 1.01 MHz | 30.22 | L1 gnd | -15.77 |
| 2 | Average | 3.302 MHz | 25.61 | L1 gnd | -20.38 |
| 1 | Quasi Peak | 3.666 MHz | 29.82 | L1 gnd | -26.17 |
| 1 | Quasi Peak | 12.27 MHz | 39.22 | L1 gnd | -20.77 |
| 2 | Average | 12.402 MHz | 34.14 | L1 gnd | -15.85 |
| 2 | Average | 13.314 MHz | 42.49 | L1 gnd | -7.50 |
| 1 | Quasi Peak | 13.35 MHz | 48.32 | L1 gnd | -11.67 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model:** GTH30K3FI(indoor unit)

**Heating mode** **Port: Power Cord- L line**

Final measurement results

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 150 kHz | 47.63 | L1 gnd | -18.36 |
| 2 | Average | 334 kHz | 33.13 | L1 gnd | -17.22 |
| 1 | Quasi Peak | 454 kHz | 39.23 | L1 gnd | -17.56 |
| 2 | Average | 478 kHz | 35.83 | L1 gnd | -10.65 |
| 2 | Average | 1.01 MHz | 29.98 | L1 gnd | -16.01 |
| 1 | Quasi Peak | 1.142 MHz | 32.71 | L1 gnd | -23.28 |
| 2 | Average | 2.662 MHz | 26.36 | L1 gnd | -19.63 |
| 1 | Quasi Peak | 4.914 MHz | 31.57 | L1 gnd | -24.42 |
| 1 | Quasi Peak | 12.338 MHz | 42.40 | L1 gnd | -17.59 |
| 2 | Average | 12.338 MHz | 37.48 | L1 gnd | -12.51 |
| 1 | Quasi Peak | 13.202 MHz | 50.41 | L1 gnd | -9.58 |
| 2 | Average | 13.318 MHz | 43.16 | L1 gnd | -6.83 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model:** GTH30K3FI(indoor unit)

**Heating mode** **Port: Power Cord- N line**

Final measurement results

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 150 kHz | 50.08 | L1 gnd | -15.91 |
| 2 | Average | 334 kHz | 32.71 | L1 gnd | -17.64 |
| 1 | Quasi Peak | 454 kHz | 38.52 | L1 gnd | -18.27 |
| 2 | Average | 478 kHz | 35.62 | L1 gnd | -10.85 |
| 2 | Average | 1.01 MHz | 29.93 | L1 gnd | -16.07 |
| 1 | Quasi Peak | 1.046 MHz | 34.12 | L1 gnd | -21.87 |
| 1 | Quasi Peak | 2.558 MHz | 32.49 | L1 gnd | -23.50 |
| 2 | Average | 4.142 MHz | 25.84 | L1 gnd | -20.16 |
| 1 | Quasi Peak | 12.27 MHz | 39.43 | L1 gnd | -20.56 |
| 2 | Average | 12.338 MHz | 33.87 | L1 gnd | -16.12 |
| 1 | Quasi Peak | 13.234 MHz | 49.37 | L1 gnd | -10.62 |
| 2 | Average | 13.234 MHz | 41.78 | L1 gnd | -8.21 |

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According to EN55014.1, for terminal disturbance voltage, the test start frequency shall be obtained per the formula: f start=60/L (MHz), so, here, the f start=60/8.0 =7.5 MHz. Where, the length of interconnection line is 8.0 meters.

**Cooling mode** **Port:** Interconnection line at indoor unit

Final measurement results

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 2 | Average | 7.504 MHz | 57.05 | L1 gnd | -6.94 |
| 1 | Quasi Peak | 7.636 MHz | 61.48 | L1 gnd | -12.51 |
| 1 | Quasi Peak | 9.512 MHz | 59.24 | L1 gnd | -14.75 |
| 2 | Average | 9.636 MHz | 53.36 | L1 gnd | -10.64 |
| 2 | Average | 13.444 MHz | 50.30 | L1 gnd | -13.69 |
| 1 | Quasi Peak | 13.804 MHz | 54.70 | L1 gnd | -19.29 |
| 2 | Average | 18.492 MHz | 45.67 | L1 gnd | -18.32 |
| 1 | Quasi Peak | 18.796 MHz | 55.22 | L1 gnd | -18.77 |
| 2 | Average | 18.92 MHz | 49.30 | L1 gnd | -14.69 |
| 1 | Quasi Peak | 20.26 MHz | 53.17 | L1 gnd | -20.82 |
| 1 | Quasi Peak | 26.188 MHz | 46.50 | L1 gnd | -27.49 |
| 2 | Average | 26.24 MHz | 41.32 | L1 gnd | -22.67 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

Additional terminal:

**Cooling mode** **Port:** Interconnection line at outdoor unit

Final measurement results

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 2 | Average | 7.5 MHz | 57.56 | L1 gnd | -6.43 |
| 1 | Quasi Peak | 7.548 MHz | 62.47 | L1 gnd | -11.52 |
| 1 | Quasi Peak | 9.584 MHz | 59.07 | L1 gnd | -14.92 |
| 2 | Average | 9.584 MHz | 53.33 | L1 gnd | -10.67 |
| 1 | Quasi Peak | 11.988 MHz | 53.37 | L1 gnd | -20.63 |
| 2 | Average | 12.124 MHz | 49.63 | L1 gnd | -14.36 |
| 2 | Average | 18.5 MHz | 48.06 | L1 gnd | -15.93 |
| 1 | Quasi Peak | 18.836 MHz | 53.09 | L1 gnd | -20.90 |
| 2 | Average | 19.036 MHz | 45.94 | L1 gnd | -18.05 |
| 1 | Quasi Peak | 20.216 MHz | 52.98 | L1 gnd | -21.01 |
| 1 | Quasi Peak | 24.568 MHz | 45.96 | L1 gnd | -28.03 |
| 2 | Average | 25.7 MHz | 41.35 | L1 gnd | -22.64 |

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Additional terminal:

**Heating mode** **Port: Interconnection line at indoor unit**

Final measurement results

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 8.128 MHz | 58.06 | L1 gnd | -15.93 |
| 2 | Average | 8.804 MHz | 51.88 | L1 gnd | -12.11 |
| 2 | Average | 9.492 MHz | 51.34 | L1 gnd | -12.65 |
| 1 | Quasi Peak | 9.776 MHz | 57.14 | L1 gnd | -16.85 |
| 2 | Average | 11.912 MHz | 51.02 | L1 gnd | -12.97 |
| 1 | Quasi Peak | 12.98 MHz | 54.64 | L1 gnd | -19.35 |
| 1 | Quasi Peak | 17.056 MHz | 50.92 | L1 gnd | -23.07 |
| 2 | Average | 17.128 MHz | 44.88 | L1 gnd | -19.11 |
| 1 | Quasi Peak | 20.184 MHz | 51.09 | L1 gnd | -22.90 |
| 2 | Average | 22.228 MHz | 45.04 | L1 gnd | -18.95 |
| 1 | Quasi Peak | 24.88 MHz | 48.14 | L1 gnd | -25.86 |
| 2 | Average | 25.324 MHz | 44.39 | L1 gnd | -19.60 |

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Additional terminal:

**Heating mode** **Port: Interconnection line at outdoor unit**

Final measurement results

| TRACE | | FREQUENCY | LEVEL dBµV | | DELTA LIMIT dB |
|---|---|---|---|---|---|
| 1 | Quasi Peak | 7.6 MHz | 61.48 | L1 gnd | -12.51 |
| 2 | Average | 8.796 MHz | 55.65 | L1 gnd | -8.34 |
| 2 | Average | 9.472 MHz | 53.87 | L1 gnd | -10.12 |
| 1 | Quasi Peak | 9.476 MHz | 60.34 | L1 gnd | -13.65 |
| 1 | Quasi Peak | 11.928 MHz | 55.02 | L1 gnd | -18.97 |
| 2 | Average | 12.108 MHz | 49.57 | L1 gnd | -14.42 |
| 2 | Average | 18.072 MHz | 47.69 | L1 gnd | -16.30 |
| 1 | Quasi Peak | 18.732 MHz | 51.94 | L1 gnd | -22.05 |
| 2 | Average | 19.052 MHz | 45.67 | L1 gnd | -18.32 |
| 1 | Quasi Peak | 20.152 MHz | 50.87 | L1 gnd | -23.12 |
| 1 | Quasi Peak | 25.52 MHz | 47.32 | L1 gnd | -26.68 |
| 2 | Average | 25.684 MHz | 42.16 | L1 gnd | -21.83 |

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## 4.2 Discontinuous Interference on AC Mains

| | | |
|---|---|---|
| **Date of testing** | : | 2013.01.11 |
| **Temperature** | : | 24°C~26°C |
| **Humidity** | : | 66%RH~67%RH |
| **Test procedure** | : | EN55014-1: 2006+A1:2009+A2:2011 |
| **Frequency range** | : | 0.15M – 30MHz |
| **Kind of test site** | : | Shielded room |
| **Operational mode** | : | Dry |
| **Test result** | : | Pass |

1.Test Setup

The EUT is on an insulating plane (height=80cm)
The distance between EUT and L.I.S.N is 80cm.
The distance between EUT and other metal conductors grounded is at least 80cm.

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

2. Test results.

| Model: GUHD30NK3FO（outdoor unit） | | | | | |
|---|---|---|---|---|---|
| Run A (Observation time=120Mins0Sec) | | | | | |
| Frequency (MHz) | | 0.15 | 0.5 | 1.4 | 30 |
| Limit value (L)(**dB**μV) | | 66 | 56 | 56 | 60 |
| Amount of clicks >L | Short (n1) | 3 | 2 | 1 | 0 |
| | Long (n2) | 0 | 0 | 0 | 0 |
| Total (n=n1+n2) | | 3 | 2 | 1 | 0 |
| Click Rate (N=n/T) | | 0. 03 | 0. 02 | 0. 01 | 0.00 |
| Continuous(s) | | 0 | 0 | 0 | 0 |
| Switching operations | | --- | | | |
| f factor | | N/A | | | |
| Result | | PASS | | | |
| Model: GKH24K3FI(indoor unit) | | | | | |
| Run A (Observation time=120Mins0Sec) | | | | | |
| Frequency (MHz) | | 0.15 | 0.5 | 1.4 | 30 |
| Limit value (L)(**dB**μV) | | 66 | 56 | 56 | 60 |
| Amount of clicks >L | Short (n1) | 32 | 24 | 11 | 0 |
| | Long (n2) | 0 | 0 | 0 | 0 |
| Total (n=n1+n2) | | 32 | 24 | 11 | 0 |
| Click Rate (N=n/T) | | 0. 27 | 0. 20 | 0. 09 | 0.00 |
| Continuous(s) | | 0 | 0 | 0 | 0 |
| Switching operations | | --- | | | |
| f factor | | N/A | | | |
| Result | | PASS | | | |
| Model: GTH24K3FI(indoor unit) | | | | | |
| Run A (Observation time=120Mins0Sec) | | | | | |
| Frequency (MHz) | | 0.15 | 0.5 | 1.4 | 30 |
| Limit value (L)(**dB**μV) | | 66 | 56 | 56 | 60 |
| Amount of clicks >L | Short (n1) | 31 | 23 | 10 | 0 |
| | Long (n2) | 0 | 0 | 0 | 0 |
| Total (n=n1+n2) | | 31 | 23 | 10 | 0 |
| Click Rate (N=n/T) | | 0. 26 | 0. 19 | 0. 08 | 0.00 |
| Continuous(s) | | 0 | 0 | 0 | 0 |
| Switching operations | | --- | | | |
| f factor | | N/A | | | |
| Result | | PASS | | | |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

| Model: GKH30K3FI(indoor unit) | | | | | |
|---|---|---|---|---|---|
| Run A (Observation time=120Mins0Sec) | | | | | |
| Frequency (MHz) | | 0.15 | 0.5 | 1.4 | 30 |
| Limit value (L)(**dB**μV) | | 66 | 56 | 56 | 60 |
| Amount of clicks >L | Short (n1) | 33 | 24 | 11 | 0 |
| | Long (n2) | 0 | 0 | 0 | 0 |
| Total (n=n1+n2) | | 33 | 24 | 11 | 0 |
| Click Rate (N=n/T) | | 0. 28 | 0. 20 | 0. 09 | 0.00 |
| Continuous(s) | | 0 | 0 | 0 | 0 |
| Switching operations | | --- | | | |
| f factor | | N/A | | | |
| Result | | PASS | | | |
| Model: GTH30K3FI(indoor unit) | | | | | |
| Run A (Observation time=120Mins0Sec) | | | | | |
| Frequency (MHz) | | 0.15 | 0.5 | 1.4 | 30 |
| Limit value (L)(**dB**μV) | | 66 | 56 | 56 | 60 |
| Amount of clicks >L | Short (n1) | 30 | 23 | 10 | 0 |
| | Long (n2) | 0 | 0 | 0 | 0 |
| Total (n=n1+n2) | | 30 | 23 | 10 | 0 |
| Click Rate (N=n/T) | | 0. 25 | 0. 19 | 0. 08 | 0.00 |
| Continuous(s) | | 0 | 0 | 0 | 0 |
| Switching operations | | --- | | | |
| f factor | | N/A | | | |
| Result | | PASS | | | |

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## 4.3 Disturbance Power

| | | |
|---|---|---|
| **Date of testing** | : | 2013.01.11 |
| **Temperature** | : | 25°C/18°C |
| **Operational mode** | : | Cool /Heat, High speed |
| **Humidity** | : | 65%RH~67%RH |
| **Test procedure** | : | EN55014-1: 2006+A1:2009+A2:2011 |
| **Frequency range** | : | 30M - 300MHz |
| **Kind of test site** | : | Shielded room |
| **Test ports** | : | AC Mains/ Interconnection line |
| **Test result** | : | Pass |

1.Test Setup:

EUT and absorbing clamp are placed on an insulating plane (height=80cm). The distance between the absorbing clamp and other metal conductors grounded is 40cm above. EUT is connected to A.C power through an extended cord(≧6m). The absorbing clamp clamps the power line and moves along the power line to measure the maximum disturbance power emitted from the line. If EUT has an indoors unit and an outdoors unit, its interconnection lines and signal lines(or controlling lines) should be also measured ,too.

2.If the result of the measurement with the Quasi Peak detector is below the Average limit, the measurement with Average Detector has been omitted.

The power cord and interconnection line had been extended to a length of 6m and routed through an absorbing clamp. The clamp was moved along the cable to find the maximal emission.

Disturbances other than those mentioned are small or not detectable.

Receiver setup:

**Detector:Peak+Average, IF-BW: 120kHz, Step: 60kHz, M-Time: 10ms.**

The frequency spectra are as follows:

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model:** GUHD30NK3FO（outdoor unit）

**Cooling mode** **Port: Power Cord**

**Final measurement results**

| TRACE | | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|---|
| 2 | Average | 30 MHz | 21.50 | -13.49 |
| 1 | Quasi Peak | 30.4 MHz | 32.30 | -12.70 |
| 2 | Average | 65.64 MHz | 15.34 | -20.97 |
| 1 | Quasi Peak | 65.8 MHz | 34.71 | -11.61 |
| 1 | Quasi Peak | 81 MHz | 39.08 | -7.80 |
| 2 | Average | 83.52 MHz | 23.07 | -13.90 |
| 2 | Average | 84 MHz | 22.95 | -14.04 |
| 1 | Quasi Peak | 84.32 MHz | 35.48 | -11.53 |
| 1 | Quasi Peak | 118.24 MHz | 26.16 | -22.10 |

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**Model:** GUHD30NK3FO（outdoor unit）

**Heating mode** **Port: Power Cord**

**Final measurement results**

| | TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|---|
| 2 | Average | 30 MHz | 21.17 | -13.82 |
| 1 | Quasi Peak | 30.2 MHz | 33.55 | -11.45 |
| 1 | Quasi Peak | 61.44 MHz | 27.48 | -18.67 |
| 2 | Average | 83.6 MHz | 27.16 | -9.82 |
| 1 | Quasi Peak | 83.68 MHz | 39.32 | -7.66 |
| 2 | Average | 84 MHz | 26.88 | -10.11 |
| 1 | Quasi Peak | 84.08 MHz | 38.58 | -8.41 |
| 1 | Quasi Peak | 104.44 MHz | 38.79 | -8.95 |
| 2 | Average | 106.48 MHz | 24.44 | -13.39 |
| 1 | Quasi Peak | 128.4 MHz | 32.07 | -16.57 |

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**Model:** GUHD30NK3FO（outdoor unit）

**Cooling mode** **Port: Interconnection line, at indoor unit.**

**Final measurement results**

| TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|
| 2 Average | 39.32 MHz | 22.59 | -12.74 |
| 1 Quasi Peak | 39.4 MHz | 34.20 | -11.13 |
| 1 Quasi Peak | 52.12 MHz | 24.59 | -21.22 |
| 1 Quasi Peak | 77.04 MHz | 27.56 | -19.18 |
| 1 Quasi Peak | 98.56 MHz | 35.18 | -12.35 |
| 1 Quasi Peak | 104.32 MHz | 35.33 | -12.42 |
| 1 Quasi Peak | 127.44 MHz | 28.37 | -20.23 |

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**Model:** GUHD30NK3FO（outdoor unit）

**Heating mode** **Port: Interconnection line, at indoor unit.**

**Final measurement results**

| TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|
| 1 Quasi Peak | 39.52 MHz | 33.88 | -11.46 |
| 2 Average | 40 MHz | 22.59 | -12.77 |
| 1 Quasi Peak | 50.48 MHz | 24.28 | -21.47 |
| 1 Quasi Peak | 76.84 MHz | 26.25 | -20.48 |
| 1 Quasi Peak | 100.12 MHz | 36.01 | -11.58 |
| 1 Quasi Peak | 102.12 MHz | 36.96 | -10.70 |
| 1 Quasi Peak | 126.8 MHz | 31.47 | -17.11 |

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**Model:** GUHD30NK3FO（outdoor unit）

**Cooling mode** **Port: Interconnection line, at outdoor unit.**

**Final measurement results**

| TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|
| 1 Quasi Peak | 30 MHz | 32.47 | -12.52 |
| 2 Average | 38 MHz | 22.82 | -12.47 |
| 1 Quasi Peak | 53.36 MHz | 29.72 | -16.14 |
| 1 Quasi Peak | 82 MHz | 35.51 | -11.40 |
| 2 Average | 82.24 MHz | 21.51 | -15.41 |
| 1 Quasi Peak | 100.2 MHz | 34.54 | -13.05 |
| 1 Quasi Peak | 113.28 MHz | 34.41 | -13.66 |
| 2 Average | 125.8 MHz | 23.33 | -15.21 |
| 1 Quasi Peak | 125.96 MHz | 41.51 | -7.04 |
| 1 Quasi Peak | 144.6 MHz | 29.40 | -19.84 |

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**Model:** GUHD30NK3FO（outdoor unit）

**Heating mode** **Port: Interconnection line, at outdoor unit.**

**Final measurement results**

| TRACE | | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|---|
| 1 | Quasi Peak | 30.72 MHz | 32.10 | -12.92 |
| 2 | Average | 39.44 MHz | 22.57 | -12.77 |
| 1 | Quasi Peak | 54.56 MHz | 30.99 | -14.91 |
| 1 | Quasi Peak | 82.6 MHz | 34.85 | -12.09 |
| 2 | Average | 82.6 MHz | 21.16 | -15.78 |
| 1 | Quasi Peak | 99.76 MHz | 33.71 | -13.86 |
| 1 | Quasi Peak | 119.92 MHz | 35.76 | -12.56 |
| 1 | Quasi Peak | 125.2 MHz | 40.21 | -8.31 |

**Model:** GTH24K3FI(indoor unit)

**Cooling mode** **Port: Power Cord**

**Final measurement results**

| TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|
| 2 Average | 64.56 MHz | 30.42 | -5.85 |
| 1 Quasi Peak | 72.48 MHz | 42.04 | -4.53 |
| 1 Quasi Peak | 102.64 MHz | 25.40 | -22.28 |
| 1 Quasi Peak | 138.28 MHz | 23.44 | -25.56 |

**Heating mode** **Port: Power Cord**

**Final measurement results**

| | TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|---|
| 1 | Quasi Peak | 64.2 MHz | 42.05 | -4.21 |
| 2 | Average | 64.64 MHz | 28.84 | -7.43 |
| 1 | Quasi Peak | 94.96 MHz | 28.10 | -19.30 |
| 1 | Quasi Peak | 140.64 MHz | 23.81 | -25.28 |

**Model:** GTH24K3FI(indoor unit)

**Cooling mode** **Port: Power Cord**

**Final measurement results**

| | TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|---|
| 2 | Average | 41.52 MHz | 25.94 | -9.48 |
| 1 | Quasi Peak | 43.6 MHz | 39.27 | -6.22 |
| 1 | Quasi Peak | 48.12 MHz | 38.61 | -7.05 |
| 2 | Average | 48.44 MHz | 23.12 | -12.55 |
| 1 | Quasi Peak | 75.84 MHz | 27.61 | -19.08 |
| 1 | Quasi Peak | 101.88 MHz | 28.38 | -19.27 |
| 1 | Quasi Peak | 102.2 MHz | 28.36 | -19.31 |
| 1 | Quasi Peak | 126.2 MHz | 35.21 | -13.34 |

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**Model:** GTH24K3FI(indoor unit)

**Heating mode** **Port: Power Cord**

**Final measurement results**

| TRACE | | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|---|
| 1 | Quasi Peak | 40.72 MHz | 38.42 | -6.97 |
| 2 | Average | 42.48 MHz | 26.54 | -8.92 |
| 1 | Quasi Peak | 48 MHz | 38.43 | -7.23 |
| 2 | Average | 48.32 MHz | 23.41 | -12.26 |
| 1 | Quasi Peak | 76.28 MHz | 26.63 | -20.08 |
| 1 | Quasi Peak | 101.92 MHz | 29.47 | -18.18 |
| 1 | Quasi Peak | 102.8 MHz | 29.32 | -18.36 |
| 1 | Quasi Peak | 127.28 MHz | 34.97 | -13.62 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model:** GKH30K3FI(indoor unit)

**Cooling mode** **Port: Power Cord**

**Final measurement results**

| | TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|---|
| 1 | Quasi Peak | 47.84 MHz | 39.67 | -5.98 |
| 2 | Average | 47.96 MHz | 26.61 | -9.04 |
| 1 | Quasi Peak | 49.92 MHz | 39.70 | -6.03 |
| 2 | Average | 54.6 MHz | 27.06 | -8.84 |
| 1 | Quasi Peak | 69.8 MHz | 38.78 | -7.69 |
| 2 | Average | 72.2 MHz | 26.11 | -10.45 |
| 2 | Average | 86.08 MHz | 20.32 | -16.75 |
| 1 | Quasi Peak | 95.92 MHz | 30.17 | -17.26 |
| 1 | Quasi Peak | 105.68 MHz | 25.74 | -22.05 |
| 1 | Quasi Peak | 125.32 MHz | 31.46 | -17.06 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model:** GKH30K3FI(indoor unit)

**Heating mode** **Port: Power Cord**

**Final measurement results**

| | TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|---|
| 1 | Quasi Peak | 30.52 MHz | 27.63 | -17.38 |
| 2 | Average | 31.12 MHz | 19.75 | -15.28 |
| 1 | Quasi Peak | 48.6 MHz | 33.43 | -12.25 |
| 2 | Average | 63.16 MHz | 21.86 | -14.36 |
| 1 | Quasi Peak | 71.52 MHz | 35.93 | -10.60 |
| 2 | Average | 71.8 MHz | 24.25 | -12.29 |
| 1 | Quasi Peak | 98.96 MHz | 28.36 | -19.18 |
| 1 | Quasi Peak | 103.96 MHz | 25.17 | -22.56 |
| 1 | Quasi Peak | 127.16 MHz | 29.89 | -18.69 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model:** GTH30K3FI(indoor unit)

**Cooling mode** **Port: Power Cord**

**Final measurement results**

| TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|
| 2 Average | 47.08 MHz | 18.89 | -16.73 |
| 1 Quasi Peak | 47.12 MHz | 33.14 | -12.49 |
| 1 Quasi Peak | 48.16 MHz | 29.96 | -15.70 |
| 1 Quasi Peak | 81.24 MHz | 33.13 | -13.76 |
| 1 Quasi Peak | 84.2 MHz | 29.07 | -17.93 |
| 1 Quasi Peak | 119.88 MHz | 35.03 | -13.29 |
| 1 Quasi Peak | 120.76 MHz | 34.76 | -13.59 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model:** GTH30K3FI(indoor unit)

**Heating mode** **Port: Power Cord**

**Final measurement results**

| TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|
| 1 Quasi Peak | 34.68 MHz | 20.80 | -24.36 |
| 1 Quasi Peak | 53.48 MHz | 27.92 | -17.94 |
| 1 Quasi Peak | 82.44 MHz | 32.74 | -14.20 |
| 1 Quasi Peak | 84.12 MHz | 29.82 | -17.17 |
| 1 Quasi Peak | 111.56 MHz | 29.97 | -18.04 |
| 1 Quasi Peak | 125.88 MHz | 36.88 | -11.66 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model: wired controller**

**Cooling mode** **Port: Interconnection line, Near wired controller**

**Final measurement results**

| TRACE | | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|---|
| 1 | Quasi Peak | 30.72 MHz | 32.10 | -12.92 |
| 2 | Average | 39.44 MHz | 22.57 | -12.77 |
| 1 | Quasi Peak | 54.56 MHz | 30.99 | -14.91 |
| 1 | Quasi Peak | 82.6 MHz | 34.85 | -12.09 |
| 2 | Average | 82.6 MHz | 21.16 | -15.78 |
| 1 | Quasi Peak | 99.76 MHz | 33.71 | -13.86 |
| 1 | Quasi Peak | 119.92 MHz | 35.76 | -12.56 |
| 1 | Quasi Peak | 125.2 MHz | 40.21 | -8.31 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model: wired controller**

**Heating mode** **Port: Interconnection line, Near wired controller**

**Final measurement results**

| | TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|---|
| 1 | Quasi Peak | 30 MHz | 32.47 | -12.52 |
| 2 | Average | 38 MHz | 22.82 | -12.47 |
| 1 | Quasi Peak | 53.36 MHz | 29.72 | -16.14 |
| 1 | Quasi Peak | 82 MHz | 35.51 | -11.40 |
| 2 | Average | 82.24 MHz | 21.51 | -15.41 |
| 1 | Quasi Peak | 100.2 MHz | 34.54 | -13.05 |
| 1 | Quasi Peak | 113.28 MHz | 34.41 | -13.66 |
| 2 | Average | 125.8 MHz | 23.33 | -15.21 |
| 1 | Quasi Peak | 125.96 MHz | 41.51 | -7.04 |
| 1 | Quasi Peak | 144.6 MHz | 29.40 | -19.84 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model: Control panel**

**Cooling mode** **Port: Interconnection line, Away from wired controller**

**Final measurement results**

| | TRACE | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|---|
| 1 | Quasi Peak | 39.52 MHz | 33.88 | -11.46 |
| 2 | Average | 40 MHz | 22.59 | -12.77 |
| 1 | Quasi Peak | 50.48 MHz | 24.28 | -21.47 |
| 1 | Quasi Peak | 76.84 MHz | 26.25 | -20.48 |
| 1 | Quasi Peak | 100.12 MHz | 36.01 | -11.58 |
| 1 | Quasi Peak | 102.12 MHz | 36.96 | -10.70 |
| 1 | Quasi Peak | 126.8 MHz | 31.47 | -17.11 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model: Control panel**

**Heating mode** **Port: Interconnection line, Away from wired controller**

**Final measurement results**

| TRACE | | FREQUENCY | LEVEL dBpW | DELTA LIMIT dB |
|---|---|---|---|---|
| 2 | Average | 39.32 MHz | 22.59 | -12.74 |
| 1 | Quasi Peak | 39.4 MHz | 34.20 | -11.13 |
| 1 | Quasi Peak | 52.12 MHz | 24.59 | -21.22 |
| 1 | Quasi Peak | 77.04 MHz | 27.56 | -19.18 |
| 1 | Quasi Peak | 98.56 MHz | 35.18 | -12.35 |
| 1 | Quasi Peak | 104.32 MHz | 35.33 | -12.42 |
| 1 | Quasi Peak | 127.44 MHz | 28.37 | -20.23 |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

# 4.4 Harmonics on AC Mains

| | | |
|---|---|---|
| **Date of testing** | : | 2013.01.12 |
| **Temperature** | : | 25°C/18°C |
| **Humidity** | : | 66%RH~67%RH |
| **Test procedure** | : | EN61000-3-2: 2006+A1:2009+A2:2009<br>EN61000-3-12: 2005 |
| **Harmonics order** | : | 2 – 40 |
| **Equipment Class** | : | A |
| **Operational mode** | : | Cool /Heat, High speed |
| **Test result** | : | Pass |

1.Test Setup:

2. Test result.

**The test results are shown as follows:**

.

**Model**: GUHD30NK3FO（outdoor unit）

Cooling mode/ Standard used:EN/IEC 61000-3-12 Ed.2 Short cyclic,Rsce= 33 (Not balanced Tab. 2)

| Hn | Ieff [A] | Ieff [%] | Limit [%] | Result |
|---|---|---|---|---|
| 2 | 8.757E-3 | 0.108 | 8.00 | PASS |
| 3 | 392.406E-3 | 4.853 | 21.60 | PASS |
| 4 | 7.873E-3 | 0.097 | 4.00 | PASS |
| 5 | 236.151E-3 | 2.921 | 10.70 | PASS |
| 6 | 8.529E-3 | 0.105 | 2.67 | PASS |
| 7 | 195.954E-3 | 2.424 | 7.20 | PASS |
| 8 | 7.689E-3 | 0.095 | 2.00 | PASS |
| 9 | 205.808E-3 | 2.545 | 3.80 | PASS |
| 10 | 9.728E-3 | 0.120 | 1.60 | PASS |
| 11 | 177.323E-3 | 2.193 | 3.10 | PASS |
| 12 | 6.786E-3 | 0.084 | 1.33 | PASS |
| 13 | 156.470E-3 | 1.935 | 2.00 | PASS |
| 14 | 6.799E-3 | 0.084 | | PASS |
| 15 | 145.771E-3 | 1.803 | | PASS |
| 16 | 6.914E-3 | 0.086 | | PASS |
| 17 | 109.929E-3 | 1.360 | | PASS |
| 18 | 5.842E-3 | 0.072 | | PASS |
| 19 | 117.606E-3 | 1.455 | | PASS |
| 20 | 7.787E-3 | 0.096 | | PASS |
| 21 | 71.779E-3 | 0.888 | | PASS |
| 22 | 5.079E-3 | 0.063 | | PASS |
| 23 | 89.530E-3 | 1.107 | | PASS |
| 24 | 4.813E-3 | 0.060 | | PASS |
| 25 | 42.512E-3 | 0.526 | | PASS |
| 26 | 4.520E-3 | 0.056 | | PASS |
| 27 | 53.097E-3 | 0.657 | | PASS |
| 28 | 6.636E-3 | 0.082 | | PASS |
| 29 | 29.596E-3 | 0.366 | | PASS |
| 30 | 7.207E-3 | 0.089 | | PASS |
| 31 | 26.907E-3 | 0.333 | | PASS |
| 32 | 3.082E-3 | 0.038 | | PASS |
| 33 | 19.751E-3 | 0.244 | | PASS |
| 34 | 3.090E-3 | 0.038 | | PASS |
| 35 | 5.114E-3 | 0.063 | | PASS |
| 36 | 2.756E-3 | 0.034 | | PASS |
| 37 | 13.624E-3 | 0.169 | | PASS |
| 38 | 2.421E-3 | 0.030 | | PASS |
| 39 | 11.217E-3 | 0.139 | | PASS |
| 40 | 2.947E-3 | 0.036 | | PASS |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model**: GUHD30NK3FO（outdoor unit）
Heating mode/Standard used:EN/IEC 61000-3-12 Ed.2 Short cyclic,Rsce= 33 (Not balanced Tab. 2)

| Hn | Ieff [A] | Ieff [%] | Limit [%] | Result |
|---|---|---|---|---|
| 2 | 8.635E-3 | 0.108 | 8.00 | PASS |
| 3 | 391.009E-3 | 4.873 | 21.60 | PASS |
| 4 | 8.065E-3 | 0.101 | 4.00 | PASS |
| 5 | 232.209E-3 | 2.894 | 10.70 | PASS |
| 6 | 9.811E-3 | 0.122 | 2.67 | PASS |
| 7 | 192.420E-3 | 2.398 | 7.20 | PASS |
| 8 | 8.279E-3 | 0.103 | 2.00 | PASS |
| 9 | 203.417E-3 | 2.535 | 3.80 | PASS |
| 10 | 12.176E-3 | 0.152 | 1.60 | PASS |
| 11 | 174.789E-3 | 2.178 | 3.10 | PASS |
| 12 | 7.453E-3 | 0.093 | 1.33 | PASS |
| 13 | 155.246E-3 | 1.935 | 2.00 | PASS |
| 14 | 8.902E-3 | 0.111 | | PASS |
| 15 | 144.232E-3 | 1.797 | | PASS |
| 16 | 8.640E-3 | 0.108 | | PASS |
| 17 | 109.687E-3 | 1.367 | | PASS |
| 18 | 6.508E-3 | 0.081 | | PASS |
| 19 | 117.765E-3 | 1.468 | | PASS |
| 20 | 9.265E-3 | 0.115 | | PASS |
| 21 | 71.877E-3 | 0.896 | | PASS |
| 22 | 5.403E-3 | 0.067 | | PASS |
| 23 | 90.006E-3 | 1.122 | | PASS |
| 24 | 5.373E-3 | 0.067 | | PASS |
| 25 | 43.389E-3 | 0.541 | | PASS |
| 26 | 4.361E-3 | 0.054 | | PASS |
| 27 | 55.227E-3 | 0.688 | | PASS |
| 28 | 3.486E-3 | 0.043 | | PASS |
| 29 | 30.439E-3 | 0.379 | | PASS |
| 30 | 4.262E-3 | 0.053 | | PASS |
| 31 | 29.086E-3 | 0.362 | | PASS |
| 32 | 3.004E-3 | 0.037 | | PASS |
| 33 | 20.435E-3 | 0.255 | | PASS |
| 34 | 2.947E-3 | 0.037 | | PASS |
| 35 | 6.758E-3 | 0.084 | | PASS |
| 36 | 2.770E-3 | 0.035 | | PASS |
| 37 | 13.406E-3 | 0.167 | | PASS |
| 38 | 2.305E-3 | 0.029 | | PASS |
| 39 | 10.549E-3 | 0.131 | | PASS |
| 40 | 2.791E-3 | 0.035 | | PASS |

THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB

**Model**: GKH24K3FI(indoor unit)

**fan mode**

**Test Result: Pass** **Source qualification: Normal**
**THC(A): 0.42** **I-THD(%): 10.91** **POHC(A): 0.028** **POHC Limit(A): 0.265**
**Highest parameter values during test:**

| | | | |
|---|---|---|---|
| V_RMS (Volts): | 229.97 | Frequency(Hz): | 50.00 |
| I_Peak (Amps): | 2.617 | I_RMS (Amps): | 0.188 |
| I_Fund (Amps): | 0.142 | Crest Factor: | 1.617 |
| Power (Watts): | 42.9 | Power Factor: | 0.993 |

| Harm# | Harms(avg) | 100%Limit | %of Limit | Harms(max) | 150%Limit | %of Limit | Status |
|---|---|---|---|---|---|---|---|
| 2 | 0.005 | 1.080 | 0.5 | 0.006 | 1.620 | 0.38 | Pass |
| 3 | 0.312 | 2.300 | 13.6 | 0.315 | 3.450 | 9.13 | Pass |
| 4 | 0.008 | 0.430 | 1.8 | 0.010 | 0.645 | 1.56 | Pass |
| 5 | 0.206 | 1.140 | 18.1 | 0.208 | 1.710 | 12.15 | Pass |
| 6 | 0.014 | 0.300 | 4.8 | 0.020 | 0.450 | 4.41 | Pass |
| 7 | 0.106 | 0.770 | 13.8 | 0.111 | 1.155 | 9.59 | Pass |
| 8 | 0.025 | 0.230 | 10.7 | 0.039 | 0.345 | 11.43 | Pass |
| 9 | 0.071 | 0.400 | 17.6 | 0.080 | 0.600 | 13.26 | Pass |
| 10 | 0.033 | 0.184 | 18.1 | 0.054 | 0.276 | 19.42 | Pass |
| 11 | 0.087 | 0.330 | 26.5 | 0.096 | 0.495 | 19.47 | Pass |
| 12 | 0.035 | 0.153 | 22.8 | 0.059 | 0.230 | 25.75 | Pass |
| 13 | 0.052 | 0.210 | 24.6 | 0.059 | 0.315 | 18.84 | Pass |
| 14 | 0.026 | 0.131 | 20.0 | 0.041 | 0.197 | 20.89 | Pass |
| 15 | 0.029 | 0.150 | 19.4 | 0.032 | 0.225 | 14.34 | Pass |
| 16 | 0.015 | 0.115 | 13.0 | 0.019 | 0.173 | 10.97 | Pass |
| 17 | 0.023 | 0.132 | 17.1 | 0.025 | 0.199 | 12.38 | Pass |
| 18 | 0.011 | 0.102 | 10.7 | 0.013 | 0.153 | 8.43 | Pass |
| 19 | 0.019 | 0.118 | 16.0 | 0.021 | 0.178 | 11.67 | Pass |
| 20 | 0.011 | 0.092 | 12.1 | 0.013 | 0.138 | 9.49 | Pass |
| 21 | 0.013 | 0.107 | 12.2 | 0.015 | 0.161 | 9.33 | Pass |
| 22 | 0.010 | 0.084 | 12.1 | 0.011 | 0.125 | 8.83 | Pass |
| 23 | 0.017 | 0.098 | 17.4 | 0.018 | 0.147 | 12.51 | Pass |
| 24 | 0.007 | 0.077 | 9.1 | 0.008 | 0.115 | 7.15 | Pass |
| 25 | 0.012 | 0.090 | 13.6 | 0.014 | 0.135 | 10.04 | Pass |
| 26 | 0.006 | 0.071 | 9.1 | 0.007 | 0.106 | 6.87 | Pass |
| 27 | 0.006 | 0.083 | 7.6 | 0.007 | 0.125 | 5.85 | Pass |
| 28 | 0.006 | 0.066 | 9.0 | 0.007 | 0.099 | 6.77 | Pass |
| 29 | 0.010 | 0.078 | 12.7 | 0.011 | 0.116 | 9.30 | Pass |
| 30 | 0.005 | 0.061 | 8.1 | 0.006 | 0.092 | 6.13 | Pass |
| 31 | 0.005 | 0.073 | 7.3 | 0.006 | 0.109 | 5.48 | Pass |
| 32 | 0.004 | 0.058 | 0.0 | 0.005 | 0.086 | 5.54 | Pass |
| 33 | 0.006 | 0.068 | 8.5 | 0.006 | 0.102 | 6.19 | Pass |
| 34 | 0.003 | 0.054 | 0.0 | 0.004 | 0.081 | 4.97 | Pass |
| 35 | 0.005 | 0.064 | 7.3 | 0.005 | 0.096 | 5.34 | Pass |
| 36 | 0.003 | 0.051 | 0.0 | 0.004 | 0.077 | 4.65 | Pass |
| 37 | 0.003 | 0.061 | 0.0 | 0.004 | 0.091 | 4.13 | Pass |
| 38 | 0.003 | 0.048 | 0.0 | 0.003 | 0.073 | 4.14 | Pass |
| 39 | 0.003 | 0.058 | 0.0 | 0.004 | 0.087 | 4.41 | Pass |
| 40 | 0.002 | 0.046 | 0.0 | 0.002 | 0.069 | 3.17 | Pass |

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**Model**: GTH24K3FI(indoor unit)

**fan mode**

**Test Result: Pass** **Source qualification: Normal**
**THC(A): 0.42** **I-THD(%): 10.88** **POHC(A): 0.029** **POHC Limit(A): 0.265**
**Highest parameter values during test:**

| | | | |
|---|---|---|---|
| V_RMS (Volts): | 229.98 | Frequency(Hz): | 50.00 |
| I_Peak (Amps): | 2.682 | I_RMS (Amps): | 0.289 |
| I_Fund (Amps): | 0.262 | Crest Factor: | 1.619 |
| Power (Watts): | 66.0 | Power Factor: | 0.993 |

| Harm# | Harms(avg) | 100%Limit | %of Limit | Harms(max) | 150%Limit | %of Limit | Status |
|---|---|---|---|---|---|---|---|
| 2 | 0.005 | 1.080 | 0.5 | 0.006 | 1.620 | 0.39 | Pass |
| 3 | 0.314 | 2.300 | 13.6 | 0.316 | 3.450 | 9.15 | Pass |
| 4 | 0.007 | 0.430 | 1.6 | 0.008 | 0.645 | 1.28 | Pass |
| 5 | 0.207 | 1.140 | 18.2 | 0.209 | 1.710 | 12.21 | Pass |
| 6 | 0.008 | 0.300 | 2.8 | 0.011 | 0.450 | 2.54 | Pass |
| 7 | 0.109 | 0.770 | 14.2 | 0.111 | 1.155 | 9.61 | Pass |
| 8 | 0.011 | 0.230 | 4.8 | 0.015 | 0.345 | 4.23 | Pass |
| 9 | 0.078 | 0.400 | 19.5 | 0.080 | 0.600 | 13.34 | Pass |
| 10 | 0.018 | 0.184 | 9.8 | 0.025 | 0.276 | 8.99 | Pass |
| 11 | 0.095 | 0.330 | 28.7 | 0.097 | 0.495 | 19.52 | Pass |
| 12 | 0.013 | 0.153 | 8.5 | 0.019 | 0.230 | 8.18 | Pass |
| 13 | 0.058 | 0.210 | 27.4 | 0.059 | 0.315 | 18.85 | Pass |
| 14 | 0.012 | 0.131 | 9.5 | 0.017 | 0.197 | 8.80 | Pass |
| 15 | 0.031 | 0.150 | 20.4 | 0.032 | 0.225 | 14.26 | Pass |
| 16 | 0.010 | 0.115 | 9.0 | 0.013 | 0.173 | 7.39 | Pass |
| 17 | 0.022 | 0.132 | 16.9 | 0.024 | 0.199 | 12.21 | Pass |
| 18 | 0.010 | 0.102 | 9.8 | 0.012 | 0.153 | 7.70 | Pass |
| 19 | 0.019 | 0.118 | 15.9 | 0.020 | 0.178 | 11.48 | Pass |
| 20 | 0.010 | 0.092 | 11.2 | 0.012 | 0.138 | 8.51 | Pass |
| 21 | 0.013 | 0.107 | 12.5 | 0.015 | 0.161 | 9.55 | Pass |
| 22 | 0.009 | 0.084 | 11.2 | 0.011 | 0.125 | 8.71 | Pass |
| 23 | 0.017 | 0.098 | 17.4 | 0.018 | 0.147 | 12.42 | Pass |
| 24 | 0.007 | 0.077 | 8.9 | 0.008 | 0.115 | 6.83 | Pass |
| 25 | 0.012 | 0.090 | 13.5 | 0.013 | 0.135 | 9.72 | Pass |
| 26 | 0.006 | 0.071 | 8.6 | 0.007 | 0.106 | 6.50 | Pass |
| 27 | 0.006 | 0.083 | 7.8 | 0.007 | 0.125 | 5.89 | Pass |
| 28 | 0.005 | 0.066 | 8.3 | 0.007 | 0.099 | 6.57 | Pass |
| 29 | 0.010 | 0.078 | 12.7 | 0.011 | 0.116 | 9.05 | Pass |
| 30 | 0.005 | 0.061 | 7.7 | 0.005 | 0.092 | 5.87 | Pass |
| 31 | 0.005 | 0.073 | 7.1 | 0.006 | 0.109 | 5.41 | Pass |
| 32 | 0.004 | 0.058 | 0.0 | 0.005 | 0.086 | 5.39 | Pass |
| 33 | 0.006 | 0.068 | 8.2 | 0.006 | 0.102 | 6.00 | Pass |
| 34 | 0.003 | 0.054 | 0.0 | 0.004 | 0.081 | 4.69 | Pass |
| 35 | 0.005 | 0.064 | 7.2 | 0.005 | 0.096 | 5.41 | Pass |
| 36 | 0.003 | 0.051 | 0.0 | 0.003 | 0.077 | 4.47 | Pass |
| 37 | 0.003 | 0.061 | 0.0 | 0.004 | 0.091 | 4.08 | Pass |
| 38 | 0.003 | 0.048 | 0.0 | 0.003 | 0.073 | 4.13 | Pass |
| 39 | 0.003 | 0.058 | 0.0 | 0.004 | 0.087 | 4.24 | Pass |
| 40 | 0.002 | 0.046 | 0.0 | 0.002 | 0.069 | 3.31 | Pass |

*THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB*

**Model**: GKH30K3FI(indoor unit)

**fan mode**

**Test Result: Pass** **Source qualification: Normal**
**THC(A): 0.58** **I-THD(%): 18.58** **POHC(A): 0.033** **POHC Limit(A): 0.260**
**Highest parameter values during test:**

| | | | |
|---|---|---|---|
| V_RMS (Volts): | 229.96 | Frequency(Hz): | 50.00 |
| I_Peak (Amps): | 2.723 | I_RMS (Amps): | 0.336 |
| I_Fund (Amps): | 0.308 | Crest Factor: | 2.437 |
| Power (Watts): | 76.6 | Power Factor: | 0.992 |

| Harm# | Harms(avg) | 100%Limit | %of Limit | Harms(max) | 150%Limit | %of Limit | Status |
|---|---|---|---|---|---|---|---|
| 2 | 0.009 | 1.080 | 0.8 | 0.025 | 1.620 | 1.53 | Pass |
| 3 | 0.479 | 2.300 | 20.8 | 1.331 | 3.450 | 38.59 | Pass |
| 4 | 0.009 | 0.430 | 2.2 | 0.020 | 0.645 | 3.08 | Pass |
| 5 | 0.262 | 1.140 | 23.0 | 0.709 | 1.710 | 41.46 | Pass |
| 6 | 0.008 | 0.300 | 2.7 | 0.011 | 0.450 | 2.55 | Pass |
| 7 | 0.125 | 0.770 | 16.2 | 0.289 | 1.155 | 25.05 | Pass |
| 8 | 0.009 | 0.230 | 3.9 | 0.011 | 0.345 | 3.22 | Pass |
| 9 | 0.088 | 0.400 | 21.9 | 0.156 | 0.600 | 26.08 | Pass |
| 10 | 0.013 | 0.184 | 7.1 | 0.020 | 0.276 | 7.07 | Pass |
| 11 | 0.092 | 0.330 | 27.8 | 0.127 | 0.495 | 25.74 | Pass |
| 12 | 0.014 | 0.153 | 9.2 | 0.021 | 0.230 | 9.11 | Pass |
| 13 | 0.060 | 0.210 | 28.8 | 0.092 | 0.315 | 29.12 | Pass |
| 14 | 0.012 | 0.131 | 8.8 | 0.016 | 0.197 | 8.19 | Pass |
| 15 | 0.036 | 0.150 | 24.1 | 0.049 | 0.225 | 21.95 | Pass |
| 16 | 0.010 | 0.115 | 8.4 | 0.012 | 0.173 | 7.06 | Pass |
| 17 | 0.029 | 0.132 | 22.3 | 0.053 | 0.199 | 26.42 | Pass |
| 18 | 0.010 | 0.102 | 10.1 | 0.014 | 0.153 | 8.85 | Pass |
| 19 | 0.024 | 0.118 | 20.4 | 0.039 | 0.178 | 22.12 | Pass |
| 20 | 0.011 | 0.092 | 11.6 | 0.015 | 0.138 | 10.96 | Pass |
| 21 | 0.017 | 0.107 | 15.8 | 0.036 | 0.161 | 22.39 | Pass |
| 22 | 0.010 | 0.084 | 11.5 | 0.013 | 0.125 | 10.63 | Pass |
| 23 | 0.016 | 0.098 | 16.7 | 0.025 | 0.147 | 16.73 | Pass |
| 24 | 0.007 | 0.077 | 9.6 | 0.010 | 0.115 | 8.70 | Pass |
| 25 | 0.014 | 0.090 | 15.7 | 0.024 | 0.135 | 17.84 | Pass |
| 26 | 0.006 | 0.071 | 9.0 | 0.009 | 0.106 | 8.39 | Pass |
| 27 | 0.009 | 0.083 | 11.1 | 0.018 | 0.125 | 14.54 | Pass |
| 28 | 0.006 | 0.066 | 8.6 | 0.007 | 0.099 | 7.48 | Pass |
| 29 | 0.011 | 0.078 | 13.7 | 0.018 | 0.116 | 15.50 | Pass |
| 30 | 0.005 | 0.061 | 8.0 | 0.007 | 0.092 | 7.27 | Pass |
| 31 | 0.007 | 0.073 | 10.2 | 0.015 | 0.109 | 13.64 | Pass |
| 32 | 0.004 | 0.058 | 7.4 | 0.006 | 0.086 | 6.54 | Pass |
| 33 | 0.007 | 0.068 | 9.9 | 0.012 | 0.102 | 12.13 | Pass |
| 34 | 0.004 | 0.054 | 5.3 | 0.005 | 0.081 | 6.17 | Pass |
| 35 | 0.006 | 0.064 | 8.9 | 0.011 | 0.096 | 11.44 | Pass |
| 36 | 0.003 | 0.051 | 0.0 | 0.004 | 0.077 | 5.58 | Pass |
| 37 | 0.005 | 0.061 | 11.5 | 0.010 | 0.091 | 11.14 | Pass |
| 38 | 0.003 | 0.048 | 0.0 | 0.004 | 0.073 | 5.29 | Pass |
| 39 | 0.005 | 0.058 | 14.1 | 0.009 | 0.087 | 9.81 | Pass |
| 40 | 0.002 | 0.046 | 0.0 | 0.003 | 0.069 | 3.85 | Pass |

*THIS TEST REPORT IS RESPONSIBLE FOR THE SAMPLE TESTED ONLY AND SHOULD NOT BE DUPLICATED IN PART WITHOUT PERMISSION OF THE TEST LAB*

**Model**: GTH30K3FI(indoor unit)

**fan mode**

**Test Result: Pass** **Source qualification: Normal**
**THC(A): 0.41** **I-THD(%): 11.05** **POHC(A): 0.029** **POHC Limit(A): 0.265**
**Highest parameter values during test:**

| | | | |
|---|---|---|---|
| V_RMS (Volts): | 229.97 | Frequency(Hz): | 50.00 |
| I_Peak (Amps): | 2.840 | I_RMS (Amps): | 0.540 |
| I_Fund (Amps): | 0.502 | Crest Factor: | 1.621 |
| Power (Watts): | 123.1 | Power Factor: | 0.993 |

| Harm# | Harms(avg) | 100%Limit | %of Limit | Harms(max) | 150%Limit | %of Limit | Status |
|---|---|---|---|---|---|---|---|
| 2 | 0.005 | 1.080 | 0.5 | 0.006 | 1.620 | 0.39 | Pass |
| 3 | 0.310 | 2.300 | 13.5 | 0.315 | 3.450 | 9.13 | Pass |
| 4 | 0.007 | 0.430 | 1.6 | 0.009 | 0.645 | 1.32 | Pass |
| 5 | 0.206 | 1.140 | 18.1 | 0.217 | 1.710 | 12.69 | Pass |
| 6 | 0.009 | 0.300 | 3.0 | 0.013 | 0.450 | 2.79 | Pass |
| 7 | 0.105 | 0.770 | 13.7 | 0.132 | 1.155 | 11.46 | Pass |
| 8 | 0.009 | 0.230 | 4.0 | 0.013 | 0.345 | 3.87 | Pass |
| 9 | 0.078 | 0.400 | 19.4 | 0.095 | 0.600 | 15.83 | Pass |
| 10 | 0.013 | 0.184 | 7.1 | 0.019 | 0.276 | 6.97 | Pass |
| 11 | 0.093 | 0.330 | 28.1 | 0.116 | 0.495 | 23.49 | Pass |
| 12 | 0.010 | 0.153 | 6.3 | 0.012 | 0.230 | 5.07 | Pass |
| 13 | 0.058 | 0.210 | 27.4 | 0.067 | 0.315 | 21.33 | Pass |
| 14 | 0.010 | 0.131 | 7.8 | 0.013 | 0.197 | 6.58 | Pass |
| 15 | 0.031 | 0.150 | 20.8 | 0.037 | 0.225 | 16.59 | Pass |
| 16 | 0.010 | 0.115 | 9.0 | 0.012 | 0.173 | 6.99 | Pass |
| 17 | 0.024 | 0.132 | 18.4 | 0.027 | 0.199 | 13.47 | Pass |
| 18 | 0.011 | 0.102 | 10.4 | 0.013 | 0.153 | 8.23 | Pass |
| 19 | 0.020 | 0.118 | 17.2 | 0.023 | 0.178 | 12.78 | Pass |
| 20 | 0.010 | 0.092 | 10.8 | 0.012 | 0.138 | 8.59 | Pass |
| 21 | 0.014 | 0.107 | 13.4 | 0.016 | 0.161 | 10.23 | Pass |
| 22 | 0.009 | 0.084 | 10.2 | 0.010 | 0.125 | 8.11 | Pass |
| 23 | 0.017 | 0.098 | 17.1 | 0.019 | 0.147 | 12.66 | Pass |
| 24 | 0.007 | 0.077 | 9.3 | 0.008 | 0.115 | 6.96 | Pass |
| 25 | 0.013 | 0.090 | 13.9 | 0.014 | 0.135 | 10.25 | Pass |
| 26 | 0.006 | 0.071 | 8.5 | 0.007 | 0.106 | 6.80 | Pass |
| 27 | 0.007 | 0.083 | 8.6 | 0.008 | 0.125 | 6.43 | Pass |
| 28 | 0.005 | 0.066 | 8.0 | 0.006 | 0.099 | 6.00 | Pass |
| 29 | 0.010 | 0.078 | 13.2 | 0.011 | 0.116 | 9.68 | Pass |
| 30 | 0.005 | 0.061 | 7.7 | 0.005 | 0.092 | 5.96 | Pass |
| 31 | 0.006 | 0.073 | 7.8 | 0.006 | 0.109 | 5.88 | Pass |
| 32 | 0.004 | 0.058 | 0.0 | 0.005 | 0.086 | 5.49 | Pass |
| 33 | 0.006 | 0.068 | 8.6 | 0.006 | 0.102 | 6.37 | Pass |
| 34 | 0.003 | 0.054 | 0.0 | 0.004 | 0.081 | 4.81 | Pass |
| 35 | 0.005 | 0.064 | 7.7 | 0.006 | 0.096 | 5.80 | Pass |
| 36 | 0.003 | 0.051 | 0.0 | 0.003 | 0.077 | 4.53 | Pass |
| 37 | 0.004 | 0.061 | 0.0 | 0.004 | 0.091 | 4.36 | Pass |
| 38 | 0.003 | 0.048 | 0.0 | 0.003 | 0.073 | 4.55 | Pass |
| 39 | 0.004 | 0.058 | 0.0 | 0.004 | 0.087 | 4.79 | Pass |
| 40 | 0.002 | 0.046 | 0.0 | 0.002 | 0.069 | 3.30 | Pass |

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# 4.5 Voltage Fluctuation on AC Mains

| | | |
|---|---|---|
| **Date of testing** | : | 2013.01.12 |
| **Temperature** | : | 24°C~26°C |
| **Humidity** | : | 66%RH~67%RH |
| **Test procedure** | : | EN61000-3-3: 2008<br>EN61000-3-11: 2000 |
| **Frequency Range** | : | 0-2kHz |
| **Test observation period** | : | 120min |
| **Operational mode** | : | Dry |
| **Test result** | : | Pass |

1.Test Setup:

2. Test result.

| Model | $d_c$ [%] | $d_{max}$ [%] | d (t)[ms] | Pst | Plt |
|---|---|---|---|---|---|
| GUHD30NK3FO（outdoor unit） | 1.30 | 1.32 | 0.00 | 0.168 | 0.167 |
| GKH24K3FI(indoor unit) | 0.12 | 1.61 | 0 | 0.219 | 0.206 |
| GTH24K3FI(indoor unit) | 0.14 | 1.60 | 0 | 0.216 | 0.204 |
| GKH30K3FI(indoor unit) | 0.15 | 1.51 | 0.00 | 0.208 | 0.202 |
| GTH30K3FI(indoor unit) | 0.12 | 1.50 | 0.00 | 0.108 | 0.103 |
| **Limit** | **3.30** | **6.00** | **500.0** | **1.000** | **0.650** |

**Remark:**

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# 5. Immunity Tests

## 5.1 Electrostatic Discharge (ESD)

| | | |
|---|---|---|
| **Date of testing** | : | 2013.01.12 |
| **Temperature** | : | 24°C~26°C |
| **Humidity** | : | 56%RH |
| **Test procedure** | : | EN55014-2: 1997+A1: 2001+A2:2008 |
| **Basic Standard** | : | IEC 61000-4-2:2008 |
| **Performance Criterion** | : | B |
| **Operational mode** | : | Cool, High fan |
| **Test result** | : | Pass |

1. Test setup

Note: HCP means Horizontal Coupling Plane,
VCP means Vertical Coupling Plane
GRP means Ground Reference Plane

The EUT was put on a 0.8m high wooden tabel/0.1m high for floor standing equipment standing on the ground reference plane(GRP) 3m by 2m in size, made by iron 1.0 mm thick.
A horizontal coupling plane(HCP) 1.6m by 0.8m in size was placed on the table, and the EUT with its cables were isolated from the HCP by an insulating support thick than 0.5mm. The VCP 0.5m by 0.5m in size & HCP were constructed from the same material type & thinness as that of the GRP, and connected to the GRP via a 470kΩ resistor at each end.
The distance between EUT and any of the other metallic surface excepted the GRP, HCP & VCP was greater than 1m.
The EUT was arranged and connected according to its functional requirements.

Direct static electricity discharges was applied only to those points and surface which are accessible to personnel during normal usage.

2. Test result

| Location of Discharge | Type of Discharge | Level(kV) | Polarity | Number of Discharge | Result |
|---|---|---|---|---|---|
| Remote Receiver | Air | 8.0 | ± | 10 | A |
| Display window | Air | 8.0 | ± | 10 | A |
| Manual key | Air | 8.0 | ± | 10 | A |
| Touchable screw | Contact | 4.0 | ± | 10 | A |
| Remote Controller | Air | 8.0 | ± | 10 | A |
| | HCP | 4.0 | ± | 10 | A |
| | VCP | 4.0 | ± | 10 | A |

**Remark:**
The Air discharge could not occur and the EUT worked normally during the test, no degradation of function occurred.

Air -Air Discharge
Contact -Contact Discharge
HCP—Horizontal Coupling Plate,
VCP—Vertical Coupling Plate

## 5.2 Electrical Fast Transient/Burst (EFT)

| | | |
|---|---|---|
| **Date of testing** | : | 2013.01.12 |
| **Temperature** | : | 24°C |
| **Humidity** | : | 67%RH |
| **Test procedure** | : | EN55014-2: 1997+A1: 2001+A2:2008 |
| **Basic Standard** | : | IEC 61000-4-4:2004 |
| **Repetition Frequency** | : | 5kHz |
| **Performance Criterion** | : | B |
| **Operational mode** | : | Cool, High fan |
| **Test result** | : | Pass |

1.Test Setup

The EUT is placed on an insulating plane, it is 0.1m high for table model and 0.1m high for floor type above the grounded reference plane. EUT is at least 0.5m away from the wall of the EMC laboratory and other metal conductors grounded except the grounded reference plane., and its four borders are at least 0.1m away from the borders of the grounded reference plane. The cable between EUT and CDN is not more than 0.5m.

For signal lines and control lines, the burst signal is coupled by a capacitive coupling clamp.

2. Test result:

| Location | Voltage (kV) | Duration (s) | Coupled by | Result |
|---|---|---|---|---|
| L +N+PE | ±1 | 120 | CDN | A |
| Interconnection line | ±0.5 | 120 | Capacitive Coupling Clamp | A |
| **Remark:** The EUT worked normally during the test, no degradation of function occurred. | | | | |

## 5.3 Surge

| | | |
|---|---|---|
| **Date of testing** | : | 2013.01.12 |
| **Temperature** | : | 24°C |
| **Humidity** | : | 67%RH |
| **Test procedure** | : | EN55014-2: 1997+A1: 2001+A2:2008 |
| **Basic Standard** | : | IEC 61000-4-5:2005 |
| **Performance Criterion** | : | B |
| **Operational mode** | : | Cool, High fan |
| **Test result** | : | Pass |

1.Test Setup

The cable between EUT and CDN is not more than 1m..
No other special specifications.

2.Test result

| Location | Polarity | Phase Angle | Number of test | Pulse Voltage（kV） | Result |
|---|---|---|---|---|---|
| L—N | ± | 0° | 5 | 1 | A |
| | ± | 90° | 5 | 1 | A |
| | ± | 180° | 5 | 1 | A |
| | ± | 270° | 5 | 1 | A |
| L-PE | ± | 0° | 5 | 2 | A |
| | ± | 90° | 5 | 2 | A |
| | ± | 180° | 5 | 2 | A |
| | ± | 270° | 5 | 2 | A |
| N-PE | ± | 0° | 5 | 2 | A |
| | ± | 90° | 5 | 2 | A |
| | ± | 180° | 5 | 2 | A |
| | ± | 270° | 5 | 2 | A |
| **Remark:** The EUT worked normally during the test, no degradation of function occurred. | | | | | |

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## 5.4 Immunity to conducted Disturbances, induced by RF fields

| | | |
|---|---|---|
| **Date of testing** | : | 2013.01.12 |
| **Temperature** | : | 24°C |
| **Humidity** | : | 67%RH |
| **Test procedure** | : | EN55014-2: 1997+A1: 2001+A2:2008 |
| **Basic Standard** | : | IEC 61000-4-6:2008 |
| **Frequency range** | : | 150k~230MHz |
| **Modulation** | : | 80%AM, 1kHz sine-wave |
| **Dwell time/Step size** | : | 3000ms / 1% |
| **Performance Criterion** | : | A |
| **Operational mode** | : | Cool, High fan |
| **Test result** | : | Pass |

1. Test Setup

| Frequency Range | Coupling Port | Strength | Coupling Method | Result |
|---|---|---|---|---|
| 0.15MHz~80MHz | AC Mains | 3V | CDN | A |
| 80MHz~230MHz | AC Mains | 3V | CDN | A |
| 0.15MHz~80MHz | Interconnection wire | 1V | Coupling/Decoupling Network | A |
| 80MHz~230MHz | Interconnection wire | 1V | Coupling/Decoupling Network | A |
| **Remark:** The EUT worked normally during the test, no degradation of function occurred. | | | | |

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# 5.5 Voltage Dips and Short interruptions

| | | |
|---|---|---|
| **Date of testing** | : | 2013.01.12 |
| **Temperature** | : | 24°C |
| **Humidity** | : | 67%RH |
| **Test procedure** | : | EN55014-2: 1997+A1: 2001+A2:2008 |
| **Basic Standard** | : | IEC 61000-4-11:2004 |
| **Performance Criterion** | : | C |
| **Operational mode** | : | Cool, High fan |
| **Test result** | : | Pass |

1.Test Setup

No other special specifications.

2. Test result.

| Severity Level | | Test Level | Duration | Intervals | Phase Angle | Number of Test | Result |
|---|---|---|---|---|---|---|---|
| Short Interruption 100% | | 0%$U_T$ | 0.5P | 3min | 0° | 3 | A |
| | | | | | 180° | 3 | A |
| Voltage Dips | 60% | 40%$U_T$ | 10P | 3min | 0° | 3 | B |
| | | | | | 180° | 3 | B |
| | 30% | 70%$U_T$ | 25P | 3min | 0° | 3 | B |
| | | | | | 180° | 3 | B |

**Remark:**

1, $U_T$: Nominal Voltage of EUT.

2, During the test of 40%$U_T$, 70%$U_T$ the EUT stopped, but it could recover the primal status. No degradation of function occurred.

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