# STC (Dongguan) Company Limited EC DECLARATION OF CONFORMITY 

Reference Number:<br>EMC-D163134DOC

Intracom Asia Co., Ltd.
4F., No.77, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan
declare the product
Description:
300N High-Power PoE Access Point
Brand Name:
Intellinet
Model:
525800
complies with the requirements of the relevant union harmonization legislation:

## EC Electromagnetic Compatibility Directive 2014/30/EU

## Applicable Standard(s) with amendments:

EN55022: 2010 +AC: 2011
EN55024: 2010
EN61000-3-2: 2014
EN61000-3-3: 2013

General Remarks:
This declaration is only valid when used in conjunction with the technical file(s) refers to DM123144
This declaration applies specifically to the sample(s) investigated in the technical report mentioned above and not to the bulk.

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

## Manufacturer/Importer

## Signature

Test Laboratory


ElectroMagnetic Compatibility Department
For and on behalf of
STC (Dongguan) Company Limited

Date of Issue: 2016-04-20

STC Test Report

## DAkkS

Date: 2016-04-15
Page 1 of 39
No.: DM123144

Applicant:<br>Intracom Asia Co., Ltd. 4F., No.77, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan<br>\section*{Description of Sample(s):}

Date Sample(s) Received:

Date Tested:

Investigation Requested:

## Conclusion(s):

The submitted product COMPLIED with the requirements of EN55022: 2010 +AC: 2011, EN55024: 2010, EN61000-3-2: 2014 and EN61000-3-3: 2013. The EMC tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.
Test for compliance with EMC requirements of EN55022, EN55024, EN61000-3-2 and EN61000-3-3.

## Remark(s):



## STC Test Report

Date: 2016-04-15

## No.: DM123144

## CONTENT:

Cover
Content

### 1.0 General Details

1.1 Equipment Under Test [EUT] Page 3 of 39
Description of Sample(s)
1.2 Date of Order Page 3 of 39
1.3 Submitted Sample(s)Page 3 of 39
1.4 Test Duration Page 3 of 39
1.5 Country of Origin
Page 3 of 39
2.0 Technical Details
2.1 Investigations Requested Page 4 of 39
2.2 Test Standards and Results Summary ..... Page 4-5 of 39
3.0 Test Results
3.1 Emission Page 6-18 of 39
3.2 Immunity ..... Page 19-31 of 39
Appendix A
List of Measurement Equipment ..... Page 32-33 of 39
Appendix B
Photograph(s) of ProductPage 34-39 of 39

## STC Test Report

Date: 2016-04-15
No.: DM123144

### 1.0 General Details

1.1 Equipment Under Test [EUT]

Description of Sample(s)

Product:
Manufacturer:

Brand Name:
Model Number:
Rating:

300N High-Power PoE Access Point Intracom Asia Co., Ltd.
4F., No.77, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221, Taiwan
Intellinet
525800
Input: $100-240 \mathrm{Va.c} .50 / 60 \mathrm{~Hz} 0.5 \mathrm{~A}$; Output: 12Vd.c. 1.0A.

The AC/DC adaptor was provided by the applicant with following details:
Brand name: AMIGO; Model no.: AMS9-1201000FV2
1.2 Date of Order

2015-06-09

### 1.3 Submitted Sample(s):

1 Sample

### 1.4 Test Duration

2015-06-12 to 2015-06-17

### 1.5 Country of Origin

China

## STC Test Report

Date: 2016-04-15
Page 4 of 39
No.: DM123144

### 2.0 Technical Details

### 2.1 Investigations Requested

Perform ElectroMagnetic Interference [EMI] \& ElectroMagnetic Susceptibility [EMS] tests for CE Marking

### 2.2 Test Standards and Results Summary Tables

| Test Standards |  |
| :--- | :--- |
| EN55022: 2010 <br> +AC: 2011 | Information technology equipment - Radio disturbance characteristics - <br> Limits and methods of measurement |
| EN55024: 2010 | Information technology equipment - Immunity characteristics - Limits and <br> methods of measurement |
| EN61000-3-2: 2014 | Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for <br> harmonic current emissions (equipment input current $\leq 16$ A per phase) |
| EN61000-3-3: 2013 | Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of <br> voltage changes, voltage fluctuations and flicker in public low-voltage <br> supply systems, for equipment with rated current $\leq 16$ A per phase and not <br> subject to conditional connection |

## STC Test Report

Date：2016－04－15
No．：DM123144

2．2 Test Standards and Results Summary Tables

| EMISSION Results Summary |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Test Condition | Test Requirement | Test Method | Class／ Severity | Test Result |  |  |
|  |  |  |  | Pass | Failed | N／A |
| Radiated Emission， 30 MHz to 1 GHz | $\begin{aligned} & \text { EN55022: } 2010 \\ & + \text { AC: } 2011 \end{aligned}$ | $\begin{aligned} & \text { EN55022: } 2010 \\ & +\mathrm{AC}: 2011 \end{aligned}$ | Class B | 区 | $\square$ | $\square$ |
| Conducted <br> Emission on AC／ <br> Telecommunicatio n Port， 150 kHz to 30 MHz | $\begin{aligned} & \text { EN55022: } 2010 \\ & + \text { AC: } 2011 \end{aligned}$ | $\begin{aligned} & \text { EN55022: } 2010 \\ & +\mathrm{AC}: 2011 \end{aligned}$ | Class B | ® | $\square$ | $\square$ |
| Harmonic <br> Emissions on AC Supply | EN61000－3－2： 2014 | EN61000－3－2： 2014 | Class A | 区 | $\square$ | $\square$ |
| Voltage Fluctuations on AC Supply | EN61000－3－3： 2013 | EN61000－3－3： 2013 | N／A | 区 | $\square$ | $\square$ |

STC Test Report

Date：2016－04－15
No．：DM123144

## 2．2 Test Standards and Results Summary Tables

| IMMUNITY <br> Results Summary |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Test Condition | Test Requirement | Test Method | Class／ Severity | Test Result |  |  |
|  |  |  |  | Pass | Failed | N／A |
| Electrostatic Discharge | EN55024： 2010 | EN61000－4－2： 2009 | $\begin{gathered} \pm 4.0 \mathrm{kV} \\ \text { Cont } \\ \pm 2.0 \mathrm{kV}, \\ \pm 4.0 \mathrm{kV}, \\ \pm 8.0 \mathrm{kV} \\ \text { Air } \\ \hline \end{gathered}$ | 区 | $\square$ | $\square$ |
| Radiated Immunity 80 MHz to 1000 MHz | EN55024： 2010 | EN61000－4－3： 2006 <br> ＋A1： 2008 <br> ＋A2： 2010 | 3V／m | 区 | $\square$ | $\square$ |
| Electrical Fast <br> Transients on AC <br> Supply | EN55024： 2010 | EN61000－4－4： 2004 | $\square 1.0 \mathrm{kV}$ | 区 | $\square$ | $\square$ |
| Surge Immunity on AC Supply | EN55024： 2010 | EN61000－4－5： 2006 | $\square 1 . \mathrm{kV}$ | 区 | $\square$ | $\square$ |
| Continuous RF Immunity on AC Supply | EN55024： 2010 | EN61000－4－6： 2009 | 3Vrms | 区 | $\square$ | $\square$ |
| Voltage Dips， <br> Interruptions and Variations on AC Supply | EN55024： 2010 | $\begin{gathered} \text { EN61000-4-11: } \\ 2004 \end{gathered}$ | $\begin{gathered} 0 \%, 70 \% \\ \text { of UT } \end{gathered}$ | 区 | $\square$ | $\square$ |

## Remarks：

N／A：Not Applicable
$\mathrm{U}_{\mathrm{T} \text { ：}}$ The nominal supply voltage

## STC Test Report

Date: 2016-04-15
No.: DM123144

### 3.0 Test Results

### 3.1 Emission

### 3.1.1 Radiated Emissions (30MHz to 1000MHz)

| Test Requirement: | EN 55022 |
| :--- | :--- |
| Test Method: | EN 55022 |
| Level: | Class B |

Test Date(s): 2015-06-15
Mode of Operation
Wireless mode

## Test Method:

The test was performed in accordance with EN55022 at 3m test distance on a standard emission test site, with quasi-peak measurements performed if the maximised peak measurements were less than 6 dB from the corresponding Class B limit lines.

## Test Procedure:

The EUT is a USB HEADSET, the test was conducted during the on mode function to simulate the normal usage as well as to produce the maximum electromagnetic disturbances.

## Test Setup:



Ground Plane

Absorbers placed on top of the ground plane are for measurements above 1000 MHz only.

## STC Test Report

Date: 2016-04-15
Page 8 of 39
No.: DM123144

Limits for Radiated Emission:

| Frequency Range <br> $[\mathrm{MHz}]$ | Quasi-Peak Limits <br> $[\mathrm{dB} \mu \mathrm{V} / \mathrm{m}]$ |
| :---: | :---: |
| $30-230$ | 40.0 |
| $230-1000$ | 47.0 |

## Results of Wireless mode: Pass

Please refer to the following table for result details
Horizontal


The quasi-peak measurements were recorded as follows:

| Frequency <br> MHz | Level @ 3 m <br> $\mathrm{~dB} \mu \mathrm{~V} / \mathrm{m}$ | Limit @3m <br> $\mathrm{dB} \mu \mathrm{V} / \mathrm{m}$ | Margin <br> dB | E-Field Polarity |
| :---: | :---: | :---: | :---: | :---: |
| 30.4 | 29.2 | 40.0 | 10.8 | Horizontal |
| 716.3 | 37.7 | 47.0 | 9.3 | Horizontal |
| 977.8 | 39.4 | 47.0 | 7.6 | Horizontal |

## STC Test Report

Date: 2016-04-15
Page 9 of 39
No.: DM123144

Limits for Radiated Emission:

| Frequency Range <br> $[\mathrm{MHz}]$ | Quasi-Peak Limits <br> $[\mathrm{dB} \mu \mathrm{V} / \mathrm{m}]$ |
| :---: | :---: |
| $30-230$ | 40.0 |
| $230-1000$ | 47.0 |

## Results of Wireless mode: Pass

Please refer to the following table for result details


The quasi-peak measurements were recorded as follows:

| Frequency <br> MHz | Level @ 3 m <br> $\mathrm{~dB} \mu \mathrm{~V} / \mathrm{m}$ | Limit @3m <br> $\mathrm{dB} \mu \mathrm{V} / \mathrm{m}$ | Margin <br> dB | E-Field Polarity |
| :---: | :---: | :---: | :---: | :---: |
| 37.4 | 28.1 | 40.0 | 11.9 | Vertical |
| 55.9 | 29.3 | 40.0 | 10.6 | Vertical |
| 91.9 | 33.0 | 40.0 | 7.0 | Vertical |

## STC Test Report

Date: 2016-04-15
Page 10 of 39
No.: DM123144

Limits for Radiated Emission:

| Frequency of Emission <br> $(\mathrm{MHz})$ | Average Limit <br> $(\mathrm{dB} \mu \mathrm{V} / \mathrm{m})$ | Peak Limits <br> $(\mathrm{dB} \mu \mathrm{V} / \mathrm{m})$ |
| :---: | :---: | :---: |
| $1000-3000$ | 50 | 70 |
| $3000-6000$ | 54 | 74 |
| NOTE: The lower limit applies at the transition frequency. |  |  |

## Results of Wireless mode: Pass

Please refer to the following table for result details


The average \& peak measurements were recorded as follows:

|  | Average Level @3m dBD V/m | Peak <br> Level <br> @3m <br> $\mathrm{dB} \mathrm{V} / \mathrm{m}$ | Average Limit @3m $\mathrm{dB} \mathrm{V} / \mathrm{m}$ | Peak <br> Limit <br> @3m $\mathrm{dB} \mathrm{V} / \mathrm{m}$ | Margin <br> Averag <br> e <br> dB | Margin Peak dB | E-Field Polarity |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1528.6 | 35.7 | 39.2 | 50.0 | 70.0 | 7.1 | 24.2 | Horizontal |
| 1792.3 | 36.2 | 40.8 | 50.0 | 70.0 | 2.2 | 18.5 | Horizontal |
| 1625.8 | 33.6 | 38.0 | 50.0 | 70.0 | 9.7 | 24.5 | Vertical |
| 2137.9 | 38.2 | 42.7 | 50.0 | 70.0 | 6.6 | 19.1 | Vertical |

Remarks:
Calculated measurement uncertainty ( $30 \mathrm{MHz}-1 \mathrm{GHz}$ ): 4.6 dB

$$
(1 \mathrm{GHz}-6 \mathrm{GHz}): 4.4 \mathrm{~dB}
$$

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

## STC Test Report

Date: 2016-04-15
Page 11 of 39
No.: DM123144

### 3.1.2 Conducted Emissions ( 150 kHz to 30 MHz )

Test Requirement:
Test Method:
Level:

Test Date(s):
Mode of Operation:

EN 55022
EN 55022
Class B

2015-06-12
Wireless mode

## Test Method:

Initial measurements were performed in peak and average detection modes on the live line. Any emissions recorded within 30 dB of the relevant limit lines were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results. The test was performed in accordance with EN 55022.

## Test Setup:



## STC Test Report

Date: 2016-04-15
Page 12 of 39
No.: DM123144

## Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

Results of Wireless mode (L): Pass
Please refer to the following diagram for individual results.


## STC Test Report

Date: 2016-04-15
Page 13 of 39
No.: DM123144

## Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

## Results of Wireless mode (N): Pass

Please refer to the following diagram for individual results.


## STC Test Report

Date: 2016-04-15
Page 14 of 39
No.: DM123144

## Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

Results of Wireless mode (Telecommunication port): Pass
Please refer to the following diagram for individual results.


## STC (Dongguan) Company Limited

## STC Test Report

Date: 2016-04-15
No.: DM123144

### 3.1.3 Harmonics Emissions on AC Supply

| Test Requirement: | EN 61000-3-2 |
| :--- | :--- |
| Test Method: | EN 61000-3-2 |
| Level: | Class A |
| Test Date(s): | $2015-06-17$ |
| Mode of Operation: | Wireless mode |
| Input Voltage: | 230Va.c. |

## Test Method:

The test was performed in accordance with EN 61000-3-2.

## STC Test Report

Date: 2016-04-15
Page 16 of 39
No.: DM123144

## Results and limit line for Harmonics Emissions:

For limits for Harmonics Emission Test, please refer to limit lines (saw-tooth) in the following diagram.

## Results: Pass

Please refer to the following table for individual results.

## Current \& voltage waveforms



Harmonics and Class A limit line
European Limits


Remark:
Calculated measurement uncertainty: 7.1\%

## STC Test Report

Date: 2016-04-15

### 3.1.4 Emission for Fluctuations \& Flicker

| Test Requirement: | EN 61000-3-3 |
| :--- | :--- |
| Test Method: | EN 61000-3-3 |
| Level: | N/A |
| Test Date(s): | $2015-06-17$ |
| Mode of Operation: | Wireless mode |

## Test Method:

The test was performed in accordance with EN 61000-3-3.

## STC Test Report

Date: 2016-04-15
Page 18 of 39
No.: DM123144

## Limits for Flicker:

Please refer to the result table for details.

## Results: Pass

Please refer to the following table for individual results.

Maximum Occurring Levels:

| Pst: | 0.064 | Limit $=$ | 1.00 | (The Highest Short Term Flicker Value) |
| :--- | :---: | :--- | :--- | :--- |
| Plt: | 0.028 | Limit $=$ | 0.65 | (The Highest Long Term Flicker Value) |
| dc(\%): | 0.00 | Limit $=$ | $3.30 \%$ | (The Highest Relative Steady State Voltage Change (1sec)) |
| dmax: | 0.00 | Limit $=$ | $4.00 \%$ | (*The Highest Maximum Relative Voltage Change) |
| Tdt: | 0.00 | Limit $=$ | 500 ms | (The Max Time (in milli-sec) that dt exceeds 3.3\%) |
| Ut: | 230.19 |  |  | (EUT Test RMS Voltage) |

[^0]
## STC Test Report

Date: 2016-04-15
No.: DM123144
3.2 Immunity
3.2.1 Susceptibility Performance Criteria

| A | Normal performance within the specification limits |
| :--- | :--- |
| B | Temporary degradation or loss of function or performance which is self- <br> recoverable |
| C | Temporary degradation or loss of function or performance which <br> requires operator intervention or system reset |
| D | Degradation or loss of function which is not recoverable due to damage of <br> equipment (components) or software, or loss of data |

## STC Test Report

Date: 2016-04-15
No.: DM123144

### 3.2.2 Electrostatic Discharge

Test Requirement:
Test Method:
EN 55024
EN 61000-4-2
Severity:
$\pm 4 \mathrm{kV}$ for Direct \& Indirect Contact Discharge $\pm 2 \mathrm{kV}, \pm 4 \mathrm{kV}, \pm 8 \mathrm{kV}$ for Air Discharge

Performance Criterion Requirement:
B

| Temperature: | $23{ }^{\circ} \mathrm{C}$ |
| :--- | :--- |
| Humidity: | $56 \%$ |
| Atmospheric Pressure: | 101 kPa |
| Test Date(s): | $2015-06-17$ |
| Mode of Operation: | Wireless mode |

## Test Method:

The test was performed in accordance with EN 61000-4-2.

## Test Procedure:

The EUT is a USB HEADSET, the test was conducted during the on mode function to simulate the normal usage specified by the manufacturer.

Test Setup:


## STC Test Report

Date: 2016-04-15
Page 21 of 39
No.: DM123144

Severity Levels for Electrostatic Discharge:

| Level | Test Voltage <br> Direct \& Indirect Contact Discharge <br> $[\mathrm{kV}]$ | Test Voltage <br> Air Discharge <br> $[\mathrm{kV}]$ |
| :---: | :---: | :---: |
| 1 | $\pm 2 \mathrm{kV}$ | $\pm 2 \mathrm{kV}$ |
| 2 | $\pm 4 \mathrm{kV}$ | $\pm 4 \mathrm{kV}$ |
| 3 | $\pm 6 \mathrm{kV}$ | $\pm 8 \mathrm{kV}$ |
| 4 | $\pm 8 \mathrm{kV}$ | $\pm 15 \mathrm{kV}$ |

## Results of Wireless mode: Pass

Please refer to the following table for individual results.

|  | Location | Discharge Method | Test Voltage | Individual Results |  |
| :--- | :--- | :---: | :---: | :---: | :---: |
|  |  |  |  | Failed |  |
| HCP | [Horizontal Coupling Plane] | Indirect Contact | $\pm 4 \mathrm{kV}$ | $\boxtimes$ | $\square$ |
| VCP | [Vertical Coupling Plane] | Indirect Contact | $\pm 4 \mathrm{kV}$ | $\boxtimes$ | $\square$ |
| Indicator light/Gap | Air | $\pm 2 \mathrm{kV}, \pm 4 \mathrm{kV}, \pm 8 \mathrm{kV}$ | $\boxtimes$ | $\square$ |  |


| $* * *$ EUT Grounding | $\square$ Grounded | $\boxtimes$ Ungrounded |
| :--- | :--- | :--- |

[^1]
## STC Test Report

Date: 2016-04-15
No.: DM123144

### 3.2.3 Radiated Immunity [ 80 MHz to 1000 MHz ]

Test Requirement:
Test Method:
Severity:
Modulation:

EN 55024
EN 61000-4-3
Level $2[3 \mathrm{~V} / \mathrm{m}]$
$80 \% 1 \mathrm{kHz} \mathrm{AM}$

Performance Criterion Requirement:
A

| Temperature: | $23{ }^{\circ} \mathrm{C}$ |
| :--- | :--- |
| Humidity: | $53 \%$ |
| Test Date(s): | $2015-06-17$ |
| Mode of Operation: | Wireless mode |

## Test Method:

The test was performed in accordance with EN 61000-4-3.

## Test Procedure:

The EUT is a USB HEADSET, the test was conducted during the on mode function to simulate the normal usage specified by the manufacturer.

## Test Setup:



## STC Test Report

Date: 2016-04-15
Page 23 of 39
No.: DM123144

Severity Levels for Radiated Immunity:

| Level | Field Strength <br> $[\mathrm{V} / \mathrm{m}]$ |
| :---: | :---: |
| 1 | 1 |
| 2 | 3 |
| 3 | 10 |

## Results of Wireless mode: Pass

Please refer to the following table for individual results.

| Frequency | Face | Polarity | Level | Dwell <br> Time <br> $(\mathrm{MHz})$ |  |  | Sweep <br> rate <br> $(\%)$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Individual <br> Results |  |  |  |  |
| $80-1000$ | $0^{\circ}$ | Horizontal | 3 | 3 | 1 | $\boxtimes$ | $\square$ |
| $80-1000$ | $90^{\circ}$ | Horizontal | 3 | 3 | 1 | $\boxtimes$ | $\square$ |
| $80-1000$ | $180^{\circ}$ | Horizontal | 3 | 3 | 1 | $\boxtimes$ | $\square$ |
| $80-1000$ | $270^{\circ}$ | Horizontal | 3 | 3 | 1 | $\boxtimes$ | $\square$ |


| $80-1000$ | $0^{\circ}$ | Vertical | 3 | 3 | 1 | $\boxtimes$ | $\square$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $80-1000$ | $90^{\circ}$ | Vertical | 3 | 3 | 1 | $\boxtimes$ | $\square$ |
| $80-1000$ | $180^{\circ}$ | Vertical | 3 | 3 | 1 | $\boxtimes$ | $\square$ |
| $80-1000$ | $270^{\circ}$ | Vertical | 3 | 3 | 1 | $\boxtimes$ | $\square$ |

Remarks:
The dwell time at each frequency is according to the standard being applied and the basic standard Calculated measurement uncertainty: 1.74 dB

## STC Test Report

Date: 2016-04-15
No.: DM123144

### 3.2.4 Electrical Fast Transients on AC Supply

Test Requirement:
Test Method:
Severity:

EN 55024
EN 61000-4-4
Level 2 on AC $[ \pm 1 \mathrm{kV}]$

## Performance Criterion Requirement:

B

| Temperature: | $23{ }^{\circ} \mathrm{C}$ |
| :--- | :--- |
| Humidity: | $52 \%$ |
| Atmospheric Pressure: | 101 kPa |
| Test Date(s): | $2015-06-17$ |
|  |  |
| Mode of Operation: | Wireless mode |

## Test Method:

The test was performed in accordance with EN 61000-4-4.
Test Setup:


## STC Test Report

Date: 2016-04-15
Page 25 of 39
No.: DM123144

Severity Levels for Electrical Fast Transient:

| Level | On power supply port, PE |  | On I/O (Input/Output) signal, data and <br> control ports |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Voltage peak <br> $[\mathrm{kV}]$ | Repetition rate <br> $[\mathrm{kHz}]$ | Voltage peak <br> $[\mathrm{kV}]$ | Repetition rate <br> $[\mathrm{kHz}]$ |
| 1 | 0.5 | 5.0 | 0.25 | 5.0 |
| 2 | 1.0 | 5.0 | 0.50 | 5.0 |
| 3 | 2.0 | 5.0 | 1.00 | 5.0 |
| 4 | 4.0 | 5.0 | 2.00 | 5.0 |

## Results of Wireless mode: Pass

Please refer to the following table for individual results.

| Conductor | Polarity \& Level | Duration/Polarity | Individual Results |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | $(\mathrm{s})$ | Pass | Failed |
| Live- Neutral | $\pm 1 \mathrm{kV}$ | 120 | $\boxed{y y y y}$ | $\square$ |

Remark:
Calculated measurement uncertainty: 7.1\%

## STC Test Report

Date: 2016-04-15
No.: DM123144

### 3.2.5 Surge Immunity on AC Supply

Test Requirement:
Test Method:
EN 55024
Severity:
EN 61000-4-5
Level $2- \pm 1 \mathrm{kV}$ (LAN port, between live \& neutral)
Performance Criterion Requirement:
B

| Temperature: | $23{ }^{\circ} \mathrm{C}$ |
| :--- | :--- |
| Humidity: | $53 \%$ |
| Atmospheric Pressure: | 101 kPa |
| Test Date(s): | $2015-06-17$ |
|  |  |
| Mode of Operation: | Wireless mode |

## Test Method:

The test was performed in accordance with EN 61000-4-5.

## Test Setup:



## STC Test Report

Date：2016－04－15
Page 27 of 39
No．：DM123144

Severity Levels for Surge Immunity：

| Level | Open－circuit test voltage $\pm 10 \%$ |
| :---: | :---: |
| kV |  |
| 1 | 0.5 |
| 2 | 1.0 |
| 3 | 2.0 |
| 4 | 4.0 |

Results of Wireless mode：Pass
Please refer to the following table for individual results

| Conductor | Level \＆Polarity kV | No．of Surge | Phase <br> Angle | Surge Interval(s) | Individual Results |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Pass | Failed |
| Live－Neutral | $\pm 1.0$ | 5 | $0^{\circ}$ | 60s | 区 | $\square$ |
|  |  |  | $90^{\circ}$ |  | 区 | $\square$ |
|  |  |  | $180^{\circ}$ |  | 区 | $\square$ |
|  |  |  | $270^{\circ}$ |  | 区 | $\square$ |

Remarks：
Calculated measurement uncertainty：7．1\％

## STC Test Report

Date: 2016-04-15
No.: DM123144

### 3.2.6 Continuous RF Immunity on AC Supply ( 150 kHz to 80 MHz ) <br> Test Requirement: <br> EN 55024 <br> Test Method: <br> EN 61000-4-6 <br> Severity: <br> Level 2-3Vrms(emf) with $80 \% 1 \mathrm{kHz}$ AM

## Performance Criterion Requirement: <br> A

| Temperature: | $22{ }^{\circ} \mathrm{C}$ |
| :--- | :--- |
| Humidity: | $53 \%$ |
| Atmospheric Pressure: | 101 kPa |
| Test Date(s): | $2015-06-17$ |
| Mode of Operation: | Wireless mode |

## Test Method:

The test was performed in accordance with EN 61000-4-6.
Test Setup:


## STC Test Report

Date: 2016-04-15
No.: DM123144

Severity Levels for Continuous RF Immunity:

| Frequency range $150 \mathrm{kHz}-80 \mathrm{MHz}$ |  |  |
| :---: | :---: | :---: |
| Level | Voltage level (emf) |  |
|  | $\mathrm{U}_{\mathrm{o}}[\mathrm{dB}(\mu \mathrm{V})]$ | $\mathrm{U}_{\mathrm{o}}[\mathrm{V}]$ |
| 1 | 120 | 1 |
| 2 | 130 | 3 |
| 3 | 140 | 10 |

## Results of Wireless mode: Pass

Please refer to the following table for individual results.

| Frequency <br> (MHz) | Level (Vrms) | Dwell Time <br> (s) | Sweep rate <br> (\%) | Individual Results |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Pass | Failed |
| $150 \mathrm{kHz}-80 \mathrm{MHz}$ | 3 | 3 | 1 | 区 | $\square$ |

Remark:
Calculated measurement uncertainty: 2.39 dB

## STC Test Report

Date: 2016-04-15
Page 30 of 39
No.: DM123144

### 3.2.7 Voltage Dips, Interruptions and Variations on AC Supply

Test Requirement:
Test Method:
Severity:

EN 55024
EN 61000-4-11
$[0,70] \%$ of $U_{T}$

| Performance Criterion Requirement: | B for $0 \%$ of $\mathrm{U}_{\mathrm{T}}$ for 0.5 period <br> C for other specifications |
| :--- | :--- | :--- |
|  | $23{ }^{\circ} \mathrm{C}$ |
| Temperature: | $53 \%$ |
| Humidity: | 101 kPa |
| Atmospheric Pressure: | $2015-06-17$ |
| Test Date(s): | Wireless mode |

## Test Method:

The test was performed in accordance with EN 61000-4-11.

## STC Test Report

Date：2016－04－15
Page 31 of 39
No．：DM123144

Severity Levels for voltage dips，short interruptions and voltage variations immunity：

| Level | Voltage dip and short interruptions | Duration <br> （period） |
| :---: | :---: | :---: |
| 0 | 100 | 0.5 |
| 70 | 30 | 25 |
| 0 | 100 | 250 |

## Results of Wireless mode：Pass

Please refer to the following table for individual results．

| Phase | Test Level （\％of $\mathrm{U}_{\mathrm{T}}$ ） | Duration （period） | Individual Results |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | Pass | Failed |
| $0^{\circ}$ followed by $180^{\circ}$ | 0 | 0.5 | 区 | $\square$ |
| $0^{\circ}$ followed by $180^{\circ}$ | 70 | 25 | 区 | $\square$ |
| $0^{\circ}$ followed by $180^{\circ}$ | 0 | 250 | 区 | $\square$ |

Remarks：
Calculated measurement uncertainty：7．1\％of tested voltage
$\mathrm{U}_{\mathrm{T}}$－The nominal supply voltage

## STC Test Report

Date: 2016-04-15
Page 32 of 39
No.: DM123144

## APPENDIX A

## List of Measurement Equipment

## Radiated Emission

| EQP NO. | DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL |
| :--- | :--- | :--- | :--- | :--- | :--- |
| EMD022 | EMI Test Receiver | ROHDE \& SCHWARZ | ESCS 30 | 100314 | 2015.03 .24 |
| EMD061 | Biconilog Antenna | ETS.LINDGREN | $3142 C$ | 00060439 | 2014.11 .29 |
| EMD084 | MULTI-DVICE CONTROLLER | ETS.LINDGREN | 2090 | 00060107 | N/A |
| EMD088 | Video Contol Unit | ETS.LINDGREN | Y21953A | 2601073 | N/A |
| EMD093 | Monitor | ViewSonic | VA9036 | Q8X064201876 | N/A |
| EMD102 | Intelligent Frequency | Ainuo lnstrument Co., Ltd | AN97005SS | 79707454 | N/A |
| EMD105 | FACT-3 EMC Chamber | ETS.LINDGREN | FACT-3 | 3803 | N/A |
| EMD131 | Standard Gain Horn Antenna <br> (18GHZ-26.5GHZ $)$ | Chengdu AINFO lnc. | JXTXLB-42-15- <br> C-KF | J2021100721001 | 2015.06 .27 |
| EMD-S01 | RE Test software | ROHDE \& SCHWARZ | ESxS-K1 | V2.10 | N/A |
| EMD-S02 | RE Test software | AUDIX | e3 | V9.14c31 | N/A |

Conducted Emission

| EQP NO. | DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL |
| :--- | :--- | :--- | :--- | :--- | :--- |
| EMD003 | IMPULSEGRENZER PULSE <br> LIMITER | ROHDE \& SCHWARZ | ESH3-Z2 | 100071 | 2015.3 .24 |
| EMD004 | ZWEILEITER-V- <br> NETZNACHBILDUNG TWO- <br> LINE V-NETWORK | ROHDE \& SCHWARZ | ESH3-Z5 | 100102 | 2015.3 .24 |
| EMD036 | EMI TEST RECEIVER | ROHDE \& SCHWARZ | ESIB26 | 100388 | 2015.03 .24 |
| EMD041 | TWO-LINE V-NETWORK | ROHDE \& SCHWARZ | ENV216 | 100261 | 2015.03 .24 |
| EMD103 | INTELLIGENT FREQUENCY | AINUO LNSTRUMENT <br> CO., LTD | AN97005SS | 79707455 | N/A |
| EMD106 | SHIELDING ROOM \#1 | ETS.LINDGREN | RFD-100 | 3802 | N/A |
| EMD-S03 | CE Test software | ROHDE \& SCHWARZ | ESIB-K1 | V1.20 | N/A |

## HARMONICS/ FLICKER

| EQP NO. | DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL |
| :--- | :--- | :--- | :--- | :--- | :--- |
| EMD013 | AC POWER SOURCE | SCHAFFNER | NSG1007 | 54964 | 2015.3 .24 |
| EMD014 | HARMONIC \& FLICKER <br> METER | SCHAFFNER | CCN1000 | 72104 | 2015.3 .24 |
| EMD-S05 | Harmonics/ Flicker Test software | TESEQ | Win2100V3 | V3.2.0.35 | N/A |

## Electro Static Discharge

| EQP NO. | DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL |
| :--- | :--- | :--- | :--- | :--- | :--- |
| EMD007 | HIGH VOLTAGE OUTPUT <br> $\pm 30 K V ~ M A X ~$ | KIKUSUI | KES4021 | LG001717 | 2014.11 .25 |
| EMD034 | DEHUMIDIFIER | KAWASIMA <br> ELECTRICAL <br> APPLANCE CO.,LTD | DH-820H | N/A | N/A |
| EMD100 | THERMOHYGROGRAPH | SATO KEIRYOKI <br> MFG.CO.,LTD. | $7210-00$ | 1633581 | 2015.08 .11 |
| EMD109 | BAROGRAPH | SATO KEIRYOKI <br> MFG.CO.,LTD. | NSII-BQ | 567719 | 2014.12 .03 |
| EMD139 | ESD Simulator | TESEQ | NSG 438 | 873 | 2014.11 .17 |

## STC Test Report

Date: 2016-04-15
Page 33 of 39
No.: DM123144

## List of Measurement Equipment

Radiated Field Immunity

| EQP NO. | DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL |
| :--- | :--- | :--- | :--- | :--- | :--- |
| EMD111 | Power meter | ROHDE \& SCHWARZ | NRVD | 102051 | 2015.3 .24 |
| EMD137 | Signal Generator | ROHDE \& SCHWARZ | SMB100A | $1406600 \mathrm{~K} 02-$ <br> $104532-\mathrm{DF}$ | 2015.03 .24 |
| EMD060 | Biconilog Antenna | ETS.LINDGREN | 3142C | 00060445 | 2014.11 .15 |
| EMD063 | Power Amplifier | BONN ELEKTRONIK | BLWA0840- <br> $50 / 30 \mathrm{D}$ | 066454 B | 2015.3 .24 |
| EMD064 | Power Amplifier | BONN ELEKTRONIK | BLWA0810- <br> $250 / 100 \mathrm{D}$ | 066454 A | 2015.3 .24 |
| EMD-S07 | RI Test software | ROHDE \& SCHWARZ | EMC32 | V8.40.0 | N/A |

EFT /BURST

| EQP NO. | DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL |
| :--- | :--- | :--- | :--- | :--- | :--- |
| EMD053 | TRANSIENT IMMUNITY TEST <br> SYSTEM | EMC-PARTNER | TRANSIENT2000 | 845 | 2015.03 .24 |
| EMD-S08 | EFT Test software | EMC PARTNET | Test-Manager | V1.71 | N/A |

SURGE IMMUNITY

| EQP NO. | DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL |
| :--- | :--- | :--- | :--- | :--- | :--- |
| EMD053 | TRANSIENT IMMUNITY TEST <br> SYSTEM | EMC-PARTNER | TRANSIENT2000 | 845 | 2015.03 .24 |
| EMD-S08 | SURGE Test software | EMC PARTNET | Test-Manager | V1.71 | N/A |

## INJECTED CURRENT IMMUNITY

| EQP NO. | DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL |
| :--- | :--- | :--- | :--- | :--- | :--- |
| EMD023 | DUAL DIRECTIONAL <br> COUPLER | AMPLIFIER RESEARCH | DC2600A | 308682 | 2015.3 .24 |
| EMD024 | AMPLIFIER | AMPLIFIER RESEARCH | 75A250A | 308682 | 2015.3 .24 |
| EMD111 | POWER METER | ROHDE \& SCHWARZ | NRVD | 102051 | 2015.3 .24 |
| EMD026 | SIGNAL GENERATOR | ROHDE \& SCHWARZ | SML01 | 102439 | 2015.3 .24 |
| EMD029 | COUPLING DECOUPLING <br> NETWORK | FISCHER CUSTOM <br> COMMUNICATIONS <br> INC | $30 W 1000 B$ | 4022 | 2015.3 .24 |
| EMD-S09 | CI Test software | ROHDE \& SCHWARZ | EMC32 | V5.20.0 | N/A |

VOLTAGE DIP

| EQP NO. | DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | LAST CAL |
| :--- | :--- | :--- | :--- | :--- | :--- |
| EMD053 | TRANSIENT IMMUNITY TEST <br> SYSTEM | EMC-PARTNER | TRANSIENT2000 | 845 | 2015.03 .24 |
| EMD-S08 | DIPS Test software | EMC PARTNET | Test-Manager | V1.71 | N/A |

Remark:
N/A Not Applicable

## STC Test Report

Date: 2016-04-15
Page 34 of 39
No.: DM123144

## APPENDIX B

## Photograph (S) Of Product



Rear View of the Product


STC (Dongguan) Company Limited
68 Fumin Nan Road, Dalang, Dongguan, China. (Zip Code : 523 770)

## STC Test Report

Date: 2016-04-15
Page 35 of 39
No.: DM123144

Photograph (S) Of Product


STC (Dongguan) Company Limited

## STC Test Report

Date: 2016-04-15
Page 36 of 39
No.: DM123144

Photograph (S) Of Product


STC (Dongguan) Company Limited

## STC Test Report

Date: 2016-04-15
Page 37 of 39
No.: DM123144

Photograph (S) Of Product


Harmonic Emissions \& Voltage Fluctuations Test Set Up


## STC Test Report

Date: 2016-04-15
Page 38 of 39
No.: DM123144

## Photograph (S) Of Product



Radiated Immunity Test Set Up


## STC Test Report

Date: 2016-04-15
Page 39 of 39
No.: DM123144

## Photograph (S) Of Product

Electrical Fast Transients, Surge Immunity, Voltage Dips Test Set Up

******End of Test Report*****

STC (Dongguan) Company Limited
68 Fumin Nan Road, Dalang, Dongguan, China. (Zip Code : 523 770)
Tel : (86 769) 81119888 Fax : (86769) 81116222 E-mail : dgstc@dgstc.org Homepage : www.dgstc.org
This report shall not be reproduced unless with prior written approval from STC (Dongguan) Company Limited.

# STC Test Report 

## Conditions of Issuance of Test Reports

1. All samples and goods are accepted by The Hong Kong Standards \& Testing Centre Limited (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The Company provides its services on the basis that such terms and conditions constitute express agreement between the Company and any person, firm or company requesting its services (the "Clients").
2. Any report issued by the Company as a result of this application for testing service (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to his customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
4. The Report refers only to the sample tested and does not apply to the bulk, unless the sampling has been carried out by the Company and is stated as such in the Report.
5. In the event of the improper use the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
6. Sample submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
7. The Company will not be liable for or accept responsibility for any loss or damage howsoever arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
8. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
9. Subject to the variable length of retention time for test data and report stored hereinto as to otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of this test report for a period of three years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after the retention period. Under no circumstances shall we be liable for damages of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.
10. Issuance records of the Report are available on the internet at www.stc-group.org. Further enquiry of validity or verification of the Reports should be addressed to the Company.

[^0]:    Remark:

    *     - Some products may have more relax limits (refer to Clause 5 of EN 61000-3-3)

    Calculated measurement uncertainty: 7.7\%

[^1]:    Remarks:
    ***For ungrounded EUT, the charge on the EUT shall be removed prior to each applied ESD pulse
    Calculated measurement uncertainty: 7.1\%

