



**TEST REPORT OF A 2.4/5 GHZ IEEE 802.11b/g WLAN  
ACCESS POINT, BRAND INTERSIL,  
MODEL ISL39300A, IN CONFORMITY WITH  
47 CFR PART 15 (2003-03-13).**

FCC listed : 90828  
Industry Canada : IC3501  
VCCI registered : R-1518, C-1598

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Test specification(s): 47 CFR Part 15 (2003-03-13)  
Description of EUT: 2.4/5 GHz IEEE 802.11b/g WLAN Access Point  
Manufacturer: Intersil Corporation  
Brand mark: Intersil  
Model: ISL39300A  
FCC ID: OSZ39300A

## MEASUREMENT/TECHNICAL REPORT

**Intersil Corporation**

**Model : ISL39300A**

**FCC ID: OSZ39300A**

August 29, 2003

|                                                       |                              |                                                 |                         |
|-------------------------------------------------------|------------------------------|-------------------------------------------------|-------------------------|
| This report concerns:                                 | Original grant/certification | <del>Class 2 change</del>                       | <del>Verification</del> |
| Equipment type:                                       | Unlicensed U-NII Device      |                                                 |                         |
| Deferred grant requested per 47 CFR 0.457(d)(1)(ii) ? |                              | <del>Yes</del>                                  | No                      |
| Report prepared by:                                   | Name                         | : J. Schuurmans.                                |                         |
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The data taken for this test and report herein was done in accordance with 47 CFR Part 15 and the measurement procedures of ANSI C63.4-1992. TNO Electronic Products & Services (EPS) B.V. at Niekerk, The Netherlands, certifies that the data is accurate and contains a true representation of the emission profile of the Equipment Under Test (EUT) on the date of the test as noted in the test report. I have reviewed the test report and find it to be an accurate description of the test(s) performed and the EUT so tested.

Date: September 5, 2003

Signature:

P. de Beer  
TNO Electronic Products & Services (EPS) B.V.



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### **Description of test item**

Test item : 2.4/5 GHz IEEE 802.11b/g WLAN Access Point  
Manufacturer : Intersil Corporation  
Brand : Intersil  
Model : ISL39300A  
Serial numbers : n.a.  
Revision : n.a.  
Receipt number : n.a.  
Receipt date : August 29, 2003

### **Applicant information**

Applicant's representative : Mr. D. Sariredjo  
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### **Test(s) performed**

Location : Niekerk  
Test(s) started : August 18, 2003  
Test(s) completed : August 29, 2003  
Purpose of test(s) : Type approval / certification  
Test specification(s) : 47 CFR Part 15 (2002-03-13)

Test engineer : O.H. Hoekstra

Report written by : J. Schuurmans, B.Sc.E.E.

Project leader : P.A.J.M. Robben, B.Sc.E.E.

This report is in conformity with NEN-EN-ISO/IEC 17025.

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The test results relate only to the item(s) tested.



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## 1 General information.

### 1.1 Product description.

The 2.4/5 GHz IEEE 802.11b/g WLAN Access Point, brand Intersil, model ISL39300A, is designed to operate in the 5 GHz unlicensed U-NII devices frequency band (5.15 GHz – 5.35 GHz), as specified by the Federal Communications Commission in the USA.

The 2.4/5 GHz IEEE 802.11b/g WLAN Access Point, brand Intersil, model ISL39300A, utilizes Direct Sequence Spread Spectrum (DSSS) and OFDM modulation techniques.

The 2.4/5 GHz IEEE 802.11b/g WLAN Access Point, brand Intersil, model ISL39300A, incorporates an integral antenna.

### 1.2 Related submittal(s) and/or Grant(s).

Not applicable.

### 1.3 Tested system details.

Details and an overview of the system and all its components, as it has been tested, can be found in table 1 below. FCC ID's are stated in this overview where applicable. The EUT is listed in the first row of this table 1.

| Description                                                        | Model number    | Serial number           | FCC ID     | Cable descriptions                                                                                                  |
|--------------------------------------------------------------------|-----------------|-------------------------|------------|---------------------------------------------------------------------------------------------------------------------|
| 2.4/5 GHz IEEE 802.11b/g WLAN Access Point                         | ISL39300A       | n.a.                    | OSZ393000A | UTP to hub or Power Over Lan Hub                                                                                    |
| PowerDsine Power Over Lan Hub                                      | PowerDsine 6024 | S02036405502799         | n.a.(DoC)  | -UTP to Access Point<br>-DC power cord to AC/DC adapter                                                             |
| Dell notebook computer                                             | LSt             | Ooo893KM-12800-05I-1143 | n.a. (DoC) | -Unshielded DC power cord to AC/DC adapter<br>-Shielded parallel cable to printer<br>-Shielded mouse cable to mouse |
| Dell AC/DC power adapter 100-240 VAC/1.5 Amps to +19 VDC/2.64 Amps | ADP-50SB        | 000983T                 | n.a. (DoC) | -Unshielded DC power cord to notebook computer                                                                      |
| Netgear DS108 8 Port 10/100 Mbps Dual Speed Hub                    | DS108           | DS18L25553805           | n.a. (DoC) | -Unshielded power cord to AC/DC adapter                                                                             |
| Netgear AC/DC power adapter 230 VAC/0.16 A +12 VDC/1.2 Amps        | PWR-002-006     | n.a.                    | n.a. (DoC) | -Unshielded DC power cord to hub<br>-Unshielded power cord to AC mains                                              |

Table 1 - Tested system details overview.



|                        |                                            |
|------------------------|--------------------------------------------|
| Test specification(s): | 47 CFR Part 15 (2003-03-13)                |
| Description of EUT:    | 2.4/5 GHz IEEE 802.11b/g WLAN Access Point |
| Manufacturer:          | Intersil Corporation                       |
| Brand mark:            | Intersil                                   |
| Model:                 | ISL39300A                                  |
| FCC ID:                | OSZ39300A                                  |

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## 1.4 Test methodology.

The test methodology used is based on the requirements of 47 CFR Part 15 (2002-03-13), sections 15.107, 15.207, 15.109, 15.209 and 15.205.

The test methods, which have been used, are based on ANSI C63.4: 1992.

Radiated emission tests above 30 MHz were performed at a measurement distance of 3 meters. Below 30 MHz the radiated emission tests were carried out at measurement distances of 3 and 10 meters. The test results regarding the radiated emission tests on frequencies below 30 MHz have been extrapolated in order to determine the field strength of the measured values at measurement distances of 30 and 300 meters (as required by 47 CFR Part 15).

The bandwidth of the receiver is switching automatically to the right bandwidth in accordance with CISPR 16. This is implemented in the receiver. The antenna factors are programmed in the test receiver. The receiver automatically calculates the appropriate correction factor for the utilized antenna and also the appropriate antenna factor for the cable loss. The total correction is automatically added to the measured value.

Radiated emission tests in the frequency range of 1 GHz – 40 GHz were performed with appropriate pre-amplifiers, antennas and a spectrum analyzer. At frequencies on which radiated emissions were found the level at the input of the pre-amplifier was reproduced by means of a RF signal generator. The output level of the signal generator was then increased with the antenna factor in order to obtain the actual field strength value for each individual frequency on which radiated emissions were found.

## 1.5 Test facility.

The Federal Communications Commission has reviewed the technical characteristics of the test facilities at TNO Electronic Products & Services (EPS) B.V., located in Niekerk, 9822 TL Smidshornerweg 18, The Netherlands, and has found these test facilities to be in compliance with the requirements of 47 CFR Part 15, section 2.948, per October 23, 2000.

The description of the test facilities has been filed at the Office of the Federal Communications Commission under registration number 90828. The facility has been added to the list of laboratories performing these test services for the public on a fee basis.

The list of all public test facilities is available on the Internet at <http://www.fcc.gov>.

## 1.6 Product labeling.

In accordance with 47 CFR Part 15.19 (a)(3) the following text shall be placed on a label, which is attached to the EUT:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

In accordance with 47 CFR Part 2.925 (a)(1), the FCC ID shall be placed on a label, which is attached to the EUT.

For further details about the labeling requirements (size, legibility, etc.) as set by the Federal Communications Commission see 47 CFR Part 15.19 (a)(3), 47 CFR Part 15.19 (b)(2), 47 CFR Part 15.19 (b)(4), 47 CFR Part 2.925 and 47 CFR Part 2.926.



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## 1.7 System test configuration.

### 1.7.1 Justification.

The system was configured for testing in a typical fashion (as an end-user would normally use it).

The justification and manipulation of cables and equipment in order to simulate a worst-case behavior of the test setup has been carried out as prescribed in ANSI C63.4: 1992.

Tests were performed at the operating frequencies channel 36 (5180 MHz), channel 48 (5240 MHz), channel 52 (5260 MHz) and channel 64 (5320 MHz). Further details may be found in table 2 below.

| Channel | Operating frequencies (MHz) | Rated output power (mW) | Test performed |
|---------|-----------------------------|-------------------------|----------------|
| 36      | 5180                        | 48.4                    | yes            |
| 40      | 5200                        | 48.4                    | no             |
| 44      | 5220                        | 48.4                    | no             |
| 48      | 5240                        | 48.4                    | yes            |
| 52      | 5260                        | 80.0                    | yes            |
| 56      | 5280                        | 80.0                    | no             |
| 60      | 5300                        | 80.0                    | no             |
| 64      | 5320                        | 80.0                    | yes            |

Table 2 - Specification of channels and rated maximum peak conducted transmit output power.

The EUT was tested to an ethernet HUB, powered by an AC/DC power supply.

### 1.7.2 EUT exercise software.

The EUT could be enabled to transmit or receive continuously on channels 36 (5180 MHz), 48 (5240 MHz), 52 (5260 MHz) and 64 (5320 MHz) by means of test software, which was supplied by the manufacturer of the EUT. Furthermore, the utilized test software also enables various transmission bit-rate settings in the range of 6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s.

## 1.8 Special accessories.

No special accessories are used and/or needed to achieve compliance with the appropriate sections of 47 CFR Part 15.

## 1.9 Equipment modifications.

No modifications have been made to the equipment in order to achieve compliance with the appropriate sections of 47 CFR Part 15.

## 1.10 Configuration of the tested system.

Not applicable. See table 1 in section 1.3 of this test report.

## 1.11 Block diagram(s) of the EUT.

The block diagram is available as part of the documentation which is to be submitted to the FCC/TCB.



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## 2 Radiated emission data.

### 2.1 Test results with EUT operating in receive mode on channel 36.

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109 and 47 CFR Part 15.209 with the EUT operating in receive mode on channel 36 (5180 MHz), are depicted in table 3.

| Frequency<br>(MHz) | Test results<br>quasi peak<br>(dBμV/m) |      | Test results<br>average<br>(dBμV/m) |      | Test results<br>peak<br>(dBμV/m) |      | Resolution<br>bandwidth<br>(kHz) | Quasi peak<br>limits<br>(dBμV/m) | Average<br>limits<br>(dBμV/m) | Peak<br>limits<br>(dBμV/m) |
|--------------------|----------------------------------------|------|-------------------------------------|------|----------------------------------|------|----------------------------------|----------------------------------|-------------------------------|----------------------------|
|                    | V                                      | H    | V                                   | H    | V                                | H    |                                  |                                  |                               |                            |
| 58.97              | 24.7                                   | 18.6 | -                                   | -    | -                                | -    | 120                              | 40.0                             | -                             | -                          |
| 178.15             | 30.0                                   | 37.9 | -                                   | -    | -                                | -    | 120                              | 43.5                             | -                             | -                          |
| 216.80             | 24.9                                   | 30.4 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 264.00             | 43.1                                   | 40.4 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 275.00             | 40.9                                   | 40.7 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 297.00             | 40.7                                   | 43.6 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 567.25             | 36.7                                   | 32.1 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 10360.00           | -                                      | -    | n.t.                                | n.t. | 45.0                             | 40.9 | 1000                             | -                                | 54.0                          | 74.0                       |
| 20720.00           | -                                      | -    | n.t.                                | n.t. | 51.8                             | 53.2 | 1000                             | -                                | 54.0                          | 74.0                       |

Table 3 - Test results with the EUT operating in receive mode on channel 36 (5180 MHz).

Note: Field strength values of radiated emissions at frequencies not listed in table 3 are more than 20 dB below the applicable limit.

Note: Above 1 GHz, all measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

Test engineer

Signature

Name : H. Pieters

Date : August 28, 2003



Test specification(s): 47 CFR Part 15 (2003-03-13)  
Description of EUT: 2.4/5 GHz IEEE 802.11b/g WLAN Access Point  
Manufacturer: Intersil Corporation  
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## 2.2 Test results with EUT operating in receive mode on channel 48.

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109 and 47 CFR Part 15.209 with the EUT operating in receive mode on channel 48 (5240 MHz), are depicted in table 4.

| Frequency<br>(MHz) | Test results<br>quasi peak<br>(dBµV/m) |      | Test results<br>average<br>(dBµV/m) |      | Test results<br>peak<br>(dBµV/m) |      | Resolution<br>bandwidth<br>(kHz) | Quasi peak<br>limits<br>(dBµV/m) | Average<br>limits<br>(dBµV/m) | Peak<br>limits<br>(dBµV/m) |
|--------------------|----------------------------------------|------|-------------------------------------|------|----------------------------------|------|----------------------------------|----------------------------------|-------------------------------|----------------------------|
|                    | V                                      | H    | V                                   | H    | V                                | H    |                                  |                                  |                               |                            |
| 58.97              | 24.7                                   | 18.6 | -                                   | -    | -                                | -    | 120                              | 40.0                             | -                             | -                          |
| 178.15             | 30.0                                   | 37.9 | -                                   | -    | -                                | -    | 120                              | 43.5                             | -                             | -                          |
| 216.80             | 24.9                                   | 30.4 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 264.00             | 43.1                                   | 40.4 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 275.00             | 40.9                                   | 40.7 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 297.00             | 40.7                                   | 43.6 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 567.25             | 36.7                                   | 32.1 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 10480.00           | -                                      | -    | n.t.                                | n.t. | 45.4                             | 41.7 | 1000                             | -                                | 54.0                          | 74.0                       |
| 20960.00           | -                                      | -    | n.t.                                | n.t. | 50.2                             | 50.6 | 1000                             | -                                | 54.0                          | 74.0                       |

Table 4 - Test results with the EUT operating in receive mode on channel 48 (5240 MHz).

Note: Field strength values of radiated emissions at frequencies not listed in table 4 are more than 20 dB below the applicable limit.

Note: Above 1 GHz, all measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

Test engineer

Signature

Name : H. Pieters

Date : August 28, 2003



Test specification(s): 47 CFR Part 15 (2003-03-13)  
Description of EUT: 2.4/5 GHz IEEE 802.11b/g WLAN Access Point  
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### 2.3 Test results with EUT operating in receive mode on channel 52.

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109 and 47 CFR Part 15.209 with the EUT operating in receive mode on channel 52 (5260 MHz), are depicted in table 5.

| Frequency<br>(MHz) | Test results<br>quasi peak<br>(dBµV/m) |      | Test results<br>average<br>(dBµV/m) |      | Test results<br>peak<br>(dBµV/m) |      | Resolution<br>bandwidth<br>(kHz) | Quasi peak<br>limits<br>(dBµV/m) | Average<br>limits<br>(dBµV/m) | Peak<br>limits<br>(dBµV/m) |
|--------------------|----------------------------------------|------|-------------------------------------|------|----------------------------------|------|----------------------------------|----------------------------------|-------------------------------|----------------------------|
|                    | V                                      | H    | V                                   | H    | V                                | H    |                                  |                                  |                               |                            |
| 58.97              | 24.7                                   | 18.6 | -                                   | -    | -                                | -    | 120                              | 40.0                             | -                             | -                          |
| 178.15             | 30.0                                   | 37.9 | -                                   | -    | -                                | -    | 120                              | 43.5                             | -                             | -                          |
| 216.80             | 24.9                                   | 30.4 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 264.00             | 43.1                                   | 40.4 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 275.00             | 40.9                                   | 40.7 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 297.00             | 40.7                                   | 43.6 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 567.25             | 36.7                                   | 32.1 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 10520.00           | -                                      | -    | n.t.                                | n.t. | 44.8                             | 41.3 | 1000                             | -                                | 54.0                          | 74.0                       |
| 21040.00           | -                                      | -    | n.t.                                | n.t. | 49.1                             | 52.9 | 1000                             | -                                | 54.0                          | 74.0                       |

Table 5 - Test results with the EUT operating in receive mode on channel 52 (5260 MHz).

Note: Field strength values of radiated emissions at frequencies not listed in table 5 are more than 20 dB below the applicable limit.

Note: Above 1 GHz, all measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

#### Test engineer

Signature

Name : H.J. Pieters

Date : August 28, 2003



Test specification(s): 47 CFR Part 15 (2003-03-13)  
Description of EUT: 2.4/5 GHz IEEE 802.11b/g WLAN Access Point  
Manufacturer: Intersil Corporation  
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## 2.4 Test results with EUT operating in receive mode on channel 64.

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109 and 47 CFR Part 15.209 with the EUT operating in receive mode on channel 64 (5320 MHz), are depicted in table 6.

| Frequency<br>(MHz) | Test results<br>quasi peak<br>(dBµV/m) |      | Test results<br>average<br>(dBµV/m) |      | Test results<br>peak<br>(dBµV/m) |      | Resolution<br>bandwidth<br>(kHz) | Quasi peak<br>limits<br>(dBµV/m) | Average<br>limits<br>(dBµV/m) | Peak<br>limits<br>(dBµV/m) |
|--------------------|----------------------------------------|------|-------------------------------------|------|----------------------------------|------|----------------------------------|----------------------------------|-------------------------------|----------------------------|
|                    | V                                      | H    | V                                   | H    | V                                | H    |                                  |                                  |                               |                            |
| 58.97              | 24.7                                   | 18.6 | -                                   | -    | -                                | -    | 120                              | 40.0                             | -                             | -                          |
| 178.15             | 30.0                                   | 37.9 | -                                   | -    | -                                | -    | 120                              | 43.5                             | -                             | -                          |
| 216.80             | 24.9                                   | 30.4 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 264.00             | 43.1                                   | 40.4 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 275.00             | 40.9                                   | 40.7 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 297.00             | 40.7                                   | 43.6 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 567.25             | 36.7                                   | 32.1 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 10640.00           | -                                      | -    | n.t.                                | n.t. | 44.7                             | 41.5 | 1000                             | -                                | 54.0                          | 74.0                       |
| 21280.00           | -                                      | -    | n.t.                                | n.t. | 50.0                             | 52.6 | 1000                             | -                                | 54.0                          | 74.0                       |

Table 6 - Test results with the EUT operating in receive mode on channel 64 (5320 MHz).

Note: Field strength values of radiated emissions at frequencies not listed in table 6 are more than 20 dB below the applicable limit.

Note: Above 1 GHz, all measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

### Test engineer

Signature

Name : H.J. Pieters

Date : August 28, 2003



Test specification(s): 47 CFR Part 15 (2003-03-13)  
Description of EUT: 2.4/5 GHz IEEE 802.11b/g WLAN Access Point  
Manufacturer: Intersil Corporation  
Brand mark: Intersil  
Model: ISL39300A  
FCC ID: OSZ39300A

## 2.5 Test results with EUT operating in transmit mode on channel 36.

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109, 47 CFR Part 15.209 and 47 CFR Part 15.205 (restricted bands of operation) with the EUT operating in transmit mode on channel 36 (5180 MHz), are depicted in table 7.

| Frequency<br>(MHz) | Test results<br>quasi peak<br>(dBµV/m) |      | Test results<br>average<br>(dBµV/m) |      | Test results<br>peak<br>(dBµV/m) |      | Resolution<br>bandwidth<br>(kHz) | Quasi peak<br>limits<br>(dBµV/m) | Average<br>limits<br>(dBµV/m) | Peak<br>limits<br>(dBµV/m) |
|--------------------|----------------------------------------|------|-------------------------------------|------|----------------------------------|------|----------------------------------|----------------------------------|-------------------------------|----------------------------|
|                    | V                                      | H    | V                                   | H    | V                                | H    |                                  |                                  |                               |                            |
| 58.97              | 24.7                                   | 18.6 | -                                   | -    | -                                | -    | 120                              | 40.0                             | -                             | -                          |
| 178.15             | 30.0                                   | 37.9 | -                                   | -    | -                                | -    | 120                              | 43.5                             | -                             | -                          |
| 216.80             | 24.9                                   | 30.4 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 264.00             | 43.1                                   | 40.4 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 275.00             | 40.9                                   | 40.7 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 297.00             | 40.7                                   | 43.6 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 567.25             | 36.7                                   | 32.1 | -                                   | -    | -                                | -    | 120                              | 46.0                             | -                             | -                          |
| 10360.00           | -                                      | -    | n.t.                                | n.t. | 51.6                             | 45.6 | 1000                             | -                                | 54.0                          | 74.0                       |
| 15540.00           | -                                      | -    | n.t.                                | n.t. | 53.9                             | 51.3 | 1000                             | -                                | 54.0                          | 74.0                       |
| 20720.00           | -                                      | -    | n.t.                                | n.t. | 52.7                             | 53.0 | 1000                             | -                                | 54.0                          | 74.0                       |

Table 7 - Test results with the EUT operating in transmit mode on channel 36 (5180 MHz).

Note: Radiated emission tests have been performed with all possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s) in transmit mode. The highest values measured of the spurious emission components are reported by means of table 7.

Note: Field strength values of radiated emissions at frequencies not listed in table 7 are more than 20 dB below the applicable limit.

Note: Above 1 GHz, all measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

### Test engineer

Signature

Name : H.J. Pieters

Date : August 28, 2003



Test specification(s): 47 CFR Part 15 (2003-03-13)  
 Description of EUT: 2.4/5 GHz IEEE 802.11b/g WLAN Access Point  
 Manufacturer: Intersil Corporation  
 Brand mark: Intersil  
 Model: ISL39300A  
 FCC ID: OSZ39300A

## 2.6 Test results with EUT operating in transmit mode on channel 48.

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109, 47 CFR Part 15.209 and 47 CFR Part 15.205 (restricted bands of operation) with the EUT operating in transmit mode on channel 48 (5240 MHz), are depicted in table 8.

| Frequency (MHz) | Test results quasi peak (dBμV/m) |      | Test results average (dBμV/m) |      | Test results peak (dBμV/m) |       | Resolution bandwidth (kHz) | Quasi peak limits (dBμV/m) | Average limits (dBμV/m) | Peak limits (dBμV/m) |
|-----------------|----------------------------------|------|-------------------------------|------|----------------------------|-------|----------------------------|----------------------------|-------------------------|----------------------|
|                 | V                                | H    | V                             | H    | V                          | H     |                            |                            |                         |                      |
| 58.97           | 24.7                             | 18.6 | -                             | -    | -                          | -     | 120                        | 40.0                       | -                       | -                    |
| 178.15          | 30.0                             | 37.9 | -                             | -    | -                          | -     | 120                        | 43.5                       | -                       | -                    |
| 216.80          | 24.9                             | 30.4 | -                             | -    | -                          | -     | 120                        | 46.0                       | -                       | -                    |
| 264.00          | 43.1                             | 40.4 | -                             | -    | -                          | -     | 120                        | 46.0                       | -                       | -                    |
| 275.00          | 40.9                             | 40.7 | -                             | -    | -                          | -     | 120                        | 46.0                       | -                       | -                    |
| 297.00          | 40.7                             | 43.6 | -                             | -    | -                          | -     | 120                        | 46.0                       | -                       | -                    |
| 567.25          | 36.7                             | 32.1 | -                             | -    | -                          | -     | 120                        | 46.0                       | -                       | -                    |
| 10480.00        | -                                | -    | n.t.                          | n.t. | 51.6                       | 45.6  | 1000                       | -                          | 54.0                    | 74.0                 |
| 15720.00        | -                                | -    | n.t.                          | n.t. | 53.9                       | 52.2  | 1000                       | -                          | 54.0                    | 74.0                 |
| 20960.00        | -                                | -    | n.t.                          | n.t. | <51.0                      | <51.0 | 1000                       | -                          | 54.0                    | 74.0                 |

Table 8 - Test results with the EUT operating in transmit mode on channel 48 (5240 MHz).

Note: Radiated emission tests have been performed with all possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s) in transmit mode. The highest values measured of the spurious emission components are reported by means of table 8.

Note: Field strength values of radiated emissions at frequencies not listed in table 8 are more than 20 dB below the applicable limit.

Note: Above 1 GHz, all measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, all spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

### Test engineer

Signature

Name : H.J. Pieters

Date : August 28, 2003



Test specification(s): 47 CFR Part 15 (2003-03-13)  
Description of EUT: 2.4/5 GHz IEEE 802.11b/g WLAN Access Point  
Manufacturer: Intersil Corporation  
Brand mark: Intersil  
Model: ISL39300A  
FCC ID: OSZ39300A

## 2.7 Test results with EUT operating in transmit mode on channel 52.

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109, 47 CFR Part 15.209 and 47 CFR Part 15.205 (restricted bands of operation) with the EUT operating in transmit mode on channel 52 (5260 MHz), are depicted in table 9.

| Frequency<br>(MHz) | Test results<br>quasi peak<br>(dB $\mu$ V/m) |      | Test results<br>average<br>(dB $\mu$ V/m) |      | Test results<br>peak<br>(dB $\mu$ V/m) |      | Resolution<br>bandwidth<br>(kHz) | Quasi peak<br>limits<br>(dB $\mu$ V/m) | Average<br>limits<br>(dB $\mu$ V/m) | Peak<br>limits<br>(dB $\mu$ V/m) |
|--------------------|----------------------------------------------|------|-------------------------------------------|------|----------------------------------------|------|----------------------------------|----------------------------------------|-------------------------------------|----------------------------------|
|                    | V                                            | H    | V                                         | H    | V                                      | H    |                                  |                                        |                                     |                                  |
| 58.97              | 24.7                                         | 18.6 | -                                         | -    | -                                      | -    | 120                              | 40.0                                   | -                                   | -                                |
| 178.15             | 30.0                                         | 37.9 | -                                         | -    | -                                      | -    | 120                              | 43.5                                   | -                                   | -                                |
| 216.80             | 24.9                                         | 30.4 | -                                         | -    | -                                      | -    | 120                              | 46.0                                   | -                                   | -                                |
| 264.00             | 43.1                                         | 40.4 | -                                         | -    | -                                      | -    | 120                              | 46.0                                   | -                                   | -                                |
| 275.00             | 40.9                                         | 40.7 | -                                         | -    | -                                      | -    | 120                              | 46.0                                   | -                                   | -                                |
| 297.00             | 40.7                                         | 43.6 | -                                         | -    | -                                      | -    | 120                              | 46.0                                   | -                                   | -                                |
| 567.25             | 36.7                                         | 32.1 | -                                         | -    | -                                      | -    | 120                              | 46.0                                   | -                                   | -                                |
| 10520.00           | -                                            | -    | n.t.                                      | n.t. | 47.2                                   | 43.1 | 1000                             | -                                      | 54.0                                | 74.0                             |
| 15780.00           | -                                            | -    | 40.2                                      | n.t. | 55.8                                   | 53.7 | 1000                             | -                                      | 54.0                                | 74.0                             |
| 21040.00           | -                                            | -    | n.t.                                      | n.t. | <51.0                                  | 52.1 | 1000                             | -                                      | 54.0                                | 74.0                             |

Table 9 - Test results with the EUT operating in transmit mode on channel 52 (5260 MHz).

Note: Radiated emission tests have been performed with all possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s) in transmit mode. The highest values measured of the spurious emission components are reported by means of table 9.

Note: Field strength values of radiated emissions at frequencies not listed in table 9 are more than 20 dB below the applicable limit.

Note: Above 1 GHz, most measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, most spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

### Test engineer

Signature

Name : H.J. Pieters

Date : August 28, 2003



Test specification(s): 47 CFR Part 15 (2003-03-13)  
Description of EUT: 2.4/5 GHz IEEE 802.11b/g WLAN Access Point  
Manufacturer: Intersil Corporation  
Brand mark: Intersil  
Model: ISL39300A  
FCC ID: OSZ39300A

## 2.8 Test results with EUT operating in transmit mode on channel 64.

The results of the radiated emission tests, carried out in accordance with 47 CFR Part 15.109, 47 CFR Part 15.209 and 47 CFR Part 15.205 (restricted bands of operation) with the EUT operating in transmit mode on channel 64 (5320 MHz), are depicted in table 10.

| Frequency<br>(MHz) | Test results<br>quasi peak<br>(dB $\mu$ V/m) |      | Test results<br>average<br>(dB $\mu$ V/m) |      | Test results<br>peak<br>(dB $\mu$ V/m) |      | Resolution<br>bandwidth<br>(kHz) | Quasi peak<br>limits<br>(dB $\mu$ V/m) | Average<br>limits<br>(dB $\mu$ V/m) | Peak<br>limits<br>(dB $\mu$ V/m) |
|--------------------|----------------------------------------------|------|-------------------------------------------|------|----------------------------------------|------|----------------------------------|----------------------------------------|-------------------------------------|----------------------------------|
|                    | V                                            | H    | V                                         | H    | V                                      | H    |                                  |                                        |                                     |                                  |
| 58.97              | 24.7                                         | 18.6 | -                                         | -    | -                                      | -    | 120                              | 40.0                                   | -                                   | -                                |
| 178.15             | 30.0                                         | 37.9 | -                                         | -    | -                                      | -    | 120                              | 43.5                                   | -                                   | -                                |
| 216.80             | 24.9                                         | 30.4 | -                                         | -    | -                                      | -    | 120                              | 46.0                                   | -                                   | -                                |
| 264.00             | 43.1                                         | 40.4 | -                                         | -    | -                                      | -    | 120                              | 46.0                                   | -                                   | -                                |
| 275.00             | 40.9                                         | 40.7 | -                                         | -    | -                                      | -    | 120                              | 46.0                                   | -                                   | -                                |
| 297.00             | 40.7                                         | 43.6 | -                                         | -    | -                                      | -    | 120                              | 46.0                                   | -                                   | -                                |
| 567.25             | 36.7                                         | 32.1 | -                                         | -    | -                                      | -    | 120                              | 46.0                                   | -                                   | -                                |
| 10640.00           | -                                            | -    | n.t.                                      | n.t. | 50.5                                   | 47.1 | 1000                             | -                                      | 54.0                                | 74.0                             |
| 15960.00           | -                                            | -    | 39.6                                      | n.t. | 57.5                                   | 53.1 | 1000                             | -                                      | 54.0                                | 74.0                             |
| 21280.00           | -                                            | -    | n.t.                                      | n.t. | 51.9                                   | 53.1 | 1000                             | -                                      | 54.0                                | 74.0                             |

Table 10 - Test results with the EUT operating in transmit mode on channel 64 (5320 MHz).

Note: Radiated emission tests have been performed with all possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s) in transmit mode. The highest values measured of the spurious emission components are reported by means of table 10.

Note: Field strength values of radiated emissions at frequencies not listed in table 10 are more than 20 dB below the applicable limit.

Note: Above 1 GHz, most measured values of the spurious emissions with the detector in peak mode, are below the applicable limits, which are valid when using an average detector. Therefore, most spurious emissions above 1 GHz have been measured with the peak detector only (n.t. = not tested), unless otherwise noted.

### Test engineer

Signature

Name : H.J. Pieters

Date : August 28, 2003



Test specification(s): 47 CFR Part 15 (2003-03-13)  
Description of EUT: 2.4/5 GHz IEEE 802.11b/g WLAN Access Point  
Manufacturer: Intersil Corporation  
Brand mark: Intersil  
Model: ISL39300A  
FCC ID: OSZ39300A

### 3 Conducted emission data.

#### 3.1 AC mains with EUT operating in transmit/receive mode.

The (worst-case) results of the conducted emission tests at the 110 Volts AC mains connection terminals of the PowerDsine Power over Lan HUB, to which the EUT is connected, carried out in accordance with 47 CFR Part 15.107 and 47 CFR Part 15.207, with the EUT operating in transmit/receive mode on channels 36 (5180 MHz), 48 (5240 MHz), 52 (5260 MHz) and 64 (5320 MHz), while utilizing all possible transmission bit-rates (6/9 Mbit/s, 12/18 Mbit/s, 24/36 Mbit/s and 48/54 Mbit/s), are depicted in table 11.

| Frequency<br>(MHz) | Measurement results<br>dB(μV)<br>Neutral |      | Measurement results<br>dB(μV)<br>Line 1 |      | Limits<br>dB(μV) |      | Margin<br>(dB)<br>Neutral |       | Margin<br>(dB)<br>Line 1 |       | Result |
|--------------------|------------------------------------------|------|-----------------------------------------|------|------------------|------|---------------------------|-------|--------------------------|-------|--------|
|                    | QP                                       | AV   | QP                                      | AV   | QP               | AV   | QP                        | AV    | QP                       | AV    |        |
| 0.18               | 46.4                                     | 43.4 | 48.8                                    | 43.1 | 64.5             | 54.5 | -18.1                     | -11.1 | -15.7                    | -11.4 | PASS   |
| 0.37               | 40.5                                     | 39.6 | 38.0                                    | 34.7 | 58.5             | 48.5 | -18.0                     | -8.9  | -20.5                    | -13.8 | PASS   |
| 0.82               | 42.3                                     | 41.8 | 44.8                                    | 44.2 | 56.0             | 46.0 | -13.7                     | -4.2  | -11.2                    | -1.8  | PASS   |
| 1.74               | 28.8                                     | 27.7 | 24.7                                    | 22.4 | 56.0             | 46.0 | -27.2                     | -18.3 | -31.3                    | -23.6 | PASS   |
| 2.38               | 29.4                                     | 26.6 | 29.4                                    | 26.5 | 56.0             | 46.0 | -26.6                     | -19.4 | -26.6                    | -19.5 | PASS   |
| 2.92               | 21.4                                     | 17.5 | 21.0                                    | 17.2 | 56.0             | 46.0 | -34.6                     | -28.5 | -35.0                    | -28.8 | PASS   |
| 3.02               | 22.4                                     | 18.4 | 22.0                                    | 17.9 | 56.0             | 46.0 | -33.6                     | -27.6 | -34.0                    | -28.1 | PASS   |
| 5.02               | 18.8                                     | 12.2 | 18.0                                    | 11.9 | 60.0             | 50.0 | -41.2                     | -37.8 | -42.0                    | -38.1 | PASS   |
| 12.50              | 27.4                                     | 25.2 | 27.7                                    | 25.3 | 60.0             | 50.0 | -32.6                     | -24.8 | -32.3                    | -24.7 | PASS   |
| 18.98              | 31.2                                     | 27.7 | 32.6                                    | 28.3 | 60.0             | 50.0 | -28.8                     | -22.3 | -27.4                    | -21.7 | PASS   |
| 18.94              | 18.6                                     | 7.5  | 40.0                                    | 38.1 | 60.0             | 50.0 | -41.4                     | -42.5 | -20.0                    | -11.9 | PASS   |
| 20.99              | 39.7                                     | 38.3 | 39.1                                    | 37.6 | 60.0             | 50.0 | -20.3                     | -11.7 | -20.9                    | -12.4 | PASS   |
| 28.44              | 42.4                                     | 39.2 | 42.5                                    | 39.5 | 60.0             | 50.0 | -17.6                     | -10.8 | -17.5                    | -10.5 | PASS   |

Table 11 - Test results with the EUT operating in transmit/receive mode.

Note: Disturbance voltage values of conducted emissions at frequencies not listed in table 11 are more than 20 dB below the applicable limit.

#### Test engineer

Signature :

Name H.J. Pieters

Date : August 19, 2003



Test specification(s): 47 CFR Part 15 (2003-03-13)  
 Description of EUT: 2.4/5 GHz IEEE 802.11b/g WLAN Access Point  
 Manufacturer: Intersil Corporation  
 Brand mark: Intersil  
 Model: ISL39300A  
 FCC ID: OSZ39300A

## 4 List of utilized test equipment.

| Inventory number | Description                    | Brand             | Model                |
|------------------|--------------------------------|-------------------|----------------------|
| 12471            | Biconical antenna 20MHz-200MHz | EATON             | 94455-1              |
| 12473            | Log-per antenna 200-1000MHz    | EATON             | 96005                |
| 12476            | Antenna mast                   | EMCO              | TR3                  |
| 12477            | Antenna mast 1-4 mtr           | Poelstra          | --                   |
| 12482            | Loop antenna                   | EMCO              | 6507                 |
| 12483            | Guidehorn                      | EMCO              | 3115                 |
| 12484            | Guidehorn                      | EMCO              | 3115                 |
| 12486            | Guidehorn 18 – 40 GHz          | EMCO              | 3116                 |
| 12488            | Guidehorn 18 - 26.5 GHz        | EMCO              | RA42-K-F-4B-C        |
| 12533            | Signalgenerator                | MARCONI           | 2032                 |
| 12559            | Digital storage oscilloscope   | Le Croy           | 9310M                |
| 12561            | DC Power Supply 20A/70V        | DELTA             | SM7020D              |
| 12567            | Plotter                        | HP                | 7440A                |
| 12605            | Calibrated dipole 28MHz-1GHz   | Emco              | 3121c                |
| 12608            | HF milliwattmeter              | Hewlett Packard   | HP435a               |
| 12609            | Power sensor 10MHz-18GHz       | Hewlett Packard   | HP8481A              |
| 12636            | Polyester chamber              | Polyforce         | --                   |
| 12640            | Temperature chamber            | Heraeus           | VEM03/500            |
| 13664            | Spectrum analyzer              | HP                | HP8593E              |
| 13078            | Preamplifier 0.1 GHz - 12 GHz  | Miteq             | AMF-3D-001120-35-14p |
| 13452            | Digital multi meter            | HP                | 34401A               |
| 13526            | Signalgenerator 20 GHz         | Hewlett & Packard | 83620A               |
| 13594            | Preamplifier 10 GHz - 25 GHz   | Miteq             | AMF-6D-100250-10p    |
| 13886            | Open Area testsite             | Comtest           | --                   |
| 14051            | Anechoic room                  | Comtest           | --                   |
| 14450            | 2.4 GHz bandrejectfilter       | BSC               | XN-1783              |
| 15633            | Biconilog Testantenna          | Chase             | CBL 6111B            |
| 15667            | Measuring receiver             | R&S               | ESCS 30              |
| 99045            | DC Power Supply 3A/30V         | DELTA             | E030/3               |
| 99055            | Non-conducting support         | NMi               | --                   |
| 99061            | Non-conducting support 150cm   | NMi               | --                   |
| 99068            | Detector N-F/BNC-F             | Radiall           | R451576000           |
| 99069            | Cable 5m RG214                 | NMi               | --                   |
| 99071            | Cable 10m RG214                | NMi               | --                   |
| 99076            | Bandpassfilter 4 - 10 GHz      | Reactel           | 7AS-7G-6G-511        |
| 99077            | Regulating trafo               | RFT               | LTS006               |
| 99112            | Tripod                         | Chase             | --                   |
| 99136            | Bandpassfilter 10 - 26.5 GHz   | Reactel           | 9HS-10G/26.5G-S11    |
| 99199            | Spectrum Analyzer              | R&S               | FSP40                |