



**ADDENDUM TO INTERNATIONAL ELECTRONICS INC. TEST REPORT FC05-039**

**FOR THE**

**PROXIMITY CARD READER, ES ENROLLMENT STATION**

**FCC PART 15 SUBPART C SECTIONS 15.207 & 15.209,**  
**SUBPART B SECTION 15.107 & 15.109 CLASS B AND ICES-003 (2004)**

**COMPLIANCE**

**DATE OF ISSUE: SEPTEMBER 5, 2008**

**PREPARED FOR:**

International Electronics Inc.  
427 Turnpike Street  
Canton, MA 02021

P.O. No.: 44997  
W.O. No.: 88107

**PREPARED BY:**

Mary Ellen Clayton  
CKC Laboratories, Inc.  
5046 Sierra Pines Drive  
Mariposa, CA 95338

Date of test: June 22-23, 2005 and  
August 13 – September 3, 2008

**Report No.: FC05-039A**

This report contains a total of 57 pages and may be reproduced in full only. Partial reproduction may only be done with the written consent of CKC Laboratories, Inc. The results in this report apply only to the items tested, as identified herein.

## TABLE OF CONTENTS

|                                                                              |    |
|------------------------------------------------------------------------------|----|
| Administrative Information .....                                             | 3  |
| Summary of Results .....                                                     | 4  |
| Conditions During Testing.....                                               | 4  |
| Approvals.....                                                               | 4  |
| FCC 15.31(e) Voltage Variation .....                                         | 5  |
| FCC 15.33(a) Frequency Ranges Tested .....                                   | 5  |
| FCC 15.35 Analyzer Bandwidth Settings .....                                  | 5  |
| FCC 15.203 Antenna Requirements .....                                        | 5  |
| EUT Operating Frequency .....                                                | 5  |
| Temperature And Humidity During Testing.....                                 | 5  |
| Equipment Under Test (EUT) Description .....                                 | 6  |
| Equipment Under Test .....                                                   | 6  |
| Peripheral Devices .....                                                     | 6  |
| Report of Measurements .....                                                 | 7  |
| Table 1: FCC 15.207 Six Highest Conducted Emission Levels .....              | 7  |
| Table 2: FCC 15.209 Fundamental Emission Levels .....                        | 8  |
| Table 3: FCC 15.209 Six Highest Radiated Emission Levels: 9kHz - 30MHz ..... | 9  |
| Table 4: FCC 15.209 Highest Radiated Emission Levels: 30-1000MHz .....       | 10 |
| RSS-210 Occupied Bandwidth Plot.....                                         | 11 |
| EUT Setup.....                                                               | 12 |
| Correction Factors.....                                                      | 12 |
| Table A: Sample Calculations .....                                           | 12 |
| Test Instrumentation and Analyzer Settings .....                             | 13 |
| Spectrum Analyzer Detector Functions .....                                   | 13 |
| Peak.....                                                                    | 13 |
| Quasi-Peak.....                                                              | 13 |
| Average.....                                                                 | 13 |
| EUT Testing.....                                                             | 14 |
| Mains Conducted Emissions.....                                               | 14 |
| Radiated Emissions.....                                                      | 14 |
| Appendix A: Test Setup Photographs.....                                      | 15 |
| Photograph Showing Mains Conducted Emissions .....                           | 16 |
| Photograph Showing Radiated Emissions .....                                  | 17 |
| Photograph Showing Radiated Emissions .....                                  | 18 |
| Appendix B: Test Equipment List .....                                        | 19 |
| Appendix C: Measurement Data Sheets .....                                    | 20 |
| Appendix D: FCC Part 15 Subpart B Sections 15.107 & 15.109 and ICES-003..... | 34 |
| Equipment Under Test (EUT) Description .....                                 | 35 |
| Equipment Under Test .....                                                   | 35 |
| Peripheral Devices .....                                                     | 35 |
| Report of Measurements .....                                                 | 36 |
| Conducted Emissions.....                                                     | 36 |
| Radiated Emissions.....                                                      | 50 |

## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** June 22-23, 2005 and August 13 – September 3, 2008

**DATE OF RECEIPT:** June 22, 2005

**MANUFACTURER:** International Electronics Inc.  
427 Turnpike Street  
Canton, MA 02021

**REPRESENTATIVE:** Chris Hentschel

**TEST LOCATION:** CKC Laboratories, Inc.  
5046 Sierra Pines Drive, Mariposa, CA 95338  
1120 Fulton Place, Fremont, CA 94539

**TEST METHOD:** ANSI C63.4 (2003), RSS-210 Issue 7, RSS GEN  
Issue 2 and ICES-003 (2004)

**PURPOSE OF TEST:** **Original Report:** To demonstrate the testing of the Proximity Card Reader, ES Enrollment Station with the requirements for FCC Part 15 Subpart C Sections 15.207 & 15.209 devices.  
**Addendum A:** To add testing of the added digital circuitry (USB port) to FCC 15.109 B, 15.107 B and ICES-003 specifications. A different power supply was required in order to pass these requirements. This added circuitry and power supply change would not affect the emissions from the wireless portion of the EUT.

## SUMMARY OF RESULTS

| Test                | Specification/Method                                            | Results |
|---------------------|-----------------------------------------------------------------|---------|
| Conducted Emissions | FCC Part 15 Subpart C 15.207                                    | Pass    |
| Radiated Emissions  | FCC Part 15 Subpart C 15.209                                    | Pass    |
| Occupied Bandwidth  | RSS-210 Issue 7/RSS GEN Issue 2                                 | Pass    |
| Conducted Emissions | FCC Part 15 Subpart B 15.107 Class B<br>ICES-003 (2004) Class B | Pass    |
| Radiated Emissions  | FCC Part 15 Subpart B 15.109 Class B<br>ICES-003 (2004) Class B | Pass    |
| Site File No.       | FCC 784962<br>IC 3082-D                                         | Pass    |

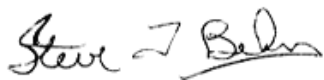
## CONDITIONS DURING TESTING

Wurth 742 711 12 ferrite on power input wire next to EUT for IC radiated emissions testing.

## APPROVALS

Steve Behm, Director of Engineering Services

### QUALITY ASSURANCE:



Steve Behm, Director of Engineering Services



Mike Wilkinson, Senior EMC Engineer/Lab Manager



Amrinder Brar, EMC Engineer/Lab Manager

### TEST PERSONNEL:



Randy Clark, EMC Engineer



Art Rice, Senior EMC Engineer



Norberto Gamez Jr., Test Technologist

### **FCC 15.31(e) Voltage Variations**

Voltage variations on AC mains were performed in accordance with 15.31(e). There was no detectable change in the RF output of the EUT at  $\pm 15\%$  of nominal AC mains input voltage.

### **FCC 15.33(a) Frequency Ranges Tested**

15.207 Conducted Emissions: 150kHz – 30MHz

15.209 Radiated Emissions: 9kHz – 1000MHz

| <b>FCC SECTION 15.35:<br/>ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE</b> |                     |                  |                   |
|-------------------------------------------------------------------------------|---------------------|------------------|-------------------|
| TEST                                                                          | BEGINNING FREQUENCY | ENDING FREQUENCY | BANDWIDTH SETTING |
| CONDUCTED EMISSIONS                                                           | 150 kHz             | 30 MHz           | 9 kHz             |
| RADIATED EMISSIONS                                                            | 9 kHz               | 150 kHz          | 200 Hz            |
| RADIATED EMISSIONS                                                            | 150 kHz             | 30 MHz           | 9 kHz             |
| RADIATED EMISSIONS                                                            | 30 MHz              | 1000 MHz         | 120 kHz           |

### **FCC 15.203 Antenna Requirements**

The antenna is non-removable; therefore the EUT complies with Section 15.203 of the FCC rules.

### **EUT Operating Frequency**

The EUT was operating at 125kHz.

### **Temperature And Humidity During Testing**

The temperature during testing was within  $+15^{\circ}\text{C}$  and  $+35^{\circ}\text{C}$ .

The relative humidity was between 20% and 75%.

## **EQUIPMENT UNDER TEST (EUT) DESCRIPTION**

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

## **EQUIPMENT UNDER TEST**

### **Proximity Card Reader**

Manuf: IEI  
Model: ES Enrollment Station  
Serial: 062205-001  
FCC ID: pending

### **EUT Power Supply**

Manuf: TRIAD  
Model: WDU12-300  
Serial: 1004K  
FCC ID: NA

## **PERIPHERAL DEVICES**

The EUT was tested with the following peripheral device(s):

### **Printer**

Manuf: HP  
Model: C6410A  
Serial: MY97G1924Z

### **Printer Power Supply**

Manuf: Astec Power Inc.  
Model: C6409-60014  
Serial: 9912 R00

### **Host PC**

Manuf: Toshiba  
Model: PS426U-0M151  
Serial: 50683063U

### **Host PC Power Supply**

Manuf: Toshiba  
Model: PA3201U-1ACA  
Serial: 2XE11354

## REPORT OF MEASUREMENTS

The following tables report the worst case emissions levels recorded during the tests performed on the EUT. All readings taken were peak readings unless otherwise stated. The data sheets from which the emissions tables were compiled are contained in Appendix C.

| Table 1: FCC 15.207 Six Highest Conducted Emission Levels |                          |                    |           |             |  |                              |                       |              |       |
|-----------------------------------------------------------|--------------------------|--------------------|-----------|-------------|--|------------------------------|-----------------------|--------------|-------|
| FREQUENCY<br>MHz                                          | METER<br>READING<br>dBμV | CORRECTION FACTORS |           |             |  | CORRECTED<br>READING<br>dBμV | SPEC<br>LIMIT<br>dBμV | MARGIN<br>dB | NOTES |
|                                                           |                          | Lisn<br>dB         | HPF<br>dB | Cable<br>dB |  |                              |                       |              |       |
| 0.333983                                                  | 44.5                     | 0.3                | 0.1       | 0.1         |  | 45.0                         | 49.4                  | -4.4         | W     |
| 0.333983                                                  | 44.3                     | 0.2                | 0.1       | 0.1         |  | 44.7                         | 49.4                  | -4.7         | B     |
| 0.579779                                                  | 40.2                     | 0.1                | 0.3       | 0.1         |  | 40.7                         | 46.0                  | -5.3         | B     |
| 0.661226                                                  | 40.6                     | 0.3                | 0.3       | 0.1         |  | 41.3                         | 46.0                  | -4.7         | W     |
| 0.664862                                                  | 40.4                     | 0.2                | 0.3       | 0.1         |  | 41.0                         | 46.0                  | -5.0         | B     |
| 0.746309                                                  | 40.8                     | 0.2                | 0.3       | 0.1         |  | 41.4                         | 46.0                  | -4.6         | B     |

Test Method: ANSI C63.4 (2003)  
Spec Limit: FCC Part 15 Subpart C Section 15.207

NOTES: B = Black Lead  
W = White Lead

COMMENTS: EUT is an enrollment station for RFID tags operating on 125kHz. The device is a computer peripheral which is attached to a host computer. Host computer has all ports filled. EUT orientation tested on three orthogonal axes to determine maximized emissions. EUT power is provided via AC adapter. Serial communication from host PC to EUT is established via customer provided program entitled "Prox Enrollment Station Demo v0.1," pes\_demo.exe. Frequency Range Investigated: 150kHz to 30 MHz.

**Table 2: FCC 15.209 Fundamental Emission Levels**

| FREQUENCY<br>MHz | METER<br>READING<br>dBμV | CORRECTION FACTORS |  |             |            | CORRECTED<br>READING<br>dBμV/m | SPEC<br>LIMIT<br>dBμV/m | MARGIN<br>DB | NOTES |
|------------------|--------------------------|--------------------|--|-------------|------------|--------------------------------|-------------------------|--------------|-------|
|                  |                          | Ant<br>dB          |  | Cable<br>dB | Corr<br>dB |                                |                         |              |       |
| 0.126            | 67.3                     | 10.2               |  | 0.1         | -80.0      | -2.4                           | 25.6                    | -28.0        | V     |
| 0.126            | 66.1                     | 10.2               |  | 0.1         | -80.0      | -3.6                           | 25.6                    | -29.2        | V     |
| 0.126            | 63.3                     | 10.2               |  | 0.1         | -80.0      | -6.4                           | 25.6                    | -32.0        | H     |
| 0.126            | 63.2                     | 10.2               |  | 0.1         | -80.0      | -6.5                           | 25.6                    | -32.1        | H     |
| 0.126            | 51.9                     | 10.2               |  | 0.1         | -80.0      | -17.8                          | 25.6                    | -43.4        | V     |
| 0.126            | 37.0                     | 10.2               |  | 0.1         | -80.0      | -32.7                          | 25.6                    | -58.3        | H     |

Test Method: ANSI C63.4 (2003)  
Spec Limit: FCC Part 15 Subpart C Sections 15.209  
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization  
V = Vertical Polarization

COMMENTS: EUT is an enrollment station for RFID tags operating on 125kHz. The device is a computer peripheral which is attached to a host computer. Host computer has all ports filled. EUT orientation tested on three orthogonal axes to determine maximized emissions. EUT power is provided via AC adapter. Serial communication from host PC to EUT is established via customer provided program entitled "Prox Enrollment Station Demo v0.1," pes\_demo.exe. Frequency Range Investigated: Carrier. Test distance correction factor used in accordance with 15.31 to correct test data at 3 meters for comparison to the limit at 300 meters for compliance to 15.209. Voltage variations on AC mains were performed in accordance with 15.31(e). There was no detectable change in the RF output of the EUT at ±15% of nominal AC mains input voltage.

**Table 3: FCC 15.209 Six Highest Radiated Emission Levels: 9kHz - 30MHz**

| FREQUENCY<br>MHz | METER<br>READING<br>dB $\mu$ V | CORRECTION FACTORS |  |             |            | CORRECTED<br>READING<br>dB $\mu$ V/m | SPEC<br>LIMIT<br>dB $\mu$ V/m | MARGIN<br>DB | NOTES |
|------------------|--------------------------------|--------------------|--|-------------|------------|--------------------------------------|-------------------------------|--------------|-------|
|                  |                                | Ant<br>dB          |  | Cable<br>dB | Corr<br>dB |                                      |                               |              |       |
| 1.565            | 35.8                           | 10.2               |  | 0.4         | -40.0      | 6.4                                  | 23.6                          | -17.2        | H     |
| 1.648            | 33.8                           | 10.2               |  | 0.4         | -40.0      | 4.4                                  | 23.2                          | -18.8        | H     |
| 5.442            | 36.7                           | 9.9                |  | 0.5         | -40.0      | 7.1                                  | 29.5                          | -22.4        | H     |
| 5.608            | 37.0                           | 9.9                |  | 0.5         | -40.0      | 7.4                                  | 29.5                          | -22.1        | H     |
| 5.689            | 36.9                           | 9.9                |  | 0.5         | -40.0      | 7.3                                  | 29.5                          | -22.2        | H     |
| 9.976            | 37.1                           | 9.8                |  | 0.7         | -40.0      | 7.6                                  | 29.5                          | -21.9        | H     |

Test Method: ANSI C63.4 (2003)  
Spec Limit: FCC Part 15 Subpart C Section 15.209  
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization

COMMENTS: EUT is an enrollment station for RFID tags operating on 125kHz. The device is a computer peripheral which is attached to a host computer. Host computer has all ports filled. EUT orientation tested on three orthogonal axes to determine maximized emissions. EUT power is provided via AC adapter. Serial communication from host PC to EUT is established via customer provided program entitled "Prox Enrollment Station Demo v0.1," pes\_demo.exe. Frequency Range Investigated: 9kHz to 30MHz. Test distance correction factor used in accordance with 15.31 to correct test data at 3 meters for comparison to the limit at 30 and 300 meters as appropriate for compliance to 15.209.

**Table 4: FCC 15.209 Highest Radiated Emission Levels: 30-1000MHz**

| FREQUENCY<br>MHz | METER<br>READING<br>dB $\mu$ V | CORRECTION FACTORS |           |             |  | CORRECTED<br>READING<br>dB $\mu$ V/m | SPEC<br>LIMIT<br>dB $\mu$ V/m | MARGIN<br>DB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-------------|--|--------------------------------------|-------------------------------|--------------|-------|
|                  |                                | Ant<br>dB          | Amp<br>dB | Cable<br>dB |  |                                      |                               |              |       |
| 110.593          | 50.9                           | 10.3               | -26.8     | 2.4         |  | 36.8                                 | 43.5                          | -6.7         | V     |
| 177.720          | 51.6                           | 8.3                | -26.7     | 3.0         |  | 36.2                                 | 43.5                          | -7.3         | V     |
| 180.780          | 51.9                           | 8.2                | -26.7     | 3.1         |  | 36.5                                 | 43.5                          | -7.0         | V     |
| 181.380          | 56.4                           | 8.2                | -26.6     | 3.1         |  | 41.1                                 | 43.5                          | -2.4         | HQ    |
| 185.220          | 49.6                           | 8.2                | -26.6     | 3.1         |  | 34.3                                 | 43.5                          | -9.2         | V     |

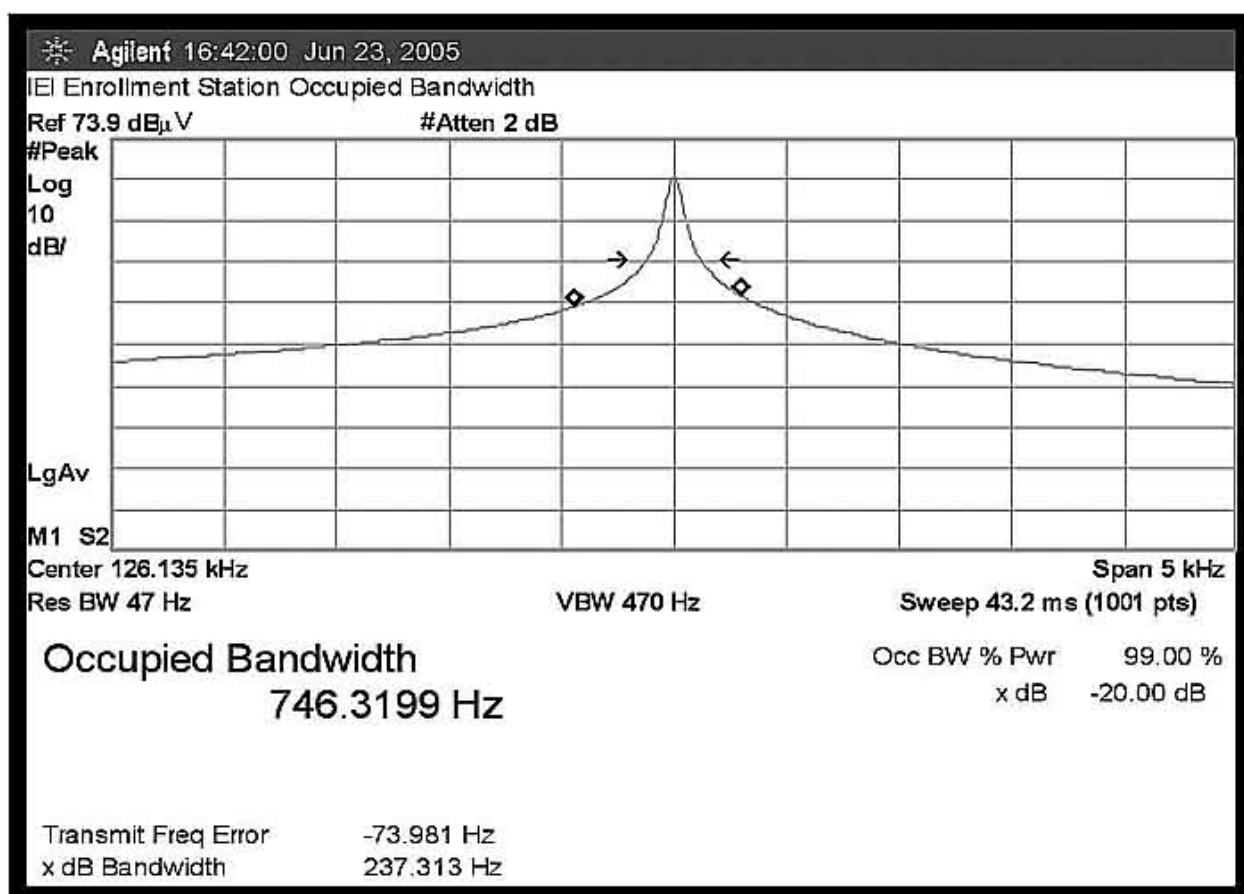
Test Method: ANSI C63.4 (2003)  
Spec Limit: FCC Part 15 Subpart C Section 15.209  
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization  
V = Vertical Polarization  
Q = Quasi Peak Reading

COMMENTS: EUT is an enrollment station for RFID tags operating on 125kHz. The device is a computer peripheral which is attached to a host computer. Host computer has all ports filled. EUT orientation tested on three orthogonal axes to determine maximized emissions. EUT power is provided via AC adapter. Serial communication from host PC to EUT is established via customer provided program entitled "Prox Enrollment Station Demo v0.1," pes\_demo.exe. Frequency Range Investigated: 30-1000 MHz.

## RSS-210 OCCUPIED BANDWIDTH PLOT

**Test Conditions:** EUT is an enrollment station for RFID tags operating on 125kHz. The device is a computer peripheral which is attached to a host computer. Host computer has all ports filled. EUT power is provided via AC adapter. Serial communication from host PC to EUT is established via customer provided program entitled "Prox Enrollment Station Demo v0.1," pes\_demo.exe. EUT tested with the worst case orientation.



## EUT SETUP

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the photographs in Appendix A. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables. The corrected data was then compared to the applicable emission limits to determine compliance.

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available I/O ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. I/O cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The radiated and conducted emissions data of the EUT was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in Table A.

Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

## CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dB $\mu$ V/m, the spectrum analyzer reading in dB $\mu$ V was corrected by using the following formula in Table A. This reading was then compared to the applicable specification limit to determine compliance.

| TABLE A: SAMPLE CALCULATIONS |                     |                |
|------------------------------|---------------------|----------------|
|                              | Meter reading       | (dB $\mu$ V)   |
| +                            | Antenna Factor      | (dB)           |
| +                            | Cable Loss          | (dB)           |
| -                            | Distance Correction | (dB)           |
| -                            | Preamplifier Gain   | (dB)           |
| =                            | Corrected Reading   | (dB $\mu$ V/m) |

## **TEST INSTRUMENTATION AND ANALYZER SETTINGS**

The test instrumentation and equipment listed in Appendix B were used to collect both the radiated and conducted emissions data. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. For radiated measurements below 300 MHz, the biconical antenna was used. For frequencies from 300 to 1000 MHz, the log periodic antenna was used. For frequencies from 30 to 1000 MHz, the biconilog antenna was used. The horn antenna was used for frequencies above 1000 MHz. Conducted emissions tests required the use of the FCC type LISNs.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. For conducted emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. A 10 dB external attenuator was also used during conducted tests, with internal offset correction in the analyzer. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dB $\mu$ V, and a vertical scale of 10 dB per division.

## **SPECTRUM ANALYZER DETECTOR FUNCTIONS**

The notes that accompany the measurements contained in the Tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

### **Peak**

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

### **Quasi-Peak**

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

### **Average**

For certain frequencies, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.

## EUT TESTING

### Mains Conducted Emissions

During conducted emissions testing, the EUT was located on a wooden table measuring approximately 80 cm high, 1 meter deep, and 1.5 meters in length. One wall of the room where the EUT was located has a minimum 2 meter by 2 meter conductive plane. The EUT was mounted on the wooden table 40 cm away from the conductive plane, and 80 cm from any other conductive surface.

The vertical metal plane used for conducted emissions was grounded to the earth. Power to the EUT was provided through a LISN. The LISN was grounded to the ground plane. All other objects were kept a minimum of 80 cm away from the EUT during the conducted test.

The LISNs used were 50  $\mu\text{H}$  /  $\pm 50$  ohms. Above 150 kHz, a 0.15  $\mu\text{F}$  series capacitor was added in-line prior to connecting the analyzer to restore the proper impedance for the range. A 30 to 50 second sweep time was used for automated measurements in the frequency bands of 150 kHz to 500 kHz, and 500 kHz to 30 MHz. All readings within 20 dB of the limit were recorded, and those within 6 dB of the limit were examined with additional measurements using a slower sweep time.

### Radiated Emissions

The EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters.

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. The frequency range of 30 MHz to 1000 MHz was scanned with the biconilog antenna located about 1.5 meter above the ground plane in the vertical polarity. During this scan, the turntable was rotated and all peaks at or near the limit were recorded. A scan of the FM band from 88 to 110 MHz was then made using a reduced resolution bandwidth and frequency span. The biconilog antenna was changed to the horizontal polarity and the above steps were repeated. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

A thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable and raising and lowering the antenna from one to four meters as needed. The test engineer maximized the readings with respect to the table rotation, antenna height, and configuration of EUT. Maximizing of the EUT was achieved by monitoring the spectrum analyzer on a closed circuit television monitor.

**APPENDIX A**

**TEST SETUP PHOTOGRAPHS**

**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



Mains Conducted Emissions - Front View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Radiated Emissions - Front View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Radiated Emissions - Back View

## APPENDIX B

### TEST EQUIPMENT LIST

#### 15.207

| Function                | S/N          | Calibration Date | Cal Due Date | Asset # |
|-------------------------|--------------|------------------|--------------|---------|
| Agilent E4446A SA       | US44300407   | 01/12/2005       | 01/12/2007   | 02660   |
| 150kHz HP Filter TTE    | G7754        | 04/20/2004       | 04/20/2006   | 02608   |
| LISN, 8028-50-TS-24-BNC | 8379276, 280 | 06/03/2005       | 06/03/2007   | 1248    |

#### 15.209 Fundamental, 9kHz-30MHz, and Occupied Bandwidth

| Function          | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------|------------|------------------|--------------|---------|
| Agilent E4446A SA | US44300407 | 01/12/2005       | 01/12/2007   | 02660   |
| EMCO Loop Antenna | 1074       | 05/13/2005       | 05/13/2007   | 00226   |

#### 15.209 30-1000MHz

| Function             | S/N        | Calibration Date | Cal Due Date | Asset # |
|----------------------|------------|------------------|--------------|---------|
| Agilent E4446A SA    | US44300407 | 01/12/2005       | 01/12/2007   | 02660   |
| HP 8447D Preamp      | 1937A02604 | 03/11/2005       | 03/11/2007   | 00099   |
| Chase CBL6111C Bilog | 2456       | 06/26/2003       | 06/26/2005   | 01991   |

**APPENDIX C:**  
**MEASUREMENT DATA SHEETS**

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **IEI**  
 Specification: **FCC 15.207 - AVE**  
 Work Order #: **83756**  
 Test Type: **Conducted Emissions**  
 Equipment: **Proximity Card Reader**  
 Manufacturer: **IEI**  
 Model: **Enrollment Station**  
 S/N: **062205-001**

Date: 06/23/2005  
 Time: 16:00:55  
 Sequence#: 6  
 Tested By: Randal Clark  
 120V 60Hz

**Equipment Under Test (\* = EUT):**

| Function               | Manufacturer | Model #            | S/N        |
|------------------------|--------------|--------------------|------------|
| Proximity Card Reader* | IEI          | Enrollment Station | 062205-001 |
| EUT Power Supply       | TRIAD        | WDU12-300          | 1004K      |

**Support Devices:**

| Function             | Manufacturer     | Model #      | S/N        |
|----------------------|------------------|--------------|------------|
| Printer Power Supply | Astec Power Inc. | C6409-60014  | 9912 R00   |
| Printer              | HP               | C6410A       | MY97G1924Z |
| Host PC Power Supply | Toshiba          | PA3201U-1ACA | 2XE11354   |
| Host PC              | Toshiba          | PS426U-0M151 | 50683063U  |

**Test Conditions / Notes:**

EUT is an enrollment station for RFID tags operating on 125kHz. The device is a computer peripheral which is attached to a host computer. Host computer has all ports filled. EUT orientation tested on three orthogonal axes to determine maximized emissions. EUT power is provided via AC adapter. Serial communication from host PC to EUT is established via customer provided program entitled "Prox Enrollment Station Demo v0.1," pes\_demo.exe. Frequency Range Investigated: 150kHz to 30 MHz.

**Transducer Legend:**

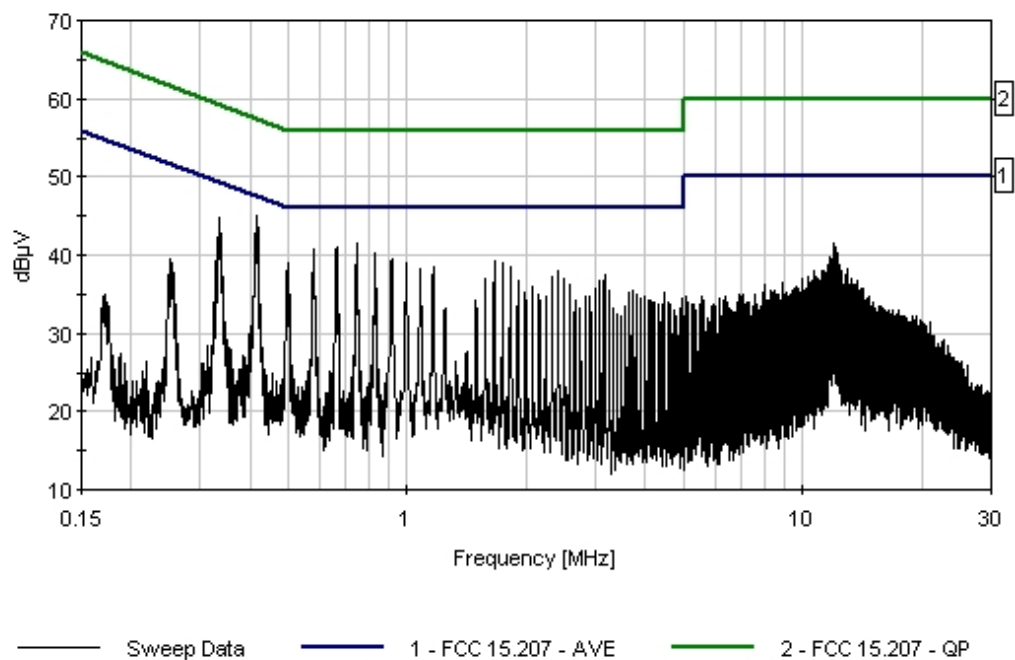
|                           |                               |
|---------------------------|-------------------------------|
| T1=HP Filter AN02608      | T2=LISN Insertion Loss s/n280 |
| T3=Cable - Internal + cab |                               |

**Measurement Data:** Reading listed by margin. Test Lead: Black

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | Dist<br>dB | Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|------------|-------|--------------|--------------|--------------|--------------|
| 1 | 746.309k    | 40.8         | +0.3     | +0.2     | +0.1     | +0.0       |       | 41.4         | 46.0         | -4.6         | Black        |
| 2 | 333.983k    | 44.3         | +0.1     | +0.2     | +0.1     | +0.0       |       | 44.7         | 49.4         | -4.7         | Black        |
| 3 | 664.862k    | 40.4         | +0.3     | +0.2     | +0.1     | +0.0       |       | 41.0         | 46.0         | -5.0         | Black        |
| 4 | 579.779k    | 40.2         | +0.2     | +0.2     | +0.1     | +0.0       |       | 40.7         | 46.0         | -5.3         | Black        |
| 5 | 830.665k    | 39.7         | +0.3     | +0.2     | +0.1     | +0.0       |       | 40.3         | 46.0         | -5.7         | Black        |
| 6 | 582.688k    | 39.2         | +0.2     | +0.2     | +0.1     | +0.0       |       | 39.7         | 46.0         | -6.3         | Black        |
| 7 | 915.479k    | 38.9         | +0.2     | +0.2     | +0.2     | +0.0       |       | 39.5         | 46.0         | -6.5         | Black        |
| 8 | 1.660M      | 38.7         | +0.1     | +0.3     | +0.2     | +0.0       |       | 39.3         | 46.0         | -6.7         | Black        |

|     |          |      |      |      |      |      |      |      |       |       |
|-----|----------|------|------|------|------|------|------|------|-------|-------|
| 9   | 996.280k | 38.3 | +0.2 | +0.3 | +0.2 | +0.0 | 39.0 | 46.0 | -7.0  | Black |
| 10  | 498.332k | 38.3 | +0.2 | +0.3 | +0.1 | +0.0 | 38.9 | 46.0 | -7.1  | Black |
| 11  | 1.745M   | 38.3 | +0.1 | +0.3 | +0.2 | +0.0 | 38.9 | 46.0 | -7.1  | Black |
| 12  | 1.162M   | 37.8 | +0.2 | +0.3 | +0.2 | +0.0 | 38.5 | 46.0 | -7.5  | Black |
| 13  | 1.826M   | 37.9 | +0.1 | +0.3 | +0.2 | +0.0 | 38.5 | 46.0 | -7.5  | Black |
| 14  | 414.720k | 32.5 | +0.2 | +0.3 | +0.1 | +0.0 | 33.1 | 47.6 | -14.5 | Black |
| Ave |          |      |      |      |      |      |      |      |       |       |
| ^   | 416.157k | 44.4 | +0.2 | +0.3 | +0.1 | +0.0 | 45.0 | 47.5 | -2.5  | Black |
| ^   | 419.066k | 42.9 | +0.2 | +0.3 | +0.1 | +0.0 | 43.5 | 47.5 | -4.0  | Black |

CKC Laboratories Date: 06/23/2005 Time: 16:00:55 IEIWO#: 83756  
FCC 15.207 - AVE Test Lead: Black 120V 60Hz Sequence#: 6  
IEI M/N Enrollment Station



Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **IEI**  
 Specification: **FCC 15.207 - AVE**  
 Work Order #: **83756**  
 Test Type: **Conducted Emissions**  
 Equipment: **Proximity Card Reader**  
 Manufacturer: **IEI**  
 Model: **Enrollment Station**  
 S/N: **062205-001**

Date: 06/23/2005  
 Time: 16:02:49  
 Sequence#: 7  
 Tested By: Randal Clark  
 120V 60Hz

**Equipment Under Test (\* = EUT):**

| Function               | Manufacturer | Model #            | S/N        |
|------------------------|--------------|--------------------|------------|
| Proximity Card Reader* | IEI          | Enrollment Station | 062205-001 |
| EUT Power Supply       | TRIAD        | WDU12-300          | 1004K      |

**Support Devices:**

| Function             | Manufacturer     | Model #      | S/N        |
|----------------------|------------------|--------------|------------|
| Printer Power Supply | Astec Power Inc. | C6409-60014  | 9912 R00   |
| Printer              | HP               | C6410A       | MY97G1924Z |
| Host PC Power Supply | Toshiba          | PA3201U-1ACA | 2XE11354   |
| Host PC              | Toshiba          | PS426U-0M151 | 50683063U  |

**Test Conditions / Notes:**

EUT is an enrollment station for RFID tags operating on 125kHz. The device is a computer peripheral which is attached to a host computer. Host computer has all ports filled. EUT orientation tested on three orthogonal axes to determine maximized emissions. EUT power is provided via AC adapter. Serial communication from host PC to EUT is established via customer provided program entitled "Prox Enrollment Station Demo v0.1," pes\_demo.exe. Frequency Range Investigated: 150kHz to 30 MHz.

**Transducer Legend:**

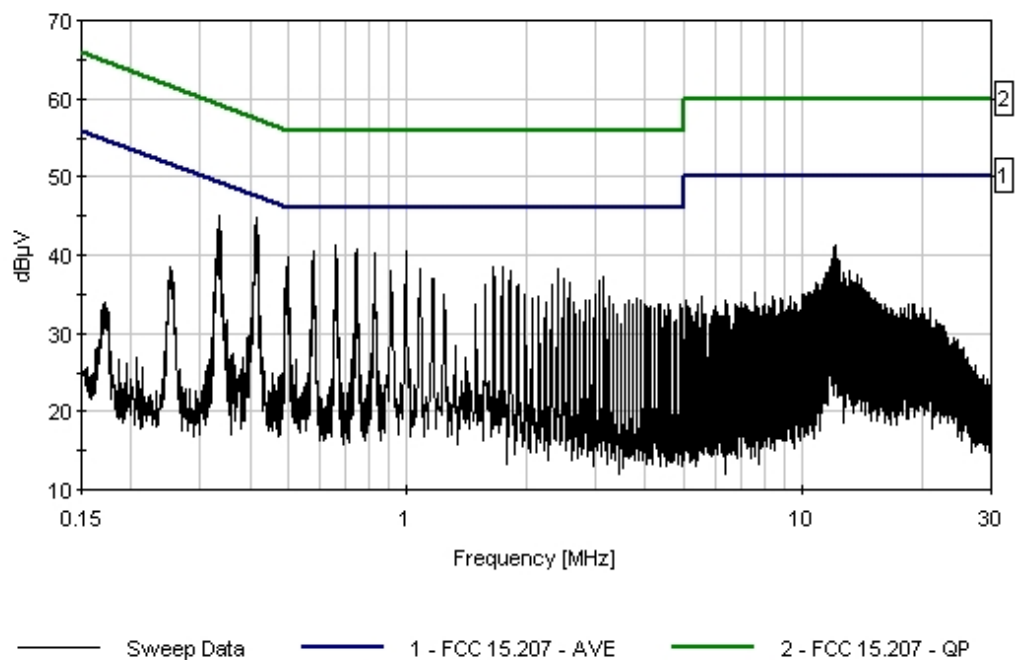
|                           |                               |
|---------------------------|-------------------------------|
| T1=HP Filter AN02608      | T2=LISN Insertion Loss s/n276 |
| T3=Cable - Internal + cab |                               |

**Measurement Data:** Reading listed by margin. Test Lead: White

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | Dist<br>dB | Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|------------|-------|--------------|--------------|--------------|--------------|
| 1 | 333.983k    | 44.5         | +0.1     | +0.3     | +0.1     | +0.0       |       | 45.0         | 49.4         | -4.4         | White        |
| 2 | 661.226k    | 40.6         | +0.3     | +0.3     | +0.1     | +0.0       |       | 41.3         | 46.0         | -4.7         | White        |
| 3 | 743.400k    | 40.0         | +0.3     | +0.3     | +0.1     | +0.0       |       | 40.7         | 46.0         | -5.3         | White        |
| 4 | 579.779k    | 40.0         | +0.2     | +0.3     | +0.1     | +0.0       |       | 40.6         | 46.0         | -5.4         | White        |
| 5 | 996.280k    | 39.8         | +0.2     | +0.3     | +0.2     | +0.0       |       | 40.5         | 46.0         | -5.5         | White        |
| 6 | 827.756k    | 39.6         | +0.3     | +0.2     | +0.1     | +0.0       |       | 40.2         | 46.0         | -5.8         | White        |
| 7 | 331.074k    | 42.9         | +0.1     | +0.3     | +0.1     | +0.0       |       | 43.4         | 49.4         | -6.0         | White        |
| 8 | 336.892k    | 42.5         | +0.1     | +0.3     | +0.1     | +0.0       |       | 43.0         | 49.3         | -6.3         | White        |

|     |          |      |      |      |      |      |      |      |       |       |
|-----|----------|------|------|------|------|------|------|------|-------|-------|
| 9   | 497.605k | 39.1 | +0.2 | +0.3 | +0.1 | +0.0 | 39.7 | 46.0 | -6.3  | White |
| 10  | 1.655M   | 37.9 | +0.1 | +0.4 | +0.2 | +0.0 | 38.6 | 46.0 | -7.4  | White |
| 11  | 1.741M   | 37.9 | +0.1 | +0.4 | +0.2 | +0.0 | 38.6 | 46.0 | -7.4  | White |
| 12  | 494.696k | 37.8 | +0.2 | +0.3 | +0.1 | +0.0 | 38.4 | 46.1 | -7.7  | White |
| 13  | 2.400M   | 37.4 | +0.1 | +0.4 | +0.3 | +0.0 | 38.2 | 46.0 | -7.8  | White |
| 14  | 413.710k | 32.4 | +0.2 | +0.4 | +0.1 | +0.0 | 33.1 | 47.6 | -14.5 | White |
| Ave |          |      |      |      |      |      |      |      |       |       |
| ^   | 415.430k | 44.1 | +0.2 | +0.4 | +0.1 | +0.0 | 44.8 | 47.5 | -2.7  | White |
| ^   | 413.249k | 43.1 | +0.2 | +0.4 | +0.1 | +0.0 | 43.8 | 47.6 | -3.8  | White |

CKC Laboratories Date: 06/23/2005 Time: 16:02:49 IEIWO#: 83756  
FCC 15.207 - AVE Test Lead: White 120V 60Hz Sequence#: 7  
IEI M/N Enrollment Station



Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **IEI**  
 Specification: **FCC 15.209**  
 Work Order #: **83756**  
 Test Type: **Maximized Emissions**  
 Equipment: **Proximity Card Reader**  
 Manufacturer: **IEI**  
 Model: **Enrollment Station**  
 S/N: **062205-001**

Date: 06/23/2005  
 Time: 14:45:11  
 Sequence#: 1  
 Tested By: Randal Clark

**Equipment Under Test (\* = EUT):**

| Function               | Manufacturer | Model #            | S/N        |
|------------------------|--------------|--------------------|------------|
| Proximity Card Reader* | IEI          | Enrollment Station | 062205-001 |
| EUT Power Supply       | TRIAD        | WDU12-300          | 1004K      |

**Support Devices:**

| Function             | Manufacturer     | Model #      | S/N        |
|----------------------|------------------|--------------|------------|
| Printer Power Supply | Astec Power Inc. | C6409-60014  | 9912 R00   |
| Printer              | HP               | C6410A       | MY97G1924Z |
| Host PC Power Supply | Toshiba          | PA3201U-1ACA | 2XE11354   |
| Host PC              | Toshiba          | PS426U-0M151 | 50683063U  |

**Test Conditions / Notes:**

EUT is an enrollment station for RFID tags operating on 125kHz. The device is a computer peripheral which is attached to a host computer. Host computer has all ports filled. EUT orientation tested on three orthogonal axes to determine maximized emissions. EUT power is provided via AC adapter. Serial communication from host PC to EUT is established via customer provided program entitled "Prox Enrollment Station Demo v0.1," pes\_demo.exe. Frequency Range Investigated: Carrier. Test distance correction factor used in accordance with 15.31 to correct test data at 3 meters for comparison to the limit at 300 meters for compliance to 15.209. Voltage variations on AC mains were performed in accordance with 15.31(e). There was no detectable change in the RF output of the EUT at  $\pm 15\%$  of nominal AC mains input voltage.

**Transducer Legend:**

|                                   |                     |
|-----------------------------------|---------------------|
| T1=Mag Loop - AN 00226 - 9kHz-30M | T2=Cable - 10 Meter |
| T3=15.31 3m 40dB/Dec Correction   |                     |

**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

| # | Freq<br>MHz | Rdng<br>dB $\mu$ V | T1<br>dB | T2<br>dB | T3<br>dB | dB | Dist<br>Table | Corr<br>dB $\mu$ V/m | Spec<br>dB $\mu$ V/m | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------------|----------|----------|----------|----|---------------|----------------------|----------------------|--------------|--------------|
| 1 | 126.148k    | 67.3               | +10.2    | +0.1     | -80.0    |    | +0.0          | -2.4                 | 25.6                 | -28.0        | Vert         |
|   |             |                    |          |          |          |    |               |                      | Carrier X-Axis       |              |              |
| 2 | 126.150k    | 66.1               | +10.2    | +0.1     | -80.0    |    | +0.0          | -3.6                 | 25.6                 | -29.2        | Vert         |
|   |             |                    |          |          |          |    |               |                      | Carrier Y-Axis       |              |              |
| 3 | 126.148k    | 63.3               | +10.2    | +0.1     | -80.0    |    | +0.0          | -6.4                 | 25.6                 | -32.0        | Horiz        |
|   |             |                    |          |          |          |    |               |                      | Carrier X-Axis       |              |              |
| 4 | 126.152k    | 63.2               | +10.2    | +0.1     | -80.0    |    | +0.0          | -6.5                 | 25.6                 | -32.1        | Horiz        |
|   |             |                    |          |          |          |    |               |                      | Carrier Z-Axis       |              |              |
| 5 | 126.150k    | 51.9               | +10.2    | +0.1     | -80.0    |    | +0.0          | -17.8                | 25.6                 | -43.4        | Vert         |
|   |             |                    |          |          |          |    |               |                      | Carrier Z-Axis       |              |              |
| 6 | 126.148k    | 37.0               | +10.2    | +0.1     | -80.0    |    | +0.0          | -32.7                | 25.6                 | -58.3        | Horiz        |
|   |             |                    |          |          |          |    |               |                      | Carrier Y-Axis       |              |              |

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **IEI**  
 Specification: **FCC 15.209**  
 Work Order #: **83756**  
 Test Type: **Maximized Emissions**  
 Equipment: **Proximity Card Reader**  
 Manufacturer: **IEI**  
 Model: **Enrollment Station**  
 S/N: **062205-001**

Date: 06/23/2005  
 Time: 14:45:11  
 Sequence#: 1  
 Tested By: Randal Clark

**Equipment Under Test (\* = EUT):**

| Function               | Manufacturer | Model #            | S/N        |
|------------------------|--------------|--------------------|------------|
| Proximity Card Reader* | IEI          | Enrollment Station | 062205-001 |
| EUT Power Supply       | TRIAD        | WDU12-300          | 1004K      |

**Support Devices:**

| Function             | Manufacturer     | Model #      | S/N        |
|----------------------|------------------|--------------|------------|
| Printer Power Supply | Astec Power Inc. | C6409-60014  | 9912 R00   |
| Printer              | HP               | C6410A       | MY97G1924Z |
| Host PC Power Supply | Toshiba          | PA3201U-1ACA | 2XE11354   |
| Host PC              | Toshiba          | PS426U-0M151 | 50683063U  |

**Test Conditions / Notes:**

EUT is an enrollment station for RFID tags operating on 125kHz. The device is a computer peripheral which is attached to a host computer. Host computer has all ports filled. EUT orientation tested on three orthogonal axes to determine maximized emissions. EUT power is provided via AC adapter. Serial communication from host PC to EUT is established via customer provided program entitled "Prox Enrollment Station Demo v0.1," pes\_demo.exe. Frequency Range Investigated: 9kHz to 30MHz. Test distance correction factor used in accordance with 15.31 to correct test data at 3 meters for comparison to the limit at 30 and 300 meters as appropriate for compliance to 15.209.

**Transducer Legend:**

|                                   |                     |
|-----------------------------------|---------------------|
| T1=Mag Loop - AN 00226 - 9kHz-30M | T2=Cable - 10 Meter |
| T3=15.31 3m 40dB/Dec Correction   |                     |

**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

| # | Freq<br>MHz | Rdng<br>dB $\mu$ V | T1<br>dB | T2<br>dB | T3<br>dB |  | Dist<br>Table | Corr<br>dB $\mu$ V/m | Spec<br>dB $\mu$ V/m | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------------|----------|----------|----------|--|---------------|----------------------|----------------------|--------------|--------------|
| 1 | 1.565M      | 35.8               | +10.2    | +0.4     | -40.0    |  | +0.0          | 6.4                  | 23.6                 | -17.2        | Horiz        |
| 2 | 1.648M      | 33.8               | +10.2    | +0.4     | -40.0    |  | +0.0          | 4.4                  | 23.2                 | -18.8        | Horiz        |
| 3 | 9.976M      | 37.1               | +9.8     | +0.7     | -40.0    |  | +0.0          | 7.6                  | 29.5                 | -21.9        | Horiz        |
| 4 | 5.608M      | 37.0               | +9.9     | +0.5     | -40.0    |  | +0.0          | 7.4                  | 29.5                 | -22.1        | Horiz        |
| 5 | 5.689M      | 36.9               | +9.9     | +0.5     | -40.0    |  | +0.0          | 7.3                  | 29.5                 | -22.2        | Horiz        |
| 6 | 5.442M      | 36.7               | +9.9     | +0.5     | -40.0    |  | +0.0          | 7.1                  | 29.5                 | -22.4        | Horiz        |
| 7 | 4.701M      | 36.6               | +9.9     | +0.5     | -40.0    |  | +0.0          | 7.0                  | 29.5                 | -22.5        | Horiz        |

|    |        |      |       |      |       |      |     |      |       |       |
|----|--------|------|-------|------|-------|------|-----|------|-------|-------|
| 8  | 5.854M | 36.2 | +9.9  | +0.5 | -40.0 | +0.0 | 6.6 | 29.5 | -22.9 | Horiz |
| 9  | 5.194M | 36.0 | +9.9  | +0.5 | -40.0 | +0.0 | 6.4 | 29.5 | -23.1 | Horiz |
| 10 | 9.902M | 35.8 | +9.8  | +0.7 | -40.0 | +0.0 | 6.3 | 29.5 | -23.2 | Horiz |
| 11 | 3.791M | 35.8 | +10.0 | +0.5 | -40.0 | +0.0 | 6.3 | 29.5 | -23.2 | Horiz |
| 12 | 5.114M | 35.8 | +9.9  | +0.5 | -40.0 | +0.0 | 6.2 | 29.5 | -23.3 | Horiz |
| 13 | 1.812M | 35.7 | +10.1 | +0.4 | -40.0 | +0.0 | 6.2 | 29.5 | -23.3 | Horiz |
| 14 | 9.238M | 35.5 | +9.8  | +0.7 | -40.0 | +0.0 | 6.0 | 29.5 | -23.5 | Horiz |
| 15 | 5.525M | 35.6 | +9.9  | +0.5 | -40.0 | +0.0 | 6.0 | 29.5 | -23.5 | Horiz |
| 16 | 2.060M | 35.3 | +10.1 | +0.4 | -40.0 | +0.0 | 5.8 | 29.5 | -23.7 | Horiz |
| 17 | 1.730M | 35.2 | +10.2 | +0.4 | -40.0 | +0.0 | 5.8 | 29.5 | -23.7 | Horiz |
| 18 | 4.947M | 35.3 | +9.9  | +0.5 | -40.0 | +0.0 | 5.7 | 29.5 | -23.8 | Horiz |
| 19 | 4.532M | 35.2 | +9.9  | +0.5 | -40.0 | +0.0 | 5.6 | 29.5 | -23.9 | Horiz |
| 20 | 4.366M | 35.1 | +9.9  | +0.5 | -40.0 | +0.0 | 5.5 | 29.5 | -24.0 | Horiz |
| 21 | 4.038M | 35.0 | +10.0 | +0.5 | -40.0 | +0.0 | 5.5 | 29.5 | -24.0 | Horiz |
| 22 | 7.091M | 34.9 | +9.9  | +0.6 | -40.0 | +0.0 | 5.4 | 29.5 | -24.1 | Horiz |
| 23 | 6.842M | 34.9 | +9.9  | +0.6 | -40.0 | +0.0 | 5.4 | 29.5 | -24.1 | Horiz |
| 24 | 4.782M | 35.0 | +9.9  | +0.5 | -40.0 | +0.0 | 5.4 | 29.5 | -24.1 | Horiz |
| 25 | 2.224M | 34.9 | +10.1 | +0.4 | -40.0 | +0.0 | 5.4 | 29.5 | -24.1 | Horiz |
| 26 | 6.510M | 34.8 | +9.9  | +0.6 | -40.0 | +0.0 | 5.3 | 29.5 | -24.2 | Horiz |
| 27 | 4.615M | 34.9 | +9.9  | +0.5 | -40.0 | +0.0 | 5.3 | 29.5 | -24.2 | Horiz |
| 28 | 3.873M | 34.8 | +10.0 | +0.5 | -40.0 | +0.0 | 5.3 | 29.5 | -24.2 | Horiz |
| 29 | 6.676M | 34.7 | +9.9  | +0.6 | -40.0 | +0.0 | 5.2 | 29.5 | -24.3 | Horiz |
| 30 | 5.941M | 34.8 | +9.9  | +0.5 | -40.0 | +0.0 | 5.2 | 29.5 | -24.3 | Horiz |
| 31 | 8.989M | 34.6 | +9.8  | +0.7 | -40.0 | +0.0 | 5.1 | 29.5 | -24.4 | Horiz |
| 32 | 7.420M | 34.7 | +9.8  | +0.6 | -40.0 | +0.0 | 5.1 | 29.5 | -24.4 | Horiz |

|    |         |      |       |      |       |      |     |      |       |       |
|----|---------|------|-------|------|-------|------|-----|------|-------|-------|
| 33 | 2.885M  | 34.7 | +10.0 | +0.4 | -40.0 | +0.0 | 5.1 | 29.5 | -24.4 | Horiz |
| 34 | 6.759M  | 34.5 | +9.9  | +0.6 | -40.0 | +0.0 | 5.0 | 29.5 | -24.5 | Horiz |
| 35 | 4.865M  | 34.6 | +9.9  | +0.5 | -40.0 | +0.0 | 5.0 | 29.5 | -24.5 | Horiz |
| 36 | 4.450M  | 34.6 | +9.9  | +0.5 | -40.0 | +0.0 | 5.0 | 29.5 | -24.5 | Horiz |
| 37 | 4.284M  | 34.6 | +9.9  | +0.5 | -40.0 | +0.0 | 5.0 | 29.5 | -24.5 | Horiz |
| 38 | 4.121M  | 34.6 | +9.9  | +0.5 | -40.0 | +0.0 | 5.0 | 29.5 | -24.5 | Horiz |
| 39 | 9.567M  | 34.4 | +9.8  | +0.7 | -40.0 | +0.0 | 4.9 | 29.5 | -24.6 | Horiz |
| 40 | 8.741M  | 34.4 | +9.8  | +0.7 | -40.0 | +0.0 | 4.9 | 29.5 | -24.6 | Horiz |
| 41 | 7.914M  | 34.5 | +9.8  | +0.6 | -40.0 | +0.0 | 4.9 | 29.5 | -24.6 | Horiz |
| 42 | 7.008M  | 34.4 | +9.9  | +0.6 | -40.0 | +0.0 | 4.9 | 29.5 | -24.6 | Horiz |
| 43 | 6.431M  | 34.4 | +9.9  | +0.6 | -40.0 | +0.0 | 4.9 | 29.5 | -24.6 | Horiz |
| 44 | 6.348M  | 34.4 | +9.9  | +0.6 | -40.0 | +0.0 | 4.9 | 29.5 | -24.6 | Horiz |
| 45 | 5.277M  | 34.5 | +9.9  | +0.5 | -40.0 | +0.0 | 4.9 | 29.5 | -24.6 | Horiz |
| 46 | 9.072M  | 34.3 | +9.8  | +0.7 | -40.0 | +0.0 | 4.8 | 29.5 | -24.7 | Horiz |
| 47 | 8.244M  | 34.4 | +9.8  | +0.6 | -40.0 | +0.0 | 4.8 | 29.5 | -24.7 | Horiz |
| 48 | 7.257M  | 34.3 | +9.9  | +0.6 | -40.0 | +0.0 | 4.8 | 29.5 | -24.7 | Horiz |
| 49 | 5.030M  | 34.4 | +9.9  | +0.5 | -40.0 | +0.0 | 4.8 | 29.5 | -24.7 | Horiz |
| 50 | 4.203M  | 34.4 | +9.9  | +0.5 | -40.0 | +0.0 | 4.8 | 29.5 | -24.7 | Horiz |
| 51 | 3.954M  | 34.3 | +10.0 | +0.5 | -40.0 | +0.0 | 4.8 | 29.5 | -24.7 | Horiz |
| 52 | 2.391M  | 34.3 | +10.1 | +0.4 | -40.0 | +0.0 | 4.8 | 29.5 | -24.7 | Horiz |
| 53 | 2.307M  | 34.3 | +10.1 | +0.4 | -40.0 | +0.0 | 4.8 | 29.5 | -24.7 | Horiz |
| 54 | 11.387M | 34.3 | +9.7  | +0.7 | -40.0 | +0.0 | 4.7 | 29.5 | -24.8 | Horiz |
| 55 | 2.635M  | 34.3 | +10.0 | +0.4 | -40.0 | +0.0 | 4.7 | 29.5 | -24.8 | Horiz |
| 56 | 2.143M  | 34.2 | +10.1 | +0.4 | -40.0 | +0.0 | 4.7 | 29.5 | -24.8 | Horiz |
| 57 | 11.304M | 34.2 | +9.7  | +0.7 | -40.0 | +0.0 | 4.6 | 29.5 | -24.9 | Horiz |

|    |         |      |       |      |       |      |     |      |       |       |
|----|---------|------|-------|------|-------|------|-----|------|-------|-------|
| 58 | 9.320M  | 34.1 | +9.8  | +0.7 | -40.0 | +0.0 | 4.6 | 29.5 | -24.9 | Horiz |
| 59 | 7.340M  | 34.1 | +9.9  | +0.6 | -40.0 | +0.0 | 4.6 | 29.5 | -24.9 | Horiz |
| 60 | 2.554M  | 34.2 | +10.0 | +0.4 | -40.0 | +0.0 | 4.6 | 29.5 | -24.9 | Horiz |
| 61 | 10.225M | 34.0 | +9.8  | +0.7 | -40.0 | +0.0 | 4.5 | 29.5 | -25.0 | Horiz |
| 62 | 10.142M | 34.0 | +9.8  | +0.7 | -40.0 | +0.0 | 4.5 | 29.5 | -25.0 | Horiz |
| 63 | 7.503M  | 34.1 | +9.8  | +0.6 | -40.0 | +0.0 | 4.5 | 29.5 | -25.0 | Horiz |
| 64 | 7.174M  | 34.0 | +9.9  | +0.6 | -40.0 | +0.0 | 4.5 | 29.5 | -25.0 | Horiz |
| 65 | 6.593M  | 34.0 | +9.9  | +0.6 | -40.0 | +0.0 | 4.5 | 29.5 | -25.0 | Horiz |
| 66 | 6.265M  | 34.0 | +9.9  | +0.6 | -40.0 | +0.0 | 4.5 | 29.5 | -25.0 | Horiz |
| 67 | 5.360M  | 34.1 | +9.9  | +0.5 | -40.0 | +0.0 | 4.5 | 29.5 | -25.0 | Horiz |
| 68 | 2.471M  | 34.0 | +10.1 | +0.4 | -40.0 | +0.0 | 4.5 | 29.5 | -25.0 | Horiz |
| 69 | 1.977M  | 34.0 | +10.1 | +0.4 | -40.0 | +0.0 | 4.5 | 29.5 | -25.0 | Horiz |
| 70 | 11.470M | 34.0 | +9.7  | +0.7 | -40.0 | +0.0 | 4.4 | 29.5 | -25.1 | Horiz |
| 71 | 8.659M  | 33.9 | +9.8  | +0.7 | -40.0 | +0.0 | 4.4 | 29.5 | -25.1 | Horiz |
| 72 | 8.163M  | 34.0 | +9.8  | +0.6 | -40.0 | +0.0 | 4.4 | 29.5 | -25.1 | Horiz |
| 73 | 7.997M  | 34.0 | +9.8  | +0.6 | -40.0 | +0.0 | 4.4 | 29.5 | -25.1 | Horiz |
| 74 | 6.925M  | 33.9 | +9.9  | +0.6 | -40.0 | +0.0 | 4.4 | 29.5 | -25.1 | Horiz |
| 75 | 9.650M  | 33.8 | +9.8  | +0.7 | -40.0 | +0.0 | 4.3 | 29.5 | -25.2 | Horiz |
| 76 | 8.576M  | 33.8 | +9.8  | +0.7 | -40.0 | +0.0 | 4.3 | 29.5 | -25.2 | Horiz |
| 77 | 8.327M  | 33.9 | +9.8  | +0.6 | -40.0 | +0.0 | 4.3 | 29.5 | -25.2 | Horiz |
| 78 | 7.586M  | 33.9 | +9.8  | +0.6 | -40.0 | +0.0 | 4.3 | 29.5 | -25.2 | Horiz |
| 79 | 8.410M  | 33.7 | +9.8  | +0.7 | -40.0 | +0.0 | 4.2 | 29.5 | -25.3 | Horiz |
| 80 | 7.669M  | 33.8 | +9.8  | +0.6 | -40.0 | +0.0 | 4.2 | 29.5 | -25.3 | Horiz |
| 81 | 9.816M  | 33.6 | +9.8  | +0.7 | -40.0 | +0.0 | 4.1 | 29.5 | -25.4 | Horiz |
| 82 | 8.824M  | 33.6 | +9.8  | +0.7 | -40.0 | +0.0 | 4.1 | 29.5 | -25.4 | Horiz |

|     |         |      |       |      |       |      |     |      |       |       |
|-----|---------|------|-------|------|-------|------|-----|------|-------|-------|
| 83  | 10.474M | 33.5 | +9.8  | +0.7 | -40.0 | +0.0 | 4.0 | 29.5 | -25.5 | Horiz |
| 84  | 9.733M  | 33.5 | +9.8  | +0.7 | -40.0 | +0.0 | 4.0 | 29.5 | -25.5 | Horiz |
| 85  | 9.403M  | 33.5 | +9.8  | +0.7 | -40.0 | +0.0 | 4.0 | 29.5 | -25.5 | Horiz |
| 86  | 7.752M  | 33.6 | +9.8  | +0.6 | -40.0 | +0.0 | 4.0 | 29.5 | -25.5 | Horiz |
| 87  | 10.640M | 33.4 | +9.8  | +0.7 | -40.0 | +0.0 | 3.9 | 29.5 | -25.6 | Horiz |
| 88  | 10.308M | 33.4 | +9.8  | +0.7 | -40.0 | +0.0 | 3.9 | 29.5 | -25.6 | Horiz |
| 89  | 3.131M  | 33.5 | +10.0 | +0.4 | -40.0 | +0.0 | 3.9 | 29.5 | -25.6 | Horiz |
| 90  | 2.803M  | 33.5 | +10.0 | +0.4 | -40.0 | +0.0 | 3.9 | 29.5 | -25.6 | Horiz |
| 91  | 10.391M | 33.3 | +9.8  | +0.7 | -40.0 | +0.0 | 3.8 | 29.5 | -25.7 | Horiz |
| 92  | 10.059M | 33.3 | +9.8  | +0.7 | -40.0 | +0.0 | 3.8 | 29.5 | -25.7 | Horiz |
| 93  | 9.155M  | 33.3 | +9.8  | +0.7 | -40.0 | +0.0 | 3.8 | 29.5 | -25.7 | Horiz |
| 94  | 8.080M  | 33.4 | +9.8  | +0.6 | -40.0 | +0.0 | 3.8 | 29.5 | -25.7 | Horiz |
| 95  | 9.485M  | 33.2 | +9.8  | +0.7 | -40.0 | +0.0 | 3.7 | 29.5 | -25.8 | Horiz |
| 96  | 8.493M  | 33.1 | +9.8  | +0.7 | -40.0 | +0.0 | 3.6 | 29.5 | -25.9 | Horiz |
| 97  | 3.214M  | 33.2 | +10.0 | +0.4 | -40.0 | +0.0 | 3.6 | 29.5 | -25.9 | Horiz |
| 98  | 2.965M  | 33.1 | +10.0 | +0.4 | -40.0 | +0.0 | 3.5 | 29.5 | -26.0 | Horiz |
| 99  | 6.018M  | 32.9 | +9.9  | +0.6 | -40.0 | +0.0 | 3.4 | 29.5 | -26.1 | Horiz |
| 100 | 10.557M | 32.8 | +9.8  | +0.7 | -40.0 | +0.0 | 3.3 | 29.5 | -26.2 | Horiz |
| 101 | 10.723M | 32.8 | +9.7  | +0.7 | -40.0 | +0.0 | 3.2 | 29.5 | -26.3 | Horiz |
| 102 | 11.553M | 32.7 | +9.7  | +0.7 | -40.0 | +0.0 | 3.1 | 29.5 | -26.4 | Horiz |
| 103 | 11.221M | 32.7 | +9.7  | +0.7 | -40.0 | +0.0 | 3.1 | 29.5 | -26.4 | Horiz |
| 104 | 3.708M  | 32.6 | +10.0 | +0.5 | -40.0 | +0.0 | 3.1 | 29.5 | -26.4 | Horiz |
| 105 | 3.049M  | 32.5 | +10.0 | +0.4 | -40.0 | +0.0 | 2.9 | 29.5 | -26.6 | Horiz |
| 106 | 1.894M  | 32.4 | +10.1 | +0.4 | -40.0 | +0.0 | 2.9 | 29.5 | -26.6 | Horiz |
| 107 | 3.460M  | 32.3 | +10.0 | +0.5 | -40.0 | +0.0 | 2.8 | 29.5 | -26.7 | Horiz |

|     |         |      |       |      |       |      |     |      |       |       |
|-----|---------|------|-------|------|-------|------|-----|------|-------|-------|
| 108 | 6.184M  | 32.2 | +9.9  | +0.6 | -40.0 | +0.0 | 2.7 | 29.5 | -26.8 | Horiz |
| 109 | 2.717M  | 32.2 | +10.0 | +0.4 | -40.0 | +0.0 | 2.6 | 29.5 | -26.9 | Horiz |
| 110 | 11.138M | 32.1 | +9.7  | +0.7 | -40.0 | +0.0 | 2.5 | 29.5 | -27.0 | Horiz |
| 111 | 11.802M | 31.9 | +9.7  | +0.8 | -40.0 | +0.0 | 2.4 | 29.5 | -27.1 | Horiz |
| 112 | 10.972M | 31.9 | +9.7  | +0.7 | -40.0 | +0.0 | 2.3 | 29.5 | -27.2 | Horiz |
| 113 | 10.889M | 31.9 | +9.7  | +0.7 | -40.0 | +0.0 | 2.3 | 29.5 | -27.2 | Horiz |
| 114 | 10.806M | 31.9 | +9.7  | +0.7 | -40.0 | +0.0 | 2.3 | 29.5 | -27.2 | Horiz |
| 115 | 5.772M  | 31.8 | +9.9  | +0.5 | -40.0 | +0.0 | 2.2 | 29.5 | -27.3 | Horiz |
| 116 | 3.379M  | 31.7 | +10.0 | +0.5 | -40.0 | +0.0 | 2.2 | 29.5 | -27.3 | Horiz |
| 117 | 11.967M | 31.4 | +9.7  | +0.8 | -40.0 | +0.0 | 1.9 | 29.5 | -27.6 | Horiz |
| 118 | 3.542M  | 31.4 | +10.0 | +0.5 | -40.0 | +0.0 | 1.9 | 29.5 | -27.6 | Horiz |
| 119 | 12.967M | 31.4 | +9.6  | +0.8 | -40.0 | +0.0 | 1.8 | 29.5 | -27.7 | Horiz |
| 120 | 11.884M | 31.2 | +9.7  | +0.8 | -40.0 | +0.0 | 1.7 | 29.5 | -27.8 | Horiz |
| 121 | 11.719M | 31.2 | +9.7  | +0.8 | -40.0 | +0.0 | 1.7 | 29.5 | -27.8 | Horiz |
| 122 | 6.101M  | 31.2 | +9.9  | +0.6 | -40.0 | +0.0 | 1.7 | 29.5 | -27.8 | Horiz |
| 123 | 3.296M  | 31.3 | +10.0 | +0.4 | -40.0 | +0.0 | 1.7 | 29.5 | -27.8 | Horiz |
| 124 | 11.636M | 31.2 | +9.7  | +0.7 | -40.0 | +0.0 | 1.6 | 29.5 | -27.9 | Horiz |
| 125 | 3.626M  | 30.7 | +10.0 | +0.5 | -40.0 | +0.0 | 1.2 | 29.5 | -28.3 | Horiz |
| 126 | 11.055M | 30.3 | +9.7  | +0.7 | -40.0 | +0.0 | 0.7 | 29.5 | -28.8 | Horiz |
| 127 | 12.050M | 30.0 | +9.7  | +0.8 | -40.0 | +0.0 | 0.5 | 29.5 | -29.0 | Horiz |
| 128 | 12.384M | 30.0 | +9.6  | +0.8 | -40.0 | +0.0 | 0.4 | 29.5 | -29.1 | Horiz |
| 129 | 12.218M | 29.9 | +9.7  | +0.8 | -40.0 | +0.0 | 0.4 | 29.5 | -29.1 | Horiz |
| 130 | 12.550M | 29.8 | +9.6  | +0.8 | -40.0 | +0.0 | 0.2 | 29.5 | -29.3 | Horiz |
| 131 | 12.633M | 29.7 | +9.6  | +0.8 | -40.0 | +0.0 | 0.1 | 29.5 | -29.4 | Horiz |
| 132 | 12.133M | 29.6 | +9.7  | +0.8 | -40.0 | +0.0 | 0.1 | 29.5 | -29.4 | Horiz |

|     |          |      |       |      |       |      |       |                |       |       |
|-----|----------|------|-------|------|-------|------|-------|----------------|-------|-------|
| 133 | 12.799M  | 29.5 | +9.6  | +0.8 | -40.0 | +0.0 | -0.1  | 29.5           | -29.6 | Horiz |
| 134 | 12.716M  | 28.8 | +9.6  | +0.8 | -40.0 | +0.0 | -0.8  | 29.5           | -30.3 | Horiz |
| 135 | 12.301M  | 28.0 | +9.6  | +0.8 | -40.0 | +0.0 | -1.6  | 29.5           | -31.1 | Horiz |
| 136 | 12.882M  | 27.9 | +9.6  | +0.8 | -40.0 | +0.0 | -1.7  | 29.5           | -31.2 | Horiz |
| 137 | 12.467M  | 27.7 | +9.6  | +0.8 | -40.0 | +0.0 | -1.9  | 29.5           | -31.4 | Horiz |
| 138 | 252.300k | 45.7 | +10.2 | +0.1 | -80.0 | +0.0 | -24.0 | 19.6<br>Y-Axis | -43.6 | Vert  |
| 139 | 252.300k | 45.3 | +10.2 | +0.1 | -80.0 | +0.0 | -24.4 | 19.6<br>Z-Axis | -44.0 | Vert  |
| 140 | 252.240k | 44.2 | +10.2 | +0.1 | -80.0 | +0.0 | -25.5 | 19.6<br>X-Axis | -45.1 | Vert  |
| 141 | 378.450k | 39.2 | +10.2 | +0.2 | -80.0 | +0.0 | -30.4 | 16.0<br>Z-Axis | -46.4 | Vert  |
| 142 | 378.450k | 39.0 | +10.2 | +0.2 | -80.0 | +0.0 | -30.6 | 16.0<br>Y-Axis | -46.6 | Vert  |
| 143 | 378.388k | 37.7 | +10.2 | +0.2 | -80.0 | +0.0 | -31.9 | 16.0<br>X-Axis | -47.9 | Vert  |

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **IEI**  
 Specification: **FCC 15.209**  
 Work Order #: **83756**  
 Test Type: **Maximized Emissions**  
 Equipment: **Proximity Card Reader**  
 Manufacturer: **IEI**  
 Model: **Enrollment Station**  
 S/N: **062205-001**

Date: 06/23/2005  
 Time: 15:27:19  
 Sequence#: 2  
 Tested By: Randal Clark

**Equipment Under Test (\* = EUT):**

| Function               | Manufacturer | Model #            | S/N        |
|------------------------|--------------|--------------------|------------|
| Proximity Card Reader* | IEI          | Enrollment Station | 062205-001 |
| EUT Power Supply       | TRIAD        | WDU12-300          | 1004K      |

**Support Devices:**

| Function             | Manufacturer     | Model #      | S/N        |
|----------------------|------------------|--------------|------------|
| Printer Power Supply | Astec Power Inc. | C6409-60014  | 9912 R00   |
| Printer              | HP               | C6410A       | MY97G1924Z |
| Host PC Power Supply | Toshiba          | PA3201U-1ACA | 2XE11354   |
| Host PC              | Toshiba          | PS426U-0M151 | 50683063U  |

**Test Conditions / Notes:**

EUT is an enrollment station for RFID tags operating on 125kHz. The device is a computer peripheral which is attached to a host computer. Host computer has all ports filled. EUT orientation tested on three orthogonal axes to determine maximized emissions. EUT power is provided via AC adapter. Serial communication from host PC to EUT is established via customer provided program entitled "Prox Enrollment Station Demo v0.1," pes\_demo.exe. Frequency Range Investigated: 30-1000 MHz.

**Transducer Legend:**

|                     |                 |
|---------------------|-----------------|
| T1=Amp - S/N 604    | T2=Bilog Site D |
| T3=Cable - 10 Meter |                 |

**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | Dist<br>Table | Corr<br>dBμV/m | Spec<br>dBμV/m | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|---------------|----------------|----------------|--------------|--------------|
| 1 | 181.380M    | 56.4         | -26.6    | +8.2     | +3.1     | +0.0          | 41.1           | 43.5           | -2.4         | Horiz        |
|   | QP          |              |          |          |          |               |                | BB             |              | 153          |
| ^ | 181.380M    | 58.5         | -26.6    | +8.2     | +3.1     | +0.0          | 43.2           | 43.5           | -0.3         | Horiz        |
|   |             |              |          |          |          |               |                | BB             |              | 152          |
| 3 | 110.593M    | 50.9         | -26.8    | +10.3    | +2.4     | +0.0          | 36.8           | 43.5           | -6.7         | Verti        |
|   |             |              |          |          |          |               |                |                |              | 100          |
| 4 | 180.780M    | 51.9         | -26.7    | +8.2     | +3.1     | +0.0          | 36.5           | 43.5           | -7.0         | Verti        |
|   |             |              |          |          |          |               |                | BB             |              | 100          |
| 5 | 177.720M    | 51.6         | -26.7    | +8.3     | +3.0     | +0.0          | 36.2           | 43.5           | -7.3         | Verti        |
|   |             |              |          |          |          |               |                | BB             |              | 100          |
| 6 | 185.220M    | 49.6         | -26.6    | +8.2     | +3.1     | +0.0          | 34.3           | 43.5           | -9.2         | Verti        |
|   |             |              |          |          |          |               |                | BB             |              | 100          |

**APPENDIX D:**

**FCC PART 15 SUBPART B SECTIONS 15.107 & 15.109 AND ICES-003**

## EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

## EQUIPMENT UNDER TEST

### Proximity Card Reader

Manuf: International Electronics Inc.  
Model: Enrollment Station  
Serial: Sample #1

### AC Adapter

Manuf: CUI  
Model: 3A-251DN12  
Serial: None

## PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

### Keyboard

Manuf: NMB  
Model: TR2258W  
Serial: 51582199

### Mouse

Manuf: HP  
Model: M-S34  
Serial: LZA61706876

### Printer

Manuf: HP  
Model: C5316A  
Serial: MY8C4C207Y

### Laptop PC

Manuf: Dell  
Model: PP01L  
Serial: BGJZK21

### AC Adapter for Laptop PC

Manuf: Dell  
Model: AA20031  
Serial: CN-09364U-16921-32B-05F1

## REPORT OF MEASUREMENTS

### CONDUCTED EMISSIONS

#### Test Setup Photos





## Test Data Sheets

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **International Electronics Inc.**

Specification: **FCC 15.107 B COND [AVE]**

Work Order #: **88107**

Date: 8/13/2008

Test Type: **Conducted Emissions**

Time: 15:26:49

Equipment: **Proximity Card Reader**

Sequence#: 19

Manufacturer: International Electronics Inc.

Tested By: N. Gamez

Model: Enrollment Station

120V 60Hz

S/N: Sample #1

### Test Equipment:

| Function                  | S/N        | Calibration Date | Cal Due Date | Asset # |
|---------------------------|------------|------------------|--------------|---------|
| Cable                     | None       | 12/11/2007       | 12/11/2009   | 00888   |
| S.A., RF Section HP-8568B | 2601A02492 | 11/20/2007       | 11/20/2009   | 02663   |
| S.A., Display HP-85662A   | 2542A12169 | 11/20/2007       | 11/20/2009   | 02662   |
| QP Adapter HP-85650A      | 2521A00909 | 11/20/2007       | 11/20/2009   | 00683   |
| 10 dB Pad                 |            | 08/27/2007       | 08/27/2009   | 02223   |
| LISN, Emco 3816/2         | 9408-1007  | 04/03/2007       | 04/03/2009   | 00494   |
| LISN, Emco 3816/2         | 9408-1006  | 04/02/2007       | 04/02/2009   | 00493   |
| TTE High Pass Filter      | H4120      | 01/17/2007       | 01/17/2009   | 05258   |

### Equipment Under Test (\* = EUT):

| Function               | Manufacturer                   | Model #            | S/N       |
|------------------------|--------------------------------|--------------------|-----------|
| Proximity Card Reader* | International Electronics Inc. | Enrollment Station | Sample #1 |
| AC Adapter             | CUI                            | 3A-251DN12         | None      |

### Support Devices:

| Function                 | Manufacturer | Model # | S/N                      |
|--------------------------|--------------|---------|--------------------------|
| Keyboard                 | NMB          | TR2258W | 51582199                 |
| Mouse                    | HP           | M-S34   | LZA61706876              |
| Printer                  | HP           | C5316A  | MY8C4C207Y               |
| Laptop PC                | Dell         | PP01L   | BGJZK21                  |
| AC Adapter for laptop PC | Dell         | AA20031 | CN-09364U-16921-32B-05F1 |

### Test Conditions / Notes:

F-CB FCC 15.107 B 2007 Running PES\_DEMO software. Clicked on the "Enroll Card" button before each segment of the sweep, as the software times out after about 45-60 seconds. EUT is powered on by AC adapter. EUT is connected with USB cable to PC. All other peripherals are also connected to PC. An unterminated cable is attached to the VGA port of the PC. An unterminated cable is attached to the EUT's RJ12 serial port. Conducted emissions 0.15-30 MHz.

### Transducer Legend:

|                                       |                    |
|---------------------------------------|--------------------|
| T1=LISN - AN00493 - Black - ELC "OUT" | T2=ANP02223-082707 |
| T3=Cable ANP00888                     | T4=TTE HP Filter   |

### Measurement Data:

Reading listed by margin.

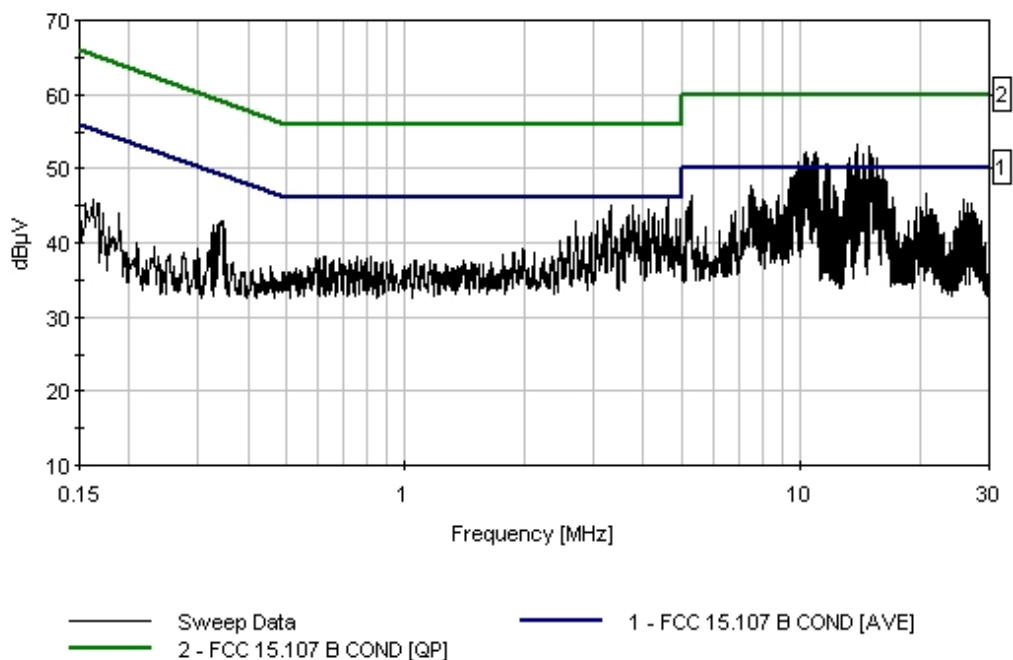
Test Lead: Black

| #   | Freq<br>MHz | Rdng<br>dB $\mu$ V | T1<br>dB | T2<br>dB | T3<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dB $\mu$ V | Spec<br>dB $\mu$ V | Margin<br>dB | Polar<br>Ant |
|-----|-------------|--------------------|----------|----------|----------|----------|---------------|--------------------|--------------------|--------------|--------------|
| 1   | 15.036M     | 35.3               | +0.0     | +10.0    | +0.3     | +0.0     | +0.0          | 45.6               | 50.0               | -4.4         | Black        |
| Ave |             |                    |          |          |          |          |               |                    |                    |              |              |
| ^   | 15.036M     | 43.1               | +0.0     | +10.0    | +0.3     | +0.0     | +0.0          | 53.4               | 50.0               | +3.4         | Black        |

|    |                |      |      |       |      |      |      |      |      |       |       |
|----|----------------|------|------|-------|------|------|------|------|------|-------|-------|
| 3  | 10.360M<br>Ave | 34.8 | +0.0 | +10.0 | +0.3 | +0.2 | +0.0 | 45.3 | 50.0 | -4.7  | Black |
| ^  | 10.360M        | 42.4 | +0.0 | +10.0 | +0.3 | +0.2 | +0.0 | 52.9 | 50.0 | +2.9  | Black |
| 5  | 3.287M<br>Ave  | 28.1 | -0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 38.4 | 46.0 | -7.6  | Black |
| ^  | 3.287M         | 36.1 | -0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 46.4 | 46.0 | +0.4  | Black |
| 7  | 15.036M<br>QP  | 40.5 | +0.0 | +10.0 | +0.3 | +0.0 | +0.0 | 50.8 | 60.0 | -9.2  | Black |
| 8  | 10.360M<br>QP  | 38.8 | +0.0 | +10.0 | +0.3 | +0.2 | +0.0 | 49.3 | 60.0 | -10.7 | Black |
| 9  | 3.287M<br>QP   | 32.7 | -0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 43.0 | 56.0 | -13.0 | Black |
| 10 | 16.119M<br>Ave | 26.1 | +0.1 | +10.0 | +0.3 | +0.0 | +0.0 | 36.5 | 50.0 | -13.5 | Black |
| ^  | 16.119M        | 40.3 | +0.1 | +10.0 | +0.3 | +0.0 | +0.0 | 50.7 | 50.0 | +0.7  | Black |
| 12 | 14.362M<br>QP  | 35.0 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 45.4 | 60.0 | -14.6 | Black |
| 13 | 14.362M<br>Ave | 24.6 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 35.0 | 50.0 | -15.0 | Black |
| ^  | 14.362M        | 41.1 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 51.5 | 50.0 | +1.5  | Black |
| 15 | 13.896M<br>Ave | 24.5 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 34.9 | 50.0 | -15.1 | Black |
| ^  | 13.896M        | 43.5 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 53.9 | 50.0 | +3.9  | Black |
| 17 | 9.892M<br>Ave  | 22.8 | +0.0 | +10.0 | +0.3 | +0.2 | +0.0 | 33.3 | 50.0 | -16.7 | Black |
| ^  | 9.892M         | 41.1 | +0.0 | +10.0 | +0.3 | +0.2 | +0.0 | 51.6 | 50.0 | +1.6  | Black |
| 19 | 13.896M<br>QP  | 32.0 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 42.4 | 60.0 | -17.6 | Black |
| 20 | 9.892M<br>QP   | 31.8 | +0.0 | +10.0 | +0.3 | +0.2 | +0.0 | 42.3 | 60.0 | -17.7 | Black |
| 21 | 16.119M<br>QP  | 31.6 | +0.1 | +10.0 | +0.3 | +0.0 | +0.0 | 42.0 | 60.0 | -18.0 | Black |
| 22 | 14.944M<br>QP  | 31.1 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 41.5 | 60.0 | -18.5 | Black |
| 23 | 4.592M<br>Ave  | 16.8 | +0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 27.3 | 46.0 | -18.7 | Black |
| ^  | 4.592M         | 36.4 | +0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 46.9 | 46.0 | +0.9  | Black |
| 25 | 10.973M<br>Ave | 20.8 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 31.2 | 50.0 | -18.8 | Black |
| ^  | 10.973M        | 40.7 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 51.1 | 50.0 | +1.1  | Black |

|    |         |      |      |       |      |      |      |      |      |       |       |
|----|---------|------|------|-------|------|------|------|------|------|-------|-------|
| 27 | 7.532M  | 20.3 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 30.9 | 50.0 | -19.1 | Black |
|    | Ave     |      |      |       |      |      |      |      |      |       |       |
| ^  | 7.532M  | 39.0 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 49.6 | 50.0 | -0.4  | Black |
| 29 | 4.592M  | 26.3 | +0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 36.8 | 56.0 | -19.2 | Black |
|    | QP      |      |      |       |      |      |      |      |      |       |       |
| 30 | 14.944M | 19.7 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 30.1 | 50.0 | -19.9 | Black |
|    | Ave     |      |      |       |      |      |      |      |      |       |       |
| ^  | 14.944M | 43.6 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 54.0 | 50.0 | +4.0  | Black |
| 32 | 7.532M  | 29.2 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 39.8 | 60.0 | -20.2 | Black |
|    | QP      |      |      |       |      |      |      |      |      |       |       |
| 33 | 11.080M | 17.4 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 27.8 | 50.0 | -22.2 | Black |
|    | Ave     |      |      |       |      |      |      |      |      |       |       |
| ^  | 11.080M | 40.5 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 50.9 | 50.0 | +0.9  | Black |
| 35 | 10.973M | 27.3 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 37.7 | 60.0 | -22.3 | Black |
|    | QP      |      |      |       |      |      |      |      |      |       |       |
| 36 | 11.080M | 24.0 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 34.4 | 60.0 | -25.6 | Black |
|    | QP      |      |      |       |      |      |      |      |      |       |       |

CKC Laboratories, Inc. Date: 8/13/2008 Time: 15:26:49 International Electronics Inc. WWO#: 88107  
FCC 15.107 B COND [AVE] Test Lead: Black 120V 60Hz Sequence#: 19  
black-120V-without ferrite on USB cable



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **International Electronics Inc.**

Specification: **FCC 15.107 B COND [AVE]**

Work Order #: **88107**

Date: 8/13/2008

Test Type: **Conducted Emissions**

Time: 16:36:30

Equipment: **Proximity Card Reader**

Sequence#: 20

Manufacturer: International Electronics Inc.

Tested By: N. Gamez

Model: Enrollment Station

120V 60Hz

S/N: Sample #1

#### Test Equipment:

| Function                  | S/N        | Calibration Date | Cal Due Date | Asset # |
|---------------------------|------------|------------------|--------------|---------|
| Cable                     | None       | 12/11/2007       | 12/11/2009   | 00888   |
| S.A., RF Section HP-8568B | 2601A02492 | 11/20/2007       | 11/20/2009   | 02663   |
| S.A., Display HP-85662A   | 2542A12169 | 11/20/2007       | 11/20/2009   | 02662   |
| QP Adapter HP-85650A      | 2521A00909 | 11/20/2007       | 11/20/2009   | 00683   |
| 10 dB Pad                 |            | 08/27/2007       | 08/27/2009   | 02223   |
| LISN, Emco 3816/2         | 9408-1007  | 04/03/2007       | 04/03/2009   | 00494   |
| LISN, Emco 3816/2         | 9408-1006  | 04/02/2007       | 04/02/2009   | 00493   |
| TTE High Pass Filter      | H4120      | 01/17/2007       | 01/17/2009   | 05258   |

#### Equipment Under Test (\* = EUT):

| Function               | Manufacturer                   | Model #            | S/N       |
|------------------------|--------------------------------|--------------------|-----------|
| Proximity Card Reader* | International Electronics Inc. | Enrollment Station | Sample #1 |
| AC Adapter             | CUI                            | 3A-251DN12         | None      |

#### Support Devices:

| Function                 | Manufacturer | Model # | S/N                      |
|--------------------------|--------------|---------|--------------------------|
| Keyboard                 | NMB          | TR2258W | 51582199                 |
| Mouse                    | HP           | M-S34   | LZA61706876              |
| Printer                  | HP           | C5316A  | MY8C4C207Y               |
| Laptop PC                | Dell         | PP01L   | BGJZK21                  |
| AC Adapter for laptop PC | Dell         | AA20031 | CN-09364U-16921-32B-05F1 |

#### Test Conditions / Notes:

F-CB FCC 15.107 B 2007 Running PES\_DEMO software. Clicked on the "Enroll Card" button before each segment of the sweep, as the software times out after about 45-60 seconds. EUT is powered on by AC adapter. EUT is connected with USB cable to PC. All other peripherals are also connected to PC. An unterminated cable is attached to the VGA port of the PC. An unterminated cable is attached to the EUT's RJ12 serial port. Conducted emissions 0.15-30 MHz.

#### Transducer Legend:

|                                       |                    |
|---------------------------------------|--------------------|
| T1=LISN - AN00493 - White - ELC "OUT" | T2=ANP02223-082707 |
| T3=Cable ANP00888                     | T4=TTE HP Filter   |

#### Measurement Data:

Reading listed by margin.

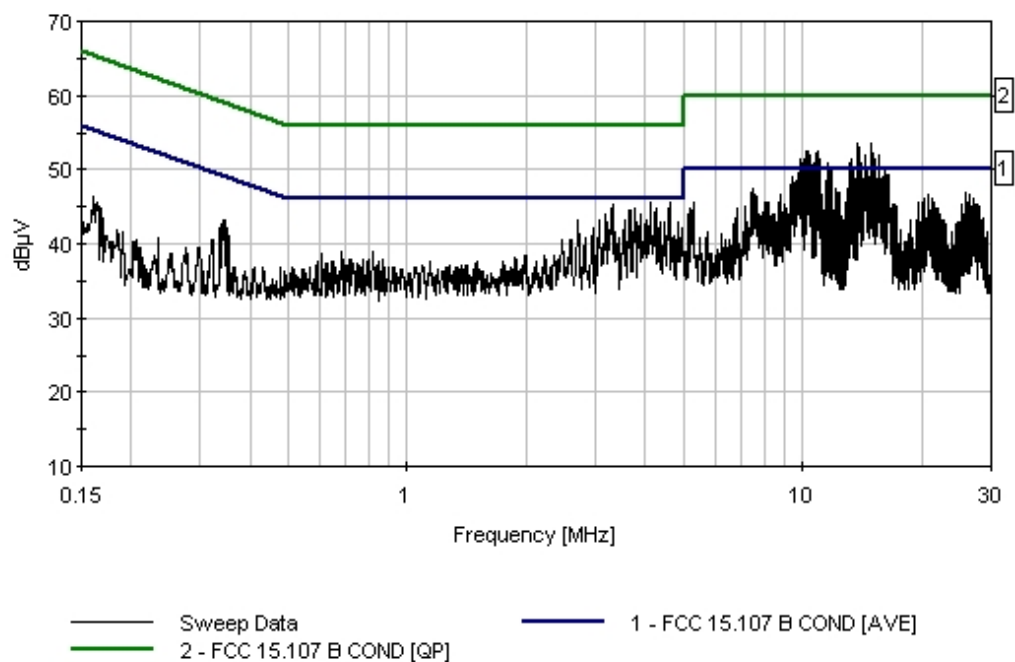
Test Lead: White

| #   | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|-----|-------------|--------------|----------|----------|----------|----------|---------------|--------------|--------------|--------------|--------------|
| 1   | 13.770M     | 36.4         | +0.0     | +10.0    | +0.3     | +0.1     | +0.0          | 46.8         | 50.0         | -3.2         | White        |
| Ave |             |              |          |          |          |          |               |              |              |              |              |
| ^   | 13.770M     | 43.7         | +0.0     | +10.0    | +0.3     | +0.1     | +0.0          | 54.1         | 50.0         | +4.1         | White        |

|    |                |      |      |       |      |      |      |      |      |       |       |
|----|----------------|------|------|-------|------|------|------|------|------|-------|-------|
| 3  | 10.994M<br>Ave | 35.8 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 46.2 | 50.0 | -3.8  | White |
| ^  | 10.994M        | 43.4 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 53.8 | 50.0 | +3.8  | White |
| 5  | 10.359M<br>Ave | 34.6 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 45.2 | 50.0 | -4.8  | White |
| ^  | 10.359M        | 42.8 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 53.4 | 50.0 | +3.4  | White |
| 7  | 3.286M<br>Ave  | 28.4 | +0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 38.9 | 46.0 | -7.1  | White |
| ^  | 3.286M         | 36.9 | +0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 47.4 | 46.0 | +1.4  | White |
| 9  | 13.770M<br>QP  | 41.2 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 51.6 | 60.0 | -8.4  | White |
| 10 | 10.994M<br>QP  | 41.2 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 51.6 | 60.0 | -8.4  | White |
| 11 | 10.359M<br>QP  | 39.1 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 49.7 | 60.0 | -10.3 | White |
| 12 | 16.122M<br>Ave | 27.5 | +0.1 | +10.0 | +0.3 | +0.0 | +0.0 | 37.9 | 50.0 | -12.1 | White |
| ^  | 16.122M        | 40.6 | +0.1 | +10.0 | +0.3 | +0.0 | +0.0 | 51.0 | 50.0 | +1.0  | White |
| 14 | 3.286M<br>QP   | 33.0 | +0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 43.5 | 56.0 | -12.5 | White |
| 15 | 9.890M<br>Ave  | 24.6 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 35.2 | 50.0 | -14.8 | White |
| ^  | 9.890M         | 40.9 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 51.5 | 50.0 | +1.5  | White |
| 17 | 9.890M<br>QP   | 32.4 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 43.0 | 60.0 | -17.0 | White |
| 18 | 4.613M<br>Ave  | 18.5 | +0.0 | +10.1 | +0.2 | +0.1 | +0.0 | 28.9 | 46.0 | -17.1 | White |
| ^  | 4.613M         | 33.7 | +0.0 | +10.1 | +0.2 | +0.1 | +0.0 | 44.1 | 46.0 | -1.9  | White |
| 20 | 16.122M<br>QP  | 32.2 | +0.1 | +10.0 | +0.3 | +0.0 | +0.0 | 42.6 | 60.0 | -17.4 | White |
| 21 | 14.945M<br>QP  | 31.6 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 42.0 | 60.0 | -18.0 | White |
| 22 | 15.062M<br>Ave | 20.5 | +0.0 | +10.0 | +0.3 | +0.0 | +0.0 | 30.8 | 50.0 | -19.2 | White |
| ^  | 15.062M        | 43.0 | +0.0 | +10.0 | +0.3 | +0.0 | +0.0 | 53.3 | 50.0 | +3.3  | White |
| 24 | 4.613M<br>QP   | 26.3 | +0.0 | +10.1 | +0.2 | +0.1 | +0.0 | 36.7 | 56.0 | -19.3 | White |
| 25 | 14.945M<br>Ave | 20.2 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 30.6 | 50.0 | -19.4 | White |
| ^  | 14.945M        | 43.5 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 53.9 | 50.0 | +3.9  | White |
| 27 | 15.062M<br>QP  | 29.4 | +0.0 | +10.0 | +0.3 | +0.0 | +0.0 | 39.7 | 60.0 | -20.3 | White |

|     |         |      |      |       |      |      |      |      |      |       |       |
|-----|---------|------|------|-------|------|------|------|------|------|-------|-------|
| 28  | 13.799M | 19.0 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 29.4 | 50.0 | -20.6 | White |
| Ave |         |      |      |       |      |      |      |      |      |       |       |
| 29  | 11.070M | 17.3 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 27.6 | 50.0 | -22.4 | White |
| Ave |         |      |      |       |      |      |      |      |      |       |       |
| ^   | 11.070M | 42.1 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 52.5 | 50.0 | +2.5  | White |
|     |         |      |      |       |      |      |      |      |      |       |       |
| 31  | 11.070M | 23.9 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 34.3 | 60.0 | -25.7 | White |
| QP  |         |      |      |       |      |      |      |      |      |       |       |

CKC Laboratories, Inc. Date: 8/13/2008 Time: 16:36:30 International Electronics Inc. WO#: 88107  
FCC 15.107 B COND [AVE] Test Lead: White 120V 60Hz Sequence#: 20  
white-120V-without ferrite on USB cable



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **International Electronics Inc.**

Specification: **ICES-003 B COND [AVE] 2004**

Work Order #: **88107**

Date: 8/13/2008

Test Type: **Conducted Emissions**

Time: 15:26:49

Equipment: **Proximity Card Reader**

Sequence#: 19

Manufacturer: International Electronics Inc.

Tested By: N. Gamez

Model: Enrollment Station

120V 60Hz

S/N: Sample #1

#### Test Equipment:

| Function                  | S/N        | Calibration Date | Cal Due Date | Asset # |
|---------------------------|------------|------------------|--------------|---------|
| Cable                     | None       | 12/11/2007       | 12/11/2009   | 00888   |
| S.A., RF Section HP-8568B | 2601A02492 | 11/20/2007       | 11/20/2009   | 02663   |
| S.A., Display HP-85662A   | 2542A12169 | 11/20/2007       | 11/20/2009   | 02662   |
| QP Adapter HP-85650A      | 2521A00909 | 11/20/2007       | 11/20/2009   | 00683   |
| 10 dB Pad                 |            | 08/27/2007       | 08/27/2009   | 02223   |
| LISN, Emco 3816/2         | 9408-1007  | 04/03/2007       | 04/03/2009   | 00494   |
| LISN, Emco 3816/2         | 9408-1006  | 04/02/2007       | 04/02/2009   | 00493   |
| TTE High Pass Filter      | H4120      | 01/17/2007       | 01/17/2009   | 05258   |

#### Equipment Under Test (\* = EUT):

| Function               | Manufacturer                   | Model #            | S/N       |
|------------------------|--------------------------------|--------------------|-----------|
| Proximity Card Reader* | International Electronics Inc. | Enrollment Station | Sample #1 |
| AC Adapter             | CUI                            | 3A-251DN12         | None      |

#### Support Devices:

| Function                 | Manufacturer | Model # | S/N                      |
|--------------------------|--------------|---------|--------------------------|
| Keyboard                 | NMB          | TR2258W | 51582199                 |
| Mouse                    | HP           | M-S34   | LZA61706876              |
| Printer                  | HP           | C5316A  | MY8C4C207Y               |
| Laptop PC                | Dell         | PP01L   | BGJZK21                  |
| AC Adapter for laptop PC | Dell         | AA20031 | CN-09364U-16921-32B-05F1 |

#### Test Conditions / Notes:

F-CB Running PES\_DEMO software. Clicked on the "Enroll Card" button before each segment of the sweep, as the software times out after about 45-60 seconds. EUT is powered on by AC adapter. EUT is connected with USB cable to PC. All other peripherals are also connected to PC. An unterminated cable is attached to the VGA port of the PC. An unterminated cable is attached to the EUT's RJ12 serial port. Conducted emissions 0.15-30 MHz.

#### Transducer Legend:

|                                       |                    |
|---------------------------------------|--------------------|
| T1=LISN - AN00493 - Black - ELC "OUT" | T2=ANP02223-082707 |
| T3=Cable ANP00888                     | T4=TTE HP Filter   |

#### Measurement Data:

Reading listed by margin.

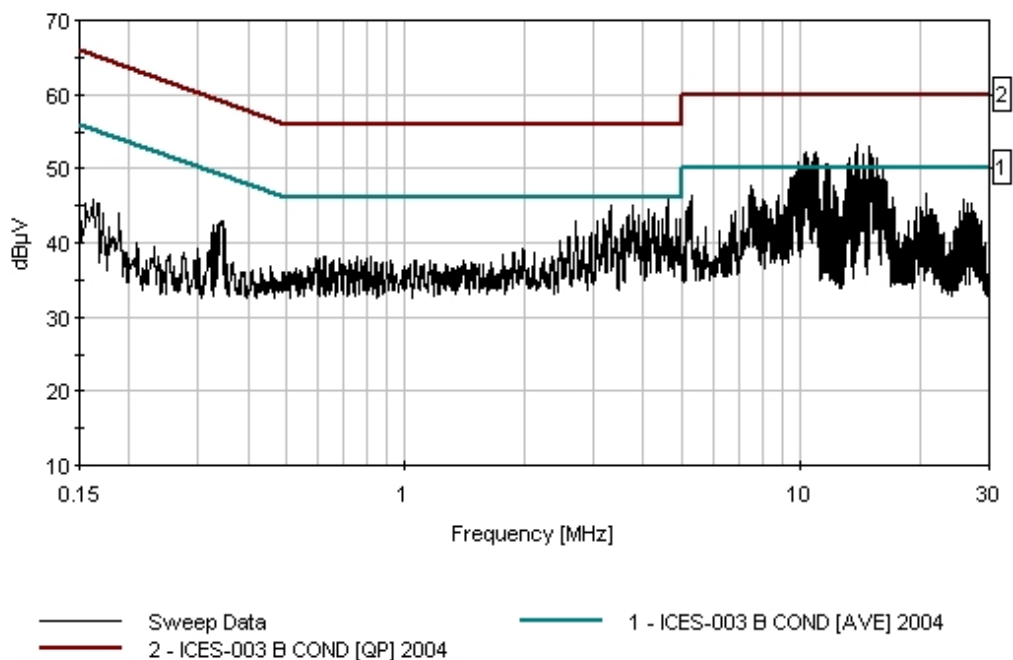
Test Lead: Black

| #   | Freq<br>MHz | Rdng<br>dB $\mu$ V | T1<br>dB | T2<br>dB | T3<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dB $\mu$ V | Spec<br>dB $\mu$ V | Margin<br>dB | Polar<br>Ant |
|-----|-------------|--------------------|----------|----------|----------|----------|---------------|--------------------|--------------------|--------------|--------------|
| 1   | 15.036M     | 35.3               | +0.0     | +10.0    | +0.3     | +0.0     | +0.0          | 45.6               | 50.0               | -4.4         | Black        |
| Ave |             |                    |          |          |          |          |               |                    |                    |              |              |
| ^   | 15.036M     | 43.1               | +0.0     | +10.0    | +0.3     | +0.0     | +0.0          | 53.4               | 50.0               | +3.4         | Black        |

|    |                |      |      |       |      |      |      |      |      |       |       |
|----|----------------|------|------|-------|------|------|------|------|------|-------|-------|
| 3  | 10.360M<br>Ave | 34.8 | +0.0 | +10.0 | +0.3 | +0.2 | +0.0 | 45.3 | 50.0 | -4.7  | Black |
| ^  | 10.360M        | 42.4 | +0.0 | +10.0 | +0.3 | +0.2 | +0.0 | 52.9 | 50.0 | +2.9  | Black |
| 5  | 3.287M<br>Ave  | 28.1 | -0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 38.4 | 46.0 | -7.6  | Black |
| ^  | 3.287M         | 36.1 | -0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 46.4 | 46.0 | +0.4  | Black |
| 7  | 15.036M<br>QP  | 40.5 | +0.0 | +10.0 | +0.3 | +0.0 | +0.0 | 50.8 | 60.0 | -9.2  | Black |
| 8  | 10.360M<br>QP  | 38.8 | +0.0 | +10.0 | +0.3 | +0.2 | +0.0 | 49.3 | 60.0 | -10.7 | Black |
| 9  | 3.287M<br>QP   | 32.7 | -0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 43.0 | 56.0 | -13.0 | Black |
| 10 | 16.119M<br>Ave | 26.1 | +0.1 | +10.0 | +0.3 | +0.0 | +0.0 | 36.5 | 50.0 | -13.5 | Black |
| ^  | 16.119M        | 40.3 | +0.1 | +10.0 | +0.3 | +0.0 | +0.0 | 50.7 | 50.0 | +0.7  | Black |
| 12 | 14.362M<br>QP  | 35.0 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 45.4 | 60.0 | -14.6 | Black |
| 13 | 14.362M<br>Ave | 24.6 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 35.0 | 50.0 | -15.0 | Black |
| ^  | 14.362M        | 41.1 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 51.5 | 50.0 | +1.5  | Black |
| 15 | 13.896M<br>Ave | 24.5 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 34.9 | 50.0 | -15.1 | Black |
| ^  | 13.896M        | 43.5 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 53.9 | 50.0 | +3.9  | Black |
| 17 | 9.892M<br>Ave  | 22.8 | +0.0 | +10.0 | +0.3 | +0.2 | +0.0 | 33.3 | 50.0 | -16.7 | Black |
| ^  | 9.892M         | 41.1 | +0.0 | +10.0 | +0.3 | +0.2 | +0.0 | 51.6 | 50.0 | +1.6  | Black |
| 19 | 13.896M<br>QP  | 32.0 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 42.4 | 60.0 | -17.6 | Black |
| 20 | 9.892M<br>QP   | 31.8 | +0.0 | +10.0 | +0.3 | +0.2 | +0.0 | 42.3 | 60.0 | -17.7 | Black |
| 21 | 16.119M<br>QP  | 31.6 | +0.1 | +10.0 | +0.3 | +0.0 | +0.0 | 42.0 | 60.0 | -18.0 | Black |
| 22 | 14.944M<br>QP  | 31.1 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 41.5 | 60.0 | -18.5 | Black |
| 23 | 4.592M<br>Ave  | 16.8 | +0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 27.3 | 46.0 | -18.8 | Black |
| ^  | 4.592M         | 36.4 | +0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 46.9 | 46.0 | +0.9  | Black |
| 25 | 10.973M<br>Ave | 20.8 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 31.2 | 50.0 | -18.8 | Black |
| ^  | 10.973M        | 40.7 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 51.1 | 50.0 | +1.1  | Black |

|    |         |      |      |       |      |      |      |      |      |       |       |
|----|---------|------|------|-------|------|------|------|------|------|-------|-------|
| 27 | 7.532M  | 20.3 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 30.9 | 50.0 | -19.1 | Black |
|    | Ave     |      |      |       |      |      |      |      |      |       |       |
| ^  | 7.532M  | 39.0 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 49.6 | 50.0 | -0.4  | Black |
| 29 | 4.592M  | 26.3 | +0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 36.8 | 56.0 | -19.2 | Black |
|    | QP      |      |      |       |      |      |      |      |      |       |       |
| 30 | 14.944M | 19.7 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 30.1 | 50.0 | -19.9 | Black |
|    | Ave     |      |      |       |      |      |      |      |      |       |       |
| ^  | 14.944M | 43.6 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 54.0 | 50.0 | +4.0  | Black |
| 32 | 7.532M  | 29.2 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 39.8 | 60.0 | -20.2 | Black |
|    | QP      |      |      |       |      |      |      |      |      |       |       |
| 33 | 11.080M | 17.4 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 27.8 | 50.0 | -22.2 | Black |
|    | Ave     |      |      |       |      |      |      |      |      |       |       |
| ^  | 11.080M | 40.5 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 50.9 | 50.0 | +0.9  | Black |
| 35 | 10.973M | 27.3 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 37.7 | 60.0 | -22.3 | Black |
|    | QP      |      |      |       |      |      |      |      |      |       |       |
| 36 | 11.080M | 24.0 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 34.4 | 60.0 | -25.6 | Black |
|    | QP      |      |      |       |      |      |      |      |      |       |       |

CKC Laboratories, Inc. Date: 8/13/2008 Time: 15:26:49 International Electronics Inc. WO#: 88107  
ICES-003 B COND [AVE] 2004 Test Lead: Black 120V 60Hz Sequence#: 19  
black-120V-without ferrite on USB cable



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **International Electronics Inc.**  
 Specification: **ICES-003 B COND [AVE] 2004**  
 Work Order #: **88107**  
 Test Type: **Conducted Emissions**  
 Equipment: **Proximity Card Reader**  
 Manufacturer: International Electronics Inc.  
 Model: Enrollment Station  
 S/N: Sample #1

Date: 8/13/2008  
 Time: 16:36:30  
 Sequence#: 20  
 Tested By: N. Gamez  
 120V 60Hz

**Test Equipment:**

| Function                  | S/N        | Calibration Date | Cal Due Date | Asset # |
|---------------------------|------------|------------------|--------------|---------|
| Cable                     | None       | 12/11/2007       | 12/11/2009   | 00888   |
| S.A., RF Section HP-8568B | 2601A02492 | 11/20/2007       | 11/20/2009   | 02663   |
| S.A., Display HP-85662A   | 2542A12169 | 11/20/2007       | 11/20/2009   | 02662   |
| QP Adapter HP-85650A      | 2521A00909 | 11/20/2007       | 11/20/2009   | 00683   |
| 10 dB Pad                 |            | 08/27/2007       | 08/27/2009   | 02223   |
| LISN, Emco 3816/2         | 9408-1007  | 04/03/2007       | 04/03/2009   | 00494   |
| LISN, Emco 3816/2         | 9408-1006  | 04/02/2007       | 04/02/2009   | 00493   |
| TTE High Pass Filter      | H4120      | 01/17/2007       | 01/17/2009   | 05258   |

**Equipment Under Test (\* = EUT):**

| Function               | Manufacturer                   | Model #            | S/N       |
|------------------------|--------------------------------|--------------------|-----------|
| Proximity Card Reader* | International Electronics Inc. | Enrollment Station | Sample #1 |
| AC Adapter             | CUI                            | 3A-251DN12         | None      |

**Support Devices:**

| Function                 | Manufacturer | Model # | S/N                      |
|--------------------------|--------------|---------|--------------------------|
| Keyboard                 | NMB          | TR2258W | 51582199                 |
| Mouse                    | HP           | M-S34   | LZA61706876              |
| Printer                  | HP           | C5316A  | MY8C4C207Y               |
| Laptop PC                | Dell         | PP01L   | BGJZK21                  |
| AC Adapter for laptop PC | Dell         | AA20031 | CN-09364U-16921-32B-05F1 |

**Test Conditions / Notes:**

F-CB Running PES\_DEMO software. Clicked on the "Enroll Card" button before each segment of the sweep, as the software times out after about 45-60 seconds. EUT is powered on by AC adapter. EUT is connected with USB cable to PC. All other peripherals are also connected to PC. An unterminated cable is attached to the VGA port of the PC. An unterminated cable is attached to the EUT's RJ12 serial port. Conducted emissions 0.15-30 MHz.

**Transducer Legend:**

|                                       |                    |
|---------------------------------------|--------------------|
| T1=LISN - AN00493 - White - ELC "OUT" | T2=ANP02223-082707 |
| T3=Cable ANP00888                     | T4=TTE HP Filter   |

**Measurement Data:**

Reading listed by margin.

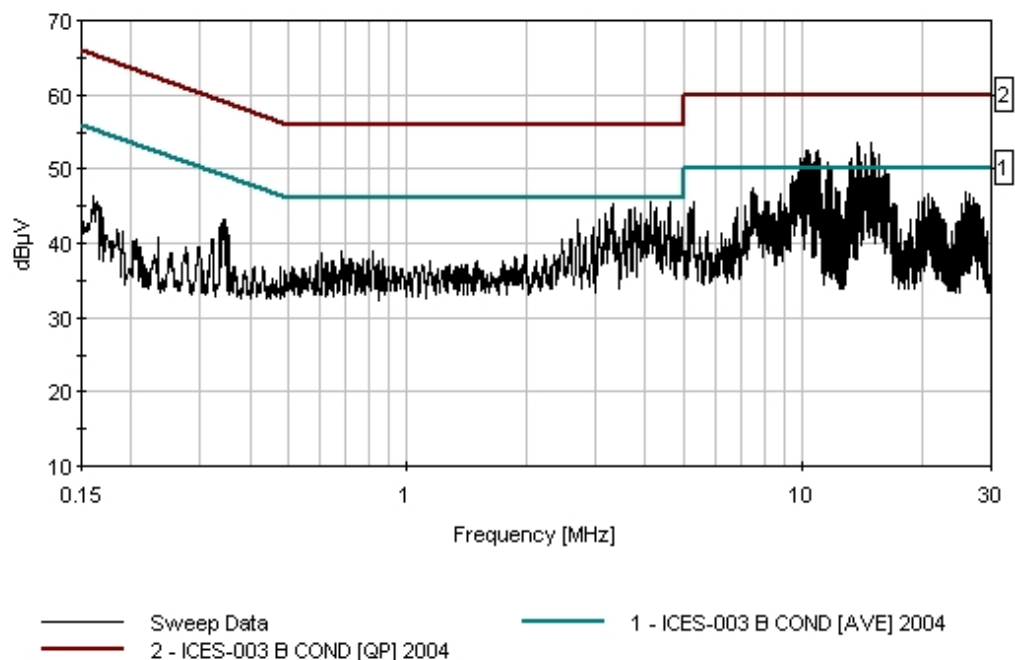
Test Lead: White

| #   | Freq<br>MHz | Rdng<br>dB $\mu$ V | T1<br>dB | T2<br>dB | T3<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dB $\mu$ V | Spec<br>dB $\mu$ V | Margin<br>dB | Polar<br>Ant |
|-----|-------------|--------------------|----------|----------|----------|----------|---------------|--------------------|--------------------|--------------|--------------|
| 1   | 13.770M     | 36.4               | +0.0     | +10.0    | +0.3     | +0.1     | +0.0          | 46.8               | 50.0               | -3.2         | White        |
| Ave |             |                    |          |          |          |          |               |                    |                    |              |              |
| ^   | 13.770M     | 43.7               | +0.0     | +10.0    | +0.3     | +0.1     | +0.0          | 54.1               | 50.0               | +4.1         | White        |

|    |                |      |      |       |      |      |      |      |      |       |       |
|----|----------------|------|------|-------|------|------|------|------|------|-------|-------|
| 3  | 10.994M<br>Ave | 35.8 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 46.2 | 50.0 | -3.8  | White |
| ^  | 10.994M        | 43.4 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 53.8 | 50.0 | +3.8  | White |
| 5  | 10.359M<br>Ave | 34.6 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 45.2 | 50.0 | -4.8  | White |
| ^  | 10.359M        | 42.8 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 53.4 | 50.0 | +3.4  | White |
| 7  | 3.286M<br>Ave  | 28.4 | +0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 38.9 | 46.0 | -7.1  | White |
| ^  | 3.286M         | 36.9 | +0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 47.4 | 46.0 | +1.4  | White |
| 9  | 13.770M<br>QP  | 41.2 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 51.6 | 60.0 | -8.4  | White |
| 10 | 10.994M<br>QP  | 41.2 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 51.6 | 60.0 | -8.4  | White |
| 11 | 10.359M<br>QP  | 39.1 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 49.7 | 60.0 | -10.3 | White |
| 12 | 16.122M<br>Ave | 27.5 | +0.1 | +10.0 | +0.3 | +0.0 | +0.0 | 37.9 | 50.0 | -12.2 | White |
| ^  | 16.122M        | 40.6 | +0.1 | +10.0 | +0.3 | +0.0 | +0.0 | 51.0 | 50.0 | +1.0  | White |
| 14 | 3.286M<br>QP   | 33.0 | +0.1 | +10.1 | +0.2 | +0.1 | +0.0 | 43.5 | 56.0 | -12.5 | White |
| 15 | 9.890M<br>Ave  | 24.6 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 35.2 | 50.0 | -14.8 | White |
| ^  | 9.890M         | 40.9 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 51.5 | 50.0 | +1.5  | White |
| 17 | 9.890M<br>QP   | 32.4 | +0.1 | +10.0 | +0.3 | +0.2 | +0.0 | 43.0 | 60.0 | -17.0 | White |
| 18 | 4.613M<br>Ave  | 18.5 | +0.0 | +10.1 | +0.2 | +0.1 | +0.0 | 28.9 | 46.0 | -17.1 | White |
| ^  | 4.613M         | 33.7 | +0.0 | +10.1 | +0.2 | +0.1 | +0.0 | 44.1 | 46.0 | -1.9  | White |
| 20 | 16.122M<br>QP  | 32.2 | +0.1 | +10.0 | +0.3 | +0.0 | +0.0 | 42.6 | 60.0 | -17.4 | White |
| 21 | 14.945M<br>QP  | 31.6 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 42.0 | 60.0 | -18.0 | White |
| 22 | 15.062M<br>Ave | 20.5 | +0.0 | +10.0 | +0.3 | +0.0 | +0.0 | 30.8 | 50.0 | -19.2 | White |
| ^  | 15.062M        | 43.0 | +0.0 | +10.0 | +0.3 | +0.0 | +0.0 | 53.3 | 50.0 | +3.3  | White |
| 24 | 4.613M<br>QP   | 26.3 | +0.0 | +10.1 | +0.2 | +0.1 | +0.0 | 36.7 | 56.0 | -19.3 | White |
| 25 | 14.945M<br>Ave | 20.2 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 30.6 | 50.0 | -19.4 | White |
| ^  | 14.945M        | 43.5 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 53.9 | 50.0 | +3.9  | White |

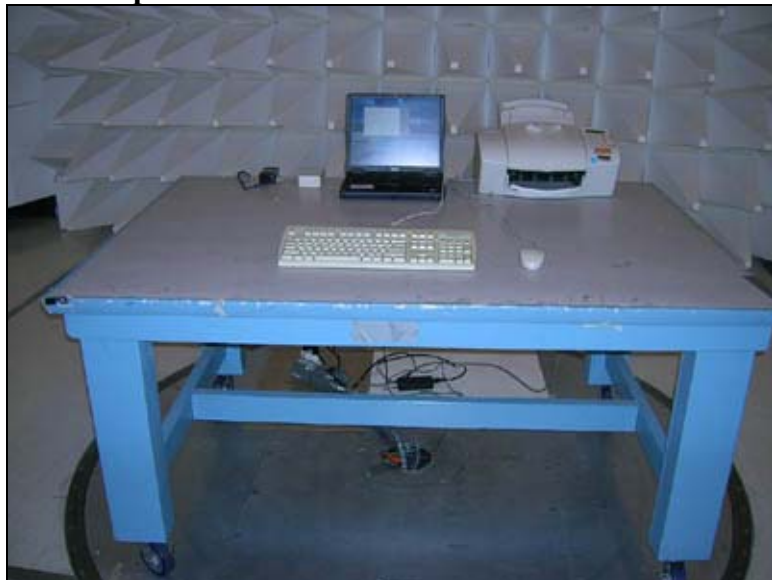
|     |         |      |      |       |      |      |      |      |      |       |       |
|-----|---------|------|------|-------|------|------|------|------|------|-------|-------|
| 27  | 15.062M | 29.4 | +0.0 | +10.0 | +0.3 | +0.0 | +0.0 | 39.7 | 60.0 | -20.3 | White |
| QP  |         |      |      |       |      |      |      |      |      |       |       |
| 28  | 13.799M | 19.0 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 29.4 | 50.0 | -20.6 | White |
| Ave |         |      |      |       |      |      |      |      |      |       |       |
| 29  | 11.070M | 17.3 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 27.7 | 50.0 | -22.4 | White |
| Ave |         |      |      |       |      |      |      |      |      |       |       |
| ^   | 11.070M | 42.1 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 52.5 | 50.0 | +2.5  | White |
| 31  | 11.070M | 23.9 | +0.0 | +10.0 | +0.3 | +0.1 | +0.0 | 34.3 | 60.0 | -25.7 | White |
| QP  |         |      |      |       |      |      |      |      |      |       |       |

CKC Laboratories, Inc. Date: 8/13/2008 Time: 16:36:30 International Electronics Inc. VWO#: 88107  
ICES-003 B COND [AVE] 2004 Test Lead: White 120V 60Hz Sequence#: 20  
white-120V-without ferrite on USB cable



## **RADIATED EMISSIONS**

### **Test Setup Photos**



FCC 15.109



FCC 15.109



ICES-003



ICES-003



ICES-003 Ferrite Added

## Test Data Sheets

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **International Electronics Inc.**

Specification: **FCC 15.109 Class B Radiated**

Work Order #: **88107**

Date: 8/25/2008

Test Type: **Maximized Emissions**

Time: 22:10:49

Equipment: **Proximity Card Reader**

Sequence#: 24

Manufacturer: International Electronics Inc.

Tested By: Art Rice

Model: Enrollment Station

S/N: Sample #1

### Test Equipment:

| Function              | S/N        | Calibration Date | Cal Due Date | Asset # |
|-----------------------|------------|------------------|--------------|---------|
| Cable                 | None       | 04/21/2008       | 04/21/2010   | P05440  |
| SA - Agilent E4446A   | US44300408 | 03/05/2007       | 03/05/2009   | 02668   |
| Preamplifier, HP8447D | 2443A03707 | 02/05/2007       | 02/05/2009   | 00730   |
| Cable                 | None       | 04/05/2007       | 04/05/2009   | P05300  |
| Cable                 | None       | 04/02/2007       | 04/02/2009   | P05299  |
| Antenna, Bilog        | 2630       | 12/30/2006       | 12/30/2008   | 00852   |

### Equipment Under Test (\* = EUT):

| Function               | Manufacturer                   | Model #            | S/N       |
|------------------------|--------------------------------|--------------------|-----------|
| Proximity Card Reader* | International Electronics Inc. | Enrollment Station | Sample #1 |
| AC Adapter             | CUI                            | 3A-251DN12         | None      |

### Support Devices:

| Function                 | Manufacturer | Model # | S/N                      |
|--------------------------|--------------|---------|--------------------------|
| Keyboard                 | NMB          | TR2258W | 51582199                 |
| Mouse                    | HP           | M-S34   | LZA61706876              |
| Printer                  | HP           | C5316A  | MY8C4C207Y               |
| Laptop PC                | Dell         | PP01L   | BGJZK21                  |
| AC Adapter for laptop PC | Dell         | AA20031 | CN-09364U-16921-32B-05F1 |

### Test Conditions / Notes:

F-C3 Running PES\_DEMO software. Clicked on the "Enroll Card" button before each segment of the sweep, as the software times out after about 45-60 seconds. EUT is powered on by AC adapter. EUT is connected with USB cable to PC. All other peripherals are also connected to PC. An unterminated cable is attached to the VGA port of the PC. An unterminated cable is attached to the EUT's RJ12 serial port. Radiated emissions 30-1000 MHz.

### Transducer Legend:

|                               |                               |
|-------------------------------|-------------------------------|
| T1=ANT AN00852 25-1000MHz     | T2=Cable Calibration ANP05299 |
| T3=Cable Calibration ANP05300 | T4=Cable Calibration ANP05440 |
| T5=AMP-AN00730-020507         |                               |

### Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

| # | Freq    | Rdng | T1<br>T5 | T2   | T3   | T4   | Dist  | Corr   | Spec   | Margin | Polar |
|---|---------|------|----------|------|------|------|-------|--------|--------|--------|-------|
|   | MHz     | dBμV | dB       | dB   | dB   | dB   | Table | dBμV/m | dBμV/m | dB     | Ant   |
| 1 | 38.355M | 51.0 | +15.4    | +0.1 | +0.1 | +0.4 | +0.0  | 39.7   | 40.0   | -0.3   | Vert  |
|   | QP      |      | -27.3    |      |      |      | 261   |        |        |        | 99    |
| ^ | 38.395M | 52.9 | +15.4    | +0.1 | +0.1 | +0.4 | +0.0  | 41.6   | 40.0   | +1.6   | Vert  |
|   |         |      | -27.3    |      |      |      | 261   |        |        |        | 99    |

|    |          |      |       |      |      |      |      |      |      |      |       |
|----|----------|------|-------|------|------|------|------|------|------|------|-------|
| 3  | 32.960M  | 47.8 | +17.9 | +0.0 | +0.2 | +0.3 | +0.0 | 39.0 | 40.0 | -1.0 | Vert  |
|    | QP       |      | -27.2 |      |      |      | 287  |      |      |      | 101   |
| ^  | 32.961M  | 49.6 | +17.9 | +0.0 | +0.2 | +0.3 | +0.0 | 40.8 | 40.0 | +0.8 | Vert  |
|    |          |      | -27.2 |      |      |      | 287  |      |      |      | 101   |
| 5  | 50.698M  | 56.0 | +8.8  | +0.0 | +0.2 | +0.4 | +0.0 | 38.1 | 40.0 | -1.9 | Vert  |
|    | QP       |      | -27.3 |      |      |      | 290  |      |      |      | 101   |
| ^  | 50.665M  | 61.1 | +8.8  | +0.0 | +0.2 | +0.4 | +0.0 | 43.2 | 40.0 | +3.2 | Vert  |
|    |          |      | -27.3 |      |      |      | 290  |      |      |      | 101   |
| 7  | 120.004M | 56.0 | +11.7 | +0.1 | +0.3 | +0.6 | +0.0 | 41.5 | 43.5 | -2.0 | Vert  |
|    | QP       |      | -27.2 |      |      |      | 240  |      |      |      | 100   |
| ^  | 120.010M | 62.5 | +11.7 | +0.1 | +0.3 | +0.6 | +0.0 | 48.0 | 43.5 | +4.5 | Vert  |
|    |          |      | -27.2 |      |      |      | 240  |      |      |      | 100   |
| 9  | 83.421M  | 55.8 | +8.5  | +0.1 | +0.2 | +0.5 | +0.0 | 37.9 | 40.0 | -2.1 | Horiz |
|    | QP       |      | -27.2 |      |      |      | 69   |      |      |      | 244   |
| ^  | 83.424M  | 57.6 | +8.5  | +0.1 | +0.2 | +0.5 | +0.0 | 39.7 | 40.0 | -0.3 | Horiz |
|    |          |      | -27.2 |      |      |      | 69   |      |      |      | 244   |
| 11 | 49.640M  | 54.6 | +9.2  | +0.0 | +0.2 | +0.4 | +0.0 | 37.1 | 40.0 | -2.9 | Vert  |
|    | QP       |      | -27.3 |      |      |      | 290  |      |      |      | 101   |
| ^  | 49.623M  | 59.7 | +9.2  | +0.0 | +0.2 | +0.4 | +0.0 | 42.2 | 40.0 | +2.2 | Vert  |
|    |          |      | -27.3 |      |      |      | 290  |      |      |      | 101   |
| 13 | 336.004M | 53.8 | +14.6 | +0.1 | +0.4 | +1.0 | +0.0 | 42.6 | 46.0 | -3.4 | Horiz |
|    | QP       |      | -27.3 |      |      |      | 147  |      |      |      | 126   |
| ^  | 336.010M | 54.3 | +14.6 | +0.1 | +0.4 | +1.0 | +0.0 | 43.1 | 46.0 | -2.9 | Horiz |
|    |          |      | -27.3 |      |      |      | 147  |      |      |      | 126   |
| 15 | 48.002M  | 53.1 | +10.0 | +0.0 | +0.2 | +0.4 | +0.0 | 36.4 | 40.0 | -3.6 | Vert  |
|    | QP       |      | -27.3 |      |      |      | 283  |      |      |      | 99    |
| ^  | 48.000M  | 57.4 | +10.0 | +0.0 | +0.2 | +0.4 | +0.0 | 40.7 | 40.0 | +0.7 | Vert  |
|    |          |      | -27.3 |      |      |      | 283  |      |      |      | 99    |
| 17 | 51.857M  | 54.2 | +8.5  | +0.0 | +0.2 | +0.5 | +0.0 | 36.1 | 40.0 | -3.9 | Vert  |
|    | QP       |      | -27.3 |      |      |      | 296  |      |      |      | 101   |
| ^  | 51.789M  | 58.9 | +8.5  | +0.0 | +0.2 | +0.5 | +0.0 | 40.8 | 40.0 | +0.8 | Vert  |
|    |          |      | -27.3 |      |      |      | 296  |      |      |      | 101   |
| 19 | 116.945M | 53.5 | +11.5 | +0.1 | +0.3 | +0.6 | +0.0 | 38.8 | 43.5 | -4.7 | Vert  |
|    | QP       |      | -27.2 |      |      |      | 249  |      |      |      | 100   |
| ^  | 117.014M | 54.7 | +11.5 | +0.1 | +0.3 | +0.6 | +0.0 | 40.0 | 43.5 | -3.5 | Vert  |
|    |          |      | -27.2 |      |      |      | 249  |      |      |      | 100   |
| 21 | 56.845M  | 53.1 | +7.2  | +0.1 | +0.2 | +0.4 | +0.0 | 33.8 | 40.0 | -6.2 | Vert  |
|    | QP       |      | -27.2 |      |      |      | 120  |      |      |      | 100   |
| ^  | 56.837M  | 57.2 | +7.2  | +0.1 | +0.2 | +0.4 | +0.0 | 37.9 | 40.0 | -2.1 | Vert  |
|    |          |      | -27.2 |      |      |      | 120  |      |      |      | 100   |
| 23 | 36.003M  | 43.5 | +16.9 | +0.0 | +0.2 | +0.3 | +0.0 | 33.7 | 40.0 | -6.3 | Vert  |
|    | QP       |      | -27.2 |      |      |      | 275  |      |      |      | 99    |
| ^  | 35.984M  | 50.6 | +16.9 | +0.0 | +0.2 | +0.3 | +0.0 | 40.8 | 40.0 | +0.8 | Vert  |
|    |          |      | -27.2 |      |      |      | 275  |      |      |      | 99    |
| 25 | 663.948M | 43.0 | +20.6 | +0.2 | +0.7 | +1.6 | +0.0 | 39.0 | 46.0 | -7.0 | Horiz |
|    |          |      | -27.1 |      |      |      | 227  |      |      |      | 144   |
| 26 | 216.004M | 54.3 | +10.4 | +0.1 | +0.4 | +0.8 | +0.0 | 38.9 | 46.0 | -7.1 | Horiz |
|    | QP       |      | -27.1 |      |      |      | 270  |      |      |      | 160   |
| ^  | 216.004M | 61.3 | +10.4 | +0.1 | +0.4 | +0.8 | +0.0 | 45.9 | 46.0 | -0.1 | Horiz |
|    |          |      | -27.1 |      |      |      | 270  |      |      |      | 160   |

|    |                |      |                |      |      |      |             |      |      |       |              |
|----|----------------|------|----------------|------|------|------|-------------|------|------|-------|--------------|
| 28 | 149.062M       | 50.9 | +11.4<br>-27.0 | +0.2 | +0.2 | +0.7 | +0.0<br>260 | 36.4 | 43.5 | -7.1  | Vert<br>100  |
| 29 | 81.770M<br>QP  | 50.9 | +8.3<br>-27.2  | +0.1 | +0.2 | +0.5 | +0.0<br>80  | 32.8 | 40.0 | -7.2  | Horiz<br>244 |
| ^  | 81.801M        | 55.7 | +8.3<br>-27.2  | +0.1 | +0.2 | +0.5 | +0.0<br>80  | 37.6 | 40.0 | -2.4  | Horiz<br>244 |
| ^  | 81.856M        | 53.4 | +8.3<br>-27.2  | +0.1 | +0.2 | +0.5 | +0.0<br>69  | 35.3 | 40.0 | -4.7  | Horiz<br>244 |
| 32 | 382.330M<br>QP | 48.5 | +15.9<br>-27.3 | +0.1 | +0.4 | +1.1 | +0.0<br>192 | 38.7 | 46.0 | -7.3  | Vert<br>140  |
| ^  | 382.387M       | 53.3 | +15.9<br>-27.3 | +0.1 | +0.4 | +1.1 | +0.0<br>192 | 43.5 | 46.0 | -2.5  | Vert<br>140  |
| 34 | 367.065M<br>QP | 48.0 | +15.5<br>-27.2 | +0.1 | +0.4 | +1.1 | +0.0<br>329 | 37.9 | 46.0 | -8.1  | Horiz<br>134 |
| ^  | 367.044M       | 58.3 | +15.5<br>-27.2 | +0.1 | +0.4 | +1.1 | +0.0<br>329 | 48.2 | 46.0 | +2.2  | Horiz<br>134 |
| 36 | 216.006M<br>QP | 53.1 | +10.4<br>-27.1 | +0.1 | +0.4 | +0.8 | +0.0<br>344 | 37.7 | 46.0 | -8.3  | Vert<br>101  |
| ^  | 215.993M       | 59.6 | +10.4<br>-27.1 | +0.1 | +0.4 | +0.8 | +0.0<br>344 | 44.2 | 43.5 | +0.7  | Vert<br>101  |
| 38 | 932.072M       | 39.0 | +23.2<br>-27.5 | +0.2 | +0.7 | +1.9 | +0.0<br>226 | 37.5 | 46.0 | -8.5  | Vert<br>99   |
| 39 | 86.349M<br>QP  | 48.9 | +8.8<br>-27.2  | +0.0 | +0.2 | +0.6 | +0.0<br>260 | 31.3 | 40.0 | -8.7  | Vert<br>100  |
| ^  | 86.353M        | 53.0 | +8.8<br>-27.2  | +0.0 | +0.2 | +0.6 | +0.0<br>260 | 35.4 | 40.0 | -4.6  | Vert<br>100  |
| 41 | 264.007M<br>QP | 49.3 | +13.1<br>-27.2 | +0.1 | +0.4 | +0.9 | +0.0<br>299 | 36.6 | 46.0 | -9.4  | Horiz<br>103 |
| ^  | 264.008M       | 54.7 | +13.1<br>-27.2 | +0.1 | +0.4 | +0.9 | +0.0<br>299 | 42.0 | 46.0 | -4.0  | Horiz<br>103 |
| 43 | 364.400M<br>QP | 46.2 | +15.4<br>-27.2 | +0.1 | +0.4 | +1.1 | +0.0<br>321 | 36.0 | 46.0 | -10.0 | Horiz<br>115 |
| ^  | 364.400M       | 54.3 | +15.4<br>-27.2 | +0.1 | +0.4 | +1.1 | +0.0<br>321 | 44.1 | 46.0 | -1.9  | Horiz<br>115 |
| 45 | 258.325M<br>QP | 48.6 | +13.1<br>-27.2 | +0.1 | +0.4 | +0.9 | +0.0<br>305 | 35.9 | 46.0 | -10.1 | Horiz<br>142 |
| ^  | 258.310M       | 54.4 | +13.1<br>-27.2 | +0.1 | +0.4 | +0.9 | +0.0<br>305 | 41.7 | 46.0 | -4.3  | Horiz<br>142 |
| 47 | 258.475M<br>QP | 47.9 | +13.1<br>-27.2 | +0.1 | +0.4 | +0.9 | +0.0<br>303 | 35.2 | 46.0 | -10.8 | Horiz<br>100 |
| ^  | 258.456M       | 53.8 | +13.1<br>-27.2 | +0.1 | +0.4 | +0.9 | +0.0<br>303 | 41.1 | 46.0 | -4.9  | Horiz<br>100 |
| 49 | 664.154M<br>QP | 33.2 | +20.6<br>-27.1 | +0.2 | +0.7 | +1.6 | +0.0<br>334 | 29.2 | 46.0 | -16.8 | Vert<br>100  |
| ^  | 664.172M       | 47.4 | +20.6<br>-27.1 | +0.2 | +0.7 | +1.6 | +0.0<br>334 | 43.4 | 46.0 | -2.6  | Vert<br>100  |
| 51 | 929.707M<br>QP | 26.9 | +23.1<br>-27.4 | +0.2 | +0.7 | +1.9 | +0.0<br>348 | 25.4 | 46.0 | -20.6 | Vert<br>100  |
| ^  | 929.699M       | 46.2 | +23.1<br>-27.4 | +0.2 | +0.7 | +1.9 | +0.0<br>348 | 44.7 | 46.0 | -1.3  | Vert<br>100  |

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170  
 Customer: **International Electronics Inc.**  
 Specification: **ICES-003 B 2004 RADIATED**  
 Work Order #: **88107** Date: 9/3/2008  
 Test Type: **Maximized Emissions** Time: 10:38:55  
 Equipment: **Proximity Card Reader** Sequence#: 25  
 Manufacturer: International Electronics Inc. Tested By: Art Rice  
 Model: Enrollment Station  
 S/N: Sample #1

**Test Equipment:**

| Function              | S/N        | Calibration Date | Cal Due Date | Asset # |
|-----------------------|------------|------------------|--------------|---------|
| Cable                 | None       | 04/21/2008       | 04/21/2010   | P05440  |
| SA - Agilent E4446A   | US44300408 | 03/05/2007       | 03/05/2009   | 02668   |
| Preamplifier, HP8447D | 2443A03707 | 02/05/2007       | 02/05/2009   | 00730   |
| Cable                 | None       | 04/05/2007       | 04/05/2009   | P05300  |
| Cable                 | None       | 04/02/2007       | 04/02/2009   | P05299  |
| Antenna, Bilog        | 2630       | 12/30/2006       | 12/30/2008   | 00852   |

**Equipment Under Test (\* = EUT):**

| Function               | Manufacturer                   | Model #            | S/N       |
|------------------------|--------------------------------|--------------------|-----------|
| Proximity Card Reader* | International Electronics Inc. | Enrollment Station | Sample #1 |
| AC Adapter             | CUI                            | 3A-251DN12         | None      |

**Support Devices:**

| Function                 | Manufacturer | Model # | S/N                      |
|--------------------------|--------------|---------|--------------------------|
| Keyboard                 | NMB          | TR2258W | 51582199                 |
| Mouse                    | HP           | M-S34   | LZA61706876              |
| Printer                  | HP           | C5316A  | MY8C4C207Y               |
| Laptop PC                | Dell         | PP01L   | BGJZK21                  |
| AC Adapter for laptop PC | Dell         | AA20031 | CN-09364U-16921-32B-05F1 |

**Test Conditions / Notes:**

F-C3 Running PES\_DEMO software. Clicked on the "Enroll Card" button before each segment of the sweep, as the software times out after about 45-60 seconds. EUT is powered on by AC adapter. EUT is connected with USB cable to PC. All other peripherals are also connected to PC. An unterminated cable is attached to the VGA port of the PC. An unterminated cable is attached to the EUT's RJ12 serial port. Wurth 742 711 12 ferrite on power input wire next to EUT. Radiated emissions 30-1000 MHz.

**Transducer Legend:**

|                               |                               |
|-------------------------------|-------------------------------|
| T1=ANT AN00852 25-1000MHz     | T2=Cable Calibration ANP05299 |
| T3=Cable Calibration ANP05300 | T4=Cable Calibration ANP05440 |
| T5=AMP-AN00730-020507         |                               |

**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

| # | Freq     | Rdng | T1       | T2   | T3   | T4   | Dist  | Corr   | Spec   | Margin | Polar |
|---|----------|------|----------|------|------|------|-------|--------|--------|--------|-------|
|   | MHz      | dBμV | T5<br>dB | dB   | dB   | dB   | Table | dBμV/m | dBμV/m | dB     | Ant   |
| 1 | 120.007M | 52.6 | +11.7    | +0.1 | +0.3 | +0.6 | -10.0 | 28.1   | 30.0   | -1.9   | Vert  |
|   | QP       |      | -27.2    |      |      |      | 263   |        |        |        | 100   |
| ^ | 120.004M | 57.7 | +11.7    | +0.1 | +0.3 | +0.6 | -10.0 | 33.2   | 30.0   | +3.2   | Vert  |
|   |          |      | -27.2    |      |      |      | 263   |        |        |        | 100   |
| 3 | 382.329M | 54.8 | +15.9    | +0.1 | +0.4 | +1.1 | -10.0 | 35.0   | 37.0   | -2.0   | Vert  |
|   |          |      | -27.3    |      |      |      | 188   |        |        |        | 130   |

|    |          |      |       |      |      |      |       |      |      |       |       |
|----|----------|------|-------|------|------|------|-------|------|------|-------|-------|
| 4  | 32.250M  | 46.7 | +18.0 | +0.0 | +0.1 | +0.3 | -10.0 | 27.8 | 30.0 | -2.2  | Vert  |
|    | QP       |      | -27.3 |      |      |      | 263   |      |      |       | 100   |
| ^  | 32.237M  | 48.7 | +18.0 | +0.0 | +0.1 | +0.3 | -10.0 | 29.8 | 30.0 | -0.2  | Vert  |
|    |          |      | -27.3 |      |      |      | 263   |      |      |       | 100   |
| 6  | 51.882M  | 54.9 | +8.5  | +0.0 | +0.2 | +0.5 | -10.0 | 26.8 | 30.0 | -3.2  | Vert  |
|    | QP       |      | -27.3 |      |      |      | 261   |      |      |       | 106   |
| ^  | 51.943M  | 59.6 | +8.5  | +0.0 | +0.2 | +0.5 | -10.0 | 31.5 | 30.0 | +1.5  | Vert  |
|    |          |      | -27.3 |      |      |      | 261   |      |      |       | 106   |
| 8  | 38.277M  | 47.5 | +15.5 | +0.1 | +0.1 | +0.4 | -10.0 | 26.3 | 30.0 | -3.7  | Vert  |
|    | QP       |      | -27.3 |      |      |      | 260   |      |      |       | 100   |
| ^  | 38.306M  | 49.8 | +15.4 | +0.1 | +0.1 | +0.4 | -10.0 | 28.5 | 30.0 | -1.5  | Vert  |
|    |          |      | -27.3 |      |      |      | 260   |      |      |       | 100   |
| 10 | 51.018M  | 54.0 | +8.7  | +0.0 | +0.2 | +0.5 | -10.0 | 26.1 | 30.0 | -3.9  | Vert  |
|    | QP       |      | -27.3 |      |      |      | 291   |      |      |       | 100   |
| ^  | 51.004M  | 57.3 | +8.7  | +0.0 | +0.2 | +0.5 | -10.0 | 29.4 | 30.0 | -0.6  | Vert  |
|    |          |      | -27.3 |      |      |      | 291   |      |      |       | 100   |
| 12 | 159.287M | 50.9 | +11.0 | +0.2 | +0.2 | +0.8 | -10.0 | 25.9 | 30.0 | -4.1  | Vert  |
|    | QP       |      | -27.2 |      |      |      | 283   |      |      |       | 99    |
| ^  | 159.295M | 53.3 | +11.0 | +0.2 | +0.2 | +0.8 | -10.0 | 28.3 | 30.0 | -1.7  | Vert  |
|    |          |      | -27.2 |      |      |      | 283   |      |      |       | 99    |
| 14 | 48.002M  | 51.5 | +10.0 | +0.0 | +0.2 | +0.4 | -10.0 | 24.8 | 30.0 | -5.2  | Vert  |
|    | QP       |      | -27.3 |      |      |      | 366   |      |      |       | 108   |
| ^  | 48.021M  | 55.5 | +10.0 | +0.0 | +0.2 | +0.4 | -10.0 | 28.8 | 30.0 | -1.2  | Vert  |
|    |          |      | -27.3 |      |      |      | 366   |      |      |       | 108   |
| 16 | 382.222M | 50.8 | +15.9 | +0.1 | +0.4 | +1.1 | -10.0 | 31.0 | 37.0 | -6.0  | Vert  |
|    | QP       |      | -27.3 |      |      |      | 188   |      |      |       | 130   |
| 17 | 216.002M | 49.2 | +10.4 | +0.1 | +0.4 | +0.8 | -10.0 | 23.8 | 30.0 | -6.2  | Horiz |
|    | QP       |      | -27.1 |      |      |      | 202   |      |      |       | 163   |
| ^  | 215.998M | 54.0 | +10.4 | +0.1 | +0.4 | +0.8 | -10.0 | 28.6 | 30.0 | -1.4  | Horiz |
|    |          |      | -27.1 |      |      |      | 202   |      |      |       | 163   |
| 19 | 216.012M | 49.1 | +10.4 | +0.1 | +0.4 | +0.8 | -10.0 | 23.7 | 30.0 | -6.3  | Vert  |
|    | QP       |      | -27.1 |      |      |      | 284   |      |      |       | 100   |
| ^  | 216.007M | 52.2 | +10.4 | +0.1 | +0.4 | +0.8 | -10.0 | 26.8 | 30.0 | -3.2  | Vert  |
|    |          |      | -27.1 |      |      |      | 284   |      |      |       | 100   |
| 21 | 116.847M | 47.7 | +11.5 | +0.1 | +0.3 | +0.6 | -10.0 | 23.0 | 30.0 | -7.0  | Vert  |
|    | QP       |      | -27.2 |      |      |      | 234   |      |      |       | 100   |
| ^  | 116.857M | 50.1 | +11.5 | +0.1 | +0.3 | +0.6 | -10.0 | 25.4 | 30.0 | -4.6  | Vert  |
|    |          |      | -27.2 |      |      |      | 234   |      |      |       | 100   |
| 23 | 367.061M | 49.5 | +15.5 | +0.1 | +0.4 | +1.1 | -10.0 | 29.4 | 37.0 | -7.6  | Horiz |
|    | QP       |      | -27.2 |      |      |      | 330   |      |      |       | 106   |
| ^  | 367.029M | 58.7 | +15.5 | +0.1 | +0.4 | +1.1 | -10.0 | 38.6 | 37.0 | +1.6  | Horiz |
|    |          |      | -27.2 |      |      |      | 330   |      |      |       | 106   |
| 25 | 49.761M  | 49.9 | +9.1  | +0.0 | +0.2 | +0.4 | -10.0 | 22.3 | 30.0 | -7.7  | Vert  |
|    | QP       |      | -27.3 |      |      |      | 268   |      |      |       | 108   |
| ^  | 49.751M  | 56.4 | +9.1  | +0.0 | +0.2 | +0.4 | -10.0 | 28.8 | 30.0 | -1.2  | Vert  |
|    |          |      | -27.3 |      |      |      | 268   |      |      |       | 108   |
| 27 | 83.556M  | 49.4 | +8.5  | +0.1 | +0.2 | +0.5 | -10.0 | 21.5 | 30.0 | -8.5  | Vert  |
|    |          |      | -27.2 |      |      |      | 83    |      |      |       | 108   |
| 28 | 335.998M | 47.6 | +14.6 | +0.1 | +0.4 | +1.0 | -10.0 | 26.4 | 37.0 | -10.6 | Horiz |
|    |          |      | -27.3 |      |      |      | 332   |      |      |       | 104   |