



HID GLOBAL CORPORATION TEST REPORT

FOR THE

**6101B (6303-310) ICLASS RW100, 6111B (6304-310) ICLASS RW300
& 6121B (6305-310) ICLASS RW400**

FCC PART 15 SUBPART C SECTIONS 15.207, 15.,.09, 15.225 AND RSS-210

COMPLIANCE

DATE OF ISSUE: JANUARY 15, 2007

PREPARED FOR:

HID Global Corporation
9292 Jeromino Road
Irvine, CA 92618-1905

P.O. No.: 11008009
W.O. No.: 85766

PREPARED BY:

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

Date of test: October 9 – December 21, 2006

Report No.: FC07-002

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ADMINISTRATIVE INFORMATION

DATE OF TEST: October 9 – December 21, 2006

DATE OF RECEIPT: October 9, 2006

MANUFACTURER: HID Global Corporation
9292 Jeromino Road
Irvine, CA 92618-1905

REPRESENTATIVE: Mat Aschenberg

TEST LOCATION: CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

TEST METHOD: ANSI C63.4 (2003), RSS-210 and RSS-GEN

PURPOSE OF TEST: To demonstrate the compliance of the 6101B (6303-310) iClass RW100, 6111B (6304-310) iClass RW300 & 6121B (6305-310) iClass RW400 with the requirements for FCC Part 15 Subpart C Sections 15.207, 15.209, 15.225 and RSS-210 devices.

FCC TO CANADA STANDARD CORRELATION MATRIX

| Canadian Standard | Canadian Section | FCC Standard | FCC Section | Test Description |
|-------------------|------------------|--------------|-------------|--|
| RSS 210 | 5.5 | 47CFR | 15.203 | Antenna Connector Requirements |
| RSS 210 | 6.2.1 | 47CFR | 15.209 | General Radiated Emissions Requirement |
| RSS 210 | 6.2.2(e) | 47CFR | 15.225(a)* | Fundamental Requirements |
| RSS 210 | 6.2.2(e) | NA | NA | ±150kHz to ±450kHz Emissions Requirement |
| RSS 210 | 6.2.2(e) | 47CFR | 15.225(b)* | Out of band emissions |
| RSS 210 | 6.2.2(e) | 47CFR | 15.225(c)* | Carrier Stability |
| RSS 210 | 6.3 | 47CFR | 15.205 | Restricted Bands of Operation |
| RSS 210 | 6.4 | 47CFR | 15.215(c) | Frequency Stability Recommendation |
| RSS 210 | 6.5 | 47CFR | 15.35(c) | Pulsed Operation |
| RSS 210 | 6.6 | 47CFR | 15.207 | AC Mains Conducted Emissions Requirement |
| | IC 3082A-1 | | 784962 | Site File No. |

* Indicates that FCC Requirements are more stringent than the Canadian Equivalent.

CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:



Joyce Walker, Quality Assurance Administrative Manager

TEST PERSONNEL:



Mike Wilkinson, EMC Engineer/Lab Manager

FCC 15.31(m) Number Of Channels

This device operates on a single channel.

FCC 15.33(a) Frequency Ranges Tested

15.207 Conducted Emissions: 150 kHz – 30 MHz

15.209 Radiated Emissions: 9 kHz – 1000 MHz

15.225 Spurious Emissions: Carrier

| FCC SECTION 15.35: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE | | | |
|---|----------------------------|-------------------------|--------------------------|
| 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 an integral part of the EUT and is non-removable; therefore the EUT complies with Section 15.203 of the FCC rules.

FCC 15.205 Restricted Bands

The fundamental operating frequency lies outside the restricted bands and therefore complies with the requirements of Section 15.205 of the FCC rules. Any spurious emission coming from the EUT was investigated to determine if any portion lies inside the restricted band. If any portion of a spurious emissions signal was found to be within a restricted band, investigation was performed to ensure compliance with Section 15.209.

EUT Operating Frequency

The EUT was operating at 13.56 GHz.

Temperature And Humidity During Testing

The temperature during testing was within +15°C and + 35°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.

The following models have been tested by CKC Laboratories: **6101B (6303-310) iClass RW100, 6111B (6304-310) iClass RW300 and 6121B (6305-310) iClass RW400**

The manufacturer states that the following additional models are identical electrically to the one which was tested, or any differences between them do not affect their EMC characteristics, and therefore they comply to the level of testing equivalent to the tested models.

6100B iCLASS R10 (6306-310)
6110B iCLASS R30 (6304-310)
6120B iCLASS R40 (6304-310)

EQUIPMENT UNDER TEST

61xxB iCLASS Readers

Manuf: HID Global Corp.
Model: 6101B (6303-310) iClass RW100
Serial: 121806

61xxB iCLASS Readers

Manuf: HID Global Corp.
Model: 6111B (6304-310) iClass
RW300
Serial: 121806

61xxB iCLASS Readers

Manuf: HID Global Corp.
Model: 6121B (6305-310) iClass RW400
Serial: 121806

PERIPHERAL DEVICES

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

DC Power Supply

Manuf: Topward
Model: TPS-2000
Serial: 920035

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 MHz | METER READING dB μ V | CORRECTION FACTORS | | | | CORRECTED READING dB μ V | SPEC LIMIT dB μ V | MARGIN dB | NOTES |
| | | Lisn dB | HPF dB | Cable dB | | | | | |
| 0.499059 | 19.1 | 0.3 | 0.3 | 11.9 | | 31.6 | 46.0 | -14.4 | B-1 |
| 0.499059 | 19.1 | 0.3 | 0.3 | 11.9 | | 31.6 | 46.0 | -14.4 | W-1 |
| 13.561780 | 47.7 | 0.5 | 0.1 | 10.9 | | 59.2 | 60.0 | -0.8 | BQ-2 |
| 13.561980 | 46.9 | 0.4 | 0.1 | 10.9 | | 58.3 | 60.0 | -1.7 | WQ-3 |
| 13.562000 | 47.6 | 0.4 | 0.1 | 10.9 | | 59.0 | 60.0 | -1.0 | WQ-2 |
| 976.453 | 19.1 | 0.3 | 0.2 | 11.8 | | 31.4 | 46.0 | -14.6 | W-1 |

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

NOTES:
B = Black Lead
W = White Lead
1 = 6101B
2 = 6111B
3 = 6121B

COMMENTS: EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Frequency range investigated: 150 kHz - 30 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

Table 2: FCC 15.209 Six Highest Radiated Emission Levels: 9 kHz - 30 MHz

| FREQUENCY MHz | METER READING dB μ V | CORRECTION FACTORS | | | CORRECTED READING dB μ V/m | SPEC LIMIT dB μ V/m | MARGIN dB | NOTES |
|------------------|--------------------------------|--------------------|-----------|------------|--------------------------------------|-------------------------------|--------------|-------|
| | | Cable dB | Ant dB | Corr dB | | | | |
| 4.003 | 14.6 | 0.6 | 10.0 | -20.0 | 5.2 | 29.5 | -24.3 | H-1 |
| 8.027 | 12.8 | 0.8 | 9.8 | -20.0 | 3.4 | 29.5 | -26.1 | V-3 |
| 27.121 | 13.6 | 1.4 | 6.6 | -20.0 | 1.6 | 29.5 | -27.9 | V-3 |
| 27.122 | 20.7 | 1.4 | 6.6 | -20.0 | 8.7 | 29.5 | -20.8 | H-2 |
| 27.122 | 19.8 | 1.4 | 6.6 | -20.0 | 7.8 | 29.5 | -21.7 | H-3 |
| 27.123 | 15.0 | 1.4 | 6.6 | -20.0 | 3.0 | 29.5 | -26.5 | V-2 |

Test Method: ANSI C63.4 (2003)
 Spec Limit: FCC Part 15 Subpart C Section 15.209
 Test Distance: 10 Meters

NOTES: H = Horizontal Polarization
 V = Vertical Polarization
 1 = 6101B
 2 = 6111B
 3 = 6121B

COMMENTS: EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test data is corrected for proper test distance using 40dB per decade correction factor in accordance with 15.31. Frequency range investigated: 9 kHz to 30 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

Table 3: FCC 15.209 Six Highest Radiated Emission Levels: 30-1000 MHz

| FREQUENCY MHz | METER READING dB μ V | CORRECTION FACTORS | | | | CORRECTED READING dB μ V/m | SPEC LIMIT dB μ V/m | MARGIN dB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-------------|------------|--------------------------------------|-------------------------------|--------------|-------|
| | | Ant dB | Amp dB | Cable dB | Dist dB | | | | |
| 40.694 | 37.9 | 12.0 | -27.0 | 1.7 | 10.0 | 34.6 | 40.0 | -5.4 | VQ-2 |
| 176.305 | 43.3 | 8.4 | -26.7 | 3.9 | 10.0 | 38.9 | 43.5 | -4.6 | VQ-3 |
| 230.543 | 41.3 | 10.7 | -26.2 | 4.7 | 10.0 | 40.5 | 46.0 | -5.5 | VQ-2 |
| 339.035 | 35.2 | 13.9 | -26.4 | 5.6 | 10.0 | 38.3 | 46.0 | -7.7 | V-2 |
| 596.662 | 31.0 | 19.0 | -27.7 | 8.4 | 10.0 | 40.7 | 46.0 | -5.3 | V-2 |
| 623.807 | 28.9 | 19.4 | -27.6 | 8.4 | 10.0 | 39.1 | 46.0 | -6.9 | V-2 |

Test Method: ANSI C63.4 (2003)
 Spec Limit: FCC Part 15 Subpart C Section 15.209
 Test Distance: 10 Meters

NOTES:
 Q = Quasi Peak Reading
 V = Vertical Polarization
 1 = 6101B
 2 = 6111B
 3 = 6121B

COMMENTS: EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test distance correction factor used in accordance with 15.31, 20dB per decade. Frequency range investigated: 30-1000 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

Table 4: FCC 15.225(a) Carrier Emission Levels

| FREQUENCY MHz | METER READING dB μ V | CORRECTION FACTORS | | | CORRECTED READING dB μ V/m | SPEC LIMIT dB μ V/m | MARGIN dB | NOTES |
|------------------|--------------------------------|--------------------|-----------|------------|--------------------------------------|-------------------------------|--------------|-------|
| | | Cable dB | Ant dB | Corr dB | | | | |
| 13.561 | 50.6 | 1.0 | 9.6 | -20.0 | 41.2 | 84.0 | -42.8 | V-3 |
| 13.561 | 47.3 | 1.0 | 9.6 | -20.0 | 37.9 | 84.0 | -46.1 | H-3 |
| 13.562 | 47.6 | 1.0 | 9.6 | -20.0 | 38.2 | 84.0 | -45.8 | V-2 |
| 13.562 | 45.3 | 1.0 | 9.6 | -20.0 | 35.9 | 84.0 | -48.1 | H-2 |
| 13.562 | 42.8 | 1.0 | 9.6 | -20.0 | 33.4 | 84.0 | -50.6 | H-1 |

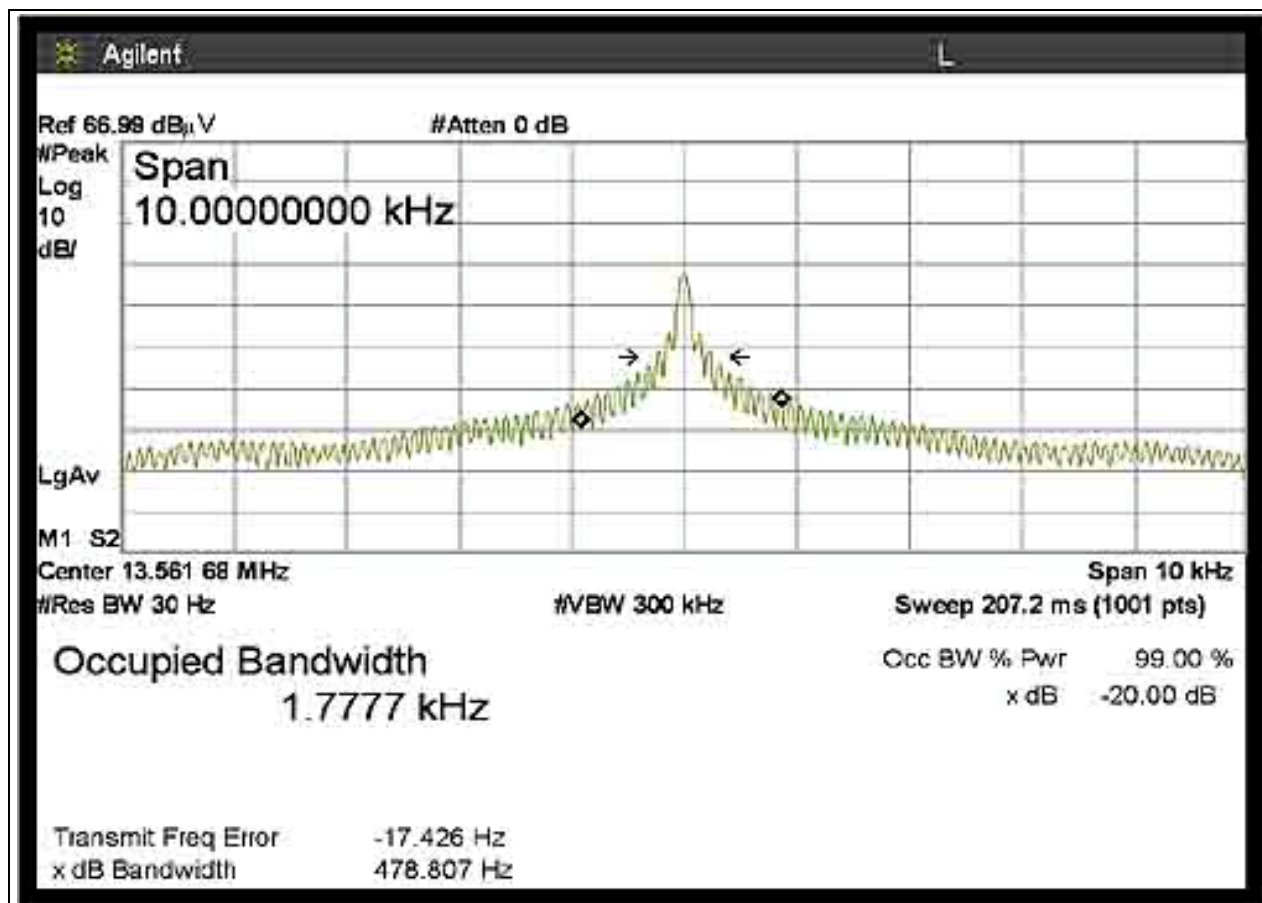
Test Method: ANSI C63.4 (2003)
 Spec Limit: FCC Part 15 Subpart C Section 15.225
 Test Distance: 10 Meters

NOTES: H = Horizontal Polarization
 V = Vertical Polarization
 1 = 6101B
 2 = 6111B
 3 = 6121B

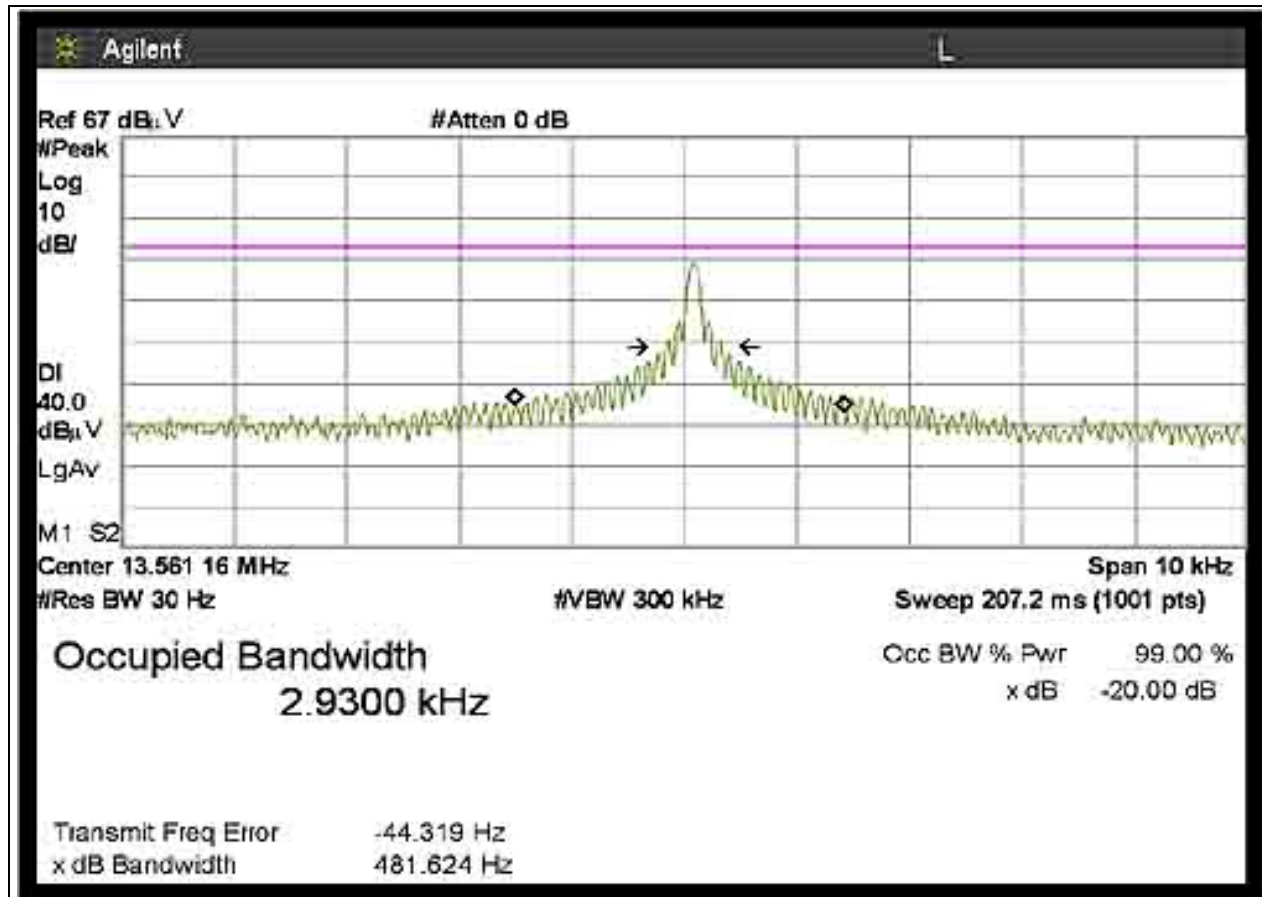
COMMENTS: EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test data is corrected for proper test distance using 40dB per decade correction factor in accordance with 15.31. Frequency range investigated: Carrier. Temperature: 21.5°C, Relative Humidity: 48%.

OCCUPIED BANDWIDTH - 6101B

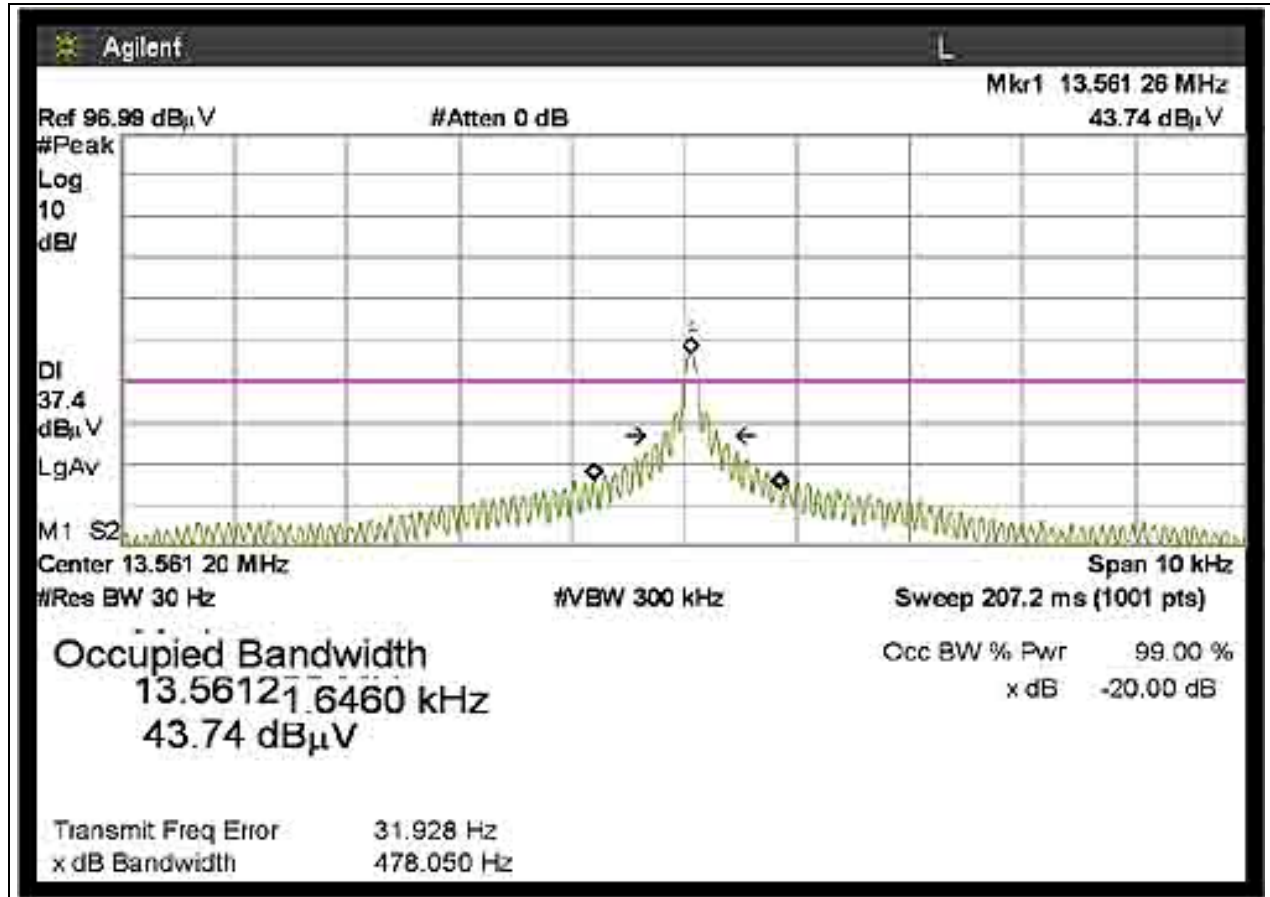
Test Conditions: EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test data is corrected for proper test distance using 40dB per decade correction factor in accordance with 15.31. Temperature: 21.5°C, Relative Humidity: 48%.



OCCUPIED BANDWIDTH - 6111B



OCCUPIED BANDWIDTH - 6121B



FREQUENCY STABILITY

Test Conditions: EUT was placed inside the temperature chamber and was transmitting continuously. SA RBW = 1.0 kHz, VBW = 10 kHz, Span = 5 kHz.

| | | | |
|---|-------------------------------|------------------------|-------------------|
| Customer: | HID Global | | |
| WO#: | 85766 | | |
| Test Engineer: | Mike Wilkinson | | |
| Device Model #: | 6101B (6303-310) iClass RW100 | | |
| Operating Voltage: | 12 VDC | | |
| Frequency Limit: | 0.01 % | | |
| Temperature Variations | | | |
| | | Channel 1 (MHz) | Dev. (MHz) |
| Channel Frequency: | | 13.561550 | |
| Temp (C) | Voltage | | |
| -20 | 12 | 13.561730 | 0.00018 |
| -10 | 12 | | |
| 0 | 12 | | |
| 10 | 12 | | |
| 20 | 12 | 13.561550 | 0.00000 |
| 30 | 12 | | |
| 40 | 12 | | |
| 50 | 12 | | |
| Voltage Variations ($\pm 15\%$) | | | |
| 20 | 10.2 | 13.561530 | 0.00002 |
| 20 | 12 | 13.561550 | 0.00000 |
| 20 | 13.8 | 13.561530 | 0.00002 |
| Max Deviation (MHz) | | | 0.00018 |
| | | | PASS |

| | | | |
|---|-------------------------------|------------------------|-------------------|
| Customer: | HID Global | | |
| WO#: | 85766 | | |
| Test Engineer: | Mike Wilkinson | | |
| Device Model #: | 6111B (6304-310) iClass RW300 | | |
| Operating Voltage: | | | 12 VDC |
| Frequency Limit: | | | 0.01 % |
| Temperature Variations | | | |
| | | Channel 1 (MHz) | Dev. (MHz) |
| Channel Frequency: | | 13.561180 | |
| Temp (C) | Voltage | | |
| -20 | 12 | 13.561500 | 0.00032 |
| -10 | 12 | | |
| 0 | 12 | | |
| 10 | 12 | | |
| 20 | 12 | 13.561180 | 0.00000 |
| 30 | 12 | | |
| 40 | 12 | | |
| 50 | 12 | | |
| Voltage Variations ($\pm 15\%$) | | | |
| 20 | 10.2 | 13.561130 | 0.00005 |
| 20 | 12 | 13.561180 | 0.00000 |
| 20 | 13.8 | 13.561150 | 0.00003 |
| Max Deviation (MHz) | | | 0.00032 |
| | | | PASS |

| | | | |
|---|-------------------------------|------------------------|-------------------|
| Customer: | HID Global | | |
| WO#: | 85766 | | |
| Test Engineer: | Mike Wilkinson | | |
| Device Model #: | 6121B (6305-310) iClass RW400 | | |
| Operating Voltage: | | | 12 VDC |
| Frequency Limit: | | | 0.01 % |
| Temperature Variations | | | |
| | | Channel 1 (MHz) | Dev. (MHz) |
| Channel Frequency: | | 13.561130 | |
| Temp (C) | Voltage | | |
| -20 | 12 | 13.561150 | |
| -10 | 12 | | |
| 0 | 12 | | |
| 10 | 12 | | |
| 20 | 12 | 13.561130 | |
| 30 | 12 | | |
| 40 | 12 | | |
| 50 | 12 | | |
| Voltage Variations ($\pm 15\%$) | | | |
| 20 | 10.2 | 13.561150 | 0.00002 |
| 20 | 12 | 13.561130 | 0.00000 |
| 20 | 13.8 | 13.561180 | 0.00005 |
| Max Deviation (MHz) | | | 0.00005 |
| | | | PASS |

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 μ V/m, the spectrum analyzer reading in dB μ 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 μ V) |
| + | Antenna Factor | (dB) |
| + | Cable Loss | (dB) |
| - | Distance Correction | (dB) |
| - | Preamplifier Gain | (dB) |
| = | Corrected Reading | (dB μ 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 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 μ 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 μ H/+50 ohms. 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 - 6101B

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



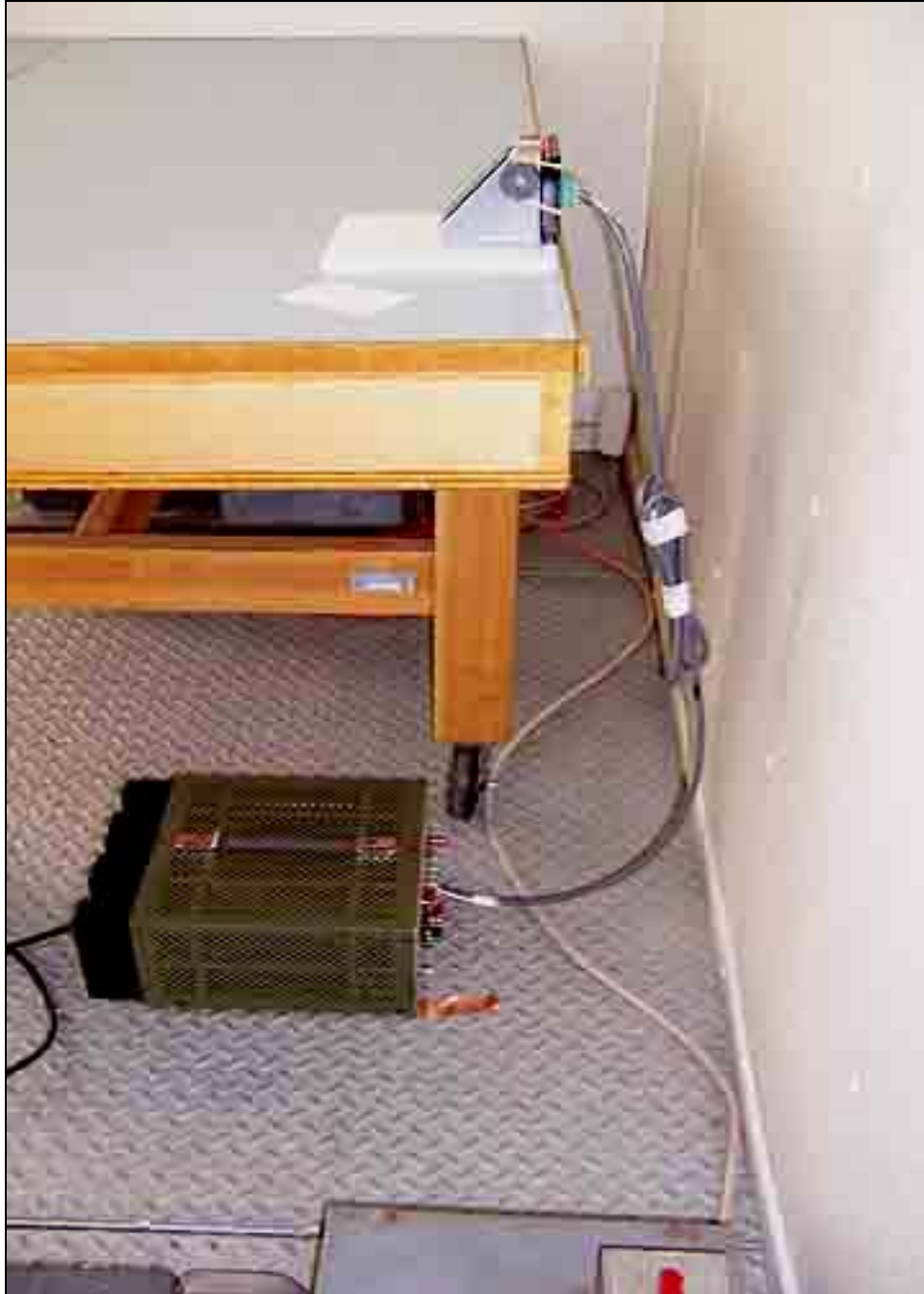
Mains Conducted Emissions - Side View - 6101B

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



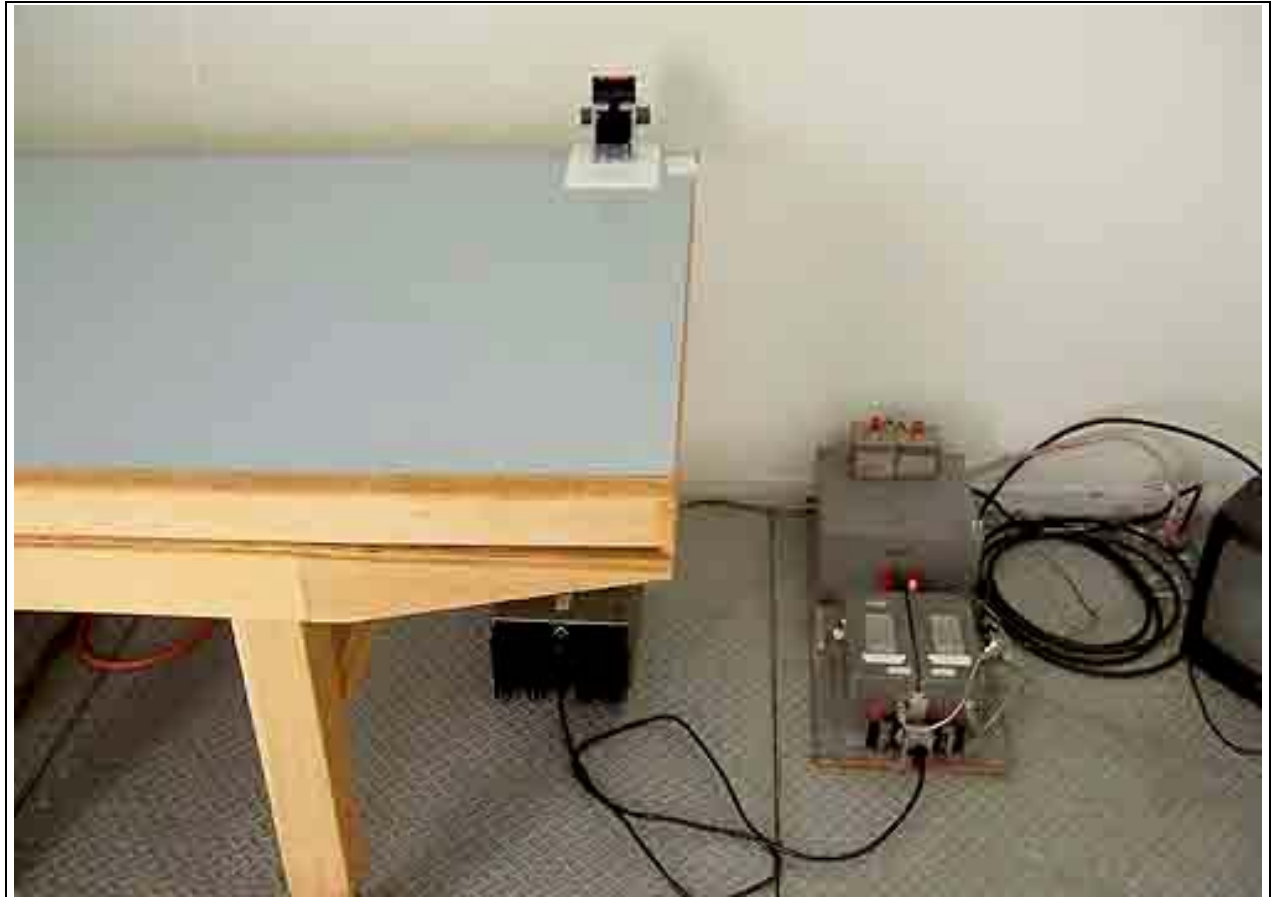
Mains Conducted Emissions - Front View - 6111B

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



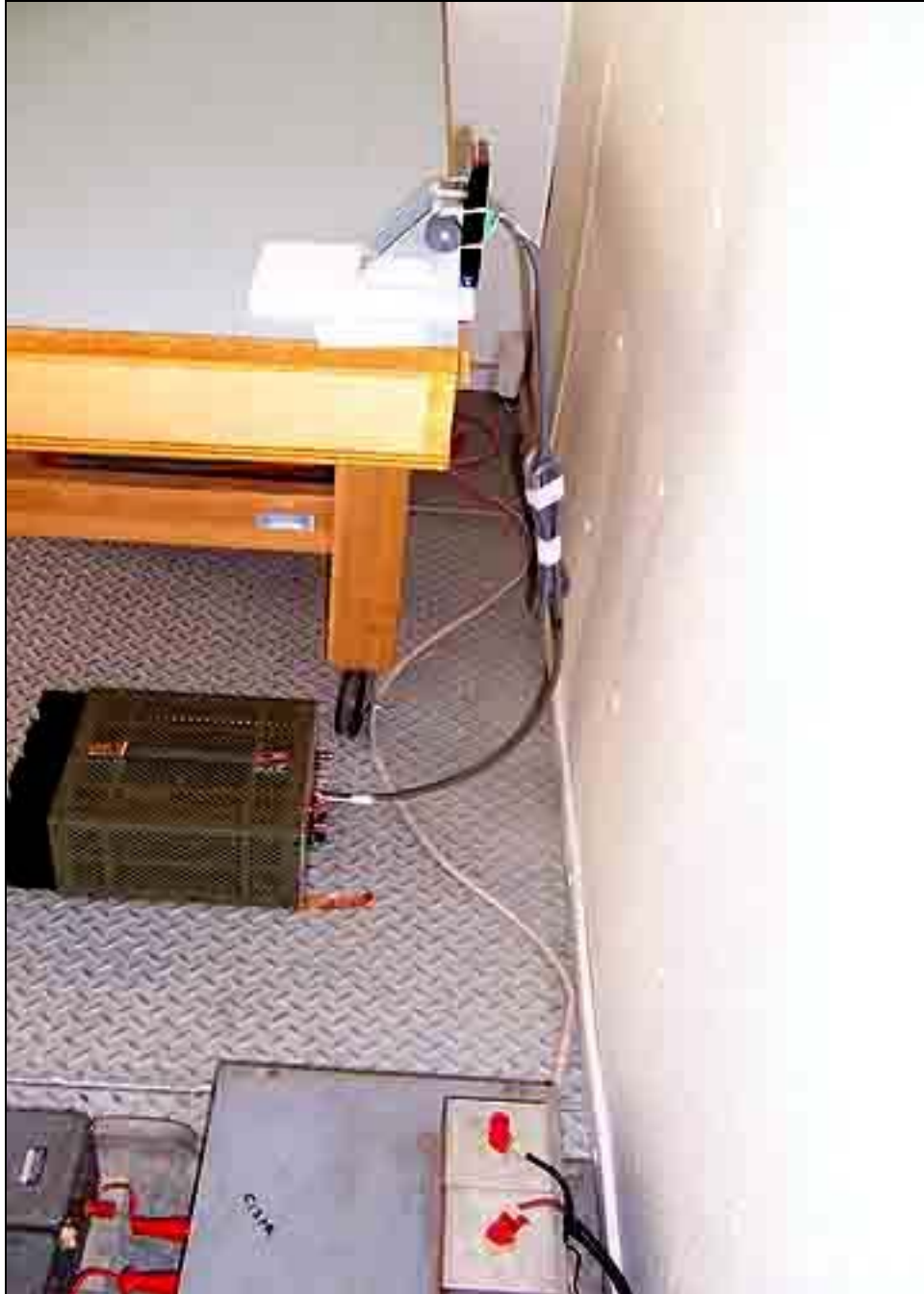
Mains Conducted Emissions - Side View - 6111B

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Front View - 6121B

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Side View - 6121B

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View - 6101B

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Back View - 6101B

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View - 6111B

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Back View - 6111B

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View - 6121B

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Back View - 6121B

PHOTOGRAPH SHOWING TEMPERATURE TESTING



APPENDIX B

TEST EQUIPMENT LIST

FCC 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 | 03/09/2006 | 03/09/2008 | 02608 |
| LISN, 8028-50-TS-24-BNC | 8379276, 280 | 06/03/2005 | 06/03/2007 | 1248 & 1249 |

FCC 15.209 9 kHz – 30 MHz, 15.225(a) 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 |

FCC 15.209 30-1000 MHz

| 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 | 06/07/2005 | 06/07/2007 | 01991 |

Frequency Stability

| Function | S/N | Calibration Date | Cal Due Date | Asset # |
|---------------------------------------|------------|------------------|--------------|---------|
| Spectrum Analyzer HP 8564E | 3623A00539 | 08/01/2006 | 08/01/2008 | 1406 |
| Temp Chamber Thermotron S-1.2 MiniMax | 11899 | 01/24/2005 | 01/24/2007 | 01879 |
| Thermometer Omega HH-26K | T-202884 | 01/18/2005 | 01/18/2007 | 02242 |
| Multimeter Fluke 8520A | | 04/25/2005 | 04/25/2007 | 02369 |

APPENDIX C:
MEASUREMENT DATA SHEETS

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.207 - AVE**
 Work Order #: **85766** Date: 12/20/2006
 Test Type: **Conducted Emissions** Time: 13:23:27
 Equipment: **61xxB iCLASS Readers** Sequence#: 14
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6101B (6303-310) iClass RW100 120V 60Hz
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6101B (6303-310) iClass RW100 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Frequency range investigated: 150 kHz - 30 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

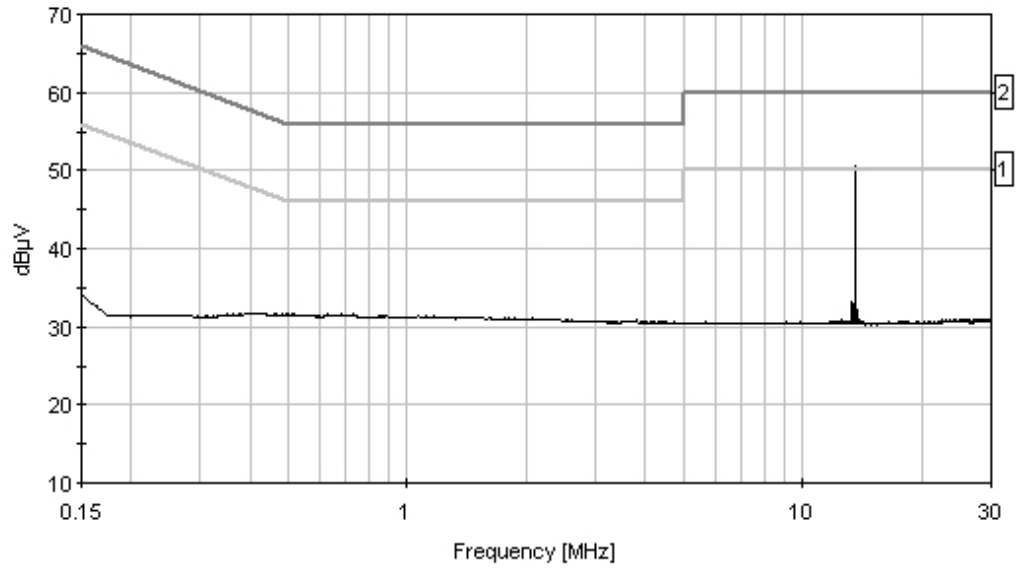
Transducer Legend:

| | |
|---------------------------------|-----------------------------|
| T1=LISN Insertion Loss s/n276 | T2=Filter 150kHz HP AN02608 |
| T3=Cable - Site D LISN 100k-30M | |

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

| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | Dist Table dB | Corr dB μ V | Spec dB μ V | Margin dB | Polar Ant |
|---|-------------|-----------------|-------|-------|-------|---------------|-----------------|-----------------|-----------|-----------|
| 1 | 499.059k | 19.1 | +0.3 | +0.3 | +11.9 | +0.0 | 31.6 | 46.0 | -14.4 | Black |
| 2 | 886.228k | 19.1 | +0.3 | +0.2 | +11.8 | +0.0 | 31.4 | 46.0 | -14.6 | Black |
| 3 | 4.486M | 19.1 | +0.4 | +0.1 | +11.0 | +0.0 | 30.6 | 46.0 | -15.4 | Black |
| 4 | 13.562M | 22.1 | +0.5 | +0.1 | +10.9 | +0.0 | 33.6 | 50.0 | -16.4 | Black |
| ^ | 13.562M Ave | 39.1 | +0.5 | +0.1 | +10.9 | +0.0 | 50.6 | 50.0 | +0.6 | Black |
| 6 | 27.606M | 19.3 | +0.4 | +0.2 | +11.0 | +0.0 | 30.9 | 50.0 | -19.1 | Black |
| 7 | 27.061M | 19.3 | +0.4 | +0.1 | +11.0 | +0.0 | 30.8 | 50.0 | -19.2 | Black |

CKC Laboratories Date: 12/20/2006 Time: 13:23:27 HID Global WO#: 85766
 FCC 15.207 - AVE Test Lead: Black 120V 60Hz Sequence#: 14
 HID Global Corp. MN 6101B (6303-310) iClass RW100



— Sweep Data — 1 - FCC 15.207 - AVE — 2 - FCC 15.207 - QP

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.207 - AVE**
 Work Order #: **85766** Date: 12/20/2006
 Test Type: **Conducted Emissions** Time: 13:31:28
 Equipment: **61xxB iCLASS Readers** Sequence#: 15
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6101B (6303-310) iClass RW100 120V 60Hz
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6101B (6303-310) iClass RW100 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Frequency range investigated: 150 kHz - 30 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

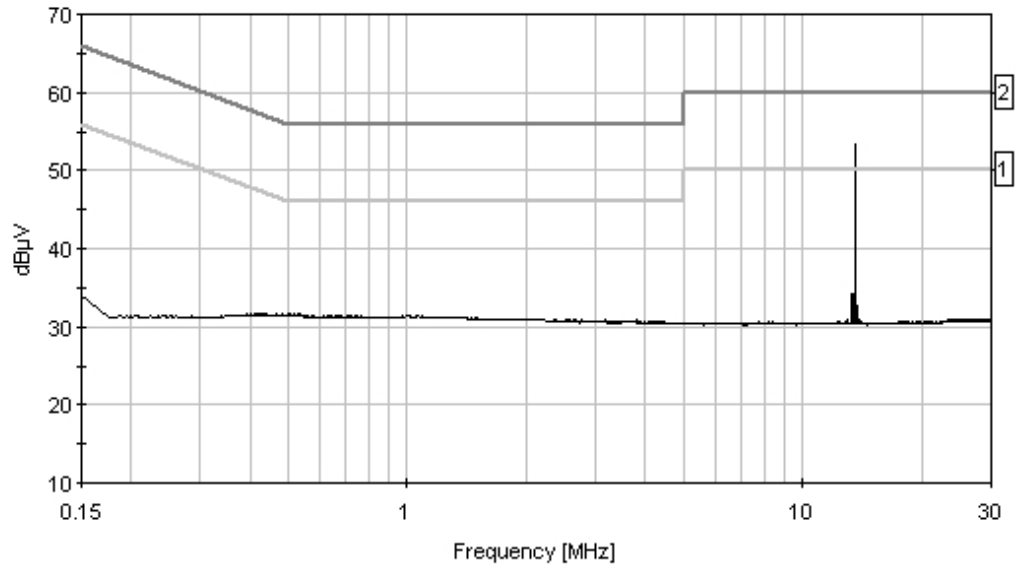
Transducer Legend:

| | |
|---------------------------------|-----------------------------|
| T1=LISN Insertion Loss s/n280 | T2=Filter 150kHz HP AN02608 |
| T3=Cable - Site D LISN 100k-30M | |

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

| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | Dist dB | Table | Corr dB μ V | Spec dB μ V | Margin dB | Polar Ant |
|---|----------|-----------------|-------|-------|-------|---------|-------|-----------------|-----------------|-----------|-----------|
| 1 | 499.059k | 19.1 | +0.3 | +0.3 | +11.9 | +0.0 | | 31.6 | 46.0 | -14.4 | White |
| 2 | 976.453k | 19.1 | +0.3 | +0.2 | +11.8 | +0.0 | | 31.4 | 46.0 | -14.6 | White |
| 3 | 13.562M | 23.6 | +0.4 | +0.1 | +10.9 | +0.0 | | 35.0 | 50.0 | -15.0 | White |
| | Ave | | | | | | | | | | |
| ^ | 13.560M | 42.0 | +0.4 | +0.1 | +10.9 | +0.0 | | 53.4 | 50.0 | +3.4 | White |
| 5 | 4.495M | 19.2 | +0.3 | +0.1 | +11.0 | +0.0 | | 30.6 | 46.0 | -15.4 | White |
| 6 | 27.140M | 19.2 | +0.5 | +0.1 | +11.0 | +0.0 | | 30.8 | 50.0 | -19.2 | White |
| 7 | 178.100k | 19.0 | +0.3 | +0.3 | +11.7 | +0.0 | | 31.3 | 54.6 | -23.3 | White |

CKC Laboratories Date: 12/20/2006 Time: 13:31:28 HID Global WO#: 85766
 FCC 15.207 - AVE Test Lead: White 120V 60Hz Sequence#: 15
 HID Global Corp. MN 6101B (6303-310) iClass RW100



— Sweep Data — 1 - FCC 15.207 - AVE — 2 - FCC 15.207 - QP

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.207 - AVE**
 Work Order #: **85766** Date: 12/20/2006
 Test Type: **Conducted Emissions** Time: 12:53:29
 Equipment: **61xxB iCLASS Readers** Sequence#: 13
 Manufacturer: **HID Global Corp.** Tested By: **Mike Wilkinson**
 Model: **6111B (6304-310) iClass RW300** 120V 60Hz
 S/N: **121806**

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6111B (6304-310) iClass RW300 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Frequency range investigated: 150 kHz - 30 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

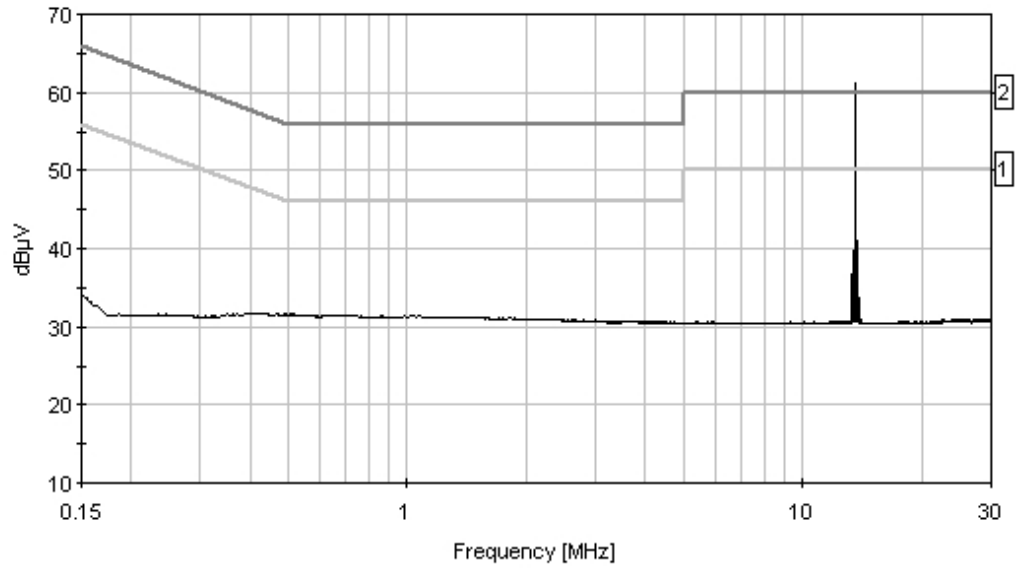
Transducer Legend:

| | |
|---------------------------------|-----------------------------|
| T1=LISN Insertion Loss s/n276 | T2=Filter 150kHz HP AN02608 |
| T3=Cable - Site D LISN 100k-30M | |

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

| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | Dist dB | Table | Corr dB μ V | Spec dB μ V | Margin dB | Polar Ant |
|---|----------|-----------------|-------|-------|-------|---------|-------|-----------------|-----------------|-----------|-----------|
| 1 | 13.562M | 47.7 | +0.5 | +0.1 | +10.9 | +0.0 | | 59.2 | 60.0 | -0.8 | Black |
| | QP | | | | | | | | | | |
| 2 | 4.001M | 18.9 | +0.4 | +0.1 | +11.0 | +0.0 | | 30.4 | 46.0 | -15.6 | Black |
| 3 | 13.561M | 20.8 | +0.5 | +0.1 | +10.9 | +0.0 | | 32.3 | 50.0 | -17.7 | Black |
| | Ave | | | | | | | | | | |
| ^ | 13.560M | 49.6 | +0.5 | +0.1 | +10.9 | +0.0 | | 61.1 | 50.0 | +11.1 | Black |
| 5 | 29.500M | 19.0 | +0.4 | +0.2 | +11.0 | +0.0 | | 30.6 | 50.0 | -19.4 | Black |
| 6 | 27.122M | 19.1 | +0.4 | +0.1 | +11.0 | +0.0 | | 30.6 | 50.0 | -19.4 | Black |
| 7 | 8.001M | 18.9 | +0.5 | +0.1 | +10.8 | +0.0 | | 30.3 | 50.0 | -19.7 | Black |
| 8 | 14.751M | 18.9 | +0.4 | +0.1 | +10.8 | +0.0 | | 30.2 | 50.0 | -19.8 | Black |
| 9 | 153.500k | 19.0 | +0.4 | +2.7 | +11.6 | +0.0 | | 33.7 | 55.8 | -22.1 | Black |

CKC Laboratories Date: 12/20/2006 Time: 12:53:29 HID Global WO#: 85766
 FCC 15.207 - AVE Test Lead: Black 120V 60Hz Sequence#: 13
 HID Global Corp. MN 6111B (6304-310) iClass RW300



— Sweep Data — 1 - FCC 15.207 - AVE — 2 - FCC 15.207 - QP

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.207 - AVE**
 Work Order #: **85766** Date: 12/20/2006
 Test Type: **Conducted Emissions** Time: 12:56:53
 Equipment: **61xxB iCLASS Readers** Sequence#: 12
 Manufacturer: **HID Global Corp.** Tested By: **Mike Wilkinson**
 Model: **6111B (6304-310) iClass RW300** 120V 60Hz
 S/N: **121806**

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6111B (6304-310) iClass RW300 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Frequency range investigated: 150 kHz - 30 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

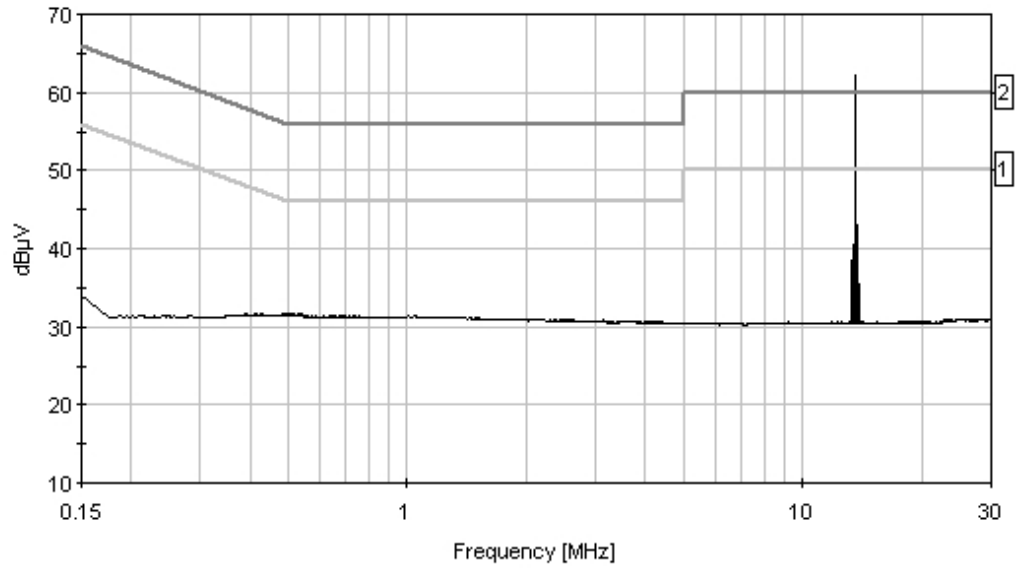
Transducer Legend:

| | |
|---------------------------------|-----------------------------|
| T1=LISN Insertion Loss s/n280 | T2=Filter 150kHz HP AN02608 |
| T3=Cable - Site D LISN 100k-30M | |

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

| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | Dist Table dB | Corr dB μ V | Spec dB μ V | Margin dB | Polar Ant |
|---|----------|-----------------|-------|-------|-------|---------------|-----------------|-----------------|-----------|-----------|
| 1 | 13.562M | 47.6 | +0.4 | +0.1 | +10.9 | +0.0 | 59.0 | 60.0 | -1.0 | White |
| | QP | | | | | | | | | |
| 2 | 13.560M | 21.4 | +0.4 | +0.1 | +10.9 | +0.0 | 32.8 | 50.0 | -17.2 | White |
| | Ave | | | | | | | | | |
| ^ | 13.559M | 50.8 | +0.4 | +0.1 | +10.9 | +0.0 | 62.2 | 50.0 | +12.2 | White |
| 4 | 8.000M | 19.5 | +0.5 | +0.1 | +10.8 | +0.0 | 30.9 | 50.0 | -19.1 | White |
| 5 | 29.500M | 19.0 | +0.5 | +0.2 | +11.0 | +0.0 | 30.7 | 50.0 | -19.3 | White |
| 6 | 14.764M | 19.3 | +0.4 | +0.1 | +10.8 | +0.0 | 30.6 | 50.0 | -19.4 | White |
| 7 | 169.000k | 19.3 | +0.3 | +0.9 | +11.7 | +0.0 | 32.2 | 55.0 | -22.8 | White |

CKC Laboratories Date: 12/20/2006 Time: 12:56:53 HID Global WO#: 85766
 FCC 15.207 - AVE Test Lead: White 120V 60Hz Sequence#: 12
 HID Global Corp. MN 6111B (6304-310) iClass RW300



— Sweep Data — 1 - FCC 15.207 - AVE — 2 - FCC 15.207 - QP

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.207 - AVE**
 Work Order #: **85766** Date: 12/20/2006
 Test Type: **Conducted Emissions** Time: 10:23:29
 Equipment: **61xxB iCLASS Readers** Sequence#: 10
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6121B (6305-310) iClass RW400 120V 60Hz
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6121B (6305-310) iClass RW400 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Frequency range investigated: 150 kHz - 30 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

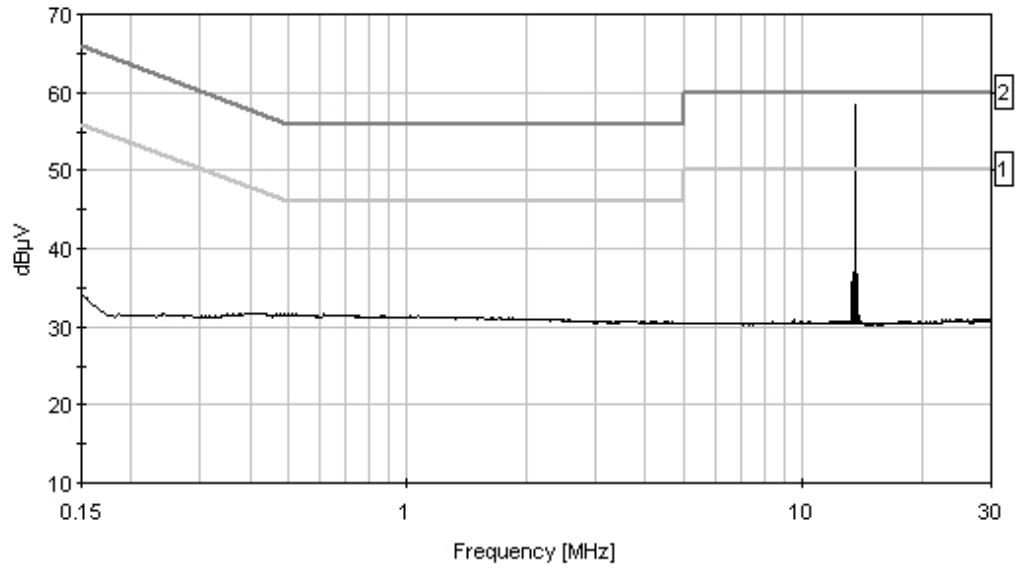
Transducer Legend:

| | |
|---------------------------------|-----------------------------|
| T1=LISN Insertion Loss s/n276 | T2=Filter 150kHz HP AN02608 |
| T3=Cable - Site D LISN 100k-30M | |

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

| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | Dist dB | Table | Corr dB μ V | Spec dB μ V | Margin dB | Polar Ant |
|---|----------|-----------------|-------|-------|-------|---------|-------|-----------------|-----------------|-----------|-----------|
| 1 | 4.000M | 19.1 | +0.4 | +0.1 | +11.0 | +0.0 | | 30.6 | 46.0 | -15.4 | Black |
| 2 | 13.556M | 19.4 | +0.5 | +0.1 | +10.9 | +0.0 | | 30.9 | 50.0 | -19.1 | Black |
| ^ | 13.559M | 46.8 | +0.5 | +0.1 | +10.9 | +0.0 | | 58.3 | 50.0 | +8.3 | Black |
| 4 | 12.000M | 18.9 | +0.5 | +0.1 | +10.9 | +0.0 | | 30.4 | 50.0 | -19.6 | Black |
| 5 | 27.122M | 18.9 | +0.4 | +0.1 | +11.0 | +0.0 | | 30.4 | 50.0 | -19.6 | Black |
| 6 | 14.750M | 19.0 | +0.4 | +0.1 | +10.8 | +0.0 | | 30.3 | 50.0 | -19.7 | Black |
| 7 | 151.200k | 19.1 | +0.4 | +3.0 | +11.6 | +0.0 | | 34.1 | 55.9 | -21.8 | Black |

CKC Laboratories Date: 12/20/2006 Time: 10:23:29 HID Global WO#: 85766
 FCC 15.207 - AVE Test Lead: Black 120V 60Hz Sequence#: 10
 HID Global Corp. MN 6121B (6305-310) iClass RW400



— Sweep Data — 1 - FCC 15.207 - AVE — 2 - FCC 15.207 - QP

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.207 - AVE**
 Work Order #: **85766** Date: 12/20/2006
 Test Type: **Conducted Emissions** Time: 10:41:18
 Equipment: **61xxB iCLASS Readers** Sequence#: 11
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6121B (6305-310) iClass RW400 120V 60Hz
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6121B (6305-310) iClass RW400 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Frequency range investigated: 150 kHz - 30 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

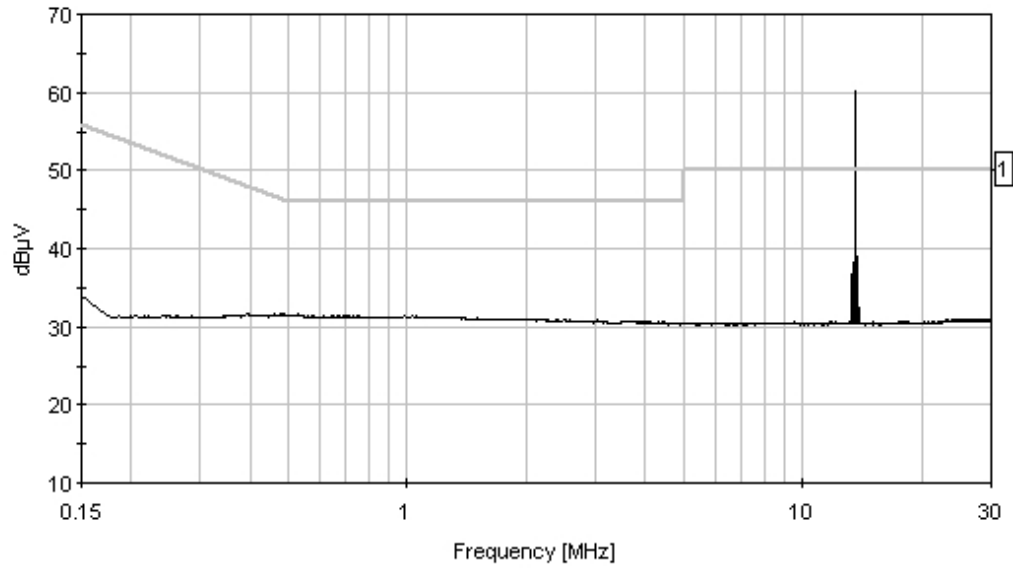
Transducer Legend:

| | |
|---------------------------------|-----------------------------|
| T1=LISN Insertion Loss s/n280 | T2=Filter 150kHz HP AN02608 |
| T3=Cable - Site D LISN 100k-30M | |

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

| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | Dist Table dB | Corr dB μ V | Spec dB μ V | Margin dB | Polar Ant |
|---|----------|-----------------|-------|-------|-------|---------------|-----------------|-----------------|-----------|-----------|
| 1 | 13.562M | 46.9 | +0.4 | +0.1 | +10.9 | +0.0 | 58.3 | 60.0 | -1.7 | White |
| | QP | | | | | | | | | |
| 2 | 4.000M | 18.9 | +0.4 | +0.1 | +11.0 | +0.0 | 30.4 | 46.0 | -15.6 | White |
| 3 | 27.122M | 19.0 | +0.5 | +0.1 | +11.0 | +0.0 | 30.6 | 50.0 | -19.4 | White |
| 4 | 12.000M | 18.9 | +0.4 | +0.1 | +10.9 | +0.0 | 30.3 | 50.0 | -19.7 | White |
| 5 | 14.750M | 19.0 | +0.4 | +0.1 | +10.8 | +0.0 | 30.3 | 50.0 | -19.7 | White |
| 6 | 150.000k | 18.9 | +0.3 | +3.1 | +11.6 | +0.0 | 33.9 | 56.0 | -22.1 | White |
| 7 | 13.561M | 13.1 | +0.4 | +0.1 | +10.9 | +0.0 | 24.5 | 50.0 | -25.5 | White |
| | Ave | | | | | | | | | |
| ^ | 13.560M | 48.7 | +0.4 | +0.1 | +10.9 | +0.0 | 60.1 | 50.0 | +10.1 | White |

CKC Laboratories Date: 12/20/2006 Time: 10:41:18 HID Global WO#: 85766
FCC 15.207 - AVE Test Lead: White 120V 60Hz Sequence#: 11
HID Global Corp. MN 6121B (6305-310) iClass RW400



Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.209**
 Work Order #: **85766** Date: 12/18/2006
 Test Type: **Radiated Scan** Time: 16:55:59
 Equipment: **61xxB iCLASS Readers** Sequence#: 4
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6101B (6303-310) iClass RW100
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6101B (6303-310) iClass RW100 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test data is corrected for proper test distance using 40dB per decade correction factor in accordance with 15.31. Frequency range investigated: 9 kHz to 30 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

Transducer Legend:

| | |
|----------------------------------|-----------------------------------|
| T1=Cable - Site D 10m 9k-1G | T2=Mag Loop - AN 00226 - 9kHz-30M |
| T3=15.31 10m 40dB/Dec Correction | |

Measurement Data:

Reading listed by margin.

Test Distance: 10 Meters

| # | Freq MHz | Rdng dBµV | T1 dB | T2 dB | T3 dB | Dist Table dB | Corr dBµV/m | Spec dBµV/m | Margin dB | Polar Ant |
|---|----------|-----------|-------|-------|-------|---------------|-------------|-------------|-----------|-----------|
| 1 | 4.003M | 14.6 | +0.6 | +10.0 | -20.0 | +0.0 | 5.2 | 29.5 | -24.3 | Horiz |
| 2 | 27.124M | 13.5 | +1.4 | +6.6 | -20.0 | +0.0 | 1.5 | 29.5 | -28.0 | Horiz |
| 3 | 14.757M | 10.8 | +1.0 | +9.5 | -20.0 | +0.0 | 1.3 | 29.5 | -28.2 | Horiz |
| 4 | 8.008M | 6.0 | +0.8 | +9.8 | -20.0 | +0.0 | -3.4 | 29.5 | -32.9 | Vert |
| 5 | 29.507M | 8.0 | +1.5 | +5.7 | -20.0 | +0.0 | -4.8 | 29.5 | -34.3 | Horiz |
| 6 | 14.751M | 3.9 | +1.0 | +9.5 | -20.0 | +0.0 | -5.6 | 29.5 | -35.1 | Vert |
| 7 | 27.095M | 4.6 | +1.4 | +6.6 | -20.0 | +0.0 | -7.4 | 29.5 | -36.9 | Vert |

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.209**
 Work Order #: **85766** Date: 12/19/2006
 Test Type: **Radiated Scan** Time: 13:58:29
 Equipment: **61xxB iCLASS Readers** Sequence#: 7
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6111B (6304-310) iClass RW300
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6111B (6304-310) iClass RW300 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test data is corrected for proper test distance using 40dB per decade correction factor in accordance with 15.31. Frequency range investigated: 9 kHz to 30 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

Transducer Legend:

| | |
|----------------------------------|-----------------------------------|
| T1=Cable - Site D 10m 9k-1G | T2=Mag Loop - AN 00226 - 9kHz-30M |
| T3=15.31 10m 40dB/Dec Correction | |

Measurement Data:

Reading listed by margin.

Test Distance: 10 Meters

| # | Freq MHz | Rdng dBµV | T1 dB | T2 dB | T3 dB | Dist Table dB | Corr dBµV/m | Spec dBµV/m | Margin dB | Polar Ant |
|---|----------|-----------|-------|-------|-------|---------------|-------------|-------------|-----------|-----------|
| 1 | 27.122M | 20.7 | +1.4 | +6.6 | -20.0 | +0.0 | 8.7 | 29.5 | -20.8 | Horiz |
| 2 | 27.123M | 15.0 | +1.4 | +6.6 | -20.0 | +0.0 | 3.0 | 29.5 | -26.5 | Vert |
| 3 | 14.758M | 9.5 | +1.0 | +9.5 | -20.0 | +0.0 | 0.0 | 29.5 | -29.5 | Vert |
| 4 | 27.145M | 11.1 | +1.4 | +6.6 | -20.0 | +0.0 | -0.9 | 29.5 | -30.4 | Horiz |
| 5 | 8.035M | 7.1 | +0.8 | +9.8 | -20.0 | +0.0 | -2.3 | 29.5 | -31.8 | Vert |
| 6 | 16.021M | 5.3 | +1.0 | +9.3 | -20.0 | +0.0 | -4.4 | 29.5 | -33.9 | Horiz |
| 7 | 27.155M | 7.4 | +1.4 | +6.6 | -20.0 | +0.0 | -4.6 | 29.5 | -34.1 | Vert |
| 8 | 29.521M | 7.3 | +1.5 | +5.7 | -20.0 | +0.0 | -5.5 | 29.5 | -35.0 | Horiz |

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.209**
 Work Order #: **85766** Date: 12/19/2006
 Test Type: **Radiated Scan** Time: 15:10:50
 Equipment: **61xxB iCLASS Readers** Sequence#: 9
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6121B (6305-310) iClass RW400
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6121B (6305-310) iClass RW400 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test data is corrected for proper test distance using 40dB per decade correction factor in accordance with 15.31. Frequency range investigated: 9 kHz to 30 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

Transducer Legend:

| | |
|----------------------------------|-----------------------------------|
| T1=Cable - Site D 10m 9k-1G | T2=Mag Loop - AN 00226 - 9kHz-30M |
| T3=15.31 10m 40dB/Dec Correction | |

Measurement Data: Reading listed by margin. Test Distance: 10 Meters

| # | Freq MHz | Rdng dBµV | T1 dB | T2 dB | T3 dB | Dist Table dB | Corr dBµV/m | Spec dBµV/m | Margin dB | Polar Ant |
|---|----------|-----------|-------|-------|-------|---------------|-------------|-------------|-----------|-----------|
| 1 | 27.122M | 19.8 | +1.4 | +6.6 | -20.0 | +0.0 | 7.8 | 29.5 | -21.7 | Horiz |
| 2 | 8.027M | 12.8 | +0.8 | +9.8 | -20.0 | +0.0 | 3.4 | 29.5 | -26.1 | Vert |
| 3 | 27.121M | 13.6 | +1.4 | +6.6 | -20.0 | +0.0 | 1.6 | 29.5 | -27.9 | Vert |
| 4 | 27.147M | 12.4 | +1.4 | +6.6 | -20.0 | +0.0 | 0.4 | 29.5 | -29.1 | Horiz |
| 5 | 29.532M | 12.8 | +1.5 | +5.7 | -20.0 | +0.0 | 0.0 | 29.5 | -29.5 | Horiz |
| 6 | 27.096M | 10.1 | +1.4 | +6.6 | -20.0 | +0.0 | -1.9 | 29.5 | -31.4 | Horiz |
| 7 | 27.145M | 10.0 | +1.4 | +6.6 | -20.0 | +0.0 | -2.0 | 29.5 | -31.5 | Vert |
| 8 | 29.504M | 9.8 | +1.5 | +5.7 | -20.0 | +0.0 | -3.0 | 29.5 | -32.5 | Vert |
| 9 | 16.004M | 4.1 | +1.0 | +9.3 | -20.0 | +0.0 | -5.6 | 29.5 | -35.1 | Vert |

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.209**
 Work Order #: **85766** Date: 12/18/2006
 Test Type: **Radiated Scan** Time: 15:47:33
 Equipment: **61xxB iCLASS Readers** Sequence#: 3
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6101B (6303-310) iClass RW100
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6101B (6303-310) iClass RW100 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test distance correction factor used in accordance with 15.31, 20dB per decade. Frequency range investigated: 30-1000 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

Transducer Legend:

| | |
|-----------------------------|-----------------|
| T1=Amp - S/N 604 | T2=Bilog Site D |
| T3=Cable - Site D 10m 9k-1G | |

Measurement Data: Reading listed by margin. Test Distance: 10 Meters

| # | Freq MHz | Rdng dBµV | T1 dB | T2 dB | T3 dB | Dist Table dB | Corr dBµV/m | Spec dBµV/m | Margin dB | Polar Ant |
|---|----------|-----------|-------|-------|-------|---------------|-------------|-------------|-----------|-----------|
| 1 | 203.428M | 38.7 | -26.5 | +8.6 | +4.2 | +10.0 | 35.0 | 43.5 | -8.5 | Vert |
| 2 | 366.159M | 33.5 | -26.6 | +14.6 | +5.9 | +10.0 | 37.4 | 46.0 | -8.6 | Vert |
| 3 | 176.309M | 37.5 | -26.7 | +8.4 | +3.9 | +10.0 | 33.1 | 43.5 | -10.4 | Vert |
| | QP | | | | | | | | | |
| 4 | 406.839M | 28.9 | -26.9 | +15.6 | +6.5 | +10.0 | 34.1 | 46.0 | -11.9 | Vert |
| 5 | 284.794M | 31.9 | -26.1 | +12.6 | +5.4 | +10.0 | 33.8 | 46.0 | -12.2 | Vert |
| 6 | 217.006M | 35.7 | -26.3 | +9.7 | +4.4 | +10.0 | 33.5 | 46.0 | -12.5 | Vert |
| 7 | 366.159M | 29.1 | -26.6 | +14.6 | +5.9 | +10.0 | 33.0 | 46.0 | -13.0 | Horiz |
| 8 | 352.598M | 28.6 | -26.5 | +14.3 | +5.6 | +10.0 | 32.0 | 46.0 | -14.0 | Vert |

| | | | | | | | | | | |
|----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 9 | 203.440M | 32.6 | -26.5 | +8.6 | +4.2 | +10.0 | 28.9 | 43.5 | -14.6 | Horiz |
| 10 | 122.045M | 30.9 | -26.7 | +11.0 | +3.3 | +10.0 | 28.5 | 43.5 | -15.0 | Vert |
| 11 | 162.741M | 31.5 | -26.7 | +9.8 | +3.8 | +10.0 | 28.4 | 43.5 | -15.1 | Vert |
| 12 | 366.159M | 26.8 | -26.6 | +14.6 | +5.9 | +10.0 | 30.7 | 46.0 | -15.3 | Horiz |
| 13 | 217.001M | 32.9 | -26.3 | +9.7 | +4.4 | +10.0 | 30.7 | 46.0 | -15.3 | Horiz |
| 14 | 379.719M | 25.5 | -26.7 | +14.9 | +6.1 | +10.0 | 29.8 | 46.0 | -16.2 | Vert |
| 15 | 257.686M | 28.2 | -26.0 | +12.1 | +5.1 | +10.0 | 29.4 | 46.0 | -16.6 | Horiz |
| 16 | 271.242M | 26.4 | -26.0 | +12.4 | +5.3 | +10.0 | 28.1 | 46.0 | -17.9 | Vert |
| 17 | 67.805M | 28.7 | -26.8 | +5.8 | +2.3 | +10.0 | 20.0 | 40.0 | -20.0 | Vert |

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.209**
 Work Order #: **85766** Date: 12/18/2006
 Test Type: **Radiated Scan** Time: 13:40:18
 Equipment: **61xxB iCLASS Readers** Sequence#: 2
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6111B (6304-310) iClass RW300
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6111B (6304-310) iClass RW300 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test distance correction factor used in accordance with 15.31, 20dB per decade. Frequency range investigated: 30-1000 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

Transducer Legend:

| | |
|-----------------------------|-----------------|
| T1=Amp - S/N 604 | T2=Bilog Site D |
| T3=Cable - Site D 10m 9k-1G | |

Measurement Data: Reading listed by margin. Test Distance: 10 Meters

| # | Freq MHz | Rdng dBµV | T1 dB | T2 dB | T3 dB | Dist Table dB | Corr dBµV/m | Spec dBµV/m | Margin dB | Polar Ant |
|---|----------------|-----------|-------|-------|-------|---------------|-------------|-------------|-----------|-----------|
| 1 | 596.662M | 31.0 | -27.7 | +19.0 | +8.4 | +10.0 | 40.7 | 46.0 | -5.3 | Verti |
| 2 | 40.694M QP | 37.9 | -27.0 | +12.0 | +1.7 | +10.0 | 34.6 | 40.0 | -5.4 | Verti |
| 3 | 230.543M QP | 41.3 | -26.2 | +10.7 | +4.7 | +10.0 | 40.5 | 46.0 | -5.5 | Verti |
| 4 | 623.807M | 28.9 | -27.6 | +19.4 | +8.4 | +10.0 | 39.1 | 46.0 | -6.9 | Verti |
| 5 | 339.035M | 35.2 | -26.4 | +13.9 | +5.6 | +10.0 | 38.3 | 46.0 | -7.7 | Verti |
| 6 | 54.243M | 39.8 | -26.8 | +7.3 | +2.0 | +10.0 | 32.3 | 40.0 | -7.7 | Verti |
| 7 | 230.545M | 38.4 | -26.2 | +10.7 | +4.7 | +10.0 | 37.6 | 46.0 | -8.4 | Horiz |
| 8 | 176.294M QP | 37.8 | -26.7 | +8.4 | +3.9 | +10.0 | 33.4 | 43.5 | -10.1 | Verti |

| | | | | | | | | | | |
|----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 9 | 406.835M | 30.3 | -26.9 | +15.6 | +6.5 | +10.0 | 35.5 | 46.0 | -10.5 | Verti |
| 10 | 203.418M | 36.6 | -26.5 | +8.6 | +4.2 | +10.0 | 32.9 | 43.5 | -10.6 | Verti |
| 11 | 257.687M | 34.2 | -26.0 | +12.1 | +5.1 | +10.0 | 35.4 | 46.0 | -10.6 | Verti |
| 12 | 311.925M | 31.9 | -26.3 | +13.2 | +5.5 | +10.0 | 34.3 | 46.0 | -11.7 | Verti |
| 13 | 433.968M | 28.5 | -27.1 | +16.1 | +6.7 | +10.0 | 34.2 | 46.0 | -11.8 | Horiz |
| 14 | 366.155M | 29.6 | -26.6 | +14.6 | +5.9 | +10.0 | 33.5 | 46.0 | -12.5 | Verti |
| 15 | 379.715M | 29.2 | -26.7 | +14.9 | +6.1 | +10.0 | 33.5 | 46.0 | -12.5 | Verti |
| 16 | 67.784M | 35.7 | -26.8 | +5.8 | +2.3 | +10.0 | 27.0 | 40.0 | -13.0 | Verti |
| 17 | 352.595M | 29.5 | -26.5 | +14.3 | +5.6 | +10.0 | 32.9 | 46.0 | -13.1 | Verti |
| 18 | 284.807M | 31.0 | -26.1 | +12.6 | +5.4 | +10.0 | 32.9 | 46.0 | -13.1 | Verti |
| 19 | 40.692M | 29.7 | -27.0 | +12.0 | +1.7 | +10.0 | 26.4 | 40.0 | -13.6 | Horiz |
| 20 | 54.252M | 33.5 | -26.8 | +7.3 | +2.0 | +10.0 | 26.0 | 40.0 | -14.0 | Horiz |
| 21 | 162.734M | 31.9 | -26.7 | +9.8 | +3.8 | +10.0 | 28.8 | 43.5 | -14.7 | Verti |
| 22 | 339.013M | 28.1 | -26.4 | +13.9 | +5.6 | +10.0 | 31.2 | 46.0 | -14.8 | Horiz |
| 23 | 216.996M | 31.4 | -26.3 | +9.7 | +4.4 | +10.0 | 29.2 | 46.0 | -16.8 | Horiz |
| 24 | 122.054M | 27.9 | -26.7 | +11.0 | +3.3 | +10.0 | 25.5 | 43.5 | -18.0 | Verti |
| 25 | 216.978M | 24.7 | -26.3 | +9.7 | +4.4 | +10.0 | 22.5 | 46.0 | -23.5 | Verti |

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.209**
 Work Order #: **85766** Date: 12/18/2006
 Test Type: **Radiated Scan** Time: 12:18:56
 Equipment: **61xxB iCLASS Readers** Sequence#: 1
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6121B (6305-310) iClass RW400
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6121B (6305-310) iClass RW400 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test distance correction factor used in accordance with 15.31, 20dB per decade. Frequency range investigated: 30-1000 MHz. Temperature: 21.5°C, Relative Humidity: 48%.

Transducer Legend:

| | |
|-----------------------------|-----------------|
| T1=Amp - S/N 604 | T2=Bilog Site D |
| T3=Cable - Site D 10m 9k-1G | |

Measurement Data: Reading listed by margin. Test Distance: 10 Meters

| # | Freq MHz | Rdng dBµV | T1 dB | T2 dB | T3 dB | Dist Table dB | Corr dBµV/m | Spec dBµV/m | Margin dB | Polar Ant |
|---|----------------|-----------|-------|-------|-------|---------------|-------------|-------------|-----------|-----------|
| 1 | 176.305M QP | 43.3 | -26.7 | +8.4 | +3.9 | +10.0 | 38.9 | 43.5 | -4.6 | Verti |
| 2 | 54.243M | 39.7 | -26.8 | +7.3 | +2.0 | +10.0 | 32.2 | 40.0 | -7.8 | Verti |
| 3 | 162.737M | 37.5 | -26.7 | +9.8 | +3.8 | +10.0 | 34.4 | 43.5 | -9.1 | Verti |
| 4 | 325.481M | 32.2 | -26.4 | +13.5 | +5.6 | +10.0 | 34.9 | 46.0 | -11.1 | Verti |
| 5 | 311.902M | 32.2 | -26.3 | +13.2 | +5.5 | +10.0 | 34.6 | 46.0 | -11.4 | Verti |
| 6 | 339.041M | 30.9 | -26.4 | +13.9 | +5.6 | +10.0 | 34.0 | 46.0 | -12.0 | Verti |
| 7 | 203.425M | 35.1 | -26.5 | +8.6 | +4.2 | +10.0 | 31.4 | 43.5 | -12.1 | Verti |
| 8 | 284.786M | 31.8 | -26.1 | +12.6 | +5.4 | +10.0 | 33.7 | 46.0 | -12.3 | Verti |

| | | | | | | | | | | |
|----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 9 | 339.032M | 29.1 | -26.4 | +13.9 | +5.6 | +10.0 | 32.2 | 46.0 | -13.8 | Horiz |
| 10 | 311.912M | 29.2 | -26.3 | +13.2 | +5.5 | +10.0 | 31.6 | 46.0 | -14.4 | Horiz |
| 11 | 257.691M | 29.9 | -26.0 | +12.1 | +5.1 | +10.0 | 31.1 | 46.0 | -14.9 | Verti |
| 12 | 216.980M | 33.0 | -26.3 | +9.7 | +4.4 | +10.0 | 30.8 | 46.0 | -15.2 | Verti |
| 13 | 203.441M | 30.9 | -26.5 | +8.6 | +4.2 | +10.0 | 27.2 | 43.5 | -16.3 | Horiz |
| 14 | 203.441M | 30.5 | -26.5 | +8.6 | +4.2 | +10.0 | 26.8 | 43.5 | -16.7 | Verti |
| 15 | 271.212M | 27.4 | -26.0 | +12.4 | +5.3 | +10.0 | 29.1 | 46.0 | -16.9 | Verti |
| 16 | 149.177M | 29.3 | -26.7 | +10.4 | +3.6 | +10.0 | 26.6 | 43.5 | -16.9 | Verti |
| 17 | 352.592M | 22.5 | -26.5 | +14.3 | +5.6 | +10.0 | 25.9 | 46.0 | -20.1 | Horiz |
| 18 | 216.998M | 27.9 | -26.3 | +9.7 | +4.4 | +10.0 | 25.7 | 46.0 | -20.3 | Horiz |

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.225(a)**
 Work Order #: **85766** Date: 12/19/2006
 Test Type: **Radiated Scan** Time: 10:08:20
 Equipment: **61xxB iCLASS Readers** Sequence#: 5
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6101B (6303-310) iClass RW100
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6101B (6303-310) iClass RW100 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test data is corrected for proper test distance using 40dB per decade correction factor in accordance with 15.31. Frequency range investigated: Carrier. Temperature: 21.5°C, Relative Humidity: 48%.

Transducer Legend:

| | |
|----------------------------------|-----------------------------------|
| T1=Cable - Site D 10m 9k-1G | T2=Mag Loop - AN 00226 - 9kHz-30M |
| T3=15.31 10m 40dB/Dec Correction | |

Measurement Data: Reading listed by margin. Test Distance: 10 Meters

| # | Freq MHz | Rdng dBµV | T1 dB | T2 dB | T3 dB | Dist Table dB | Corr dBµV/m | Spec dBµV/m | Margin dB | Polar Ant |
|---|----------|-----------|-------|-------|-------|---------------|-------------|-------------|-----------|-----------|
| 1 | 13.562M | 42.8 | +1.0 | +9.6 | -20.0 | +0.0 | 33.4 | 84.0 | -50.6 | Horiz |
| 2 | 13.562M | 42.8 | +1.0 | +9.6 | -20.0 | +0.0 | 33.4 | 84.0 | -50.6 | Vert |

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.225(a)**
 Work Order #: **85766** Date: 12/19/2006
 Test Type: **Radiated Scan** Time: 11:52:47
 Equipment: **61xxB iCLASS Readers** Sequence#: 6
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6111B (6304-310) iClass RW300
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6111B (6304-310) iClass RW300 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test data is corrected for proper test distance using 40dB per decade correction factor in accordance with 15.31. Frequency range investigated: Carrier. Temperature: 21.5°C, Relative Humidity: 48%.

Transducer Legend:

| | |
|----------------------------------|-----------------------------------|
| T1=Cable - Site D 10m 9k-1G | T2=Mag Loop - AN 00226 - 9kHz-30M |
| T3=15.31 10m 40dB/Dec Correction | |

Measurement Data: Reading listed by margin. Test Distance: 10 Meters

| # | Freq MHz | Rdng dBµV | T1 dB | T2 dB | T3 dB | Dist Table dB | Corr dBµV/m | Spec dBµV/m | Margin dB | Polar Ant |
|---|----------|-----------|-------|-------|-------|---------------|-------------|-------------|-----------|-----------|
| 1 | 13.562M | 47.6 | +1.0 | +9.6 | -20.0 | +0.0 | 38.2 | 84.0 | -45.8 | Vert |
| 2 | 13.562M | 45.3 | +1.0 | +9.6 | -20.0 | +0.0 | 35.9 | 84.0 | -48.1 | Horiz |

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **HID Global**
 Specification: **FCC 15.225(a)**
 Work Order #: **85766** Date: 12/19/2006
 Test Type: **Radiated Scan** Time: 14:39:07
 Equipment: **61xxB iCLASS Readers** Sequence#: 8
 Manufacturer: HID Global Corp. Tested By: Mike Wilkinson
 Model: 6121B (6305-310) iClass RW400
 S/N: 121806

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-----------------------|------------------|-------------------------------|--------|
| 61xxB iCLASS Readers* | HID Global Corp. | 6121B (6305-310) iClass RW400 | 121806 |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-----------------|--------------|----------|--------|
| DC Power Supply | Topward | TPS-2000 | 920035 |

Test Conditions / Notes:

EUT is an iClass reader operating on a carrier frequency of 13.56 MHz. EUT is transmitting continuously with a tag in the field. The power supply chassis was bonded to the ground plane. The drain wire was not connected to the power supply. RS232 module was installed. Test data is corrected for proper test distance using 40dB per decade correction factor in accordance with 15.31. Frequency range investigated: Carrier. Temperature: 21.5°C, Relative Humidity: 48%.

Transducer Legend:

| | |
|----------------------------------|-----------------------------------|
| T1=Cable - Site D 10m 9k-1G | T2=Mag Loop - AN 00226 - 9kHz-30M |
| T3=15.31 10m 40dB/Dec Correction | |

Measurement Data: Reading listed by margin. Test Distance: 10 Meters

| # | Freq MHz | Rdng dBµV | T1 dB | T2 dB | T3 dB | Dist dB | Table | Corr dBµV/m | Spec dBµV/m | Margin dB | Polar Ant |
|---|-------------|--------------|----------|----------|----------|------------|-------|----------------|----------------|--------------|--------------|
| 1 | 13.561M | 50.6 | +1.0 | +9.6 | -20.0 | +0.0 | | 41.2 | 84.0 | -42.8 | Vert |
| 2 | 13.561M | 47.3 | +1.0 | +9.6 | -20.0 | +0.0 | | 37.9 | 84.0 | -46.1 | Horiz |