



HID GLOBAL CORPORATION TEST REPORT
FOR THE
6125BXA MULTICLASS RP40 READER
FCC PART 15 SUBPART C SECTIONS 15.207, 15.209 & 15.225 AND RSS-210
COMPLIANCE

DATE OF ISSUE: MARCH 15, 2007

PREPARED FOR:

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

P.O. No.: 11007580
W.O. No.: 85597

PREPARED BY:

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Date of test: January 9-25, 2007

Report No.: FC07-016

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ADMINISTRATIVE INFORMATION

DATE OF TEST: January 9-25, 2007

DATE OF RECEIPT: January 9, 2007

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: FCC Part 15 Subpart C Sections 15.207, 15.209, 15.225, RSS-210 and
RSS GEN

PURPOSE OF TEST: To demonstrate the compliance of the 6125BxA multiCLASS RP40
Reader with the requirements for FCC Part 15 Subpart C Sections
15.207, 15.209, 15.225 and RSS-210 devices.

APPROVALS

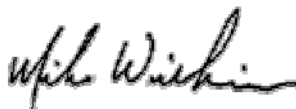
Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:



Joyce Walker, Quality Assurance Administrative
Manager

TEST PERSONNEL:



Mike Wilkinson, EMC Engineer/Lab
Manager

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.

FCC 15.33(a) Frequency Ranges Tested

15.207 Conducted Emissions: 150 kHz – 30 MHz

15.209 Radiated Emissions: 9 kHz – 1 GHz

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.

EUT Operating Frequency

The EUT was operating at 13.56MHz & 125kHz.

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 reader includes a 3128A ASK Prox Expansion Module.

The following model was tested by CKC Laboratories: **6125xxAxx iCLASS RP40**

(Since the time of testing the manufacturer has chosen to use the following model name in its place. Any differences between the names does not affect their EMC characteristics and therefore complies to the level of testing equivalent to the tested model name shown on the data sheets: **6125BxA multiCLASS RP40 Reader**

EQUIPMENT UNDER TEST

multiCLASS RP40 Reader

Manuf: HID Global Corporation
Model: 6125BxA
Serial: 010907
FCC ID: pending

PERIPHERAL DEVICES

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

DC Power Supply

Manuf: Topward Electric Instruments Co., Ltd.
Model: TPS-2000
Serial: 920035

REPORT OF EMISSIONS MEASUREMENTS

TESTING PARAMETERS

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

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits to determine compliance. 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. This reading was then compared to the applicable specification limit to determine compliance.

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 were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. The following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. When conducted emissions testing was performed, a 10 dB external attenuator was used with internal offset correction in the analyzer.

MEASURING EQUIPMENT BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	>1 GHz	1 MHz

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions 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 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/receiver readings were recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

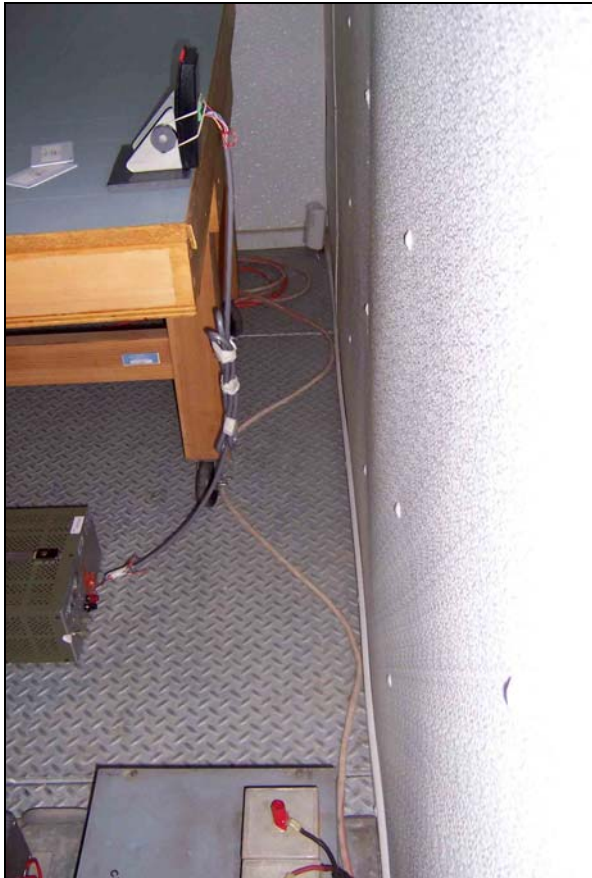
When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

Average

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

FCC 15.207 CONDUCTED EMISSIONS

Test Setup Photos



Test Data Sheets

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

Customer: **HID Global Corporation**
 Specification: **FCC 15.207 - AVE**
 Work Order #: **85597**
 Test Type: **Conducted Emissions**
 Equipment: **iCLASS Reader**
 Manufacturer: HID Global Corporation
 Model: 6125xxAxx iCLASS RP40
 S/N: 010907

Date: 1/10/2007
 Time: 3:34:04 PM
 Sequence#: 6
 Tested By: Mike Wilkinson
 120V 60Hz

Test Equipment:

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
iCLASS Reader*	HID Global Corporation	6125xxAxx iCLASS RP40	010907

Support Devices:

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035

Test Conditions / Notes:

Equipment is an iCLASS Reader operating on a frequency of 13.56MHz & 125kHz. The EUT is mounted vertically on a support structure to simulate normal installation. DC power supply is bonded to ground. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 21°C, Relative Humidity: 35%.

Transducer Legend:

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

Measurement Data:

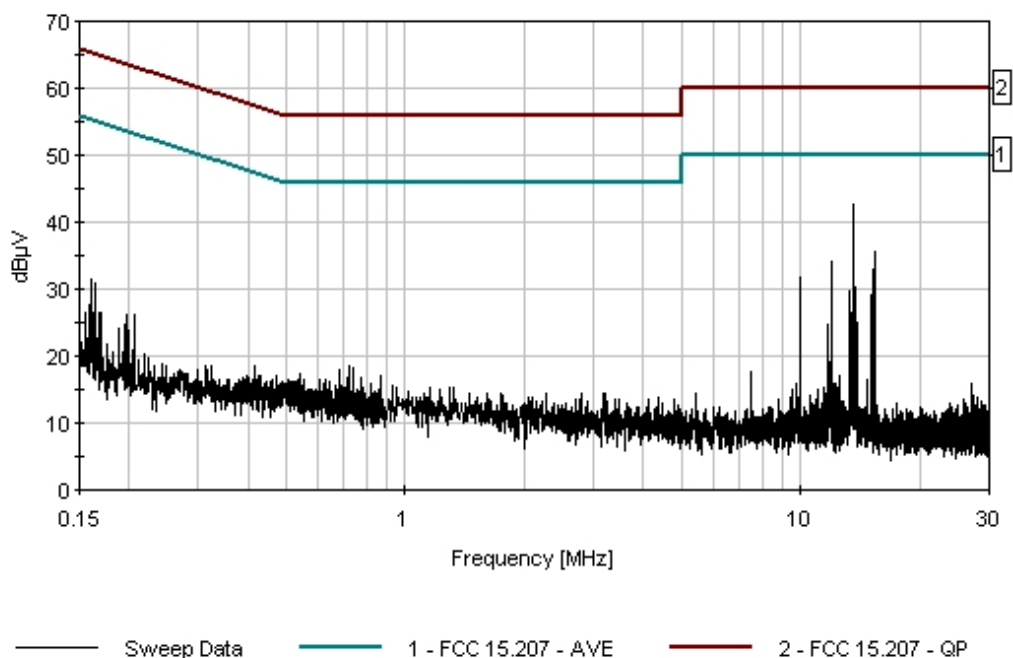
Reading listed by margin.

Test Lead: Black

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	13.560M	31.2	+0.5	+0.1	+10.9	+0.0	42.7	50.0	-7.3	Black	
2	13.563M	29.0	+0.5	+0.1	+10.9	+0.0	40.5	50.0	-9.5	Black	
3	13.557M	28.5	+0.5	+0.1	+10.9	+0.0	40.0	50.0	-10.0	Black	
4	13.567M	24.4	+0.5	+0.1	+10.9	+0.0	35.9	50.0	-14.1	Black	
5	15.441M	24.4	+0.4	+0.1	+10.8	+0.0	35.7	50.0	-14.3	Black	
6	13.554M	23.1	+0.5	+0.1	+10.9	+0.0	34.6	50.0	-15.4	Black	

7	11.967M	22.7	+0.5	+0.1	+10.9	+0.0	34.2	50.0	-15.8	Black
8	15.251M	21.5	+0.4	+0.1	+10.8	+0.0	32.8	50.0	-17.2	Black
9	9.978M	20.5	+0.5	+0.1	+10.8	+0.0	31.9	50.0	-18.1	Black
10	13.570M	19.1	+0.5	+0.1	+10.9	+0.0	30.6	50.0	-19.4	Black
11	13.772M	18.7	+0.5	+0.1	+10.9	+0.0	30.2	50.0	-19.8	Black
12	13.775M	18.3	+0.5	+0.1	+10.9	+0.0	29.8	50.0	-20.2	Black
13	13.352M	18.2	+0.5	+0.1	+10.9	+0.0	29.7	50.0	-20.3	Black
14	13.550M	18.2	+0.5	+0.1	+10.9	+0.0	29.7	50.0	-20.3	Black
15	13.769M	17.7	+0.5	+0.1	+10.9	+0.0	29.2	50.0	-20.8	Black

CKC Laboratories Date: 1/10/2007 Time: 3:34:04 PM HID Global W/O#: 85597
 FCC 15.207 - AVE Test Lead: Black 120V 60Hz Sequence#: 6
 HID Global M/N 3125xxAxx iCLASS RP40



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

Customer: **HID Global Corporation**
 Specification: **FCC 15.207 - AVE**
 Work Order #: **85597**
 Test Type: **Conducted Emissions**
 Equipment: **iCLASS Reader**
 Manufacturer: **HID Global Corporation**
 Model: **6125xxAxx iCLASS RP40**
 S/N: **010907**

Date: 1/10/2007
 Time: 3:37:39 PM
 Sequence#: 7
 Tested By: Mike Wilkinson
 120V 60Hz

Test Equipment:

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
iCLASS Reader*	HID Global Corporation	6125xxAxx iCLASS RP40	010907

Support Devices:

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035

Test Conditions / Notes:

Equipment is an iCLASS Reader operating on a frequency of 13.56MHz & 125kHz. The EUT is mounted vertically on a support structure to simulate normal installation. DC power supply is bonded to ground. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 21°C, Relative Humidity: 35%.

Transducer Legend:

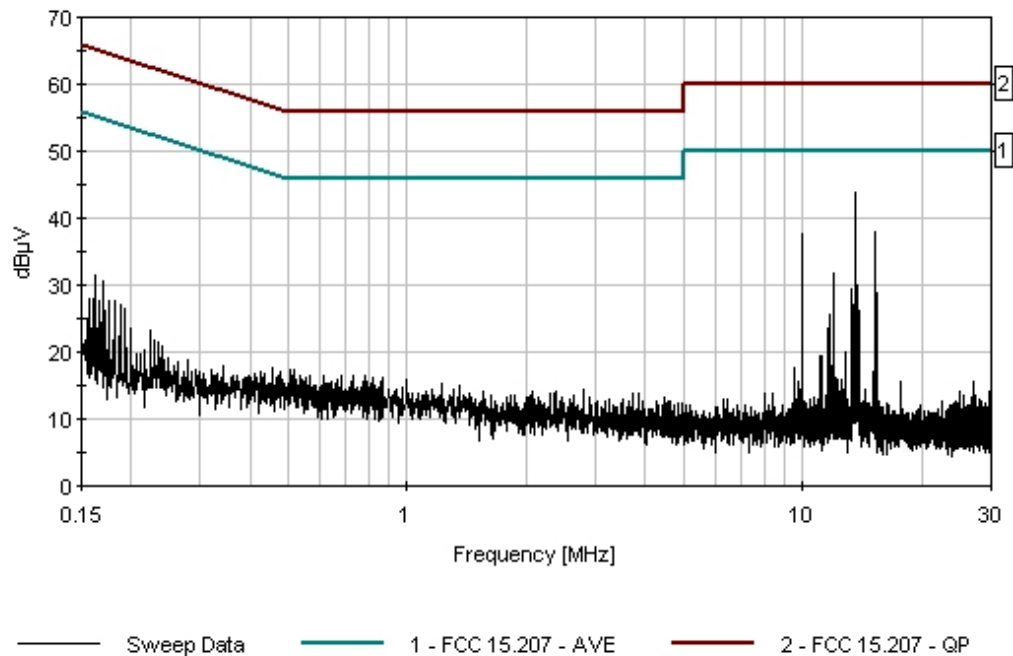
T1=LISN Insertion Loss s/n280	T2=Filter 150kHz HP AN02608
T3=Cable - Site D LISN 100k-30M	

Measurement Data:

#	Freq MHz	Rdng dB μ V	Reading listed by margin.			Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
			T1 dB	T2 dB	T3 dB					
1	13.561M	32.5	+0.4	+0.1	+10.9	+0.0	43.9	50.0	-6.1	White
2	13.565M	30.5	+0.4	+0.1	+10.9	+0.0	41.9	50.0	-8.1	White
3	13.559M	30.1	+0.4	+0.1	+10.9	+0.0	41.5	50.0	-8.5	White
4	15.251M	26.7	+0.4	+0.1	+10.8	+0.0	38.0	50.0	-12.0	White
5	9.978M	26.4	+0.4	+0.1	+10.8	+0.0	37.7	50.0	-12.3	White
6	13.556M	26.1	+0.4	+0.1	+10.9	+0.0	37.5	50.0	-12.5	White

7	13.568M	24.3	+0.4	+0.1	+10.9	+0.0	35.7	50.0	-14.3	White
8	11.975M	20.5	+0.4	+0.1	+10.9	+0.0	31.9	50.0	-18.1	White
9	13.552M	20.2	+0.4	+0.1	+10.9	+0.0	31.6	50.0	-18.4	White
10	13.773M	18.6	+0.4	+0.1	+10.9	+0.0	30.0	50.0	-20.0	White
11	13.770M	18.3	+0.4	+0.1	+10.9	+0.0	29.7	50.0	-20.3	White
12	13.351M	18.1	+0.4	+0.1	+10.9	+0.0	29.5	50.0	-20.5	White
13	13.354M	18.1	+0.4	+0.1	+10.9	+0.0	29.5	50.0	-20.5	White
14	13.571M	17.7	+0.4	+0.1	+10.9	+0.0	29.1	50.0	-20.9	White
15	15.441M	17.6	+0.4	+0.1	+10.8	+0.0	28.9	50.0	-21.1	White

CKC Laboratories Date: 1/10/2007 Time: 3:37:39 PM HID Global WO#: 85597
 FCC 15.207 - AVE Test Lead: White 120V 60Hz Sequence#: 7
 HID Global M/N 3125xxAxx iCLASS RP40



FCC 15.209 RADIATED EMISSIONS

Test Setup Photos



Test Data Sheets

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

Customer: **HID Global Corporation**
 Specification: **FCC 15.209**
 Work Order #: **85597** Date: 1/12/2007
 Test Type: **Radiated Scan** Time: 15:16:23
 Equipment: **iCLASS Reader** Sequence#: 20
 Manufacturer: HID Global Corporation Tested By: Mike Wilkinson
 Model: 6125xxAxx iCLASS RP40
 S/N: 010907

Test Equipment:

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
iCLASS Reader*	HID Global Corporation	6125xxAxx iCLASS RP40	010907

Support Devices:

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035

Test Conditions / Notes:

Equipment is an iCLASS Reader operating on a frequency of 13.56MHz and 125kHz The EUT is mounted vertically on a support structure to simulate normal installation. DC power supply is bonded to ground. Test data is corrected for proper test distance using 40dB per decade correction factor in accordance with 15.31. Frequency Range Investigated: Carrier. 125kHz, Relative Humidity: 35%

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	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	125.399k	44.1	+0.2	+10.2	-60.0		+0.0	-5.5	25.6	-31.1	Vert
2	125.368k	35.9	+0.2	+10.2	-60.0		+0.0	-13.7	25.6	-39.3	Horiz

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

Customer: **HID Global Corporation**

Specification: **FCC 15.209**

Work Order #: **85597**

Date: 1/12/2007

Test Type: **Radiated Scan**

Time: 13:08:20

Equipment: **iCLASS Reader**

Sequence#: 19

Manufacturer: HID Global Corporation

Tested By: Mike Wilkinson

Model: 6125xxAxx iCLASS RP40

S/N: 010907

Test Equipment:

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
iCLASS Reader*	HID Global Corporation	6125xxAxx iCLASS RP40	010907

Support Devices:

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035

Test Conditions / Notes:

Equipment is an iCLASS Reader operating on a frequency of 13.56MHz and 125kHz. The EUT is mounted vertically on a support structure to simulate normal installation. DC power supply is bonded to ground. Test data is corrected for proper test distance using 40dB per decade correction factor in accordance with 15.31. Frequency Range Investigated: 9kHz to 30 MHz. Relative Humidity: 35%.

Transducer Legend:

T1=Cable - Site D 10m 9k-1G	T2=Mag Loop - AN 00226 - 9kHz-30M
T3=dBuA Conversion	

Measurement Data:

Reading listed by margin.

Test Distance: 10 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	Dist dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	250.300k	40.3	+0.2	+10.2	-51.5	+0.0	-0.8	19.6	-20.4	Horiz
2	250.760k	40.3	+0.2	+10.2	-51.5	+0.0	-0.8	19.6	-20.4	Vert
3	27.122M	20.6	+1.4	+6.6	-51.5	+0.0	-22.9	29.5	-52.4	Horiz
4	27.123M	15.7	+1.4	+6.6	-51.5	+0.0	-27.8	29.5	-57.3	Vert

FCC 15.225 RADIATED EMISSIONS

Test Setup Photos



Test Data Sheets

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

Customer: **HID Global Corporation**

Specification: **15.225/15.209**

Work Order #: **85597**

Date: 1/10/2007

Test Type: **Radiated Scan**

Time: 14:57:43

Equipment: **iCLASS Reader**

Sequence#: 5

Manufacturer: HID Global Corporation

Tested By: Mike Wilkinson

Model: 6125xxAxx iCLASS RP40

S/N: 010907

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Chase CBL6111C Bilog	2456	06/07/2005	06/07/2007	01991
HP 8447D Preamp	1937A02604	03/11/2005	03/11/2007	00099

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
iCLASS Reader*	HID Global Corporation	6125xxAxx iCLASS RP40	010907

Support Devices:

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035

Test Conditions / Notes:

Equipment is an iCLASS Reader operating on a frequency of 13.56MHz & 125kHz. The EUT is mounted vertically on a support structure to simulate normal installation. DC power supply is bonded to ground. Frequency Range Investigated: 30-1000MHz. Temperature: 21°C, Relative Humidity: 35%.

Transducer Legend:

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

Measurement Data:

Reading listed by margin.

Test Distance: 10 Meters

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	40.693M	37.7	+1.7	-27.0	+12.0		+10.0	34.4	40.0	-5.6	Vert
QP											
^	40.693M	40.7	+1.7	-27.0	+12.0		+10.0	37.4	40.0	-2.6	Vert
3	176.291M	39.7	+3.9	-26.7	+8.4		+10.0	35.3	43.5	-8.2	Vert
QP											
^	176.291M	42.1	+3.9	-26.7	+8.4		+10.0	37.7	43.5	-5.8	Vert

5	54.232M	38.6	+2.0	-26.8	+7.3	+10.0	31.1	40.0	-8.9	Vert
6	311.916M	32.2	+5.5	-26.3	+13.2	+10.0	34.6	46.0	-11.4	Vert
7	339.046M	30.2	+5.6	-26.4	+13.9	+10.0	33.3	46.0	-12.7	Vert
8	122.047M	32.4	+3.3	-26.7	+11.0	+10.0	30.0	43.5	-13.5	Vert
9	230.556M	32.8	+4.7	-26.2	+10.7	+10.0	32.0	46.0	-14.0	Vert
10	325.476M	26.9	+5.6	-26.4	+13.5	+10.0	29.6	46.0	-16.4	Vert
11	257.676M	27.8	+5.1	-26.0	+12.1	+10.0	29.0	46.0	-17.0	Vert
12	216.994M	30.6	+4.4	-26.3	+9.7	+10.0	28.4	46.0	-17.6	Vert

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

Customer: **HID Global Corporation**
 Specification: **FCC 15.225(a)**
 Work Order #: **85597**
 Test Type: **Radiated Scan**
 Equipment: **iCLASS Reader**
 Manufacturer: **HID Global Corporation**
 Model: **6125xxAxx iCLASS RP40**
 S/N: **010907**

Date: 1/12/2007
 Time: 11:14:01
 Sequence#: 18
 Tested By: Mike Wilkinson

Test Equipment:

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
iCLASS Reader*	HID Global Corporation	6125xxAxx iCLASS RP40	010907

Support Devices:

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035

Test Conditions / Notes:

Equipment is an iCLASS Reader operating on a frequency of 13.56MHz and 125kHz. The EUT is mounted vertically on a support structure to simulate normal installation. DC power supply is bonded to ground. Test data is corrected for proper test distance using 40dB per decade correction factor in accordance with 15.31. Frequency Range Investigated: Carrier. Relative Humidity: 35%.

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	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	13.562M	51.4	+1.0	+9.6	-20.0	+0.0	42.0	84.0	-42.0	Horiz
2	13.561M	49.5	+1.0	+9.6	-20.0	+0.0	40.1	84.0	-43.9	Vert

FREQUENCY STABILITY

Test Equipment

Description	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	1406	HP	8564E	3623A00539	8/01/06	8/01/08
Temp Chamber	01879	Thermotron	S-1.2 MiniMax	11899	1/24/05	1/24/07
Thermometer	02242	Omega	HH-26K	T-202884	1/18/05	1/18/07
Multimeter	02369	Fluke	8520A		4/25/05	4/25/07

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

Test Setup Photos



Test Data

Customer: HID Global
WO#: 85597
Test Engineer: Mike Wilkinson
Operating Voltage: 12 VDC
Frequency Limit: 0.01 %

Temperature Variations

Channel Frequency:		6125BxxAxx iCLASS RP40 13.561205	Dev. (MHz)
Temp (C)	Voltage		
-20	12	13.561356	0.00015
-10	12	13.561320	0.00012
0	12	13.561300	0.00009
10	12	13.561255	0.00005
20	12	13.561205	0.00000
30	12	13.56120	0.00001
40	12	13.56118	0.00002
50	12	13.56111	0.00009

Voltage Variations (±15%)

20	10.2	13.561205	0.00000
20	12	13.561205	0.00000
20	13.8	13.561205	0.00000

Max Deviation (MHz)	0.00015
Max Deviation (%)	0.00111
PASS	

OCCUPIED BANDWIDTH

Test Equipment

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

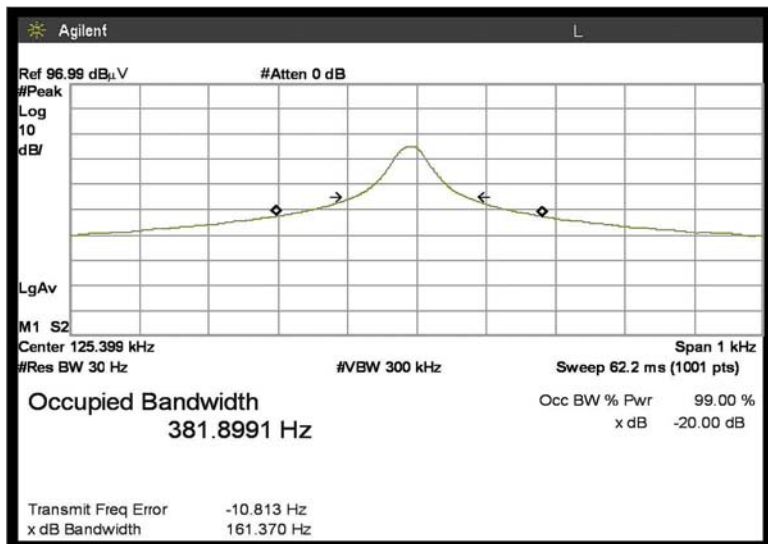
Test Setup Photos



Test Conditions

Equipment is an iCLASS Reader operating on a frequency of 13.56MHz and 125kHz. The EUT is mounted vertically on a support structure to simulate normal installation. DC power supply is bonded to ground.

OCCUPIED BANDWIDTH - 125kHz



OCCUPIED BANDWIDTH - 13.56MHz

