HID GLOBAL CORPORATION TEST REPORT

FOR THE

6136AXA MULTICLASS RPK40 READER

FCC PART 15 SUBPART C SECTIONS 15.207, 15.209, 15.225 AND RSS-210

COMPLIANCE

DATE OF ISSUE: APRIL 20, 2007

PREPARED FOR:

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

P.O. No.: 11009776
W.O. No.: 86371

PREPARED BY:

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Date of test: March 22 - April 11, 2007

Report No.: FC07-030

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ADMINISTRATIVE INFORMATION

DATE OF TEST: March 22 - April 11, 2007

DATE OF RECEIPT: March 22, 2007

MANUFACTURER: HID Global Corporation
9292 Jeronimo 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 GEN and RSS-210

PURPOSE OF TEST: To demonstrate the compliance of the 6136AxA multiCLASS RPK40 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

Randy Clark, EMC Engineer

FCC TO CANADA STANDARD CORRELATION MATRIX

Canadian Standard	Canadian Section	FCC Standard	FCC Section	Test Description
RSS GEN	7.1.4	47CFR	15.203	Antenna Connector Requirements
RSS GEN	7.2.1	47CFR	15.35(c)	Pulsed Operation
RSS GEN	7.2.2	47CFR	15.207	AC Mains Conducted Emissions Requirement
RSS 210	2.1	47CFR	15.215(c)	Frequency Stability Recommendation
RSS 210	2.2	47CFR	15.205	Restricted Bands of Operation
RSS 210	2.6	47CFR	15.209	General Radiated Emissions Requirement
RSS 210	A2.6	47CFR	15.225(a-c)	Fundamental and Emissions Mask Requirements
RSS 210	A2.6	NA	NA	±150kHz to ±450kHz Emissions Requirement
RSS 210	A2.6	47CFR	15.225(d)	Out of band emissions
RSS 210	A2.6	47CFR	15.225(e)	Carrier Stability
	3082A-1		784962	Site File No.

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 – 1000 MHz

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 13.56 MHz and 125 kHz.

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. This reader includes a 3126B ASK Expansion Module.

EQUIPMENT UNDER TEST

multiCLASS Reader

Manuf: HID Global Corporation
Model: 6136AxA multiCLASS RPK40 Reader
Serial: 021207
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
FCC ID: NA

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 dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula. This reading was then compared to the applicable specification limit to determine compliance.

SAMPLE CALCULATIONS		
	Meter reading	(dBµV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/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 #: **86371** Date: 3/27/2007
Test Type: **Conducted Emissions** Time: 14:56:03
Equipment: **multiCLASS Reader** Sequence#: 17
Manufacturer: HID Global Corporation Tested By: Mike Wilkinson
Model: 6136AxA multiCLASS RPK40 Reader 120V 60Hz
S/N: 021207

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	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
multiCLASS Reader*	HID Global Corporation	6136AxA multiCLASS RPK40 Reader	021207

Support Devices:

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

Test Conditions / Notes:

Equipment is a multiCLASS Reader operating on a frequency of 13.56 MHz and 125 kHz. The EUT is mounted vertically on a support structure to simulate normal installation. DC power supply is bonded to ground. Frequency Range Investigated: 150 kHz to 30 MHz. Temperature: 21ºC, Relative Humidity: 43%. 125 kHz transmitter module installed is ASK Module.

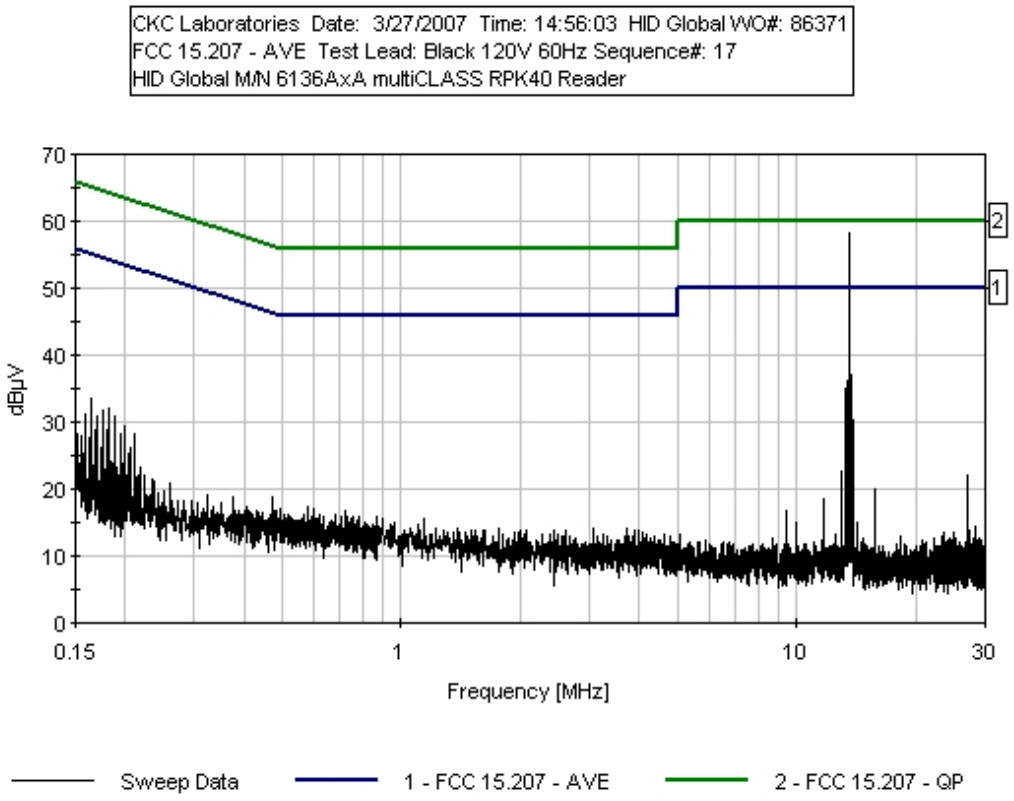
Transducer Legend:

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 Ave	13.562M	28.0	+0.5	+0.1	+10.9		+0.0	39.5	50.0	-10.5	Black
^	13.562M	46.7	+0.5	+0.1	+10.9		+0.0	58.2	50.0	+8.2	Black
3	158.000k	23.1	+0.4	+2.2	+11.6		+0.0	37.3	55.6	-18.3	Black
4	164.000k	22.0	+0.4	+1.5	+11.7		+0.0	35.6	55.3	-19.7	Black
5	27.123M	12.7	+0.4	+0.1	+11.0		+0.0	24.2	50.0	-25.8	Black

6	14.190M	10.9	+0.4	+0.1	+10.9	+0.0	22.3	50.0	-27.7	Black
7	9.440M	8.9	+0.5	+0.1	+10.8	+0.0	20.3	50.0	-29.7	Black
8	11.730M	6.2	+0.5	+0.1	+10.9	+0.0	17.7	50.0	-32.3	Black
9	9.970M	5.0	+0.5	+0.1	+10.8	+0.0	16.4	50.0	-33.6	Black



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 #: **86371** Date: 3/27/2007
Test Type: **Conducted Emissions** Time: 15:01:41
Equipment: **multiCLASS Reader** Sequence#: 18
Manufacturer: HID Global Corporation Tested By: Mike Wilkinson
Model: 6136AxA multiCLASS RPK40 Reader 120V 60Hz
S/N: 021207

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	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
multiCLASS Reader*	HID Global Corporation	6136AxA multiCLASS RPK40 Reader	021207

Support Devices:

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

Test Conditions / Notes:

Equipment is a multiCLASS Reader operating on a frequency of 13.56 MHz and 125 kHz. The EUT is mounted vertically on a support structure to simulate normal installation. DC power supply is bonded to ground. Frequency Range Investigated: 150 kHz to 30 MHz. Temperature: 21ºC, Relative Humidity: 43%. 125 kHz transmitter module installed is ASK Module.

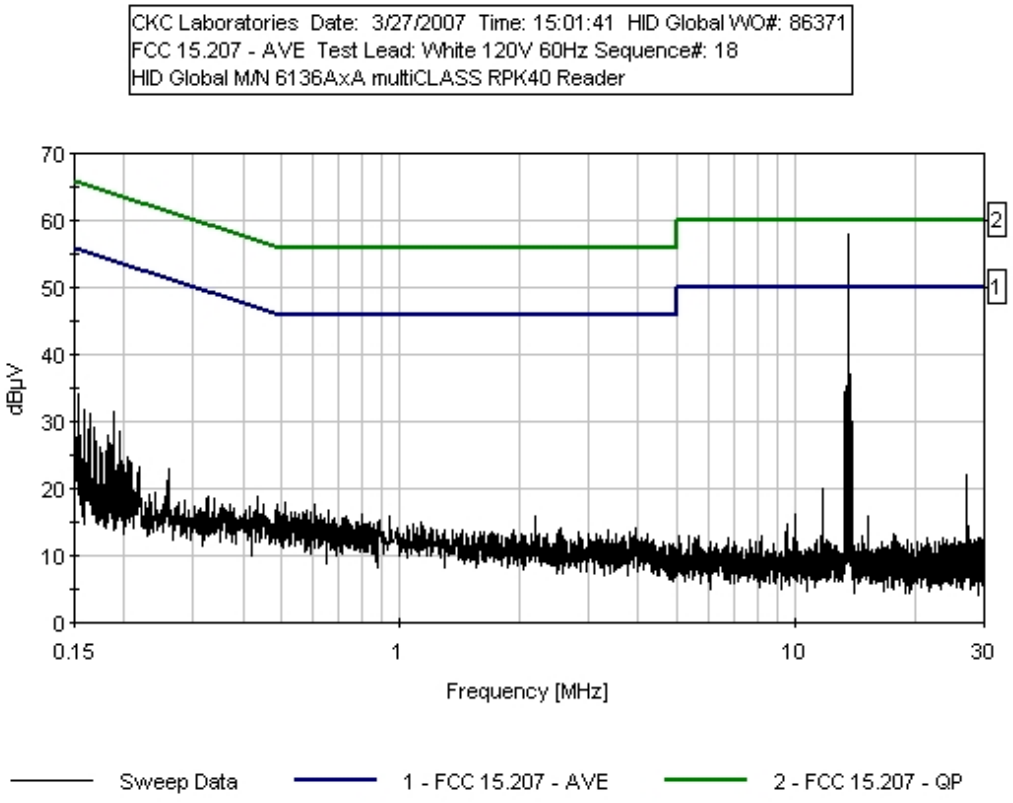
Transducer Legend:

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 dBµV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	13.561M Ave	28.1	+0.4	+0.1	+10.9		+0.0	39.5	50.0	-10.5	White
^	13.561M	46.6	+0.4	+0.1	+10.9		+0.0	58.0	50.0	+8.0	White
3	156.000k	23.5	+0.3	+2.4	+11.6		+0.0	37.8	55.7	-17.9	White
4	27.123M	12.4	+0.5	+0.1	+11.0		+0.0	24.0	50.0	-26.0	White
5	9.980M	12.0	+0.4	+0.1	+10.8		+0.0	23.3	50.0	-26.7	White
6	13.020M	11.4	+0.4	+0.1	+10.9		+0.0	22.8	50.0	-27.2	White
7	12.430M	9.4	+0.4	+0.1	+10.9		+0.0	20.8	50.0	-29.2	White

8	11.770M	9.2	+0.4	+0.1	+10.9	+0.0	20.6	50.0	-29.4	White
9	15.320M	8.1	+0.4	+0.1	+10.8	+0.0	19.4	50.0	-30.6	White
10	15.740M	7.1	+0.4	+0.1	+10.8	+0.0	18.4	50.0	-31.6	White
11	16.450M	5.2	+0.4	+0.1	+10.8	+0.0	16.5	50.0	-33.5	White



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 #: **86371** Date: 3/23/2007
Test Type: **Maximized Emissions** Time: 15:15:58
Equipment: **multiCLASS Reader** Sequence#: 5
Manufacturer: HID Global Corporation Tested By: Mike Wilkinson
Model: 6136AxA multiCLASS RPK40 Reader
S/N: 021207

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
EMCO Loop Antenna	1074	05/13/2005	05/13/2007	00226

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

Function	Manufacturer	Model #	S/N
multiCLASS Reader*	HID Global Corporation	6136AxA multiCLASS RPK40 Reader	021207

Support Devices:

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

Test Conditions / Notes:

Equipment is a multiCLASS Reader operating on a frequency of 13.56 MHz and 125 kHz. 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 Temperature: 21ºC, Relative Humidity: 43%. 125 kHz transmitter module installed is ASK Module.

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	125.381k	49.1	+0.2	+10.2	-60.0		+0.0	-0.5	25.6	-26.1	Horiz
2	125.381k	40.5	+0.2	+10.2	-60.0		+0.0	-9.1	25.6	-34.7	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 #: **86371** Date: 3/23/2007
Test Type: **Maximized Emissions** Time: 15:55:45
Equipment: **multiCLASS Reader** Sequence#: 6
Manufacturer: HID Global Corporation Tested By: Mike Wilkinson
Model: 6136AxA multiCLASS RPK40 Reader
S/N: 021207

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
EMCO Loop Antenna	1074	05/13/2005	05/13/2007	00226

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

Function	Manufacturer	Model #	S/N
multiCLASS Reader*	HID Global Corporation	6136AxA multiCLASS RPK40 Reader	021207

Support Devices:

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

Test Conditions / Notes:

Equipment is a multiCLASS Reader operating on a frequency of 13.56 MHz and 125 kHz. 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: 9 kHz to 30 MHz. Temperature: 21ºC, Relative Humidity: 43%. 125 kHz transmitter module installed is ASK Module.

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	27.124M	22.9	+1.4	+6.6	-20.0		+0.0	10.9	29.5	-18.6	Horiz
2	27.124M	15.3	+1.4	+6.6	-20.0		+0.0	3.3	29.5	-26.2	Vert
3	250.876k	40.0	+0.2	+10.2	-60.0		+0.0	-9.6	19.6	-29.2	Vert
4	250.834k	37.8	+0.2	+10.2	-60.0		+0.0	-11.8	19.6	-31.4	Horiz

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 #: **86371** Date: 3/23/2007
Test Type: **Maximized Emissions** Time: 13:54:23
Equipment: **multiCLASS Reader** Sequence#: 3
Manufacturer: HID Global Corporation Tested By: Mike Wilkinson
Model: 6136AxA multiCLASS RPK40 Reader
S/N: 021207

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Chase CBL6111C Bilog	2456	12/30/2006	12/30/2008	01991
HP 8447D Preamp	1937A02604	03/14/2007	03/14/2009	00099

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

Function	Manufacturer	Model #	S/N
multiCLASS Reader*	HID Global Corporation	6136AxA multiCLASS RPK40 Reader	021207

Support Devices:

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

Test Conditions / Notes:

Equipment is a multiCLASS Reader operating on a frequency of 13.56 MHz and 125 kHz. The EUT is mounted vertically on a support structure to simulate normal installation. DC power supply is bonded to ground. Frequency Range Investigated: 30-1000 MHz. Temperature: 21ºC, Relative Humidity: 43%. 125 kHz transmitter module installed is ASK Module.

Transducer Legend:

T1=AMP AN00099 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	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	40.689M QP	41.6	-27.2	+12.0	+1.7		+10.0	38.1	40.0	-1.9	Vert
^	40.699M	44.0	-27.2	+12.0	+1.7		+10.0	40.5	40.0	+0.5	Vert
3	203.423M	41.8	-26.7	+8.6	+4.2		+10.0	37.9	43.5	-5.6	Vert
4	176.303M	42.0	-26.8	+8.4	+3.9		+10.0	37.5	43.5	-6.0	Vert

5 QP	230.543M	41.1	-26.5	+10.7	+4.7	+10.0	40.0	46.0	-6.0	Vert
^	230.543M	42.6	-26.5	+10.7	+4.7	+10.0	41.5	46.0	-4.5	Vert
7	298.352M	37.7	-26.4	+12.8	+5.5	+10.0	39.6	46.0	-6.4	Vert
8	40.706M	36.1	-27.2	+12.0	+1.7	+10.0	32.6	40.0	-7.4	Horiz
9	284.785M	36.7	-26.4	+12.6	+5.4	+10.0	38.3	46.0	-7.7	Vert
10	108.473M	38.6	-27.1	+10.1	+3.0	+10.0	34.6	43.5	-8.9	Vert
11	54.254M	38.1	-27.1	+7.3	+2.0	+10.0	30.3	40.0	-9.7	Horiz
12	135.620M	35.8	-27.0	+11.0	+3.4	+10.0	33.2	43.5	-10.3	Vert
13	54.255M	37.3	-27.1	+7.3	+2.0	+10.0	29.5	40.0	-10.5	Vert
14	298.357M	33.6	-26.4	+12.8	+5.5	+10.0	35.5	46.0	-10.5	Horiz
15	325.474M	32.5	-26.6	+13.5	+5.6	+10.0	35.0	46.0	-11.0	Vert
16	284.792M	33.1	-26.4	+12.6	+5.4	+10.0	34.7	46.0	-11.3	Horiz
17	325.455M	31.6	-26.6	+13.5	+5.6	+10.0	34.1	46.0	-11.9	Horiz
18	311.917M	31.8	-26.5	+13.2	+5.5	+10.0	34.0	46.0	-12.0	Horiz
19	244.101M	33.1	-26.4	+11.6	+4.9	+10.0	33.2	46.0	-12.8	Vert
20	311.917M	30.5	-26.5	+13.2	+5.5	+10.0	32.7	46.0	-13.3	Vert
21	271.239M	31.3	-26.4	+12.4	+5.3	+10.0	32.6	46.0	-13.4	Vert
22	230.542M	32.7	-26.5	+10.7	+4.7	+10.0	31.6	46.0	-14.4	Horiz
23	203.433M	32.9	-26.7	+8.6	+4.2	+10.0	29.0	43.5	-14.5	Horiz
24	257.656M	30.5	-26.4	+12.1	+5.1	+10.0	31.3	46.0	-14.7	Horiz
25	216.982M	32.1	-26.6	+9.7	+4.4	+10.0	29.6	46.0	-16.4	Vert
26	216.983M	29.9	-26.6	+9.7	+4.4	+10.0	27.4	46.0	-18.6	Vert

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

Customer: **HID Global Corporation**
Specification: **47 CFR 15.225 Mask**
Work Order #: **86371** Date: 3/23/2007
Test Type: **Maximized Emissions** Time: 14:31:08
Equipment: **multiCLASS Reader** Sequence#: 4
Manufacturer: HID Global Corporation Tested By: Mike Wilkinson
Model: 6136AxA multiCLASS RPK40 Reader
S/N: 021207

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
EMCO Loop Antenna	1074	05/13/2005	05/13/2007	00226

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

Function	Manufacturer	Model #	S/N
multiCLASS Reader*	HID Global Corporation	6136AxA multiCLASS RPK40 Reader	021207

Support Devices:

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

Test Conditions / Notes:

Equipment is a multiCLASS 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. Temperature: 21ºC, Relative Humidity: 43%. 125 kHz transmitter module installed is ASK Module.

Transducer Legend:

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

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

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	13.561M	46.4	+1.0	+9.6			-19.0	38.0	84.0	-46.0	Horiz
2	13.561M	46.1	+1.0	+9.6			-19.0	37.7	84.0	-46.3	Vert

RSS-210 OCCUPIED BANDWIDTH

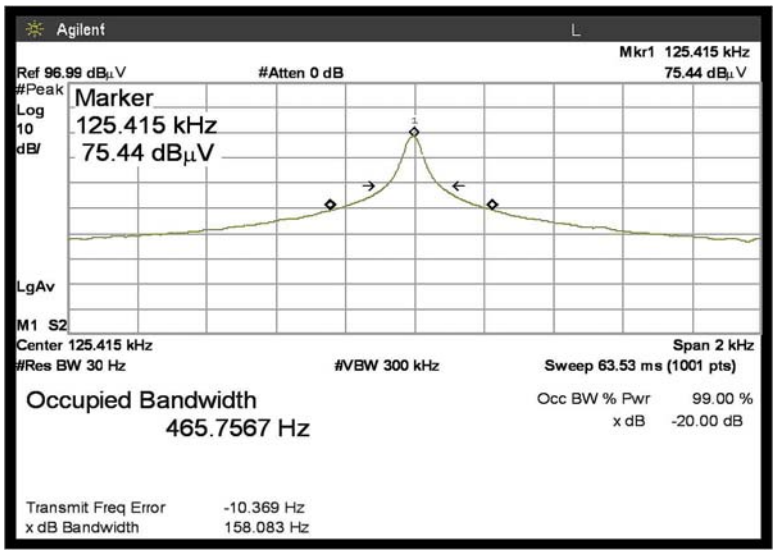
Test Equipment

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
EMCO Loop Antenna	1074	05/13/2005	05/13/2007	00226

Test Setup Photos

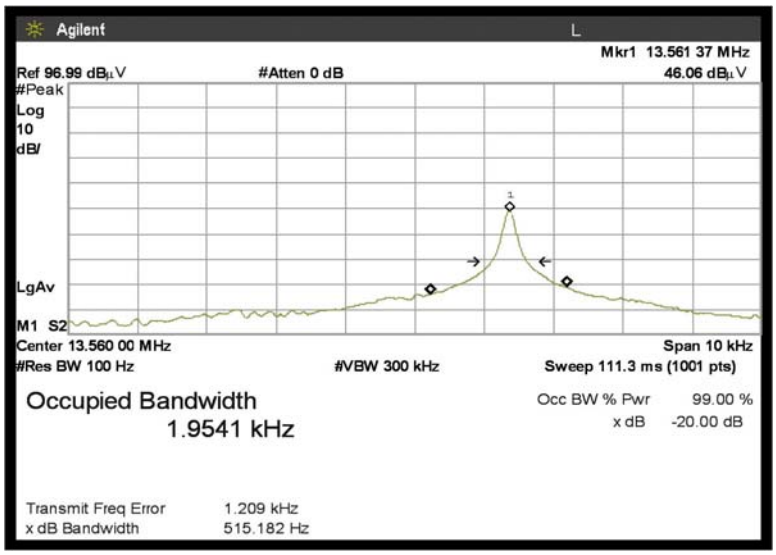
Test Conditions: Equipment is a multiCLASS Reader operating on a frequency of 13.56 MHz and 125 kHz. The EUT is mounted vertically on a support structure to simulate normal installation. DC power supply is bonded to ground. 125 kHz transmitter module installed is ASK Module.

RSS-210 OCCUPIED BANDWIDTH 125 kHz



Tested By: Mike Wilkinson

RSS-210 OCCUPIED BANDWIDTH 13.56 MHz



Tested By: Mike Wilkinson

FCC 15.225/RSS-210 EMISSIONS MASK

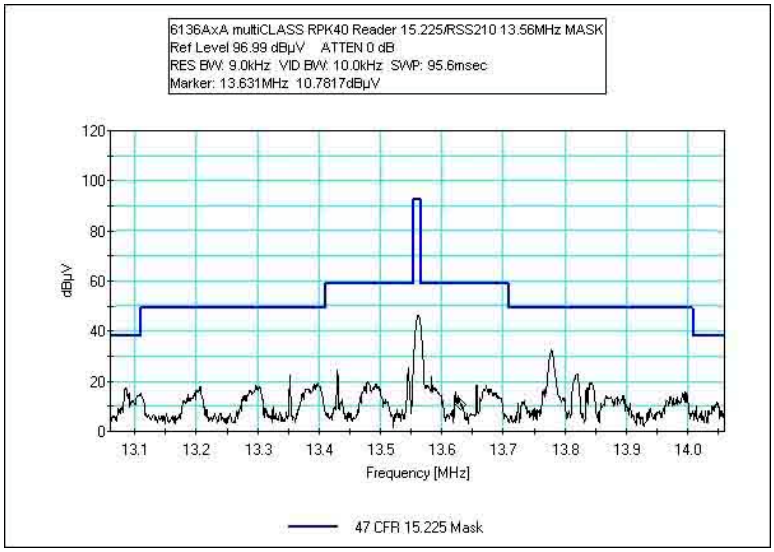
Test Equipment

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
EMCO Loop Antenna	1074	05/13/2005	05/13/2007	00226

Test Setup Photos

Test Conditions: Equipment is a multiCLASS Reader operating on a frequency of 13.56 MHz and 125 kHz. The EUT is mounted vertically on a support structure to simulate normal installation. DC power supply is bonded to ground. 125 kHz transmitter module installed is ASK Module.

Plot



Tested By: Mike Wilkinson

FREQUENCY STABILITY

Test Equipment

Function	S/N	Cal Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	1/3/2007	1/3/2009	2660
Solar Loop Sensor	N/A	3/4/2007	3/4/2009	170
Thermotron Temperature Chamber	11899	12/21/2006	12/21/2008	1879
HP 6205C Dual DC Power Supply	2228A01775	8/15/2005	8/15/2007	762

Test Setup Photos

Test Conditions: Equipment is placed inside of a temperature chamber. EUT power is provided via bench supply. Power variations are performed while monitoring with a digital volt meter.

Device Model #: multiCLASS RPK40 Reader
Operating Voltage: 12 **VDC**
Frequency Limit: 0.01 **%**

Temperature Variations

		6136AxA	**Dev. (MHz)**
Channel Frequency:		**13.56241**	
Temp (C)	Voltage		
-30	12		
-20	12	13.56131	0.00110
-10	12	13.56133	0.00108
0	12	13.56132	0.00109
10	12	13.56129	0.00112
20	12	13.56241	0.00000
30	12	13.56120	0.00121
40	12	13.56114	0.00127
50	12	13.56109	0.00132

Voltage Variations (±15%)

20	10.2	13.56241	0.00000
20	12	13.56241	0.00000
20	13.8	13.56241	0.00000

Max Deviation (MHz)	**0.00132**
Max Deviation (%)	**0.00976**
	PASS

Tested By: Randal Clark