



HID GLOBAL CORPORATION TEST REPORT

FOR THE

1351 PROXPASS II

FCC PART 15 SUBPART C SECTION 15.209

COMPLIANCE

DATE OF ISSUE: NOVEMBER 29, 2006

PREPARED FOR:

PREPARED BY:

HID Global Corporation 9292 Jeromino Road Irvine, CA 92618-1905 Mary Ellen Clayton CKC Laboratories, Inc. 5046 Sierra Pines Drive Mariposa, CA 95338

P.O. No.: 11008315 W.O. No.: 85557 Date of test: November 17-20, 2006

Report No.: FC06-074

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ADMINISTRATIVE INFORMATION

DATE OF TEST: November 17-20, 2006

DATE OF RECEIPT: November 17, 2006

MANUFACTURER: HID Global Corporation

9292 Jeromino Road Irvine, CA 92618-1905

REPRESENTATIVE: Frank de Vall

TEST LOCATION: CKC Laboratories, Inc.

5046 Sierra Pines Drive Mariposa, CA 95338

TEST METHOD: ANSI C63.4 (2003)

PURPOSE OF TEST: To demonstrate the compliance of the 1351

ProxPass II with the requirements for FCC Part 15

Subpart C Section 15.209 devices.



FCC TO CANADA STANDARD CORRELATION MATRIX

Canadian	Canadian	FCC	FCC	Test Description
Standard	Section	Standard	Section	
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
	IC 3082A-1		784962	Site File No.

CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply. Conducted emissions not required for this device because it is battery powered.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:

TEST PERSONNEL:

Joyce Walker, Quality Assurance Administrative

Manager

Randy Clark, EMC Engineer

Mike Wilkinson, EMC Engineer/Lab

Manager

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FCC 15.31(e) Voltage Variations

Not applicable to this device because it is battery powered.

FCC 15.31(m) Number Of Channels

This device operates on a single channel.

FCC 15.33(a) Frequency Ranges Tested

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					
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 139.6 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%.

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EQUIPMENT UNDER TEST (EUT) DESCRIPTIONThe customer declares the EUT tested by CKC Laboratories was representative of a production unit.

EQUIPMENT UNDER TEST

ProxPass II

Manuf: **HID Global Corporation**

Model: 1351 Serial: 111706 JQ61351 FCC ID:

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

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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 15.209 Carrier Emission Levels									
FREQUENCY MHz	METER READING dBµV	CoR Cable dB	RECTION Ant dB	ON FACT	ORS Corr dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES	
0.138	53.8	0.2	10.1		-80.0	-15.9	24.8	-40.7	V	
0.138	53.2	0.2	10.1		-80.0	-16.5	24.8	-41.3	V	
0.139	53.0	0.2	10.1		-80.0	-16.7	24.7	-41.4	V	
0.139	52.7	0.2	10.1		-80.0	-17.0	24.7	-41.7	V	
0.140	53.9	0.2	10.1		-80.0	-15.8	24.7	-40.5	V	
0.140	53.6	0.2	10.1		-80.0	-16.1	24.7	-40.8	V	

NOTES:

Test Method: ANSI C63.4 (2003)

FCC Part 15 Subpart C Section 15.209

Test Distance: 3 Meters

Spec Limit:

COMMENTS: EUT is a hand held card transmitting at 139.6 kHz and is battery operated only. The EUT is transmitting continuously with duty cycle during the test. Fresh batteries were installed prior to test. Test distance correction factor applied in accordance with 15.31 of 40dB per decade to correct test data for comparison to the limit. Measurements were performed over a ground plane. Measurements include peak data for all modulation products within the 20dB bandwidth of the device. EUT Testing in three orthogonal positions, indicated by X, Y and Z notes. **No EUT Emissions detected within 40dB of the limit**. Frequency Range Investigated: Carrier Upper Sideband (centered on 139 kHz). Temperature: 21.1°C, Relative Humidity: 32%.

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V = Vertical Polarization



	Table 2: FCC 15.209 Six Highest Radiated Emission Levels										
FREQUENCY MHz	METER READING dBμV	COR Cable dB	RECTION Ant dB	ON FACT	CORS Corr dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES		
0.110	44.9	0.2	10.3		-40.0	-24.6	26.8	-51.4	V		
0.112	44.8	0.2	10.3		-40.0	-24.7	26.6	-51.3	V		
0.112	44.3	0.2	10.3		-40.0	-25.2	26.6	-51.8	V		
4.000	13.9	0.6	10.0		-40.0	-15.5	29.5	-45.0	Н		
8.000	8.5	0.8	9.8		-40.0	-20.9	29.5	-50.4	Н		
16.000	7.2	1.0	9.3		-40.0	-22.5	29.5	-52.0	Н		

Test Method: ANSI C63.4 (2003) NOTES: H = Horizontal Polarization
Spec Limit: FCC Part 15 Subpart C Section 15.209 V = Vertical Polarization

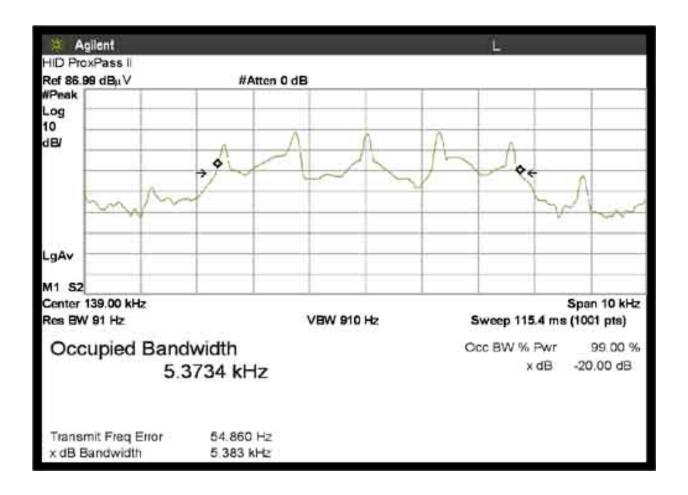
Test Distance: 3 Meters

COMMENTS: EUT is a hand held card transmitting at 139.6 kHz and is battery operated only. The EUT is transmitting continuously with duty cycle during the test. Fresh batteries were installed prior to test. Test distance correction factor applied in accordance with 15.31 of 40dB per decade to correct test data for comparison to the limit. Measurements were performed over a ground plane. Frequency Range Investigated: 9 kHz – 1000 MHz. **No EUT emissions detected in the frequency range of 30-1000 MHz.** Temperature: 21.1°C, Relative Humidity: 32%.

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OCCUPIED BANDWIDTH



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

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

CORRECTION FACTORS

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

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

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TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Appendix B were used to collect the radiated 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.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. 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.

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EUT TESTING

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.

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APPENDIX A TEST SETUP PHOTOGRAPHS

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Radiated Emissions – Test Setup

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Radiated Emissions - X

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Radiated Emissions - Y

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Radiated Emissions - Z

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APPENDIX B

TEST EQUIPMENT LIST

FCC 15.209 9 kHz - 30 MHz and Carrier

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	
Chase CBL6111C Bilog	2456	06/07/2005	06/07/2007	01991	
HP 8447D Preamp	1937A02604	03/11/2005	03/11/2007	00099	

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APPENDIX C:

MEASUREMENT DATA SHEETS

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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 #: 85557 Date: 11/20/2006
Test Type: Maximized Emissions Time: 14:13:14
Equipment: ProxPass II Sequence#: 3

Manufacturer: HID Global Tested By: Randal Clark

Model: 1351 S/N: 111706

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
ProxPass II*	HID Global	1351	111706

Support Devices:

Function Manufacturer Model #	S/N	
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Test Conditions / Notes:

EUT is a hand held card transmitting at 139.6 kHz and is battery operated only. The EUT is transmitting continuously with duty cycle during the test. Fresh batteries were installed prior to test. Test distance correction factor applied in accordance with 15.31 of 40dB per decade to correct test data for comparison to the limit. Measurements were performed over a ground plane. Measurements include peak data for all modulation products within the 20dB bandwidth of the device. EUT Testing in three orthogonal positions, indicated by X, Y and Z notes. No EUT Emissions detected within 40dB of the limit. Frequency Range Investigated: Carrier Upper Sideband (centered on 139 kHz). Temperature: 21.1°C, Relative Humidity: 32%.

Transducer Legend:

Transaucer Legena.	
T1=Cable - Site D 10m 9k-1G	T2=Mag Loop - AN 00226 - 9kHz-30M
T3=15.31 3m 40dB/Dec Correction	

Measur	ement Data:	Re	ading lis	ted by ma	argin.		Te	st Distance	e: 3 Meters	;	
#	Freq	Rdng	T1	T2	T3		Dist	Corr	Spec	Margin	Polar
	MHz	dΒμV	dB	dB	dB	dB	Table	$dB\muV/m$	$dB\mu V/m$	dB	Ant
1	140.316k	53.9	+0.2	+10.1	-80.0		+0.0	-15.8	24.7	-40.5	Verti
									X		100
2	137.754k	53.8	+0.2	+10.1	-80.0		+0.0	-15.9	24.8	-40.7	Verti
									X		100
3	140.309k	53.6	+0.2	+10.1	-80.0		+0.0	-16.1	24.7	-40.8	Verti
									Z		100
4	137.740k	53.2	+0.2	+10.1	-80.0		+0.0	-16.5	24.8	-41.3	Verti
									Z		100
5	139.042k	53.0	+0.2	+10.1	-80.0		+0.0	-16.7	24.7	-41.4	Verti
									X		100
6	139.028k	52.7	+0.2	+10.1	-80.0		+0.0	-17.0	24.7	-41.7	Verti
									Z		100
7	140.295k	49.3	+0.2	+10.1	-80.0		+0.0	-20.4	24.7	-45.1	Horiz
									X		100
8	137.747k	49.2	+0.2	+10.1	-80.0		+0.0	-20.5	24.8	-45.3	Horiz
									X		100
9	141.590k	48.7	+0.2	+10.1	-80.0		+0.0	-21.0	24.6	-45.6	Verti
									X		100
10	141.590k	48.5	+0.2	+10.1	-80.0		+0.0	-21.2	24.6	-45.8	Verti
									Z		100

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11	140.309k	48.6	+0.2	+10.1	-80.0	+0.0	-21.1	24	1.7 -45.8	Horiz		
								Z		100		
12	137.754k	48.5	+0.2	+10.1	-80.0	+0.0	-21.2	24	1.8 -46.0	Horiz		
								\mathbf{z}^{-}		100		
13	139.042k	48.3	+0.2	+10.1	-80.0	+0.0	-21.4		1.7 -46.1	Horiz		
13	139.042K	40.3	+0.2	+10.1	-80.0	+0.0	-21.4	X	+./ -40.1	100		
1.4	120.0251	47.0	. 0. 2	. 10.1	00.0	. 0. 0	21.0		1.7. 16.6			
14	139.035k	47.8	+0.2	+10.1	-80.0	+0.0	-21.9		4.7 -46.6	Horiz		
								Z		100		
15	136.487k	47.9	+0.2	+10.1	-80.0	+0.0	-21.8		4.9 -46.7	Verti		
								X		100		
16	136.494k	47.4	+0.2	+10.1	-80.0	+0.0	-22.3	24	4.9 -47.2	Verti		
								Z		100		
17	141.583k	44.8	+0.2	+10.1	-80.0	+0.0	-24.9	24	1.6 -49.5	Horiz		
- 7	1 . 110 0011			. 10.1	00.0			X		100		
18	141.583k	44.2	+0.2	+10.1	-80.0	+0.0	-25.5		1.6 -50.1	Horiz		
10	141.363K	44.2	+0.2	⊤10.1	-00.0	+0.0	-23.3	Z	+.0 -50.1	100		
10	126 466	42.0	.0.2	. 10.1	90.0	.00	25.0		1.9 -50.8			
19	136.466k	43.8	+0.2	+10.1	-80.0	+0.0	-25.9		1.9 -50.8	Horiz		
								X		100		
20	136.480k	43.4	+0.2	+10.1	-80.0	+0.0	-26.3		1.9 -51.2	Horiz		
								Z		100		
21	137.740k	40.7	+0.2	+10.1	-80.0	+0.0	-29.0	24	1.8 -53.8	Verti		
								Y		100		
22	140.309k	40.3	+0.2	+10.1	-80.0	+0.0	-29.4	24	1.7 -54.1	Verti		
								Y		100		
23	139.028k	40.0	+0.2	+10.1	-80.0	+0.0	-29.7		1.7 -54.4	Verti		
23	137.020K	70.0	10.2	110.1	00.0	10.0	۵).۱	Y	··· -5 - 5 - 5	100		
24	1.41 5071-	267	10.2	+10.1	90.0	.00	22.0		16 577			
24	141.597k	36.7	+0.2	+10.1	-80.0	+0.0	-33.0		1.6 -57.6	Verti		
								Y		100		
25	136.473k	36.3	+0.2	+10.1	-80.0	+0.0	-33.4		1.9 -58.3	Verti		
								Y		100		
26	139.000k	31.6	+0.2	+10.1	-80.0	+0.0	-38.1	24	1.7 -62.8	Horiz		
								Y - N	o EUT signals	100		
								detected in this				
									guration.			
								201111	5			

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

HID Global Customer: FCC 15.209 Specification:

Work Order #: Date: 11/20/2006 85557 Test Type: Time: 12:30:09 **Maximized Emissions**

Equipment: ProxPass II Sequence#: 2 Tested By: Randal Clark

Manufacturer: HID Global Model: 1351

S/N: 111706

Equipment Under Test (* = EUT):

Equipment Citaer 1	CDF (- 11 C 1).			
Function	Manufacturer	Model #	S/N	
ProxPass II*	HID Global	1351	111706	

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a hand held card transmitting at 139.6 kHz and is battery operated only. The EUT is transmitting continuously with duty cycle during the test. Fresh batteries were installed prior to test. Test distance correction factor applied in accordance with 15.31 of 40dB per decade to correct test data for comparison to the limit. Measurements were performed over a ground plane. Frequency Range Investigated: 9 kHz - 30 MHz Temperature: 21.1°C, Relative Humidity: 32%.

Transducer Legend:

17 ansaucer Ecgena.	
T1=Cable - Site D 10m 9k-1G	T2=Mag Loop - AN 00226 - 9kHz-30M
T3=15.31 3m 40dB/Dec Correction	

Measur	Measurement Data: Reading listed by margin					. Test Distance: 3 Meters					
#	Freq	Rdng	T1	T2	T3		Dist	Corr	Spec	Margin	Polar
	MHz	dΒμV	dB	dB	dB	dB	Table	$dB\muV/m$	$dB\mu V/m$	dB	Ant
1	4.000M	13.9	+0.6	+10.0	-40.0		+0.0	-15.5	29.5	-45.0	Horiz
2	8.000M	8.5	+0.8	+9.8	-40.0		+0.0	-20.9	29.5	-50.4	Horiz
3	112.225k	44.8	+0.2	+10.3	-80.0		+0.0	-24.7	26.6 X	-51.3	Verti
4	109.695k	44.9	+0.2	+10.3	-80.0		+0.0	-24.6	26.8 Z	-51.4	Verti
5	112.245k	44.3	+0.2	+10.3	-80.0		+0.0	-25.2	26.6 Z	-51.8	Verti
6	16.000M	7.2	+1.0	+9.3	-40.0		+0.0	-22.5	29.5	-52.0	Horiz
7	12.000M	6.7	+1.0	+9.7	-40.0	_	+0.0	-22.6	29.5	-52.1	Horiz
8	109.685k	43.8	+0.2	+10.3	-80.0		+0.0	-25.7	26.8 X	-52.5	Verti

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9	110.970k	43.7	+0.2	+10.3	-80.0	+0.0 -25.8 26.7 -52.5 Verti
						Z
10	110.965k	43.4	+0.2	+10.3	-80.0	+0.0 -26.1 26.7 -52.8 Verti
						X
11	113.520k	40.4	+0.2	+10.3	-80.0	+0.0 -29.1 26.5 -55.6 Verti
						X
12	125.000k	29.7	+0.2	+10.2	-80.0	+0.0 -39.9 25.7 -65.6 Verti
						Z

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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 #:
 85557
 Date:
 11/20/2006

 Test Type:
 Maximized Emissions
 Time:
 15:44:43

Equipment: ProxPass II Sequence#: 8
Manufacturer: HID Global Tested By: Randal Clark

Model: 1351 S/N: 111706

Equipment Under Test (* = EUT):

Equipment Chaci	1051 (- 110 1).			
Function	Manufacturer	Model #	S/N	
ProxPass II*	HID Global	1351	111706	

Support Devices:

Transfer and the second								
Function	Manufacturer	Model #	S/N					

Test Conditions / Notes:

EUT is a hand held card transmitting at 139.6 kHz and is battery operated only. The EUT is transmitting continuously with duty cycle during the test. Fresh batteries were installed prior to test. **No EUT emissions detected in this frequency range.** Frequency Range Investigated: 30-1000 MHz. Temperature: 21.1°C, Relative Humidity: 32%.

Transducer Legend:

Measurement Data:			F	Reading lis	sted by 1	margin.		Τe	est Distance	e: 3 Meters		
	#	Freq	Rdng					Dist	Corr	Spec	Margin	Polar
		MHz	dΒμV	dB	dB	dB	dB	Table	$dB\muV/m$	$dB\mu V/m$	dB	Ant

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