



**ADDENDUM TO TEST REPORT FC99-014**

**FOR THE**

**PROXPRO, 5355/8A (5355-300)**

**FCC PART 15 SUBPART C  
SECTION 15.207/15.209**

**COMPLIANCE**

**DATE OF ISSUE: SEPTEMBER 19, 2000**

**PREPARED FOR:**

HID Corporation  
9292 Jeronimo  
Irvine, CA 92618-1905

P.O. No: 007532  
W.O. No: 70946

**Report No: FC99-014A**

**DOCUMENTATION CONTROL:**

A handwritten signature in black ink, appearing to read 'Tracy Phillips', written over a horizontal line.

Tracy Phillips  
Documentation Control Supervisor  
CKC Laboratories, Inc.

**PREPARED BY:**

Joyce Walker  
CKC Laboratories, Inc.  
5473A Clouds Rest  
Mariposa, CA 95338

Date of test: February 18, 25, 1999

**APPROVED BY:**

A handwritten signature in black ink, appearing to read 'Dennis Ward', written over a horizontal line.

Dennis Ward  
Director of Laboratories  
CKC Laboratories, Inc.

This report contains a total of 25 pages and may be reproduced in full only. Partial reproduction may only be done with the written consent of CKC Laboratories, Inc.

## TABLE OF CONTENTS

Administrative Information .....	3
Summary Of Results.....	4
Equipment Under Test (EUT) Description.....	4
Measurement Uncertainty.....	4
EUT Operating Frequency.....	4
Peripheral Devices .....	5
Report Of Measurements.....	6
Table 1: Six Highest Radiated Emission Levels – 9kHz-30MHz .....	6
Table 2: Six Highest Radiated Emission Levels - 30MHz-1000MHz .....	7
Table 3: Six Highest Conducted Emission Levels .....	8
Table A : List Of Test Equipment .....	9
EUT Setup .....	10
Test Instrumentation And Analyzer Settings.....	10
Table B : Analyzer Bandwidth Settings Per Frequency Range.....	11
Spectrum Analyzer Detector Functions.....	11
Peak .....	11
Quasi-Peak.....	11
Average.....	12
Test Methods .....	12
Radiated Emissions Testing.....	12
Conducted Emissions Testing .....	13
Sample Calculations .....	13
Appendix A : Information About The Equipment Under Test.....	15
I/O Ports.....	16
Crystal Oscillators .....	16
Printed Circuit Boards .....	16
Required EUT Changes To Comply.....	16
Photograph Showing Radiated Emissions.....	17
Photograph Showing Conducted Emissions.....	18
Appendix B: Measurement Data Sheets .....	19

**CKC Laboratories, Inc. has Certificates of Accreditation from the following agencies:**  
DATEch (Germany); A2LA (USA); FCC (USA); VCCI (Japan); BSMI (Taiwan); HOKLAS (Hong Kong).  
**CKC Laboratories, Inc. has Letters of Acceptance through an MRA for the following agencies:**  
ACA/NATA (Australia); SABS (South Africa); SWEDAC (Sweden); TUV Rheinland-Germany; TUV Rheinland-Korea; TUV Rheinland-Russia; Radio Communication Agency (RA); NEMKO (Norway).

## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** February 18, 25, 1999

**PURPOSE OF TEST:** To demonstrate the compliance of the ProxPro, 5355/8A (5355-300), with the requirements for FCC Part 15 Subpart C Sections 15.207/15.209 devices.  
The addendum is to accommodate product name changes by the manufacturer.

**MANUFACTURER:** HID Corporation  
9292 Jeronimo  
Irvine, CA 92618-1905

**REPRESENTATIVE:** Frank de Vall

**TEST LOCATION:** CKC Laboratories, Inc.  
5473A Clouds Rest  
Mariposa, CA 95338

**TEST PERSONNEL:** Dustin Oaks

**TEST METHOD:** ANSI C63.4 1992

**FREQUENCY RANGE TESTED:** 9 kHz - 1000 MHz

**EQUIPMENT UNDER TEST:** **ProxPro**  
Manuf: HID Corporation  
Model: 5355/8A (5355-300)  
Serial: N/A  
FCC ID: JQ6535Y (pending)

## **SUMMARY OF RESULTS**

The HID Corporation ProxPro, 5355/8A (5355-300), was tested in accordance with ANSI C63.4 1992 for compliance with FCC Part 15 Subpart C Sections 15.207/15.209.

As received, the above equipment was found to be fully compliant with the limits of FCC Part 15 Subpart C Sections 15.207/15.209. The results in this report apply only to the items tested, as identified herein.

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

RFID Access Control Reader.

The following model has been tested by CKC Laboratories:

Prox Reader, 5355/8B

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

ProxPro, 5355/8A (5355-300)

### **MEASUREMENT UNCERTAINTY**

Associated with data in this report is a  $\pm 4$ dB measurement uncertainty.

### **EUT OPERATING FREQUENCY**

The EUT was operating at 125 kHz.

### **TEMPERATURE AND HUMIDITY DURING TESTING**

The temperature during testing was within  $+15^{\circ}\text{C}$  and  $+35^{\circ}\text{C}$ .  
The relative humidity was between 20% and 75%.

## **PERIPHERAL DEVICES**

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

### **Power Supply**

Manuf: Sorensen  
Model: DCR60 - 30B  
Serial: 0176  
FCC ID: N/A

### **Power Supply**

Manuf: Topward Electronic Instruments  
Model: 2306  
Serial: 920035  
FCC ID: N/A

## REPORT OF MEASUREMENTS

The following tables report the six highest worst case levels recorded during the tests performed on the ProxPro, 5355/8A (5355-300). All readings taken are peak readings unless otherwise noted by a “Q” or “A”. The data sheets from which these tables were compiled are contained in Appendix B.

Table 1: Six Highest Radiated Emission Levels - 9kHz-30MHz									
FREQUENCY	METER READING	CORRECTION FACTORS				CORRECTED READING	SPEC LIMIT	MARGIN	NOTES
		Mag	Cable	FCC 15.31	Dist				
MHz	dBμV	dB	dB	dB	dB	dBμV/m	dBμV/m	dB	
0.125	42.5	12.2	0.1	-40.0		14.8	25.7	-10.9	N
0.375	28.2	14.3	0.1	-40.0		2.6	16.1	-13.5	N
0.500	6.8	12.8	0.2	0.0		19.8	33.6	-13.8	N
0.625	9.9	11.6	0.2	0.0		21.7	31.7	-10.0	N
0.750	0.5	10.7	0.2	0.0		11.4	30.1	-18.7	N
0.875	7.5	10.0	0.2	0.0		17.7	28.7	-11.0	N

Test Method: ANSI C63.4 1992  
 Spec Limit : FCC Part 15.209  
 Test Distance: 30 Meters

NOTES: N = No Polarization

COMMENTS: EUT operating in normal mode. No Proxcard in field. EUT receiving operating voltage of 24VDC via power supply. 40dB/Dec correction used in accordance to FCC Part 15.31.

**Table 2: Six Highest Radiated Emission Levels - 30MHz-1000MHz**

FREQUENCY MHz	METER READING dBμV	CORRECTION FACTORS				CORRECTED READING dBμV/m	SPEC LIMIT dBμV/m	MARGIN dB	NOTES
		Amp dB	Ant dB	Cable dB	Dist				
33.940	49.4	-27.3	12.6	1.0		35.7	40.0	-4.3	VQ
48.063	46.5	-27.2	11.0	1.3		31.6	40.0	-8.4	VQ
65.072	49.3	-27.2	8.9	1.4		32.4	40.0	-7.6	VQ
119.976	45.5	-27.2	13.8	2.0		34.1	43.5	-9.4	V
188.025	42.0	-26.8	16.7	2.6		34.5	43.5	-9.0	V
192.037	41.4	-26.8	17.1	2.6		34.3	43.5	-9.2	V

Test Method: ANSI C63.4 1992  
Spec Limit : FCC Part 15.209  
Test Distance: 3 Meters

NOTES: Q = Quasi Peak Reading  
V = Vertical Polarization

COMMENTS: EUT operating in normal mode. No Proxcard in field. EUT receiving operating voltage of 24VDC via power supply.

Table 3: Six Highest Conducted Emission Levels									
FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS				CORRECTED READING dBµV	SPEC LIMIT dBµV	MARGIN dB	NOTES
		Lisn dB	dB	dB	dB				
8.509804	34.1	0.0				34.1	48.0	-13.9	W
11.511150	35.4	0.0				35.4	48.0	-12.6	B
11.639690	34.2	0.0				34.2	48.0	-13.8	B
15.142350	34.2	0.0				34.2	48.0	-13.8	W
15.640430	35.0	0.0				35.0	48.0	-13.0	W
16.636600	35.6	0.0				35.6	48.0	-12.4	W

Test Method: ANSI C63.4 1992  
Spec Limit : FCC Part 15.207  
Test Distance: No Distance

NOTES: B = Black Lead  
W = White Lead

COMMENTS: EUT is operating in normal operating mode. No Proxcard located in field. EUT received operating voltage of 24VDC via power supply. Negative power lead from EUT tied to DC power supply chassis ground.



**TABLE A**  
**LIST OF TEST EQUIPMENT**

1. Spectrum Analyzer, Hewlett Packard, Model No. 8566B, S/N 2209A01404. Calibration date: June 12, 1998. Calibration due date: June 12, 1999.
2. Preamp, Hewlett Packard, Model No. 8447D, S/N 1937A02604. Calibration date: April 10, 1998. Calibration due date: April 10, 1999.
3. Quasi-Peak Adapter, Hewlett Packard, Model No. 85650A, S/N 2811A01267. Calibration date: June 12, 1998. Calibration due date: June 12, 1999.
4. Biconical Antenna, A & H Systems, Model No. SAS-200/542, S/N 156. Calibration date: June 9, 1998. Calibration due date: June 9, 1999.
5. Log Periodic Antenna, A & H Systems, Model No. SAS-200/512, S/N 154. Calibration date: June 9, 1998. Calibration due date: June 9, 1999.
6. Magnetic Loop Antenna, EMCO, Model No. 6502, S/N 1074. Calibration date: May 11, 1998. Calibration due date: May 11, 1999.
7. LISN (FCC), Solar Electronics, S/N 855996, 992. Calibration date: May 28, 1998. Calibration due date: May 28, 1999.

## **EUT SETUP**

The equipment under test (EUT) and the peripheral(s) listed were set up in a manner that represented their normal use. Any special conditions required for the EUT to operate normally are identified in the comments that accompany Table 1-3 for radiated and conducted emissions. Additionally, a complete description of all the ports and I/O cables is included on the information sheets contained in Appendix A.

During radiated emissions testing, 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. This configuration is typical for radiated emissions testing of wall mounted devices.

I/O cables were connected to the EUT and peripheral in the manner required for normal operation of the system. Excess cabling was bundled in the center in a serpentine fashion using 30-40 centimeter lengths.

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 is 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. Conducted emissions tests required the use of the LISN's listed in Table A.

## **TEST INSTRUMENTATION AND ANALYZER SETTINGS**

The test instrumentation and equipment listed in Table A were used to collect both the radiated and conducted emissions data for the ProxPro, 5355/8A (5355-300). For frequencies below 30 MHz, the magnetic loop antenna was used. For radiated measurements below 300 MHz, the biconical antenna was used. For frequencies from 300 to 1000 MHz, the log periodic antenna was used. All antennas were located at a distance of 30 meters from the edge of the EUT while doing testing from 9kHz to 30 MHz, and 3 meters while doing testing from 30 MHz to 1 GHz. Conducted emissions tests required the use of the FCC type LISN's.

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

TABLE B : ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	450 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

## **SPECTRUM ANALYZER DETECTOR FUNCTIONS**

The notes that accompany the measurements contained in Tables 1, 2 and 3 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 for the ProxPro, 5355/8A (5355-300).

### **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**

When the frequencies are below 30 MHz, 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.

## **TEST METHODS**

The radiated and conducted emissions data of the ProxPro, 5355/8A (5355-300), 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 the "Sample Calculations". The corrected data was then compared to the FCC Part 15 Subpart C Sections 15.207/15.209 emissions limits to determine compliance.

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

## **Radiated Emissions Testing**

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode with the I/O cables and power cable facing the antenna. The frequency range of 9 kHz to 30 MHz was scanned with the magnetic loop antenna. The frequency range of 30 MHz - 88 MHz was then scanned with the biconical antenna located about 1.5 meter above the ground plane in the vertical configuration. During this scan, the turntable was rotated and all peaks, which were at or near the limit, were recorded. The frequency range of 100 - 300 MHz was scanned with the biconical antenna in the same manner, and the peaks recorded. Lastly, a scan of the FM band from 88 - 110 MHz was made, using a reduced resolution bandwidth and a reduced frequency span. The biconical antenna was changed to the horizontal polarity and the above steps were repeated. After changing to the log periodic antenna in the horizontal configuration, the frequency range of 300 - 1000 MHz was scanned. The log periodic antenna was changed to the vertical polarity and the frequency range of 300 - 1000 MHz was again scanned. 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.

For the final radiated scan, the equipment was again positioned with its I/O and power cables facing the antenna. A thorough scan of all frequencies was manually made using a small frequency span, rotating the turntable as needed. Comparison with the previously recorded measurements was then made.

Using the peak readings from both scans as a guide, the test engineer then maximized the readings with respect to the table rotation, antenna height and configuration of the peripheral and cables. Maximizing of the cables was achieved by monitoring the spectrum analyzer on a closed circuit television monitor while the EUT cables were being moved and rearranged on the EUT table for maximum emissions. Photographs showing the final worst case configuration of the EUT are contained in Appendix A.

### **Conducted Emissions Testing**

For conducted emissions testing, a 30 to 50 second sweep time was used for automated measurements in the frequency bands of 450 kHz to 1.705 MHz, 1.705 MHz to 3 MHz, and 3 MHz to 30 MHz. All readings within 20 dB of the limit were recorded. At frequencies where the recorded emissions were close to the limit, further investigation was performed manually at a slower sweep rate.

### **SAMPLE CALCULATIONS**

The basic spectrum analyzer reading was converted using correction factors as shown in the emissions readings in Tables 1, 2 and 3. For radiated emissions in dB $\mu$ V/m, the spectrum analyzer reading in dB $\mu$ V was corrected by using the following formula:

$$\begin{aligned} &\text{Meter reading (dB}\mu\text{V)} \\ &+ \text{Antenna Factor (dB)} \\ &+ \text{Cable Loss (dB)} \\ &- \text{Distance Correction (dB)} \\ &- \text{Pre-amplifier Gain (dB)} \\ &= \text{Corrected Reading (dB}\mu\text{V/m)} \end{aligned}$$

This reading was then compared to the applicable specification limit to determine compliance.

A typical data sheet will display the following in column format:

#	Freq MHz	Rdng dBuV	Cable	Amp	Bicon	Mag	FCC 15.31	Dist	Corr dBuV/m	Spec	Margin	Polar
	LISN											

# means reading number

**Freq MHz** is the frequency in MHz of the obtained reading.

**Rdng dBuV** is the reading obtained on the spectrum analyzer in dBuV.

**Amp** is short for the preamplifier factor or gain in dB.

**Bicon** is the biconical antenna factor in dB.

**FCC 15.31** is 40dB/Dec correction used in accordance with 15.31.

**Mag** is the magnetic loop antenna factor in dB.

**Cable** is the cable loss in dB of the coaxial cable on the OATS.

**Dist** is the distance factor (in dB). It is used when testing at a different test distance than the one stated in the spec.

**Corr dBuV/m** is the corrected reading which is now in dBuV/m (field strength).

**Spec** is the specification limit (dB) stated in the agency's regulations.

**Margin** is the closeness to the specified limit in dB; + is over and - is under the limit.

**Polar** is the Polarity of the antenna with respect to earth.

**FCC 15.31** is the average correction called in FCC Part 15.31.

**LISN** is the line impedance stabilization network factor in dB.

**APPENDIX A**

**INFORMATION ABOUT THE EQUIPMENT UNDER TEST**

INFORMATION ABOUT THE EQUIPMENT UNDER TEST	
Test Software/Firmware:	None
CRT was displaying:	NA
Power Supply Manufacturer:	Customer Supplied
Power Supply Part Number:	NA
AC Line Filter Manufacturer:	NA
AC Line Filter Part Number:	NA
Voltage used during testing:	24VDC

I/O PORTS	
Type	#
DC Power & Signals	1

CRYSTAL OSCILLATORS	
Type	Freq In MHz
Ceramic Resonator	4 MHz

PRINTED CIRCUIT BOARDS				
Function	Model & Rev	Clocks, MHz	Layers	Location
All Electronics	Rev B	4 MHz	4	

### CABLE INFORMATION

Cable #:	Cable(s) of this type:
Cable Type: Shielded Construction: Multiconductor Connected To End (1): Reader  Connector At End (1): None Shield Grounded At (1): Shield Ground Part Number:	Shield Type: Foil with Drain Length In Meters: 152 Connected To End (2): DC Supply and Controller  Connector At End (2): None Shield Grounded At (2): NC Number of Conductors: 6 to 10
Notes:	

REQUIRED EUT CHANGES TO COMPLY:
None.



## PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View

## PHOTOGRAPH SHOWING CONDUCTED EMISSIONS



Conducted Emissions - Front View

**APPENDIX B**

**MEASUREMENT DATA SHEETS**

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest Rd, Barn • Mariposa, CA 95338 • (800)-500-4EMC

Customer: **HID Corporation**  
Specification: **FCC 15.209**  
Test Type: **Maximized Emissions**  
Equipment: **Proximity Reader**  
Manufacturer: **HID**  
Model: **5355/8B**  
S/N: **N/A**

Date: Feb-18-99  
Time: 10:46  
Sequence#: 17  
Tested By: Dustin Oaks

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

Function	Manufacturer	Model #	S/N
Proximity Reader*	HID	5355/8B	N/A

***Support Devices:***

Function	Manufacturer	Model #	S/N
Power Supply	Sorensen	DCR60 - 30B	0176

***Test Conditions / Notes:***

EUT operating in normal mode. No Proxcards in field. EUT receiving operating voltage of 24VDC via power supply. 40dB/Dec correction used in accordance with FCC Part 15.31.

***Measurement Data:***

Sorted by Margin

Test Distance: 30 Meters

#	Freq	Rdng dBμV	Mag dB	Cable dB	FCC 15.31		Dist dB	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar
					dB	dB					
1	625.144k	9.9	+11.6	+0.2	+0.0		+0.0	21.7	31.7	-10.0	None
2	125.009k	42.5	+12.2	+0.1	-40.0		+0.0	14.8	25.7	-10.9	None
3	874.973k	7.5	+10.0	+0.2	+0.0		+0.0	17.7	28.7	-11.0	None
4	374.985k	28.2	+14.3	+0.1	-40.0		+0.0	2.6	16.1	-13.5	None
5	500.144k	6.8	+12.8	+0.2	+0.0		+0.0	19.8	33.6	-13.8	None
6	749.973k	0.5	+10.7	+0.2	+0.0		+0.0	11.4	30.1	-18.7	None
7	250.144k	24.4	+14.7	+0.1	-40.0		+0.0	-0.8	19.6	-20.4	None

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest Rd, Barn • Mariposa, CA 95338 • (800)-500-4EMC

Customer: **HID Corporation** Date: Feb-18-99

Specification: **FCC 15.209** Time: 14:54

Test Type: **Maximized Emissions** Sequence#: 24

Equipment: **Proximity Reader**

Manufacturer: HID Tested By: Dustin Oaks

Model: 5355/8B

S/N: N/A

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

Function	Manufacturer	Model #	S/N
Proximity Reader*	HID	5355/8B	N/A

**Support Devices:**

Function	Manufacturer	Model #	S/N
Power Supply	Sorensen	DCR60 - 30B	0176

**Test Conditions / Notes:**

EUT operating in normal mode. No Proxcard in field. EUT receiving operating voltage of 24VDC via power supply.

**Measurement Data:**

Sorted by Margin

Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	Amp dB	Bicon dB	Cable dB	Dist dB	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar
1	33.940	49.3	-27.3	+12.6	+1.0	+0.0	35.7	40.0	-4.3	Vert
Quasi Peak										
^	33.905	54.3	-27.3	+12.6	+1.0	+0.0	40.6	40.0	+0.6	Vert
3	65.072	49.3	-27.2	+8.9	+1.4	+0.0	32.4	40.0	-7.6	Vert
Quasi Peak										
^	65.070	51.8	-27.2	+8.9	+1.4	+0.0	34.9	40.0	-5.1	Vert
5	48.063	46.5	-27.2	+11.0	+1.3	+0.0	31.6	40.0	-8.4	Vert
Quasi Peak										
^	48.054	50.7	-27.2	+11.0	+1.3	+0.0	35.8	40.0	-4.2	Vert
7	188.025	42.0	-26.8	+16.7	+2.6	+0.0	34.5	43.5	-9.0	Vert
8	192.036	41.4	-26.8	+17.1	+2.6	+0.0	34.3	43.5	-9.2	Vert
9	119.976	45.5	-27.2	+13.8	+2.0	+0.0	34.1	43.5	-9.4	Vert
10	168.043	42.0	-26.9	+14.8	+2.4	+0.0	32.3	43.5	-11.2	Vert
11	180.041	40.4	-26.9	+15.9	+2.5	+0.0	31.9	43.5	-11.6	Vert

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest Rd, Barn • Mariposa, CA 95338 • (800)-500-4EMC

Customer: **HID Corporation** Date: Feb-25-99

Specification: **FCC pt 15.207** Time: 10:02

Test Type: **Conducted Emissions** Sequence#: 40

Equipment: **Proximity Reader**

Manufacturer: HID Tested By: Dustin Oaks

Model: 5355/8B

S/N: N/A

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

Function	Manufacturer	Model #	S/N
Proximity Reader*	HID	5355/8B	N/A

***Support Devices:***

Function	Manufacturer	Model #	S/N
Power Supply	Topward Electronic Instruments	2306	920035

***Test Conditions / Notes:***

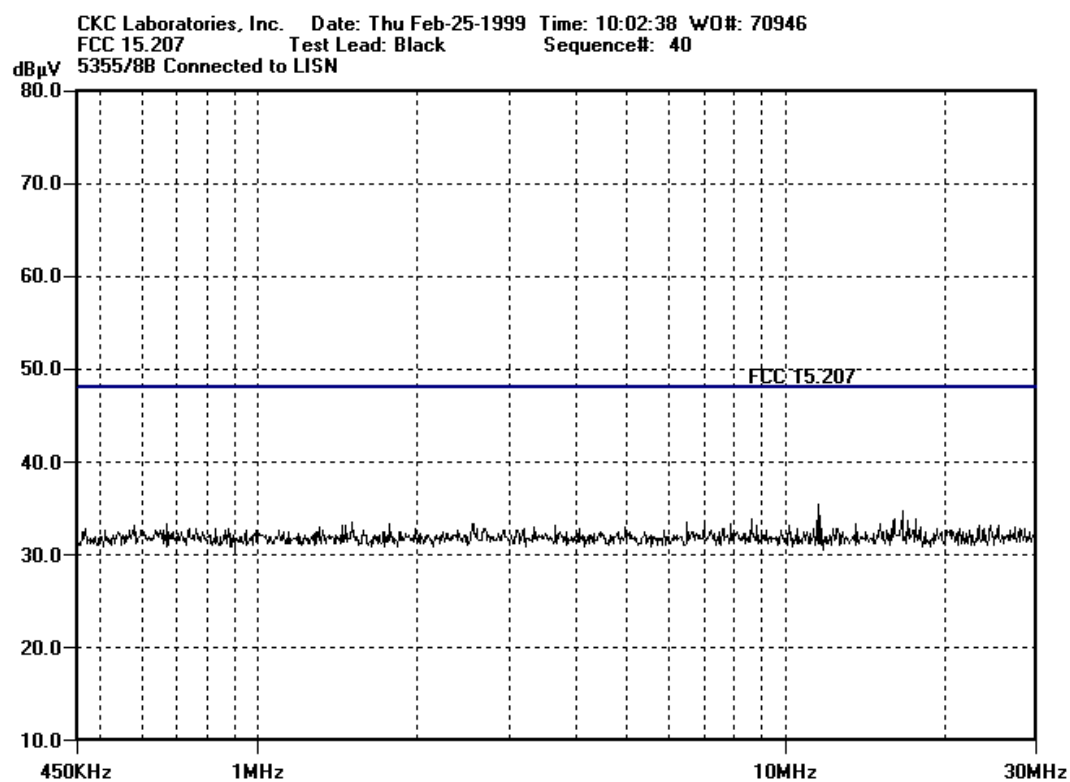
EUT is operating in normal operating mode. No Proxcard located in field. EUT received operating voltage of 24VDC via power supply. Negative power lead from EUT tied to DC power supply chassis ground.

***Measurement Data:***

Sorted by Margin

Test Lead: Black

#	Freq MHz	Rdng dB $\mu$ V					Dist dB	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar
1	11.511	35.4					+0.0	35.4	48.0	-12.6	Black
2	16.653	34.8					+0.0	34.8	48.0	-13.2	Black
3	11.640	34.2					+0.0	34.2	48.0	-13.8	Black
4	8.632	33.9					+0.0	33.9	48.0	-14.1	Black
5	17.660	33.8					+0.0	33.8	48.0	-14.2	Black
6	16.139	33.8					+0.0	33.8	48.0	-14.2	Black
7	17.022	33.7					+0.0	33.7	48.0	-14.3	Black
8	16.010	33.7					+0.0	33.7	48.0	-14.3	Black
9	7.009	33.6					+0.0	33.6	48.0	-14.4	Black
10	1.510	33.5					+0.0	33.5	48.0	-14.5	Black



Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest Rd, Barn • Mariposa, CA 95338 • (800)-500-4EMC

Customer: **HID Corporation** Date: Feb-25-99

Specification: **FCC pt 15.207** Time: 10:02

Test Type: **Conducted Emissions** Sequence#: 41

Equipment: **Proximity Reader**

Manufacturer: **HID** Tested By: Dustin Oaks

Model: 5355/8B

S/N: N/A

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

Function	Manufacturer	Model #	S/N
Proximity Reader*	HID	5355/8B	N/A

***Support Devices:***

Function	Manufacturer	Model #	S/N
Power Supply	Topward Electronic Instruments	2306	920035

***Test Conditions / Notes:***

EUT is operating in normal operating mode. No Proxcard located in field. EUT received operating voltage of 24VDC via power supply. Negative power lead from EUT tied to DC power supply chassis ground.

***Measurement Data:***

Sorted by Margin

Test Lead: White

#	Freq MHz	Rdng dB $\mu$ V					Dist dB	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar
1	16.637	35.6					+0.0	35.6	48.0	-12.4	White
2	15.640	35.0					+0.0	35.0	48.0	-13.0	White
3	15.142	34.2					+0.0	34.2	48.0	-13.8	White
4	17.006	34.1					+0.0	34.1	48.0	-13.9	White
5	15.512	34.1					+0.0	34.1	48.0	-13.9	White
6	8.510	34.1					+0.0	34.1	48.0	-13.9	White
7	13.632	33.9					+0.0	33.9	48.0	-14.1	White
8	12.636	33.9					+0.0	33.9	48.0	-14.1	White
9	1.020	33.8					+0.0	33.8	48.0	-14.2	White
10	9.003	33.6					+0.0	33.6	48.0	-14.4	White



