



ADDENDUM TO RF IDEAS, INC. TEST REPORT FC04-062

FOR THE

125 KHZ PROXIMITY CARD READER, BSE-PCPRXM-232 & BSE-PCPROXM-USB

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

COMPLIANCE

DATE OF ISSUE: NOVEMBER 1, 2004

PREPARED FOR:

RF IDEas, Inc.
4238 B Arlington Heights Rd., #244
Arlington Heights, IL 60004

P.O. No.: R-04072201
W.O. No.: 82520

PREPARED BY:

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Date of test: August 3-6, 2004

Report No.: FC04-062A

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ADMINISTRATIVE INFORMATION

DATE OF TEST: August 3-6, 2004

DATE OF RECEIPT: August 3, 2004

PURPOSE OF TEST: To demonstrate the compliance of the 125 kHz Proximity Card Reader, BSE-PCPRXM-232 & BSE-PCPROXM-USB with the requirements for FCC Part 15 Subpart C Sections 15.207, 15.209 & RSS-210 devices.
Addendum A is to revise the test distance on Table 4.

TEST METHOD: ANSI C63.4 (2001)

MANUFACTURER: RF IDEas, Inc.
4238 B Arlington Heights Rd., #244
Arlington Heights, IL 60004

REPRESENTATIVE: Rick Landuyt

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

SUMMARY OF RESULTS

As received, the RF IDEas, Inc. 125 kHz Proximity Card Reader, BSE-PCPRXM-232 & BSE-PCPROXM-USB was found to be fully compliant with the following standards and specifications:

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	6.3	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 3082-D		784962		Site File Number

CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

APPROVALS

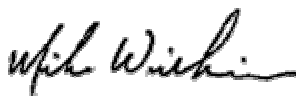
Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:



Joyce Walker, Quality Assurance Administrative Manager

TEST PERSONNEL:



Mike Wilkinson, Lab Manager

FCC 15.31(e) Voltage Variations

Table 1: 15.31(e) Voltage Variation on Peak Power - 232				
FREQUENCY MHz	CORRECTED READING dBμV/m 85%	CORRECTED READING dBμV/m 100%	CORRECTED READING dBμV/m 115%	SPEC LIMIT dBμV/m
125	-6.7	-6.6	-6.6	25.7

Test Method: ANSI C63.4 (2001)
 Spec Limit: FCC Part 15 Subpart C Section 15.209
 Test Distance: 3 meters

Table 2: 15.31(e) Voltage Variation on Peak Power - USB				
FREQUENCY MHz	CORRECTED READING dBμV/m 85%	CORRECTED READING dBμV/m 100%	CORRECTED READING dBμV/m 115%	SPEC LIMIT dBμV/m
125	-7.7	-7.7	-7.7	25.7

Test Method: ANSI C63.4 (2001)
 Spec Limit: FCC Part 15 Subpart C Section 15.209
 Test Distance: 3 meters

FCC 15.31(m) Number Of Channels

This device operates on a single channel.

FCC 15.33(a) Frequency Ranges Tested

15.207 Conducted: 150 kHz – 30 MHz

15.209 Radiated: 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.

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.

FCC 15.215 Additional Provisions to the General Radiated Emission Limitations

The fundamental frequency was kept within the central 80% of the permitted band in order to minimize the possibility of out-of-band operation. Refer to Appendix B for the test equipment used and Appendix C for the occupied bandwidth plot(s).

Mode Of Operation

The EUT was configured by the manufacturer to operate in a continuous transmit mode for testing purposes.

Eut Operating Frequency

The EUT was operating at 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 a production unit.

The following model has been tested by CKC Laboratories:

BSE-PCPRXM-U and BSE-PCPRXM-232

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

BSE-PCPRXM-USB, BSE-PCPRXM-232, BSE-PCPRXM-232-R12, BSE-PCPRXM-TTL, BSE-PCPRXM-TTL-R12, OEM-PCPRXM-USB, OEM-PCPRXM-232, OEM-PCPRXM-232-R12, OEM-PCPRXM-TTL, OEM-PCPRXM-TTL-R12

EQUIPMENT UNDER TEST

125 kHz Proximity Card Reader

Manuf: RF Ideas, Inc.
Model: BSE-PCPRXM-232
Serial: M40409
FCC ID: pending

125 kHz Proximity Card Reader

Manuf: RF Ideas, Inc.
Model: BSE-PCPROXM-USB
Serial: 51203241
FCC ID: pending

PERIPHERAL DEVICES

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

Mouse

Manuf: Microsoft
Model: Mouse port compatible mouse 2.1A
Serial: 00653718
FCC ID: C3KKMP1

Host Computer (2 each)

Manuf: Toshiba
Model: 2595CDS
Serial: B997681A
FCC ID: DoC

Host Computer Power Supply

Manuf: Toshiba
Model: PA3083A-1ACN
Serial: 0201-A-06371300G
FCC ID: NA

Printer

Manuf: HP
Model: DeskJet 895 Cxi
Serial: MY9291B24N
FCC ID: DoC

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 3: FCC 15.207 Six Highest Conducted Emission Levels									
FREQUENCY MHz	METER READING dBμV	CORRECTION FACTORS				CORRECTED READING dBμV	SPEC LIMIT dBμV	MARGIN dB	NOTES
		Lisn dB	HPF dB	Cable dB					
0.156545	48.5	0.3	2.1	0.1		51.0	55.6	-4.6	W-2
0.159454	50.2	0.3	1.8	0.1		52.4	55.5	-3.1	W-U
0.211085	48.4	0.3	0.1	0.1		48.9	53.2	-4.3	W-2
0.211812	48.5	0.3	0.1	0.1		49.0	53.1	-4.1	W-U
0.213994	48.7	0.4	0.1	0.1		49.3	53.0	-3.7	B-2
0.213994	48.7	0.4	0.1	0.1		49.3	53.0	-3.7	B-U

Test Method: ANSI C63.4 (2001)
Spec Limit: FCC Part 15 Subpart C Section 15.207

NOTES: B = Black Lead
W = White Lead
2 = 232
U = USB

COMMENTS: EUT is a Proximity Card Reader operating at 125 kHz. The EUT is DC powered by the host computer via the EUT's USB port, EUT data is sent USB. EUT is transmitting continuously. Reader function was checked before and after the test by placing a card near the EUT and the EUT reading and reporting the card ID to a Word window displayed on the host computer plus observing the EUT indicator light changing states from red to green. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 23°C, Relative Humidity: 30%.

Table 4: FCC 15.209 Fundamental Emission Levels

FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN DB	NOTES
		Ant dB	15.31 dB	Cable dB	Dist dB				
0.125	63.7	9.6	-80.0	0.1		-6.6	25.7	-32.3	V-2
0.125	62.6	9.6	-80.0	0.1		-7.7	25.7	-33.4	V-U
0.125	59.4	9.6	-80.0	0.1		-10.9	25.7	-36.6	H-2
0.125	58.5	9.6	-80.0	0.1		-11.8	25.7	-37.5	H-U
0.125	51.0	9.6	-80.0	0.1		-19.3	25.6	-44.9	V-U
0.125	50.2	9.6	-80.0	0.1		-20.1	25.7	-45.8	V-2

Test Method: ANSI C63.4 (2001)
Spec Limit: FCC Part 15 Subpart C Section 15.209
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization
2 = 232
U = USB

COMMENTS: EUT is a Proximity Card Reader operating at 125 kHz. The EUT is DC powered by the host computer via the EUT's PS2 cable. EUT data is sent via RS232. EUT is transmitting continuously. Reader function was checked before and after the test by placing a card near the EUT and the EUT reading and reporting the card ID to the Word documents displayed on the host computer plus observing the EUT indicator light changing states from red to green. Test distance correction factor 40dB per decade applied in accordance with 15.31 to correct test data taken at 3 meters for comparison at the limit distance of 300 meters. Frequency investigated was - Fundamental. Temperature was 22°C and the humidity was 35%. Data represents the worst case of emissions from 3 orthogonal planes. The EUT is vertical (worst case orientation).

Table 5: FCC 15.209 Six Highest Radiated Emission Levels: 9 kHz - 30 MHz

FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN DB	NOTES
		Ant dB	15.31 dB	Cable dB	Dist dB				
0.625	28.5	9.6	-40.0	0.2		-1.7	31.7	-33.4	V
0.875	28.5	937	-40.0	0.2		-1.6	28.7	-30.3	V
1.002	27.2	938	-40.0	0.2		-2.8	27.6	-30.4	H
2.375	17.7	9.6	-40.0	0.4		-12.3	29.5	-41.8	V
3.500	17.9	9.4	-40.0	0.4		-12.3	29.5	-41.8	V
12.125	14.6	8.6	-40.0	0.8		-16.0	29.5	-45.5	H

Test Method: ANSI C63.4 (2001)
Spec Limit: FCC Part 15 Subpart C Section 15.209
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: EUT is a Proximity Card Reader operating at 125 kHz. The EUT is DC powered by the host computer. EUT is transmitting continuously. Reader function was checked before and after the test by placing a card near the EUT and the EUT reading and reporting the card ID to the Word documents displayed on the host computer plus observing the EUT indicator light changing states from red to green. Frequency investigated was 9 kHz to 30 MHz. Temperature: 23°C, Relative Humidity: 30%. Data represents the worst case of emissions from both products. Data represents the worst case of emissions from 3 orthogonal planes of each product. Test distance correction factor applied in accordance with 15.31 to correct test data for comparison to the applicable limit. **No EUT emissions detected within 20dB of the limit.**

Table 6: FCC 15.209 Six Highest Radiated Emission Levels: 30-1000 MHz

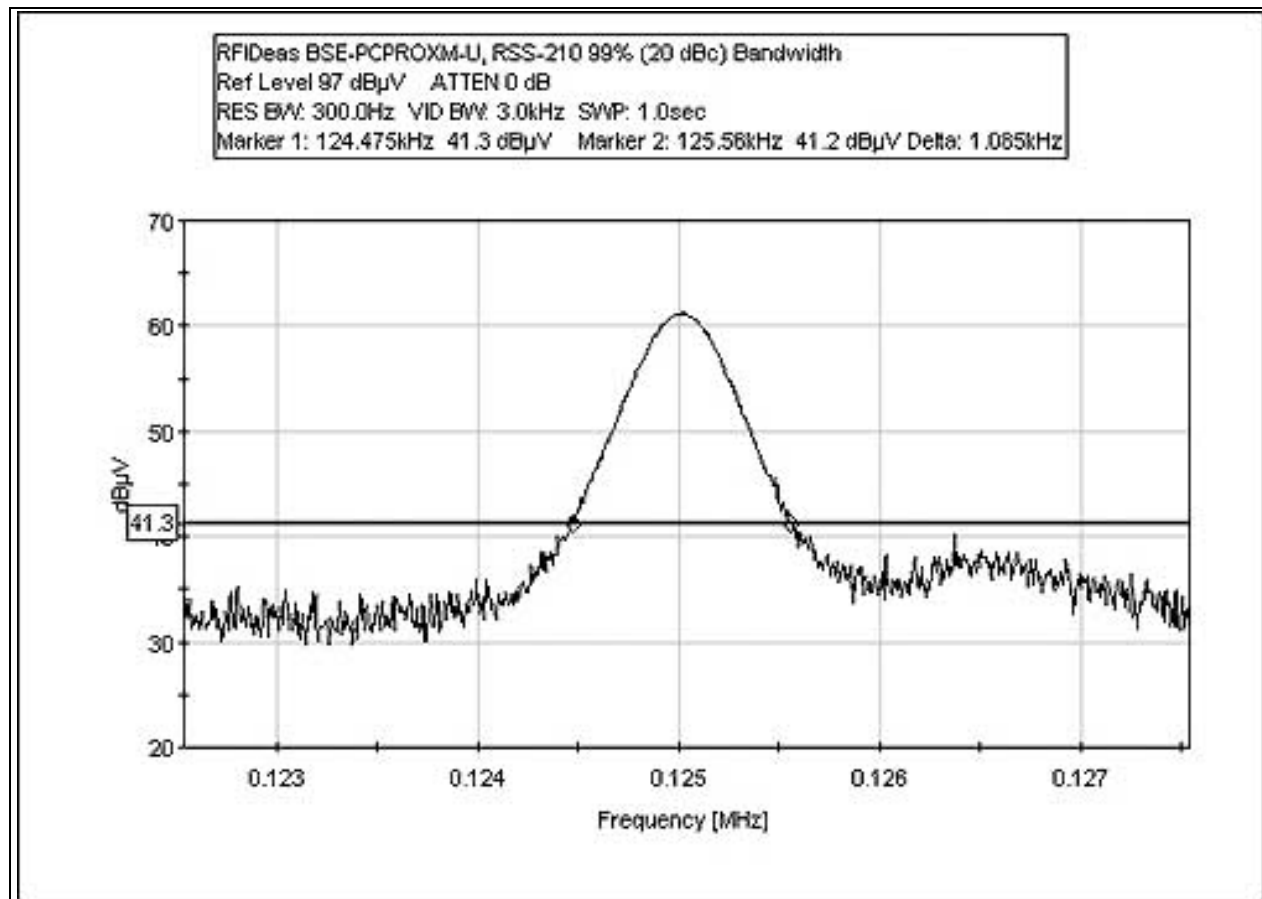
FREQUENCY MHz	METER READING dB μ V	CORRECTION FACTORS				CORRECTED READING dB μ V/m	SPEC LIMIT dB μ V/m	MARGIN DB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
39.982	38.0	12.4	-27.3	1.4	10.0	34.5	40.0	-5.5	H
240.106	38.4	11.3	-26.5	3.5	10.0	36.7	46.0	-9.3	H
320.900	34.8	13.4	-26.6	4.3	10.0	35.9	46.0	-10.1	H
365.030	33.9	14.6	-26.9	4.7	10.0	36.3	46.0	-9.7	V
365.100	38.3	14.6	-26.9	4.7	10.0	40.7	46.0	-5.3	H
366.100	37.4	14.6	-26.9	4.7	10.0	39.8	46.0	-6.2	V

Test Method: ANSI C63.4 (2001)
Spec Limit: FCC Part 15 Subpart C Section 15.209
Test Distance: 10 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: EUT is a Proximity Card Reader operating at 125 kHz. The EUT is DC powered by the host computer. EUT is transmitting continuously. Reader function was checked before and after the test by placing a card near the EUT and the EUT reading and reporting the card ID to the Word documents displayed on the host computer plus observing the EUT indicator light changing states from red to green. Frequency investigated was 30 MHz to 1000 MHz. Temperature: 23°C, Relative Humidity: 35%. Data represents the worst case of emissions from both products. Data represents the worst case of emissions from 3 orthogonal planes of each product. Test distance correction factor applied in accordance with 15.31 to correct test data for comparison to the applicable limit.

RSS-210 20 dB BANDWIDTH



EUT SETUP

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the photographs in Appendix A. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables. The corrected data was then compared to the applicable emission limits to determine compliance.

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

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

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

CORRECTION FACTORS

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

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

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Appendix B were used to collect both the radiated and conducted emissions data. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. For radiated measurements below 300 MHz, the biconical antenna was used. For frequencies from 300 to 1000 MHz, the log periodic antenna was used. For frequencies from 30 to 1000 MHz, the biconilog antenna was used. Conducted emissions tests required the use of the FCC type LISNs.

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

SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the Tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

Average

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

EUT TESTING

Mains Conducted Emissions

During conducted emissions testing, the EUT was located on a wooden table measuring approximately 80 cm high, 1 meter deep, and 1.5 meters in length. One wall of the room where the EUT was located has a minimum 2 meter by 2 meter conductive plane. The EUT was mounted on the wooden table 40 cm away from the conductive plane, and 80 cm from any other conductive surface.

The vertical metal plane used for conducted emissions was grounded to the earth. Power to the EUT was provided through a LISN. The LISN was grounded to the ground plane. All other objects were kept a minimum of 80 cm away from the EUT during the conducted test.

The LISNs used were 50 μ H/+50 ohms. Above 150 kHz, a 0.15 μ F series capacitor was added in-line prior to connecting the analyzer to restore the proper impedance for the range. A 30 to 50 second sweep time was used for automated measurements in the frequency bands of 150 kHz to 500 kHz, and 500 kHz to 30 MHz. All readings within 20 dB of the limit were recorded, and those within 6 dB of the limit were examined with additional measurements using a slower sweep time.

Radiated Emissions

The EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters.

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. The frequency range of 30 MHz to 1000 MHz was scanned with the biconilog antenna located about 1.5 meter above the ground plane in the vertical polarity. During this scan, the turntable was rotated and all peaks at or near the limit were recorded. A scan of the FM band from 88 to 110 MHz was then made using a reduced resolution bandwidth and frequency span. The biconilog antenna was changed to the horizontal polarity and the above steps were repeated. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

A thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable and raising and lowering the antenna from one to four meters as needed. The test engineer maximized the readings with respect to the table rotation, antenna height, and configuration of EUT. Maximizing of the EUT was achieved by monitoring the spectrum analyzer on a closed circuit television monitor.

APPENDIX A

TEST SETUP PHOTOGRAPHS

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Front View - 232

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Front View - USB

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View - 232

PHOTOGRAPH SHOWING RADIATED EMISSIONS



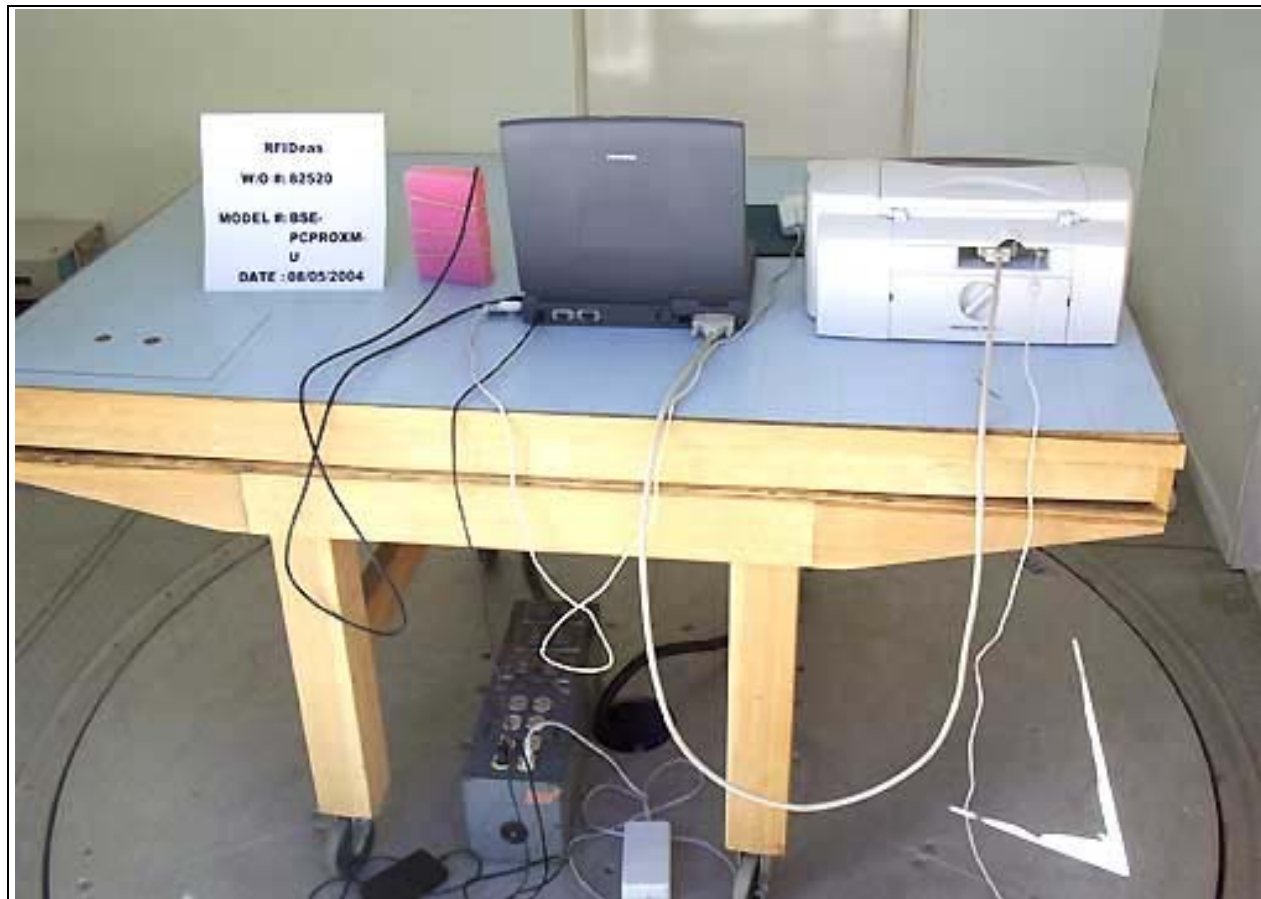
Radiated Emissions - Back View - 232

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View - USB

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Back View - USB

APPENDIX B

TEST EQUIPMENT LIST

FCC 15.207

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2005	00490
HP 8566B SA Display	2403A08241	02/26/2003	02/26/2005	00489
HP 85650A QPA	2811A01267	02/26/2003	02/26/2005	00478
150kHz HP Filter TTE	G7753	04/20/2004	04/20/2006	02609
LISN, 8028-50-TS-24-BNC	8379276, 280	06/05/2003	06/05/2005	1248 & 1249

FCC 15.209 Fundamental

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2005	00490
HP 8566B SA Display	2403A08241	02/26/2003	02/26/2005	00489
HP 85650A QPA	2811A01267	02/26/2003	02/26/2005	00478
EMCO Loop Antenna	1074	05/21/2003	05/21/2005	00226

FCC 15.209 9 kHz – 30 MHz

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2005	00490
HP 8566B SA Display	2403A08241	02/26/2003	02/26/2005	00489
HP 85650A QPA	2811A01267	02/26/2003	02/26/2005	00478
EMCO Loop Antenna	1074	05/21/2003	05/21/2005	00226

FCC 15.209 30-1000 MHz

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2005	00490
HP 8566B SA Display	2403A08241	02/26/2003	02/26/2005	00489
HP 85650A QPA	2811A01267	02/26/2003	02/26/2005	00478
HP 8447D Preamp	1937A02604	03/07/2003	03/07/2005	00099
Chase CBL6111C Bilog	2456	12/13/2002	12/13/2004	01991

APPENDIX C:

MEASUREMENT DATA SHEETS

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **RF IDEas, Inc.**

Specification: **FCC 15.207 - AVE**

Work Order #: **82520**

Date: 08/05/2004

Test Type: **Conducted Emissions**

Time: 3:30:56 PM

Equipment: **125 kHz Proximity Card Reader**

Sequence#: 7

Manufacturer: RF IDEas, Inc.

Tested By: Mike Wilkinson

Model: BSE-PCPRXM-232

120V 60Hz

S/N: M40409

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
125 kHz Proximity Card Reader*	RF IDEas, Inc.	BSE-PCPRXM-232	M40409

Support Devices:

Function	Manufacturer	Model #	S/N
Host Computer	Toshiba	2595CDS	B997681A
Mouse	Microsoft	Mouse port compatible mouse 2.1A	00653718
Host Computer	Toshiba	2595CDS	B997681A
Host Computer Power Supply	Toshiba	PA3083A-1ACN	0201-A-06371300G

Test Conditions / Notes:

EUT is a Proximity Card Reader operating at 125 kHz. The EUT is DC powered by the host computer via the EUT's USB port, EUT data is sent USB. EUT is transmitting continuously. Reader function was checked before and after the test by placing a card near the EUT and the EUT reading and reporting the card ID to a Word window displayed on the host computer plus observing the EUT indicator light changing states from red to green. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 23°C, Relative Humidity: 30%.

Transducer Legend:

T1=Cable - Internal + cab	T2=LISN Insertion Loss s/n276
T3=HP Filter AN02608	

Measurement Data:

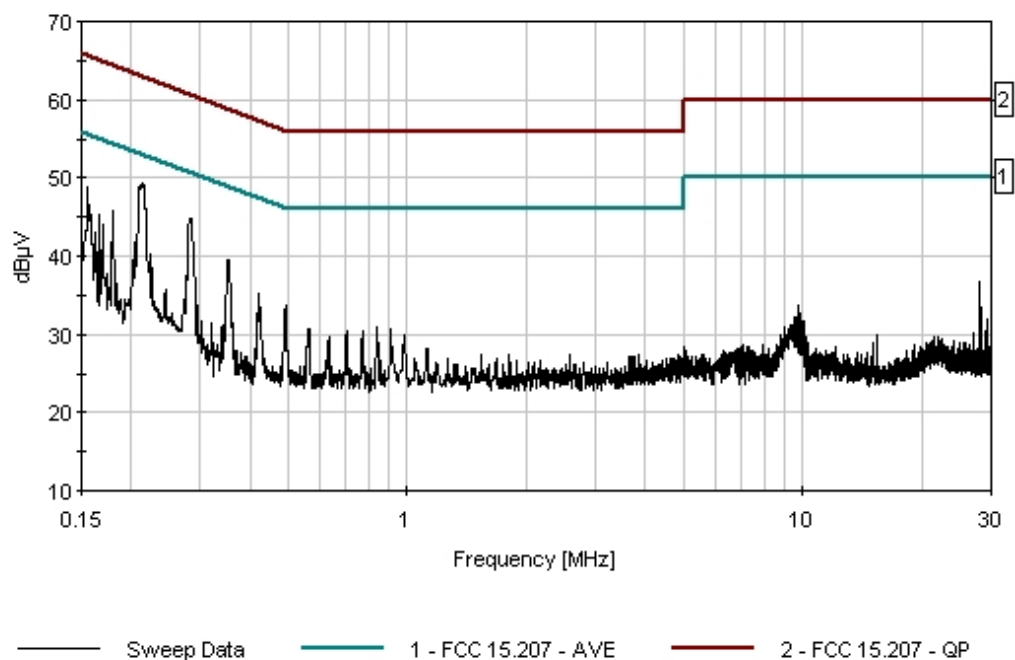
Reading listed by margin.

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	213.994k	48.7	+0.1	+0.4	+0.1		+0.0	49.3	53.0	-3.7	Black
2	283.078k	44.3	+0.1	+0.3	+0.2		+0.0	44.9	50.7	-5.8	Black
3	155.090k	46.0	+0.1	+0.4	+2.2		+0.0	48.7	55.7	-7.0	Black
4	179.815k	44.8	+0.1	+0.4	+0.4		+0.0	45.7	54.5	-8.8	Black
5	352.162k	38.8	+0.1	+0.4	+0.1		+0.0	39.4	48.9	-9.5	Black
6	165.998k	43.5	+0.1	+0.4	+1.3		+0.0	45.3	55.2	-9.9	Black
7	169.634k	42.7	+0.1	+0.4	+0.9		+0.0	44.1	55.0	-10.9	Black

8	203.813k	41.2	+0.1	+0.4	+0.0	+0.0	41.7	53.5	-11.8	Black
9	162.362k	41.0	+0.1	+0.4	+1.6	+0.0	43.1	55.3	-12.2	Black
10	423.427k	34.4	+0.1	+0.4	+0.2	+0.0	35.1	47.4	-12.3	Black
11	494.693k	33.2	+0.1	+0.3	+0.2	+0.0	33.8	46.1	-12.3	Black
12	150.000k	40.0	+0.1	+0.4	+2.7	+0.0	43.2	56.0	-12.8	Black
13	28.157M	35.6	+0.6	+0.4	+0.2	+0.0	36.8	50.0	-13.2	Black
14	225.629k	37.8	+0.1	+0.4	+0.2	+0.0	38.5	52.6	-14.1	Black
15	164.544k	38.5	+0.1	+0.4	+1.4	+0.0	40.4	55.2	-14.8	Black
16	837.931k	30.4	+0.1	+0.2	+0.3	+0.0	31.0	46.0	-15.0	Black
17	563.777k	30.1	+0.1	+0.3	+0.2	+0.0	30.7	46.0	-15.3	Black
18	911.024k	29.9	+0.2	+0.3	+0.2	+0.0	30.6	46.0	-15.4	Black
19	701.945k	29.8	+0.1	+0.3	+0.3	+0.0	30.5	46.0	-15.5	Black
20	770.302k	29.8	+0.1	+0.2	+0.3	+0.0	30.4	46.0	-15.6	Black

CKC Laboratories Date: 08/05/2004 Time: 3:30:56 PM RFIDeas W/O#: 82520
 FCC 15.207 - AVE Test Lead: Black 120V 60Hz Sequence#: 7
 RFIDeas M/N BSE-PCPRXM-232



Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **RF IDEas, Inc.**

Specification: **FCC 15.207 - AVE**

Work Order #: **82520**

Date: 08/05/2004

Test Type: **Conducted Emissions**

Time: 3:37:24 PM

Equipment: **125 kHz Proximity Card Reader**

Sequence#: 8

Manufacturer: RF IDEas, Inc.

Tested By: Mike Wilkinson

Model: BSE-PCPRXM-232

120V 60Hz

S/N: M40409

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
125 kHz Proximity Card Reader*	RF IDEas, Inc.	BSE-PCPRXM-232	M40409

Support Devices:

Function	Manufacturer	Model #	S/N
Host Computer	Toshiba	2595CDS	B997681A
Mouse	Microsoft	Mouse port compatible mouse 2.1A	00653718
Host Computer	Toshiba	2595CDS	B997681A
Host Computer Power Supply	Toshiba	PA3083A-1ACN	0201-A-06371300G

Test Conditions / Notes:

EUT is a Proximity Card Reader operating at 125 kHz. The EUT is DC powered by the host computer via the EUT's USB port, EUT data is sent USB. EUT is transmitting continuously. Reader function was checked before and after the test by placing a card near the EUT and the EUT reading and reporting the card ID to a Word window displayed on the host computer plus observing the EUT indicator light changing states from red to green. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 23°C, Relative Humidity: 30%.

Transducer Legend:

T1=Cable - Internal + cab	T2=LISN Insertion Loss s/n280
T3=HP Filter AN02608	

Measurement Data:

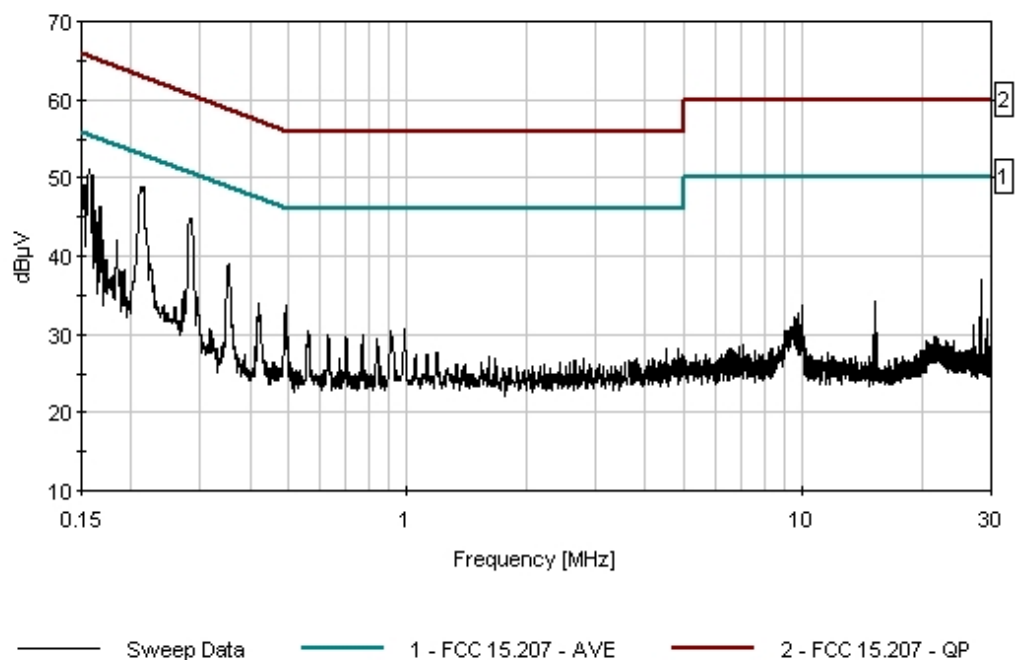
Reading listed by margin.

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	211.085k	48.4	+0.1	+0.3	+0.1		+0.0	48.9	53.2	-4.3	White
2	156.545k	48.5	+0.1	+0.3	+2.1		+0.0	51.0	55.6	-4.6	White
3	160.181k	48.2	+0.1	+0.3	+1.8		+0.0	50.4	55.5	-5.1	White
4	283.078k	44.2	+0.1	+0.2	+0.2		+0.0	44.7	50.7	-6.0	White
5	152.182k	46.2	+0.1	+0.3	+2.5		+0.0	49.1	55.9	-6.8	White
6	166.726k	44.8	+0.1	+0.3	+1.2		+0.0	46.4	55.1	-8.7	White
7	163.090k	43.8	+0.1	+0.3	+1.5		+0.0	45.7	55.3	-9.6	White

8	355.070k	38.6	+0.1	+0.3	+0.1	+0.0	39.1	48.8	-9.7	White
9	183.451k	41.4	+0.1	+0.3	+0.3	+0.0	42.1	54.3	-12.2	White
10	493.238k	33.0	+0.1	+0.3	+0.2	+0.0	33.6	46.1	-12.5	White
11	28.177M	35.8	+0.6	+0.5	+0.2	+0.0	37.1	50.0	-12.9	White
12	169.634k	40.7	+0.1	+0.3	+0.9	+0.0	42.0	55.0	-13.0	White
13	421.973k	33.4	+0.1	+0.3	+0.2	+0.0	34.0	47.4	-13.4	White
14	983.325k	30.0	+0.2	+0.3	+0.2	+0.0	30.7	46.0	-15.3	White
15	292.531k	34.5	+0.1	+0.2	+0.2	+0.0	35.0	50.5	-15.5	White
16	560.868k	29.8	+0.1	+0.2	+0.3	+0.0	30.4	46.0	-15.6	White
17	911.024k	29.8	+0.2	+0.2	+0.2	+0.0	30.4	46.0	-15.6	White
18	192.178k	37.7	+0.1	+0.3	+0.1	+0.0	38.2	53.9	-15.7	White
19	15.165M	33.3	+0.4	+0.4	+0.1	+0.0	34.2	50.0	-15.8	White
20	770.302k	29.4	+0.1	+0.2	+0.3	+0.0	30.0	46.0	-16.0	White

CKC Laboratories Date: 08/05/2004 Time: 3:37:24 PM RFIDeas W/O#: 82520
 FCC 15.207 - AVE Test Lead: White 120V 60Hz Sequence#: 8
 RFIDeas M/N BSE-PCPRXM-232



Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **RF IDEas, Inc.**

Specification: **FCC 15.207 - AVE**

Work Order #: **82520**

Date: 08/05/2004

Test Type: **Conducted Emissions**

Time: 3:46:26 PM

Equipment: **125 kHz Proximity Card Reader**

Sequence#: 10

Manufacturer: RF IDEas, Inc.

Tested By: Mike Wilkinson

Model: BSE-PCPROXM-U

120V 60Hz

S/N: 51203241

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
125 kHz Proximity Card Reader*	RF IDEas, Inc.	BSE-PCPROXM-U	51203241

Support Devices:

Function	Manufacturer	Model #	S/N
Host Computer	Toshiba	2595CDS	B997681A
Mouse	Microsoft	Mouse port compatible mouse 2.1A	00653718
Host Computer	Toshiba	2595CDS	B997681A
Host Computer Power Supply	Toshiba	PA3083A-1ACN	0201-A-06371300G

Test Conditions / Notes:

EUT is a Proximity Card Reader operating at 125 kHz. The EUT is DC powered by the host computer via the EUT's USB port, EUT data is sent USB. EUT is transmitting continuously. Reader function was checked before and after the test by placing a card near the EUT and the EUT reading and reporting the card ID to a Word window displayed on the host computer plus observing the EUT indicator light changing states from red to green. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 23°C, Relative Humidity: 30%.

Transducer Legend:

T1=Cable - Internal + cab	T2=LISN Insertion Loss s/n276
T3=HP Filter AN02608	

Measurement Data:

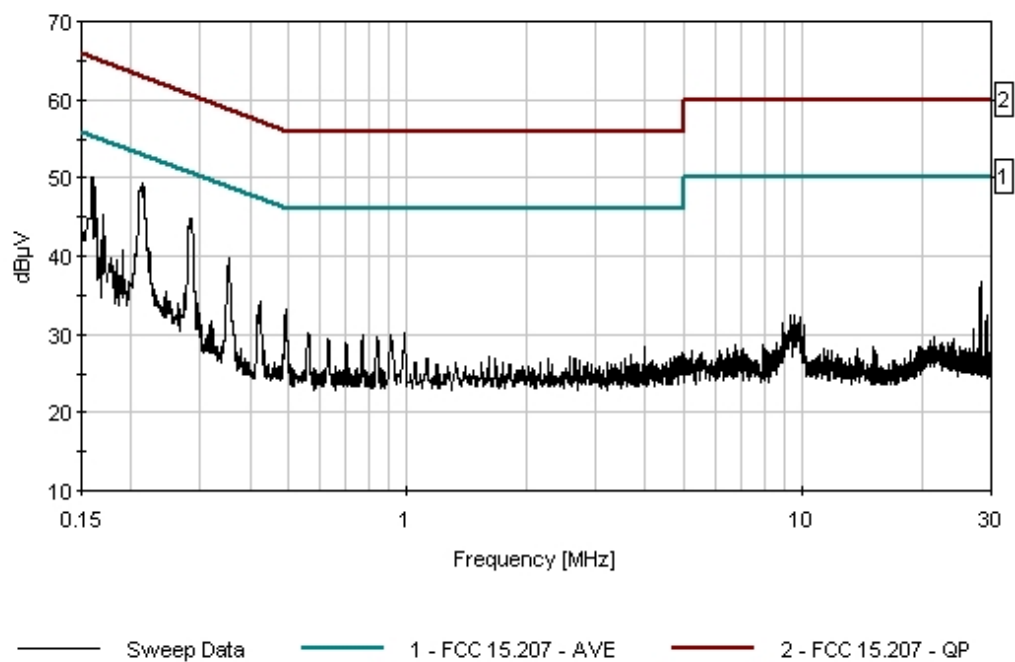
Reading listed by margin.

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	213.994k	48.7	+0.1	+0.4	+0.1		+0.0	49.3	53.0	-3.7	Black
2	159.454k	47.9	+0.1	+0.4	+1.8		+0.0	50.2	55.5	-5.3	Black
3	285.259k	44.2	+0.1	+0.3	+0.2		+0.0	44.8	50.7	-5.9	Black
4	162.362k	46.6	+0.1	+0.4	+1.6		+0.0	48.7	55.3	-6.6	Black
5	354.343k	39.1	+0.1	+0.4	+0.1		+0.0	39.7	48.9	-9.2	Black
6	169.634k	43.9	+0.1	+0.4	+0.9		+0.0	45.3	55.0	-9.7	Black
7	171.816k	41.2	+0.1	+0.4	+0.8		+0.0	42.5	54.9	-12.4	Black

8	493.966k	32.7	+0.1	+0.3	+0.2	+0.0	33.3	46.1	-12.8	Black
9	424.154k	33.5	+0.1	+0.4	+0.2	+0.0	34.2	47.4	-13.2	Black
10	28.177M	35.6	+0.6	+0.4	+0.2	+0.0	36.8	50.0	-13.2	Black
11	190.723k	40.0	+0.1	+0.4	+0.2	+0.0	40.7	54.0	-13.3	Black
12	183.451k	38.8	+0.1	+0.4	+0.3	+0.0	39.6	54.3	-14.7	Black
13	167.453k	38.6	+0.1	+0.4	+1.1	+0.0	40.2	55.1	-14.9	Black
14	559.414k	29.4	+0.1	+0.3	+0.3	+0.0	30.1	46.0	-15.9	Black
15	983.325k	29.4	+0.2	+0.3	+0.2	+0.0	30.1	46.0	-15.9	Black
16	769.574k	29.3	+0.1	+0.2	+0.3	+0.0	29.9	46.0	-16.1	Black
17	911.024k	29.2	+0.2	+0.3	+0.2	+0.0	29.9	46.0	-16.1	Black
18	294.713k	33.4	+0.1	+0.3	+0.2	+0.0	34.0	50.4	-16.4	Black
19	841.567k	29.0	+0.1	+0.2	+0.3	+0.0	29.6	46.0	-16.4	Black
20	628.498k	28.6	+0.1	+0.3	+0.3	+0.0	29.3	46.0	-16.7	Black

CKC Laboratories Date: 08/05/2004 Time: 3:46:26 PM RFIDeas W/O#: 82520
 FCC 15.207 - AVE Test Lead: Black 120V 60Hz Sequence#: 10
 RFIDeas M/N BSE-PCPROXM-U



Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **RF IDEas, Inc.**
 Specification: **FCC 15.207 - AVE**
 Work Order #: **82520**
 Test Type: **Conducted Emissions**
 Equipment: **125 kHz Proximity Card Reader**
 Manufacturer: **RF IDEas, Inc.**
 Model: **BSE-PCPROXM-U**
 S/N: **51203241**

Date: 08/05/2004
 Time: 3:43:02 PM
 Sequence#: 9
 Tested By: Mike Wilkinson
 120V 60Hz

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
125 kHz Proximity Card Reader*	RF IDEas, Inc.	BSE-PCPROXM-U	51203241

Support Devices:

Function	Manufacturer	Model #	S/N
Host Computer	Toshiba	2595CDS	B997681A
Mouse	Microsoft	Mouse port compatible mouse 2.1A	00653718
Host Computer	Toshiba	2595CDS	B997681A
Host Computer Power Supply	Toshiba	PA3083A-1ACN	0201-A-06371300G

Test Conditions / Notes:

EUT is a Proximity Card Reader operating at 125 kHz. The EUT is DC powered by the host computer via the EUT's USB port, EUT data is sent USB. EUT is transmitting continuously. Reader function was checked before and after the test by placing a card near the EUT and the EUT reading and reporting the card ID to a Word window displayed on the host computer plus observing the EUT indicator light changing states from red to green. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 23°C, Relative Humidity: 30%.

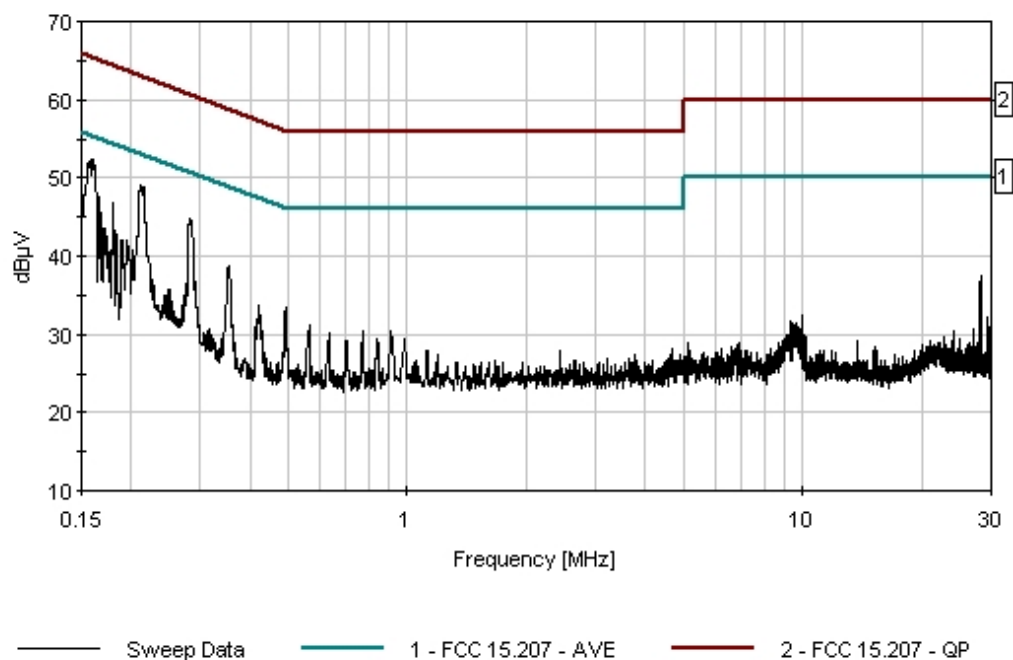
Transducer Legend:

T1=Cable - Internal + cab	T2=LISN Insertion Loss s/n280
T3=HP Filter AN02608	

Measurement Data:		Reading listed by margin.					Test Lead: White				
#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB		Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	159.454k	50.2	+0.1	+0.3	+1.8		+0.0	52.4	55.5	-3.1	White
2	211.812k	48.5	+0.1	+0.3	+0.1		+0.0	49.0	53.1	-4.1	White
3	282.350k	44.3	+0.1	+0.2	+0.2		+0.0	44.8	50.7	-5.9	White
4	179.815k	46.1	+0.1	+0.3	+0.4		+0.0	46.9	54.5	-7.6	White
5	165.998k	45.8	+0.1	+0.3	+1.3		+0.0	47.5	55.2	-7.7	White
6	168.907k	44.2	+0.1	+0.3	+1.0		+0.0	45.6	55.0	-9.4	White
7	353.616k	38.3	+0.1	+0.3	+0.1		+0.0	38.8	48.9	-10.1	White

8	181.997k	42.4	+0.1	+0.3	+0.4	+0.0	43.2	54.4	-11.2	White
9	171.816k	42.3	+0.1	+0.3	+0.8	+0.0	43.5	54.9	-11.4	White
10	183.451k	42.1	+0.1	+0.3	+0.3	+0.0	42.8	54.3	-11.5	White
11	167.453k	42.0	+0.1	+0.3	+1.1	+0.0	43.5	55.1	-11.6	White
12	194.359k	41.6	+0.1	+0.3	+0.1	+0.0	42.1	53.8	-11.7	White
13	189.996k	41.5	+0.1	+0.3	+0.2	+0.0	42.1	54.0	-11.9	White
14	491.784k	32.9	+0.1	+0.3	+0.2	+0.0	33.5	46.1	-12.6	White
15	28.170M	36.1	+0.6	+0.5	+0.2	+0.0	37.4	50.0	-12.6	White
16	202.358k	40.4	+0.1	+0.3	+0.0	+0.0	40.8	53.5	-12.7	White
17	421.973k	33.0	+0.1	+0.3	+0.2	+0.0	33.6	47.4	-13.8	White
18	176.179k	39.6	+0.1	+0.3	+0.5	+0.0	40.5	54.7	-14.2	White
19	564.504k	30.6	+0.1	+0.2	+0.2	+0.0	31.1	46.0	-14.9	White
20	911.024k	29.9	+0.2	+0.2	+0.2	+0.0	30.5	46.0	-15.5	White

CKC Laboratories Date: 08/05/2004 Time: 3:43:02 PM RFIDeas W/O#: 82520
 FCC 15.207 - AVE Test Lead: White 120V 60Hz Sequence#: 9
 RFIDeas M/N BSE-PCPROXM-U



Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **RF Ideas, Inc.**

Specification: **FCC 15.209**

Work Order #: **82520**

Date: 08/05/2004

Test Type: **Maximized Emissions**

Time: 08:38:07

Equipment: **125 kHz Proximity Card Reader**

Sequence#: 2

Manufacturer: RF Ideas, Inc.

Tested By: Mike Wilkinson

Model: BSE-PCPRXM-232

S/N: M40409

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
125 kHz Proximity Card Reader*	RF Ideas, Inc.	BSE-PCPRXM-232	M40409

Support Devices:

Function	Manufacturer	Model #	S/N
Host Computer	Toshiba	2595CDS	B997681A
Printer	HP	DeskJet 895Cxi	MY9291B24N
Mouse	Microsoft	Mouse port compatible mouse 2.1A	00653718

Test Conditions / Notes:

EUT is a Proximity Card Reader operating at 125 kHz. The EUT is DC powered by the host computer via the EUT's PS2 cable. EUT data is sent via RS232. EUT is transmitting continuously. Reader function was checked before and after the test by placing a card near the EUT and the EUT reading and reporting the card ID to the Word documents displayed on the host computer plus observing the EUT indicator light changing states from red to green. Test distance correction factor 40dB per decade applied in accordance with 15.31 to correct test data taken at 3 meters for comparison at the limit distance of 300 meters. Frequency investigated was - Fundamental. Temperature was 22°C and the humidity was 35%. Data represents the worst case of emissions from 3 orthogonal planes. The EUT is vertical (worst case orientation).

Transducer Legend:

T1=Mag Loop - Site B - AN 00226 - 9kHz-30M	T2=Cable - 3 Meter
T3=15.31 3m 40dB/Dec Correction	

Measurement Data:

Reading listed by margin.

Test Distance: 3 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	124.985k	63.7	+9.6	+0.1	-80.0		+0.0 165	-6.6	25.7 Vertical EUT Position	-32.3	Vert 100
2	125.030k	59.4	+9.6	+0.1	-80.0		+0.0 86	-10.9	25.7 Vertical EUT Position	-36.6	Horiz 100
3	125.040k	50.2	+9.6	+0.1	-80.0		+0.0 86	-20.1	25.7 Horizontal EUT Position	-45.8	Vert 100
4	125.015k	39.7	+9.6	+0.1	-80.0		+0.0 363	-30.6	25.7 Horizontal EUT Position	-56.3	Horiz 100

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **RF Ideas, Inc.**

Specification: **FCC 15.209**

Work Order #: **82520**

Date: 08/05/2004

Test Type: **Maximized Emissions**

Time: 07:24:25

Equipment: **125 kHz Proximity Card Reader**

Sequence#: 1

Manufacturer: RF Ideas, Inc.

Tested By: Mike Wilkinson

Model: BSE-PCPROXM-U

S/N: 51203241

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
125 kHz Proximity Card Reader*	RF Ideas, Inc.	BSE-PCPROXM-U	51203241

Support Devices:

Function	Manufacturer	Model #	S/N
Host Computer	Toshiba	2595CDS	B997681A
Printer	HP	DeskJet 895Cxi	MY9291B24N
Mouse	Microsoft	Mouse port compatible mouse 2.1A	00653718

Test Conditions / Notes:

EUT is a Proximity Card Reader operating at 125 kHz. The EUT is DC powered by the host computer via the EUT's USB cable. EUT is transmitting continuously. Reader function was checked before and after the test by placing a card near the EUT and the EUT reading and reporting the card ID to the Word documents displayed on the host computer plus observing the EUT indicator light changing states from red to green. Test distance correction factor 40dB per decade applied in accordance with 15.31 to correct test data taken at 3 meters for comparison at the limit distance of 300 meters. Frequency investigated was - Fundamental. Temperature was 22°C and the humidity was 35%. Data represents the worst case of emissions from 3 orthogonal planes. The EUT is vertical (worst case orientation).

Transducer Legend:

T1=Mag Loop - Site B - AN 00226 - 9kHz-30M	T2=Cable - 3 Meter
T3=15.31 3m 40dB/Dec Correction	

Measurement Data:

Reading listed by margin.

Test Distance: 3 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	124.600k	62.6	+9.6	+0.1	-80.0		+0.0 161	-7.7	25.7 Vertical EUT Position	-33.4	Vert 100
2	124.940k	58.5	+9.6	+0.1	-80.0		+0.0 81	-11.8	25.7 Vertical EUT Position	-37.5	Horiz 100
3	125.280k	51.0	+9.6	+0.1	-80.0		+0.0 2	-19.3	25.6 Horizontal EUT Position	-44.9	Vert 100
4	125.280k	46.8	+9.6	+0.1	-80.0		+0.0 365	-23.5	25.6 Horizontal EUT Position	-49.1	Horiz 100

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **RF IDEas, Inc.**

Specification: **FCC 15.209**

Work Order #: **82520**

Date: 08/05/2004

Test Type: **Maximized Emissions**

Time: 10:14:55

Equipment: **125 kHz Proximity Card Reader**

Sequence#: 5

Manufacturer: RF IDEas, Inc.

Tested By: Mike Wilkinson

Model: BSE-PCPRXM-xxx

S/N:

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
125 kHz Proximity Card Reader	RF IDEas, Inc.	BSE-PCPROXM-U	51203241
125 kHz Proximity Card Reader	RF IDEas, Inc.	BSE-PCPRXM-232	M40409

Support Devices:

Function	Manufacturer	Model #	S/N
Host Computer	Toshiba	2595CDS	B997681A
Printer	HP	DeskJet 895Cxi	MY9291B24N
Mouse	Microsoft	Mouse port compatible mouse 2.1A	00653718

Test Conditions / Notes:

EUT is a Proximity Card Reader operating at 125 kHz. The EUT is DC powered by the host computer. EUT is transmitting continuously. Reader function was checked before and after the test by placing a card near the EUT and the EUT reading and reporting the card ID to the Word documents displayed on the host computer plus observing the EUT indicator light changing states from red to green. Frequency investigated was 9 kHz to 30 MHz. Temperature: 23°C, Relative Humidity: 30%. Data represents the worst case of emissions from both products. Data represents the worst case of emissions from 3 orthogonal planes of each product. Test distance correction factor applied in accordance with 15.31 to correct test data for comparison to the applicable limit. **No EUT emissions detected within 20dB of the limit.**

Transducer Legend:

T1=Mag Loop - Site B - AN 00226 - 9kHz-30M	T2=Cable - 3 Meter
T3=15.31 3m 40dB/Dec Correction	

Measurement Data:

Reading listed by margin.

Test Distance: 3 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	875.220k	28.5	+9.7	+0.2	-40.0		+0.0 165	-1.6	28.7	-30.3	Vert 100
2	1.002M	27.2	+9.8	+0.2	-40.0		+0.0 79	-2.8	27.6	-30.4	Horiz 100
3	125.020k	63.5	+9.6	+0.1	-80.0		+0.0 165	-6.8	25.7 Fundamental	-32.5	Vert 100
4	625.220k	28.5	+9.6	+0.2	-40.0		+0.0 163	-1.7	31.7	-33.4	Vert 100
5	125.020k	59.4	+9.6	+0.1	-80.0		+0.0 79	-10.9	25.6 Fundamental	-36.5	Horiz 100

6	3.500M	17.9	+9.4	+0.4	-40.0	+0.0 214	-12.3	29.5	-41.8	Vert 100
7	2.375M	17.7	+9.6	+0.4	-40.0	+0.0 186	-12.3	29.5	-41.8	Vert 100
8	12.125M	14.6	+8.6	+0.8	-40.0	+0.0 79	-16.0	29.5	-45.5	Horiz 100
9	252.440k	41.6	+9.6	+0.1	-80.0	+0.0 160	-28.7	19.6	-48.3	Vert 100
10	375.220k	37.1	+9.6	+0.2	-80.0	+0.0 157	-33.1	16.1	-49.2	Vert 100
11	251.600k	39.7	+9.6	+0.1	-80.0	+0.0 79	-30.6	19.6	-50.2	Horiz 100
12	24.000M	2.0	+6.0	+1.0	-40.0	+0.0 200	-31.0	29.5	-60.5	Vert 100

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **RF IDEas, Inc.**

Specification: **FCC 15.209**

Work Order #: **82520**

Date: 08/05/2004

Test Type: **Maximized Emissions**

Time: 13:09:44

Equipment: **125 kHz Proximity Card Reader**

Sequence#: 6

Manufacturer: RF IDEas, Inc.

Tested By: Mike Wilkinson

Model: BSE-PCPRXM-xxx

S/N:

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
125 kHz Proximity Card Reader	RF IDEas, Inc.	BSE-PCPROXM-U	51203241
125 kHz Proximity Card Reader	RF IDEas, Inc.	BSE-PCPRXM-232	M40409

Support Devices:

Function	Manufacturer	Model #	S/N
Host Computer	Toshiba	2595CDS	B997681A
Printer	HP	DeskJet 895Cxi	MY9291B24N
Mouse	Microsoft	Mouse port compatible mouse 2.1A	00653718

Test Conditions / Notes:

EUT is a Proximity Card Reader operating at 125 kHz. The EUT is DC powered by the host computer. EUT is transmitting continuously. Reader function was checked before and after the test by placing a card near the EUT and the EUT reading and reporting the card ID to the Word documents displayed on the host computer plus observing the EUT indicator light changing states from red to green. Frequency investigated was 30 MHz to 1000 MHz. Temperature: 23°C, Relative Humidity: 35%. Data represents the worst case of emissions from both products. Data represents the worst case of emissions from 3 orthogonal planes of each product. Test distance correction factor applied in accordance with 15.31 to correct test data for comparison to the applicable limit.

Transducer Legend:

T1=Amp - S/N 604	T2=Bilog Site B
T3=Cable - 10 Meter	

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

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB		Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	365.100M	38.3	-26.9	+14.6	+4.7		+10.0 85	40.7	46.0	-5.3	Horiz 307
2	39.982M	38.0	-27.3	+12.4	+1.4		+10.0 306	34.5	40.0	-5.5	Horiz 307
3	366.100M	37.4	-26.9	+14.6	+4.7		+10.0 142	39.8	46.0	-6.2	Vert 114
4	240.106M	38.4	-26.5	+11.3	+3.5		+10.0 33	36.7	46.0	-9.3	Horiz 385
5	365.030M	33.9	-26.9	+14.6	+4.7		+10.0 79	36.3	46.0	-9.7	Vert 100
6	320.900M	34.8	-26.6	+13.4	+4.3		+10.0 326	35.9	46.0	-10.1	Horiz 307

7	214.678M	36.9	-26.6	+9.5	+3.4	+10.0 112	33.2	43.5	-10.3	Vert 122
8	200.036M	38.0	-26.7	+8.3	+3.3	+10.0 263	32.9	43.5	-10.6	Vert 122
9	215.610M	34.9	-26.6	+9.5	+3.4	+10.0 96	31.2	43.5	-12.3	Horiz 342
10	230.626M	35.9	-26.5	+10.7	+3.4	+10.0 120	33.5	46.0	-12.5	Vert 114
11	310.778M	32.2	-26.6	+13.1	+4.2	+10.0 262	32.9	46.0	-13.1	Horiz 307
12	235.624M	31.8	-26.5	+11.0	+3.5	+10.0 365	29.8	46.0	-16.2	Vert 114
13	155.210M	30.5	-27.0	+10.2	+2.8	+10.0 59	26.5	43.5	-17.0	Vert 114