



**XCEEDID TEST REPORT**  
**FOR THE**  
**PHYSICAL ACCESS CONTROL READER, XF1050**  
**FCC PART 15 SUBPART C SECTIONS 15.207 & 15.209 AND RSS-210**  
**COMPLIANCE**

**DATE OF ISSUE: MARCH 15, 2005**

**PREPARED FOR:**

XceedID  
112 N. Rubey Drive, Suite 100  
Golden, CO 80403

P.O. No.: 011305JDM  
W.O. No.: 83109

**PREPARED BY:**

Mary Ellen Clayton  
CKC Laboratories, Inc.  
5046 Sierra Pines Drive  
Mariposa, CA 95338

Date of test: February 24-25, 2005

**Report No.: FC05-011**

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## **ADMINISTRATIVE INFORMATION**

**DATE OF TEST:** February 24-25, 2005

**DATE OF RECEIPT:** February 24, 2005

**MANUFACTURER:** XceedID  
112 N. Rubey Drive, Suite 100  
Golden, CO 80403

**REPRESENTATIVE:** Mike Conlin

**TEST LOCATION:** CKC Laboratories, Inc.  
5046 Sierra Pines Drive  
Mariposa, CA 95338

**TEST METHOD:** ANSI C63.4 (2001) and RSS-212

**PURPOSE OF TEST:** To demonstrate the compliance of the Physical Access Control Reader, XF1050 with the requirements for FCC Part 15 Subpart C Sections 15.207 & 15.209 devices.

## FCC TO CANADA STANDARD CORRELATION MATRIX

Canadian Standard	Canadian Section	FCC Standard	FCC Section	Test Description
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 No.

### 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(m) Number Of Channels**

This device operates on a single channel.

#### **FCC 15.33(a) Frequency Ranges Tested**

15.207 Conducted Emissions: 150 kHz – 30 MHz

15.209 Radiated Emissions: 9 kHz – 1000 MHz

<b>FCC SECTION 15.35: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE</b>			
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.

#### **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 representative of a production unit.

## **EQUIPMENT UNDER TEST**

### **Physical Access Control Reader**

Manuf: XceedID  
Model: XF1050  
Serial: 1000  
FCC ID: pending

## **PERIPHERAL DEVICES**

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

### **DC Power Supply**

Manuf: Topward  
Model: TPS-4000  
Serial: 918520

## 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 15.207 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					
0.656858	24.4	0.2	0.3	0.1		25.0	46.0	-21.0	W
0.819024	25.7	0.2	0.3	0.1		26.3	46.0	-19.7	B
3.169367	24.5	0.3	0.1	0.3		25.2	46.0	-20.8	B
9.441040	30.9	0.5	0.1	0.3		31.8	50.0	-18.2	B
13.584350	27.9	0.5	0.1	0.4		28.9	50.0	-21.1	B
27.225500	27.8	0.4	0.2	0.5		28.9	50.0	-21.1	B

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

NOTES: B = Black Lead  
W = White Lead

COMMENTS: EUT is operating on a frequency of 125kHz. RF Tag present in the field for continuous communication. EUT is powered via support power supply at 12 VDC. EUT is tested in three orthogonal orientations; the worst case emissions are reported. Frequency range investigated: 150 kHz to 30 MHz. Temperature: 18°C, Relative Humidity: 45%.

**Table 2: FCC 15.209 Fundamental Emission Levels**

FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS				CORRECTED READING dB $\mu$ V/m	SPEC LIMIT dB $\mu$ V/m	MARGIN DB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
0.123	72.2	-70.4		0.1	-21.0	-19.1	25.8	-44.9	V
0.123	67.6	-70.4		0.1	-21.0	-23.7	25.8	-49.5	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 operating on a frequency of 125kHz. RF Tag present in the field for continuous communication. EUT is powered via support power supply at 12 VDC. EUT is tested in three orthogonal orientations; the worst case emissions are reported. Test distance correction factor used, 40dB per decade to correct test data for comparison to the applicable limit. Frequency range investigated: Fundamental. Temperature: 18°C, Relative Humidity: 45%.



**Table 3: FCC 15.209 Six Highest Radiated Emission Levels - 9kHz - 30MHz**

FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS				CORRECTED READING dB $\mu$ V/m	SPEC LIMIT dB $\mu$ V/m	MARGIN DB	NOTES
		Ant dB	15.31 dB	Cable dB	Dist dB				
0.243	47.5	9.5	-80.0	0.1	-21.0	-43.9	19.9	-63.8	V
0.246	25.3	9.6	-80.0	0.1	-21.0	-66.0	19.8	-85.8	H
0.366	28.6	9.6	-80.0	0.2	-21.0	-62.6	16.3	-78.9	V
0.492	31.4	9.6	-80.0	0.2	-21.0	-19.8	33.8	-53.6	V
0.615	17.8	9.6	-80.0	0.2	-21.0	-33.4	31.8	-65.2	H
8.001	5.5	9.1	-80.0	0.6	-21.0	-45.8	29.5	-75.3	V

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 operating on a frequency of 125kHz. RF Tag present in the field for continuous communication. EUT is powered via support power supply at 12 VDC. EUT is tested in three orthogonal orientations; the worst case emissions are reported. Test distance correction factor used in accordance with 15.31, 40dB per decade to correct test data for comparison to the applicable limit. Frequency range investigated: 9 kHz to 30 MHz. Temperature: 18°C, Relative Humidity: 45%.

**Table 4: FCC 15.209 Six Highest Radiated Emission Levels: 30-1000MHz**

FREQUENCY MHz	METER READING dB $\mu$ V	CORRECTION FACTORS				CORRECTED READING dB $\mu$ V/m	SPEC LIMIT dB $\mu$ V/m	MARGIN DB	NOTES
		Ant dB	Amp dB	Cable dB	Dist dB				
64.086	36.2	5.9	-27.3	1.8	10.0	26.6	40.0	-13.4	V
120.069	29.9	10.9	-27.2	2.5	10.0	26.1	43.5	-17.4	V
120.086	31.9	10.9	-27.2	2.5	10.0	28.1	43.5	-15.4	H
122.474	29.9	11.0	-27.2	2.5	10.0	26.2	43.5	-17.3	H
248.062	29.4	11.9	-26.5	3.6	10.0	28.4	46.0	-17.6	H
424.086	23.7	15.9	-27.3	5.1	10.0	27.4	46.0	-18.6	H

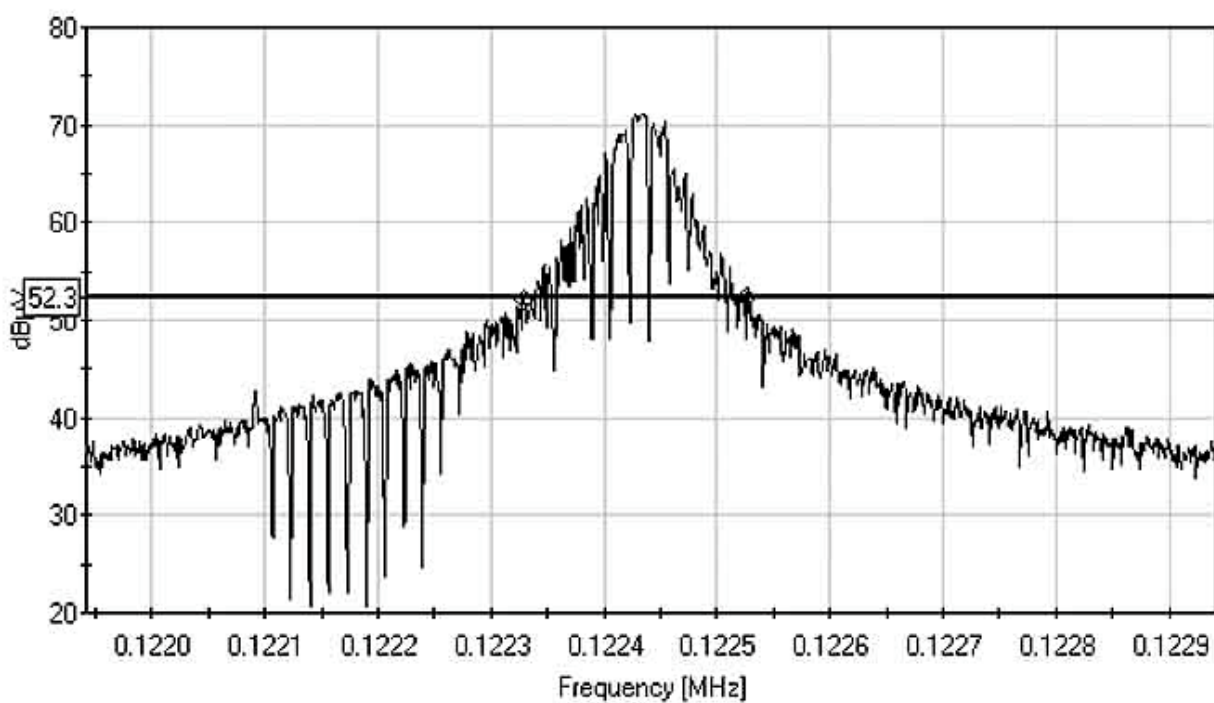
Test Method: ANSI C63.4 (2001)  
Spec Limit: FCC Part 15 Subpart C Section 15.209  
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization  
V = Vertical Polarization

COMMENTS: EUT is operating on a frequency of 125kHz. RF Tag present in the field for continuous communication. EUT is powered via support power supply at 12 VDC. EUT is tested in three orthogonal orientations; the worst case emissions are reported. Test distance correction factor used in accordance with 15.31, 20dB per decade to correct test data for comparison to the applicable limit. Frequency range investigated: 30-1000 MHz. Temperature: 18°C, Relative Humidity: 45%.

## RSS-210 20dB BANDWIDTH

XceedID: XF1050, 20 dB Bandwidth  
Ref Level 97 dB $\mu$ V ATTN 0 dB  
RES BW: 30.0Hz VID BW: 300.0Hz SWP: 10.0sec  
Marker 1: 122.329kHz 52.1 dB $\mu$ V Marker 2: 122.527kHz 52.3 dB $\mu$ V Delta: 198.007Hz



## 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 $\mu$ 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.

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)

## **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 $\mu$ 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  $\mu$ H/+50 ohms. Above 150 kHz, a 0.15  $\mu$ 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



**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



Mains Conducted Emissions - Side View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Radiated Emissions - Front View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Radiated Emissions - Back View

## APPENDIX B

### TEST EQUIPMENT LIST

#### *15.207*

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer (RF Section)	2007A01066	02/16/2005	02/16/2007	01184
Spectrum Analyzer (Display)	2005A01550	02/16/2005	02/16/2007	01183
QP Adapter	2043A00104	02/16/2005	02/16/2007	00069
LISN, 8028-50-TS-24-BNC	8379276, 280	06/05/2003	06/05/2005	1248 & 1249

#### *15.209 Fundamental & 9kHz – 30MHz*

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer (RF Section)	2007A01066	02/16/2005	02/16/2007	01184
Spectrum Analyzer (Display)	2005A01550	02/16/2005	02/16/2007	01183
QP Adapter	2043A00104	02/16/2005	02/16/2007	00069
EMCO Loop Antenna	1074	05/21/2003	05/21/2005	00226

#### *15.209 30-1000MHz*

Function	S/N	Calibration Date	Cal Due Date	Asset #
Spectrum Analyzer (RF Section)	2007A01066	02/16/2005	02/16/2007	01184
Spectrum Analyzer (Display)	2005A01550	02/16/2005	02/16/2007	01183
QP Adapter	2043A00104	02/16/2005	02/16/2007	00069
HP 8447D Preamp	1937A02604	03/07/2003	03/07/2005	00099
Chase CBL6111C Bilog	2456	06/26/2003	06/26/2005	01991

**APPENDIX C:**  
**MEASUREMENT DATA SHEETS**

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

Customer: **XceedID**  
 Specification: **FCC 15.207 - AVE**  
 Work Order #: **83109**  
 Test Type: **Conducted Emissions**  
 Equipment: **Physical Access Control Reader**  
 Manufacturer: XceedID Corp.  
 Model: XF1050  
 S/N: 1000

Date: 02/25/2005  
 Time: 9:08:57 AM  
 Sequence#: 4  
 Tested By: Mike Wilkinson  
 120V 60Hz

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

Function	Manufacturer	Model #	S/N
Physical Access Control Reader*	XceedID Corp.	XF1050	1000

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-4000	918520

**Test Conditions / Notes:**

EUT is operating on a frequency of 125kHz. RF Tag present in the field for continuous communication. EUT is powered via support power supply at 12 VDC. EUT is tested in three orthogonal orientations; the worst case emissions are reported. Frequency range investigated: 150 kHz to 30 MHz. Temperature: 18°C, Relative Humidity: 45%.

**Transducer Legend:**

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

**Measurement Data:**

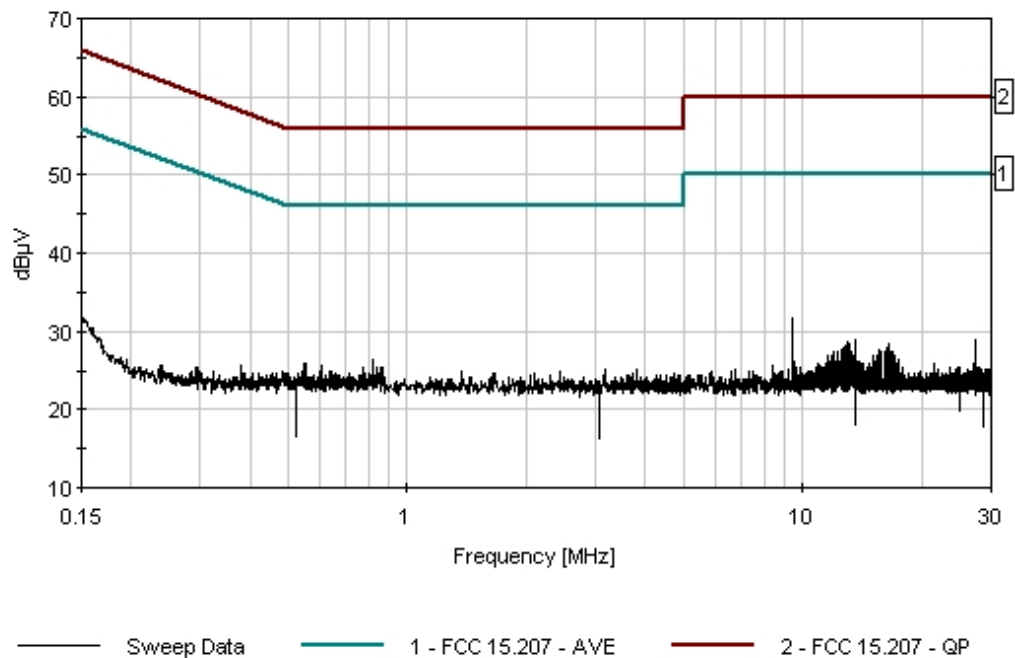
Reading listed by margin.

Test Lead: Black

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	Dist dB	Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	9.441M	30.9	+0.3	+0.5	+0.1	+0.0		31.8	50.0	-18.2	Black
2	819.024k	25.7	+0.1	+0.2	+0.3	+0.0		26.3	46.0	-19.7	Black
3	3.169M	24.5	+0.3	+0.3	+0.1	+0.0		25.2	46.0	-20.8	Black
4	1.379M	24.2	+0.2	+0.3	+0.2	+0.0		24.9	46.0	-21.1	Black
5	13.584M	27.9	+0.4	+0.5	+0.1	+0.0		28.9	50.0	-21.1	Black
6	27.226M	27.8	+0.5	+0.4	+0.2	+0.0		28.9	50.0	-21.1	Black
7	13.011M	27.6	+0.4	+0.5	+0.1	+0.0		28.6	50.0	-21.4	Black
8	13.565M	27.5	+0.4	+0.5	+0.1	+0.0		28.5	50.0	-21.5	Black
9	16.501M	27.6	+0.4	+0.4	+0.1	+0.0		28.5	50.0	-21.5	Black
10	13.581M	27.4	+0.4	+0.5	+0.1	+0.0		28.4	50.0	-21.6	Black

11	13.078M	27.3	+0.4	+0.5	+0.1	+0.0	28.3	50.0	-21.7	Black
12	12.767M	27.2	+0.4	+0.5	+0.1	+0.0	28.2	50.0	-21.8	Black
13	13.557M	27.2	+0.4	+0.5	+0.1	+0.0	28.2	50.0	-21.8	Black
14	13.205M	27.1	+0.4	+0.5	+0.1	+0.0	28.1	50.0	-21.9	Black
15	13.557M	27.1	+0.4	+0.5	+0.1	+0.0	28.1	50.0	-21.9	Black
16	13.572M	27.1	+0.4	+0.5	+0.1	+0.0	28.1	50.0	-21.9	Black
17	13.584M	27.1	+0.4	+0.5	+0.1	+0.0	28.1	50.0	-21.9	Black
18	13.566M	27.0	+0.4	+0.5	+0.1	+0.0	28.0	50.0	-22.0	Black
19	13.591M	27.0	+0.4	+0.5	+0.1	+0.0	28.0	50.0	-22.0	Black
20	13.591M	26.9	+0.4	+0.5	+0.1	+0.0	27.9	50.0	-22.1	Black

CKC Laboratories Date: 02/25/2005 Time: 9:08:57 AM XceedID VWO#: 83109  
FCC 15.207 - AVE Test Lead: Black 120V 60Hz Sequence#: 4  
XceedID Corp. MN XF1050



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

Customer: **XceedID**  
 Specification: **FCC 15.207 - AVE**  
 Work Order #: **83109**  
 Test Type: **Conducted Emissions**  
 Equipment: **Physical Access Control Reader**  
 Manufacturer: XceedID Corp.  
 Model: XF1050  
 S/N: 1000

Date: 02/25/2005  
 Time: 9:20:15 AM  
 Sequence#: 5  
 Tested By: Mike Wilkinson  
 120V 60Hz

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

Function	Manufacturer	Model #	S/N
Physical Access Control Reader*	XceedID Corp.	XF1050	1000

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-4000	918520

**Test Conditions / Notes:**

EUT is operating on a frequency of 125kHz. RF Tag present in the field for continuous communication. EUT is powered via support power supply at 12 VDC. EUT is tested in three orthogonal orientations; the worst case emissions are reported. Frequency range investigated: 150 kHz to 30 MHz. Temperature: 18°C, Relative Humidity: 45%.

**Transducer Legend:**

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

**Measurement Data:**

Reading listed by margin.

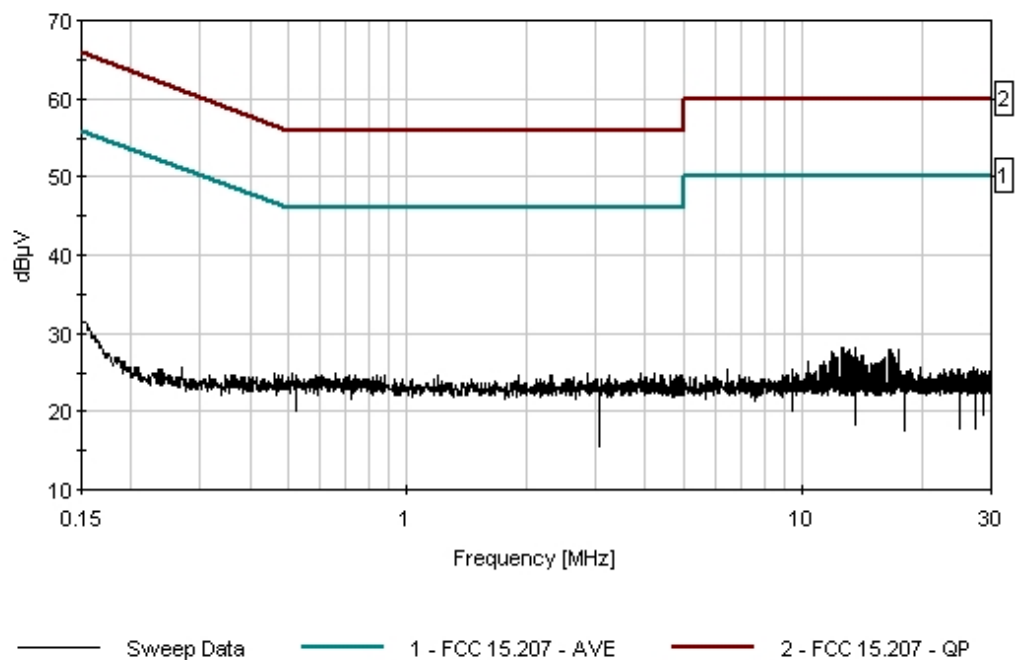
Test Lead: White

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	Dist dB	Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	656.858k	24.4	+0.1	+0.2	+0.3	+0.0		25.0	46.0	-21.0	White
2	4.224M	24.1	+0.3	+0.4	+0.1	+0.0		24.9	46.0	-21.1	White
3	2.855M	24.1	+0.3	+0.3	+0.1	+0.0		24.8	46.0	-21.2	White
4	12.615M	27.3	+0.4	+0.4	+0.1	+0.0		28.2	50.0	-21.8	White
5	12.691M	27.2	+0.4	+0.4	+0.1	+0.0		28.1	50.0	-21.9	White
6	13.577M	27.2	+0.4	+0.4	+0.1	+0.0		28.1	50.0	-21.9	White
7	13.595M	27.2	+0.4	+0.4	+0.1	+0.0		28.1	50.0	-21.9	White
8	13.583M	27.1	+0.4	+0.4	+0.1	+0.0		28.0	50.0	-22.0	White
9	13.595M	27.1	+0.4	+0.4	+0.1	+0.0		28.0	50.0	-22.0	White
10	13.078M	27.0	+0.4	+0.4	+0.1	+0.0		27.9	50.0	-22.1	White



11	13.557M	27.0	+0.4	+0.4	+0.1	+0.0	27.9	50.0	-22.1	White
12	13.597M	27.0	+0.4	+0.4	+0.1	+0.0	27.9	50.0	-22.1	White
13	16.555M	27.0	+0.4	+0.4	+0.1	+0.0	27.9	50.0	-22.1	White
14	17.420M	26.9	+0.5	+0.4	+0.1	+0.0	27.9	50.0	-22.1	White
15	13.554M	26.9	+0.4	+0.4	+0.1	+0.0	27.8	50.0	-22.2	White
16	13.559M	26.9	+0.4	+0.4	+0.1	+0.0	27.8	50.0	-22.2	White
17	13.600M	26.9	+0.4	+0.4	+0.1	+0.0	27.8	50.0	-22.2	White
18	16.798M	26.9	+0.4	+0.4	+0.1	+0.0	27.8	50.0	-22.2	White
19	13.575M	26.8	+0.4	+0.4	+0.1	+0.0	27.7	50.0	-22.3	White
20	13.576M	26.8	+0.4	+0.4	+0.1	+0.0	27.7	50.0	-22.3	White

CKC Laboratories Date: 02/25/2005 Time: 9:20:15 AM XceedID VWO#: 83109  
FCC 15.207 - AVE Test Lead: White 120V 60Hz Sequence#: 5  
XceedID Corp. MN XF1050



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

Customer: **XceedID**  
 Specification: **FCC 15.209**  
 Work Order #: **83109**  
 Test Type: **Maximized Emissions**  
 Equipment: **Physical Access Control Reader**  
 Manufacturer: XceedID Corp.  
 Model: XF1050  
 S/N: 1000

Date: 02/24/2005  
 Time: 15:08:40  
 Sequence#: 2  
 Tested By: Mike Wilkinson

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

Function	Manufacturer	Model #	S/N
Physical Access Control Reader*	XceedID Corp.	XF1050	1000

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-4000	918520

**Test Conditions / Notes:**

EUT is operating on a frequency of 125kHz. RF Tag present in the field for continuous communication. EUT is powered via support power supply at 12 VDC. EUT is tested in three orthogonal orientations; the worst case emissions are reported. Test distance correction factor used, 40dB per decade to correct test data for comparison to the applicable limit. Frequency range investigated: Fundamental. Temperature: 18°C, Relative Humidity: 45%.

**Transducer Legend:**

T1=Cable - 10 Meter	T2=15.31 3m 40dB/Dec Correction
T3=Mag Loop - Site B - AN 00226 - 9kHz-30M	

**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	122.740k	72.2	+0.1	-80.0	+9.6	-21.0	-19.1	25.8	-44.9	Vert
2	122.740k	67.6	+0.1	-80.0	+9.6	-21.0	-23.7	25.8	-49.5	Horiz

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

Customer: **XceedID**  
 Specification: **FCC 15.209**  
 Work Order #: **83109**  
 Test Type: **Maximized Emissions**  
 Equipment: **Physical Access Control Reader**  
 Manufacturer: XceedID Corp.  
 Model: XF1050  
 S/N: 1000

Date: 02/24/2005  
 Time: 15:54:50  
 Sequence#: 3  
 Tested By: Mike Wilkinson

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

Function	Manufacturer	Model #	S/N
Physical Access Control Reader*	XceedID Corp.	XF1050	1000

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-4000	918520

**Test Conditions / Notes:**

EUT is operating on a frequency of 125kHz. RF Tag present in the field for continuous communication. EUT is powered via support power supply at 12 VDC. EUT is tested in three orthogonal orientations; the worst case emissions are reported. Test distance correction factor used in accordance with 15.31, 40dB per decade to correct test data for comparison to the applicable limit. Frequency range investigated: 9 kHz to 30 MHz. Temperature: 18°C, Relative Humidity: 45%.

**Transducer Legend:**

T1=Cable - 10 Meter	T2=15.31 3m 40dB/Dec Correction
T3=Mag Loop - Site B - AN 00226 - 9kHz-30M	

**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	Dist dB	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	123.440k	72.2	+0.1	-80.0	+9.6	-21.0	-19.1	25.8 Carrier	-44.9	Vert
2	491.660k	31.4	+0.2	-40.0	+9.6	-21.0	-19.8	33.8	-53.6	Vert
3	243.240k	47.5	+0.1	-80.0	+9.5	-21.0	-43.9	19.9	-63.8	Vert
4	614.690k	17.8	+0.2	-40.0	+9.6	-21.0	-33.4	31.8	-65.2	Horiz
5	8.001M	5.5	+0.6	-40.0	+9.1	-21.0	-45.8	29.5	-75.3	Vert
6	365.980k	28.6	+0.2	-80.0	+9.6	-21.0	-62.6	16.3	-78.9	Vert
7	246.470k	25.3	+0.1	-80.0	+9.6	-21.0	-66.0	19.8	-85.8	Horiz

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

Customer: **XceedID**  
 Specification: **FCC 15.209**  
 Work Order #: **83109**  
 Test Type: **Maximized Emissions**  
 Equipment: **Physical Access Control Reader**  
 Manufacturer: XceedID Corp.  
 Model: XF1050  
 S/N: 1000

Date: 02/24/2005  
 Time: 13:40:53  
 Sequence#: 1  
 Tested By: Mike Wilkinson

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

Function	Manufacturer	Model #	S/N
Physical Access Control Reader*	XceedID Corp.	XF1050	1000

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-4000	918520

**Test Conditions / Notes:**

EUT is operating on a frequency of 125kHz. RF Tag present in the field for continuous communication. EUT is powered via support power supply at 12 VDC. EUT is tested in three orthogonal orientations; the worst case emissions are reported. Test distance correction factor used in accordance with 15.31, 20dB per decade to correct test data for comparison to the applicable limit. Frequency range investigated: 30-1000 MHz. Temperature: 18°C, Relative Humidity: 45%.

**Transducer Legend:**

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

**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	64.086M	36.2	-27.3	+1.8	+5.9		+10.0	26.6	40.0	-13.4	Vert
2	120.086M	31.9	-27.2	+2.5	+10.9		+10.0	28.1	43.5	-15.4	Horiz
3	122.474M	29.9	-27.2	+2.5	+11.0		+10.0	26.2	43.5	-17.3	Horiz
4	120.069M	29.9	-27.2	+2.5	+10.9		+10.0	26.1	43.5	-17.4	Vert
5	248.062M	29.4	-26.5	+3.6	+11.9		+10.0	28.4	46.0	-17.6	Horiz
6	424.086M	23.7	-27.3	+5.1	+15.9		+10.0	27.4	46.0	-18.6	Horiz
7	122.302M	28.0	-27.2	+2.5	+11.0		+10.0	24.3	43.5	-19.2	Vert
8	314.302M	25.0	-26.6	+4.2	+13.2		+10.0	25.8	46.0	-20.2	Vert
9	192.084M	25.8	-26.7	+3.2	+8.3		+10.0	20.6	43.5	-22.9	Horiz