



Engineering and Testing for EMC and Safety Compliance

**CERTIFICATION APPLICATION REPORT
FCC PART 15.245 & INDUSTRY CANADA RSS-210**

**MODEL: i-Port 3
FCC ID: O2E-ILR-IP3NA
IC: 3538B-IPORT3**

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May 11, 2005

Standards Referenced for This Report	
Part 2: 2004	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
Part 15: 2004	Radio Frequency Devices
ANSI C63.4-2003	Standard Format Measurement/Technical Report Personal Computer and Peripherals
RSS-210; 2001	Low Power License-Exempt Radio Communication Devices (All Frequency Bands)

FCC Part	Frequency Range (MHz)	Output Power (W)	Frequency Tolerance	Emission Designator
15.245	905-914.8	N/A	N/A	N/A

I, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this test report. Modifications made to the equipment during testing, in order to achieve compliance with these standards, are listed in the report.

Furthermore, there was no deviation from, additions to, or exclusions from the FCC Part 2, FCC Part 15, Industry Canada RSS-210, and ANSI C63.4.

Signature: 

Date: May 11, 2005

Typed/Printed Name: Desmond A. Fraser

Position: President

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1 GENERAL INFORMATION

The following application for a transceiver is prepared on behalf of Identec Solutions, Inc., Model: i-PORT 3, FCC ID: O2E-ILR-IP3NA, in accordance with Part 2, and Part 15, Subparts A and C of the Federal Communications Commission's rules and regulations, and Industry Canada RSS-210. The test results reported in this document relate only to the item that was tested.

All measurements contained in this application were conducted in accordance with ANSI C63.4 Methods of Measurement of Radio Noise Emissions, 2003. The instrumentation utilized for the measurements conforms to the ANSI C63.4 standard for EMI and Field Strength Instrumentation. Some accessories are used to increase sensitivity and prevent overloading of the measuring instrument. Calibration checks are performed regularly on the instruments, and all accessories including the high pass filter, preamplifier, and cables.

All radiated emissions measurements were performed manually at Rhein Tech Laboratories. The radiated emissions measurements required by the rules were performed on the three meter, open-field test range maintained by Rhein Tech Laboratories, 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. A complete description and site attenuation measurement data have been placed on file with the Federal Communications Commission. The power line conducted emissions measurements were performed in a shielded enclosure also located at the Herndon, Virginia facility. The FCC accepts Rhein Tech Laboratories, Inc. as a facility available to do measurement work for others on a contractual basis.

1.1 MODIFICATIONS

No modifications were made to the EUT to achieve the passing results in this report.

1.2 RELATED SUBMITTAL(S)/GRANT(S)

This is an original certification submission.

1.3 TEST METHODOLOGY

Radiated testing was performed according to the procedures in ANSI C63.4 2003. Radiated testing was performed at an antenna-to-EUT distance of 3 meters.

1.4 TEST FACILITY

The open area test site and conducted measurement facility used to collect the radiated data is located on the parking lot of Rhein Tech Laboratories, 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report, submitted to and approved by the Federal Communications Commission, to perform AC line conducted and radiated emissions testing (ANSI C63.4 2003).

2 SYSTEM TEST CONFIGURATION

2.1 JUSTIFICATION

To complete the test configuration required by the FCC, the transmitter was initiated by client-supplied software to control channel selection, modulation type, and power settings. Furthermore, the EUT was tested and investigated in three orthogonal planes.

2.2 EXERCISING THE EUT

The i-PORT 3 is a transmitter designed to function from 905 to 918 MHz. Software selection provided a high (914.8 MHz), mid (909.9 MHz), and lower (905 MHz) channel in this range for testing.

2.3 TEST SYSTEM DETAILS

The test sample was received on January 17, 2005. The FCC Identifiers for all equipment, plus descriptions of all cables used in the tested system, are shown in the table below.

TABLE 2-1: EQUIPMENT UNDER TEST (EUT)

Part	Manufacturer	Model	Serial Number	FCC ID	Cable Description	RTL Bar Code
i-PORT 3	Identec Solutions, Inc.	i-PORT 3	N/A	O2E-ILR-IP3NA	2.7m unshielded CAT5	16436
Antenna extension cable	Identec Solutions, Inc.	210278-010	N/A	N/A	2.54m shielded RG58	N/A
Magnetic Mount Whip Antenna (5 dBi)	Identec Solutions, Inc.	N/A	N/A	N/A	0.3 m shielded	16437
Patch Antenna (8 dBi Gain)	Cushcraft	S9028PC	N/A	N/A	0.3m shielded	16432
YAGI Antenna (7 dBi gain)	Wireless Technologies, Inc.	Astron	N/A	N/A	0.25m shielded	16433
Laptop Computer	Toshiba	Satellite	N/A	DOC	0.2m unshielded I/O	N/A
110VAC/12VDC power adapter	XPiQ Inc.	HUP24-12B2	02331981	N/A	1.7m Unshielded Power	16438

TABLE 2-2: ASSOCIATED TEST EQUIPMENT

Part	Manufacturer	Model	Serial Number	FCC ID	Cable Description	RTL Bar Code
Laptop	Toshiba	Satellite 1905-S301	92043315C	N/A	3m unshielded power	16621

2.4 CONFIGURATION OF TESTED SYSTEM

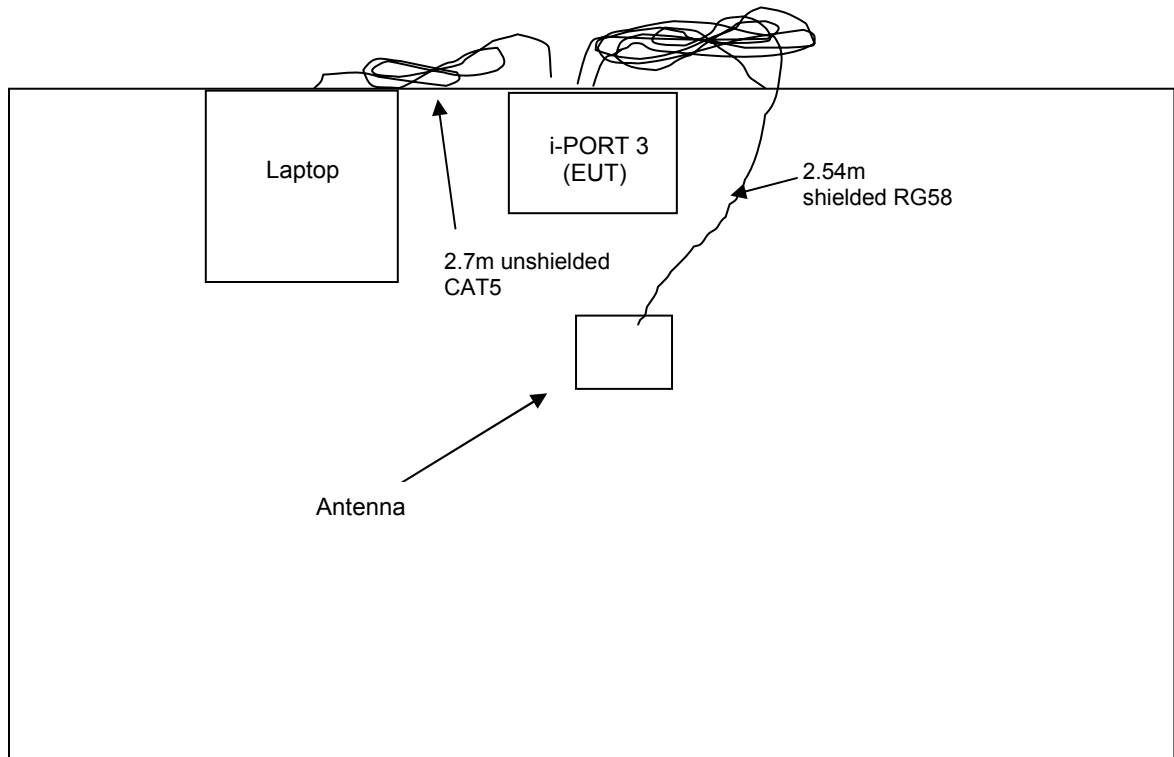


FIGURE 2-1: TEST SYSTEM CONFIGURATION

3 RADIATED EMISSIONS

3.1 TEST METHODOLOGY FOR RADIATED EMISSIONS MEASUREMENTS

Before final measurements of radiated emissions were made on the open-field three meter range, the EUT was scanned indoors at one meter and three meter distances, in order to determine its emissions spectrum signature. The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude, direction, and frequency. This process was repeated during final radiated emissions measurements on the open-field range, at each frequency, in order to ensure that maximum emission amplitudes were attained.

Final radiated emissions measurements were made on the three meter, open-field test site. The EUT was placed on a nonconductive turntable approximately 0.8 meters above the ground plane. The spectrum was examined from 30 MHz to 1000 MHz using a spectrum analyzer, a quasi-peak adapter, an EMCO log periodic and biconical antenna. In order to gain sensitivity, a preamplifier was connected in series between the antenna and the input of the spectrum analyzer.

At each frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters in order to determine the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarizations. The spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the FCC quasi-peak detection mode. No video filter less than 10 times the resolution bandwidth was used. The second harmonic of the highest LO was tested. The highest emission amplitudes relative to the appropriate limit were measured and recorded in this report.

Note: Rhein Tech Laboratories, Inc. has implemented procedures to minimize errors that occur from test instruments, calibration, procedures, and test setups. Test instrument and calibration errors are documented from the manufacturer or calibration lab. Other errors have been defined and calculated within the Rhein Tech Quality Manual, Section 6.1. Rhein Tech implements the following procedures to minimize errors that may occur: yearly as well as daily calibration methods, technician training, and emphasis to employees on avoiding error.

3.2 RADIATED EMISSION DATA - FCC §15.245

TABLE 3-1: FUNDAMENTAL RADIATED EMISSIONS – MAGNETIC MOUNT WHIP ANTENNA

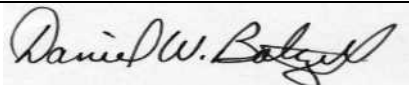
Temperature: 28°F Humidity: 51%								
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Duty Cycle Correction Factor	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
905	Pk	H	100.8	25.5		126.3	134.0	-7.7
905	Av	H	100.8	25.5	-18.7	107.6	114.0	-6.4
909.9	Pk	V	101.7	24.4		126.1	134.0	-7.9
909.9	Av	V	101.7	24.4	-18.7	107.4	114.0	-6.6
914.8	Pk	H	104.2	25.5		129.7	134.0	-4.3
914.8	Av	H	104.2	25.5	-18.7	111.0	114.0	-3.0

TABLE 3-2: FUNDAMENTAL RADIATED EMISSIONS – YAGI ANTENNA

Temperature: 28°F Humidity: 51%								
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Duty Cycle Correction Factor	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
905	Pk	H	105.3	25.5		130.8	134.0	-3.2
905	Av	H	105.3	25.5	-18.7	112.1	114.0	-1.9
909.9	Pk	H	106.2	25.4		131.6	134.0	-2.4
909.9	Av	H	106.2	25.4	-18.7	112.9	114.0	-1.1
914.8	Pk	H	106.2	25.5		131.7	134.0	-2.3
914.8	Av	H	106.2	25.5	-18.7	113.0	114.0	-1.0

TABLE 3-3: FUNDAMENTAL RADIATED EMISSIONS - PATCH ANTENNA

Temperature: 28°F Humidity: 51%								
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Duty Cycle Correction Factor	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
905	Pk	H	86.7	36.9		123.6	134.0	-10.4
905	Av	H	86.7	36.9	-18.7	104.9	114.0	-9.1
909.9	Pk	H	86.2	36.9		123.1	134.0	-10.9
909.9	Av	H	86.2	36.9	-18.7	104.4	114.0	-9.6
914.8	Pk	H	86.9	36.8		123.7	134.0	-10.3
914.8	Av	H	86.9	36.8	-18.7	105.0	114.0	-9.0

Daniel Baltzell		January 31, 2005
Test Engineer	Signature	Date Of Test

4 CONDUCTED LIMITS - §15.207

4.1 TEST METHODOLOGY FOR CONDUCTED LINE EMISSIONS MEASUREMENTS

The power line conducted emission measurements were performed in a Series 81 type shielded enclosure manufactured by Rayproof. The EUT was assembled on a wooden table 80 centimeters high. Power was fed to the EUT through a 50 ohm / 50 microhenry Line Impedance Stabilization Network (EUT LISN). The EUT LISN was fed power through an A.C. filter box on the outside of the shielded enclosure. The filter box and EUT LISN housing are bonded to the ground plane of the shielded enclosure. A second LISN, the peripheral LISN, provides isolation for the EUT test peripherals. This peripheral LISN was also fed A.C. power. A metal power outlet box, which is bonded to the ground plane and electrically connected to the peripheral LISN, powers the EUT host peripherals.

The spectrum analyzer was connected to the A.C. line through an isolation transformer. The 50-ohm output of the EUT LISN was connected to the spectrum analyzer input through a Solar high-pass filter. The filter is used to prevent overload of the spectrum analyzer from noise below 100 kHz. Conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or peak mode if applicable). The analyzer's 6 dB bandwidth was set to 9 kHz. No video filter less than 10 times the resolution bandwidth was used. Average measurements are performed in linear mode using a 10 kHz resolution bandwidth, a 1 Hz video bandwidth, and by increasing the sweep time in order to obtain a calibrated measurement. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in this report.

4.2 CONDUCTED LINE EMISSIONS TEST

The conducted test was performed with the EUT exercise program loaded, and the emissions were scanned between 150 kHz to 30 MHz on the NEUTRAL SIDE and PHASE SIDE.

4.3 CONDUCTED LINE EMISSIONS TEST EQUIPMENT

TABLE 4-1: CONDUCTED LINE EMISSIONS TEST EQUIPMENT

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
900931	Hewlett Packard	8566B	Spectrum Analyzer (100 Hz - 22 GHz)	3138A07771	6/23/05
901083	AFJ international	LS16	16A LISN	16010020080	3/24/06

4.4 CONDUCTED LINE EMISSIONS TEST DATA

TABLE 4-2: CONDUCTED EMISSIONS (NEUTRAL SIDE); MODE: DIGITAL-RECEIVER - WHIP ANTENNA

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.170	Pk	52.4	0.4	52.8	65.0	-12.2	55.0	-2.2
0.268	Pk	41.1	0.4	41.5	61.2	-19.7	51.2	-9.7
0.357	Pk	32.6	0.4	33.0	58.8	-25.8	48.8	-15.8
0.446	Pk	29.5	0.5	30.0	56.9	-26.9	46.9	-16.9
1.232	Pk	27.5	0.6	28.1	56.0	-27.9	46.0	-17.9
15.690	Pk	39.7	1.5	41.2	60.0	-18.8	50.0	-8.8

TABLE 4-3: CONDUCTED EMISSIONS (PHASE SIDE); MODE: DIGITAL-RECEIVER - WHIP ANTENNA

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.172	Pk	51.4	0.4	51.8	64.9	-13.1	54.9	-3.1
0.268	Pk	40.4	0.4	40.8	61.2	-20.4	51.2	-10.4
0.355	Pk	34.0	0.4	34.4	58.8	-24.4	48.8	-14.4
0.442	Pk	31.4	0.5	31.9	57.0	-25.1	47.0	-15.1
0.529	Pk	29.2	0.5	29.7	56.0	-26.3	46.0	-16.3
15.220	Pk	41.8	1.6	43.4	60.0	-16.6	50.0	-6.6

TABLE 4-4: CONDUCTED EMISSIONS (NEUTRAL SIDE); MODE: DIGITAL-RECEIVER - PATCH ANTENNA

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.170	Pk	52.7	0.4	53.1	65.0	-11.9	55.0	-1.9
0.267	Pk	41.6	0.4	42.0	61.2	-19.2	51.2	-9.2
0.359	Pk	34.2	0.4	34.6	58.8	-24.2	48.8	-14.2
0.442	Pk	28.8	0.5	29.3	57.0	-27.7	47.0	-17.7
0.616	Pk	30.0	0.6	30.6	56.0	-25.4	46.0	-15.4
1.147	Pk	28.8	0.6	29.4	56.0	-26.6	46.0	-16.6
14.960	Pk	44.3	1.6	45.9	60.0	-14.1	50.0	-4.1

TABLE 4-5: CONDUCTED EMISSIONS (PHASE SIDE); MODE: DIGITAL-RECEIVER - PATCH ANTENNA

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.179	Qp	53.2	0.4	53.6	65.2	-11.6	55.2	-1.6
0.179	Av	31.8	0.4	32.2	64.5	-32.3	54.5	-22.3
0.267	Pk	42.3	0.4	42.7	61.2	-18.5	51.2	-8.5
0.363	Pk	29.5	0.4	29.9	58.7	-28.8	48.7	-18.8
0.616	Pk	29.8	0.6	30.4	56.0	-25.6	46.0	-15.6
1.147	Pk	28.4	0.6	29.0	56.0	-27.0	46.0	-17.0
14.990	Pk	43.7	1.6	45.3	60.0	-14.7	50.0	-4.7

TABLE 4-6: CONDUCTED EMISSIONS (NEUTRAL SIDE); MODE: DIGITAL-RECEIVER - YAGI ANTENNA

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.166	Pk	51.8	0.4	52.2	65.2	-13.0	55.2	-3.0
0.172	Pk	52.1	0.4	52.5	64.9	-12.4	54.9	-2.4
0.271	Pk	40.4	0.4	40.8	61.1	-20.3	51.1	-10.3
0.353	Pk	31.6	0.4	32.0	58.9	-26.9	48.9	-16.9
0.449	Pk	28.1	0.5	28.6	56.9	-28.3	46.9	-18.3
14.910	Pk	38.1	1.6	39.7	60.0	-20.3	50.0	-10.3

TABLE 4-7: CONDUCTED EMISSIONS (PHASE SIDE); MODE: DIGITAL-RECEIVER - YAGI ANTENNA

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.172	Pk	50.6	0.4	51.0	64.9	-13.9	54.9	-3.9
0.269	Pk	40.1	0.4	40.5	61.1	-20.6	51.1	-10.6
0.357	Pk	33.9	0.4	34.3	58.8	-24.5	48.8	-14.5
0.443	Pk	31.7	0.5	32.2	57.0	-24.8	47.0	-14.8
0.619	Pk	29.1	0.6	29.7	56.0	-26.3	46.0	-16.3
14.710	Pk	41.9	1.5	43.4	60.0	-16.6	50.0	-6.6

TABLE 4-8: CONDUCTED EMISSIONS (NEUTRAL SIDE); MODE: TRANSMIT - WHIP ANTENNA MID CHANNEL

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.178	Qp	54.6	0.4	55.0	65.2	-10.2	55.2	-0.2
0.178	Av	32.0	0.4	32.4	64.6	-32.2	54.6	-22.2
0.268	Pk	43.1	0.4	43.5	61.2	-17.7	51.2	-7.7
0.352	Pk	32.8	0.4	33.2	58.9	-25.7	48.9	-15.7
0.527	Pk	29.2	0.5	29.7	56.0	-26.3	46.0	-16.3
0.786	Pk	27.4	0.6	28.0	56.0	-28.0	46.0	-18.0
1.586	Pk	27.4	0.7	28.1	56.0	-27.9	46.0	-17.9
15.020	Pk	41.2	1.6	42.8	60.0	-17.2	50.0	-7.2

TABLE 4-9: CONDUCTED EMISSIONS (PHASE SIDE); MODE: TRANSMIT - WHIP ANTENNA MID CHANNEL

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.181	Qp	53.9	0.4	54.3	65.2	-10.9	55.2	-0.9
0.181	Av	21.3	0.4	21.7	64.4	-42.7	54.4	-32.7
0.266	Pk	43.7	0.4	44.1	61.2	-17.1	51.2	-7.1
0.356	Pk	35.3	0.4	35.7	58.8	-23.1	48.8	-13.1
0.441	Pk	29.1	0.5	29.6	57.0	-27.4	47.0	-17.4
0.528	Pk	30.6	0.5	31.1	56.0	-24.9	46.0	-14.9
15.050	Pk	39.3	1.6	40.9	60.0	-19.1	50.0	-9.1

TABLE 4-10: CONDUCTED EMISSIONS (NEUTRAL SIDE); MODE: TRANSMIT - PATCH ANTENNA MID CHANNEL

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.178	Qp	51.8	0.4	52.2	65.2	-13.0	55.2	-3.0
0.178	Av	32.3	0.4	32.7	64.6	-31.9	54.6	-21.9
0.268	Pk	44.3	0.4	44.7	61.2	-16.5	51.2	-6.5
0.355	Pk	34.3	0.4	34.7	58.8	-24.1	48.8	-14.1
0.444	Pk	28.5	0.5	29.0	57.0	-28.0	47.0	-18.0
0.522	Pk	30.8	0.5	31.3	56.0	-24.7	46.0	-14.7
1.230	Pk	26.6	0.6	27.2	56.0	-28.8	46.0	-18.8
1.669	Pk	27.1	0.7	27.8	56.0	-28.2	46.0	-18.2
14.940	Pk	39.7	1.6	41.3	60.0	-18.7	50.0	-8.7

TABLE 4-11: CONDUCTED EMISSIONS (PHASE SIDE); MODE: TRANSMIT - PATCH ANTENNA MID CHANNEL

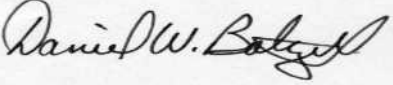
Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.178	Qp	51.8	0.4	52.2	65.2	-13.0	55.2	-3.0
0.178	Av	21.4	0.4	21.8	64.6	-42.8	54.6	-32.8
0.268	Pk	44.3	0.4	44.7	61.2	-16.5	51.2	-6.5
0.358	Pk	35.0	0.4	35.4	58.8	-23.4	48.8	-13.4
0.449	Pk	29.4	0.5	29.9	56.9	-27.0	46.9	-17.0
0.538	Pk	32.5	0.5	33.0	56.0	-23.0	46.0	-13.0
15.220	Pk	42.0	1.6	43.6	60.0	-16.4	50.0	-6.4

TABLE 4-12: CONDUCTED EMISSIONS (NEUTRAL SIDE); MODE: TRANSMIT – YAGI ANTENNA MID CHANNEL

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.177	Qp	55.5	0.4	55.9	65.3	-9.4	55.3	0.6
0.177	Av	32.1	0.4	32.5	64.6	-32.1	54.6	-22.1
0.268	Pk	44.3	0.4	44.7	61.2	-16.5	51.2	-6.5
0.357	Pk	34.5	0.4	34.9	58.8	-23.9	48.8	-13.9
0.444	Pk	26.7	0.5	27.2	57.0	-29.8	47.0	-19.8
0.526	Pk	27.6	0.5	28.1	56.0	-27.9	46.0	-17.9
1.576	Pk	25.7	0.7	26.4	56.0	-29.6	46.0	-19.6
14.600	Pk	39.0	1.5	40.5	60.0	-19.5	50.0	-9.5

TABLE 4-13: CONDUCTED EMISSIONS (PHASE SIDE); MODE: TRANSMIT –YAGI ANTENNA MID CHANNEL

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	QP Limit (dBuV)	QP Margin (dBuV)	AV Limit (dBuV)	AV Margin (dBuV)
0.177	Qp	54.9	0.4	55.3	65.3	-10.0	55.3	0.0
0.177	Av	21.8	0.4	22.2	64.6	-42.4	54.6	-32.4
0.268	Pk	44.1	0.4	44.5	61.2	-16.7	51.2	-6.7
0.357	Pk	35.2	0.4	35.6	58.8	-23.2	48.8	-13.2
0.447	Pk	28.5	0.5	29.0	56.9	-27.9	46.9	-17.9
0.530	Pk	29.2	0.5	29.7	56.0	-26.3	46.0	-16.3
1.499	Pk	26.9	0.7	27.6	56.0	-28.4	46.0	-18.4
14.540	Pk	43.0	1.5	44.5	60.0	-15.5	50.0	-5.5

Daniel Baltzell		April 9, 2005
Test Engineer	Signature	Date Of Test

5 RADIATED SPURIOUS AND HARMONIC EMISSIONS - §2.1053

Radiated Spurious and Harmonic Emissions - §2.1053

5.1 HARMONIC RADIATED EMISSIONS TEST DATA - FCC §15.245

TABLE 5-1 HARMONIC RADIATED EMISSIONS: MAGNETIC MOUNT WHIP ANTENNA, LOW CHANNEL 905 MHZ

Temperature: 28°F Humidity: 51%							
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1810.0	Pk	V	70.2	-7.8	62.4	84.1	-21.7
1810.0	Av	V	68.8	-7.8	61.0	64.1	-3.1
2715.0	Pk	H	46.7	19.6	66.3	84.1	-17.8
2715.0	Av	H	33.0	19.6	52.6	64.1	-11.5
3620.0	Pk	H	46.8	9.8	56.6	74.0	-17.4
3620.0	Av	H	32.2	9.8	42.0	54.0	-12.0
4525.0	Pk	H	54.0	19.1	73.1	74.0	-0.9
4525.0	Av	H	33.7	19.1	52.8	54.0	-1.2
5430.0	Pk	H	47.5	15.4	62.9	74.0	-11.1
5430.0	Av	H	32.8	15.4	48.2	54.0	-5.8
6335.0	Pk	V	41.7	14.7	56.4	74.0	-17.6
6335.0	Av	V	28.7	14.7	43.4	54.0	-10.6
7240.0	Pk	V	43.0	13.5	56.5	84.1	-27.6
7240.0	Av	V	29.3	13.5	42.8	64.1	-21.3
8145.0	Pk	H	41.0	13.3	54.3	84.1	-29.8
8145.0	Av	H	30.3	13.3	43.6	64.1	-20.5
9050.0	Pk	H	44.0	18.6	62.6	74.0	-11.4
9050.0	Av	H	30.8	18.6	49.4	54.0	-4.6

TABLE 5-2: HARMONIC RADIATED EMISSIONS: MAGNETIC MOUNT WHIP ANTENNA, MID CHANNEL 909.9 MHZ

Temperature: 28°F Humidity: 51%							
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1819.8	Pk	H	70.5	-6.7	63.8	84.1	-20.3
1819.8	Av	H	62.3	-6.7	55.6	64.1	-8.5
2729.7	Pk	V	47.8	10.9	58.7	74.0	-15.3
2729.7	Av	V	29.5	10.9	40.4	54.0	-13.6
3639.6	Pk	H	47.6	9.2	56.8	74.0	-17.2
3639.6	Av	H	28.6	9.2	37.8	54.0	-16.2
4549.5	Pk	V	56.1	14.2	70.3	74.0	-3.7
4549.5	Av	V	31.1	14.2	45.3	54.0	-8.7
5459.4	Pk	V	48.7	14.0	62.7	74.0	-11.3
5459.4	Av	V	28.8	14.0	42.8	54.0	-11.2
6369.3	Pk	V	42.6	13.6	56.2	84.1	-27.9
6369.3	Av	V	28.5	13.6	42.1	64.1	-22.0
7279.2	Pk	H	41.2	13.1	54.3	64.1	-9.8
7279.2	Av	H	28.1	13.1	41.2	64.1	-22.9
8189.1	Pk	V	40.8	13.1	53.9	74.0	-20.1
8189.1	Av	V	28.0	13.1	41.1	54.0	-12.9
9099.0	Pk	V	42.9	18.5	61.4	74.0	-12.6
9099.0	Av	V	30.0	18.5	48.5	54.0	-5.5

TABLE 5-3: HARMONIC RADIATED EMISSIONS: MAGNETIC MOUNT WHIP ANTENNA, HIGH CHANNEL 914.8 MHZ

Temperature: 28°F Humidity: 51%							
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1829.6	Pk	H	69.6	-5.7	63.9	84.1	-20.2
1829.6	Av	H	55.1	-5.7	49.4	64.1	-14.7
2744.4	Pk	H	48.3	10.8	59.1	74.0	-14.9
2744.4	Av	H	30.4	10.8	41.2	54.0	-12.8
3659.2	Pk	H	47.8	9.3	57.1	74.0	-16.9
3659.2	Av	H	30.3	9.3	39.6	54.0	-14.4
4574.0	Pk	H	48.7	14.2	62.9	74.0	-11.1
4574.0	Av	H	31.7	14.2	45.9	54.0	-8.1
5488.8	Pk	H	44.8	13.9	58.7	84.1	-25.4
5488.8	Av	H	29.8	13.9	43.7	64.1	-20.4
6403.6	Pk	V	43.0	13.6	56.6	84.1	-27.5
6403.6	Av	V	29.6	13.6	43.2	64.1	-20.9
7318.4	Pk	V	40.1	13.0	53.1	84.1	-31.0
7318.4	Av	V	27.6	13.0	40.6	64.1	-23.5
8233.2	Pk	V	41.4	18.6	60.0	74.0	-14.0
8233.2	Av	V	27.2	18.6	45.8	54.0	-8.2
9148.0	Pk	V	42.3	18.2	60.5	74.0	-13.5
9148.0	Av	V	29.2	18.2	47.4	54.0	-6.6

TABLE 5-4: HARMONIC RADIATED EMISSIONS: PATCH ANTENNA, LOW CHANNEL 905 MHZ

Temperature: 28°F Humidity: 51%							
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1810.0	Pk	H	72.8	-7.8	65.0	84.1	-19.1
1810.0	Av	H	59.8	-7.8	52.0	64.1	-12.1
2715.0	Pk	V	51.0	11.0	62.0	84.1	-22.1
2715.0	Av	V	31.7	11.0	42.7	64.1	-21.4
3620.0	Pk	V	45.7	9.6	55.3	74.0	-18.7
3620.0	Av	V	27.7	9.6	37.3	54.0	-16.7
4525.0	Pk	V	58.0	14.3	72.3	74.0	-1.7
4525.0	Av	V	34.2	14.3	48.5	54.0	-5.5
5430.0	Pk	V	46.5	14.1	60.6	74.0	-13.4
5430.0	Av	V	29.5	14.1	43.6	54.0	-10.4
6335.0	Pk	V	42.5	13.4	55.9	74.0	-18.1
6335.0	Av	V	28.8	13.4	42.2	54.0	-11.8
7240.0	Pk	H	43.3	13.2	56.5	84.1	-27.6
7240.0	Av	H	29.3	13.2	42.5	64.1	-21.6
8145.0	Pk	V	42.0	13.3	55.3	84.1	-28.8
8145.0	Av	V	29.8	13.3	43.1	64.1	-21.0
9050.0	Pk	V	43.0	18.6	61.6	74.0	-12.4
9050.0	Av	V	30.7	18.6	49.3	54.0	-4.7

TABLE 5-5: HARMONIC RADIATED EMISSIONS: PATCH ANTENNA, MID CHANNEL 909.9 MHZ

Temperature: 28°F Humidity: 51%							
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1819.8	Pk	V	69.8	-8.1	61.7	84.1	-22.4
1819.8	Av	V	55.0	-8.1	46.9	64.1	-17.2
2729.7	Pk	V	47.8	10.9	58.7	74.0	-15.3
2729.7	Av	V	29.1	10.9	40.0	54.0	-14.0
3639.6	Pk	V	47.1	9.2	56.3	74.0	-17.7
3639.6	Av	V	28.7	9.2	37.9	54.0	-16.1
4549.5	Pk	V	57.4	14.2	71.6	74.0	-2.4
4549.5	Av	V	34.5	14.2	48.7	54.0	-5.3
5459.4	Pk	V	48.1	14.0	62.1	74.0	-11.9
5459.4	Av	V	28.8	14.0	42.8	54.0	-11.2
6369.3	Pk	V	42.7	13.6	56.3	84.1	-27.8
6369.3	Av	V	29.0	13.6	42.6	64.1	-21.5
7279.2	Pk	V	41.7	13.1	54.8	64.1	-9.3
7279.2	Av	V	28.3	13.1	41.4	64.1	-22.7
8189.1	Pk	V	41.8	13.1	54.9	74.0	-19.1
8189.1	Av	V	28.3	13.1	41.4	54.0	-12.6
9099.0	Pk	V	43.1	18.5	61.6	74.0	-12.4
9099.0	Av	V	30.0	18.5	48.5	54.0	-5.5

TABLE 5-6: HARMONIC RADIATED EMISSIONS: PATCH ANTENNA, HIGH CHANNEL 914.8 MHZ

Temperature: 28°F Humidity: 51%							
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1829.6	Pk	H	71.2	-5.7	65.5	84.1	-18.6
1829.6	Av	H	55.5	-5.7	49.8	64.1	-14.3
2744.4	Pk	H	50.4	10.8	61.2	74.0	-12.8
2744.4	Av	H	31.5	10.8	42.3	54.0	-11.7
3659.2	Pk	V	49.3	9.3	58.6	74.0	-15.4
3659.2	Av	V	30.8	9.3	40.1	54.0	-13.9
4574.0	Pk	V	48.9	14.2	63.1	74.0	-10.9
4574.0	Av	V	29.5	14.2	43.7	54.0	-10.3
5488.8	Pk	H	45.7	13.9	59.6	84.1	-24.5
5488.8	Av	H	28.1	13.9	42.0	64.1	-22.1
6403.6	Pk	H	42.4	13.6	56.0	84.1	-28.1
6403.6	Av	H	28.4	13.6	42.0	64.1	-22.1
7318.4	Pk	H	42.4	13.0	55.4	84.1	-28.7
7318.4	Av	H	28.4	13.0	41.4	64.1	-22.7
8233.2	Pk	H	40.1	18.6	58.7	74.0	-15.3
8233.2	Av	H	27.3	18.6	45.9	54.0	-8.1
9148.0	Pk	V	41.9	18.2	60.1	74.0	-13.9
9148.0	Av	V	29.1	18.2	47.3	54.0	-6.7

TABLE 5-7: HARMONIC RADIATED EMISSIONS: YAGI ANTENNA, LOW CHANNEL 905 MHZ

Temperature: 28°F Humidity: 51%							
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1810.0	Pk	H	80.0	-7.8	72.2	84.1	-11.9
1810.0	Av	H	60.8	-7.8	53.0	64.1	-11.1
2715.0	Pk	H	49.0	11.0	60.0	84.1	-24.1
2715.0	Av	H	30.8	11.0	41.8	64.1	-22.3
3620.0	Pk	V	46.7	9.6	56.3	74.0	-17.7
3620.0	Av	V	27.8	9.6	37.4	54.0	-16.6
4525.0	Pk	V	56.5	14.3	70.8	74.0	-3.2
4525.0	Av	V	32.8	14.3	47.1	54.0	-6.9
5430.0	Pk	V	48.0	14.1	62.1	74.0	-11.9
5430.0	Av	V	29.8	14.1	43.9	54.0	-10.1
6335.0	Pk	V	43.5	13.4	56.9	74.0	-17.1
6335.0	Av	V	29.2	13.4	42.6	54.0	-11.4
7240.0	Pk	H	42.2	13.2	55.4	84.1	-28.7
7240.0	Av	H	29.3	13.2	42.5	64.1	-21.6
8145.0	Pk	H	44.6	13.3	57.9	84.1	-26.2
8145.0	Av	H	30.0	13.3	43.3	64.1	-20.8
9050.0	Pk	H	43.8	18.6	62.4	74.0	-11.6
9050.0	Av	H	30.7	18.6	49.3	54.0	-4.7

TABLE 5-8: HARMONIC RADIATED EMISSIONS: YAGI ANTENNA, MID CHANNEL 909.9 MHZ

Temperature: 28°F Humidity: 51%							
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1819.8	Pk	V	70.3	-8.1	62.2	84.1	-21.9
1819.8	Av	V	56.3	-8.1	48.2	64.1	-15.9
2729.7	Pk	V	42.8	11.0	53.8	74.0	-20.2
2729.7	Av	V	28.0	11.0	39.0	54.0	-15.0
3639.6	Pk	V	42.0	9.6	51.6	74.0	-22.4
3639.6	Av	V	27.5	9.6	37.1	54.0	-16.9
4549.5	Pk	H	51.3	14.2	65.5	74.0	-8.5
4549.5	Av	H	30.7	14.2	44.9	54.0	-9.1
5459.4	Pk	V	46.9	14.0	60.9	74.0	-13.1
5459.4	Av	V	28.7	14.0	42.7	54.0	-11.3
6369.3	Pk	V	42.9	13.6	56.5	84.1	-27.6
6369.3	Av	V	28.8	13.6	42.4	64.1	-21.7
7279.2	Pk	V	41.3	13.1	54.4	64.1	-9.7
7279.2	Av	V	28.1	13.1	41.2	64.1	-22.9
8189.1	Pk	V	40.3	13.1	53.4	74.0	-20.6
8189.1	Av	V	27.9	13.1	41.0	54.0	-13.0
9099.0	Pk	V	43.5	18.5	62.0	74.0	-12.0
9099.0	Av	V	30.0	18.5	48.5	54.0	-5.5

TABLE 5-9: HARMONIC RADIATED EMISSIONS: YAGI ANTENNA, HIGH CHANNEL 914.8 MHZ

Temperature: 28°F Humidity: 51%							
Emission Frequency (MHz)	Test Detector	Antenna Polarity (H/V)	Analyzer Reading (dBuV)	Site Correction Factor (dB/m)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1829.6	Pk	H	83.1	-5.7	77.4	84.1	-6.7
1829.6	Av	H	53.6	-5.7	47.9	64.1	-16.2
2744.4	Pk	V	48.3	10.8	59.1	74.0	-14.9
2744.4	Av	V	30.4	10.8	41.2	54.0	-12.8
3659.2	Pk	V	47.7	9.3	57.0	74.0	-17.0
3659.2	Av	V	30.5	9.3	39.8	54.0	-14.2
4574.0	Pk	V	51.2	14.2	65.4	74.0	-8.6
4574.0	Av	V	31.2	14.2	45.4	54.0	-8.6
5488.8	Pk	V	46.1	13.9	60.0	84.1	-24.1
5488.8	Av	V	28.6	13.9	42.5	64.1	-21.6
6403.6	Pk	V	43.1	13.6	56.7	84.1	-27.4
6403.6	Av	V	28.8	13.6	42.4	64.1	-21.7
7318.4	Pk	V	42.0	13.0	55.0	84.1	-29.1
7318.4	Av	V	28.5	13.0	41.5	64.1	-22.6
8233.2	Pk	V	38.6	18.6	57.2	74.0	-16.8
8233.2	Av	V	27.3	18.6	45.9	54.0	-8.1
9148.0	Pk	V	42.1	18.2	60.3	74.0	-13.7
9148.0	Av	V	29.0	18.2	47.2	54.0	-6.8

Daniel Baltzell		January 31, 2005
Test Engineer	Signature	Date Of Test

TABLE 5-10: EQUIPMENT USED FOR TESTING HARMONIC RADIATED EMISSIONS

Radiated Emissions					
RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Date
900931	Hewlett Packard	8566B	Spectrum Analyzer (100 Hz - 22 GHz)	3138A07771	6/23/05
900905	Rhein Tech Labs	PR-1040	Pre Amplifier 40 dB (10 MHz – 2 GHz)	1006	9/1/05
900969	Hewlett Packard	85650A	Quasi-Peak Adapter	2412A00414	6/23/05
901053	Schaffner Chase	CBL6112B	Bi-Log Antenna (20 MHz - 2 GHz)	2648	9/20/05
900151	Rohde and Schwarz	HFH2-Z2	Loop Antenna (9 kHz - 30 MHz)	827525/019	8/25/06
900932	Hewlett Packard	8449B OPT H02	Preamplifier (1 - 26.5 GHz)	3008A00505	5/5/05
901020	Hewlett Packard	8564E	Portable Spectrum Analyzer (9 kHz - 40 GHz)	3943A01719	8/11/05
900878	Rhein Tech Labs	AM3-1197-0005	3 meter antenna mast, polarizing	Outdoor Range 1	Not Required
901231	IW Microwave Products	KPW-1503-2400-KPS	High Frequency RF Cables	240"	9/5/05
901232	IW Microwave Products	KPW-1503-2400-KPS	High Frequency RF Cables	240"	9/5/05
901235	IW Microwave Products	KPS-1503-360-KPS	High Frequency RF Cables	36"	9/5/05
901242	Rhein Tech Labs	WRT-000-0003	Wood rotating table	N/A	Not Required
900772	EMCO	3161-02	Horn Antenna (2 - 4 GHz)	9804-1044	5/20/07
900321	EMCO	3161-03	Horn Antenna (4.0 - 8.2 GHz)	9508-1020	5/20/07
900323	EMCO	3160-07	Horn Antenna (8.2 - 12.4 GHz)	9605-1054	5/20/07

6 CONCLUSION

The data in this measurement report shows that the Identec Solutions, Inc. Model i-PORT 3, FCC ID: O2E-ILR-IP3NA, IC: 3538B-IPORT3, complies with all the requirements of Parts 2 and 15.245 of the FCC Rules, and IC RSS-210.