Engineering and Testing for EMC and Safety Compliance

FCC CLASS II PERMISSIVE CHANGE TEST REPORT

MODEL: i-Port 3
FCC ID: O2E-ILR-IPORT3

Identec Solutions, Inc.
#102 – 1860 Dayton Street
Kelowna, BC
Canada
V1Y 7W6
Tel: (250) 860-6567
Fax: (250) 860-6541

July 8, 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

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

REPORT PREPARED BY:

Test Engineer: Dan Baltzell
Administrative Writer: Rick McMurray

Rhein Tech Laboratories, Inc.

Document Number: 2005118

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1 GENERAL INFORMATION

The following application for an FCC Class II Permissive Change is prepared on behalf of Identec Solutions, Inc. in accordance with FCC Rules and Regulations Parts 2 and 15. The Equipment Under Test (EUT) is Identec Model **i-Port 3**, FCC ID: O2E-ILR-IPORT3. 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.

1.1 MODIFICATIONS

No modifications were made during testing.

1.2 RELATED SUBMITTAL(S)/GRANT(S)

The original certification of FCC ID: O2E-ILR-IPORT3 was granted on 11/13/2003.

The purpose of this Class II Permissive Change is to test AC line conducted emissions per the latest FCC rules (down to 150 kHz) in order to remove grant note 05 “The manufacture and importation of this device must cease on July 10, 2005, pursuant to 15.37(j) or 18.123 transition provisions adopted under FCC 02-157 (ET Docket 98-80)”.

1.3 TEST METHODOLOGY

AC conducted emissions per FCC 15.107 and ANSI C63.4 2003.

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 CONFORMANCE STATEMENT

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

Frequency Range (MHz)	Output Power (W)	Frequency Tolerance	Emission Designator
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 above. No modifications were made to the equipment during testing in order to achieve compliance with these standards.

Furthermore, there was no deviation from, additions to, or exclusions from the ANSI C63.4 test methodology.

Signature:  Date: July 8, 2005

Typed/Printed Name: Desmond A. Fraser Position: President
(NVLAP Signatory)

NVLAP *Accredited by the National Voluntary Accreditation Program for the specific scope of accreditation under Lab Code 20061-0.*

Note: This report may not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

3 SYSTEM TEST CONFIGURATION

3.1 JUSTIFICATION

The test sample was received on July 8, 2005. The FCC Identifiers for all equipment, plus descriptions of all cables used in the tested system are in the following table.

TABLE 3-1: 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	02424P0184	O2E-ILR-IPORT3	2.7m unshielded CAT5	16741
Antenna extension cable	Identec Solutions, Inc.	210278-010	N/A	N/A	2.54m shielded RG58	N/A
Magnetic Mount Whip Antenna (5 dBi gain)	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	16621
110VAC/12VDC power adapter	XPiQ Inc.	HUP24-12B2	023794950460	N/A	1.7m Unshielded Power	16740

3.2 CONFIGURATION OF TESTED SYSTEM

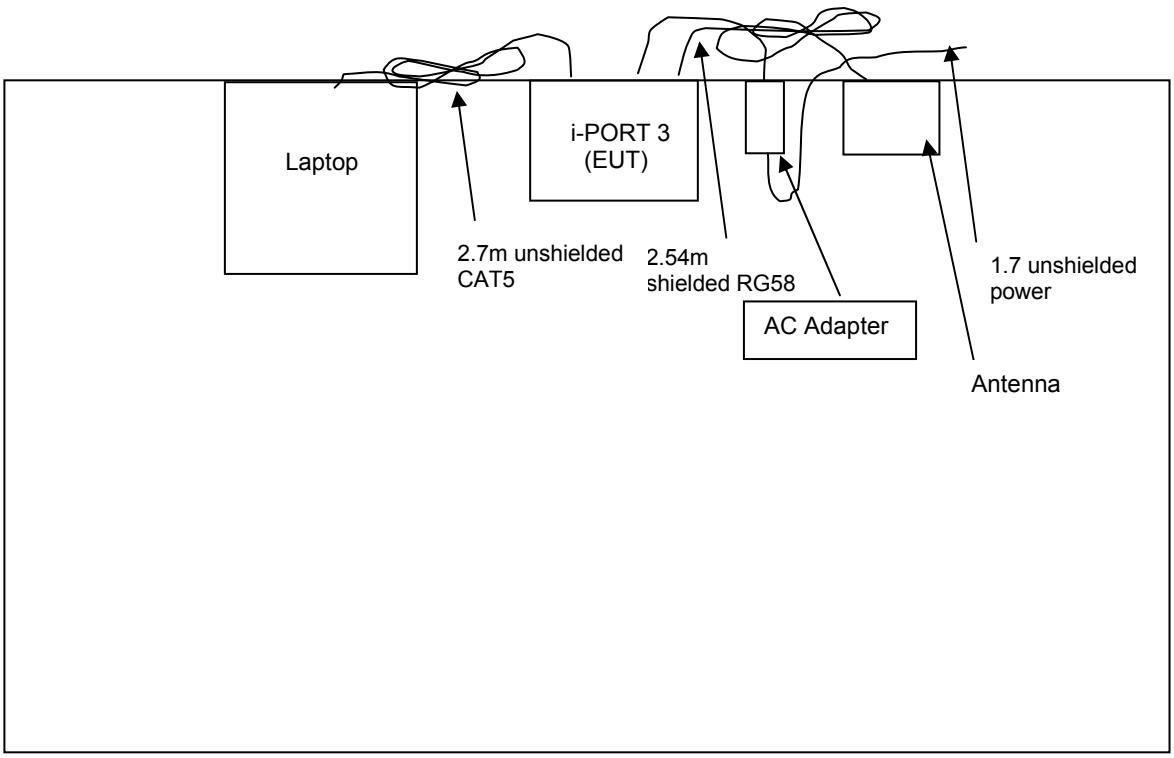


FIGURE 3-1: TEST SYSTEM CONFIGURATION

4 CONDUCTED EMISSIONS

4.1 CONDUCTED EMISSIONS MEASUREMENTS PROCEDURE

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 7 kHz high-pass filter. The filter is used to prevent overload of the spectrum analyzer from noise below 7 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 EMISSIONS DATA

TABLE 4-1: CONDUCTED EMISSIONS - NEUTRAL CONDUCTOR - MAGNETIC MOUNT WHIP ANTENNA - TX 909.9 MHZ

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC 15.207 QP Limit (dBuV)	FCC 15.207 QP Margin (dBuV)	FCC 15.207 AV Limit (dBuV)	FCC 15.207 AV Margin (dBuV)	Pass/ Fail
0.150	Pk	47.1	0.2	47.3	66.0	-18.7	56.0	-8.7	Pass
0.180	Pk	43.5	0.2	43.7	64.5	-20.8	54.5	-10.8	Pass
0.363	Pk	36.3	0.3	36.6	58.7	-22.1	48.7	-12.1	Pass
0.457	Pk	40.7	0.3	41.0	56.7	-15.7	46.7	-5.7	Pass
3.750	Pk	36.4	1.1	37.5	56.0	-18.5	46.0	-8.5	Pass
20.150	Pk	42.1	2.5	44.6	60.0	-15.4	50.0	-5.4	Pass

TABLE 4-2: CONDUCTED EMISSIONS - PHASE CONDUCTOR - MAGNETIC MOUNT WHIP ANTENNA - TX 909.9 MHZ

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC 15.207 QP Limit (dBuV)	FCC 15.207 QP Margin (dBuV)	FCC 15.207 AV Limit (dBuV)	FCC 15.207 AV Margin (dBuV)	Pass/ Fail
0.164	Pk	45.1	0.2	45.3	65.3	-20.0	55.3	-10.0	Pass
0.180	Pk	41.4	0.2	41.6	64.5	-22.9	54.5	-12.9	Pass
0.364	Pk	35.9	0.3	36.2	58.6	-22.4	48.6	-12.4	Pass
0.457	Pk	40.7	0.3	41.0	56.7	-15.7	46.7	-5.7	Pass
3.720	Pk	36.6	1.1	37.7	56.0	-18.3	46.0	-8.3	Pass
20.060	Pk	42.2	2.5	44.7	60.0	-15.3	50.0	-5.3	Pass

TABLE 4-3: CONDUCTED EMISSIONS - NEUTRAL CONDUCTOR – YAGI ANTENNA - TX 909.9 MHZ

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC 15.207 QP Limit (dBuV)	FCC 15.207 QP Margin (dBuV)	FCC 15.207 AV Limit (dBuV)	FCC 15.207 AV Margin (dBuV)	Pass/ Fail
0.161	Pk	47.4	0.2	47.6	65.4	-17.8	55.4	-7.8	Pass
0.181	Pk	44.3	0.2	44.5	64.4	-19.9	54.4	-9.9	Pass
0.270	Pk	40.1	0.2	40.3	61.1	-20.8	51.1	-10.8	Pass
0.458	Pk	40.9	0.3	41.2	56.7	-15.5	46.7	-5.5	Pass
3.800	Pk	37.2	1.1	38.3	56.0	-17.7	46.0	-7.7	Pass
19.970	Pk	41.9	2.5	44.4	60.0	-15.6	50.0	-5.6	Pass

TABLE 4-4: CONDUCTED EMISSIONS - PHASE CONDUCTOR – YAGI ANTENNA - TX 909.9 MHZ

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC 15.207 QP Limit (dBuV)	FCC 15.207 QP Margin (dBuV)	FCC 15.207 AV Limit (dBuV)	FCC 15.207 AV Margin (dBuV)	Pass/ Fail
0.158	Pk	46.6	0.2	46.8	65.6	-18.8	55.6	-8.8	Pass
0.181	Pk	41.5	0.2	41.7	64.4	-22.7	54.4	-12.7	Pass
0.365	Pk	36.6	0.3	36.9	58.6	-21.7	48.6	-11.7	Pass
0.457	Pk	41.0	0.3	41.3	56.7	-15.4	46.7	-5.4	Pass
3.720	Pk	36.7	1.1	37.8	56.0	-18.2	46.0	-8.2	Pass
21.060	Pk	42.6	2.6	45.2	60.0	-14.8	50.0	-4.8	Pass

TABLE 4-5: CONDUCTED EMISSIONS - NEUTRAL CONDUCTOR - PATCH ANTENNA -TX 909.9 MHZ

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC 15.207 QP Limit (dBuV)	FCC 15.207 QP Margin (dBuV)	FCC 15.207 AV Limit (dBuV)	FCC 15.207 AV Margin (dBuV)	Pass/ Fail
0.153	Pk	48.8	0.2	49.0	65.8	-16.8	55.8	-6.8	Pass
0.181	Pk	45.7	0.2	45.9	64.4	-18.5	54.4	-8.5	Pass
0.366	Pk	38.9	0.3	39.2	58.6	-19.4	48.6	-9.4	Pass
0.458	Pk	40.8	0.3	41.1	56.7	-15.6	46.7	-5.6	Pass
3.180	Pk	37.4	1.0	38.4	56.0	-17.6	46.0	-7.6	Pass
20.940	Pk	40.2	2.6	42.8	60.0	-17.2	50.0	-7.2	Pass

TABLE 4-6: CONDUCTED EMISSIONS - PHASE CONDUCTOR - PATCH ANTENNA - TX 909.9 MHZ

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC 15.207 QP Limit (dBuV)	FCC 15.207 QP Margin (dBuV)	FCC 15.207 AV Limit (dBuV)	FCC 15.207 AV Margin (dBuV)	Pass/ Fail
0.159	Pk	46.5	0.2	46.7	65.5	-18.8	55.5	-8.8	Pass
0.181	Pk	47.0	0.2	47.2	64.4	-17.2	54.4	-7.2	Pass
0.364	Pk	38.0	0.3	38.3	58.6	-20.3	48.6	-10.3	Pass
0.457	Pk	40.5	0.3	40.8	56.7	-15.9	46.7	-5.9	Pass
3.240	Pk	39.3	1.0	40.3	56.0	-15.7	46.0	-5.7	Pass
20.680	Pk	40.5	2.6	43.1	60.0	-16.9	50.0	-6.9	Pass

TABLE 4-7: CONDUCTED EMISSIONS - NEUTRAL CONDUCTOR - MAGNETIC MOUNT WHIP ANTENNA -DIGITAL MODE

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC 15.207 QP Limit (dBuV)	FCC 15.207 QP Margin (dBuV)	FCC 15.207 AV Limit (dBuV)	FCC 15.207 AV Margin (dBuV)	Pass/ Fail
0.154	Pk	47.4	0.2	47.6	65.8	-18.2	55.8	-8.2	Pass
0.180	Pk	42.5	0.2	42.7	64.5	-21.8	54.5	-11.8	Pass
0.364	Pk	37.4	0.3	37.7	58.6	-20.9	48.6	-10.9	Pass
0.456	Pk	41.3	0.3	41.6	56.8	-15.2	46.8	-5.2	Pass
0.680	Pk	41.8	0.3	42.1	56.0	-13.9	46.0	-3.9	Pass
20.120	Pk	42.2	2.5	44.7	60.0	-15.3	50.0	-5.3	Pass

TABLE 4-8: CONDUCTED EMISSIONS - PHASE CONDUCTOR - MAGNETIC MOUNT WHIP ANTENNA -DIGITAL MODE

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC 15.207 QP Limit (dBuV)	FCC 15.207 QP Margin (dBuV)	FCC 15.207 AV Limit (dBuV)	FCC 15.207 AV Margin (dBuV)	Pass/ Fail
0.154	Pk	48.1	0.2	48.3	65.8	-17.5	55.8	-7.5	Pass
0.179	Pk	44.5	0.2	44.7	64.5	-19.8	54.5	-9.8	Pass
0.365	Pk	37.7	0.3	38.0	58.6	-20.6	48.6	-10.6	Pass
0.456	Pk	42.0	0.3	42.3	56.8	-14.5	46.8	-4.5	Pass
0.620	Pk	40.8	0.2	41.0	56.0	-15.0	46.0	-5.0	Pass
20.150	Pk	42.0	2.5	44.5	60.0	-15.5	50.0	-5.5	Pass

TABLE 4-9: CONDUCTED EMISSIONS - NEUTRAL CONDUCTOR – YAGI ANTENNA -DIGITAL MODE

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC 15.207 QP Limit (dBuV)	FCC 15.207 QP Margin (dBuV)	FCC 15.207 AV Limit (dBuV)	FCC 15.207 AV Margin (dBuV)	Pass/ Fail
0.159	Pk	47.5	0.2	47.7	65.5	-17.8	55.5	-7.8	Pass
0.181	Pk	45.5	0.2	45.7	64.4	-18.7	54.4	-8.7	Pass
0.364	Pk	37.8	0.3	38.1	58.6	-20.5	48.6	-10.5	Pass
0.457	Pk	42.1	0.3	42.4	56.7	-14.3	46.7	-4.3	Pass
0.650	Pk	41.0	0.3	41.3	56.0	-14.7	46.0	-4.7	Pass
19.970	Pk	42.4	2.5	44.9	60.0	-15.1	50.0	-5.1	Pass

TABLE 4-10: CONDUCTED EMISSIONS - PHASE CONDUCTOR – YAGI ANTENNA -DIGITAL MODE

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC 15.207 QP Limit (dBuV)	FCC 15.207 QP Margin (dBuV)	FCC 15.207 AV Limit (dBuV)	FCC 15.207 AV Margin (dBuV)	Pass/ Fail
0.162	Pk	46.2	0.2	46.4	65.4	-19.0	55.4	-9.0	Pass
0.181	Pk	42.8	0.2	43.0	64.4	-21.4	54.4	-11.4	Pass
0.272	Pk	37.5	0.2	37.7	61.1	-23.4	51.1	-13.4	Pass
0.458	Pk	42.2	0.3	42.5	56.7	-14.2	46.7	-4.2	Pass
0.680	Pk	41.5	0.3	41.8	56.0	-14.2	46.0	-4.2	Pass
20.060	Pk	42.5	2.5	45.0	60.0	-15.0	50.0	-5.0	Pass

TABLE 4-11: CONDUCTED EMISSIONS - NEUTRAL CONDUCTOR - PATCH ANTENNA -DIGITAL MODE

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC 15.207 QP Limit (dBuV)	FCC 15.207 QP Margin (dBuV)	FCC 15.207 AV Limit (dBuV)	FCC 15.207 AV Margin (dBuV)	Pass/ Fail
0.156	Pk	48.4	0.2	48.6	65.7	-17.1	55.7	-7.1	Pass
0.182	Pk	43.8	0.2	44.0	64.4	-20.4	54.4	-10.4	Pass
0.364	Pk	40.4	0.3	40.7	58.6	-17.9	48.6	-7.9	Pass
0.457	Pk	42.1	0.3	42.4	56.7	-14.3	46.7	-4.3	Pass
0.590	Pk	41.1	0.2	41.3	56.0	-14.7	46.0	-4.7	Pass
17.110	Pk	40.5	2.3	42.8	60.0	-17.2	50.0	-7.2	Pass

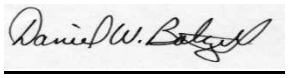
TABLE 4-12: CONDUCTED EMISSIONS - PHASE CONDUCTOR - PATCH ANTENNA -DIGITAL MODE

Emission Frequency (MHz)	Test Detector	Analyzer Reading (dBuV)	Site Correction Factor (dB)	Emission Level (dBuV)	FCC 15.207 QP Limit (dBuV)	FCC 15.207 QP Margin (dBuV)	FCC 15.207 AV Limit (dBuV)	FCC 15.207 AV Margin (dBuV)	Pass/ Fail
0.163	Pk	45.8	0.2	46.0	65.3	-19.3	55.3	-9.3	Pass
0.183	Pk	42.6	0.2	42.8	64.3	-21.5	54.3	-11.5	Pass
0.366	Pk	39.9	0.3	40.2	58.6	-18.4	48.6	-8.4	Pass
0.457	Pk	42.1	0.3	42.4	56.7	-14.3	46.7	-4.3	Pass
0.620	Pk	40.4	0.2	40.6	56.0	-15.4	46.0	-5.4	Pass
19.410	Pk	40.9	2.5	43.4	60.0	-16.6	50.0	-6.6	Pass

TABLE 4-13: EQUIPMENT USED FOR TESTING

Part Type	Manufacturer	Model	Serial Number	Barcode	Cal Due Date
Display Section	Hewlett Packard	85662A	2816A16471	900896	3/8/2006
Spectrum Analyzer (10 kHz-1.5 GHz)	Hewlett Packard	8567A	2727A00535	900897	3/8/2006
Quasi-Peak Adapter	Hewlett Packard	85650A	2521A00743	900339	5/3/2006
Filter	Solar	8130	947306	900729	N/A
16A LISN	AFJ International	LS16/110VAC	16010020082	901084	12/24/2005
16A LISN	AFJ International	LS16/110VAC	16010020080	901083	3/24/2006

Test Personnel:

Signature:  Date: July 8, 2005 Typed Name: Dan Baltzell

5 CONCLUSION

The data in this measurement report shows that the Identec Solutions Inc., Model i-Port 3, FCC ID: **O2E-ILR-IPORT3**, complies with the latest requirements of FCC Part 15.207.