

ANNEX 8 TO TEST REPORT # EMCC-010133BC, 2002-12-13

USER MANUAL

EQUIPMENT UNDER TEST:

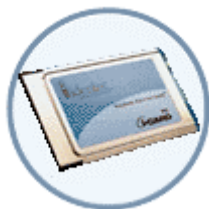
Trade Name:	i-CARD Interrogator
Model No.:	i-Card3
Serial No.:	none
Equipment Category:	Transceiver
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RELEVANT STANDARD: 47 CFR Part 15.249



PC i-CARD III User's Guide

December 12, 2002



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Radio Frequency Compliance Statement

IDENTEC SOLUTIONS AG. is the responsible party for the compliance of the following devices:

MODEL:	i-PORT	i-CARD III	i-D TAGS	i-Qxx TAGS
FCC ID:	O2E-ILR-IPORT	OO4-ILR-ICARD3-	OO4-ILR-ID2	OO4-ILR-IQ8T or OO4-ILR-IQR
CANADA:	35381032062A	Pending	3538A 12112	35381021756A or 35381021825
EUROPE:	CE 0678(!)	CE 0678(!)	CE 0678(!)	CE 0682(!)

The user(s) of these products are cautioned to only use accessories and peripherals approved, in advance, by IDENTEC SOLUTIONS. The use of accessories and peripherals, other than those approved by IDENTEC SOLUTIONS, or unauthorized changes to approved products, may void the compliance of these products and may result in the loss of the user(s) authority to operate the equipment.

Operation is subject to the following conditions: (1) these devices may not cause harmful interference, and (2) these devices must accept any interference, including interference that may cause undesired operation of the device.

FCC Compliance (i-CARD III / NA)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada Compliance (i-CARD III / NA)

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication.

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF field in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada.

European Notification according R&TTE Directive (i-CARD III / EU)

This equipment complies to Art. 6.4 of R&TTE Directive (1999/5/EC) and can be used in the following European countries:

Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, Netherlands , Austria, Portugal, Sweden, Spain, United Kingdom, Norway, Switzerland.

European Notification according R&TTE Directive (i-CARD III / EU / I)

This equipment complies to Art. 6.4 of R&TTE Directive (1999/5/EC) including national restrictions in Italy according ERC/REC 70-03 Annex 1 Band I and can be used in above noted European countries and Italy.

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1.0 Overview

This guide explains how to install and operate the PC version of the i-CARD III when using a laptop or desktop computer.

1.1 Functionality

The i-CARD III is IDENTEC SOLUTIONS' Intelligent Long Range (ILR®) radio frequency mobile interrogator in a type II PC Card format. The PC i-CARD III is easily integrated into portable or laptop computers and is used in conjunction with i-LINKS (or other ILR® software) to read and write data to tags. The flexibility of an interrogator on a PC Card allows for easy integration of ILR® into enterprise systems and permits combination with other technologies such as bar code and wireless LAN.

The PC i-CARD III is available in a FCC compliant version (i-CARD III/NA) and two European versions (i-CARD III / EU and i-CARD III / EU / I) to communicate in a global market. The signal propagation characteristics of the UHF radio band used by ILR® technology provide long-range communication and high-speed transmission rates for reliable data exchange.

Computers with a PC i-CARD III can communicate to tags at a distance of up to 10 meters (33 feet). The i-CARD III communicates with the entire i-Q active tag product line including i-Q8, i-Q8T, i-Q32, and i-Q32T tags. The European versions are also compatible with the i-D tag product line.

The installation and usage instructions for the PC i-CARD III are identical for all versions.

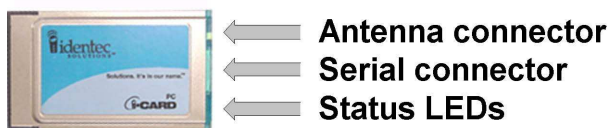
1.2 Components

The i-CARD III resembles a standard PC card with one addition: an external antenna. On the exposed end of the i-CARD III, there are an MMCX antenna connector, a 15-pin serial connector (not used in the PC version of the i-CARD III) and 3 status LEDs indicating *Transmit*, *Receive* and *RF Carrier Detect*. These LEDs are operational after appropriate ILR® software is installed (i.e. i-LINKS).



Note: The current version only supports a quarter wavelength antenna available under P/N 887124 from IDENTEC SOLUTIONS and equivalent internal antennas for hand helds.

Figure 1: i-CARD III Components



2.0 Installation

The PC i-CARD III is easy to install—simply attach the antenna, insert the i-CARD III into the desired computer and install the necessary hardware driver for the specific operating system. The following sections describe each of these steps in detail.

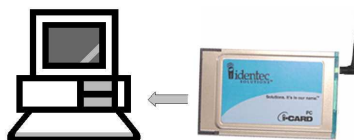


Note: The hardware driver only needs to be installed the first time an i-CARD III is inserted into a computer or when performing an upgrade to the driver.

2.1 Hardware

To install the external antenna, grasp its base and insert it into the antenna connector until it locks into place.

Figure 2: Antenna Installation



To remove the antenna, grasp the base firmly and remove carefully to avoid damage.

2.2 Software

The computer being used for i-CARD III operations must be running one of the following operating systems: Windows NT/98/ME/2000/CE.

To install the i-CARD III, perform the following steps:

1. Insert the **ILR® Installation Disk** (either floppy disk or CD) into the computer that will operate the i-CARD III.
2. Insert the i-CARD III into the PC card slot of the desktop or laptop computer. An installation wizard will start immediately after the i-CARD III is inserted.
3. Complete the wizard instructions and refer to the following sections for additional instructions specific to each operating system:

For O/S:	Go to section:
2000	3.2.1
98	3.2.2
ME	3.2.2
NT	3.2.3
CE	3.2.4



Note: A *readme.txt* file is available for each operating system on the **ILR® Installation Disk** and contains the same instructions that are described in the following sections.

2.2.1 Windows 98/ Windows 2000/Windows ME

The following section describes how to install the device driver on Windows 98, Windows 2000 and Windows ME. When the i-CARD III is inserted into the PC slot, an installation wizard begins automatically and the following screen appears:



Select the *Search for a suitable driver for my device* option and click *Next*.

Selecting a search location depends on the type of **ILR® Installation Disk** you received. If you received a floppy disk, the search location is the **A:** drive. If you received a CD, the search location is the **D:** drive.

For a search location, select the *Floppy Disk Drives* option, and click *Next*. Click the *Browse* button to copy drivers from your **ILR® Installation Disk**:



Using the *Browse* dialog box, select the `\drivers\Windows 98` folder. Select the *i-CARD III.inf* file, then click *OK*.



Note: The driver used for Windows ME is the same as Windows 98 and is stored in the subfolder *Windows 98* on the **ILR® Installation Disk**.

The hardware driver is loaded and a confirmation screen appears. This screen verifies that the installation has completed successfully. Click *Next* to complete the installation.

The hardware driver installation is now complete.

2.2.2 Windows NT/Windows CE

For these installations please see Readme-file on Distribution Disk.



Note: When the installation is finished you must power off your handheld device and power it back on to complete the driver initialization.

3.0 Usage

After completing the i-CARD III installation, please refer to the user's guide of the applicable software to continue with the system implementation.

The i-CARD III can be used in conjunction with a variety of software applications, such as i-DEMO, i-LINKS and other ILR® custom applications.

4.0 Application program rules

Due to national restrictions not all parameter values are valid in each version of the i-CARD III. Programmers of application software are strongly recommended to read the documentation which comes with the development package.



Note: When trying to set an operation mode or output power which is not allowed in the national version the i-CARD III returns with an error code. Please refer to the library manual.

According to ERC/REC70-03 a maximum duty cycle of 1% (i-Q- tags) and 10% (i-D- tags) is allowed in Europe. Due to the protocol used on the RF link this means no restrictions for interactive operation. However in continuously running applications the application programmer must ensure observance of these rules. For details please see the documentation which comes with the development package.

To minimize spurious radiation consecutive scans must be separated by pauses with a length of at least 0.2 seconds. Again this is no restriction for interactive application as a scan is typically followed by manual selection of a tag in a list which normally lasts longer than this required time.

Appendix A: Technical Specifications

Type II PC i-CARD III

Compatibility

ILR® tags	i-Q xx /EU (i-CARD III/EU, i-CARD III/EU/I, mode 2) i-Q xx /NA (i-CARD III/NA, mode 4) i-D (i-CARD III/EU, i-CARD III/EU/I, mode 1)
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Performance

Read range (adjustable)	10 m (33 ft)
Write range (adjustable)	10 m (33 ft)
Read rate (ID only)	100 tags/s
Read rate	35 tags/s @ 128 bit data reading
Multiple tag handling	Up to 2,000 tags in the read zone

Communication

Frequency Downlink	868.350 MHz (i-CARD III/EU, i-CARD III/EU/I, mode 2) 869.525 MHz (i-CARD III/EU, i-CARD III/EU/I, mode 1) 916.500 MHz (i-CARD III/NA, mode 4)
Frequency Uplink	868.350 MHz (i-CARD III/EU, i-CARD III/EU/I, modes 1,2) 916.500 MHz (i-CARD III/NA, mode 4)
Certification	EN 330 220 (EU); FCC part 15 (US); Industry Canada
Number of antennas	1
Output power	Up to 0 dBm (i-CARD III/EU, i-CARD III/EU/I, i-CARD III/NA, modes 2,4) Up to 24 dBm (i-CARD III/EU, mode 1) Up to 14 dBm (i-CARD III/EU/I, mode 1)
Sensitivity	-85 dBm (high sens.), -45 dBm (low sens.)

CPU

Hardware drivers for different O/S	Windows NT/98/ME/2000/CE, PALM OS
Program memory	2 MB Flash

User Interfaces

Parallel interface	PCMCIA
Serial interface	RS-232
Number of status indications	3 LEDs

Electrical

Input power	5 V DC ± 5%
Power consumption	25 mA (operating) 300 mA (maximum pulse)
Standards / Safety	CE

Environmental

Operating temperature	-20°C to +60°C (-4°F to +140°F)
Option ext. temperature range	-40°C to +80°C (-40°F to +176°F)
Storage temperature	-40°C to +80°C (-40°F to +176°F)
Humidity	90% non-condensing

Physical

Dimensions	Standard Type II PC Card
Enclosure	Metal
Mass	32 grams (1.13 oz)