ILR 350 Series
i-Q350 HHX, Hothead Tag
Operation Manual

PRELIMINARY

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IDENTEC SOLUTIONS AG,
Millennium Park 2, 6890 Lustenau, Austria

Phone: +43 5577 87387- 0, Fax: +43 5577 87387-15
E-Mail: info@identecsolutions.at
www.identecsolutions.com

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

MODELS:	i-Q350 HHX	
Region/Country	Organization	Marking
EUROPE:	EC	CE
USA	FCC	FFC ID 004-ILR-IQ350HHX
Canada	Industry Canada	IC: 3538A-IQ350HHX

European Notification according R&TTE Directive

This equipment complies to Art. 6.4 of R&TTE Directive (1999/5/EC). It is tested for compliance with the following standards: ETSI EN 300 220, ETSI EN 301 489, EN 60950

USA Notification

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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 any changes or modifications not expressly approved by the party responsible for compliance could void the users' authority to operate the equipment.

The device 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 communications. 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 own expense.

Canada Notification

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Printed in Austria

Contents

1 Introduction

1.1 Preparations

This installation manual must be read carefully prior to starting the installation. The described installation works assume that installation materials like cable, antenna, tag holder, etc. are available.

1.2 Recommended Procedure

1. Check the Scope of Delivery according to the Bill of Delivery
2. Read this manual completely
3. Do the initial operation for every single tag
4. Mount the tags
5. An additional performance check of the tags and a system test can now be done

1.3 Scope of this Document

This document is the users' manual of the model i-Q350L W.
This document is intended only for mechanical installation rsp. everyday use.

1.4 Responsibility

IDENTEC SOLUTIONS is not responsible for any errors occurring in this document.

1.5 Associated Documents

*   i-B350L W — ILR350 Wristband Tag Datasheet

1.6 Scope of Delivery—Visual Inspection

Check delivery whether it is complete and for any damages. If the delivery is not complete or damaged immediately inform the carrier. The dispatch and service organization of IDENTEC SOLUTIONS should also be informed to facilitate the repair or exchange of the system.

2   Safety Precautions

Important Safety Note

The devices described in this manual are for exclusive operation by trained employees. Only qualified personnel that know the potential dangers involved should perform the installation, settings, maintenance and repair of the units used.

Operational Safety

The correct and safe use of these systems assumes that operating and service personnel follow the safety measures described in the manual alongside the generally acceptable safety procedures.
If there is a possibility where a safe operation cannot be guaranteed, the system must be switched off and secured against accidental use. Then, the service unit responsible must be informed.

Do not open the housing

There is no need to open the housing. There are no user serviceable parts inside. Set-up and configuration during initial operation is done wireless with the built-in air interface.

Handling Safety

In the event of high operating temperature of 70 °C (+158 °F), the tags are heated and must be handled with care. To prevent burns, wait until the tags have cooled down or use appropriate gloves. At temperatures below 0 °C (+32 °F) tags can be frozen. In this case, wait a while until tags are warmed up or use appropriate gloves.

Battery Inside

All tags contain a battery. That is the reason for the following instructions:

Warning
Fire, explosion and burn hazard
Risk of explosion if battery is replaced by an incorrect type
Do not recharge, short circuit, crush, disassemble, heat above 70 °C (158 °F)
Do not incinerate, or expose contents to water

Electrostatic Discharge

This product contains components that are sensitive to electrostatic discharges. Please observe the special instructions for their protection. Incorrect handling can damage the unit and cause the invalidation of the warranty.

Safety Documents

This ILR system was designed, tested and supplied in perfect condition according to the test report document EN60950.

Condensation/Change of Temperature

Moving the systems from a cold to a warm environment could lead to dangerous situations due to condensation. Therefore it must be ensured that the system can adjust itself to the warmer temperature.

Spare Parts

We recommend that only original products, spare and replacement parts authorized by IDENTEC SOLUTIONS be used for installation, service and repair. Otherwise IDENTEC SOLUTIONS does not accept any responsibility for materials used, work carried out or possible consequences.

3 General
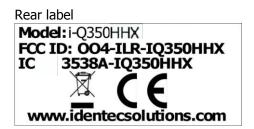
3.1 Optical Identification of the Tag

The labels are on the front and back side of the tag.

Front label

hothead®

0.400.000.000

Rear label

Model: i-Q350HHX
FCC ID: OO4-ILR-IQ350HHX
IC   3538A-IQ350HHX

www.identecsolutions.com

4 Configuration of the tag

Important Note

Do not open the housing! Configuration is done using the built-in air interface of the i-Q350 HHX.

The Response mode of the i-Q350 HHX offers the following features for configuration:

- Broadcast mode can be configured for simultaneous operation. In this case the tag responds to commands from a reader as well as broadcasts configurable data in a regular interval.
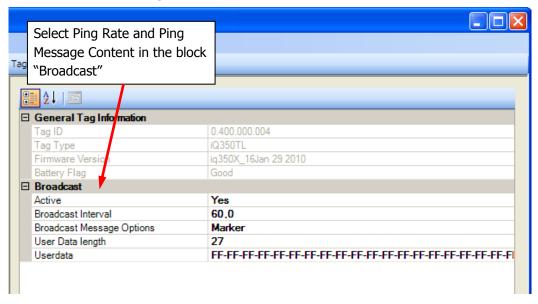
Tools Needed

- PC running on MS Windows with the ILR Tag Configuration for ILR 350 series tags
- Connection to an i-PORT M 350 or i-CARD CF 350 to communicate with the tags

The ILR Tag Configuration software tool is described in detail in this manual:

- ILR 350 Tag Configuration Plug-In Manual

Overview on the Configuration Software

Select Ping Rate and Ping Message Content in the block "Broadcast"

General Tag Information	
Tag ID	0.400.000.004
Tag Type	iQ350TL
Firmware Version	iq350X_16Jan 29 2010
Battery Flag	Good

Broadcast	
Active	Yes
Broadcast Interval	60,0
Broadcast Message Options	Marker
User Data length	27
Userdata	FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FF-FI

4.1 Ping Rate

Note: These settings can be found in the ILR Tag Configuration software tool in the section "Broadcast"

- Active: Activates or de-activates the broadcast function that regularly sends out messages.

- Broadcast Interval: 0 = no broadcast messages are sent, value > 0 = Broadcast interval in seconds. This can be set in steps of 0.5 sec, from 0.5 sec up to 300 sec.

- Broadcast Message Options: The options in this field depend on the capabilities of the tag. The subchapter "Limitations of the User Data Field" lists the possible options of this tag type.

- User Data Length: Configure the number of Bytes from the "User Data" that is sent with a broadcast message. The number starts from Byte 0 (zero). The limits of the User Data length are described at the end of this chapter.

5 Maintenance

5.1 General

When installed correctly the ILR System will operate virtually maintenance free for many years. However, in the event maintenance is required only trained and authorized personnel are permitted to perform the updates, changes and maintenance necessary.

5.2 Regular Cleaning of The Surface

Remove dust with a brush or compressed air. If there are fatty or oily substances use a soft cloth moistened with a mild rinsing agent.

Warning

Do not clean the tag in a dishwasher. Do not sandblast the tag. Do not use high pressure water jet or steam cleaner. Do not use cleaning products containing chemical additives.

5.3 Precautionary Maintenance

A regular check of the system is recommended. Unstable connections could lead to damage and malfunctions of the system and should therefore be repaired as soon as possible.

A Brief Checklist

- Are all housings intact?
- Are all cables intact?
- Are all connectors intact?
- Are all connectors securely fastened?
- Are all screws still tight?
- Is there a malfunction at a specific unit?

5.4 Returns

Parts or main components returned for repair or exchange must be handled with great care. PC cards must be returned in the appropriate ESD-protecting packaging material. All returns should include an error description and a short application overview and be sent to the local distributor or to:

> IDENTEC SOLUTIONS AG
> Service Department
> Millenium Park 2
> 6890 Lustenau
> AUSTRIA

6 Technical Data

Operating Data

Operating frequency ILR-RFID	868 MHz (EU) or 920 MHz (NA
Maximum transmission power	0.75mW (EU / NA)
Compatibility	i-PORT M 350, i-CARD CF-350
Standards/Certification	FCC Part 15 (US), ETSI EN 300 220 (EU)

Communication Data Long-Range RFID (ILR, Response Technology)

Multiple tag handling	Up to 2,000 tags in the read zone
Read/write range response mode	Up to 60 m (200 feet), free air*
Data rate response	19.2 to 115.2 kbits/s

Communication Data Long-Range RFID (ILR, Beacon Technology)

Read range broadcast	Up to 150 m (500 feet) free air*
Operation mode	Transmits marker information in at regular intervals
Repetition rate (ping rate)	0,5 – 300 seconds, adjustable in steps of 0,5 seconds
Data rate broadcast	115.2 kbits/s

* The communication range depends on the antenna type, the antenna cable runs and the environmental conditions.

Electrical

Power source	Lithium battery (not replaceable)
Battery monitoring	Yes

Temperature measuring

Metering range	+3°C to +50°C (37.4°F to 122°F)
Resolution	0.01 °C (0.018 °F)

Shock Detection

Detection	50G
Accuracy	±25%

Data

Data retention	> 10 years without power
Write cycles	100,000 writes to a tag
Memory size	10,000 Bytes user definable
Identification code	48 bit fixed ID

Environmental Conditions

Operating temperature	-10° C to +60° C (+14°F to +140°F)
Humidity	10 % to 90 % relative humidity @ 30 °C
Shock	50 G, 3 times DIN IEC 68-2-27
	Multiple drops to concrete from 1 m (3 ft)
Vibration	3 G, 20 sine wave cycles, 5 Hz to 150 Hz, DIN IEC 68-2-6
	5 G, noise 5 Hz to 1000 Hz, 30 minutes, DIN IEC 68-2-64

Physical

Dimensions	100x32x8mm
Enclosure	TPE 50-70 shore A / PC ABS
Weight	TBD
Enclosure rating	IP 67

US Patent Technology
United States Patent No. 6,563,417
United States Patent No. 7,053,777