



Advanced reader technologies

## *i-scan*<sup>®</sup> UHF

Fixed RFID  
Long Range Reader  
**ID ISC.LRU2000-A**

Fixed RFID  
Long Range Reader Unit  
**ID ISC.LRMU2000-B**  
(excludes housing and  
Application Connectivity  
Controller Board -ACC)



RFID Multi-protocol Long Range Readers for identification of UHF transponders (865-928 MHz) in fields of application like retail, industry, supply chain, logistics etc.

### **Features:**

- Wide variety of ETSI and FCC certified antenna configurations with reading ranges of up to 5 meters
- Multi-tag readers (EPC Gen2, opt. ISO18000-6-B / -C)
- High speed anti-collision function identifies large quantity of tags. Buffered Read Mode and notification channel function provides data filtering and buffering.
- Dense Reader Mode
- Host protocol compatible with OBID *i-scan*<sup>®</sup> HF Long Range Readers

## Description

OBID i-scan<sup>®</sup> UHF Long Range Readers identify UHF transponders within a frequency range from 865 to 928 MHz and so can be used in Europe (EU version) and in North America (FCC version).

Both devices, Fixed Long Range Reader and Fixed Long Range Reader Unit, have identical RF performances. The ID ISC.LRMU2000-B differs from the ID ISC.LRU2000-A in terms of housing, interface options and functionality for the host connectivity of the device.

Each member of the ID ISC.LR(M)U2000 product series has the following RF key features:

- A high sensitivity receiver increases the tag detection range.
- A powerful tag response decoding engine decodes FM0 coded return link signals between 40kbps and 320kbps and subcarrier coded (Dense Reader Mode) return link signals between 53kbps (US) and 64kbps (EU).
- RF front end with blocking features supports adjacent channel operation of RF Readers.
- RF synchronisation mechanism for synchronous listen process of a Reader which operates in listen-before-talk mode, ensures the ability to use more than one Reader in Dense Reader Mode within a listen-before-talk environment.
- Reader protection against various fault conditions, such as antenna shortcut and electrostatic discharge.
- Reader is available in different versions to fulfil the different national radio rules of UHF.

The reader platform of the ID ISC.LR(M)U2000 product series provides most extensive configuration possibilities and reader commands. The base set of commands and features is compatible with the commands, used throughout the OBID i-scan<sup>®</sup> product line. The configuration possibilities of the ID ISC.LR(M)U2000 readers make it easy to adapt the readers to a range of applications by software and hardware configurations.

The RF section of the readers are controlled by a dedicated DSP based RF controller. A second controller, the Application Connectivity Controller (ACC), uses an ARM processor, running a Linux operation system. The ACC transforms the reader into a powerful and intelligent device, capable of running application software directly on the reader platform and capable of connecting and controlling other real world devices. The ID ISC.LRU2000-A has three hardware interface ports: Ethernet, RS232 and RS485. All ports are controlled by the ACC. Furthermore, the reader has digital inputs for direct control of various trigger possibilities and various outputs for direct control of several indicators.

Both, the powerful and flexible RF transmitter / receiver and the intelligent digital controller form the basis of an agile multi-protocol reader that can be updated in case of creation of future protocols and features. The readers support the transponder protocols EPC Gen2, optional ISO18000-6-B and ISO18000-6-C. The ACC firmware can also be updated allowing the reader to be adapted to different applications as EPC reader protocol or ISO15691 data protocol.

FEIG ELECTRONIC provides a library which allows the user to develop their own applications to run on the ACC.

## Standard conformity

Radio authorization	
- Europe	EN 302 208, EN 300 220
- USA	FCC 47 CFR Part 15
EMC	EN 301 489
Safety	EN 60950
Vibration	EN 60068-2-6 10 Hz to 150 Hz: 0,075 mm / 1g
Shock resistance	EN 60068-2-27; acceleration: 30g



# Technical Data

	ID ISC.LRU2000-A	ID ISC.LRMU2000-B
Housing	Plastic (black)	--
Dimensions (WxHxD)	180 x 320 x 110 mm (7.09 x 12.6 x 4.33 inch)	170 x 210 x 50 mm (6.69 x 8.27 x 1.97 inch)
Weight	2100 g	800 g
Protection class	IP54	--
Power supply	15 - 24 V DC +/- 15%	
Power consumption	max. 32 VA	
Operating frequency	869,525 MHz; 865,6 - 867,6 MHz (200 kHz steps) Version EU 902 - 928 MHz (500 kHz steps) Version FCC	
Transmitting power	100 mW -3 W (adjustable via software in 100mW steps)	
Modulation techniques	DSB-ASK (adjustable via software; Data rates forward link from 40kbps to 160kbps)	
Receiving capability	Sensitivity -- 70dBm (Tag) Sensitivity -- 96dBm (Listen) Dense Reader Mode US - LF 64kbps Dense Reader Mode EU - LF 80kbps Data rate to decode FM0 40kbps - 320 kbps	
Antenna connection	4x SMA-connector (50 Ohm); Multiplexer integrated	
RF Diagnostics	RF Channel monitoring; Antenna SWR Control; Internal overheating control	
Outputs: - 1 Opto coupler - 1 Relay (1x NO/NC) - 3 optional relays*	24 V DC / 30mA 24 V DC / 2 A	
Inputs: - 1 Opto coupler - 3 optional opto couplers*	max. 24 V DC / 20mA	
Interfaces	RS232 and RS485 Ethernet (TCP/IP)	RS232 and RS485 (19.2 k - 230.4 k baud)
Protocols	FEIG ISO HOST Buffered Read Mode Notification Mode	FEIG ISO HOST
Operation system	Linux (32MB RAM, 16MB FLASH)	--
Supported transponders	EPC Gen2; optional ISO18000-6-B / -C	
Indicators	5 LED (for diagnosis of the operation status)	6 LED (for diagnosis of the operation status)
Temperature range - operation - storage	-20°C to +55°C -25°C to +85°C	
Humidity	5-95% (not condensing)	

\* Necessary accessories for this option: ID ISC.LR.I/O-A Extension Board