e-Plate
a world of RFID solutions

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DATE: 17/11/2005 | **Issue No 2**

i-Port R2 Specification

Communication

Parameter	Specification
Reading range	Configurable via RSSI filter and antenna gain, up to 100m
Frequency	868,3MHz (EU), 916.5 MHz (NA), 2 different versions
Sensitivity	-85 dBm
Number of antennas	1
Antenna connector	SMA
Compatibility	i-D3, i-B2
Air interface transmission speed	100 kBit/s
Air interface transmission error detection	16 Bit CRC
Air interface security against cloning	Rolling code with tag age counter
Standards	CE, EN 330220 (EU), FCC 15 (NA)

CPU

Parameter	Specification
CPU type	Cygnal 8051 compatible
Program memory	Flash, re-programmable via host interface
Program memory size	128kByte
RTC	None
RAM- Buffer size	Up to 400 readings
Configuration memory	EEPROM

Interface

Parameter	Specification
Interface type	RS422, daisy chain
Interface baud rate	115 kBaud (others on request)
Interface connector	RJ45 in, RJ45 out
Protocol	Proprietary
Address range	240 readers addressable
Host integration	Via Windows- DLL
Wireless connections (WAN, WLAN, GSM)	Via external gateway
Mode	Slave, reader will be polled by host or gateway
Status display	4 LEDs on connector side

Product data sheet correct at date of issue. E-Plate Ltd reserves the right to amend without prior notice.

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Electrical specifications

Parameter	Specification
Power supply	10 VDC .. 30 VDC
Power consumption	< 500 mW
Power connector	Integrated in host interface

Environmental specifications

Parameter	Specification
Operating temperature range	-40°C to +80°C
Humidity	Up to 90% non- condensing

Housing

Parameter	Specification
Size	110 x 55 x 25 mm
Material	Aluminium
Weight	120 g
Protection class	IP 52, IP67 with external housing
Mounting method	2 mounting holes M5

Software

Interface uses a proprietary protocol frame. Commands are divided in 2 classes depending on the type of address used:

Dynamic addressing

The addresses used in this command set are defined by the physical position of the reader in the daisy chain. Commands are:

- assign static address
- read static address
- load firmware
- diagnostics

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Static addressing

This address is independent of the position of the reader in the chain. Implemented commands are:

- start reading
- stop reading
- set parameters (i.e. sensitivity, RSSI filter)
- get last reading
- get reading from buffer

Timekeeping

There is no absolute time in the reader to avoid the necessity of synchronising a large number of readers. Instead every reading is stored internally in a buffer with an internal timestamp. When a reading is sent to the host the time difference between the reading and the reporting is sent in the telegram, this enables the host to calculate the original time of the reading based on its own synchronised clock.

Security, Encryption

Data read from the tag is reported, "as is" without additional encryption/decryption. This minimises the probability of security leaks and enables the user to implement any possible encryption method during writing the ID in the tag and to use the complementary decryption in the centralised database.

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