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Micro RWD 125kHz RF Transponder Reader Module

(Supports Hitag 1/S, Hitag 2, EM Marin & Microchip RF Transponders)

The MicroRWD chip module is a complete RF transponder / contactless smart card read and write system on a single chip and represents one of the smallest and lowest cost solutions currently available.

24 pin DIL package (18mm x 32 mm)

Micro RWD Chip Module — Standalone mode with Internal EEPROM holding authorised tag codes. ("Mini" Access control System)

Host System — Micro RWD Chip Module — RS232 Serial comms

The RWD chip module uses hybrid mixed signal ASIC and RISC processor technology to achieve features and performance for a fraction of the cost of existing systems and is entirely encapsulated within a 24 pin DIL package (18 mm x 32 mm).

Typical application configuration for Micro RWD module

In response to the worldwide demand for contactless RFID systems, the MicroRWD supports the popular 125 kHz EM Marin EM400x and Microchip MCRF200/123 read-only transponders and the high security Hitag 1, Hitag S2048 and Hitag 2 read/write transponders. The EM400x and MCRF200 provide 40 and 128 bits of read-only data respectively whereas the Hitag transponders provide 256/2048 bits of Read/Write EEPROM memory with extensive data and transaction security features. Using a password exchange system and with encrypted commands and data, the information on the Hitag transponders is protected against interrogation and copying. In addition the MicroRWD chip module uses a burst mode RF field which gives only very short periods of communication, resulting in even higher levels of security and lower power consumption (only 30ms required for Tag authentication and 20ms to write 32 bits of data).

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For a proximity system, the RWD module has outstanding RF drive capability and has a read/write range to Hitag tags of up to 20cm whilst maintaining reliable communication and high resilience to EMC corruption. This has been achieved through the RWD continuously self-tuning its antenna circuit to allow for inductive changes in the RF field, extensive filtering of the received signals and the detailed design of the chip module.

The RWD module is a complete reader and tag acceptance solution on a single chip and only needs a 700 uH antenna coil connected and 5v DC supply to be a fully featured read/write system. The chip module provides internal EEPROM memory for holding lists of authorised identity codes, a manual override switch facility and supports direct LED drives to give visual indication of acceptance. Up to 100ma of drive current is also provided as an output that can be used to switch external loads.

The MicroRWD chip module also has a TTL level RS232 interface that allows a host system to communicate with it if necessary. System features can be customised, passwords and security codes changed, and transponder data can be written and read via the host interface.
Windows Application software and driver source code are available to assist in developing custom software drivers for the simple command protocol.
The RWD chip module is available in versions supporting different tags / Smart cards and also Magnetic Stripe clock/data and Weigand protocol output, more information on customised versions is available on request.

Evaluation kits are available and come complete with PC RS232 interconnect cable, Antenna coil, Windows Application software and 'C' language driver source code and full documentation, all on CDROM. These kits allow rapid evaluation of the MicroRWD's powerful features and enable this exciting world of RFID to be explored.

Part Number	Tag Supported
MicroRWD H1C	Hitag 1, HS2048*
MicroRWD H2C	Hitag 2
MicroRWD EM400X	EM Marin EM400X/4102
MicroRWD MC200	MCRF200/123
MicroRWD QT (Quad Tag)	All of above types supported

*(HS2048 supported in plain memory mode – default as supplied by Philips)

More information on the MicroRWD and other products can be found at the Internet web site:

http://www.ibtechnology.co.uk

Or alternatively contact IB Technology by email at:

sales@ibtechnology.co.uk

(Hitag is a trademark of Philips Semiconductors N.V)
(EM400x is a trademark of EM MICROELECTRONIC-MARIN SA, a SWATCH GROUP company)
(MCRF200 is a trademark of Microchip Technology Inc.)