

EMBEDDED HF RFID MID-RANGE M500

APPLICATIONS

- Industrial Automation
- Mobile Terminals
- Access Control
- Retail Market

FEATURES

- SMA Antenna Connection
- Reading Range > 40 cm
- 15 Vdc Power Supply
- Bulk Reading
- RS232 or TTL

RFID OPTIONS

- ISO 15693
- ISO 18000-3

PRODUCT DESCRIPTION

The Embedded HF Mid Range Module M500 is a mid range RFID reader operating in the HF frequency range (13.56 MHz). With its small form factor and its SMA antenna connection, it is possible to connect a broad range of HF antennas for multiple applications.

Supporting ISO 15693 and ISO 18000-3, the embedded device is able to read tags from a distance of up to 40 cm. The integrated anti-collision functionality allows to read up to 30 transponders at once.

Thanks to the various interfaces such as TTL or RS232, the reader is well equipped to support applications such as retail and industrial applications.

Beside a testing applications for Windows with various setting options, the documentation includes sources for Windows based developments and a command protocol for OS independent developments.

APPLICATION EXAMPLES

► RETAIL MARKET



The Retail Market is really suitable for the utilisation of the Embedded HF Mid Range Module M500. RFID can further develop and efficiently control work processes.

iDTRONIC's Embedded HF Mid Range Module M500 can be easily integrated into existing mobile barcode or rfid scanner. The identification and assignment of product items will be more efficient.

The shop manager of a supermarket can easily capture with this module over 30 units at once. The reading distance between the reader and the product can be up to 40 cm.

Even on cashless payment stations the Embedded HF Mid Range Module M500 can be integrated. In wholesale markets the customers can scan via a handheld device their goods and pay at a self-service terminal.

► INDUSTRIAL AUTOMATION PROCESSES



The Embedded HF Mid Range Module M500 can be implemented into industrial automation processes within storage applications. Robotic arms can be applied to store the goods to the correct shelf.

The tiny dimensions of the Embedded HF Mid Range Module M500 suit into a lot of such devices.

With the module the robotic arm can detect the right good for the shelf. The data of the transponder on the product will be saved automatically for statistics and tracking. The storage process will be efficient. The goods are always in the right place.

TECHNICAL DATA

* READING DISTANCE DEPENDS ON TAG, ANTENNA AND ENVIRONMENTAL CONDITIONS.

ELECTRICAL SPECIFICATIONS

Power Supply	15 Vdc, capable to deliver up to 700 mA briefly Round socket, ø 5.5 2.1 mm
Power Consumption	HALT mode: app. 40 mA IDLE mode: app. 50 mA Standard (auto-list mode): up to 300 mA
Operating Frequency	13.56 MHz
Reading Distance	up to 40 cm*
Baudrate	9600 ... 115200 bit/s factory preset at 115200
Antenna	SMA female
Interface	TTL, RS232
Connector	
I/O's	

MECHANICAL SPECIFICATIONS

Material	FR-4, Green
Mounting Option	Screwing

ENVIRONMENTAL CONDITIONS

Operating Temperature	-20 °C ... +80 °C
Storage Temperature	-40 °C ... +85 °C
Humidity	up to 95 %, non condensing
MTBF	200'000 h

SDK INFORMATION

Supported OS by Silabs USB VCP Driver	Windows 7/8/8.1/10 Windows Server 2003/7/8/8.1 Windows 2K WinCE (5.0, 6.0) Macintosh OSX Linux (4.x.x., 2.6.x) Android 4.2
Supported OS	Windows 7, 8, 8.1, 10
Supported Languages	C++, Binary command protocol
Demo Software	Windows

APPLICABLE STANDARDS

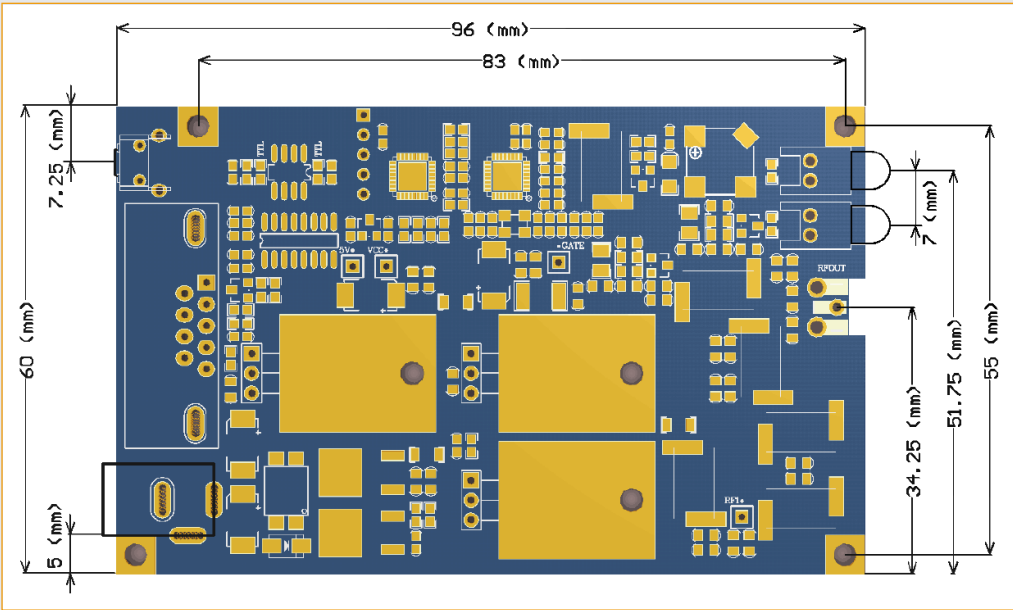
EMC	EN 301489-1:2012-04 (v1.9.21) EN 301489-3:2013-12 (V1.6.1)
Radio Regulation	EN 300330-1:2015-08 (V1.8.1) EN 300330-2:2015-08 (V1.6.1)
Safety	EN 60950-1:2014-08 EN 62369-1:2010-03 EN 50364:2010-11
RED	2014/53/EU
RoHS 2	2011/65/EU
REACH	1907/2006
Certificates	FCC, CE, IC**

AVAILABLE VERSIONS

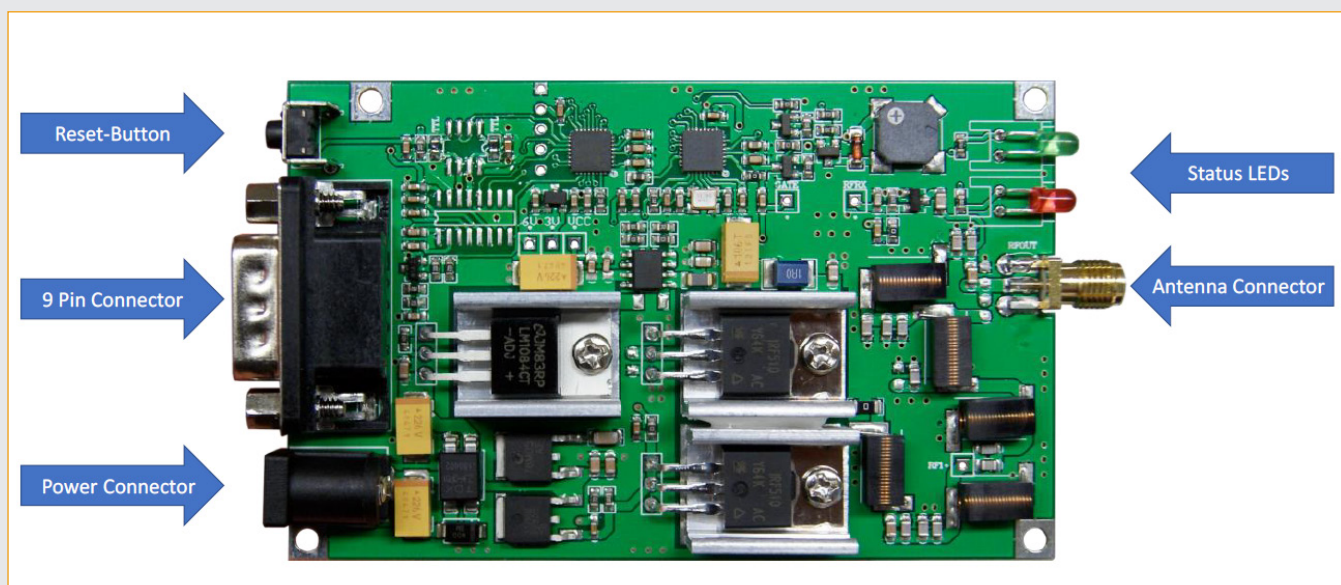
*READING DISTANCE DEPENDS ON TAG, ANTENNA AND ENVIRONMENTAL CONDITIONS.

HF	
GENERAL SPECIFICATIONS	
Dimensions	109.5 × 60 × 17 mm (overall including connectors) 96.2 × 60 × 17 mm (PCB only)
Weight	58 g
Power Supply	15 Vdc
Power Consumption	HALT mode: app. 40 mA IDLE mode: app. 50 mA Standard (auto-list mode): up to 300 mA
Operating Frequency	13.56 MHz
Reading Distance	up to 40 cm*
RT FX Speed	up to 848 kBd
Reader IC	NXP CLRC 663
Interface	RS232, TTL
Antenna	SMA female
Baudrate	9600 ... 115200 bit/s, factory preset at 115200
SUPPORTED STANDARDS TAGS	
ISO 15693 and compatible	EM4135, EM4043, EM4x33, EM4x35, I-Code SLI / SLIX, M24LR16/64, TI Tag-it HF-I, SRF55Vxx (my-d vicinity)
ISO 18000-3M3 and compatible	I-Code ILT-M

MECHANICAL VIEW



POSITION OF PORTS



PINOUT OF D TYPE CONNECTOR (MALE)

Note: The pinout for TTL is the same, only the levels are different.

PIN	NAME	DESCRIPTION
1	–	–
2	TxD	RS232 or TTL Level, connect to Pin 3 of your PC
3	RxD	RS232 or TTL Level, connect to Pin 3 of your PC
4	–	–
5	GND	RS232 or TTL Level, connect to Pin 3 of your PC
6	–	–
7	–	–
8	–	–
9	–	–

PINOUT OF POWER SUPPLY ROUND CONNECTOR

PIN	NAME	DESCRIPTION
Tip	+	–
Ring	GND	–

ORDER CODES

VERSION	ORDER CODE
OEM HF Module RS-232	OEM-HF-MR-M500-RS232
OEM HF Module TTL	OEM-HF-MR-M500-TTL

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