iDTRONIC
PROFESSIONAL RFID

EMBEDDED UHF MODULE

M650



PRODUCT DESCRIPTION

The iDTRONIC RFID Embedded UHF Module M650 is a high-performance UHF RFID module based on IMPINJ E710 New Generation RF chip. Featuring four SMA antenna ports that support RF sensitivity up to 33 dBm, the module's reliable RF performance and advanced anti-jamming design make it ideal for fixed RFID devices. With an all-aluminum housing and excellent heat dissipation, this reader module can be perfectly embedded into fixed readers, printers or other fixed devices.

It is equipped with UHF Technology EPC Class 1 Gen 2 (ISO 18000-63) and is globally applicable with a frequency band of 840 - 960 MHz. The M650 UHF module has a MMCX antenna interface that supports a power output of max. 33 dBm, which enables it to rapidly read multi-labels at up to 900 tags per second.

iDTRONIC's hardware comes with a useful SDK for the development of controller, Linux or Windows based applications. In addition to the documentation, command protocols and source codes, the SDK includes a Windows based demo application providing full functionality over all supported UHF RFID standards.

▶ APPLICATIONS

- Industrial Automation
- Parking Automation
- Supply Chain

▶ FEATURES

- Based on the latest generation Impinj E710 chipset
- EPC C1 GEN2 | ISO 18000-63
- 33 dBm RF power output
- High performance of anti collision recognition algorithm
- UART - TTL
- Metal housing for heat dissipation

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RFIDCanada
Automating Identification

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TECHNICAL DATA

RADIO SPECIFICATIONS	
Operating Frequency	840...960 MHz, Configurations for USA: 902...928 MHz (FCC), EU: 865...868 MHz (ETSI)
RFID IC	Impinj E710
RF TX Power	+5...33 dBm, adjustable in steps of 1 dB
RF Sensitivity	-87 dBm
RF Channel Isolation	32 dB
Reading Range	Up to 12 meters*
RF Impedance	50 Ω
Antenna	4 SMA female connectors for external antennas

ELECTRICAL SPECIFICATIONS	
Power Supply	3.6...5 Vdc
Power Consumption	1600 mA @ +33 dBm TX Power 120 mA Standby 40 mA enabling Mode
Connectors	15 pin FPC socket
Communication Interface	UART TTL port
Baudrate	9600...921600 bit/s, 115200 bits/s factory default
GPIO	2 Inputs TTL Levels: Logic low: < 0.8 V, minimum 0V Logic high: > 2 V, maximum 3.3 V 2 Outputs TTL Levels: Logic low: maximum 0.4 V Logic high: minimum 2.9V, maximum 3.3V IO: The maximum output current of the port is 5mA

MECHANICAL SPECIFICATIONS	
Dimensions	74.8 × 48.5 × 8 mm
Weight	56 g
Material	Aluminium

ENVIRONMENTAL CONDITIONS	
Operating Temperature	-25 °C ... +55 °C
Storage Temperature	-40 °C ... +85 °C
Humidity	up to 95 %, non-condensing

SUPPORTED STANDARDS / TAGS	
ISO Standard	ISO 168000-63 (EPC Class 1 Gen 2)
Read Rate	≥ 900 tags/s
Tag Cache	≥ 1000 Tags @ 12 Bytes EPC size

SDK INFORMATION	
Supported OS	Windows, Linux, Android
Supported Languages	C, C#/.NET, Java
Demo Software	Windows

Other functions and details to be continued and upgraded.

VERSIONS	ORDER CODES
Embedded UHF Module M650 - TTL	OEM-UHF-M650-TTL

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