

Embedded Module

M600



PRODUCT DESCRIPTION

The iDTRONIC RFID EMBEDDED UHF SMD Module M600 is a high-performance UHF RFID module based on the IMPINJ New Generation reader chips (E310/E510/E710). Manufactured as a surface-mounted device (SMD) with a max. RF output power of 30 dBm and supporting real-time onboard temperature monitoring, this module allows for rapid and seamless integration, especially in PDA and desktop RFID 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 M600 UHF SMD module has a single mono-static RF port as antenna interface that supports a power output of max 30 dBm, which enables it to rapidly read between 350 and 1,000 tags per second (depending on the IC Chip).

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

- **Mobile applications**
- **USB-powered devices**
- **Industry 4.0 devices**
- **Logistics & Asset Tracking**
- **Retail / Inventory Management**

FEATURES

- **EPC C1 GEN2 | ISO 18000-63**
- **30 dBm RF power output**
- **Coin-sized footprint & SMT ready**
- **UART - TTL**

CHIP OPTIONS

- **Based on the latest generation Impinj chipsets E310/E510/E710**

TECHNICAL DATA

MECHANICAL SPECIFICATIONS

Operating Frequency	840...960 MHz, Configurations for USA: 902...928 MHz (FCC), EU: 865...868 MHz (ETSI)
RF TX Power	+5...30 dBm, adjustable in steps of 1 dB
Reading Range	Up to 9 meters*
RF Impedance	50 Ω

ELECTRICAL SPECIFICATIONS

Power Supply	3.6...5 Vdc
Power Consumption	850 mA @ +30 dBm TX Power 50 mA Standby 50 µA Power Down Mode
Connectors	Solder Joints
Communication Interface	UART TTL port
Baudrate	9600...921600 bit/s, 115200 bits/s factory default
GPIO	<p>2 Inputs TTL Levels: Logic low: < 0.8 V, minimum 0V Logic high: > 2 V, maximum 3.3 V</p> <p>2 Outputs TTL Levels: Logic low: maximum 0.4 V Logic high: minimum 2.9V, maximum 3.3V</p> <p>IO: The maximum output current of the port is 5mA</p>

MECHANICAL SPECIFICATIONS

Dimensions	28 × 28 × 4 mm
Weight	10 g
Material	PCB: FR4 Shielding frame: nickel-nickel copper Shield cover: stainless steel

ENVIRONMENTAL CONDITIONS

Operating Temperature	-20 °C up to +55 °C
Storage Temperature	-40 °C up to +85 °C
Humidity	up to 95 %, non-condensing

SDK INFORMATION

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

SUPPORTED STANDARD / TAGS

ISO Standard	ISO 18000-63 (EPC Class 1 Gen 2)
Tag Cache	≥ 1000 Tags @ 12 Bytes EPC size

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

AVAILABLE VERSIONS

	E310	E510	E710
GENERAL SPECIFICATIONS			
Description	EMBEDDED UHF SMD MODULE TTL - 310	EMBEDDED UHF SMD MODULE TTL - 510	EMBEDDED UHF SMD MODULE TTL - 710
RFID IC	IMPINJ E310	IMPINJ E510	IMPINJ E710
RF Sensitivity	- 73 dBm	- 80 dBm	- 87 dBm
Reading Rate	≥ 350 tags/s	≥ 600 tags/s	≥ 1000 tags/s
Applications	Mobile and Desktop Applications / USB-powered Devices / Short Range	Industrial Applications and Devices / Logistics and Asset Tracking	Demanding Range and Inventory Application / Long Range
GENERAL SPECIFICATIONS			
	OEM-UHF-M603-TTL	OEM-UHF-M605-TTL	OEM-UHF-M607-TTL