Embedded SMT Module UHF

M600

PRODUCT DESCRIPTION

The iDTRONIC Embedded SMT Module UHF M600 is a high-performance UHF RFID module based on the IMPINJ New Generation reader chips E310/E510/E710. Manufactured as a surface-mounted technology (SMT) with a max. RF output power of 30 dBm and supporting real-time onboard temperature monitoring, this module is ideal for direct SMT assembly on PCB boards, enabling rapid and seamless integration, particularly in space-constrained designs such as 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 SMT 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).

For added flexibility, the module is also available in combination with a Carrier Board, simplifying evaluation and integration in prototyping or development environments.

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

- **SMT assembly on PCB boards**
- **Integration into mobile devices**

FEATURES

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

CHIP OPTIONS

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

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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 Impendance	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	**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	28 × 28 × 4 mm
Weight	10 g
Material	PCB: FR4 Shielding frame: nickel-nickel copper Shield cover: stainless stee

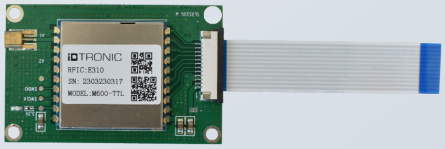
ENVIRONMENTAL CONDITIONS	
Operating Temperature	-20 °C up to +55 °C
Storage Temperature	-40 °C up to +85 °C
Humidity	up to 95 %, non-condensing

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 DISCTANCE DEPENDS ON TAG, ANTENNA AND ENVIRONMENTAL CONDITIONS.

M600 WITH CARRIER BOARD



AVAILABLE VERSIONS

	E310	E510	E710
GENERAL SPECIFICATIONS			
Description	EMBEDDED UHF SMT MODULE TTL - 310	EMBEDDED UHF SMT MODULE TTL - 510	EMBEDDED UHF SMT 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			
w/o Carrier Board	OEM-UHF-M603-TTL	OEM-UHF-M605-TTL	OEM-UHF-M607-TTL
with Carrier Board	OEM-UHF-M603-CB-TTL	OEM-UHF-M605-CB-TTL	OEM-UHF-M607-CB-TTL

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