ART-321E

UHF RFID Two-Port Module



Features

- Smallest mini-size UHF RFID module
- Compliant with EPC global Class 1 Gen. 2 (ISO18000-6C)
- Free SDK, standard version; Supports Windows®
- Supports power saving mode and Low Power Consumption
- RF output power: Adjustable 30dBm/1W (Max)
- RF ASIC: Impinj R1000 chipset based design
- RFID Silicon: Impinj-R1000
- Two antenna ports supporting two mono-static antennas
- UART Interface
- Supports remote upgrade firmware

Introduction

RFID Tracer Module ART-321E, UHF RFID module, is designed with an Impinj R1000 chipset which contains two antenna ports. The maximum RF output power is 30dBm. ART-321E is designed for easy integration into any existing or new platforms. The low power consumption and super small form factor provides a perfect alternative for mobile or handheld devices.

The ART-321E easy and powerful demo package allows for fast creation of custom applications via an API. It operates over the North American UHF frequency band (902 ~ 928 MHz) and follows ISO 18000-6C international standards, and free demo software offers quick evaluation without software development.

Specifications

Wireless Network

- **Frequency Range** 902 ~ 928MHz
- **Channel Spacing** 500KHz
- **Frequency Hopping** 50CH
- **Frequency Stability** 10ppm
- **RF Output Power** Max. output power is 30dBm
  Available to adjust from +10 ~ +30dBm in 1dB step
- **Supply Voltage** $3.3V_{DC}$ +/-5%
- **Reception Sensitivity** -75dBm

General

- **Host Control Signal/ Data Rate** UART
- **RFID Protocols** EPC Class 1 Gen 2 / ISO 18000-6C
  Linking Frequency: 250KHz
  Data Rate: 62.5 kpbs
  Data Encoding: Miller-4
  Modulation : PR-ASK
- **Architecture** Impinj R1000

Mechanics

- **Dimensions** 70.5 mm (L) X 41.5 mm (W) X 8.2 mm (H)
- **Digital Connector** 1.27mm 12*2 P Header
- **Antenna Connector** Two RP SMA (F) to support mono-static antenna

Environment

- **Operating Temperature** -10°C to 55°C
- **Temperature Threshold** 85°C (Typical)
- **Storage Temperature** -40°C to 85°C

Signal Description

Signal/Group Name	Pin Number	Type	Function Description
VCC	2, 4, 15, 16	Power	Power Supply Input
GND	1, 3, 18, 20	Ground	Ground
nRST	22	Input	Module Reset
UART Tx	6	Output	UART Serial Transmit Data
UART Rx	8	Input	UART Serial Receive Data
GPIO X	9, 10, 11, 12, 13, 14	I/O	General Purpose Input/ Output
JTAG	17, 19, 21, 23, 24	I/O	Valid for Manufacturing
RESERVER	5, 7	Open	Reserved for Further Use

Pin Definitions

24	=>TDO	23	=>RTCK
22	=>nRST	21	=>TCK
20	=>GND	19	=>TMS
18	=>GND	17	=>TDI
16	=>VCC	15	=>VCC
14	=>GPIO 3	13	=>GPIO 6
12	=>GPIO 2	11	=>GPIO 5
10	=>GPIO 1	9	=>GPIO 4
8	=>UART Rx	7	=>RESERVER
6	=>UART Tx	5	=>RESERVER
4	=>VCC	3	=>GND
2	=>VCC	1	=>GND



Ordering Information

- **ART-321E-00A1E** UHF RFID Two-Port Module

All product specifications are subject to change without notice

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