

WiRIO3 Single Channel UHF RFID Reader

(Model: TU-05-C01)



System Feature

- Wi-Fi/Ethernet Connected UHF RFID Tag Reader
 - Connection is from device connected to server.
 - Once the system powers up, it will auto create a persistence connection to the server without user intervention.
 - Server can be placed either at public cloud, private cloud, or LAN.
 - Device able to work behind firewall.
- Single Channel Long Range UHF Tag Reading
 - Based on Imping E310 chip with improved read rate and superior receive sensitivity for long rang reading.
 - Build in 1200 Tag Cache size for highspeed reading.
 - Able to match with various type of 50Ω Antenna to manage the tag detection range and angle.

- Users can also adjust the output power from 1dBm to 30dBm to manage the reading distance remotely through the server.
- With the correct antenna and low loss feeder cable, the reading can achieve up to the reading range of 15meter.
- Build in device core temperature sensor, providing remote temperature monitoring when the device is operating under high temperature environment.
- Over temperature error auto stop and notification.
- Build in Tag Selection Filter that only detect the tag that matches or NOT matches the selection criteria.
- Auto read tag data on any one of the tag's memories banks when the tag is detected.
- Write/Lock/Kill Tag with Tag Selection Filter.
- Internal power supply with DC/DC converter to reduce power wastage.
 - Input DC 12V to 24V.
 - Reverse polarity protection.
- Auto fetch real time clock from Internet Time Server.
 - Auto connect with the Internet Time Server to fetch the Real time value (EPOCH Time) when network is connected and internet link is available.
 - Manually set time by server if internet link is not available.
 - Auto readjust the time drift periodically.
 - Append the EPOCH time to all the message.
- Direct link with USB Connection
 - Easily link up with the device without connecting to the network.
 - Suitable for direct connection with PC/Host system located beside the device.
 - Just add an extra JSON layer of wrapper to wrap around the same JSON messaging standard used in the MQTT Broker Server communication.
 - Thus provide an easy path for future system expansion, from localized system architecture to network-based system architecture.
- Network link with MQTT Broker Server
 - Open Standard protocol and readily available either using paid version or free version of MQTT Broker Server.
 - Messaging format based on JSON format.
 - JSON messaging format is supported by various programming language and easily integrated to any existing system.
- Easy setup and configuration
 - System configures with Android Apps.

WiRIO3 Single Channel UHF RFID Reader (Model: TU-05-C01) Rev.1

- Provide detailed device properties, e.g., model number, version number, etc.
- Connectivity selection either using Wi-Fi, Ethernet or USB Link.
- Upload WPA Enterprise Server private/public key.
- Server IP/Domain Name Setup.
- DHCP/Fix IP.
- Internet Time Server Setting.
- Water and Dust resistance enclosure
 - Full aluminum body enclosure to provide good heat dissipation.
 - The enclosure also comes with proper sealing to protect against water/dusty environment.

Power and Enclosure Specification

<i>Input Voltage</i>	DC 12V to 24V
<i>Supported POE</i>	IEEE802.af/at, RJ45 Connector Power pin on 1&2, 3&6 and 4&5, 7&8.
<i>System Power Consumption</i>	10W Max
<i>Operation Humidity</i>	20%-90%RH
<i>Operation Temperature</i>	25°C to 45°C
<i>Storage Humidity</i>	10-95RH
<i>Storage Temperature</i>	0°C to 85°C
<i>Enclosure Dimension</i>	95mm (W) x 120mm (L) x 50mm (H)
<i>Enclosure Type</i>	Water slash proof Aluminum Extrusions, IP54 equivalent.

RFID Reader Specification

<i>Antenna Channel</i>	1 Channel, SMA Female Connector
<i>Operation Frequency</i>	919MHz~923MHz Auto Hopping (According to MCMC Class Assignment for RFID)
<i>Output Power</i>	30dBm Max, User Adjustable in 1dBm Step
<i>UHF Tag Protocol</i>	EPC global UHF Class 1 Gen 2 ISO 18000-6C

Wi-Fi Specification

<i>Frequency</i>	2.4Ghz~2.5Ghz
<i>Supported Wi-Fi Protocol</i>	802.11 b/g/n
<i>Antenna Type</i>	External Mini Cap antenna
<i>Security Protocol</i>	WPA/WPA2 personal, WPA/WPA2 Enterprise
<i>Encryption Protocol</i>	WEP/TKIP/AES

Ethernet Specification

<i>Speed</i>	RJ45, 10/100 Mbps
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USB Type-C Port Specification

<i>Supported Protocol</i>	USB Virtual Comm Port
<i>Baud</i>	921600 Baud, 8bit, no-parity, 1 stop bit

Backend Server Connectivity

<i>Server Connection</i>	MQTT Broker with TCP, TCP-TLS, Web-Socket Connection
<i>Server Port</i>	User Definable
<i>Encryption/Security</i>	Public CA, Self-Signed Certificate
<i>Messaging Format</i>	JSON
<i>Other</i>	NTP auto RTC update