

# AL-510 RFID UHF Reader Datasheet



## UHF RGID EPC C1G2 Reader Feature

- Compatible with ISO 18000-6C
- With Automatic Read Mode
- Supports up to 32 Port Antennas
- Certification Regions Include US, TW, CN, JP, VN
- Support for LoRa or NB-IoT Function Selection
- Support GPIO Function ( 4 Inputs & 4 Outputs)
- Support Ethernet, RS232/485, USB HID and Wi-Fi Interface
- Support RFID tag featuring an integrated IoT sensor.



## AL-510 Product Details

|                                  |   |
|----------------------------------|---|
| Air Interface Protocols          | EPC Global UHF Class 1 Gen2 / ISO 18000-6C  |
| Transmit Power                   | 0 to +29dBm (1dBm/per step)   |
| Frequency                        | 866-868MHz, 902-928MHz  |
| Max Receive Sensitivity          | -75 dBm   |
| Antenna Ports                    | 4 Port Monostatic Antenna Port (SMA JACK)   |
| Read Zones (Maximum)             | Support 32-port with Antenna Hubs   |
| Data Interface                   | Ethernet 10/100Base-T auto-MDIX Ethernet port<br>RS232 Serial Port (DB15 to DB9)<br>RS485 Industrial Connector<br>USB 2.0 Type-B HID port<br>Wi-Fi 802.11 b/g/n, 2.4GHz to 2.5GHz, 150 Mb/s   |
| GPIO                             | 4 Input 1.5V to 24V, 4 Output Dry Contact   |
| IoT Sensor                       | Support Customized UHF RFID standard air interface protocol.<br>(1) EM Tag: YTG-250 (2) FMSH Tag: FM13DT160<br>(3) AXZON RFM Tag: RFM3200/RFM3240/RFM3250/RFM3254/<br>RFM2100/RFM2110/RFM2120 |
| LED                              | Power (Red), Wi-Fi (Yellow),<br>Status (Red), Signal (Green)  |
| Environment IP Rating            | IP52  |
| Shock and Vibration              | Mil-Std-810G Certified  |
| Operating Temperature / Humidity | -20~to +70 / 5% to 95% non-condensing   |
| Dimension                        | 180mm X 136mm X 35mm  |
| Weight                           | 550g  |
| Compliance Certification         | NCC, FCC, SRRC, TELEC, MIC  |
| Developer Library                | AL510 SDK(.NET)   |
| Software Supported               | RFID Middleware, 510 Utility  |

# RFID UHF Reader Antenna Hub & Control Box

## Product Specification

| Antenna Hub                               |  |
|---|--|
| Power Supply                              | 12V Provided by the GPIO Adapter   |
| Power Consumption                         | ~60mA Max  |
| Max Input Power                           | 4 Port Monostatic Antenna Port (SMA JACK)  |
| Read Zones (Maximum)                      | Support 32-Port with Antenna Hubs  |
| Connectors                                | RF Input: SMA Female<br>8 RF Outputs: SMA Female<br>1 Digital I/O: RJ45                  |
| Insertion Loss                            | 1.3 dB, Typical  |
| Isolation                                 | 27 dB min  |
| Return Loss                               | -37 dB min   |
| Antenna Hub Switching Speed               | <300 $\mu$ s typical   |
| Environment IP Rating                     | IP52   |
| Shock and Vibration                       | Mil-Std-810G Certified   |
| Operating Temperature                     | -40°C to +80°C   |
| Humidity                                  | 5% to 95% non-condensing   |
| Dimension                                 | 132 x 86 x 28mm  |
| Weight                                    | 140g   |
| Cables RF Cable Maximum Length            | Typical 1/2 dB per Meter Signal Loss   |
| Digital Cable for Control, Maximum Length | 100m if Shielded 30m if Unshielded   |
| GPIO Control Box                          |  |
| Power Supply                              | 12V Provided by the AL510  |
| Power Consumption                         | ~5mA Max   |
| Connectors                                | 1 GPIO Input: DB-15 (For Connection to Reader)<br>4 Digital I/O: RJ45 (One for Each Hub) |
| Environment IP Rating                     | IP52   |
| Shock and Vibration                       | Mil-Std-810G Certified   |
| Operating Temperature                     | -40°C to +80°C   |
| Storage Temperature                       | 25 °C  |
| Humidity                                  | 5% to 95%, non-condensing  |
| Cables                                    | DB-15: 30cm Normally   |
| Dimension                                 | 118 x 70 x 30 mm   |
| Weight                                    | 140g   |

## AL-510 multiple antenna architectures

