RedWave

# ID RED.A.MRU80.FLY Family

## Industrial RFID UHF Mid Range Antenna Reader with CPU

RedWave RFID UHF Mid Range Antenna with integrated Reader, Industrial Series, Smart FlyBoard Ethernet with CPU & I/O

**3 Models:**

**ID RED.A.MRU80.FLY-E - Ethernet** (P.N. 9916-550-70)
**ID RED.A.MRU80.FLY-W - Wi-Fi** (P.N. 9916-554-70)
**ID RED.A.MRU80-FLY-M –GSM/GPRS** (P.N. 9916-556-70)

**Powered**

OBID® OBID i-scan® **by** FEIG ELECTRONIC

### Features

- Operating frequency: 865 – 868 MHz (EU Region)
- Standard: UHF - EPC Class 1 Gen 2 - ISO 18000-6C.
- Circularly polarized UHF Antenna (gain 8.5 dBc)
- Internal antenna multiplexer & plug for 1 additional external multiplexed antenna.
- CPU:16 Bit microcontroller 16Mips@32Mhz, 256K Flash, 16K Ram.
- Host Interfaces: Lan Ethernet or WiFi or Mobile GSM/GPRS.
- Reader modes: FEIG ISO Host Mode, Direct Lan Scan Mode, Lan/Internet Notification Mode (TCP).
- Web Cloud Device: Web Server for configuration via Internet browser.
- Standard Firmware feature: Tag on presence (3 output), Trigger wake-up based on 2 inputs. Anti-collision for small or single tag population
- Real Time Clock/Calendar with battery. Slot for Micro SD memory card.
- Industrial Class protection IP65. Radome Plastic (UV rating).
- Power consumption: max. 2 W.
- Mounting kit Aluminum included. Dimensions: 270 x 270 x 75 mm.
- Firmware upgradable (Flash-EEPROM)

### Benefits

- Antenna & Reader integrated & Low cost Mid Range UHF Controller.
- Read Range: up to 300 cm (depending on tag & environment).
- Multiplexed antenna for a wide range of applications (gate).
- Same protocol of all FEIG's controllers (HF & UHF)

### Applications

- Industrial and process automation for mid range applications.
- Mid Range UHF Gate easy and quick installation.
- Item level tagging. Asset Tracking.
- Race Sport Timing, Vehicle & people access control.
- Waste Management.


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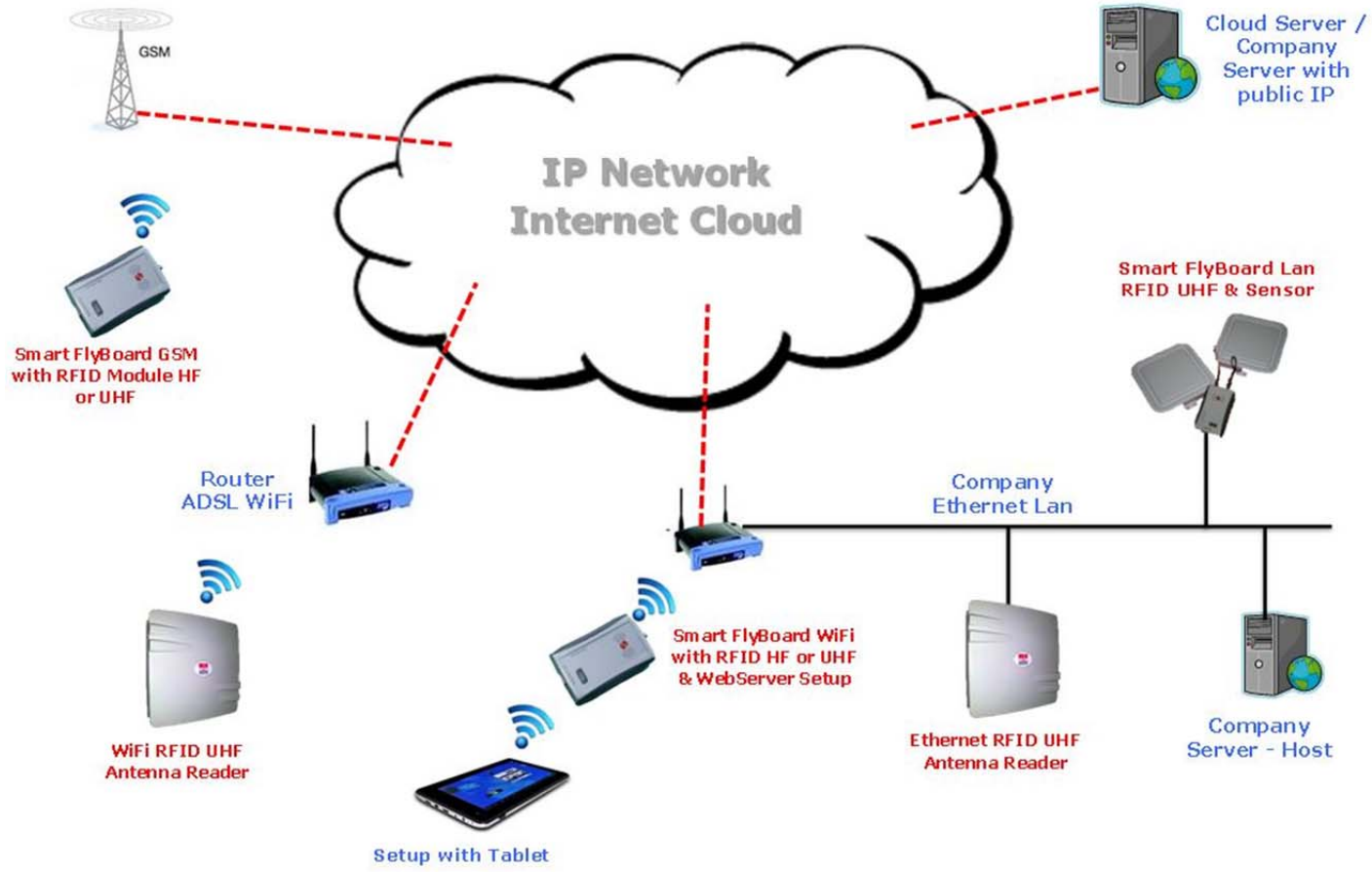
**www.rfidglobal.it**

## Scenarios of RFID Device based on the RFID RedWave Smart FlyBoard




All RFID Device based on the ***RFID RedWave Smart FlyBoard*** are available in 3 versions (Lan, WiFi, GSM/GPRS), specifically projected and produced for RFID OBID Controller HF & UHF of FEIG Electronic.

The RFID RedWave Smart FlyBoard is equipped with CPU processor & I/O, so that it helps to create flexible RFID architecture, operating in both frequencies (HF and UHF), building them like “LEGO bricks” according to the specific needs of the RFID project.

**External IP 65 connectors & I/O**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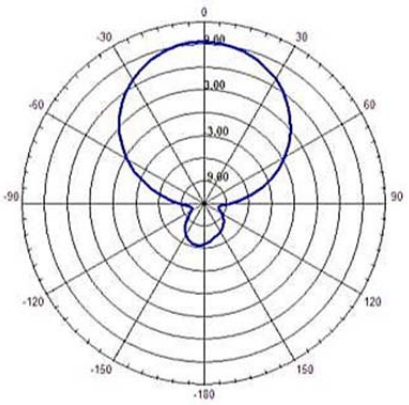
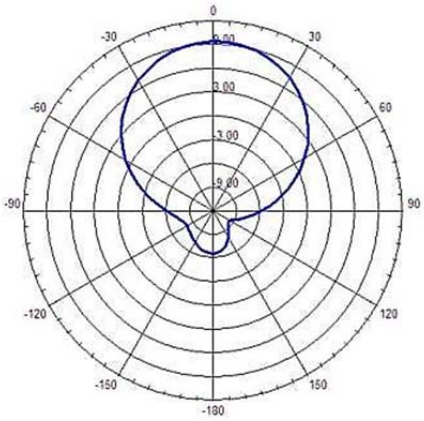
## Functionality

**RedWave Industrial RFID UHF Antenna Reader Smart - RED.A.MRU80.FLY**




Azimuth




Elevation

## Standard Firmware

Standard firmware provided for Smart Flyboard provides: TCPI/IP interface for host connection; Web interface for host configuration

The Smart Flyboard, with the standard firmware, extends the base functionality of the RFID reader connected adding the following functionalities:

- Further Inputs / Outputs
- New features (notification mode, dataset with time stamp, …)
- Internal Real Time Clock with battery to avoid loose of time information when the power is down.
- Web interface for configuration

TCPI/IP interface host application can send/receive:

- Configuration command (power setting, active antennas, UHF sessions, …)
- Standard transponder command (inventory command, read/write command, custom transponder command, …)
- Custom configuration command
- Custom notification transponders data

The OBID standard configuration and transponder commands are all the commands that internal connected reader supports. These commands support the standard FEIG Electronic protocol.
Custom and configuration commands are the extended commands provided by firmware and let you use the advanced settings for Smart Flyboard.

## Custom Firmware

Standard firmware guarantees the fundamental general purpose functionality needed in a classic RFID system anyway, if standard firmware doesn't suit specific customer requirements, a custom firmware can be developed to support any specific needs. Realizing a new firmware let the customer to redefine all the inputs and outputs channels, and provides following interface: SPI, I2C, UART, Digital Inputs/outputs, …
Customer specific firmware can also developed using the on board web server to provide a web based interface.
Smart Flyboard custom firmware can be realized by mean a free Open Source IDE called 'Open Picus Flyport'. The IDE let you easy develop custom application using C++ language based on Microchip C30 compiler.
High level libraries are provided to let you develop application also without knowing the hardware specific registers values of micro CPU.
High level libraries let you simply handle:

- TCP channels
- UART connection
- I2C, SPI
- Digital Input output
- Analog input output
- ….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RFID GLOBAL by SOFTWORK

## Technical Data

**RedWave Industrial RFID UHF Antenna Reader Smart - RED.A.MRU80.FLY**

| | ID RED.A.MRU80.FLY-E | ID RED.A.MRU80-FLY-W | ID RED.A.MRU80-FLY-M |
|---|---|---|---|
| **Host Communication** | Ethernet RJ45 (10/100). | Wireless Ethernet 802.11 b/g/n | Mobile (GSM/GPRS) |
| **Operating frequency & Standard** | 860 MHz to 928 MHz (software adjustable). UHF EPC Class 1 Gen 2 - ISO 18000-6C. | | |
| **CPU** | 16 Bit Microchip PIC24FJ microcontroller 16Mips@32Mhz, 256K Flash, 16K Ram. | | |
| **RF Output Power** | Up to 400 mWatt ERP (software adjustable). | | |
| **RFID Features** | Anti-collision. Dense Reader Mode. Read Performance: 25 tags/sec,<br>Read Range: up to 300 cm. (Read range and rate are subject to specific environmental conditions).<br>Integrated antenna multiplexer:<br>1 integrated UHF antenna + 1 additional external UHF antenna (not included) | | |
| **Integrated Antenna Features** | Polarization Right Hand Circularly Polarized (RHCP).<br>Gain 8.5 dBc. 3 dB beam width 65° x 65°<br>Front-to-back ratio: 17 dB. VSWR 1.1:1<br>Nominal impedance 50 ohm | | |
| **Other Features** | Real Time Clock/Calendar with battery. Slot for Micro SD memory card. | | |
| **Reader modes** | ISO Host Mode, direct Lan Scan Mode, Lan/Internet Notification Mode (TCP). | | |
| **Configuration modes** | Low-level commands, Client Application or via On Board Web Server (Internet Browser) | | |
| **Standard Firmware** | On board OBID FEIG management protocol.<br>FEIG Dataset with time stamp. Trigger wake-up (2 inputs), Tag on presence (3 Outputs).<br>Possibility of custom applications (on request) | | |
| **Software** | OBID FEIG Reader Protocol | | |
| **Power supply** | 12 VDC (+/- 5 %) external power supply | | |
| **Power consumption** | Typical: 400 mA - Max 2 Amp | | |
| **External Signal** | Audible Alarm Buzzer with red LED indicator, piezoelectric, 80dB at 10cm, 2.8kHz tone frequency, pulse tone, IP65 | | |
| **External I/O connector (industrial IP 65)** | 4 x digital input, 3 x digital output, 1 x output relay 24V @ 1A | | |
| **Internal I/O & BUS** | MiniUSB for Firmware upgrade & debug. 4 x digital input, 4 x digital output (only Ethernet version). 1 x buzzer, 1 x SPI interface, 1 x I2C Interface. | | |
| **Mechanical specifications** | Housing: Radome Plastic (UV rating). Mounting kit Aluminum (for pole).<br>Colour White<br>Dimensions (HxWxD): 270 x 270 x 75 mm.<br>Weight: about 1200 gr. | | |
| **Temperature range** | Operation: -20° C up to 65° C - Storage: -20° C up to 85° C | | |
| **Environmental specifications** | Protection class: Industrial IP 65<br>Wind speed 160 kmh. Wind surface 0.066 m2. | | |
| **Radio license** | Europe EN 302 208 - USA FCC 47 CFR Part 15 | | |
| **Compliance** | EMC EN 301 489 - Safety EN 60950 | | |

Authorized Dealer


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