

OBERON 300 Family

Industrial RFID UHF Mid Range Antenna Reader with CPU



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

3 Models of Oberon 300 family:

- Oberon 300-E** - Host interface Ethernet (p.n. 9916-550-74)
- Oberon 300-W** - Host interface Wi-Fi (p.n. 9916-554-74)
- Oberon 300-M** - Host interface GSM/GPRS (p.n. 9916-556-74)

Features

- Operating frequency: 860 to 960 MHz. Standard: UHF - EPC Class 1 Gen 2 - ISO 18000-6C. Circularly polarized UHF Antenna (gain 8.5 dBc)
- Internal antenna multiplexer & plug for **3 additional external multiplexed antenna**.
- RF Power: up to 1 Watt ERP. Receiver sensitivity -75dBm**
- CPU:16 Bit microcontroller 16Mips@32Mhz, 256K Flash, 16K Ram.
- Host Interfaces: Lan Ethernet or WiFi or Mobile GSM/GPRS.
- Reader modes: 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 (4 output), Trigger wake-up based on 2 inputs. Anti-collision for small or single tag population
- 4 x digital input, 3 x digital output, 1 x output relay 24VDC @ 1A
- Real Time Clock/Calendar with battery. Slot for Micro SD memory card.
- Industrial Class protection IP65. Radome Plastic (UV rating).
- Power consumption: max. 7 Watt.
- Mounting kit Aluminum included. Dimensions: 270 x 270 x 75 mm.
- Firmware upgradable (Flash-EEPROM)

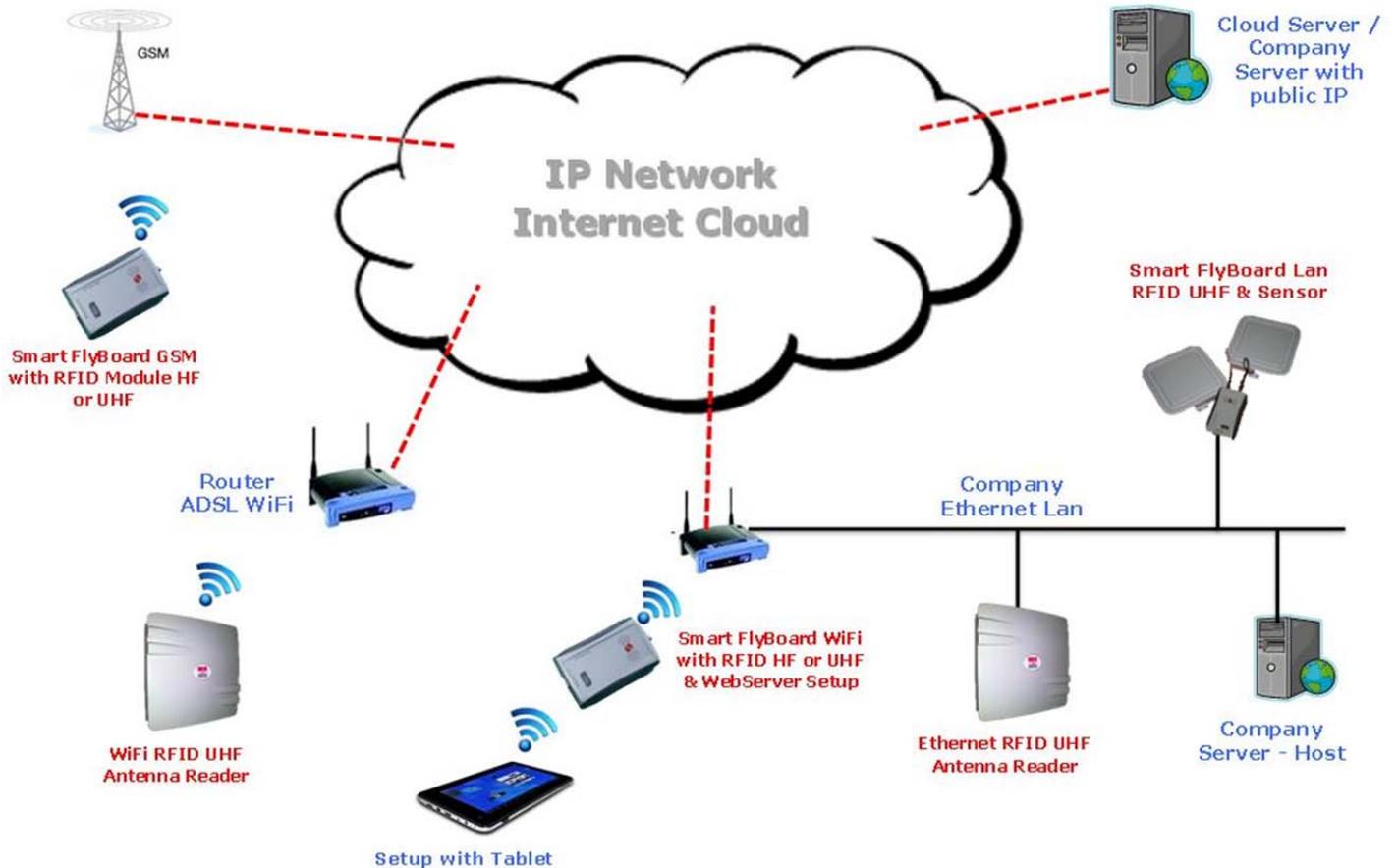
Benefits

- Antenna & Reader integrated & Low cost Mid Range UHF Controller.
- Read Range: up to 450 cm (depending on tag & environment).**
- Multiplexed antenna for a wide range of applications (gate).

Applications

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

Scenarios of RFID Device based on the RFID RedWave Smart FlyBoard

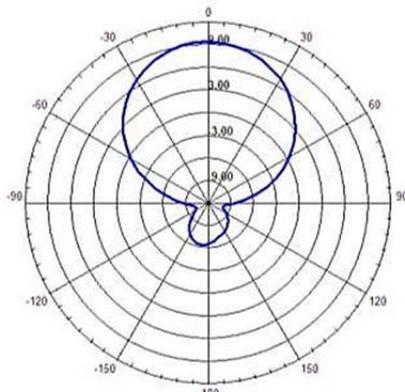


All RFID Device based on the **RFID RedWave Smart FlyBoard** are available in 3 versions (Lan, WiFi, GSM/GPRS), specifically projected and produced for RFID OBID Controller HF & UHF of FEIG Electronic.

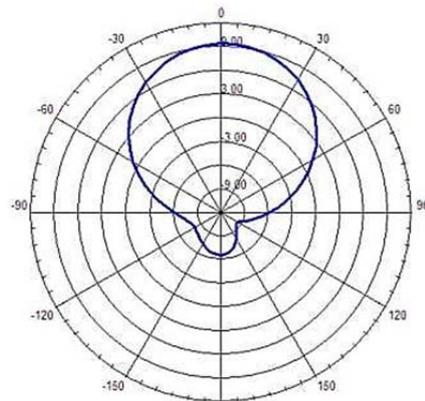
The RFID RedWave Smart FlyBoard is equipped with CPU processor & I/O, so that it helps to create flexible RFID architecture, operating in both frequencies (HF and UHF), building them like "LEGO bricks" according to the specific needs of the RFID project.



External IP 65 connectors & I/O



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 standard configuration and transponder commands are all the commands that internal connected reader supports.

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
-

Technical Data

OBERON 300 - Industrial RFID UHF Antenna Reader Smart RedWave

	OBERON 300-E	OBERON 300-W	OBERON 300-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	Reader: +27 dBm (500 mW) adjustable. Up to 1 Watt ERP. Receiver sensitivity -75 dBm		
RFID Features	Anti-collision. Dense Reader Mode. Read Performance: 200 tags/sec, Read Range: up to 450 cm. (Read range and rate are subject to specific environmental conditions). Integrated antenna multiplexer: 1 integrated UHF antenna + 3 additional external UHF antenna (not included)		
Integrated Antenna Features	Polarization Right Hand Circularly Polarized (RHCP). Gain 8.5 dBc. 3 dB beam width 65° x 65° Front-to-back ratio: 17 dB. VSWR 1.1:1 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 management protocol. Dataset with time stamp. Trigger wake-up (2 inputs), Tag on presence (4 Outputs). Possibility of custom applications (on request)		
Power supply	12 VDC (+/- 5 %) external power supply (not included). Power consumption: max. 7 Watt		
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). Colour White Dimensions (HxWxD): 270 x 270 x 75 mm. 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 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