

Z-AIR-1

HALF / FULL DUPLEX RADIOMODEM, 868-870 MHz WITH BUILT-IN ANTENNA

Highlights

- **Compliance with RED (Radio Equipment Directive) 2014/53 / EU**
- **IP65 External protection degree**
- **PC software configuration (Z-AIR-1 SETUP)**
- **Power supply: 9-32 Vdc**
- **Consumption: Rx 30mA; Tx 200mA**
- **Operating bandwidth: 868 – 870 MHz**
- **Modulation: 9K00F1D or 18K00F1D**
- **Transmission power: 25/150/500 mW**
- **Communication Interfaces: RS485**
- **Operating mode: Point-To-Point, Point-To-Multipoint, Broadcasting, Digital Repeater**

Z-AIR-1 is a radiomodem with built-in antenna suitable for indoor and outdoor applications and IP65 protection degree. The module works on UHF 868 - 870 MHz bandwidth, using the channel subsets at 25 or 50 kHz with output power up to 500 mW and Class 2 LBT / Agility receiver . This device uses «license free» frequency and is compliant with ERC70-3 Recommendation and Radio Equipment Directive (RED).

Z-AIR-1 can be used in 43 countries with ERP (Effective Radiated Power) limitation and duty cycle or free channels or licensed channels. Radiomodem – antenna integration improves considerably the system efficiency avoiding the loss of connection on high frequencies.

Z-AIR-1 can interface directly with any system equipped with RS485 serial port. Transparent to the communication protocol, the radiomodem can work in Digital Repeater Mode, Broadcasting, Point-To-Point, Point-to-Multipoint reaching peripheral units and remote nodes several kilometers away.



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Z-AIR-1



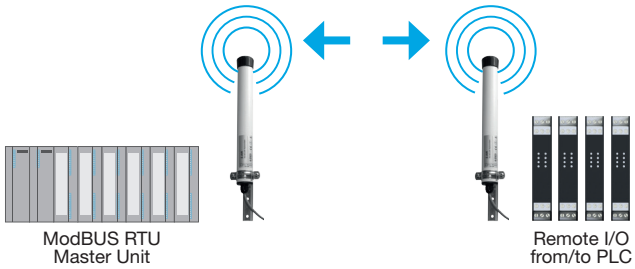
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TECHNICAL DATA

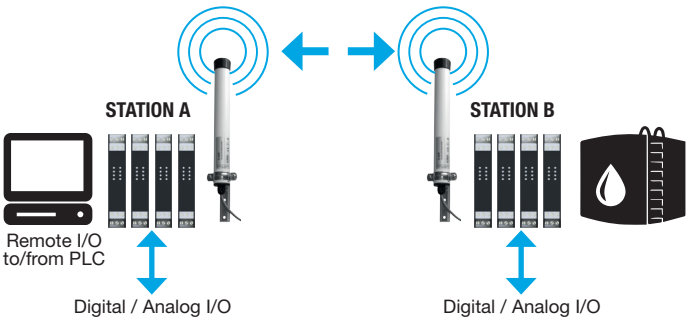
GENERAL DATA	
Power Supply	9 – 32 Vdc
External Power Transducers	No
Rx/Tx power consumption @12Vdc	Rx ~30 mA; Tx ~200 mA
Max power consumption	5 W
Sleep (Power Off) current consumption	≤ 150 µA @ 12Vdc
LED Status Indicators	ONAIR/On
Bandwidth	868 – 870 MHz
Nr channels	1@CH50 kHz; 3@CH25 kHZ
Canalization	25 kHz o 50 kHz
Modulation	9K00F1D o 18K00F1D
Data rate (radio)	9,6 kbps (@25 kHz) 19,2 kbps (@50 kHz)
Memory buffer dimension	1024 bytes
Frequency stability	± 1 ppm/°C
Encryption	AES 128 bit
Antenna	λ/2 built-in dipole
Antenna connector	Built-in
Serial port	9 PIN connector for VCC/GND/RTX/RS 485/On air/GND and PWR ON
Cable length	5 m (standard version, available also with 10 m cable or more)
Dimension	Ø 40 x L 420 mm
Operating temperature	-30..+70 °C
Weight	750 g
Case	Fiberglass
Protection degree	IP65 (fit for outdoor installation)
Mouting	Stainless Steel Mounting Bracket
Built-in I/O	No
Operating mode	Point-To-Point, Point-To-Multipoint, Broadcasting, Digital Repeater, Routing tables support (addressing)
Built-in I/O	No
COMMUNICATION	
Interface	RS485
Protocol	Protocol transparent (max buffer 1024 bytes)
Data rate	From 1,2 to 57,6 kbps
TRANSMITTER	
Output Power	25/150/500 mW depending on operating sub-band
Frequency Deviation	±1,8 kHz @12,5 kHz ±3 kHz @25 kHz
Power Stability	±1,5 dB
RECEIVER	
Type	CLASSE 2 - LBT and AGILITY
Input sensivity	≤ -105 ± 3 dBm @50kHz; ≤ -107 ± 3 dBm @25kHz
Communication Mode / Data Format	Half / Full Duplex
Range coverage	Up to 7 km in open field with directive antenna in dominant position
STANDARD	
Approvals	CE
Countries where applicable	AT, BE, CY, CZ, DK, EE, FI, FR, DE, GR, HU, HR, IE, IT, LV, LT, LU, MT, NL, PL, PT, SK, SI, ES, SE, GB, IS, LI, NO, CH, BG, RO, TR
Norms	EN 50401, EN 60950-1, EN 301489- 1/3, EN 300220-1/2 v 2.3.1, ERC 70- 03, RED (Radio Equipment Directive) 2014/53/UE, 1999/5/CE Directive, 2012/19/EU Directive

APPLICATION EXAMPLES

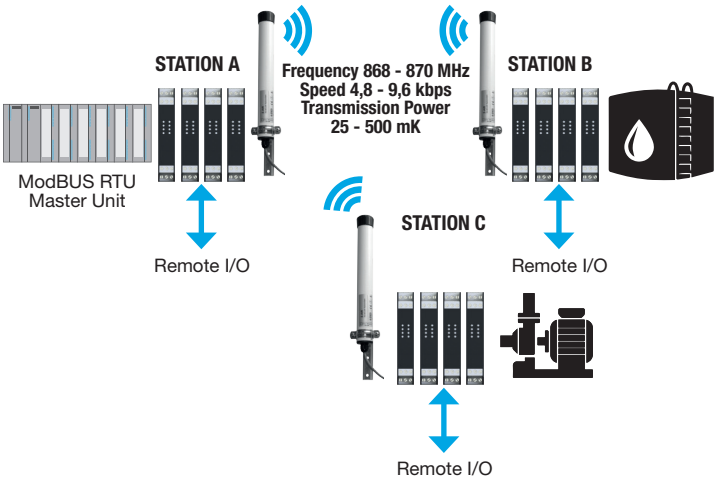
Data transmission from generic Master Unit



Data transmission Point-To-Point (i.e. I/O Repetition)



Data transmission Point-To-Multipoint



ORDER CODES

Code	Description
Z-AIR-1	Half / Full Duplex radiomodem, 868-870 MHz with built-in antenna, IP65, 5 m cable length, RED compliance
Z-AIR-1-10M	Half / Full Duplex radiomodem, 868-870 MHz with built-in antenna, IP65, 10 m cable length, RED compliance
S117P1	RS232/USB, TTL/USB, RS485/USB asynchronous and optoisolated serial converter
S107USB	RS485/USB optoisolated serial converter, portable version
Z-AIR-1-SETUP	Z-AIR-1 setting software

17C1115 - Z-AIR1-1709EN – September 2017

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