TEKON
WIRELESS SENSORS TECHNOLOGY

WIRELESS REPEATER DUOS

EASY
TO CONFIGURE

up to
12
repeaters

IoT ready

Wireless Repeater DUOS is an easy-to-use solution to extend transmissions and improve the signal strength covering long distances.

This device can be easily configured and combined with up to 12 repeaters connected per each network.

Due to its self-optimizing Mesh network features, this equipment has the capacity to auto discover the best wireless link, create alternative paths in a mesh network and make sure that there is no chance of an individual device failure bringing the whole network down.

KEY FEATURES

EASY TO CONFIGURE
SIMPLE, INTUITIVE AND FREE CONFIGURATION SOFTWARE

UP TO 4KM DISTANCE (LoS)
RANGE OF 868MHZ AND 915MHZ

AUTO DISCOVERY OF BEST WIRELESS LINK
AUTOMATIC FORWARDING OF COMMUNICATION

MESH NETWORK
IMPROVEMENT OF THE MESH NETWORK RELIABILITY

IMPROVEMENT OF THE NETWORK COVERAGE
IMPROVEMENT OF THE SIGNAL STRENGTH

Product References		
	Black	White
868MHz	PA160410310	PA160410320
915MHz	PA160410330	PA160410340

DS_DUOS_REPEAT_E01D

TECHNICAL SPECIFICATIONS

RADIO SPECIFICATIONS	868MHZ	915MHZ
Range[1]	Up to 4 Km LoS	
Minimum communication distance	3 m @ 27 dBm (500mW)	
Radio transmit power[2]	0 to 27 dBm	8 to 27 dBm
Radio receiver sensitivity[2]	-97 to -110 dBm	
Frequency band[2]	868 to 869 MHz	902 to 928 MHz [3]
Radio channels	16	50 [4]
Radio transmission rate[2]	1,2 to 76,8 kbit/s	
Modulation	GFSK	
Encryption method	AES 128 (Advanced Encryption Standard)	

WIRELESS NETWORK	
Maximum devices	55
Maximum hops	13

ANTENNA	868MHZ	915MHZ
	¼ λ dipole with SMA connector, 50 Ohms and +3 dBi gain	

SUPPLY VOLTAGE
External power supply with 12 VDC ± 5%
Maximum current draw of 250 mA[2]

INTERFACE
1 blue LED (LED 2) for general operation status
1 red LED (LED 3) signaling radio data transmission
1 green LED (LED 4) signaling radio data reception
1 M8 female socket with 5 poles for power supply and device configuration trough host computer

OPERATING ENVIRONMENT
−10 ºC to 60 ºC
95% maximum relative humidity (non-condensing)

CASING	
Dimensions	142 x 73 x 34,5 mm
Weight	100 g
Material	ABS UL94HB/Silicone
Protection index	IP40

FACTORY DEFAULT SETTINGS	868MHZ	915MHZ
Frequency	869,525 MHz	915,000 MHz
Radio transmit power	27 dBm	
Radio transmission rate	76,8 kbit/s	
Wireless channel	13	26

Wireless network ID	16777217
Wireless device ID	201
Configuration time window at startup	10 seconds
Serial communication	RS-485
Baud rate (config mode)	19200
Parity	none

CERTIFICATIONS AND APPROVALS

EN 61326 -1 -Class B - Industrial Requirements

EN 300 220 -2 V3.1.1

EN 301 489-1 V2.2.0

EN 301 489-3 V2.1.1

[1] Range depends on the environment and line of sight. Always verify your wireless network's range by performing a Site Survey.

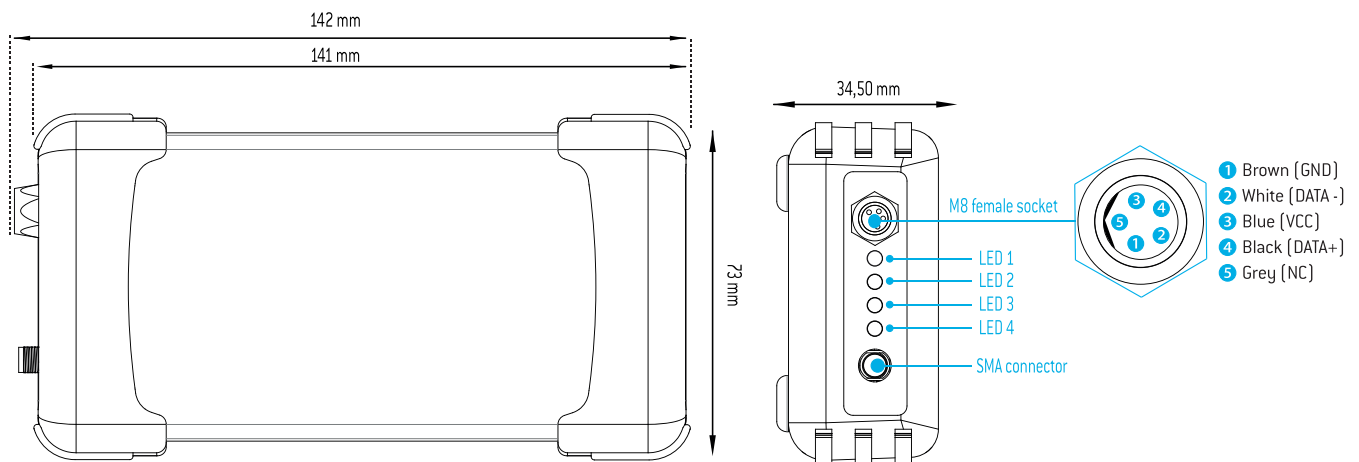[2] Dependent on radio channel selection.

[3] In some countries, the frequency band admitted is not so extended as the default range.

[4] The radio frequencies admitted in Australia are available from channel 26 to channel 50.

TECHNICAL DRAWINGS

DIMENSIONAL DRAWINGS, INTERFACE DESIGN

POWER SUPPLY AND COMMUNICATIONS CONNECTOR

142 mm

141 mm

73 mm

34,50 mm

M8 female socket

LED 1
LED 2
LED 3
LED 4

SMA connector

1 Brown (GND)
2 White (DATA -)
3 Blue (VCC)
4 Black (DATA+)
5 Grey (NC)

ACCESSORIES

DUOS EXTERNAL POWER CABLE
REF.: PA160410008
Cable for external power of any Wireless System DUOS device.

DUOS POWER SUPPLY 230V AC/ 12V DC
REF.: PA160410006
Power supply for any Wireless System DUOS device.

DUOS RS485-USB CONVERTER CABLE
REF.: PA160410004
USB power and communication cable to be used with the Wireless Gateway and Repeater DUOS.

RELATED PRODUCTS

DUOS TEMP WIRELESS TRANSMITTER
REF.: PA160410410 / PA160411810

- Dual temperature probe: internal and external;
- 128-bit AES data encryption;
- Multi-hop mesh network with self-forming, self-healing and self-optimizing features;
- Battery voltage and wireless link quality (RSSI) monitoring;
- Low power and long battery life;

* external probe not included

DUOS HYGROTEMP WIRELESS TRANSMITTER
REF.: PA164520110 / PA164520510

- Dual probe: external temperature and humidity + internal temperature;
- 128-bit AES data encryption;
- Multi-hop mesh network with self-forming, self-healing and self-optimizing features;
- Battery voltage and wireless link quality (RSSI) monitoring;
- Low power and long battery life;

* external probe not included

DUOS DI+TEMP WIRELESS TRANSMITTER
REF.: PA160411210 / PA160412510

- Dual temperature probe: internal and external;
- External digital input for event detection;
- 128-bit AES data encryption;
- Multi-hop mesh network with self-forming, self-healing and self-optimizing features;
- Battery voltage and wireless link quality (RSSI) monitoring;
- Low power and long battery life;

* external probe not included

DUOS CO2 WIRELESS TRANSMITTER
REF.: PA160411110 / PA160412410

- Dual probe: external CO_2 and internal temperature;
- Up to 4Km communication distance (LoS) with 128-bit AES encryption;
- Multi-hop mesh network with self-forming, self-healing and self-optimizing features;
- Battery voltage and wireless link quality (RSSI) monitoring;
- Low power and long battery life;
- Extreme operating temperature range -40ºC to 60ºC and IP67 protection;

* external probe not included

DUOS WIRELESS GATEWAY
REF.: PA160410210 / PA160411910 / PA160410230

- Up to 55 DUOS transmitters by gateway;
- Multiple networks simultaneously with extra gateways;
- 128-bit AES data encryption;
- Multi-hop mesh network with self-forming, self-healing and self-optimizing features;

DUOS WIRELESS GATEWAY IOT
REF.: PA160410240 / PA160411920

- Ethernet TCP/IP communication;
- Integration with Tekon IoT Platform;
- Scalable network up to 55 transmitters;
- Multiple networks simultaneously;
- Automatic Mesh Network Management;
- Up to 4Km communication distance (LoS);
- Multiple networks simultaneously;
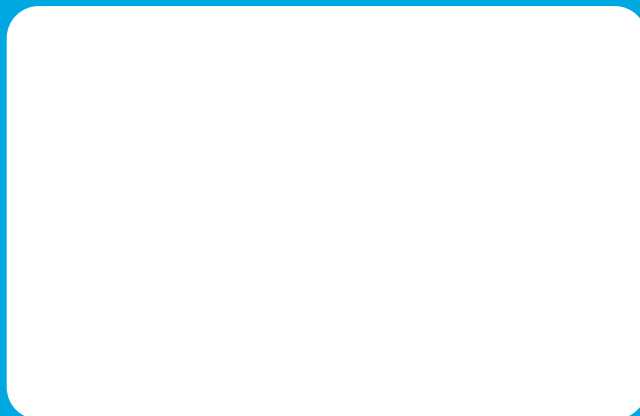- AES KEY Data encryption 128bits;

REVISION HISTORY	
VERSION	
E01B	Addition of 915MHz frequency information in "Radio Specifications", "Antenna", "Operating Environment" and "Factory Default Settings" tables; Revision of "Peak current" topic in "Power Supply" table; Reform of "Voltage Threshold" table; Identification of led number in "Interface" table; Reform of "Certifications and approvals" table; Led layout in "Technical Drawings"; Inclusion of "DUOS Wireless Gateway IoT" in "Related Products" table;
E01C	Addiction of information about the frequency range used in Australia. Changing the default configuration of radio channel on 915 MHz models.
E01D	Removal of 2,4 GHz frequency

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