

DUOS WIRELESS SYSTEM INSTALLATION GUIDE

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DUOS WIRELESS SYSTEM INSTALLATION GUIDE

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TEKON CONFIGURATOR SOFTWARE is only compatible with the Microsoft Windows Operating System.

01	Connect the antenna to the <i>Gateway</i> .



02 Connect the *DUOS RS485-USB* cable to the computer and then to the Gateway.



03 Check the device connection through the LED signage. If the red and blue LEDs are active, both the cable and *Gateway* are working correctly.





O TekOn Configurator ++ - - File Tools Help	
File Tools Help	
Devices Serial Port Configuration	
Transmitters Port Name COM3	
THU1102 Baudrate 19200 -	
THP1217 Not Connected	
THT1216 Refresh Serial Ports	
Gateway Repeater Transmitter	
Medbus Configuration 3	
M THM501	
A DIN Rail Modbus Address 1 🖨	
TDU1218 Modbus Baudrate 19200 •	
Modbus Parity None Unknown Model	
Wireless	
WGW1104 Wireless Network ID:	
1 DUOS Wireless Channel	

Select the Serial Port of the DUOS Wireless Gateway Click on the *Refresh Serial Ports* button.

٥	TekOn Configurator	* ×
File Tools Help		
Devices	Serial Port Configuration	
 Transmitters 	Port Name COM3 -	
4 🙆 Head		5
THU1102	Baudrate 19200 *	
THP1217	Parity None + Refresh Serial Ports	Not Connected
1H11216		
THP101	Gateway Repeater Transmitter	
C THM501	Modbus Configuration	
C THM501		
A S DIN Rail	Modbus Address 1	
TDU1218	Modbus Baudrate 19200 •	
TDU1219	Madhan Dariba	Unknown Model
🔺 🏶 Wireless	Modbus Panty None •	Unknown Moder
104 WGW1104	Wireless Network ID:	
10 WGW410	Wireless Channel	
DUOS 🔷		
PLUS	Read Write	
	Click on connection button to start	

¹ Tekon Configurator software is free of charge and available at <u>www.tekonelectronics.com</u>



O1 CONNECT AND CONFIGURE THE DUOS WIRELESS GATEWAY

E.	TekOn Configurator	+ ×
ile Tools Help	-	
		-
Devices	Serial Port Configuration	
Transmitters	Port Name COM3 -	
Head (2) THU1102	Baudrate COM3	9
THP1217	Parity COM7 Patent Social Parts	Not Connected
() THT1216	COM1 COM1	
THP101	Gateway Repearer ransmitter	
3 THM501	Modbus Configuration	
C THM601	Madhus Address	
TDU1218	Modbus Raudress	
TDU1219	Modbus Parity None -	Unknown Model
 Wireless 	Hone -	
WGW1104	Wireless Network ID:	
🥏 DUOS	Wireless Channel	
PLUS	Read Write	
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07

Remove the *DUOS RS485-USB* cable from the *Gateway* side and reinsert it.



NOTE:

After reinserting the cable, you have 10 seconds to enter in configuration mode by clicking on the Connect (9) button, while the blue LED flashes slowly.

In this mode, you can manage the device parameters: *Modbus Address*, *Modbus baud rate*, *Modbus Parity*, *Wireless Network ID* and *Wireless Channel*.

² You can check the device port name in the Device Manager menu in the Windows operating system.







NOTE:

When 10 seconds have been exceeded, the blue LED is steady and it is no longer possible to enter configuration mode. In this case, the cable must be removed and reiserted - step 2.



01 CONNECT AND CONFIGURE THE DUOS WIRELESS GATEWAY

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Take note of the device configuration data available, namely: *Modbus Address*, *Modbus Baudrate*, *Modbus Parity*, *Wireless Network ID* and *Wireless Channel*.

đ	TekOn Configurator	+ _ =
Chevices Pevices Transmitters Transmitters Transmitters Thur102 Thur1	Serial Port Configuration Port Name Eaudrate 19200 * Parity None * Refresh Serial Ports Gateway Repeater Modbus Configuration Modbus Address 1	+ _ D
WGW104 WGW104 WGW410 DUOS	Modbus Baudrate 19200 • Modbus Parity None • Wireless Network ID: 16777217 Wireless Channel 13 • Read Write Read device successfully	Gateway 868MHz FW v1.3.0 HW v1.0



10

NOTE:

The wireless network connection between devices is ensured by the *Wireless Network ID* and *Wireless Channel field parameters.*

Click on the *Disconnect* (🧐) button.

The Modbus interface and the wireless network are active if the blue LED is on and steady and the red LED is flashing once per second.

D	TekOn Configurator	+
Pevices Transmitters Transmitters Thead THU1102 THU1102 TH1216 TH1216 TH1201 TH1201 THM501 THM501 THM501 THM501 THM501 THM501	Serial Port Configuration Port Name Port Name Baudrate 19200 * Parity None * Refresh Serial Ports Gateway Repeater Modbus Configuration Modbus Address 1	+ _ Configuration Mode
Wireless Wireless WGW1104 WGW410 DUOS PLUS	Modbus Baudrate 19200 • Modbus Parity None • Wireless Network ID: 16777217 Wireless Channel 13 • Read Write	Gateway 868MHz FW v1.3.0 HW v1.0



01 CONNECT AND CONFIGURE THE DUOS WIRELESS GATEWAY

Modbus Communication

Open the *Modbus* tab of the *Gateway* and set the previously saved configurations.



Ensure that the Port name, Baudrate, Parity and the Modbus Address fields are the same obtained in configuration mode.





01 CONNECT AND CONFIGURE THE DUOS WIRELESS GATEWAY



The messages *Connected to Modbus* and *Reading successfully* will appear if the *Serial Port* configuration parameters are correct and the Modbus connection established.

If the blue LED is on and steady and red LED flashes once per second, the *Gateway* is fully operational on the Modbus and wireless interfaces.



02 CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

The following steps are valid for any *Transmitter* from the *DUOS* system.

The device (previously mentioned as "unknown model"), as well as the firmware and hardware versions, will be detected when the USB is set. The Tekon Configurator software graphical interface is then adjusted to the detected device.

01 Connect probe to the *DUOS Wireless Transmitter*.

The *DUOS Temp Wireless Transmitter* is the device chosen for this guide.





NOTE:

Although the transmitters are physically equal, probe compatibility is different. This means that the DUOS TEMP Wireless Transmitter is only compatible with temperature probes (models: Plug and Play probe and Temperature Probe), whereas the DUOS Hygrotemp Wireless Transmitter is only compatible with temperature and humidity probes (models: TK07-PFT5 and TK07-MFT9-HC01).

02

Open a new window of the *Tekon Configurator Software* and select the menu *DUOS* >> *Transmitter*.

Ele Teele Liele	TekOn Configurator	
nie tous nep		
Devices Transmitters Head THU1102 THU1217 THT1216 THT1216 THU101	Serial Port Configuration Port Name <u>COM12</u> - Baudrate <u>19200</u> - Parity <u>None</u> + <u>Refresh Serial Ports</u> Gateway Repeater <u>Transmitter</u> ²	Not Connected
THM501 THM501 THM501 THM601 DIN Rail TDU1218 TDU1218 Wireless 1 WGW104 WGW104 WGW410 DUOS PLUS	Measure 1 Measure 2 Measure 3 Battery Voltage Comm. Period Transmitter ID Wireless Network ID: Wireless Channel	Unknown Model
	Click on connection button to start	



step

CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

03

Connect the *DUOS TRANSMITTER SARC* cable to the computer and then to the transmitter.

After cable connection, all LEDs stay active during 10 seconds.





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Click on the *Refresh Serial Ports* button.

Devices	Serial Port Configuration	
 Transmitters A (B) Head 	Port Name COM3 -	
THU1102	Baudrate 19200 -	7
THP1217 THT1216	Parity None + Refresh Serial Ports	Not Connected
THP101 THT201	Gateway Repeater Transmitter	\mathbf{i}
THM501	Measure 1	
THM601	Measure 2	
A DIN Kall	Measure 3	
TDU1219	Battery Voltage V	Unknown Model
🖌 💎 Wireless	Comm. Period 5	
👹 WGW1104	Transmitter ID	
WGW410	Wireless Network ID:	
DUOS	Wireless Channel	





step	
02	CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

Remove the cable from the *Transmitter* side and reinsert it. This will access the device's configuration input window during 10 seconds.



³ You can check the device port name in the Device Manager menu in the Windows operating system.

operations.



02 CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

b	TekOn Configurator	+ _ = 🔁 🗙
File Tools Help	Contraction and Contraction	
 Transmitters Head THU1102 THP1217 THP1217 THP1216 THP101 THP011 THM501 THM501 THM501 DIN Rail TDU1218 TDU1218 TDU1219 Wireless WGW1104 WGW104 WGW104 DUOS PLUS 	Port Name COMIZ • Baudrate 19200 • Parity None • Refresh Serial Ports Gateway Repeater Transmitter Internal Temperature 18.4 °C External Temperature 18.1 °C Battery Voltage 5.1 V Comm. Period 10 s Transmitter ID 55 • Wireless Network ID: 16777217 Wireless Channel 13 •	Configuration Mode Configuration Mode UGOS TEMP. Sensor: TK9808 EW v2.13 HW v3.1
	Read device successfully	

Click on Connect () button to enter configuration mode. These configurations are read automatically.

In configuration mode, the *Transmitter* activates 4 LEDS: 2 blue LEDs flash and the red and green LEDs remain active and steady.





NOTE:

After reinserting the cable, you have 10 seconds to enter configuration mode by clicking on the Connect () button, while the blue LEDs flash slowly.

When the 10 seconds have been exceeded, the blue LEDs are steady and it is no longer possible to enter configuration mode.

In that case, the cable must be removed from the Transmitter and reiserted - step 3.



02 CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

Configure the *Wireless Network ID* and the *Wireless Channel* previously obtained from the *Gateway*. The wireless connection between both devices is ensured by the *Wireless Network ID* and the *Wireless Channel* parameters.

Ensure that the *Transmitter ID* is unique in the network. Each device must have a different *Transmitter ID*. Change it (if necessary) and take note to view the data later.

Click on the Write button to update the settings for the Transmitter.

ð	TekOn Configurator	*
File Tools Help		
Devices	Serial Port Configuration Port Name COM12 • Baudrate 19200 • Parity None • Refresh Serial Ports Gateway Repeater Transmitter Internal Temperature 18.4 °C External Temperature 18.1 °C Battery Voltage 5.1 V Comm. Period 10 s Transmitter ID 55 • Wireless Network ID: 16777217 Wireless Channel 13 • Read Write	Configuration Mode Configuration Mode USOS TEMP. Sensor: TK9808 FW v2.1.1 HW v3.1
	Writing Success	



02 CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

09

Click on the *Configuration Mode* (9) button to exit setup and start the equipment in normal operation mode.

)	TekOn (Configurator	+
lle Tools Help			
levices	Serial Port Configuration		
 Transmitters A (A) Head 	Port Name COM12 -		
THU1102	Baudrate 19200 -		2
THP1217 THT1216	Parity None +	Refresh Serial Ports	Not Connected
THP101 THT201	Gateway Repeater Trans	mitter	
3 THM501	Internal Temperature 💹	18.4 °C	
THM601	External Temperature 🕍	18.1 °C	
TDU1218	Battery Voltage	5.1 V	-
TDU1219	Comm. Period	10 s	DUOS TEMP.
 Wireless 	Transmitter ID	55 🗘	FW v2.1.1
👹 WGW1104	Wireless Network ID:	16777217	HW v3.1
WGW410 DUOS	Wireless Channel	13	
PLUS		Read	
	Click on connection button	to start	

After this procedure:

• The Transmitter awaits connection to the Gateway, when only the red LED flashes;



• The *Transmitter* is connected via wireless and its data is available in the *Gateway*, when the red and green LEDs flash.





NOTE:

If the green LED does not flash, communication as not been established. Make sure that the devices are at a distance of at least 3 meters, or remove the antenna from the gateway (in case both devices are near each other). The *Transmitter LEDs* remain active during 1 minute. After this period, all LEDs shut down in order to optimise battery life.

To reset the transmitter, the batteries should be removed, during - at least - 50 seconds (in sleep mode) or instead, as the transmitter has a magnetic switch, a magnet can be used to reset it by passing the magnet close to the transmitter's front side in the blue LED's area.



03 CHECK WIRELESS COMMUNICATION BETWEEN THE DUOS TRANSMITTER AND THE GATEWAY

01

Place the two windows of Tekon Configurator software devices' side by side, in order to analyse communication between both devices.



02

Select the configured *Transmitter ID* in the *Gateway* window. After this, it is possible to access the address window of the *Transmitter* in analysis.

The communication between devices is successfull when the *Communication Period* field is in compliance with its duration cycle. Therefore, as soon as the cycle duration has finished, it will turn back to 0.

Communication does not occur if the *Communication Period* field presents a higher value than the *Elapsed Time* field.

In the following example, it was established that the temperature monitoring cycle (or *Elapsed Time*) is 2 seconds. Therefore, the *Communication Period* field will turn back to 0 as soon as it reaches 2 seconds and the analysed parameters (in this case, the temperature) will be updated in accordance with ambient conditions.

You can define the communication period of the *Transmitter* (or the *Elapsed Time*) in the write field by clicking on the *register* () button.

) () () () () () () () () () (TekOn Configurator	+
ile Tools Help	-	
Devices	Serial Port Configuration	
4 Transmitters	Port Name COM13 - Refresh Time 0.5 - s	
4 🙆 Head	Reading Address 4	5
THU1102		
THT1216	Parity None Refresh Serial Ports	connected to Modous
() THP101	Cataway Descenter Transmitter	
THT201	Medburg Configuration	
THM501	modous Conliguration	1991
DIN Rail	Transmitter ID 55 🚔	
TDU1218	Address Value Value	DUOS TEMP
TDU1219	RSSI 1136 96 -48 dBm	Sensor: TK9808
🔺 💎 Wireless	Comm. Period 1137 10 10 s	4
WGW1104	Elapsed Time 1138 4 4 s	-
DUOS	PWR Volt. 1139 51 5.1 V	
I PLUS	Internal Temp. 1143 14.25 14.25 °C	
•	External Temp. 1145 14.25 ℃	V
	Reading successfully	



04 CONNECT AND CONFIGURE THE DUOS WIRELESS REPEATER





02

Connect the *DUOS RS485-USB* cable to the computer and then to *Repeater*.



Check the device connection through the LEDs signage. LED switched off 🗕 🗕 🗕 🕳 LED flashes slowly ——— LED flashes quickly \mathbb{I} LED switched on and steady (red/green LED) POWER ON 1 Т Т 1 I I T T L Т L I ۱ When connected to the Gateway



)pen the <i>Tekon Co</i>	onfigurator Software and select the	menu DUOS >> Repeater.
C Ris Tools Hain	TekOn Configurator	
Devices Transmitters Transmitters THU1102 THU1102 THU1102 THU110 THU110 THU110 THU110 THU110 THU110 THU110 THU1219 Wireless WGW1104 WGW410 WGW410 WGW5	Serial Port Configuration Port Name COMI • Baudrate 19200 • Parity None • Refresh Serial Ports Gateway Repeater Transmitter Repeater ID • Wireless Network ID: Wireless Channel • Read Write	Rot Connected
	Click on connection button to start	

Click on *Refresh Serial Ports* button.

File Tools Help Devices Transmitters Transmitters Transmitters ThU1102 ThU1102 ThU1102 ThU1216 ThU1216 ThU102 ThU102 ThU	Not Connected
HHZ01 THM501 THM501 THM601 DIN Rail Uireless Network ID: TDU1218 TDU1219 Wireless Wireless Wireless Wireless Wireless Rea	In Serial Ports



CONNECT AND CONFIGURE THE DUOS WIRELESS REPEATER



06

Remove the cable from *Repeater* and reinsert it. After reinserting the cable you have 10 seconds to enter configuration mode by clicking on the *Connect* []] button, while the blue LED flashes slowly.





NOTE:

When the 10 seconds have been exceeded, the blue LED remains steady and it is no longer possible to enter *Configuration mode*. In that case, the cable must be removed from Repeater and reiserted.

⁴ You can check the device port name in the Device Manager menu in the Windows operating system.







CONNECT AND CONFIGURE THE DUOS WIRELESS REPEATER

08

Make sure that *Wireless Network ID* and *Wireless Channel* in the *Repeater* window have the same values as the ones that were obtained in the *Gateway* configuration window.

0	TekOn Configurator	+ ×
File Tools Help		
Devices Transmitters Transmitters THU1102 THU1102 THU1102 THT217 THT216 THT201 THT501 THT501 THM501 NIN Rail TUU1218 TUU1218 TUU1219 Wireless WWriteless WWW104 WWW104 WWW104 WWW104 WWW104 WWW104 WWWU104 WWWWU104 WWWU104 WWWWU104 WWWU104 WWWWU104 WWWU104 WWWWU104 WWWU104 WWWWU104 WWWU104 WWWWU104 WWWU104 WWWWU104 WWWU104 WWWU	Serial Port Configuration Port Name COM13 Baudrate 19200 Parity None Refresh Serial Ports	Configuration Mode
	Gateway Repeater Transmitter Repeater ID 201 Wireless Network ID: 16777217 Wireless Channel 13 Read Write	Repeater 868MHz FW v1.3.0 HW v1.0
	Read device successfully	



NOTE:

If there is more than one *Repeater* in the network, make sure that the *Repeater ID* is unique in order to avoid network conflict.

09

Change configuration fields (if necessary) and click on *Write* () button to update the *Repeater ID* parameter.

5	TekOn Configurator	* - = ×
Devices Transmitters Transmitters Transmitters Head THU1102 TH1217 TH1216 TH1201 TH1201 TH1201 TH1501 TH1501 TH1501 TH1501 TH1501 TH1501 Wireless Wireless Wireless Wireless	Serial Port Configuration Port Name COM13. • Baudrate 19200 • Parity None • Refresh Serial Ports Gateway Repeater Transmitter Repeater ID 201 * Wireless Network ID: 16777217 Wireless Channel 13 *	Configuration Mode
♥ WGW1104 ♥ WGW410 ● DUOS ↓ PLUS	Writing Success	



CONNECT AND CONFIGURE THE DUOS WIRELESS REPEATER

Click on the *Configuration Mode* () button to exit the setup programme.

0	TekOn Configurator	+
File Tools Help Devices Transmitters Transmitters Head THU1102 THU1102 TH11216 TH11216 TH11216 TH11216 TH11201 TH11201 TH11501 TH11501 TH11501 TH11501 TH11501	TekOn Configurator Serial Port Configuration Port Name Port Name Baudrate 19200 = Parity None + Refresh Serial Ports Gateway Repeater ID 201 Wireless Network ID: 16777217	+ _ Configuration Mode
THT201 THT201 THM501 THM501 DIN Rail TDU1218 TDU1219 Wireless WGW1104 WGW104 WGW104	Gateway Repeater Transmitter Repeater ID 201	Repeater 868MHz FW v1.3.0 HW v1.0
DUOS PLUS	Read device successfully	



NOTE:

In order to establish communication between the Repeater and the Gateway, make sure that both devices are at a distance of at least 3 meters or remove the antenna from the repeater (in case both devices are near each other). These procedures will guarantee communication quality.

At this moment, it is possible to check if:

• The Repeater is trying to connect to the network when the red LED flashes every second.





04 CONNECT AND CONFIGURE THE DUOS WIRELESS REPEATER

• The *Repeater* is connected to the wireless network when red and green LEDs flash. \mathbb{I} • LED switches on and remains steady I – – 🗕 Red/green LED flashes as soon 1 as connection between the T devicesas been established. I 1

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