

## DUOS inCO2 WIRELESS TRANSMITTER INSTALLATION GUIDE

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## **DUOS inCO2 TRANSMITTER** INSTALLATION GUIDE

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## **DUOS inCO2 TRANSMITTER** INSTALLATION GUIDE

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#### **LEGEND:**



Important information for the setup;

• Take note of the information;

Validation of a setting;

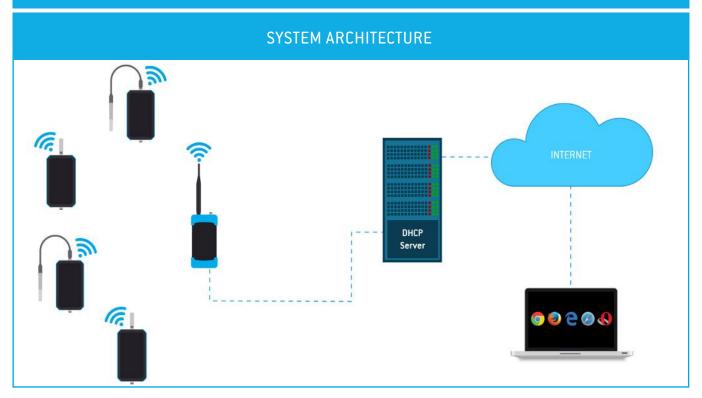
**TEKONELECTRONICS.COM** 



## **01** CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

#### NOTE:

If your device is a DUOS IoT GATEWAY, please consider the information on this page. If your device is a DUOS GATEWAY, please go to the next page to start the equipment setup.



#### MINIMUM REQUIREMENTS

The right application of DUOS IoT GATEWAY only occurs if all minimum requirements are met by the customer side. The architectural minimum requirements needed to successfully use this device are:

- Ethernet cable (included with your DUOS IoT GATEWAY);
- DHCP server;
- Web browser with the latest version;

You must have a DHCP server in your network. The main purpose of this kind of server is to automatically provide and assign IP addresses and other network parameters to connected devices.

To begin the configuration of DUOS IoT GATEWAY, the pin of button mode, must be in the *Config Mode* side.

After completing the setup procedures, go to step 5 to begin the connection to the platform.



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## **01** CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

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

01	Connect the antenna to the Gateway.	
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 <i>Gateway</i> are	<ul> <li>LED flashes slowly</li> <li>LED switched on and steady</li> <li>Red LED flashes every second whenever it sends beacons to new elements to join the network</li> <li>Green LED flashes as soon as the device receives data from other equipment.</li> </ul>



step	
01	CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

ekOn Configurator Tools Help		- 🗆 X
Devices	Serial Port Configuration Port Name COM4 • Baudrate 19200 •	<b>B</b>
THP1217     THT1216     THT1216     THT01     THT01     THT01     THT001     THT002     THT02	Parity None  Refresh Serial Ports Gateway Repeater Transmitter Modbus Configuration Modbus Address	Not Connected
THM501     DIN Rail     TDU1218     TDU1219     TDU301	Modulus Aduress I v Modbus Baudrate 19200 v Modbus Parity None v Wireless Network ID:	Unknown Model
Wireless WGW1104 WGW410 1 DUOS PLUS	Click on connection button to start	

#### 05

Select the Serial Port of the DUOS Wireless Gateway

Click on the *Refresh Serial Ports* button.

1 TekOn Configurator		- 🗆 🗙
File Tools Help		
Devices	Serial Port Configuration	
Transmitters     Second Action Content of Content	Port Name COM4 -	
THU1102	Baudrate 19200 -	
THP1217 THT1216	Parity None - Refresh Serial Ports	Not Connected
S THP101	Gateway Repeater Transmitter	
THT201 THU301	Modbus Configuration	
THT202	Modbus Address	
THM501	Modbus Baudrate 19200 -	
DIN Rail     TDU1218	Modbus Parity None •	Unknown Model
TDU1219	Wireless Network ID:	
TDU301	Wireless Channel	
🔺 💎 Wireless	wireless channel	
👹 WGW1104	Read	
👹 WGW410	Litead Write	
DUOS		
PLUS	Click on connection button to start	

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



## **O1** CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

TekOn Configurator		- 🗆 🗙
File Tools Help		
Devices Transmitters	Serial Port Configuration	
<ul> <li>Head</li> <li>THU1102</li> <li>THP1217</li> <li>THT1216</li> <li>THP101</li> </ul>	Baudrate COM3 COM3 Parity COM7 COM1 Gateway Represerve Transmitter	Not Connected
THT201 THU301 THT202 THP102	Modbus Address	
<ul> <li>THM501</li> <li>DIN Rail</li> <li>TDU1218</li> </ul>	Modbus Baudrate 19200 • Modbus Parity None •	Unknown Model
<ul> <li>TDU1219</li> <li>TDU301</li> <li>Wireless</li> <li>WGW1104</li> </ul>	Wireless Network ID: Wireless Channel	
WGW410	Click on connection button to start	

**07** 

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



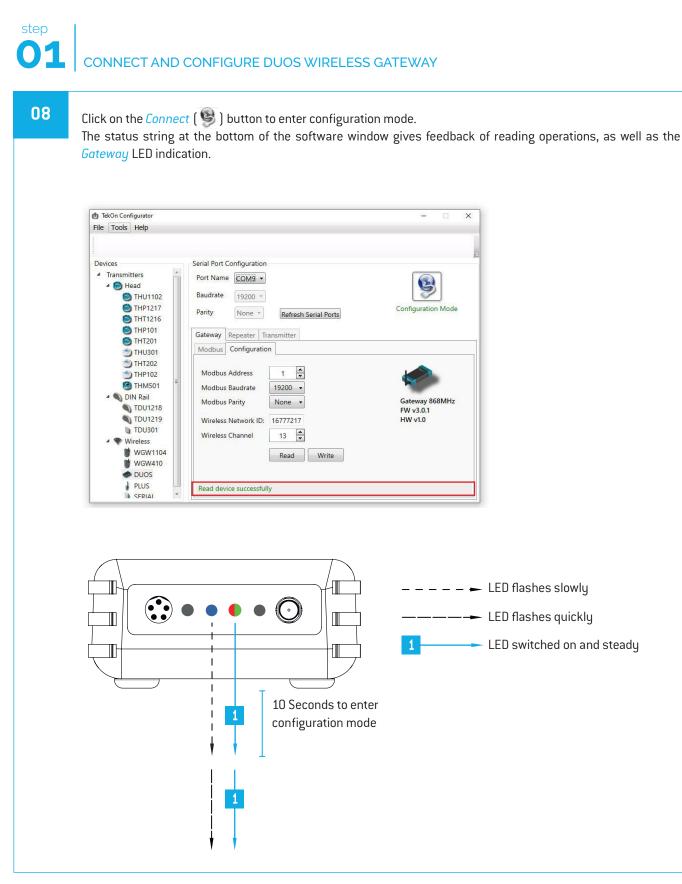
#### NOTE:

After reinserting the cable, you have 10 seconds to enter in configuration mode by clicking on the Connect ( ) 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*.

 $<sup>^{\</sup>rm 2}$  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 reinserted - step 2.



## **01** CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

09

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

1 TekOn Configurator		- 🗆 🗙
File Tools Help	Serial Port Configuration	
<ul> <li>Transmitters</li> <li>Head</li> <li>THU1102</li> <li>THP1217</li> <li>THT1216</li> <li>THP101</li> <li>THT01</li> </ul>	Port Name COMG • Baudrate 19200 • Parity None • Refresh Serial Ports Gateway Repeater Transmitter	Configuration Mode
THU301 THT202 THP102 THM501 DIN Rail TDU1218 TDU1219 TDU1219 TDU301 Wireless Wireless Wireless Wireless Wireless Wireless Wireless Wireless	Modbus       Configuration         Modbus Address       1         Modbus Baudrate       19200         Modbus Parity       None         Wireless Network ID:       16777217         Wireless Channel       13         Read       Write	Gateway 868MHz FW v3.0.1 HW v1.0
DUOS     PLUS     SERIAI	Read device successfully	

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.

<b>1</b> TekOn Configurator		
ile Tools Help		
Devices	Serial Port Configuration	
Transmitters     Generation	Port Name COM9 -	
THU1102	Baudrate 19200 -	<b>~</b>
THP1217 THT1216	Parity None * Refresh Serial Ports	Configuration Mode
THP101 THT201	Gateway Repeater Transmitter	
THU301	Modbus Configuration	
THT202 THP102 THM501	Modbus Address 1 📩 Modbus Baudrate 19200 •	<b>\$</b>
TDU1218	Modbus Parity None 🔻	Gateway 868MHz
TDU1219	Wireless Network ID: 16777217	FW v3.0.1 HW v1.0
TDU301		
A The Wireless	Wireless Channel 13	
WGW1104		
WGW410	Read Write	
DUOS		
	Read device successfully	

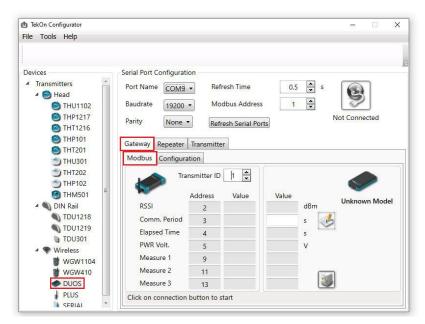


11

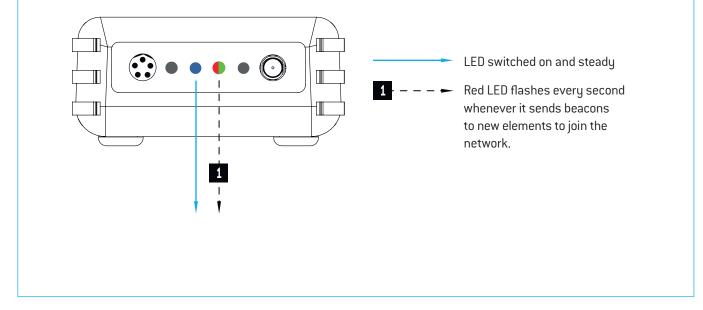
## **01** CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

#### 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.



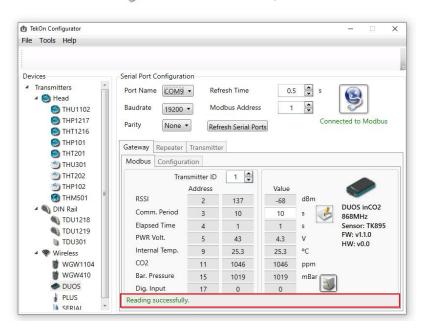




## **01** CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

12

Click on the *Connect* () button and check the operation status at the bottom of the window.



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.



01 Prepare the *DUOS inCO2 Wireless Transmitter*. Unscrew the connector's rubber plug.



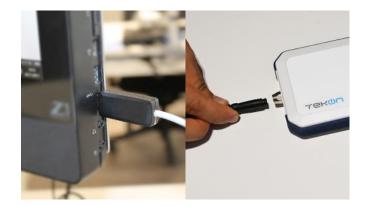
02

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

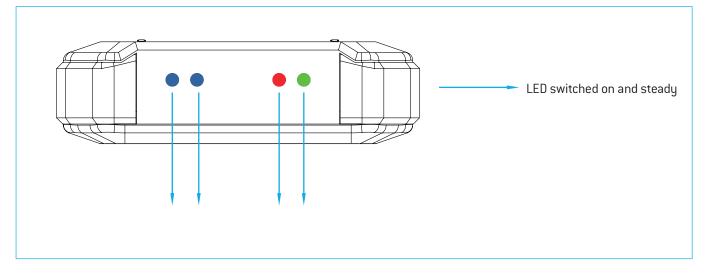
t TekOn Configurator File Tools Help		>
Devices	Serial Port Configuration	
Transmitters     Mead	Port Name COM4 -	
THU1102	Baudrate 19200 -	2
THP1217 THT1216	Parity None - Refresh Serial Ports	Not Connected
THP101 THT201	Gateway Repeater Transmitter 2	
THU301	Measure 1	
THT202	Measure 2	
M THM501	Measure 3	-
A DIN Rail	Battery Voltage V	Unknown Model
TDU1218	Comm. Period s	
TDU1219	Transmitter ID	
<b>TDU</b> 301	Wireless Network ID:	
Wireless     WGW1104	Wireless Channel	
WGW410		
	Read Write	
SERIAL	Click on connection button to start	

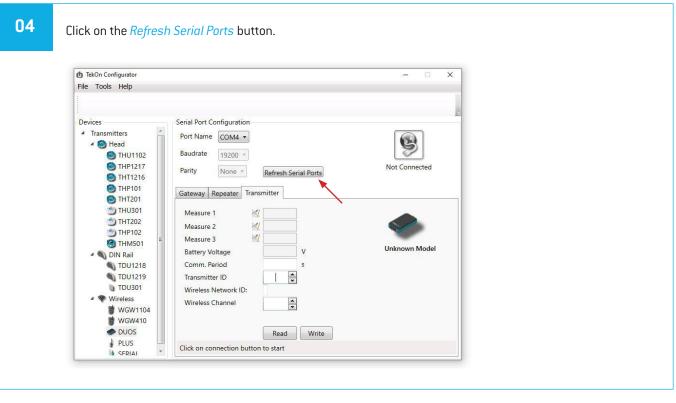
**03** Connect the *DUOS TRANSMITTER SARC* cable to the computer and then to the transmitter.

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











TekOn Configurator		×
File Tools Help		
		8
Devices	Serial Port Configuration	
<ul> <li>Transmitters</li> <li>Teansmitters</li> <li>Thead</li> <li>THU102</li> <li>THU102</li> <li>THU102</li> <li>TH1216</li> <li>TH1216</li> <li>TH1216</li> <li>TH1201</li> <li>THU301</li> <li>TH1202</li> </ul>	Port Name COM12  Baudrate COM3 COM3 COM7 Parity COM7 COM1 Gateway Represent mansmitter Measure 1 Measure 2	Not Connected
THP102 THM501	Measure 3	-
DIN Rail     TDU1218	Battery Voltage V Comm. Period s	Unknown Model
TDU1219 TDU301	Transmitter ID Vireless Network ID:	
<ul> <li>✓ ♥ Wireless</li> <li>♥ WGW1104</li> <li>♥ WGW410</li> <li>● DUOS</li> </ul>	Wireless Channel	
PLUS SFRIAI	Click on connection button to start	

#### 06

#### Remove the cable from *DUOS inCO2*

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



<sup>&</sup>lt;sup>3</sup> You can check the device port name in the Device Manager menu in the Windows operating system.





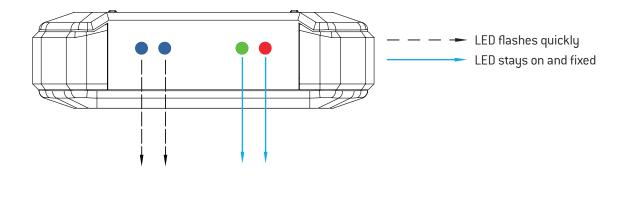
07

Click on *Connect* (9) button to enter configuration mode. These configurations are read automatically.

le Tools Help				
e rous neip				
evices	Serial Port Configuration			
Transmitters	Port Name COM12 -			
B THU1102	Baudrate 19200 +			2
C THP1217	Parity None -	Refresh Seri	al Ports	Configuration Mode
THT1216				
M THT201	Gateway Repeater Tran	nsmitter		
5 THU301	Internal Temp.	24.9	°C	
THT202	CO2	1030	ppm	
THP102	Average CO2	1017	ppm	
(3) THM501	Barometric Pressure	1019.1	mBar	DUOS inCO2
4 🖏 DIN Rail	Digital Input	Open		868MHz
TDU1218	Battery Voltage	4.3	v	Sensor: TK895
S TDU1219	Comm. Period	10	5	FW v1.1.0 HW v0.0
DU301	Transmitter ID	1	1	
Wireless WGW1104	Wireless Network ID:	16777217		
WGW1104	Wireless Channel	13	1	
DUOS		_		
PLUS -		Read	Write	

The status string at the bottom of the software window gives feedback on reading operations.

In configuration mode, *DUOS inCO2 Wireless Transmitter* activates 4 LEDS: 2 blue LEDs flashes, red and green LEDs remains active and steady.





#### NOTE:

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

When the 10 seconds window have been exceeded, 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 reinserted - step 3.



08

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

Ensure that *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 Write button to update settings to the Transmitter.

TekOn Configurator				- 0 3
le Tools Help				
levices	Serial Port Configuration			
Transmitters     A      B Head     Head     THU1102	Port Name COM12 • Baudrate 19200 •			9
THP1217	Parity None =	Refresh Seri	ial Ports	Configuration Mode
THP101 THT201	Gateway Repeater Tran	nsmitter		
THU301	Internal Temp.	24.9	°C	100
THT202	CO2	1030	ppm	
THP102	Average CO2	1017	ppm	
THM501 =	Barometric Pressure	1019.1	mBar	DUOS inCO2
4 🌒 DIN Rail	Digital Input	Open		868MHz
TDU1218	Battery Voltage	4.3	V	Sensor: TK895 FW v1.1.0
TDU1219 D TDU301	Comm. Period	10	s	HW v0.0
A S Wireless	Transmitte <mark>r I</mark> D	1		
WGW1104	Wireless Network ID:	16777217		
WGW410	Wireless Channel	13		
DUOS		Read	Write	
PLUS	Writing Success			



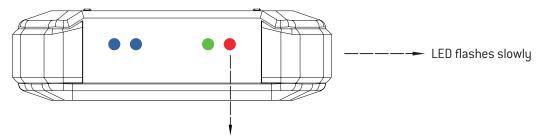
09

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

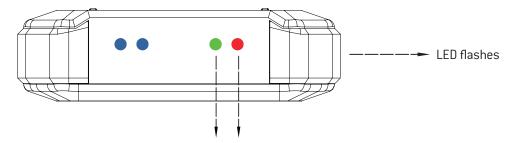
1 TekOn Configurator				- 0
le Tools Help				
levices	Control David Constanting			
	Serial Port Configuration			
Transmitters     A      Head	Port Name COM12 -			
THU1102	Baudrate 19200 +			9
THP1217	19200			
THT1216	Parity None -	Refresh Seri	ial Ports	Configuration Mode
THP101				
THT201	Gateway Repeater Tran	smitter		
THU301	Internal Temp.	24.9	°C	
THT202	CO2	1030	ppm	
THP102	Average CO2	1017	ppm	
A THM501	Barometric Pressure	1019.1	mBar	
A S DIN Rail	Digital Input	Open	moar	DUOS inCO2 868MHz
TDU1218	Battery Voltage	43	v	Sensor: TK895
TDU1219	Comm Period			FW v1.1.0
TDU301	Transmitter ID	10	5	HW v0.0
Wireless		1		
👹 WGW1104	Wireless Network ID:	16777217		
WGW410	Wireless Channel	13		
DUOS		Read	Write	
PLUS	Writing Success			
SERIAI	Thing solution			

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 has 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.

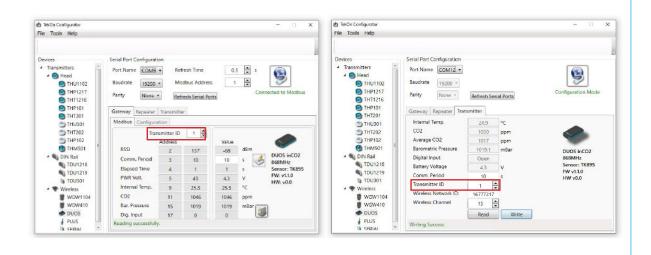
To reset the transmitter, the batteries should be removed, during - at least - 50 seconds (in sleep mode) or instead, as the transmitter has a magnetic switch, a magnet can be used to reset it by passing the magnet close to the transmitter's front side in the blue LED's area.



## 03 CHECK WIRELESS COMMUNICATION BETWEEN DUOS TRANSMITTER AND 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 *Elapsed Time* field presents a higher value than the *Communication Period* field.

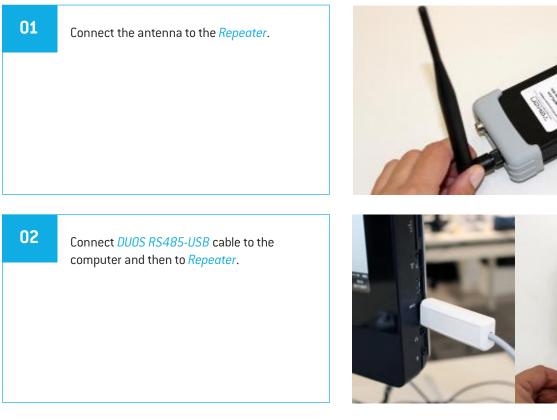
In the following example, it was established that the temperature monitoring cycle (or *Communication Period*) is 10 seconds. Therefore, the *Elapsed Time* field will turn back to 0 as soon as it reaches 10 seconds and the analysed parameters (in this case, the temperature) will be updated in accordance with ambient conditions.

You can define the communication period of the *Transmitter* in the write field by clicking on the *register* ( J button.

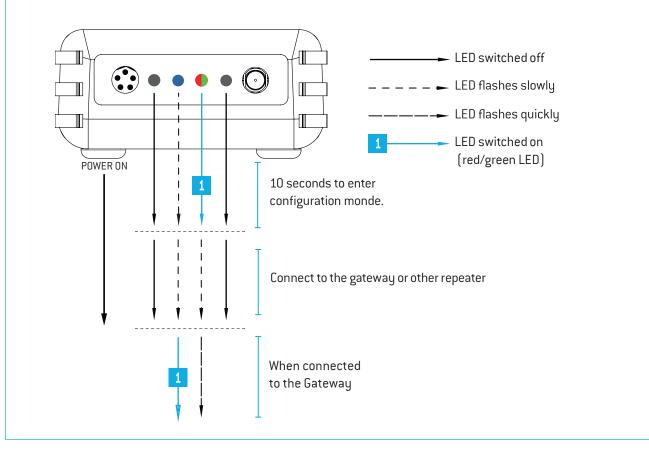




# **O**4 CONNECT AND CONFIGURE DUOS WIRELESS REPEATER



Check the device connection through the LEDs indication.





# Step CONNECT AND CONFIGURE DUOS WIRELESS REPEATER 03 Open Tekon Configurator Software and select the menu DUOS >> Repeater.

4 🙆 Head	uration
THP1217     THP1217     THT1216     TH011	

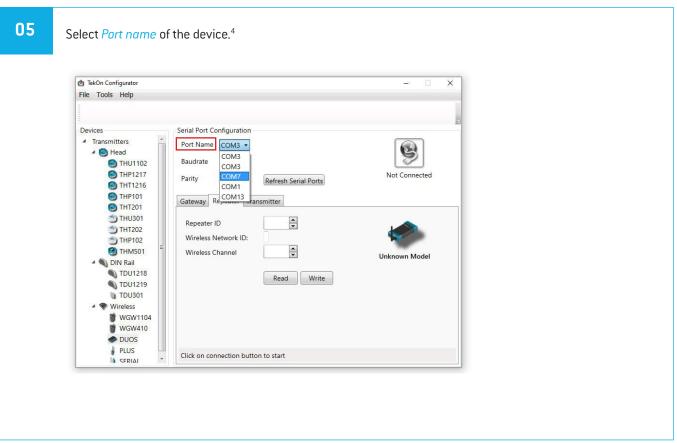
#### 04

Click on *Refresh Serial Ports* button.

TekOn Configurator		— 🗆 ×
File Tools Help		
Devices	Serial Port Configuration	
Transmitters     Mead	Port Name COM3 -	
THU1102	Baudrate 19200 +	9
THP1217 THT1216	Parity None - Refresh Serial Ports	Not Connected
THP101 THT201	Gateway Repeater Transmitter	<b>`</b>
5 THU301 THT202	Repeater ID	
THP102		
C THM501	Wireless Channel	Unknown Model
<ul> <li>DIN Rail</li> </ul>		
TDU1218	Read Write	
TDU1219		
TDU301		
<ul> <li>Wireless</li> </ul>		
WGW1104		
WGW410		
DUOS 🔷		
PLUS	Click on connection button to start	







#### 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.





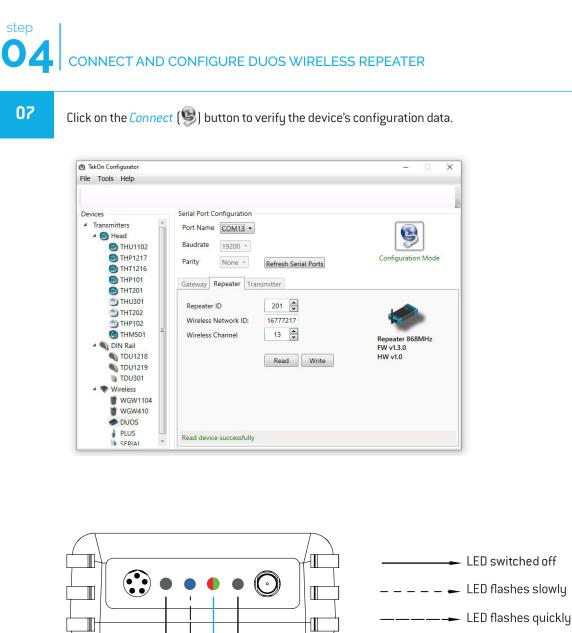
#### NOTE:

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 reinserted.

<sup>&</sup>lt;sup>4</sup> You can check the device port name in the Device Manager menu in the Windows operating system.



LED switched on (red/green LED)



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POWER ON

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## CONNECT AND CONFIGURE 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.

TekOn Configurator		– 🗆 🗙
File Tools Help		
Devices	Serial Port Configuration	
<ul> <li>▲ Transmitters</li> <li>▲ ● Head</li> <li>● THU1102</li> <li>● THP1217</li> <li>● THP1217</li> <li>● THT1216</li> <li>● THP101</li> </ul>	Port Name COM13  Baudrate 19200  Parity None  Refresh Serial Ports Gateway Repeater Transmitter	Configuration Mode
THT201     THU301     THT202     THP102     THM501     THM501	Repeater ID 201 🔍 Wireless Network ID: 16777217 Wireless Channel 13 💌	Repeater 868MHz
TDUI218 TDUI218 TDUI219 TDU301	Read Write	FW v1.3.0 HW v1.0
WGW10 WGW410 DUOS PLUS SERIAL	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.

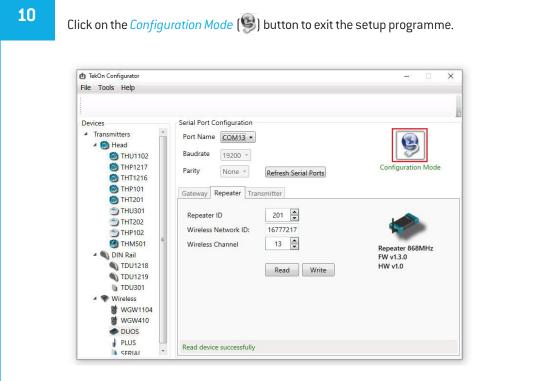
#### 09

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

1 TekOn Configurator File Tools Help		- 🗆 X
Devices	Serial Port Configuration	
Transmitters     Mead     THU1102     THP1217     THT1216	Port Name COM13  Baudrate 19200  Parity None  Refresh Serial Ports	Configuration Mode
© THP101 © THP101 © THT201 © THT202 © THM501 © THM501 © DIN Rail © TDU1218 © TDU1218 © TDU1219 © TDU301 ■ Wireless © WGW1104 © WGW410 ● DUOS	Gateway     Repeater     Transmitter       Repeater ID     201 🗶       Wireless Network ID:     16777217       Wireless Channel     13 🖉         Read     Write	Repeater 868MHz FW v1.3.0 HW v1.0
PLUS SFRIAI	Writing Success	



# **04** CONNECT AND CONFIGURE DUOS WIRELESS REPEATER



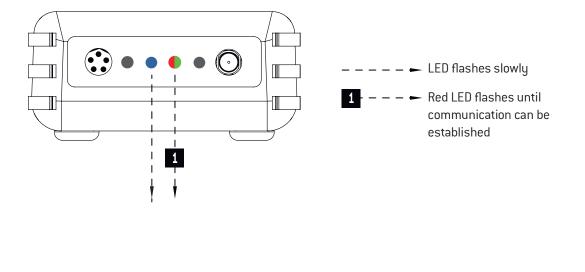


#### NOTE:

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 DUOS WIRELESS REPEATER

• The *Repeater* is connected to the wireless network when red and green LEDs flash. -1 • LED switches on and remains steady Т – – – Red/green LED flashes as soon 1 as connection between the T devices has been established. I 1



# Step 05 CONNECT DUOS WIRELESS IOT GATEWAY 01 Change the switch pin to Normal Mode. Image the switch pin to Normal Mode. Plug the ethernet cable that follows with your gateway to the device's input and to your network. Image the switch pin to your gateway to the device's input and to your network. 02 Your DUOS IoT GATEWAY physical connection should look like this.



#### WIFI



The access through this interface only allows the configuration and consultation of DUOS IoT GATEWAY. Unable to send data to the cloud over this channel.

The DUOS IoT GATEWAY appear with an SSID with the following configuration *WGW4IoT-hostname*. By default, the devices follow with the SSID *WGW4IoT-<serialnumber>* 

n	2
U	3

Connect to the wifi network that comes from your gateway.

Use the password *bresimar* to login.

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	Wi-Fi
Ativar ou desativar	
Wi-Fi	
WI-FI+ Experiència de Internet otimiz	ada Desativado 🗦
Redes disponíveis	
BRESIMAR	(1)
WGW4IoT-Tekon	<u></u>
OpenWrt	ିଶ
WGW4IoT-DUOS@TEKC	N R
DOMBRESIMAR	(1)

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## 05 CONNECT DUOS WIRELESS INT GATEWAY

DUOS IoT GATEWAY has a fixed IP address assigned to be accessed via mobile phone, tablet or pc (through Wi-Fi). The interface designed to interact with the device can be accessed through its fixed IP (192.168.128.1) or its SSID address (http://Tekon). The factory-defined and configurable access data are:

- Login: admin

- Password: admin



#### NOTE:

This password and username must be changed to improve the security level.



#### NOTE:

After a power-on cycle, the first access to the gateway may have a long time waiting time and should not be confused with a lack of response.



#### NOTE:

SSID address access is only possible until it is changed. After the change, you must access by the user-defined SSID.

#### 04

Check your network credentials. Click on *Settings* >> *IP Network* tab.

By default, your gateway has a static ethernet IP address for the network (192.168.100.1). You can choose to keep this IP address or activate the DHCP feature to be assigned a dynamic IP address by the network.

Communication Module Users	Data Import/Export Netwo	rk Cloud Services Monit System	m		
IP Network Table					
Show 10 + entries			Search	h.	
Interface It DHCP	IP Address	Netmask Gateway	MAC Address	11	
eth0 Disabled	192.168.100.1	255.255.255.0 192.168.0.250	40.83.60.02.10:40		
Usabled	102.100.100.1	100,000,000	The last last rate, the The	G# Manage	
lo Disabled	127.0.0.1	255.0.0.0	00:00:00:00:00:00		
ra0 Disabled	192 168 128 1	255 255 255 0	40 a3 6b c2 1c:4a		
Showing 1 to 3 of 3 entries				Previous 1 Next	
NTP Peer	pt.pocl.ntp.org				
				Terreser 1	
				🖺 Update	
<b>o</b> ¢ Test				1.05.80.05.000.000	
C Test Proxy Configuration					
Proxy Configuration					



## 05 CONNECT DUOS WIRELESS INT GATEWAY

Т	To enable the option to get an dynamic IP address assigned by your network, click on <i>I</i>	Manage butto
	Theor InT Gateway HOME BENSOR NETWORK BETTINOS	
	Communication Module Users Deta Import/Export Network Cloud Services Mont System	
	IP Network Table	
	Show 10 + entres Search:	
	Interface II DHCP II IP Address II Netmask II Gateway II MAC Address	
	eth0 Desabled 192.168.100.1 255.255.0 192.168.0.250 40.83.60.c2.1c.4c IZ Manage	
	lo Disabled 127.0.0.1 255.0.0.0 00.00.00.00.00.00	
	ra0 Disabled 192.168.128.1 255.255.0 40.a3.66.c2.1c.4a	
	Showing 1 to 3 of 3 entries Previous 1 Next	
	NTP	
	NTP Peer pt.pool ntp.org	
	oc Test කි. Update	
	Proxy Configuration	



A pop-up window will show up. Click on the validation box, next to the *DHCP* label to enable the option and click on the *Update* button to save the changes. You will be redirected to the previous page.

Show to + entries	DHCP	×	Search
Interface II DHCP	IP Address	192 168 100 1	ess 17
eth0 Enabled	Netmask	255,255,255,0	2.10.4c IX Manage
Io Disabled	Gateway	152 168 0 250	0.00.00
730 Disabled	MAC Address	40 a3 6b c2 1c 4c	2.1c/4a
Showing 1 to 3 of 3 entries			Previous 1 Next
NTP		Close 🕲 Up	date
NTP Peer	pt.pool.ntp.org		
0° Tesi			图 Update



Write down the IP address of your device's ethernet port. It will be needed later.





#### **CONFIGURE A PROXY SERVER (OPTIONAL)**

on the opur		on to save	the change	2S.				
Interface [1	DHCP	IP Address	11 Netmask	II Gateway	11 MAC Address	11		
eth0	Disabled	192.168.100.1	255.255.255.0	192.168.0.250	40 83 6b c2 1c 4c		🕼 Manage	
0	Disabled	127.0.0.1	255.0.0.0		00:00:00:00:00:00			
ra0	Disabled	192,168,128,1	255,255,255,0		40 a3.66 c2 fc:4a			
Showing 1 to 3 of 3 ent	tries					Previous	1 Next	
NTP								
NTP Peer		pt.pool.ntp.org						
of Test							🔁 Update	
Proxy Configuration	6							
HTTP Proxy								
HTTPS Proxy								
							······································	



#### NOTE:

The proxy address must consider the full path configuration like in the example: 'http://my.proxy.com:9000' or 'https://my.secure.proxy.com:9000'





#### ACCESS TO DUOS GATEWAY IOT THROUGH ETHERNET

08	The connection to DUOS IoT GATEWAY through Ethernet is made using your web browser. You can access by the hostname (http:// <hostname>) or via IP address (http://&lt;192.168.100.1&gt;). The default login credentials are: - Login: admin - Password: admin</hostname>
	(i) Not unual 1982 108 100 1 (iii) (
	((iii) Tekon IoT Gateway
	Sign in
	Pasanord
	and the second and the se



#### NOTE:

DUOS IoT GATEWAY access credentials displayed by default can be edited in *Settings* » *Users* menu.





09



#### **TRANSMITTER ACTIVATION**

# At login, the graphical interface displays the transmitters that are connected to the network. The first presentation of the devices connected to the network is through a vertical listing (1). To get an overview of your system, at the bottom of the main page, you will find information about the activity and links established (2).

Most Recent Values		
Show to • entries	Bearch	
Hub ID Name	Status	
1 N/A		
strowing 1 to 2 of 2 entries Status Overview	Previos	Next
Status Overview	Gateway Uping 317	Neut
Status Overview Notwork	Gateway	



The transmitters are listed in ascending numerical order. By default, the name appears with "N/A" until it is edited and reset. The *Hub ID* field match to the Transmitter ID field defined in Tekon Configurator over the transmitter configuration.

10

Click on the *Hub ID* field of the transmitter to activate. You will be redirected to the selected transmitter page, select the *Properties* tab [1], in the *Status* property, choose the *Active* state [2] and click on the *Update* button [3] to save the change.

Sensor Hub - 1		
(1) Measurements Properties	Madaus	
Properties		
Name		
System Id	1:0:0:0	
Network Id	1:0.0.1	
Firmware Version	3.0.0	
Refresh Time (seconds)	16	
Status	UNDEFINED	. [2]
Description	UNDEFINED ACTIVE INACTIVE	
Synchronize to Cloud	OF .	
		Detete     Bupdate     [3]



# **05** CONNECT DUOS WIRELESS IOT GATEWAY



The transmitter is activated. Transmitter information available for all the interfaces.



If you would like to send data from this transmitter to Tekon IoT Platform, set the *Synchronize to Cloud* field to *On* mode and save the changes. We will return to this subject shortly.

#### 11

- In the "Properties" tab, fill in the fields:
- "Name" and "Description" according to your preference;
- "Refresh Time" according to the intended transmitter communication period;

#### Save the changes in the Update button.

Measurements Properties Mod	sus	
Properties		
Name	DUOS InCO2	
System Id	1-0:08	
Network Id	1:0:0:1	
Firmware Version	100	
Communication Period (seconde)	10	
Status	ACTIVE	v
Description		
Synchronize to Cloud	ОП	



The transmitter is configured.



## 05 CONNECT DUOS WIRELESS IOT GATEWAY

		CONNECTION TO TEK	ON IOT PLATFORM	
12	In the DUOS IoT GATEWA	Y page, go to <i>Settings</i> >> <i>Clo</i>	ud Services.	
	(m) Telentor Gateway NONE SENSOR NE Settings	WOW STITUES	1 10	81×
		nrfEport Natural Cloud Services Maint System		
	Server LRL. Art Kay	http://lef18.tekanetectronice.com/		
	statos 4): Text Condentials Tekon Cloud - Sensor hubs confit	or	United Costonists	
	Show 10 - ontries Hub ID Nemie		Search	
	Showing 1 to 2 of 2 end		Previous 1 Next	

13

In a new browser page, access your Tekon IoT Platform and go to *Settings >> Administration*.

+ Hearter Q() (Her statisticals() (Hers QALIDADE	19895		Codd ret frid any information for the following dataseticus	
	1 Humidity	I femperature == 28°C Ditionances me	Conter = [10] -310471 o miccoso Lid M	
			no memoratoria la	



step

### 05 CONNECT DUOS WIRELESS INT GATEWAY

Click on the view option to see the <i>gateway</i> user d	ata and copy the	API key.
View user		PERSONAL AREA     ADMINISTRATION
Uper details		CONFIGURATION
٤.		
Name		
galaxiay		
Okerwinine galaxay		
Profile		
Garevay		
Enail		
No dela		
Caliphone No deta		
so oss		
Company No dob		
Communication details		
Açtî key		
		<b>CD</b>

- C.	

In the DUOS IoT GATEWAY page, fill in the fields:

- "Server URL" with your Tekon IoT Platform address;
- "API Key" with the Api key previously copied;

Change the *Status* field value to *On*.

Cettings			
Communication Module Users Data Imp	rt/Euport Network Chuid Services Montt System		
Tekon Cloud			
Server URL	http://solf/8.kokonolectronics.com/		
API Key	411a0au 70a 42at a121 2008621202		
Statue	(an )		
O <sup>®</sup> Test Credentials		🗌 Validate Credentiais	E) Update
Tekon Cloud - Sensor hubs config	ration		
Show to v outries		Search:	
Hub ID Name	Status		
f DU Showing 1 to 2 of 2 entr		chionization Off	•
Sidnay Fid 2 dr 2 dr	0	Previous 1 Next	



## 05 CONNECT DUOS WIRELESS INT GATEWAY

**16** 

step

You can test the credentials declared. Click on *Test Credentials* button to test the credentials authenticity. If the credentials are authentic, a success message will show next to the button.

You can validate the credentials. This step will ensure data the credentials entered are authentic. Click on the *Validate Credentials* checkbox.

Click on *Update* button to save the changes. If *Validate Credentials* is checked, the configured data is stored only if valid. Pay attention to the received message.

ttings			
ermunication Module - Usera - Data Importet	Sapart Nistwark Cloud Services Man	ll System	
Tekon Cloud			
Samer URL	http://latt@.tokooelectronics.com/		
API Key	An Indiano / Tax - Khart an Khi 2003/06/21/202		
State	Cin		
😋 Test Crodentials 🖌 Authentication			Validate Credenitals
Tekon Cloud - Sensor hubs configura	tion		
Show 10 ~ entries			Search
Hub ID Name		Statue	
	nCO2	Cloud Synchronization Off	٣
f DUOS I			
f DUOS I Strowing 1 to 2 of 2 entries			Previous 1 Next



Your DUOS GATEWAY IoT is now connected to your Tekon IoT Platform instance.





CONNECT DUOS WIRELESS IOT GATEWAY

#### ATTACH TRANSMITTER DATA TO TEKON IOT PLATFORM

17 Access to your Tekon IoT Platform, click at the Datasources menu and the button ( 🔊 ) to edit the datasource where you want to send the transmitter data. 🌲 ALARMS + 📑 DATA + 🏟 SETTINGS + erun Datasources = 0 0 2 00 00 00 Datasources list Datasource \* Date 2 Variable 8 > DUOS HYGROTEMP 1 11/18/2021 4:35:49 PM A mount 🗇 👌 рыра ниталотому а 11/16/2021 4:31:12 PM 2. 2 DUOS HYGROTEMP 3 11/18/2021 4:11:02 PM 3. m 3. .... 🗆 🗲 Duce In CO2 11/16/2021 4:31:32 PM 3. -1 JU ANTE 🚫 100 0/8 > HYGROTEMP ID1 - 1220920090 03/12/2020 1:33:30 PM Am 01 C > TEMP IC2 - 1220900008 0/12/2020 1:33:30 PM × ---10 · Fage 1 of 1

Copy the API key from the datasource and go back to your DUOS IoT GATEWAY page. On the page, select the transmitter you want to match, fill in the *API Key* field with the copied value.

You can test and validate the credentials, as explained in the step 16.

#### Click on Update button to save the changes.

Settings		
Communication Module Users Data	Import/Export Network Clant Services Manit System	
Tekon Cloud		
Server URL	http://of18.tekonelectronics.com/	
API Key	defailed Plan Aber ART 2008621202	
Status	, Du .	
📭 Test Gredentials 🖌 Authenti	cation Ok	🗆 Validate Grestendiats 🖪 Update
Tekon Cloud - Sensor hubs cor	ofiguration	Validate Credentials
Show 10 v entries		Saarolt
Hub ID N	ame	Status
1 0	U05 InC02	Cloud Synchronization On 🔻
API Key	16166606-7116-4175-68/0 ACINO.411217	
of Test Credentials		Uvalidate Credentiats

18





#### CONNECT DUOS WIRELESS IOT GATEWAY



#### NOTE:

The message "Cloud Synchronization On" will only be visible if you have activated the option "Synchronize to Cloud" in the "TRANSMITTER ACTIVATION" step to activate your transmitter. If you did not perform the validation, the message "Cloud Synchronization Off" will be displayed in the "Status" field.



Your transmitter is now connected to your Tekon IoT Platform.



#### NOTE:

Perform a reboot in the gateway. Remove the *DUOS RS485-USB* cable on the gateway port and reconnect it.

#### VERIFY COMMUNICATION WITH TEKON IOT PLATFORM

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To verify if the information acquired by the transmitter is effectively reaching your Tekon IoT Platform, click on the Datasources menu and check the date of the latest communication between the platform and the transmitter. This log will tell you if the communication process is on or not.

		ces						- 100	L.K.O
	our	6 🖉 2 🔮 0 💮 0	0		a	Sect	1		
		Datassures *	Date 2	Communication #	Variable 0			ctions	ë.
	>	DUOS HYGROTEHP 1	11/18/2021 4:35:49 PM	🕱 vectorali acaderi	🛪 нателя жилот	æ	1		•
	>	DUDS HYDROTENP 2	11/18/2021 4:31:12 PM	X women wante	X umoraana		1		¢
	>	DUOS HYGROTEMP 3	11/16/2021 4:11:02 PM	💢 WUMUH ALAMIN	🗶 нониталия		,		•
	>	Duce \$1:002	11/16/2021 4131132 PM	💐 wenner assure	0-		,		٩
	>	HYSROTENP J01 - 12209200302	03(12/2620 1:33:30 PM	X wasan wante	0		1		U
	>	TEMP 802 - 0205930008	03/13/2080 1:33:30 PM	🗶 wenner asam	0		,		¢
50 •		Page 1 of 1			«	R	•		



## 05 CONNECT DUOS WIRELESS INT GATEWAY

	DATA COMMUNICATION OVER MODBUS TCP/IP							
20		•					Modbus TCP/IP c ters in modbus c	communication. communications.
	Click	(in) Token InT Gateway HON	E SENSOR NETWORK	you want to	analyze ar	nd select th	e Modbus Holdin	ng Registers tab.
		Sensor Hub - 4 Measurements Properties Modbus holding registers	Nocitus Halding registers					
		Register Variable	Actual Value	Register Address	Register Value	Register Type	Register Format	
		Transmitter Model	DUOS InCO2	126	0x00003C	Holding Register	UINT16	
		Probe Sensor Model	TK395	127	0x000009	Holding Register	UINT16	
		RSS	-14dim	128	0x00001C	Holding Register	UNTIE	
		Communication Period	10s 6131s	129	0x00000A 0x0017F3	Holding Register	UNT16	
		Eattery Voltage	3.8/	130	0x000026	Holding Register	UNTIG	
		PW Version Major I Minor	1.0	132	0x000100	Holding Register	UNTS_UNTS	
		FW Version Revision	0	133	0x000000	Holding Register	UNT16	
		HW Version Major   Minor	0.0	134	0x00000	Holding Register	UINT8_UINT8	
		Internal Temperature	34.94%C	135	0x42080083	Holding Register	FLOAT32	
		Carbon Dioxide	1034ppm	137	0x44814000	Holding Register	FLOAT32	
		Mean Carbon Dioxida	1045ppm	139	0x44824000	Holding Register	PLOAT32	
		Atmospheric Pressure	1020.1 mbar	141	Ox447F0666	Holding Register	FLDAT32	
		Di Statu	0	143	0x000000	Holding Begister	FLOAT32	

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- In this page, you have the selected transmitter modbus scheme.
- (1): variable names;
- (2): current value recorded;
- (3): modbus address;
- (4): register value;
- (5): register type;
- (6): register data type;

Sensor Hub - 40

Measuriettwals' Properties	Modbus Holding registers					
Modbus holding registers	(2)	(3)	(4)	(5)	(6)	
Register Variable	Actual Value	Register Address	Register Value	Register Type	Register Format	
Transmitter Model	DUOS InCO2	126	0x00003C	Holding Register	UINT16	
Probe Sensor Model	TK895	127	0x000000	Holding Register	UNIT16	
RSSI	-14dBm	128	0x00001C	Holding Register	LINT 16	
Communication Period	10s	129	0x00000A	Holding Register	UINT16	
Elapsed Time	61310	130	0x0017F3	Holding Register	UINT16	
Battery Voltage	3.8v	131	0x000026	Holding Register	UINT16	
FW Version Major I Minor	1.0	132	0x000100	Holding Register	LINTS_UINTS	
FW Version Revision	0	133	0x000000	Holding Register	UINT16	
HW Version Major I Minor	0.0	134	0x000000	Holding Register	UINTS_UINTS	
Internal Temperature	34.94°C	135	0x42080063	Holding Register	FLOAT32	
Carbon Dicalde	1034ppm	137	0x44814000	Holding Register	FLOAT32	
Mean Carbon Dioxide	1045ppm	139	0x4482A000	Holding Register	FLOAT32	
Atmospheric Pressure	1020.1mbar	141	0x447F0666	Holding Register	FL0AT32	





#### CONNECT DUOS WIRELESS IOT GATEWAY



#### NOTE:

In this example we used the transmitter / hub 1. The first modbus address of its variables starts at 0. To find the modbus address calculation formula defined for DUOS IoT GATEWAY, please refer the datasheet on Tekon Electronics website.



To access to the records via Modbus TCP/IP in real time, you must use a program developed for this purpose, external to Tekon Electronics.



- DUOS IoT GATEWAY IP;
- Port: 1502;



REVISION HISTORY	
VERSION	
E01B	

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