

## **DUOS in HYGROTEMP WIRELESS TRANSMITTER** INSTALLATION GUIDE

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## **DUOS in HYGROTEMP TRANSMITTER** INSTALLATION GUIDE

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CHECK WIRELESS COMMUNICATION BETWEEN DUOS in HYGROTEMP AND GATEWAY

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## **DUOS in HYGROTEMP TRANSMITTER** INSTALLATION GUIDE

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#### **LEGEND:**



Important information for the setup;

Tak

Take note of the information;

Validation of a setting;

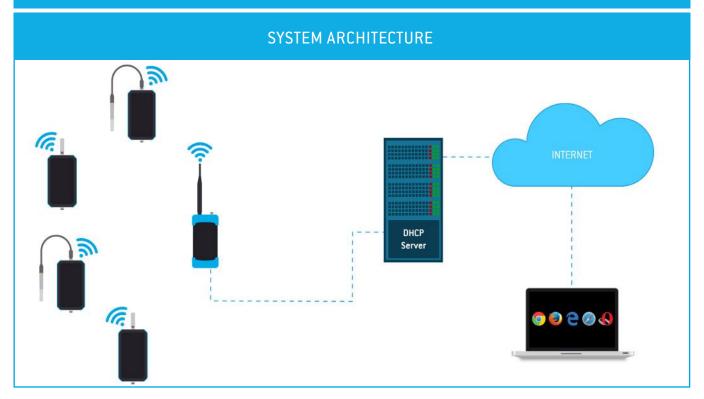
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## **01** CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

#### 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.



#### **TEKONELECTRONICS.COM**



# **O**1 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 <i>DUOS RS485-USB</i> cable to the computer and then to the Gateway.	
	If the red and blue LEDs are active, both the cable and <i>Gateway</i> and and <i>G</i>	<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

TekOn Configurator le Tools Help	- • ×
evices  Serial Port Configuration  Port Name COM4  Baudrate  THU1102 THU217 TH1216 TH1216 TH1216 TH1201 TH1202 THU301 TH1202 THU301 TH1202 THU301 TUU1218 TDU1218 TDU1218 TDU1218 TDU1219 TDU301 Kireless WGW1104 Click on connection button to start	Not Connected

#### 05

Select the Serial Port of the DUOS Wireless Gateway

Click on the *Refresh Serial Ports* button.

File Tools Help		110.001
rile Tools help		
Devices	Serial Port Configuration	
Transmitters     A      Head	Port Name COM4	
THU1102	Baudrate 19200 -	2
THP1217 THT1216	Parity None - Refresh Serial Ports	Not Connected
THP101	Gateway Repeater Transmitter	
THT201 THU301	Modbus Configuration	
THT202	Modbus Address	
THP102 THM501	Modbus Baudrate 19200 V	
A N DIN Rail	Modbus Parity None •	Unknown Model
TDU1218		
TDU1219	Wireless Network ID:	
TDU301	Wireless Channel	
<ul> <li>Wireless</li> </ul>		
<b>WGW1104</b>	Read Write	
<b>WGW410</b>		
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 ile Tools Help		- 🗆 X
Devices A Transmitters A B Head B THU1102 THI1216 THI1216 THI1216 THI1201	Serial Port Configuration Port Name COM3 Baudrate COM3 Parity COM1 COM1 Cateway Represent ransmitter Modbus Configuration	Not Connected
THU301 THT202 THP102 THM501 DIN Rail TDU1218 TDU1219 TDU301	Modbus     Configuration       Modbus     Address       1     Image: Configuration       Modbus     Baudrate       19200     Image: Configuration       Modbus     Baudrate       19200     Image: Configuration       Wireless     Channel	Unknown Model
WGW1104 WGW410 DUOS PLUS	Read Write Click on connection button to start	

07

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



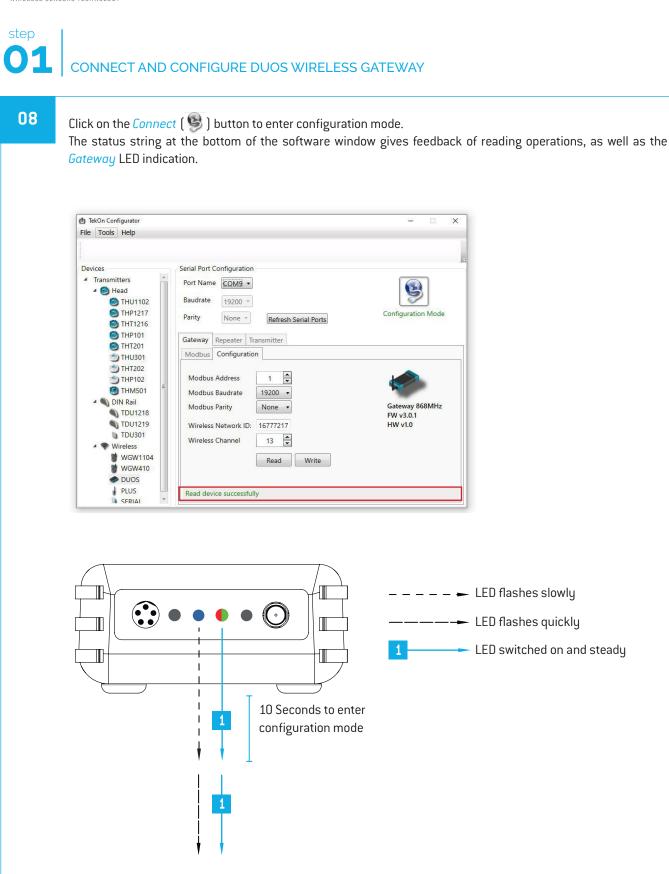
#### NOTE:

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>lt;sup>2</sup> 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*.

TekOn Configurator		- 🗆 🗙
File Tools Help	Serial Port Configuration	
<ul> <li>▲ Transmitters</li> <li>▲ ● Head</li> <li>● THU1102</li> <li>● THP1217</li> <li>● THP1217</li> <li>● TH1216</li> <li>● TH1216</li> <li>● TH1216</li> <li>● TH1201</li> <li>● TH1201</li> <li>● TH1202</li> </ul>	Port Name COMIG • Baudrate 19200 • Parity None • Refresh Serial Ports Gateway Repeater Transmitter Modbus Configuration	Configuration Mode
THP102 THM501 TM501 TU1218 TU1219 TU1219 TU1219 TU301 Wireless Wow1104 WGW410	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	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.

TekOn Configurator		- 0 >
File Tools Help	Serial Port Configuration	
<ul> <li>Transmitters</li> <li>Head</li> <li>THU1102</li> <li>THU1217</li> <li>THU1217</li> <li>THU1216</li> </ul>	Port Name COM9  Baudrate 19200  Parity None  Refresh Serial Ports	Configuration Mode
<ul> <li>THP101</li> <li>THT201</li> <li>THU301</li> <li>THT202</li> <li>THP102</li> <li>THM501</li> </ul>	Gateway Repeater Transmitter Modbus Configuration Modbus Address 1 V Modbus Baudrate 19200	
<ul> <li>DIN Rail</li> <li>TDU1218</li> <li>TDU1219</li> <li>TDU301</li> <li>Wireless</li> <li>WGW1104</li> <li>WGW410</li> <li>DU05</li> </ul>	Modbus Parity None  Wireless Network ID: 16777217 Wireless Channel 13 Read Write	Gateway 868MHz FW v3.0.1 HW v1.0
PLUS SFRIAI	Read device successfully	

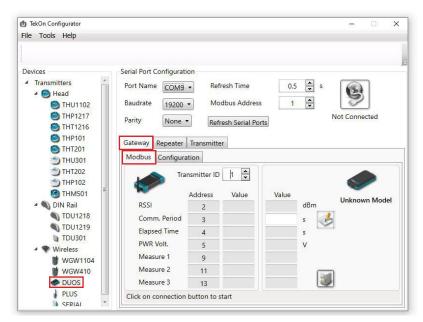


11

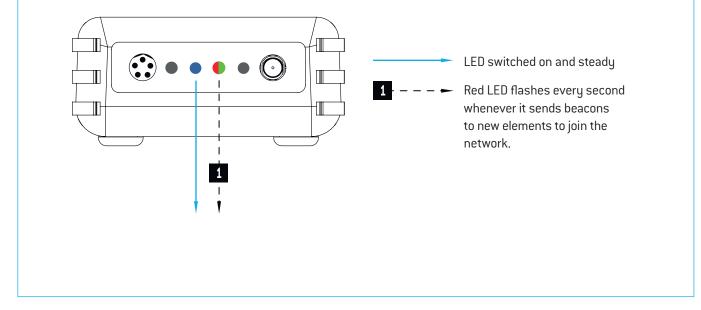
## **01** CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

#### 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.

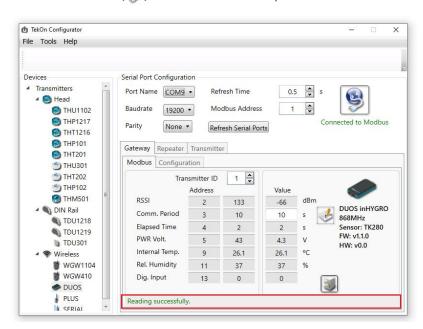




## **01** CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

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 inHYGROTEMP Wireless Transmitter*. Unscrew the connector's rubber plug.



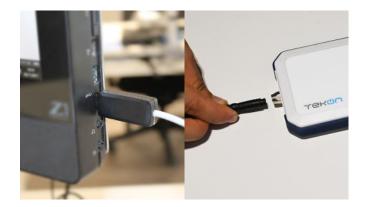
02

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

		× 12 *
<ul> <li>TekOn Configurator</li> <li>File Tools Help</li> <li>Devices</li> <li>Transmitters</li> <li>Thead</li> <li>THU1102</li> <li>THP1217</li> <li>THT1216</li> <li>THP101</li> <li>THP101</li> <li>THT201</li> <li>THT201</li> <li>THT201</li> <li>THT201</li> <li>THT201</li> <li>THT202</li> <li>THP101</li> <li>THT202</li> <li>THP102</li> <li>THM501</li> <li>DIN Rail</li> </ul>	Serial Port Configuration Port Name COM4  Baudrate 19200 Parity None  Refresh Serial Ports Gateway Repeater Transmitter  Compared to the series of the serie	Not Connected
TDU1218 TDU1219 TDU301 Wireless WGW1104 WGW410 DU05 1 PLUS SERIAL	Comm. Period s Transmitter ID s Wireless Network ID: Wireless Channel s Read Write Click on connection button to start	

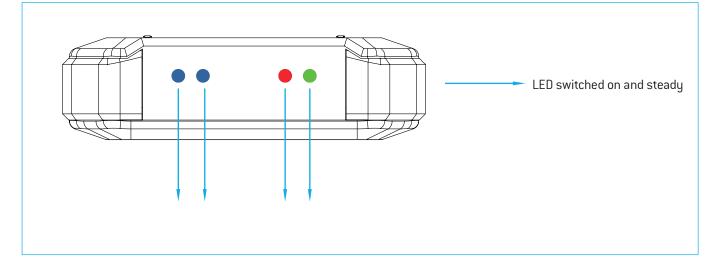
**03** Connect the *DUOS TRANSMITTER SARC* cable to the computer and then to the transmitter.

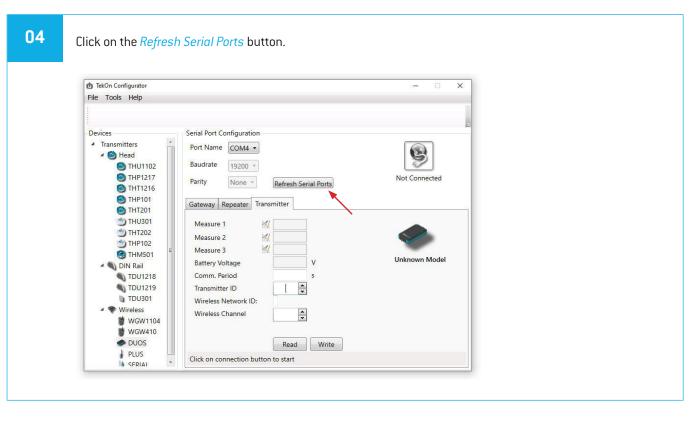
After cable connection, all LEDs stay active during 10 seconds.













TekOn Configurator     File Tools Help		• ×
Devices	Serial Port Configuration	2
<ul> <li>Transmitters</li> <li>Transmitters</li> <li>Head</li> <li>THU1102</li> <li>THP1217</li> <li>THP1217</li> <li>THP1216</li> <li>THP101</li> <li>THP201</li> </ul>	Port Name COM12 - Baudrate COM3 COM3 COM3 COM7 COM1 Gateway Refresh Serial Ports	Not Connected
한 THU301 한 THT202 한 THP102	Measure 1 2 Measure 2 Measure 3 Meas	<b>~</b>
THM501 TOU1218 TOU1219 TOU301 Wireless WGW1104 WGW410	Battery Voltage V Comm. Period s Transmitter ID S Wireless Network ID: Wireless Channel S	Unknown Model
DUOS PLUS SERIAI	Read Write Click on connection button to start	

#### 06

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



 $<sup>^{\</sup>rm 3}$  You can check the device port name in the Device Manager menu in the Windows operating system.



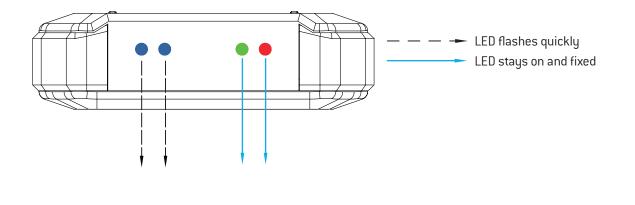
07

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

TekOn Configurator				- D
e Tools Help				
)evices	Serial Port Configuration			
Transmitters	Port Name COM12 .			
🔺 🙆 Head				8
THU1102	Baudrate 19200 +			1
C THP1217	Parity None -		2	Configuration Mode
THT1216	None *	Refresh Serial	Ports	
THP101	Gateway Repeater Trans	smitter		
THT201	Gateway Repeater Han			
3 THU301	Internal Temp.		32	
THT202			°C	
5 THP102	Relative Humidity	51	%	
THM501	Digital Input	Open		and the second second
🔺 🚳 DIN Rail	Battery Voltage	4.3	V	DUOS inHYGRO 868MHz
TDU1218	Comm. Period	10	s	Sensor: TK280
TDU1219	Transmitter ID	1		FW v1.0.0
TDUS01	Wireless Network ID:	16777217		HW v0.0
Wireless	Wireless Channel			
WGW1104	wireless Channel	13 🔹		
WGW410		Read	Write	
DUOS		50. C		
PLUS -				
SFRIAI	Read device successfully			

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

In configuration mode, *DUOS inHYGROTEMP 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*.

1 TekOn Configurator			- D
ile Tools Help			
Devices	Serial Port Configuration		
Transmitters			
A C Head	Port Name COM12 •		
THU1102	Baudrate 19200 +		2
THP1217			Configuration Mode
THT1216	Parity None =	Refresh Serial Ports	Configuration mode
A THP101		STATISTICS IN CONTRACTOR	
THT201	Gateway Repeater Tran	nsmitter	
THU301	Internal Temp.	30.3 °C	
THT202			
5 THP102	Relative Humidity	40 %	
C THM501	Digital Input	Open	
🖌 🐑 DIN Rail	Battery Voltage	4.4 V	DUOS inHYGRO 868MHz
TDU1218	Comm. Period	10 s	Sensor: TK280
TDU1219	Transmitter ID	1	FW v1.0.0
TDU301	Wireless Network ID:	16777217	HW v0.0
Wireless	Wireless Channel	13	
WGW1104	Thereas chainer		
WGW410		Read Write	
DUOS			
PLUS	10/2014 0 10/00		
SERIAI -	Writing Success		



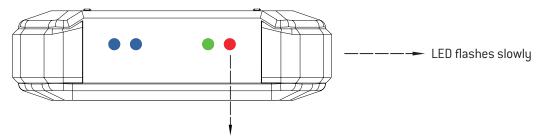
09

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

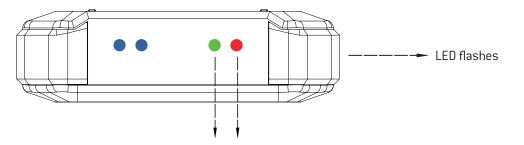
) TekOn Configurator Ile Tools Help				- "D_
Devices A Transmitters A B Head Head THU1102 THU1217 THU1216	Serial Port Configuration Port Name COM12 - Baudrate 19200 - Parity None -	Refresh Serial P	lorts	Not Connected
THP101 THT201 THU301	Gateway Repeater Tra	ansmitter		
THT202	Relative Humidity	23.2 °C		
THP102 THM501		Open		
A DIN Rail	Battery Voltage	4.3 V		DUOS inHYGRO 868MHz
TDU1218	Comm. Period	10 s		Sensor: TK280
STDU1219	Transmitter ID	1		FW v1.0.0
TDU301	Wireless Network ID:	16777217		HW v0.0
WGW1104	Wireless Channel	13 💌		
WGW410		Read	Write	
DUOS  PLUS				
SERIAL	Click on connection butt	on 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 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.

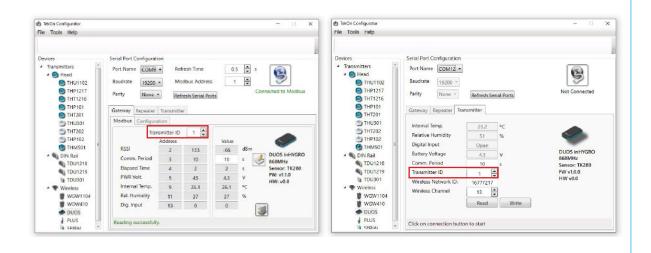




# 03 CHECK WIRELESS COMMUNICATION BETWEEN DUOS TRANSMITTER AND GATEWAY



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.

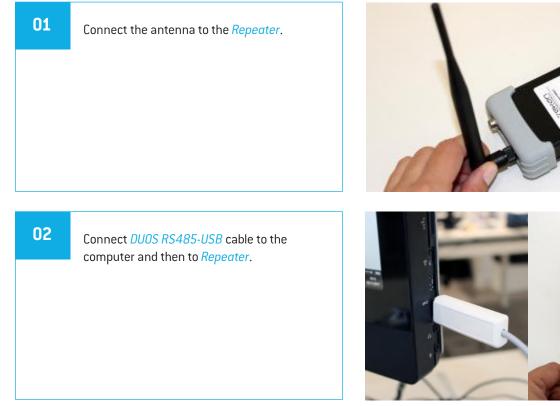
In the following example, it was established that the temperature monitoring cycle (or *Communication Period*) is 10 seconds. Therefore, the *Elapsed Time* field will turn back to 0 as soon as it reaches 10 seconds and the analysed parameters (in this case, the temperature) will be updated in accordance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

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

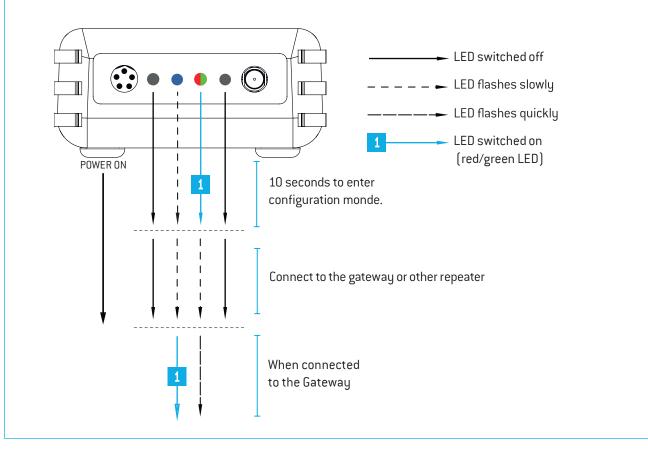




# CONNECT AND CONFIGURE DUOS WIRELESS REPEATER



Check the device connection through the LEDs indication.





step 04	CONNECT AND CONFIGURE DUOS WIRELESS REPEATER
03	Open <i>Tekon Configurator Software</i> and select the menu <i>DUOS &gt;&gt; Repeater</i> .

1) TekOn Configurator		
File Tools Help Devices	Serial Port Configuration	
<ul> <li>Transmitters</li> <li>Transmitters</li> <li>Head</li> <li>THU1102</li> <li>THU1102</li> <li>THP1217</li> <li>THT1216</li> <li>THP101</li> </ul>	Port Name COM1 • Baudrate 19200 • Parity None • Refresh Serial Ports	Not Connected
THT201     THU301     THT202     THP102     THN501     DIN Rail     TDU1218     TDU1219     TDU301	Gateway Repeater Transmitter Repeater ID Wireless Network ID: Wireless Channel Read Writ	Unknown Model
Wireless     WGW1104     WGW410     DUOS     PLUS     SFRIAL	Click on connection button to start	

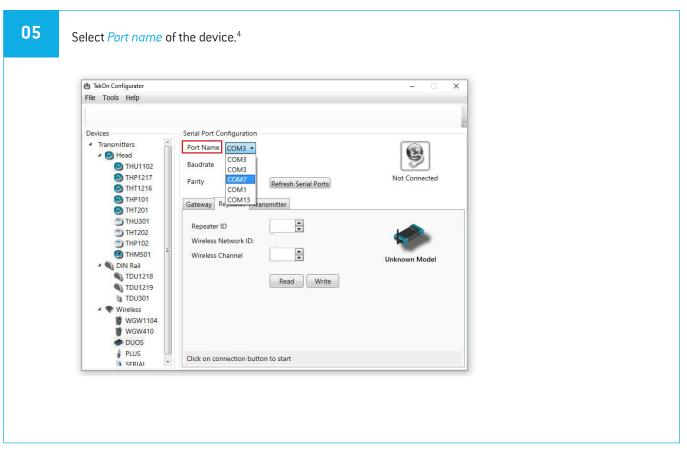
#### 04

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	



# CONNECT AND CONFIGURE 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:

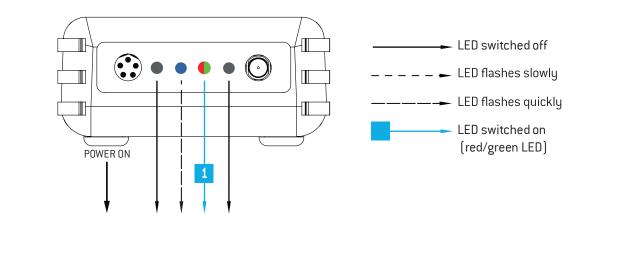
When the 10 seconds have been exceeded, the blue LED remains steady and it is no longer possible to enter *Configuration mode*. In that case, the cable must be removed from Repeater and reinserted.

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





**(b)** TekOn Configurator × File Tools Help Devices Serial Port Configuration 4 Transmitters Port Name COM13 -S 4 🙆 Head THU1102 Baudrate 19200 \* THP1217 Configuration Mode Parity None \* Refresh Serial Ports THT1216 () THP101 Gateway Repeater Transmitter THT201 5 THU301 Repeater ID 201 THT202 Wireless Network ID: 16777217 5 THP102 13 🔷 C THM501 Wireless Channel Repeater 868MHz FW v1.3.0 4 🔊 DIN Rail TDU1218 HW v1.0 Read Write TDU1219 TDU301 4 💎 Wireless 👹 WGW1104 WGW410 Read device successfully







#### 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.

<b>d</b> TekOn Configurator		– 🗆 X
File Tools Help		
Devices	Serial Port Configuration	
Transmitters     A      Head	Port Name COM13  Baudrate	9
<ul> <li>THU1102</li> <li>THP1217</li> <li>THT1216</li> </ul>	Baudrate 19200 * Parity None * Refresh Serial Ports	Configuration Mode
THP101 THT201	Gateway Repeater Transmitter	
THU301 THT202	Repeater ID 201	
5 THP102	Wireless Network ID: 16777217	
M THM501	Wireless Channel 13	Repeater 868MHz
TDU1218	Read Write	FW v1.3.0 HW v1.0
TDU1219	itead white	
TDU301		
👹 WGW1104		
WGW410		
SERIAI	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.

<b>b</b> TekOn Configurator File Tools Help		- 🗆 X
Devices	Serial Port Configuration	
<ul> <li>Transmitters</li> <li>Head</li> <li>THU1102</li> <li>THP1217</li> <li>THT1216</li> </ul>	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
PLUS SERIAI	Writing Success	



10



1 TekOn Configurato × File Tools Help Serial Port Configuration Devices Transmitters Port Name COM13 -🔺 🙆 Head Baudrate 19200 + THU1102 STHP1217 Parity None \* Refresh Serial Ports C THT1216 THP101 Gateway Repeater Transmitter THT201 5 THU301 Repeater ID 201 🗂 тнт202 Wireless Network ID: 16777217 👏 THP102 13 M THM501 Wireless Channel Repeater 868MHz FW v1.3.0 DIN Rail TDU1218 HW v1.0 Read Write TDU1219 TDU301 Wireless WGW1104 WGW410 DUOS PLUS Read device successfully

Click on the *Configuration Mode* (9) button to exit the setup programme.

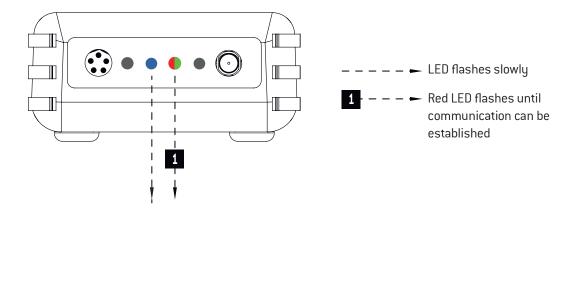


#### NOTE:

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:

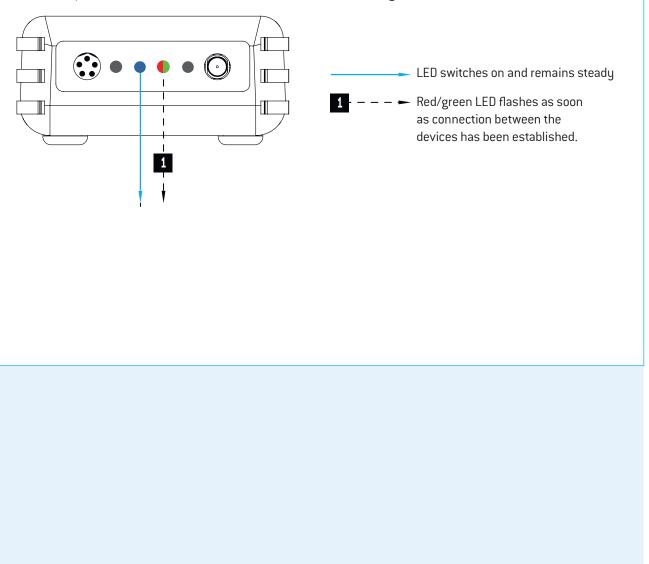
• The *Repeater* is trying to connect to the network when the red LED flashes every second.







• The *Repeater* is connected to the wireless network when red and green LEDs flash.





# 01 Connect DUOS WIRELESS Iot GATEWAY 01 Change the switch pin to Normal Mode. Plug the ethernet cable that follows with 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	0

Connect to the wifi network that comes from your gateway.

Use the password *bresimar* to login.

vodafone P	间 🗇 奈 📶 67% 🔳
	Wi-Fi
Ativar ou desativar	
WI-FI	
WI-FI+ Experiencia de Internet otim	bizada Desativado 🗦
Redes disponiveis	
BRESIMAR	1
WGW4ioT-Tekon	(i)
OpenWrt	ିଶ
WGW4IoT-DUOS@TEK	(ON 🛜
DOMBRESIMAR	(



# 05 CONNECT DUOS WIRELESS IOT 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 1	Data Import/Export	Network	Cloud Service	5	Monit System			
IP Network Table									
Show 10 + entries							Search:		
Interface 11 1	DHCP	IP Address	11.0	Netmask		Gateway	MAC Address	11	
eth0 [	Disabled	192.168.100.1	4	255 255 255 0		192.168.0.250	40.83.60.02.10:40		CZ Manage
10 GI	Disabled	127.0.0.1	3	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		
								-	s 1 Next
Showing 1 to 3 of 3 entries	5							Previou	s Next
	5	pt.pool.ntp.org						Previdu	s 1 Next
NTP	5	pt pool nip.org						Previdu	E Update
NTP Peer	5	pt pool ntp.org						Previdu	
NTP Peer CC Test	5	pt.pool ntp.org						Freviou	
NTP Peer C¢ Test	5	pt pool ntp.org						Freviou	
NTP Peer CC Test Proxy Configuration	5	pt pool ritp.org						Freviou	
NTP Peer © Test Proxy Configuration HTTP Proxy	5	pt pool ritp.org						Fieldu	



# CONNECT DUOS WIRELESS INT GATEWAY

				0	5.5	etwork, click on <i>Ma</i>	
(in) Tekon IoT Gateway	HOME SENS	OR NETWORK BETTIN	05			ADMIN+	
Communication Module	Users )	Data import/Export	Vetwork Cloud Service	s Monit System			
IP Network Table							
Show 10 - en	tries				Search		
Interface [	DHCP	IP Address	11 Netmask	Gateway	MAC Address	11	
eth0	Disabled	192.168.100.1	255 255 255 0	192, 168, 0, 250	40 a3 6b c2 1c:4c	🕼 Manage	
10	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 a3.60 c2 1c:4a		
Showing 1 to 3 of 3 e	ntries					Previous 1 Next	
NTP							
NTP Peer		pt.pool.ntp.org					
Ø <sub>6</sub> Test						E Update	



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.

P Network Tat	ble	Interface	eth0			
Show to	ennes	DHCP IP Address	192.168.100.1		Search.	
etnő	Enabled	Netmask	255,255,255,0		2.1c.4c	tæ t≜anage
10	Disabled	Gateway	192 168 0 250		0.00.00	
780 Showing 1 to 3 c	Disabled If 3 entries	MAC Address	40 83 6b c2:1c:4c		2.1c.4a	evicus 1 Next
NTP		24		Close 🗈 Updat	e :	
NTP Peer		pt.pool.ntp.org				
Øs Test						图 Update



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





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

LIICK	on the <mark>Updo</mark>	ate butt	on to save	the change	es.				
	Interface [1	DHCP	IP Address	11 Netmask	Gateway	MAC Address	11		
	eth0	Disabled	192.168.100.1	255.255.255.0	192.168.0.250	40:83:66:c2:1c:4c		🕼 Manage	
	10	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 65 c2 1c 4a		-	
	Showing 1 to 3 of 3 ent	tries					Previou	t Next	
	NTP								
	NTP Peer		pt.pool.ntp.org						
	Q <sup>®</sup> Test							D Update	
[	Proxy Configuration	1							
	HTTP Proxy								
	HTTPS Proxy								
								🖪 Update	



#### 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

80	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:</hostname>
	- Login: admin - Password: admin
	Wet many
	((•)) Tekon IoT Gateway
	Sign in Unemanne Unemanne According
	Protected by The Prevalence



#### NOTE:

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



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#### 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		
	Search:	1000
Hub ID Name		Status 0 ¥
stowing 1 to 2 of 2 entries Status Overview	Pi	Yernous t Next
Status Overview.		trevious 1 Mert
	Gateway	henous 1 Next
Status Overview Network		herous 1 Next



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	Motous	
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 AGTIVE INACTIVE	
Synchronize to Cloud	OF.	
		Dedde     Dydate     (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.

	NETWORK SETTINGS	1 ADMIN -
ensor Hub - 1		
Measurements Properties Modbu	8	
Properties		
Name	DLOS Infigur	1
System Id	1-9-9-8	
Network Id	1:0:0:1	
Firmware Version	1.0.9	
Communication Period (seconde)	10	
Status	ACTINE	~
Description		
Synchronize to Cloud	ОП	
		Detete 🖁 Update



The transmitter is configured.



## CONNECT DUOS WIRELESS IOT GATEWAY

		CONNECTION TO T	EKON IOT I	PLATFORM	
12	In the DUOS loT GATEW	AY page, go to <i>Settings</i> >>	Cloud Service	s.	
	(m) Tekan loT Gateway MONE BERGE A Settings	ETWORK SETTING		1. ADMN-+	
		part Eucort Althueix Obart Sonices Mont Syste	677		
	Server USL. ATT Key	http://etill.tekanellectronics.com/			
	Status 42 Test Cententists Tekon Cloud - Sensor hubs cont	au guration		🗌 körlöste Dreckoslasts 🔄 Egulater	
	Show 10 v ontries Hub ID Nam	e t	Status	Search:	
	7 Snowieg 1 to 2 of 2 er		eus Bynchronization Ciff	Previous 1 Next	

13

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

+ Inorte Q (C) (the startments (C) NOS QUALINAR	19895		Gold refind my information for the following determinant	
	t Humblity 53.5% Displaces and M	Emperature = 28°C DAVERTURE 12:0 me		
			i nn- heisine attocht, la	



step

## 05 CONNECT DUOS WIRELESS INT GATEWAY

Click on the view option to see the <i>gateway</i> us	er data and copy	the API key.
		SETTINGS - O LOCUT     CLANDUNCE
View user		PERSONAL AREA     ADMINISTRATION
User details		CONFIGURATION
<u> ۵</u>		
Name		
gdeway		
Chernhame gataway		
ganway Profile		
Genevaty		
Email		
Teo della		
Collphone No deta		
Company		
No data		
Communication details Apil key		
Approxy Approximation films which with prevent prev		

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*.

Settings				
Sentimunication Module - Users - Data Imp	or/Export Network Cloud Services A	fontt System		
Tekon Cloud				
Server URL	http://lot78.fokconstretronics.com/			
API Key	414/adam 704-4245-6023-20206421292			
Status	Ön			
OC Test Credentials			🗋 Malidate Credentiais 🔄 Update	]
Tekon Cloud - Sensor hubs config	uration			_
Shaw to 🗸 eatries			Search:	
Hub ID Name		Status		
f DU Showing 1 to 2 of 2 enti	OS inHygroT	Cloud Synchronization Off	*	
Showing 1 to 2 or 2 end	IP S		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.

ettings			
Communication Module - Usera - Data Impe	orl/Export Network Cloud Services	Mantt System	
Tekon Claud			
Server LVAL	http://lot18.tokonelectronics.com/		
АРІ Кву	Available File-Alter with 2003062	1282	
Status	On		
0° Test Crodentials 🖌 Authenticati			Validate Credentials     El Update
Tekon Cloud - Sensor hubs config	uration		
Show 10 ~ entries			Search:
Hub ID Name		Statue	
	OS InHygroT	Cidud Synchronization Off	٣
1 DU			
	R5		Previous 1 Next



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





#### 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. 🗛 DASHEGARD 📻 DATAGOURGES 🐥 ALARNS + 🛢 DATA + 🗢 SETTINSS + Datasources ... Datasources list Datasource \* Date 2 tion t Variable 0 DUOS HYSROTEMP 1 11/18/2021 4:35:49 PM A manufacture & manufacture & 🗆 🗲 рыла нисяютеля а 10/16/2021 4:51:12 PM A summary A summary DUOS HYGROTEMP 3 11/18/2021 4:11:02 PM N WITHIN ALANTE N MICHIEL ALANTE 🗆 🗲 Data by hypothese 11/38/2021 4:31:12 PM 🗶 wanan nann 👩 🕬 N WINDH ALANIN () .... HYGROTEMP ID1 - I2209200902 03/12/2020 1:33:30 PM .... C > TEMP IC2 - 1220900008 🗶 wennan alaama 🧑 🚥 03/12/2020 1121:30 PM 10 · Fage 1 of 1 11 1 18 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. Teken fot Gateway HOME SENSOR NETWORK SETTINGS ADAW-Settings Communication Module Users Data Import/Export Network Claud Services Monit System Tekon Cloud Server URL http://lot18.tekonelectronics.com/ API Key Status 📽 Test Credentials 🖌 Authentication Ox 🗆 Validate Crestentials 🖹 Update Tekon Cloud - Sensor hubs configuration Validate Credentials Show to v entries Search: Hub ID Name Status DUOS inHygroT Cloud Syr zation On API Kev 1x16652/6-7111-4175-00/2 NUMMARK 1117

📄 Validate Credentials 🛛 🖺 Update

oc Test Credentials

ing the tof tenkine





#### 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.

tasources					C	NBC (3	
표 6 📀 2 😡 0 💿 0 🕐 0			٩	Search			
Datassurce *	Date #	Communication #	Variable 0		Ad	tions	
DUCS HYSROTERE 1	11/18/28/21 4:35:45 (44	🗶 merenan aname	🛪 новал клана		1		•
> DOOS HYDROTENP 2	11/18/2021 4:31:12 PM	X WEIGHT WARF	X university	۵	1		¢
DUXIS HYBRIOTEMP 3	11/16/2821 4:11:02 PM	💥 WEISERE ALARIES	🗶 moninaana		,		•
🔰 Daas in Hypeliens	11/16/2021 4:31:32 (9)	X wenter assure	0-		,		٩
> HYGROTEHP ID1 - I2209200102	03(12/280) 1(1)(3) (9)	X WINDIT ALADI	0	۰	,		U
У теме кол - цаловоков	03/12/2080 1:23:30 PM	A screen severe	0=		,		¢
ső + Pages of s				2		15	



## 05 CONNECT DUOS WIRELESS INT GATEWAY

			OIGAIEWAY	graphical ir	terface of l	Modbus TCP/IP communicat	ion.
ln ea	ch transmitte	r you can a	analyse diffe	rent comm	on parame	ters in modbus communicat	tions.
		5	5				
Click	on the transm	hitter / hub	you want to	) analyze ar	nd select th	e Modbus Holding Registers	s tab.
	Takon InT Gateway HO	SENSOR NETWORK	SETTINGS			👢 ADMIN 🕶	
	Sensor Hub - 4	10					
	0011301 1100	10					
	Measurements Properties	Mod2us Holding registers					
	Modbus holding registers						
	mounds norwing registers						
	Register Variable	Actual Value	Register Address	Register Value	Register Type	Register Format	
	Transmitter Model	DU05 InHygroT	168	0x000038	Holding Register	UNT16	
	Probe Sensor Model	TK290	169	0x000008	Holding Register	UNTIG	
	RSSI	-29@m	170	0x00003A	Holding Register	UNT16	
	Communication Period	10s	171	0x00000A	Holding Register	UNTI6	
	Elapsed Time	62887s	172	DxD0F5A7	Holding Register	UNT16	
	Battery Voltage	0.8v	173	0x000008	Holding Register	UNTIG	
	FW Version Major I Minor	1.0	174	0x000100	Holding Register	UNTS_UNTS	
	FW Version Revision	0	175	8x000000	Holding Register	UNTIG	
	HW Version Major I Minor	0.0	176	0x000000	Holding Register	LINTE_LINTE	
				0x41070000	Holding Register	FLOAT32	
	Internal Temperature	26.88°C	177	00041070000			
	Internal Temperature Relative Humidity	26,88°C 43,73%	179	Dx422EEC88	Holding Register	FLOWIGE	

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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

Measurements Properties	Modbus Holding registers				
Modibus halding registers	(2)	(3)	(4)	(5)	(6)
Register Variable	Actual Value	Register Address	Register Value	Register Type	Register Format
Transmitter Model	DUOS InHygroT	168	0x000038	Holding Register	UNT16
Probe Sensor Model	TK280	169	800000#0	Holding Register	UNT16
RSSI	-29dBm	170	0x00003A	Holding Register	UNT16
Communication Period	10:	171	ADDECEND	Holding Register	UNT16
Elapsed Time	62887s	172	0x00F5A7	Holding Register	UNT16
Battery Voltage	0.8v	173	0x000008	Holding Register	UNT16
FW Version Major I Minor	1.0	174	Gx000100	Holding Register	UINTS_UINTS
FW Version Revision	0	175	0x000000	Holding Register	UNT16
HW Version Major   Minor	0.0	176	0x000000	Holding Register	UINT8_UINT8
Internal Temperature	26.88°C	177	0x41070000	Holding Register	FLOAT32
Relative Hurridity	43.73%	179	Ox422EEC88	Holding Register	FLOAT32
Di State	0	181	0x000000	Holding Register	FLOAT32





#### 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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