

### **DUOS WIRELESS SYSTEM** INSTALLATION GUIDE

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**TEKONELECTRONICS.COM** 

### **DUOS WIRELESS SYSTEM** INSTALLATION GUIDE

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CHECK WIRELESS COMMUNICATION BETWEEN THE DUOS TRANSMITTER AND THE GATEWAY

Page 25 to 26

### **DUOS WIRELESS SYSTEM** INSTALLATION GUIDE

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### **LEGEND:**



Important information for the setup;

Take r

Take note of the information;

Validation of a setting;

**TEKONELECTRONICS.COM** 

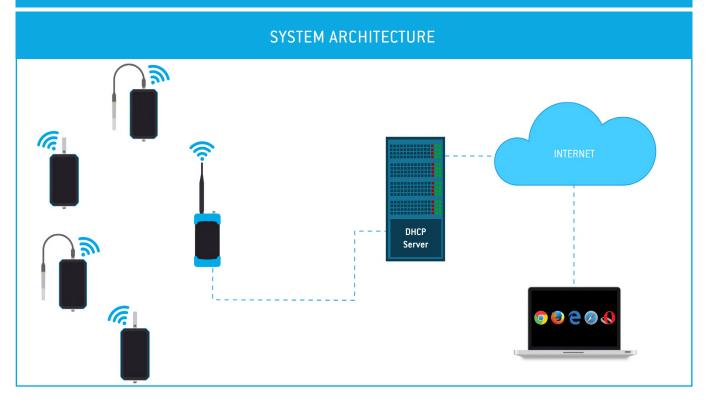






### NOTE:

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

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

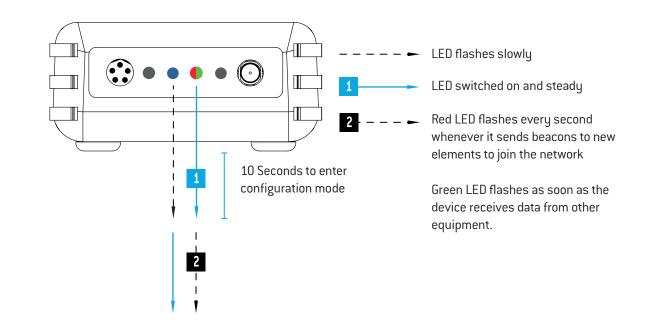


02 Connect the *DUOS RS485-USB* cable to the computer and then to the Gateway.

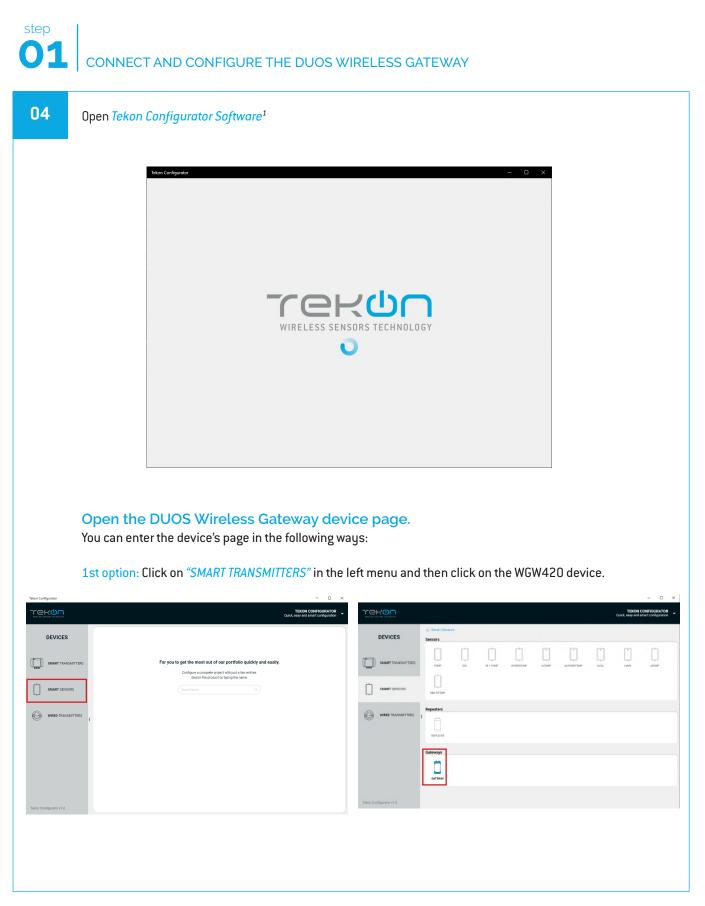


### 03

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







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



step	
01	CONNECT AND CONFIGURE THE DUOS WIRELESS GATEWAY

	2nd option: Type the name of the device in the <i>"Search Device"</i> field on the home page and select.
	DEVICES         Image: Instance Transcontrepts         Image: Instance Transcotrepts         Image: Instance Transcot
05	Load the "Port COM" corresponding to the DUOS Wireless Gateway.
	<b>NOTE:</b> If the USB cable has already been connected before opening the device page, "Port COM" will appear in the list, otherwise you need to click on the " <sup>©</sup> " button.



06	Select corresponding <i>Port n</i>	ame².
		- C × TEKON CONFIGURATOR Quick, easy and smart configuration
	DEVICES	
	SMART TRANSMITTERS	Disconnected (2)
	SMART SENSORS	Wireless Interface Wireless Network ID
		Modbus Interface      Hotbus Address      1     Basefrats (Spin)      Basefrats (Spin)      Basefrats (Spin)      Basefrats (Spin)      C
		A sources

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 (

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

<sup>2</sup> You can check device's serial port name in "Device Manager" on Microsoft <sup>®</sup> Windows<sup>®</sup> operating system.



08	Click on <i>Connect</i> ( 😃 ) button.
	The software will connect to the device.
	DEVICES     MART TRANSMITTERS     Device     Per COH     Device     Device     Device     Device     Devices     De
	Image: Signal service (service)     Image: Signal service)        Image:
	Tekon Configurator v1.0
	<b>NOTE:</b> If the software is unable to connect to the device, the "connection failed" status is displayed. If it hasn't connected, go back to the previous steps and check the port COM.



When the software connects to the device, the "*Connected*" message will be displayed and the gateway will give feedback via LEDs.

Tekon Configurator		- • ×
		TEKON CONFIGURATOR Quick, easy and smart configuration
SMART TRANSMITTERS	Port COM (COM9 • 3)	Modbus Hode
Fekon Configurator v2.0.0	Wireless Interface S555 • 5 • 5 • • • • • • • • • • • • • •	
	10 Seconds to enter configuration mode	<ul> <li>LED flashes slowly</li> <li>LED flashes quickly</li> <li>LED switched on and steady</li> </ul>



### 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.



09

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

DEVICES	Smart Sensors > Gateways > GATEWAY GATEWAY Model: 915 MHz	0
SMART TRANSMITTERS	Firmware Version: 3.0.0 Hardware Version: 1.0	
SMART SENSORS	Port COH COM25	Hodbus Mode
WIRED TRANSMITTERS	Wireless Interface Wireless Network ID Wireless Channel 5555  Wireless Channel 5 Wi	
	(19200 • None •	
Tekon Configurator v1.0		
NOTE:		
	work connection between devices is ensured by th	e Wireless Network ID and Wireless C

You can change the editable parameters. To save your changes, click on WRITE DEVICE. If the changes have been written to the device, the symbol  $(\checkmark)$  will appear.

If not, the symbol (X) will appear: try again and check that the device is connected correctly.



10	Click on the <i>Disconnect</i> button.				
		-      X     X     TEKON CONFIGURATOR     Quick, easy and smart configuration			- · × TEKON CONFIGURATOR Quick, easy and smart configuration
DEVICES SMART TRAK SMART SDO WRED TRAKE	NS   Per coll  Cores		BANKT TRANSMITTERS     SAMART TRANSMITTERS     MART SUBJORS     WIND TRANSMITTERS	Contract Sensors 2 CAREWAY  C	
Tekon Configurator v1.0		VIRITE CEVICE	Tekon Configurator v1.0		Ø WHITE DEVICE

The "Connected" status changes to "Disconnected".

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.

11

### **Modbus Communication**

Select modbus mode in the checkbox below the Connect button.

SMART TRANSMITTERS     Image: Smart Transmitters   <		Smart Sensors > Gateways > GATEWAY     GATEWAY     GATEWAY     GATEWAY	TEKON CONFIGURATOR Quick, easy and smart configuration
SMART SENSORS     Image: CONS model       Wireless Interface     Wireless Interface       Wireless Interface     Modbus Interface       Modbus Interface     Modbus Interface       Image: Statistic Statisti Statistic Statistic Statisti	SMART TRANSMITTERS	Hardware Version: 1.0	
WIRED TRANSMITTERS	SMART SENSORS	coxes     v     ©       Wireless Interface	
	WIRED TRANSMITTERS	Soss      O     Soss     Sossss     Sosss     Soss     Sossss	



12 Ensure that the Port name, Baudrate, Parity and the Modbus Address fields are the same obtained in configuration mode. Tekon Configurator rexun TEKO 0 DEVICES GATEWAY 1: 3.0.0 1: 1.0 Disconnected () SMART TRANSMITTERS Scan Time (s) COM25 \$ • 3 C Baudrate 19200 Parity None Ŧ 🛃 Modbus Mode \$ SMART SENSORS Device Model Firmware Version O WIRED TRANSMITTERS Hardware Ver Sensor Model RSSI (dBm) Power Supply (V) Elapsed Time (s)  $\mathbb{I}$ LED switched on and steady • T 1 Red LED flashes every second I whenever it sends beacons 1 Τ I to new elements to join the + network. T 1 T ţ



13

### Click on connect and check that the status is "*Connected*".

Tekon Configurato	r									- • ×
									TEKON Quick, easy and	I CONFIGURATOR
DEV	ICES		Smart Sensors	GATEW Model Firmw	IAY E : 915 MHz are Version: 3.0.0	r				
SMAP	RT TRANSMITTERS		Transmitter Index	Hardw	Scan Time (s)	\$	Port COM COM25	• 6		Connected ⊘
SMAF	RT SENSORS		Modbus Address	\$	Baudrate 19200	¥	Parity None	¥		Modbus Mode
WIRE	D TRANSMITTERS	:	MODBUS REMOTE DEVICES	Firmw Hardw	: Model are Version rare Version r Model		0.0.0			
				Elapse	dBm) Supply (V) d Time (s) unication Period (s)		0 0 10 0	•		
Tekon Configurato	or v1.0									SEND DATA

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.



### 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 Tekon Configurator Software<sup>1</sup>

		- C X TEKON CONFIGURATOR Quick, easy and smart configuration
DEVICES	Smart Sensors > Gateways > GATEWAY GATEWAY GATEWAY	Disconnected (9)
SMART TRANSMITTERS	Pert COM CON25 CON25 Wireless Interface	Nodbus Hode
WIRED TRANSMITTERS	Windess Hetwork ID Windess Channel	
Tekon Configurator v1.0		

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



# **02** CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

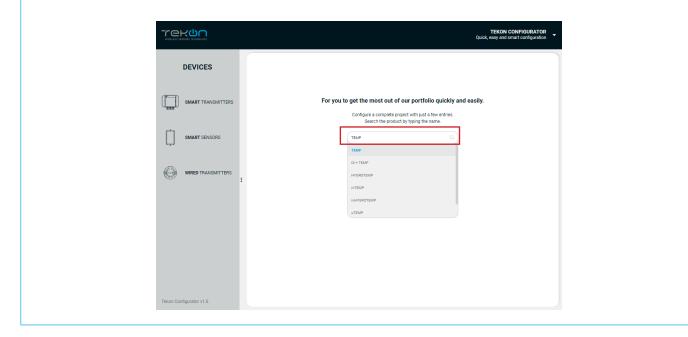
### Open the DUOS Transmitter device page.

You can enter the device's page in the following ways:

1st option: Click on "SMART SENSORS" in the left menu and then click on the DUOS Temp device.

	TEXON CONSTULIZATOR Quick, easy and smart configuration								TEKO Quick, easy an	N CONFIGURATOR
DEVICES		DEVICES	Smart Sensors     Sensors							
SMART TRANSMITTERS	For you to get the most out of our portfolio quickly and easily. Cordigate a complete project with just a fave entries. Search the product by thong the same.	SMART TRANSMITTERS	TEMP		DI + TEMP	HYOROTEMP	inTEMP	in HYGROTEMP	inCO:	in MR
ų		SMART SENSORS	UTEMP	MULTITEMP						
WIRE TRANSMITTERS		WIRED TRANSMITTERS	Repeaters							
			Gateways							
			GATEWAY							
Tekon Configurator v1.0										

2nd option: Type the name of the device in the "Search Device" field on the home page and select.





# step

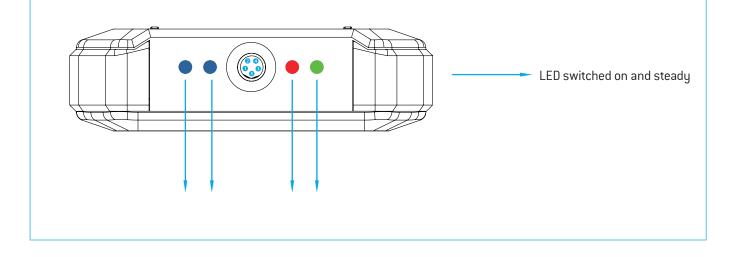
### CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

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.





04

### Load the "Port COM" corresponding to the DUOS Wireless Gateway.

		TEKON CONFIGURATOR Quick; easy and smart configuration
DEVICES	Smart Sensors > Sensors > TEMP TEMP B	
SMART TRANSMITTERS	Port COM Selet COM	(Disconnected (3)
SMART SENSORS	Uireless Hetwork ID	•
WIRED TRANSMITTERS	Transmitter Index 1 Communication Period (s) Power Supply (V) Internal Temperature (*C) External Temperature (*C)	
Tekon Configurator v1.0		

### NOTE:

If the USB cable has already been connected before opening the device page, "Port COM" will appear in the list, otherwise you need to click on the "🐵" button.



# **02** CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

05	Select corr	esponding <i>Port n</i>	ame².	
		Tekon Configurator		x
				TEKON CONFIGURATOR Quick, easy and smart configuration
		DEVICES	☆ Smart Sensors > Sensors > TEMP	
		SMART TRANSMITTERS	Ų ·······	(Disconnected ())
		SMART SENSORS	Pert COH COHIS Wireless Itelswork ID Wireless Channel	٢
		WIRED TRANSMITTERS	Transmitter Index     1       Communication Period (s)     \$       Power Supply (r)     \$       Internal Temperature ( <c)< td="">     \$       External Temperature (<c)< td="">     \$</c)<></c)<>	
		Tekon Configurator v1.0		

06

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



<sup>&</sup>lt;sup>2</sup> You can check device's serial port name in "Device Manager" on Microsoft <sup>®</sup> Windows<sup>®</sup> operating system.



# **02** CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

07	Click on <i>Connect</i> ( 👛 ) button.			
	DEVICES	annel		
Team Configuration of D	S ANALTERE ANA		Weeless Network ID (13 0) Wireless Daund (13 0)	

### NOTE:

If the software is unable to connect to the device, the "connection failed" status is displayed. If it hasn't connected, go back to the previous steps and check the port COM. When the software connects to the device, the "Connected" message will be displayed, and the gateway will give feedback via the LEDs.



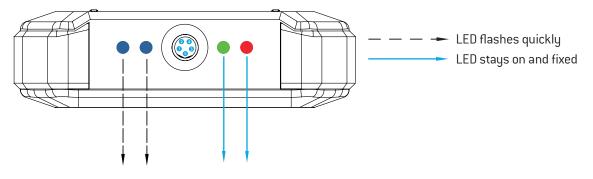
step

## CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

The device's identification data is now available in the software window. In this guide, the *DUOS TEMP Wireless Transmitter* has been considered.

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 (

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

08

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. On this page you can configure the transmitter's communication period, i.e. the time interval between measurements and communication of the values to the gateway. In addition, you can configure the reconnection period which is only triggered when communication between the gateway and the transmitter fails. When communication fails, the transmitter will try to connect to the gateway using the following logic:

- 5 attempts with the communication period set;

- N attempts with the reconnection period until communication is successful.

The default reconnection period is 30 minutes. Please note that short reconnection periods (< 30 minutes) will impact the transmitter's autonomy if communication takes a long time to be re-established.



# **02** CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

				TEKON CONFIGURATOR Quick, easy and smart configuration	
DEVICES	Smart Sensors > Sensors > 1 TEMP  Model: 868 MH	łz		(	$\overline{\mathbf{O}}$
SMART TRANSMITTERS	Firmware Vers Hardware Vers			(Connected @	
SMART SENSORS		5555 \$	]	<b>(</b>	
	Transmitter Index	13 ¢ 55 ¢ 10 ¢			
	Reconnection Period (s) Power Supply (V) Internal Temperature (°C)	60 \$ 4.5 25.38	]		
	External Temperature (°C)	24.88			
Tekon Configurator v1.0					

You can change the editable parameters. To save your changes, click on WRITE DEVICE. If the changes have been written to the device, the symbol ( ) will appear.

If not, the symbol (X) will appear: try again and check that the device is connected correctly.

09 Clic	ck on the <i>Disconnect</i> button.			
Tekon Configurator	- • ×	Tekon Configurator		- • ×
	TEXON CONFIGURATOR Quick, easy and smart configuration			TEKON CONFIGURATOR Quick, easy and smart configuration
DEVICES SMART TRANSMITTERS	Senand Senands > TEMP	DEVICES	(i) Smart Sensors 3 Sensors 3 Table TEMP 8 Provide MMM: Timumer Varian; 6.0 Hardware Varian; 6.2 Prot Cont Conta ** ©	(Deconnected @)
SMART SENSORS	Wireless Network ID (555 0) Wireless Okannil (13 0)	SMART SENSORS	Wireless Network ID     5555     \$       Wireless Channel     13     \$	
WIRED TRANSMITTERS	Transmitter Index BS 0 Communication Princi (a) 0 0 Resonancian Princi (a) 0 0 Pener Staphy (c) 44 Date of Imperiation (c) 213 External Temperature (c) 248	WHED TRANSMITTERS	Treamitie Index         55         8           CommonStein Fund (s)         10         8           Resonanchin Fund (s)         00         8           Parameting (rg)         4.4         8           Edamid Temperature (rc)         2.111         8	
Tekon Configurator v1.0		Tekon Configurator v1.0		
The	e "Connected" status changes to " <i>Disconnected</i> "	,		

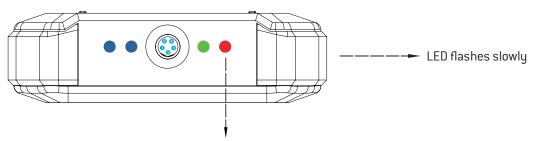


step

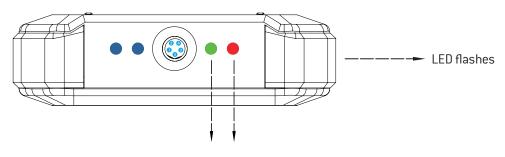
# CONNECT AND CONFIGURE THE DUOS WIRELESS TRANSMITTER

### 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.

step 03 CHECK WIRELESS COMMUNICATION BETWEEN THE DUOS TRANSMITTER AND THE GATEWAY

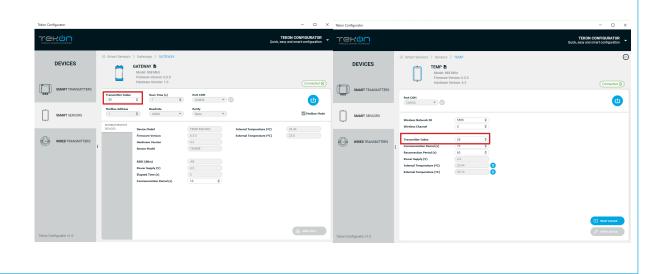


# step 03

### 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 *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.

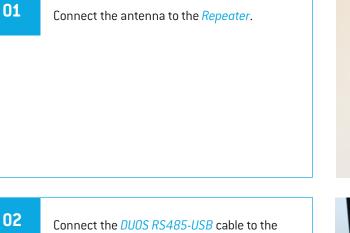
You can define the communication period of the *Transmitter* in the write field by clicking on the *register* (

				Quick	TEKON CONFIGURATO easy and smart configuration
DEVICES		Gateways > GATEWAY     GATEWAY     Model: 868 MHz     Firmware Version: 3.0.0     Hardware Version: 1.0			
SMART TRANSMITTERS	Transmitter Index 55	Scan Time (s)	Port COH COH25 *	0	Connected
SMART SENSORS	Hodbus Address	Baudrate     (19200 *	Parity None *		Modbus P
Ç	MODBUS REMOTE DEVICES	Device Hodel	TEMP 868 MHz	Internal Temperature (°C)	26.06
	1	Firmware Version Hardware Version Sensor Model	(6.3.0 (4.2 (TK9808	External Temperature (°C)	25.56
		RSSI (dBm)	.70		
		Power Supply (V) Elapsed Time (s)	(4.6)		
		Communication Period (s)	(10 \$)		





### step 0 CONNECT AND CONFIGURE THE DUOS WIRELESS REPEATER

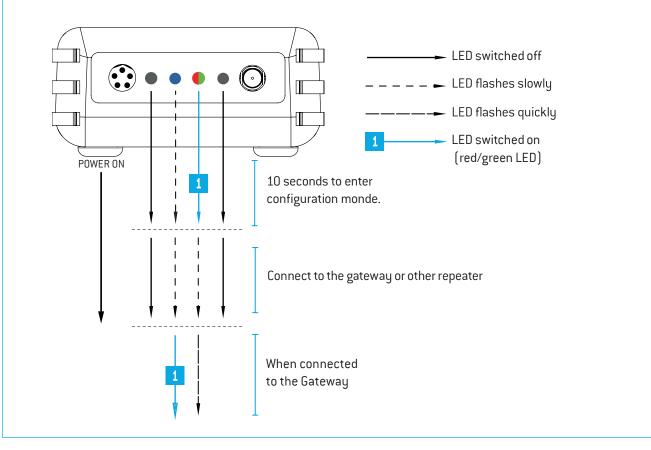




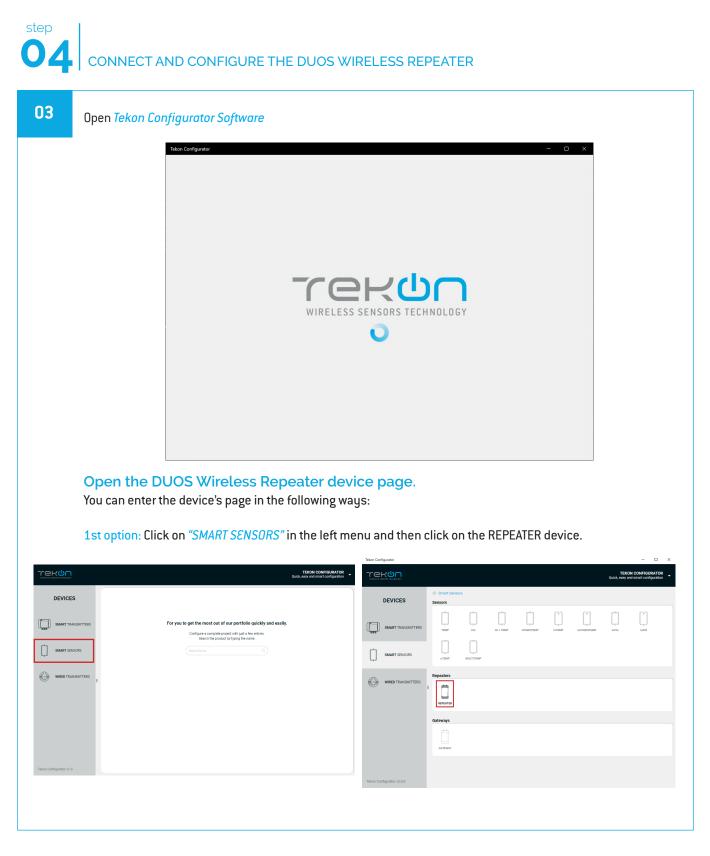
computer and then to *Repeater*.



Check the device connection through the LEDs indication.









WIRELES	S SENSORS TECHNOLOGY		DUOS WIRELESS SYSTEM	INSTA
step		AND CONFIGUR	E THE DUOS WIRELESS REPEATER	
	2nd option:	Type the name of the	e device in the <i>"Search Device"</i> field on the home page and	select.
			TEKON CONFIGURATOR Quick, easy and smart configuration	
		DEVICES		
		SMART TRANSMITTERS	For you to get the most out of our portfolio quickly and easily. Configure a complete project with just a few entries. Search the product by typing the name.	
		SMART SENSORS	REPEATER	
		WIRED TRANSMITTERS		
		Tekon Configurator v1.0		

04	Load the	CONTRACTOR COM	
		Tekon Configurator v1.0	I WHITE DEVICE
	NOTE: If the USB of otherwise y	cable has already you need to click o	been connected before opening the device page, "Port COM" will appear in the list, on the " <sup>29</sup> " button.





05	Select corresponding Port	name².	
		Smart Sensors > Repeaters > REFEATER	TEKON CONFIGURATOR  Duick, essy and smart configuration  Disconnected (b)
	SMART SENSORS	Wireless Network ID Wireless Channel Repeater Id	VITE DAVCE
	Tekon Configurator v1.0		
06	Remove the cable from Repe	eater and reinsert it.	

Remove the cable from *Repeater* and reinsert 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>2</sup> You can check device's serial port name in "Device Manager" on Microsoft <sup>®</sup> Windows<sup>®</sup> operating system.



step	
04	CONNECT AND CONFIGURE THE DUOS WIRELESS REPEATER

07	Click on <i>Connect</i> ( 👜 ) button		
		TEKON CONFIGURATOR  Quick, easy and smart configuration	
	DEVICES	# Smart Seniors > REPEATER     REPEATER     REPEATER	
	(The second seco	Concentration (Disconnected (O)	
	SMART SENSORS	Windess Hebrork ID Windess Channel Reporter Id	
	WIRED TRANSMITTERS	Reputer Id 🛛 🔍	
		(A sense or o	

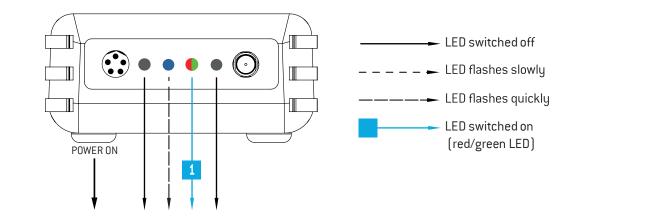
The software will connect to the device.

	TEKON CONFIGURAT Quick, easy and smart configural	OR 🚽			TEKON CONFIGURATOR Quick, easy and smart configuration
DEVICES	Of Smart Sensors > Repeaters > REFEATER     REPEATER     REPEATER B		DEVICES	Smart Sensors > Repeaters > REPEATER     REPEATER 0     Model '15 Mild     Pimmare Vension 2.0.1	Θ
SMART TRANSMITTERS	The Content of Content	•••	SMART TRANSMITTERS	Hardware Version: 1.0	Connected (O)
SMART SENSORS	Workes Robowi ID 8 Workes Classed \$ Reputs 2 \$		SMART SENSORS	Windess Network ID         5555         ⊕           Windess Chansel         5         ⊕           Repeater I         (201         ⊕	
WIRED TRANSMITTERS	1		WIRED TRANSMITTERS	1	
Tekon Configurator v1.0	J with a contract	5	Tekon Configurator v1.0		VINITE DEVICE



### NOTE:

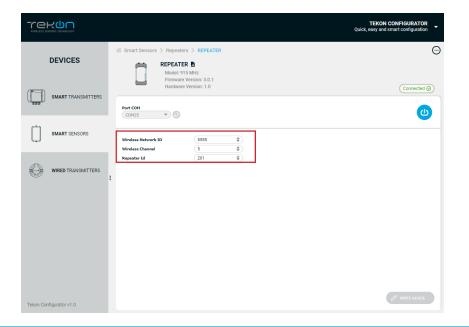
If the software is unable to connect to the device, the "connection failed" status is displayed. If it hasn't connected, go back to the previous steps and check the port COM. When the software connects to the device, the "Connected" message will be displayed, and the gateway will give feedback via the LEDs.





# 08 Make sure that Wireless Network ID and Wireless Chappel in the Repeater

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.





### 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

You can change the editable parameters. To save your changes, click on WRITE DEVICE. If the changes have been written to the device, the symbol (

If not, the symbol (X) will appear: try again and check that the device is connected correctly.

			TEKON CONFIGURATOR Quick, easy and smart configuration
DEVICES	Firmwa		Θ
SMART TRANSMITTERS	Port COH COM25 V 3		
SMART SENSORS	Wireless Network ID Wireless Channel	(5555 ¢) (5 ¢)	
	Repeater Id	(201 \$	
Tekon Configurator v1.0			



### 09

step

### Click on the *Disconnect* button.

	TEKON CONFIGURATOR Quick, casy and amart configuration			TEKON CONFIGURATOR Quick, easy and smart configuration
DEVICES UNIX TRANSMITTER  C C C C C C C C C C C C C C C C C C		DEVICES  SMART TRANSMITTERS  MART TRANSMITTERS  WIRED TRANSMITTERS	Remard Sensors > Repeators > REPEATER   REPEATER   Repeator B   Repeator B   Repeator B   Sensors B   Sensors B   Sensors B   Sensors B   Sensors B   Sensors B	
Tekon Configurator v1.0	🖉 with denice	Tekon Configurator v1.0		WHITE DEVICE

The "Connected" status changes to "Disconnected".

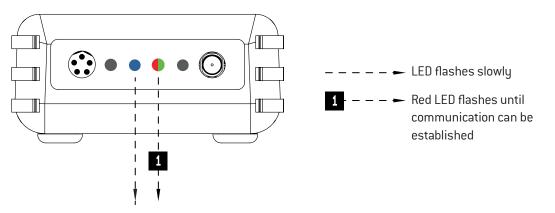


### NOTE:

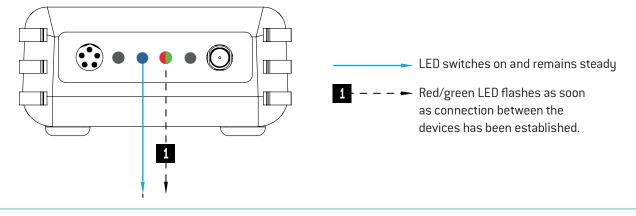
In order to establish communication between the Repeater and the Gateway, make sure that both devices are at a distance of at least 3 meters or remove the antenna from the repeater (in case both devices are near each other). These procedures will guarantee communication quality.

### 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.







# O1 CANNECT THE DUOS WIRELESS IOT GATEWAY O1 Change the switch pin to Normal Mode. Hug the ethernet cable that follows with your gateway to the device's input and to your network. O2 O3 O4 O5 O5

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	Э	

Connect to the wifi network that comes from your gateway.

Use the password *bresimar* to login.

vodafone P	III 🛈 🤶 .11 67% 🔳
	Wi-Fi
Ativar ou desativar	
Wi-Fi	
Wi-Fi+ Experiência de Internet otimizad	a Desativado
Redes disponíveis	
BRESIMAR	
WGW4IoT-Tekon	<u></u>
OpenWrt	(i)
WGW4IoT-DUOS@TEKON	
DOMBRESIMAR	



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	Network	Cloud Services	5 N	Monit System				
IP Network Table										
Show 10 • en	tries							Search:		
	DHCP	IP Address	Lî Ne	tmask	11	Gateway	11	MAC Address	Jt	
eth0	Disabled	192.168.100.1		5.255.255.0		192.168.0.250		40:a3:6b:c2:1c:4c		☑ Manage
lo	Disabled	127.0.0.1	25	5.0.0.0				00:00:00:00:00:00		
ra0	Disabled	192.168.128.1	25	5.255.255.0				40:a3:6b:c2:1c:4a		
Showing 1 to 3 of 3 e									Previou	s 1 Next
	ntnes								Pieviou	- Hon
	ntnes	pt.pool.ntp.org							Pieviou	
NTP	ntnes	pt.pool.ntp.org							Pieviou	E Update
NTP Peer © Test		pt pool.ntp.org							Previou	
NTP Peer of Test		pt pool ntp.org								
NTP Peer of Test Proxy Configuratio		pt pool.ntp.org								
NTP Peer © Test Proxy Configuratio HTTP Proxy		pt.pool.ntp.org								



To en	able the op	otion to	get an dyna	amic IP addr	ess assigne	d by your ne	etwork, click on <i>Manage</i>	buttor
-								
0	,,		DR NETWORK SETTING				1 ADMIN -	
(	communication Module	Users [	Data Import/Export Ne	twork Cloud Services	Monit System			
1	P Network Table							
	Show 10 • ent	700				Search:		
	Interface 1	DHCP	IP Address	11 Netmask	11 Gateway	MAC Address	41	
	eth0	Disabled	192.168.100.1	255.255.255.0	192.168.0.250	40:a3:6b:c2:1c:4c	🕼 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 en	tries					Previous 1 Next	
N	ITP							
ľ								
	NTP Peer		pt.pool.ntp.org					
			Ear and a star					
	0° Test						🖺 Update	
	Provou Configuration							
F	Proxy Configuration	1						



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.

IP Network Tabl	9	Interface	eth0			
Show 10 +	entries	DHCP	Ø		Search:	
Interface	LE DHCP	IP Address	192.168.100.1		ess	
eth0	Enabled	Netmask	255.255.255.0		2:1c:4c	Co Manage
ю	Disabled	Gateway	192.168.0.250		0:00:00	
ra0	Disabled	MAC Address	40:a3:6b:c2:1c:4c		2:1c:4a	
Showing 1 to 3 of	3 entries				P	revious 1 Next
NTP				Close 🖺 Update	]	
NTP Peer		pt.pool.ntp.org				
Q <sup>®</sup> Test						🖺 Update



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



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

	-		-		•	-			<i>Proxy Configuration</i> . proxy server.
Click	on the Upde			he change	S.	MAC Address	11		
	eth0	Disabled	192.168.100.1	255.255.255.0	192.168.0.250	40:a3:6b:c2:1c:4c		C 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 en	tries					Previou	s 1 Next	
	NTP								
	NTP Peer		pt.pool.ntp.org						
	Ø <sup>®</sup> Test							🖺 Update	
	Proxy Configuration	ו							
	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>
	O Not securi 192.168.100.1
	(e) Taken kit Gateway
	Sign in
	Username admini
	Password ·····
	Provered by Frankoter



### NOTE:

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



### TRANSMITTER ACTIVATION

#### 09

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).

Home		
lost Recent Values		
Show 10 • entries	Search:	
Hub ID Name	Status	
		*
1 N/A Showing 1 to 2 of 2 entries Status Overview	Previous 1	Vext
Showing 1 to 2 of 2 entries Status Overview	Previous 1	
Showing 1 to 2 of 2 entries Status Overview Network	Prevous 1 /	Next
Showing 1 to 2 of 2 entries Status Overview Network #Active Nodes: 1	Galeway Uptime: 3.17	
Showing 1 to 2 of 2 entries Status Overview Network	Prevous 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)		
	Addbus	
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	Off	
		Delete     Delete     Delete     Delete     Delete





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.

easurements Properties	Modbus	
roperties		
Name	DUOS CO2 - Comercial Wharehouse	
System Id	1:0:0:0	
Network Id	1:0:0:1	
Firmware Version	3.0.0	
Refresh Time (seconds)	16	
Status	ACTIVE	•
Description	Black DUOS CO2 transmitter in comercial wharehouse	
Synchronize to Cloud	Off	



The transmitter is configured.



		CONNECTION TO TE	KON IOT PLATFORM	
12	In the DUOS IoT GATEWA	Y page, go to <i>Settings</i> >> (	Cloud Services.	
	Tekon lot Gateway HOME SEN	SOR NETWORK SETTINGS	ADMIN-	
	Communication Module Users Tekon Cloud	Data Import/Export Network Cloud Services Mr	ont. System	
	Server URL	http://iot19.tekonelectronics.com/		
	Status	classic hindus and later has some are		
	© Test Credentials	configuration	Validate Credentials  Update	
	Show 10 T entries		Search: Status	
	1 DUOS Showing 1 to 2 of 2 entries	\$ CO2 – Comercial Wharehouse	Cloud Synchronization Off   Previous   Next	

13

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

Faurites      Alo     Insris     Qualitation	INSYS		Could not find any information for the following dataseurces	✿ CONFIGURATION	
	Humidity -	Temperature	Conter − [00] -310471 Ormoderis La Det		
		c	2019 - IMESIMAR AUTOMICKO, S.A.		



14	Click on the view option to see the <i>gateway</i> user data a	and copy the API key.
	MILLER INCOME TRANSFORMER & DATASOURCES & ALARMS - 🛢 DATA -	SETTINGS - O LOGOUT
	View user User details	
	Name gelensy Unsername gelensy	
	Puffe Galeowy Email Yo obs Celiptone	
	Te data Company Te data Communication details	
	Api key An and a fan anti-strengt sta	•

- 6	

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*.

ettings	
Communication Module Users	Data Import/Export Network Cloud Services Monit System
Tekon Cloud	
Server URL	http://ior19.tekonelectronics.com/
API Key	ctax45275 0846-8155-5605. Toxin-ACIDEa7e
Status	on
<b>©</b> Test Credentials	🗌 Validate Credentials 🛛 Update
Tekon Cloud - Sensor hubs of	configuration
Show 10 • entries	Search:
Hub ID Name	Status
1 DUOS Showing 1 to 2 of 2 entries	CO2 - Comercial Wharehouse Cloud Synchronization Off 🔻
	Previous 1 Next



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 Users	Data Import/Export Network Cloud S	ervices Monit System		
Tekon Cloud				
Server URL	http://iot19.tekonelectronics.com/			
API Key	clash271 (bdd-8113-5456-15a/a-65	Na7e		
Status	On			
🗞 Test Credentials 🖌 Author	entication Ok		✓ Validate Credentials	pdate
Tekon Cloud - Sensor hubs	configuration			
Tekon Cloud - Sensor Hubs				
Show 10 • entries			Search:	
			Search:	
Show 10 v entries Hub ID Nam				1
Show 10 • entries Hub ID Nam	e		Status	1



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



18

### 05 CONNECT THE DUOS WIRELESS INT GATEWAY

### ATTACH TRANSMITTER DATA TO TEKON IOT PLATFORM

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.

Name -         Date ®         Communication ®         Variables state ®           D005 000 91944-01590         0x10 019 1111157 44-01:09         0x10 019 0111157 44-01:09         0x10 010 0100 0100 01000000000000000000					
Name         Dote II         Communication II         Variables state II           DOS CO2 915/941- 1157 A47 - 61.00         Image: Annotation IIII (1111) (11111) (11111) (11111) (11111) (1111) (11111) (1111) (1111) (1111) (11111) (	atasources				
Name         Date         Communication         Variables state           DU05 000 519/948-71557 ACV         09/12/2019 11:1157 A4 -01:09         Image: Amage:					+ Add datase
DUDG CQ2 1919H2 - TISTE ACV         09/22/2019 11:11:57 AH +01:09         マム         マム         0           INFS         07/26/2019 12:15:53 PH +01:09         マム         マム         ・           FULS 5         マム         マム         ・         ・           FULS 53         99/17/2018 2:46:09 PH +01:09         マム         ・         ・         ・           FULS 53         99/17/2018 2:46:09 PH +01:09         マム         ・				search	
INPIS     07/26/2019 12:15:33 PH + 01:00     V a     V a     V a       PLUS S     V a     V a     0       PLUS SS     04(17/2018 2:46:09 PH + 01:00     0     0       Tetle INPIS Additi     V a     0     0	Name -	Date 0	Communication ©	Variables state 0	
RUS 5 6 69(17/2018 2.44.09 PM +61.50 6 6 6 6 6 7 4 6 6 6 7 4 6 6 7 4 6 7 4 6 7 4 6 7 4 6 7 4 6 7 4 7 4	DUOS CO2 915MHz - TESTE ACV	09/23/2019 11:11:57 AM +01:00	of ak	or ak	
PLUS 55 09(17)2019 248:09 PM + 01:00 0 mm	INSYS	07/26/2019 12:15:33 PM +01:00	er ek	<ul> <li>✓ dk</li> </ul>	0 J
	PLUS 5		of ak	v ak	0 /
	PLUS 55	09/17/2019 2:48:09 PM +01:00	O error	v at	
20 -	Teste INSYS Andril		✓ ak	✓ ak	
	20 *				
			© 2019 - BRESIMAR AUTOMAÇÃO, S.A.		

19

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.

sei	ttings			
Con	mmunication Module Users Data	Import/Export Network Cloud Services	Monit System	
Т	Fekon Cloud			
	Server URL	http://iot19.tekonelectronics.com/		
	API Key	c8a4627f-9b8d-4f15-9d06-1ba4e4056a7e		
	Status	On		
	📽 Test Credentiais 🖌 Authenticati	on Ok	Validate Credentials	E Update
	Tekon Cloud - Sensor hubs co	nfiguration		
	Show 10 • entries		Search:	
	Hub ID Name		Status	
	1 DUOS C	O2 - Comercial Wharehouse	Cloud Synchronization On	•
	API Key	fe966bf6-7c1c-417b-bbf2-f42bbdafc337		
	00 Test Credentials		Validate Credentials Dupdate	e



### step 05

### CONNECT THE 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

20

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.

	ASHBOARD 📾 DATASOURCES 🌲 ALARMS 👻 🛢 DATA			💠 SETTINGS 👻 🖒 LOGO
tasources				
				+ Add datasou
			search	
lame •	Date 0	Communication ©	Variables state 0	
UOS CO2 915MHz - TESTE ACV	09/23/2019 11:11:57 AM +01:00	✓ ek	of ak	• /
NSYS	07/26/2019 12:15:33 PM +01:00	✓ ek	✓ ek	• <i>1</i>
LUS 5		√ ek	✓ ak	01
LUS 55	09/17/2019 2:48:09 PM +01:00	O error	✓ ak	01
este INSYS Andril		√ ak	✓ dk	• 1
20 -				
20 -				
		© 2019 - BRESIMAR AUTOMAÇÃO, S.A.		
		© 2019 - BRESSHAR HUTOPAR, NO, S.A.		



		DATA COI	MMUNICA	TION OVE	R MODBUS	S TCP/IP	
	′ou can pre-check tl n each transmitter		-	•			
(	lick on the transmi	tter / hub u	ou want to ar	haluze and s	select the Mo	dbus tab.	
	(w) Tekon IoT Gateway HOME		ETTINGS	5		1 ADMIN-	
	Sensor Hub - 40						
	Measurements Properties Modbus	Modbus			Search:		
	Register Variable	Actual Value	Register Address	Register Value	Register Type	Register Format	
	Transmitter Model	DUOS TEMP	819	0x000003	Holding Register	UINT16	
	Probe Sensor Model	TK9808	820	0x000001	Holding Register	UINT16	
	RSSI	-22	821	0x00002C	Holding Register	UINT16	
	Communication Period	60	822	0x00003C	Holding Register	UINT16	
	Elapsed Time	33	823	0x000021	Holding Register	UINT16	
	Power Supply Voltage	5	824	0x000032	Holding Register	UINT16	
	FW Version Major   Minor	3.0	825	0x000300	Holding Register	UINT8_UINT8	
		0	826	0x000000	Holding Register	UINT16	
	FW Version Revision	0	020				
	FW Version Revision HW Version Major   Minor	3.3	827	0x000303	Holding Register	UINT8_UINT8	
				0x000303 0x41A58106	Holding Register Holding Register	UINT8_UINT8 DOUBLE	
	HW Version Major   Minor	3.3	827				

22

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

Modbus					
Show 25 • entries (1) Register Variable	(2) Actual Value	(3) Register Address	(4) Register Value	(5) Search: Register Type	<b>(6)</b> Register Format
Transmitter Model	DUOS TEMP	819	0x000003	Holding Register	UINT16
Probe Sensor Model	TK9808	820	0x000001	Holding Register	UINT16
RSSI	-22	821	0x00002C	Holding Register	UINT16
Communication Period	60	822	0x00003C	Holding Register	UINT16
Elapsed Time	33	823	0x000021	Holding Register	UINT16
Power Supply Voltage	5	824	0x000032	Holding Register	UINT16
FW Version Major   Minor	3.0	825	0x000300	Holding Register	UINT8_UINT8
FW Version Revision	0	826	0x000000	Holding Register	UINT16
HW Version Major   Minor	3.3	827	0x000303	Holding Register	UINT8_UINT8
Last Internal Temperature	20.69	828	0x41A58106	Holding Register	DOUBLE
Last Temperature	20.44	830	0x41A38106	Holding Register	DOUBLE





#### 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;

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