

DUOS MULTITEMP WIRELESS TRANSMITTER INSTALLATION GUIDE

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IG DUOS MULTITEMP EO2A

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DUOS MULTITEMP TRANSMITTER INSTALLATION GUIDE

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CHECK WIRELESS COMMUNICATION BETWEEN DUOS MULTITEMP TRANSMITTER AND GATEWAY

Page 25 to 26

DUOS MULTITEMP TRANSMITTER INSTALLATION GUIDE

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LEGEND:



Important information for the setup;

Take

Take note of the information;

Validation of a setting;

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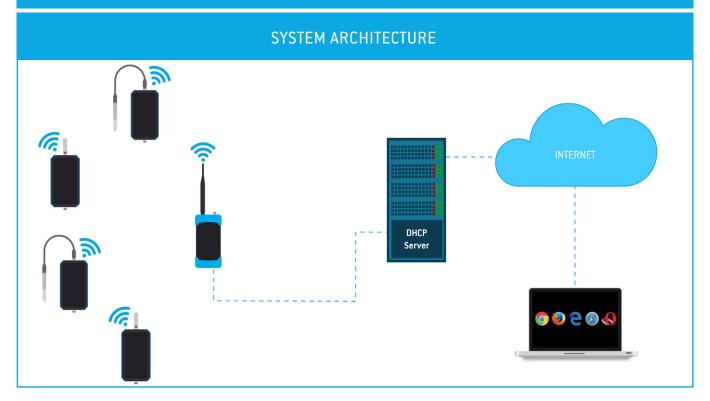


01 CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY



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 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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O1 CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

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

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

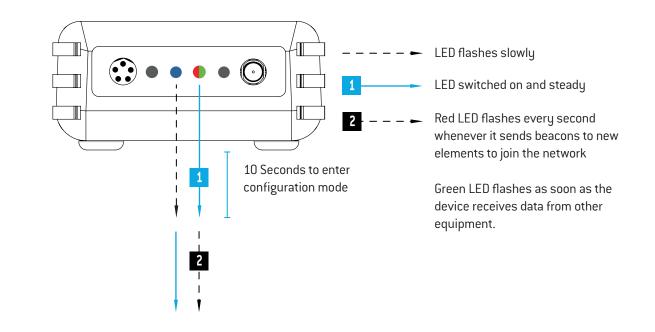


02 Connect the *DUOS RS485-USB* cable to the computer and then to the Gateway.

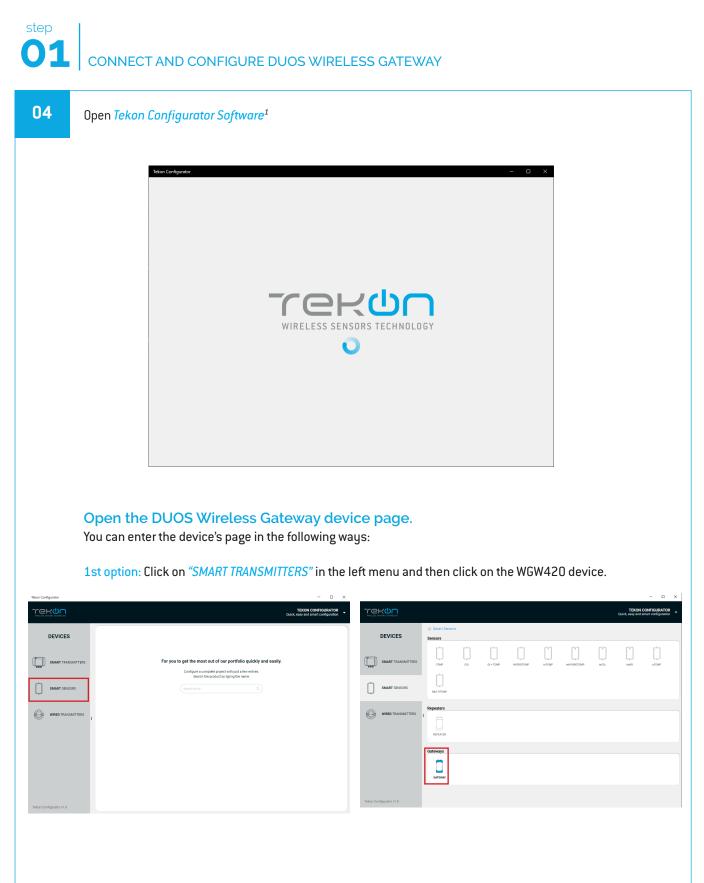


03

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







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





2nd option: Type the name	of the device in the <i>"Search Device"</i> field on the home page and select.
DEVICES Image:	TEXCONCONFIGURATION Configuration
DEVICES DEVICES OBART TRANSMITTERS OBART SENSORS WIRD TRANSMITTERS	
NOTE: If the USB cable has alread otherwise you need to click	ly been connected before opening the device page, "Port COM" will appear in the list, < on the "🔗" button.



O1 CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

06	Select corresponding <i>Port n</i>	name².
		CALC CONFIGURATOR Quick, easy and smart configuration
	DEVICES	
	SMART TRANSMITTERS	Disconnected ()
	SMART SENSORS	Wireless Interface Wireless Interface
	WIRED TRANSMITTERS	Modbus Interface Hodbus Aldress Baudrate (tep) Baudrate (tep) Baudrate (tep) Constrained by Cons

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*.

² You can check device's serial port name in "Device Manager" on Microsoft [®] Windows[®] operating system.



01 CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

08	Click on <i>Connect</i> (也) button.
	The software will connect to the device.
	INTERNATIONS IN
	NOTE:
	If the software is unable to connect to the device, the <u>connector Failed</u> status is displayed. If it hasn't connected, go back to the previous steps and check the port COM.





CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

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

		TEKON CONFIGURATOR Quick, easy and smart configuration
DEVICES	Wired Transmitters > THP101	Connected (A)
SMART TRANSMITTERS	Port COM COMIO V S	<u>ل</u>
SMART SENSORS	Input Configurations Transmitter Description (12207240087 500	
WIRED TRANSMITTERS	Sensor Type Wires Resistance (Ω) (PT100) (0) (0) Min. Temperature (0) (0) (0) (0) (0)	Temperature (°C) -273.15
	Min. Current (mA) Max. Current (mA) 4 20 Output Limits Lower Limit (mA) 38 Upper Limit (mA)	Current Offset (mA) Invert Output
	Error Limits Signaling Current (mA) 21.6	T READ VALUES
		 LED flashes slowly LED flashes quickly LED switched on and steady
	10 Seconds to enter configuration mode	
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.



step 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.

DEVICES	Smart Sensors > Gateways > GATEWAY GATEWAY GATEWAY	\odot
	Model: 915 MHz Firmware Version: 3.0.0 Hardware Version: 1.0	Connected Ø
SMART TRANSMITTERS	Port COM COM25 V	U Hodbus Hode
SMART SENSORS	Wireless Interface Wireless Network ID Wireless Channel	
WIRED TRANSMITTERS	Writeless Interview ID Writeless Chainter 5555 \$ Modbus Interface Modbus Address 1	
	Baudrate (bps) Parity 19200 V None V	
Tekon Configurator v1.0		
NOTE: The wireless netw <i>field parameters.</i>	vork connection between devices is ensured by th	e Wireless Network ID and Wireless Cl

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.



O1 CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

10	Click on the <i>Disconnect</i> button.				
Tekon Configurator		- 0 ×	Tekon Configurator		- 0 ×
		TEKON CONFIGURATOR Quick, easy and smart configuration			TEKON CONFIGURATOR Quick, easy and smart configuration
	GALEWAY D Model: 915 MHz: Firmware Version: 3.0.0 Hardware Version: 1.0	Connected @		(#) Smart Sensors > Oateways > OATEWAY GATEWAY D Mode 91 50 Mart Firmmare Version: 1.0	(Disconnected (C))
SMART SEN	Part COH	U Mothos Hode	SMART TRANSMITTERS	Port COM COMES v Ø	U Notivus Mode
WIRED TRAN	Mitters Identified D Works Identified D D D D D D D D D D D D D D D D D D D		WIRED TRANSMITTERS	Windows National Degree Windows Deared O 1 Modbuss Interface B	
Tekon Configurator v1.0		(P were server	Teton Configurator VI.0		

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.

Tekon Configurator	Smart Sensors > Gateways > GATEWAY GATEWAY	CONFIGURATOR Quick, essy and smart configuration
SMART TRANSMITTERS	Model: 915 MMz Firmware Version: 3.0.0 Hardware Version: 1.0	
SMART SENSORS	Wireless Interface Wireless Retwork ID 5555 \$	Hodbur Mode
WIRED TRANSMITTERS	Modbus Interface Modbus Address 1 Baudrate (pp) 10200 V None V	
Tekon Configurator v1.0		



01 CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

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 (i) 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



01 CONNECT AND CONFIGURE DUOS WIRELESS GATEWAY

13

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

		×
		TEKON CONFIGURATOR Quick, easy and smart configuration
DEVICES	Smart Sensors > Gateways > GATEWAY GATEWAY E Model: 915 MHz Firmware Version: 1.0	Connected @
SMART TRANSMITTERS	Transmitter Index Scan Time (s) Port COH 1 \$\$ 1 \$\$ \$\$ \$\$ \$\$	
SMART SENSORS	Hodbus Address Baudrate Parity 1 \$ 19200 * None *	Modbus Hode
WIRED TRANSMITTERS	Process Proce	
Tekon Configurator v1.0		A 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.

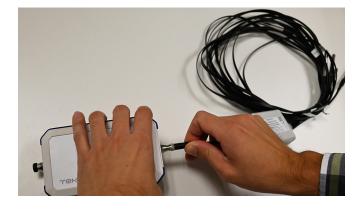




CONNECT AND CONFIGURE DUOS MULTITEMP WIRELESS TRANSMITTER



Connect the probe (and the digital input cable, if it will be used) to the *DUOS MultiTemp Wireless Transmitter*.





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



02 CONNECT AND CONFIGURE DUOS MULTITEMP WIRELESS TRANSMITTER

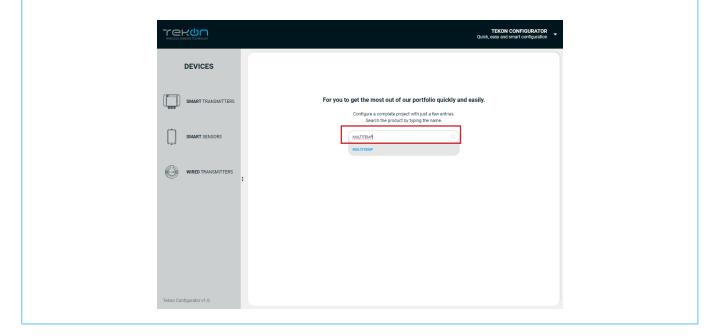
Open the DUOS Transmitter device page.

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 Multitemp device.

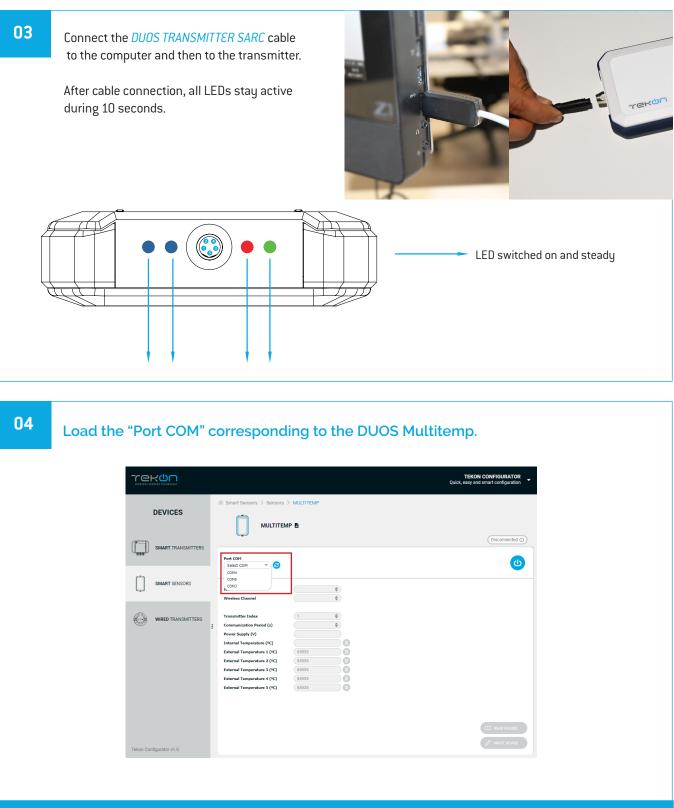
	TEXON CONFIGURATOR Quick, easy and smart configuration								TEKO Quick, easy ar	N CONFIGURATOR
DEVICES		DEVICES	Smart Sensors	ors						
EMART TRANSMITTERS	For you to get the most out of our portfolio quickly and easily. Configue a complete project with just 5 few ethics. Search are product by typic the name.	EMART TRANSMITTERS	TIMP TIMP UTIMP TIMP	CO.	DI + TEMP	HYGROTEMP	in TEMP	U U U U U U U U U U U U U U U U U U U	inco:	under and a second seco
			REPEATER							
Tekon Configurator v1.0										

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





CONNECT AND CONFIGURE DUOS MULTITEMP WIRELESS TRANSMITTER





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 "2" button.



05	Select corresp	Select corresponding <i>Port name</i> ² .			
		on Configurator		- - X TEKON CONFIGURATOR Quick, essy and smart configuration	
		DEVICES		(Disconnected (0))	
		SMART TRANSMITTERS	Port CON CONS V C	٢	
		WIRED TRANSMITTERS	Wireless Channel		
	Te	kon Configurator v1.0			

06

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



² You can check device's serial port name in "Device Manager" on Microsoft [®] Windows[®] operating system.



step 02 connect and configure duos multitemp wireless transmitter

07	Click on <i>Connect</i> (😃) butto	n.
	Tekon Configurator	- • ×
		TEKON CONFIGURATOR Quick, easy and smart configuration
	DEVICES	# Smart Sensors > Sensors > MULTITEMP
	(F)	
	SMART TRANSMITTERS	Port COH COH3 V 6
	SMART SENSORS	Wireless Network ID
	WIRED TRANSMITTERS	Wirdless Channel
	TIRED IRPOSITION I	Communication Period (s) Power Supply (V) Internal Transportation (PC)
		External Temperature 1 (*C) 65535 External Temperature 3 (*C) 65535 External Temperature 3 (*C) 65535
		External Temperature 4 (4C) 65555 0 External Temperature 5 (4C) 65555 0
	Tekon Configurator v1.0	
		onnect to the device, the <u>connection Falled</u> status is displayed. If it hasn't evious steps and check the port COM.
		is now available in the software window. Pless Transmitter has been considered.
	-	o enter configuration mode. These configurations are read automatically.
	In configuration mode, the <i>Tran</i> s active and steady.	smitter activates 4 LEDS: 2 blue LEDs flash and the red and green LEDs remain
	active and executy.	
		LED flashes quickly LED stays on and fixed
4	button, while blue LEDs flas	you have 10 seconds to enter configuration mode by clicking on Connect (2) shes slowly. ow have been exceeded, blue LEDs are steady and it is no longer possible to enter



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.

			TEKON CONFIGURATOR Quick, easy and smart configuration
DEVICES	Smart Sensors > Sensors > M MULTITEMP & Model: 868 MHz Firmware Versio	z on: 1.2.0	Θ
SMART TRANSMITTERS	Port COM COM3 V S	on: 4.2	Connected ()
SMART SENSORS		5555 \$ 5 \$	
WIRED TRANSMITTERS	Communication Period (s)	6 \$ 10 \$ 1800 \$	
	Internal Temperature (°C) External Temperature 1 (°C) External Temperature 2 (°C) External Temperature 3 (°C) External Temperature 4 (°C)	4.5 28.5 30.52 28.74 19.14 19.14 15.47 10	
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 (\checkmark) will appear.

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



09

To validate the changes in configuration mode, click on "READ VALUES" button.

DEVICES	Smart Sensors > Sensors MULTITEM Model: 86 Firmware	AP B	Θ
SMART TRANSMITTERS	Hardware Port COM COM3 V 🕑	Version: 4.2	Connected @
SMART SENSORS	Wireless Network ID	5556 \$	
	Wireless Channel	(5 \$	
WIRED TRANSMITTERS	Transmitter Index	6 \$	
inter individual interior	Communication Period (s)	10 🔷	
	Power Supply (V)	4.4	
	Internal Temperature (°C)	25.12	
	External Temperature 1 (°C)	65535	
	External Temperature 2 (°C)	65535	
	External Temperature 3 (°C) External Temperature 4 (°C)	(65535 (B) (65535 (B)	
	External Temperature 5 (°C)	65535	

While the settings are being written, the following icon will be displayed next to the *"READ VALUES"* button ()

If the changes to the device have been written, the following symbol will appear (
)

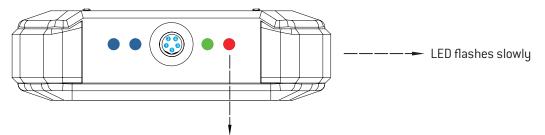
f not, the following symbol will appear (X),try again and check that the device is connected correctly.



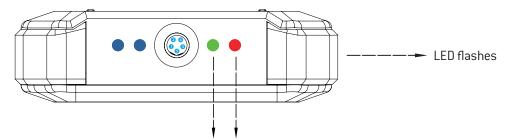
10	Click on the Disc	connected but	ton to exit se	etup and start the	e equipment in normal ope	eration mode.
		Tekon Configurator			- • ×	
					TEKON CONFIGURATOR Quick, easy and smart configuration	
		DEVICES		MP B	(Disconnected (0))	1
		SMART TRANSMITTERS	Port COM COM3 V 2]
		SMART SENSORS	Wireless Network ID Wireless Channel	5555 \$ 5 \$		
		WIRED TRANSMITTERS	Transmitter Index Recommunication Pariod (s) Recommunication Pariod (s) Power Supply (r) Internal Temperature 2 (°C) External Temperature 2 (°C) External Temperature 3 (°C) External Temperature 3 (°C)	6 0 100 0 1500 0 45 5555 0 65555 0 65555 0 65555 0 0 0 0 0		

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.

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



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.

Tekon Configurator	- 0	× Tekon Configurator		- • ×
	TEKON CONFIGURA Quick, essy and smart configur			TEKON CONFIGURATOR Quick, easy and smart configuration
DEVICES	(*) Smart Sensors > Gatteways > GatteWay CATEWAY D Control of the Sensors - Control of the Sen	DEVICES	Smart Sensors > Sensors > MULTITEMP MULTITEMP b Model: 668 Mirg Firmware Version: 1.2.0 Hardware Version: 4.2	(connected @)
SMART TRANSMITTERS	Transmitter Index Scan Time () Port CON (6 ()	SMART TRANSMITTERS	Port COH CONS V S	۵
MINAT SENSORS	Image: Second		Works Helson's ID 556 0 Works Channi 5 0 Tomanster Index 6 0 Tomanster Index 6 0 Tomanster Index 6 0 Tomanster Index 10 0 Standard Tragendram 1(10) 2.5.0.1 0 External Tragendram 1(10) 2.5.2.0 0 External Tragendram 1(10) 2.8.2.4 0 External Tragendram 1(10) 1.8.2.7 0	
Tekon Configurator v1.0	(∆ see or	Tekon Configurator v1.0		

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.

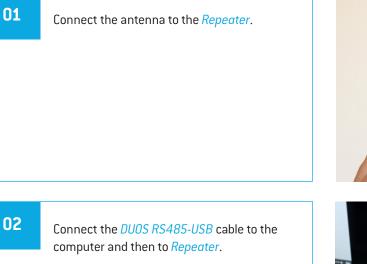
In the following example, it was established that the temperature monitoring cycle (or *Communication Period*) is 10 seconds. Therefore, the *Elapsed Time* field will turn back to 0 as soon as it reaches 10 seconds and the analysed parameters (in this case, the temperature) will be updated in accordance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

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

DEVICES DETUNE IMART TRANSPORTERS Image: State of the first intervent int		95(85 TECHNICLEY	会 Smart Sensors	> Gateways > GATEWAY		- Spanon, S	easy and smart configuration
Import States Table (Sile	ान्त्र			Model: 868 MHz Firmware Version: 3.0.1			Connected
SUART SERVICE Service Transmitters WIRED TRANSMITTERS		SMART TRANSMITTERS				0	C
EXCUSE Device Hand MULTIDIE Handler Lateral Trepundant (C) C4.01 Finance Version 12.0 Extend Transports (C) 22.01 Since Head Since Head Extend Transports (C) 20.52 Since Head Since Head Extend Transports (C) 20.52 Since Head Since Head Extend Transports (C) 20.52 Since Head Since Head Extend Transports (C) 20.54 Handware Version 42 Extend Transports (C) 20.54 Extend Transports (C) 90.54 50.54 50.54 Handware Version 42 Extend Transports (C) 15.47	Ĥ	SMART SENSORS					Modbus M
WIRED TRANSMITTERS Handware Version E2 External Transportunts 2 (%) 30.52 Same Hold Same Hold Same Hold Same Hold External Transportunts 2 (%) 30.52 External Transportunt Same Hold Same Hold Same Hold Same Hold Same Hold 30.52 External Transportunt Same Hold Same Hold Same Hold Same Hold Same Hold 30.52 Same Hold Sa	-			Device Model	MULTITEMP 868 MHz	Internal Temperature (°C)	24.69
Instructive team of the second s	~			Firmware Version	1.2.0	External Temperature 1 (%)	25.01
Second Control External Interpretation 3 (%) External Interpre	6	WIRED TRANSMITTERS		Hardware Version	4.2	External Temperature 2 (%)	30.52
REEE (dBm) 72 External Transporture 5 (%) 15.47 Power Supply (V) 4.5	00		:	Sensor Model	SensorUnknown	External Temperature 3 (%)	28.74
Pover Supply (V) 4.5 Bapeet Time (s) 6						External Temperature 4 (°C)	19.14
Elapsed Time (s) (6				RSSI (dBm)	-72	External Temperature 5 (°C)	15.47
				Power Supply (V)	4.5		
Communication Period (s) 10 💠				Elapsed Time (s)	6		
				Communication Period (s)	(10 ¢)		



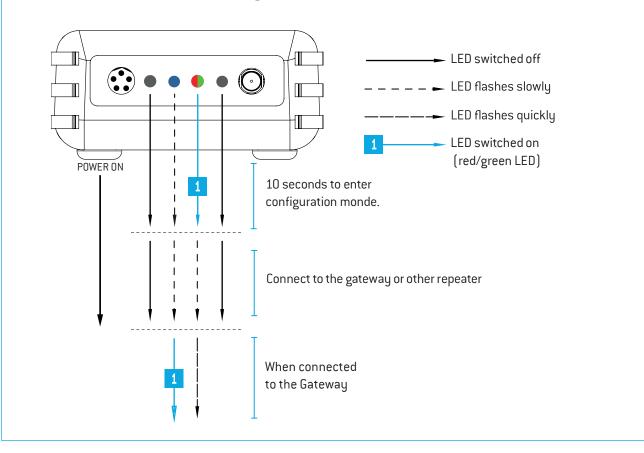




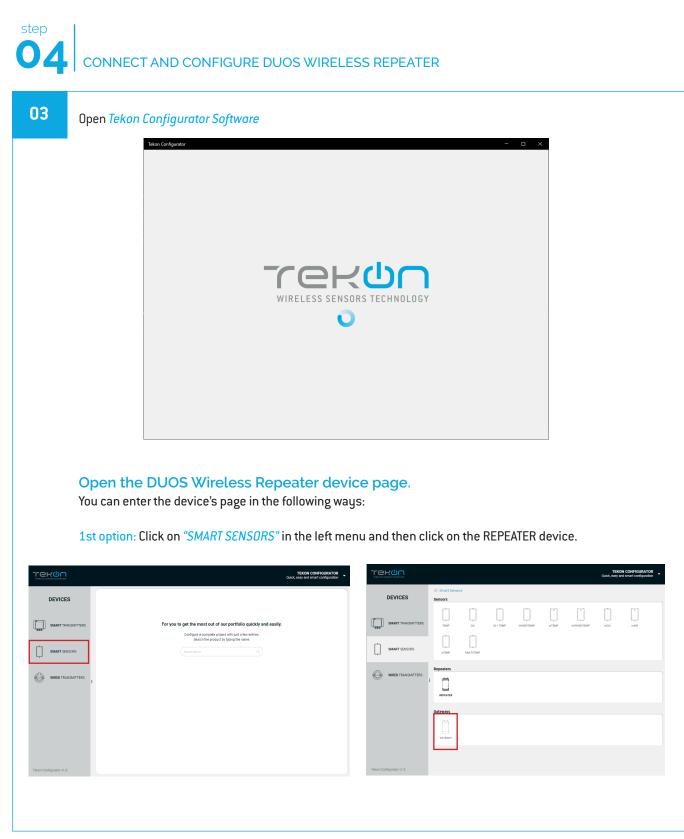


the

Check the device connection through the LEDs indication.









step 04	CONNECT AND CONFIG	URE DUOS WIRELESS REPEATER
	2nd option: Type the name o	f the device in the " <i>Search Device</i> " field on the home page and sele
		TEKON CONFIGURATOR Quick, easy and small configuration
	DEVICES	
		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 trying the name.

Tekon Configurator v1.0

:

04	Load the "Port COM" corresponding to the DUOS Wireless Repeater.
	DEVICES MART SENSOR WIED TRANSMITTERS *
	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 " I button.



O4 CONNECT AND CONFIGURE DUOS WIRELESS REPEATER

05	Select corresponding Port	^t name ² .	
	Tekon Configurator		- 0 X
			TEKON CONFIGURATOR Quick, easy and smart configuration
	DEVICES	Smart Sensors > Repeaters > REPEATER	(Disconnected (9))
	SMART TRANSMITTERS	Port CON Select COM	
	SMART SENSORS	Vireless Network ID Wireless Channel Repeator Id	
	WIRED TRANSMITTERS	2	
	Tekon Configurator v1.0		Ø WRITE DEVICE
06	Remove the cable from <i>Rep</i>	egter 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.

² You can check device's serial port name in "Device Manager" on Microsoft [®] Windows[®] operating system.



07	Click on <i>Connect</i> (也) button.	
		TEKON CONFIGURATOR Quide, easy and small configuration
	DEVICES	SmartSensors > RepEATER
	SMART TRANSMITTERS	
	SMART SENSORS	Wireless Hetwork ID Wineless Channel
	WIRED TRANSMITTERS	

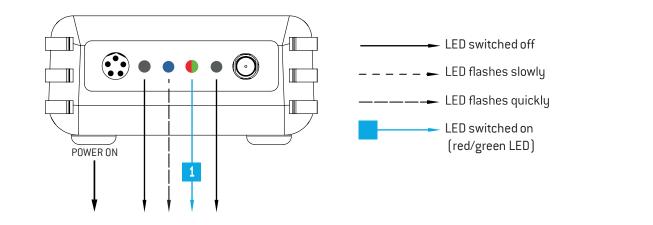
The software will connect to the device.

	TEKON CONFIGURATOR Quick, easy and smart configuration	•			TEKON CONFIGURATOR Quick, easy and smart configuration
DEVICES	(# SmartSensors > Repeaters > REPEATER		DEVICES	Smart Sensors > Repeaters > REPEATER REPEATER D Model 915 Mbtz Farmware Version 3.0.1	Θ
SMART TRANSMITTERS			SMART TRANSMITTERS	Professor 10	(Connected @)
SMART SENSORS	Wireless Tabhowk ID Wireless Classical @ Wireless Tabhowk ID @ @ @ @ @ @ @ @ @ @		SMART SENSORS	Wireless Network ID 5555 ↓ Wireless Channel 5 ↓ Repeater Id 201 ↓	
			WIRED TRANSMITTERS	1	
Tekon Configurator v1.0	Ø weresver	,	Tekon Configurator v1.0		/ WHITE DEVICE



NOTE:

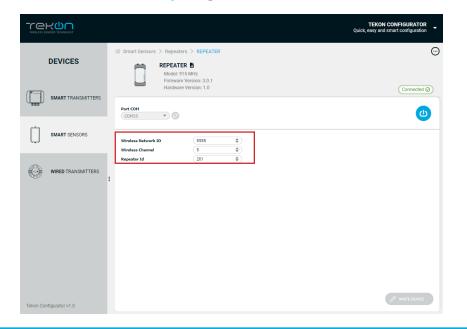
If the software is unable to connect to the device, the <u>connection False(D)</u> status is displayed. If it hasn't connected, go back to the previous steps and check the port COM. When the software connects to the device, the "Connected" message will be displayed, and the gateway will give feedback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





08

Make sure that *Wireless Network ID* and *Wireless 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 () will appear.

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	Firmw	TER D I: 915 MHz vare Version: 3.0.1		Θ
SMART TRANSMITTERS	Port COM COM25 V	vare Version: 1.0		Connected @
SMART SENSORS	Wireless Network ID Wireless Channel	5555	 (a) (b) (c) (c)	
	Repeater Id	201	•	
Tekon Configurator v1.0				



09

step

Click on the *Disconnect* button.

		TEKON CONFIGURATOR Quick, easy and smart configuration			TEKON CONFIGURATOR Quick, easy and smart configuration
DEVICES Image: Image	Imard Sensor > Repeator > REPEATS Imard Sensor > Repeator > REPEATS Repeator B Imard Sensor 1.3 Imard Sensor 1.3		DEVICES Image: Devices </th <th>Constituents > REFLATS EXAMPLES REFLATES REFLATES R</th> <th><u>(eccouncedor</u>)</th>	Constituents > REFLATS EXAMPLES REFLATES REFLATES R	<u>(eccouncedor</u>)
Tekon Configurator v1.0		WHITE DEVICE	Tekon Configurator v1.0		/ WHITE DEVICE

The "Connected" status changes to "Disconnected".

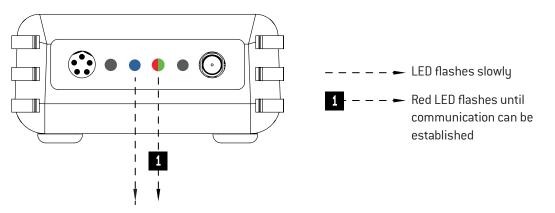


NOTE:

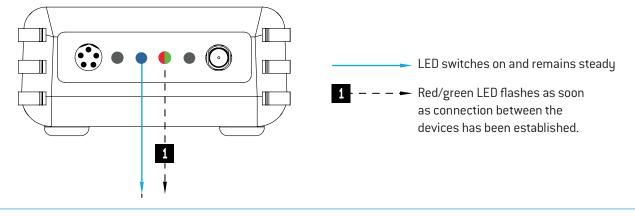
In order to establish communication between the Repeater and the Gateway, make sure that both devices are at a distance of at least 3 meters or remove the antenna from the repeater (in case both devices are near each other). These procedures will guarantee communication quality.

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.









Step 05 CONNECT DUOS WIRELESS IOT GATEWAY O1 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. O2 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	5	

Connect to the wifi network that comes from your gateway.

Use the password *bresimar* to login.

vodafone P	i 🛈 🤶 . I 🛛 67% 🔳	
Wi-Fi		
Ativar ou desativar		
Wi-Fi		
Wi-Fi+ Experiência de Internet otimizada	Desativado >	
Redes disponíveis		
BRESIMAR		
WGW4loT-Tekon	(i).	
OpenWrt	<u></u>	
WGW4IoT-DUOS@TEKON		
DOMBRESIMAR	<u></u>	

TEKONELECTRONICS.COM



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 Servic	es	Monit Syster	1				
IP Network Table											
Show 10 • entries								Search:			
Interface It DHCP	11	IP Address	11	Netmask	11	Gateway	11	MAC Address	11		
eth0 Disable	d	192.168.100.1		255.255.255.0		192.168.0.250		40:a3:6b:c2:1c:4c		C Manage	
lo Disable	d	127.0.0.1		255.0.0.0				00:00:00:00:00			
ra0 Disable	d	192.168.128.1		255.255.255.0				40:a3:6b:c2:1c:4a			
The District	u	192.100.120.1		200.200.200.0				10.00.00.02.10.10			
Showing 1 to 3 of 3 entries	ŭ	132.100.120.1		200.200.200.0					Previou	ıs 1 Next	
Showing 1 to 3 of 3 entries		pt.pool.ntp.org		200.200.200.0					Previou	is 1 Next	
Showing 1 to 3 of 3 entries				233,233,235,0					Previou	ıs 1 Next E⊔Update	
Showing 1 to 3 of 3 entries NTP NTP Peer ©© Test	u			200.200.200.0					Previou		
Showing 1 to 3 of 3 entries NTP NTP Peer ©© Test	u			200.200.200.0					Previou		
Showing 1 to 3 of 3 entries NTP NTP Peer © Test Proxy Configuration	u			230.230.230.0					Previou		



05	To enable the option to get an dynamic IP address assigned by your network, click on <i>Manage</i> button.
	Communication Module: Users Data Import/Export. Network Cloud Services Monit System
	IP Network Table
	Show 10 • entries Search
	Interface 🗍 DHCP 🔢 IP Address 🔄 Netmask 📑 Gateway 📑 MAC Address
	eth0 Disabled 192.168.100.1 255.255.255.0 192.168.0.260 40.a3.8b:c2:1c:4c Cr Manage
	lo Disabled 127.0.0.1 255.0.0.0000000000
	ra0 Disabled 192.168.128.1 255.255.265.0 40.a3.6b.c2.1c.4a
	Showing 1 to 3 of 3 entries Previous 1 Next
	NTP
	NTP Peer pt pool ntp org
	C Test
	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.

P Network Table		Interface	eth0			
Show 10 • enti	ies	DHCP IP Address	0	Se	earch:	
Interface 🕌	DHCP		192.168.100.1	ess		
eth0	Enabled	Netmask	255.255.255.0	2:10:	:4c	🕼 Manage
ю	Disabled	Gateway	192.168.0.250	0:00:	:00	
ra0	Disabled	MAC Address	40:a3:6b:c2:1c:4c	2:10	:4a	
Showing 1 to 3 of 3 en	tries				F	Previous 1 Next
NTP				Close 🖺 Update		
NTP Peer		pt.pool.ntp.org				
o\$ Test						🖺 Update



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





CONFIGURE A PROXY SERVER (OPTIONAL)

Click	on the <mark>Upda</mark>	<mark>ate</mark> butt	on to save	the change	es.				
	Interface	DHCP	IP Address	1 Netmask	↓† Gateway	MAC Address	lt		
	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		10-10 C	
	Showing 1 to 3 of 3 en	tries					Previou	s 1 Next	
	NTP								
	NTP Peer		pt.pool.ntp.org						
			proportity.org						
	O ₀ ^o Test							Update	
	Proxy Configuration	n							
	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

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://<192.168.100.1>). The default login credentials are: - Login: admin - Password: admin</hostname>
	O Net seen 192:188:100.1
	Sign in Username and Password Excert



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).

Vost Recent Values		
Show 10 • entries	Search	
Hub ID Name		Status
1 N/A		• • [1
Showing 1 to 2 of 2 entries	β	revious 1 Next
Status Overview		
	Gateway Uptime: 3.17	
Status Overview Network	Gateway	revious 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.

Tekon loT Gateway HOME SENSO	R NETWORK SETTINGS	ADMIN	
Sensor Hub - 1			
(1) Measurements Properties Modbu	JS		
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	Ŧ	(2)
Description	UNDEFINED ACTIVE INACTIVE		
Synchronize to Cloud	Off		
		🗯 Delete 🖺 Update	(3)





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.

Tekon IoT Gateway HOME SENSOR	ETWORK SETTINGS 1 ADMIN
ensor Hub - 1	
Measurements Properties Modbus	
Properties	
Name	DUOS MultiTemp 868MHz
System Id	1.0.08
Network Id	1:0:0:1
Firmware Version	1.0.0
Communication Period (seconds)	10
Status	ACTIVE ~
Description	
Synchronize to Cloud	Off
	🖀 Delete 🔄 Update



The transmitter is configured.



		CONNECTION TO	TEKON IOT F	PLATFORM	
12	In the DUOS loT GATEWA	/ page, go to <i>Settings</i> >	> Cloud Service	S.	
	Tekon IoT Gateway HOME SENSOR NET Settings Communication Module Users Data Impo Tekon Cloud		sterr	💄 ADAN -	
	Server URL	http://lot18.tekonelectronics.com/			
	API Key	de1allaac-71be-42ad-o423-283366a21292			
	Status	On			
	♀ [©] Test Credentials			Update Credentials	
	Tekon Cloud - Sensor hubs configu	ration			
	Show 10 v entries			Search:	
	Hub ID Name		Status		
	f DUG Showing 1 to 2 of 2 entrie		Cloud Synchronization Off	Previous 1 Next	

13

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

Frances O 48 O (Bar dash banda (Bar dash banda (Bar)	INSYS	Could not find any information for the following distances	
	Humidity -	Г Conter	
	01	019 - BRESIMAR AUTOMAÇÃO, S.A.	



step

05 CONNECT DUOS WIRELESS INT GATEWAY

4	Click on the view option to see the <i>gateway</i> user data a	and copy the API key.
	View user	SETTINGS - O LOGOUT O LANGUAGE FRENNAL AREA
	User details	
	name gdrawy Usemane gdrawy Profile Gdrawy	
	Email No data Caliphone Na da Company	
	No dita Communication details Api key	
		•

- 1	

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*.

Communication Module Users Data Import/Export Network Mont System Factor Cloud Server UR: Intp://of18.bisonetectronics.com/ API Key Status Of: Status Of: Tector Cloud - Sensor hubs configuration Stoor Image: Cloud System Stoor Image: Cloud Status Image: Cloud System Stoor Image: Cloud System Image: Cloud System Image: Cloud System Image: Cloud System Image: Cloud System Image: Cloud System Image: Cloud System Image: Cloud System Image: Cloud System Image: Cloud System Image: Cloud System Image: Cloud System </th <th>Settings</th> <th></th> <th></th> <th></th>	Settings			
Server URL http://ot18.lskonelectronics.com/ API Key Image: Comparison of the second	Communication Module Users Data Import	Export Network Cloud Services Manit System		
API Key Image: Constraint of the second of	Tekon Cloud			
Status 0° o° feed Credentias Tekon Cloud - Sensor hubs configuration Show 10 Hub ID Name Image: Multiple paceMHz Cloud Synchronization Off	Server URL	http://iot18.tekonelectronics.com/		
of: Test Oredentias □ Valuate Credentias © Update Tekon Cloud - Sensor hubs configuration Show 10 v entries Search:	API Key	defailuse 715a-42ad-a425 280386a21292		
Tekon Cloud - Sensor hubs configuration Show 10 v entries Search: Hub ID Name Status 1 DUOS MultiTemp 868MHz Cloud Synchronization Ciff V Showing 1 to 2 of 2 entries Cloud Synchronization Ciff V	Status	On		
Show 10 v entries Search: Hub ID Name Status I DUDS MultiTemp 868MHz Coud Synchronization Off ▼ Showing 1 to 2 of 2 entries Showing 1 to 2 of 2 entries	Q ^o _o Test Credentials		Validate Credentials	Update
Hub ID Name Status 1 DU0S MultiTemp 868MHz Cloud Synchronization Off Showing 1 to 2 of 2 entries	Tekon Cloud - Sensor hubs configur	ation		
1 DUOS MultiTemp 868MHz Cloud Synchronization Off Showing 1 to 2 of 2 entries	Show 10 v entries		Search:	
Showing 1 to 2 of 2 entries	Hub ID Name	Statu		
			chronization Off	•
	Snowing 1 to 2 of 2 entries		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.

ttings			
mmunication Module Users Data Import/Ex	port Network Cloud Services M	lonit System	
Tekon Cloud			
Server URL	http://iot18.tekonelectronics.com/		
API Key	de1allase 11ba 42ad a423 28038421292		
Status	On		
State Credentials Authentication C	k		Validate Credentials
Tekon Cloud - Sensor hubs configurat	on		
Show 10 ~ entries			Search:
Hub ID Name		Status	
1 DUOS M Showing 1 to 2 of 2 entries	ItiTemp 868MHz	Cloud Synchronization Off	v
			Previous 1 Next



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



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18

05 CONNECT DUOS WIRELESS IOT 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. rek<mark>u</mark>u 😰 DASHBOARD 📾 DATASOURCES 🌲 ALARMS 👻 🛢 DATA SETTINGS - O LOG Datasources DUOS CO2 9 09/23/2019 11:11:57 AM +01:00 » / B 07/26/2019 12:15:33 PM +01:00 INSYS PLUS 5 / 8 PLUS 55 17/2019 2:48:09 PM +01:00 / 8 Teste INS / B 20 -

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.

ettings		
Communication Module Users Data Import/	Deport Network Cloud Services Manit System	
Tekon Cloud		
Server URL	http://lot18.tekonelectronics.com/	
API Key	de/alluer-11ba-42ad-a425-280386a21282	
Status	0n	
✿ Test Credentials ✔ Authentication	DK	🗌 Validate Credentials 🖺 Update
Tekon Cloud - Sensor hubs configura	tion	Validate Credentials
Show 10 v entries		Search:
Hub ID Name		Status
1 DUOS MultiTemp 868MHz API Key		Cloud Synchronization On
0° Test Credentials		Validate Credentials







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 loT 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

19

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.

	SHBOARD 📾 DATASOURCES 🌲 ALARMS 👻 🚍 DATA			💠 SETTINGS 👻 🖒 LOGOU
tasources				
				+ Add datasour
			search	
lame •	Date 0	Communication 0	Variables state 0	
UOS CO2 915MHz - TESTE ACV	09/23/2019 11:11:57 AM +01:00	v ek	✓ ak	• /
NSYS	07/26/2019 12:15:33 PM +01:00	✓ ek	✓ ak	• /
LUS 5		✓ ak	of ak	01
LUS 55	09/17/2019 2:48:09 PM +01:00	0 error	of ak	01
este INSYS Andril		✓ ek	✓ ek	9 /
20 -				
		© 2019 - BRESIMAR AUTOMAÇÃO, S.A.		



	DATA COMMUNICATION OVER MODBUS TCP/IP							
20								^P communication. s communications.
	Click o	on the transm	itter / hub	you want to	analyze an	d select th	e Modbus Hol	ding Registers tab.
		Tekon loT Gateway HOM	E SENSOR NETWORK	SETTINGS			1 AE	Min -
		Sensor Hub - 4	0					
		Measurements Properties	Modbus Holding registers					
		Modbus holding registers						
		Register Variable	Actual Value	Register Address	Register Value	Register Type	Register Format	
		Transmitter Model	DUOS MULTITEMP	0	0x00000E	Holding Register	UINT16	
		Probe Sensor Model	MULTI_TK9808	1	0x000005	Holding Register	UINT16	
		RSSI	-20dBm	2	0x000028	Holding Register	UINT16	
		Communication Period	10s	3	0x00001E	Holding Register	UINT16	
		Elapsed Time	10s	4	0x00FFFF	Holding Register	UINT16	
		Battery Voltage	0v	5	0x000000	Holding Register	UINT16	
		FW Version Major I Minor	1.0	6	0x000100	Holding Register	UINT8_UINT8	
		FW Version Revision	0	7	0x000000	Holding Register	UINT16	
		HW Version Major I Minor	4.2	8	0x000402	Holding Register	UINT8_UINT8	
		Internal Temperature	22.0 °C	9	0x42480000	Holding Register	FL0AT32	
		External Temperature S1	21.80 °C	11	0x423C8000	Holding Register	FLOAT32	
		External Temperature S2	23.20 °C	13	0xC1BE7EFA	Holding Register	FL0AT32	
		External Temperature S3	22.50 °C	15	0x413F8106	Holding Register	FL0AT32	
		External Temperature S4	22.00 °C	17	0xC138FDF4	Holding Register	FL0AT32	
		External Temperature S5	21.90 °C	19	0x40780000	Holding Register	FL0AT32	

21

- 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

nents Properties Modbus Holding registers Modbus holding registers (3) (4) (6) (2) (5) Register Address Register Variable Register Value Register Type Register Format Actual Value Transmitter Model DUOS MULTITEM Holding Register 0 UINT16 0x00000E Probe Sensor Model MULTI TK9808 0x000005 Holding Register UINT16 RSSI 0x000028 Holding Register UINT16 -20dBm 10s 3 Holding Register UINT16 Communication Period 0x00001E Elapsed Time 10s 4 0x00FFFF Holding Register UINT16 Battery Voltage OV 0x000000 Holding Register UINT16 1.0 UINT8_UINT8 FW Version Major I Minor 6 0x000100 Holding Register FW Version Revision 0 0x000000 Holding Register UINT16 7 HW Version Major I Minor 4.2 0x000402 Holding Register UINT8_UINT8 22.0 °C 9 Holding Register FLOAT32 Internal Temperature 0x42480000 External Temperature S1 21.80 °C 11 0x423C8000 Holding Register FLOAT32 External Temperature S2 13 0xC1BE7EFA Holding Register FLOAT32 23.20 °C 22.50 °C 15 Holding Register FL0AT32 External Temperature S3 0x413F8106 External Temperature S4 22.00 °C 17 0xC138FDF4 Holding Register FLOAT32 21.90 °C FLOAT32 External Temperature S5 0x40780000 Holding Registe







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	
E02A	

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