

uctrys

User Manual





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Acknowledgment

Welcome to the world of high security!

You have purchased ULTRYS software; it will allow you to configure SPECTRE readers, encode user cards and vehicle tags.

We would like to thank you for the confidence you place in us and we hope that this solution developed by STid will keep you satisfied.

We remain at your disposal for any further information about this programming tool and our cutting-edge solutions.

We look forward to seeing you for more information on our website <u>www.stid-security.com</u>.

The STid Team



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1. Information

PC requirements

- A PC with operating system: Windows 7 or 10 or Windows server 2012r2.
- USB communication port.
- 50 MB min of free disk space.

USB Key Content

- FTDI USB Driver for Windows 7, 8.x and 10.
- ULTRYS Version 3.x.x.

Hardware required

To configure the reader:

• USB cable provided with SLA and SMA to directly configure the reader via USB link.

Or

• STid UHF 866-915 MHZ encoder to encode UHF SCB/OCB configuration card:

Part number:

- ARC-Wx5-G/U04-5AA/1
- STR-Wx5-E/U04-5AA/1 (v10 firmware version required*)
- GAD-Wx5-E/U04-5AA/1 (v08 firmware version required*)
- UHF ISO card part number: CCTW630_AP (ISO card UHF Broadband- Quanray QS-5AE 64K).

To encode user credentials and vehicle tags:

STid UHF 866-915 MHz encoder, part number:

- ARC-Wx5-G/U04-5AA/1
- STR-Wx5-E/U04-5AA/1 (v10 firmware version required*)
- GAD-Wx5-E/U04-5AA/1 (v08 firmware version required*)

*Identification on the back of the encoder.





Windows Installation

- 1. Insert the ULTRYS v2 USB stick on an USB port of your PC.
- 2. Wait for the automatic opening of the browser window.
- 3. Launch ULTRYS V2.x.x_setup.exe.
- 4. Follow the instructions on the screen.

Compatibility ULTRYS / Reader Range / User IDs

This ULTRYS version (3.x.x) allows you to configure SPECTRE, SPECTRE NANO, ATX and ATX4 readers.

To configure URx & GAT readers, please use ULTRYS v1.x.x.

	ULTRYS v1	ULTRYS 3.0
SPECTRE + SPECTRE ANTENNA	х	\checkmark
SPECTRE + URD ANTENNA	Х	\checkmark
URx + URD ANTENNA	\checkmark	Х
URx + SPECTRE ANTENNA	✓	Х
Credential encoding in secure mode	Х	\checkmark

Warning:

- To read credentials encoded with ULTRYS v1 on a SPECTRE reader: configure the EPC reading in Mode 1(standard) and do not use the EPC filter.
- Credentials encoded with ULTRYS v2 will not read on the Urx /GAT readers.

Compatibility ULTRYS / Firmware reader

This ULTRYS version (3.x) allows you to configure SPECTRE, SPECTRE NANO, ATX and ATX4 readers according to the firmware version of the reader.

	ULTRYS v2.0	ULTRYS v2.1	ULTRYS v2.4	ULTRYS v3.0
Firmware v7	~	v	V	v
Firmware v9		~	~	~
Firmware ≥ v10			~	~
Firmware ≥ v13				~



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25	83	2	(2)	3	(\cdot, \cdot)	15	35	(2)	35	65	35	~ 2	32			\mathbb{S}^{2}	13	20	33	83	(2)	(2)	(\mathbf{z})	555	3
55	22	12						8	2	10	12	32	2	3	120	53		11	(1)	2	33			2	1
10	27	Ξ.		Ψ.	-		12	Υ.	1.0	1	17	10						1		-	11	τ.			÷.

Overview

It is possible to install the software on an unlimited number of workstations.



The software is divided into three distinct parts:

ULTRYS settings

Readers configuration

User credentials

On the Home page, you can select the language (English, Spanish, French) and click on the link for user manual.



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53	22	12						8	2	0	17	32	2	1	120	53		51	(0)	2	8				
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Open

At the first opening no file is loaded by default. ULTRYS is directly open on the home page.



This mention indicates the current configuration.

At the next opening, ULTRYS will automatically load the last loaded configuration file.

Two possible cases:

- The loaded file is the one to use
- The loaded file is not the one to use



1st Case: the loaded file is the one to use

en the last configurati	on file used
figuration name	MU ULTRYS
figuration file path	C:\Program Files (x86)\STid\ULTRYS v3.0.0.13\MU ULTRYS.ucg
e last used	1/3/2022 11:58:10 AM
.ucg file requires a user ID ar	nd a password
k on Cancel to skip this file ar	nd continue to the home page
île	Administrator
sword	
Cancel	Confirm
	Administrator 🕳 🗙
LOD that secures and streamlines your vehicle access	
Per Penny IV CC Userstonenov Desktadopener Ubyd Penny IV vog	

- 1. Enter the password of the configuration file if there is one if not go to step 2.
- 2. Select the profile to use to open the file.
- 3. Enter the profile password if there is one.
- 4. Please confirm.

5. ULTRYS loads the file and opens the home page.

2nd case the loaded file is not the one to use

Open the last configurati	ion file used
Configuration file path	C:\Program Files (x86)\STId\ULTRYS v3.0.0.13\MU ULTRYS.ucg
Date last used	1/3/2022 11:58:10 AM
The .ucg file requires a user ID an Click on Cancel to skip this file an Profile	nd a password nd continue to the home page Administrator
Password	
Cancel	Confirm

- 1- Cancel.
- 2- ULTRYS is open on the home page without any configuration loaded





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55	83	2	(2)	22	35	55	(2)	35	65	25	\mathbb{S}^{n}	52		. *		23	13	25	35	83	(2)	35	22	55	15
68	22	12					8	2	10	12	32	2	1	120	1	53		<u>†1</u>	50	2	8			2	1
					 	14.1		1.00	1.0	1.1	1.1	1.1		-											14

2. Readers configurable

$\Box \Box \Box \Box \Box \Box \Box \blacksquare @$					
SLA-Rx1-A-U04-xx/SMA-Rx1-A-U04-xx					
SLA-RX2-A-U04-5AB/ SMA-RX2-A-U04-5AB SLA-Rx3-A-U04-7AB/ SMA-Rx3-A-U04-7AB	SPECTRE READ ONLY				
SLA-Wx3-A-U04-70S/SMA-Wx3-A-U04-70S	SPECTRE OSDP™				

SNA-Rx1-A-BT4-xx	
SNA-Rx2-A-BT4-5AB	SPECTRE NANO READ ONLY
SNA-Rx3-A-BT4-7AB	
SNA-Wx3-A-BT4-7OS	SPECTRE NANO OSDP™

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ATX-Rx1-A-U04-xx	
ATX-Rx2-A-U04-5AB	SPECTRE ATX READ ONLY
ATX-Rx3-A-U04-7AB	
ATX -Wx3-A-U04-7OS	SPECTRE ATX OSDP™
	-⊤ ≂ ≡ ∧ て)·([⊘]
ATX4-Rx1-A-U04-xx	
ATX4-Rx2-A-U04-5AB	SPECTRE ATX 4 READ ONLY
ATX4-Rx3-A-U04-7AB	
ATX4 -Wx3-A-U04-7OS	SPECTRE ATX 4 OSDP™



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25	83	(2)	(2)	22		35	35	(2)	35	65	35	52	52				23	\mathbb{C}^{2}	25	35	83	(2)	35			55	15
50	22	12						8	2	0	12	12	2	1		1	53		\mathbb{T}^{2}	(\cdot)	2	8					15
<u>.</u>	21	-	2		-	Ξ.	3	۰.	1	1	17	8	1	. •	-	*	٠.	۰.			-	1	5	Ξ.	•		3







SPECTRE OSDP™

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3. Reader configuration SPECTRE READ ONLY

3-1 ULTRYS settings

ULTRYS					Administrat	or 🗕	×
uut				ULTRYS settings Communication		SC:	3
No configuration loaded	1				🚾 EN 🔻	6	(i)
کې ULTRYS settings	Communication Port selection for encoder or reader connection						
Readers configuration		Select device	Select a reader 🔹				
User credentials		O Connectivity test					

SPECTRE READ ONLY

Connect the SPECTRE reader to the PC using the provided USB cable to load the configuration via serial link directly onto the reader.



or

Connect an UHF encoder to the PC to load the configuration onto UHF SCB configuration card.



Select device

Select device

To set the communication port

C Refresh

C Refresh

Connectivity test

Connectivity test

Select device	Select a reader 🔹
\bigcirc Refresh	
O Connectivity test	

ARC-W55-G/U04-5AA [COM9]

ARC-W55-G/U04-5AA [COM9]

COM3

COM3

Device detected: Version 7 (29.7)

Close

Failed to connect; check

Close

compatible reader

communication port and connect a

1- Click on 'Refresh' to detect all readers connected to the PC.

- 2- Open the dropdown list Select device
- 3- Readers whose firmware is ≥ 8 will appear in the drop-down list under their commercial reference.
 Select the communication port number for the encoder or reader or select the reader to use.
- 4- Run the connectivity test

Message OK (with indication of the firmware version).

Message: Failed

•

- Check the compatibility of the reader.
- Check the USB cable.
- Check the Baudrate reader: it must be fixed to 115200.

Note: during the connectivity test on a UHF encoder, a sound and light signal (orange) will be emitted for 1 second.



3-2 Create new configuration



The reader configuration is done in 9 steps. To move from one stage to another, you must click on "Next".

1 2 3 4 5 6 7 8 9	UHF frequency band regulation
1 2 3 4 5 6 7 8 9	Configuration protection loaded into the <u>reader</u>
1 2 3 4 5 6 7 8 9	Reader configuration
1 2 3 4 5 6 7 8 9	Antenna type selection
	Installation configuration
	Light indicator configuration
	Reading & communication parameters
	User Security Roles
	Configuration save and protect



Step 1- UHF frequency band regulation





The frequency bands depend on the installation location

Andorra - ETSI	,
Andorra - ETSI	
Australia - AustraliaCustom1	
Austria - ETSI	
Azerbaijan - ETSI	
Belgium - ETSI	
Bosnia - ETSI	
Bulgaria - ETSI	
Canada - FCC	
Croatia - ETSI	
Cyprus - ETSI	
Czech Republic - ETSI	
Denmark - ETSI	
Estonia - ETSI	
Finland - ETSI	
France - ETSI	
Germany - ETSI	

Type the first characters to display a country or select the country in which the installation will be done.

For a country which is not in the list, please contact STid: support@stid.com.

2 To approve the feasibility to install your reader in the selected country, you can check the compatibility.





With USB reader connection

Reader ID
Connect your reader O fyour reader's reference number
Cancel Confirm
Reader's frequency band compatible with selected country's regulations
Reader's frequency band incompatible with selected country's regulations
Try again Check later
No reader connected, check your USB connection and communication settings
Try again Connect later

With reader part number

Cancel

 \cap



 Connect the reader and set the communication COM port.
 Select 'Connect your reader'

3- Please confirm

SPECTRE READ ONLY

Enter the first 5 characters of the reader part number Example: SLAR41, SLAR51, SMAR43...

 Reader's frequency band compatible with selected country's regulations

 Close

 Incorrect reader reference number

 Try again
 Check later

Enter the first 6 characters of your reader's reference number

Confirm

Message: OK

Message: the reference reader is not compatible with regulation selected.



Step 2- Configuration protection loaded into the reader

O ULTRYS					Administrator 🗕 🗙
uut				Readers configuration Create a configuration	' Ø
No configuration loaded	í.				💴 EN 🔻 🖨 🕧
Ĩ Ĵ	Configuration protection	on loaded into the reader		1 2 3 4	
ULTRYS settings		The protection code is a data that can be cust configuration of a reader during installation.	comized by the administrator to protec	t the	
		Modifying this configuration requires the protection All readers have the default protection code "F	ction code. FFFFFFFFF		
Readers configuration		We recommend you to change the default pro- configuration process. Enter FFFFFFFFFF in the "Protection code" fie (hexadecimal) in the "New protection code" fie	tection code the first time you carry o eld and specify the new protection co ld.	ut the de	
		Protection code	FFFFFFFFF		
User credentials		New protection code			
	« Previous			Next	»

SPECTRE readers are initially supplied with a default configuration and a protection code to 0xFFFFFFFFF.

The size of this protection code is 5 bytes (10 hexadecimal characters).

After the initial setup and in order to reconfigure the reader, it will be necessary to present an UHF SCB card or a configuration file with the same 'protection code' as the reader.



Random protection code generator.

 Caution

 This protection code is important and should definitely be known by the administrator. It protects the configuration data and allows reader configuration updates.

 If you lose this protection code, you won't be able to reconfigure the reader again and the reader must be reset at the factory.

 To change the protection code, it will be necessary to know the current protection code.



Step 3- Reader configuration

ULTRYS				Administrator 🗕 🗙
uut				Readers configuration Create a configuration
No configuration loade	d			🔤 EN 🔻 🖨 🕧
د ک ULTRY's settings	Reader configuration			
	SPECTRE	SPECTRE NANO	ATX	ATX4
Readers configuration			Cr T H	
	Read only OSDP	Read only OSDP	Read only OSDP	Read only OSDP
User credentials				
	2 Firmware v13 • (i)		Auto detecti Connect and	on check my reader configuration
	K Previous			Next ≫

(1) Selecting the reader type

SPECTRE SLA-R4/5x-A/U04-xx readers can be configured in "Read only" mode from firmware version 7.

2 Selecting Firmware

You must select the firmware version that is compatible with your reader.

To do so, you can manually select the reader and firmware version, or you can use the function "Auto detection – Connect and check my reader configuration".







With reader's number reference

Reader type detection Connect your reader Continut Cancel Confirm Cancel Confirm Ty again Check later

1- Connect the reader via USB cable provided. Configure the communication parameters.

SPECTRE READ ONLY

- 2- Select the Connect your reader.
- 3- Click on Confirm.

Message : NOK

- Check the USB cable
- Check the communication with reader

Enter the first 6 characters of your reader's reference number.

Examples: SLAR41, SLAR51, SMAR41

Message: NOK

Check your reader's reference number.



Step 4- Antenna type selection

ULTRYS		Administrator 🕳 🗙
uut	ECUS Version 3.0.8	Readers configuration Create a configuration
No configuration loaded	1	📟 en 🔻 🖨 🤃
کی ULTRYS settings	Antenna type selection	
Readers configuration		
User credentials	SPECTRE antenna	URD antenna
	« Previous	Next ≫

The SPECTRE reader can be connected to new SPECTRE antennas (ANT-UHF2), or previous antennas (ANT_URD).

Select the type of antenna used in the installation and compatible with the reader selected.



Step 5- Installation configuration with SPECTRE Antenna

ULTRYS				,	Administrator 🗕 🗙
uut			Rea Creat	ders configuration e a configuration	
No configuration loade	ed 		1		EN ▼ 🖨 🕖 6 \ 7 \ 8 \ 9
کې کې ULTRYS settings	Installation configuration	Lane 2 🖋	Lane 3	Lane 4	6 Contraction Cont
Readers configuration	Ant 1 Behind the reader •	Ani 3 1.5 m cable Ani 4 1.5 m cable	< 0 >	406	settings
User credentials	2 — Remove a lane				(3) + Add a lane
	« Previous	000:	9 9 9	Next ≫	

SPECTRE READ ONLY

1 Name the lane

Maximum 10 characters.

For example, Entryl.

23Add / Delete lane

Use 'Add /Delete lane' to configure the number of lanes you will use in your application.

The default setting is one antenna on the first lane.

For more information about the possible combination please refer to the document NA_SPECTRE.



4 Add / Remove antenna on lane

Set the number of antennas on the corresponding lane.

When an antenna is added, the RF port to which the antenna has to be connected appears on the reader with corresponding color to help the installation.



RF ports are assigned in order to add the antennas in the configuration wizard. When an antenna is removed from the configuration, the RF port connection for other antennas does not change.

Example: Ant 2 deleted from lane 1 and added to lane 2.





SPECTRE READ ONLY



5 Select the cable length for each antenna



For each antenna, select the cable length you would like to use between antenna and reader.

Only the first Antenna of the lane I can be lean against the reader.



6 Advanced settings



- Select the lane to configure. The lanes selected in installation setup are in white, unused lanes are grayed out. When a lane is selected in Advanced parameters it is written in blue.
- b Select / Change the cable length between the antenna and the reader.
- C Adjust the power of each antenna (from 10% to 100%) to adjust the reading distances.
- Adjust the timing for a scan (reading) by step of 1 second (max 30s). This setting is taking into account only if Input type selection is set to Activating all lanes or Activating the event lane.
- e <u>Th</u> Er

The EPC filter is not available in Secure Mode.

Enter the value for EPC Mask, max 62 hexadecimal bytes.

- Adjust the value for offset EPC mask in bytes (0 to 65535). It depends on the EPC Mask length.
- Filter inversion not selected: only tags with an EPC value corresponding to the EPC mask value will be provided to the user.
 - Filter inversion selected: only tags with an EPC value different from the EPC mask value will be provided to the user.
- RSSI (Received Signal Strength Indication) is a measure of the power in reception of the tag response. The value returned by the reader is proportional to the amplitude of the reception signal.

Adjust the RSSI value (-110dBm to 0dBm). 0dBm deactivates the RSSI filter.

Filter inversion not selected: only tags with an RSSI greater than or equal to the specified value will be provided to the user.

Filter inversion selected: only tags with an RSSI smaller or equal to the specified value will be provided to the user.

Ex: RSSI filter= -49dBm + Reversal not selected

A tag that will have a RSSI value of -20dBm will be sent back,

A tag that will have a RSSI value of -60dBm will not be sent back.



Scan time, EPC filter and RRSI filter settings are the same for antennas on the same lane.

SPECTRE READ ONLY

The cable length and RF power antenna are set for each antenna.

Example 1: 4 antennas on lane 1.

	Lane 1	Lane 2 Lane 3 Lane 4
Ant 1 Behind Power	the reader 🔹 🔹	Scan time after triggering of the first sector
Ant 2 1.5 m c	able 🔹	EPC filter
Power	◀ 100% ►	EPC mask position (byte) 0 o
Ant 3 1.5 m c	able 🔹	□ Filter inversion: The reader will only send to the system the EPCs without the filter
Power	◀ 100% ▶	
Ant 4 1.5 m c	able 🔻	RSSI filter
Power	◀ 100% ►	□ Filter inversion: The reader will only send to the system the EPCs for credentials with an RSSI below the defined value

Example 2: 2 antennas on lane 1 et 2 antennes on lane 2.

Advanced settings		Advanced settings
Lane 1	Lane 2 Lane 3 Lane 4	Lane 1 Lane 2 Lane 3 Lane 4
Ant 1 Behind the reader	Scan time after triggering of the () I 1 s	Ant 3 1.5 m cable ▼ Scan time after triggering of the RFID reading Power ◀ 100% ►
Ant 2 1.5 m cable	EPC filter EPC mask (Hexadecimal) EPC mask position (byte)	Ant 4 1.5 m cable EPC filter Power < 100% ▶ EPC mask (Hexadecimal) EPC mask position (byte)
	☐ Filter inversion: The reader will only send to the system the EPCs without the filter	□ Filter inversion: The reader will only send to the system the EPCs without the filter
	RSSI filter	RSSI filter
	RSSI value Disabled	RSSI value
	Filter inversion: The reader will only send to the system the EPCs for credentials with an RSSI below the defined value	Filter inversion: The reader will only send to the system the EPCs for credentials with an RSSI below the defined value
	Cancel Confirm	Cancel Confirm



EPC Filter

Examples:

1- *EPC mask* = AA AA and *Offset* = 0

Only tag 1 is transmitted.

2- EPC mask = AA AA AA and Offset = 0

No tag is transmitted.

3- EPC mask = 01 and Offset = 11

Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00 01 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 02 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 03 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 03

Offset is represented in blue; the filter is done on byte 12. Only tag 1 is transmitted.

4- *EPC mask* = AB and *Offset* = 2

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are transmitted.

5- EPC mask = AB, Offset = 2 and Reversal

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are not transmitted. Only tag 4 is transmitted.



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EPC filter	
EPC mask (Hexadecimal)	01
EPC mask position (byte)	- 1 1 o
□ Filter inversion: The reader will only EPCs without the filter	send to the system the





EPC filter

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Input / output settings Input management RFID reader behavior options based on external events (detector, ground loop etc.) Selection of the RFID reading mode and use of the inputs Continuous reading without using inputs Cancel

SPECTRE READ ONLY

The configuration of the outputs depends on the reading mode chosen.

Output management			
Output type selection	Pull up	to V+	•
Status of outputs	Open	Closed	Maintain during
Output 1	۲	0	
Output 2	\bigcirc		
Output 3	\bigcirc		
Output 4	\bigcirc	\bigcirc	
Cancel K Previous			Confirm

Both types of output are « Pull up to V+ » or « Open drain ».

Status of outputs: select for each output the default state 'Open' or 'Closed' and if the state is maintained during the detection process.



Input management RFID reader behavior options based on external events (detector, ground loop etc.) Selection of the RFID Continuous reading without using inputs reading mode and use of the inputs a Continuous reading without using inputs b Trigger of the reading on all lanes С Trigger of the reading on the event lane Activation of the custom LED (triggered by the event) d Output activation (triggered on outputs) e Cancel »

(a) Reading mode = Continuous reading without using inputs



In this mode, the reader scan continuously.

There is no action on input activation.

SPECTRE READ ONLY



SPECTRE READ ONLY

b <u>Reading mode = Trigger of the reading on all lanes</u>



If an Input is activated (In1, In2, In3 or In4), the reader scans on all lanes set.

The duration of the reading is defined in 'Advanced settings'.



Advanced settings

Behind the reader

•

SPECTRE READ ONLY

C Reading mode = Trigger of the reading on the event lane



If an Input is activated, the reader scans on the corresponding lane.

The reading duration is defined in 'Advanced settings'.

		1
Pull up	to V+	•
0000	Closed	Maintain during
		detection
\bigcirc	Ŏ	
\bigcirc	Õ	
\bigcirc		
		Confirm
	Pull up Open (©) (©) (©)	Pull up to V+ Open Closed O O O O O O O O O O O O O O O O O O O

Scan time after triggering of the RFID reading

1 s



Reading mode = Activation of the custom LED (triggered by the event).



The LEDs are activated on 'Customized event' color during 1 second by Input.

SPECTRE READ ONLY

Examples:

- On lane 1 there is one antenna, an action on Input1 activates the LED during 1 second.
- On lane 2 there are four antennas, an action on Input2 activates the LED on each antenna during 250 ms.

Light indicator configuration Color and brightness selection			
Reading in progress	Reading error	Detecting user ID	Customized event
LED brightness 100%	LED brightness 100%	LED brightness 100%	LED color

The LED 'Customized event' color is defined on step 6: Setting up light indicator.

Output management			1 2	Nothing to do.
Output type selection	Pull up	to V+	•	
Status of outputs	Open	Closed	Maintain during detection	
Output 1	\bigcirc			
Output 2	igodol	\bigcirc		
Output 3	\bigcirc	\bigcirc		
Output 4	٢			
Cancel K Pre	evious		Confirm	



Reading mode = Output activation (triggered on outputs)



An action on Input toggles the corresponding output regardless of RF function of the reader.

SPECTRE READ ONLY

Output management			1 2
Output type selection	Pull up	to V+	*
Status of outputs	Open	Closed	Maintain during
Output 1	\odot		
Output 2	Õ	Õ	
Output 3	\bigcirc		
Output 4	\bigcirc		
Cancel K Previous			Confirm
Cancei K Previous			Confirm



Summary table

	Reading Mode	Input	Configurable Outputs states?	Maintain during detection available?	Output
(3)	Continuous reading without using inputs	No action	Yes by lane	Yes by lane	 If 'Continuing during detection process' not activated: the output state toggles at the ascent. If 'Continuing during detection process' activated: the output state toggles to the RF detection and remains in this state as long as, at each scan is at least one detection.
b	Trigger of the reading on all lanes	An action on any input activates the reading on all configured lanes.	Yes by lane	Yes	 If 'Continuing during detection process' not activated: the output state toggles at the
€	Trigger of the reading on the event lane.	An action on Input <i>x</i> activate the scan on lane <i>x</i> .	Yes by lane	Yes	ascent during the ascent time of the identifier (physically on the BUS + 200ms.
					- If 'Continuing during detection process' activated: the output state toggles to the RF detection and remains in this state as long as, at each scan is at least one detection.
0	Activation of the custom LED (triggered by the event)	Custom LED lighting for all antennas / lane	No	No	In this mode the Outputs are not usable.
e	Output activation (triggered on outputs)	An action on an Input toggles the corresponding output.	Yes	No	The output state is only linked to a user action on the input.

Note: as long as the action is detected on the input, the output remains toggled.



Step 6- Light indicator configuration

				Administra	itor 🗕 🗙
uut	CCU S Version 3.0.0.8		Re Cri	eaders configuration eate a configuration	Ø
No configuration loade	d			EN 🔻	a (i)
کې ULTRYS settings	Light indicator configuration Color and brightness selection		L	1 <u>2 3 4 5 5 6</u> 7) <u>8)</u> 9)
Readers configuration	Reading in progress	Reading error	Detecting user ID	Customized event	
	Previous			Next »	

Reading in progress:

This LED lights when the RF is on.

After initializing reader sequence, this LED must be lit on the selected color.

Reading error:

This LED lights when the RF is bad, in this case the reader can't read the tag.

- Check the antenna connection _
 - Check the antenna cable

Detecting user ID:

This LED lights when a tag is detected by the antenna.

Customized event*:

By default, there is no color.

LED brightness:

The LED brightness can be adjusted by step of 10% (from 10% to 100%)





* The LED 'Customized event' only appears if 'Reading Mode' = Continuous reading + custom LED lighting.

SPECTRE READ ONLY





Default display:




Step 7- Reading & communication parameters

) U		LCD S Version 3.0.8	R	Administral eaders configuration reate a configuration	
U Read	No configuration loaded LTRYS settings ders configuration ders configuration ser credentials	Reading & communication parameters Authenticated UHF data encryption (Secure Mode) UHF user ID encryption UHF data formatting before uploading to the system Selection of the UHF data transmission format Mode 1 (Standard) Format details Mode 3 Mode 4 Mode 4	Cutput protocol selection Select output protocol Size of the credential sent to the system (bytes) C Filtering Time between same user ID being read twice	1)2)3)4)5)6)7 1)12)3)4)5)6)7 11B 	2 3 5
		« Previous		Next 🔉	
1	Ô Au	thenticated UHF data encryptio	on (Secure Mode)		
	ש UHF ו	user ID encryption			
	Private	key definition (16 bytes - Hex)			
	6B212F	C17FF3A4A2EE15D1C5791E660E			

The EPC can be encrypted and signed before being written in the tag.

The reader will decrypt and authenticate the EPC before sending it on its output media.

Only an EPC correctly decrypted and authenticated will produce an output data, otherwise the reader will remain mute.

Notes:

Only UHF tags compatible with "FAST ID" feature and having at least 128 bits of EPC can be decrypted and authenticated by the SPECTRE Access reader.
 The chips compatible with secure encoding are: Monza X Monza P6P. Monza 4D.

The chips compatible with secure encoding are: Monza X, Monza R6P, Monza 4D, this chip is present into

- TLTA-W53M-943_S
- TLTA-W75B-943_S
- IronTag Aero
- CCTW490_AN
- The secure mode is not accessible if an EPC mask has been set in 'Advanced settings'.

Note: After setting an EPC security key, if you return to step 5 with the Previous button, and you set an EPC filter, then returning to step 7, the "EPC ID Security" checkmark is displayed. in gray, the key field is still accessible but not taken into account.



The displays depend on the Ultrys version chosen in step 3.

Firmware =7.0

Firmware >=9.0

SPECTRE READ ONLY

Select protocol	
Select output protocol	•
	RS232
	RS485
	Wiegand 26 bits - 3i
	Wiegand with customized LRC size
	Wiegand with customized size
	Clock&Data 40 bits - Iso 2B

Output protocol sele	ection
Select output protocol	R\$232 *
	RS232
	RS485
	Wiegand 26 bits - 3i
	Wiegand with LRC custom size
	Wiegand custom size
	Clock&Data 40 bits - Iso 2B
	Wiegand 34 bits - 3Eb
	Wiegand 37 bits - 3V
	Wiegand 35 bits - 3W
	Clock&Data 32 bits - Iso 2H
	Wiegand 36 bits (32+4 LRC) - 3Ca
	Wiegand 44 bits (40+4 LRC) - 3Cb
	Wiegand 32 bits - 3La
	Wiegand 40 bits - 3Lb
	Clock&Data custom size

RS232 / RS485

Select protocol			
Select output protocol		RS232	•
Data		Hexadecimal	•
PaddingSTX+ETX	CR	LRC ASCII	
Baud Rate		115200	•

Serial frame:

1 byte	X bytes	1 byte	1 byte	1 byte	1 byte
STX	Data*	LRC	CR	LF	ETX

*Doubled if the ASCII option is activated.

Data	Data sent in decimal or hexadecimal format.
Padding	Add on the frame leading zeros. If this option is not activated, the leading zero won't sent.
STX+ETX	Add STX (0x02) and ETX (0x03) in the frame.
CR	Carriage return (0x0D).
LF	Line feed (0x0A).
LRC	Checksum byte by XORing of all previously characters without the STX.
ASCII	If this option is activated, the Data will be sent in ASCII mode.



Wiegand 26 bits- 3i

X Select protocol							
Select output protocol	Wiegand 26 bits - 3i 🔹						
Overview of TTL outputs	Overview of TTL outputs						
Bit 1 Even parity from	Bit 1 Even parity from bit 2 to bit 13						
Bit 26 Odd parity from	bit 14 to bit 25						
Lane 4 Lane 3	Lane 2	Lane 1					
CLK4 DATA4 CLK3 DATA3	CLK2 DATA2	CLK1 DATA1					
0000000000	00 <mark>00</mark> 00						
	Ant 1 Ant 2						

Note: the graphic indicating the lanes, depends on the configuration of the number of antennas/lanes.

Wiegand with LRC customized size

Select protocol							
Select output protocol Wiegand with customized LRC size •							
Overview of TTL outputs This protocol has the same message structure as the Wiegand 3Ca or 3Cb protocol, but the number of bytes can be customized (EPC size).							
Lane 4 Lane CLK4 DATA4 CLK3 D	Lane 1 CLK1 DATA1						
Ant 3 Ant 1 Ant 4 Ant 2							

Wiegand customized size

Select protoco	bl.							
Select output protocol	1	Viegand with customi	zed size 🔹					
Overview of TTL outpu	Overview of TTL outputs							
This protocol has the same message structure as the Wiegand 3La or 3La protocol, but the number of bytes can be customized (EPC size).								
Lane 4	Lane 3	Lane 2	Lane 1					
Lane 4 CLK4 DATA4	Lane 3 CLK3 DATA3	Lane 2 CLK2 DATA2	Lane 1 CLK1 DATA1					
Lane 4 CLK4 DATA4			Lane 1 CLKI DATA1					

Decimal Clock&Data – Iso 2B





3

Size of the credential sent to the system (bytes)

Protocol	Size in plain mode	Size in secure mode
RS232 / RS485	1b up to 62b	1b up to 6b
Wiegand 26 bits	Fixed to 3b	Fixed to 3b
Wiegand with LRC custom size /	1b up to 16b	1b up to 6b
Wiegand custom size		
Decimal Clock&Data – Iso 2B	1b up to 7b	1b up to 6b

SPECTRE READ ONLY

- 1 B



Example: EPC data: AA BB CC DD EE xx xx ... VV WW XX YY ZZ with 'Size of the credential sent to the system' fixed to 4bytes.







The reader emits the credential code present in the field only once during this time.

SPECTRE READ ONLY

This time is adjustable from 0 to 30 seconds.



Step 8- User Security Roles



ULTRYS allows to manage three different profiles by configuration file.





Step 9- Configuration save and protect

ULTRYS		Administrator 🕳 🗙
uut	Version 3.0.8	Readers configuration Create a configuration
No configuration loade	d 4	🕮 EN 🔻 🖨 🤃
3		
. S?	Configuration save and protect	
ĮÕž	Configuration save and protect	
ULTRYS settings		
Readers configuration		
User credentials		
	Save as	Summary of my configuration
	II Provinus	
	Previous	

This step allows you to save the configuration file containing all the current configuration settings (keys, formats, reader...). You can select a location and password to protect the file.

(1) Choose a name to easily find the configuration. (example: Parking IN).

Note: the name of the configuration must be contained in the file name.

- 2 To protect the configuration file, you can define a password. This password is different from Administrator password.
- 3 Select a directory and a file name to save.
- 4 The name and location of 'Configuration Loaded' indicates now the chosen name and location.





5 Get a summary of the configuration created.

Summary of my configuration				_ = ×
		#Reader + antenna configuration Reader : SPECTRE Access Reader Antenna : SPECTRE antenna		
www.stdisecurity.com Version 3.0.0.8	В	Installation overview		
Summary of configuration settings		Lane 1	Lane 2 Lane 3	Lane 4
This document contains all the configuration settings needed to install the reader and antennas on site. For further information on installation, please refer to the <u>Installation procedure</u>		Ant 1 Behns be re: Ant 2 Ant 3 Behns be re: Ant 4 Ant 4 Ant 4	15 m cable V	4 0 ►
#Configuration details Configuration name : ParkingN Created on : 10/26/2021 10.03	Installation procedure			
#Regulation of frequency bands Frequency bands Countres France ESI Difference Difference <thdifference< th=""> Difference</thdifference<>			00:00:00	
	4 1 de 3	▶ nt		= 5

SPECTRE READ ONLY

Print: allows printing of configuration information on a network, local or virtual printer (PDF).



4. Reader configuration SPECTRE OSDP™

4-1 ULTRYS settings

ULTRYS					Administrat	or _ ×
uut				ULTRYS settings Communication		٢Ĉ] پې
No configuration loaded	1				EN 🔻	i
کې ULTRYS settings	Communication Port selection for encoder or reader connection					
Readers configuration		Select device	Select a reader 🗸 🔻			
User credentials		O Connectivity test				

SPECTRE OSDP[™]

Connect the SPECTRE reader to the PC using the provided USB cable to load the configuration via serial link directly onto the reader.



or

Connect an UHF encoder to the PC to load the configuration onto UHF OCB configuration card.



Select device

Select device

To set the communication port

C Refresh

C Refresh

Connectivity test

Select device	Select a reader 🔹
\mathcal{G} Refresh	
O Connectivity test	

ARC-W55-G/U04-5AA [COM9]

ARC-W55-G/U04-5AA [COM9]

COM3

COM3

1- Click on 'Refresh' to detect all readers connected to the PC.

- 2- Open the dropdown list Select device
- 3- Readers whose firmware is ≥ 8 will appear in the drop-down list under their commercial reference.
 Select the communication port number for the encoder or reader or select the reader to use.
- 4- Run the connectivity test



Ŧ

Note: during the connectivity test on a UHF encoder, a sound and light signal (orange) will be emitted for 1 second.



4-2 Create new configuration



The reader configuration is done in 8 steps. To move from one stage to another, you must click on "Next".

1 2 3 4 5 6 7 8 9	UHF frequency band regulation
1 2 3 4 5 6 7 8 9	Configuration protection loaded into the <u>reader</u>
1 2 3 4 5 6 7 8 9	Reader configuration
Step 4 does not exist in the SPECTRI	E OSDP™ setup wizard
1 2 3 4 5 6 7 8 9	Installation configuration
1)2)3)4)5)6 7 8 9	Light indicator configuration
	Reading & communication parameters
	User Security Roles
1 2 3 4 5 6 7 8 9	Configuration save and protect



Step 1- UHF frequency band regulation





The frequency bands depend on the installation location

Andorra - ETSI	•
Andorra - ETSI	
Australia - AustraliaCustom1	
Austria - ETSI	
Azerbaijan - ETSI	
Belgium - ETSI	
Bosnia - ETSI	
Bulgaria - ETSI	
Canada - FCC	
Croatia - ETSI	
Cyprus - ETSI	
Czech Republic - ETSI	
Denmark - ETSI	
Estonia - ETSI	
Finland - ETSI	
France - ETSI	
Germany - ETSI	,

Type the first characters to display a country or select the country in which the installation will be done.

For a country which is not in the list, please contact STid: support@stid.com.

2 To approve the feasibility to install your reader in the selected country, you can check the compatibility.





With USB reader connection

Reader ID
Connect your reader O fyour reader's reference number
Cancel Confirm
Reader's frequency band compatible with selected country's regulations
Close
Reader's frequency band incompatible with selected country's regulations
Try again Check later
No reader connected, check your USB connection and communication settings
Try again Connect later

With reader part number



1- Connect the reader and set the communication COM port.

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- 2- Select 'Connect your reader'
- 3- Please confirm

Message: OK

Message: NOK

The reader can't be installed in the selected country.

- Check the USB cable
- Check the communication with reader

Enter the first 5 characters of the reader part number Example: SLAW43, SLAW53, SMAW43, SMAW53...

Message: the reference reader is not compatible with regulation selected.



Step 2- Configuration protection loaded into the reader

O ULTRYS					Administrator 🕳 🗙
uut				Readers configuratior Create a configuration	
No configuration loaded	í				💴 EN 🔻 🖨 🕧
Ĩ Ĵ	Configuration protection	on loaded into the reader		1 2 3 4	5))6))7))8))9)
ULTRYS settings		The protection code is a data that can be cust configuration of a reader during installation.	omized by the administrator to protec	t the	
		Modifying this configuration requires the protect All readers have the default protection code *F	tion code.		
Readers configuration		we recommend you to change the default pro configuration process. Enter FFFFFFFFFF in the "Protection code" fiel (hexadecimal) in the "New protection code" fiel	ection code the first time you carry of eld and specify the new protection cod d.	de	
		Protection code	FFFFFFFFF		
User credentials		New protection code			
	« Previous			Next	»

SPECTRE readers are initially supplied with a default configuration and a protection code to 0xFFFFFFFFF.

The size of this protection code is 5 bytes (10 hexadecimal characters).

After the initial setup and in order to reconfigure the reader, it will be necessary to present an UHF OCB card or a configuration file with the same 'protection code' as the reader.



Random protection code generator.

Caution This protection code is important and should definitely be known by the administrator. It protects the configuration data and allows reader configuration updates. If you lose this protection code, you won't be able to reconfigure the reader again and the reader must be reset at the factory. To change the protection code, it will be necessary to know the current protection code.



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Step 3- Reader configuration

ULTRYS				Administrator 🗕 🗙
uut	Version 3.0.8		Read Create	ers configuration a configuration
No configuration loade	d			🗮 EN 🔻 🔓 🤃
د ک ULTRYS settings	Reader configuration			
	SPECTRE	SPECTRE NANO	ATX	ATX4
Readers configuration				
\bigcirc	Read only OSDP	Read only OSDP	Read only OSDP	Read only OSDP
User credentials				
	2 Firmware v13 • (i)		Auto detection Connect and check m	ny reader configuration
	« Previous			Next ≫

(1) Selecting the reader type

SPECTRE SLA-W43/53-A-U04-7OS readers can be configured in OSDP™ mode from firmware version 7.

2 Selecting Firmware

You must select the firmware version that is compatible with your reader.

To do so, you can manually select the reader and firmware version, or you can use the function "Auto detection – Connect and check my reader configuration".







With reader's number reference

Connect your reader Image: Enter the first 6 characters of your reader's reference number Image: Image:

1-	Connect the reader via USB cable provided.
	Configure the communication parameters.

SPECTRE OSDP™

- 2- Select the Connect your reader.
- 4- Click on Confirm.

Message: NOK

- Check the USB cable
- Check the communication with reader

Enter the first 6 characters of your reader's reference number

Examples: SLAW43, SLAW53



Message: NOK

Check your reader's reference number



۲.	.*	1	1	171	125	25	1	1	1	1		-		10		20		20	31	120		
1	2		35	15	$\left(T \right)$	85	Γ				<	SD	FC	ТΡ	F (25	D	тм				
1					88	25																
		-		1.0		1.0				1.1						10.0	1.1		11		 	

Step 4- Antenna type selection

The SPECTRE OSDP™ reader only works with the new SPECTER antennas (ANT-UHF2) Step 4 does not exist in the SPECTER OSDP™ setup wizard.

Step 5- Installation configuration



1 Name the lane

Maximum 10 characters.

For example, Entry1...

23Add / Delete lane

Use 'Add /Delete lane' to configure the number of lanes you will use in your application.

The default setting is one antenna on the first lane.

For more information about the possible combination please refer to the document NA_SPECTRE.



In OSDP™, the lane number corresponds to the "Reader Number":



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4 Add / Remove antenna on lane

Set the number of antennas on the corresponding lane.

When an antenna is added, the RF port to which the antenna has to be connected appears on the reader with corresponding color to help the installation.

Oltrys v2				Admini	strateur 🗕 🗙
uLt	L S Version 2.0.03		C	configuration lecteurs réer une configuration	$ \emptyset $
Aucune configuration c	nargée			🚺 fr	• 🔒 (Ì)
			[1 2 3 4 5 6	$\left< 7 \right> 8 > 9$
. 503	Configuration de l'installation	20-00 PP-01			
ĨŎĨ	Entree1	Sortie1	Voie 3	Voie 4	\$ 0
کرتہ Paramètres Ultrys					Paramètres avancés
	◀ 2 ▶	◀ 2 ▶	< 0 >	< 0 ►	
Configuration lecteurs	Ant 1 Adossée au lecteu 🔻	Ant a Câble 1,5 m •			Paramètres Entrées/Sorties
configuration recreats		Ant 4 Cat e 15 m			+
	Supprimer une voie				Ajouter une voie
رصارت الطالب Identifiants utilisateurs					
,	« Précédent			Suivant ≫	

RF ports are assigned in order to add the antennas in the configuration wizard.

When an antenna is removed from the configuration, the RF port connection for other antennas does not change.

Example: Ant 2 deleted from lane 1 and added to lane 2.





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5 Select the cable length for each antenna



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For each antenna, select the cable length you would like to use between antenna and reader.

Only the first Antenna of the lane 1 can be lean against the reader.



ж. - **ж**

6 Advanced settings



- 3 Select the lane to configure. The lanes selected in installation setup are in white, unused lanes are grayed out. When a lane is selected in Advanced parameters it is written in blue.
- **b** Select / Change the cable length between the antenna and the reader.
- C Adjust the power of each antenna (from 10% to 100%) to adjust the reading distances.
- Adjust the timing for a scan (reading) by step of 1 second (max 30s). This setting is taking into account only if Input type selection is set to Activating all lanes or Activating the event lane.
- The EPC filter is not available in Secure Mode. Enter the value for EPC Mask, max 62 hexadecimal bytes. Adjust the value for offset EPC mask in bytes (0 to 61). It depends on the EPC Mask length. Filter inversion not selected: only tags with an EPC value corresponding to the EPC mask value g will be provided to the user. Filter inversion selected: only tags with an EPC value different from the EPC mask value will be provided to the user. RSSI (Received Signal Strength Indication) is a measure of the power in reception of the tag (h) response. The value returned by the reader is proportional to the amplitude of the reception signal Adjust the RSSI value (-110dBm to 0dBm). 0dBm deactivates the RSSI filter. Filter inversion not selected: only tags with an RSSI greater than or equal to the specified value (i` will be provided to the user. Filter inversion selected: only tags with an RSSI smaller or equal to the specified value will be provided to the user. Ex: RSSI filter = -49f=dBm + Reversal not selected A tag that will have a RSSI value of -20dBm will be sent back, A tag that will have a RSSI value of -60dBm will not be sent back.

Scan time, EPC filter and RRSI filter settings are the same for antennas on the same lane. The cable length and RF power antenna are set for each antenna.



SPECTRE OSDP™

Example 1: 4 antennas on lane 1.

Advanced set	ttings	
	Lane 1	Lane 2 Lane 3 Lane 4
Ant 1 Behind the Power	e reader 🔹 🔹	Scan time after triggering of the i I s RFID reading
Ant 2 1.5 m cab	le •	EPC filter EPC mask (Hexadecimal)
Ant 3 1.5 m cab	le •	EPC mask position (byte) 0 o Filter inversion: The reader will only send to the system the EPCs without the filter
Ant 4 1.5 m cab	Ie ✓ 100% ►	RSSI filter RSSI value ——— Disabled — Filter inversion: The reader will only send to the system the EPCs
		 ✓ for credentials with an RSSI below the defined value Cancel Confirm

Example 2: 2 antennas on lane 1 et 2 antennes on lane 2.

Advanced settings		Advanced settings	
Lane 1	Lane 2 Lane 3 Lane 4	Lane 1 Lane 2 Lane 3 Lane 4	
Ant 1 Behind the reader Power 100% Ant 2 1.5 m cable Power 100%	Scan time after triggering of the RFID reading EPC filter EPC mask (Hexadecimal) EPC mask position (byte) Filter inversion: The reader will only send to the system the EPCS without the filter	Ant 3 1.5 m cable Scan time after triggering of the RFID reading Image: Constant of the RFID reading Power 1 00% EPC filter Ant 4 1.5 m cable EPC mask (Hexadecimal) Power 1 00% EPC mask position (byte) 0 0 EPC There is the provision: The reader will only send to the system the EPCs without the filter EPC subtout the filter	
	RSSI filter RSSI value Filter inversion: The reader will only send to the system the EPCs for credentials with an RSSI below the defined value Cancel	RSSI filter RSSI value Disabled Filter inversion. The reader will only send to the system the EPCs for credentials with an RSSI below the defined value Cancel Confirm	



EPC Filter

Examples:

1- *EPC mask* = AA AA and *Offset* = 0

Only tag 1 is transmitted.

2- EPC mask = AA AA AA and Offset = 0

No tag is transmitted.

3- EPC mask = 01 and Offset = 11

Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00 01 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 02 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 03 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 03

Offset is represented in blue; the filter is done on byte 12. Only tag 1 is transmitted.

4- *EPC mask* = AB and *Offset* = 2

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are transmitted.

5- EPC mask = AB, Offset = 2 and Reversal

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are not transmitted. Only tag 4 is transmitted.



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Filter inversion: The reader will only send to the system the

EPCs without the filter

EPC filter

~



Input / output settings



SPECTRE OSDP[™]

The configuration of the outputs depends on the reading mode chosen.

Output management			
Output type selection	Pull up	to V+	•
Status of outputs	Open	Closed	Maintain during detection
Output 1	\bigcirc	0	
Output 2	\bigcirc		
Output 3	\bigcirc		
Output 4	\bigcirc		
Cancel K Previous			Confirm

Both types of output are « Pull up to V+ » or « Open drain ».

Status of outputs: select for each output the default state 'Open' or 'Closed' and if the state is maintained during the detection process.



			1
Input management			· //
RFID reader behavior o	ptions based on external events (detector	; ground loo	op etc.)
RFID reader behavior of Selection of the RFID	otions based on external events (detector	; ground loo	op etc.)
RFID reader behavior of Selection of the RFID reading mode and use of the inputs	otions based on external events (detector Continuous reading without using inputs Continuous reading without using inputs	, ground loo	op etc.)
RFID reader behavior of Selection of the RFID reading mode and use of the inputs	otions based on external events (detector Continuous reading without using inputs Continuous reading without using inputs Trigger of the reading on all lanes	, ground loo	op etc.)
RFID reader behavior of Selection of the RFID reading mode and use of the inputs	otions based on external events (detector Continuous reading without using inputs Continuous reading without using inputs Trigger of the reading on all lanes Trigger of the reading on the event lane	, ground loo	op etc.)
RFID reader behavior of Selection of the RFID reading mode and use of the inputs	otions based on external events (detector Continuous reading without using inputs Continuous reading without using inputs Trigger of the reading on all lanes Trigger of the reading on the event lane	, ground loo	op etc.)

Reading mode = Continuous reading without using inputs

RFID reader behavior options bas	ed on external event	s (detector,	ground loop etc.)
Selection of the RFID reading mode and use of the inputs	ous reading without usi	ng inputs	·
Cancel			Next ≫
Output management			1 2
Output type selection	Pull up to \	/+	•
Status of outputs	Open	Closed	Maintain during
Status of outputs Output 1	Open	Closed	Maintain during detection
Status of outputs Output 1 Output 2	Open	Closed	Maintain during detection
Status of outputs Output 1 Output 2 Output 3	Open	Closed	Maintain during detection

In this mode, the reader scan continuously.

There is no action on input activation.

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Select the output type and default state for output.



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beading mode = Trigger of the reading on all lanes



If an Input is activated (In1, In2, In3 or In4), the reader scans on all lanes set.

The duration of the reading is defined in 'Advanced settings'.

Select the output type and default state for output.



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Reading mode = Trigger of the reading on the event lane



If an Input is activated, the reader scans on the corresponding lane.

Advanced settings					
Lane 1		Lane 2		Lane 3	Lane 4
Ant 1 Behind the reader	×	Scan time aft RFID reading	er trigge	ring of the	1 s

The reading duration is defined in 'Advanced settings'.

Output management			1 2
Output type selection	Pull up	to V+	•
Status of outputs	Open	Closed	Maintain during detection
Output 1	\bigcirc	0	
Output 2	\bigcirc	\circ	
Output 3	\bigcirc	\circ	
Output 4	\bigcirc	\bigcirc	
Cancel K Previous			Confirm

Select the output type and default state for output.



Summary table

F	Reading Mode	Input	Configurable Outputs states?	Output
a	Continuous reading without using inputs	No action	Yes by lane	The output state toggles at the ascent
b	Trigger of the reading on all lanes	An action on any input activates the reading on all configured lanes	Yes by lane	The output state toggles at the ascent during the ascent time of the identifier (physically on the BUS + 200ms
0	Trigger of the reading on the event lane	An action on Input <i>x</i> activates the scan on lane <i>x</i>	Yes by lane	



Step 6- Light indicator configuration

ULTRYS			Administrator 🗕 🗙
uut	CCU Solution 3.0.8		Readers configuration Create a configuration
No configuration loade	d		■ EN ▼ 🖬 🕧
۲ ۲ ULTRYS settings	Light indicator configuration Color selection		
		Detecting user ID	
Readers configuration			
User credentials		LED color	
	K Previous		Next 🔉

Detecting user ID:

This LED lights when a tag is detected by the antenna.

Warning: An osdp_LED command cancels this color.

LED color:

No color
ОК



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Step 7- Reading & communication parameters

) (CUS Version 3.0.8		Readers conf Create a configur	Adminis figuration ation	trator _ ×
Rea	No configuration loaded	Reading & communication parameters Authenticated UHF data encryption (Secure Mode) UHF user ID encryption UHF data formatting before uploading to the system Selection of the UHF data transmission format Mode 1 (Standard) Format details Mode 3 Mode 4	Output protocol selection Output protocol Data Baud rate Size of the credential sent to the syste Constraints Filtering Time between same user ID being read	1)2)3	■ N ■ A 5 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 3 5
1	O Au UHF Private 6B212F	thenticated UHF data encryption user ID encryption key definition (16 bytes - Hex) FC17FF3A4A2EE15D1C5791E660E	on (Secure Mode)		

The EPC can be encrypted and signed before being written in the tag.

The reader will decrypt and authenticate the EPC before sending it on its output media.

Only an EPC correctly decrypted and authenticated will produce an output data, otherwise the reader will remain mute.

Notes:

• Only UHF tags compatible with "*FAST ID*" feature and having at least 128 bits of EPC can be decrypted and authenticated by the SPECTRE Access reader.

The chips compatible with secure encoding are: Monza X, Monza R6P, Monza 4D, this chip is present into

- TLTA-W53M-943_S
- TLTA-W75B-943_S
- IronTag Aero
- CCTW490_AN
- The secure mode is not accessible if an EPC mask has been set in 'Advanced settings'.

Note: After setting an EPC security key, if you return to step 5 with the Previous button, and you set an EPC filter, then returning to step 7, the "EPC ID Security" checkmark is displayed. in gray, the key field is still accessible but not taken into account.



Format details

AA BB CC xx xx ... XX YY ZZ

There are 4 UHF ID formatting modes:

Output protocol Data	RS485 - OSDP		
Data			
	Hexadecimal		
Baud rate	9600	•	
The only modifial	ble parameter is the baud	19200 38400 57600 115200	
The only modifial	ble parameter is the baud tial sent to the system (bytes)	19200 38400 57600 115200	1 B
The only modifial Size of the credent Protocol	ble parameter is the baud tial sent to the system (bytes) Size in plain	19200 38400 57600 115200	1 B

Example: EPC data: AA BB CC DD EE xx xx ... VV WW XX YY ZZ with 'Size of the credential sent to the system' fixed to 4bytes.

Mode 1 (Standard) Mode 2 (Standard reversed)

Mode 3 Mode 4



Mode 1



The reader emits the credential code present in the field only once during this time.

This time is adjustable from 0 to 30 seconds.



Step 8- User Security Roles



ULTRYS allows to manage three different profiles by configuration file.





.*			121	125	28	1.5	्र	2	1	 			- 10	20	10	10	31	187		. 4
	10	15	35	(2)	35					SD	EC	тр		05	П	тм				
1			2	88	2					38	EC			03						

Step 9- Configuration save and protect

O ULTRYS		Administrator 🗕 🗙
uut	Version 3.0.8	Readers configuration Create a configuration
No configuration loade	d 4	
1	Confirmation and another	
- Contraction of the second	Configuration save and protect	
2023		
ULIRY'S settings	^	
	Create a name (maximum 14 characters)	
Readers configuration		
User credentials		
	3 Save as	Summary of my configuration
	« Previous	
2		

This step allows you to save the configuration file containing all the current configuration settings (keys, formats, reader...). You can select a location and password to protect the file.

(1) Choose a name to easily find the configuration. (example: Parking IN).

Note: the name of the configuration must be contained in the file name.

- 2 To protect the configuration file, you can define a password. This password is different from Administrator password.
- 3 Select a directory and a file name to save.
- The name and location of 'Configuration Loaded' indicates now the chosen name and location.





(5) Get a summary of the configuration created.

Summary of my configuration 📃 🗖 🗙									
		Reader + antenna configuration eader : SPECTRE Reader OSDP ntenna : SPECTRE antenna							
		stallation overview							
Summary of configuration settings		Lane 1	Lane 2	Lane 3	Lane 4				
This document contains all the configuration settings needed to install the reader and anternas on site. For further information on installation, please refer to the <u>Installation procedure</u>		Ant 1 Bahind ba mu 🔹 Ant Corez 1.5 m cable 💌 Ant	 ✓ 2 ► Ant.3 1.5 m cable ▼ Ant.4 1.5 m cable ▼ 	4 0 ►	◀ 0 ►				
#Configuration details Installation procedure Configuration name : ParkingN Created on : 10/26/2021 10.03									
#Regulation of frequency bands Frequency bands / Countries : France - ETSI Duty crole : 0.975 Channels (MHz) : 867,5.806,9.806,3.805,7 ERP : 2000 mW		9	00:0						
	↓ 1 de 2 ↓ Print								

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Print: allows printing of configuration information on a network, local or virtual printer (PDF).





SPECTRE NANO READ ONLY

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SPECTRE NANO OSDP™


5. Reader configuration SPECTRE NANO READ ONLY

5-1 ULTRYS settings

O ULTRYS					Administrato	or = ×
uut				ULTRYS settings Communication		ζÇ ³
No configuration loaded	d				EN 🔻	d (1)
کې ULTRYS settings	Communication Port selection for encoder or reader connection					
Readers configuration		Select device	ARC-W55-G/U04-5AA [COM9] 🔹			
User credentials		Connectivity test	1			

Connect the SPECTRE NANO reader to the PC using the provided USB cable to load the configuration via serial link directly onto the reader.



Or

 Connect an UHF encoder to the PC to load the configuration onto UHF SCB configuration card.



Select device

Select device

To set the communication port

C Refresh

C Refresh

Connectivity test

Connectivity test

Select a reader	•
	Select a reader

ARC-W55-G/U04-5AA [COM9]

ARC-W55-G/U04-5AA [COM9]

COM3

COM3

Device detected: Version 7 (29.7)

Close

Failed to connect; check

Close

compatible reader

communication port and connect a

1- Click on 'Refresh' to detect all readers connected to the PC.

- 2- Open the dropdown list Select device
- 3- Readers whose firmware is ≥ 8 will appear in the drop-down list under their commercial reference.
 Select the communication port number for the encoder or reader or select the reader to use.
- 4- Run the connectivity test

Message OK (with indication of the firmware version).

Message: Failed

•

- Check the compatibility of the reader.
- Check the USB cable.
- Check the Baudrate reader: it must be fixed to 115200.

Note: during the connectivity test on a UHF encoder, a sound and light signal (orange) will be emitted for 1 second.



5-2 Create new configuration

ULTRYS		Administrator 🗕 🗙
uut	Version 3.0.7	Readers configuration Create a configuration
No configuration loade	d j	🔤 EN 🔻 🖨 (Ì)
کې ULTRYS settings	UHF frequency band regulation Installation country selection The UHF frequency bands depend on the installation location France - ETSI	
Readers configuration	Créate new Configuration	
User credentials	compatible with regulations	
		Next ≫

The reader configuration is done in 9 steps. To move from one stage to another, you must click on "Next".

1 2 3 4 5 6 7 8 9	UHF frequency band regulation	
1 2 3 4 5 6 7 8 9	Configuration protection loaded into the reader	
1 2 3 4 5 6 7 8 9	Reader configuration	
Step 4 does not exist in the SPECTER N	ANO configuration wizard	
1 2 3 4 5 6 7 8 9	Installation configuration	
1 2 3 4 5 6 7 8 9	Light and sound indicator configuration	
	Reading & communication parameters	
	<u>User Security Roles</u>	
	Configuration save and protect	



Step 1- UHF frequency band regulation UHF



The frequency bands depend on the installation location

Andorra - ETSI	•
Andorra - ETSI	
Australia - AustraliaCustom1	
Austria - ETSI	
Azerbaijan - ETSI	
Belgium - ETSI	
Bosnia - ETSI	
Bulgaria - ETSI	
Canada - FCC	
Croatia - ETSI	
Cyprus - ETSI	
Czech Republic - ETSI	
Denmark - ETSI	
Estonia - ETSI	
Finland - ETSI	
France - ETSI	
Germany - ETSI	~

Type the first characters to display a country or select the country in which the installation will be done.

For a country which is not in the list, please contact STid: support@stid.com.

2 To approve the feasibility to install your reader in the selected country, you can check the compatibility.





With USB reader connection

Reader ID
 Connect your reader Connect your reader<
Cancel Confirm
Reader's frequency band compatible with selected country's regulations
Close
Reader's frequency band incompatible with selected country's regulations
Try again Check later
No reader connected, check your USB connection and communication settings
Try again Connect later

With reader part number



- 1- Connect the reader and set the communication COM port.
- 2- Select 'Connect your reader'
- 3- Please confirm

.

Message: OK

Message: NOK

The reader can't be installed in the selected country.

- Check the USB cable
- Check the communication with reader

Enter the first 5 characters of the reader part number Example: SNAR41, SNAR51, SNAR42...

Message: the reference reader is not compatible with regulation selected.



SPECTRE NANO READ ONLY

Step 2- Configuration protection loaded into the reader

O ULTRYS					Administrator 🗕 🗙
LLL			F	Readers configuration Create a configuration	Ø
No configuration loaded	l				🎟 en 🔻 🖨 🤃
ţÇ.	Configuration protection	on loaded into the reader		1 2 3 4 5) <u>6)7)8)</u> 9)
ULTRYS settings		The protection code is a data that can be cust configuration of a reader during installation. Modifying this configuration requires the protec All readers have the default protection code "Ff We recommend you to change the default prot configuration process. Enter FFFFFFFFF in the "Protection code" fiel (hexadectima) in the "New protection code" fiel	omized by the administrator to protect f tion code. =FFFFFFFF*. ection code the first time you carry out ald and specify the new protection code d	the the	
User credentials		Protection code	FFFFFFFFF		
	« Previous			Next	»

SPECTRE NANO readers are initially supplied with a default configuration and a protection code to 0xFFFFFFFFFF.

The size of this protection code is 5 bytes (10 hexadecimal characters).

After the initial setup and in order to reconfigure the reader, it will be necessary to present an UHF SCB card or a configuration file with the same 'protection code' as the reader.



Random protection code generator.

Caution This protection code is important and should definitely be known by the administrator. It protects the configuration data and allows reader configuration updates. If you lose this protection code, you won't be able to reconfigure the reader again and the reader must be reset at the factory. To change the protection code, it will be necessary to know the current protection code.



Step 3- Reader configuration

				Administrator 🗕 🗙
uut	CC Version 3.0.8		Rea Creat	ders configuration e a configuration
No configuration loade	d			🛎 en 🔻 🖨 🤃
د ک ULTRYS settings	Reader configuration		1	
	SPECTRE	SPECTRE NANO	ATX	ATX4
Readers configuration			SH SH	
\bigcirc	Read only OSDP	Read only OSDP	Read only OSDP	Read only OSDP
User credentials				
	Eirmware v13 •		Auto detection Connect and check	my reader configuration
E	« Previous			Next ≫

1 Selecting the reader type

SPECTRE NANO SNA-R4/5x-A/U04-xx readers can be configured in "Read only" mode from firmware v13.

Selecting Firmware

You must select the firmware version that is compatible with your reader.

To do so, you can manually select the reader and firmware version, or you can use the function "Auto detection – Connect and check my reader configuration".





With USB reader connection



- 1- Connect the reader via USB cable provided. Configure the communication parameters.
- 2- Select the Connect your reader.
- 5- Click on Confirm.

Message: NOK

- Check the USB cable
- Check the communication with reader

With reader's number reference

Reader type detection	Enter the first 6 characters of your reader's reference number ATX4R1 Confirm	Enter the first 6 characters of your reader's reference number Examples: SNAR41, SNAR51,
Try again	t reader reference number Check later	Message: NOK Check your reader's reference number.

Step 4- Antenna type selection

The SPECTER NANO reader works with an integrated antenna.

Step 4 does not exist in the SPECTER NANO configuration wizard.



Step 5- Installation configuration

ULTRYS					Administrator 🗕 🗙
uut				Readers configuration	' Ø
No configuration loade	d				📰 en 🔻 🖨 🕧
ULTRYS settings	Installation configuration	Bluetooth Toff	1 Access 1 🖋		5 6 7 8 9 4 Advanced settings 5 6 7 8 9
User credentials	Previous			Next	»



Maximum 10 characters.

For example, Entryl....



Bluetooth[®] configuration



Reading of Bluetooth® identifiers disabled

SPECTRE NANO READ ONLY

Reading of Bluetooth® identifiers enabled

There are two possible displays of Step 1, depending on whether a Bluetooth® configuration is already defined or not:

No existing configuration: The Step 1 screen is as follows

Bluetooth® configuration	1 2 3 4
Load a Bluetooth® configuration (.pse)	→★ Open my current Bluetooth® configuration
Cancel	Next ≫

Existing configuration: The Step 1 screen is as follows:





Bluetooth® configuration is done in 4 steps. To move from one Step to another you must click on "Next".

SPECTRE NANO READ ONLY

1 2 3 4	Selecting the Bluetooth® configuration: - Load a Bluetooth® configuration - Open my current Bluetooth® configuration		
	Name / Reading mode / Bluetooth® Reading mode / Security		
	Identification mode / Reader options		
	Virtual access card parameters		

Step 1: Load a Bluetooth® configuration (.pse)





Nom

SPECTRE_NANO_BLUE-01.pse

^

* 200 F

*

Nom du fichier: SPECTRE_NANO_BLUE-01.pse

Bluetooth® configuration

Bluetooth® configuration file path

Cancel

Load a Blu

*

(.pse)

® configuration

Sélectionner un fichier

📌 Accès rapide

EUREAU PERSO (U:) BE

← → × ↑ 🔲 > Ce PC → Bureau

Organiser 👻 Nouveau dossier



2- A window opens to select the desired configuration file.

3- Enter the passwords used when saving the SECard (.pse) file.



28/09/2021 10:28 13/08/2021 10:32 08/08/2021 09:43

PSE file (*.pse) Ouvrir Annule

onfiguration

C:\Program Files (x86)\STid\ULTRYS v3.0.0.13\NANO-BLUE-STID.pse

Next ≫

Modifié le

Type

Fichier

Raccou

 $1 \left\langle 2 \right\rangle \left\langle 3 \right\rangle \left\langle 4 \right\rangle$

>



Check the entry of the administrator password



Check the password entry from the pse file



Step 2: Bluetooth® configuration

Some parameters are inherited from the .pse SECard configuration file and therefore cannot be changed.



lame Configuration name (14 characters r	nax.) NANO-BLUE	
Reading mode UHF or Bluetooth® 	O UHF then Bluetooth®	O Bluetooth® then UHF
Bluetooth® reading mode Private ID Private ID else CSN CSN only	Site code 6D45 (Hexadecimal on 2 bytes)	Bluetooth® data format Bluetooth® ID size Offset 0 B
Authenticated Bluetooth® data e Bluetooth® ID encryption Private key definition (16 bytes - He 4D6F077563A6D585330B499385B3	ncryption «.) BCC2	
Bluetooth® communication encr	yption - Key customization (R and W)	
	s) Write key (Hexad	lecimal on 16 bytes)



Bluetooth® configuration - Loa	ded from .pse	
Name		
Configuration name (14 characters max.	NANO-BLUE	
b Boading modo		
Bluetooth® reading mode	Site code	Bluetooth® data format
Private ID	6D45 (Hexadecimal	Bluetooth® -4 B
Private ID else CSN	on 2 bytes)	Offset 0 B
CSN only		Reverse
Authenticated Bluetooth® data encry	rption	
Bluetooth® ID encryption 🥡		
Private key definition (16 bytes - Hex.)	_ ^	
4D6F077563A6D585330B499385B3BCC		
Bluetooth® communication encryptic	on - Key customization	
One key (RW)	🔘 Two keys (R and W)	
Read key (Hexadecimal on 16 bytes)	Write key (Hexad	ecimal on 16 bytes)
Current D07C4BA98676F3065C3103247	790CCC82 Current E2B0D9	0674678F297722045840A0D005A
New D07C4BA98676F3065C3103247	790CCC82 🕅 New E2B0D9	0674678F297722045840A0D005A
Cancel K Prev	/ious	Next 🔉

These parameters must be those used for encoding the Bluetooth® virtual badge.



(a) Name

Configuration name: enter the name of the configuration Mobile ID.

The name must be a maximum of 14 characters.

The configuration name "Conf Mobile ID" is reserved for the STid Mobile ID[®] configuration.

SPECTRE NANO READ ONLY

b Reading I	mode
UHF or Bluetooth®	Reader configured to read UHF identifiers or Bluetooth® identifiers. Feedback of all identifier.
UHF then Bluetooth®	Reading the UHF identifier triggers reading of the Bluetooth® identifier. The reader scans in UHF. As soon as a valid UHF identifier is detected (key, EPC filter, etc.), the reader checks (for a timeout of 6s by default) whether a Bluetooth® identifier has to be returned (valid VCard read).
	Timeout adjustable at Step 7: Timeout for second identification (UHF and Bluetooth® 6 s mode) 6 s The reader returns the two identifiers one after the other.
	If beyond the scan time no valid Bluetooth® identifier is read, the reader resumes UHF scan.
Bluetooth [®] then UHF	Reading the Bluetooth [®] identifier triggers reading of the UHF identifier. The reader scans in Bluetooth [®] . As soon as a valid VCard is detected (Site code, etc.), the reader checks (for a timeout of 6s by default) whether a UHF identifier has to be returned (key, EPC filter).
	Timeout adjustable at Step 7:
	Timeout for second identification (UHF and Bluetooth® 6 s
	The reader returns the two identifiers one after the other.
	If beyond the scan time no valid UHF identifier is read, the reader resumes Bluetooth® scan.



(c)

Bluetooth[®] reading mode

STid Mobile ID® can store 3 types of cards:

		STid Mobile ID* ST ACCESS Stid Mobile ID • access Stid Mobile ID • access	Id Mobile ID REMIUM YOUR Corthia Marin Seried Marin Berner Meters Berner Meters Berner Meters	
	Identifier issued on download of application	A		
	Manageable cards with custom programming		P	
	Full card customization		P	
	Card revocation function		P	
	Temporary visitor badge		P	
	Access user interaction	A	P	
	Enhanced user interaction	Upgradeable to Premium identification experience	P	
Priva	ate ID	Reader configured for private code reading	only.	

Private ID otherwise	Reader configured for private code reading.
CON	If this is not found or if the security settings are incorrect, then the reader will read and return the CSN

Reader configured only to read CSN.

CSN only

Γ.	
14	

Site Code

Number on two hexadecimal bytes designating the site code to use to create the VCard.

Site code 51BC is reserved for STid Mobile ID® configuration.

Note: this site code is unrelated to the 26-bit Wiegand protocol 'site code'.



e

Bluetooth[®] data format

Bluetooth [®] ID size	Determines the length in bytes of the Bluetooth® identifier. Max 48 bytes. When Authenticated Bluetooth® data encryption is used, the max size cannot exceed 12 bytes.
Offset	Set an offset from the first byte for reading data.
Reverse	- checked: identifier read Least Significant Byte First (LSB First).
	- not checked: identifier read Most Significant Byte First (MSB First).

Authenticated Bluetooth[®] data encryption

Private identifiers can be encrypted AND signed before being written to the badge.

The reader will decrypt and authenticate the private identifier thus protected, before sending it to its output media. Only a correctly decrypted and authenticated identifier will produce an exit code, otherwise the reader will remain silent.

The encryption-authentication uses the mode MtE (MAC Then Encrypt).

Bluetooth[®] communication encryption – Key customization

One key (RW)	Use a key to read and write.
Two keys (R et W)	Use a key to read and a key to write.

Allows you to define the security keys used for Bluetooth® data.



SPECTRE NANO READ ONLY

Step 3: Bluetooth® configuration

	Bluetooth® configuration	
a	Identification modes and communication ranges	
	☑ Card	☑ Hands-free
	Contact	Up to ≈5m
	☑ Bluetooth [®] communication activation by sensor / ground loop	☑ Remote
	Up to ≈1m	Up to ~5m
	✓ ТарТар	Remote button active Remote 1 Remote 2
	Up to ≈5m	
b	Reader options	
	LED activation at Bluetooth® connection	Unlocking smartphone required by the reader
	Cancel	Next ≫



a

Identification modes and communication ranges

Card

Works by presenting the smartphone in front of the reader (like a badge).

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Contact: the smartphone must be in contact with the reader Up to 0.2m: smartphone must be in an area of 0.2m around the reader Up to 0.3m: smartphone must be in an area of 0.3m around the reader Up to 0.5m: smartphone must be in an area of 0.5m around the reader

Bluetooth® communication activation by sensor / ground loup



Up to 1m: Smartphone must be in an area of 1m around the reader Up to 2m: Smartphone must be in an area of 2m around the reader Up to 3m: Smartphone must be in an area of 3m around the reader Up to 4m: Smartphone must be in an area of 4m around the reader Up to 5m: Smartphone must be in an area of 5m around the reader

ТарТар

By tapping your smartphone twice in your pocket.



Up to 3m Up to 5m Up to 10m Up to 15m

Hands-free

Works without any user action.



Up to 3m Up to 5m Up to 10m

Up to 5m Up to 10m

Remote

Works remotely. The phone becomes your remote control. You can display up to two buttons per virtual badge.



Up to 15m Up to 20m Remote control button active: If th

Remote control button active: If the "Remote" identification mode has been activated, allows you to associate the current configuration with the Remote 1 or Remote 2 button. Possibility to use the fields to name the buttons.



b Reader options

LED activation at Bluetooth[®] connection

Allows the reader to light up briefly when connecting with a smartphone.

The color can be selected by clicking on



SPECTRE NANO READ ONLY

This action, independent of the detection of the virtual card, informs the user that communication between the smartphone and the reader is in progress.



Unlocking smartphone required by the reader

If checked: the smartphone must be unlocked (with PIN code or other unlocking option depending on the smartphone) to authenticate with the reader.

If unchecked: unlocking the smartphone is not required to authenticate with the reader.



Step 4: Bluetooth® configuration

Bluetooth® configu	ıration		1 2 3 4
Virtual access card par	ameters		
Vcard name (14 characte	ers max.) STid		
R R R R R R R R R R R R R R R R R R R] Display ID] Display site code] Display configuration name] Prohibit deletion	 Button Remote 1 Button Remote 2 Unlock required i Bio unlock required i 	
Card preview	STId NAND-BLUE 6D45 XXYYYYZZ		
Cancel	Previous		Confirm

Vcard name: Name that will appear on the virtual badge on the smartphone screen.

Note: choose a meaningful name allowing the user to quickly identify the virtual badge to use.



<u>Prohibit Deletion</u>: prohibit the deletion of the virtual access card by the user. Only the administrator, via SECard (Settings / Credits / Delete your virtual access card) can delete it.



Note: if the Bluetooth[®] configuration is configured on STid Mobile ID[®] CSN:

Step 2:

Bluetooth® configura	ation			1 2 3 4
Name Configuration name (14 cha	racters max.) Conf	Mobile ID		
Reading mode				
O UHF or Bluetooth®	С) UHF then Bluetooth®	О	Bluetooth® then UHF
Bluetooth® reading mode	e Sit	te code	Blu	uetooth® data format
 Private ID Private ID else CSN CSN only 	5	(Hexadecimal on 2 bytes)		Reverse
Cancel	« Previous			Next ≫

SPECTRE NANO READ ONLY

Step 3: Remote mode is not accessible.

Bluetooth® configuration	
Identification modes and communication ranges	
☑ Card	☑ Hands-free
Contact	Up to ~5m
Bluetooth® communication activation by sensor / ground loop	☑ Remote
Up to *1m	Up to ≈5m
	Remote button active
Up to *5m	Remote 1
Reader options	
☐ LED activation at Bluetooth® connection	□ Unlocking smartphone required by the reader
Cancel	Next ≫



(3)

Anti-intrusion settings



```
Error code sending
```

Sending error code 0xAA every 2 seconds as long as the reader is "open".

Buzzer Activation Activation of the buzzer at the highest intensity as long as the reader is "open". The buzzer stops as soon as the cover is detected as being closed or

when communication via the internal USB is established (for configuration for example) or if the reader is reconfigured by BLE or if the reader is restarted.

Deleting keys

Key erasure upon detection of opening.

Activation of the LED to signal the key deletion

* Can only be activated if the Erase keys option has been activated Activation of the fixed or flashing LED depending on the setting below:



The LED sequence is repeated as long as the reader is switched on and stops if communication via the internal USB is established (for configuration for example) or if the reader is reconfigured using the BLE or if the system is restarted.



Advanced settings

	Advanced settings				
a	Power	i	◀ 100% ▶		
b	Scan time after triggering the UHF RFID reading /Bluetooth	i	[1 s		
	EPC filter				
C	EPC mask (Hexadecimal)				
d	EPC mask position (byte)		∎—— 0 В		
e	$\hfill \ensuremath{\square}$ Filter inversion: the reader will only send to the EPCs without the filter	e system the			
	RSSI filter				
f	RSSI value		Disable	ed	
g	□ Filter inversion: the reader will only send to th for credentials with an RSSI below the defined	e system the EF d value	PCs		
	Cancel	Confirm	I		
	Adjust the antenna power (10% to 10)	00%) to adjust	the reading di	stance.	
	Adjust the reading time in steps of 1 if in the Input type selection, the read	second (max ading mode is	30s). This para set to "Trigger	meter is taken iı ing of reading o	nto account only n the event".
	C The EPC filter is not available in Section Enter the value for EPC Mask, max 6	ecure Mode. 52 hexadecima	al bytes.		
	Adjust the value for offset EPC mask It depends on the EPC Mask length.	k in bytes (0 to	o 61 bytes).		

Filter inversion not selected: only tags with an EPC value corresponding to the EPC mask value will be provided to the user.

Filter inversion selected: only tags with an EPC value different from the EPC mask value will be provided to the user.



Filter inversion not selected: only tags with an RSSI greater than or equal to the specified value will be provided to the user.

Filter inversion selected: only tags with an RSSI smaller or equal to the specified value will be provided to the user.

Ex: RSSI filter= -49dBm + Reversal not selected

A tag that will have a RSSI value of -20dBm will be sent back,

A tag that will have a RSSI value of -60dBm will not be sent back.



EPC Filter

Examples:

1- *EPC mask* = AA AA and *Offset* = 0

Only tag 1 is transmitted.

2- EPC mask = AA AA AA and Offset = 0

No tag is transmitted.

3- EPC mask = 01 and Offset = 11

Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00 01 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 02 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 03 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 03

Offset is represented in blue; the filter is done on byte 12. Only tag 1 is transmitted.

4- *EPC mask* = AB and *Offset* = 2

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are transmitted.

5- EPC mask = AB, Offset = 2 and Reversal

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are not transmitted. Only tag 4 is transmitted.



SPECTRE NANO READ ONLY



EPC filter	
EPC mask (Hexadecimal)	01
EPC mask position (byte)	- 1 1 o
□ Filter inversion: The reader will only EPCs without the filter	send to the system the



Filter inversion: The reader will only send to the system the

EPCs without the filter

EPC filter



5 Input / output	t settings
Input management	1 2 3
RFID reader behavior opt	ions based on external events (detector, ground loop etc.)
RFID/Bluetooth® reading mode selection	Continuous reading without using the input
Input option selection used to activate an	Activation of the LED and/or custom buzzer (triggered by the event)
external action	Output activation (triggered by the event)
Cancel	Next ≫

SPECTRE NANO READ ONLY

The configuration of the outputs depends on the reading mode chosen.

Output type selection Output status	Pull up to V+ (V out)
Output status	
	Open Closed Maintain during
Output 1	
Cancel K Previous	Next ≫

Both types of output are « Pull up to V+ » or « Open drain ».

Status of outputs: select for each output the default state 'Open' or 'Closed' and if the state is maintained during the detection process.



Input management	1 2 3
RFID reader behavior op	tions based on external events (detector, ground loop etc.)
RFID/Bluetooth® reading mode selection	Continuous reading without using the input Continuous reading without using the input Trigger of the reading by the event (use of the input)
Input option selection used to activate an	Activation of the LED and/or custom buzzer (triggered by the event)
external action	Output activation (triggered by the event)
	Relay activation (triggered by the event)
Cancel	Next ≫

SPECTRE NANO READ ONLY

Reading mode = Continuous reading without using input

Input management		1	2)3	In this mode, the reader scan continuously.
RFID reader behavior op	otions based on external events (detector, ground loop etc.)		There is no action on input activation.
RFID/Bluetooth® reading mode selection	Continuous reading without using	the input 🔹		
Input option selection used to activate an external action	 Activation of the LED and/or Output activation (triggered by Relay activation (triggered by 	custom buzzer (triggered by the ever y the event) the event)	nt)	
Cancel		Next 2	>	
Output management		1)	2 3	
Output type selection		Pull up to V+ (V out)	• Q	Select the output type and default state
Output status Output 1		Open Closed Maintain detect	during ion	or output.
Cancel	Previous	Next ≫		



Relay manageme	nt			1 2 3
Activate the relay wh	en a tag is detected	Off		
			I	_
Cancel	« Previous			Confirm

Activate the relay on detection

'OFF'.

SPECTRE NANO READ ONLY

Activate the relay when a tag is detected On Con Con Con Con Con Con Con Con Con Co	
Relay maintaining option	
Maintain the relay as long as tags are detected by the reader Activate the relay when a tag is transmitted	∎ 1 s
Cancel	onfirm

Activate the relay on detection 'ON': maintaining the relay as long as there is detection or for a fixed period of between 1s and 20s.



Options available in this reading mode:

Activation of the LED and/or buzzer (triggered by the event)

This option modifies the Step 6 of the main Wizard, with the addition of the setting of the LED and / or the buzzer "Custom event".

ULTRYS				Administrator 🗕 🗙
uut	Version 3.0.14		Read Create	lers configuration
NANO-BLUE (from US	B reader)			💴 EN 🔻 🖨 (
کې پې ULTRYS settings	Light and sound indicator settin Colors, intensity, flashing LEDs and buz	g .zer		
Readers configuration	Default LED	Reading error	User ID upload	Customized event
	LED brightness 100%	LED brightness 100%	LED brightness 100%	
User credentials	ED settings	ED settings	LED settings	ED settings
			M Coff	Toff
	« Previous			Next 🔉

Output activation de la sortie (triggered by the event)

Possibility of activating the output when an event is detected on the input, independently of the reading of an identifier.

Realy activation (triggered by the event)

Possibility of activating the relay when an event is detected on the input, regardless of the reading of an identifier.

At Step 3: it is no longer possible to activate the relay on detection.





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Reading mode = Trigger of the reading by the event (use the input)





Summary table

Reading mode	Options	Input	Configurable Outputs states?	Maintain during detection available?	Output	Relay on detection
Continuous reading without using inputs		No action	Yes	Yes	 If 'Continuing during detection process' not activated: the output state toggles at the ascent If 'Continuing during detection process' activated: the output state toggles to the RF detection and remains in this state as long as, at each scan is at least one detection 	Yes
a Continuous reading without using inputs	Activation of the LED and/or custom buzzer (triggered by the event)	An action on the input lights the LED and / or Buzzer according to the "Custom event" parameters	Yes	No		Yes
(a) Continuous reading without using inputs	Outpu activation (triggered by the event)	An action on the input activates the output	Yes	Yes	- If 'Continuing during detection process' not activated: the output state toggles at the ascent	Yes
a Continuous reading without using inputs	Realy activation (triggered by the event)	An action on the input activates the relay	Yes	Yes	- If 'Continuing during detection process' activated: the output state toggles to the RF detection and remains in this state as long as, at each scan is at least one detection	No
Trigger of the reading by the event (use of the input)		An action on the input activates reading on the lanel	Yes	Yes	 If 'Continuing during detection process' not activated: the output state toggles at the ascent If 'Continuing during detection process' activated: the output state toggles to the RF detection and remains in this state as long as, at each scan is at least one detection 	Yes

Note: as long as the action is detected on the input, the output remains toggled.



Step 6- Light and sound indicator setting

O ULTRYS			Administrator 🗕 🗙
uut	EPU Superior 3.0.13		Readers configuration Create a configuration
No configuration loade	Light and sound indicator setting		
کی ULTRYS settings	Colors, intensity, hashing LEDs and buzzer		
Readers configuration	Default LED	Reading error	User ID upload
User credentials	LED brightness ——— 100%	LED brightness 100%	LED brightness 100%
			Toff
	« Previous		Next ≫

Default LED:

After the reader initialization phase, the LED must be activated according to the color defined in the box.

The intensity of the LED is adjustable in 10% steps (from 10% to 100%).

Reading error:

This LED lights when the RF is bad, in this case the reader can't read the tag. The intensity of the LED is adjustable in 10% steps (from 10% to 100%).

User ID upload:

LED: Color indicating the detection of an identifier by the antenna. The intensity of the LED is adjustable in 10% steps (from 10% to 100%).

Buzzer parameter – Custom eve	nt
Buzzer time 📲 200 ms	
Adjusting the buzzer volume	
Low volume	
Cancel Confirm	

Buzzer: OFF or ON+option :



Customized event*:

LED lights if action on the input. Default set to no color / Buzzer OFF. LED: Color indicating the detection of an identifier by the antenna.



Buzzer: OFF or ON+options :

LED settings:

LED settings – By default	LED settings – Reading problem
Continuous fixed LED ELED flashing Flashing time 200 ms	LED color selection
LED color selection No color Cancel Confirm	No color Cancel Confirm
LED settings – When the user ID is uploaded	LED settings – Custom event
LED settings – When the user ID is uploaded O 1 LED (x200 ms) LED flashing Number of flashes (x100 ms)	LED settings – Custom event O 1 LED (x1 s) Image: Description of the set
LED settings – When the user ID is uploaded 1 LED (x200 ms) LED flashing Number of flashes (x100 ms) 2 LED color selection Image: Color selection	LED settings – Custom event () 1 LED (x1 s) () LED flashing Number of flashes (x100 ms) () () 2 LED color selection () () () () () () () () () () () () () (



* The LED 'Customized event' only appears if 'Reading Mode' = Continuous reading + Activation de la LED personnalisée ».

SPECTRE NANO READ ONLY

Readers configuration Create a configuration



کې ULTRYS settings	Light and sound indicator settin Colors, intensity, flashing LEDs and buz	g .zer	1	
Readers configuration	Default LED	Reading error	User ID upload	Customized event
User credentials	CED settings	ED settings	LED settings	LED settings

Display in other cases:



ULTRYS uutrys Version 3.0.0.13 **Readers** configuration Create a configurati EN 🔻 1 2 3 4 5 6 7 8 9 Light and sound indicator setting No. ίΩ, Colors, intensity, flashing LEDs and buzzer ULTRYS settings Default LED User ID upload Reading error tion 3 LED brightness _____ 100% LED brightness _____ 100% LED brightness _____ 100% 6 LED settings LED settings LED settings User credentials Off **«** Previous Next ≫

SPECTRE NANO READ ONLY



SPECTRE NANO READ ONLY

Step 7- Reading & communication parameters

The parameters accessible in step 7 depend on the previously defined parameters and the selected protocol. The different modes will be discussed in the Application Note.

ULTRYS			Administrator	
uut	ITUS Version 3.0.9		Readers configuration Create a configuration	Ð,
No configuration loade	d		🕮 EN 🔻 🔒	ı i
	(1 2 3 4 5 6 7 8	
. 503	Reading & communication	n parameters		
	Authenticated UHF data e	ncryption (Secure Mode)	Uutput protocol selection	
ULTRY'S settings	UHF user ID encryption		Select output protocol .	
	UHF data formatting befo	re uploading to the system	Size of the credential sent to the system (bytes)	(2)
	Use the predefined formats for formatting the UHF ID	O Format the UHF ID manually	C. Filtering	
Readers configuration	Selection of the UHF data transmission format	UHF ID size 62 B Offset 0 B	Time between same user ID being read twice 6 s	
\frown \triangleright	Mode 1 (Standard) 🔹	Inverted		
	Format details			
	MODE 3	mode z		
User credentials	AA BB CC xx xx .	XX YY ZZ		(4)
	Mode 4	Mode 1		
	// Draviour		Nort	
	R Previous		Next 77	

 \bigcirc The data can be encrypted and signed before being written in the tag.

The reader will decrypt and authenticate the data before sending it on its output media. Only an identifier correctly decrypted and authenticated will produce an output data, otherwise the reader will remain mute.

If authenticated encryption is also used for the Bluetooth® identifier, it is possible to use: - A different private key for EPC and for Bluetooth®



- An identical private key for the EPC and for Bluetooth[®] in this case, the value of the key is defined in the Bluetooth[®] configuration:

huthenticated UHF data encryption (Secur	Authenticated Bluetooth® data encryption	
☑ UHF user ID encryption ☑ Use the encryption key of t Bluetooth® user ID	ne (i)	Private key definition (16 bytes - Hex.) 4D6F077563A6D585330B499385B3BCC2


Notes:

• Only UHF tags compatible with "*FAST ID*" feature and having at least 128 bits of EPC can be decrypted and authenticated by the SPECTRE Access reader. The chips compatible with secure encoding are: Monza X, Monza R6P, Monza 4D, this chip is present into

SPECTRE NANO READ ONLY

- TLTA-W53M-943_S
- TLTA-W75B-943_S
- IronTag Aero
- CCTW490_AN
- The secure mode is not accessible if an EPC mask has been set in 'Advanced settings'.

Note: After setting an EPC security key, if you return to step 5 with the Previous button, and you set an EPC filter, then returning to step 7, the "EPC ID Security" checkmark is displayed. in gray, the key field is still accessible but not taken into account

(2) Output protocol selection

The advanced options in this part depend on whether or not a Bluetooth® configuration is activated and the protocol chosen:

Bluetooth [®] activation	Reading mode	Bluetooth® reading mode	Output protocol	Advanced options
Bluetooth Off	NA			NA
Bluetooth On	UHF or Bluetooth® UHF then Bluetooth® Bluetooth® then UHF	Private ID Private ID else CSN CSN only	RS232 RS485	Advanced options Protocol options ID_Tag, to indicate whether the ID information comes from a UHF or Bluetooth® credential Cancel Confirm
	UHE or Bluefooth®	Private ID Private ID else CSN	RS232 RS485	Advanced options Protocol options D_Tag. to indicate whether the ID information comes from a UHF or Bluetooth® credential Cancel Confirm
	UHF then Bluetooth® Bluetooth® then UHF	 CSN only Private ID Private ID else CSN CSN only 	Other protocols	Advanced options Protocol options Site code forced on the Bluetooth® CSN ID Cancel Confirm



ID_Tag:

D_Tag:				
Advanced option	s			
Protocol options				
ID_Tag, to indicate comes from a UH	e whether the ID information F or Bluetooth® credential	Site code	forced on the Bluet	tooth® CSN ID
90 EPC UF	HF Gen 2 (Hex)			
60 Bluetoo	th® (Hex)			
C	Cancel		Confirm	

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The ID-Tag values are editable.

1 byte	Lane number	ID-Tag	x bytes	1 byte	1 byte	1 byte	1 byte
STX	1 byte	0x90: UHF 0x60: BLE	Data*	LRC	CR	LF	ETX

Site code forced on the Bluetooth[®] CSN ID:

Advanced options	
Protocol options	
□ ID_Tag, to indicate whether the ID information comes from a UHF or Bluetooth® credential	Site code forced on the Bluetooth® CSN ID AB (Hexadecimal on 2 bytes max.)
Cancel	Confirm

Force the value defined in the field to the value of the CSN.

The value of the code will be transmitted in high order on one or two bytes. The CSN can therefore be truncated depending on the size of the protocol used.



RS232 / RS485

Output protocol selection				
Select output protocol	RS485		*	
Data	Hexadecimal		•	
 Indicate the channel number upstrea Padding STX+ETX 	am of the ID	□ LRC □ ASCII		
Baud rate	115200		•	
Size of the credential sent to the system (bytes) 3 B				

Serial frame:

1 byte	Channel number	X bytes	1 byte	1 byte	1 byte	1 byte
STX	1 byte	Data*	LRC	CR	LF	ETX
		,				

* Doubled if the ASCII is activated.

Data	Data sent in decimal or hexadecimal format.		
Channel number	The SPECTRE NANO having only one channel, indicates 01h.		
Padding	Add on the frame leading zeros. If this option is not activated, the leading zero won't sent.		
STX+ETX	Add STX (0x02) and ETX (0x03) in the frame.		
CR	Carriage return (0x0D).		
LF	Line feed (0x0A).		
LRC	Checksum byte by XORing of all previously characters without the STX.		
ASCII	If this option is activated, the Data will be sent in ASCII mode.		
Baud Rate	9600, 19200, 38400, 57600 ou 115200 bauds		
Size of the credential sent to the system (bytes)	Size in plain mode	Size in secure mode	
	1 to 62 bytes	1 to 6 bytes	



Wiegand /Clock&Data



Protocol	Size in plain mode	Size in secure mode
Wiegand 26 bits	Fixed to 3b	Fixed to 3b
Wiegand with LRC custom size /	1b up to 16b	1b up to 6b
Wiegand custom size		
Decimal Clock&Data – Iso 2B	1b up to 7b	1b up to 6b



<u>Note:</u> If the "ID size" of the Bluetooth[®] data is greater than "Size of the credential sent to the system":

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Please note: the data formatting only applies to the uploading of data into the system, it is not taken into account for the encoding of identifiers.

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<u>1st case</u>: UHF data formatting before uploading to the system without active Bluetooth[®] configuration:

 Use the predefined formats for formatting the UHF ID 	O Format the UHF ID manually
Selection of the UHF data transmission format	UHF ID size 4 B Offset 0 B
Mode 1 (Standard) •	Reverse
Format details	
Mode 3	Mode 2
	mode 2
AA BB CC xx xx	XXIYYIZZ
AA BB CC xx xx	
AA BB CC xx xx	Mode 1 (Standard)
AA BB CC xx xx	Mode 1 Mode 1 (Standard) Mode 2 (Standard reversed)
AA BB CC xx xx	Mode 1 (Standard) Mode 2 (Standard reversed) Mode 3

Example: EPC data: AA BB CC DD EE xx xx ... VV WW XX YY ZZ with 'Size of the credential sent to the system' fixed to 4bytes.





UHF data formatting before uploading to the system		
O Use the predefined formats for formatting the UHF ID	Format the UHF ID manually	
Selection of the UHF data transmission format	UHF ID size 4 B	
Mode 1 (Standard) 🔹	Reverse	

Possibility to define the reporting format according to the size of the identifier, the offset and the reading direction.

WARNING

UHF ID Size + Offset should not be larger than the EPC size of the tag used. Otherwise the ID will not be returned to the system.

Example 1:

ID encoded in the Tag:	AABBCCDDEEFF001122334455
	UHF ID size 4 B
Formatting:	Offset 8 B
	Reverse
ID Formated:	22334455
Size of the credential sent to the system:	Size of the credential sent to the system (bytes) 4 B
Data sent to the system:	22334455

Example 2:

ID encoded in the Tag:	AABBCCDDEEFF001122334455
	UHF ID size
Formatting:	Offset 0 B
	☑ Reverse
ID Formated:	55443322
Size of the credential sent to the system:	Size of the credential sent to the system (bytes) 4 B
Data sent to the system:	55443322

Example 3 :

ID encoded in the Tag:	AABBCCDDEEFF001122334455	
	UHF ID size 4 B	
Formatting:	Offset 0 B	
	Reverse	
ID Formated:	AABBCCDD	
Size of the credential sent to the system:	Size of the credential sent to the system (bytes) 4 B	
Data sent to the system:	AABBCCDD	

Example 4 :

ID encoded in the Tag:	AABBCCDDEEFF001122334455	
	UHF ID size	
Formatting:	Offset 4 B	
	Reverse	
ID Formated:	DDCCBBAA	
Size of the credential sent to the system:	Size of the credential sent to the system (bytes) 4 B	
Data sent to the system:	DDCCBBAA	



2nd case: UHF data formatting before uploading to the system with an active Bluetooth® configuration:

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UHF data formatting before uploading to the system			
O Use the predefined formats for formatting the UHF ID Use Bluetooth® data format			
-	O Format the UHF ID manually		
Selection of the UHF data	UHF ID size 4 B		
transmission format	Offset 0 B		
Mode 1 (Standard)	Reverse		

Possibility to format the UHF ID manually (ditto case 1) or to use the Bluetooth® data format.





The reader emits the credential code present in the field only once during this time. This time is adjustable from 0 to 30 seconds.

If the Reading Mode has been set to 'UHF then Bluetooth®' or 'Bluetooth® then UHF', the timeout setting appears:

Reading mode O UHF or Bluetooth®	O UHF then Bluetooth®	O Bluetooth® then UHF
Reading mode	O UHF then Bluetooth®	O Bluetooth® then UHF
Filtering		
Time between same user ID being re Timeout for second identification (UH mode)	ad twice	—— 6 s —— 6 s

UHF then Bluetooth[®]: If beyond the Timeout no valid Bluetooth[®] identifier is read, the reader starts again in UHF scan.

Bluetooth[®] then UHF: If beyond the Timeout no valid UHF identifier is read, the reader starts again in Bluetooth[®] scan.



Step 8- User Security Roles



ULTRYS allows to manage three different profiles by configuration file.





SPECTRE NANO READ ONLY

Step 9- Configuration save and protect

		Administrator 🕳 🗙
uut	Version 3.0.14	Readers configuration Create a configuration
Conf Mobile ID (from L	ISB reader)	
ţŎţ	Configuration save and protect	1)2)3)4)5)6)7)8}9
ULTRYS settings	Create a name (maximum 14 characters) Conf Mobile ID	
	Customizing .ucg file protection	
Readers configuration	3 □ Disable the reader from taking into account the next UHF configuration cards. next reader configurations will be done only by USB	The
	Allow ULTRYS to retrieve and open the reader and UHF parameters from the reader and ut parameters from the reader and UHF parameters from the reader and UHF parameters from the reader and ut parame	eader (j)
User credentials	Allow ULTRYS to retrieve and open the reader and Bluetooth® parameters from reader (USB) and the configuration card	n the (i)
	6 Save as Summary of my cor	afiguration 8
8	K Previous	

This step allows you to save the configuration file containing all the current configuration settings (keys, formats, reader...). You can select a location and password to protect the file.

(1) Choose a name to easily find the configuration. (example: Parking IN).

Note: the name of the configuration must be contained in the file name.

2 To protect the configuration file, you can define a password. This password is different from Administrator password.

(3) If this option is enabled, the reader can only be configured again via the USB connection.

4 Authorize ULTRYS to retrieve and open the reader and UHF parameters from the reader and the configuration card. See 11-Open an existing configuration.

i	To optimize the security level of your configuration, disable the retrieval and the opening in ULTRYS, from the reader (by USB) and the configuration card, of the reader and UHF parameters (including the security keys).
	ок



5 Authorize ULTRYS to retrieve and open the reader and Bluetooth® parameters from the reader and the configuration card. See 11-Open an existing configuration.

SPECTRE NANO READ ONLY



6 Select a directory and a file name to save

The name and location of 'Configuration Loaded' indicates now the chosen name and location.





(8) Get a summary of the configuration created.

Summary of my configuration	_ =
	#Reader Configuration Reader: Manoreader Installation overview
Summary of configuration setti	ngs 😵 🔤 👘
This document contains all the configuration settings needed to install the reader and antennas- site. For further information on installation, please refer to the <u>installation procedure</u>	
#Configuration details Configuration name : NANO BLUE Created on : 00250021913	
Updated on: 10/24/02/19/13 // Regulation of frequency bands Frequency band/ Countries: France. ETSI Duty crycle: 0.975 Channels (MHz): 807,5 609, 9803, 985,7	
ERP : 2000 mW	
	(14:3)
	Print
Summary of my configuration	21 B
Bluetooth® configuration Reading mode Bluetooth® then UHF	Input management RFID/Bluetooth® reading mode selection : Continuous reading without using the input
Bluetooth® reading mode : CSN only Site code : 51BC	Activation of the LED and/or custom buzzer (triggered by the event) : No Output activation (triggered by the event) : No
Isueloomo data format Inverted : No kiertification modes and communication ranges	Relay activation (inggered by the events) : no Output management
A A	Output type selection : Pull up to V+ Status of outputs : Mantain during
Card : Contact TapTap : No	Open Closed overcion
	Light indicator settings Reading in progress Reading error
Hands-Iree : No bisecostre communication actuation by sensor / ground loop : No	
Unlocking smartphone required by the reader : No LED activation at Bluetooth® connection : No	
Advanced settings	LED brightness
Anterna 1: Power :: 100 % Scone time offen	LED color : Blue
RFID reading 1 s EPC mask (Hexadecimal) :	
EPC mask position (byte) : 0 Filter inversion: The reader will only send to the system the EPCs without the filter : No	
RSSI value : 0 dBm Filter inversion: The reader will only send to the system the EPCs Encoded by other BCC halos the defined rates in the EPCs	
for creatinals with an RSSI below the defined value :: No	
	(2 de 3) =
	r Christen (Christen)
Summary of my configuration	- •
Detecting user ID	Time between same user ID being read twice : 6 s Timeout for second identification (UHF and Bluetooth® mode) === 6 s
	Advanced options Site code formed on the Bistelenth® CONID -: Ma
150 bideese	ane code loi ced un ale binecodino Can ID -, no
LED color : Green	
नाजा 🐙	
#Communication protocol	
Secure mode : Disabled Select output protocol : Wiegand custom size	
This protocol has the same message structure as the Wiegand 3La or 3Lb protocol, plus customizable number of bytes (EPC size). Observations of TTL outputs:	
Size of the credential sent to the system (bytes) : θ byte(s)	
Format The UHF ID manually : Yes UHF ID USE : 02.8 Offset : 0.8 Inverted : No	
	(3 de 3)

Print: allows printing of configuration information on a network, local or virtual printer (PDF).

SPECTRE NANO READ ONLY



6. Reader configuration SPECTRE NANO OSDP™

6-1 ULTRYS settings

ULTRYS					Administrat	or _ ×
uut				ULTRYS settings Communication		ζζ ³
No configuration loaded	1				EN 🔻	i
کې ULTRYS settings	Communication Port selection for encoder or reader connection					
Readers configuration		Select device	ARC-W55-G/U04-SAA [COM9] 🔹			
User credentials		Connectivity test				

SPECTRE NANO OSDP™

Connect the SPECTRE NANO reader to the PC using the provided USB cable to load the configuration via serial link directly onto the reader.



Or

 Connect an UHF encoder to the PC to load the configuration onto UHF OCB configuration card.



Select device

Select device

To set the communication port

C Refresh

C Refresh

Connectivity test

Connectivity test

Select device	Select a reader 🔹
\mathcal{G} Refresh	
O Connectivity test	

ARC-W55-G/U04-5AA [COM9]

ARC-W55-G/U04-5AA [COM9]

COM3

COM3

Device detected: Version 7 (29.7)

Close

Failed to connect; check

Close

communication port and connect a compatible reader

1- Click on 'Refresh' to detect all readers connected to the PC.

- 2- Open the dropdown list Select device
- 3- Readers whose firmware is ≥ 8 will appear in the drop-down list under their commercial reference.
 Select the communication port number for the encoder or reader or select the reader to use.
- 4- Run the connectivity test

Message OK (with indication of the firmware version).

Message: Failed

- Check the compatibility of the reader.
- Check the USB cable.
- Check the Baudrate reader: it must be fixed to 115200.

Note: during the connectivity test on a UHF encoder, a sound and light signal (orange) will be emitted for 1 second.





The reader configuration is done in 8 steps. To move from one stage to another, you must click on "Next".

1 2 3 4 5 6 7 8 9	UHF frequency band regulation	
1 2 3 4 5 6 7 8 9	Configuration protection loaded into the reader	
1 2 3 4 5 6 7 8 9	Reader configuration	
Step 4 does not exist in the SPECTRE N	ANO OSDP™ setup wizard	
1 2 3 4 5 6 7 8 9	Installation configuration	
1 2 3 4 5 6 7 8 9	Light and sound indicator settings	
	Reading & communication parameters	
	<u>User Security Roles</u>	
	Configuration save and protect	



SPECTRE NANO OSDP™

Step 1- UHF frequency band regulation





The frequency bands depend on the installation location

Andorra - ETSI
Andorra - ETSI
Australia - AustraliaCustom1
Austria - ETSI
Azerbaijan - ETSI
Belgium - ETSI
Bosnia - ETSI
Bulgaria - ETSI
Canada - FCC
Croatia - ETSI
Cyprus - ETSI
Czech Republic - ETSI
Denmark - ETSI
Estonia - ETSI
Finland - ETSI
France - ETSI
Germany - ETSI

Type the first characters to display a country or select the country in which the installation will be done.

For a country which is not in the list, please contact STid: support@stid.com.

2 To approve the feasibility to install your reader in the selected country, you can check the compatibility.





With USB reader connection

Reader ID
 Connect your reader Connect your reader<
Cancel Confirm
Reader's frequency band compatible with selected country's regulations
Close
Reader's frequency band incompatible with selected country's regulations
Try again Check later
No reader connected, check your USB connection and communication settings
Try again Connect later

With reader part number



1- Connect the reader and set the communication COM port.

SPECTRE NANO OSDP[™]

- 2- Select 'Connect your reader'
- 3- Please confirm

Message: OK

Message: NOK

The reader can't be installed in the selected country.

- Check the USB cable
- Check the communication with reader

Enter the first 5 characters of the reader part number

Example: SNAW43, SNAW53.

Message: the reference reader is not compatible with regulation selected.



SPECTRE NANO OSDP™

10 X 10

Step 2- Configuration protection loaded into the reader

					Administrator 🗕 🗙
uut				Readers configuration Create a configuration	Ø
No configuration loaded	d			1)2)3)4)5)	EN ▼ 🖨 🛈
د ک ULTRYS settings	Configuration protection Protection code definition	n loaded into the reader			
Readers configuration		The protection code is a data that can be cust configuration of a reader during installation. Modifying this configuration requires the proter All readers have the default protection code "F We recommend you to change the default pro configuration process. Enter FEFEFFEFFEFFEFFEFFEFFEFFEFFEFFEFFEFFEFF	comized by the administrator to protect ction code. FFFFFFFFF*. tection code the first time you carry ou eld and specify the new protection coo	t the ut the	
User credentials		(hexadecimal) in the "New protection code" fie Protection code	Id.		
	K Previous	New protection code		िंग Next 🌶	

SPECTRE NANO readers are initially supplied with a default configuration and a protection code to 0xFFFFFFFFFF.

The size of this protection code is 5 bytes (10 hexadecimal characters).

After the initial setup and in order to reconfigure the reader, it will be necessary to present an UHF OCB card or a configuration file with the same 'protection code' as the reader.



Random protection code generator.

Caution

This protection code is important and should definitely be known by the administrator. It protects the configuration data and allows reader configuration updates.

If you lose this protection code, you won't be able to reconfigure the reader again and the reader must be reset at the factory.

To change the protection code, it will be necessary to know the current protection code.



Step 3- Reader configuration

ULTRYS				Administrator 🕳 🗙
uut	C C U S Version 3.0.9		Reade Create a	ers configuration
Conf Mobile ID (from L	JSB reader)			🕮 EN 🔻 🔓 🦚
د ک الا TRYS settings	Reader configuration			2 3 4 5 6 7 8 9
o Entro octango	SPECTRE	SPECTRE NANO	ATX	ATX4
Readers configuration			E H	
\bigcirc	Read only OSDP	Read only OSDP	Read only OSDP	Read only OSDP
User credentials				
	Firmware v13 (i)		Connect and check my	y reader configuration
	Previous			INCAL

(1) Selecting the reader type

SPECTRE NANO SNA-Wx3-A/U04-7OS can be configured in OSDP™ mode from firmware version v13.

2 Selecting Firmware

You must select the firmware version that is compatible with your reader.

To do so, you can manually select the reader and firmware version, or you can use the function "Auto detection – Connect and check my reader configuration".







With reader's number reference

Reader type detection

λŲ

Cancel

3- Connect the reader via USB cable provided. Configure the communication parameters.

SPECTRE NANO OSDP™

- 4- Select the Connect your reader.
- 6- Click on Confirm.

Message: NOK

- Check the USB cable
- Check the communication with reader

Enter the first 6 characters of your reader's reference number

Examples: SNAW43, SNAW53



ATX4R1

Confirm

Message: NOK

Check your reader's reference number

Step 4- Antenna selection

The SPECTER NANO reader works with an integrated antenna.

Step 4 does not exist in the SPECTER OSDP™ setup wizard.



Step 5- Installation configuration

					Administrator 🗕 🗙
uut				Readers configuration	
No configuration loade	d				🗮 EN 🔻 🖨 🕧
ULTRYS settings	Installation configuration	Bluetooth Off	1 Access 1 🖋		5 6 7 8 9 4 Advanced settings 1 for the settings
User credentials	K Previous			Next	*



Maximum 10 characters.

For example, Entry1....



2 Bluetooth[®] configuration



Reading of Bluetooth® identifiers disabled

SPECTRE NANO OSDP[™]

Reading of Bluetooth® identifiers enabled

There are two possible displays of Step 1, depending on whether a Bluetooth® configuration is already defined or not:

No existing configuration: The Step 1 screen is as follows



Existing configuration: The Step 1 screen is as follows:





Bluetooth[®] configuration is done in 4 steps. To move from one Step to another you must click on "Next".

SPECTRE NANO OSDP™

1 2 3 4	Selecting the Bluetooth® configuration: - Load a Bluetooth® configuration - Open my current Bluetooth® configuration
1 2 3 4	Name / Reading mode / Bluetooth® Reading mode / Security
	Identification mode / Reader options
1 2 3 4	Virtual access card parameters

Step 1: Load a Bluetooth® configuration (.pse)





Bluetooth® configuration

Load a Blu

*

(.pse)

Cancel

to keep control of your security - Adm

PSE configuration file Current configuration file

Ada

Configuration file

Password for PSE file protection (optional) kpMpMB#2

When loading configuration file use SCB version defined by

C:\Users\c.pialoux\AppData\Roaming\STid\SECard v3.6.0.291\secard.pse rds for SECard login

> ord STid User pass

> > ord STid

ord STidA-1

SECard - The sof

fraction for the second second

Setting: Encoder

Fas Fas Reader Infiguration Create Iser care

® configuration

Sélectionner un fichier

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2- A window opens to select the desired configuration file.

3- Enter the passwords used when saving the SECard (.pse) file.



password



Check the password entry from the pse file



🏽 🕶 🔳 😮

Open my current Bluetooth®

C:\Program Files (x86)\STid\ULTRYS v3.0.0.13\NANO-BLUE-STID.pse

SECard settings Configuration files

Load pse file

Save as...

SCB wizard

Next ≫

Туре

>



SPECTRE NANO OSDPT

Step 2: Bluetooth® configuration

Some parameters are inherited from the .pse SECard configuration file and therefore cannot be changed.



Name Configuration name (14 characters ma	ax.) NANO-BLUE	
Reading mode UHF or Bluetooth® 	O UHF then Bluetooth®	O Bluetooth® then UHF
Bluetooth® reading mode Private ID Private ID else CSN CSN only	Site code 6D45 (Hexadecimal on 2 bytes)	Bluetooth® data format Bluetooth® ID size Offset Reverse
Authenticated Bluetooth® data end Bluetooth® ID encryption Private key definition (16 bytes - Hex.) 4D6F077563A6D585330B499385B3B	cryption) CC2	
Bluetooth® communication encryp	otion - Key customization	
Read key (Hexadecimal on 16 bytes)	Write key (Hex	adecimal on 16 bytes)
Current D07C4BA98676F3065C31032	24790CCC82 Current E2B0	0D9674678F297722045840A0D005A
New Dozo (DADADOSZCEDOSCODADOS		





SPECTRE NANO OSDP™

These parameters must be those used for encoding the Bluetooth® virtual badge.



(a) Name

Configuration name: enter the name of the configuration Mobile ID.

The name must be a maximum of 14 characters.

The configuration name "Conf Mobile ID" is reserved for the STid Mobile ID[®] configuration.

SPECTRE NANO OSDP™

b Reading	mode
UHF or Bluetooth®	Reader configured to read UHF identifiers or Bluetooth® identifiers. Feedback of all identifier.
UHF then Bluetooth®	Reading the UHF identifier triggers reading of the Bluetooth [®] identifier. The reader scans in UHF. As soon as a valid UHF identifier is detected (key, EPC filter, etc.), the reader checks (for a timeout of 6s by default) whether a Bluetooth® identifier has to be returned (valid VCard read). Timeout adjustable at Stop 7:
	Timeout for second identification (UHF and Bluetooth® 6 s
	The reader returns the two identifiers one after the other. If beyond the scan time no valid Bluetooth® identifier is read, the reader resumes UHF scan.
Bluetooth [®] then UHF	Reading the Bluetooth [®] identifier triggers reading of the UHF identifier. The reader scans in Bluetooth [®] . As soon as a valid VCard is detected (Site code, etc.), the reader checks (for a timeout of 6s by default) whether a UHF identifier has to be returned (key, EPC filter).
	Timeout for second identification (UHF and Bluetooth® 6 s
	The reader returns the two identifiers one after the other.
	If beyond the scan time no valid UHF identifier is read, the reader resumes Bluetooth® scan.



 \bigcirc

Bluetooth[®] reading mode

	STid Mobile ID® A CCESS STid Mobile II e Adaptarts	STid Mobile ID PREMIUM UDGD Cynthia Marin Sarver Kernen Sarver Kernen
Identifier issued on download of application	A	
Manageable cards with custom programming		P
Full card customization		P
Card revocation function		P
Temporary visitor badge		P
Access user interaction	A	P
Enhanced user interaction	Upgradeable to Premium identification experience	P

STid Mobile ID® can store 3 types of cards:

Private ID	Reader configured for private code reading only.
Private ID otherwise CSN	Reader configured for private code reading.
	If this is not found or if the security settings are incorrect, then the reader will read and return the CSN.
CSN only	Reader configured only to read CSN.



Site Code

Number on two hexadecimal bytes designating the site code to use to create the VCard.

Site code 51BC is reserved for STid Mobile ID® configuration.

Note: this site code is unrelated to the 26-bit Wiegand protocol 'site code'



e Bluetooth® data form	at
Bluetooth [®] ID size	Determines the length in bytes of the Bluetooth [®] identifier. Max 48 bytes. When Authenticated Bluetooth® data encryption is used, the max size cannot exceed 12 bytes.
Offset	Set an offset from the first byte for reading data.
Reverse	- checked: identifier read Least Significant Byte First (LSB First).
	- not checked: identifier read Most Significant Byte First (MSB First).

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(f) Authenticated Bluetooth[®] data encryption

Private identifiers can be encrypted AND signed before being written to the badge.

The reader will decrypt and authenticate the private identifier thus protected, before sending it to its output media. Only a correctly decrypted and authenticated identifier will produce an exit code, otherwise the reader will remain silent.

The encryption-authentication uses the mode MtE (MAC Then Encrypt).

g Bluetooth® commu	nication encryption – Key customization
One key (RW)	Use a key to read and write.
Two keys (R et W)	Use a key to read and a key to write.

Allows you to define the security keys used for Bluetooth[®] data.



Step 3: Configuration Bluetooth®

Bluetooth® configuration	1 2 3 4
a Identification modes and communication ranges	
☑ Card	☑ Hands-free
Contact	Up to ≈5m
☑ Bluetooth [®] communication activation by sensor / ground loop	✓ Remote
Up to ~1m	Up to ≈5m
	Remote button active
Up to ~5m	Remote 1 Remote 2
Beader options	
LED activation at Bluetooth® connection Cancel	Unlocking smartphone required by the reader
cancer (110000	



Identification modes and communication ranges

Card

(a)

Works by presenting the smartphone in front of the reader (like a badge).



Contact: the smartphone must be in contact with the reader Up to 0.2m: smartphone must be in an area of 0.2m around the reader Up to 0.3m: smartphone must be in an area of 0.3m around the reader Up to 0.5m: smartphone must be in an area of 0.5m around the reader

Bluetooth[®] communication activation by sensor / ground loup



Up to 1m: Smartphone must be in an area of 1m around the reader Up to 2m: Smartphone must be in an area of 2m around the reader Up to 3m: Smartphone must be in an area of 3m around the reader Up to 4m: Smartphone must be in an area of 4m around the reader Up to 5m: Smartphone must be in an area of 5m around the reader

ТарТар

By tapping your smartphone twice in your pocket.



Up to 3m Up to 5m Up to 10m Up to 15m

Hands-free

Works without any user action.



Up to 3m Up to 5m Up to 10m

Remote

Works remotely. The phone becomes your remote control. You can display up to two buttons per virtual badge.



Up to 5m Up to 10m Up to 15m Up to 20m

Remote control button active: If the "Remote" identification mode has been activated, allows you to associate the current configuration with the Remote 1 or Remote 2 button. Possibility to use the fields to name the buttons.



b Reader options

LED activation at Bluetooth[®] connection

Allows the reader to light up briefly when connecting with a smartphone.

The color can be selected by clicking on



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This action, independent of the detection of the virtual card, informs the user that communication between the smartphone and the reader is in progress.



Unlocking smartphone required by the reader

If checked: the smartphone must be unlocked (with PIN code or other unlocking option depending on the smartphone) to authenticate with the reader.

If unchecked: unlocking the smartphone is not required to authenticate with the reader.



Step 4: Bluetooth® configuration

Bluetooth® configu	uration		1)2)3)4
Virtual access card par	rameters		
Vcard name (14 characte	ers max.) STid		
प्र प्र प्र	 Display ID Display site code Display configuration name Prohibit deletion 	 Button Remote 1 Button Remote 2 Unlock required i Bio unlock required i 	
Card preview	STId NAND-BLU 6D45 XXYYYYZZ		
Cancel	C Previous		Confirm

Vcard name: Name that will appear on the virtual badge on the smartphone screen.

Note: choose a meaningful name allowing the user to quickly identify the virtual badge to use.



<u>Prohibit Deletion</u>: prohibit the deletion of the virtual access card by the user. Only the administrator, via SECard (Settings / Credits / Delete your virtual access card) can delete it.



Note: if the Bluetooth[®] configuration is configured on STid Mobile ID[®] CSN:

Step 2:

Bluetooth® configuration		1)2/3/4
Name Configuration name (14 characters	max.) Conf Mobile ID	
Reading mode		
O UHF or Bluetooth®	O UHF then Bluetooth®	O Bluetooth® then UHF
Bluetooth® reading mode	Site code	Bluetooth® data format
 Private ID Private ID else CSN CSN only 	51BC (Hexadecimal on 2 bytes)	☐ Reverse
Cancel ≪	Previous	Next ≫

Step 3: Remote mode is not accessible.

Bluetootne configuration	
Identification modes and communication ranges	
☑ Card ☑ Hands-free	
Contact	
Bluetooth® communication activation by Semote sensor / ground loop	
Up to ~1m	
Remote button active	
✓ TapTap Remote 1 Remote 2	i i
Up to ≈5m	
Reader options	
LED activation at Bluetooth® connection	
Cancel	



3 Anti-intrusion settings



```
Error code sending
```

Sending error code 0xAA every 2 seconds as long as the reader is "open".

SPECTRE NANO OSDP™

Buzzer Activation Activation of the buzzer at the highest intensity as long as the reader is "open". The buzzer stops as soon as the cover is detected as being closed or

when communication via the internal USB is established (for configuration for example) or if the reader is reconfigured by BLE or if the reader is restarted.

Activation of the fixed or flashing LED depending on the setting

Deleting keys

Key erasure upon detection of opening.

Activation of the LED to signal the key deletion

below:

* Can only be activated if the Erase keys option has been activated



The LED sequence is repeated as long as the reader is switched on and stops if communication via the internal USB is established (for configuration for example) or if the reader is reconfigured using the BLE or if the system is restarted.


Advanced settings

	Advanced settings						
a	Power	1	i	◀ 100% ►			
b	Scan time after triggering the UHF RFID reading /Bluetooth		i	₿ ──── 1 s			
	EPC filter						
C	EPC mask (Hexadecimal)						
d	EPC mask position (byte)			∎—— 0 В			
e	Filter inversion: the reader will only s EPCs without the filter	send to the system	the				
	RSSI filter						
f	RSSI value			Disable	ed		
g	☐ Filter inversion: the reader will only for credentials with an RSSI below t	send to the system the defined value	the EF	PCs			
	Cancel	Confir	m				
	a Adjust the antenna power	(10% to 100%) to ;	adjust	the reading o	distance.		
	Adjust the reading time in sing time in the Input type selection	steps of 1 seconc n, the reading m	d (max Iode is	30s). This par s set to "Trigge	ameter is ering of re	taken into ading on tl	account only he event".
	The EPC filter is not availa	able in Secure M	ode.				

	Enter the value for EPC Mask, max 62 hexadecimal bytes.
d	Adjust the value for offset EPC mask in bytes (0 to 61 bytes). It depends on the EPC Mask length.

Filter inversion not selected: only tags with an EPC value corresponding to the EPC mask value will be provided to the user.

Filter inversion selected: only tags with an EPC value different from the EPC mask value will be provided to the user.

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Filter inversion not selected: only tags with an RSSI greater than or equal to the specified value will be provided to the user.

Filter inversion selected: only tags with an RSSI smaller or equal to the specified value will be provided to the user.

Ex: RSSI filter= -49dBm + Reversal not selected

A tag that will have a RSSI value of -20dBm will be sent back,

A tag that will have a RSSI value of -60dBm will not be sent back.



EPC Filter

Examples:

1- *EPC mask* = AA AA and *Offset* = 0

Only tag 1 is transmitted.

2- EPC mask = AA AA AA and Offset = 0

No tag is transmitted.

3- EPC mask = 01 and Offset = 11

Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00 01 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 02 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 03 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 03

Offset is represented in blue; the filter is done on byte 12. Only tag 1 is transmitted.

4- EPC mask = AB and Offset = 2

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are transmitted.

5- EPC mask = AB, Offset = 2 and Reversal

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are not transmitted. Only tag 4 is transmitted.



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EPC filter



Filter inversion: The reader will only send to the system the EPCs without the filter



Input / output	tsettings	
Input management		1 2 3
RFID reader behavior opt	ions based on external events (detector, ç	ground loop etc.)
RFID/Bluetooth® reading mode selection	Continuous reading without using the input	▼
Cancel		Next ≫

The configuration of the outputs depends on the reading mode chosen.

Output managem	ent			1 2 3
Output type selection	1	Pull up to V+	· (V out)	•
Output status				Maintain during
Output 1		Open		detection
Cancel	Previous			Next ≫

Both types of output are « Pull up to V+ » or « Open drain ».

Status of outputs: select for each output the default state 'Open' or 'Closed' and if the state is maintained during the detection process.







Input management			1 2 3
RFID reader behavior options based	on external events (detector, gro	ound loop etc	:.)
RFID/Bluetooth® reading mode selection a b Continuous Trigger of th	reading without using the input reading without using the input re reading by the event (use of the inp	ut)	
Cancel			Next ≫

(a) <u>Reading mode = Continuous reading without using input</u>.

					1 2	3	
Input managemen	t						In
RFID reader behavior	options based on e	dernal events (d	etector, grou	ind loop et			СС
RFID/Bluetooth® read mode selection	ing Continuous read	ing without using th	e input	·			Tł ac
Cancel					Next ≫		
Output manageme	nt				1) 2	3	
Output type selection			Pull up to V	+ (V out)		•	Se
Output status			Open	Closed	Maintain duri	ng	de
Output 1			 Open 	O	detection		
Cancel	« Previous				Next ≫		

In this mode, the reader scan continuously.

There is no action on input activation.

Select the output type and default state for output.







(b)

<u>Reading mode = Trigger of the reading by the event (use the input)</u>

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Summary table

Reading mode	Input	Configurable Outputs states?	Maintain during detection available?	Output	Relay on detection
a Continuous reading without using inputs	No action	Yes	Yes	- If 'Continuing during detection process' not activated: the output	Yes
b Trigger of the reading by the event (use of the input)	An action on the input activates reading on the lanel	Yes	Yes	state toggles at the ascent - If 'Continuing during detection process' activated: the output state toggles to the RF detection and remains in this state as long as, at each scan is at least one detection	Yes

Note: as long as the action is detected on the input, the output remains toggled.



				Ad	ministrator 🗕 🗙
uut	Version 3.0.13		R	teaders configuration	
No configuration loade	đ		[≝ E 1) 2) 3) 4) 5) 6	N ▼ 🖨 (Ì)
کې ULTRYS settings	Light and sound indicator setting Colors, intensity, flashing LEDs and buzzer		·		
Readers configuration		Default LED	User ID upload		
	LED bright	tness ——— 100%	LED brightness 100%		
User credentials		LED settings	LED settings		
	K Previous			Next ≫	

LED brightness: The intensity of the LED is adjustable in 10% steps (from 10% to 100%).

Default LED:

After the reader initialization phase, the LED must be activated according to the color defined in the box, as long as the reader does not receive a permanent OSDP_LED command.

User ID upload:

LED: Color indicating the detection of an identifier by the antenna, as long as the reader does not receive a permanent OSDP_LED command.

Buzzer paramete	er – Custom event
Buzzer time	— 200 ms
Adjusting the buzze	r volume
Low v	+ olume
Cancel	Confirm

Buzzer: OFF or ON+option :

Buzzer: indicating the detection of an identifier by the antenna, as long as the reader does not receive a permanent OSDP_BUZ command.



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LED settings:





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Step 7- Reading & communication parameters

The parameters accessible in step 7 depend on the previously defined parameters and the selected protocol. The different modes will be discussed in the Application Note.

ULTRYS				Admini	strator 🗕 🗙
uut	CUS Version 3.0.0.14			Readers configuration Create a configuration	Ø
NANO-BLUE (from US	B reader)			EN 1	• 🔒 🕧
ULTRYS settings	Reading & communication O Authenticated UHF data e Image: UHF user ID encryption Use t Private key definition (16 bytes - Hex) 4D6F077563A6D585330B499385B3BCd Image: UHF data formatting befor	n parameters ncryption (Secure Mode) he encryption key of the ooth@user ID C2	Output protocol sel Output protocol Data Baud rate	1)2)3)4)5)6) Nection RS485-OSDP Hexadecimal 115200	7 8 8 9
User credentials	Use the predefined formats for formating the UHF ID Selection of the UHF data transmission format Mode 1 (Standard)	Use Bluetooth® data format Format the UHF ID manually UHF ID size UHF ID size Offset Reverse	 Option the size of the lot of output protocol Advanced options Advanced Filtering Time between same user ID be Timeout for second identificatio mode) 	ing read twice	— 1B — 6s — 6s

1 The data can be encrypted and signed before being written in the tag. The reader will decrypt and authenticate the data before sending it on its output media. Only an identifier correctly decrypted and authenticated will produce an output data, otherwise the reader will remain mute.

If authenticated encryption is also used for the ${\sf Bluetooth}^{\circledast}$ identifier, it is possible to use:

- A different private key for EPC and for Bluetooth®



- An identical private key for the EPC and for Bluetooth[®] in this case, the value of the key is defined in the Bluetooth[®] configuration:





Notes:

• Only UHF tags compatible with "*FAST ID*" feature and having at least 128 bits of EPC can be decrypted and authenticated by the SPECTRE Access reader. The chips compatible with secure encoding are: Monza X, Monza R6P, Monza 4D, this chip is present into

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- TLTA-W53M-943_S
- TLTA-W75B-943_S
- IronTag Aero
- CCTW490_AN
- The secure mode is not accessible if an EPC mask has been set in 'Advanced settings'.

Note: After setting an EPC security key, if you return to step 5 with the Previous button, and you set an EPC filter, then returning to step 7, the "EPC ID Security" checkmark is displayed. in gray, the key field is still accessible but not taken into account

Output protocol	RS485 - OSDP	
Data	Hexadecimal	
Baud rate	115200	•
 Upload the size of the ID to the system Define the size of the data returned output protocol Advanced options 	stem I on the	——— 1 В
		9600 9600
		19200 38400 57600

The baudrate can be modified with the values: 115200

Upload the size of the ID to the system

: Returns all of the data read.(osdp_RAW)

$oldsymbol{\circ}$	Define the size of the data returned on the output protocol	62 B	
--------------------	--	-------------	--

Protocol	Size in plain mode	Size in secure mode
RS485	1 to 62 bytes	1 to 6 bytes



SPECTRE NANO OSDP

Advanced options:

The advanced options in this part depend on whether or not a Bluetooth® configuration is activated:

Bluetooth [®] activation	Reading mode	Bluetooth® reading mode	Advanced options
Bluetooth Off	NA		Advanced options Protocol options Data offset in bits 0 bits © Data left-justified 0 bits Image: State of the Busy command 0 bits Backward compatibility option Image: Use the ACK instead of the Busy command 0 bits Cancel Confirm
Bluetooth On	UHF or Bluetooth® UHF then Bluetooth® UHF then Bluetooth® Bluetooth® then UHF	 Private ID Private ID else CSN CSN only 	Advanced options D_Tag, to indicate whether the ID information D_Tag, to indicate whether the ID information Data offset in bits Data offset in bits Data offset in bits Data offset in bits Data offset of the Busy command Data offset in bits Data offset Distribute Distribute
Bluetooth On	UHF or Bluetooth® UHF then Bluetooth® UHF then Bluetooth® Bluetooth® then UHF	 Private ID Private ID else CSN CSN only Private ID Private ID else CSN CSN only 	Advanced options Protocol options D. Tag, to indicate whether the ID information comes from a UHF or Bluetooth® credential authentication Data offset in bits 0 bits Data offset in bits 0 bits Bata offset in bits 0 bits Bata left-justified Data right- justified Bata wather compatibility option Use the ACK instead of the Busy command Use the old IEEE number (F51BC0) Cancel Confirm



Advanced options Protocol options ID Tag, to indicate whether the ID information Enable Plain mode after secure channel a 🗹 comes from a UHF or Bluetooth® credential authentication 90 EPC UHF Gen 2 (Hex) - 0 Modification of the RS485 address 60 Bluetooth® (Hex) Site code forced on the Bluetooth® CSN ID Data offset in bits 0 bits AB (Hexadecimal on 2 bytes max.) Data right-Data left-justified iustified С Backward compatibility option Use the ACK instead of the Busy command Use the old IEEE number (F51BC0) g h) Cancel Confirm

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Value add in front of the data to indicate the technology read.

- Available only if a Bluetooth[®] configuration is active.
- Used to fix the first ID bit sent by the reader to the OSDP_RAW command (UID and Private ID).
 Adjustable from 0 to 255 bits.
 Ex: if the offset is 6 and the data is 0x123456 (hexa), 0b0001 0010 0011 0100 0101 0110 (binary).
 - →The data with the offset will be 0b10 0011 0100 0101 0110 (binary), 0x023456 (hexa).
 - Allows adding zero padding to the left or right (left justified or right justified).
 - Disabled: after an osdp_keyset command with a key other than the default SCBKD key, it is mandatory to communicate in Secure Channel.

Enabled: After an osdp_keyset command with a key other than the default SCBKD key, it is possible to communicate in plain mode even after successful authentication.

Allows the RS485 address to be defined, by OCB configuration without having to use the osdp_COMSET command.

Allows to force a site code. The value of the code will be transmitted in high order on one or two bytes. The CSN can therefore be truncated depending on the size of the protocol used. Available only if a Bluetooth® configuration 'Private ID reading mode otherwise CSN' or 'CSN only' is active.

Disabled: the response will be osdp_busy. Enable: the response will be osdp_ACK.

b Disabled: uses IEEE 0x2C17E0. Enabled: uses IEEE 0xF51BC0.

(a)

(c)

d



<u>Note:</u> If the "ID size" of the Bluetooth[®] data is greater than "Size of the credential sent to the system":

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Please note: the data formatting only applies to the uploading of data into the system, it is not taken into account for the encoding of identifiers.

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<u>1st case</u>: UHF data formatting before uploading to the system without active Bluetooth[®] configuration:

JHF ID size 4 B Offset 0 B Reverse Mode 2 XX YY ZZ
Reverse
Mode 2 XX YY ZZ
XX YY ZZ
XXIYYZZ
Mode 1
Mode 1 (Standard)
Ν

Example: EPC data: AA BB CC DD EE xx xx ... VV WW XX YY ZZ with 'Size of the credential sent to the system' fixed to 4bytes.





Possibility to define the reporting format according to the size of the identifier, the offset and the reading direction.

WARNING

UHF ID Size + Offset should not be larger than the EPC size of the tag used. Otherwise the ID will not be returned to the system.

<u>Example</u> 1:

ID encoded in the Tag:	AABBCCDDEEFF001122334455
	UHF ID size 4 B
Formatting:	Offset 8 B
	Reverse
ID Formated:	22334455
Size of the credential sent to the system:	Define the size of the data returned on the output protocol 4 B
Data sent to the system:	22334455

Example 2:

ID encoded in the Tag:	AABBCCDDEEFF001122334455	
	UHF ID size 4 B	
Formatting:	Offset 0 B	
	✓ Reverse	
ID Formated:	55443322	
Size of the credential sent to the system:	Define the size of the data returned on the output protocol 4 B	
Data sent to the system:	55443322	

Example 3 :

ID encoded in the Tag:	AABBCCDDEEFF001122334455
	UHF ID size
Formatting:	Offset 0 B
	Reverse
ID Formated:	AABBCCDD
Size of the credential sent to the system:	Define the size of the data returned on the output protocol 4 B
Data sent to the system:	AABBCCDD

Example 4 :

ID encoded in the Tag:	AABBCCDDEEFF001122334455	
	UHF ID size 4 B	
Formatting:	Offset 4 B	
	☑ Reverse	
ID Formated:	DDCCBBAA	
Size of the credential sent to the system:	Define the size of the data returned on the output protocol	
Data sent to the system:	DDCCBBAA	



2nd case: UHF data formatting before uploading to the system with an active Bluetooth® configuration:

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UHF data formatting befo	re uploading to the system
O Use the predefined formats for formatting the UHF ID	Use Bluetooth® data format
U U	O Format the UHF ID manually
Selection of the UHF data	UHF ID size 4 B
transmission format	Offset 0 B
Mode 1 (Standard) *	Reverse

Possibility to format the UHF ID manually (ditto case 1) or to use the Bluetooth® data format.





The reader emits the credential code present in the field only once during this time.

This time is adjustable from 0 to 30 seconds.

If the Reading Mode has been set to 'UHF then Bluetooth[®] 'or 'Bluetooth[®] then UHF', the timeout setting appears:



UHF then Bluetooth[®]: If beyond the Timeout no valid Bluetooth[®] identifier is read, the reader starts again in UHF scan.

Bluetooth[®] then UHF: If beyond the Timeout no valid UHF identifier is read, the reader starts again in Bluetooth[®] scan.



Step 8- User Security Roles



ULTRYS allows to manage three different profiles by configuration file.





SPECTRE NANO OSDP™

Step 9- Configuration save and protect

		Administrator 🕳 🗙
uut		Readers configuration Create a configuration
Conf Mobile ID (from U	SB reader)	
	Configuration save and protect	
ULTRYS settings	Create a name (maximum 14 characters) Conf Mobile ID	
	2 Customizing .ucg file protection	
Readers configuration	Isable the reader from taking into account the next UHF configuration cards. T next reader configurations will be done only by USB	ne
	Allow ULTRYS to retrieve and open the reader and UHF parameters from the rea (USB) and the configuration card	^{der} (i)
	Allow ULTRY'S to retrieve and open the reader and Bluetooth® parameters from reader (USB) and the configuration card	^{the} (i)
	6 Save as Summary of my confi	guration 8
	« Previous	

This step allows you to save the configuration file containing all the current configuration settings (keys, formats, reader...). You can select a location and password to protect the file.

(1) Choose a name to easily find the configuration. (example: Parking IN).

Note: the name of the configuration must be contained in the file name.

2 To protect the configuration file, you can define a password. This password is different from Administrator password.

(3) If this option is enabled, the reader can only be configured again via the USB connection.

4 Authorize ULTRYS to retrieve and open the reader and UHF parameters from the reader and the configuration card. See 11-Open an existing configuration.

i	To optimize the security level of your configuration, disable the retrieval and the opening in ULTRYS, from the reader (by USB) and the configuration card, of the reader and UHF parameters (including the security keys).	
	ОК	



5 Authorize ULTRYS to retrieve and open the reader and Bluetooth® parameters from the reader and the configuration card. See 11-Open an existing configuration.

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6 Select a directory and a file name to save

The name and location of 'Configuration Loaded' indicates now the chosen name and location.





8 Get a summary of the configuration created.

	Version 3.0.0.9	#Reader Configuration Reader : Nano OSDP reader Installation overview	_
Summary of configuration	settings		
This document contains all the configuration settings needed to install the reader an site. For further information on installation, please refer to the <u>installation procedure</u>	nd antennas on		
#Configuration details Configuration name : NANO-BLUE Created on : 11/3/2021 9:45			
#Regulation of frequency bands Frequency bands / Countries : France - ET38 Dady cycle Dady cycle Channels (MHz) : 807 / 5 806, 9 806, 3 805, 7 ERP : 2000 mW			
	∢1 de	3 »	= 5 •
Summary of my configuration			_ = ×
Buetooth® configuration Uff Then Bluetooth® : Uff or Bluetooth® Bluetooth® cading mode : Private ID otherwise CSN Site: code : cON5 Buetooth® code : and communication in the set of th	Remote Up to <20m Remote button act	Advanced settings Accessed Accesse	
	4 2 de	3) fint	= 5 •
Summary of my configuration			×
Default LED LED bightness LED color : Blue LED color : Blue LED color : Blue LED color : Creen LED color : Green Merican Buzzer time : 200 ms LED color : Green Merican Buzzer time : 200 ms Lew volume Buzzer time : 200 ms Lew volume Lew volume Buzzer time : 200 ms Lew volume Lew volume Buzzer time : 200 ms Lew volume Buzzer time : 200 ms Lew volume Lew volume Lew volume Lew volume Lew volume Lew volume Lew volume Le		Advanced options Site code forced on the Bluetooth® CSNID : No ID_Tag, to indicate whether the ID information comes from a UHE or Bluetooth® credential : N Entable Plan mode after secure channel authentification : No Data offset in bits : 0 bits Modification of the R3485 address (0) : No Data left_jacifield Use the ACK instead of the Busy command : No Use the old IEEE number (F51BC0) : No	ko
Time between same user ID being read twice : 6 s Timeout for second identification (UHF and Bluetooth® mode) ==[
	(3 de	3 »	= +



Print: allows printing of configuration information on a network, local or virtual printer (PDF).









7. Reader configuration SPECTRE ATX READ ONLY

7-1 ULTRYS settings

O ULTRYS					Administrat	or _	×
uut				ULTRYS settings Communication		to the	3
No configuration loaded	d -				EN 🔻	6	(i)
کې ULTRYS settings	Communication Port selection for encoder or reader connection						
Readers configuration		Select device ${\cal J}$ Refresh	ARC-W55-G/U04-5AA [COM9] 🔻				
User credentials		O Connectivity test					

SPECTRE ATX READ ONLY

Connect the SPECTRE ATX reader to the PC using the provided USB cable to load the configuration via serial link directly onto the reader.



or

 Connect an UHF encoder to the PC to load the configuration onto UHF SCB configuration card.



To set the communication port

Select device CRefresh	Select a reader	Ŧ	1-	Click on 'Refresh' to detect all readers connected to the PC.
Select device	ARC-W55-G/U04-5AA [COI ARC-W55-G/U04-5AA [COI COM3	M9] *	2- 3-	Open the dropdown list Select device Readers whose firmware is ≥ 8 will appear in the drop-down list under their commercial reference. Select the communication port number for the encoder or reader or select the reader to use.
Select device	СОМЗ	•	4-	Run the connectivity test
Device detected: Close	Version 7 (29.7)	Messa versic	age Ol on).	K (with indication of the firmware
Failed to connect communication compatible read	t; check port and connect a er	- - -	Cheo Cheo Cheo fixec	ck the compatibility of the reader. ck the USB cable. ck the Baudrate reader: it must be to 115200.

Note: during the connectivity test on a UHF encoder, a sound and light signal (orange) will be emitted for 1 second.



7-2 Create new configuration

ULTRYS		Administrator 🗕 🗙
uut	CCUS Version 3.0.7	Readers configuration Create a configuration
No configuration loade	d	
کی ULTRYS settings	UHF frequency band regulation Installation country selection The UHF frequency bands depend on the installation location France - ETSI	
Readers configuration	Créate new configuration v configuration v con	
User credentials	Compatible with regulations	
		Next 🔉

The reader configuration is done in 7 steps. To move from one stage to another, you must click on "Next".

1 2 3 4 5 6 7 8 9	UHF frequency band regulation
1 2 3 4 5 6 7 8 9	Configuration protection loaded into the <u>reader</u>
1 2 3 4 5 6 7 8 9	Reader configuration
Step 4 does not exist in the SPECTRE AT	(READ ONLY setup wizard
1 2 3 4 5 6 7 8 9	Installation configuration
Step 6 does not exist in the SPECTRE AT>	(READ ONLY setup wizard
1 2 3 4 5 6 7 8 9	Reading & communication parameters
	User Security Roles
1 2 3 4 5 6 7 8 9	Configuration save and protect



SPECTRE ATX READ ONLY

Step 1- UHF frequency band regulation





The frequency bands depend on the installation location

Andorra - ETSI	*
Andorra - ETSI	
Australia - AustraliaCustom1	
Austria - ETSI	- 1
Azerbaijan - ETSI	
Belgium - ETSI	
Bosnia - ETSI	
Bulgaria - ETSI	
Canada - FCC	
Croatia - ETSI	
Cyprus - ETSI	
Czech Republic - ETSI	
Denmark - ETSI	
Estonia - ETSI	
Finland - ETSI	
France - ETSI	
Germany - ETSI	-

Type the first characters to display a country or select the country in which the installation will be done.

For a country which is not in the list, please contact STid: support@stid.com.

(2) To approve the feasibility to install your reader in the selected country, you can check the compatibility.



*



SPECTRE ATX READ ONLY

With USB reader connection

Reader ID
 Connect your reader Connect your reader<
Cancel Confirm
Reader's frequency band compatible with selected country's regulations
Close
Reader's frequency band incompatible with selected country's regulations
Try again Check later
No reader connected, check your USB connection and communication settings
Try again Connect later

With reader part number



- 1- Connect the reader and set the communication COM port.
- 2- Select 'Connect your reader'
- 3- Please confirm

Message: OK

Message: NOK

The reader can't be installed in the selected country.

- Check the USB cable
- Check the communication with reader

Enter the first 5 characters of the reader part number Example: ATXR41, ATXR42, ATXR51.....

Message: the reference reader is not compatible with regulation selected.



Step 2- Configuration protection loaded into the reader

O ULTRYS					Administrator 🕳 🗙
LLL				Readers configuratior Create a configuration	
No configuration loaded	í				🎬 EN 🔻 🖨 🤃
Ĩ Ĵ	Configuration protection	on loaded into the reader		1 2 3 4	5))6))7))8))9)
ULTRYS settings		The protection code is a data that can be cust configuration of a reader during installation.	omized by the administrator to protec	t the	
		Modifying this configuration requires the protect All readers have the default protection code *F	tion code.		
Readers configuration		we recommend you to change the default pro configuration process. Enter FFFFFFFFFF in the "Protection code" fiel (hexadecimal) in the "New protection code" fiel	ection code the first time you carry of eld and specify the new protection cod d.	de	
		Protection code	FFFFFFFFF		
User credentials		New protection code			
	« Previous			Next	»

SPECTRE ATX readers, are initially supplied with a default configuration and a protection code to 0xFFFFFFFFF.

The size of this protection code is 5 bytes (10 hexadecimal characters).

After the initial setup and in order to reconfigure the reader, it will be necessary to present an UHF SCB card or a configuration file with the same 'protection code' as the reader.



Random protection code generator.

Caution This protection code is important and should definitely be known by the administrator. It protects the configuration data and allows reader configuration updates. If you lose this protection code, you won't be able to reconfigure the reader again and the reader must be reset at the factory. To change the protection code, it will be necessary to know the current protection code.



Step 3- Reader configuration

ULTRYS				Administrator 🕳 🗙
uut			Reade Create	ers configuration a configuration
MyConfigName (from	USB reader)			📟 EN 🔻 🖨 (ì)
د ک ULTRYS settings	Reader configuration		1	2 3 4 5 6 7 8 9
	SPECTRE	SPECTRE NANO	ATX	ATX4
Readers configuration			Ex B H	
\bigcirc	Read only OSDP	Read only OSDP	Read only OSDP	Read only OSDP
User credentials				
	Firmware v13 • (i)		Auto detection Connect and check m	iy reader configuration
	« Previous			Next ≫

1 Selecting the reader type

SPECTRE ATX readers can be configured in "Read only" mode from firmware version 10.

2 Selecting Firmware

You must select the firmware version that is compatible with your reader.

To do so, you can manually select the reader and firmware version, or you can use the function "Auto detection – Connect and check my reader configuration".





With USB reader connection



With reader's number reference

Reader type detection	
Connect your reader	Enter the first 6 characters of your reader's reference number ATX4R1
Cancel	Confirm
	reader reference number
Try again	Check later

1- Connect the reader via USB cable provided. Configure the communication parameters.

SPECTRE ATX READ ONLY

- 2- Select the Connect your reader.
- 3- Click on Confirm.

Message : NOK

- Check the USB cable
- Check the communication with reader

Enter the first 6 characters of your reader's reference number

Examples: ATXR41, ATXR51, ATXR42

Message: NOK

Check your reader's reference number



Step 4- Antenna type selection

The SPECTRE ATX reader only works with antenna embeded(ANT_UHF2).

SPECTRE ATX READ ONLY

Step 4 does not exist in the SPECTRE ATX configuration wizard.

Step 5- Installation configuration

ULTRYS			Administrator 🕳 🗙
uut			Readers configuration Create a configuration
MyConfigName (from)	USB reader)		📟 EN 🔻 🖨 🤃
~	Installation configuration		1 2 3 4 5 6 7 8 9
د مرجع کرکیک ULTRYS settings		1 Lane 🖋	2 Advanced settings
Readers configuration			3 Input/Output settings
User credentials			
	« Previous		Next »



Maximum 10 characters.

For example, Entryl.



Advanced settings

Advanced settings			
Power			◀ 100% ►
Scan time after triggering the UHF RFID reading		(i)	∎ 1 s
EPC filter			
EPC mask (Hexadecimal)			
EPC mask position (byte)			 0 o
Filter inversion: The reader EPCs without the filter	r will only send to th	e system the	
RSSI filter			
RSSI value			Disable
☐ Filter inversion: The reade for credentials with an RS	er will only send to the send	ne system the El d value	PCs
Can	cel	Confirm	

Adjust the antenna power (10% to 100%) to adjust the reading distance. The power emitted depends on the type of regulation, limited to 1800mw ERP for ETSI and 1200mw ERP for FCC, New Zealand and Australia. No limitation for Morocco.

Adjust the timing for a scan (reading) by step of 1 second (max 30s). This setting is taking into account only if *Input type selection* is set to *Activating all lanes* or *Activating the event lane.*



Ex: RSSI filter = -49f=dBm + Reversal not selected A tag that will have a RSSI value of -20dBm will be sent back, A tag that will have a RSSI value of -60dBm will not be sent back.



EPC Filter

Examples:

1- *EPC mask* = AA AA and *Offset* = 0

Only tag 1 is transmitted.

2- EPC mask = AA AA AA and Offset = 0

No tag is transmitted.

3- EPC mask = 01 and Offset = 11

Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00 01 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 02 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 03 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 03

Offset is represented in blue; the filter is done on byte 12. Only tag 1 is transmitted.

4- EPC mask = AB and Offset = 2

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are transmitted.

5- EPC mask = AB, Offset = 2 and Reversal

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are not transmitted. Only tag 4 is transmitted.



SPECTRE ATX READ ONLY



EPC filter				
EPC mask (Hexadecimal)	01			
EPC mask position (byte)	- 1 1 o			
Filter inversion: The reader will only send to the system the EPCs without the filter				



EPC mask position (byte)

EPC filter

Filter inversion: The reader will only send to the system the EPCs without the filter

- 20


③ Input/ output settings



SPECTRE ATX READ ONLY

Select the reading mode, the output settings depend on this mode.

Output managem	ent			
Output type selection	n	Pull up	to V+	,
Status of outputs				
		Open	Closed	Maintain during detection
Output 1		\odot	0	
Output 2		0	0	
Output 3		۲	0	
Output 4		\bigcirc	0	
Cancel	« Previous			Confirm

Both types of output are Pull up to V+ or Open drain.

Status of outputs: select for each output the default state 'Open' or 'Closed' and if the state is maintained during the detection process.



Input management RFID reader behavior options based on external events (detector, ground loop etc.) Selection of the RFID reading mode and user Image: Determine the imput Image: Determine the imput

SPECTRE ATX READ ONLY

Reading mode = Continuous reading without using input





B Reading mode = Trigger of the reading by the event



If Input is activated, the reader scans on the lane.

SPECTRE ATX READ ONLY

The reading duration is defined in 'Advanced settings'.

Select the output type and default state for output.



(c)

<u>Reading mode = Output activation (triggered on outputs)</u>



An action on Input toggles the corresponding output regardless of RF function of the reader.

SPECTRE ATX READ ONLY

Select the output type and default state for output.



Summary table

ſ	Reading Mode	Input	Configurable Outputs states?	Maintain during detection available?	Output
a	Continuous reading without using inputs	No action	Yes by lane	Yes by lane	 If 'Continuing during detection process' not activated: the output state toggles at the ascent If 'Continuing during detection process' activated: the output state toggles to the RF detection and remains in this state as long as, at each scan is at least one detection
b	Trigger of the reading by the event	An action on the input activates the reading on the lane	Yes	Yes	 If 'Continuing during detection process' not activated: the output state toggles at the ascent during the ascent time of the identifier (physically on the BUS + 200ms
					- If 'Continuing during detection process' activated: the output state toggles to the RF detection and remains in this state as long as, at each scan is at least one detection
C	Output activation (triggered on outputs)	An action on an Input toggles the corresponding output	Yes	No	The output state is only linked to a user action on the input

Note: as long as the action is detected on the input, the output remains toggled.

Step 6- Light indicator configuration

The SPECTRE ATX reader is not equipped with an LED card or a Buzzer.

Step 6 does not exist in the SPECTRE ATX setup wizard.



SPECTRE ATX READ ONLY

Step 7- Reading & communication parameters

			Administra Readers configuration Create a configuration	ator _ ×
No configuration loaded ULTRYS settings Readers configuration User credentials	Reading & communication parameters Authenticated UHF data encryption (Secure Mode) UHF user ID encryption UHF data formatting before uploading to the system Selection of the UHF data transmission format Mode 1 (Standard) Format details Mode 3 Mode 3 Mode 4 Mode 4 Mode 4 Mode 4 Mode 1 Mode 4 Mode 4 Mode 1 Mode 4 Mode 1 Mode 4 Mode 2 Mode 2 Mode 1 Mode 4 Mode 1 Mode 4 Mode 1 Mode 2 Mode 2 Mode 1 Mode 4 Mode 1 Mode 1 Mode 2 Mode 2 Mode 1 Mode 1 Mode 4 Mode 1 Mode 1 Mode 2 Mode 1 Mode 1 Mode 1 Mode 2 Mode 1 Mode 1 Mo	Cutput protocol selection Select output protocol Size of the credential sent to the system (bytes C Filtering Time between same user ID being read twice	I) 2 3 4 5 6 7 I) 6 s	 (1) (2) (3) (5)
	« Previous		Next 🔉	
1 Au UHF Private ke CA3DA5	thenticated UHF data encryption user ID encryption ey definition (16 bytes - Hex) 0D284959F9DF605EFBAFBCBC4E	on (Secure Mode)	When UHF iden its maximum siz bytes OK	tifier is encrypted, te cannot exceed 6

The EPC can be encrypted and signed before being written in the tag.

The reader will decrypt and authenticate the EPC before sending it on its output media. Only an EPC correctly decrypted and authenticated will produce an output data, otherwise the reader will remain mute.

Notes:

• Only UHF tags compatible with "*FAST ID*" feature and having at least 128 bits of EPC can be decrypted and authenticated by the SPECTRE Access reader.

The chips compatible with secure encoding are: Monza X, Monza R6P, Monza 4D, this chip is present into

- TLTA-W53M-943_S
- TLTA-W75B-943_S
- IronTag Aero
- CCTW490_AN
- The secure mode is not accessible if an EPC mask has been set in 'Advanced settings'.

Note: After setting an EPC security key, if you return to step 5 with the Previous button, and you set an EPC filter, then returning to step 7, the "EPC ID Security" checkmark is displayed. in gray, the key field is still accessible but not taken into account



Select output protocol	RS232
	RS232
	RS485
	Wiegand 26 bits - 3i
	Wiegand with LRC custom size
	Wiegand custom size
	Clock&Data 40 bits - Iso 2B
	Wiegand 34 bits - 3Eb
	Wiegand 37 bits - 3V
	Wiegand 35 bits - 3W
	Clock&Data 32 bits - Iso 2H
	Wiegand 36 bits (32+4 LRC) - 3Ca
	Wiegand 44 bits (40+4 LRC) - 3Cb
	Wiegand 32 bits - 3La
	Wiegand 40 bits - 3Lb
	Clock&Data custom size

RS232 / RS485

X Sélection du pro	tocole			
Sélectionner le protocole de	sortie	RS232		•
Données		Hexadécimal		•
BourrageSTX+ETX	CR		LRC ASCII	
Baud Rate		115200		•

Serial frame :

1 byte	X bytes	1 byte	1 byte	1 byte	1 byte
STX	Data*	LRC	CR	LF	ETX

*Doubled if the ASCII option is activated.

Data	Data sent in decimal or hexadecimal format.
Padding	Add on the frame leading zeros. If this option is not activated, the leading zero won't sent.
STX+ETX	Add STX (0x02) and ETX (0x03) in the frame.
CR	Carriage return (0x0D).
LF	Line feed (0x0A).
LRC	Checksum byte by XORing of all previously characters without the STX.
ASCII	If this option is activated, the Data will be sent in ASCII mode.



Wiegand 26 bits - 3i

Select protoco	bl					
Select output protocol Overview of TTL output	ts	Wiegand 26 bits - 3i	*			
Bit 1 ► Ev Bit 2 Bit 25 ► Da Bit 26 ► Oc	Bit 1 Even parity from bit 2 to bit 13 Bit 2 Bit 25 Data (24 bits) Bit 26 Odd parity from bit 14 to bit 25					
Lane 4	Lane 3	Lane 2	Lane 1			
CLK4 DATA4	CLK3 DATA3	CLK2 DATA2	CLK1 DATA1			
0000						
		Ant 3 Ant 4	Ant 1 Ant 2			

Note: the graphic indicating the lanes, depends on the configuration of the number of antennas/lanes.

Wiegand with LRC customized size



Wiegand customized size

Select protoc	ol		
Select output protocol	N N	Viegand with custom	ized size 🔹
Overview of TTL outp	outs		
This protocol has the st the number of bytes ca	ame message stru n be customized (f	cture as the Wiegar EPC size).	nd 3La or 3La protocol, but
Lane 4 CLK4 DATA4	Lane J CLK3 DATA3	CLK2 DATA2	Lane T
00000			

Decimal Clock&Data – Iso 2B





3

Size of the credential sent to the system (bytes)

Protocol	Size in plain mode	Size in secure mode
RS232 / RS485	1b up to 62b	1b up to 6b
Wiegand 26 bits	Fixed to 3b	Fixed to 3b
Wiegand with LRC custom size /	1b up to 16b	1b up to 6b
Wiegand custom size		
Decimal Clock&Data – Iso 2B	1b up to 7b	1b up to 6b

ŀ

SPECTRE ATX READ ONLY

- 1 B

Node 2
Mode 1
Mode 1
Mode 1

Example: EPC data: AA BB CC DD EE xx xx ... VV WW XX YY ZZ with 'Size of the credential sent to the system' fixed to 4bytes.





The reader emits the credential code present in the field only once during this time.

This time is adjustable from 0 to 30 seconds.



Step 8- User Security Roles



ULTRYS allows to manage three different profiles by configuration file.





Step 9- Configuration save and protect

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\bigcirc
8 9

This step allows you to save the configuration file containing all the current configuration settings (keys, formats, reader...). You can select a location and password to protect the file.

(1) Choose a name to easily find the configuration. (example: Parking IN).

Note: the name of the configuration must be contained in the file name.

- 2 To protect the configuration file, you can define a password. This password is different from Administrator password.
- 3 Select a directory and a file name to save.
- The name and location of 'Configuration Loaded' indicates now the chosen name and location.





5 Get a summary of the configuration created.

Summary of my configuration	_ = ×
	Installation overview
Summary of configuration settings	
This document contains all the configuration settings needed to install the reader and antennas on site. For further information on installation, please refer to the Installation procedure	
#Configuration details Installation procedure Configuration name : MyConfigName Created on : Updated on : 10/26/2021 10:03	88
#Regulation of frequency bands Frequency bands / Countries : France - ETSI Duly cycle : 0.975 Channels (MHz) : 867,5 866,9 866,3 865,7 ERP : 2000 mW	
#Reader + antenna configuration Reader : ATX Reader Antenna : SPECTRE antenna	
د 1 de والم	2) Print

SPECTRE ATX READ ONLY

Print: allows printing of configuration information on a network, local or virtual printer (PDF).



8. Reader configuration SPECTRE ATX OSDP™

8-1 ULTRYS settings

ULTRYS					Administrat	or _ ×
uut				ULTRYS settings Communication		ξĵ.
No configuration loaded	K				EN 🔻	i
کې ULTRYS settings	Communication Port selection for encoder or reader connection					
Readers configuration		Select device	ARC-W55-G/U04-5AA [COM9] 🔻			
User credentials		O Connectivity test				

Connect the SPECTRE ATX reader to the PC using the provided USB cable to load the configuration via serial link directly onto the reader.



or

 Connect an UHF encoder to the PC to load the configuration onto UHF OCB configuration card.



Select device

Select device

To set the communication port

C Refresh

C Refresh

Connectivity test

Connectivity test

Select device	Select a reader 🔹
\bigcirc Refresh	
O Connectivity test	

ARC-W55-G/U04-5AA [COM9]

ARC-W55-G/U04-5AA [COM9]

COM3

COM3

Device detected: Version 7 (29.7)

Close

Failed to connect; check

Close

communication port and connect a compatible reader

1- Click on 'Refresh' to detect all readers connected to the PC.

- 2- Open the dropdown list Select device.
- 3- Readers whose firmware is ≥ 8 will appear in the drop-down list under their commercial reference.
 Select the communication port number for the encoder or reader or select the reader to use.
- 4- Run the connectivity test.

Message OK (with indication of the firmware version).

Message: Failed

- Check the compatibility of the reader.
- Check the USB cable.
- Check the Baudrate reader: it must be fixed to 115200.

Note: during the connectivity test on a UHF encoder, a sound and light signal (orange) will be emitted for 1 second.



8-2 Create new configuration



The reader configuration is done in 7 steps. To move from one stage to another, you must click on "Next".

1 2 3 4 5 6 7 8 9	UHF frequency band regulation
1 2 3 4 5 6 7 8 9	Configuration protection loaded into the reader
1 2 3 4 5 6 7 8 9	Reader configuration
Step 4 does not exist in the SPECTRE ATX (DSDP™ configuration wizard
1 2 3 4 5 6 7 8 9	Installation configuration
Step 6 does not exist in the SPECTRE ATX 0	DSDP ™ configuration wizard
1)2)3)4)5)6)7 8 9	Reading & communication parameters
	<u>User Security Roles</u>
	Configuration save and protect



SPECTRE ATX OSDP™

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The frequency bands depend on the installation location

Andorra - ETSI
Andorra - ETSI
Australia - AustraliaCustom1
Austria - ETSI
Azerbaijan - ETSI
Belgium - ETSI
Bosnia - ETSI
Bulgaria - ETSI
Canada - FCC
Croatia - ETSI
Cyprus - ETSI
Czech Republic - ETSI
Denmark - ETSI
Estonia - ETSI
Finland - ETSI
France - ETSI
Germany - ETSI

Type the first characters to display a country or select the country in which the installation will be done.

For a country which is not in the list, please contact STid: support@stid.com.

2 To approve the feasibility to install your reader in the selected country, you can check the compatibility.





With USB reader connection

Reader ID
Connect your reader O fyour reader's reference number
Cancel Confirm
Reader's frequency band compatible with selected country's regulations
Reader's frequency band incompatible with selected country's regulations
Try again Check later
No reader connected, check your USB connection and communication settings
Try again Connect later

With reader part number



- 1- Connect the reader and set the communication COM port.
- 2- Select 'Connect your reader'
- 3- Please confirm

Message: OK

Message: NOK

Message: OK

The reader can't be installed in the selected country.

- Check the USB cable
- Check the communication with reader

Enter the first 5 characters of the reader part number Example: ATXW43, ATXW53.

Message: the reference reader is not compatible with regulation selected.



SPECTRE ATX OSDP™

Step 2- Configuration protection loaded into the reader

ULTRYS					Administrator 🗕 🗙
uut				Readers configuration Create a configuration	
No configuration loade	d				🛚 EN 🔻 🖨 🤃
				1 2 3 4 6	
୍ଦେ	Configuration protection	on loaded into the reader			
Ĩ	Protection code definition				
ULTRYS settings					
		The protection code is a data that can be cust configuration of a reader during installation.	omized by the administrator to protect	the	
		Modifying this configuration requires the protect	tion code.		
		All readers have the default protection code "F	FFFFFFFF*.		
Readers configuration		We recommend you to change the default prot configuration process. Enter FFFFFFFFF in the "Protection code" fiel (hexadecimal) in the "New protection code" fiel	ection code the first time you carry ou eld and specify the new protection cod d.	it the le	
		Protection code	FFFFFFFFF		
User credentials		New protection code			
	« Previous			Next	»

SPECTRE ATX readers are initially supplied with a default configuration and a protection code to 0xFFFFFFFFF.

The size of this protection code is 5 bytes (10 hexadecimal characters).

After the initial setup and in order to reconfigure the reader, it will be necessary to present an UHF OCB card or a configuration file with the same 'protection code' as the reader.



Random protection code generator.

Caution This protection code is important and should definitely be known by the administrator. It protects the configuration data and allows reader configuration updates. If you lose this protection code, you won't be able to reconfigure the reader again and the reader must be reset at the factory. To change the protection code, it will be necessary to know the current protection code.



Step 3- Reader configuration

				Administrator 🗕 🗙
uut			Read Create	ers configuration a configuration
MyConfigName (from L	ISB reader)		_	🕿 EN 🔻 🖨 🤃
د ک ULTRYS settings	Reader configuration			
	SPECTRE	SPECTRE NANO	ATX	ATX4
Readers configuration			S H	
\bigcirc	Read only OSDP	Read only OSDP	Read only OSDP	Read only OSDP
User credentials				
	2 Firmware v13 •		Auto detection Connect and check n	ny reader configuration
	K Previous			Next ≫

1 Selecting the reader type

SPECTRE ATX readers can be configured in "Read only" mode from firmware 10.

2 Selecting Firmware

You must select the firmware version that is compatible with your reader.

To do so, you can manually select the reader and firmware version, or you can use the function "Auto detection – Connect and check my reader configuration".





With USB reader connection



With reader's number reference

Connect your reader Image: Enter the first 6 characters Image: Image:

1- Connect the reader via USB cable provided. Configure the communication parameters.

- 2- Select the Connect your reader.
- 3- Click on Confirm.

Message : NOK

- Check the USB cable
- Check the communication with reader

Enter the first 6 characters of your reader's reference number

Examples: SLAR41, SLAR51, SMAR41



Message: NOK

Check your reader's reference number



Step 4- Antenna type selection

The SPECTRE ATX reader works with a built-in antenna.

Step 4 does not exist in the SPECTRE ATX setup wizard.

Step 5- Installation configuration

		Administrator 🗕 🗙
uut		Readers configuration Create a configuration
MyConfigName (from	USB reader)	💴 EN 🔻 🖨 🤃
		1 2 3 4 5 6 7 8 9
ULTRYS settings	Installation configuration	 (2) Advanced settings (3) Input/Output settings
	« Previous	Next ≫

1 Name the lane

Maximum 10 characters.

For example, Entryl.



Advanced settings

Advanced set	ings		
Power		(i	100% ►
Scan time after trig UHF RFID reading	ggering the	(i) 🚺 1 s
EPC filter			
EPC mask (Hexad	ecimal)		
EPC mask position	ı (byte)		 0 o
Filter inversion: EPCs without f	The reader will only s he filter	send to the system th	le
RSSI filter			
RSSI value			Disable
Filter inversion for credentials	: The reader will only with an RSSI below tl	send to the system th ne defined value	ne EPCs
	Cancel	Confirm	

a Adjust the antenna power (10% to 100%) to adjust the reading distance. The power emitted depends on the type of regulation, limited to 1800mw ERP for ETSI and 1200mw ERP for FCC, New Zealand and Australia. No limitation for Morocco.

- Adjust the timing for a scan (reading) by step of 1 second (max 30s). This setting is taking into account only if *Input type selection* is set to *Activating all lanes* or *Activating the event lane.*
- The EPC filter is not available in Secure Mode. (C) Enter the value for EPC Mask, max 62 hexadecimal bytes. Adjust the value for offset EPC mask in bytes (0 to 62). It depends on the EPC Mask length. d Filter inversion not selected: only tags with an EPC value corresponding to the EPC mask value е will be provided to the user. Filter inversion selected: only tags with an EPC value different from the EPC mask value will be provided to the user. RSSI (Received Signal Strength Indication) is a measure of the power in reception of the tag (f) response. The value returned by the reader is proportional to the amplitude of the reception signal Adjust the RSSI value (-110dBm to 0dBm). 0dBm deactivates the RSSI filter. Filter inversion not selected: only tags with an RSSI greater than or equal to the specified value (g) will be provided to the user. Filter inversion selected: only tags with an RSSI smaller or equal to the specified value will be provided to the user.

Ex: RSSI filter = -49f=dBm + Reversal not selected A tag that will have a RSSI value of -20dBm will be sent back, A tag that will have a RSSI value of -60dBm will not be sent back.



EPC Filter

Examples:

Code EPC Tag 2: AA02ABCD0000000000000002 Code EPC Tag 3: AA02ABCD0000000000000000 Code EPC Tag 4: AA02FFFF0000000000000000

1- EPC mask = AA AA and Offset = 0

Tag 2: AA02ABCD000000000000002 Tag 3 : AA02ABCD000000000000000 Tag 4 : AA02FFFF0000000000000003

Only tag 1 is transmitted.

2- EPC mask = AA AA AA and Offset = 0

Tag 2: AA02ABCD000000000000002 Tag 3: AA02ABCD0000000000000003 Tag 4: AA02FFFF0000000000000003

No tag is transmitted.

3- EPC mask = 01 and Offset = 11

Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00 01 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 02 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 03 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 03

Offset is represented in blue; the filter is done on byte 12. Only tag 1 is transmitted.

4- EPC mask = AB and Offset = 2

Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00 01 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00 02 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 03 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 03

Tags 1, 2 and 3 are transmitted.

5- EPC mask = AB, Offset = 2 and Reversal

Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00 01 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00 02 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 03 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 03

Tags 1, 2 and 3 are not transmitted. Only tag 4 is transmitted.



SPECTRE ATX OSDPTM



EPC filter	
EPC mask (Hexadecimal)	01
EPC mask position (byte)	- 1 1 o
□ Filter inversion: The reader will only EPCs without the filter	send to the system the



EPC mask position (byte)

EPC filter

Filter inversion: The reader will only send to the system the ~ EPCs without the filter



Input/output



Select the reading mode, the output settings depend on this mode.

Output managem	ent			
Output type selection		Pull up	to V+	
Status of outputs				Maintain during
		Open	Closed	detection
Output 1		\bigcirc	0	
Output 2		0	0	
Output 3		\bigcirc	0	
Output 4		٢	0	
Cancel				Confirm

Both types of output are Pull up to V+ or Open drain.

Status of outputs: select for each output the default state 'Open' or 'Closed' and if the state is maintained during the detection process.



Input management		1 2
RFID reader behavior op	tions based on external events (detector,	ground loop etc.)
Selection of the RFID reading mode and use of the inputs	Continuous reading without using the input Continuous reading without using the input Trigger of the reading by the event	Y
Cancel		Next ≫

Reading mode = Continuous reading without using input

Input management RFID reader behavior options bas Selection of the RFID reading mode and use of the inputs	ed on external events (detector, ground loop etc.)	In this mode, the reader scan continuously. There is no action on input activation.
Cancel Output management	Next >>	e output type and default state for
Output type selection Status of outputs Output 1 Output 2 Output 3 Output 4 Cancel Vervious	Pull up to V+ Open Closed Maintain during detection O O O O O O O Confirm Confirm 	



Advanced settings

Lane 1

B Reading mode = Trigger of the reading by the event



If Input is activated, the reader scans on the lane.

The reading duration is defined in 'Advanced settings'.

Select the output type and default state for output.

		'						
Ant 1 Behind	d the reader	•	Scan time af RFID reading	ter triggering of 1 J	the		∎ —— 1s	
							1	2
Output r	nanagem	ent						
Output typ	be selection			Pull	up to V+			•
Status of	outputs							
				Open	Close	ed	Maintain duri detection	ng
Outpu	ıt 1			0	0			
Outpu	ıt 2			\odot	0			
Outpu	ıt 3			\bigcirc	0			
Outpu	ıt 4			\bigcirc	0			
				I				
C	ancel	«	revious				Confirm	



Summary table

Reading Mode	Input	Configurable Outputs states?	Output
 Continuous reading without using inputs 	No action	Yes	The output state toggles at the ascent
Trigger of the reading by the event	An action on the input activates the reading on the lane	Yes	The output state toggles at the ascent during the ascent time of the identifier (physically on the BUS + 200ms

Step 6- Light indicator configuration

The SPECTRE ATX reader is not equipped with an LED card or a Buzzer.

Step 6 does not exist in the SPECTRE ATX setup wizard.



SPECTRE ATX OSDP™

Step 7- Reading & communication parameters

ULTRYS	Reading & communication parameters		Readers configuration Create a configuration 1)2)[3) 4] 5	Administrator _ X
ULTRYS settings	Authenticated UHF data encryption (Secure Mode) UHF user ID encryption UHF data formatting before uploading to the system Selection of the UHF data transmission format Mode 1 (Standard)	Output protocol selection Output protocol Data Baud rate	RS485 - OSDP Hexadecimal 9600	2
Vser credentials	Format details Mode 3 AA BB CC xx xx XX YY ZZ Mode 4 Mode 1	Size of the credential sent to the system Filtering Time between same user ID being read t	h (bytes)	- 1B 5
	« Previous		Next)	»
1	thenticated UHF data encryption user ID encryption (i) ey definition (16 bytes - Hex) D284959F9DF605EFBAFBCBC4E	on (Secure Mode)) is m byte	n UHF identifier is encrypted, aximum size cannot exceed 6 s OK

The EPC can be encrypted and signed before being written in the tag.

The reader will decrypt and authenticate the EPC before sending it on its output media. Only an EPC correctly decrypted and authenticated will produce an output data, otherwise the reader will remain mute.

Notes:

• Only UHF tags compatible with "*FAST ID*" feature and having at least 128 bits of EPC can be decrypted and authenticated by the SPECTRE Access reader.

The chips compatible with secure encoding are: Monza X, Monza R6P, Monza 4D, this chip is present into

- TLTA-W53M-943_S
- TLTA-W75B-943_S
- IronTag 206
- CCTW490_AN
- The secure mode is not accessible if an EPC mask has been set in 'Advanced settings'.

Note: After setting an EPC security key, if you return to step 5 with the Previous button, and you set an EPC filter, then returning to step 7, the "EPC ID Security" checkmark is displayed. in gray, the key field is still accessible but not taken into account.



(2)

3

💢 Output protocol selection RS485 - OSDP Output protocol Hexadecimal Data 9600 Baud rate 9600 9600 19200 38400 57600 The only modifiable parameter is the baud rate. [115200 Size of the credential sent to the system (bytes) - 1 B Protocol Size in plain mode Size in secure mode RS485 1b up to 62b 1b up to 6b .л.

(G ³⁾ UHF data formatti	ng before uploading to the	system
Selection of the UHF data tran	smission format	
Mode 1 (Standard)	•	
Format details Mode 3	Mode 2	
		:
Mode 4	Mode 1	
		Mode 1 (Standard)
		Mode 3
		Mode 4
nere are 4 Uhr ID	formatting modes:	Mode 4

Example: EPC data: AA BB CC DD EE xx xx ... VV WW XX YY ZZ with 'Size of the credential sent to the system' fixed to 4bytes.





The reader emits the credential code present in the field only once during this time.

This time is adjustable from 0 to 30 seconds.



Step 8- User Security Roles



ULTRYS allows to manage three different profiles by configuration file.





Step 9- Configuration save and protect

ULTRYS		Administrator 🗕 🗙
uut	Version 3.0.8	Readers configuration Create a configuration
No configuration loade	d (4)	
کې کې ULTRYS settings	Configuration save and protect Configuration save and protect	
	Create a name (maximum 14 characters)	
Readers configuration	Customizing .ucg file protection	
User credentials		
	3 Save as	Summary of my configuration
	« Previous	

This step allows you to save the configuration file containing all the current configuration settings (keys, formats, reader...). You can select a location and password to protect the file.

(1) Choose a name to easily find the configuration. (example: Parking IN).

Note: the name of the configuration must be contained in the file name.

- 2 To protect the configuration file, you can define a password. This password is different from Administrator password.
- 3 Select a directory and a file name to save.
- 4 The name and location of 'Configuration Loaded' indicates now the chosen name and location.





5 Get a summary of the configuration created.

Summary of my configuration	_ = ×
	Installation overview
Summary of configuration settings	
This document contains all the configuration settings needed to install the reader and antennas on site. For further information on installation, please refer to the Installation procedure	
#Configuration details Installation procedure Configuration name : MyConfigName Enstallation procedure Created on : 10/26/2021 10:03	8 H -
#Regulation of frequency bands Frequency bands / Countries : France - ETSI Duty cycle : 0.975 Channels (MHz) : 867,5 866,9 866,3 865,7 ERP : 2000 mW	
#Reader + antenna configuration Reader : ATX Reader OSDP Antenna : SPECTRE antenna	
4 1 de	2) The second s

Print: allows printing of configuration information on a network, local or virtual printer (PDF)





ATX 4 READ ONLY	Ô
ATX 4 OSDP™	Ô



9. Reader configuration SPECTRE ATX4 READ ONLY

9.1 ULTRYS settings

					Administra	ator 🗕 🗙
uut	C C S Version 3.0.0.7			ULTRYS settings Communication		ţÇ;
No configuration loaded	đ				EN 🔻	b (i)
۲ ULTRYS settings	Communication Port selection for encoder or reader connection					
Readers configuration		Select device	ARC-W55-G/U04-5AA [COM9] 🔻			
User credentials		O Connectivity test				

Connect the SPECTRE ATX4 reader to the PC using the provided USB cable to load the configuration via serial link directly onto the reader.



or

 Connect an UHF encoder to the PC to load the configuration onto UHF SCB configuration card.


Select device

Select device

To set the communication port

C Refresh

C Refresh

Connectivity test

Connectivity test



ARC-W55-G/U04-5AA [COM9]

ARC-W55-G/U04-5AA [COM9]

COM3

COM3

Device detected: Version 7 (29.7)

Close

Failed to connect; check

Close

communication port and connect a compatible reader

1- Click on 'Refresh' to detect all readers connected to the PC.

- 2- Open the dropdown list Select device
- 3- Readers whose firmware is ≥ 8 will appear in the drop-down list under their commercial reference.
 Select the communication port number for the encoder or reader or select the reader to use.
- 4- Run the connectivity test

Message OK (with indication of the firmware version).

Message: Failed

- Check the compatibility of the reader.
- Check the USB cable.
- Check the Baudrate reader: it must be fixed to 115200.

Note: during the connectivity test on a UHF encoder, a sound and light signal (orange) will be emitted for 1 second.



9.2 Create new configuration



The reader configuration is done in 7 steps. To move from one stage to another, you must click on "Next".

1 2 3 4 5 6 7 8 9	<u>UHF frequency band regulation</u>	
1 2 3 4 5 6 7 8 9	Configuration protection loaded into the reader	
1 2 3 4 5 6 7 8 9	Reader configuration	
Step 4 does not exist in the SPECTRE ATX	4 READ ONLY setup wizard	
1 2 3 4 5 6 7 8 9	Installation configuration	
Step 6 does not exist in the SPECTRE ATX4 READ ONLY setup wizard		
1 2 3 4 5 6 7 8 9	Reading & communication parameters	
	<u>User Security Roles</u>	
	Configuration save and protect	



Step 1- UHF frequency band regulation





The frequency bands depend on the installation location

Andorra - ETSI
Andorra - ETSI
Australia - AustraliaCustom1
Austria - ETSI
Azerbaijan - ETSI
Belgium - ETSI
Bosnia - ETSI
Bulgaria - ETSI
Canada - FCC
Croatia - ETSI
Cyprus - ETSI
Czech Republic - ETSI
Denmark - ETSI
Estonia - ETSI
Finland - ETSI
France - ETSI
Germany - ETSI

Type the first characters to display a country or select the country in which the installation will be done.

For a country which is not in the list, please contact STid: support@stid.com.

2 To approve the feasibility to install your reader in the selected country, you can check the compatibility.





With USB reader connection

Reader ID
Connect your reader O fyour reader's reference number
Cancel Confirm
Reader's frequency band compatible with selected country's regulations
Close
Reader's frequency band incompatible with selected country's regulations
Try again Check later
No reader connected, check your USB connection and communication settings
Try again Connect later

With reader part number



- 1- Connect the reader and set the communication COM port.
- 2- Select 'Connect your reader'
- 3- Please confirm

Message: OK

Message: NOK

The reader can't be installed in the selected country.

- Check the USB cable
- Check the communication with reader

Enter the first 5 characters of the reader part number Example: ATX4R41, ATX4R42, ATX4R51.....

Message: the reference reader is not compatible with regulation selected.



Step 2- Configuration protection loaded into the reader

O ULTRYS					Administrator 🗕 🗙
uut	ITUS Version 3.0.0.8			Readers configuration Create a configuration	
No configuration loaded	K				🖭 EN 🔻 🖨 🤃
	Configuration protection	on loaded into the reader		1 2 3 4 5	
τÕζ.	Protection code definition	in loaded lifto the reader			
ULTRYS settings		The protection code is a data that can be cust configuration of a reader during installation.	omized by the administrator to protec	ct the	
		Modifying this configuration requires the protect All readers have the default protection code "F	ction code. FFFFFFFFF [®] .		
Readers configuration		We recommend you to change the default prot configuration process. Enter FFFFFFFFF in the "Protection code" fiel (hexadecimal) in the "New protection code" fiel	tection code the first time you carry o eld and specify the new protection co ld.	ut the de	
		Protection code	FFFFFFFF		
User credentials		New protection code			
	« Previous			Next	»

SPECTRE ATX4 readers, are initially supplied with a default configuration and a protection code to 0xFFFFFFFFFF.

The size of this protection code is 5 bytes (10 hexadecimal characters).

After the initial setup and in order to reconfigure the reader, it will be necessary to present an UHF SCB card or a configuration file with the same 'protection code' as the reader.



Random protection code generator.

Caution This protection code is important and should definitely be known by the administrator. It protects the configuration data and allows reader configuration updates. If you lose this protection code, you won't be able to reconfigure the reader again and the reader must be reset at the factory. To change the protection code, it will be necessary to know the current protection code.



Step 3- Reader configuration

ULTRYS				Administrator 🗕 🗙
uut			Read Create	ers configuration a configuration
MyConfigName (from	USB reader)			💴 EN 🔻 🖨 🤃
ULTRYS settings	Reader configuration		1	2 3 4 5 6 7 8 9
	SPECTRE	SPECTRE NANO	ATX	ATX4
Readers configuration			E H	
\bigcirc	Read only OSDP	Read only OSDP	Read only OSDP	Read only OSDP
User credentials	Firmware v13 • 🥡	2)	Auto detection Connect and check n	1) ny reader configuration
	Previous			Next ≫

Selecting the reader type

SPECTRE ATX4 readers can be configured in "Read only" mode from firmware version 10.

2 Selecting Firmware

You must select the firmware version that is compatible with your reader.

To do so, you can manually select the reader and firmware version, or you can use the function "Auto detection – Connect and check my reader configuration".





With USB reader connection



With reader's number reference

Reader type detection			
Connect your reader	Enter the first 6 characters of your reader's reference number ATX4R1		
Cancel	Confirm		
Incorrect reader reference number			
Try again	Check later		

- 1- Connect the reader via USB cable provided. Configure the communication parameters.
- 2- Select the Connect your reader.
- 3- Click on Confirm.

Message : NOK

- Check the USB cable
- Check the communication with reader

Enter the first 6 characters of your reader's reference number

Examples: ATX4R41, ATX4R51, ATX4R42

Message: NOK

Check your reader's reference number



Step 4- Antenna type selection

The SPECTRE ATX reader only works with new antenna (ANT_UHF2).

Step 4 does not exist in the SPECTRE ATX configuration wizard.

Step 5- Installation configuration



1 Name the lane

Maximum 10 characters.

For example, Entryl.

23Add / Delete lane

Use 'Add /Delete lane' to configure the number of lanes you will use in your application.

The default setting is one antenna on the first lane.

For more information about the possible combination please refer to the document NA_SPECTRE.



4 Add / Remove antenna on lane

Set the number of antennas on the corresponding lane.

When an antenna is added, the RF port to which the antenna has to be connected appears on the reader with corresponding color to help the installation.



RF ports are assigned in order to add the antennas in the configuration wizard. When an antenna is removed from the configuration, the RF port connection for other antennas does not change.

Example: Ant 2 deleted from lane 1 and added to lane 2.



5 Select the cable length for each antenna



SPECTRE ATX 4 READ ONLY

For each antenna, select the cable length you would like to use between antenna and reader.



6 Advanced settings



- Select the lane to configure. The lanes selected in installation setup are in white, unused lanes are grayed out. When a lane is selected in Advanced parameters it is written in blue.
- b Select / Change the cable length between the antenna and the reader.
- C Adjust the power of each antenna (from 10% to 100%) to adjust the reading distances.
- Adjust the timing for a scan (reading) by step of 1 second (max 30s). This setting is taking into account only if Input type selection is set to Activating all lanes or Activating the event lane.
- e <u>Th</u> En

The EPC filter is not available in Secure Mode.

Enter the value for EPC Mask, max 62 hexadecimal bytes.

- Adjust the value for offset EPC mask in bytes (0 to 65535). It depends on the EPC Mask length.
- Filter inversion not selected: only tags with an EPC value corresponding to the EPC mask value will be provided to the user.
 - Filter inversion selected: only tags with an EPC value different from the EPC mask value will be provided to the user.
- RSSI (Received Signal Strength Indication) is a measure of the power in reception of the tag response. The value returned by the reader is proportional to the amplitude of the reception signal.

Adjust the RSSI value (-110dBm to 0dBm). 0dBm deactivates the RSSI filter.

Filter inversion not selected: only tags with an RSSI greater than or equal to the specified value will be provided to the user.

Filter inversion selected: only tags with an RSSI smaller or equal to the specified value will be provided to the user.

Ex: RSSI filter= -49dBm + Reversal not selected

A tag that will have a RSSI value of -20dBm will be sent back,

A tag that will have a RSSI value of -60dBm will not be sent back.



Scan time, EPC filter and RRSI filter settings are the same for antennas on the same lane.

The cable length and RF power antenna are set for each antenna.

Example 1: 4 antennas on lane 1.

	Lane 1	Lane 2 Lane 3 Lane 4
Ant 1 Behind th	ne reader 🔹 🔹	Scan time after triggering of the i s RFID reading
Ant 2 1.5 m cal	ble 🔹	EPC filter
Power	◀ 100% ►	EPC mask (Hexadecimal) EPC mask position (byte)
Ant 3 1.5 m cal	ble •	□ Filter inversion: The reader will only send to the system the EPCs without the filter
Ant 4 1.5 m cal	ble T	RSSI filter
Power	◀ 100% ►	RSSI value Disabled

Example 2: 2 antennas on lane 1 et 2 antennes on lane 2.

Advanced settings		Advanced settings
Lane 1	Lane 2 Lane 3 Lane 4	Lane 1 Lane 2 Lane 3 Lane 4
Ant 1 Behind the reader	Scan time after triggering of the fill	Ant 3 1.5 m cable ✓ Scan time after triggering of the RFID reading Power ◀ 100% ►
Ant 2 1.5 m cable	EPC filter EPC mask (Hexadecimal) EPC mask position (byte) 0 o	Ant 4 1.5 m cable EPC filter Power < 100% ▶ EPC mask (Hexadecimal) EPC mask position (byte) 0 o
	$\hfill Filter$ inversion: The reader will only send to the system the EPCs without the filter	□ Filter inversion: The reader will only send to the system the EPCs without the filter
	RSSI filter RSSI value Filter inversion: The reader will only send to the system the EPCs for credentials with an RSSI below the defined value	RSSI filter RSSI value Disabled Filter inversion: The reader will only send to the system the EPCs for credentials with an RSSI below the defined value
	Cancel Confirm	Cancel Confirm



EPC Filter

Examples:

1- *EPC mask* = AA AA and *Offset* = 0

Only tag 1 is transmitted.

2- EPC mask = AA AA AA and Offset = 0

No tag is transmitted.

3- EPC mask = 01 and Offset = 11

Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00 01 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 02 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 03 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 03

Offset is represented in blue; the filter is done on byte 12. Only tag 1 is transmitted.

4- *EPC mask* = AB and *Offset* = 2

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are transmitted.

5- EPC mask = AB, Offset = 2 and Reversal

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are not transmitted. Only tag 4 is transmitted.





EPC filter			
EPC mask (Hexadecimal)	01		
EPC mask position (byte)	- 1 1 o		
□ Filter inversion: The reader will only send to the system the EPCs without the filter			



EPC mask position (byte)

EPC filter

~



7	Input / output settings
	1)2 Input management
	RFID reader behavior options based on external events (detector, ground loop etc.)
	Selection of the RFID reading mode and use of the inputs
	Cancel Next >>>

SPECTRE ATX 4 READ ONLY

The configuration of the outputs depends on the reading mode chosen.

	Dullus	to V/	
	Pull up	10 V+	•
Status of outputs	Open	Closed	Maintain during detection
Output 1	\bigcirc	0	
Output 2	\bigcirc		
Output 3	\bigcirc		
Output 4	0	0	
			Confirm

Both types of output are « Pull up to V+ » or « Open drain ».

Status of outputs: select for each output the default state 'Open' or 'Closed' and if the state is maintained during the detection process.



Input management		1	2
RFID reader behavior op	tions based on external events (detector, g	round loop etc.)	
Selection of the RFID reading mode and use of the inputs	Continuous reading without using inputs	•	
	Trigger of the reading on all lanes Trigger of the reading on the event lane		
Cancel	Output activation (triggered on outputs)	Next ≫	

Reading mode = Continuous reading without using inputs

		1 2
Input managemei	nt	
RFID reader behavio	r options based on external events (detecto	or, ground loop etc.)
Selection of the RFIC reading mode and u the inputs	Continuous reading without using inputs	*
Cancel		Next ≫

In this mode, the reader scan continuously.

There is no action on input activation.

SPECTRE ATX 4 READ ONLY



Select the output type and default state for output.



SPECTRE ATX 4 READ ONLY

Reading mode = Trigger of the reading on all lanes



If an Input is activated (In1, In2, In3 or In4), the reader scans on all lanes set.

settings'.

Select the output type and default state for output.



C

Reading mode = Trigger of the reading on the event lane



If an Input is activated, the reader scans on the corresponding lane.

SPECTRE ATX 4 READ ONLY

The reading duration is defined in 'Advanced settings'.

Select the output type and default state for output.



Reading mode = Output activation (triggered on outputs)



An action on Input toggles the corresponding output regardless of RF function of the reader.

Output management			
Output type selection	Pull up	o to V+	•
Status of outputs	Open	Closed	Maintain during
Output 1	٢	0	
Output 2	ightarrow	\circ	
Output 3	\bigcirc		
Output 4	٢		
Cancel K Prev	vious		Confirm

Select the output type and default state for output.



Summary table

		1		1	
	Reading Mode	Input	Configurable Outputs states?	Maintain during detection available?	Output
a	Continuous reading without using inputs	No action	Yes by lane	Yes by lane	 If 'Continuing during detection process' not activated: the output state toggles at the ascent If 'Continuing during detection process' activated: the output state toggles to the RF detection and remains in this state as long as, at each scan is at least one detection
b	Trigger of the reading on all lanes	An action on any input activates the reading on all configured lanes	Yes by lane	Yes	 If 'Continuing during detection process' not activated: the output state toggles at the
C	Trigger of the reading on the event lane	An action on Input <i>x</i> activate the scan on lane <i>x</i>	Yes by lane	Yes	ascent during the ascent time of the identifier (physically on the BUS + 200ms - If 'Continuing during detection process' activated: the output
					state toggles to the RF detection and remains in this state as long as, at each scan is at least one detection
d	Output activation (triggered on outputs)	An action on an Input toggles the corresponding output	Yes	No	The output state is only linked to a user action on the input

Note: as long as the action is detected on the input, the output remains toggled.

Step 6- Light indicator configuration

Step 6 does not exist in the SPECTRE ATX4 configuration wizard.



SPECTRE ATX 4 READ ONLY

Step 7- Reading & communication parameters

	CUS Version 3.0.8		Admin Readers configuration Create a configuration	istrator _ ×
No configuration loade	Reading & communication parameters Authenticated UHF data encryption (Secure Mode) UHF user ID encryption UHF user ID encryption Selection of the UHF data formatting before uploading to the system Selection of the UHF data transmission format Mode 1 (Standard) Mode 3 Mode 4 Mode 4	Cutput protocol selection Select output protocol Size of the credential sent to the system (bytes Filtering Time between same user ID being read twice	(1) 2) 3) 4) 5) 6) (1) 2) 3) 4) 5) 6) 7) (1) 2) 7) 7) 7) 7) 7) 7) 7) 7) 7) 7) 7) 7) 7)	 2 3 5
2	« Previous		Next ≫	
1	uthenticated UHF data encryptic user ID encryption ey definition (16 bytes - Hex) 0D284959F9DF605EFBAFBCBC4E	on (Secure Mode)	Vhen UHF id its maximum bytes	lentifier is encrypted, size cannot exceed 6

The EPC can be encrypted and signed before being written in the tag.

The reader will decrypt and authenticate the EPC before sending it on its output media. Only an EPC correctly decrypted and authenticated will produce an output data, otherwise the reader will remain mute.

Notes:

• Only UHF tags compatible with "*FAST ID*" feature and having at least 128 bits of EPC can be decrypted and authenticated by the SPECTRE Access reader.

The chips compatible with secure encoding are: Monza X, Monza R6P, Monza 4D, this chip is present into

- TLTA-W53M-943_S
- TLTA-W75B-943_S
- IronTag 206
- CCTW490_AN
- The secure mode is not accessible if an EPC mask has been set in 'Advanced settings'.

Note: After setting an EPC security key, if you return to step 5 with the Previous button, and you set an EPC filter, then returning to step 7, the "EPC ID Security" checkmark is displayed. in gray, the key field is still accessible but not taken into account.



SPECTRE ATX 4 READ ONLY



RS232 / RS485

Select protocol		
Select output protocol	RS232	•
Data	Hexadecimal	•
Padding		
Baud Rate	115200	•

Serial frame:

1 byte	X bytes	1 byte	1 byte	1 byte	1 byte
STX	Data*	LRC	CR	LF	ETX

*Doubled if the ASCII option is activated.

Data	Data sent in decimal or hexadecimal format.
Padding	Add on the frame leading zeros. If this option is not activated, the leading zero won't sent.
STX+ETX	Add STX (0x02) and ETX (0x03) in the frame.
CR	Carriage return (0x0D).
LF	Line feed (0x0A).
LRC	Checksum byte by XORing of all previously characters without the STX.
ASCII	If this option is activated, the Data will be sent in ASCII mode.



Wiegand 26 bits- 3i

Select protoco	ol		
Select output protocol		Wiegand 26 bits - 3i	•
Overview of TTL output	uts		
Bit 1 Ev	/en parity from bit	2 to bit 13	
Bit 26	dd parity from bit	14 to bit 25	
Lane 4	Lane 3	Lane 2	Lane 1
CLK4 DATA4	CLK3 DATA3	CLK2 DATA2	CLK1 DATA1
0000	0000		
		Ant 3 Ant 4	Ant 1 Ant 2

* * * * * * * * * * * *

Note: the graphic indicating the lanes, depends on the configuration of the number of antennas/lanes.

Wiegand with LRC customized size

X Selec	t protoco	bl				
Select output Overview of	protocol	ıts	Wiegand with cu	istomized LRC	size •	
This protocol the number o	has the sa f bytes can	me message str be customized	ructure as the W (EPC size).	/iegand 3Ca o	r 3Cb protocol	, but
L	ane 4	Lane 3 CLK3 DATA3	Lane 2 CLK2 DATA2		Lane 1	
	900	0000		9996		

Wiegand customized size

Select protoco	l		
Select output protocol	1	Viegand with custom	ized size 🔹
Overview of TTL output	ts		
This protocol has the san	ne message stru	cture as the Wiegar	id 3La or 3La protocol, but
the number of bytes can	be custoffized (i	LFC SIZEJ.	
Lane 4	Lane 3	Let Size).	Lane 1
Lane 4 CLK4 DATA4	Lane 3 CLK3 DATA3	Lane 2 CLK2 DATA2	Lane 1 CLK1 DATA1
	Lane 3 CLK3 DATA3	Lane 2 CLK2 DATA2	Lane 1 c.ki DATAI

Decimal Clock&Data – Iso 2B

Select protocol			
Select output protocol	c	lock&Data 40 bits - I	so 2B 🔹 🔻
Overview of TTL outputs			
Version Iso Si Decoding Decin 40 bits Data x chai Values 09	e customized nal (BCD) acters		
Lane 4	Lane 3	Lane 2	Lane 1
CLK4 DATA4	CLK3 DATA3	CLK2 DATA2	CLK1 DATA1
		Ant 3 Ant 4	Ant 1 Ant 2



(3)

(

Size of the credential sent to the system (bytes)

Protocol	Size in plain mode	Size in secure mode
RS232 / RS485	1b up to 62b	1b up to 6b
Wiegand 26 bits	Fixed to 3b	Fixed to 3b
Wiegand with LRC custom size /	1b up to 16b	1b up to 6b
Wiegand custom size		
Decimal Clock&Data – Iso 2B	1b up to 7b	1b up to 6b

ŀ

SPECTRE ATX 4 READ ONLY

– 1 B

Selection of the UHF data transmiss	sion format
Mode 1 (Standard) •	
Format details	
Mode 3	Mode 2
AA BB CC xx xx	x XX YY ZZ
	x XX YY ZZ Mode 1
AA BB CC xx xx	x XX YY ZZ Mode 1
AA BB CC xx xx	x XX YY ZZ Mode 1 Mode 1
AA BB CC xx xx	Mode 1 (Standard) Mode 2 (Standard reversed)

Example: EPC data: AA BB CC DD EE xx xx ... VV WW XX YY ZZ with 'Size of the credential sent to the system' fixed to 4bytes.







The reader emits the credential code present in the field only once during this time.

This time is adjustable from 0 to 30 seconds.



Step 8- User Security Roles



ULTRYS allows to manage three different profiles by configuration file.





Step 9- Configuration save and protect

		Administrator 🗕 🗙
LLL	Version 3.0.8	Readers configuration Create a configuration
No configuration loade	d 4	
~	Configuration save and protect	
ξQĴ	Configuration save and protect	
ULTRYS settings		
	Create a name (maximum 14 characters)	
Readers configuration		
in a data a d		
User credentials		
	3 Save as	Summary of my configuration
	« Previous	

This step allows you to save the configuration file containing all the current configuration settings (keys, formats, reader...). You can select a location and password to protect the file.

(1) Choose a name to easily find the configuration. (example: Parking IN).

Note: the name of the configuration must be contained in the file name.

- 2 To protect the configuration file, you can define a password. This password is different from Administrator password.
- 3 Select a directory and a file name to save.
- 4 The name and location of 'Configuration Loaded' indicates now the chosen name and location.





SPECTRE ATX 4 READ ONLY

5 Get a summary of the configuration created

Summary of my configuration					_ = ×
	Ins	Lane 1	Lane 2	Lane 3	Lane 4
Summary of configuration settings		Ant 1 1.5 m cable -	4 2 ► Ant 3 1.5 m cable ▼ Ant 4 1.5 m cable ▼	∢ 0 ►	∢ 0 ►
This document contains all the configuration settings needed to install the reader and antennas on site. For further information on installation, please refer to the <u>Installation procedure</u>					
#Configuration adetails Configuration name : MyConfigName Created on : 10/26/2021 10:03	Installation procedure) ()	
#Regulation of frequency bands Frequency bands / Countries : France - ETSI Duty cycle : 0.975 Channels (MHz) : 867,5 866,9 866,3 865,7 ERP : 2000 mW					
#Reader + antenna configuration Reader : ATX4 Reader Antenna : SPECTRE antenna					
	4 1 de 2 ▶ Image: Constraint of the c				e -5 *

Print: allows printing of configuration information on a network, local or virtual printer (PDF).



10. Reader configuration SPECTRE ATX4 OSDP[™]

10-1 ULTRYS settings

ULTRYS					Administr	ator 🕳	×
uut				ULTRYS settings Communication		₹Û;	10 mg
No configuration loaded	1				EN 🔻	6	i
کې ULTRYS settings	Communication Port selection for encoder or reader connection						
Readers configuration		Select device	ARC-W55-G/U04-SAA [COM9] 🔻				
User credentials		O Connectivity test	1				

Connect the SPECTRE ATX4 reader to the PC using the provided USB cable to load the configuration via serial link directly onto the reader.



or

 Connect an UHF encoder to the PC to load the configuration onto UHF OCB configuration card.



Select device

Select device

To set the communication port

C Refresh

C Refresh

Connectivity test

Connectivity test

Select device	Select a reader	•
\bigcirc Refresh		
O Connectivity test		

ARC-W55-G/U04-5AA [COM9]

ARC-W55-G/U04-5AA [COM9]

COM3

COM3

Device detected: Version 7 (29.7)

Close

Failed to connect; check

Close

compatible reader

communication port and connect a

1- Click on 'Refresh' to detect all readers connected to the PC.

- 2- Open the dropdown list Select device
- 3- Readers whose firmware is ≥ 8 will appear in the drop-down list under their commercial reference.
 Select the communication port number for the encoder or reader or select the reader to use.
- 4- Run the connectivity test

Message OK (with indication of the firmware version).

Message: Failed

•

- Check the compatibility of the reader.
- Check the USB cable.
- Check the Baudrate reader: it must be fixed to 115200.

Note: during the connectivity test on a UHF encoder, a sound and light signal (orange) will be emitted for 1 second.

-



10-2 Create new configuration

ULTRYS		Administrator 🗕 🗙
uut	L L S	Readers configuration Create a configuration
No configuration loade	d	■ EN ▼ ■ () 1 2 3 4 5 6 7 8 9
۲۵۶۶ ULTRYS settings	UHF frequency band regulation Installation country selection The UHF frequency bands depend on the installation location France - ETSI	
Readers configuration	Créate new configuration	
User credentials	compatible with regulations	
		Next ≫

The reader configuration is done in 7 steps. To move from one stage to another, you must click on "Next".

1 2 3 4 5 6 7 8 9	UHF frequency band regulation
1 2 3 4 5 6 7 8 9	Configuration protection loaded into the <u>reader</u>
1 2 3 4 5 6 7 8 9	Reader configuration
Step 4 does not exist in the SPECTRE ATX4	OSDP™ configuration wizard
1)2)3)4)5 6)7)8)9)	Installation configuration
Step 6 does not exist in the SPECTRE ATX4	OSDP™ configuration wizard
1 2 3 4 5 6 7 8 9	Reading & communication parameters
1 2 3 4 5 6 7 8 9 <u>User Security Roles</u>	
	Configuration save and protect



Step 1- UHF frequency band regulation





The frequency bands depend on the installation location

Andorra - ETSI
Andorra - ETSI
Australia - AustraliaCustom1
Austria - ETSI
Azerbaijan - ETSI
Belgium - ETSI
Bosnia - ETSI
Bulgaria - ETSI
Canada - FCC
Croatia - ETSI
Cyprus - ETSI
Czech Republic - ETSI
Denmark - ETSI
Estonia - ETSI
Finland - ETSI
France - ETSI
Germany - ETSI

Type the first characters to display a country or select the country in which the installation will be done.

For a country which is not in the list, please contact STid: support@stid.com.

2 To approve the feasibility to install your reader in the selected country, you can check the compatibility.





With USB reader connection

Reader ID	
Connect your reader Connect your reader	
Cancel Confirm	
Reader's frequency band compatible with selected country's regulations	
Close	
Reader's frequency band incompatible with selected country's regulations	
Try again Check later	
No reader connected, check your USB connection and communication settings	
Try again Connect later	

With reader part number



- Connect the reader and set the communication COM port.
- 2- Select 'Connect your reader'
- 3- Please confirm

Message: OK

Message: NOK

The reader can't be installed in the selected country.

- Check the USB cable
- Check the communication with reader

Enter the first 5 characters of the reader part number

Example: ATX4W43, ATX4W53

Message: the reference reader is not compatible with regulation selected.



Step 2- Configuration protection loaded into the reader

					Administrator 🗕 🗙
uLt				Readers configuration Create a configuration	
No configuration loaded	1				🗮 EN 🔻 🖨 🤃
ţŎţ	Configuration protectio	on loaded into the reader		1 2 3 4 5	
ULTRYS settings		The protection code is a data that can be custo configuration of a reader during installation.	omized by the administrator to protect	the	
		Modifying this configuration requires the protec	tion code. =FFFFFFFFF		
Readers configuration		We recommend you to change the default prot configuration process. Enter FFFFFFFFFF in the "Protection code" fiel (hexadecimal) in the "New protection code" field	ection code the first time you carry ou Id and specify the new protection cod d.	t the e	
		Protection code	FFFFFFFF		
User credentials		New protection code			
	« Previous			Next 2	»

SPECTRE ATX4 readers are initially supplied with a default configuration and a protection code to 0xFFFFFFFFFF.

The size of this protection code is 5 bytes (10 hexadecimal characters).

After the initial setup and in order to reconfigure the reader, it will be necessary to present an UHF OCB card or a configuration file with the same 'protection code' as the reader.



Random protection code generator.

Caution This protection code is important and should definitely be known by the administrator. It protects the configuration data and allows reader configuration updates. If you lose this protection code, you won't be able to reconfigure the reader again and the reader must be reset at the factory. To change the protection code, it will be necessary to know the current protection code.



Step 3- Reader configuration

ULTRYS				Administrator 🗕 🗙
uut	CCU Solution 3.0.8		Read Create	ers configuration a configuration
No configuration loade	d			💴 EN 🔻 🖨 🤃
د ک الا TRY's settings	Reader configuration		1	2 3 4 5 6 7 8 9
o Entro Soungs	SPECTRE	SPECTRE NANO	ATX	ATX4
Readers configuration			E B H	
\bigcirc	Read only OSDP	Read only OSDP	Read only OSDP	Read only OSDP
User credentials	2 Firmware v13 🔹 🚺		Auto detection Connect and check n	1)
ž	« Previous			Next 🔉

1 Selecting the reader type

SPECTRE ATX4 readers can be configured in OSDP™ mode from firmware 10.

Selecting Firmware

You must select the firmware version that is compatible with your reader.

To do so, you can manually select the reader and firmware version, or you can use the function "Auto detection – Connect and check my reader configuration".





Reader type detection	
Connect your reader	Enter the first 6 characters of your reader's reference number
Cancel	Confirm



With reader's number reference

Reader type detection

V

Cancel

1- Connect the reader via USB cable provided. Configure the communication parameters.

SPECTRE ATX 4 OSDP™

- 2- Select the Connect your reader.
- 3- Click on Confirm.

Message : NOK

- Check the USB cable
- Check the communication with reader

Enter the first 6 characters of your reader's reference number

Examples: ATX4W43, ATX4W53



ATX4R1

Confirm

Message: NOK

Check your reader's reference number



Step 4- Antenna type selection

The OSDP[™] SPECTRE ATX4 reader only works with the new SPECTER antennas (ANT-UHF2) Step 4 does not exist in the SPECTER OSDP[™] setup wizard.

Step 5- Installation configuration



1 Name the lane

Maximum 10 characters.

For example, Entry1...

23Add / Delete lane

Use 'Add /Delete lane' to configure the number of lanes you will use in your application.

The default setting is one antenna on the first lane.

For more information about the possible combination please refer to the document NA_SPECTRE.


In OSDP™, the lane number corresponds to the "Reader Number":





4 Add / Remove antenna on lane

Set the number of antennas on the corresponding lane.

When an antenna is added, the RF port to which the antenna has to be connected appears on the reader with corresponding color to help the installation.



RF ports are assigned in order to add the antennas in the configuration wizard.When an antenna is removed from the configuration, the RF port connection for other antennas does not change.

Example: Ant 2 deleted from lane 1 and added to lane 2.





5 Select the cable length for each antenna



For each antenna, select the cable length you would like to use between antenna and reader.



6 Advanced settings



- 3 Select the lane to configure. The lanes selected in installation setup are in white, unused lanes are grayed out. When a lane is selected in Advanced parameters it is written in blue.
- b Select / Change the cable length between the antenna and the reader.
- C Adjust the power of each antenna (from 10% to 100%) to adjust the reading distances.
- Adjust the timing for a scan (reading) by step of 1 second (max 30s). This setting is taking into account only if Input type selection is set to Activating all lanes or Activating the event lane.
- The EPC filter is not available in Secure Mode. (e) Enter the value for EPC Mask, max 62 hexadecimal bytes. Adjust the value for offset EPC mask in bytes (0 to 61). It depends on the EPC Mask length. Filter inversion not selected: only tags with an EPC value corresponding to the EPC mask value g will be provided to the user. Filter inversion selected: only tags with an EPC value different from the EPC mask value will be provided to the user. RSSI (Received Signal Strength Indication) is a measure of the power in reception of the tag (h) response. The value returned by the reader is proportional to the amplitude of the reception signal Adjust the RSSI value (-110dBm to 0dBm). 0dBm deactivates the RSSI filter. Filter inversion not selected: only tags with an RSSI greater than or equal to the specified value (i ` will be provided to the user. Filter inversion selected: only tags with an RSSI smaller or equal to the specified value will be provided to the user. Ex: RSSI filter = -49f=dBm + Reversal not selected A tag that will have a RSSI value of -20dBm will be sent back, A tag that will have a RSSI value of -60dBm will not be sent back. Scan time, EPC filter and RRSI filter settings are the same for antennas on the same lane. The

cable length and RF power antenna are set for each antenna.



Example 1: 4 antennas on lane 1.

Advanced s	settings	
	Lane 1	Lane 2 Lane 3 Lane 4
Ant 1 Behind Power	i the reader 🔹 🔹	Scan time after triggering of the the RFID reading
Ant 2 1.5 m o	cable 🔹	EPC filter EPC mask (Hexadecimal)
Power	◀ 100% ►	EPC mask position (byte) 0 o
Ant 3 1.5 m o Power	cable ▼	□ Filter inversion: The reader will only send to the system the EPCs without the filter
Ant 4 1.5 m c	cable 🔹	RSSI filter
Power	◀ 100% ►	RSSI value Disabled Filter inversion: The reader will only send to the system the EPCs for credentials with an RSSI below the defined value
		Cancel Confirm

Example 2: 2 antennas on lane 1 et 2 antennes on lane 2.

Advanced settings		Advanced settings	
Lane 1	Lane 2 Lane 3 Lane 4	Lane 1 Lane 2 Lane 3 Lane 4	
Ant 1 Behind the reader ▼ Power 100% Ant 2 1.5 m cable ▼ Power 100%	Scan time after triggering of the RFID reading EPC filter EPC mask (Hexadecimal) EPC mask position (byte) CPC mask pos	Ant 3 1.5 m cable Scan time after triggering of the RFID reading Image: Constraint of the RFID reader of the RFID readere of the RFID reader of	s 0 o
	RSSI filter RSSI value Disabled Filter inversion: The reader will only send to the system the EPCs for credentials with an RSSI below the defined value Cancel Confirm	RSSI filter RSSI value C Filter inversion: The reader will only send to the system the EP for credentials with an RSSI below the defined value Cancel Confirm	Disabled PCs



EPC Filter

Examples:

1- *EPC mask* = AA AA and *Offset* = 0

Only tag 1 is transmitted.

2- EPC mask = AA AA AA and Offset = 0

No tag is transmitted.

3- EPC mask = 01 and Offset = 11

Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00 01 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 02 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 03 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 03

Offset is represented in blue; the filter is done on byte 12. Only tag 1 is transmitted.

4- *EPC mask* = AB and *Offset* = 2

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are transmitted.

5- EPC mask = AB, Offset = 2 and Reversal

 Tag 1: AA AA AB CD 00 00 00 00 00 00 00 00

 Tag 2: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 3: AA 02 AB CD 00 00 00 00 00 00 00 00

 Tag 4: AA 02 FF FF 00 00 00 00 00 00 00 00

Tags 1, 2 and 3 are not transmitted. Only tag 4 is transmitted.





EPC filter					
EPC mask (Hexadecimal)	01				
EPC mask position (byte)	- 1 1 o				
□ Filter inversion: The reader will only send to the system the EPCs without the filter					

EPC filter



Filter inversion: The reader will only send to the system the EPCs without the filter



Input / output settings



SPECTRE ATX 4 OSDP™

The configuration of the outputs depends on the reading mode chosen.

Output managem	ent				2
Output type selection	1	Pull up	to V+		,
Status of outputs		Open	Closed	Maintain during detection	
Output 1		\bigcirc	0		
Output 2		\bigcirc	\bigcirc		
Output 3		\bigcirc	igodol		
Output 4		\bigcirc	\bigcirc		
Cancel	« Previous			Confirm	

Both types of output are « Pull up to V+ » or « Open drain ».

Status of outputs: select for each output the default state 'Open' or 'Closed' and if the state is maintained during the detection process.



			1 2
Input management			
RFID reader behavior opt	ions based on external events (detector,	ground loo	p etc.)
Selection of the RFID reading mode and use of	Continuous reading without using inputs	۷	
the inputs	Continuous reading without using inputs		
	Trigger of the reading on all lanes		
	Trigger of the reading on the event lane		
<u> </u>			
Cancel		Next	»

Reading mode = Continuous reading without using inputs

Input management RFID reader behavior options ba Selection of the RFID reading mode and use of the inputs	used on external events (detector, nuous reading without using inputs	ground loop etc.)) In this mode, the reader scan continuously. There is no action on input activation.
Cancel		Next >>	
Output type selection Status of outputs Output 1 Output 2 Output 3 Output 4	Pull up to V+ Open Closed ● ● ● ● ● ● ● ● ● ● ● ●	Aaintain during detection	Select the output type and default state for output.
Cancel K Previo	ous	Confirm	



Reading mode = Trigger of the reading on all lanes.



If an Input is activated (In1, In2, In3 or In4), the reader scans on all lanes set.

The duration of the reading is defined in 'Advanced settings'.

Select the output type and default state for output.



C

<u>Reading mode = Trigger of the reading on the event lane</u>



If an Input is activated, the reader scans on the corresponding lane.

SPECTRE ATX 4 OSDP™

Advanced settings		
Lane 1	Lane 2 Lane 3	Lane 4
Ant 1 Behind the reader	Scan time after triggering of the RFID reading	1 s

The reading duration is defined in 'Advanced settings'.

Output managem	ent			1)2
Output type selection		Pull up	to V+	•
Status of outputs		Open	Closed	Maintain during detection
Output 1		\bigcirc	0	
Output 2		\bigcirc		
Output 3		\bigcirc		
Output 4		\bigcirc		
			_	
Cancel	K Previous			Confirm

Select the output type and default state for output.



Summary table

F	Reading Mode	Input	Configurable Outputs states?	Output
a	Continuous reading without using inputs	No action	Yes by lane	The output state toggles at the ascent
b	Trigger of the reading on all lanes	An action on any input activates the reading on all configured lanes	Yes by lane	The output state toggles at the ascent during the ascent time of the identifier (physically on the BUS + 200ms
©	Trigger of the reading on the event lane	An action on Input <i>x</i> activates the scan on lane <i>x</i>	Yes by lane	

Step 6- Light indicator configuration

Step 6 does not exist in the SPECTRE ATX4 configuration wizard



Step 7- Reading & communication parameters

ULTRYS ULTRYS No configuration loaded	Version 3.0.8		Readers configuration of the c	Administra onfiguration guration 3) 4) 5) 6) 7	ator _ ×
ULTRYS settings	Reading & communication parameters Authenticated UHF data encryption (Secure Mode) UHF user ID encryption UHF data formatting before uploading to the system Selection of the UHF data transmission format Mode 1 (Standard) Format details Mode 3 Mode 4	Output protocol selection Output protocol Data Baud rate Size of the credential sent to the syste C Filtering Time between same user ID being read	RS485 - OSDP Hexadecimal 9600 m (bytes) twice	• • • • • • • • • • • • •	2 3 5
	K Previous			Next ≫	
1 O Au UHF Private k CA3DA5	uthenticated UHF data encryptic user ID encryption rey definition (16 bytes - Hex) 0D284959F9DF605EFBAFBCBC4E	on (Secure Mode	e)	When UHF iden its maximum siz bytes OK	tifier is encrypted, te cannot exceed 6

The EPC can be encrypted and signed before being written in the tag.

The reader will decrypt and authenticate the EPC before sending it on its output media. Only an EPC correctly decrypted and authenticated will produce an output data, otherwise the reader will remain mute.

Notes:

• Only UHF tags compatible with "*FAST ID*" feature and having at least 128 bits of EPC can be decrypted and authenticated by the SPECTRE Access reader.

The chips compatible with secure encoding are: Monza X, Monza R6P, Monza 4D, this chip is present into

- TLTA-W53M-943_S
- TLTA-W75B-943_S
- IronTag 206
- CCTW490_AN
- The secure mode is not accessible if an EPC mask has been set in 'Advanced settings'.

Note: After setting an EPC security key, if you return to step 5 with the Previous button, and you set an EPC filter, then returning to step 7, the "EPC ID Security" checkmark is displayed. in gray, the key field is still accessible but not taken into account.



(

SPECTRE ATX 4 OSDP™

Output protoco	lselection	
Output protocol	RS485 - OSDP	
Data	Hexadecimal	
Baud rate	9600	
		9600 -
		19200
		38400
		38400 57600
The only modifia	ble parameter is the baud I	38400 57600 rate. 115200

Protocol	Size in plain mode	Size in secure mode
RS485	1b up to 62b	1b up to 6b

	and an official offic	il.		
Mode 1 (Standard)	•			
Format details				
Mode 3		Mode 2		
AA BB CC	xx xx[]	XX YY Z	Z	
	-			
Mode 4		Mode 1		

There are 4 UHF ID formatting modes:

Example: EPC data: AA BB CC DD EE xx xx ... VV WW XX YY ZZ with 'Size of the credential sent to the system' fixed to 4bytes.





The reader emits the credential code present in the field only once during this time.

This time is adjustable from 0 to 30 seconds.



Step 8- User Security Roles



ULTRYS allows to manage three different profiles by configuration file.





Step 9- Configuration save and protect

ULTRYS		Administrator 🕳 🗙
uut	Version 3.0.8	Readers configuration Create a configuration
No configuration loade	d 4	
Į	Configuration save and protect Configuration save and protect	
ULTRYS settings	â	
	Create a name (maximum 14 characters)	
Readers configuration	Customizing .ucg file protection	
User credentials		
	3 Save as	Summary of my configuration
	« Previous	

This step allows you to save the configuration file containing all the current configuration settings (keys, formats, reader...). You can select a location and password to protect the file.

(1) Choose a name to easily find the configuration. (example: Parking IN).

Note: the name of the configuration must be contained in the file name.

- 2 To protect the configuration file, you can define a password. This password is different from Administrator password.
- 3 Select a directory and a file name to save.
- 4 The name and location of 'Configuration Loaded' indicates now the chosen name and location.





SPECTRE ATX 4 OSDP™

5 Get a summary of the configuration created.

Resumen de mi configuración				_ = ×
DSTID ULTRUS	# Le A	Configuración del lector + antena(s) ector : Lector ATX4 ntena : Antena SPECTRE		
www.stdi-security.com Version 3.0.0.8	R	esumen de instalación		
Resumen de los parámetros de configuración		Lane 1	Lane 2 Lane 3	Lane 4
Este documento incluye todos los parámetros de configuración necesarios para la instalación del lector y de las antenas in siño. Para más información sobre la instalación, consulte <u>Manual de instalación</u>		Ant 1 Cable 1.5 m Ant 2 Ant 2 Ant 4	Cable 1.5 m +	
#Detalles de la configuración Nombre de la configuración : MyConfigName Creada el : 26/10/2021 10:03	Manual de instalación			
#Regulación de las bandas de frecuencia Bandas de frecuencia / país : Francia - ETSI Ciclo de trabajo : 0.975 Canales (MHz) : 867,5860,9863,865,7 ERP : 2000 mW				
	∢ 1 de 2 ▶	ıir		=

Print: allows printing of configuration information on a network, local or virtual printer (PDF).



11. Open an existing configuration

ULTRYS		Administrator 🕳 🗙
uut	C C C S Version 3.0.8	Readers configuration Create a configuration
No configuration loade	d	EN 🔻 🖨 🚺
کې ULTRYS settings	UHF frequency band regulation Installation country selection The UHF frequency bands depend on the installation location France - ETSI	
Readers configuration	Create new Open an existing configuration into the reader	
User credentials	Compatible with regulations	
		Next 🔉

CAUTION: To open an SNA configuration, use ULTRYS v3.0.X minimum.

11.1 Configuration file





Nom du fichier:		Ultrys Configuration File (*.ucg' Ouvrir Annuler
Open a configuratior	n from a configuration	n file
	Øţ	Ů
Configuration file (.ucg)	Reader via USB	Configuration badge (SCB UHF)
Configuration file path	C:\Program Files (x86)\STI \SMA_Salon_expo.ucg	
.ucg file password		
Cancel		Confirm
Confirm your use	er rights	
Configuration name		Parking IN
Profile	Administ	trator 🔹
Password	Administ	rator
	User1 User2	
Cancel		Confirm

1- Select a configuration file .ucg on your PC or USB stick.

2- If the file has been protected for reading, enter the password and confirm.

3- Select the profile to use and enter the corresponding password. Please confirm.



85	33	8	8			3	9	16	3	8	\mathbb{R}	\mathbb{C}^{2}	28				$\epsilon \geq 1$	63	85	83	22	81	6				3
25	83	2		2	5	8	35	1	8	65	35	\mathbb{C}^{n}	32				53	11	55	55	83		32			÷.	1
55	22	12						8	2	10	12	32	2	1	10	1	53		51	1	2	8				2	1
<u>.</u>	21	-	2	۳.	•	Ξ.	2	۳.	5	1	17	8	1		-	*	٠.	۰.	÷.,		-	1	5	Ξ.	•		ŝ

11.2 Reader via USB



Confirm

Cancel







 5- ULTRYS then displays the configuration wizard with all settings loaded from the reader.



Check connection and COM port settings.

Note for an SNA configuration:

Depending on the permissions defined when creating the SNA reader configuration in step 9, the UHF and / or Bluetooth[®] settings will not be loaded

Configuration save and	protect	-	
	Create a name (maximum 14 characters)	NANO-BLUE	
	Customizing .ucg file protection		
	Disable the reader from taking into account the next reader configurations will be done only by	e next UHF configuration cards. The / USB	
	Allow ULTRYS to retrieve and open the reader (USB) and the configuration card	and UHF parameters from the reader	(i)
	Allow ULTRYS to retrieve and open the reader reader (USB) and the configuration card	and Bluetooth® parameters from the	Ì



85	33	8	(0)			3	19	18	25	18	28	2	2		10		52	12	20	23	8	31	10			3
55	83	2		2		8	15	(π)	25	65	35	2	22				53	13	52	35	83		32	3	35	8
55	22	13					2	8	25	10	12	12	2	3	120	10	5		51	10	5	8			2	1
10	21	-	÷.	Ψ.	Ξ.	Ξ.	2	۰.	1	Ξ.	17	с.	1.1			÷.,	÷.,	۰.	1	5	-	11	τ.	Ξ.		÷.

11.3 Configuration badge (SCB/OCB UHF)

Open an	existing confi	guration		
Config (uration file .ucg)	Reader via USB	Configuratio (SCB U	n badge HF)
	Cancel		Confirm	



- 1- Connect an UHF encoder (ARC, STR or GAT Desk).
- 2- Configure the communication settings.
- 3- Present the SCB/OCB UHF to the encoder.
- 4- Please confirm.

5- Select the profile to use and the corresponding password. Please confirm.





6- ULTRYS then displays the configuration wizard with all settings loaded from the SCB/OCB UHF.



Check connection and COM port settings.

Note for an SNA configuration:

Depending on the permissions defined when creating the SNA reader configuration in step 9, the UHF and / or Bluetooth[®] settings will not be loaded

Configuration save and p	protect	
	Create a name (maximum 14 characters)	NANO-BLUE
	Customizing .ucg file protection	
	□ Disable the reader from taking into account the next reader configurations will be done only by	next UHF configuration cards. The / USB
	Allow ULTRYS to retrieve and open the reader a (USB) and the configuration card	and UHF parameters from the reader (i)
	Allow ULTRYS to retrieve and open the reader reader (USB) and the configuration card	and Bluetooth® parameters from the 👔



12. Load the configuration into the reader







30	\mathcal{T}	\mathbb{R}^{2}	$\langle t \rangle$	(\mathbf{r})	(\mathbf{r})	(0)	(0)	(2)	\mathbb{R}	18	\mathbb{R}	2	28	$\sim 10^{-10}$	0.10		${\mathbb C}^{2}$	(\cdot)	(0)	(\mathbf{x})	\mathbb{R}^{2}	[0]	$\langle t \rangle$	(\mathbf{r})		36	18
15	83	\mathbb{R}^{2}	(2)		\sim	\mathbb{S}^{2}	(2)	(π)	35	65	35	\mathbb{C}^{n}	\mathbb{S}^{n}				\mathbb{S}^{2}	13	55	33	83	(2)	32	(\mathbf{z})		55	(2)
55	22	12					22	88	3	10	12	32	2	3	0.50		53		51	50	52	33				22	15
50	27	-	2	۳.	-		3	٠	15	1	17	57	1	. *		*	•		7		-	1	5	Ξ.	-		3

12.1 Loading the configuration into the reader



- 1- Connect a reader via USB cable.
- 2- Configure the communication settings.

3- Configure the latency of com port to 1

a 🐙 Ports (COM et LPT)

- PCIe to High Speed Serial Port (COM1)
- PCIe to High Speed Serial Port (COM2)
- PCIe to Multi Mode Parallel Port (LPT3)
- USB Serial Port (COM16)
- USB Serial Port (COM4)

Double click on the good COM port number.

USB Serial Port (COM1) Properties		0 50
General Port Settings Driver Detaile	Paramètres avancés pour COM3	N X
Bits per second: 9600 V Data bits: 8 V	Numéro de port COM: COM3 Longueurs des trames USB Choisir une valeur fable afin de corriger l'apparition d'anomalies à débit réduit. Valeu	OK Annuler Irs par défaut
Parity: None	Choisir une valeur naute ann de privilegier la rapioite. Réception (Octets): 4096	
Flow control: None	Transmission (Octets): 4096	
Advanced Restore Defaults	Options BM Divers Choisir une valeur faible afin de corriger les problèmes de réponse. Enumérateur de périphérique série Imprimante série	
	Temps de latence (msec): 16 Invalider si hors tension Notification d'événements inattendus	
	Délais Valider RTS à la fermeture du port unvaiorer les signaux de controle muuurem a	
	Delai d'attente minimum en lecture (meec): Délai d'attente minimum en écriture Délai d'attente minimum	
OK Cancel	(msec):	

Open Advanced...

Put Latency on "16"







20	33	35	30	(\mathbf{r})		3	$\left(\theta \right)$	18	25	18	13	2	28		. * .		52	12	20	(\mathbf{x})	8	35	10				3
55	\mathbb{R}^{2}	\mathbb{R}^{2}	(2)		(\mathbf{z})	15	(2)	(2)	35	65	$\mathbb{R}^{n}_{\mathcal{O}}$	\mathbb{C}^{n}	32	25			53	13	55	33	83	(2)	32	(\mathbf{z})		55	17
59	22	13						88	2	63	12	32	\mathbb{C}^{n}	3	1		53		51	50	22	8				22	
	27	-	2	۳.	-	Ξ.	3	Υ.	15	1	17	2	1			*	٠.		7		-	1	5	Ξ.	-		3

12.2 Configuration card (SCB/OCB UHF)

NANO-BLUE (from Use CCC) ULTRY'S settings Residers configuration User credentials	Reality	Load a configuration into the reader Loading mode selection	 Connect an UHF encoder (STR, ARC UHF or GAT Desk). Configure the communication settings. Present a compatible SCB/OCB UHF card to the encoder. Load
	K Previous	Cancel 🗙	
	PLIS	Administrator _ X	
NANC-BLUE (from USB	Configuration loading	Load a comiguration into the reader	5-Close. ULTRYS then displays the home page.



The tag presented to the encoder is not compatible to create a SCB/OCB UHF or is not in RF Field.

Note:

The UHF encoder uses a blue light signal to indicate that the writing of the configuration is in progress. A green light and an audible signal, emitted for 1 second, indicates that the configuration has been written correctly. A red light and an audible signal, emitted for 1 second, indicates a writing error.



13. User credentials

The user credentials encoding is done in three steps. To move from one step to another, you must click on "Next".

1 2 3	Configuration details loaded
1 2 3	<u>User ID definition</u>
1 2 3	Encoding tags

Step 1- Configuration details loaded

Oltrys v2					Administra	tor 🗕 🗙
uut			Crea Create	te from a configuratio your user ID and password I	n from a configuration	
No configuration loaded	1				🗰 en 🔻	
۲ Ultrys settings	Creating user IDs Configuration details loa	ded			_	
Configuring readers		Configuration name : Open with profile : Administrator Regulating frequency bands : Select protocol : EPC size (bytes) : Secure mode : EPC Filtering;				
User IDs						
		EPC filter	Check user ID info	ormation before encoding		
		Select the lane	Уд Тад	autodiagnosis		
					Next ≫	
User credential cri Configuration details la	eation baded Configuration name : encoding Open with profile : Administrator Velet protocol : Wiegand custor Size of the credential sent to the Secure mode : Disabled EPC Filtering: - Lane 1 : EPC mask (Hexaded - Lane 3 : EPC mask (Hexaded - Lane 4 : EPC mask (Hexaded	m size system (bytes) : 3 mal) : / EPC mask position (byte) : 0 mal) : / EPC mask position (byte) : 0 mal) : / EPC mask position (byte) : 0 mal) : / EPC mask position (byte) : 0		Check the loaded is th to use or op configurati	configuratione correct or oen the on to use.	on ne



Caution: If the authenticated encryption of EPC data has been enabled in the configuration, make sure the tag is compatible with this option by performing the tag autodiagnosis.

If a non-compatible tag is still encoded in secure mode it will not be read by the Spectre reader.

Check user ID information before encoding
Vo Tag autodiagnosis

Examples:

./ Manufacturar : Impini
✓ Model : 80
Compatible with secure encoding : No
Close
Ownership of the user ID
·
✓ Manufacturer · Impini
✓ Model : Monza4D
✓ Compatible with secure encoding : Yes
Close

It indicates the UHF chip type and if it is compatible with secure encoding.

The chips compatible with secure encoding are: Monza X, Monza R6P, Monza 4D, those chips are present into the following credentials:

- TLTA-W75B-943_S (TeleTag V4-UHF FastID Programmable Removable Windshield tag-Broadband)
- TMSW94B3361 (IronTag 360-360 Flexible on-metal tag-Broadband-Impinj MonzaX2K-Black)
- CCTW490_AN (UHF EPC1 Gen2 Impinj Monza 4 programmable ISO Prox card)
- ETA-W75B-574BE10 (ETA v2 Self destroying programmable adhesive label).



V	Filtre EPC
Sé	electionner la voie

If an EPC filter has been set in the 'Advanced settings', select 'EPC Filter' and the corresponding lane to encode automatically the value of the EPC filter into the user credential.

Example:

Advanced settings		Advanced settings
Lane 1	Lane 2 Lane 3 Lane 4	Lane 1 Lane 2 Lane 3 Lane 4
Ant 1 Behind the reader	Scan time after triggering of the	Ant 2 1.5 m cable Scan time after triggering of the RFID reading Power ◀ 100% ►
	EPC filter	EPC filter
	EPC mask (Hexadecimal) A4	EPC mask (Hexadecimal) BB
	EPC mask position (byte) 0 o	EPC mask position (byte) 0 o
	$\hfill \ensuremath{\square}$ Filter inversion: the reader will only send to the system the EPCs without the filter	☐ Filter inversion: the reader will only send to the system the EPCs without the filter
	RSSI filter	RSSI filter
	RSSI value —— Disabled	RSSI value Disabled
	☐ Filter inversion: the reader will only send to the system the EPCs for credentials with an RSSI below the defined value	☐ Filter inversion: the reader will only send to the system the EPCs for credentials with an RSSI below the defined value
•	Cancel Confirm	Cancel Confirm

Selecting	lane with EPC filter	
	🗹 Lane 1 🗌 Lane 2 📘	🛛 Lane 3 🔲 Lane 4
	A user credential can only h bytes), which can be applie If you select multiple lanes,	ave one EPC filter (EPC mask + offset d on one or more lanes. EPC filter must be similar.
	Close	Confirm

In this example, if the lane 1 is selected, the user credential will be encoded with the EPC filter AA.



Step 2 – User ID definition

				Administrator 🗕 🗙
uut	CCUS Version 3.0.0.14		Create from a config Create your user ID and pa	guration ssword from a configuration
MU (from USB reader)				📟 EN 🔻 🔓 🕧
کې ULTRYS settings	User credential creation User ID definition			1 2 3
Readers configuration	Manual ID creation	First ID	C Import Excel ID	C a Import TXT ID
User credentials		Last ID Increment	Sheet number First cell Increment O By line O By column	Delimiter CR/LF delimiter
		Check validity and de	tail of encoding data validation	
	« Previous			Next ≫

It is possible to enter the user IDs in four ways (described below).

Warning, credentials encoding depend on the reading EPC mode and EPC filter.



For Wiegand protocols only (except 3i), it is possible to enter the identifier in Decimal or Hexadecimal.

Enter directly the ID value in the field and click Next.

Use to encode a single tag or a specific value.



$oldsymbol{\circ}$	Automatic ID creation
	First ID
	AA0001
	Last ID
	AA0100
	Increment
	1

Fill in each corresponding field, the beginning, the end and the increment to generate the list of user IDs to encode.





This mode allows you to import lists in Excel format to be used for the user IDs programming.



	Arrs Ins					
Prestan-	A Modelee		96 Montore	End Address and Fee Light Arbeits a sole Light Scholass she to	a furra	
					Service .	
03			~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~			-
	0			10 N		1.1
1 BOSE	717880					
a Ambb	248248				i	
A 1444 A	1.1.1.1.1.1.1.1			-	*	
S BOOL	MIZELD P	12				
6 ALDD	ARE ARE					
C 11111						







This mode allows you to import lists in Text format to be used for programming the user IDs.





85	33	8	$\langle t \rangle$		(\cdot)	30	9	15	28	18	R	2	2		110		${\mathbb R}^{\times}_{{\mathbb R}}$	63	85		8	81	10			10	3
55	83	2		3		35	15		25	65	33	12	22				53	5	55	33	83		32		5	35	3
55	22	5						8	2	10	1	12	2	3		5	5		51	50	2	8				2	
1	21	-	2	۳.	•	Ξ.	2	۳.	5	1	17	8				*	٠.	۰.	1	-	-	1	5	Ξ.	-		3

Step 3- Encoding tag

Oltrys v2				Administrator 🗕 🗙
uut			Create from a configue Create your user ID and pass	ration word from a configuration
Configuration loaded: to	est encodage (C:\Program Files (x86)\STid\Ultrys (2\test encodage.ucg)		≝ en ▼ 🖨 🥡
کې کې Ultrys settings	User credential creation Encoding tags OPERATIONS	Create user credentials	Read ID data	STATUS
Readers configuration				
User credentials				
				~
	« Previous			Close 🗙

1 Present the user credential which you would like to encode to the encoder and click on this button.

Vser	tag successfully encoded	d for identifier 1 .	
Submit another ID	for encoding with the nex	t ID or cancel the p	process
Can	icel	Next	
2 The credent	ial data reading is v	written on Op	erations windows.
OPERATIONS User tag read [EPC] : 000001.			STATUS Success

Stid

14. Annex 1: Using the EPC code feedback format and EPC filter

The feedback modes allow the full compatibility with existing credential.

To encode the credential, we would prefer standard mode (mode 1).

Using mode

Encoding the value 1122334455 on 5 bytes without EPC filter.



Settings			Value encoded by ULTRYS	Value ascended by the Reader
EPC size (bytes)	• 1 5 o		000000000000001122334455	1122334455
EPC code feedback format	Mode 1 (Standard)	•		
EPC size (bytes)	• 6 5 o		000000000000001122334455	5544332211
EPC code feedback format	Mode 2 (Standard reversed)	•		
EPC size (bytes)	• • 5 o		11223344550000000000000000	1122334455
EPC code feedback format	Mode 3	•		
EPC size (bytes)	• • 5 o		11223344550000000000000000	5544332211
EPC code feedback format	Mode 4	•		



26	20	8	80		3	19	15	2	18	18	2	2		*	2	12	12	20	1	8	81	10			18
55	83	2		2	35	15	1	8	65	35	1	2.3				53	11	52	35	83		22		3	15
1	2	12		1			8	2	0	1	12	1	1	1	2	5	1	Ť.	1	5	8		1	2	1

Using EPC filter and modes

Encoding the value 1122334455 on 5 bytes with EPC filter 'AA'.

	Selecting lane with EPC filter
EPC filter	🗹 Voie 1 🖬 Voie 2 🖬 Voie 3 🗐 Voie 4
Select the lane	The channels selected do not all have the same EPC filter (EPC mask + offset byte). A user/ID can only have one EPC filter, which can be applied on one or more channels. Close Confirm



Settings		Value encoded by ULTRYS	Value ascended by the Reader
EPC mask AA			
Offset (byte)	0 o		
EPC size (bytes)	• 6	AA000000000000000000000000000000000000	1122334455
EPC code feedback format	Mode 1 (Standard) 🔹	AA000000000000000000000000000000000000	1122334433
EPC size (bytes)	• 5 o	AA000000000000000000000000000000000000	5544332211
EPC code feedback format	Mode 2 (Standard reversed)	111000000000000000000000000000000000000	3311332211
EPC size (bytes)	• 0 5 o	AA223344550000000000000000	AA22334455
EPC code feedback format	Mode 3 🔹		
EPC size (bytes)	• [5 o	AA223344550000000000000000	55443322AA
EPC code feedback format	Mode 4 🔹		
EPC mask AA Offset (byte)	7 о		
EPC size (bytes)	• 6		
EPC code feedback format	Mode 1 (Standard) -	00000000000000AA22334455	AA22334455
EPC size (bytes)	• 1 5 o	11223344550000AA00000000	1122334455
EPC code feedback format	Mode 3 🔹		


Using secure mode

Encoding the value 1122334455 on 5 bytes in secure mode.



	Encoded value on 16 bytes encrypted.	Value ascended by the Reader
 ✓ User ID security (EPC) Private key definition (16 bytes) 676AB9819CD0523B1D01BD448545A9E2 	789C9B12C733B3657EF030CE17F250BE	1122334455



86	20	35	(0)	$\langle \tau \rangle$		3	19	18	28	18	2	2	2		1		52	£33	(0)	23	83	31	10				18
15	83	22				35	15	(π)	25	65	35	12	22				13	23	25	35	83		32	33		33	
55	22	12					2	8	25	10	12	12	2	3		1	53	23	51	10	5	8				1	15
10	27	-	2	۳.	•	Ξ.	3	۰.	3	1	17	8	1		-	*	٠.	•	5		-	1	5	Ξ.	-		3

15. Annex 2: protocols

Protocols Clock & Data







Clock & Data 2B

VARIANT	Decoding	Data	Values
2B	Decimal (BCD)	13 characters	0 to 9

Reading an ID of 5 bytes (40 bit) and convert to decimal.

Message

16 leading zeros Start Sentinel Da	a End Sentinel LRC 1 trailing zero
------------------------------------	------------------------------------

The frame consists of a first series of 16 synchronization zeros followed by 5-bit characters (4 bits, LSB first, plus 1 parity bit). It ends with 1 trailing zero without a clock.

The message consists of the following:

Start Sentinel:	1character 1011b (0x0B) – parity bit 0. Transmission 1101 0
Data:	According to the protocol: 13 or 10 decimal characters
End Sentinel:	1character 1111b (0x0F) - parity bit 1. Transmission 1111 1
LRC:	1 control character, which is the « XOR » of all characters of all characters of all characters sent from "Start Sentinel" to "End Sentinel".
Trailing zero:	The "Data" signal encodes a "0" until "Code" returns to its normal position.
	During this time, there is no activity of the "Clock" signal.

Example

For a hexadecimal user code of "0x187E775A7F", the output code will be: "0105200966271".

Frame sent by reader will be:

000	1101 0	00001	1000 0	00001	1010 1				0110 1	0100 0	1110 0	1000 0	1111 1	1111 1	0000
	В	0	1	0	5	2	009	6	6	2	7	1	F	F	
16 Zeros	S.S	Char.1	Char.2	Char.3	Char.4	(Char		Char.10	Char.11	Char.12	Char.13	E.S	LRC	Zero



Clock & Data 2H

VARIANT	Decoding	Data	Values
2H	Decimal (BCD)	10 characters	0 to 9

The reader will read an identifier on 5 bytes (40 bits), truncate on 4 bytes (32 bits) and convert to decima.

Message

16 leading zeros	Start Sentinel	Data	End Sentinel	LRC	1 trailing zero

The frame consists of a first series of 16 synchronization zeros followed by 5-bit characters (4 bits, LSB first, plus 1 parity bit). It ends with 1 trailing zero without a clock.

The message consists of the following:

Start Sentinel:	1 character 1011b (0x0B) – parity bit 0. Transmission 1101 0
Data:	According to the protocol: 13 or 10 decimal characters
End Sentinel:	1character 1111b (0x0F) - parity bit 1. Transmission 1111 1
LRC:	1 control character, which is the « XOR » of all characters of all characters of all characters sent from "Start Sentinel" to "End Sentinel".
Trailing zero:	The "Data" signal encodes a "0" until "Code" returns to its normal position.
	During this time, there is no activity of the "Clock" signal.

Example

For a hexadecimal user code of "0x06432F1F", the output code will be: "0105066271".

Frame sent by reader will be:

000	11010	0000 1	1000 0	0000 1	1010 1			0110 1	0100 0	11100	1000 0	1111 1	0010 1	000
	В	0	1	0	5	0	6	6	2	7	1	F	4	
16 Zeros	<i>S.S</i>	Char.1	Char.2	Char.3	Char.4	Chai	r	Char.7	Char.8	Char.9	Char.10	E.S	LRC	Zero



20	(0, 0)	\mathbb{R}^{2}	(0)	(\mathbf{r})	(\mathbf{s})	(0)	(0)	1%	28	38	\mathbb{R}	\mathbb{C}^{n}	28	$\sim 10^{-1}$	010		$t \geq$	(\cdot)	(0)	(2)	\mathbb{R}^{2}	$\left \theta \right _{i}$	$(\mathbf{r})^{i}$	(\mathbf{f})	(\mathbf{n})	(0)	18
25	83	(2)	(2)			35	(2)	(π)	35	65	35	\mathbb{C}^{n}	32		10		\mathbb{S}^{2}	13	20	33	83	$\left\{ \mathbf{r} \right\}$	32			555	
50	22	72						8	2	10	17	32	2	1	10	1	53		11	(1)	22	8				22	15
	27	-	2	Ψ.			2	Ψ.		1	17	8				*	1	۰.	τ.	Ξ.	-	1	τ.				9

Protocoles Wiegand

Chronograms



* times for variants 3i, 3V

Wiegand 3i

Message

The frame consists of 26 bits as follows:

	Bit 1	Bit 2Bit 25	Bit 26
Structure	lst parity	Data (24 bits)	2nd parity
Description	1 even parity bit calculated from bits 2 to 13 included	6 hexadecimal digits MSByte first	1 odd parity bit calculated from bits 14 to 25 included

Example

or the hexadecimal code "0x0FC350", the frame sent will be:

0	0000	1111	1100	0011	0101	0000	1
	0	F	С	3	5	0	
Parity	Digit 1	Digit 2	Digit 3	Digit4	Digit 5	Digit 6	Parity

Note

The Wiegand 26 bits is generally expressed as Code Site + User Code in decimal.

	Byte 1	Byte 2 – Byte 3
Structure	Site Code	Card Code
Max Value	0xFF - 255 in decimal	0xFF FF - 65535 in decimal
Example	0x0F - 15 in decimal	0xC350 - 50000 in decimal



20	(0,1)	\mathbb{R}^{2}	(0)	$\langle \tau \rangle$	(\mathbf{r})	(0)	(\mathbf{r})	(2)	25	18	\mathbb{R}	22	28		0.00		${\mathbb C}^{2}$	(\cdot)	(0)	(0, 0)	\mathbb{R}^{2}	[0,1]	$\langle t \rangle$	(\mathbf{r})		10	18
55	83	\mathbb{R}^{2}	(2)	32		35	$\{\mathbf{r}\}$	(2)	35	65	25	\mathbb{C}^{n}	32				\mathbb{S}^{2}	\mathbb{S}^{2}	20	33	83	(2)	32	(\mathbf{z})	\sim	35	12
55	22	13						88	25	10	12	32	\simeq	3	120		53		<u>*</u> 1	50	52	8				22	
\mathbf{x}_{i}	27	-	2	۳.	-	-	2	Υ.	15	1	17	2	1			*	•			-	-	1	5	Ξ.	-		3

WIEGAND 3Ca

Message

The frame consists of 36 bits as follows:

	Bit 1Bit 32	Bit 33Bit36
Structure	Data (32 bits)	LRC
Description	8 hexadecimal digits MSByte first	Control character XOR between data sent

Example

For the hexadecimal code "0x001950C3", the frame sent will be:

0000	0000	0001	1001	0101	0000	1100	0011	0010
0	0	7	9	5	0	С	3	2
Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Digit 7	Digit 8	LRC

Note

In the case of 5 bytes identifier (40 bits), reader will truncate the MSB byte (8 bits) before decimal conversion.

WIEGAND 3Cb

Message

The frame consists of 40 bits as follows:

	Bit 1Bit 40	Bit 41Bit44
Structure	Data (40 bits)	LRC
Description	8 hexadecimal digits MSByte first	Control character XOR between data sent

Example

For the hexadecimal code "0x 01001950C3", the frame sent will be:

0000	0001	0000	0000	0001	1001	0101	0000	1100	0011	0011
0	7	0	0	7	9	5	0	С	3	3
Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Digit 7	Digit.8	Digit 9	Digit 10	LRC



2.5	2.5	35	20	(\mathbf{r})		30	(θ)	18	25	18	13	9	28		. * .	10	12	20	(\mathbf{x})	8	35	10			10	18
55	\mathbb{R}^{2}	\mathbb{R}^{2}	(2)			35	35	(2)	35	65	25	\mathbb{C}^{n}	32			13	\mathbb{C}^{2}	55	33	83	(2)	37	22		33	(2)
50	22	13		25			22	88	25	65	12	32	\simeq	3		53	23	<u>t:</u>]	53	53	23		1		22	35
10	27	-		Ψ.	-						17	2				۰.			-	-	1	τ.	Ξ.	-		ġ.

WIEGAND 3La

Message

Wiegand 32 bits identical to Wiegand 3Ca without the LRC.

The frame consists of 32 bits as follows:

	Bit 1Bit 32
Structure	Data (32 bits)
Description	8 hexadecimal digits MSByte first

Example

For the hexadecimal code "0x001950C3", the frame sent will be:

0000	0000	0001	1001	0101	0000	1100	0011
0	0	7	9	5	0	С	3
Digit	1 Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Digit 7	Digit 8

WIEGAND 3Lb

Message

Wiegand 40 bits identical to Wiegand 3Cb without the LRC.

The frame consists of 40 bits as follows:

	Bit 1Bit 40
Structure	Data (40 bits)
Description	10 hexadecimal digits MSByte first

Example

For the hexadecimal code "0x 01001950C3", the frame sent will be:

0000	0001	0000	0000	0001	1001	0101	0000	1100	0011
0	7	0	0	7	9	5	0	С	3
Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Digit 7	Digit 8	Digit 9	Digit 10



DSTid

Wiegand 3Eb

Message

The frame consists of 34 bits as follows:

	Bit 1	Bit 2Bit 33	Bit 34
Structure	lst parity	Data (32 bits)	2nd parity
Description	1 even parity bit calculated from bits 2 to 17 included	8 hexadecimal digits MSByte first	1 odd parity bit calculated from bits 18 à 33 included

Example

For the hexadecimal code "0x 12347F02", the frame sent will be:

1	0001	0011	0001	0010	1001	1101	1101	0011	1
	7	2	3	4	7	F	0	2	
Parity	Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Digit 7	Digit 8	Parity

Wiegand 3W

The frame consists of 35 bits as follows:

	Bit 1-2	Bit 3Bit 34	Bit 35
Structure	lst parity	Data (32 bits)	2nd parity
Description	2 parity bits	8 hexadecimal digits MSByte first	l odd parity bit

Wiegand 3V

Message

The frame consists of 37 bits as follows:

	Bit 1	Bit 2Bit 36	Bit 37
Structure	lst parity	Data (35 bits)	2nd parity
Description	1 even parity bit calculated from bits 2 to 19 included	8 hexadecimal digits MSByte first	1 odd parity bit calculated from bits 19 à 36 included

Example

For the hexadecimal code "0x 0F3129DD3B", the frame sent will be:

1	111	0011	0001	0010	1001	1101	1101	0011	1011	0
	7	3	7	2	9	D	D	3	В	
Parity	Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Digit 7	Digit 8	Digit 9	Parity



16. **REVISION**

Date	Version	Description
04/03/2019	2.0	Creation.
15/11/2019	2.1	OSDP reader added
03/06/2020	2.2	Add SPECTRE ATX / ATX4 READ ONLY / OSDP ™
05/10/2021	3.0	Redesign of the document: one chapter per type of reader Addition of SPECTER NANO Read only and OSDP ™
04/03/2022	3.0.1	Bluetooth® activation by sensor new distance added b

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