STid SPECTRE NANO UHF and Bluetooth Multi Technology Reader Instruction Manual

STid SPECTRE NANO UHF and Bluetooth Multi Technology Reader Instruction Manual

Ïíequency Band		Refeíences		Ïíequency Band		Refeíences	
ETSI	SNA-R41-A-BT4-xx: TTL			Morocco	SNA-R41-A-BT4-xx1M: TTL		
865 – 868 MHz	SNA-R42-A-BT4-5AB: RS232 SNA-R43-A-BT4-7AB: RS485			865.7 MHz	SNA-R42-A-BT4-5AB1M: RS232 SNA-R43-A-BT4-7AB1M: RS485		
	SNA-W43-A-BT4-7OS: OSDP™ v1 & v2				SNA-W43-A-BT4-7OS1M: OSDP™ v1 & v2		
	SNA-W42-A/BT4-5AX: SSCP® v1 & v2- RS232				SNA-W42-A/BT4-5AX1M: SSCP® v1 & v2- RS232		
	SNA-W43-A/BT4-7AX: SSCP® v1 & v2- RS485				SNA-W43-A/BT4-7AX1M: SSCP® v1 & v2- RS485		
FCC	SNA-R51-A-BT4-xx: TTL						
902 – 928 MHz	SNA-R52-A-BT4-5AB: RS232						
	SNA-R53-A-BT4-7AB: RS485						
	SNA-W53-A-BT4-7OS: OSDP™ v1 & v2						
	SNA-W52-A/BT4-5AX: SSCP® v1 & v2- RS232						
	SNA-W53-A/BT4-7AX: SSCP® v1 & v2- RS485						
Peru	SNA-R51-A-U04-xx1PE: TTL			Philippines	SNA-R51-A-U04-xx1PH: TTL		
916 – 928 MHz	SNA-R52-A-U04-5AB1PE: RS232			918 – 920 MHz	SNA-R52-A-U04-5AB1PH: RS232		
	SNA-R53-A-U04-7AB1PE: RS485				SNA-R53-A-U04-7AB1PH: RS485		
	SNA-W53-A-U04-7OS1PE: OSDP™ v1 & v2				SNA-W53-A-U04-7OS1PH: OSDP™ v1 & v2		
	SNA-W52-A/BT4-5AX1PE: SSCP® v1 & v2- RS232				SNA-W52-A/BT4-5AX1PH: SSCP® v1 & v2- RS232		
	SNA-W53-A/BT4-7AX1PE: SSCP® v1 & v2- RS485				SNA-W53-A/BT4-7AX1PH: SSCP® v1 & v2- RS485		
New-Zealand	SNA-R51-A-BT4-xx1NZ: TTL			Australia	SNA-R51-A-BT4-xx1AU: TTL		
922 – 928 MHz	SNA-R52-A-BT4-5AB1NZ: RS232 SNA-R53-A-BT4-7AB1NZ: RS485			920 – 926 MHz	SNA-R52-A-BT4-5AB1AU: RS232 SNA-R53-A-BT4-7AB1AU: RS485		
	SNA-W53-A-BT4-7OS1NZ: OSDP™ v1 & v2				SNA-W53-A-BT4-7OS1AU: OSDP™ v1 & v2		
	SNA-W52-A/BT4-5AX1NZ: SSCP® v1 & v2- RS232				SNA-W52-A/BT4-5AX1AU: SSCP® v1 & v2- RS232		
	SNA-W53-A/BT4-7AX1NZ: SSCP® v1 & v2- RS485				SNA-W53-A/BT4-7AX1AU: SSCP® v1 & v2- RS485		

Contents

Power Supply Characteristics

Use an DC power supply ES1, PS1 (as per IEC EN 62368-1) for main supply.

- **Main power supply:** Typical: 12 Vdc
- **Consumption:** Typical: 0.9A under +12 Vdc
- **Range:** +10 Vdc up to +36 Vdc (indoor use)
- **Max:** 1.25A under +12 Vdc
- **Range:** +10 Vdc up to +30 Vdc (outdoor use)

Characteristics

- **Communication:** RS485 (L+ & L-) / RS232 (TD & RD) / TTL (Wiegand / Clock & Data)
- **Pin out:** Removable connectors 1×8 pins, thread 5.00mm/0.196 in
- **Temperature:** -22°F to +140°F
- **Protection:** IK10 certified Reader casing – IP65
- **Chip:** EPC1 Gen2 (ISO 18000-63) – 1 to 62 bytes max
- **I/O:** 1 input / 1 output
- **Buzzer:** Can be activated / deactivated by software and Master jumper
- **Relay 2A;** 24VDC
- 1 **LED:** 7 configurable colors (red, green, blue, orange, purple, turquoise, white)
- **Anti-intrusion:** Electromechanical switch + Infrared proximity sensor

Recommended Cables

- **RS485:** Use a multi-conductor shielded twisted pair cable. Max length 3 280 ft / 1000 m at 9600 baud.
- **RS232:** Max length 49.21 ft / 15 m.
- **Wiegand** / **Clock & Data:** Use a multi-conductor shielded untwisted
  2 cable AWG24 – 30 m / 98.4 ft max 4 cables AWG24 – 60 m / 196.9 ft max 6 cables AWG24 – 100 m / 328.1 ft

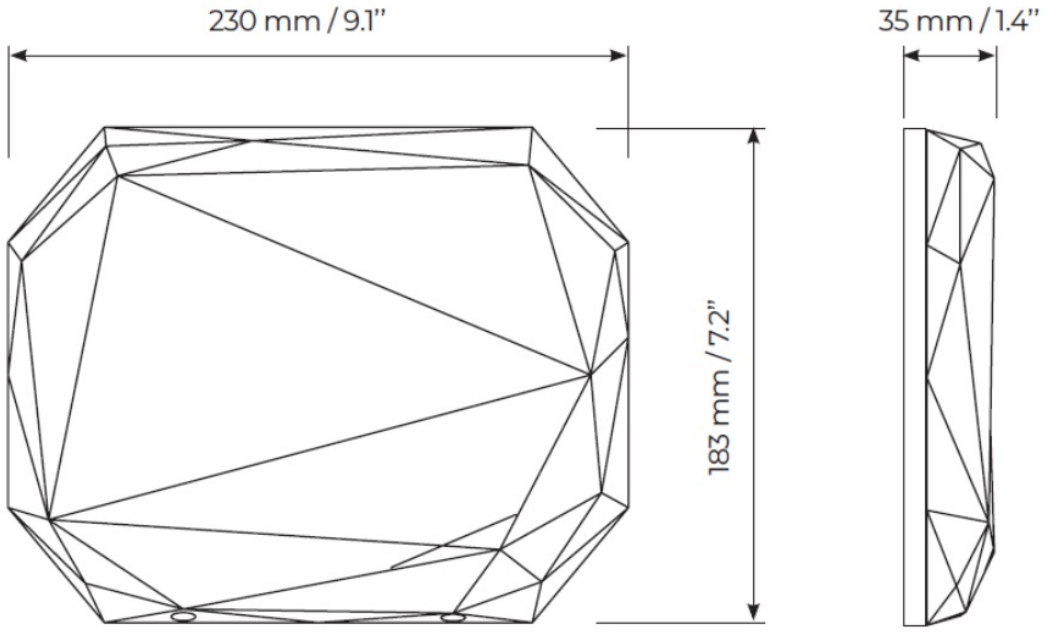
max

2 cable AWG20 – 50 m / 164. ft max 4 cables AWG20 – 100 m / 328.1 ft max

Recommendations

- Install the reader away from computer transmission cables or from power sources (ex: RJ45, sector…). The disruptions that they can cause can vary according to their radiation power and their proximity.
- Use a filtered and regulated power supply.
- Users must not remain within a range of less than, 34 cm / 13.39 in from an antenna for an extended period of time as per EN50364 applicable to this type of device.
- Before any service operation you must de-energize reader.

Dimensions (mm/in)

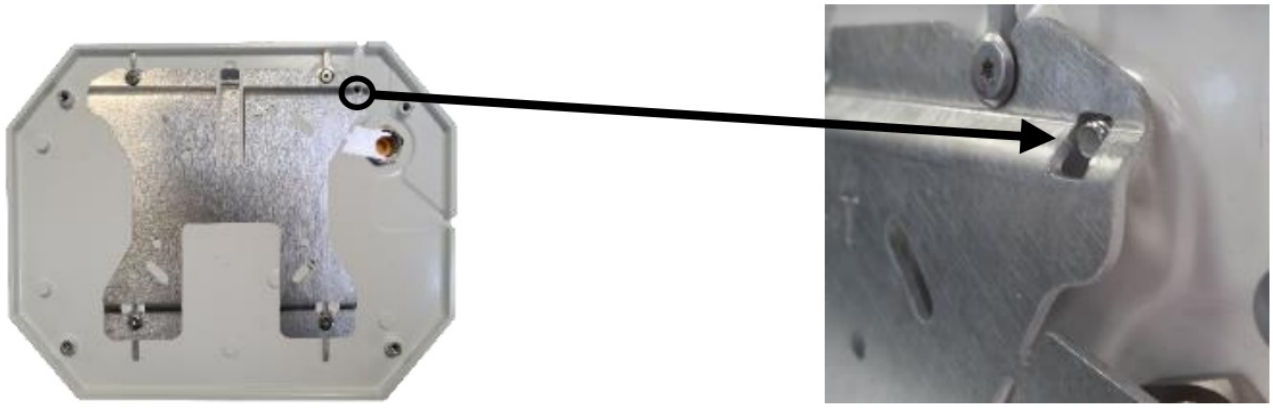


Mounting

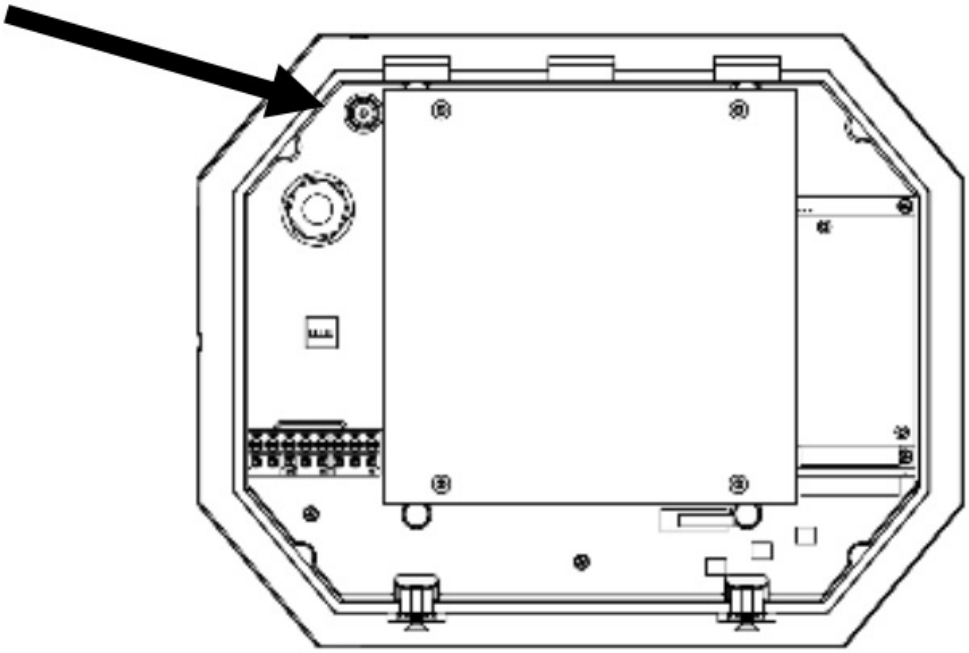
On delivery, the metal mounting plate is mounted on the reader

Step 1: Open the reader by unscrewing the two screws and lifting the cover.

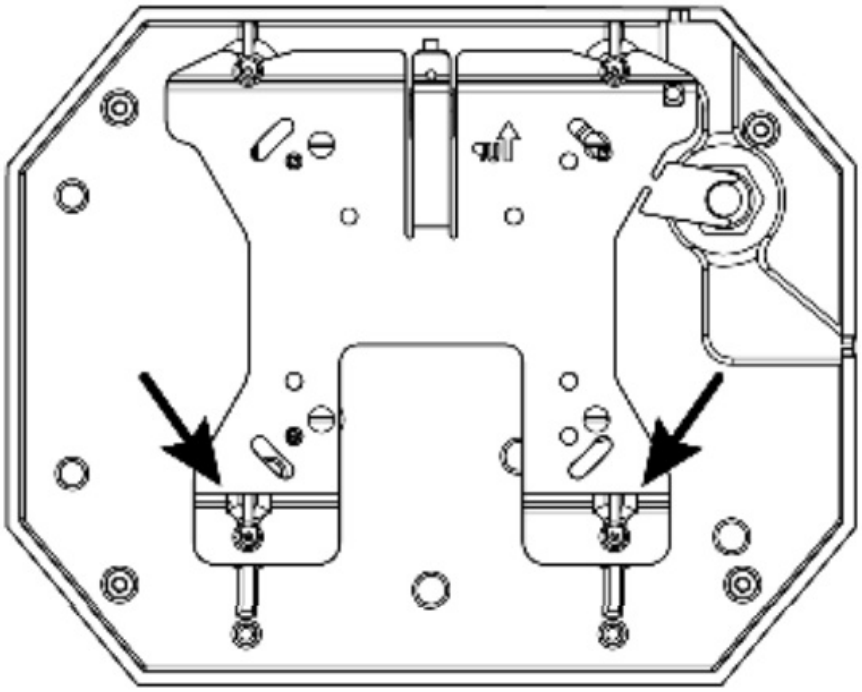
The reader is equipped with a locking screw that secures the reader plate to the metal mounting plate.

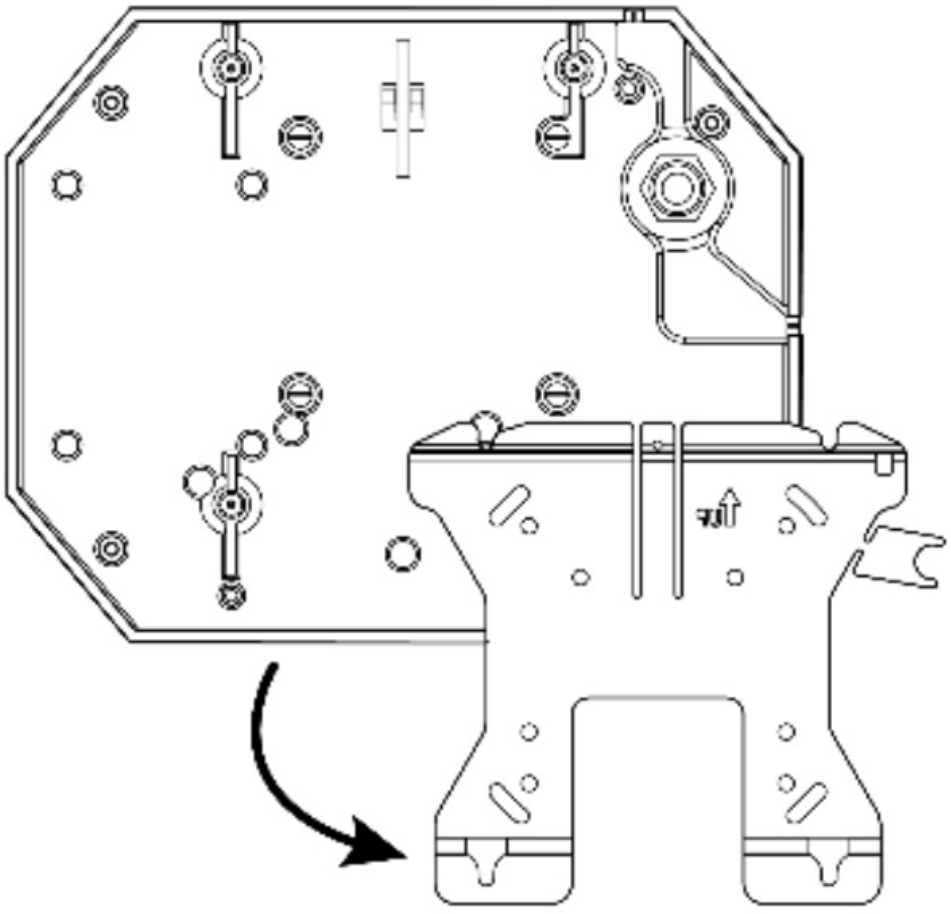


Step 2: Unscrew the locking screw with Torx T8 tool, **without removing the screw from the plate so as not to lose the seal.**



Step 3: Remove the metal mounting plate by exerting pressure on the metal plate while sliding it. Leave the four mounting screws in place.

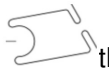


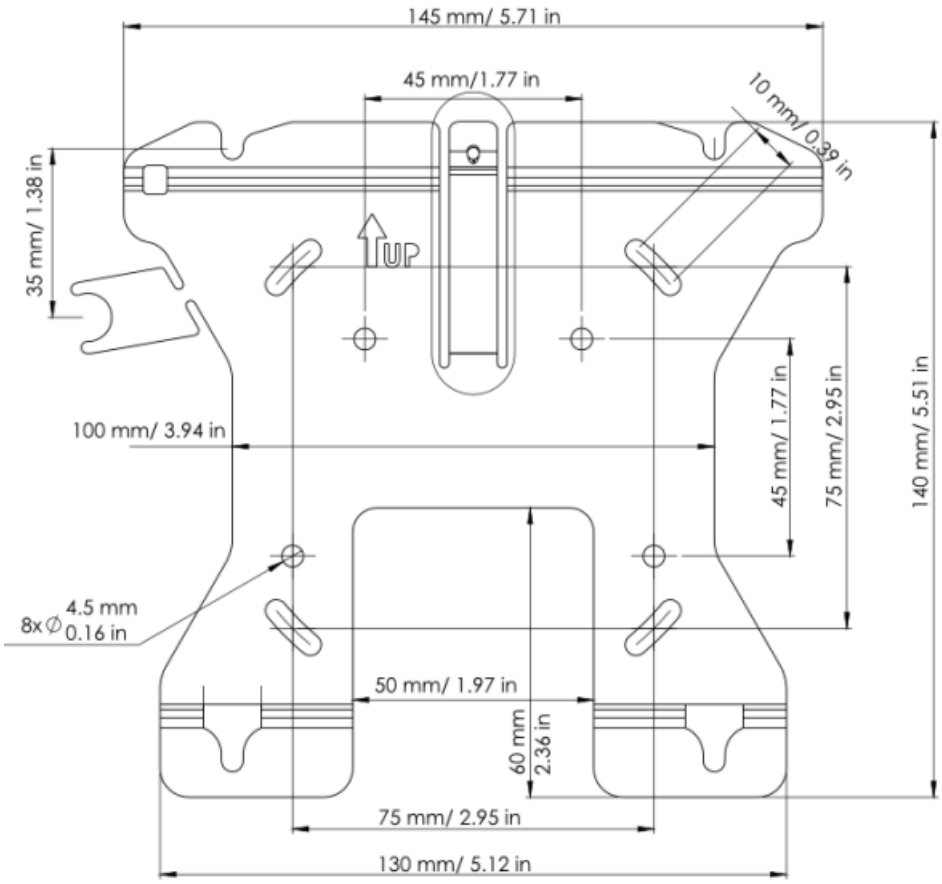


Wall Mounting

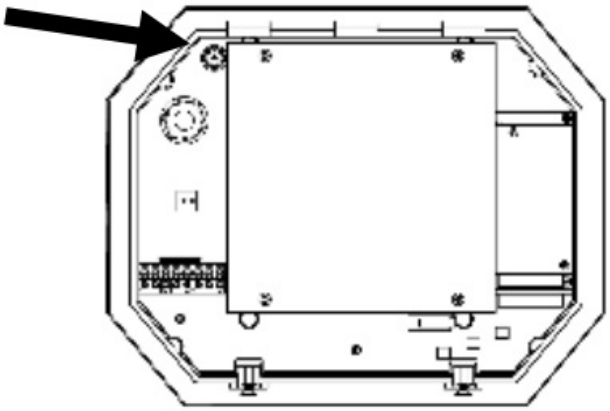
To fix the reader to a wall with the metal mounting plate please follow the Steps 1 to 3 to remove the metal mounting plate from the reader. Then follow the next steps:

Step 1: Place and mount the metal mounting plate onto the wall. Use the mounting plate as a drilling template

 this part serves as a marker for drilling the passage of the cables in the cable gland. It can be removed by bending or turning it on itself or by cutting it at the base



Step 2: Pass the wires through the reader cable gland. Adjust the emergent cable length to allow normal closing of the reader.
Step 3: Put the reader back on the mounting plate by sliding it down on the 4 mounting screws.
Step 4: Tighten the locking screw (with its gasket) with provided Torx T8 tool.



Mounting with KFX-UHF

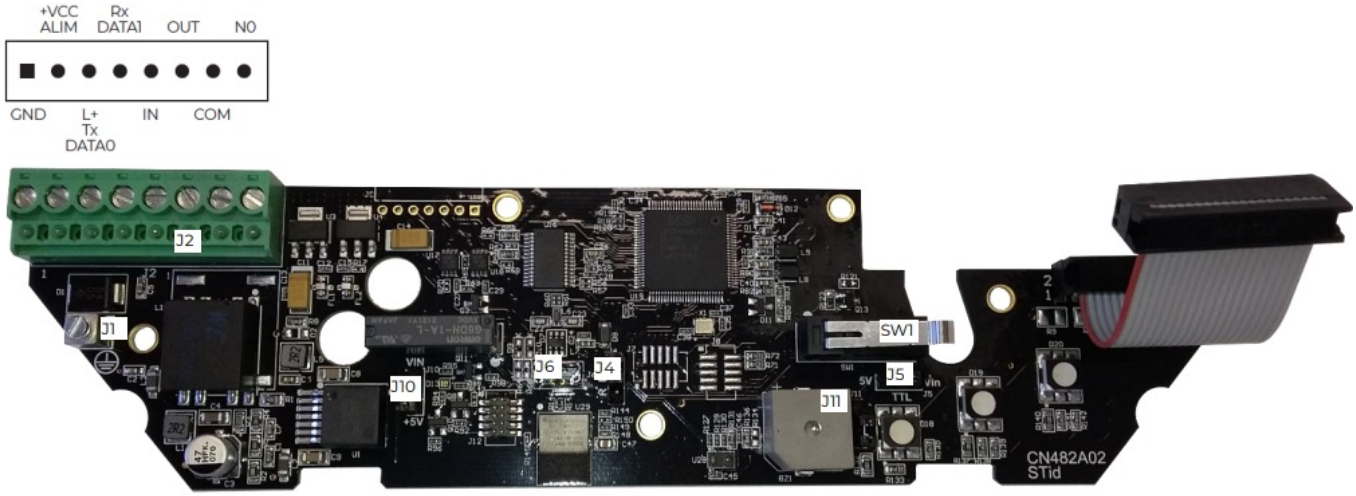
If you want to mount the reader with KFX-UHF, please follow the Steps 1 to 3 to remove the metal mounting plate from the reader. Then follow the next steps:

- Fix the standard 75×75 mm VESA type mounting bracket on the reader using the M4x12 stainless steel screws provided in the mounting kit.

- Adjustable pole-mounted kit (KFX-UHF-09)

- Adjustable wall-mounted kit (KFX-UHF-08)

TTL / RS232 / RS485 Connection



J1	Use this connector for earth connection purpose
J4	End of line resistor RS485 Use this (on RS485 connection) when the distance of the data cable is near or over 100 m / 328.08 f t and the signal is weakened (polluted signals, frame errors etc.).
J5	TTL output level: +5V or VIN
J6	Micro USB connector for configuration purposes only
J11	Buzzer
J10	Pull Up output: +5V or VIN
SW1	Anti-intrusion switch

J2	Type		
	Wiegand	**Clock & Data**	**RS485 / RS232**
1	GND		
2	+Vcc		
3	D0	DATA	L+ / TX
4	D1	CLOCK	L- / RX
5	IN	IN	IN
6	OUT	OUT	OUT
7	COM	COM	COM
8	NO	NO	NO

Configuration SNA Read only & OSDP

The reading mode (UHF or/and Bluetooth®), the communication protocol… are configurable with the ULTRYS software or when the reader is ordered.

- TTL protocols (Wiegand & ISO2):
  - ISO2 (Clock & Data) – Decimal (7 bytes max)
  - Wiegand 26-bit….
  - Wiegand with LRC – Hexadecimal (16 bytes max) + LRC
  - Wiegand without LRC – Hexadecimal (16 bytes max).
- Serial protocols (RS232 & RS485): The structure of the frame can be configured with the following optional parameters (in grey):

1 byte	*1 byte*	*1 byte*	*X bytes*	*1 byte*	*1 byte*	*1 byte*	*1 byte*
STX	***Lane number***	***ID-Tag***	***Tag Data****	***LRC***	***CR***	***LF***	***ETX***
0x02	*0x01*		*0x0y nn…..nn*		*0x0D*	*0x0A*	*0x03*

OSDP™ protocol (RS485: 7OS): refer to Spec_Protocole_7OS_OSDP_UHF-US.pdf

- STX+ETX: add 0x02 (STX) and 0x03 (ETX) at the start /end of frame – CR/LF: Carriage Return (0x0D + 0x0A) configurable separately
- LRC: Checksum (XOR of all previously bytes except STX) – Data sent in: decimal or hexadecimal

- ASCII: if this option is activated, the data will be sent in ASCII mode (data size will be doubled)
- Non-significant zero: complete the tag data with not significant 0 to obtain the defined data size
- Lane no. fixed to 01 (SNA has only 1 lane)

Start Sequence SNA Read only & OSDP™

When the reader is switched on, the white LED lights up. Reader initializing.
After initializing, the reader will look for a SCB/OCB UHF configuration card for about 15 s, Blue LED lights up.

If a configuration card is detected: the LED displays orange while reading data, then LED and buzzer gives the followings indications:

- 3 GREEN flashes (500ms ON; 500ms OFF) + buzzer at the same time: SCB/OCB UHF is taken into account.
- 3 RED flashes (500ms ON; 500ms OFF) + buzzer at the same time: the regulation (region) of the SCB/OCB UHF does not match to the regulation of the reader.
- 3 PURPLE flashes (500ms ON; 500ms OFF) + buzzer at the same time: the protection code of the SCB/OCB UHF does not match to the reader protection code.
- 5 RED flashes (500ms ON; 500ms OFF) + buzzer at the same time: the SCB/OCB UHF is not for SNA reader.
- no LED/Buzzer: the SCB/OCB UHF version does not match with reader version and the configuration card is not taken into account.

The end of the start sequence is indicated by the flashing of the reader LED white 3 times and buzzer sounds 3 times at the same time as the LED

Start Sequence SNA Read & Write

When the reader is switched on, the white LED & buzzer lights up. Reader initializing (a few seconds) then everything goes out. The reader then waits for commands.
Coming from the factory, the SPECTRE nano is compatible with SSCP® v1 and v2 communication protocols. You must use the Authenticate command to define the desired communication protocol.
All commands are available in the SSCP® protocol specification:
Spec_Protocole_SSCP_UHF_ACCESS_V1.2_FR.pdf.

Declaration of Compliance

STid declares that the SNA-R4x-A & SNA-R5x-A reader is compliant to the fundamental requirements of Directive RED 2014/53/EU and Directive RoHs 2011/65/EU and Commission Delegated Directive 2015/863/EU. A copy of our declaration is available upon request send to **qualite@stid.com.**

This device complies with Part 15 of the FCC rules and with Innovation, Science and Economic Development Canada’s license-exempt RSS(s). Operation is subject to the following two conditions

1) This device must not cause harmful interference.
2) This device must accept any interference received, including interference that may cause undesired operation

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can emit radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for assistance.
This equipment complies with FCC's and ISEDC's radiation exposure limits (using RSS-102 rules) set forth for an uncontrolled environment under the following conditions:
This equipment should be installed and operated such that a minimum separation distance of 34 cm / 13.39 in is maintained between the radiator (antenna) and the user's/nearby person's body at all times.
– The transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Documents / Resources

	STid SPECTRE NANO UHF and Bluetooth Multi Technology Reader [pdf] Instruction Manual OVNSNA, OVNSNA sna, SPECTRE NANO UHF and Bluetooth Multi Technology Reader, SPECTRE NANO, SPECTRE NANO Multi Technology Reader, UHF and Bluetooth Multi Technology Reader, UHF Multi Technology Reader, Bluetooth Multi Technology Reader, Multi Technology Reader, Reader