STid NI1127X08 UHF Spectre Access Module Instruction Manual

Installation procedure

UHF SPECTRE Access module

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NI1127X08 UHF Spectre Access Module

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

Power Supply Characteristics

Use an AC/DC power supply LPS type, Limited Power Source (as per IEC EN 60950-1 Ed2) or ES1 type, PS1 (as per IEC EN 62368-1) for main supply and for an eventual V+/V-.

Main power supply: Range +9 Vdc up to +36 Vdc
Typical: 12 Vdc
Advice:
To overcome the cable length effect on the supply voltage seen by the reader, it is recommended to use a 24V power supply
Consumption:
Typical: 1A under +12 Vdc
Max: 1.5A under +12 Vdc

Characteristics

	Read-only	OSDPTM	SSCP®
Communication:	RS485 (L+ & L-) / RS232 (Tx) TTL (Wiegand / Clock & Data)	RS485 (L+ & L-)	RS485 (L+ & L-) / RS232 (Tx & Rx)
Pin out:	Terminal block plug 3×4 pins and 1×8 pins, thread 3.81 mm / 0.149 in		
Temperature:	-25 to +60 °C / -13 to +140 °F		
Protection:	IK10 certified Reader casing – IP66		
Chip:	EPC1 Gen2 (ISO 18000-63) – 1 to 62 bytes max		
I/O:	4 optocoupled inputs and 4 optocoupled outputs		
Module LED:	1 red LED: presence of power supply and 1 green LED: activity on Reader / host link		

Recommended Cables

	Read-only	OSDPTM	SSCP®
RS485:	Use a multi-conductor shielded twisted pair cable – Max length 3 280 ft / 1000 m at 9600 baud.		
RS232:	Use a multi-conductor shielded twisted pair cable – Max length 49.21 ft / 15 m.	—	Use a multi-conductor shielded twisted pair cable – 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 module away from computer transmission cables or from power sources (ex: RJ45, AC power line…).
- The disruptions that they can cause can vary according to their radiation power and their proximity.
- Use a filtered and regulated power supply.
- Antennas connected to different modules may interfere with each other. Move them away from each other.
- A power supply which provides 1.5 A min under +12Vdc is recommended.
- If the IN/OUT are powered by the module, use a 2A min under +12Vdc 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.
- Only the hatch can be opened.
- Before any service operation you must de-energize reader.
- Check that the hatch seal is correctly positioned before closing.

- Do not remove the caps of unused cable glands:

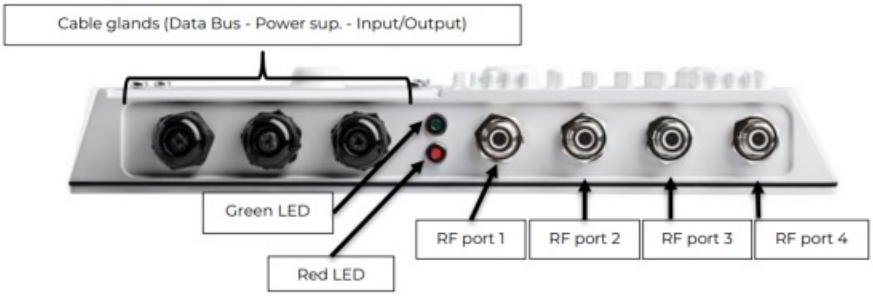
- Do not remove the caps from the unused RF connectors:

- Install the reader with the word UP facing upwards in that way the connectors are down:

- Careful: There is a 5.5 volts DC on each RF port.

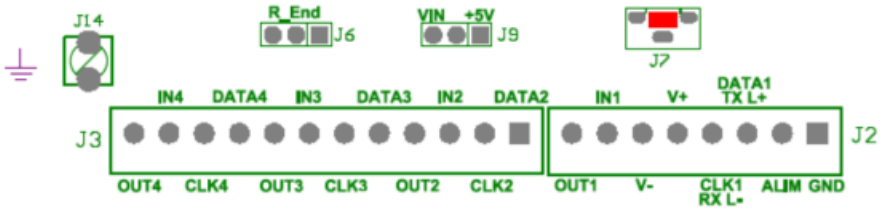
Host Connection
In order to access the module connectors, open only the hatch provided for this purpose by unscrewing the 4 captive screws without removing them from the hatch.

Front View of the module



TTL / RS232 / RS485 Connection

J6	*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 ft and the signal is weakened (polluted signals, frame errors etc.).
J9	*TTL output level: +5V or Vin*
J7	*Micro USB connector for configuration purposes only*
J14	*Use this connector for earth connection purpose*



	Read-only	**OSDPTM**	**SSCP®**
IN 1-2-3-4	4 opto-coupled inputs		
OUT 1-2-3-4	4 opto-coupled outputs		
V- opt	Low polarization potential of opto-coupled inputs and outputs		
V+ opt	High polarization potential of opto-coupled inputs and outputs		
DATA1	Data or D0 Channel 1 or Tx (*RS232)* or L+ (*RS485)*	L+ (*RS485)*	Tx (*RS232)* or L+ (*RS485)*
CLK1	Clock or D1 Channel 1 or L- (*RS485)*	L- (*RS485)*	Rx (*RS232)* or L- (*RS485)*
DATA 2 / **CLK2**	Data/Clock or D0/D1 Channel 2	Not used	
DATA 3 / **CLK3**	Data/Clock or D0/D1 Channel 3	Not used	
DATA 4 / **CLK4**	Data/Clock or D0/D1 Channel 4	Not used	
ALIM	Power supply		
GND	GND		

Configuration

Only STid antennas can be used with read-only and OSDPTM modules. Please refer to the STid antenna installation procedure for module/antenna compatibility.
The number of antennas & channels and the communication protocol are configurable with the Ultrys V2 application or when the module is ordered. Please refer to Ultrys for more details about configuration settings.

- TTL protocols (Wiegand & ISO2): please refer to Spec_Protocole_Wiegand_V2.1_EN & Spec_Protocole_Clock&Data_V2.1_EN.
- Serial protocols (RS232 & RS485): the structure of the frame can be configured with the ULTRYS application with the following optional parameters (in gray):

1 byte	1 byte + X bytes	1 byte	1 byte	1 byte	1 byte
STX	Channel number + Tag Data*	LRC	CR	LF	ETX
0x02	Ox0y nn…..nn		OxOD	OXOA	0x03

– ASCII: if this option is activated, the data will be sent in ASCII mode (data size will be doubled)
– Padding: complete the tag data with not significant 0 to obtain the defined data size – (Channel no. + 0 padding + tag data).

- OSDP™ protocol (RS485: 7OS): please refer to ULTRYS for more details about configuration settings + refer to Spec_Protocole_7OS_OSDP_UHF-EN.pdf.

Start Sequence

When the module is switched on, the module's red LED lights up. Module initializing.
After initializing, the module will look for a configuration tag for about 15 s, on antenna 1 (connected to RF port 1).

- If no tag detected: the antenna LED flashes "color RFON" (200ms) (blue by default) / RFOFF (200ms).
- If any tag detected: the antenna LED displays the sequence "color RFON" (blue by default) / "color DETECTION" (orange by default) for 200ms then LED OFF.
- If a configuration tag is detected: the antenna LED displays the sequence « color RFON "(blue by default) / "color DETECTION" (orange by default) for 200ms then LED OFF, then the antenna LED gives the followings indications:
  – 3 GREEN flashes (500ms ON; 200ms OFF): the configuration tag is taken into account.
  – 3 RED flashes (500ms ON; 200ms OFF): the regulation (region) of the configuration tag does not match to the regulation of the reader.
  – 3 PURPLE flashes (500ms ON; 200ms OFF): the key of the configuration tag does match to the reader key.
  – 5 RED flashes (500ms ON; 200ms OFF): the model of the reader of the configuration tag does match to the model of the reader.

The end of the start sequence is indicated by the flashing of the reader LEDs (red and green) 3 times (500ms ON; 500ms OFF).

Red/Green Module LED indication

Power supply OK: fixed red LED
Power supply too low: blinking red LED (500ms ON / 500ms OFF)
Temperature error: blinking red LED 5 times after all reading sequence. (RF Scan)
RF error, antenna problem: blinking red LED 3 times after all reading sequence. (RF Scan)
Communication: green LED

Operating Mode

When the module is switched on, the module's red LED lights up. Reader initializing.
After initializing:

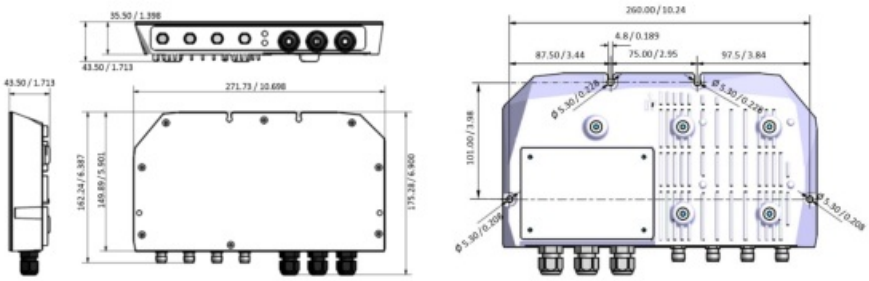
- If the module is a RS232 module: module's green LED blinked 3 times.
- If the module is a RS485 module: module's red LED blinked 3 times.

The module then waits for command.
More details about reader's communication are available in the protocol specification:
Spec_Protocole_SSCP_UHF_ACCESS.

Red/Green Module LED indication

Power supply OK: fixed red LED
Power supply too low: blinking red LED (500ms ON / 500ms OFF)
Communication: Green LED

Dimensions (mm/in)



Mounting

Mount with a 75 x 75 mm / 0.79 x 0.79 in VESA standard mounting bracketM4x12 stainless steel screws provided with mounting kit).

Or mount directly on a wall Ø 4×35 aluminum screws provided (TCL ALU 4×12).

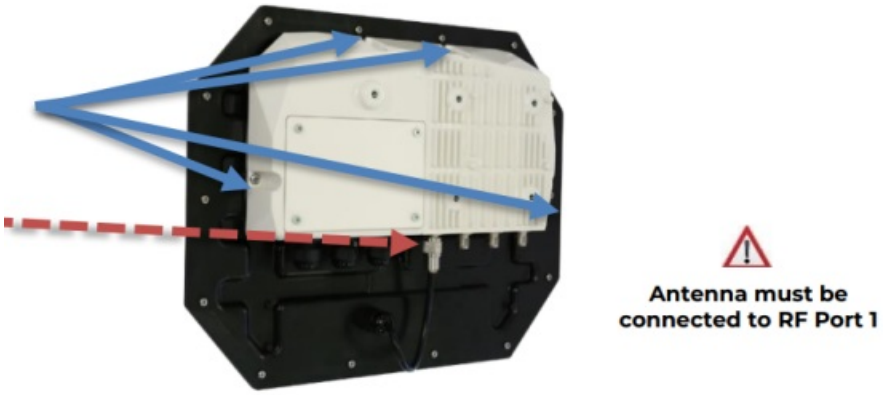
If you want to mount the module using KFX-UHF, please refer to the instruction procedure of the kits:

Adjustable wall-mounted kit: KFX-UHF-08 NI1096H

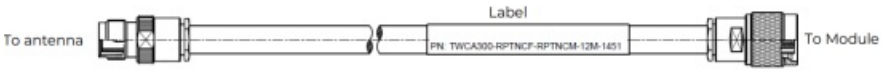
Adjustable pole-mounted kit: KFX-UHF-09 NI1096I

Mounting an Antenna UHF-SPECTRE on Module

- Attach the antenna on the module with the 4 screws (TCL ALU M4x12) provided with the module.
- Remove the cap from port RF 1.
- Connect the antenna to port RF 1 of the module.



⚠ The antenna cables have a male connector and a female connector.

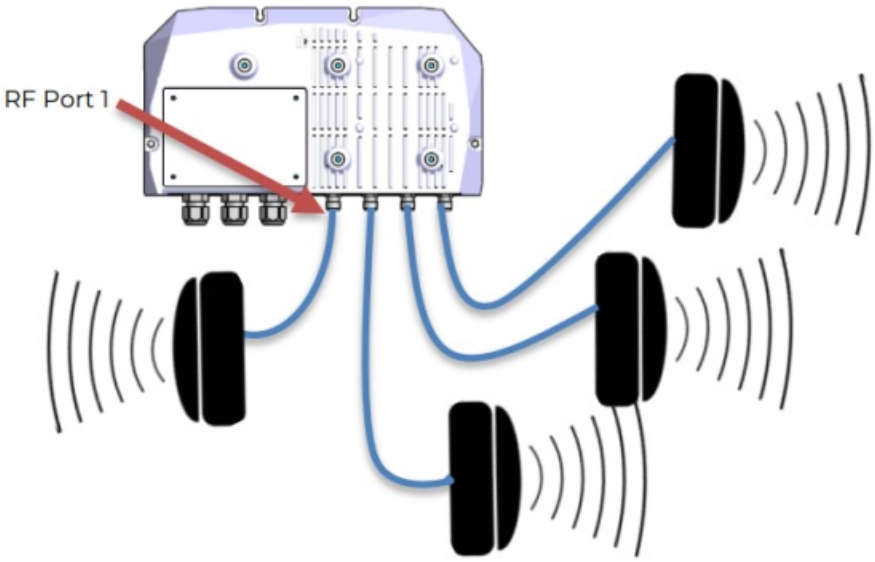


Length	Part number	Cable loss
1.5 m /4.92 ft	CAB-SPECTRE-1.5M	0.55 dB
3 m / 9.84 ft	CAB-SPECTRE-3M	1.1 dB
9 m / 29.53 ft	CAB-SPECTRE-9M	2.3 dB
12 m / 39.37 ft	CAB-SPECTRE-12M	2.4 dB

Note: cable losses add up when several cables are coupled. Ex: CAB-SPECTRE-1.5M (0.55 dB) + CAB-SPECTRE-3M (1.1 dB) = total loss 1.65 dB

Antenna Connection

⚠ An antenna must be connected to the RF port 1 (closed to the LEDs).



Read-only & OSDPTM	SSCP®
Check on Ultrys software, the possible cable combinations relative to antenna used.	It strongly advised that total cable loss doesn't exceed 3dB.

Declaration of Compliance

STid declares that the SMA-R5x/R4x-A modules are 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.

This device complies with CAN ICES-003(B) / NMB-003(B).

NI1127X08

Documents / Resources

	STid NI1127X08 UHF Spectre Access Module [pdf] Instruction Manual NI1127X08 UHF Spectre Access Module, NI1127X08, UHF Spectre Access Module, Spectre Access Module, Access Module

References

- Donner une seconde vie à mes équipements électriques | ecosystem
- User Manual

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