SpritControl®

Nozzle Reader with RFID r/w & Bluetooth
Earlier called BlueTank

Quick Start Guide Rev 5.0

Versions

This Quick Start Guide is valid for SpritControl® Nozzle Readers (SCNR).
The firmware is called SCNR (earlier called TagTrans)

System Requirements

Recommended Operating System:

- All systems which communicate with BlueTooth

Recommended Bluetooth Adapter

- BT USB Adapter Parani UD100
- BT-Serial Adapter Parani SD1000
- BT-Serial // USB Adapter SD1000U
- BT-Access Point / Gateway MSP1000
- ParaWIN software to manage connections (included with adapters)
- http://www.senanetworks.com/

Start Up Kit Packing List

- SpritControl Nozzle Reader with rubber mounting boot
- SD1000U BlueTooth Adapter
- Set of transponders, tags and smart labels

Battery

- Batteries are not included in the shipment.
- Please buy the batteries locally.
- The only allowed type is L91 Energizer Lithium Ion battery
- The battery is non rechargeable!
- https://data.energizer.com/pdfs/l91.pdf

Support Manuals Software Firmware

- Programming Manual and Software Tools see Support Website:
- www.datatronic.eu/support/support_f.html

About this Quick Start Guide

- This Quick Start Guide contains only the most basic setup instructions.
- http://www.datatronic.eu/support/SpritControl%20(BlueTank)/BlueTank_Quick_Start_Guide_E30.pdf
- For complete information refer to the Programming Manual.
- http://www.datatronic.eu/support/SpritControl%20(BlueTank)/BlueTank_Programming_Manual_E21.pdf

System Features

- The SCNReader has no switches and connectors.
- It is switched on by movement
- Switch OFF by software command or by time out.
- All functions of the **integrated RFID reader / writer** from CAEN, type R1270 Quark-Up are accessible transparent via the BlueTooth interface and not influenced by the reader firmware.
- https://www.caenrfid.com/en/products/r1270-quark-up/
- The **SCNReader firmware** offers hundreds of options for functionality and use of the reader. Switch On by shake or be reading angle, timeout scenarios, LED indication, Beeper, battery level control, etc.
- Customer specified firmware on request.

Hardware Preparation

- **Mounting the Reader to the nozzle**
- The SpritControl® reader housing is fitting perfectly to the rubber mounting boot.
- See instructions from Alvern Media.
- https://alvernmedia.com/technical/installation-guide/
- Standard shipment is with Z200 for ELAFLEX ZVA 25 and Slimmline
- Other boots are available in different colors and for other nozzles like OPW.
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- **Mounting the transponder**
- The transponder, tag or smart label should be fixed close to the filler neck.
- Examples see at http://www.spritcontrol.com/index.html
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- **Changing the battery** (it is a non-rechargeable battery!)
- Open with a T10 screwdriver the screw on the battery and electronic cabinet cover on the rear side of the reader.
- Remove the cover, take care of the O-ring seal.
- Insert L91 Lithium Ion batteries in the battery holder (NO OTHER TYPE)
- Fix the cover again, tightly, not to strong, with the O-ring the housing is IP68 watertight.
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- After the batteries are inserted the green LED is ON (until timeout or switched off by software %off – command)

Setup Instructions

Follow these instructions to set up the SpritControl® nozzle reader with a **Bluetooth *enabled*** PC running Windows.

First Startup

Move the reader with a gentle shake if in the firmware wakeup by shake is enabled (or over an angle of about 120° from vertical to down, if wakeup by angle is enabled) and the ***green LED*** will switch on to show that the system power is ON.

Status Indicator LED's

The reader is equipped with two LEDs to see the status of the reader.
The ***green LED*** is the **battery condition indicator**. To get the exact battery status, see settings: "get bat". If the battery is fully charged, the LED is ***green***. If this LED is ***orange***, the battery conditions are moderate to low. If the LED flashes some second ***red*** the battery must be changed. (not charged)
The ***blue LED*** indicates the **communication status**. It is ***blue*** after the BlueTooth connection is established. During a communication with the reader it blinks (depending on set up ***blue*** and ***red*** simultaneously.

Set up the connection to your host

Most easy you use ParaWIN together with the SD1000U BlueTooth adapter.
Start the ParaWIN software Installation CD is included in the adapter package) and set the parameters by selecting the COM port of the SD1000U USB adapter , select the BaudRate 9600 (later change to 115.200), and Parity None, StopBit 1.

Select “Connection” to search for the SCNReader which will prompt with **SpritControl®** firmware **SCNReader HW 2.2 SW 012.21** …

You can set the **Pin Code** (default pin = 1234, to change the pin or disable it see Settings / Commands), so the unit can be paired to the host (/ PC or Bluetooth adapter).

Instead of using ParaWIN and ParaniSena adapters you can use any BluTooth connection with external or internal adapters and BlueTooth stacks.
The Bluetooth software will set up a virtual COM-Port. Use this com-port to communicate between the SpritControl® Nozzle Reader and any terminal program like TeraTerm, or Hyperterminal, etc... As soon as the SCNReader is paired and the Bluetooth/serial connection is completed to a host, the ***blue LED*** will indicats that a proper communication is established.
Now the SpritControl® Nozzle Reader is connected.

In order to save **battery life** the unit will go to sleep (Sleep mode) after a period of being idle (Stand by Mode). The Stand by Mode is configurable. (timeout see settings: t1 – t3). The unit will wake up from Sleep Mode in Stand by Mode by shaking or by wakeup by angle.
If you do not move the unit or read tags or send commands, the SCNReader will switch off by timeout, depending on the setings of t1 – t3 e.g. after 60 seconds. It will change into Sleep Mode. To retrigger the SCNReader shake it or move it over the programmed angle. It restarts and reconnects to the host automatically, if BlueTooth stack is configured accordingly.

Reading a transpoder

Switch on the SCNReader by moving and check if the Blue LED has switched on (with a Beep)
The easiest way to read a tag is to use software from CAEN:

1. **“CAEN RFID EasyController” Software” for Windows Setup_1_4_3**
   Download this program from our support Website.
   http://www.datatronic.eu/support/RFID_UHF/Easy_Controller_Software/Setup_1_6_0.zip
   Got to: File – Connect – Connection Type RS232 Connecttion: select the virtual COM Port which was assigned from the Bluetooth stack or ParaWIN.

   Start „Inventory“
   Place the transponder near the SCNozzle Reader and you will see the EPC code of the transponder.
   Many other settings and programming features are available.
   For all details see the Technical Information Manual.
   http://www.datatronic.eu/support/RFID_UHF/Easy_Controller_Software/EasyController_Technical_Information_Manual_rev01.pdf

   The reader antenna has a linear polarization, therefore reading distances depend on orientation and alignement of the transponder.

2. **Handy App “CAEN EasyController” Software for Android and IOS**
   Download this program from Play store

Serial Port Settings:

Change the settings in your terminal program:
COM Port: according BlueTooth adapter
Baud rate: 115.200
Data: 8 bit
Parity: none
Stop: 1 bit
Flow control: none

Settings

It is possible to see and change settings of your SCNReader with easy to understand **%-Commands**, using a terminal program.
The *commands* for the SCNReader firmware settings always start with a **"%"**-character and need to be sent/confirmed by "*carriage return*", otherwise it is misunderstood as a reader-command and does not reach the microcontroller of the SCNReader.
To get a list of most important settings/commands and the firmware versions of the SpritControl® send ***"%help":***

Input ***%help***	**Output instruction list**
	%SCNReader HW 2.2 SW 0.12.21 UHF 3AMS Build Time Jul 30 2020 12:25:34
	%get to ... get timeouts
	toff actual time until power off
	troff actual time until reader off
	t1 timeout power off
	t2 retrigger time power off
	t3 retrigger time reader off
	%set t1 xxxxx ... set timeout power off to xxxxx seconds
	%set t2 xxxxx ... set retrigger time power off to xxxxx seconds
	%set t3 xxxxx ... set retrigger time reader off to xxxxx seconds
	%get bat/bth ... get battery level/thresholds
	%set pin xxxx ... set pin (max 16 digits)
	%set name xxxx ... add string to friendly name (max 32 digits)
	%get acon ... get state of auto connect %set acon on/off ... set auto connect on/off
	%del pair ... delete pairing
	%blink help ... lists blink commands %get br ... get actual baud rate %set br xxx ... set baud rate to xxx 47 -> 9600, 23 -> 19200, 11 -> 38400, 7 -> 57600, 3 -> 115200
	%ax help ... lists 3axis motion sensor commands
	%off ... power down
	%sendbt set ... lists setting of the BlueTooth module and MAC address

General support questions:

Support Website: www.datatronic.eu/support/support_f.html

Please send any questions to mail@datatroic.eu