User manual

For installation, operation and service

V-Scan

Article number 5275571

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Version overview

Manual version 2.0 / December 2007	Draft version of this document, not released
Manual version 2.1 / January 2008	First version of this document
Manual version 2.2 / June 2008	Manual name changed, not released
Manual version 2.3 / June 2008	Data manager items removed from manual
Manual version 2.4 / September 2008	Battery specifications changed. Appendix A updated. Menu changes V-Scan implemented.
Manual version 2.5 / May 2009	Manual updated for V-scan software version 2.0
Manual version 2.6 / May 2010	Manual updated for V-scan software version 2.1
Manual version 2.7 / August 2012	Manual updated for FCC and IC warning and logos.

Compliance statements (part15.19)
This device complies with part 15 of the FCC Rules and to RSS210 of Industry Canada.
Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil se conforme aux normes RSS210 exemptés de license du Industry Canada. L'opération est soumis aux deux conditions suivantes:
(1) cet appareil ne doit causer aucune interférence, et
(2) cet appareil doit accepter n'importe quelle interférence, y inclus interférence qui peut causer une opération non pas voulu de cet appareil.

Warning (part15.21)
Changes or modifications not expressly approved by party responsible for compliance could void the user's authority to operate the equipment.

Preface

This manual describes the installation, operation, troubleshooting and maintenance of the **V-Scan handheld reader**. Read this manual entirely and install the V-Scan step by step as described in the manual.

Pictograms

Please pay extra attention here. This pictogram indicates an important subject.

More information

Later versions of this document will be posted to the Nedap Agri Website, as required. Please visit our website (http://www.nedap-agri.com) for more information or to find related manuals. For questions or for further information, please contact your dealer or Nedap Agri.

Software

Check our website (http://www.nedap-agri.com) for the newest software releases.

Table of contents

1. Introduction

The V-Scan Hand held reader is the final stage in benefiting from RF animal ID. It is used for reliable ISO tag reading with animal data display along with user definable data input. Furthermore the V-Scan enables easy interfacing with any PC and/or PDA software application using the V-Scan Data Manager application software. Also an ASCII protocol is available to send the read and/or stored data in the V-Scan to an host application.
Moreover the V-Scan can be connected to the Velos management system. In that case the V-Scan – Velos synchronisation application transfers data between the Velos processing unit (VPU) and the V-Scan.

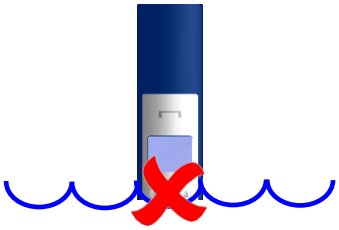
Summarized:

- Easy and reliable animal identification
- ISO compliant RF reader
- Ergonomic design
- Audible and visible reading confirmation
- Easy data transfer between V-Scan and any PC software via USB or Bluetooth
- Data entry in user definable database
- Interfacing with Nedap Velos Management System

The hand held reader is delivered together with a Software package, battery charger and USB cable. The matching type of charger is provided (110V or 230V) depending on the V-Scan model ordered (EU or USA). Optionally a car adaptor charger (12/24V DC) can be ordered.

2. Safety

Before connecting and using the V-Scan read this information. Not following this guidelines may be dangerous and helps to avoid possible problems using the V-Scan. Read this complete user manual for further information.



- Do not submerge.
- Do not power hose.

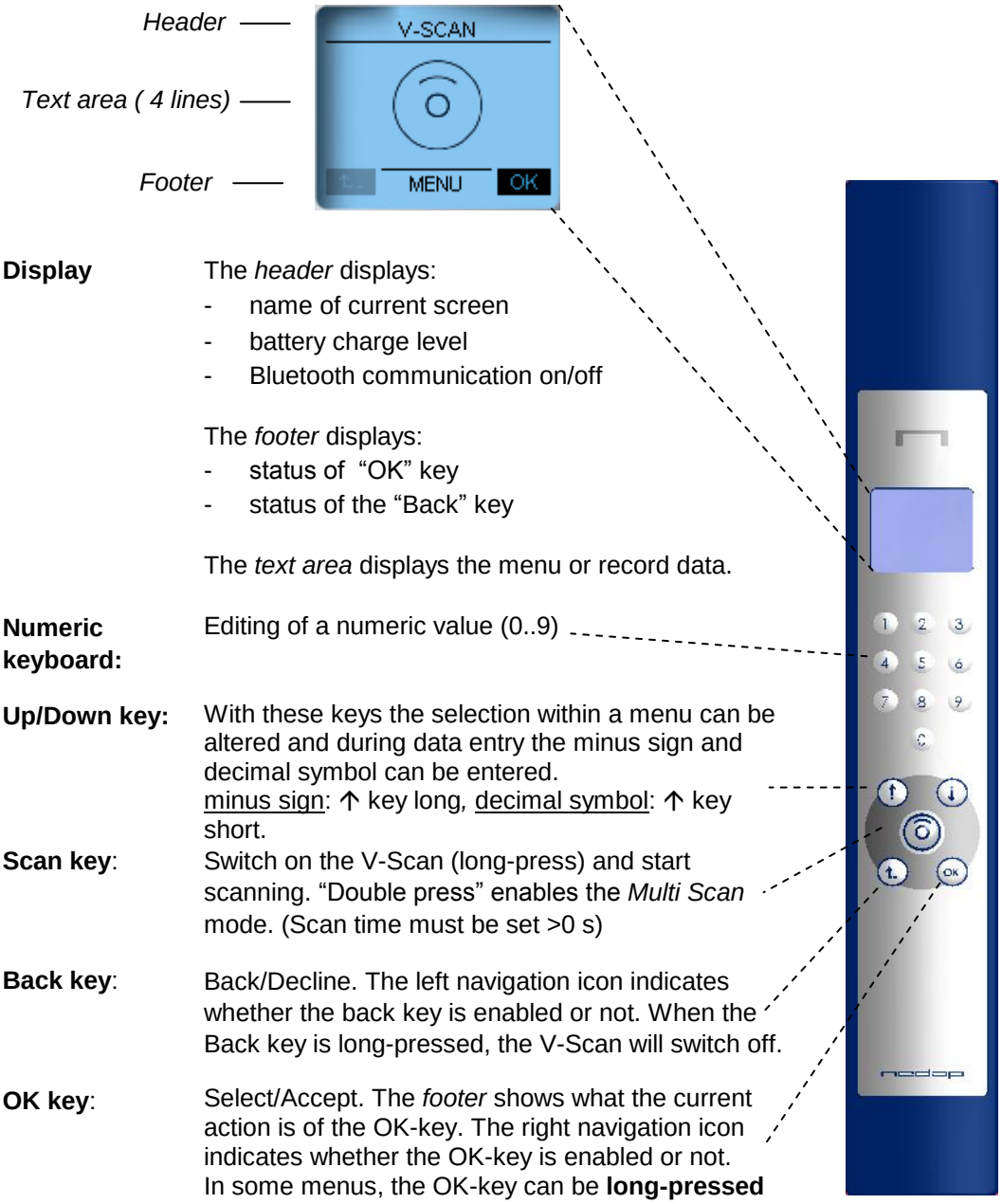
Keep connectors free of dirt. Always close lid when cables are not connected.

Use wrist cord to prevent from dropping.

The V-Scan can be rinsed with water for cleaning.

3. Description

3.1. Interface



- **Display** The *header* displays:
  - name of current screen
  - battery charge level
  - Bluetooth communication on/off

  The *footer* displays:
  - status of "OK" key
  - status of the "Back" key

  The *text area* displays the menu or record data.

- **Numeric keyboard:** Editing of a numeric value (0..9)

- **Up/Down key:** With these keys the selection within a menu can be altered and during data entry the minus sign and decimal symbol can be entered.
  minus sign: ↑ key long, decimal symbol: ↑ key short.

- **Scan key**: Switch on the V-Scan (long-press) and start scanning. "Double press" enables the *Multi Scan* mode. (Scan time must be set >0 s)

- **Back key**: Back/Decline. The left navigation icon indicates whether the back key is enabled or not. When the Back key is long-pressed, the V-Scan will switch off.

- **OK key**: Select/Accept. The *footer* shows what the current action is of the OK-key. The right navigation icon indicates whether the OK-key is enabled or not.
  In some menus, the OK-key can be **long-pressed** to activate a sub-option-menu. This is indicated with an up-arrow symbol ↑ after the "OK".

  OK Action in footer is activated by pressing OK button

  OK↑ Option menu available by pressing OK button long

3.2. Display icons

In the header the battery status and the connection status is displayed. The table below shows the meaning of the battery icons.

Icon	Function	Description
	**Battery capacity**	(100%.. 0%) , no charger connected
	**Fast charge**	Battery is fast charging.
	**Fast charge paused***	Currently not charging, waiting for correct temperature for fast charge
	**Trickle charge**	Fast charge is finished, charger is continuing with normal charge.
	**Charging finished**	Charging is finished but adapter is still connected.
	**Battery level is critical**	The V-Scan has detected a voltage-dip and battery needs to be charged as soon as possible to prevent data loss!

**) If the temperature of the batteries is too low or too high, the charger stops charging temporally until the right temperature is reached. The charger remains in fast charge mode until it detects the full status. Then a period of normal charging is done to achieve the maximum capacity.*

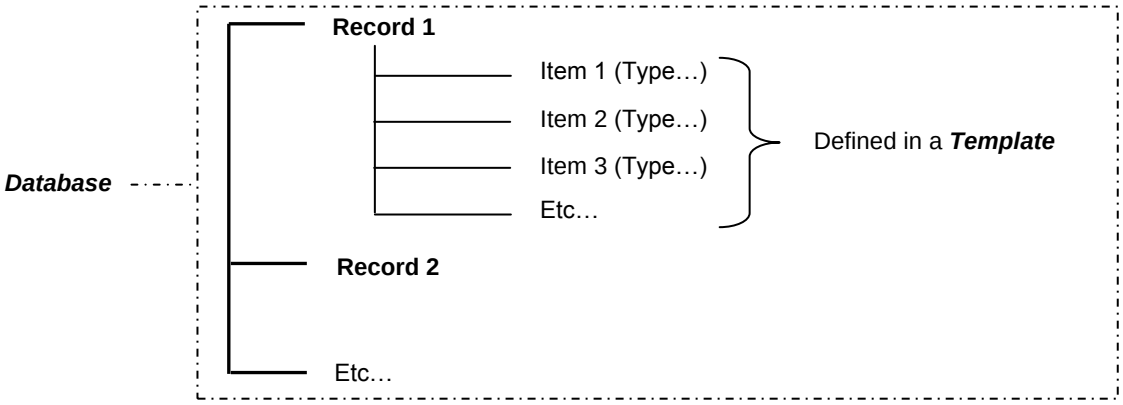
The table below shows the meaning of the communication icons:

Icon	Function	Description
	**USB cable connected**	USB cable connected.
	**USB cable connected and communication**	USB cable connected and communication is established with V-Scan application.
	**Bluetooth paired with host**	A host has paired the V-Scan device using Bluetooth
	**Bluetooth paired with host and communication**	A host has paired the V-Scan device using Bluetooth and communication is established with V-Scan application.

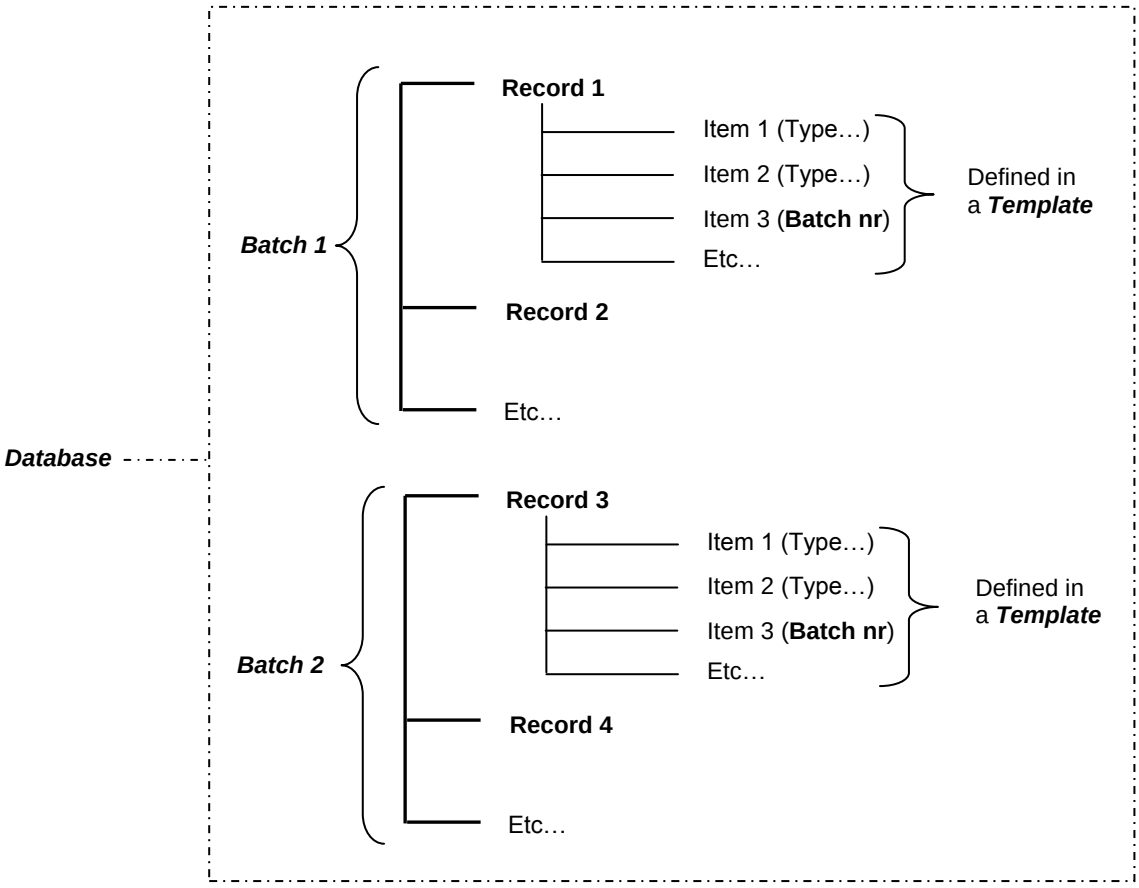
For a Bluetooth connection the V-Scan device must be paired. Appendix B explains how to pair a Bluetooth device using the PC.

3.3. V-Scan Database

The V-Scan database is filled with **records**. A record contains **items**. These items are defined in a **template**. Templates can be composed with the V-Scan or the V-Scan Data Manager. The format of an item is defined by the **data type**. Data types can be **System types** or **Custom types.** System types are item types which are entered by the V-Scan automatically after a tag is scanned. Custom types have to be entered by the user. In case of using the V-Scan - Velos Synchronisation, templates are generated automatically.



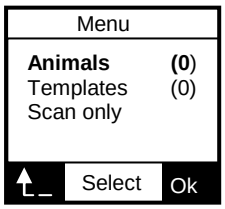
When records are stored grouped, series of records are joined together in a **batch**. One data item in the template has to be the system type **Batch nr**.



3.4. V-Scan menus

3.4.1. Main menu

When in the main screen the OK button is pressed, the **database menu** appears:

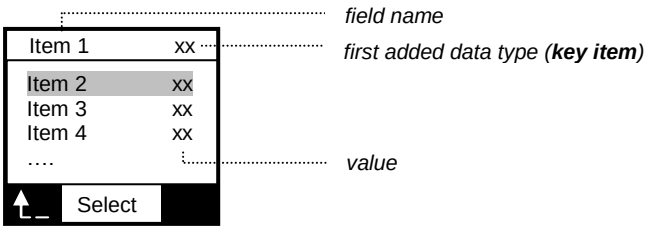


In this menu, the following options can be chosen:

- Animals: Viewing the records and deleting the database. When the data type **Batch nr** is an item in the template, management of batch scanning can be done (Set active, adding, deleting, renaming and viewing of batches). The name depends on the given Template Name.
- Templates: Management of **templates** (Set active, adding, deleting, viewing of templates).
- Scan only**:** When **Scan only** option is selected, tag-numbers are not stored, but the full tag information is displayed.

3.4.2. Record menu

Display record

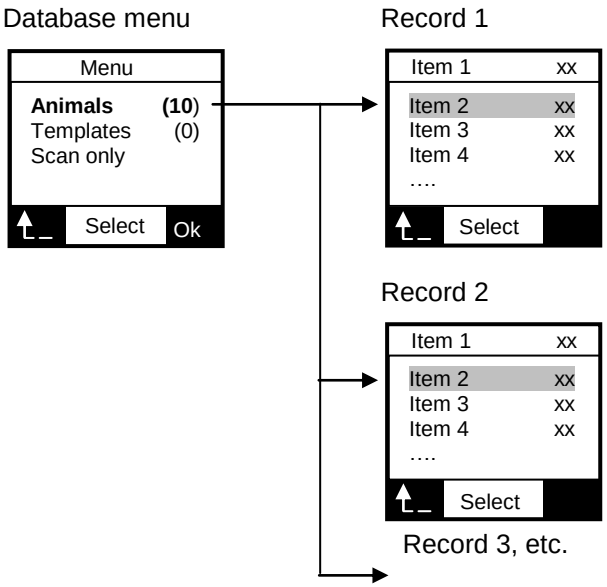


The record data is displayed as one field (type) per line. The **field name** is shown left and the current **value** on the right. When the selected field is a user type, the user can edit the value (except when the user type is a textual type, because the V-Scan does not support entering text).
To enter a **floating point number** (e.g. **- 20.8**): select the field, enter **20**, press **↑ key long** (minus sign appears), press **↑ key short** (decimal symbol appears), enter **8**, press the **OK button** to confirm.

Changing a tag number of a record
In order to change the tag number of a record, search or scroll to the record of which the tag number must be changed and press the **scan key**. When the scanned tag is a new tag number, the V-Scan asks if the current tag number must be overwritten. This will only be the case if the "Auto Create" setting is switched off (otherwise a new record is created instead of overwriting the current).

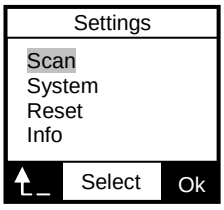
Searching a record
The first field of a record (the type added first, when the template was composed) can be used to search a record. Use the **Up/Down keys** ↑↓ for scrolling through the records. Select the record and press **OK button** to view record data. Also the searched value can be entered with the numeric keys. After entering the record data is displayed.

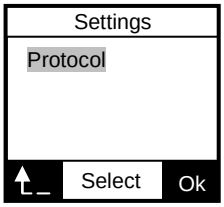
Displaying records
When a template is activated, the records are stored and displayed under the Animals option. Between the brackets the number of stored records is displayed: (10).



3.5. V-Scan settings

When in the main screen the **OK button** is **long-pressed**, the settings menu appears. Use the **Up/Down keys** ↑↓ to scroll through the settings menu.





In this menu (1st and 2nd screen), the following options can be chosen:

Scan
Change scan settings

- Auto create: Create a new record automatically or ask the user for confirmation.
- Scan time: The time the V-Scan keeps scanning for tags after the scan button is released.
  Also more than one tag can be scanned during one read-session. This is called **Multiscan**. This option can also be enabled once for one read-session, by "double press" the Scan key. The V-Scan keeps scanning until **Scan time** is passed or Scan key is pressed again.
  The Scan time must be set other than zero for the multiscan function.
- Sound: Select whether sound is enabled/disabled when scanning tags.

System
Change system settings

- Bluetooth: Switch the Bluetooth communication on/off.
- Language: Select the language of the menus.
- Date: Set the system date.
- Time: Set the system time.
- Contrast: Set the contrast level (1- 7) of the display. 1 means less contrast.
- Date format: Select display mode of the date, European (eur) or American date format (usa).

Reset
Restore V-Scan to factory settings.

Info
Displays system information

- Memory: Number of records in use / free.
- Battery: Displays battery voltage, battery level and status.
- Version: Version of V-Scan applications
- Bluetooth Bluetooth name of V-Scan

Protocol *(for details, see documentation VP5002-1000SS ASCII Protocols V-Scan)*
Type ASCII protocol to an host application

- Type Protocol type (Nedap, ISO, Sync)

In case Sync:

- Confirmation on/off. Confirmation of receiving data by host.
- Send All/new/off. Send mode after reading a tag.

4. Maintenance and cleaning

4.1. Batteries

The V-Scan is powered by four rechargeable batteries. The full performance of new batteries is achieved only after a few charge and discharge cycles. The ambient temperature for charging the batteries of the V-Scan must be between 5°C and 25°C. **Only use the charger (230/110V AC – 12VDC) provided along with the V-Scan.**

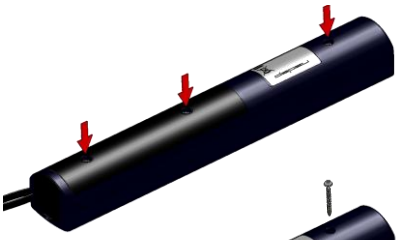
Before first use of the V-Scan, charge batteries at least 16 hours for obtaining the maximum battery capacity.

Connect the plug in the connector on the right side to charge the batteries.

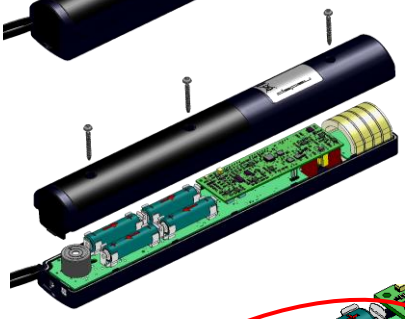
The batteries can be charged and discharged hundreds of times, but it will eventually wear out. When the scanning time is noticeable shorter than normal, replace the batteries. Warranty is not applicable for the rechargeable batteries.

Steps for replacement of rechargeable batteries:

1. Open the back cover of the V- Scan. Use **PZ2** screw driver.

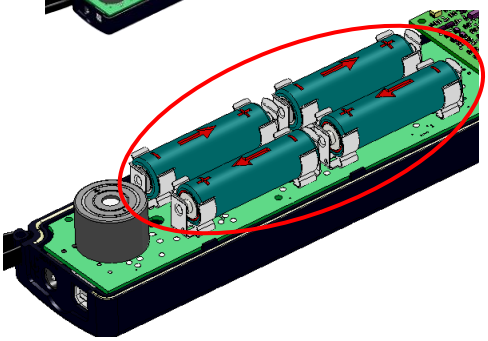


2. Open the back cover.



3. Replace the batteries. Mount the batteries in the correct direction. Watch the positive and negative terminals of the batteries for the direction.

   Dispose of batteries according to local regulations (e.g. recycling). Do not dispose as household waste.

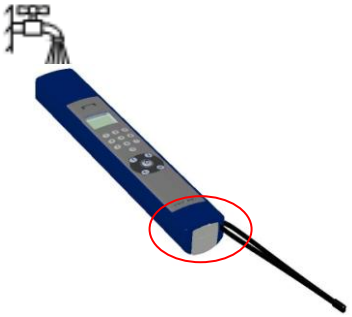


4. After replacing batteries, close the back cover and fix the screws firmly.
5. Connect the charger, now the V-Scan can be switched on.

Only replace batteries with same type (4x AA-size, rechargeable, Recyko+, 1.2V, 2100mAh, NiMH, GP210AAHCB)

4.2. Cleaning

The V-Scan can be rinsed with water for cleaning. Be sure that the cover lid is closed.



5. Disposal

The crossed-out wheeled bin means that within the European Union the product must be taken to separate collection at the product-end-of-life. This applies to your device but also to any enhancements marked with this symbol. Do not dispose of these products as unsorted municipal waste.

Appendix A Technical specifications

VP5002, V-Scan ISO hand Held Reader (EU/USA)

Physical	
Size (LxWxH)	330 x 50 x 40 mm
Weight	0,535 kg
Display	LCD with back light, 6 rows of 16 positions
Keyboard	Numeric + Menu control keys
Environment	
Operating temperature	-10 - +50 °C
Storage temperature	-25 - +50 °C
Relative humidity	30 -100 %
Protection classification	IP64
Reliability	
MTBF	200.000 hours
Expected Life	5 years, minimum
RFID	
Technology	ISO 11784 ISO 11785 FDX and HDX
Synchronization	ISO 11985 Annex C compliant
Reading distance	> 20 cm (depending on label)
Reading speed	< 70 msec
Reading confirmation	Audible and visible signal
Certifications	CE, IC, FCC
Data	
Clock	Real time clock for reading time stamp
Communication	USB 2.0 and Bluetooth (at least 5 m)
Format	ASCII (Nedap Dump, ISO Dump or Nedap Sync)
Memory	1 Mbyte static memory (=10000 animals)
Power	
Power source	4x AA-size, rechargeable, Recyko+, 1.2V, 2100mAh, NiMH (GP210AAHCB)
Stand-by	50 days
In action scanning tags	> 2 hours equals ± 5000 readings
Charging time	± 3 – 4 hours
Charger	230/110V AC – 12V DC > 1A
Accessories	Battery charger 230/110V AC – 12V DC, USB cable, Software package, User manuals

Appendix B Setup a Bluetooth connection

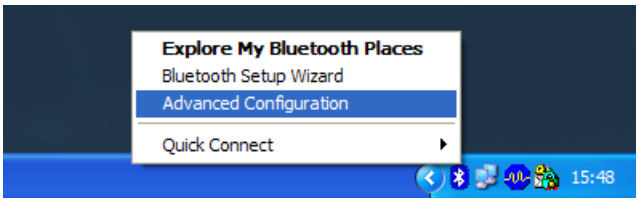
The V-Scan Application only communicates with serial COM Ports. The USB connection automatically generates a COM Port on the PC by the installed drivers. These drivers come along with the V-Scan Application.

The Bluetooth COM-Port driver software is not included in V-Scan Application installation software. This driver software is dependent on the manufacturer of your Bluetooth Device.

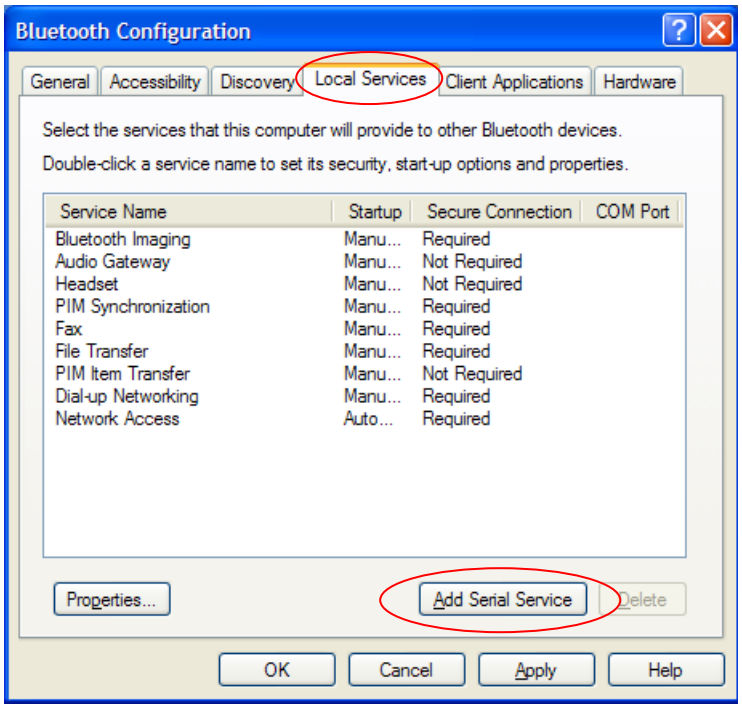
*Make sure that Bluetooth is switched on in the V-Scan. **Settings** > **System menu***

Before the V-Scan can be connected to the PC using Bluetooth, the “Bluetooth Serial Port” must be installed on the PC. Follow up next steps to setup the “Bluetooth serial Port” .

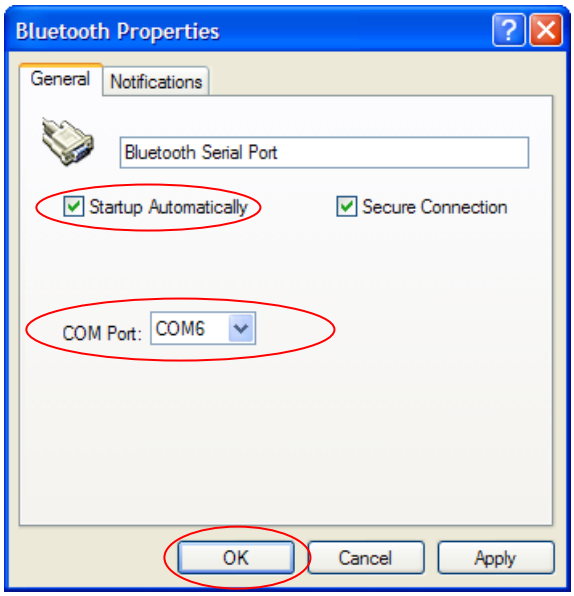
1. Right mouse button click on the icon in the system tray. Select *Advanced Configuration*.



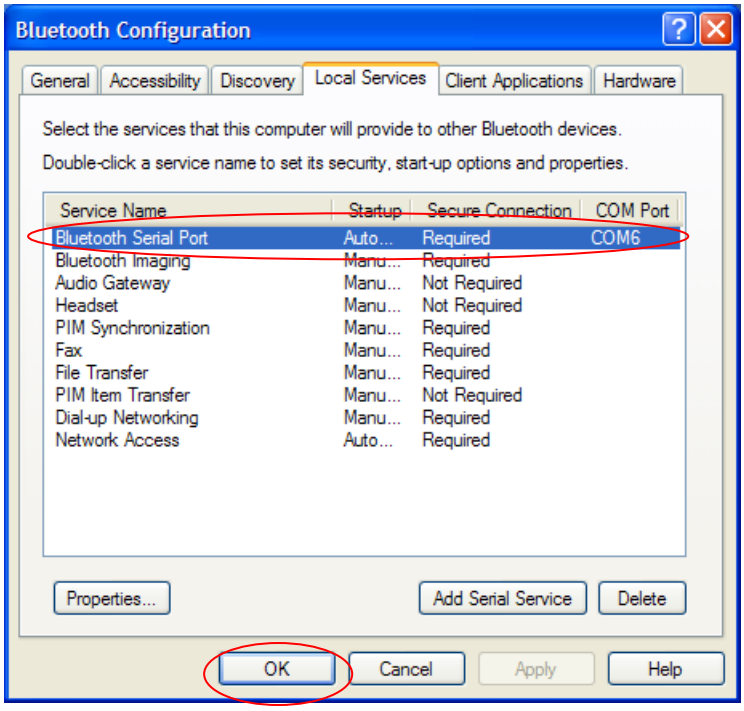
2. Open the tab “*Local Services*”. If no Bluetooth Serial Port is listed, click *Add Serial Device*. If a Bluetooth Serial Port is listed, start with **step 5**.



3. Select the *COM Port* and setup *Startup Automatically.* Click *OK* to save the setup.

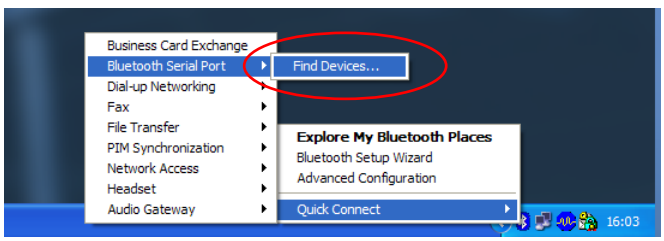


4. Now the Bluetooth Serial Port (COM 6) is setup, Click *OK*

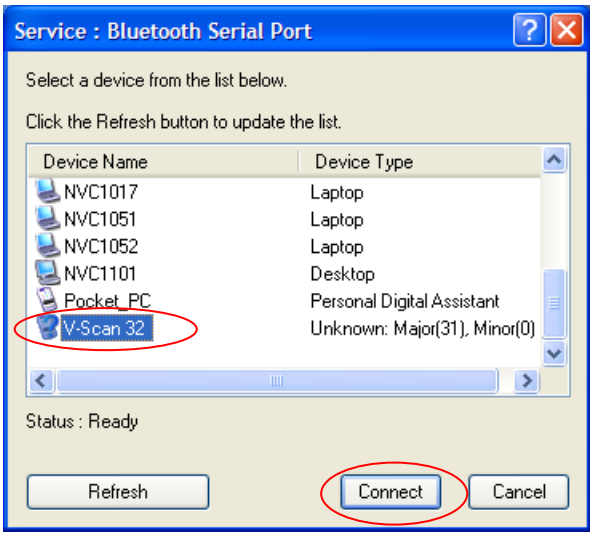


5. Switch on the V- Scan.

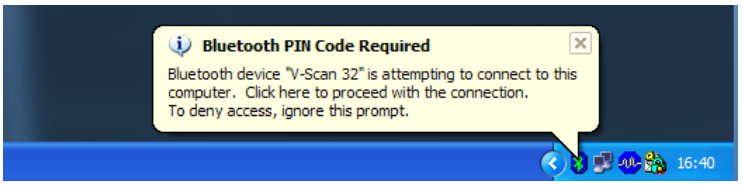
6. Right mouse button click on the icon in the system tray. Select *Find devices*.



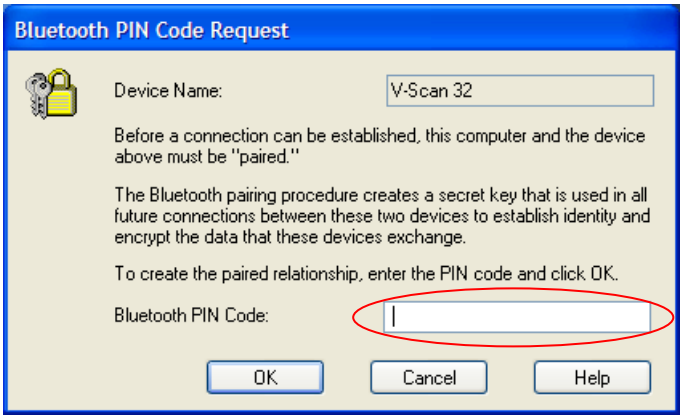
7. Click on the *Refresh* button. "**V-Scan xx**" will appear in the list. The V-Scan number is the last number of the V-Scan's serial number. Select the correct *V-Scan* and click *Connect*.



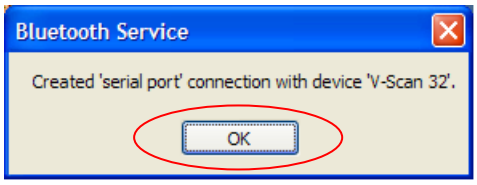
8. The PC starts to make a connection with the V-Scan ("pairing this V-Scan"). A pop-up balloon may appear in the right bottom corner of the screen. Click on the balloon.



9. Enter the PIN code "**0000**"(four zeros) and press *OK*.



10. Next screen appears. The connection with the V-Scan is made successfully. Click *OK*.



11. From now on the Bluetooth Serial Connection with the V-Scan is set up.

When the V-Scan switches off (automatically), the communication will be lost. It takes some time (> 5 seconds) before the V-Scan Application gets the "no connection signal" from the Bluetooth Serial Port. Also when the V-Scan is switched on again, it takes some time before the communication is established again.

After the setup, the Bluetooth connection will be established automatically. Steps to proceed:

1. Switch on the V-Scan
2. Start the V-Scan Data Manager / V-Scan – Velos synchronisation application.
3. The connection will be established automatically.

Appendix C Declarations

technology that matters

Declaration of Conformity

We, the undersigned,

Company	N.V. Nederlandsche Apparatenfabriek "Nedap"
Address, City, country	Parallelweg 2, 7141 DC Groenlo, The Netherlands
Phone number/Fax number	+31 544 471 162/+31 544 463 475

certify and declare under our sole responsibility that the following equipment:

Product description / Intended use	Cattle Code hand held transmitter operating at 134.2 kHz
Manufacturer	N.V. Nederlandsche Apparatenfabriek "Nedap"
Brand	Nedap and Roxell
Models VP5002 ROXELL, VP5002 VELOS and VP5004 VELOS, BlueMod +B20/AI	

is tested to and conforms with the essential requirements for protection of health and the safety of the user and any other person and Electromagnetic Compatibility, as included in following standards:

Standard	**Issue date**
EN 60950-1 and EN 60950-1/A11/A12 EN 62369-1 and EN 50364 EN 301 489-1V1.9.2 and -3 V1.4.1 NOTE: Immunity tested according to Industrial levels	2006 and 2009/2010/2011 Both 2010 2011 and 2002

and is tested to and conforms with the essential radio test suites so that it effectively uses the frequency spectrum allocated to terrestrial/space radio communication and orbital resources so to as to avoid harmful interference, as included in following standards:

Standard	**Issue date**
EN 300 330-1 V1.7.1 and -2 V 1.5.1	Both 2010

and therefore complies with the essential requirements and provisions of the **Directive 1999/5/EC** of the European Parliament and of the council of March 9, 1999 on Radio equipment and Telecommunications Terminal Equipment and the mutual recognition of their conformity and with the provisions of Annex III (Conformity Assessment procedure referred to in article 10).

The following laboratories and institutions performed the tests and issued the relevant reports:

Report- or Declaration Numbers	**Issued by**
12062004.e01, 12062004.p01, 12062004.p02, 12062004.r01, 12062004.s01	TÜV Rheinland EPS, Eiberkamp 10, 9351 VT Leek, The Netherlands
031012.s01, 041012.01_HE	Nedap, Parallelweg 2, 7141 DE Groenlo, The Netherlands
Manual Hardware Reference BlueMod+B20/AI	Stollmann Entwicklungs-und Vertriebs GmbH, Mendelssohnstr. 15d, 22761, Hamburg, Germany

The technical documentation as required by the Conformity Assessment procedure is kept at the following address:

Company	N.V. Nederlandsche Apparatenfabriek "Nedap"
Address, City + Country	Parallelweg 2, 7141 DC Groenlo, The Netherlands
E-mail	Jacques.Hulshof@nedap.com
TF reference nr.	041012.02
Drawn up in	Groenlo, The Netherlands
Date	04 October 2012
Name and position	Jacques A.M. Hulshof, Approbation Management

CE

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F (+31) 544 466 839 - info@nedap-agri.com - www.nedap-agri.com