DRAFT

User Manual

RFID Encoder

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FCC and IC statements

FCC statements

This device complies with Part 15 of the FCC Rules. 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.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference; in which case, correction of the interference is at the user's expense.
Important: **Changes or modifications to an intentional or unintentional radiator not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**

The end product must be labeled to say 'FCC ID: Y7V-681001025C1'.

Industry Canada statements

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The end product is labeled 'IC:9514A-681001025C1'.

The term "IC" before the equipment certification number only signifies that the Industry Canada technical specifications were met.

Le terme "IC" devant le numéro de certification signifie seulement que les specifications techniques Industrie Canada ont été respectées.

1. Introduction

The RFID encoder is used for encoding and verifying RFID cards. It can be used together with the below systems:

- Visionline
- VingCard Vision

Unless anything else is stated, the information in this document is valid for both systems.

Note: For upgrade of firmware in the RFID encoder, see Appendix C.

Figure 1: RFID encoder

2. To mount the encoder

The RFID encoder can either be mounted on a wall or be placed on a table etc; dimensions in Figure 2 below in mm (inches).

2.1 Dimensions

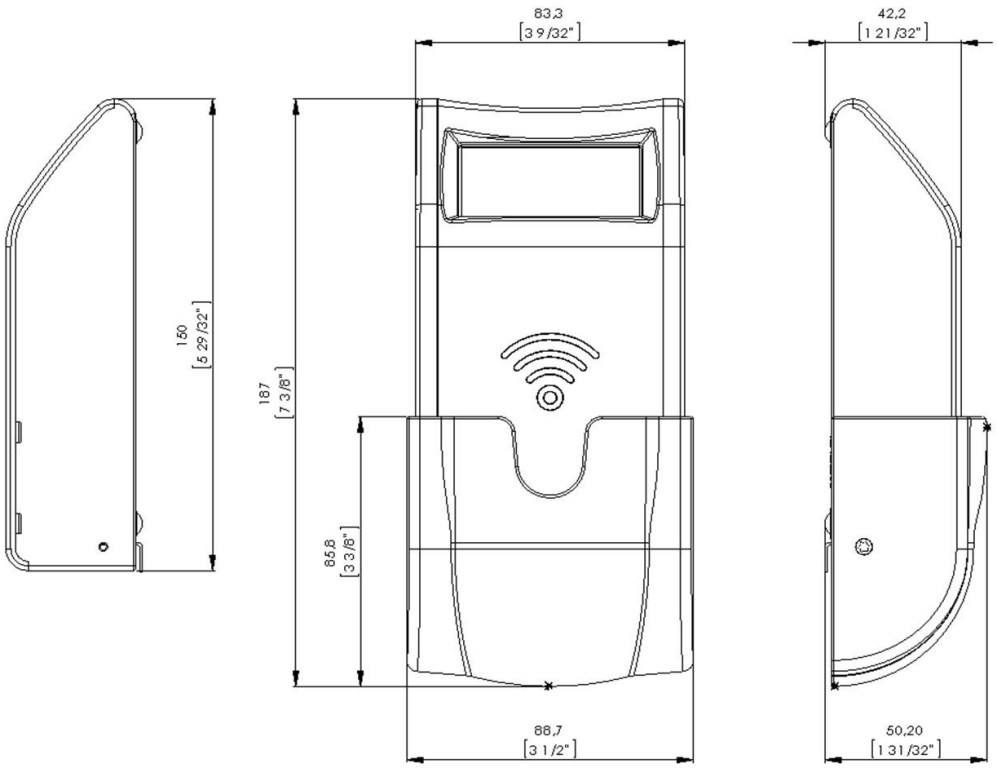


Figure 2: Encoder dimensions

Note: The RFID encoder can be mounted either horizontally or vertically.

2.2 Mounting kit

The RFID encoder is delivered with a mounting kit containing the following items:

Description	Quantity	Usage
Screws 2,9x25mm	2	For mounting the RFID encoder on a wall
Collar screw 3,5x25mm	1	For mounting the RFID encoder on a wall
Screws 2,5x6,4mm	4	For mounting the card holder and mounting brackets
Expand plugs 6x30	3	
Mounting brackets	2	
Adhesive Velcro strips	2	If the RFID encoder should be mounted without using screws

Table 1: Mounting kit

2.3 To mount on the wall

The encoder can be mounted on the wall either with the enclosed screws or with the enclosed Velcro strips.

If the encoder should be mounted with screws:

- fasten the mounting brackets at the bottom of the encoder with the two mounting bracket screws
- fasten the encoder on the wall with the collar screw at the suspension and two screws at the mounting brackets

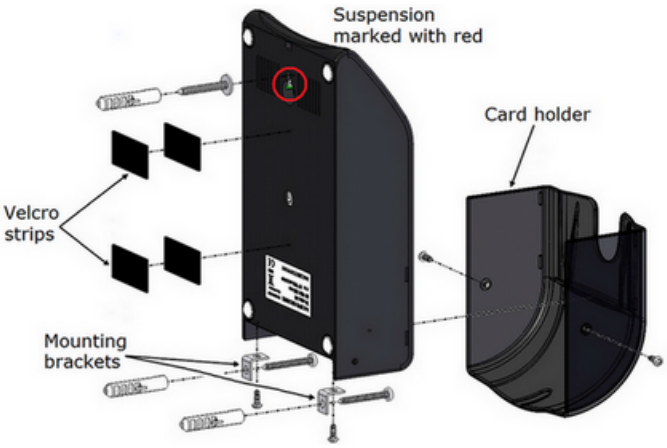


Figure 3: Exploded view of RFID encoder, card holder and mounting details

Note: When mounting the encoder on the wall, the parameter 'Wall mounted' must be enabled; this can be done via the **RFID Encoder Configuration Utility** (see chapter 5). If Visionline is applicable, it can also be done via the web interface (see chapter 7).

2.4 Card holder

If the RFID encoder is mounted on the wall, a card holder should be mounted on the encoder. The card holder, including two screws for fixation, are enclosed with the encoder at delivery.

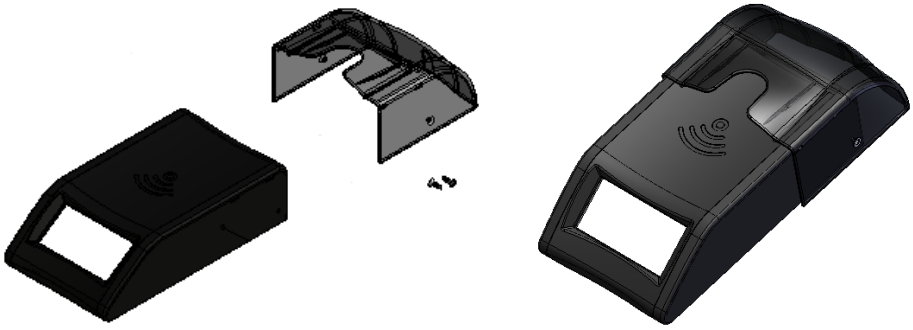


Figure 4: The card holder is snapped onto the RFID encoder and also fastened with two screws.

3. Electrical specification

There are several possibilities for powering:

- Power via PoE; *power over Ethernet*
- External power via adapter of 5VDC regulated voltage
- Power via USB (only applicable for Visionline)

3.1 Connectors

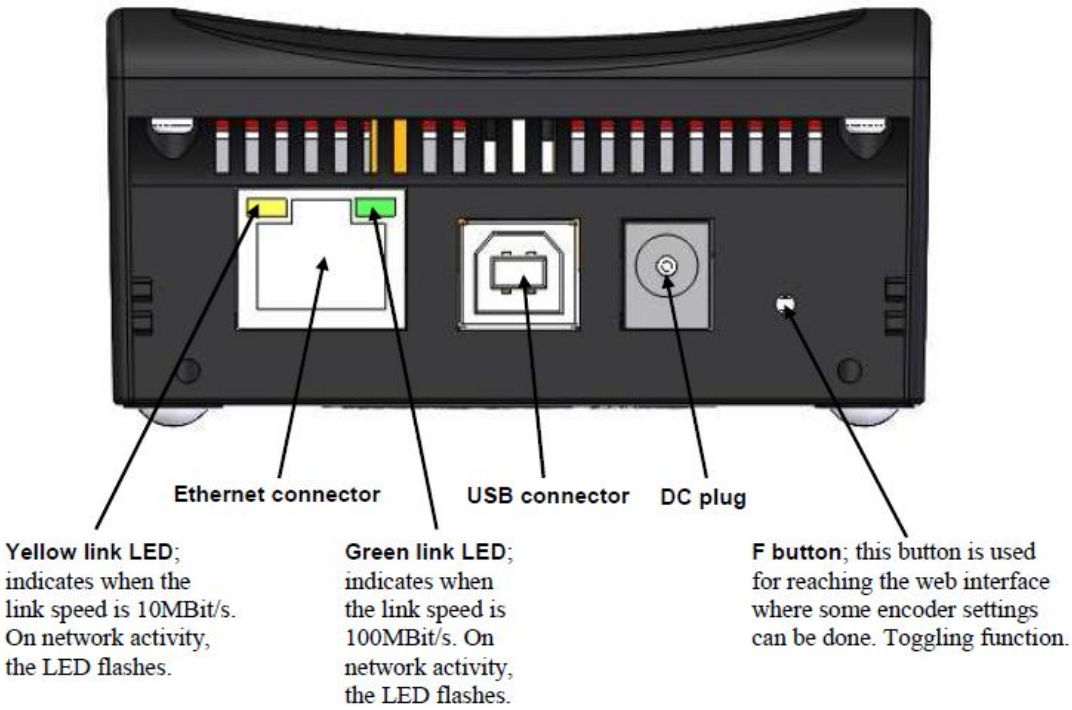


Figure 5: Rear panel of encoder

4. To connect to Visionline or VingCard Vision

4.1 To connect to the Visionline server

4.1.1 To connect via TCP/IP

If the encoder connects to the server via TCP/IP, it automatically adjusts to 10 or 100Mbit/s networks. The encoder starts by retrieving an IP address via DHCP; *Dynamic Host Configuration Protocol*. The encoder then automatically finds the server.

Note: When the encoder has been detected by the server, the display shows the date and time. An encoder device will automatically be added to the server.

If no DHCP server is available:

1. The display will show 'offline' and the encoder IP address (default 192.168.0.100, or another IP address if the encoder has already been connected to a network).
2. Shortly after, the IP address on the encoder display will change to an IP address in the range 169.254.1.0 – 169.254.254.255; this range is based on the *zero config* standard.

Note: When the RFID encoder has got an IP address, either via DHCP or via *zero config*, it makes an *announcement broadcast* which either the Visionline server or a connected ZigBee gateway should answer to. For more information about how the RFID encoder finds the server, see Appendix E.

4.1.2 To connect via USB

If the encoder should connect via USB, the following steps must be taken:

- The USBXpress driver must be installed; see Appendix B for details.
- An encoder device must be added to the Visionline device list; see details here.

Note: Power via USB is not always enough for the encoder. If this is the case, use the enclosed external power supply of 5VDC.

To add an encoder device in the Visionline device list:

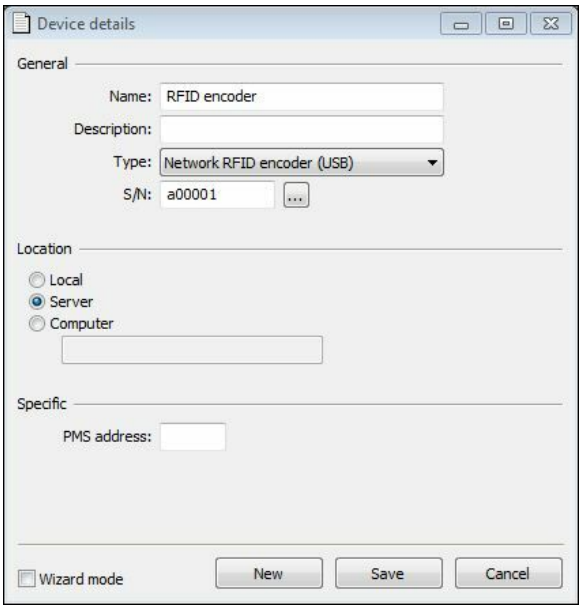


Figure 6

1. When the USBXpress driver has been installed according to Appendix B, open the Visionline device list by double clicking on **Devices** under the **Lists** tab in the navigation window.
2. In the **Devices** dialog, click **Add**; the **Device details** dialog will be shown.
3. Enter a **Name** for the encoder.
4. If desired, enter a **Description** for the encoder.
5. At **Type**, choose 'Network RFID encoder (USB)' in the drop-down-menu.

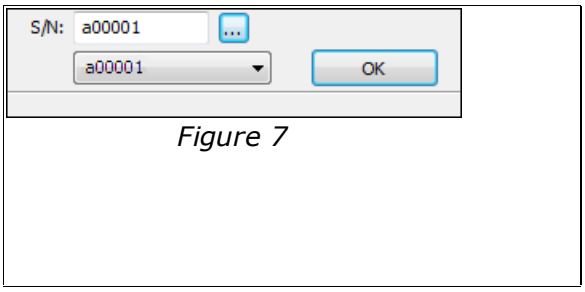


Figure 7

Figure 8

6. At **S/N**, click the button. All network RFID encoders that are connected via USB will be shown in the drop-down list; see Figure 7.
7. In the **Device details** dialog, mark the applicable radio button under **Location**. For **Server** and **Computer**, the field **PMS address** will be available; fill in this if applicable.
8. Click **Save** and **Close**.
9. Double click on **RFIDEncoderConfig.exe** which is available on the Visionline CD under **Drivers/RFID Encoder/ RFID Encoder Configuration Utility**; if the encoder is correctly connected to the PC and uses the USBXpress driver, the serial number of the encoder should be shown in the upper left window at **USB**; see example in Figure 8.
10. Follow the steps in section 5.1 to make the settings in **RFID Encoder Configuration Utility**.

4.1.3 RFID encoder in SysMon

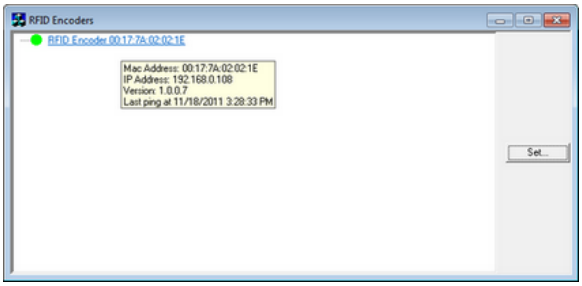


Figure 9

1. Double click on **SysMon.exe** in the Visionline installation folder.
2. Go to **View/RFID Encoders**; encoders that have been connected via TCP/IP will be shown. ***Note:*** When hovering over an RFID encoder in the **RFID Encoders** window of SysMon, information about *Mac address*, *IP address*, *firmware version* and *last ping* will be shown.

Note: For upgrade of firmware via SysMon, see Appendix C.

4.1.3.1 To rename the encoder

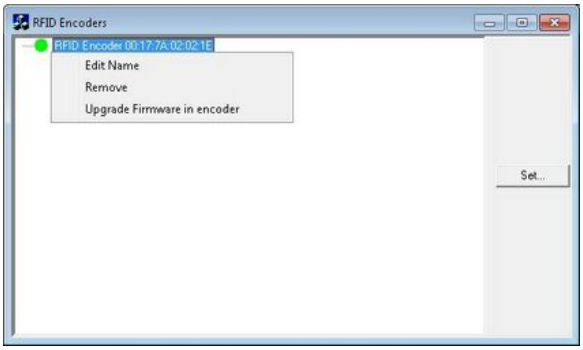


Figure 10

1. To rename an encoder, right click on it in SysMon and choose **Edit Name**.

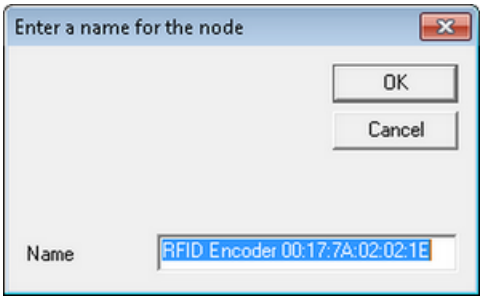


Figure 11

2. The dialog in Figure 11 will be shown; enter a name for the encoder and click **OK**.

4.2 To connect to the VingCard Vision server or workstation

4.2.1 To connect via TCP/IP

To make the RFID encoder accessible for VingCard Vision, the encoder must be assigned with four parameters:

- IP address
- IP port number
- gateway address
- subnet mask

Before setting the above parameters in **RFID Encoder Configuration Utility**, the USBXpress driver must be available for the RFID encoder to be able to connect and perform the setup. When the RFID encoder has been configured with the four parameters above, the encoder becomes backward compatible with the KDE encoder which connects via TCP/IP only and has a static IP address.

Figure 12

1. Install the USBXpress driver according to Appendix B.
2. Double click on **RFIDEncoderConfig.exe**; if the encoder is correctly connected to the PC and uses the USBXpress driver, the serial number of the encoder should be shown in the upper left window at USB; see example in Figure 12.
3. Follow the steps in section 5.2 to make the settings in **RFID Encoder Configuration Utility**.

5. Configuration utility

If the encoder parameters need to be modified to suit the network where the encoder is located, this can be done in **RFID Encoder Configuration Utility**. Table 2 below describes the configurable parameters.

For guidance about how to configure the RFID encoder for use together with Visionline, see section 5.1. For information about how to configure the RFID encoder for use together with VingCard Vision, see section 5.2. For default parameter values, see section 6.1.
Note: For Visionline, the parameters can also be changed via a web interface; see chapter 7.

Dynamic IP address (DHCP) ***Note:*** This parameter is only applicable for Visionline.	If this checkbox is marked, the RFID encoder retrieves an IP address via DHCP (*Dynamic Host Configuration Protocol*) and then automatically finds the server.
Host IP address	The IP address of the encoder
Subnet Mask	A mask used to determine what subnet an IP address belongs to
Announcement broadcast	If there is no DNS (*Domain Name System*), the RFID encoder will still find the server if this checkbox is marked
Emulate KDE	Emulate a KDE encoder ***Note for Visionline:*** With the 'emulate KDE' alternative marked, the web interface described in chapter 7 will not be available.
Wall mounted	This parameter changes the text orientation on the encoder display. Mark **Enable** if the encoder should be mounted on the wall.
Zero config ***Note:*** This parameter is only applicable for Visionline.	If no DHCP server is available, the encoder will at startup show 'offline' and the encoder IP address. Shortly after, the IP address will change to an address in the range 169.254.1.0 – 169.254.254.255; this range is based on the *zero config* standard. ***Note:*** It is recommended to always have this checkbox marked.
EPHY auto negotiate	If the link speed (10 or 100 Mbit/s) has been unaltered for a certain time, a detector changes to manual speed and alternatively tests 10MBit/s and 100MBit/s until an answer is given. When this detector is activated, the parameter *EPHY (Ethernet PHYsical transceiver) auto negotiate* will be set to 'No' and the checkbox will be unmarked.

Table 2: Configurable parameters

5.1 To configure the encoder for use with Visionline

Figure 13

1. Make sure that the USBXpress driver is installed; see Appendix B for details.
2. Double click on **RFIDEncoderConfig.exe**.
3. Connect the encoder to USB power; the encoder will appear in the drop-down-menu at 'USB' in the upper left corner of the **RFID Encoder Configuration Utility** window.
4. Select the encoder in the drop-down-menu.
5. Click the **Start** button to connect.

Figure 14

6. Click the **Get version** button.

Figure 15

7. The firmware version of the encoder will be shown; make sure that it is the latest version, if not upgrade the encoder according to Appendix C.

Figure 16

8. Click the **Get config** button. At first configuration, the default encoder parameters will be shown; see Figure 16. ***Note:*** The default parameter values are also shown in section 6.1.

Figure 17

9. To modify one or more parameters, make the desired changes and click the **Set config** button.

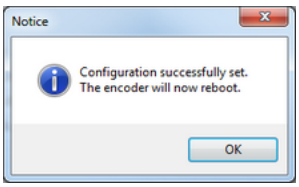


Figure 18

10. When the new configuration has bee set in the encoder, a message as in Figure 18 will be shown.

5.2 To configure the encoder for use with VingCard Vision

Figure 19

1. Make sure that the USBXpress driver is installed; see Appendix B for details.
2. Double click on **RFIDEncoderConfig.exe**.
3. Connect the encoder to USB power; the encoder will appear in the drop-down-menu at 'USB' in the upper left corner of the **RFID Encoder Configuration Utility** window.
4. Select the encoder in the drop-down-menu.
5. Click the **Start** button to connect.

Figure 20

6. Click the **Get version** button.

Figure 21

7. The firmware version of the encoder will be shown; make sure that it is the latest version, if not upgrade the encoder according to Appendix C.

Figure 22

8. Click the **Get config** button. At first configuration, the default encoder parameters will be shown; see Figure 22. ***Note:*** The default parameter values are also shown in section 6.1.

Figure 23

9. Under **IP Setup**:
   - uncheck **Dynamic IP address (DHCP)**
   - set **Host IP** address; this is the encoder IP address
   - set **Default gateway**; this is the encoder gateway address
   - set **Subnet mask**; this is the encoder subnet mask

10. Under **Connection Setup**:
   - uncheck **Announcement broadcast**
   - let **Server IP** and **Server Port** be empty; these parameters are not applicable for VingCard Vision
   - let **KDE port** be 3001

11. Under **Misc Settings**:
   - check **Emulate KDE**
   - uncheck the rest of the checkboxes

12. Click the **Set config** button.
13. When the new configuration has been set in the encoder, a message as in Figure 24 will be shown.
14. Disconnect the power and USB cables.
15. Connect the LAN cable to the local hub.
16. Power up the encoder.

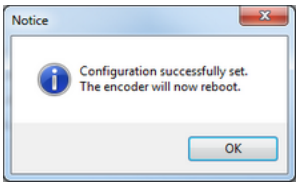


Figure 24

6. To factory reset the encoder

There are two ways to reset the encoder parameters to default values, e.g. if an encoder should be used at a demo installation:

- Press and hold the **F** button with a narrow instrument while powering up the encoder; see in Figure 5 where the button is located.
- Press **Defaults** and then **Set config** in the **RFID Encoder Configuration Utility**; see below for details. The default values are also shown in Table 3.

Figure 25

1. Click the **Defaults** button.

Figure 26

2. If the default parameters should be set in the encoder, click the **Set config** button. ***Note:*** If VingCard Vision is applicable, it will not be possible to connect to the encoder after the default values have been set in it. In this case, the encoder must then be reconfigured according to section 5.2; make sure that **Emulate KDE** is checked in **RFID Encoder Configuration Utility**.

6.1 Default parameter values

Note: For a description of the encoder parameters, see Table 2.

Parameter	**Default value**
Dynamic IP address (DHCP; *Dynamic Host Configuration Protocol*)	Enable
Host IP	192.168.0.100
Default gateway	192.168.0.1
Subnet mask	255.255.255.0
Announcement broadcast	Enable
Server port	7799
KDE port	3001
Emulate KDE	Disable
Wall mounted	Disable
Zero config	Enable
EPHY auto negotiate	Enable

Table 3: Default parameter values for the RFID encoder

7. Web interface (only applicable for Visionline)

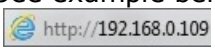
If the parameters for the RFID encoder need to be modified to suit the network where the encoder is located, this can be done either

- via the configuration utility described in section 5.1
- via the web interface described in the section To modify the encoder parameters. To open the web interface, http://ipaddress must be entered in a web browser. The encoder IP address is shown on the encoder display. ***Note:*** See Table 2 for a description of the encoder parameters.

7.1 To modify the encoder parameters

Figure 27

1. Press the **F** button down to the right on the back of the encoder (see Figure 5); use a narrow instrument.
2. In the web browser, enter http://ipaddress; the IP address to enter is shown on the display at startup of the encoder. See example below:

   Note: If no DHCP server is available, use the *zero config* IP address which is shown on the display; see section 4.1.1 for more information about *zero config*.
3. Make the desired changes in the **RFID Encoder Setup** page; see example in Figure 27.
4. If the *server IP* should be changed and there is no DNS (*Domain Name System*): Enter the applicable **Server IP**, **OR** mark the radio button 'Enable' for **Announcement Broadcast**; this makes the encoder find the server.
5. When all desired changes have been done in the **RFID Encoder Setup** page:
   - Click **Save**.
   - Click **Reboot**.
   - Press the **F** button on the encoder again to close the web interface.

Appendix A: Quick reference of technical data

- **Dimensions, encoder (WxHxD):**
  83.3 x 152.0 x 42.2 mm (3 9/32" x 5 31/32" x 1 21/32")

- **Dimensions, card holder (WxHxD):**
  88.7 x 85.8 x 48.0 mm (3 1/2" x 3 3/8" x 1 57/64")

- Material in encoder: ABS UL 94V-0

- Automatic adjustment to 10 or 100MBit/s networks

- Material in card holder: PC UL 94V-0, semitransparent

- Several possibilities for powering:
  - Power via PoE; *power over Ethernet*
    Note: The RFID encoder is of *PoE class 1*; power range 0.44-3.84W.
  - External power via adapter of 5VDC regulated voltage
  - Power via USB (only applicable for Visionline)

- The maximum current consumption for the RFID encoder is 400 mA continuously

- Sound signals

- Intended for indoor use only, temperature range +5ºC to +50ºC

- Relative humidity 10-90%; non-condensing

- Required version of Visionline: 1.11.1 or higher

- Required version of VingCard Vision: 5.2 or higher

Appendix B: To install the USBXpress driver

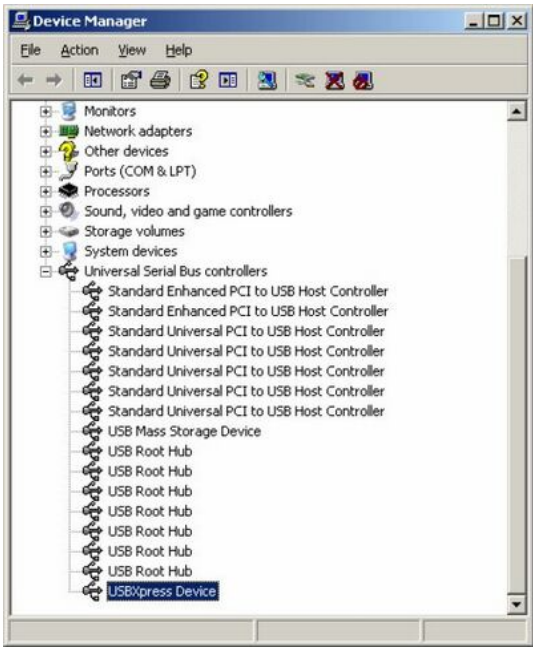


Figure B1

1. All necessary files for the USBXpress driver are found on the Visionline CD under **Drivers/USBXpress Driver**; double click on **USBXpressInstaller.exe** and follow the instructions.
2. Connect the RFID encoder by USB cable to the computer.
3. Go to the **Device Manager** in Windows and click the plus sign in front of 'Universal Serial Bus controllers'; see Figure B1.

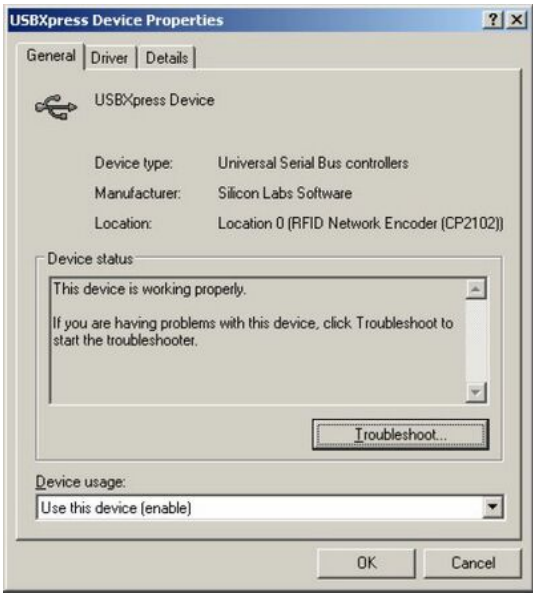


Figure B2

4. In the **Device Manager**, double click on the **USBXpress Device** and make sure that the **USBXpress Device Properties** dialog says 'This device is working properly' as in Figure B2.

Appendix C: To upgrade firmware

To upgrade firmware via RFID Encoder Configuration Utility

Figure C1

1. Double click on **RFIDEncoderConfig.exe**.
2. Connect the encoder to USB power; the encoder will appear in the drop-down-menu at 'USB'.
3. Select the encoder in the drop-down-menu.
4. Click the **Start** button.
5. Click the **Open** button.

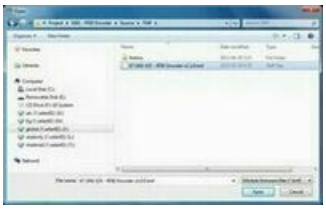


Figure C2

6. Browse to the desired firmware file and click **Open**.

Figure C3

7. When the firmware version has been loaded, it will be shown next to the **Bootload** button as shown in Figure C3.

Figure C4

8. Click the **Bootload** button.

Figure C5

9. When the bootloading has finished, a message as in Figure C5 will be shown.

To upgrade firmware via SysMon (only applicable for Visionline)

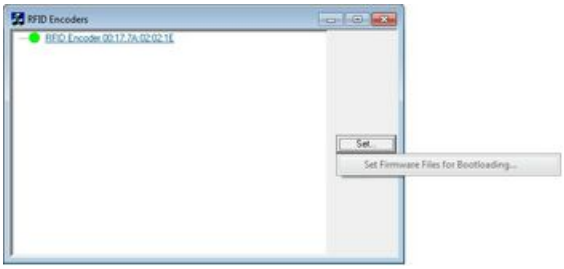


Figure C6

1. Double click on **SysMon.exe** in the Visionline installation folder.
2. Go to **View/RFID Encoders**; encoders that have been connected via TCP/IP will be shown.
3. Mark the applicable encoder and click the **Set** button; choose **Set Firmware Files for Bootloading**.

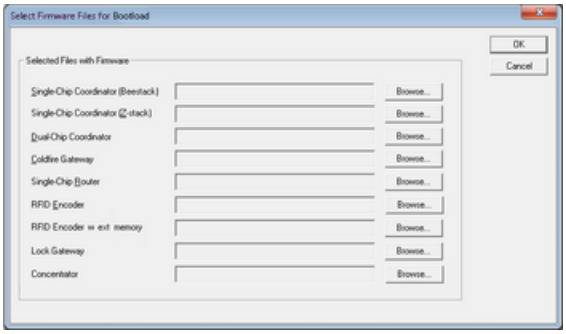


Figure C7

4. The dialog in Figure C7 will be shown.
5. Click the **Browse** button at the applicable one of 'RFID Encoder' or 'RFID Encoder w ext memory' and select the applicable encoder firmware file.
6. Click **OK** in the **Select Firmware Files for Bootload** dialog.

Appendix D: Boot-up procedure

1. When an encoder comes out of reset, it reads its IP configuration from a non-volatile memory.
2. If 'Dynamic IP Address' is set to **Disable** (see chapter 7): the encoder sets its IP address to the address stored in the config memory. Continue at step 13 below.
3. If 'Dynamic IP Address' is set to **Enable** (see chapter 7): the encoder sends a *DHCP Request packet* with IP destination address 255.255.255.255, i.e. IP broadcast, requesting its most recently used IP address.
4. If the network/subnet configuration has not changed, the DHCP server will most likely send a *DHCP ACK packet*, allowing the encoder to continue to use the same IP. The DHCP server may use either *IP broadcast* or *unicast* for this packet; *broadcast* is however most commonly used. Continue at step 10 below.
5. If the DHCP server is unwilling to let the encoder use the same address as before, or if the requested IP is out of scope, it sends a *DHCP NAK*.
6. The encoder resets its IP address to 0.0.0.0 and sends a *DHCP Discover packet* with IP destination address 255.255.255.255; *IP broadcast*.
7. If a DHCP server is available, it sends a *DHCP Offer packet*. Since the encoder has no valid IP address, the DHCP server must send to IP destination 255.255.255.255; *IP broadcast*.
8. The encoder receives the offer and sends a *DHCP Request packet*, as in step 3 above, but this time requests the IP address offered by the DHCP server.
9. The DHCP server sends a *DHCP ACK packet*, confirming that the encoder may start using the new IP address. Unlike the ACK in step 4 above, this ACK packet must be sent to IP destination address 255.255.255.255 (IP broadcast), since the encoder has not got any confirmed IP address yet.
10. The encoder performs gratuitous ARP (*Address Resolution Protocol*) to ensure that no other host has got the same IP.
11. If IP collision is detected, the encoder sends a *DHCP Decline packet* which refuses the assigned IP address and restarts the IP acquirement procedure for the encoder.
12. *New functionality, RFID encoder version 2.0.0 and later*: If there is no DHCP server available on the subnet, the encoder self-assigns an IP address from the IPv4 Local Link address space (169.254.0.0/16), and sends gratuitous ARP to ensure that no other host has got the same IP.
13. The encoder reads the most recently used Visionline server IP address and tries to open a TCP connection to the server.
14. If the TCP connection attempt fails, the encoder will continue to try connections to the same IP over and over again – unless it detects that the network/subnet setup has changed, e.g. the encoder may have been moved to a new location. Then it will send an application specific service discovery request (*announcement broadcast*) with IP destination address 255.255.255.255; *IP broadcast*.

14 b. *New functionality, RFID encoder version 2.0.0 and later*: Even if the network/subnet setup is unchanged, but long time (one hour) has elapsed

without any successful TCP connection with the Visionline server, the encoder will start sending service discovery requests.

15. If a Visionline server is on the same subnet, or if another encoder with a valid TCP connection to the server is on the subnet, they will send a reply to the querying unit, letting it know the IP address and TCP port of the Visionline server. The encoder then tries TCP connection to that IP.

15 b. *New functionality, RFID encoder version 2.0.0 and later*: From the payload supplied in the reply (the reply is sent with IP destination address 255.255.255.255, *IP broadcast*), the querying unit can determine if its own IP address properties are correct with respect to network class, default encoder IP and subnet mask. If required, it will self-assign a new IP address within the subnet specified in the reply, and then send gratuitous ARP to ensure that no other host has got the same IP. Then it goes on and tries TCP connection to the received server IP address.

16. *New functionality, RFID encoder version 2.0.0 and later*: Prior to sending the service discovery request, the encoder tries to contact a DNS server (*Domain Name System*), with a request for resolving the most recently used *server host name*. If that name is unknown to the DNS, the encoder tries to resolve the factory default *server host name*. If any of the two names renders a successful DNS reply, the encoder uses the IP address received from the DNS server, and tries TCP connections to that address. If the factory default name is unknown too, or if a DNS server is not available at all, the encoder sends a service discovery request.

Note: 14/14 b, (15/15b) and 16 will go on in a round robin way until the encoder has reached the server.

Appendix E: More about how the encoder finds the server (Visionline only)

Introduction

This appendix describes the process of how the encoder finds the server. The solution is based on DNS (*Domain Name System*) as well as on *announcement broadcast*, which is a proprietary implementation of *zero config*; see section 4.1.1 for details about *zero config*.

Note: For more information about setting up DNS entries etc, contact the hotel IT department. A general description of this cannot be made in this document, since this varies with the type of DNS server that is used.

There are three challenges when the encoder is connected to the network:

1. A new encoder must be able to find the server even if it is located on a separate subnet.
2. The encoder must be able to locate a backup server in case the primary server fails. The backup server is assumed to have the latest database from the primary server.
3. The above must be fulfilled even if there are multiple Visionline servers on the same network.

To commission encoders:

Single server - to commission encoders with DNS
Multiple servers - to commission encoders with DNS
To commission encoders without DNS

To switch to backup server

Single server - to switch to backup server with DNS
Multiple servers - to switch to backup server with DNS
To switch to backup server without DNS

To commission encoders with DNS

If the encoder is located on the same subnet as the server, the encoder will locate the server using *announcement broadcast* without any need for manual configuration. However, the normal case is that the server and the encoder are located on different subnets. The first encoder for each subnet requires help from the DNS to locate the server.

Single server

1. Add a DNS entry called *timeloxserver* and let its IP address be the address of the Visionline server to which the new encoder shall connect. The encoder will then make a DNS query using the name *timeloxserver* and in this way get the IP address of the server.
2. Connect the encoder to Ethernet and wait for it to appear in the SysMon ZigBee tree.

Multiple servers

In the steps below, it is necessary to know the Visionline *system code*. To find it, double click on **System settings** under **Reports** in the Visionline navigation window.

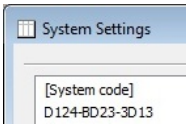


Figure D1

1. For each Visionline server, add a new DNS entry with the system name for the concerned server. The system name is *timelox_12-character system code without dashes*, e.g. *timelox_D124BD233D13*.
2. In order to find the correct server at first installation, the encoders must be installed for one server at a time.
3. Let *timeloxserver* refer to the IP address of the first Visionline server.
4. When all encoders have been installed for one server, the DNS entry for *timeloxserver* must be changed to the IP address of the next server.
5. When all encoders for the last server have been installed, the *timeloxserver* entry must be removed.

Note: Every set of encoders that is connected with a particular Visionline server will receive the system name of that server, once connection to the server is established. If an encoder for some reason needs to use DNS again in the future, the system name (e.g. *timelox_D124BD233D13*) will "win" over the default name. When the encoder makes a DNS request, the system name will connect it to the correct Visionline server.

To commission encoders without DNS

1. Connect one encoder to each subnet. Use the web interface for the encoder to configure the IP address of the Visionline server; see chapter 7 for details.
   Note: This is only needed for the first encoder for each subnet, since the other encoders on the same subnet will retrieve the server IP address from the first one by *announcement broadcast*.
2. Continue adding encoders. They will automatically obtain the IP address of the Visionline server from the encoders on the same subnet that are already online with the server.

To switch to backup server

Single server - to switch to backup server with DNS

1. Change the IP address of the *timeloxserver* entry in the DNS so it points to the backup server. The encoders will then connect to the backup server if the connection to the primary server is lost and cannot be re-established.

Multiple servers - to switch to backup server with DNS

1. For the concerned Visionline server, change the IP adress of the system name entry in the DNS so it points to the backup server. The encoders will then connect to the backup server if the connection to the primary server is lost and cannot be re-established.

To switch to backup server without DNS

1. Remove the primary server from the network.
2. Assign the IP address of the primary server to the backup server
   OR
   Enter the IP address of the backup server in the web interface for one encoder per subnet. ***Note:*** It will take one hour after the primary server closes its sockets until the rest of the encoders enable their *announcement broadcast*.

Revision history

Date	Change	By
March 8, 2012	• Initial version	KG
April 13, 2012	• Updated section *Connecting via TCP/IP* • Updated section *Mounting kit*	KG
October 17, 2012	• Updated section *Connecting via TCP/IP* • Added information about the USBXpress driver • Updated screenshot 'Select Firmware Files for Bootload' • Added information about configuration utility • Updated web interface • Added chapter about reset • Updated *Quick reference of technical data* with information about PoE class 1 and maximum current consumption for the encoder • Removed information about bootloader tool • Added appendix *More about how the RFID encoder finds the server*	KG
January 25, 2013	• 'Emulate KDE' is now implemented	KG
July 3, 2013	• Added information about VingCard Vision	KG
January 13, 2014	• Modified chapter about web interface • Modified chapter about installing USB Xpress driver • Added chapter about boot-up procedure	KG
December 21, 2015	• Updated layout	KG

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