



# Pcounter Network (241 & AKE) & USB Reader Guide

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# Table of Contents

<b>0.0 - Introduction .....</b>	<b>3</b>
<b>0.1 - Prerequisites .....</b>	<b>3</b>
<b>1.0 - 241 Configuration .....</b>	<b>4</b>
1.1 - Locate 241's IP .....	5
1.1.1 - Scan for reader using PScan.....	5
1.1.2 - Escalate to DHCP Admin .....	5
1.2 - Configure 241.....	6
1.2.1 - Configure 241's Web UI .....	6
1.2.2 - Associate 241 In Pcounter .....	8
<b>2.0 - AKE Configuration .....</b>	<b>9</b>
2.1 - Locate AKE's IP .....	9
2.1.1 - Scan for reader using PScan.....	9
1.1.2 - Escalate to DHCP Admin .....	9
2.2 Configure AKE .....	10
2.2.1 Configure AKE's Web UI .....	10
2.2.2 - Associate AKE In Pcounter .....	12
<b>3.0 - Card Configuration .....</b>	<b>13</b>
3.1 - View Card Swipe Results .....	13
3.2 - ID# Storage Options .....	13
<b>4.0 - Advanced USB HID Reader Configuration .....</b>	<b>15</b>
4.1 - Installing PCProx Plus .....	15
4.2 - Connecting USB Reader .....	15
4.3 - Customizing USB Reader Type & Output .....	16
4.3.1 - Configuring Multiple Card Types .....	16
4.3.2 - Customizing Card Output Data .....	18
<b>5.0 - Documentation and Video Links.....</b>	<b>19</b>

## 0.0 - Introduction

AND Technologies uses and recommends RF IDEas brand card readers.

Some MFP models do not support USB attached card readers. When the MFP/printer does not support USB attached readers, a network attached reader must be used.

A network attached reader is actually two devices, an Ethernet adaptor and a card reader that attaches to the Ethernet adaptor. The function of these devices is to deliver the user's card swipe to the Pcounter server over the network, when the MFP itself does not support USB readers.

There is also a section in this guide that discusses advanced configuration of the RF IDEas 80581 USB reader.

## 0.1 - Prerequisites

There are two types of ethernet adaptors that Pcounter supports, 241 and AKE.

241 Network Readers have an ethernet switch built in and can share a single network port with the printer.

AKE Network Readers require their own network port to plug into, in addition to the network port for the printer.

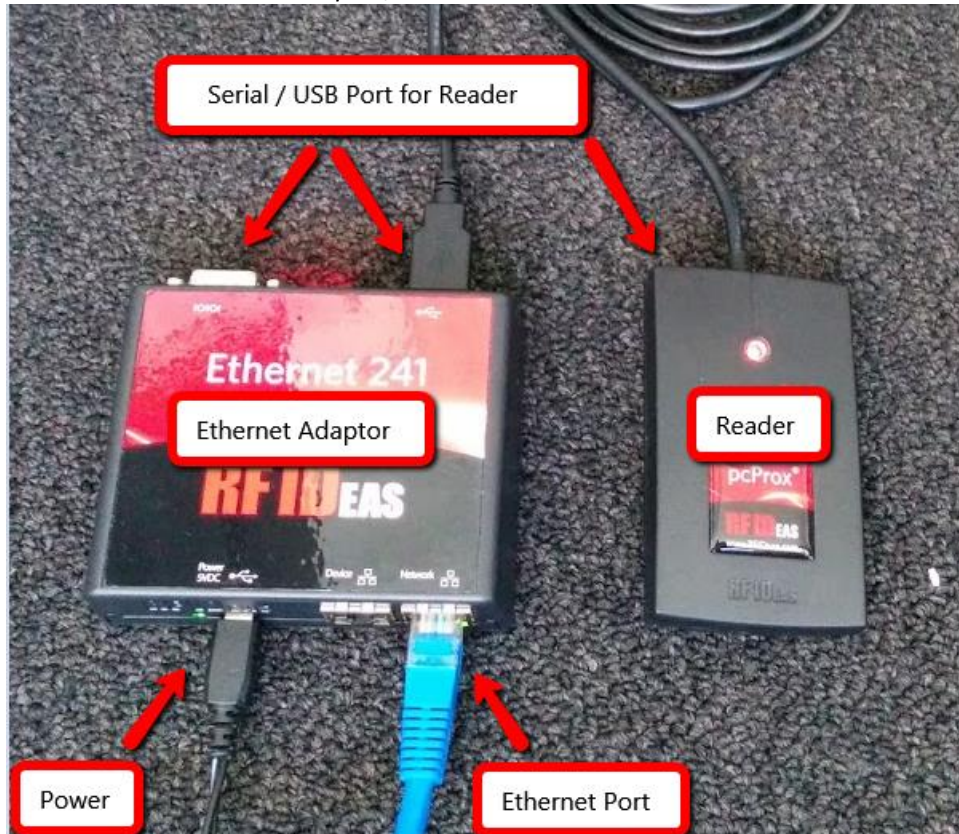
Both adaptor types require a power plug.

## 1.0 - 241 Configuration

The reader configuration process can be summarized with the following steps:

- 1) Locate reader IP
- 2) Configure Reader's web UI
- 3) Associate reader with a device in Pcounter

*241 adaptor, with a USB reader attached.*



## 1.1 - Locate 241's IP

Network readers require their own, unique IP address.

When the network reader is first attached to the network, in a segment that has DHCP, it will receive an address from DHCP automatically. The address the device receives can be located by either using the PScan utility to search an IP range, or by having the site's DHCP administrator use the MAC address printed on the device's sticker to locate the device's IP in DHCP.

### 1.1.1 - Scan for reader using PScan

- 1) Attach the network reader directly to the network via Ethernet in a location where it will receive an IP address from DHCP.

Note, the lights on the network reader's ethernet port should light green to show a good connection to the network.

- 2) Download PScan [here](#) and extract to a workstation or server on the same network as the reader.
- 3) Open a command prompt and use a cd command to change directory to wherever PScan.exe is located.
- 4) Run the search command: `pscan findreaders ip.ip.ip`  
ip.ip.ip = first three octets of the network segment to be scanned

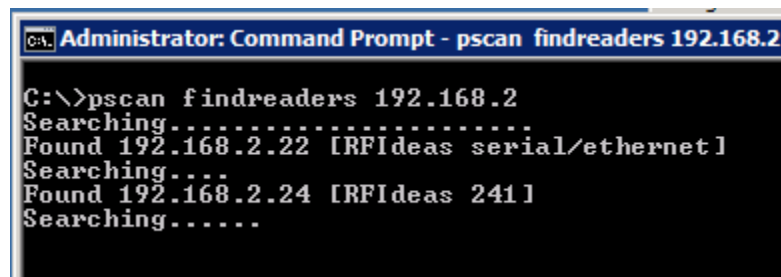
IE:

```
pscan findreaders 192.168.2
```

```
C:\>pscan findreaders 192.168.2
```

- 5) Execute the command. All nodes in the network range defined by the command will be scanned one by one until the network reader is located. Each period shown in the command output represents one node that has been scanned.
- 6) When a reader is found, the command will display the reader's IP and model.

IE:



```
Administrator: Command Prompt - pscan findreaders 192.168.2
C:\>pscan findreaders 192.168.2
Searching.....
Found 192.168.2.22 [RFIdeas serial/ethernet]
Searching....
Found 192.168.2.24 [RFIdeas 241]
Searching.....
```

*This picture shows a 241 found at 192.168.2.22 and an AKE found at 192.168.2.24*

### 1.1.2 - Escalate to DHCP Admin

If the scanning command does not locate the reader:

- 1) The site's DHCP administrator will need to be involved.
- 2) The network reader has its MAC address printed on a sticker attached to the side or back.
- 3) Communicate the MAC address to the DHCP administrator and ask that they locate the corresponding IP in DHCP.

## 1.2 - Configure 241

Once the IP address for the reader has been found, it can be configured for use with Pcounter.

### 1.2.1 - Configure 241's Web UI

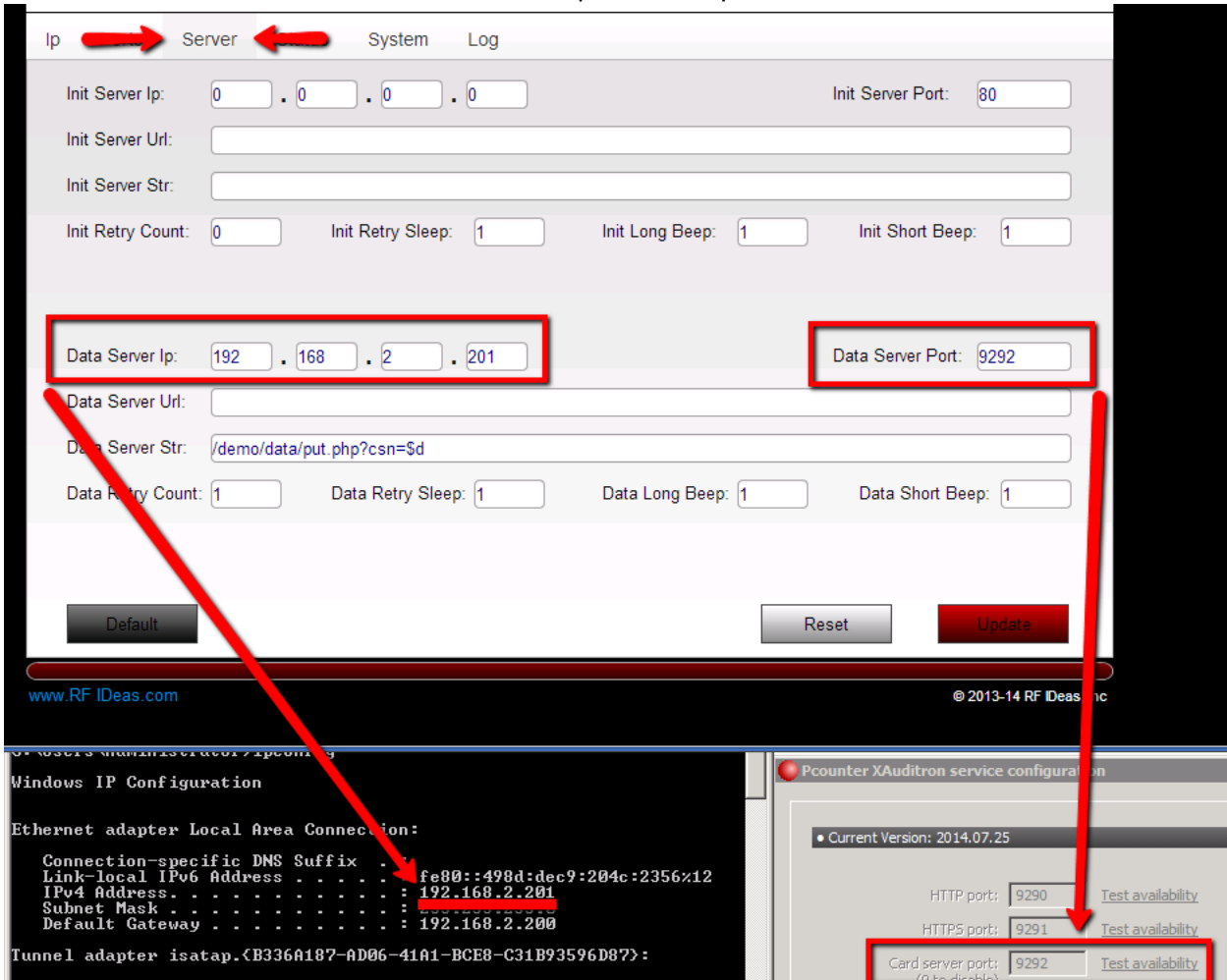
- 1) Type the reader's IP address into a web browser to access the reader's web interface. Note, **Firefox** is the recommended browser for configuring 241 style network readers. If experiencing browser issues, try **Firefox**.
- 2) This step is optional. To assign a static address, navigate to the section 'IP', use the 'addressing mode' dropdown to change from DHCP to static, then type the new IP, IP Network Mask, and Gateway. DNS is **optional**. **Click update** to apply the new IP address, then **refresh the page** to verify the configuration was accepted.

The screenshot shows the 'IP' configuration page of the Pcounter Network Reader web interface. The page has a navigation bar with 'Ip', 'Server', 'Status', 'System', and 'Log' tabs. The 'Ip' tab is selected. The configuration form includes the following fields:

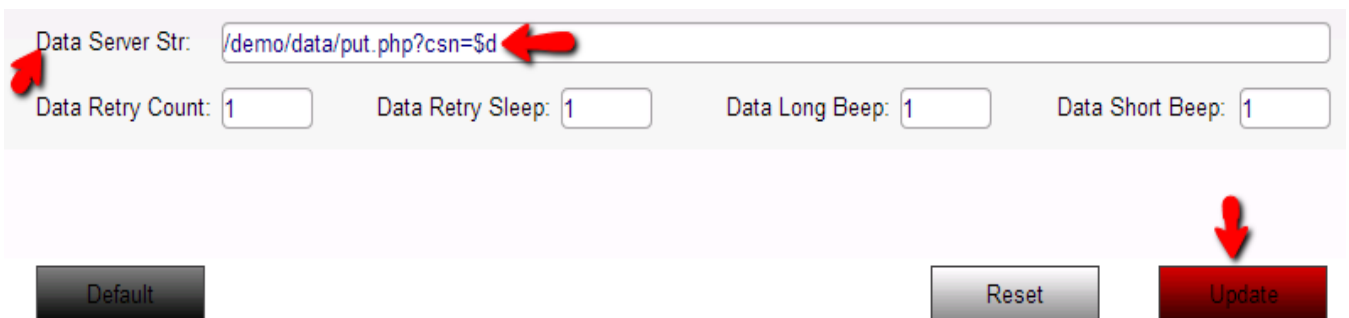
- Client: On (dropdown)
- Addressing Mode: Static (dropdown)
- Ip Address: 192 . 168 . 2 . 24
- Ip Mask: 255 . 255 . 255 . 0
- Gateway: 192 . 168 . 2 . 200
- DNS 1: 192 . 168 . 2 . 1
- DNS 2: 0 . 0 . 0 . 0
- Network Port: 100 Mbps-Full Duplex (dropdown)
- Device Port: 100 Mbps-Full Duplex (dropdown)
- Location: Tom's Office (text input)

At the bottom of the page are three buttons: 'Default', 'Reset', and 'Update'. The 'Update' button is highlighted in red. Red arrows point to the 'Ip' tab, the 'Addressing Mode' dropdown, the IP configuration fields (which are enclosed in a red box), and the 'Update' button.

- 3) Navigate to the section 'Server'.  
Set 'Data Server IP' to the IP address of the Pcounter Embedded server.  
Set 'Data Server Port' to the 'card server port' used by the Pcounter Embedded service.



- 4) Data Server Str is set differently depending on if the card reader type is proximity or magstripe.  
For proximity use /demo/data/put.php?csn=\$1  
For magstripe use /demo/data/put.php?csn=\$d  
IE:

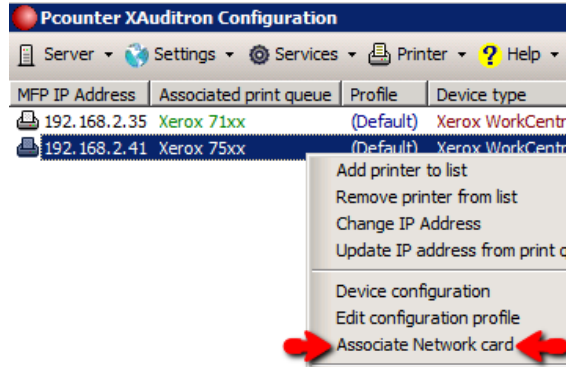


- 5) **Click update** to apply the new settings, then **refresh the page** to verify the configuration was accepted.

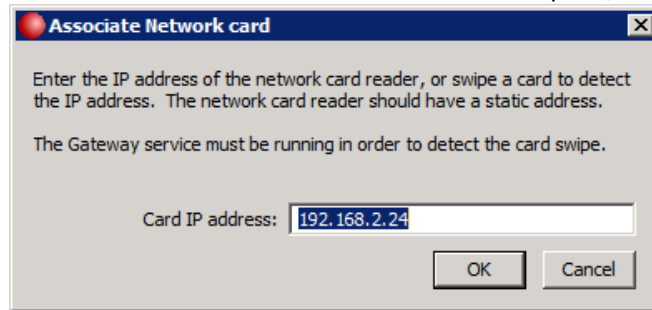
### 1.2.2 - Associate 241 In Pcounter

The final step is to associate the reader with a device in Pcounter Embedded.

- 1) The MFP in question should be fully tested with Pcounter Embedded. Specifically, keyboard login should be tested and confirmed to be working normally before attempting to add a network card reader.
- 2) Open the Pcounter Embedded interface, IE PCXAConfig. Right click the MFP in question in the device list and choose 'associate network card'.



- 3) Enter the IP address of the network reader into the box that opens, then OK to accept.



- 4) The network reader is ready for testing.



## 2.0 - AKE Configuration

### 2.1 - Locate AKE's IP

Network readers require their own, unique IP address.

When the network reader is first attached to the network, in a segment that has DHCP, it will receive an address from DHCP automatically. The address the device receives can be located by either using the PScan utility to search an IP range, or by having the site's DHCP administrator use the MAC address printed on the device's sticker to locate the device's IP in DHCP.

#### 2.1.1 - Scan for reader using PScan

- 1) Attach the network reader directly to the network via Ethernet in a location where it will receive an IP address from DHCP.

Note, the lights on the network reader's ethernet port should light green to show a good connection to the network.

- 2) Download PScan [here](#) and extract to a workstation or server on the same network as the reader.
- 3) Open a command prompt and use a cd command to change directory to wherever PScan.exe is located.
- 4) Run the search command: pscan findreaders ip.ip.ip

ip.ip.ip = first three octets of the network segment to be scanned

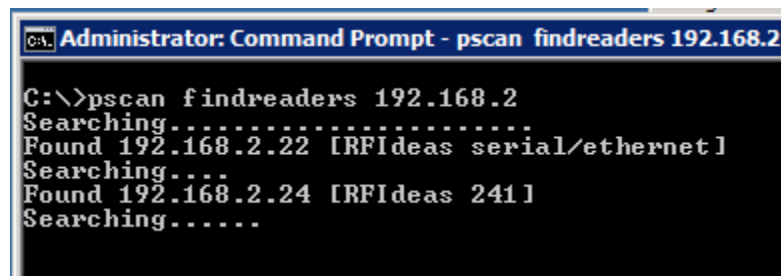
IE:

```
pscan findreaders 192.168.2
```

```
C:\>pscan findreaders 192.168.2
```

- 5) Execute the command. All nodes in the network range defined by the command will be scanned one by one until the network reader is located. Each period shown in the command output represents one node that has been scanned.
- 6) When a reader is found, the command will display the reader's IP and model.

IE:



```
Administrator: Command Prompt - pscan findreaders 192.168.2
C:\>pscan findreaders 192.168.2
Searching.....
Found 192.168.2.22 [RFIdeas serial/ethernet]
Searching.....
Found 192.168.2.24 [RFIdeas 241]
Searching.....
```

*This picture shows a 241 found at 192.168.2.22 and an AKE found at 192.168.2.24*

#### 1.1.2 - Escalate to DHCP Admin

If the scanning command does not locate the reader:

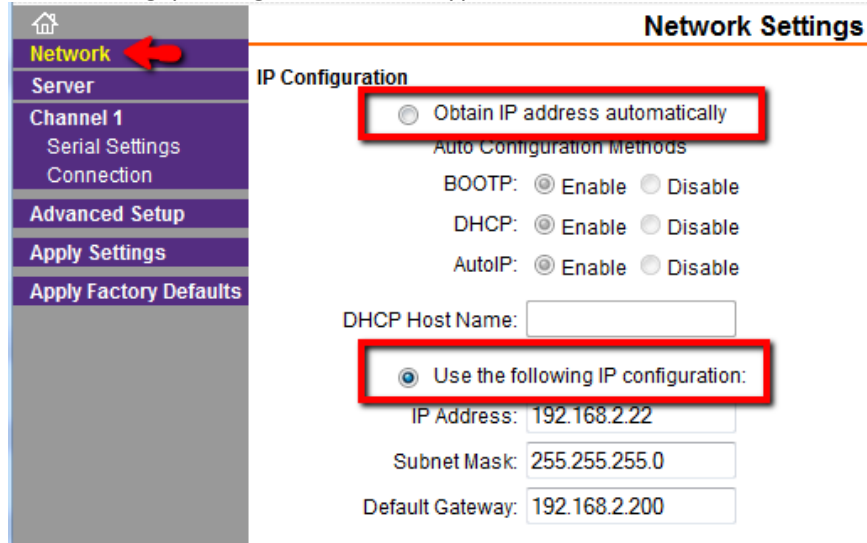
- 1) The site's DHCP administrator will need to be involved.
- 2) The network reader has its MAC address printed on a sticker attached to the side or back.
- 3) Communicate the MAC address to the DHCP administrator and ask that they locate the corresponding IP in DHCP.

## 2.2 Configure AKE

Once the IP address for the reader has been found, it can be configured for use with Pcounter.

### 2.2.1 Configure AKE's Web UI

- 1) Type the reader's IP address into a web browser to access the reader's web interface.  
Note, **Firefox** is the recommended browser for configuring network readers.  
If experiencing browser issues, use **Firefox**.
- 2) This step is optional. To assign a static address, navigate to the section 'Network', set the bullet to 'use the following ip configuration', then type the new IP, IP Network Mask, and Gateway.



The screenshot displays the 'Network Settings' web interface. On the left is a navigation menu with a home icon at the top, followed by 'Network' (highlighted in yellow with a red arrow pointing to it), 'Server', 'Channel 1' (with sub-items 'Serial Settings' and 'Connection'), 'Advanced Setup', 'Apply Settings', and 'Apply Factory Defaults'. The main content area is titled 'Network Settings' and contains the 'IP Configuration' section. This section has two radio button options: 'Obtain IP address automatically' (which is selected and highlighted with a red box) and 'Use the following IP configuration:' (which is also highlighted with a red box). Under the first option is the text 'Auto Configuration Methods'. Below this are three rows of radio buttons: 'BOOTP: Enable (selected) / Disable', 'DHCP: Enable (selected) / Disable', and 'AutoIP: Enable (selected) / Disable'. Below these is a text input field for 'DHCP Host Name:'. Under the second radio button option are three text input fields: 'IP Address: 192.168.2.22', 'Subnet Mask: 255.255.255.0', and 'Default Gateway: 192.168.2.200'.

- 3) Go to Channel 1 > Connection.
  - Set 'Protocol' to TCP.
  - Set 'Accept Incoming' to Yes
  - Set 'Active Connect' to 'With any character'
  - Check the box for 'auto increment for active connect'
  - Set 'Remote Port' to the port the Pcounter service is using for 'Card Server Port'
  - Set 'Remote Host' to the IP address of the Pcounter server

**Connection Settings**

**Channel 1**

Connect Protocol: Protocol: TCP

Connect Mode

Passive Connection: Accept Incoming: Yes

Active Connection: Active Connect: With Any Character

Password Required:  Yes  No

Start Character: 0x0D (in Hex)

Modem Mode: None

Mdm Esc Seq Pass Thru:  Yes  No

Endpoint Configuration:

Local Port: 10001

Remote Port: 9292

Auto increment for active connect

Remote Host: 192.168.1.2

- 4) Once all the settings are set in step 3, click the OK button at the bottom, then click 'apply settings'. Wait until the screen changes, it will display a message that says 'please wait while the configuration is saved...'. Do NOT click on anything until the progress bar disappears and the UI refreshes, displaying the main screen.

**Please wait while the configuration is saved...**

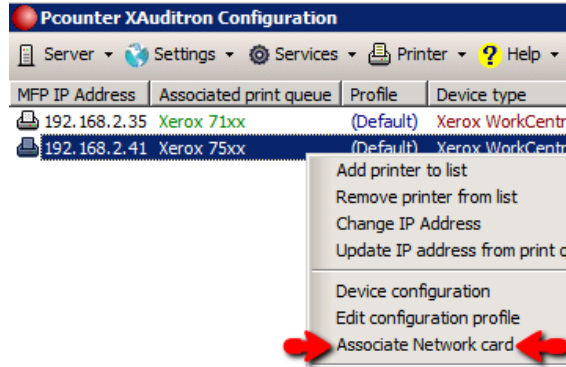
**The unit will reboot in order for the settings to be applied.**

Progress bar: [ ]

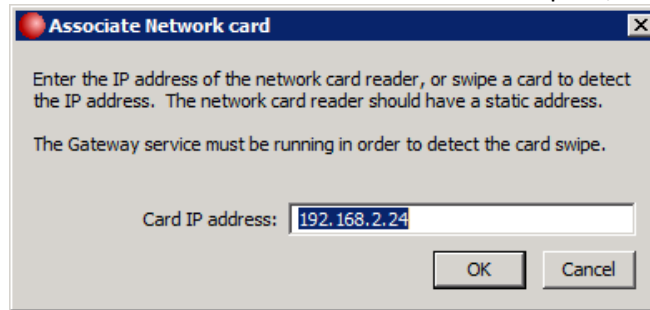
### 2.2.2 - Associate AKE In Pcounter

The final step is to associate the reader with a device in Pcounter Embedded.

- 1) The MFP in question should be fully tested with Pcounter Embedded. Specifically, keyboard login should be tested and confirmed to be working normally before attempting to add a network card reader.
- 2) Open the Pcounter Embedded interface, IE PCXAConfig. Right click the MFP in question in the device list and choose 'associate network card'.



- 3) Enter the IP address of the network reader into the box that opens, then OK to accept.



- 4) The network reader is ready for testing.

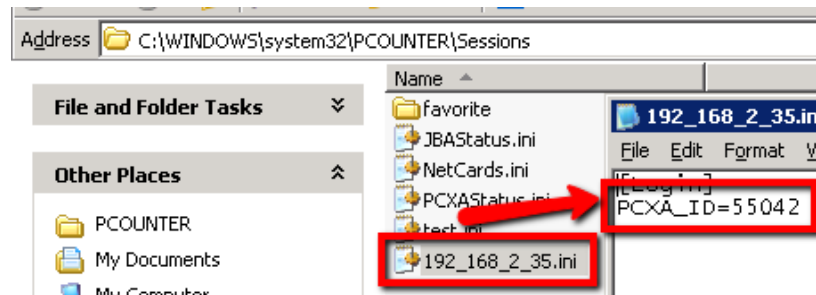
## 3.0 - Card Configuration

Once the reader is communicating with the server and the MFP properly, additional configuration may need to be done to match the card swipe to the user's ID number.

### 3.1 - View Card Swipe Results

The following process can be used to view card swipe results after successful authentication.

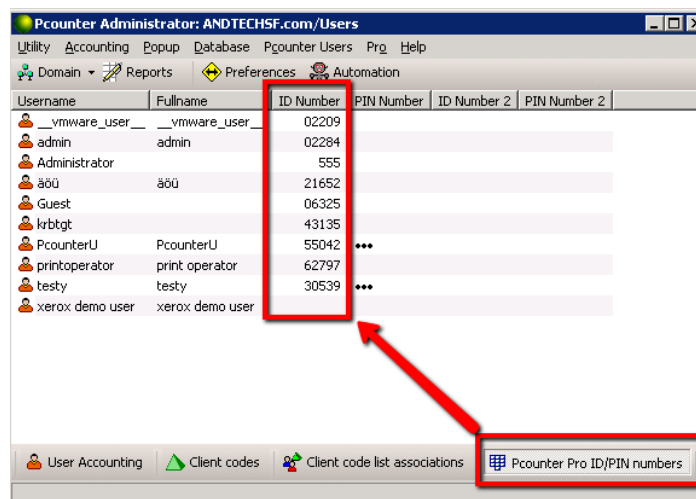
- 1) On the Pcounter XAudit server, open an explorer window to:  
x86: c:\windows\system32\pcounter\sessions  
x64: c:\windows\syswow64\pcounter\sessions
- 2) Swipe a test card at the reader, an access denied message may be displayed at the MFP.
- 3) When the card is swiped, an .ini file should be generated at the directory listed above with the filename matching the IP address of the MFP it is being directed to. This .ini file should list the exact read result from the card being swiped.



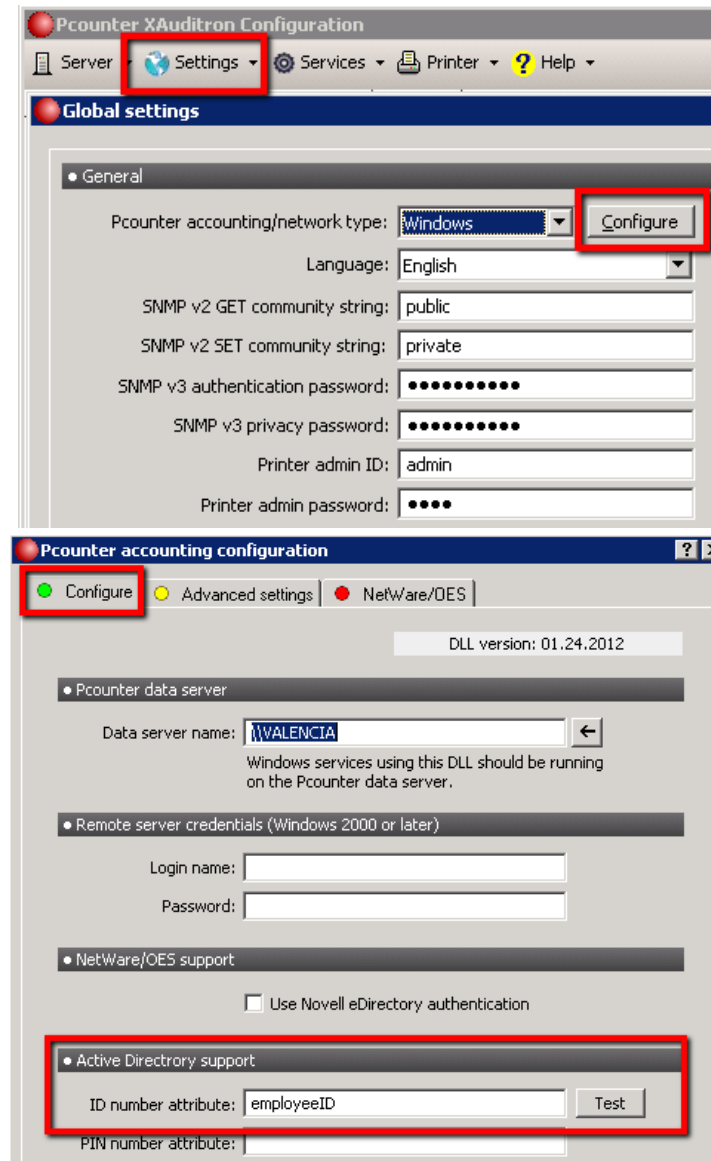
- 4) The number displayed in the session .ini is considered an ID# and is used to identify a user.
- 5) A user can be an Active Directory user account, a local user account, or a Pcounter User account.
- 6) The ID# can be stored in Pcounter Administrator's ID# database, or in Active Directory as an attribute.

### 3.2 - ID# Storage Options

- 1) ID#'s can reside in Pcounter Administrator's Pcounter Pro ID/PIN numbers area. To view, just open Pcounter Administrator and click on Pcounter Pro ID/PIN numbers at the bottom right.



- 2) ID#s can also reside Active Directory as an attribute:
  - a. First choose an attribute, such as Employee ID, that is populated for all users in the domain with the number contained on their HID card. The Active Directory Users and Computers snap-in can be used to manually modify any active directory attribute.
  - b. Set the attribute for ID# lookup in Pcounter XAudit>Global Settings>Configure>ID Number Attribute.
  - c. Enter the name of the attribute you will use in Active Directory.
  - d. Click the test button to confirm the attribute lookup is successful.



- 3) ID#'s can be automatically stored in either the Pcounter Administrator database, or in Active Directory as an attribute, by enabling 'automatic ID# registration' in the Pcounter Embedded application.

## 4.0 - Advanced USB HID Reader Configuration

The section discusses advanced configuration options for the RF IDEas USB HID 80851 Reader. Occasionally, the default configuration of the reader must be changed to customize the reader input and output.

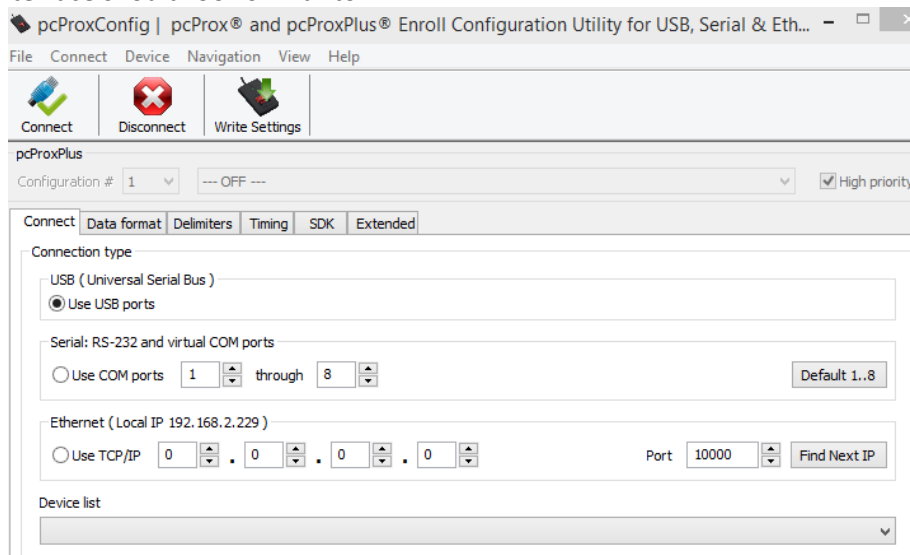
### 4.1 - Installing PCProx Plus

First the PCProx configuration utility must be installed to allow reader settings changes.

**This process should be done on a PC or Server that will allow the HID Reader to be physically attached.**

- 1) Download PCProx Plus, either find it on the RF IDEas website, or use this link [here](#).
- 2) Run the installer and take all the defaults to install the application to “C:\Program Files (x86)\RF IDEas\pcProx5”
- 3) Browse to the installation directory and open ‘PCProxConfig.exe’.

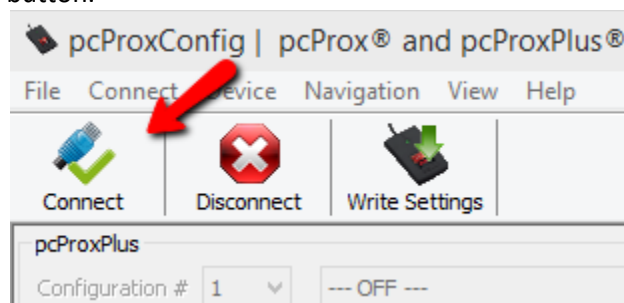
The interface should look similar to:



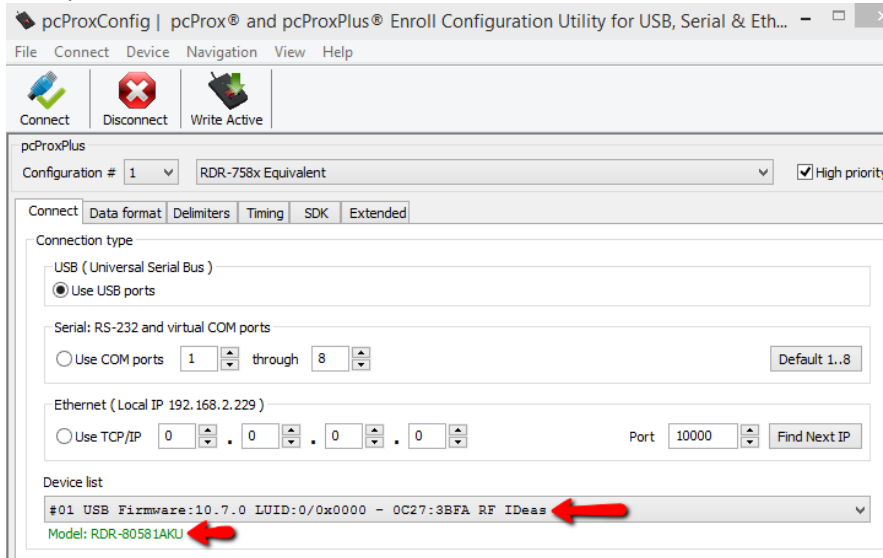
### 4.2 - Connecting USB Reader

Once the configuration utility is installed, the reader must be connected.

- 1) Attach the USB reader to the PC.
- 2) Open the PCProxConfig interface.
- 3) Click the connect button.



- The attached reader should then be displayed in the device list and below the model number should be displayed as 'RDR-80581AKU'.  
If RDR-80581AKU is not the displayed model, please contact Pcounter support to ensure compatibility.



### 4.3 - Customizing USB Reader Type & Output

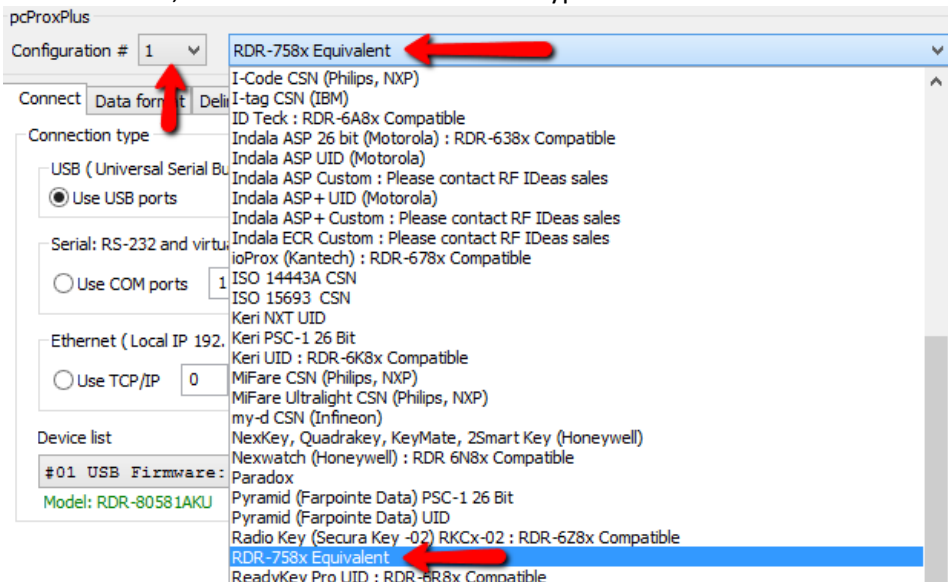
Once the reader is connected to the PCProx Interface, the reader configuration can be customized.

#### 4.3.1 - Configuring Multiple Card Types

RF IDEas USB HID 80851 Reader can read two different card types simultaneously thus allowing two completely different card types to access the reader normally.

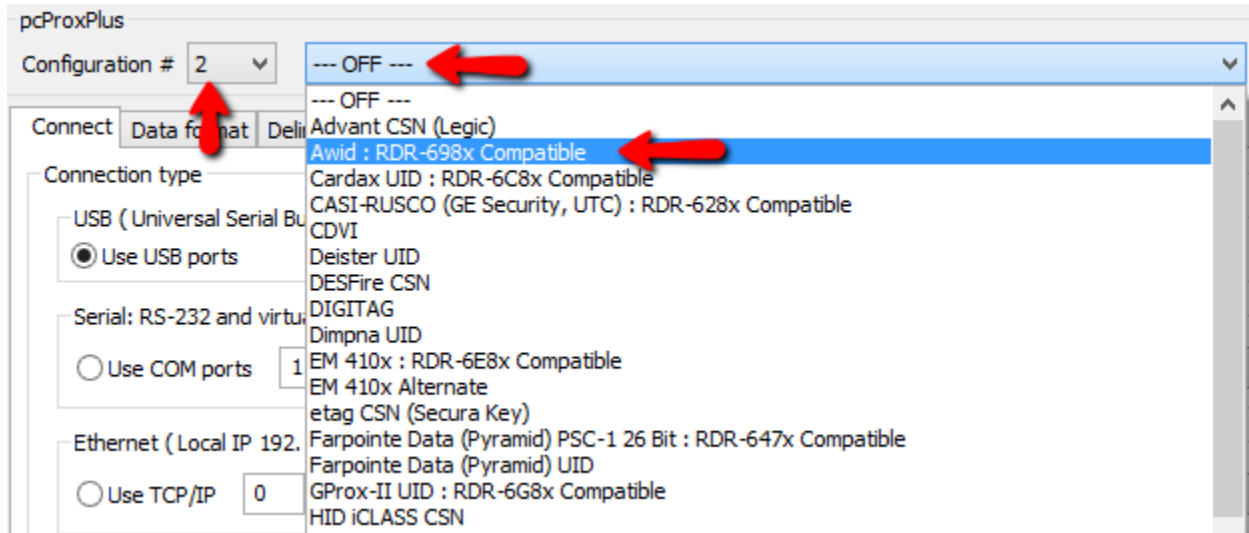
To configure the reader for this:

- Use sections 4.1 and 4.2 of this document to install PCProxConfig and connect the USB Reader.
- Once the reader is connected, the 'Configuration' dropdowns can be selected.
- Ensure 'Configuration' is set to '1', then click on dropdown and choose the first card type that should be allowed, or leave it at the default card type.

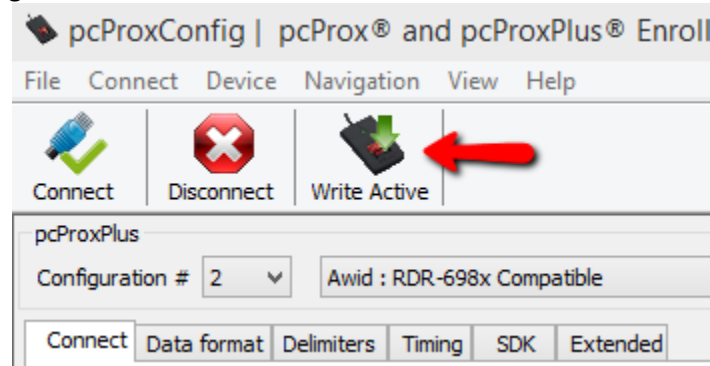




- 4) Set 'Configuration' to '2', then click on dropdown and choose the second card type that should be allowed.



- 5) Once both Configuration card types are selected as desired, click the 'Write Active' button to apply the changes to the card reader itself.



- 6) Thoroughly test the reader with both card types.  
7) Make changes to 'Configuration' 1 and 2 as needed. Make sure to use the 'Write Active' button to apply any additional changes to the reader before doing more testing.

### 4.3.2 - Customizing Card Output Data

The reader output can be customized using the PCProxConfig interface.

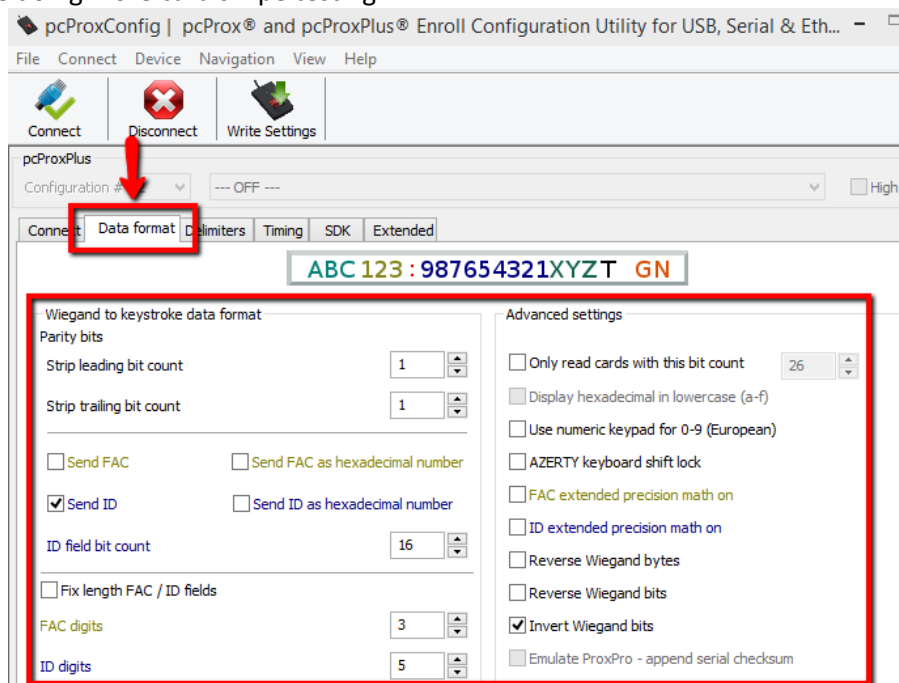
This can be helpful if the reader output does not match an existing database of card numbers.

However, 'automatic registration' is also an option in that situation.

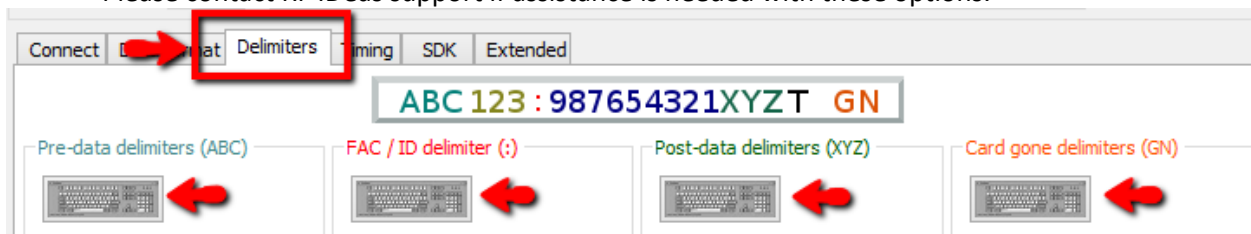
For more information on automatic registration please contact Pcounter Support.

To customize card reader output:

- 1) Use sections 4.1 and 4.2 of this document to install PCProxConfig and connect the USB Reader.
- 2) Once the reader is connected, go to the 'Data Format' tab.
- 3) There are a large number of options available to customize the reader output. AND Technologies does not provide support for each setting in this window. Please contact RF IDEas support if assistance is needed with each option.
- 4) When making changes, make sure to click 'Write Settings' to apply the changes to the reader before doing more card swipe testing.



- 5) Click on the 'Delimiters' tab. Here special characters can be inserted before, between, and after the card read result. This can be helpful to further customize the reader output. AND Technologies does not provide support for each setting in this window. Please contact RF IDEas support if assistance is needed with these options.



- 6) When making changes, make sure to click 'Write Settings' to apply the changes to the reader before doing more card swipe testing

## 5.0 - Documentation and Video Links

This concludes the guide. If there are any questions, please email [support@pcounter.com](mailto:support@pcounter.com).

Links to recommended Pcounter documents and videos:

**All Pcounter Videos:**

<https://www.youtube.com/user/andtechsf>

**Pcounter for Windows - Primary Documentation :**

[www.pcounter.com/supportfiles/pcounterwin.pdf](http://www.pcounter.com/supportfiles/pcounterwin.pdf)

**Pcounter for Windows - Prepare, Install, Configure:**

<https://www.youtube.com/watch?v=hyOaYOnVp3k>

**Pcounter Client and Printer Distribution Guide :**

[www.pcounter.com/supportfiles/Pcounter\\_Distribution\\_Guide.pdf](http://www.pcounter.com/supportfiles/Pcounter_Distribution_Guide.pdf)

**Pcounter WebPrint Installation and Customization Guide:**

[www.pcounter.com/supportfiles/Pcounter\\_webprint\\_Guide.pdf](http://www.pcounter.com/supportfiles/Pcounter_webprint_Guide.pdf)

**Pcounter Administrator Training Video Part 1:**

<https://www.youtube.com/watch?v=FxwmXCE6ebU>

**Pcounter Administrator Training Video Part 2:**

<https://www.youtube.com/watch?v=5jLsOj4tKJw>

**Pcounter Popup Training Video:**

<https://www.youtube.com/watch?v=chSbuDZJlhQ>

**Pcounter Station - Installation and Troubleshooting Guide:**

[www.pcounter.com/supportfiles/pstation\\_guide.pdf](http://www.pcounter.com/supportfiles/pstation_guide.pdf)

**Pcounter for Windows - Balance.exe as a Web App:**

[https://www.youtube.com/watch?v=J\\_IVgsgopnI](https://www.youtube.com/watch?v=J_IVgsgopnI)