# CNV-1000 Converter Setup

The CNV-1000 is an ethernet to RS-485 converter that is required for communication to the BioSync readers. The converter automatically connects to the BioSyncs via their serial number/MAC address and so no addressing of the readers is required.

The host PC connects to the CNV-1000, then the CNV-1000 connects to the BioSync readers via an RS-485 network. The RS-485 network between the BioSync units is used for fingerprint transfer and reader settings and fingerprint enrollment can be performed from any biometric unit in the network (or from the desktop USB enrollment station) - Part number (KBF-ENR). One CNV-1000 is required per installation (not one per fingerprint reader)
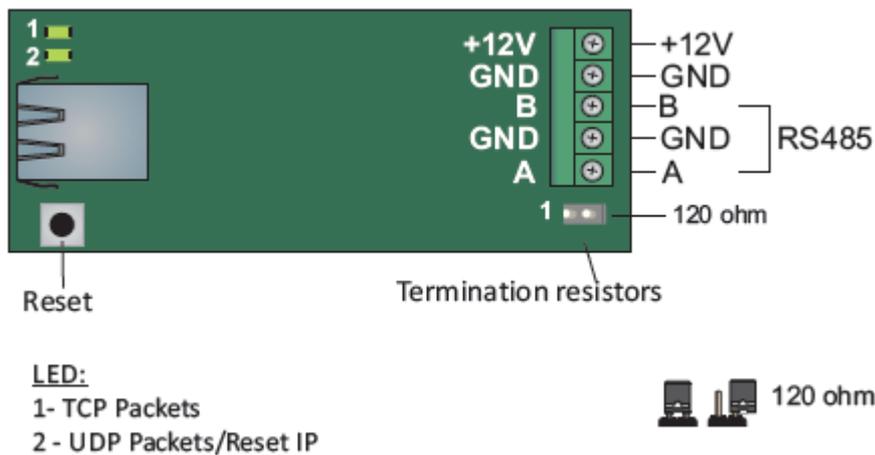
Installation Notes:

- The maximum numbers of BioSync readers on a single RS-485 line is 32.
- More than 32 fingerprint readers requires an additional CNV-1000.
- The RS-485 line should be wired in the form of a continuous daisy-chain, NOT as a star configuration.
- The shield of the RS-485 line between two devices should be connected to the Earth from ONE side of the data line... Use the side which has the earth connection to the building grounding network.
- The maximum cable run distance of the entire RS-485 network is 1000 feet.
- The recommended cable type for the RS-485 network is Belden 9501 (or equivalent).

![Keri Systems Incorporated logo]

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The following information explains how to setup the CNV-1000 converter.

CNV-1000 Hardware Connection

This converter is connected to the PC over a local area network, directly with a cross-over cable or using a network hub or switch. It uses an external 12VDC power-supply and does not require any drivers to be installed.

1. Apply 12VDC power to the CNV-1000.
2. Connect the host PC to the CNV-1000 using a cross-over cable or via a hub/switch using a patch cable.
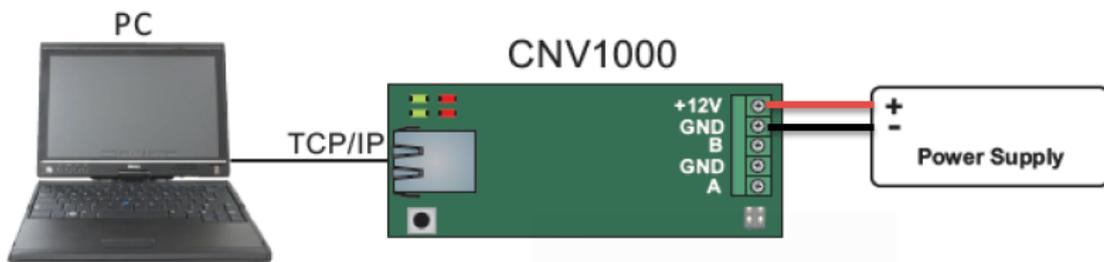
3. Connect the first BioSync to the CNV-1000 using the RS-485 connections.
4. Connect the second BioSync to the first BioSync by daisy-chaining the RS-485 connections.
5. Continue the RS-485 daisy-chain connection to other BioSync readers.
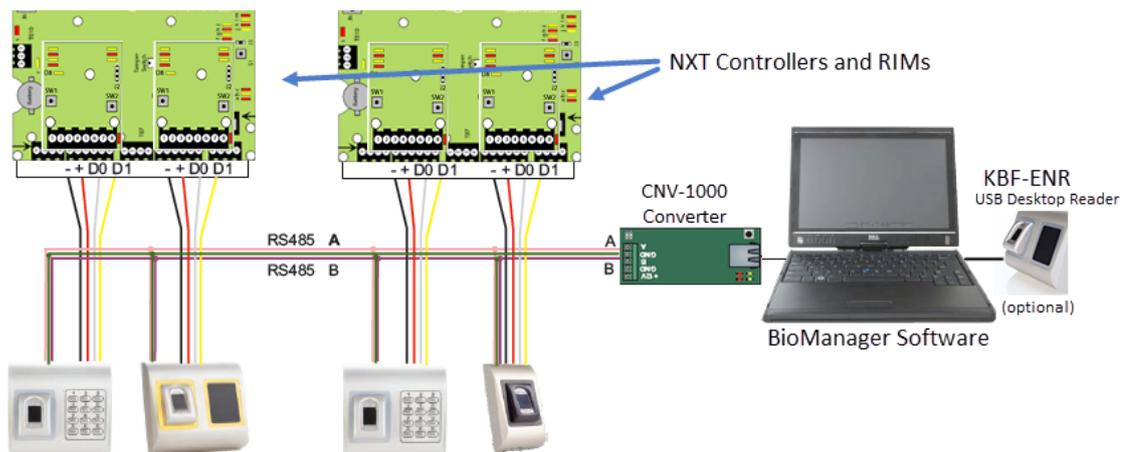
6. Wire the BioSync readers into the RIMs (which should be configured for Wiegand).
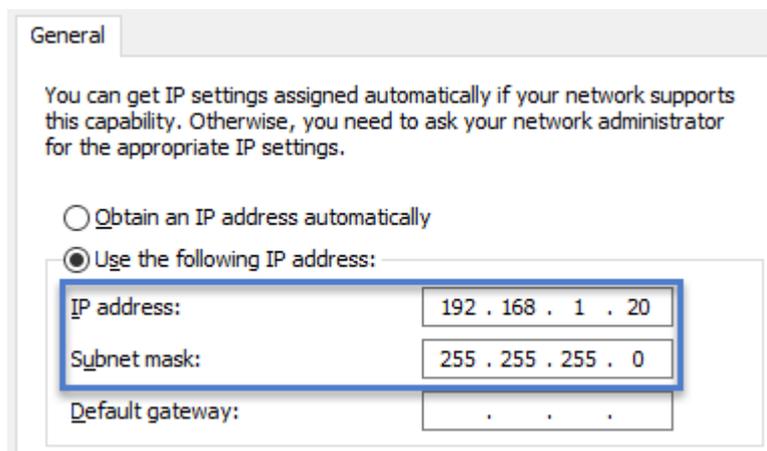
CNV-1000 Host PC Connection

IMPORTANT: The CNV-1000 has a default IP address of **192.168.1.100** so for initial connection and configuration you will have to set the host PC with an IP address in the same IP range:

Consult an IT professional if you require assistance changing the host PC IP address.

1. From Windows Control Panel, go to **Network and Sharing Center.**
2. On the left-side of the screen click on **Change Adapter Settings.**
3. Right-click **Local Area Connection** and choose **Properties.**
4. Highlight Internet Protocol Version 4 (TCP/IPv4).
5. Click the **Properties** button.
6. Verify that **Use the following IP address** is selected.
7. Enter an IP address on the range of 192.168.1.X (but not 192.168.1.100).
8. Press the tab key and the Subnet mask should auto-infill with 255.255.255.0
9. The default gateway fields should be left blank.

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically
◉ Use the following IP address:

IP address:	192 . 168 . 1 . 20
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	. . .

10. You will now be able to connect to the CNV-1000 via a web browser.

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CNV-1000 IP Address Change

1. Open a web browser and in the address bar, enter the default IP address for the CNV-1000.
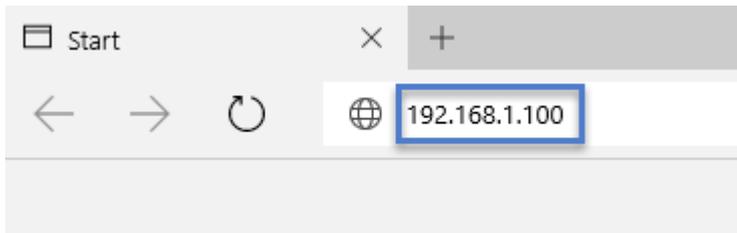
2. A login window will appear prompting you for a user name and password.

    - Default user name = **admin**
    - Default password = **00000000** (eight zeros)

3. In the **Settings** section enter the IP address you wish to assign to the CNV-1000.

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Settings

System WAN / LAN

IP Address `???.???.???.???`

SubnetMask `255.255.255.0`

Gateway IP `192.168.1.1`

DNS Server `0.0.0.0`

DHCP Enable ☐

4. Then click on the UPDATE AND RESET button.

Update and Reset

Firmware v 2.02
NetID: 59138723

5. You will then see the following message:

SETUP COMPLETE.

### System will RESET to validate the new settings.

To login again, please retype the (new) IP into browser's URL.

6. After a few seconds the CNV-1000 will be set to the new IP address.

Note: If the new address is on a different range to 192.168.1.X then you will need to alter the host IP address again to be within the new range before you can connect to the converter again. Follow the steps outlines in the previous section to change the host IP address.

Resetting the CNV-1000
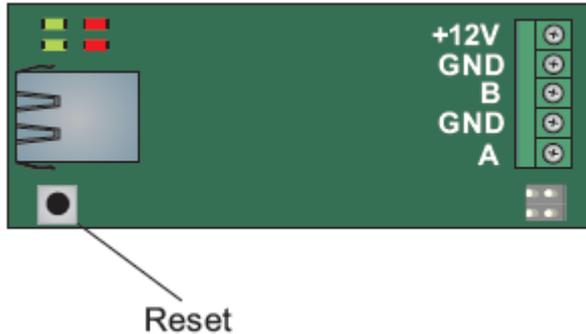
Reset

Perform the following steps to clear the converter's configuration and to set the IP address back to the default.

1. Remove the CNV-1000 cover and you will see the PCB.
2. Press and hold the black reset button for at least 5 seconds.
3. The second green LED should illuminate.
4. The converter is now reset (IP address and the TCP port and the password will be at their defaults).

Adding the CNV-1000 as a Portal

Within the BioManager software the converter is referred to as a portal. The portal must be added before you can add the BioSync readers to the software.

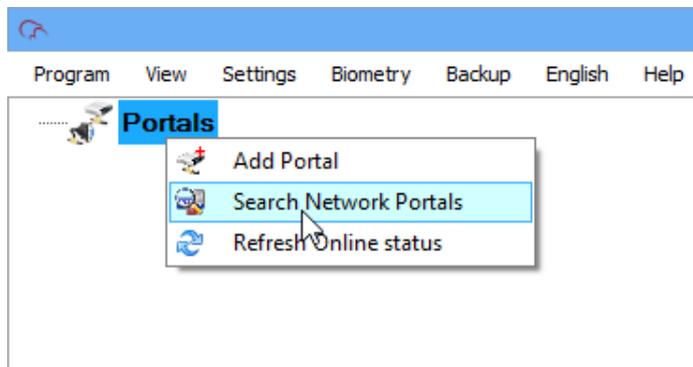1. Click the BioManager client icon on the desktop.

2. If no operators have been setup then the user interface should open.
3. A general system events grid will be displayed on the main window pane.
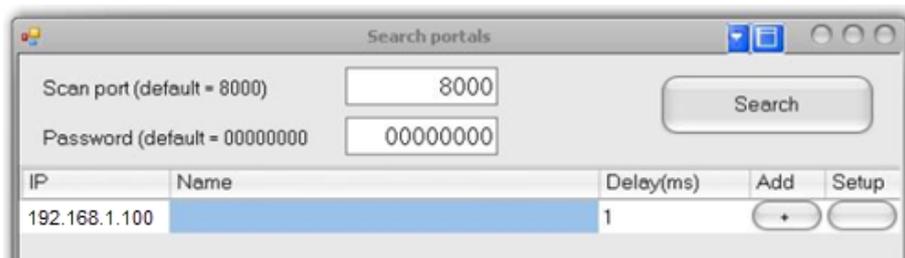
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4. On the left of the screen you will see **Portals.**
5. Right-click Portals and select **Search Network Portals.**

6. Click the SEARCH button and wait...
7. If the CNV-1000 is found it will be displayed in the table.

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Note: You can also add the portal manually (via right-click - Add Portal), you then simply type the IP address which is assigned to the CNV-1000).

8. Enter an 8 digit device password (factory default is 00000000).
9. Select the row with the portal listed and click on the Setup button to configure it.
10. The setup portal window is shown with the portal settings. If the values are empty, reading settings from the CNV-1000 will not be possible.
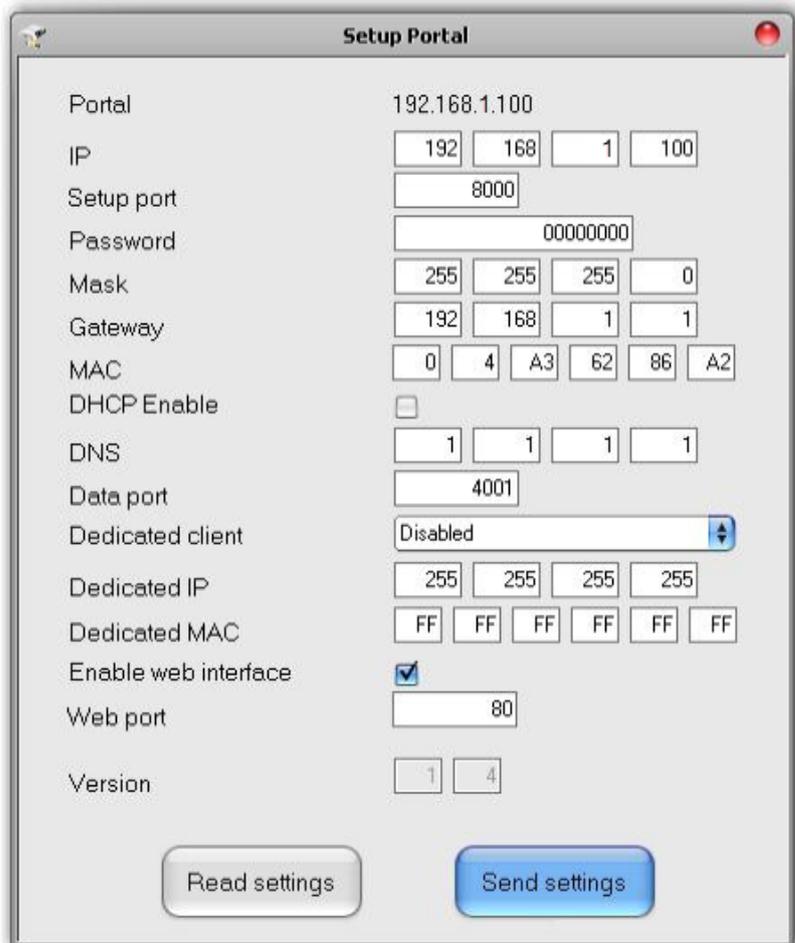
Setup Portal	
Portal	192.168.1.100
IP	192 168 1 100
Setup port	8000
Password	00000000
Mask	255 255 255 0
Gateway	192 168 1 1
MAC	0 4 A3 62 86 A2
DHCP Enable	☐
DNS	1 1 1 1
Data port	4001
Dedicated client	Disabled
Dedicated IP	255 255 255 255
Dedicated MAC	FF FF FF FF FF FF
Enable web interface	☑
Web port	80
Version	1 4

Read settings   Send settings

11. Enter New Settings:

    - **IP:** IP address of device
    - **Setup port:** Network port for search and setup. Changing is not recommended.
    - **Password:** Password for access to read and change the settings of the CNV-1000. It is recommended to change the default password and use it for all converters in the system.
    - **Mask:** Enter the device subnet mask.
    - **Gateway:** Default gateway.
    - **MAC:** Physical address of the device. Changing is not recommended.

- **DHCP Enable:** Enable the DHCP client.
- **DNS:** Address of the DNS server.
- **Data port:** Port used for communication between BioManager and devices behind the converter.
- **Dedicated client:** To forbid unauthorized access to devices connected to the portal from another system, select one of the following options: a) **Disabled** - no source security checking, b) **MAC only** - the source MAC address must be equal to the Dedicated MAC value, c) **IP only** the source IP address must be equal to the Dedicated IP value, d) **IP or MAC** - at least one of the conditions from point b and c must be true, e) **IP and MAC** - both b and c conditions must be true.
- **Enable web interface:** enable or disable the CNV-1000 web interface for configuration.
- **Web port:** Web interface port.
- **Version:** Read-only field displaying the firmware version of the converter.

12. Click on SEND SETTINGS to configure the CNV-1000, in a few seconds you should see the results message notifying you that the settings have been successfully changed.
13. You are now ready to begin adding your BioSync readers to the BioManager software.

CNV-1000 Converter Firmware Upgrade Procedure

Perform the following steps to upgrade the firmware on a CNV-1000:

IMPORTANT NOTE: If the version is NOT greater than the detected version (being used by the CNV-1000) then DO NOT change the firmware.
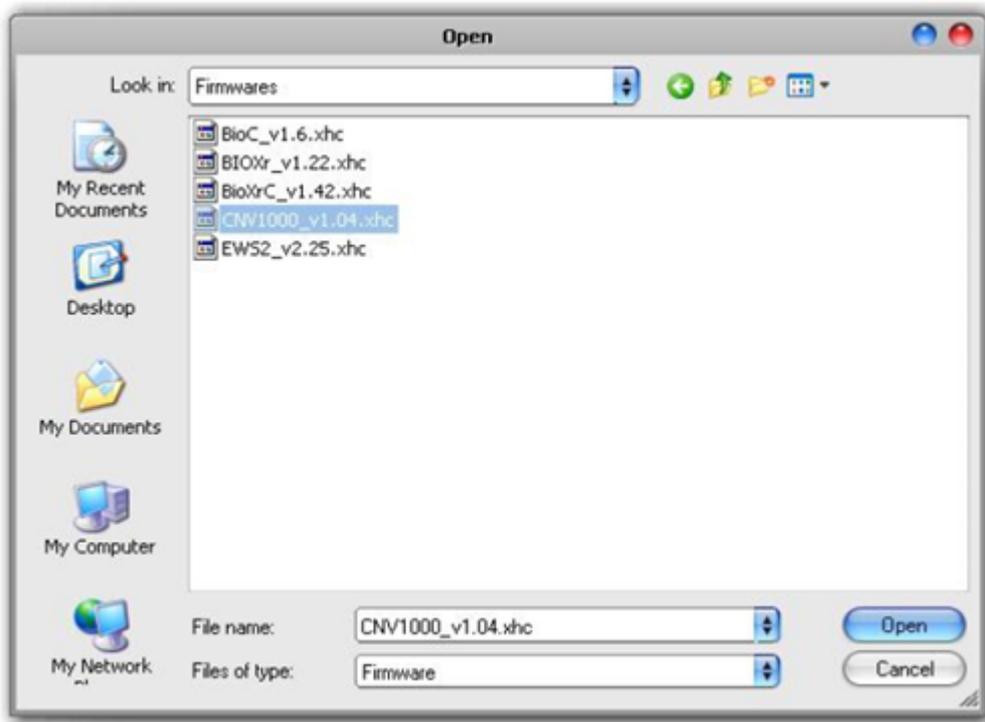
1. Right-click the portal to be updated and select the Firmware Update option.

2. On the firmware update window, click the Browse button. The default location of the firmware files installed with BioManager will be in the BioManager "Firmware"

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folder. If you have a newer version, use the Browse button to locate it.

3. Select the firmware file with a "xhc" extension.
4. Check the firmware version.

5. Click on the UPLOAD button.
6. Wait for the "Update End" message.
7. Close the Firmware Update window.

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