RPS Connection with a DX4020 and Crossover Network Cable Troubleshooting Flowchart

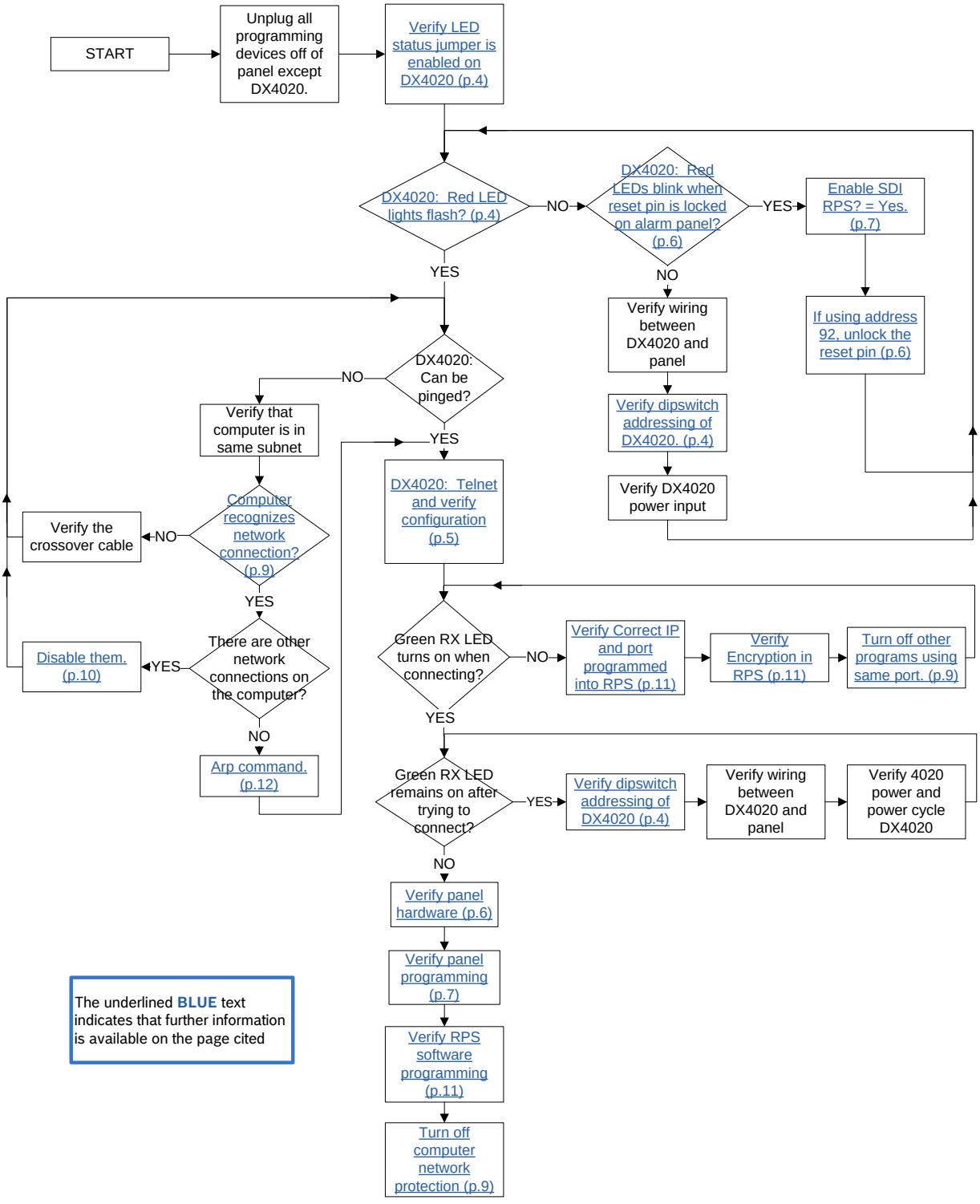


Table of Contents

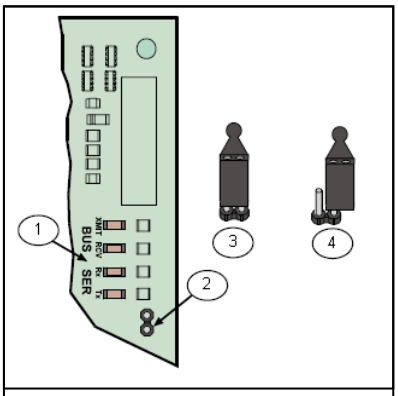
Special Note

Steps contained in this document are for troubleshooting purposes only. Once troubleshooting is complete, you may need to reconfigure your system to match your specific operating requirements. This document is not intended to replace other documents and should not be used for installation support. Please consult the referenced product's Installation and Operation Guides during use of this document.

DX4020 Configuration

LED Status Jumper

The P2 jumper must be in the on position to enable the LEDs



1. Ethernet and serial LEDs
2. P2 Jumper location
3. LEDs enabled
4. LEDs disabled

LED Display

- BUS – XMIT and BUS – RCV blink approximately once every second
- SER – RX blinks when the DX4020 receives a message from RPS over the network.
- SER – TX blinks when the DX4020 sends a message to RPS over the network

Dipswitches

		DX4020 DIP Switches							
Panel	**Address**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
G, GV2, GV3	88	Down	Down	Down	Up	Up	Up	Up	Up
GV3	92	Down	Down	Up	Up	Up	Up	Up	Up
FPD-7024	250	Down	Down	Down	Down	Down	Down	Down	Down

Telnet Configuration

- Firmware
  - Scroll to beginning of telnet session.
  - Locate "software version."
  - Upgrade the module to latest firmware.
    - Xport - 01 = Firmware version 5.8.8.3 (as of 4/12/2011)
    - Xport - 03/04 = Firmware version 6.1.8.3 (as of 4/12/2011)
- Server Configuration
  - Verify IP address, gateway, and subnet mask with the network administrator.
- Channel 1 configuration
  - Baudrate: 9600
  - I/F Mode: 4C
  - Flow: 00
  - Port: 7700 (can vary by customer's choice)
  - Connect Mode: CC
  - Datagram Type:

Panel Version	Datagram Type
G Series: Firmware 6.9 and lower	00
G Series: Firmware 7.0	02
GV2 Series: Firmware 7.05 and lower	00
GV2 Series: Firmware 7.06 and higher	02
GV3 Series: All versions	02
FPD-7024	02

- Security Settings
  - Enable encryption:
    - If set to *Yes*, encryption must be *Enabled* or *Auto* and the key must match in RPS.
    - If set to *No*, encryption must be *Disabled* or *Auto* in RPS.

Alarm Panel Configuration

Alarm Panel Firmware

The firmware in the G Series Control Panels must be version 6.3 or later to work with the DX4020.

All firmware versions of the GV2/GV3 Series Control Panels and the FPD-7024 will work with the DX4020.

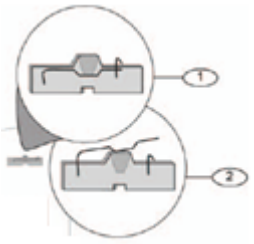
Alarm Panel Hardware

Verify that no other devices are causing a conflict with the DX4020

- No other devices on the panel may use the same address as the DX4020. The DX4020 will be set for address 88, or it may be set to address 92 on GV3 series panels
- Unplug all devices from the port labeled PROG.

Lock the S1 Reset pin down when the DX4020 is configured as Address 88. Test the RPS connection again.

Note: Do not lock the reset pin when the DX4020 is configured as Address 92.



1. Reset pin locked (closed)
2. Reset pin normal (open)

Locking the reset pin performs several troubleshooting functions.

- Prevents the panel from communicating with other devices on the SDI BUS.
  - This can help in situations where damaged or incorrectly installed hardware is causing communication issues on the BUS.
- Prevents the panel from sending messages to a central station over the network.
  - This can help in situations where a panel is not able to communicate with the programmed central station. Outbound communication attempts could prevent some inbound attempts by RPS.

Take all devices off of the SDI BUS except for the DX4020. Test the RPS connection again.

Alarm Panel Programming

For the G, GV2, and GV3 panels, verify the configuration with another approved connection method (ex. modem, D5360, DX4010V2, D5200).

For the FPD-7024, verify the configuration via the panel's keypad.

G Series Configuration

- 9000Main | Panel Wide Parameters | RAM Parameters
  - RAM Passcode = RPS will need to match this number in RPS Passcode field of the Panel Communication window.
- RADXAUX1 | SDI RAM Parameters
  - Enable SDI RAM? = Yes
  - SDI RAM Callback Enabled? = No
    - If set to Yes, SDI RAM IP Address must be set to the IP address of the RPS host computer.

GV2 Series and GV3 Series (8.10 and lower) Configuration

- GV2Main | Panel Wide Parameters | RPS Parameters
  - RPS Passcode = RPS will need to match this number in RPS Passcode field of the Panel Communication window.
- GV2AUX1 | SDI RPS Parameters
  - Enable SDI RPS? = Yes
  - SDI RPS Callback Enabled? = No
    - If set to Yes, SDI RPS IP Address must be set to the IP address of the RPS host computer.

GV3 Series (8.11 and higher) Configuration

- Panel Wide Parameters | RPS Parameters
  - RPS Passcode = RPS will need to match this number in RPS Passcode field of the Panel Communication window.
- AUXPARM | SDI RPS Parameters
  - Answer RPS over network? = Yes
  - RPS Address Verification? = No
    - If set to Yes, SDI RPS IP Address must be set to the IP address of the RPS host computer.

FPD-7024

1. Press 0 and type 9876.
2. Press 3 for Program System.
3. Press 4 for Option Bus.
4. Press 1 for Update Bus. The display will show "Updating....TOT BUS DEVS: XX" where XX is the total number of devices on the Option Bus. If 00 or the wrong total number of devices is shown, check the wiring and addressing of each device on the Option Bus. Each Device needs to have its own address. Repeat steps 3 and 4 until all attached devices are entered into the panel.
5. Press 7 for Remote Program.
6. Press 1 for Enable.
7. Press * once. The top line of the display should read "PROG MODES."
8. Press 6 for Program Accounts.
9. Press 4 for Ring Count.
10. Press Enter 02.
11. Press 7 for Alternate Communications.
12. Press 0 for Network.
13. Press * 4 times to return to System Normal.

RPS Host Computer Configuration

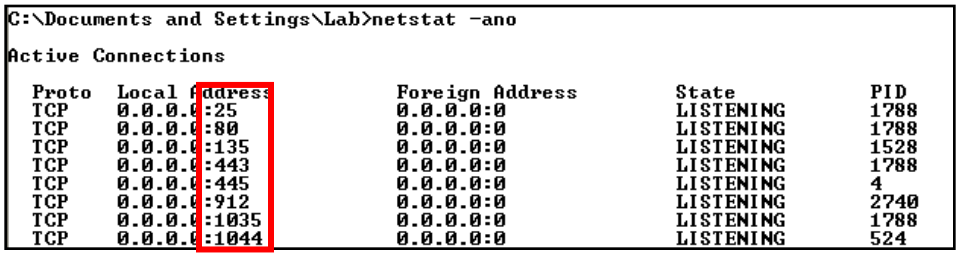
Network Protection

1. Disable all virus scanners on the host computer.
2. Disable all firewalls on the host computer.

Conflicting Programs

Verify that RPS is the only program running on the host computer that uses the same network port as programmed into the DX4020 Channel 1 configuration.

1. Close RPS.
2. Open a Command Prompt on your computer.
3. Type in **netstat –ano**.
4. Press [Enter].
5. A table similar to the one below appears.

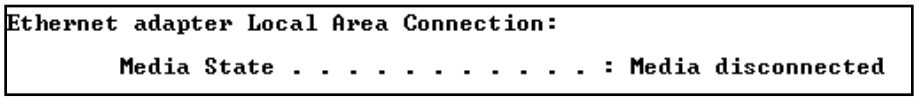


```
C:\Documents and Settings\Lab>netstat -ano

Active Connections

  Proto  Local Address          Foreign Address        State           PID
  TCP    0.0.0.0:25             0.0.0.0:0              LISTENING       1788
  TCP    0.0.0.0:80             0.0.0.0:0              LISTENING       1788
  TCP    0.0.0.0:135            0.0.0.0:0              LISTENING       1528
  TCP    0.0.0.0:443            0.0.0.0:0              LISTENING       1788
  TCP    0.0.0.0:445            0.0.0.0:0              LISTENING       4
  TCP    0.0.0.0:912            0.0.0.0:0              LISTENING       2740
  TCP    0.0.0.0:1035           0.0.0.0:0              LISTENING       1788
  TCP    0.0.0.0:1044           0.0.0.0:0              LISTENING       524
```

6. In the Local Address column, the network ports currently in use on the computer are displayed after the IP address.
7. Scroll through the table to verify that your DX4020 Channel 1 network port is not in the list.
8. If it is in the list, find and turn off the program currently accessing that network port. Test the RPS connection again.

Verify that your computer sees a network connection

1. Open a Command Prompt on your computer.
2. Type in **ipconfig**.
3. Press [Enter].
4. Information similar to one of the two images below will be displayed. We are only concerned with the information for your Ethernet adapter Local Area Connection.



```
Ethernet adapter Local Area Connection:

        Media State . . . . . . . . . . . : Media disconnected
```

If the display shows “Media disconnected” for your Local Area Connection as in the image above, then the computer does not see a network connection to your DX4020.

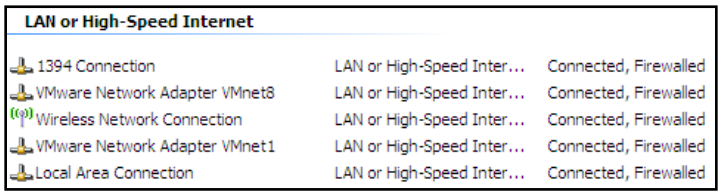
```
Ethernet adapter Local Area Connection:

        Connection-specific DNS Suffix  . :
        IP Address. . . . . . . . . . . . : 172.30.0.168
        Subnet Mask . . . . . . . . . . . : 255.255.0.0
        Default Gateway . . . . . . . . . : 172.30.0.4
```

If the display shows an IP address for your Local Area Connection as in the image above, then the computer does recognize a network connection to your DX4020.

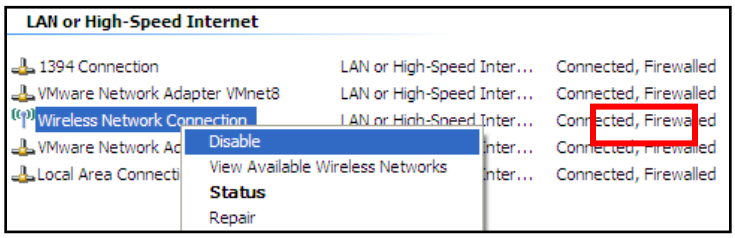
Disable all network connections other than the Local Area Connection

Windows XP

- Browse to *Start* | *Control Panel* | *Network Connections*.

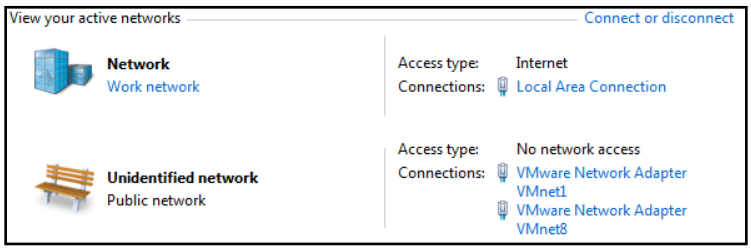


- Right-click on a connection to be disabled. Select *Disable*.



Windows 7

- Browse to *Start* | *Control Panel* | *View Network Status and Tasks*.



- Click on the connection you would like to disable, and select *Disable*.

RPS settings

RPS Version

Upgrade your installation of RPS to the latest version. You can verify the version of RPS installed on your computer by browsing to Help | About.

The latest version is 5.13 (as of 5/5/2011)

Panel IP Address, Port, and Encryption

Highlight the panel in the panel list and click View.

- Select the Panel Info tab.
  - Verify that the correct panel type and Datalock are selected.
  - For GV3 panels only, also verify that the correct Panel Version range is selected.
- Select the Network tab.
  1. Verify the IP Address and port number fields.
     - The IP address and port number must match those programmed into the DX4020.
  2. Verify the Encryption and Key fields.
     - If encryption is turned on in the DX4020 Telnet configuration, then set the Encryption field to Enabled and verify that the Key field is correct with the following steps.
       1. Browse to Config | System.
       2. Click on the Encryption Key tab.
       3. Verify that your encryption key is listed in the table.
          - If it is, make a note of the Name.
          - If not, edit a default key to match the number programmed and enter a name and the key.
       4. Click OK. Click OK again.
       5. Highlight the panel in the panel list and click View.
       6. Select the Network Tab and edit the Key field so it reflects the name of the encryption key programmed in your DX4020.

RPS Passcode

Double-click on your panel in the Panel List and click Connect to display the Panel Communication window. Retype the RPS Passcode and click the Connect button to attempt to connect to the panel.

Note: Once a connection is established, RPS will save the RPS Passcode.

ARP Troubleshooting

Address Resolution Protocol (ARP) is used to convert an IP address into a physical address (MAC Address). This is necessary for commands, such as Telnet, which must reference an IP address.

NOTE: The ARP command only builds a temporary association table on your computer. It does not attempt to connect to the DX4020 and cannot be used as proof of a connection.

For the ARP command to assist with your DX4020 configuration, you must enter an IP Address that is in the same subnet as your computer. Otherwise the following telnet commands will fail.

Reference your DX4020 Installation Guide for proper ARP command procedures.

ARP Command Errors

"The arp –s command was entered incorrectly."

- Type **arp –d *.** This command deletes the ARP table so you can re-enter your information.

"Arp entry addition failed: 5" or "Arp entry deletion failed: 87."

- This message implies that you are running the command as a computer user with lower level permissions. Close your command prompt window. Browse to Start | Programs | Accessories and right-click on the Command Prompt executable file. Select Run As… and run the program as an administrator.
- If you are using Windows 7 and the ARP entry still fails as administrator, complete the task using the following commands.
  1. At a command prompt, type **ipconfig**.
     - Discover the name for the adapter you are using.
     - For example, the image below shows that the name of this adapter is "Local Area Connection."

       ```
       Ethernet adapter Local Area Connection:
       ```
  2. At a command prompt, type:
     - **Netsh –c interface ipv4 set neighbors "[*name of adapter*]" [*IP Address being assigned to DX4020*] [*MAC Address of DX4020*]**
       - Example: netsh –c interface ipv4 set neighbors "local area connection" 172.30.0.20 00-20-4a-a6-94-5e.
     - To check that you have entered the information correctly, type in **netsh –c interface ipv4 show neighbors** and find your entry in the table displayed.
  3. Once this address association is complete, continue to the telnet connection.

Telnet Troubleshooting

Telnet is a protocol that allows you to connect to remote servers over a TCP/IP network.

Reference your DX4020 Installation Guide for proper telnet command procedures.

Telnet Command Errors

Command prompt displays "Telnet is not a recognized command"

This implies that Telnet is not installed on your computer. Complete the following steps.

Windows XP

- Browse to C:\WINDOWS\system32\telnet.exe
- Verify that this file exists on your computer
    - If not, copy it from a different computer and paste it into the above location on the computer needing telnet.

Window 7 or Windows Vista

- Click the Windows Start button.
- Click Control Panel.
- Select Programs.
- Select Turn Windows Features On or Off.
- Wait for the window to populate.
- Click the check boxes beside Telnet Client.
- Click OK and wait for the installation to complete.

Telnet attempt to port 1 does not fail within a couple of seconds

This implies that the computer is not seeing the DX4020s MAC address across the network due to one of the following reasons.

- The arp –s command was entered incorrectly. Type **arp –g** and press enter at the command prompt to verify that you have entered the IP Address and MAC address correctly. Compare this to the MAC address written on your DX4020.
- The computer's IP Address and the IP Address you assigned through ARP are in different subnets.
    - Type in **ipconfig** and press [Enter]. Verify that you have assigned the DX4020 a temporary IP Address that is in the same subnet as your computer.
- The DX4020 is not powered up.
- There is a bad network connection
    - Verify your crossover cable is made properly.
- The computer is trying to connect using wrong network adapter.
    - Disconnect all network adapters except for the local area connection.

Telnet connection displays "password:" when connecting

This is displayed when someone has configured a Telnet login password on the DX4020 under the Server section of programming. If a login password has been programmed into the DX4020, you must enter that password before continuing. The only way to default the password is to send it in to Bosch Repair Department to be defaulted.

-End of Document-