FLX05000031 – The license exists but the start date is in the future.

This message occurs when a valid license exists, but the start date is in the future.

Resolution: Ensure the PC Clock is set to current time and date.

FLX24500001 - Unable to connect to the license server

This message indicates that no network connection is available.

Resolution: Check the PC network connections. If this does not resolve the issue, check the firewall settings, or use the offline licensing process.

FLX22051302 - The response file has been altered

This message indicates that the response file has been altered and a new file must be obtained from the license administrator. It occurs when the user attempts to load the Manual Request file as the Manual Response file.

Resolution: Obtain the Manual Response file through the DSL website, or through your license coordinator.

FLX98007109 - The entered Activation ID was not found on the license server

This message occurs when entered Activation ID was not found on the server

Resolution: Ensure that the key is valid and that it is being entered correctly.

Note: The Activation ID must be entered in lower case letters. Using capital letters will cause this error.

FLX98007288 – The entered activation has already been licensed by another user.

This message occurs when two users attempt to use the same Activation ID.

Resolution: Ensure that the Activation ID has been entered correctly. If a license was previously obtained and used on a PC that is no longer function, contact the license administrator to obtain a new Activation ID.

FLX98009999 - License Error

This message occurs when the Activation ID used was not created for the selected service tool.

Resolution: Verify that the Activation ID is valid for the selected service tool. If the error continues to occur, contact a Cat Dealer or Media Logistics.

FLX01000006 – PREPTOOL HAS NOT BEEN USED ON APPLICATION

1. Go to C:\Program Files (x86)\Common Files\Offboard Information Products\<version number>\Comet

2. Delete comet.exe and comet_libFNP.dll

3. Next, Go to: C:\Program Files (x86)\Common Files\Offboard Information Products\Comet

4. Delete comet.exe and comet_libFNP.dll

5. Relaunch service tool to perform auto-repair. If the auto-repair does not proceed, rerun the installation media

FLX01000020 – Flexnet licensing service is not running

1. Right-click on Computer and select **Manage**.

2. Under Services and Applications, select **Services**.

3. Double-click on FLEXnet Licensing Service and click **Start**.

Note: If license service does not appear in the list, reinstall the service tool.

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FLX1000021 – User does not have adequate rights for communication with FLEXnet Licensing Service

1. Right-click on Computer and select **Manage**.

2. Under Services and Applications, select **Services**.

3. Double-click on FLEXnet Licensing Service and click **Start**.

Note: If license service does not appear in the list, reinstall the service tool.

FLX05000076, FLX05000157, FLX08050030, FLX99500000, FLX11500000 – Corrupted Trusted Storage Files

A utility has been included with the service tool to correct certain license corruption issues.
Follow these steps to run the utility:

- Simultaneously press the Windows (⊞) Key and the R key and a dialog box will appear.

- Enter "CMD" in the dialog box and then press the Enter key. A command window will appear.

- Copy and then paste the command below into the command window:

    "%PROGRAMDATA%\Offboard Information Products\OIPLicenseUtil.exe" -cleanup

- Press the Enter key and the utility will log the current licensing information.

After running this utility, the service tool can be relicensed using the following procedure:

- Open Windows File Explorer.

- Copy and then paste the location below into the address bar:

    %PROGRAMDATA%\Offboard Information Products

- Open the most recent filename beginning with "OIPLicense_active" which contains a list of activation IDs for

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installed service tools.

- Start the service tool and a dialog will appear stating that the tool is not licensed.

- Follow your standard licensing procedure after which the program should be successfully licensed.

FLX12050005 – Corrupted License

1. Delete the following folder

- For 32-bit OS: C:\Program Files\Common Files\Offboard Information Products\
- For 64-bit OS: C:\Program Files (x86)\Common Files\Offboard Information Products\

2. When the folder is deleted, re-launch the service tool.

FLX24051404 – Issues sending information to Flexera servers

If the activation ID was copied and pasted into the activation screen, try manually typing in all the activation information and attempt to activate again.

If the problem persists, try to license the service tool using the offline method.

FLX98007174 - Activation ID is expired

Contact the License Administrator for a new Activation ID.

FLX98007343 – The License order is expired

Contact the License Administrator for a new Activation ID.

FLX99500003 – Activation ID is already active on this PC

A utility has been included with the service tool to correct certain license corruption issues.

Follow these steps to run the utility:

- Simultaneously press the Windows (⊞) Key and the R key and a dialog box will appear.
- Enter "CMD" in the dialog box and then press the Enter key. A command window will appear.
- Copy and then paste the command below into the command window:

  "%PROGRAMDATA%\Offboard Information Products\OIPLicenseUtil.exe" -cleanup
- Press the Enter key and the utility will log the current licensing information.

After running this utility, the service tool can be relicensed using the following procedure:

- Open Windows File Explorer.
- Copy and then paste the location below into the address bar:

  %PROGRAMDATA%\Offboard Information Products

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- Open the most recent filename beginning with "OIPLicense_active" which contains a list of activation IDs for installed service tools.

- Start the service tool and a dialog will appear stating that the tool is not licensed.

- Follow your standard licensing procedure after which the program should be successfully licensed.

Ethernet Direct Connection

For troubleshooting information, please refer to the IP Flash over Ethernet Troubleshooting Guide topics listed below:

- [Preferences Settings](#)
- [Physical Network Connectivity](#)
- Verify Windows Network Settings
    - [IP Address](#)
    - [OIPNet Service](#)

- [VPN/Firewall/Antivirus Software](#)

- [Windows 10 Network Settings](#)
    - [Check the status of the connection](#)
    - [Verify that the network adapter is automatically detecting the network speed](#)
    - [Disable the "Caterpillar Machine Network Connection"](#)
    - [Disable any air card or cellular network connection](#)

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Note: Caterpillar cable 305-5528 is required. ECMs capable of Ethernet flashing will also detect over J1939 via Cat Communication Adapter.

1. From the Communications tab (1) of the Preferences dialog, select Ethernet Direct Connection (2).

2. Ensure that the appropriate Ethernet adapter has been selected (3). Ethernet adapter descriptions will vary by manufacturer.

Note: If the Ethernet adapter does not appear as a selection, check the Device Manager to ensure Ethernet adapter drivers have been installed and the device is working properly.
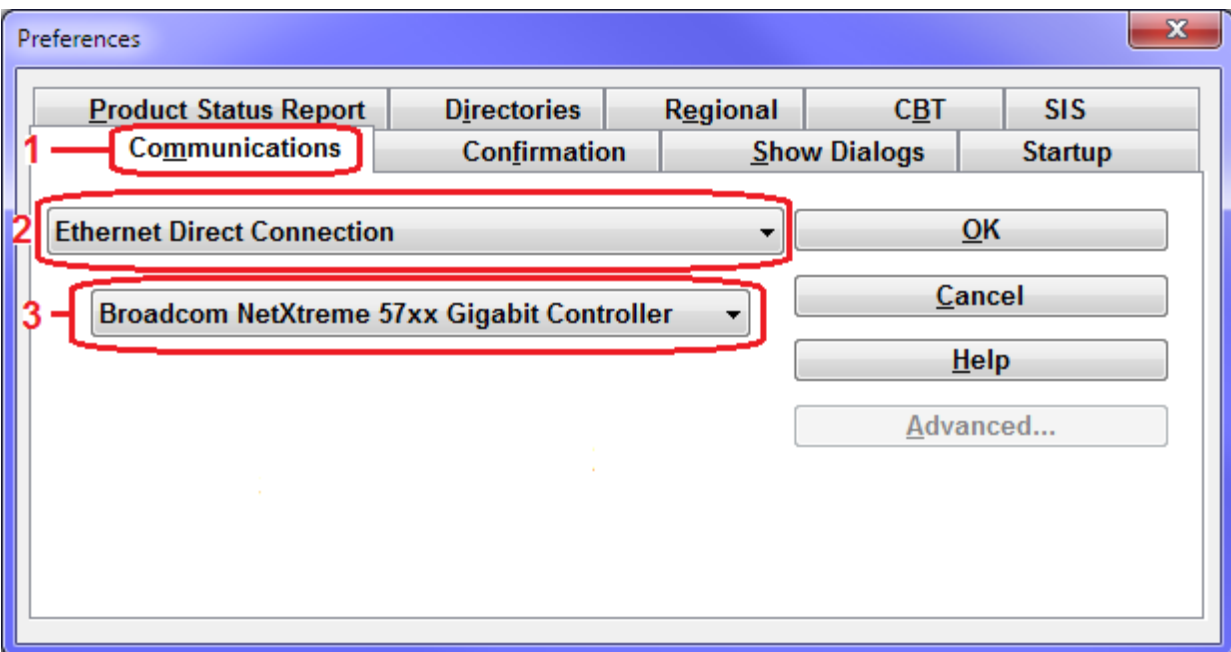
Physical Network Connectivity

1. Using Caterpillar cable part number 305-5528, make sure the deutsch-style connector is plugged securely into the Ethernet Service Port on the machine and that the RJ45 connector-end is plugged securely into the network adapter slot on the PC.

2. Verify that the status lights on the PC Ethernet port are illuminated. Generally, there are two lights: one light is continuously illuminated and the other light flashes according to network activity. On some ports, there may be only a single light that flashes with network activity.
   a. If no status light is illuminated, there is a physical wiring problem between the ECM and the PC. Verify continuity of the cable and/or substitute a different cable.

   b. If a status light is red, consult the documentation for the network adapter. Under normal conditions, the lights are typically green, amber, orange, or yellow.

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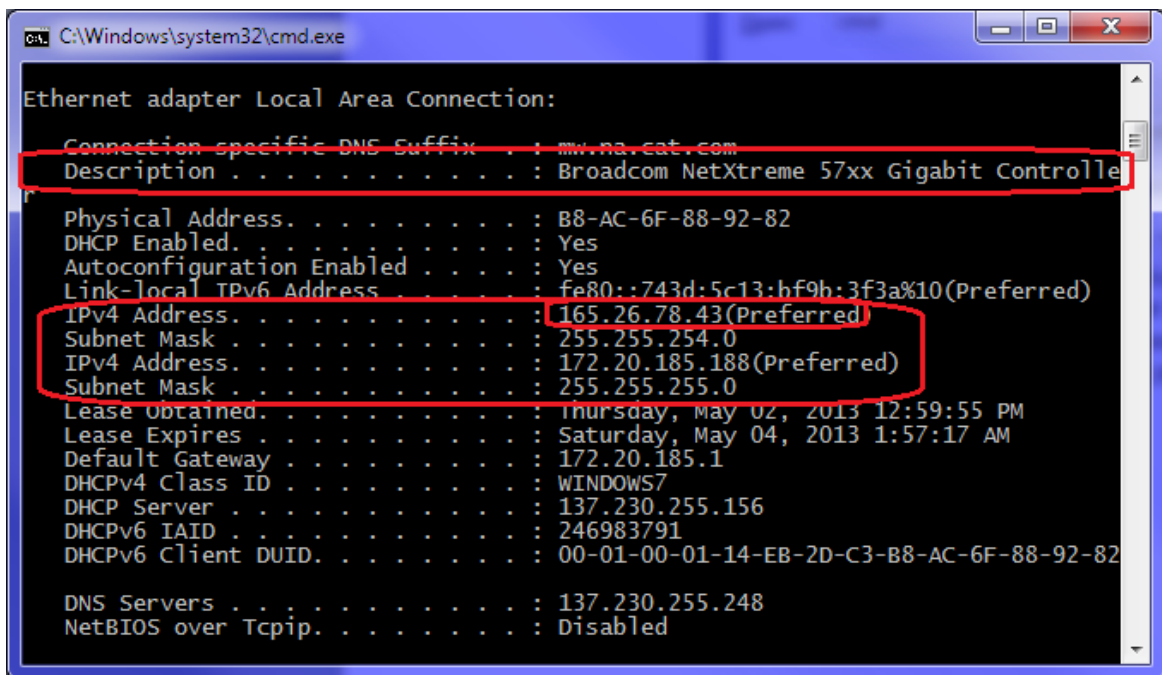
Illustration 17   g03287317

(8) Machine service connector
(9) Ethernet service connector

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IP Address

1. Launch the service tool and go to Utilities>WinFlash.

2. Leave the WinFlash window open while performing the remaining steps in this section of the Troubleshooting Guide.

3. Attempt to connect ECM using Ethernet. **Note:** An ECM does not actually have to be detected in order to perform the following procedures

4. Open Command Prompt: Start>All Programs>Accessories>Command Prompt

5. Type **ipconfig /all** and press Enter. A screen similar to the following will be displayed:

```
C:\Windows\system32\cmd.exe

Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix  . : mw.na.cat.com
   Description . . . . . . . . . . . : Broadcom NetXtreme 57xx Gigabit Controller
   Physical Address. . . . . . . . . : B8-AC-6F-88-92-82
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::743d:5c13:hf9b:3f3a%10(Preferred)
   IPv4 Address. . . . . . . . . . . : 165.26.78.43(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.254.0
   IPv4 Address. . . . . . . . . . . : 172.20.185.188(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Lease Obtained. . . . . . . . . . : Thursday, May 02, 2013 12:59:55 PM
   Lease Expires . . . . . . . . . . : Saturday, May 04, 2013 1:57:17 AM
   Default Gateway . . . . . . . . . : 172.20.185.1
   DHCPv4 Class ID . . . . . . . . . : WINDOWS7
   DHCP Server . . . . . . . . . . . : 137.230.255.156
   DHCPv6 IAID . . . . . . . . . . . : 246983791
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-14-EB-2D-C3-B8-AC-6F-88-92-82

   DNS Servers . . . . . . . . . . . : 137.230.255.248
   NetBIOS over Tcpip. . . . . . . . : Disabled
```

6. Verify IP address starts with 165.26.78.x, where "x" is a number between 1 and 254. If multiple IPv4 addresses are listed, verify that any address matches the pattern.

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7. If no IP address is present, verify the network connectivity and also ensure that the OIPNet Service is running.

Verifying Windows Network Settings - OIPNet Service

Note: The service tool uses a Windows service to perform certain networking activities. If the Windows service does not appear, the log file does not exist, or the messages inside the log file do not match what is expected, call the service tool help desk.

1. Launch the service tool and go to Utilities>WinFlash.

2. Leave the WinFlash window open while performing the remaining steps in this section of the Troubleshooting Guide.

3. Attempt to connect ECM using Ethernet. **Note:** An ECM does not actually have to be detected in order to perform the following procedures

4. Access the Run dialog:

   - Right click on the **Start Menu** icon. Select **Run** from the list. Alternatively, push the "**Windows/Start**" key on the keyboard at the same time as the "**R**" Key. The **Run** dialogue window will open.

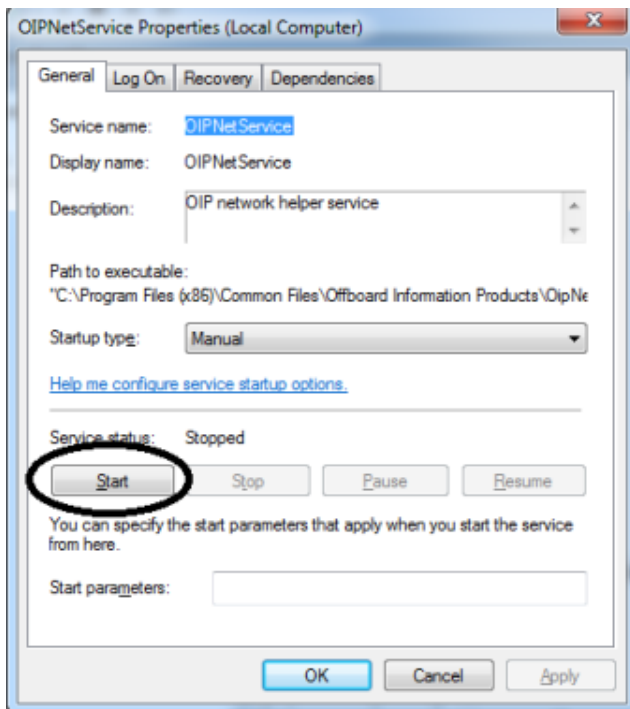5. Type **services.msc** and click *OK*.
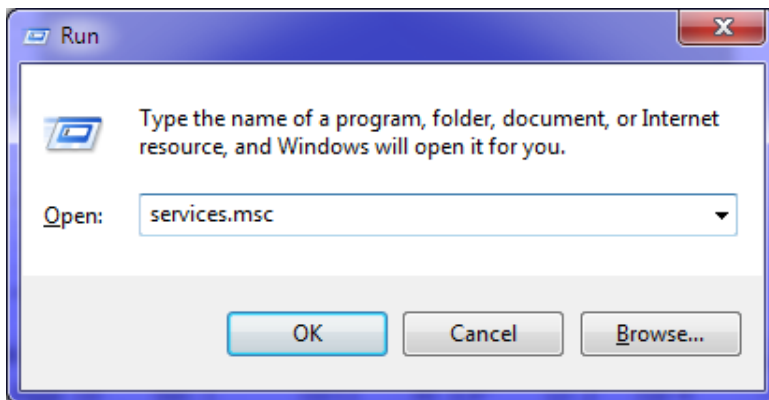
6. Verify that "OIPNetService" appears in the list of services. and then select the entry.
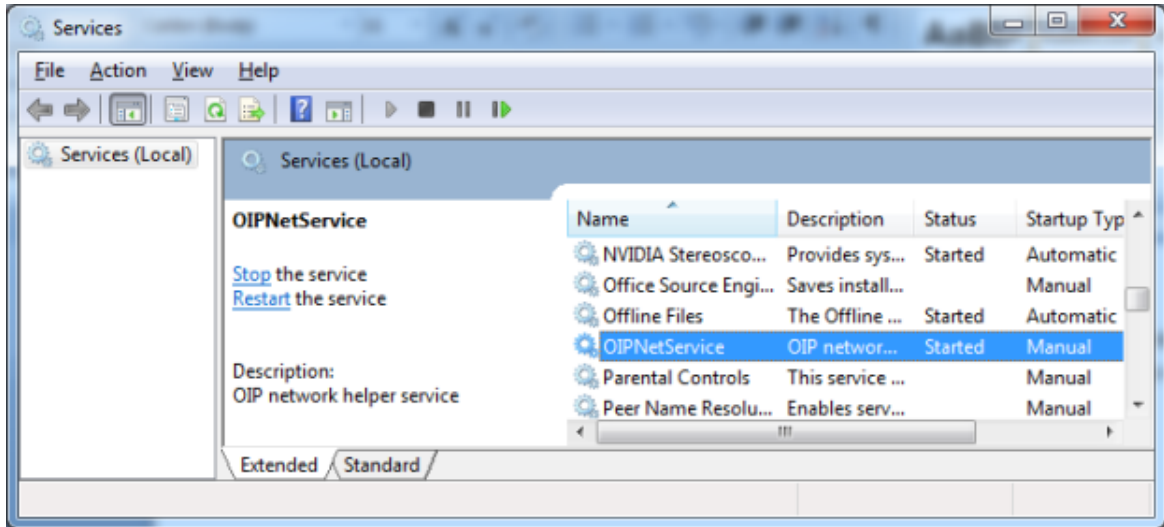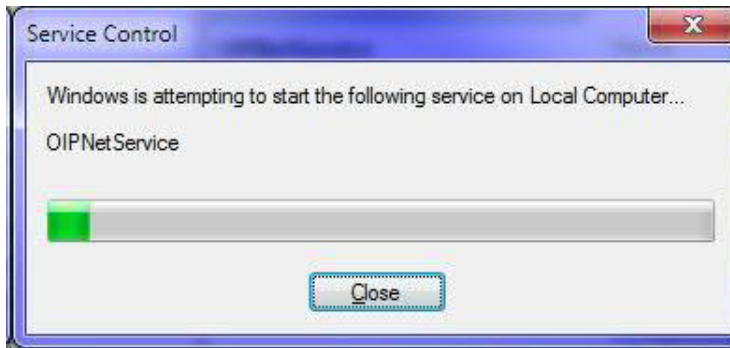
7. If the service is not started, double-click on OIPNetService in the right pane.

The following dialog displays the properties of the service. Click **Start** to start the service.

The following dialog will be displayed:

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Service Control

Windows is attempting to start the following service on Local Computer...

OIPNetService

Close

8. If the service does not start, reinstall the service tool or call the help desk for further assistance.

VPN/Firewall/Antivirus Software

Network filtering software, firewall software, and VPN software can interfere with ECM communications. Network filtering software and firewall software can block traffic going to or coming from the ECM. VPN software may route traffic intended for the ECM to a different network instead, such as a corporate network.

To troubleshoot this issue, perform the following steps:

1. Remove any air card/cellular card from the PC. The use of the air card/cellular card can affect how information is routed on the network.

2. Temporarily disable any VPN software.

   Note: This action prevents the PC from accessing the corporate network and may also prevent access to the Internet.

   a. Right-click on the VPN icon in the system tray. This icon may include, but is not limited, to one of the following:

   b. If a "Disconnect" option exists in the menu, click the option.

   c. If right-clicking the VPN icon brings up a VPN dialog, click the "Disconnect" button or select the menu option for the dialog.

3. Temporarily disable any firewall software.

   Note: This action is not recommended if the PC is connected to the Internet or any networks other than the product. Be sure to re-enable the firewall software as soon as access to the Internet or any non-product networks is required.

4. If a firewall or VPN software is interfering with the ability to detect and flash ECMs over Ethernet, contact the IT/IS

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department responsible for the PC on which the service tool is running. The firewall or VPN software should be programmed to have rules or exceptions to allow communication on the following Internet ports for a 165.26.78.0/23 IP address space:

- Sending and receiving UDP broadcasts on port 31580

- Sending an outgoing FTP connection request to an FTP server on ports > 1023

- Accepting an incoming FTP data connection request from an FTP server on ports >1023 (i.e. FTP client in active mode)

- Sending and receiving FTP command data on ports 20 and 21

WINDOWS 10 NETWORK SETTINGS

The following topics provide information on troubleshooting Windows 10 network settings issues:

- [Check the status of the connection](#)
- [Verify that the network adapter is automatically detecting the network speed](#)
- [Disable any "Caterpillar Machine Network Connection"](#)
- [Disable any air card or cellular network connection](#)

Windows 10: Check the status of the connection

1. Click the Windows icon, then the Settings icon, to access the Windows Settings panel. If the PC has been configured to eliminate the Settings icon, click on the Windows icon and type the word: settings. A link to the Settings Application will appear that can be clicked open.
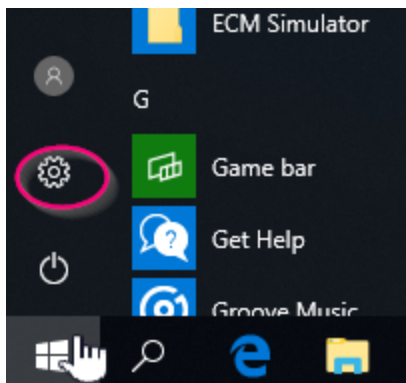

2. Click on "Network & Internet".

3. When the Network Status dialog is open, the connection status of the current network adapter will be displayed. This may or may not reflect an internet connection.
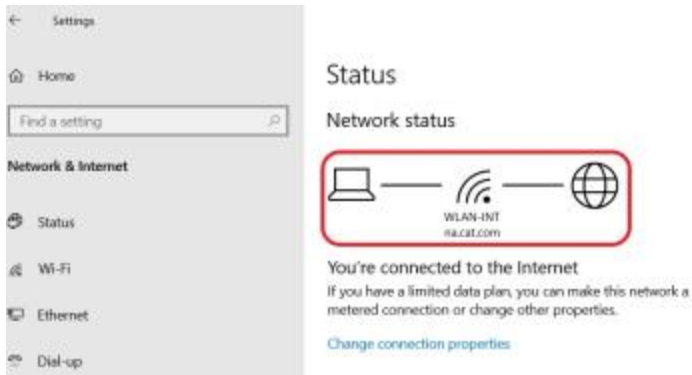
4. Click on "Change adapter options" to see the status of all available network adapters and connections.
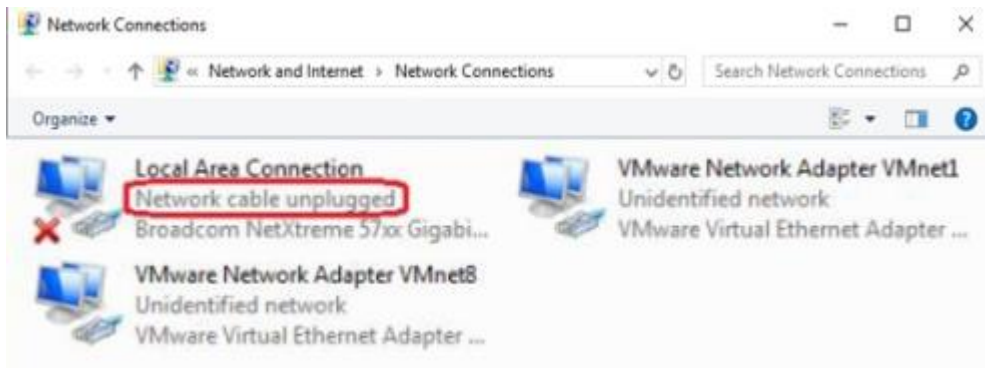

5. Verify that the network adapter is status reads "Connected" or "Unidentified network".
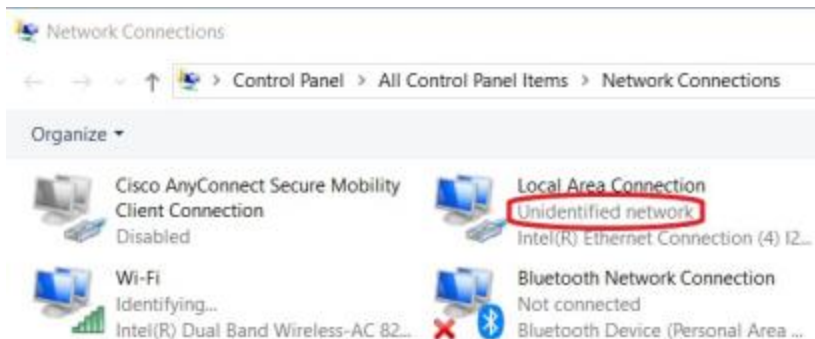
A status of "Network cable unplugged", "Not connected", or "Disabled" indicates one of the following issues:

  ○ The adapter is not plugged into the ECM properly
  ○ The cable is faulty

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- The adapter is disabled
- The adapter has a problem

To address these issues:

- Verify connections as described in the above in this section
- Verify continuity of the cable and/or substitute a different cable
- Verify that the network adapter is enabled and working properly

6. If the network adapter has a status showing a network name (e.g."Machine Service Bay") or an Internet domain name (e.g."na.cat.com"), then the adapter is connected to a network and is not connected to an ECM. Check your cables and make sure the Caterpillar Cable 305-5528 is connected to the Ethernet Service Port on the machine.

If the cables are connected properly, this issue is likely caused by VPN software that has not been properly disabled. Please refer to the [VPN/Firewall/Anitvirus Software section](#) for more information.

WINDOWS 10: VERIFY THAT THE NETWORK ADAPTER IS AUTOMATICALLY DETECTING THE NETWORK SPEED

To verify that the network adapter is automatically detecting network speed, perform the following steps:

1. Click the Windows icon, then the Settings icon, to access the Windows Settings panel. If the PC has been configured to eliminate the Settings icon, click on the Windows icon and type the word: settings. A link to the Settings Application will appear that can be clicked open.
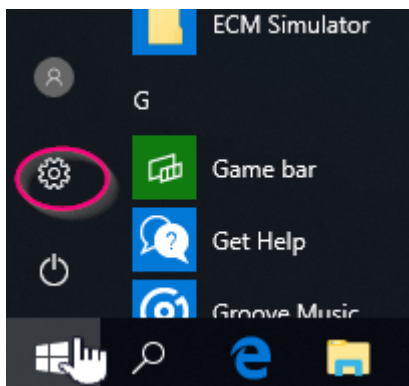
2. Click on "Network & Internet".

3. When the Network Status dialog is displayed, click on "Change adapter options".

Change your network settings

Change adapter options
View network adapters and change connection settings.

Sharing options
For the networks you connect to, decide what you want to share.

Network troubleshooter
Diagnose and fix network problems.

4. A list of available network adapter/connection options will appear. Right-click on the desired network connection and select "Properties" from the drop down list.
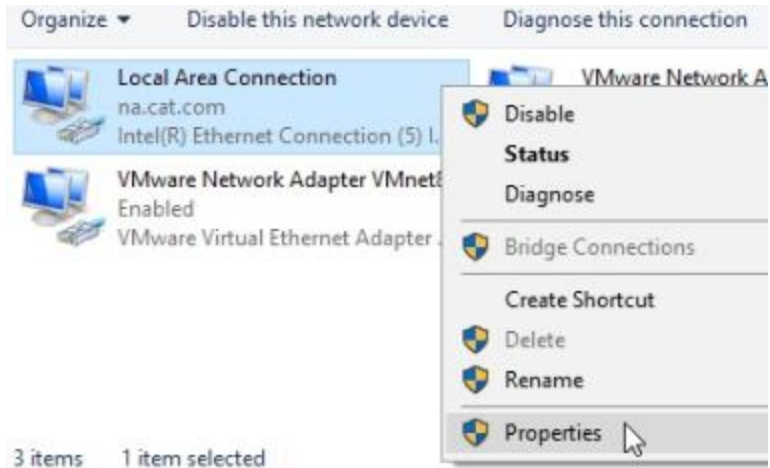
5. When the Local Area Connection Properties dialog is displayed, click the Configure button.
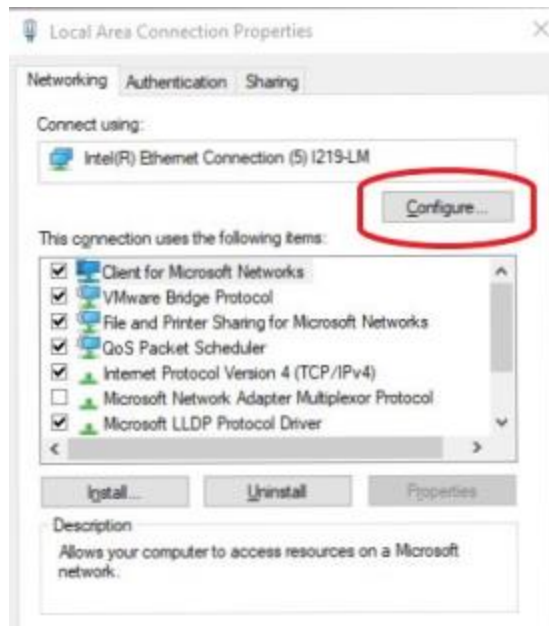
6. When the Intel (R) Ethernet Connection Properties dialog is displayed, click on the Advanced tab. Select "Speed & Duplex" from the list in the Property window. Verify that the adapter is configured to automatically detect network speed. This will be reflected by the Value window being populated with a selection of "Auto" or "Auto Negotiation" from the drop-down list.

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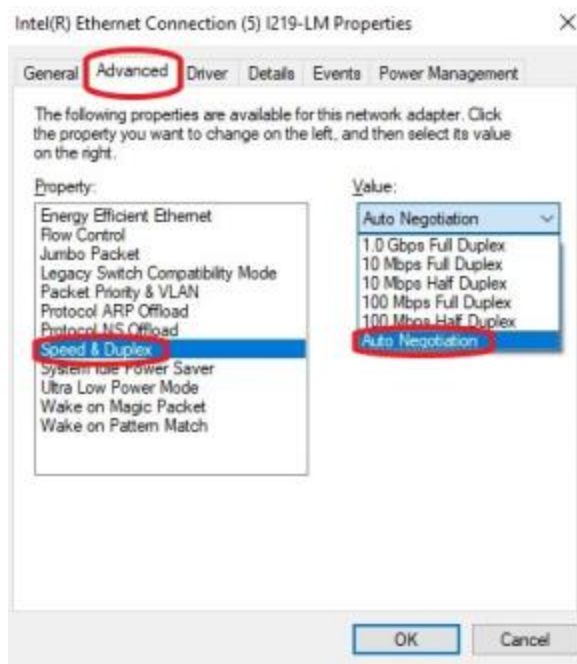
Windows 10: Disable the "Cat Machine Network connection"

To disable the "Cat Machine Network Connection", perform the following steps:

1. Click the Windows icon, then the Settings icon, to access the Windows Settings panel. If the PC has been configured to eliminate the Settings icon, click on the Windows icon and type the word: settings. A link to the Settings Application will appear that can be clicked open.

2. Click on "Network & Internet".

3. When the Network Status dialog is displayed, click on "Change adapter options" to see the connection status of all available network adapters.

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Change your network settings

⊕ **Change adapter options**
View network adapters and change connection settings.

🖥 **Sharing options**
For the networks you connect to, decide what you want to share.

⚠ **Network troubleshooter**
Diagnose and fix network problems.

4. Right-click on the adapter named "Caterpillar Machine Network Connection" and select "Disable" from the drop-down list.

Note: This connection must be re-enabled in order to transfer data with VIMSpc.

WINDOWS 10: DISABLE ANY AIR CARD OR CELLULAR NETWORK CONNECTION

To disable any air card or cellular network connection, such as the Verizon Wireless VZAccess card, perform the following steps:

1. Click the Windows icon, then the Settings icon, to access the Windows Settings panel. If the PC has been configured to eliminate the Settings icon, click on the Windows icon and type the word: settings. A link to the Settings Application will appear that can be clicked open.
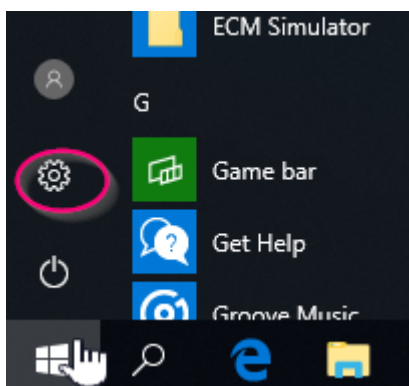
2. Click on "Network & Internet".

3. When the Network Status dialog is displayed, click on "Change adapter options" to see the connection status of all available network adapters.

Change your network settings

Change adapter options
View network adapters and change connection settings.

Sharing options
For the networks you connect to, decide what you want to share.

Network troubleshooter
Diagnose and fix network problems.

4. When the list of active network connections/adapters appears, right-click on the air card/cellular network connection and select "Disable".

Note: This connection may need to be re-enabled in order to connect to the corporate network, or to use certain Internet-based features in the service tool

Turn off the internal USB power supply

Connection issues may occur when the computer is in Power Save mode. To disable this mode, perform the following steps:

1. Click **Start**.

2. Access the Device Manager

   a. Right click on the **Start Menu** icon and select **Computer Management** from the list. The **Computer Management** dialogue window will open. Select **Device Manager**, located in the left column.

3. Select the **Universal Serial Bus** controllers and double-click one of the **USB Root Hubs**. The USB Root Hub Properties dialog box is displayed.

4. In the **Power Management** tab, deselect the "Allow the computer to turn off this device to save power" checkbox.

5. Repeat Steps 3 and 4 for each USB Root Hub.

Connection Issue - CA3 or USB-to-Serial Adapter

See "Turn off the internal USB power supply"

ENSURE THE CA3 DB15 CONNECTOR JACKSCREWS ARE TIGHTENED PROPERLY

In order to ensure that the ground pin connects first, the power socket on the DB15 connector of the CA3 data link cable (PN 327-8981) is recessed. This prevents excessive voltage from being applied to the data link signal lines.

Any movement of the DB15 jackscrews can prevent the socket from engaging on the pins of the CA3, which will prevent the CA3 from powering up or from communicating with ECMs.

Make sure that the DB15 jackscrews are tightened flush against the CA3 endplate.

If the jackscrew is raised and cannot be tightened to make it flush against the CA3 endplate, return the CA3 under a warranty claim.

ENSURE THE CA3 DATA LINK CABLE IS TIGHTENED SECURELY TO THE CA3 DB15 CONNECTOR

In order to ensure that the ground pin connects first, the power socket on the DB15 connector of the CA3 data link cable (PN 327-8981) is recessed. This prevents excessive voltage from being applied to the data link signal lines. Since this socket is recessed, if the DB15 connector on the data link cable is not tightened securely to the CA3, the socket on the cable may not engage the pin on the CA3.

If the CA3 will not power up or will not communicate with ECMs, ensure that the data link cable is tightened securely to the CA3 DB15 connector.

Contact the Customer Services Technology Group for a RMA (Return Merchandise Authorization) prior to filing the warranty claim. Customer Service Technology Group can be contacted at the following telephone numbers:

- Inside Illinios: 1-800-541-8665
- Outside Illinios: 1-800-542-8665
- From Canada: 1-800-543-8665
- Others: 1-309-657-6277

142 Error - CA3

There are several possible causes of a Error 142 "Hardware not responding" message.

CA3 driver installation error

First, ensure the CA3 is plugged into the USB port on the PC. Next, perform the following steps to ensure that the CA3 drivers are properly installed:

1. Click Start.

2. Access the Device Manager:

    - Right click on the **Start Menu** icon and select **Computer Management** from the list. The **Computer Management** dialogue window will open. Select **Device Manager**, located in the left column.

3. Click on "Vehicle Data Link Adapter" and the "CAT Comm Adapter 3" option should appear. A red X should not be shown over the icon in front of the name. If there is a red X over the icon, then reinstall the CA3 driver.

The CA3 Toolkit is running

The CA3 Toolkit will monopolize communication to the CA3, and no other application will be able to communicate with the CA3. Shut down the CA3 Toolkit in order for the service tool to communicate.

Internal Power Supply is active

CA3s built in 2009 generated electrical noise from the built-in USB power supply, which was problematic for some PCs. In these instances, the CA3 would not be detected by the service tool or by the CA3 Toolkit. See the "Turn off CA3's internal USB power supply" recommended practice in order to address this issue

CA3 is not properly powered

When the CA3 powers up, the LED lights on the front of the device glow and then will sequentially turn off from the top ("Data Link" end) to the bottom ("Computer"end) of the device. The Power LED will turn color from orange to red and then the blue "USB" LED will blink once. The CA3 will not be operational until this sequence has occurred. The sequence can take up to 10 seconds.

142 Error - Communication Adapter

Please perform the following steps:

1. Confirm that the communication adapter is connected to a power source (e.g. ECM). Verify that the vehicle key is turned on and that the communications adapter is powered. **NOTE**: If the communications adapter is connected, but is not receiving power, then the communications adapter is faulty.

2. Confirm that changes register on the Communications Adapter's status lights when attempting communication.

3. Verify that all cables are securely plugged into the computer, the communications adapter, and service connector.

4. Verify that all Preferences are correctly set. If changes are made, connect again.

5. If the Communications Adapter II (CA2) is being used, verify that the Caterpillar Communication Adapter II Toolkit is installed on the PC.

6. Confirm that the COM Port that is associated with the Communications Adapter is working. Reset the COM Port if necessary.

7. If Palm Pilot software is installed and active, disable that software.

8. If an infrared port is active, disable that port.

9. If there is a modem, or another device, on the same COM Port, or a counter COM Port (i.e. 1 & 3, 2&4) then disable that device or move it to another port.

10. Verify that the COM Port is set up correctly in the Device Manager in the Control Panel as well as in the PC's BIOS. **Note**: Standard COM / LPT port settings are as follows:
    - COM1 = 03F8 IRQ 4
    - COM2 = 02F8 IRQ 3
    - COM3 = 03E8 IRQ 4
    - COM4 = 02E8 IRQ 3
    - LPT1 = 378H IRQ 7
    - LPT2 = 278H IRQ 5

WORKAROUND: Use the printer port.

If the printer port does not work, please perform the following steps:

1. Access the BIOS.
2. Note the current parallel port setting.
3. Change the setting to **bidirectional/ECP/EPP** until a setting is found that resolves the issue.

NOTE: If using an IBM Thinkpad laptop, access Thinkpad Configuration in the Control Panel to change parallel port settings. Try EPP setting first.

213 ERROR

Please perform the following steps:

1. Verify the preferences in CA2 toolkit match the service tool preferences (including baud rate setting) and to launch the service tool again.

2. Reset COM port if using a serial port connection and try the service tool again.

3. If modem is on same Com port or counter Com port (1 & 3 or 2 & 4), disable it or move to another port and try to launch the service tool again.

4. Insert the service tool or Install Disk in CD Rom Drive:

    1. Click Start > All Programs > Windows Explorer.

    2. Click drive containing the CD.

    3. Click **CA2** folder.

    4. Click the **2.22** folder.

    5. Double-click **Setup.exe**.

    6. Follow on-screen installation instructions.

    7. Restart the computer and try the service tool again.

If the above steps do not resolve the problem, click **Start>Run**

1. Type regedit.

2. Click OK.

3. Expand the HKEY_LOCAL_MACHINE menu.

4. Expand the Software menu.

5. Expand the Microsoft menu.

6. Expand the Windows menu.

7. Expand the CurrentVersion menu.

8. Expand the SharedDLLs menu.

9. Right-click ca2rp.ini and click Delete (if present).

10. Right-click ca2rp32.ini and click Delete (if present).

11. Right-click ca2rp.dll and click Delete (if present).

12. Right-click ca2rp32.dll and click Delete (if present).

13. Right-click ca2.cfg and click Delete (if present).

14. Right-click CATserv.exe and click Delete (if present).

15. Right-click CAT_CAII.INF and click Delete (if present).

16. Close the Registry Editor

17. Insert the service tool CD or Install Disk in CD Rom Drive.

18. Click Start > Programs > Windows Explorer.

19. Click drive containing the CD.

20. Click CA2 folder.

21. Click the 2.22 folder.

22. Double-click Setup.exe.

23. Follow on-screen installation instructions.

24. Restart the computer and try the service tool again.

If the problem persists, use the parallel port for the Communication Adapter.

230 Error - The Requested Port is in Use by Another Process

Please perform the following steps:

1. Reboot the PC.

2. If the above does not resolve the issue, disable Palm Pilot software.

3. If the problem persists, reinstall the CA2 drivers.

If the problem persists, reset the COM port.

1. Change the port settings in device manager:
   1. Right -click on My Computer and select **Manage**.

   2. Click on **Device Manager**.

   3. Select the + (plus sign) to expand the Ports section.

   4. Select the **COM port**.

   5. Select **Port Setting** and select the **Advanced** button.

   6. Change **COM Port Number** to an available port number.

   7. Select OK and OK to close window.

8. Reboot the PC.

2. If the problem persists, use the parallel port for the Communication Adapter.

231 ERROR

Please perform the following steps:

1. Confirm that the Communication Adapter is connected to the correct serial port.

2. Change the baud rate up or down to test for success at a different baud rate.

3. Confirm that the Communication Adapter software is updated to the latest version.

4. Open the service tool, select the **Utilities** menu, and then choose **Preferences**.

5. Choose the correct communication port.

6. Attempt to connect to the ECM. If unable to connect, then the serial port is not being recognized.

7. Contact the computer vendor or your support department to verify settings in the BIOS and operation of the serial port.

8. If port settings in Device Manager match the Preferences in the service tool, then reinstall the Communication Adapter drivers.

Workaround: Use the printer port for the Communication Adapter.

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443 ERROR

Please perform the following steps:

1. Connect **CA2** to the ECM. **NOTE**: Do not launch the service tool.

2. Access the Comm Adapter Toolkit:
   - Click the **Start Menu** icon. From the list, select **Caterpillar Comm Adapters > Comm Adapter Toolkit**.

3. Click **Utilities > Application Firmware Flash**.

4. Click **ca2v3i1.0.apf**. Click **Select File**.

5. Click **OK**.

6. Click **Begin Flash**.

7. Click X, in the top-right corner to exit the program.

8. Begin using the service tool.

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453 Error

Please perform the following steps:

1. Cycle power on the truck.

2. Use the **Special Use Serial Cable - 196-0055**.

3. Change the baud rate up or down to test for success at a different baud rate.

4. Test the Communication Adapter with another computer.

5. Test a different Communication Adapter on another computer.

6. If the 453 error persists, uninstall and reinstall the Communication Adapter II (CA2) software. If this does not resolve the error, reset the COM port.

7. Disable the infrared port (if applicable).

8. If the 453 error persists, use the parallel port.

If the parallel port is unavailable, then flash the Communication Adapter II:

1. Close the service tool.

2. Access the Comm Adapter Toolkit:
   - Click the **Start Menu** icon. From the list, select **Caterpillar Comm Adapters > Comm Adapter Toolkit**.

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3. Select the **Utilities** menu.

4. Select the **Application Firmware Flash** from the Utilities menu.

5. Flash the Communication Adapter II with the **ca2v3i1.0apf** flash file.

6. Open the service tool and select the **Utilities** menu.

7. Select **Preferences** from the Utilities menu.

8. Choose the following adapter - **Caterpillar Comm Adapter II (Dual Data Link/Serial IP)**.

9. Select **OK**.

901 ERROR (WCA3)

This error usually indicates that an invalid IP address has been entered for the radio. It may also indicate that the radio is either out of range or has been turned off.

Please perform the following steps:

1. In the service tool, go to **Utilities > Preferences > Modify... > Communications**. Make sure Wireless Comm Adapter 3 is selected.

2. Click the **Advanced** button, and then click the **Discover Radios** button. **Note**: If a radio with the desired IP address is not discovered, the radio is either out of range or it is not on.

3. Click the **Add to Favorites** button in the Radio Discovery dialog and enter the appropriate information. Then click OK.

4. Click the **Close** button in the Radio Discovery dialog.

5. Click the **Close** button in the Favorite Radios dialog. The Communications tab of the Preferences dialog is displayed.

6. In the drop down list under the Wireless Comm Adapter 3 settings, select the desired radio.

7. Select the **Automatically connect to selected radio** checkbox.

8. Click **OK**.

902 ERROR (WCA)

This error occurs when the wireless network has not finished acquiring its IP address. This may be caused by an off-network PC or a down network. It occurs most commonly when using AutoIP: If the radio and the PC are configured for an AutoIP address (169.254.x.x), then the PC is required to wait for a period of time before it is assigned a valid AutoIP address. Attempting to connect before the address has been assigned will result in this error.

If this error occurs while the PC is on the network and the network is not down, try again, making sure to allow for the required PC wait period before attempting to connect.

903 ERROR

Please perform the following steps:

1. Verify the application firmware version of the Communication Adapter.

    1. Access the Comm Adapter Toolkit:

        - Click the **Start Menu** icon. From the list, select **Caterpillar Comm Adapters > Comm Adapter Toolkit**.

    2. Verify that the Application Firmware Version (Serial IP) is not listed as 3.1.0.

2. If the listed Application Firmware Version (Serial IP) is not listed as 3.1.0, select **Utilities > Application Firmware Flash**.

    1. Click **Select File**.

    2. Select **ca2v3il.0.apf**. Click **OK**.

    3. Click **Begin Flash**. When the flash process is complete, exit the CAT Communication Adapter Toolkit summary screen and launch Cat Electronic Technician.

If Step 2 did not complete successfully, change the Communication Adapter preferences in the service tool.

1. Select **Utilities > Preferences > Modify...** and click the **Communications** tab.

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2. Select **Caterpillar Comm Adapter II (RP1210)** from the drop-down list.

3. Click **OK**.

Unable to Communicate with an ECM

If this message is received, perform the following steps to troubleshoot the issue:

- Ensure the data link cable is securely fastened to the communication adapter

- Try a different data link cable and/or communication adapter. **Note**: If using a CA3, unplug the USB cable from the PC and ensure that the communication adapter is being powered by the ECM.

- Check the ECM wiring harness.

HOW TO FLASH THE CA2

Please perform the following steps:

1. Connect the Communication Adapter II (CA2) to the ECM. **NOTE**: Do not open the service tool.

2. Access the Comm Adapter Toolkit:

   ○ Click the **Start Menu** icon. From the list, select **Caterpillar Comm Adapters > Comm Adapter Toolkit**.

3. Select **Utilities > Application Firmware Flash**. Click **Select File**.

4. Select **ca2v3i1.0.apf**. **NOTE**: Select Firmware version ca2v3i1.0.apf for SIP, ca2v2i2.apf for RP1210.

5. Select OK.

6. Select **Begin Flash**.

7. Close the window to exit.

8. Start the service tool.

How to set up the USB to Serial Adapter

Please perform the following steps:

1. Insert the USB software driver CD included with the Adapter in the CD drive; Windows will finish installing the driver.

2. Plug USB to Serial Adapter to USB port. Windows will prompt for the location of the driver.

3. Access the **Device Manager**:

    - Right click the **Start Menu** icon, select the **Computer Management** option. The **Computer Management** dialogue window will open. Select **Device Manager**, located in the left column.

4. Expand the Ports (COM & LPT) option.

5. Verify that the adapter is listed as **Prolific USB-to-Serial Comm Port** and a port number has been assigned to it.

If the adapter is listed as **Prolific USB-to-Serial Bridge**, then please perform the following steps:

1. Download USB Drivers and unzip to the desktop.

2. Double-click the **Win98-2000** folder.

3. Double-click the **DRemover98_2K.exe** file, and click **OK** to restart the PC.

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4. Ensure that the USB-to-Serial adapter is plugged into the computer.

5. When the computer restarts, access Device Manager:

    ○ Right click the **Start Menu** icon, select the **Computer Management** option. The **Computer Management** dialogue window will open. Select **Device Manager**, located in the left column.

6. Select the **Hardware** tab, and click on **Device Manager**.

7. Right-click on the **USB-to-Serial** entry in the device listing, and select **Update Driver**.

8. Select **Install** from a list or specific location (Advanced) and select **Next**.

9. Select the USB Adapter in the device listing, and click the **Have Disk**... option.

10. From the Install From Disk window, select **Browse**.

11. Select the **Desktop** and select the **Ser2pl.inf** file. **NOTE**: The file may be located under a WinXP folder on the desktop.

12. Select **Open** and Select **OK**.

13. Select **Next** to install the driver. **NOTE**: If a window appears stating that the hardware has not passed Windows testing, select the **Continue Anyway** option.

14. Select the **Finish** option.

15. In the Device Manager window, the adapter should now be listed as **Prolific USB-to-Serial Comm Port**.

Please note that the service tool is only able to use COM ports 1-4. If the driver was assigned to a higher port number, a new port number must be assigned. Please perform the following steps to reassign the port:

1. From the Device Manager window, right-click the **Adapter** and select **Properties**.

2. Select the **Port Settings** tab and select **Advanced**.

3. Change the COM Port assignment (COM 1,2 or 4) and select **OK** on all currently open windows.

4. Open the service tool application, select **Utilities > Preferences> Modify...**

5. In the **Communications** tab, change the COM Port assignment to the port that was selected in step 3 and select **OK**.

HOW TO ENABLE DUAL DATA LINK

Please perform the following steps:

1. In the service tool, go to **Utilities > Preferences > Modify...** and select the **Communications** tab. Verify that **Caterpillar Comm Adapter II (Dual Data Link/Serial IP)** is selected.

2. In the same screen, verify that the "Enable Dual Data Link Service" checkbox is checked. (**NOTE**: In installations 2008C and greater, this checkbox has been pre-selected.)

3. Verify that the ECM plug part number is 157-4829 (black plug on one end that plugs into the truck and a gray plug on the other end that goes into the communications adapter) if the engine has an SAE J1939 service connector.

4. Flash CA2 toolkit to the latest version.

5. Try another data link cable to verify the cable is not faulty.

6. Try using a bypass harness to go directly to the ECM.