



SightLine

APPLICATIONS

EAN-Troubleshooting Comms

PN: EAN-Troubleshooting-Comms

2/11/2019

**Contact:**

Web: sightlineapplications.com

Sales: sales@sightlineapplications.com

Support: support@sightlineapplications.com

Phone: +1 (541) 716-5137

Export Controls

Exports of SightLine products are governed by the US Department of Commerce, Export Administration Regulations (EAR); classification is ECCN 4A994. The [export summary sheet](#) located on the support/documentation page of our website outlines customers responsibilities and applicable rules. SightLine Applications takes export controls seriously and works to stay compliant with all export rules.

Copyright and Use Agreement

© Copyright 2017, SightLine Applications, Inc. All Rights reserved. The SightLine Applications name and logo and all related product and service names, design marks and slogans are the trademarks, and service marks of SightLine Applications, Inc.

Before loading, downloading, installing, upgrading or using any Licensed Product of SightLine Applications, Inc., users must read and agree to the license terms and conditions outlined in the [End User License Agreement](#).

All data, specifications, and information contained in this publication are based on information that we believe is reliable at the time of printing. SightLine Applications, Inc. reserves the right to make changes without prior notice.

Alerts

The following notifications are used throughout the document to help identify important safety and setup information to the user:

 **CAUTION:** Alerts to a potential hazard that may result in personal injury, or an unsafe practice that causes damage to the equipment if not avoided.

 **IMPORTANT:** Identifies crucial information that is important to setup and configuration procedures.

 *Used to emphasize points or reminds the user of something. Supplementary information that aids in the use or understanding of the equipment or subject that is not critical to system use.*



Contents

1 Troubleshooting Comms Overview 1

2 Power 2

3 Ethernet 2

4 Windows Firewall..... 4

5 Removing the Parameter File 5

6 Stuttering / Stalling Network Video..... 6

7 Serial..... 6

8 Video Not Displayed in Panel Plus 7

9 Network and Video Diagnostic Checklists 8

 9.1 Network..... 8

 9.2 Video 9

10 VideoTrack Crash 9

11 Extract the Crash Log 10

12 1500-OEM 11

 12.1 1500-OEM Does Not Boot 11

 12.2 PC to 1500-OEM 11

 12.3 Analog Video on 1500-OEM 12

List of Figures

Figure 1: Example 3000-IO Power and Serial Connector..... 2

Figure 2: Configure Host PC for Static IP Address..... 11



1 Troubleshooting Comms Overview

This document reviews frequent network questions and common system connection problems.

| Problem | Possible Cause | Solution |
|---|---|--|
| Software, documentation or sample code | All software is available online. | Browse or search at the SightLine software-downloads page and the documentation support page. |
| Software installation | Conflict with previous revision | Uninstall previous revision and delete any artifact directories (e.g. C:\Program Files (x86)\SightLine Applications\SLA-1500 Upgrade Utility 2.24.16) |
| No connection | Connected to wrong connector | Check the product ICD to verify the connector is correct. |
| | Bad cables | Verify connectors and cables by hooking them up to other sources. |
| No video output / video is black, etc. | Incompatible display | Try a known working input source (camera or DVD player, monitor) to verify the display is working. |
| | No Video Source | Verify the camera (or other source) is functioning by connecting it directly into the display |
| | No power to SightLine hardware | Verify correct voltage (5V or 12V depending on unit) Look for status lights on the board (non-enclosure units) |
| | Wrong Input Source Selected | Use Panel Plus to set the camera order. |
| | Analog Video Out disabled | System was configured for network output only. Use Panel Plus to enable NTSC output. |
| Serial port is not working | Wrong serial port | Try selecting a different Com Port from Panel Plus |
| | TX and RX are swapped | Try using a null modem in line with your cable to the SLA-hardware. |
| | Bad serial port | Try hooking your serial port up to another device like a PC and send commands. |
| | Wrong voltage level | Verify with the ICD for your product. Some OEM boards assumes a 3.3V TTL serial communication. |
| | Incorrect or no ground | Verify your serial cable is using the same digital ground as the SLA-hardware. |
| | Incorrectly configured serial ports | Connect via Network and configure with: Panel Plus main menu » <i>Configure</i> » <i>Serial Ports</i> |
| Unit does not respond to command but is shown on the network | IP address / Network Mask mismatch | If a DHCP server is not available, the default IP address for SLA-hardware is 169.254.1.180 (SLA-1500) or 169.254.1.181 (SLA-3000) with a subnet mask of 255.255.0.0. Set PC to be on the same subnet, and then use Panel Plus to change the network settings of the SLA-hardware. Clear the ARP table from the command line (arp -d *). |
| | Windows Firewall | Disable windows firewall. |
| | Router/Switch issues | Try using a simple (unmanaged) network switch. |
| | Not Connected | Select the unit name from the pull-down list and click Connect. The IP address, temperature, and firmware version should be visible in the status bar. |
| | Wrong Network Adapter | Disable all Wireless and other network interfaces except the wired (LAN). |
| | Bad Parameter File | Remove parameter file with Upgrade Utility. See Removing the Parameter File |
| | Unit Firmware Crash | Remove and restore power to the unit VideoTrack has crashed (Appendix) |
| Stalling/stuttering network video | Configuration problems Verify correct network streaming settings Verify network hardware | |
| Video appears blue (or some other color) Image scrolling, etc. | Video synchronization Unplug the video source and plugging it back in. Cycle power to the SLA-hardware after the video source is connected. Try a different video source. Verify video source by plugging it directly into a display. | |



2 Power

1. Verify that SLA-PWR-xxxx is functional using a voltmeter.
2. Verify that power and ground are supplied to the correct pins. See [Figure 1](#) example.
3. Verify that screw terminals on top of connector are tight.
4. Verify that power connector is seated firmly within the socket on the SLA-1500-ENC.

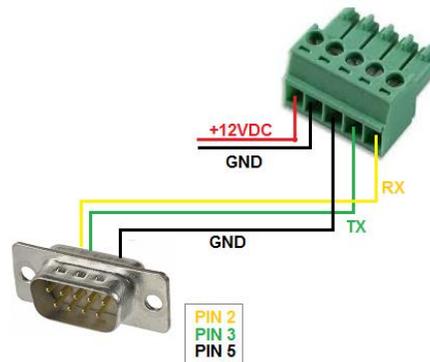


Figure 1: Example 3000-IO Power and Serial Connector

3 Ethernet

1. Make sure all cables are in good condition and firmly connected (swap cables if necessary).
2. Make sure power is supplied to all hardware, network switch, PC, SLA board, etc.
3. Verify that the link lights are active for the port on the network switch where the SLA board is plugged in.

A powered switch is recommended for bench testing. If the SLA hardware is directly connected to the PC and a DHCP server is used, the PC can lose the network connection if the SLA hardware is disconnected or power cycled. It can take up to three minutes for the PC to reestablish connection, which can cause a timeout of the DHCP server. This can be avoided by setting the PC to a static IP address.

4. Verify that the DHCP server can provide an IP Address.
5. If a DHCP server is not used, the SLA board will default to the following IP addresses:
 - 1500-OEM: 169.254.1.180 subnet mask 255.255.0.0
 - 3000-OEM: 169.254.1.181 subnet mask 255.255.0.0

Verify that the IP address and subnet mask are valid for your network. For most networks, 255.255.255.0 is the correct subnet mask. For IP addresses in the range 169.254.x.x, 255.255.0.0 is correct.

6. Open a Command Prompt window and use the IPCONFIG command to see the network configuration. See the following Microsoft support [article](#).

```
IPv4 Address . . . . . : 192.168.1.106
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.1.1
```



7. Verify that the PC and SLA board are on the same subnet and using the same subnet mask.

 *If there is a subnet mask mismatch between the host PC and the 1500-OEM / 3000-OEM, Panel Plus will report this problem when connecting to the SLA hardware. Panel Plus uses a broadcast message (255.255.255.255) to query the network for SightLine units. This allows for discovery and response across separate networks. Panel Plus will still discover the hardware and will display a warning about the hardware not being on the same network.*

8. Ping the SLA board from the PC.

 *Ping may be successful even when Panel Plus is using the wrong network interface.*

9. Clear the ARP cache on the PC, type: `arp -d *`

10. Download and install a network packet analyzer to verify that the SLA board is generating packets.

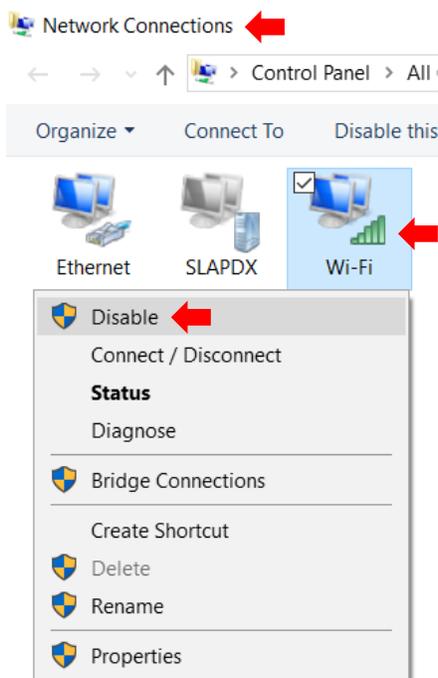
References: [Wireshark](#) / [Information about Network Monitor 3](#)

11. Disable Windows Defender or Microsoft Firewall protection. See the following Microsoft support [article](#).

12. Disable all unused wired and wireless network interfaces. See Microsoft Windows [support](#) for more help information.

 *Multiple network interfaces on a PC can confuse Panel Plus or the upgrade server.*

 *Leave the Wired network enabled.*



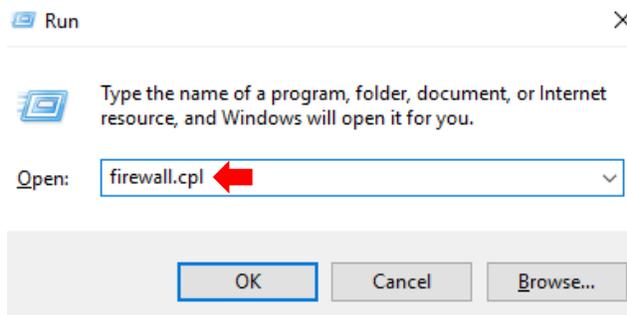
13. Verify the wired network interface is enabled and connected.



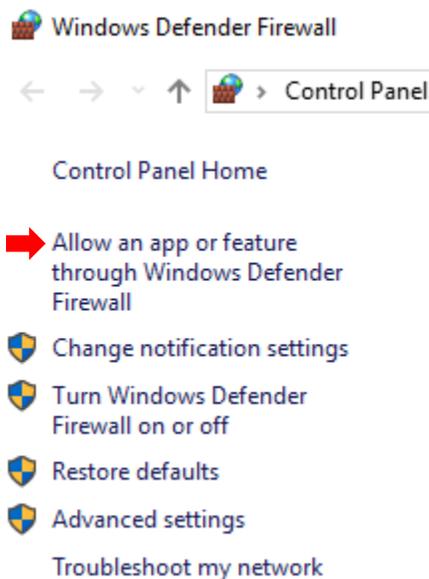
4 Windows Firewall

Windows firewall can block Panel Plus from accessing the network. The workaround is to modify the firewall rule that is created when the application is launched for the first time. Windows firewall manages network access on a per-application basis - a firewall rule is created for each installed version of Panel Plus.

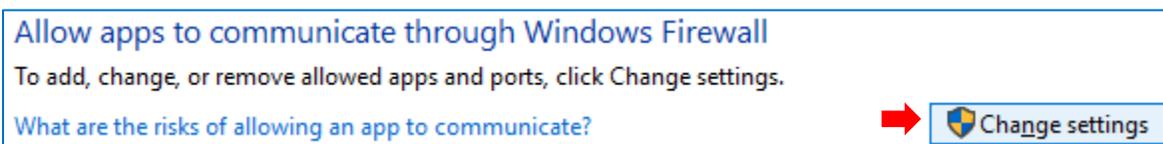
1. Press *Windows KEY+R* to open a Run prompt. Enter *firewall.cpl*.



2. From the sidebar select *Allow an app or feature through Windows Defender Firewall*.

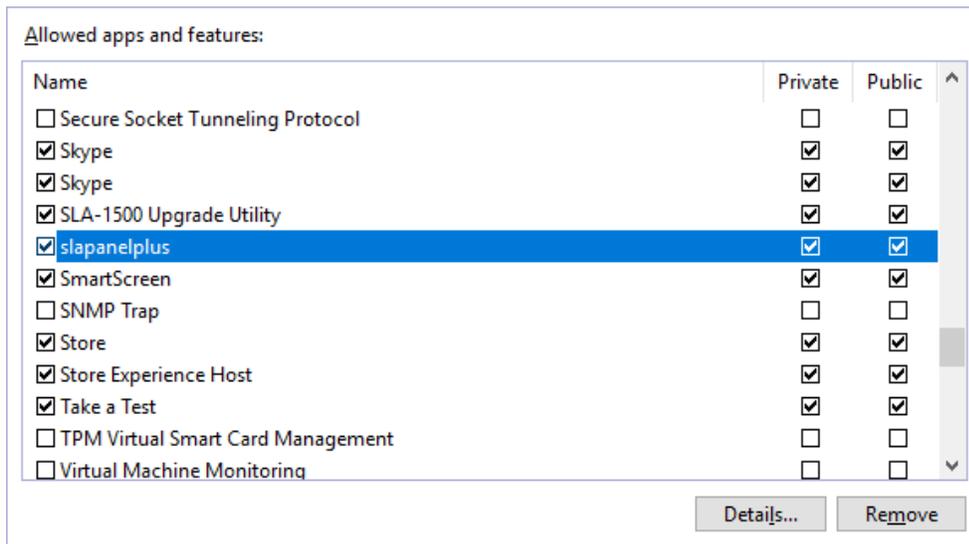


3. Select *Change settings* and approve the subsequent user account control prompt.





4. Check the public and private boxes for each *slapanelplus* entry.



5. Click *OK* and close.

5 Removing the Parameter File

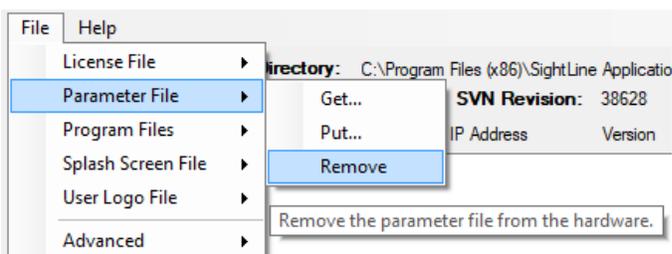
If there are no problems with the firewall settings, remove the parameter file using the 1500-OEM / 3000-OEM Upgrade Utility. This should allow a connection to the unit with Panel Plus.

See [EAN-Firmware Upgrade Utility](#) for additional parameter file management information.

1. From the Start menu on your PC, go to SightLine Applications and open the appropriate upgrade utility application.
2. Click the Find IP Addresses button.
3. Select the IP address of the board.

Before removing the parameter file, record the current network, passthrough, and camera configuration settings, since these settings will be lost once the parameter file is removed from the board.

4. From the main menu, go to *File » Parameter File » Remove*.



5. Click *Yes* in the *dialog* window to remove the file. The utility removes the parameter file from the board and saves a copy in *C:\Users\\AppData\Roaming\SightLineApplications*.
6. Close the upgrade utility and cycle the board power.
7. In Panel Plus, wait for the system to boot, and then try connecting to the board.



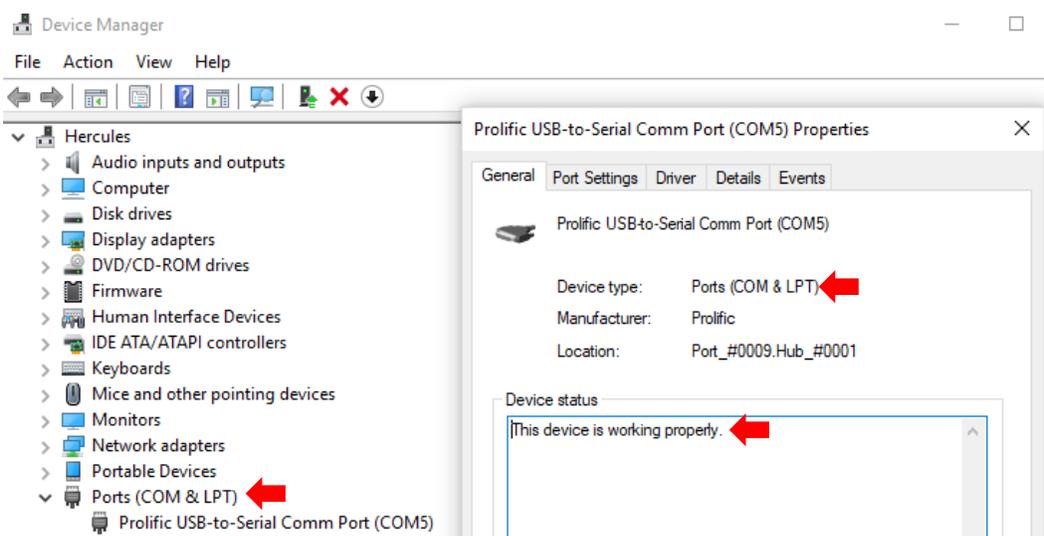
6 Stuttering / Stalling Network Video

The problem may be that something is causing packet loss, or possibly multiple streams arriving at the same UDP port on the host PC.

- ✓ Verify that analog video output is working correctly if possible.
- ✓ Ensure that there are no other video streams going to the PC (such as from another SightLine board or some other device). Multiple streams arriving at the same UDP port on the PC can cause packet loss.
- ✓ On the compression tab, ensure unicast is selected (click *Use My IP - Unicast*) not multicast.
- ✓ If the SLA board is direct connected to a PC through a switch or router, unplug the PC from the switch or router and connect directly to SLA board (do this hot without restarting either system). This will determine if the switch or router is the problem. A 100mbps or faster switch is recommended.
- ✓ If the above attempts do not fix the problem, try a different PC. Make sure to disable firewalls and any other network monitoring. Make sure to connected directly to the computer's built-in Network Interface Card and not through a USB <-> Ethernet adapter or similar.

7 Serial

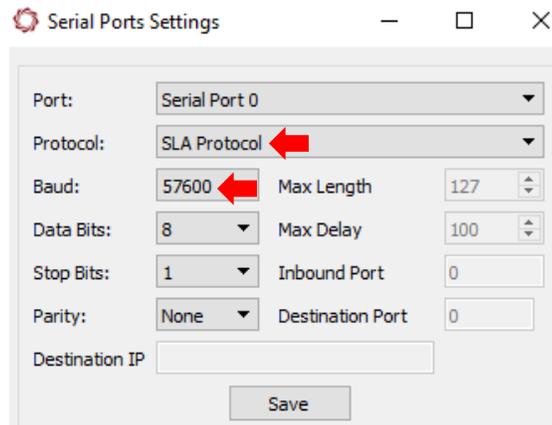
1. Make sure to use the supplied null modem cable or adapter. Pins 2 and 3 on the DB9 connector can also be swapped.
2. Navigate to the *Control Panel » Device Manager (or use Windows KEY+R to open RUN and enter devmgmt.msc)*.
3. Navigate to the *COM & LPT ports* and expand the menu. Right-click and select *Properties*.
4. Verify the COM port number and status. The Port Settings (second tab) are preempted by Panel Plus and do not need to be set here.



The Windows Mode command from the console can also be used to verify the PC serial port. See the following Microsoft support [article](#). Use the supplied null modem adapter.



5. Ensure that the serial port is configured properly in Panel Plus.
Main menu » *Configure* » *Serial Ports*.
6. *Protocol* should be set to *SLA Protocol* and not *Passthrough* or similar. *Baud* should be set to *57600*.



7. Make sure TX and RX lines are connected properly. Check the connection on the DB9 connectors, RX and TX are on pins 2 and 3, respectively.
8. Verify the connection is to one of the RS-232 level serial ports and not the 3.3V serial port found on many of the adapter boards.

8 Video Not Displayed in Panel Plus

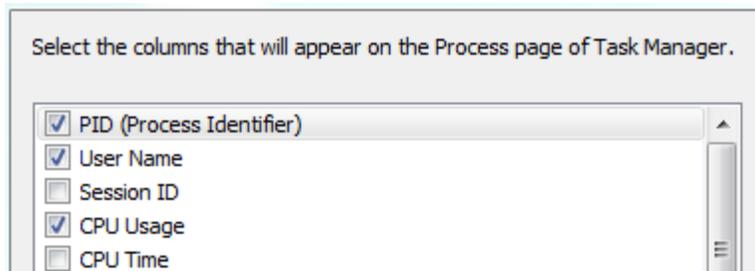
1. Open a Windows command prompt.
2. To find the process that has the 15004 port open type: `netstat -a -n -o`

```

UDP    0.0.0.0:4500          *:* * 412
UDP    0.0.0.0:5355          *:* * 1136
UDP    0.0.0.0:14002         *:* * 5812
UDP    0.0.0.0:15004         *:* * 5812
UDP    0.0.0.0:44784         *:* * 4104
UDP    0.0.0.0:53617         *:* * 1940
UDP    0.0.0.0:54925         *:* * 2052

```

3. **Ctrl+Alt+Delete** » *Start Task Manager*.
4. From the *Windows Task Manager*, click on the *Process* tab.



5. From the main menu » *View* » *Select Columns*.
6. Enable *PID* (Process Identifier).
7. Click *OK*.
8. Click the new *PID* column to sort by *PID* number.



9. Select the *PID* that has the port open.

| Image Name | PID | User Name | CPU | Description |
|----------------------|------|-----------|-----|--|
| qtappwrapper.exe | 4720 | jeremy | 00 | QtAppWrapper |
| taskmgr.exe | 4768 | jeremy | 00 | Windows Task Manager |
| TraceCompMgr.exe *32 | 5000 | jeremy | 00 | TraceCompMgr.exe |
| explorer.exe | 5320 | jeremy | 00 | Windows Explorer |
| CCSMonitor.exe *32 | 5404 | jeremy | 00 | CCSMonitor |
| devenv.exe *32 | 5520 | jeremy | 00 | Microsoft Visual Studio 2008 |
| SLAPanel.exe *32 | 5812 | jeremy | 04 | Application for Controlling SLA Hardware |
| soffice.exe *32 | 5852 | jeremy | 00 | OpenOffice.org 3.3 |
| putty.exe *32 | 5992 | jeremy | 00 | SSH, Telnet and Rlogin client |
| svchost.exe | 6084 | SYSTEM | 00 | Host Process for Windows Services |
| splwow64.exe | 6296 | jeremy | 00 | Print driver host for 32bit applications |

10. Click the *End Process* Button. Relaunch Panel Plus, connect to the device and view the network video.

9 Network and Video Diagnostic Checklists

9.1 Network

- ✓ Latest revision of the SLA-1500-AB board.
- ✓ Check all cable connections to make sure they are making a tight fit.
- ✓ Replace cables.
- ✓ Check indicator lights on network switch.
- ✓ Check indicator lights on 1500-OEM board.
- ✓ Try a different network port on the switch.
- ✓ Swap PC and 1500-OEM network ports.
- ✓ Replace network switch.
- ✓ Use static IP address on PC and 1500-OEM board. Verify both on same subnet. Verify both have same network mask.
- ✓ Verify that there are no IP address conflicts.
- ✓ Ping the 1500-OEM board from the Command Prompt window.
- ✓ Disable Windows Firewall.
- ✓ Use a packet analyzer to examine packets on the network. See [Wireshark](#) / [Information about Network Monitor 3](#).



9.2 Video

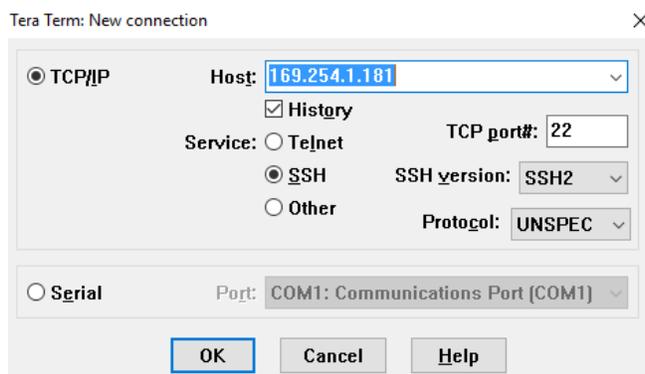
- ✓ Latest revision of the SLA-1500-AB board.
- ✓ Replace all video cables.
- ✓ Verify video input and output by connection video source (camera) to video display (analog monitor).
- ✓ Try a different video source.
- ✓ Try a different display. Is the video set to SC NTSC?
- ✓ Is the video progressive or interleaved?

10 VideoTrack Crash

Panel Plus connects to VideoTrack, the primary SightLine process running on the board. If you are unable to connect to the board after modifying the firewall rule for Panel Plus, it is possible that VideoTrack has crashed.

Connecting Panel Plus through serial is an effective way to determine if VideoTrack is running. A serial port must be configured for command and control (SLA Protocol). This is the factory default configuration for Serial Port 0.

1. If you cannot connect Panel Plus through serial, establish an SSH session to the board and check the running processes from the Linux console.
2. Use TeraTerm, PuTTY or another SSH client to connect to the board's IP address. The default port is 22.



3. 1500-OEM: Enter root for both the username and password when prompted.
4. 3000-OEM: When prompted, enter root as the username and leave the password field blank.



5. 1500-OEM: to view a list of running processes and look for *VideoTrack1500*, from the DM-37x# prompt, enter: `ps`

```

169.254.1.180 - Tera Term VT
File Edit Setup Control Window Help
37 root      0 SW [mtddbloc7]
38 root      0 SW [mtddbloc8]
39 root      0 SW [mtddbloc9]
40 root      0 SW [mtddbloc10]
41 root      0 SW [mtddbloc11]
44 root      0 SW [kworker/u:2]
51 root      0 SW [yaffs-bg-1]
61 root      1832 S < udevd --daemon
533 root     0 SW [flush-31:5]
548 root     2180 S /usr/sbin/inetd
555 root     2244 S /usr/sbin/dropbear
570 root     0 SW [kworker/0:2]
582 root     61092 S ./x_Discover_Release
606 root     2480 S lighttpd/sbin/lighttpd -f lighttpd/HLS1500.conf -m li
507 root     186m S ./VideoTrack1500 -Q
612 root     0 SW< [DSPLINK_DPC_0]
614 root     0 SW< [DSPLINK_DPC_1]
628 root     0 SW< [DSPLINK_DPC_2]
630 root     20208 S ./rtspMain
644 root     2452 S dhclient -q eth0
673 root     2324 S /usr/sbin/dropbear
674 root     2432 S -sh
675 root     2104 R ps
DM-37x#

```

6. 3000-OEM: To view a list of running processes and look for *VT3000_Release*, from the root@sla3000:~# prompt, enter: `ps`

```

169.254.1.181 - Tera Term VT
File Edit Setup Control Window Help
26 root      0 SW< [nfsiod]
27 root      0 SW< [crypto]
34 root      0 SW [mtddbloc0]
35 root      0 SW [mtddbloc1]
36 root      0 SW [mtddbloc2]
37 root      0 SW [mtddbloc3]
38 root      0 SW [mtddbloc4]
39 root      0 SW [mtddbloc5]
40 root      0 SW [ubi_bgt0d]
41 root      0 SW [kworker/u:1]
218 root     2240 S /usr/sbin/dropbear -r /etc/dropbear/dropbear_rsa_host
226 root     3000 S /sbin/syslogd -n -C64 -m 20
228 root     2936 S /sbin/klogd -n
239 root     61104 S ./x_Discover_Release
258 root     0 SW< [HDMI WQ]
280 root     559m S ./VT3000_Release
317 root     20180 S ./rtspMain
319 root     2520 S lighttpd/sbin/lighttpd -D -f lighttpd/HLS.conf -m lig
326 root     1956 S < /sbin/udev -d
331 root     1996 S vsftpd /etc/vsftpd.conf
374 root     2428 S /usr/sbin/dropbear -r /etc/dropbear/dropbear_rsa_host
375 root     3128 S -sh
377 root     3128 R ps
root@sla3000:~#

```

11 Extract the Crash Log

In the event that a 3000-OEM or 1500-OEM experiences a crash, the board automatically writes a log file (*lastCrashLog.txt*) to the root home folder (~/).

lastCrashLog.txt contains the kernel log (*dmesg*), call stack, and the assert line of the crash. The log will persist in the filesystem and can be retrieved via FTP, SCP, and SSH, etc.

The process of copying files from a 1500-OEM or 3000-OEM to a Windows PC is documented in [EAN-Using-WinSCP](#).



12 1500-OEM

12.1 1500-OEM Does Not Boot

Problem: The 1500-OEM startup script was modified and now it does not boot.

Solution: Use single user mode.

Use [Tera Term](#) or [PuTTY](#) for this process.

1. Connect PC to Serial Port 0.
2. Use Tera Term or PuTTY to establish an SSH session to the target.
3. Perform a SHIFT+S to get to U-boot.
4. Type: `setenv otherbootargs single`
5. Type: `boot`

```
COM7 - PuTTY
OMAP Logic # setenv otherbootargs single
OMAP Logic # boot
```

This executes a minimal Linux boot. At the command prompt you can now edit `rc.local`, delete parameter files, etc.

12.2 PC to 1500-OEM

1. Configure host PC for Static IP Address (169.254.1.181).
2. Go to *Start » Control Panel » Network and Sharing Center*.
3. Change Adapter settings.
4. Right-click on *Local Area Connection » Disable*.
5. Right-click on *Local Area Connection » Properties*.
6. Select TCP/IPv4. Click *Properties*.
7. Select Use the following IP address:
 - 169.254.1.181
 - 255.255.0.0
8. Click *OK* and then click *Close*.
9. Right-click on *Local Area Connection » Enable*.

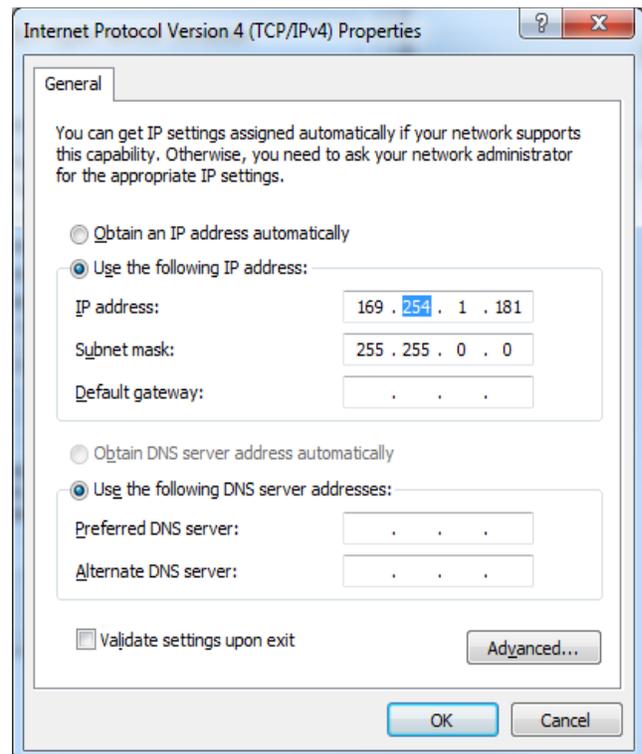
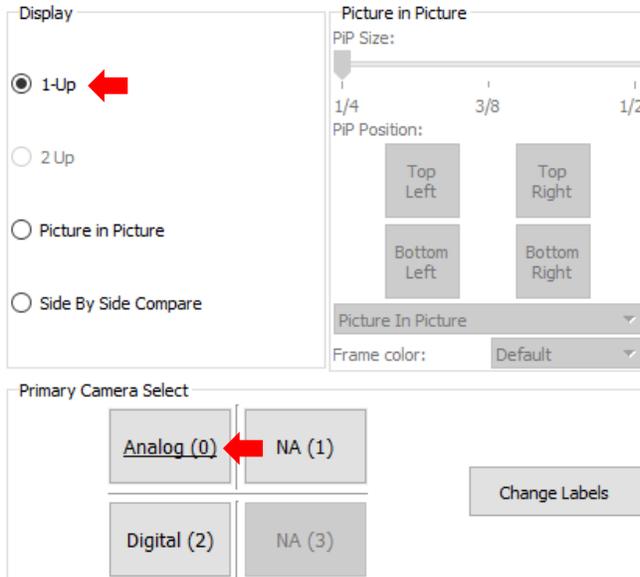


Figure 2: Configure Host PC for Static IP Address

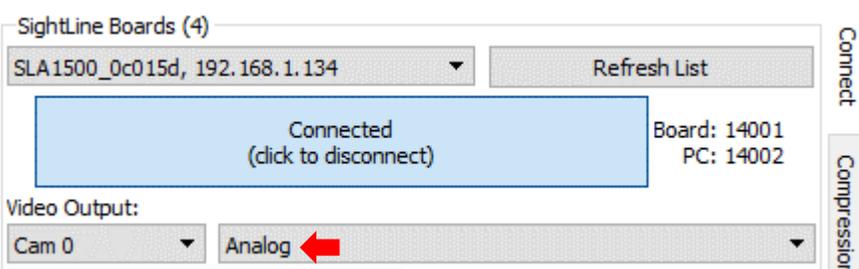


12.3 Analog Video on 1500-OEM

1. Verify power to the camera and analog monitor.
2. Connect the camera directly to the analog monitor.
3. From the *Multi Camera* tab in Panel Plus, verify the camera is connected to Vin0 on the 1500-AB board.
4. Verify the analog monitor is connected to Vout. Verify Cam0 is set as the input.



5. From the *Connect* tab in Panel Plus, verify the system is configured for Analog (NTSC) output.



6. In the *Acquisition Settings* dialog window of Panel Plus, verify *Camera Type* is configured to NTSC.

