

**IPM4UP Upgrades
IPM400A
DTV Monitor
Instructions**

www.tektronix.com



075-0997-00

Tektronix

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Kit Description

This document provides instructions for installing IPM4UP options into an IPM400A DTV Monitor. The IPM4UP upgrade kit contains a license upgrade certificate that allows you to enable the new options on the monitor.

The IPM400A is supplied with an IP Video Gigabit Ethernet (GbE) interface card as a standard accessory.

The following table lists the IPM400A upgrades that are supported by this document.

Table 1: IPM400A upgrade options

Product	Option	Description
IPM4UP	DIAG	Software upgrade to add the following software features: <ul style="list-style-type: none">– Triggered recording capability up to 160 MB– Template testing (for user-defined service plan testing)– In-depth PCR analysis with graphical result views– Bit rate testing functionality– Service logging– RF Polling functionality
	SX	Field upgrade to add 1000BASE-SX Short Wavelength Optical port with LC connector (Multi Mode 850 nm) to GbE interface
	LX	Field upgrade to add 1000BASE-LX Long Wavelength Optical port with LC connector (Single Mode 1310 nm) to GbE interface
	ZX	Field upgrade to add 1000BASE-ZX Optical port with LC connector (Single Mode 1550 nm) to GbE interface

Supported Products

The following product is supported by this upgrade kit:

IPM400A DTV Monitor

Software Option Upgrades

To perform a software option upgrade, you must use a PC to access the RUI (Remote User Interface) of the DTV monitor. The PC and the monitor must be connected to the same Ethernet network.

The following table lists the system requirements for IPM400A DTV monitor.

Table 2: PC system requirements

Characteristic	Description
Minimum specification	1.2 GHz Intel Pentium Processor (Preferred: 2 GHz)
Operating system	Microsoft Windows 2000, Windows XP, and Windows Vista (Recommended: Windows XP Pro)
Disk space	2 GB free disk space
Ethernet	10/100-base T
Installed software	Microsoft Internet Explorer, Version 7.0 minimum; Sun Java Runtime Environment Version 6 Update 10 minimum (1.6.0_10 or later)
RAM	1 GB
CD-ROM drive	8x
Display	1024 x 768 pixel video monitor with 16 bit (65000) available colors

Kit Parts Lists

The following table lists the parts supplied with each of the upgrade kits.

Table 3: IPM400A-DIAG upgrade kit parts list

Quantity	Part number	Description
1 EA	063-4135-xx	MTM400A, RFM300, and IPM400A DTV Monitor Documentation CD
1 EA	063-4136-xx	MTM400A, RFM300, and IPM400A Software Application CD
1 EA	NA	Option key document for a specified IPM400A DTV monitor
1 EA	NA	Product Upgrade identification sticker
1 EA	075-0997-00	IPM4UP Upgrades Instructions (This document)

Software Option Upgrade

The IPM4UP option upgrade requires that you apply a new option key to enable the new options.

Option Keys

Option keys are a unique string of alphanumeric characters of the form nnnnn-nnnnn-nnnnn-nnnnn. A single option key can enable one or more software options.

Each option key is unique and is generated for a specific IPM400A monitor using the serial number and MAC address of that monitor. An option key that is generated for one monitor will not work when applied to another monitor.

The serial number identifies a specific DTV monitor. The MAC address identifies the Transport Stream Processor board that is installed in the monitor. If there is a hardware failure and the Transport Stream Processor board is replaced, a new option key will need to be issued because the monitor will then have a different MAC address. The MAC address is printed on the label on the top cover of the monitor and above the network port on the rear panel.

If you ordered a software option upgrade, this kit includes both a document and a sticker with the new option key for your monitor. You will apply the sticker to the top cover of the monitor after you verify the upgrade.



CAUTION. *To avoid losing your software options, do not misplace the option key document or sticker that was included with this upgrade kit. If the battery-backed RAM in your DTV monitor is reset, you must reapply the option key to reenable any software options that were purchased for your monitor.*

Upgrading the Software

Perform the following procedure to apply the option key that was supplied with this kit:

1. Power on the monitor and wait for it to initialize. When the initialization process is complete, the monitor beeps and the front-panel LEDs illuminate.
2. Use a PC that meets the necessary requirements. (See Table 2 on page 2.) Ensure that the PC is connected to the same Ethernet network as the monitor. Perform the following steps to open the RUI :

NOTE. *This procedure uses Microsoft Internet Explorer to open the monitor RUI. You can also access the RUI using the Tektronix Web Monitoring Systems Manager (WebMSM). The instructions for using WebMSM are located in the WebMSM User Manual (Tektronix part number 077-0116-xx).*



CAUTION. *The Java applet used in the following steps will not run unless a temp directory is properly configured on the PC. A temp directory is set up by default in the Windows XP operating system; previous operating systems may require operator action.*

The Java applet will not run unless the Sun Java Virtual Machine is installed. Type `java -version` at the command prompt to verify that it is installed and that the version is 1.6.0_10 or greater. If it is not installed, you can download the latest version from the Sun Web site, www.java.com.

If you have to update the Java version on the PC, you will need to restart this procedure at step 2.

- a. Launch Microsoft Internet Explorer.
 - b. In the address bar of the Web browser, enter the network identity or IP address of the monitor, for example: `http://TSMonitor01` or `http://111.222.333.444`.
 - c. Press **Enter**. A Java applet is downloaded from the monitor and launched. The file size is approximately 1.5 MB; the download time will depend on the network speed and traffic.
3. After the Java applet is downloaded, the Connect to MTM Device dialog box is displayed. (See Figure 1.)

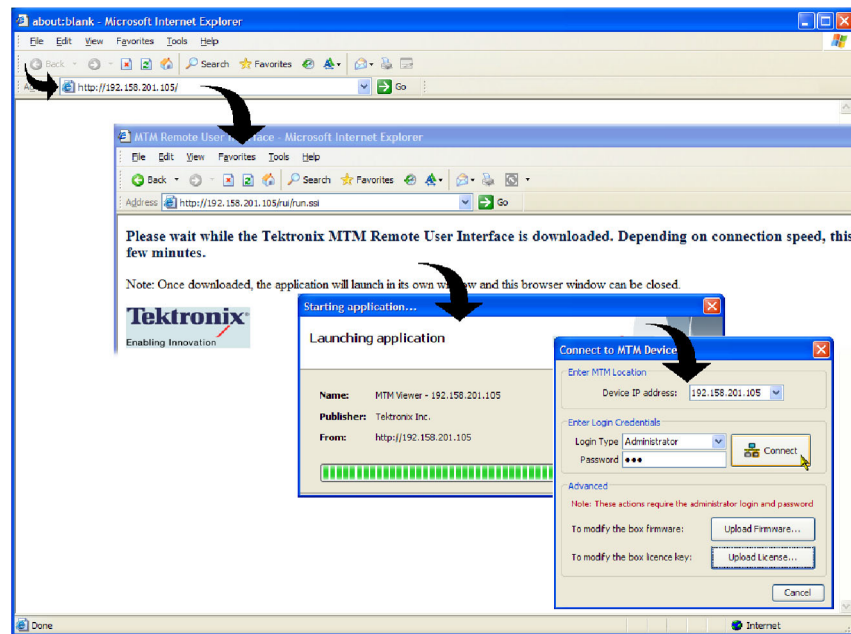


Figure 1: Logging on to IPM400A monitor

4. In the Connect to MTM Device dialog box, select **Administrator** from the Login Type drop-down list, and then enter the password. The default password for Administrator login type is tek.

NOTE. You must log in to the monitor using the Administrator login type. The User login type does not have sufficient permissions to perform software option upgrades.

5. Click **Connect** to log on to the monitor and display the RUI window.
6. Click **Device** in the button bar of the RUI window to display the Device Information view. (See Figure 2.)
7. Verify that the Network MAC Address shown in the Device Information view matches the Unique ID number listed on the option key document that was shipped with the upgrade kit.
8. Make a note of the software options that are currently enabled on the monitor.

NOTE. After you upgrade the monitor, you will verify the upgrade by checking that the new option that you purchased has been enabled.

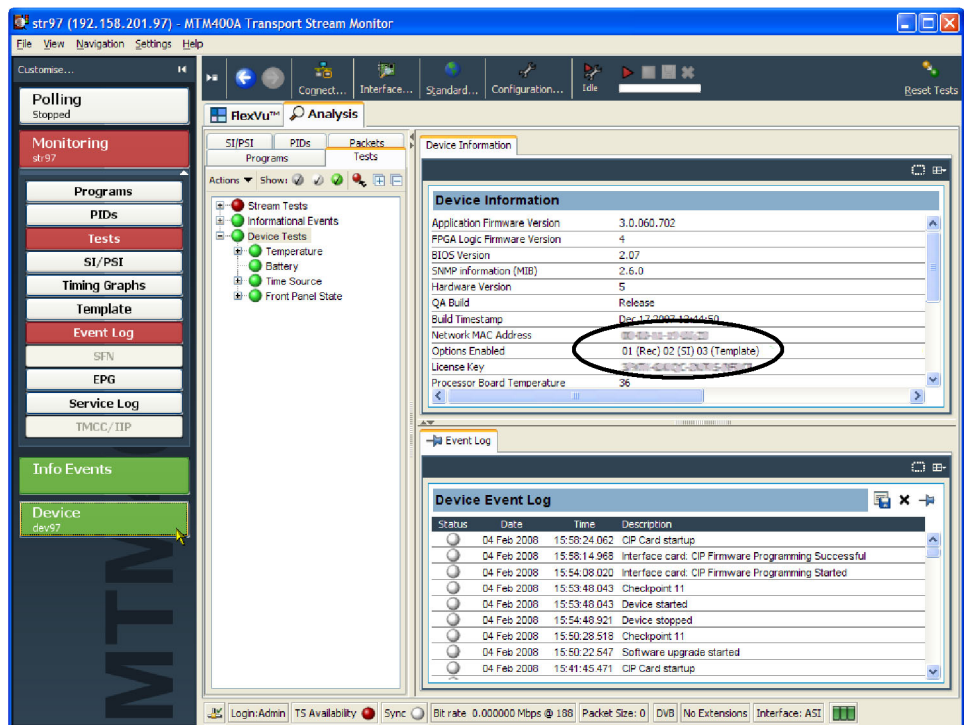


Figure 2: Device Information view

- After you verify the MAC address and note the installed software options, close the RUI window, repeat steps 2 through 4 to redisplay the Connect to MTM Device dialog box, and then proceed to step 10.

NOTE. You should initiate the software options upgrade process from the Connect to MTM Device dialog box that appears before the monitor RUI is launched. Only advanced users should use the Connect to MTM Device dialog box that is accessed from the Connect button in the monitor RUI toolbar.

- In the Connect to MTM Device dialog box, click **Upload License** to open the Upload License dialog box. (See Figure 3.)



CAUTION. The option key string is case-sensitive and must be entered exactly as it appears on the option key document, including any dashes.

- In the Upload License dialog box, enter the new option key that was supplied with this kit, and then click **Upload**.
- Click **Yes** to confirm the upload in the Upload License message box. (See Figure 4.)

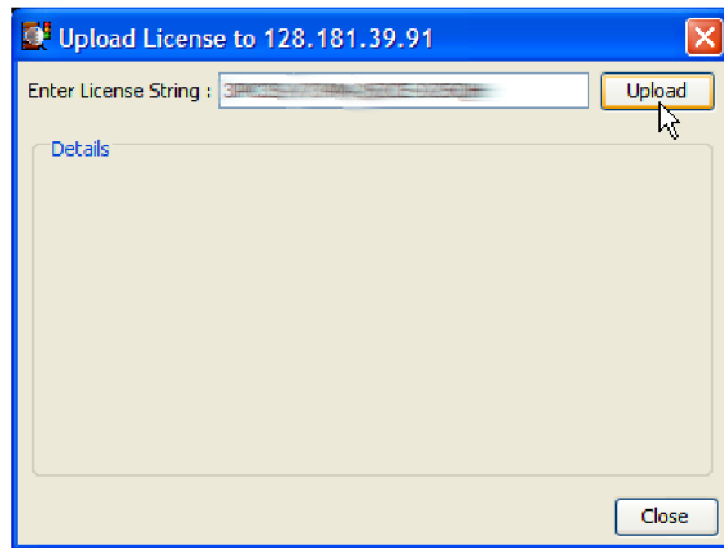


Figure 3: Upload license dialog box

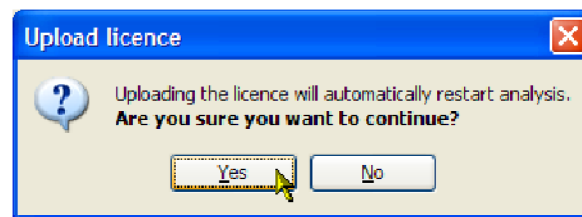


Figure 4: Upload license message box

13. Progress messages will be displayed in the Upload License dialog box as the new option key is loaded into the monitor:
 - If the option key is accepted, the message "License upload ok" appears, and then the monitor automatically reboots. The reboot process implements the software options enabled by the new option key. The message "Reboot complete" appears after the monitor reboots.
 - If the option key is rejected, the message "License upload error - invalid license" appears in the Upload License dialog box. (See page 8, *Troubleshooting*.)
14. Click **Close** to close the Upload License dialog box, and then proceed to verify the software options. (See page 8, *Verifying the Software Option Upgrade*.)

Troubleshooting

If the option key upload is rejected, the message “License upload error – invalid license” appears in the Upload License dialog box. Use the following steps to correct the problem:

- Reenter the option key in the Upload License dialog box. The option key string is case-sensitive and must be entered exactly as it appears on the option key document, including any dashes.
- Inspect the option key documentation that was supplied with the upgrade kit and verify that you are applying the option key to the IPM400A DTV monitor listed in the documents.
- If you are upgrading a monitor that is connected to a network containing more than one DTV monitor, ensure that the RUI is viewing the correct monitor. Select Info in the Device view and verify that the MAC Address of the monitor matches the Unique ID number listed on the option key documentation supplied with the upgrade kit.

If the upgrade is still unsuccessful, contact Tektronix Technical Support, ensuring that the following information is available:

- Serial Number of the DTV monitor
- MAC Address of the TS processor board
- Option key string that was supplied with the upgrade kit
- Option key string that was previously assigned to the monitor (should be listed on the label attached to the top cover of the monitor)

Verifying the Software Option Upgrade

Perform the following steps to verify the software option upgrade:

1. Display the Device Information view. Refer to steps 1 through 6 of the previous procedure. (See page 4, *Upgrading the Software* .)
2. Verify that the new software option that you purchased with this upgrade is now enabled. The option is listed on the option key documentation.

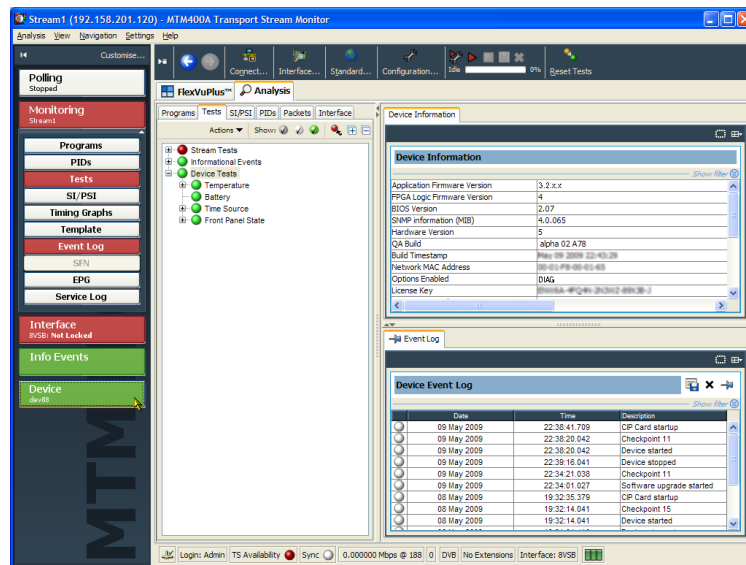


Figure 5: Device Information view



CAUTION. Be sure to apply the option key label from the Product Upgrade sticker. When it is necessary after a repair, the Tektronix service center uses the option key listed on the monitor label to reenble the software options for your monitor. If you do not apply the new option key label supplied with the upgrade kit to the top cover of the monitor and your monitor is sent to Tektronix for repair, the monitor might be returned to you without all of your software options enabled.

3. After you verify that the proper software options are enabled, apply the option-key label from the Product Upgrade sticker that was supplied with the upgrade kit to the top cover of the monitor, covering over the previous option key listed on the monitor label.
4. Apply the option-upgrade label from the Product Upgrade sticker to the top cover of the monitor next to the options listed on the monitor label.

Hardware Option Upgrade

If you purchased an SFP module for your GbE interface card (IPM4UP options LX, SX, or ZX), perform the following steps to install and verify the SFP module.

- Install the SFP Module (See page 10.)
- Verify the SFP Module Upgrade (See page 11.)

Install the SFP Module

Perform the following steps to install the SFP module. (See Figure 6.)



WARNING. To prevent possible exposure to hazardous laser radiation, use only Class 1 lasers as defined in the USA Federal Regulations CDRH 21 CFR 1040 and IEC/EN 60825/A2:2001.



Figure 6: SFP module and optical port plug



CAUTION. To prevent damage to the SFP module, remove power from the monitor before removing or inserting the SFP module.

1. Remove power from the monitor.
2. Insert the SFP module into the rear-panel SFP 1000 connector. (See Figure 7.) When fully inserted, the SFP module is latched in position.



WARNING. To prevent possible exposure to hazardous laser radiation, be sure to install the optical port plug in the SFP module when no signal cable is connected to the SFP module.

3. Proceed to *Verify SFP Module Upgrade*. (See page 11.)

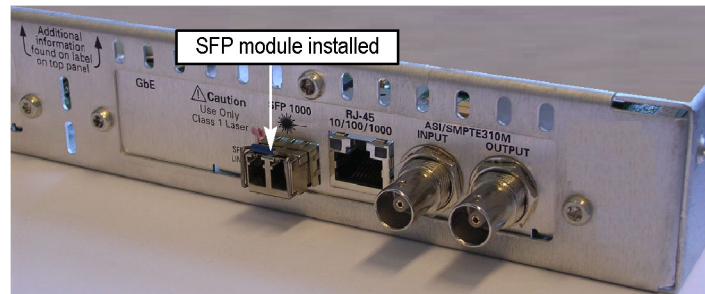


Figure 7: SFP module – installed

Verifying SFP Module Upgrade

To verify that the new SFP module you installed in the GbE interface card is functioning correctly, perform the following procedure:

1. Connect an IP over optical signal, via the SFP module, to the GbE interface card:
 - a. Remove the optical port plug from the SFP module. (See Figure 6 on page 10.)
 - b. Insert the optical cable into the SFP module. When fully inserted, the cable connector is latched in position. (See Figure 8.)

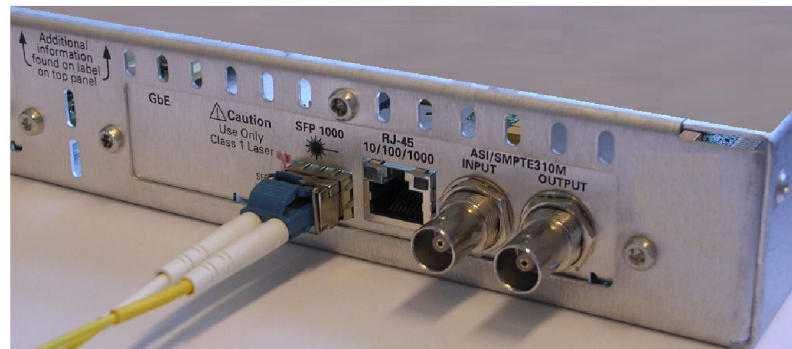


Figure 8: Optical cable connected to SFP module

2. Power on the monitor and wait for it to initialize. When the initialization process is complete, the monitor beeps and the front-panel LEDs illuminate.

3. Using a PC that meets the requirements for the RUI version and is connected to the same Ethernet network as the monitor, perform the following steps to open the RUI.

NOTE. *This procedure uses Microsoft Internet Explorer to open the monitor RUI. You can also access the RUI using the Tektronix Web Monitoring Systems Manager (WebMSM). The instructions for using WebMSM are located in the WebMSM User Manual (Tektronix part number 077-0116-xx).*

- a. Launch Microsoft Internet Explorer.
- b. In the address bar of the Web browser, enter the network identity or IP address of the monitor, for example: `http://TSMonitor01` or `http://111.222.333.444`.
- c. Press **Enter**. A Java applet is downloaded from the monitor and launched. The file size is approximately 1.5 MB; the download time will depend on the network speed and traffic.



CAUTION. *The Java applet will not run unless a temp directory is properly configured on the PC. A temp directory is set up by default in the Windows XP operating system; previous operating systems may require operator action.*

The Java applet will not run unless the Sun Java Virtual Machine is installed. Type `java -version` at the command prompt to verify that it is installed and that the version is 1.6.0_10 or greater. If it is not installed, you can download the latest version from the Sun Web site, www.java.com.

If you have to update the Java version on the PC, you will need to restart this procedure at step 2.

4. After the Java applet is downloaded, the Connect to MTM Device dialog box is displayed. (See Figure 9.)

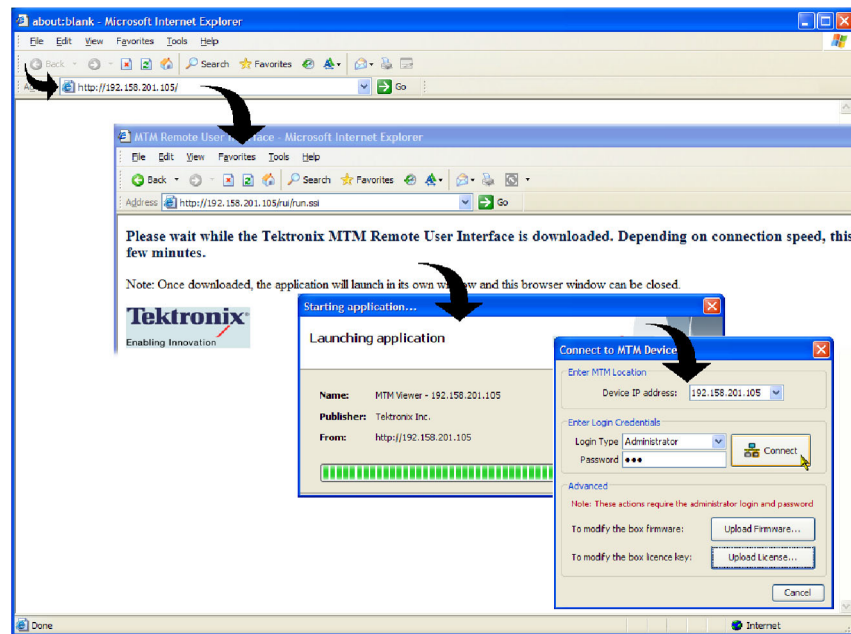


Figure 9: Logging on to an MTM400A monitor

5. In the Connect to MTM Device dialog box, select **Administrator** from the Login Type drop-down list, and then enter the password. The default password for Administrator login type is tek.

NOTE. You must log in to the monitor using the Administrator login type. The User login type does not have sufficient permissions to perform software option upgrades.

6. Click **Connect** to log on to the monitor and display the RUI window.
7. Click the **Interface** toolbar icon to open the Interface dialog box.
8. In the Interface dialog box, select **GbE** from the Interfaces drop-down list, and then select **Auto 1000(Optical)** from the Select Speed drop-down list. (See Figure 10.)
9. Close the Interface dialog box.

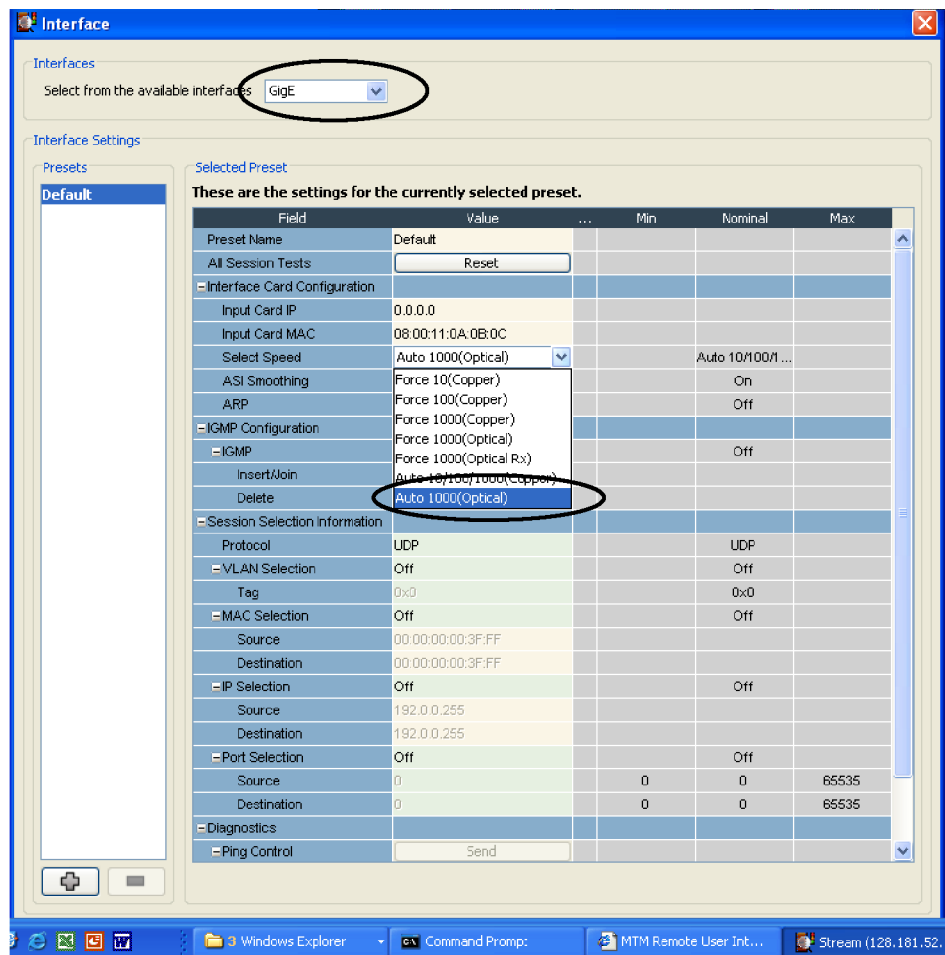


Figure 10: Selecting the interface card speed in the Interface dialog box

10. In the RUI window, click the **Analysis** tab, and then click the **Interface** tab.
11. Click **Add Graph** on the Graphs tab, and then select **Traffic** from the Available Graphs drop-down list. (See Figure 11.)

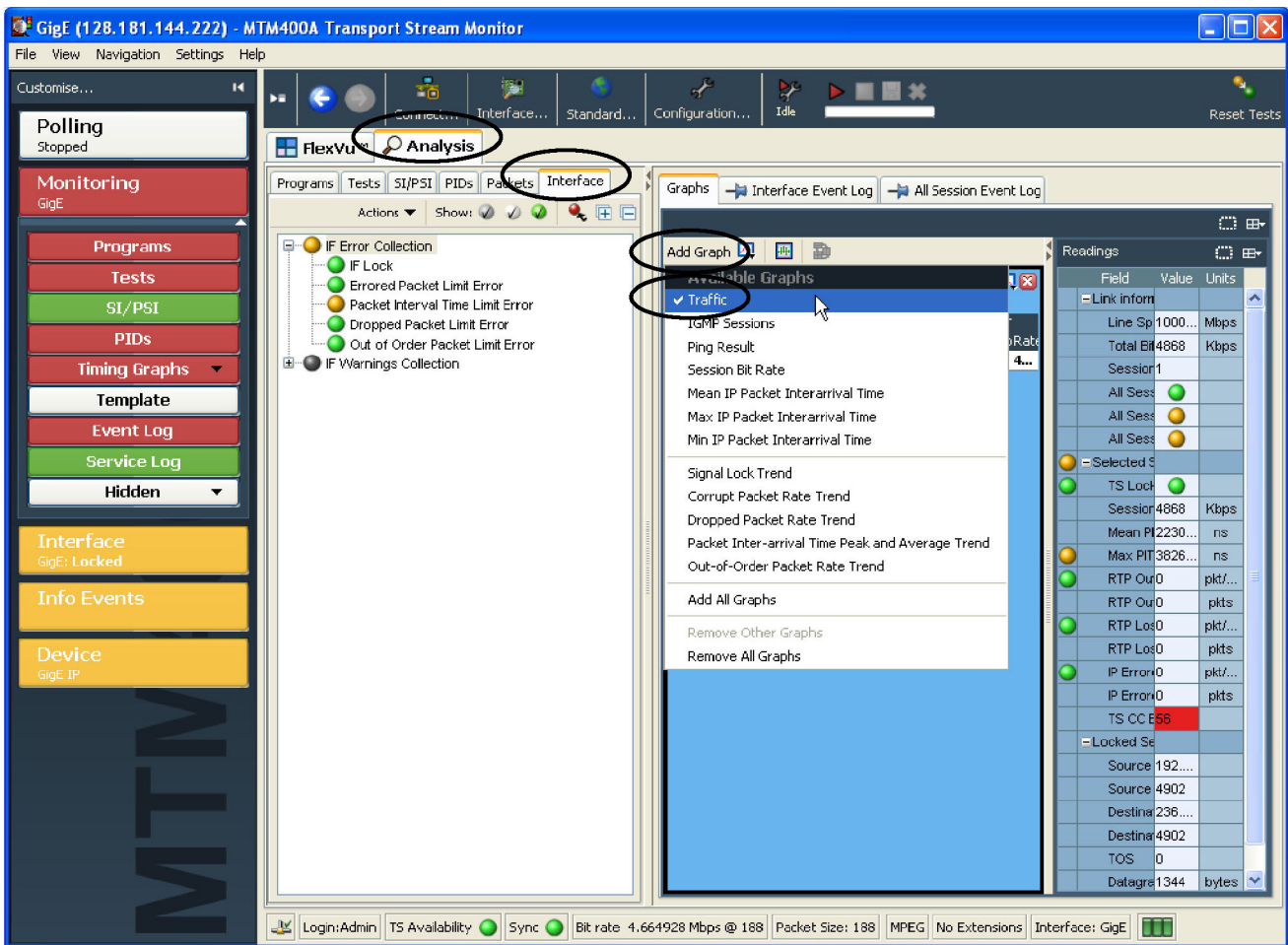


Figure 11: Selecting the Traffic graph

12. Verify that the monitor displays information about the program(s) contained on the transport stream signal in the Traffic graph. (See Figure 12.) The example transport stream in the following illustration contains one program.

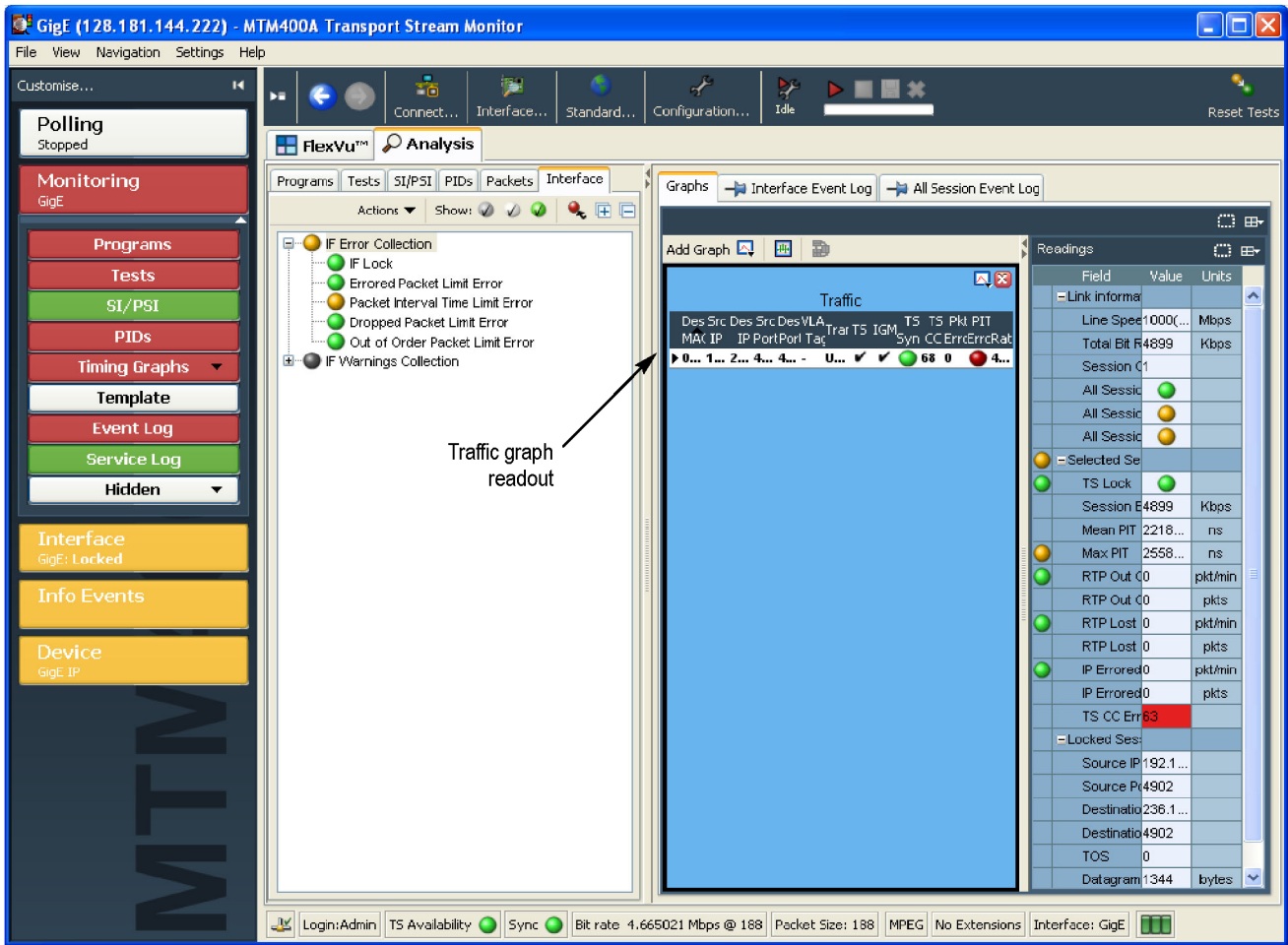


Figure 12: Viewing the Traffic graph

13. If the monitor displays information about the IP over optical signal in the Traffic graph, then the SFP module is installed and operating properly. Apply the Option Upgrade label from the Product Upgrade sticker that was supplied with the upgrade kit to the top cover of the monitor next to the options listed on the monitor label.

End of Document