

Release Notes



MTS400 Series MPEG Test Systems

071-1726-02

This document applies to software version 1.1.

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Release Notes

These release notes provide the following information:

- Descriptions of the features of this software version.
- Document part numbers supporting this software release.
- Descriptions of installation and operational problems or behaviors that you might encounter while using the instrument and explanations of how you can minimize or eliminate the impact on instrument operation.

Introduction

Tektronix has redefined the MPEG analyzer with its ground-breaking MTS400 Series MPEG Test Systems. Increased productivity is provided through its many new technical features. The MTS430 is well suited for applications in research, development, and manufacturing test. The MTS400 is equally well suited for applications in broadcasting and network operations. The MTS4SA provides the MTS400 Series software applications for standalone use on PCs.

A wide variety of applications simplify the complex tasks of creating transport streams for set top box design and manufacturing, as well as triggering and recording intermittent errors during live broadcasts.

The following information provides an overview of the features of the MTS400 Series systems:

- **IP Connectivity** - Acquires transport streams from the network interface for analysis and recording of streams over IP (internet protocol).
- **CaptureVu™** - Simplifies the task of triggering, recording, and analyzing events.
- **High Performance Engine** - Measurement throughput up to 400 Mbps.
- **Intuitive GUI** - A simple, yet powerful GUI (graphic user interface) provides real time analysis and recording, as well as deferred time analysis.
- **Languages** - Windows Unicode fonts provide regional language support.
- **Hardware/Interfaces** - The MTS400 Series instruments provide 144 GB of storage, ASI up to 214 Mbps, fast Intel P4 processor, integrated XGA display and dual Ethernet ports for LAN support and GigE transport analysis.

- **Application Packages** - Analysis of Audio and Video Elementary Streams, Packetized Elementary Streams, Transport Streams, and Data Broadcasting Streams, as well as Multiplexing Audio, Video and Data Broadcasting Streams.
- **International Standards** - Support for MPEG-2, ATSC, DVB, and ISDB.

Related User Documentation

The following user documentation supports firmware version 1.1:

- *MTS400 Series Getting Started Manual* (English)
Tektronix part number 020-2654-03
(includes user documentation CD-ROM)
- *MTS400 Series Getting Started Manual* (Japanese)
Tektronix part number 020-2655-01
(includes user documentation CD-ROM)
- *MTS400 Series User Manual* (English)
Tektronix part number 071-1507-00
- *MTS400 Series Specifications and Performance Verification Technical Reference* (English)
Tektronix part number 071-1724-01
- *MTS400 Series Programmer Manual* (English)
Tektronix part number 071-1725-00

Installation Issues (MTS400 and MTS430)

The following issues affect the installation of the MTS400 Series instruments and/or software:

Using the Correct Software Recovery Media

Due to a circuit board change, the serial number range assigned to the MTS400 Series instruments changed from B01xxxx to B02xxxx, and the software version changed from v1.0 to v1.1. The software number change was required only because of the hardware change. There are no functionality differences between v1.0 and v1.1 of the software.

Due to the nature of the hardware change, the software versions are not compatible between the two serial number ranges of the instrument. This issue does not affect the MTS400 Series standalone software.



CAUTION. *To prevent software problems on your MTS400 Series instrument, use the v1.0 recovery media only on instruments with a serial number of B01xxxx, and use the v1.1 recovery media only on instruments with a serial number of B02xxxx.*

For instruments with serial numbers B01xxxx, if you know or suspect that hardware changes have been made, look at the rear panel of the instrument for upgrade information labels. If a label states that the instrument has been upgraded to B02xxxx hardware, use the v1.1 recovery media to restore the software on that instrument.

Internal Error Dialog Box

After the files have been copied during installation, a dialog box may appear with a message indicating that there was an internal error. Clicking OK will close the dialog box, and the installation will complete successfully.

Uninstalling the MTS400

When uninstalling the MTS400, a dialog box lists a number of DLLs that cannot be unregistered. Clicking OK will close the dialog box, and the uninstall will complete successfully.

License Agreement Acceptance Follow-up

When the instrument is powered up for the first time, you must complete the Windows XP license and registration process. After successful completion of the registration process, the instrument will automatically restart.

If the Found New Hardware Wizard opens after the system has restarted (see Figure 1), you must complete the wizard before the instrument will operate properly.

Perform the following steps to complete the Found New Hardware Wizard:

1. In the Found New Hardware Wizard window (see Figure 1), enable the **No, not this time** option.
2. Click **Next** to continue.



Figure 1: Found New Hardware Wizard page 1

3. On the second page of the wizard (see Figure 2), verify that the option **Install the software automatically (Recommended)** is enabled.
4. Click **Next** to continue.
5. The wizard will search for the required drivers, as shown in Figure 3. When the drivers are found, the Next button will be enabled.
6. When the Next button is enabled, click **Next** to proceed.

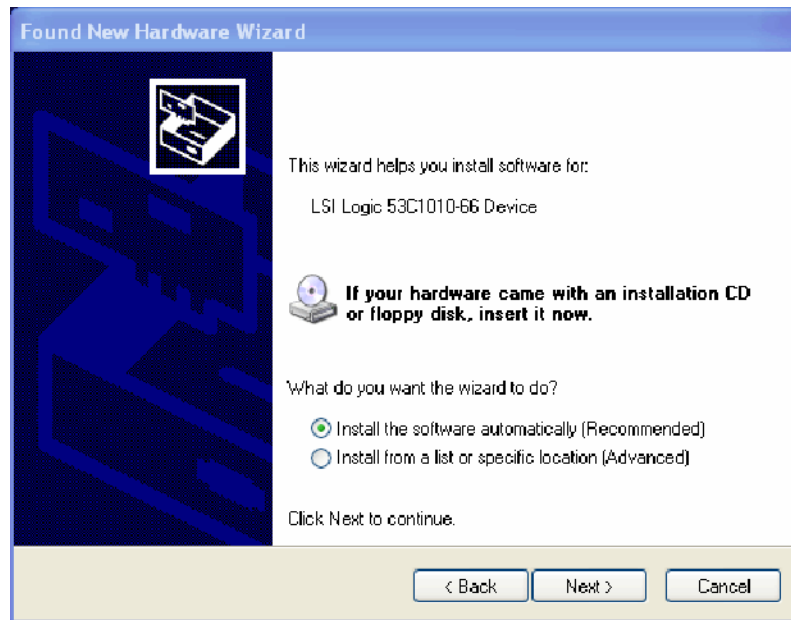


Figure 2: Found New Hardware Wizard page 2

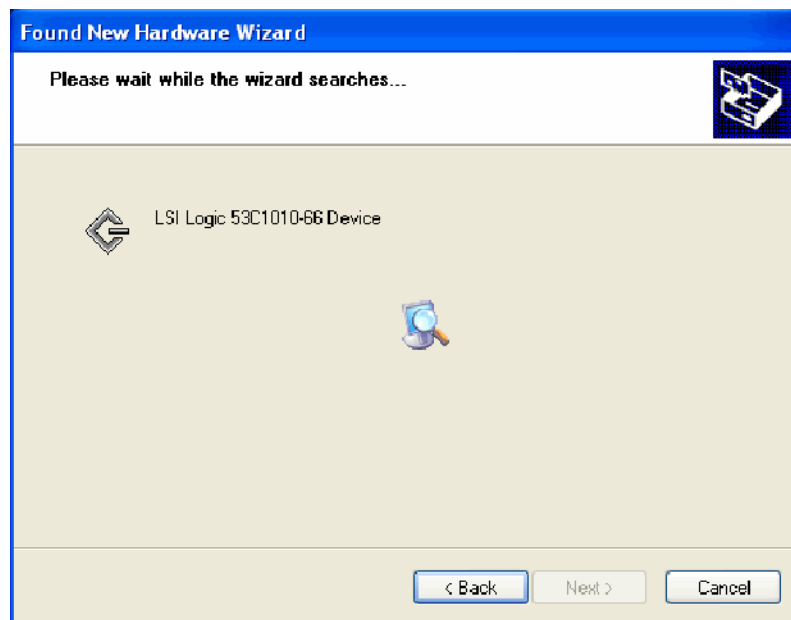


Figure 3: Wizard searching for drivers

7. When the wizard dialog box shown in Figure 4 is displayed, click **Finish**.
8. Select **Restart** from the Start menu to reboot the MTS400 Series system. The Windows XP registration and hardware setup will now be complete.

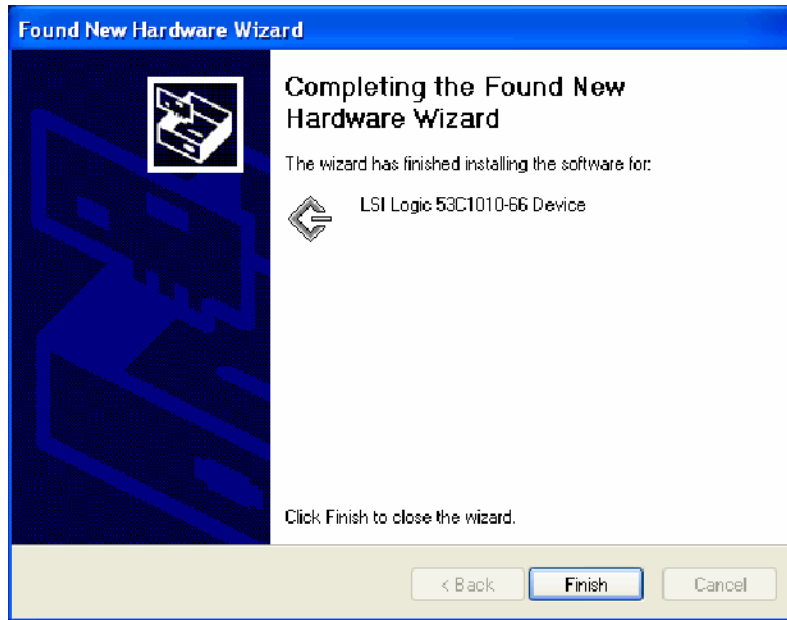


Figure 4: Completing the wizard

Installation Issues (MTS4SA)

If the latest Multiplexer software is installed from the MTS4SA application CD-ROM, previously installed versions of the Multiplexer will no longer work.

MPEG Player Issues (MTS400 and MTS430)

Administrator Rights for Recording

The MPEG Player application provides a facility to record to RAM. You need local administrator rights on the machine to make a recording.

MPEG Player and TSCA Application Interaction

If the MPEG Player application is playing a stream near its maximum bit rate limit (that is, 214 Mbps simplex or 107 Mbps duplex), starting the TSCA application may result in a dialog box being displayed with the message “Mega FIFO empty error” and the player stopping. Once the TSCA has started, it will be possible to start playing the stream again.

A workaround is to ensure that the TSCA is started before playing a stream at high bit rates.

Multiplexer Issues (MTS400, MTS430 and MTS4SA)

In the Multiplexer application, if you set the stream properties to “Greatest component stop time”, and then uses the Program Wizard to add an MPEG video elementary stream from a file, it will not generate a correct transport stream. If you select the “Available bit rate graph”, the application will crash.

Transport Stream Compliance Analyzer Issues (MTS400, MTS430 and MTS4SA)

Program Tree Does not Always Update Correctly

After deferred analysis has completed, very occasionally the program tree may not display the program names although they do appear in the Summary View. If you switch from the Program tab to another tab then back again, the program names will appear.

Administrator Rights for IP Analysis

In order to perform real time IP analysis, you need local administrator rights.

Lost Packets During Recording on IP Analysis on Low Specification PCs

On some low specification PCs (with old network cards and slower hardware), packets may be lost while recording a stream being analyzed over IP. This is due to the hardware dropping Ethernet frames.

1.6 PID Error Test Behavior

The 1.6 PID Error test determines whether a PID is missing by checking that its bit rate is 0 for a period of $10 \times PS4 \times PP1$, where PS4 is the Stream Parameter “PID bit rate bin duration” (by default this is 100 ms) and PP1 is the default PID parameter “PID bit rate limit and missing test integration count” (by default this is 1).

However, due to the complication that PIDs may change between unreferenced and referenced states, the test may not indicate that an error has occurred for an additional hold off period defined by the Stream Parameter “PID reference transition time” (by default this is 1000 ms). All these parameters can be set through the Parameters dialog, accessible through the Settings menu of the Transport Stream Compliance Analyzer.

Custom Scripting Must be Enabled to Display DSMCC in DVB Mode

In DVB mode, although the DSMCC script is listed as one of the scripts, DSMCC tables will not be displayed in the SI view unless Custom Scripting is enabled.

Custom Script “associated stream type” Does not Work in ATSC

The script language has a facility whereby the “assocStreamType” can be used to associate a PMT stream_type field value with a particular table. This is ignored in ATSC mode, but it is rarely used. A possible workaround is to use “assocPid” instead to associate a fixed PID with a particular table; this is less effective as it is not dynamic.

Custom Scripted Sections Without section_syntax_indicator ==1 Dropped

The scripting language can be used to define sections with section_syntax_indicator = 0 (that is, without the usual subtable structure). The TSCA raises syntax errors for these sections, and they are not seen in the SI view. It is unlikely that many sections would be specified with this feature.

TSCA May Become Overwhelmed on High Bit Rate Corrupted Streams

Streams analyzed at a high bit rate with numerous sync losses and sync gains with partial stream information may result in the TSCA becoming overwhelmed. This has only been seen on a stream generated by Tektronix for test purposes, and not on any customers streams.

Sync Will be Lost if the Stream is not Present for Two or More Seconds

If a stream disappears for two seconds or more, it will appear that sync has been lost.

IP Connection May be Lost

There has been a single incident of an IP connection being lost on an MTS400. This is due to a problem with Windows XP and/or the network driver. This will be observed by the Transport Stream Compliance Analyzer not being able to see transport streams transmitted over IP. If this occurs, attempt to detect whether the IP connection is still alive by attempting to ping other machines on the network. This is achieved by performing the following steps:

1. Start a Command prompt through the start menu sequence Start->All Programs->Accessories->Command Prompt
2. Attempt to ping a known machine on the network by typing

```
ping <machine>
```

where <machine> is either the IP address or host name of the known machine. If the IP connection is alive, this will return lines in the following format:

```
Reply from <IP address>:bytes=<n> time=<t>ms TTL=<l>
```

If these responses are not received, it is likely that connection is not alive.

If the connection is not alive, reboot the machine to reset the network connection.

User Interface May Disappear Due to Later Versions of the Sun Java Virtual Machine

The TSCA was developed and tested using Sun Java 1.4.2_05. Problems have been seen with later versions of 1.4.2, where the TSCA user interface may disappear, particularly in the EPG view, due to bugs in these versions of the Sun Java Virtual Machine. If the user interface disappears during analysis, the user should attempt to run the application again, and check the version of the Java Virtual Machine using the Help > About menu option. The version will be listed as the java.vm.version, and should read “1.4.2_05-b04”.

If a later version is being used, it is recommended that the user uninstalls the later versions using the “Add or Remove Programs” facility in the Windows Control Panel. These will be listed as “Java 2 Runtime Environment, SE v1.4.2”. The required version will be listed as “Java 2 Runtime Environment, SE v1.4.2_05”.

WinPcap May Cause PC Reset During IP Analysis on Multiprocessor PCs (MTS4SA Only)

It has been observed on a multiprocessor PC, that performing an IP Analysis caused it to reset. This may not occur on other SMP (symmetric multiprocessor) PCs, but if it is seen, it can be resolved by installing the WinPcap 3.1 Beta 4 version, which can be found at the following location:

<http://www.winpcap.org/install/default.htm>

ES Analyzer Issues (MTS400, MTS430 and MTS4SA)

Only Partially Decodes 4:2:2 Profile@HighLevel File	4:2:2 Profile@HighLevel files are only partially supported by the ES Analyzer. It fails to correctly recognize the 0x82 Profile/Level type.
Presentation Order is Incorrect	It has been noted that sometimes the Presentation Order chart does not always present field encoded material in the correct order.

Security Patches (MTS400, MTS430 and MTS4SA)

The software has been verified with the following Microsoft Security Patches.

Microsoft Window NT 4.0 (Service Pack 6.0a High Encryption)	KB823181 KB824141 KB824146 KB828035 Q823980 Q828750 IE6 SP1
Microsoft Windows 2000 (Service Pack 4)	No patches.
Microsoft Windows XP Pro (Service Pack 2)	KB834707 KB873339 KB885835 KB885836 KB886185 KB888302 KB890047 KB887472 KB885250 KB891781 KB867282 KB888113 KB890830

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