

Computer Telephony Integration Application Bulletin

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Using StrataLink for CTI Connections

Many Microsoft® Windows®-based Computer Telephony software products either do not have a TAPI compliant version of their product, or need the additional capabilities of a “middleware” software to control how the application functions with Strata DK call handling.

StrataLink has been developed with this in mind and offers you the ability to work with several popular software applications. They are:

- ♦ Elan Software’s Goldmine™ 95 V3.0
- ♦ TeleMagic® for Windows V2.2
- ♦ DayTimer Organizer™ V2.0
- ♦ Golden Gate Software’s Page Server/Page® Send Application V1.0
- ♦ Commence® V3.1

StrataLink will work with Toshiba’s new V2.22 TSPI. Both will be packaged together, and when released, will ship with each RPCI-DI. The installation procedure will provide options for installing the TSPI, StrataLink, or both.

Note This bulletin provides important general information on StrataLink and how it operates. For specific instructions on using one of the above applications with StrataLink, see the Application Notes for the desired software.

StrataLink communicates with these software applications using Microsoft Windows Open System Architecture capabilities for Dynamic Data Exchange (DDE). StrataLink accepts a DDE exchange to provide for outbound dialing and creates DDE instructions which in turn create actions within the linked application.

The program is designed to work with Toshiba’s TAPI Service Provider to receive events from the telephone system and collect information for the application. It also provides dialing instructions which ensure the number sent to the telephone system matches the local dialing plan.

Figure 1 shows how StrataLink is used with Windows applications to provide telephone services with your desktop PC.

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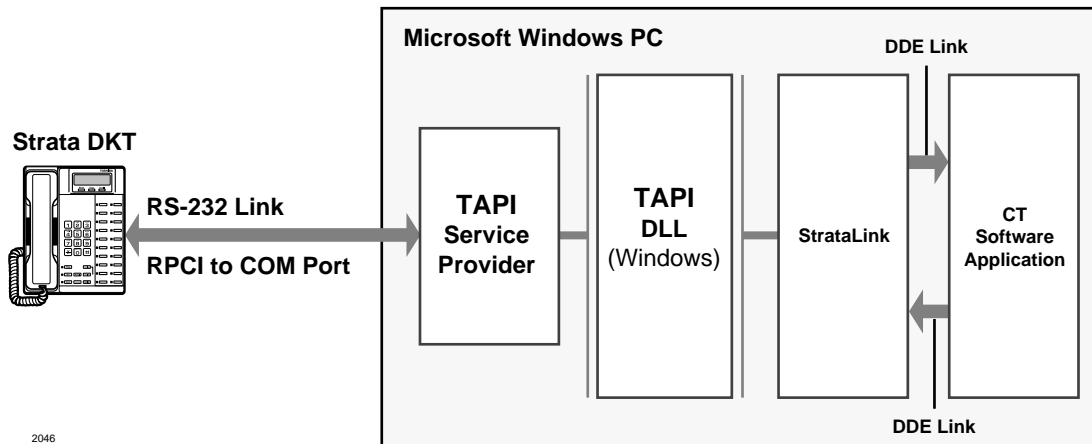


Figure 1 Computer Telephony Connection Using Toshiba's StrataLink

StrataLink Functions

StrataLink has three basic functions. It:

- ◆ Accepts events from the telephone, applies filtering rules and conditions and causes actions to take place in the application.
- ◆ Provides for outbound calling and call control from the application.
- ◆ Provides tools for testing the interface and debugging or monitoring the call events.

Processes Telephone Events

Using Windows TAPI, StrataLink accepts the Strata DK commands and provides a selection of "Actions" based upon call events, called Triggers. Each Trigger can have one or more conditions applied to it to control how, when, or if the Action is to be performed. Each Action has a limited set of parameters that can be changed to customize the application for the user. A list of Trigger events can be selected for the Action desired.

Provides Outbound Calling and Call Control

The Computer Telephony Software creates events for controlling the telephone. The events are controlled using DDE exchanges originating from the application and received by StrataLink. In some programs, the application software must be configured for this operation.

Tests, Debugs, and Monitors

StrataLink provides several important testing and debugging functions. These tools enable the installer to verify whether the link is functional and by using the TAPI link, to view the details of the information being passed. Without these tools, the troubleshooting or verifying operation is reduced to guessing.

Software Application Initiated Events

Dialing Preferences

Most application programs when attempting to dial using a DDE command are not able to specify the line appearance for the call. A line appearance must be specified for:

- ♦ Intercom Calls – dialing numbers with less than five digits.
- ♦ Local Calls – calls that match the local area code specified or calls with only seven digits (also need specify the local area code to be stripped before dialing).
- ♦ Long Distance Calls – any call with 10 or more digits (also indicate if a ‘1’ needs to be added if missing).

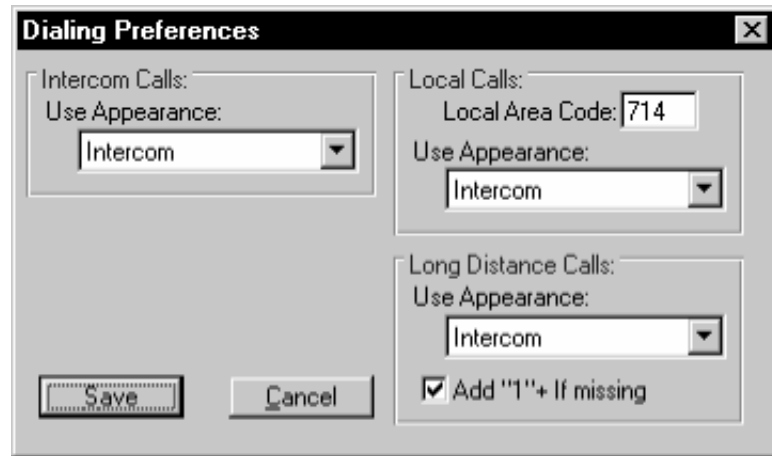


Figure 2 Dialing Preferences Screen

StrataLink provides an easy-to-use dialog box (see Figure 2) available in the Main Menu’s Setup sub-menu to set your dialing preferences.

Local Calls

Application programs may dial the area code of the telephone number even if it is a local call. Thus, by setting the Local Area Code field, StrataLink detects these calls, strips off the Area Code of the telephone number, and dials using the “Local” appearance. For example, if your Local Area Code is “714” and the application attempts to dial “714-515-1234,” the program converts the number to “515-1234” before dialing.

Long Distance Calls

Application programs may not insert a “1” before a long distance call. By using the option “Add 1+ if Missing,” StrataLink can automatically detect and correct this. For example, if the application attempts to dial a long distance call like “612-555-1234” (and your Local Area Code is “714”), this option converts the number to “1-612-555-1234” before dialing.

Application Program DDE Commands

With the exception of TeleMagic, all other applications mentioned in this bulletin can send the appropriate DDE commands to StrataLink. Some application programs (for example GoldMine) must be configured to use these DDE commands.

StrataLink, wherever necessary, offers more than one format for each command. (See your program’s Application Notes for applicable commands.) The following are some examples:

Dial

Dial a telephone number on the specified line appearance. If the line appearance is not specified, the appropriate default appearance (Intercom, Local, or Long Distance) is used.

[Dial, "Phone Number", "appearance"]

...or [DialNumber ("Intercom or Trunk ID", "Outside Phone Number")]

Answer

Answer a Ringing Call on the specified line appearance. If the line appearance is not specified, the current appearance is used.

[Answer, <appearance>]

...or [AnswerCall ()]

Hangup

Hangup on a active call.

[Hangup]

...or [DropCall ()]

Telephone System Events

Trigger Rules and Conditions

The Trigger Rules are established by the installer or user so that specific Actions can be performed when an event occurs. The Triggering event can be any number of things (e.g., Call Ringing, Call Connected, or Call Cleared).

The existing Trigger Rules can be displayed (Figure 3), edited, deleted or new rules added to meet the needs of the application. These functions are important when setting up the desktop PC. Multiple rules can be created and active at the same time.

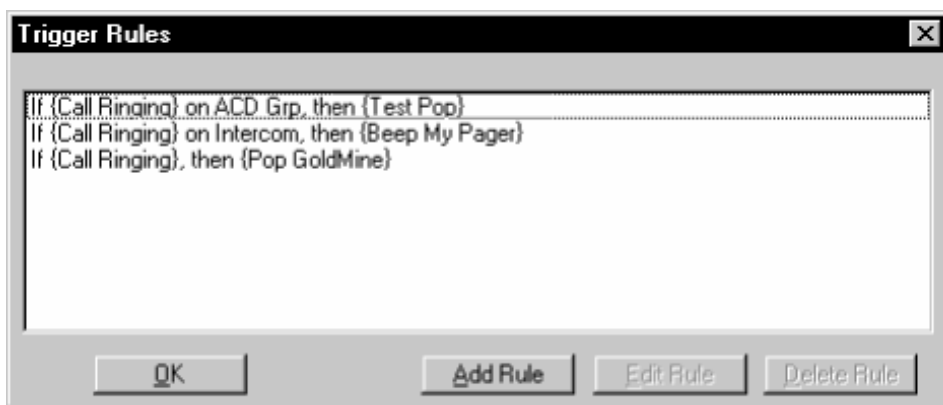


Figure 3 Trigger Rules Screen

Add/Change a Trigger Rule

When adding or changing a rule, the following fields are displayed on the Add/Change Trigger Rule screen (Figure 4):

Filters

When the triggering event occurs, it may need to pass specific filters or conditions before the Action is performed. Filters currently available include:

- ◆ Caller ID – required/not required. If there is no Caller ID associated with a call, you may not want to have an Action performed. The most common example is “Screen Pop” where you must select “any Number” to stop an Action.
To trigger an event anytime a call rings, regardless of whether Caller ID is present, you must select “none Required.”
- ◆ Trigger Delay – a short delay, expressed in tenths of a second, that will occur prior to the action. The delay is needed to send Caller ID information when Caller ID is not required.
- ◆ Appearance – the Trigger can be used on any line or a specific line. If the same Trigger applies to some lines but not to others, the rule must be entered for each line to which the rule applies.

Conditions

Conditions (i.e., Phone State) include performing the action “if not talking” or “if trunk number is available.” You may not want to have an Action performed while you are talking on a call. Again, the most common example is “Screen Pop” where you must select “If Not Talking” to prevent an Action from occurring until you are finished with the call.

Actions and Parameters

Actions are set up by the installer to perform a specific function (e.g., Screen Pop Goldmine, Pop Telemagic, or Beep My Pager). These Actions can then be used as part of a Trigger Rule and performed when a specific event occurs.

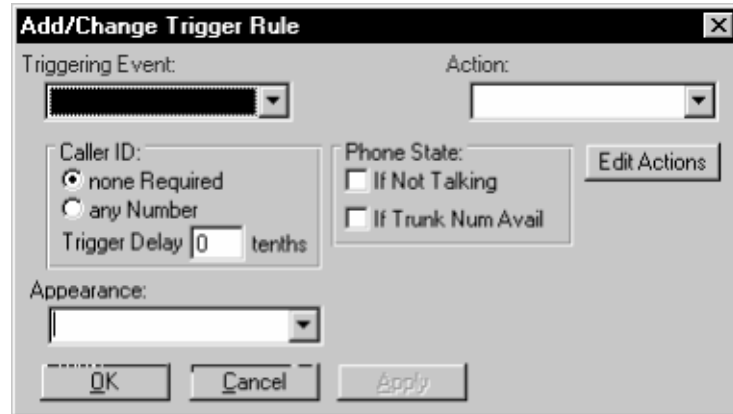


Figure 4 Add/Change Trigger Rule Screen

The existing Actions can be displayed (Figure 5), edited, deleted or new Actions added.

Important! *Deleting or adding Actions without instructions from Toshiba is not recommended. Editing Actions should always be in accordance with the program's Application Notes.*

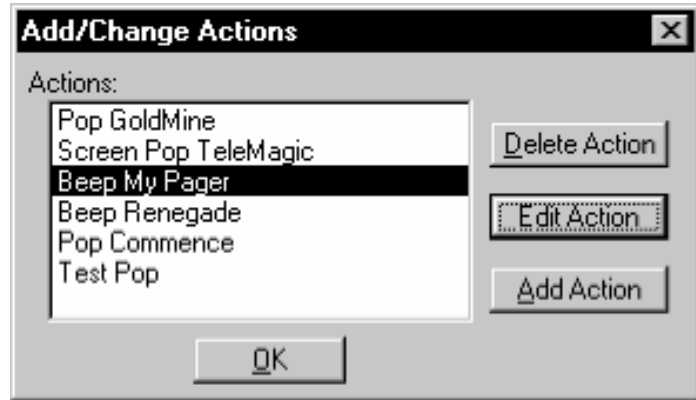


Figure 5 Add/Change Actions Screen

Add/Edit Action

When adding or editing an Action, the following fields are displayed on the Add/Edit Action screen (Figure 6):

Important! *Do not change these items without specific instructions in the program's Application Notes.*

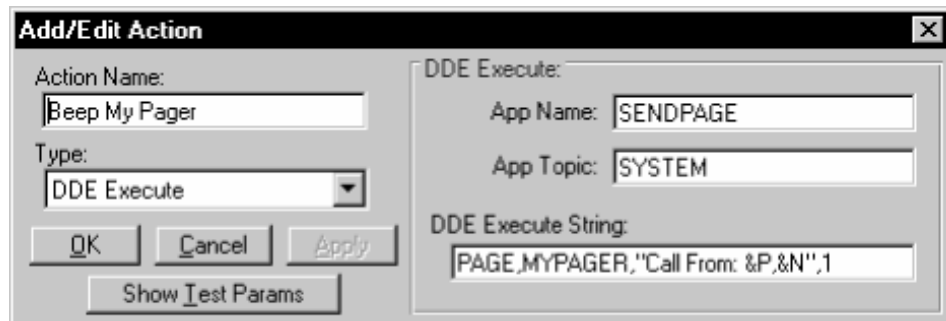


Figure 6 Add/Edit Action Screen

Action Name

Every event Action has a “Name” which you should set to describe the result the action is attempting to cause, like “Beep My Pager.” This name is used in the Trigger Rules.

Type

Select from the pull-down menu the type of Action to be performed. Each Action has one or more parameters that must be provided by the user/installer. These parameters often contain “tokens” which enable the inclusion of real-time information (e.g., Caller Phone Number, Date, Time, etc.) in the parameter. The choices are as follows:

DDE Execute

Sends a specific DDE command to the program you specify. This Action is very flexible and can be used to communicate with many different types of programs for a variety of purposes (e.g., Screen Pop). DDE Execute String parameters include:

- ♦ App Name – This should be set to the DDE name of the application to receive the DDE event.
- ♦ App Topic – This should be set to the DDE 'Topic' for the application to receive the DDE event.
- ♦ DDE Execute String – This is the command to be executed by the application receiving this DDE event. Typically this command includes token(s) so that real-time information is included in the command string.

Show Test Params Button

When you set up an Action, it is always a good idea to make sure the Action works correctly. The Test button will popup a Test Action screen for this purpose. Using this screen, you can simulate parameters (e.g., Calling Phone Number and Calling Name) and press the Test button to execute the Action with the test parameters. Parameters can be changed for the specific test.

Tokens

Some parameters contain Token(s) that enable the inclusion of real-time information (like the Caller Phone Number, Date, Time, etc.). The Tokens are:

Table 6-1 Tokens

TOKEN	FUNCTION	TOKEN	FUNCTION
&D	Date:	&E	Called Phone Number
&P	Caller Phone Number	&F	Called Name
&N	Caller Name	&A	TAPI Appearance Number
&H	Caller Phone Number Hyphenated: 714-555-1234	&B	TAPI Appearance Name
&I	Caller Phone Number Hyphenated: (714)555-1234	&G	TAPI Call ID
&T	Time of Day: HH:MM		

Example Actions Using Tokens

The following are some examples of how Actions can be set up:

Table 6-2 Token Usage Examples

Pop GoldMine '95 – Screen Pop Elan Software's GoldMine '95	
Action Type	DDE Execute
App Topic	DATA
App Name	GOLDMINE
DDE Execute String	[CALLERID("&I","&N","2")]
Pop TeleMagic – Screen Pop TeleMagic software from Telemagic, Inc.	
Action Type	Pop TeleMagic
Index Level	Leave this blank
Index Name	"TelePhone #"
Search String	&P
Beep My Pager – "Golden Page" software from Golden Gate Software	
While the telephone is ringing, this Action displays a message with the caller's Caller ID on a pager so that the person can decide whether to pickup the call.	
Action Type	DDE Execute
App Name	SENDPAGE
App Topic	SYSTEM
DDE Execute String	PAGE,MYPAGER,"Call From: &H,&N",1
Pop DayTimer Organizer – Screen pop Day-Timer Organizer (DayTimer Technologies)	
Action Type	DDE Execute
App Name	DTO_AxxConnect
App Topic	SYSTEM
DDE Execute String	[CallRinging("&G","&P","&N","2")]
For DayTimer Organizer call logging and screen-pop to work correctly, you should also enable a Trigger Rule to send a Call Cleared message whenever a Call Clears.	
Action Type	DDE Execute
App Name	DTO_AxxConnect
App Topic	SYSTEM
DDE Execute String	[CallCleared("&G","&P","&N","2")]

TeleMagic Link

The TeleMagic program (from Telemagic, Inc.) communicates with StrataLink via a special link called TeleMagic. The TeleMagic Link appears automatically each time StrataLink is accessed and provides a means to set up and monitor the communication between the two programs.

Important! For this link to operate, the TeleMagic program must be loaded and operational.

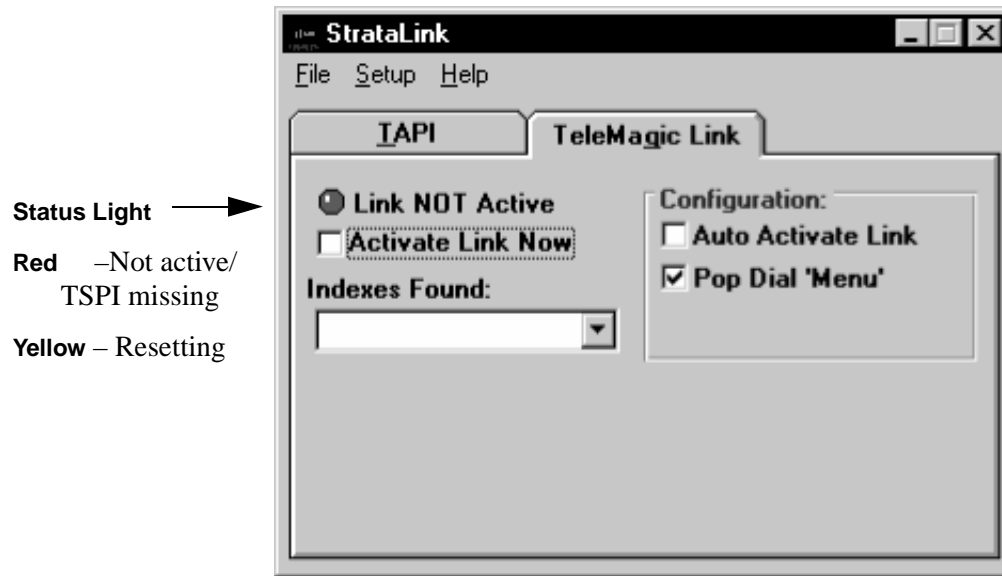


Figure 7 TeleMagic Link Menu

If you select the Auto Activate Link option, StrataLink automatically attempts to establish the TeleMagic link periodically (every 30 seconds or so) until the link is established. Once the Link is established, the Link Active light changes from Red to Green, and dialing and Screen-Pop can function. For Screen-Pop to work, the appropriate Trigger Rules must be set up.

Pop TeleMagic

Sends a “Pop” or “LookUp” command to TeleMagic with the configuration you specify. This is used to Screen-Pop the TeleMagic contact manager when a call rings in. Pop TeleMagic parameters are:

- ♦ Index Level - Tells TeleMagic the level on which to perform the search (e.g., 1, 2, 3, etc.). Leaving this parameter blank causes the search to occur on the level in present use.
- ♦ Index Name - Selects the TeleMagic index to be used for the search. For Screen Pop this is typically “TelePhone #”, but since the Indexes within TeleMagic are programmable this could be set to any appropriate index. The TeleMagic Link must be operational before you can make this selection.
- ♦ Search String - This should be set to whatever string should be searched for using the above two parameters. For Screen Pop this is typically the Calling Phone number which would be the token &P.

Testing TSPI Link

The TAPI dialog box (Figure 8) provides a method for verifying the TAPI Driver is setup and operational. To check the driver, select an appearance (e.g., Intercom) and click on each of the Pickup, Dial, and Hangup keys individually. To complete the test, you should repeat this procedure for each line appearance.

To access the setup screen for the Toshiba TAPI Service Provider, click on the Driver Setup button. The Configure Keys section of the screen should be programmed properly as they will be interrogated and used as the Appearances by StrataLink. Whenever you make configuration changes to the TAPI Service Provider, it is recommended that you exit and restart StrataLink.

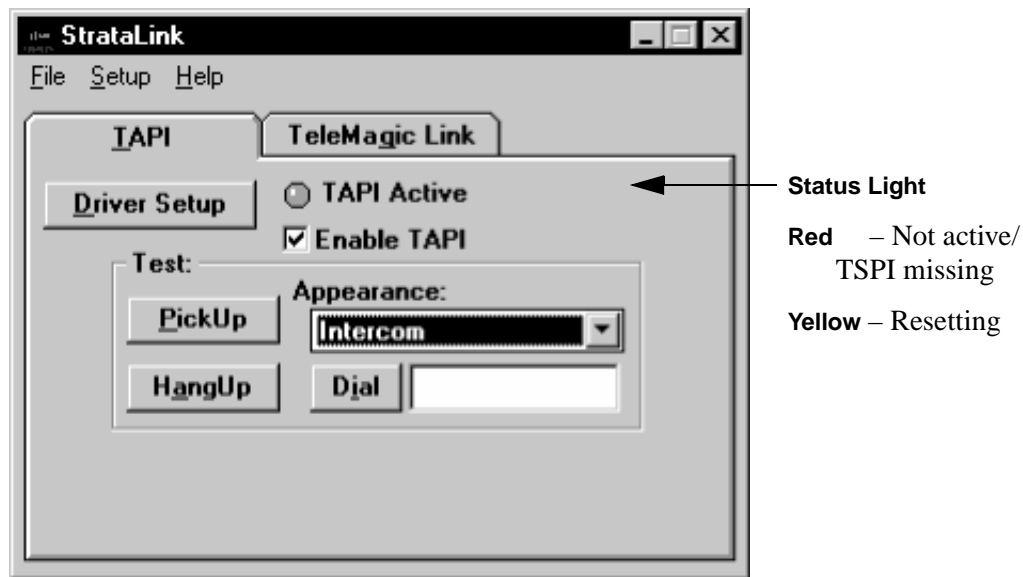


Figure 8 TAPI Test Screen

Debugging

Provides two tools for monitoring communication activity to and from StrataLink. This is especially useful when you are setting up and testing Actions and Trigger Rules.

Show Calls

The Show Calls menu opens an Active Call Queue screen showing all telephone calls presently known to StrataLink. This window can be kept open while other activities and functions are performed.

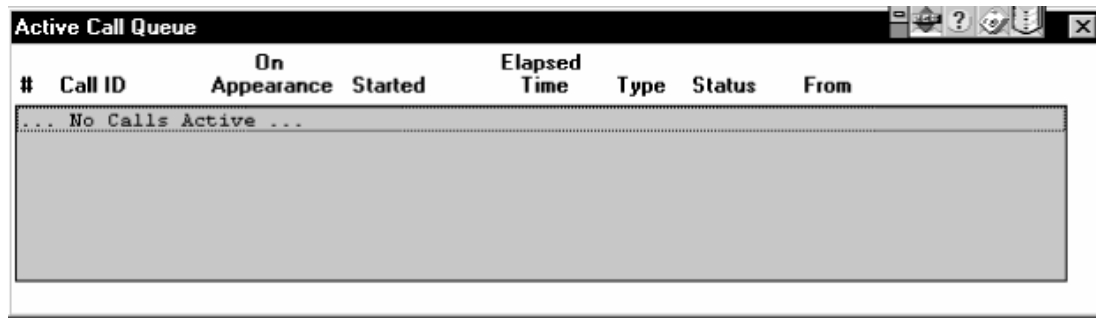


Figure 9 Active Call Queue Screen

Show Events

The Show Events menu opens a Debug Events screen which shows real-time events as they occur. The Display option on this window allows you to choose which event you will monitor. This window can be kept open while other activities and functions are performed.

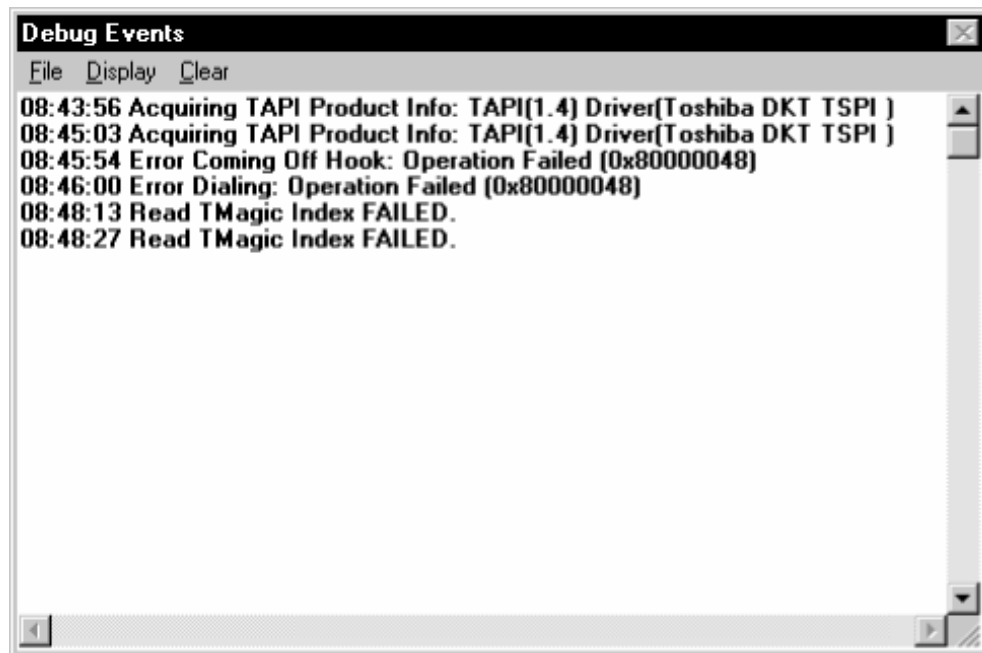


Figure 10 Debug Events Screen