



Explorer 8300DVB Screen and Clean User's Guide

Please Read

Important

Please read this entire guide. If this guide provides installation or operation instructions, give particular attention to all safety statements included in this guide.

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Preface

About This Guide

Introduction

As part of regular business operations, subscribers may return an Explorer® 8300DVB™ Set-Top to you, for example, when they move to a new city or if it is not functioning properly. Upon receiving the set-top and prior to returning it to a subscriber, you will want to ensure that the 8300DVB is in optimal working condition and that it is returned to its original factory condition.

To make certain that a returned 8300DVB is ready for another subscriber, Cisco has developed the Screen and Clean application. This application ensures that the components of the set-top are functioning properly and restores all factory default settings.

The Screen and Clean application runs various tests, selected by the operating technician, and delivers results in real-time right to your desktop. This tool is designed as a diagnostic tool; therefore, if any test should happen to fail, you can rerun the test or assume your normal company procedures for further troubleshooting.

Purpose

The purpose of this guide is to teach system technicians how to use the Screen and Clean application on returned 8300DVBs so that they can be distributed to new subscribers with factory default settings. You will learn how to set up your test system to use the Screen and Clean application, as well as how to install the application on your PC.

Scope

This document provides the following information and instructions:

- System requirements
- System setup
- Screen and Clean installation and testing procedures
- Test descriptions

About This Guide, Continued

Audience

This document is written for system operators and technicians who are responsible for setting the hard drive and memory of 8300DVBs to their original factory conditions, as well as verifying that the 8300DVB functions properly.

Document Version

This is the second release of this document.

Chapter 1

Screen and Clean Overview

Overview

Introduction

This overview of the Screen and Clean application introduces you to the purpose and key features of this application. This chapter also introduces the components of the Screen and Clean main screen. The components include menu options and toolbar buttons.

In This Chapter

This chapter contains the following topics.

Topic	See Page
Screen and Clean Application Overview	1-2
Software Overview	1-3

Screen and Clean Application Overview

Introduction

The Screen and Clean application is a Windows-based application that is designed to run on a personal computer (PC) and communicate with an Explorer 8300DVB Set-Top that has been returned by a subscriber.

Purpose

The purpose for using the Screen and Clean application on returned 8300DVBs includes the following functions:

- Verify the operation of an 8300DVB
- Reset the non-volatile memory (NVM) and the hard disk drive (HDD) to clear out the previous subscriber's settings and content (for example, settings and recordings)
- Provide minimal tracking of any failed tests

Features

The features of the Screen and Clean application are included in the following list:

- No testing of software is necessary; testing is to find hardware faults
- The test process requires minimal interaction by the operator
- The Screen and Clean application does not interfere with normal subscriber operation
- Immediate test results are displayed in the user interface

Software Overview

Introduction

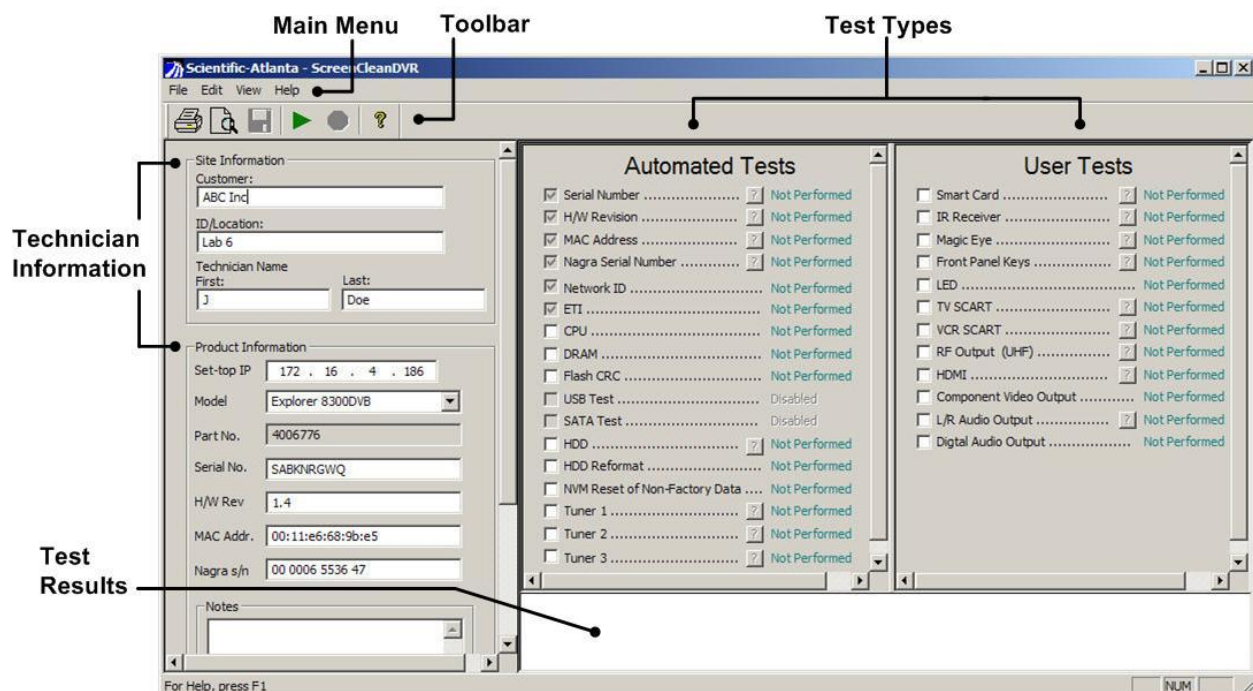
This section describes the components of the Screen and Clean user interface, including the main menu and the toolbar.

Note: For information about how to setup your system to run the Screen and Clean application, go to Chapter 2, **System Setup**. For information on how to run the Screen and Clean application, go to Chapter 3, **Test 8300DVBs Using Screen and Clean**.

Screen and Clean Window

The Screen and Clean window opens immediately after you launch the application. The main Screen and Clean window consists of the following components:

- **Main Menu** – Contains various menus that allow you to access commands
- **Toolbar** – Contains icons that provide quick access to commonly used features
- **Technician Information** – Includes text boxes that allow you to input information about the test site, technician, 8300DVB product, and any special situation or circumstances (notes)
- **Test Types** – Includes a list of automated (do not require operator involvement) and user tests (require operator involvement)
- **Test Results** – Provides an area where results are reported for each completed test



Software Overview, Continued

Main Menu Options

This section provides descriptions of the Main Menu options. The Main Menu options include the following menus:

- File
- Edit
- View
- Help

File Menu

File Menu Command	Function
Run Tests	Runs the tests that you selected in the automated and user test areas
Stop Tests	Stops the tests Note: If a test is in progress, it will complete before the remaining tests are stopped.
Save To DB	Saves the test results to the database (DB) Notes: <ul style="list-style-type: none">• This option is only valid after a test has been run to completion.• This option is not enabled if Auto Save to DB is enabled.
Print	Prints a copy of the test results to your default printer
Print Preview	Allows you to view how the test results will appear when they are printed
Print Setup	Allows you to specify the printer and printer connection
Exit	Closes the Screen and Clean DVR application

Software Overview, Continued

Edit Menu

Edit Menu Command	Function
Copy All Output to Clipboard	<p>Copies all output from the test results window to the clipboard</p> <p>Notes:</p> <ul style="list-style-type: none">You do <i>not</i> need to select any text prior to executing this command.You can also right-click your mouse button in the test results area and select Copy All to Clipboard to place a copy of the output on the clipboard.
Settings	Allows you to customize testing parameters for the test site

View Menu

View Menu Command	Function
Toolbar	Allows you to view or hide the toolbar
Status Bar	Allows you to view or hide the status bar
Clear Output on Run	<p>Allows you to enable an auto-clear feature that clears the output from the test results area each time a new test is run</p> <p>Note: If you do not wish to enable this feature, you can manually clear the output from the test results area, when desired. To do so, select Clear Output from the View menu or right-click your mouse button in the test results section and select Clear Output.</p>
Clear Output	<p>Allows you to clear the output from the test results area</p> <p>Note: You can also right-click your mouse button in the test results area and select Clear Output to delete output from this area.</p>

Software Overview, Continued

View Menu Command	Function
Auto Save to DB	<p>If selected, all output from the test results window is automatically saved to the database at the completion of a test</p> <p>Notes:</p> <ul style="list-style-type: none">• When enabled, Save To DB disables the manual save option.• If this feature is not checked, you must manually save output to the database using the Save To DB command or the Save Results button.• Once the test results have been saved, you cannot save them again.
DB Records	Allows you to display all records saved to the database with the option of deleting them as well

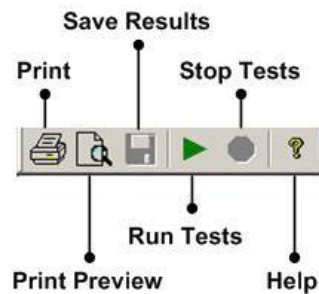
Help Menu

Help Menu Command	Function
Help Topics	Allows you to view an index of help topics for Screen and Clean
About ScreenClean	Provides copyright and version information

Software Overview, Continued

Toolbar

The toolbar within the Screen and Clean application allows you to quickly access commonly used features as shown in the following diagram.



Toolbar Icon Name	Function
Print	Prints a copy of the test results
Print Preview	Allows you to view how the test results will appear when they are printed
Save Results	Saves the test results to the database Note: You can only save test results once per completed test.
Run Tests	Runs the tests selected in the automated and user test areas
Stop Tests	Stops the tests Note: If a test is in progress, it will complete, but no other tests will begin.
Help	Displays a list of help topics

Software Overview, Continued

Technician Information

When the technician first opens the Screen and Clean application, they enter the appropriate information in the Site Information section. The fields in these sections are text-only fields.

The technician also enters the appropriate information (for example, MAC address) from the labels on the 8300DVB into the Product Information area of the window.

Important: You must include an entry for each field, except the Notes field, to successfully run a test.

Notes:

- If you enter a serial number, hardware revision, MAC address, or Nagra serial number incorrectly in the Product Information area, the tests for those values (Automated Tests area of window) will fail. When this test fails, the correct value is displayed in the test results area and the incorrect value you entered is highlighted in yellow. You should update the value you entered with the value reported in the test results area.
- Once you enter information into any of these fields, it is saved for future tests.

Test Types

The Main Menu includes the following two types of tests:

- **Automated Tests** – Tests that do not require the technician to perform any functions. These tests are automatically run by the application
- **User Tests** – Tests that require the technician to perform a function (for example, pressing front panel keys for the Front Panel Keys test)

Note: You can select any number of tests to run simultaneously.

Test Results

The test results section includes information regarding the outcome of each test, including the date and time that the tests were started and finished. The starting date and time is shown at the beginning of the test results. The ending date and time is shown at the end of the test results. The duration of the entire test is also included at the end of the test results.

Most tests display a Passed (text is green) or Failed result (text is red), while others also list actual values (for example, Network ID [value is blue]). All test results can be printed to your printer or saved to the database.

Software Overview, Continued

If a test yields a pass result, the 8300DVB successfully passed the requirements for the individual test. If all of the tests in a test run pass, an overall “Passed” test result is shown in the test results window.

Example:

Overall Test Results
Passed

If a test yields a fail result, the 8300DVB did not pass the requirements of the individual test. If any number of tests do not pass during a test run, an overall “Failed” test result is shown in the test results window.

Example:

Overall Test Results
Failed: 2 Tests

If a fail result is reported, a question mark icon (?) becomes activated next to the “Failed” result in either the Automated Tests or User Tests listing. Click this icon to view why an individual test failed.

Example: If the Front Panel Keys test did not pass, the following dialog may appear when you click the (?) button.



If a test fails, you can run the test again. If you continue to get a fail result, follow your normal company procedures for further troubleshooting.

Chapter 2

System Setup

Overview

Introduction

This chapter describes and illustrates the typical setup for connecting PCs to an 8300DVB set-top environment (mini-headend environment). This chapter also describes the procedures for operating and installing the Screen and Clean software application on your PC.

In This Chapter

This chapter contains the following topics.

Topic	See Page
System Requirements	2-2
Connect the 8300DVB	2-4
Install the Screen and Clean Application	2-6

System Requirements

Overview

This section outlines the software and hardware requirements that are needed to use the Screen and Clean application.

Software Requirements

The following software is required on the PC that is running the Screen and Clean application:

- Cisco Screen and Clean Application (version 2.1)
- Microsoft Windows XP or later
- Open Database Connectivity (ODBC) Data Source

Hardware Requirements

To successfully test 8300DVBs with the Screen and Clean application, the system or test operator is required to have the following equipment for their system environment:

- 8300DVB
- Two-Way TV remote control
- PC
- Unspecified bit rate cable modem termination system (UBR CMTS)
- Mini-headend
- Television
 - 2 SCART connectors (serial input)
 - Standard-definition TV (SDTV)
 - High-definition TV (HDTV) with HDMI™ and component cables
 - Component video input (two color-coded RCA phone jacks)
 - IEC 60958 optical input (digital audio)
 - Stereo audio speakers
- Cable TV signal
- MPEG2 stream generator/player, preferably having three transport stream outputs that contain different content
- Three QAM modulators
- One CMTS for DOCSIS® communication (256-QAM is recommended)

System Requirements, Continued

- UPS (for DOCSIS communication testing) for test station equipment and a mini-headend
- RF combining network for the three QAMs and CMTS
- Two-way distribution network for multiple test bench requirements
- RF attenuator for each test bench to change drop levels
- Wintel PC connected to the CMTS network running at least Microsoft Windows XP software
- Printer
- Nagra test cards¹
- Magic Eye (IR receiver)
- Peripheral device
- RCA phono adaptor and headphones
- Test carts
- Burn-in racks
- Assorted cables leads (including an SCART cable, RCA cable, RF cable, power cable, IR cable, RJ-45 cabling, and USB connector cable)

¹ The Nagra test card requires a valid, functioning, non-blacklisted card.

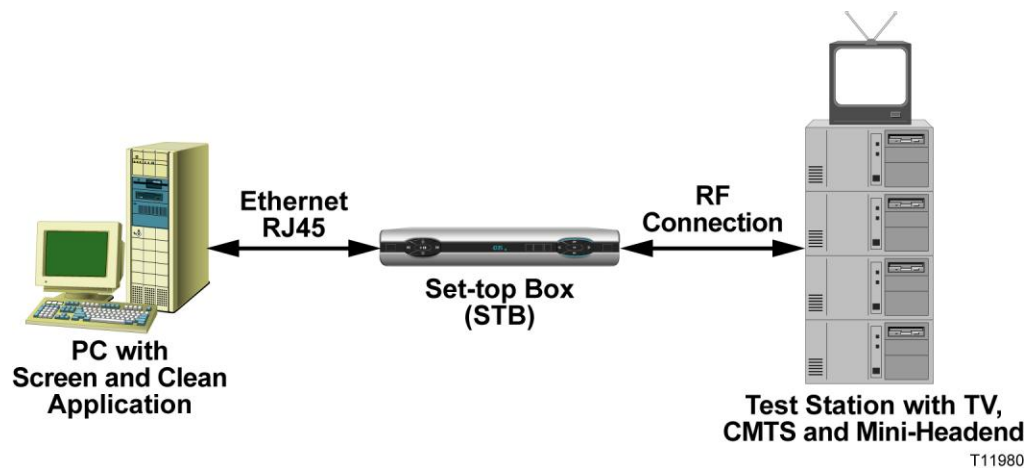
Connect the 8300DVB

Overview

This section describes how to connect an 8300DVB to your PC and your headend system. The connections described within this section will ensure that each Screen and Clean test will operate properly.

Connecting the 8300DVB

The PC is connected to the 8300DVB using an Ethernet connection as illustrated in the following example.



Complete the following steps to connect the 8300DVB to a PC and a test station.

1. Using an Ethernet RJ-45 cable, connect the 8300DVB to the PC.
2. Using an RF cable, connect the 8300DVB to the RF connection located on your mini-headend system.
3. Using an SCART cable, RCA cable, power cable, IR cable, and/or a component cable, connect the 8300DVB to the SDTV or HDTV, as needed.

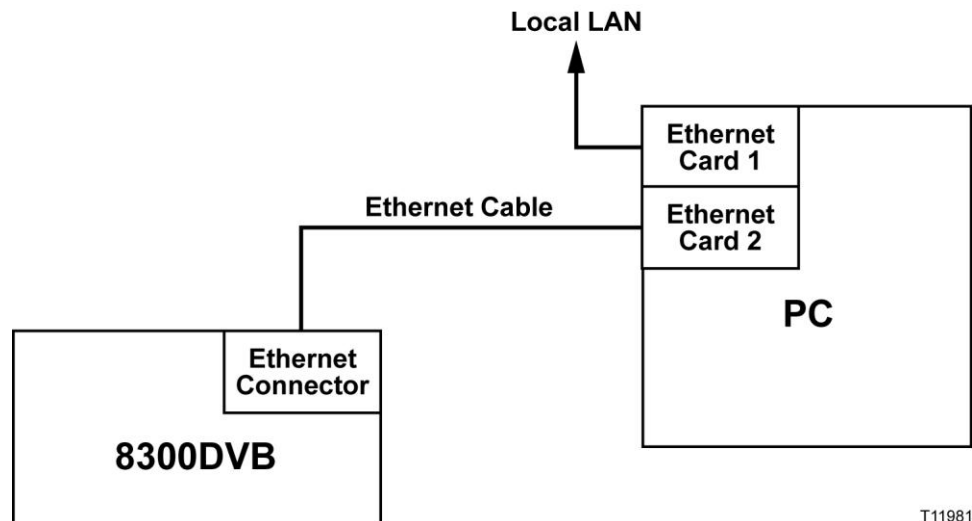
Note: These cables are needed for specific tests. Refer to Chapter 4, **Screen and Clean Test Descriptions**, to determine where the cables are connected and which cable is needed for each test.

Connect the 8300DVB, Continued

Ethernet Card Configuration

The following illustration shows a two Ethernet card configuration. This configuration will isolate the 8300DVB Ethernet traffic from the regular (corporate) network connection (for example, when a PC is connected to a corporate network). This will allow the Screen and Clean application to operate more efficiently.

Note: If your 8300DVB testing environment is not connected with the regular network connection, a one Ethernet card configuration is sufficient.



Configuring the Ethernet Port

To effectively communicate to the 8300DVB, you should set up the Ethernet port to obtain IP information from the network using the dynamic host configuration protocol (DHCP) protocol. Contact your network administrator for details about how to configure the DHCP protocol.

Install the Screen and Clean Application

Overview

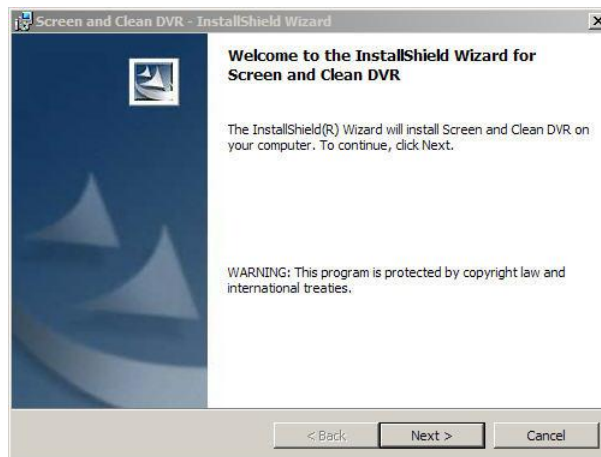
This section describes the procedures for installing the Screen and Clean application onto your PC. This section also includes instructions for setting up a data source. A data source provides the connection information that enables you to communicate with the Screen and Clean database.

Installing the Screen and Clean Application

Complete the following steps to install the Clean and Screen application onto your PC.

1. Insert the Screen and Clean 2.1 CD into the CD drive on your PC.

Result: The Screen and Clean DVR Welcome screen opens.



2. Click **Next** and the license agreement for the application opens.
3. Review the license agreement, and then click **I accept the terms of the license agreement**.

Note: If you would like a printed copy of the license agreement, click **Print**.

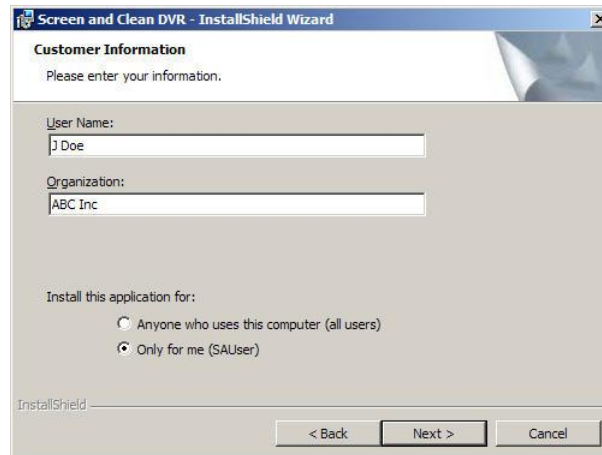
4. Click **Next**.

Result: The Screen and Clean DVR Release Notes window opens.

Install the Screen and Clean Application, Continued

5. Review the information in the release notes and then click **Next**.

Result: The Customer Information window opens.

The screenshot shows a Windows-style dialog box titled "Screen and Clean DVR - InstallShield Wizard". The window has a standard title bar with minimize, maximize, and close buttons. The main content area is titled "Customer Information" and includes the instruction "Please enter your information:". There are two text input fields: "User Name:" with the text "J Doe" and "Organization:" with the text "ABC Inc". Below these fields, there is a section titled "Install this application for:" with two radio button options: "Anyone who uses this computer (all users)" and "Only for me (SAUser)". The "Only for me (SAUser)" option is selected. At the bottom of the window, there is a status bar that says "InstallShield" and three buttons: "< Back", "Next >", and "Cancel".

6. Complete the following steps while viewing the Customer Information window.
 - a) Type your name in the **User Name** field.
 - b) Type your company name in the **Organization** field.
 - c) Select the appropriate button to indicate who can access the Screen and Clean application.
 - d) Click **Next**.

Result: The Destination Folder window opens.

7. Complete one of the following options:
 - a) Click **Next** to install the application into the default folder destination.
 - b) Click **Change** to install the application into a different folder.

Result: The Ready to Install the Program window opens.

8. Review your installation settings.
9. Are your settings correct?
 - If **yes**, click **Install** and then go to step 10.
 - If **no**, click **Back** and correct your settings by repeating steps 5 through 8, as needed.

Install the Screen and Clean Application, Continued

10. When the InstallShield Wizard Completed window opens, choose whether or not you want to view the readme file by clicking a checkmark into or out of the **Show the readme file** box.
11. Click **Finish**.

Results:

- The Screen and Clean application is successfully installed on your PC.
- The Screen and Clean program group is added to the Start menu and contains shortcuts to the application, help, and an electronic version of this user's guide.
- The Screen & Clean DVR icon is placed on your desktop for quick access to the application.

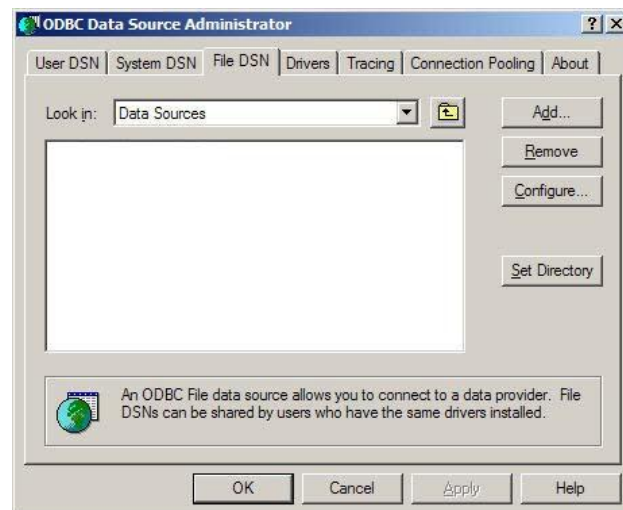
Configuring the Data Source

Open DataBase Connectivity (ODBC) is a programming interface that provides a common language for Windows-based applications to access databases on a network. The Screen and Clean application requires you to manually set up an Open ODBC data source so that you can save test results to the database.

Note: If you have already set up the ODBC data source for an earlier version of ScreenCleanDVR, then you do not have to set it up again.

1. From your desktop, click the **Start** menu and then select the following sub-commands:
Settings>Control Panel>Administrative Tools>Data Sources (ODBC)

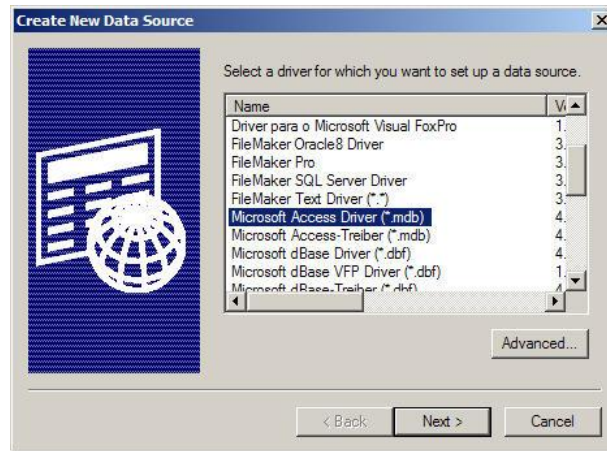
Result: The ODBC Data Source Administrator window opens.



Install the Screen and Clean Application, Continued

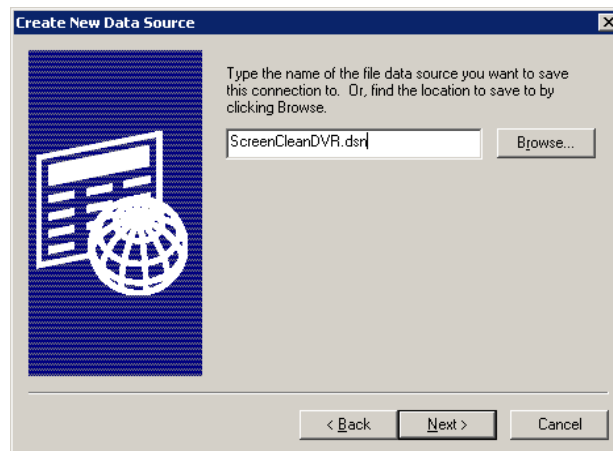
2. Click the **File DSN** tab, and then click the **Add** button.

Note: The Create New Data Source window opens.



3. Select **Microsoft Access Driver (*.mdb)** and click **Next**.

Result: A second Create New Data Source window opens.

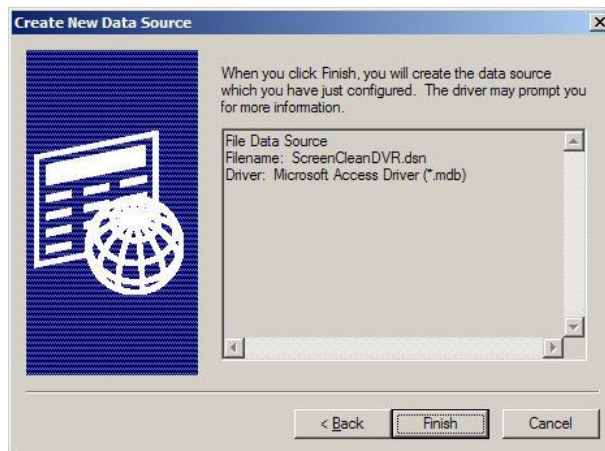


Install the Screen and Clean Application, Continued

4. In the Data Source Name box, type **ScreenCleanDVR.dsn** for the data source, and then click **Next**.

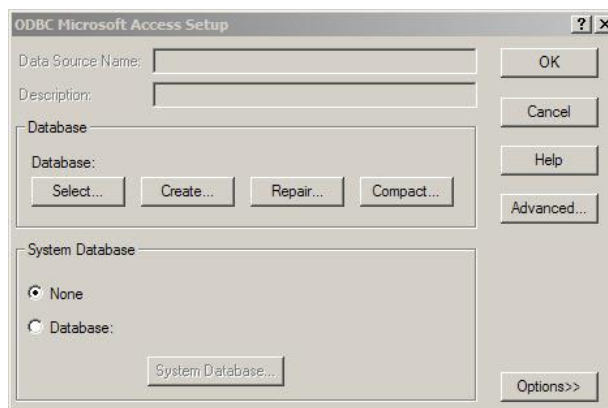
Important: You *must* use ScreenCleanDVR.dsn for the data source name. If you use a different name, test results will *not* be saved to the database.

Result: An overview of the Screen and Clean data source is shown in the next window.



5. Click **Finish**.

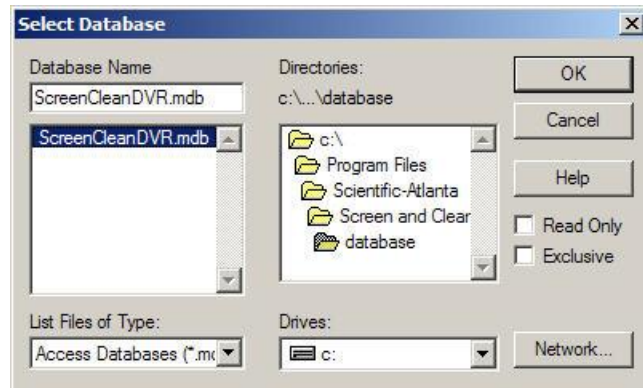
Result: The ODBC Microsoft Access Setup window opens.



Install the Screen and Clean Application, Continued

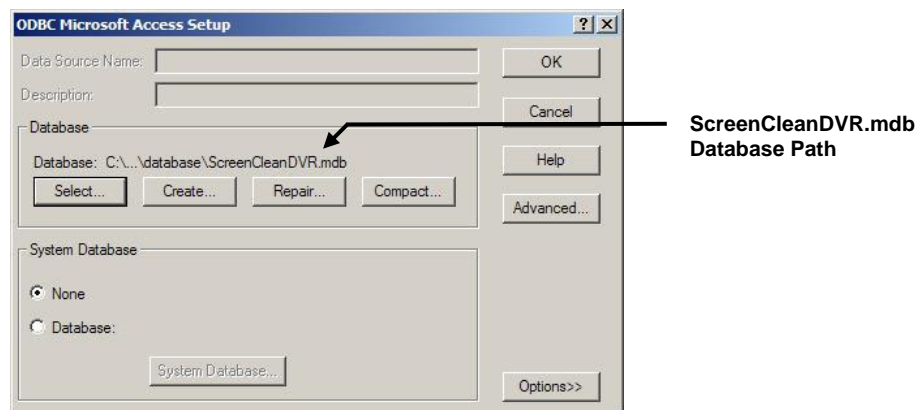
6. Click **Select**.

Result: The Select Database window opens.



7. Navigate to the **Screen and Clean\database** directory and select **ScreenCleanDVR.mdb**.
8. Click **OK**.

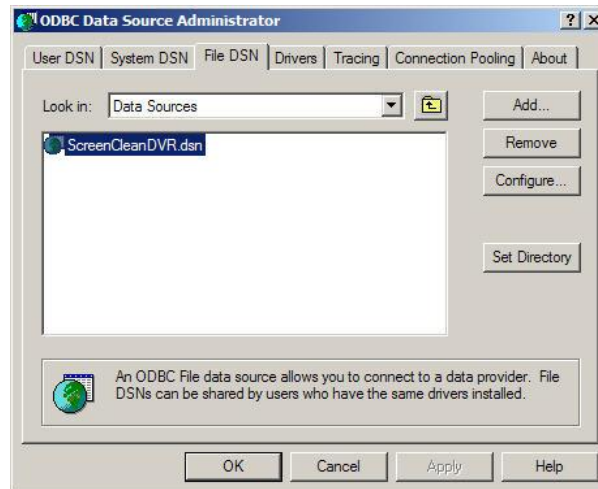
Result: The ODBC Microsoft Access Setup window opens and displays the database path where the ScreenCleanDVR.mdb data source is located.



Install the Screen and Clean Application, Continued

9. Click **OK**.

Result: The Select Database window closes and the ScreenCleanDVR.mdb data source is inserted into the ODBC Data Source Administrator window.



10. Click **OK**.

Chapter 3

Test 8300DVBs Using Screen and Clean

Overview

Introduction

This chapter describes how to run automated and user tests on an 8300DVB using the Screen and Clean application. This chapter also includes the procedures for starting up an 8300DVB.

Note: The 8300DVBs can only be tested one at a time.

In This Chapter

This chapter contains the following topics.

Topic	See Page
Run the Screen and Clean Application	3-2

Run the Screen and Clean Application

Overview

This section describes how to run the Screen and Clean application on an 8300DVB, including how to start up the 8300DVB. These procedures assume that you have successfully connected the 8300DVB to the PC and a TV. If you have not yet connected your system, refer to Chapter 2, **System Setup**.

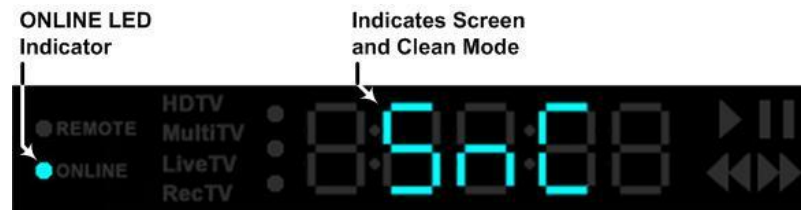
Running the Screen and Clean Application

Complete the following tests to run the Screen and Clean application on an 8300DVB set-top.

Important: These procedures outline the basic steps to run the Screen and Clean application; they do not describe each test. For details about each test, refer to Chapter 4 **Screen and Clean Test Descriptions**.

1. On the front panel of the 8300DVB, press **Reset**.
2. Press the **right arrow** (➡) plus the **up arrow** (⬆) buttons simultaneously.
3. Release the buttons when the word **Boot** appears in the LED window.

Result: An ONLINE indicator light will flash until it has successfully booted and connected to the system, and SnC will appear in the LED window.



4. In the LED window, watch for the **ONLINE** indicator light to stop flashing.

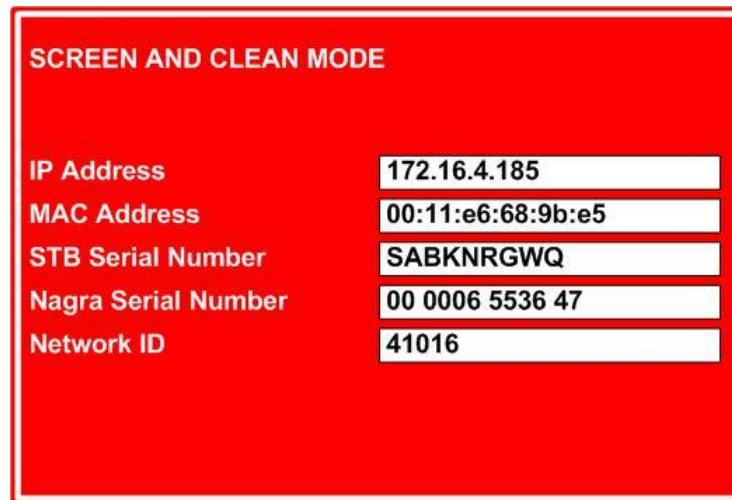
Run the Screen and Clean Application, Continued

5. Did the ONLINE indicator light stop flashing?

Note: This may take up to a minute to occur.

- If **no**, repeat steps 1 through 4.
- If **yes**, the 8300DVB has successfully booted.

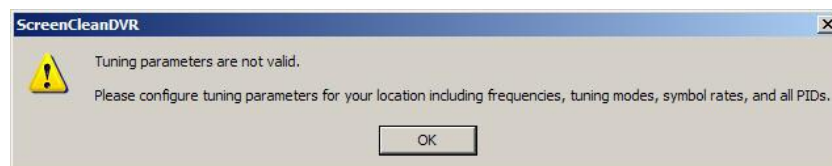
Result: The TV monitor displays the welcome screen. Wait for the IP address of the 8300DVB to appear in the IP Address field. This address indicates that the 8300DVB is ready to communicate with the PC.



SCREEN AND CLEAN MODE

IP Address	172.16.4.185
MAC Address	00:11:e6:68:9b:e5
STB Serial Number	SABKNRGWQ
Nagra Serial Number	00 0006 5536 47
Network ID	41016

6. When the 8300DVB is ready to communicate with the PC, double-click the **Screen & Clean DVR** icon on your desktop.
7. Is this the first time you are accessing the Screen and Clean application?
- If **yes**, the following dialog opens. Go to step 8.



- If **no**, the ScreenCleanDVR window opens. Go to step 14.

Run the Screen and Clean Application, Continued

- Click **OK**.

Result: The Edit Settings window opens.

	Low Frequency	Mid Frequency	High Frequency
Tuning Parameters			
Frequency (Hz)	419000000	519000000	619000000
Modulation Mode	qam64	qam64	qam64
Symbol Rate	6952	6952	6952
A/V Test Parameters			
Video PID	669	1000	165
Audio PID	619	1001	119
PCR PID	669	1000	165
Frequency for A/V Tests	Low	Mid	High
Tuner Test Parameters			
BER High Limit	0.000000999	0.000000009	0.000000099
S/N Low Limit (dB)	15	25	30
Signal Level Low Limit (dBmV)	-12	-6	-10
Signal Level High Limit (dBmV)	-6	6	12
BER Measurement Period for all tuner tests (seconds)	1		
HDD Partitioning			
Partition Size (MB)	1024	10240	Note: 1MB = 1024 bytes 1GB = 1024 MB
	ITFS	USER	
Buttons	Save	Cancel	

- In the Tuning Parameters area, enter the low-, medium-, and high-frequency requirement for your test site, the modulation mode, and the symbol rate values, as needed.

Note: The frequency value must be between 50000000 Hz and 1000000000 Hz.

- In the A/V Test Parameters area, enter the video, audio, and PCR PID (plug control resister program identifier) requirements for your site at the low-, medium-, and high-frequency levels. Then adjust the **Frequency for A/V Tests** select, as needed.

Result: The PID values must be between 1 and 8191.

- Adjust the values in the Tuner Test Parameters and the HDD Partitioning areas, as needed.

- Click **Save**.

Result: A dialog opens and asks you to confirm the changes that you made.

Run the Screen and Clean Application, Continued

13. Click **OK**.

Result: The ScreenCleanDVR window opens.

Scientific Atlanta - ScreenCleanDVR

File Edit View Help

Site Information

Customer: ABC Inc

ID/Location: Lab 6

Technician Name

First: J Last: Doe

Product Information

Set-top IP: 172 . 16 . 4 . 186

Model: Explorer 8300DVB

Part No.: 4006776

Serial No.: SABKNRGWQ

H/W Rev: 1.4

MAC Addr.: 00:11:e6:68:9b:e5

Nagra s/n: 00 0006 5536 47

Notes

Automated Tests

- ☒ Serial Number ☐ Not Performed
- ☒ H/W Revision ☐ Not Performed
- ☒ MAC Address ☐ Not Performed
- ☒ Nagra Serial Number ☐ Not Performed
- ☒ Network ID ☐ Not Performed
- ☒ ETI ☐ Not Performed
- ☒ CPU ☐ Not Performed
- ☐ DRAM ☐ Not Performed
- ☐ Flash CRC ☐ Not Performed
- ☐ USB Test Disabled
- ☐ SATA Test Disabled
- ☐ HDD ☐ Not Performed
- ☐ HDD Reformat ☐ Not Performed
- ☐ NVM Reset of Non-Factory Data ☐ Not Performed
- ☐ Tuner 1 ☐ Not Performed
- ☐ Tuner 2 ☐ Not Performed
- ☐ Tuner 3 ☐ Not Performed

User Tests

- ☐ Smart Card ☐ Not Performed
- ☐ IR Receiver ☐ Not Performed
- ☐ Magic Eye ☐ Not Performed
- ☐ Front Panel Keys ☐ Not Performed
- ☐ LED ☐ Not Performed
- ☐ TV SCART ☐ Not Performed
- ☐ VCR SCART ☐ Not Performed
- ☐ RF Output (UHF) ☐ Not Performed
- ☐ HDMI ☐ Not Performed
- ☐ Component Video Output ☐ Not Performed
- ☐ L/R Audio Output ☐ Not Performed
- ☐ Digital Audio Output ☐ Not Performed

For Help, press F1

NUM

14. In the Site Information area, enter the appropriate information in the following fields:

- Customer
- ID/Location
- Technician Name (first and last name)

Important: Each of these fields *must* include an entry *before* you attempt to run a test.

Note: All data that you provide in this section is automatically saved in these fields until you change them.

Run the Screen and Clean Application, Continued

15. In the Product Information area, enter the values for the following fields:
- **Set-top IP** – *must* be manually entered to run the Screen and Clean application
 - **Model** – click the arrow to select Explorer 8300DVB
 - **Part No.** – automatically inserted by the system after you select the model
 - **Serial No.** – located on the bottom label of the 8300DVB being tested
 - **H/W Rev** – located on the bottom label of the 8300DVB being tested
 - **MAC Addr.** – located on the bottom label of the 8300DVB being tested
 - **Nagra S/N** – located on the bottom label of the 8300DVB being tested

Important: Each of these fields *must* include an entry *before* you attempt to run a test.

Notes:

- The serial number, hardware revision, MAC address, and Nagra serial number values should be on labels attached to the 8300DVB. If one of these entries is entered incorrectly, the tests for those values (Automated Tests area of window) will fail. When this test fails, the correct value is displayed in the test results area in red and the incorrect value you entered is highlighted in yellow.
 - All data that you provide in this section is automatically saved in these fields until you change them.
16. From the **Notes** section, enter any text that is necessary to describe the testing situation (for example, user complaint or issue).


Notes:

- An entry in this field is *not* required.
 - This text field is limited to 255 characters and is not specific to any parameter.
17. Select the tests that you want to run by selecting the check box next to the left of each test in the **Automated Tests** and **User Tests** areas of the window.

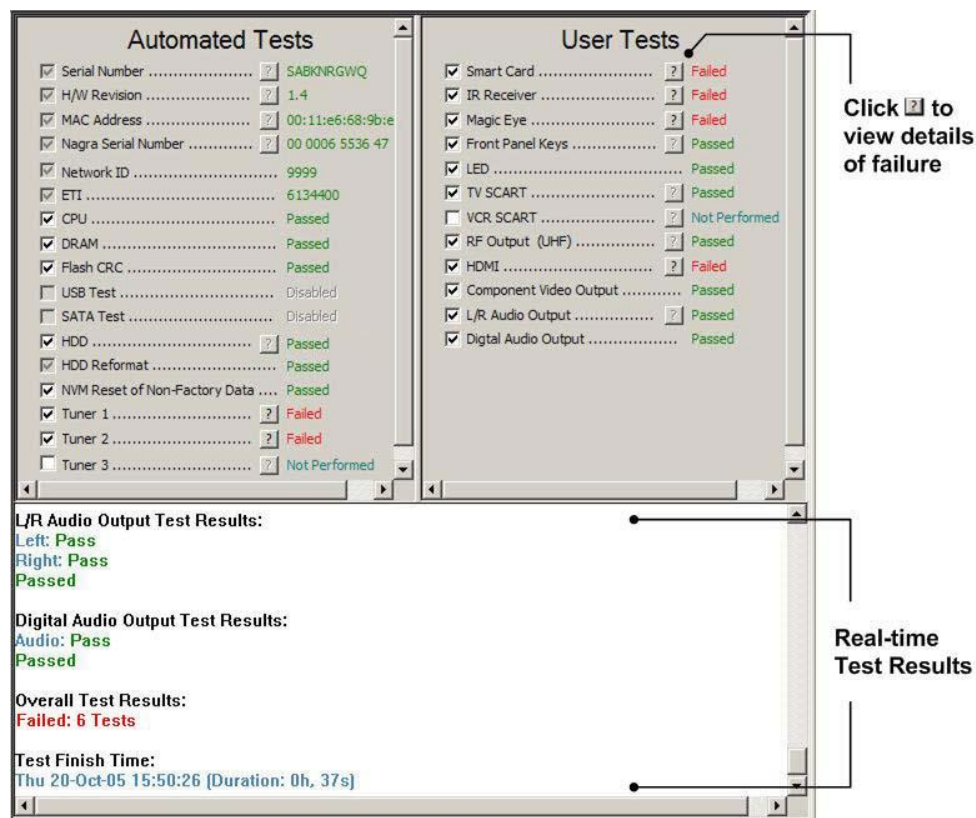
Notes:

- The tests in the Automated Tests area do not require any user interaction.
- The tests in the User Tests area require user interaction (for example, pressing front panel keys for the Front Panel Keys test).
- If you select the HDD test, the HDD Reformat test will automatically be selected because a reformat of the hard disk drive is required.

Run the Screen and Clean Application, Continued

18. Click **File** and select **Run tests** or click the **Run Tests** icon () from the toolbar to begin testing the 8300DVB.

Result: The results of each test are shown in the lower portion of the window.





19. From the File menu, click **Save To DB** or click the **Save Results** icon () to save the results to the database.

Notes:

- Each set of test results can only be saved to the database one time.
- If you have enabled the Auto Save to DB feature located in the View menu, you do not need to manually save the test results. The test results are automatically saved to the database after the test run completes.

Run the Screen and Clean Application, Continued

20. From the File menu, click **Print** or click the **Print** icon () to print the results.

Note: To see a preview of the printed copy, select **Print Preview** from the File menu or click the **Print Preview** icon ()

Screen and Clean Test Results	
Customer	: ABC Inc
Name	: J Doe
Location	: Lab 6
Test Date/Time	: Thu 20-Oct-05 15:49:49
Model Number	: Explorer 8300DVB
Part Number	: 4006776
Serial Number	: SABKNRGWQ
Hardware Revision	: 1.4
MAC Address	: 00:11:e6:68:9b:e5
Nagra Serial Number	: 00 0006 5536 47
Overall Test Results : Failed: 6 Tests	
Serial Number	Passed
Hardware Revision	Passed
MAC Address	Passed
Nagra Serial Number	Passed
Network ID	Passed (9999)
ETI	Passed (6134400)
CPU	Passed
DRAM	Passed
Flash CRC	Passed
HDD	Passed
HDD Reformat	Passed
NVM Factory Defaults	Passed
Tuner 1 Test	Failed
Low Frequency Test	
Signal Level: 5 dB	Fail
Mid Frequency Test	
Signal Level: -4 dB	Fail
High Frequency Test	
Signal Level: -4 dB	Fail
Tuner 2 Test	Failed
Low Frequency Test	
Signal Level: 5 dB	Fail
Mid Frequency Test	
Signal Level: -5 dB	Fail
High Frequency Test	
Signal Level: -5 dB	Fail
Tuner 3 Test	Not Performed
Smart Card	Failed
Expected "Removed" got "OK"	
IR Receiver	Failed
Key 1:	Failed
Key 2:	Failed
Magic Eye	Failed
Key 1:	Failed
Key 2:	Failed
Front Panel Keys	Passed
LED	Passed
TV SCART	Passed
VCR SCART	Not Performed
RF Output (UHF)	Passed
HDMI	Failed
Video:	Fail
Audio:	Fail
Component Video	Passed
L/R Audio Output	Passed
Digital Audio	Passed
Notes:	
<No Additional Notes>	

Continued on next page

Run the Screen and Clean Application, Continued

21. Do you want to run another test?
 - If **yes**, initiate a new test on the same 8300DVB or a different 8300DVB, and then repeat steps 14 through 20, as needed
 - If **no**, click **Exit** from the File menu.

Result: The Screen and Clean application closes.

Chapter 4

Screen and Clean Test Descriptions

Overview

Introduction

This chapter provides a brief description of each test in the Screen and Clean application that can be run on an 8300DVB. The descriptions include the purpose of the test, as well as the possible result of the test.

In This Chapter

This chapter contains the following topics.

Topic	See Page
Automated Tests	4-2
User Tests	4-9

Automated Tests

Overview

This section describes each automated test type. Automated tests do not require operator involvement; therefore, the output will indicate when these tests have completed.

Automated tests include the following test types:

- Serial Number
- H/W Revision
- MAC Address
- Nagra Serial Number
- Network ID
- ETI
- CPU
- DRAM
- Flash CRC
- USB Test
- SATA Test
- HDD
- HDD Reformat
- NVM Reset of Non-Factory Data
- Tuner 1
- Tuner 2
- Tuner 3

Serial Number

A unique number that is assigned to an 8300DVB and used for identification purposes. This test is *always* run by default.

Purpose: The Serial Number test verifies the serial number for a specific 8300DVB.

Results: The correct serial number for the 8300DVB appears in the test results area.

Example:

Serial Number Test Results SABKNRGWQ Passed
--

Automated Tests, Continued

H/W Revision

The hardware (H/W) revision number is the hardware version number for the 8300DVB. This test is *always* run by default.

Purpose: The H/W Revision test verifies the hardware version number for the 8300DVB.

Results: The correct hardware revision number appears in the test results area.

Example:

Hardware Revision Test Results 1.4 Passed
--

MAC Address

The MAC address is the unique physical address for the 8300DVB. This test is *always* run by default.

Purpose: The MAC address test verifies the MAC address for the 8300DVB.

Results: The correct MAC address appears in the test results area.

Example:

MAC Address Test Results 00:01:e6:68:9b:e5 Passed
--

Nagra Serial Number

Nagra provides the encryption and conditional access services in the system. The Nagra serial number is the serial number for the Nagra software that is currently loaded on the set-top.

Purpose: The Nagra serial number test verifies the serial number for the Nagra software.

Results: The Nagra serial number appears in the test results area.

Example:

Nagra Serial Number Test Results 00 0006 5536 47 Passed
--

Automated Tests, Continued

Network ID

The network ID is a unique identifier that the 8300DVB is using to obtain its network data (for example, channel line-up). This test is *always* run by default.

Note: If this value is cleared after running the NVM Reset of Non-Factory Data test, the new Network ID value will not be read or displayed until the 8300DVB has been rebooted.

Purpose: The Network ID test verifies the network ID that the 8300DVB is using to obtain its network data.

Results: The network ID is a numeric number that appears in the test results area.

Example:

Network ID Test Results 41016 Passed

ETI

The elapsed time indicator (ETI) is the total amount of time that an 8300DVB has been in use since it left the factory. The ETI is not reset and is updated every 24 hours. If the 8300DVB reboots *prior* to running for a continuous 24 hours, the ETI value will not increment. This test is *always* run by default.

Purpose: The ETI test reports the amount of time, in seconds, that the 8300DVB has been in use since it left the factory.

Results:

ETI Test Results 6048000 Passed
--

CPU

The CPU is the main processing device within your 8300DVB. Currently, only one processor is available in the 8300DVB; therefore, the CPU must be functional for testing to occur.

Purpose: The CPU test verifies whether or not the CPU is functioning properly.

Results:

- **Passed** – The CPU is functioning properly.
- **Failed** – The CPU is not functioning properly.

Example:

CPU Test Results Passed

Automated Tests, Continued

DRAM

The dynamic random access memory (DRAM) is checked by writing a test pattern to the useable DRAM, and then reading the DRAM to confirm that the expected pattern exists.

Purpose: The DRAM test verifies whether or not the DRAM is functioning properly.

Results:

- **Passed** – The DRAM is functioning properly.
- **Failed** – The DRAM is not functioning properly.

Example:

DRAM Test Results Passed

Flash CRC

After you start up the 8300DVB, the bootloader calculates the cyclic redundancy check (CRC) of the flash image and compares this value to the one stored in the flash memory. These values must match for the 8300DVB to function properly.

Purpose: The Flash CRC test verifies the CRC that is calculated for the flash image matches the value stored in flash memory.

Results:

- **Passed** – The CRC for the flash image is valid.
- **Failed** – The CRC for the flash image is not valid.

Example:

Flash CRC Test Results Passed
--

USB Test

The USB test is not available for this release.

SATA Test

The SATA test is not available for this release.

Automated Tests, Continued

HDD

The hard disk drive (HDD) is permanently mounted in the 8300DVB and can contain programs recorded by the previous subscriber.

Important:

- When selecting the HDD test, the HDD Reformat test is automatically selected and will run *after* the HDD test has completed.
- The HDD test may take several minutes to complete.
- After the HDD Reformat test is run, you *must* reboot the 8300DVB if you want to run additional tests.

Purpose: The HDD test clears the HDD of recorded programs and tests the recording surface of the HDD to ensure that it has no defects.

Results:

- **Passed** – The recording surface on the hard drive has no defects.
- **Failed** – The recording surface on the hard drive has defects.

Example:

HDDTest Results
HDD Test: Passed
All Tests Completed
Passed

HDD Reformat

The HDD Reformat test is used to reformat the hard drive to settings configured within the Screen and Clean application.

Note: The HDD Reformat test is run *after* the HDD test has completed.

Purpose: The HDD Reformat test clears the content of the HDD and sets up clean partitions on the HDD.

Results:

- **Passed** – The HDD was successfully reformatted.
- **Failed** – The HDD was not successfully reformatted.

Example:

HDD Format Test Results
Passed

Automated Tests, Continued

NVM Reset of Non-Factory Data

The NVM Reset of Non-Factory Data test clears out all of the data stored in non-volatile memory *except* those values that were set at the factory. All operating system and application site- and user-specific data items will be reset to their default values by their respective owners the next time the box is booted or the application is launched.

Purpose: The NVM Reset of Non-Factory Data test clears the NVM on the 8300DVB, and maintains all data in the NVM assigned at the factory.

Results:

- **Passed** — The NVM was successfully cleared.
- **Failed** — The NVM was not successfully cleared.

Example:

NVM Factory Defaults Test Results Passed

Automated Tests, Continued

Tuner 1, Tuner 2, and Tuner 3

The Tuner 1, Tuner 2, and Tuner 3 tests are independent tests. Each test is run for a specific tuner that is located within the 8300DVB and the test reports frequency-related information for each tuner module.

Purpose: The tuner tests verify that the frequency-related parameters on the 8300DVB are within an acceptable operating range.

Results:

The results section includes the values for a low-, mid-, and high-frequency test. The results of these frequency tests yield one of the following results:

- **Passed** – The parameters for the tuner are within an acceptable range.
- **Failed** – The parameters for the tuner are not within an acceptable range.

Example:

```
Tuner 1 Test Results
Low Frequency Test...
  Tuner Locked Status: Locked
  Frequency: 419000000 Hz
  Signal Level: 5 dB Pass
  S/N: 32 dB Pass
  BER: 0.000e+000 (000000000000) Pass

Mid Frequency Test...
  Tuner Locked Status: Locked
  Frequency: 519000000 Hz
  Signal Level: 5 dB Pass
  S/N: 32 dB Pass
  BER: 0.000e+000 (000000000000) Pass

High Frequency Test...
  Tuner Locked Status: Locked
  Frequency: 619000000 Hz
  Signal Level: 5 dB Pass
  S/N: 32 dB Pass
  BER: 0.000e+000 (0.000000000000) Pass
Passed
```

User Tests

Overview

User tests require the involvement of the technician (for example, pressing the front panel keys). The technician will then respond to questions prompted by the Screen and Clean application. The response to these questions will determine the outcome of each user test. User tests include the following test types:

- Smart Card
- IR Receiver
- Magic Eye
- Front Panel Keys
- LED
- TV SCART
- VCR SCART
- RF Output (UHF)
- HDMI
- Component Video Output
- L/R Audio Output
- Digital Audio Output

Smart Card

The Smart Card slot is located on the back panel of the 8300DVB and is labeled **SMARTCARD**. To perform this test, you must insert a Smart Card if one is not inserted in the SMARTCARD slot or remove a Smart Card that is already inserted in the SMARTCARD slot.

Purpose: The Smart Card test verifies that the SMARTCARD slot on the 8300DVB is functioning properly.

Results:

- **Passed** – The Smart Card connection port is working properly.
- **Failed** – The Smart Card connection port is not working properly.

Example:

Smart Card Test Results Passed

User Tests, Continued

IR Receiver

The IR receiver is located on the front panel of the 8300DVB and receives signals from the Two-Way TV remote control. When the test begins, point the remote control towards the 8300DVB IR receiver, and then press keys 1 and 2 on the remote control when prompted by the Screen and Clean application.

Purpose: The IR Receiver test verifies that the IR receiver on the 8300DVB is receiving a signal from the remote control.

Results:

- **Passed** – The 8300DVB picked up the signal from the remote control; therefore, the IR receiver is working properly.
- **Failed** – The 8300DVB did not pick up the signal from the remote control; therefore, the IR receiver is not working properly.

Example:

IR Receiver Test Results Key 1: Passed Key 2: Passed Passed
--

Magic Eye

The Magic Eye device allows you to interact with the 8300DVB (for example, change channels or view the on-screen guide) from an area that is remote to the location of the set-top. To use the Magic Eye device, attach it to a TV in another area using the RF connection port. Point your remote control at the Magic Eye device and verify whether or not the TV attached to the Magic Eye is successfully changing channels, viewing the guide, and performing any other function that the remote control will typically manage.

When the test begins, point the remote control towards the Magic Eye, and then press keys 1 and 2 when prompted by the Screen and Clean application.

Purpose: The Magic Eye test verifies that the Magic Eye device is functioning properly.

Results:

- **Passed** – The Magic Eye device is functioning properly.
- **Failed** – The Magic Eye device is not functioning properly.

Example:

MagicEye Test Results Key 1: Passed Key 2: Passed Passed

User Tests, Continued

Front Panel Keys

The 8300DVB includes front panel keys that enable you to access functions and features on the set-top. When the Front Panel Keys test begins, the following window opens and continues to display until one of the following conditions is met:

- You successfully press all of the keys on the 8300DVB.
- You fail to press all of the keys on the 8300DVB; and therefore, you click OK in response to the following statement:

Press all indicated Front panel buttons ONCE, then Click OK.



When the test begins, each front panel key is shown as a red question mark button in the test window. Press each key on the front panel of the 8300DVB one time to verify that the key is working properly. If the key is functioning properly, the key indicator in the Front Panel Buttons window will change to a green OK button. If you press a key twice or if the key “bounces” and causes multiple presses to be detected, the key indicator will change to a yellow X button. If you fail to press a key, the key indicator for that key will remain a red question mark button. In this case, you will need to click **OK** in response to the dialog box.

Purpose: The Front Panel Keys test verifies that each front panel key on the 8300DVB is functioning properly.

Results:

- **Passed** – All of the front panel keys are working properly.
- **Failed** – Some or all of the front panel keys are not working properly. A list of keys that are not functioning properly are provided in the test results area.

Example:

Front Panel Test Results All Keys Passed Passed
--

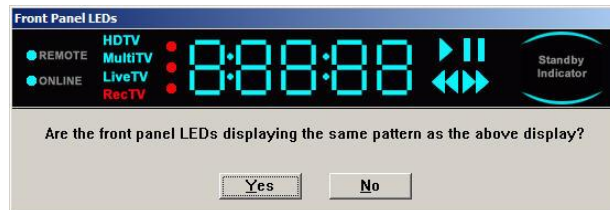
User Tests, Continued

LED

The LED display panel on the front of the 8300DVB provides general status information. For example, if the ONLINE LED is illuminated, then the 8300DVB is successfully connected to the CMTS on the headend.

When the LED test begins, the following window opens and continues to display until you click **Yes** or **No** in response to the following question:

Are the front panel LEDs displaying the same pattern as the above display?



Purpose: The LED test verifies that LEDs on the front panel of the 8300DVB are operating correctly.

Results:

- **Passed** – The LEDs on the 8300DVB match those on the Front Panel LEDs test window and are operating correctly.
- **Failed** – The LEDs on the 8300DVB do not match those on the Front Panel LEDs test window and do not operate correctly.

Example:

LED Test Results Passed
--

User Tests, Continued

TV SCART

The TV SCART¹ connector is located on the back panel of the 8300DVB and is labeled **TV**. To perform this test, you must connect a SCART cable from the TV to the 8300DVB. When the TV SCART test begins, video and audio will be played using the TV SCART output. The following window then opens and continues to display until you click **Yes** or **No** in response to the following question:
Is video present on the TV?



After responding to this question, another dialog window opens and continues to display until you click **Yes** or **No** in response to the following question
Is audio present on the TV?

Purpose: The TV SCART test verifies that both audio and video on the SCART connectors are working properly.

Results:

- **Passed** – The SCART connection port is working properly.
- **Failed** – The SCART connection port is not working properly.

Example:

TV SCART Test Results Video: Pass Audio: Pass Passed

¹ Syndicat français des Constructeurs d'Appareils Radio et Television

User Tests, Continued

VCR SCART

The VCR SCART connector is located on the back panel of the 8300DVB and is labeled **VCR**. To perform this test, you must connect a SCART cable from a VCR to the 8300DVB.

When the VCR SCART test begins, video and audio will be played using the VCR SCART output. The following window opens and continues to display until you click **Yes** or **No** in response to the following question:

Is video present on the TV?



After responding to this question, another dialog window opens and continues to display until you click **Yes** or **No** in response to the following question

Is audio present on the TV?

Purpose: The VCR SCART verifies that both audio and video on the SCART connectors are working properly when the 8300DVB is connected to a VCR.

Results:

- **Passed** – The VCR SCART connection port is working properly.
- **Failed** – The VCR SCART connection port is not working properly.

Example:

VCR SCART Test Results

Video: Pass

Audio: Pass

Passed

User Tests, Continued

RF Output (UHF)

The radio frequency (RF) output connector is located on the back panel of the 8300DVB and is labeled **TO TV**. To perform this test, you must connect an RF cable from the TV to the 8300DVB.

When the RF Output (UHF) test begins, video and audio will be played using the RF output. The following window opens and continues to display until you click **Yes** or **No** in response to the following question:

Is video present on the TV?



After responding to this question, another dialog window opens and continues to display until you click **Yes** or **No** in response to the following question

Is audio present on the TV?

Purpose: The RF Output (UHF) test verifies that both audio and video on the RF output connectors are working properly when the 8300DVB is connected to a TV.

Results:

- **Passed** – The RF connection port is working properly.
- **Failed** – The RF connection port is not working properly.

Example:

RF Output Test Results Video: Pass Audio: Pass Passed
--

User Tests, Continued

HDMI

The high-definition multimedia interface (HDMI) output connector is located on the back panel of the 8300DVB and is labeled **HDMI**. To perform this test, you must connect an HDMI cable from an HDTV to the 8300DVB.

When the HDMI test begins, video and audio will be played using the HDMI output. The following window opens and continues to display until you click **Yes** or **No** in response to the following question:

Is video present on the TV?



After responding to this question, another dialog window opens and continues to display until you click **Yes** or **No** in response to the following question

Is audio present on the TV?

Purpose: The HDMI test verifies that the digital audio and video on the HDMI output connector is working properly when the 8300DVB is connected to an HDTV.

Results:

- **Passed** – The HDMI connection port is working properly.
- **Failed** – The HDMI connection port is not working properly.

Example:

HDMI Test Results Video: Pass Audio: Pass Passed
--

User Tests, Continued

Component Video Output

The component video output (PrPbY) connector is located on the back panel of the 8300DVB and is labeled **HDTV (Pb, Pr, Y)**. To perform this test, you must connect a component (PrPbY) cable from a TV to the 8300DVB.

When the component video output test begins, video will display using the component outputs. The following window opens and continues to display until you click **Yes** or **No** in response to the following question:

Is video present on the TV?



Purpose: The Component Video Output test verifies that the video output connector is working properly when the 8300DVB is connected to a TV using a component connector.

Results:

- **Passed** – The component video output connection port is working properly.
- **Failed** – The component video output connection port is not working properly.

Example:

Component Video Test Results Video: Pass Passed
--

User Tests, Continued

L/R Audio Output

The left/right (L/R) audio output connector is located on the back panel of the 8300DVB and is labeled **AUDIO OUT**. To perform this test, you must connect an RCA cable from the TV to the 8300DVB.

When the L/R audio output test begins, audio will be played out of left (L) and right (R) outputs simultaneously. The following window opens and continues to display until you click **Yes** or **No** in response to the following question:

Do you hear audio on the LEFT channel?



After responding to the question, another window opens and continues to display until you click **Yes** or **No** in response to the following question:

Do you hear audio on the RIGHT channel?

Purpose: The L/R Audio Output test verifies that the left and right audio output connectors are working properly when the 8300DVB is connected to a television using an RCA connector.

Results:

- **Passed** – The left and right audio output ports are working properly.
- **Failed** – The left and right audio output ports are not working properly.

Example:

L/R Audio Output Test Results

Left: Pass

Right: Pass

Passed

User Tests, Continued

Digital Audio Output

The digital audio output connector is located on the back panel of the 8300DVB and is labeled **OPTICAL AUDIO OUT**. To perform this test, you must connect an optical cable from an audio receiver to the 8300DVB.

When the digital audio output test begins, audio will be played using the optical output. The following window opens and continues to display until you click **Yes** or **No** in response to the following question:

Do you hear audio on the stereo speakers?



Purpose: The Digital Audio Output test verifies that the digital audio output connector is working properly when the 8300DVB is connected to an audio receiver using an optical cable connector.

Results:

- **Passed** – The digital audio output connection port is working properly.
- **Failed** – The digital audio output connection port is not working properly.

Example:

Digital Audio Output Test Results Audio: Pass Passed

Chapter 5

Customer Information

If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.

Access your company's extranet site to view or order additional technical publications. For accessing instructions, contact the representative who handles your account. Check your extranet site often as the information is updated frequently.



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