

1. Introduction

SdEye™ (type number DTC-335) is DekTec's real-time SDI Analyzer and Waveform Monitor application. **SdEye** allows you to monitor an SDI stream with any SDI-capable DekTec input adapter.

A setup program is available for easy installation or upgrading of the **SdEye** software. The installation package includes installation support for the **Dta** , **DtPcie** and **Dtu** device drivers, which are required to run **SdEye**.

1.1. DekTec PCI Cards Supported by SdEye

SdEye supports the following DekTec PCI/PCle cards and USB adapters:

Type	Description	Input Format
PCI		
DTA-145	ASI/SDI input+output adapter	SD-SDI
DTA-160	Gigabit Ethernet + 3 ASI/SDI ports	SD-SDI
PCI Express		
DTA-2144	Quad ASI/SDI input + output adapter	SD-SDI
DTA-2145	ASI/SDI input + output adapter	SD-SDI
DTA-2152	HD-SDI input + output adapter	SD-SDI, HD-SDI
DTA-2154	Quad HD-SDI input + output adapter	SD-SDI, HD-SDI
DTA-2160	Gigabit Ethernet + 3 ASI/SDI ports	SD-SDI
DTA-2172	Dual SG-SDI/ASI adapter	SD-SDI, HD-SDI, 3G-SDI
DTA-2174	Quad 3G-SDI adapter	SD-SDI, HD-SDI, 3G-SDI
DTA-2175	HD-SDI/ASI input + output	SD-SDI, HD-SDI, 3G-SDI
DTA-2178	Octal 12G SDI adapter	SD-SDI, HD-SDI, 3G-SDI, 12G-SDI
DTA-2179	Twelve 3G-SDI adapter	SD-SDI, HD-SDI, 3G-SDI
DTA-2195	12G-SDI input + output with HDMI 2.0 adapter	SD-SDI, HD-SDI, 3G-SDI, 12G-SDI
USB-2		
DTU-225	FantASI ASI/SDI input adapter	SD-SDI
DTU-245	FantASI ASI/SDI input+output adapter	SD-SDI
USB-3		
DTU-351	HD-SDI Input adapter	SD-SDI, HD-SDI

1.2. Files

The **SdEye.zip** archive contains the following files:

SdEye SetUp.exe	Setup program that installs the DTC-335 SdEye monitor software and the Dta , DtPCie and Dtu device drivers
DTC-335 SdEye Installation.pdf	This document

The setup program installs the following files:

SdEye.exe	v4.0.0.71	Main executable of SdEye
Dta##.sys	v4.28.11.289	Device driver system file for PCI/PCle cards
Dta##.inf	v4.28.11.289	Device driver information file for PCI/PCle cards
DtPcie64.sys	v3.3.1.363	Device driver system file for PCle cards
DtPcie64.inf	v3.3.1.363	Device driver information file for PCle cards
Dtu##.sys	v4.15.4.92	Device driver system file for USB devices
Dtu##.inf	v4.15.4.92	Device driver information file for USB devices

2. Installing the Software

The **SdEye** setup program is self-contained. Installing the monitor software and the device driver is as simple as running the setup executable (**SdEye SetUp.exe**) and pressing "Next" a few times.

2.1. System requirements

Before installing the application please first check if the used PC meets the system requirements for **SdEye** as found in the table below.

OS	Windows 2k16/2k19/2k22/10/11	
Processor	Core i5* minimum Core i7* recommended	
Memory	4G	
Graphics	PCI Express graphics card, with full DirectX 9 support (including DirectDraw 3D Acceleration)	NOTE: Use of integrated graphics chips is discouraged

* Or equivalent AMD processor

2.2. Operation of the Setup Program

The setup program copies the **SdEye** executable to the **SdEye** sub-directory in **C:\Program Files\DekTec**. A shortcut to "SdEye" is created in the Start Menu and optionally on the Desktop.

The **Dta** , **DtPcie** and **Dtu** device-driver files are copied to **C:\Program Files\DekTec\Drivers**. Thereafter, setup instructs the Windows Plug'n Play manager to install the device driver.

Notes

- You can omit installation of the **Dta**, **DtPcie** and/or **Dtu** device driver by deselecting the check box "Install the Dta device driver" and "Install the Dta device driver" respectively.
- A Windows device driver can only be installed by a user account with the privilege to *load and unload device drivers*, e.g. administrator.

The software can be installed *after* the device has been inserted into / connected to the system (§2.3), or *before* the hardware is inserted / connected (Pre-Installation, §2.4). Both approaches are equally valid.

2.3. Hardware Installed Prior To Software Installation

This scenario assumes that:

- The **Dta**, **DtPcie** and **Dtu** device driver software has not been installed before on the PC, and
- A DekTec PCI card has been inserted into the PC or a USB adapter has been connected to the PC.

Sometimes after booting the PC, the **Found New Hardware Wizard** will show up. As no device-driver software has been installed yet, you should **CANCEL** the wizard.

You can now run **SdEye SetUp.exe** to automatically install the monitor software and the device driver. After the installation completes, the software can be used immediately. No reboot is required.

2.4. Pre-Installation: Software Installed without Hardware Present

This scenario assumes that:

- No previous version of the **Dta** , **DtPcie** or **Dtu** device driver software has been installed on the

PC, and

- No DekTec PCI card is present in the PC, and no DekTec USB device is connected to the PC.

You can pre-install the software by running [SdEye SetUp.exe](#).

Then, shut-down the computer and insert the DekTec PCI card in a free PCI slot, or connect the USB device to the PC. After powering up the computer again, the device driver should install itself just after booting. On Windows XP, the **Welcome to the Found New Hardware Wizard** will show up. Choose **Install the software automatically (Recommended)**. Press **Next** and **Finish**, and the driver installs.

The monitor software is now ready for use.

2.5. Upgrading

The setup program can also be used to upgrade the **SdEye** Monitor software and the **Dta / DtPcie / Dtu** device driver to a new version in one go. Again, no reboot should be required.

3. Troubleshooting

3.1. Checking Device Status in the Device Manager

The Windows device manager can be used to check whether the Dta, DtPcie or Dtu driver runs properly. To check the device status of a DTA or DTU adapter:

1. Open the Windows device manager: right-click **My Computer**, select **Manage**, and go to **Device Manager** under **System Tools**.
2. Locate the DekTec adapter in the device category **Professional audio/video interfaces**.
3. Right-click **DTA** or **DTU** adapter, select **Properties**, and check the **Device status** pane.

The status should be: **This device is working properly**. If not, don't try the Windows Troubleshooter (it does not know anything about DekTec devices), but inspect the event log (§3.2) and the install log (§3.3). If the computer does not boot, please review §3.4.

3.2. Checking the Event Log

The System Event Log can be consulted to check whether the **Dta** and/or **Dtu** device driver has been loaded and started properly. To open the System Event Log:

1. Right-click **My Computer**, select **Manage**, and open **Event Viewer** under **System Tools**.
2. Select the **System** log.
3. Dta driver messages have **Dta** in the **Source** column;
DtPcie driver messages have **DtPcie** in the **Source** column;
Dtu driver messages have **Dtu** in the **Source** column.

If the driver loads successfully, the following event message is logged:

The Dta driver (Rev ...) has loaded successfully.

Or **The DtPcie driver (Rev ...) has loaded successfully.**

Or **The Dtu driver (Rev ...) has loaded successfully.**

The device-driver version listed in this message should match the **Dta/Dtu**-version number listed in the file overview in §1.2.

For each DekTec PCI card inserted in the system, a start-up message listing PCI-Card Type, Firmware Version and Slot Number is logged, e.g.:

The DTA-145 (Firmware Version 3) in PCI Slot 3 has started successfully.

Obviously, if the Dta driver detects an error while trying to start the PCI-Card, the message above will not occur. Instead, an error message is logged, which may be helpful to find the source of the problem.

For each USB device connected to the system, a start-up message similar to the PCI-card start-up message will be logged.

3.3. Checking the Device-Driver Install Log

The device-driver install log is a text file (**DtDrvInstall.log**) written into **C:\Program Files\DekTec\Drivers** (or a redirected path). In case of installation troubles, please contact DekTec at support@dektec.com, attaching the install log.

3.4. PC Does Not Boot

In some exceptional cases, inserting a DekTec PCI card into a PC may stop that PC from booting. The PC may already be suspended in the BIOS start-up sequence. Assuming that the PC does boot when the DekTec PCI card is not inserted, this may be caused (1) by a broken PCI card, or (2) by a bad contact on the PCI bus.

3.4.1. Broken PCI Card

Whether or not the PCI card is broken can be checked just after powering up the PC, by observing the LED on the PCI bracket of the card¹. If the LED stays blank (does not flash), the PCI card is probably broken and should be returned to DekTec for repair.

3.4.2. Bad Contact on PCI Bus

From practical experience it is known that the PCI Bus is quite sensitive to dust or grease on the PCI-connector fingers of a PCI card. A single bad contact may lead to system instabilities, including:

- Boot failure;
- Invisibility of a PCI card during installation;
- System crash at the moment that the Dta device driver starts.

If one of these symptoms occurs, DekTec recommends extracting the DekTec PCI card, checking/cleaning the connector fingers and re-inserting the card, if possible in a different PC or in a different PCI slot, and avoiding mechanical strain on the PCI connector. If the problem persists, please contact DekTec at support@dektec.com

¹ Most DekTec PCI and PCIe cards have a LED on the PCI bracket. Cards without LED cannot be checked easily.

4. DTC-335 SdEye Revision History

Revision	Date	Changes
v4.0.0.71	2024.07.12	Complete new design and improved performance, adds separate multi-viewer and analyser mode
v3.8.0.63	2021.02.09	- Improvements for 4K processing using DTA-2174B and DTA-2178 - Performance improvement; SdEye is now deployed as 64 bit application - Bug fix for not detecting input change from fractional to non-fractional
v3.7.1.62	2020.09.15	Improvement for easily trigger a freeze or log on a SCTE 104 packet
v3.7.0.61	2020.09.03	- Support for DTA-2178 Octal 12G-SDI/ASI Ports for PCIe - Support for SCTE 104 ANC data decoding
v3.6.0.60	2020.03.19	Support for DTA-2174B Quad 3G-SDI/ASI ports (1x12G) with genlock
v3.5.0.57	2019.12.19	- Support for OP47 subtitles decoding - Support for KLV ANC Data decoding - Bug fix in Payload ID decoding - Bug fix in Audio Control Packet decoding
v3.4.0.55	2019.10.02	- Support for CIE diagram to analyse BT.709 or BT.2020 color space - Support for HDR waveform graph settings for PQ, HLG using NITS scale - Support for ANC data decode of HDR/WCG Metadata
v3.3.0.54	2019.08.05	Support for DTA-2172 Dual 3G-SDI card
v3.2.2.53	2019.04.08	Bug fix: Blank or green screen seen for some configurations
v3.2.1.49	2019.02.21	Bug fix: DtapiService crash was seen on older PC's that did not support AVX instruction set
v3.2.0.48	2019.02.12	- Support for DTA-2175 HD-SDI input+output card, making use of new DtPcie driver - Support for peak level numbers to the peak meter bars - Support for decoding/display of hexadecimal Teletext pages - Bugfix: Teletext PES data_identifier issue - Bugfix: ATC timecode decoding
v3.1.0.42	2018.05.09	- Support for Teletext (SMPTE 2031/OP-47) ANC data decoder and statistics - Support for ANC data decode of Video Payload ID - Support for ANC data decode of KLV data packets - Support for ANC data raw data display and previous next packets controls - Improved analyser waveform scale - Bug Fix: DTU-351 decoding issue for certain HD formats
v3.0.1.31	2018.02.28	- Decode of closed captions CC708 packets (CC608 compatible part only) - Source selection do now indicate serial number when multiple boards of same type are used - Improvements in Audio decoding/displaying - Bug Fix: Frame not stored correctly in .dtsdi file - Bug Fix: .dtsdi file that includes stuffing byte could not be decoded - Bug Fix: Multiple file inputs selection could result in hang
v3.0.0.23	2017.10.24	4K UHD SMPTE 425-5 and SMPTE 2082 analysis support - New confidence-monitoring window displaying up to 4 different inputs - Decoding and analysis of ANC metadata packets per SMPTE 2020 - Support for DTA-2179 Twelve 3G-SDI adapter - Support for DTA-2195 12G-SDI adapter
v2.8.1.21	2016.06.07	Bug Fix: For some PC's DeviceScan was failing

v2.8.0.20	2015.08.14	• Support for Frame by frame step through • Support for Input card in title bar
v2.7.0.19	2015.01.13	• Support for DTA-2174 3G-SDI Input
v2.6.0.18	2014.12.10	• Support for Audio Metadata decoding • Support for ATC time code according SMPTE 12M-2-2008 • Support for up to 6 configurable table views • Improved threshold highlighting • Bug Fix: Frame dropping seen on Windows 8.1 systems • Bug Fix: Wrong ANC packets count (1 packet missing)
v2.5.0.16	2014.07.02	• Support for SDI output streaming mode • Support for offline .dtsdi file input analysis • Support for CRC line error detection • Support for Logging/Trigger mode for ancillary data analysis • Improved SDI CSV data logging
v2.4.0.14	2013.12.24	• New algorithm for controlled dropping of frames during high CPU load conditions • Improved reception reliability in combination with a DTU-351 • Bug Fix: failed to detect fractional input signals in combination with a DTA-2154 • Bug Fix: 1080p23.98 input signals were always reported as being invalid
v2.3.0.12	2013.10.23	• Support for DTU-351 and DTA-2154 • Support for user defined layout. I.e. can move and resize individual graphs to create a custom layout • Can now export SDI frames to CSV file from the "SDI DATA" tab
v2.2.0.11	2013.07.24	• Support for closed captioning decoding/overlaying • Added de-interlaced view mode for better picture quality • 1:1 picture display mode • Highlighting of selected ANC packets • Several small bug fixes to improve stability
v2.1.1.6	2013.03.14	• Bug Fix: sometimes certain Luma levels were not displayed at all • Bug Fix: occasional application crash when selecting enlarged mode, while colored mode was enabled • Bug Fix: vector scope was not valid for HD signals
v2.1.0.5	2013.02.05	• Support for audio decoding (i.e. audio is now audible) • Support for ARIB closed captioning ancillary data packets • Optimised code performance (less drops of frames)
v2.0.1.3	2012.08.03	• Fixed crash when selecting SDI Data tab, while Layout 3 is enabled
v2.0.0.1	2012.08.02	• Support for DTA-2152 (i.e. HD-SDI) • Raw SDI data & ancillary data viewer • Dedicated audio viewer with peak meter for 16-channel and stereoscope
v1.5.0.26	2012.05.15	• Support for DTA-2152 V5 and V4 Dta and Dtu drivers
v1.1.1.23	2011.03.23	• Fixes issue with SdEye failing to start due to missing runtimes
v1.1.0.22	2011.02.15	• New stream details pane for SDI attributes and list of detected ancillary data streams • Brightness and contrast control for graphs • New black & white mode for waveform graphs • New 'enlarged' graphs mode for tests with colorbars • Option to switch between 75% or 100% scale in vector scope • R, G, B channel selection for picture display
v1.0.2.19	2009.02.25	• Bug Fix: Solves potential crash when an invalid/corrupted signal is received

v1.0.1.18	2009.02.23	• First release to the field
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