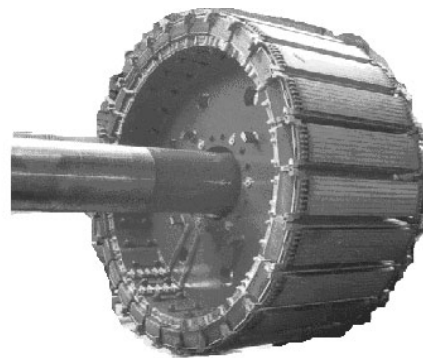


# Synchronous API

## Preliminary

### Application Program Interface for custom applications with DVEO Hardware



#### Features

- Provides functions used to aid in interfacing with DVB-ASI cards, ATSC Master (SMPTE 310M) cards, Multi-master cards and SDI Master (SMPTE 259M) cards
- MPEG-2 Transport Stream Analyzer
- Logging options
- Diskrouter example application

#### Applications

Common Uses include:

- Branded Player or Recorder
- Multiplexer
- Set top box (STB)
- Table modifier
- Opportunistic data insertion
- Internet protocol

#### Capabilities

##### Transfer Status Messages:

The Synchronous API provides the transfer status to the application using the following messages:

- Transfer has completed
- Overflows were detected on the card (which will likely result in lost data as well as loss of packet synchronization in the buffers)
- Indication of a double-click by the user in the Analyzer Window

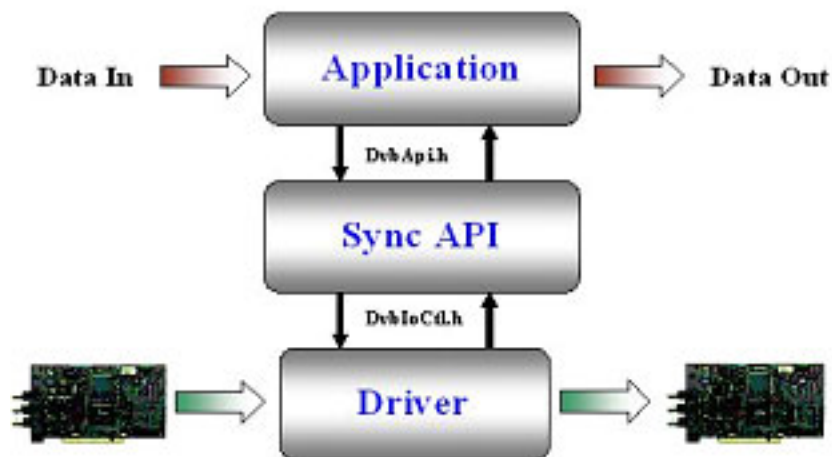
#### Overview

The Synchronous API provides an interface to read and write data to the Master Driver and offers developers the ability to easily create applications that work with DVEO cards.

The Synchronous API is a collection of dynamic link libraries (dll's) and provides functions to the developer such as getting or putting a buffer, getting card capabilities and setting the data transfer rate.

The MPEG-2 Transport Stream Analyzer provides information regarding the programs in the transport stream including elementary stream PIDs, packet size detection, bitrate of the transport stream and section CRC errors.

In addition, the Synchronous API allows the application to take advantage of the features provided by the DVEO cards such as PID filtering, null PID insertion, removal of prepended timestamps, refusal of unsynchronized data, and conversion of MPEG-2 packet sizes (188 and 204).



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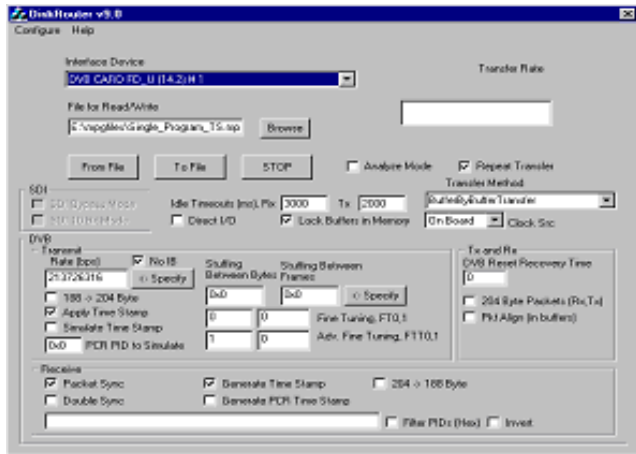
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## DiskRouter Example Application:

The Diskrouter is an example application which uses the Synchronous API to read and write data to and from DVEO cards.

It could be used for buffer to buffer data transmission or any sized data transmission using the API. It also demonstrates how to enumerate devices, setup devices for transmission and monitor the status.



Diskrouter GUI

## Functions used to help interface with the DVEO cards:

- Get the rate from the stuffing value
- Get the stuffing value from the rate
- Get the card description / capabilities
- Correlate messages with transfers
- Initialize / stop a given transfer
- Get or put a buffer
- Transfer variable sized buffers to or from the card
- Allow manual control of the relays
- Reset the watchdog timer
- Get the general purpose input value
- Get the silicon serial number if available
- Enable/Disable the secondary input (if applicable)
- Opens the device and returns configuration data
- Given display settings, setup the transfer settings
- Control placement of K28.5 comma characters
- Update the analyzer window display

## List of Calls to DVEO cards:

- CalcRate () : Get the rate from the stuffing value
- CalcStuffingFromRate() : Get the stuffing value from the rate
- DisplayLSCardType() : Get the card description
- GetLSCardCaps() : Get the card description / capabilities
- IsMyMessage () : Correlate messages with transfers
- LSCardAtStartApi () / LSCardAtEndApi () : Start / Stop a given transfer
- LSCardAtGetBuffer () : Get a buffer from the card
- LSCardAtPutBuffer () : Send a buffer to the card for transmitting
- LSCardAtTransferData () : Transfer variable sized buffers to or from the card
- LSCardCtrlRelay () : Allow manual control of the relays
- LSCardEnableWdt () : Reset the watchdog timer
- LSCardGetGPI () : Get the general purpose input value
- LSCardGetSiliconID () : Get the silicon serial number if available
- LSCardSel2ndInput () : Enable/Disable the secondary input (if applicable)
- OpenLSCardDevice () : Opens the device and returns configuration data
- SaveParameters () : Given display settings, setup the transfer settings
- SetIbIpFromStuffing () / SetStuffingFromIbIp () : Control placement of K28.5 comma characters
- UpdateAnalyser () : Update the analyzer window display
- DisplayAppGlobalState () : Logging menu that saves settings to the registry
- explainerror () : Display a message box and log error
- InitializeLogging () / TerminateLogging () : Initializes / terminates the logging
- IsHex () : checks if values is Hex
- MyError () : Display a message box and log error
- Mytime () : Returns time since StartMyTimer ()
- OpenLoggingWindow () / CloseLoggingWindow () : Open / Close the logging window
- SetAppGlobalState () : Loads settings from the registry
- StartMyTimer () : Start timer for logging times

## Ordering Information

Synchronous API



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