MPEG-2 Recording Software
Usage Instructions

- Windows 2000/XP
- Linux

1. Introduction

The DEKTEC DtRecord software is an elementary command-line program to record an MPEG-2 Transport Stream into a file with the DTA-120 (DVB/ASI input), the DTA-122 (DVB/SPI input), DTA-124 (QUAD ASI/SDI input), DTA-140 (DVB/ASI input+output) or the DTU-225 (USB-2 ASI/SDI input).

The package includes the DtRecord source code, to (1) illustrate the use of the DTAPI library for building digital-video applications and (2) to provide a basis for creating a custom Transport-Stream recorder application.

The DtRecord package consists of the following files:

File	*Version*	*Description*
`DtRecord.exe`	none[1]	DtRecord compiled for Windows 2000/XP
`DtRecord.cpp`	`V2.2.0`	DtRecord source file with all application code
`Makefile`	`-`	Makefile for compiling DtRecord under Linux
`DtRecord Usage Instructions.pdf`	`V2.2.0`	This document

2. Running the DtRecord application

The following items are required to run the DtRecord application:

- The DtRecord executable file;
- The Dta1xx and Dtu2xx drivers[2], installed on the target system (the latest version of the drivers can be downloaded from on www.dektec.com);
- One or more DTA-120, DTA-122, DTA-124, DTA-140 and/or DTU225 devices installed in the target system.

After start-up, the DtRecord application first prints the specified settings to the console[3]. Then recording commences. Recording stops when until the record file reaches its maximum size (as specified on the command line), the user presses a key or an error occurs. Please refer to the Troubleshooting section (§5) for help on errors.

[1] DtRecord.exe does not contain a version resource. "DtRecord `-?`" prints out the version number.
[2] Note: the Linux version of the Dta1xx driver is part of the Linux SDK. Dtu2xx driver for Linux will be available soon
[3] Provided that the *run-silent* option (`-s`) has not been specified.

3. Command-Line Usage

3.1. Syntax

```
DtRecord recfile[4] [-x MaxSize] [-m Mode] [-t Type] [-i Port] [-n Number]
[-s] [-?]
```

3.2. Options

- **-x** Maximum file size in MB. If this option is not specified, the size of the record file is unbounded
- **-m** Receive Mode (default **ST188**). See §3.2.1 for a more detailed description
  - Use: **ST188** Store packets as 188-byte packets
  - **ST204** Store packets as 204-byte packets
  - **STRAW** No notion of packets. Store all valid bytes.
- **-t** Board Type to use (default: any input board[5])
  - Use: **120** for DTA-120
  - **122** for DTA-122
  - **124** for DTA-124
  - **140** for DTA-140
  - **225** for DTU-225
- **-i** Port index of the input channel to use (default **1**)
  - Note: **1** indicates the first input channel
- **-n** Board Number to use (default **1**)
  - Note: **1** indicates the first board
- **-s** Run in silent mode (i.e. no messages printed to the screen)
- **-?** Display command line help

Note:

- The first option should either be the **recfile** or the help option.

3.2.1. Receive Mode

This section provides a more detailed description of the Receive-Mode option. For a complete description of the Receive Modes refer to the datasheets of the PCI input card that is used. As mentioned above the Receive-Mode option supports the following five modes:

- **ST188**: This mode can be used if the **recfile** should contain 188-byte packets only. In this mode, the DEKTEC input board will remove the trailing 16 bytes of each incoming 204-byte packet; 188-byte packets are left untouched. If the hardware is not synchronised to the incoming Transport Stream, all packets will be dropped until synchronisation is achieved.
- **ST204**: This mode can be used if the **recfile** should contain 204-byte packets only. In this mode, the DEKTEC input board will add 16 dummy bytes to each incoming 188-byte

[4] Name of the file in which the Transport Stream is recorded.
[5] Any input board means the *N*th input device (either DTA-120, DTA-122, DTA-124, DTA-140 or DTU-225) found in the system, where *N* is the board number specified with the **-n** option.

packet; 204-byte packets are left untouched. If the hardware is not synchronised to the incoming Transport Stream, all packets will be dropped until synchronisation is achieved.

- **STRAW**: In this mode, the DEKTEC input board stores *all* valid data bytes without regard to packet boundaries (i.e. no synchronisation required). This mode is especially helpful for analysing the cause of a synchronisation problem (e.g. packets do not start with a sync byte or invalid packet sizes).

3.3. Examples

```
DtRecord myfile.ts

DtRecord "c:\Video streams\myfile.ts" -x 100 -t 122 -m STRAW -n 2
```

4. Compiling the DtRecord Application

4.1. Compilation under Windows

Before compiling **DtRecord.cpp**, be sure to include the (path to the) DTAPI header file (**dtapi.h**) and to link with the library (**dtapi.lib**). The latest version of these files is available on the DEKTEC website (www.dektec.com).

The DTAPI library has been compiled with the C/C++ Code-Generation Options in VC++ set to: "Use run-time library: Multithreaded." On the compiler command line this corresponds to the **/MT** option. DtRecord has to be compiled with this same setting, or a conflict with the version of the run-time library will occur.

4.2. Compilation under Linux

The DtRecord package comes with a makefile intended for compilation on a Linux machine. Before compiling make sure the makefile uses the correct include paths to the DTAPI include file (**dtapi.h**) and the DTAPI library file (**dtapi.o**). To compile, type 'make' in the directory containing **DtRecord.cpp**.

The DTAPI library for Linux is part of our Linux SDK, which can be downloaded from the DEKTEC website (www.dektec.com).

5. Troubleshooting

This section provides help for problems that might occur while using the DtRecord application. If the problem persists refer to §6.

5.1. DtRecord Errors

The DtRecord application can generate two types of errors, namely: command-line errors and application errors. Command-line errors are caused by missing or invalid options. Application errors indicate a problem with the system.

5.1.1. Command-Line Errors

The table below shows the possible command-line error messages and their probable cause(s):

Message:	Cause(s):
"Missing or invalid command line option(s)"	▪ An invalid option parameter has been specified (e.g. character(s) instead of a number, negative numbers or unknown parameter); ▪ An option has been specified more than once; ▪ An option is unknown; ▪ The option prefix is missing (all options except the **recfile** should start with '/' or '-', followed by the option identifier and an optional parameter).
"No record file specified"	▪ The **recfile** has not been specified as the first argument

5.1.2. Application Errors

Application-error messages start with "Error: ", followed by the error cause.

The table below shows the possible application error messages and their probable cause(s):

Message:	Cause(s):
"Can't set Receive Mode"	▪ The specified Receive Mode is not supported by the DTA-120, DTA-122 or DTA-140
"Can't open **recfile** for writing"	▪ The specified **recfile** is not accessible. Possibly the file is used by another application or the user does not have access rights for the file/directory.
"FIFO underflow. Can't write data fast enough"	▪ The system is not fast enough for recording data at the current input rate: the hard-disk may not be fast enough or not enough memory is installed. ▪ Other applications are performing processor and/or hard-disk intensive tasks.
"No input board in the system" or "No DTA-1xx in the system" or No "DTU-2xx detected"	▪ No DTA-120, DTA-122, DTA-124, DTA-140 or DTU-225 device is installed in the system; ▪ The DTA-1xx or DTU-2xx driver is not installed or not working correctly[6].
"Could not find input board #X in the system" or "Could not find DTA-1xx #X in the system" or "Could not find DTU-2xx #X in the system"	▪ The Xth board as specified by the Board-Number option is not present in the system; ▪ See also item above.

DtRecord can generate more application errors than specified above. However, the cause of such errors is not always evident and may require support from DEKTEC.

[6] Refer to the troubleshooting section in the Dta1xx or Dtu2xx driver installation guide for more details.

6. Contacting DEKTEC for Support

If the troubleshooting section does not provide a solution for your problem or the error(s) does persist you may send an email to support@dektec.com.

Please specify the following items in your problem report:

- The error message generated by the DtRecord application;
- The type of board used (DTA-120, DTA-122, DTA-124, DTA-140 or DTU-225);
- Operating System;
- Driver Version;
- DTAPI library version (for custom applications).

7. DtRecord Revision History

Revision	*Date*	*Changes*
V2.2.0	2005.03.14	• Added support for DTA-124 • Added support to record files >2GB
V2.1.0	2004.11.18	• Added support for DTU-225 • Updated to use DtDevice class as defined in the DTAPI (v2)
V2.0.1	2003.20.01	• Fix recording bug for DTA-140 • Set Receive-Control field to idle when done, to avoid Receive-FIFO overflow (with corresponding green/red flashing of the status LED) some time after running DtRecord
V2.0.0	2002.12.06	• Can now be compiled both under Linux and under Windows
V1.1.0	2002.11.14	• Support for DTA-140
V1.0.1	2002.07.26	• Fix bug to recognize DTA-120 without /t option