

Real-Time MPEG-2 Transport-Stream Multiplexer

Installation

1. Introduction

The **MuxXpert™** is DekTec's real-time multiplexing and re-multiplexing of live MPEG-2 Transport Streams application. The typenumber of this software is **DTC-700-MX**. This application runs on a standard- or industrial PC in conjunction with any mix of DekTec input and output adapters. Services and service components from any input can be re-multiplexed to any output.

This installation software can also be used to install the MuxXpert-API SDK. The typenumber of the MuxXpert-API SDK is **DTC-706-MS**

A setup program is available for easy installation or upgrading of the MuxXpert software.

The MuxXpert application requires a valid **license code** that is stored in non-volatile memory on one of the DekTec devices. The MuxXpert license will be delivered within a separate license file, which has to be installed.

1.1. System Requirements

Platform: Windows 10, 11; Server 16,19, 22

Processor: Core i5 4th generation (minimum)

RAM: 4GB (minimum)

1.2. DekTec PCI Cards Supported by MuxXpert

The MuxXpert supports a mix of DekTec input and output adapters. The following DekTec PCI cards are supported:

Type	Description	Input(s)	Output(s)
PCI			
DTA-100	DVB-ASI Output Adapter		1x ASI
DTA-102	DVB-SPI (LVDS) Output Adapter		1x SPI
DTA-105	Dual DVB-ASI Output Adapter		2x ASI
DTA-107	DVB-S Modulator		1x L band
DTA-107S2	DVB-S2 Modulator		1x L band
DTA-110	ATSC/QAM modulator		1x UHF
DTA-111	Multi-standard modulator		1x VHF,UHF
DTA-112	ATSC/DVB-T/QAM modulator		1x VHF,UHF
		1x ASI*	
DTA-115	Multi-standard modulator		1x VHF,UHF
		1x ASI*	
DTA-116	Multi-standard modulator		1x 36-MHz I/F, digital I/Q
		1x ASI*	
DTA-117	Multi-standard modulator		1x 44-MHz I/F, digital I/Q
		1x ASI*	
DTA-120	DVB-ASI Input Adapter	1x ASI	
DTA-122	DVB-SPI (LVDS) Input Adapter	1x SPI	
DTA-124	Quad ASI/SDI Input Adapter	4x ASI	
DTA-140	DVB-ASI Input+Output Adapter	1x ASI	1x ASI
DTA-145	Dual ASI/SDI Adapter	2x ASI**	
DTA-160	Gigabit TS-over-IP + Triple ASI Ports	1x TSolP*** 3x ASI*	
PCI Express			
DTA-2107	Multi-standard L-band modulator		1x L band
DTA-2111(B)	Multi-standard modulator		1x VHF,UHF
DTA-2115	All-standard, all band modulator		1x VHF,UHF, L band / 8x VHF,UHF
DTA-2116	All-standard, 0-3GHz modulator		1x VHF,UHF, L, S band
DTA-2127	Quad DVB-S2X Receiver	4x L band	1x ASI
DTA-2131(B)	Multi-standard SDR Receiver	1x VHF,UHF (ATSC, DVB-T/T2)	
DTA-2132	High-End Satellite Receiver	1x L band	
DTA-2135	DVB-T Receiver	2x VHF,UHF	
DTA-2136	Dual-Channel QAM Receiver	2x VHF,UHF	2x ASI
DTA-2137(C)	Dual-Channel DVB-S2 Receiver	2x L band	2x ASI
DTA-2138(B)	DVB-C2/DVB-T2 Receiver	1x VHF,UHF	

DTA-2139(B)	Twelve-Channel QAM Receiver	12x VHF,UHF	
DTA-2139C	Twelve-Channel Cable/Terrestrial Receiver	12x VHF,UHF (ATSC, DVB-T/T2, QAM-A/B/C)	
DTA-2144	Quad ASI/SDI Adapter	4x ASI*	
DTA-2152	Dual HD-SDI Adapter	2x ASI**	
DTA-2154	Quad HD-SDI Adapter	4x ASI**	
DTA-2160	Gigabit TS-over-IP + Triple ASI Ports	1x TSolP*** 3x ASI*	
DTA-2162	Dual Gigabit TS-over-IP	2x TSolP***	
DTA-2172	Dual 3G-SDI/ASI Adapter	2x ASI	
DTA-2174	Quad 3G-SDI/ASI Adapter	4x ASI	
DTA-2175	HD-SDI/ASI input+output Adapter	2x ASI	
DTA-2178-ASI	Octal ASI port	8x ASI	
DTA-2178	Eight 12G-SDI/ASI ports	8x ASI	
DTA-2179	Twelve HD-SDI/ASI Adapter	12x ASI	
DTA-2180	H.264 HD contribution encoder	1x Encoder	
USB****			
DTU-205****	FantASI ASI/SDI output		1x ASI
DTU-215****	Multi-standard VHF+UHF modulator		1x VHF,UHF
DTU-225****	FantASI ASI/SDI input	1x ASI	
DTU-245****	FantASI ASI/SDI input+output	1x ASI	1x ASI
DTU-315****	All-standard, all band modulator for USB-3		1x VHF,UHF, L band
Networked Adapters			
DTE-3100	Networked ASI Output		1x ASI
DTE-3120	Networked ASI Input	1x ASI	
DTE-3137	Networked DVB-S2 Receiver	1x L band	

* Each port can be used as Output or Input

** 2x Output, or 1x Input + 1x Output

*** The Gig-E can carry multiple TS Inputs and TS Outputs

**** For evaluation and demos, not recommended for operational use.

2. Installation Instructions

Installation of the MuxXpert is self-explanatory. The 'MuxXpert Installer.exe' program will guide you through the installation process. Optionally the MuxXpert-API SDK can be selected to be installed. The installation package also includes installation support for the **Dta**, **DtaNw** and **Dtu** device drivers, which are required to run the MuxXpert.

2.1. Operation of the Setup Program

The setup program copies the MuxXpert executable and its components to the **MuxXpert** sub-directory in **C:\Program Files(x86)\DekTec**. A shortcut to "MuxXpert" is created in the Start Menu and optionally on the Desktop.

The **Dta**, **DtaNw**, **DtPcie**, **DtBb2** and **Dtu** device-driver files are copied to **C:\Program Files(x86)\DekTec\Drivers**. Thereafter, setup instructs the Windows Plug'n Play manager to install the device driver.

Notes

- You can omit installation of the **Dta**, **DtaNw**, **DtPcie**, **DtBb2** and/or **Dtu** device driver by choosing the Custom installation setup type and deselecting the driver features.
- 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 MuxXpert user's manual ([DTC-700 MuxXpert Manual.pdf](#)), the documents that define the Remux Configuration Data ([RmcDataTempl00.pdf](#)) and the XML-schema file ([RmcDataTempl00.xsd](#)) file are copied to **C:\Program Files(x86)\DekTec\MuxXpert\Doc**.

2.2. Installation of the MuxXpert License

The MuxXpert requires a valid license. Appropriate license(s) can be installed through **DtInfo**. The **DtInfo** utility can be downloaded [here](#).

3. Revision History

Revision	Date	Change Description
V2.21.1.6624	2024.02.20	<ul style="list-style-type: none"> Improved stability of ATSC 1.0 reception
V2.21.0.6612	2024.02.08	<ul style="list-style-type: none"> Added support for ATSC 1.0 reception Added support for DVB-S2X output
V2.20.0.6514	2023.11.16	<ul style="list-style-type: none"> Added support for DTA-2111B Added support for DTA-2116 Added support for DTA-2127 Added support for DTA-2131B Added support for DTA-2132
V2.19.0.5377	2020.09.21	<ul style="list-style-type: none"> Added support for DTA-2178 and DTA-2178-ASI Added support for DTA-2174B Fixed support for DTA-2172 Fixed high-bitrate local-NIC input
V2.18.0.4890	2019.05.23	<ul style="list-style-type: none"> Added support for DTA-2139B Added support for DTA-2172 Added support for DTA-2175
V2.17.4.4762	2019.01.15	<ul style="list-style-type: none"> Fixed ISDB-S output level Fixed DVB-S(2) maximum symbolrate
V2.17.3.4093	2017.03.17	<ul style="list-style-type: none"> Added support for DTA-2179 Fixed SDT and EIT table updating Shows all inputs and outputs ports Decreased port-to-port delay
V2.15.0.3728	2016.03.17	<ul style="list-style-type: none"> Added support for DTU-315 Added support for DTA-2180 Added support for 8x 8MHz DTA-2115 variant
V2.14.1.3491	2015.07.24	<ul style="list-style-type: none"> Fixed DTA-2160/DTA-2162 high input rates Fixed DVB-C2 modulation
V2.14.0.3341	2015.02.25	<ul style="list-style-type: none"> Added support for DTA-2131 and DTA-2138 VHF/UHF receiver Added support for DTA-2152, DTA-2154 and DTA-2174 ASI-ports Added support for configurable roll-off for DVB-S Fixed update of service_list_descriptor in NIT Fixed support for local loop input (IP: 127.0.0.1)
V2.12.0.3132	2014.07.30	<ul style="list-style-type: none"> Added support for DTA-2115 Added support for 24-inputs and 8-outputs configuration Fixed Windows 8 security issue Fixed start-up error when ASI/SDI-port is in SDI-mode Fixed saving of play-list loop attribute
V2.11.0.2844	2013.10.15	<ul style="list-style-type: none"> Added support for DTA-2162 Increased tolerance for network-jitter on local NIC
V2.10.0.2644	2013.03.29	<ul style="list-style-type: none"> Added support for DTA-2138 (DVB-C and DVB-T) Added support for DTA-2139 Added support for DVB-S2 roll-off Fixed DVB-C2/T2 modulation performance Fixed support for DTA-100 Fixed bitrate accuracy problem for DTA-2107 Improved support for large configurations Improved support for multiple NICs (network interface cards)

V2.9.2.2468	2012.10.03	<ul style="list-style-type: none"> Fixed support for DTA-2135 Fixed support for DTA-2137
V2.9.0.2388	2012.07.16	<ul style="list-style-type: none"> Added support for DTA-2107, DTA-2136 and DTE-3137 Fixed start-up failure of configurations using many IP-outputs Fixed incorrect license expiration
V2.8.0.2320	2012.05.14	<ul style="list-style-type: none"> Based on new DTAPI and drivers
V2.7.0.2244	2012.02.23	<ul style="list-style-type: none"> Improved start-up behaviour Added option to temporary run the MuxXpert API with GUI
V2.6.6. 2167	2011.12.08	<ul style="list-style-type: none"> Improved robustness for IP-input streams Added DTA-112 ISDB-T support Improved indication in case (P)SI is dropped. Fixed private data specifier > 0x7FFFFFFF bug
V2.6.0.1851	2011.01.26	<ul style="list-style-type: none"> Support for single PLP DVB-C2 Support for single TS, single layer ISDB-S
V2.5.1.1828	2011.01.03	<ul style="list-style-type: none"> Fixed DTA-110 support
V2.5.0.1797	2010.12.03	<ul style="list-style-type: none"> Support for DTA-2111 Support for 192 byte TS-files (M2TS-files) Support for variable rate single program TS-files Added play-list looping Fixed large configuration restrictions
V2.4.0.1642	2010.07.02	<ul style="list-style-type: none"> Increased number of TS-inputs, TS-outputs and File-players for MuxXpert-API NIC-only configurations fixed. Added option to skip extraction and processing of selected SI tables from the TS-input Added option to share PMT PIDs Swe.exe memory leak fixed.
V2.3.1.1615	2010.06.04	<ul style="list-style-type: none"> Fixed DTA-2160 detection Fixed installation conflict with StreamXpert
V2.3.0.1563	2010.04.13	<ul style="list-style-type: none"> Improved robustness for SDT-actual from SDT-other Support for DTA-111 and DTA-2160
V2.2.0.1489	2010.01.29	<ul style="list-style-type: none"> Support for DTE-3100, DTE-3120 Support for Local Network Adapter for TS-over-IP input and output ports. Support for DVB-T2 output ports.
V2.1.1.1377	2009.10.09	<ul style="list-style-type: none"> Fixes output stream interruption after setting same output parameters Improved robustness for invalid EIT-schedule
V2.1.0.1363	2009.09.25	<ul style="list-style-type: none"> Support for DTA-2135 and DTA-2137 Increased number of outputs for MuxXpert-API Fixes SDT-other from SDT-actual-out updates Service_ID 0xFFFF is accepted Memory leak fixed Improved robustness in case of invalid PID adaptations
V2.0.2.1179	2009.03.25	<ul style="list-style-type: none"> Increased number of TS-inputs and File-players for MuxXpert-API Improved robustness for unreliable input Transport Streams Improved TS-file bitrate estimation for files that are added in play-list
V2.0.1.1139	2009.02.16	<ul style="list-style-type: none"> Changed ATSC filter to 32 taps. Added thumbnails for new supported cards.

		<ul style="list-style-type: none"> • Sets variable rate SPTS support from configuration. • Improved MuxXpert restart. • Added table version attribute
V2.0.0.1068	2008.12.04	<ul style="list-style-type: none"> • MuxXpert-API support included. • Support for variable rate single program transport streams over IP. • Support for DTA-112, DTA-116, DTA-117 and DTA-2144 • Fixes problem if TEI is set in TS-packets. • Fixes playlist bugs: <ul style="list-style-type: none"> ◦ Failure when no drive-letter is specified. ◦ Failure when some but not all items contain a start-time. • Check for configuration + play-list file update interval is set to 1 second. • Confirmation is asked when closing the MuxXpert.
V1.5.1.757	2008.01.28	<ul style="list-style-type: none"> • Support for ADTB-T and DMB-T/H output ports. • Support for ATSC, QAM-B and DVB-S.2 is improved. • Improved support for managing EIT present and EIT following events. • Improved Incoming NIT-actual adaptation. • Fixes the unreferenced PID selection exception. • Fixes the ECM-adaptation exception. • Improved robustness in case the IP-cable is not connected. • RMC Data template changes: <ul style="list-style-type: none"> ◦ ADTBT and DMBTH replace the DTMB output port. ◦ QAMB output parameters are redefined. ◦ Redundant OfdmModulationType attribute is removed from DVBH and DVBT output parameters. ◦ Non-standard DVBC and QAMC modulation types are removed. ◦ DVBS attributes are renamed (old names can still be used). ◦ NewPcr element replaces NewPcrPid for changing the PCR of a service (NewPcrPid can still be used). ◦ The order of the tables in DvbSiTables is according their table_id. ◦ Attribute FilterPfEvents is added to the element EitTimeFilter to control the filtering of EIT present and EIT following events. The FilterPfEvents attribute replaces the PassPastEvents attribute. ◦ Attribute EventType is added to the EventPars element to set the type of an EIT-event.
V1.5.0.620	2007.09.13	<ul style="list-style-type: none"> • Support for Transport-Stream recording • Support for Custom sub-table generation • Support for disabling of EIT-time-filter for EIT-P/F tables • TS bitrate estimation is done when file is added in play-list • Right mouse click to remove services from output service-list • Maximum play-list size increased to 100 items • Scrollbars are added in behalf of low resolution screens • If necessary ECM(s) are added in case of SvcWideComposition • More double-number-styles are allowed • Fixes the KeepOrigPid and SvcFromScratch combination exception • Fixes the EitActualFromComposition sub-table generation exception • Improved robustness in case an invalid descriptor is specified
V1.4.0.549	2007.07.04	<ul style="list-style-type: none"> • Support for ATSC, DTMB and DVBS2 output port type. • Support for the DTA107S2 adapter. • Support for the ISDB-T mode 1 segment TV. • Support for selection of a PID range in TsWideComposition. • Support for PcrAdaptation for specifying a new PID for a PCR stream.

		<ul style="list-style-type: none"> • Support for creating a NIT-actual from an incoming NIT-actual. • Support for Custom Table generation • Comment lines in SdtActualAdaptation are accepted. • EitOtherFromScratch according to XSD • The number of messages shown in the GUI is limited.
V.1.3.2.520	2007.06.05	<ul style="list-style-type: none"> • Support for 1 segment ISDB-T • Character Code Table selection added in GUI • IP-multicast zero source port is changed • DVB-T Setting fixed • Reading SectionData from RmcData file fixed
V.1.3.1.467	2007.04.16	<ul style="list-style-type: none"> • DVB-T/H configuration start-up error fixed • GUI displays the ISDBT layer of the generated service components
V.1.3.0.456	2007.03.30	<ul style="list-style-type: none"> • Support for ISDBT output port type • Support for QAMB and QAMC output port type • Support for TsTimeOffset for specifying a time offset of an input and output transport stream. • Support for TsTimeCorrection for specifying the applied time correction. • Support for ISDBT transport stream output parameters settings. • Support for KeepOrigPid attribute to keep incoming PIDs unchanged if possible. • Support for simple drag and drop of services. • Maximum number of file players increased to 4. • QamRollOff attribute is removed now DVBC, QAMB and QAMC are different port types • Specification of the Tag element in table descriptor sorting is changed • Specification of the Duration attribute in event is changed.
V.1.2.1.331	2006.11.28	Fixes NewPcr assignment problem
V.1.2.0.319	2006.11.16	<ul style="list-style-type: none"> • Support for different and separate Nwld and Onwld. • Improved input TS switching behaviour. • Fixes the table properties specification problem.
V.1.0.285	2006.10.12	Fixes a start-up problem that occurs on some systems.
V.1.0.242	2006.09.15	First version for external release