DekTec SDK

| REVISION HISTORY

SDK

January 2020

DekTec SDK Revision History

SDK version January 2020	
Versions	DTAPI: v5.37.0.134 Drivers: Dta v4.27.5.264, DtPcie v1.5.0.128 DtaNw v3.5.10.41, Dtu v4.13.6.83 DtapiService: v3.7.0.83
Changes	New features: • Support for DTA-2174B Quad 3G-SDI Ports for PCIe (variant 1 firmware) • DTA-2132: Auto symbol rate and fast blind scan support Linux only features: • Support for 32 bit DtPcie driver Bug fixes: • Matrix API: YUV422P2_16B to UYVY422_10B conversion was not efficient • DTAPINET was not in sync with DTAPI, amongst others ATSC3.0 modulation was missing • DTA-2115/DTU-315: ATSC3.0 ALP packets larger than 4096 bytes Nov2019 fix was not correct • DTA-2132: Low SNR and lock issue could occur • DTA-2132: Invalid statistics could have been returned • DTA-2152: Possible SDI lock issue was seen • DTA-2172/75: DtDevice::GetRefClkCnt did return DTAPI_E_NOT_SUPPORTED • DTA-2274B: Genlock for the 3G-ports didn't work Linux only bug fixes: • Linux drivers did not build on Ubuntu 19.10 • DtPcie driver did report IOMMU errors and no data was received for some server configuration *Support for DTA-2174B requires Visual Studio 2013 or higher and the 64 bit DtPcie driver installed Visual Studio 2008 and Visual Studio 2010 DTAPI libraries are no longer distributed*

SDK version November 2019	
Versions	DTAPI: v5.36.3.130 Drivers: Dta v4.27.4.262, DtPcie v1.4.0.111, DtaNw v3.5.10.41, Dtu v4.13.6.83 DtapiService: v3.6.1.82
Changes	New features: • Support for DTA-2274B 12G-SDI and Triply-Buffered 3G-SDI Output for PCIe • Support for Visual Studio 2019 • Matrix API: SetIoConfig option to enable/disable automatic black frames insertion • DTA-2132: Improved tuning configuration for IQ port • DTA-2137C: Improved power level calibration • DTA-2172/75: Added DtDevice::SetTxClockOffset() for precise control of the transmit clock Bug fixes: • DTAPI classes returned unclear error codes when using an incompatible DtPcie driver • DtOutpChannel did repeat the last few SDI frames when an underflow occurred but should repeat the last frame only • DTU-351: Disabled auto correction of errors (CRC checksum) in SDI input signal • DTA-2115/DTU-315: ATSC3.0 ALP packets larger than 4096 bytes were not supported • DTA-2131: Another process could stop main data processing (seen using DtInfo and StreamXpert) • DTA-2132: Data reception was not possible without explicitly setting Rx-Mode using SetRxMode() • DTA-2172: Missing audio samples in 3G SDI level B output • DTA-2172: DtPcie driver didn't update after installing DtPcie installer v1.3.0 • DTA-2172/75 ASI-input channel occasionally returned an invalid timestamp • DTA-2172/75 4:2:0 video processed by the Matrix API had jagged edges in the SDI output • DTA-2195: SetRowConfig did fail when more than one VPID overrule was configured for a 4k signal Linux only bug fixes: • DTA-2175: Outputting of data was stopped when a child process was forked from within the process controlling the DTA-2175 ***Support for DTA-2274B requires Visual Studio 2013 or higher and the 64 bit DtPcie driver installed***

SDK version July 2019	
Versions	DTAPI: v5.35.0.124 Drivers: Dta v4.27.3.259, DtPcie v1.3.0.72, DtaNw v3.5.10.41, Dtu v4.13.5.82 DtapiService: v3.6.0.81
Changes	New features: • Support for DTA-2132 High-End Satellite Receiver • Matrix API: Support to receive/transmit raw 4k formats • DTAPINET now supports DtPcie cards (DTA-2132, DTA-2139B, DTA-2172 and DTA-2175) • DTA-2115B: Support for the 2 types of noise generators (requires firmware v2) • DTA-2131: Support for larger ATSC sample rate offsets Bug fixes: • NicInpChannel methods ClearFlags() and GetFlags() were missing • Modulator cards: noise generation was not working for IQ-direct mode • DTA-2131: STMP2 RX-mode was missing • DTA-2131: AdvDemod::OpenStream() function returned unclear error on no license • DTA-2131: Improved ATSC 3.0 demodulator for adjacent channel interference • DTA-2136/39: tuner offset for possible lock delay was accidentally removed in SDK Jan2019 release • DTA-2175: Failsafe functions were not available Linux only New features: • Driver support for linux kernel v5 ***Support for DTA-2132 requires Visual Studio 2013 or higher and the 64 bit DtPcie driver installed***

SDK version May2019	
Versions	DTAPI: v5.34.0.120 Drivers: Dta v4.27.2.258, DtPcie v1.2.0.66 DtaNw v3.5.10.41, Dtu v4.13.4.81 DtapiService: v3.5.2.79
Changes	New features: • Support for DTA-2172 Dual 3G-SDI/ASI Ports for PCIe • DTA-2131: Support for constellations and transport stream packets with timestamps • DTA-2175: Support for Transmit on timestamp DTAPI_TXMODE_TXONTIME Bug fixes: • Matrix API: DtMxFrame::m_Video::m_Planes::m_WidthInSymbols did report unscaled width • DTA-2131: Nominal bitrate instead of actual bitrate was reported • DTA-2136/2139: For some frequency changes a long lock delay occurred • DTA-2136/2139: Bad packet count was very large after a tune action • DTA-2137: Inserted dummy frame in STL3FULL mode were invalid. • DTA-2139B/2175: DtPcie driver did not support Windows standby condition • DTA-2139B: InputChannel GetStatus did not return DTAPI_PCKSIZE_188 • DTA-2139B: GetFlags returned an incorrect latched sync error • DTA-2139B: DTAPI_E_INVALID_LEVEL was reported incorrectly for DTAPI_STAT_RFLVL_CHAN • DTA-2152 disabling SMPTE-352 descriptor insertion did not work • DTA-2160/62: DTAPI_E_INVALID_IP_ADDR was reported on broadcast address configuration • DTA-2174/2195: DtapiVidStd2IoStd was missing support for DTAPI_VIDSTD_2160P50B • DTA-2175: Support for Transparent Packets was missing • DTA-2175: The video configured for NV12 (=DT_PXFMT_YUV420P2_8B) was corrupted • DTA-2175: 8-bit SDI file format playout was not received by some receivers • DTA-2175: CPU did require SSE4.1support, now minimum requirement is SSE3.0 • DTA-2195: DtAvOutput::GetHdmiStatus could report old values Linux only bug fixes: • DtapiService connection errors did occur after a long time • GCC5.1 DTAPI binaries were not correctly build ***Support for DTA-2172 requires Visual Studio 2013 or higher and the 64 bit DtPcie driver installed***

SDK version Feb2019	
Versions	DTAPI: v5.33.0.117 Drivers: Dta v4.27.1.257, DtPcie v1.1.0.59 DtaNw v3.5.10.41, Dtu v4.13.4.81 DtapiService: v3.5.1.77
Changes	New features: • Support for DTA-2139B Twelve-Channel Cable/Terrestrial Receiver for PCIe Bug fixes: • DtapiService crash was seen on older PC's that did not support AVX instruction set • DTA-2131: ATSC stream with long echoes was not received • DTU-315: DTAPI_E_INVALID_LEVEL was reported when Output Level was configured during playout Linux only bug fixes: • DTA-2136 AttachToPort did hang in some cases • DTA-2160/2162 DtaNw driver did not build on Linux kernel >=v4.20 ***Support for DTA-2175 and DTA-2139B requires Visual Studio 2013 or higher and the new 64 bit DtPcie driver installed***

SDK version Jan2019	
Versions	DTAPI: v5.32.0.115 Drivers: Dta v4.27.0.256, DtPcie v1.0.9.55 DtaNw v3.5.9.40, Dtu v4.13.3.80 DtapiService: v3.5.0.75
Changes	New features: • Support for DTA-2175 HD-SDI/ASI Input+Output with Relay Bypass for PCIe • DTA-2115B/DTU-315: option to (re)set the ATSC 3.0 Time Information • DTA-2131: ATSC 3.0 L1B and L1D constellation support • DTA-2131: ATSC 3.0 output of raw BB-frames support • DTA-2174/79: Quad Link (DTAPI_CAP_QUADLINK) capability to simplify configuration of 4K Bug fixes: • Unexpected DTAPI_NOT_SUPPORTED on SetModControl() was reported • SMPTE-352 descriptor insertion was not disabled when using DtOutputChannel for SDI HD cards • DTU-245: DtInpChannel::Read() junk bytes were seen at start of the buffer • DTU-315: DTAPI_E_INVALID_LEVEL was reported when Output Level was configured during playout • DTU-315: DTAPI_TX_DMA_UFL was sometimes reported for DVB-S2X/ISDB-S3 • DTA-2115B/DTU-315: MISO signal was not correct for ATSC3.0 • DTA-2115B/DTU-315: no error code on SetModPars() containing an ATSC 3.0 PLP collision • DTA-2115B: SFN TOO_LATE error was seen at specific sample rates • DTA-2152: Doubly Buffered configuration did not work • DTA-2182: DtapiService communication error did occur resulting in no license points available • DTA-2195: Line doubling on 4K output was seen for DT_PXFMT_YUV422P_16B Linux only New Features: • GCC4.8 and GCC5.1 DTAPI binaries are now distributed; adding full C++11 support and better support for latest distributions *For Linux GCC4.8.5 or higher is required* *Support for latest boards (DTA-2175/DTA-2139B) requires Visual Studio 2013 or higher and the new 64 bit DtPcie driver installed*

SDK version July2018	
Versions	DTAPI: v5.31.0.109 Drivers: Dta v4.26.4.253, DtaNw v3.5.9.40, Dtu v4.13.2.78 DtapiService: v3.4.1.72
Changes	New features: • DTA-2115B/DTU-315: support for ISDB-S3 modulation released Bug fixes: • DTA-2160: identical multicast reception could fail for IP channel 16th Linux only bug fixes: • DTA-2160/62: DtaNw build error for CentOs 7.5 *Visual Studio 2008 and Visual Studio 2010 support will be discontinued from November 1th 2018*

SDK version May2018	
Versions	DTAPI: v5.30.0.108 Drivers: Dta v4.26.2.251, DtaNw v3.5.7.38, Dtu v4.13.1.77 DtapiService: v3.4.1.71
Changes	New features: • Added support for DTA-2131 new licenses: XPRT (C2Xpert T2Xpert, Atsc3Xpert support), RXAB (Basic), RXA3 (ATSC 3.0) and RXAT2 (DVB-T2) • Matrix API 2.0: Support for getting/setting the AFD (RP186-2008) • Matrix API 2.0: AncGetPacket wildcards and selected range of lines parameters added • DTA-2115B/DTU-315: Initial support for ISDB-S3 modulation • DTA-2131: ATSC 3.0 support for reception of ALP-packets up to 64K byte • DTA-2131: ATSC 3.0 support for 2016 and 2018 LMT/RDT ALP encapsulation modes • DTA-2195: DtAvOutput supported HDR formats added in DtHdmiTxStatus struct • SHA256 driver signing support Bug fixes: • Matrix API 2.0: Timing of generated teleletext waveform was not correct • Matrix API 2.0: Sometimes a segmentation fault in MxHdAncParser::DeEmbedAudio was seen on a disruption in the input signal • Matrix API 2.0: AES validity bit was not ignored like specified when extracting audio as AES3 samples • DTA-2136: Frequency offset to lock was needed when analog channel was active • DTA-2162: Multicast without source specified was not possible for SSM IP address range • DTA-2162/2160: GetFifoLoad() could be incorrect for IP playout • DTA-2195: In some cases 2160P24 displays were not detected • DTA-2195: DTAPI_E_INVALID_LNKSTD on DtMxProcess::Start for 4K could be seen • DTA-2195: HdmiTx SCDC initialisation fails sometimes after hot plug detect Linux only bug fixes: • DTA-2152\74\79\95: DTAPI_E_OUT_OF_MEMORY was seen on ASI playout due to Feb2018 Linux SDK change *Visual Studio 2008 and Visual Studio 2010 support will be discontinued from November 1th 2018*

SDK version Feb2018	
Versions	DTAPI: v5.29.0.105 Drivers: Dta v4.26.0.248, DtaNw v3.5.7.38, Dtu v4.13.0.76 DtapiService: v3.4.0.70
Changes	New features: • Added support for DTA-2182 Dual H.264 Encoder • Matrix API 2.0: Support for WSS and Teletext output • DTA-2131: L1-detail version 1 support added for ATSC 3.0 demodulator Bug fixes: • DTA-2115B: QAM-B signal was inverted • DTA-2131: QAM-B bitrate and timestamps were 0 • DTA-2154: Robustness improvement for possible hang seen on multiple video standard switches • DTA-2174: Possible invalid FIFO-load was reported on first call Linux only bug fixes: • DtapiService did generate a lot of DtapiDemoSvc Pipe files in /Tmp folder • Dta and Dtu driver build errors were seen for Fedora 27 (kernel v4.14) • DtaNw driver build errors were seen for RedHat/CentOs 7.4 • DTU-315/351: Kernel page fault was seen for some Linux distributions

SDK version Nov2017	
Versions	DTAPI: v5.28.0.103 Drivers: Dta v4.25.0.245, DtaNw v3.5.6.37, Dtu v4.12.1.74 DtapiService: v3.3.5.64
Changes	New features: • Added DtAvOutput::SetHdmiAudioChannel for DTA-2195 • Matrix API 2.0: Support for Line 21 CEA-608 CC output • Matrix API 2.0: Support for ancillary data VPID configuration per frame; DtMxAuxConfigSdi::m_DisableVpidProcessing should be set. • Window 10 secure boot driver support • DTA-2131: Support for QAM-B demodulation Bug fixes: • DVB-S2 CID GUID is now using a default unique value, but could still be overridden • DtInpChannel::GetStatistic() did not return errors like DTAPI_E_NOT_SUPPORTED • Matrix API 2.0: Pixel format DT_PXFMT_YUV420P2_8B caused a crash or corrupted output • Matrix API 2.0: Callback did not return error for 1080i60 configuration but 1080i59 input signal • DTA-107: SetSnr() was failing although a valid CM license was used • DTA-2115B: Spurious in the ATSC 3.0 output was seen • DTA-2115/DTU-315: ATSC 3.0 ALP parsing incorrect when SIF or HEF is used • DTA-2131: ATSC (8-VSB) demodulator did not set TEI bit in case of stream errors • DTA-2131: ATSC (8-VSB) demodulator statistic DTAPI_STAT_BER_PRERS did not return correct value • DTA-2131: ATSC 3.0 demodulator MER was not precise for constellations with an irregular pattern • DTA-2131: Invalid ATSC 3.0 ALP-packets when ALP-header contained additional headers • DTA-2180: Potential driver divide by zero crash was seen • DTU-236A: Incorrect lock status was reported

SDK version Aug2017	
Versions	DTAPI: v5.27.0.97 Drivers: Dta v4.24.0.242, DtaNw v3.5.6.37, Dtu v4.12.1.74 DtapiService: v3.3.4.63
Changes	New features: • Added DtAvOutput::SetHdmiColorimetry for DTA-2195 • DTA-2131: Maximum number of LDPC iterations increased to improve performance Bug fixes: • DTA-2131: NO_SUCH_DEVICE errors were seen in case of enabled "Windows fast startup" • DTA-2195: driver was not updated when previous version was installed • DTU-351: Windows dtu driver was failing due to June2017 SDK changes Linux only bug fixes: • DTA-2160/62: kernel > 4.11.0 (like Fedora 25) resulted in a DtaNw compile error • DTU-315: DVB-S(2) playout was failing • DTU-245/225/205/215: Dtu driver used on kernel > 4.8.0 did not start

SDK version June2017	
Versions	DTAPI: v5.26.0.96 Drivers: Dta v4.23.0.240, DtaNw v3.5.5.36, Dtu v4.12.0.73 DtapiService: v3.3.3.62
Changes	New features: • Support for DTA-2195: 12G SDI input + output with HDMI-2.0 output • DTU-315: Linux support Bug fixes: • Matrix API 2.0: Possible crash was seen for 32 bit VS2008 and VS2010 configurations • DTAPINET DtInpChannel::SetErrorStatsMode was missing • DTA-2131: Threading issues could occur for calls like SetTunerFrequency(), Tune()

SDK version April2017	
Versions	DTAPI: v5.25.0.94 Drivers: Dta v4.22.0.236, DtaNw v3.5.5.36, Dtu v4.11.0.71 DtapiService: v3.3.3.61
Changes	New features: • ATSC 3.0: Transmitter Identification (TxID) support for modulator (DTA-2115B/DTU-315) and de-modulator (DTA-2131) • Matrix API 2.0: Added function to configure AFD line number • Matrix API 2.0: Added function for Genlock pixel offset • Visual Studio 2017 support added • DTA-2115B/DTU-315: Support for negative SNR for testing robust ATSC 3.0 and DVB-S2X modes • DTA-2154/2174: Added DtDevice:SetVcxoState to control the VCXO • DTA-2180: Support for Dolby Digital Pro audio encoding; requires firmware v2 • DTA-2195 12G-SDI I/O adapter with HDMI 2.0 output: Initial support added Bug fixes: • Matrix API 2.0: for some equipment audio decoding issues occurred • DTA-2131: GetTsRate always reported 0bps for QAM-C,DVB-C and 8-VSB • DTA-2160/2162: trying to fill the transmit FIFO on HOLD mode resulted in a deadlock • DTA-2160/2162: FEC reconstruction status did change continuously for large matrices Linux only bug fixes: • Dta driver build was failing due to a signature mismatch • For Fedora 25 DtaNw driver compile error was seen • Matrix API 2.0: only one frame was received for the DTU-351 IMPORTANT NOTE: *Visual Studio 2005 DTAPI libraries are no longer distributed*

SDK version Feb2017	
Versions	DTAPI: v5.24.0.91 Drivers: Dta v4.21.0.229, DtaNw v3.5.4.35, Dtu v4.11.0.71 DtapiService: v3.3.2.60
Changes	New features: • DTA-2131: Support for 8-VSB demodulation • DTA-2131: Support for QAM-A and QAM-C demodulation • DTU-315: Support for DVB-CID Bug fixes: • ATSC 3.0 demodulator issue was seen when using guard interval 12_4864 • ATSC 3.0 demodulator lock statistic reported in_lock when signal was lost • DTAPINET DtStatistics::GetName function didn't return the string correctly • ISDB-T modulation did result in high PCR-jitter when PCR was part of the video PID • Matrix API 2.0: For 4K level B audio data/control packets were not always located in the correct link • DTA-2115(B): Continuous Wave configurationdid result in 3dB offset • DTA-2131: Potential DVB-T2 synchronisation issue was seen after cable disconnect-connected • DTA-2136/2137/2139: Constellation points were not in range of -16k..+16k • DTA-2152: Doubly buffered mode was not working for firmware version V3 • DTA-2160/2162: VLAN configuration using SetIpPars was not working • DTA-2162: BSOD was seen in a specific condition on loop-through and multicast IP addresses Linux only bug fixes: • DTA-2160/2162: MAC address changes were not applied correctly

SDK version Dec2016	
Versions	DTAPI: v5.23.0.89 Drivers: Dta v4.20.0.226, DtaNw v3.5.3.34, Dtu v4.10.1.70 DtapiService: v3.3.1.59
Changes	New features: • ATSC 3.0: Changes incorporated for latest specification update • ATSC 3.0: Support for IQ over ASI option (DTA-2145 and DTA-2160) • Matrix API 2.0: Added minimal byte alignment setting (DtMxVideoConfig::m_BufAlignment) • Matrix API 2.0: Decoding performance improvement by using separate threads for Video and Anc • Matrix API 2.0: Support for thread priorities (DtMxProcess::SetThreadScheduling()) • DTA-2131: Support for QAM-A (DVB-C) and QAM-C demodulation Bug fixes: • VLAN driver was not updated by Installer • Matrix API 2.0: Embedding an audio service with more than 4 services could cause a crash • DTA-2115B: 8 Channel configurations for ATSC 3.0/DVB-T2/DVB-C2 resulted in inverted spectrum • DTA-2138B: RF level accuracy was1dB instead of 0,1dB • DTA-2138(B): DTAPI_E_INVALID_SYMRATE was reported when configuring the symbol rate • DTA-2160/2162: IP output did take broadcast MAC address instead of the default gateway DTA-2160/2162: IP-Address in DtHwFuncDesc did return 0.0.0.0 in case of a static defined address and disconnected cable

SDK version Sep2016	
Versions	DTAPI: v5.21.0.85 Drivers: Dta v4.19.0.224, DtaNw v3.5.3.34, Dtu v4.10.1.70 DtapiService: v3.3.0.58
Changes	New features: • Support for DTA-2179: 12xSD/HD/3G-SDI and ASI; maximum performance 8x3G(2x4K) + 4xHD • Matrix API 2.0: Performance improvements including support for thread affinity for call back threads • Matrix API 2.0: Added support for setting VPID bytes (part of DtMxAuxConfigSdi) Bug fixes: • VLAN configuration option was missing for Windows 10 • Matrix API 2.0: Crash when receiving SD-SDI, aux data enabled and a non-default pixel format • Matrix API 2.0: AES sample parity was not computed correct for HD streams • Matrix API 2.0: Possible assert when scaling SD-SDI signals • Matrix API 2.0: Incorrect VPID was used for 4K output (3G level B) • Matrix API 2.0: Lines were duplicated for a 4K output using the DT_PXFMT_YUV422P_8B pixel format • Matrix API 2.0: Columns were swapped on 4K sample-interleave output when configured as DT_PXFMT_UYVY_8B • DTA-2174: Signal detected but no new frame interrupts after short signal interruption • DTA-2180: In some rare cases input standard detection on HDMI port was failing Linux only bug fixes: • Lock up was seen on CentOS 7 HP DL380 G9 server IMPORTANT NOTE: *Visual Studio 2005 and Windows XP support will be discontinued at the start of 2017*

SDK version Aug2016	
Versions	DTAPI: v5.20.0.83 Drivers: Dta v4.18.0.222, DtaNw v3.5.2.30, Dtu v4.10.1.70 DtapiService: v3.3.0.58
Changes	New features: • DTU-315/ DTA-2115: ATSC 3.0 modulator updated with support for Multi PLP and Hybrid Time Interleaver (HTI) • DTA-2160/2162: Support for routing tables • Matrix API 2.0: Add support for inserting SMPTE-337 data-burst as audio samples (enables embedding of AC-3 and E-AC-3 audio) • Support for DT_EVENT_TYPE_IOCONFIG that fires when any IoConfig on attached device changes Bug fixes: • Matrix API 2.0: Possible segmentation fault on high load • Matrix API 2.0: Output with pixelformat DT_PXFMT_UYVY422_8B causes application crash • Memory leak in driver on each SetIoConfig call (only applies for the Windows driver) • DTU-315: Spectrum inversion for DVB-C was incorrect • DTA-2136: Spectrum inversion measurement was incorrect • DTA-2139: Driver installer failing when multiple DTA-2139 units are installed • DTA-2154/2174: Potential hang of DMA after call to detect video standard • DTA-2162: BSOD when using port2 and SMPTE-2022-7 disabled • DTA-2180: Number of Dolby-E services is limited to 3 Linux only bug fixes: • Driver compile failure for kernel 4.6+ • DTA-2160/2162: Default gateway for IPv6 could not be found

SDK version June2016	
Versions	DTAPI: v5.19.0.81 Drivers: Dta v4.17.0.221, DtaNw v3.5.2.30, Dtu v4.10.0.69 DtapiService: v3.2.1.57
Changes	New features: • DTA-2115 and DTU-315 ATSC 3.0 modulator support • DTA-2131 ATSC 3.0 demodulator support • Support for multiple source IP address filtering using new struct DtIpPars2 • Support for override of default gateway address • Support for DTU-245B • Support for reboot without powercycle for the DTA-2154 • Support for License Programming (DtDevice::SetLicenseFromFile, DtDevice::SetLicenseFromString) • Matrix API 2.0: Performance improvements for 4K • Matrix API 2.0: Support for teletext decoding from 625I50 signals • Matrix API 2.0: Support for audio frame number when no audio control packets are available Bug fixes: • Matrix API 2.0: DtMxRawConfigSdi::m_LineAlignment set to -1 (no alignment) did result in data buffer with a size of 1 line • Matrix API 2.0: RGB->UYVY conversion used wrong constants for BT709 colorspace • Matrix API 2.0: WSS parsing failed on some valid streams • Matrix API 2.0: YUV_422P_16B input did corrupted data in V plane • DTAPI naming conflict with standard C libraries did occur due to atan2f function • DTA-2115B: ATSC playout was not working for 8*8MHz mode • DTA-2115B/DTU-315: wrong channel filter was used for ISDB-Tmm • DTA-2135: SetTunerFrequency was failing when both ports were used

SDK version April2016	
Versions	DTAPI: v5.18.1.78 Drivers: Dta v4.16.0.217, DtaNw v3.5.2.30, Dtu v4.9.1.68 DtapiService: v3.2.0.56
Changes	Bug fixes: • DTA-2115B: Power level for 8x8MHz mode was incorrect for DVB-T2 and DVB-C2 • DTA-2131: More improvements for 1.7MHz adjacent channels were needed • DTA-2180: Audio pass through configuration was failing • DTA-2180: Added encoder limitation: max 2 AAC audio channels for 1080p H.264 configurations • DTA-2180: Added encoder limitation: max 3 Dolby-E audio channels are supported and only 2 for all 1080p H.264 configurations

SDK version March2016	
Versions	DTAPI: v5.18.0.77 Drivers: Dta v4.16.0.217, DtaNw v3.5.2.30, Dtu v4.9.1.68 DtapiService: v3.2.0.56
Changes	New features: • Support for DTA-2115B 8x 8MHz VHF/UHF channel modulation (HW8CH option) • Support for DTA-2115B GPS clock synchronisation • Support for DTA-2115B Phase noise emulation • Full support for DTA-2180 H.264 HD Contribution Encoder for PCIe Bug fixes: • DtapiHwFuncScan returned no NICs when more than 20 NICs were present • DTU-315: did not output a signal at low symbol rates • DTU-315/DTA-2111/DTA-2115: power level for Multi-channel modulation (SWMC) was incorrect • DTA-2131: difficult to receive a signal when many adjacent channels were present • DTA-2162: listening on IP-inputs, when no data was received, did cost a lot of CPU resources

SDK version Jan2016	
Versions	DTAPI: v5.17.0.74 Drivers: Dta v4.15.0.212, DtaNw v3.5.1.29, Dtu v4.9.0.67 DtapiService: v3.1.1.54
Changes	New features: • Initial support for DTA-2180 H.264 HD Contribution Encoder for PCIe • Matrix API 2.0: performance improvements for 4K • DTU-315 dual channel software modulation Bug fixes: • Matrix API 1.0: z-bit in audio samples was set for both channels of a channel • DAB playout resulted in audio artefacts when play DAB ETI file containing audio reconfiguration • GetIpStats m_NumIpPacketsReceived was not incremented when header identification field was zero • IPv6 receive for UDP resulted in a crash • Possible application hang was seen occasionally due to race condition in DMA abort • DTU-236(A) QAM annex was not reported correctly in StreamXpert Linux only bug fixes: • DtapiService install fix for Ubuntu 14.04 • DTA-2137: High CPU load seen when controlling multiple units

SDK version Oct2015	
Versions	DTAPI: v5.16.2.71 Drivers: Dta v4.14.7.207, DtaNw v3.5.1.29, Dtu v4.8.3.66 DtapiService: v3.1.0.52
Changes	New features: • Support for new DVB-C2 statistics for DTU-238 and DTA-2138(B) • Support for latest DTU-238 hardware revision 1 Bug fixes: • DtOutpChannel::SetFailsafeConfig did return invalid value on DTAPI_IOCONFIG_FAILSAFE • DtInpChannel::GetStatistics did return unclear error when tuning action was still in progress • Matrix API 2.0: Number of dropped frames was not accurately reported for DTU-351 • Matrix API 2.0: No error was returned when configuring raw SDI input for multi-link • Matrix API 2.0: Out-of-memory issue was seen when call-back on input-only matrix was to slow • DTA-2107: DVB-S2 outputs was failing due to a DTAPI change in Aug2015 SDK • DTA-2160: Firmware upgrade was failing for latest DtInfo version

SDK version Sep2015	
Versions	DTAPI: v5.16.1.68 Drivers: Dta v4.14.6.205, DtaNw v3.5.1.29, Dtu v4.8.2.65 DtapiService: v3.0.4.51
Changes	Bug fixes: • Matrix API 2.0: performance improvements for 4K NV12 input • Multiple IP channel detach at the same time could have resulted in a crash • DTU-236: DtInpChannel::Equalise disable call did fail • DTU-238: ISDB-T statistics BER PRE-RS and PER where invalid • DTU-238/DTA-2138B: DVB-C2 relock on input signal stop and start was failing • DTU-315: Programing a license file using DtInfo did not succeed • DTU-315: Modulator output errors were seen in some cases • DTA-2137: Link margin statistic was not calculated correctly • DTA-2174: Internal genlocking error, caused 4K output issues

SDK version Aug2015	
Versions	DTAPI: v5.16.0.67 Drivers: Dta v4.14.4.203, DtaNw v3.5.1.29, Dtu v4.8.0.63 DtapiService: v3.0.3.50
Changes	New features: • Support for DTU-315 VHF/UHF/L-band modulator for USB-3 • Support for Visual Studio 2015 • Matrix API 2.0: Support for 4:2:0 (NV12 pixel format) • Matrix API 2.0: Support for parsing WSS from 625i signals • Matrix API 2.0: Support for parsing Line21 data from 525i signals • Matrix API 2.0: Support for parsing/generating Video Index data from SD signals Bug fixes: • Matrix API 2.0: performance improvements for 4K input + output (V210) • Matrix API 2.0: performance improvements for DTU-351 • Matrix API 2.0: Assert was seen for DTU-351 used in debug mode • Matrix API 2.0: SD audio parsing was resulting in a crash • Matrix API 2.0: callback was not called (with DT_FRMSTATUS_NO_SIGNAL) when there was no input present on startup • DTU-236/238: SpectrumScan was failing when start frequency was near the minimum frequency • DTU-236/238: SpectrumScan improvements for duration • DTU-351: DtDevice::DetectVidStd was not implemented • DTA-2131: RfLevel measurement was incorrect caused by latest DtapiService changes • DTA-2135: in some cases DtapiService crash was seen using T2Xpert • DTA-2138B: RfLevel was having an incorrect offset • DTA-160/2160: SDI over IP transmit was not working • DTA-2162: for Source Specific Multicast only IP address was configurable not the Port number • DTA-2152/2154/2174: Genref port was not configurable when a port has genlock=on configured • DTA-2152/2154/2174: driver was failing when configuration in the registry was invalid • DTA-2174: Genlock was not calibrated (a few lines offset) Linux only bug fixes: • DtaNw driver did not build on Linux kernels >= 3.16 • DtapiService did not install/start correctly on Ubuntu 15.04 • DtapiService was hanging when DtInpChannel:Detach() was called • AttachToPort failure was seen when using old SDK and new drivers

SDK version June2015	
Versions	DTAPI: v5.15.0.60 Drivers: Dta v4.14.0.194, DtaNw v3.5.0.28, Dtu v4.7.0.61 DtapiService: v3.0.1.46
Changes	New features: • Support for 3G level B. NOTE: requires DTA-2174 firmware version 3. • DTU-351 support for Linux • Added DtDevice::DetectVidStd() capable of detecting 4K video standards and link number • Added DtDevice::GetTemperature(), DtDevice::GetFanTemperature() is now deprecated Bug fixes: • Documentation for DtInputChannel::GetConstellationPoints() points ranges were incorrect. • DtInputChannel::SpectrumScan() for DTU-236A/DTU-238 was not working properly • DtDemodEvent DTAPI_EV_TUNE_FREQ_HAS_CHANGED was not triggered in some conditions • Matrix API 2.0: Possible corrupted audio was seen for SD signals • Matrix API 2.0: Wrong audio status bits for DtMxAudioChannelStatus:: GetPcmNumBits() • Matrix API 2.0: Invalid BCH was inserted for HD audio packets • Matrix API 2.0: Possible crash when DtMxRowConfig::m_Enable was set to false • DtSdiUtlity Table Of Contents size was too small • DTU-236A did report incorrect levels in some cases • DTU-238 did fail to lock in certain situations • DTA-2131: configuring more than two DTA-2131 units in one PC did result in an error • DTA-2154/DTA-2174: PSF input formats were not detected • DTA-2152/DTA-2154/DTA-2174: No data was received after some fast input switch conditions

SDK version May2015	
Versions	DTAPI: v5.14.0.56 Drivers: Dta v4.13.3.191, DtaNw v3.5.0.28, Dtu v4.6.1.59 DtapiService: v3.0.0.44
Changes	New features: • Support for the DTU-238 • New V3 DtapiService uses statistic caching to significantly improving speed of demodulator related DtInpChannel methods (e.g. GetStatistics or SetTunerFrequency) Bug fixes: • DTA-2115: crossing the 999↔1000Mhz and 1399↔1400Mhz frequency boundaries caused a discontinuity in the RF signal • DTA-2137: for DVB-S the PRE-VIT-BER was returning invalid • DTA-2154: arrival timestamps were assigned to wrong frame (one frame to late) • DTA-2154: Dta driver v4.13.0.180 introduced a backwards compatibility issue with firmware ≤V4 • DTE-3137: lost signal lock when a second application is monitoring statistics (only in DTAPI mode)

SDK version Apr2015	
Versions	DTAPI: v5.13.0.54 Drivers: Dta v4.13.0.180, DtaNw v3.5.0.28, Dtu v4.5.1.57 DtapiService: v2.2.15.39
Changes	New features: • Support for SMPTE ST2022-5/6 and ST2022-7, including support for seamless SDI over IP using DTA-2162 • Full support for SMPTE-2022-1-2007 FEC handling • Support for ISDB-S B15 format • Matrix API 2.0: support for v210 for 10-bit video (DT_PXFMT_V210) • Matrix API 2.0: m_DataFormat is removed in various structs, functionality now part of m_PixelFormat Bug fixes: • Matrix API 2.0: Audio input for 4K was not processed correctly • Matrix API 2.0: Deadlock on DtMxProcess:Stop() was seen in exceptional cases • Matrix API 2.0: Minimum end-to-end delay increased by 1 frame, default end-to-end delay increased by 2 frames. • Matrix API 2.0: Stability improvements especially on systems with a heavy CPU/memory load • IP RTP receive delay seen on switch of input streams • Possible race condition in IoConfig when set from multiple applications, for example on SDI IOSTD • DTA-2111: DVB-C symbolrate < 4MBaud did not work • DTA-2115: Undefined signal for frequency changes 999-1000MHz and 1399-1400MHz Windows only bug fixes: • DTAPINET: DtInpChannel::ReadFrame call was broken Linux only bug fixes: • Enumerating old dta driver was failing with error: DTAPI_E_DRIVER_INCOMP • Makefile order was incorrect Udev rules were not in proper location before module was loaded • Linking to DTAPI now needs the "-ldl" flag besides the already required "-lpthread" flag

SDK version Feb2015r2	
Versions	DTAPI: v5.12.0.51 Drivers: Dta v4.12.1.168, DtaNw v3.5.0.28, Dtu v4.5.0.56 DtapiService: v2.2.15.39
Changes	Hot Fixes: • DTA-2154 Rev 4: Fine-tuned FAN control settings to make sure FAN does not run faster than necessary for lower temperatures • DTA-160/2160/2162: FEC reconstruction logic did not restore all packets it could potentially repair

SDK version Feb2015	
Versions	DTAPI: v5.12.0.51 Drivers: Dta v4.12.0.165, DtaNw v3.5.0.28, Dtu v4.5.0.56 DtapiService: v2.2.15.39
Changes	New features: • Support for dual channel software modulation; new license available for DTA-2111/DTA-2115 • Support for HD-SDI Progressive Segmented Frame (PSF) formats. NOTE: requires latest firmware versions for DTA-2152 (V2) and DTA-2154 (V5) • Matrix API 2.0: RGB support • Support for DTA-2154 hardware revision 4.0 • GENREF IO-config no longer takes a reference video standard as par-extra0 • Matrix API 2.0: added a frame arrival timestamp to DtMxFrame • Support for DTA-2152 firmware version 2 and DTA-2154 firmware versions 4/5 Bug fixes: • Possible crash on older CPU's (that did not support SSE3) • LocalNIC 127.0.0.1 loopback did not work when IP cable was disconnected • Matrix API 2.0: The 3G-outputs in a 4K matrix row were not always in-sync with each other • Matrix API 2.0: Possible corruption of received ancillary data for 3G-SDI signals • Matrix API 2.0: Checksum was missing on DtMxFrame::AncGetPacket • Matrix API 2.0: Assert was seen when starting SDI output as 1080i59.94 • Matrix API 2.0: Improved performance of ancillary data generation • Matrix API 2.0: DtMxFrame::AncGetPacket failed for audio ancillary data • DtFrameBuffer::AncAddAudio/AncCommit was significantly slower for fractional SDI standards • DTAPI.NET was missing previous DTAPI changes, like DVB-S2x and DtDvbCidPars • 204 bytes DVB-S modulation resulted in incorrect TS-rate • DTA-2107: 204 bytes playout was failing (remark: TxMode MIN16 is required) • DTA-2115: DVB-S2X errors were generated for VCM stream with VLSNR and other modcods • DTA-2139: QAM-B tuning was sometimes failing for some high frequency signals • DTA-2152: Fixed genlock alignment, to ensure outputs are aligned within 1.5us of the genlock reference Windows only bug fixes: • On Windows XP, the DTAPI would crash (introduced in Nov2014 SDK release) • Memory usage was increasing slowly on multiple AttachToPort/DetachToPort actions Linux only bug fixes: • All threads in an application linking to the DTAPI were renamed "MX log thread"

SDK version Nov2014	
Versions	DTAPI: v5.11.0.49 Drivers: Dta v4.11.0.148, DtaNw v3.5.0.28, Dtu v4.4.16.55 DtapiService: v2.2.14.38
Changes	New features: • Support for the DTA-2174 (Quad 3G/HD-SDI / ASI Ports with Genlock Adapter) • DTAPI- Matrix 2.0: Matrix API 2.0 further abstracts from SDI interface implementation details and enables your application to concentrate solely on processing the video, audio and ancillary data. For example it can be used to easily build SMPTE-425-5 compliant 4K input/output applications using the DTA-2174. • DTA-2115: Support for DVB carrier identification for satellite using DtOutpChannel::SetModControl(DtDvbCidPars) Bug fixes: • Local NIC did not report errors like DTAPI_NO_LINK • DTAPINET was missing new SMPTE ST 2022-7 functions • DTAPI_RXMODE_IPRAW was failing for non MPEG 192 bytes packets • DtInpChannel::RegisterDemodCallback in some cases failed for slow PC's • Constant audible crack when embedding audio into a XXXp59.94 SDI standard • DTA-160: Windows Sleep/Hibernate for some PC's resulted in a BSOD • DTA-2115: DVB-S2X modulation for 32-APSK 32/45 short frames was incorrect • DTA-2115: DVB-S2X modulation for VLSNR BPSK was incorrect • DTA-2131: DtAdvDemod MER and Impulse Response was incorrect for second MISO channel • DTA-2131: DVB-C2 demodulator tuning to signal with 32MHz was failing • DTA-2131: DVB-C2 reception of a G/I=128 configuration was not error free

SDK version Oct2014	
Versions	DTAPI: v5.10.0.46 Drivers: Dta v4.10.0.144, DtaNw v3.5.0.28, Dtu v4.4.16.55 DtapiService: v2.2.13.37
Changes	New features: • Support for SMPTE ST 2022-7 'Seamless Protection Switching' using the DTA-2162 • Support for all possible number of FEC rows and FEC columns (before only the SMPTE specified) • Support for block aligned FEC generation using DTAPI_FEC_2D_M1_B and DTAPI_FEC_2D_M2_B • DTA-2138B support; upgraded demodulator includes ISDB-T and T2 lite (DVB-T2 v1.3.1) support • DTA-2144B support Bug fixes: • Fractional SDI video standards did not contain the correct amount of audio samples in their output • DTA-2137: Calling SetTunerFrequency() twice on same frequency in some cases stopped the receiver • DTA-2115: DVB-S2X performance issue was seen on some new PC's Linux only bug fixes: • DTA-2154: Possible driver crash on application exit • DTA-2160: Possible failing network port attach for Ubuntu 3.11

SDK version Sep2014	
Versions	DTAPI: v5.9.0.45 Drivers: Dta v4.9.1.142, DtaNw v3.5.0.28, Dtu v4.4.15.54 DtapiService: v2.2.12.36
Changes	New features: • Support for 20%, 25% roll-off for DVB-S modulation • DTA-2131: DAB Transmitter ID support • AncPacket class extended with m_LineNumber field Note: Line parameter removed from DtFrameBuffer::AncAddPacket old interface of AncAddPacket is marked as deprecated and will be removed in a future release Bug fixes: • Dta crash could occur on application exit • T2-MI input stream was not correctly modulated when IL-Type = 1 • T2-MI output through a virtual port was not working for DTA-2111 and DTU-215 • Registration for DT_EVENT_TYPE_GENLOCK did trigger an assert • DtAdvDemod: For DVB-C2 all opened streams were closed on SetTunerFrequency() • DtAdvDemod: Virtual input support did not work correctly • DtAdvDemod: Did return DTAPI_OK on AttachToPort() when port was already in use • DTU-351: Calling DtFrameBuffer::AncGet* twice with the same frame number caused an DTAPI error • DTA-2115: DVB-T2 single PLP was not working without DVB-T2 (multiPLP) license • DTA-2115: DVB-S, DVB-S2 and QAM levels were not correct • DTA-2152: Genlock was misaligned for several formats (720p50 does still have misalignment) • DTA-2154: Configuring port 4 as double-buffered from port 3 was no possible • DTA-160/2160: A zero in a multicast address was treated as a wildcard Linux only bug fixes: • IP V6 support was not working correctly

SDK version June2014	
Versions	DTAPI: v5.8.0.43 Drivers: Dta v4.9.0.140, DtaNw v3.5.0.28, Dtu v4.4.14.53 DtapiService: v2.2.12.36
Changes	New features: • Initial support for the DTA-2174 (Quad 3G/HD-SDI / ASI Ports with Genlock Adapter) • Support for runtime changes to channel modelling settings (i.e. no need to stop modulation anymore) • Support for extra option to force link IP speed to 1Gbps • Support for DVB-S2 16/32-APSK constellation shape configuration • DTA-2115: Optimized DMA performance, so that card can be used in PCIe gen2 slots at maximum sample rates • DTA-2154: Reduced time needed to achieve genlock • DTA-2154: Support for ancillary data checksum inserter Bug fixes: • HyperV installation did result in a DTAPI_E_NW_DRIVER error for DTA-160/2160/2162 • Spectral inversion was enabled by default for DVB-S2 / ISDB-S (introduced in Apr2014 SDK)) • VLAN for Windows 8.1 did not function correctly due to administrator right changes • Audio control packets were not added for embedded audio in HD SDI streams • DTA-2115: Shoulder attenuation was not according specification for OFDM signals • DTA-2115: Non-default bitrates for ISDB-T were not accepted • DTA-2115: DVB-S2X dummy frames were incorrect • DTA-2115: DVB-S2X 16-APSK-L:5/9,8/15,1/2 did not create a correct signal • DTA-2144: Driver did crash after driver/PC restart when a genref was configured • DTA-2154: GetStatus(AsiLock) did always return 0 Non-backwards compatible API change (<u>a code change might be required!</u>): • Buffers used for DtFrameBuffer and DtSdiMatrix must now have their addresses aligned at a 32-byte boundary (instead of 8-byte boundary) and their sizes must be a multiple of 32 bytes (instead of 8 bytes). • DTE-3137: RF level statistic was incorrectly using dBm unit, now using dBmV. Also statistic for MER was incorrect. Spectral Inversion, Link Margin, Es/N0 and Eb/N0 statistics are added (similar statistic support like DTA-2137) Linux only bug fixes: • Dta driver did not compile for Linux kernel versions >= 3.13 • DTA-2160 network port did not function for a network configurations were only 2 interfaces descriptions were found

SDK version Apr2014	
Versions	DTAPI: v5.7.0.41 Drivers: Dta v4.8.0.121, DtaNw v3.4.6.27, Dtu v4.4.13.52 DtapiService: v2.2.11.35
Changes	New features: • Support for DTA-2115 (All-Standard, All-Band Modulator) including DVB-S2x modulation • SDK support for Visual Studio 2013 (VC12) • Support for non-exclusive attaching to input channels, to allow read-only access to port status parameters. NOTE: this is not supported for all input types • Support for DTAPI_STAT_SPECTRUMINV statistic for DTA-2136 Bug fixes: • In some cases invalid DVB-T2 GSE packets were sent • Matrix API did not embed audio ANC packets in switching lines • DtInpChannel::SetIpPars crashed when unicast addresses were specified in combination with seamless protection mode • DTA-2152/2154: Driver did crash when IO Standard for GenRef port was set to SD-SDI • DTA-2154: Analog genlock did not work • DTA-2162: On high network transmit load the non real-time transmit stalled Linux only bug fixes: • DTA-2154 ASI input did not work • DtapiGetDeviceDriverVersion(DTU) did return DTAPI_OK when no DTUs were present

SDK version Feb2014	
Versions	DTAPI: v5.6.0.40 Drivers: Dta v4.7.4.107, DtaNw v3.4.5.26, Dtu v4.4.11.50 DtapiService: v2.2.10.34
Changes	New features: • DTA-2131: added Advanced demodulation API support for DVB-T2/DVB-C2 BBframes • DTA-2131: added Advanced demodulation API support for GSE using DVB-T2 • GSE support added for DVB-T2 modulation • ISDB-Tmm support added for DTA-115,116, DTU-215 (only < 13 segments, DTA-2111 can do all) • Matrix API support for 24 and 32 bit PCM SDI audio added • Matrix API support for timestamps in DtFrameBuffer::GetFrameInfo added • Device temperature and fan-speed support added in DtDevice for DTA-2139, DTA-2154 • Now making use of Visual Studio generated _WIN64 and _WIN32 defines for DTAPI.H Bug fixes: • For Windows 8.1 adding a VLAN did not succeed • DVB-T/H was not correctly modulated/demodulated when using 2k in-depth interleaving • DtapDeviceScan order of devices returned was changed in Oct2013 release, changes reverted and optional parameter added for serial number sorting • DTU-351: SD SDI reception did result in lost frames • DTA-2131: Possible crash on detach of DVB-C2/T2 demodulator; introduced in Dec2013 release • DTA-2136: Packet loss on Port 2 when tuning port 1 and shared antenna mode was active • DTA-2137: VCM lock issue on low SNR; mute mechanism introduced using DtDemodParsDvbS2Adv • DTA-2154: Auto detect failed to detect standard of HD signals when port was configured for SD-SDI operation New Linux features: • Added ini file mechanism which specifies the default IO-configuration values for a card