DekTec SDK

REVISION HISTORY

SDK

April 2016

DekTec SDK Revision History

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 dis-continuity 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 (a code change might be required!): • 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