

D750 AEON Transmitter Interface PCB

Version 5.2.0
03 March 2020

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Change History

Version	Main Changes from Previous Version	Released By
4.0.1	Initial release supporting TX mode with B110 v1.1.	RL
4.1.2	Major bug fixes after initial release, genlock support, inclusion of B110 v1.3b6.	RL
4.2.1	Extra delay mode, improved decoder automation, bug fixes, inclusion of B110 v1.3.	RL
4.3.9	Aeon Quad mode enabled, Read b110 license, Upload license (two in one), Upload upgrade file (two in one), Enable the second audio channel.	AOA
4.4.1	Enabled encoding modes, added quad sync setting to display	AOA
5.2.0	Add 8 channel embedded audio	WH

Introduction

This document describes to the reader the key features, improvements, known issues and bug fixes implemented in the software for the AEON (D750 based) Transmitter range.

The document will be up issued with every software release and as such gives a traceable history in a single document.

It is DTC's intention to continue to use one version of software for all of its AEON (D750 based) Transmitter variants. Certain features will only be active where the required hardware is present in certain designs. These dependencies will be highlighted throughout.

For all current AEON Transmitters it is possible to upgrade the unit with a two software file. One which will be named with the version number for the D750, and one for the B110 HEVC encoder.

Upgrade procedures are covered in separate documentation available on request from solent.support@domotactical.com

Software Releases

Version 4.0.1

File Names

- d750_v4.0.1.tar.zz (software upgrade)
- d750_v4.0.1_atmel.tar.zz (production front panel programming package)
- d750_v4.0.1_boot.tar.zz (production SD card programming package)
- b110_v1.1.tar (compatible encoder upgrade)

Compatibility

- Requires an AEON Decoder for HEVC decode and SDI output.
Recommended AEON-DEC at v1.1+.

New features

- [\[ENGV4KTX-27\]](#) - Support D750 in SDR TX mode
Standard 6MHz / 7MHz / 8MHz DVB-T modulation.
Dual pedestal 6MHz / 7MHz / 8MHz DVB-T modulation.
Requires Pro-RXD at v2.4+ or Pro-RXB at v2.0+ or Pro-RX at v2.0+.
Domo 6MHz / 7MHz / 8MHz wideband modulation.
Requires Pro-RXD at v1.0+ or Pro-RXB at v1.6+.
Domo 2.5MHz / 1.25MHz / 625kHz narrowband modulation.
- [\[ENGV4KTX-7\]](#) - Dual-band 1980-2700MHz and 6400-7500MHz
1x 200mW transmitter covering 6400-7500MHz
2x 100mW transmitters/receivers covering 1980-2700MHz
- [\[ENGV4KTX-30\]](#) - SDI standards conversion
12G-SDI is supported on SDI input 1. This gets demuxed internally the status for which can be viewed on the WUI.
Dual 6G-SDI is supported on SDI inputs 1 and 3. This gets demuxed internally the status for which can be viewed on the WUI.
Quad 3G-SDI is supported on SDI inputs 1 to 4. These get passed straight to the HEVC encoder.
Single 3G/HD/SD-SDI are supported on SDI input 1.
Compatible SFP modules can be used as an alternative to 12G-SDI capable SDI inputs 1 or 3. Supports modules designed for dual 12G-SDI host with non-MSA pinout.
- [\[ENGV4KTX-31\]](#) - ASI input/output

- [\[ENGV4KTX-1\]](#) - 4K capable HEVC encoder

Supports most standard broadcast resolutions from 480/576i up to 2160p60. 4:2:2 or 4:2:0 encoding, 10 or 8 bit.

4K inputs can be provided in either 2-SI or SQ mode, over either Level A or Level B type SDI interfaces.

Enhancements

- None.

Bug Fixes

- None.

Known Issues

- [\[ENGV4KTX-28\]](#) - Support D750 in SDR Mesh mode
Functionality in place but with minimum testing in this release.
- [\[ENGV4KTX-76\]](#) - Menu structure tidy-up
Front panel menu structure contains every option, some of which will not be relevant to current mode.
- [\[ENGV4KTX-89\]](#) - Second audio input not functional
Future functionality.
- [\[ENGV4KTX-90\]](#) - Reliability issues with 1080i
Avoid using until next release.
- [\[ENGV4KTX-91\]](#) - Data channel not functional
Future functionality.
- [\[ENGV4KTX-92\]](#) - Camera interfaces not functional
Future functionality.
- [\[SOLO8TX-98\]](#) - DVB-T modulator is bitrate limited
Several high bitrate combinations are currently not supported. All other combinations are functional and this doesn't affect dual pedestal mode.
 - 64QAM - 3/4 FEC - 1/32 guard interval
 - 64QAM - 5/6 FEC - 1/32, 1/16 or 1/8 guard interval
 - 64QAM - 7/8 FEC - 1/32, 1/16 or 1/8 guard interval

Related documents

- None.

Version 4.1.2

File Names

- d750_v4.1.2.tar.zz (software upgrade)
- d750_v4.1.2_boot.tar.zz (production SD card programming package)
- b110_v1.3b6_std.tar (for AEON-DEC with early PCBs or AEON-TX/ENC)
- b110_v1.3b6_fast.tar (for AEON-DEC with new PCBs)

Compatibility

- Requires an AEON Decoder for HEVC decode and SDI output.
Recommended AEON-DEC at v1.3b6+.
- [\[ENGV4KTX-77\]](#) - Issues with ARRI AMIRA

Issues seen with older hardware on ARRI AMIRA with dual 6G-SDI output. Ensure your ARRI AMIRA hardware has been updated appropriately.

New features

None.

Enhancements

- [\[ENGV4KTX-76\]](#) - Menu structure tidy-up

Implemented simple front panel menu structure similar to SOL7OBTX
- [\[ENGV4KTX-77\]](#) - Support single 12G/6G-SDI input on SDI 3

Previously only on SDI 1, now automatic between SDI 1 or SDI 3. Same with SFP modules, either input could be used for 12G-SDI.
- [\[ENGV4KTX-95\]](#) - User friendly upgrade method for B110

HEVC upgrade option added to Uploads page on web interface. This can be used to load B110 upgrade files.

Bug Fixes

- [\[ENGV4KTX-86\]](#) - CRC errors with 12G-SDI input

Improvements made to reliability of 12G-SDI single path.
- [\[ENGV4KTX-90\]](#) - Known bug list with B110 v1.1 release

Bug fixes to embedded audio on HD-SDI inputs, video lock detection, 1080i support and some decoder issues at 59/60 frame rates.

Adds missing genlock functionality. Note that early decoder PCBs will not function correctly at 59/60 frame rates and may need to be returned for swap out.
- [\[ENGV4KTX-97\]](#) - Unit fails to get IP address

Issue fixed where configuration of the B110 could get corrupt.

- [\[ENGV4KTX-98\]](#) - Decoder has fixed PCR PID of 257
Front panel control of the PCR PID now functions correctly.
- [\[ENGV4KTX-102\]](#) - Missing 2SI vs SQD option
- There are now two 2160p format options. One for Two Sample Interleave, and one for Square Division.

Known Issues

- [\[ENGV4KTX-28\]](#) - Support D750 in SDR Mesh mode
Functionality in place but with minimum testing in this release.
- [\[ENGV4KTX-89\]](#) - Second audio input not functional
Future functionality.
- [\[ENGV4KTX-91\]](#) - Data channel not functional
Future functionality.
- [\[ENGV4KTX-92\]](#) - Camera interfaces not functional
Future functionality.
- [\[ENGV4KTX-103\]](#) - No support for PSF video formats
Future functionality.
- [\[SOLO8TX-98\]](#) - DVB-T modulator is bitrate limited

Related documents

- None.

Version 4.2.1

File Names

- d750_v4.2.1.tar.zz (software upgrade)
- d750_v4.2.1_boot.tar.zz (production SD card programming package)
- b110_v1.3_enc_std.tar (for AEON-TX)
- b110_v1.3_dec_std.tar (for AEON-DEC with early PCBs)
- b110_v1.3_dec_fast.tar (for AEON-DEC with new PCBs)

Compatibility

- Requires an AEON Decoder for HEVC decode and SDI output.
Recommended AEON-DEC at v1.3+.
- [\[ENGV4KTX-112\]](#) - Cameras with high inrush current

Issues seen with some Sony cameras which take around 30A on boot. This trips the 8A pass-through current protection. If support for higher inrush current is required a hardware modification is available.

New features

- [\[ENGV4KTX-104\]](#) - New decoder features

Automatic service detection based on program number is now available on the decoder.

Output format has now changed to default output format for power up, output format is now detected automatically.

Added audio level meters for monitoring decoded audio channels.
- [\[ENGV4KTX-105\]](#) - Changes to encoder delay mode

There are now three delay modes. Ultra Low Delay replaces what was previously Low Delay. The new Low Delay mode is a compromise between Normal and Ultra Low in terms of latency and picture quality.

Ensure both encoder and decoder are set to the same mode for optimum performance.
- [\[ENGV4KTX-105\]](#) - Pass-through overcurrent trip status

Alarm flags page added to AEON-TX front panel. This includes pass-through overcurrent trip status which can also now be found on the WUI. This gets set when the camera plate draws too much current.

Enhancements

- [\[ENGV4KTX-76\]](#) - Menu structure tidy-up

Streamer and recording options added to AEON-TX front panel menu.

Bug Fixes

- [\[ENGV4KTX-108\]](#) - Embedded audio validity bit inverted

Embedded audio on the decoder output was being incorrectly flagged causing some equipment not to acknowledge the presence of audio channels.

- [\[ENGV4KTX-111\]](#) - PCR recovery not working if same PID as video

PCR PID is no longer allowed to be the same as the video PID. Be aware this is automatically checked and limited so past configurations may change on upgrade.

Known Issues

- [\[ENGV4KTX-28\]](#) - Unit fails HEVC upgrade or boot whilst streaming

Some units have shown issues where the HEVC upgrade fails to complete, or the HEVC encoder fails to completely boot whilst streaming at high bitrates. It's advisable to disable streaming before upgrading, or if a boot issue occurs. This can be done via the WUI or AEON-TX front panel.

- [\[ENGV4KTX-28\]](#) - Support D750 in SDR Mesh mode
Functionality in place but with minimum testing in this release.
- [\[ENGV4KTX-89\]](#) - Second audio input not functional
Will be available on next release.
- [\[ENGV4KTX-91\]](#) - Data channel not functional
Future functionality.
- [\[ENGV4KTX-92\]](#) - Camera interfaces not functional
Future functionality.
- [\[ENGV4KTX-103\]](#) - No support for PSF video formats
Future functionality.
- [\[SOLO8TX-98\]](#) - DVB-T modulator is bitrate limited

Related documents

- None.

Version 4.3.9

File Names

- d750_v4.3.9.tar.zz (software upgrade)
- d750_v4.3.9_boot.tar (production SD card programming package)
- b110_update_v1.5.1.tar

Compatibility

Requires an AEON Decoder for HEVC decode and SDI output.
Recommended AEON-DEC at v1.5+.

New features

- [\[ENGV4KTX-89\]](#) - Second audio input not functional
- Aeon Quad mode

Enhancements

- Upload tab upgrade supports all upgrade formats
- Upload tab license supports all license formats
- Display licenced modules on the Information tab

Bug Fixes

Known Issues

- [\[ENGV4KTX-28\]](#) - Unit fails HEVC upgrade or boot whilst streaming

Some units have shown issues where the HEVC upgrade fails to complete, or the HEVC encoder fails to completely boot whilst streaming at high bitrates. It's advisable to disable streaming before upgrading, or if a boot issue occurs. This can be done via the WUI or AEON-TX front panel.

- [\[ENGV4KTX-28\]](#) - Support D750 in SDR Mesh mode
Functionality in place but with minimum testing in this release.
- [\[ENGV4KTX-91\]](#) - Data channel not functional
Future functionality.
- [\[ENGV4KTX-92\]](#) - Camera interfaces not functional
Future functionality.
- [\[SOLO8TX-98\]](#) - DVB-T modulator is bitrate limited

Related documents

- None.

Version 4.4.1

File Names

- d750_v4.4.1.tar.zz (software upgrade)
- d750_v4.4.1_boot.tar (production SD card programming package)
- b110_update_v1.5.1.tar

Compatibility

Requires an AEON Decoder for HEVC decode and SDI output.
Recommended AEON-DEC at v1.5+.

New features

- [\[ENGV4KTX-131\]](#) - Select H.264/MPEG2 on the web page and the Front panel
- [\[ENGV4KTX-130\]](#) - Allow the Aeon Quad and Single mode available on the front panel Quad mode

Enhancements

Bug Fixes

- [\[ENGV4KTX-122\]](#) – Front panel right audio power was controlling left, typo.

Known Issues

- [\[ENGV4KTX-28\]](#) - Unit fails HEVC upgrade or boot whilst streaming

Some units have shown issues where the HEVC upgrade fails to complete, or the HEVC encoder fails to completely boot whilst streaming at high bitrates. It's advisable to disable streaming before upgrading, or if a boot issue occurs. This can be done via the WUI or AEON-TX front panel.

- [\[ENGV4KTX-28\]](#) - Support D750 in SDR Mesh mode
Functionality in place but with minimum testing in this release.
- [\[ENGV4KTX-91\]](#) - Data channel not functional
Future functionality.
- [\[ENGV4KTX-92\]](#) - Camera interfaces not functional
Future functionality.
- [\[SOLO8TX-98\]](#) - DVB-T modulator is bitrate limited

Related documents

- None.

Version 5.2.0

File Names

- d750_v5.2.0.tar.zz (software upgrade)
- d750_v5.2.0_boot.tar (production SD card programming package)
- b110_update_v1.8.0.tar

Compatibility

Requires an AEON Decoder for HEVC decode and SDI output.
Recommended AEON-DEC at v1.5+.

New features

- [[ENGV4KTX-138](#)] – Support 8 pairs of audio channels from SDI 1 to 4.
- [[ENGV4KTX-91](#)] - Data channel functionality support.
- Ancillary channel functionality support.

Enhancements

Bug Fixes

- [[QUAL-13989](#)] – restrict the SDR menu options on the Aeon TX front panel.
- Remove Key fob support
- Remove Telemetry functionality
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Known Issues

- [[ENGV4KTX-28](#)] - Unit fails HEVC upgrade or boot whilst streaming

Some units have shown issues where the HEVC upgrade fails to complete, or the HEVC encoder fails to completely boot whilst streaming at high bitrates. It's advisable to disable streaming before upgrading, or if a boot issue occurs. This can be done via the WUI or AEON-TX front panel.
- [[ENGV4KTX-28](#)] - Support D750 in SDR Mesh mode
Functionality in place but with minimum testing in this release.
- [[ENGV4KTX-92](#)] - Camera interfaces not functional
Future functionality.

Related documents

- None.