

Aligo

4K AV over IP



INTRODUCING ALIGO – INTELLIGENT AVOIP

Aligo, Datapath's suite of AVoIP transmitters and receivers provide pristine quality content across a 10G network. Deliver critical, visual, information from production, SCADA and other vital systems to endpoints in and around the control room environment with sub-millisecond latency.

The Aligo range of transmitters allow 4K or HD content to be ingested into a private, AES 128-bit secured network for delivery to Aligo receivers. The Aligo receivers can then be attached directly to a screen, a video wall controller or an Aetria Workstation for instant display. Intelligent distribution comes with the inclusion of both the Aligo stream and encrypted low-bandwidth SQX stream for each connected input. This ensures content is delivered to the right place at the right time even if resources are already being consumed.

The Aligo range has been designed for use within Datapath's Aetria environment but can also be used for non-switched, point to point connections, in Direct Connect mode transmitters are connected directly to receivers using fibre cables to provide a plug and play solution for high quality video extension. Direct Connect mode is automatically detected making set up quick and easy.

FEATURES

- **Pristine Quality 4K60 Content** - Every source is provided as a visually lossless stream with sub-millisecond latency over a dedicated 10G network.
- **Easy 4K Content Distribution** - Direct Connect mode allows content to be transmitted point-to-point with zero configuration.
- **Optimized for Aetria** - Aligo appliances can be fully managed and controlled as part of an Aetria control room installation alongside any video walls and operator workstations.
- **Flexible Distribution with Simultaneous SQX Streams** - Each source is provided as a low-bandwidth SQX stream for redistribution over the Aetria network to endpoints that do not have Aligo receivers.

Engineering the **world's best** visual solutions

**DATAPATH**
EXCELLENCE BY DESIGN

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PRISTINE QUALITY WITH DS10G

Aligo's primary 10G channel delivers content using Datapath's proprietary DS10G codec.

- **Engineered for pro-AV applications:** Purpose built for use in professional, mission-critical installations.
- **Quality without compromise:** DS10G delivers visually lossless content, with zero-latency 4K60 intra-frame encoding, optimised for switched distribution over 10Gb networks.
- **Built by Datapath:** Benefitting from decades of video management and processing experience, DS10G has best-in-class signal acquisition, EDID handling, genlocking and mode management.
- **Reliability by design:** Designed for critical applications, DS10G has built-in resilience against bit errors, jitter and dropped packets.

SIMULTANEOUS LIVE STREAMS

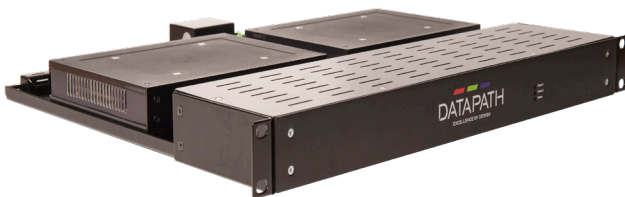
Aligo's secondary 1G channel provides a compressed, secure live stream of every input.

- **Flexible distribution over 1G:** Every input is provided as an SQX Livestream encoded as AVC (H.264/H.265). This stream can be delivered over the 10G or 1G network.
- **Security first:** Encrypted streams are received only by legitimate users and decoded by pre-authenticated Datapath resources.

RACK MOUNT KITS

Datapath's 6U and 1U rack mount kits can support multiple Aligo RX100 or TX100 units. The 6U rack supports 10 Aligo TX100/RX100s & the 1U is for dual units. The rack mount kits:

- are made from high quality and robust steel construction.
- contain dual internal independent power supplies with full redundancy (load sharing).
- have PSU failure signalling to external environment monitoring equipment..
- and have cable management provided via rear cable clamps.



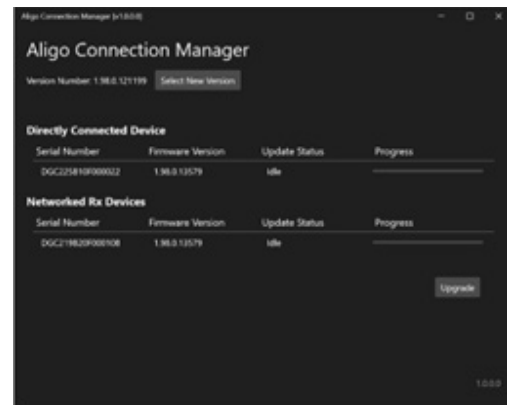
NO COMPROMISE STREAM MANAGEMENT

- Aligo always transmits sources to endpoint in the highest possible resolution. Endpoints that do not support 4K can receive an HD Version of a 4K source whilst other endpoints still receive the full 4K.
- With a TX100 the 10G link can be used to transport 4 independent HD streams anywhere on the network. An RX100 can then receive any 4K or 4 x HD sources from any transmitter(s) on the network.
- All streams are genlocked to source, maintaining their suitability for IP based video walls.
- AES bitstream encryption is maintained for all primary DS10G and secondary SQX streams.

Datapath's DS10G codec allows a number of options for the flexible routing of video streams when handling mixed HD and 4K sources and displays. It allows customers to comfortably future-proof their project designs by catering for 4K sources and displays whilst still handling HD endpoints. This is done by minimizing the number of network switch ports required without ever compromising quality in any scenario.

ALIGO CONNECTION MANAGER

The Aligo Connection Manager app provides a simple tool for identifying, managing, and updating Aligo transmitter and receiver devices used in Direct Connect mode.



4K AV over IP

QTX100

Quad 4K Transmitter with SQX Encoding

- Connects up to four HDMI 2.0 inputs (4K60) to your 10G AV network. Can be used in conjunction with a VSN controller to distribute up to 16 independent HD outputs per unit.
- On-board SQX encoding enables compressed content to be sent over the 10G or 1G network.
- Low latency KVM is supported for each source via the onboard USB HID interfaces.



SPECIFICATION QTX100

INPUT CONNECTIONS

4 x HDMI 2.0

HDCP SUPPORT

HDCP v2.2

HDMI PIXEL CLOCK MAXIMUM

600MHz @ 8-bit 4:4:4

HDMI PIXEL CLOCK MINIMUM

25MHz

TYPICAL RESOLUTIONS, HD STREAM

Up to 150Mpixels/sec, maximum line length 2048

Examples:

1920 x 1080p at 60Hz (SMPTE timings)

1920 x 1200p at 60Hz (CVT-Reduced Blanking)

2048 x 1080p at 60Hz (CVT-Reduced Blanking)

TYPICAL RESOLUTIONS, 4K STREAM

Up to 600Mpixels/sec, maximum line length

4096

Examples:

3840 x 2160p at 60Hz (SMPTE timings)

4096 x 2160p at 60Hz (CVT-Reduced Blanking)

SCANTYPE

Progressive. Interlaced video not supported

VIDEO SAMPLING FORMATS

[1] – 10,12-bit modes coming soon

RGB 8-bit, RGB 10-bit[1], YCbCr 4:4:4 8-bit, YCbCr

4:4:4 10-bit[1], YCbCr 4:2:2 12-bit [1], YCbCr

4:2:0[1]

STREAMING CODECS AND PROFILES

DS10G by Datapath (visually lossless & low latency over 10Gb network)

Additional H.264/H.265 SQX streaming at source resolution for each port

NETWORK CONNECTIONS

4x 10Gb SFP+ Fiber ports (Lossless streaming interface), Note: Compatible 850nm multi-mode SFP modules are available as a separate accessory

1x 1Gb RJ45 (Control/Management port)

1x 1Gb RJ45 (Media port for SQX streaming)

MULTICAST STREAMING SUPPORT

Each source is available at any number of displays in parallel. Requires IGMPv2 enabled at network switch

AUDIO SUPPORT

Transmit stereo HDMI embedded audio for each input independently routable to multiple sinks. The embedded audio consists of up to four channel pairs encoded in PCM format, up to 96KHz sampling.

KVM SUPPORT

4 x Type-B USB host ports for connecting to a USB host PC

HID device support (keyboard, mouse etc.) independently routable to sink

POWER CONSUMPTION

35W

MECHANICAL

318mm (l) x 176mm (w) x 43mm (h)

WEIGHT

1.8kg

RELATIVE HUMIDITY

5%-90% non-condensing

4K AV over IP

TX100

Single 4K Transmitter with Quad HD Inputs and SQX Encoding

- Single HDMI 2.0 and 3 x HDMI 1.4 inputs supporting a single 4K input or 4 x HD inputs.
- Supports loop through for local monitoring of a 4K workstation
- On-board SQX encoding enables compressed content to be sent to a 1G network
- Low latency KVM is supported for each source via the onboard USB 2.0 interfaces



SPECIFICATION TX100

INPUT CONNECTIONS

4 x HDMI 1 x 2.0, 3. X 1.4
Supports single 4K input or 4 x HD inputs

HDCP SUPPORT

HDCP v2.2 or v1.4 (input 1), HDCP 1.4 only (inputs 2-4)

HDMI PIXEL CLOCK MAXIMUM

600MHz @ 8bit 4:4:4 (Input 1)
150MHz @ 8bit 4:4:4 (Inputs 2-4)

HDMI PIXEL CLOCK MINIMUM

25MHz

TYPICAL RESOLUTIONS, HD STREAM

Up to 150Mpixels/sec, maximum line length 2048
Examples:
1920 x 1080p at 60Hz (SMPTE timings)
1920 x 1200p at 60Hz (CVT-Reduced Blanking)
2048 x 1080p at 60Hz (CVT-Reduced Blanking)

TYPICAL RESOLUTIONS, 4K STREAM

Up to 600Mpixels/sec, maximum line length 4096
Examples:
3840 x 2160p at 60Hz (SMPTE timings)
4096 x 2160p at 60Hz (CVT-Reduced Blanking)

SCAN TYPE

Progressive. Interlaced video not supported

VIDEO SAMPLING FORMATS

[1] – 10,12-bit modes coming soon
RGB 8-bit, RGB 10-bit[1], YCbCr 4:4:4 8-bit, YCbCr 4:4:4 10-bit[1], YCbCr 4:2:2 12-bit [1], YCbCr 4:2:0[1]

STREAMING CODECS AND PROFILES

DS10G by Datapath (visually lossless & low latency over 10Gb network)
Additional H.264/H.265 SQX streaming at source resolution for each port

NETWORK CONNECTIONS

1x 10Gb SFP+ Fiber ports (Lossless streaming interface), Note: Compatible 850nm multi-mode SFP modules are available as a separate accessory
1x 1Gb RJ45 (Control/Management/Streaming port)

MULTICAST STREAMING SUPPORT

Each source is available at any number of displays in parallel. Requires IGMPv2 enabled at network switch

AUDIO SUPPORT

Transmit stereo HDMI embedded audio for each input independently routable to multiple sinks. The embedded audio consists of up to four channel pairs encoded in PCM format, up to 96KHz sampling.

KVM SUPPORT

4 x Type-B USB host ports for connecting to a USB host PC
HID device support (keyboard, mouse etc.) independently routable to sink

POWER CONSUMPTION

19W : 4 HD In, HD Loop out, 10G, 1G and USB ports active
17W : 4k In, 4k loop out, 10G, 1G and USB ports active

MECHANICAL

205mm (l) x 162mm (w) x 34mm (h)

WEIGHT

1kg

RELATIVE HUMIDITY

5%-90% non-condensing

The TX100 in a 1U rack mount kit will require 2U of rack space to accommodate effective cable management.

4K AV over IP

RX100

Single 4K Receiver with Quad HD Outputs

- Receives either a single 4K or four independent HD feeds.
- VESA mountable behind a screen or desk mountable for use as a remote access station (thin client).
- Keyboard and mouse connectivity is supported for KVM control of sources via the onboard USB 2.0 interfaces.



SPECIFICATION RX100

OUTPUT CONNECTIONS

1 x HDMI 2.0, 3 x HDMI 1.4 full size connectors

HDCP SUPPORT

HDCP v2.2, HDCP v1.4

HDMI PIXEL CLOCK MAXIMUM

600MHz (output 1), 165MHz (outputs 2-4)

HDMI PIXEL CLOCK MINIMUM

25MHz

TYPICAL RESOLUTIONS, HD STREAM

Up to 150Mpixels/sec, maximum line length 2048

Examples:

1920 x 1080p at 60Hz (SMPTE timings)

1920 x 1200p at 60Hz (CVT-Reduced Blanking)

2048 x 1080p at 60Hz (CVT-Reduced Blanking)

TYPICAL RESOLUTIONS, 4K STREAM

Up to 600Mpixels/sec, maximum line length

4096

Examples:

3840 x 2160p at 60Hz (SMPTE timings)

4096 x 2160p at 60Hz (CVT-Reduced Blanking)

STREAMING MODES

Single 10Gb network receiver up to 600MPixels/sec

Receive 4K image and display on HDMI2.0 output 1

or

Up to four HD independent streams received and displayed on four HD outputs.

SCAN TYPE

Progressive. Interlaced video not supported.

VIDEO SAMPLING FORMATS

[1] – 10,12-bit modes coming soon

RGB 8-bit, RGB 10-bit[1], YCbCr 4:4:4 8-bit, YCbCr 4:4:4 10-bit[1], YCbCr 4:2:2 12-bit, YCbCr 4:2:0[1]

STREAMING CODECS AND PROFILES

DS10G by Datapath (visually lossless & low latency over 10Gb network)

Additional H.264/H.265 SQX streaming at source resolution for each port

NETWORK CONNECTIONS

1 x 10Gb SFP+ Fiber port (Lossless streaming interface), Note: Compatible 850nm multi-mode SFP modules are available as a separate accessory.

x 1Gb RJ45 (Management port)

MULTICAST STREAMING SUPPORT

Each source is available at any number of displays in parallel. Requires IGMPv2 enabled at network switch

AUDIO SUPPORT

Receive embedded HDMI audio and outputs all channel pairs to display via HDMI cable.

One selectable channel pair routable to the analog line level jack output.

KVM SUPPORT

2 x Type-A USB client ports for connecting HID devices (keyboard, mouse etc.) independently routable to sink

POWER CONSUMPTION

15W

MECHANICAL

205 x 162 x 34 mm, VESA mounting holes for mounting behind a screen

Feet included for desktop mounting.

WEIGHT

1kg

RELATIVE HUMIDITY

5%-90% non-condensing

Datapath recommend using Premium Certified cables no more than 3m / 10ft in length. Cables over these lengths may not be supported.

4K AV over IP

MODELS AVAILABLE

- Order code: ALIGORX100-1 (Aligo RX100 - With PSU. Single AVoIP receiver with four HDMI outputs)
- Order code: ALIGORX100-2 (Aligo RX100 - No PSU. Single AVoIP receiver with four HDMI outputs)
- Order code: ALIGOQTX100-UK (Aligo QTX100 - Internal PSU. UK mains cable. Quad AVoIP transmitter with four HDMI inputs)
- Order code: ALIGOQTX100-EU (Aligo QTX100 - Internal PSU. EU mains cable. Quad AVoIP transmitter with four HDMI inputs)
- Order code: ALIGOQTX100-US (Aligo QTX100 - Internal PSU. US mains cable. Quad AVoIP transmitter with four HDMI inputs)
- Order code: ALIGOQTX100-AU (Aligo QTX100 - Internal PSU. AU mains cable. Quad AVoIP transmitter with four HDMI inputs)
- Order code: ALIGOTX100-1 (Aligo 10G optical KVM AVoIP transmitter, multi-national PSU, 1 SFP+ port, SFP+ modules not included)
- Order code: ALIGOTX100-2 (Aligo 10G optical KVM AVoIP transmitter, no PSU, 1 SFP+ port, SFP+ modules not included)
- Order code: RMK01 (1U Rack mounting kit, supports 2 units. Compatible with Aligo RX100, TX100, IQS4)
- Order code: PSUALIGOIQS4 (SFP+ Transceiver Module 850nm for Aligo)
- Order code: PSUALIGOIQS4 (External Power Supply for Aligo RX100, TX100 and IQS4)
- Order code: PSURMK01 (Replacement internal power supply module for Aligo 1U rackmount kit)

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