

SeaChange® MediaClient™ 6000 Series

QuickSpec

Standard Definition and High Definition The “Versatile” MediaClient

The MediaClient 6000 series is a flexible and high performance video server codec that solves the headaches of TV Operations on the cusp of providing HD services. With its real-time Broadcast-Grade software codec architecture, a MCL 6000 purchased today for Standard Definition (SD) services can be easily repurposed for future High Definition (HD) use.

There are four MCL 6000 server codec models available:

[MCL 6012 provides 1 input and 2 outputs](#)

[MCL 6024 provides 2 inputs and 4 outputs](#)

[MCL 6020 provides 2 inputs](#)

[MCL 6004 provides 4 outputs](#)

These new MediaClients I/O platforms are powered with flexible software codec kits for SD or HD encoding and decoding. The MCL 6000 with SD codecs provide all the same superb functionality of the original MCL 4000 series; broadcast quality encoders supporting frame accurate encoding of MPEG-2, IMX or DV25/DV50 compression schemes. Simultaneously, the independent decoders support frame accurate playback of any combination of these formats back-to-back. From the same decoder output, efficient long GOP MPEG-2 program material plays frame accurately back-to-back with locally edited promos or advertisements in DV25/50 or IMX.

All MCL 6000 SD-powered models have easy upgrade paths to one or multiple of the 9 HD MediaClient software codec kits, such as single or dual HD encoder, triple HD decoders, dual SD-HD Simulcast decoders as well as the 1-input, 2-output HD MediaClient.

For “HD-Now” implementations, the MediaClient 6000 series can all be purchased pre-configured for HD only operation, meaning that you do not pay for unused SD functionality.

The MediaClient 6000 series have options that support pure HD clip playout, or support for mixed HD/SD clip playout with simultaneous HD and SD outputs (SD-HD Simulcast) with dynamic aspect ratio conversion and AFD support. These choices cater for the differing HD requirements of each TV operation.

The MCL 6000 series supports encoding and back-to-back play of HD 1080i or 720p MPEG-2 Long GOP up to 80Mb/s and I-Frame to 150Mb/s. Support is also provided for MXF OP1A Program Stream and Transport stream, HDV 720p, HDV1080i and XDCAM-HD as well as DV100 and the newest DNxHD format as add-on options (see detailed Specifications on back).



Housed in a new 1RU rack-mount platform, the MCL 6000 series provides even higher channel density and the guaranteed versatility of SD or HD capability. Importantly, unlike other competitive SD/HD capable systems, you do not pay for the unused HD capability up front. When required, and when new budget is available, you pay for the simple software upgrade to HD capability.

The latest MCL 6000 series is designed to connect to the Emmy® award-winning SeaChange Broadcast MediaLibrary cluster (BMLe/ex and UML), as well as the latest Flash Memory Library (FML200). The MediaClient/MediaLibrary architecture represents one of the most highly scalable, high-bandwidth, storage efficient, fault tolerant, multi-channel Playout solutions on the market today.

KEY FEATURES

- Future-proof and versatile SD/HD-capable MCL server codec
- Higher channel density than previous MediaClients
- Frame accurate back-to-back playback of different clip compression combinations from the same decoder
- Standard hot-swappable redundant power supplies
- Space-saving 1RU rack-mount chassis

OPERATIONAL BENEFITS

- Buy a SD MediaClient now and be confident that it can be later converted for HD use
- Use appropriate compression formats for different types of material; long GOP MPEG-2 for long duration programs and I-Frame (such as DV or IMX) for promos or advertisements. Support for back-to-back playback of these formats from the same decoder means simple operation. No transcoding required
- Improved tapeless integration with support for encoding and decoding of content from popular NLEs
- Backward compatibility with BMC or MCL 4000 series encoded files
- Efficient use of rack space

Product Specifications

SD FEATURES:

Input Specifications

- Supports maximum two SD SDI inputs per SMPTE 259M
- Supports up to eight 20 bits and 24 bits embedded AES Pairs per SDI Input per SMPTE272M
- Supports VITC/LTC as an input to provide time inserted into stream

Output Specifications

- Supports maximum Four SD SDI outputs per SMPTE 259M
- Supports up to eight 20 bits and 24 bits embedded AES Pairs per SDI Output per SMPTE272M

Video Standard

- 720 x 480i (29.97 Hz)
- 720 x 576i (25 Hz) - PAL
- 720 x 576i (29.97 Hz) - PAL

Video Codecs

- Main Profile @ Main Level, per ISO/IEC 13818-2
- 4:2:2 Profile @ Main Level, per ISO/IEC 13818-2
- IMX 30/40/50
- DV25(DVCPro), DV50(DVCPro50), per SMPTE314M
- IEC-DV(DVCAM or DVSD) 25Mb/s, per IEC61834-2

Stream Multiplexes

- MPEG-2 Program Stream
- MPEG-2 Transport stream
- MXF OP1A: D10 as SMPTE 386M compatible with XDCAM/e-VTR
- MXF OP1A: Single MPEG-2 Elementary stream video and multiple MPEG Layer2 audio essence as SMPTE 381M
- MXF OP1A: Single MPEG-2 Elementary stream video and multiple AES3/BWF (SMPTE382M) audio essence as SMPTE 381M
- MXF OP1A: DV (DV25, DV50, IEC-DV) as SMPTE383M
 - A/V Compound DIF as SMPTE314
 - A/V Separate (audio wrapped as SMPTE382M)
- DV25(DVCPro25)
- DV50(DVCPro50)
- IEC-DV(DVCAM or DVSD)

Audio Standard

- Supports up to eight AES pairs uncompressed per SMPTE302M audio
- Supports up to four AES pairs uncompressed per SMPTE331M for MXF wrapped IMX only
- Supports up to four MPEG-1 Layer II compressed ISO/IEC 13818-3 audio
- Supports up to eight mixed compressed and uncompressed AES pairs

Audio Sampling Frequency

- 48KHz

Audio Quantization

- Supports 16, 20 or 24 bits

Audio Pass-through

- Supports pass-through of any data format (16, 20, or 24 bits) per AES pair, including Dolby E or AC-3

Vertical Blanking Interval Specification

- Compressed VBI - 16 or 32 lines supported
- Uncompressed VBI - Supports 6 lines per video frame (Chroma/Luma)
- Encoded VBI - CC as per CEA-608 - VITC as per SMPTE-12M
- Supports OP-42 Teletext

Additional Features

- AFD per SMPTE-2016 carried in MXF Metadata
- Support back-to-back encoding**
- Support back-to-back decoding
- Support audio remapping (Decoder only)
- Support VDCP and SeaChange API control protocols

HARDWARE SPECIFICATIONS

Chassis Description

1RU, rack-mountable

Power Supply (standard)

Dual, redundant 650W Power Supplies, hot-swappable

Removable Media

CD-ROM

Audio/Video I/O Board Options

SD/HD 2-SDI IN
SD/HD 4-SDI OUT
SD/HD 1-SDI IN and 2-SDI OUT
SD/HD 2-SDI IN and 4-SDI OUT

LTC Input (optional)

Single or Dual LTC Input

Network I/O

Dual 1000BaseT Ethernet, RJ45 Output connectors

HD FEATURES:

Input Specifications

- Supports maximum two HD SDI inputs per SMPTE 292M
- Supports up to eight 20 bits and 24 bits embedded AES Pairs per SDI Input per SMPTE272M
- Supports VITC/LTC as an input to provide time inserted into stream

Output Specifications

- Supports maximum triple HD SDI outputs per SMPTE 292M
- Supports up to eight 20 bits and 24 bits embedded AES Pairs per SDI Output per SMPTE272M

Video Standard

- 1920 x 1080i (29.97 Hz)
- 1920 x 1080i (25 Hz)
- 1280 x 720p (59.94 Hz)
- 1280 x 720p (50 Hz)

Video Codecs

- Main Profile @ High Level, per ISO/IEC 13818-2
- 4:2:2 Profile @ High Level, per ISO/IEC 13818-2
- Main Profile @ High 1440 Level, per ISO/IEC 13818-2
- 4:2:2 Profile @ High 1440 Level, per ISO/IEC 13818-2
- XDCAM-HD 17.5/25/35Mb/s & 50Mb/s
- HDV 25Mb/s
- DV100 (optional add-on codec)
- DNxHD 120, 145, 180, 185, 220 per SMPTE 2019 (VC-3) (optional add-on codec)

Stream Multiplexes

- MPEG-2 Program Stream per ISO/IEC 13818-2
- MPEG-2 Transport Stream per ISO/IEC 13818-2
- MXF OP1A: Single MPEG-2 Elementary stream video and multiple MPEG Layer2 audio essence
- MXF OP1A: Single MPEG-2 Elementary stream video and multiple AES3/BWF (SMPTE382M) audio essence
- MXF OP1A: DV100 or DNxHD (VC-3) combined single video and multiple audio essence as per relative specification
- XDCAM HD
- Raw HDV

Audio Standard

- Supports up to eight AES pairs uncompressed audio per SMPTE302M audio
- Supports up to four MPEG-1 Layer II compressed audio per ISO/IEC 13818-3 audio
- Supports up to eight mixed compressed and uncompressed AES pairs based on two specifications above

Audio Sampling Frequency

- 48KHz

Audio Quantization

- Supports 16, 20 or 24 bits

Audio Pass-through

- Supports pass-through of any data format (16, 20, or 24 bits) per AES pair, including Dolby E or AC-3

Vertical Blanking Interval Specification

- Uncompressed VBI
 - Supports 6 lines per video frame (Chroma/Luma)
 - Supports 0 to 6 lines of 10-bit uncompressed per SMPTE 436M
- Encoded VBI
 - CC as per CEA-708
 - VITC as per SMPTE-RP188
- Supports OP-47 Teletext

Additional Features

- AFD per SMPTE-2016 carried in MXF Metadata
- Support back-to-back encoding**
- Support back-to-back decoding
- Support audio remapping (Decoder only)
- Support VDCP and SeaChange API control protocols

CHASSIS SPECIFICATIONS

Dimensions

1.703" x 16.93"W x 27.25"D (43.25 mm x 430 mm x 692 mm)

Weight

Approximately 40.0 lb (18.14 kg)

Ambient Temperature

Operating: +10° C to +35° C
Non-operating: -40° C to +70° C

Relative Humidity

Non-operating: 90%, non-condensing @ 35° C

AC Voltage

600W

Safety and EMC Compliance (Class A)

CE, FCC, U/L, CB

SD/HD SIMULCAST DECODER FEATURES:

I/O Specifications

- Supports maximum dual HD SDI outputs per SMPTE 292M
- Supports maximum dual SD SDI outputs per SMPTE259M
- Supports up to eight 20 bits and 24 bits embedded AES Pairs per SDI Output per SMPTE272M

Video Standard

- HD
 - 1920 x 1080i (29.97 Hz)
 - 1920 x 1080i (25 Hz)
 - 1280 x 720p (59.94 Hz)
 - 1280 x 720p (50 Hz)

SD

- 720 x 480i (29.97 Hz)
- 720 x 576i (25 Hz) - PAL
- 720 x 576i (29.97 Hz) - PAL

Video Codecs

- HD: Please refer to HD Video Codecs specifications
- SD: Please refer to SD Video Codecs specifications

Stream Multiplexes

- HD: Please refer to HD specifications
- SD: Please refer to SD specifications

Audio Standard

- up to eight AES pairs uncompressed audio, per SMPTE302M audio
- up to four MPEG-1 Layer II compressed audio, per ISO/IEC 13818-3 audio
- Supports up to four AES pairs uncompressed per SMPTE331M for MXF wrapped IMX only
- up to eight mixed compressed and uncompressed AES pairs based on two specifications above

Audio Sampling Frequency

- 48KHz

Audio Quantization

- Supports 16, 20 or 24 bits

Audio Pass-through

- Supports pass-through of any data format (16, 20, or 24 bits) per AES pair, including Dolby E or AC-3

Vertical Blanking Interval Specification

- HD
 - Please refer to HD specifications
 - Supports upconversion of CEA-608 to CEA-708 captions
 - Supports conversion of OP-42 Teletext to OP-47 Teletext
- SD
 - Please refer to SD specifications
 - Supports bridge for CEA 708 to 608 captions
 - Supports conversion of OP-47 Teletext to OP-42 Teletext

Aspect Ratio

- 4 modes of up-conversion SD to HD:
 - 4:3 – Preservation of the original source ratio
 - 16:9 – Image proportionally scaled by deleting vertically from top/bottom of source
 - 14:9 – Image proportionally scaled in horizontally centered pillarbox, by deleting vertically from top/bottom of source
 - Stretch – Image is asymmetrically stretched to fill screen
- 4 modes for HD down conversion to SD:
 - 16:9 – Preservation of the original source ratio
 - 4:3 – Image proportionally scaled by deleting horizontally from left/right of source
 - 14:9 – Image proportionally scaled in vertically centered letterbox by deleting horizontally from left/right of source
 - Squeeze – Image is asymmetrically squeezed to fit screen

Additional Features

- Supports back-to-back decoding
- Support audio remapping (Decoder only)
- Support VDCP and SeaChange API control protocols
- AFD code on output according to scaling mode used

SOFTWARE SPECIFICATIONS

Operating System

Microsoft Windows XP Professional

SeaChange Software

Broadcast Kit 3.2 (for BMLLe)

Broadcast Kit 5.2 (for BMLEx and ML1G)



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** Only specific configurations – please check with SeaChange