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POWERFUL AND VERSATILE 4K/3G/HD RECORDING AND REPLAY SERVER FOR ANY TASK

Fulcrum ATM/12G

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- SUPPORT FOR 4K/3G/HD SIGNALS

- 3G/HD: 11 REC + 11 SEARCH + 2 PLAY + FX

- 4K: 4 REC + 4 SEARCH + 2 PLAY + FX

- FREEDOM WHEN WORKING WITH SUPER SLOW MOTION CAMERAS

- INDEPENDENT WORKPLACES

- CONVENIENT AND RELIABLE RECORDING FOR NLE

- DISK SUBSYSTEM ON SSD

- 4U, 20 KG.

FULCRUM ATM/12G

A versatile and affordable broadcast grade server for working with 4K/3G/HD-SDI signals with a wide range of available options.

The high performance of the server makes Fulcrum ATM/12G an excellent system for solving any task of TV production, sports and live broadcasts. Its size and normal weight (4U – 56 cm, 20 kg) make it easy to integrate into the environment of any studios or OB Vans.

Slow Motion Replays:

- 3G / HD: 11112 configuration (11 record + 11 search + 2 play + FX)

NLE Recording:

- 3G / HD: Up to 12 channels by DMR™ recording

The SSD-based video array provides unprecedented performance and high-speed operation and search in Replay mode, as well as makes the system lighter and reliable when working in harsh conditions.

4K SUPPORT
For those who really need it

Fulcrum ATM/12G has optional support for 4K that can be added remotely (software license). The license opens the 4 Rec + 4 Search + 2 Play + FX configuration in Replay mode and up to 6 recording channels for NLE.

SUITABLE FOR ESPORTS AND SPORTS BROADCASTS

eSports are the most difficult in terms of replays. The Fulcrum ATM/12G is perfectly suited for replays in eSports, thanks to its large number of 3G-SDI recording channels (a mandatory requirement for a replay server for eSports) and unprecedented interface performance with high search speed. Fulcrum ATM/12G provides 11 Rec + 11 Search + 2 Play + FX configuration in 3G/HD mode. The server is also a great tool for replays at any sporting event.

To improve the user experience, the server has a built-into the main interface and dedicated Multiviewers. Even one operator can easily handle all the tasks.

FULCRUM ATM/12G. 11-CHANNEL 3G/HD REPLAY CONFIGURATION.

11112 Replay configuration. Channels: 11 Record; 11 Search; 2 Playback.
11 3G/HD-SDI inputs.
SDI Output 1 - Program. Graphics Port 1 - Main Interface. Graphics Port 2 - Multiviewer.
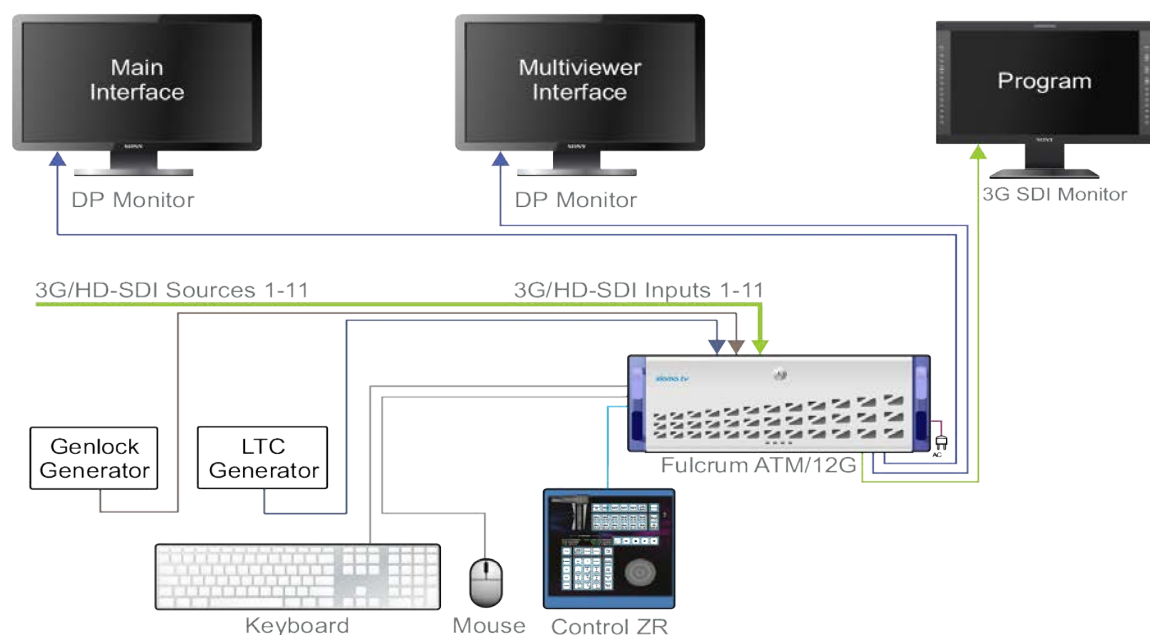
SUPER SLOW MOTION CAMERAS
Work with SSM cameras in different combinations

The servers are integrated with SSM cameras from most manufacturers. Fulcrum ATM/12G allows working with 2x, 3x, 4x, 6x, 8x cameras in various combinations.

INDEPENDENT WORKPLACES

Complete coverage of all moments in the competition with a high density of unrelated events

When working at sports events that are characterized by high density of unrelated events, such as track and field competitions or wrestling on multiple mats, the support of two independent workplaces is essential. The server allows two operators to work in parallel creating clips and Highlights.

TWO FULL-FEATURED WORKPLACES WITH
5 REC + 5 SEARCH + 2 PLAY + FX CONFIGURATION FOR 3G/HD.

FULCRUM ATM/12G. 10-CHANNEL 3G/HD REPLAY CONFIGURATION.
TWO INDEPENDENT 552 REPLAY WORKPLACES

10 3G/HD-SDI inputs. Each workplace: 5 Record; 5 Search; 2 Playback channels.
Graphics Port 1 (3) - Main Interface 1 (2). Graphics Port 2 (4) - Multiviewer 1 (2).
SDI Output 1 (2) is used for Program 1 (2).
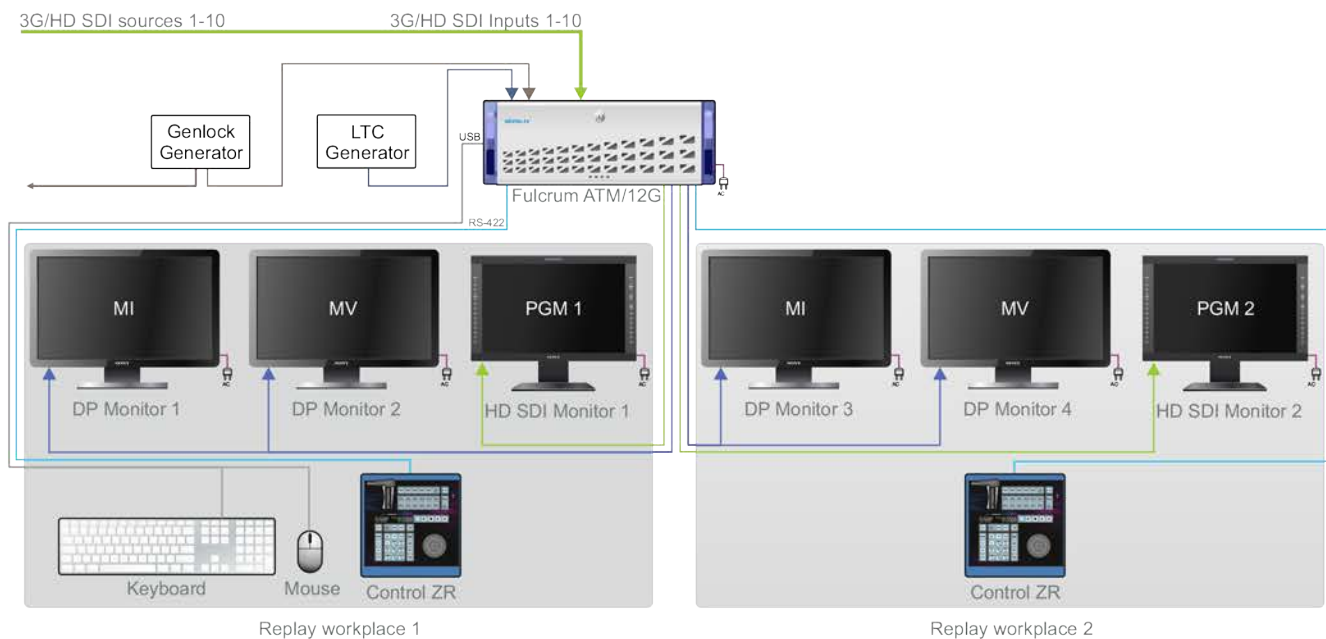
COMFORTABLE WORK IN REPLAY MODE

High-performance and intuitive interface

Access to all functions and operations is simplified as much as possible.

Parallel work with 2 separate playlists

No need to switch to an additional playlist to add clips into it.

Reliable protection of recorded material

Restore clips and playlists at restart.

Export and import clips and playlists

Import from any file media or over the network. Export as one file or with markup by clips.

Simultaneous search on all channels

Search does not require a dedicated SDI output and switching between channels.

Alpha Channel

Play pre-loaded clips with an Alpha channel.

Networking

Exchange clips and playlists between slomo.tv servers.

Main interface with built-in Multiviewer

All indicators, controls and video windows are always in front of the operator's eyes.

Automatic creation of clips and playlists

Aired clips are automatically saved to playlists.

4 graphics ports

For outputting the main interface, Multiviewer, Game Analyzer (telestrator).

Support for hotkeys

Quick access to 100 objects - clips or playlists.

MultiSkin function

Quickly switch between different interfaces on one monitor.

RECORDING FOR NLE - RELIABLE, SIMPLE, EASY, FAST

DMR™ technology - Direct recording for non-linear editing on external HDDs in parallel with built-in storage

Multi-channel recording with selected codec (ProRes; AVID DNxHD; DVCPro HD; DVCPro 50; IMX; XDCAM 50; AVC-Intra 100/XAVC) to a built-in video array in a specially developed fail-safe high reliability file format and in native files of NLE system on any available media or NAS.

SD Proxy files support
Simultaneous recording of both full resolution video files and SD Proxy files, which significantly increases the speed and comfort of editing.

10 GbE network interfaces
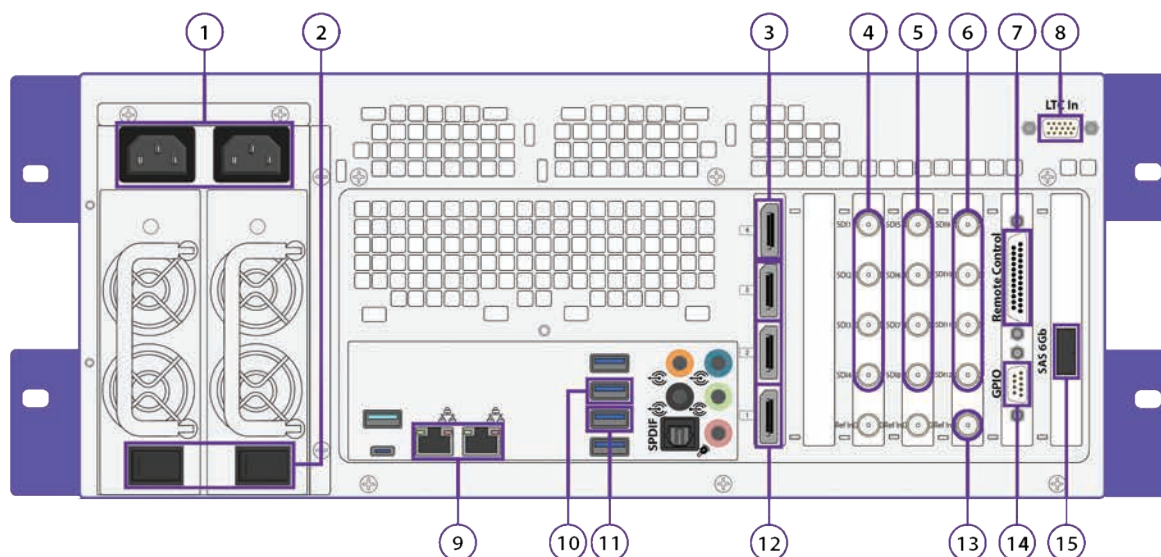2-port 10GbE interface for fast data exchange between servers and for recording to NAS.

4 BUILT-IN DMR™ RACKS FOR HDDS

THE RECORDED MATERIAL IS SECURELY PROTECTED EVEN WHEN THE POWER IS LOST

THE SYSTEM DOES NOT REQUIRE ANY ADDITIONAL EQUIPMENT

Fulcrum ATM/12G SUPPORTS WORKING WITH «GROWING FILES».

1 – 110/220V 60/50Hz-power supply connection.

2 – Switching on the power supply;

3 – Main Monitor 1920x1080-Main interface / Multiviewer (Display port);

4-6 – SDI inputs/outputs-Video signal connection (BNC);

7 – Remote Control-Remote control connection (DB-25);

8 – LTC In-Time-code source connection (DHS – 15);

9 – 9-10 GbE network (RJ-45)

10 – Mouse (USB)

11 – Keyboard (USB);

12 – Additional Monitor 1920x1080 Multi-viewer / Game Analyzer (Display port)

13 – Ref In-Sync connection (BNC)

14 – GPIO input for external hardware integration (DB-9)

15* – SAS 6Gb.

* – additional option

Control ZR

THE CONTROL ZR REPLAY CONSOLE IS INCLUDED WITH THE SERVER.

Control ZR is a specialized remote control panel equipped with 51 buttons with RGB illumination, a highly reliable T-bar and a Jog/Shuttle for search and control the slow-motion playback speed with an accuracy of up to 2%.

The controller provides direct access to 24 recording channels, presets, and most functions.

Connection via RS232/422, USB and Ethernet. Control ZR is powered via USB or Power over Ethernet (PoE) technology.

PARAMETERS	Fulcrum ATM/12G
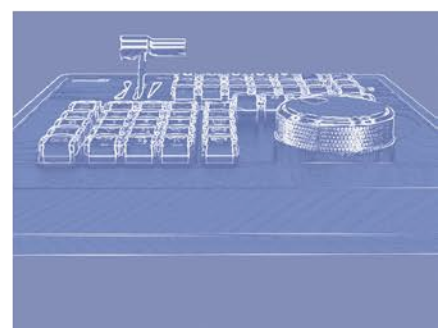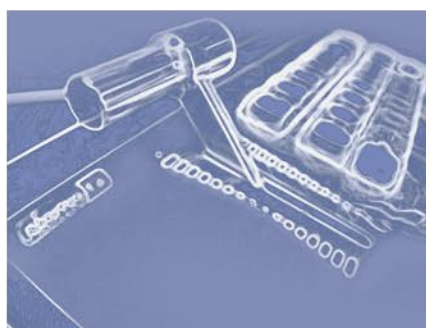
Video inputs (Replay Mode / Recording for NLE)

12G-SDI*	4 / 6 (DMR™ – 3 channels, export – 6 channels)
3G/HD-SDI	11 / 12
Video outputs (Replay Mode) 12G*/3G/HD/1280p/SD-SDI	2
	1st Out – Playout with transition effects between clips. 2nd Out can be configured as Preview, Multiviewer, Alpha-channel, Game Analyzer or Delay Output*.
Graphics ports	4 DP

Video Formats

HD/SD	29.97Hz/59.94Hz: 1920x1080/59.94i, 1920x1080/29.97 PsF, 1280x720/59.94p, 720x480/29.97 PsF, 720x480/59.94i 25Hz/50Hz: 1920x1080/50i, 1920x1080/25 PsF, 1280x720/50p, 720x576/25 PsF, 720x576/50 Support for 16:9 and 4:3 modes.
3G	1920x1080/59.94p, 1920x1080/119.88i 1920x1080/50p, 1920x1080/100i
4K	UHD (3840x2160) 25p/30p/50p/60p

Operational channels (simultaneously)

Replay Mode	12G / 3G/HD	4 / 11 Record + 4 / 11 Search+ 2 Playback +FX
Recording for NLE	12G / 3G**/HD	Up to 6/12 channels

Codecs

Replay	3G / HD / SD: DCT-based I-Frame; ProRes; AVID DNxHD; DVCPro HD; DVCPro 50; IMX; XDCAM 50; AVC-Intra 100/XAVC 12G (4K): DCT-based I-Frame 1200Mbitt
DMR™	ProRes; AVID DNxHD; DVCPro HD; DVCPro 50; IMX; XDCAM 50; AVC-Intra 100/XAVC 4K: ProRes 422
Export	MJPEG; ProRes; AVID DNxHD; IMX; XDCAM 50; MPEG2 Long GOP; H.264; MPEG4; DVCpro 50 / DVCPro HD; AVC-Intra 100/XAVC; v.210* 4K: ProRes 4444, RAW UNCOMPRESSED*; 4K ProRes
Export Containers	QuickTime / MXF / MP4
Storage (SSD)	HD video: 266 hours 4K video: 22 hours
Multiviewer	Built into the main interface screen – up to 13 video windows; 3G / HD / SD only: via a separate graphics port or SDI output – up to 24 video windows. MultiSkin mode support.
Recorded Audio Channels* (Replay Mode / Recording for NLE)**	Up to 88/96 16/24 bit 48 kHz
Replay Audio Channels*	Up to 8
Controller	Control ZR remote control with 51 RGB buttons, T-bar and Jog / Shuttle. Connection via USB*, Ethernet*, RS-232*, RS-422.
Time-code	LTC (SMPTE 12M-1) Support of Drop Frame and Non-Drop Frame for 29.97/59.94 modes
Synchronization	Support of BlackBurst and Tri-Level signals
GPIO	2 inputs and 2 outputs for integration with external equipment (Mixer, Switcher, Automation)
Video Standards SDI	SMPTE 292M, SMPTE 274M, SMPTE 259M, SMPTE 296M 2001, SMPTE 424M, SMPTE 425M, SMPTE ST-2081, SMPTE ST-2082
Video Exchange	10 GbE (Network) USB 3.0/eSATA (External HDD Box) Built-in trayless/toolless 3.5" SATA HDD Racks
DMR™ Racks	4
Independent replay workplaces	1 + 1*
Power	110V/60Hz or 220V/50Hz / 500W
Chassis / Dimensions (H x W x D), mm / Weight, kg	4U, 19"/ 176.5 x 483 x 560 / 20

Notes:
* - optional.
** - depends on the codec used
*** - embedded.

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