

SA-2100A Digital Cinema Server

The high-performance solution for Digital Cinema



GDC Technology is proud to introduce the **SA-2100A Digital Cinema Server**, our fourth generation digital cinema playback server designed to fully comply with DCI specifications and FIPS-140 security requirements.

The SA-2100A is an advanced version of the highly-successful model SA-2100, retaining all its features such as:

- 2K/4K DCI MXF JPEG2000 playback
- DCI MXF JPEG2000 3D playback
- MPEG2 MXF Interop playback
- CineLink II™ link encryption
- CineCanvas™ image and subtitling management
- FIPS-140 Certified Media Block
- DCI approved forensic watermarking
- HDTV live streaming/store-and-forward capabilities
- Highly stable Linux-based operating system
- Touch screen user interface
- Ingest of Digital Cinema Packages (DCPs) via physical media, network and satellite

In addition, the SA-2100A offers increased storage capacity and flexibility with the following unique features offered as standard.

Unique Features

FIPS 140-2 Certified Media Block

The SA-2100A ships with a FIPS 140-2 Level 3 Certified Media Block providing the highest level of security recommended by DCI.



Instant playback from CRU drive sleds *

The SA-2100A allows for instant playback from the CRU drive sleds without requiring content ingest. This significantly reduces time to screening in emergency situations.



Swapping of data drives for immediate content playback

The SA-2100A allows instant transfer of data drives (i.e. HDD) between servers, making it possible to move a movie quickly from one screen to another.



Redundant Hot Swappable 2TB Storage

The 2TB content storage of the SA-2100A uses 3 redundant hot swappable drives which can be easily attached or detached. The SA-2100A is able to remain operational in the event of a single drive failure and minimizes the downtime.



Incorporation of RealD 3D EQ Technology

The availability of RealD's 3D EQ ghostbusting technology in the SA-2100A allows for superior 3D presentations and facilitates seamless integration with RealD 3D exhibition systems.

Closed Captioning Support

The SA-2100A facilitates greater access to motion pictures by displaying closed captions from DCPs on WGBH's Rear Window Captioning devices.



Instant playback from TMS Library

The SA-2100A allows for instant playback from the TMS content library to the server. This makes available huge amount of content storage for playback, providing flexibility for show management.



Removable Hard Disk Drive (HDD) Sled *

The SA-2100A comes with built-in support for a removable HDD sled that allows for high-speed ingest of DCPs via industry standard hot-pluggable HDD.



DVD-ROM Drive *

An internal DVD-ROM drive has been integrated in the SA-2100A to cater for ingest of DCPs from DVDs.



Remote Access of the Screen Management System

The SA-2100A includes a CD-ROM with software for the remote access of its Screen Management System (SMS) from a Windows® PC and other mobile devices such as Apple®iPhone™.

Optional Feature



Quad Link Option (SA-2100AQ) ❖

The SA-2100A can also be upgraded to the SA-2100AQ which features four HD-SDI outputs. This option enables the SA-2100AQ to be used for:

- Highest quality 3D playback with dual stream 12-bit 4:4:4 output images to two projectors simultaneously
- Independent playback of two separate 2D content streams to two projectors simultaneously (Estimated availability: Q4 2009)

Model **SA-2100A**





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due to ongoing product
development and
improvement.

GDC manufacturing
facility is
ISO 9001: 2000 certified.



PB-0001-0904-V1E

SA-2100A Digital Cinema Server Technical Specifications

Physical

Dimensions 482 (W) x 591 (D) x 177 (H) mm 4RU
Weight 25kg (55lbs)

Environmental

Operating temperature 5° to 40°C (41° to 104°F)
Operating humidity 20% to 90%, non-condensing
Operating altitude 10,000ft. above sea level

Power

Power requirement 100 to 240V AC ± 10%,
50/60Hz (15A max.)
Max power consumption 300W
Redundant power supplies Redundant internal hot swappable x 2
Uninterrupted power supply (UPS) with surge protection (optional) 3-way, meets IEEE STD 587 Cat. A 6KV test

Video Performance

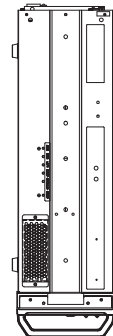
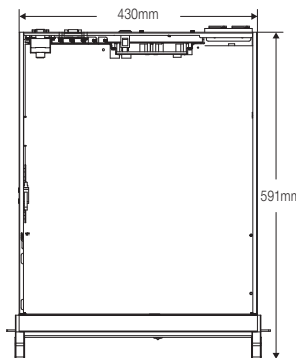
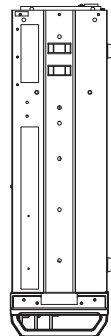
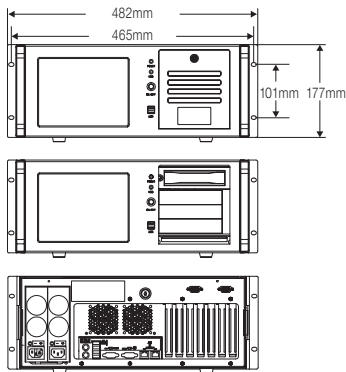
Formats 1280x720, 1280x1024, 1920x1080,
2K (2048x1080), 4K (4096x2160 - video
output is 2048x1080)
Frame rates 23.98, 24, 25, 29.97, 50, 59.94, 60 fps
Compression JPEG2000, MPEG2 MXF Interop
Packaging DCI Digital Cinema Package (DCP)

Video Output

Single link HD-SDI SMPTE 292M 10-bit 4:2:2 YUV
Dual link HD-SDI SMPTE 372M 12-bit 4:4:4 RGB/X'Y'Z',
Dual SMPTE 292M 10-bit 4:2:2 YUV
(for 3D playback)
Quad link HD-SDI ♦ Dual SMPTE 372M 12-bit 4:4:4 RGB/X'Y'Z',
(optional) (for 3D or dual 2D playback)

Audio Output

Digital uncompressed audio 16 channels (XLR-M x 8, AES/EBU)
96/48 KHz, 16-bit/24-bit
D-sub 26-pin
Audio Offset +/- 50 frames



★ Only available in SA-2100A and SA-2100AQ

♦ Also available in SA-2100Q and SA-2100TQ

System Interfaces

Ethernet 2 x RJ-45
(1 x 10/100 BaseT,
1 x 1000 BaseT)
USB2.0 6 x USB A-Type male
VGA D-sub 15-pin
16-pin GPI I/Os D-sub 37-pin
DVD-ROM drive ★ Read speed 8x
HDD sled ★ CRU-Dataport DX 115
DVB-ASI (optional) BNC, CENELEC
EN 50083-9 standard
270Mbps < 2.8ppm
D-sub 9-pin
RS232 D-sub 9-pin
Modem Interface with remote sensing software

Storage

Storage Redundant hot swappable 2000GB

Security

AES 128-bit encrypted data storage
GDC conditional access system
CineLink II™ link encryption
Thomson NexGuard® forensic watermarking
FIPS 140-2 Level 3

Subtitles

CineCanvas™ image and subtitling management

Reference I/O

Analog Genlock Bi-level, Tri-level

User Interface

Touch screen LCD panel Control of digital cinema servers
and DLP Cinema® projectors
Windows® PC network Remote access to the screen
control management system (SMS)
and server user interface

Third-Party Integration Options

CineDigm Theatre Command Center® v3
Library Management Server®
RealD RealD 3D EQ
WGBH Rear Window Captioning Device

GDC Digital Cinema Server Series

The SA-2100 Digital Cinema Server is available in various configurations to suit the differing needs of cinema owners. Cinemas that already utilize a theatre management system (TMS) will find the SA-2100T and SA-2100TQ a cost efficient choice. Meanwhile, cinemas not using TMS can benefit from the increased ingest options of the SA-2100A and SA-2100AQ.

Model No.	SA-2100	SA-2100Q	SA-2100T	SA-2100TQ	SA-2100A	SA-2100AQ
Description	Basic Model	Basic Model with Quad-Link	Advanced Model for TMS Integration	Advanced Model with Quad-Link for TMS Integration	Advanced Model	Advanced Model with Quad-Link
DVD-ROM Drive					●	●
HDD Sled					●	●
Redundant Power Supply			●	●	●	●
GPI/O			●	●	●	●
Hot-Swappable HDD x 3 units			●	●	●	●
Quad-Link HD-SDI		●		●		●