grass valley

Masterpiece

12G-SDI UHD/HD Master Control Switcher

Total master control and channel branding for all standards up to 4K UHD.

In today's multiformat, multiplatform world — where consumers have access to content anytime and anywhere — demanding higher quality and delivering that content in its absolute best form is a key priority for broadcasters and media companies who want to remain relevant.

With ever-growing market uptake of UHD, those broadcasters embracing the format are starting to see benefits. The dawn of this technology is only going to fuel the accelerating consumer demand for high-quality content anytime, anywhere.

In particular, live sports are an excellent showcase for this technology. UHD is ideal for sports video because it presents consumers with vivid, life-like details and gives service providers an engaging way to differentiate their packages from the competition. Sports broadcasters are embracing UHD because it provides them with additional revenue streams to their current and traditional HD channels.

Grass Valley has a rich history in helping media organizations deliver content on time, on budget and to the right audience across whatever distribution mechanisms are appropriate. Building on our world firsts in deploying UHD technologies, we are introducing the Masterpiece 12G-SDI, which is a new market-defining master control switcher.

Whether you are producing your content in HD or UHD, whatever your channel genre, whether it's sports, news or live entertainment, and whatever your distribution — a single over-the-air (OTA) channel, multichannel content distribution or real-time streaming — Masterpiece 12G-SDI has the power and flexibility to provide you with dynamic and rock-solid master control 24x7x365.

Differentiate Yourself with UHD Master Control

The introduction of our Masterpiece 12G-SDI master control switcher illustrates how Grass Valley is continually growing its range of UHD solutions for content production and distribution. Masterpiece 12G-SDI works across multiple formats, includes flexible audio capabilities, channel branding and multichannel video program distribution, as well as dynamic visual effects.

With an intuitive and compact control panel, Masterpiece 12G-SDI offers unbeatable master control operation. This is essential in today's complex master control environments where decisions have to be made quickly by operators across multiple channels to ensure the quality of output that's required.

Masterpiece 12G-SDI, combined with FormatFusion3 technology, is unique in the master control environment, giving you more capacity to feed multiformat material into your channels. This means you don't have to create multiple versions of the same material to feed different channel outputs, and there is no need for external conversion equipment. This reduces capital outlay and complexity. Commercial breaks in HD can be combined with UHD programs, increasing advertising slots and creating more lucrative revenue streams for you.

KEY FEATURES

- UHD/1080p/1080i/720p Master Control Switcher
- 10x 12G-SDI inputs for single link UHD connectivity
- 40x 1080p/1080i/720p inputs
- HD or UHD PGM/PST and clean outputs*
- 4 keyers for channel branding (UHD/1080p/1080i/720p)
- 4 channels of DVE assignable to backgrounds and keyers
- Internal clipstore backed up by 1 TB HDD
- 8-channel AES audio mixer

- 16-channel audio shuffling for every crosspoint and output
- Embedding/de-embedding and routing
- Flexible audio routing
- Controlled via Grass Valley Morpheus Automation
- Optional control panel, built-in motorized audio faders
- HD and UHD processing
- FormatFusion3 for multiformat workflows
- DVE functionality for squeeze back and on-air effects

- Automatic Dolby® E detection
- Voiceovers with automatic level control
- Control multiple masterpiece mainframes from one control surface
- Optional MSP software control surface offering the same control features as the hardware panel

* Outputs match operational format — UHD or 1080p only

Automation Integration

Masterpiece 12G-SDI has a seamless control interface to Grass Valley Morpheus playout automation solution.

Automating Master Control

Seamless interfacing with Grass Valley's Morpheus automation system allows Masterpiece to deliver robust and resilient content distribution and flexible device management, making it the most efficient automation tool for your channel management.

Morpheus automation enables playout schedules to run smoothly, keeping your channel content working effortlessly. Masterpiece also offers third-party automation using Oxtel protocol. The Masterpiece control panel can be operated manually, allowing for on-the-fly operations when needed. Integration with Grass Valley's LiveTouch replay and ChyronHego's graphics engine control provides a strong content and branding toolset.

Switching audio, breaking away audio from video, and triggering effects such as squeeze backs and loading clips on-the-fly are just some of the operations the Masterpiece 12G-SDI and Morpheus can achieve together for automated master control.

Your Brand Is Everything

The Masterpiece 12G-SDI switcher gives you the power to brand your channel easily so that it stands out, essential in today's content-rich world. If you're working in HD with plans to transition to UHD, Masterpiece 12G-SDI lets you move seamlessly to UHD workflows without any compromise in quality or performance. It also facilitates high-quality keying. There are four keys available with DVE and to transition your graphics to air via preview or directly cut. Features enabling this include:

- Four key layers for essential channel branding and DVE effects to create any on-air style
- HD and UHD internal clipstore for stills and clips
- 10 Clipstore outputs — UHD x2 and HD x2 or 10x HD
- Library of transition types and profiles control for creative visual design including squeeze back

Audio Mixing and System Integration

Masterpiece 12G-SDI receives audio signals via both SDI embedded audio and direct AES inputs.

Audio Mixing

Masterpiece includes an 80x56 out audio mixer and can execute the following:

- Audio lead and lag transition
- Break away audio transitions
- Voiceovers
- Pre-fade listen audio selection directly from control buttons on the panel

The benefit of pre-fade listening to the audio before it goes live gives the operator confidence knowing that a channel's audio material and feeds are played out as scheduled. The audio mixer provides embedding and de-embedding audio processing. Any 16 embedded channels can be selected from any/all the incoming video sources. Audio channels can be shuffled for flexible alignment with in-house channel mapping.

System Integration

As a fully loaded master control system, Masterpiece 12G-SDI offers a full solution to HD/1080p and UHD Master Control without needing any (optional) extras.

Of course you can pair Masterpiece 12G-SDI with Grass Valley's UHD-ready product range including routing, playout, control and monitoring, multiviewers, servers and automation to ensure a seamless workflow for your UHD productions. By combining Grass Valley systems, you get comprehensive master control facilities that satisfy even the most mission-critical live production environments.

Soft Panel User Interface

Masterpiece supports an optional MSP user interface. The standalone software package runs on a user-supplied standard or touchscreen PC. This easy to operate UI provides direct control of switching crosspoints and the ability to recall effects and macros. If customers require the ability to directly cut on a hardware keyboard, a USB keyboard offers the operator direct customized keyboard control of the switcher. The MSP control UI can operate the Masterpiece mainframe as a standalone control surface or control mulitple Masterpiece mainframes that are running in a headless application.

Master Control That Won't Let You Down

Masterpiece 12G-SDI is built to Grass Valley's precision engineering standards and backed by 24/7 customer support. It is purpose-built to withstand the most testing of operational environments, entirely suitable for today but with a firm eye on tomorrow's requirements, too.

- Designed for channel maximization
- Audience retention
- Redundant power for peace of mind on-air performance
- Traditional hardware control panel or *NEW* MSP software control panel for headless applications

By combining Grass Valley systems you get comprehensive master control facilities that satisfy even the most mission-critical live UHD production environments

SPECIFICATIONS

Video/TV Standards

TV Standards

11.88 Gb/s Video Standards (UHD):

 SMPTE ST 2082-10

 3840x2160p 50 Hz

 3840x2160p 59.94 Hz

 3840x2160p 60 Hz

2.97 Gb/s Video Standards (1080p):

 1080p59.94 SMPTE ST 424

 1080p59.94 SMPTE ST 425/Level A

 1080p59.94 SMPTE ST 425/Level B

 1080p50 SMPTE ST 424

 1080p50 SMPTE ST 425/Level A

 1080p50 SMPTE ST 425/Level B

1.485 Gb/s Video Standards (HD):

 1080i60 SMPTE ST 274(4), SMPTE ST 292(D)

 1080i59.94 SMPTE ST 274(5), SMPTE ST 292(E)

 1080i50 SMPTE ST 274(6), SMPTE ST 292(F)

 1035i60 SMPTE ST 260, SMPTE ST 292(A)

 1035i59.94 SMPTE ST 260, SMPTE ST 292(B)

 1080p30 sF

 1080p29.97 sF

 1080p25 sF

 1080p24 sF

 1080p23.976 sF

 1080p30 SMPTE ST 274(7), SMPTE ST 292(G)

 1080p29.97 SMPTE ST 274(8), SMPTE ST 292(H)

 1080p25 SMPTE ST 274(9), SMPTE ST 292(I)

 1080p24 SMPTE ST 274(10), SMPTE ST 292(J)

 1080p23.976 SMPTE ST 274(11), SMPTE ST 292(K)

 720p60 SMPTE ST 296(1), SMPTE ST 292(L)

 720p59.94 SMPTE ST 296(2), SMPTE ST 292(M)

 720p50 SMPTE ST 296(2), SMPTE ST 292(M)

Reference

Analog genlock high definition tri-level syncs signal or SD 1V B and B

Mainframe

Video Signal Inputs

10x 12G-SDI (SMPTE ST 2082) single link BNC connectors

42x HD/1080p (1.485 Gb/s / 2.97 Gb/s)

Serial digital interface as REC601/SMPTE ST 292/SMPTE ST 424 via BNC connectors

Genlock reference 2 off Analog Sync (loop A and B through)

Video Signal Outputs

3x 12G-SDI (SMPTE ST 2082) single link BNC connectors

14x HD/1080p (1.485 Gb/s / 2.97 Gb/s)

Serial digital interface as REC601/SMPTE ST 292/SMPTE ST 424 via BNC connectors

Audio Signal Inputs

4 AES Diff pair inputs (either as 8x AES mono or 4x AES stereo)

16 program embedded SDI (1.5 Gb/s / 3 Gb/s / 12 Gb/s)

16 preset embedded SDI (1.5 Gb/s / 3 Gb/s / 12 Gb/s)

16 utility embedded SDI (1.5 Gb/s / 3 Gb/s / 12 Gb/s)

8 internal store

Audio Signal Outputs

Program 16 embedded SDi (1.5 Gb/s / 3 Gb/s / 12 Gb/s)

Preset 16 embedded SDi (1.5 Gb/s / 3 Gb/s / 12 Gb/s)

4 AES Diff pair outputs (either as 8x AES mono or 4x AES stereo)

Monitoring 16 embedded SDI (1.5 Gb/s / 3 Gb/s / 12 Gb/s)

Control Interfaces – Automation

Grass Valley Morpheus Automation via TCP/IP connection using proprietary protocol

Standard

44 GPI Tally/GPO outputs assignable GPI / GPO isolated contact closures via 2 x 25-way D-Ttype. Assignable as GPI or GPO

10/100/1000BaseT 3 x RJ45 Ethernet connectors fixings

4x RS-422 control ports

2x USB

Power

Masterpiece 12G-SDI mainframe auto-sensing 100-250 VAC power supply

50/60 Hz nominal. Two fully independent hot swappable PSU modules, with separate mains power feeds via 2x 13A IEC - 320-C14 socket

Power consumption: <400W

Environmental Specifications

Temp. range: 5 to 40°C (41 to 104°F) non-condensing operation

Mainframe Mechanics

2 RU

Height: 87 mm (3.42 in.)

Depth: 604.8 mm (23.81 in.)

Weight: Approx. 14 kg (30.3 lbs.)

Masterpiece Control Panel

Width: 482.6 mm (19 in.)

Height: 163.6 mm (6.47 in.)

Depth: 265.9 mm (10.47 in.)

Masterpiece Mainframe Communications

10/100/1000BaseT 1 x RJ45 Ethernet connectors fixings

2x RJ45 Ethernet connector fixings — connect to Maverik modules

CAT5 or above cables — crossover cables are not suitable
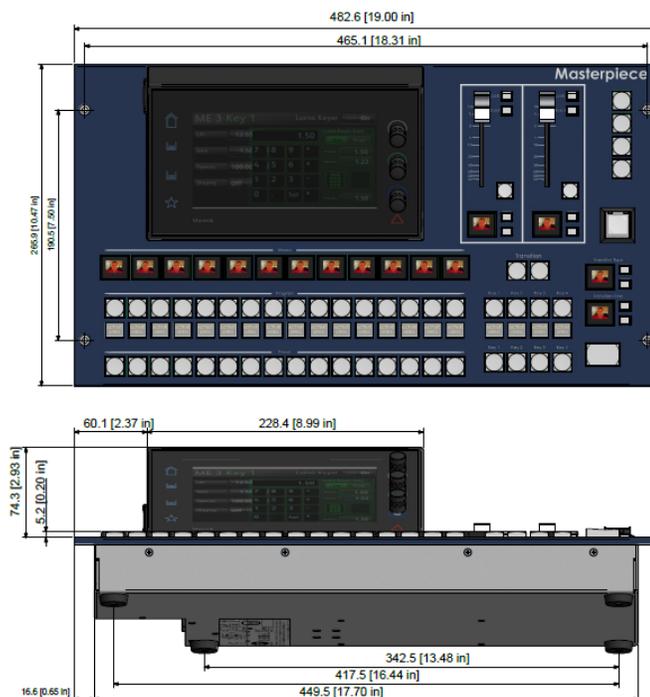
4x USB Ports

1x Monitor connection to local touchscreen

PSU

2x fully independent external PSU modules with separate mains power feeds via 2 x 10A IEC leads

Output from each PSU 12V DC 100W via Kycon KPPX 4-pin or compatible connectors

2 supplied as standard

ORDERING

FGADZ 9679121A

Masterpiece 12G-SDI Master Control System. 12G Single link UHD/1080p/1080i/720p 2 RU mainframe with 10 UHD inputs, Program, Preset and Clean Outputs via single link 12G-SDI BNC or 1080p/1080i/720p BNCs. 4 key layers, internal clip-store, 4 channels of assignable DVE. Multichannel AES (48 kHz) audio mixer with embedding, dembedding and audio shuffling functionality. Masterpiece control panel with 16 video crosspoint buttons, 2 motorized faders, transition control and includes built-in touch screen GUI.

MSP-PNL-1ME-KBD

Soft panel interface keyboard for 1 M/E GUI with special keycap labels and color for switcher control. Requires the MSP-LIC-1ME-SW option to operate the MSP.

DS-PUB-2-0706C-EN

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