

Masterpiece

12G-SDI 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 — 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 4K 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. 4K 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 4K UHD because it provides them with additional revenue streams to their current and traditional HD channels.

Grass Valley, a Belden brand, 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 4K UHD technologies, we are introducing the Masterpiece 12G-SDI, which is a new market-defining master control switcher.

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 4K UHD Master Control

The introduction of our Masterpiece 12G-SDI master control switcher illustrates how Grass Valley is continually growing its range of 4K 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 4K UHD programs, increasing advertising slots and creating more lucrative revenue streams for you.

Masterpiece 12G-SDI Master Control Switcher

KEY FEATURES

- 4K UHD/1080p/1080i/720p Master Control Switcher
- 10x 12G-SDI inputs for single link 4K UHD connectivity
- 40x 1080p/1080i/720p inputs
- 4K UHD PGM/PST and clean outputs
- 4 keyers for channel branding (4K UHD/1080p/1080i/720p)
- 4 channels of DVE assignable to backgrounds and keyers
- Internal clipstore backed up by 1 TB HDD
- 16-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
- 4K UHD processing
- FormatFusion3 for multiformat workflows
- DVE functionality for squeeze back and on-air effects
- Automatic Dolby E detection
- Voiceovers with automatic level control
- LTC input
- Control multiple masterpiece mainframes from one control surface

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. The Masterpiece control panel can also be operated manually, allowing for on-the-fly operations when needed.

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 4K UHD, Masterpiece 12G-SDI lets you move seamlessly to 4K 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
- 4K UHD internal clipstore for stills and clips
- 4K UHD clipstore outputs
- 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 SD/HD/1080p and 4K UHD Master Control without needing any (optional) extras.

Of course you can pair Masterpiece 12G-SDI with Grass Valley's 4K UHD-ready product range including routing, playout, control and monitoring, multiviewers, servers and automation to ensure a seamless workflow for your 4K UHD productions. By combining Grass Valley systems, you get comprehensive master control facilities that satisfy even the most mission-critical live 4K UHD production environments.

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



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Masterpiece 12G-SDI Master Control Switcher

SPECIFICATIONS

Video/TV Standards

TV Standards

11.88 Gb/s Video Standards (4K 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
40x HD/SD/1080p (270 Mb/s / 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/SD/1080p (270 Mb/s / 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

16 AES (48 kHz) mono channels per SDI Input (PGM/PST/Background Utility/HD Utility)
4 AES (48 kHz) stereo pair inputs, 3 AES (48 kHz) stereo pair outputs + LTC input

Audio Mixer

4-input channel mixer (mixes up to 16 AES mono signals per channel)/LTC

Audio Signal Outputs

Program/Preset and Clean (16 AES (48 kHz) per output)
4x audio monitoring outputs

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-Type. Assignable as GPI or GPO
10/100/1000BaseT 3 x RJ45 Ethernet connectors fixings
2x 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 2 x 13A IEC - 320-C14 socket

Power

Consumption: <400W
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

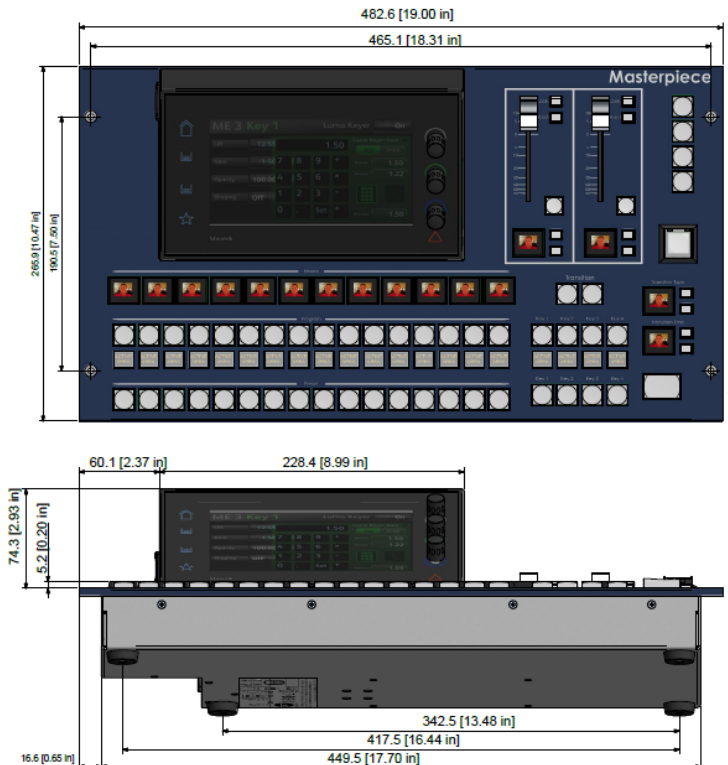
Width: 482.6 mm (19 in.)
Height: 163.6 mm (6.47 in.)
Depth: 265.9 mm (10.47 in.)

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



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