

MASTERPIECE

Scalable, flexible, HD or SD master control solutions.



FEATURES

- Complete solution in 2RU frame
- HD or SD capable
- Mix, Wipe and Fade transitions
- Four DSKs
- Two channel 3D DVE option
- Logo Store option
- 16 Channel Embedded Audio Processing
- Dolby® E Mixing option
- Eight assignable Audio 'Overs'
- Dual PSU and Relay Bypass option
- Modular construction
- Control interfaces via RS485 and Ethernet



Masterpiece, housed in a single 2RU frame, is Pro-Bel's new HD or SD master control switcher. Based on many years of experience designing state of the art digital switchers, it is the most advanced and cost effective solution yet conceived.

Masterpiece has been designed as a single frame master control solution, offering a high degree of flexibility from simple mixer and keyer operations, to complex systems with DVE and logo insertion, and multi-level audio with Dolby E processing. All options are contained in a single 2RU frame, with firmware or hardware options providing the additional functionality. Buying a base system and upgrading at a later date is easy. Upgrades are either a case of plugging in a card, or in some cases simply entering a licence key. This ensures the system can grow as your requirements change.

The single frame approach used in Masterpiece minimises system build and configuration time, and allows for fast installation when time to air is critical.

Base Mixer

The base mixer system provides:

HD or SD mixer

2 or 4 DSKs

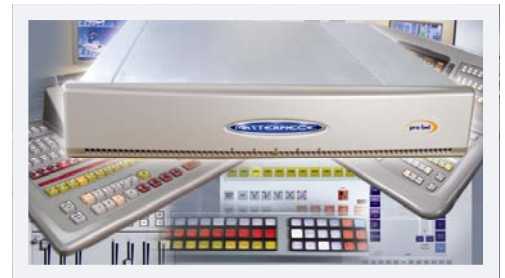
Independent Key Preview path (HD only)

16 mono / 8 stereo levels of audio mixing

System controller (for automation & router interfaces)

Dual redundant PSUs

Hot swappable fan module



Additional Options then provide:

- DVE
- Logo store
- Dolby E decoders
- Dolby E encoder
- HD/SD frame delay

Control

Masterpiece is all new, but in line with Pro-Bel's policy of always providing an upgrade path, the Masterpiece mixer is compatible with all our existing range of control surfaces, from the compact 2RU TX-502, offering simple control where space is a premium, to the fully featured TX-520 panel. In addition, it is compatible with Pro-Bel's Morpheus Control and Monitoring Suite of control software. This allows custom PC screens to be user-defined, allowing integration of master control, routing and equipment or signal monitoring on one screen as required; an ideal option for emergency or multi-channel control where the majority of the playout is automated.

For the ultimate flexibility, Pro-Bel's audio fader panel can be connected to the Masterpiece mixer, allowing real-time control of audio overs and program levels, ideal for sports and live events.

Video Mixing

The video mixer offers a flexible architecture to cater for the vast majority of real world applications. The mixer has the option of up to four down stream keys, each with external key and fill inputs. As an alternative, the DSKs can be fed from an internal logo store which is capable of storing several hundred logos, including animated logos or full frame apology announcements. The system is designed to allow for multiple logos to be displayed without sacrificing additional DSKs for each logo.

Audio Mixing

Masterpiece is supplied as standard with the ability to mix up to 16 mono audio levels, providing a combination of mixer levels and audio Voice-Overs to suit most applications.

Several options of audio input and output are available. Audio can be mixed from the embedded audio on the Program and Preset video inputs, or alternatively from discrete AES inputs to the mixer. The AES inputs can be used for voice-overs, or can be assigned as Program and Preset sources, allowing AES audio mixing with Voice-Overs (up to 4 levels depending on the configuration).

Dolby E Mixing

Optional Dolby E modules support mixing of 5.1 channel surround sound. Dolby decoders decode the Program and Preset inputs and the mixer can then carry out full audio transitions as with any other audio level. Once this is complete, the audio can be re-encoded into Dolby E. The audio can be extracted and re-embedded, or simply presented as AES, depending on the configuration. Other levels of AES audio can be processed simultaneously, allowing for multi-level, multi-language operation. All this takes place without intervention from the operator once the initial configuration is complete, control of audio levels is the same for compressed and PCM audio.

Audio delays through the decoder and encoder path are compensated for in the PCM audio and video paths, ensuring lip sync is maintained through the mixer. Dolby metadata can also be passed through or re-generated on the output Dolby E signal.



DVE

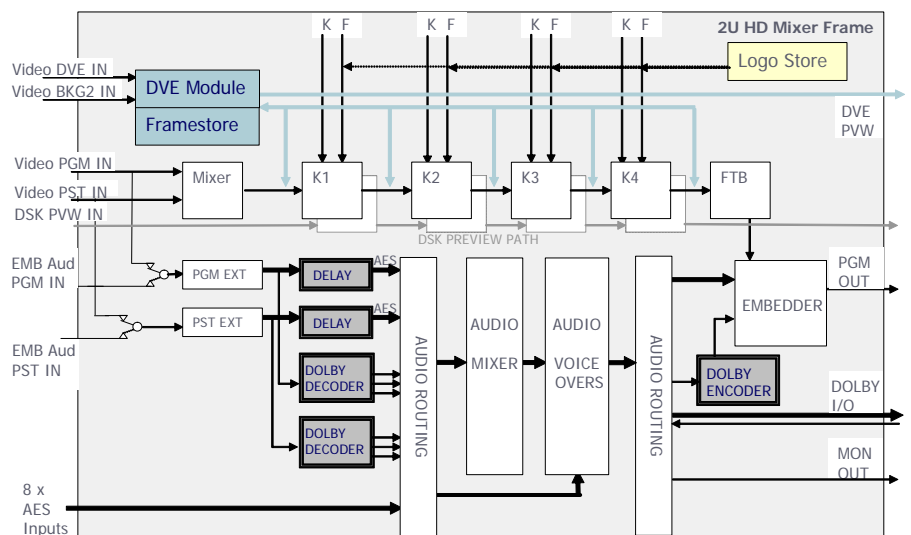
An optional DVE card provides 3D perspective effects on two planes of video, one derived from the PGM/PST mixer, the other external, against an externally fed background. The DVE can perform timed sequences based on a stored timeline and maintains embedded ancillary data during picture manipulation. Both the DVE, which does not tie up a DSK, and the Logo Store key can be dynamically located anywhere in the DSK chain.

Automation Ready

The open architecture ensures easy integration with any automation system. Consider, however, that only Pro-Bel has designed *both* our own master control switchers and automation systems, so you know integration between them means seamless performance and reliability unrivalled by any other mix of master control switcher and automation system on the market. Full system control is available via TCP/IP Ethernet interface, time stamped commands ensure 100% frame accuracy.

Router Integration

All Pro-Bel master control solutions use an external router, typically from the Sirius range which provides in-router conversion of analogue inputs in both video and audio if required. Masterpiece can control the router directly, holding its own database of input names for the four character alphanumeric displays associated with each input. Alternatively it can control the router via the Pro-Bel Aurora control system which will give greater flexibility and control of multiple routers with tie line management.



Control Panels

TX 520

The fully featured TX 520 panel provides access to all system functions, from basic transitions to multi-channel operation making it ideal for broadcast operations that demand the most from equipment and people. Single-button control of all system functions ensures highly accurate on-air operation. Control of up to four downstream keys (DSKs) and an optional DVE is supported.



- Full size control surface
- 20 prime inputs
- Two Aux busses
- Plasma display for metering and system configuration
- Multi-channel operation
- Integrated machine control



TX 510

Compact panel

- 12 Prime inputs
- Single Aux bus
- LCD touch screen for metering and configuration
- Multi-channel operation
- Integrated machine control



TX 502

This compact control panel is ideal for systems that are primarily automated yet require occasional manual control during peak transmission activity. However, looks can be deceptive – while the panel is reduced in size, it's still big on facilities.

- Ultra-compact 2U panel
- LCD re-legendable buttons
- 10 prime inputs
- Single Aux bus
- Multi-channel operation*



Perfectly suited for applications where space is limited, the re-legendable buttons on the TX 502 provide a highly flexible master control environment.

Morpheus Control & Monitoring (MCM) - Master Control Panel

A fully functional touchscreen for control and configuration providing a totally flexible control surface. Control functionality can be made available as required for each operation, video capture windows allow on-screen previews and full on-screen configuration is available. Ethernet connection allows the panel to configure and control a virtually unlimited number of channels. For headless operation, it is possible to configure each channel from a PC, thus reducing cost while maintaining the flexibility of the system. The user can plug a TX 502 panel into the PC serial port and switch it with the main Morpheus Control & Monitoring screen to multiple mixers giving a manual push button control option with maximum flexibility.



* When used with MCM

Technical Specification

Video

Standard: SDI to SMPTE-259M (625 or 525)
 HD-SDI to SMPTE-292M (720p-50/59.94fps, 1080i-50/59.94fps)

Inputs:

Program/Preset Up to 20 PGM/PST**
 Aux Up to 24 AUX **
 Keyers: 2 or 4 DSK (KEY and FILL)
 DVE: Background, Foreground 2 (foreground 1 from Program path)
 Reference Analogue Black & Burst & Tri level

Outputs:

Main: 2 PGM, 2 Clean feed
 Preview: DSK, PST and DVE previews

Audio

AES: 16 levels of audio mixing (mono) - Inputs to AES 3 at 48kHz
 Inputs and Outputs: Up to 8 levels embedded from PGM and PST
 Up to 8 levels from separate embedded audio PGM and PST
 Up to 4 levels from AES inputs ***

Dolby E: Input from any of the above physical inputs

Control:

Automation Control: Ethernet or RS485
 Router Control: RS485
 Panels: TX520 (20 bus panel - 655mm (25.8") wide, 522mm (20.6") deep)
 TX510 (12 bus panel - 482mm (18.9") wide, 355mm (13.9") deep)
 TX502 (10 bus panel - 2RU rackmount)
 Morpheus Control & Monitoring (MCM) Inset touchscreen monitor
 (configurable functionality)

Cue outputs 32 open controller outputs individually programmable for operation as either:
 Channel cue (Input 1, Input 2 etc.), Row cue (PGM bus on air, PST bus on air), Over cue (Over on air) or
 Pre-roll.
 Additional programmable GPI inputs (optional - contact Pro-Bel for details) allow sequences of events to be
 triggered from a single GPI.

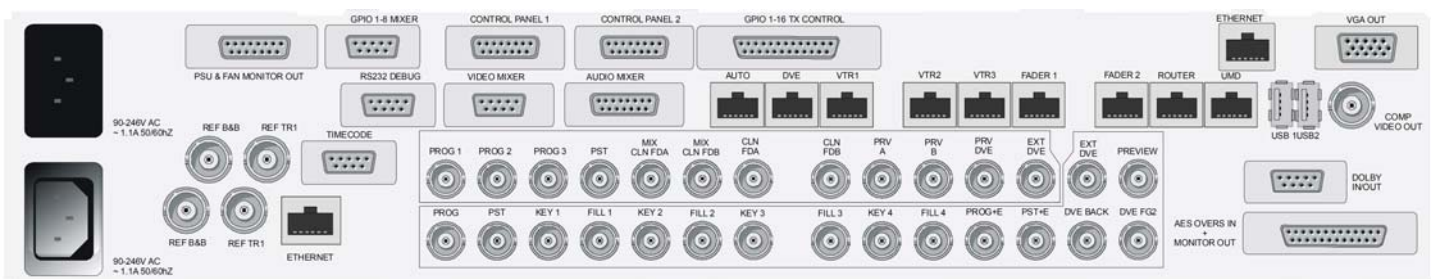
Physical:

Dimensions 2RU x 19" width x 445mm
 Weight: 8kg (18lb)
 Cooling: Fan assisted (front inlet, side exhaust)
 Operating temperature: 0 - 40 degrees C

** Depends on panel type

*** Dependent on configuration of V/Os & monitor outputs

Rear View



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