# Panasonic

## AG-MX70
### Digital A/V Mixer

**4:2:2:4 Picture Quality, 3D Effects, SDI In/Out, and Title Animation — Plus Easy Operation and Outstanding Cost-Performance.**

With the AG-MX70 digital A/V mixer, Panasonic has integrated a 2-BUS, 8-input video switcher, multi-functional digital video effects unit with high-end performance, and an audio mixer into a single compact unit.

The AG-MX70 provides broadcast-grade 4:2:2:4 digital component picture quality.

It features more than 600 effect patterns and a 30-frame graphics buffer for roll, crawl, and logo animation using title files downloaded from a PC. A large LCD panel with a matrix menu helps assure quick, easy operation. Offering optional 3D video effects and SDI interface, this A/V mixer is ready for full-fledged digital post-production.
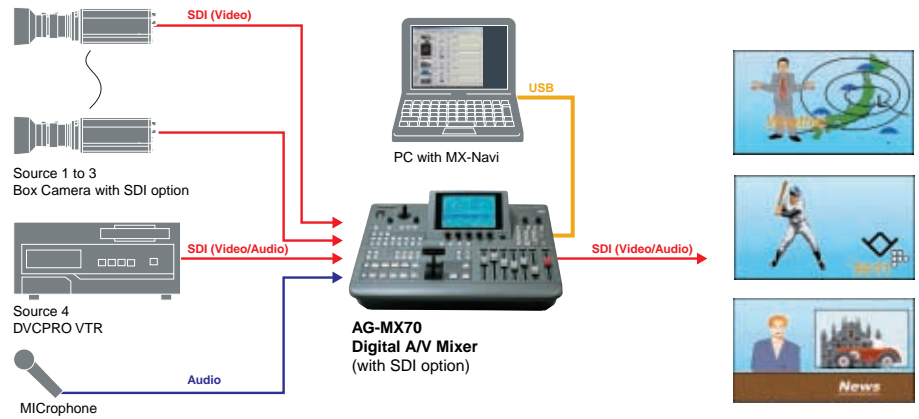
The versatile AG-MX70 is right at home when connected to 25 Mbps DVCPRO VTRs in a digital editing system, or when used as a switcher either in the studio or at live events.
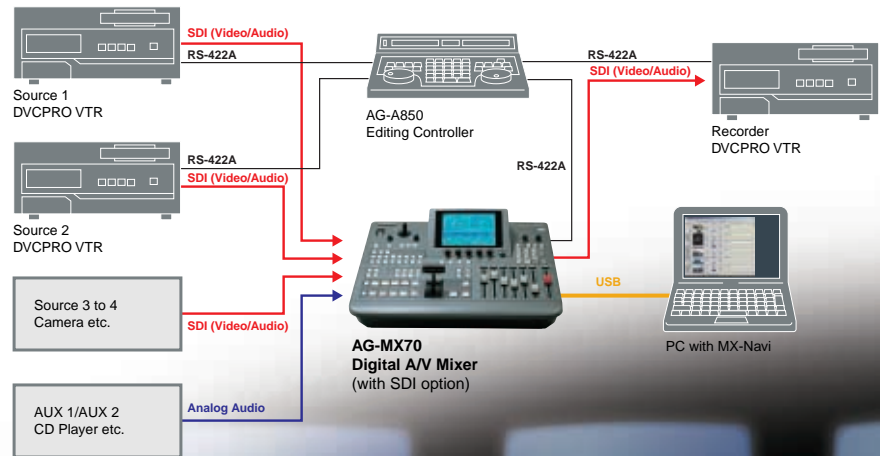
# System Applications

## Live Application

Eight video inputs, each with tally output, and M/E and DSK preview prepare the AG-MX70 for use as a switcher with multi-camera feeds for live studio or event applications. Adding the optional SDI interface also enables high-quality digital input. Titles and graphics created on a PC can be downloading from MX-Navi application, and easily superimposed for use in live production programming.



SDI (Video)

PC with MX-Navi

USB

Source 1 to 3
Box Camera with SDI option

SDI (Video/Audio)

SDI (Video/Audio)

Source 4
DVCPRO VTR

AG-MX70
Digital A/V Mixer
(with SDI option)

Audio

MICrophone

## Editing Application

Standard-equipped RS-422A and RS-232C remote terminals and a GPI terminal allow the AG-MX70 to team up with the AG-A850 or other-brand editing controller, for A/B roll editing. With the SDI interface option on-board, a high-quality, fully digital editing system can also be configured with a DVCPRO VTR. The MX-Navi title insertion program brings the quality of program production to a level approaching many high-end systems.



SDI (Video/Audio)

RS-422A

RS-422A

SDI (Video/Audio)

Source 1
DVCPRO VTR

AG-A850
Editing Controller

Recorder
DVCPRO VTR

RS-422A

RS-422A

SDI (Video/Audio)

Source 2
DVCPRO VTR

Source 3 to 4
Camera etc.

SDI (Video/Audio)

USB

AG-MX70
Digital A/V Mixer
(with SDI option)

PC with MX-Navi

AUX 1/AUX 2
CD Player etc.

Analog Audio

# Creative, Intelligent, Versatile
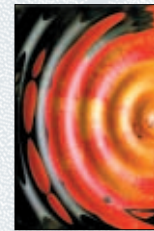
Accordion        Flag        Page turn        Melt

## 4:2:2:4 Digital Processing, 16:9 Wipe Patterns

The AG-MX70 provides high quality 4:2:2:4 digital component signal processing, and wipe patterns accommodates both 16:9 and 4:3 image production needs.

## Large LCD Screen, Matrix Menu

A large LCD panel permits easy monitoring of system status. A five-row matrix menu display with five rotary switches makes it easy to understand and set the AG-MX70's multitude of functions. The menu, which is linked to keys on the operating panel, automatically switches to show the necessary settings. This simplifies operation and reduces steps.

## 2D and 3D Video Effects

Equipped with over 600 2-dimensional effects -- including transition and key patterns, mosaic, paint, trail, and multi-image digital effects -- the versatile AG-MX70 has all it takes to create professional production results. The optional AG-VE70 3D Effects Board provides more than 1,600 3D digital effects, including page turn, ripple, and sphere. The 2D and 3D effects can be combined to create sophisticated image expressions that rival many high-end DVEs.

## Roll, Crawl, and Logo Animation

MX-Navi makes it easy to download graphics files (TGA, BMP, JPEG) created with the other graphics applications, via a USB terminal. Downloads go to the internal graphics buffer* for use in creating roll or crawl titles, logo animation, and other effects.

*NTSC: 640 x 480 pixels x 30 frames,  PAL: 768 x 576 pixels x 26 frames
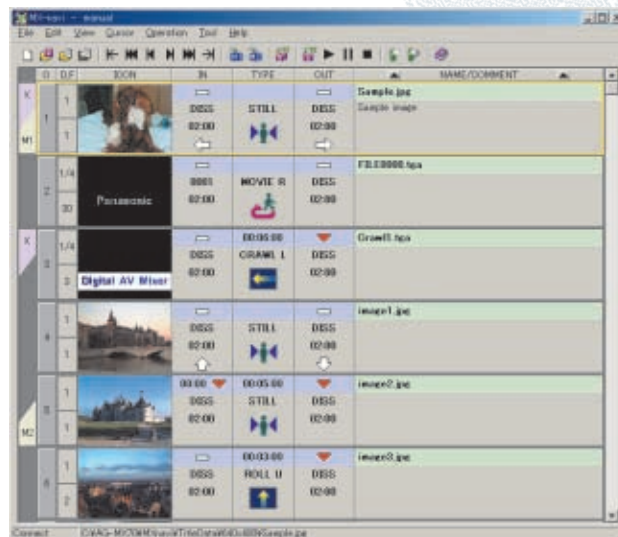
## Serial Digital In/Out

Adding the optional AG-YA70 SDI Board gives the AG-MX70 a 4-input/1-output serial digital component interface (SMPTE 259M-C). This is ideal for configuring an editing system with DVCPRO or other digital VTRs.

## 8 Video Inputs

The AG-MX70 is ready for live multi-camera feeds, with a total of eight analog composite inputs, or four analog component Y/Pb/Pr or YC inputs and four SDI inputs.

## Joy Stick Controller

The easy-to-handle joy stick lets you intuitively position or size your effects, and select or adjust colors.

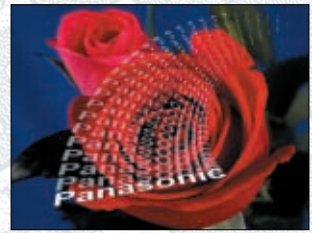MX-Navi application window

Ripple


Multi screen


Sphere


Trail


Title Animation

## Audio Mixing

The AG-MX70 provides versatile audio mixing with four Stereo Inputs plus two Auxiliary Mono Inputs, one of which may be a mic input. Audio can be linked or unlinked to video transitions. The AG-MX70 is also equipped with a headphone jack. The level meters are displayed on the LCD.
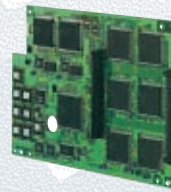
## Tally Output

Tally outputs for up to eight cameras are provided, for using the AG-MX70 as a switcher at live events.

## Other Functions

- Numeric keypad for setting pattern numbers and other values.
- A total of 13 patterns are preset; other patterns can be stored in memory.
- Digital chroma key, digital luminance key
- M/E(Mix Effects) preview, DSK(Down Stream Key) preview
- Editor terminal (9-pin) for either RS-422 or RS-232C connection

### Optinal Boards



**AG-VE70**
3-Dimension Effects Board

**AG-YA70**
Serial Digital Interface Board

# SPECIFICATIONS

## GENERAL

| | |
|---|---|
| Power Source: | 120VAC, 50/60Hz (AG-MX70P), 220 — 240VAC, 50/60Hz (AG-MX70E) |
| Power Consumption: | 50W (Standard), 70W (Full Option) |
| Operating Temperature: | 5° to 40°C |
| Operating Humidity: | Less than 90% (non dew) |
| Dimensions: | 16-3/4″(W) x 7-13/16″(H) x 15-3/4″(D) 425 (W) x 198 (H) x 400 (D) mm |
| Weight: | 16.5 lbs (7.5 kg) in Standard 17.6 lbs (8.0 kg) with Full Option |
| Standard Accessory: | Power cable, CD-ROM |

## VIDEO

| | | |
|---|---|---|
| Video Format: | 625/525 switchable | |
| Sampling Frequency: | Y: 13.5 MHz, Pb/Pr: 6.75MHz, Key: 13.5MHz(4:2:2:4) | |
| Quantization: | A/D: | 9 bit (source 1—8) |
| | Ext. key: | 8 bit |
| | Internal Process: | 8 bit with dynamic rounding |
| | D/A: | 10 bit |
| Gain: | Unity (100% ±2% ) | |
| Band width: | Y: 0.5MHz to 5.0 MHz (±1.0 dB), Pb/Pr: 0.25MHz to 2.5 MHz (±1.0 dB) | |
| S/N ratio: | 56 dB(component), 50 dB(composite or YC) | |
| K factor: | Less than 1% | |
| DG/DP: | Less than 3%/3° | |
| PLL Frequency Range: | Sync: fh±300 Hz, SC: fsc±40 Hz fh=15.734kHz (AG-MX70P)/15.625kHz (AG-MX70E) fsc=3.58MHz (AG-MX70P)/4.43MHz (AG-MX70E) | |
| System Delay: | Max. 1-frame | |

## AUDIO

| | |
|---|---|
| Sampling Frequency: | 48 kHz |
| Quantization: | Analog Input: 20bit, Digital Input (option): 24bit |
| Frequency Response: | 20 Hz to 20 kHz (±1.0 dB) |
| Dynamic Range: | More than 85dB (analog In/out) |
| THD: | Less than 0.05% (1 kHz, aliment level) |
| Cross Talk: | Less than −70 dB (1 kHz, between any two channels) |
| Headroom: | 20 dB/18 dB switchable |
| Digital Audio: | SDI Embedded Audio (option) 2CH ( Ch-1&2/3&4/5&6/7&8 selectable) |

## VIDEO INPUT

| | |
|---|---|
| Analog Component : | BNC x 4 (SOURCE 1/2/3/4), Y: 1.0 Vp-p 75 Ω , Pb/Pr (AG-MX70P): 0.525/0.757 Vp-p switchable 75Ω, Pb/Pr (AG-MX70E): 0.7 Vp-p 75Ω |
| Analog Composite: | BNC x 8 (SOURCE 1 — 8), 1.0Vp-p 75Ω |
| S-Video: | Mini-DIN4 x 4 (SOURCE 1/2/3/4), Y: 1.0 Vp-p, 75Ω, C: 0.286Vp-p 75Ω (AG-MX70P), 0.3Vp-p 75Ω (AG-MX70E) |
| External Fill: | BNC x 1 (Y/Pb/Pr), Analog Component, Y: 1.0 Vp-p 75Ω Pb/Pr (AG-MX70P): 0.525/0.757 Vp-p switchable 75Ω Pb/Pr(AG-MX70E): 0.7 Vp-p 75Ω *Y signal will be clipped at lower than pedestal level. |
| External Key : | BNC x 1, 1.0Vp-p, 75Ω, Analog Composite or Y+Sync |
| Genlock: | BNC x 1 (with passive-loop-through), 1.0Vp-p 75Ω On/Off |
| SDI (Option) : | BNC x 4 (IN 1/2/3/4), SMPTE 259M-C/EBU Tech.3267-E |

## VIDEO OUTPUT

| | |
|---|---|
| Analog Component : | BNC x 2, Y: 1.0 Vp-p 75 Ω Pb/Pr (AG-MX70P): 0.525/0.757 Vp-p switchable 75Ω Pb/Pr (AG-MX70E): 0.7 Vp-p 75Ω |
| Analog Composite: | BNC x 2, 1.0Vp-p 75Ω |
| S-Video: | Mini-DIN4 x 2, Y: 1.0 Vp-p, 75Ω, C: 0.286Vp-p 75Ω (AG-MX70P), 0.3Vp-p 75Ω (AG-MX70E) |
| AUX: | BNC x1, 1.0Vp-p 75Ω |
| 8H Advanced Reference: | BNC x 1, 75Ω, Sync: 0.286(AG-MX70P)/0.3 Vp-p (AG-MX70E) Burst: 0.286(AG-MX70P)/0.3 Vp-p (AG-MX70E) |
| SDI (Option): | BNC x 1, SMPTE 259M-C/EBU Tech.3267-E |

## VIDEO INPUT ADJUSTMENT

| | |
|---|---|
| AGC: | Y: +2dB to −6dB, C: +2dB to −6dB (composite and YC input only) |
| Setup Level: | 0/7.5 IRE switchable (composite and YC, 525 mode only) |

## VIDEO OUTPUT ADJUSTMENT :

| | |
|---|---|
| Setup Level: | 0/7.5IRE switchable (composite and YC, 525 mode only) |
| System H Phase: | −0.25 H to +0.25 H (74 ns/step) |
| System SC Phase: | ±180° |

## AUDIO INPUT

| | |
|---|---|
| Analog (L/R): | XLR x 8, +4/0/−3 dBu switchable, 10kΩ |
| Analog (L/R): | RCA x 4 (AUX 1/2), −8.0 dBV, 10KΩ, unbalanced |
| MIC: | M6 x 1, −60 dBu, 2kΩ, unbalanced |
| SDI (Option): | BNC x 4, Embedded Audio (CH1/2, 3/4, 5/6, 7/8 switchable) |

## AUDIO OUTPUT

| | |
|---|---|
| Analog (L/R): | XLR x 2 (PROGRAM 1), +4/0/-3 dBu switchable, 47Ω |
| Analog (L/R): | RCA x 2 (PROGRAM 2), −8.0 dBV, 47Ω |
| Headphone: | M6 x 1, 8Ω, unbalanced, −20 dBu to −60 dBu |
| SDI (Option): | BNC x 1, Embedded Audio (CH1/2) |

## OTHER PORT

| | |
|---|---|
| Editor: | D-sub 9-pin, RS-422A/232C switchable RS-422A Protocol: GVG/Sony switchable |
| Connectable Editor: | Panasonic: AG-A850, SONY: BVE-2000, BVE-910, BVE-700, PVE-500 |
| Tally Out: | D-sub 9-pin, Open-Collector x 8ch Collector Current: Less than 50mA, Maximum Voltage: 35VDC |
| GPI: | BNC x 1, Voltage (TTL-level) or Make-contact (pull-up resister = 10kΩ), Low-Active |
| USB: | Type-B connector x 1, USB Ver.1.1 (cable length: max. 3m) |

## FUNCTIONS

| | |
|---|---|
| Video Effects: | Nega, Mosaic, Mono, Paint, Strobe, Multi, Trail, Frame/Field-Still, Defocus, Decay, Mirror |
| Matte Colors: | White, Yellow, Cyan, Green, Magenta, Red, Blue, Black, Color-Bar, Custom 1/2 |
| Wipe/Transition Patterns: | More than 600 patterns (standard), More than 1,600 patterns (with optional 3D Effect Board) |
| Event Memory: | 100 Events |
| Joystick Control: | Positioner, Color Correction. |
| Audio Mixer: | SOURCE-1 to 8, AUX-1, AUX-2/Mic, Master |
| Audio Effects: | 3 Band-EQ, Pan, Attenuator, Voice Changer |
| Others: | Audio-Follow, Auto-Take, Auto-Fade, Memory, Audio&Video Input-Assign |

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.
These products may be subject to export regulations.

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