Extron

MGP 641 xi 5K Series • Setup Guide

IMPORTANT NOTE:

Go to **www.extron.com** for the complete MGP 641 xi 5K Series user guide, installation instructions, and specifications before connecting the product to the power source.

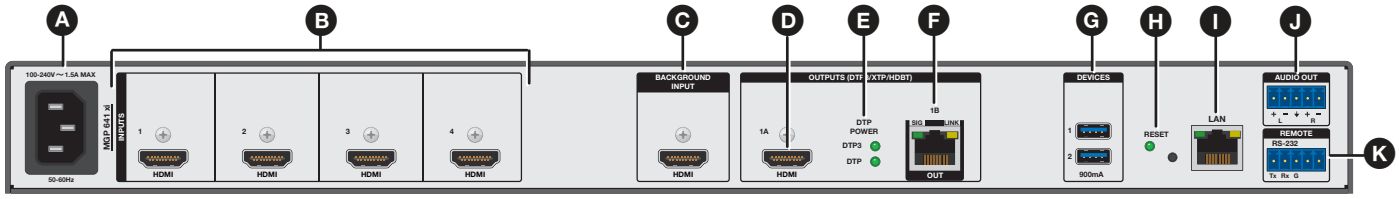
The MGP 641 xi 5K and MGP 641 xi 5K SDI are multi-window video signal processors that display multiple video sources on a single screen in picture-in-picture or picture-by-picture format. Both models have four HDMI inputs, one HDMI background input, one HDMI output, and one buffered DTP3 output. In addition, the MGP 641 xi 5K SDI model has four 12G-SDI inputs that are configurable to be used instead of the HDMI input. Each input is dedicated to one window.

The MGP 641 xi 5K Series feature dedicated connectivity for each of the four windows, fully customizable window layouts, HDCP 1.4 and 2.3 support, logo and background image support, logo keying, and ultra-high resolution support up to 5120 x 2880 at 30 Hz. The MGP 641 xi 5K Series can be controlled and configured using the front panel controls, Simple Instruction Set™ (SIS™) commands, the internal web page, and the Videowall Configuration Software (VCS). The VCS program is available at **www.extron.com**. For information on using VCS, see the *VCS Help File*, also on the Extron website.

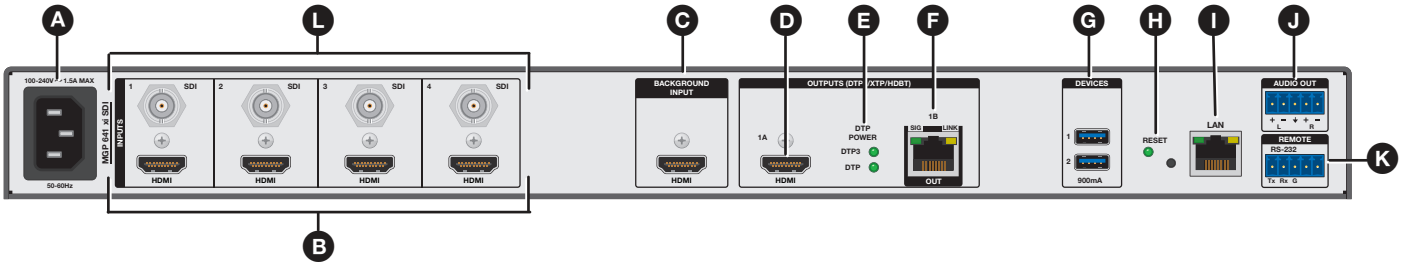
About this Guide

This guide provides instructions for an experienced installer to install and configure the MGP 641 xi 5K Series processors. In this guide, the terms “MGP 641 xi 5K Series” and “MGP” are used interchangeably to refer to both products in the MGP 641 xi 5K Series. For full installation, configuration, and operation details, see the *MGP 641 xi Series User Guide*, available at **www.extron.com**.

Rear Panel Features and Connections



MGP 641 xi 5K



MGP 641 xi 5K SDI

- **A** AC power connector
- **B** HDMI inputs
- **C** HDMI live BACKGROUND INPUT
- **D** HDMI output (output 1A)
- **E** DTP remote power LEDs
- **F** DTP/XTP/HDBT output (output 1B)
- **G** USB device connectors
- **H** RESET button and LED
- **I** Ethernet LAN connector
- **J** ANALOG AUDIO OUT connector
- **K** REMOTE RS-232 connector
- **L** SDI inputs

Figure 1. Rear Panels

Installation Steps

1. Mount the MGP to a rack using the pre-installed side mounting brackets. The unit has a 1U high, full rack wide enclosure.

   Alternatively, attach the four provided rubber feet to the bottom of the MGP and place the unit in the desired location.

2. Connect HDMI sources to the HDMI input connectors (inputs 1 through 4) (see **figure 1**, B on the previous page).

   MGP 641 xi 5K SDI only: Connect SDI sources to the 12G-SDI input connectors (L) (optional).

3. If desired, connect a source to the HDMI live BACKGROUND INPUT connector (C). The MGP 641 windows are displayed in front of this unscaled background video source.

   NOTE: You must set the output resolution to match that of the background source, or the background video is not displayed. The refresh rates do **not** need to match.

4. Make the following output connections as needed:

   - Connect an HDMI display to the HDMI output 1A connector (D).
   - Connect a DTP or DTP3 endpoint, XTP matrix switcher, or HDBaseT compatible receiver to the buffered DTP/XTP/HDBT output connector 1B (F). For cable wiring and recommendations, see the *MGP 641 xi Series User Guide* available at **www.extron.com**.

     NOTES:

     - RS-232 data can be inserted via Ethernet (see the *MGP 641 xi Series User Guide* or the *VCS Help File*).
     - For 5K rates, the twisted pair output is active only if connected to a DTP3 receiver. Output resolutions of 4K @ 30 Hz and lower are supported by DTP receivers.

a. Connect a balanced or unbalanced analog audio receiving device (such as a DSP device or an amplifier) to the 5-pole captive screw AUDIO OUT connector (J) for 2-Ch audio from the selected input. This connector is configurable via VCS or SIS as two discrete mono outputs or as one stereo output (see “Audio Wiring” for details).

b. If the MGP is connected to a computer or to a host controller for remote control, do one of the following:

   - Connect an RS-232 cable from the host serial port to the Tx, Rx, and G pins (the remaining two pins are not used) of the 5-pole Remote RS-232 rear panel connector (K). The default protocol for the RS-232 port is 9600 baud, 1 stop bit, no parity, and 8 data bits, with no flow control.
   - Connect a USB-A to USB-C cable from the host USB-A port to the MGP 641 front panel USB-C CONFIG port (see **figure 3**, A on the next page).
   - Connect an RJ-45 network cable from the host Ethernet port to the MGP 641 rear panel LAN port.

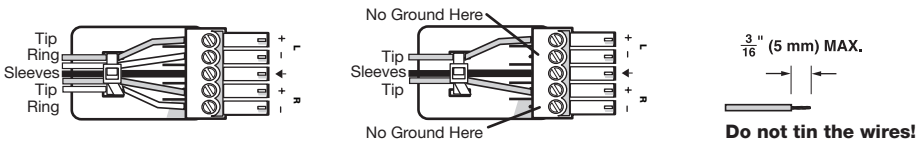
5. (Optional) Connect USB devices such as a USB touchpanel, mouse, or flash drive to one or both USB-A 3.0 Devices ports for use with the annotation function (LinkLicense required), and to save images (see **figure 1**, G).

6. Connect power to the MGP by plugging a standard IEC power cord (provided) from a 100 to 240 VAC, 50-60 Hz power source into the AC power connector (A).

7. Apply power to all connected devices.

Audio Wiring

Wire the audio output connectors as shown in figure 2. Use the supplied tie wrap to strap the audio cable to the extended tail of the connector.



Balanced Audio Output **Unbalanced Audio Output**

Figure 2. Wiring the Audio Output Connectors

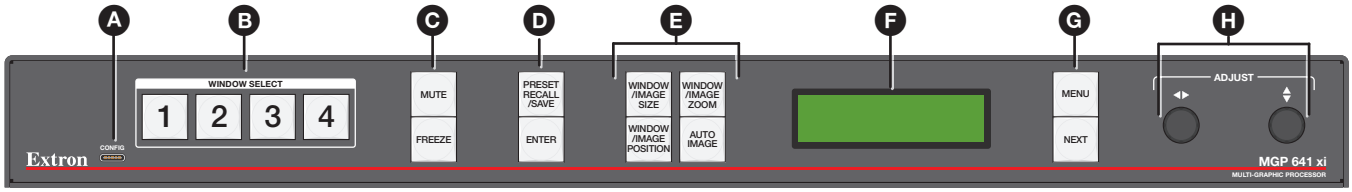
ATTENTION:

- For unbalanced outputs, do not connect wires to the “-” poles.
- Pour les sorties asymétriques, ne connectez pas de câbles aux pôles « - » .

NOTE: The length of exposed wires is important. The ideal length is 3/16 inch (5 mm).

Front Panel Controls

The MGP 641 xi 5K Series front panel buttons, **ADJUST** knobs, and the LCD screen menus provide navigation of general settings required to initially control and configure the MGP. When you press a button or rotate a knob, the LCD screen displays the available settings.



- **A** **USB CONFIG port**
- **B** **Window and input selection buttons**
- **C** **MUTE and FREEZE buttons**
- **D** **PRESET RECALL/SAVE and ENTER buttons**
- **E** **Picture control buttons**
- **F** **LCD screen**
- **G** **Menu navigation buttons**
- **H** **Horizontal and vertical ADJUST knobs**

Figure 3. MGP 641 xi 5K Series Front Panel

A **USB CONFIG port** — Connect a host device to this USB-C port for device configuration, control, file transfer, and firmware upgrades.

B **Window selection buttons** — Press these buttons to select windows (inputs) 1 through 4 for configuration. The selected button lights amber.

C **MUTE and FREEZE buttons** —

- **MUTE** — Press this button to mute the selected window. The button lights orange when the mute is enabled. To unmute, press the lit **MUTE** button again.
- **FREEZE** — Press this button to freeze the selected window. The button lights orange when freeze is enabled. To unfreeze the window, press the lit **FREEZE** button again.

D **PRESET RECALL/SAVE and ENTER buttons** — In combination, these buttons save the current settings to a window preset or recall a stored preset (up to 128). See **Saving and Recalling Presets** on page 4 for more information on using these buttons.

E **Picture control buttons** — Press these buttons to adjust the size, position, and zoom, or to perform an auto-image adjustment on the selected window.

- Press **WINDOW/IMAGE SIZE**, **WINDOW/IMAGE POSITION**, or **WINDOW/IMAGE ZOOM** once to select the window (the button lights orange) or twice to select the image within the window (the button lights green).
- Use the horizontal (◄►) and vertical (▲▼) **ADJUST** knobs to adjust the settings shown on the left and right sides of the LCD screen, respectively.
- Press **AUTO IMAGE** to perform an auto image adjustment on the selected input window. Press it again to confirm the adjustment.

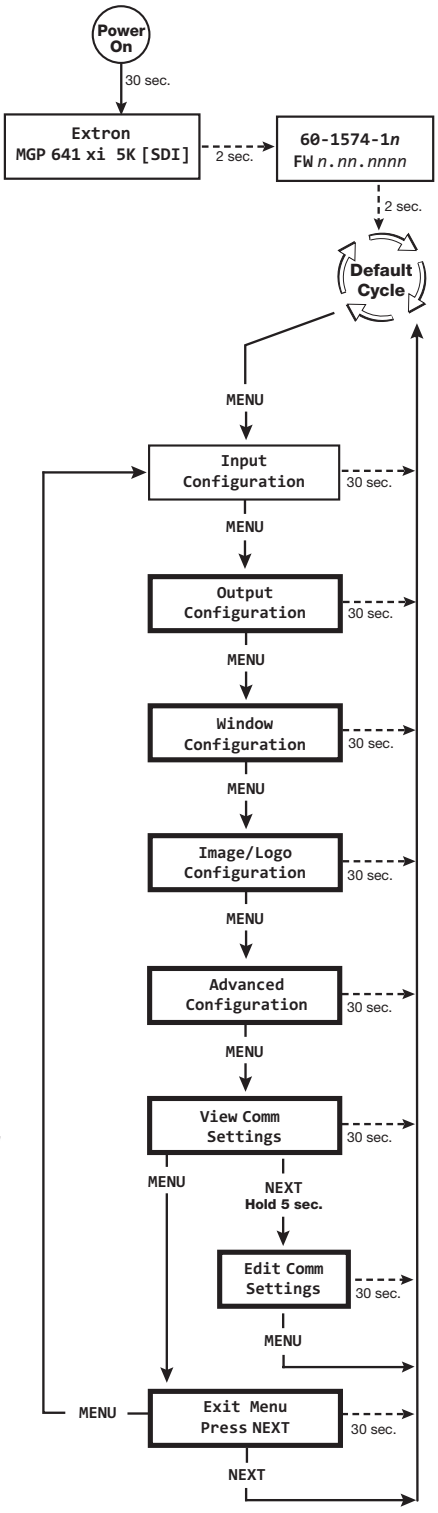
F **LCD screen** — Displays the configuration menus, messages, and your selections.

G **Menu navigation buttons** — Press **MENU** to step through the menus on the LCD screen. From each menu, press **NEXT** to step through its submenus.

H **Horizontal and vertical ADJUST knobs** — Turn these knobs to step through submenu options and preset slots, and to adjust picture controls.

Setting Up the MGP 641 xi 5K Series Using the Front Panel

After installing and connecting the MGP, use the front panel controls to configure and adjust the unit for use. Press the **MENU** button to access the Main Menu (shown at right). Then, repeatedly press the **MENU** button to cycle through the menus and access the Input Configuration, Output Configuration, and Advanced Configuration menus to perform steps 1 through 4.



1. Use the Input Configuration menu to configure inputs 1 through 4, including EDID selection, aspect ratio selection, HDCP authorization, and input format (SDI models only). Some of these settings may require about 3 seconds to take effect after selection.
2. Use the Output Configuration menu to configure the outputs, including signal type, resolution and rate, **HDCP Note** (encryption notification), TP and HDMI format, and display rotation.
3. From the Advanced Configuration menu, Test Pattern submenu, use the crop and grayscale test patterns to adjust the display settings.
4. Use the front panel menu system to set the IP address for the unit:
   a. Press the **MENU** button repeatedly until the View Com Settings menu name is displayed on the LCD screen.
   b. Press and hold the **NEXT** button until the LCD screen displays Edit Comm Settings.
   c. Press the **NEXT** button repeatedly until IP Address appears on the LCD screen.
   d. Rotate the horizontal **ADJUST** knob (◄►) to select a section of the address (octet) to edit, and the vertical **ADJUST** knob (▲▼) to increase or decrease the selected number.
   e. Repeat step d for the remaining octets.
5. Use the picture control buttons to size and position each window as desired for your application.
6. Save each window configuration to any of the 128 window preset slots for easy recall of window settings.

Saving and Recalling Presets

To save the current configuration as a preset:

1. Press and hold the **PRESET RECALL/SAVE** button until the LCD screen displays Window Preset/Save to #*nnn* (approximately 2 seconds). The button lights orange.
2. Rotate either **ADJUST** knob to select the preset number or name to which you want to save this configuration.
3. Press the **ENTER** button. The button lights orange. Both the **PRESET RECALL/SAVE** and the **ENTER** buttons remain lit until the preset is saved, then turn off.

To recall a saved preset, press the **PRESET RECALL/SAVE** button and immediately release it. The button lights orange, and the LCD window displays Window Preset/Recall #*nnn*. Rotate either **ADJUST** knob to select a preset number, then press **ENTER**. The **ENTER** button lights orange and remains lit until the window preset is recalled, then both buttons turn off. The LCD window displays WINDOW PRESET #*nnn* Saved.

SIS Commands

As an alternative to the front panel controls, you can issue SIS commands via RS-232, USB, or Ethernet from the host to set up and control the MGP 641 (see the *MGP 641 xi Series User Guide* at **www.extron.com** for a complete list of SIS commands).

Command	ASCII	Response	Additional Description
Input Video Type			
Set video type	X1*X3\	ItypX1*X3↵	Set input X1 to format X3.
View video type	X1\	ItypX3↵	View video type X3 set for input X1 .
View detected format	X1*\	VtypX1*X18↵	View actual video format X18 on input X1.
Window and Preset			
Mute (blank) a window	X1*1B	VmtX1*1↵	Blank (mute) window X1.
Unmute a window	X1*0B	VmtX1*0↵	Unmute window X1.
View mute status	X1 B	X42 ↵	View mute status X42 for window X1.
Save window preset	1*X14,	1Spr*X14↵	Save current window settings as preset X14.
Recall window preset	1*X14.	1Rpr*X14↵	Recall window preset X14.
Audio			
Audio input switch	X1$	InX1•Aud↵	Select (switch) the audio from input X1.
Global audio mute	X4Z	AmtX4↵	Set mute state of all audio outputs to X4.
Discrete audio mute	X2*X4Z	AmtX2*X4↵	Set mute state of audio output X2 to X4.
View global mute status	Z	X4•X4•X4↵	View audio mute status: HDMI, DTP, analog audio
View discrete audio mute	X2*Z	X4↵	View mute status X4 of audio output X2.
Front Panel Lock Mode			
Set front panel lock mode	X35X	ExeX35↵	Set front panel lock mode to X35.
Read front panel lock mode	X	X35↵	View front panel lock mode X35.

KEY:

X1	= Input (window) selection	0 = All windows 1 = Window 1, 2 = Window 2, 3 = Window 3, 4 = Window 4 99 = Background (valid only for EDID, HDCP authorization, HDCP status, audio, and information request commands)
X2	= Output number	1 = HDMI output, 2 = TP output, 3 = Analog audio output, 99 = All outputs
X3	= Input video type	1 = HDMI/DVI, 2 = SDI (auto detect)
X4	= Mute status	0 = unmuted, 1 = muted
X10	= DHCP on or off status	0 = off or disabled, 1 = on or enabled
X14	= Window preset number	1 - 128
X18	= Detected input format	0 = no signal, 1 = HDMI, 2 = DVI, 3 = SDI, 4 = HD-SDI, 5 = 3G-SDI, 6 = 6G-SDI, 7 = 12G-SDI, 8 = Unknown 3 through 7 apply to MGP 641 xi 5K SDI only.
X35	= Front panel lock (executive) mode	0 = Off (front panel unlocked, default), 1 = Complete front panel lockout, 2 = Only window preset recall, mute, freeze, and auto image are available.
X42	= Mute status	0 = Unmute (default) 1 = Mute video to black screen 2 = Mute video and sync (for output mute only).

Command	ASCII	Response	Additional Description
IP Setup			
Set IP address	Esc X107 CI←	Ipi•X107↵	Set unit IP address X107.
Read IP address	Esc CI←	X107↵	View the unit IP address (X107).
Set subnet mask	Esc X113 CS←	Ips•X113↵	Set unit subnet mask X113.
Read subnet mask	Esc CS←	X113↵	View the unit subnet mask (X113).
Set gateway address	Esc X107 CG←	Ipg•X107↵	Set IP address X107 for your gateway.
Read gateway address	Esc CG←	X107↵	View the gateway IP address for the unit.
Set DHCP mode	Esc X10DH←	IdhX10↵	Enable or disable DHCP.
View DHCP mode	Esc DH←	X10↵	View the DHCP setting.
Reboot networking	Esc2Boot←	Boot2↵	Restart the network after IP setting changes.

KEY:

X10 = DHCP on or off status — 0 = off or disabled (default), 1 = on or enabled
X107 = IP or gateway address — *nnn.nnn.nnn.nnn*. Leading zeros are optional in each octet.
X113 = Subnet mask — *nnn.nnn.nnn.nnn*. Leading zeros are optional in each octet.

NOTE: IP and subnet commands require an ESC 2BOOT command before any changes are applied (see the Reboot Networking command, above).

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the **Extron Safety and Regulatory Compliance Guide** on the Extron website.

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