Pixblasters MINI Video LED Controller

TRANSFORMING LED STRIPS & PANELS INTO REAL-TIME DISPLAYS

ANY COMPUTER & ANY OS

PC, Raspberry Pi, media boxes… – connects to any computer as an ordinary monitor.

NO PROGRAMMING

Plug-in the monitor cable and the controller will smoothly drive LEDs at the maximum frame rate of 60 fps.

DISPLAY MANAGEMENT

Use any Digital Signage Software and add layered screen divisions, text, animations, video, RSS...

REAL-TIME CONTROL

Develop your own software for real-time controls of smart lighting fixtures, art installations, etc.

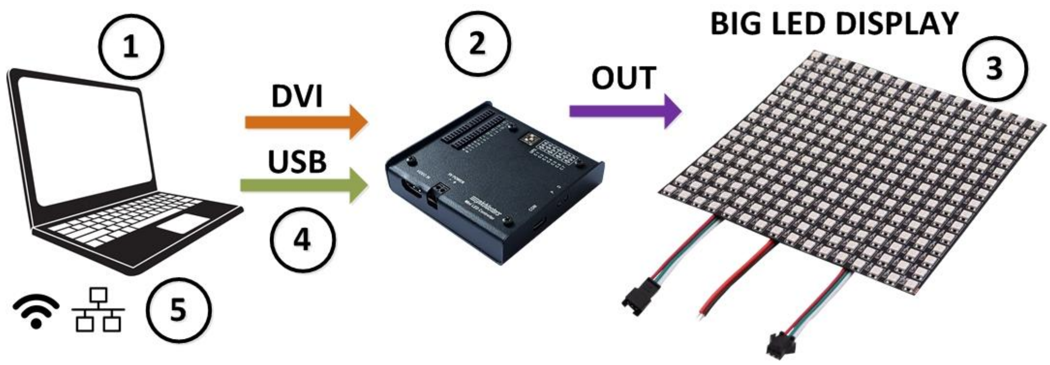
REMOTE ACCESS

Control it remotely anywhere in the world through network interfaces of the driving computer.

Pixblasters MINI is a real-time video controller for addressable RGB LED strips and panels (including WS2812B, SK6812, APA102, and compatible devices). It presents itself to a host computer as a standard monitor (display device) and maps a user-selected portion of the screen to up to 8,192 RGB LEDs at 60 frames per second. The device requires no programming and operates independently of the host CPU/GPU workload, allowing the computer to run digital signage software, media players, or other applications without performance impact.

When used with the MINI LED controller, real-time RGB LED displays can be assembled by users with minimal technical experience. The system requires no soldering and can be built using only basic hand tools such as pliers, wire cutters, and screwdrivers.

System Connections



- A single LED-driving computer (**1**) generates the video signal for the LED display and connects to the DVI-compatible video input of the Pixblasters MINI video LED controller (**2**) via an HDMI-type monitor cable.
- The computer (**5**) can be controlled locally or remotely through various network interfaces. It can run any video display application, including digital signage players that automatically connect to online digital content services.
- The Pixblasters MINI controller displays the selected portion of the video image on the attached LED display (**3**), which can consist of up to 8,192 RGB LEDs. The display can be assembled using LED strips or LED panels (WS2811, WS2812B and other most popular addressable LEDs).
- The LED controller (**2**) is configured using on-board DIP switches. Additional configuration parameters are set only once per board through a simple configuration menu on the PC (**1**) connected with a USB-C cable.
- **Example**: the LED display (**3**) can be built from, for instance, 32 units of 16x16 WS2812B LED panels or other types of LED panels. When constructed using 30 LED/m strips, the display can cover nearly 10 m^2 LED display[1] and can be arranged in various configurations to support different video resolutions (W x H), such as 512 x 16, 128 x 64 and many others.
- Separate +5V DC power supplies must provide adequate power for the entire display.
- To control LED displays with more than 8,192 LEDs, please use the Pixblasters MS1 LED controller. This controller allows for chaining and support displays containing hundreds of thousands of LEDs.

[1] Assumed square pixel

LED MATERIAL

Pixblasters MINI supports video LED displays built of different types of addressable RGB LED panels or LED strips (3- and 4-wire types).

DISPLAY SIZE

A single MINI can control[1] 2.3/7.4 m^2 display built of 60/30 LED/m.

DISPLAY SPEED

LEDs work at their maximum speed and perfectly synchronized, no matter the number of LEDs and the display size.

DISPLAY CONTENT

Anything that shows on a computer monitor shows on the LEDs as well. No need for special software for anti-aliasing, fonts, image processing…

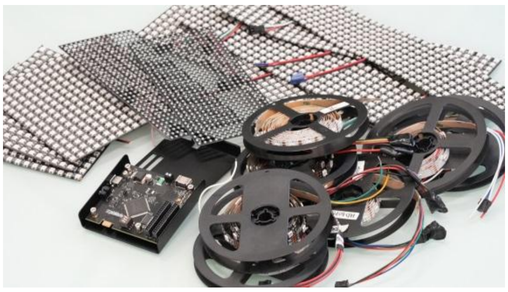
[1] Assumed square pixel
[2] LED display acts as an ordinary monitor

Technical Specifications

- Supports 3-wire (WS2811, WS2812B…) and 4-wire (APA102, SK9822, HD107S…) LED strips
- Supports WS2812B LED panels: 8x8, 16x16, 32x8, 32x16, 22x22, 44x11 and other custom formats
- Includes the DVI® compatible video input with the on-board EDID flash and accepts the standard monitor cable
- Supports different video input resolutions (max. 720p - 1280x720@60) and the RGB888 (16M colors) color format
- Drives up to 8,192 LEDs through 16 digital outputs that drive up to 512 LEDs each
- Supports wide range of output resolutions (H x V): 512 x 16 (native), 256 x 32, 128 x 64, and others
- Integrates video input cropping, multiple lines per output mode, brightness control and LED gamma corrections
- Displays any graphics and video content – no limits on font types, animations, image and movie formats…
- Maximum LED display frame rate (60 FPS for WS2812B) is not affected by a number of attached LEDs
- Validated with different computers and different OSes: Raspberry Pi, PC, media boxes, phones and tablets…
- Can be remotely controlled anywhere in the world through the network interfaces of the driving computer
- The driving computer is free of LED controls and the size of the LED display does not influence its performance
- The driving computer can run digital signage players, media players, web kiosk applications, custom software, etc.
- Display content can be designed and remotely administrated by any digital signage software[2]
- On-board Microchip PIC18F26J50 microcontroller enables updates and permanently stores the display configuration
- Fully configurable through a configuration menu on the PC connected via the USB C cable
- New features can be added to deployed controllers through a simple firmware upgrade procedure
- Operation modes can be swiftly changed by on-board DIP switches
- Snap-action connectors enable easy wiring of the complete display with no need for any soldering
- The LED power supplies need to be wired separately to enable power and current requirements of giant LED displays
- Based on the AMD Spartan®-6 XC6LX9-3 FPGA chip
- Dimensions: 89,6 x 92 x 21 mm (L x W x H)
- Power Supply 5V DC, 0.6A

Product Ordering and Resources

For detailed information about this product, please visit our website at ***www.pixblasters.com***. The Downloads section provides the latest firmware versions, while the Documents section includes the complete User's Manual and additional documentation. You can also find various examples of video LED installations in the Videos section. For technical support, please contact us at ***info@pixblasters.com***.



To place an order, please contact Pixblasters at ***info@pixblasters.com***. To order from our distributors, please visit Crowd Supply: *https://www.crowdsupply.com/pixblasters/pixblasters-mini-led-controller*

Part No:	Distributor	Product Name

www.pixblasters.com
E-mail: info@pixblasters.com