

DGE-1000

Digital Graphics Engine 1000



- *Touch screen graphics engine for the Crestron® TSD-2220 or a third-party USB HID-compliant touch screen*
- *HDMI® output supports display resolutions up to 3840x2160@60Hz (2160p60)*
- *Displays dual-window or full screen video from HDMI and H.264 streaming sources*
- *Supports video input resolutions up to 1080p60 via HDMI*
- *Receives H.264 streaming video signals up to 1080p60/25 Mbps*
- *HDCP 1.4 compliant (HDMI only)*
- *Crestron® HTML5 technology used for custom user projects*
- *Built-in web browsing*
- *Supports Crestron Home® and Crestron General Web apps*
- *Onboard COM, HDMI, IR/serial, and high-speed Ethernet ports*
- *High-speed USB 2.0, 3.0 ports for USB HID-compliant peripheral devices*
- *Powered via PoE+ or power pack (sold separately)*
- *Enterprise-grade security and authentication*
- *Web or cloud-based configuration*
- *Compact, surface-mountable form factor*

The Crestron® DGE-1000 digital graphics engine transforms an HD touch screen display into an advanced Crestron controller. The DGE-1000 features [Crestron HTML5](#) technology that may be used to create a custom graphical environment for controlling audio, video, lighting, shades, HVAC, security, and other amenities. It is also used for functions with dual-window video display and web browsing. Its low-profile, surface-mountable design allows for discreet installation behind a flat-panel display, under a table, or inside a lectern or equipment rack.

The DGE-1000 offers an HDMI® output to connect a display device, and includes two USB HID ports for touch screen, mouse, or keyboard input. Additional control ports are provided for controlling the display device and other equipment. The HDMI input allows an AirMedia® wireless presentation gateway or other high-definition video source to

be connected and displayed onscreen. Additionally, H.264/H.265 and MJPEG streaming video signals can be received over a high-speed Ethernet connection, which also provides an interface to a Crestron control system.¹

Touch Screen Interface

The DGE-1000 can be paired with the [TSD-2220](#) HD touch screen display to deliver a high-definition 21.5 in. touch screen control panel that is ideal for home, corporate, and government applications. It is also compatible with third-party touch screen displays to support a range of control, collaboration, video display, and interactive kiosk solutions.

Crestron HTML5 Technology

Crestron HTML5 User Interface is a collection of design components used for creating a JavaScript™ programming library that is compatible with HTML5. This library allows web application developers to create UI projects that communicate to Crestron control systems instead of normal HTTP servers.

HD Streaming Video

The DGE-1000 supports high-definition streaming video, making it possible to view security cameras and other video sources over the network via the touch screen display. Native support for H.264, H.265 and MJPEG formats allows the DGE-1000 to display live streaming video from an IP camera, a streaming encoder ([DM-TXRX-100-STR](#) or similar), or a [DigitalMedia™ switcher](#).¹

HDMI Input

An HDMI input is provided for connecting and displaying an HD video source. Wireless presentation is also supported by connecting an [AirMedia® gateway](#) to the HDMI input, allowing for laptops and mobile devices to connect to the DGE-1000 over Wi-Fi® communications.²

HDCP Support

Support for HDCP (High-bandwidth Digital Content Protection) ensures seamless compatibility with content-protected optical disc, television, and streaming sources.

Web Browsing

Using its built-in Crestron General Web app or a web browser, the DGE-1000 provides access to online program guides and other web-based services. It can also be used to control DVRs and other devices.³

Onscreen Keyboard

Typing in passwords, URLs, and text searches is facilitated using the onscreen multi-language keyboard.

Built-in Annotation

Native to the DGE-1000, annotation provides the ability to capture ideas in real time, letting you draw and write over a video source. Remote annotation capability allows multiple participants, each with a separate touch screen, to annotate over the same video image for enhanced collaboration. Remote annotation is possible by using multiple DGE-1000's

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and touch screens. Adding a dedicated DGE-1000 to the main display in a room allows the annotated session to be viewed by an entire audience.

Onboard Control Ports

The DGE-1000 provides built-in RS-232 and IR ports for programmable control of the connected display and other devices via a control system. When connected to a control system via Ethernet, the DGE-1000 offers a gateway for controlling the display device directly through its HDMI connection, which reduces the need for dedicated serial cables or IR emitters. Additional control capabilities are available by using CEC (Consumer Electronics Control) that is embedded within the HDMI out signal.

Low-Profile Installation

The DGE-1000 mounts conveniently to a wall, ceiling, or other flat surface. Its compact, surface-mountable form factor fits easily behind a flat panel display, beneath a tabletop, or inside a lectern or other furniture. It can even be attached directly to a single rack rail in the back of an equipment cabinet. The DGE-1000 can be powered using the included wall mount power pack or via PoE (Power over Ethernet) for a true single-wire solution.

Crestron Home® OS Control

The DGE-1000 can be used to control a [Crestron Home OS](#) whole home solution via a connected [TSD-2220](#) or third-party touch screen display. Select the Crestron Home app from the connected display to control lighting, shades, climate, media, security, and cameras, including the ability to create and recall scenes that create a desired ambiance throughout a home. Additionally, the DGE-1000 supports streaming high-definition video to the connected display directly from the Crestron Home app.

Enterprise-Grade Security

The DGE-1000 employs enterprise-grade networking with robust security features such as 802.1X authentication, TLS encryption, HTTPS connectivity, and Active Directory® service integration. These features help to protect your network and to ensure compliance with your organization's network policies. Cloud-based provisioning and management streamlines the process of configuring, monitoring, and updating each DGE-1000 on the network. Additional support for SNMP allows the DGE-1000 to be monitored by your IT administrator.

XiO Cloud® Service

The DGE-1000 is compatible with the XiO Cloud® service, which is an IoT (Internet of Things) based platform for remotely provisioning, monitoring, and managing Crestron devices across an enterprise or an entire client base. Built on the Microsoft® Azure® software platform and utilizing Microsoft's industry-leading Azure IoT Hub technology, XiO Cloud enables installers and IT managers to deploy and manage thousands of devices simultaneously. Unlike other virtual machine-based cloud solutions, Azure services provide unlimited scalability to suit the ever-growing needs of an

enterprise. For more information, visit www.crestron.com/xiocloud.

Specifications

Graphics Engine

Crestron HTML5 technology, landscape or portrait orientation, local and remote annotation, multilanguage web browser³, multilanguage onscreen keyboard, screensaver, scalable dual streaming video windowing, displays any combination of HDMI® and streaming sources^{1,2}, setup and diagnostics via web browser, onscreen UI, or cloud

Languages

Onscreen Keyboard	Arabic, Chinese (Simplified), Croatian, Czech, Danish, Dutch, English (UK), English (US), Finnish, French (Canada), French (Switzerland), German, Hebrew, Hungarian, Italian, Japanese, Norwegian Bokmal, Polish, Portuguese, Russian, Serbian, Spanish, Swedish, Turkish
Web Browser	Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, Dutch, English (US), Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Portuguese (Brasil), Romanian, Russian, Slovak, Spanish, Swedish, Thai

Communications

Ethernet	100/1000 Mbps, auto-switching, autonegotiating, autodiscovery, full/half duplex, TCP/IP, UDP/IP, DHCP, SSL, TLS ⁵ , SSH, SFTP (SSH File Transfer Protocol), IEEE 802.1x, Active Directory authentication, HTTPS web browser setup and XiO Cloud service, 802.3af compliant
USB Host	USB 2.0 and 3.0, Supports TSD-2220 touch screen display and most third-party USB HID compliant peripherals
USB Device	For computer console (installer setup and firmware updates)
RS-232	2-way device control and monitoring up to 115.2k baud with hardware and software handshaking (via control system)
IR/Serial	1-way device control via infrared up to 1.1 MHz or serial TTL/RS-232 (0–5V) up to 19200 baud (via control system)
HDMI (Input)	HDCP 1.4, EDID; Supports management of HDCP and EDID

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HDMI (Output) HDCP 2.2, EDID, CEC; Supports management of HDCP and EDID

Pointing Device Support

Compatible with the TSD-2220 touch screen display and most third-party USB HID compliant touch screens, mice, and keyboards

Streaming Decoder

Video Formats	H.264 and H.265 (MPEG-4 part 10 AVC, MJPEG)
Audio Formats	AAC stereo
Bitrates	Up to 20 Mbps
Resolutions	Up to 1080p30

Video

Input Signal Types	HDMI (DVI and dual-mode DisplayPort™ signal compatible ⁴)
Output Signal Types	HDMI (DVI compatible ⁴)
Maximum Input Resolutions	HDMI Input: 1920x1080@60Hz (HD 1080p60);

NOTE: Interlaced video is not supported. All video inputs will be scaled to the selected HDMI.

HDMI Output Resolutions	1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x800@60Hz ⁵ , 1366x768@60Hz ⁵ , 1440x900@60Hz ⁵ , 1600x900@60Hz ⁵ , 1600x1200@60Hz, 1680x1050@60Hz ⁵ , 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 3840x2160@30Hz(2160p30) 3840x2160@50Hz(2160p50) 3840x2160@60Hz(2160p)
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NOTE: All video inputs are scaled to the selected HDMI output resolution.

Audio

Input Signal Types	HDMI (dual-mode DisplayPort compatible ⁴)
Output Signal Types	HDMI
Input/Output Format	2 channel LPCM

Connectors and Card Slots

IR	(1) 2-pin 3.5 mm detachable terminal block; IR/Serial output port for display device control; IR output up to 1.1 MHz; 1-way serial TTL/RS-232 (0-5V) up to 19200 baud
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NOTE: IR port 2 is not used. IRP2 emitter is sold separately.

COM	(1) 5-pin 3.5 mm detachable terminal block; Bidirectional RS-232 port for display device control; Up to 115.2k baud, hardware and software handshaking support
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AUDIO OUT	(1) 5-pin 3.5 mm detachable terminal block; Balanced/unbalanced stereo line-level audio output; Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced; Output Impedance: 200 ohms balanced, 100 ohms unbalanced
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HDMI Input	(1) HDMI Type A connector; HDMI digital video/audio input; (DVI & Dual-Mode DisplayPort compatible)
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HDMI Output	(1) HDMI Type A connector; HDMI digital video/audio output (DVI compatible ²)
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USB	(2) USB Type A connectors; USB 2.0 host port for USB conferencing peripheral; USB 3.0 host port for USB conferencing peripheral; (1) USB Type B connector; USB 3.0 device port for computer console
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LAN PoE+	(1) 8-pin RJ-45 connector; 100Base-TX/1000Base-T Ethernet port and PoE+ Class 4
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24 V 1.25A	(1) 2.1 x 5.5 mm DC power connector; 24VDC power input; PW-2412WU power pack sold separately
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Controls and Indicators

PWR	(1) Green LED, indicates operating power supplied via the local power pack or PoE+
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RESET	(1) Recessed push button for hardware reset
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SETUP	(1) Red LED and (1) recessed push button for onscreen IP address display
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ONLINE	(1) Green LED, indicates control system connection
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HDMI IN/OUT	(2) Green LEDs, indicate HDMI signal presence at the HDMI input/output
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LAN PoE+	(2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity
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Power

Power over Ethernet	IEEE 802.3af Class 4 Powered Device
Power Pack (Sold Separately)	Input: 100-240VAC, 50/60 Hz; Output: 1.25A @ 24VDC; Model: PW-2412WU
Power Consumption	14 W (typical)

Environmental

Temperature	32° to 104°F (-0° to 40° C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	47.8 BTU/hr

Construction

Chassis	Metal, black finish, with (2) integral mounting flanges, vented sides
Mounting	Freestanding, surface mount, or attach to a single rack rail

Dimensions

Height	1.26 in. (33 mm)
Width	7.40 in. (188 mm)
Depth	6.54 in. (166 mm)

Weight

1.9 lb (0.86 kg)

Compliance

Regulatory Model: M202011001

Model

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Available Accessories

For a list of available accessories, visit the [DGE-1000](#) product page.

Notes:

1. The DGE-1000 supports up to two simultaneous streaming inputs with a maximum combined total bitrate of 25 Mbps.
2. The HDMI® input signal cannot be downsampled more than 4 times. For instance, a 1920x1080 source signal can be displayed no smaller than 480x270 pixels.
3. Web browsing, weather information, and certain other functions require an internet connection.
4. HDMI connections require an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort™ signal. [CBL-HD-DVI](#) interface cables are available separately.
5. The output resolution is with or without reduced blanking.
6. The output resolution is with reduced blanking only.

This product may be purchased from select authorized Crestron dealers and distributors. To find a dealer or distributor, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/How-To-Buy/Find-a-Representative or contact us for additional information by visiting www.crestron.com/contact/our-locations for your local contact.

The original language version of this document is U.S. English. All other languages are a translation of the original document.

The product warranty can be found at www.crestron.com/warranty.

The specific patents that cover Crestron products are listed online at www.crestron.com/legal/patents.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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HDMI

Specifications are subject to change without notice.

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