

DGE-100

Digital Graphics Engine 100

- > Graphics engine and touch screen interface for the Crestron® TSD-2020
- > Compatible with most third-party USB HID compliant touch screens
- > HDMI® output supports display resolutions up to Full HD 1080p60 and WUXGA
- > Features Crestron Smart Graphics™
- > Supports dual-window or full screen video
- > HDMI input accepts video sources up to 1080p60
- > Receives H.264 streaming video signals up to 1080p60/25Mbps^[3]
- > HDCP 1.2 compliant
- > Built-in annotation capabilities
- > Customizable audio feedback
- > Built-in Web browsing
- > On-screen multi-language keyboard
- > Customizable screensaver
- > USB 2.0 port supports most USB HID compliant touch screens, mice, and keyboards
- > High-speed 10/100 Ethernet LAN port
- > Enables device control via CEC, IR, and RS-232
- > Powered via PoE or local power pack
- > 100-240V universal power pack included
- > Compact, surface-mountable form factor fits in tight spaces
- > Optional wall mount kit available for use with TSD-2020

The DGE-100 Digital Graphics Engine transforms virtually any HD touch screen display into an advanced Crestron® controller. Featuring Crestron Smart Graphics™ technology, the DGE-100 provides for the creation of a completely custom graphical environment combining advanced controls for audio & video, lighting, shades, HVAC, security, and other functions with dual-window HD video display, annotation, audio feedback, and Web browsing. Its low-profile, surface-mountable design allows for a discreet installation behind a flat-panel display, under a table, or inside a lectern or equipment rack.

The DGE-100 features an HDMI® output to the display device, and includes a USB HID port for touch, mouse, and/or keyboard input. Additional control ports are provided to enable control of the display device and other equipment. A single HDMI input allows a high-definition video source to be connected and displayed on screen. High-performance H.264 streaming video is also supported over a high-speed Ethernet connection. Ethernet also provides the interface to a Crestron control system.

Touch Screen Interface

The DGE-100 pairs perfectly with a Crestron TSD-2020 HD Touch Screen Display to deliver a high-definition 20" touch screen control panel that's ideal for home automation, corporate multimedia presentation, and command center applications. Third-party touch screens of all sizes can be used with the DGE-100 to fulfill a range of control, collaboration, and interactive kiosk applications, offering a powerful and versatile solution for all types of meeting rooms, court rooms, auditoriums, and public spaces.



Smart Graphics™

The DGE-100 uses Smart Graphics to deliver the ultimate user experience and the ultimate value by enabling the creation of dynamically rich user interfaces with incredible efficiency and unparalleled functionality. Using Smart Graphics, programmers can swiftly integrate fluid gesture-driven controls, animated feedback, rich metadata, embedded apps and widgets, and full-motion video for a deeply engaging and ultra-intuitive touch screen experience.

Crestron Smart Graphics offers these enhancements and more:

- Cool-looking graphical buttons, sliders, knobs, and gauges that are intuitive and fun to use
- Kinetic effects to enhance the feeling of realism, with lists and toolbars that scroll with momentum at the flick of a fingertip
- Drag-and-drop objects that snap into place, offering an easy way to switch sources
- Dashboard widgets to personalize the touch screen with clocks, weather, news, and other information^[1]
- A power-saving screensaver that allows display of time, temperature, and other text content at a reduced brightness level
- Customizable themes allowing a completely different look and feel for every user, event, or season
- Fully-developed SmartObjects® that enable sophisticated control over complex devices with minimal programming
- A consistent look and feel across touch screens of varying sizes

HD Streaming Video

High-definition streaming video capability makes it possible to view security cameras and other video sources over the network right on the touch screen. Native support for H.264 and MJPEG formats allows the DGE-100 to display live streaming video from an IP camera, a streaming encoder (Crestron CEN-NVS200, DM-TXRX-100-STR, or similar^[2]), or a DigitalMedia™ switcher.

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Top View



Bottom View

HDMI® Input

In addition to handling streaming video, the DGE-100 includes an HDMI input, which allows a computer or other HD video source to be connected and displayed. Wireless presentation capability can also be enabled by connecting an AirMedia™ gateway (AM-100^[2]) to the HDMI input, allowing Wi-Fi® enabled laptops and mobile devices to connect wirelessly to the DGE-100.

HDCP Support

Industry-leading support for HDCP (High-bandwidth Digital Content Protection) ensures seamless compatibility with content-protected DVD, Blu-ray Disc®, HDTV, and multimedia computer sources connected via HDMI.

Web Browsing

Using the DGE-100's built-in Web browser, it's possible to access online program guides and other Web-based services at the touch of a button, allowing enhanced touch screen control of DVRs and other appliances without having to pick up a separate tablet or smartphone. If a device can be controlled or managed through a Web browser, it can be integrated into the Crestron system through the DGE-100. Of course, the Web browser may also be used to simply browse the Internet, watch online videos, and check up on social media.^[1]

Multi-Touch Support

Paired with the TSD-2020 or any other multi-touch compatible touch screen display, the DGE-100 affords enhanced capabilities for browsing Web pages using multi-touch gestures.

On-Screen Keyboard

An on-screen multi-language keyboard allows for quick entry of passwords, URLs, and text searches.

Built-in Annotation

Whether conducting a high-level boardroom meeting or training seminar, sharing ideas in a huddle space, or watching sports in your home theater,

annotation helps put the fine point on any presentation. Native to the DGE-100, annotation provides the ability to illustrate your thoughts on-the-fly, letting you draw and write over video and computer images, and sketch out ideas on a whiteboard screen.

Remote annotation capability allows multiple participants, each with a separate touch screen, to draw with their fingertips over the same video image or whiteboard, enabling enhanced collaboration in a classroom, courtroom, or council chamber. Remote annotation works using multiple DGE-100's and other Crestron touch screens. Adding a dedicated DGE-100 to the main display in any room allows the annotation session to be viewed by the entire audience.

Device Controller

The DGE-100 includes built-in RS-232 and IR control ports to allow for programmable control of the connected display and other devices. Additional control capability is afforded by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Via its Ethernet connection to the control system, the DGE-100 provides a gateway for controlling the display device right through its HDMI connection, potentially eliminating the need for any dedicated serial cables or IR emitters.

Low-Profile Installation

The DGE-100 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. It can be powered using the wall mount power pack (included), or via PoE (Power over Ethernet) for a true one-wire solution. All connections and LED indicators are positioned on the top and bottom, ensuring optimal access and visibility for a clean, serviceable installation.

When paired with a wall-mounted TSD-2020 HD Touch Screen Display, the DGE-100 can be installed within the optional TSD-2020-WMK-BB back box, allowing for a completely hidden appearance.

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SPECIFICATIONS

Graphics Engine

Crestron® Smart Graphics™, landscape or portrait orientation, local and remote annotation, multi-language Web browser^[1], multi-touch support, multi-language on-screen keyboard, screensaver, fully-scalable dual video windowing (displays any combination of HDMI® and/or streaming sources)

Languages

Smart Graphics: Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, Dutch, English (UK), English (US), Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Portuguese (Brazilian), Romanian, Russian, Slovak, Spanish, Swedish, Thai

On-Screen 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, Bulgarian, Catalan, Chinese, Croatian, Czech, Danish, Dutch, English, Filipino, Finnish, French, German, Greek, Hebrew, Hindi, Hungarian, Indonesian, Italian, Japanese, Korean, Latvian, Lithuanian, Norwegian Bokmal, Pashto, Persian, Polish, Portuguese, Romanian, Romansh, Russian, Serbian, Slovak, Slovenian, Spanish, Swedish, Thai, Turkish, Ukrainian, Vietnamese

Memory

DDR3 SDRAM: 2 GB

Flash: 4 GB

Maximum Project Size: 1 GB

Communications

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP, IEEE 802.3af and 802.3at Type 1 compliant

USB Host: Supports the Crestron TSD-2020 touch screen display and most third-party USB HID compliant touch screens, mice, and keyboards

USB Device: For computer console (installer setup and firmware update)

RS-232: 2-way device control and monitoring up to 115.2k baud with hardware and software handshaking

IR/Serial: 1-way device control via infrared up to 1.1 MHz or serial TTL/RS-232 (0-5 Volts) up to 19.2k baud

HDMI: HDCP 1.2, EDID, CEC

NOTE: Supports management of HDCP; supports management of CEC between the connected HDMI display device and a control system

Device Support

The DGE-100 is compatible with the Crestron TSD-2020 touch screen display and most third-party USB HID compliant touch screens, mice, and keyboards

Streaming Decoder

Video Formats: H.264 (MPEG-4 part 10 AVC), MJPEG

Audio Formats: AAC stereo

Bitrates: Up to 25 Mbps^[3]

Resolutions: Up to 1080p60

Video

Input Signal Types: HDMI (DVI & Dual-Mode DisplayPort compatible^[4])

Output Signal Types: HDMI (DVI compatible^[4])

Input Resolutions, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), plus any other resolution allowed by HDMI up to 148MHz pixel clock

Input Resolutions, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 148MHz pixel clock

Output Resolutions: 640x480@60Hz, 800x600@60Hz, 1024x768@60Hz^[5], 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x800@60Hz^[5], 1366x768@60Hz^[5], 1440x900@60Hz^[5], 1600x900@60Hz^[6], 1600x1200@60Hz, 1680x1050@60Hz^[5], 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz

Audio

Input Signal Types: HDMI (Dual-Mode DisplayPort compatible^[4])

Output Signal Types: HDMI

Input/Output Format: 2-channel PCM

Audio Feedback Formats: MP3

Connectors

CONSOLE, USB: (1) USB Micro-A female;
USB computer console port;
Type A to Micro-A USB cable included

IR 1 – 2: (1) 4-pin 3.5 mm detachable terminal block;
Comprises (2) IR/Serial ports;
IR output up to 1.1 MHz;
1-way serial TTL/RS-232 (0-5 Volts) up to 19200 baud

COM: (1) 5-pin 3.5 mm detachable terminal block;
Bidirectional RS-232 port;
Up to 115.2k baud, hardware and software handshaking support

HDMI INPUT: (1) 19-pin Type A HDMI female;
HDMI digital video/audio input (DVI & Dual-Mode Displayport compatible^[4])

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HDMI OUTPUT: (1) 19-pin Type A HDMI female;
HDMI digital video/audio output (DVI compatible⁽⁴⁾)

USB: (1) USB Type A female; USB 2.0 host port for connection of a USB HID compliant touch screen, mouse, or keyboard

LAN PoE: (1) 8-pin RJ45 female;
10Base-T/100Base-TX Ethernet port, Power over Ethernet compliant

24VDC 0.75A: (1) 2.1 x 5.5 mm DC power connector;
24 Volt DC power input;
PW-2407WU power pack included

Ground: (1) 6-32 screw, chassis ground lug

Controls & Indicators

PWR: (1) Green LED, indicates operating power supplied via PoE or local power pack, flashes while booting

RESET: (1) Recessed pushbutton for hardware reset

SETUP: (1) Red LED and (1) recessed pushbutton for Ethernet setup

ONLINE: (1) Green LED, indicates connection to a control system via Ethernet

HDMI IN & OUT: (2) Green LEDs, indicate HDMI signal presence at the HDMI input or output

LAN PoE: (2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity

Power Requirements

Power over Ethernet: IEEE 802.3at Type 1 (802.3af compatible) Class 0 (12.95 W) PoE Powered Device

Power Pack: 0.75 Amps @ 24 Volts DC;

100-240 Volts AC, 50/60 Hz power pack, model PW-2407WU included

Power Consumption: 8 Watts (typical)

Environmental

Temperature: 32° to 104° F (0° to 40° C)

Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 27.3 BTU/hr

Enclosure

Chassis: Metal, black finish, with (2) integral mounting flanges, vented sides

Mounting: Freestanding, surface mount, or attach to a single rack rail

Dimensions

Height: 6.42 in (163 mm)

Width: 7.40 in (188 mm)

Depth: 1.35 in (35 mm)

Weight

19.6 oz (554 g)

MODELS & ACCESSORIES

Available Models

DGE-100: Digital Graphics Engine 100

Included Accessories

PW-2407WU: Wall Mount Power Pack, 24VDC, 0.75A, 2.1mm, Universal (Qty. 1 included)

Available Accessories

TSD-2020: 20" HD Touch Screen Display

TSD-2020-WMK-BB: Wall Mount Kit and Back Box for TSD-2020

TSD-2020-PMK: Pre-Construction Mounting Kit for TSD-2020-WMK-BB

PWE-4803RU: PoE Injector

CEN-SW-POE-5: 5-Port PoE Switch

CEN-SWPOE-16: 16-Port Managed PoE Switch

CEN-NVS200: Network Video Server

DM-TXRX-100-STR: HD Streaming Transmitter/Receiver

CBL Series: Crestron® Certified Interface Cables

CNSP-XX: Custom Serial Interface Cable

IRP2: IR Emitter

Notes:

1. Web browsing, weather information, and certain other functions require an Internet connection.
2. Item(s) sold separately.
3. Supports up to two simultaneous streaming inputs with a maximum combined total bitrate of 25 Mbps.
4. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. [CBL-HD-DVI](#) interface cables are available separately.
5. With or without reduced blanking.
6. With reduced blanking only.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

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