DGE-100

Digital Graphics Engine 100

> *Touch screen graphics engine for the Crestron® TSD-2220 or a third-party USB HID compliant touch screen*

> *Also supports OSM applications without a touch screen*

> *HDMI® output supports display resolutions up to Full HD 1080p60 and WUXGA*

> *Displays dual-window or full screen video from HDMI and H.264 streaming sources [1,3]*

> *Supports video input resolutions up to 1080p60 via HDMI*

> *Receives H.264 streaming video signals up to 1080p60/25Mpbs [1]*

> *HDCP 1.4 compliant (HDMI only)*

> *Crestron Smart Graphics® technology*

> *Built-in annotation capabilities*

> *Compatible as a video source for Crestron Airboard™ whiteboard capture system*

> *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*

> *Enterprise grade security*

> *Web based configuration*

> *Cloud-based provisioning and management*

> *SNMP monitoring support*

> *Compact, surface-mountable form factor fits in tight spaces*

The DGE-100 Digital Graphics Engine transforms an 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 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 for connection 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 an AirMedia® wireless presentation gateway or other high-definition video source to be connected and displayed on screen. Additionally, H.264 streaming video signals can be received over a high-speed Ethernet connection.[1] Ethernet also provides the interface to a Crestron control system.

Touch Screen Interface

The DGE-100 pairs perfectly with a Crestron TSD-2220 HD Touch Screen Display to deliver a high-definition 21.5 in. touch screen control panel that's ideal for home automation, corporate multimedia presentation, and command center applications. Third-party touch screens of varying sizes can be used with the DGE-100 to fulfill a range of control, collaboration, video display, and interactive kiosk solutions.

OSM Interface

On-screen menu (OSM) capability offers an alternative to touch screen control, enabling a fully-customizable control menu to appear on any TV or video display, with simple navigation provided using the same Crestron handheld remote that's controlling the TV. A USB mouse may also be used. The DGE-100 delivers stunning menu graphics that pop up unobtrusively at the edge of the screen alongside the video image, letting you quickly adjust lighting and climate control settings, lower the shades, check security system status, and lock or unlock the front door without interrupting the movie or TV program you're watching. Detailed alert messages can also appear on screen in case of a security alarm, doorbell, or other event. You can even pop up a live streaming camera window to see who's at the door or coming up the driveway.

Smart Graphics® Technology

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®

Top View

Bottom View

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 [2]
- 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® technology that enables 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), or a DigitalMedia™ switcher.[1]

HDMI® Input

An HDMI input is included to allow a local HD video source to be connected and displayed. Wireless presentation capability can also be enabled by connecting an AirMedia gateway to the HDMI input, allowing Wi-Fi® enabled laptops and mobile devices to connect wirelessly to the DGE-100.[3]

HDCP Support

Support for HDCP (High-bandwidth Digital Content Protection) ensures seamless compatibility with content-protected DVD, Blu-ray Disc® player, broadcast TV, and Internet TV sources.

Web Browsing

Using its built-in web browser, the DGE-100 provides access to 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. The web browser may also be used to simply browse the Internet, check traffic conditions, or look up a recipe.[2]

Multi-Touch Support

Paired with the TSD-2220 or 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.

Crestron AirBoard™ Capture System Compatibility

The DGE-100 can be used to view presentation content captured by a Crestron CCS-WB-1 Crestron AirBoard™ whiteboard capture system. Connection to a room display, AV system, or conferencing codec is handled

by the DGE-100. The captured presentation is then streamed to the DGE-100 over the network and fed to the room system via the DGE-100's HDMI® output.

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 via the control system. 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 PoE (Power over Ethernet) for a true one-wire solution.

Enterprise Grade Security

Crestron digital graphics engines employ enterprise-grade networking with robust security features such as 802.1X authentication, TLS encryption, HTTPS connectivity, and Active Directory® software integration. These features are imperative to protect your network against service interruptions and malicious intrusions, and to ensure compliance with your organization's stringent network policies. Cloud-based provisioning and management streamlines the process of configuring and monitoring every digital graphics engine on the network and keeping them updated. Additional support for SNMP allows every digital graphics engine to be monitored by your IT administrator alongside every other device on the network.

Crestron XiO Cloud™ Service

Crestron XiO Cloud is Crestron's unifying cloud-based platform for remotely provisioning, monitoring, and managing Crestron devices across an enterprise or an entire client base. Crestron XiO Cloud enables installers and IT managers to deploy and manage thousands of devices in the amount of time it would ordinarily take to manage just one. It provides a zero-touch solution that allows complete configuration of device settings without any hardware in hand, then simply connect each device on site and let Crestron XiO Cloud push out the settings, licenses, drivers, and firmware updates – automatically and securely – for a quick and painless, ready-to-use deployment.

Ongoing Crestron XiO Cloud services facilitate daily management and monitoring of every device through a single dashboard with comprehensive reporting and logging, live status viewing and alerts, performance metrics and analytics, scheduled actions and updates, and more. As requirements grow and evolve, new features and functionality can be added easily to one or many devices at any time without ever going on site. Crestron XiO Cloud is a subscription-based service offering an adaptable SaaS (Software as a Service) solution with graduated levels of functionality and unlimited scalability.

For more information about Crestron XiO Cloud, please visit https://www.crestron.com/xiocloud.

NOTE: The level of Crestron XiO Cloud functionality available varies by device. New Crestron XiO Cloud functions may be added for devices in future firmware updates.

SPECIFICATIONS

Graphics Engine

Crestron Smart Graphics, landscape or portrait orientation, local and remote annotation, multi-language web browser [2], 10-point multi-touch support, multi-language on-screen keyboard, screensaver, scalable dual video windowing (displays any combination of HDMI and/or streaming sources) [1,3], setup and diagnostics via web browser or onscreen UI

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

RAM: 2 GB DDR3-SDRAM
Flash: 4 GB
Maximum Project Size: 1 GB

Communications

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, TCP/IP, UDP/IP, CIP, DHCP, SSL, TLS, SSH, SFTP (SSH File Transfer Protocol), SNMP, IPv4 or IPv6, Active Directory authentication, HTTPS web browser setup, Crestron XiO Cloud client, IEEE 802.1X, IEEE 802.3af and 802.3at Type 1 compliant, web browser setup, Crestron control system integration
USB Host: Supports the Crestron TSD-2220 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 (via control system)
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 (via control system)
HDMI: HDCP 1.4, EDID, CEC

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

Pointing Device Support

The DGE-100 is compatible with the Crestron TSD-2220 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 [1]
Resolutions: Up to 1080p60

Video

Input Signal Types: HDMI (DVI & Dual-Mode DisplayPort compatible [4])
Output Signal Types: HDMI (DVI compatible [4])
Input Resolutions: 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
NOTE: Interlaced video is not supported
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 LPCM
Audio Feedback Formats: MP3

Connectors

CONSOLE, USB: (1) USB Micro-A connector, 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) HDMI Type A connector, female;
HDMI digital video/audio input;
(DVI & Dual-Mode Displayport compatible [4])

HDMI OUTPUT: (1) HDMI Type A connector, female;
HDMI digital video/audio output;
(DVI compatible [4])

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

LAN PoE: (1) 8-pin RJ45 connector, 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 is supplied via the local power pack or PoE, 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

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

Power Pack (included): Input: 100-240 Volts AC, 50/60 Hz;
Output: 0.75 Amps @ 24 Volts DC;
Model: PW-2407WU

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)

Compliance

UL Listed for US & Canada, IC, CE, FCC Part 15 Class B digital device

Notes:

1. Supports up to two simultaneous streaming inputs with a maximum combined total bitrate of 25 Mbps.
2. Web browsing, weather information, and certain other functions require an Internet connection.
3. The HDMI input signal cannot be downscaled by more than 4x. For instance, a 1920x1080 source signal can be displayed no smaller than 480x270 pixels.
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. 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 https://www.crestron.com/How-To-Buy/Find-a-Representative or by calling 855-263-8754.

The specific patents that cover this and other Crestron products are listed online at https://www.crestron.com/legal/patents.

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

Crestron, the Crestron logo, AirMedia, Crestron AirBoard, Crestron XiO Cloud, DigitalMedia, Smart Graphics, and SmartObjects are either trademarks or registered trademarks of Crestron Electronics, Inc. in the United States and/or other countries. Blu-ray Disc is either a trademark or registered trademark of Blu-ray Disc Association in the United States and/or other countries. HDMI is either a trademark or registered trademark of HDMI Licensing LLC in the United States and/or other countries. Active Directory is either a trademark or a registered trademark of Microsoft Corporation in the United States and/or other countries. Wi-Fi is either a trademark or registered trademark of Wi-Fi Alliance in the United States and/or other countries. Other trademarks, registered trademarks, and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Crestron disclaims any proprietary interest in the marks and names of others. Crestron is not responsible for errors in typography or photography. Specifications are subject to change without notice.
©2018 Crestron Electronics, Inc.

DM-TXRX-100-STR: HD Streaming Transmitter/Receiver
CBL Series: Crestron® Certified Interface Cables
CNSP-XX: Custom Serial Interface Cable
IRP2: IR Emitter
SW-XIOC-S Series: Crestron XiO Cloud™ Standard Provisioning and Management Service for one device
SW-XIOC-P Series: Crestron XiO Cloud™ Premium Provisioning and Management Service for one device
CCS-WB-1: Crestron AirBoard™ Whiteboard Capture System

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-2220: 21.5 in. HD Touch Screen Display
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

Crestron Electronics, Inc. 15 Volvo Drive │ Rockleigh, NJ 07647

Tel: 800.237.2041 / 201.767.3400 │ Fax: 201.767.1903

www.crestron.com

All brand names, product names and trademarks are the property of their respective owners.

©2018 Crestron Electronics, Inc.

Specifications subject to change without notice. Revised 12/27/18