BROMPTON TECHNOLOGY

TESSERA SX40 LED PROCESSOR

Big, Bright, Bold Projects

The Brompton Technology **Tessera SX40 LED processor** combines **Tessera's industry-leading** feature set and **easy-to-use** software interface with our **highest-ever** capacity processor.

Available in a standard 2U rack form with a total output capacity of 9 million pixels, the SX40 offers support for full 4K LED walls at up to 60Hz, 12-bit colour depth. It supports latency-free 4K up/down scaling to match the source to the screen, as well as all of the industry-leading Tessera processing features.

These features include **HDR** and **Dynamic Calibration**, as well as **Ultra Low Latency**, **HFR+(High Frame Rate)**, **Frame Remapping**, **ShutterSync** and **3D LUT** Import. The SX40 also supports **On-Screen Colour Adjustment (OSCA)** for seam corrections; **Dark Magic** for dark-area detail, and **ChromaTune** for colour control.

Used in combination with the **Tessera XD Distribution** unit, the **SX40** provides a cost-effective and powerful system for supporting the biggest and boldest LED projects..

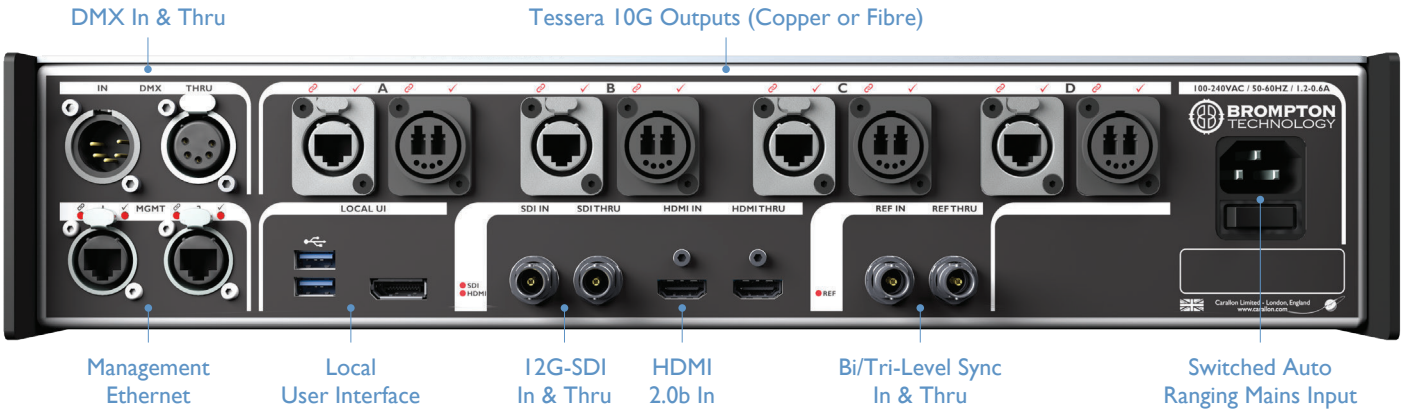
There are several powerful, flexible options for configuring fixtures within the 4K standard canvas such as:

- Quick Association for a fast and easy way to associate large numbers of fixtures to a **Brompton** processor
- Pixel mapping that allows free placement and rotation of fixtures to 0˚ / 90˚ / 180˚ / 270˚ regardless of cabling order
- Sub-fixture support

The **SX40** also supports **Processor Redundancy**. If a problem occurs with the video input or output on a primary processor, it can be configured such that a back-up processor takes over in just a few seconds, and can be used with or without closed loop redundancy.

TESSERA SX40 | FRONT

TESSERA SX40 | REAR



TESSERA XD DATA DISTRIBUTION UNIT

The **Tessera XD** data distribution unit is a sophisticated single box solution designed to manage the complications of mass cabling that can arise with large LED display systems.

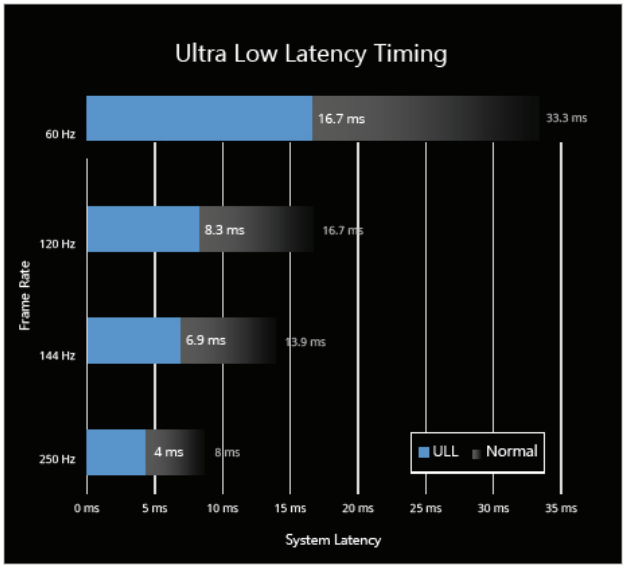
Trunk connections between **Tessera SX40** and **XD**, or between **XD** units, use a 10G Ethernet-based backbone to reduce the number of homerun connections required. For maximum cabling convenience, each 10G trunk connection supports up to ten independent 1G connections to fixtures, each having the same pixel capacity as a 1G **Tessera** output, subject to system capacity. For more information see the **XD Data Distribution** Data Sheet.

XD Data Distribution Unit

ULTRA LOW LATENCY

Ultra Low Latency provides a latency minimising solution for the broadcast, television and film industries, making it easier to synchronise live action with visual effects, virtual sets and cameras.

The **Tessera SX40** LED processor already has an industry-leading 2 frames end-to-end latency. Now ultra low latency reduces this to just 1 frame, at reduced system capacity.



Ultra Low Latency Timing Graph

HIGH FRAME RATE +

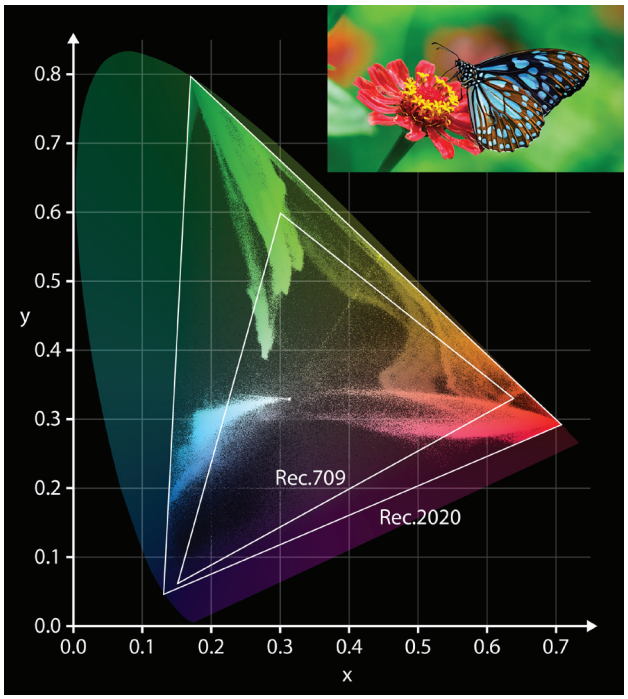
HFR+ gives you the power to play video content on an LED screen at up to 250 fps (frames per second).

This gives smoother visuals in eSports and simulator applications using high-frame rate content. It also makes it possible to shoot slow motion visual effects with over-cranked cameras against LED screens and still retain perfect synchronisation between screen and camera.

HDR

The **Tessera SX40** processor automatically detects and handles **HDR** content, accepting **HDR** video at up to 12 bits per colour. The system switches seamlessly between SDR, PQ and HLG with no interruptions. **HDR** is beautifully supported at all resolutions and frame rates, in both of the commonly used **HDR** formats (PQ (ST-2084) and HLG).

All **Tessera SX40** processor features are available for **HDR** content, ensuring a fully optimised, exceptional performance. **HDR** is exclusive to **R2-based** panels that have been calibrated with **Dynamic Calibration**.



An illustration of how the colours in a source image (inset) are distributed in the CIE 1931 xy colour space

TESSERA SX40 LED PROCESSOR

Full Specifications

PHYSICAL (WxHxL)
Unboxed
- 482.6mm (19") x 88.9mm (3.5") x 406.4mm (16")
- Rear width: 431.8mm (17")

Boxed
- 550mm (21.65") x 220mm (8.66") x 520mm (20.5")

WEIGHT
- Unboxed: 7.50Kg (16.53lbs)
- Boxed: 10Kg (22lbs)

ELECTRICAL
- Switched autoranging power supply
- 100 - 240V AC
- 50Hz - 60Hz
- 1.2 - 0.6A

HDMI 2.0B INPUT
- One HDMI 2.0 input
- Full 18Gbps HDMI 2.0 bandwidth, maximum 600MHz pixel clock
- Up to 4096 x 2160 resolution (progressive only)
- 23.98Hz to 250Hz frame rate
- 8,10 and 12 bits per channel colour depths
- RGB and YCbCr 4:4:4, 4:2:2 and 4:2:0
- Compatible with DVI-D and DisplayPort sources via adapters

SDI INPUT & RE-CLOCKED THRU PORT
- One 12G SDI input that supports the following:
  - HD-SDI - ST-292
  - 3G-SDI - ST-424, Level A and Level B-DL
  - 6G-SDI - ST-2081
  - 12G-SDI - ST-2082, 2SI format
- Up to 4096 x 2160 resolution (progressive only)
- 23.98Hz to 60Hz frame rate
- 10 bits per channel colour depth
- YCbCr 4:2:2

OUTPUTS
- Four 10GBASE-T copper output ports
- Supports nominally 9 million pixels at 36 bits per pixel @ 60Hz
- Supports Neutrik etherCON Cat 6A / etherCON (CAT5e) connectors
- Compatible with standard Cat6A / Cat5e RJ45 connectors
- Requires Cat6A cable (up to 60m) or Cat5e cable (upto 30m)

- Four 10GBASE-LR Tessera XD fibre output ports
- Supports Neutrik opticalCON DUO / DUO ARMORED / DUO X-TREME / DUO LITE connectors
- Compatible with standard LC-Duplex connectors
- Requires 1310nm, 9/125um single-mode fibre (up to 2KM) with PC or UPC connectors

- Each 10G output independently auto-switches between fibre and copper
- Closed loop redundancy support
- Processor redundancy support

GENLOCK
- Bi-level and Tri-level sync
- Sync to source
- Processors genlock from source right through to panel refresh
- Frame rates from 23.98 to 60Hz

LATENCY
- 2 frames end-to-end system latency (all features)

TESSERA MANAGEMENT SOFTWARE
- Local management using monitor, keyboard and mouse connected directly to processor
- Up to 3840x2160 local monitor resolution supported, minimum 1920x1080 recommended

TESSERA REMOTE
- Available free for Windows PC and Mac OS
- Remote management using Windows PC or Mac connected to processor via Ethernet network
- Two Gigabit Ethernet management network ports

REMOTE CONTROL
- Support for eDMX protocols:
  - Art-Net,
  - Streaming ACN
- DMX-512A on 5-pin XLR in and thru
- Tessera Control application for multi-processor control via management network ports
- IP Control

I/O
- Two USB 2.0 ports on front
- Two USB 3.0 ports on rear
- One DisplayPort (DP++) monitor output supporting HDMI, DVI and VGA with adapter

FRONT PANEL
- Six status LEDs
- Power LED
- Freeze button
- Blackout button

WARRANTY
- Two years

CERTIFICATIONS
- CE, ETL/cETL

AV AWARDS 2019 WINNER

Established in 2012, Brompton Technology is based in West London and is a spin-off from Carallon, a serial innovator in the entertainment technology space. It operates in the rapidly expanding LED Video display sector, and product designs come from years of Industry and engineering experience, and an acute understanding of the current marketplace. This has resulted in it fast becoming a globally known and respected brand within this sector.
More information can be found at www.bromptontech.com.

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