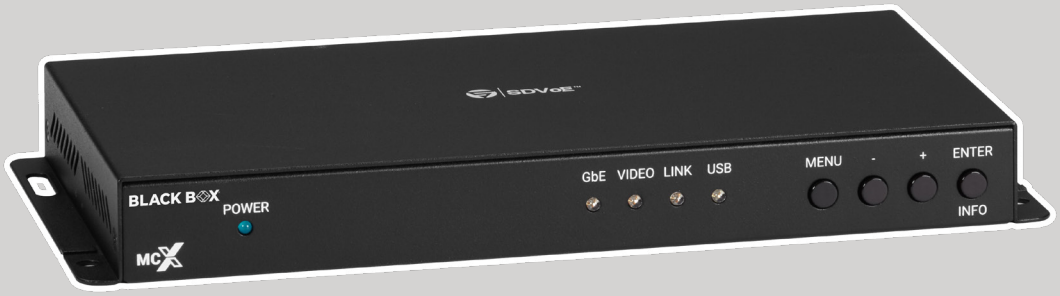
DATA SHEET

MCXG2 SERIES

MCX GEN2 ENDPOINTS:

ENCODERS, DECODERS, AND TRANSCODERS

24/7 TECHNICAL SUPPORT AT 877.877.2269 OR VISIT BLACKBOX.COM



BLACK BOX

OVERVIEW

MCX GEN2 ENCODERS AND DECODERS

INTRODUCTION

To extend AV, IR, RS-232, USB 2.0, and Ethernet signals, choose the Black Box Designed MCX Gen2 encoder and decoder endpoints. As TAA-compliant solutions, Black Box encoders/decoders are ideal for government control rooms, point-to-point secure video conferencing, hotel or convention center displays, sports bar AV distribution systems, multi-monitor broadcasts, distributed video matrix or video wall systems, and remote KVM system control.

Choose Copper or Fiber Versions to Suit Your Application
MCX Gen2 encoders and decoders are designed for high-quality AV distribution with virtually zero latency (0.03 milliseconds), and they include options for copper (Cat6A) and fiber (SFP+) 10G connectivity, giving you the flexibility to choose the version that is right for your network.

Multiple Control and Data Signal Encoding and Decoding
Get the most out of your system by connecting every essential device to your MCX Gen2 encoder/decoder through its variety of ports. Alongside HDMI and USB-C A/V inputs and HDMI Outputs, multiple control and data signals may also be transmitted, including IR and RS-232 control, USB 2.0 device sharing, and 1G Ethernet.

PoE Compliant
MCX Gen2 endpoints are PoE compliant, requiring no external power supplies when connected to a PoE network switch.

A/V Loop Out for Source Side Display
Black Box MCX Gen2 Encoders come with an additional HDMI 2.0 loop out. With this local HDMI output, the system can display the input source on a separate monitor. For example, during a live event, the user can view the source and sample that video on a loop, then pass it down to the network to compare latency.

3-Port USB with USB-C Connectivity
MCX Gen2 features the ability to share USB 2.0 devices, such as keyboard and mouse for KVM extension, web cameras, or external hard drives. Encoders feature a USB-C input port, and they can be configured to access USB devices from other endpoints, or to share a USB-C device with endpoints. The USB-C input port can also be used for the connection of a display using an A/V Alternate Mode USB-C connection. Decoders feature three USB 2.0 Type-A ports for sharing peripherals with endpoints in the system.

Uncompressed 4K60 4:4:4 with Zero Latency
Black Box MCX Gen2 technology provides AV over IP distribution with imperceivable latency, featuring glass-to-glass encoding and decoding that happens in real time (0.03 milliseconds), and ensures transmission of 4K60 4:4:4 video to an unlimited number of UHD displays without sacrificing video quality or frame rate. Using Software-Defined Video over Ethernet (SDVoE), it allows AV and data to coexist on the same network without reducing network performance, functionality, or capability.

Create Ergonomic Workflows for Operators
This SDVoE-based AV over IP video distribution system is easy to install and use on a modern network. Front-panel configuration buttons and On-Screen Display (OSD) on our encoders/decoders streamline daily workflow, simplifying management of your system.

Get Complete Control of Your System Using MCX Gen2 Controller
Combined with the optional MCX Gen2 Controller, the functionality of the encoders/decoders expands exponentially. Multiple encoders/decoders may be combined with one or more 10-Gigabit Ethernet switches, and the units can be used together to form a distributed video matrix, a multi-viewer system, or a video wall systems. See the MCX Gen2 Controller section of this datasheet for details.

FEATURES

- PROVIDES 4K60 4:4:4 AV, IR, RS-232, USB 2.0, AND ETHERNET EXTENSION/DISTRIBUTION
- COMPATIBLE WITH HDMI AND USB-C A/V INPUTS, AND HDMI OUTPUTS
- SUPPORTS CONVERSION FOR USE WITH DVI
- HDCP 2.3 AND HDCP 1.4 COMPLIANT
- MODELS AVAILABLE WITH 10G CAT6A COPPER OR SFP+ FIBER TO ALLOW FOR NETWORK FLEXIBILITY
- IP-SWITCHABLE WITH MINIMAL LATENCY (USE MCX GEN2 CONTROLLER FOR SWITCHING AND CONTROL FUNCTIONALITY)
- OPTIONAL LOSSLESS COMPRESSION TO ALLOW VIDEO TRANSFER WITHIN LIMITED BANDWIDTH
- EXTENDS UP TO 30KM OVER FIBER (MAXIMUM DISTANCE DEPENDS ON THE SFP+ MODULE AND TYPE OF FIBER CONNECTIVITY USED)
- SUPPORTS INDEPENDENT BREAKAWAY A/V MATRIX SWITCHING WITH MINIMAL LATENCY, VIDEO WALL GENERATION, AND MULTI-VIEW COMPOSITING (USE MCX GEN2 CONTROLLER FOR SWITCHING AND CONTROL FUNCTIONALITY)
- FACILITATES PASS THROUGH OF 10/12-BIT HDR SOURCES (POINT-TO-POINT OR GENLOCK MODES)
- ENABLES PASS THROUGH OF AUDIO FORMATS INCLUDING LPCM (UP TO 8 CHANNELS), BITSTREAM, AND HD BITSTREAM FROM HDMI AND USB-C A/V SOURCES
- FRONT PANEL PUSHBUTTONS AND OSD ALLOW FOR BASIC CONFIGURATION

NOTE: A transcoder model is also available. It is detailed in its own section in this data sheet.

SPECIFICATIONS

MCX GEN2 COPPER NETWORK AV VIDEO ENCODERS AND DECODERS

FRONT VIEW

MCXG2EC01

BACK VIEW

MCXG2EC01

FRONT VIEW

MCXG2DC01

BACK VIEW

MCXG2DC01

WHAT'S INCLUDED WITH THE ENCODERS

- **(1) UHD+ COPPER TRANSMITTER**
- **(1) 12-V/3-A DC POWER ADAPTER**
- **(1) POWER CORD**
- **(1) IR EMITTER**
- **(1) 3-PIN TERMINAL BLOCK**

WHAT'S INCLUDED WITH THE DECODERS

- **(1) UHD+ COPPER RECEIVER**
- **(1) 12-V/3-A DC POWER ADAPTER**
- **(1) POWER CORD**
- **(1) IR RECEIVER**
- **(1) 3-PIN TERMINAL BLOCK**

COMPARISON CHART

MCX GEN2 COPPER NETWORK AV VIDEO ENCODERS AND DECODERS

COPPER ENCODER AND DECODER FEATURE COMPARISON CHART		
FEATURE	**MCXG2EC01 ENCODER**	MCXG2DC01 DECODER
HDMI VERSION	HDMI 2.0b	
10GBE BANDWIDTH	10 Gbps	
INPUT PORTS	(1) HDMI Type A (1) USB Type C	None
OUTPUT PORTS	(1) HDMI Type A	
BI-DIRECTIONAL PORT	(1) Stereo Audio (3.5mm)	
PASS-THROUGH PORTS	(1) 10GbE LAN (RJ-45); (2) IR (3.5mm); (1) RS-232 (3-pin Terminal Block); (1) LAN (RJ-45)	(1) 10GbE LAN (RJ-45); (2) IR (3.5mm); (1) RS-232 (3-pin Terminal Block); (1) LAN (RJ-45); (3) USB 2.0 (Type A)
IR FREQUENCY	38kHz	
BAUD RATE	57600 (Default), up to 115200 bps	
POWER SUPPLY	12V/3A DC (US/EU standards, CE/FCC/UL certified)	
ESD PROTECTION (HBM)	±8kV (Air Discharge) ±4kV (Contact Discharge)	
DIMENSIONS (W X H X D)	8.5" x 1.0" 4.3" (215mm × 25mm ×108mm) [Case Only] 8.5" x 1.0" x 4.6" (215mm × 25mm × 116.7mm) [All Inclusive]	
WEIGHT	2.0 lb. (916g)	
CHASSIS MATERIAL	Metal (Steel)	
CHASSIS COLOR	Black	
OPERATING TEMPERATURE	32˚ to 104˚F (0 to 40˚C)	
STORAGE TEMPERATURE	-4˚ to 140˚F (-20 to +60˚C)	
RELATIVE HUMIDITY	20 – 90% RH (Non-condensing)	
POWER CONSUMPTION	14.3 W	
SUPPORTED VIDEO RESOLUTION	720 × 400p@70/85, 640 × 480p@60/72/75/85, 720 × 480i@60, 720 × 480p@60, 720 × 576i@50, 720 × 576p@50, 800 × 600p@56/60/72/75/85, 848 × 480p@60, 1024 × 768p@60/70/75/85, 1152 × 864p@75, 1280 × 720p@50/60, 1280 × 768p@60/75/85, 1280 × 800p@60/75/85, 1280 × 960p@60/85, 1280 × 1024p@60/75/85, 1360 × 768p@60, 1366 × 768p@60, 1400 × 1050p@60, 1440 × 900p@60/75, 1600 × 900p@60RB, 1600 × 1200p@60, 1680 × 1050p@60, 1920 × 1080i@50/60, 1920 × 1080p@24/25/30, 1920 × 1080p@50/60, 1920 × 1200p@60RB, 2560 × 1440p@60RB, 2560 × 1600p@60RB, 2048 × 1080p@24/25/30, 2048 × 1080p@50/60, 3840 × 2160p@24/25/30, 3840 × 2160p@50/60 (4:2:0), 3840 × 2160p@24, HDR10, 3840 × 2160p@50/60 (4:2:0), HDR10, 3840 × 2160p@50/60, 4096 × 2160p@24/25/30, 4096 × 2160p@50/60 (4:2:0), 4096 × 2160p@24, HDR10, 4096 × 2160p@50/60 (4:2:0), HDR10, 4096 × 2160p@50/60	

SPECIFICATIONS

MCX GEN2 COPPER NETWORK AV VIDEO ENCODERS AND DECODERS

COPPER ENCODER AND DECODER FEATURE COMPARISON CHART CONTINUED		
FEATURE	**MCXG2EC01 ENCODER**	**MCXG2DC01 DECODER**
DIGITAL AUDIO		
HDMI	Input	Output
	LPCM: Max channels: 8 channels, sampling rate (kHz): 32, 44.1, 48 Bitstream: standard and high definition	
CAT5E/6/7 FIBER	Output	Input
	LPCM: Max channels: 8 channels, sampling rate (kHz): 32, 44.1, 48 Bitstream: standard and high definition	
ANALOG AUDIO		
INPUT	Max Audio Level: 1Vrms Impedance: 10kΩ Type: Unbalanced	
OUTPUT	Max Audio Level: 1Vrms THD+N: < −80 dB@0dBFS 1kHz (A wt) SNR: >80 dB@0dBFS Frequency Response: < ±1 dB@20Hz~20kHz Crosstalk: < −80 dB@10kHz Impedance: 470Ω Type: Unbalanced	

COPPER ENCODER AND DECODER CABLE LENGTH SPECIFICATIONS				
CABLE LENGTH	**1080P**		**4K30**	4K60
	8-bit	12-bit	(4:4:4) 8-bit	(4:4:4) 8-bit
HIGH SPEED HDMI CABLE				
HDMI INPUT (ENCODER ONLY)	15m	10m	5m	3m
HDMI OUTPUT	15m	10m	5m	3m
CATEGORY CABLE				
CAT. 5E/6	100m		70m	
CAT. 6A/7	100m			

SPECIFICATIONS

MCX GEN2 FIBER NETWORK AV VIDEO ENCODERS AND DECODERS

FRONT VIEW

MCXG2EF01

BACK VIEW

MCXG2EF01

FRONT VIEW

MCXG2DF01

BACK VIEW

MCXG2DF01

WHAT'S INCLUDED WITH THE ENCODERS

- **(1) UHD+ FIBER TRANSMITTER**
- **(1) 12-V/3-A DC POWER ADAPTER**
- **(1) POWER CORD**
- **(1) IR EMITTER**
- **(1) 3-PIN TERMINAL BLOCK**

WHAT'S INCLUDED WITH THE DECODERS

- **(1) UHD+ FIBER RECEIVER**
- **(1) 12-V/3-A DC POWER ADAPTER**
- **(1) POWER CORD**
- **(1) IR RECEIVER**
- **(1) 3-PIN TERMINAL BLOCK**

COMPARISON CHART

MCX GEN2 FIBER NETWORK AV VIDEO ENCODERS AND DECODERS

FIBER ENCODER AND DECODER FEATURE COMPARISON CHART		
FEATURE	**MCXG2EF01 ENCODER**	**MCXG2DF01 DECODER**
HDMI VERSION	HDMI 2.0b	
10GBE BANDWIDTH	10 Gbps	
INPUT PORTS	(1) HDMI Type A (1) USB Type C	None
OUTPUT PORTS	(1) HDMI Type A	
BI-DIRECTIONAL PORT	(1) Stereo Audio (3.5mm)	
PASS-THROUGH PORTS	(1) 10GbE LAN (SFP+); (2) IR (3.5mm); (1) RS-232 (3-pin Terminal Block); (1) LAN (RJ-45)	(1) 10GbE LAN (SFP+); (2) IR (3.5mm); (1) RS-232 (3-pin Terminal Block); (1) LAN (RJ-45); (3) USB 2.0 (Type A)
IR FREQUENCY	38kHz	
BAUD RATE	57600 (Default), up to 115200 bps	
POWER SUPPLY	12V/3A DC (US/EU standards, CE/FCC/UL certified)	
ESD PROTECTION (HBM)	±8kV (Air Discharge) ±4kV (Contact Discharge)	
DIMENSIONS (W X H X D)	8.5" x 1" x 4.3" (215mm × 25mm × 108mm) [Case Only] 8.5" x 1" x 4.6" (215mm × 25mm × 116.7mm) [All Inclusive]	
WEIGHT	2.0 lb. (916g)	
CHASSIS MATERIAL	Metal (Steel)	
CHASSIS COLOR	Black	
OPERATING TEMPERATURE	32 to 104˚F (0 to 40˚C)	
STORAGE TEMPERATURE	-4 TO +140˚F (-20 TO +60˚C)	
RELATIVE HUMIDITY	20 – 90% RH (Non-condensing)	
POWER CONSUMPTION	18.51 W	
SUPPORTED VIDEO RESOLUTION	720 × 400p@70/85, 640 × 480p@60/72/75/85, 720 × 480i@60, 720 × 480p@60, 720 × 576i@50, 720 × 576p@50, 800 × 600p@56/60/72/75/85, 848 × 480p@60, 1024 × 768p@60/70/75/85, 1152 × 864p@75, 1280 × 720p@50/60, 1280 × 768p@60/75/85, 1280 × 800p@60/75/85, 1280 × 960p@60/85, 1280 × 1024p@60/75/85, 1360 × 768p@60, 1366 × 768p@60, 1400 × 1050p@60, 1440 × 900p@60/75, 1600 × 900p@60RB, 1600 × 1200p@60, 1680 × 1050p@60, 1920 × 1080i@50/60, 1920 × 1080p@24/25/30, 1920 × 1080p@50/60, 1920 × 1200p@60RB, 2560 × 1440p@60RB, 2560 × 1600p@60RB, 2048 × 1080p@24/25/30, 2048 × 1080p@50/60, 3840 × 2160p@24/25/30, 3840 × 2160p@50/60 (4:2:0), 3840 × 2160p@24, HDR10, 3840 × 2160p@50/60 (4:2:0), HDR10, 3840 × 2160p@50/60, 4096 × 2160p@24/25/30, 4096 × 2160p@50/60 (4:2:0), 4096 × 2160p@24, HDR10, 4096 × 2160p@50/60 (4:2:0), HDR10, 4096 × 2160p@50/60	

SPECIFICATIONS

MCX GEN2 FIBER NETWORK AV VIDEO ENCODERS AND DECODERS

FIBER ENCODER AND DECODER FEATURE COMPARISON CHART CONTINUED		
FEATURE	**MCXG2EF01 ENCODER**	MCXG2DF01 DECODER
DIGITAL AUDIO		
HDMI	Input	Output
	LPCM: Max channels: 8 channels, sampling rate (kHz): 32, 44.1, 48 Bitstream: standard and high definition	
FIBER	Output	Input
	LPCM: Max channels: 8 channels, sampling rate (kHz): 32, 44.1, 48 Bitstream: standard and high definition	
ANALOG AUDIO		
INPUT	Max Audio Level: 1Vrms Impedance: 10kΩ Type: Unbalanced	
OUTPUT	Max Audio Level: 1Vrms THD+N: < −80 dB@0dBFS 1kHz (A wt) SNR: >80 dB@0dBFS Frequency Response: < ±1 dB@20Hz~20kHz Crosstalk: < −80 dB@10kHz Impedance: 470Ω Type: Unbalanced	

FIBER ENCODER AND DECODER CABLE LENGTH SPECIFICATIONS				
CABLE LENGTH	**1080P**		**4K30**	**4K60**
	8-bit	12-bit	(4:4:4) 8-bit	(4:4:4) 8-bit
HIGH SPEED HDMI CABLE				
HDMI INPUT (ENCODER ONLY)	15m	10m	5m	3m
HDMI OUTPUT	15m	10m	5m	3m
FIBER CABLE				
MULTI-MODE FIBER (OM3)	300m			
MULTI-MODE FIBER (OM4)	550m			

OVERVIEW

MCX GEN2 TRANSCODER

INTRODUCTION

To extend AV, IR, RS-232, USB 2.0, and Ethernet signals, choose the Black Box designed MCX Gen2 transcoder endpoint. As a TAA-compliant solution, the transcoder is ideal for government control rooms, point-to-point secure video conferencing, hotel or convention center displays, sports bar AV distribution systems, multi-monitor broadcasts, distributed video matrix or video wall systems, and remote KVM system control.

Copper and Fiber Units Combined Into One Device
The Black Box MCX Gen2 Transcoder is designed to allow for use as either an encoder or decoder, giving you the ability to use a single unit for all of your encoding and decoding needs. It is also compatible for use with all MCX Gen2 Encoders and Decoders. Simply configure the transcoder for the desired purpose, and you're ready to set up your system to provide high-quality, IP-routable, AV over IP Distribution with virtually zero latency (0.03 milliseconds).

It's not simply a decision to use one or the other; you can connect both copper and fiber networking ports at the same time for the added benefit of failover redundancy. Connect both ports to your network, set one as the default connection, and the other will serve as a backup in the event of a failure.

DisplayPort™ Output with Additional Control and Data Signal Encoding / Decoding
Get the most out of your system by connecting every essential device to your MCX Gen2 transcoder through its variety of ports. Alongside HDMI and DisplayPort Inputs and DisplayPort Output, multiple control and data signals may also be transmitted, including IR and RS-232 control, USB 2.0 device sharing, and 1G Ethernet.

PoE Compliant
MCX Gen2 endpoints are PoE compliant, requiring no external power supplies when connected to a PoE network switch.

A/V Loop Out for Source Side Display
The Black Box MCX Gen2 transcoder comes with an additional DisplayPort 1.2 loop out. With this local DisplayPort output, the system can display the input source on a separate monitor. For example, during a live event, the user can view the source and sample that video on a loop, and then pass it down to the network to compare latency.

USB 2.0 Hub Connectivity
MCX Gen2 features the ability to share USB 2.0 devices, such as keyboard and mouse for KVM extension, web cameras, or external hard drives. The transcoder features a USB 2.0 Type-B input port and three USB 2.0 Type-A device ports. When used as an encoder, the transcoder can be configured to access devices from other endpoints, or to share a device with endpoints. When used as a decoder, the transcoder uses the three USB 2.0 ports for sharing devices with endpoints in the system.

Uncompressed 4K60 4:4:4 with Zero Latency
Black Box MCX Gen2 technology provides AV over IP distribution with zero latency, featuring glass-to-glass encoding and decoding that happens in real time (0.03 milliseconds), and ensures transmission of 4K60 4:4:4 video to an unlimited number of UHD displays without sacrificing video quality or frame rate. Using Software-Defined Video over Ethernet (SDVoE), it allows AV and data to coexist on the same network without reducing network performance, functionality, or capability.

Create Ergonomic Workflows for Operators
The SDVoE-based AV over IP video distribution system is easy to install and use on a modern network. Front-panel configuration buttons and On-Screen Display (OSD) on our transcoder streamlines daily workflow, easing management of your system.

Get Complete Control of Your System Using MCX Gen2 Controller
Combined with the optional MCX Gen2 Controller, the functionality of the encoders/decoders expands exponentially. Multiple encoders/decoders may be combined with one or more 10-Gigabit Ethernet switches, and the units can be used together to form a distributed video matrix, a multi-viewer system, or a video wall systems. See the MCX Gen2 Controller section of this datasheet for details.

FEATURES

- CONFIGURABLE FOR USE AS EITHER AN ENCODER OR DECODER, GIVING YOU THE ABILITY TO USE A SINGLE MODEL FOR ALL OF YOUR ENCODING AND DECODING NEEDS.
- COMPATIBLE FOR USE WITH ALL MCX GEN2 ENCODERS AND DECODERS
- PROVIDES 4K60 4:4:4 AV, IR, RS-232, USB 2.0, AND ETHERNET EXTENSION/DISTRIBUTION
- HDCP 2.2 AND HDCP 1.4 COMPLIANT
- COMPATIBLE WITH HDMI 2.0 AND DISPLAYPORT INPUTS, AND DISPLAYPORT OUTPUT
- INCLUDES BOTH 10G CAT6A COPPER AND SFP+ FIBER PORTS TO ALLOW FOR NETWORK FLEXIBILITY
- IP-SWITCHABLE WITH MINIMAL LATENCY (USE MCX GEN2 CONTROLLER FOR SWITCHING AND CONTROL FUNCTIONALITY)
- OPTIONAL LOSSLESS COMPRESSION TO ALLOW VIDEO TRANSFER WITHIN LIMITED BANDWIDTH
- EXTENDS UP TO 30KM OVER FIBER (MAXIMUM DISTANCE DEPENDS ON THE SFP+ MODULE AND TYPE OF FIBER CONNECTIVITY USED)
- SUPPORTS INDEPENDENT BREAKAWAY A/V MATRIX SWITCHING WITH MINIMAL LATENCY, VIDEO WALL GENERATION, AND MULTI-VIEW COMPOSITING (USE MCX GEN2 CONTROLLER FOR SWITCHING AND CONTROL FUNCTIONALITY)
- ENABLES PASS THROUGH OF AUDIO FORMATS INCLUDING LPCM (UP TO 8 CHANNELS), BITSTREAM AND HD BITSTREAM FROM HDMI OR DISPLAYPORT SOURCES
- FRONT PANEL PUSHBUTTONS AND OSD ALLOW FOR BASIC CONFIGURATION

SPECIFICATIONS

MCX GEN2 DISPLAYPORT COPPER/FIBER TRANSCODER

FRONT VIEW

MCXG2TD11

BACK VIEW

MCXG2TD11

WHAT'S INCLUDED WITH THE TRANSCODER

- **(1) UHD+ COPPER/FIBER TRANSCODER**
- **(1) 12-V/3-A DC POWER ADAPTER**
- **(1) POWER CORD**
- **(1) IR EMITTER**
- **(1) IR RECEIVER**
- **(1) 3-PIN TERMINAL BLOCK**

SPECIFICATION CHART

MCX GEN2 DISPLAYPORT COPPER/FIBER TRANSCODER

MCX GEN2 COPPER/FIBER TRANSCODER SPECIFICATIONS	
FEATURE	**MCXG2TD11 TRANSCODER**
DISPLAYPORT VERSION	DisplayPort™ 1.2
HDMI VERSION	HDMI 2.0b
10GBE BANDWIDTH	10 Gbps
INPUT PORTS	(1) DisplayPort; (1) HDMI Type A
OUTPUT PORTS	(1) DisplayPort (Loop-through in encoder mode)
BI-DIRECTIONAL PORT	(1) Stereo Audio (3.5mm)
PASS-THROUGH PORTS	(1) 10GbE LAN (RJ-45 or SFP+); (2) IR (3.5mm); (1) RS-232 (3-pin Terminal Block); (1) LAN (RJ-45); (3) USB 2.0 (Type A) (under decoder mode); (1) USB 2.0 (Type B) (under decoder mode)
IR FREQUENCY	38kHz
BAUD RATE	57600 (Default), up to 115200 bps
POWER SUPPLY	12V/3A DC (US/EU standards, CE/FCC/UL certified)
ESD PROTECTION (HBM)	±8kV (Air Discharge) ±4kV (Contact Discharge)
DIMENSIONS (W X H X D)	9.1" x 1" x 4.6" (231.5 x 25 x 116.7mm)
WEIGHT	2 lb. (916g)
CHASSIS MATERIAL	Metal (Steel)
CHASSIS COLOR	Black
OPERATING TEMPERATURE	32 to 104˚F (0 to 40˚C)
STORAGE TEMPERATURE	-4˚F to +140˚F (-20 to +60˚C)
RELATIVE HUMIDITY	20 – 90% RH (Non-condensing)
POWER CONSUMPTION	14.3 W
SUPPORTED VIDEO RESOLUTION	720 × 400p@70/85, 640 × 480p@60/72/75/85, 720 × 480i@60, 720 × 480p@60, 720 × 576i@50, 720 × 576p@50, 800 × 600p@56/60/72/75/85, 848 × 480p@60, 1024 × 768p@60/70/75/85, 1152 × 864p@75, 1280 × 720p@50/60, 1280 × 768p@60/75/85, 1280 × 800p@60/75/85, 1280 × 960p@60/85, 1280 × 1024p@60/75/85, 1360 × 768p@60, 1366 × 768p@60, 1400 × 1050p@60, 1440 × 900p@60/75, 1600 × 900p@60RB, 1600 × 1200p@60, 1680 × 1050p@60, 1920 × 1080i@50/60, 1920 × 1080p@24/25/30, 1920 × 1080p@50/60, 1920 × 1200p@60RB, 2560 × 1440p@60RB, 2560 × 1600p@60RB, 2048 × 1080p@24/25/30, 2048 × 1080p@50/60, 3840 × 2160p@24/25/30, 3840 × 2160p@50/60, 3840 × 2160p@24, 3840 × 2160p@50/60, 4096 × 2160p@24/25/30, 4096 × 2160p@24, 4096 × 2160p@50/60, 4096 × 2160p@50/60

SPECIFICATIONS

MCX GEN2 DISPLAYPORT COPPER/FIBER TRANSCODER

MCX GEN2 COPPER/FIBER TRANSCODER SPECIFICATIONS CONTINUED		
FEATURE	**MCXG2TD11 TRANSCODER**	
DIGITAL AUDIO		
DISPLAYPORT	Input	Output
	LPCM: Max channels: 8 channels, sampling rate (kHz): 32, 44.1, 48 Bitstream: standard and high definition	
CAT5E/6/7 FIBER	Output	Input
	LPCM: Max channels: 8 channels, sampling rate (kHz): 32, 44.1, 48 Bitstream: standard and high definition	
ANALOG AUDIO		
INPUT	Max Audio Level: 1Vrms Impedance: 10kΩ Type: Unbalanced	
OUTPUT	Max Audio Level: 1Vrms THD+N: < −80 dB@0dBFS 1kHz (A wt) SNR: >80 dB@0dBFS Frequency Response: < ±1 dB@20Hz~20kHz Crosstalk: < −80 dB@10kHz Impedance: 470Ω Type: Unbalanced	

COPPER/FIBER TRANSCODER CABLE LENGTH SPECIFICATIONS				
CABLE LENGTH	**1080P**		**4K30**	4K60
	8-bit	12-bit	(4:4:4) 8-bit	(4:4:4) 8-bit
DISPLAYPORT CABLE				
DISPLAYPORT INPUT	15m	10m	5m	3m
DISPLAYPORT OUTPUT	15m	10m	5m	3m
HDMI INPUT	15m	10m	5m	3m
CATEGORY CABLE				
CAT. 5E/6	100m		70m	
CAT. 6A/7	100m			

NOTE: YUV 4:2:0 and HDR10 is not supported.

SPECIFICATIONS

MCX GEN2 CONTROLLER (MCX-G2-CTRL-24, -48, -120, -250,-500, -UL)

OVERVIEW

The MCX Gen2 controller is an all-in-one SDVoE/AVoIP network controller and manager with an easy-to-use, intuitive user interface. It has many advanced features and provides extensive analytics for both end users and integrators. These are physical appliances (basically small computers) providing a software interface to manage all MCX encoders/decoders in a customer's system. Choose from 24, 48, 120, 250, 500, or unlimited endpoints.

FEATURES

- SIMPLIFIED SETUP – EASY SETUP PROCEDURES WITH CSV IMPORT CAPABILITY TO ACCOMMODATE LARGE DEPLOYMENTS. ASSIGN ICONS TO BOTH SOURCE AND DISPLAY ENDPOINTS TO ASSIST IN IDENTIFICATION.
- - SYSTEM DESIGN TESTING – GRANULAR TESTING OF ALL ENCODER/DECODER FUNCTIONALITY INCLUDING ATTACHED IR OR RS-232 DEVICES. REBOOT AND RESET OPTIONS ARE AVAILABLE FOR INDIVIDUAL OR GROUPS OF ENDPOINTS.
- - STATUS MONITORING – REAL-TIME DATA ON ENCODER/DECODER OPERATIONS AS WELL AS INSIGHT INTO SOURCE AND DISPLAY OPERATION.
- - UPDATING – EXTENSIVE FIRMWARE MANAGEMENT, PROVIDING HIGH-LEVEL ADMINISTRATOR ACCESS TO INDIVIDUAL OR GROUPS OF ENDPOINTS WITH FIRMWARE CLOUD-MANAGED FILES
- - SECURITY – INDIVIDUAL ENCRYPTED ENCODER/DECODER PAIRINGS FOR ADDED PROTECTION AGAINST UNAUTHORIZED CONTENT VIEWING. ADDITIONAL PERMISSION SETTINGS CAN ALLOW OR DISALLOW SPECIFIED ROUTING.
- EDID MANAGEMENT – FLEXIBLE EDID HANDLING WITH FULL REPORTING OF MONITOR INFORMATION. EDID VALIDATION PROCESS ENSURES INFORMATION INTEGRITY.
- CONTROL UI – CREATE BROWSER-BASED INTERFACES TO CONTROL YOUR PROJECTS' ESSENTIAL FUNCTIONS WITH OUR "NO PROGRAMMING" APPROACH TO GUI DESIGN. YOU CAN USE CONTROL MATRIX, VIDEO WALL, AND MULTIVIEW FUNCTIONS, AS WELL AS EXTERNAL DEVICES, SUCH AS DISPLAYS AND MEDIA PLAYERS. YOU CAN ALSO CREATE "NO TOUCH" UIS WITH OUR PIN-CODED QR SYSTEM. THIS MAKES SETTING UP TOUCH PANELS AND CONTROL BOARDS SIMPLE AND COST-FREE.
- EVENTS – AUTOMATE ACTIONS LIKE TURNING ON DISPLAYS UPON SOURCE DETECTION OR INITIATING ROOM OFF PROCEDURES AFTER SOURCE DISCONNECTION. COMBINE WITH MULTIPLE ENCODERS TO CREATE A PRIORITY AUTO-SWITCHING SYSTEM.
- SCHEDULER – SCHEDULE ANY NUMBER OF PRESET COMMANDS FOR UNATTENDED OPERATION. FROM ENSURING ALL DISPLAYS ARE TURNED OFF AT THE END OF DAY, TO CHANGING SOURCE CONTENT ON THE LOBBY VIDEO WALL, THE POSSIBILITIES ARE ENDLESS.
- AUDIT – ASSET TRACKING OF DEVICES THROUGHOUT THEIR LIFECYCLE. THE MCX GEN 2 CONTROLLER LOGS THE FULL HISTORY OF EVERY DEVICE IT MANAGES, REGARDLESS OF THE LENGTH OF SERVICE.
- SLA ADHERENCE – TIME-STAMPED LOGGING OF DEVICES TO MEET SYSTEM-INTEGRATOR SLA COMMITMENTS. CREATE REPORTS THAT SHOW WHEN AND HOW LONG DEVICES WERE OUT OF SERVICE.
- ANALYTICS – BETTER UNDERSTAND AV BEHAVIOR BY STUDYING USER AV INTERACTIONS. CREATE REPORTS TO SHOW WHEN AV WAS USED, HOW LONG IT WAS USED, AND EVEN HOW LONG IT TOOK TO START AV IN ANY MEETING.

ORDERING INFORMATION

MCX GEN2 DATA SHEET

ITEM	CODE
MCX Gen2 Encoders and Decoders	
Copper, HDMI	
MCX Gen2 HDMI Single Encoder Copper	**MCXG2EC01**
MCX Gen2 HDMI Decoder Copper	**MCXG2DC01**
Fiber, HDMI	
MCX Gen2 HDMI Single Encoder Fiber	**MCXG2EF01**
MCX Gen2 HDMI Decoder Fiber	**MCXG2DF01**
MCX Gen2 DisplayPort™ Copper/Fiber Transcoder	**MCXG2TD11**
MCX Gen2 Controller - Adds SDVoE/AVoIP functionality and management	
24 Endpoints	**MCX-G2-CTRL-24**
48 Endpoints	**MCX-G2-CTRL-48**
120 Endpoints	**MCX-G2-CTRL-120**
250 Endpoints	**MCX-G2-CTRL-250**
500 Endpoints	**MCX-G2-CTRL-500**
Unlimited Endpoints	**MCX-G2-CTRL-UL**
ControlBridge Desktop Touch Panel, 7”	**CB-TOUCH7-T**
ControlBridge Desktop Touch Panel, 12”	**CB-TOUCH12-T**

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ABOUT BLACK BOX

Black Box® is a trusted IT solutions provider delivering cutting-edge technology products and world-class consulting services to businesses across the globe in every industry. The breadth of our global reach and depth of our expertise accelerate customer success by bringing people, ideas, and technology together to solve real-world business problems.

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