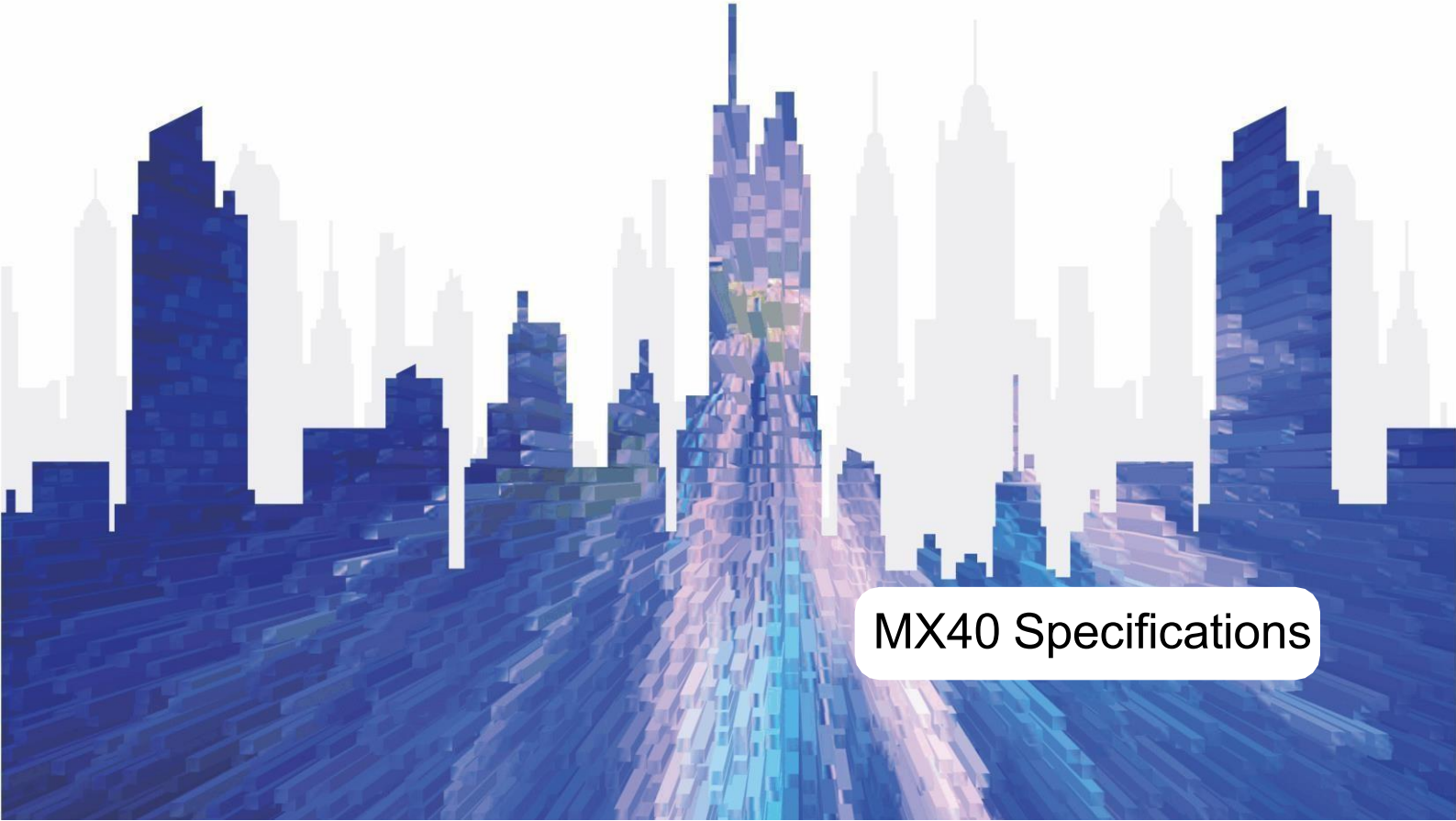
Maxtell
LED Display Company

MX Series
Multimedia Player





MX40 Specifications

Change History

Document Version	Release Date	Description
V1.0.1	2021-9-30	• Added certification information. • Updated the description of the playback performance.
V1.0.0	2021-07-30	First release

Introduction

The MX40 is a new generation of multimedia player created by Maxtell for full-color LED displays. This multimedia player integrates playback and sending capabilities, allowing users to publish content and control LED displays with a computer, mobile phone, or tablet. Working with our superior cloud-based publishing and monitoring platforms, the TB40 enables users to manage LED displays from an Internet-connected device anywhere, anytime.

Support for multi-screen synchronous playback and synchronous and asynchronous modes makes this multimedia player a perfect fit for a wide range of applications.

Thanks to its reliability, ease of use, and intelligent control, the TB40 becomes a winning choice for commercial LED displays and smart city applications such as fixed displays, lamp-post displays, chain store displays, advertisement players, mirror displays, retail store displays, door head displays, shelf displays, and much more.

Certification

RoHS

Note: If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact Maxtell to confirm and address the problem. Otherwise, the customer shall be responsible for the legal risks caused or Maxtell has the right to claim compensation.

Features

Output

- Loading capacity up to 1,300,000 pixels

  Maximum width: 4096 pixels

  Maximum height: 4096 pixels

- 2x Gigabit Ethernet ports

  These two ports serve as primary by default. Users can also set one as primary and the other as backup.

- 1x Stereo audio connector

  The audio sample rate of the internal source is fixed at 48 kHz. The audio sample rate of the external source supports 32 kHz, 44.1 kHz, or 48 kHz. If Maxtell's multifunction card is used for audio output, audio with a sample rate of 48 kHz is required.

- 1x HDMI 1.4 connector

  Maximum output: 1080p@60Hz, support for HDMI loop

Input

- 1x HDMI 1.4 connector

  In synchronous mode, video sources input from this connector can be scaled to fit the entire screen automatically.

- 2x sensor connectors

  Connect to brightness sensors or temperature and humidity sensors.

Control

- 1x USB 3.0 (Type A) port

  Allows for playback of content imported from a USB drive and firmware upgrade over USB.

- 1x USB (Type B) port

  Reserved

- 1x Gigabit Ethernet port

  Connects to a LAN, public network, or computer for content publishing and screen control.

Performance

- Powerful processing capacity
  - Quad-core ARM A55 processor @1.8 GHz
  - Support for H.264/H.265 4K@60Hz video decoding

  - 1 GB of onboard RAM
  - 16 GB of internal storage
- Flawless playback

  2x 4K, 6x 1080p, 10x 720p, or 20x 360p video playback

Functions

- All-round control plans
  - Enables users to publish content and control screens from a computer, mobile phone, or tablet.
  - Allows users to publish content and control screens from anywhere, anytime.
  - Allows users to monitor screens from anywhere, anytime.
- Switching between Wi-Fi AP and Wi-Fi STA
  - In Wi-Fi AP mode, the user terminal connects to the built-in Wi-Fi hotspot of the TB40. The default SSID is “AP+*Last 8 digits of SN*” and the default password is “12345678”.
  - In Wi-Fi STA mode, the user terminal and the TB40 are connected to the Wi-Fi hotspot of a router.
- Synchronous and asynchronous modes
  - In asynchronous mode, the internal video source works.
  - In synchronous mode, the video source input from the HDMI connector works.
- Synchronous playback across multiple screens
  - NTP time synchronization
  - GPS time synchronization (The specified 4G module must be installed.)
- Support for 4G modules

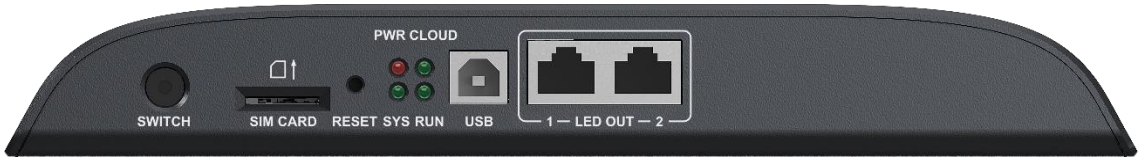
  The TB40 ships without a 4G module. Users have to purchase 4G modules separately if needed.

  Network connection priority: Wired network > Wi-Fi network > 4G network

  When multiple types of networks are available, the TB40 will choose a signal automatically according to the priority.

Appearance

Front Panel



Name	Description
SWITCH	Switches between synchronous and asynchronous modes • Staying on: Synchronous mode • Off: Asynchronous mode
SIM CARD	SIM card slot Capable of preventing users from inserting a SIM card in the wrong orientation
RESET	Factory reset button Press and hold this button for 5 seconds to reset the product to its factory settings.
USB	Reserved USB (Type B) port
LED OUT	Gigabit Ethernet outputs

Rear Panel



Name	Description
SENSOR	Sensor connectors Connect to light sensors or temperature and humidity sensors.
HDMI	HDMI 1.4 connectors • OUT: Output connector, support for HDMI loop • IN: Input connector, HDMI video input in synchronous mode In synchronous mode, users can enable full-screen scaling to adjust the image to fit the screen automatically. Requirements for full-screen scaling in synchronous mode: • 64 pixels ≤ video source width ≤ 2048 pixels • Images can only be scaled down and cannot be scaled up.
WiFi	Wi-Fi antenna connector Support for switching between Wi-Fi AP and Wi-Fi STA
ETHERNET	Gigabit Ethernet port Capable of connecting to a LAN, public network, or computer for content publishing and screen control Indicator status description: • The yellow stays on: The TB40 is connected to a fast Ethernet cable and the connection is available. • The green and yellow stay on simultaneously: The TB40 is connected to a Gigabit Ethernet cable and the connection is available.
COM2	GPS antenna connector
USB 3.0	USB 3.0 (Type A) port Allowing for playback of content imported from a USB drive and firmware upgrade over USB The Ext4 and FAT32 file systems are supported. The exFAT and FAT16 file systems are not supported.
COM1	4G antenna connector
AUDIO OUT	Audio output connector
12V⎓2A	Power input connector

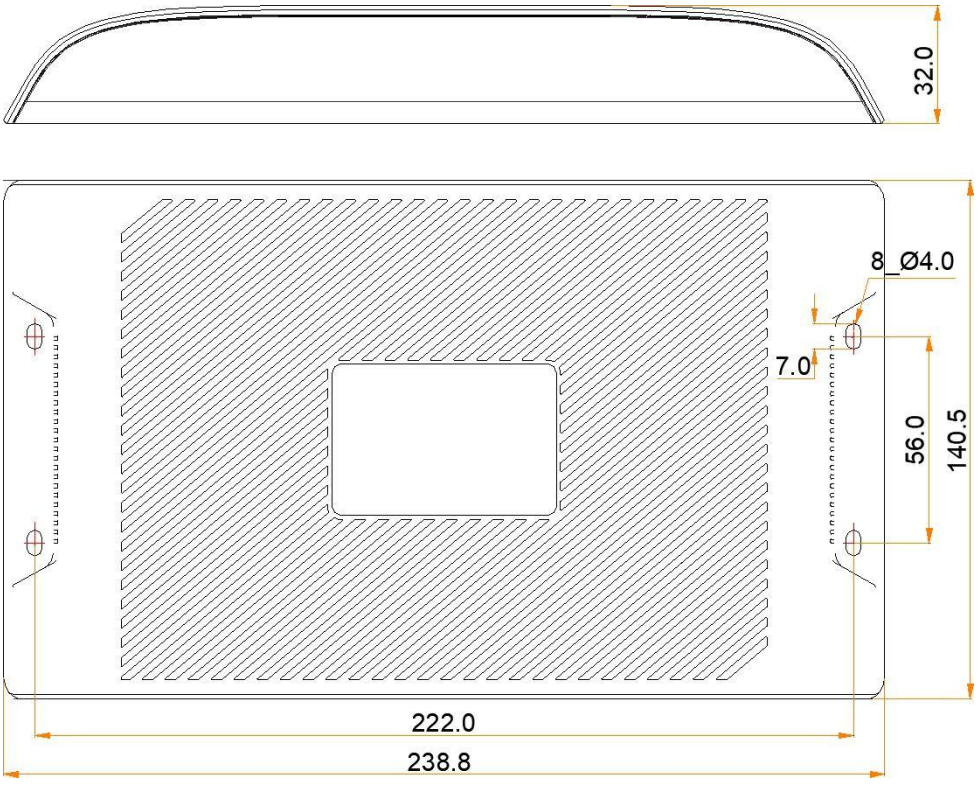
Indicators

Name	Color	Status	Description
PWR	Red	Staying on	The power supply is working properly.
SYS	Green	Flashing once every 2s	The TB40 is functioning normally.
		Flashing once every second	The TB40 is installing the upgrade package.
		Flashing once every 0.5s	The TB40 is downloading data from the Internet or copying the upgrade package.
		Staying on/off	The TB40 is abnormal.
CLOUD	Green	Staying on	The TB40 is connected to the Internet and the

Name	Color	Status	Description
			connection is available.
		Flashing once every 2s	The TB40 is connected to VNNOX and the connection is available.
RUN	Green	Flashing once every second	No video signal
		Flashing once every 0.5s	The TB40 is functioning normally.
		Staying on/off	FPGA loading is abnormal.

Dimensions

Product Dimensions



Tolerance: ±0.3 Unit: mm

Specifications

Electrical Parameters	Input power	DC 12 V, 2 A
	Maximum power consumption	18 W
Storage Capacity	RAM	1 GB
	Internal storage	16 GB
Storage Environment	Temperature	–40°C to +80°C
	Humidity	0% RH to 80% RH, non-condensing

Operating Environment	Temperature	–20ºC to +60ºC
	Humidity	0% RH to 80% RH, non-condensing
Packing Information	Dimensions (L×W×H)	385.0 mm × 280.0 mm × 75.0 mm
	List	• 1x TB40 • 1x Wi-Fi omnidirectional antenna • 1x Power adapter • 1x Quick Start Guide
Dimensions (L×W×H)	238.8 mm × 140.5 mm × 32.0 mm	
Net weight	430.0 g	
IP Rating	IP20 Please prevent the product from water intrusion and do not wet or wash the product.	
System Software	• Android 11.0 operating system software • Android terminal application software • FPGA program Note: Third-party applications are not supported.	

Media Decoder Specifications

Image

Category	Codec	Supported Image Size	Container	Remarks
JPEG	JFIF file format 1.02	96×32 pixels to 817×8176 pixels	JPG, JPEG	No support for non-interlaced scan Support for SRGB JPEG Support for Adobe RGB JPEG
BMP	BMP	No Restriction	BMP	N/A
GIF	GIF	No Restriction	GIF	N/A
PNG	PNG	No Restriction	PNG	N/A
WEBP	WEBP	No Restriction	WEBP	N/A

Video

Category	Codec	Resolution	Maximum Frame Rate	Maximum Bit Rate (Ideal Case)	File Format	Remarks
MPEG-1/2	MPEG-1/2	48×48 pixels to 1920×1088 pixels	30fps	80Mbps	DAT, MPG, VOB, TS	Support for field coding
MPEG-4	MPEG4	48×48 pixels to 1920×1088 pixels	30fps	38.4Mbps	AVI, MKV, MP4, MOV, 3GP	No support for MS MPEG4 v1/v2/v3, GMC
H.264/AVC	H.264	48×48 pixels to 4096×2304	2304P@60fps	80Mbps	AVI, MKV, MP4, MOV,	Support for field coding

Category	Codec	Resolution	Maximum Frame Rate	Maximum Bit Rate (Ideal Case)	File Format	Remarks
		pixels			3GP, TS, FLV	and MBAFF
MVC	H.264 MVC	48×48 pixels to 4096×2304 pixels	2304P@60fps	100Mbps	MKV, TS	Support for Stereo High Profile only
H.265/HEVC	H.265/HEVC	64×64 pixels to 4096×2304 pixels	2304P@60fps	100Mbps	MKV, MP4, MOV, TS	Support for Main Profile, Tile & Slice
GOOGLE VP8	VP8	48×48 pixels to 1920×1088 pixels	30fps	38.4Mbps	WEBM, MKV	N/A
GOOGLE VP9	VP9	64×64 pixels to 4096×2304 pixels	60fps	80Mbps	WEBM, MKV	N/A
H.263	H.263	SQCIF (128×96) QCIF (176×144) CIF (352×288) 4CIF (704×576)	30fps	38.4Mbps	3GP, MOV, MP4	No support for H.263+
VC-1	VC-1	48×48 pixels to 1920×1088 pixels	30fps	45Mbps	WMV, ASF, TS, MKV, AVI	N/A
MOTION JPEG	MJPEG	48×48 pixels to 1920×1088 pixels	60fps	60Mbps	AVI	N/A

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