



MTB(SH)100

100 Mbps Ethernet
Distribution Unit

Product
Specification



SECTION 01

PRODUCT OVERVIEW

Gigabit-to-100 Mbps signal distribution engineered for structured LED display systems.

The MTB(SH)100 is a Gigabit-to-100 Mbps Ethernet distribution unit independently developed by Mooncell for LED display systems. Designed to simplify conventional multi-interface input and output connections, it works with Mooncell C-series receiving cards and uses one twisted pair within a Cat 5e cable for LED data transmission, enabling signal transmission and display power delivery to share the same wiring system.


491,520
PIXELS

Maximum unit capacity

8
OUTPUTS

100 Mbps Ethernet

61,440
PIXELS

Maximum per output

1 x GbE
INPUT

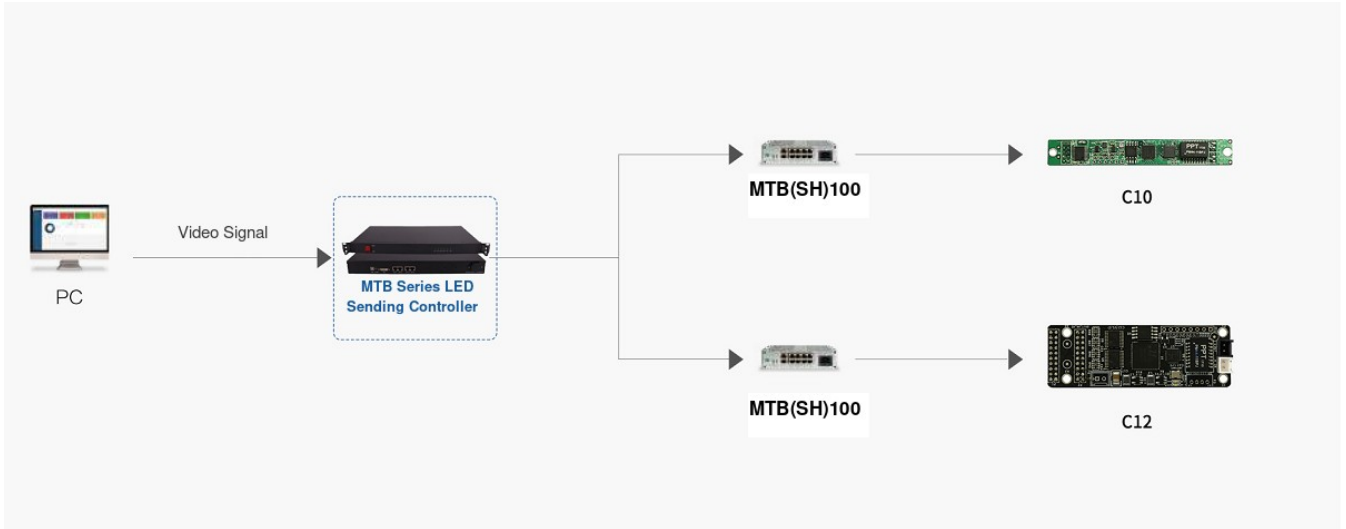
Plus LINK cascade

SYSTEM VALUE A single unit supports up to 491,520 pixels. High processing efficiency and robust signal transmission improve loading utilization while maintaining stability and cost-effective deployment.

SECTION 02

SYSTEM ARCHITECTURE

A modular signal path from the LED sending controller to Mooncell C-series receiving cards.



Typical system topology. Device quantities and receiving-card selection depend on the LED display design.

NETWORK I/O 1 x RJ45 Gigabit Ethernet input, 1 x LINK loop output, and 8 x 100 Mbps Ethernet outputs.

FLEXIBLE LOADING Up to 491,520 pixels per unit and 61,440 pixels per output, with mapping inside the sending controller's output area.

SYSTEM RESILIENCE Bidirectional loop redundancy plus multi-unit cascading for expanded or distributed display systems.

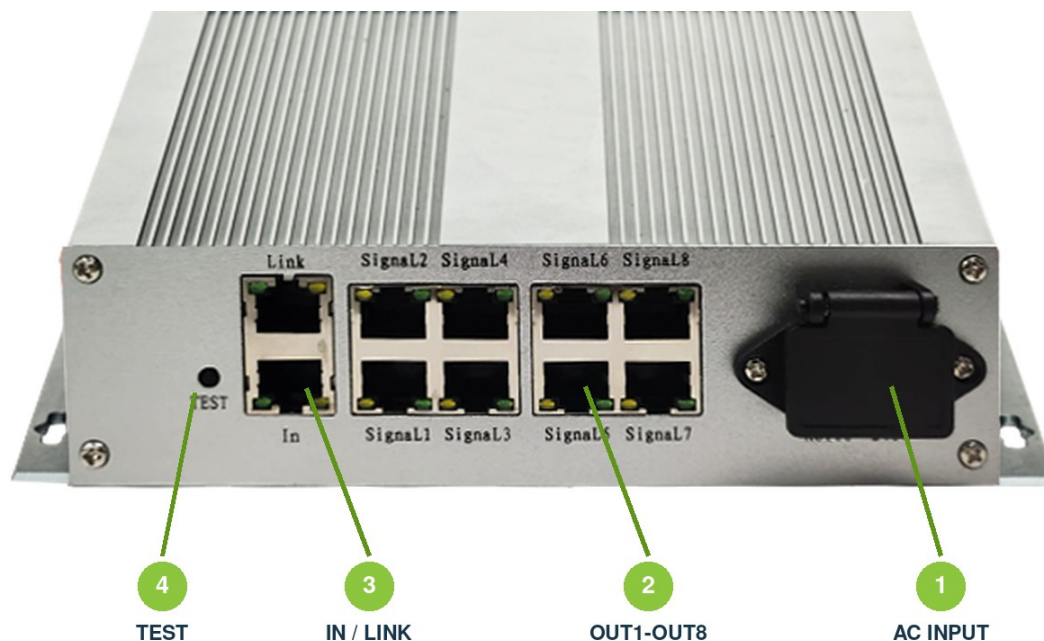
MONITORING PC software monitoring of operating parameters and device status, with configuration parameter readback.

DIAGNOSTICS Gigabit Ethernet bit-error-rate testing and offline front-panel TEST-button operation.

SERVICEABILITY Local storage of static configuration parameters and secure firmware upgrade support.

HARDWARE INTERFACES

Front-panel connectivity is grouped by power, distribution outputs, network loop, and offline test control.



Front-panel reference. The enclosure and printed port labels may vary slightly by production batch.

REF.	INTERFACE	FUNCTION
1	AC Power Input	100-240 VAC power input.
2	OUT1-OUT8	Eight 100 Mbps Ethernet outputs to Mooncell C-series receiving cards. Physical panel labels are Signal1-Signal8.
3	IN / LINK	IN receives LED data from the LED sending controller; LINK provides loop output to the next distribution unit.
4	TEST Button	Front-panel control for offline display testing.

LED INDICATOR STATUS

Front-panel LEDs provide immediate power, communication, Ethernet, DVI-input, and loop-status feedback.

PORT GROUP	LED STATE	INTERPRETATION
OUT1-OUT8	Yellow LED on	The yellow LED remains on after power-up.
OUT1-OUT8	Off	Power supply fault.
OUT1-OUT8	Flashing	Communication with the receiving card is normal.
IN / LINK	Steady on	The yellow LED remains on after power-up.
IN / LINK	Slow flashing	Receiving card normal; Ethernet connected; no DVI input signal.
IN / LINK	Fast flashing	Receiving card normal; Ethernet connected; DVI input signal present.
IN / LINK	Off	No Gigabit Ethernet signal.
IN / LINK	3 quick flashes	Receiving card normal; Ethernet loop connected; DVI input signal present.

QUICK FIELD INTERPRETATION

1. If OUT1-OUT8 indicators are off, verify that power is being supplied correctly.
2. If IN / LINK indicators are off, verify the Gigabit Ethernet connection and upstream signal path.
3. Use the flash pattern to distinguish DVI-input status from Ethernet-loop status.

SECTION 05

LOADING CAPACITY & MAPPING

Capacity is defined at both the complete unit and individual 100 Mbps output levels.

CONFIGURATION PRINCIPLE Per-output capacity depends on the selected mapping dimensions. A wider mapped area permits higher loading; for best utilization, select a configuration with a larger mapping width.

PIXEL LOADING CAPACITY

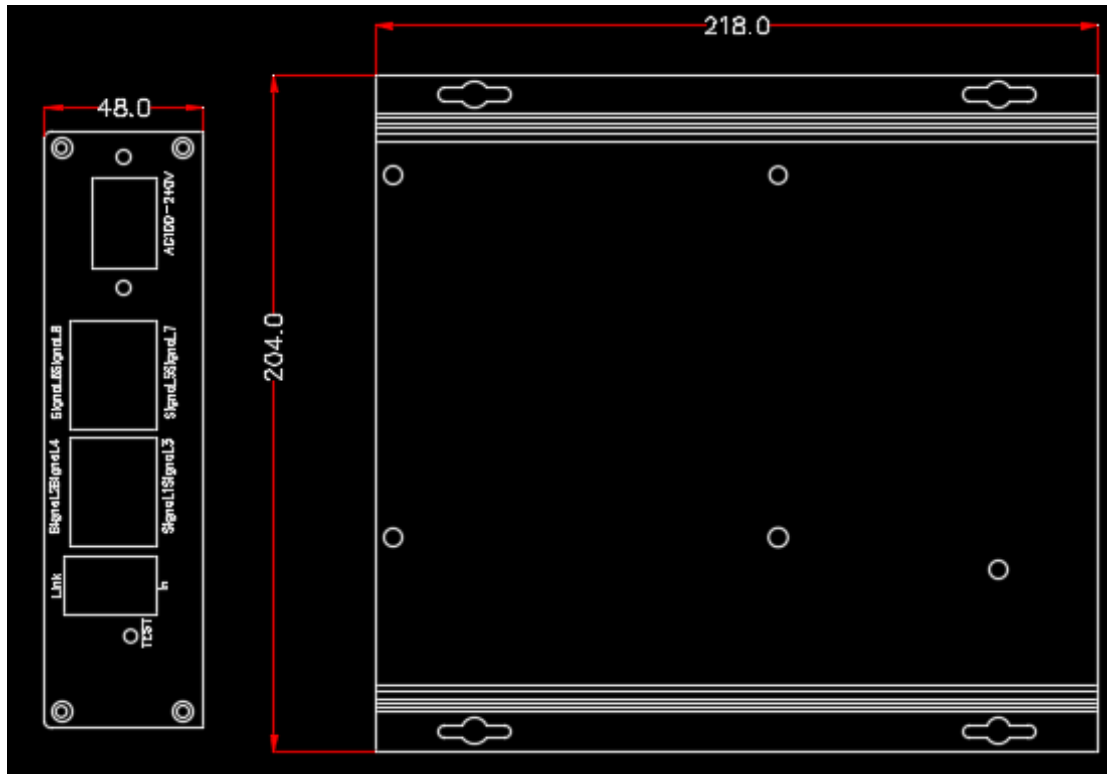
SCOPE	CONDITION	PIXEL CAPACITY	PORT MAPPING (W x H)
Entire unit	Maximum	491,520 pixels	-
Entire unit	Typical	480,000 pixels	-
Entire unit	Minimum	16,384 pixels	-
Per output	Maximum	61,440 pixels	4096 x 15
Per output	Typical	60,000 pixels	2000 x 30
Per output	Minimum	2,048 pixels	1 x 2048

MAPPING LIMITS

PARAMETER	WIDTH	HEIGHT
Mapping range	4096 pixels	4096 pixels
Offset range	0-4095 pixels	0-4095 pixels

MECHANICAL & GENERAL SPECIFICATIONS

Compact metal enclosure with defined electrical, environmental, and mechanical operating limits.



Mechanical dimensions. Tolerance: ± 0.3 mm. Units: mm.

CATEGORY	PARAMETER	SPECIFICATION
Electrical	Input voltage	100-240 VAC, 50/60 Hz
Electrical	Rated power consumption	20 W
Environment	Operating temperature	-40°C to +80°C
Environment	Operating humidity	10%-90% RH, non-condensing
Mechanical	Dimensions	218 mm x 204 mm x 48 mm (L x W x H)
Mechanical	Net weight	2 kg

SECTION 07

APPLICATIONS

Designed for distributed LED display installations where compact signal distribution and reduced cabling are priorities.



EXAMPLE INSTALLATION | ARCHITECTURAL LED DISPLAY



EXAMPLE INSTALLATION | OUTDOOR COMMERCIAL LED DISPLAY

Example project installations. Images are for application reference only.

RECOMMENDED DISPLAY TYPES

- LED strip displays
- Mesh LED displays
- Decorative LED displays

DEPLOYMENT FIT Integrated signal and power wiring, cascade support, loop redundancy, and flexible port mapping make the MTB(SH)100 well suited to modular and spatially distributed LED display structures.

SAFETY & DOCUMENT CONTROL

Observe the rated AC input and keep the enclosure free of conductive contaminants.

DANGER - HIGH VOLTAGE The device operates at 100-240 VAC.

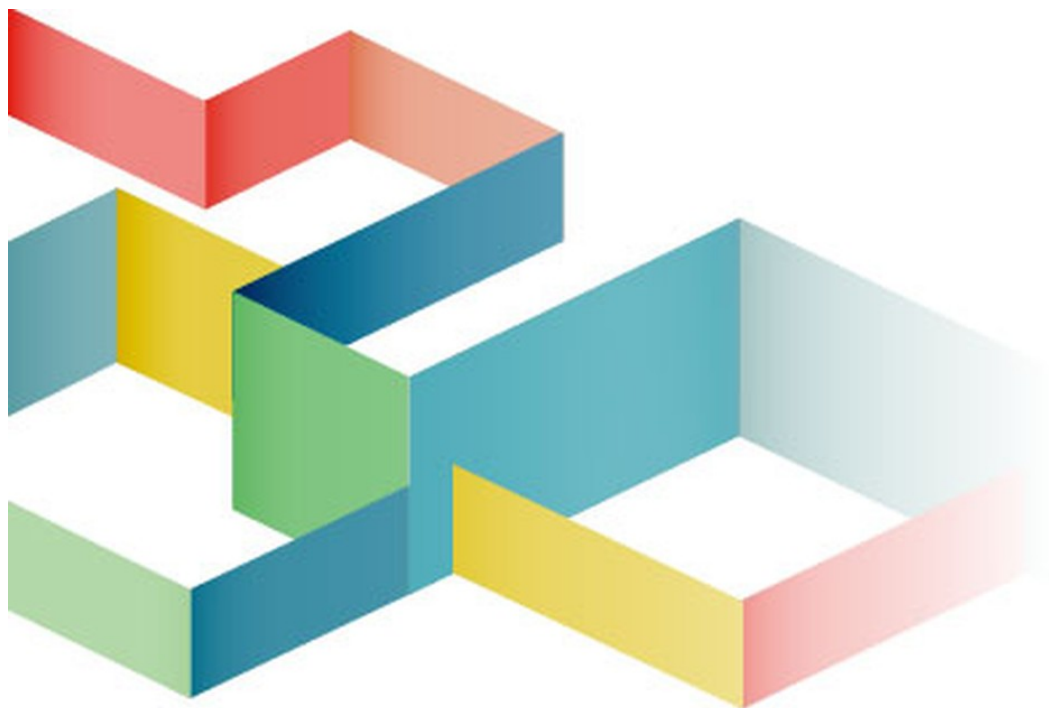
- Do not allow liquids, metal fragments, or other conductive objects to enter the device; doing so may create a serious safety hazard.
- Operate the device only in a clean, dry environment.

DOCUMENT IDENTIFICATION

Model	MTB(SH)100	Document	Product Specification
Current revision	V4.1	Release date	2026-02-04
Product	100 Mbps Ethernet Distribution Unit	Language	English

CHANGE HISTORY

VERSION	RELEASE DATE	CHANGE DESCRIPTION
V3.0	2020-08-05	Initial release.
V3.1	2025-04-16	Updated loading-capacity parameters and added Ethernet-port loading notes.
V4.0	2025-12-05	Document updated; first release under V4.0.
V4.1	2026-02-04	Updated the product model designation.



After-Sales Service Hotline: 400-881-3531

Website: www.mooncell.com.cn

Address: Mooncell Building, Third Industrial Zone,
Baoshi South Road, Shiyan Subdistrict, Bao'an District,
Shenzhen, China

