摩西尔 Mooncell

INTERACTIVE FLOOR DISPLAY SERIES

MTB600E-D / MTB400E-D

INTERACTIVE LED FLOOR DISPLAY

SENDING CONTROLLERS

USER MANUAL

V2.0 | ENGLISH

SAFETY INFORMATION

	This symbol alerts the user to important operating and maintenance instructions in this manual.
	This symbol warns the user of exposed hazardous voltage inside the enclosure and a risk of electric shock.

CAUTION

- **Read the Instructions.** Read and understand all safety and operating instructions before using the equipment.
- **Retain the Instructions.** Keep the safety instructions for future reference.
- **Observe Warnings.** Follow all safety and operating instructions shown on the product and in this user manual.
- **Use Approved Attachments.** Do not use tools or auxiliary equipment that are not recommended by the product manufacturer, as they may create a hazard.

WARNING

- **Power Supply.** Operate the equipment only from the power source marked on the product. Use a grounded power system. The third conductor, protective earth, is a safety feature and must not be omitted or bypassed.
- **Disconnecting Power.** To disconnect power safely, unplug the power cord from the equipment or desktop power supply and disconnect any power cord connected to the mains supply.
- **Power Cord Protection.** Route power cords so they cannot be stepped on, pinched, or crushed by heavy objects.
- **Servicing.** All servicing must be performed by qualified service personnel. There are no user-serviceable parts inside. To avoid electric shock, do not open the enclosure or attempt to service the equipment yourself.
- **Ventilation Openings.** Slots and openings in the enclosure prevent sensitive internal components from overheating. Do not block any ventilation opening.

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TRADEMARKS

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SECTION 01

REVISION HISTORY

DOCUMENT VERSION	HARDWARE VERSION	RELEASE DATE	REVISION DESCRIPTION
V2.0	ST40 (V4.0.0) ST60 (V5.0.0)	August 22, 2025	Initial release

SECTION 02

APPLICABLE MODELS

THIS MANUAL APPLIES TO THE FOLLOWING PRODUCT MODELS
MTB600E-D / MTB400E-D

This manual uses the MTB600E-D Interactive LED Floor Display Sending Controller as the illustrated example.

SECTION 03

PRODUCT OVERVIEW

3.1 PRODUCT INTRODUCTION

The MTB600E-D is a standalone sending controller developed by Mooncell for interactive LED floor displays. It supports the interactive floor-display communication protocol, drives up to 2.6 million pixels, and combines powerful processing, highly stable performance, and excellent cost efficiency.

Its video processing and LED data-sending capabilities make it suitable for interactive display projects in education, entertainment, gaming, and similar applications.

3.2 PRODUCT FEATURES

3.2.1 INPUT AND OUTPUT INTERFACES

MULTIPLE INPUT INTERFACES

- 1 × HDMI 1.4
- 1 × DVI

OUTPUT INTERFACES

- 6 × Gigabit Ethernet outputs; supports arbitrary top/bottom and left/right screen splicing
- Maximum LED display loading capacity: 2.6 million pixels

AUDIO INTERFACE

- Supports audio input and synchronous transmission over the network cable

CONTROL INTERFACES

- 1 × USB communication interface; multiple sending cards can be cascaded and controlled from the same PC
- 1 × 100 Mbps LAN interface for host-PC connection and commissioning

3.2.2 PRACTICAL FUNCTIONS

- Supports EDID management.
- Compatible with 30 Hz, 50 Hz, 60 Hz, and 120 Hz input frame rates.
- Supports an ST_EXT expansion board for cascaded brightness control and automatic brightness adjustment.
- Supports host-PC software monitoring of sending-controller operating parameters and status.
- Supports configuration-parameter readback.
- Supports Gigabit Ethernet bit-error-rate testing.

SECTION 04

HARDWARE INTRODUCTION

4.1 HARDWARE INTERFACE DESCRIPTION

4.1.1 FRONT PANEL

** Product photo for reference only. The delivered product shall prevail.*

DATA INTERFACE DESCRIPTION

NO.	ITEM	DESCRIPTION
1	Power switch	Switches power to the sending controller.
2	Numeric display	Displays the current brightness value.
3	Indicators and function buttons	Displays device operating status and provides function controls.

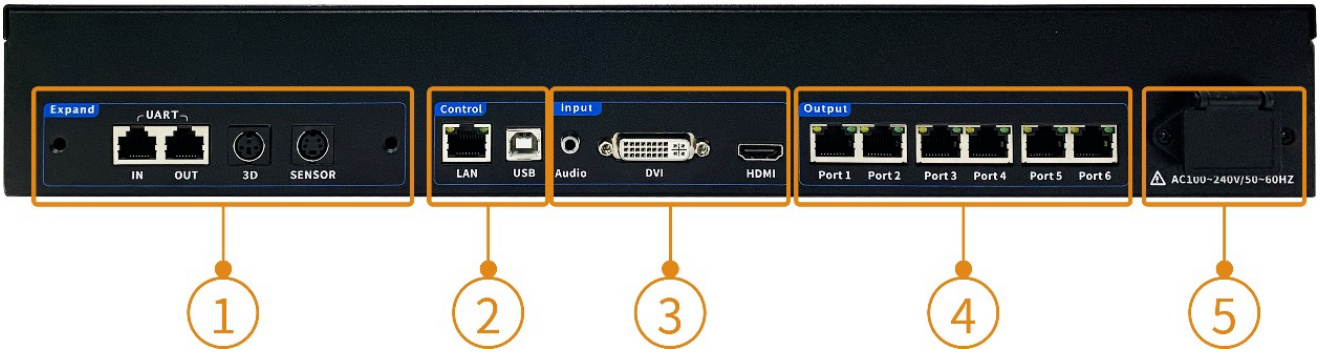
INDICATOR DESCRIPTION

GROUP	INDICATOR	DESCRIPTION
Output	P1-P6	Gigabit Ethernet output indicators: Flashing evenly: communication is normal. Steady on: no Gigabit Ethernet signal communication.
Input	DVI	DVI input indicator and button: Steady on: DVI input is normal. Off: no DVI input. Button: selects DVI input.
Input	HDMI	HDMI input indicator and button: Steady on: HDMI input is normal. Off: no HDMI input. Button: selects HDMI input.

4.1.1 FRONT PANEL - INDICATOR DESCRIPTION (CONTINUED)

GROUP	INDICATOR	DESCRIPTION
Control	RUN	Power indicator.
Control	USB	USB interface indicator: Steady on: USB cable connected normally. Off: USB cable not connected.
Control	LAN	100 Mbps LAN indicator: Steady on: LAN connection is normal. Off: LAN not connected.
Expand	3D	3D interface indicator: Steady on: 3D transceiver connected normally. Off: 3D transceiver not connected.
Expand	SENSOR	SENSOR interface indicator: Steady on: ambient-light sensor connected normally. Off: ambient-light sensor not connected.
Expand	UART-IN	Serial-port indicator: Steady on: serial input connected normally. Off: serial input not connected.
Expand	UART-OUT	Serial-port indicator: Steady on: serial output connected normally. Off: serial output not connected.
Function	INC	Display inspection indicator and button.

4.1.2 REAR PANEL



** Product photo for reference only. The delivered product shall prevail.*

DATA INTERFACE DESCRIPTION

INTERFACE GROUP	NO.	NAME	DESCRIPTION
Input interfaces	3	HDMI	1 × HDMI 1.4 input; supports video sources up to 2560 × 1080 @ 60 Hz and lower compatible formats.
Input interfaces	3	AUDIO	1 × 3.5 mm audio input.
Input interfaces	3	DVI	1 × DVI video input; maximum resolution 1920 × 1200 @ 60 Hz.
Output interfaces	4	Gigabit Ethernet outputs	Port 1-Port 6 correspond to output ports 1-6. Maximum load per output: 650,000 pixels. Maximum 50 receiving cards per output. Audio transmission is supported only through P1.
Control interfaces	2	LAN	100 Mbps LAN interface for host-PC commissioning.
Control interfaces	2	USB (Type-B)	Communication with PC software.

4.1.2 REAR PANEL - DATA INTERFACE DESCRIPTION (CONTINUED)

INTERFACE GROUP	NO.	NAME	DESCRIPTION
Expansion interfaces	1	UART IN/OUT	Serial communication input and output.
Expansion interfaces	1	3D	3D transceiver communication interface.
Expansion interfaces	1	SENSOR	Ambient-light sensor communication interface.
Power interface	5	AC power inlet	AC 100-240 V, 50/60 Hz power inlet.

SECTION 05

PRODUCT PARAMETERS

5.1 BASIC PARAMETERS

CATEGORY	PARAMETER	SPECIFICATION
Loading capacity	Per output	Maximum 655,360 pixels; reference loading format (W × H): 1280 × 512
Loading capacity	Whole controller	2.6 million pixels
Loading range	Width	128-4096 pixels
Loading range	Height	64-4096 pixels
Offset range	Horizontal	0-4095 pixels
Offset range	Vertical	0-4095 pixels

5.2 SPECIFICATIONS

CATEGORY	PARAMETER	SPECIFICATION
Electrical	Input voltage	AC 100-240 V, 50/60 Hz
Electrical	Rated power	16 W

5.2 SPECIFICATIONS (CONTINUED)

CATEGORY	PARAMETER	SPECIFICATION
Operating environment	Operating temperature	-20°C to +60°C
Operating environment	Operating humidity	10% RH to 90% RH, non-condensing
Storage environment	Storage temperature	-20°C to +70°C
Chassis	Dimensions	483 × 284.5 × 65.5 mm, including rack ears and feet
Weight	Net weight	3.12 kg per unit
Outer packaging	Dimensions	515 × 130 × 355 mm
Outer packaging	Gross weight	4.31 kg, including accessories and packaging
Accessories	Standard accessories	1 × power cord, 1 × USB cable, 1 × DVI cable, 1 × HDMI cable, 1 × certificate of conformity
Cartonization	Packing method	3 units per carton

** Power consumption may vary depending on operating conditions, environmental conditions, settings, and other factors.*

SECTION 06

PRECAUTIONS

- High-voltage hazard: the operating voltage of this product is AC 100-240 V.
- Do not allow liquids, metal fragments, or other conductive objects to enter the enclosure; doing so may cause a safety incident.
- Use the equipment in a dry, clean environment.

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