LED DISPLAY

P2.5 INDOOR

01 APPEARANCE

Model: TSMX-P2.5

P2.5mm: 320mm x 160mm

P2.5mm: 160mm x 160mm

02 KEY FEATURES

1. **High resolution**: With a pixel density of up to 160,000 pixels/㎡, the display delivers high-quality images and videos with exceptional sharpness.
2. **High brightness and wide viewing angle**: With a brightness of ≥ 800 cd/㎡ and a wide viewing angle of 160°/140°, the display ensures clear visibility from various angles.
3. **Long lifespan**: The TSMX P2.5 LED display has a lifespan of up to 100,000 hours, ensuring durable and stable operation.
4. **Flexible adjustment**: Brightness can be adjusted from 0 to 255 levels, suitable for all indoor lighting conditions.
5. **High refresh rate**: With a refresh rate ranging from 3840 to 7680Hz, the display provides smooth images without flickering.
6. **Energy efficiency**: Low power consumption design helps reduce operating costs and protect the environment.
7. **High error handling and stability**: SC-PWM technology helps eliminate dead pixels and effectively improve low-gray mottling.
8. **Easy maintenance and repair**: Modules can be easily detached, making maintenance and repair convenient.

03 SPECIFICATIONS

Pixel Pitch	2.5mm
Pixel Density	160000 pixels/㎡
Module Resolution	128 dots (W) * 64 dots (H) 64 dots (W) * 64 dots (H)
Module Size	320mm (W) * 160mm (H) 160mm (W) * 160mm (H)
Module Weight	350g
Scan Mode	1/32
Operating Voltage	DC5V ± 10%
Maximum Current	8A
Maximum Power Consumption	40W
Power Interface	VH4
Signal Interface	HUB75D (IDC16)
Brightness	≥ 800 cd/㎡
Color Temperature	9000 ± 500K
Viewing Angle	160° horizontal, 140° vertical
Optimal Viewing Distance	≥ 2.5m
Gray Scale	14 bit -16 bit
Refresh Rate	3840 - 7680Hz (depending on system load)
Brightness Adjustment	0 to 255 levels
Lifespan	100.000 hours
Operating Temperature	-20℃ to 60℃
Operating Humidity	10% to 95% RH non-condensing
Storage Temperature	-40℃ to 80℃

04 CHIP LED TECHNICAL SPECIFICATIONS

Specification	Blue LED	Green LED	Red LED
Forward Current IF	20mA	20mA	30mA
Peak Forward Current IFP	30mA	30mA	50mA
Power Consumption PD	68mW	68mW	72mW
Reverse Voltage VR	10V	10V	10V
Operating Temperature Of LED Pad Topr	-30 ~ +85°C	-30 ~ +85°C	-30 ~ +85°C
Storage Temperature Tstg	-40 ~ +85°C	-40 ~ +85°C	-40 ~ +85°C
Forward Voltage VF	2.4V (min) ~ 3.4V (max) (at IF=5mA)	2.4V (min) ~ 3.4V (max) (at IF=5mA)	1.7V (min) ~ 2.4V (max) (at IF=10mA)
Reverse Current IR	max 0.5uA (at VR=10V)	max 0.5uA (at VR=10V)	max 0.5uA (at VR=10V)
Viewing angle Δλ1/2	110° (at IF=5mA)	110° (at IF=5mA)	110° (at IF=10mA)
Luminous Intensity Iv	18Mcd (min) ~ 48Mcd (max) (at IF=5mA)	105Mcd (min) ~ 200Mcd (max) (at IF=5mA)	40Mcd (min) ~ 65Mcd (max) (at IF=10mA)
Peak wavelength λD	455Nm (min) ~ 480Nm (max) (at IF=5mA)	510Nm (min) ~ 535Nm (max) (at IF=5mA)	620Nm (min) ~ 625Nm (max) (at IF=10mA)

05 IC TECHNICAL SPECIFICATIONS

- The control chip is dedicated for high-density full-color LED screens, utilizing unique SC-PWM technology that features fast output response, high refresh rate, good current integrity, strong anti-aliasing capabilities, and resistance to PCB parasitic noise.
- The chip controls LED screens with small pixel pitches, high scanning speeds, and high refresh rates. The output current of the chip can be adjusted through an external resistor, and the internal reference of the chip will precisely output the LED current. It has extremely low current errors between channels and between chips, which can effectively improve low-gray mottling, color shift, color block, and the darkening of the first scan line.
- Power voltage range: 3,8V~5,5V
- Scanning capability: 1 to 64
- Output current can be accurately adjusted through an external resistor
- Constant current output range: 0,5~25mA@VDD=5V, 0,5~18mA@VDD=4,2V
- Current accuracy:

  Between channels: ±2% (max)

  Chip to chip: ±2% (max)
- Integrated power-saving mode
- Integrated dead pixel elimination function, effectively removing open diagonals
- Effectively prevents low-gray mottling, color blocks, and other phenomena when scanning at high levels
- Low power consumption design, achieving the best display performance under a power supply voltage of 4.2V~4.5V


APPLIED TECHNOLOGY AND SERVICES