P3 MODULE SPECIFICATION

Specification model：HLT-P3-RGB-SMD

Specification description：PH3 Indoor surface mount three-in-one

Module structure：Light drive in one

Lamp Bead Specification：2121

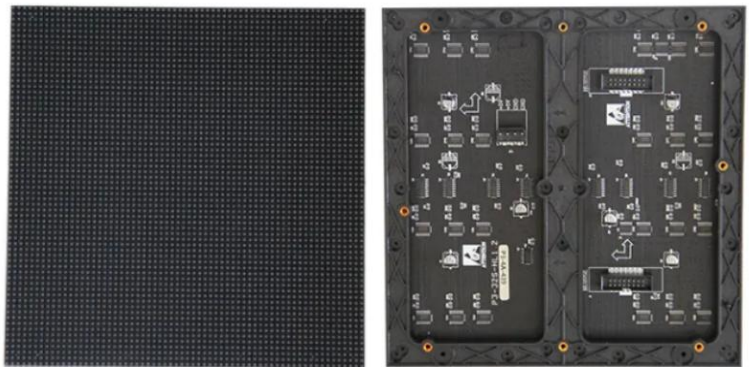
一、The Main Technical Parameters

Technical parameter：(T=25℃)

Project		Parameters	Remarks
Basic parameters	Pixel pitch	3mm	
	Pixel structure	1R1G1B	
	Pixel density	111111/m^2	
	Module resolution	64（W）*64（H）	
	Module size	192mm*192mm	
	Cabinet size	Customized	
Optical parameters	Single point brightness and chroma correction	Have	
	White balance brightness	≥700cd/㎡	
	Color temperature	3200K—9300K adjustable	
	Horizontal viewing angle	≥160°	
	Vertical viewing angle	≥140°	
	Visible distance	≥4.5m	
	Brightness uniformity	≥97%	
	Contrast	≥3000:1	
Processing performance	Signal processing bits	16bits*3	
	Grayscale	65536	
	Control distance	Network cable:100m, optical fiber:10km	
	Drive mode	High gray scale constant current source driver IC	
	Control method	Category 5e twisted pair network cable （less than 100m)	
		Multi-mode optical fiber(100m～500m)	
		Single-mode optical fiber(500m～10Km)	
	Video playback capability	4K ultra-high definition images	
	Scanning method	32/1scan	
	Input signal mode	AV/CVBS/VGA/DVI/HDMI/SDI/DP	
	Frame change frequency	≥60HZ	
	Refresh rate	≥1920HZ	
	Control method	Synchronize/Synchronous asynchronous	
	Brightness adjustment range	Stepless adjustment from 0 to 100	
Usage parameters	Continuous working time	≥72Hours	
	Typical life span	50，000 Hours	
	Protection level	IP43	
	Range of working temperature	-20 ℃ to 60 ℃	
	Working humidity range	10 %- 80% RH no condensation	
	Storage temperature range	-20 ℃ to 60 ℃	
Electrical parameters	Operating Voltage	DC:4.2-5V	
	Power supply requirements	AC：220×（1±10%）V、50×（1±5%）Hz	
	Maximum power consumption	800 W/㎡	
	Average power consumption	280 W/㎡	

2. Materials and schematic diagram

- Good heat dissipation performance, arbitrary splicing, seamless splicing
- 1920 refresh rate, high grayscale
- Total black light, high contrast
- No fan, silent
- Seamless splicing and quick installation



Product information

- LED light

We use high-end chip-packaged LED lights from world-renowned manufacturers to provide customers with a variety of choices. At the same time, the service life and display quality of the display are fully guaranteed.

SMD full color 2121 series: full black body

◆ Driver IC

It adopts high refresh rate, high grayscale constant current driver IC from the world's leading manufacturers, with excellent driving performance, stable and reliable.

◆ PCB board

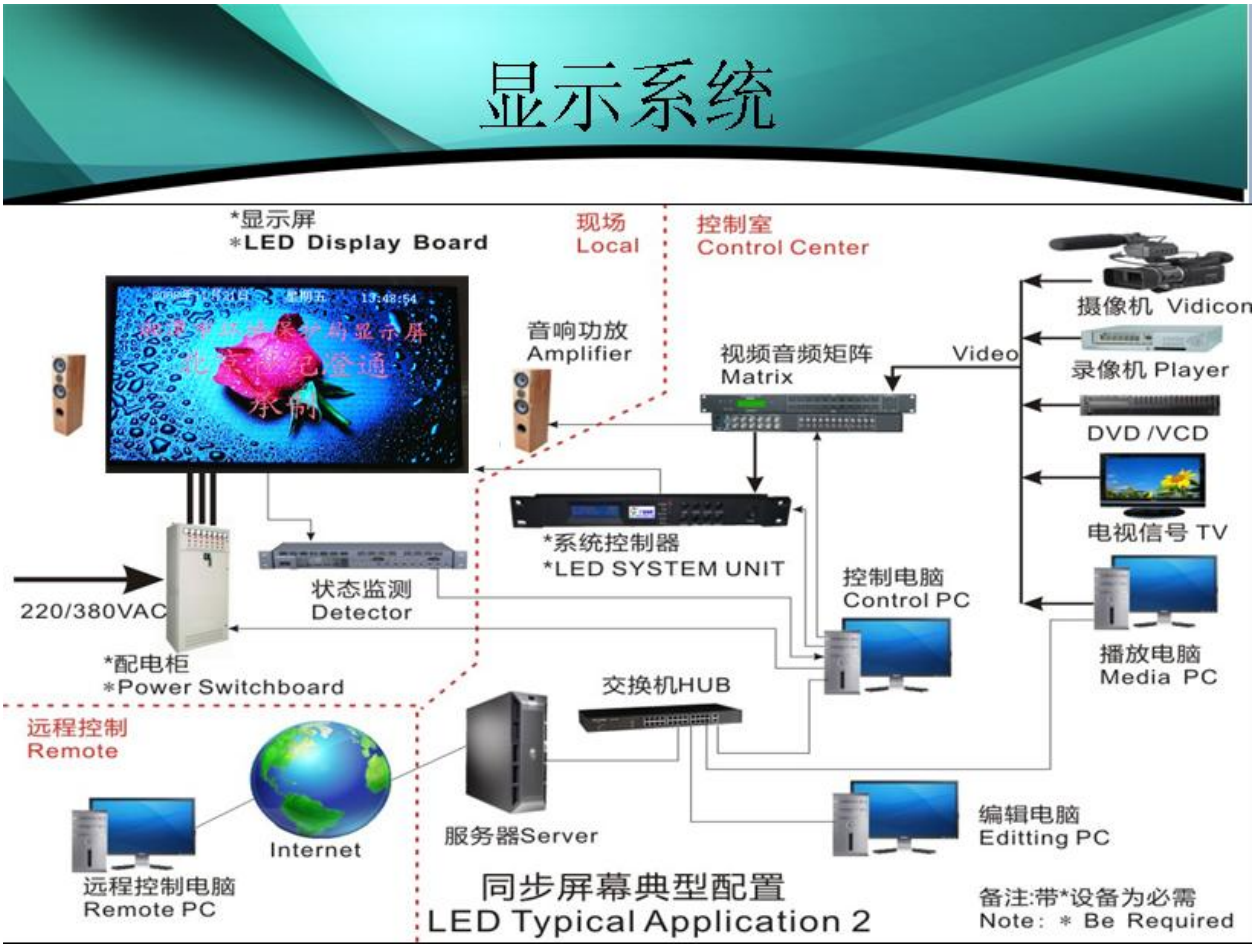
The multi-layer circuit design is used to ensure uniform current distribution on the light panel and good heat dissipation, prevent color blocks from appearing under low grayscale conditions, and enhance anti-electromagnetic interference capabilities.

The boards are made from high-quality manufacturers in the industry: Shengyi, Jiantao (KB), etc.

◆ Drive and control

Each module is controlled by an independent control card, which has higher integration, stronger stability, better display effect and high refreshed, dedicated 14BIT high grayscale, high refresh drive constant current IC, unique blanking circuit, protects LED, prevents surge leakage; supports system multi-channel redundant backup, module point-by-point chromaticity correction, and double power supply backup.

System control topology diagram

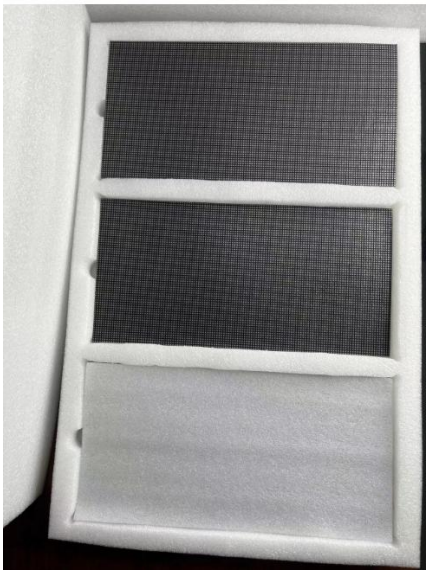


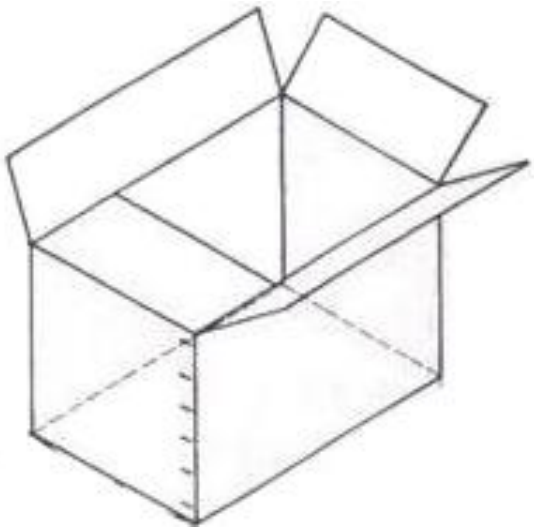
Reliability experiment

Category	Experimental items	Reference standards	Experimental conditions	Duration	Acceptance criteria
LED Luminous tube					
Environmental experiment	Temperature cycle	JESD22-A104-A	-40℃～25℃～100℃～25℃ 30 minutes,5 minutes,30 minutes,5 minutes	Loop 100 times	0/50
	Thermal shock	JESD22-A106	-40℃～100℃ 30 minutes,30 minutes	Loop 100 times	0/50
	High temperature storage	JIS C 7021 (1977)B-11	Ta=60℃ RH=90%	1000 hours	0/50
Lifespan experiment	Normal temperature life test	JESD22-A108-A	Ta=25℃ Test conditions: when powered on and lit	1000 hours	0/50
	High temperature life experiment	JESD22-A101	Ta =85℃ RH=85% Test conditions: when powered on and lit	1000 hours	0/50
Mechanical vibration experiment	Mechanical vibration	MIL-STD-883 Method 2007	20G minutes,20 to 2000Hz 4 cycles,4 minutes.Each,X,Y,Z	----	0/50
LED Finished unit box					
Environmental storage experiment	Low temperature storage test	GB2423.2	After storage for 4 hours at (-40±2) 0C and recovery at room temperature for 4 hours, the display mode and uniformity are normal with no abnormalities and no out-of-control points.	8 hours	0/50
	High temperature storage test	GB2423.2	After storage for 4 hours at (60±2)0C and recovery at normal temperature for 4 hours, the display mode and uniformity are normal with no abnormalities and no out-of-control points.	8 hours	0/50

Aging experiment	Normal temperature aging test		Ta=25℃ 72 hours of non-stop power on and display playback	72 hours	0/50
	High temperature aging test	GB2423.2-89	Under the conditions of (40±2)0C, power on for 8 hours and perform inspections every hour. The display mode and uniformity are normal with no abnormalities and no out-of-control points.	8 hours	0/50
Mechanical vibration experiment	Mechanical vibration	GB6587.4-86	Vibration frequency is 5HZ-55HZ-5HZ, amplitude 0.19mm, 5 minutes	5 hours	0/50

5.Packing





Note: 42 unit module packed in one carton box using imported high-quality cartons.

Reminder of matters needing attention

Usage environment

1. This product is an indoor display screen;

2. Avoid use in high temperature, high humidity, high acid/alkali/salt environments;

3. Keep away from flammable items, gases and dust;

4. The normal operating ambient temperature of this product is -20~50℃, and the optimal ambient temperature is -10~40℃;

5. The storage temperature is -30~60℃, avoid storage in high temperature, high humidity, high acid/alkali/salt environment; keep away from flammable items and gas storage;

6. Avoid strong collisions and collisions with sharp objects during transportation;

Operate

1. This product is powered by DC +5V (operating voltage: 4.5~5.2V). AC power supply is prohibited; the power terminals are prohibited from being connected reversely;
2. If this product is faulty during the warranty period, please send it back to our company for repair, or perform repairs under the guidance of our after-sales personnel;
3. When disassembling/installing the product, be sure to operate carefully to avoid tools hitting the product;
4. Lightning protection and anti-static work should be done during operation and use; the box and steel structure should be grounded;
5. During use of this product, the power cannot be turned on and off continuously. The two

operations should be separated by at least 1 minute;

6. This product cannot be turned off for a long time. It is recommended to use it once every half month and power it on for 4 hours. In a high-humidity environment, it is recommended to use it once a week and power it on for 4 hours.

7. This product does not allow playing the highest brightness all-white picture for more than half an hour. It is recommended to play mainly dynamic videos;

Clean

To clean the surface of the module, please use a soft-bristled brush and brush gently. It is prohibited to use any liquid substance to clean the surface of the LED module, otherwise the SMD LED may be damaged.

Moisture-proof and storage requirements

1. After opening the package, SMD LED products must be stored in an environment with a temperature <30°C and a humidity <60%.

2. If the screen has not been used for more than 3 days, the preheating lighting method needs to be used every time the screen is lit: 30%-50% brightness is preheated for 4-8 hours, and then adjusted to normal brightness (80%-100%) lights up the screen body to eliminate moisture so that there is no abnormality during use.

3. If the screen has not been used for more than 7 days, the preheating lighting method must be used every time the screen is lit: 30%-50% brightness is preheated for more than 12

hours, and then adjusted to normal brightness (80%-100%) %) lights up the screen to eliminate moisture so that there is no abnormality during use.

The operation process is as follows: Lights up during preheating normal use

LED screen normal brightness

- More than 3 days, LED screen (30%-50% brightness) preheating for 4-8 hours
- More than 7 days, LED screen (30%-50% brightness) preheating for more than 12 hours

注： Note: Our company will continue to upgrade and improve existing products. If the specifications change, we will notify you separately.

The right to interpret models and technical indicators belongs to our company.