LED electronic display system design solution

Chapter 1. Company profile

1.1 Company profile

Wuhan Meilige Technology Development Co., Ltd. is a high-tech enterprise specializing in the research, development, production, sales and after-sales service of graphic image products. Since 1997, it has been engaged in the development and research of LED display screens and control systems. Now it has formed a series of display screens from indoor to outdoor, from monochrome, two-color to full-color. Meilige LED electronic display screens have a national business scope including Beijing, Jiangsu, Hunan, Hubei, Henan and other places. It involves hundreds of users in the fields of sports, finance, securities, post and telecommunications, electricity, transportation, industrial control, labor market, medicine, school, telecommunications, industry and commerce, taxation, courts, technical supervision, etc. The technical level, engineering quality and after-sales service of the products are well received by users, and the engineering quality and reputation have reached the first-class level. It enjoys a high reputation in the industry and users.

The company also has the world's leading touch technology, embedded acquisition system technology, touch browsing technology, provides touch products, and is the general agent of touch products of ELO Company of the United States and MINATO Company of Japan in China. The company is based on touch Internet all-in-one machine, WBT network computer, various dedicated network information terminals,

core application software and network management software products, constructs urban public information solutions, e-commerce solutions, financial solutions, enterprise management solutions, e-government solutions, hospital solutions, etc., and provides various network systems, network products and services suitable for government, education, public utilities and other industries.

1.2 Technology, scale, and related experience.

The LED display screen is a large-scale display system integrating microelectronics technology, optoelectronics technology, computer technology, and multimedia information processing technology. With its bright colors, wide dynamic range, high brightness, long life, stable and reliable operation, it has become a leader among many display media and is widely used in government agencies, commercial advertising, sports stadiums, information dissemination, news releases, securities trading, etc.

As a professional manufacturer of display screens, Meilige has established a complete pre-sales, in-sales and after-sales service system. Professionals are responsible for the selection and design of display screen products and their systems, installation and commissioning, and after-sales maintenance and warranty. The various components used in the display screens produced by the company are strictly selected to ensure that they are authentic original products. The light-emitting devices all use original high-quality tube cores from Japan and Taiwan (such as products from Japan Nichia, Sharp, Taiwan Guolian, etc.), and the electronic components use components from well-known foreign semiconductor device manufacturers (HARRIS, TOSHIBA, HITACHI, MOTOROLA, TEXAS). The display screen has strong processability, and its module production is produced by a professional production line. It undergoes a week of aging test before leaving the factory to ensure its stable and reliable operation. With its superb technical strength and standardized business model, the company promises a three-year warranty and lifelong maintenance for its products.

The display screen has fast image information refresh, soft color matching, stable display, and no "stroboscopic" or "water ripple" phenomena. The VGA/Video synchronous display screen is 100% synchronized, that is, the content displayed on the computer screen can be displayed on the large screen point by point. Support PC hardware, operating system and software platform, truly realizing what you see on the computer screen is what you see.

The company seeks efficiency and development with norms, maximizes the benefits to users, and always adheres to "meeting customer requirements with professional technology, reliable quality and constantly improving services".

Chapter 2 System Requirements Analysis and Implementation Goals

This design plan is formulated through communication with users and in accordance with user requirements.

The display screen solution model is determined as follows: Its main technical parameters are as follows:

Index name Technical index Remarks

Light-emitting device Φ 3.7mm Dual-primary color 8×8 matrix module 1. The light-emitting device adopts the high-brightness tube core of Taiwan Guolian Company, with high brightness and uniform color; 2. The control chip adopts the American programmable logic gate array, with simple structure and good stability; 3. The switching power supply adopts a large-screen special power supply with overvoltage, overload, short circuit and other protection functions; 4. The circuit board adopts UL certified products. Pixel density 44100 dots/m2

Point spacing 4.7 mm

Brightness R> 400CD, G>300CD

Blind spot rate The whole screen has no blind spots

Grayscale level 256 levels

Display color 65536 colors

Display mode VGA synchronization 640×480～1024×768

Brightness adjustment 8 levels adjustable

Unit board size: 305 mm ×152 mm

Resolution: 64 × 32

Quantity: 13 × 8 = 104 pieces

Screen

Effective display area: 3.97 m × 1.22 m

Resolution: 832 × 256

Unit board gap ` 0.1 ㎜

Transmission mode and speed High-speed serial, 40 Mbit/s per channel

Drive mode Scan drive

Screen refresh rate 150 pictures/second

Viewing angle

Visual distance Horizontal viewing angle: plus or minus 70 degrees

2 m ~ 60 m

Display function Chinese, English, common symbols

Animation, video program

Working environment Temperature: -20 degrees ~ 70 degrees

Voltage: AC 180 V - 240 V

Power consumption: ≤ 300 W / m2

Power consumption ≤ 300 W / m2

Screen thickness ≤10 cm

Average life More than 100,000 hours

Communication interface LED Dedicated multimedia card

Frame structure The display frame is made of a new type of silver-white aluminum alloy material, with stainless steel covering the outside.

This design adopts VGA synchronization technology, which can meet the user's playback requirements in real time: such as advertising, working status, notifications, announcements, and can also display images from various video sources such as VCD, DVD, VCR, TV, and data transmitted from the network, ensuring a true 256-level grayscale effect, with rich colors and distinct layers, truly reproducing the gorgeous colors of nature.