

Operation Description

1. Main Control ---- AK3760E

CPU

- ARM926EJ-S 32-bit RISC CPU
- Up to 800MHz working frequency
- 32KB I-Cache and 32KB D-Cache
- Memory Management Unit
- Video Decoder
- Supports H.264/MJPEG decoding
- Compatible with H.264 BP/MP/HP Level 3.1~5.1
- Supports up to 1920*1080@30fps

Bootstrap

- Four booting modes
- Serial NOR Flash Boot
- SPI NAND Flash Boot
- USB Mass Storage Boot
- UART Boot

2D Graphics Engine

- Image format conversion
- Down scaling and up scaling
- Image rectangular mapping
- Luma conversion
- Image cropping
- Alpha blending
- Rotation: 90°, 180°, 270°

Working Mode

- Normal operating mode
- Standby mode
- Power off mode

Display Controller

- Supports 18-bit/16-bit/9-bit/8-bit MPU LCD
- Supports 24-bit/18-bit/16-bit/8-bit RGB LCD
- Supports 4-lane MIPI LCD
- Programmable LCD size, up to 1920*1920*1920

Power Management Unit

- BUCK11 for core

Ethernet MAC

- Supports two Ethernet MAC interfaces
- Compliant with IEEE 802.3
- RMI mode
- 10/100Mbps full-duplex mode
- Provides PHY clock output

Image Capture

- Supports dual-sensor input
- Supports DVP interfaces
- Compatible with BT.601/BT.656/BT.1120 standard
 - 8-bit input data width
- Input data format: Bayer RGB data, YUV422 data, B&W RAW data and JPEG compressed data
- Supports data sampling at both rising edge and falling edge
- Supports downscaling of YUV422 data
- Image cropping
- Data line swap function

MMC/SD/SDIO

- Three interfaces for
- MMC/SD/SDIO/SDHC/micro-SD cards
- Compliant with eMMC/MMC4.2, SD2.0 and SDIO2.0 profile

Video Encoder

- Supports MJPEG encoding
- Supports resolution up to 2592*2592

SPI Flash Controller

- One SPI master interface for SPI NOR Flash or SPI NAND Flash
- Supports Standard SPI, Dual SPI, and Quad SPI
- Supports two #CS signals
 - USB Host/Slave
- Supports one USB 2.0 High Speed Host & Slave interface
- Supports high-speed (480Mbps) mode and full-speed (12Mbps) mode
- Supports Control, Bulk, Interrupt and Isochronous transfers
 - SAR ADC
- One 12-bit SAR ADC
- Two channels for general purpose analog-to-digital conversion
 - Audio Codec
- One 22-bit Sigma-Delta DAC with headphone driver
- One 16-bit Sigma-Delta ADC with built-in Microphone pre-AMP
 - Peripheral Interfaces
- 4xTWI (two-wire interface)
- 2x I2S
- 4x UART (one with hardware flow control)
- 2x SPI
- 86x GPIOs (all shared with other pins)
- 6x PWM
- 1x PDM
 - Always on
- Supports RTC
- 32.768KHz crystal oscillation circuit and RC oscillation
- Time counter (second, minute, hour) and calendar counter (day, month, year)
- 12/24-hour mode and leap year mode
 - Operating Voltage
- IO: 3.3V
- Core: 1.1V
- DDR2 SDRAM: 1.8V
- Image sensor: 1.8V/3.3V
 - Storage
- 512Mbit/1Gbit DDR2 SDRAM
 - Package
- 128-pin ELQFP package with 14mm X 14mm
- X 1.4mm, 0.4mm pitch

2. The circuitry mainly consists of two parts:

a. Relay ---- HFD3/5-L2S

- Dimensions of 9.0H x 7.5W x 15L mm is ideal for high-density mounting.
- Dielectric strength of 1,500 VAC
- Conforms to FCC Part 68 requirements (1,500 V, 10 x 160 μ s).
- Coils and Contacts voltage of 2,500 V for 2 x 10 μ s (conforms to Telcordia specifications).
- Dual-winding latching models to save energy.
- UL recognized / CSA certified / VDE certified.

• RoHS Compliant

Contact Data

- Rated load: 0.5 A @ 125 VAC, 2 A @ 30 VDC
- Contact material: AgNi (Au Clad)
- Max. Switching current; 4 A
- Max. Switching voltage: 277 VAC, 220 VDC
- Max. Switching power: 52.5 VA / 90W
- Max. switching capacity: 37.5 VA, 30 W
- Min. permissible load: 10m VDC, 10 μ A
- Mechanical durability: 1 x 10⁸ times
- Electrical durability: 1 x 10⁵ times

b. Screen

The Screen is a transmissive type a-Si TFT-LCD (amorphous silicon thin film transistor liquid crystal display) module, which is composed of a TFT-LCD panel, a driver circuit a backlight unit, The panel size is 4.0 inch and the resolution is 480×480. High image quality a-Si TFT LCD module. Partial-screen display function is available. Sleep and Stand-by modes are available for power saving.

3.Power supply, between R/RC and C, the voltage is AC 24V. Swipe the interface to the right to the Menu menu and click the WiFi icon (Connect). The device will enter the interface of scanning the surrounding hotspots, wait for the hotspots to be scanned, and then manually select one of the hotspots and click to enter the hotspot password. Wait for the device to connect to the hotspot successfully. The "Connected" message is displayed.

4. Power supply: AC 24V

5.crystals

X1 :24MHz, X2 : 32.768KHz, X1: 40MHz

6.RF IC: RTL8733BS

2. 4G WIFI

Operation Frequency:	IEEE 802.11b/g/n HT20/n HT40: 2412-2462MHz
Modulation Type:	OFDM/DSSS
Bit Rate of Transmitter	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6Mbps 802.11n Up to 150Mbps
Antenna Designation:	FPC antenna
Antenna Gain	2.7dBi

5G WIFI

Operation Frequency:	5180-5240MHz, 5745-5825MHz
Modulation Type:	DSSS, OFDM
Antenna Designation:	FPC antenna
Antenna Gain	2.9dBi