

CARDVD System Working Principle

The CARDVD system is a car multimedia system that FREESCALE IMX515 as the main CPU, STM8 as a co-processor, WINCE as the main operating system to complete FM, Navigation, DVD and other automotive applications.

Working principle of CARDVD is show as in the Fig.1:

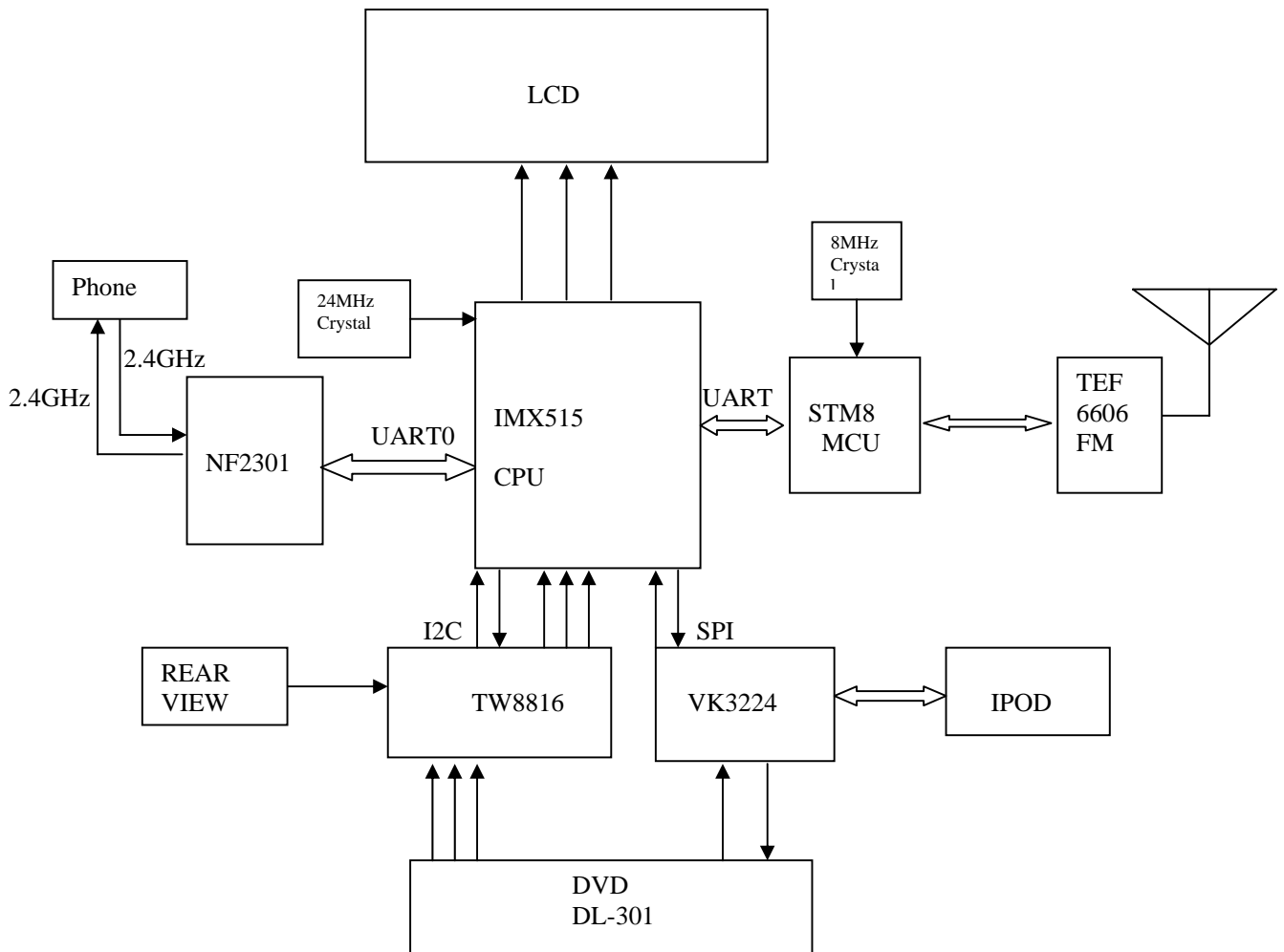


Fig.1

1: Radio

Radio module used the NXP TEF6606, WINCE system control the radio user interface, the system communicate through IMX51 serial (COM3) to send commands to STM8 MCU system, and then the MCU control the radio module, finally finished automatic search, manual search, storage units and other functions, STM8 and TEF6606 also using serial communication mode.

2: DVD

Mechanism used Huayang DL-301 mechanism, TECHWELL TW8816 as the AD IC, change DVD YPrPb video signal to digital RGB565 16BIT signal, using the CSI of IMX51 IPU image processing unit connection to preview and display the LCD screen of 800*480 resolution . Mechanism control by VK3224 extended serial 1.

3: Bluetooth

Bluetooth used NFORE NF2301 module, WINCE host system through IMX51 UART0 send commands to achieve the relevant match, dialing, speaker-on, phone book, A2DP function, Bluetooth serial use UART0.

When turn on the bluetooth module of the CADDVD system, it emit 2.4GHz high frequency signal and receive 2.4GHz high frequency signal from cell phone. the Bluetooth of the CADDVD system find and recognize the phone device through wireless signals, When it does, tap the name of the phone device on the LCD screen and select "Pair." Enter the passcode for the phone device. Tap the "Connect" button on the CARDVD to finish the pairing process. Click the different function symbols at the bottom of Bluetooth system Menu, user can communicate with cell phone through 2.4GHz wireless signals: Dial, call records, phone book, phone music connection and Setup function.

4: Navigation

Use third-party navigation software, navigation software can highlight IMX515 2D/3D acceleration of the advantages, preferred to use OPENGL ES 1.1,2.0 / OPENVG navigation engine technology, it has been contacted 3D map issues with SiWei, Kaidide, Daodaotong. Kaidide has transplanted 3D map for our platform, 3D technology is based on OPENGL ES 2.0.

5: IPOD

WINCE main control system through IMX51 UART 4 or USB to communicate with IPOD. About the USB connection, you need to write IPOD HID client driver provides an interface to facilitate APP calls, to achieve control of the IPOD.

6: Media Play

Use IMX515 VPU video hardware decoding function, H.264/MPEG4/DIVX/VMVB supporting and WINCE DDRAW technology to achieve multimedia play function.

7: Rear View

The rear view video camera information through the video matrix switch to the TW8816 input, AD converter into a digital signal interface through IMX51 CSI Rear view real-time preview.