

# **AVT2 RC1 (V1.0) Reference Design**

## **Hardware Specifications**

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**Version : 1.0 or RC1**

**Qi Hardware Inc.**

## **Features of avt2\_RC1**

- \* 336 MHz XBurst Jz4720 MIPS-compatible CPU
- \* display: 8-bit RGB / ITU 656/601 data format input of TFT display.
- \* dimension (mm): 94.5 x 65
- \* DRAM: 64MB Synchronous DRAM
- \* headphone jack (3.5 mm)
- \* SDHC microSD
- \* support 850mAh charge limited 4.2V Li-ion battery
- \* 2GB NAND flash memory
- \* mini-USB: USB 2.0 High-Speed Device
- \* micro-AB USB: USB 1.1 Host
- \* serial console
- \* speaker and microphone
- \* 58 Keys

## **FUNCTIONAL BLOCK**

### **SDRAM**

This board has finally 64MB SDRAM with one chip U8 Micron MT48LC32M16A2P-75 .

### **NAND FLASH**

This board has SAMSUNG 2GB U9 K9GAG08U0M-PCB0.

### **USB INTERFACE**

There has one USB 1.1 host port with micro-AB receptacle connector(J4), one USB 2.0 device port on main board (J2).

### **AUDIO SYSTEM**

JZ4720 provides internal CODEC is an I2S/AC97 audio CODEC with 18 bits DAC and 16 bits ADC. The audio system of this design makes use of the internal CODEC to implement the input and

output of audio. It consists of MIC-in with two solder pastes MIC+1 and MIC-1, headphone jack J3, an amplifier U10 GPY0030B for external speaker connecting to the solder paste SP+1 and SP-1. When plug a headphone in J3, the amplifier will be off.

The audio system provides record with gain control; stereo headphone output

with bass/treble boost, and output volume control by software.

### **KEYBOARD INTERFACE**

There are 58 keys reserved by software control. An another ON/OFF key S9 connected to pin 124 WAKEUP\_/PD29 of jz4720. A reset key S1 connected to pin 123 PPRST\_ of jz4720. When this pin receives Low, the cpu will start a reset procedure.

### **MICRO-SD CARD SOCKET**

J1 is the MICRO-SD card socket for extension memory.

### **LCD INTERFACE**

CON2 can let you connected with 24pins of FPC to support 8-bit RGB / ITU 656/601 data format input of TFT display.

### **CHARGING STATUS LED**

LED D3 indicates the charge status that light when charging.

### **BOOT SELECT SWITCH**

SW1 can be switched to either USB BOOT mode or NAND FLASH BOOT mode.

### **SERIAL CONSOLE**

CON3 is a serial console with 3 terminals in RXD/TXD/GND fuctionality which can communicate with jz4720.

### **JTAG TEST POINTs**

There are 5 test points TP1~5 reserved for JTAG interface.

### **UART PORT**

There is another uart port reserved which shares pins with JTAG interface.

### **TOUCH SCREEN INTERFACE**

XP/XN, YP/YN (TP81/TP84, TP82/TP83) test points reserved inputs for touch screen.

## **GPIO DEFINITION SHEET**

### **PROJECT SITE**

[http://downloads.qi-hardware.com/hardware/qi\\_avt2/v1.0/](http://downloads.qi-hardware.com/hardware/qi_avt2/v1.0/)

### **KNOWN ISSUES**

1. Charge function of U5 SE9016 fail due to wrong pcb footprint layout on U5 pin PROG and VCC reversely. After rework, it works well.
2. USB host functionality failure by wrong design on choosing parts. Instead of USBDF01W5 for EMI Filter and line termination for USB downstream ports. After rework, it works well.
3. BD4 needed to be changed into Sunlord ferrite bead PZ1608D221TF and BN1/BN2 needed to be changed into Sunlord ferrite bead array ARZ3216-4-601 to pass FCC test.
4. Not easily plug-in the CON2 fpc connector, after using TONYO's BL114-24RL-TAND. It connects well.
5. J1 micro-SD socket is out of placements a little.
6. Keys are out of placement met with mechanical metal domn, but still works well.
7. Y1 32.768KHz Xtal is not at right spec, after changing to YOKETANT P1AT26070327681220AD. It works well.