Technical Description
For
Duo Plus TFT Camera

Revision History

Revision	Description of Change	Date
A		Initial Draft

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Effective Date:

1.0 Camera Architecture

The design of the camera consists of 4 circuit boards. They are main processor board, Power supply and strobe board, Button user interface board and power button board. The Main processor board is a 6 layers PCB design. It consists of the main Digital signal processing chip and image sensor. Together with the lens and lens-holder mounted on the top of the sensor on the 6 layers board, it becomes the main processor sub-assembly. The 1.6 inches TFT is mounted on between the camera body and main processor board via the flexible cable. This camera can operate in three modes, the USB to PC; output TV on PAL or NTSC and standby picture mode.

2.0 Description in component level

Main components on the camera has a camera ASIC which controls the image pipe -line, processing and command and control of the camera. The camera ASIC is called the Coach; it consists of a DSP and a HW JPEG processor. The camera's eye is the 1.3MP CMOS sensor. The frequency that drives the CMOS sensor is 22MHZ resonator. It has two types of Flash memory on board. The NAND type and NOR type. The NOR type consists of the program excitable code and 8 MB of NAND flash is used for image storage. There is a 8MB of SD RAMS in the design; the main function is for temporary buffer and storage. The buttons and the OSD menu through the 1.6 inches TFT display module do user interface interaction. There is a Strobe board in the camera. The strobe board has a fly back type circuitry to control the charging. The camera is operated by 2AA battery.

3.0 Camera operation

When camera is ON, auto-exposure algorithm is activated. When user pushes the shutter button, Coach will then receive a command to capture the image from the CMOS sensor. Image will be placed to the Coach, processed in the SDRAM and send to the internal NAND flash memory or external MMC. This implies to still image or video clips. When camera is connecting to TV thru the TV jack. TFT will be off. When Coach is detecting the changes of the PIP thru the TV jack, still image or life view mode will be sending to the TV thru TV cable. Likewise for camera connected to USB. Camera command will be sent to PC thru USB and Coach will send data to PC according to the commands and determined by application SW.

When camera is in stand alone, the TFT will be acting like life viewfinder if the review sw is in view mode or in still picture or video clips review. The TFT ON/OFF SW is a two-step. Icons on the TFT will be off if the user press the ON/OFF switch the first time, the second time when the ON/OFF is pressed, the TFT will be off.