NF610 Technical Description

A. Hardware Description

NF610 consists of five boards:

1. Network board
2. Video board
3. Power board
4. CCD board
5. Camera main board

The CCD board and camera main board form the camera module. The camera module outputs analog video signal to the video board. The video decoder digitizes the video signal and the FIFO stores the image data when DSP is busy. DSP obtains data from FIFO, encodes the image, and stores it in the SDRAM. The FPGA controls the operation of image grabbing, FIFO, and SDRAM through DSP. The compressed video stream will be send to MCU from DSP. The MCU will send out the compressed video through the Ethernet PHY. The flash memory stores the firmware and the MCU will load the firmware upon boot-up. The SDRAM are required for the operations of embedded OS. The MCU can detect the alarm input, control relay output and camera functions through its general purpose I/O port. The reception software will receive the data through network and decompress the data to display images.

C. Component Description

PCB Board	Category	Reference	Description
Network Board	Integrated Circuit	U1-SC6030	MCU
Network Board	Integrated Circuit	U2-Flash	Store application program for MCU startup
Network Board	Integrated Circuit	U3, U4-RAM	Store data
Network Board	Integrated Circuit	U6-LXT971ALC	Image transmission through Ethernet
Network Board	Integrated Circuit	U8	Photo-coupler
Network Board	Integrated Circuit	U9, U10	Control & reset logic
Network Board	Integrated Circuit	U15	3.3V Regulator
Video Board	Integrated Circuit	U1	Video Decoder
Video Board	Integrated Circuit	U2, U3-FIFO	Store digital data in FIFO format
Video Board	Integrated Circuit	U4-RAM	Store data
Video Board	Integrated Circuit	U5-FPGA	Perform logic control
Video Board	Integrated Circuit	U6	Video Processor
Video Board	Integrated Circuit	U7	Control & reset logic
Video Board	Integrated Circuit	U8	5V Regulator
Video Board	Integrated Circuit	U9	3.3V & 1.8V Regulator
Power Board	Integrated Circuit	U2	Photo-coupler