Winbond W90N740 Evaluation board

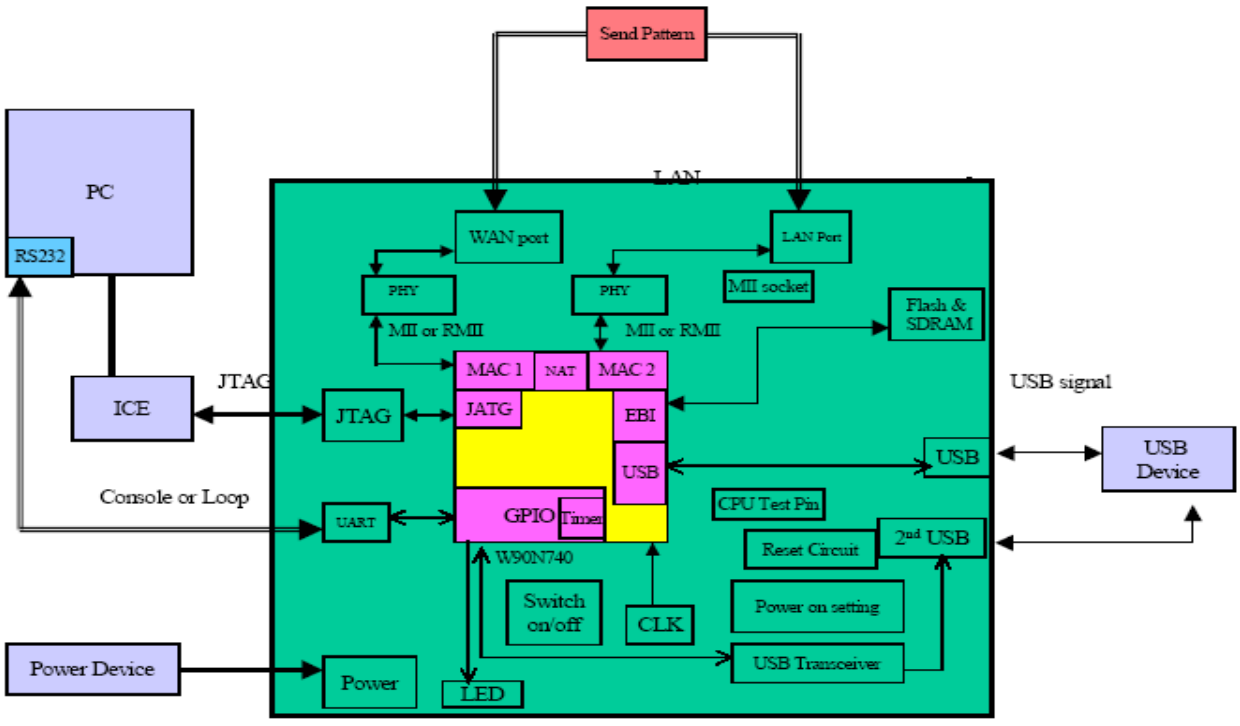
GENERAL DESCRIPTION

The evaluation board is a test platform that is suitable for the sample of W90N740. The board include the powerful 16/32-bit ARM® based RISC micro-controller (W90N740CD), USB function, memory, PCMCIA function, power control system, LAN and WAN Ethernet port. This allows us to test and debug all W90N740CD function.

FEATURES

- W90N740CD: 16/32-bit ARM7TDMI® RISC micro-controller
- Boot ROM and AP flash-- 2M*16 bits for expansion.
- SDRAM: One 512*4 banks*32 M bits SDRAM
- General I/O: control signal, UART or 2nd USB, show status (LEDs)
- USB: USB function
- LAN and WAN 10/100M Ethernet interface
- Embedded ICE™ Interface
- Expansion Function: one port WAN and 4 ports LAN.

THE FUNCTION BLOCKS



CPU: W90N740CD

W90N740CD is our protagonist. That is for her what we do every thing. The W90N740 is using ARM7TDMI® core inside. It is a low power, general-purpose integrated circuits. The W90N740 offers an 8K-byte I-cache/SRAM, a 2K-byte D-cache/SRAM and two MACs of Ethernet controller that reduces total system cost. An NAT Accelerator is support to reduce the software loading for network address translation processing.

We support 15MHZ frequency for CPU. In the PCBA, that would have test point for every one pin. The others that we do use power regulator support the power of the w90N740.

Flash and SDRAM

We put boot room, flash and SDRAM on the evaluation board. The boot room sizes are 1 piece 256K*8 bits, PLCC package. They are using the ROM bank. We would put the other flash for application program. The sizes could be 2M*16 or 1M*16 bytes or 0.5M*16 bytes, TSOP package, which used the external I/O bank. The SDRAM has one piece and sizes are 2M*32 bytes.

PHY, WAN Port and LAN Port

This is main function that do broadband gateway. We choose one port PHY IC of DM9161 of the DAVICOM. It supports MII mode and RMII mode. We made connect WAN port and LAN port on board or it can connect with an external wire. The function block would show some connect status LED.

We have an extension function, one MII socket. That is for used the daughter board to extension 4 ports switch output.

JTAG.

We used it to connect to CPU with ICE. It's debug tool.

UART, 2nd USB and LED

Those functions are creating by the programmable I/O ports of CPU. The UART and 2nd USB are optional functions. We used switch to select it. The UART can do console connection or RS232 full function connector. The 2nd USB needs a transceiver or external USB transceiver connects to USB device.

The LED function is showing the power on or power off mode.

USB

We have one USB host controller. It is USB 1.1 compliant specification. On the evaluation board, that we would have one power-switch IC. This IC can output current typically limited to 0.85A below the 5A safety requirement.