

The best solution for FTTH

Description The TA-470wr wire speed NAT router reference design delivers NAT performance at 200Mbps, full duplex. The TA-470wr allows the highest speed data pass through for WAN to LAN and vice versa which meets real time applications and high bandwidth multi-media contents delivering and sharing. Internet users gradually feel that popular high definition digital media contents and real time applications such as IP STB (MoD), VoIP and Internet gaming need wire speed router to handle vast data. The TA-470wr is an ideal solution for them who want to transfer their data network to be triple play network.

Based on Taifatech's TF470 Advanced Wire Speed NAT Router SoC, NAT and many other functions are integrated into the hardware. The highly integrated SoC needs not to be used SRAM but small flash memory needed. This makes the TA-470wr the most cost effective and the quickest NAT router solution on the market.

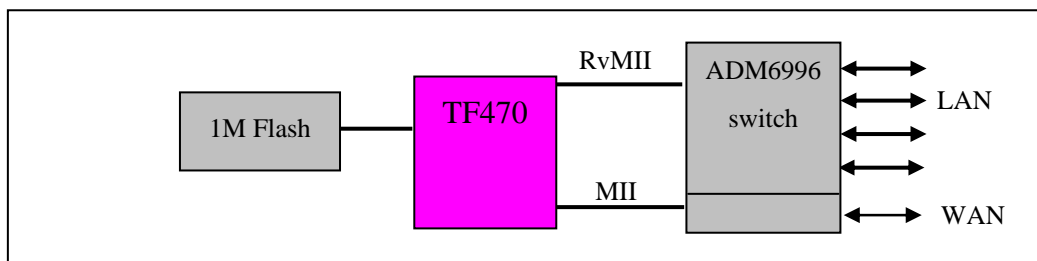
Users running bandwidth hungry applications such as Video on Demand, HD TV over Internet and Video Conferencing can take advantage of TA-470wr's performance to fully harvest the speed their broadband connections provide. To take the advantage of hardware L3/L4 QoS function of TF470, real time applications such as VoIP have the highest priority to pass through the TA-470wr.

Using the highest bandwidth and the highest priority of TA-470wr, users will feel that watching live football game is the same as watching live it on cable or satellite TV. The TA-470wr includes Taifatech's patent pending Home Portal technology. It automatically catalogs devices connected to it, configures them and generates a web page for accessing these devices. Whether it is a Networked DVD player, Personal Video Recorder, a wireless AV transmitter, a wireless DTV tuner, a Network Camera or an Internet Appliance, users can gain access to them from the Internet with just a click of the mouse.

The TA-470wr contains a demo board, schematics, Gerber file, TF-430 datasheet, documentation and software.

- Benefits**
- ✧ Complete hardware platform for wire speed NAT router
 - ✧ 200Mbps full duplex NAT performance
 - ✧ L3/L4 QoS for real time applications
 - ✧ Includes Taifatech's patent pending Home Portal technology
 - ✧ Low Flash without SRAM requirement

Block Diagram



TA-470wr Wire Speed NAT Router Turn Key Solution

TF470 Wire Speed NAT Router SOC

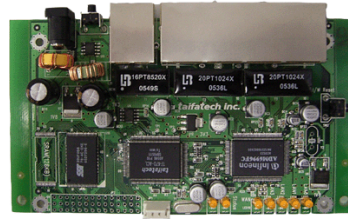
- ✦ Pipeline RISC TF-390 core, 50MHz operating frequency, with single cycle per instruction
- ✦ 96KB internal SRAM for data memory or program mirror
- ✦ 4KB/8KB program mirroring in internal SRAM
- ✦ Supports up to 4MB External Flash/ROM/SRAM
- ✦ Two 128 byte Linear Access Window
- ✦ Dedicated 22-bit address and 8-bit address bus for external program data memory and extended IO
- ✦ Built-in Internet protocol accelerator
- ✦ Hardware based pattern search engine
- ✦ Embedded 82KB SRAM for packet buffer and address table
 - 40KB for packet buffer and L2/L3 table
 - 48KB for NAT table
 - 96KB for MCU data and packet buffer
- ✦ 8 channel DMA

NAT Features

- ✦ Hardware based NAT/NAPT, 4K entries for NAT table
- ✦ Supports up to 8 public IP address
- ✦ Supports up to 8 DMZ hosts
- ✦ Supports port or port range forwarding, up to 32 entries
- ✦ Supports port or port range triggering, up to 24 entries
- ✦ Supports up to 4 LAN static route entries
- ✦ Supports up to 4 WAN static route entries
- ✦ Supports up to unlimited sessions L2TP, 8 sessions PPTP and single session IPsec pass through
- ✦ Supports multicast pass through from WAN to LAN
- ✦ Supports layer 2 bridging, 512 entries for L2 MAC address table
- ✦ Supports layer 3 routing, 512 entries for LAN and 256 entries for WAN IP table
- ✦ Supports NAT ALGs for ICQ, MSN Messenger, Yahoo Messenger and Netmeeting

Hardware based Features

- ✦ Up to 10 port filtering
- ✦ Up to 512 source IP address filtering
- ✦ Up to 10 destination IP address filtering
- ✦ Up to 512 source and destination MAC address filtering
- ✦ Supports multi-session PPPoE, up to 4
- ✦ Supports PPTP client
- ✦ Supports IP un-number, up to 4
- ✦ Per port pattern search engine: 4 8-byte for LAN, 4 8-byte and 1 16 byte for WAN
- ✦ L3/L4 QoS



Hardware Features

- ✦ MII interface for 10/100M Ethernet PHY
- ✦ 802.3x flow control for duplex mode and Jamming for half duplex mode
- ✦ Selectable MII/RvMII interface for switch
- ✦ 4 available ports for LAN

Software Features

- ✦ Browser based setup and configuration
- ✦ Firmware upgrade via web
- ✦ Factory reset
- ✦ DHCP server and client
- ✦ Home Portal Technology
- ✦ Multi-session PPPoE
- ✦ PPTP client
- ✦ IP based (L3) and port based (L4) QoS
- ✦ UPnP

Hardware Platform

- ✦ Four 10/100 Ethernet ports for LAN
- ✦ One 10/100 Ethernet port for WAN
- ✦ RS-232 console port for debugging
- ✦ External power: +5VDC @ 1A
- ✦ Internal power: regulated into 3.3V and 1.8V
- ✦ 1MB Flash
- ✦ LED for LAN, WAN, status and power
- ✦ Buttons for hardware and software reset

Software Developing Platform

- ✦ User Interface API
- ✦ TCP/IP protocol stack
- ✦ Web server software
- ✦ DHCP server and client
- ✦ Home Portal Technology
- ✦ UPnP
- ✦ PPTP client
- ✦ Multi-session PPPoE

