Product Specification
Of
AR7505AEW11-A-ZZ
1x1 11n ADSL2/2+ Router + 4 Ethernet Port

Approval

	Department:	Name:	Release Date:
Editor	Marketing	Ricky Ho	09/05/2011
PM	PM		
Hardware engineer	R&D		
Software engineer	R&D		
Mechanical engineer	R&D		
Approved	Marketing		

Revision History:

Date	Release	Author	Description:
08/31/2011	V1.0	Ricky	Initial Draft
9/5/2011	V1.1	Ricky	Modify model name to AR7505AEW11-A-ZZ

1. PRODUCT OVERVIEW

DESCRIPTION

AR7505 Wireless ADSL2/2+ Router can provide access to the Internet on most common POTS and ISDN.

AR7505 Internet access or remote connection feature makes it the perfect solution for home users. ORANGEHOME is 802.11n WPA/WPA2, Wireless ADSL2/2+ Internet Router which come with 4 Ethernet (LAN) Port. Its wireless LAN 802.11n, 10/100Mbps Ethernet LAN connectivity, and WAN interfaces provide users the flexibility of Internet connection. This product use ATM over ADSL technology for transmissions to the Central Office (CO). Multiple users can access the Internet through a single ISP connection (IP/PPP). Graphical user interface software for installation, configuration, and management will also be provided with the product.

Besides of flexibility on LAN connectivity, **AR7505** also provide network security and HTTP / SNMP management features for network security. Network Address Translation (NAT), dynamic host connectivity protocol (DHCP), packet filtering with hacker attack monitoring and logging are all supported.

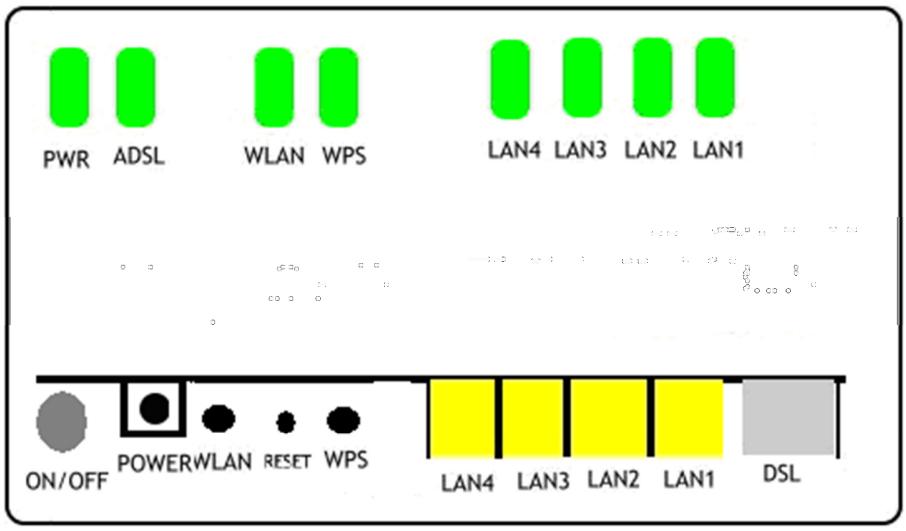
MAIN FEATURES

- ANNEX A supported
- One RJ11 ADSL Port.
- 4 Ethernet (LAN port) Interface.
- Support PPPoE, PPPoA, RFC1483 Bridge.
- Traffic shaping (UBR/CBR/VBR).
- OAM (I.610) F4/F5 support.
- Wireless IEEE802.11b/g/n
- Wireless encapsulation WEP/WPA/WPA2
- Wireless QoS, WMM (Wi-Fi Multi media)

PLATFORM OVERVIEW

The electrical design consists of the following components:
One main PCB board design
External switch power supply:
Input : 100~240VAC, 50/60Hz, 9W
Output option : 9VDC / 1A

FRONT & REAR PANEL:



MECHANICAL DIMENSION

Housing dimension:
PCB dimension: 142mm x 117 mm
Mechanical: Both top and base case are plastic .

2. HARDWARE SPECIFICATION

MAIN CHIPSET – ADSL SOLUTION

Ralink/Trendchip TC3162U (330MHz) + TC3086(ADSL2+ Analog Front End)

ETHERNET SWITCH

TC2205F 4-Port FE switch

WIRELESS SECTION

RT5390 single band 1x1 11n PCIe

FLASH

8 MB SPI Flash

SDRAM

16 MB SDRAM

HARDWARE ARCHITECTURE

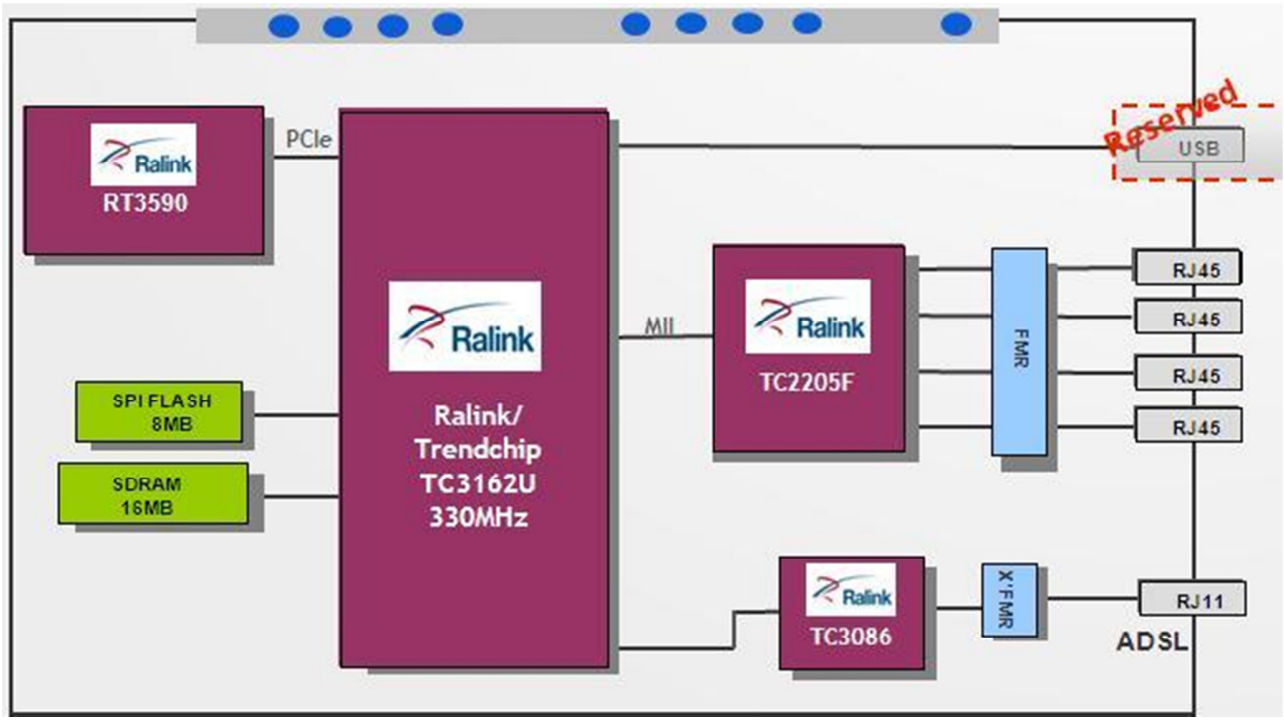


Figure 1: Hardware architecture

PHYSICAL INTERFACE

ADSL
Pinout ADSL Port
Tip and Ring: Pin 3 and 4

WAN SECTION
ANSI T1.413 issue 2/G.dmt network interface

LAN SECTION
auto-MDI/MDIX 10/100Mbps Fast Ethernet LAN port.

LEDS DEFINITION

Mode	Label	Color	Description
Power	Power	Solid Green	Power on, normal operation
		Off	Power off or failure
Ethernet 1	LAN 1	Solid Green	Link up (10/100Mbps)
		Flashing (Green)	Send/Receive data
		Off	Without link
Ethernet 2	LAN 2	Solid Green	Link up (10/100Mbps)
		Flashing (Green)	Send/Receive data
		Off	Without link
Ethernet 3	LAN 3	Solid Green	Link up (10/100Mbps)
		Flashing (Green)	Send/Receive data
		Off	Without link
Ethernet 4	LAN 4	Solid Green	Link up (10/100Mbps)
		Flashing (Green)	Send/Receive data
		Off	Without link
ADSL	ADSL	Solid Green	When the ADSL loop is brought UP
		Flashing (Green)	Startup
		Off	ADSL loop is down
WLAN	WLAN	Flashing quickly (Green)	Send/Receive data
		Flashing slowly (Green)	wifi channel auto search
		Off	Without link
WPS	WPS	Flashing --- 5Hz	In process
		Flashing --- 1Hz	Fail- No Overlap Session
		Green	Success
		Off	No Connection

POWER JACK
9V/1A

RESET BUTTON
Reset button is designed and positioned at rear panel for rebooting and resetting system configuration to its default parameters. Reboot: by pressing < 1 second and release. Back to factory default settings: by pressing and holding the reset button for >= 5 seconds

POWER SWITCH
AR7505 has an on/off power switch. This switch must be positioned on the device in such a manner as to prevent accidental switching. Press up to switch on **AR7505**, press down to turn off **AR7505**.

ANTENNA
Antenna: One internal antenna.

WIFI SIMPLE CONFIG BUTTON
One Wifi Simple Config button on rear panel.

1. Press once quickly to enable WPS function. And WPS LED will present WPS status.
2. Press and hold 5 sec then release the WPS button to enable the WLAN channel scanning function. WLAN LED will flash slowly to present “WLAN channel scanning” status.

WIRELESS FREQUENCY BAND
ISM Band, 2.4-2.485GHz

WIRELESS CHANNELS
Available wireless channels set in hardware varies per region. Must be compliant with regional regulations.

- Channel 1-13 (default is 6, or Auto if driver is capable)

3. SOFTWARE SPECIFICATION

All the software are ARC's generic features expect customized GUI.

Feature
ADSL Compliant
Full ADSL2+/2/1 standards
Annex A, B, I, J, L & M
ITU G.992.1 (G.dmt)
ITU G.992.2 (G.lite)
ITU G.992.3 ADSL2 (G.dmt.bis)
ITU G.992.4 (G.lite.bis)
ITU G.992.5 (G.dmt.bisplus)
ITU G.994.1 (G.hs)
ITU G.995.1
ITU G.996.1
ITU G.997.1
Support Multimode
Support Fast path and Interleave path
Echo Cancellation
Trellis Coding
Bit Swapping
Seamless Rate Adaption
Network Timing Reference
Downstream 4kbps granularity, upstream 32kbps granularity
1bit constellation
Bit loading on pilot tone
CPE determining Pilot tone
DELT
Dual latency independently in each direction
Extend bit swapping
Initialization time < 60 sec
Masked mode
Multiple bearers
Power Saving Mode
L3 to L0 initialization
ATM Support
MultiProtocol over AAL5 (RFC 1483/2684)
VC and LLC Multiplexing
Support 8 PVCs

Traffic Shaping (ATM QoS) UBR, CBR, VBR-rt,VBR-nrt
OAM F4/F5 loop-back, AIS, and RDI OAM cells
VPI range 0-255
VCI range 1-65535
Keeping of reserved values
Creating of PTI field
Creating of CLP field
Calculating of HEC field
Means of VPI/VCI use
Operational data rate - Upstream
Operational data rate - Downstream
PVC statistics
Precise Peak Cell Rate traffic shaping on a per-VCC basis
Network Service
IPv4
DHCP Server/Relay
DHCP Client (WAN Port)
DNS Proxy
PPPoE
PPPoA
RFC 2684 Bridging/Routing
NAT/PAT
RIP V1/V2
Static Routing
UPnP
ALG
DMZ
Virtual Server
SNTP
PPPoE passthrough (Bridge Interface)
uPnP
DSCP/802.1p marking
IGMP Snooping v1/v2
IGMP Snooping v3 (software)
Hardware IGMP Snooping v1/v2
Port binding(LAN/WAN/WLAN)
Port-based VLAN
IP Alias
VPN (IPSec, PPTP, L2TP) pass-through
802.1D MAC Bridge

Ethernet /ADSL / WLAN statistics
Static IP assignment from DHCP server
NAT
1-1 NAT
NAT and NAPT
NAT 1024 sessions capacity
Security
NAT
Prevent port scanning & packet attack
DoS Attack protection
SYN Flooding
Ping of Death,
Teardrop
LAND attack
Management Access Control for LAN/WAN sides
IP with zero length
Smurf Attach
TCP Null Scan
Stateful Packet Inspection(SPI)
IP filtering
MAC filtering
URL filter
HTTPs
SSH
WLAN
802.11 b/g/n
Multiple SSIDs (Up to 4 SSIDs)
Rate adaptation automatically
Power saving
Max Channel number (Ch1~13)
Auto channel selection
WMM support
64-bit&128-bit WEP
WPA-PSK & WPA2-PSK
MAC address filtering
16 users in the wireless LAN
Device Management
Web Configuration
Telnet Management
F/W upgrade

TR-069
SNMP v1/v2c
Web Page Firmware upgrade
Diagnostic Tool for ADSL and IP Ping
Setup Wizard
CLI Command

4. RELIABILITY

The MTBF of the **AR7505** is more than 50,000 hours.

5. ELECTROMAGNETIC COMPATIBILITY

AR7505 will be certified with ANATEL

6. SAFETY CERTIFICATIONS

ANATEL

7. CERTIFICATIONS

WiFi Alliance WiFi 11b/g/n logo

REQUIREMENTS:

AR7505 will use a switching power adapter with interface 9VDC / 1A

HEAT & POWER DISSIPATION

Power: <= 9W (Max)

8. PHYSICAL SPECIFICATIONS

DIMENSIONS AND WEIGHT SPECIFICATIONS

AR7505 have the following size:

- TBD

ENVIRONMENTAL OPERATING RANGES

AR7505 complies with the following standards:
Temperature: IEC 68-2-14
0 to 40 degree C (Standard Operating)
-20 to 70 degree C (Non-operation)
Humidity: 10% to 90% (Non-condensing)

ROUTER POWER

AC input voltage: 100~240VAC, 50/60Hz
Power consumption: 9W (idle-maximum consumption)

OPERATIONAL ENVIRONMENT

Supply voltage of external power supply: input 100~240V 50/60Hz, Output 9VDC,1A
Working temperature: 0°C to +40°C

Working humidity: 10% to 90%

9. PACKAGING

TBD