VMG8924-B10A
Standard Version

Firmware Release Note

V1.00(AAKL.1)b2

Date: Aug. 20, 2013

Author: Wood Huang

Reviewer:

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Revision History

Date	Release	Author	Description
2013/04/29	1.0	Wood Huang	FW release for V1.00(AAKL.0)b1
2013/05/10	1.0	Wood Huang	FW release for V1.00(AAKL.0)b2
2013/05/29	1.0	Wood Huang	FW release for V1.00(AAKL.0)C0
2013/07/30	2.0	Wood Huang	FW release for V1.00(AAKL.1)b1
2013/08/20	2.1	Wood Huang	FW release for V1.00(AAKL.1)b2

ZyXEL VMG8924-B10A
V1.00(AAKL.1)b2
Release Note

Date: Aug. 20, 2013

Supported Platforms:

ZyXEL VMG8924-B10A & VMG8324-B10A

Versions:

Bootbase version: V1.60 | 05/10/2013 10:23:51

Firmware version: V1.00(AAKL.1)b2

Kernel version: 2.6.30

DSL mode code version: A2pv6F038f2

DSL driver version: d24e

WLAN code version: 6.30 RC102.7

Voice code version: 4.12L.06 May 11 2012 11:58:17 IPTK 8.2.2

Notes:

1. QoS Monitor will show only if QoS software Queue is used.

    Qos software queue is created if rate limit or WFQ is configured.
2. 802.11ac is supported with 4360 WLAN adaptor (VMG8924-B10A model).
3. WPS lock down: 10 failures in 300 seconds.

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Features list:

Feature	Additional Information
VDSL	• G.993.1 VDSL Annex A • G.993.2 VDSL2 Annex A, band plan 997, 998 • Support VDSL profiles: 8a/b/c/d, 12a/b and 17a • Maximum data rate (DS/US): 100Mbps/60Mbps • G.994.1 (G.hs) Handshake • Rate adaption • SRA (Seamless Rate Adaption) • UPBO (Upstream power back-off) • VDSL OAM communication channels • INP: Up to 16 symbols • PTM mode • Dying Gasp • G.Vector support • G.INP Support
ADSL	• G.992.1(G.dmt) Annex A compliant • G.992.2(G.lite), Annex A compliant • ANSI T1.413 compliant • G.992.3(ADSL2), Annex A compliant • G.992.5(ADSL2+) Annex A compliant • I.432 ATM physical layer compliant • Reach-Extended ADSL (RE ADSL), • SRA (Seamless Rate Adaptation) • ADSL physical connection ATM AAL5 (ATM Adaptation Layer type 5) • Support multi-protocol over AAL5 (RFC2684/1483) • PPP over ATM AAL5 (RFC2364) • Support VC-based and LLC-based multiplexing • ATM traffic shaping (CBR, VBR-rt/nrt, UBR) • I.610 F4/F5 OAM • Auto-detect VDSL2 or ADSL2/2+ • Support ADSL PTM mode • G.INP Support
Bridge/Router	• IEEE 802.1D transparent bridge & basic spanning tree • Dynamic learning for up to 2014 MAC address • PPPoE (RFC 2516) • PPPoA (RFC 2364) • DHCP client/server/relay with DHCP option 60/61/125 • DNS Proxy • Dynamic DNS (DynDNS, Freedns, zoneedit, noip and GnuDIP) • RIP I/ RIP II supported • UPnP - IGD (Universal Plug and Play for the Internet Gateway

	Device)
	● Interface Grouping
	● Static/Policy Route
	● Additional Subnet: IP Alias/Public LAN
	● STB Vendor ID
	● 5th Ethernet Port
	● LAN VLAN
	● Adjustable MTU size (max 1518 byte)
	● MAC Encapsulation Routing / IPoE
	● Qos classification route
	● DHCP Conditional Serving
	● DNS Route
	● Wake on LAN
	● Auto reserve LAN client IPv4 address
	● VLAN Auto Hunt
	● Option 125 enhancement on DHCP server for TR111 part 1
USB	● USB 1.1/2.0
	● FTP File sharing
	● Support USB disk/USB flash
	● Supported File system :FAT16, FAT32, EXT2/EXT3. (Phase2: NTFS)
	● Support 3G dongle
	● Support DLNA
	● Support Print Server
	● Support SAMBA
	● Support 3G budget control
NAT	● NAT
	● Full cone NAT
	● At least 4096 NAT sessions supported
	● Virtual Server (port forwarding)
	● Port Triggering
	● NAT ALGs
	- FTP
	- TFTP
	- RTSP
	- SIP
	- H.323
	- PTP
	● IPSec VPN Pass Through
	● DMZ
	● Multi-to-Multi NAT (phase2)
	● PPPoE Pass Through
	● NAT loopback
	● Limit session per host

Firewall & Security	● 802.1x Authentication (EAP-TLS)
	● PAP/CHAP
	● MS-CHAP v1 and v2
	● Stateful Packet Inspection
	● Parental control: Protocol Packet Filter/URL keyword blocking , Scheduled filtering policy based on time of day.
	● ACL Rule support: (32 ACL rules)
	   - Selected Source/Destination Device
	   - Source/Destination IP
	   - Source/Destination Port (Any/Single/Range)
	   - Type (TCP/UDP/ICMP/Others)
	   - Protocol number (only for Others Type)
	   - Selected Predefined Service
	   - TCP Flag/Mask
	   - Policy (Accept/Drop/Reject)
	   - Rate Limit
	   - Schedule Rule
	   - Four directions: WAN to Router, LAN to Router, WAN to LAN, LAN to WAN
	● DoS Protection
	   - Port Scan
	   - ICMP Flooding
	   - TCP Syn Flooding
	   - IP Snoofing
	   - Ping of Death
	   - Land Attack
	   - ICMP Redirect Attack
	   - Smurf Attack
	   - Zero Length IP
	   - UDP Flooding
	   - ICMP Redirect Attack
	● Report and logs via SysLog, GUI, email daemon.
	● Service control: trust domain or IP addresses list for service control.

Wireless LAN	● IEEE 802.11 2.0n Compliance, backward compatible with 11b/g ● Auto Channel Selection ● WMM ● WPS ● WDS ● Multi SSID: Up to 4 ● WEP Data Encryption 64/128bit ● WPA/WPA-PSK with TKIP & AES security type ● WPA2/WPA2-PSK with TKIP & AES security type ● IEEE 802.1x (EAP-MD5, TLS and TTLS) ● 32 MAC Filter

	- Client connection : A minimum of 32 clients simultaneously connect to the AP - Adjustable WLAN output power(via CLI , xml) - Hidden SSID support - Generate default unique ESSID by serial number (show on CPE back label) - Generate default unique wireless KEY by MAC (show on CPE back label) - Separate QoS configuration for each SSID - Channel Scan (Channel Status) - Wireless Scheduling for power off/on - WPS 2.0 certificate - Isolation (Guest WLAN) - WPS AP PIN attack prevent mechanism (WPS lock down)
Voice Features	- SIP (Section Initiating Protocol, RFC 3261) version 2 - Codec: G711 a/μ (64K) (Fullrate feature), G.726 G.722 - G.168 echo cancellation (8ms ~ 16ms) - Fax/modem detection and pass-through - Voice Active Detector (VAD) - Silence Suppression - Comfort Noise Generation (CNG) - Dynamic Jitter Buffer. - DTMF Detection and Generation - DTMF relay by In-Band and Out-of-Band (RFC 2833, SIP INFO) - SIP account (URL type included) - On hook, off hook and flash detection. - Dialing Type: Tone - Ring cadence frequency can be tuned by firmware by country. - Tip/ring polarity reversal - Ringing Voltage: min 45V RMS at 5 REN (FXS) - Caller ID (FSK.DTMF) - Country Code(default support: USA, BELGIUM, DENMARK, FINLAND, NETHERLAND, NORWAY, PORTUGAL, SPAIN, SWEDEN, SWITZERLAND, GERMANY, Australia, Ireland) - Call Forwarding (No condition, Busy, No answer) - Call Transferring (Blind, ConsultOnHold, Attendant) - Call Hold / Call Retrieve - Three Way Conference - Abbreviated Dialing (Speed Dial) - Phone Book - Internal Call - Early Media - Anonymous Call - Call Waiting - Call Accept - Conference-DSP local mixer - Second Call - IVR (Interactive Voice Response) - Flash Hook Timer

	• Message Waiting Indicator (RFC 3842) • T.38 Fax Relay • Transparent Fax rely over G.711 • Polarity Reverse • Last Number Redial • Flexible dial plan (RFC3525 section 7.1.14) • Call return • Immediate Dial • SRTP • Music On Hold

QoS	• Support flexible Packet Classification by:
	  - From Interface
	  - TCP / UDP Port Range
	  - ETH TYPE (IP/ARP/PPPoE/802.1Q)
	  - Source MAC Address
	  - Source MAC Mask
	  - Destination MAC Address
	  - Destination MAC Mask
	  - Source IP Address/ Mask
	  - Destination IP Address/ Mask
	  - Predefine Service
	  - IP Protocol (TCP, UDP, ICMP, IGMP, User Defined)
	  - DHCP option 60/77
	  - Packet Length
	  - 6-bit DiffServ Code Point (DSCP, RFC 2474)
	  - 802.1P 3-bit Class of Service (CoS)
	  - 802.1Q 12-bit VLAN ID
	  - TCP ACK
	  - DHCP option 61/125
	• Packet Modification
	  - Support SAME and MARK DSCP field
	  - Support SAME, MARK, REMOVE, and tag-in-tag(ADD) to 802.1Q VLAN Tag
	  - Support tag auto translation(AUTO) between DSCP and 802.1P Class of Service
	• Default Queue(phase II)
	• Service default priority (ACK, LCP, IGMP, DNS, RIP,ARP ...etc)
	• Traffic Shaping:
	  - Rate Limitation for specify remote node.
	• Auto Priority Mapping(the tag can be automatically translated between DSCP and 802.1P Class of Service)

	- Queue Management - Drop Tail
	
	    - Rate Limit
	
	    - Queueing and Scheduling
	
	        · Strict Priority Queueing
	
	        · Weighted Fair Queueing - Counters and statistics for QoS and traffic - Default L2/L3 tagging and queueing setting of each outgoing interface

Management	- Web/HTTP: 3 level log-in - Administrator: Access to all pages
	
	    - Support: Allow ISP for maintenance and diagnostics
	
	    - User: View settings/statistics and update FW. - Login Privilege - CLI (Command Line Interpreter) via SSH or Telnet - Firmware upgrade via Web/TFTP/FTP/TR069 RPC method - Text based configuration (XML based) - Configuration backup/update/restore default via Web - Configurable access control for remote management (Interface and / port number) - Trust Domain (support trust domain list) - NTP (Internet Time automatically synchronize) - DSL Forum TR-069, TR-098 - DSL Forum TR-064 - DSL Forum TR-111 - SNMP v1, v2 - Rom-D support(put xml config file via ftp to device flash as factory default config) - TR069 SerialNumber parameter MUST be device serial number in back label. - GUI: Brick type - Configurable connection request port for TR069. - Support multi-language - UPnP port forwarding rules on page - TR098 captive portal - Configuration filter by login privileges - Customized startup-script

Bootloader	- NAND boot - Model ID check mechanism - Skip check when Multiboot or Expressboot upgrade - Engineer Debug Flag control for bootloader and MRD change - Firmware checksum - Romfile checksum

	• MultiBoot • AT Command
Diagnostic Capabilities	• 802.1ag CFM • Log • xDSL Statistics • Ping/TraceRoute/NSlookup • OAM Ping • Remote packet trace function
IGMP	• IGMP v1, v2, v3 • IGMP Proxy • IGMP Snooping • Support fast leave
Triple Play	• Support dynamic configurations to create Multiple WAN interfaces. • Single WAN with NO tag for ADSL/Ether/VDSL WAN. • Multiple PVC support for ADSL WAN • Multiple VLAN support for Ethernet/VDSL WAN
Power Management	• CPU clock divider when Idle • Wait instruction when Idle • DRAM Self Refresh • Ethernet/DSL/WLAN/LED Auto Power Down • Support CoC4.0

IPv6	• IPv6 multicast (MLDv1, MLDv2)
	• IPv6 syslog
	• IPv6 diagnostic: ping6/traceroute6
	• RFC 6204 conformance test: pass "MUST" items
	• IPv6 LAN Auto PD selection
	• IPv6 LAN address selection(SLAAC/DHCPv6/Both) DNS(RA/DHCPv6/Both)
	• Support IPv6 DNS & DNS option
	   - DNS scenario when get both IPv4/IPv6 DNS server from ISP
	   - DNS cache must handle A-record and AAAA-record independently
	   - DNS query can send by following scenario
	     IPv4 DNS Server First
	     IPv6 DNS Server First
	     IPv4 DNS Server Only
	     IPv6 DNS Server Only
	• Multiple Wan can all support IPv6/IPv4
	• Support IPv6 internet LED display
	• Web GUI enhancement
	    Cnnection status page WAN/LAN IPv6 address
	• HW accelerator support IPv6 (IPv6 multicast)
	• DualStack/6RD/DS-Lite
	• Configurable IA_NA/IA_PD. Default both enable but can accept response contain IA_NA/IA_PD only

	• RFC2827 (IP Source Address Spoofing) (IPv4/v6)

Modifications in V1.00(AAKL.1)b2

1. Base on V1.00(AAKL.1)b1 to release V1.00(AAKL.1)b2
2. [Bug Fix][ITS 130701418] The ACL rule will disappear from GUI when the firewall is disabled. And then enable the firewall, the ACL will return in GUI
3. [Bug Fix][ITS 130800697] DSL uptime counter display error.
4. [FEATURE ENHANCEMENT][ITS 130605250] Add separate firewall IPv4 and IPv6 control Flag.
5. [FEATURE ENHANCEMENT][ITS 130800636] Enable ADSL over PTM as factory default setting.
6. [FEATURE ENHANCEMENT][ITS 130702735] Add more wireless information for the LAN device about SSID, Link quality, Connect type.

Modifications in V1.00(AAKL.1)b1

7. Base on V1.00(AAKL.0)C0 to release V1.00(AAKL.1)b1
8. [Bug Fix][SPRID 121217134] Add a new interface group that select LAN interface and none WAN interface can create successfully.
9. [Bug Fix][SPRID 121217135] There are redundant wireless LAN interfaces on interface group page.
10. [Bug Fix][SPRID121218221] WLAN LED will not off, when WLAN configure disable From GUI and HW button.
11. [Bug Fix][SPRID 130225373] In the Wake on LAN page, the IP address column is redundant.
12. [Bug Fix][SPRID 130227535] Use tftp client tool to put FW to device >> Failed.
13. [Bug Fix][SPRID 130227537] Rate Limit of WAN configuration can't work again, when user modify "Rate Limit".
14. [Bug Fix][SPRID 130412337] LAN PC connect to DUT and will get IP address randomly.
15. [Bug Fix][SPRID 130415493] Wireless's LED behavior is not correct.
16. [Bug Fix][SPRID 130416648] LAN PC play the MLD video, after 2-3 minutes, DUT will reboot.
17. [Bug Fix][SPRID 130417754] When change security to WEP in 802.11n mode, GUI pop

out message issue.

18. [Bug Fix][SPRID 130419060] Press HW WPS button, then disable WPS from GUI, 5G LED still flash (orange).

19. [FEATURE MODIFICATION][DHCP] Support DHCP Options 61 on WAN side.

20. [FEATURE MODIFICATION][WEB REDIRECT] Using DUT index page to replace troubleshooting pages.

21. [FEATURE MODIFICATION][ITS 130500999] Fixed MAC feature. Use parameter MacIndex to control the MAC allocated to wan interface.

22. [FEATURE MODIFICATION][ITS 130503361] Allow each wan interface has independent static DNS servers.

23. [FEATURE MODIFICATION][ITS 130602748] Add VOIP tone setting for Austria.

24. [FEATURE MODIFICATION][VLAN] Support VLAN Mux on ATM PVC.

25. [FEATURE MODIFICATION][ITS 130603320] Support clean ROM-D via ftp.

26. [FEATURE MODIFICATION][ITS 130405196] Show Internet connection up only when default gateway interface get IP. Enabled if (InternetGatewayDevice.X_5067F0_CustomizationFlag.X_5067F0_Parameter1 & 0x00000001) = 1

27. [Bug Fix][ITS 130504207] V6 auto renew dhcp6c won't renew when receive more than one reply message.

28. [Bug Fix][ITS 130401093] Dhcp6c will re-init if reveive more than one reply message.

29. [Bug Fix] LAN PC can't ping to WAN (IPv6) when firewall is disabled.

30. [FEATURE MODIFICATION][ITS 130502491] In Maintenance->Time page, Daylight Saving setting, Order field. Change Fifth to Last.

31. [FEATURE MODIFICATION][ITS 130503411] Enhance the status page loading speed.

32. [FEATURE MODIFICATION][ITS 130503755] Change the serial number format shown on COE
Original: "SerialNumber"
Change to: "SerialNumber ModelName FirmwareVersion"

33. [FEATURE MODIFICATION][COUNTRYCODE] Close 11ac DFS band for US (FF) & EU(E1) region.

34. [Bug Fix][SPRID 130301048] MAX NAT session per host can't be limited.

35. [Bug Fix][SPRID 130227536] Use ADSL WAN to play IGMP >> Lag.

36. [Bug Fix][SPRID 130220040] Passphrase type couldn't be set.

37. [Bug Fix][SPRID 121219374] Wireless can't pass the PQA criteria, please check the attached file.

38. [Bug Fix][SPRID 121015894] Port trigger can't work when set port range.

Modifications in V1.00(AAKL.0)C0

39. Base on 1.00(AAKL.0)b2 to release V1.00(AAKL.0)C0

Modifications in V1.00(AAKL.0)b2

40. Base on 1.00(AAGW.0)b5 to release V1.00(AAKL.0)b2
41. Change Vendor Name to "ZyXEL Communications Corp.".
42. [BUG FIX] [SPRID 130415450]Diagnostic can't "Ping/TraceRoute/Nslookup" ipv6 domain address.
43. [BUG FIX] [SPRID 130416621] After DUT use .w to upgrade FW, user can't use account (zyuser/admin) to login FTP.
44. [BUG FIX] [SPRID 130415473]5th Ehternet Port can't work
45. [BUG FIX] [SPRID 130412360][Power Management]Wireless 5G LED didn't OFF by power management.
46. [BUG FIX] [SPRID 130415492] [Remote MGMT] Type "sys atsh " via ssh response error.
47. [BUG FIX] [SPRID 130412361] [3G]LAN PC still can't access Internet after 3G connect up when DUT has 2 WAN connections.
48. [BUG FIX] [SPRID 130416649]   [GUI] The information about 2.4G and 5G are not correct in the Connection Status page(Interface Status) .
49. [BUG FIX] [SPRID 130415453] When system Log of Category select "DHCP Server", GUI (Log) can't show any about DHCP Server information.
50. [BUG FIX] [SPRID 130415451] Diagnostic Address set ";" + "sh command" >> Diagnostic can do sh mode active.
51. [BUG FIX] [SPRID 130422139] DUT can't get Provision Code from DHCP option 43.
52. [BUG FIX] [RD Internal][ADSL] Rate Limit of WAN configuration can't work again, when user modify "Rate Limit"
53. [BUG FIX] [RD Internal] (Power Management) LED behavior is wrong after reboot when DUT enabled power management.
54. [BUG FIX] [RD Internal] there are two "Host Name" fields in USB Service > File Sharing for Google Chrome and Firefox.
55. [FEATURE ENHANCEMENT] Support tr69 to update romd.
56. [FEATURE MODIFICATION] [RD Internal] modify timer of reset to default button to

trigger in CFE from 20s to 10s.

57. [FEATURE MODIFICATION] modify default config, set WLAN 2.4G default bandwidth to 40MHz.

58. [FEATURE MODIFICATION] [HW][WLAN] update 5G SROM for CPK issue.

59. [FEATURE MODIFICATION] [HW][WLAN] update 2.4G and 5G con-current regulatory power table limitation for CE/FCC to EU/60 and Q1/60.

60. [FEATURE MODIFICATION][RD Internal] WLAN auto generate SSID for 5G to ZyXELXXXXXX_5G (XXXXXX is the last 6 mac address).

61. [BUG FIX] [SPRID 121214980] VDSL bridge throughput can't pass PQA criteria (Run 64 to 1518 continuous).

Modifications in V1.00(AAKL.0)b1

62. Base on 1.00(AAGW.0)b4 to release V1.00(AAKL.0)b1

63. Change Vendor Name to "ZyXEL Communications Corp.".

Default Settings in V1.00(AAKL.1)b2

Please refer to V100AAKL1b2.rom for more detail. It can be viewed by text editor. Recommend to use XML parser to get well organization result.

Public Domain Software Announcements

The following public domain software are used in this firmware release:

- MIPS Linux kernel, version 2.6.30

  http://www.linux-mips.org or http://kernel.org

- Bridge-Utils

  http://bridge.sourceforge.net

- BusyBox 1.0.0 toolset

  http://www.busybox.net/

- Dproxy: dproxy-nexgen

  http://dproxy.sourceforge.net

- ebtables 2.0.6

  http://ebtables.sourceforge.net

- bftpd 1.0.24

  http://www.bftpd.org/

- iproute2   iproute2-2.4.7-now-ss020116-try.tar.gz

  http://www.linuxgrill.com/anonymous/iproute2

- iptables-1.3.8

  http://www.netfilter.org

- udhcp 0.9.6

  http://udhcp.busybox.net/

- zebra 0.93a

  http://www.zebra.org/

- ppp 2.4.1

  http://www.roaringpenguin.com/pppoe

- Ssh server: dropbear v0.46

  http://matt.ucc.asn.au/dropbear/dropbear.html

- openssl: openSSL library v0.9.7f

  http://www.openssl.org

- Dnsmasq: 2.48

  http://www.thekelleys.org.uk/dnsmasq/

- Ssmtp : 2.62 GPLv2

  http://packages.debian.org/lenny/ssmtp

- Dhcpv6

  http://sourceforge.net/projects/wide-dhcpv6/