

# ZAC-1023-2-9

Part Number: ZN-7200-2E1

## Product Specification



IEEE 802.11 b/g/n Wireless CPE

Version: 0.5

- 1 -

## 2 Specification

### 2.1 Hardware Specification

Table 2-1 Hardware Specification

Features	Additional Information
Chipset	Atheros: AR9342
Standard Compliance	- IEEE 802.3u MDI / MDIX 10/100 Fast Ethernet - IEEE 802.11b/g/n wireless LAN interface
DDRII	64Mbyte
Flash	16Mbyte
Power input requirement	Passive POE 24Vdc Pin 4, 5 positive Pin 7, 8 negative
Ethernet PHY	10/100 Mbps
Antenna	Internal 9dBi directional antenna (Vertical, Horizontal)
Antenna Frequency band	2.4~2.5GHz
Vertical Port HPBW	(XY Plane /H-Plane) : >80° ; (XZ Plane /E-Plane) : >60°
Horizontal Port HPBW	(XY Plane /E-Plane) : >70° ; (XZ Plane /H-Plane) : >50°
Antenna Configuration	2 X 2 (2 Tx,2 Rx)
LAN port	1 port
Reset Button	Reset device to factory default
Ground	Ground terminal x1
System Update Capability	- Support HTTP UI upgrade via Ethernet port or wireless network - Support TFTP upgrade via Ethernet port
LED Definition	<p><b>Power (Single-color LED x1)</b></p> <ul style="list-style-type: none"> <li>• On: Power on</li> <li>• Off: Power off</li> </ul> <p><b>LAN (Single-color LED x1)</b></p> <ul style="list-style-type: none"> <li>• Off: Ethernet disconnected</li> <li>• On: Ethernet connected</li> <li>• Blinking: Transmitting / receiving data</li> </ul> <p><b>WLAN (Single-color LED x1)</b></p> <ul style="list-style-type: none"> <li>• Off: Radio disabled</li> <li>• On: Radio enabled</li> <li>• Blinking: Radio transmitting / receiving data</li> </ul> <p><b>Signal *3 (Single-color LED x3)</b></p> <ul style="list-style-type: none"> <li>• 3 LED ON: Excellent signal strength</li> <li>• 2 LED ON: Good signal strength</li> <li>• 1 LED ON: Weak signal strength</li> </ul>
Data Rate	11b: 11M, 5.5M, 2M, 1Mbps 11g: 54M, 48M, 36M, 24M, 18M, 12M, 9M, 6Mbps 11n: HT20 MCS0~15 HT40 MCS0~15
Data modulation type	DSSS / BPSK / QPSK / CCK / DQPSK / DBPSK 802.11b/g/n: OFDM

		802.11n: OFDM						
RF frequency range		FCC: 2.412 GHz ~ 2.462 GHz NCC: 2.412 GHz ~ 2.462 GHz CE: 2.412 GHz ~ 2.472 GHz						
Power Consumption (W)		<12W						
Average Output Power*	802.11b	1, 2, 5, 11Mbps	27 dBm					
	802.11g	6, 9, 12, 18, 24 Mbps	25 dBm					
		36 Mbps	24 dBm					
		48, 54 Mbps	23 dBm					
	802.11gn (HT20)**	MCS0, MCS8	30 dBm					
		MCS1, MCS2, MCS3, MCS9, MCS10, MCS11	29 dBm					
		MCS4, MCS12	28 dBm					
		MCS5, MCS13	27 dBm					
		MCS6, MCS7, MCS14, MCS15	26 dBm					
		MCS0, MCS8	29 dBm					
	802.11gn (HT40)**	MCS1, MCS2, MCS3, MCS9, MCS10, MCS11	28 dBm					
		MCS4, MCS12	27 dBm					
		MCS5, MCS13	26 dBm					
		MCS6, MCS7, MCS14, MCS15	25 dBm					
		Sensitivity (at single chain)		Mode	802.11b	802.11g	802.11n(HT20)	802.11n (HT40)
					FER<8%	FER<10%	FER<10%	FER<10%
			11 Mbps	-96	-	-	-	
		5.5 Mbps	-94	-	-	-		
		2 Mbps	-93	-	-	-		
		1 Mbps	-90	-	-	-		
		6 Mbps	-	-94	-	-		
		9 Mbps	-	-93	-	-		
		12 Mbps	-	-90	-	-		
		18 Mbps	-	-88	-	-		
		24 Mbps	-	-85	-	-		
		36 Mbps	-	-81	-	-		
		48 Mbps	-	-76	-	-		
		54 Mbps	-	-75	-	-		
		MCS0	-	-	-94	-		
		MCS1	-	-	-89	-		
		MCS2	-	-	-87	-		
		MCS3	-	-	-84	-		
		MCS4	-	-	-80	-		
		MCS5	-	-	-76	-		
		MCS6	-	-	-75	-		
		MCS7	-	-	-74	-		
		MCS8	-	-	-	-91		

\* +,-2dBm. The listed value is the target power calibrated in the radio. The actual power will vary depending on each country's regulation.

\*\* The combined power of chain 0 plus chain 1.

	MCS9	-	-	-	-86
	MCS10	-	-	-	-84
	MCS11	-	-	-	-81
	MCS12	-	-	-	-77
	MCS13	-	-	-	-73
	MCS14	-	-	-	-72
	MCS15	-	-	-	-71

## 2.2 Firmware Specification

Table 2-2 Firmware Specification (Fat AP Mode)

Function Catalog		Detail Function	Default settings
Web Language		English/Chinese	English
Status		Information	
		Connections	
		Statistics	
		ARP Table	
		Bridge Table	
		DHCP Client List	
		Network Activity	
System	Basic Settings:	1. Device Name 2. Country/Region 3. Device Mode	APXXXXXX United States
	Network Settings:	Network Mode Spanning Tree STP Forward Delay Enable 802.1Q VLAN Management VLAN ID WAN Access Type 1. Static IP 2. DHCP Client 3. PPPoE WAN IP Address LAN Access Type 1. Static IP 2. DHCP Client LAN IP Address DHCP Server DHCP Relay	Bridge Enable 1 (second) Disabled 0 Static  Manual, 192.168.0.99 Static  Manual, 192.168.1.1 Disabled Disabled
	Time Setting	1. Current Time 2. Time Zone Select 3. Enable NTP client update	GMT Disabled
	RADIUS Settings	IP Address of Authentication RADIUS Server	0.0.0.0
	Firewall Setting (Router Mode Only)	1. Source IP Filtering 2. Destination IP Filtering 3. Source Port Filtering 4. Destination Port Filtering 5. Port Forwarding 6. UDP Pass-through 7. DMZ	
	Wireless	Basic Wireless Settings	Disable Wireless LAN Interface Operation Mode AP Mode Function: 1. SSID 2. Broadcast SSID 3. 802.11 Mode 4. HT Protect

	<ul style="list-style-type: none"> <li>5. Frequency/Channel</li> <li>6. Extension Channel</li> <li>7. Channel Model               <ul style="list-style-type: none"> <li>a. 20MHz</li> <li>b. 40MHz</li> </ul> </li> <li>8. Maximum Output Power (per chain)</li> <li>9. Data Rate</li> <li>10. Channel Protection               <ul style="list-style-type: none"> <li>a. None</li> <li>b. CTS to self</li> <li>c. RTS-CTS</li> </ul> </li> </ul>	<p>2437MHz (6) None 20MHz</p> <p>Full Auto None</p>
	<p>Wireless Client Mode Function:</p> <ul style="list-style-type: none"> <li>1. SSID</li> <li>2. Lock AP MAC</li> <li>3. 802.11 Mode</li> <li>4. Channel Model               <ul style="list-style-type: none"> <li>a. 20MHz</li> <li>b. 40MHz</li> </ul> </li> <li>5. Maximum Output Power (per chain)</li> <li>6. Channel Protection               <ul style="list-style-type: none"> <li>a. None</li> <li>b. CTS to self</li> <li>c. RTS-CTS</li> </ul> </li> <li>7. Enable MAC Clone</li> </ul>	<p>Wireless Disabled 802.11b/g/n 20MHz</p> <p>Full None</p> <p>Disabled</p>
	<p>Bridge Mode Function:</p> <ul style="list-style-type: none"> <li>1. 802.11 Mode</li> <li>2. Frequency/Channel</li> <li>3. Extension Channel</li> <li>4. Channel Model               <ul style="list-style-type: none"> <li>a. 20MHz</li> <li>b. 40MHz</li> </ul> </li> <li>5. Maximum Output Power (per chain)</li> <li>6. Data Rate</li> <li>7. Channel Protection               <ul style="list-style-type: none"> <li>a. None</li> <li>b. CTS to self</li> <li>c. RTS-CTS</li> </ul> </li> </ul>	<p>802.11b/g/n 2437MHz (6) None 20MHz</p> <p>Full Auto None</p>
	<p>AP Repeater Mode Function:</p> <ul style="list-style-type: none"> <li>1. SSID</li> <li>2. Broadcast SSID</li> <li>3. 802.11 Mode</li> <li>4. HT Protect</li> <li>5. Frequency/Channel</li> <li>6. Extension Channel</li> <li>7. Channel Model               <ul style="list-style-type: none"> <li>a. 20MHz</li> <li>b. 40MHz</li> </ul> </li> <li>8. Maximum Output Power (per chain)</li> <li>9. Data Rate</li> <li>10. Channel Protection               <ul style="list-style-type: none"> <li>a. None</li> <li>b. CTS to self</li> <li>c. RTS-CTS</li> </ul> </li> </ul>	<p>Wireless Enable 802.11b/g/n Disabled 2437MHz (6) None 20MHz</p> <p>Full Auto None</p>
Profile Settings	1. VAP Profile Settings (up to 8 profiles)	

		<p>In Each Profile:</p> <p>Basic Settings</p> <ol style="list-style-type: none"> <li>1. Profile Name</li> <li>2. SSID</li> <li>3. Broadcast SSID</li> <li>4. Wireless Separation</li> <li>5. WMM</li> <li>6. Station Number Limitation</li> <li>7. Max. Station Number</li> <li>8. VAP VLAN ID</li> <li>9. IGMP Snooping</li> </ol> <p>Security Settings</p> <ol style="list-style-type: none"> <li>1. Open System</li> <li>2. Shared Key (64/128/152-bits WEP)</li> <li>3. Legacy 802.1X</li> <li>4. WPA</li> <li>5. WPA2</li> <li>6. WPA + WPA2</li> <li>7. WPA-PSK(TKIP)</li> <li>8. WPA2-PSK(AES)</li> <li>9. WPA-PSK + WPA2-PSK</li> </ol>	<p>Profile1~8</p> <p>Wireless</p> <p>Enabled</p> <p>Disabled</p> <p>Enabled</p> <p>Disabled</p> <p>32</p> <p>0</p> <p>Enabled</p> <p>Open System</p>
	Advanced settings	<p>A-MPDU Aggregation</p> <p>A-MSDU Aggregation</p> <p>Short GI</p> <p>RTS Threshold(0~2347)</p> <p>Fragmentation Length(256~2346)</p> <p>Beacon Interval(20~1000ms)</p> <p>DTIM Interval (1-255)</p> <p>Preamble Type</p> <p>IGMP Snooping</p> <p>Distance</p> <p>Channel Protection (None/CTS to self/RTS-CTS)</p>	<p>Enabled</p> <p>Disabled</p> <p>Enabled</p> <p>2347</p> <p>2346</p> <p>100</p> <p>1</p> <p>Auto</p> <p>Enabled</p> <p>1000(m)</p> <p>None</p>
	Access Control	<p>Support up to 32 MAC addresses for each profile with modes below:</p> <ol style="list-style-type: none"> <li>1. Disable</li> <li>2. Allow Listed</li> <li>3. Deny Listed</li> </ol>	<p>Disabled</p>
	Traffic Shaping	<ol style="list-style-type: none"> <li>1. Overall Traffic Shaping <ol style="list-style-type: none"> <li>a. Incoming Traffic Limit</li> <li>b. Incoming Traffic Burst</li> <li>c. Outgoing Traffic Limit</li> <li>d. Outgoing Traffic Burst</li> </ol> </li> <li>2. VAP Traffic Shaping (per VAP profile) <ol style="list-style-type: none"> <li>a. Outgoing Traffic Limit</li> <li>b. Outgoing Traffic Burst</li> </ol> </li> </ol>	<p>Disabled</p> <p>Disabled</p>
Management	Remote Management	<p>Embedded Web Configuration Interface</p> <ol style="list-style-type: none"> <li>1. HTTP</li> <li>2. HTTPS</li> <li>3. SSL</li> </ol> <p>Remote Console</p>	<p>HTTP</p> <p>Telnet</p>

		1. Telnet 2. SSH 3. FTP	
		SNMP Management 1. V1 (RFC 1157) 2. V2c (RFC 2011-2013) 3. V3 (RFC 2571-2576) 4. SNMP trap transmit	V2
	Configuration Management	Capability to store configuration backup	
		Configuration changes via: 1. Local command line 2. Remote command line (SSH) 3. Load config file 4. HTTP user interface Restore factory defaults via: 1. HTTP-UI 2. Push button	
		FTP	Enabled
		WISE (Windows-based Utility Software)	Disabled
		CPE Management	
	Firmware Upload	Upgrade Device's Firmware	
	Configuration File	1. Backup and Restore Configuration 2. Reset Settings to Factory Default 3. Reboot Device	
	Password Settings	Change Password	password
	Certificate Settings	Import / Delete User's Certificate Files for Wireless Client Mode's User Authentication (802.1X, WPA, or WPA2)	
Tools	System Logs	Syslog (RFC 3164) Support	Disabled
	Site Survey	Wireless Network (AP) Scan Tool	
	Ping Watchdog	Enable Ping Watchdog IP Address to Ping Ping Interval Startup Delay Failure Count To Reboot	Disabled 0.0.0.0 300 Seconds 100 Seconds 300

Table 2-3 Firmware Specification (AC & Thin AP Mode)

Function Catalog		Detail Function	Default Settings
Web Language		English/Chinese	English
Status		Information	
		Managed AP	
		Wireless Users	
		DHCP Client List	
Wireless Settings	Wireless Networks	VAP1~8 VLAN ID Description SSID Broadcast SSID Wireless Separation WMM Support Max. Station Number (0~32)	VAP1 Enabled 0 Profile (1~8) Wireless Enabled Disabled Enabled 32



		Network Authentication Data Encryption	Open System None
	Wireless Protocol	Basic Settings Country/Region 802.11 Mode Data Rate Advanced Settings Preventing DOS Attacks A-MPDU Aggregation A-MSDU Aggregation Short GI IGMP Snooping HT Protect Preamble Type RTS Threshold Fragment Threshold Beacon Interval DTIM Interval Channel Protection Distance	Open System United States 802.11A/B/G/N Auto  Disabled Enabled Disabled Enabled Enabled Disabled Auto 2347 2346 100 1 None 1000
	Access Control	Wireless Network Access Control Mode MAC Address	VAP1-Wireless Disable N/A
	Traffic Shaping	Interface Selection Enable Traffic Shaping Outgoing Traffic Rate Outgoing Traffic Burst	VAP1 Disabled 1024K 20
	LAN Settings (Router Only)	IP Address Subnet Mask DHCP Server DHCP IP Address Range Lease Time	192.168.1.1 255.255.255.0 Enabled 192.168.1.1~200 7200
	Firewall Filtering (Router Only)	Enable Firewall Filtering Filter Type Target Protocol Direction MAC Address Comment	Disabled MAC Filter Drop TCP Source NULL NULL
	Port Forwarding (Router Only)	Enable Port Forwarding IP Address Protocol Port Comment	Disabled NULL TCP NULL NULL
	DMZ Settings (Router Only)	Enable DMZ DMZ Host IP Address	Disabled 0.0.0.0
	Radius Settings	Authentication RADIUS Server IP Address Port Shared Secret Global-Key Update Seconds	0.0.0.0 1812 *****  3600
Management	AP Management	AP lists that managed by AC	N/A

	System Settings	Device Settings Device mode Connect Mode Device Name Spanning Tree STP Forward Delay Enable 802.1Q VLAN IP Address Assignment DHCP Client / Static IP IP Address Subnet Mask Gateway IP Address DNS1 DNS2 DHCP Server (Assigned to TAP Only) DHCP IP Address Range DHCP Subnet Mask Lease Time SNMP Settings SNMP Survey Interval	Virtual AC LAN APXXXXXX Enabled 1 Disabled  Static IP 192.168.1.1 255.255.255.0 0.0.0.0 0.0.0.0 0.0.0.0 Enabled 192.168.1.1~200 255.255.255.0 120  15
	Time Settings	Time Zone Select Enable NTP Client Update NTP Server Manual IP	Greenwich Mean Time Disabled 192.5.41.41-North America 0.0.0.0
	Firmware Upload	Upgrade AC Firmware Upload TAP Firmware Auto Upgrade TAP Firmware	NULL NULL Disabled
	Configuration File	Save AC Settings to File Save TAP Settings to Default Load Settings from File Reset Settings to Default Reboot the Device	N/A N/A NULL N/A N/A
	Password Settings	Current Password New Password Confirm Password	NULL NULL NULL
	System log Settings	Enabled Remote Syslog Server IP Address Port Log Schedule Severity Level Send Log To Day For Sending Log Time For Sending Log Clear Log Send Log From Mail Subject SMTP Server SMTP Authentication User Name Password	Disabled 0.0.0.0 514 Never NULL NULL Sunday 0hour 0minute Disabled NULL NULL NULL Disabled NULL NULL
	System Log	Syslog Class	System Log
Tools	Ping	Ping Address Ping Count	0.0.0.0 5
	Trace Route	Data Size Destination IP Address	40 0.0.0.0

Table 2-3 Firmware Specification (Thin AP Mode)

Function Catalog	Detail Function	Default settings
Web Language	English/Chinese	English
Information	Information	N/A
Basic Settings	Device Mode Device Name DHCP Client Static IP IP Address Subnet Mask Gateway IP Address DNS1 DNS2 LAN Internet Advanced Settings Management Port FW Upgrade Port Enable 802.1Q VLAN Management VLAN ID	Thin AP APXXXXXX Enabled Disabled 192.168.1.1 255.255.255.0 0.0.0.0 0.0.0.0 0.0.0.0 Enabled Disabled Disabled RS 232 21 Disabled 0

## 2.3 Power Adapter Specification

Output: 24Vdc @ 1A

## 2.4 Physical specification

Table 2-4 Physical Specification

Items	Description
Dimension	205mm(L)×64mm(W) ×61mm(H)
Weight	≤ 500g
Enclosure	IP55

## 2.5 Environment specification

Table 2-5 Environment Specification

Items	Device Description	Power Adapter Spec
Operating Temperature(Max)	-20' ~ +70°C	0' ~ +40°C
Operating Humidity (non-condensing)	10 ~ 95% RH	20 ~ 85% RH
Storage Temperature	-40 ~ +70°C	-20 ~ +60°C
Storage Humidity (non-condensing)	10 ~ 95% RH	5 ~ 95% RH
Warranty	24 Months	
Green	RoHs / REACH Compliant	

## 2.6 Safety/Country Approval

Table 2-6 Safety/Country Approval

Items	Description	ID number
FCC	Part15 sub B Part15 sub C	FCC ID: M4Y-ZAC102329
CE	EN300328 V1.8.1 EN301489 -1/-17 EN55022/24 EN60950	