HAP101 Wi-Fi HaLow Access Point

Product Brief

Vantron HAP101 Wi-Fi HaLow access point is designed in compliance with the prominent IEEE 802.11ah (Wi-Fi HaLow) standard and IEEE 802.11 b/g/n (2.4GHz Wi-Fi). It offers a complete Wi-Fi connectivity solution for IoT developers who seek for wireless connections with energy efficiency, extended coverage, obstacle penetration, effortless accessibility, etc.

HAP101 supports up to 1km coverage at ultra-low power consumption while still delivering optimal performance with data rates up to 150 Mbps (2.4GHz Wi-Fi) and 32.5 Mbps (Wi-Fi HaLow), respectively. By complying with the IEEE 802.11ah standard, HAP101 supports operation in the sub 1GHz license exempt RF bands to avoid the crowded 2.4GHz frequency band. It enables stable connection of over 8,000 clients when working at the AP mode, making it an ideal solution for replacing complex networking requirements in confined spaces.

HAP101 is designed for large-scale dense deployment of low-power stations to eliminate multiple access points in application scenarios such as smart home appliances, surveillance systems, industrial process control, logistics and asset management, portables and wearables, smart city facilities, etc.

Exterior and Features

| 4 x LED indicator | Restore button | RJ45 | RS485 | DC in |

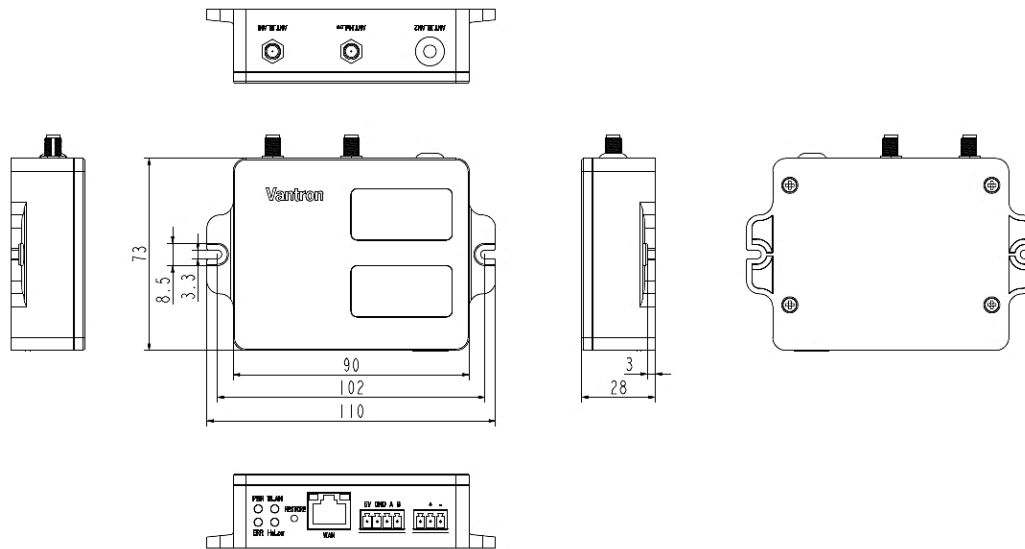| 2.4GHz Wi-Fi antenna | Wi-Fi HaLow antenna | 2.4GHz Wi-Fi antenna |

HAP101
Wi-Fi HaLow with 2.4GHz Wi-Fi combined
Sub-1 GHz frequency bands supported
Longer distance: up to 1km
More than 8,000 stable connections, 4x legacy AP
Data rates up to 150 Mbps (2.4GHz Wi-Fi) and 32.5 Mbps (Wi-Fi HaLow)
Ultra-low power consumption
Better penetration through walls and obstacles
Enhanced Wi-Fi security protections
Wide range of commercial and IoT applications
AP and STA modes supported

HAP101 Datasheet

HAP101				
System	CPU	MediaTek 580MHz MIPS® CPU		
	Wi-Fi HaLow SoC	Morse Micro MM6108		
	Memory	256MB		
	Storage	64MB		
WLAN Features	2.4GHz Wi-Fi	Standard: IEE 802.11 b/g/n		
		Frequency range: 2.412GHz ~ 2.462GHz		
		Channel bandwidth: 20/40 MHz		
		Data rate: up to 150 Mbps		
		Antenna: 1T1R		
	Wi-Fi HaLow	Standard: IEE 802.11 ah		
		Frequency range	US: 903.5MHz~926.5MHz	Europe: 863MHz~868MHz
			Japan: 916.5MHz~927.5MHz	Korea: 917.5MHz~923.5MHz
			Singapore: 866MHz~869MHz & 920MHz~925MHz	
		Channel bandwidth: 1/2/4/8 MHz		
		Data rate: up to 32.5 Mbps @8MHz or 15 Mbps @4MHz		
		Working mode: AP, STA configurable		
I/O	Fast Ethernet	1 x RJ45, 10/100 Mbps		
	Serial port (Optional)	1 x RS485 (4-pin terminal, 5V output, baud rate: 115200)		
	Antenna	1 x Wi-Fi HaLow antenna		
		1 x 2.4GHz Wi-Fi antenna		
System Control	LED indicators	1 x Power indicator		1 x WLAN activity indicator
		1 x Wi-Fi HaLow activity indicator		1 x Error indicator
	Button	1 x Restore button		
Mechanical	Dimensions	110mm x 73mm x 28mm (with wall mount)		
	Casing material	Plastics (UL94, SP6 compliant)		
	Installation	Wall mounting		
	Heat dissipation	Fanless		
Power	Input	9V ~ 40V DC		
	Port	3-pin terminal (Over-current protection, reverse polarity protection)		
Software	Operating system	VantronOS		
	VPN	OpenVPN, IPSec		
	Device management platform	Vantron BlueSphere GWM		
	Upgrade	Local upgrade, OTA upgrade		
Security	2.4GHz Wi-Fi	64/128-bit WEP, TKIP, WPA, WPA2, AES, WPS		
	Wi-Fi HaLow	WPA3		
Environment Condition	Temperature	Operating: -20℃ ~ +70℃		Storage: -40℃ ~ +85℃
	Humidity	≤ 95% RH (non-condensing)		
	Certificate	FCC, IC		

Product Outlines

Ordering Information

Ordering No.	Memory & storage	Main I/Os & power input	Wi-Fi HaLow	OS
HAP101	256MB + 64 MB	RJ45, 9V~40V DC input	Yes	VantronOS
HAP101-S	256MB + 64 MB	**RS485**, RJ45, 9V~40V DC input	Yes	VantronOS

Packing list	
HAP101 Wi-Fi HaLow Access Point	1
Wi-Fi HaLow antenna	1
Qualified certificate	1
2.4GHz Wi-Fi antenna	1

Optional accessories	
12V/1A power adapter and power cord	1 kit
DC power connector	1
RS485 terminal connector	1

Since 2002 established by two Silicon Valley entrepreneurs, Vantron Technology has been a pioneer in connected IoT devices and IoT platform solutions. Today, Vantron is serving customers all over the world, including many Global Fortune 500 companies. The product lines cover intelligent edge hardware, IoT communication devices, industrial displays and the cloud-based BlueSphere device management platform.

Vantron offers IoT communication devices that enable multi-protocol connections for industrial equipment and local data processing through edge computing. With abundant wired and wireless connectivity options, remote operations and maintenance have become easier than ever. Such devices can be deployed across different sectors such as smart retail, medical and warehousing. Moreover, Vantron's IoT solutions are designed to facilitate enterprises' digital transformation, streamline operations, enhance productivity, etc.