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Aerohive NETWORKS

Aerohive AP1130 802.11ac Extreme WiFi Access Point

The Aerohive AP1130 is a durable, enterprise-grade, high performance (2x2:2) 802.11ac MIMO solution, specially designed for outdoor high-bandwidth-demand wireless deployments in harsh environments.

Aerohive Networks AP1130 is a high-performing and ruggedized 802.11ac outdoor access point (AP). The AP1130 provides high-performance dual band concurrent (2.4GHz and 5GHz) 802.11ac (2x2:2) MIMO and has a 10/100/1000 Ethernet port.

The Aerohive AP1130 is an enterprise-grade, high performance product, designed for high bandwidth outdoor wireless environments.

With extended temperature range and a watertight chassis, the AP1130 can be deployed in almost any outdoor environment on earth. With two antennas on each radio and the ability to provide service concurrently on both 2.4Ghz and 5Ghz bands, the AP1130 provides support for 802.11ac as well as legacy 802.11a, b, g and n clients, through Aerohive's industry unique and resilient controller-less architecture.

Key Features & Benefits

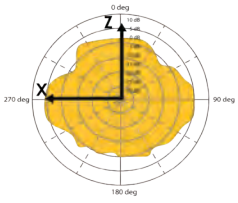
802.11ac
AP1130 is a 2x2:2 802.11ac access point which provides high speed data access not just with the new 802.11ac capable wireless clients but also improves user experience on the traditional 802.11n clients. As more APs are added to the network, HiveOS simply recognizes and automatically includes them in the network. Improvements to the radio management software account for the new 802.11ac radios automatically and allow for existing and new APs to coexist flawlessly.

Light Weight and Intuitive Design
AP1130 is one of industry's lightest 802.11ac access points, allowing easy installation in hard to reach places like rooftops and poles by a single person. The AP also features intuitive LEDs which indicate the AP status and backhaul connections either over Ethernet or wireless (mesh backhaul). Additionally, AP1130 features a brand new capability to provide accurate tuning of directional antennas for long range point to point mesh connections. This capability provides for a visual and audio mechanism to accurately identify the most suitable orientation for antennas, such that the mesh link is formed at the highest possible negotiated rate, leading to improved user experience in areas without Ethernet connected APs.

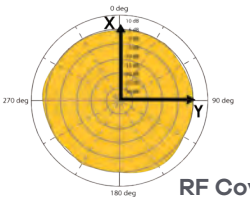
Aerohive's Cooperative Control Architecture
AP1130, like all Aerohive access points, is built upon the feature rich HiveOS operating system. HiveOS is the backbone of the Aerohive Cooperative Control architecture, and allows the access points to organise into groups or "hives" that coordinate advanced features such as layer 2/ layer 3 roaming, cooperative RF management, security information, and mesh networking without requiring a centralised controller. Cooperative Control provides all the benefits of coordinated, next- generation Wi-Fi with lower Total Cost of Ownership (TCO), more reliability, more scalability, higher performance, and with a focus on truly optimizing mobility in a mobile first enterprise.

Integrated Application Visibility and Control (AVC)
AP1130 supports full layer 7 Application Visibility and Control for a wide variety of applications, allowing prioritisation of resources based on business priorities. Aerohive's cloud or on-premise based management application – HiveManager allows the administrators to view top applications and users and design policies to prioritise or block applications based on what is critical to that particular environment. This user-focused approach ensures every user experience is optimised for mobility.

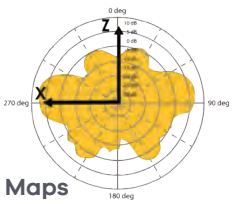
2.4 Ghz Horizontal



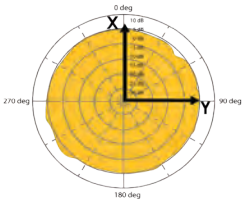
2.4 Ghz Vertical



5 Ghz Horizontal



5 Ghz Vertical



RF Coverage Maps

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Advanced Features
- Integrated application visibility and control (AVC)
- On-device RADIUS Switch directory support, Captive, Web Portal, DHCP server, and spectrum analysis - Max 256 concurrent RADIUS authenticated users
- Max 512 DHCP clients per AP

Flexible Hardware Platform
- Two radios provide concurrent 802.11a/n/ac and 802.11b/g/n connections with no degradation in performance
- Automatic or dedicated mesh backup
- Supports 802.3at PoE
- Buzzer for long distance point to point mesh tuning

Security
- Trusted Platform Module (TPM)–Hardware-based key storage and encryption
- Wireless privacy & authentication Wi-Fi CERTIFIED WPA and WPA2, 802.11i, WEP, 802.1x, PSK
- Granular user profile-based management defines QoS, mobility policies, and security policies for each user that enters the network
- Encryption: AES:CCMP, TKIP, and RC4 (WEP only)
- Marking and policing–WMM (802.11e) for wireless
- 802.1p and/or DiffServ
- Wi-Fi CERTIFIED WMM
- WMM power save (U-APSD)

AP1130 Product Specifications

Included Mounting Options
- Wall Mount
- Pole Mount 1 to 2.75 inches in diameter Radio Specifications—802.11a
- 5.150–5.950 GHz Operating Frequency
- Orthogonal Frequency Division Multiplexing

(OFDM) Modulation
- Rates (Mbps): 54, 48, 36, 24, 18, 12, 9, 6 w/ auto fallback

Radio Specifications—802.11b
- 2.4–2.5 GHz Operating Frequency
- Direct-Sequence Spread-Spectrum (DSSS)

Modulation
- Rates (Mbps): 11, 5.5, 2, 1 w/ auto fallback

Radio Specifications—802.11g
- 2.4–2.5 GHz Operating Frequency
- Orthogonal Frequency Division Multiplexing (OFDM) Modulation
- Rates (Mbps): 54, 48, 36, 24, 18, 12, 9, 6 w/ auto fallback

Radio Specifications—802.11n
- 2.4–2.5 GHz & 5.150–5.950 GHz Operating Frequency
- 802.11n Modulation
- Rates (Mbps): MCS0 - MCS15 (6.5MBps - 300Mbps)
- 2x2 Multiple-In, Multiple-Out (MIMO) Radio
- HT20 and HT40 High-Throughput (HT) Support
- A-MPDU and A-MSDU Frame Aggregation

Radio Specifications - 802.11ac
- 5.150–5.950 GHz Operating Frequency
- 802.11ac Modulation (256-QAM)
- Rates (Mbps): MCS0–MCS9 (6.5Mbps - 867Mbps), NSS = 1-2.
- 2x2:2 Stream Multiple-In, Multiple-Out (MIMO) Radio
- VHT20/VHT40/VHT80 support

Mounting
- Wall Mounted
- Pole mounted – 1-2.75inch pole strap included with the AP

Antennas
- 4x N-type jack antenna connections for external antennas
- Antennas sold as accessory

Interfaces
- Autosensing 10/100/1000 Base-T Ethernet PoE (Power over Ethernet 802.3at) Port

Physical
- LxWxH: 7.71x7.71x2.12in (196x196x54mm) without brackets and antennas
- 2.6 lbs (1.079 Kg), without brackets and antennas

Warranty and Support

Every Aerohive Networks device is backed by a limited lifetime hardware warranty. Extended product and technical support may be purchased separately and can include next day advanced replacement, 24x7 or 8x5 technical support, web and email support access, and software updates.

	2.4GHz		5GHz	
Rate	TX Power	Sensitvity	TX Power	Sensitvity
802.11ac VHT20				
MCS 0	22	-92	21	-93
MCS 1	22	-89	21	-89
MCS 2	22	-87	21	-87
MCS 3	22	-84	21	-84
MCS 4	20	-80	21	-81
MCS 5	20	-76	19	-76
MCS 6	19	-74	17	-75
MCS 7	18	-73	18	-73
MCS 8	17	-69	16	-69
MCS 9	16	N/A	15	N/A
802.11ac VHT40				
MCS 0	22	-90	20	-90
MCS 1	22	-87	20	-87
MCS 2	22	-84	20	-85
MCS 3	22	-81	20	-81
MCS 4	20	-78	20	-78
MCS 5	20	-74	19	-74
MCS 6	19	-72	18	-72
MCS 7	18	-71	17	-71
MCS 8	17	-66	16	-66
MCS 9	16	-65	15	-64
802.11ac VHT80				
MCS 0	N/A	N/A	20	-87
MCS 1	N/A	N/A	20	-84
MCS 2	N/A	N/A	20	-81
MCS 3	N/A	N/A	20	-78
MCS 4	N/A	N/A	20	-75
MCS 5	N/A	N/A	19	-70
MCS 6	N/A	N/A	18	-69
MCS 7	N/A	N/A	17	-68
MCS 8	N/A	N/A	16	-63
MCS 9	N/A	N/A	15	-61

	2.4GHz		5GHz	
Rate	TX Power	Sensitvity	TX Power	Sensitvity
802.11a				
6 Mbps – 24 Mbps			21	-94, -86
36 Mbps			19	-82
48 Mbps			18	-78
54 Mbps			17	-77
802.11b				
1 Mbps	23	-98		
2 Mbps	23	-95		
5.5 Mbps	23	-93		
11 Mbps	23	-90		
802.11g				
6 Mbps – 24 Mbps	21	-94, -85		
36 Mbps	20	-82		
48 Mbps	19	-77		
54 Mbps	18	-76		
802.11n HT20				
MCS 0, 1, 2, 3, 4, 8, 9, 10, 11, 12,	22	-93, -80	21	-93, -81
MCS 5, 13	21	-76	19	-76
MCS 6, 14	19	-74	18	-75
MCS 7, 15	18	-73	17	-73

Power & Sensitivity Table

Power shown is per transmit chain and is maximum power that the radio is capable of, power limits will be limited by local radio regulations.

Contact Krome today on 01932 232345 to learn how your organisation can benefit from an Aerohive wireless LAN architecture.

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Email: info@krome.co.uk

Krome Wireless Deployment Planning Service

We can deliver you a Wireless solution that caters for your individual business, and specific site requirements.

To create a WLAN solution that works effectively, there are several considerations that have to be made, the multiple client device and application types that are required to perform over the wireless infrastructure is just the start, in addition to that you need to add the speed and complexity of 802.11n, the variety of potentially high demanding applications or high-density environments and the security risks, with so many factors to consider tricky deployment scenarios can easily arise, causing unexpected challenges to the success of your Wireless deployment.

Krome offer a comprehensive wireless deployment planning service to fully assess and effectively plan the solution prior to installation.

Assessing Your Requirements

To get started with your WLAN installation, Krome will examine the requirements of your implementation, including departmental, individual user, site, and application requirements, gaining a basic overview of what your Wireless network will need to support. We will identify mission critical applications, paying special attention to those that generate high levels of traffic and those requiring deterministic behavior. Once we have identified such applications we can then evaluate the expected service levels.

Effective Planning

Whether you are upgrading from an existing WLAN or planning a completely new greenfields site Krome can fully evaluate and plan the deployment by using a WLAN planning tool and building floor plans. The planning tool is designed to help scope and plan a WiFi Deployment to determine the number of APs required to achieve an intended coverage, AP placement and data rates. This tool calculates the loss in signal strength as it passes through open air and various materials to show predicted coverage.

Upgrading from Existing Wi-Fi

If you are upgrading your existing WLAN, you already have plenty of data about how your current network is performing. Krome will initially perform a quick site survey with the existing access points in place, evaluating the current coverage, capacity, and type of APs (access points). Using the survey information allows us to make informed decisions about your new implementation. Krome will provide a report on how to achieve optimal results and performance with your new deployment, along with the quickest and most effective way to migrate systems.

New WLAN Deployment

In a new, or greenfield, WLAN deployment; when you do not have the benefit of an existing network for testing and analysis, the planning stage is more complex. Determining the scope of your WLAN deployment will have a major impact on capacity and coverage. Krome will evaluate users, applications, interference's, devices and performance requirements, along with building plans and site information. Site plans and blueprints are hugely beneficial for planning as we are able to evaluate the building characteristics; location of elevators, load-bearing walls and material of walls. With this information loaded into the planning tool combined with our analysis of your service requirements we are able to comprehensively plan for your deployment.

Deploying with Confidence

Moving a large enterprise, or even a small one, to a WLAN for the very first time need not be daunting; with proper planning in place, you can prevent poor performance and eliminate unforeseen solution costs. By engaging with highly experienced Wireless deployment partner Krome Technologies to effectively assess and plan your deployment you can be assured that your WLAN solution is a success.

Find Out More

If you're interested in learning more about Aerohive Networks WLAN solutions or our deployment planning service please do get in touch with one of our Business Managers, we'd love to share our experiences, and help you to plan and deliver your Aerohive WLAN solution.

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