

White-Space AP™

700MHz, 600mW Wi-Fi based AP with GPS for outdoor and indoor markets

Powered by Arada Wireless Software Solution



Platform Highlights

White-Space AP is a multi-role Wi-Fi based platform with support for 700MHz and GPS, ideal for emerging whitespace applications. It is an integration of GPS and Wi-Fi to enable low-cost “Wi-Fi like” access points to allow for auto-detection and channel selection of the best whitespace frequency based on the physical location of the access point.

The White-Space AP is based on the IEEE 802.11a/g protocol and is intended for whitespace applications in the emerging WRAN 802.22 market. Furthermore, it can be used in data exchange between high-speed vehicles and between the vehicles and the roadside infrastructure.

Arada Systems is a leader in technologies meant for vehicle-based communication networks, particularly for applications such as toll collection, vehicle safety services, and commerce transactions via cars. White-AP is being evaluated for real-time communication between vehicles and roadside access points, or other vehicles that creates a real-time public safety network.

The solution is built using Atheros' MiniPCI AR5414 based WLAN chipset on the AR7161 platform. The AR7161 is Atheros' family of high performance, cost effective and scalable wireless network processors. The platform supports multiple radio support as well to configure in various networks including 2.4GHz and 5GHz.

Platform Specifications

Software Features	
AP Modes	<ul style="list-style-type: none"> Access Point mode Point-to-point support Point-to-multipoint WDS client Repeater WDS links with WPA-PSK WDS links with WPA2-PSK
Wireless Security	<ul style="list-style-type: none"> Upto 16 BSSIDs supported Hidden SSID RADIUS MAC authentication Local MAC authentication 802.1x client authentication WEP encryption (64, 128, 152 bit) Dynamic WEP keys with 802.1x WPA and WPA2 over 802.1x WPA and WPA2 Pre-shared Key WPA-WPA2 Mixed Mode WPA2 Pre-authentication TKIP and AES encryptions
Hotspot support	
VLAN	<ul style="list-style-type: none"> 802.1Q tagging VLAN bridging 4095 VLAN IDs Management VLAN ID Default VLAN ID per radio Untagged VLAN 802.1x dynamic VLAN assignments
QoS	IEEE 802.1p/1Q
Radio Settings	<ul style="list-style-type: none"> Country Code setting External antenna Auto channel selection Selectable mode operation Selectable power setting Data rate setting Selectable beacon interval Selectable DTIM interval Adjustable RTS threshold Adjustable fragmentation threshold Maximum clients setting (128) Frame Aggregation
Bridging	802.11D and Spanning Tree Protocol
System Software Upgrade	<ul style="list-style-type: none"> TFTP upgrade FTP upgrade HTTP upgrade

IP Address Management	Static DHCP client DHCP server DNS resolution
SNMP	SNMP v1 and v2c SNMPv3 users SNMPv3 groups SNMPv3 trap targets SNMPv3 trap filters SNMP agent
MIB support	802.11a/b/g MIB 802.11n MIB Enterprise MIB
Management Access	Console CLI HTTP Packet capture HTTPS Telnet SSH v2.0
Logging	Event Logging Remote Syslog (4 servers) Console display and clear Web display and clear
System Clock	Manual date and time setting Time zone Daylight saving NTP support
System Information	System configuration Wireless configuration Wireless client status
Full Linux SDK support	
Hardware Support	
Processor Board (AR7161)	32-bit 24k MIPS processor core running at 680MHz
Ethernet	Support for dual 10/100/1000 Ethernet MACs
MaxR-700 Radio (AR5414)	698MHz to 778MHz
Single Band Radio (AR9160+AR9103)	Single Band 2.4GHz 3x3 11n MIMO radio
Dual Band Radio (AR9160+AR9106)	Dual Band Configurable 2.4/5.0 GHz 3x3 11n MIMO radio
Frequency Band	698MHz to 778MHz 2.300GHz to 2.500 GHz 4.9GHz to 5.925 GHz
Modulation Technology	OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK
FEC Coding Rate	1/2, 2/3, 3/4, 5/6
Hardware Encryption	AES, TKIP, WEP
Interfaces	PCI - Communication Interface

	<p>GPIOs, LEDs - Peripheral Interface EEPROM - Memory Interface I²S for Audio Streaming SLIC for VOIP Dual USB for NAS, networking printer connectivity, etc.</p>
PCI	32-bit, 33/66 MHz PCI 2.3 host interface
Memory	DDR and serial FLASH memory interfaces
Debug	High speed UART and GPIOs
Supported Data Rates	<p>IEEE 802.11a : 6 – 54 Mbps IEEE 802.11b : 1 – 11 Mbps IEEE 802.11g : 6 – 54 Mbps XSPAN : 6.5 – 300 Mbps (per band)</p>
Variable Channel support	Support for 5, 10, 20 and 40 MHz channels. Rx filter supports blocking specifications for half and quarter rate channels.

Certifications

- FCC CFR 47 Part 15, FCC MO&O 06-96
- Canada RSS-210 Issue 7
- ETSI EN301 893 V1.5.1
- Japan Radio Law Radio Equipment Regulations ARIB T-71
- uL