



Expertise

- IEEE 802.11 a/b/g
- Chipsets – Intersil Prism, Philips BGW, Marvell, Atheros SoC
- Cards – Corega, Road Lanner, AmbiCom, Symbol
- Interfaces – SDIO, SPI, PCMCIA, PCI, CompactFlash
- Wi-Fi device drivers
- Security – WPA, WPA2, WEP, IPsec
- 802.1x authentication
- Wi-Fi network management utilities
- FCC, CE certification



Application Areas

- IP phone
- Access point
- IP camera
- Wireless TV
- Wireless media receiver
- Remote upgrade and status monitoring

Introduction

Wi-Fi is a wireless networking technology based on IEEE 802.11 a/b/g/n standards. Advent of Wi-Fi technology and its standardization across the globe have opened up new possibilities.

Aftek's Wi-Fi Expertise

End to end solution providing capability and expertise in wireless networking domain has enabled Aftek to deliver diverse Wi-Fi based applications. Overcoming various challenges involved in implementing wireless technology such as increased complexity, meticulous power management and added security risks, Aftek has developed wide variety of wireless systems.

Aftek's Wi-Fi skills include

- Wi-Fi standards IEEE 802.11 a/b/g/n
- Design and development of Wi-Fi test/evaluation boards
- Hardware systems designing and prototyping based on chipsets like Intersil Prism, Philips BGW, Marvell, Atheros SoC and cards such as Corega, Road Lanner, AmbiCom, Symbol
- Development, porting, customization, optimization and testing of vendor specific device drivers for embedded OS like Linux (kernel 2.6, 2.4), Windows CE (6.0, 5.0)
- Development and enhancement of device drivers for SDIO, SPI, PCMCIA, PCI and CompactFlash which are typically used to interface Wi-Fi chipsets and cards
- Wi-Fi stack implementation and optimization
- Implementing security based on WPA, WPA2, 64/128-bit WEP and IPsec
- Implementing 802.1x authentication with methods like EAP-MD5, EAP-TLS, EAP-SIM, EAP-MSCHAPv2
- Development, enhancement and testing of wireless network management GUI utilities on various platforms
- Implementation, integration and wireless enabling of variety of solutions such as wireless IP phone, wireless camera, wireless TV, wireless media receiver, wireless access point, wireless remote upgrade and status monitoring
- Wi-Fi product testing and test automation
- Product compliance testing for certifications like FCC, CE



About Aftek

Aftek Limited is a full spectrum technology services company from India. Over last 20 years Aftek has gained significant exposure to variety of technologies. Rich technological capabilities, focused investments in Research & Development and industry exposure enables us to reach beyond the basic IT services to design and deliver projects, products and implement end-to-end solutions to customers in variety of industries. Our service spectrum covers key services as Hardware Development, Firmware Development, Embedded Systems, Application Development, Application Maintenance and Testing Services.

Aftek's Wi-Fi Experience

Dual mode phone

Dual mode phone supports Wi-Fi based IP calls along with standard GSM cellular calls. Wi-Fi based calls ensure a better indoor coverage and a cost effective option for making long distance or roaming calls. Aftek handled end to end design and development of hardware and software of dual mode phone.



- Aftek designed the hardware and developed form-factor prototypes using Philips BGW chipset for 802.11 b/g with SPI interface
- Ported and customized wlanctl-ng driver package for Linux kernel 2.6 based on PXA270 platform.
- Implemented WPA, WPA2 and WEP (64-bit and 128-bit) security
- Implemented 802.1x authentication with methods like EAP-MD5, EAP-TLS, EAP-SIM, EAP-MSCHAPv2
- Implemented support for optimized power management of Wi-Fi chipset.
- Implemented support for ad-hoc as well as infrastructure modes of Wi-Fi network
- Developed application for detailed configuration of Wi-Fi parameters, automatic selection of access point and automatic switching to Wi-Fi network (from cellular network and vice versa) for data/voice communication. Also, implemented GUI for the same
- Compliance testing for FCC certification

Home automation

Home automation solution provides features for security, entertainment and communication which are based on devices like wireless surveillance camera, wireless TV, wireless media receiver and wireless phone. A Wi-Fi access point is used to communicate with these client devices with high performance requirement for audio and video streaming.

- Aftek designed and developed prototype hardware for Wi-Fi access point and client devices based on Intersil Javelin chipset
- Based on Intel IXP425 and Samsung S3C2510 platforms and μ Linux and Linux kernel 2.4
- Customized PCI interface driver of Wi-Fi device and optimized it for performance improvement
- Implemented security using WEP key and IPsec
- Implemented MAC filtering and access control list (ACL) to limit Wi-Fi clients