![AFTEK logo — AFfordable TEKnology]

AFTEK GSM/GPRS PORTFOLIO

DRIVER / STACKS / APIs

Aftek has developed APIs for interfacing GSM engines to the application software. The APIs were developed based on standard GSM AT command set applicable to the engine used.

APPLICATIONS

- Developed applications that include various GSM features like call control, SMS and GPRS

- Worked on over 50 APIs for various applications

- Code reusability - GSM code base ported from earlier versions of PWG series to the PWG-600

With an industry leading presence in embedded systems, Aftek provides **expert GSM** based **services** in **Mobile** and **Wireless communications**, **Telematics** and **Transport** domains.

Aftek's work on GSM consists of:

- GSM engine hardware integration and interfacing
- GSM stacks
- GSM codecs
- Driver development for GSM base band
- GSM test bench for testing GSM stacks
  SMS and call-based applications using GSM technology

Hardware

Aftek has worked on

- GSM engines from world leaders like Texas Instruments, Siemens, Wavecom and CMCS. We have interfaced CMCS dual / tri / quad band engines to various 8051 derivatives, Intel X-Scale (PXA-255 and PXA-270) and ARM based processors. GSM audio interface with USB based voice codec chips
- Schematic building, PCB artwork design (Multiplatform as well as Form Factor), hardware assembly and bring-up testing
- PCBs - Developed in-house form factor up to 6 layers. Designed 12 layer form factor boards for mobile applications. Cost effective solution with 2-4 layer board for transferring Voice calls from GSM to VoIP Network and vice versa

Project Case Studies

Personal Wireless Gateway (PWG 600)

PWG 600 is a dual mode mobile phone, capable of connecting to GSM/GPRS, Bluetooth, WiFi and VoIP networks with both voice and data communication capabilities. It functions as a peripheral device with PC or PDA using its USB/Bluetooth interface to allow internet connectivity on PC/Laptop/Pocket PC using WiFi or GPRS.

PWG uses CMCS make GSM engine featuring Quad Band GSM 850/900/1800/1900 MHz, GSM Phase 2+, Transmit Power Class 4 and 1, 14.4 Kbps Mobile Station Class B (alternate voice/data) GPRS operation. It supports GSM 07.05, GSM 07.07 AT command standards.

GSM work done on PWG-600:

- Hardware integration and interfacing of Dual SIM, Quad Band GSM Engine over Intel X-Scale processor PXA-255
- Hardware bring-up testing
- Software interfaces and APIs for communicating with the GSM engine using GSM AT command set (07.05 and 07.07)
- GSM application software for providing various features like call control features, SMS, phone book, etc.
- Application software to take care of GPRS connectivity.

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Pet Locator

Pet Locator is a device used for locating pets in a premises. It uses GPS to locate the position of the pet and uses SMS to communicate the same to the owner. It incorporates 8051 based processor interfaced to the CMCS dual band engine.

GSM work done on Pet Locator:

- Hardware integration and interfacing of dual band GSM Engine over 8051 derivative processor
- Hardware bring-up testing
- Building software interfaces and APIs for communicating with the GSM engine using GSM AT command set (07.05 and 07.07)
- GSM application software providing SMS support

VoIP to GSM Gateway (Voicelink)

Voicelink is a device which links voice form GSM network to VoIP network and vice versa. Voicelink can be used to make international GSM calls at low cost. The device is also Skype compatible and support calls forwarding from Skype to GSM Network and vice versa.

Voicelink uses Wavecom make GSM engine featuring dual band GSM 900/1800 MHz, GSM Phase 2+, Transmit Power Class 4 and 1, data circuit asynchronous, transparent and non transparent up to 14.4 kbps. It supports GSM 07.05, GSM 07.07 AT command standards. Additional open AT feature along with APIs for embedded application development. R&TTE and GCF-CC approved Wavecom GSM Module along with CE Marking.

GSM work done on Voicelink:

- Hardware integration and interfacing of SIM, Dual Band GSM Engine from Wavecom and serial interface for AT-Commands
- Hardware bring-up testing
  Multiplexing Voice Path using Analog Switches for satisfying the various call termination schemes
- Software interfaces and APIs for communicating with the GSM engine using GSM AT command set (07.05 and 07.07)
  Exploration of Open AT feature of Wavecom GSM Engine
- Analysis of spare resources of GSM Base Band Processor which can be used for embedded application development, feasibility study of the same for usage in application and cost impact
- Cost effective PCB design for handling excellent voice quality and no TDMA noise which is prime most important in voice applications
- Implementation of Novel Method of Powering GSM engine without battery
- Complete CE marking Process and tests for the same, Provided CE Marking for this product

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Vehicle Tracking

The device developed for Vehicle Tracking uses GPS to locate the position of the vehicle and SMS to communicate the same to a centralized server hosting tracking application.

GSM work done on Vehicle Tracking:

- Hardware integration and interfacing of dual band GSM engine over 8051 derivative processor
- Hardware bring-up testing
- Application software with SMS support

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