Sierra Wireless AirPrime™ Intelligent Embedded Modules WMP Series

Microprocessors with Built–in Wireless

Combining embedded processor capability and wireless connectivity in a single device, the Sierra Wireless AirPrime™ WMP Series will improve your time to market as well as your total system cost, size and performance.

AirPrime WMP Series products are certified processing and radio solutions in a BGA package, designed for GSM/GPRS cellular communication in M2M and automotive devices.

AIRPRIME WMP50
Entry-level industrial and self-contained GSM/GPRS microprocessor for applications with limited MIPS requirements. BGA form factor for high volume surface mount technology in production.

AIRPRIME WMP100
Enhanced features GSM/GPRS microprocessor for applications requiring mid-range performance. Full pinout and software compatibility with WMP50 for easy system scalability.

AIRPRIME WMP150
Automotive-grade GSM/GPRS/EDGE RX microprocessor designed for Tier one OEM manufacturers. Ideal for eCall, TollCollect and telematics systems.

KEY BENEFITS:
- Standard semiconductor BGA form factor enabling:
    - high quality in the field
    - fully automated high volume production capability
    - technology excellence (co-planarity, high yield)
- Reduced bill of material through hardware integration
- Memory flexibility

Embedded SIM

AirPrime WMP100 and WMP150 are available with Embedded SIM as an option.

Sierra Wireless's Embedded SIM solution removes the plastic from a conventional SIM card and embeds the silicon die inside the intelligent embedded modem, with the following benefits:

- Resistance to extreme temperatures, vibration and humidity
- Service provider and carrier choice
- Subscription portability and security
- Reduced size
- Simplified logistics
- Same warranty as the intelligent embedded module itself

SIERRA WIRELESS™ | AirPrime™

Sierra Wireless Software Suite

Cellular software for M2M

Sierra Wireless provides a comprehensive embedded software platform which allows you to develop, compile, test, debug, download and natively execute your applications written in standard ANSI C/C++ and/or Lua script directly on your WMP microprocessor.

The AirPrime™ embedded software suite is owned, developed and maintained by Sierra Wireless, allowing us to respond to your evolving needs faster than may companies that rely on third-party software. It includes:

- A pre-emptive multitasked event-based real-time operating system (Open AT® OS)
- An integrated development environment built on Eclipse™ to develop, compile, download, test and debug your application binary
- An extensive set of additional libraries (Plug-Ins) which offer supplementary services over the core Open AT® OS
- The firmware which manages the wireless communication (GSM/GPRS/EDGE/HSPA) and an AT commands interface in the intelligent embedded modem
- A simple and intuitive Windows®-based discovery tool which enables ultra-fast configuration of modules as well as easy access to basic module features
- PC drivers for Windows® XP/Vista (USB and CMUX)
- Embedded drivers for Windows® Mobile 5.x/6.x and Windows® CE 6.0 (RIL/MUX and USB)

Real Time Operating System

The Open AT® OS is the only operating system which natively provides wireless services (voice call, data call, SMS...).

It features:

- **Real Time:** the latency time to external interruptions or timers is guaranteed less than 600 µs
- **Pre-emptive multitasking:** up to 64 tasks are available to develop your software application
- A native API in ANSI C
- Event-driven programming

Eclipse–based Developer Studio

Built on the de-facto standard Eclipse™, the integrated development environment manages all the development steps of your project.

Developer Studio provides a whole range of key benefits:

- A familiar environment for many developers
- A scalable environment thanks to Eclipse™ plug-ins
- Fully integrates all Sierra Wireless tools as plug-ins
- Integrated documentation
- Automatic update checker with pop-up notification
- Windows® and Linux compliance
- Available source code
- Ease third party software redistribution

Learning Center

Sierra Wireless provides a professional education program for developers using the Sierra Wireless Software Suite. Enrolling in one of our courses will spark your creativity and help you to speed development time. For companies wishing to enrol a few participants, we provide scheduled training course dates in Europe, North America and Asia on a regular basis. If you have larger needs or just want a dedicated tutoring session, we also offer on-site programs.

Sierra Wireless Professional Services

Sierra Wireless proposes an extensive professional services offering:

PRODUCT DESIGN
- Application code review
- Customer design review
- Customer product certification

PRODUCT BUILD
- IMEI implementation
- Tailored delivery
- Tailored product configuration

AFTER SALES
- Intelligent embedded module reconfiguration
- Out of warranty repair
- Extended warranty

AirVantage™ Management Services

Once you have deployed your wireless M2M solution in the field, you may need to regularly monitor and upgrade your devices. How do you do that in an easy, safe and cost-effective way?

The answer is AirVantage Management Services, a packaged device management solution which enables remote diagnosis and software upgrades which can save you considerable operating costs.

REMOTE DIAGNOSIS ENABLES YOU TO:
- Run sanity checks and configure your devices
- Monitor the wireless network quality
- Compile traffic reports for analysis

THE SOFTWARE UPGRADE SERVICE INCLUDES:
- Delta generation (download only the code that has changed, for faster downloads and reduced data volume)
- Upgrade for multiple devices
- Real-time campaign monitoring
- Reports

Easy to deploy, secure, scalable and carrier agnostic, AirVantage Management Services are based on industry standards: OMA-DM and full IP architecture.

These secure, easy-to deploy and scalable device management services are powered by the AirVantage Services Platform, a comprehensive software-as-a-service M2M offering which allows you to quickly expand your M2M services, from device management to asset data management, subscription management and billing services.

KEY BENEFITS:
- Greater solution stability and performance
- Fewer deployment errors, delays and added expenses
- Less time-consuming redesign
- Safer design for the integration of any Sierra Wireless product

SIERRA WIRELESS™ | **AirPrime™**

Sierra Wireless AirPrime™
Intelligent Embedded Modules
WMP Series

	WMP50	WMP100	WMP150
AIR INTERFACE			
	GSM/GPRS	GSM/GPRS	GSM/GPRS
FREQUENCY BANDS			
	850/900/1800/1900 MHz	850/900/1800/1900 MHz	850/900/1800/1900 MHz
APPROVALS			
	R&TTE, CE, GCF, FCC, PTCRB, China RTE, AT&T	R&TTE, CE, GCF, FCC, PTCRB, China RTE, AT&T	R&TTE, CE, GCF, FCC, PTCRB, China RTE, AT&T
POWER			
Alarm	16uA	16uA	16uA
Standby and Idle	2,5mA	2,5mA	2,5mA
GSM/GPRS max	400mA max GPRS class 10	400mA max GPRS class 10	400mA max GPRS class 10
CPU PERFORMANCES			
Processor	ARM946 / DSP	ARM946 / DSP	ARM946 / DSP
Core frequency	26 MHz	104 MHz / (26 MHz)	104 MHz / (26 MHz)
User MIPS available	21 MIPS	87 MIPS	87 MIPS
IO voltage	1.9v / 1.9v-2.8v	1.9v / 1.9v-2.8v	1.9v / 1.9v-2.8v
AUDIO			
Analog audio	2 x speaker out - 2 x micro in	2 x speaker out - 2 x micro in	2 x speaker out - 2 x micro in
Digital audio		1 x PCM	1 x PCM
Codec	HR, FR, EFR, AMR	HR, FR, EFR, AMR	HR, FR, EFR, AMR
Quality		VDA2A	VDA2A
Echo cancellation & noise reduction	✓(low)	✓(high)	✓
DTMF	✓	✓	✓
INTERFACES			
UART	2	2	2
USB	Device 2,0 (Full speed, Low speed)	Device 2,0 (Full speed, Low speed)	Device 2,0 (Full speed, Low speed)
ON OFF	✓	✓	✓
SPI	1	2	2
I2C		1	1
ADC	2	3 (+battery)	Enhanced (AUX ADC)
DAC			1
GPIO		11 Up to 44*	11 Up to 50
RTC	✓ (external crystal)	✓ (external crystal)	✓ (external crystal)
Timers (HW, SW, Capture)		✓	✓ (enhanced)
Interrupts pins	2	9	9
Flash LED output	1	1	1
PWM (Buzzer)	1	1	1
Keyboard interface	5 x 5**	5 x 5**	5 x 5
SIM interface	1,8V/3V	1,8V/3V	1,8V/3V (incl. Smart card I/F)
LOCATION SOLUTION			
	AirPrime XM0110 GPS module and Location Plug-In	AirPrime XM0110 GPS module and Location Plug-In	AirPrime XM0110 GPS module and Location Plug-In
EMBEDDED SIM			
		✓	✓
CONTROL OPTIONS			
	AT commands, C/C++ language, Lua Script	AT commands, C/C++ language, Lua Script	AT commands, C/C++ language, Lua Script
OPERATING SYSTEM			
	Open AT®	Open AT®	Open AT®
MANAGEMENT SERVICES			
	✓	✓	✓
DRIVERS			
Windows® Mobile	✓	✓	✓
Windows® CE	✓	✓	✓
Windows®XP	✓	✓	✓
Windows® 7	✓	✓	✓
Windows® Vista	✓	✓	✓
Mac OS			
Linux	✓	✓	✓
DEVICE DIMENSIONS			
	25 x 25 x 3 mm	25 x 25 x 3 mm	25 x 25 x 3 mm
OPERATIONAL TEMPERATURE			
	-30°C to +70°C	-40°C to +85°C	-40°C to +85°C

* Multiplexed, ** with performance deviations

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