

# Sierra Wireless AirPrime™ Intelligent Embedded Modules Q Series

## A Single Form Factor for Multiple Technologies

Conceived for rapid mounting in electronic machine-to-machine equipment, the Sierra Wireless AirPrime Q Series of intelligent embedded modules allows you to make one single product design which can communicate on any cellular protocol, anywhere around the world. All AirPrime Q Series intelligent embedded modules are footprint compatible to smooth product development and simplify upgrading.

Choose an AirPrime Q Series intelligent embedded module when you need one or more of the following:

- Programmable capabilities\*
- Multi-standard wireless
- Future-proof bearer evolution
- A field replaceable product

In addition, any AirPrime Q Series modules that support Open AT® include an embedded TCP/IP stack that can be controlled with simple AT commands.

### AIRPRIME Q26 EXTREME

The dual-mode 2G/3G/3G+ AirPrime Q26 Extreme supports peak data rates up to 7.2 Mbps HSDPA and 2 Mbps HSUPA with automated 2G/3G handover.

### AIRPRIME Q26 ELITE

The Q26 Elite features the Qualcomm QSC6055 chipset and integrates Qualcomm gpsOne® technology, making it uniquely suited for fleet management and tracking applications with E911 requirements. It supports an extended temperature range of -40°C to +85°C.

### AIRPRIME Q2687

With an extended temperature range of -40°C to +85°C, the Q2687 intelligent embedded module offers a wide range of interfaces including USB, UART, SPI and a parallel data bus, as well as data bearers up to EDGE. Certified for use in the North American market.

### AIRPRIME Q2686

Equipped with on-board audio recording facilities, the Q2686 is well suited for alarm systems and IVR (Interactive Voice Response) product designs. It also supports an extended temperature range of -40°C to +85°C.

## Embedded SIM

All 3GPP AirPrime Q Series products 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 module, with the following benefits:

- Resistance to extreme temperatures, vibration and humidity
- Subscribers can choose their service provider or carrier
- Subscription portability and security
- Reduced size and simplified logistics
- Same warranty as the intelligent embedded module itself



### KEY BENEFITS:

- Form-factor compatibility
- High-speed data transmission on any cellular network
- Software designed for M2M
- Remote monitoring and upgrade
- European Union's RoHS compliant
- Manufactured by ISO/TS 16949-certified OEM



AirPrime™

# Sierra Wireless Software Suite

## Cellular Software for M2M

The Sierra Wireless Software Suite is a comprehensive embedded software platform designed and optimized for M2M (machine-to-machine) communication. The software suite lets you embed your application directly onto your intelligent embedded module.

This embedded software allows Sierra Wireless AirPrime® intelligent embedded modules to function in a number of different ways:

- Simple modems: controlled via AT commands by a main processor
- Intelligent modems: controlled via AT commands by a main processor, but also providing some additional customized services through a supplementary software application
- Processors: the module is the single processor and is hosting your standard ANSI C/C++ application as well as providing the wireless connectivity

The Sierra Wireless Software Suite is owned, developed and maintained by Sierra Wireless, allowing us to respond to your needs faster than companies relying on third-party software. The Sierra Wireless Software Suite 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 modules
- A simple and intuitive Windows®-based discovery tool which enables ultra-fast configuration of modules as well as easy access to basic modem 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)

## 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 enroll 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.

## Why Sierra Wireless

Sierra Wireless has been in the wireless data and applications business for more than 16 years. We have a proven record of delivering well-designed, highly reliable products, backed by worldwide field and call center support. Our business partners depend on us for a broad portfolio of leading-edge wireless products and solutions that help them extend the reach of their networks. Find out how our products can help you. For more information, visit [www.sierrawireless.com](http://www.sierrawireless.com).

## 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™ Intelligent Embedded Modules Q Series

	Q2686	Q2687	Q26 Extreme	Q26 Elite
<b>AIR INTERFACE</b>	GSM/GPRS	GSM/GPRS/EDGE	HSDPA 7.2 Mbps HSUPA 2 Mbps	CDMA
<b>FREQUENCY BANDS</b>	GSM/GPRS/EDGE 850/900/1800/1900	GSM/GPRS/EDGE 850/900/1800/1900	WCDMA 850/1900/2100 EDGE 850/900/1800/1900	CDMA 800/1900
<b>APPROVALS</b>	R&TTE, CE, GCF, FCC, PTCRB, China	R&TTE, CE, GCF, FCC, PTCRB, China, AT&T	R&TTE, CE, GCF, FCC, PTCRB, China	FCC, IC, CDG 1&2
<b>POWER</b>				
Alarm	17uA	17uA	17uA	
Standby and Idle	2,5mA	2,5mA	2,5mA	5mA
GSM/GPRS max	400mA max GPRS class 10	400mA max GPRS class 10	600mA max GPRS class 10	
H5xPA max			820mA max; HSDPA full power	
<b>CPU PERFORMANCES</b>				
Processor	ARM946 / DSP	ARM946 / DSP	ARM946 / DSP	ARM9
Core frequency	26-104 MHz	26-104 MHz	26-104 MHz	192 MHz
User MIPS available	87 MIPS	87 MIPS	87 MIPS	
I/O voltage	1V8-2V8	1V8-2V8	1V8-2V8	1V8-2V8
<b>AUDIO</b>				
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	2 x speaker out -2 x micro in
Digital audio	✓	✓	✓	✓
Codec	HR, FR, EFR, AMR	HR, FR, EFR, AMR	GSM: HR, FR, EFR, AMR   W-CMDA: AMR	EVRC/QCELP/EVRC-B
Quality	VDA2A	VDA2A	VDA2A	
Echo cancellation & noise reduction	✓	✓	✓	✓
DTMF	✓	✓	✓	✓
<b>INTERFACES</b>				
UART	2	2	2	2
USB	USB 2.0 Full Speed (12 Mbps)	USB 2.0 Full Speed (12 Mbps)	USB 2.0 Full Speed (12 Mbps)	Device 2.0 (Full Speed)
SPI	2	2	2	
I2C	1	1	1	1
ADC	2	2	2	2
DAC	1	1	1	1
GPIO	Up to 44	Up to 44	Up to 45 GPIO's	Up to 20*
RTC	✓	✓	✓	✓
Timers (HW, SW, Capture)	✓	✓	✓	n/a
Interrupts pins	2	2	3	n/a
Flash LED output	1	1	1	1
PWM (Buzzer)	1	1	1	1
Keyboard interface	5x5	5x5	5x5	5x5
SIM interface	1.8V/3V	1.8V/3V	SIM and U-SIM	RUIM
<b>ANTENNA DIVERSITY</b>			✓	
<b>LOCATION SOLUTION</b>	AirPrime XM0110 GPS module and Location Plug-In	AirPrime XM0110 GPS module and Location Plug-In	AirPrime XM0110 GPS module and Location Plug-In	gpsOne
<b>EMBEDDED SIM</b>	✓	✓		
<b>CONTROL OPTIONS</b>	AT commands, C/C++ language; Lua script	AT commands, C/C++ language; Lua script	AT commands, C/C++ language; Lua script	AT commands
<b>OPERATING SYSTEM</b>	Open AT™	Open AT™	Open AT™	
<b>MANAGEMENT SERVICES</b>	✓	✓	✓	
<b>DRIVERS</b>				
Windows® Mobile	✓	✓	✓	
Windows® CE	✓	✓	✓	
Windows® XP	✓	✓	✓	✓
Windows® 7	✓	✓	✓	✓
Windows® Vista	✓	✓	✓	✓
Linux	✓	✓	✓	✓
<b>DEVICE DIMENSIONS</b>	32 x 40 x 4 mm	32 x 40 x 4 mm	32 x 40 x 6.55 mm	32 x 40 x 6.63 mm
<b>OPERATIONAL TEMPERATURE</b>				
Normal (Class A)	-20°C to +55°C	-20°C to +55°C	-20°C to +55°C	-30°C to +70°C
Extended (Class B)	-40°C to +85°C	-40°C to +85°C	-30°C to +75°C	-40°C to +85°C

\* Multiplexed