SIERRA WIRELESS

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wavecom

WISMO
218

Wireless Standard Modem

WISMO
FAMILY

Smart Devices   Creative Software   Services

Wireless Standard Modem
WISMO FAMILY

WISMO is an entry level cellular modem from Sierra Wireless which adds wireless voice and data connectivity to your product. This extremely cost efficient solution, easy to use solution provides WWAN connectivity in a highly compact form factor.

Castellation package

Superior quality

Cost effective

Easy to use

Entry level GSM/SMS/GPRS

WISMO Family

WISMO provides basic modem features in a very cost efficient package, without compromising typical M2M industry requirements.

It is easy to use, thanks to a simple and intuitive Windows tool (see page 5), and easily placed within your product via either manual or common automatic machine placement soldering methods.

WISMO is postage stamp sized at just 25 mm x 25 mm x 2,8 mm. With multi-band, multi-bearer, multi-codec, TCP/IP compatibility and a range of peripheral connectivity, WISMO 218 and WISMO 228 pack a mean punch in their sleek form-factor that includes all **the radio**, **processing**, **memory** and software to perform inside your product.

The purchase price of your WISMO modems includes essential IPR coverage to legally protect you from patent holder claims.

WISMO218

WISMO218 is a dual-band 900/1800 GSM modem supporting multi-bearer (GSM, CSD, SMS, FAX, GPRS) and multi-codec (HR, FR, EFR, AMR). Its castellation form factor facilitates integration in automated or manual assembly line, as well as the visual control on the manufacturing line.

WISMO228

WISMO228 delivers the same features as WISMO 218 in an identical package, and adds quad band 850/900/1800/1900 GSM connectivity as well as an extended temperature range -40°C to +85°C (Class B).

	WISMO218	WISMO228
Market Positioning		
	Entry Level Modem (Dual Band)	Entry Level Modem (Quad Band)
Cellular Performances		
Bearers	GSM + GPRS	GSM + GPRS
Radio Bands	Dual Band 900/1800 MHz	Quad Band 900/1800/850/1900 MHz
Regulatory and Approvals	CE, GCF, China RTE, R&TTE	CE, GCF, China RTE, R&TTE, PTCRB, AT&T, FCC, IC
Nominal sensitivity		
850/900 MHz Rx (typ)	- 109dBm	- 108dBm
1800/1900 MHz Rx (typ)	- 109dBm	- 108dBm
850/900 MHz Tx	33dBm +/- 2	33dBm +/- 2
1800/1900 MHz Tx	30dBm +/- 2	30dBm +/- 2
Intellectual Property rights (IPR)	Included	Included
Data Features		
GPRS	*Multi-slot class 10	*Multi-slot class 10
	*Multi-slot class 10	*Mobile Station Class B
"CS Data Calls (Transparent / Non-Transparent) "	up to 9.6kbps	up to 9.6kbps
SMS	*Classes 0, 1, 2 & 3	*Classes 0, 1, 2 & 3
	*Reception of SMS during calls	*Reception of SMS during calls
FAX	*Bearer service fax	*Bearer service fax
	*Group 3, Class 1.0	*Group 3, Class 1.0
TCP/IP	-	Embedded TCP/IP and UDP/IP Stack
Power consumption (typ)		
Off Mode	36 µA	40 µA
GSM Alarm	36 µA	40 µA
Standby and Idle (Paging 9)	1.3 mA	1.5 mA
GSM (2W) / GPRS cl.10	214 mA / 369 mA	250 mA / 400 mA
CPU Performances		
Processor	ARM926 / DSP	ARM926 / DSP
Core Frequency	156 MHz	156 MHz
Core I/O Voltage	3.2 to 4.8V	3.2 to 4.8V
Audio and Voice features		
Analog Audio	1 x speaker out	1 x speaker out
	1 x micro in	1 x micro in
Digital Audio	-	-
Codec	HR, FR, EFR, AMR	HR, FR, EFR, AMR
Echo Cancellation & Noise Reduction	√	√
DTMF	-	-
Telephony/Handset/Hands free mode	√	√

	WISMO218	WISMO228
Interfaces and Control		
UART	√	√
USB	-	-
SPI	√	√
I2C	-	-
ADC	√	√
DAC	-	-
GPIO	11	11
RTC	√	√
PWM	√	√
RF (Antenna)	√	√
Buzzer Output	√	√
Reset	√	√
SIM Toolkit R99	√	√
SIM Interface	1.8V/3V	1.8V/3V
Tx Burst Indicator	√	√
JTAG	-	-
AT Command Set	3GPP TS	3GPP TS
TCP/IP	-	Stack access via AT commands
Miscellaneous		
Packaging	LCC Castellation, 1.5mm pitch, 46 SMT pads	LCC Castellation, 1.5mm pitch, 46 SMT pads (100% compatible with WISMO218)
Mechanical size	25 x 25 x 2.8 mm	25 x 25 x 2.8 mm
Weight	3.8 g	<4 g
Environmental	Class A -20°C to +55°C	Class A -20°C to +55°C
	Class B -40°C to +85°C (Operating)	Class B -40°C to +85°C
	Storage -40°C to +85°C	Storage -40°C to +85°C
Quality grade	Standard	Standard
RoHS	√	√
Shipment Packaging	Tape & Reel 250 pieces	Tape & Reel 250 pieces
Accessories		
FW update over UART	√	√
Development Kit	√	√

Creative Software

OPEN AT

Get up and running in less than 5 minutes!

↗ **Expresso is a simple and intuitive Windows® tool** which enables ultra-fast configuration of modems as well as easy access to basic modem features. The hyper-easy graphical user interface enables you to access to these features while simultaneously visualising the AT commands that will be needed in the product development.

↗ **The software enables you to discover your WISMO**, configure it and perform a range of standard operations such as sending an SMS or setting up a GPRS connection to the Internet.

↗ **Expresso is exclusive to Sierra Wireless and free** of charge to Sierra Wireless customers. The intuitive graphical user interface is born from a unique co-operation between Sierra Wireless and our subsidiary Anyware Technologies.

Smart Devices

Quality you can trust

WISMO benefits from Sierra Wireless's extensive expertise in the development and manufacturing of wireless solutions, particularly in the areas of high out-of-box reliability and low field failure rates. All WISMO products are produced on an ISO TS 16949 (automotive standard) certified manufacturing site, and benefits from the inspection equipment already in place for automotive-grade products.

Regarding deliveries, 95% of shipments from the factory arrive within 4 weeks from the order date and the on-time delivery rate is close to 100%, equating to significant logistics **benefits for customers operating efficient JIT** (Just In Time) manufacturing processes.

By choosing a WISMO, you will also benefit from Sierra Wireless' supply **chain management** and **delivery performance excellence.** Around 95% of all our deliveries arrive

within the customer's requested delivery date, with a lead time of 4 weeks, and close to 100% of our deliveries arrive within the committed delivery date. For customers needing even faster deliveries, we offer an express service to deliver goods within one week.

For you, this means that you can operate leaner JIT (Just In Time) manufacturing controls.

Why LCC (castellation)?

LCC was selected for WISMO218 and 228 to optimize the ease of use:

- *Easy to solder on SMT line automatically or manually*
- *Easy to visually inspect (no Xray machines required)*
- *Easy to correct unsoldered points at end of line inspection (without reflow)*
- *Easy to service in the field (removal can be done on-site without expensive specialist tools)*

Unlike processors, modems have very few connections and LCC is ideal for this class of low IO devices.

Best suited for high IO connectivity (e.g. processors)

Ball Grid Array

Best suited for products where EMS investment is a non-issue and repair is uneconomical

Land Grid Array

Best suited for low IO connectivity (bit pipe modems)

Castellation

KEY FEATURES	
Usability Features	
Easy	Runs in Java under Microsoft® Windows® and other platforms*, simple, intuitive and trouble-free.
Fast	Get your modem up and running in less than 5 minutes and learn how to program it.
Smart	Full graphical interface provides rapid access to the most used modem services with inline help and mouse over assistance for events and their AT commands.
Operational Features	
Network	Retrieve band operation, network status, quality and carrier/operator name.
Device	Retrieve device parameters such as model, serial number, IMEI, IMSI, firmware version.
Audio	Retrieve/Set echo cancellation, speaker/microphone selection, level control.
Calls	Initiate Voice (with phonebook), CSD data, GPRS data calls.
Messaging	Retrieve/Set SMSC and send/receive SMS.
Watch	An AT "spy" window for each function group and AT "console" provide total bi-directional control of AT commands allowing you to "use and learn" your chosen device.

*Expresso is platform independent and will support operation on Linux and Mac with suitable device drivers.

Sierra Wireless professional services: less pain, more gain

M2M
OperatingPortal™

Sierra Wireless proposes an extensive professional services offering, enabling you to:
• Ensure a high degree of solution stability and performance
• Avoid deployment errors that could result in delays and added expenses
• Minimize time-consuming redesign by ensuring proper design early in the lifecycle
• Avoid common issues and expedite the resolution of critical problems
• Work on a safe design to integrate Sierra Wireless products

Connect, monitor, control and manage your remote devices

Improve your time-to-market with custom-developed turnkey M2M solutions from Sierra Wireless's fully-owned subsidiary Anyware Technologies!

The M2M OperatingPortal™ from Anyware Technologies is an end-to-end M2M Middleware Platform that allows machine-raw data to be transformed into useful business information for your company.

M2M Operating Portal is based on open source components and can easily be customized and integrated into your IT system.

The offer includes all the parts of an M2M solution, including

↗ Complete Device Management Services
 • Provisioning
 • Monitoring
 • firmware upgrade

↗ Asset Management Services
 • data storage
 • communication management
 • event and alarm processing
 • monitoring
 • remote control

↗ Open API for development of customized applications

↗ An application container hosting with
 • a standard Device Management Application
 • a skinable standard Asset management Application

The M2M OperatingPortal™ is hardware-independent and can integrate wireless modules from any supplier.

Customer Design Review

The Customer Design Review Service has been created to help you integrate Sierra Wireless's products in your application by benefiting from design best practices and Sierra Wireless's own wireless expertise. This service helps you work proactively to ensure a high degree of solution stability and performance, and to minimize time-consuming redesigns by ensuring approvals compliant design early in the development life cycle. Sierra Wireless's hardware experts review the schematics and PCB layout of your application under strict confidentiality and provide:

↗ **Schematics review**
↗ **Component placement advice**
↗ **PCB layout review**

Customer Product Certification

↗ Sierra Wireless's unique global experience in final product certification management is at your service for safety related certifications (CE, FCC, CCC)

and/or GSM related certifications (GCF-CC, PTCRB).
Take advantage of our expertise to reduce the cost of your product certification, and get your product through the certification process faster.

IMEI implementation

↗ Sierra Wireless set the industry standard by being the first to propose three services to assist you in handling IMEI regulations and accreditation houses.

• *Preloaded Customer IMEI:*
 Apply for your private range of IMEI numbers and Sierra Wireless can download them in your WISMO® prior to delivery. Products are customized with your IMEI number and you don't need to invest in specialized production equipment. This offer allows you to use your own IMEI TAC number in Sierra Wireless products, securing connection to the network of your chosen cellular service provider.

• *Sierra Wireless IMEI:*
 Sierra Wireless proposes a valid IMEI number embedded within the WISMO®. You share the Sierra Wireless IMEI TAC number with other Sierra Wireless customers on the cellular network.

• *Inactive IMEI:*
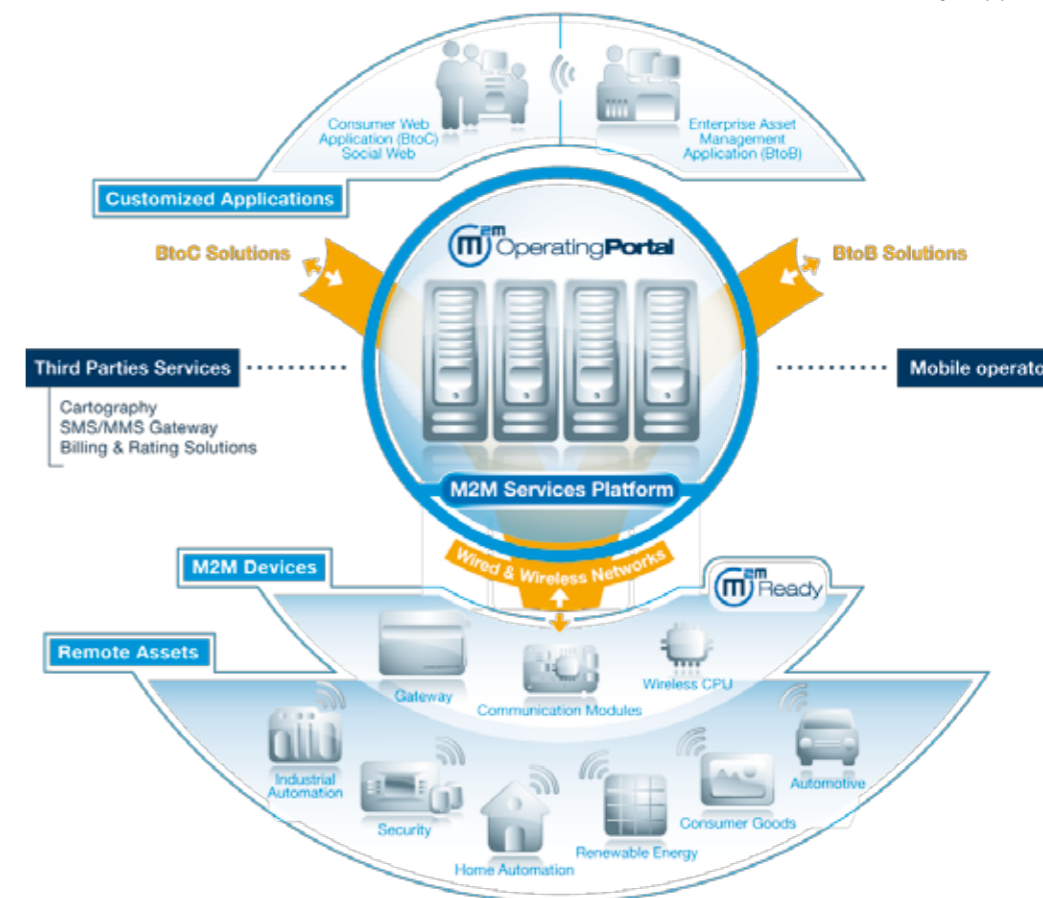 This offer will allow you to download your IMEI numbers at your premises.

Tailored Delivery

• *Express Delivery:* Your WISMO can be delivered world wide in less than 7 working days to enable you to perform unexpected sales.
• *Fast Delivery:* All orders of WISMO modems can be delivered in less than 21 calendar days without limitation on the quantities

Rest on a generic, secure and scalable platform:
core M2M services to connect millions of assets easily and quickly.

Choose between two offers:
 - A turnkey solution: Anyware Technologies advises you, implements, deploys and operates your M2M Solution.
 - Your own solution: the platform provides APIs for your asset management application & embedded agents for your devices.
Master the complete M2M value chain:
our technical expertise includes all the parts of an M2M solution: embedded application, device management, asset management, consumer & enterprise web interfaces.
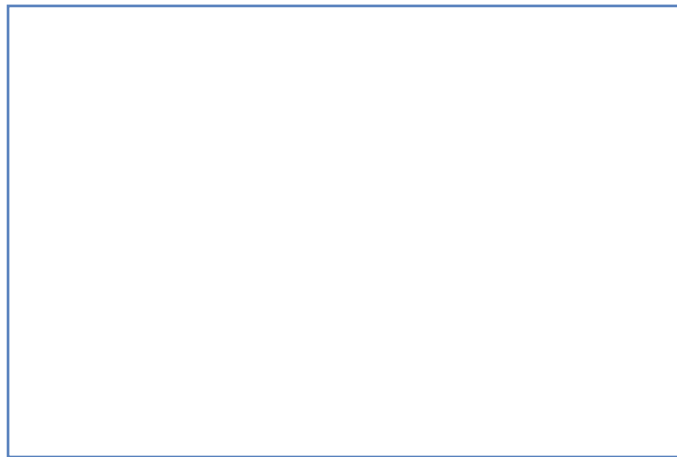
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