Wireless CPUs

Embedded wireless computing power

Wavecom has designed an extensive range of Wireless CPUs for industrial wireless applications. In conjunction with our Open AT® Operating Systems, IDEs, Plug-Ins and Services, they allow a new breed of applications to be developed without the need of external processors.

EMBED YOUR APPLICATION

Our Wireless CPUs are delivered with Open AT® software, which allows you to embed your application directly on the Wireless CPU.

BENEFIT FROM AUTOMOTIVE QUALITY STANDARDS

Selected by leading car makers, and manufactured by an ISO/TS 16949 certified manufacturing partner, our Wireless CPUs comply with the strictest quality standards.

PROTECT YOUR INVESTMENT

Wavecom's Wireless CPUs are designed for a long life. And, Download-Over-The-Air capability ensures system longevity and reduced field maintenance.

GO FASTER TO MARKET WITH CARRIER APPROVALS

Our Wireless CPUs are carrier approved in all our major global markets.

RELY ON OUR LICENCE COVERAGE

Wavecom provides essential Intellectual Property Right (IPR) coverage for all of the technologies offered in our products.

wavecom

Make it wireless

Operating Systems | *Plug-Ins* | *Integrated Development Environments* | *Wireless CPUs* | *Services*

Processing power for any application

In the early days of industrial wireless applications, the wireless element was a plain modem – an unintelligent device that receives data in one format and transmits it in another.

Technology has come a long way since then and today, Wavecom's intelligent products include ARM microprocessors that can process data, listen to more than 50 peripheral devices, address complex display driver interfaces, run embedded customer applications, connect to the Internet, and store the resulting data in embedded memory.

With such powerful functionality, the modem has evolved to become the Wireless CPU – a powerful, programmable processor which can also connect to cellular networks anywhere in the world.

ADD AN EXTERNAL WIRELESS CPU TO EXISTING APPLICATIONS

FASTRACK M1306

The rugged, quick design Fastrack M1306 has proven itself for stable, reliable performance for many years, and continues to deliver rapid time to market and painless integration.

→ Open AT® Operating System with DOTA II + Cache Memory

→ Open AT® Plug-Ins including TCP/IP and Internet

→ Programmable GPIO interfaces for alarm, telemetry and other applications

→ Embedded SIM holder

→ Simplified connectivity via D-Type connection

→ Dual band GSM and GPRS

→ "Finished Goods" certified, plug and play product

INTEGRA M2106

Built around Wavecom's field-proven technology and small enough to fit into the tightest spaces, the Integra M2106 offers a rapid, handy path to adding wireless capability to existing systems.

→ Open AT® Operating System with DOTA II + Cache Memory

→ Open AT® Plug-Ins including TCP/IP and Internet

→ Programmable GPIO, keypad and ADC interfaces

→ Embedded SIM holder

→ PCB rapid change mounting

→ Dual band GSM and GPRS with voice, data & SMS

→ "Finished Goods" certified, plug and play product

EMBED A WIRELESS CPU: ADD VALUE, REDUCE COST

Q2400

This entry-level solution is perfect for wireless local loop and simple machine-to-machine applications that require basic voice, SMS or circuit switched data wireless connectivity.

→ Open AT® Operating System

→ Programmable device requiring no external CPU

→ Fully shielded to save costs of approvals

→ Interchangeable with CDMA Q2438 Wireless CPU

→ Interchangeable with Q2406 & Q2426

→ Dual band GSM with voice, data and SMS

Q2406 & Q2426

Loaded with complete 2.5G GSM/GPRS voice and data capacity, this super-thin series is designed to fit into any application. Available in interchangeable dual-band versions, it allows you to operate on any GSM or GPRS network worldwide.

→ Open AT® Operating System with DOTA II + Cache Memory

→ Open AT® Plug-Ins including TCP/IP and Internet

→ Extended temperature version available of Q2406B

→ Interchangeable with CDMA Q2438 Wireless CPU

→ Interchangeable Q2400, Q2406, Q2426

→ Dual band GSM and GPRS with voice, data & SMS plus AMR for USA

GLOBALLY INTERCHANGEABLE

Q2438

The Q2438 Wireless CPU allows you to equip your application with CDMA2000® 1xRTT and AMPS technology. With integrated gpsOne®, the Q2438 is particularly suited for fleet management and tracking applications.

→ Interchangeable with all GSM and GPRS Q24xx series Wireless CPUs

→ Location enabled via gpsOne® technology

→ Dual band Cellular 800 and PCS 1900

→ Widely approved at CDMA operators

→ BREW® activated

→ Available with or without RUIM capable OS

LOCATE YOUR ASSETS, AUTOMOTIVE FLEET, CHILDREN AND PETS

Q2501

Designed to meet stringent automotive requirements, the Q2501 combines wireless voice and data capabilities with an Open AT® controlled GPS receiver in a super-compact package.

→ Open AT® Operating System with DOTA II + Cache Memory

→ Open AT® Plug-Ins including TCP/IP and Internet

→ Location enabled via Open AT® controlled 16 channel GPS

→ Dual band GSM and GPRS with voice, data & SMS

→ Compliant with automotive environmental requirements for temperature, humidity and vibration

MORE POWER, LESS SPACE

Q2686

The Q2686 is the most compact programmable Wireless CPU available. The Open AT® OS runs on an ARM9 core, providing applications with more than 16 MIPS (using VariSpeed). Equipped with up to 44 GPIOs, the Q2686 is especially suited to applications which require a high number of connections.

→ Open AT® Operating System with DOTA II + Cache Memory

→ Open AT® Plug-Ins including TCP/IP and Internet

→ Open AT® GTi compatible

→ RTOS compatible, running on 32 bit, 104 MHz ARM9 core

→ VariPower & VariSpeed for battery life optimisation

→ Largest range of peripheral interfaces, including controllerless Bluetooth & GPS

→ Global GSM and GPRS operation

→ Extended temperature range

Q2687

Featuring new expansion port capability coupled with high speed wireless data technology, the Q2687 has the performance, flexibility and adaptability you need. Microsoft® Windows Mobile® compatibility ensures seamless integration with a wide range of Microsoft® enabled applications.

→ Interchangeable with the Q2686

→ Largest range of peripherals including a parallel bus as expansion port

→ Global GSM, GPRS and EDGE operation

Wireless CPU family

		Plug & Play		Quik® Series							
		Fastrack M1306B	Integra M2106B	Q2400A	Q2406A	Q2406B	Q2426B	Q2501B	Q2438F	Q2686H	Q2687H
Processor	Type	ARM7	ARM7	ARM7	ARM7	ARM7	ARM7	ARM7	ARM7	ARM9	ARM9
	Architecture	32 bit	32 bit	32 bit	32 bit	32 bit	32 bit	32 bit	32 bit	32 bit	32 bit
	Top Speed	52MHz	52MHz	52MHz	52MHz	52MHz	52MHz	52MHz	52MHz	104MHz	104MHz
	VariSpeed	No	No	No	No	No	No	No	No	26-104MHz	26-104MHz
	Sleep Mode	32kHz	32kHz	32kHz	32kHz	32kHz	32kHz	32kHz	32kHz	32kHz	32kHz
	Cache Memory	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	DMA (Direct Memory Access)	No	No	No	No	No	No	No		Yes♦	Yes♦
Open AT Application Execution	Open AT® Operating System	Open AT®	Open AT®	Open AT®	Open AT®	Open AT®	Open AT®	Open AT®	BREW2.1	Open AT® Real Time	Open AT® Real Time
	MIPS (Worst / Best case)	9 to 13	9 to 13	1 to 6	1 to 6	9 to 13	9 to 13	9 to 13	5 to 7	12 to 16	12 to 16
	Free Compiler (GNU)										
	Thumb Mode Compilation										
	DOTA	Type I & II	Type I & II	Type I	Type I	Type I & II	Type I & II	Type I & II	No	Type I & II	Type I & II
Deterministic / Real Time Capabilities	HW timers (CPU Speed granularity)									●♦	●
	SW Timers	●	●	●	●	●	●	●		●	●
	External Interruption	<19ms	<19ms	<19ms	<19ms	<19ms	<19ms	<19ms		<1ms♦	<1ms
	DSP Interruption									<1ms★	<1ms
	RTC Interruption									<1ms♦	<1ms
	LowLevel Interrupt Routine									●♦	●
	HighLevel Interrupt Routine	●	●	●	●	●	●	●		●	●
IO	Pins	15+4	50	60	60	60	60	80	60	100	100
	RTOS Interrupt			❶	❶	❶	❶	❶		❷	❷
	GPIO/GPO/GPI	❷+❶+❶	❷+❶+❶	❻+❶+❶	❻+❹+❶	❻+❹+❶	❻+❶+❶	❻+❹+❶	31	up to 44	up to 44
	Digital Audio								PCM (1)	PCM	PCM
	Analogue Audio	❷	❷+❷	❷+❷	❷+❷	❷+❷	❷+❷	❷+❷	❷+❷	❷+❷	❷+❷
	ADC		❶	❶	❶	❶	❶	❷	❷	❷	❷
	DAC							❶			❶
	SPI		❶	❶	❶	❶	❶	❶		❶	❷
	I2C		❶	❶	❶	❶	❶		(1)	❶	❶
	RS232	❶	❶	❶	❷	❷	❷	❷		❷	❷
	USB								2.0 (2)	2.0	2.0
	LED driver		❶	❶	❶	❶	❶	❶	❷	❶	❶
	Buzzer driver or PWM		❶	❶	❶	❶	❶	❶		❶	❶(PWM)
	Keyboard		5x5	5x5	5x5	5x5	5x5	5x5	5x5	5x5	5x5
	SIM/RUIM	3V SIM	3V SIM	3V SIM	3V SIM	3V SIM	3V SIM	3V SIM	3V RUIM	1.8V/3V SIM	1.8V/3V SIM
	Expansion Port										parallel
Power Supply	Voltage/VDC (nom)	5.5 to 32	5.0	3.6	3.6	3.6	3.6	3.6	3.8	3.6	3.6
	Current/µA (min)	-	-	5	5	5	15	5	5	17	17
	Current/mA (idle)	17 @ 13.2V	9	3	3	3	3	3	4 (sleep)	1.7	1.7
	Current/A (max)	1.7 @ 5.5V	1.32	1.8	1.8	1.8	1.8	1.9	0.67 (full power)	-	-
	Vari Power	9	9	9	9	9	9	9	9	9	9
RF Interface	Solder			●	●	●	●	●	●	●	●
	IMP			●	●	●	●	●		●	●
	U.FL					●	●			●	●
	MMS								❷		
	MMCX		●								
	SMA	●									
Mechanical	Full shielding	●	●	●	●	●	●	●	●	●	●
	Size/mm	73x54x25	46x64x12	58x32x3.9	58x32x3.9	58x32x3.9	58x32x3.9	58x32x6	58.4x32.8x3.9	40x32.2x4	40x32.2x4
	Weight/g	82	81	<12	<12	<12	<12	<15	<12	<9	<9
	SIM holder	●									
Temperature	Class A	-20°C/+55°C	-20°C/+55°C	-20°C/+55°C	-20°C/+55°C	-20°C/+55°C §	-20°C/+55°C	-20°C/+55°C	-40°C/+85°C	-20°C/+55°C	-20°C/+55°C
	Class B		-30°C/+85°C					-35°C/+85°C	-40°C/+85°C	-40°C/+85°C	-40°C/+85°C
Wireless	GSM										
	GPRS class	10	10		10	10	10	10		10	10
	EDGE class										10
	1xRTT								●		
	AMPS										
Radio	850MHz						●		800	●	●
	900MHz	●	●	●	●	●	●	●		●	●
	1800MHz	●	●	●	●	●	●	●		●	●
	1900MHz						●		●	●	●
Audio Codecs		FR/EFR/HR	FR/EFR/HR	FR/EFR/HR	FR/EFR/HR	FR/EFR/HR	FR/EFR/AMR	FR/EFR/HR	EVRC/13k	QCELP quad	quad
Location Solution								GPS	gpsOne	Plug-In♦	Plug-In
Open AT® OS		6.55#	6.55#	6.51#	6.51#	6.55#	6.55#	6.55#		6.60#	6.61#
Open AT® Plug-Ins	TCP/IP	●	●		●	●	●	●		●	●
	Internet*	●	●		●	●		●		●	●
	GTi Mono					●				●	●
	GTi Colour					●				●	●
	IBM MQ-TT	●	●			●				on request	on request
	Orange M2MC	●	●			●				on request	on request
	Open SIM access					●				●♦	
	Bluetooth										
	Security									●★	●★
	C-GPS									●♦	●♦
Open AT® IDE	Open AT®	●	●	●	●	●	●	●		●	●
	Open AT® GTi					●				●	●
	Open AT® built on Eclipse									●♦	●
Debug Tools	Remote Task Env.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Step by Step Execution	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Break points	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Traces	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Development Kit Order Code	Application Examples	Free sources M1306B-DK	Free sources M2106B-DK	Free sources Q2400A-DK	Free sources Q2406A-DK	Free sources Q2406B-DK	Free sources Q2426B-DK	Free sources Q2501B-DK	Free sources Q2438-DK	Free sources Q2686H-DK	Free sources Q2687H-DK

NOTES
# denotes current version and beyond within the major range (refer to Open AT® OS & Plug-In brochure for more information)
♦ Available with Open AT® OS 6.61   * Internet Plug-In includes TCP/IP features plus Email (POP3/SMTP) and File Transfer (FTP)
★ Available with Open AT® OS 6.70
§ Extended temperature version available
   (1) from Q2438v6 onwards - (2) requires external USB transceiver

APPROVALS
Regulatory - Entire GSM range is approved to R&TTE, GCF-CC (900/1800 MHz), PTCRB (850/1900MHz), FCC (USA) - Pre-certified range is additionally approved to CE (EMC & Safety)
   - CDMA: IEC950, UL950, FCC (O9EQ2438F-M), CSA, IC-133, CDG1 & CDG2 (IS-98D, IS-898) & CDG3 (application specific)
   - See www.wavecom.com/approvals for latest carrier list.

RoHS COMPLIANCE
All Wavecom Wireless CPUs are compliant with the RoHS Directive (2002/95/EC).

wavecom
Make it wireless

www.wavecom.com