

# Wireless CPU family

Processor	Type Architecture Top Speed VarySpeed Sleep Mode Cache Memory DMA (Direct Memory Access)	Plug & Play Series						Quik Series				Micro Series		
		Fastrack Supreme	Integra M2106+	Q24 Classic	Q24 Plus	Q24 Extended	Q24 Auto	CM52	Q2438F	Q2686 Q2687	GR64	GS64	WMP100 WMP150	
ARM9	32 bit	ARM9	ARM7	ARM7	ARM7	ARM7	ARM7	ARM7	ARM7	ARM9	ARM9	ARM9		
32 bit	104MHz	32 bit	52MHz	52MHz	52MHz	52MHz	52MHz	52MHz	52MHz	32 bit	32 bit	32 bit		
26/104MHz	32kHz	32kHz	32kHz	32kHz	32kHz	32kHz	32kHz	32kHz	32kHz	104MHz	101MHz	26/104MHz		
32kHz												32kHz		
Open AT® Application Execution	Operating System MIPS (Worst / Best case) Application Flash (Byte) Application RAM (Byte) Free Compiler (GNU) Thumb Mode Compilation DOTA	Open AT® Real Time 87 max.	Open AT® 6 max.	Open AT® 6 max.	Open AT® 13 max.	Open AT® 13 max.	Open AT® 13 max.	Open AT® 13 max.	Open AT® 13 max.	Open AT® M2mpower 87 max.	Open AT® Multitask 87 max.	Open AT® Multitask 87 max.		
Real Time Capabilities	HW timers (CPU clock res.) SW Timers External Interruption DSP Interruption RTC Interruption LowLevel Interrupt Routine HighLevel Interrupt Routine	<1ms	<19ms	<19ms	<19ms	<19ms	<19ms	<19ms	<19ms	<1ms	<1ms	<1ms		
IO	Pins RTOS Interrupt GPIO/GPO/GPI Digital Audio Analogue Audio ADC DAC SPI I2C RS232 USB LED driver Buzzer driver or PWM Keyboard SIM/RTUIM Parallel Bus	15+4+IESM <sup>1</sup>	50	60	60	60	60	60	40	60	100	60	100	BGA576
Power Supply	Voltage/VDC (nom) Current/µA (min) Current/mA (idle) Current/A (max) VariPower modes	5.5 to 32	5	3.6	3.6	3.6	3.6	3.6	5 & 12	3.8	3.6	3.6	3.6	3.6
RF Interface	Solder pad IMP U.FL (bottom side) MMS MMCX SMA	•	•	•	•	•	•	•	•	•	•	•	•	•
Mechanical	Full shielding Size/mm Weight/g SIM holder	73x54x25	46x64x12	58x32x3.9	58x32x3.9	58x32x3.9	58x32x3.9	58x32x3.9	114.6x49.5x10	58.4x32.8x3.9	40x32.2x4	50x33x3.3	37x30x2.8	25x25x3.0
Temperature	Class A Class B	-20°C/+55°C -30°C/+85°C	-20°C/+55°C -30°C/+85°C	-20°C/+55°C	-20°C/+55°C	-20°C/+55°C	-20°C/+55°C	-20°C/+55°C	-30°C/+75°C	-30°C/+75°C	-30°C/+85°C	-30°C/+85°C	-30°C/+85°C	-30°C/+85°C
Wireless	GSM GPRS class EDGE class 1xRTT AMPS	10 10 (option)	10	•	10	10	10	10	•	•	10	10	10	10
Radio	850MHz 900MHz 1800MHz 1900MHz Maximum Sensitivity (dBm)	• • • • -108@900	• • • • -108@900	• • • • -110@900	• • • • -110@900	• • • • -110@900	• • • • -110@900	• • • • -110@900	• • • • -104@800	• • • • -107@800	• • • • -110@900	• • • • -110@900	• • • • -110@900	• • • • -110@900
Audio	Codecs <sup>2</sup> Quality (incl. AEC/NR)	FR/EF/HR VDA2A	FR/EF/HR VDA2A	FR/EF/HR VDA2C	FR/EF/HR VDA2C	FR/EF/HR VDA2C	FR/EF/HR VDA2C	FR/EF/HR VDA2C	EVRC	EVRC/13k	quad VDA2A	quad VDA2A	quad VDA2A	quad VDA2A
Location Solution	Microsoft compatible Open AT® Plug-Ins	Plug-In/IESM <sup>1</sup>	external <sup>4</sup>	external <sup>4</sup>	external <sup>4</sup>	external <sup>4</sup>	external <sup>4</sup>	external <sup>4</sup>	gpsOne	Plug-In	external <sup>4</sup>	external <sup>4</sup>	external <sup>4</sup>	Plug-In
Open AT® IDE	Open AT® Open AT® GTI Open AT® built on Eclipse™ M2mPower	•	•	•	•	•	•	•	•	•	•	•	•	•
Debug Tools	Remote Task Env. Step by Step Execution Break points Traces Application Examples	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •	• • • • •
Development Kit Order Code		Supreme-DK	M2106B-DK	Q24Series-DK	Q24Series-DK	Q24Series-DK	Q24Series-DK	UDK-CM52	Q2438-DK	Q2687H-DK	UDK-MK2	UDK-MK2	WMP100-DK	

**NOTES**  
 1) Internal Expansion Socket Module  
 2) Requires external USB transceiver  
 3) HR codec versions of Q24 Classic and Q24 Plus available on request  
 4) Any external autonomous GPS solution which supports NMEA may be controlled via Open AT®  
 5) Denotes current version and beyond within the major range (refer to Open AT® OS & Plug-In brochure for more information)  
 6) Internet Plug-In includes TCP/IP features plus Email (POP3/SMTP) and File Transfer (FTP)  
 7) As temperature performance is linked to internal memory, please refer to full technical specifications for details.

**APPROVALS**  
 Regulatory - Entire GSM range is approved to R&TTE, GCF-CC (900/1800 MHz), PTCRB (850/1900MHz), FCC (USA) - CE (EMC & Safety)  
 - CDMA: IEC950, UL950, FCC (O9EQ2438F-M), CSA, IC-133, CDG1 & CDG2 (IS-98D, IS-898) & CDG3 (application specific)

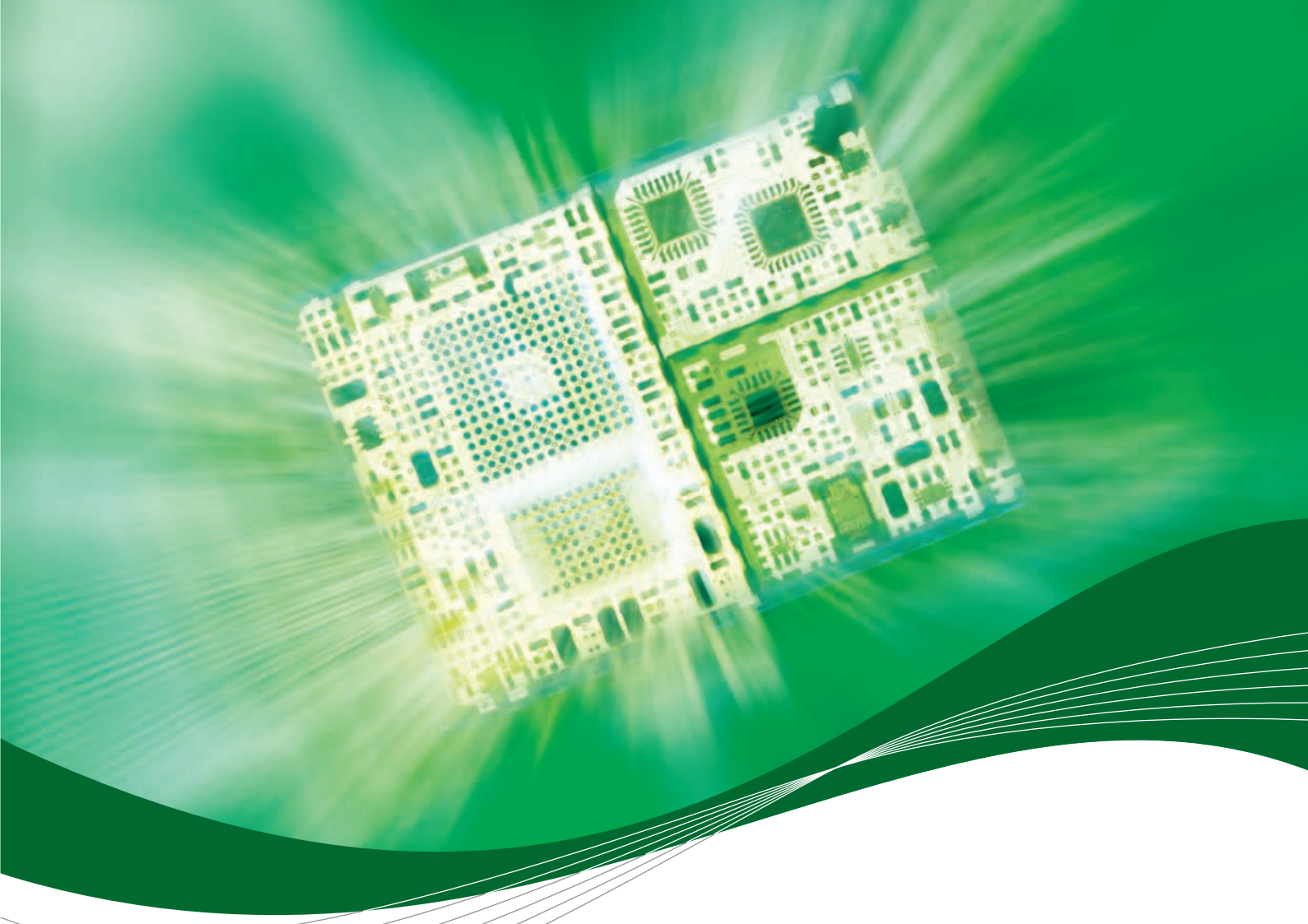
**RoHS COMPLIANCE**  
 All Wavecom Wireless CPUs are compliant with the RoHS Directive (2002/95/EC).

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## 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.

<p><b>EMBED YOUR APPLICATION</b></p> <p>Our Wireless CPUs are delivered with Open AT® software, which allows you to embed your application directly on the Wireless CPU.</p>	<p><b>PROTECT YOUR INVESTMENT</b></p> <p>Wavecom's Wireless CPUs are designed for a long life. And, Download-Over-The-Air capability ensures system longevity and reduced field maintenance.</p>	<p><b>RELY ON OUR LICENCE COVERAGE</b></p> <p>Wavecom provides essential Intellectual Property Right (IPR) coverage for all of the technologies offered in our products.</p>
<p><b>BENEFIT FROM AUTOMOTIVE QUALITY STANDARDS</b></p> <p>Selected by leading car makers, and manufactured by an ISO/TS 16949 certified manufacturing partner, our Wireless CPUs comply with the strictest quality standards.</p>	<p><b>GO FASTER TO MARKET WITH CARRIER APPROVALS</b></p> <p>Our Wireless CPUs are carrier approved in all our major global markets.</p>	



## Wireless CPUs

# 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 A PLUG & PLAY WIRELESS CPU TO EXISTING APPLICATIONS



#### FASTRACK SUPREME

Fastrack Supreme features an open-standard expansion card interface enabling developers to add additional IO connectivity or features like GPS, WiFi, Bluetooth, Zigbee and more.

- ARM9 core running Open AT® OS with DOTA II + Cache Memory
- Use Wavecom expansion cards or develop your own – available cards include additional IOs, USB and GPS
- Backwards compatible form factor with Fastrack M1306
- Forwards compatible with 3G capabilities such as video
- Improved power consumption
- Date and time internal battery backup



#### 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

### MAINTAIN EXISTING DESIGNS AND ADD VALUE



#### GR64

Optimized for global M2M communications, the GR64 is ideal for a broad spectrum of applications including fleet and asset management, POS, vending, security and metering.

- Industrial grade: -30°C to +75°C
- ARM9 based M2mpower C script application execution as standard
- Functionally comparable to GM47/GM48/GR47/GR48
- Integrated TCP/UDP/IP protocol stack
- Global GSM and GPRS operation



#### GS64

The highly compact and slimline GS64 is ideal for applications including PDAs, laptops and PND (Personal Navigation Devices), as well as time critical or intensive monitoring applications.

- Prosumer grade: -20°C to +55°C
- Ultra-compact size
- 2x UART & USB connectivity
- Embedded SIM holder option
- Global GSM and GPRS operation

### EMBED A QUIK WIRELESS CPU: ADD VALUE, REDUCE COST



#### NEW Q24 SERIES

This evolution of the hugely popular GSM Q24 Series extends the lifetime to more than 10 years, while bringing a range of new benefits to existing and new Q24 Series based product designs.

- Open AT® Operating System as standard
- ARM7 based native execution of ANSI C programs
- Embedded SIM holder option
- Global GSM and GPRS operation
- 5-way radio connectivity with high sensitivity
- Interchangeable with existing GSM Q24 Series
- Interchangeable with CDMA Q2438
- Choose from Q24 Classic, Q24 Plus, Q24 Extended or Q24 Auto



#### 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
- Available with or without RUIM capable OS
- CM52 CDMA Wireless CPU also available for automotive applications



#### CM52

Designed for the automotive market, the CM52 is fully certified by the largest CDMA carrier in the U.S.A. and designed into the telematics units of some of the world's premier car makers.

- CDMA/1xRTT + AMPS fallback
- High resistance to shock and vibration
- Extended temperature range
- Automotive manufacturing and certification including PPAP
- Aeris Microburst®

### MORE POWER, LESS SPACE

#### Q2686



Equipped with up to 44 GPIOs, the Q2686 is especially suited to applications which require a high number of connections. The Open AT® OS runs on an ARM9 core, providing applications with up to 87 MIPS (using VariSpeed).

- Open AT® OS with DOTA II + Cache Memory
- Open AT® Plug-Ins including TCP/IP and Internet
- Open AT® GTi compatible
- RTOS compatible; 32 bit, 104 MHz ARM9 core
- VariPower & VariSpeed for battery life optimisation
- Largest range of peripheral interfaces, including companion Bluetooth & GPS
- Global GSM and GPRS operation
- Extended temperature range



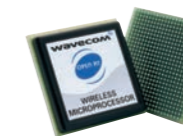
#### Q2687

Featuring new expansion port capability coupled with high speed wireless data technology, the Q2687 has the performance, flexibility and adaptability you need.

- Interchangeable with the Q2686; all Q2686 features
- Largest range of peripherals including a parallel bus as expansion port and new DAC
- Global GSM, GPRS and EDGE operation
- Microsoft® Windows Mobile® 5 compatible
- USB and RIL drivers available

### MINIMIZE PARTS, MAXIMIZE PERFORMANCE

#### WMP100 & WMP150



Wavecom's new Wireless Microprocessor series redefines total cost of ownership via its fully automated machine placement form factor (no IO/Radio connectors), companion wireless Plug-Ins and multitasking operating system.

- Low latency Open AT® Multitasking OS as standard
- ARM9 based real time native ANSI C program execution
- Supports Open AT® GTi for complex graphics display based products
- Supports companion Bluetooth and GPS Open AT® Plug-Ins
- Machine placed to optimise parts & manufacturing costs
- Dedicated Automotive (WMP150) OS features