



Introducing the new
Q24 family with OS 6.57



Securing the future

Version 5.0

wavecom[®]
Make it wireless

OS6.57/Q24: Product Offer

Our Product Offer

Solution Intro.

Wireless CPU

Open AT® OS

Open AT® Apps

Open AT® IDE

Open AT® Plug-Ins

DOTA

IPR

Quality

Packages

Pro Services

Support

- Wavecom solutions are at the **centre** of wireless enabled applications.
- By utilising all 3 core elements of our product wheel, the **Total Cost of Ownership** can be significantly reduced compared to **modem only** solutions.



OS6.57/New Q24 family: Introduction

Our Product Offer

Solution Intro.

Wireless CPU

Open AT® OS

Open AT® Apps

Open AT® IDE

Open AT® Plug-Ins

DOTA

IPR

Quality

Packages

Pro Services

Support

→ OS 6.57 on the new Q24 family is the entry level range of embedded wireless processing solutions from Wavecom that:

- brings **Wireless Computing Power** for Automotive, industrial M2M and Mobile Professional applications,
- supports as standard, the most powerful **Cellular Embedded Application Environment**
- Has a **large set of hardware interfaces** available
- is **interchangeable** with the previous **Q24 Series and CDMA products**.
- works on **any global GSM network**, thanks to **Quad Band*** and **Codec**** capability



*850MHz,900MHz,1800MHz,1900MHz

**HR (upon request),FR,EFR,AMR

Solution Positioning: Replacing the existing Q24 series and more...

Our Product Offer

Solution Intro.

Wireless CPU

Open AT® OS

Open AT® Apps

Open AT® IDE

Open AT® Plug-Ins

DOTA

IPR

Quality

Packages

Pro Services

Support

| Plug, Play & Customise | | Embedded Customer Solutions | | Tracking | |
|---|--|--|--|---|--|
| <p>CDMA</p> <p>Q2438: Dual band Single sided CDMA 1xRTT gpsOne New: TCP/IP</p> <p>Q2458: Single band CDMA 1xRTT TCP/IP Hot swap Q2438</p> <p>1H 2007</p> | | <p>OS 6.60 / Q2686:* Wireless Computing Power ARM9, 104MHz Open AT® 4.0 USB & PCM RF Connector Up to 44 GPIO Quad Band GPRS Cl.10</p> <p>1Q 2006</p> | | <p>OS 6.61 / Q2687:* RTOS Wireless CPU OS6.60 / Q2686 + Microsoft® Windows® Mobile™ Parallel port & DAC GT1800 (HMI dev suite) EDGE cl10, GPRS cl12</p> <p>2Q 2006</p> | |
| <p>GSM</p> <p>Q2400A: 900/1800 GSM Only</p> <p>Q2406A: 900/1800 GPRS Cl.10</p> <p>Q2406B:* 900/1800 GPRS Cl.10</p> <p>Q2426B:* 850/1900 GPRS Cl.10</p> <p>Q2501B:* Open AT® 3.0 GPS 16 900/1800 GPRS Cl.10</p> <p>TCP/IP Plug-In Available Everywhere</p> | | <p>Open AT® and...</p> <p>* Added Value Solution Packages: → TCP/IP Plug-In or Internet Plug-In → Orange M2M Connect Plug-In → IBM MQ Telemetry Transport Plug-In → Bluetooth OS Component → Open AT® GTi (HMI Developer Suite)</p> | | | |

WAVECOM©2005. All rights reserved



Solution Positioning: Replacing the existing Q24 series and more...

- Our Product Offer
- Solution Intro.**
- Wireless CPU
- Open AT® OS
- Open AT® Apps
- Open AT® IDE
- Open AT® Plug-Ins
- DOTA
- IPR
- Quality
- Packages
- Pro Services
- Support

| Q24 Classic | Q24 Plus | Q24 Extended | Q24 Auto |
|--|---|---|---|
| | | | |
| Quad band GSM only 1 to 6 MIPS -20/+55°C | Quad band GSM / GPRS 9 to 12 MIPS -20/+55°C | Quad band GSM / GPRS 9 to 12 MIPS -20/+55°C | Quad band GSM / GPRS 9 to 13 MIPS -30/+75°C MMS connector Numerous plug-ins Automotive qualified Traceability |
| Replaces Q2400A | Replaces Q2406B, Q2426B | | Replaces Q24-C |

Samples: End July 2006
Mass production: End November 2006

More choice, more capabilities, more reliability, more stability, extended life span, with the same form factor

OS6.57/New Q24 family: Wireless CPU

Our Product Offer

Solution Intro.

Wireless CPU

Open AT® OS

Open AT® Apps

Open AT® IDE

Open AT® Plug-Ins

DOTA

IPR

Quality

Packages

Pro Services

Support

- Ensuring extended life span of the Q24 family:
 - Planned end of life of major components of the current Q24 series
- Capitalising on the acquired experience to offer a state of the art product
 - Hardware and software design
 - Production, testing, supply chain
- Developed in order to ensure the smoothest transition
 - No mechanical changes (as compared to Q24 series)
- Whenever possible, add value to the customer:
 - Quad band,
 - 5 Embedded RF connections possibilities [2 x UFL, MMS, IMP, solder cable]
 - Embedded SIM holder available [in option]
- Reducing all risks and ensuring delivery in due time

OS6.57/New Q24 family: Open AT[®] Operating System

Our Product Offer

Solution Intro.

Wireless CPU

Open AT[®] OS

Open AT[®] Apps

Open AT[®] IDE

Open AT[®] Plug-Ins

DOTA

IPR

Quality

Packages

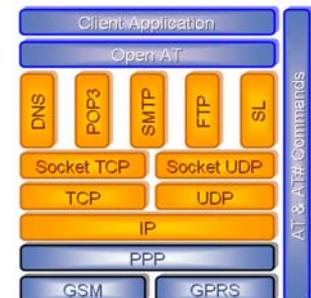
Pro Services

Support

→ At the heart of the new Q24 family beats the powerful **Wavecom Open AT[®] Operating System 6.57** that provides:



- **Open AT[®]** application environment: **Embed your own ANSI C** application and reduce your costs
- **TCP/IP Plug-In** as standard for Plus, Extended and Auto products with the new Wavecom IP stack:
 - **Basic** Internet Protocols : TCP/IP/UDP/DNS
 - **Extended** Clients : Email (POP3, SMTP), File Transfer (FTP)
- **VDA2C** audio **echo cancellation, noise reduction**
- Rapid battery charger,
- ENS,
- Fast Network Registration,
- GSM 27.010 multiplexing,
- Bluetooth SAP client,
- OS roadmap for additional features to come...



OS6.57/new Q24 family: Open AT[®] Applications

Our Product Offer

Solution Intro.

Wireless CPU

Open AT[®] OS

Open AT[®] Apps

Open AT[®] IDE

Open AT[®] Plug-Ins

DOTA

IPR

Quality

Packages

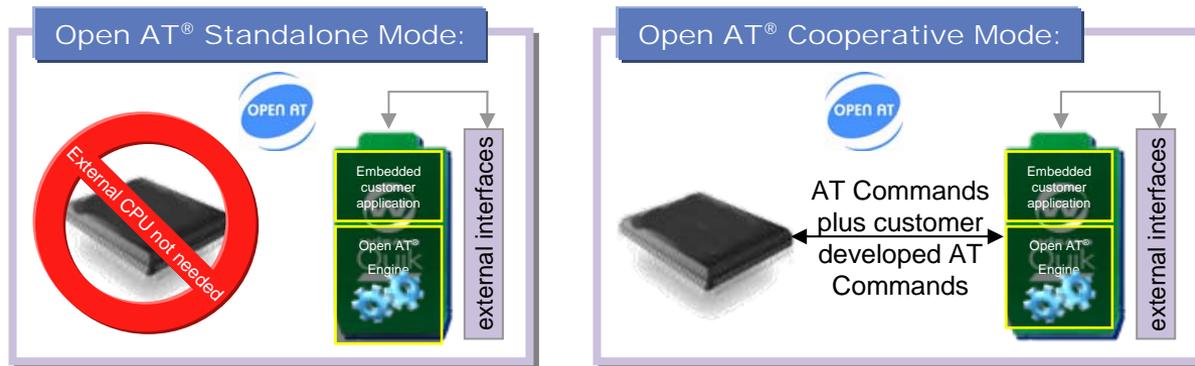
Pro Services

Support

→ **Open AT[®]** is the worlds leading **CELLULAR EMBEDDED APPLICATION ENVIRONMENT** for the creation of innovative

applications because it allows you to:

- **develop** and **execute** your applications **directly** on Wavecom Wireless CPUs,
- **eliminate** external host **processors, memory & discretés** & associated design costs
- **reduce** the total **cost of ownership** for **end-to-end solutions**,
- **reduce** the physical **size** of the end product,
- **reduce** the **power consumption** using a range of dedicated low power modes,
- **update** your application using **DOTA** to release new features or correct software issues
- **secure** your **investment** in your **intellectual property** via copy and reverse engineering protection,
- **develop** new **features** on the Wireless CPU while other suppliers have to make new devices.



OS6.57/New Q24 family: Open AT[®] IDE

Our Product Offer

Solution Intro.

Wireless CPU

Open AT[®] OS

Open AT[®] Apps

Open AT[®] IDE

Open AT[®] Plug-Ins

DOTA

IPR

Quality

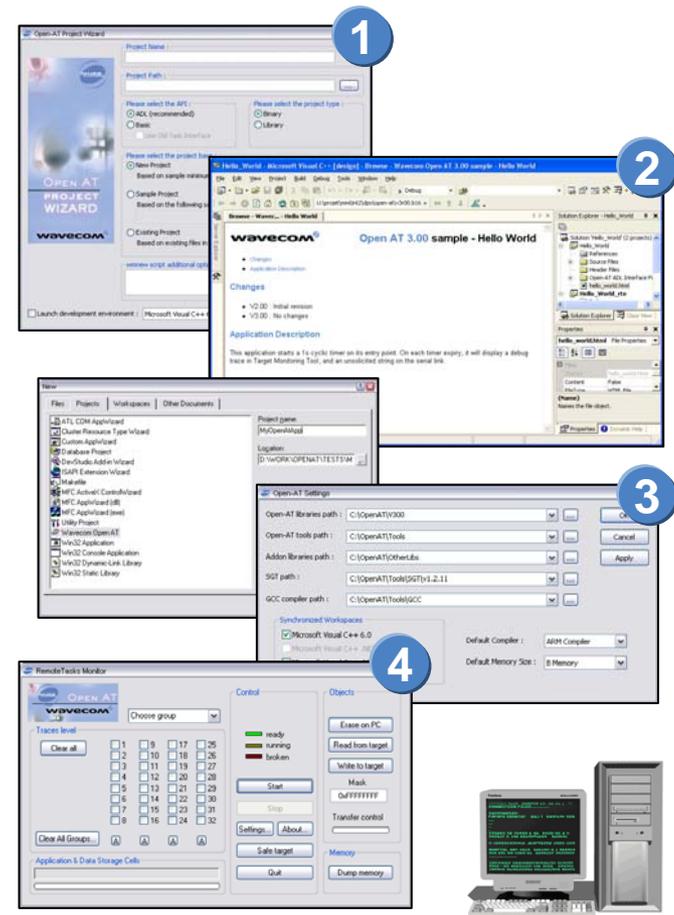
Packages

Pro Services

Support

→ The Open AT[®] Development Environment provides a **rich set of easy to use graphical tools:**

- 1 **Open AT[®] Project Wizard**
 - 2 **Visual C++ Development Environment**
 - 3 **Open AT[®] Settings Application**
 - 4 **Remote Task Monitor**
- HTML Help**



OS6.57/New Q24 family: Open AT[®]-Plug-Ins

Our Product Offer

Solution Intro.

Wireless CPU

Open AT[®] OS

Open AT[®] Apps

Open AT[®] IDE

Open AT[®] Plug-Ins

DOTA

IPR

Quality

Packages

Pro Services

Support

➔ Thanks to the **flexibility** provided by the Open AT[®]-Plug-Ins, **add functionalities** if and when requested:

| | Q24 Classic | Q24 Plus | Q24 Extended | Q24 Auto |
|-----------------|-------------|----------|--------------|----------|
| TCP/IP | | ● | ● | ● |
| Internet | | ● | ● | ● |
| GTi Mono | | ● | ● | ● |
| GTi Colour | | | | |
| IBM MQ-TT | | ● | ● | ● |
| Orange M2MC | | ● | ● | ● |
| Open SIM access | | | | |
| Bluetooth | | ● | ● | ● |
| Security | | | | |
| C-GPS | | | | |

OS6.57/New Q24 family: Download Over The Air

OPEN AT

Our Product Offer

Solution Intro.

Wireless CPU

Open AT® OS

Open AT® Apps

Open AT® IDE

Open AT® Plug-Ins

DOTA

IPR

Quality

Packages

Pro Services

Support

→ DOTA Type 1 : Open AT® Application

- Update your applications remotely in the field*.
- Save costs of visiting or recalling product from the field.
- Use it to deliver new features or rectify abnormalities.

Open AT®

WISMO
Operating
System

→ DOTA Type 2 : Wavecom Operating System

- OS 6.57 allows you to download the entire Wavecom Operating System over the air.

Open AT®

WISMO
Operating
System

→ Both DOTA Types are designed to increase service revenue for System Integrators and Service Providers.

DOWNLOAD OVER THE AIR

**1.2MByte available for customer application download*

OS6.57/ New Q24 family: Intellectual Property



Our Product Offer

Solution Intro.

Wireless CPU

Open AT® OS

Open AT® Apps

Open AT® IDE

Open AT® Plug-Ins

DOTA

IPR

Quality

Packages

Pro Services

Support

→ When choosing a cellular solution supplier, it is critical that the GSM* IPR is covered.

→ **The Law:** *“Any product manufacturer integrating GSM technology shall pay royalties owed to third parties in respect of essential Intellectual Property Rights to Patent Holders”*

→ This can represent **up to 20%** of the price of the final product

→ Our selling prices include IPR coverage: our customers do not have to pay anything more: **AN IPR INCLUSIVE OFFER**

→ The low end modules manufacturer companies do not have this coverage in their product:

OEM manufacturers using module suppliers not covering IPR cannot export to Europe and the USA

→ Many customers and **even our competitors** are coming back to us in order to be able to export their products.

**CDMA IPR also covered for CDMA products*

OS6.57/ New Q24 family: Quality Assurance

Our Product Offer

Solution Intro.

Wireless CPU

Open AT® OS

Open AT® Apps

Open AT® IDE

Open AT® Plug-Ins

DOTA

IPR

Quality

Packages

Pro Services

Support

- All Wavecom products are manufactured at Solectron, Suzhou which is certified to automotive standards:
 - ISO TS 16949
- **Fully Certified** to R&TTE directive, CE marking, GCF-CC, FCC/PTCRB, China RTE, Industry Canada
- Reliability:
 - T0: 200 ppm
 - 1 year: 300 ppm
- RoHS* compliant
 - EU Green Policy Directive



*Restriction of Hazardous Substances

OS6.57/New Q24 family: Wavecom Professional Services

Our Product Offer

Solution Intro.

Wireless CPU

Open AT® OS

Open AT® Apps

Open AT® IDE

Open AT® Plug-Ins

DOTA

IPR

Quality

Packages

Pro Services

Support

→ Wavecom provide a range of professional services to help customers deliver applications to market in record time. Here are just a few:

IMEI Triple Offer



- **CUSTOMER:** Let Wavecom download your personal IMEI
- **WAVECOM:** Use Wavecom approved IMEI
- **INACTIVE:** Get default IMEI and reprogram in your facility

Open AT® University

- **Get your developers professionally trained by a qualified instructor**
- **Open Sessions run quarterly**
- **Private sessions on demand**

Open AT® Code Review

- **Source code review (under NDA)**
- **Extensive evaluation report**
- **Essential educational tool for both experienced and new developers**

OS6.57/New Q24 family: Wavecom Support

Our Product Offer

Solution Intro.

Wireless CPU

Open AT® OS

Open AT® Apps

Open AT® IDE

Open AT® Plug-Ins

DOTA

IPR

Quality

Packages

Pro Services

Support

→ Wavecom's wireless expertise is available for you to maximise your potential...

→ Extensive Online Support

- Sales & Marketing materials
- Extensive FAQ database
- Technical Documentation
- Carrier certification
- Type approval certificates & reports*
- Free Application Notes on website*
- Latest OS releases*
- Open AT® SDK downloads*
- Automatic updates via mailing list subscription*

→ Online OS Developers Forum

- Free community in which to openly discuss any aspect relating to Wavecom OS, including Open AT® open to all Wavecom customer developers.

Generic - New AN Template

| Number | Title | Category | Download |
|--------|-----------------------------------|--------------|----------|
| A001 | Call Management with Keypad | Basic | |
| A002 | Hands Free Speaker Phone | Intermediate | |
| A003 | - | - | - |
| A004 | Floating Point Arithmetic Library | Basic | |
| A005 | Auto TCP Socket Data connection | Intermediate | |
| A006 | Graphical Engine & LCD Driver | Intermediate | |

Application Note Examples

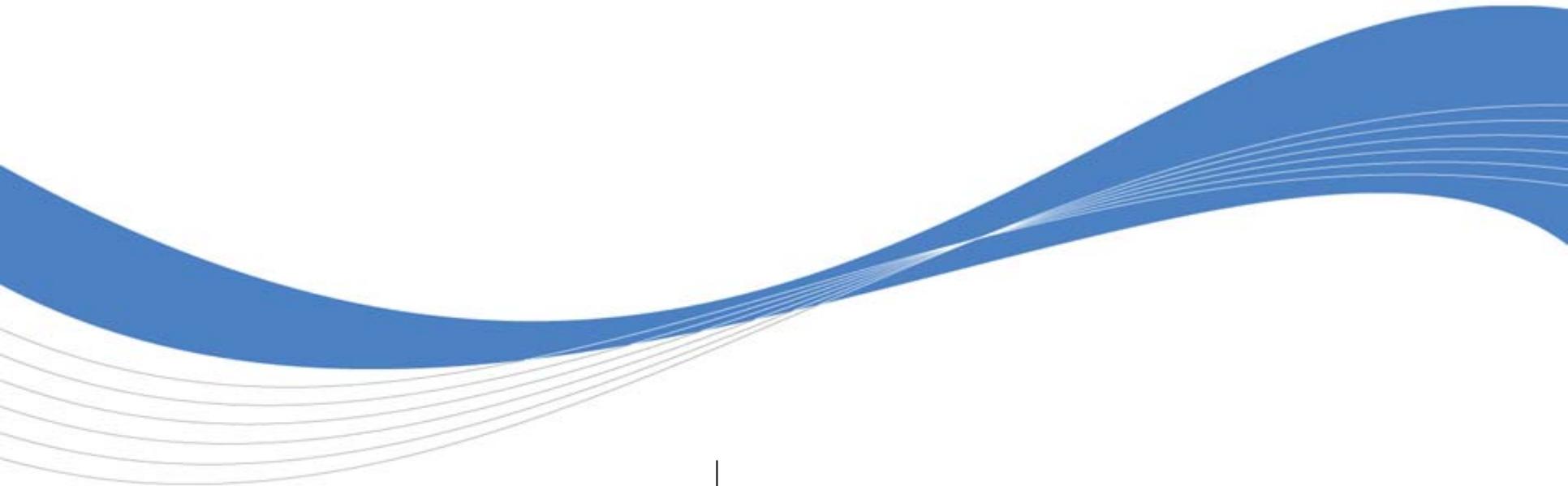
Generic - Original AN Template

| Number | Title | Category | Download |
|--------|--|--------------|----------|
| EOS005 | Creating an Open AT 2.x Library | Basic | |
| EOS007 | Porting Open AT application from WM library to ADL library | Intermediate | |
| EOS008 | Modified AT commands and API Interfaces for UART2 | Basic | |
| EOS009 | Suspending & resuming Open AT applications with interrupt mode | Basic | |
| EOS010 | Steps to create a DWL file for Open AT ADL application | Basic | |
| EOS011 | Using FEM flow in an Open AT application | Basic | |
| EHW016 | Bluetooth Interface for AT x55 | Advanced | |
| EHW001 | Q25 Dead Reckoning | Basic | |
| EHW002 | CAN V2.0B Interface | Intermediate | |
| EHW003 | USB 1.1 Interface | Intermediate | |
| EHW004 | USB 2.0 Interface | Intermediate | |

www.wavecom.com/support

www.wavecom.com/approvals

*Requires customer login account (request from your sales manager)



THANK YOU

Appendices Follow

Appendix 1: What Is The Wavecom Open AT[®] OS?

“I am the powerful brain that listens, thinks & acts.”

The **embedded upgradeable software** in Wavecom hardware platforms that accepts **inputs** and **commands** from **external peripherals/interfaces** such as a keyboard, SIM, cellular network, analogue & digital inputs, in addition to **internal programs** running under **Open AT[®]** and **reacts to/responds** to these inputs by performing **simple** or **complex calculations** and **tasks**, **changing the state** of the external peripherals/interfaces that it connects to and **communicating with external networks** such as the internet.



A few examples:

- A simple external AT[®] command issued to set up a call or send an SMS in a car alarm.
- An Open AT[®] application making an API command request to the OS to turn on a warning horn and send an SMS to indicate a flood in a remote part of the world.
- A pre-set time activated alarm that wakes up the OS and Open AT[®] to connect the hardware platform to the cellular network to send an electricity meter report via email and then go back to sleep.
- A soft drinks vending machine Open AT[®] application downloads the prices for the day and a multimedia sales promo via FTP.
- A complex graphical user interface for a wireless local loop phone that is driven by a keyboard and an LCD display.
- A new Open AT[®] application or the entire OS is downloaded over-the-air.
- Intelligent monitoring and charging of the Lilon battery.

Operating Temperature

- Q24 Classic and Q24 Plus are compliant with the following operating classes:

| Conditions | Temperature range |
|---------------------|---|
| Operating / Class A | -20 °C to +55°C for GSM 850 / 900 -10°C to +55°C for GSM 1800/1900 |
| Storage | -40 °C to +85°C |

- Q24 Extended and Q24 Automotive are compliant with the following operating classes:

| Conditions | Temperature range |
|---------------------|--|
| Operating / Class A | -20 °C to +55°Cfor GSM 850 / 900 -10°C to +55°C for GSM 1800/1900 |
| Operating / Class B | -30 °C to +75°C |
| Operating / Class C | -40°C to + 85°C |
| Storage | -40° to + 85°C |

Mechanical overview

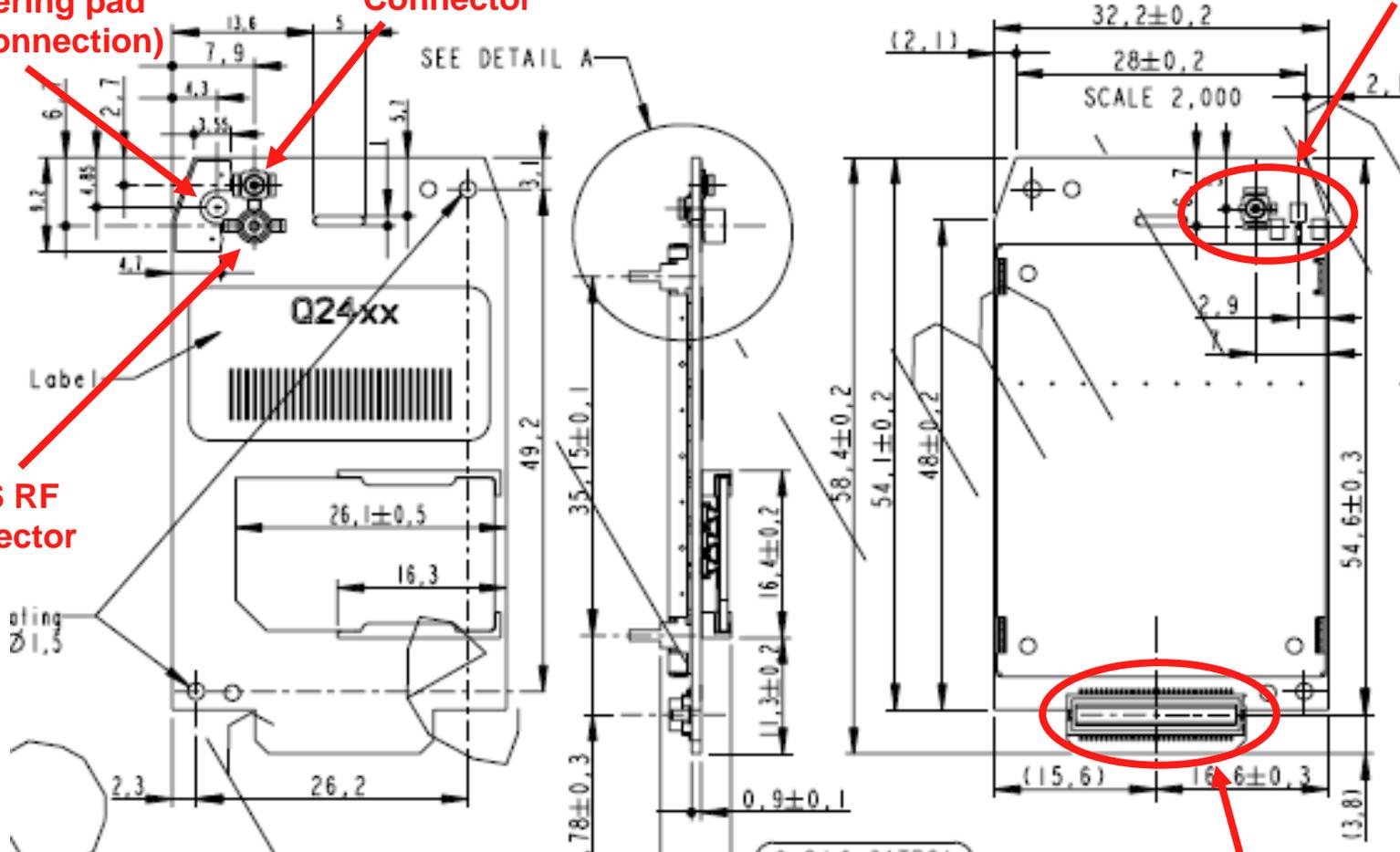
Soldering pad
(RF Connection)

UFL RF
Connector

UFL or IMP
RF Connector

MMS RF
Connector

60 pins GPC Connector



Mechanical overview: Quick comparison with Q24xx

- Same PCB shape
- Same GPC 60 pins connector
- Same legs position
- Shielding rationalised with no impact on the design
- Only change in soldering pad position and MMS connector:

