Introducing the new Q24 family with OS 6.57

Securing the future

OS 6.57

New Q24

Version 5.0

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L1

OS6.57/Q24: Product Offer
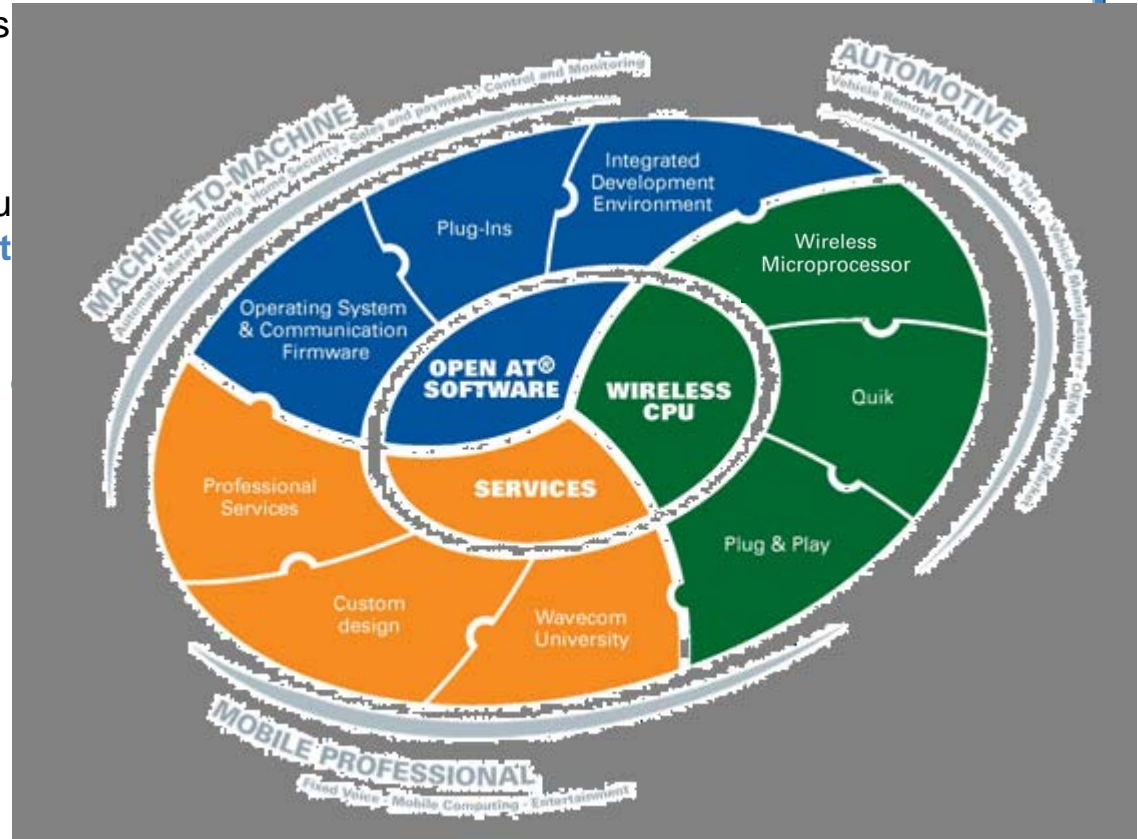
→ Wavecom solutions are at the **centre** of wireless enabled applications.

→ By utilising all 3 core elements of our product wheel, the **Total Cost Ownership** can be significantly reduced compared to **modem** solutions.

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OS6.57/New Q24 family: Introduction

➔ 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

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

Plug, Play & Customise

Embedded Customer Solutions

Tracking

CDMA

Q2458:
Single band
CDMA 1xRTT
TCP/IP
Hot swap Q2438

1H 2007

Q2438:
Dual band
Single sided
CDMA 1xRTT
gpsOne
New: TCP/IP

RoHS COMPLIANT

Class leading

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

1Q 2006

OS 6.61 / Q2687:
RTOS Wireless CPU
OS6.60 / Q2686 +
Microsoft® Windows® Mobile™
Parallel port & DAC
GTI800 (HMI dev suite)
EDGE cl10, GPRS cl12

2Q 2006

GSM

Open AT®

Q2406B:
900/1800
GPRS Cl.10

Q2426B:
850/1900
GPRS Cl.10

Q2501B:
Open AT® 3.0
GPS 16
900/1800
GPRS Cl.10

Open AT® and...

RoHS COMPLIANT

Q2406A:
900/1800
GPRS Cl.10

Q2400A:
900/1800
GSM Only

TCP/IP Plug-In Available Everywhere

* 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)

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Solution Positioning: Replacing the existing Q24 series and more…

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 1...	...	...PRS ...13 MIPS -30/+75° C MMS connector Numerous plug-ins Automotive qualified Traceability
Optio...			
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

➜ 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

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

➔ 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…
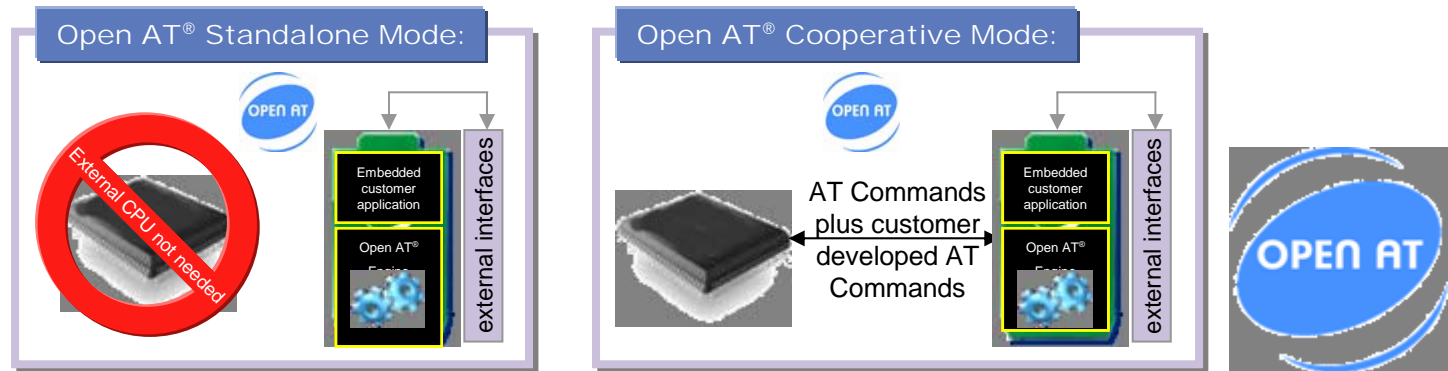
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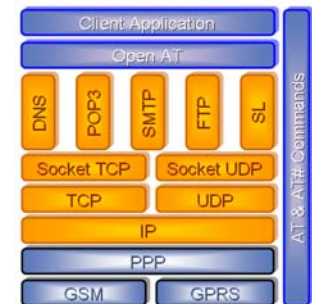
OS6.57/new Q24 family: Open AT® Applications

→ **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** & **discretes** & 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.

Open AT® Standalone Mode:

External CPU not needed

OPEN AT

Embedded customer application

Open AT® Engine

external interfaces

Open AT® Cooperative Mode:

OPEN AT

AT Commands plus customer developed AT Commands

Embedded customer application

Open AT® Engine

external interfaces

OPEN AT

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OS6.57/New Q24 family: Open AT® IDE

➔ 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

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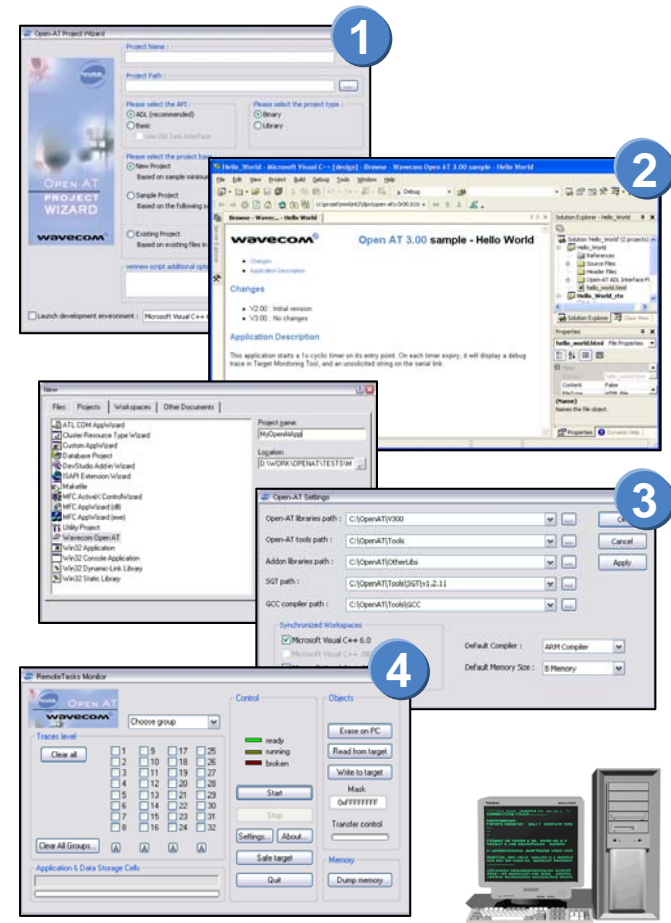
OS6.57/New Q24 family: Open AT®-Plug-Ins

➔ 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				

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➔ **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®

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®

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

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OS6.57/ New Q24 family: Intellectual Property

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

GSM
GLOBAL SYSTEM FOR
MOBILE COMMUNICATIONS

➔ **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

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OS6.57/ New Q24 family: Quality Assurance

➔ 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

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OS6.57/New Q24 family: Wavecom Professional Services

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

Open AT® University

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

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® Code Review

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

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OS6.57/New Q24 family: Wavecom 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*

Application Note Examples

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	

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 FCM 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

➔ **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.

www.wavecom.com/approvals

Requires customer login account (request from your sales manager)

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THANK YOU | Appendices Follow

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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 LiIon battery.*

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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:**

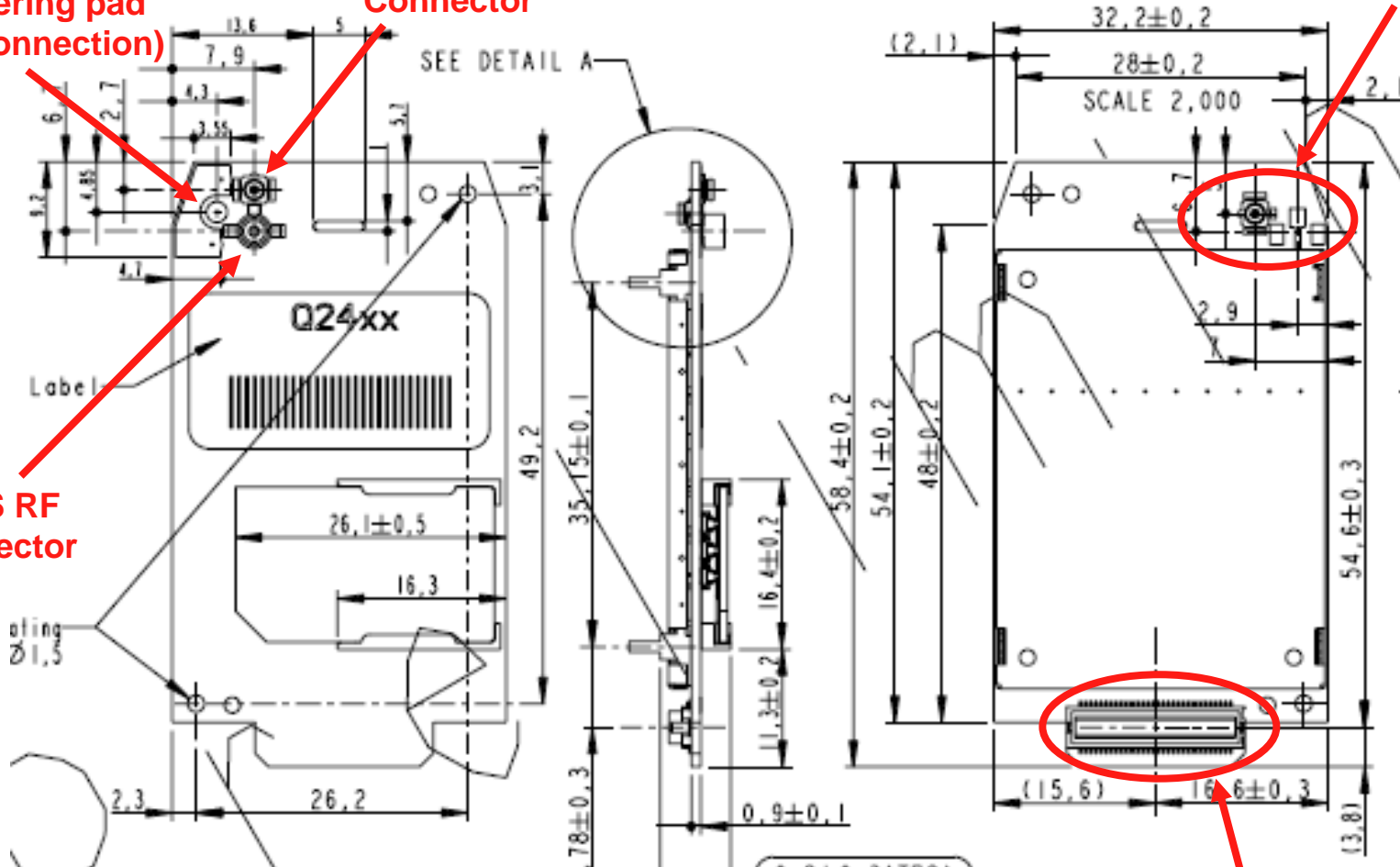| Conditions	Temperature range
Operating / Class A	-20 °C to +55°Cfor GSM 850 / 900 -10°C to +55°C for GSM 1800/1900
Operating / Class B	-30 °C to +75°C
Operating / Class C	-40°C to + 85°C
Storage	-40° to + 85°C

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Mechanical overview

UFL RF Connector

Soldering pad (RF Connection)

UFL or IMP RF Connector

MMS RF Connector

60 pins GPC Connector

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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:**

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