IoT Portfolio

INELTEK GmbH · Hauptstrasse 45 · 89522 Heidenheim/Germany
Phone +49 7321 9385 0 · Fax +49 7321 9385 95 · info@ineltek.com · www.ineltek.com

Design-In-Expertise And Service

IoT Manufacturer Overview

Atmel
A Subsidiary of Microchip Technology Inc.

BOSCH
Invented for life

ams

imagin Orient
EUROPE

MagnaChip

MICRO CRYSTAL SWITZERLAND

MICROCHIP

HANTRONIX

renata batteries

EPSON
EXCEED YOUR VISION

REDPINE SIGNALS®

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Content

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Microcontroller | Wireless | Security | Sensor & Sensor Frontend

Display | Capacitive Touch | Batteries & Wireless Charging | Timing Devices

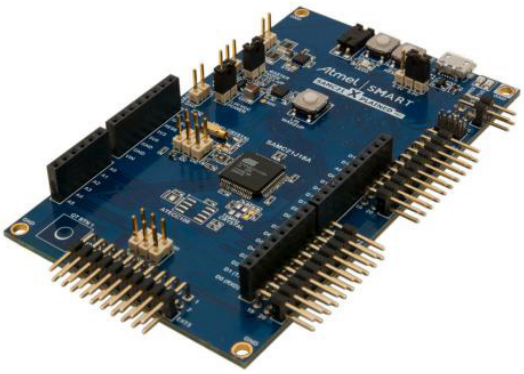
1. Atmel MPUs and MCUs

1.1 SAM A5 MPUs

ARM® Cortex®-A5 based microprocessor platforms running up to 536 MHz (850 DMIPS), Linux support, Gigabit Ethernet, dual CAN, security, FPU, NEON, hardware video decoder, TFT controller.

1.2 SAM E90 MCUs

High-performance **ARM® Cortex®-M7** core-based MCUs running up to 300 MHz (1500 CoreMark) with up to 2 MB Flash and 384 KB SRAM, FPU with double precision, 10/100 Ethernet MAC, dual CAN-FD, CMOS image sensor interface, security, dual 2 Msps 12 bit ADC, HS USB Host and Device.



1.3 SAM S70 MCUs

High-performance **ARM® Cortex®-M7** core-based MCUs running up to 300 MHz (1500 CoreMark) with up to 2 MB Flash and 384 KB SRAM, FPU with double precision, CMOS image sensor interface, security, dual 2 Msps 12 bit ADC, HS USB Host and Device.

1.4 SAM G MCUs

Ultra-low-power and high performance **ARM® Cortex®-M4** core with FPU running up to 120 MHz. Very small package 3x3 mm 49-ball WLCSP package, 12 bit ADC, DMA, up to 512 KB Flash and 176 KB SRAM, low power consumption at <100 µA/MHz, well suited for all kind of wearable computing.

1.5 SAM L MCUs

ARM® Cortex®-M0+ based MCU running up to 48 MHz, up to 256 KB embedded Flash and 40 KB SRAM, **low power consumption at <35 µA/MHz**, DMA, Sleepwalking and Event system, FS USB host & device, 3 OpAmps, 2 analog comparators, programmable logic block, 12 bit ADC with 20 channels.

1.6 SAM C MCUs

ARM® Cortex®-M0+ based MCU running up to 48 MHz, up to 256 KB embedded Flash and 32 KB SRAM, **2,7 V to 5,5 V operating voltage**, two 12 bit ADCs, **CAN-FD**, LIN (master/slave), 16 bit Sigma Delta ADC, Divide and square root accelerator.

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1.7 SAM D MCUs

ARM® Cortex®-M0+ based MCU running up to 48 MHz, up to 256 KB embedded Flash and 32 KB SRAM, **wide range of pin count and memory** size from 8 KB Flash/14 pin to 256 KB Flash/64 pin, USB, motor control timers, automotive versions, temperature range -40°C to 125°C.

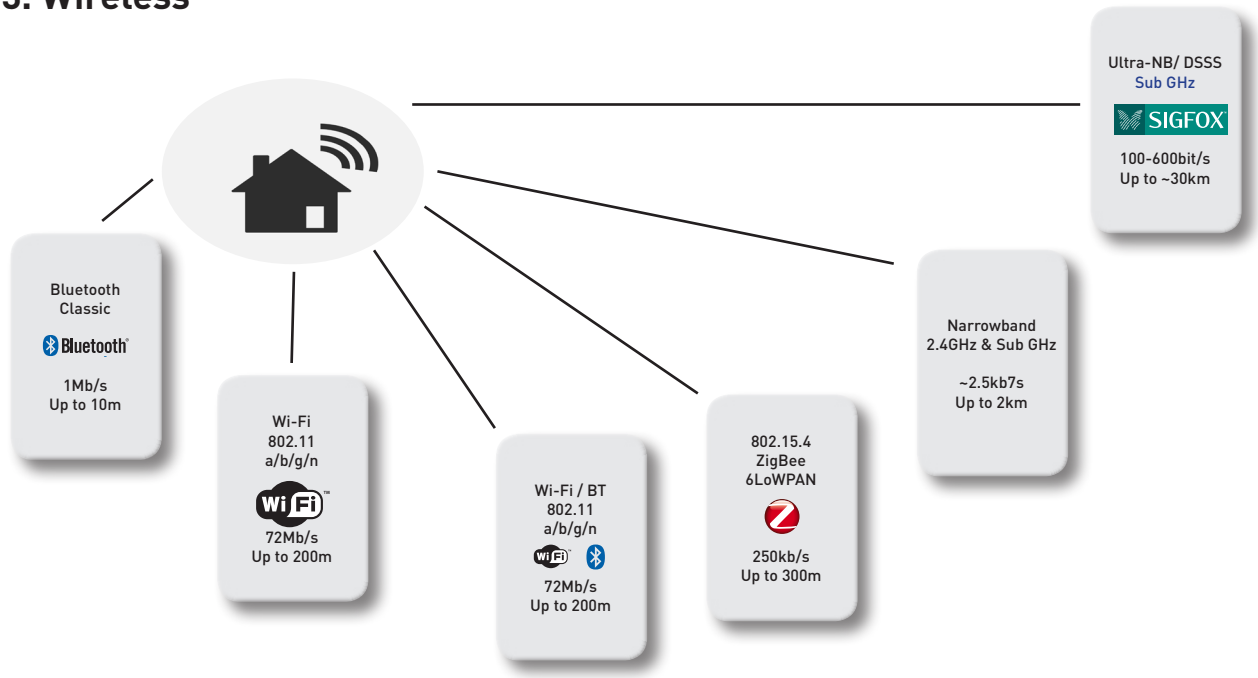
1.8 Microchip MCUs

- 8-bit PIC-MCUs
- 16-bit PIC24 MCUs and dsPIC Digital Signal Controller
- 32-bit MIPS based Microcontroller

2. MAC Series Serial EEPROMs

Value added serial EEPROMs with pre-programmed **128 bit unique serial numbers and MAC addresses** available from Atmel and Microchip.

3. Wireless



3.1 Wi-Fi Connectivity Schemes

- Standalone IoT solution PIC32WM/WM32 or SAMW25 series
- Network controller RN17x/18x or WINC1500 series
- Link controller MRF24WG/WN or WILC1000 series

3.2 Bluetooth SMART Product Types

- Bluetooth SMART and microcontroller - SAM B11
- Bluetooth SMART link controller - BTLC1000
- RNxxxx Bluetooth companion and standalone modules

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3.3 Wi-Fi + Bluetooth SMART - Combo

ATWINC3400 System on Chip with Wi-Fi & Bluetooth SMART

3.4 LoRa & SIGFOX

Low power wide area network, wireless connectivity over several kilometers. Ultra low power enables battery life time of several years

3.5 Redpine n-Link™ Family

- Single Stream Wi-Fi (2.4/5GHz) module,
- Single Stream Wi-Fi (2.4/5GHz), BT 4.0 Dual Mode and ZigBee® combo module
- Multi Protocol Wireless Mini PCI Express (PCIe) Card

3.6 Redpine Connect-io-n™ Family

- Single stream Wi-Fi (2.4/5GHz) embedded module
- Single stream Wi-Fi (2.4/5GHz), BT 4.0 dual mode and ZigBee embedded combo module

3.7 Redpine WiSeConnect™ Family

- Single stream Wi-Fi (2.4/5GHz) advanced embedded combo module,
- Single stream Wi-Fi (2.4/5GHz), BT 4.0 dual mode and ZigBee embedded combo module

4. Security

SHA / AES / ECC based authentication engines with ultra-secure hardware data & key storage.

5. Sensors & Sensor Frontends

Bosch Sensortec: Motion Sensors

3/6/9-axis sensors with **Gyroscope, eCompass, Accelerometer, Sensor Hub solution** with 9-axis absolute orientation sensor running FusionLib software.

Environmental Sensors

Pressure sensors and integrated enviromental units (pressure, humidity, temperature)

Epson: **Very high precision** Gyro Sensors, IMUs, 6DOF inertial sensors, Accelerometer and Inclinometer.

ams: Chemical sensors, optical sensors (ambient light/color/proximity/gesture), lightning sensor, rotating and linear magnetic position sensors, HF / UHF interface and sensor Tag, **high precision capacitive+resistiv sensor front ends. CMOS Imaging Sensors**.

MagnaChip: Humidity sensor, e-Compass, programmable digital hall sensor.

Microchip Temperature sensors, **current sensors, analog front ends, thermocouple converter**

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6. Display & Display Controller

TFTs from 2,2"-15,0", Electronic Paper Displays (**EPD**) from 1,43"-31,2", **OLED** displays, custom specific LCDs. Highly integrated display controller with resolution from 2.40 x 3.20 to 800 x 480 with integrated VRAM.

7. Touch Control

Custom capacitive touch solutions for TFT- and EPD displays, Atmel Cortex M0+ products with **Peripheral Touch Controller (PTC)**, **mTouch-Metal overCap Technology allows non segmented metal surfaces.**

8. Batteries

Standard Lithium coin cells, standard **LiPo rechargeable batteries** from 33 mAh to 2700 mAh, custom specific versions. Battery charging, supervision and management ICs.

9. Timing Devices

32 KHz Crystals, standard RTCs, RTCs with automatic temperature compensation, **RTCs with ultra low current consumption**, radio receivers for time code, MEMS based ascillators.

10. Ineltek Support

Time to Market has never been more important than it is today. The ability to quickly capitalise on investment is critical to all businesses. By shortening the development cycle, there are two distinct advantages for your business: your development costs are minimised and the opportunity to gain competitive advantage from technological advances in your products is maximised.

The ramification of this development proves to be a major challenge as well as a tremendous dilemma for any Design Engineer. For one thing, whilst organisations have to zero in on the complex business of component selection, they need to simultaneously worry about the success of their projects. As well as this, it is vital to select the most suitable product in terms of price and technical compatibility. In conjunction with the wide range of products and product announcements, this task becomes increasingly challenging.

This is the point where we are able to add true Value.

Through our in-depth, long-term experience of electronic components and displays, we are able to advise the appropriate solution for your applications which:

- best fits your requirements
- meets the available budget
- is available for the lifetime of your product

We are on hand to help and advise you during the training period as well. Considering the current complexity of microcontrollers and their toolsets, you can waste a lot of time on research and on trial and error in development. You can save a great deal of this time with specific product training by Ineltek.

Technical questions and issues frequently arise, especially during the development period. Ineltek helps and advises on site, by phone or via e-mail to help ensure a fluid development phase. Our team of experienced and well educated Application Engineers is the foundation of the service we provide.

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Contact

HEADQUARTER

INELTEK GmbH
Hauptstrasse 45
89522 Heidenheim
Phone: +49 7321 93850
Email: info@ineltek.com
Web: www.ineltek.com

INELTEK GmbH
Zur Alten Baumschule 9
82418 Murnau-Seehausen
Phone: +49 8841 48870

INELTEK Ltd.
Unit 2B Saturn House
Calleva Park, Aldermaston
Berkshire, RG7 8HA
United Kingdom
Phone: +44 1189 703388
Email: info@ineltek.co.uk

Anatronic S.A.
Rua Capitão Leitão, N° 26 - 1°Esq
2800-132 Almada
Portugal
Phone: +351 21 9376267
Email: info@anatronic.com
Web: www.anatronic.com

German Offices

INELTEK Nord GmbH
Lindenallee 84c
22869 Schenefeld
Phone: +49 40 839604 0

INELTEK GmbH
Nizzastrasse 6
01445 Radebeul
Phone: +49 351 87376350

INELTEK Mitte GmbH
Industriestrasse 27
63834 Sulzbach
Phone: +49 6028 99380

International Offices

INELTEK Ges.m.b.H.
Schlösselgasse 1
2000 Stockerau
Austria
Phone: +43 2266 982510
Email: office@ineltek.at

INELTEK Italy
Via dei Faggi 7
31033 Castelfranco Veneto (TV)
Italy
Phone: +39 0423 497705
Email: italy@ineltek.com

INELTEK Russia
Leningradskoe sh., d. 92A
125565 Moscow
Russia
Phone: +7 495 9759180
Email: russia@ineltek.com

INELTEK Inc. Milwaukee
823 N Waterville Rd
Oconomowoc, WI 53066
USA
Phone: +1 262 5650159
Email: usa@ineltek.com

JM Elektronik sp. z o.o.
Ul. Karolinki 58
44-100 Gliwice
Poland
Phone: +48 32 3396900
Email: sprzedaz@jm.pl
Web: www.jm.pl

Network

Anatec AG
Sumpfstrasse 7
6300 Zug
Switzerland
Phone: +41 41 7483232
Email: info@anatec.ch
Web: www.anatec.ch

Anatronic S.A.
Pso. Imperial N.8, 3°B
28005 Madrid
Spain
Phone: +34 91 3660159
Email: info@anatronic.com
Web: www.anatronic.com

Alcom Electronics BV
Rivium 1e straat 52
2909 LE Capelle a/d Ijssel
Netherlands
Phone: +31 10 2882500
Email: info@alcom.nl
Web: www.alcom.nl

Alcom Electronics BV
Singel 3
2550 Kontich
Belgium
Phone: +32 3 4583033
Email: info@alcom.be
Web: www.alcom.be