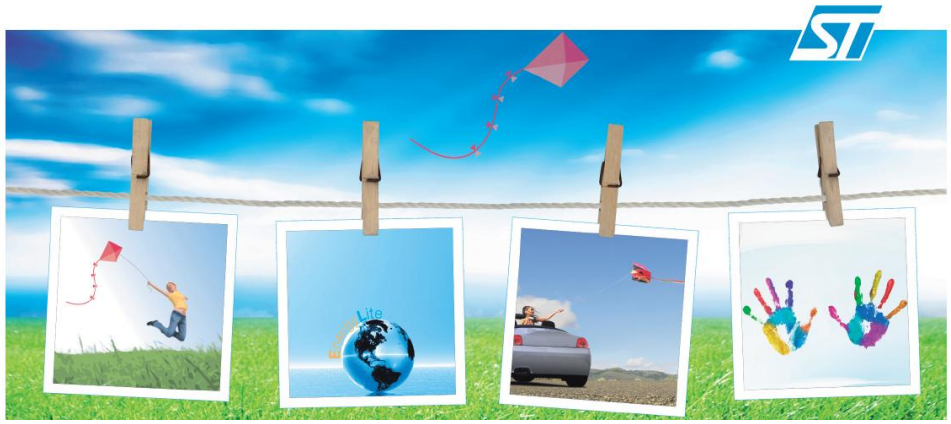
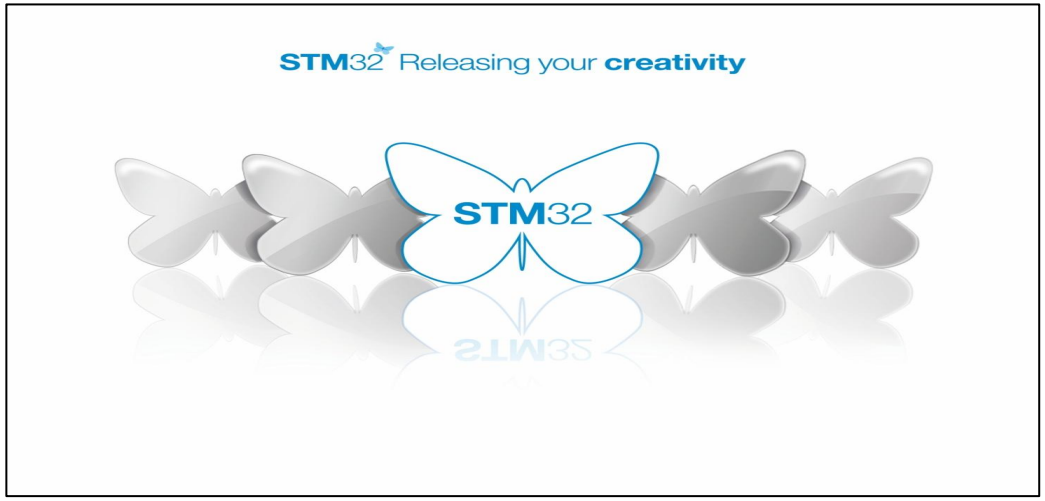
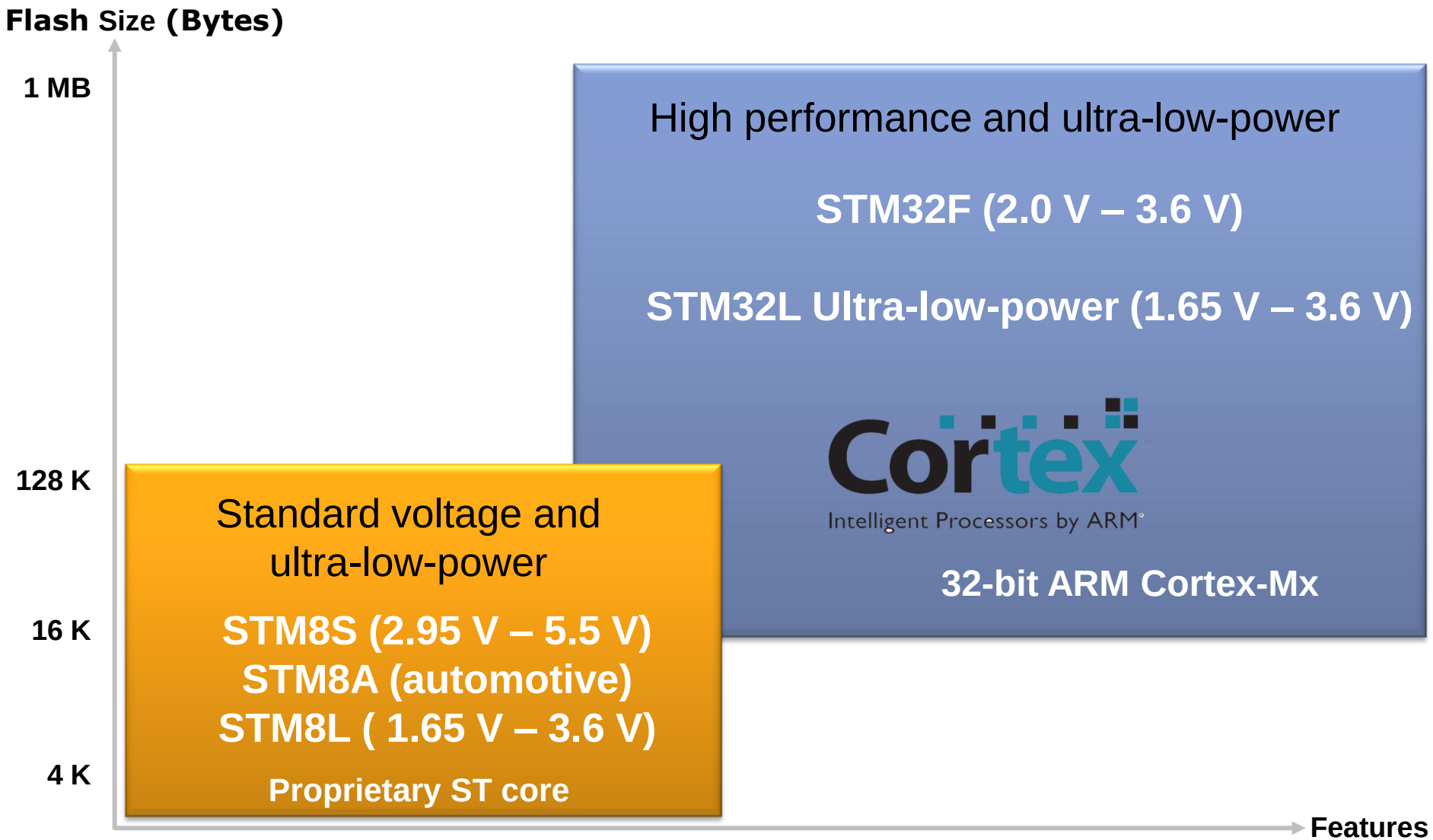
STM8 STM32 MCU Portfolio

8 bit and 32 bit STMicroelectronics MCU Portfolio



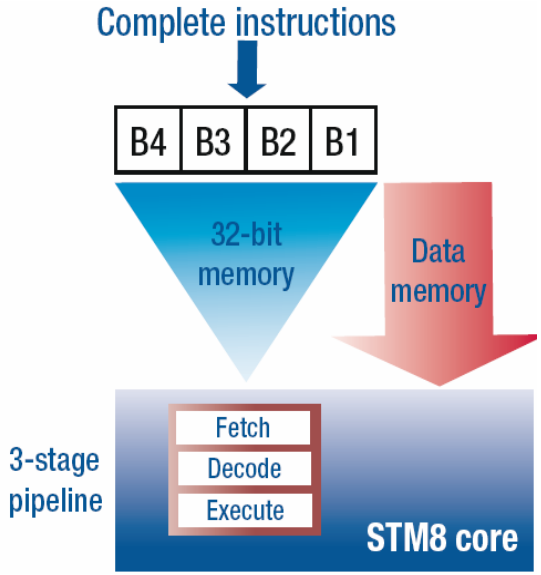


MCUs – New families development focus



STM8 – Advanced architecture for performance

- High performance core
  - 20MIPS peak @ 24MHz Fcpu
  - Advanced Harvard & CISC architecture.
  - New arithmetic instructions ($_yX_x$,$^y/_x$)
    - Hardware division (16/8)
    - Faster multiplication (8x8)
    - 8 bit signed arithmetic support
- Innovative architecture
  - 1MB linear address space, no paging
  - 16-Bit index registers
  - 32-bit memory interface and 3-stage pipeline
  - Advanced clock controller for better power consumption & noise control

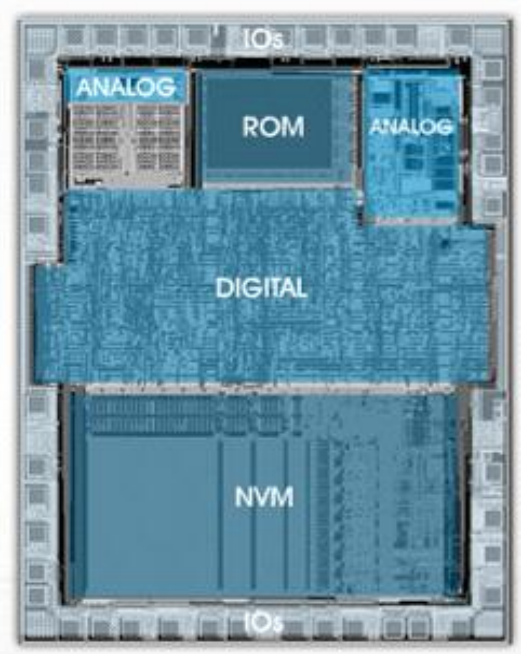


Performance and code compactness

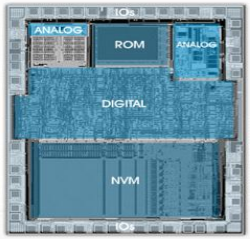
The technology enables to break price barriers

- Our technology is driving the 8bit evolution
- A break through with 130nm Lithography.
- E² Non volatile memory, Analog and digital peripherals

0,4µM



0,13µm



STM8 Segmentation

STM8S
General purpose

E² data, 3 and 5V family, precise RC.

Platform designed and engineered for cost effectiveness

Robust and reliable

STM8A
Automotive

E² data, 3 and 5V family, precise RC, LIN, CAN, grade 0 AEC-Q100.

Conceived to meet high quality and reliability standards

Simply smarter

STM8L
Ultra low power

E²Data, 1.65 to 3 V family, strong analog, LCD drivers, low leakage techno.

Architecture and technology focused on power savings

Energy lite

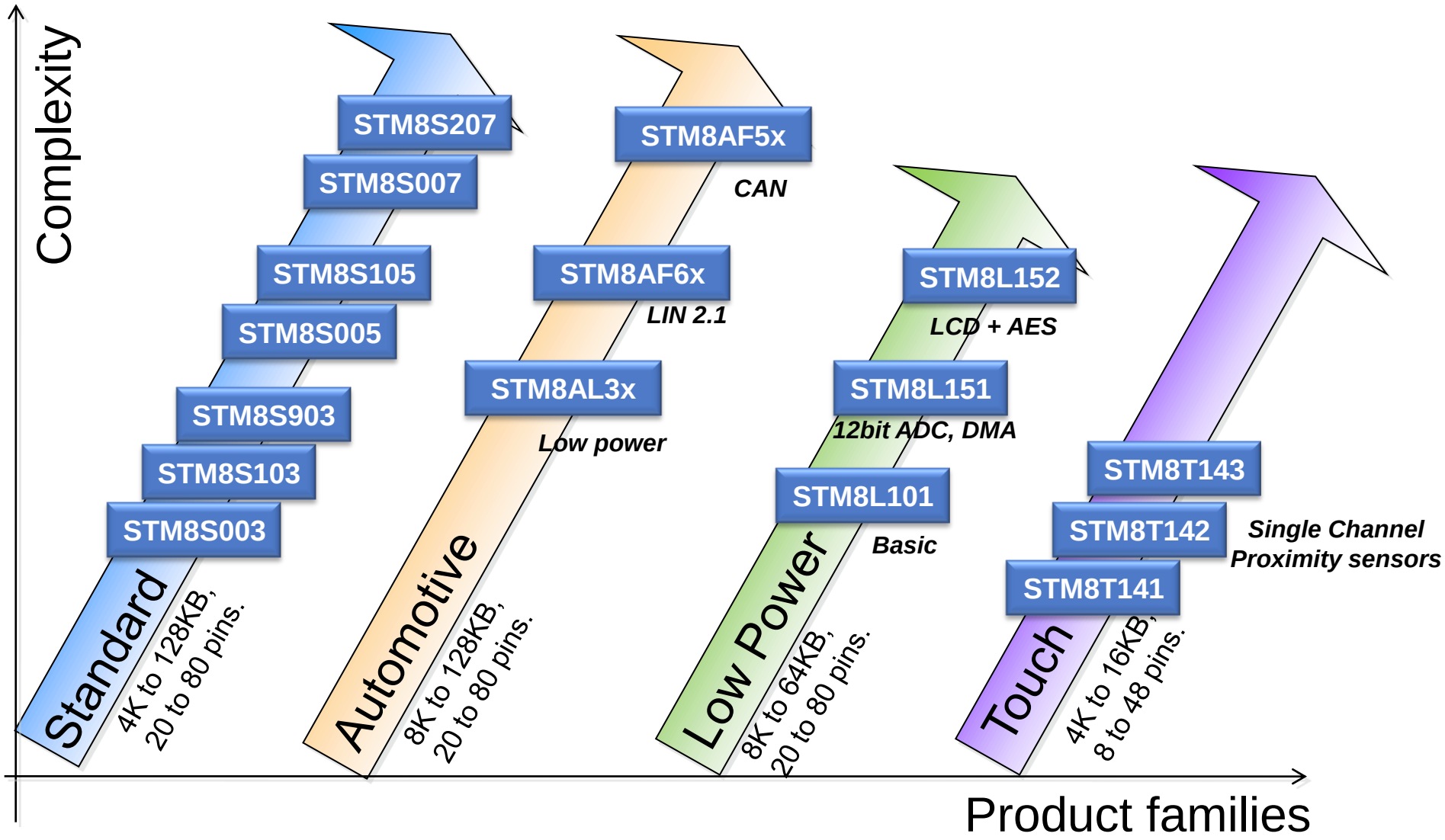
STM8T
Touch Sensing

Proximity sensors, touch-keys, key-pads, sliders or wheels.

Hardware and open software solutions

At your fingertips

STM8 product line card



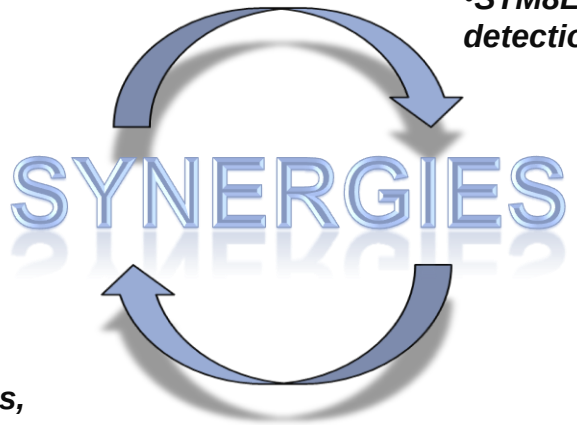
ST microcontrollers is Gaining Leadership

Medical

- *STM8T (U/I)*
- *STM8S (Pumps, Fans, motors)*
- *STM8L (Body care, disposable devices, monitoring , dispensers.)*

Industrial

- *STM8T (U/I, proximity sensors)*
- *STM8S (Appliances, Networking, metering, Circuit breakers, lighting, HVAC, Pumps)*
- *STM8L (Metering, Sensors , IO-link, Actuators, detection, U/I)*



Consumer & mobile

- *STM8T (U/I, Proximity sensors)*
- *STM8S (Set top box, Digital TV, e-bikes, power tools, battery chargers..)*
- *STM8L (GPS, Remote Ctrl, Sports goods, games, scales..)*

Security

- *STM8T (U/I)*
- *STM8S (Alarm C.U., door openers, Automation)*
- *STM8L (Wireless sensors, Door lock, Switches, motion sensors, U/I)*

User interface

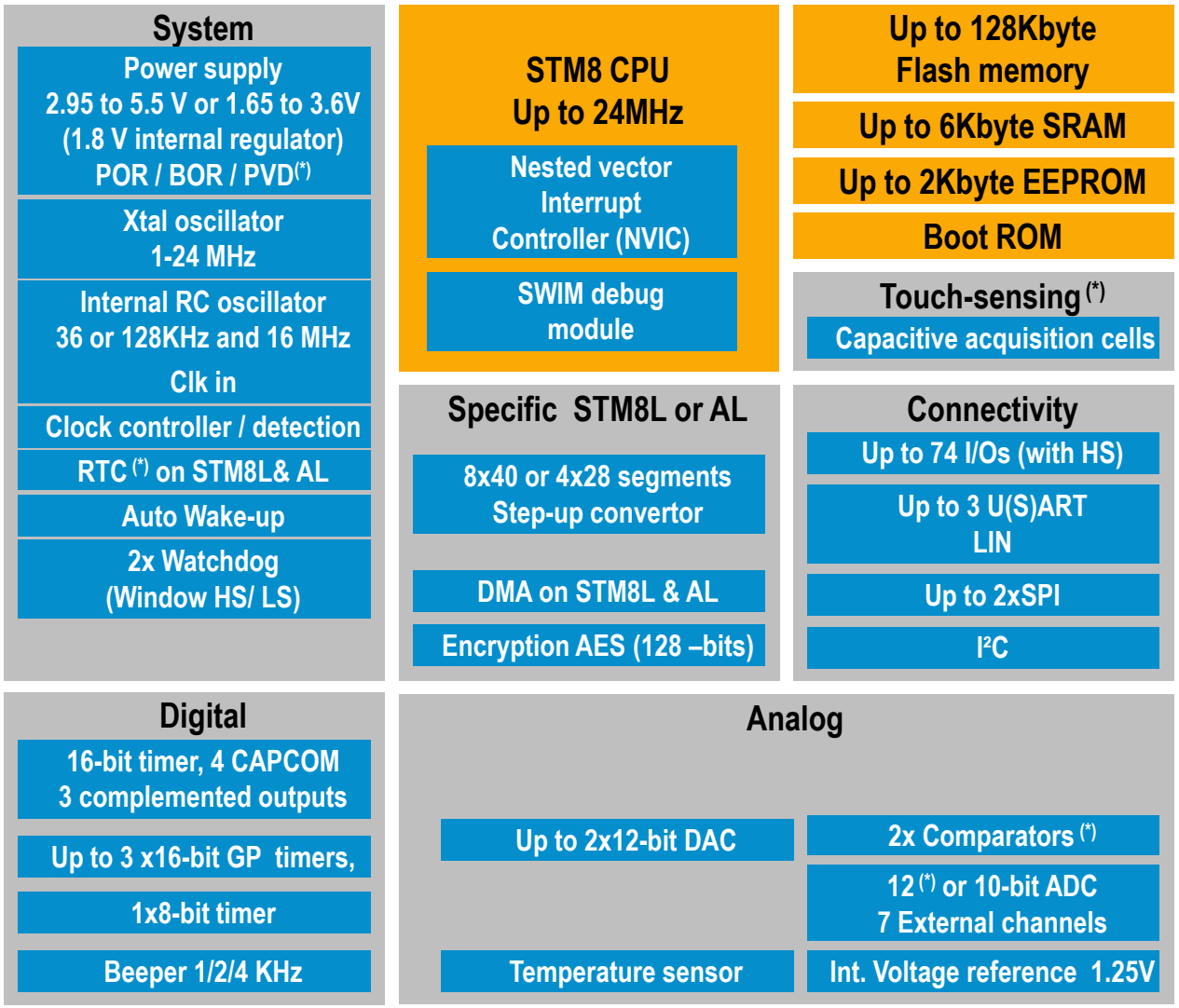
- *STM8T (Proximity sensors, touches, sliders..)*
- *STM8L/S (Software libraries)*

Automotive

- *STM8AF (Body, Lin nodes, Actuators, fans, HVAC, Immobilizers)*
- *STM8AL (Wireless sensors, Door lock) Switches, motion sensors, U/I)*

** Worldwide*

STM8- Generic (*) Block diagram



- Efficient architecture
- Rich peripheral set
- 4 time bases (incl. 1%RC)
- Innovative Power management
- Many embedded IPS

- Advanced analog peripherals
- 16 bit timers, including motor control features
- Capacitive sensing acquisition module

- Various package styles
  - LQFP 32, 44,48,64 or 80
  - TSSOP20, 28
  - QFN 20,28,32,48
  - CSP or Die form

(*) Not all features are available, check selector guide

Software / Firmware library and support

- ST Toolset, a free, easy to use IDE
  - STVD for development, STVP for programming
- STM8S peripheral firmware library and examples
  - Rapidly develop complex application with STM8 using the maintained software libraries. Source code provided, written in C.

www.st.com/stm8

- STM8S IEC 60335 ClassB compliant firmware library, VDE approved
- Raisonance RIDE, free IDE with RBuilder and RFlasher
- Raisonance C Compiler, 32KB free

www.raisonance.com

- Cosmic C Complier, 32KB free version

www.cosmic-software.com

- IAR forSTM8, 8KB free version

STM8 Promotion tools

- The STM8-Discovery is the cheapest and quickest way to build and debug an application.
- Debugger is included
- Free tool suite to download
- Code Examples available on internet
- Ideal for a proof of concept and education
- A pre-connected STM8 samples is included
- Dedicated STM8-Discovery home web page (Forum, Free example, Application Note, schematic …)

www.st.com/stm8l-discovery

www.st.com/stm8s-discovery

Development kits

- STM8S-DISCOVERY
- STICE-SYS001- High-end full featured emulator
- STM8/128-EVAL- Evaluation board with full range of peripheral features
- STM8/128-SK/RAIS- Starter kit including everything needed to begin a design
- STX-RLINK- Programming and debugging dongle
- ST-LINK/V2 - Programming and debugging dongle

$150 RRP

$1990 RRP

$21 RRP

$9 RRP

STM8/128-SK/RAIS

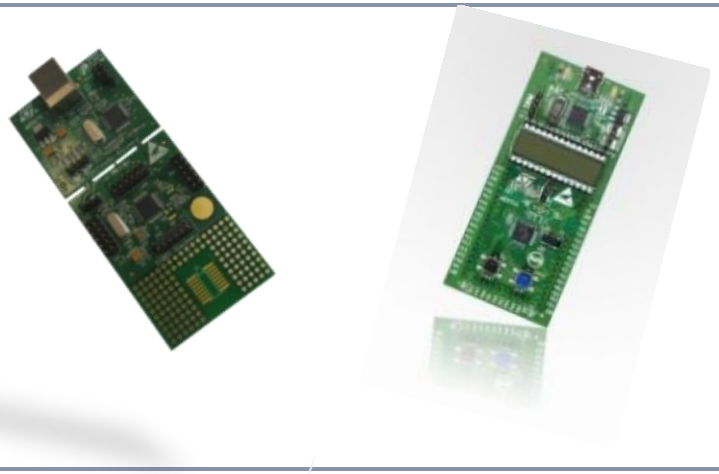
$219 RRP

STX-RLINK

$59 RRP

RAISONANCE

What shall you memorize ?



Convenient development

STM8 discovery kits.

$10 for a Sample & a full development environment (C compilers, debuggers..)

3x3mm

Cost effective

All this for less than 30cts buy.

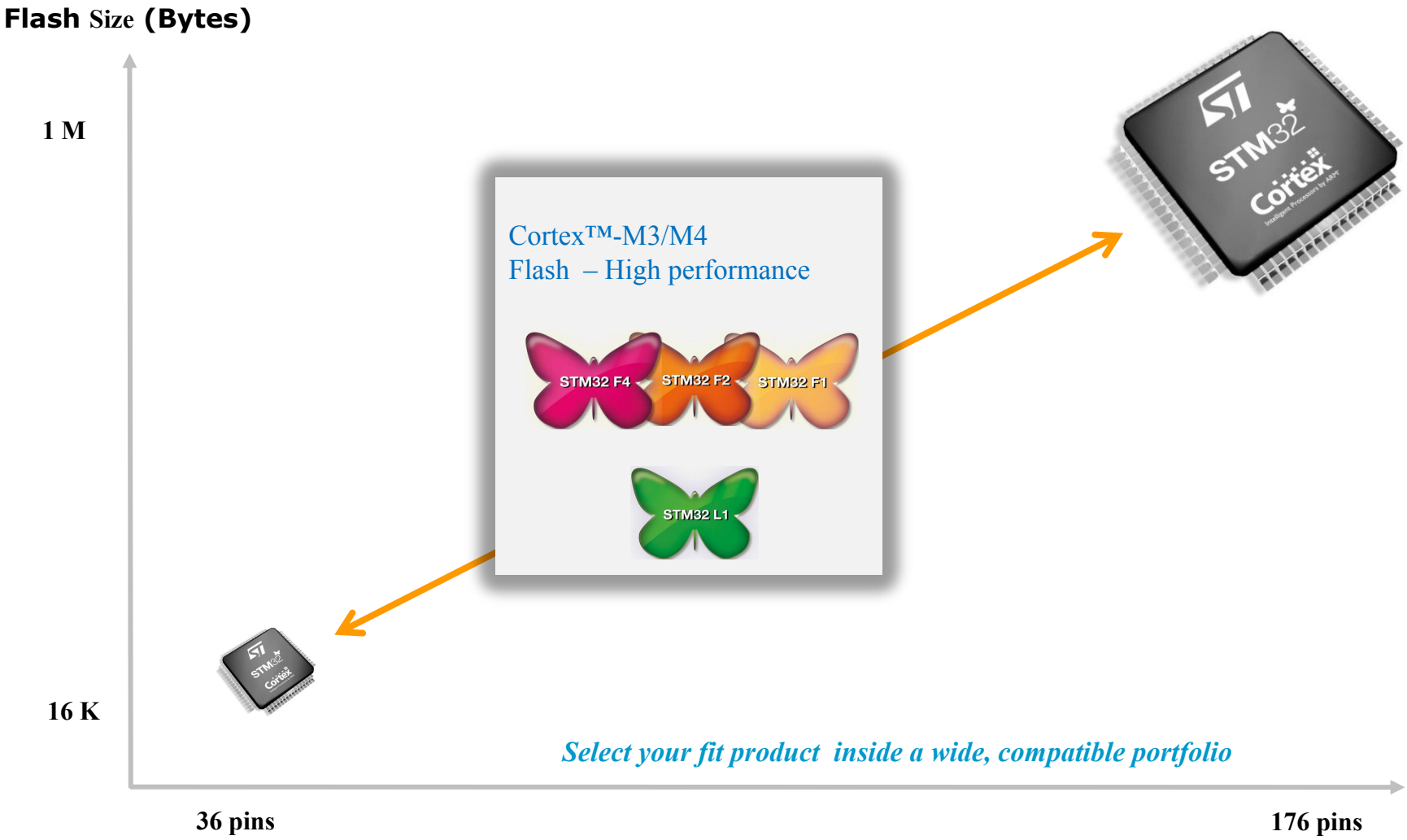
20 pins, 1%RC, Real E², SCI/SPI/I²C, 16bit timers, ADC, up to 8Kb, capacitive sensing

4 families conceived to address segments in the best ways

STM32 Products Port Folio

STM32 Releasing your creativity

STM32 today – platform effect



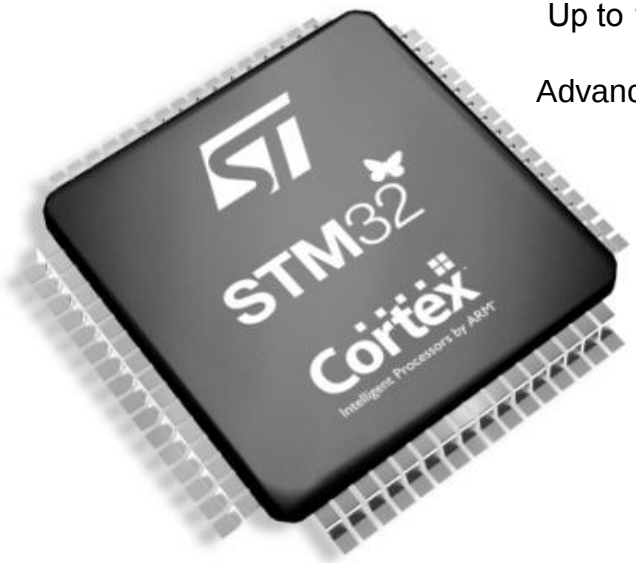
STM32 today – platform effect

L1 series
Cortex-M3

Ultra-low power
EnergyLite™ technology
Up to 384-Kbyte Flash

F4 series
Cortex-M4

Outstanding performance, up to 168MHz w/ DSP & FPU
Up to 168 MHz/210 DMPIS with ART Accelerator™
1-Mbyte Flash – 192-Kbyte SRAM
Advanced features (crypto/hash processor and RNG)



F1 series
Cortex-M3

Five families
Ethernet USB OTG
From 16-Kbyte up to 1-Mbyte Flash
36 pins to 144 pins

F2 series
Cortex-M3

Up to 120 MHz/150 DMIPS with ART Accelerator
Highest performance Cortex-M MCU
Advanced features

STM32 product series

4 product series

Common core peripherals and architecture:

- Communication peripherals: USART, SPI, I²C
- Multiple general-purpose timers
- Integrated reset and brown-out warning
- Multiple DMA
- 2x watchdogs Real-time clock
- Integrated regulator PLL and clock circuit
- External memory interface (FSMC)
- Dual 12-bit DAC
- Up to 3x 12-bit ADC (up to 0.41 µs)
- Main oscillator and 32 kHz oscillator
- Low-speed and high-speed internal RC oscillators
- -40 to +85 °C and up to 105 °C operating temperature range
- Low voltage 2.0 to 3.6 V or 1.65/1.7 to 3.6 V (depending on series) 5.0 V tolerant I/Os
- Temperature sensor

+

STM32 F4 series - High performance with DSP (STM32F405/415/407/417)

168 MHz Cortex-M4 with DSP and FPU	Up to 192-Kbyte SRAM	Up to 1-Mbyte Flash	2x USB 2.0 OTG FS/HS	3-phase MC timer	2x CAN 2.0B	SDIO 2x I²S audio Camera IF	Ethernet IEEE 1588	Crypto/hash processor and RNG

STM32 F2 series - High performance (STM32F205/215/207/217)

120 MHz Cortex-M3 CPU	Up to 128-Kbyte SRAM	Up to 1-Mbyte Flash	2x USB 2.0 OTG FS/HS	3-phase MC timer	2x CAN 2.0B	SDIO 2x I²S audio Camera IF	Ethernet IEEE 1588	Crypto/hash processor and RNG

STM32 F1 series - Connectivity line (STM32F105/107)

72 MHz Cortex-M3 CPU	Up to 64-Kbyte SRAM	Up to 256-Kbyte Flash	USB 2.0 OTG FS	3-phase MC timer	2x CAN 2.0B	2x I²S audio	Ethernet IEEE 1588

STM32 F1 series - Performance line (STM32F103)

72 MHz Cortex-M3 CPU	Up to 96-Kbyte SRAM	Up to 1-Mbyte Flash	USB FS device	3-phase MC timer	CAN 2.0B	SDIO 2x I²S

STM32 F1 series - USB Access line (STM32F102)

48 MHz Cortex-M3 CPU	Up to 16-Kbyte SRAM	Up to 128-Kbyte Flash	USB FS device

STM32 F1 series - Access line (STM32F101)

36 MHz Cortex-M3 CPU	Up to 80-Kbyte SRAM	Up to 1-Mbyte Flash

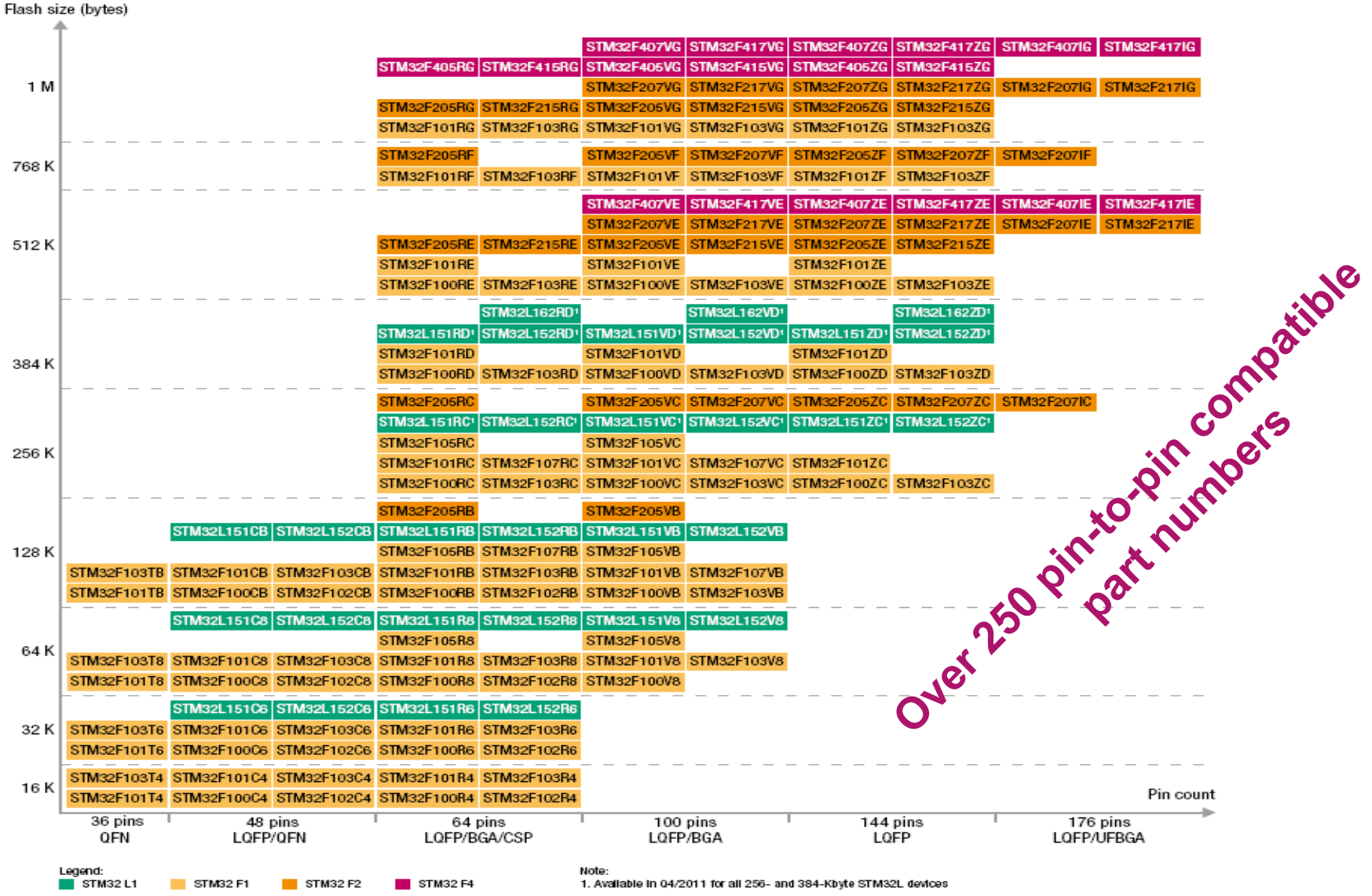
STM32 F1 series - Value line (STM32F100)

24 MHz Cortex-M3 CPU	Up to 32-Kbyte SRAM	Up to 512-Kbyte Flash	3-phase MC timer	CEC

STM32 L1 series - Ultra-low-power (STM32F151/152)

32 MHz Cortex-M3 CPU	Up to 48-Kbyte SRAM	Up to 384-Kbyte Flash	USB FS device	Data EEPROM up to 12 Kbytes	LCD 8x40 4x44	Comparator	BOR MSI VScal	AES 128-bit

STM32 – leading portfolio *in production*



STM32 series: key benefits summary

Real-time performance	Outstanding power efficiency	Superior and innovative peripherals	Maximum integration	Extensive tools and software
+ ART Accelerator, Multi-AHB bus matrix, Excellent real-time 120 MHz/ 150 DMIPS at zero-wait state execution performance from Flash	<1 µA V_{BAT} with RTC, ultra-low dynamic power consumption 1.65 to 3.6 V V_{DD}	USB-OTG High speed, camera interface, Ethernet, CAN, crypto/ hash processor, external memory interface	1-Mbyte Flash, 128-Kbyte SRAM, 528 OTP bytes, 4-Kbyte backup SRAM, reset circuitry, voltage regulator, 1% RC oscillator, PLL	Various IDE starter kits, libraries, RTOS and stacks
Future proof design	**Environment friendly, suits low-power operation**	**Address all your needs and beyond**	**Cost and space saving**	**More time for innovation**

STM32 F-2 series, over 30 part numbers, a new addition to the STM32 platform now counting over 180 compatible devices

Extensive tools and SW

- Evaluation board for full product feature evaluation
  - Hardware evaluation platform for all interfaces:
    - External memories, Ethernet and 2 USB OTG connectors, touch-screen TFT display, CMOS camera, audio output…
  - Possible connection to all I/Os and all peripherals
- Large choice of development IDE solutions from the STM32 and ARM ecosystem.

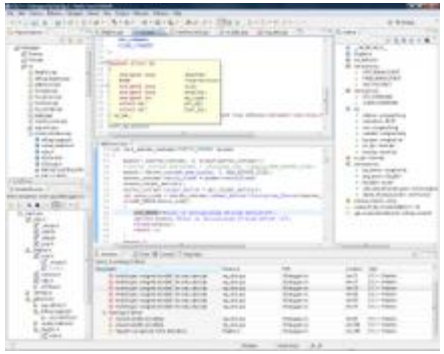
STM32XX-EVAL

RAISONANCE Embbeded Systems Development Tools
aiji system 아이지시스템
hitex DEVELOPMENT TOOLS
IAR SYSTEMS
atollic
i SYSTEM
Green Hills SOFTWARE, INC.
SHAGER
KEIL An ARM® Company
LAUTERBACH
SIGNUM SYSTEMS
TASKING
expresslogic
CMX SYSTEMS

STM32 Discovery kit

- Development Toolchain support
  - **ECLIPSE Dev Tools : Free Atollic** TrueSTUDIO® lite version with unlimited code-size and usage-time.
  - **IAR** EWARM
  - **KEIL** MDK-ARM

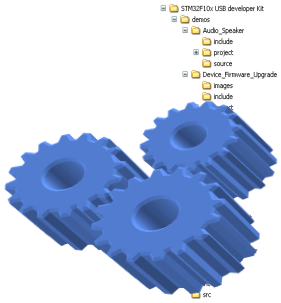
atollic IAR SYSTEMS KEIL An ARM® Company



Price: $9.90 to 14$

- Large number of software examples available at STM32xx DISCOVERY for a quick start to evaluate and develop with the STM32F1xx, STM32L1xx, STM32F4xx

Free software solutions from ST

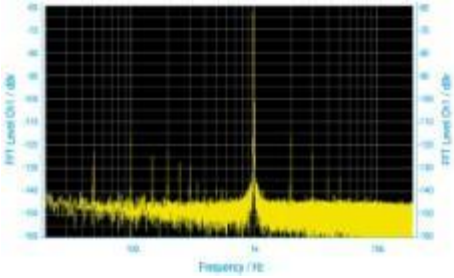


Standard peripheral library

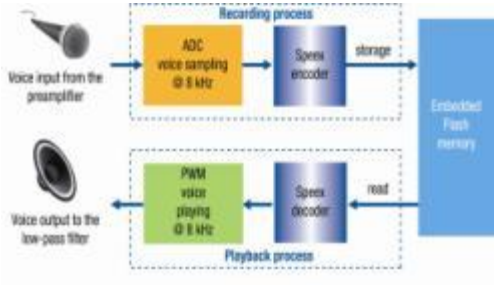
USB device library

Motor control library

Self-test routines for EN/IEC 60335-1 Class B



DSP library



SPEEX codec

MP3 WMA

Encryption library

Touch-sense library

Free software solutions from ST

USB HOST library

Touch-sense library:

CT Library STM32L

Graphic Library STM32

http://www.st.com/stonline/stappl/resourceSelector/app?page=resourceSelectorPage&doctype=FIRMWARE&ClassID=1734

name = STM32 embedded GUI Library (AN3128)

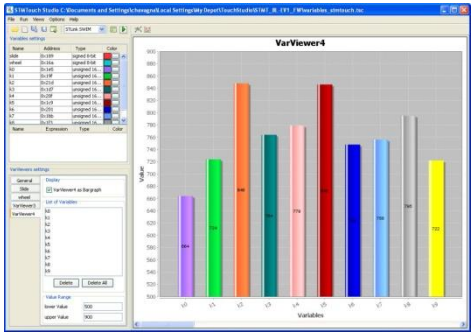
Making Life Easier

Start with the right STM32 or STM8 and get the optimum pinout configuration

- MicroXplorer tools
  - MCU product selector
    - Identify the best STM32 to fit your application needs (performance, memory, peripherals, I/Os, etc.)
  - MCU configuration tool
    - Configure the STM32 pinout to fit your application needs

Optimize application performance

- STM Studio tool
  - Monitor any variable selected in your code to optimize application performance (motor control, touch sense, etc.)
    - Several display modes
    - On-the-fly acquisition modes
    - Log to/replay from file
    - Variables read/write capability



H2/2011 MCU Trainings Calendar Overview

H2/2011	July	August	September	October	November	December
STM32F1xx	11.-13. (W28)* Doulos – Munich 18.-20. (W29)* Microconsult - Munich 19.-21. (W29)* Doulos – Ringwood 19.-22. (W29)* MVD - Paris		12.-14. (W37)* Doulos – Hannover 13.-15. (W37)* Tecnologix - Milano 20.-23. (W38)* MVD - Paris 22.-23. (W38)* Exelen - Fribourg	5.-7. (W40)* Hitex - Karlsruhe 11.-13. (W41) ST Prague (CR) 18.-21. (W42)* MVD - Paris 24.-26. (W43)* Microconsult - Munich	3.11.-4.11. (W44)* Hitex - Karlsruhe 15.-17. (W46)* Tecnologix - Milano 29.11.-1.12. (W48)* Doulos – Ringwood 29.11.-1.12. (W48)* MVD - Paris	30.11.-2.12. (W48)* Hitex - Karlsruhe 12.-14. (W50)* Doulos – Munich
STM32F2xx STM32F4xx			20.-22. (W38) ST Prague (CR)	5.-6. (W40) ST Marlow (UK) 18.-20. (W42) ST Kista (Sweden)	8.-10. (W45) ST Grasbrunn (De)	
STM32L1xx				4.-5. (W40) ST Marlow (CR) 25.-26. (W43) ST Prague (CR)		
STM8S/L			6.-8. (W36) ST Prague (CR)			
STM32W				27.10. (W43) ST Prague (CR)		
Motor Control with ST MCU's					22.-24. (W47) ST Prague (CR)	
Advanced C						6.-7. (W49) ST Prague (CR)

Note: For more details about the ST trainings please click on the chosen session. In case of sessions provided by our Training Partners (*) you will be redirected to their web page getting the full info about the given session.

For latest schedule, sessions and Partners info please visit www.st.com/learnMCU

STM32F roadmap

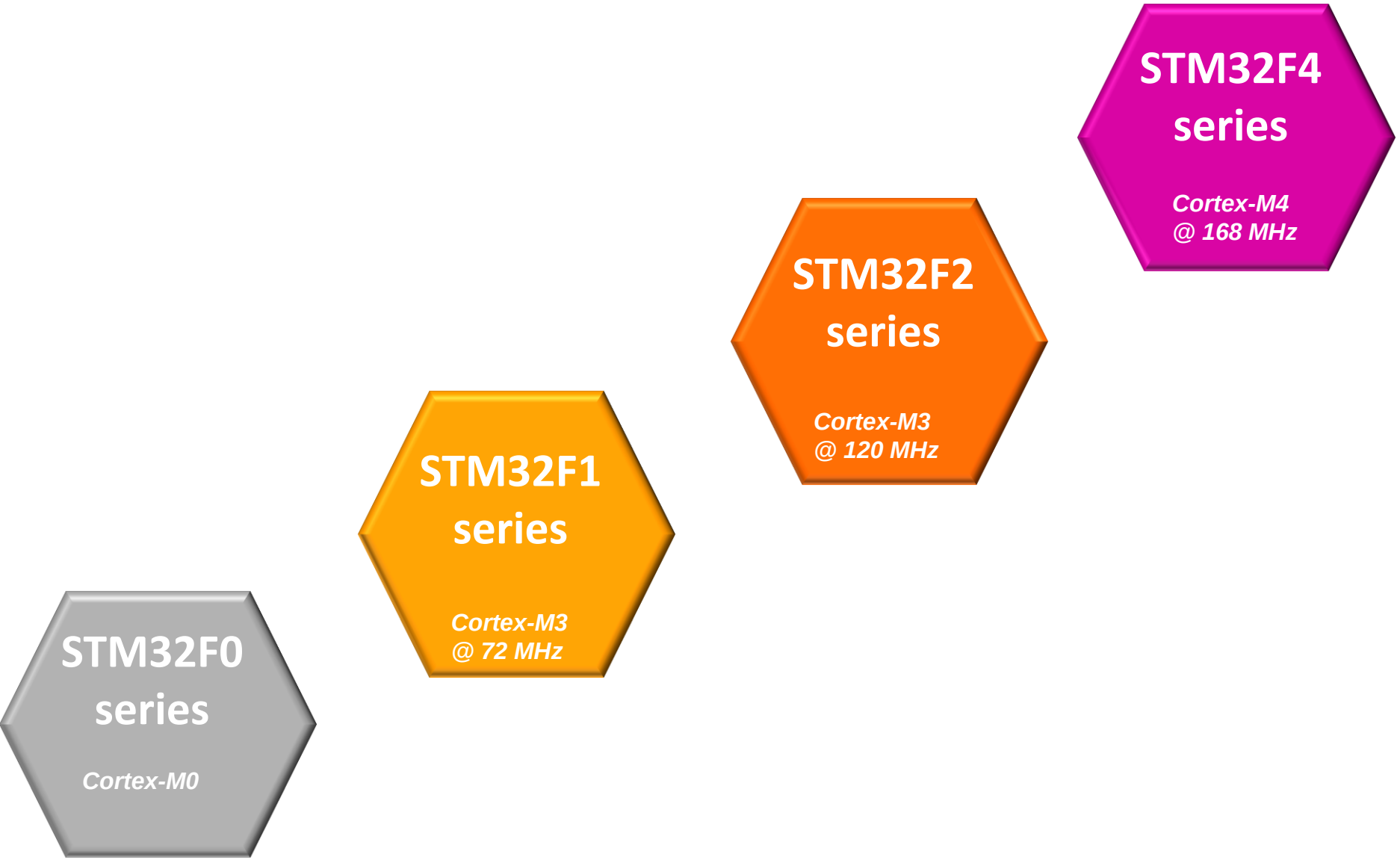
ST has licenced all Cortex-M processors

- **Forget traditional 8/16/32-bit classifications**
  - Seamless architecture across all applications
  - Every product optimised for ultra low power and ease of use

Cortex-M0	Cortex-M3	Cortex-M4
“8/16-bit” applications	“16/32-bit” applications	“32-bit/DSC” applications

Binary and tool compatible

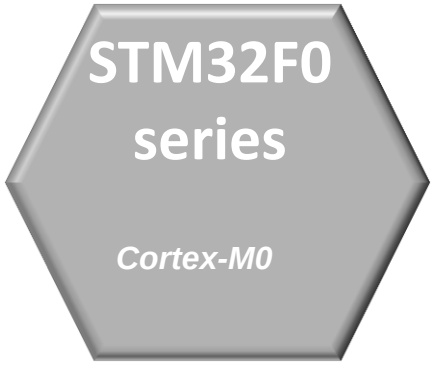
STM32F series short term roadmap



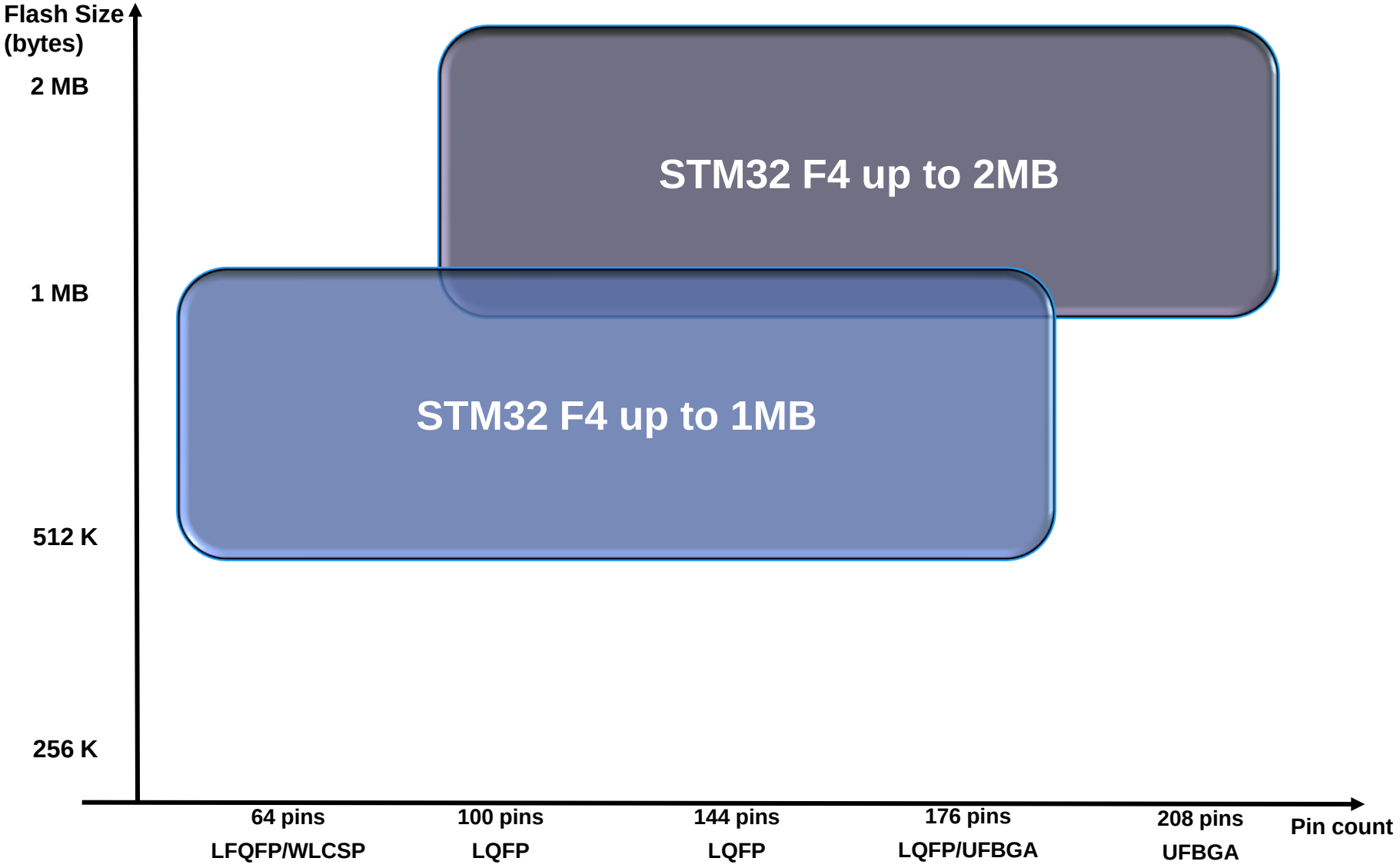
STM32 Next 2 Major Launch

STM32F4 → Cortex M4
Increasing ST leadership in the performance race
PR September 2011

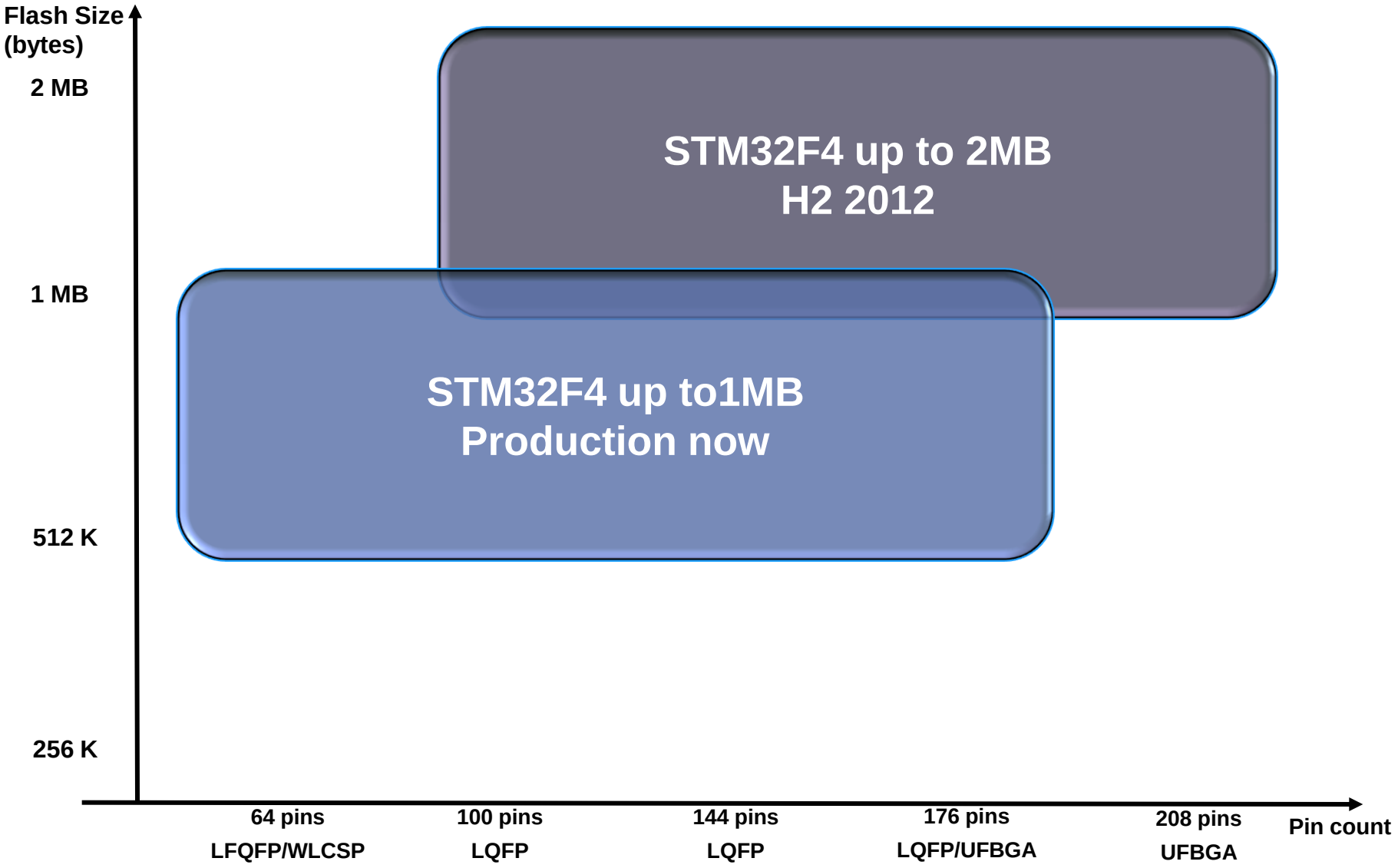
STM32F0 → Cortex M0
Expanding Market Reach towards 8-16 bit
Early 2012



STM32 F4 Roadmap



STM32 F4 Roadmap



Thank you

For all documentation and software download go to :

www.st.com/stm32

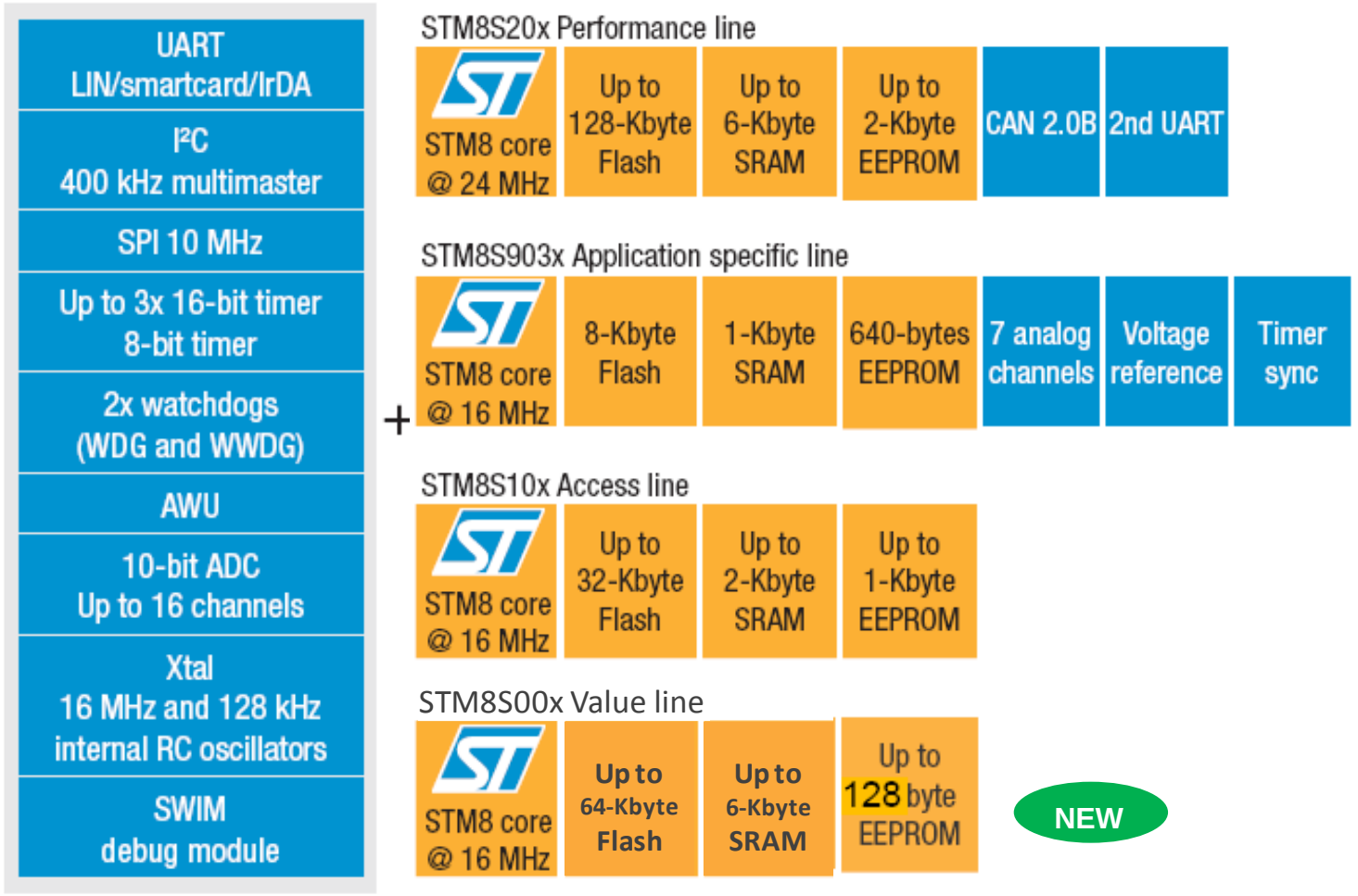
www.st.com/stm8

Backup Slides STM8 portfolio

The best STM8S for Your Application

- STM8S Value-Line, when:
  - the very last cents count
  - can concentrate multiple application on few references
- STM8S Access-Line / Performance-Line, when:
  - other packages are needed
  - other memory configuration needed
  - unique ID feature needed
  - higher endurance on the Flash needed
  - factory programming service
- STM8S Application-Specific, when:
  - More ADC/Timers channels needed
  - Internal Vref needed

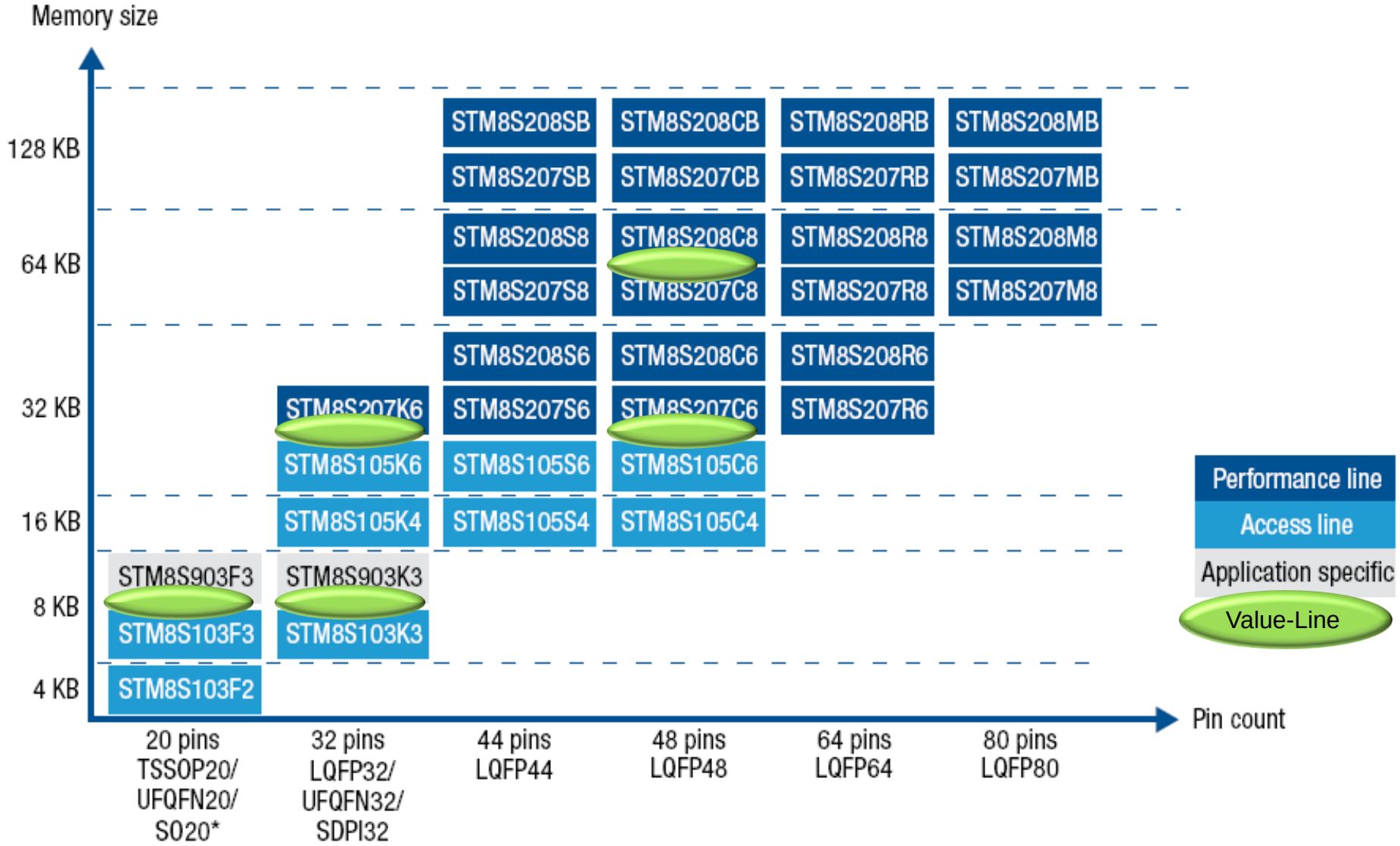
STM8S : large Industrial and consumer MCUs offer



STM8S - Features and Benefits

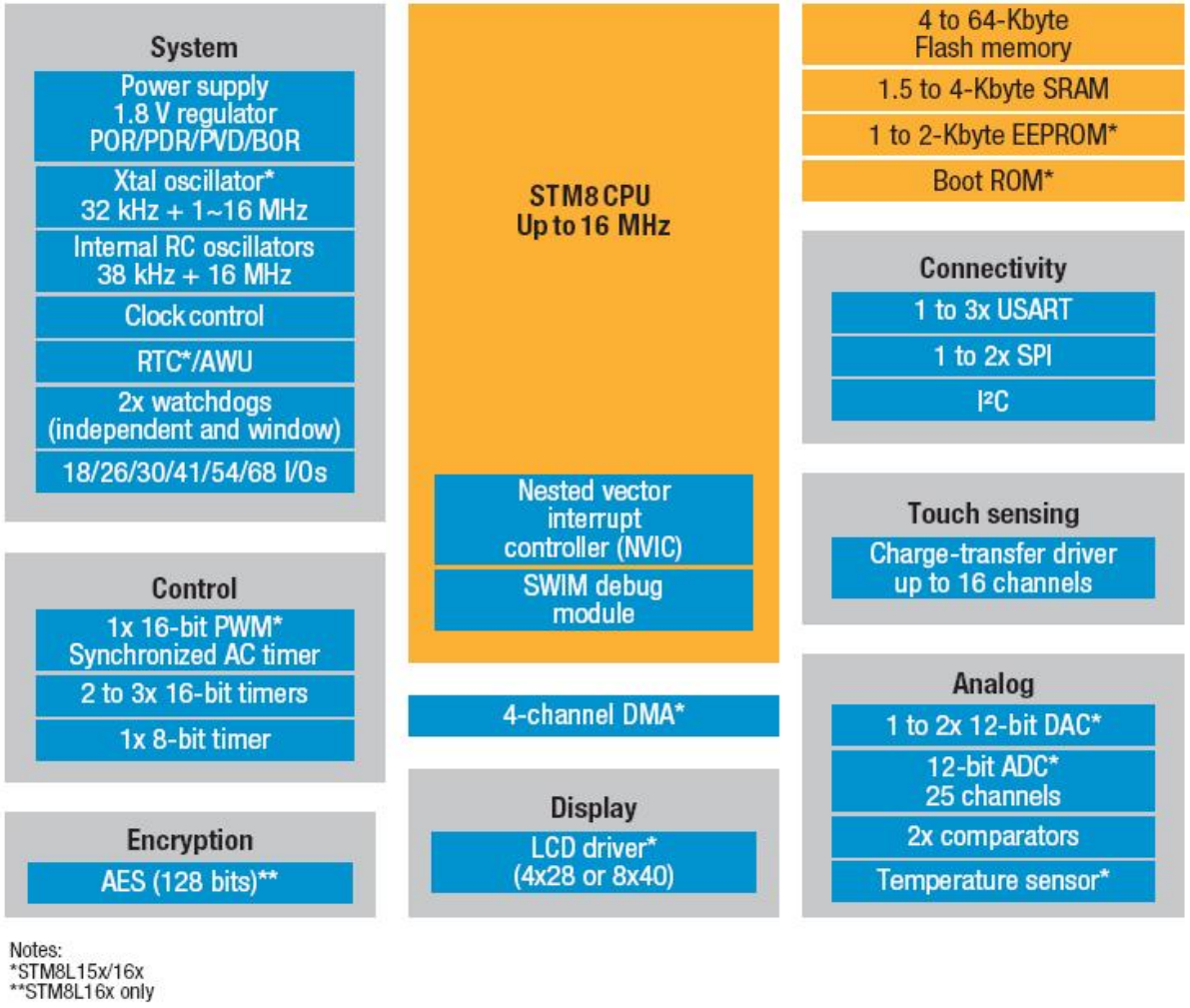
Features	Benefits
Integrated **true data E²**	**Reduced system cost**, **No risk** of program corruption
Internal supervisor circuits; power-on reset, **Dual watchdog,** brown-out reset, clock security system, **Low noise emission**. Injection robust I/Os, strong against EMS.	Reduced system cost, Robustness, safe designs
16-bit advance motor control timer, fast 10-bit ADC (2.3µs)	Motor control, including **3-phase PMDC**
CAN, up to 1x U(S)ART, SPI, I²C	**All** essentials communication **peripherals**
Product **Platform** with layout-out compatibility	Time to market, re-use of software libraries
Efficient STM8 core; up to **20MIPS @24MHz**. Harvard architecture for code efficiency	Room for **high end applications** (Motor control) or security checks.
2.95V, -40 to +125°C temperature range	Ideal for **industrial** or harsh environments
Advanced development tools (Low cost debuggers to high end emulators)	Time to market, Development cost (e.g $5 Discovery-kit)
Free of charge software libraries, numerous examples, application notes.	Std. Peripherals, motor control, DALI, LNB, Class B., Free C compiler up to 32KB.

STM8S - Industrial Lines



STM8L - block diagram

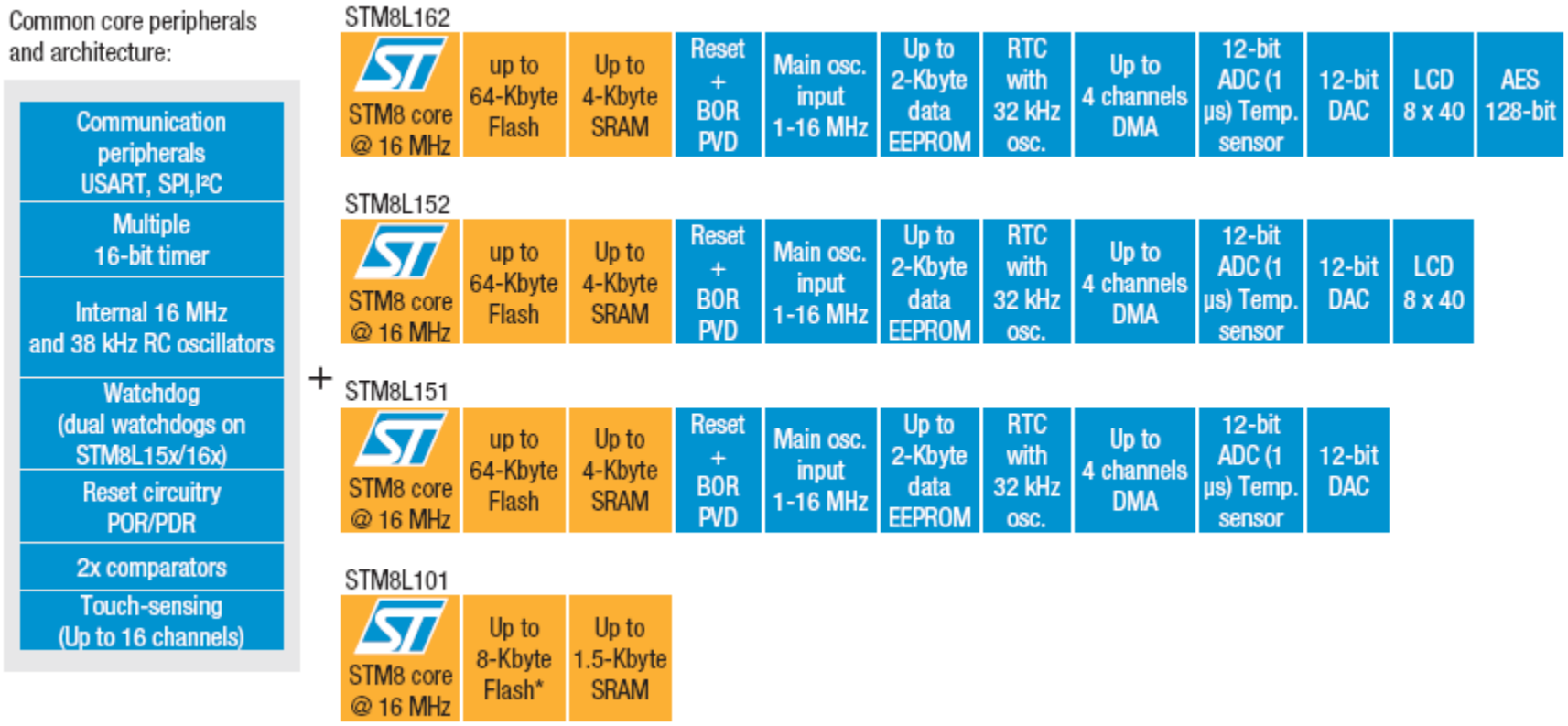
- Core
  - STM8 core @ 16 MHz
  - -40 to 125 °C
- Memory
  - From 4 to 64-Kbyte Flash
  - 1.5 to 4-Kbyte SRAM
  - 1 to 2-Kbyte data EEPROM



STM8L - Features and Benefits

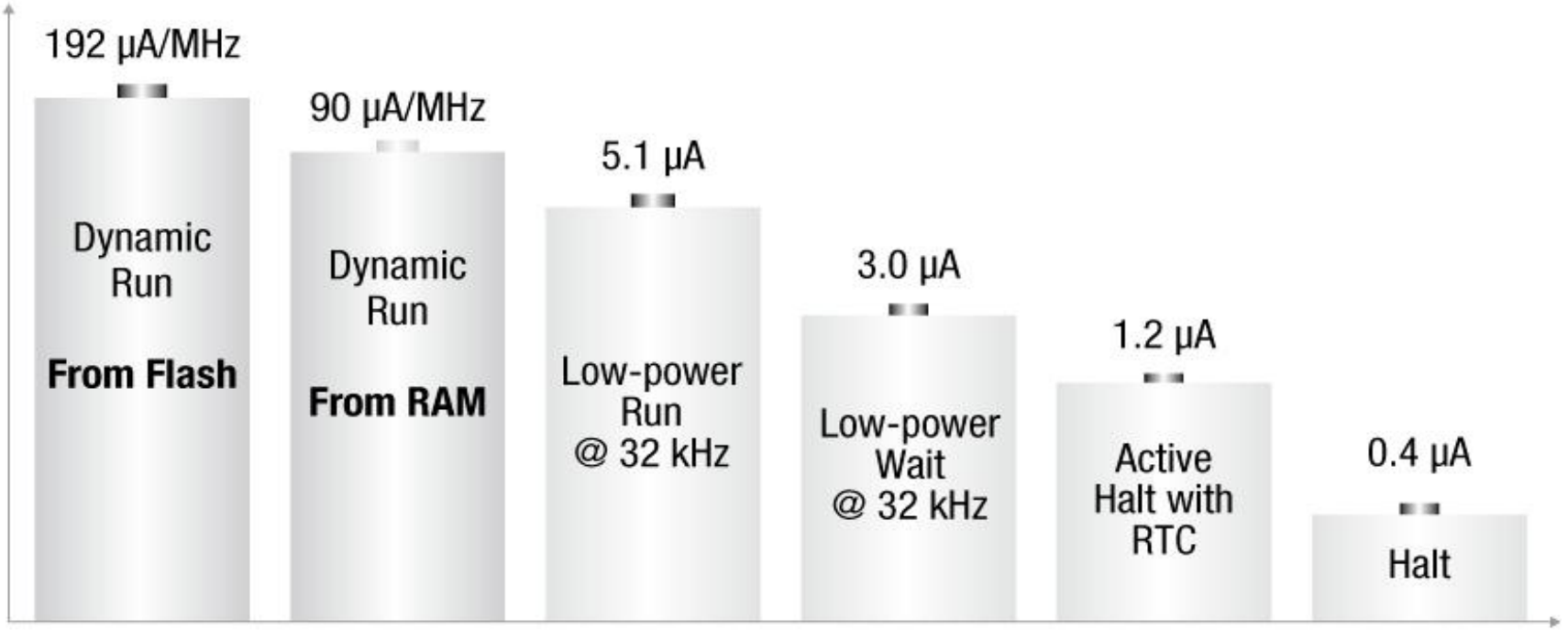
Features	Benefits
Ultra-low-leakage proprietary 130 nm technology	Low power consumption at all temperature
Ultra-low-power design (clock gating, low-power Flash with power-off capability) Up to 6 low power modes	Reduced overall current consumption by turning off clocks of unused peripherals or Flash
Sub 1 µA hardware RTC and AWU system unit	Low-power modes with periodic wake up
Sub-second hardware RTC	Precise synchronization in RF networks, sensors and alarms
Fine-grain calibration accuracy down to +/-2 ppm	Very high efficiency of RTC calibration within a 10 s time frame.
Direct memory access on board (7-channel DMA)	Improve performance, reduces consumption
Ultra-low-power and ultra-safe features (POR, PDR, BOR, PVD, unique ID, backup clock, Flash protection, Flash with error code correction (ECC), dual watchdog, and more)	Integrated safety and security for applications; user data confidentiality/reliability
Analog functional down to 1.8 V, programming down to 1.65 V	Full functionality over the complete V_{DD} range

STM8L : large Ultra low power MCUs offer



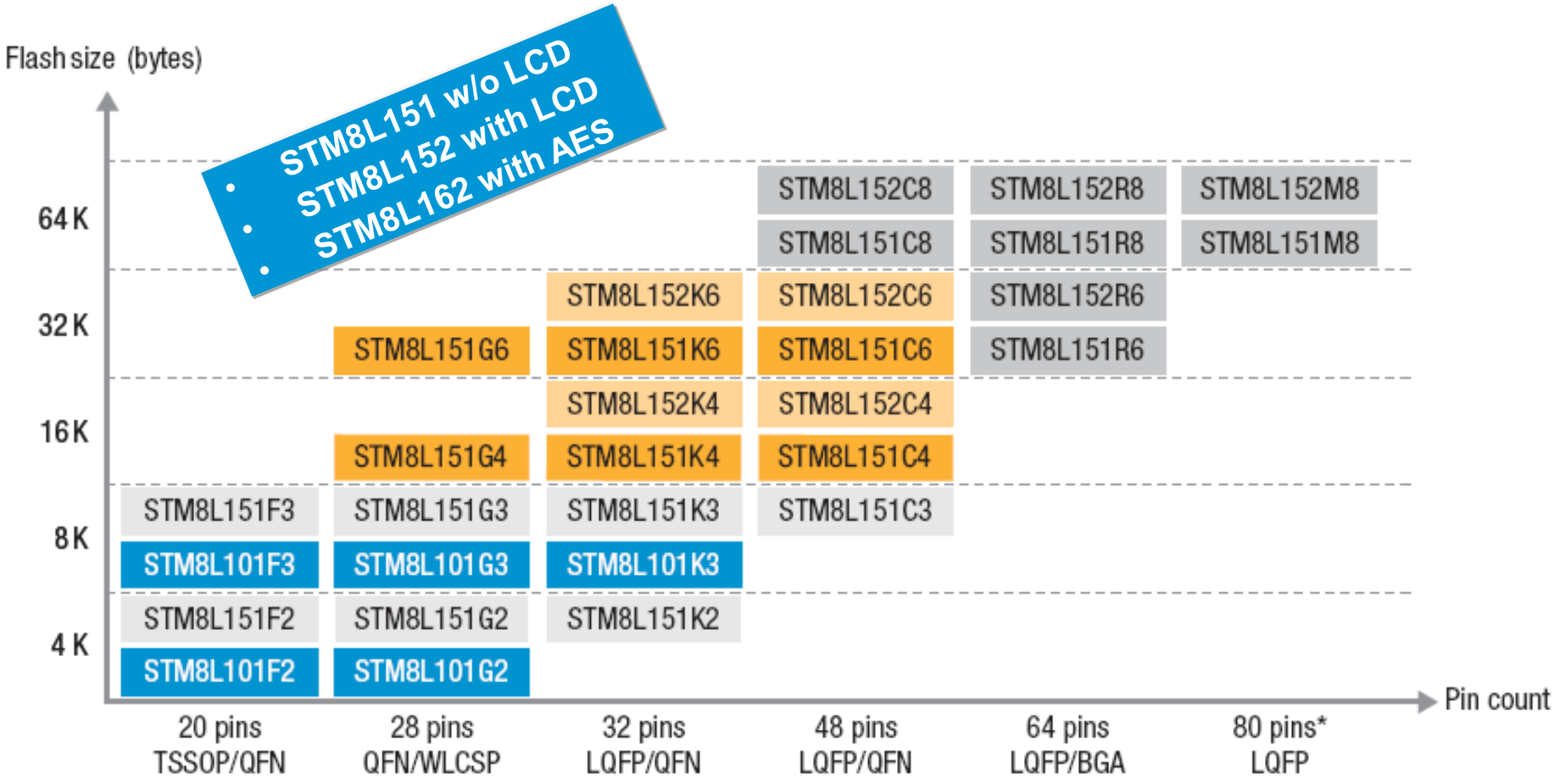
STM8L15x/16x power consumption

Typical @ 25 °C



Notes:
- POR/PDR on
- RAM content preserved
- BOR option at 2.4 µA
- Startup time from active Halt 5 µs
- Run and Wait consumption values are independent of V_{DD}
- Active Halt and Halt values measured at V_{DD} = 1.8 V

STM8L – Line card



STM8A Product lines

- Up to 2x U(S)ART
- I²C
  400 kHz multimaster
- SPI 10 MHz
- Up to 3x 16-bit timer
  8-bit timer
- 2x watchdogs
  (WDG and WWDG)
- AWU
  Beeper 1/2/4 kHz
- 10-bit ADC
  Up to 16 channel
- Xtal
  16 MHz and 128 kHz
  internal RC oscillators
- SWIM debug module

+

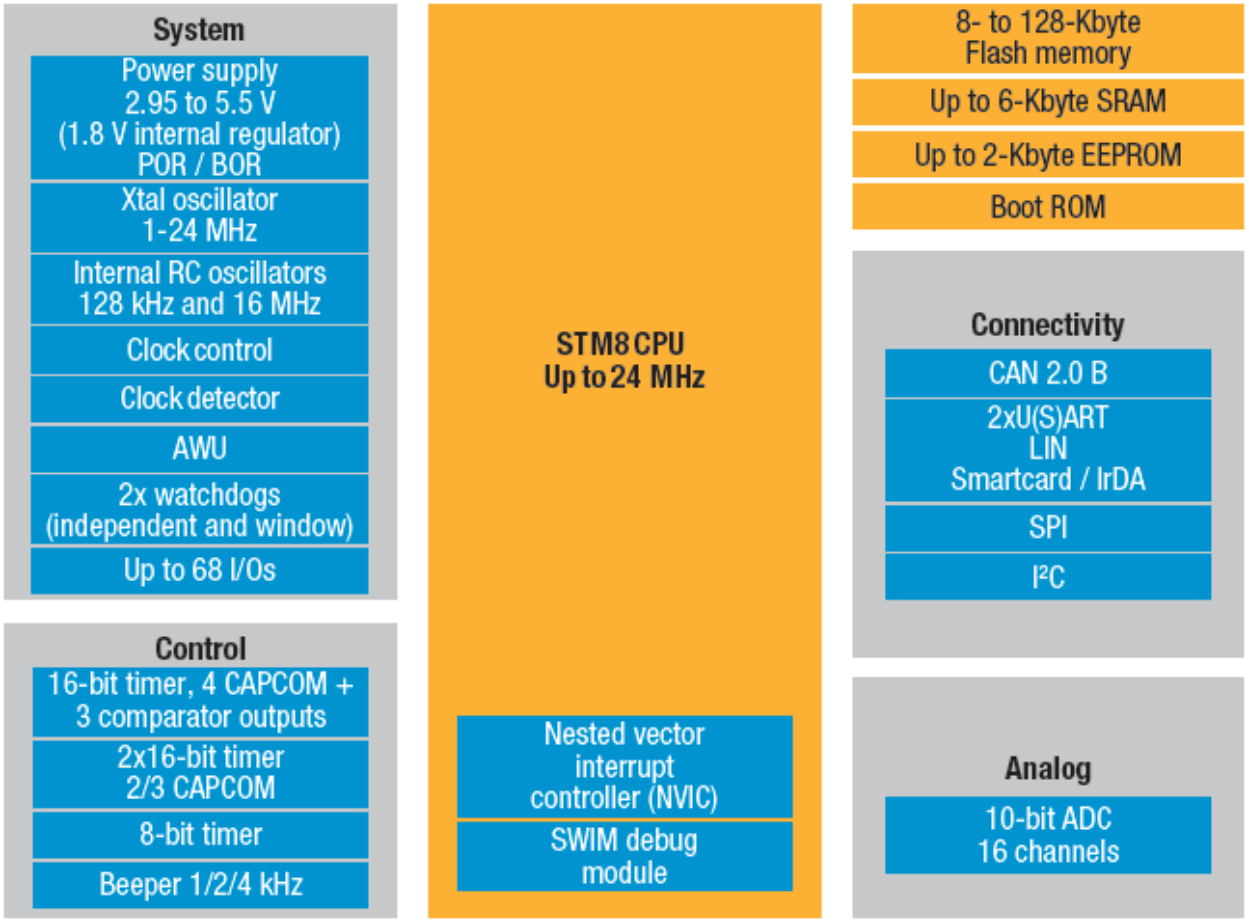
STM8AF62xx Standard line

STM8 core @ 24 MHz	Up to 128-Kbyte Flash	Up to 2-Kbyte SRAM	Up to 2-Kbyte EEPROM

STM8AF52xx CAN line

STM8 core up to 24 MHz	Up to 128-Kbyte Flash	Up to 6-Kbyte SRAM	Up to 2-Kbyte EEPROM	CAN 2.0B

STM8A product example: 128Kbyte - STM8AF51A



- Rich peripheral set
- CAN and LIN interfaces
- Applications: local LIN master, HVAC, car radio

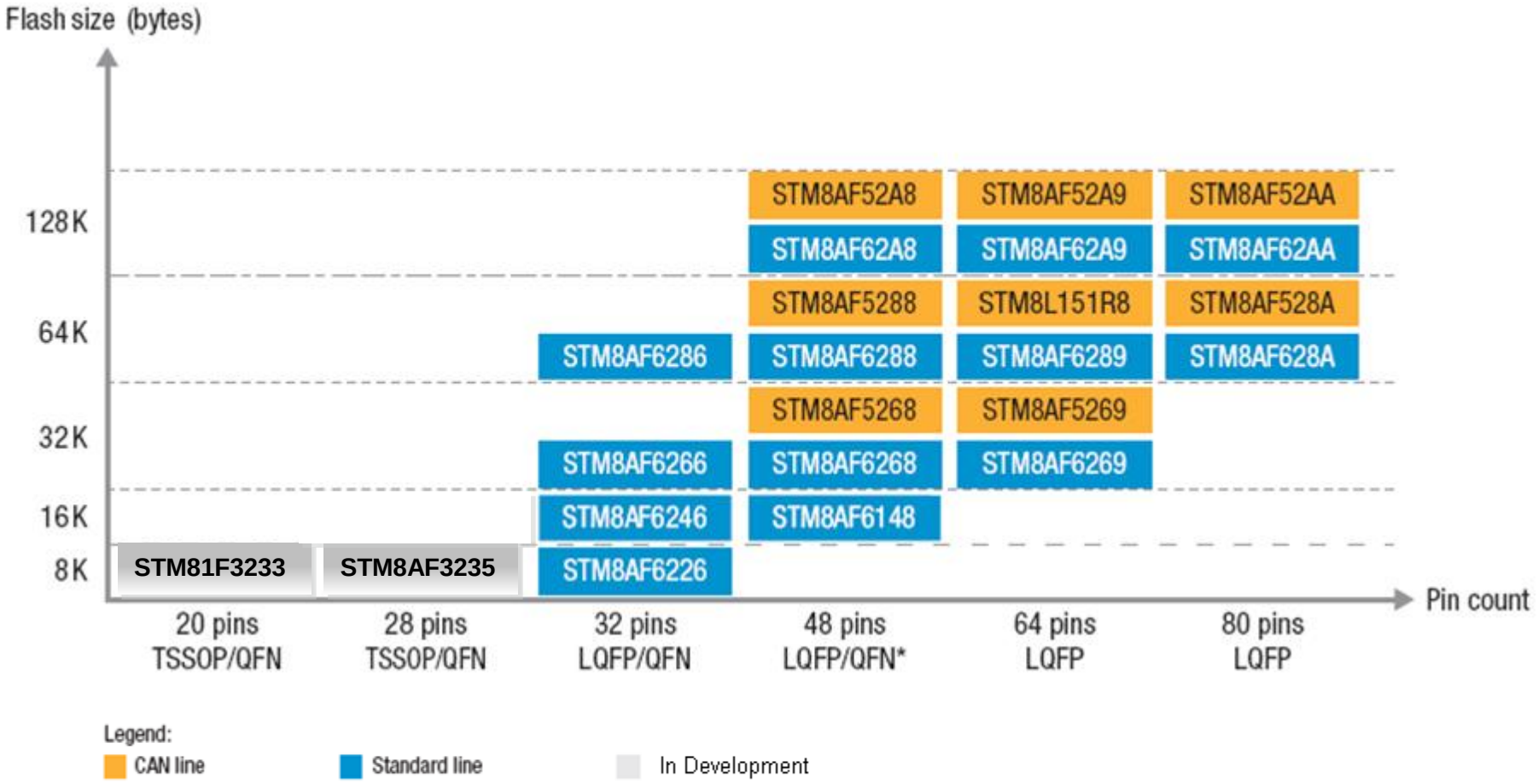
- 16-bit Multipurpose timer with 4 CAPCOM channels and 3 complementary outputs
- CAN interface with 3 Tx Buffers
- 2 independent LIN interfaces

Packages: LQFP 80, 64, 48

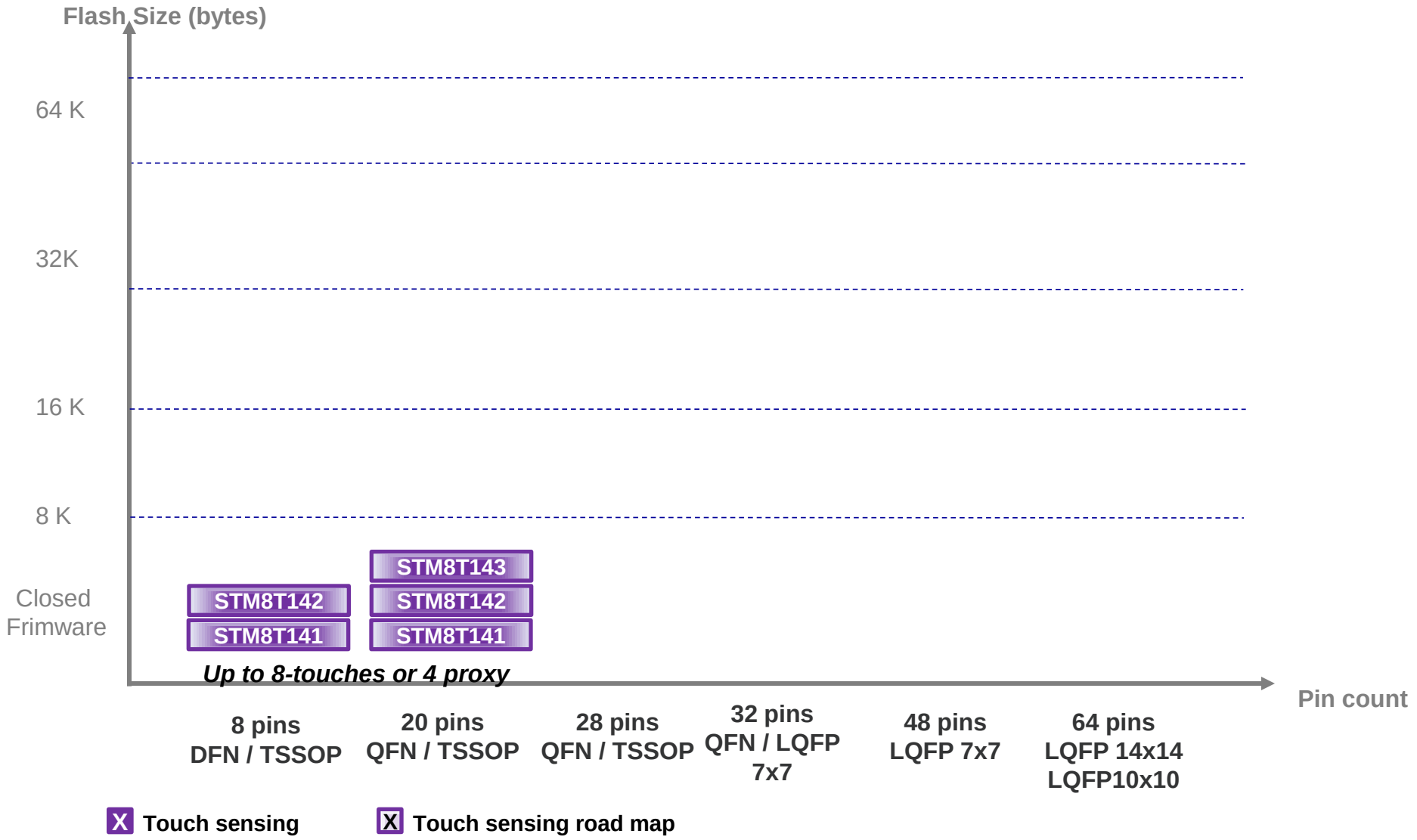
STM8A - Features and Benefits

Features	Benefits
Integrated true data E²	**Reduced system cost**, **No risk** of program corruption
Internal supervisor circuits; power-on reset, Dual watchdog, brown-out reset, clock security system, Low noise emission. LIN 2.1 with Auto-synchro. On STM8AF	Reduced system cost, **Robustness**
Injection robust I/Os	Reduced system cost, Robustness, safe design.
Platform with **compatibility** across the board	**Time to market**, **re-use** of software libraries
Efficient STM8 core; 10MIPS avg. @16MHz	Room for **high end applications** (Motor control) or security **checks**.
AEC-Q100 grade 0 (150°C) on STM8AF or Grade 1	Reduced system cost, explore **new application** domains.
LCD and **Ultra low power** with **STM8AL**	User Interface, **Battery friendly devices**
Advanced development tools (Low cost debuggers to high end emulators)	Time to market
Software libraries	LIN software package, CAN (Vector)

STM8A – Line card



STM8T – Line card

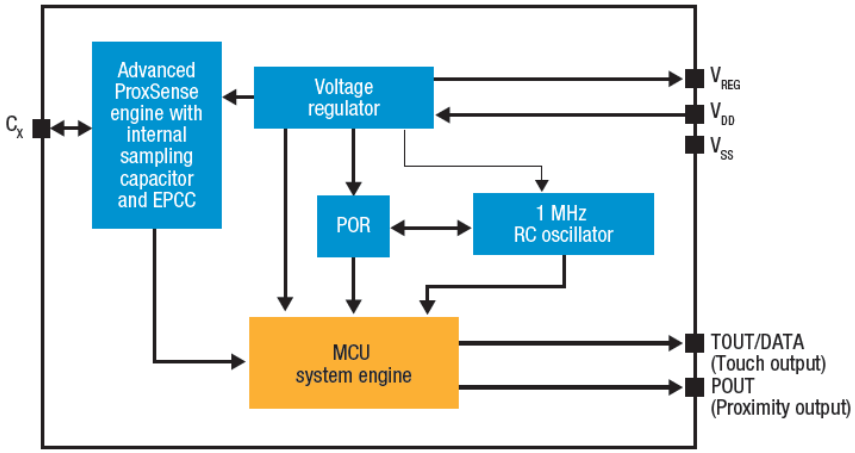


STM8T - Features and Benefits

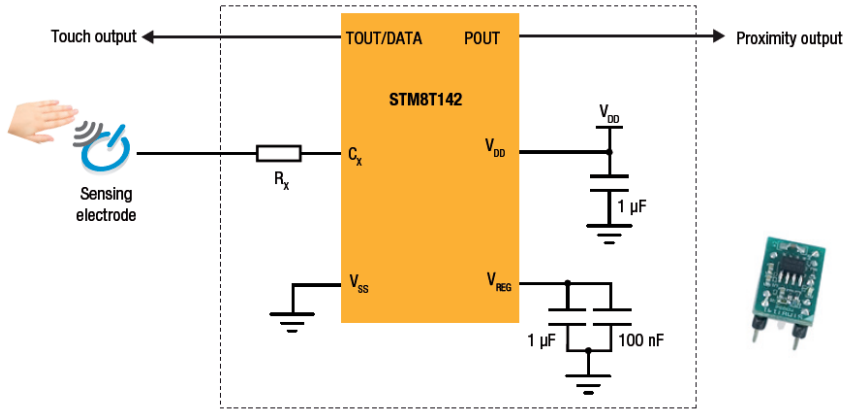
Features	Benefits
2 acquisition methods (Surface and projected)	Flexibility
On chip voltage regulator	Reduced system cost & immunity
Electrode automatic tuning	Sensitivity and RF immunity
Internal sampling capacitors	Reduced system cost & immunity.
Electrode Parasitic Capacitance compensation	
Advanced environment compensation filter and calibration features	Non need for production-line or user calibration
4 selectable power modes	Ultra-low power consumption suitable to portable equipments
Low consumption (9µA ultra-low power mode, 50µA run mode)	
Low pin count, small footprints (8pins ultra-thin package)	Suitable for space-constrained applications
Few external components required	Cost-Optimized bill-of-Material

Proximity detection

STM8T142 block diagram



STM8T142 typical application diagram



- Dual outputs for touch and proximity detection
- Internal sampling capacitors
- On-chip integrated voltage regulator
- Electrode automatic tuning
- Electrode parasitic capacitance compensation
- Environment control system
- 8 touch and 4 proximity sensitivity levels
- 4 low-power modes
- Data streaming mode for easy application fine tuning
- Current consumption down to 9 µA
- Supply voltage: 2 to 5.5 V
- 8-pin packages:
- UFDFPN8 (3 x 2 x 0.6 mm)
- SO8 narrow packages

Tools offer STM8 Platform

Touch sensing Library on STM8

Rev 1.X

Launched in March '09

RC charging time acquisition

STM8S / STM8L

Post Processing

COSMIC

STM8S evaluation board
(STM8/128-EV/TS)

Rev 2.X

Available Now

RC charging time acquisition + CT Charge Transfer acquisition

STM8S **STM8L**

Post Processing

COSMIC RAISONANCE IAR SYSTEMS

New features and improvements :

- Cosmic, IAR and Raisonance C compilers supported
- Acquisition speed improved
- Interrupt management improved
- Active shield feature for Charge transfer
- RTOS management capable

STMTouch Studio

+

STM8L evaluation board
(STMT/8L-EV1)

+

STM8 Development Tools

A wide choice of solutions.

starter kits
Numerous boards

STM8L101-EVAL
STM8L1526-EVAL

STM8/128-EVAL

STM8-SK/RAIS

ST-ICE

STM8 promotion kits

STM8L-PRIMER

STM8S-DISCOVERY KIT
STM8L-DISCOVERY KIT

STM8/128_MCKIT

ST-LINK

IDE solutions

STVD – EWSTM8 – RIDE (*) - IDEA (*)

(*) up to 32 KB C compiler free of charge

Software/Hardware solution providers

CMX SYSTEMS, Freepox, Many ideas one solution, HI-LO SYSTEMS 河洛半導體股份有限公司, Data I/O, vector, KAMAMI, SMH Technologies, BP MICROSYSTEMS, FALCON, 1 SYSTEM, SYSTEM GENERAL

H2/2011 MCU Trainings Calendar Overview

H2/2011	July	August	September	October	November	December
STM32F1xx	11.-13. (W28)* Doulos – Munich 18.-20. (W29)* Microconsult - Munich 19.-21. (W29)* Doulos – Ringwood 19.-22. (W29)* MVD - Paris		12.-14. (W37)* Doulos – Hannover 13.-15. (W37)* Tecnologix - Milano 20.-23. (W38)* MVD - Paris 22.-23. (W38)* Exelen - Fribourg	5.-7. (W40)* Hitex - Karlsruhe 11.-13. (W41) ST Prague (CR) 18.-21. (W42)* MVD - Paris 24.-26. (W43)* Microconsult - Munich	3.11.-4.11. (W44)* Hitex - Karlsruhe 15.-17. (W46)* Tecnologix - Milano 29.11.-1.12. (W48)* Doulos – Ringwood 29.11.-1.12. (W48)* MVD - Paris	30.11.-2.12. (W48)* Hitex - Karlsruhe 12.-14. (W50)* Doulos – Munich
STM32F2xx STM32F4xx			20.-22. (W38) ST Prague (CR)	5.-6. (W40) ST Marlow (UK) 18.-20. (W42) ST Kista (Sweden)	8.-10. (W45) ST Grasbrunn (De)	
STM32L1xx				4.-5. (W40) ST Marlow (CR) 25.-26. (W43) ST Prague (CR)		
STM8S/L			6.-8. (W36) ST Prague (CR)			
STM32W				27.10. (W43) ST Prague (CR)		
Motor Control with ST MCU's					22.-24. (W47) ST Prague (CR)	
Advanced C						6.-7. (W43) ST Prague (CR)

Note: For more details about the ST trainings please click on the chosen session. In case of sessions provided by our Training Partners (*) you will be redirected to their web page getting the full info about the given session.

For latest schedule, sessions and Partners info please visit www.st.com/learnMCU

STM32 Releasing your creativity

www.emcu-it

STM8 - Conclusion

- High performance 20 MIPs core
- Robust and Reliable
- Ultra low power
- 130nm technology enables to break price barriers
- 4 kBytes to 128 kBytes, 20 pins to 80 pins
- 4 families dedicated for Automotive, Industrial , Touch sensing and portable applications.
- Lower system cost
- Friendly IDE with free software suite

- More info are here: www.emcu.it

STM8 Simply Smarter