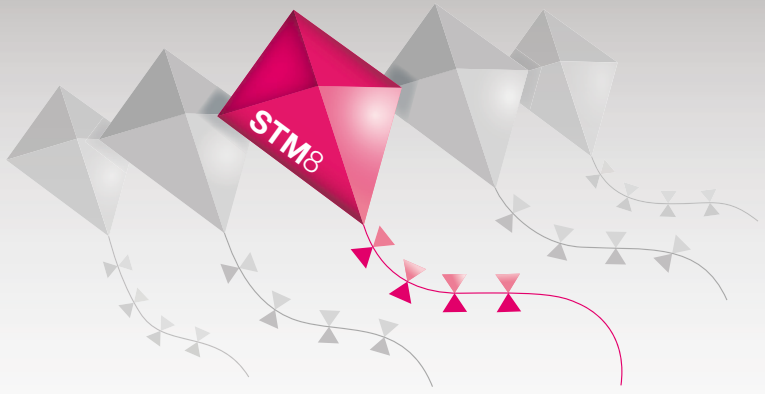
STM8
product families

STM8 Simply **smarter**



STMicroelectronics

8-bit microcontrollers

Content

STM8 – 8-bit microcontrollers

The STM8 is a platform of technologies, IPs and tools which forms the basis of STMicroelectronics' comprehensive family of 8-bit microcontrollers. These cover a wide range of applications from ultra-low-power and consumer electronics, including home appliances and factory automation, to automotive segments.

The platform provides outstanding levels of digital and analog performance combined with a high level of cost effectiveness.

Implemented around a high-performance 8-bit core and a state-of-the-art set of peripherals and IPs, the microcontrollers in the STM8 family are manufactured using an ST-proprietary 130 nm embedded non-volatile memory technology.

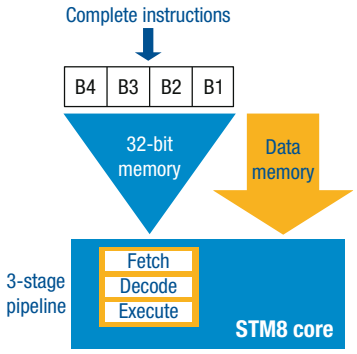
STM8 core

The STM8 core is an evolution of the industry-standard ST7. It has been significantly improved to reach 1.6 cycles per instruction and up to 24 MHz clock frequency, allowing customers to run their applications at low speed with enough performance.

The flexibility of the architecture minimizes switching noise, so improving the system robustness and power consumption.

An innovative clock implementation provides strong benefits such as fast wake-up in 4 µs. It enables immediate clock switching on the fly to allow clock accelerations for PWM or calculation routines.

The 32-bit robust NVM memory addressed through a 3-stage pipeline interface, the 16-bit index registers and stack pointers and the advanced instruction set with hardware multiplication/division are key elements that significantly improve the efficiency of this 8-bit device family.



One series for every need

The STM8 is a coherent platform addressing several types of application and requirement.

- The mainstream STM8S covers a wide range of sectors such as the appliance, industrial or consumer markets. This series fits the market needs with a good balance of performance versus cost, particularly true for the STM8 Value line.
- The STM8L targets low-voltage, medical, metering and battery-powered applications with advanced analog features and innovative IPs such as the DMA, 12-bit ADC and DAC, encryption engine and low-power memory that maintain their specifications at high temperatures.
- For automotive applications, the STM8A series is qualified to AEC-Q100 grade1 and Grade 0 (150 °C), and offers standard-voltage or ultra-low-power categories.
- Finally, the STM8T touch-sensing series provides innovative IPs to support capacitive sensing designs, combining MCU properties with the most advance acquisition technology.

Based on the different marketing demands, our design and engineering teams have developed a wide portfolio to meet each requirement in the best way, bringing the exact price point versus features to our customers.

Development support

All STM8 devices embed a non-intrusive debug module interfaced through a single wire module (SWIM). This advanced feature allows hardware and software engineers to build and debug their application using one I/O and no MCU resources. Real-time read/write RAM, on-the-fly access to registers, no wait, no stall and unlimited breakpoints on all memory instructions highlight the high level of innovation made available to users.

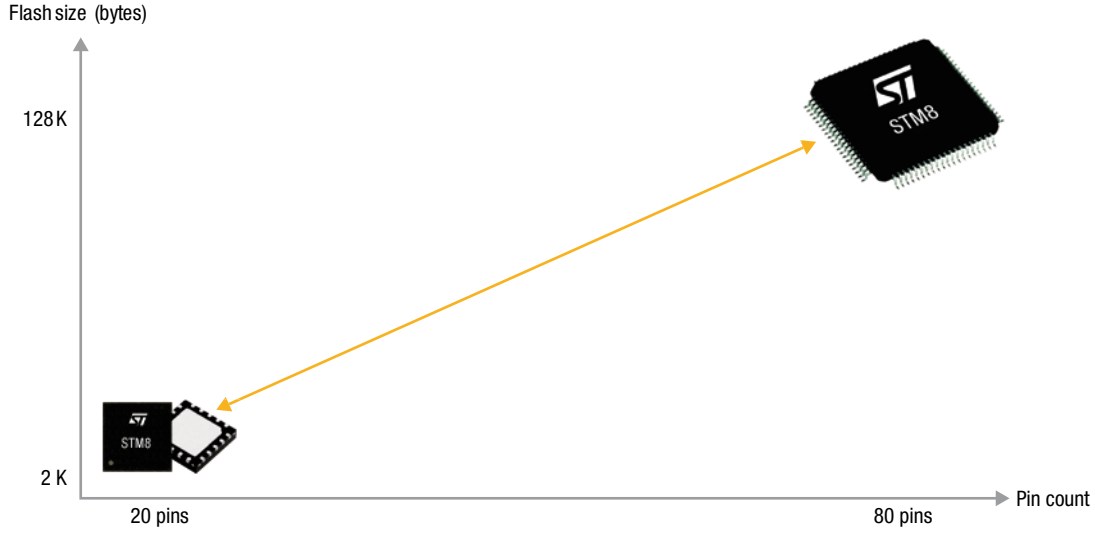
Improved time to market, cost effectiveness, quick development cycles, reuse of software libraries, suitable features and performance are all reasons to choose the STM8 family.

STM8 series

STM8S Mainstream	STM8A Automotive	STM8L Ultra-low power	STM8T Touch sensing
Data EEPROM, 3 and 5 V family, precise RC	Data EEPROM, 3 and 5 V family, precise RC, LIN, CAN, grade 0 AEC-Q100	Data EEPROM, 1.65 and 3 V family, strong analog, LCD drivers, low-leakage technology	Proximity sensors, touchkeys, keypads, sliders or wheels
Platform designed and engineered for cost effectiveness	Conceived to meet high quality and reliabilty standards	Architecture and technology focused on power savings	Hardware and open software solutions
www.st.com/stm8s	www.st.com/stm8a	www.st.com/stm8l	www.st.com/stm8t

Top view portfolio

A large product portfolio to meet all your needs



Superior and innovative capabilities

Ps	STM8S	STM8A	STM8L	STM8T
Global features				
Voltage domain	2.95 to 5.5 V	3.0 to 5.5 V (STM8AF) 1.65 to 3.6 V (STM8AL)	1.65 to 3.6 V (1.4 V RAM data ret.)	1.65 to 3.6 V and 2.0 to 5.5 V
Max. temperature	-40 to 125 °C	-40 to 150 °C	-40 to 125 °C	-40 to 85 °C
Internal clock, high speed	Internal RC up to 16 MHz 1%			
Internal clock, low speed	RC 128 kHz		RC 38 kHz	
Max. clock speed	24 MHz	16 MHz		
Min. clock speed	128 kHz		300 kHz	2 MHz
Watchdog	2 Watchdogs (One window)			
Low power, Halt	4.5 µA	5 µA (0.3 µA on STM8AL)	0.3 µA	0.4 µA
Low power, Active Halt	10 µA (Run in 50 µs)	25 µA (Run in 50 µs) (0.8 µA on STM8AL)	0.8 µA (Run in 4 µs)	0.8 µA (Run in 4 µs)
Power consumption, Run	1.8 mA @ 16 MHz from RAM	4.4 mA @ 16 MHz from RAM	1.6 mA @ 16 MHz from RAM	10 µA (200 ms scan)
Data EEPROM endurance	Independent 300-kcycle EEPROM			
SAE EMI level	2.5 (24 MHz)	2.5 (24 MHz)	1.5 (16 MHz)	1 (16 MHz)
DMA	No	STM8AL only	Yes, 4 channels	No
Boot ROM	YES			
RTC	No	STM8AL only	Yes, +/- 0.5 ppm	No
The need for speed				
USART	1 Mbit/s, up to 2 UARTs		1 Mbit/s	
SPI	10 Mbit/s			
I²C	100 and 400 Kbit/s			
3-phase MC timer	12 MHz max PWM		8 MHz max PWM	
CAN	1Mbit/s, up to 3 mailboxes		-	
The need for analog				
ADC	Up to 16 channels, 10 bits, 2.3 µs, TUE 2.2 mV	Up to 16 channels, 10 bits, 3.5 µs,TUE 2.2 mV	28 channels, 12 bits, 1 µs, TUE 0.4 mV	-
DAC	-	STM8AL only	2 channels, 12 bits, 1 MSPS, TUE 3.5 mV	-
Comparators	-	STM8AL only	3 µs propagation delay, 0.2 µA consumption	-
Touch sensing	STM8S RC library	STM8L CT library (STM8AL only)	STM8L CT library	ProxSense™ IP, up to 300 touchkeys, projected or surface
Internal voltage reference	1.8 V or + 1.2V +/-2.5% on STM8S903	1.8 V or (1.22 V on STMAL)	1.22 V +/-1.6%, 20 ppm/°C	ProxSense™ voltage regulator
Temperature sensor	-	Yes on STM8AL	+/-1 °C	-
The need for connectivity				
CAN	BeCAN 2.0B	BeCAN 2.0B	-	-
UART	Smartcard, IrDA, single wire, LIN	LIN 2.1 compliant (master/ slave)	Smartcard, IrDA, single wire, LIN 2.0	-
SPI	Yes			
I²C	Yes			
CEC	Software IP			
DALI	Software IP			
SWIM	Non-intrusive debug and programming			
IR Interface	-	-	Hardware IP	-
LCD	Software IP	Software IP on STM8AF or 4 x 28 or 8 x 40 segments (320 pixels) on STM8AL	4 x 28 or 8 x 40 segments (320 pixels)	-
Unique ID	Individual die identification on 96 bits			
LNB	STM8SPLNB1 DiSEqC™	-	-	-

(*) Typical values are indicated. Depending on part numbers, other characteristics may be found, refer to datasheet.

STM8S mainstream 8-bit MCUs

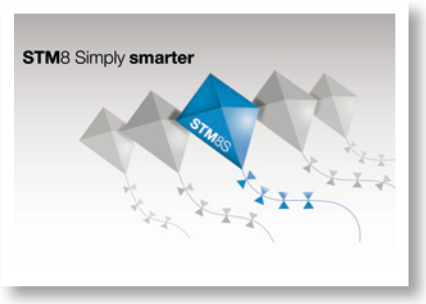
STMicroelectronics' STM8S series of general-purpose 8-bit Flash microcontrollers offers ideal solutions for industrial and appliance requirements. An advanced core combined with 3-stage pipeline ranks the STM8S microcontroller in the top position for performance.

The true embedded EEPROM and the calibrated RC oscillator reduce costs significantly for the majority of applications. An easy-to-use and intuitive development environment also contributes to improving time to market.

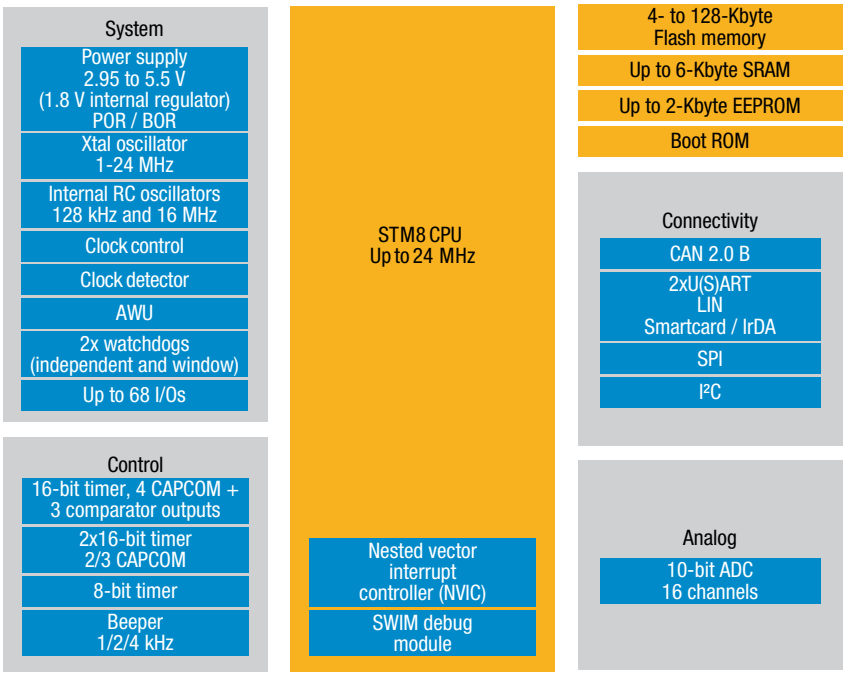
STM8S description

Upgrade to a higher or downgrade to a lower memory size, or use a different package across lines without changing the initial layout or software.

- STM8 24 MHz CPU
- 8 to128 Kbytes of embedded Flash, up to 6 Kbytes of SRAM
- Supply voltage: 2.95 to 5.5 V
- Up to four low-power modes: down to 4 µA with complete context retention
- State-of-the-art digital and analog peripherals
- Specific interfaces such as IrDA and smartcard for support of consumer applications
- -40 to +85 °C, or up to 125 °C temperature range
- Free class B self-diagnostic library for IEC 60335/IEC 60730 compliant applications
- Many software libraries and examples for download



STM8S block diagram



STM8S applications

- Appliances, power tools
- HVAC
- Power management
- Lighting
- Factory automation
- Devices with rechargeable batteries
- Motor control
- e-vehicles
- Toys and games
- Sensors
- Power supplies
- User interfaces

STM8S product lines

STM8S microcontrollers come in 4 lines: The Performance line is featuring the highest performance with 24 MHz clock speed and the most advanced peripherals set. More affordable, the Access line offers a more limited set of features and performance. The more recent Value line is optimized in terms of production flow to address cost-sensitive application fields. Finally, the Application specific line features a full set of additional analog IPs.

Common core peripherals and architecture:

- UART LIN/smartcard/IrDA
- 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 channels
- Xtal 16 MHz and 128 kHz internal RC oscillators
- SWIM debug module

STM8S903 Application specific line

STM8 core @ 16 MHz	8-Kbyte Flash	1-Kbyte SRAM	640-byte EEPROM	7 analog channels	Voltage reference	Timer sync

STM8S20 Performance line

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

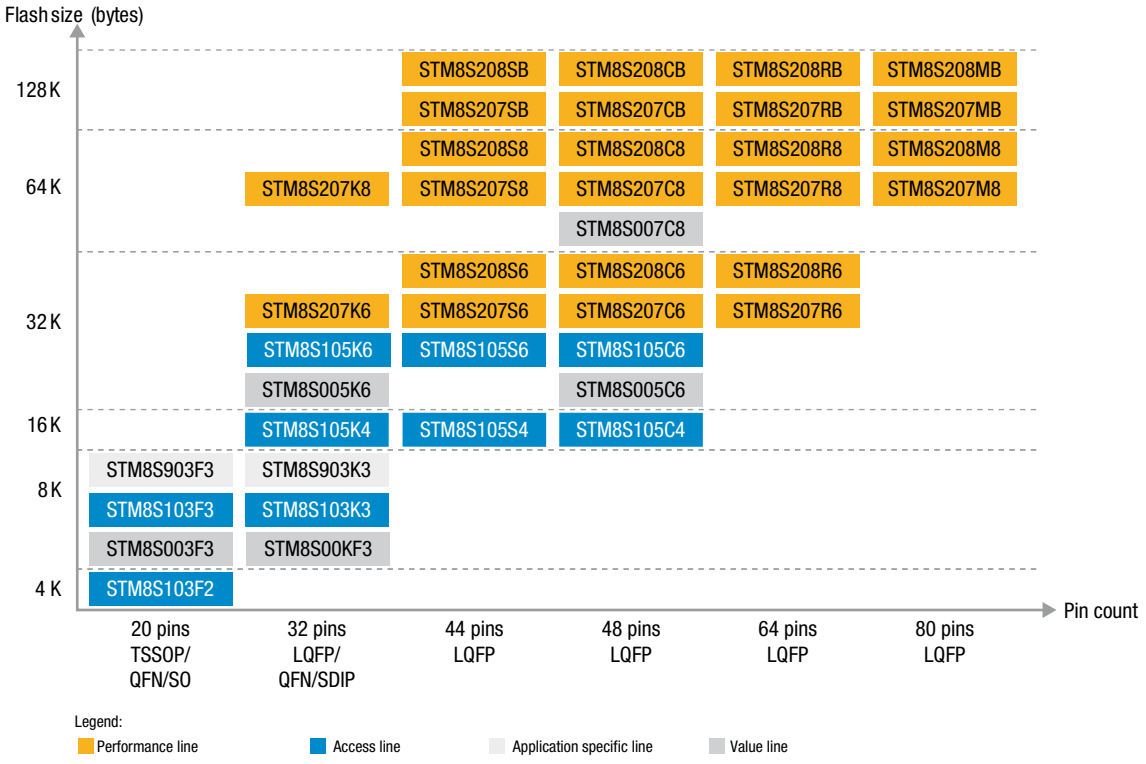
+ STM8S10 Access line

STM8 core @ 16 MHz	Up to 32-Kbyte Flash	Up to 2-Kbyte SRAM	Up to 1-Kbyte EEPROM

STM8S00 Value line

STM8 core @ 16 MHz	Up to 64-Kbyte Flash	1-Kbyte SRAM	128-byte EEPROM

STM8S portfolio



STM8L ultra-low-power MCUs

STMicroelectronics proposes an ultra-low-power series of MCUs based on 8 bit and 32 bit cores. The STM8L MCU series is based on the STM8 proprietary core and is the entry point of our low-power MCU solutions.

The STM8L series combines high performance and ultra low power consumption using a new proprietary ultra low leakage process and optimized architecture. This series is declined in three different lines, making the STM8L an optimal series to support many applications with special care on power savings.

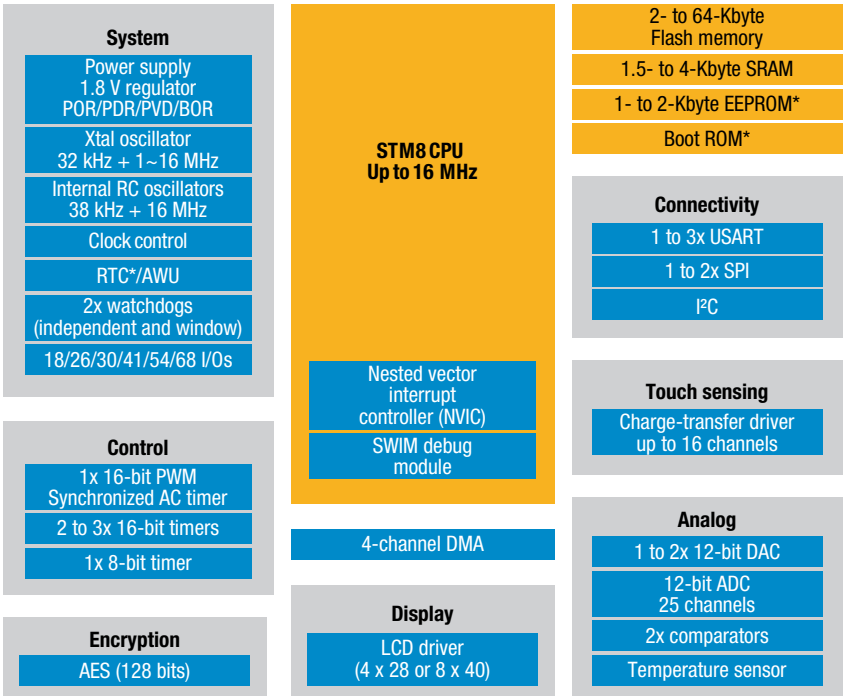
The STM8L101 is the entry point for the ultra low power 8 bit portfolio. It is cost optimized and offers a high level of integration in an ultra small footprint. The STM8L151 series offers more features and performance with advanced digital and analog features.

STM8L description

Upgrade to a higher or downgrade to a lower memory size, or use a different package across lines without changing your initial design or software.

- STM8 16 MHz CPU
- 2 to 64 Kbytes of embedded Flash, up to 4 Kbytes of SRAM and up to 2 Kbytes of EEPROM
- Four lines: pin-to-pin, software and peripheral compatibility
- Supply voltage: 1.65 to 3.6 V
- Up to four ultra-low-power modes: down to 350 nA with SRAM and context retention
- Run mode dynamic consumption down to 150 µA/MHz
- State-of-the-art digital and analog peripherals
- -40 to +85 °C, or up to 125 °C operating temperature range
- Free touch-sensing library
- LCD driver
- AES 128 encryption

STM8L block diagram



Abbreviations:
AWU: Auto wake up from halt
BOR: Brown-out reset
I²C: Inter integrated circuit
AES: Advanced encryption standard
PDR: Power-down reset
POR: Power-on reset
PVD: Programmable voltage detector
RTC: Real-time clock
SPI: Serial peripheral interface
USART: Universal sync/async receiver transmitter

STM8L applications

- Medical equipment
  - Glucose meters, insulin pumps
  - Blood pressure and colesterol monitors
  - Patient monitoring
- Metering (electricity/gas/water/heat meters, scales)
- Alarm systems (central units, sensors, door locks, fire alarms)
- GP portable devices
  - Mobile phones, accessories
  - Gaming, remote controls
- GPS watches, sports equipment

STM8L product lines

Common core peripherals and architecture:

- Communication peripherals USART, SPI, I²C
- Multiple 16-bit timer
- Internal 16 MHz and 38 kHz RC oscillators
- Watchdog (dual watchdogs on STM8L15x/16x)
- Reset circuitry POR/PDR
- 2x comparators
- Touch-sensing (Up to 16 channels)

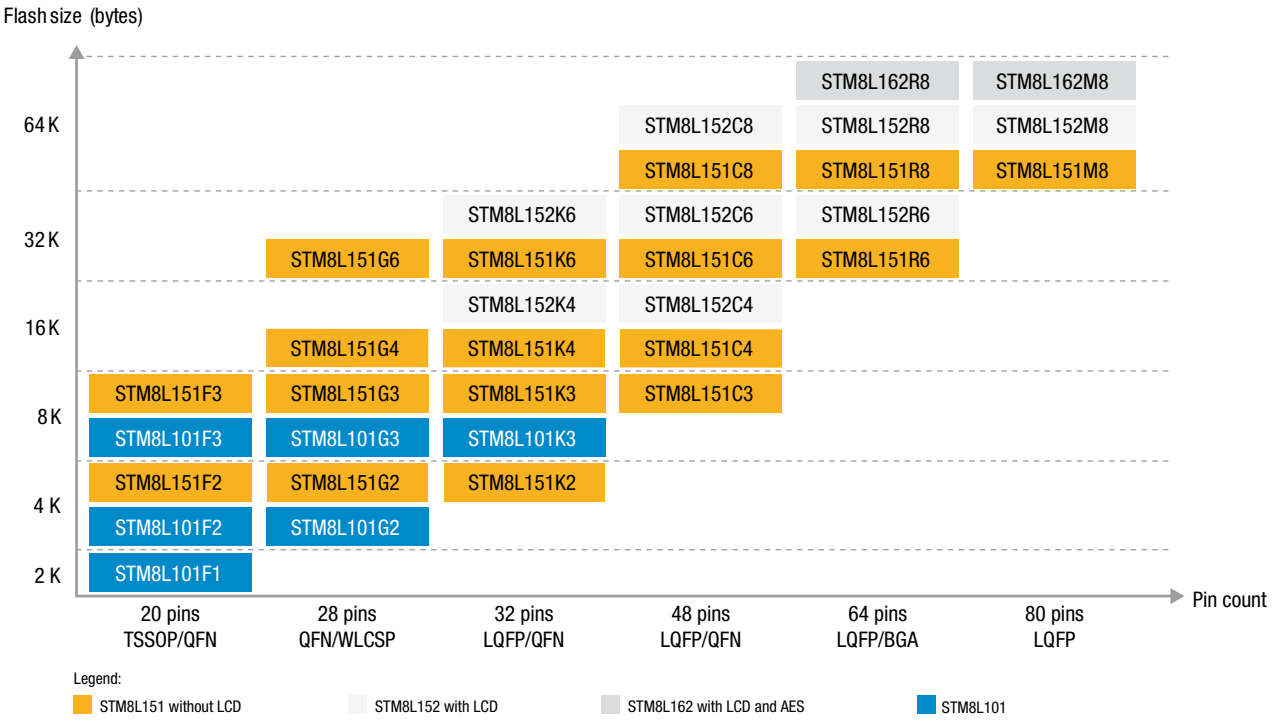
+

STM8L162	STM8 core @ 16 MHz	up to 64-Kbyte Flash	Up to 4-Kbyte SRAM	Reset + BOR PVD	Main osc. input 1-16 MHz	Up to 2-Kbyte data EEPROM	RTC with 32 kHz osc.	Up to 4 channels DMA	12-bit ADC (1 µs) Temp. sensor	12-bit DAC	LCD 8 x 40	AES 128-bit
STM8L152	STM8 core @ 16 MHz	up to 64-Kbyte Flash	Up to 4-Kbyte SRAM	Reset + BOR PVD	Main osc. input 1-16 MHz	Up to 2-Kbyte data EEPROM	RTC with 32 kHz osc.	Up to 4 channels DMA	12-bit ADC (1 µs) Temp. sensor	12-bit DAC	LCD 8 x 40	
STM8L151	STM8 core @ 16 MHz	up to 64-Kbyte Flash	Up to 4-Kbyte SRAM	Reset + BOR PVD	Main osc. input 1-16 MHz	Up to 2-Kbyte data EEPROM	RTC with 32 kHz osc.	Up to 4 channels DMA	12-bit ADC (1 µs) Temp. sensor	12-bit DAC		
STM8L101	STM8 core @ 16 MHz	Up to 8-Kbyte Flash*	Up to 1.5-Kbyte SRAM									

Note:
* Embedded EEPROM in the Flash

Abbreviations:
AES: Advanced encryption standard
BOR: Brown-out reset
Osc.: Oscillator
POR: Power-on reset
PDR: Power-down reset
PVD: Programmable voltage detector
RTC: Real-time clock

STM8L portfolio



STM8A automotive 8-bit MCUs

This series of 8-bit Flash microcontrollers responds to the specific needs of automotive applications.

From product specifications on through design and manufacturing, the focus is on reliability, application robustness and system cost improvement.

The integrated true data EEPROM features top notch endurance and data retention throughout the full temperature range. With its extended temperature range up to 150 °C ambient temperature, the STM8A is the ideal and economic solution for the growing market of 8-bit automotive applications.

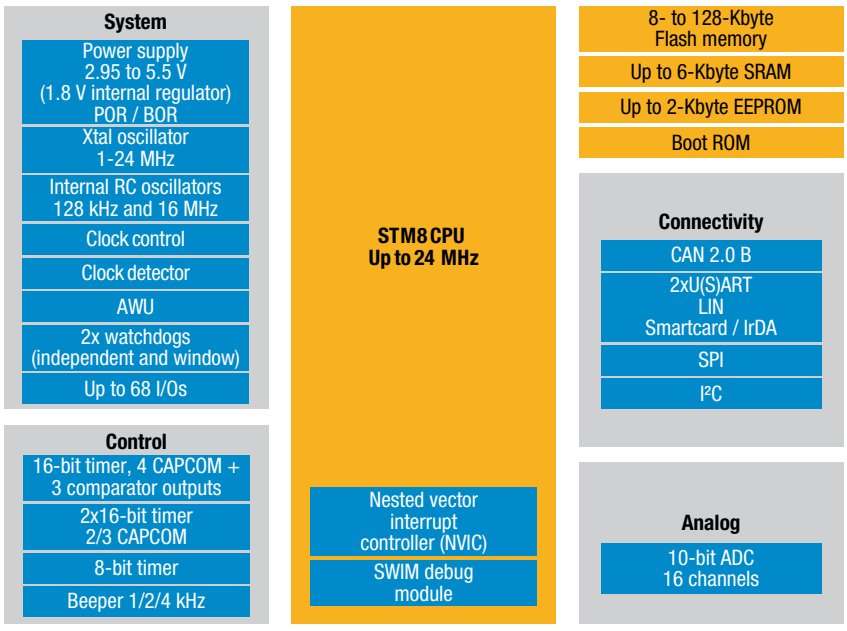
Newly introduced, the ultra-low-power STM8AL is now available for sampling. With the multiplication of electronic subsystems, saving power is becoming a key consideration, and this series responds to the specific needs of low power in automotive applications.

STM8A description

Upgrade to a higher or downgrade to a lower memory size or use a different package across lines without changing the initial layout or software.

- STM8 up to 24 MHz CPU
- 8 to 128 Kbytes of embedded Flash, up to 6 Kbytes of SRAM and up to 2 Kbytes of data EEPROM
- Packages up to 80 pins
- Supply voltage: 2.95 to 5.5 V for STM8AF, 1.65 to 3.6 V for STM8AL
- Up to four low-power modes: down to 1 µA with complete context retention
- State-of-the-art digital and analog peripherals
- Up to 150 °C ambient temperature
- Qualified to AEC-Q100
- Certified CAN drivers
- Free certified LIN drivers
- Touch-sensing and LCD lines

STM8AF block diagram



STM8AF applications

- CAN controllers
- LIN nodes
- Actuators
- Sensors
- Safety microcontrollers
- Car radios
- Immobilizers
- DC motor control
- HVAC

STM8AF product lines

Common core peripherals and architecture:

- Up to 2x U(S)ART LIN support
- I²C 400 kHz multimaster
- SPI 10 MHz
- Up to 3x 16-bit timer 8-bit timer
- 2x watchdogs (IWDG 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

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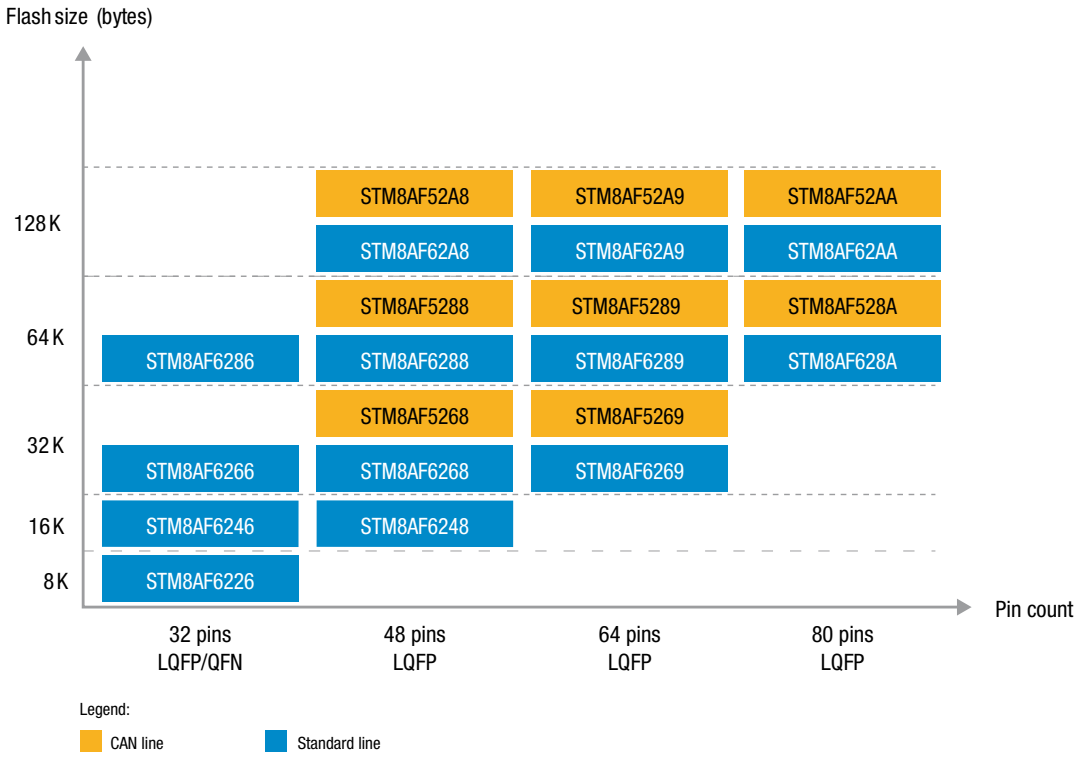
STM8AF62 LIN line

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

STM8AF52 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

STM8AF portfolio



STM8AL product lines

The STM8AL30 is the entry point for the automotive ultra-low-power 8-bit portfolio. It is cost optimized and offers a high level of integration in an ultra-small 20-pin footprint. The STM8AL31 is the feature-rich 8-bit solution. It has more Flash, SRAM and peripherals on board, with external crystal/clock capability, more analog features, a real-time clock and enhanced reset, EEPROM with true RWW, DMA, fast ADC and DAC. The STM8AL3L has an additional segment LCD driver.

Common core peripherals and architecture:

- Multiple communication peripherals up to 3x USART, 2x SPI, I²C
- Up to 8x16-bit timers
- 16 MHz and 32 kHz external oscillators
- Internal 16 MHz and 38 kHz RC oscillators Clock security system
- 2x watchdogs
- Reset circuitry POR/PDR
- 2x comparators
- Boot loader
- SWIM debug module

\+

STM8AL3L LCD Standard low-power line

STM8 core 16 MHz	Up to 64-Kbyte Flash	Up to 4-Kbyte RAM	Up to 2-Kbyte data EEPROM	RTC	DMA and AES	12-bit ADC	12-bit DAC	LCD 8 x 40 4 x 28 Step-up convertor

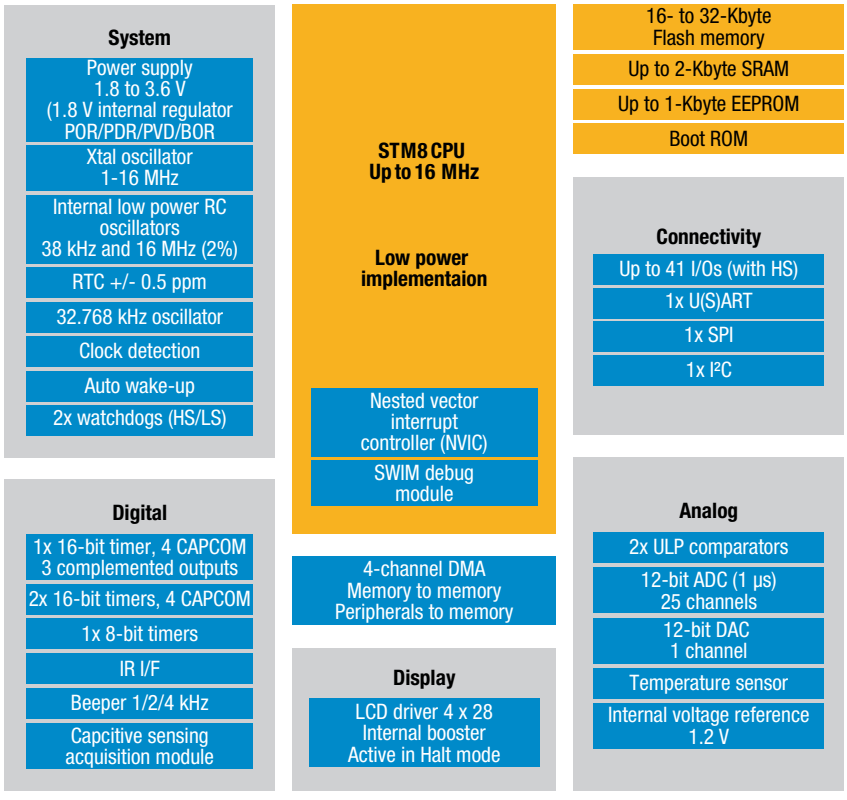
STM8AL31 Standard low-power line

STM8 core 16 MHz	Up to 64-Kbyte Flash	Up to 4-Kbyte RAM	Up to 2-Kbyte data EEPROM	RTC	DMA and AES	12-bit ADC	12-bit DAC

STM8AL30 Value low-power line

STM8 core 16 MHz	Up to 8-Kbyte Flash	Up to 1.5-Kbyte RAM

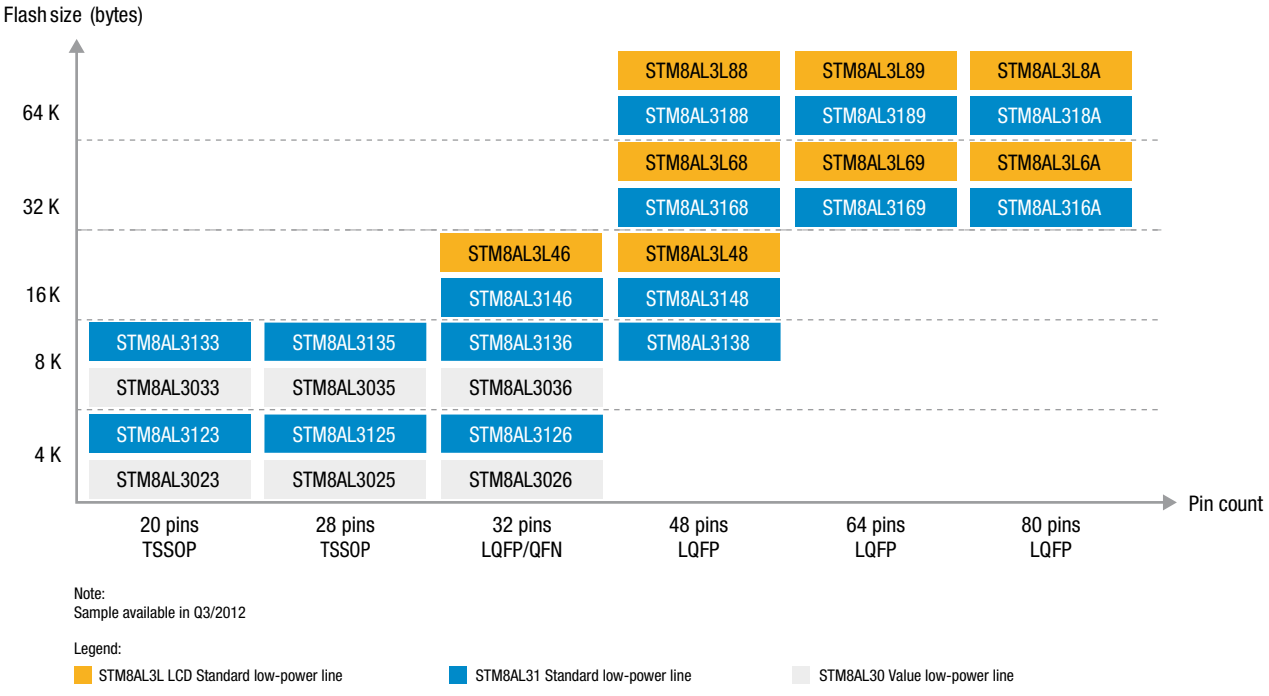
STM8AL3Lx8 block diagram



STM8AL applications

- Remote keyless entry
- Tire pressure monitors
- Alarms
- BLDC electric motor control
- Sensors

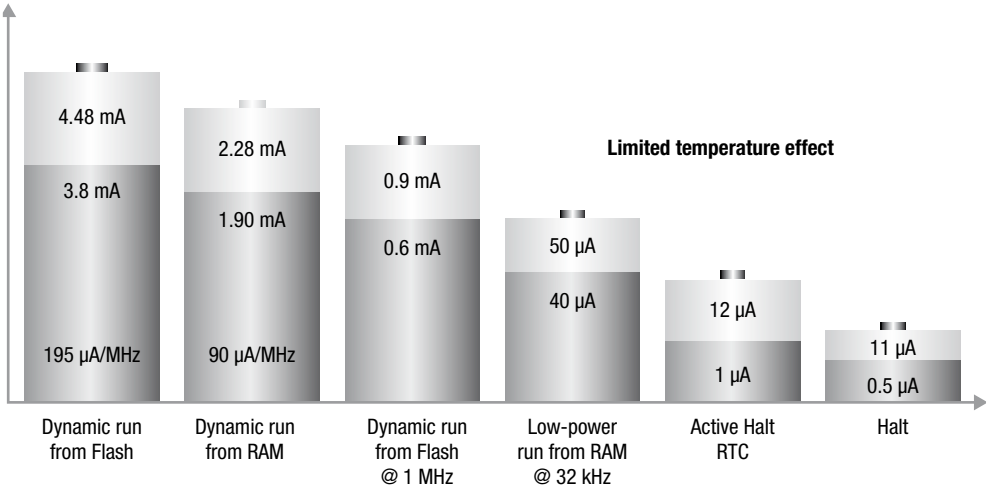
STM8AL portfolio



Note:
Sample available in Q3/2012

Legend:
STM8AL3L LCD Standard low-power line
STM8AL31 Standard low-power line
STM8AL30 Value low-power line

STM8AL power budget



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

Legend
Max (125 °C)
Typ (25 °C)

STM8T touch-sensing MCUs

The STM8T uses a ProxSense™ charge transfer capacitive acquisition principle and allows various applications from a basic single touch including proximity sensing up to an advanced matrix capable of managing up to 300 touches or channels. With proximity detection ranging up to 20 cm, the capacitive electrode is usually made using a simple conductive material such as a copper pad or conductive ITO layer. The STM8T143 is a single-channel capacitive sensor with two independent outputs to report touch or proximity events.

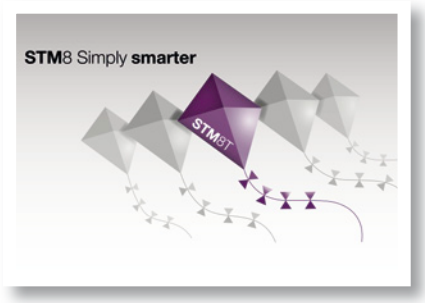
The newly introduced STM8TL53 series is based on the STM8L platform with ProxSense™. The robust cell provides a strong immunity to perturbation, while the innovative STM8L provides the benefits of low-power Flash-based technology. The combination of these two advanced solutions meets the needs of the most demanding user interfaces.

STM8T143 description

The STM8T143 has unique features to optimize sensitivity as well as provide outstanding immunity to RF interferences.

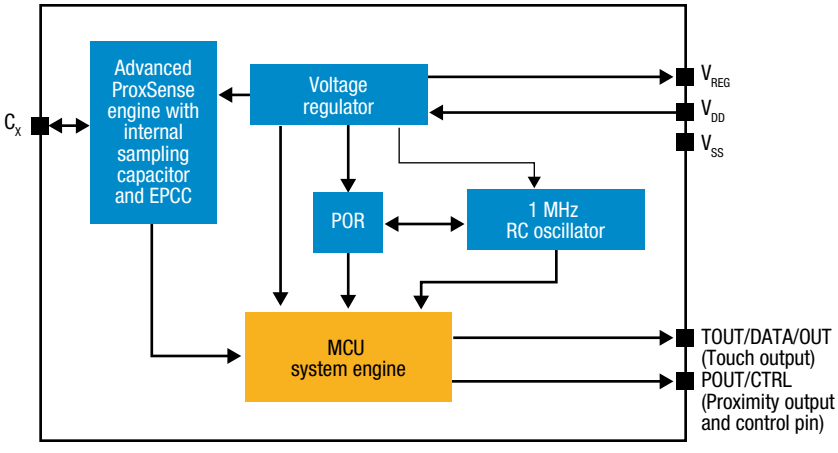
It embeds sampling capacitors (Cs) and features an electrode parasitic capacitance compensation circuitry (EPCC). EPCC automatically compensates for ground parasitic capacitance sources (such as ground planes, printed circuit board tracks and large metal objects) which significantly reduce the proximity detection range.

A specific algorithm called automatic electrode tuning optimizes the system performances by selecting the most appropriate Cs value and EPCC parameters to always get maximum performances.



- Surface charge transfer acquisition principle
- Dual outputs for touch and proximity detection
- Built-in sampling capacitors
- On-chip integrated voltage regulator
- Automatic electrode tuning (AET)
- Electrode parasitic capacitance compensation (EPCC)
- Environment control system (ECS) with dynamic calibration
- Sync/halt pin to control device conversion by a host
- 8 touch and 4 proximity sensitivity levels
- 4 power modes
- Data streaming mode for easy application fine tuning
- Current consumption down to 10 µA
- Supply voltage: 2 to 5.5 V
- 8-pin packages:
  - UFDFPN8 (3 x 2 x 0.6 mm)
  - SO8 narrow packages

STM8T143 block diagram



STM8T applications

- Consumer electronics
- Companion device for navigation joysticks and optical track pads
- Hand detection for nomad equipment (tablet PCs)
- Ear/face proximity detection for smartphones
- Ear/head detection for MP3/ walkman ear buds and Bluetooth headsets
- On/off touch-sensing buttons such as GPS system home buttons
- Wall switch backlight activation on user approach and light controls on user touch

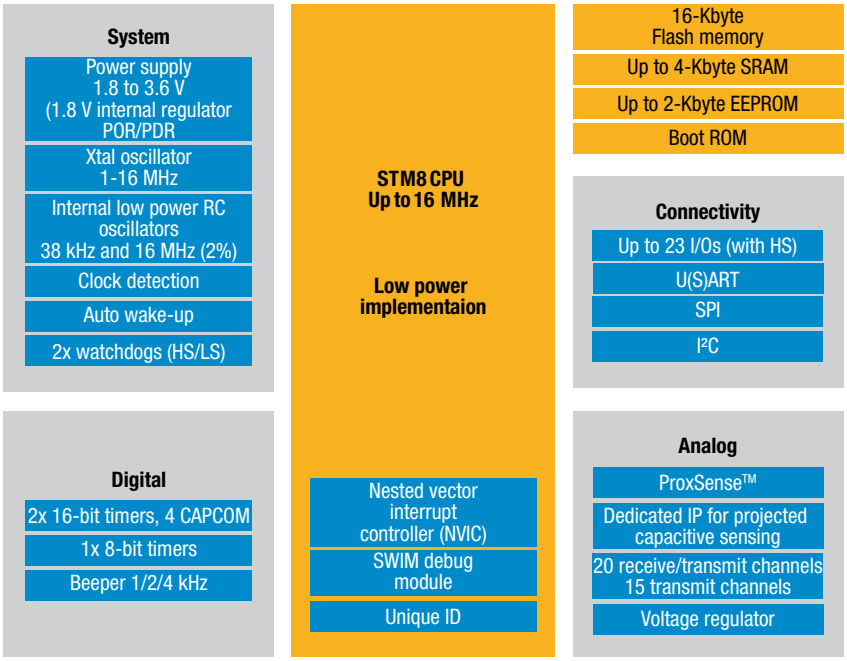
STM8TL53 description

The STM8TL53 is the most advanced solution offering up to 300 channels using the ProxSense™ projected charge transfer capacitive acquisition principle. The hardware peripheral combines advanced analog and digital processing to measure the electrode capacitance with no CPU load.

The fast projected capacitive acquisition minimizes the use of external components for a robust multiplexing of channels using a matrix of up to 15 Tx and 20 Rx.

- Projected acquisition
- Highest sensitivity robustness (SNR > 300:1)
- Built-in sensing capacitors
- Good dielectric penetration (10 mm with plexiglass)
- Proximity capability
- Water resistant
- Automatic electrode tuning (AET)
- Electrode parasitic capacitance compensation (EPCC)
- Board layout easiness
- On-chip regulator
- RF noise detection module
- Acquisition synchronization input pin
- Low-power modes
- Software library and numerous examples
- 28 or 48 QFN, TSSOP20

STM8TL53 block diagram



STM8 tools

Discovery kits

Discovery kits are the cheapest and quickest way to discover the STM8 families. These quick-start evaluation boards embed the ST-LINK debug probe and are supported by IDE from ST (STVD) and IAR (EWSTM8).

Order codes:

- STM8S-DISCOVERY (STM8S Performance and Access line)
- STM8SVLDISCOVERY (STM8S Value line)
- STM8L-DISCOVERY (STM8L)

STM8S-DISCOVERY

STM8SVLDISCOVERY

STM8L-DISCOVERY

Evaluation boards

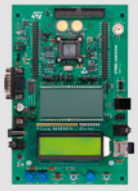
ST evaluation boards: general-purpose evaluation boards for STM8A, STM8L and STM8S devices with hardware features for evaluating microcontroller performance, low-power options and full range of peripherals such as SPI, I²C, EEPROM, RS-232 and more... (Order code types: STM8xxx-EVAL).

- STM8/128-EVAL (STM8S)
- STM8A/128-EVAL (STM8A)
- STM8L101-EVAL (STM8L101)
- STM8L1526-EVAL (STM8L15x, 32 KB Flash)
- STM8L1528-EVAL (STM8L15x, 64 KB Flash)

STEVAL-IAS003V1 is an STM8L101 low-power demonstrator LCD glass directly driven by the microcontroller. It features:

- 1.25 µA average consumption
- 3-digit LCD glass driven by software
- CR1220 battery operated (not included)

STM8L15LPBOARD demonstrates 7 different power modes of the STM8L15x. It provides the means to measure the current sourced by the battery.



STM8L1528-EVAL

STM8L15LPBOARD

Starter kits

Complete sets of hardware and software tools to help users discover target device features and start application development quickly and easily:

- **EvoPrimer STM8L:** Fun, stimulating learning and development platforms with touchscreen LCD, MEMS-based controls and integrated debugging/programming via USB for the STM8L15x. Includes Raisonance RIDE and STM8 C compiler (compiles up to 32 Kbytes of code).
  (Order code: STM8L1526PRIMER)
- **Raisonance REva starter kits for STM8S**, with RIDE integrated development environment, C compiler for STM8, RLink (USB/SWIM) in-circuit debugger/programmer, demonstration motherboard and daughter boards with STM8S target devices (STM8/128-SK/RAIS).
  Each REva daughter board can be ordered separately (STM8S/8-D/RAIS, STM8S/32-D/RAIS, STM8/128-D/RAIS).

STM8L1526PRIMER

STM8/128-SK/RAIS

Programming

You can program the STM8 Flash microcontroller on your application board via the single-wire interface module (SWIM) connector. In-circuit programmers include:

- **RLink**: Raisonance's in-circuit programmer/debugger for STM8A, STM8L and STM8S with USB host interface
- **ST-LINK/V2**: ST's in-circuit debugger/programmer for STM8A, STM8L and STM8S with USB host interface
- **Flasher STM8**: in-circuit programmer with standalone mode for production environment from Segger
- **FlashRunner**: in-circuit programming system for production lines featuring standalone operation and easy integration in production and test equipment from SMH Technologies
- **Production programming solutions** include multi-site (gang) and automated programming solutions from third-parties

Debugging

High-end emulator

The STice in-circuit emulation system offers the most advanced debugging and diagnostic features available (freely configurable advanced breakpoints, trace, code coverage, profiling) when running applications in place of the target microcontroller, plus the added flexibility of in-circuit debugging and programming capability for start-to-finish control of application development (order code types: STICE-SYSxxx)

STICE-SYSxxx

In-circuit debugger/programmer

In-circuit debugger/programmers provide low-cost solutions for programming the target
device on an application board, and debugging the application while it runs on the target
microcontroller. They feature all standard debugging functions along with advanced breakpoints.

- **RLink** from Raisonance for STM8A, STM8L and STM8S microcontrollers (order code: STX-RLINK)
- **ST-LINK/V2** from ST for STM8A, STM8L and STM8S microcontrollers

STX-RLINK

ST-LINK/V2

STM8 touch-sensing tools

Evaluation boards

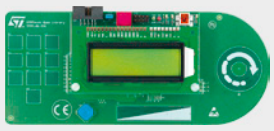
Touch-sensing library evaluation boards (STM8/128-EV/TS and STMT/8L-EV1):
STMicroelectronics proposes two dedicated boards to evaluate the touch-sensing library on both STM8S and STM8L series.

The STM8/128-EV/TS is an ideal platform to learn and play with the library using an STM8S device.
The board comes pre-programmed with a demonstration firmware that manage 5 touch keys and 1 slider.

The STMT/8L-EV1 board is based on STM8L device and manages 10 keys, 1 wheel and 1 slider. The user can easily evaluate the touch-sensing software features and performances and display or change parameters through an LCD display interface.

- STM8/128-EV/TS (STM8S)
- STMT/8L-EV1 (STM8L)

STM8/128-EV/TS



STMT/8L-EV1

Proximity and touch-key evaluation boards:

The STM8T141-EVAL evaluation kit is a low-cost tool designed to quickly assess the STM8T141. The board is delivered with an on-board electrode and four plug-in modules that are programmed in two different configurations (touch and proximity) to evaluate device performance.

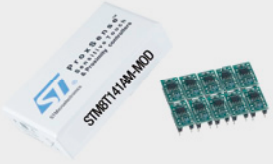
The board is battery operated but can be powered using a USB cable. It allows the proximity range in different system ground configurations to be evaluated.

An external cable antenna is supplied that replaces the on-board electrode when testing the shield feature.

Blank plug-in modules are available in boxes of 10 pieces (STM8T141AM-MOD). They can be used independently or with the evaluation kit.

- STM8T141-EVAL (STM8T141)
- STM8T141AM-MOD (STM8T141)
- STM8T143-EVAL (STM8T143)

STM8T141-EVAL



STM8T141AM-MOD

STM8T143-EVAL

In-circuit programmers

A programming kit composed of a socket board (STM8T14x-SB) and a USB dongle (ST-TSLINK) allows user options (including device sensitivity, output mode, shield, and detection timeout duration) to be changed. The socket board is able to program SO8 and UFDFPN8 packages, as well as the DIP14 modules.

- STM8T14x-SB
- ST-TSLINK

STM8T14x-SB + ST-TSLINK

Order code: BRSTM80212

For more information on ST products and solutions, visit **www.st.com**