

STM32



2008 9

STM32



STM32

2007 6 ST
32K~128K

Cortex-M3

STM32



200

16,000



1000
STM32



embedded AWARD 2008



STM32

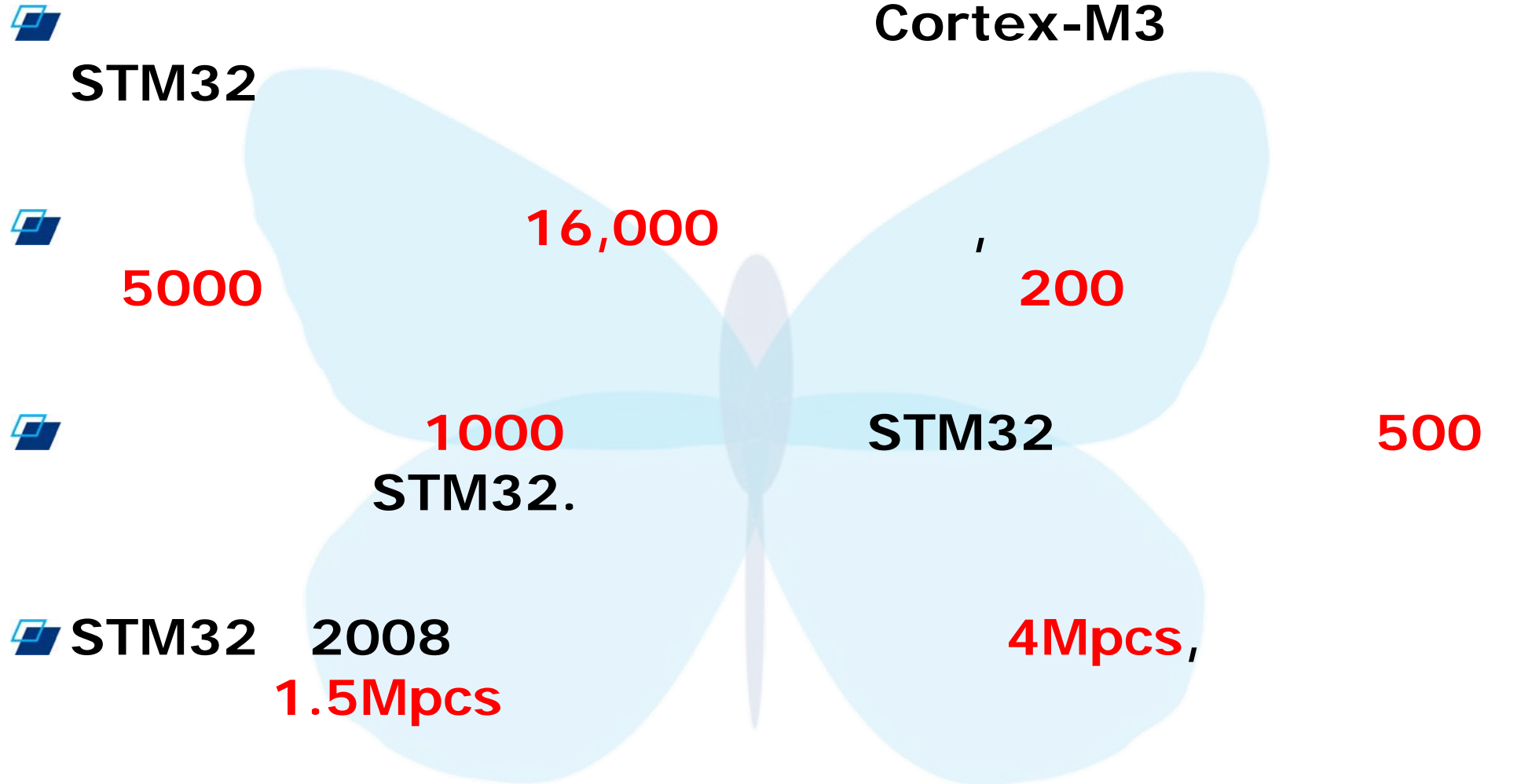
STM32

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www.st.com/stm32



STM32



STM32

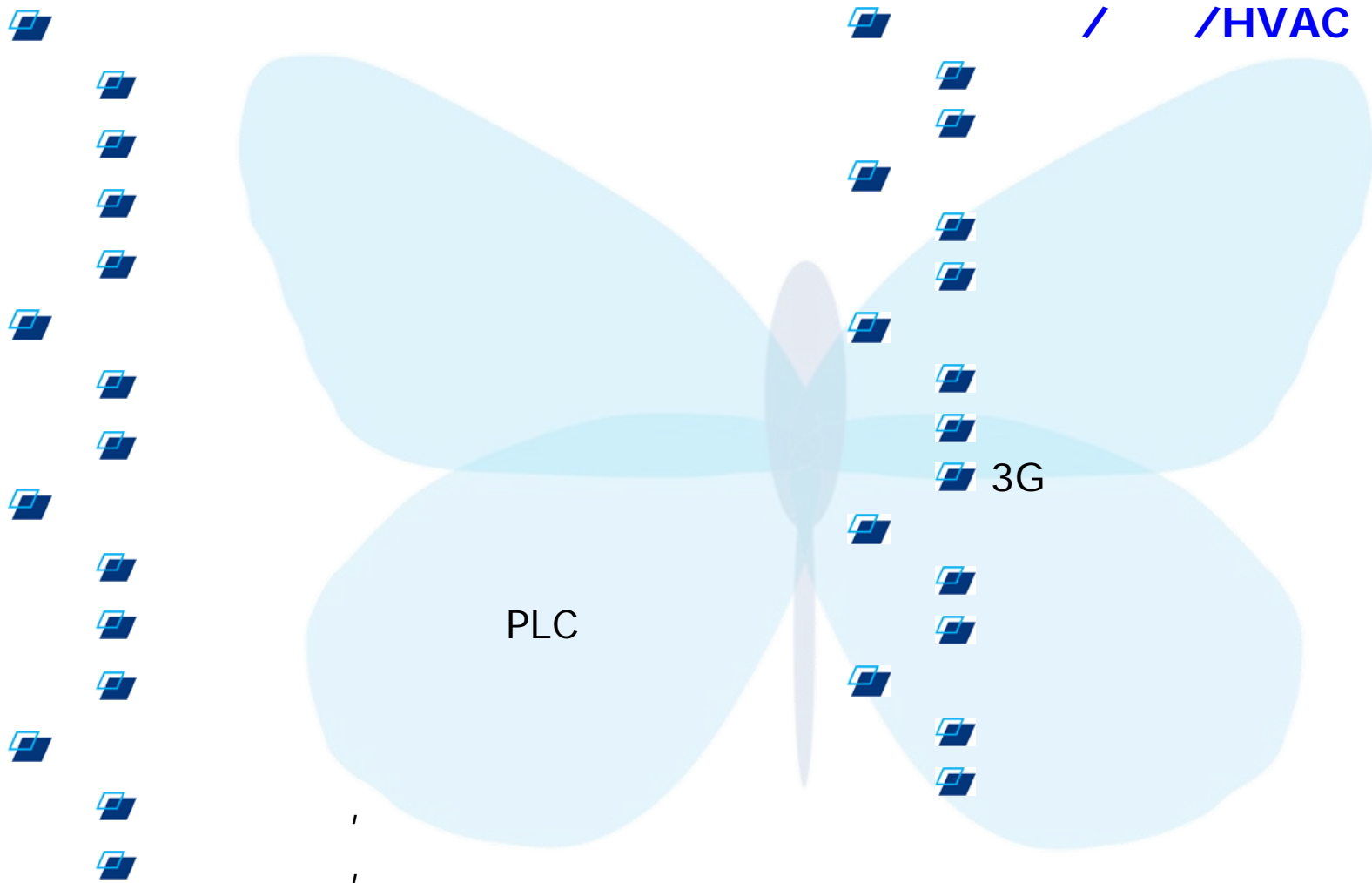
STM32

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STM32

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2008 9 5

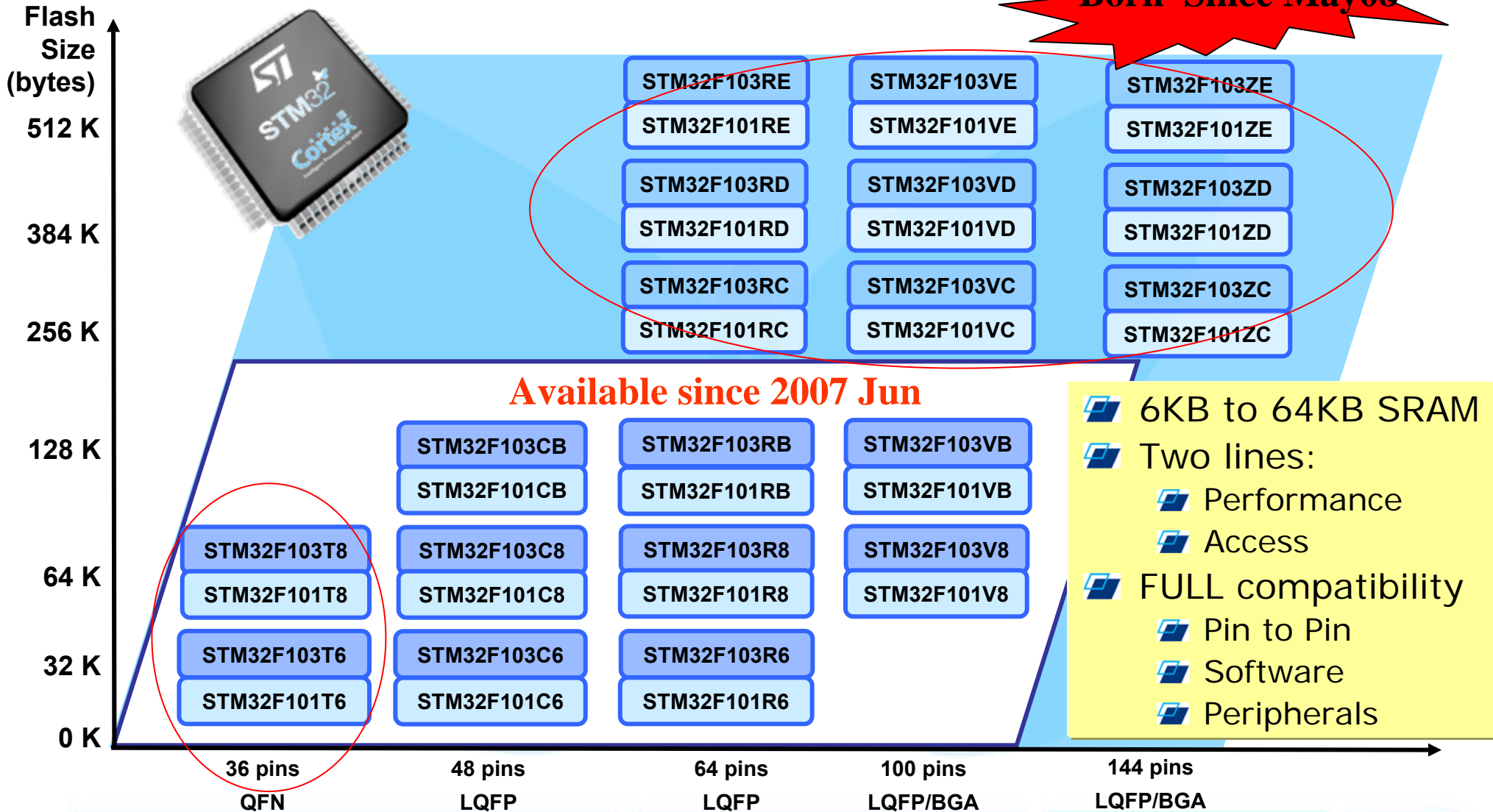


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STM32

Born Since May08



STM32

STM32

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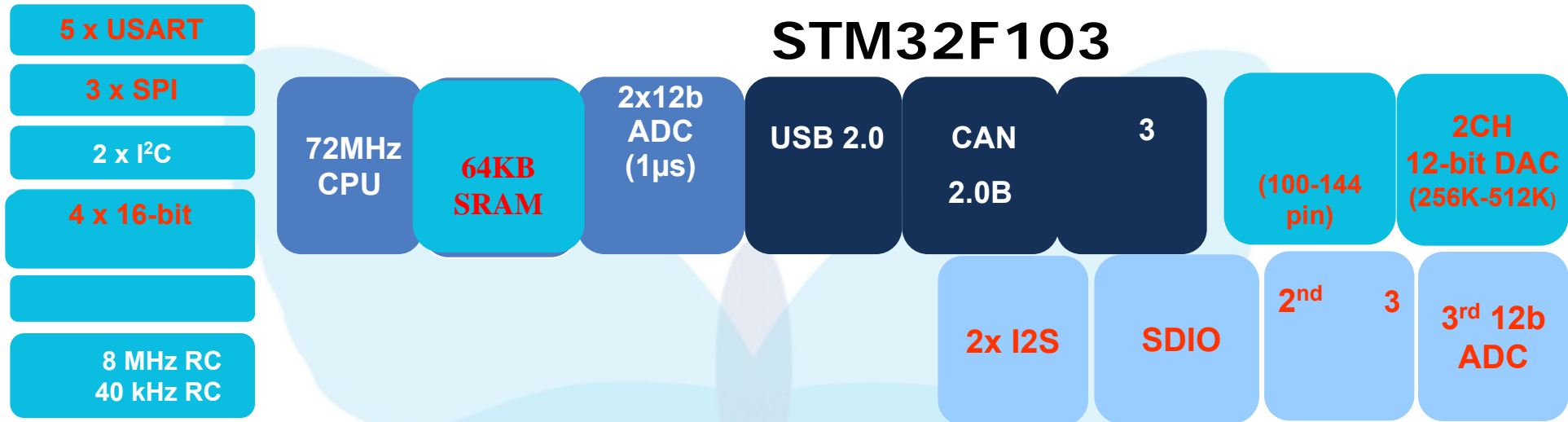


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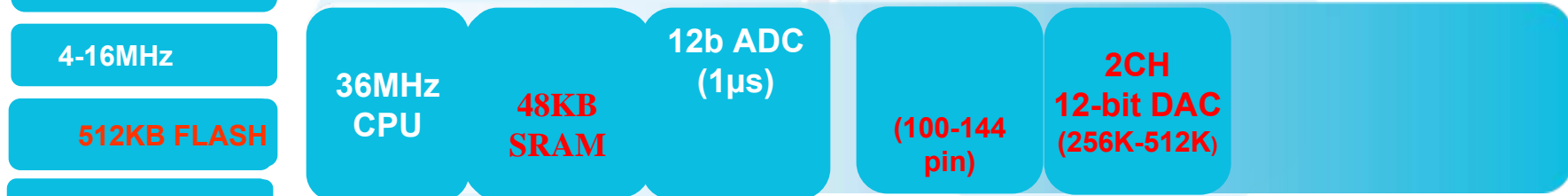
www.st.com/stm32

STM32 : 2

STM32F103



STM32F101



08 5

STM32

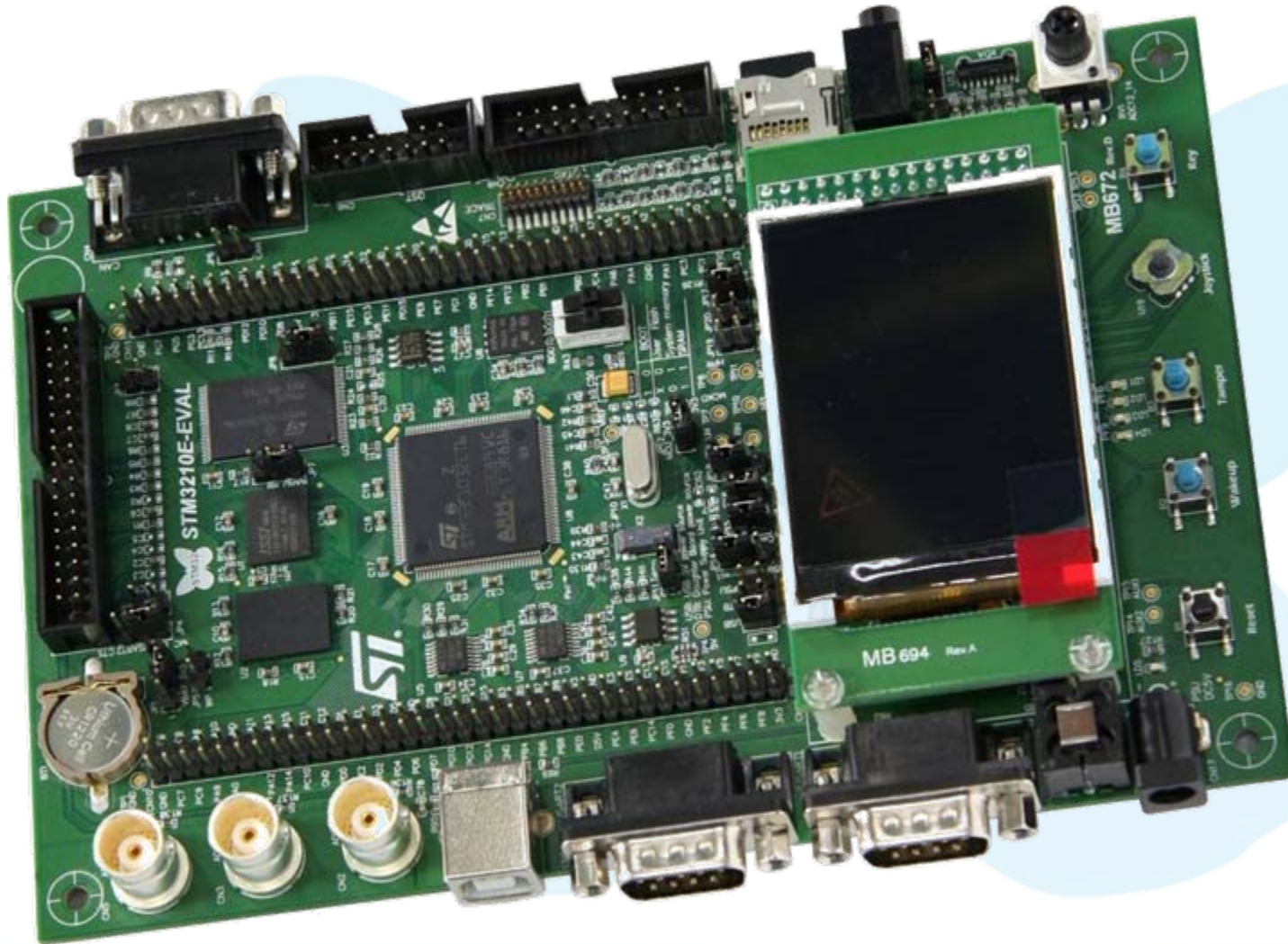
STM32

STM32

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STM32



LCD DAC

STM32
SDIO

STM32

STM32

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ST 32 MCU

2007 6

STM32
32

ST

32

32



STM32

STM32

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STM32

 **DELTA ()**

STM32

 **Garmin ()**

STM32

 **Danfoss ()**

STM32

 **BG Tech ()**

STM32

 **XXX(**

STM32

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12

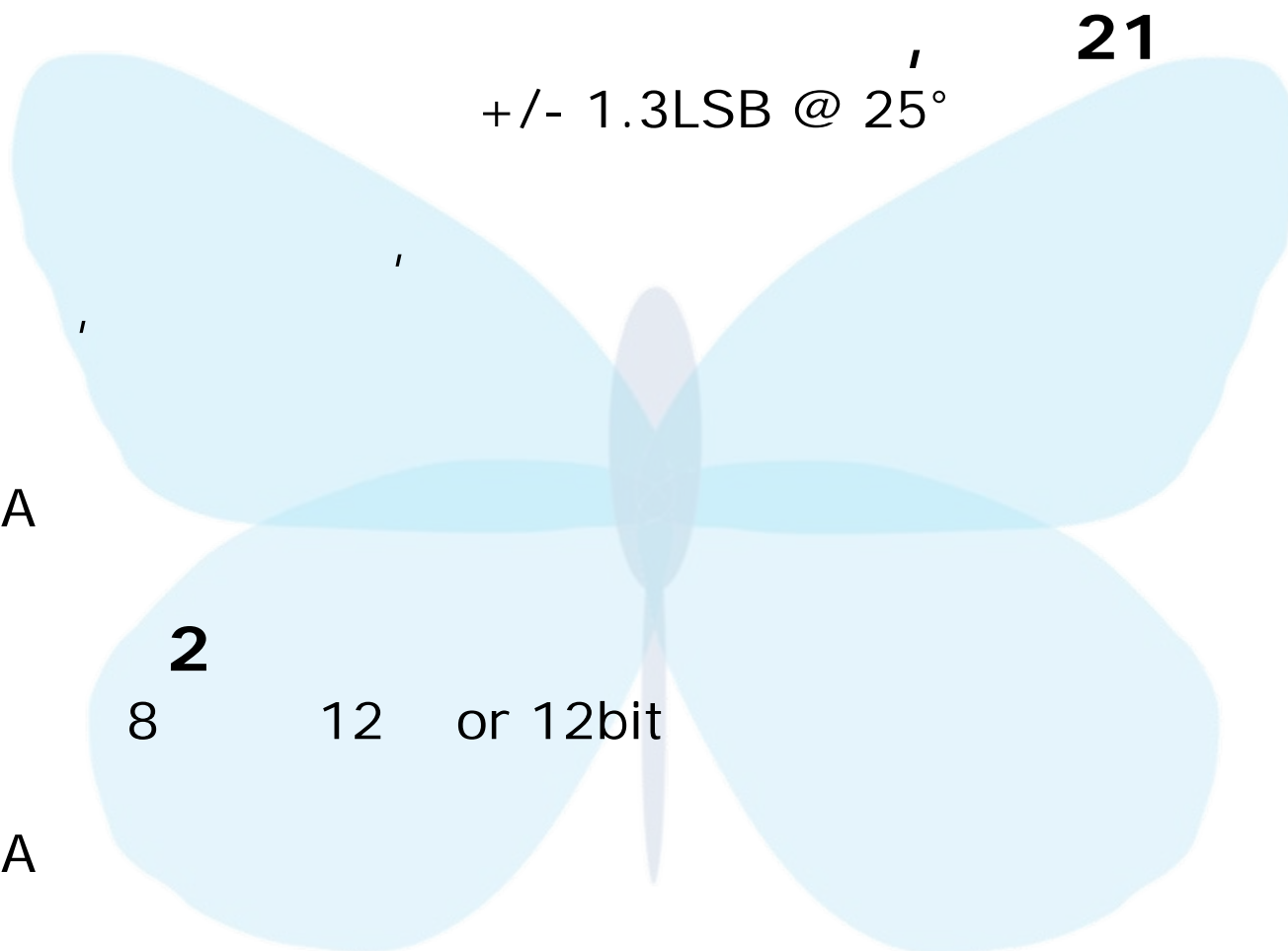
1



DMA



DMA



21

+/- 1.3LSB @ 25°

2

8

12

or 12bit

STM32





STM32




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I2C x 2	
	
	7/10
	(100kHz)
	(400kHz)
	SMBus2.0 PMBus




CAN	
	CAN2.0A B
	8
	1M /

SPI x 3	
	
	18 /
	CRC
	SD/MMC

DMA x 12

I2S x 2	
	
	16 32
	8kHz~48kHz
	256

USB	
	USB2.0
	8
	
	USB-IF

USART x 5	
	4.5M /
	LIN IrDA
	ISO7816-3
	CTS/RTS

STM32

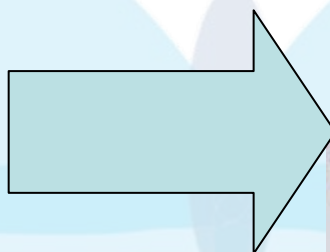
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STM32F103R8

6
PWM



STM32F103RC

6
PWM



STM32

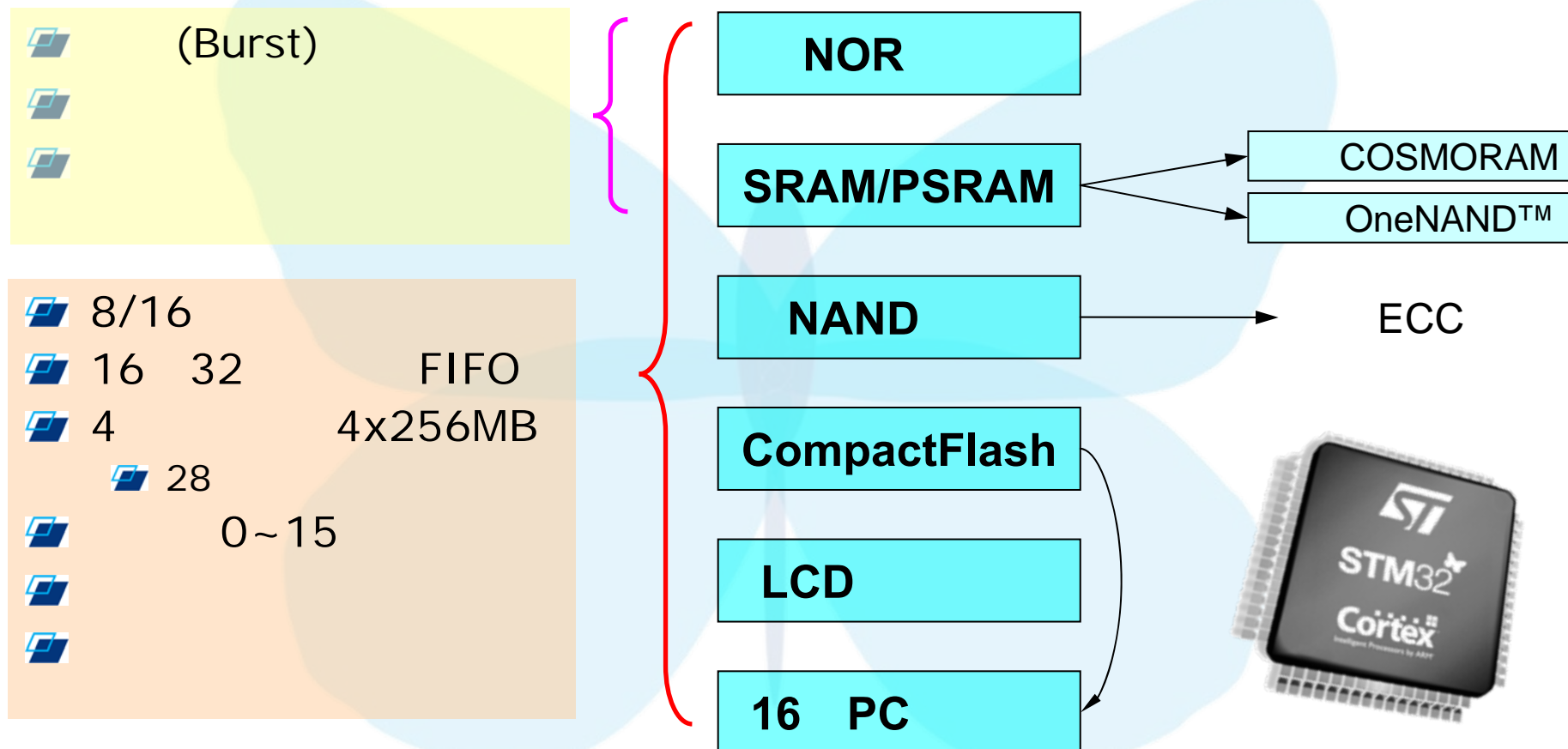
STM32

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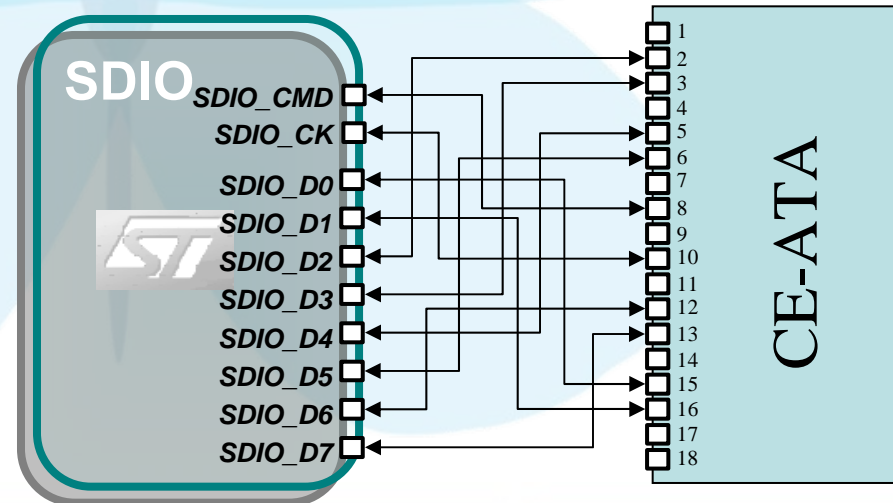
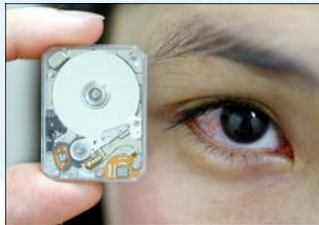
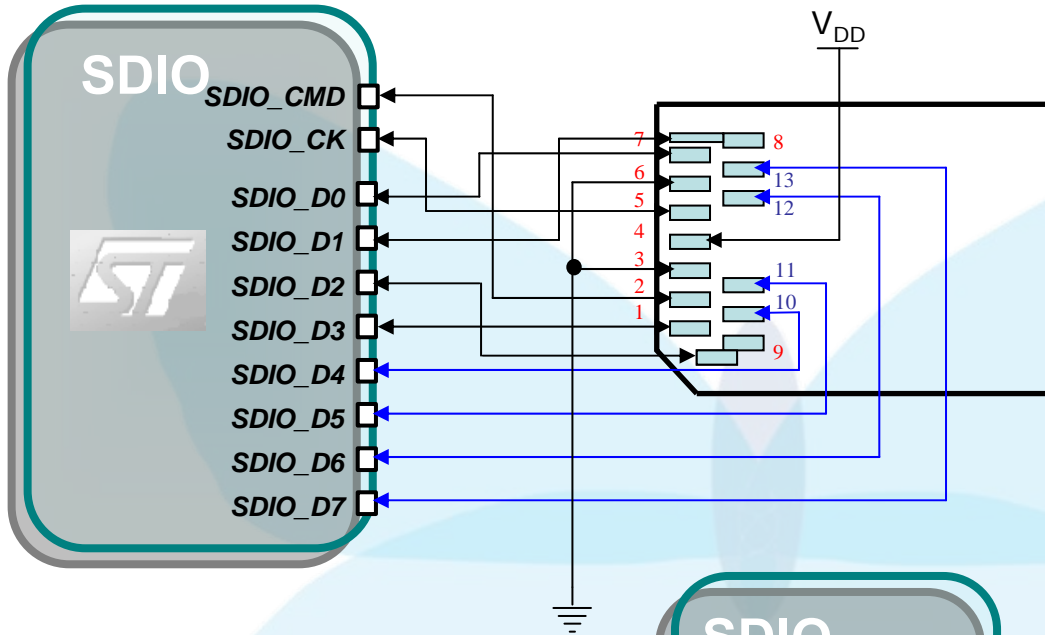


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SDIO



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Fi)

A/D

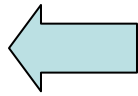
GPRS, Wi-

CAN



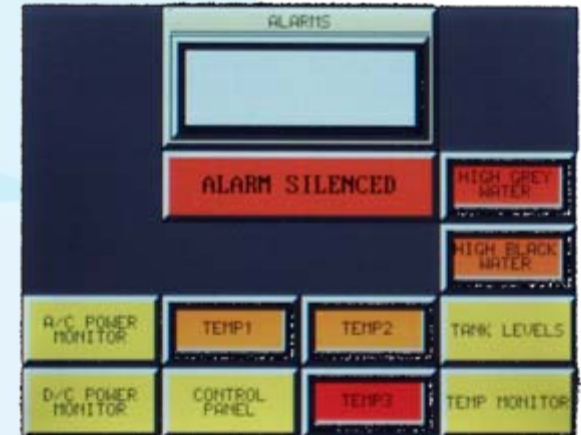
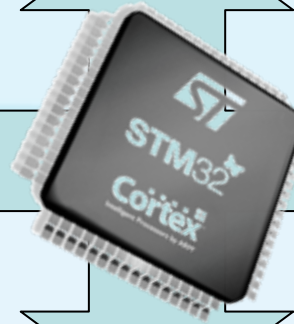
FSMC

flash



I²S

DAC



SDIO

SD

SD



STM32

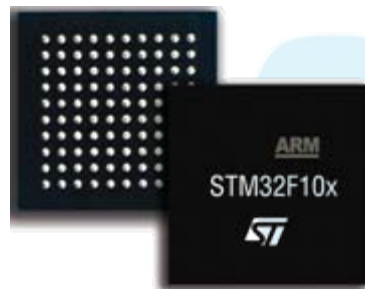
STM32

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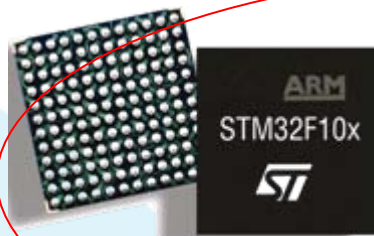


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BGA100
(10x10mm)



BGA144
(10x10mm)



QFN36
(6x6mm)



LQFP48
(7x7mm)



LQFP64
(10x10mm)



LQFP100
(14x14mm)



LQFP144
(20x20mm)

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IEC60335

IEC60335-1 Ed4

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()

()

2007 10 IEC60335

IEC60335, Class B



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IEC60335-1

MCU



A



MCU

B



MCU

C



MCU



calss C



STM32

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IEC 60335-1 B

MCU



MCU
ST



RAM



ROM/Flash



CPU	
CPU	()
	I/O
	A/D
	D/A

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B : ST

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ST



I/O (')

MISRA C



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IEC60335-1

 ST

VDE

 VDE

(http://www.vde.com/vde_en/),



ST

VDE

MCU



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1/2



CPU



RAM



ST "

"

16

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2/2



CPU



RAM



16



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21IC ST MCU

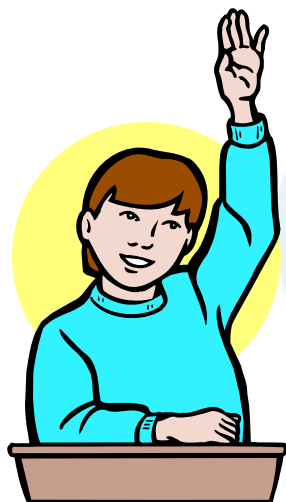
2006 8 1
ST

21IC



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电子工程师社区
BBS.21IC.com



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EDNChina
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2008 我的工程师社区



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ID							/RMB
	l i kee	5727	1718	0.6	1030	6757	5000
	computer00	4870	1718	0.75	1289	6159	3000
	zhonghuahun212	4388	1718	0.5	859	5247	3000
	sunke9	2051	1718	0.6	1030	3081	3000
	promcu	1717	1718	0.7	1202	2919	1000
	xi ong_gang_vhut	1311	1718	0.75	1299	2610	1000
	l i ongt	555	1718	0.5	859	1414	1000
	hwarm	396	1718	0.55	945	1341	1000
	j i zzll	243	1718	0.6	1030	1273	1000

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STM32

	ID						/RMB
	wangxi ng	4154	1247	0.55	686	4840	3000
	xi ewei chao	3527	1247	0.5	624	4151	1000
	zhonghuahun212	3524	1247	0.5	624	4148	500



STM32

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活动说明

意法半导体携手EDN面向所有注册会员举办了一系列活动，旨在帮助中国工程师了解和熟悉STM32，交流STM32的开发心得、经验及成果等，欢迎广大爱好者踊跃参加。

STM32系列32位闪存微控制器基于突破性的ARM Cortex™-M3内核，这是一款专为嵌入式应用而开发的内核。

用户名 [会员注册](#) | [忘记密码?](#)

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产品新闻



意法半导体 (ST) 大幅扩展STM32微控制器产品系列

微控制器的世界领先企业意法半导体 (纽约证券交易所代码: STM) 宣布, 其改写市场结构的32位STM32系列微控制器, 在系统可伸缩性和外设选择性方面全面升级。自2007年6月问世以来, STM32系列微控制器以市场定位优势与技术领先, 赢得各种大规模应用的龙头企业的青睐, 扩产订单源源不断。[详细]

- 意法半导体 (ST) 的STM32微控制器开发工具获奖肯定 [2008-05-26]
- 意法半导体 (ST) 推出首款在基于ARM Cortex的微控制器上运行的无传感器磁场定向电机控制... [2008-02-05]

- STM32团队小组热门话题** [加入小组](#)
- 参加STM32知识竞赛, 有机会获得免费STM32学习套件!
 - 用stm32芯片能否自己构成一个数据采集卡?
 - 【STM32组】[问题讨论]关于STM32F103RET6的DAC硬...
 - STM32的SPI 中NSS管脚问题
 - stm32 管脚能驱动uln2803 2003吗?

STM32

STM3210-LK

STM32F103

(ST-LINK II)

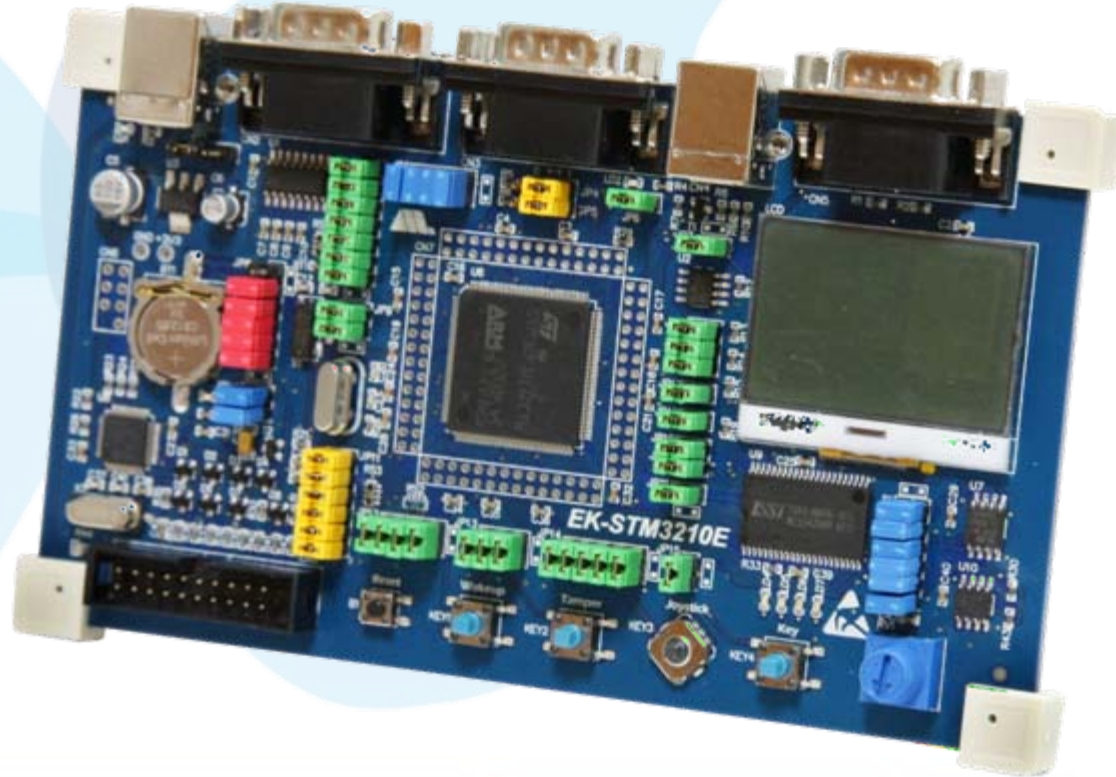
STM32

2KB/s

USB

: RMB230

STM32



STM32

STM32

STM32

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STM32 Mini Kit



:



ST-LINK-II

,



STM32

,



USB



RMB129



ST-LINK-III



STM32

STM32

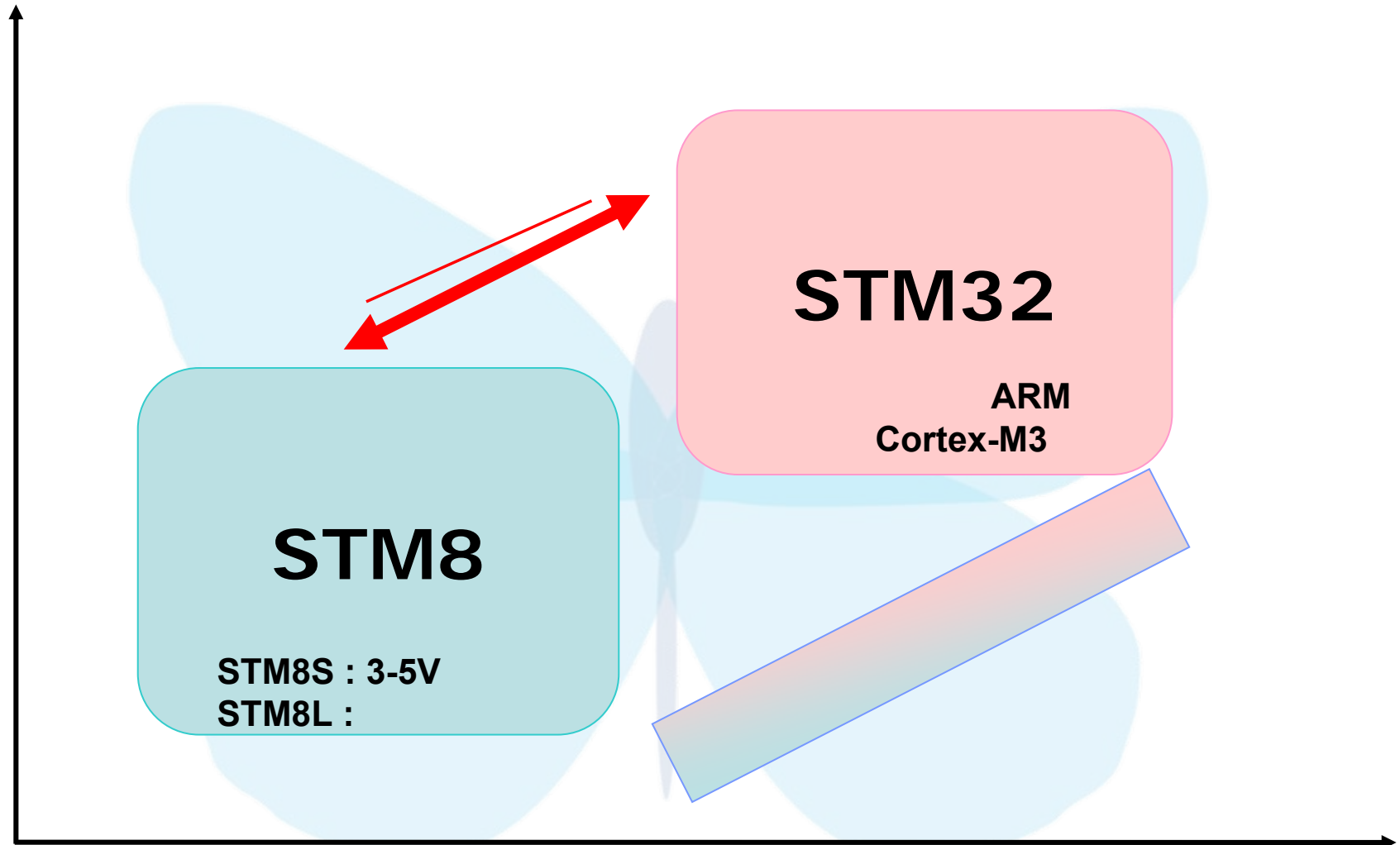
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ST



STM32

STM32

2008 9 32



STM8S

 **ST**



 **STM8S**



0.13



8



8

8

ST5, ST6, ST7

ST9

STM32

STM32

2008 9 33



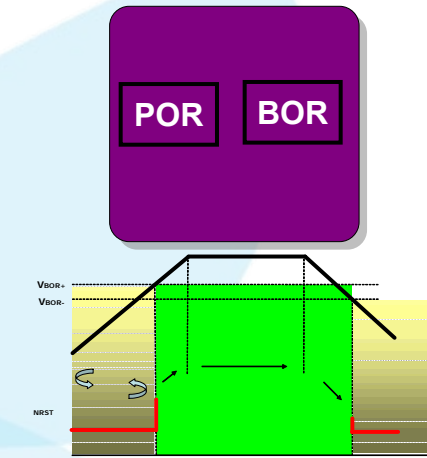
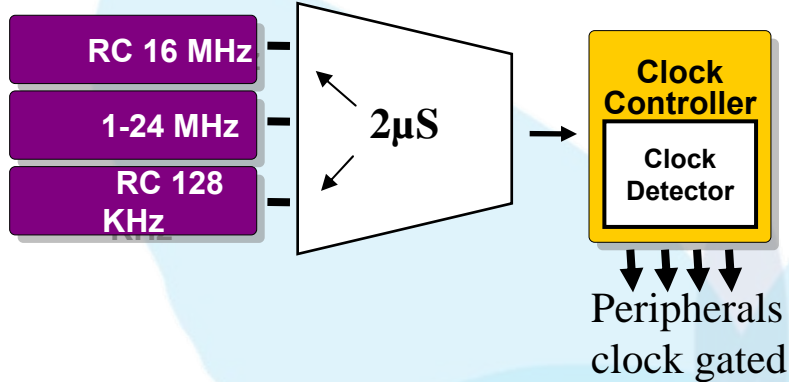
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www.st.com/stm32

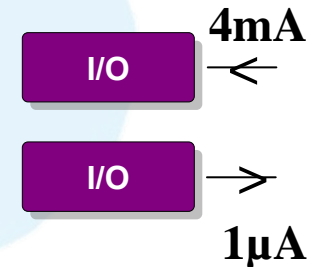
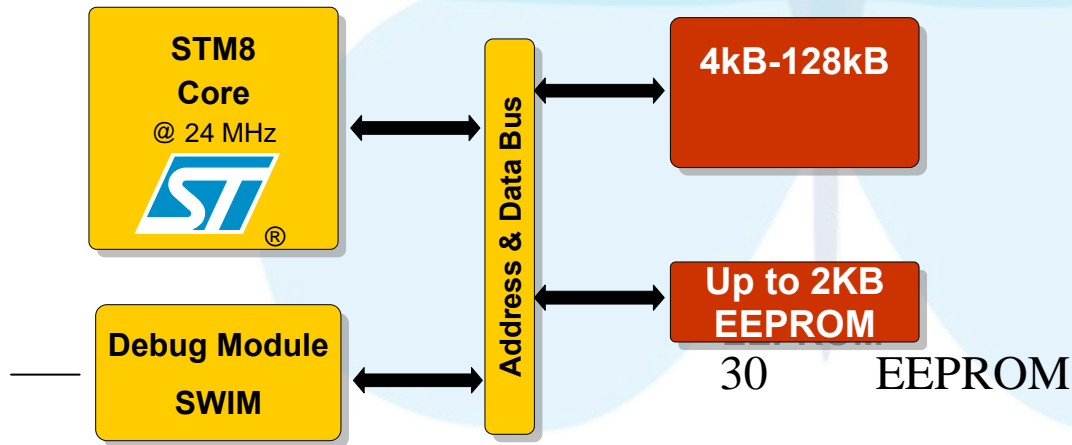
STM8S



1% Trim



3



STM32

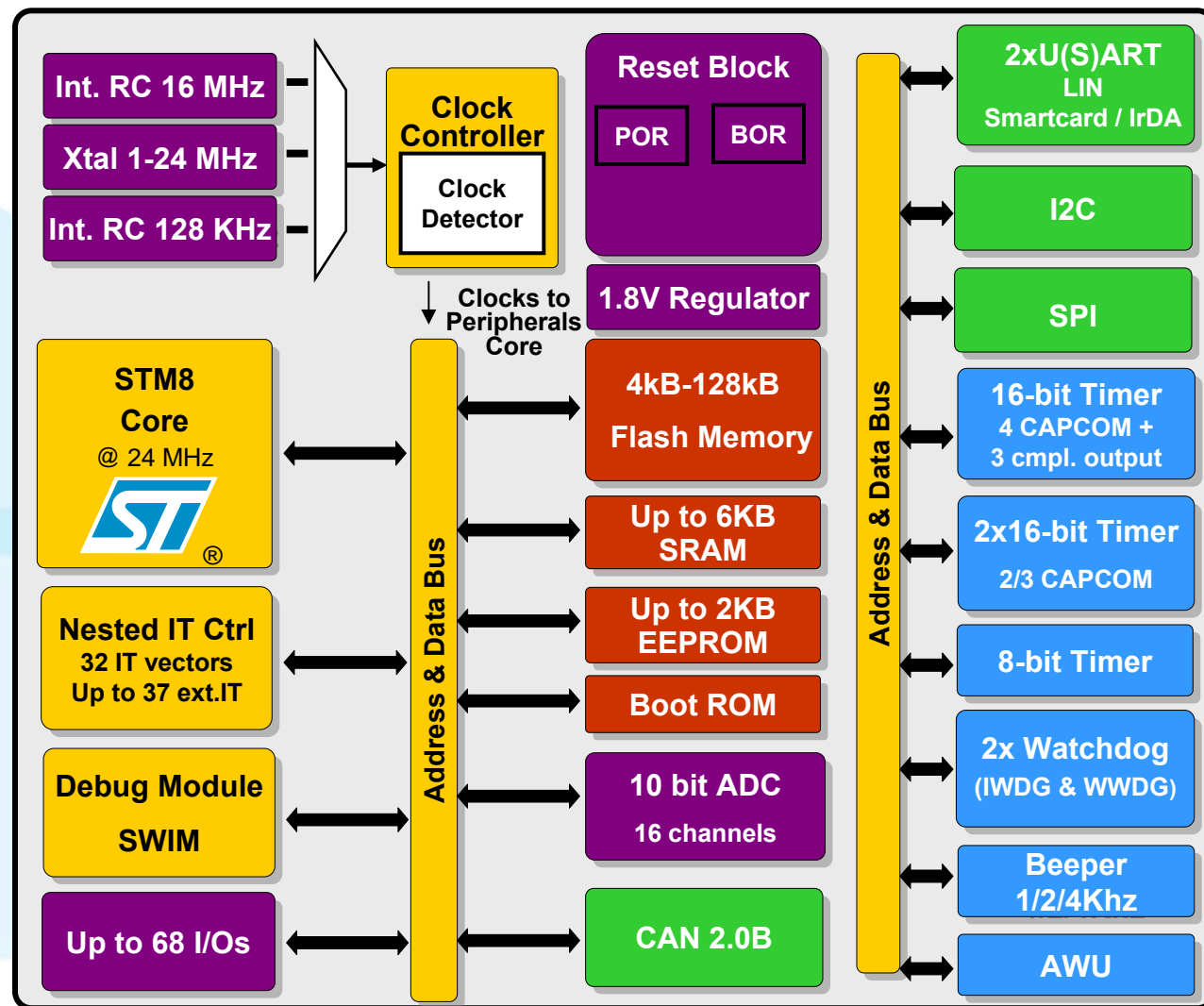
STM32

2008 9 34



STM8S

- 3.0-5.5
- 40 to +125 ° C
- 24MHz
- 10K FLASH
- 300K EEPROM
- 4
- (~5µA)
- RC 16MHz,
- +/-1%
- SWIM
- (<6s for 128KB)
- LQFP 80, 64, 48, 44, 32
- VQFN 20, 32, 48
- TSSOP 20



STM32

STM32

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STM8S 2


- UART
LIN /Smartcard / IrDA
- I2C
400 KHz multi-master
- SPI
10MHz
- Up to 3x16-bit Timer
8-bit Timer
- 2x Watchdog
(IWDG & WWDG)
- AWU
Beeper 1/2/4Khz
- 10-bit ADC
Up to 16 channel
- XTAL
16MHz int.RC osc.
128KHz int.RC osc.
- SWIM
Debug Module

STM8S20x

STM8 Core @ 24 MHz 	Up to 6KB SRAM	Up to 2KB EEPROM	CAN 2.0B	2nd UART
---	----------------------	------------------------	-------------	-------------



STM8S10x

STM8 Core @ 16 MHz 	Up to 2KB SRAM	Up to 1KB EEPROM
--	----------------------	------------------------

STM32

STM32

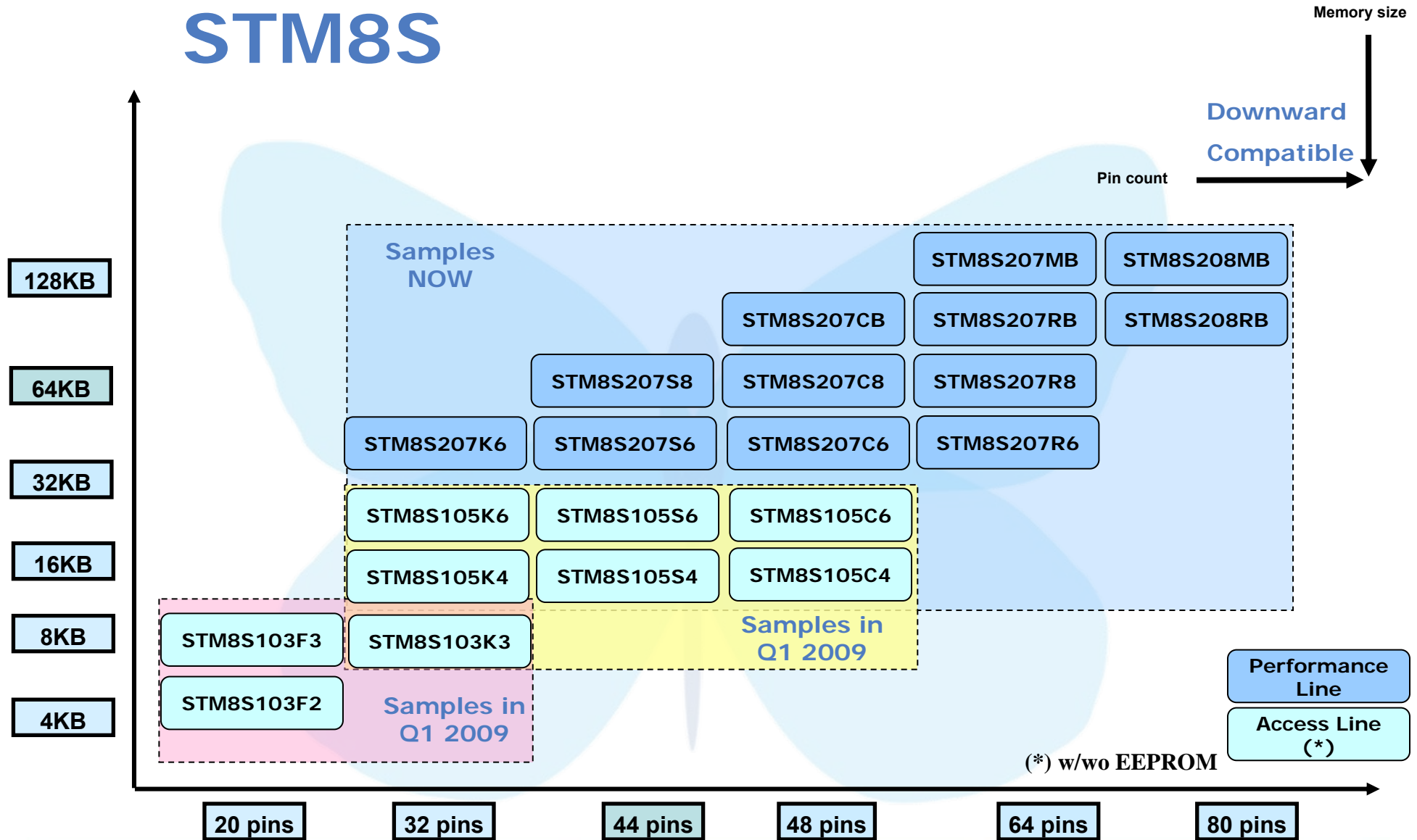
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STM8S



STM32

STM32

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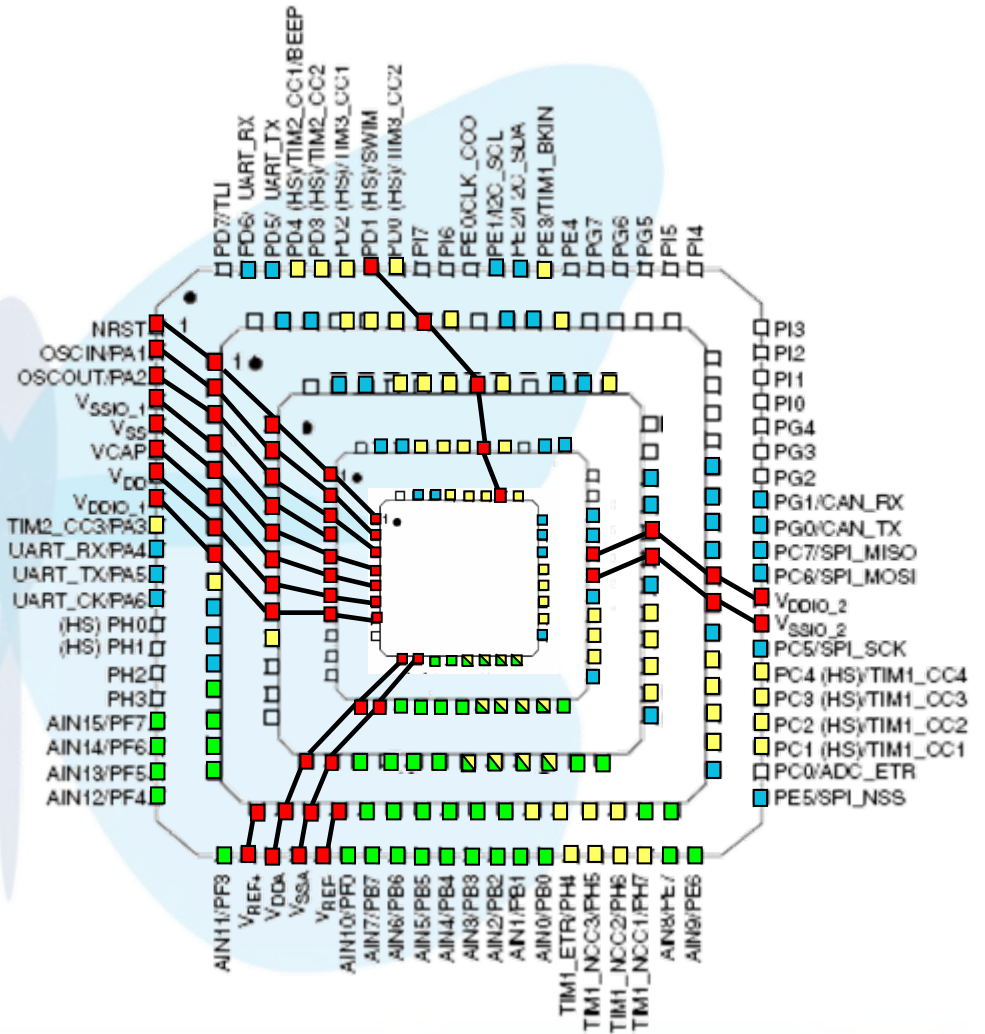


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STM8S

SPI, I²C, UART



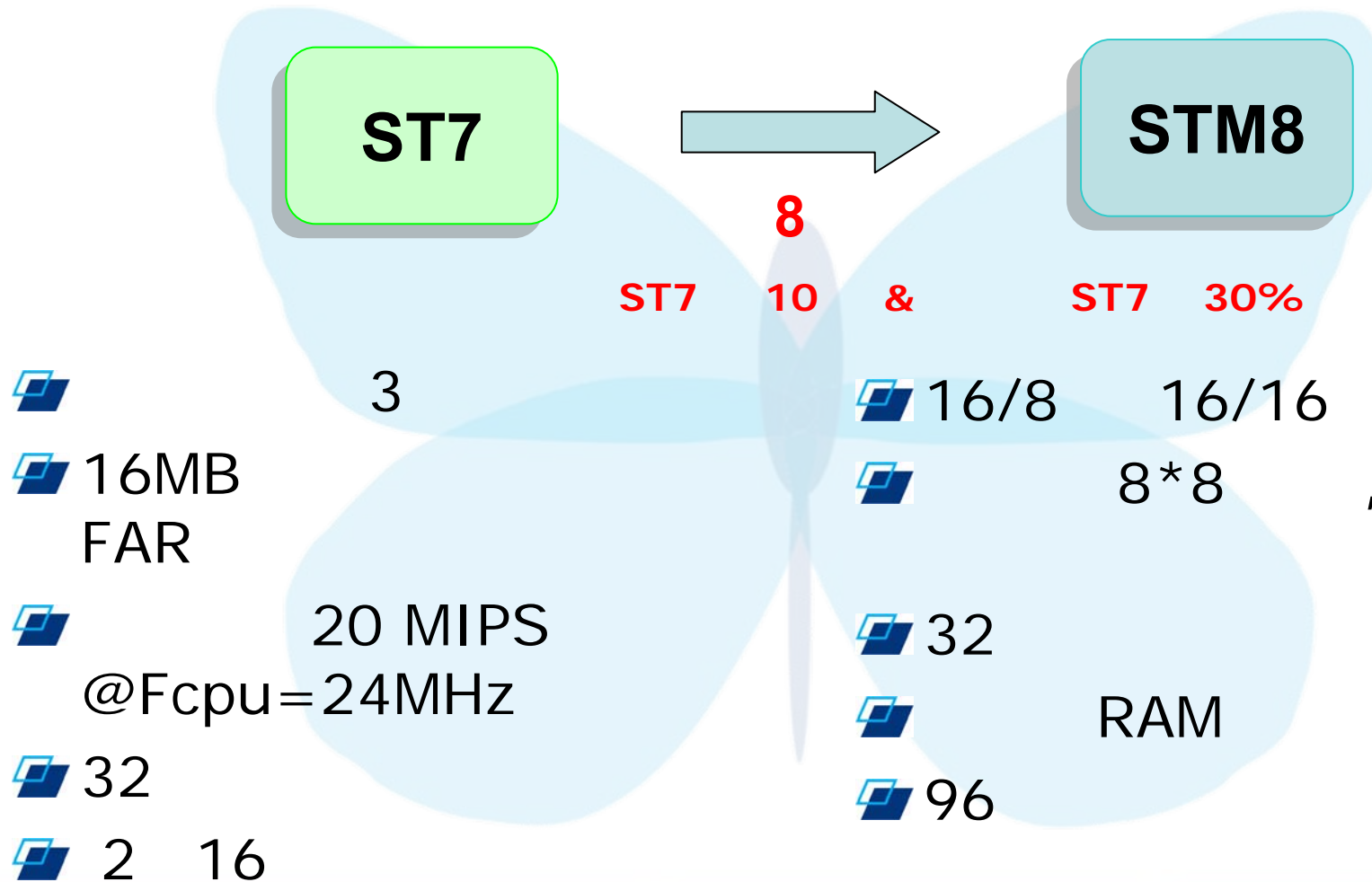
STM32

STM32

2008 9 38



STM8S : CISC



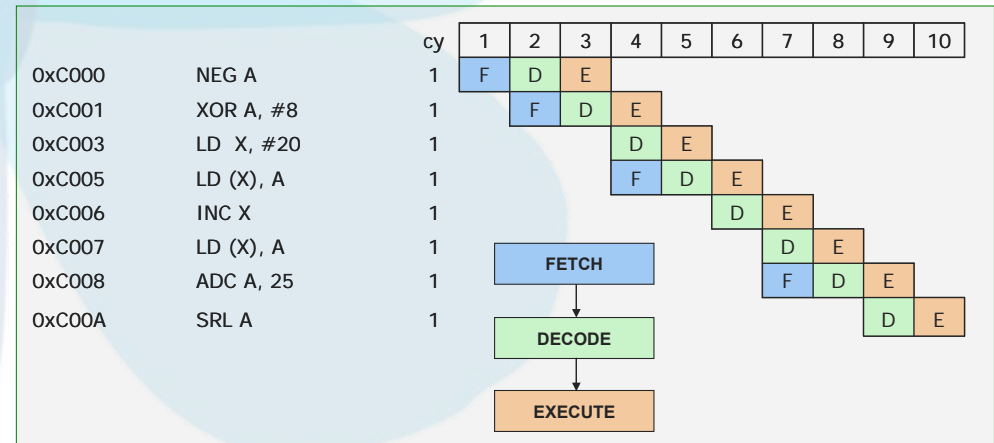
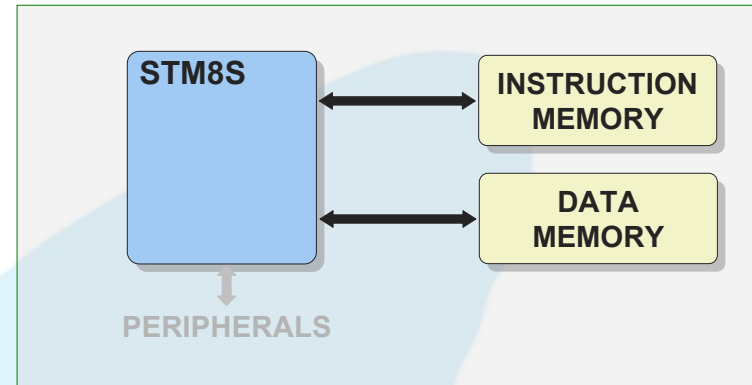
STM32

STM32

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STM8S



STM32

STM32

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STM8S



1%



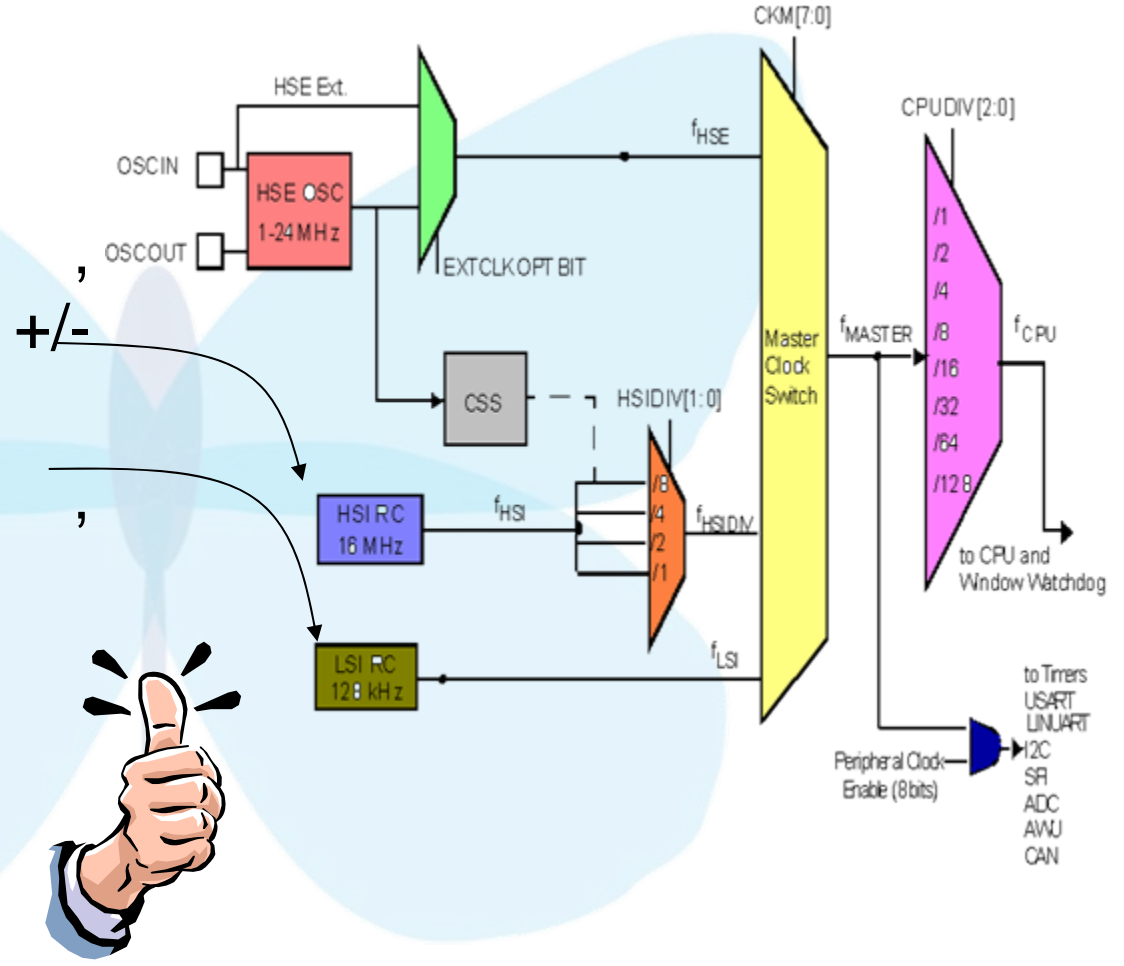
16MHz RC
+/-2%,

128KHz RC
+/-5%

: 2

:

CCO



STM32

STM32

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STM8S



128KB flash, 10K



6KB RAM



2KB data EEPROM, 300K



boot loader



/



128KB

6sec



32

6

ECC

(

1

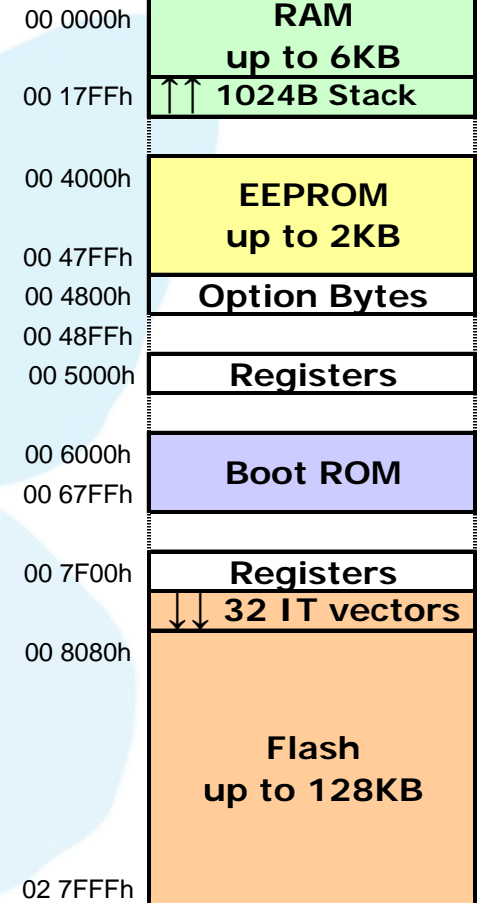
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20/32/44/48/64/80
128KB



4KB



STM32

STM32

2008 9 42

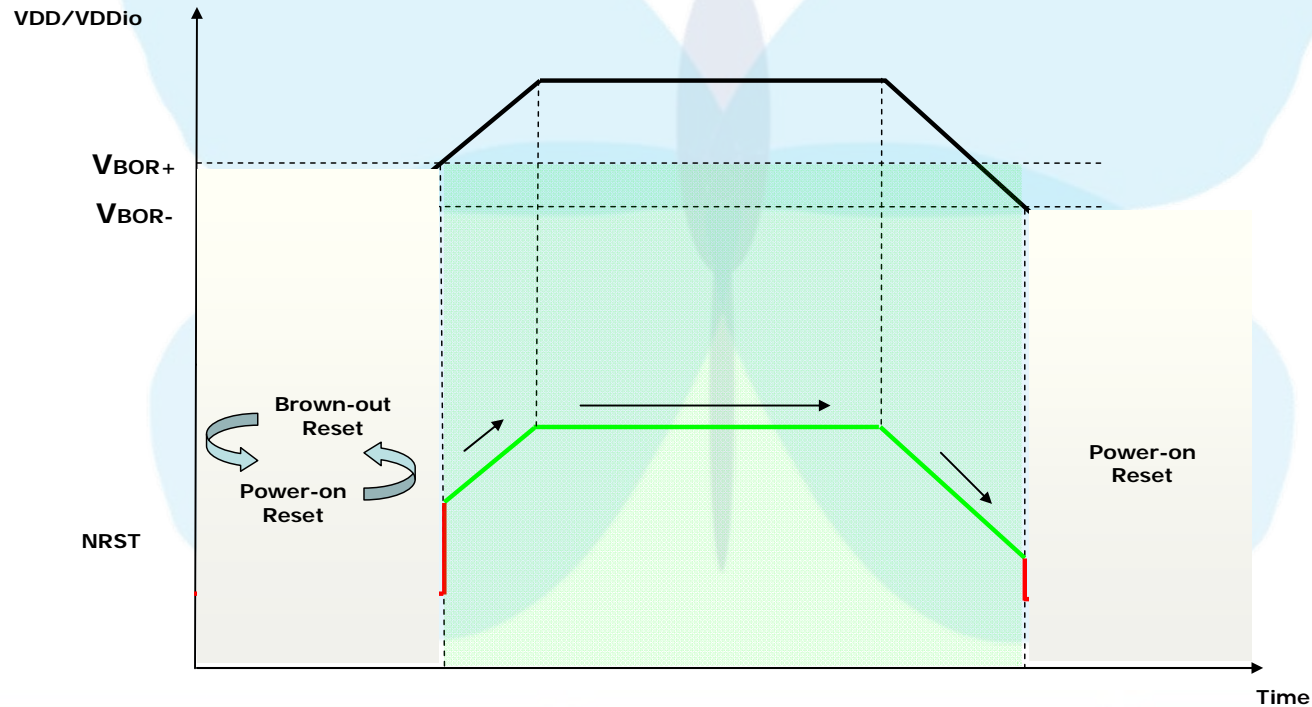


STM8S (BOR)

(POR)



$V_{BOR+} = 2.95V$ and $V_{BOR-} = 2.88V$



STM32

STM32

2008 9 43



STM8S

2



STM8S208MB		CPU			()
*	ON	ON	OFF		2.5
**	ON	ON	ON		1 +0.6 /
	ON	ON	ON		
5V 16Mhz	ON	OFF	ON		1.3
128Khz	128Khz	OFF	OFF	(2μS)	250
128Khz	128Khz	OFF	OFF	(100μs)	11.5
5V	OFF	OFF	OFF	(100μS)	5.5

* , 16MHz 5V 25 ° C

** , 16MHz
5V 25 ° C

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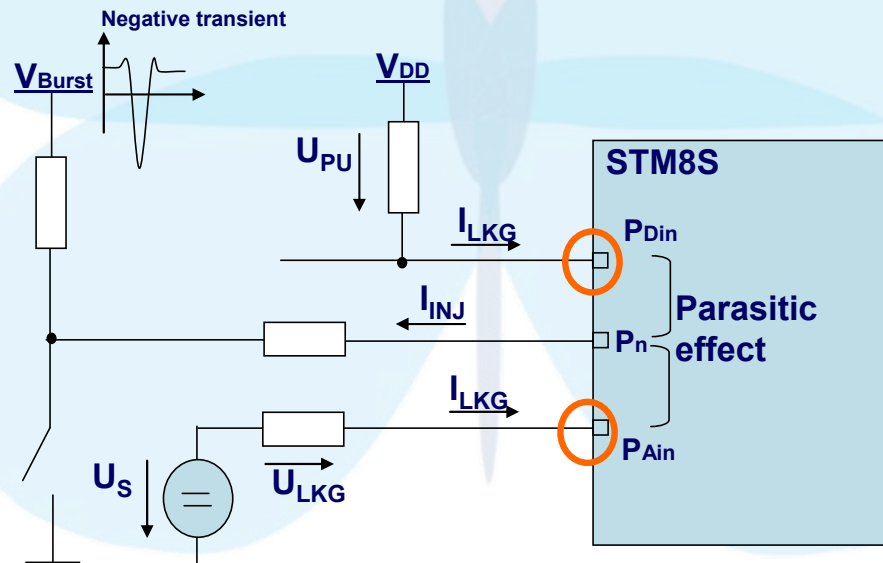
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STM8S IO



4mA

1 μ A



STM32

STM32






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Class B of IEC60335






ST **STM8S** **IEC 60335 / IEC 60730**

 Specific hardware features of STM8S to help in conformance to safety regulations

-  Dual watchdog architecture, IWDG+WWDG
-  Internal clock sources, HSI and LSI RC
-  Clock security system, CSS, to monitor external clock source
-  Error correction code on memory, ECC
-  High impedance state for I/Os under RESET

VDE

 Class B self-diagnostic library for STM8

-  STL, self-test library for CPU, RAM, flash, WDG and clock source check at start-up
-  Run-time test routines for CPU, RAM, flash, WDG, clock source and stack overflow check
-  Application note and user manual for the library
-  Self-test library f/w modules approved by the VDE
-  All f/w libraries are MISRA C compliant

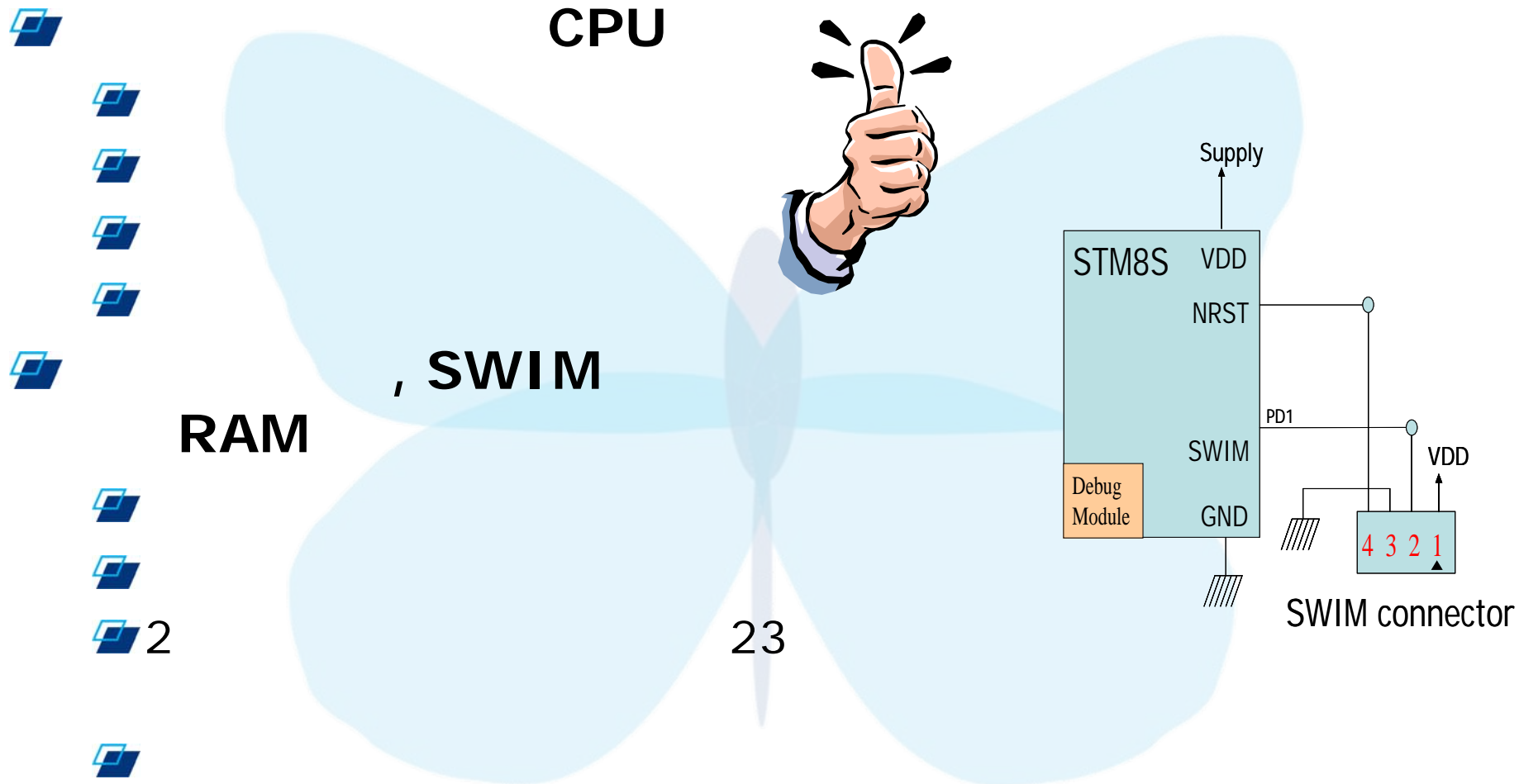
STM32

STM32

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SWIM



STM32

STM32

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STM8S

- ▣ STICE-SYS001- ST
- ▣ STM8/128-EVAL- ST
- ▣ STM8/128-SK/RAIS-
- ▣ STX-RLINK 3 –



199RMB



RAISONANCE



STM8/128-EVAL

\$150



STICE-SYS001

\$1990



STM8/128-SK/RAIS

\$219



STX-RLINK

\$59

All recommended resale prices

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STM8S

- ST Visual Develop (STVD),
- ST Visual Programmer (STVP),
- STM8S
- STM8S IEC 60335 ClassB , VDE
- Raisonance RIDE, RBuilder RFlasher
- Raisonance C , 16KB
- Cosmic C , 16KB



www.st.com/stm8

RAISONANCE

www.raisonance.com



www.cosmic-software.com

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STM8S



 HVAC



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STM8S

8-bit microcontroller families

Part number	Program memory			RAM (bytes)	Data EEPROM (bytes)	A/D inputs	Timer functions			Serial interface	LVD levels	I/Os (high current ²)	Packages	Supply voltage (V)	Special features	
	Type		Size (Kbytes)				12 or 16-bit (IC/OC/ PWM)	8-bit (IC/OC/ PWM)	Others							
	Flash	ROM														
STM8 - 8-bit microcontrollers																
32 pins	STM8S104K4	●		16	2 K		7x10-bit	3x16-bit (8/8/11)	1x8-bit	2xWDG	SPI, I ² C, UART (IrDA, ISO 7816)		25(8)	LQFP32, VQFN32	3.0 to 5.5	Access Line: 16 MHz CPU speed, POR, BOR, SWIM, 16 MHz and 128 kHz internal RC oscillator ICP, IAP, boot ROM, beeper, TLI
	STM8S104K6	●		32	2 K		7x10-bit		1x8-bit			25(8)	LQFP32, VQFN32			
	STM8S105K4	●		16	2 K	1 K	7x10-bit		1x8-bit			25(8)	LQFP32, VQFN32			
	STM8S105K6	●		32	2 K	1 K	7x10-bit		1x8-bit			25(8)	LQFP32, VQFN32			
44 pins	STM8S104S4	●		16	2 K		9x10-bit		1x8-bit			34(8)	LQFP44			
	STM8S104S6	●		32	2 K		9x10-bit		1x8-bit			34(8)	LQFP44			
	STM8S105S4	●		16	2 K	1 K	9x10-bit		1x8-bit			34(8)	LQFP44			
	STM8S105S6	●		32	2 K	1 K	9x10-bit		1x8-bit			34(8)	LQFP44			
48 pins	STM8S104C4	●		16	2 K		10x10-bit	3x16-bit (9/9/12)	1x8-bit			38(9)	LQFP48			
	STM8S104C6	●		32	2 K		10x10-bit		1x8-bit			38(9)	LQFP48			
	STM8S105C4	●		16	2 K	1 K	10x10-bit		1x8-bit			38(9)	LQFP48			
	STM8S105C6	●		32	2 K	1 K	10x10-bit		1x8-bit			38(9)	LQFP48			
32 pins	STM8S207K4	●		16	2 K	1 K	7x10-bit	3x16-bit (8/8/11)	1x8-bit		SPI, I ² C, UART (IrDA, ISO 7816)		25(8)	LQFP32, VQFN32	3.0 to 5.5	Performance Line: 24 MHz CPU speed, POR, BOR, SWIM, 16 MHz and 128 kHz internal RC oscillator ICP, IAP, boot ROM, beeper, TLI
	STM8S207K6	●		32	2 K	1 K	7x10-bit		1x8-bit			25(8)	LQFP32, VQFN32			
	STM8S207S6	●		32	2 K	1 K	9x10-bit		1x8-bit			34(8)	LQFP44			
	STM8S207S8	●		64	4 K	1.5 K	9x10-bit		1x8-bit			34(8)	LQFP44			
48 pins	STM8S207C6	●		32	2 K	1 K	10x10-bit	3x16-bit (9/9/12)	1x8-bit		SPI, I ² C, 2xUART (IrDA, ISO 7816)		38(9)	LQFP48		
	STM8S207C8	●		64	4 K	1.5 K	10x10-bit		1x8-bit			38(9)	LQFP48			
	STM8S207C8	●		128	6 K	2 K	10x10-bit		1x8-bit			38(9)	LQFP48			
	STM8S207P6	●		32	2 K	1 K	16x10-bit		1x8-bit			52(9)	LQFP64			
64 pins	STM8S207P8	●		64	4 K	1.5 K	16x10-bit	3x16-bit (9/9/12)	1x8-bit		SPI, I ² C, 2xUART (IrDA, ISO 7816), CAN		52(9)	LQFP64	3.0 to 5.5	
	STM8S207R8	●		128	6 K	2 K	16x10-bit		1x8-bit			52(9)	LQFP64			
	STM8S208R8	●		128	6 K	2 K	16x10-bit		1x8-bit			52(9)	LQFP64			
	STM8S208R8	●		128	6 K	2 K	16x10-bit		1x8-bit			52(9)	LQFP64			
80 pins	STM8S207MB	●		128	6 K	2 K	16x10-bit	3x16-bit (9/9/12)	1x8-bit		SPI, I ² C, 2xUART (IrDA, ISO 7816)		68(11)	LQFP80	3.0 to 5.5	
	STM8S208MB	●		128	6 K	2 K	16x10-bit		1x8-bit			68(11)	LQFP80			

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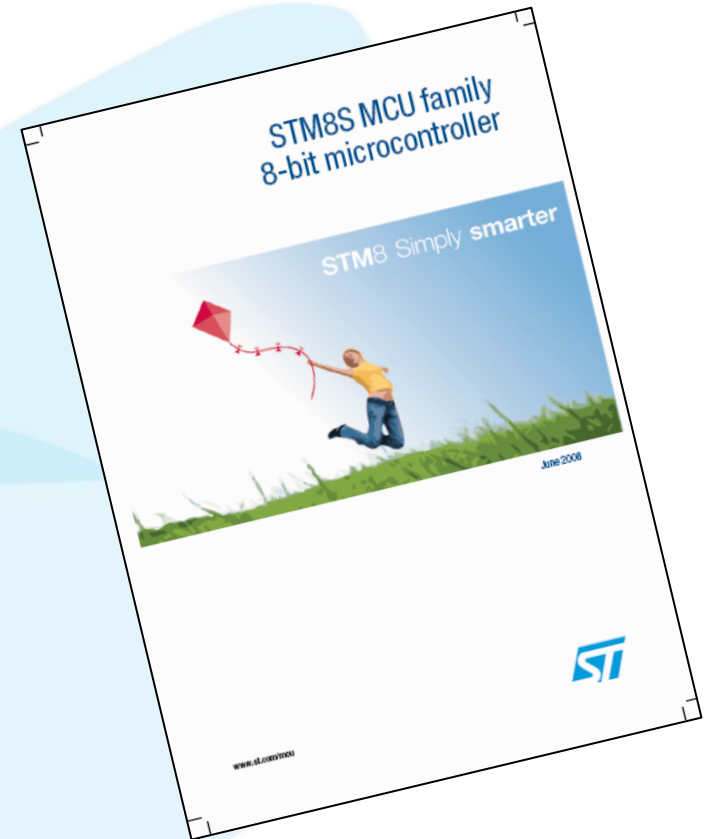
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STM8

STM8

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Family

ST62	ST6
ST72	ST7
STM8	STM8
ST10	ST10
STR7	STR7
STM32	Cortex

Family type

L	Low Power
S	Standard

STM8 Sub Family

Type	ASSM type	Peripheral set
0 Value	0 Standard	1
1 Access	1 USB	3
2 Performance	2 LCD	5
9 ASSM		7
		9 +

Pin count

A	8 pins
Y	16 pins
F	20 pins
E	24 pins
G	28 pins
K	32 pins
L	34 pins
D	38 pins
H	40 pins
J	42 pins
S	44 pins
C	48 pins
U	52 pins
N	56 pins
R	64 pins
M	80 pins
P	84 pins
V	100 pins
W	128 pins
Z	144 pins

Code Size

0	1K
1	2K
2	4K
3	8K
4	16K
5	24K
6	32K
7	48K
8	64K
9	72K
A	96K
B	128K
C	148K
D	256K

Package

B	DIP (Dual in line)
H	BGA (Ball grid array)
M	SO (small outline)
P	TSSOP
T	TQFP (thin quad flat)
U	QFN (Dual Quad flat no lead)

Temperature range

0	+25° C
1	0 to +70° C
5	-10° C to +85° C
8	-25° C to +85° C
6	-40° C to +85° C
7	-40° C to +105° C
3	-40° C to +125° C

Options

/xxx	ROM code
TR	tape and real

Pitch Size

0,40 mm	A
0,50 mm	
0,65 mm	B
0,80 mm	C
1,00 mm	D

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