

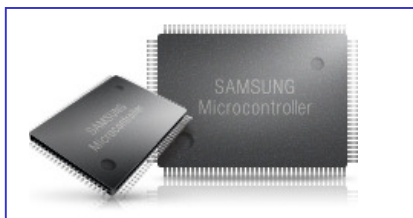


# SAM8 - SAMSUNG 8-bit MCUs & Tools

## Device Overview

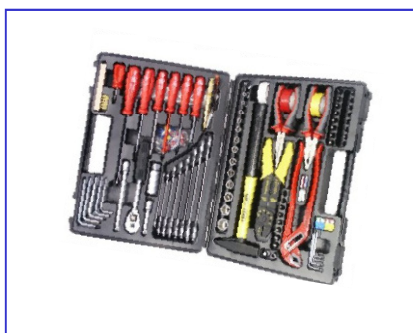
Device	CPU	Speed (MHz)	Intern. Osc.	Flash	RAM	Pins	ADC	Ext. 32.768 kHz	Timer	UART / SPI / I2C	LVD	LCD	Temp.	V
S3F94C8	SAM8	10	3,2 MHz	8k	208B	16 or 20	9x 10-bit	-	2	-	yes	-	-40 to 85°C	1.8-5.5
S3F84P4	SAM8	10	8 MHz	4k	208B	8 SOP	4x 10-bit	-	4	-	yes	-	-20 to 85°C	2.0-5.5
S3F8S28 / 4	SAM8	12	8 MHz	8k /4k	272B	20 SOP	13x 12-bit	-	7	1 / 0 / 1	yes	-	-40 to 85°C	1.8-5.5
S3F84A5	SAM8	10	8 MHz	16k	400B	32 QFN	8x 10-bit	-	4 plus 1x3-Phase PWM	1 / 0 / 0	yes	-	-40 to 85°C	2.0-5.5
S3F8S39	SAM8	12	8 MHz	32k	1k	32 QFN	16x 10-bit	-	8	2 / 1 / 1	yes	-	-40 to 85°C	1.8-5.5
S3F8S19	SAM8	12	8MHz	32k	2k	48 QFN	10x 10-bit	-	7	2 / 1 / 1	yes	16x8*	-40 to 85°C	1.8-5.5
S3F84ZB <sup>1</sup>	SAM8	12	-	64k	2.1k	100 QFN	8x 10-bit DAC: 2x 8-bit	yes	8	2 / 1 / 0	yes	64x8*	-40 to 85°C	2.0-5.5
S3F82MA	SAM8	12	-	48j	3j	100 QFN	5x 10-bit	yes	6	0 / 1 / 0	yes	56x16	-40 to 85°C	1.8-5.5
S3F82NB	SAM8	12	-	64k	4k	128 QFN	8x 10-bit Comparators	yes	5	0 / 1 / 0	yes	80x16	-40 to 85°C	1.8-5.5
S3F883B	SAM8	12	-	64k	2.5k	Integrated PLL frequency synthesizer, integrated intermediate 20-bit frequency counter								
S3F11BG	8051	24	16 MHz	384k	4k	Audio Decoder/Encoder, JPEG Image Decoder, Video DMA, 8080 interface, USB Func.								

Table: some selected actual devices out of the SAMSUNG 8-bit MCU portfolio. \* = LCD with voltage booster, <sup>1</sup>= with external 8-bit parallel interface



### SAM8

SAM8 is the SAMSUNG 8-bit CPU Core based on a CISC architecture for lowest cost solutions. The SAM8 core is base for reliable easy to use microcontrollers and works with 0.03 DMIPs/MHz. The devices are simple "work horses" that fulfill the need of many low-end applications. Especially low-pin-count devices or devices with integrated LCD-Controller/Driver are very famous. For example, the S3F82NB is a simple microcontroller with integrated LCD Controller/Driver that drives up to 80x16 segments.



### Solutions based on SAM8

(Application notes)

	Device	Description	Schematics	Source Code
Battery Charger for Ni-MH	S3F8S28	x	x	x
Smoke Detector	S3F8S28	x	x	x
Electric Bike Controller	S3F84A5	x	x	x
LED Lighting	S3F84P4	x	x	x
Boiler Controller Application	S3F84P4	x	x	x
Time Piece Applications (Weather station, watches..)	S3F82I9	x	x	x
Thermostat Application Note	S3F84ZB	x	x	x
Watt-Hour Meter	S3F84IA	x	x	



# SAM8 - SAMSUNG 8-bit MCUs & Tools

## Emulator



### Full featured Emulator OPENice-I2000

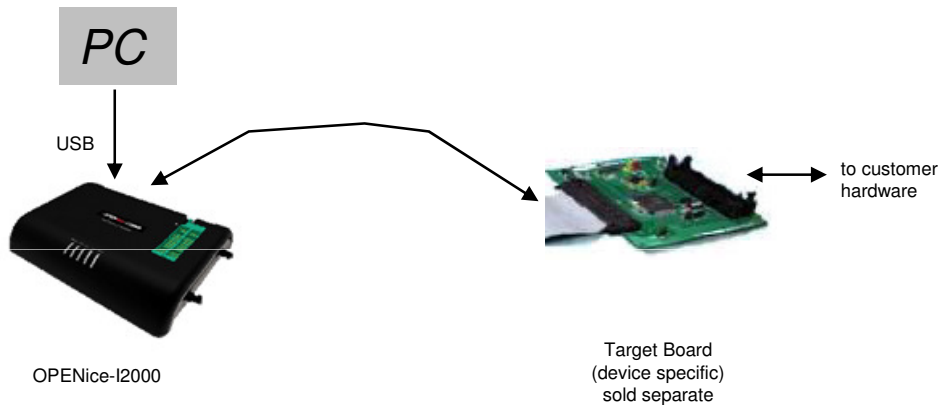
The OPENice-I2000 is a full featured chip-emulator for SAMSUNG 8-bit microcontrollers. It also allows programming using the programming interface. It includes:

- **OPENice-I2000**
- OPENice SLD (software kit) includes Project Manager, Assembler, Debugger.. for all SAM8 based devices
- Programming software
- Support for IAR Embedded Workbench
- Power supply

**Order Code:**  
OPENice-I2000

**Resale price:**  
949,00 €

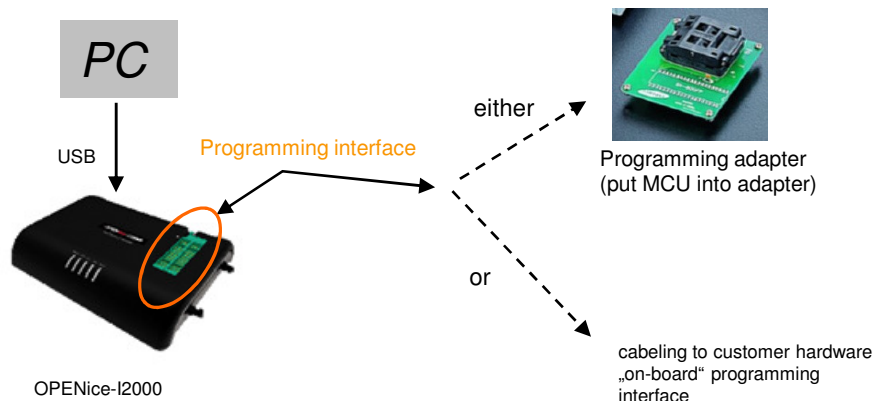
### OPENice-I2000 as EMULATOR



**Order Code:**  
**Target Boards**  
TB94C8  
TB84P4  
TB8S24/S8  
TB84A5  
TB8S19  
TB84ZB  
TB82MA  
TB82NB  
TB883B  
...

**Resale price:**  
99,00 €

### OPENice-I2000 as PROGRAMMER



**Order Code:**  
**Programming adapter**  
SA-8SOP  
SA-20SOP  
SA-32SOP  
SA-64QFP  
SA-64TQFP  
SA-64LQFP  
SA-80TQFP  
SA-128QFP  
...

**Resale price:**  
depends on adapter  
between  
50 € and 170 €



# SAM8 - SAMSUNG 8-bit MCUs & Tools

## Programmer



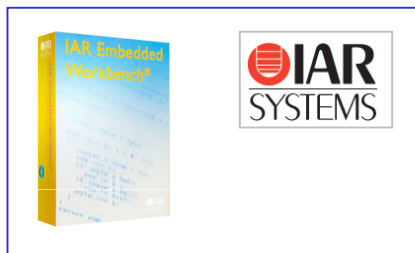
### Programmer for mass production

- Portable & Stand alone SAMSUNG OTP/MTP/FLASH MCU programmer.
- HEX data file download via USB port from PC to internal Buffer memory (118 MByte for several HEX Files)
- Stand alone operation (without PC)
- Up to 10K(MTP) bytes per second for Flash Programming
- Use target as power supply source or external power adapter

**Order Code:**  
AS-PRO

**Resale price:**  
594,00 €

## C-Compiler / Linker / Debugger



### IAR Embedded Workbench

IAR Embedded Workbench is a set of highly sophisticated and easy-to-use development tools for embedded applications. It integrates the IAR C/C++ Compiler™, assembler, linker, librarian, text editor, project manager, and C-SPY® Debugger in one integrated development environment (IDE).

**Order Code:**  
EWSAM8

**Resale price:**  
2500,00 €

IAR provides two version:  
EWSAM8-LE (no C-SPY debugger no runtime libraries)  
EWSAM8 (full package)

**Order Code:**  
EWSAM8-LE

**Resale price:**  
1900,00 €

- [Free 4k code limited version available](#)
- [Free full featured 30-day evaluation version available](#)

## Example: what to order to start with... S3F8S19

### Order codes and prices:

- |  |                   |
|--|-------------------|
| • 1x EWSAM8 (Order Code: EWSAM8)<br>(IAR Embedded Workbench, C-Compiler, Linker, Debugger,..)                                      | 2500,00 €         |
| • 1x OPENice-I2000 (Order Code: OPENice-I2000)<br>(Emulator & Programmer for SAM8 8-bit microcontroller including Emulation Board) | 949,00 €          |
| • 1x Target Board (Order Code: TB8S19)<br>(device specific, to connect with OPENice-I2000 to emulate dedicated device)             | 99,00€            |
| • 1x AS-PRO (Order Code: AS-PRO)<br>(In-Circuit Programmer for SAM8 8-bit microcontroller)   | 595,00 € (option) |
| • 1x SA-48QFP (Order Code: SA-48QFP)<br>(Programming adapter for OPENice-I2000, device specific)                                   | 87,00 € (option)  |
| • 5x MCU samples (Order Code: S3F8S19XZZ-<br>(S3F8S19 8-bit MCU in LQFP package, Tray, ROHS)                                       | free              |

SAMSUNG: [www.samsungsemi.com](http://www.samsungsemi.com)  
IAR: [www.iar.com](http://www.iar.com)

  
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