8, 16 and 32-bit microcontrollers

Product and tool selection guide

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8, 16 and 32-bit microcontroller families

	Part number	Program memory type: Flash	Program memory type: ROM	Prog. (bytes)	RAM (bytes)	Data E²PROM (bytes)	A/D inputs	Timer functions: 12 or 16-bit (IC/OC/PWM)	Timer functions: 8-bit (IC/OC/PWM)	Timer functions: Others	Serial interface	LVD levels	I/Os (high current[5])	Package	Supply voltage	Special features
STR7/STR9: 32-bit ARM® RISC CPU microcontrollers																
STR7: 32-bit ARM7™ RISC CPU microcontrollers																
64 pins	**STR711FR0**	•		64+16K	16K		4x12-bit	4x16-bit (5/5/3)		WDG, RTC	2xSPI/2xI²C/4xUART/ HDLC/SC/USB		30(0)	LQFP64/BGA64	3.0 to 3.6V	
	STR712FR0	•		64+16K	16K		4x12-bit			WDG, RTC	2xSPI/2xI²C/4xUART/ HDLC/SC/CAN		32(0)	LQFP64/BGA64	3.0 to 3.6V	50MHz, 16K data flash
	STR715FR0	•		64+16K	16K		4x12-bit			WDG, RTC	2xSPI/2xI²C/4xUART/ HDLC/SC		32(0)	LQFP64/BGA64	3.0 to 3.6V	
	STR751FR0	•		64+16K	16K		11x10-bit	5x16-bit (5/5/11)		WDG, RTC	2xSSP/I²C/3xHS-UART/ USB		38(7)	LQFP64	3.0 to 3.6V	
	STR752FR0	•		64+16K	16K		11x10-bit			WDG, RTC	2xSSP/I²C/3xHS-UART/ CAN		38(7)	LQFP64	3.0 to 3.6V or 4.5 to 5.5V	60MHz, 16K data flash, 4xDMA, AWU, SMI, on-chip RC oscillator, motor control oriented PWM
	STR755FR0	•		64+16K	16K		11x10-bit			WDG, RTC	2xSSP/I²C/3xHS-UART		38(7)	LQFP64	3.0 to 3.6V or 4.5 to 5.5V	
	STR711FR1	•		128+16K	32K		4x12-bit	4x16-bit (5/5/3)		WDG, RTC	2xSPI/2xI²C/4xUART/ HDLC/SC/USB		30(0)	LQFP64/BGA64	3.0 to 3.6V	
	STR712FR1	•		128+16K	32K		4x12-bit			WDG, RTC	2xSPI/2xI²C/4xUART/ HDLC/SC/CAN		32(0)	LQFP64/BGA64	3.0 to 3.6V	50MHz, 16K data flash
	STR751FR1	•		128+16K	16K		11x10-bit	5x16-bit (5/5/11)		WDG, RTC	2xSSP/I²C/3xHS-UART/ USB		38(7)	LQFP64	3.0 to 3.6V	
	STR752FR1	•		128+16K	16K		11x10-bit			WDG, RTC	2xSSP/I²C/3xHS-UART/ CAN		38(7)	LQFP64	3.0 to 3.6V or 4.5 to 5.5V	60MHz, 16K data flash, 4xDMA, AWU, SMI, on-chip RC oscillator, motor control oriented PWM
	STR755FR1	•		128+16K	16K		11x10-bit			WDG, RTC	2xSSP/I²C/3xHS-UART		38(7)	LQFP64	3.0 to 3.6V or 4.5 to 5.5V	
	STR711FR2	•		256+16K	64K		4x12-bit	4x16-bit (5/5/3)		WDG, RTC	2xSPI/2xI²C/4xUART/ HDLC/SC/USB		30(0)	LQFP64/BGA64	3.0 to 3.6V	
	STR712FR2	•		256+16K	64K		4x12-bit			WDG, RTC	2xSPI/2xI²C/4xUART/ HDLC/SC/CAN		32(0)	LQFP64/BGA64	3.0 to 3.6V	50MHz, 16K data flash
	STR751FR2	•		256+16K	16K		11x10-bit	5x16-bit (6/6/12)		WDG, RTC	2xSSP/I²C/3xHS-UART/ USB		38(7)	LQFP64/BGA64	3.0 to 3.6V	
	STR752FR2	•		256+16K	16K		11x10-bit			WDG, RTC	2xSSP/I²C/3xHS-UART/ CAN		38(7)	LQFP64/BGA64	3.0 to 3.6V or 4.5 to 5.5V	60MHz, 16K data flash, 4xDMA, AWU, SMI, on-chip RC oscillator, motor control oriented PWM
	STR755FR2	•		256+16K	16K		11x10-bit			WDG, RTC	2xSSP/I²C/3xHS-UART		38(7)	LQFP64/BGA64	3.0 to 3.6V or 4.5 to 5.5V	
100 pins	**STR731FV0**	•		64K	16K		12x10-bit	15x16-bit (12/12/12)		WDG, RTC	3xSPI/2xI²C/4xUART/ 3xCAN		72(0)	LQFP100	4.5 to 5.5V	36MHz, 16xDMA channels, on-chip RC oscillator
	STR736FV0	•		64K	16K		12x10-bit			WDG, RTC	3xSPI/2xI²C/4xUART		72(0)	LQFP100	4.5 to 5.5V	
	STR750FV0	•		64K+16K	16K		16x10-bit	5x16-bit (6/6/12)		WDG, RTC	2xSSP/I²C/3xHS-UART/ CAN/USB		72(9)	LQFP100	3.0 to 3.6V or 4.5 to 5.5V (without USB)	60MHz, 16K data flash, 4xDMA, AWU, SMI, on-chip RC oscillator, motor control oriented PWM
	STR755FV0	•		64K+16K	16K		16x10-bit			WDG, RTC	2xSSP/I²C/3xHS-UART		72(9)	LQFP100	3.0 to 3.6V or 4.5 to 5.5V	
	STR731FV1	•		128K	16K		12x10-bit	15x16-bit (12/12/12)		WDG, RTC	3xSPI/2xI²C/4xUART/ 3xCAN		72(0)	LQFP100	4.5 to 5.5V	36MHz, 16xDMA channels, on-chip RC oscillator
	STR736FV1	•		128K	16K		12x10-bit			WDG, RTC	3xSPI/2xI²C/4xUART		72(0)	LQFP100	4.5 to 5.5V	
	STR750FV1	•		128K+16K	16K		16x10-bit	5x16-bit (6/6/12)		WDG, RTC	2xSSP/I²C/3xHS-UART/ CAN/USB		72(9)	LQFP100/BGA100	3.0 to 3.6V or 4.5 to 5.5V (without USB)	60MHz, 16K data flash, 4xDMA, AWU, SMI, on-chip RC oscillator, motor control oriented PWM
	STR755FV1	•		128K+16K	16K		16x10-bit			WDG, RTC	2xSSP/I²C/3xHS-UART		72(9)	LQFP100	3.0 to 3.6V or 4.5 to 5.5V	
	STR731FV2	•		256K	16K		12x10-bit	15x16-bit (12/12/12)		WDG, RTC	3xSPI/2xI²C/4xUART/ 3xCAN		72(0)	LQFP100	4.5 to 5.5V	36MHz, 16xDMA channels, on-chip RC oscillator
	STR736FV2	•		256K	16K		12x10-bit			WDG, RTC	3xSPI/2xI²C/4xUART		72(0)	LQFP100	4.5 to 5.5V	
	STR750FV2	•		256K+16K	16K		16x10-bit	5x16-bit (6/6/12)		WDG, RTC	2xSSP/I²C/3xHS-UART/ CAN/USB		72(9)	LQFP100/BGA100	3.0 to 3.6V or 4.5 to 5.5V (without USB)	60MHz, 16K data flash, 4xDMA, AWU, SMI, on-chip RC oscillator, motor control oriented PWM
	STR755FV2	•		256K+16K	16K		16x10-bit			WDG, RTC	2xSSP/I²C/3xHS-UART		72(9)	LQFP100/BGA100	3.0 to 3.6V or 4.5 to 5.5V	
144 pins	**STR710RZ**	•			64K		4x12-bit	4x16-bit (5/5/3)		WDG, RTC	2xSPI/2xI²C/4xUART/ HDLC/SC/CAN/USB		48(8)	LFBGA144/LQFP144	3.0 to 3.6V	50MHz, external memory interface
	STR710FZ1	•		128+16K	32K		4x12-bit			WDG, RTC	2xSPI/2xI²C/4xUART/ HDLC/SC/CAN/USB		48(8)	LFBGA144/LQFP144	3.0 to 3.6V	50MHz, 16K data flash, external memory interface
	STR730FZ1	•		128K	16K		16x10-bit	19x16-bit (20/20/16)		WDG, RTC	3xSPI/2xI²C/4xUART/ 3xCAN		112(0)	LFBGA144/LQFP144	4.5 to 5.5V	36MHz, 16xDMA channels, on-chip RC oscillator
	STR735FZ1	•		128K	16K		16x10-bit			WDG, RTC	3xSPI/2xI²C/4xUART		112(0)	LFBGA144/LQFP144	4.5 to 5.5V	
	STR710FZ2	•		256+16K	64K		4x12-bit	4x16-bit (5/5/3)		WDG, RTC	2xSPI/2xI²C/4xUART/ HDLC/SC/CAN/USB		48(8)	LFBGA144/LQFP144	3.0 to 3.6V	50MHz, 16K data flash, external memory interface
	STR730FZ2	•		256K	16K		16x10-bit	19x16-bit (20/20/16)		WDG, RTC	3xSPI/2xI²C/4xUART/ 3xCAN		112(0)	LFBGA144/LQFP144	4.5 to 5.5V	36MHz, 16xDMA channels, on-chip RC oscillator
	STR735FZ2	•		256K	16K		16x10-bit			WDG, RTC	3xSPI/2xI²C/4xUART		112(0)	LFBGA144/LQFP144	4.5 to 5.5V	
STR9: 32-bit ARM966E-S™ RISC CPU microcontrollers																
80 pins	**STR910FM32**	•		256+32K	64K		8x10-bit	7x16-bit (8/8/7)		WDG, 1µA RTC	CAN, 3xUART, 2xFast I²C, 2xSPI	2	40(16)	LQFP80	CPU core: 1.8V +/-10% I/O ring: selectable: 2.7 to 3.3V or 3.0 to 3.6V	96MHz ARM9E CPU core, 9xDMA, brown-out warning, 3-ph AC MC, ETM trace
	STR911FM42	•		256+32K	96K		8x10-bit			WDG, 1µA RTC	USB, CAN, 3xUART, 2xFast I²C, 2xSPI	2	40(16)	LQFP80		
	STR911FM44	•		512+32K	96K		8x10-bit			WDG, 1µA RTC	USB, CAN, 3xUART, 2xFast I²C, 2xSPI	2	40(16)	LQFP80		
128 pins	**STR910FW32**	•		256+32K	64K		8x10-bit			WDG, 1µA RTC	CAN, 3xUART, 2xFast I²C, 2xSPI	2	80(16)	LQFP128		96MHz ARM9E CPU core, 9xDMA, brown-out warning, 3-ph AC MC, ETM trace, tamper detect, EMI
	STR912FW42	•		256+32K	96K		8x10-bit			WDG, 1µA RTC	Ethernet, USB, CAN, 3xUART, 2xFast I²C, 2xSPI	2	80(16)	LQFP128		
	STR912FW44	•		512+32K	96K		8x10-bit			WDG, 1µA RTC	Ethernet, USB, CAN, 3xUART, 2xFast I²C, 2xSPI	2	80(16)	LQFP128		
ST10: 16-bit fast core with advanced interrupt management (up to 10 Mbytes address space)																
100 pins	**ST10R172LT**				1K		5x16-bit	5x16-bit		WDG	USART/SSP		77	LQFP100	3.3V	50MHz, ROMless, PEC, PWM, EMI
	ST10R272LT				1K		5x16-bit			WDG	USART/SSP		77	LQFP100	3.3V	
144 pins	**ST10R167-Q**				4K		16x10-bit			WDG	USART/SSC/CAN		111	PQFP144	4.5 to 5.5V	25MHz, ROMless, PEC, PWM, CAPCOM, EMI
	ST10F269Z1	•		128K	12K		16x10-bit			WDG	USART/SSC/2xCAN		111	PQFP144/LQFP144	4.5 to 5.5V	40MHz, PEC, PWM, CAPCOM, MAC, EMI
	ST10F271Z1	•		128K	12K		24x10-bit			WDG, RTC	I²C/2xUART/2xSSC/ 2xCAN		111	PQFP144/LQFP144	4.5 to 5.5V	64MHz,PEC,PWM,CAPCOM,MAC,EMI
	ST10F269Z2	•		256K	12K		16x10-bit			WDG	USART/SSC/2xCAN		111	PQFP144/LQFP144	4.5 to 5.5V	40MHz, PEC, PWM, CAPCOM, MAC, EMI
	ST10F272Z2	•		256K	20K		24x10-bit			WDG, RTC	I²C/2xUART/2xSSC/ 2xCAN		111	PQFP144/LQFP144	4.5 to 5.5V	64MHz,PEC,PWM,CAPCOM,MAC,EMI
	ST10F273Z4	•		512K	36K		24x10-bit			WDG, RTC	I²C/2xUART/2xSSC/ 2xCAN		111	PQFP144/LQFP144	4.5 to 5.5V	64MHz, PEC, PWM, CAPCOM, MAC, EMI
	ST10F276Z5	•		832K	68K		24x10-bit			WDG, RTC	I²C/2xUART/2xSSC/ 2xCAN		111	PQFP144/LQFP144	4.5 to 5.5V	
ST7: 8-bit industry standard, fast core architecture with innovative peripherals (up to 60K bytes address space)																
ST7 Lite																
8 pins	**ST7LITEUS2**	•[5,6]		1K	128			1x12-bit (0/1/1)	1(1/0/0)	WDG, RTC		3	5(5)	DIP8/SO8/DFN8	2.4 to 5.5V	8MHz internal RC oscillator, AWU, ROP, ICP, IAP, 5 I/Os + 1 additional output
	ST7LITEUS5	•[5,6]		1K	128		5x10-bit		1(1/0/0)	WDG, RTC		3	5(5)	DIP8/SO8/DFN8	2.4 to 5.5V	
	ST7LITEU02	•[5,6]		2K	128				1(1/0/0)	WDG, RTC		3	5(5)	DIP8/SO8/DFN8	2.4 to 5.5V	
	ST7LITEU05	•[5,6]		2K	128		5x10-bit		1(1/0/0)	WDG, RTC		3	5(5)	DIP8/SO8/DFN8	2.4 to 5.5V	
	ST7LITEU09	•[5,6]		2K	128	128	5x10-bit		1(1/0/0)	WDG, RTC		3	5(5)	DIP8/SO8/DFN8	2.4 to 5.5V	
16-20 pins	**ST7LITES2Y0**	•[5,6]		1K	128			1x12-bit (0/1/1)	1(1/0/0)	WDG, RTC	SPI	3	13(6)	DIP16/SO16	2.4 to 5.5V	1% internal RC oscillator, PLL, ROP, ICP, IAP
	ST7LITES5Y0	•[5,6]		1K	128		5x8-bit		1(1/0/0)	WDG, RTC	SPI	3	13(6)	DIP16/SO16	2.4 to 5.5V	
	ST7LITE02Y0	•[5,6]		1.5K	128				1(1/0/0)	WDG, RTC	SPI	3	13(6)	DIP16/SO16/QFN20	2.4 to 5.5V	
	ST7LITE05Y0	•[5,6]		1.5K	128		5x8-bit		1(1/0/0)	WDG, RTC	SPI	3	13(6)	DIP16/SO16/QFN20	2.4 to 5.5V	1% internal RC oscillator, PLL, ADC with op-amp, ROP, ICP, IAP
	ST7LITE09Y0	•[5,6]		1.5K	128	128	5x8-bit		1(1/0/0)	WDG, RTC	SPI	3	13(6)	DIP16/SO16/QFN20	2.4 to 5.5V	
	ST7LIT10BF0	•[5,6]		2K	256		7x10-bit	2x12-bit (1/4/4)	2(1/0/0)	WDG, RTC	SPI	3	17(7)	DIP20/SO20/QFN20	2.7 to 5.5V	AWU, ADC with op-amp, ROP, ICP, IAP, debug module
	ST7LIT10BY0	•[6]		2K	256		7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	13(5)	DIP16/SO16	2.7 to 5.5V	
	ST7LIT15BF0	•[5,6]		2K	256		7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	17(7)	DIP20/SO20/QFN20	2.7 to 5.5V	1% internal RC oscillator, PLL, 32MHz timer, ART with deadtime and enhanced one pulse mode, AWU, ADC with op-amp, analog comp., ROP, ICP, IAP, debug module
	ST7LIT15BY0	•[6]		2K	256		7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	13(5)	DIP16/SO16	2.7 to 5.5V	
	ST7LIT19BF0	•[5,6]		2K	256	128	7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	17(7)	DIP20/SO20/QFN20	2.7 to 5.5V	
	ST7LIT19BY0	•[6]		2K	256	128	7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	13(5)	DIP16/SO16	2.7 to 5.5V	
	ST7LIT10BF1	•[5,6]		4K	256		7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	17(7)	DIP20/SO20/QFN20	2.7 to 5.5V	AWU, ADC with op-amp, ROP, ICP, IAP, debug module
	ST7LIT10BY1	•[6]		4K	256		7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	13(5)	DIP16/SO16	2.7 to 5.5V	
	ST7LIT15BF1	•[5,6]		4K	256		7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	17(7)	DIP20/SO20/QFN20	2.7 to 5.5V	1% internal RC oscillator, PLL, 32MHz timer, ART with deadtime and enhanced one pulse mode, AWU, ADC with op-amp, analog comp., ROP, ICP, IAP, debug module
	ST7LIT15BY1	•[6]		4K	256		7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	13(5)	DIP16/SO16	2.7 to 5.5V	
	ST7LIT19BF1	•[5,6]		4K	256	128	7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	17(7)	DIP20/SO20/QFN20	2.7 to 5.5V	
	ST7LIT19BY1	•[6]		4K	256	128	7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	13(5)	DIP16/SO16	2.7 to 5.5V	

For a list of abbreviations and notes, refer to the page following the mature products

8, 16 and 32-bit microcontroller families

	Part number	Program memory type: Flash	Program memory type: ROM	Prog. (bytes)	RAM (bytes)	Data E²PROM (bytes)	A/D inputs	Timer functions: 12 or 16-bit (IC/OC/PWM)	Timer functions: 8-bit (IC/OC/PWM)	Timer functions: Others	Serial interface	LVD levels	I/Os (high current[5])	Package	Supply voltage	Special features
ST7: 8-bit industry standard, fast core architecture with innovative peripherals (up to 64K bytes address space)																
	ST7 Lite															
20 pins	**ST7DALIF2**	•[5,6]		8K	384	256	7x10-bit	1x12-bit (1/4/4)	2(1/0/0)	WDG, RTC	SPI/DALI	3	15(7)	SO20	2.4 to 5.5V	1% internal RC oscillator, PLL, 32MHz timer, DALI, AWU, ADC with op-amp, ROP, ICP, IAP, debug module
20 pins	**ST7LITE20F2**	•[5,6]		8K	384		7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	15(7)	DIP20/SO20	2.4 to 5.5V	PLL, 32MHz timer, AWU, ADC with op-amp, ROP, ICP, IAP, debug module
20 pins	**ST7LITE25F2**	•[5,6]		8K	384		7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	15(7)	DIP20/SO20	2.4 to 5.5V	1% internal RC oscillator, PLL, 32MHz timer, AWU, ADC with op-amp, ROP, ICP, IAP, debug module
20 pins	**ST7LITE29F2**	•[5,6]		8K	384	256	7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	15(7)	DIP20/SO20	2.4 to 5.5V	
20 pins	**ST7LITE30F2**	•[5,6]		8K	384		7x10-bit	2x12-bit (1/4/4)	2(1/0/0)	WDG, RTC	SPI/LINSCI	3	15(7)	DIP20/SO20/QFN20	2.7 to 5.5V	PLL, AWU, ROP, ICP, IAP, debug module
20 pins	**ST7LITE35F2**	•[5,6]		8K	384		7x10-bit		2(1/0/0)	WDG, RTC	SPI/LINSCI	3	15(7)	DIP20/SO20/QFN20	2.7 to 5.5V	1% internal RC oscillator, PLL, AWU, ROP, ICP, IAP, debug module
20 pins	**ST7LITE39F2**	•[5,6]		8K	384	256	7x10-bit		1(1/0/0)	WDG, RTC	SPI/LINSCI	3	15(7)	DIP20/SO20/QFN20	2.7 to 5.5V	
	ST7 mid-range															
28-32 pins	**ST72260G1**	•[5,6]	•	4K	256			2x16-bit (4/4/2)		WDG, RTC	SPI	3	22(8)	SDIP32/SO28	2.7 to 5.5V	ROP, ICP, IAP, PLL, nested interrupts
28-32 pins	**ST72262G1**	•[5,6]	•	4K	256		6x10-bit			WDG, RTC	SPI	3	22(8)	SDIP32/SO28	2.7 to 5.5V	
28-32 pins	**ST72264G1**	•[5,6]	•	4K	256		6x10-bit			WDG, RTC	SPI/SCI/I²C	3	22(8)	SDIP32/SO28	2.7 to 5.5V	
28-32 pins	**ST72232AK1**	•[4,6]	•	4K	384		8x10-bit	2x16-bit (3/3/1)		WDG, RTC	SPI/SCI		24(10)	SDIP32/LQFP32	3.8 to 5.5V	ICP, IAP, nested interrupts, TLI, ROP, beep[3]
28-32 pins	**ST72262G2**	•[5,6]	•	8K	256		6x10-bit	2x16-bit (4/4/2)		WDG, RTC	SPI	3	22(8)	SDIP32/SO28	2.7 to 5.5V	ROP, ICP, IAP, PLL, nested interrupts
28-32 pins	**ST72264G2**	•[5,6]	•	8K	256		6x10-bit			WDG, RTC	SPI/SCI/I²C	3	22(8)	SDIP32/SO28/ BGA6x6	2.7 to 5.5V	
28-32 pins	**ST72324BK2**	•[4,6]	•	8K	384		8x10-bit	2x16-bit (3/3/1)		WDG, RTC	SPI/SCI	3	24(10)	SDIP32/LQFP32	3.8 to 5.5V	
28-32 pins	**ST72324LK2**	•[4,6]	•	8K	384		8x10-bit			WDG, RTC	SPI/SCI		24(10)	SDIP32/LQFP32	2.85 to 3.6V	ICP, IAP, nested interrupts, TLI, ROP, beep[3]
28-32 pins	**ST7232AK2**	•[4,6]	•	8K	384		8x10-bit			WDG, RTC	SPI/SCI		24(10)	SDIP32/LQFP32	3.8 to 5.5V	
28-32 pins	**ST72340K2**	•[5,6]		8K	512	256		2x16-bit (3/3/2)		WWDG, RTC	SPI/SCI	3	22(5)	LQFP32	2.7 to 5.5V	PLL, ROP, ICP, IAP
28-32 pins	**ST72344K2**	•[5,6]		8K	512	256	8x10-bit			WWDG, RTC	SPI/SCI/I²C	3	22(5)	LQFP32	2.7 to 5.5V	1% internal RC oscillator, PLL, ROP, ICP, IAP
28-32 pins	**ST72324BK4**	•[4,6]	•	16K	512		8x10-bit	2x16-bit (3/3/1)		WDG, RTC	SPI/SCI	3	24(10)	SDIP32/LQFP32	3.8 to 5.5V	ICP, IAP, nested interrupts, TLI, ROP, beep[3]
28-32 pins	**ST72324LK4**	•[4,6]	•	16K	512		8x10-bit			WDG, RTC	SPI/SCI		24(10)	SDIP32/LQFP32	2.85 to 3.6V	
28-32 pins	**ST72325K4**	•[4,6]	•	16K	512		8x10-bit		1(0/3/3)	CSS, WDG, RTC	SPI/SCI/I²C	3	24(10)	SDIP32/LQFP32	3.8 to 5.5V	
28-32 pins	**ST72340K4**	•[5,6]		16K	1K	256		2x16-bit (3/3/2)		WWDG, RTC	SPI/SCI	3	22(5)	LQFP32	2.7 to 5.5V	PLL, ROP, ICP, IAP
28-32 pins	**ST72344K4**	•[5,6]	•	16K	1K	256	8x10-bit			WWDG, RTC	SPI/SCI/I²C	3	22(5)	LQFP32	2.7 to 5.5V	1% internal RC, oscillator PLL, ROP, ICP, IAP
28-32 pins	**ST72324BK6**	•[4,6]	•	32K	1K		8x10-bit	2x16-bit (3/3/1)		WDG, RTC	SPI/SCI	3	24(10)	SDIP32/LQFP32	3.8 to 5.5V	
28-32 pins	**ST72324LK6**	•[4,6]	•	32K	1K		8x10-bit			WDG, RTC	SPI/SCI		24(10)	SDIP32/LQFP32	2.85 to 3.6V	ICP, IAP, nested interrupts, TLI, ROP, beep[3]
28-32 pins	**ST72325K6**	•[4,6]	•	32K	1K		8x10-bit		1(0/3/3)	CSS, WDG, RTC	SPI/SCI/I²C	3	24(10)	SDIP32/LQFP32	3.8 to 5.5V	
28-32 pins	**ST72361K6**	•[4,6]	•	32K	1K		6x10-bit	1x16-bit (2/2/1)	1(1/1/3)	WWDG, RTC	SPI/2xSCI	1	24(5)	LQFP32	4.5 to 5.5V	Nested interrupts, TLI, ROP, SCIs with LIN features (LINSCI), AWU
28-32 pins	**ST72361K7**	•[4,6]	•	48K	1K		6x10-bit		1(1/1/3)	WWDG, RTC	SPI/2xSCI	1	24(5)	LQFP32	4.5 to 5.5V	
28-32 pins	**ST72361K9**	•[4,6]	•	60K	2K		6x10-bit		1(1/1/3)	WWDG, RTC	SPI/2xSCI	1	24(5)	LQFP32	4.5 to 5.5V	
42-48 pins	**ST7232AJ1**	•[4,6]	•	4K	384		12x10-bit	2x16-bit (3/3/1)		WDG, RTC	SPI/SCI		32(12)	SDIP42/LQFP44	3.8 to 5.5V	ICP, IAP, nested interrupts, TLI, ROP, beep[3]
42-48 pins	**ST72324BJ2**	•[4,6]	•	8K	384		12x10-bit			WDG, RTC	SPI/SCI	3	32(12)	SDIP42/LQFP44	3.8 to 5.5V	
42-48 pins	**ST72324LJ2**	•[4,6]	•	8K	384		12x10-bit			WDG, RTC	SPI/SCI		32(12)	LQFP44	2.85 to 3.6V	
42-48 pins	**ST7232AJ2**	•[4,6]	•	8K	384		12x10-bit			WDG, RTC	SPI/SCI		32(12)	SDIP42/LQFP44	3.8 to 5.5V	
42-48 pins	**ST72340S2**	•[5,6]		8K	512	256		2x16-bit (3/3/2)		WWDG, RTC	SPI/SCI	3	32(8)	LQFP44	2.7 to 5.5V	PLL, ROP, ICP, IAP
42-48 pins	**ST72344S2**	•[5,6]		8K	512	256	12x10-bit			WWDG, RTC	SPI/SCI/I²C	3	32(8)	LQFP44	2.7 to 5.5V	1% internal RC oscillator, PLL, ROP, ICP, IAP
42-48 pins	**ST72324BJ4**	•[4,6]	•	16K	512		12x10-bit	2x16-bit (3/3/1)		WDG, RTC	SPI/SCI	3	32(12)	SDIP42/LQFP44	3.8 to 5.5V	ICP, IAP, nested interrupts, TLI, ROP, beep[3]
42-48 pins	**ST72324LJ4**	•[4,6]	•	16K	512		12x10-bit			WDG, RTC	SPI/SCI		32(12)	LQFP44	2.85 to 3.6V	
42-48 pins	**ST72325S4**	•[4,6]	•	16K	512		12x10-bit		1(0/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	32(12)	LQFP48	3.8 to 5.5V	
42-48 pins	**ST72325J4**	•[4,6]	•	16K	512		12x10-bit		1(0/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	32(12)	LQFP44	3.8 to 5.5V	
42-48 pins	**ST72340S4**	•[5,6]		16K	1K	256		2x16-bit (3/3/2)		WWDG, RTC	SPI/SCI	3	32(8)	LQFP44	2.7 to 5.5V	PLL, ROP, ICP, IAP
42-48 pins	**ST72344S4**	•[4,6]	•	16K	1K	256	12x10-bit			WWDG, RTC	SPI/SCI/I²C	3	32(8)	LQFP44	2.7 to 5.5V	1% internal RC oscillator, PLL, ROP, ICP, IAP
42-48 pins	**ST72345C4**	•[4,6]	•	16K	1K	256	12x10-bit			WWDG, RTC	SPI/SCI/I²C/I²C slave 3-Addr.	3	32(8)	LQFP48 (7x7)	2.7 to 5.5V	
42-48 pins	**ST72321BJ6**	•[4,6]	•	32K	1K		12x10-bit		1(0/4/4)	WDG, RTC	SPI/SCI/I²C	3	32(12)	LQFP44	3.8 to 5.5V	ICP, IAP, nested interrupts, TLI, ROP, beep[3]
42-48 pins	**ST72324BJ6**	•[4,6]	•	32K	1K		12x10-bit	2x16-bit (3/3/1)		WDG, RTC	SPI/SCI	3	32(12)	SDIP42/LQFP44	3.8 to 5.5V	
42-48 pins	**ST72324LJ6**	•[4,6]	•	32K	1K		12x10-bit			WDG, RTC	SPI/SCI		32(12)	LQFP44	2.85 to 3.6V	
42-48 pins	**ST72325C6**	•[4,6]		32K	1K		12x10-bit	2x16-bit (3/3/2)	1(0/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	36(13)	LQFP48	3.8 to 5.5V	
42-48 pins	**ST72325J6**	•[4,6]	•	32K	1K		12x10-bit		1(0/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	32(12)	SDIP42/LQFP44/48	3.8 to 5.5V	
42-48 pins	**ST72325S6**	•[4,6]	•	32K	1K		16x10-bit		1(0/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	32(12)	LQFP48	3.8 to 5.5V	
42-48 pins	**ST72361J6**	•[4,6]	•	32K	1K		11x10-bit	1x16-bit (2/2/1)	1(2/1/5)	WWDG, RTC	SPI/2xSCI	1	34(6)	LQFP44	4.5 to 5.5V	Nested interrupts, TLI, ROP, SCIs with LIN features (LINSCI), AWU

For a list of abbreviations and notes, refer to the page following the mature products

8, 16 and 32-bit microcontroller families

	Part number	Program memory type: Flash	Program memory type: ROM	Prog. (bytes)	RAM (bytes)	Data E²PROM (bytes)	A/D inputs	Timer functions: 12 or 16-bit (IC/OC/PWM)	Timer functions: 8-bit (IC/OC/PWM)	Timer functions: Others	Serial interface	LVD levels	I/Os (high current[5])	Package	Supply voltage	Special features
ST7: 8-bit industry standard, fast core architecture with innovative peripherals (up to 64K bytes address space)																
ST7 mid-range																
42-48 pins	ST72321BJ7	•[4]	•	48K	1.5K		12x10-bit	2x16-bit (3/3/2)	1(0/4/4)	WDG, RTC	SPI/SCI/I²C	3	32(12)	LQFP44	3.8 to 5.5V	ICP, IAP, nested interrupts, TLI, ROP, beep[3]
	ST72325C7	•[4,6]		48K	1.5K		12x10-bit		1(0/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	36(13)	LQFP48	3.8 to 5.5V	
	ST72325J7	•[4,6]		48K	1.5K		12x10-bit		1(0/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	32(12)	LQFP44	3.8 to 5.5V	
	ST72361J7	•[4]	•	48K	2K		11x10-bit	1x16-bit (2/2/1)	1(2/1/5)	WWDG, RTC	SPI/2xSCI	1	34(6)	LQFP44	4.5 to 5.5V	Nested interrupts, TLI, ROP, SCIs with LIN features (LINSCI), AWU
	ST72321BJ9	•[4]	•	60K	2K		11x10-bit	2x16-bit (3/3/2)	1(0/4/4)	WDG, RTC	SPI/SCI/I²C	3	32(12)	LQFP44	3.8 to 5.5V	ICP, IAP, nested interrupts, TLI, ROP, beep[3]
	ST72325C9	•[4,6]		60K	2K		12x10-bit		1(0/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	36(13)	LQFP48	3.8 to 5.5V	
	ST72325J9	•[4,6]		60K	2K		12x10-bit		1(0/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	32(12)	LQFP44	3.8 to 5.5V	
	ST72361J9	•[4]	•	60K	2K		11x10-bit	1x16-bit (2/2/1)	1(2/1/5)	WWDG, RTC	SPI/2xSCI	1	34(6)	LQFP44	4.5 to 5.5V	Nested interrupts, TLI, ROP, SCIs with LIN features (LINSCI), AWU
64 pins	ST72321BAR6	•[4]	•	32K	1K		16x10-bit	2x16-bit (4/4/2)	1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (10x10)	3.8 to 5.5V	ICP, IAP, nested interrupts, TLI, ROP, beep[3]
	ST72321BR6	•[4]	•	32K	1K		16x10-bit		1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (14x14)	3.8 to 5.5V	
	ST72325AR6	•[4,6]	•	32K	1K		16x10-bit		1(2/4/4)	CSS, WDG, RTC	SPI/SCI/I2C	3	48(16)	LQFP64 (10x10)	3.8 to 5.5V	
	ST72361AR6	•[4]	•	32K	2K		16x10-bit	1x16-bit (2/2/1)	2(4/2/5)	WWDG, RTC	SPI/2xSCI	1	48(6)	LQFP64 (10x10)	4.5 to 5.5V	Nested interrupts, TLI, ROP, SCIs with LIN features (LINSCI), AWU
	ST72321BAR7	•[4]	•	48K	1.5K		16x10-bit	2x16-bit	1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (10x10)	3.8 to 5.5V	ICP, IAP, nested interrupts, TLI, ROP, beep[3]
	ST72321BR7	•[4]	•	48K	1.5K		16x10-bit		1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (14x14)	3.8 to 5.5V	
	ST72325AR7	•[4,6]		48K	1.5K		16x10-bit	2x16-bit (4/4/2)	1 (2/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (10x10)	3.8 to 5.5V	
	ST72325R7	•[4,6]		48K	1.5K		16x10-bit		1 (2/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (14x14)	3.8 to 5.5V	
	ST72361AR7	•[4]	•	48K	2K		16x10-bit	1x16-bit (2/2/1)	2(4/2/5)	WWDG, RTC	SPI/2xSCI	1	48(6)	LQFP64 (10x10)	4.5 to 5.5V	Nested interrupts, TLI, ROP, SCIs with LIN features (LINSCI), AWU
	ST72321BAR9	•[4]	•	60K	2K		16x10-bit	2x16-bit (4/4/2)	1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (10x10)	3.8 to 5.5V	ICP, IAP, nested interrupts, TLI, ROP, beep[3]
	ST72321BR9	•[4]	•	60K	2K		16x10-bit		1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (14x14)	3.8 to 5.5V	
	ST72325AR9	•[4,6]		60K	2K		16x10-bit		1(2/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (10x10)	3.8 to 5.5V	
	ST72325R9	•[4,6,6]		60K	2K		16x10-bit		1(2/4/4)	CSS, WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (14x14)	3.8 to 5.5V	
	ST72361AR9	•[4,]	•	60K	2K		16x10-bit	1x16-bit (2/2/1)	2(4/2/5)	WWDG, RTC	SPI/2xSCI	1	48(6)	LQFP64 (10x10)	4.5 to 5.5V	Nested interrupts, TLI, ROP, SCIs with LIN features (LINSCI), AWU
80 pins	ST72321M6	•[4,6]	•	32K	1K		16x10-bit	2x16-bit (4/4/2)	1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	64(16)	LQFP80 (14x14)	3.8 to 5.5V	Nested interrupts, TLI, ROP, beep[3]
	ST72321M9	•[4,6]	•	60K	2K		16x10-bit		1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	64(16)	LQFP80 (14x14)	3.8 to 5.5V	
ST7 application specific																
CAN	ST72561AR4	•[4,6]	•	16K	1K		16x10-bit	1x16-bit (2/2/1)	2(4/2/5)	WWDG, RTC	SPI/2xSCI/CAN	1	48(6)	LQFP64 (10x10)	4.5 to 5.5V	Nested Interrupts, TLI, ROP, SCIs with LIN features (LINSCI), CAN 2.0B active, AWU
	ST72561J4	•[4,6]	•	16K	1K		11x10-bit		1(2/1/5)	WWDG, RTC	SPI/2xSCI/CAN	1	34(6)	LQFP44	4.5 to 5.5V	
	ST72561K4	•[4,6]	•	16K	1K		6x10-bit		1(1/1/3)	WWDG, RTC	SPI/2xSCI/CAN	1	24(5)	LQFP32	4.5 to 5.5V	
	ST72521AR6	•[4,6]	•	32K	1K		16x10-bit	2x16-bit (4/4/2)	1(2/4/4)	WDG, RTC	SPI/SCI/I²C/CAN	3	48(16)	LQFP64 (10x10)	3.8 to 5.5V	Nested interrupts, TLI, ROP, beep[3], CAN (2.0B passive)
	ST72521R6	•[4,6]	•	32K	1K		16x10-bit		1(2/4/4)	WDG, RTC	SPI/SCI/I²C/CAN	3	48(16)	LQFP64 (14x14)	3.8 to 5.5V	
	ST72561AR6	•[4,6]	•	32K	1K		16x10-bit	1x16-bit (2/2/1)	2(4/2/5)	WWDG, RTC	SPI/2xSCI/CAN	1	48(6)	LQFP64 (10x10)	3.8 to 5.5V	Nested interrupts, TLI, ROP, SCIs with LIN features (LINSCI), CAN 2.0B active, AWU
	ST72561J6	•[4,6]	•	32K	1K		11x10-bit		1(2/1/5)	WWDG, RTC	SPI/2xSCI/CAN	1	34(6)	LQFP44	4.5 to 5.5V	
	ST72561K6	•[4,6]	•	32K	1K		6x10-bit		1(1/1/3)	WWDG, RTC	SPI/2xSCI/CAN	1	24(5)	LQFP32	4.5 to 5.5V	
	ST72561AR7	•[4,6]	•	48K	2K		16x10-bit		2(4/2/5)	WWDG, RTC	SPI/2xSCI/CAN	1	48(6)	LQFP64 (10x10)	4.5 to 5.5V	
	ST72521AR9	•[4,6]	•	60K	2K		16x10-bit	2x16-bit (4/4/2)	1(2/4/4)	WDG, RTC	SPI/SCI/I²C/CAN	3	48(6)	LQFP64 (10x10)	3.8 to 5.5V	Nested interrupts, TLI, ROP, beep[3], CAN (2.0B passive)
	ST72521M9	•[4,6]	•	60K	2K		16x10-bit		1(2/4/4)	WDG, RTC	SPI/SCI/I²C/CAN	3	64(16)	LQFP80	3.8 to 5.5V	
	ST72521R9	•[4,6]	•	60K	2K		16x10-bit		1(2/4/4)	WDG, RTC	SPI/SCI/I²C/CAN	3	48(16)	LQFP64 (14x14)	3.8 to 5.5V	
	ST72561AR9	•[6]	•	60K	2K		16x10-bit	1x16-bit (2/2/1)	2(4/2/5)	WWDG, RTC	SPI/2xSCI/CAN	1	48(6)	LQFP64 (10x10)	4.5 to 5.5V	Nested interrupts, TLI, ROP, SCIs with LIN features (LINSCI), CAN 2.0B active, AWU
	ST72561J9	•[4,6]	•	60K	2K		11x10-bit		1(2/1/5)	WWDG, RTC	SPI/2xSCI/CAN	1	34(6)	LQFP44	4.5 to 5.5V	
	ST72561K9	•[4,6]	•	60K	2K		6x10-bit		1(1/1/3)	WWDG, RTC	SPI/2xSCI/CAN	1	24(5)	LQFP32	4.5 to 5.5V	
	ST72561R9	•[4,6]	•	60K	2K		16x10-bit		2(4/2/5)	WWDG, RTC	SPI/2xSCI/CAN	1	48(6)	LQFP64 (10x10)	4.5 to 5.5V	
DiSEqC™	ST7LNB0V2Y0	[6]	•	1.5K	128	128							13(6)	SO16/QFN20	4.5 to 5.5V	DiSEqC 2.1 interface, 22kHz tone detector
	ST7LNB1Y0	[6]	•	1.5K	128	128							13(6)	SO16/QFN20	4.5 to 5.5V	DiSEqC interface, SatCR control
MC	ST7MC1K2	•[4,6]	•	8K	384		8x10-bit	1x16-bit (2/2/1)	1(1/0/1)	WWDG	LINSCI	1	17(3)	LQFP32/SDIP32	4.5 to 5.5V	Sensorless brushless motor control cell, ICD, ICP, IAP, LVD, CSS/PLL, ROP, RTC, nested interrupts
	ST7MC1K4	•[4,6]	•	16K	768		8x10-bit		1(1/0/1)	WWDG	LINSCI	1	17(3)	LQFP32/SDIP32	4.5 to 5.5V	
	ST7MC2S4	•[4,6]	•	16K	768		11x10-bit	2x16-bit (2/2/1)	1(1/0/1)	WWDG	LINSCI/SPI	1	26(6)	LQFP44	4.5 to 5.5V	
	ST7MC2N6	•[4,6]		32K	1K		14x10-bit		1(2/0/2)	WWDG	LINSCI/SPI	1	36(10)	SDIP56	4.5 to 5.5V	Sensorless brushless motor control cell, ICD, ICP, IAP, LVD, CSS/PLL, ROP, RTC, nested interrupts, beep[3]
	ST7MC2R6	•[4,6]		32K	1K		16x10-bit	2x16-bit (2/2/2)	1(2/0/4)	WWDG	LINSCI/SPI	1	44(12)	LQFP64	4.5 to 5.5V	
	ST7MC2S6	•[4,6]		32K	1K		11x10-bit	2x16-bit (2/2/1)	1(1/0/1)	WWDG	LINSCI/SPI	1	26(6)	LQFP64	4.5 to 5.5V	Sensorless brushless motor control cell, ICD, ICP, IAP, LVD, CSS/PLL, ROP, RTC, nested interrupts
	ST7MC2R7	•[4,6]		48K	1.5K		16x10-bit	2x16-bit (2/2/2)	1(2/0/4)	WWDG	LINSCI/SPI	1	44(12)	LQFP64	4.5 to 5.5V	Sensorless brushless motor control cell, ICD, ICP, IAP, LVD, CSS/PLL, ROP, RTC, nested interrupts, beep[3]
	ST7MC2M9	•[4,6]		60K	1.5K		16x10-bit		1(2/0/4)	WWDG	LINSCI/SPI	1	60(12)	LQFP80	4.0 to 5.5V	
SCR	ST7SCR1E4	•[4,6]	•	16K	768				1(0/0/0)	WDG	USB/ISO7816	1	4	SO24/QFN24	4.0 to 5.5V	Smartcard power supply unit, ISO7816, 7 full-speed USB endpoints, ICP, IAP, 4 LED outputs
	ST7SCR1R4	•[4,6]	•	16K	768				1(0/0/0)	WDG	USB/ISO7816	1	35	LQFP64	4.0 to 5.5V	
USB 2.0 (HS)	ST72681										USB 2.0 HS			LQFP48 (7x7)	3.0 to 3.6V	Mass storage controller interface, reed-solomon error correction engine
	ST72682										USB 2.0 HS			LQFP64 (10x10)	3.0 to 3.6V	
USB 2.0 (FS)	ST7267C8		•	54K	4K			1x16-bit (2/2/1)	1(0/0/0)	WDG	SPI/USB 2.0 HS		26(8)	LQFP48 (7x7)	2.7 to 3.6V	
	ST7267R8		•	54K	4K				1(0/0/0)	WDG	SPI/USB 2.0 HS		40(8)	LQFP64	2.7 to 3.6V	
	ST72652AR4		•	16K	512					WDG	USB/DTC	1	47(11)	LQFP64 (10x10)	4.0 to 5.5V	PVR, ROP, 5 full-speed USB endpoints, ICP, IAP
	ST72652C4		•	16K	512					WDG	USB/DTC	1	31(5)	LQFP48 (7x7)	4.0 to 5.5V	
	ST72651AR6	•[4,6]	•	32K	5K		8x8-bit	1x16-bit (0/2/2)		WDG	USB/DTC/I²C/SPI	1	47(11)	LQFP64 (10x10)	2.7 to 5.5V	DSC, PVR, ROP, 5 full-speed USB endpoints, ICP, IAP

For a list of abbreviations and notes, refer to the page following the mature products

8, 16 and 32-bit microcontroller families

	Part number	Program memory type: Flash	Program memory type: ROM	Prog. (bytes)	RAM (bytes)	Data E²PROM (bytes)	A/D inputs	Timer functions: 12 or 16-bit (IC/OC/PWM)	Timer functions: 8-bit (IC/OC/PWM)	Timer functions: Others	Serial interface	LVD levels	I/Os (high current[2])	Package	Supply voltage	Special features
ST7: 8-bit industry standard, fast core architecture with innovative peripherals (up to 64K bytes address space)																
ST7 application specific																
USB 2.0 (LS)	**ST7260E1**	•[4]	◦	4K	384			1x16-bit (2/1/1)		WDG	USB/SCI	1	14(6)	SO24	4.0 to 5.5V	Three low-speed USB endpoints, ICP, IAP, ROP
	ST7260K1	•[4]	◦	4K	384			1x16-bit (2/2/1)		WDG	USB/SCI	1	19(10)	QFN40	4.0 to 5.5V	
	ST7263BE1	•[4]	◦	4K	384			1x16-bit		WDG	USB/SCI/I²C	1	14(6)	SO24	4.0 to 5.5V	
	ST7263BK1	•[4]	•	4K	384		8x8-bit	1x16-bit (2/2/1)		WDG	USB	1	19(10)	SDIP32/SO34	4.0 to 5.5V	
	ST7260E2	•[4]	◦	8K	384			1x16-bit (2/1/1)		WDG	USB/SCI	1	14(6)	SO24	4.0 to 5.5V	
	ST7260K2	•[4]	•	8K	384			1x16-bit (2/2/1)		WDG	USB/SCI	1	19(10)	QFN40	4.0 to 5.5V	
	ST7263BE2	•[4]	◦	8K	384			1x16-bit (2/1/1)		WDG	USB/SCI/I²C	1	14(6)	SO24	4.0 to 5.5V	
	ST7263BH2	•[4]	◦	8K	384		12x8-bit	1x16-bit (2/2/1)		WDG	USB/SCI/I²C	1	27(10)	LQFP48 (7x7)	4.0 to 5.5V	
	ST7263BK2	•[4]	•	8K	384		8x8-bit			WDG	USB/SCI	1	19(10)	SDIP32/SO34/QFN40	4.0 to 5.5V	
	ST7263BE4	•[4]	◦	16K	512			1x16-bit (2/1/1)		WDG	USB/SCI/I²C	1	14(6)	SO24	4.0 to 5.5V	
	ST7263BK4	•[4]	•	16K	512		8x8-bit	1x16-bit (2/2/1)		WDG	USB/SCI/I²C	1	19(10)	SDIP32/SO34	4.0 to 5.5V	
	ST7263BD6	•[4]	◦	32K	1K		12x8-bit			WDG	USB/SCI/I²C	1	27(10)	QFN40	4.0 to 5.5V	
	ST7263BE6	•[4]	◦	32K	1K			1x16-bit (2/1/1)		WDG	USB/SCI/I²C	1	14(6)	SO24	4.0 to 5.5V	
	ST7263BH6	•[4]	◦	32K	1K		12x8-bit	1x16-bit (2/2/1)		WDG	USB/SCI/I²C	1	27(10)	LQFP48 (7x7)	4.0 to 5.5V	
	ST7263BK6	•[4]	•	32K	1K		8x8-bit			WDG	USB/SCI/I²C	1	19(10)	SDIP32/SO34	4.0 to 5.5V	
UPSD: 8-bit Flash programmable system device with 8032 microcontroller core																
Turbo plus UPSD w/32KB SRAM and USB – 9 MIPs																
3V	**UPSD3454EV**	•		288K	32K		8x10-bit	5x16-bit (1/2/6)	2 (6/8/6)	WDG, PCA	2xUART/USB/ I²C/SPI/IrDA	1	36/45(8)	LQFP52/80	3.0 to 3.3V	JTAG ISP/debug, PLD, FS USB
5V	**UPSD3454E**	•		288K	32K		8x10-bit		2 (6/8/6)	WDG, PCA		1	36/45(8)	LQFP52/80	4.5 to 5.5V	
Turbo plus UPSD w/USB – 9 MIPs																
3V	**UPSD3422EV**	•		80K	4K		8x10-bit	5x16-bit (1/2/6)	2 (6/8/6)	WDG, PCA	2xUART/USB/ I²C/SPI/IrDA	1	36/45(8)	LQFP52/80	3.0 to 3.6V	JTAG ISP/debug, PLD, FS USB
	UPSD3433EV	•		160K	8K		8x10-bit		2 (6/8/6)	WDG, PCA		1	36/45(8)	LQFP52/80	3.0 to 3.6V	
	UPSD3434EV	•		288K	8K		8x10-bit		2 (6/8/6)	WDG, PCA		1	36/45(8)	LQFP52/80	3.0 to 3.6V	
5V	**UPSD3422E**	•		80K	4K		8x10-bit		2 (6/8/6)	WDG, PCA		1	36/45(8)	LQFP52/80	4.5 to 5.5V	
	UPSD3433E	•		160K	8K		8x10-bit		2 (6/8/6)	WDG, PCA		1	36/45(8)	LQFP52/80	4.5 to 5.5V	
	UPSD3434E	•		288K	8K		8x10-bit		2 (6/8/6)	WDG, PCA		1	36/45(8)	LQFP52/80	4.5 to 5.5V	
Turbo UPSD – 6 MIPs																
3V	**UPSD3312DV**	•		80K	2K		8x10-bit	5x16-bit (1/2/6)	2 (6/8/6)	WDG, PCA	2xUART/I²C/SPI/IrDA	1	36(8)	LQFP52	3.0 to 3.6V	PLD, JTAG ISP/debug
	UPSD3333DV	•		160K	8K		8x10-bit		2 (6/8/6)	WDG, PCA		1	36/45(8)	LQFP52/80	3.0 to 3.6 V	
	UPSD3334DV	•		288K	8K		8x10-bit		2 (6/8/6)	WDG, PCA		1	45(8)	LQFP80	3.0 to 3.6 V	
5V	**UPSD3312D**	•		80K	2K		8x10-bit		2 (6/8/6)	WDG, PCA		1	36(8)	LQFP52	4.5 to 5.5 V	
	UPSD3333D	•		160K	8K		8x10-bit		2 (6/8/6)	WDG, PCA		1	36/45(8)	LQFP52/80	4.5 to 5.5 V	
	UPSD3334D	•		288K	8K		8x10-bit		2 (6/8/6)	WDG, PCA		1	45(8)	LQFP80	4.5 to 5.5 V	
Turbo UPSD w/32KB SRAM – 6 MIPs																
3V	**UPSD3354DV**	•		288K	32K		8x10-bit	5x16-bit (1/2/6)	2 (6/8/6)	WDG, PCA	2xUART/I²C/SPI/IrDA	1	36/45(8)	LQFP52/80	3.0 to 3.6 V	PLD, JTAG ISP/debug
5V	**UPSD3354D**	•		288K	32K		8x10-bit		2 (6/8/6)	WDG, PCA		1	36/45(8)	LQFP52/80	4.5 to 5.5 V	
ST6: 8-bit general purpose control applications (up to 8 Kbytes address space)																
16 pins	**ST6200C**[1]	[6]	•	1K	64		4x8-bit		1(0/0/0)	WDG		1	9(3)	DIP16/SO16	3.0 to 6V	RC oscillator, OSG, ROP
	ST6203C[1]	[6]	•	1K	64				1(0/0/0)	WDG		1	9(3)	DIP16/SO16	3.0 to 6V	
	ST6201C[1]	[6]	•	2K	64		4x8-bit		1(0/0/0)	WDG		1	9(3)	DIP16/SO16	3.0 to 6V	
20 pins	**ST6210C**[1]	[6]	•	2K	64		8x8-bit		1(0/0/0)	WDG		1	12(4)	DIP20/SO20	3.0 to 6V	
	ST6220C[1]	[6]	•	4K	64		8x8-bit		1(0/0/0)	WDG		1	12(4)	DIP20/SO20	3.0 to 6V	
28 pins	**ST6225C**[1]	[6]	•	4K	64		16x8-bit		1(0/0/0)	WDG		1	20(4)	DIP28/SO28	3.0 to 6V	

For a list of abbreviations and notes, refer to the page following the mature products

Mature products – microcontroller families

Not recommended for new designs

	Part number	Program memory type: Flash	Program memory type: ROM	Prog. (bytes)	RAM (bytes)	Data E²PROM (bytes)	A/D inputs	Timer functions: 12 or 16-bit (IC/OC/PWM)	Timer functions: 8-bit (IC/OC/PWM)	Timer functions: Others	Serial interface	LVD levels	I/Os (high current[5])	Package	Supply voltage	Special features
UPSD: 8-bit Flash programmable system device with 8032 microcontroller core																
UPSD																
3V	UPSD3212CV	•[6]		80K	2K		4x8-bit	3x16-bit (1/2/0)	2 (0/2/5)	WDG	2xUART/I²C/ DDC	1	37/46	LQFP52/80	3.0 to 3.6V	
3V	UPSD3233BV	•[6]		160K	8K		4x8-bit		2 (0/2/5)	WDG		1	37/46	LQFP52/80	3.0 to 3.6V	
3V	UPSD3234BV	•[6]		288K	8K		4x8-bit		2 (0/2/5)	WDG		1	37/46	LQFP52/80	3.0 to 3.6V	PLD, JTAG ISP
5V	UPSD3212C	•[6]		80K	2K		4x8-bit		2 (0/2/5)	WDG		1	37/46	LQFP52/80	4.5 to 5.5V	
5V	UPSD3233B	•[6]		160K	8K		4x8-bit		2 (0/2/5)	WDG		1	37/46	LQFP52/80	4.5 to 5.5V	
UPSD w/32KB SRAM																
3V	UPSD3253BV	•[6]		160K	32K		4x8-bit	3x16-bit (1/2/0)	2 (0/2/5)	WDG	2xUART/I²C/ DDC	1	37/46	LQFP52/80	3.0 to 3.6V	
3V	UPSD3254BV	•[6]		288K	32K		4x8-bit		2 (0/2/5)	WDG		1	46	LQFP80	3.0 to 3.6V	PLD, JTAG ISP
5V	UPSD3253B	•[6]		160K	32K		4x8-bit		2 (0/2/5)	WDG		1	37	LQFP52	4.5 to 5.5V	
UPSD w/USB																
5V	UPSD3212A	•[6]		80K	2K		4x8-bit	3x16-bit (1/2/0)	2 (0/2/5)	WDG	2xUART/I²C/ DDC	1	37/46	LQFP52/80	4.5 to 5.5V	PLD, JTAG ISP, LS USB 2.0
5V	UPSD3234A	•[6]		288K	8K		4x8-bit		2 (0/2/5)	WDG		1	37/46	LQFP52/80	4.5 to 5.5V	
UPSD w/USB and 32KB SRAM																
5V	UPSD3254A	•[6]		288K	32K		4x8-bit	3x16-bit (1/2/0)	2 (0/2/5)	WDG	2xUART/I²C/DDC/USB	1	37/46	LQFP52/80	4.5 to 5.5V	PLD, JTAG ISP, LS USB 2.0
ST6: 8-bit general purpose control applications (up to 8 Kbytes address space)																
16 pins	ST6262C[1]	[6]		2K	128	64	4x8-bit		1+1 (1/1/1)	WDG		1	9(5)	DIP16/SO16	3.0 to 6V	
20 pins	ST6260C[1]	[6]		4K	128	128	7x8-bit		1+1 (1/1/1)	WDG	SPI	1	13(6)	DIP20/SO20	3.0 to 6V	RC oscillator, OSG, ART, ROP, IC/OC
28 pins	ST6265C[1]	[6]		4K	128	128	13x8-bit		1+1 (1/1/1)	WDG	SPI	1	21(8)	DIP28/SO28	3.0 to 6V	
ST7: 8-bit industry standard, fast core architecture with innovative peripherals (up to 64K bytes address space)																
ST7 baseline																
28-32 pins	ST72104G1	•[6]	•	4K	256			1x16-bit (2/2/1)		WDG	SPI	3	22(8)	SDIP32/SO28	3.2 to 5.5V	
28-32 pins	ST72216G1	•[6]	•	4K	256		6x8-bit			WDG	SPI	3	22(8)	SDIP32/SO28	3.2 to 5.5V	
28-32 pins	ST72254G1	•[6]	•	4K	256		6x8-bit	2x16-bit (4/4/2)		WDG	SPI/I²C	3	22(8)	SDIP32/SO28	3.2 to 5.5V	
28-32 pins	ST72104G2	•[6]	•	8K	256			1x16-bit (2/2/1)		WDG	SPI	3	22(8)	SDIP32/SO28	3.2 to 5.5V	RC oscillator, clock security system, ISP, ROP
28-32 pins	ST72215G2	•[6]	•	8K	256		6x8-bit	2x16-bit		WDG	SPI	3	22(8)	SDIP32/SO28	3.2 to 5.5V	
28-32 pins	ST72254G2	•[6]	•	8K	256		6x8-bit	(4/4/2)		WDG	SPI/I²C	3	22(8)	SDIP32/SO28	3.2 to 5.5V	
42-44 pins	ST72124J2	•[6]	•	8K	384			2x16-bit (3/3/2)		WDG, RTC	SPI/SCI	3	32(4)	SDIP42/LQFP44	3.2 to 5.5V	
42-44 pins	ST72314J2	•[6]	•	8K	384		6x8-bit			WDG, RTC	SPI/SCI	3	32(4)	SDIP42/LQFP44	3.2 to 5.5V	
42-44 pins	ST72334J2	•[6]	•	8K	384	256	6x8-bit			WDG, RTC	SPI/SCI	3	32(4)	SDIP42/LQFP44	3.2 to 5.5V	
42-44 pins	ST72314J4	•[6]	•	16K	512		6x8-bit			WDG, RTC	SPI/SCI	3	32(4)	SDIP42/LQFP44	3.2 to 5.5V	RC oscillator, clock security system, ISP, ROP, beep[3]
42-44 pins	ST72334J4	•[6]	•	16K	512	256	6x8-bit			WDG, RTC	SPI/SCI	3	32(4)	SDIP42/LQFP44	3.2 to 5.5V	
56-64 pins	ST72314N4	•[6]	•	16K	512		8x8-bit			WDG, RTC	SPI/SCI	3	44(8)	SDIP56/LQFP64	3.2 to 5.5V	
56-64 pins	ST72334N4	•[6]	•	16K	512	256	8x8-bit			WDG, RTC	SPI/SCI	3	44(8)	SDIP56/LQFP64	3.2 to 5.5V	
ST7 lite																
20 pins	ST7LITE10F1	•[5]		4K	256		7x10-bit	1x12-bit (1/4/4)	2(1/0/0)	WDG, RTC	SPI	3	15(7)	SO20	2.4 to 5.5V	Upgraded by ST7LIT10BF1
20 pins	ST7LITE15F1	•[5]		4K	256		7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	15(7)	SO20	2.4 to 5.5V	Upgraded by ST7LIT15BF1
20 pins	ST7LITE19F1	•[5]		4K	256	128	7x10-bit		2(1/0/0)	WDG, RTC	SPI	3	15(7)	SO20	2.4 to 5.5V	Upgraded by ST7LIT19BF1
ST7 mid-range																
32 pins	ST72324K2	•[6]		8K	384		8x10-bit	2x16-bit (3/3/1)		WDG, RTC	SPI/SCI	3	24(10)	SDIP32/LQFP32	3.8 to 5.5V	Upgraded by ST72324BK2
32 pins	ST72324K4	•[6]		16K	512		8x10-bit			WDG, RTC	SPI/SCI	3	24(10)	SDIP32/LQFP32	3.8 to 5.5V	Upgraded by ST72324BK4
32 pins	ST72324K6	•[6]		32K	1K		8x10-bit			WDG, RTC	SPI/SCI	3	24(10)	SDIP32/LQFP32	3.8 to 5.5V	Upgraded by ST72324BK6
42-44 pins	ST72324J2	•[6]		8K	384		12x10-bit			WDG, RTC	SPI/SCI	3	32(12)	SDIP42/LQFP44	3.8 to 5.5V	Upgraded by ST72324BJ2
42-44 pins	ST72324J4	•[6]		16K	512		12x10-bit			WDG, RTC	SPI/SCI	3	32(12)	SDIP42/LQFP44	3.8 to 5.5V	Upgraded by ST72324BJ4
42-44 pins	ST72324J6	•[6]		32K	1K		12x10-bit			WDG, RTC	SPI/SCI	3	32(12)	SDIP42/LQFP44	3.8 to 5.5V	Upgraded by ST72324BJ6
42-44 pins	ST72321J7	•[4,6]		48K	1.5K		12x10-bit	2x16-bit (3/3/2)	1(0/4/4)	WDG, RTC	SPI/SCI/I²C	3	32(12)	LQFP44	3.8 to 5.5V	Upgraded by ST72321BJ7
42-44 pins	ST72321J9	•[4,6]		60K	2K		12x10-bit		1(0/4/4)	WDG, RTC	SPI/SCI/I²C	3	32(12)	LQFP44	3.8 to 5.5V	Upgraded by ST72321BJ9
64 pins	ST72321AR6	•[4,6]		32K	1K		16x10-bit	2x16-bit (4/4/2)	1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (10x10)	3.8 to 5.5V	Upgraded by ST72321BAR6
64 pins	ST72321R6	•[4,6]		32K	1K		16x10-bit		1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (14x14)	3.8 to 5.5V	Upgraded by ST72321BR6
64 pins	ST72321AR7	•[4,6]		48K	1.5K		16x10-bit		1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (10x10)	3.8 to 5.5V	Upgraded by ST72321BAR7
64 pins	ST72321R7	•[4,6]		48K	1.5K		16x10-bit		1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (14x14)	3.8 to 5.5V	Upgraded by ST72321BR7
64 pins	ST72321AR9	•[4,6]		60K	2K		16x10-bit		1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (10x10)	3.8 to 5.5V	Upgraded by ST72321BAR9
64 pins	ST72321R9	•[4,6]		60K	2K		16x10-bit		1(2/4/4)	WDG, RTC	SPI/SCI/I²C	3	48(16)	LQFP64 (14x14)	3.8 to 5.5V	Upgraded by ST72321BR9

For a list of abbreviations and notes, refer to the page following the mature products

Mature products – microcontroller families

Not recommended for new designs

	Part number	Program memory type: Flash	Program memory type: ROM	Prog. (bytes)	RAM (bytes)	Data E²PROM (bytes)	A/D inputs	Timer functions: 12 or 16-bit (IC/OC/PWM)	Timer functions: 8-bit (IC/OC/PWM)	Timer functions: Others	Serial interface	LVD levels	I/Os (high current[5])	Package	Supply voltage	Special features
	ST7 application specific															
MC	**ST72141K2**[1]	[6]	•	8K	256		8x8-bit	2x16-bit (4/4/2)		WDG	SPI	1	26(3)	SDIP32/SO34	4.0 to 5.5V	Sensorless brushless permanent magnet DC motor controller
USB	**ST72622L2**	•[6]	•	8K	384		8x10-bit		2(2/2/2)	WDG	USB/SPI	1	23(8)	SO34	4.0 to 5.5V	Three low-speed USB endpoints, ICP, IAP, ROP
USB	**ST72623F2**	•[6]	•	8K	384		3x10-bit		2(2/2/2)	WDG	USB	1	11(8)	SO20/DIP20	4.0 to 5.5V	
USB	**ST72621J4**	•[6]	•	16K	768		8x10-bit		2(2/2/2)	WDG	USB/SPI/SCI	1	31(8)	LQFP44/SDIP42	4.0 to 5.5V	
USB	**ST72621K4**	•[6]	•	16K	768		8x10-bit		2(2/2/2)	WDG	USB/SPI/SCI	1	21(8)	SDIP32	4.0 to 5.5V	
USB	**ST72621L4**	•[6]	•	16K	768		8x10-bit		2(2/2/2)	WDG	USB/SPI/SCI	1	23(8)	SO34	4.0 to 5.5V	
	ST9: 8/16-bit high performance core for fast real-time management (up to 4 Mbytes address space)															
64 pins	**ST92F124R9**	•		64K	2K	1K	16x10-bit	5x16-bit (8/6/5)		WDG	SPI/SCI/I²C		48	LQFP64	4.5 to 5.5V	PLL clock/low power, LIN master
64 pins	**ST92F150CR9**	•		64K	2K	1K	16x10-bit	5x16-bit (8/6/5)		WDG	SPI/SCI/I²C/CAN		48	LQFP64	4.5 to 5.5V	CAN 2.0B active, PLL clock, low power, LIN master
64 pins	**ST92F124R1**	•		128K	4K	1K	16x10-bit	5x16-bit (8/6/5)		WDG	SPI/SCI/I²C		48	LQFP64	4.5 to 5.5V	PLL clock/low power, LIN master
64 pins	**ST92F150CR1**	•		128K	4K	1K	16x10-bit	3x16-bit (4/4/5)		WDG	SPI/SCI/I²C/CAN		48	LQFP64	4.5 to 5.5V	CAN 2.0B active, PLL clock, low power, LIN master
100 pins	**ST92F150CV9**	•		64K	2K	1K	16x10-bit	5x16-bit (8/8/7)		WDG	SPI/2SCIs/I²C/CAN		77	LQFP100	4.5 to 5.5V	CAN 2.0B active, PLL clock, low power, LIN master
100 pins	**ST92F124V1**	•		128K	4K	1K	16x10-bit	5x16-bit (8/8/7)		WDG	SPI/2xSCIs/I²C		80	P/LQFP100	4.5 to 5.5V	PLL clock/low power, LIN master
100 pins	**ST92F150CV1**	•		128K	4K	1K	16x10-bit	5x16-bit (8/8/7)		WDG	SPI/2SCIs/I²C/CAN		77	P/LQFP100	4.5 to 5.5V	CAN 2.0B active, PLL clock, low power, LIN master
100 pins	**ST92F150JDV1**	•		128K	6K	1K	16x10-bit	5x16-bit (8/8/7)		WDG	SPI/2xSCIs/I²C/ 2xCAN/J1850		77	P/LQFP100	4.5 to 5.5V	CAN 2.0B active, PLL clock, LIN master
100 pins	**ST92F250CV2**	•		256K	8K	1K	16x10-bit	5x16-bit (8/8/7)		WDG	SPI/2xSCIs/2xI²Cs/CAN		80	P/LQFP100	4.5 to 5.5V	CAN 2.0B active, PLL clock, low power, LIN master
	ST10: 16-bit fast core with advanced interrupt management (up to 10 Mbytes address space)															
144 pins	**ST10F168SQ**	•		256K	8K		16x10-bit	5x16-bit		WDG	USART/SSC/CAN		111	PQFP144	4.5 to 5.5V	25MHz, PEC, PWM, CAPCOM

Abbreviations

ADC : Analog-to-digital converter
ART : Auto-reload timer
ATAPI : AT attachment packet interface
AWU : Auto wakeup from HALT
BLPD : Byte level protocol decoder
BOD : Brown-out detector
CAN : Controller area network
CAPCOM : Capture compare
CSS : Clock security system
DALI : Digital addressable lighting interface
DDC : Data display channel
DiSEqC : Digital satellite equipment control
DMA : Direct Memory Access
DSC : Dual supply control
DTC : Data transfer coprocessor
EMI : External memory interface
HDLC : High-level data link control
IAP : In-application programming
IC/OC : Input capture/output compare
ICP : In-circuit programming
IR : Infrared
IrDA : Infrared data association
ISP : In-situ programming
I²C : Inter-integrated circuit
LCD : Liquid crystal display
LIN : Local interconnect network
LVD : Low voltage detection
MAC : Multiply accumulator
MC : Motor control
MFT : Multifunction timer
NMI : Non-maskable interrupt
OSG : Oscillator safeguard
PCA : Programmable counter array
PDR : Power down reset
PHW : Programmable halt wakeup
PEC : Peripheral event controller
PLD : Programmable logic device
PLL : Phase locked loop
POR : Power-on reset
PVR : Programmable voltage regulator
PWM : Pulse width modulation
ROP : Readout protection
RTC : Real-time clock timer
SC : Smartcard
SCI : Serial communication interface (UART)
SCR : Smartcard reader
SMI : Serial memory interface
SPI : Serial peripheral interface
SSC : Single-cycle switching support
SSP : Synchronous serial port
TBU : Time base unit
TLI : Top level interrupt
UART : Universal asynchronous receiver transmitter
USART : Universal synchr./asynchr. receiver transmitter
USB : Universal serial bus
WDG : Watchdog timer
WWDG : Window watchdog timer

Packages

DIP : Dual in line package
LCC : Leaded chip carrier
SDIP : Shrink dual in line package
PQFP : Plastic quad flat package
SO : Small outline
LQFP : Low profile quad flat package
PBGA : Plastic ball grid array
DFN : Dual flat no-lead
QFN : Quad flat no-lead

Notes

• : Under development
1 : Exists also in OTP and EPROM version
2 : Number of high current pins included in the number of I/O pins
3 : Audio square wave generator
4 : HDFlash (high-density flash)
5 : XFlash (extended flash for 10K cycle min)
6 : FASTROM service available for pre-programmed devices in production quantities

8, 16 and 32-bit microcontroller development tool guide

This reference guide describes ST's development tools for 8-bit, 16-bit and 32-bit microcontrollers that are in production. For more information about available tools and supported microcontrollers, please refer to www.st.com/mcu

Evaluation

Evaluation boards

- Prototype target board with basic features for evaluating sample devices
- Can be used with hardware development tools
- External analog comparator and A/D converter

Starter kits

- Everything you need to get started quickly and easily
- Immediate evaluation with demonstration examples
- In-circuit debugging to troubleshoot and refine the code using the actual input and output of the target system
- Programming capability

Development

Hardware

In-circuit debuggers for Flash devices

- Real-time
- In-circuit debugging (standard chip used, no bondouts, 100% electrical characteristics guaranteed)
- Separate target application or evaluation board needed
- Programming capability

Emulators

DVP series emulators (ST7)

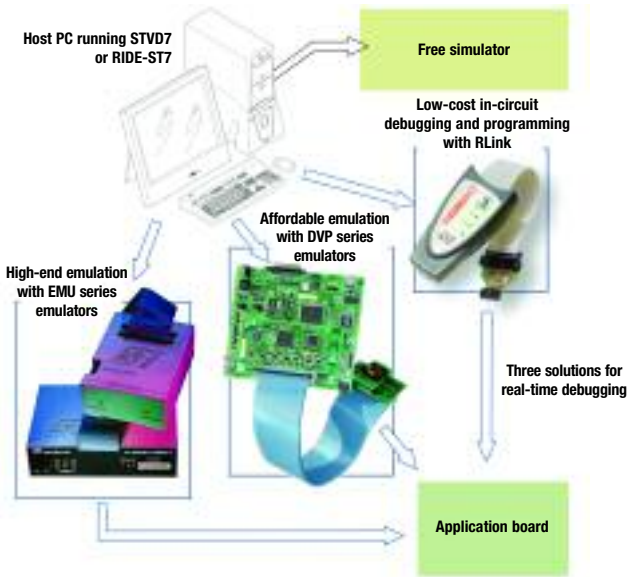
- Real-time emulation with limited byte trace
- Limited emulation of analog behavior
- Programming capability
- In-circuit debugging

EMU series emulators (ST7)

- Real-time emulation
- Complex trace triggering
- Profiling (depending on model)
- Full emulation of analog behavior
- Programming capability (depending on model)
- In-circuit debugging

Software

- Free C compilers and assembler-linker toolsets
- Free integrated development environments
- A full range of software tools and embedded software solutions from 3rd party vendors



Programming

Single-position programmers

Program one device at a time. Allow operation from a host PC in standalone mode.

In-circuit programmers for Flash devices

Program the device soldered on an application board via a JTAG, in-circuit communication or in-situ programming interface (depending on the target device).

Pre-programming

ST FASTROM service for ST7 and ST6 also provides rapid delivery of ready-to-mount MCUs pre-programmed with the customer's application (from S19 file) and options (from order form).

GANG programmers

3rd party solutions for programming several devices at once. For a list of vendors, refer to www.st.com/mcu

Automatic programmers

3rd party solutions for automated programming in a production environment. For a list of vendors, refer to www.st.com/mcu

Evaluation

Starter kits

- **ST7FUS-PRIMER**
  Ultra low-cost, introductory buzzer/light sensor application (RC, ADC, PWM and LVD) with ST7FLITEUS. In-circuit debugging/programming via µRLink (USB interface) using RIDE integrated development environment
- **ST7FLITE-SK/RAIS, ST7232X-SK/RAIS, ST72F34X-SK/RAIS, ST72F36X-SK/RAIS and ST72F63B-SK/RAIS**
  Complete, cost-effective kits for evaluation of ST7LITE, ST7226x, ST7232x, ST7234x, ST7236x, ST7256x and ST7263B, that include RIDE-ST7, RLink (USB) in-circuit debugger/programmer, evaluation motherboard (ADC, SPI, CAN, I^2C, I/Os, etc.) and daughter boards featuring supported MCUs:
  - ST7FLITEUS, ST7FLITE0, ST7FLITE1B and ST7FLITE3 daughter boards for ST7FLITE-SK/RAIS
  - ST72321B and ST72325 daughter boards for ST7232X-SK/RAIS
  - ST72345 and ST72264 daughter boards for ST72F34X-SK/RAIS
  - ST72361 daughter board for ST72F36X-SK/RAIS
  - ST7263B daughter board for ST72F63B-SK/RAIS
- **ST7MC-KIT/BLDC**
  Motor control development kit for ST7MC that includes firmware, GUI, ST7MC samples, a 12VDC 240VAC 1000W inverter board, isolation board, STXF-INDART/USB debugger/programmer and 24V BLDC motor. Optional accessories include ST7MC-MOT/IND - 240V/800W Selni three-phase induction motor. Available from ST/distributor or www.softecmicro.com

Evaluation boards

Evaluation boards for learning and testing microcontroller features include: ST7232X-EVAL for ST7F321/521, ST7DALI-EVAL for lighting applications, ST7CAN-DEMO for CAN networks, as well as ST7MDTULS/EVAL, ST7265X-EVAL/MS and ST7265X-DVT/MS for USB devices

Development

Hardware development tools for all budgets and all needs

- **STX-RLINK from Raisonance for low-cost, real-time in-circuit debugging/programming of ST7 Flash microcontrollers**
- **ST7-DVP series emulators for affordable, real-time emulation with advanced breakpoints and trace plus in-circuit debugging/programming capability**
- **ST7-EMU series emulators for full-featured, real-time emulation with advanced breakpoints, trace and profiling plus in-circuit debugging/programming capability. Emulators include everything to connect to the user application for all supported MCUs**

Free software tools

- **ST7 Toolset with everything to build, debug and program applications in one free download that includes assembler and linker plus:**
  - **ST7 Visual Develop (STVD7), ST's easy-to-use IDE offering integrated control of C toolsets including Cosmic C compiler and supporting a full range of debugging and programming tools**
  - **ST7 Visual Programmer (STVP7), ST's full-featured programming software supporting the complete range of ST programming boards**
- **Raisonance software toolset with everything to develop applications for ST7, uPSD and STR7/9. Available from www.raisonance.com**
  Includes:
  - **RIDE development environment with debugger, RBuilder (application builder), assembler and linker. Supports Cosmic and Raisonance C compilers, DVP3 and EMU3 emulators and STX-RLINK in-circuit debugger/programmer**
  - **RFlasher programming software allows viewing, erasing, writing and verifying of Flash memory. Offers automated mode and project manager**
- **Cosmic C compiler with free version that outputs code up to 16K. Available from www.cosmic-software.com**
- **Raisonance C compiler with free version that outputs code up to 16K. Available from www.raisonance.com**
- **REALIZER, Actum Solutions' graphical design tool for creating applications without learning assembly or writing a single line of code**
  Supports ST7 and ST6. Versions include STREALIZER-II (available from ST only), and REALIZER enhanced versions with end-user support available from www.actum.com
- **CAN, OSEK and LIN software: CAN drivers for pCAN and beCAN. ST7 OSEK software from Vector Informatik GmbH is available for most automotive OEMs. LIN driver supports the standard ST7 SCI and LINSCI**

Programming

In-circuit programmers

- **STX-RLINK, Raisonance's low-cost in-circuit debugger/programmer for ST7, uPSD, STR7 and STR9 with USB interface to host PC**
- **ST7-STICK, ST's in-circuit communication kit for programming ST7 with parallel port interface to host PC**
- **Flasher, Segger Microcontroller Systems' in-circuit programmer with standalone mode for production environment**

ST7-SocketBoards allowing single-position programming for use with any tool with in-circuit programming capability (STX-RLINK, ST7-STICK, ST7-DVP3, ST7-EMU3). Engineering programming boards (EPB) are still available for certain ST7

Gang and automated programmers that are ready to integrate into a production environment are available from third-party vendors

ST7 development and programming tools

	Device	Evaluation board starter kit	In-circuit debugger, RLink series[3]		Emulator			Programming tool		
			Starter kit with demo board	In-circuit debugger	DVP series	EMU series	3rd party emulator	In-circuit programmer	ST socket boards[11] and engineering programming board (EPB)	3rd party programmer
ST7 LITE	**ST7LITEUS**	ST7FUS-PRIMER	ST7FLITE-SK/RAIS[8]	STX-RLINK[8,12]	ST7MDT10-DVP3[6]	ST7MDT10-EMU3		ST7-STICK[1,9] STX-RLINK[8]	ST7SB10-SU0[1]	BP Microsystems www.bpmicro.com Data I/O www.data-io.com Dataman www.dataman.com Elnec www.elnec.com HI-LO www.hilosystems.com.tw Insem www.insem.co.kr Leap www.leap.com.tw RK-System www.rk-system.com.pl Segger www.segger.com Softec Microsystems www.softecmicro.com System General www.sg.com Xeltek www.xeltek.com
	ST7LITES ST7LITE0		ST7FLITE-SK/RAIS[8]	STX-RLINK[8]	ST7MDT10-DVP3[6]	ST7MDT10-EMU3		ST7-STICK[1,9] STX-RLINK[8]	ST7SB10-SU0[1]	
	ST7LITE1B		ST7FLITE-SK/RAIS[8]	STX-RLINK[8]	ST7MDT10-DVP3[6]	ST7MDT10-EMU3		ST7-STICK[1,9] STX-RLINK[8]	ST7SB10-123[1]	
	ST7LITE1 ST7LITE2	ST7FLIT2-COS/COM	ST7FLITE-SK/RAIS[8]	STX-RLINK[8]	ST7MDT10-DVP3[6]	ST7MDT10-EMU3		ST7-STICK[1,9] STX-RLINK[8]	ST7SB10-123[1]	
	ST7LITE3		ST7FLITE-SK/RAIS[8]	STX-RLINK[8]	ST7MDT10-DVP3[6]	ST7MDT10-EMU3		ST7-STICK[1,9] STX-RLINK[8]	ST7SB10-123[1]	
	ST7DALI	ST7DALI-EVAL		STX-RLINK[8]	ST7MDT10-DVP3[6]	ST7MDT10-EMU3		ST7-STICK[1,9] STX-RLINK[8]	ST7SB10-123[1]	
ST7 mid-range	**ST72260 ST72262 ST72264**	ST7FOPTIONS-EVAL	ST72F34X-SK/RAIS[8]	STX-RLINK[8]	ST7MDT10-DVP3[6]	ST7MDT10-EMU3		ST7-STICK[1,9] STX-RLINK[8]	ST7SB10-26X[1]	
	ST7232A			STX-RLINK[8]	ST7MDT20-DVP3[5]	ST7MDT20J-EMU3		ST7-STICK[1,9] STX-RLINK[8]	ST7SB20J[1]	
	ST72321BJ ST72321J ST72325J	ST7232X-EVAL	ST7232X-SK/RAIS[8]	STX-RLINK[8]	ST7MDT20-DVP3[5]	ST7MDT20J-EMU3	Hitex, iSystem	ST7-STICK[1,9] STX-RLINK[8]	ST7SB20J[1]	
	ST72321R ST72321AR ST72325AR ST72321BR ST72321BAR	ST7232X-EVAL	ST7232X-SK/RAIS[8]	STX-RLINK[8]	ST7MDT20-DVP3[5]	ST7MDT20M-EMU3	Hitex, iSystem	ST7-STICK[1,9] STX-RLINK[8]	ST7SB20M[1]	
	ST72324 ST72324B	ST7232X-EVAL	ST7232X-SK/RAIS[8]	STX-RLINK[8]	ST7MDT20-DVP3[5]	ST7MDT20J-EMU3	Hitex, iSystem	ST7-STICK[1,9] STX-RLINK[8]	ST7SB20J[1]	
	ST72340 ST72344 ST72345		ST72F34X-SK/RAIS[8]	STX-RLINK[8]		ST7MDT40-EMU3		ST7-STICK[1,9] STX-RLINK[8]	ST7SB20J[1,7] ST7SB40-QP48[1,7]	
CAN	**ST72521**	ST7232X-EVAL ST7CAN-DEMO		STX-RLINK[8]	ST7MDT20-DVP3[5]	ST7MDT20M-EMU3	Hitex, iSystem	ST7-STICK[1,9] STX-RLINK[8]	ST7SB20M[1]	
	ST72361 ST72561	Phytec www.phytec.com	ST72F36X-SK/RAIS[8]	STX-RLINK[8]	ST7MDT25-DVP3[4]		Hitex, iSystem	ST7-STICK[1,9] STX-RLINK[8]	ST7SB25[1]	
MC	**ST7MC**	ST7MC-KIT/BLDC[10]		STX-RLINK[8]		ST7MDT50-EMU3	iSystem	ST7-STICK[1,9] STX-RLINK[8]		
	ST72141	ST7MTC2[1]				ST7MDT5-EMU2B	iSystem		ST7MDT5-EPB[1]	
USB	**ST7263B ST7260**	ST7MDTULS-EVAL	ST72F63B-SK/RAIS[8]	STX-RLINK[8]		ST7MDTU3-EMU3		STX-RLINK[8]	ST7MDTU3-EPB[1]	
	ST7265	ST7265X-EVAL/MS ST7265X-DVT/MS		STX-RLINK[8]		ST7MDTU5-EMU2B		STX-RLINK[8]	ST7MDTU5-EPB[1]	
	ST7267					ST7MDTU7-EMU3				
SCR	**ST7SCR**	ST7SCR-EVAL/SCR				ST7MDTS1-EMU2B			ST7MDTS1-EPB[1]	
ST7 baseline	**ST72104 ST72215 ST72216 ST72254**				ST7MDT1-DVP2[1]		iSystem		ST7MDT1-EPB2[2]	
	ST72124 ST72314 ST72334				ST7MDT2-DVP2[1]		Hitex, iSystem		ST7MDT2-EPB2[1]	

Notes

1 Add suffix /EU, /US or /UK for the power supply for your region
2 Add suffix /EU or /US for the power supply for your region
3 Available from ST or from Raisonance, www.raisonance.com
4 Requires optional connection kit. See 'How to order an EMU or DVP' for connection kit ordering information
5 Includes connection kit for SDIP32/SDIP42 only. See 'How to order an EMU or DVP' for connection kit ordering information
6 Includes connection kit for DIP16/SO16 only. See 'How to order an EMU or DVP' for connection kit ordering information
7 Order socket board ST7SB40-QP48 for LQFP48 package and ST7SB20J for all other packages
8 USB connection to PC
9 Parallel port connection to PC
10 Available accessories: ST7MC-MOT/IND (induction motor) and ST7-ICC/OPTOISOL (optoisolation board included with motor control starter kit (ST7MC-KIT/BLDC), is also available as separate product)
11 Socket boards complement any tool with ICC capabilities (ST7-STICK, InDART, RLINK, DVP3, EMU3, etc.)
12 For in-circuit debugging of ST7FLITEUS, users must also order the AD-ICD/DS8Z adapter. For ICD of ST7FLITEUS in DFN8 package, users must order AD-ICD/DS8Z and ST7MDT10-8/DVP

How to order an ST7-EMU or DVP (accessories)

ST7-EMU series emulators

- **ST7MDTxx-EMUx**
  Part number for ordering a complete EMUx emulator that includes connection kits for all supported ST7 packages
- **ST7MDTxx-TEB**
  When adapting an EMU3 to emulate another ST7 family, this part number is for ordering the appropriate target emulation board, which includes connection kits for all supported packages
- **AC7MDTxx-xxxx**
  Part number for ordering replacement adapters, connectors and sockets for connecting to the application board

ST7-DVP series emulators

- **ST7MDTxx-DVPx**
  Part number for ordering a DVP series emulator and target emulation board. DVP3 emulators do not include connection kits for all supported packages
- **ST7MDTxx-TEB/DVP**
  When adapting a DVP3 to emulate another ST7 family, this part number is for ordering the appropriate target emulation board, which does not include connection kits for all supported packages
- **ST7MDTxx-xxx/DVP**
  Part number for ordering the package-specific connection accessories for the DVP3. It must be specified when ordering a complete DVP3 with connection kit except for the following emulators:
  - **ST7MDT10-DVP3 for DIP16/SO16**
  - **ST7MDT20-DVP3 for SDIP32/SDIP42**
- **AS-xxxx**
  Sockets are provided in the connection kits. However, socket part numbers can be used to order additional or replacement sockets

How to order an ST7-EMU or DVP (accessories)

Device	Packages	EMU series			DVP series			Socket[7]
		Emulator part number[1]	Target emulation board[6] (TEB)[1]	Connection kit	Emulator part number[3]	Target emulation board[6] (TEB)[3]	Connection kit	
ST7LITEUS	DIP8, SO8, DFN8	ST7MDT10-EMU3[1]	ST7MDT10-TEB[1,6]	ST7MDT10-TEB/DVP[6]	ST7MDT10-DVP3[4]	ST7MDT10-TEB/DVP[3,6]	ST7MDT10-8/DVP[2]	
ST7LITE0 **ST7LITES**	DIP16/SO16	ST7MDT10-EMU3[1]	ST7MDT10-TEB[1,6]	AC7MDT10-D16/S16[6]	ST7MDT10-DVP3[4]	ST7MDT10-TEB/DVP[4,6]	ST7MDT10-16/DVP[4]	AS-DIP-SO[7]
ST7LITE1B	DIP16/SO16 DIP20/SO20	ST7MDT10-EMU3[1] ST7MDT10-EMU3[1]	ST7MDT10-TEB[1,6] ST7MDT10-TEB[1,6]	AC7MDT10-D16/S16[6] AC7MDT10-D20/S20[6]	ST7MDT10-DVP3[4] ST7MDT10-DVP3[3]	ST7MDT10-TEB/DVP[4,6] ST7MDT10-TEB/DVP[3,6]	ST7MDT10-16/DVP[4] ST7MDT10-20/DVP[2]	AS-DIP-SO[7] AS-DIP-SO[7]
ST7LITE1 **ST7LITE2**	DIP20/SO20	ST7MDT10-EMU3[1]	ST7MDT10-TEB[1,6]	AC7MDT10-D20/S20[6]	ST7MDT10-DVP3[3]	ST7MDT10-TEB/DVP[3,6]	ST7MDT10-20/DVP[2]	AS-DIP-SO[7]
ST7LITE3	DIP20/SO20	ST7MDT10-EMU3[1]	ST7MDT10-TEB[1,6]	AC7MDT10-D20/S20[6]	ST7MDT10-DVP3[3]	ST7MDT10-TEB/DVP[3,6]	ST7MDT10-20/DVP[2]	AS-DIP-SO[7]
ST7DALI	SO20	ST7MDT10-EMU3[1]	ST7MDT10-TEB[1,6]	AC7MDT10-D20/S20[6]	ST7MDT10-DVP3[3]	ST7MDT10-TEB/DVP[3,6]	ST7MDT10-20/DVP[2]	AS-DIP-SO[7]
ST72260 **ST72262** **ST72264**	SDIP32/SO28	ST7MDT10-EMU3[1]	ST7MDT10-TEB[1,6]	AC7MDT10-D32/S28[6]	ST7MDT10-DVP3[3]	ST7MDT10-TEB/DVP[3,6]	ST7MDT10-32/DVP[2]	AS-DIP-SO[7]
ST7232A	SDIP32 LQFP32	ST7MDT20J-EMU3[1] ST7MDT20J-EMU3[1]	ST7MDT20J-TEB[1,6] ST7MDT20J-TEB[1,6]	AC7MDT20-D32/D42[6] AC7MDT20-T32[6]	ST7MDT20-DVP3[4] ST7MDT20-DVP3[3]	ST7MDT20-TEB/DVP[4,6] ST7MDT20-TEB/DVP[3,6]	-[4] ST7MDT20-T32/DVP[2]	AS-DIP-SO[7] AS-TQFP32[7]
ST72321 **ST72321B**	LQFP44 LQFP64 (10x10) LQFP64 (14x14)	ST7MDT20J-EMU3[1] ST7MDT20M-EMU3[1] ST7MDT20M-EMU3[1]	ST7MDT20J-TEB[1,6] ST7MDT20M-TEB[1,6] ST7MDT20M-TEB[1,6]	AC7MDT20-T44[6] AC7MDT20-T64/10[6] AC7MDT20-T64/14[6]	ST7MDT20-DVP3[3] ST7MDT20-DVP3[3] ST7MDT20-DVP3[3]	ST7MDT20-TEB/DVP[3,6] ST7MDT20-TEB/DVP[3,6] ST7MDT20-TEB/DVP[3,6]	ST7MDT20-T44/DVP[2] ST7MDT20-T6A/DVP[2] ST7MDT20-T64/DVP[2]	AS-TQFP44[7] AS-TQFP64/10[7] AS-TQFP64/14[7]
ST72324 **ST72324B**	SDIP32/SDIP42 LQFP32 LQFP44	ST7MDT20J-EMU3[1] ST7MDT20J-EMU3[1] ST7MDT20J-EMU3[1]	ST7MDT20J-TEB[1,6] ST7MDT20J-TEB[1,6] ST7MDT20J-TEB[1,6]	AC7MDT10-D32/D42[6] AC7MDT20-T32[6] AC7MDT20-T44[6]	ST7MDT20-DVP3[4] ST7MDT20-DVP3[3] ST7MDT20-DVP3[3]	ST7MDT20-TEB/DVP[4,6] ST7MDT20-TEB/DVP[3,6] ST7MDT20-TEB/DVP[3,6]	-[4] ST7MDT20-T32/DVP[2] ST7MDT20-T44/DVP[2]	AS-DIP-SO[7] AS-TQFP32[7] AS-TQFP44[7]
ST72340 **ST72344** **ST72345**	LQFP32 LQFP44 LQFP48	ST7MDT40-EMU3[1] ST7MDT40-EMU3[1] ST7MDT40-EMU3[1]						
ST72361	LQFP32 LQFP44 LQFP64 (10x10) LQFP64 (14x14)				ST7MDT25-DVP3[3] ST7MDT25-DVP3[3] ST7MDT25-DVP3[3] ST7MDT25-DVP3[3]	ST7MDT25-TEB/DVP[3,6] ST7MDT25-TEB/DVP[3,6] ST7MDT25-TEB/DVP[3,6] ST7MDT25-TEB/DVP[3,6]	ST7MDT25-T32/DVP[2] ST7MDT25-T44/DVP[2] ST7MDT25-T6A/DVP[2] ST7MDT25-T64/DVP[2x]	AS-TQFP32[7] AS-TQFP44[7] AS-TQFP64/10[7] AS-TQFP64/14[7]
ST72521	LQFP64 (10x10) LQFP64 (14x14) LQFP80	ST7MDT20M-EMU3[1] ST7MDT20M-EMU3[1] ST7MDT20M-EMU3[1]	ST7MDT20M-TEB[1,6] ST7MDT20M-TEB[1,6] ST7MDT20M-TEB[1,6]	AC7MDT20-T64/10[6] AC7MDT20-T64/14[6] AC7MDT20-T80[6]	ST7MDT20-DVP3[3] ST7MDT20-DVP3[3] ST7MDT20-DVP3[3]	ST7MDT20-TEB/DVP[3,6] ST7MDT20-TEB/DVP[3,6] ST7MDT20-TEB/DVP[3,6]	ST7MDT20-T6A/DVP[2] ST7MDT20-T64/DVP[2] ST7MDT20-T80/DVP[2]	AS-TQFP64/10[7] AS-TQFP64/14[7] AS-TQFP80[7]
ST72561	LQFP32 LQFP44 LQFP64 (10x10) LQFP64 (14x14)				ST7MDT25-DVP3[3] ST7MDT25-DVP3[3] ST7MDT25-DVP3[3] ST7MDT25-DVP3[3]	ST7MDT25-TEB/DVP[3,6] ST7MDT25-TEB/DVP[3,6] ST7MDT25-TEB/DVP[3,6] ST7MDT25-TEB/DVP[3,6]	ST7MDT25-T32/DVP[2] ST7MDT25-T44/DVP[2] ST7MDT25-T6A/DVP[2] ST7MDT25-T64/DVP[2]	AS-TQFP32[7] AS-TQFP44[7] AS-TQFP64/10[7] AS-TQFP64/14[7]
ST7MC	LQFP32 LQFP44 LQFP64 (10x10) LQFP64 (14x14) LQFP80	ST7MDT50-EMU3[1] ST7MDT50-EMU3[1] ST7MDT50-EMU3[1] ST7MDT50-EMU3[1] ST7MDT50-EMU3[1]	ST7MDT50-TEB[1,6] ST7MDT50-TEB[1,6] ST7MDT50-TEB[1,6] ST7MDT50-TEB[1,6] ST7MDT50-TEB[1,6]					AS-TQFP32[7] AS-TQFP44[7] AS-TQFP64/10[7] AS-TQFP64/14[7]
ST7260	SO24 QFN40 (6x6)	ST7MDTU3-EMU3 ST7MDTU3-EMU3						AS-SO24
ST7263B	SDIP32 SO24 SO34 LQFP48 (7x7) QFN40 (6x6)	ST7MDTU3-EMU3[1] ST7MDTU3-EMU3[1] ST7MDTU3-EMU3[1] ST7MDTU3-EMU3[1] ST7MDTU3-EMU3						AS-DIP-SO[7] AS-SO24[7] AS-SO34[7]
ST7265	LQFP48 (7x7) LQFP64 (10x10)	ST7MDTU5-EMU2B[1] ST7MDTU5-EMU2B[1]						
ST7SCR	SO24 LQFP64	ST7MDTS1-EMU2B[1] ST7MDTS1-EMU2B[1]						
ST72104 **ST72215** **ST72216** **ST72254**	DIP32/SO28				ST7MDT1-DVP2[5]			
ST72124 **ST72314**	LQFP44				ST7MDT2-DVP2[3,5]		ST7MDT2-DV/TQ44[2]	
ST72334	SDIP42 SDIP56 LQFP64				ST7MDT2-DVP2[3,5]			

Notes:

1 Includes all connection kits
2 Must be ordered separately
3 Connection kit not included, must be ordered separately
4 The following connection kit is provided without specifying a connection kit part number:
ST7MDT10-16/DVP for DIP16/SO16, when ordering ST7MDT10-DVP3 and ST7MDT10-TEB/DVP
SDIP32/SDIP42 connection kit, when ordering ST7MDT20-DVP3 and ST7MDT20-TEB/DVP
5 Add suffix /EU, /US or /UK for the power supply of your region
6 These parts are included with the emulator. Ordering references are provided for upgrade or replacement
7 These parts are included with connection kits and EMU series emulators. References are provided for ordering spare or replacement parts

Definition:

1 TEB: target emulation board to emulate a specific ST7 sub-family. Users can upgrade their emulator to emulate another ST7 family by ordering the appropriate TEB
2 Connection kit: complete kit to connect the emulator to a target board. Includes cables, adapters and sockets for specific packages
3 DVP3: entry-level emulator that offers a low-cost, flexible, modular debugging and programming solution
4 EMU3: high-end emulator that offers a complete, flexible, modular debugging and programming solution

Replacement power supplies:

1 For EMU series emulators: APS5V/8A
2 For DVP series emulators: APS5V/2A5

UPSD family

Development

UPSD development kits include everything required to get started with UPSD including the development software, evaluation copy of a compiler, a JTAG programming adaptor.

- DK3200 - Development kit for uPSD3200 Series products
- DK3300 - Development kit for uPSD3300 Series products
- DK3400 - Development kit for uPSD3400 Series products

Software

- PSDsoft Express or Configuration and Programming Software (CAPS)
- Development and programming software for UPSD products
  Download free from ST website www.st.com/mcu
- Keil Software, Raisonance and Tasking 8051 Development Tools and Compilers Packages support all UPSD series:
  - Keil Software (www.keil.com)
  - Raisonance (www.raisonance.com)
  - Tasking (www.tasking.com)
- UPSD series is compatible with generic 8051 compilers

Programming

- FL-101 – FlashLINK JTAG parallel port programmer
- RLINK-ST - USB JTAG programmer
- Third party programmers are available as listed below. Please check the vendors site for the appropriate models for your part type
- Please visit www.st.com/mcu for the most up to date listing of third party programmer vendors

UPSD development and programming tools

Part number	ST development kit	Emulator	Programmer	3rd party programmer
PSD3212CV UPSD3212C UPSD3233B UPSD3233BV UPSD3234BV UPSD3234A UPSD3253B UPSD3254A	DK3200[1]	EMUL51-PC / Nohau Corp. www.nohau.com Insight ME-3200 Manley Corporation www.manley.cn	FL-101 – FlashLINK JTAG parallel port programmer RLINK-ST - USB JTAG programmer	JTAG Technologies www.jtag.com Needham's Electronics www.needhams.com Tribal Microsystems www.tribalmicro.com BP Microsystems www.bpmicro.com
UPSD3312D UPSD3312DV UPSD3333D UPSD3333DV UPSD3334D UPSD3334DV UPSD3354D UPSD3354DV	DK3300	Keil Software uVision2 (w/ ULINK) www.keil.com Raisonance IDE (RIDE) www.raisonance.com (Note 2)		
UPSD3433E UPSD3433EV UPSD3434E UPSD3434EV	DK3400			

Notes
1 Add suffix: -110, -220 for the power supply voltage for your region
2 Code development is easily managed without an external hardware in-circuit emulator by using the on-chip JTAG in-circuit emulator. ST has partnered with Keil Software and Raisonance to include support for UPSD3300 and UPSD3400 JTAG ICE in their 8051 Development Tools

ST6 family

Software

- **RIDE, Raisonance's free software toolchain with IDE, assembler, linker and free code-size limited C compiler.** Available from www.raisonance.com
- **Visual Micro Lab (VMLAB), Advanced Micro Tool's development environment for building virtual prototypes of applications, offers true hardware/software simulation.** Available from www.amtools.net
- **REALIZER, Actum Solutions' graphical design tool for creating applications without learning assembly or writing a single line of code.** Supports ST7 and ST6. Versions include STREALIZER-II (available from ST only), and REALIZER enhanced versions with end-user support. Available from www.actum.com

ST6 development and programming tools

Part number	Evaluation board	Starter kit	Emulator	Dedicated board for ST emulators	ST engineering programming board (EPB)	3rd party programmer	
ST6200C		ST622X-KIT[1]	ST ST62GP-EMU2[3] Softec www.softecmicro.com Ceibo www.ceibo.com	ST62GP-DBE	ST62E2XC-EPB[1]	Advantech Equipment www.aec.com.tw BP Microsystems www.bpmicro.com Conitec www.conitec.net Data I/O www.data-io.com Dataman www.dataman.com EE Tools www.eetools.com Elnec www.elnec.com Hi-Lo Systems www.hilosystems.com.tw Ice Technology www.icetech.com Leap www.leap.com.tw Lloyd Research www.lloyd-research.com	Logical Devices www.chipprogrammers.com MQP Electronics www.mqp.com Needham's Electronics www.needhams.com Phyton www.phyton.com RK-system www.rk-system.com.pl Softec Microsystems www.softecmicro.com STAG Programmers www.stag.co.uk System General Corp www.sg.com.tw Tribal Microsystems www.tribalmicro.com Xeltek www.xeltek.com
ST6203C		ST622X-KIT[1]			ST62E2XC-EPB[1]		
ST6201C		ST622X-KIT[1]			ST62E2XC-EPB[1]		
ST6262C		ST626X-KIT[2]			ST62E6XC-EPB[2]		
ST6210C		ST622X-KIT[1]			ST62E2XC-EPB[1]		
ST6220C		ST622X-KIT[1]			ST62E2XC-EPB[1]		
ST6260C		ST626X-KIT[2]			ST62E6XC-EPB[2]		
ST6225C		ST622X-KIT[1]			ST62E2XC-EPB[1]		
ST6265C	ST626X-EVAL	ST626X-KIT[2]			ST62E6XC-EPB[2]		

Notes
1 Add suffix /110, /220 or /UK for the power supply for your region
2 Add suffix /EU, /US or /UK for the power supply for your region
3 Emulator interface with Raisonance's IDE (RIDE)

ST9 family

Free software toolchain

- ST9 Toolset with everything to build, debug and program applications in one free download that includes:
  - ST9 Visual Develop (STVD9), ST's easy-to-use IDE with free C compiler, simulator and supporting a ST9-EMU2 series emulators
  - ST9 Visual Programmer (STVP9), ST's fully-featured programming software supporting the complete range of ST9 programming boards

ST9 development and programming tools

Part number	Evaluation board	Emulator	Dedication board	Single programmer	Operating system	3rd party programmer[3]
ST92F124/150/250	ST92F150-EVAL	ST92F150-EMU2	ST92F150-DBE[2]	ST92F150-EPB[1]	3SOFT (0SEK 0S) www.3soft.de Vector (OSEK sotware) www.vector-informatik.de CMX (real-time kernel) www.cmx.com	BP Microsystems www.bpmicro.com Data I/O www.data-io.com Leap www.leap.com.tw Segger www.segger.com

Notes

1 An updated list of supported ST MCUs is available at www.st.com/mcu
2 This board is used to convert a ST92F120-EMU2 to ST92F150-EMU2
3 An updated list of supported ST MCUs is available at www.st.com/mcu

ST10 family

ST10 development and programming tools

Part number	Software	Evaluation board	Emulator/debbuger	Programmer
ST10R172 **ST10R272** **ST10R167** **ST10F168** **ST10F269** **ST10F272** **ST10F271** **ST10F273** **ST10F276**	**C Toolchain** Cosmic www.cosmic-software.com Keil www.keil.com Tasking www.tasking.com GNU (HighTec) www.hightec-rt.com **Real-time kernel** CMX www.cmx.com OSE166 www.ose.com RTX166 www.keil.com PXROS www.hightec-rt.com EUROS www.euros-embedded.com µC/OS-II Micriµm www.micriµm.com **OSEK** osCAN www.vector-informatik.com ProOSEK www.3soft.com OSEKWorks www.windriver.com	Forth-Systeme www.fsforth.de Phytec www.phytec.com Rigel www.rigelcorp.com	Hitex www.hitex.com Lauterbach www.lauterbach.com Nohau www.nohau.com PLS www.pls-mc.com	BP Microsystems www.bpmicro.com

STR7 and STR9 families

Tools for the ARM core-based STR7 and STR9 families include a full range of third-party tools that come complete with C/C++ compiler, integrated development environment and in-circuit emulator with industry standard JTAG interface. In addition ST offers a range of complete, affordable starter kits for those who are new to ARM core-based MCUs, and developer kits for those who are ready to master the possibilities of ARM.

Evaluation

Evaluation boards

- **STR710-EVAL, STR730-EVAL, STR750-EVAL, STR910-EVAL**
  Evaluation boards for STR71x (USB, CAN, RS232), STR73x (CAN, RS232), STR75x (USB, CAN, RS232) and STR91x (Ethernet, USB, CAN, RS232, IrDA, trace tool support)

Starter kits

- **STR710-SK/HIT, STR730-SK/HIT, STR750-SK/HIT, STR91X-SK/HIT**
  Hitex starter kits with HiTOP5 (16K code-size limited version) with GNU C/C++ compiler, debugger, Tantino (USB/JTAG) in-circuit emulator, evaluation board for either STR710F, STR730F, STR750F or STR912F
- **STR711-SK/IAR, STR712-SK/IAR, STR730-SK/IAR, STR731-SK/IAR, STR750-SK/IAR, STR91X-SK/IAR**
  IAR starter kits with Embedded Workbench for ARM (EWARM 32k code-size limited version), C/C++ compiler, J-Link (USB/JTAG) in-circuit emulator and IAR demonstration board for either STR711F, STR712F, STR730F, STR731F, STR750F or STR912F
- **STR750-SK/KEIL, STR91X-SK/KEI**
  Keil starter kits with evaluation version of RealView Microcontroller Development Kit for ARM (16K code-size limited version) with ULink (USB/JTAG) in-circuit emulator and evaluation board for either STR750F or STR912F
- **STR71X-SK/RAIS, STR730-SK/RAIS, STR750-SK/RAIS, STR91X-SK/RAI**
  Raisonance starter kits with RIDE (16k code-size limited version), GNU C/C++ compiler, RLink (USB/JTAG) in-circuit emulator, REva demonstration mother board (CAN, RS232, I/Os etc.) and daughter board(s) for either STR711F and STR712F, or STR730F, or STR750F or STR912F

Development

Development environments

Software package

IAR Embedded Workbench for ARM integrated development environment with IAR C/C++ compiler and C-SPY debugger:

- **STR-EW/IAR – unlimited version with MISRA C extension and 1-year of support and updates from IAR**
- **STR-EW/D/IAR – unlimited version with license dongle, MISRA C extension and 1-year of support and updates from IAR**
- **STR-EW-BL/IAR – baseline version with 256KB code-size limitation**
- **STR-EW-BL/D/IAR – baseline version with license dongle and 256KB code-size limitation**

Software package with in-circuit emulator

- **STX-PRO/RAIS**
  Raisonance developer's kit for STR7/9 with RIDE integrated development environment (unlimited), GNU C/C++ compiler and RLink in-circuit emulator (USB/JTAG)

Complete hardware/software package with trace support for STR9

- **STR91X-DK/IAR**
  IAR Advanced Development kit EWARM-BL512 integrated development environment (512K code-size limited), IAR C/C++ compiler, STR912F evaluation board and J-Trace (USB/JTAG) with 38-pin trace connection for STR9
- **STR9-DK/RAIS**
  Raisonance Professional Developer kit for STR9 with RIDE integrated development environment (unlimited), GNU C/C++ compiler, REva evaluation board with STR912F and Signum JTAGjet-ETM (USB/JTAG) with 38-pin trace connection for STR9

Software

RTOS and stack software

- **A full range of portable embedded system software, TCP/IP stacks and several royalty-free, small-footprint operating systems from third-parties such as CMX, freeRTOS, GreenHills, Keil, Micrium, NexGen, Segger and GNU**

Programming

- **STX-RLINK, Raisonance's low-cost in-circuit programmer for STR7 and STR9 with USB interface to host PC. Also supports in-circuit debugging/programming of ST7 and uPSD microcontrollers**

A range of single position, gang and automated programmers that are ready to integrate into a production environment are available from third-party vendors.

1 Part numbers shown are for STMicroelectronics and third-party tools (Hitex, IAR, Keil and Raisonance) which are available from ST. Additional tools that are not available through ST. Additional tools that are not available through ST can be ordered from the third-parties listed.

STR7 and STR9 development and programming tools

Device	Evaluation		Development environment available from ST	C/C++ compiler	3rd party development environment	RTOS and stack software	Programmer
	Evaluation board	Starter kit					
STR71x	STR710-EVAL	STR71X-SK/RAIS STR710-SK/HIT STR711-SK/IAR STR712-SK/IAR Keil www.keil.com	Software only: STR-EW/IAR STR-EW/D/IAR STR-EW-BL/IAR STR-EW-BL/D/IAR Software with in-circuit emulator: STX-PRO/RAIS Software/hardware package supporting STR9 trace capability STR91X-DK/IAR STR9-DK/RAIS	ARM www.arm.com GNU www.gcc.gnu.org GreenHills www.ghs.com IAR www.iar.com Keil www.keil.com	Aiji System www.aijisystem.com Anby www.anby.cn ARM www.arm.com Ashling www.ashling.com Embest www.embedinfo.com Green Hills Software www.ghs.com Hitex www.hitex.com IAR www.iar.com iSYSTEM www.isystem.com Keil www.keil.com Lauterbach www.lauterbach.com Nohau www.nohau.com PLS www.pls-mc.com Raisonance www.raisonance.com Rowley www.rowley.co.uk Signum www.signum.com	CMX www.cmx.com freeRTOS www.freertos.org GreenHills www.ghs.com Keil www.keil.com Micrium www.micrium.com NexGen www.nexgen-software.com Segger www.segger.com uCinux www.uclinux.org	STX-RLINK BP Microsystems www.bpmicro.com Dataman www.dataman.com Data I/O www.data-io.com Elnec www.elnec.sk Hitex www.hitex.com Leap www.leap.com.tw PLS www.pls-mc.com Raisonance www.raisonance.com RK-System www.rk-system.com.pl Segger www.segger.com Systems General www.sg.com.tw Xeltec www.xeltec.com
STR73x	STR730-EVAL	STR730-SK/HIT STR730-SK/IAR STR730-SK/RAIS STR731-SK/IAR Keil www.keil.com					
STR75x	STR750-EVAL	STR750-SK/HIT STR750-SK/IAR STR750-SK/KEIL STR750-SK/RAIS					
STR91x	STR910-EVAL	STR91X-SK/HIT STR91X-SK/IAR STR91X-SK/KEI STR91X-SK/RAI					

MCU - Typical designations and part-n^0 suffixes

ST72	F	264	G	2	B	6	/CCC
Family		Subfamily (Depends on the product range)		ROM size code	Packaging	Application range	Option

Family

ST6	62
ST7	7x
ST10	10
ST7	R7
ST9	R9

Version code

*	ROM (no character)
E	EPROM
T	OTP
P	FastROM
F,C	Flash

User pin count

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
N	56 pins
AR	64 pins (10x10)
R	64 pins (14x14)
M	80 pins
V	100 pins
W	128 pins
Z	144 pins

ROM size code

	ST7	STR7/STR9
1K/2K	0	
4K	1	
8K	2	
16K	4	
32K	6	
48K	7	
54K	8	
60/64K	9	0
128K		1
256K		2

Packaging

B	Plastic DIP (dual in-line package)
D	Ceramic DIP (dual in-line package)
H	BGA (ball grid array package)
M	Plastic SO (small outline package)
L	Low Profile QFP (quad flat package)
U	Dual/Quad Flat no-lead

Application range

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

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Full product information at www.st.com

Order code: SGMICRO1106