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LPC3000 series

The 32-bit LPC3000 series is based on the ARM926EJ core and is the only ARM9 microcontroller that provides a vector floating-point co-processor and integrated USB On-The-Go, as well as the ability to operate in ultra-low-power mode down to 0.9V. With speeds of up to 208 MHz, the NXP LPC3180 series supports Linux and is ideal for a wide range of high-precision applications such as point-of-sale (POS) equipment, medical devices, and global positioning systems (GPS).

	Memory				Timers		Serial interfaces														
Type	FLASH	RAM	Instruction cache	Data cache	No. of timers*	PWM channels	USB	UART	I²C	SPI	ADC (10-bit) No. of channels	I/O pins	Interrupts (ext) / levels	External bus interface	PLL	Max. freq. (MHz)	CPU voltage	I/O voltage	Temp. range options	Package	Comments / special features
LPC3180		64K	32K	32K	4	2	1	7	2	2	3	55	60(18)/3	•	•	208	1.2V	3/1.8V	F	LFBGA320	90nm process, NAND Flash, SDRAM/DDR (1.8V), (1) USB 2.0 FS OTG, VFP unit, and SD card

founded by Philips

LPC2000 series

Based on an ARM7TDMI-S core operating at up to 72 MHz, these 32-bit microcontrollers deliver high performance and low power consumption in a cost-effective package. In addition to offering integrated LCD support, they offer a wide range of peripherals, including multiple serial interfaces, Ethernet, USB Host/OTG, CAN, and external bus options and are designed for use in general-purpose and specialty embedded applications such as industrial control, automotive, medical, and connectivity.

	Memory				Timers		Serial interfaces								Analog											
Type	FLASH	RAM	ISP/IAP	Program security	No. of timers*	PWM channels	Ethernet	USB	UART	I²C	CAN	SPI	SSP	I²S	ADC (10-bit) No. of channels	DAC (10-bit) No. of channels	SD/MMC	I/O pins	Interrupts (ext) / levels	External bus interface	PLL	Max. freq. (MHz)	CPU voltage	I/O voltage	Temp. range options	Package	Comments / special features
LPC2800 devices																											
LPC2888	1M	64K	Y/Y	•	4			1[1]	1[2]	1				1	5		•	85	30/16	•	•	60	1.8V	3.3V	F	TBGA180	[1] USB V2.0 high speed; [2] IrDA configurable; LCD interface logic
LPC2880		64K	Y/Y	•	4			1[1]	1[2]	1				1	5		•	85	30/16	•	•	60	1.8V	3.3V	F	TBGA180	LPC2880 is the ROMless version of the LPC2888
LPC2400 devices																											
LPC2478	512K	98K	Y/Y	•	6	12[1]	1	1[2]	4[3]	3	2	1	2	1	8	1	•	160	32(46)/32	•[4]	•	72	3.3V		F	LQFP208 TFBGA208	LPC2468 with QVGA LCD controller
LPC2470		98K	Y/Y	•	6	12[1]	1	1[2]	4[3]	3	2	1	2	1	8	1	•	160	32(46)/32	•[4]	•	72	3.3V		F	LQFP208 TFBGA208	LPC2468 with QVGA LCD controller
LPC2468	512K	98K	Y/Y	•	6	12[1]	1	1[2]	4[3]	3	2	1	2	1	8	1	•	160	32(46)/32	•[4]	•	72	3.3V		F	LQFP208 TFBGA208	On-chip 4MHz RC-Osc, GP DMA, RTC w/ 2K batt. RAM [1] 2 PWM blocks; [2] USB 2.0 FS Host/OTG/device, DMA and 4K RAM; [3] UART 3 w/ IrDA; [4] 32-bit ext. bus
LPC2300 devices																											
LPC2378	512K	58K	Y/Y	•	6	6	1	1[1]	4[2]	3	2	1	2	1	8	1	•	104	32(46)/32	•[3]	•	72	3.3V		F	LQFP144	On-chip 4MHz RC-Osc, GP DMA, RTC w/ 2K batt. RAM [1] USB 2.0 FS device w/ PHY, DMA and 4K RAM; [2] UART 3 w/ IrDA; [3] MiniBus (8-bit)
LPC2368	512K	58K	Y/Y	•	6	6	1	1[1]	4[2]	3	2	1	2	1	6	1	•	70	32(42)/32		•	72	3.3V		F	LQFP100	100-pin version of LPC2378, no external bus
LPC2366	256K	58K	Y/Y	•	6	6	1	1[1]	4[2]	3	2	1	2	1	6	1		70	32(42)/32		•	72	3.3V		F	LQFP100	256K Flash version of LPC2368, no SD/MMC
LPC2364	128K	34K	Y/Y	•	6	6	1	1[1]	4[2]	3	2	1	2	1	6	1		70	32(42)/32		•	72	3.3V		F	LQFP100	128K Flash / 34K RAM version of LPC2368, no SD/MMC
LPC2200 devices																											
LPC2294	256K	16K	Y/Y	•	5	6			2	1	4	2			8			112	25(4)/16	•	•	60	1.8 V	3.3 V	H	LQFP144	LPC2214 upgrade with 4x CAN
LPC2292	256K	16K	Y/Y	•	5	6			2	1	2	2			8			112	25(4)/16	•	•	60	1.8 V	3.3 V	F	LQFP144, TFBGA144	LPC2214 upgrade with 2x CAN
LPC2290/01		16K			5	6			2	1	2	2			8			76	25(4)/16	•	•	60	1.8 V	3.3 V	F	LQFP144	ROMless version of LPC2292
LPC2220		64K			5	6			2	1		2			8			76	16(4)/16	•	•	75	1.8 V	3.3 V	F	LQFP144, TFBGA144	64K RAM version of LPC2210
LPC2214	256K	16K	Y/Y	•	5	6			2	1		2			8			112	16(4)/16	•	•	60	1.8 V	3.3 V	F	LQFP144	External Bus, 4 Chip Selects, 10-bit SA ADC, 256K Flash
LPC2212	128K	16K	Y/Y	•	5	6			2	1		2			8			112	16(4)/16	•	•	60	1.8 V	3.3 V	F	LQFP144	128K Flash version of LPC2214
LPC2210/01		16K			5	6			2	1		2			8			76	16(4)/16	•	•	60	1.8 V	3.3 V	F	LQFP144	ROMless version of LPC2214
LPC2100 devices																											
LPC2194	256K	16K	Y/Y	•	5	6			2	1	4	2			4			46	25(4)/16		•	60	1.8 V	3.3 V	H	LQFP64	LPC2124 upgrade with 4x CAN
LPC2148	512K	40K	Y/Y	•	5	6		1	2	2		1	1		8+6	1		45	23(4)/16		•	60	3.3 V		F	LQFP64	LPC2138 plus USB 2.0 full speed
LPC2146	256K	40K	Y/Y	•	5	6		1	2	2		1	1		8+6	1		45	23(4)/16		•	60	3.3 V		F	LQFP64	LPC2136 plus USB 2.0 full speed
LPC2144	128K	16K	Y/Y	•	5	6		1	2	2		1	1		8+6	1		45	23(4)/16		•	60	3.3 V		F	LQFP64	LPC2134 plus USB 2.0 full speed
LPC2142	64K	16K	Y/Y	•	5	6		1	2	2		1	1		6	1		45	23(4)/16		•	60	3.3 V		F	LQFP64	LPC2132 plus USB 2.0 full speed
LPC2141	32K	8K	Y/Y	•	5	6		1	2	2		1	1		6			45	23(4)/16		•	60	3.3 V		F	LQFP64	LPC2131 plus USB 2.0 full speed
LPC2138/01	512K	32K	Y/Y	•	5	6			2	2		1	1		2x8	1		47	22(4)/16		•	60	3.3 V		F	LQFP64, HVQFN64	Dual 8-ch. 10-bit ADC, BOD, POR, 32-kHz XTAL input, VBAT, Fast I/O

Note: Reset active low. * Includes WatchDog timer and Real-time Clock. ** Using timers 0-3.

Continued next page

LPC2000 series (continued)

Type	Memory				Timers		Serial interfaces								Analog		SD/MMC	I/O pins	Interrupts (ext) / levels	External bus interface	PLL	Max. freq. (MHz)	CPU voltage	I/O voltage	Temp. range options	Package	Comments / special features
	FLASH	RAM	ISP/IAP	Program security	No. of timers*	PWM channels	Ethernet	USB	UART	I^2C	CAN	SPI	SSP	I^2S	ADC (10-bit) No. of channels	DAC (10-bit) No. of channels											
LPC2136/01	256K	32K	Y/Y	•	5	6			2	2		1	1		2x8	1		47	22(4)/16		•	60	3.3 V		F	LQFP64	256K Flash version of LPC2138
LPC2134/01	128K	16K	Y/Y	•	5	6			2	2		1	1		2x8	1		47	22(4)/16		•	60	3.3 V		F	LQFP64	128K Flash, 16K RAM version of LPC2138
LPC2132/01	64K	16K	Y/Y	•	5	6			2	2		1	1		8	1		47	22(4)/16		•	60	3.3 V		F	LQFP64, HVQFN64	64K Flash, 16K RAM version of LPC2138
LPC2131/01	32K	8K	Y/Y	•	5	6			2	2		1	1		8			47	22(4)/16		•	60	3.3 V		F	LQFP64	32K Flash, 8K RAM version of LPC2138
LPC2129	256K	16K	Y/Y	•	5	6			2	1	2	2			4			46	18(4)/16		•	60	1.8 V	3.3 V	F	LQFP64	LPC2124 upgrade with 2x CAN
LPC2119	128K	16K	Y/Y	•	5	6			2	1	2	2			4			46	18(4)/16		•	60	1.8 V	3.3 V	F	LQFP64	LPC2114 upgrade with 2x CAN
LPC2109	64K	8K	Y/Y	•	5	6			2	1	1	2			4			46	18(4)/16		•	60	1.8 V	3.3 V	F	LQFP64	LPC2119 with 64 KB Flash, 8 KB RAM, and 1x CAN
LPC2124	256K	16K	Y/Y	•	5	6			2	1		2			4			46	16(4)/16		•	60	1.8 V	3.3 V	F	LQFP64	10-bit SA ADC, 2x SPI and 256K Flash
LPC2114	128K	16K	Y/Y	•	5	6			2	1		2			4			46	16(4)/16		•	60	1.8 V	3.3 V	F	LQFP64	128K Flash version of the LPC2124
LPC2106	128K	64K	Y/Y		5	6			2	1		1						32	16(3)/16		•	60	1.8 V	3.3 V	B, F	LQFP48	64K RAM, 128K Flash
LPC2105	128K	32K	Y/Y		5	6			2	1		1						32	16(3)/16		•	60	1.8 V	3.3 V	B	LQFP48	32K RAM version of LPC2106
LPC2104	128K	16K	Y/Y		5	6			2	1		1						32	16(3)/16		•	60	1.8 V	3.3 V	B	LQFP48	16K RAM version of LPC2106
LPC2103	32K	8K	Y/Y	•	6	14**			2	2		1	1		8			32	19(3)/16		•	70	1.8 V	3.3 V	F	LQFP48	Lowest cost, lowest power, ADC
LPC2102	16K	4K	Y/Y	•	6	14**			2	2		1	1		8			32	19(3)/16		•	70	1.8 V	3.3 V	F	LQFP48	16K Flash, 4K RAM version of LPC2103
LPC2101	8K	2K	Y/Y	•	6	14**			2	2		1	1		8			32	19(3)/16		•	70	1.8 V	3.3 V	F	LQFP48	8K Flash, 2K RAM version of LPC2103

Note: Reset active low. * Includes WatchDog timer and Real-time Clock. ** Using timers 0-3.

LPC900 series

Designed for applications that demand high integration and low cost over a wide range of performance requirements, these single-chip microcontrollers integrate a number of system-level functions.

Type	Memory						Timers			Serial interfaces			Analog			I/O pins	Interrupts (ext.) / levels	Clocks / CPU cycle	Freq.uency range (MHz) at 3 V	Temp. range options	Package	Comments / special features
	FLASH / EEPROM (program / data)	EEPROM (data)	RAM	ICP / PP	ISP / IAP	Program security	Total no. of timers	PWM	RTC / system timer / WD	UART	I^2C	SPI	ADC channels resolution	DAC channels resolution	Comparators							
LPC95x devices																						
P89LPC954	16K		512 B	Y/Y	Y/Y	•	4	2 ch.	1	2	1	1	8/10b		2	42	17(3)/4	2	0-18	F	PLCC44, LQFP48	LPC952 with 16 KB Flash
P89LPC952	8K		512 B	Y/Y	Y/Y	•	4	2 ch.	1	2	1	1	8/10b		2	42	17(3)/4	2	0-18	F	PLCC44, LQFP48	LPC900 in 44/48-pin package; 2 UARTs; 2-wire debug interface
LPC94x devices																						
P89LPC9408	8K	512 B	768 B	Y/Y	Y/Y	•	5	CCU	1	1	1	1	8/10b		2	23	15(3)/4	2	0-18	F	LQFP64	LPC938 with integrated PCF8576D universal LCD driver
P89LPC9401	8K		256 B	Y/Y	Y/Y	•	4	2 ch.	1	1	1	1			2	23	13(3)/4	2	0-18	F	LQFP64	LPC931 with integrated PCF8576D universal LCD driver
LPC93x devices																						
P89LPC938	8K	512 B	768 B	Y/Y	Y/Y	•	5	CCU	1	1	1	1	8/10b		2	26	15(3)/4	2	0-18	F	TSSOP28, HVQFN28, PLCC28	LPC935 with 10-bit ADC
P89LPC936	16K	512 B	768 B	Y/Y	Y/Y	•	5	CCU	1	1	1	1	2x4/8b	2x8b	2	26	15(3)/4	2	0-18	F	TSSOP28	LPC935 with 16K Flash
P89LPC935	8K	512 B	768 B	Y/Y	Y/Y	•	5	CCU	1	1	1	1	2x4/8b	2x8b	2	26	15(3)/4	2	0-18	F	TSSOP28, PLCC28, HVQFN28	LPC932A1 + two 4-ch 8-bit ADCs / two 8-bit DACs
P89LPC934	8K		256 B	Y/Y	Y/Y	•	4	2 ch.	1	1	1	1	4/8b	2x8b	2	26	15(3)/4	2	0-18	F	TSSOP28	LPC930/931 + 4-ch 8-bit ADC / two 8-bit DACs
P89LPC933	4K		256 B	Y/Y	Y/Y	•	4	2 ch.	1	1	1	1	4/8b	2x8b	2	26	15(3)/4	2	0-18	F	TSSOP28	LPC930/931 + 4-ch 8-bit ADC / two 8-bit DACs

Continued next page

LPC900 series (continued)

	Memory						Timers			Serial interfaces			Analog									
Type	FLASH / EEPROM (program / data)	EEPROM (data)	RAM	ICP / PP	ISP / IAP	Program security	Total no. of timers	PWM	RTC / system timer / WD	UART	I²C	SPI	ADC channels resolution	DAC channels resolution	Comparators	I/O pins	Interrupts (ext.) / levels	Clocks / CPU cycle	Freq.uency range (MHz) at 3 V	Temp. range options	Package	Comments / special features
P89LPC932A1	8K	512 B	768 B	Y/Y	Y/Y	•	5	CCU	1	1	1	1			2	26	15(3)/4	2	0-18	F	TSSOP28, PLCC28, HVQFN28	LPC935 with ADCs and DACs
P89LPC9311	8K		256 B	Y/Y	Y/Y	•	4	2 ch.	1	1	1	1			2	26	13(3)/4	2	0-18	F	TSSOP28	LPC931 with 8 high-drive pins (20 mA)
P89LPC931	8K		256 B	Y/Y	Y/Y	•	4	2 ch.	1	1	1	1			2	26	13(3)/4	2	0-18	F	TSSOP28	4K / 8K Flash versions of LPC932A1 w/o EEPROM, w/o CCU, w/o XRAM
P89LPC930	4K		256 B	Y/Y	Y/Y	•	4	2 ch.	1	1	1	1			2	26	13(3)/4	2	0-18	F	TSSOP28	4K / 8K Flash versions of LPC932A1 w/o EEPROM, w/o CCU, w/o XRAM
LPC92x devices																						
P89LPC925	8K		256 B	Y/Y	Y/Y	•	4	2 ch.	1	1	1		4/8b	1/8b	2	18	12(3)/4	2	0-18	F	TSSOP20	LPC921/922 + 4-ch 8-bit ADC / 8-bit DAC; runs up to 18 MHz
P89LPC924	4K		256 B	Y/Y	Y/Y	•	4	2 ch.	1	1	1		4/8b	1/8b	2	18	12(3)/4	2	0-18	F	TSSOP20	LPC921/922 + 4-ch 8-bit ADC / 8-bit DAC; runs up to 18 MHz
P89LPC9221	8K		256 B	Y/Y	Y/Y	•	4	2 ch.	1	1	1				2	18	12(3)/4	2	0-18	F	TSSOP20, DIP20	LPC922 with 8 high-drive pins (20 mA)
P89LPC922	8K		256 B	Y/Y	Y/Y	•	4	2 ch.	1	1	1				2	18	12(3)/4	2	0-18	F	TSSOP20, DIP20	20-pin versions of LPC930/931 w/o SPI; LPC76x pin-comp. upgrade
P89LPC921	4K		256 B	Y/Y	Y/Y	•	4	2 ch.	1	1	1				2	18	12(3)/4	2	0-18	F	TSSOP20	20-pin versions of LPC930/931 w/o SPI; LPC76x pin-comp. upgrade
P89LPC920	2K		256 B	Y/Y	Y/Y	•	4	2 ch.	1	1	1				2	18	12(3)/4	2	0-18	F	TSSOP20	2K Flash version of 921/922
LPC91x devices																						
P89LPC917	2K		256 B	Y/–	– /–	•	4	2 ch.	1	1	1		4/8b	1/8b	2	14	13(3)/4	2	0-18	F	TSSOP16	4-ch 8-bit ADC / 8-bit DAC; 2 serial channels; 2-ch 8-bit PWM
P89LPC916	2K		256 B	Y/–	– /–	•	4	1 ch.	1	1	1	1	4/8b	1/8b	2	14	14(2)/4	2	0-18	F	TSSOP16	4-ch 8-bit ADC / 8-bit DAC; 3 serial channels; 1-ch 8-bit PWM
P89LPC915	2K		256 B	Y/–	– /–	•	4	1 ch.	1	1	1		4/8b	1/8b	2	12	13(3)/4	2	0-18	F, H	TSSOP14, DIP14	4-ch 8-bit ADC / 8-bit DAC; 2 serial channels; 1-ch 8-bit PWM
P89LPC914	1K		128 B	Y/–	– /–	•	4	1 ch.	1	1		1			2	12	10(1)/4	2	0-IRC	F	TSSOP14	1-ch 8-bit PWM; UART; SPI; 12 I/O pins
P89LPC913	1K		128 B	Y/–	– /–	•	4		1	1		1			2	12	10(1)/4	2	0-18	F	TSSOP14	UART; SPI; 12 I/O pins; external crystal pins
P89LPC912	1K		128 B	Y/–	– /–	•	4	1 ch.	1			1			2	12	7(1)/4	2	0-18	F	TSSOP14	1-ch 8-bit PWM; SPI; 12 I/O pins; external crystal pins
LPC910x devices																						
P89LPC9107	1K		128 B	Y/–	– /–	•	4	2 ch.	1	1			4/8b	1/8b	1	10	9(1)/4	2	0-18	F	TSSOP14, DIP14	Clock doubler for internal RC OSC
P89LPC9103	1K		128 B	Y/–	– /–	•	4		1	1			4/8b	1/8b	1	8	9(1)/4	2	0-18	F	HVSON10	Smallest available package 3 x 3 mm²
P89LPC9102	1K		128 B	Y/–	– /–	•	4	2 ch.	1				4/8b	1/8b	1	8	9(1)/4	2	0-18	F	HVSON10	Smallest available package 3 x 3 mm²
LPC90x devices																						
P89LPC908	1K		128 B	Y/–	– /–	•	4		1	1					1	6	9(1)/4	2	0-IRC	F	SO8	UART; 6 I/O pins
P89LPC907	1K		128 B	Y/–	– /–	•	4		1	1*					1	6	8(1)/4	2	0-IRC	F	SO8	UART (*Transmit function only); 6 I/O pins
P89LPC906	1K		128 B	Y/–	– /–	•	4	1 ch.	1						1	6	6(1)/4	2	0-18	F	SO8	1-ch 8-bit PWM; 6 I/O pins; external crystal pins
P89LPC903	1K		128 B	Y/–	– /–	•	4		1	1					2	6	9(1)/4	2	0-IRC	F	SO8	Industry-standard pinout; 6 I/O pins; 2 analog comparators; UART
P89LPC902	1K		128 B	Y/–	– /–	•	4		1						2	6	6(1)/4	2	0-IRC	F	SO8, DIP8	Industry-standard pinout; 6 I/O pins; 2 analog comp. 5 ext. interrupt inputs
P89LPC901	1K		128 B	Y/–	– /–	•	4	1 ch.	1						1	6	6(1)/4	2	0-18	F	SO8, DIP8	Industry-standard pinout; 6 I/O pins; 1-ch 8-bit PWM; external crystal pins

Notes: (1) LPC900 FLASH EEPROM features: Program and data (byte) storage, block-/sector-/page-/byte-erasable, 2-ms erase, data read via MOVC instruction. (2) Auxiliary EEPROM features: Data (byte) storage, page-/byte-erasable, 2-ms erase. (3) Reset active low.

LPC700 series

Designed for applications that demand low voltage, high integration, and low cost, the LPC700 series uses a high-performance 6-clock 80C51 that executes instructions at twice the rate of the standard 80C51. To reduce component count, board space, and system cost, the devices combine a number of system supervisory functions, serial interfaces, and analog options in low-profile SO and TSSOP packages.

	Memory			Timers			Serial interfaces		Analog													
Type	OTP / ROM	RAM	ICP / PP	No. of timers	PWM	WD	UART	I²C	ADC ch. / bits	Comparators	I/O pins	Interrupts (ext.) levles	Program security	Default clock rate	Optional clock rate	Reset active (low or high)	Max. frequency (MHz)	Freq. range (MHz) at 3V	Freq. range (MHz) at 5V	Temp. range options	Package	Comments / special features
LPC76x / LPC77x devices																						
P87LPC779	8K	128 B	ICP	2		•	1	1 (bit)	4/8	2	18	13(3)/4	•	6-clk	12-clk	L	20	0-10	0-20	B, F	TSSOP20	LPC769 upgrade with 8K OTP; addtl 128 B of RAM not supported by emulators
P87LPC778	8K	128 B	ICP	2	•	•	1	1 (bit)	4/8	2	18	13(3)/4	•	6-clk	12-clk	L	20	0-10	0-20	B, F	TSSOP20	LPC768 upgrade with 8K OTP; addtl 128 B of RAM not supported by emulators
P87LPC769	4K	128 B	ICP	2		•	1	1 (bit)	4/8	2	18	13(3)/4	•	6-clk	12-clk	L	20	0-10	0-20	H	SO20	2 AC, BOD, POR, 8 KBIs, IRC (6 MHz ± 25%), 4ch 8-bit ADC, 2ch 8-bit DAC
P87LPC768	4K	128 B	ICP	2	•	•	1	1 (bit)	4/8	2	18	13(3)/4	•	6-clk	12-clk	L	20	0-10	0-20	B, F	DIP20, SO20	2 AC, BOD, POR, 8 KBIs, IRC (6 MHz ± 25%), 4ch 8-bit ADC, PWM
P87LPC767	4K	128 B	ICP	2		•	1	1 (bit)	4/8	2	18	13(3)/4	•	6-clk	12-clk	L	20	0-10	0-20	B, F, H	DIP20, SO20	2 AC, BOD, POR, 8 KBIs, IRC (6 MHz ± 25%), 4ch 8-bit ADC
P87LPC764	4K	128 B	ICP	2		•	1	1 (bit)		2	18	12(3)/4	•	6-clk	12-clk	L	20	0-10	0-20	B, F	TSSOP20, DIP20, SO20	2 AC, BOD, POR, 8 KBIs, IRC (6 MHz ± 10% / ± 25%)
P87LPC762	2K	128 B	ICP	2		•	1	1 (bit)		2	18	12(3)/4	•	6-clk	12-clk	L	20	0-10	0-20	B, F	TSSOP20, DIP20, SO20	2 AC, BOD, POR, 8 KBIs, IRC (6 MHz ± 10% / ± 25%)
P87LPC761	2K	128 B	ICP	2		•	1	1 (bit)		2	14	11(3)/4	•	6-clk	12-clk	L	20	0-10	0-20	B	TSSOP16, DIP16	16-pin LPC derivative; ± 2.5% internal RC Oscillator (0-50 °C)
P87LPC760	1K	128 B	ICP	2		•	1	1 (bit)		2	12	11(3)/4	•	6-clk	12-clk	L	20	0-10	0-20	B	TSSOP14, DIP14	14-pin LPC derivative; ± 2.5% internal RC Oscillator (0-50 °C)

80C51 family

Designed for real-time applications, these 8-bit microcontrollers are used in a wide variety of applications, from consumer products and computer peripherals to automotive systems. The NXP portfolio includes Flash, OTP (one-time programmable), ROM, and ROMless devices.

	Memory					Timers			Serial interfaces														
Type	FLASH	OTP / ROM	RAM	ICP / PP	ISP / IAP	No. of timers	PWM	WD	UART	I²C	SPI	ADC channel / bits	I/O Pins	Interrupts (ext.) levles	Program security	Default clock rate	Optional clock rate	Reset active (low or high)	Max. freq. (MHz)	Freq. range (MHz) at 3V	Freq. range (MHz) at 5 V	Temp. range options	Package	Comments / special features
66x devices																								
P89V664	64K		2K	– /Y	Y/Y	4	•	•	1	2	1		36	8(2)/4	•	6-clk	12-clk	H	20/40		0-20/40	F	PLCC44, LQFP44	Fast erase times and more I/O
P89V662	32K		1K	– /Y	Y/Y	4	•	•	1	2	1		36	8(2)/4	•	6-clk	12-clk	H	20/40		0-20/40	F	PLCC44, LQFP44	Fast erase times and more I/O
P89V660	16K		512 B	– /Y	Y/Y	4	•	•	1	2	1		36	8(2)/4	•	6-clk	12-clk	H	20/40		0-20/40	F	PLCC44, LQFP44	Fast erase times and more I/O
66xX2 devices																								
P87C661X2		16K	512 B	– /Y		4	•	•	1	2			32	9(2)/4	•	12-clk	6-clk	H	30/33	0-30/33	0-30/33	B	PLCC44, LQFP44	87C660X2 with two I²C interfaces
P87C660X2		16K	512 B	– /Y		4	•	•	1	1			32	8(2)/4	•	12-clk	6-clk	H	30/33	0-16	0-30/33	B, F	PLCC44, LQFP44	OTP version of 89C660; 12-clk default, 6-clk option
Mx2 devices																								
P87C51MC2/02		96K	3K	– /Y		4	•	•	2		1		34	13(2)/4	1	6-clk		H	24	0-12	0-24	B	PLCC44	16 MB data/code addr. range; 2 UARTs, SPI , P4 I/O
P87C51MB2/02		64K	2K	– /Y		4	•	•	2		1		34	13(2)/4	1	6-clk		H	24	0-12	0-24	B	PLCC44	16 MB data/code addr. range; 2 UARTs, SPI, P4 I/O

Continued next page

80C51 family (continued)

Type	Memory					Timers			Serial interfaces			ADC channel / bits	I/O Pins	Interrupts (ext.) levles	Program security	Default clock rate	Optional clock rate	Reset active (low or high)	Max. freq. (MHz)	Freq. range (MHz) at 3V	Freq. range (MHz) at 5 V	Temp. range options	Package	Comments / special features
	FLASH	OTP / ROM	RAM	ICP / PP	ISP / IAP	No. of timers	PWM	WD	UART	I²C	SPI													
Rx2 devices																								
P89LV51RD2	64K		1K	– /Y	Y/Y	4	•	•	1		1		32	7(2)/4	1	12-clk	6-clk	H	16/33	0-16/33		B, F	DIP40, PLCC44, LQFP44	Operating voltage 3 V ± 10%
P89LV51RC2	32K		1K	– /Y	Y/Y	4	•	•	1		1		32	7(2)/4	1	12-clk	6-clk	H	16/33	0-16/33		B, F	DIP40, PLCC44, LQFP44	Operating voltage 3 V ± 10%
P89LV51RB2	16K		1K	– /Y	Y/Y	4	•	•	1		1		32	7(2)/4	1	12-clk	6-clk	H	16/33	0-16/33		B, F	DIP40, PLCC44, LQFP44	Operating voltage 3 V ± 10%
P89V51RD2	64K		1K	– /Y	Y/Y	4	•	•	1		1		32	7(2)/4	1	12-clk	6-clk	H	20/40		0-20/40	B, F	DIP40, PLCC44, LQFP44	Operating voltage 5 V ± 10%
P89V51RC2	32K		1K	– /Y	Y/Y	4	•	•	1		1		32	7(2)/4	1	12-clk	6-clk	H	20/40		0-20/40	B, F	DIP40, PLCC44, LQFP44	Operating voltage 5 V ± 10%
P89V51RB2	16K		1K	– /Y	Y/Y	4	•	•	1		1		32	7(2)/4	1	12-clk	6-clk	H	20/40		0-20/40	B, F	DIP40, PLCC44, LQFP44	Operating voltage 5 V ± 10%
P87C51RD2		64K	1K	– /Y		4	•	•	1				32	7(2)/4	1	12-clk	6-clk	H	30/33	0-16	0-30/33	B, F	DIP40, PLCC44, LQFP44	Not recommended for new designs. Please use the P89V devices above
P87C51RC2		32K	512 B	– /Y		4	•	•	1				32	7(2)/4	1	12-clk	6-clk	H	30/33	0-16	0-30/33	B, F	DIP40, PLCC44, LQFP44	Not recommended for new designs. Please use the P89V devices above
P87C51RB2		16K	512 B	– /Y		4	•	•	1				32	7(2)/4	1	12-clk	6-clk	H	30/33	0-16	0-30/33	B	DIP40, PLCC44, LQFP44	Not recommended for new designs. Please use the P89V devices above
P87C51RA2		8K	512 B	– /Y		4	•	•	1				32	7(2)/4	1	12-clk	6-clk	H	30/33	0-16	0-30/33	B	PLCC44, LQFP44	Not recommended for new designs. Please use the P89V devices above
55x devices																								
P8xC552		8K	256 B	– /Y		3	•	•	1	1		8/10	48	15(6)/4	1	12-clk		H	– /24	0-16	3.5-24	B, F, H	PLCC68,QFP80	
P8xC554		16K	512 B	– /Y		3	•	•	1	1		8/10	48	15(6)/4	1	12-clk		H	– /16	0-16	0-16	B, F	PLCC68	12-clk only; PLCC68 only; 8 ADC channels
P8xC554		16K	512 B	– /Y		3	•	•	1	1		7/10	48	15(6)/4	1	6-clk		H	16/–	0-8	0-16	B, F	LQFP64	6-clk only; LQFP64 only; 7 ADC channels
80C51X2 devices																								
P8xC58X2	32K	32K	256 B	– /Y		3			1				32	6(2)/4		12-clk	6-clk	H	20/33	0-16	0-20/33	B, F	DIP40, PLCC44, LQFP44	5-V Flash/OTP part; 12-clk def., 6-clk opt. (switch by SW or par. progr.)
P8xC54X2	16K	16K	256 B	– /Y		3			1				32	6(2)/4		12-clk	6-clk	H	30/33	0-16	0-30/33	B, F	DIP40, PLCC44, LQFP44	5-V Flash/OTP part; 12-clk def., 6-clk opt. (switch by SW or par. progr.)
P8xC52X2	8K	8K	256 B	– /Y		3			1				32	6(2)/4		12-clk	6-clk	H	20/33		0-20/33	B, F	DIP40, PLCC44, LQFP44	5-V Flash/OTP part; 12-clk def., 6-clk opt. (switch by SW or par. progr.)
P8xC51X2	4K	4K	128 B	– /Y		3			1				32	6(2)/4		12-clk	6-clk	H	20/33	0-16	0-20/33	B, F	DIP40, PLCC44, LQFP44	5-V Flash/OTP part; 12-clk def., 6-clk opt. (switch by SW or par. progr.)
P80C32X2			256 B			3			1				32	6(2)/4		12-clk	6-clk	H	30/33	0-16	0-30/33	B, F	DIP40, PLCC44	ROMless part; 12-clk default, 6-clock option (switch by SW)
P80C31X2			128 B			3			1				32	6(2)/4		12-clk	6-clk	H	30/33	0-16	0-30/33	B	DIP40, PLCC44, LQFP44	ROMless part; 12-clk default, 6-clock option (switch by SW)
CAN devices																								
P8xC591		16K	512 B	– /Y		3	•	•	1	1		6/10	32	15(6)/4		6-clk		L	12/–		0-12	F	PLCC44, PQFP44	CAN 2.0B, baud rate generator for UART
P8xC592		16K	512 B	– /Y		3	•	•	1			8/10	48	15(6)/2		12-clk		H	– /16		1.2-16	F, H	PLCC68	CAN V2.0A, five 8-bit I/O ports
P8xCE598		16K	512 B	– /Y		3	•	•	1			8/10	48	15(6)/2		12-clk		H	– /16		1.2-16	F, H	QFP80	CAN V2.0A, five 8-bit I/O ports, "E"=lower EMI (more Vss pins)

Acronym Legend:

IAP In-Application Programmable Flash
ISP In-System Progrogrammable Flash
PP Parallel Programmable Flash (via parallel programer)
OTP One-Time Programmable (EPROM)
ICP In-Circuit Programmable (using off-board programmer)
POR Power-On Reset
KBI Keyboard Interrupt Inputs
BOD Brown-out detect
I²C Inter-Integrated Circuit Bus
CAN Controller Area Network
PCA Programmable Counter Array
ADC Analog-to-Digital Converter
DAC Digital-to-Analog Converter
PWM Pulse Width Modulation
AC Analog Comparator

Temperature Legend:

B 0 to +70°C
F –40 to +85°C
H –40 to +125°C
J –40 to +105°C.

Not all package/temperature/voltage/ frequency combinations are available. For most parts "3 V" voltage range is 2.7 to 5.5 V and "5 V" voltage range is 4.5 to 5.5 V. Check data sheet for details.

Date of release: April 2007
Document order number: 9397 750 15912
Printed in the USA