



Motorola Host and Integrated Processor Summary

revised FEB2003

	603e		8240	8241	8245	740		745	750		755	7400	7410	7441	7450/1	7445	7455
	100-133 MHz	200-300 MHz	200-250 MHz	166-200 MHz	266-400 MHz	200-266 MHz	300-333 MHz	300-350 MHz	200-266 MHz	300-400 MHz	300-450 MHz	350-500 MHz	400-550 MHz	600-700 MHz	600-867 MHz	600-1000MHz	600-1000 MHz
Motorola Names	603ePID6	603ePID7, 603r	MPC8240	MPC8241	MPC8245	MPC740 PID8t	MPC740 PID8q	MPC745	MPC750 PID8t	MPC750 PID8q	MPC755	MPC7400	MPC7410	MPC7441	MPC7450/1	MPC7445	MPC7455
CPU Speed - Internal	100 MHz 133 MHz	200 MHz* 266 MHz 300 MHz	200 MHz* 250 MHz	166 MHz* 200 MHz	266 MHz 300MHz 333 MHz 350 MHz 400MHz	200 MHz 233 MHz 266 MHz	300 MHz 333 MHz	300 MHz * 350 MHz	200 MHz 233 MHz 266 MHz	300 MHz 333 MHz 366 MHz 400 MHz	300 MHz 350 MHz 400 MHz 450 MHz	350 MHz 400 MHz 450 MHz 500 MHz	400 MHz 450 MHz 500 MHz 550 MHz	600 MHz 700 MHz	600 MHz 667 MHz 733 MHz 800 MHz 867MHz	600MHz 733MHz 800MHz 933MHz 1GHz	600MHz 733MHz 800MHz 933MHz 1GHz
CPU Bus Dividers	x1.5, x2, x2.5, x3, x3.5, x4	x2, x2.5, x3, x3.5, x4, x4.5, x5, x5.5, x6	x2, x2.5, x3, x3.5, x4, x4.5, x5, x5.5, x6	x2, x2.5, x3, x3.5, x4, x4.5, x5, x5.5, x6	x2, x2.5, x3, x3.5, x4, x4.5, x5, x5.5, x6	x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8	x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8	x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8	x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8	x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8	x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8, x9, x10	x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8, x9	x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8, x9	x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8, x9, x10, x11, x12, x13, x14, x15	x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8, x9, x10, x11, x12, x13, x14, x15	x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8, x9, x10, x11, x12, x13, x14, x15	x3, x3.5, x4, x4.5, x5, x5.5, x6, x6.5, x7, x7.5, x8, x9, x10, x11, x12, x13, x14, x15
Bus Interface	64- & 32-bit modes	64- & 32-bit modes	64-bit memory bus 32-bit PCI bus	64-bit memory bus 32-bit PCI bus	64-bit memory bus 32-bit PCI bus	64 bits	64 bits	64- & 32-bit modes	64 bits	64 bits	64- & 32-bit modes	64 bits	64 bits	64 bits	64 bits	64 bits	64 bits
Instructions per Clock	3 (2+branch)	3 (2+branch)	3 (2+branch)	3 (2+branch)	3 (2+branch)	3 (2+branch)	3 (2+branch)	3 (2+branch)	3 (2+branch)	3 (2+branch)	3 (2+branch)	3 (2+branch)	3 (2+branch)	4(3+branch)	4 (3+branch)	4 (3+branch)	4 (3+branch)
L1 Cache	16 Kbyte inst 16 Kbyte data	16 Kbyte inst 16 Kbyte data	16 Kbyte inst 16 Kbyte data	16 Kbyte inst 16 Kbyte data	16 Kbyte inst 16 Kbyte data	32 Kbyte inst 32 Kbyte data	32 Kbyte inst 32 Kbyte data	32 Kbyte inst 32 Kbyte data	32 Kbyte inst 32 Kbyte data	32 Kbyte inst 32 Kbyte data	32 Kbyte inst 32 Kbyte data	32 Kbyte inst 32 Kbyte data	32 Kbyte inst 32 Kbyte data	32 Kbyte inst 32 Kbyte data	32 Kbyte inst 32 Kbyte data	32 Kbyte inst 32 Kbyte data	32 Kbyte inst 32 Kbyte data
Ext L2/L3 Cache Support	—	—	—	—	—	—	—	—	L2: 256, 512 Kbyte 1 Mbyte	L2: 256, 512 Kbyte 1 Mbyte	L2: 256, 512 Kbyte 1 Mbyte	L2: 512 Kbyte 1 or 2 Mbyte	L2: 512 Kbyte 1 or 2 Mbyte	Integrated 256Kbyte L2	256K L2 Integrated L3: 1 or 2 Mbyte	Integrated 256Kbyte L2	256K L2 Integrated L3: 1 or 2 Mbyte
Core-to- Ext L2/L3 Frequency Divisions	—	—	—	—	—	—	—	—	1:1, 1.5:1, 2:1, 2.5:1, 3:1	1:1, 1.5:1, 2:1, 2.5:1, 3:1	1:1, 1.5:1, 2:1, 2.5:1, 3:1	1:1, 1.5:1, 2:1, 2.5:1, 3:1, 3.5:1, 4:1	1:1, 1.5:1, 2:1, 2.5:1, 3:1, 3.5:1, 4:1	1:1, 1.5:1, 2:1, 2.5:1, 3:1, 3.5:1, 4:1, 5:1, 6:1	1:1, 1.5:1, 2:1, 2.5:1, 3:1, 3.5:1, 4:1, 5:1, 6:1	1:1, 1.5:1, 2:1, 2.5:1, 3:1, 3.5:1, 4:1, 5:1, 6:1	1:1, 1.5:1, 2:1, 2.5:1, 3:1, 3.5:1, 4:1, 5:1, 6:1
Typical/Maximum Power Dissipation	4.2W/5.3W @ 133 MHz	4.0W/6.1W @ 300 MHz	3.0W/3.3W @ 200 MHz	1.0W/1.3W @ 200 MHz	1.9W/2.4W @ 350 MHz	5.7W/7.9W @ 266 MHz	4.2W/6.0W @ 333 MHz	4.0W/5.7W @ 350 MHz	5.7W/7.9W @ 266 MHz	5.8W/8.0W @ 400 MHz	4.0W/6.0W @ 400 MHz	5.0W/11.5W @ 400 MHz	5.3W/11.9W @ 500 MHz	13.4W/17.6W @ 700 MHz	14.5W/19W @ 667 MHz	10.3W/14.5W @ 733MHz	21.3W/ 30W @ 1GHz
Die Size	98 sq mm	42 sq mm	78 sq mm	49 sq mm	49 sq mm	67 sq mm	67 sq mm	51 sqmm	67 sq mm	67 sq mm	51 sqmm	83 sqmm	52 sqmm	106 sqmm	106 sqmm	106 sqmm	106 sqmm
Package	240 CQFP 255 CBGA	255 CBGA - all; 255 PBGA @ 200	352 TBGA	357 PBGA	352 TBGA	255 CBGA	255 CBGA	255 PBGA	360 CBGA	360 CBGA	360 PBGA	360 CBGA	360 CBGA	360 CBGA	483 CBGA	360 CBGA	483 CBGA
Process	0.5µ 4LM	0.29µ 5LM	0.29µ 5LM	0.25µ 5LM	0.25µ 5LM	0.29µ 5LM	0.25µ 5LM	0.22µ 6LM	0.29µ 5LM	0.25µ 5LM	0.22µ 6LM	0.2µ 6LM	0.18µ 6LM	0.18µ 6LM	0.18µ 6LM	0.18µ 6LM	0.18µ 6LM
Voltage	3.3V	3.3V i/o 2.5V int	3.3V i/o 2.5V int	3.3V i/o 1.8V int	3.3V i/o 1.8V int	3.3V i/o 2.6V int	3.3V i/o 1.9V int	1.8/3.3V i/o 2.0V int	3.3V i/o 2.6V int	3.3V i/o 1.9V int	1.8/3.3V i/o 2.0V int	1.8/2.5V i/o 1.8/2.15V int	1.8/2.5V i/o 1.8V int	1.8/2.5 i/o 1.6V int	1.8/2.5 i/o 1.6-1.8V int	1.8/2.5 i/o 1.3-1.6V int	1.8/2.5 i/o 1.3-1.6V int
MIPS	253MIPS @ 133 MHz	570MIPS @ 300 MHz	475 MIPS @ 250 MHz	380 MIPS @ 200 MHz	665 MIPS @ 350 MHz	488 MIPS @ 266 MHz	610 MIPS @ 333 MHz	836MIPS @ 350 MHz	488 MIPS @ 266 MHz	733 MIPS @ 400 MHz	956MIPS @ 400 MHz	1210MIPS @ 500 MHz	1210 MIPS @ 500 MHz	1617MIPS @ 700 MHz	1693 MIPS @ 733 MHz	1848MIPS @ 800MHz	2310 MIPS @ 1GHz
Samples	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW
Production	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW	NOW
Execution Units	Integer Float Branch Load/Store System	Integer Float Branch Load/Store System	Integer Float Branch Load/Store PCI, DMA, Memory Control	Integer Float Branch Load/Store PCI, DMA, Memory Control	Integer Float Branch Load/Store PCI, DMA, Memory Control	Integer (2) Float Branch Load/Store System	Integer (2) Float Branch Load/Store System	Integer (2) Float Branch Load/Store System	Integer (2) Float Branch Load/Store System	Integer (2) Float Branch Load/Store System	Integer (2) Float Branch Load/Store System	Integer (2) Float Vector Branch Load/Store System	Integer (2) Float Vector Branch Load/Store System	Integer (4) Float Vector Branch Load/Store System	Integer (4) Float Vector Branch Load/Store System	Integer (4) Float Vector Branch Load/Store System	Integer (4) Float Vector Branch Load/Store System
	Not recommended for new designs	Also available in industrial temp		Also available in industrial temp	Also available in industrial temp	Also available in industrial temp	Not recommended for new designs		Also available in industrial temp	Not recommended for new designs		Not recommended for new designs					

* See Hardware Specification document for operation at lower frequencies