

## Ecosystem Partners

### Tools

**Freescale Semiconductor**  
www.freescale.com/codewarrior

### RTOS

**Freescale Semiconductor**      **Enea OSE Systems**  
www.freescale.com/codewarrior      www.enea.com

### Libraries

**Freescale Semiconductor**  
www.freescale.com/codewarrior

### Training

**Arnewsh Inc.**  
www.arnewsh.com

### Design Services

**GDA Technologies, Inc.**  
www.gdatech.com

### Audio/Video Applications

### Tata

www.tataelxsi.com

### Evaluation Boards and Development Kits

	Description	Price	Location
DSP563xxEVME	Evaluation System for DSP563xx Family	\$400	www.freescale.com
MSC711xEVM	Evaluation System for MSC711x Family	\$350	www.freescale.com
MSC711xADS	Application Development System for MSC711x Family and MPC8272	\$2,494	www.freescale.com
MSC8122ADSE	Application Development System for MSC8122	\$3,994	www.freescale.com
MSC8126ADSE	Application Development System for MSC8126	\$3,994	www.freescale.com
MSC8144ADS	Application Development System for MSC8144	\$3,900	www.freescale.com
MSC8156ADS	Application Development System for MSC8156	\$3,900	www.freescale.com
MSC8156EADS	Application Development System for MSC8156E	\$3,900	www.freescale.com

### Reference Designs

	Description	Price	Location
ATCA-9100	MSC8144 AdvancedTCA® Compute Processing Module	Consult partner	www.radisys.com
MSC8144AMC-SA	MSC8144 Advanced Mezzanine Card for AdvancedTCA System Expansion	Consult partner	www.freescale.com
MSC8156AMC-SA	MSC8156 AdvancedTCA Compute Processing Module	Consult Partner	www.gdatech.com

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## DSP Product Summary



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# DSP Parametric Table

Device	Core Performance (16-bit MMACS)	Core Speed (MHz)	DSP Cores	I-Cache (per core) (KB)	D-Cache (per core) (KB)	L2 I-Cache (KB)	Boot ROM (KB)	M1 Memory (per core) (KB)	Shared M2 Memory (KB)	Shared M3 Memory (MB)	External Memory Interface	DMA Channels	CPM/QUICC Engine	10/100 BT	Gigabit Ethernet (RGMII, SGMII)	PC	UART	Utopia L2	PCI	sRIO	SPI	TDM	GPIO	Timers	Max Frequency (MHz)	Bus Width (internal) (bit)	Bus Width (external) (bit)	Core Voltage (V)	I/O Voltage (V)	Host Port Interface (bit)	Low-Power Modes	Accelerators	Package	1K units S/R Lowest Speed and Package
<b>StarCore High-Performance Multicore DSPs</b>																																		
MSC8156/ MSC8156E	48,000	1,000	6	32	32	512 (per core)	96	-	512 (per core)	1	DDR 2&3 800 MHz	16	Dual RISC Cores	2	2	Yes	Yes	-	Yes	2-4x/1x	Yes	Yes	32	16	400	64, 128	2-64, 128	1	1.0/1.5/1.8/2.5/3.3	PCI-Exp	Stop, wait, power down	MAPLE-B, Turbo/Viterbi, FFT/IFFT, DFT/IDFT	783-pin FCPBGA	\$150.94
MSC8154/ MSC8154E	32,000	1,000	4	32	32	512 (per core)	96	-	512 (per core)	1	DDR 2&3 800 MHz	16	Dual RISC Cores	2	2	Yes	Yes	-	Yes	2-4x/1x	Yes	Yes	32	16	400	64, 128	2-64, 128	1	1.0/1.5/1.8/2.5/3.3	PCI-Exp	Stop, wait, power down	MAPLE-B, Turbo/Viterbi, FFT/IFFT, DFT/IDFT	783-pin FCPBGA	\$120.75
MSC8152	12,800 16,000	800 1,000	2	32	32	512 (per core)	96	-	512 (per core)	1	DDR 2&3 800 MHz	16	Dual RISC Cores	2	2	Yes	Yes	-	Yes	2-4x/1x	Yes	Yes	32	16	400	64, 128	2-64, 128	1	1.0/1.5/1.8/2.5/3.3	PCI-Exp	Stop, wait, power down	MAPLE-B, Turbo/Viterbi, FFT/IFFT, DFT/IDFT	783-pin FCPBGA	\$96.60
MSC8256	38,400 48,000	800 1,000	6	32	32	512 (per core)	96	-	512 (per core)	1	DDR 2&3 800 MHz	16	Dual RISC Cores	2	2	Yes	Yes	-	Yes	2-4x/1x	Yes	Yes	32	16	400	64, 128	2-64, 128	1	1.0/1.5/1.8/2.5/3.3	PCI-Exp	Stop, wait, power down	-	783-pin FCPBGA	\$121.29
MSC8254	25,600 32,000	800 1,000	4	32	32	512 (per core)	96	-	512 (per core)	1	DDR 2&3 800 MHz	16	Dual RISC Cores	2	2	Yes	Yes	-	Yes	2-4x/1x	Yes	Yes	32	16	400	64, 128	2-64, 128	1	1.0/1.5/1.8/2.5/3.3	PCI-Exp	Stop, wait, power down	-	783-pin FCPBGA	\$97.03
MSC8252	12,800 16,000	800 1,000	2	32	32	512 (per core)	96	-	512 (per core)	1	DDR 2&3 800 MHz	16	Dual RISC Cores	2	2	Yes	Yes	-	Yes	2-4x/1x	Yes	Yes	32	16	400	64, 128	2-64, 128	1	1.0/1.5/1.8/2.5/3.3	PCI-Exp	Stop, wait, power down	-	783-pin FCPBGA	\$77.63
MSC8126	6,400 8,000	400 500	4	16	-	-	4	224	476	-	SIU/60x-Compatible System Bus	16	-	1	-	Yes	Yes	-	-	-	-	4	32	32	166	64, 128	32, 64	1.2	3.3	32, 64	Stop, wait	TCOP, VCOP	431-pin FC-PBGA	\$110.41
MSC8144	12,800 16,000	800 1,000	4	16	32	128	96	-	512	10	DDR/DDR2 400 MHz	32	Dual RISC Cores	2	2	Yes	Yes	Yes	Yes	4x/1x	Yes	8	32	24	400	64, 128	16, 32	1	1.8/2.5/3.3	PCI 2.2	Stop, wait	-	783-pin FC-PBGA	\$139.51
MSC8122	4,800 6,400 8,000	300 400 500	4	16	-	-	4	224	476	-	SIU/60x-Compatible System Bus	16	-	1	-	Yes	Yes	-	-	-	-	4	32	32	166	64, 128	32, 64	1.1, 1.2	3.3	32, 64	Stop, wait	-	431-pin FC-PBGA	\$95.65
<b>StarCore High-Performance Single-Core</b>																																		
MSC8251	8,000	1000	1	32	32	512 (per core)	96	-	512 (per core)	1	DDR 2&3 800 MHz	16	Dual RISC Cores	2	2	Yes	Yes	-	Yes	2-4x/1x	Yes	Yes	32	16	400	64, 128	2-64, 128	1	1.0/1.5/1.8/2.5/3.3	PCI-Exp	Stop, wait, power down	-	783-pin FCPBGA	\$75.00
MSC8151	8,000	1000	1	32	32	512 (per core)	96	-	512 (per core)	1	DDR 2&3 800 MHz	16	Dual RISC Cores	2	2	Yes	Yes	-	Yes	2-4x/1x	Yes	Yes	32	16	400	64, 128	2-64, 128	1	1.0/1.5/1.8/2.5/3.3	PCI-Exp	Stop, wait, power down	MAPLE-B, Turbo/Viterbi, FFT/IFFT, DFT/IDFT	783-pin FCPBGA	\$84.00
<b>StarCore Cost-Effective DSPs</b>																																		
MSC8112	2,400	300	2	16	-	-	4	224	476	-	SIU/60x-Compatible System Bus	16	-	1	-	Yes	Yes	-	-	-	-	4	32	32	100	64, 128	32, 64	1.1	3.3	32, 64	Stop, wait	-	431-pin FC-PBGA	\$57.53
MSC8113	3,600 4,800	300 400	3	16	-	-	4	224	476	-	SIU/60x-Compatible System Bus	16	-	1	-	Yes	Yes	-	-	-	-	4	32	32	133	64, 128	32, 64	1.1	3.3	32, 64	Stop, wait	-	431-pin FC-PBGA	\$78.00
MSC7116	1,000	266	1	16	-	-	8	192	-	-	DDR	32	-	1	-	Yes	Yes	-	-	-	Software	2	46	8	133	128	16, 32	1.2	3.3	8, 16	Stop, wait	-	400-ball MAPBGA	\$37.19
MSC7119	1,200	300	1	16	-	-	8	256	-	-	DDR	32	-	1	-	Yes	Yes	-	-	-	Software	2	46	8	150	128	16, 32	1.2	3.3	8, 16	Stop, wait	-	400-ball MAPBGA	\$43.26
<b>24-bit</b>																																		
DSP56311	300 w/EFCOP			150	1	1	-	384	128K x 24	-	SRAM	6	2	1	34							3	150		24	24	1.8	3.3	8	Stop	EFCOP	196-ball MAPBGA	\$26.36	
DSP56321	550 w/EFCOP			200, 220, 240, 275	1	1	-	576	196K x 24	-	SRAM	6	2	1	34							3	200, 220, 240, 275		24	24	1.6	3.3	8	Stop	EFCOP	196-ball MAPBGA	\$38.31	