

# MILITARY Courier

February 2001

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Single MCMs are no longer available.

Single MCM (no longer available)

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Dual MCM

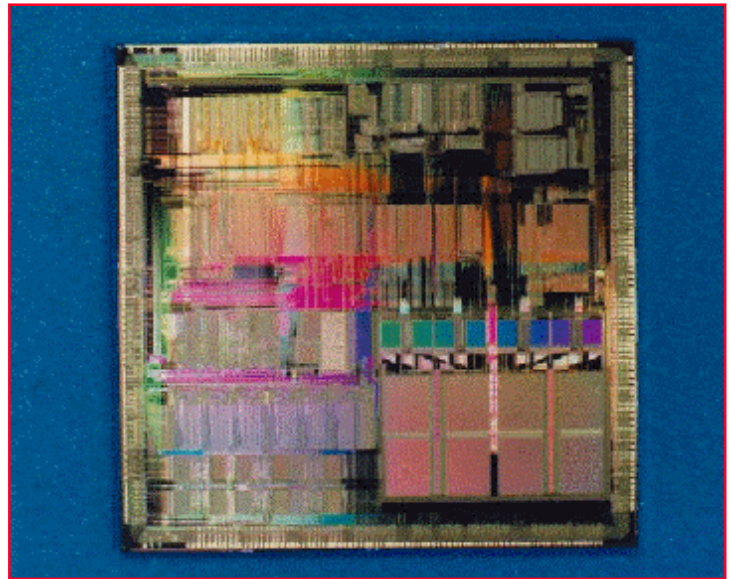
# A key component in missile defense programs

Accuracy, Reliability and  
Performance...  
Key ingredients for systems  
which must work the first time  
... every time.



## Multichip Modules

To meet the demand for higher throughput and increased circuit density, Texas Instruments has developed DSP-based multichip modules. These multichip modules combine our highest performance floating point DSP with zero wait state SRAM in a small footprint package. TI currently offers single (one 'C40) and dual (two 'C40s) modules for both military and commercial temperature ranges



**C40 Known Good Die**

For more information on Texas Instruments die products please visit our web site at this location:  
<http://www.ti.com/sc/docs/products/military/index.htm>

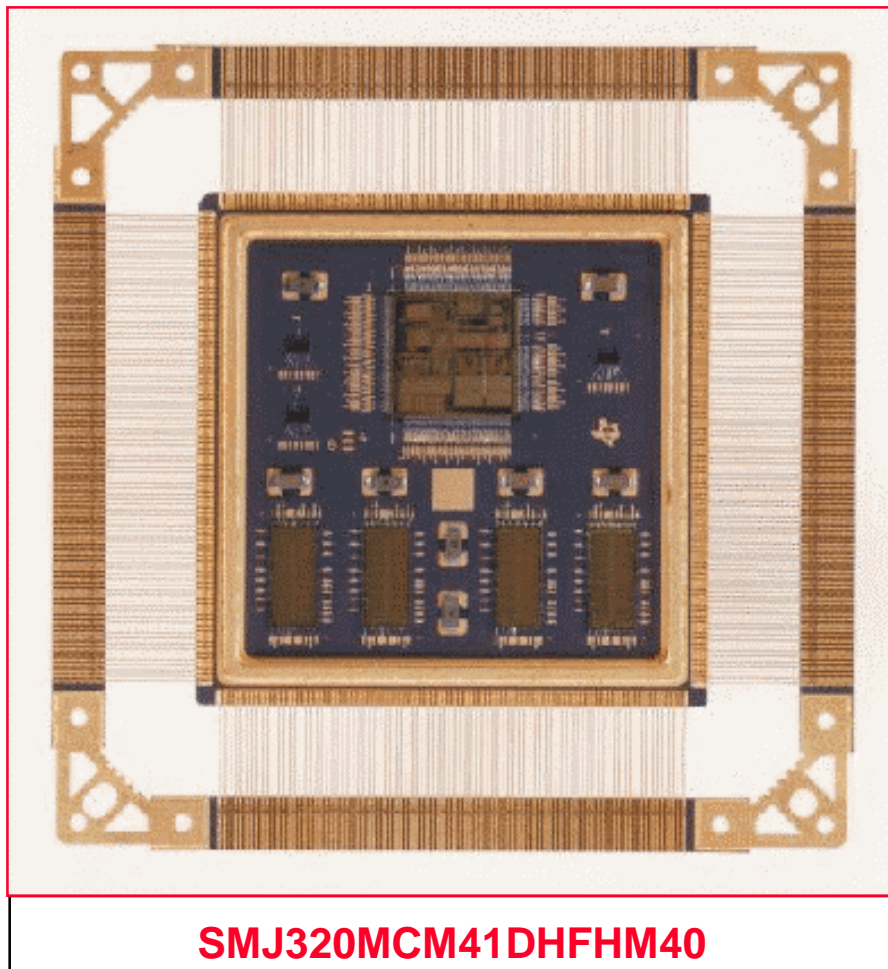
Part Number	Total Memory Description	Mechanical Sample Part No.	DSCC Part Number
<b>Single</b> <b>SMJ320MCM</b>	<b>Single MCMs are no longer available.</b>		9753601QXA
<b>Dual</b>			
<b>SMJ320MCM42CHFNM40</b>	256Kx32 SRAM	SN00408HFN	5962-9678902QXC
<b>SMJ320MCM42DHFNM40</b>	128Kx32 SRAM	SN00408HFN	5962-9678901QXC

## Single MCM

The '320MCM41 Single MCM contains one 'C40 device and 128Kx32 zero wait state SRAM connected to the 'C40's local bus. Benefits include:

- **40 MFLOPS** performance
- Global address and data buses
- Two gigaword global bus address reach.
- Six communication ports pinned out externally for module to module or external processor communication.
- Pinout is plug-in compatible with the '320C40 DSP in the 352 pin ceramic quad flatpack
- you can place a 'C40 and local memory.
- Communication port pull-up resistors and decoupling capacitors are included.

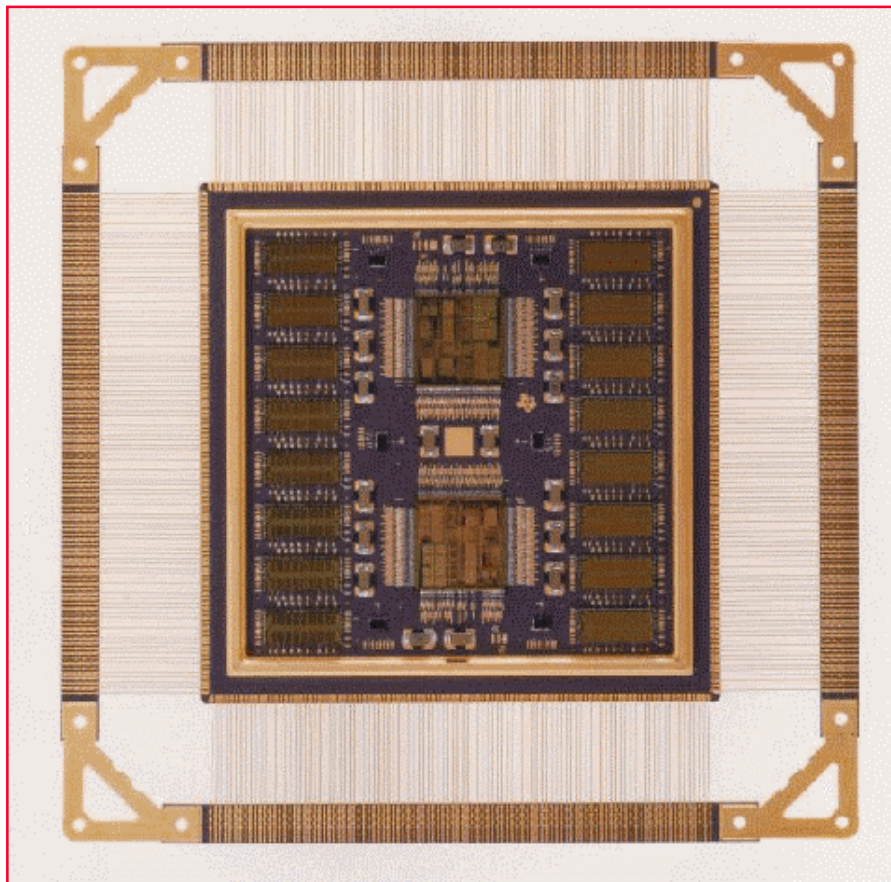
**Single MCMs are no longer available.**



## Dual MCM

The '320MCM42 Dual MCM contains two 'C40 devices and either 128Kx32 (rev D) or 256Kx32 (rev C) zero wait state SRAM connected to each 'C40's local bus.

- **80 MFLOPS** performance
  - Global address and data buses are routed externally for access to external memory.
  - Two gigaword global bus address reach per processor.
  - 'C40s are connected within the module via two communication ports. Ten remaining communication ports are routed externally for module to module or external processor communication.
  - Communication port pull-up resistors and decoupling capacitors are included.
- Enhanced performance offered by the Multichip Module Solution include:
    - 128Kx32 Local Bus SRAM option
      - 56% reduction in number of interconnects
      - 30% reduction (minimum) in board area
      - Estimated 20% reduction in power dissipation due to reduced parasitic capacitance and interconnect lengths
    - 256Kx32 Local Bus SRAM option
      - 67% reduction in number of interconnects
      - 54% reduction (minimum) in board area
      - Estimated 38% reduction in power dissipation due to reduced parasitic capacitance and interconnect lengths



**SMJ320MCM42CHFNM40**

The 'C40 MCM configuration allows standard microprocessor initialization using the bootstrap loader. Both reset-vector-control pins are brought out to external pins for each processor. A single CLKIN line and a RESET line feed both processors in parallel, minimizing clock skew and allowing easy synchronization for interlocked operations.

Device	Speed MFLOPS	Pins	Package	Total Memory	Release	Temperature
SM320MCM41DHFHL40 (Single MCM)	40	352	CQFP	128Kx32	NOW	0 - 70 °C
SM320MCM41DHFNM40 (Single MCM)	<b>Single MCMs are no longer available.</b>					-55 - 125 °C
SMJ320MCM41DHFHM40 (Single MCM)	40	352	CQFP	128Kx32	NOW	-55 - 125 °C
SM320MCM42DHFNL40 (Dual MCM)	40	408	CQFP	256Kx32	NOW	0 - 70 °C
SM320MCM42DHFNM40 (Dual MCM)	40	408	CQFP	256Kx32	NOW	-55 - 125 °C
SMJ320MCM42DHFNM40 (Dual MCM)	40	408	CQFP	256Kx32	NOW	-55 - 125 °C
SM320MCM42CHFNL40 (Dual MCM)	40	408	CQFP	512Kx32	NOW	0 - 70 °C
SM320MCM42CHFNM40 (Dual MCM)	40	408	CQFP	512Kx32	NOW	-55 - 125 °C
SMJ320MCM42CHFNM40 (Dual MCM)	40	408	CQFP	512Kx32	NOW	-55 - 125 °C

### Literature Information:

320MCM41 Single MCM Data Sheet - **SGKS002**

Single MCM Fact Sheet - **SGYV003**

320MCM42 Dual MCM Data Sheet - **SGKS001**

Dual MCM Fact Sheet - **SGYV001**

For more information please check our website at:  
<http://www.ti.com/sc/military>

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