6520

MEMOREX

Tape Cache Processor

Clear Your Tape Processing Bottleneck With The Memorex 6520 Tape Cache Processor

Optimize the performance of your Memorex tape system—quickly, economically and without a disruptive conversion of your existing tape devices and media—with the Memorex 6520 Tape Cache Processor.

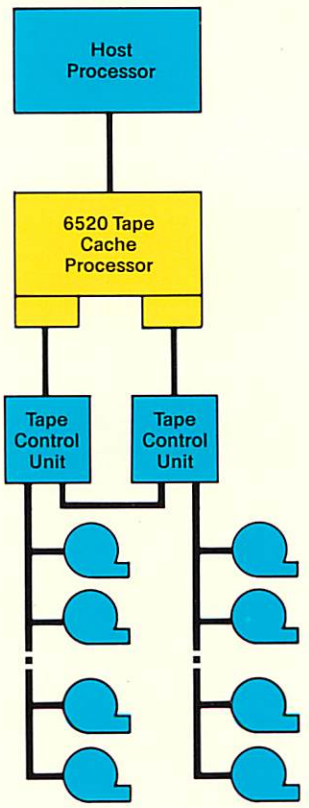
The 6520 operates with IBM and IBM compatible CPUs from 4341 to 3090. It manages the data transfer between the CPU and your tape control units, making better use of your system's resources and improving your overall productivity.

Filling the Void in Tape System Technology

Since 1973 there have been dramatic improvements in CPU and disk subsystem technology...but almost none in tape system technology. Traditional tape systems are having a much harder time keeping up with demands.

The Memorex 6520 family bridges that performance gap by intelligently managing and expediting data transfer between your CPU and tape drives. Its powerful compaction feature compacts data by an average of 50% as it transfers from the 6520 to tape. (The compaction feature can be set as the default or specific data can be compacted to the reel level with simple JCL changes.)

Tape Cache Processor Configuration



For you, the 6520 means:

- Improved system performance
- Faster throughput
- More efficient use of CPU channels
- Improved CPU access to your tape pool
- More configuration flexibility
- Lower tape library costs
- Protection of your investment in tape equipment and media.

The Intelligent Solution

The 6520 is an intelligent, buffered processor in a freestanding cabinet. Its 1 megabyte buffer memory supports simultaneous buffered data transfers at channel data rates up to 3 megabytes per second—more than twice as fast as conventional tape drives.

A single 6520 unit can support up to two tape controllers and 16 drives. A dual unit, two logically separate 6520 modules in a single cabinet, supports two separate two-controller by 16-drive subsystems.

More Efficiency Means Better Performance

With 6520, your whole tape system works more efficiently:

- *Buffered write operations.* Data is transferred to the cache buffer. When the entire record is transferred, the 6520 disconnects from the host channel, freeing it for other activity. While it's continuing to receive data from the host, the 6520 organizes the data transfer from its internal buffer to the tape device. Even if the tape controller is busy you can continue transferring records to or from the host into the 6520's internal buffer.

Improve Your System Performance With Data Compaction

- *Write immediate operations.* For applications that require immediate write verification, system connection is maintained until data has been written on the tape and verified. In this mode the 6520 operates as a traditional tape control unit.
- *Read operations.* Data transfer begins as soon as data is read into the cache and a host channel path is available. Records are then pre-read into the cache buffer, anticipating future host reads. The cache is automatically replenished as needed during the read operation masking mechanical tape delay.
- *Multiple record buffering.* Accepts multiple records for the same tape drive, or multiple tape drives within its internal buffer.
- *Simultaneous data transfers.* Single-module configuration allows up to eight host channel interfaces and attachment of two tape control units. The 6520 can execute up to three read/write operations concurrently, transferring data to or from two tape controllers simultaneously with data transfers between the host and the 6520's internal buffer.
- *Channel efficiency.* For both read and write operations, the 6520 connects to the host channel only as long as needed for data transfer, then disconnects and controls tape pool operations. This gives you better use of your channel resources.
- *Outboard error recovery procedures (ERPs).* The 6520 performs the tape ERPs function itself rather than through the host processor, leaving the host free for more productive uses.

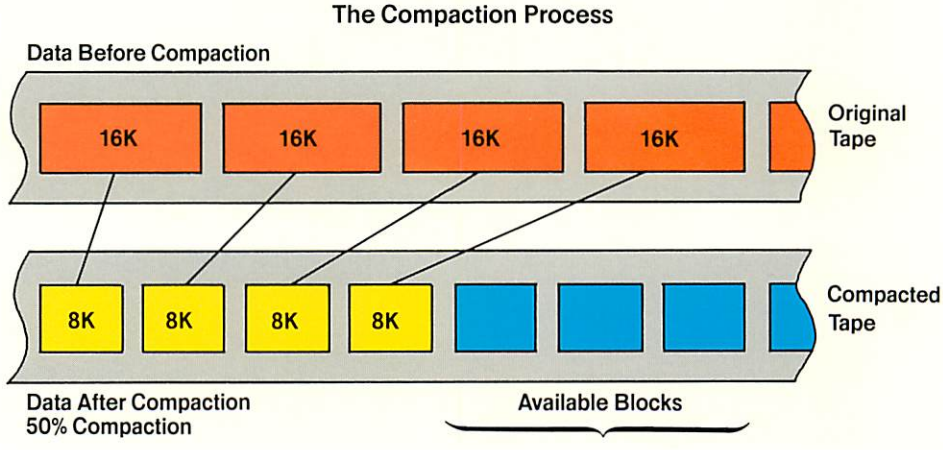
Data Compaction Saves Time and Money

Many of the 6520's dramatic improvements to your system's performance come from the data compaction feature.

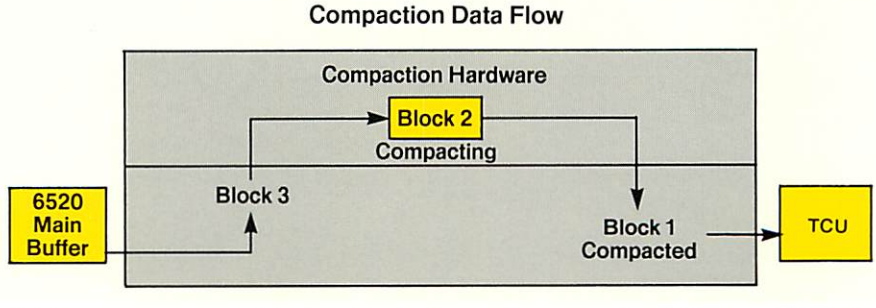
On the average, the 6520 can compact data by 50%—meaning you'll only need half as much tape to write the same amount of data. By reducing the amount of tape it takes to store your information the 6520:

- *Increases throughput.* Your tape system handles your workload up to 30% faster.
- *Lowers library costs.* You won't need as many tape reels. You'll also save on storage and operational costs for mounts.
- *Improves reliability.* Reducing the amount of tape required to write your data can reduce the number and impact of media-related errors.

The data compaction feature is implemented in the 6520 hardware and compacts data (either upon operator request or by default) as it goes from the CPU to the tape. The data decompacts automatically when it's read back to the host.



Compaction is the process of reducing your data so that it occupies less space on the tape reel—on the average, 50% less. You initiate the compaction feature through simple JCL changes down to the tape reel level.



The 6520 processes several blocks of data at once. For example, while record 3 is being transferred from the CPU to the buffer, record 2 is being compacted and verified and record 1, already compacted, is written to tape.

Memorex 6520 Tape Cache Processor Specifications

MEMOREX

25 Years of Technological Leadership

Modules Per Frame
6521, one module; 6522, two modules

Host Processor Support
- IBM 309X, 303X, 43XX, 370 and PCM equivalents
- MVS/SP1.3.3 with DFP 1.1
- MVS/XA 2.1.2 with DFP 1.2
- VM/SP4*
- Subsequent levels

Channel Support
- 6521: 2, 4 or 8 channels
- 6522: 8 channels

Channel Data Rates
1.3, 1.5, 2, 3 Mb/sec

Tape Subsystem Support
Memorex 3220, 3200

Dimensions
- Height: 39.4 in. (100 cm)
- Width: 30 in. (76.2 cm)
- Depth: 32 in. (81.3 cm)
- Weight: 320 lb (145.3 kg) one module
  350 lb (158.8 kg) two modules

Cabling
- Host to 6520: 400 ft (121 m) maximum data streaming; 200 ft (60 m) maximum offset interlock; 50 ft (15 m) DC interlock
- 6520 to Tape Control Unit: 350 ft (106 m) data streaming, with channel extension; 120 ft (36 m) maximum data streaming without channel extension, 200 IPS drive; 120 ft (36 m) maximum DC or offset interlock

Power
- 6521: 1.6 kVA; 3,600 Btu; 907 kcal
- 6522: 2.7 kVA; 6.057 Btu; 1,526 kcal
- 60 Hz, 200/240 VAC, 3 phase plus ground
- 50 Hz, 200/240/380/415 VAC, 3 phase plus ground and neutral

Operating Environment
- Ambient Temperature: 60°–90°F (16°–32°C)
- Ambient Relative Humidity: 20%–80%

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*VM support available 2Q86.
Specifications subject to change.

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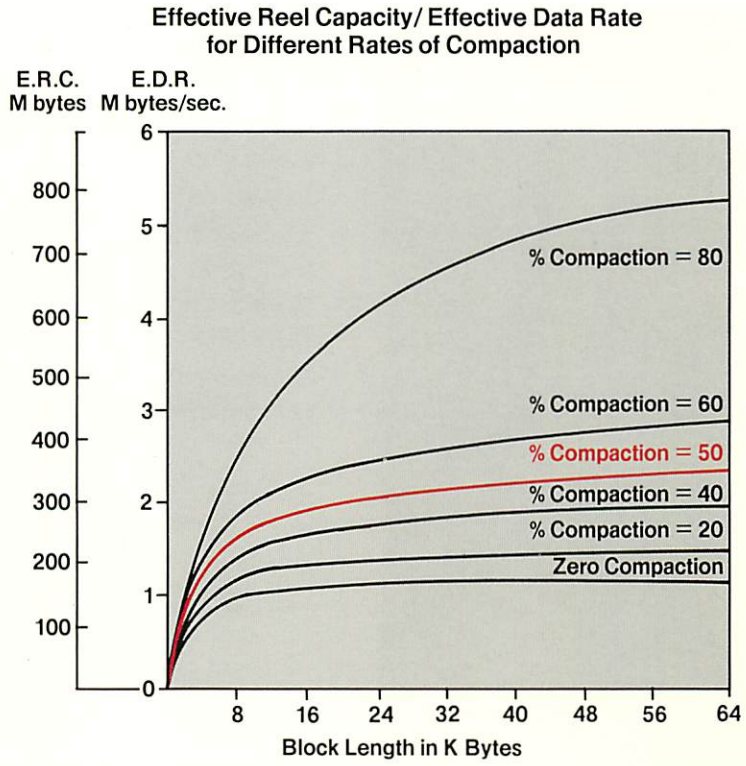
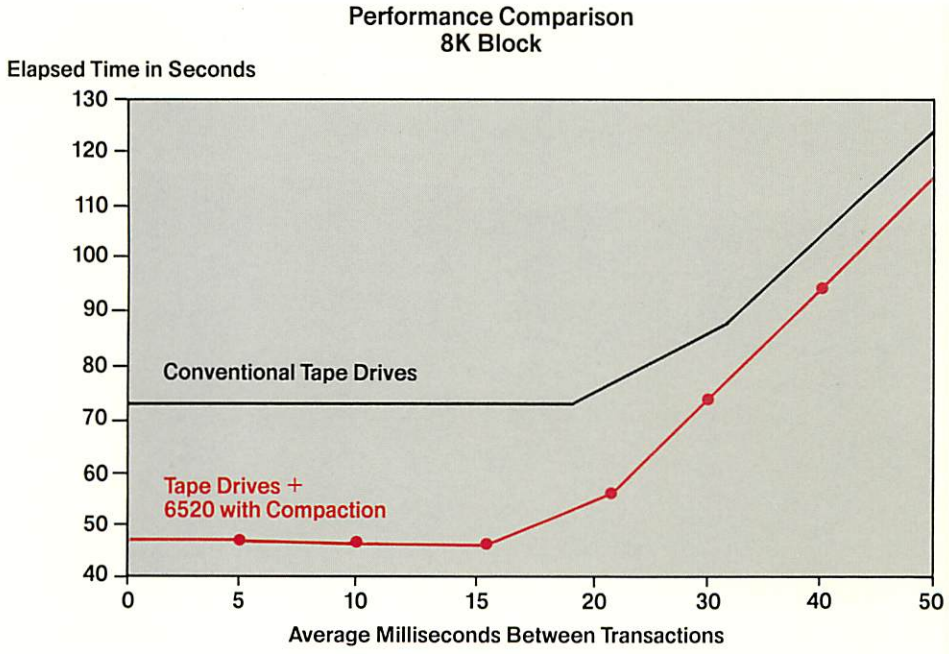


The greater the degree of compaction, the higher the effective reel capacity and the faster the effective data rate of the tape drives attached to the 6520.



With its compaction feature, the 6520 cuts the time it takes for a typical stream of data transfers. (This example illustrates four drives attached to a single tape controller.) The faster the data transfer, the more work your tape system can handle in the same amount of time.

For situations where a 6520 isn't available to read your compacted tapes, Memorex provides a host decompaction software package for your CPU that lets the system read the compacted tapes and restore them to their original form.

To eliminate any possibility of data corruption during compaction and decompaction, the 6520 makes comprehensive data integrity checks at various stages of the processes.

The degree of compaction you can expect depends on the format of your original data. Typical rates for different types of data are:

ADABAS:	20–35%
DFDSS dump files:	45–65%
SMF:	30–50%
IDMS:	50–90%
General Ledger:	45–55%
Average:	50%

Actual figures vary according to type of data.

Advanced Design Makes it Reliable

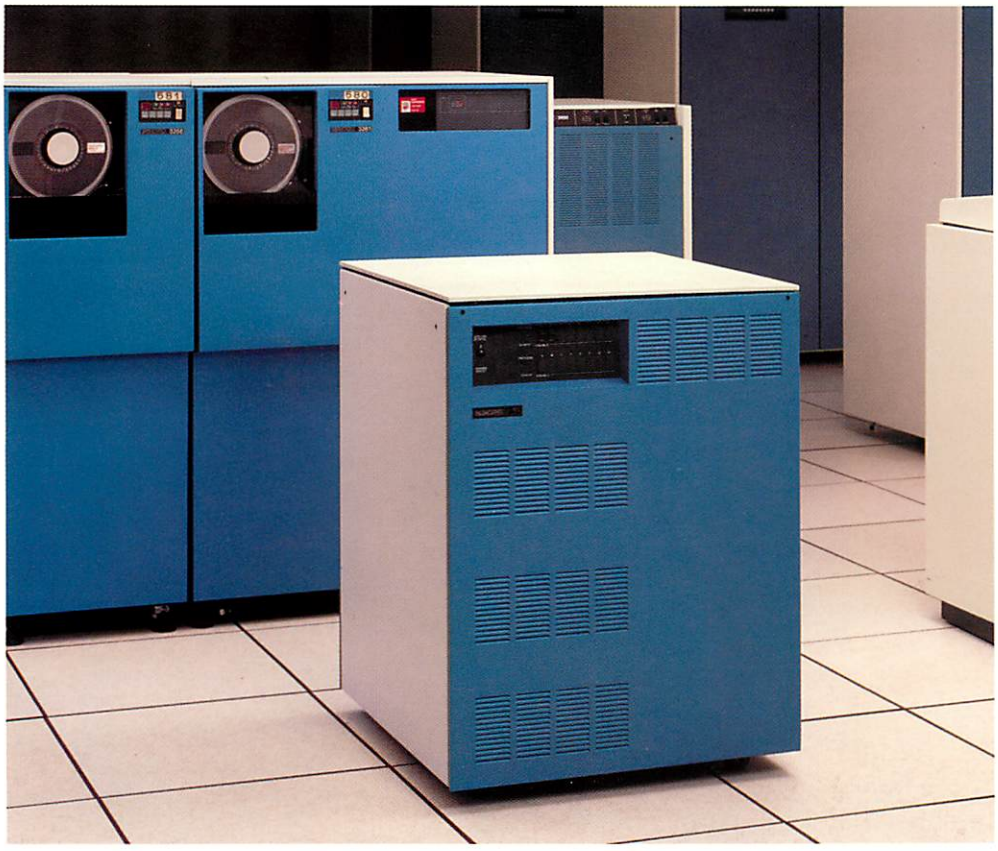
The 6520's advanced, electronic design provides state-of-the-art reliability.

The 6520 has its own power supply, microprocessor, microcode and maintenance interface. That means operations and servicing functions won't cause a disruption because they can be handled independently of the tape system.

And the 6520 is easy to service, with unique diagnostic programs that your Memorex customer engineer can invoke while the 6520 is either on-line or off-line.

In short, the 6520 is the easiest, most economical way to let your tape system catch up with your application requirements – and to *clear your tape processing bottlenecks.*

Significant Tape System Performance for a Small Investment



IBM 3480 features without the high price tag: The Memorex 6520 Tape Cache Processor protects the investment you've already made by optimizing the performance of your existing tape system.

- **IBM 3480 features at a fraction of the cost**
- **Faster throughput**
- **No costly, disruptive conversion**
- **Protect your investment in tape equipment and media**
- **More efficient use of your CPU channels**
- **Improved CPU access to your tape pool**
- **More configuration flexibility**
- **Lower tape library costs**