Nonvolatile Memory
products

XICOR™

the smart
choice for
memories

Xicor Product Family

Mixed Signal

System Management

Battery Management

Nonvolatile Memory

Xicor corporate overview

Xicor is a leader in the design and manufacture of advanced field-reprogrammable nonvolatile analog, mixed signal, and digital devices. These products retain information even when the system is turned off or power is inadvertently lost. Field reprogrammability enables products to be modified in the field, based on changing operating conditions. This increases design flexibility and the security of key system data parameters, and enables remote maintainability and user customization.

Xicor products operate at low power levels and come in ultra-small packages, making them ideal for battery-powered portable applications.

More choices for any application

For the past 20 years, Xicor has provided pioneering EEPROM memory solutions that meet market demands for higher performance, greater flexibility, and lower power consumption in more compact packages.

Today, Xicor offers one of the broadest selections of serial and parallel EEPROMs in the industry. Our offerings include devices with densities ranging from 2K all the way up to 512K.

When you choose Xicor nonvolatile memory, you also benefit from a bevy of innovative options, such as Xicor Ball Grid Array (XBGA)™ chip-scale packaging, high-speed Micro-Port Saver (MPS™) interfaces, and security features. These technologies combine to give you a decisive edge in designing market-leading consumer and industrial applications.

Nonvolatile Memory Products

Serial E²PROM
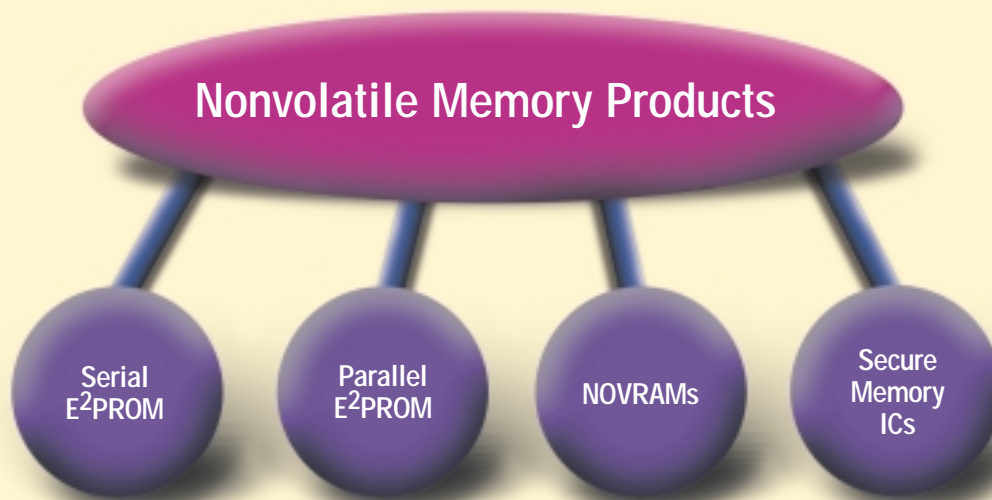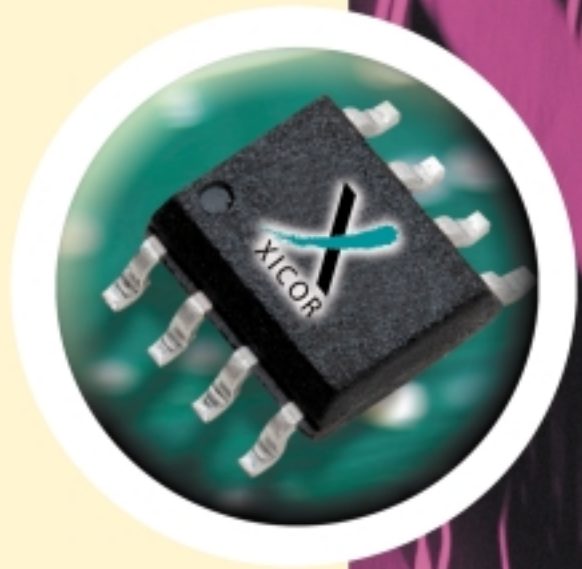
- All popular interfaces
  —2-wire, SPI
  —*MPS*
- Wide Voltage Range
  —*1.8*-5.5V
- Extended temperature version
  —*Operates to 175°C*
- Various packages
  —SOIC, PDIP, TSSOP
  —XBGA
  —4k-512k density

Parallel E²PROM

- High speed
- High density
  —up to 1M bit
- Extended temperature version
  —*Operates to 175°C*
- Various packages
  —SOIC, PDIP, TSSOP

NOVRAMs

- Ideal for event monitoring
- No shelf life issues
  —No batteries

Secure Memory ICs

- ISO 7816 compliant
- Wide range of densities and features
- Ideal for smart cards

Bold italic type indicates unique to Xicor
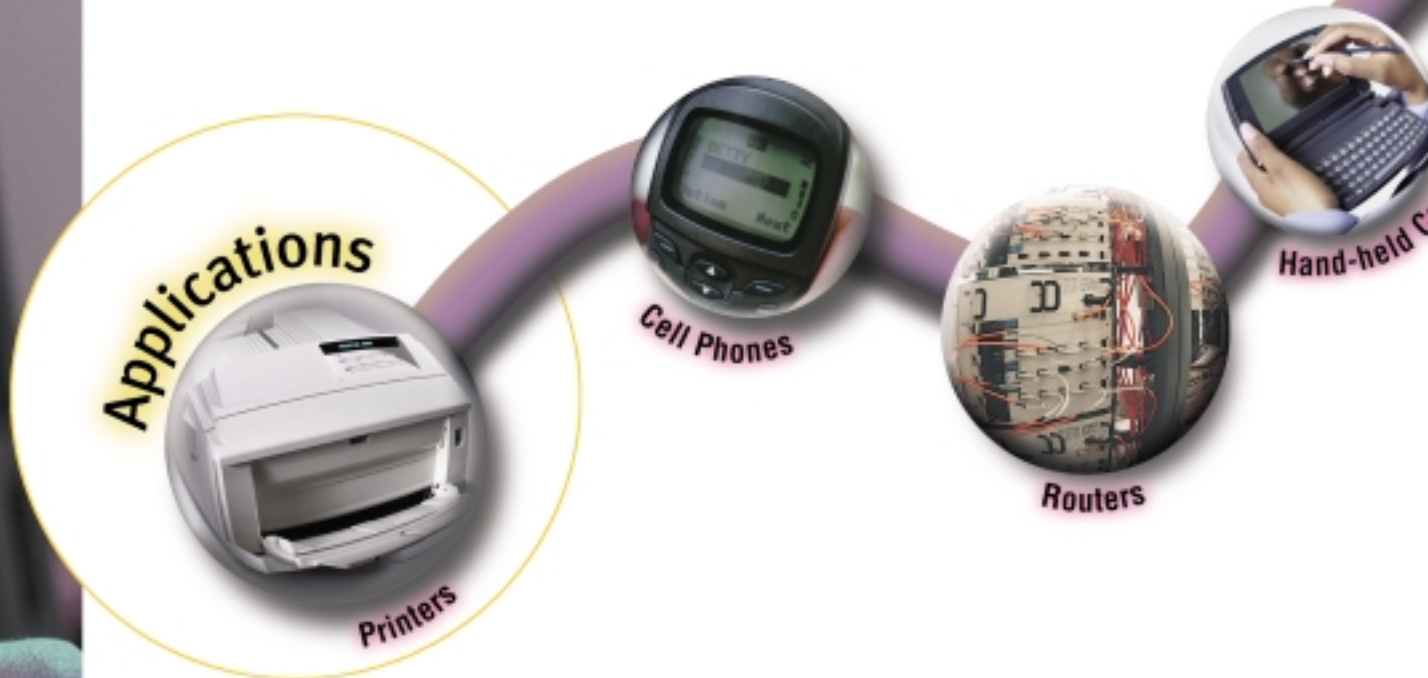
Industry-standard serial EEPROMs

Xicor's broad line of high-speed industry standard serial EEPROMs offer solutions to meet all your design requirements, including:

- Densities ranging from as high as 512Kb all the way down to 2Kb

- Low power consumption—ideal for portable electronic systems:
  — $Isb <= 1\mu A$
  — $V_{cc} <= 2.5V$

- Industry standard 2-wire and SPI interfaces

- Low voltage operation—down to 2.5V V_{cc} — ideal for battery powered systems

- Industry standard packages, including SOIC and TSSOP, as well as Xicor's die-sized XBGA package.

Xicor Serial EEPROMs

Density	2-Wire Interface	SPI Interface	Operating Voltage
2K		X25020	5V, 2.7V
4K	X24C04 X4043/5	X25040 X5043/5	5V, 2.7V
		X25057 X55020	2.7V
8K	X24C08	X25097 X5083	5V, 2.7V
16K	X24C16 X4163/5	X25160 X5163	5V, 2.7V
	X24164	X25170 X5168	5V, 2.5V, 2.7V
	X24165	X55040	5V, 2.7V
32K	X4323/5	X25320 X5323	5V, 2.7V
		X25330	5V, 2.7V
64K	X24645 X4643/5	X25650 X5643	5V, 2.7V, 2.5V
	X46402	X55060	
128K	X24128 X4385	X25128	5V, 2.5V, 2.7V
	X24129	X25138	5V, 2.5V
256K	X24256	X25256 X5563	2.5V
	X24257	X55620	2.5V
512K	X24512	X25512	2.5V
	X24513		2.5V

■ Alternative System Management Part
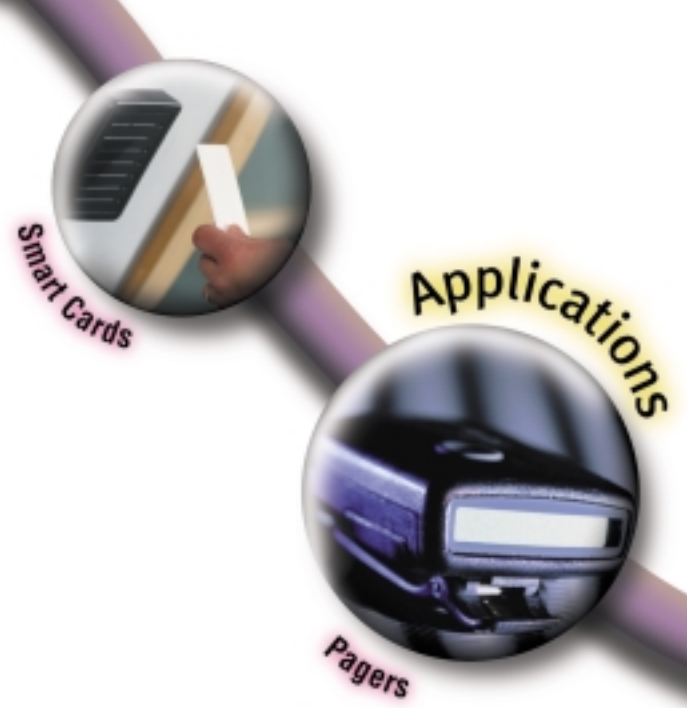
Multi-Port Saver (MPS) – Setting the Performance Standard

Bar chart: MHz vs V_{CC} (V), with legend 2-wire, SPI, MPS at 1.8V, 2.5V, 3.3V, 5.0V.
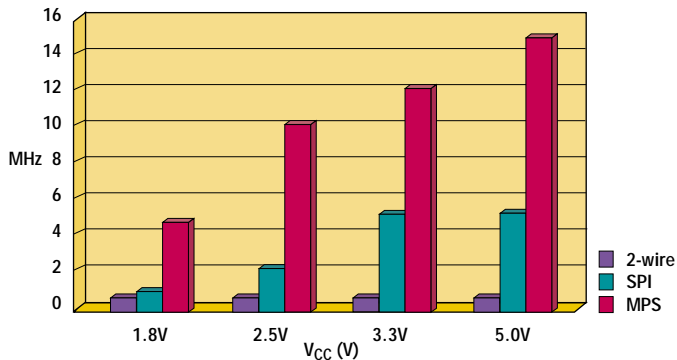
MPS™ sets the standard for high-performance EEPROM memory

When you need to ensure high-speed data transfer in applications such as cell phones, networking cards, printers, and bar code scanners, Xicor's MPS is the ideal interface choice. Designed to meet the needs of microcontroller, microprocessor, and DSP systems that have limited I/O channels to communicate with the memory, the MPS interface:

• Requires only a single I/O port for data exchange

• Provides a powerful boost in performance— for example, the X84256 with an MPS interface provides a data transfer rate of 10MHz at an operating voltage of just 2.5V.

Xicor MPS

Density	MPS Interface	Operating Voltage
64K	X84641	5V, 2.5V, 2.7V
128K	X84129	5V, 2.5V, 2.7V
256K	X84256	2.5V
	X84257	2.5V
512K	X84512	2.5V
		2.5V

Parallel EEPROMs for high performance microprocessor-based systems

With densities ranging from 64Kbit to 4Mbit, Xicor parallel memory products provide a perfect fit for nearly any microprocessor-driven application, with:

• High access speeds—as fast as 70ns

• JEDEC standard byte-wide memory pinouts for 8-bit, 16-bit and 32-bit systems

• Efficient 5V or 3V versions available

• Extended temperature operation up to 175°C

• Industry-standard packages.

Xicor Parallel E²PROMs

Part Number	Density	Performance	Packages
X28HC64	64Kb	70-120ns	SOIC, CERDIP, Flat Pack, PLCC, PGA
X28HC256	256Kb	70-150ns	SOIC, CERDIP, Flat Pack, PLCC, PGA
X28C512	512Kb	120-250ns	SOIC, CERDIP, Flat Pack, PLCC, PGA
X28C513	512Kb	120-250ns	SOIC, CERDIP, Flat Pack, PLCC, PGA
X28C010	1Mb	90-150ns	CERDIP, Flat Pack, PGA
XM28C040	4Mb	200-300ns	CERDIP
X28LV010*	1Mb	70-150ns	SOIC, PLCC, TSOP

*3.3V V_{CC}

XBGA™—A breakthrough in packaging technology

The advantages of the MPS and other interfaces are magnified when combined with Xicor's revolutionary chip-scale package, which dramatically reduces the overall footprint and volume for a given memory density.

Enabling the manufacture of devices with the smallest footprints in the industry, the XBGA package is:

• A true die-size package
• Highly durable
• Fully compatible with standard PC board assembly techniques and equipment.

These features make the XBGA the ideal IC packaging for a wide range of portable products, in particular, cellular phones, pagers, data organizers, and palm computers.

XBGA Enhances Xicor's Memory Products
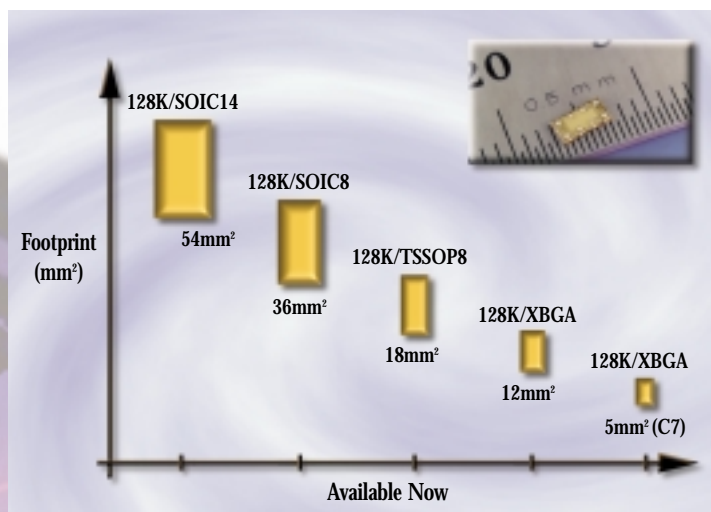
Robust security without the cost of encryption

Security has become an essential design criterion for portable products such as cell phones, pagers, and smart cards, as well as networked devices such as routers and printers. However, maintaining security is no small challenge. The growing assortment of data storage and transmission features designed into these products requires increasingly higher-density secure memory.

Xicor security ICs provide the added capacity you need, with:

• Up to 64K of nonvolatile EEPROM, which can be partitioned into multiple arrays for various uses

• ISO 7816 compliant interface

• Secure circuits with 64-bit passwords to thwart the efforts of even the most determined hacker

• Up to four memory zones, each with individual password access, which allow separate storage of user and manufacturer-encoded information

• Separate read and write passwords for each array to further deter unauthorized users

• Manufacturer-specific device-type numbers, metal-masked onto the IC during the manufacturing process, which provide a cost-effective way of preventing cloning.

Xicor Secure Memory ICs

P/N	Density	Packages
X76F100	1Kb	SOIC, Die
X76F102	1Kb	SOIC, Die
X76F200	2Kb	SOIC, Die
X76F400	4Kb	SOIC, Die
X76F641	64Kb	SOIC, Die

Nonvolatile Memory Products

Secure Memory ICs

X76F100
X76F102
X76F200
X76F400
X76F641

Serial E^{2}PROM

2-Wire

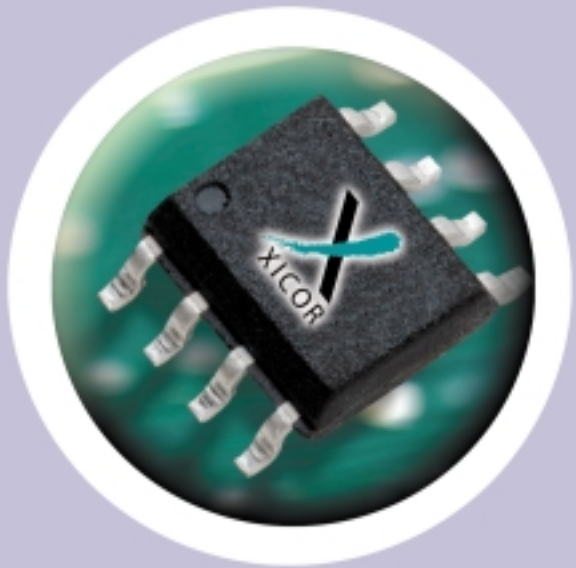X24C04
X24C08
X24C16
X24128
X24164
X24165
X24256
X24257
X24512
X24513
X24645

SPI

X25020
X25040
X25057
X25097
X25128
X25138
X25160
X25170
X25256
X25320
X25330
X25512
X25650

MPS

X84641
X84129
X84256
X84512

Parallel E^{2}PROM

X28HC64
X28HC256
X28C512
X28C513
X28C010
X28LV010
XM28C040

Find out more

For all the information you need to get acquainted with Xicor nonvolatile memory products, visit our Web site at *www.xicor.com.* Xicor sales and development staff are also available to answer your questions. See the back of this brochure for the Xicor representative nearest you.

memory products