Xicor ®

80C51 Microcontroller Family Compatible

64K	X88C64 SLIC® E^2	8192 x 8 Bit

E^2 Micro-Peripheral

FEATURES

SLIC (SELF LOADING INTEGRATED CODE) FIRMWARE

- **Automatically Downloads User's Software into 8051 Based Systems**
- **Features Load, Verify, and Block Protection Capabilities**
- **Transfers Baud Rate 9600 at 11MHz**
- **CONCURRENT READ WRITE™**
  - **—Dual Plane Architecture**
    - **—Isolates Read/Write Functions Between Planes**
    - **—Allows Continuous Execution of Code From One Plane While Writing in the Other Plane**
- **Multiplexed Address/Data Bus**
  - **—Direct Interface to Popular 8051 Family**
- **Block Protect Register**
  - **—Individually Set Write Lock Out in 1K Blocks**
- **Toggle Bit Polling**
  - **—Early End of Write Detection**
- **Page Mode Write**
 - **—Allows up to 32 Bytes to be Written in One Write Cycle**

DESCRIPTION

The X88C64 SLIC E^2 is a highly integrated E^2 Micro-controller peripheral which combines the functionality of the X88C64 component with pre-loaded software routines allowing any embedded system using it to upgrade and download software via the serial port. This self-loading integrated code eliminates the need to initially program the firmware into a memory device at the time of initial manufacture. The SLIC routines also greatly facilitate the loading of subsequent versions of the firmware into the system.

The SLIC routines consist of approximately 500 bytes of instructions for the 8051 which will initialize the microcontroller and its on-board UART and download the user's software through the UART. The baud rate for the transfer is 9600 based on a crystal frequency of 11MHz. Data transfer is accomplished using a proprietary format called XCOM. Xicor also has developed a program for IBM PCs and compatibles called XSLIC, which will translate an Intel HEX format file into XCOM format and upload the program to an X88C64 SLIC E^2.

The X88C64 device itself is an 8K x 8 E^{2}PROM fabricated with advanced CMOS Textured Poly Float-

TYPICAL APPLICATION
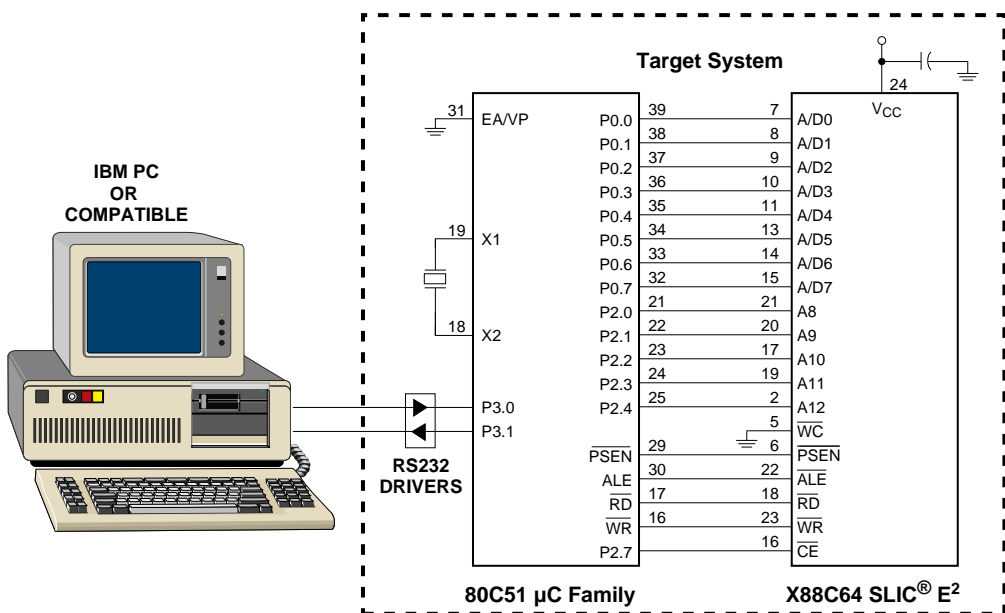
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X88C64 SLIC® E^2

ing Gate Technology. The X88C64 features a Multiplexed Address and Data bus allowing direct interface to a variety of popular single-chip microcontrollers operating in expanded multiplexed mode without the need for additional interface circuitry.

The X88C64 is internally configured as two independent 4K x 8 memory arrays. This feature provides the ability to perform nonvolatile memory updates in one array and continue operation out of code stored in the other array; effectively eliminating the need for an auxiliary memory device for code storage.

To write to the X88C64 SLIC E^2, a three-byte command sequence must precede the byte(s) being written. This sequence called Software Data Protection

prevents the loss of data or program information due to inadvertant write cycles during power-up or power-down. The X88C64 SLIC E^2 also provides a second generation software data protection scheme called Block Protect.

Block Protect can provide write lockout of the entire device or selected 1K blocks. There are eight 1K x 8 blocks that can be write protected individually in any combination required by the user. Block Protect, in additional to Write Control input, allows the different segments of the memory to have varying degrees of alterability in normal system operation.

For further information on the X88C64 hardware interface, consult the X88C64 Data Sheet.
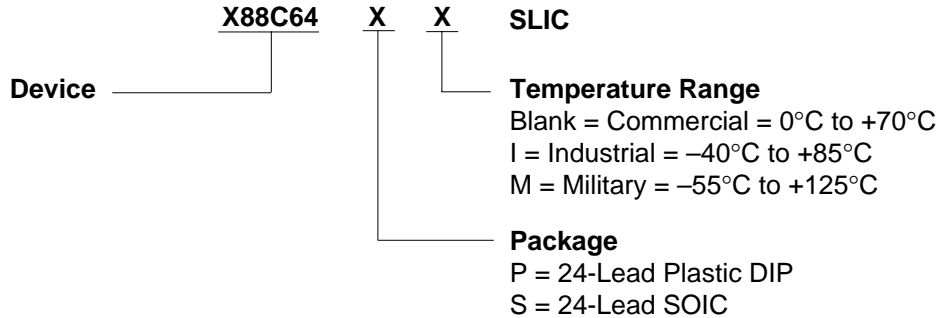
PIN CONFIGURATION

DIP/SOIC

X88C64

NC	1	24	V_{CC}
A12	2	23	$\overline{WR}$
NC	3	22	ALE
NC	4	21	A8
$\overline{WC}$	5	20	A9
$\overline{PSEN}$	6	19	A11
A/D0	7	18	$\overline{RD}$
A/D1	8	17	A10
A/D2	9	16	$\overline{CE}$
A/D3	10	15	A/D7
A/D4	11	14	A/D6
V_{SS}	12	13	A/D5

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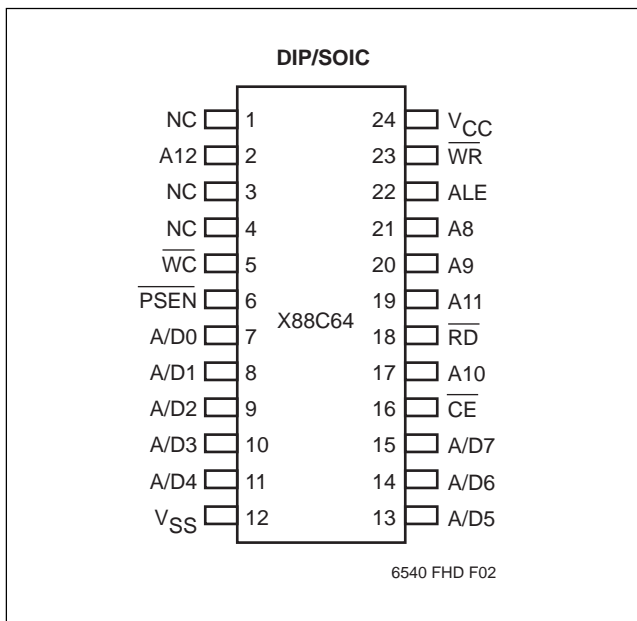
PIN NAMES

Symbol	Description
ALE	Address Latch Enable
A/D$_0$–A/D$_7$	Address Inputs/Data I/O
A$_8$–A$_{12}$	Address Inputs
$\overline{RD}$	Read Input
$\overline{WR}$	Write Input
$\overline{PSEN}$	Program Store Enable Input
$\overline{CE}$	Chip Enable
$\overline{WC}$	Write Control
V_{SS}	Ground
V_{CC}	Supply Voltage

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X88C64 SLIC® E²

ORDERING INFORMATION

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        X88C64    X    X    SLIC

Device ─────────┘          │
                           └── Temperature Range
                               Blank = Commercial = 0°C to +70°C
                               I = Industrial = –40°C to +85°C
                               M = Military = –55°C to +125°C

                    └────────── Package
                               P = 24-Lead Plastic DIP
                               S = 24-Lead SOIC
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