

Footnote: 1

This device has initialization data which follows the Main Array data in User Memory.

Footnote: 2

Security bit programming may be enabled in the Program Memory Device Options screen.

Footnote: 3

This device has initialization data which follows the Main Array data in User Memory. It also has an asynchronous/synchronous output enable bit which follows the initialize word data in User Memory. Data for this bit should be set at 00 for asynchronous mode, or 01 for synchronous mode. Other data will generate a program or verify error.

Footnote: 4

This device has initialization data at device address 2000 hex, following the Main Array. It also has an architecture byte at device address 2001 hex. The following table shows the architecture data for the three modes of operation.

Asynchronous operation	address 2001, value 00 hex
Synchronous operation	address 2001, value 01 hex
Initialize word operation	address 2001, value 02 hex

Footnote: 5

Set device block size to 4000 hex.

Footnote: 6

Security bit programming may be enabled in the Program Memory Device Options screen; this overrides the Mask Option Register (MOR) security bit value in User Memory. Note that there are two menu selections for the 68705S3: mask set 1TJ6 identifies parts produced before 1987, and mask set 0A20T identifies parts produced since January 1987.

Footnote: 7

This device's memory map is offset to start at User Memory address 0000 hex. The EPROM memory block starts at User Memory 0000 and is translated to device address F000 hex during a program operation. A load operation will read device address F000 hex and translate address 0000 to User Memory.

Footnote: 8

This device's memory array begins at address 80 hex. The programmer will automatically transfer data from User Memory to the device by the required offset. If the data block begins at User Memory 0 hex, it will

be translated to device address 80 hex during a program operation. Conversely a load operation will transfer the data block from device address 80 hex to User Memory address 0. Consult the Manufacturer's specifications for information about the device memory map.

Footnote: 9

Protection register data is represented in the last 4 words of device data. User ram is increased to reflect this, I.E. on a 16MEGx16 device, user ram is resized to 100004H locations. Address 100000H through 100003H will contain protection register data. To enable programming, verifying or loading protection register data, set the "Program" switch to "Y" for the last sector represented in the "Device Configure" screen. Programming the protection register lock bit is accomplished by setting the "Program security fuse" switch to "Y" in the Program device screen.

Footnote: 10

The address block for this device is defined with the configuration byte at location 103F hex (low nibble only). The EEPROM is located at address B600 to B7FF hex. The two ROM blocks are at addresses BF40 to BFFF and E000 to FFFF hex.

Footnote: 11

This device does not support block limits. Memory locations not defined as EPROM or EEPROM are set to zero. The configuration byte, located at address 103F, specifies the starting address of the EEPROM memory and enables/disables the COP system watch dog timer.

The upper nibble of the configuration byte defines the most significant bit of the starting address of the EEPROM memory. If the configuration byte is set to 3F hex, then the EEPROM starting address is 3800 hex (3000 hex + 800 hex). Note that the upper nibble of the configuration byte cannot be set to B hex.

The lower nibble of the configuration byte defines the enable/disable state of the COP system watch dog timer. This nibble can only be set to F hex (disable) or B hex (enable).

Footnote: 12

To enable individual sector operations, use flags in "Device Configure" (navigate to MORE COMMANDS/DEVICE CHECKS/DEVICE CONFIGURE) or "Program Device" screens. To perform sector protect bit programming, set Program Security fuse switch in "Program Device" screen. Default for individual sector control is all sectors enabled for Erase and Program, and all sectors disabled for Protect.

Footnote: 13

For proper device operation, install a .01uF capacitor onto adapter between device power and ground pins.

Footnote: 14

Data to be programmed to device begins at address 0000H in programmer user ram (corresponds to device address FC0000H). Ensure that

program data in user ram is allocated correctly. Special purpose memory map is described in device specification. Ensure that reserved locations are filled with required data.

To program Uprom bits, set "Program Configuration" flag (Program screen) and edit ram location 20000H(x16)/40000(x8) as follows:

DEI	BIT2
DED	BIT3
OSC1	BIT6
OSC2	BIT7

Then, set corresponding bit in ram to 1.

To program loc bits, set "Program security fuse 1" flag (programming screen). Ensure that desired data is in correct ram location for CCB0.

Footnote: 15

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Footnote: 16

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Footnote: 17

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Footnote: 18

Device has Security Data and User Data features (enable in PROGRAM DEVICE Options screen). User Data bytes are at address 801 and 802 hex.

Footnote: 19

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Footnote: 20

Main array fuses are 512 through 1535. Polarity fuses are 2053 and 2054. Remaining are phantom fuses (Load resets to zero). Checksum in JEDEC will reflect phantom fuses but Program and Verify will be unaffected.

Footnote: 21

The window on these devices must be covered with an opaque label during any operation!!!

Footnote: 22

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Footnote: 23

This device contains two separate EPROM areas, one for Instruction information and the other for Data. The Instruction memory space is address 0 to 7FF hex; the instruction data consists of 4 bytes, three

information bytes followed by a null byte.

The Data memory space is address 800 to BFF hex; data is oriented in reverse order with address BFF hex as the first byte and address 800 hex as the last address. This format is compatible with the NEC 77P20 assembler. See NEC's 77P20 data book for more information.

Footnote: 24

Security bit programming may be enabled in the Program Memory Device Options screen. The locations 9-B hex, D-F hex, 18-3F hex, and the most significant byte of C hex are reserved for special functions and are not programmable. These locations will always load as FFFF hex or FF hex for location 00C. If data is entered at these locations, a verify error occurs, but data will not be programmed into the device.

The least significant byte of location C hex is the Chip Configuration byte, which is programmable. The two most significant bits of this location are the lock bits which can only be programmed if the Security Bit programming is enabled from the Program Device Options screen. Consult the Manufacturer's specifications for further information. This device does not need to have the Byte Swap Option enabled.

Footnote: 25

This device is a microcontroller with two security options. Currently, only one of the two security options may be implemented per device.

The first security option protects against in-circuit reads. This option is selected from the program screen. The second security option is activated by programming device addresses 782 hex and 783 hex with data 20 hex and FE hex respectively. This prevents the part from entering program mode.

Addresses 782 hex and 783 hex may also be used for normal data, however, once data is programmed at these addresses, you must erase the device before attempting another program operation.

Footnote: 26

This device has special programmable registers that can be programmed by entering data at locations following the Main Array. The CLR register is located at device address 8000 hex. The SFR register is located at device address 8001 hex. The SFRLR register is located at device address 8002 hex. Refer to the manufacturer's spec sheet for the correct data pattern (leave all undefined bits as 1s).

If the EPROM array and the SFR registers are programmed to overlap, the programmer will fill the overlapped section in RAM with zeros.

Footnote: 27

This device contains two separate EPROM areas, one for Instruction information and the other for Data. The Instruction memory space is address 0 to 1FFF hex; the instruction data consists of 4 bytes, three information bytes followed by a null byte.

The Data memory space is address 2000 to 27FF hex; data is oriented in reverse order with address 27FF hex as the first byte and address 2000

hex as the last address. This format is compatible with the NEC 77P25 assembler. See NEC's 77P25 databook for more information.

Footnote: 28

This programmer does not fully support all structured test cases for this device.

Footnote: 29

Any of the three security options can be implemented for this device (Encryption Array data, Security Bit 1 or Security Bit 2). You can select the security options from the PROGRAM DEVICE Options screen. Once any of the security options have been programmed into the device, no further programming is allowed.

Illegal operations will generate one of these error messages:

A. Encryption Array Already Programmed - A programming operation has been attempted after the Encryption Array has been programmed.

B. Security Fuse Programmed or Bad Device - A programming operation has been attempted after security bit 1 has been programmed.

C. Security Fuse Violation - A programming operation has been attempted after security bit 2 has been programmed. This error will also be generated for a load or verify operation.

D. Test Fuse Programming Error - This error will be displayed if there is a programming error in the Encryption Array.

Data in the programmer's User Memory is partitioned as follows:

MAIN ARRAY DATA	0 through 7FF hex
ENCRYPTION ARRAY DATA	800 through 80F hex

Enter Encryption Array data by editing the appropriate address in User Memory.

After the Encryption Array is programmed, device data will no longer match data in User RAM. Encryption Array and Security Bit data cannot be read from the device.

Footnote: 30

Security bit programming may be enabled in the PROGRAM MEMORY DEVICE Options screen.

The device's memory map starting at address 2000 hex is offset to User Memory address 0000 hex. Fill first 10000 hex bytes in User Ram with FF hex before file downloading. Partial device operation is not allowed.

Locations B, D-F, 20-3F and the most significant bytes of A and C hex are reserved for special functions and are not programmable, These addresses will always load as FFFF hex (FF hex for addresses 00A and 00C). If data is entered at these addresses, a verify error occurs, but the data will not be programmed into the device.

The least significant byte of address A hex is the PPW byte, which is programmable. The least significant byte of address C hex is the Chip Configuration byte, which is programmable. The two most significant bits of this location are the lock bits which can only be programmed if the Security Bit programming is enabled from the Options screen. Consult the manufacturer's specifications for further information.

The most significant byte of address 000C must be set to 20 hex.

Footnote: 31

This device does not support Illegal Bit Test or Blank Check.

Footnote: 32

This device contains a User Electronic Signature (UES) array. Programming this array is optional. Two devices are available; one with the UES suffix and one without.

The device without the UES suffix programs the device but does not program the UES array. The device with the UES suffix programs all the arrays.

When you download a JEDEC file, you will select the device compatible with the JEDEC file. If the device is not compatible with the file a 'User data 5030: Incompatible User Data for device selected' error is displayed.

Footnote: 33

This device contains extra fuses which are automatically configured by the programmer. If these extra fuses fail to program, an error occurs.

Footnote: 34

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Footnote: 35

Memory map is offset to begin at User Memory address 0000 hex. Corresponding device address is 20 hex.

Footnote: 36

The Software Data Protection option is supported on this device.

Footnote: 37

If you attempt to re-program this device after programming the security fuse, a Device Over-Current Fault error may be generated and there is a potential that the device may be damaged.

Footnote: 38

This device has initialization data that follows the Main Array located at device address 800 hex. The device also has an architecture byte located at 801 hex. The following table shows the architecture data for the four modes of operation.

Asynchronous Enable, Asynchronous Initialize 801 hex = FF hex
Synchronous Enable, Asynchronous Initialize 801 hex = FE hex
Asynchronous Enable, Synchronous Initialize 801 hex = FD hex
Synchronous Enable, Synchronous Initialize 801 hex = FC hex

Footnote: 39

Actel FPGAs are treated as memory devices for Program operations. Since fuse data is represented in binary format, a data translation program is needed.

Contact Your Customer Support Representative to request Actel Programming Application Note.

Note: Do not change the User Data Size after downloading data.

Footnote: 40

Device algorithm does not support preload vectors.

Footnote: 41

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Footnote: 42

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Footnote: 43

Device has 12 bit data word which is represented as 16 bit data for the programmer. Unused bits are loaded from the device as zeros, ignored during Verify operation, and automatically set to zeros during programming.

Enable Security Bit programming on Programming Options screen. Oscillator selection bits cannot be reprogrammed if they were configured by the factory (OTP devices only).

When assembling source file, use output option that produces merged 8 bit Intellec Hex object file (INHX8M) then download to programmer by selecting the Intel Intellec 8/MDS translator (code 83).

Footnote: 44

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Footnote: 45

This device has a differential cell array utilizing floating gate technology. Any unprogrammed location is in an undetermined state. Loading an unprogrammed device will produce inconsistent checksums. Verify operations are valid only after the device has been programmed. Some differential cell devices support a special blank check routine. If blank check is supported, attempts to reprogram a non-blank device will generate an illegal bit error.

Although setting block limits is allowed, it is recommended that the entire device be programmed to avoid ambiguous states.

Footnote: 46

Partial device operations are not allowed on this device. If your data file is smaller than the device size, make sure that the extra locations in User RAM are filled with the blank state (FF hex).

Footnote: 47

The data file used to program this device contains the security option data. The Security option will not be programmed into the device unless it is enabled from the Programming Options screen.

Footnote: 48

This device has an asynchronous/synchronous output enable bit that follows the Main Array data in User Memory. The outputs are enabled synchronously when programmed to 1.

Footnote: 49

This device contains an Electronic ID. If an ID error occurs, the wrong device is selected or the version of this device is not supported. A software update may be required. Contact Your Customer Support Representative for more information.

Any shorts test is not supported on the UniSite programmer.

Note for XC95108 and XC95216 QFP devices: There are two versions of PPI-0558. See back side of PPI adapter at the bottom. PPI with hand-written number -002 is for XC95108. PPI with hand-written number -003 can be used for either XC95108 or XC95216.

Footnote: 50

This device does not support the test code/checksum and test signature features.

Footnote: 51

The Security option using Encryption Array Data is not supported on this device.

Footnote: 52

This device is a microcontroller with Security Bit programming capability. Security Bit programming may be enabled in the Program Memory Device Options screen. (No Uprom bit programming in UniSite 3.0 or 2900 1.2.)

The device's memory map starting at address 2000 hex is offset by 2000 hex bytes to start at the User Memory address 0000 hex. Because of differences in assemblers, fill first 10000 hex bytes in User Ram with FF hex before file downloading. Partial device operation is not allowed.

This device also has address locations in the programmable array area that are reserved for special functions and are not programmable. These addresses are B, D-F and 2F-3F hex. These locations will always load as FFFF hex. If data is entered in User RAM at these locations, a verify error occurs, but no data will be programmed at those locations.

Address C hex is also reserved. The most significant byte of C hex is always programmed to 20 hex. If data other than 20 hex is entered in User RAM at this location, a verify error occurs, but data 20 hex will be programmed.

The least significant byte of address C hex is the Chip Configuration byte, which is programmable. The two most significant bits of this location are the lock bits, which can be programmed only by selecting the Security Bit programming option in the PROGRAM Options screen. Consult the Manufacturer's specifications for further information.

The User Ram is showed in words as default. It may be more convenient to select Data Word Width = 8 and then follow memory map in Intel's User's Guide.

Footnote: 53

This device contains a security fuse, however, the option is currently not supported. If you attempt to program the security fuse manually, the part will secure. However, reprogramming will no longer be possible.

Footnote: 54

This device does not support upload, output to disk, fill RAM, Edit data or Blank check. Disable the "Blank Check" option, located on the Programming Options screen, to avoid invalid non-blank and illegal-bit errors.

Footnote: 55

This device does not support output to disk, Fill RAM, Edit data or Blank check. Disable the "Blank Check" option, located on the Programming Options screen, to avoid invalid non-blank and illegal-bit errors.

This programmer supports POF files generated by the MAXPLUS (TM Altera) development system software version 2.5 or later.

Some POF files contain "don't care" data that is calculated into the data checksum. If you perform a Load operation after programming a downloaded file, the checksum may be slightly different.

Footnote: 56

This device has an architecture byte at address 8000 hex. Set the appropriate bits to 1 to program the desired features into the device. Set all unused bits in the architecture byte to 0.

ADDR	BIT	FUNCTION	DEVICES SUPPORTING FEATURE
8000 hex	2	ALE polarity	Cypress 7C277 and 7C279
8000 hex	1	ALE enable	Cypress 7C277 and 7C279

8000 hex 0 (LSB) SYNC enable Cypress 7C277

Footnote: 57

The WSI generated PSD data file may contain data at non-programmable locations. To get correct checksum and avoid a Verify error, perform Load operation after programming the device. Upload device data to a file(.obj)for future programming sessions.

We are currently working with WSI to improve this programming process.

To ensure proper download of PSD data file, set download options as follows:

I/O Translation Format	99
I/O address offset	0
Memory begin address	0
User data size	0

Security Bit (SECA) can be enabled in PROGRAM MEMORY DEVICE Options screen.

Footnote: 58

This device requires socket adapter: 442802P600-YAM or
44PL/28D6-ZL-L1016 EDI Corporation (209-892-3270)
44PL/28D6-ZAL-L1016 EDI Corporation (209-892-3270)

Footnote: 59

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Footnote: 60

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Footnote: 61

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Footnote: 62

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Footnote: 63

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Footnote: 64

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Footnote: 65

Set device begin address and device block size to 4000 hex.

Footnote: 66

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Footnote: 67

Place jumper JP1 on adapter to 64. Set device
begin address to 800 hex and device block size to 1800 hex.

Footnote: 68

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Footnote: 69

Place jumper JP1 on adapter to 64. Set device
block size to 4000 hex.

Footnote: 70

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Footnote: 71

Set device begin address to 1000 hex and device
block size 3000 hex.

Footnote: 72

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Footnote: 73

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Footnote: 74

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Footnote: 75

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Footnote: 76

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Footnote: 77

Set device block size to 1000 hex.

Footnote: 78

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Footnote: 79

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Footnote: 80

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Footnote: 81

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Footnote: 82

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Footnote: 83

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Footnote: 84

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Footnote: 85

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Footnote: 86

Device has phantom fuses in the JEDEC fuse map (ignored during Program and Verify operations). Fuses will load as ones. Device must be erased before re-programming to avoid error.

Footnote: 87

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Footnote: 88

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Footnote: 90

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Footnote: 91

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Footnote: 92

Switches on socket adapter (see socket adapter operational manual) allow individual devices on card to be programmed. Programmer block size will default to size of an individual device.

Footnote: 93

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Footnote: 94

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Illegal Bit Test not supported.

Footnote: 95

Device has one or more architecture bits contained in one byte at address 10000 hex. Set the appropriate bits to 1 to program desired features into device:

ADDR	BIT	FUNCTION	DEVICES SUPPORTING FEATURE
10000 hex	7(msb)	CS2 polarity	Cypress 7C289
10000 hex	6	CS1 polarity	Cypress 7C289
10000 hex	5	WAIT polarity	Cypress 7C289
10000 hex	4	WAIT timing	Cypress 7C289
10000 hex	3	ALE polarity	Cypress 7C289
10000 hex	2	ALE enable	Cypress 7C289
10000 hex	1	Address setup	Cypress 7C289
10000 hex	0(lsb)	SYNC enable	Cypress 7C287

Footnote: 96

Device requires a socket adapter to interchange pins 1 and 4 between device and ZIF socket.

Footnote: 97

Device requires socket adapter: 682803P600-YAM or
68PL/28D6-ZL-L1024 EDI Corporation (209-892-3270)
68PL/28D6-ZAL-L1024 EDI Corporation (209-892-3270)

Footnote: 98

Device requires a socket adapter and additional operating instructions. Please contact Customer Support Representative for further information.

Footnote: 99

Device has programmable reset polarity. For active low, set addresses 2000-2003 hex to zero's. For active high, set to FF hex.

Footnote: 100

Set device size to 4000 hex.

Footnote: 101

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Footnote: 102

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Footnote: 103

Data bits 5-7 should be set to ones at all address locations. Refer to manufacturer spec sheet for correct data pattern.

Footnote: 104

Set device size to 4000 hex. Data bits 5-7 should be set to ones at all address locations. Refer to manufacturer spec sheet for correct data pattern.

Footnote: 105

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Footnote: 106

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Footnote: 107

Any of the four security options can be implemented for this device (Encryption Array data, Security Bits 1, 2 or 3). The security options can be selected from the PROGRAM DEVICE Options screen. The encryption array has data in User Memory. Once any of the security options have been programmed into the device, no further programming is allowed.

Data in the programmer's User Memory is partitioned as follows:

MAIN ARRAY DATA	- 0 through 1FFF hex
ENCRYPTION ARRAY DATA	- 2000 through 203F hex

Enter Encryption Array data by editing the appropriate address in User Memory.

After the Encryption Array is programmed, device data will no longer match data in User RAM. Encryption Array data cannot be read from the device.

Footnote: 108

Block limits are not supported for this device. The entire memory array will be programmed or erased automatically.

Footnote: 109

At address locations 0 to FFF hex, data bits 4-7 should be set to ones. At address locations 1000 to 1FFF hex, data bits 5-7 should be set to ones. Refer to the manufacturer's spec sheet for the correct data pattern.

Footnote: 110

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Footnote: 111

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Footnote: 112

DEVICE	JP1 JUMPERS POSITION
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37701E2SDIP all to 01
37703E2SDIP all to 01
37705E2SDIP all to 05

Set the device begin address and the block size to 4000 hex.

Footnote: 113

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Footnote: 114

To program the first 128K, select bank 0.
Maximum device size is 20000 hex. To program the last 64K, select bank
1. Maximum device size is 10000 hex.

Footnote: 115

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Footnote: 116

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Footnote: 117

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Footnote: 118

Device uses 3.0V on VCC for Load, Program, and Verify
operations. VCC voltages applied during two-pass Verify
are 3.0V and 3.5V.

Footnote: 119

Structured testing is not supported for this device on the ChipSite
module.

Footnote: 120

This device's memory map starting at address 2000 hex is offset by 2000
hex bytes to start at the User Memory address 0000 hex. Because of
differences in assemblers, fill first 10000 hex bytes in User Ram with
FF hex before file downloading. Partial device operation is not
allowed.

The device has address locations in the programmable array area that
are reserved for special functions and are not programmable. These
addresses are A, B, 2F-3F hex, and the least significant bytes of E hex
and F hex. Fill these locations in User RAM with FF hex.

Fill the most significant bytes of C, D, E and F hex in User RAM with
20 hex.

The least significant byte of C hex (CCB byte) is programmable. The two
most significant bits of this location are programmable lock bits,
which can be programmed only by selecting the Security Bit programming
option in the PROGRAM Options screen.

To program the CCB1 and Security Key bytes (the least significant byte of D hex and all bytes of address 10-17 hex) consult the manufacturer's specifications.

The User Ram is showed in words as default. It may be more convenient to select Data Word Width = 8 and then follow memory map in Intel's User's Guide.

Footnote: 121

!!!!USE ONLY FOR FX-CORE DEVICES!!!! FX core devices can be distinguish from older 87C51/87C51FA/87C51FB devices via the topside tracking number (FPO number)marked on the part. The topside tracking number on FX core devices will end with a letter 'A'. For more information call INTEL.

There are three security options supported for this device (security bit 1, 2, 3). You can select the security options from the Program Device screen.

Footnote: 122

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Footnote: 123

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Footnote: 124

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Footnote: 125

This device must have the Device Begin Address set to zero, for partial programming to function properly

Footnote: 126

This device must have the Device Begin Address set to zero, and the Device Block Size is set to an even number, for partial programming to function properly

Footnote: 127

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Footnote: 128

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Footnote: 129

If intermittent programming errors (low yields)occur, repeat Program operation. The Programming Algorithm is being reviewed with the manufacturer to improve yields.

Footnote: 130

This device has a non-contiguous memory map. To insure the integrity of the programmer's checksum, the unused and/or unprogrammable memory locations in user RAM must be set to zero.

Consult the Manufacturer's specifications for further information.

Footnote: 131

This device has a non-contiguous memory map. To insure the integrity of the programmer's checksum, the unused memory locations in user RAM must be set to zero prior to loading a device or downloading data. Use the Fill Ram option under the More-Edit screen.

Consult the Manufacturer's specifications for further information.

Footnote: 132

The illegal-bit and blank check operations are only executed on the EPROM array.

Footnote: 133

The device memory space is partitioned as follows :

ARRAY	TYPE	ADDRESS	
INSTRUCTION	PROGRAMMABLE	0-1FFF hex	
RESERVED	UNPROGRAMMABLE	2000-4FFF hex	fill with FF hex
DATA	PROGRAMMABLE	4800-4FFF hex	

Instruction and data arrays have unused bit locations which must be set to ones. This should be done by your development tools. Refer to the device specification sheet for more information.

Footnote: 134

The device memory space is partitioned as follows :

ARRAY	TYPE	ADDRESS	
INSTRUCTION	PROGRAMMABLE	0-3FFF hex	
RESERVED	UNPROGRAMMABLE	4000-4FFF hex	fill with FF hex
DATA	PROGRAMMABLE	4800-4FFF hex	

Instruction and data arrays have unused bit locations which must be set to ones. This should be done by your development tools. Refer to the device specification sheet for more information.

Footnote: 135

Set device block size to 5000 hex.

Footnote: 136

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Footnote: 137

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Footnote: 138

Use in-module adapter (part number 615-1548-002 or greater) for in-module programming.

Footnote: 139

The selected device has 2 algorithms available. The algorithm 705P9 should be used for devices with the mask 0D33N or later. The algorithm 705P9-D54E should be used for devices with the mask 0D54E.

The devices with mask 0D54E have an error in the boot loader which will not allow the device to perform the following functions properly: load, illegal-bit check and blank check. If the default 2 pass verify is not used as the number of verify passes, please insure that the number of verify passes is set to a minimum of 1.

Footnote: 140

The programmer's user RAM corresponds directly to the memory map of the device.

Footnote: 141

This device contains an Electronic ID. If an ID error occurs, the wrong device is selected or different version of this device is selected. Two different algorithms are available, 1810T and 1810T-NEW. If both algorithms yield "DEVICE ID error" contact your Customer Support Representative.

Footnote: 142

Security bit options are not supported on this device.

Footnote: 143

If the default 2 pass verify is not used as the number of verify passes, please insure that the number of verify passes is set to a minimum of 1.

Footnote: 144

Data in the Programmer's User Memory is partitioned as follows:

Main array	0 - 3FFF hex	
Unused bytes	4000h - 400C, 400E hex	
ECON6	400D hex	(ROM0, RAM0 bits)
ECON7	400F hex	(security bits)

The ECON6 or ECON7 have misverified, if a 'Device verification error' occurs during Verify, Blank check or Illegal bit check. To determine which fuse has failed, load the device and view locations ECON6 and ECON7 User memory locations.

Footnote: 145

Data in the Programmer's User Memory is partitioned as follows:

Main array 0 - 0FFF hex
ECON 1000 hex

Footnote: 146

This device requires an adapter that converts the PLCC pinout to a standard DIP socket. The adapter is available from device manufacturer.

Structured testing is not supported for this device with the adapter.

Footnote: 147

The "Software Data Protection" feature is not supported on this device.

Footnote: 148

For test vectors to run successfully on this device, the JEDEC pin swap function "P" needs to be used. The JEDEC file should be modified by inserting 4 lines after the last fuse number and before the first vector:

Example:

```
L163073 1*
L163082 1*
L163091 1*        <-- last fuse number in JEDEC file
P 15 5 14 4 13 3 12 2 1 11 10 22 21 26 25 30 29 34 33 38 37
  42 41 46 45 49 50 60 51 61 52 62 53 63 54 64 55 65 56 66
  57 67 68 58 59 47 48 43 44 39 40 35 36 31 32 27 28 23 24
  20 19 9 18 8 17 7 16 6*
V0001 01NHXXHHX0HH0XHNHHXNHH11HH10HH11NX1XNX11XX0XXXXXXXXXXN
      XXXXXXXXXXXXXN*    <-- first vector in JEDEC file
```

Footnote: 149

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Footnote: 150

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Footnote: 151

The Intel 85C22V10 algorithm is a 22V10 compatible device with superset features. To determine the correct algorithm to use, view the JEDEC file you wish to program and match the QF field to the following menu entries:

QF=5848
-select the 85C22V10 algorithm under the Intel main menu.

QF=5828
-select the 22V10 or the IPLD22V10 algorithm under the Intel main menu.
or
-select the 85C22V10 as a 22V10 algorithm under the Intel XPGM menu.

QF=5838
-select the 85C22V10 as a 22VP10 algorithm under the Intel XPGM menu.

QF=5892

-select the 85C22V10 as a 22V10UES algorithm under the Intel XPGM menu.
The 85C22V10 does not support the UES bits, so these bits will be ignored in the JEDEC.

Footnote: 152

Footnote: 153

Currently, only EPROM protect option is supported. All bytes on secured device are read as FF hex. Secured device passes blank check, but fails during programming.

Footnote: 154

This device requires socket adapter YAN02020A which has been discontinued by the manufacturer. We are working with the manufacturer to determine if there is a replacement adapter.

Footnote: 155

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Footnote: 156

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Footnote: 157

Not using ECC function, set device block size to 8000 hex.
Using ECC function, set device block size to A005 hex.
Set unused bits in ECC area to ones. Refer to device spec sheet for more information.

Footnote: 158

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Footnote: 159

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Footnote: 160

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Footnote: 161

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Footnote: 162

Set device block size to A005 hex, if use ECC function.
Set unused bits in ECC area to ones. Refer to device spec sheet for more information.

Footnote: 163

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Footnote: 164

Set device block size to 2000 hex.

Footnote: 165

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Footnote: 166

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Footnote: 167

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Footnote: 168

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Footnote: 169

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Footnote: 170

Data in programmer User Memory is partitioned as follows:

NOT IMPLEMENTED	0 through 07FF hex
RESERVED	0800 through 087F hex
PROGRAMMABLE	0880 through 0F9F hex
RESERVED	0FA0 through 0FEF hex
PROGRAMMABLE	0FF0 through 0FF7 hex
RESERVED	0FF8 through 0FFB hex
PROGRAMMABLE	0FFC through 0FFF hex

Footnote: 171

Data in the programmer's User Memory is partitioned as follows:

CONFIG. BYTE	- 003F hex
UNUSED	- 0000 through 0D7F hex
EEPROM ARRAY DATA	- 0D80 through 0FFF hex

Footnote: 172

Data in the programmer's User Memory is partitioned as follows:

CONFIG. BYTE	- 103F hex
EEPROM ARRAY DATA	- FE00 through FFFF hex

Footnote: 173

This device has an electronically erasable array. When re-programming this device, enable the "Erase before program" option.

Footnote: 174

In the configuration register (at address 103F hex) only bit #2 (NOCOP) is readable. Therefore the register can obtain only two values if read.

1. FF hex ---- COP disabled
2. FB hex ---- COP enabled

Footnote: 175

Data in the programmer's User Memory is partitioned as follows:

CONFIG. BYTE	- 003F hex
EEPROM ARRAY DATA	- 0D80 through 0FFF hex
EPRM ARRAY DATA	- A000 through FFFF hex if 711K4/KA4
	- 8000 through FFFF hex if 711KA2
	- N/A if mask versions

The Config. byte is electronically erasable (and may not be blank when device shipped from the factory).

Footnote: 176

Data in the programmer's User Memory is partitioned as follows:

User EPROM	- 0F00 through 1F00 hex
User Vectors	- 1FF0 through 1FFF hex

Footnote: 177

This device contains a feature which allows individual sectors to be protected. There are 8 16Kbyte sectors contained in this particular device. Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 20000-20007 hex to protect or to not protect data values.

Note: Protect data should be set to 01. The protect bytes in user memory 20000-20007 hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information.)

Sector	User Ram location	Protect Data	No Data Protection
0	20000 hex	01	00
1	20001 hex	01	00
2	20002 hex	01	00
3	20003 hex	01	00
4	20004 hex	01	00
5	20005 hex	01	00
6	20006 hex	01	00
7	20007 hex	01	00

2. Enable 'program security fuse' option and set 'security fuse data' to 1 on the PROGRAM MEMORY DEVICE screen to enable the protection programming option.
3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 178

Consult the Manufacturer's specifications for further information about values of the Configuration byte.

Footnote: 179

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Footnote: 180

Any of the four security options can be implemented for this device (Encryption Array data, Security Bits 1, 2 or 3). The security options can be selected from the PROGRAM DEVICE Options screen. The encryption array has data in User Memory. Once any of the security options have been programmed into the device, no further programming is allowed.

Data in the Programmer's User Memory is partitioned as follows:

MAIN ARRAY DATA	0 through 7FFF hex
ENCRYPTION ARRAY DATA	8000 through 803F hex

Enter Encryption Array data by editing the appropriate address in User Memory.

After the Encryption Array is programmed, device data will no longer match data in User RAM. Encryption Array data cannot be read from the device.

Footnote: 181

If using AR (Address register), set device block size to 4002 hex. Else, set device block size to 4000 hex. Refer to device spec sheet for more information.

Footnote: 182

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Footnote: 183

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Footnote: 184

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Footnote: 185

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Footnote: 186

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Footnote: 187

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Footnote: 188

To re-program device, disable "Erase EE device" option on Program screen (type 'N'). Device is erased automatically during programming.

Data in programmer User Memory is partitioned as follows:

DEVICE	EEPROM	EPROM
-----	-----	-----
370C610	none	7000 - 7FFF hex
370C642	none	6000 - 7FFF hex
370C710	1F00 - 1FFF hex	7000 - 7FFF hex
370C722	1F00 - 1FFF hex	6000 - 7FFF hex
370C742	1F00 - 1FFF hex	6000 - 7FFF hex
370C756	1E00 - 1FFF hex	4000 - 7FFF hex

Footnote: 189

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Data in the programmer's User Memory is partitioned as follows:

RESERVED	0 through 007F hex
PROGRAMMABLE	0080 through 0F9F hex
RESERVED	0FA0 through 0FEF hex
PROGRAMMABLE	0FF0 through 0FF7 hex
RESERVED	0FF8 through 0FFB hex
PROGRAMMABLE	0FFC through 0FFF hex

Footnote: 190

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Footnote: 191

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The Clock Detect Enable bit for this device is enabled by programming address 2016 hex of the device with the value DE hex. To program address 2016 hex for this device, edit ram with a word width of 16 and enter a DE hex in the LSB of location 0B hex.

Footnote: 192

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Blank Check must be enabled for this device to program properly.

Footnote: 193

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This device has address locations in the programmable array that are not programmable, but must be set. To manually set these locations, edit the programmer's User memory and fill the following locations:

User Memory Address (16-bit data)	Fill Data	Addresses corresponding to Device's memory map
-----	-----	-----
0E-0F hex	FFFF hex	201C-201F hex
2F-3F hex	FFFF hex	205E-207F hex

0C hex	20xx hex	2019 hex
0D hex	20xx hex	201B hex

xx - don't care

If this is not done, verify errors may occur.

The least significant byte of C hex (2018 hex of the part) is the CCB0 byte and is programmable. The two most significant bits of this byte are lock bits, which can only be programmed by selecting the Program Security Fuse option in the PROGRAM options screen.

Footnote: 194

When Loading Ram from a "Master Device" a checksum conflict may occur. Texas Instruments recommends loading Ram from a JEDEC file with a known checksum.

For additional information or assistance, please contact the Texas Instruments PLD Hotline.

Footnote: 195

Device is marked as HW on the bottom portion of this device.

Footnote: 196

Device is marked as HW on the top portion of this device.

Footnote: 197

This device has address locations in the programmable array that are not programmable, but must be set. To manually set these locations, edit the programmer's User memory and fill the following locations.

User Memory Address (16-bit data)	Fill Data	Addresses corresponding to Device's memory map
2F-3F hex	FFFF hex	205E-207F hex
0F hex	xxFF hex	201E hex
0C hex	20xx hex	2019 hex
0D hex	20xx hex	201B hex
0E hex	20xx hex	201D hex
0F hex	20xx hex	201F hex

xx - don't care

If this is not done, verify errors may occur.

The least significant byte of C hex (2018 hex of the part) is the CCB0 byte and is programmable. The two most significant bits of this byte are lock bits, which can only be programmed by selecting the Program Security Fuse option in the PROGRAM options screen.

Footnote: 198

Device has two non-programmable areas, address 0000 to 3FEF hex and 3FF6 to 3FFF hex. User data for these

locations should be set to FF hex. Refer to device spec sheet for more information.

Footnote: 199

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Footnote: 200

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Footnote: 201

To enable Low Noise Mode, enable security fuse 1 in the PROGRAM options screen.

To secure the device, enable security fuse 2 in the PROGRAM options screen (some load instructions will be disabled).

Footnote: 202

Device has a programmable reset polarity. To set polarity active low, set addresses 4000-4003 hex to zeros. For active high polarity, set all addresses to FF hex.

Footnote: 203

Unused bits in the control word(s) are always read from the device as zeros. Setting RAM data to anything other than zero for unused bits will not affect correct programming, but will generate Program/Verify errors. See device data sheet for specific location of unused bits.

Footnote: 204

Data in the programmer's User Memory is partitioned as follows:

68HC705K1

RAM, UNUSED	- 000 - 1FF hex	fill with 00 hex
MOR	- 17 hex	programmable
USER EPROM	- 200 - 3EF hex	programmable
TEST ROM, COP	- 3F0 - 3F7 hex	fill with 00 hex
USER VECTORS	- 3F8 - 3FF hex	programmable
PEPROM (personality)	- 400 - 47F hex	64 bytes programmable

68HC05K1

RAM, UNUSED	- 000 - 1FF hex	fill with 00 hex
MOR	- 17 hex	mask, fill with 00 hex
USER EPROM	- 200 - 3EF hex	mask, fill with 00h
TEST ROM, COP	- 3F0 - 3F7 hex	fill with 00 hex
USER VECTORS	- 3F8 - 3FF hex	mask, fill with 00h
PEPROM (personality)	- 400 - 47F hex	64 bytes programmable

The PEPROM resides in programmer's User Memory as follows :

400	xx	xx	xx	xx	xx	xx	xx	xx	xx	00	00	00	00	00	00	00	00	row0
410	xx	xx	xx	xx	xx	xx	xx	xx	xx	00	00	00	00	00	00	00	00	row1
420	xx	xx	xx	xx	xx	xx	xx	xx	xx	00	00	00	00	00	00	00	00	row2
430	xx	xx	xx	xx	xx	xx	xx	xx	xx	00	00	00	00	00	00	00	00	row3
440	xx	xx	xx	xx	xx	xx	xx	xx	xx	00	00	00	00	00	00	00	00	row4
450	xx	xx	xx	xx	xx	xx	xx	xx	xx	00	00	00	00	00	00	00	00	row5
460	xx	xx	xx	xx	xx	xx	xx	xx	xx	00	00	00	00	00	00	00	00	row6
470	xx	xx	xx	xx	xx	xx	xx	xx	xx	00	00	00	00	00	00	00	00	row7

c0 c1 c2 c3 c4 c5 c6 c7

The PEPROM map corresponds to the map of the Motorola programmer. Data for locations marked as xx can be 00 hex or 01 hex. Locations marked as 00 should be filled with 00 hex.

The checksum is calculated over all 480 hex Memory locations!

Footnote: 205

This device has a Software Data Protection (SDP) mode. During programming the SDP mode is disabled. To have SDP enabled after programming, the Software Data Protect option on the programming menu must be set to "Y". If this option is set to "N", the SDP mode will always be disabled after programming.

Footnote: 206

Device has programmable reset polarity. For active low polarity, set addresses 11B8-11BB hex to zero's. For active high polarity, set addresses to FF hex.

Footnote: 207

Set device block size to C000 hex.

Footnote: 208

Set device block size to F680 hex.

Footnote: 209

Set switch position to C on the socket adapter.

Footnote: 210

Device has programmable reset polarity. For active low polarity, set addresses 8DC-8DF hex to zeros. For active high polarity, set the addresses to FF hex.

Footnote: 211

Set device begin address and block size to 8000 hex. Set JP1 on PCA4774G02 to 1M (101).

Footnote: 212

Set device begin address to 14000 hex and

block size to C000 hex. Set JP1 on PCA4774G02 to 1M (101).

Footnote: 213

Set device begin address to 18000 hex and
block size to 8000 hex. Set JP1 on PCA4708G02 to 1M (101).

Footnote: 214

Set device begin address to 14000 hex and
block size to C000 hex. Set JP1 on PCA4708G02 to 1M (101)

Footnote: 215

Device requires socket adapter PCA4990 (available from the device manufacturer).

Footnote: 216

The device technology does not permit a post VERIFY. However, a PROGRAM VERIFY occurs during programming. This means that although VERIFY is not a valid operation, each fuse is thoroughly tested (verified) as it is programmed.

A LOAD operation will display the following information without writing over the data in ram:

1) ALS DESIGN CHECKSUM -

Actel's design file checksum (not to be confused with the Programmers ram image checksum displayed after both file download and programming) which is generated by the design software and programmed into the silicon signature field of the device.

2) SIGNATURE -

User ID that is defined as part of the design and programmed into the silicon signature field of the device.

Footnote: 218

The device is erased automatically before programming. Set Erase EE Device in the PROGRAM options screen to 'N'.

Footnote: 219

Data bits 6-7 should be set to ones at all address locations. Refer to the manufacturer's spec sheet for the correct data pattern.

Footnote: 220

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Footnote: 221

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Footnote: 222

Set device block size to 6000 hex.

Footnote: 223

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Footnote: 224

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Footnote: 225

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Footnote: 226

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Footnote: 227

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Footnote: 228

Set device begin address to 6000 hex and block size to 2000 hex.

Footnote: 229

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Footnote: 230

Any of the three security options can be implemented for this device (Encryption Array data, Security Bit 1 or Security Bit 2). You can select the security options from the PROGRAM DEVICE Options screen. The encryption array has data in User Memory. Once any of the security options have been programmed into the device, no further programming is allowed.

Illegal operations will generate one of these error messages:

A. Encryption Array Already Programmed - A programming operation has been attempted after the Encryption Array has been programmed.

B. Security Fuse Programmed or Bad Device - A programming operation has been attempted after security bit 1 has been programmed.

C. Security Fuse Violation - A programming operation has been attempted after security bit 2 has been programmed. This error will also be generated for a load or verify operation.

D. Test Fuse Programming Error - This error will be displayed if there is a programming error in the Encryption Array.

Data in the programmer's User Memory is partitioned as follows:

MAIN ARRAY DATA	0 through 3FF hex
ENCRYPTION ARRAY DATA	400 through 40F hex

Enter Encryption Array data by editing the appropriate address in User

Memory.

After the Encryption Array is programmed, device data will no longer match data in User RAM. Encryption Array data cannot be read from the device.

Footnote: 231

This is a high speed device and may require High Speed Logic Drivers and/or Compensated Vector test enabled during structured testing. Refer to programmers manual for more information on High speed logic drivers and Compensated vector test.

Footnote: 232

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Footnote: 233

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Footnote: 234

The data to be programmed to the device is offset to 0000h in the User RAM, which corresponds to the device address 2000h.

Address(in words)	Address(in bytes)	Intel Required Data:
0000h - 0009h	0000h through 0013h	interrupt vectors (lower)
000Ah	0015h and 0014h	FFh, FFh (reserved)
000Bh	0017h and 0016h	FFh, FFh (also see note #1)
000Ch	0019h and 0018h	**h, CCB or CCB0 byte
000Dh	001Bh and 001Ah	**h, **h or CCB1 byte
000Eh	001Dh and 001Ch	**h, FFh (reserved)
000Fh	001Fh and 001Eh	**h, FFh (reserved)
0010h - 0017h	0020h through 002Fh	security key
0018h - 001Fh	0030h through 003Fh	interrupt vectors (upper)
0020h - 002Eh	0040h through 005Dh	PTS vectors
002Fh - 003Fh	005Eh through 007Fh	all FFh (reserved)

Locations marked as **h are also reserved locations and it is the user's responsibility to fill these locations with the required data. Consult the Manufacturer's specifications for further information.

Note 1: To enable CDE (clock detect enable bit) fill these locations with 0Ch, DEh. Refer to the device spec. sheet for detailed information (CDE bit is implemented only on some 196XX family members).

To secure the device, enable Security bit programming in the Program Memory Device Options screen. If this feature is enabled, lock bits of CCB (CCB0) are to be programmed regardless of the value CCB (CCB0) byte.

User Ram data is shown in words by default. This may be changed to bytes if needed.

This device does not need to have the Byte Swap Option enabled (UniSite version 2.5 or later).

Footnote: 235

Use this algorithm only for version B silicon or higher. When embedding fuse information in the hex file, it must be stored at address FE00 hex.

To enable a feature, set the appropriate bit in the User's RAM at FE00 hex to '0'. Reserved (resvd) locations are read as '1'.

bit# ...		9		8		7		6		5		4		3		2		1		0	
-----		-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
fuse ...		1		1		resvd		FPMM1		resvd		FPMM0		FWDT1		FWDT0		FOSC1		FOSC0	

To secure the device, bit #6 in the User's RAM at FE00 hex must be set to '0' and the Security bit programming must be enabled in the Program Memory Device Options screen. Consult the Manufacturer's specifications for further information.

Footnote: 236

To secure the device, enable the security fuse from the Program Memory Device Options screen.

All operations (read, verify, blank check, ...) on a secured device will cause erasing of the EEPROM and the configuration byte. The device will not be reusable if the EPROM is not blank.

Footnote: 237

Data for device is organized into User RAM as follows: Main Array data, four words of User ID (identification), and a configuration word.

Device has a 14 bit data word, represented as 16 bit data for the programmer. The following bits are not used: bits 14 and 15 throughout the Main Array, bits 8-15 in the User ID, and bits 5-15 in configuration word. All unused bits will be loaded from the device to User RAM as zeros and are ignored during the verify operation. During programming, unused bits should be set to zeros.

Enable security bit programming from Program Device menu.

When assembling source file, output as a merged 8 bit Intellec Hex object file (INHX8M). The object file can then be downloaded to the programmer by selecting the Intel Intellec 8/MDS translator (code 83).

Footnote: 238

Devices with the E98K mask should use the menu entry WITH the asterisk '*'.

Footnote: 239

This device has a clock feature that is accessible from the last 8 bytes of the user RAM array. Refer to the Manufacturer's specification for details.

To change the clock values:

1. Select the More-Edit-Edit screen

2. Set the most significant bit (the Write bit in the control byte) to "1".

3. Set the next seven Clock bytes to the desired Seconds, Minutes, Hour, Day, Date, Month and Year values according to the Manufacturer's specification.

4. Enable the programming by setting the "Reset Clock" option in the PROGRAM DEVICE Options screen to "Y".

The value of the clock is updated automatically during each Load operation.

Footnote: 240

The Boot Block Lockout feature for this device is not supported.

Footnote: 241

Any of the four security options can be implemented for this device Encryption Array data, Security Bits 1, 2 or 3). The security options can be selected from the PROGRAM DEVICE Options screen.

Data in the Programmer's User Memory is partitioned as follows:

DEVICE	87X51FA 87X52	87X51FB 87X54	87X51FC 87X58
-----	-----	-----	-----
MAIN ARRAY	0 - 1FFFh	0 - 3FFFh	0 - 7FFFh
ENCRYPT. ARRAY	2000 - 203Fh	4000h - 403Fh	8000h - 803Fh

Enter Encryption Array data by editing the appropriate address in User Memory.

After the Encryption Array is programmed, device data will no longer match data in User RAM. Encryption Array data cannot be read from the device.

Footnote: 242

This device does not support block limits.

Footnote: 243

Erase operation erases the entire contents of device.

Footnote: 244

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Footnote: 245

Set device begin address to 2000 hex. and device block size to 6000 hex.

Footnote: 246

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Footnote: 247

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Footnote: 248

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Footnote: 249

This devices memory space is partitioned as follows :

ARRAY	TYPE	ADDRESS	
LOWER DATA	PROGRAMMABLE	0000-1FFF hex	
RESERVED	UNPROGRAMMABLE	2000-3FFF hex	fill with FF hex
UPPER DATA	PROGRAMMABLE	4000-5FFF hex	
RESERVED	UNPROGRAMMABLE	6000-7FFF hex	fill with FF hex

Lower and upper data arrays have unused bits which must be set to ones. Data generated from your development tools should support this format with no manual intervention.

Footnote: 250

Set switch position to G on the adapter.

Footnote: 251

Device full name is JT01280TP0032EEPAN1522. Device has OTP-ROM and EEPROM at different addresses. You have selected OTP-ROM programming.

Footnote: 252

Device full name is JT01280TP0032EEPAN1522. Device has OTP-ROM and EEPROM at different addresses. You have selected EEPROM programming.

Footnote: 253

Device full name is JT00320TP0128EEPAN1515. Device has OTP-ROM and EEPROM at different addresses. You have selected OTP-ROM programming.

Footnote: 254

Device full name is JT00320TP0128EEPAN1515. Device has OTP-ROM and EEPROM at different addresses. You have selected EEPROM programming.

Footnote: 255

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Footnote: 256

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Footnote: 257

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Footnote: 258

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Footnote: 259

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Footnote: 260

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Footnote: 261

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Footnote: 262

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Footnote: 263

Set device block size to 800 hex.

Footnote: 264

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Footnote: 265

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Footnote: 266

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Footnote: 267

Select individual sectors to be protected in the "Device configure" screen
If the feature is not available, use the following procedure to secure
sectors:

1. Set the bytes in User Memory at locations 80000-80007 hex with protect
or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes
in User Memory 80000-80007 hex are not part of the device array,
but are included in the device size to allow the programmer to
access the sector protection information.

Sector	User Ram location	Protect Data	Unprotect Data
0	80000 hex	1	0
1	80001 hex	1	0
2	80002 hex	1	0
3	80003 hex	1	0
4	80004 hex	1	0
5	80005 hex	1	0
6	80006 hex	1	0
7	80007 hex	1	0

2. Enable security fuse programming on the PROGRAM DEVICE options screen.
3. Program the device.

WARNING: ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 268

Some device designs and vectors may result in a Structured Test Error or Device Overcurrent during vector testing. Disable Vector test to identify if the failure is due to structure test. Disabling High Speed Logic Drivers and/or Compensated Vector Test may also eliminate the Vector failures.

Refer to the sections in your manual which describe the "High Speed Logic Drivers", "Compensated Vector Test" and "Serial Vector Test" options. The use of these features can be helpful in identifying the cause of vector failures and possibly eliminate those failures. For more information on this subject, refer to application notes #983-0358 and #983-0372 (available from Data I/O Customer Support).

Footnote: 269

Erasing and locking individuals blocks can be accomplished by modifying user memory immediately following the device's memory array.

The format of the configuration array is as follows. The offset is based from the end of device.

OFFSET	DESCRIPTION
0 - 3	configuration ID (ID is 12345678 HEX)
4 - F	reserved
10	block 0
11	block 1
12	block 2
(etc ... up to the number of blocks in the part)	

After confirming the current configuration ID, the algorithm examines the configuration bytes to determine which blocks are erased and/or locked.

The format of each byte is:

D0 1 = erase, 0 = no erase
D1 1 = lock, 0 = no lock
D2-D7 reserved

If the ID is incorrect, all blocks are erased and none are locked.

Footnote: 270

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Footnote: 271

Four levels of "BLOCK PROTECT" can be implemented

for this device as follows:

Security Fuse		Block Protect Start Addresses				
SF2	SF1	25020	25040	25043	25160	25640
0	0	None	None	None	None	None
0	1	\$C0	\$180	\$180	\$600	\$1800
1	0	\$80	\$100	\$100	\$400	\$1000
1	1	0	0	0	0	0

Enabling the "Erase EE device" option will remove all block protection.

Note: The Programmable Watchdog Timer is not supported for the Xicor 25043.

Footnote: 272

This device is available in a windowed and non-windowed package. Use of a windowed device on a handler is not recommended.

Footnote: 273

The following guidelines should be used to assure selection of the correct algorithm:

1. Distinguish between device markings beginning with "NM" or "NMC", regardless of other alpha characters that follow the device name.
2. If necessary, determine device electronic ID by viewing the ID: "More commands" / "Device checks" / "Compare electronic ID".
3. Select device algorithm from the menu as follows:

Device marking	Electronic ID	Select
NM27C256	8F04	27C256B
NMC27C256	8FC4	27C256
NM27C512	8F85	27C512A
NMC27C512	8F45	27C512

Footnote: 274

EEPROM is not programmed, verified or read.

Footnote: 275

D3 of the control word must be set to "1". The algorithm will program this bit even if user RAM data is set to "0", in which case the programmer will inform the user of an "invalid architecture word". User RAM will not be altered.

Footnote: 276

This algorithm programs both EEPROM and EPROM sections. To keep EEPROM bytes blank, fill corresponding bytes in the User's RAM with FF hex.

Footnote: 277

This algorithm programs EPROM sections only.

Footnote: 278

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Footnote: 279

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Footnote: 280

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Footnote: 281

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Footnote: 282

WARNING: If you are attempting to program a device with a data file that was generated for use with the TMDX3270110 or TMDX3270110 socket adapter please read on.

Data files generated for use with the TMDX3270110 or TMDX3270110 socket adapter, are NOT directly compatible with the device you have selected. The adapter swaps the bytes, as a result of an inverter on A0.

Execute the Byte-Data swap function under the More-Edit data menu, to swap the bytes. Please refer to the manual for additional information.

Footnote: 283

This algorithm requires a 40 pin TSOP to 40 pin DIP adapter, The manufacturers, part numbers, and phone numbers are:

Emulation Technologies
#AS-40-40-02TS-6YAM-S
(408) 982-0660

California Integration Coordinators
#CIC-40TS-40D-B6-YAM-S
(916) 626-6168

Footnote: 284

Any of the two security options can be implemented for this device (Encryption Array data, Security Bits programming 1). The security options can be selected from the PROGRAM DEVICE Options screen.

The Encryption Array data must be entered into User Memory following the Main Array data. Below is the memory partition information for the various devices:

87C51FA

	87C51	87C52	87C51FB
	87C451	87C552	87L51FB
	87C550	87C575	87C654
	87C652		
	-----	-----	-----
MAIN ARRAY :	0 - 0FFFh	0 - 1FFFh	0 - 3FFFh
ENCRYPT. ARRAY:	1000 - 101Fh	2000 - 201Fh	4000 - 401Fh

Footnote: 285

Prior to performing a Program option, transfer your design file using format 17 (LOF format). The design file *.LOF file needs to be zipped using PKZIP v1.1 prior to transferring. The programming algorithm has embedded verification of the pattern.

Footnote: 286

This algorithm allows the XC1736D device to be programmed as an XC1736A. The algorithm will automatically program the RESET polarity to be active HIGH and will generate checksums that match those of the XC1736A.

This algorithm WILL NOT program the XC1736A device and WILL NOT program the RESET polarity of the XC1736D to be active low. To program the XC1736A, select the 1736A algorithm from the standard Xilinx device selection menu. To support the programmable RESET polarity feature of the XC1736D, select the XC1736D algorithm from the standard Xilinx device selection menu.

Footnote: 287

This algorithm may not work with devices marked with date codes earlier than 1994. If you are encountering problems with devices manufactured before 1994, contact the semiconductor manufacturer.

Footnote: 288

This algorithm may not work with devices marked with date codes earlier than 1994. If you are encountering problems with devices manufactured before 1994, contact your local Data I/O office about purchasing a PPI-5201 programming adapter.

Footnote: 289

This algorithm supports both 3 volt and 5 volt devices. The voltage is determined by an ID read from the device. This ID is read during all programming operations except for a vector test operation (verify - 'V' vectors only). The default Verify option is 'A' which checks fuse and vectors.

It is important to execute another device operation prior to executing a vector test only, so that the ID is initialized. Failure to do so can cause damage to 3 volt only devices. It is also important not to mix 3 and 5 volt devices if doing a vector test only operation.

Footnote: 290

This programmer supports this devices' EPROM protect, RAM protect and RC

oscillator select programming modes, via three security options, available from the PROGRAM options screen.

To enable these features:

1. To enable the device's EPROM protect, enable security fuse 1 in the PROGRAM options screen. In this case some load instructions will be disabled.
2. To enable the device's RAM protect, enable security fuse 2 in the PROGRAM options screen.
3. To enable the device's RC oscillator, enable security fuse 3 in the PROGRAM options screen.
4. Execute a program operation.

Footnote: 291

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Footnote: 292

To keep EEPROM locations unprogrammed (blank), be sure that the corresponding bytes in programmer's user RAM are filled with FF hex.

Footnote: 293

To secure the device, change the SEC bit in OPTR to '0'. The part will be secured after programming.

Footnote: 294

This algorithm requires PPI-0605, PINSITE, and USBASE-PPI modules. Please order PPI-0605 as part number ICD6233PPI from your local Cypress Semiconductor sales office. USBASE-PPI may also be available. PINSITE and USBASE-PPI modules can be ordered from Data I/O.

Cypress Semiconductor
3901 No. First Street
San Jose, CA 95134
(408)-943-2950

Refer to the QuiXTAL Programming Guide (shipped with your PPI-0605) for information and error codes for this device.

Footnote: 295

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Footnote: 296

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Footnote: 297

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Footnote: 298

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Footnote: 299

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Footnote: 300

This device has two security bits which are set automatically by the data file. The first security bit is at location 0x021022 in the ACR. The second security bit is at location 0x021023 in the ACR. The security bit is data line D0, for both locations.

For a non-secured device, D0 of location 0x021022 must be set to logic 1 in the data file, and D0 of location 0x021023 must be set to logic 0 in the data file. To secure the device, D0 of location 0x021022 must be set to logic 0 in the data file, and D0 of location 0x021023 must be set to logic 1 in the data file.

Footnote: 301

The device you have selected, communicates with the programmer through a special cable. Please contact the device manufacture for more information on the cable/adapter.

Footnote: 302

This device requires an AutoSite with 88 pin drivers.

Footnote: 303

Select part name 705C5-E40A if the mask set is 2E40A or newer.
Select part name 705C5-D68C if the mask set is 0D68C or older.

Footnote: 304

(2900 and 3900 only) To insert the socket adapter, push down on the ZIF socket handle.

Footnote: 305

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Footnote: 306

The 68HC705J2 is programmed as a 705J1 (emulation mode). To enable this mode, set the J1 in MOR (in the programmer's RAM at address 0700 hex).

Footnote: 307

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Footnote: 308

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Footnote: 309

The available program area is "4000 hex - FFFF hex".
The data in all other areas should be set to "FF".

Device address	data
-----	-----
0000 - 3FFF hex	all FF
4000 - FFFF hex	user data
10000 - 1FFFF hex	all FF

This adapter has 2 jumper switches. Set JP1="FLASH" and JP2="1M".

Footnote: 310

The available program area is "8000 hex - FFFF hex".
The data in all other areas should be set to "FF".

Device address	data
-----	-----
0000 - 7FFF hex	all FF
8000 - FFFF hex	user data
10000 - 1FFFF hex	all FF

This adapter has 2 jumper switches. Set JP1="FLASH" and JP2="1M".

Footnote: 311

2 adapter part numbers are indicated on lower board,
"ZTAT32A-1" and "ZTAT32AR-1". Use part number "ZTAT32AR-1".

Footnote: 312

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Footnote: 313

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Footnote: 314

Programming of protect register is not supported for this device.

Footnote: 315

Set the I/O translation format for this device to 99(Intel HEX-32). This
step is necessary when downloading or uploading files from disk.

Footnote: 316

To ensure proper downloading of your design file, set the following download
options:

I/O Translation Format	88
I/O address offset	0
Memory begin address	0
User data size	0

To ensure that consistent checksums are reported, perform a
"Fill Ram" operation with FF data prior to downloading your

design file and before performing a LOAD operation.

Footnote: 317

This device has a programmable reset polarity. To set polarity active low, set addresses 4000-4003 hex to zero's. For active high polarity, set to FF hex.

Partial device operations are not allowed on this device.

Footnote: 318

This device has programmable reset polarity. To set polarity active low, set addresses 8000-8003 hex to zero's. For active high polarity, set to FF hex.

Partial device operations are not allowed on this device.

Footnote: 319

Use the following configuration blocks to properly configure the test-site for this device:

X1 = Configuration block 'B'
X2 = Configuration block 'C'
X3 = Configuration block 'B'
X4 = Configuration block 'C'

Footnote: 320

This device contains a feature that allows individual sectors to be protected. There are 7 64Kbyte sectors, 1 32Kbyte sector, 2 8 Kbyte sectors, and 1 16Kbyte sector contained in this particular device.

This device has a 16-bit data, all references to addresses will contain 2-bytes of data (1-word). Eleven extra words of data have been allocated at the end of User Memory to identify sector protect information.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 40000-4000A hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes in User Memory 40000-4000A hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. As such, this sector information will affect your checksum.

UN-PROTECT DATA = 0000 hex
PROTECT DATA = 0001 hex or any other non-zero value

Sector	29F400B Address	29F400T Address	User Ram location
0	00000h - 01FFFh	00000h - 07FFFh	40000 hex
1	02000h - 02FFFh	08000h - 0FFFFh	40001 hex
2	03000h - 03FFFh	10000h - 17FFFh	40002 hex
3	04000h - 07FFFh	18000h - 1FFFFh	40003 hex
4	08000h - 17FFFh	20000h - 27FFFh	40004 hex

5	10000h - 17FFFh	28000h - 2FFFFh	40005 hex
6	18000h - 1FFFFh	30000h - 37FFFh	40006 hex
7	20000h - 27FFFh	38000h - 3BFFFh	40007 hex
8	28000h - 2FFFFh	3C000h - 3CFFFh	40008 hex
9	30000h - 37FFFh	3D000h - 3DFFFh	40009 hex
10	38000h - 3FFFFh	3E000h - 3FFFFh	4000A hex

2. Enable 'program security fuse' option and set 'security fuse data' to 1 on the PROGRAM DEVICE options screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 321

This device contains a feature that allows individual sectors to be protected. There are 3 64Kbyte sectors, 1 32Kbyte sector, 2 8 Kbyte sectors, and 1 16Kbyte sector contained in this particular device.

This device has a 16-bit data, all references to addresses will contain 2-bytes of data (1-word). Seven extra words of data have been allocated at the end of User Memory to identify sector protect information.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 20000-20006 hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes in User Memory 20000-20006 hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. As such, this sector information will affect your checksum.

UN-PROTECT DATA = 0000 hex

PROTECT DATA = 0001 hex or any other non-zero value

Sector	29F200B Address	29F200T Address	User Ram location
-----	-----	-----	-----
0	00000h - 01FFFh	00000h - 07FFFh	20000 hex
1	02000h - 02FFFh	08000h - 0FFFFh	20001 hex
2	03000h - 03FFFh	10000h - 17FFFh	20002 hex
3	04000h - 07FFFh	18000h - 1BFFFh	20003 hex
4	08000h - 17FFFh	1C000h - 1CFFFh	20004 hex
5	10000h - 17FFFh	1D000h - 1DFFFh	20005 hex
6	18000h - 1FFFFh	1E000h - 1FFFFh	20006 hex

2. Enable 'program security fuse' option and set 'security fuse data' to 1 on the PROGRAM DEVICE options screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device,

including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 322

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Footnote: 323

The JEDEC file for this device may contain new fields that are not yet supported by HITERM's, High Speed Download.

Disable the High Speed Download option via the Communications configuration screen (More Commands-Configure System-Edit) if using a version of HITERM v3.11 or earlier.

Footnote: 324

This algorithm requires a 56 pin TSOP to 48 pin DIP adapter. The manufacturers, part numbers, and phone numbers are:

Emulation Technologies
#AS-56-48-02TS-6YAM-S
(408) 982-0660

California Integration Coordinators
#CIC-56TS-48D-B6-YAM-S
(916) 626-6168

Footnote: 325

This algorithm requires a 56 pin TSOP to 40 pin DIP adapter, The manufacturers, part numbers, and phone numbers are:

Emulation Technologies
#AS-56-40-05TS-6YAM-S
(408) 982-0660

California Integration Coordinators
#CIC-56TS-40D-E6-YAM-S
(916) 626-6168

Footnote: 326

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Footnote: 327

For V4.7/V2.5 or later, the following menu names require the indicated PPI adapters:

7128-Q160	PPI-0551
7160-Q160	PPI-0551
7192-QFP	PPI-0550
7192-PGA	PPI-0414

If you do not have the current PPI adapter, you may use the extended algorithm on the 3900 V2.5 ALG/SYS disk or UniSite V4.7 ALG disk 2 until you acquire the current PPI adapter. The effected PPI adapters are listed

below:

7128-Q160	PPI-0533
7160-Q160	PPI-0533
7192-QFP	PPI-0532
7192-PGA	PPI-0403

The 7128-Q100 adapter (PPI-0531) is unchanged since V4.6/V2.4. If you need to acquire a PPI adapter, please contact your Data I/O representative.

Footnote: 328

Bit #7 (SECE) in the OPTION register (address 1EFE hex.) must be set to '0'. The security feature is not fully implemented yet.

Footnote: 329

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This device contains an Electronic ID. If an ID error occurs, the wrong device is selected or a different version of device is selected.

If all menu entries yield a "DEVICE ID error" contact DATA I/O Customer Support at 1-800-247-5700.

Footnote: 330

A standard 7128 POF file can be programmed by the following menu entries: "7128" or Altera X-PGM menu entry "7128E AS 7128" or "7128S AS 7128. 7128E POF files can only be programmed with the "7128E" or "7128S AS 7128E" entry. 7128S POF files can only be programmed with a "7128S" entry.

Footnote: 331

Data bits 5 through 7 are not used in this device. All addresses should have these bits set to one, or a Verify error will occur. Programming is unaffected. A load operation will load these bits as ones.

Footnote: 332

Data in Programmer's User RAM is partitioned as follow:

003F hex	config. register (EEPROM cell)
0D00 hex - 0FFF hex	EEPROM
4000 hex - FFFF hex	EPR0M (not on 68HC11PH8)

Footnote: 333

A standard 7192 POF file can be programmed by the following menu entries: 7192 or Altera X-PGM "7192E as 7192" or "7192S as 7192" menu entries. The 7192E POF files can be programmed with the 7192E or Altera X-PGM menu entry "7192S as 7192E". 7192S POF files can only be programmed with a 7192S menu entry.

Footnote: 334

SETSITE NOTES

When programming sector protection, security fuse data must be set to "1" in the single device screen.

This device can be programmed in "set" mode, but with the following limitations:

- The eight bytes at User Ram locations 80000 - 80007 will secure the sector protect the same in all devices of the set.
- For all devices following the first in a set, data must begin at the User Ram location indicated by the device size represented on the SetSite Program screen. The extra eight bytes at the end of each of these devices are "don't care".

Footnote: 335

Pin #1 of the Xilinx 73108 144-PGA should be inserted in the bottom right corner of PPI-0416.

Footnote: 336

This device contains a feature that allows individual sectors to be protected. There is 1 64K byte sector, 1 32K byte sector, 1 16K byte sector, and 2 8K byte sectors contained in this particular device.

This device uses 16-bit data; all references to addresses will contain 2-bytes of data (1-word). Five extra words of data have been allocated at the end of User Memory to identify sector protect information.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 10000-10004 hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes in User Memory 10000-10004 hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. As such, this sector information will affect your checksum.

UNPROTECT DATA = 0000 hex
PROTECT DATA = 0001 hex or any other non-zero value

Sector	29F100B Address	29F100T Address	User Ram location
0	00000h - 01FFFh	00000h - 07FFFh	10000 hex
1	02000h - 02FFFh	08000h - 0BFFFh	10001 hex
2	03000h - 03FFFh	0C000h - 0CFFFh	10002 hex
3	04000h - 07FFFh	0D000h - 0DFFFh	10003 hex
4	08000h - 0FFFFh	0E000h - 0FFFFh	10004 hex

2. Enable the security fuse option on the PROGRAM DEVICE options screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 337

There are three security options supported for this device (Security bit 1, 2, 3). The security options can be selected from the Program Device screen. After programming security bits, programming operations are no longer allowed.

MAIN ARRAY DATA	0-3FFF hex
ENCRYPTION ARRAY DATA	NOT SUPPORTED
CONFIGURATION BYTES	NOT SUPPORTED

Footnote: 338

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Footnote: 339

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Footnote: 340

The available program area is "0000hex - EE7Fhex". The data in all other areas should be set to "FF".

Device address	data
-----	-----
0000hex - EE7Fhex	user data
EE80hex - 1FFFFhex	all FF
-----	-----

Footnote: 341

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Footnote: 342

Performing a LOAD operation may result in the following message:

"Load Error: Unable to encode device state into POF".

This indicates that the data read from the device isn't representable in POF format. Examples of this are a blank device (POF's represent the device data AFTER programming which is never blank), and a 7000E device programmed as a 7000E device, but loaded as a 7000 device. If the device cannot be loaded using the same algorithm selection used to program it, there may be a problem with the device.

Footnote: 343

A standard 7160 POF file can be programmed by the following menu entries: 7160, 7160-NEW or Altera X-PGM menu entry "7160E and 7160". The enhanced mode 7160 POF files can only be programmed with the 7160E menu entry.

Footnote: 344

A standard 7256 POF file can be programmed by the following menu entries: 7256, 7256-NEW or Altera X-PGM menu entry "7256E as 7256". The enhanced mode 7256 POF files can only be programmed with the 7256E menu entry.

Footnote: 345

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Footnote: 346

OPTION BYTE: The Option byte(s) are at the end of the device memory map. Please refer to the device data sheet for number of option bytes, and what each option bit represents. Enable programming by Selecting "Program configuration" in the "Program device" screen.

In TaskLink: Make the following selections: Setup menu -> General Parameters, then select the "ENABLE SPECIAL DATA.", and set the Security Option to 2 enabling all security fuses.

Footnote: 347

There are 8 256K byte sector groups in this device (each group contains 4 64K byte sectors). Use the following procedure to secure sector groups:

1. Set the bytes in User Memory at locations 200000-200007 hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes in User Memory 200000-200007 hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information.

Sector Group	User Ram location	Protect Data	Unprotect Data
0	200000 hex	1	0
1	200001 hex	1	0
2	200002 hex	1	0
3	200003 hex	1	0
4	200004 hex	1	0
5	200005 hex	1	0
6	200006 hex	1	0
7	200007 hex	1	0

2. Enable the security fuse option on the PROGRAM DEVICE options screen.
3. Program the device.

WARNING: ERASE operation will erase the entire device, including protected sector groups. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 348

The user ram is from 0 through 7FFE hex. 7FFF is reserved for the security fuse program only.

Footnote: 349

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Footnote: 350

Performing a LOAD operation may result in the following message:

"Load Error: Unable to encode device state into POF."

This indicates that the data of the device isn't representable in the POF format.

Footnote: 351

Block Locking is not supported by the Setsite algorithm.

Footnote: 352

For more information, the following files can be downloaded from the Data I/O bulletin board or FTP site:

```
atmel_uc.txt ---- for Atmel microcontrollers
mot_uc.txt   ---- for Motorola microcontrollers
int_uc.txt   ---- for Intel microcontrollers
tex_uc.txt   ---- for Texas Inst. microcontrollers
siem_uc.txt  ---- for Siemens microcontrollers
xxx_uc.txt   ---- for other microcontrollers
```

(xxx stands for the manufacturer's name)

Files will be updated periodically.

To Ftp the files, use <ftp://ftp.data-io.com/dataio/main/>

To access from the WEB, use http://www.data-io.com/technical_information/

Data I/O BBS: (206) 882 3211

Footnote: 353

The security enabled/disabled setting must be included in your data file. Check location 07F1 hex (MOR register) in the Programmer's User RAM for the security feature enabled/disabled. If bit #6 is set to '1', the part will be secured. The secured part reads all locations as 00 hex (as if it were a blank device).

Footnote: 354

This device has a security function that, once programmed, all data reads from the device as '00'. This security fuse function can be enabled from the Program Device screen.

Users are cautioned that the manufacturer does not guarantee this function. Concerns about this should be addressed to Hitachi, Ltd.

Footnote: 355

This device requires a socket adapter available from Emulation Technology Inc. (408-982-0660).

ISP/PLSI1016*	44 pin PLCC	AS-44-28-02P or AS-44-28-03P
	44 pin TQFP	AS-44-28-01Q
ISP/PLSI1024*	68 pin PLCC	AS-68-28-03P
ISP/PLSI1032*	84 pin PLCC	AS-84-28-02P
	100 pin TQFP	AS-100-28-01Q
ISP/PLSI1048*	120 pin PQFP	AS-120-28-01Q
ISP/PLSI1048C*	128 pin PQFP	AS-128-28-01Q
	133 pin PGA	AS-133-28-01G
ISP/PLSI1016E*	44 pin PLCC	AS-44-28-03P
	44 pin TQFP	AS-44-28-01Q
ISP/PLSI1024E*	68 pin PLCC	AS-68-28-03P
ISP/PLSI1032E*	84 pin PLCC	AS-84-28-02P
	100 pin PGA	AS-100-28-01Q
	100 pin TQFP	AS-100-28-01Q
ISP/PLSI1048E*	128 pin PQFP	AS-128-28-01Q
	133 pin PGA	AS-133-28-01G
ISP/PLSI2032*	44 pin PLCC	AS-44-28-03P
	44 pin TQFP	AS-44-28-01Q
ISP/PLSI2032LV*	44 pin PLCC	AS-44-28-03P
	44 pin TQFP	AS-44-28-01Q
ISP/PLSI2064*	84 pin PLCC	AS-84-28-02P
	100 pin TQFP	AS-100-28-01Q
ISP/PLSI2096*	128 pin PQFP	AS-128-28-01Q
	133 pin PGA	AS-133-28-01G
ISP/PLSI2128*	160 pin MQUAD	AS-160-28-01Q
	176 pin TQFP	AS-176-28-01Q
	167 pin PGA	AS-167-28-01G
ISP/PLSI3160*	208 pin MQUAD	AS-208-28-04MQ-6
ISP/PLSI3192*	240 pin PQFP	AS-240-28-01Q
ISP/PLSI3256*	160 pin MQUAD	AS-160-28-01Q
	167 pin PGA	AS-167-28-01G
ISP/PLSI3256A*	160 pin MQUAD	AS-160-28-01Q
	167 pin PGA	AS-167-28-01G
ISP/PLSI3256E*	304 pin MQUAD	AS-304-28-01Q-6
ISP/PLSI3320*	208 pin MQUAD	AS-208-28-04MQ-6
ISP/PLSI3448*	304 pin MQUAD	AS-304-28-01Q
ISP/PLSI6192*	208 pin MQUAD	AS-208-28-02MQ
I/P2128V-84P*	84 pin PQFP	AS-84-28-05P-6
I/P2128V-100T*	100 pin TQFP	AS-100-28-04Q-6
I/P2128V-176T*	176 pin TQFP	AS-176-28-02Q-6
ISPGDX160*	208 pin MQUAD	AS-208-28-05Q
ISPGDX120*	176 pin TQFP	AS-176-28-03Q

Footnote: 356

The starting address for this device has been offset to 0000 hex in User RAM. This corresponds to the device address FF2000h.

Address(in words)	Address.(in bytes)	Intel Required Data:
0000h - 0009h	0000h through 0013h	interrupt vectors (lower)
	000Ah 0015h and 0014h	FFh, FFh (reserved)
	000Bh 0017h and 0016h	FFh, FFh (also see note #1)
	000Ch 0019h and 0018h	**h, CCB or CCB0 byte
	000Dh 001Bh and 001Ah	**h, **h or CCB1 byte
	000Eh 001Dh and 001Ch	**h, FFh (reserved)

000Fh	001Fh	and	001Eh	**h, FFh (reserved)
0010h - 0017h	0020h through 002Fh			security key
0018h - 001Fh	0030h through 003Fh			interrupt vectors (upper)
0020h - 002Eh	0040h through 005Dh			PTS vectors
002Fh - 003Fh	005Eh through 007Fh			all FFh (reserved)

Locations marked as **h are also reserved locations and it is the user's responsibility to fill these locations with the required data. Consult the Manufacturer's specifications for further information.

Note 1: To enable CDE (clock detect enable bit), fill these locations with 0Ch, DEh. Refer to the device spec. sheet for detailed information (CDE bit is implemented only on some 196XX family members).

To secure the device, enable Security bit programming in the Program Memory Device Options screen. If this feature is enabled, lock bits of CCB (CCB0) are to be programmed regardless of value CCB (CCB0) byte.

User Ram is shown in words as default. Byte display mode is also available.

This device does not need to have the Byte Swap Option enabled.

Footnote: 357

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Footnote: 358

Data in Programmer's User Ram are partitioned as follow:

Main array in User's RAM	Main array in the device
-----	-----
0000 hex - 5FFF hex (in words)	0000 hex - BFFF hex (in bytes)
Shadow registers in User's RAM	Shadow registers in the device
(in words)	(in bytes)
-----	-----
6000 hex - 600F	F820 hex - F83E hex

Footnote: 359

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Footnote: 360

Use PPI-0262 if load or verify errors occur.

Footnote: 361

If you experience load or verify problems on the PLCC base, use PPI-PLCC44 with a configuration capacitor inserted in the jumper location for pins 12, 34 and 44.

Footnote: 362

- 1) Adapter's SW1 is set to "S" side.
- 2) Go through MAIN MENU-More-Device checks-Electronic erase.
- 3) Operate Electronic erase.
- 4) "Non-Blank" error occurs but security operation is complete.

*Note: If the device is reprogrammed it returns to an unsecured state.

Footnote: 368

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Footnote: 369

This device requires a special adapter to program. Pins 9 and 11 have to be swapped, and the adapter is not available at the time of the release. Please contact Data I/O for availability of the adapter.

Footnote: 370

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Footnote: 371

Select the device with extension -0F88 if using 68HC705X4 mask 0F88B. Select the device with extension -1F88 if using 68HC705X4 mask 1F88B.

Footnote: 372

This device contains a feature which allows individual partitions to be protected. Use the following procedure to secure any of the sixteen partitions:

1. Set the bytes in User Memory at locations 20000 - 20015 hex with protect or unprotect data values. Protect data should be set to 01, unprotect data is 00.
Note: The protect bytes in user memory are not part of the device array, but are included in the device size to allow the programmer to access the partition protection information.

Partition	User Ram address	Protect Data	Unprotect Data
-----	-----	-----	-----
0	20000	01	00
1	20001	01	00
2	20002	01	00
...and so on up to...			
15	20015	01	00

2. Enable the security fuse option on the PROGRAM DEVICE options screen to enable the protection programming option.

3. Program the device.

Footnote: 373

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Footnote: 374

The available program area is '4000h-7FFFh'

Footnote: 375

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Footnote: 376

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Footnote: 377

Device has Reset/OE# pin configuration data which follows Main Array Data in User Memory. The four configuration bytes at this location must be set to FFh for Reset/OE# (active high), or 00h for Reset#/OE (active low).

The four configuration bytes for 17C010 and 17C512 must be set to 00h for Reset/OE# (active high), or FFh for Reset#/OE (active low).

Device	Address Location	Data
17C65	2000-2003	00h for reset LOW FFh for reset HIGH
17C128	4000-4003	00h for reset LOW FFh for reset HIGH
17C256	8000-8003	00h for reset LOW FFh for reset HIGH
17C512	10000-10003	FFh for reset LOW 00h for reset HIGH
17C010	20000-20003	FFh for reset LOW 00h for reset HIGH

Footnote: 378

The available program area is 4000h-7FFFh.

Footnote: 379

Socket adapter has no 1 pin indicator. For device insertion, refer to adapter users manual. The available program area is "0000hex - 7FFFhex". The data in all other areas should be set to "FF".

Device address	Data
-----	-----
0000hex - 7FFFhex	User data
8000hex - 1FFFFhex	all FF
-----	-----

Footnote: 380

The available program area is "0000hex - 7FFFhex".
The data in other areas should be set to "FF".

Device address	Data
-----	-----
0000hex - 7FFFhex	User data
8000hex - 1FFFFhex	all "FF"
-----	-----

Footnote: 381

This device contains a feature that allows individual sector groups to be individually protected. There are 8 128K byte sector groups contained in this particular device. (Each sector group contains 2 64K byte sectors.) Use the following procedure to secure sector groups:

1. Set the bytes in User Memory at locations 100000-100007 hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes in User Memory 100000-100007 hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information.

Sector Group	User Ram location	Protect Data	Unprotect Data
0	100000 hex	1	0
1	100001 hex	1	0
2	100002 hex	1	0
3	100003 hex	1	0
4	100004 hex	1	0
5	100005 hex	1	0
6	100006 hex	1	0
7	100007 hex	1	0

2. Enable the security fuse option on the PROGRAM DEVICE options screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sector groups. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 382

This device contains a feature that allows individual sectors to be protected. There are 7 64Kbyte sectors, 1 32Kbyte sector, 2 8 Kbyte sectors, and 1 16Kbyte sector contained in this particular device.

This device uses 16-bit data; all references to addresses will contain 2-bytes of data (1-word). Eleven extra words of data have been allocated at the end of User Memory to identify sector protect information.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 40000-4000A hex with protect or un-protect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes in User Memory 40000-4000A hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. As such, this sector information will affect your checksum.

UN-PROTECT DATA = 0000 hex

PROTECT DATA = 0001 hex or any other non-zero value

Sector	29F400B Address 29LV400B Address	29F400T Address 29LV400T Address	User Ram location
0	00000h - 03FFFh	00000h - 0FFFFh	40000 hex
1	04000h - 05FFFh	08000h - 0FFFFh	40001 hex
2	06000h - 07FFFh	10000h - 17FFFh	40002 hex
3	08000h - 0FFFFh	18000h - 1FFFFh	40003 hex
4	10000h - 1FFFFh	20000h - 27FFFh	40004 hex
5	10000h - 17FFFh	28000h - 2FFFFh	40005 hex
6	18000h - 1FFFFh	30000h - 37FFFh	40006 hex
7	20000h - 27FFFh	38000h - 3BFFFh	40007 hex
8	28000h - 2FFFFh	3C000h - 3CFFFh	40008 hex
9	30000h - 37FFFh	3D000h - 3DFFFh	40009 hex
10	38000h - 3FFFFh	3E000h - 3FFFFh	4000A hex

2. Enable 'program security fuse' option and set 'security fuse data' to 1 on the PROGRAM DEVICE options screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 383

This device selection should only be used with the 'A' version devices.

The version information can be deciphered from the part name.

Ex. TMC371C7B3ANMT

^

|

An 'A' at this position means denotes an 'A' version device

Contact your local TI representative if you need assistance.

Footnote: 384

The device selection menu option containing the '-F' suffix has been optimized for performance. If you experience yield problems please use the non '-F' device menu selection.

Footnote: 385

Use the following procedure to secure any of the sixteen partitions

on this device:

1. Set the bytes in User Memory at locations 8000 - 8015 hex with protect or unprotect data values. Protect data should be set to 01, unprotect data is 00.
Note: The protect bytes in user memory are not part of the device array, but are included in the device size to allow the programmer to access the partition protection information.

Partition	User Ram address	Protect Data	Unprotect Data
-----	-----	-----	-----
0	8000	01	00
1	8001	01	00
2	8002	01	00
...and so on up to...			
15	8015	01	00

2. Enable the security fuse option on the PROGRAM DEVICE options screen to enable the protection programming option.
3. Program the device.

Footnote: 386

Use the following procedure to secure any of the sixteen partitions on this device:

1. Set the bytes in User Memory at locations 80000 - 80015 hex with protect or unprotect data values. Protect data should be set to 01, unprotect data is 00.
Note: The protect bytes in user memory are not part of the device array, but are included in the device size to allow the programmer to access the partition protection information.

Partition	User Ram address	Protect Data	Unprotect Data
-----	-----	-----	-----
0	80000	01	00
1	80001	01	00
2	80002	01	00
...and so on up to...			
15	80015	01	00

2. Enable the security fuse option on the PROGRAM DEVICE options screen to enable the protection programming option.
3. Program the device.

Footnote: 387

Data for this device is organized in User RAM as follows: Main Array data, four words of User ID (identification, 2000-2003 Hex),

and a configuration word (2007 Hex).

This device has a 14 bit data word which is represented as 16 bit data for the programmer.

Bits 4 and 5 of the configuration word are the security fuses. The options are as follows:

00	All memory is code protected.
01	Upper 3/4 of program memory code protected.
10	Upper 1/2 of program memory code protected.
11	Code protection off.

On devices that use configuration bits 8-13, they are set by the algorithm according to what bits 4 and 5 are set to by the user.

The Security Bit can be programmed only by enabling security fuse feature in Program Device Menu.

When assembling source file, output to a merged 8 bit Intellec Hex object file (INHX8M). The object file that was created can then be downloaded to the programmer by selecting the Intel Intellec 8/MDS translator (code 83).

Footnote: 388

If the assembly part number on the bottom of the adapter is 715-2209-001, your adapter should be upgraded to a later version to program this device.

Footnote: 389

This device does not support Illegal Bit Check, or Verify. The Load operation reads and displays the device signature bits.

Footnote: 390

The Verify operation for this part performs the Low and High Icc tests. The Verify Passes should be set to "One, Vcc, Nominal" in the Device Program screen.
This device does not support Continuity testing, Illegal Bit, or Blank Check. Each function is disabled.

Footnote: 391

Disable "Continuity Checking" for this device.

Footnote: 392

This device does not support upload, output to disk, fill RAM, edit data, blank check, or continuity check.

Footnote: 393

Due to exception bits:
1) A blank device will not verify after reading itself.
2) Downloading a POF file and verifying may display a different checksum then reading a device and verifying.

Footnote: 394

If using a JEDEC file designed for the 44-pin PLCC package, use the JEDEC pin swap function "P" to translate the test vector data. The JEDEC file should be modified by inserting 3 lines after the last fuse number but before the first vector:

Example:

```
L15040 11101010111101011111101011111101*
E00000000100100011
0100010101100111
1000100110101011
1100110111101111* <-- last fuse number in JEDEC file
P 39 40 41 42 43 44 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
  17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35
  36 37 38*
V0001 N0111010000N000101110NNLLLLLLLLL10N000101110N* <-- 1st vector
in JEDEC file
```

Footnote: 395

The load operation is not supported at this time.

Footnote: 396

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Footnote: 397

The Encryption Array is partitioned at 4000h-403Fh in the programmer's User Memory.

Enable the Watchdog Time Setting by setting the 'Program configuration' to 'Y'.

After the Encryption Array is programmed, device data will no longer match data in User RAM. Encryption Array and Watchdog Timer data cannot be read from the device.

Footnote: 398

Enable 2 pass verify when programming this device to comply with the manufacturers' requirements.

Footnote: 399

It is important to execute another device operation prior to executing a vector test only operation. This is required to initialize the device ID.

Footnote: 400

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Footnote: 401

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Footnote: 402

This device requires that capacitor block 44C be installed on the test-site at position X4.

Footnote: 403

Use the following configuration blocks to properly configure the test-site for this device:

- X1 = Configuration block '44B'
- X2 = No Configuration block
- X3 = Configuration block '44B'
- X4 = Configuration block '44A'

Footnote: 404

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Footnote: 405

The algorithm with -R on the menu has switched rows and columns for Personality EPROM programming. Compare the Personality EPROM reading on the DATA I/O programmer with the reading on your development tools to select the proper algorithm.

Footnote: 406

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Footnote: 407

Structured Test Vector errors may occur with this hardware configuration.

Footnote: 408

This algorithm requires the SETSITE module.

Footnote: 409

There are three security options supported for this device (Security bit 1, 2, 3). The security options can be selected from the Program Device screen. After programming security bits, programming operations are no longer allowed..

MAIN ARRAY DATA	0-3FFF hex
ENCRYPTION ARRAY DATA	NOT SUPPORTED
CONFIGURATION BYTES	NOT SUPPORTED

This algorithm is for the 'B' and 'C' step versions of the 87C251SB. The 'A' stepping is noted by an 'S-SPEC' number (the number after the part number on the symbol) of 'Q7945'. 'B' and 'C' step versions will have a spec of 'Q8052' or greater. The 'A' step will not program correctly if this algorithm is used.

Footnote: 410

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Footnote: 411

 The Write Protect Register is programmed with the address value of the first word that is to be protected. All address values equal to or greater than the value contained in the Protect Register will be protected from further writes. The value of the Protect Register can be specified by editing the User RAM location listed in the table below:

DEVICE	RAM Location	Maximum Value
93CS06	20 hex	001F hex
93CS46	40 hex	003F hex
93CS47	40 hex	003F hex
93CS56	80 hex	007F hex
93CS57	80 hex	007F hex
93LCS56	80 hex	007F hex
93CS66	100 hex	00FF hex
93CS67	100 hex	00FF hex
93LCS66	100 hex	00FF hex

The contents of the Protect Register will not be programmed unless the Program Protect Reg. option is set to "Y".

The content of the Protect Register may be secured from any future writes by setting the Program Security Fuse option to "Y".

Footnote: 412

 This algorithm is for the 'A' step version of the 87C251SB.

The step is noted by an 'S-SPEC' number which is located after the part number.

Step Version	S-SPEC
A	Q7945
B or C	Q8052' or greater.

The 'B' or 'C' step devices will not program correctly if this algorithm is used. Select the 87C251SB-BC or 87C251SB-BCP device menu selection.

Footnote: 413

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This device contains an Electronic ID. If an ID error occurs, the wrong device is selected or a different version of device is selected.

If all menu entries yield a "DEVICE ID error" contact DATA I/O Customer Support at 1-800-247-5700.

Footnote: 414

 This device has 15 64K byte, 1 32K byte, 2 8K byte, and 1 16K byte sectors.

This device uses 16-bit data; 2-bytes of data (1-word) are used to reference addresses. Nineteen extra words of data allocated at the end of User Memory used to identify sector protect information.

To secure sectors:

1. In User Memory, set bytes at locations 80000-80012 hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The bytes in User Memory at 80000-80012 hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. This sector information will affect your checksum.

UNPROTECT DATA = 0000 hex

PROTECT DATA = 0001 hex or any other non-zero value

Sector	29F800B Address 29LV800B Address	29F800T Address 29LV800T Address	User Ram location
0	00000h - 01FFFh	00000h - 07FFFh	80000 hex
1	02000h - 02FFFh	08000h - 0FFFFh	80001 hex
2	03000h - 03FFFh	10000h - 17FFFh	80002 hex
3	04000h - 07FFFh	18000h - 1FFFFh	80003 hex
4	08000h - 0FFFFh	20000h - 27FFFh	80004 hex
5	10000h - 17FFFh	28000h - 2FFFFh	80005 hex
6	18000h - 1FFFFh	30000h - 37FFFh	80006 hex
7	20000h - 27FFFh	38000h - 3FFFFh	80007 hex
8	28000h - 2FFFFh	40000h - 47FFFh	80008 hex
9	30000h - 37FFFh	48000h - 4FFFFh	80009 hex
10	38000h - 3FFFFh	50000h - 57FFFh	8000A hex
11	40000h - 47FFFh	58000h - 5FFFFh	8000B hex
12	48000h - 4FFFFh	60000h - 67FFFh	8000C hex
13	50000h - 57FFFh	68000h - 6FFFFh	8000D hex
14	58000h - 5FFFFh	70000h - 77FFFh	8000E hex
15	60000h - 67FFFh	78000h - 7FFFFh	8000F hex
16	68000h - 6FFFFh	7C000h - 7CFFFh	80010 hex
17	70000h - 77FFFh	7D000h - 7DFFFh	80011 hex
18	78000h - 7FFFFh	7E000h - 7FFFFh	80012 hex

2. Enable security fuse option on the PROGRAM DEVICE options screen.

3. Program device.

WARNING: ERASE operation erases the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 415

The algorithm programs data from user RAM address 0000h - DFFFh to device bank #8. Data from user RAM address E000h - EFFFh is programmed to the device's shadow bank.

Footnote: 416

Devices using PPI adapters need a bypass capacitor between Vcc and GND pins. Use caps supplied with PPI kits (Data I/O P/N 615-1832-001 0.1 uF).

Footnote: 417

EPM5128 - EPM5128A
EPM5192 - EPM5192A
EPM7XXX/E/S - EPM7XXX
EP960 - EP9XX
EPX880 - EPX780
EP1860 - EP18XX

Footnote: 421

Available program area is "1000 hex - FFFF hex".
Data in all other areas should be set to "FF".

Device address	data
-----	-----
0000 - FFF hex	all FF
1000 - FFFF hex	user data

Adapter has 2 jumper switches. Set JP1="EPROM" and JP2="1M".

Footnote: 422

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Footnote: 423

The program memory area in the PROM mode is as follows:

0000 hex	-	3FFF hex	unused in 87PH20F, programmable in 87PM20F
4000 hex	-	7FFF hex	programmable in 87PH20F and 87PM20F

For 87PH20F set User data size to 4000, Memory begin address to 4000,
Device begin address to 4000, and Device block size to 4000.

For 87PM20F set User data size to 8000, Memory begin address to 0000,
Device begin address to 0000, and Device block size to 8000.

Footnote: 424

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Footnote: 425

Device requires a socket adapter. Two types can be used:

1. Hitachi HS7043ESH S1H (available from the device manufacturer).
2. Data I/O H7704XQ144D3201 (available from Data I/O).

For UniSite (SITE48HS DIP module), the leads of Hitachi
adapter should be extended by 10mm to reach DIP contact.

Footnote: 426

Security Bit programming may be enabled in the Program Memory Device Options
screen.

Program security fuse 1 -> enables DED bit programming
Program security fuse 2 -> enables DEI bit programming
Program security fuse 3 -> enables LOC0/LOC1 programming

The device's memory map starting at address 2000 hex is offset by 2000 hex bytes to start at the User Memory address 0000 hex. Because of differences in assemblers, fill first 10000 hex bytes in User Ram with FF hex before file downloading. Partial device operation is not allowed.

Locations B, D-F and 2F-3F hex are reserved for special functions and are not programmable. These locations will always load as FFFF hex. If data is entered in User RAM at these locations, a verify error occurs, but no data will be programmed at those locations.

Address C hex is also reserved. The most significant byte of C hex is always programmed to 20 hex. If data other than 20 hex is entered in User RAM at this location, a verify error occurs, but data 20 hex will be programmed.

The least significant byte of address C hex is the Chip Configuration byte, which is programmable. The two most significant bits of this location are the lock bits, which can be programmed only by selecting the Security Fuse 3 programming option in the PROGRAM Options screen. Consult the Manufacturer's specifications for further information.

The User Ram is displayed in words by default. Byte display mode is also available.

Footnote: 427

Data for the individual block locking is stored, starting with block 0, at the end of device memory. A byte of data is reserved for each block. The LSB of the byte equal to one (01h) means that the block lock should be programmed. Data of zero (00h) means that the block lock will not be set. All bits other than bit zero are ignored. To enable block locking, the 'Program Configuration' option in the 'Program Device' screen must be set to 'Y'.

The master lock bit can be set by enabling the 'Program Security Fuse 1' option in the 'Program Device' screen.

Footnote: 428

If experiencing yield problems, contact Data I/O for a specially configured cap block.

Footnote: 429

This device contains a feature which allows individual sectors to be protected. There are 8 16Kbyte sectors contained in this particular device. Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 20000-20007 hex with protect or un-protect data values.

Note: Protect data should be set to 01. The protect bytes in user memory 20000-20007 hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information.)

Sector	User Ram location	Protect Data	Un-protect Data
--------	-------------------	--------------	-----------------

0	20000 hex	01	00
1	20001 hex	01	00
2	20002 hex	01	00
3	20003 hex	01	00
4	20004 hex	01	00
5	20005 hex	01	00
6	20006 hex	01	00
7	20007 hex	01	00

2. Enable 'program security fuse' option and set 'security fuse data' to 1 on the PROGRAM MEMORY DEVICE screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 430

This device contains a feature which allows individual sectors to be protected. There are 3 64K byte sectors, 1 32 Kbyte sector, 2 8K byte sectors, and 1 16K byte sector contained in this particular device.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 40000-40006 hex with protect or unprotect data values.

Note: Protect data can be 01 or any non-zero value. The protect bytes in user memory 40000-40006 hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. As such, this sector information will affect your checksum.

UNPROTECT DATA = 00 hex

PROTECT DATA = 01hex or any other non-zero value

Sector	29F002B 29F002NB 29LV002B Address	29F002T 29F002NT 29LV002T Address	User Ram location
-----	-----	-----	-----
0	00000h - 03FFFh	00000h - 0FFFFh	40000 hex
1	04000h - 05FFFh	10000h - 1FFFFh	40001 hex
2	06000h - 07FFFh	20000h - 2FFFFh	40002 hex
3	08000h - 0FFFFh	30000h - 37FFFh	40003 hex
4	10000h - 1FFFFh	38000h - 39FFFh	40004 hex
5	20000h - 2FFFFh	3A000h - 3BFFFh	40005 hex
6	30000h - 3FFFFh	3C000h - 3FFFFh	40006 hex

2. Enable the security fuse option on the PROGRAM DEVICE screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled

for any sector by following the procedure described above.

Footnote: 431

This device contains a feature which allows individual sectors to be protected. There are 7 64K byte sectors, 1 32K byte sector, 2 8K byte sectors, and 1 16 Kbyte sector contained in this particular device.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 80000-8000A hex with protect or unprotect data values.

Note: Protect data can be 01 or any non-zero value. The protect bytes in user memory 80000-8000A hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. As such, this sector information will affect your checksum.

UNPROTECT DATA = 00 hex

PROTECT DATA = 01 hex or any other non-zero value.

Sector	29LV004B Address	29LV004T Address	User Ram Location
-----	-----	-----	-----
0	00000h - 03FFFh	00000h - 0FFFFh	80000 hex
1	04000h - 05FFFh	10000h - 1FFFFh	80001 hex
2	06000h - 07FFFh	20000h - 2FFFFh	80002 hex
3	08000h - 0FFFFh	30000h - 3FFFFh	80003 hex
4	10000h - 1FFFFh	40000h - 4FFFFh	80004 hex
5	20000h - 2FFFFh	50000h - 5FFFFh	80005 hex
6	30000h - 3FFFFh	60000h - 6FFFFh	80006 hex
7	40000h - 4FFFFh	70000h - 77FFFh	80007 hex
8	50000h - 5FFFFh	78000h - 79FFFh	80008 hex
9	60000h - 6FFFFh	7A000h - 7BFFFh	80009 hex
10	70000h - 7FFFFh	7C000h - 7FFFFh	8000A hex

2. Enable the security fuse option on the PROGRAM DEVICE screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 432

This device contains a feature that allows individual sector groups to be individually protected. There are 8 128K byte sector groups contained in this particular device. (Each sector group contains 2 64K byte sectors.) Use the following procedure to secure sector groups:

1. Set the bytes in User Memory at locations 100000-100007 hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes in User Memory 100000-100007 hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information.

Sector Group	User Ram location	Protect Data	Unprotect Data
0	100000 hex	01	00
1	100001 hex	01	00
2	100002 hex	01	00
3	100003 hex	01	00
4	100004 hex	01	00
5	100005 hex	01	00
6	100006 hex	01	00
7	100007 hex	01	00

2. Enable the security fuse option on the PROGRAM DEVICE options screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sector groups. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 433

Use the following configuration blocks to properly configure the test-site for this device:

X1 = Configuration block 'C'
X2 = Configuration block 'B'
X3 = Configuration block 'C'
X4 = Configuration block 'B'

Footnote: 434

This device requires an Oki socket adapter. The socket adapter needed is an SOIC-44pin to DIP-42 pin conversion adapter. It is available from Oki electric industry Co. Ltd.

Footnote: 435

Locking individuals blocks can be accomplished by modifying user memory. The configuration array is located directly after the devices normal memory array. If the device size is 200,000 hex bytes long, the configuration memory begins at address 200,000 hex.

The format of the configuration array is as follows. The offset is based from the end of device.

OFFSET	DESCRIPTION
0	block 0
1	block 1
2	block 2
(etc ... up to the number of blocks in the part)	
D0	1 = lock, 0 = no lock
D1-D7	reserved

To enable block locking, the 'Program configuration' flag in the 'Program Device' menu must be set to 'Y' (Yes). If

the 'Program configuration' flag is set to 'N', block locking information is ignored.

Footnote: 436

 This device requires that the security fuse be blown in order for the device to function properly. Before programming the device, be sure you have made the proper selection to program the security fuse.

Footnote: 437

 This device requires a .01uf bypass capacitor between pin 16 and ground. The capacitor can be plugged directly into the pin 16 receptacle on the PPI-0708 adapter.

Footnote: 438

 This device has 15 64K byte sectors, 1 32K byte sector, 2 8K byte sectors, and 1 16K byte sector.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 100000-100012 hex with protect or unprotect data values.

Note: Protect data can be 01 or any non-zero value. The protect bytes in user memory 100000-100012 hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. As such, this sector information will affect your checksum.

UNPROTECT DATA = 00hex
 PROTECT DATA = 01hex or any other non-zero value.

Sector	29LV008B Address	29LV008T Address	User Ram Location
-----	-----	-----	-----
0	00000h - 03FFFh	00000h - 0FFFFh	100000 hex
1	04000h - 05FFFh	10000h - 1FFFFh	100001 hex
2	06000h - 07FFFh	20000h - 2FFFFh	100002 hex
3	08000h - 0FFFFh	30000h - 3FFFFh	100003 hex
4	10000h - 1FFFFh	40000h - 4FFFFh	100004 hex
5	20000h - 2FFFFh	50000h - 5FFFFh	100005 hex
6	30000h - 3FFFFh	60000h - 6FFFFh	100006 hex
7	40000h - 4FFFFh	70000h - 7FFFFh	100007 hex
8	50000h - 5FFFFh	80000h - 8FFFFh	100008 hex
9	60000h - 6FFFFh	90000h - 9FFFFh	100009 hex
10	70000h - 7FFFFh	A0000h - AFFFFh	10000A hex
11	80000h - 8FFFFh	B0000h - BFFFFh	10000B hex
12	90000h - 9FFFFh	C0000h - CFFFFh	10000C hex
13	A0000h - AFFFFh	D0000h - DFFFFh	10000D hex
14	B0000h - BFFFFh	E0000h - EFFFFh	10000E hex
15	C0000h - CFFFFh	F0000h - F7FFFh	10000F hex
16	D0000h - DFFFFh	F8000h - F9FFFh	100010 hex
17	E0000h - EFFFFh	FA000h - FBFFFh	100011 hex
18	F0000h - FFFFFh	FC000h - FFFFFh	100012 hex

2. Enable the security fuse option on the PROGRAM DEVICE screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 439

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This device contains an Electronic ID and currently has two different device selection entries on the menu; 5128_#1 and 5128_#2. If an ID error occurs, this means the wrong algorithm was selected for the current device. Please select the other menu entry and DOWNLOAD YOUR POF FILE AGAIN. If the ID error persists, contact DATA I/O Customer Service at 1-800-247-5700.

Footnote: 440

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This device contains an Electronic ID and currently has two different device selection entries on the menu; 5192_#1 and 5192_#2. If an ID error occurs, this means the wrong algorithm was selected for the current device. Please select the other menu entry. If the ID error persists, call DATA I/O Customer Service at 1-800-247-5700.

Footnote: 441

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Footnote: 442

When programming using a data file residing in the programmer's user RAM, the data to be programmed into device EPROM must reside in the first 8000h bytes of user RAM beginning at address 0. If the entire 8000h byte block is not used then the remainder must be filled with some useless value, i.e. zero or FF, which is the blank state. Data to be programmed into device EEPROM must reside in a 200h byte block of user RAM beginning at location 8000h. As with the data to be programmed into the EPROM, all unused locations must be filled with a useless value. This can be accomplished using the FILL function under the MORE - EDIT screen.

Footnote: 443

Correspondence between the programmer's user RAM and device memory is such that the first 8000h bytes of the programmer's user RAM starting at location 0 corresponds to the 8000h bytes of device EPROM which begins at location 8000h. The next 200h bytes of the programmer's user RAM starting at location 8000h corresponds to the 200h bytes of device EEPROM beginning at address 400h.

Footnote: 444

This device requires socket adapter 1616R1S300.

Footnote: 445

The signature field can be read at any time by selecting Device Verify. The Fuse Verify operation also reads the signature field. During Device Programming, if Verify Passes is set to the default value ("One, Vcc nominal"), the signature field will be read and displayed (if device passes Programming and ICC Testing). Ignore the "Device Specific Warning 0000:" message. If Verify Passes is set to "None" during Device Programming, the part will be programmed, the ICC tested, but the signature field will not be read.

This device does not support the Read operation.

Footnote: 446

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Footnote: 447

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Footnote: 448

This is the required algorithm for the following devices with a date code of 9616A or later:

TIBPAL16R4-15M
TIBPAL16R6-15M
TIBPAL16R8-15M
TIBPAL16L8-15M

This devices die was changed beginning at date code 9616A, and the new die requires a different algorithm.

Footnote: 449

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Footnote: 450

Data to be programmed to the device is offset to 0000h in User RAM. This corresponds to device address 2000h.

Address(in words)	Address(in bytes)	Intel Required Data:
-----	-----	-----
0000h - 0009h	0000h through 0013h	interrupt vectors (lower)
000Ah	0015h and 0014h	FFh, FFh (also see note #2)
000Bh	0017h and 0016h	FFh, FFh (also see note #1)
000Ch	0019h and 0018h	**h, CCB or CCB0 byte
000Dh	001Bh and 001Ah	**h, **h or CCB1 byte
000Eh	001Dh and 001Ch	**h, FFh (reserved)
000Fh	001Fh and 001Eh	**h, FFh (reserved)
0010h - 0017h	0020h through 002Fh	security key
0018h - 001Fh	0030h through 003Fh	interrupt vectors (upper)
0020h - 002Eh	0040h through 005Dh	PTS vectors
002Fh - 003Fh	005Eh through 007Fh	all FFh (reserved)

**h are also reserved locations and user must fill with the required data. Consult Manufacturer's specifications for further information.

Note 1: To enable CDE (clock detect enable bit), fill locations with 0Ch, DEh. Refer to the device spec. sheet for detailed information (CDE bit is implemented only on some 196XX family members).

Note 2: To program OSC bits fill these locations with:

2015H	OSC1:OSC0	OSCOUT
-----	-----	-----
FFh	00	divide by 2
11	01	divide by 1
44	10	divide by 4

Other values in 2015h will result in no programming of the OSC bits. Refer to the device spec. sheet for detailed information.

Other device options are enabled from the programming screen.

- Program Security Fuse 1: DED programming
- Program Security Fuse 2: DEI programming
- Program Security Fuse 3: programs LOC1/LOC0

To enable Security Key Verification, the byte, after the device size in user ram, should be set to a non-zero value.

Example: For the 87C196LB set:

WORD	BYTE	VALUE
address	address	
3000h		XXFFh enable security key verify.
	6000h	FFh enable security key verify.
3000h		xx00h disable security key verify.
	6000h	00h disable security key verify.

Key verification will program the device security locations with data from user ram if the LOC1/LOC0 bits have not been programmed.

User Ram is displayed in words as default. Byte display mode is also available.

Footnote: 451

Use data translation format number 99 (Intel Hex-32) when saving data as a file. To set the data translation format, select "File" from the main menu, select "Save As", and select "Parameters."

Footnote: 452

This algorithm uses 1 msec programming pulses.
Use for older devices.
Replaces algorithms SE370C756FN/FZ and
TSM370C756FN/FZ.

Footnote: 453

Blank check operation is performed only on EPROM arrays.

Footnote: 454

This device has a boot block at the beginning of the memory array that has a programming lockout feature that protects

data from being reprogrammed or erased. This feature, once enabled, is permanent and cannot be reset.

Footnote: 455

During a Program or Verify operation, ensure that the number of verify passes is set to 2.

Footnote: 456

PLCC package requires socket adapter 323201P600-YAM.
LCC package requires socket adapter 323201L600.
This device requires fast programming. Set the port speed to fastest in the menu: <Preferences> - <Hardware>.
Set the memory buffer size to at least 1024 in the menu: <Preferences> - <Swap File...>.
If a computer slower than a 486-33Mhz is used, Program operation may fail.
To further ensure speed, run as few applications as possible while programming.

Footnote: 457

Device requires fast programming. Set port speed to fastest in the menu: <Preferences> - <Hardware>.
Set memory buffer size to at least 1024 in the menu: <Preferences> - <Swap File...>.
If a computer slower than a 486-33Mhz is used, Program operation may fail.
To further ensure speed, run as few applications as possible while programming.

Footnote: 458

For ACT3 and 12xxXL FPGA's; generate .DIO file using Actel Designer FUS2DIO utility, download .DIO to UniSite or 3900 programmer by selecting translation format 10.

Notes: 1) Set Blank Check to "Y" (enabled) for device to program properly.
2) Do not change User data size field after downloading .DIO file.

Actel does not permit a separate post-programming VERIFY DEVICE operation.

LOAD DEVICE will display the following information:

- 1) ALS Design Checksum -
(not to be confused with the Data I/O ram image checksum).
- 2) Customer Silicon Signature -
(from .DIO file)
- 3) Security Fuse status -
0 = No Security
1 = Security Enabled

- 4) Program Fuse status -
 - 0 = Device not programmed
 - 1 = Device successfully programmed

Contact Data I/O Technical Support to request Actel Programming Application note (part #983-0318-002).

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Footnote: 482

This device has 14 bit data words represented as 16 bit data for the programmer. Data bits 14 and 15 in Main Array and 8-15 in User ID are not used. Unused bits are loaded from the device as zeros, ignored during Verify operation, and set to zero during programming.

The Security Bit can be programmed by enabling the security fuse feature in the Program Device Menu.

When assembling source file, output a merged 8 bit Intellec Hex object file (INHX8M). Then download to the programmer by selecting Intel Intellec 8/MDS translator (code 83).

To insure the integrity of the programmer's checksum, the unused memory locations in user RAM must be set to zero prior to loading a device or downloading data. Use the Fill Ram option under the More-Edit screen.

Consult the Manufacturer's specifications for further information.

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Footnote: 502

To secure the device, set at least one location from address FFF6h to FFFDh in User RAM to other than device blank state (Do Not leave FFF6h to FFFDh blank).

To perform operations on secured device, put security code in User RAM locations 0000h to 0007h.

Footnote: 503

Bits 0 and 1 in configuration word may be programmed by MCT. If so, programming device may produce Illegal Bit Error. Disable Blank Check to program device.

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Footnote: 518

The available program area is "0000hex - 7FFFhex". The data in all other areas should be set to "FF".

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Footnote: 544

To eliminate ground bounce, put a .33uF capacitor across power and ground pins.

Footnote: 545

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Footnote: 546

Device does not support Illegal Bit Check.

A pass/fail Icc test is performed during Program operation - set Verify passes to 0 in Program menu. To display Icc current, set Verify passes to 1.

Footnote: 547

If device fails Verify, switch to one pass verify.

Footnote: 548

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Footnote: 549

Device uses standard 16V8 JEDEC file (QF = 2194). The PD (sleep mode bit) must be programmed with value "0" to disable sleep mode. When loading or verifying, the PD or sleep mode bit must read/verify as "0".

Footnote: 550

It is recommended that a "Fill fuse map" operation with the fill variable set to 0 is performed prior to downloading a design file or performing a "Load" operation. This will ensure that consistent checksums are reported.

Footnote: 551

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Footnote: 552

Data in User Memory is partitioned as follows:

68HC705JP7/JJ7

USER EPROM	-	0700 - 1EFF hex	programmable
COPR		1FF0	programmable
MOR	-	1FF1	programmable
USER VECTORS	-	1FF2 - 1FFF hex	programmable
PEPROM (personality)	-	2000 - 207F hex	64 bytes programmable

The PEPROM resides in programmer's User Memory as follows :

2000	xx xx xx xx xx xx xx xx	00 00 00 00 00 00 00 00	row0
2010	xx xx xx xx xx xx xx xx	00 00 00 00 00 00 00 00	row1
2020	xx xx xx xx xx xx xx xx	00 00 00 00 00 00 00 00	row2
2030	xx xx xx xx xx xx xx xx	00 00 00 00 00 00 00 00	row3
2040	xx xx xx xx xx xx xx xx	00 00 00 00 00 00 00 00	row4
2050	xx xx xx xx xx xx xx xx	00 00 00 00 00 00 00 00	row5
2060	xx xx xx xx xx xx xx xx	00 00 00 00 00 00 00 00	row6
2070	xx xx xx xx xx xx xx xx	00 00 00 00 00 00 00 00	row7

c0 c1 c2 c3 c4 c5 c6 c7

The PEPROM map corresponds to the map of the Motorola programmer. Data for locations marked as xx can be 00 hex or 01 hex. Locations marked as 00 should be filled with 00 hex.

Footnote: 553

Enable the security fuse option (Y) on the PROGRAM DEVICE options screen to set BP1 and BP2 bits in the Write Protect Register.

Footnote: 554

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Footnote: 557

This device requires sochet adapter HS3334ESHF1H. It is available from the device manufacture.

The available program area is "0000hex - 7FFFhex". The data in other areas should be set to "FF".

Device address

Data

0000hex - 7FFFhex User data
8000hex - 1FFFFhex all "FF"

Footnote: 558

This part uses the extended ATF16V8C JEDEC file (JEDEC QF field = 2195).
The PD or sleep mode bit is specified by the value on JEDEC fuse
number 2194.

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Footnote: 588

When downloading PSD file (.obj) set the following options:

I/O Translation Format	99
I/O address offset	0
Memory begin address	0
User data size	0

NOTE: To get a consistent checksum clear RAM with a zero pattern before downloading the PSD data file.

Footnote: 589

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Footnote: 591

The M37692E8FS-PGA requires the following adapters: MSV37692-PGA, MITSUBISHI MICRO INTERFACE(MMI)adapter.

Footnote: 592

Set data in character generator ROM to "F" hex (lower 4 bits) as follows:

Device address	Data
00000hex - 11FFFhex	User data
12000hex - 13FFFhex	"XF" X...User 4BIT data

Footnote: 593

This device contains a four byte Signature String of alphanumeric characters. The four bytes will be momentarily displayed during the "Load" and "Verify" operations. If any of the four bytes is a non-printing character the Signature String will not be displayed.

Selecting the "Program security fuse" option will read-secure the device. Once secured the user can not load, verify, program, or blank check the device. However, a read-secured device can be electronically erased. The erased device is no longer read-secured and can be reprogrammed.

Footnote: 594

Fuse 5848 is not programmable on this device, and is retained for JEDEC file compatibility only.

Footnote: 595

This device contains a User Electronic Signature (UES) array and a Power Down (PD) bit. Programming the UES array and PD bit is optional. Three devices are available: one with the "EXT" suffix containing the UES and PD bits, one with a "U" suffix containing UES bits only, and one without any suffix containing no UES or PD bits.

The device with the "EXT" suffix programs all the arrays. The device with the "U" suffix programs the UES array but disables the PD mode. The device without any suffix disables the UES and PD modes.

When you download a JEDEC file, you will select the device compatible with the JEDEC file. If the device is not compatible, one of the following errors will be displayed: File not initialized or Incompatible user data.

Footnote: 596

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Footnote: 598

Available program area is "4000 hex - FFFF hex".
The data in all other areas should be set to "FF".

Set JP1="FLASH" and JP2="1M".

Footnote: 599

This device requires socket adapter 444401Q600-YAM.

Footnote: 600

This device is a microcontroller with Security Data and User Data features. Enable the security bit programming in the Program Device screen. The User Data feature is not supported.

Footnote: 601

Two security options can be selected for this device (Security Bit 1 or Security Bit 2). You can select the security options from the Program Device screen. Once any of the security options have been programmed into the device, no further programming is allowed.

Illegal operations will generate one of these error messages:

A. Security Fuse Programmed or Bad Device - A programming operation has been attempted after security bit 1 has been programmed.

B. Security Fuse Violation - A programming operation has been attempted after security bit 2 has been programmed. This error will also be generated for a load or verify operation.

Data in the programmer's User Memory is partitioned as follows:

MAIN ARRAY DATA	0 through 7FF hex
ENCRYPTION ARRAY DATA	NOT SUPPORTED

Footnote: 602

There are three security options supported for this device (Security Bits 1, 2, 3). The security options can be selected from the Program Device screen. Once any of the security options have been programmed into the device, no further programming is allowed.

Data in the Programmer's User Memory is partitioned as follows:

MAIN ARRAY DATA	0 through 7FFF hex
ENCRYPTION ARRAY DATA	NOT SUPPORTED

Footnote: 603

There are two security options supported for this device (Security Bit 1, Security Bit 2). The security options can be selected from the Program Device screen.

Footnote: 604

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Footnote: 605

Encryption array, lock bit, and configuration byte programming are all supported on this device. These features can be enabled from the Program Device screen. The encryption array and configuration bytes have data in User Memory.

	87251G1

MAIN ARRAY DATA	0-3FFF hex
ENCRYPTION ARRAY DATA	4000-407F hex
CONFIGURATION BYTES	4080-4083 hex

Note that these values are all offsets from the memory begin address field located in the PROGRAM DEVICE options screen. If the memory begin address is not zero (default) , add the value in this field to the offset for the appropriate address. Also note that to program special features, enter data at the appropriate memory locations, and set the corresponding field in the PROGRAM DEVICE options screen to "Y." Enabling the security fuses programs the lock bits, "Program XNOR data" programs the encryption array, and "Program Configuration" programs the configuration bytes.

After the Encryption Array is programmed, device data will no longer match data in User RAM. After programming security bits, programming operations are no longer allowed.

Footnote: 606

Use "Device Configure" option screen or the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 100000-10000F hex (sectors 0 - F) with protect (1 or any non-zero value) or unprotect data values.
2. Enable Security Fuse option on PROGRAM DEVICE options screen.

WARNING: Sector protect must be re-enabled for any sector following ERASE operation.

Footnote: 607

Device has a 14 bit data word which is represented as 16 bit data for the programmer. All unused bits are loaded from the device as zeros, ignored during the Verify, and set to zero during Program.

Select "Y" in "Program Security Fuse" (Program Device Menu) to secure main array of device.

Use output option that produces merged 8-bit Intellec Hex object file (INHX8M) then download to programmer by selecting Intel Intellec 8/MDS translator (code 83).

Footnote: 608

Device has a 14 bit data word which is represented as 16 bit data for the programmer. All unused bits are loaded from the device as zeros, ignored Verify, and set to zero during Program.

Bits 4 and 5 of the configuration word are the security fuses. The options are as follows:

00	All memory is code protected.
01	Upper 3/4th of program memory code protected.
10	Upper half of program memory code protected.
11	Code protection off.

Program Security Bit by enabling the security fuse feature in the Program Device Menu.

Use the output option that produces merged 8 bit Intellec Hex object file (INHX8M) then download to the programmer by selecting the Intel Intellec 8/MDS translator (code 83).

Footnote: 609

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 20000-20006 hex (sectors 0 - 6) with protect (1 or any non-zero value) or unprotect data values.
2. Enable security fuse option on PROGRAM DEVICE options screen.

WARNING: Sector protect must be re-enabled for any sector following ERASE operation.

Footnote: 610

This device has two type TSOP package.
TSOP 40pin is stamped as 29F080-xxPTN.
TSOP 48pin is stamped as 29F080-xxPFTN.
xx means speed.

Footnote: 611

This device contains a feature that allows individual sectors to be protected. There are 7 64K byte sectors, 1 32K byte sector, 2 8K byte sectors, and 1 16Kbyte sector contained in this particular device.

This device uses 16-bit data; all references to addresses will contain 2-bytes of data (1-word). Eleven extra words of data have been allocated at the end of User Memory to identify sector protect information.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 40000-4000A hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes in User Memory 40000-4000A hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. As such, this sector information will affect your checksum.

UN-PROTECT DATA = 0000 hex

PROTECT DATA = 0001 hex or any other non-zero value

Sector	29LV400B Address	29LV400T Address	User Ram location
-----	-----	-----	-----
0	00000h - 01FFFh	00000h - 07FFFh	40000 hex
1	02000h - 02FFFh	08000h - 0FFFFh	40001 hex
2	03000h - 03FFFh	10000h - 17FFFh	40002 hex
3	04000h - 07FFFh	18000h - 1FFFFh	40003 hex
4	08000h - 0FFFFh	20000h - 27FFFh	40004 hex
5	10000h - 17FFFh	28000h - 2FFFFh	40005 hex
6	18000h - 1FFFFh	30000h - 37FFFh	40006 hex
7	20000h - 27FFFh	38000h - 3BFFFh	40007 hex
8	28000h - 2FFFFh	3C000h - 3CFFFh	40008 hex
9	30000h - 37FFFh	3D000h - 3DFFFh	40009 hex
10	38000h - 3FFFFh	3E000h - 3FFFFh	4000A hex

2. Enable security fuse option on the PROGRAM DEVICE options screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 612

This device contains a feature that allows individual sectors to be protected. There are 7 64K byte sectors, 1 32K byte sector, 2 8K byte

sectors, and 1 16Kbyte sector contained in this particular device.

This device uses 16-bit data; all references to addresses will contain 2-bytes of data (1-word). Eleven extra words of data have been allocated at the end of User Memory to identify sector protect information.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 40000-4000A hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes in User Memory 40000-4000A hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. As such, this sector information will affect your checksum.

UN-PROTECT DATA = 0000 hex

PROTECT DATA = 0001 hex or any other non-zero value

Sector	58F400	Address	58F401	Address	User Ram location
-----	-----	-----	-----	-----	-----
0	00000h	- 01FFFh	00000h	- 07FFFh	40000 hex
1	02000h	- 02FFFh	08000h	- 0FFFFh	40001 hex
2	03000h	- 03FFFh	10000h	- 17FFFh	40002 hex
3	04000h	- 07FFFh	18000h	- 1FFFFh	40003 hex
4	08000h	- 0FFFFh	20000h	- 27FFFh	40004 hex
5	10000h	- 17FFFh	28000h	- 2FFFFh	40005 hex
6	18000h	- 1FFFFh	30000h	- 37FFFh	40006 hex
7	20000h	- 27FFFh	38000h	- 3BFFFh	40007 hex
8	28000h	- 2FFFFh	3C000h	- 3CFFFh	40008 hex
9	30000h	- 37FFFh	3D000h	- 3DFFFh	40009 hex
10	38000h	- 3FFFFh	3E000h	- 3FFFFh	4000A hex

2. Enable security fuse option on the PROGRAM DEVICE options screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 613

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Footnote: 614

M37602E8FS-LCC requires the following adapters:MSV37602-80D0 and MITSUBISHI MICRO INTERFACE(MMI)adapter. Mitsubishi adapter socket opens facing pin #1.

If Mitsubishi adapter has a jumper, set it to the UniSite configuration.

Footnote: 615

Mitsubishi M37510Ex-COB requires MSV3800-COB and MITSUBISHI

MICRO INTERFACE(MMI)adapters. To position the Mitsubishi adapter on top of the MMI, place the COB alignment notch over pin #20 of the MMI.

NOTE: If Mitsubishi adapter has a jumper, set it to the UniSite configuration.

Footnote: 616

The Mitsubishi M37620E8FS-PGA requires MSV37620-PGA and MITSUBISHI MICRO INTERFACE(MMI)adapters.

If Mitsubishi adapter has a jumper, set it to the UniSite configuration.

Footnote: 617

Device requires a socket adapter available from Emulation Technology Inc. (408-982-0660).

I/P2032V-44P*	44	pin PLCC	AS-44-28-03P
I/P2032V-44T*	44	pin TQFP	AS-44-28-02Q
I/P2096V-128P*	128	pin PQFP	AS-128-28-02Q-6
I/P2096V-128T*	128	pin TQFP	AS-128-28-02Q-6
I/P2128V-84P*	84	pin PQFP	AS-84-28-05P-6
I/P2128V-100T*	100	pin TQFP	AS-100-28-04Q-6
I/P2128V-160P*	160	pin PQFP	AS-160-28-03Q-6
I/P2128V-176T*	176	pin TQFP	AS-176-28-02Q-6

Footnote: 618

Footnote: 619

Footnote: 620

Footnote: 621

Device needs DIP Switch set in PPI-5705 as follows,
SW1

Switch name	D0	D8	D1	D9	D2	D10	D3	D11
Setting	ON	OFF	ON	OFF	ON	OFF	ON	OFF

SW2

Switch name	D4	D12	D5	D13	D6	D14	D7	D15
Setting	ON	OFF	ON	OFF	ON	OFF	ON	OFF

NOTE: For FUJ 29F800T and 29F800B if the settings above result in a Verify error, set D15-D8 to ON.

Footnote: 622

Footnote: 623

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Footnote: 624

For Altera QFP devices, menu selections with 'N' as the last character such as 7128-Q160N are for QFP devices that are not encased in a plastic chip carrier.

Footnote: 625

Structured vector testing not operational at this time. Please disregard vector test failures.

Footnote: 626

Adapter W66EP5316D has SDIP 52pin socket. Device should be inserted on 1pin mark in socket adapter. Lower 10 contacts not used.

To enable data security:

- 1)Set the jumper(DASEC) attachment "ON" side.
- 2)Disable Blank check, Illegal bit check.
- 3)Execute program. "Programming error" occurs.
- 4)Set the jumper(DASEC) attachment "OFF" side after executing the data security.

Footnote: 627

To enable data security:

- 1)Set the jumper(DASEC) attachment "ON" side.
- 2)Disable Blank check, Illegal bit check.
- 3)Execute program. "Programming error" occurs.
- 4)Set the jumper(DASEC) attachment "OFF" side after executing data security.

Footnote: 628

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Footnote: 629

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Footnote: 630

Device has 16-bit data. Seven extra words of data have been allocated at the end of User Memory to identify sector protect information.

To secure sectors:

1. Set bytes in User Memory at locations 20000-20006 hex (sectors 0 - 6) with protect(1 or any non-zero value) or unprotect data values.
2. Enable 'program security fuse' option and set 'security fuse data' to 1 on PROGRAM DEVICE options screen.

WARNING: Sector protect must be re-enabled for any sector following

ERASE operation.

Footnote: 631

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Footnote: 632

Device requires Cypress socket adapter CY3070,
or Emulation Technology adapter ASDIP24.6CYPRESS.

Footnote: 633

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Footnote: 634

Use SSOP-70pin to DIP-42pin conversion adapter
(part number BN-95171A-T-2 from Oki Electric Industry Co. Ltd.).

Footnote: 635

The following list provides information on
making a device menu selection.

ICT DEVICE	FEATURES IN THE DEVICE	MENU SELECTION
22CV10A	STANDARD	22CV10A or 22CV10A-PLC
22CV10A	ENHANCED	22CV10A+ or 22CV10A+PLC
22CV10AZ	STANDARD	22CV10AZ or 22CV10AZ-PLC
22CV10AZ	ENHANCED	22CV10AZ+ or 22CV10AZ+PLC
22LV10AZ	STANDARD	22LV10AZ or 22LV10AZ-PLC
22LV10AZ	ENHANCED	22LV10AZ+ or 22LV10AZ+PLC

Footnote: 636

The available program area is "0000hex - F77Fhex". The data in all
other areas should be set to "FF".

Footnote: 637

Device requires SOP44pin->DIP48pin conversion socket adapter
(OKI Electric Industry Co., Ltd.).

Footnote: 638

Device requires TSOP32->DIP32 conversion adapter (part number
Sunhayato ROM-32SP-32DP-105, Sunhayato TEL:+81-3-3984-7791(Japan)).

Footnote: 639

To enable data security.

- 1)Set jumper(DASEC) attachment "ON" side.
- 2)Disable Blank check, Illegal bit check.
- 3)Execute program. "Programming error" occurs.
- 4)Set jumper(DASEC) attachment "OFF" side after

executing data security.

Footnote: 640

To enable data security.

- 1)Set jumper(DASEC) attachment "ON" side.
- 2)Disable Blank check, Illegal bit check.
- 3)Execute program. "Programming error" occurs.
- 4)Set jumper(DASEC) attachment "OFF" side after executing the data security.

Footnote: 641

Standard 7064 POF file can be programmed by the following entries:

"7064", or Altera X-PGM menu entry "7064S AS 7064". 7064S POF files can only be programmed with a 7064S entry.

Footnote: 642

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Footnote: 643

Available program area of device is "C080 hex - FFFD hex".

Set the Device begin address and the Device block size as follows:

Device begin address: C080

Device block size: 3F7E

Footnote: 644

This micro has special data

Footnote: 645

This device is not reprogrammable. Please erase device before programming.

Footnote: 646

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Footnote: 647

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Footnote: 648

Device uses 16-bit data. 22 extra words of data have been allocated at the end of User Memory for sector protect information.

To secure sectors:

1. Set the bytes in User Memory at locations 80000-80015 hex (sectors 0 - 21) with protect (1 or any non-zero value) or unprotect data values.

Note: Protect data is included in the device size and will affect checksum.

Sector	29LD800B Address	29LD800T Address	User Ram location
--------	------------------	------------------	-------------------

	-----	-----	-----	-----
0	00000h - 01FFFh	00000h - 07FFFh	80000 hex	
1	02000h - 05FFFh	08000h - 0FFFFh	80001 hex	
2	06000h - 06FFFh	10000h - 17FFFh	80002 hex	
3	07000h - 07FFFh	18000h - 1FFFFh	80003 hex	
4	08000h - 08FFFh	20000h - 27FFFh	80004 hex	
5	09000h - 09FFFh	28000h - 2FFFFh	80005 hex	
6	0A000h - 0DFFFh	30000h - 37FFFh	80006 hex	
7	0E000h - 0FFFFh	38000h - 3FFFFh	80007 hex	
8	10000h - 17FFFh	40000h - 47FFFh	80008 hex	
9	18000h - 1FFFFh	48000h - 4FFFFh	80009 hex	
10	20000h - 27FFFh	50000h - 57FFFh	8000A hex	
11	28000h - 2FFFFh	58000h - 5FFFFh	8000B hex	
12	30000h - 37FFFh	60000h - 67FFFh	8000C hex	
13	38000h - 3FFFFh	68000h - 6FFFFh	8000D hex	
14	40000h - 47FFFh	70000h - 71FFFh	8000E hex	
15	48000h - 4FFFFh	72000h - 75FFFh	8000F hex	
16	50000h - 57FFFh	76000h - 76FFFh	80010 hex	
17	58000h - 5FFFFh	77000h - 77FFFh	80011 hex	
18	60000h - 67FFFh	78000h - 78FFFh	80012 hex	
19	68000h - 6FFFFh	79000h - 79FFFh	80013 hex	
20	70000h - 77FFFh	7A000h - 7DFFFh	80014 hex	
21	78000h - 7FFFFh	7E000h - 7FFFFh	80015 hex	

2. Enable security fuse option on PROGRAM DEVICE options screen.

WARNING: Sector protect must be re-enabled for any sector following ERASE operation.

Footnote: 649

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Footnote: 650

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Footnote: 651

Use the F1500A

Footnote: 652

Use the 1500A

Footnote: 653

To ensure that the pin keeper circuits on the 1500A/AL/ABV/ABVL are enabled/disabled according to requirements, use the 1500A/AL/ABV/ABVL-PLCC/TQFP algorithm with a 1500A/AL/ABV/ABVL JEDEC file.

Footnote: 654

Data in the programmer's User Memory is partitioned as follows:

NOT IMPLEMENTED	0 through 07FF hex
RESERVED	0800 through 0B9F hex
PROGRAMMABLE	0BA0 through 0F9F hex
RESERVED	0FA0 through 0FEF hex

PROGRAMMABLE 0FF0 through 0FF7 hex
 RESERVED 0FF8 through 0FFB hex
 PROGRAMMABLE 0FFC through 0FFF hex

Footnote: 655

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Footnote: 656

Use Emulation Technology adapter 282803S600-GANG
 in conjunction with PPI-0104.

Footnote: 657

This device uses 16-bit data. 35 extra words of data have been
 allocated at the end of User Memory to identify sector protect
 information.

To secure sectors:

1. Set bytes in User Memory at locations 100000-100022 hex (sectors 0 - 34) with
 protect (1 or any non-zero value) or unprotect data values.

Note: Protect bytes are included in the device size and will affect checksum.

Sector	29F160B Address 29LV160B Address	29F160T Address 29LV160T Address	User Ram location
-----	-----	-----	-----
0	00000h - 01FFFh	00000h - 07FFFh	100000 hex
1	02000h - 02FFFh	08000h - 0FFFFh	100001 hex
2	03000h - 03FFFh	10000h - 17FFFh	100002 hex
3	04000h - 07FFFh	18000h - 1FFFFh	100003 hex
4	08000h - 0FFFFh	20000h - 27FFFh	100004 hex
5	10000h - 17FFFh	28000h - 2FFFFh	100005 hex
6	18000h - 1FFFFh	30000h - 37FFFh	100006 hex
7	20000h - 27FFFh	38000h - 3FFFFh	100007 hex
8	28000h - 2FFFFh	40000h - 47FFFh	100008 hex
9	30000h - 37FFFh	48000h - 4FFFFh	100009 hex
10	38000h - 3FFFFh	50000h - 57FFFh	10000A hex
11	40000h - 47FFFh	58000h - 5FFFFh	10000B hex
12	48000h - 4FFFFh	60000h - 67FFFh	10000C hex
13	50000h - 57FFFh	68000h - 6FFFFh	10000D hex
14	58000h - 5FFFFh	70000h - 77FFFh	10000E hex
15	60000h - 67FFFh	78000h - 7FFFFh	10000F hex
16	68000h - 6FFFFh	80000h - 87FFFh	100010 hex
17	70000h - 77FFFh	88000h - 8FFFFh	100011 hex
18	78000h - 7FFFFh	90000h - 97FFFh	100012 hex
19	80000h - 87FFFh	98000h - 9FFFFh	100013 hex
20	88000h - 8FFFFh	A0000h - A7FFFh	100014 hex
21	90000h - 97FFFh	A8000h - AFFFFh	100015 hex
22	98000h - 9FFFFh	B0000h - B7FFFh	100016 hex
23	A0000h - A7FFFh	B8000h - BFFFFh	100017 hex
24	A8000h - AFFFFh	C0000h - C7FFFh	100018 hex
25	B0000h - B7FFFh	C8000h - CFFFFh	100019 hex
26	B8000h - BFFFFh	D0000h - D7FFFh	10001A hex
27	C0000h - C7FFFh	D8000h - DFFFFh	10001B hex
28	C8000h - CFFFFh	E0000h - E7FFFh	10001C hex
29	D0000h - D7FFFh	E8000h - EFFFFh	10001D hex

30	D8000h - DFFFFh	F0000h - F7FFFh	10001E hex
31	E0000h - E7FFFh	F8000h - FBFFFh	10001F hex
32	E8000h - EFFFFh	FC000h - FCFFFh	100020 hex
33	F0000h - F7FFFh	FD000h - FDFFFh	100021 hex
34	F8000h - FFFFFh	FE000h - FFFFFh	100022 hex

2. Enable security fuse option on the PROGRAM DEVICE options screen.

WARNING: Sector protect must be re-enabled for any sector following ERASE operation.

Footnote: 658

 Fujitsu SON package device should be inserted as "Dead Bug" style.
 1st pin of device should be set on right side of socket.

Footnote: 659

 If you experience intermittent "Overcurrent Errors" we recommend
 capacitor block 44B installed on the test-site at position X1 & X3.

Footnote: 660

 Data in the programmer User Memory is partitioned as follows:

EEPROM	0 through 007F hex
PROGRAMMABLE	0080 through 0F9F hex
RESERVED	0FA0 through 0FEF hex
PROGRAMMABLE	0FF0 through 0FF7 hex
RESERVED	0FF8 through 0FFB hex
PROGRAMMABLE	0FFC through 0FFF hex
RESERVED	1000 through 100F hex
PROGRAMMABLE	1010 through 17FF hex
RESERVED	1800 through 180F hex
PROGRAMMABLE	1810 through 1FFF hex

NOTE: For the 62T42 & 62E42 devices:

RESERVED	0 through 007F hex
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NOTE: Support for 62T40 and 62E40 devices requires
 a modified PPI-0507 (has a "-2" for the board revision number).

Footnote: 661

 RC calibration value is stored at 3FFh (programmed at the factory).

This device has a 12 bit data word which is represented as 16 bit data
 for the programmer. All unused bits are loaded from the device as zeros,
 ignored during Verify operation, set to zero during programming.

To program Security Bit, enable security fuse feature in Program Device Menu.

Use the output option that produces merged 8 bit Intellec Hex object file
 (INHX8M) then download to the programmer by selecting Intel Intellec 8/MDS
 translator (code 83).

Footnote: 662

 RC calibration value is stored at 3FFh (programmed at the factory).

This device has a 12 bit data word which is represented as 16 bit data for the programmer. All unused bits loaded from the device as zeros, ignored during Verify, and set to zero during programming.

To program Security Bit, enable security fuse feature in the Program Device Menu.

Use output option which produces merged 8 bit Intellec Hex object file (INHX8M) then download to programmer by selecting Intel Intellec 8/MDS translator (code 83).

Footnote: 663

Device has a non-contiguous memory map. To insure integrity of programmer's checksum, set unused memory locations in user RAM to zero (Fill Ram option under More->Edit) prior to loading a device or downloading data.

Footnote: 664

Device has odd/even parity bits (hidden) associated with all memory locations. Parity is calculated "on the fly" for Verify and Program routines.

NOTE: Parity is calculated and programmed for all locations so a blank location will have parity bits set.

Footnote: 665

This device has a 14 bit data word which is combined with two parity bits (hidden from user) to form 16 bit data for the programmer. All unused bits are loaded from the device as zeros, ignored during Verify, and set to zero during programming.

To program Security Bit, enable security fuse feature in the Program Device Menu.

Use output option which produces merged 8 bit Intellec Hex object file (INHX8M) then download to programmer by selecting Intel Intellec 8/MDS translator (code 83).

Footnote: 666

Device requires SSOP-70pin to DIP-48pin conversion adapter (part number OKI SOCKET70S-48, Oki electric industry Co. Ltd.).

For use on UniSite with Site48HS, extend adapter leads by 15mm.

For use on 3900 with 39BASE-0101 and 2900 with 29BASE-0102, bend lever to either side.

For use on ChipLab/2700/LabSite, set user memory size to more than 4096 bytes. Memory buffer size greater than 512 bytes is recommended. Bend lever to either side.

Footnote: 668

Damage to device and/or programming errors may occur if newer device (FX-CORE die - device names end with letter 'A') is programmed with incorrect device selected from device menu.

Footnote: 669

This device block size is 200000hex byte. User memoey size should be set upper 2048 byte. Down menu tree as Main-Preference-Swap file-User memory size. Set user memory size = 2048 or upper byte. If user memory size is changed, restart programmer.

Footnote: 670

Device has non-contiguous memory map. Set unused memory locations in user RAM to zero prior to loading device or downloading data (use Fill Ram option under the More-Edit screen).

Footnote: 671

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Footnote: 672

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Footnote: 673

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Footnote: 674

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Footnote: 675

Device requires SunHayato socket adapter - part number FLASH-80SQF-32DP-16L-FJ, SunHayato's TEL is +81-3-3986-0403(Japan).

Sector protect functions not supported.

User data size must equal device block size in program.

Footnote: 676

PM2 will be programmed to zero when code protect parameters are enabled.

Footnote: 677

If Load or Verify issues occur using PLCC base, use PPI-PLCC44 with configuration capacitor inserted in jumper location for pins 10, 20 and 31.

Footnote: 678

Device has both SON-46pin package (29LV008TSON6) and SON-40pin package.

Footnote: 679

Noise bypass capacitors are required for this device as follows:

Pin 37	100 pF
Pins 4, 16, 24, and 36	0.1 uF

The PPI adapter comes with capacitor sockets (for each pin) pre-installed.

Footnote: 680

Device requires a two pass verify. Programmer cannot accurately test low voltage Vcc verify.

Footnote: 681

CAUTION : OTP Security Page data resides in User RAM 800h - 80Fh. Location must remain in blank state (FFh) if OTP Security Page is unused.

Footnote: 682

Device requires a socket adapter (DIP Base) - part number 484803TS600YAMS, Emulation Technology: +1-408-982-0660 (Voice) or +1-408-982-0664 (Fax) in US.

Footnote: 683

To Enable Serial Programming, set PROGRAM XNOR DATA field on Program Memory Device Option screen to 'N' (to disable, set to 'Y').

Footnote: 684

Device requires socket adapter H73035Q080D3201 (available from Data I/O).

Footnote: 685

Device requires socket adapter H73035T080D3201 (available from Data I/O).

Footnote: 686

Use this algorithm with engineering samples.

Footnote: 687

Device requires socket adapter H7224XQ100D3201 (available from Data I/O).

Footnote: 688

Device requires socket adapter H7224XT100D3201 (available from Data I/O).

Footnote: 689

Device requires socket adapter H7265XT120D3201 (available) from Data I/O).

Footnote: 690

Device requires socket adapter H7212XQ064D3201 (available from Data I/O).

Footnote: 691

Byte Swap Option may need to be enabled.

Footnote: 692

Use this algorithm with production devices.

Footnote: 693

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Footnote: 694

"Invalid Architecture Word" error displays if
wrong RAM Architecture configuration in data file.

Turn off "Blank Check" option to program non-blank
device.

Footnote: 695

Device array too large to fit into Unisys RAM
and must be split in half. Upper or lower half programming is
done by selecting appropriate menu entry (suffix 'L'
for lower half, 'U' for upper half). Data for both will begin
at programmer RAM address zero.

Install .01uF cap onto adapter between power and ground pins.

Footnote: 696

Device requires one of following socket adapters:

- 1, Hitachi HS7042ESHS1H (from device manufacturer).
- 2, Data I/O H7704XQ122D3201.

In UniSite with SITE48HS DIP module, extend pin leads of Hitachi
HS7042ESHS1H adapter by 10mm.

Footnote: 697

To secure sectors, enable program security fuse = "Y".
Navigate to Main menu->More command->Device check->device Configuration and
select specific sector protect, unprotect.

WARNING: Sector protect must be re-enabled for any sector
following ERASE operation.

Footnote: 698

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Footnote: 699

Device has 16-bit data. 11 extra words of data have been
allocated at the end of User Memory to identify sector protect
information.

To secure sectors:

1. Set bytes in User Memory at locations 40000-4000A hex with protect
(1 or any non-zero value) or un-protect data values.

Note: Protect bytes are included in device size and will affect checksum.

Sector	29F400B Address	29F400T Address	User Ram location
0	00000h - 01FFFh	00000h - 07FFFh	40000 hex
1	02000h - 02FFFh	08000h - 0FFFFh	40001 hex
2	03000h - 03FFFh	10000h - 17FFFh	40002 hex
3	04000h - 07FFFh	18000h - 1FFFFh	40003 hex
4	08000h - 17FFFh	20000h - 27FFFh	40004 hex
5	10000h - 17FFFh	28000h - 2FFFFh	40005 hex
6	18000h - 1FFFFh	30000h - 37FFFh	40006 hex
7	20000h - 27FFFh	38000h - 3BFFFh	40007 hex
8	28000h - 2FFFFh	3C000h - 3CFFFh	40008 hex
9	30000h - 37FFFh	3D000h - 3DFFFh	40009 hex
10	38000h - 3FFFFh	3E000h - 3FFFFh	4000A hex

2. Enable 'program security fuse' option and set 'security fuse data' to 1 on PROGRAM DEVICE options screen.

WARNING: Sector protect must be re-enabled for any sector following ERASE operation.

Footnote: 700

Device requires Cypress socket adapter CY3072.

Footnote: 701

Device requires Cypress socket adapter CY3073.

Footnote: 702

Device requires Cypress socket adapter CY3074.

Footnote: 703

Sector operations are set up under the "Device configure" table. To get to this menu navigate as follows:

Main menu->More command->Device check->Device Configuration

Then select your specific sector operations: protect, unprotect, erase.

NOTE: To secure sectors the "Program security fuse" option must be set to "Y" during programming operation.

Footnote: 704

Device must be rotated 180 degrees

Footnote: 705

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Footnote: 706

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Footnote: 707

If device passes Fuse Verify, any Test Vector failure may be due to hardware limitations of the programmer or invalid test vector(s).

Footnote: 708

DEVICE DEVICE MEMORY MAP
90T40 0000h -> 3FBFh EPROM
90T40 3FC0h -> 41BFh EEPROM

90E40 0000h -> 3FFFh EPROM
90E40 4000h -> 41FFh EEPROM

Footnote: 709

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Footnote: 710

Set sector preferences in Sector Configuration Table
(Main Menu - 'More Commands' - 'Device Checks' - 'Device Configuration').

Footnote: 711

Problems may be encountered when using this menu selection with certain newer Altera devices. Data I/O Corp. is aware of these problems and action is being taken to correct them. If a problem is encountered please call Data I/O Corp. Customer Support at 1-800-247-5700.

Footnote: 712

Sector protect/unprotect operation not supported for this FLASH DIP module. If module is already sector-protected, module can not be erased.

1)UniSite case
Two similar device names are displayed on menu.
The difference is due to DIP Base identity.

Selected name	installed DIP Base
8502F016FA	SITE 48
8501F016FA	SITE 48
8502F016FAHS	SITE 48HS
8501F016FAHS	SITE 48HS

2)ChipLab/2700/LabSite case
Set user memory size as follows,

DIP Module	User Memory Size(Minimum)
MB8501F016FA	2048 Byte
MB8502F016FA	4096 Byte

Footnote: 713

Data bits 5-7 should be set to 1 at all address locations.

Refer to Hitachi spec sheet for correct data pattern.

Footnote: 714

Available program area is "A080 hex - FFFD hex".
Set device begin address to A080 hex, and device block size to 5F7E hex.
Refer to Mitsubishi spec sheet for details.

Footnote: 715

Available program area is "4080 hex - FFFD hex".
Set device begin address to 4080 hex, and device block size to BF7E hex.
Refer to Mitsubishi spec sheet for details.

Footnote: 716

Available program area is "C080 hex - FFFD hex".
Set device begin address to C080 hex, and device block size to 3F7E hex.
Refer to Mitsubishi spec sheet for details.

Footnote: 717

Available program area is "8080 hex - FFFD hex".
Set device begin address to 8080 hex, and device block size to FFFD hex.
Refer to Mitsubishi spec sheet for details.

Footnote: 718

Device requires socket adapter ETI 48-48-03TS.
Emulation Technology Inc. TEL: +1-408-982-0660 FAX: +1-408-982-0664.

Footnote: 719

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Footnote: 720

Block Lock-bit function is not supported. Block Lock-bit
can't be set and cleared.

Footnote: 721

Device requires SOIC-DIP conversion adapter -
part number SOCKET32-32 by OKI Electric Industry Co, Ltd.

Footnote: 722

Device requires TSOP-DIP conversion adapter -
part number SOCKET32T by OKI Electric Industry Co., Ltd.

Footnote: 723

Boot block at end of memory array has a programming lockout
feature (once enabled, cannot be reset) to protect data
from being reprogrammed or erased.

Footnote: 724

Device requires socket adapter Panasonic PB97077A0 (available from

device manufacturer).

To use adapter, extend leads by 20mm.

Footnote: 725

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Footnote: 726

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Footnote: 727

Continuity test does not check for a device installed backwards in the socket

Footnote: 728

Implement Encryption Array security option from PROGRAM DEVICE Options screen.

Enter Encryption Array data into User Memory following the Main Array data. Below is the memory partition information for various devices:

	87C51	87C52
	-----	-----
MAIN ARRAY :	0 - 0FFFh	0 - 1FFFh
ENCRYPT. ARRAY:	1000 - 103Fh	2000 - 203Fh

Footnote: 729

Device requires socket adapter OKI 7A1A (exclusive for OKI 27C4X2XX S0-40pin devices).

Footnote: 730

Device has programmable reset polarity. This data follows Main Array Data in User Memory. The four configuration bytes must be set to FFh for active high, or 00h for active low at the following locations:

XC17512/L: addresses 10000-10003 hex
XC1701/L : addresses 20000-20003 hex

Partial device operations are not allowed on this device.

Footnote: 731

Device manufacturer requires one pass verify. It is recommended that the "Verify passes" option be set to 1 for device to avoid redundancy.

Footnote: 732

This device requires that a PPI-0414 adapter P/N 715-2285-003 to be used for newer devices to improve programming yield. Note that the last 3 digits of the PPI part number must be -003 or higher. If your adapter is

not at least "-003", please contact the Customer Resource Center at 1-800-247-5700.

Footnote: 733

Preload vectors are not supported in the current release. Support for preload vectors is planned for a future release.

Footnote: 734

Data in Programmer's User RAM is partitioned as follow:

	FLASH	EEPRPM	FUSES
	-----	-----	-----
AT90S1200	0000h - 03FFh	0400h - 043Fh	0440h
AT90S1200A	0000h - 03FFh	0400h - 043Fh	0440h
AT90S8515	0000h - 1FFFh	2000h - 21FFh	2200h
AT90S4414	0000h - 0FFFh	1000h - 10FFh	1100h
AT90S2313	0000h - 07FFh	0800h - 087Fh	0880h

To program/reprogram fuses: put the proper data in Programmer's User RAM fuse location (0440h, 2200h, 1100h, 0880h or ...) and set PROGRAM XNOR DATA in the Program Memory Device Option screen to 'Y'.
Legal values are: 00h, 01h, 20h and 21h.

Footnote: 735

In 29FV4001R, "R" means TSOP-40pin reverse package.
Pin#1 mark don't match to the PPI-0708's PIN1 mark.
Insert device as proper view of device's part number marking.

Footnote: 736

This device requires OKI's socket adapter.
Part number is OKI SOCKET44T-42 (TSOP-type2-44pin -> DIP-42pin).

Footnote: 737

Device requires socket adapter H7212XD064D3201 (available from Data I/O).

Footnote: 738

Device requires socket adapter H7212XT080D3201 (available from Data I/O).

Footnote: 739

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Footnote: 740

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Footnote: 741

This MCP(FLASH & SRAM) device includes 8Mx16 bit FLASH.
Currently, the block protect function isn't supported.
Also, a block-protected device cannot be erased.

Footnote: 742

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Footnote: 743

This device contains a feature that allows individual sectors to be protected. There are 6 64Kbyte sectors, 2 32Kbyte sector, 4 8 Kbyte sectors, and 2 16Kbyte sectors (Total 14 sectors) contained in this particular device.

This device has a 16-bit data, all references to addresses will contain 2-bytes of data (1-word). Eleven extra words of data have been allocated at the end of User Memory to identify sector protect information.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 40000-4000D hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes in User Memory 40000-4000D hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. As such, this sector information will affect your checksum.

UN-PROTECT DATA = 0000 hex
PROTECT DATA = 0001 hex or any other non-zero value

Sector	29DL400BC Address	29DL400TC Address	User Ram location
-----	-----	-----	-----
0	00000h - 01FFFh	00000h - 07FFFh	40000 hex
1	02000h - 05FFFh	08000h - 0FFFFh	40001 hex
2	06000h - 06FFFh	10000h - 17FFFh	40002 hex
3	07000h - 07FFFh	18000h - 1FFFFh	40003 hex
4	08000h - 08FFFh	20000h - 27FFFh	40004 hex
5	09000h - 09FFFh	28000h - 2FFFFh	40005 hex
6	0A000h - 0DFFFh	30000h - 31FFFh	40006 hex
7	0E000h - 0FFFFh	32000h - 35FFFh	40007 hex
8	10000h - 17FFFh	36000h - 36FFFh	40008 hex
9	18000h - 1FFFFh	37000h - 37FFFh	40009 hex
10	20000h - 27FFFh	38000h - 38FFFh	4000A hex
11	28000h - 2FFFFh	39000h - 39FFFh	4000B hex
12	30000h - 37FFFh	3A000h - 3DFFFh	4000C hex
13	38000h - 3FFFFh	3E000h - 3FFFFh	4000D hex

2. Enable 'program security fuse' option and set 'security fuse data' to 1 on the PROGRAM DEVICE options screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 744

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Footnote: 745

Device has programmable reset polarity. For active low, set addresses 4000-4003 hex to zero's. For active high, set to FF hex.

Partial device operations are not allowed on this device.

Footnote: 746

Device has programmable reset polarity. For active low, set addresses 10000-10003 hex to zero's. For active high, set to FF hex.

Partial device operations are not allowed on this device.

Footnote: 747

Device has programmable reset polarity. For active low, set addresses 8000-8003 hex to zero's. For active high, set to FF hex.

Partial device operations are not allowed on this device.

Footnote: 748

Device has programmable reset polarity.

5V device: For active low, set addresses 2000-2003 hex to zero's. For active high, set to FF hex.

3V XL device: For active low, set addresses 4000-4003 hex to zero's. For active high, set to FF hex.

Partial device operations are not allowed on this device.

Footnote: 749

This device contains a feature that allows individual sectors to be protected. There are 7 64Kbyte sectors, 1 32Kbyte sector, 2 8 Kbyte sectors, and 1 16Kbyte sector contained in this particular device.

This device has a 16-bit data, all references to addresses will contain 2-bytes of data (1-word). Eleven extra words of data have been allocated at the end of User Memory to identify sector protect information.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 40000-4000A hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes in User Memory 40000-4000A hex are not part of the device array, but are included in the device size to allow the programmer to

access the sector protection information. As such, this sector information will affect your checksum.

UN-PROTECT DATA = 0000 hex
 PROTECT DATA = 0001 hex or any other non-zero value

Sector	58FVB400 Address	58FVT400 Address	User Ram location
0	00000h - 01FFFh	00000h - 07FFFh	40000 hex
1	02000h - 02FFFh	08000h - 0FFFFh	40001 hex
2	03000h - 03FFFh	10000h - 17FFFh	40002 hex
3	04000h - 07FFFh	18000h - 1FFFFh	40003 hex
4	08000h - 17FFFh	20000h - 27FFFh	40004 hex
5	10000h - 17FFFh	28000h - 2FFFFh	40005 hex
6	18000h - 1FFFFh	30000h - 37FFFh	40006 hex
7	20000h - 27FFFh	38000h - 3BFFFh	40007 hex
8	28000h - 2FFFFh	3C000h - 3CFFFh	40008 hex
9	30000h - 37FFFh	3D000h - 3DFFFh	40009 hex
10	38000h - 3FFFFh	3E000h - 3FFFFh	4000A hex

2. Enable 'program security fuse' option and set 'security fuse data' to 1 on the PROGRAM DEVICE options screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 750

This device contains a feature that allows individual sectors to be protected. There are 7 64Kbyte sectors, 1 32Kbyte sector, 2 8 Kbyte sectors, and 1 16Kbyte sector contained in this particular device.

This device has a 16-bit data, all references to addresses will contain 2-bytes of data (1-word). Eleven extra words of data have been allocated at the end of User Memory to identify sector protect information.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 40000-4000A hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The protect bytes in User Memory 40000-4000A hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. As such, this sector information will affect your checksum.

UN-PROTECT DATA = 0000 hex
 PROTECT DATA = 0001 hex or any other non-zero value

Sector	58FVB400 Address	58FVT400 Address	User Ram location
0	00000h - 01FFFh	00000h - 07FFFh	40000 hex
1	02000h - 02FFFh	08000h - 0FFFFh	40001 hex

2	03000h - 03FFFh	10000h - 17FFFh	40002 hex
3	04000h - 07FFFh	18000h - 1FFFFh	40003 hex
4	08000h - 17FFFh	20000h - 27FFFh	40004 hex
5	10000h - 17FFFh	28000h - 2FFFFh	40005 hex
6	18000h - 1FFFFh	30000h - 37FFFh	40006 hex
7	20000h - 27FFFh	38000h - 3BFFFh	40007 hex
8	28000h - 2FFFFh	3C000h - 3CFFFh	40008 hex
9	30000h - 37FFFh	3D000h - 3DFFFh	40009 hex
10	38000h - 3FFFFh	3E000h - 3FFFFh	4000A hex

2. Enable 'program security fuse' option and set 'security fuse data' to 1 on the PROGRAM DEVICE options screen to enable the protection programming option.

3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 751

This device requires ETI adapter. The part number is ETI AS-48-40-03TS-6WELS-S.

Sector protect and unprotect are not supported due to hard-ware limitation. Therefore, protected device can't be erased and unprotected.

Footnote: 752

This device has 7 64K byte sectors, 1 32K byte sector, 2 8K byte sectors, and 1 16K byte sector which may be individually protected.

Use the following procedure to secure sectors:

1. Set the bytes in User Memory at locations 80000-8000A hex with protect or unprotect data values.

Note: Protect data can be 01 or any non-zero value. The protect bytes in user memory 80000-8000A hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. As such, this sector information will affect your checksum.

UNPROTECT DATA = 00hex

PROTECT DATA = 01hex or any other non-zero value.

Sector	58FVB004 Address	58FVT004 Address	User Ram Location
-----	-----	-----	-----
0	00000h - 03FFFh	00000h - 0FFFFh	80000 hex
1	04000h - 05FFFh	10000h - 1FFFFh	80001 hex
2	06000h - 07FFFh	20000h - 2FFFFh	80002 hex
3	08000h - 0FFFFh	30000h - 3FFFFh	80003 hex
4	10000h - 1FFFFh	40000h - 4FFFFh	80004 hex
5	20000h - 2FFFFh	50000h - 5FFFFh	80005 hex
6	30000h - 3FFFFh	60000h - 6FFFFh	80006 hex
7	40000h - 4FFFFh	70000h - 77FFFh	80007 hex
8	50000h - 5FFFFh	78000h - 79FFFh	80008 hex
9	60000h - 6FFFFh	7A000h - 7BFFFh	80009 hex
10	70000h - 7FFFFh	7C000h - 7FFFFh	8000A hex

2. Enable the security fuse option on the PROGRAM DEVICE screen to enable the protection programming option.
3. Program the device.

WARNING: The ERASE operation will erase the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 753

NOTE: This adapter goes into the DIP socket with

Footnote: 754

This device requires OKI's socket adapter. The part number is OKI SOCKET70T-42.

Footnote: 755

Device requires SSOP-70pin to DIP-48pin conversion adapter (Part number OKI SOCKET70S-48 or BN-95171A-T-2, Oki electric industry Co. Ltd.).

For use on UniSite with Site48HS, extend adapter leads by 15mm.

For use on 3900 with 39BASE-0101 and 2900 with 29BASE-0102, bend lever to either side.

For use on ChipLab/2700/LabSite, set user memory size to more than 4096 bytes. Memory buffer size greater than 512 bytes is recommended. Bend lever to either side.

Footnote: 756

Data in programmer User Memory is partitioned as follows:

NOT IMPLEMENTED	0 through 07FF hex
RESERVED	0800 through 087F hex
PROGRAMMABLE	0880 through 0F9F hex
RESERVED	0FA0 through 0FEF hex
PROGRAMMABLE	0FF0 through 0FF7 hex
RESERVED	0FF8 through 0FFB hex
PROGRAMMABLE	0FFC through 0FFF hex
OPTION BYTES	1000 through 1001 hex

Footnote: 757

OPTION BYTE: The Option byte(s) are at the end of the device memory map. Please refer to the device data sheet for number of option bytes, and what each option bit represents. Enable programming by Selecting "Program configuration" in the "Program device" screen.

In TaskLink: Make the following selections: Setup menu -> General Parameters, then select the "ENABLE SPECIAL DATA.", and set the Security Option to 2 enabling all security fuses.

Footnote: 758

Data in the programmer's User Memory is partitioned as follows:

RESERVED	0 through 007F hex
PROGRAMMABLE	0080 through 0F9F hex
RESERVED	0FA0 through 0FEF hex
PROGRAMMABLE	0FF0 through 0FF7 hex
RESERVED	0FF8 through 0FFB hex
PROGRAMMABLE	0FFC through 0FFF hex
OPTION BYTES	1000 through 1001 hex

Footnote: 759

To enable Low Noise Mode, enable Security fuse 1 in the Program device screen.

To enable Watch Dog Timer(WDT), enable Program configuration, or Enable Special Data in the Program device screen.

To secure the device, enable security fuse 3 in the Program device screen (some load instructions will be disabled).

NOTE: These option bits cannot be read on this device.

Footnote: 760

To enable Low Noise Mode, enable security fuse 1 in the PROGRAM options screen.

To secure the device, enable security fuse 2 in the PROGRAM options screen (some load instructions will be disabled).

Footnote: 761

To enable device options a byte of data at the end of the main array must be configured.

DEVICE:	86E02xxxx	86E04xxx	86E08xxx
MAIN ARRAY:	0 -> 200 hex	0 -> 400 hex	0 -> 800 hex
CONFIGURATION BYTE:	201 hex	401 hex	801 hex

The following format is used to configure the option bits:

SETTING:	YES/NO	NAME OF OPTION BIT
BIT 0 =	1/0	Disable TEST Mode Bit
BIT 1 =	1/0	WDT Enable Bit
BIT 2 =	1/0	Autolatch Disable Bit
BIT 3 =	1/0	Low EMI Bit
BIT 4 =	x/x	EPROM Protect Bit
BIT 5,6,7 =	x/x	Not Used

After you have placed this configuration byte at the end of the main array, you must enable "Program configuration", or Enable Special Data in the Program device screen.

To secure the device, enable "Program security fuse" in the Program device screen (some load instructions will be disabled).

NOTE: These option bits may not be read correctly if both the WDT enable, and EPROM protect features are programmed.

Footnote: 762

This device can be electrically erased and programmed at least 1000 times. If the device has been erased over 1000 times, it may be failed on electric erase operation.

Footnote: 763

Set sector preferences in Sector Configuration Table (Device --> Sector Table)

Footnote: 764

Do not disable "Compare elec ID".

If an Electronic ID Error does occur, contact Data I/O for the latest version of the programming algorithm.

Footnote: 765

Device requires OKI's 40SOP->40DIP conversion adapter. The Part number is OKI SOCKET 40-40.

Footnote: 766

This device has a non-contiguous memory map. To insure the integrity of the programmer's checksum, the unused memory locations in user RAM must be set to zero prior to loading a device or downloading data. Use the Fill Ram option under the More-Edit screen.

Consult the Manufacturer's specifications for further information.

Footnote: 767

This device has a non-contiguous memory map. To insure the integrity of the programmer's checksum, the unused memory locations in user RAM must be set to zero prior to loading a device or downloading data. Use the Fill Ram option under the More-Edit screen.

Consult the Manufacturer's specifications for further information.

Footnote: 771

For operations that Verify the device, ONLY perform Verify on fuses, under LOGIC VERIFICATION (A,F,V) select F.

Footnote: 772

NOTE: There has been a change to how new versions of these devices are programmed; this change requires a modified

version of the PPI.

Footnote: 773

Device has non-programmable area, address 0000 to 3FFF hex.
User data for this location should be set to FF hex.
On other way, Set device begin address = 4000 hex and
device block size = 4000 hex.

Refer to device spec sheet for more information.

Footnote: 774

Device has non-programmable area, address 0000 to 3FFF hex.
In any operation, Set device begin address = 4000 hex and
device block size = 4000 hex.

Refer to device spec sheet for more information.

Footnote: 775

The ID words and the config word have been moved to 2000H and 2007H per
microchip's request. If you are using the old configuration word
location you will need to move these to the new address location.

Footnote: 776

Block lock function can't be supported due to hardware limitation.
If the device was already locked, the device can't be erased.

This ETI adapter has jumper switch.
The jumper switch should be set on "DIP44" side not "VCC" side.

On 2700 and LabSite , the lever should be bent as escaping ETI adapter.

Footnote: 777

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Footnote: 779

When trying to perform a write operation on the device, the address range should be
between 4000H and 7FFFH. If performing a write operation between 0000H and 7FFFH, the
addresses 0000H to 3FFFH should be filled with FFH.

Footnote: 780

When do a programming, the last byte of image needs to set either 00, 01, or 02.
Anything else will fail the operation. Look at the Spec for more information about
CONTROL BYTE.

Footnote: 781

When do program operation, the last byte (CONTROL BYTE at address 2001) of image
needs to set either 00, 01, or 02. Anything else will cause fail. Look at the
Spec for more information about the CONTROL BYTE

Footnote: 782

When do a program operatio

Footnote: 783

This device has 31 64K byte, 1 32K byte, 2 8K byte, and 1 16K byte sectors.

This device uses 16-bit data; 2-bytes of data (1-word) are used to reference addresses. Thirty-five extra words of data allocated at the end of User Memory used to identify sector protect information.

To secure sectors:

1. In User Memory, set bytes at locations 100000-100023 hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The bytes in User Memory at 100000-100023 hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. This sector information will affect your checksum.

UNPROTECT DATA = 0000 hex

PROTECT DATA = 0001 hex or any other non-zero value

Sector	29LV160B Address	29LV160T Address	User Ram location
-----	-----	-----	-----
0	00000h - 01FFFh	00000h - 07FFFh	100000 hex
1	02000h - 02FFFh	08000h - 0FFFFh	100001 hex
2	03000h - 03FFFh	10000h - 17FFFh	100002 hex
3	04000h - 07FFFh	18000h - 1FFFFh	100003 hex
4	08000h - 0FFFFh	20000h - 27FFFh	100004 hex
5	10000h - 17FFFh	28000h - 2FFFFh	100005 hex
6	18000h - 1FFFFh	30000h - 37FFFh	100006 hex
7	20000h - 27FFFh	38000h - 3FFFFh	100007 hex
8	28000h - 2FFFFh	40000h - 47FFFh	100008 hex
9	30000h - 37FFFh	48000h - 4FFFFh	100009 hex
10	38000h - 3FFFFh	50000h - 57FFFh	10000A hex
11	40000h - 47FFFh	58000h - 5FFFFh	10000B hex
12	48000h - 4FFFFh	60000h - 67FFFh	10000C hex
13	50000h - 57FFFh	68000h - 6FFFFh	10000D hex
14	58000h - 5FFFFh	70000h - 77FFFh	10000E hex
15	60000h - 67FFFh	78000h - 7FFFFh	10000F hex
16	68000h - 6FFFFh	80000h - 87FFFh	100010 hex
17	70000h - 77FFFh	88000h - 8FFFFh	100011 hex
18	78000h - 7FFFFh	90000h - 97FFFh	100012 hex
19	80000h - 87FFFh	98000h - 9FFFFh	100013 hex
20	88000h - 8FFFFh	A0000h - A7FFFh	100014 hex
21	90000h - 97FFFh	A8000h - AFFFFh	100015 hex
22	98000h - 9FFFFh	B0000h - B7FFFh	100016 hex
23	A0000h - A7FFFh	B8000h - BFFFFh	100017 hex
24	A8000h - AFFFFh	C0000h - C7FFFh	100018 hex
25	B0000h - B7FFFh	C8000h - CFFFFh	100019 hex
26	B8000h - BFFFFh	D0000h - D7FFFh	10001A hex
27	C0000h - C7FFFh	D8000h - DFFFFh	10001B hex
28	C8000h - CFFFFh	E0000h - E7FFFh	10001C hex
29	D0000h - D7FFFh	E8000h - EFFFFh	10001D hex
30	D8000h - DFFFFh	F0000h - F7FFFh	10001E hex
31	E0000h - E7FFFh	F8000h - FBFFFh	10001F hex

32	E8000h - EFFFFh	FC000h - FCFFFh	100020 hex
33	F0000h - F7FFFh	FD000h - FDFFFh	100021 hex
34	F8000h - FFFFFh	FE000h - FFFFFh	100022 hex

2. Enable security fuse option on the PROGRAM DEVICE options screen.

3. Program device.

WARNING: ERASE operation erases the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 784

This device has 15 64K byte, 1 16K byte, and 6 8K byte sectors.

This device uses 16-bit data; 2-bytes of data (1-word) are used to reference addresses. Twenty-two extra words of data allocated at the end of User Memory used to identify sector protect information.

To secure sectors:

1. In User Memory, set bytes at locations 80000-80015 hex with protect or unprotect data values.

Note: Protect data can be 1 or any non-zero value. The bytes in User Memory at 80000-80015 hex are not part of the device array, but are included in the device size to allow the programmer to access the sector protection information. This sector information will affect your checksum.

UNPROTECT DATA = 0000 hex

PROTECT DATA = 0001 hex or any other non-zero value

Sector	29KB800 29GB800 Address	29KT800 29GT800 Address	User Ram location
-----	-----	-----	-----
0	00000h - 01FFFh	00000h - 07FFFh	80000 hex
1	02000h - 02FFFh	08000h - 0FFFFh	80001 hex
2	03000h - 03FFFh	10000h - 17FFFh	80002 hex
3	04000h - 04FFFh	18000h - 1FFFFh	80003 hex
4	05000h - 05FFFh	20000h - 27FFFh	80004 hex
5	06000h - 06FFFh	28000h - 2FFFFh	80005 hex
6	07000h - 07FFFh	30000h - 37FFFh	80006 hex
7	08000h - 0FFFFh	38000h - 3FFFFh	80007 hex
8	10000h - 17FFFh	40000h - 47FFFh	80008 hex
9	18000h - 1FFFFh	48000h - 4FFFFh	80009 hex
10	20000h - 27FFFh	50000h - 57FFFh	8000A hex
11	28000h - 2FFFFh	58000h - 5FFFFh	8000B hex
12	30000h - 37FFFh	60000h - 67FFFh	8000C hex
13	38000h - 3FFFFh	68000h - 6FFFFh	8000D hex
14	40000h - 47FFFh	70000h - 77FFFh	8000E hex
15	48000h - 4FFFFh	78000h - 78FFFh	8000F hex
16	50000h - 57FFFh	79000h - 79FFFh	80010 hex
17	58000h - 5FFFFh	7A000h - 7AFFFh	80011 hex
18	60000h - 67FFFh	7B000h - 7BFFFh	80012 hex
19	68000h - 6FFFFh	7C000h - 7CFFFh	80013 hex
20	70000h - 77FFFh	7D000h - 7DFFFh	80014 hex
21	78000h - 7FFFFh	7E000h - 7FFFFh	80015 hex

2. Enable security fuse option on the PROGRAM DEVICE options screen.

3. Program device.

WARNING: ERASE operation erases the entire device, including protected sectors. Sector protect must be re-enabled for any sector by following the procedure described above.

Footnote: 785

This device requires the use of socket adapter number M38000-80P-A-01.

Footnote: 786

Four levels of "BLOCK PROTECT" can be implemented for this device as follows:

Security Fuse		Block Protect Start Addresses			
SF2	SF1	95010	95020	95040	95P08
0	0	None	None	None	None
0	1	\$60->\$7F	\$C0->\$FF	\$180->\$1FF	\$300->\$3FF
1	0	\$40->\$7F	\$80->\$FF	\$100->\$1FF	\$200->\$3FF
1	1	\$00->\$7F	\$00->\$FF	\$00 ->\$1FF	\$00 ->\$3FF

Enabling the "Erase EE device" option will remove all block protection.

Note: An electronic erase is automatically performed during the program operation, therefore, "Erase EE device" is not required to be enabled unless block protection had been previously set on the device. Disabling the "Erase EE device" option will speed up the programming time.

Footnote: 787

Block lock and unlock are not supported due to hard-ware limitation. Therefore, locked device can't be erased and unprotected.

Footnote: 788

This device contains an Electronic ID. If an ID error occurs, the wrong device is selected or the version of this device is not supported. A software update may be required. Contact Your Customer Support Representative for more information.

Footnote: 789

This device contains an Electronic ID. If an ID error occurs, the wrong device is selected or the version of this device is not supported. A software update may be required. Contact Your Customer Support Representative

for more information.

Any shorts test is not supported on the UniSite programmer.

Note for XC95108 and XC95216 QFP devices: There are two versions of PPI-0558. See back side of PPI adapter at the bottom. PPI with hand-written number -002 is for XC95108. PPI with hand-written number -003 can be used for either XC95108 or XC95216.

Footnote: 790

The available program area is "4000 hex - 13FFF hex".
The data in all other areas should be set to "FF".

Device address	data
-----	-----
0000 - 3FFF hex	all FF
4000 - 13FFF hex	user data

Footnote: 2000

PLCC package requires socket adapter 282801P600-YAM.
LCC package requires socket adapter 282801L600.

Footnote: 2001

PLCC package requires socket adapter 323201P600-YAM.
LCC package requires socket adapter 323201L600.

Footnote: 2002

PLCC package requires socket adapter 202001P600-YAM.
LCC package requires socket adapter 202001L600.

Footnote: 2003

PLCC package requires socket adapter 282405P600-YAM.
LCC package requires socket adapter 282405L600.

Footnote: 2004

PLCC package requires socket adapter 282404P300-YAM.
LCC package requires socket adapter 282404L600.

Footnote: 2005

PLCC package requires socket adapter 282406P600P-YAM.
LCC package requires socket adapter 282406L600.

Footnote: 2006

PLCC package requires socket adapter 281801P600.
LCC package requires socket adapter 281801L600.

Footnote: 2007

PLCC package requires socket adapter 201602P300.
LCC package requires socket adapter 201602L600.

Footnote: 2008

PLCC package requires socket adapter 201601P600-TEX.
LCC package requires socket adapter 201601L600.

Footnote: 2009

PLCC package requires socket adapter 282402P600-YAM.
LCC package requires socket adapter 282402L600.

Footnote: 2010

PLCC package requires socket adapter 282409P600-YAM.
LCC package requires socket adapter 282409L600.

Footnote: 2011

PLCC package requires socket adapter 322801P600-YAM.
LCC package requires socket adapter 322801L600.

Footnote: 2012

PLCC package requires socket adapter 322802P600.
LCC package requires socket adapter 322802L600.

Footnote: 2013

PLCC package requires socket adapter 444007P600-YAM.
LCC package requires socket adapter 444007L600.

Footnote: 2014

PLCC package requires socket adapter 444008P600-YAM.
LCC package requires socket adapter 444008L600.

Footnote: 2015

PLCC package requires socket adapter 444003P600-YAM.
LCC package requires socket adapter 444003L600.

Footnote: 2016

PLCC package requires socket adapter 444001P600.
LCC package requires socket adapter 444001L600.

Footnote: 2017

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Footnote: 2018

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Footnote: 2019

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Footnote: 2020

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Footnote: 2021

This device does not support block limits.
When an erase operation is performed, the entire contents of the device
will be erased.

Footnote: 2022

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Footnote: 2023

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Footnote: 2024

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Footnote: 2025

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Footnote: 2027

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Footnote: 2028

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Footnote: 2030

Move the jumper to the master configuration.

Footnote: 2031

Move the jumper to the master configuration.

Footnote: 2032

PLCC package requires socket adapter 444018P600-YAM.
LCC package requires socket adapter 444018L600.

Footnote: 2033

PLCC package requires socket adapter 444019P600-YAM.
LCC package requires socket adapter 444019L600.

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