

**303A-011A**  
**CMOS/BIPOLAR P/T ADAPTER**

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***V10.0 Device List***



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## DEVICE LIST

Following is a complete listing of the devices currently programmable with the 303A-011A. The devices are organized by manufacturer, and are listed in numerical order. References in the Notes column are explained following the list.

### CAUTION

*Be sure you enter the proper family and pinout codes for the device you want to program. If you enter an incorrect family and pinout code, you may damage your device. Be aware that although you may enter an independently valid family code and an independently valid pinout code, when combined, these may produce an invalid (illegal) combination. The correct combination for your device is published in this table. All family/pinout combinations not contained in this table are considered "illegal". Data I/O assumes no responsibility or liability for results produced by entry of "illegal" family/pinout combinations.*

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RAL™ is a trademark of Lattice Semiconductor Corporation.

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### Data I/O Device Support Policy/Liability

1. Data I/O strives to achieve more device support approvals from semiconductor manufacturers than any other programmer manufacturer.
2. Every effort is made to program an adequate number of samples according to the manufacturer supplied specification, and verify waveforms as per that specification prior to release of support. Manufacturers' approvals are to be sought in parallel with this process.
3. Data I/O's objective is to seek and obtain approvals on all devices.
4. Data I/O has made every attempt to ensure that the device information (as provided by the device manufacturer) contained in our programmers, software and documentation is accurate and complete. However, Data I/O assumes no liability for errors, or for any damages, whether direct, indirect, consequential or incidental, that result from use of documents provided with equipment or from the equipment or software which it accompanies, regardless of whether or not Data I/O has been advised of the possibility of such loss or damage.

## Entering 3-Digit Codes

### CAUTION

*To prevent damage to the device if your machine is a 29B, V6.0, or later, family/pinout codes must be entered using one of the following two methods.*

1. When entering family/pinout codes, all codes must be entered as three-digit codes. If the family/pinout code is given as two digits for the family code and two digits for the pinout code, leading zeroes must be inserted for both family and pinout codes. For example, a 16L8 with a family/pinout code of 22/26 must be entered as 022/026.
2. Family codes and pinout codes can be entered as two-digit codes when applicable, provided that the family code entry and the pinout code entry are separated by a START keystroke. Again, using the 16L8 example, the 22/26 code would be entered as 22 START, 26 START.

## Key To Device List Headings

An explanation of each of the column headings is given below.

Device Part Number:	The number assigned by the device manufacturer
Pins:	The number of pins on the device package.
Part Type:	The type of part, such as EPROM, EEPROM, or PAL.
Footnote:	Numbers which correspond to footnotes described at the end of the device list. The footnotes provide additional information about a device. Each footnote number corresponds to a numbered description at the end of the device list.
Adapter Version:	A number that specifies the earliest version of the P/T Adapter software that will program the device to the manufacturer's latest specifications.
Family Code:	A 2- or 3-digit hexadecimal number that designates the programming algorithm (family).
Pinout Code:	A 2- or 3-digit hexadecimal number used to differentiate device types based on pin assignment and array size (pinout).

## LOGIC

Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
<b>Altera</b>						
300	20	EPLD		V02	26	50
310	20	EPLD		V02	44	50
320	20	EPLD		V02	44	95
600	24	EPLD		V02	26	59
<b>Advanced Micro Devices/MMI</b>						
10H8/-2	20	PAL		V01	22	18
10L8/-2	20	PAL		V01	22	13
12H6/-2	20	PAL		V01	22	19
12L10	24	PAL		V01	22	01
12L6/-2	20	PAL		V01	22	14
14H4/-2	20	PAL		V01	22	20
14L4/-2	20	PAL		V01	22	15
14L8	24	PAL		V01	22	02
14R21/A	24	PMS	5	V10	22	58
16A4	20	PAL		V01	22	24
16C1/-2	20	PAL		V01	22	21
16H2/-2	20	PAL		V01	22	22
16H8	20	AmPAL		V01	97	25
16HD8	20	AmPAL		V01	97	25
16L2/-2	20	PAL		V01	22	16
16L6	24	PAL		V01	22	03
16L8-7	20	PAL		V05	20	17
16L8/A/A-2/A-4	20	PAL		V01	22	17
16L8/A/B	20	AmPAL		V05	97	17
16L8B	20	PAL		V01	30	17
16L8B-2/B-4	20	PAL		V01	22	17
16L8D	20	AmPAL		V05	20	17
16L8D	20	PAL		V09	30	17
16L8H-15	20	PAL		V03	30	17
16LD8	20	AmPAL		V01	97	17
16P8A	20	PAL		V01	22	30
16R4-7	20	PAL	1	V05	20	81
16R4/A/A-2/A-4	20	PAL		V01	22	24
16R4/A/B	20	AmPAL	1	V05	97	81
16R4B	20	PAL		V01	30	24
16R4B-2/B-4	20	PAL		V01	22	24
16R4D	20	AmPAL	1,4	V05	20	24
16R4D	20	PAL		V09	30	24
16R4H-15	20	PAL	1	V03	30	67
16R6-7	20	PAL	1	V05	20	80
16R6/A/A-2/A-4	20	PAL		V01	22	24

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Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
16R6/A/B	20	AmPAL	.	V05	97	80
16R6B	20	PAL		V01	30	24
16R6B-2/B-4	20	PAL		V01	22	24
16R6D	20	AmPAL	1,4	V05	20	24
16R6D	20	PAL		V09	30	24
16R6H-15	20	PAL	1	V03	30	67
16R8-7	20	PAL	1	V05	20	82
16R8/A/A-2/A-4	20	PAL		V01	22	24
16R8/A/B	20	AmPAL	1	V05	97	82
16R8B	20	PAL		V01	30	24
16R8B-2/B-4	20	PAL		V01	22	24
16R8D	20	AmPAL	1,4	V05	20	24
16R8D	20	PAL		V09	30	24
16R8H-15	20	PAL	.	V03	30	67
16RA8	20	PAL	1	V01	22	31
16RP4A	20	PAL	1	V01	22	31
16RP6A	20	PAL	1	V01	22	31
16RP8A	20	PAL	1	V01	22	31
16X4	20	PAL		V01	22	24
18L4	24	PAL		V01	22	04
18P8	20	AmPAL		V01	97	29
20C1	24	PAL		V01	22	12
20L10	24	AmPAL		V02	97	06
20L10/A	24	PAL		V09	22	06
20L2	24	PAL		V01	22	05
20L8	24	AmPAL		V02	97	26
20L8A/A-2/B/B-2	24	PAL		V01	22	26
20R4	24	AmPAL	1,4	V02	97	27
20R4A/A-2/B/B-2	24	PAL		V01	22	27
20R6	24	AmPAL	1,4	V02	97	27
20R6A/A-2/B/B-2	24	PAL		V01	22	27
20R8	24	AmPAL	1,4	V02	97	27
20R8A/A-2/B/B-2	24	PAL		V01	22	27
20RA10	24	PAL	5	V09	22	45
20RP10	24	AmPAL	1,4	V02	97	9F
20RP4	24	AmPAL	1,4	V02	97	9C
20RP6	24	AmPAL	1,4	V02	97	9D
20RP8	24	AmPAL	1,4	V02	97	9E
20RS10	24	PAL	1	V01	22	44
20RS4	24	PAL	1	V01	22	46

Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
20RS8	24	PAL	1	V01	22	44
20S10	24	PAL		V01	22	43
20X10	24	PAL		V09	22	23
20X10A	24	PAL	1	V09	22	36
20X4	24	PAL		V09	22	23
20X4A	24	PAL	1	V09	22	36
20X8	24	PAL		V09	22	23
20X8A	24	PAL	1	V09	22	36
20XRP10	24	AmPAL	1,4	V02	97	9F
20XRP4	24	AmPAL	1,4	V02	97	9C
20XRP6	24	AmPAL	1,4	V02	97	9D
20XRP8	24	AmPAL	1,4	V02	97	9E
22IP6	24	PAL		V06	22	6A
22P10	24	AmPAL		V02	97	2B
22RX8/A	24	PAL	1	V01	22	78
22V10/A/B/-15	24	AmPAL	1,4	V01	97	28
22XP10	24	AmPAL		V02	97	2B
23S8	20	AmPAL	1	V04	97	84
29CPL141	28	FPC	12	V08	94	7C
29CPL142	24	FPC		V10	94	7D
29CPL144	28	FPC		V08	94	7E
29CPL151	28	FPC	12	V08	94	7C
29CPL152	24	FPC		V10	94	7D
29CPL154	28	FPC		V08	94	7E
32VX10/A	24	PAL	1	V02	22	77
6L16A	24	PAL	5	V01	22	48
8L14A	24	PAL	5	V01	22	49
C16L8Q	20	PAL		V04	DB	17
C16L8Z	20	PAL		V07	46	17
C16R4Q	20	PAL	1	V04	DB	24
C16R4Z	20	PAL	1	V07	46	24
C16R6Q	20	PAL	1	V04	DB	24
C16R6Z	20	PAL	1	V07	46	24
C16R8Q	20	PAL	1	V04	DB	24
C16R8Z	20	PAL	1	V07	46	24
C18U8	20	PAL	1	V04	DB	2E
C20L8Z	24	PAL		V06	46	26
C20R4Z	24	PAL	1	V06	46	27
C20R6Z	24	PAL	1	V06	46	27
C20R8Z	24	PAL	1	V06	46	27

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Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
C20RA10Z	24	PAL	5	V06	46	45
C22V10	24	AmPAL	1	V04	60	28
C22V10	24	PAL	1	V09	DB	28
C22VF10	24	AmPAL	1	V04	60	4D
CE29M16	24	PAL	8	V03	60	4B
CE29MA16	24	PAL	8	V03	60	4C
CE16V8	20	PAL	1	V10	80	55
CE18U8	20	EPAL	1	V07	DE	3E
CE20RA10Z	24	EPPAL	5	V06	DE	45
CE22V10	24	PAL	1	V10	80	28
CE26V12	28	PAL	1	V10	80	4E
PLS105	28	FPLS		V04	2A	63
PLS167	24	FPLS		V04	2A	60
PLS168	24	FPLS		V04	2A	74
<b>ATMEL</b>						
22V10	24	EPLD	1	V04	65	28
750	24	EPLD	5,8	V05	65	0F
<b>Cypress Semiconductor</b>						
12L10	24	PAL		V01	28	01
14L8	24	PAL		V01	28	02
16L6	24	PAL		V01	28	03
16L8A	20	PAL		V01	28	17
16R4A	20	PAL	1	V01	28	24
16R6A	20	PAL	1	V01	28	24
16R8A	20	PAL	1	V01	28	24
18L4	24	PAL		V01	28	04
20G10A	24	PAL	1	V01	28	56
20L10	24	PAL		V01	28	06
20L2	24	PAL		V01	28	05
20L8	24	PAL		V01	28	26
20R4	24	PAL	1	V01	28	65
20R6	24	PAL	1	V01	28	66
20R8	24	PAL	1	V01	28	27
22V10A	24	PAL	1	V01	28	28
7C330	28	EPLD		V07	28	1A
<b>EXEL Microelectronics</b>						
78C800	24	ERASIC	1	V04	76	2A



Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
<b>Gould Electronics</b>						
153	20	PEEL		V09	7D	65
173	24	PEEL		V04	7D	76
18CV8	20	PEEL		V04	7D	3A
20CG10	24	PEEL	1	V10	7D	56
22CV10	24	PEEL	1	V10	7D	28
22CV10Z	24	PEEL	1	V10	7D	A3
253	20	PEEL		V09	7D	85
273	24	PEEL		V04	7D	86
<b>Harris</b>						
77153/82S153	20	HPL		V01	98	65
77209/16L8	20	HPL		V01	98	17
77210/16R4	20	HPL		V01	98	24
77211/16R6	20	HPL		V01	98	24
77212/16R8	20	HPL		V01	98	24
77215/16H8	20	HPL		V01	98	17
77216/16P8	20	HPL		V01	98	30
<b>International CMOS Technologies</b>						
153	20	PEEL		V06	8D	65
173	24	PEEL		V04	8D	76
18CV8	20	PEEL		V04	8D	3A
20CG10	24	PEEL	-	V10	8D	56
22CV10	24	PEEL	-	V10	8D	28
22CV10Z	24	PEEL	-	V10	8D	A3
253	20	PEEL		V06	8D	85
273	24	PEEL		V04	8D	86
<b>Intel</b>						
5AC312	24	EPLD	11	V07	55	3F
5C031	20	EPLD		V01	55	50
5C032	20	EPLD		V02	55	95
5C060	24	EPLD		V01	55	59
<b>Lattice Semiconductor</b>						
16V8	20	GAL	1,6,7,9	V03	36	55
16V8A	20	GAL	1,6,7,9	V07	36	55
16Z8	24	GAL	1,5,6,7,9	V01	36	47
20V8	24	GAL	1,6,7,9	V03	36	57
20V8A	24	GAL	1,6,7,9	V07	36	57
22V10	24	GAL	6,7,9	V09	36	28
22V10UES	24	GAL	6,7,9	V09	36	7F
6001	24	GAL	5,6,7,9	V09	36	4A

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Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
<b>National Semiconductor</b>						
10H8/A/A2	20	PAL		V01	95	18
10L8/A/A2	20	PAL		V01	95	13
12H6/A/A2	20	PAL		V01	95	19
12L10/A	24	PAL		V01	95	01
12L6/A/A2	20	PAL		V01	95	14
14H4/A/A2	20	PAL		V01	95	20
14L4/A/A2	20	PAL		V01	95	15
14L8/A	24	PAL		V01	95	02
16C1/A/A2	20	PAL		V01	95	21
16H2/A/A2	20	PAL		V01	95	22
16L2/A/A2	20	PAL		V01	95	16
16L6/A	24	PAL		V01	95	03
16L8/A/A2	20	PAL		V01	95	17
16L8B/B2	20	PAL		V01	95	17
16R4/A/A2	20	PAL		V01	95	24
16R4B/B2	20	PAL		V01	95	24
16R6/A/A2	20	PAL		V01	95	24
16R6B/B2	20	PAL		V01	95	24
16R8/A/A2	20	PAL		V01	95	24
16R8B/B2	20	PAL		V01	95	24
16RA8	20	PAL		V05	95	31
16V8	20	GAL	1,6,7,9	V03	0D	55
16V8A	20	GAL	1,6,7,9	V09	0D	55
18L4/A	24	PAL		V01	95	04
20C1	24	PAL		V01	95	12
20L10/A	24	PAL		V01	95	06
20L2/A	24	PAL		V01	95	05
20L8A	24	PAL		V01	95	26
20L8B	24	PAL		V01	95	26
20P8B	24	PAL		V03	95	42
20R4A	24	PAL		V01	95	27
20R4B	24	PAL	1	V01	95	27
20R6A	24	PAL		V01	95	27
20R6B	24	PAL	1	V01	95	27
20R8A	24	PAL		V01	95	27
20R8B	24	PAL	1	V01	95	27
20RA10	24	PAL	5	V01	95	45
20RP4B	24	PAL	1	V03	95	97
20RP6B	24	PAL	1	V03	95	97
20RP8B	24	PAL	1	V03	95	97

Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
20V8	24	GAL	1,6,7,9	V03	0D	57
20V8A	24	GAL	1,6,7,9	V09	0D	57
20X10	24	PAL		V01	95	23
20X10A	24	PAL	1	V01	95	36
20X4	24	PAL		V01	95	23
20X4A	24	PAL	1	V01	95	36
20X8	24	PAL		V01	95	23
20X8A	24	PAL	1	V01	95	36
6001	24	GAL	5,6,7,9	V09	0D	4A
87X153B	20	PLA		V03	95	65
<b>Ricoh</b>						
10P8A	20	EPLD		V01	38	51
10P8B	20	EPLD		V01	39	51
12P6A	20	EPLD		V01	38	52
12P6B	20	EPLD		V01	39	52
14P4A	20	EPLD		V01	38	53
14P4B	20	EPLD		V01	39	53
16P2A	20	EPLD		V01	38	54
16P2B	20	EPLD		V01	39	54
16P8B	20	EPLD		V01	39	30
16RP4B	20	EPLD	1	V01	39	31
16RP6B	20	EPLD	1	V01	39	31
16RP8B	20	EPLD	1	V01	39	31
241	24	EPLD	1,8	V09	39	5A
<b>Samsung Semiconductor</b>						
16L8	20	CPL	6	V04	9D	17
16R4	20	CPL	1,6	V04	9D	24
16R6	20	CPL	1,6	V04	9D	24
16R8	20	CPL	1,6	V04	9D	24
20L10	24	CPL	6	V07	9D	06
20L8	24	CPL	6	V07	9D	26
20R4	24	CPL	1,6	V07	9D	27
20R6	24	CPL	1,6	V07	9D	27
20R8	24	CPL	1,6	V07	9D	27
<b>SEEQ Technology</b>						
20RA10Z	24	PAL	5	V04	9E	45

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Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
<b>Signetics</b>						
CK2605	20	FPLA		V02	96	71
PLC153	20	FPLA		V05	86	65
PLC16V8	20	FPLA		V05	86	3B
PLC18V8Z	24	EPLD	1	V09	86	4F
PLC20V8	24	FPLA		V06	86	4E
PLC415	28	FPLA		V10	86	AA
PLC473	24	FPLA		V02	86	78
PLHS16L8	20	FPLA		V09	3D	17
PLHS18P8	20	FPLA		V09	3D	33
PLS104	28	FPLS		V02	96	63
PLS105	28	FPLS		V02	96	63
PLS105-40	28	FPLS		V09	1B	63
PLS150	20	FPGA		V02	96	64
PLS151	20	FPGA		V02	96	64
PLS152	20	FPLA		V02	96	65
PLS153	20	FPLA		V02	96	65
PLS154	20	FPLS	1	V02	96	67
PLS155	20	FPLS	1	V02	96	67
PLS156	20	FPLS	1	V02	96	68
PLS157	20	FPLS	1	V02	96	68
PLS158	20	FPLS	1	V02	96	66
PLS159	20	FPLS	1	V02	96	66
PLS159A	20	FPLS	1	V02	64	66
PLS161	24	FPLA		V02	96	69
PLS166	24	FPLS		V02	96	60
PLS167	24	FPLS		V02	96	60
PLS168	24	FPLS		V10	96	74
PLS173	24	FPLA		V02	96	76
PLS179	24	FPLS	1	V02	96	77
PLUS153	20	FPLA		V07	1B	65
PLUS16L8	20	FPLA		V08	1B	17
PLUS16R4	20	FPLA		V08	1B	24
PLUS16R6	20	FPLA		V08	1B	24
PLUS16R8	20	FPLA		V08	1B	24
PLUS173	24	FPLS		V07	1B	76
PLUS20L8	24	FPLA		V08	1B	26
PLUS20R4	24	FPLA		V08	1B	27
PLUS20R6	24	FPLA		V08	1B	27
PLUS20R8	24	FPLA		V08	1B	27
PLUS405	28	FPLS		V09	1B	79

Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
<b>Sprague Solid State</b>						
16LC8	20	SPL		V01	34	17
16RC4	20	SPL		V01	34	24
16RC6	20	SPL		V01	34	24
16RC8	20	SPL		V01	34	24
20LC8	24	SPL		V01	34	26
20XC8	24	SPL		V01	34	23
<b>SGS-Thomson Microelectronics</b>						
16V8	20	GAL	1,6,7,9	V03	14	55
16V8A	20	GAL	1,6,7,9	V10	14	55
20V8	24	GAL	1,6,7,9	V03	14	57
20V8A	24	GAL	1,6,7,9	V10	14	57
<b>Texas Instruments</b>						
16L8-10	20	BPAL		V05	A1	17
16L8-12/-15/-25	20	BPAL		V02	9A	17
16L8-7	20	BPAL		V07	0B	17
16L8A/A-2	20	PAL		V01	99	17
16L8H-15	20	BPAL		V08	0B	17
16N8	20	BPAD		V05	A1	0A
16R4-10	20	BPAL		V05	A1	24
16R4-12/-15/-25	20	BPAL		V02	9A	24
16R4-7	20	BPAL		V07	0B	24
16R4A/A-2	20	PAL		V01	99	24
16R4H-15	20	BPAL		V08	0B	24
16R6-10	20	BPAL		V05	A1	24
16R6-12/-15/-25	20	BPAL		V02	9A	24
16R6-7	20	BPAL		V07	0B	24
16R6A/A-2	20	PAL		V01	99	24
16R6H-15	20	BPAL		V08	0B	24
16R8-10	20	BPAL		V05	A1	24
16R8-12/-15/-25	20	BPAL		V02	9A	24
16R8-7	20	BPAL		V07	0B	24
16R8A/A-2	20	PAL		V01	99	24
16R8H-15	20	BPAL		V08	0B	24
18N8	20	BPAD		V08	A1	5E
20L10	24	BPAL		V08	99	06
20L8-15/-25	24	BPAL		V02	A1	26
20L8-7	24	BPAL		V09	0B	26
20L8A	24	PAL		V01	99	26
20R4-15/-25	24	BPAL	1	V02	A1	27
20R4-7	24	BPAL	1	V09	0B	27
20R4A	24	PAL	1	V01	99	27
20R6-15/-25	24	BPAL	1	V02	A1	27
20R6-7	24	BPAL	1	V09	0B	27
20R6A	24	PAL	1	V01	99	27

V10.0 DEVICE LIST

Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
20R8-15/-25	24	BPAL		V02	A1	27
20R8-7	24	BPAL		V09	0B	27
20R8A	24	PAL		V01	99	27
20X10	24	BPAL		V08	99	23
20X4	24	BPAL	1	V08	99	23
20X8	24	BPAL	1	V08	99	23
22V10/A	24	BPAL	1	V01	99	28
22VP10	24	BPAL	1	V04	99	98
506	24	FPLS	8	V09	99	7A
507	24	PSG		V09	99	7B
529	20	FPGA		V02	99	72
82S105A/B	28	FPLS		V02	99	63
82S167	24	FPLS		V04	99	60
839	24	FPLA		V04	99	70
840	24	FPLA		V04	99	70
C16L8	20	PAL		V03	42	17
C16R4	20	PAL		V03	42	24
C16R6	20	PAL		V03	42	24
C16R8	20	PAL		V03	42	24
C18V8	20	PAL		V07	42	4F
C22V10Z	24	PAL		V10	42	28
R19L8	24	PAL		V02	99	89
R19R4	24	PAL		V02	99	91
R19R6	24	PAL		V02	99	91
R19R8	24	PAL		V02	99	91
T19L8	24	PAL		V02	99	88
T19R4	24	PAL		V02	99	90
T19R6	24	PAL		V02	99	90
T19R8	24	PAL		V02	99	90
<b>VLSI Technology</b>						
16V8	20	GAL	1,6,7,9	V01	2F	55
20V8	24	GAL	1,6,7,9	V01	2F	57
VP10P8	20	EPLD		V01	32	51
VP12P6	20	EPLD		V01	32	52
VP14P4	20	EPLD		V01	32	53
VP16P2	20	EPLD		V01	32	54
VP16P8	20	EPLD		V01	32	30
VP16RP4	20	EPLD	1	V01	32	31
VP16RP6	20	EPLD	1	V01	32	31
VP16RP8	20	EPLD	1	V01	32	31

## CROSS-PROGRAMMING

Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
<b>Lattice 16V8/A GAL DIPas:</b>						
10H8	20	RAL	6,7,9	V03	36	18
10H8A	20	RAL	6,7,9	V07	36	18
10L8	20	RAL	6,7,9	V03	36	13
10L8A	20	RAL	6,7,9	V07	36	13
10P8	20	RAL	6,7,9	V03	36	32
10P8A	20	RAL	6,7,9	V07	36	32
12H6	20	RAL	6,7,9	V03	36	19
12H6A	20	RAL	6,7,9	V07	36	19
12L6	20	RAL	6,7,9	V03	36	14
12L6A	20	RAL	6,7,9	V07	36	14
12P6	20	RAL	6,7,9	V03	36	33
12P6A	20	RAL	6,7,9	V07	36	33
14H4	20	RAL	6,7,9	V03	36	20
14H4A	20	RAL	6,7,9	V07	36	20
14L4	20	RAL	6,7,9	V03	36	15
14L4A	20	RAL	6,7,9	V07	36	15
14P4	20	RAL	6,7,9	V03	36	34
14P4A	20	RAL	6,7,9	V07	36	34
16H2	20	RAL	6,7,9	V03	36	22
16H2A	20	RAL	6,7,9	V07	36	22
16H8	20	RAL	6,7,9	V03	36	25
16H8A	20	RAL	6,7,9	V07	36	25
16L2	20	RAL	6,7,9	V03	36	16
16L2A	20	RAL	6,7,9	V07	36	16
16L8	20	RAL	6,7,9	V03	36	17
16L8A	20	RAL	6,7,9	V07	36	17
16P2	20	RAL	6,7,9	V03	36	35
16P2A	20	RAL	6,7,9	V07	36	35
16P8	20	RAL	6,7,9	V03	36	30
16P8A	20	RAL	6,7,9	V07	36	30
16R4	20	RAL	1,6,7,9	V03	36	81
16R4A	20	RAL	1,6,7,9	V07	36	81
16R6	20	RAL	1,6,7,9	V03	36	80
16R6A	20	RAL	1,6,7,9	V07	36	80
16R8	20	RAL	1,6,7,9	V03	36	82
16R8A	20	RAL	1,6,7,9	V07	36	82
16RP4	20	RAL	1,6,7,9	V03	36	85
16RP4A	20	RAL	1,6,7,9	V07	36	85
16RP6	20	RAL	1,6,7,9	V03	36	86
16RP6A	20	RAL	1,6,7,9	V07	36	86
16RP8	20	RAL	1,6,7,9	V03	36	87
16RP8A	20	RAL	1,6,7,9	V07	36	87

## V10.0 DEVICE LIST

Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
<b>Lattice 20V8/A GAL DIP</b>						
14H8	24	RAL	6,7,9	V03	36	08
14H8A	24	RAL	6,7,9	V07	36	08
14L8	24	RAL	6,7,9	V03	36	02
14L8A	24	RAL	6,7,9	V07	36	02
14P8	24	RAL	6,7,9	V03	36	38
14P8A	24	RAL	6,7,9	V07	36	38
16H6	24	RAL	6,7,9	V03	36	09
16H6A	24	RAL	6,7,9	V07	36	09
16L6	24	RAL	6,7,9	V03	36	03
16L6A	24	RAL	6,7,9	V07	36	03
16P6	24	RAL	6,7,9	V03	36	39
16P6A	24	RAL	6,7,9	V07	36	39
18H4	24	RAL	6,7,9	V03	36	10
18H4A	24	RAL	6,7,9	V07	36	10
18L4	24	RAL	6,7,9	V03	36	04
18L4A	24	RAL	6,7,9	V07	36	04
18P4	24	RAL	6,7,9	V03	36	40
18P4A	24	RAL	6,7,9	V07	36	40
20H2	24	RAL	6,7,9	V03	36	11
20H2A	24	RAL	6,7,9	V07	36	11
20H8	24	RAL	6,7,9	V03	36	61
20H8A	24	RAL	6,7,9	V07	36	61
20L2	24	RAL	6,7,9	V03	36	05
20L2A	24	RAL	6,7,9	V07	36	05
20L8	24	RAL	6,7,9	V03	36	26
20L8A	24	RAL	6,7,9	V07	36	26
20P2	24	RAL	6,7,9	V03	36	41
20P2A	24	RAL	6,7,9	V07	36	41
20P8	24	RAL	6,7,9	V03	36	62
20P8A	24	RAL	6,7,9	V07	36	62
20R4	24	RAL	1,6,7,9	V03	36	65
20R4A	24	RAL	1,6,7,9	V07	36	65
20R6	24	RAL	1,6,7,9	V03	36	66
20R6A	24	RAL	1,6,7,9	V07	36	66
20R8	24	RAL	1,6,7,9	V03	36	27
20R8A	24	RAL	1,6,7,9	V07	36	27
20RP4	24	RAL	1,6,7,9	V03	36	46
20RP4A	24	RAL	1,6,7,9	V07	36	46
20RP6	24	RAL	1,6,7,9	V03	36	64
20RP6A	24	RAL	1,6,7,9	V07	36	64
20RP8	24	RAL	1,6,7,9	V03	36	63
20RP8A	24	RAL	1,6,7,9	V07	36	63



Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
<b>National 16V8/A GAL DIPas:</b>						
10H8	20	RAL	6,7,9	V07	0D	18
10H8A	20	RAL	6,7,9	V09	0D	18
10L8	20	RAL	6,7,9	V07	0D	13
10L8A	20	RAL	6,7,9	V09	0D	13
10P8	20	RAL	6,7,9	V07	0D	32
10P8A	20	RAL	6,7,9	V09	0D	32
12H6	20	RAL	6,7,9	V07	0D	19
12H6A	20	RAL	6,7,9	V09	0D	19
12L6	20	RAL	6,7,9	V07	0D	14
12L6A	20	RAL	6,7,9	V09	0D	14
12P6	20	RAL	6,7,9	V07	0D	33
12P6A	20	RAL	6,7,9	V09	0D	33
14H4	20	RAL	6,7,9	V07	0D	20
14H4A	20	RAL	6,7,9	V09	0D	20
14L4	20	RAL	6,7,9	V07	0D	15
14L4A	20	RAL	6,7,9	V09	0D	15
14P4	20	RAL	6,7,9	V07	0D	34
14P4A	20	RAL	6,7,9	V09	0D	34
16H2	20	RAL	6,7,9	V07	0D	22
16H2A	20	RAL	6,7,9	V09	0D	22
16H8	20	RAL	6,7,9	V07	0D	25
16H8A	20	RAL	6,7,9	V09	0D	25
16L2	20	RAL	6,7,9	V07	0D	16
16L2A	20	RAL	6,7,9	V09	0D	16
16L8	20	RAL	6,7,9	V07	0D	17
16L8A	20	RAL	6,7,9	V09	0D	17
16P2	20	RAL	6,7,9	V07	0D	35
16P2A	20	RAL	6,7,9	V09	0D	35
16P8	20	RAL	6,7,9	V07	0D	30
16P8A	20	RAL	6,7,9	V09	0D	30
16R4	20	RAL	1,6,7,9	V07	0D	81
16R4A	20	RAL	1,6,7,9	V09	0D	81
16R6	20	RAL	1,6,7,9	V07	0D	80
16R6A	20	RAL	1,6,7,9	V09	0D	80
16R8	20	RAL	1,6,7,9	V07	0D	82
16R8A	20	RAL	1,6,7,9	V09	0D	82
16RP4	20	RAL	1,6,7,9	V07	0D	85
16RP4A	20	RAL	1,6,7,9	V09	0D	85
16RP6	20	RAL	1,6,7,9	V07	0D	86
16RP6A	20	RAL	1,6,7,9	V09	0D	86
16RP8	20	RAL	1,6,7,9	V07	0D	87
16RP8A	20	RAL	1,6,7,9	V09	0D	87

V10.0 DEVICE LIST

Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
<b>National 20V8/A GAL DIPs:</b>						
14H8	24	RAL	6,7,9	V07	0D	08
14H8A	24	RAL	6,7,9	V09	0D	08
14L8	24	RAL	6,7,9	V07	0D	02
14L8A	24	RAL	6,7,9	V09	0D	02
14P8	24	RAL	6,7,9	V07	0D	38
14P8A	24	RAL	6,7,9	V09	0D	38
16H6	24	RAL	6,7,9	V07	0D	09
16H6A	24	RAL	6,7,9	V09	0D	09
16L6	24	RAL	6,7,9	V07	0D	03
16L6A	24	RAL	6,7,9	V09	0D	03
16P6	24	RAL	6,7,9	V07	0D	39
16P6A	24	RAL	6,7,9	V09	0D	39
18H4	24	RAL	6,7,9	V07	0D	10
18H4A	24	RAL	6,7,9	V09	0D	10
18L4	24	RAL	6,7,9	V07	0D	04
18L4A	24	RAL	6,7,9	V09	0D	04
18P4	24	RAL	6,7,9	V07	0D	40
18P4A	24	RAL	6,7,9	V09	0D	40
20H2	24	RAL	6,7,9	V07	0D	11
20H2A	24	RAL	6,7,9	V09	0D	11
20H8	24	RAL	6,7,9	V07	0D	61
20H8A	24	RAL	6,7,9	V09	0D	61
20L2	24	RAL	6,7,9	V07	0D	05
20L2A	24	RAL	6,7,9	V09	0D	05
20L8	24	RAL	6,7,9	V07	0D	26
20L8A	24	RAL	6,7,9	V09	0D	26
20P2	24	RAL	6,7,9	V07	0D	41
20P2A	24	RAL	6,7,9	V09	0D	41
20P8	24	RAL	6,7,9	V07	0D	62
20P8A	24	RAL	6,7,9	V09	0D	62
20R4	24	RAL	1,6,7,9	V07	0D	65
20R4A	24	RAL	1,6,7,9	V09	0D	65
20R6	24	RAL	1,6,7,9	V07	0D	66
20R6A	24	RAL	1,6,7,9	V09	0D	66
20R8	24	RAL	1,6,7,9	V07	0D	27
20R8A	24	RAL	1,6,7,9	V09	0D	27
20RP4	24	RAL	1,6,7,9	V07	0D	46
20RP4A	24	RAL	1,6,7,9	V09	0D	46
20RP6	24	RAL	1,6,7,9	V07	0D	64
20RP6A	24	RAL	1,6,7,9	V09	0D	64
20RP8	24	RAL	1,6,7,9	V07	0D	63
20RP8A	24	RAL	1,6,7,9	V09	0D	63

Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
<b>SGS-Thomson Microelectronics 16V8/A GAL DIPs:</b>						
10H8	20	RAL	6,7,9	V07	14	18
10H8A	20	RAL	6,7,9	V10	14	18
10L8	20	RAL	6,7,9	V07	14	13
10L8A	20	RAL	6,7,9	V10	14	13
10P8	20	RAL	6,7,9	V07	14	32
10P8A	20	RAL	6,7,9	V10	14	32
12H6	20	RAL	6,7,9	V07	14	19
12H6A	20	RAL	6,7,9	V10	14	19
12L6	20	RAL	6,7,9	V07	14	14
12L6A	20	RAL	6,7,9	V10	14	14
12P6	20	RAL	6,7,9	V07	14	33
12P6A	20	RAL	6,7,9	V10	14	33
14H4	20	RAL	6,7,9	V07	14	20
14H4A	20	RAL	6,7,9	V10	14	20
14L4	20	RAL	6,7,9	V07	14	15
14L4A	20	RAL	6,7,9	V10	14	15
14P4	20	RAL	6,7,9	V07	14	34
14P4A	20	RAL	6,7,9	V10	14	34
16H2	20	RAL	6,7,9	V07	14	22
16H2A	20	RAL	6,7,9	V10	14	22
16H8	20	RAL	6,7,9	V07	14	25
16H8A	20	RAL	6,7,9	V10	14	25
16L2	20	RAL	6,7,9	V07	14	16
16L2A	20	RAL	6,7,9	V10	14	16
16L8	20	RAL	6,7,9	V07	14	17
16L8A	20	RAL	6,7,9	V10	14	17
16P2	20	RAL	6,7,9	V07	14	35
16P2A	20	RAL	6,7,9	V10	14	35
16P8	20	RAL	6,7,9	V07	14	30
16P8A	20	RAL	6,7,9	V10	14	30
16R4	20	RAL	1,6,7,9	V07	14	81
16R4A	20	RAL	1,6,7,9	V10	14	81
16R6	20	RAL	1,6,7,9	V07	14	80
16R6A	20	RAL	1,6,7,9	V10	14	80
16R8	20	RAL	1,6,7,9	V07	14	82
16R8A	20	RAL	1,6,7,9	V10	14	82
16RP4	20	RAL	1,6,7,9	V07	14	85
16RP4A	20	RAL	1,6,7,9	V10	14	85
16RP6	20	RAL	1,6,7,9	V07	14	86
16RP6A	20	RAL	1,6,7,9	V10	14	86
16RP8	20	RAL	1,6,7,9	V07	14	87
16RP8A	20	RAL	1,6,7,9	V10	14	87

V10.0 DEVICE LIST

Device Part Number	Pins	Part Type	Notes	Adapter Version	Family Codes	Pinout Codes
<b>SGS-Thomson Microelectronics 20V8/A GAL DIP</b>						
14H8	24	RAL	6,7,9	V07	14	08
14H8A	24	RAL	6,7,9	V10	14	08
14L8	24	RAL	6,7,9	V07	14	02
14L8A	24	RAL	6,7,9	V10	14	02
14P8	24	RAL	6,7,9	V07	14	38
14P8A	24	RAL	6,7,9	V10	14	38
16H6	24	RAL	6,7,9	V07	14	09
16H6A	24	RAL	6,7,9	V10	14	09
16L6	24	RAL	6,7,9	V07	14	03
16L6A	24	RAL	6,7,9	V10	14	03
16P6	24	RAL	6,7,9	V07	14	39
16P6A	24	RAL	6,7,9	V10	14	39
18H4	24	RAL	6,7,9	V07	14	10
18H4A	24	RAL	6,7,9	V10	14	10
18L4	24	RAL	6,7,9	V07	14	04
18L4A	24	RAL	6,7,9	V10	14	04
18P4	24	RAL	6,7,9	V07	14	40
18P4A	24	RAL	6,7,9	V10	14	40
20H2	24	RAL	6,7,9	V07	14	11
20H2A	24	RAL	6,7,9	V10	14	11
20H8	24	RAL	6,7,9	V07	14	61
20H8A	24	RAL	6,7,9	V10	14	61
20L2	24	RAL	6,7,9	V07	14	05
20L2A	24	RAL	6,7,9	V10	14	05
20L8	24	RAL	6,7,9	V07	14	26
20L8A	24	RAL	6,7,9	V10	14	26
20P2	24	RAL	6,7,9	V07	14	41
20P2A	24	RAL	6,7,9	V10	14	41
20P8	24	RAL	6,7,9	V07	14	62
20P8A	24	RAL	6,7,9	V10	14	62
20R4	24	RAL	1,6,7,9	V07	14	65
20R4A	24	RAL	1,6,7,9	V10	14	65
20R6	24	RAL	1,6,7,9	V07	14	66
20R6A	24	RAL	1,6,7,9	V10	14	66
20R8	24	RAL	1,6,7,9	V07	14	27
20R8A	24	RAL	1,6,7,9	V10	14	27
20RP4	24	RAL	1,6,7,9	V07	14	46
20RP4A	24	RAL	1,6,7,9	V10	14	46
20RP6	24	RAL	1,6,7,9	V07	14	64
20RP6A	24	RAL	1,6,7,9	V10	14	64
20RP8	24	RAL	1,6,7,9	V07	14	63
20RP8A	24	RAL	1,6,7,9	V10	14	63

**Footnotes**

- (1) These devices are preloadable. See the section on Adapter- Specific Operating Information for details.
- (2) Use this pinout code when pin one of the device is used as a clock.
- (3) Use this pinout code when pin one of the device is used as an input (for Logic Fingerprint testing reasons only).
- (4) Parts are not register preloadable after the security fuse is blown.
- (5) This device is not supported by Logic Fingerprint testing.
- (6) The backwards device test is not supported for this device.
- (7) The number of times a particular GAL/RAL Semiconductor device has been programmed can be read by examining RAM location \$0113 for a 20- pin device or by examining RAM location \$0153 for a 24-pin device from the front panel (refer to the Keyboard Edit Operations section of your programming manual) This counter is updated prior to programming and can only be examined after such an operation is completed.
- (8) This device has over 10,000 fuses (cells).
- (9) The continuity test is not supported for this device.
- (10) You may experience problems when functionally testing this device.
- (11) Programming support not valid for pre-production devices. Error A2 will result on pre-production devices.
- (12) These devices do not support logic fingerprint or test vectors.

