| Dedicated Pin | 84-Pin PLCC | 100-Pin TQFP (1), (2) | 100-Pin PQFP (3) | 160-Pin PQFP |
|-------------------------|----------------------------|-------------------------|-------------------------|--|
| INPUT/GCLK1 | 83 | 87 | 89 | 139 |
| INPUT/GCLRn | 1 | 89 | 91 | 141 |
| INPUT/OE1 | 84 | 88 | 90 | 140 |
| INPUT/OE2/GCLK2 | 2 | 90 | 92 | 142 |
| TDI (4) | 14 | 4 | 6 | 9 |
| TMS (4) | 23 | 15 | 17 | 22 |
| TCK (4) | 62 | 62 | 64 | 99 |
| TDO (4) | 71 | 73 | 75 | 112 |
| GND | 7, 19, 32, 42, 47, 59, 72, | 38, 86, 11, 26, 43, 59, | 13, 28, 40, 45, 61, 76, | 17, 42, 60, 66, 95, 113, |
| | 82 | 74, 95 | 88, 97 | 138, 148 |
| VCCINT (5.0 V only) | 3, 43 | 39,91 | 41, 93 | 61, 143 |
| VCCIO (3.3 V or 5.0 V) | 13, 26, 38, 53, 66, 78 | 3, 18, 34, 51, 66, 82 | 5, 20, 36, 53, 68, 84 | 8, 26, 55, 79, 104, 133 |
| No Connect (N.C.) | 6, 39, 46, 79 | _ | - | 1, 2, 3, 4, 5, 6, 34, 35, 36, 37, 38, 39, 40, 45, 46, 47, 74, 75, 76, 81, 82, 83, 84, 85, 86, 87, 115, 116, 117, 118, 119, 120, 124, 125, 126, 127, 154, 155, 156, 157 |
| Total User I/O Pins (5) | 60 | 80 | 80 | 100 |

| LAB | MC | 84-Pin PLCC | 100-Pin TQFP (1), (2) | 100-Pin PQFP (3) | 160-Pin PQFP |
|-----|----|-------------|-----------------------|------------------|--|
| Α | 1 | 11 | 100 | 2 | 158 |
| Α | 2 | _ | _ | _ | _ |
| Α | 3 | 10 | 99 | 1 | 153 |
| Α | 4 | _ | _ | _ | _ |
| Α | 5 | _ | _ | _ | 152 |
| Α | 6 | _ | 98 | 100 | 151 |
| Α | 7 | _ | _ | _ | _ |
| Α | 8 | 9 | 97 | 99 | 150 |
| Α | 9 | 8 | 96 | 98 | 149 |
| Α | 10 | _ | _ | _ | _ |
| Α | 11 | 5 | 94 | 96 | 147 |
| Α | 12 | _ | _ | _ | _ |
| Α | 13 | _ | _ | _ | 146 |
| Α | 14 | _ | 93 | 95 | 145 |
| Α | 15 | _ | _ | _ | _ |
| Α | 16 | 4 | 92 | 94 | 144 |
| В | 17 | 18 | 9 | 11 | 15 |
| В | 18 | _ | _ | _ | _ |
| В | 19 | 17 | 8 | 10 | 14 |
| В | 20 | _ | _ | _ | _ |
| В | 21 | _ | _ | _ | 13 |
| В | 22 | _ | 7 | 9 | 12 |
| В | 23 | _ | _ | _ | _ |
| В | 24 | 16 | 6 | 8 | 11 |
| В | 25 | 15 | 5 | 7 | 10 |
| В | 26 | _ | _ | _ | _ |
| В | 27 | 14 (4) | 4 (4) | 6 (4) | 9 (4) |
| В | 28 | _ | _ | _ | _ |
| В | 29 | _ | _ | _ | 7 |
| В | 30 | _ | 2 | 4 | 160 |
| В | 31 | _ | _ | _ | _ |
| В | 32 | 12 | 1 | 3 | 159 |
| С | 33 | _ | 19 | 21 | 27 |
| С | 34 | _ | _ | _ | _ |
| С | 35 | 25 | 17 | 19 | 25 |
| С | 36 | _ | _ | _ | _ |
| С | 37 | _ | _ | _ | 24 |
| С | 38 | 24 | 16 | 18 | 23 |
| С | 39 | _ | | _ | _ |
| С | 40 | 23 (4) | 15 (4) | 17 (4) | 22 (4) |
| С | 41 | - | 10 | 12 | 16 |
| С | 42 | _ | - | _ | _ |
| С | 43 | 20 | 12 | 14 | 18 |
| С | 44 | - | - | _ | _ |
| С | 45 | _ | _ | _ | 19 |
| С | 46 | 21 | 13 | 15 | 20 |
| С | 47 | - | _ | _ | _ |
| I C | | | · · | 1 | The state of the s |

| LAB | MC | 84-Pin PLCC | 100-Pin TQFP (1), (2) | 100-Pin PQFP (3) | 160-Pin PQFP |
|--------|----------|-------------|-----------------------|------------------|--------------|
| D | 49 | _ | _ | _ | 48 |
| D | 50 | _ | _ | _ | _ |
| D | 51 | 33 | 28 | 30 | 44 |
| D | 52 | _ | _ | _ | _ |
| D | 53 | _ | 27 | 29 | 43 |
| D | 54 | 31 | 25 | 27 | 41 |
| D | 55 | _ | _ | _ | _ |
| D | 56 | 30 | 24 | 26 | 33 |
| D | 57 | _ | _ | _ | 32 |
| D | 58 | _ | _ | _ | - |
| D | 59 | 29 | 23 | 25 | 31 |
| D | 60 | _ | _ | _ | - |
| D | 61 | _ | 22 | 24 | 30 |
| D | 62 | 28 | 21 | 23 | 29 |
| D | 63 | _ | _ | _ | _ |
| D | 64 | 27 | 20 | 22 | 28 |
| E | 65 | _ | _ | _ | 59 |
| E | 66 | _ | _ | _ | - |
| E | 67 | 41 | 37 | 39 | 58 |
| E | 68 | _ | _ | _ | _ |
| E | 69 | _ | 36 | 38 | 57 |
| E | 70 | 40 | 35 | 37 | 56 |
| E | 71 | - | _ | - - | |
| E | 72 | 37 | 33 | 35 | 54 |
| E | 73 | | | | 53 |
| E | 74 | | _ | <u> </u> | |
| E | 75 | | | 34 | 52 |
| E | 75 76 | 36 | 32 | | |
| E | 76 | _ | - | 33 | 51 |
| | | - | 31 | | |
| E | 78 | 35 | 30 | 32 | 50 |
| E | 79 | - | - | - | - |
| E | 80 | 34 | 29 | 31 | 49 |
| F | 81 | - | _ | - | 62 |
| F | 82 | _ | - | - | - |
| F - | 83 | 44 | 40 | 42 | 63 |
| F | 84 | _ | - | _ | _ |
| F | 85 | - | 41 | 43 | 64 |
| F | 86 | 45 | 42 | 44 | 65 |
| F | 87 | _ | _ | _ | _ |
| F | 88 | 48 | 44 | 46 | 67 |
| F | 89 | _ | _ | _ | 68 |
| F | 90 | _ | _ | - | _ |
| F | 91 | 49 | 45 | 47 | 69 |
| F | 92 | _ | _ | _ | _ |
| F | 93 | _ | 46 | 48 | 70 |
| F | 94 | 50 | 47 | 49 | 71 |
| F | 95 | _ | _ | _ | _ |
| F | 96 | 51 | 48 | 50 | 72 |

| LAB | MC | 84-Pin PLCC | 100-Pin TQFP (1), (2) | 100-Pin PQFP (3) | 160-Pin PQFP |
|---------------|-----|-------------|-----------------------|------------------|--------------|
| G | 97 | _ | _ | _ | 73 |
| G | 98 | _ | _ | _ | _ |
| G | 99 | 52 | 49 | 51 | 77 |
| G | 100 | _ | _ | _ | _ |
| G | 101 | _ | 50 | 52 | 78 |
| G | 102 | 54 | 52 | 54 | 80 |
| G | 103 | _ | _ | _ | _ |
| G | 104 | 55 | 53 | 55 | 88 |
| G | 105 | _ | _ | _ | 89 |
| G | 106 | _ | _ | _ | _ |
| G | 107 | 56 | 54 | 56 | 90 |
| G | 108 | _ | _ | _ | _ |
| G | 109 | _ | 55 | 57 | 91 |
| G | 110 | 57 | 56 | 58 | 92 |
| G | 111 | _ | _ | _ | _ |
| G | 112 | 58 | 57 | 59 | 93 |
| Н | 113 | _ | 58 | 60 | 94 |
| Н | 114 | _ | _ | _ | _ |
| Н | 115 | 60 | 60 | 62 | 96 |
| Н | 116 | _ | _ | _ | _ |
| Н | 117 | _ | _ | _ | 97 |
| Н | 118 | 61 | 61 | 63 | 98 |
| Н | 119 | _ | _ | _ | |
| Н | 120 | 62 (4) | 62 (4) | 64 (4) | 99 (4) |
| H | 121 | - | 67 | 69 | 105 |
| Н | 122 | _ | _ | _ | _ |
| H | 123 | 65 | 65 | 67 | 103 |
| Н | 124 | _ | _ | _ | - |
| H | 125 | _ | _ | _ | 102 |
| H | 126 | 64 | 64 | 66 | 101 |
| H | 127 | _ | _ | _ | - |
| H | 128 | 63 | 63 | 65 | 100 |
| I | 129 | 67 | 68 | 70 | 106 |
| <u>.</u> 1 | 130 | _ | _ | - | _ |
| T | 131 | 68 | 69 | 71 | 107 |
| · I | 132 | - | - | - | _ |
| i I | 133 | _ | | - - | 108 |
| | 134 | _ | 70 | 72 | 109 |
| ' | 135 | | - | - | - |
| i I | 136 | 69 | 71 | 73 | 110 |
| i I | 137 | 70 | 72 | 74 | 111 |
| i I | 138 | - | - | - | _ |
| ı | 139 | | 73 (4) | | 112 (4) |
| <u> </u> | 140 | 71 (4) | | 75 (4) | |
| 1 | 141 | | - | _ | 114 |
| 1 | 141 | - | - 75 | - 77 | 121 |
| 1 1 | | _ | | 11 | 121 |
| 1 | 143 | | | 70 | 100 |
| I | 144 | 73 | 76 | 78 | 122 |

EPM7160E & EPM7160S I/O Pin-Outs

ver. 1.0

| LAB | MC | 84-Pin PLCC | 100-Pin TQFP (1), (2) | 100-Pin PQFP (3) | 160-Pin PQFP |
|-----|-----|-------------|-----------------------|------------------|--------------|
| J | 145 | 74 | 77 | 79 | 123 |
| J | 146 | _ | _ | _ | _ |
| J | 147 | 75 | 78 | 80 | 128 |
| J | 148 | _ | _ | _ | _ |
| J | 149 | _ | _ | _ | 129 |
| J | 150 | _ | 79 | 81 | 130 |
| J | 151 | _ | _ | _ | _ |
| J | 152 | 76 | 80 | 82 | 131 |
| J | 153 | 77 | 81 | 83 | 132 |
| J | 154 | _ | - | _ | _ |
| J | 155 | 80 | 83 | 85 | 134 |
| J | 156 | _ | _ | _ | _ |
| J | 157 | _ | _ | _ | 135 |
| J | 158 | _ | 84 | 86 | 136 |
| J | 159 | _ | _ | _ | _ |
| J | 160 | 81 | 85 | 87 | 137 |

Notes:

- (1) EPM7160E devices are not available in the 100-pin TQFP package.
- (2) A complete thermal analysis should be performed before committing a design to this device package.
- (3) EPM7160S devices are not available in the 100-pin PQFP package.
- (4) This JTAG pin applies to MAX 7000S devices only and this pin may function as either a JTAG port or a user I/O pin. If the device is configured to use the JTAG ports for BST or with ISP, this pin is not available as a user I/O pin.
- (5) The user I/O pin count includes dedicated input pins and all I/O pins.

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