

| I/O &<br>VREF<br>Bank | Pad Number<br>Orientation | Pin/Pad<br>Function | 144-Pin TQFP<br>(1) | 208-Pin PQFP<br>(1) | 240-Pin PQFP<br>(1) | 356-Pin BGA | 484-Pin<br>FineLine BGA |
|-----------------------|---------------------------|---------------------|---------------------|---------------------|---------------------|-------------|-------------------------|
| 8                     | 1                         | I/O                 | —                   | —                   | —                   | —           | B11                     |
| 8                     | 2                         | I/O                 | —                   | 155                 | 180                 | E22         | B10                     |
| 8                     | 3                         | I/O                 | —                   | —                   | —                   | D25         | B9                      |
| 8                     | 4                         | I/O                 | —                   | —                   | 178                 | F22         | B8                      |
| —                     | 5                         | VCCINT              | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| —                     | 6                         | VCCIO               | VCCIO8              | VCCIO8              | VCCIO8              | VCCIO8      | —                       |
| 8                     | 7                         | I/O                 | —                   | —                   | —                   | E24         | B7                      |
| 8                     | 8                         | I/O                 | —                   | —                   | —                   | —           | B6                      |
| 8                     | 9                         | I/O                 | —                   | 154                 | 176                 | F23         | B5                      |
| 8                     | 10                        | I/O                 | —                   | —                   | —                   | —           | B4                      |
| 8                     | 11                        | I/O                 | —                   | 153                 | 175                 | D26         | B3                      |
| —                     | 12                        | VCCIO               | VCCIO8              | VCCIO8              | VCCIO8              | VCCIO8      | VCCIO8                  |
| 8                     | 13                        | I/O                 | —                   | —                   | —                   | G22         | C2                      |
| 8                     | 14                        | I/O                 | —                   | —                   | —                   | —           | C3                      |
| 8                     | 15                        | I/O                 | —                   | 152                 | 174                 | E25         | D3                      |
| 8                     | 16                        | I/O                 | —                   | —                   | —                   | —           | D2                      |
| 8                     | 17                        | I/O                 | —                   | —                   | 173                 | E26         | E5                      |
| —                     | 18                        | GNDINT              | GND                 | GND                 | GND                 | GND         | GND                     |
| 8                     | 19                        | I/O                 | —                   | —                   | —                   | F25         | E4                      |
| 8                     | 20                        | I/O                 | —                   | —                   | —                   | —           | E6                      |
| 8                     | 21                        | I/O                 | —                   | 151                 | 172                 | G24         | F5                      |
| 8                     | 22                        | I/O                 | —                   | —                   | —                   | —           | F7                      |
| 8                     | 23                        | I/O                 | —                   | —                   | 171                 | F26         | E3                      |
| —                     | 24                        | GNDIO               | GND                 | GND                 | GND                 | GND         | GND                     |
| 8                     | 25                        | I/O                 | —                   | —                   | —                   | G25         | F4                      |
| 8                     | 26                        | I/O                 | —                   | —                   | 170                 | —           | E2                      |
| 8                     | 27                        | I/O                 | —                   | —                   | —                   | H23         | F3                      |
| 8                     | 28                        | I/O, DATA6 (2)      | 105                 | 150                 | 169                 | F24         | J6                      |
| 8                     | 29                        | I/O                 | —                   | —                   | —                   | —           | G5                      |
| —                     | 30                        | VCCINT              | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| 8                     | 31                        | I/O                 | —                   | —                   | —                   | G26         | F2                      |
| 8                     | 32                        | I/O                 | —                   | —                   | —                   | —           | H6                      |
| 8                     | 33                        | I/O, DATA7 (2)      | 104                 | 146                 | 166                 | G23         | K8                      |
| 8                     | 34                        | I/O                 | —                   | —                   | —                   | J22         | G6                      |
| 8                     | 35                        | I/O, nWS (2)        | 103                 | 145                 | 164                 | H22         | M7                      |
| —                     | 36                        | VCCIO               | VCCIO8              | VCCIO8              | VCCIO8              | VCCIO8      | VCCIO8                  |
| 8                     | 37                        | I/O                 | —                   | 144                 | 163                 | H25         | G4                      |
| 8                     | 38                        | I/O                 | —                   | —                   | —                   | —           | H5                      |
| 8                     | 39                        | I/O, nRS (2)        | 102                 | 142                 | 161                 | H24         | L8                      |
| 8                     | 40                        | I/O                 | —                   | —                   | —                   | H26         | J7                      |
| 8                     | 41                        | I/O, nCS (2)        | 101                 | 141                 | 160                 | J24         | K7                      |
| —                     | 42                        | GNDINT              | GND                 | GND                 | GND                 | GND         | GND                     |
| 8                     | 43                        | I/O                 | —                   | —                   | —                   | K22         | H4                      |
| 8                     | 44                        | I/O                 | —                   | —                   | —                   | —           | G3                      |
| 8                     | 45                        | I/O                 | —                   | —                   | —                   | J25         | J5                      |
| 8                     | 46                        | I/O                 | —                   | —                   | —                   | K23         | G2                      |
| 8                     | 47                        | I/O                 | —                   | —                   | —                   | J26         | J4                      |

| I/O &<br>VREF<br>Bank | Pad Number<br>Orientation | Pin/Pad<br>Function        | 144-Pin TQFP<br>(1) | 208-Pin PQFP<br>(1) | 240-Pin PQFP<br>(1) | 356-Pin BGA | 484-Pin<br>FineLine BGA |
|-----------------------|---------------------------|----------------------------|---------------------|---------------------|---------------------|-------------|-------------------------|
| –                     | 48                        | GNDIO                      | GND                 | GND                 | GND                 | GND         | GND                     |
| –                     | 49                        | VCC_CLKL4 (3)              | 100                 | 140                 | 159                 | K24         | M8                      |
| –                     | 50                        | GND_CLKL4 (3)              | 99                  | 139                 | 158                 | L22         | N8                      |
| –                     | 51                        | GND_CLKL4 (3)              | 99                  | 139                 | 158                 | L22         | N8                      |
| 8                     | 52                        | I/O, CS (2)                | 98                  | 138                 | 157                 | K25         | P4                      |
| 8                     | 53                        | I/O                        | –                   | –                   | –                   | K26         | H3                      |
| 8                     | 54                        | I/O, DEV_CLRn<br>(4)       | 97                  | 137                 | 156                 | L23         | N7                      |
| –                     | 55                        | VCCINT                     | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| –                     | 56                        | VCCIO                      | _IR1                | _IR1                | _IR1                | VCCIO8      | VCCIO8                  |
| 8                     | 57                        | I/O,<br>CLKLK_FB2n (5)     | –                   | –                   | –                   | L24         | P6                      |
| 8                     | 58                        | CLKLK_FB2p                 | 96                  | 135                 | 155                 | L25         | R6                      |
| 8                     | 59                        | I/O, CLK4n (5)             | –                   | –                   | –                   | L26         | N5                      |
| 8                     | 60                        | CLK4p                      | 95                  | 134                 | 154                 | M23         | N4                      |
| 8                     | 61                        | I/O, CLK2n (5)             | –                   | –                   | –                   | M24         | L7                      |
| –                     | 62                        | VCCIO                      | VCCIO8              | VCCIO8              | VCCIO8              | VCCIO8      | VCCIO8                  |
| –                     | 63                        | DATA0 (6), (7)             | 94                  | 133                 | 153                 | M26         | L4                      |
| –                     | 64                        | DCLK (6)                   | 93                  | 132                 | 152                 | N25         | L5                      |
| 8                     | 65                        | CLK2p                      | 92                  | 131                 | 151                 | N26         | L6                      |
| –                     | 66                        | nCE (6)                    | 91                  | 130                 | 150                 | P26         | M4                      |
| –                     | 67                        | TDI (6)                    | 90                  | 129                 | 149                 | P25         | M5                      |
| –                     | 68                        | VCCIO                      | VCCIO7              | VCCIO7              | VCCIO7              | VCCIO7      | –                       |
| –                     | 69                        | GND_CLKL2 (3)              | 88                  | 128                 | 147                 | P24         | M9                      |
| –                     | 70                        | GND_CLKL2 (3)              | 88                  | 128                 | 147                 | P24         | M9                      |
| –                     | 71                        | GNDIO                      | GND                 | GND                 | GND                 | GND         | GND                     |
| –                     | 72                        | VCC_CLKL2 (3)              | 85                  | 125                 | 144                 | P23         | L9                      |
| 7                     | 73                        | I/O, DEV_OE (4)            | 84                  | 124                 | 143                 | R26         | N6                      |
| –                     | 74                        | VCC_CKOUT2<br>(11)         | 83                  | 123                 | 142                 | R25         | T5                      |
| –                     | 75                        | GND_CKOUT2<br>(11)         | 82                  | 122                 | 141                 | R24         | T4                      |
| 7                     | 76                        | I/O                        | –                   | –                   | –                   | T26         | K6                      |
| 7                     | 77                        | I/O                        | –                   | 121                 | 140                 | T25         | H2                      |
| –                     | 78                        | GNDINT                     | GND                 | GND                 | GND                 | GND         | GND                     |
| –                     | 79                        | CLKLK_OUT2p<br>(10)        | 81                  | 120                 | 139                 | R23         | P5                      |
| 7                     | 80                        | I/O,<br>CLKLK_OUT2n<br>(5) | –                   | –                   | –                   | R22         | R5                      |
| 7                     | 81                        | I/O                        | –                   | –                   | –                   | T23         | K5                      |
| 7                     | 82                        | I/O                        | –                   | –                   | –                   | U26         | J3                      |
| 7                     | 83                        | I/O                        | –                   | –                   | –                   | U25         | J2                      |
| –                     | 84                        | VCCIO                      | VCCIO7              | VCCIO7              | VCCIO7              | VCCIO7      | VCCIO7                  |
| 7                     | 85                        | I/O                        | –                   | –                   | –                   | U24         | K4                      |
| 7                     | 86                        | I/O                        | –                   | –                   | –                   | V26         | K3                      |
| 7                     | 87                        | I/O, LOCK2 (9)             | 80                  | 119                 | 138                 | T24         | R4                      |
| 7                     | 88                        | I/O                        | –                   | –                   | –                   | –           | K2                      |
| 7                     | 89                        | I/O                        | –                   | –                   | –                   | U23         | L3                      |

| I/O &<br>VREF<br>Bank | Pad Number<br>Orientation | Pin/Pad<br>Function | 144-Pin TQFP<br>(1) | 208-Pin PQFP<br>(1) | 240-Pin PQFP<br>(1) | 356-Pin BGA | 484-Pin<br>FineLine BGA |
|-----------------------|---------------------------|---------------------|---------------------|---------------------|---------------------|-------------|-------------------------|
| –                     | 90                        | VCCINT              | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| 7                     | 91                        | I/O                 | 79                  | 117                 | 136                 | U22         | M3                      |
| 7                     | 92                        | I/O                 | –                   | –                   | –                   | V24         | M2                      |
| 7                     | 93                        | I/O, LOCK4 (9)      | 78                  | 116                 | 135                 | V25         | U5                      |
| 7                     | 94                        | I/O                 | –                   | –                   | –                   | –           | N3                      |
| 7                     | 95                        | I/O                 | –                   | –                   | –                   | W26         | N2                      |
| –                     | 96                        | GNDIO               | GND                 | GND                 | GND                 | GND         | GND                     |
| 7                     | 97                        | I/O                 | –                   | –                   | –                   | V23         | M6                      |
| 7                     | 98                        | I/O                 | –                   | –                   | –                   | W25         | P2                      |
| 7                     | 99                        | I/O                 | –                   | –                   | 134                 | W24         | P3                      |
| 7                     | 100                       | I/O                 | –                   | –                   | –                   | –           | R2                      |
| 7                     | 101                       | I/O                 | –                   | –                   | 133                 | V22         | R3                      |
| –                     | 102                       | GNDINT              | GND                 | GND                 | GND                 | GND         | GND                     |
| 7                     | 103                       | I/O                 | –                   | –                   | –                   | Y25         | U2                      |
| 7                     | 104                       | I/O                 | –                   | –                   | –                   | W23         | T3                      |
| 7                     | 105                       | I/O                 | 76                  | –                   | 131                 | AA26        | T2                      |
| 7                     | 106                       | I/O                 | –                   | –                   | –                   | –           | V2                      |
| 7                     | 107                       | I/O                 | –                   | –                   | –                   | Y24         | U3                      |
| –                     | 108                       | VCCIO               | VCCIO7              | VCCIO7              | VCCIO7              | VCCIO7      | VCCIO7                  |
| 7                     | 109                       | I/O                 | 75                  | 113                 | 130                 | W22         | W2                      |
| 7                     | 110                       | I/O                 | –                   | –                   | –                   | AA25        | V3                      |
| 7                     | 111                       | I/O                 | –                   | –                   | 129                 | Y23         | U4                      |
| 7                     | 112                       | I/O                 | –                   | –                   | –                   | –           | W3                      |
| 7                     | 113                       | I/O                 | –                   | –                   | –                   | AB26        | V4                      |
| –                     | 114                       | VCCINT              | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| 7                     | 115                       | I/O                 | –                   | 112                 | 126                 | AA24        | Y2                      |
| 7                     | 116                       | I/O                 | –                   | –                   | –                   | –           | W4                      |
| 7                     | 117                       | I/O                 | –                   | 111                 | 125                 | Y22         | Y3                      |
| 7                     | 118                       | I/O                 | –                   | –                   | –                   | –           | W5                      |
| 7                     | 119                       | I/O                 | –                   | –                   | –                   | AC26        | Y4                      |
| –                     | 120                       | GNDIO               | GND                 | GND                 | GND                 | GND         | GND                     |
| 7                     | 121                       | I/O                 | –                   | 108                 | 124                 | AA23        | AA3                     |
| 7                     | 122                       | I/O                 | –                   | –                   | –                   | –           | AA4                     |
| 7                     | 123                       | I/O                 | –                   | 107                 | 123                 | AB24        | AA5                     |
| 7                     | 124                       | I/O                 | –                   | –                   | –                   | –           | AA6                     |
| 7                     | 125                       | I/O                 | –                   | –                   | –                   | AC25        | AA7                     |
| –                     | 126                       | GNDINT              | GND                 | GND                 | GND                 | GND         | GND                     |
| 7                     | 127                       | I/O                 | –                   | –                   | –                   | AA22        | AA8                     |
| 7                     | 128                       | I/O                 | –                   | –                   | –                   | AB23        | AA9                     |
| 7                     | 129                       | I/O                 | –                   | 106                 | 121                 | AB22        | AA10                    |
| 7                     | 130                       | I/O                 | –                   | –                   | –                   | –           | AA11                    |
| –                     | 131                       | VCCIO               | VCCIO7              | VCCIO7              | VCCIO7              | VCCIO7      | VCCIO7                  |
| –                     | 132                       | VCCIO               | VCCIO6              | VCCIO6              | VCCIO6              | VCCIO6      | VCCIO6                  |
| 6                     | 133                       | I/O                 | 71                  | 104                 | 119                 | AD24        | Y5                      |
| 6                     | 134                       | I/O                 | –                   | –                   | 118                 | AE25        | V5                      |
| 6                     | 135                       | I/O                 | –                   | 103                 | 117                 | AD23        | Y6                      |
| 6                     | 136                       | I/O                 | 70                  | 102                 | 116                 | AE24        | T6                      |

| I/O &<br>VREF<br>Bank | Pad Number<br>Orientation | Pin/Pad<br>Function | 144-Pin TQFP<br>(1) | 208-Pin PQFP<br>(1) | 240-Pin PQFP<br>(1) | 356-Pin BGA | 484-Pin<br>FineLine BGA |
|-----------------------|---------------------------|---------------------|---------------------|---------------------|---------------------|-------------|-------------------------|
| 6                     | 137                       | I/O                 | –                   | –                   | –                   | AF25        | P7                      |
| 6                     | 138                       | I/O                 | 69                  | 101                 | 115                 | AD22        | W7                      |
| 6                     | 139                       | I/O                 | –                   | –                   | –                   | AE23        | W6                      |
| 6                     | 140                       | I/O                 | 68                  | 100                 | 114                 | AF24        | V6                      |
| 6                     | 141                       | I/O                 | –                   | 99                  | 113                 | AD21        | V7                      |
| 6                     | 142                       | I/O                 | –                   | –                   | 112                 | AE22        | U7                      |
| –                     | 143                       | GNDIO               | GND                 | GND                 | GND                 | GND         | GND                     |
| 6                     | 144                       | I/O                 | 67                  | 98                  | 111                 | AF23        | Y7                      |
| 6                     | 145                       | I/O                 | –                   | 97                  | 110                 | AD20        | U8                      |
| 6                     | 146                       | I/O                 | 66                  | 96                  | 109                 | AE21        | V8                      |
| 6                     | 147                       | I/O                 | –                   | –                   | –                   | AF22        | W8                      |
| 6                     | 148                       | I/O                 | 65                  | 94                  | 107                 | AF21        | Y9                      |
| 6                     | 149                       | I/O                 | –                   | –                   | 106                 | AE20        | T9                      |
| 6                     | 150                       | I/O                 | –                   | 93                  | 105                 | AD19        | Y8                      |
| 6                     | 151                       | I/O                 | –                   | –                   | 104                 | AF20        | W9                      |
| 6                     | 152                       | I/O                 | 64                  | 92                  | 103                 | AE19        | V9                      |
| 6                     | 153                       | I/O                 | –                   | –                   | –                   | AD18        | U9                      |
| –                     | 154                       | VCCIO               | VCCIO6              | VCCIO6              | VCCIO6              | VCCIO6      | VCCIO6                  |
| 6                     | 155                       | I/O                 | 63                  | 91                  | 102                 | AF19        | T10                     |
| 6                     | 156                       | I/O                 | –                   | 90                  | 101                 | AE18        | U10                     |
| 6                     | 157                       | I/O                 | –                   | –                   | –                   | AD17        | P11                     |
| 6                     | 158                       | I/O                 | 62                  | 89                  | 100                 | AF18        | V10                     |
| 6                     | 159                       | I/O                 | –                   | 88                  | 99                  | AE17        | U12                     |
| 6                     | 160                       | I/O                 | –                   | 87                  | 98                  | AF17        | U11                     |
| –                     | 161                       | VCCIO               | VCCIO6              | VCCIO6              | VCCIO6              | VCCIO6      | –                       |
| 6                     | 162                       | I/O                 | 60                  | 85                  | 96                  | AD16        | R11                     |
| 6                     | 163                       | I/O                 | 59                  | 84                  | 95                  | AE16        | R10                     |
| 6                     | 164                       | I/O                 | –                   | –                   | –                   | AF16        | T11                     |
| 6                     | 165                       | I/O                 | –                   | –                   | 94                  | AD15        | Y10                     |
| –                     | 166                       | CONF_DONE (6)       | 58                  | 83                  | 93                  | AE15        | W10                     |
| –                     | 167                       | nSTATUS (6)         | 57                  | 82                  | 92                  | AF15        | W11                     |
| 5                     | 168                       | FAST4               | 56                  | 81                  | 91                  | AE14        | V11                     |
| –                     | 169                       | VCCIO               | VCCIO5              | VCCIO5              | VCCIO5              | VCCIO5      | –                       |
| –                     | 170                       | GNDINT              | GND                 | GND                 | GND                 | GND         | GND                     |
| –                     | 171                       | GNDINT              | –                   | –                   | –                   | GND         | –                       |
| –                     | 172                       | VCCINT              | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| –                     | 173                       | VCCINT              | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| –                     | 174                       | GNDINT              | –                   | –                   | –                   | GND         | –                       |
| –                     | 175                       | GNDINT              | GND                 | GND                 | GND                 | GND         | GND                     |
| –                     | 176                       | GNDIO               | GND                 | GND                 | GND                 | GND         | GND                     |
| 5                     | 177                       | FAST3               | 53                  | 77                  | 88                  | AF12        | V12                     |
| –                     | 178                       | TCK (6)             | 52                  | 76                  | 87                  | AE12        | W12                     |
| –                     | 179                       | TMS(6)              | 51                  | 75                  | 86                  | AF11        | W13                     |
| 5                     | 180                       | I/O                 | 50                  | 74                  | 85                  | AE11        | Y11                     |
| 5                     | 181                       | I/O                 | –                   | 73                  | 84                  | AD11        | T12                     |
| 5                     | 182                       | I/O                 | –                   | –                   | 83                  | AF10        | Y12                     |
| 5                     | 183                       | I/O                 | 49                  | 72                  | 82                  | AE10        | V13                     |

| I/O &<br>VREF<br>Bank | Pad Number<br>Orientation | Pin/Pad<br>Function | 144-Pin TQFP<br>(1) | 208-Pin PQFP<br>(1) | 240-Pin PQFP<br>(1) | 356-Pin BGA | 484-Pin<br>FineLine BGA |
|-----------------------|---------------------------|---------------------|---------------------|---------------------|---------------------|-------------|-------------------------|
| 5                     | 184                       | I/O                 | —                   | —                   | —                   | AF9         | R12                     |
| 5                     | 185                       | I/O                 | 48                  | 71                  | 81                  | AD10        | T13                     |
| 5                     | 186                       | I/O                 | —                   | —                   | 80                  | AE9         | Y13                     |
| 5                     | 187                       | I/O                 | 47                  | 70                  | 79                  | AF8         | U13                     |
| 5                     | 188                       | I/O                 | —                   | 69                  | 77                  | AD9         | Y14                     |
| 5                     | 189                       | I/O                 | 46                  | 68                  | 76                  | AE8         | P12                     |
| —                     | 190                       | VCCIO               | VCCIO5              | VCCIO5              | VCCIO5              | VCCIO5      | VCCIO5                  |
| 5                     | 191                       | I/O                 | —                   | 67                  | 75                  | AF7         | W14                     |
| 5                     | 192                       | I/O                 | —                   | 66                  | 74                  | AD8         | V14                     |
| 5                     | 193                       | I/O                 | —                   | —                   | —                   | AE7         | U14                     |
| 5                     | 194                       | I/O                 | 44                  | 65                  | 73                  | AF6         | R13                     |
| 5                     | 195                       | I/O                 | —                   | —                   | —                   | AF5         | Y15                     |
| 5                     | 196                       | I/O                 | —                   | 63                  | 72                  | AE6         | T14                     |
| 5                     | 197                       | I/O                 | 43                  | 62                  | 71                  | AD7         | W15                     |
| 5                     | 198                       | I/O                 | —                   | —                   | 70                  | AF4         | Y16                     |
| 5                     | 199                       | I/O                 | —                   | 61                  | 69                  | AE5         | V15                     |
| 5                     | 200                       | I/O                 | 41                  | 60                  | 68                  | AD6         | W16                     |
| —                     | 201                       | GNDIO               | GND                 | GND                 | GND                 | GND         | GND                     |
| —                     | 202                       | VCCIO               | VCCIO5              | VCCIO5              | VCCIO5              | VCCIO5      | —                       |
| 5                     | 203                       | I/O                 | 40                  | 59                  | 66                  | AF3         | U15                     |
| 5                     | 204                       | I/O                 | —                   | —                   | —                   | AE4         | V16                     |
| 5                     | 205                       | I/O                 | —                   | 58                  | 65                  | AD5         | U16                     |
| 5                     | 206                       | I/O                 | —                   | —                   | —                   | AF2         | W17                     |
| 5                     | 207                       | I/O                 | 39                  | 57                  | 64                  | AE3         | V17                     |
| 5                     | 208                       | I/O                 | —                   | —                   | —                   | AD4         | U18                     |
| 5                     | 209                       | I/O                 | 38                  | 56                  | 63                  | AE2         | V18                     |
| 5                     | 210                       | I/O                 | —                   | 55                  | 62                  | AC5         | Y18                     |
| 5                     | 211                       | I/O                 | —                   | —                   | —                   | AD3         | Y17                     |
| 5                     | 212                       | I/O                 | 37                  | 54                  | 61                  | AC4         | W18                     |
| —                     | 213                       | VCCIO               | VCCIO5              | VCCIO5              | VCCIO5              | VCCIO5      | VCCIO5                  |
| —                     | 214                       | VCCIO               | VCCIO4              | VCCIO4              | VCCIO4              | VCCIO4      | VCCIO4                  |
| 4                     | 215                       | I/O                 | —                   | —                   | —                   | —           | AA12                    |
| 4                     | 216                       | I/O                 | 35                  | 51                  | 59                  | AA5         | AA13                    |
| 4                     | 217                       | I/O                 | —                   | —                   | —                   | AC2         | AA14                    |
| 4                     | 218                       | I/O                 | —                   | —                   | —                   | AA4         | AA15                    |
| —                     | 219                       | VCCINT              | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| 4                     | 220                       | I/O                 | —                   | —                   | —                   | Y5          | AA16                    |
| 4                     | 221                       | I/O                 | —                   | —                   | —                   | —           | AA17                    |
| 4                     | 222                       | I/O                 | 33                  | 50                  | 58                  | AC1         | AA18                    |
| 4                     | 223                       | I/O                 | —                   | —                   | —                   | —           | AA19                    |
| 4                     | 224                       | I/O                 | —                   | —                   | 57                  | AB2         | AA20                    |
| —                     | 225                       | GNDIO               | GND                 | GND                 | GND                 | GND         | GND                     |
| 4                     | 226                       | I/O                 | —                   | —                   | 55                  | AA3         | Y19                     |
| 4                     | 227                       | I/O                 | —                   | —                   | —                   | —           | Y20                     |
| 4                     | 228                       | I/O                 | —                   | 49                  | 54                  | Y4          | W19                     |
| 4                     | 229                       | I/O                 | —                   | —                   | —                   | —           | Y21                     |
| 4                     | 230                       | I/O                 | —                   | —                   | 53                  | AB1         | V19                     |

| I/O &<br>VREF<br>Bank | Pad Number<br>Orientation | Pin/Pad<br>Function   | 144-Pin TQFP<br>(1) | 208-Pin PQFP<br>(1) | 240-Pin PQFP<br>(1) | 356-Pin BGA | 484-Pin<br>FineLine BGA |
|-----------------------|---------------------------|-----------------------|---------------------|---------------------|---------------------|-------------|-------------------------|
| –                     | 231                       | GNDINT                | GND                 | GND                 | GND                 | GND         | GND                     |
| 4                     | 232                       | I/O                   | –                   | –                   | –                   | W5          | W20                     |
| 4                     | 233                       | I/O                   | –                   | –                   | –                   | –           | U19                     |
| 4                     | 234                       | I/O                   | 30                  | 46                  | 50                  | AA2         | V20                     |
| 4                     | 235                       | I/O                   | –                   | –                   | –                   | –           | W21                     |
| 4                     | 236                       | I/O                   | 29                  | 45                  | 49                  | Y3          | T17                     |
| –                     | 237                       | VCCIO                 | VCCIO4              | VCCIO4              | VCCIO4              | VCCIO4      | VCCIO4                  |
| 4                     | 238                       | I/O                   | –                   | –                   | –                   | W4          | V21                     |
| 4                     | 239                       | I/O                   | –                   | –                   | –                   | –           | T18                     |
| 4                     | 240                       | I/O                   | –                   | 44                  | 48                  | AA1         | U20                     |
| 4                     | 241                       | I/O                   | –                   | –                   | –                   | Y2          | T19                     |
| 4                     | 242                       | I/O                   | –                   | –                   | –                   | V5          | R17                     |
| –                     | 243                       | VCCINT                | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| 4                     | 244                       | I/O                   | –                   | –                   | –                   | W3          | U21                     |
| 4                     | 245                       | I/O                   | –                   | –                   | –                   | –           | R18                     |
| 4                     | 246                       | I/O                   | 27                  | –                   | 47                  | Y1          | T20                     |
| 4                     | 247                       | I/O                   | –                   | –                   | –                   | V4          | R19                     |
| 4                     | 248                       | I/O                   | –                   | –                   | 46                  | W2          | T21                     |
| –                     | 249                       | VCCIO                 | VCCIO4              | VCCIO4              | VCCIO4              | VCCIO4      | –                       |
| –                     | 250                       | GNDIO                 | GND                 | GND                 | GND                 | GND         | GND                     |
| 4                     | 251                       | I/O                   | –                   | –                   | –                   | U5          | P16                     |
| 4                     | 252                       | I/O                   | –                   | –                   | –                   | –           | R20                     |
| 4                     | 253                       | I/O                   | 26                  | 41                  | 44                  | V3          | P17                     |
| 4                     | 254                       | I/O                   | –                   | –                   | –                   | W1          | R21                     |
| 4                     | 255                       | I/O                   | –                   | 40                  | 43                  | V2          | P18                     |
| –                     | 256                       | GNDINT                | GND                 | GND                 | GND                 | GND         | GND                     |
| 4                     | 257                       | I/O                   | –                   | –                   | –                   | V1          | N15                     |
| 4                     | 258                       | I/O                   | –                   | –                   | –                   | –           | P19                     |
| 4                     | 259                       | I/O                   | –                   | 38                  | 41                  | U3          | N16                     |
| 4                     | 260                       | I/O                   | –                   | –                   | –                   | T5          | P20                     |
| 4                     | 261                       | I/O                   | –                   | 37                  | 40                  | U2          | N17                     |
| –                     | 262                       | VCCIO                 | VCCIO4              | VCCIO4              | VCCIO4              | VCCIO4      | VCCIO4                  |
| 4                     | 263                       | I/O                   | –                   | 36                  | 39                  | T4          | P21                     |
| 4                     | 264                       | I/O                   | –                   | –                   | –                   | –           | N18                     |
| 4                     | 265                       | I/O                   | –                   | 35                  | 38                  | U1          | M15                     |
| 4                     | 266                       | I/O                   | 25                  | 34                  | 37                  | T3          | N19                     |
| 4                     | 267                       | I/O                   | 24                  | 33                  | 36                  | R5          | M16                     |
| –                     | 268                       | VCCINT                | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| 4                     | 269                       | I/O                   | –                   | –                   | –                   | T2          | N20                     |
| 4                     | 270                       | I/O                   | –                   | 32                  | 35                  | –           | N21                     |
| 4                     | 271                       | I/O, CLK3n (5)        | –                   | –                   | –                   | T1          | K18                     |
| 4                     | 272                       | CLK3p                 | 23                  | 31                  | 34                  | R4          | K17                     |
| 4                     | 273                       | I/O, CLK1n (5)        | –                   | 30                  | –                   | R3          | M17                     |
| –                     | 274                       | GNDIO                 | GND                 | GND                 | GND                 | GND         | GND                     |
| –                     | 275                       | nCONFIG (6)           | 22                  | 29                  | 33                  | R1          | M19                     |
| –                     | 276                       | CLKLK_ENA (6),<br>(8) | 21                  | 28                  | 32                  | P4          | M14                     |

| I/O &<br>VREF<br>Bank | Pad Number<br>Orientation | Pin/Pad<br>Function | 144-Pin TQFP<br>(1) | 208-Pin PQFP<br>(1) | 240-Pin PQFP<br>(1) | 356-Pin BGA | 484-Pin<br>FineLine BGA |
|-----------------------|---------------------------|---------------------|---------------------|---------------------|---------------------|-------------|-------------------------|
| 4                     | 277                       | CLK1p               | 20                  | 27                  | 31                  | P3          | M18                     |
| –                     | 278                       | MSEL1 (6)           | 19                  | 26                  | 30                  | P2          | L18                     |
| –                     | 279                       | MSEL0 (6)           | 18                  | 25                  | 29                  | P1          | L19                     |
| –                     | 280                       | VCCIO               | VCCIO3              | VCCIO3              | VCCIO3              | VCCIO3      | VCCIO3                  |
| 3                     | 281                       | I/O                 | –                   | –                   | –                   | N2          | M20                     |
| 3                     | 282                       | I/O                 | –                   | –                   | –                   | N1          | L21                     |
| 3                     | 283                       | I/O                 | –                   | –                   | –                   | M1          | L20                     |
| 3                     | 284                       | I/O                 | –                   | –                   | –                   | –           | K21                     |
| 3                     | 285                       | I/O                 | –                   | –                   | –                   | M2          | L17                     |
| –                     | 286                       | GNDINT              | GND                 | GND                 | GND                 | GND         | GND                     |
| 3                     | 287                       | I/O                 | 15                  | 22                  | 25                  | M3          | K20                     |
| 3                     | 288                       | I/O                 | –                   | –                   | –                   | M4          | L16                     |
| 3                     | 289                       | I/O                 | 14                  | 21                  | 24                  | L2          | J21                     |
| 3                     | 290                       | I/O                 | –                   | –                   | –                   | –           | L15                     |
| 3                     | 291                       | I/O                 | –                   | –                   | –                   | L3          | K19                     |
| –                     | 292                       | GNDIO               | GND                 | GND                 | GND                 | GND         | GND                     |
| 3                     | 293                       | I/O                 | 13                  | 20                  | 23                  | K1          | L14                     |
| 3                     | 294                       | I/O                 | –                   | –                   | –                   | L4          | J20                     |
| 3                     | 295                       | I/O                 | –                   | 19                  | 22                  | K2          | K16                     |
| 3                     | 296                       | I/O                 | –                   | –                   | –                   | –           | J19                     |
| 3                     | 297                       | I/O                 | –                   | –                   | –                   | L5          | K15                     |
| –                     | 298                       | VCCINT              | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| 3                     | 299                       | I/O                 | –                   | 18                  | 21                  | K3          | H21                     |
| 3                     | 300                       | I/O                 | –                   | –                   | –                   | J1          | J18                     |
| 3                     | 301                       | I/O                 | 11                  | 17                  | 20                  | K4          | H20                     |
| 3                     | 302                       | I/O                 | –                   | –                   | –                   | –           | J17                     |
| 3                     | 303                       | I/O                 | –                   | –                   | –                   | J2          | H19                     |
| –                     | 304                       | VCCIO               | VCCIO3              | VCCIO3              | VCCIO3              | VCCIO3      | VCCIO3                  |
| 3                     | 305                       | I/O                 | –                   | 15                  | 18                  | K5          | J16                     |
| 3                     | 306                       | I/O                 | –                   | –                   | –                   | J3          | G21                     |
| 3                     | 307                       | I/O                 | 10                  | 14                  | 17                  | H2          | H18                     |
| 3                     | 308                       | I/O                 | –                   | –                   | –                   | –           | G20                     |
| 3                     | 309                       | I/O                 | –                   | 13                  | 16                  | J4          | H17                     |
| –                     | 310                       | GNDINT              | GND                 | GND                 | GND                 | GND         | GND                     |
| 3                     | 311                       | I/O                 | –                   | –                   | –                   | G1          | F21                     |
| 3                     | 312                       | I/O                 | –                   | –                   | –                   | H3          | G19                     |
| 3                     | 313                       | I/O                 | 7                   | 9                   | 13                  | J5          | F20                     |
| 3                     | 314                       | I/O                 | –                   | –                   | –                   | –           | G18                     |
| 3                     | 315                       | I/O                 | –                   | –                   | –                   | G2          | E21                     |
| –                     | 316                       | GNDIO               | GND                 | GND                 | GND                 | GND         | GND                     |
| –                     | 317                       | VCCIO               | VCCIO3              | VCCIO3              | VCCIO3              | VCCIO3      | –                       |
| 3                     | 318                       | I/O                 | –                   | –                   | 11                  | H4          | F19                     |
| 3                     | 319                       | I/O                 | –                   | –                   | –                   | F1          | E20                     |
| 3                     | 320                       | I/O                 | 6                   | 7                   | 10                  | G3          | F18                     |
| 3                     | 321                       | I/O                 | –                   | –                   | –                   | –           | D21                     |
| 3                     | 322                       | I/O                 | –                   | –                   | 9                   | H5          | E19                     |
| –                     | 323                       | VCCINT              | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |

| I/O &<br>VREF<br>Bank | Pad Number<br>Orientation | Pin/Pad<br>Function | 144-Pin TQFP<br>(1) | 208-Pin PQFP<br>(1) | 240-Pin PQFP<br>(1) | 356-Pin BGA | 484-Pin<br>FineLine BGA |
|-----------------------|---------------------------|---------------------|---------------------|---------------------|---------------------|-------------|-------------------------|
| 3                     | 324                       | I/O                 | —                   | 6                   | 8                   | F2          | D20                     |
| 3                     | 325                       | I/O                 | —                   | —                   | —                   | G4          | E18                     |
| 3                     | 326                       | I/O                 | —                   | 5                   | 7                   | F3          | C21                     |
| 3                     | 327                       | I/O                 | —                   | —                   | —                   | —           | D19                     |
| 3                     | 328                       | I/O                 | —                   | —                   | —                   | E2          | C20                     |
| —                     | 329                       | VCCIO               | VCCIO3              | VCCIO3              | VCCIO3              | VCCIO3      | VCCIO3                  |
| 3                     | 330                       | I/O                 | —                   | 4                   | 6                   | G5          | B20                     |
| 3                     | 331                       | I/O                 | —                   | —                   | —                   | D1          | B19                     |
| 3                     | 332                       | I/O                 | 3                   | 3                   | 5                   | F4          | B18                     |
| 3                     | 333                       | I/O                 | —                   | —                   | —                   | —           | B17                     |
| 3                     | 334                       | I/O                 | —                   | —                   | 4                   | E3          | B16                     |
| —                     | 335                       | GNDINT              | GND                 | GND                 | GND                 | GND         | GND                     |
| 3                     | 336                       | I/O                 | —                   | —                   | 3                   | D2          | B15                     |
| 3                     | 337                       | I/O                 | —                   | —                   | —                   | F5          | B14                     |
| 3                     | 338                       | I/O                 | 2                   | 2                   | 2                   | E4          | B13                     |
| 3                     | 339                       | I/O                 | —                   | —                   | —                   | —           | B12                     |
| —                     | 340                       | VCCIO               | VCCIO3              | VCCIO3              | VCCIO3              | VCCIO2      | —                       |
| —                     | 341                       | GNDIO               | GND                 | GND                 | GND                 | GND         | GND                     |
| 2                     | 342                       | I/O                 | 143                 | 207                 | 239                 | C3          | C19                     |
| 2                     | 343                       | I/O                 | —                   | —                   | 238                 | B2          | D18                     |
| 2                     | 344                       | I/O                 | 142                 | 206                 | 237                 | D5          | C18                     |
| 2                     | 345                       | I/O                 | —                   | —                   | —                   | C4          | G17                     |
| 2                     | 346                       | I/O                 | —                   | 205                 | 236                 | B3          | E17                     |
| 2                     | 347                       | I/O                 | —                   | —                   | —                   | A2          | D17                     |
| 2                     | 348                       | I/O                 | 141                 | 204                 | 235                 | C5          | C17                     |
| 2                     | 349                       | I/O                 | —                   | —                   | —                   | B4          | H16                     |
| 2                     | 350                       | I/O                 | —                   | 203                 | 234                 | A3          | F16                     |
| 2                     | 351                       | I/O                 | 140                 | 202                 | 233                 | C6          | E16                     |
| —                     | 352                       | VCCIO               | VCCIO2              | VCCIO2              | VCCIO2              | VCCIO2      | VCCIO2                  |
| 2                     | 353                       | I/O                 | 139                 | 201                 | 232                 | B5          | C16                     |
| 2                     | 354                       | I/O                 | —                   | 200                 | 231                 | A4          | D16                     |
| 2                     | 355                       | I/O                 | 138                 | 198                 | 230                 | A5          | C15                     |
| 2                     | 356                       | I/O                 | —                   | —                   | —                   | C7          | D15                     |
| —                     | 357                       | VCCIO               | VCCIO2              | VCCIO2              | VCCIO2              | VCCIO2      | —                       |
| 2                     | 358                       | I/O                 | 137                 | 197                 | 228                 | B6          | E15                     |
| 2                     | 359                       | I/O                 | —                   | —                   | —                   | A6          | F15                     |
| 2                     | 360                       | I/O                 | —                   | 196                 | 227                 | B7          | D14                     |
| 2                     | 361                       | I/O                 | 136                 | 195                 | 226                 | C8          | G15                     |
| 2                     | 362                       | I/O                 | —                   | —                   | 225                 | A7          | C14                     |
| 2                     | 363                       | I/O                 | 135                 | 194                 | 224                 | B8          | E14                     |
| —                     | 364                       | GNDIO               | GND                 | GND                 | GND                 | GND         | GND                     |
| 2                     | 365                       | I/O                 | —                   | 193                 | 223                 | C9          | F14                     |
| 2                     | 366                       | I/O                 | 133                 | 192                 | 222                 | A8          | C13                     |
| 2                     | 367                       | I/O                 | —                   | —                   | 221                 | B9          | D13                     |
| 2                     | 368                       | I/O                 | 132                 | 191                 | 220                 | C10         | C12                     |
| 2                     | 369                       | I/O                 | —                   | —                   | —                   | A9          | F13                     |
| 2                     | 370                       | I/O                 | —                   | 190                 | 219                 | B10         | C11                     |

| I/O &<br>VREF<br>Bank | Pad Number<br>Orientation | Pin/Pad<br>Function  | 144-Pin TQFP<br>(1) | 208-Pin PQFP<br>(1) | 240-Pin PQFP<br>(1) | 356-Pin BGA | 484-Pin<br>FineLine BGA |
|-----------------------|---------------------------|----------------------|---------------------|---------------------|---------------------|-------------|-------------------------|
| –                     | 371                       | VCCIO                | VCCIO2              | VCCIO2              | VCCIO2              | VCCIO2      | VCCIO2                  |
| 2                     | 372                       | I/O                  | –                   | –                   | –                   | A10         | J12                     |
| 2                     | 373                       | I/O                  | 131                 | 188                 | 217                 | C11         | E13                     |
| 2                     | 374                       | I/O                  | –                   | –                   | 216                 | B11         | H13                     |
| 2                     | 375                       | I/O                  | 130                 | 187                 | 215                 | A11         | G14                     |
| –                     | 376                       | TRST (6)             | 129                 | 186                 | 214                 | B12         | D12                     |
| –                     | 377                       | nCEO (6)             | 128                 | 185                 | 213                 | A12         | E12                     |
| 1                     | 378                       | FAST1                | 127                 | 184                 | 212                 | A13         | F12                     |
| –                     | 379                       | GNDINT               | GND                 | GND                 | GND                 | GND         | GND                     |
| –                     | 380                       | GNDINT               | –                   | –                   | –                   | GND         | –                       |
| –                     | 381                       | VCCINT               | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| –                     | 382                       | VCCINT               | VCCINT              | VCCINT              | VCCINT              | VCCINT      | VCCINT                  |
| –                     | 383                       | GNDINT               | GND                 | GND                 | GND                 | GND         | GND                     |
| –                     | 384                       | VCCIO                | VCCIO1              | VCCIO1              | VCCIO1              | VCCIO1      | VCCIO1                  |
| 1                     | 385                       | FAST2                | 124                 | 181                 | 209                 | A15         | D11                     |
| –                     | 386                       | TDO (6)              | 123                 | 180                 | 208                 | B15         | E11                     |
| –                     | 387                       | GNDINT               | –                   | –                   | –                   | –           | GND                     |
| 1                     | 388                       | I/O                  | 122                 | 179                 | 207                 | C15         | F11                     |
| 1                     | 389                       | I/O, INITDONE<br>(4) | 121                 | 178                 | 206                 | A16         | G13                     |
| 1                     | 390                       | I/O, RDYnBSY<br>(2)  | 120                 | 177                 | 205                 | B16         | G12                     |
| 1                     | 391                       | I/O                  | –                   | –                   | –                   | A17         | D10                     |
| 1                     | 392                       | I/O, CLKUSR (2)      | 119                 | 176                 | 204                 | C16         | H12                     |
| 1                     | 393                       | I/O                  | –                   | –                   | 203                 | B17         | C10                     |
| 1                     | 394                       | I/O                  | 118                 | 175                 | 202                 | A18         | C9                      |
| 1                     | 395                       | I/O                  | –                   | 174                 | 201                 | C17         | G11                     |
| 1                     | 396                       | I/O, DATA1 (2)       | 117                 | 173                 | 200                 | B18         | H11                     |
| 1                     | 397                       | I/O                  | –                   | –                   | –                   | A19         | F10                     |
| –                     | 398                       | GNDIO                | GND                 | GND                 | GND                 | GND         | GND                     |
| –                     | 399                       | VCCIO                | VCCIO1              | VCCIO1              | VCCIO1              | VCCIO1      | –                       |
| 1                     | 400                       | I/O                  | –                   | 171                 | 198                 | C18         | C8                      |
| 1                     | 401                       | I/O                  | –                   | –                   | 197                 | B19         | D9                      |
| 1                     | 402                       | I/O                  | –                   | 170                 | 196                 | A20         | E10                     |
| 1                     | 403                       | I/O, DATA2 (2)       | 115                 | 168                 | 195                 | B20         | G10                     |
| 1                     | 404                       | I/O                  | –                   | 167                 | –                   | C19         | E9                      |
| 1                     | 405                       | I/O                  | 114                 | 166                 | 194                 | A21         | C7                      |
| 1                     | 406                       | I/O                  | –                   | 165                 | 193                 | A22         | D7                      |
| 1                     | 407                       | I/O                  | 113                 | 164                 | 192                 | B21         | H10                     |
| 1                     | 408                       | I/O                  | –                   | –                   | –                   | C20         | F9                      |
| 1                     | 409                       | I/O                  | –                   | –                   | 191                 | A23         | C6                      |
| –                     | 410                       | VCCIO                | VCCIO1              | VCCIO1              | VCCIO1              | VCCIO1      | VCCIO1                  |
| 1                     | 411                       | I/O                  | –                   | –                   | 190                 | C21         | D6                      |
| 1                     | 412                       | I/O, DATA3 (2)       | 112                 | 163                 | 189                 | B22         | D8                      |
| 1                     | 413                       | I/O                  | –                   | 162                 | 187                 | A24         | C5                      |
| 1                     | 414                       | I/O                  | –                   | 161                 | 186                 | B23         | E8                      |
| 1                     | 415                       | I/O                  | –                   | –                   | –                   | C22         | F8                      |
| 1                     | 416                       | I/O, DATA4 (2)       | 111                 | 160                 | 185                 | A25         | E7                      |

| I/O &<br>VREF<br>Bank | Pad Number<br>Orientation | Pin/Pad<br>Function | 144-Pin TQFP<br>(1) | 208-Pin PQFP<br>(1) | 240-Pin PQFP<br>(1) | 356-Pin BGA | 484-Pin<br>FineLine BGA |
|-----------------------|---------------------------|---------------------|---------------------|---------------------|---------------------|-------------|-------------------------|
| 1                     | 417                       | I/O                 | —                   | 159                 | 184                 | B24         | G9                      |
| 1                     | 418                       | I/O                 | 110                 | 158                 | 183                 | C23         | D5                      |
| 1                     | 419                       | I/O                 | —                   | —                   | 182                 | B25         | C4                      |
| 1                     | 420                       | I/O, DATA5 (2)      | 109                 | 157                 | 181                 | C24         | D4                      |
| —                     | 421                       | GNDIO               | GND                 | GND                 | GND                 | GND         | GND                     |
| —                     | 422                       | —                   | —                   | —                   | —                   | —           | —                       |

| Pin Name                   | 144-Pin TQFP<br>(1) | 208-Pin PQFP<br>(1) | 240-Pin PQFP<br>(1) | 356-Pin BGA             | 484-Pin<br>FineLine BGA |
|----------------------------|---------------------|---------------------|---------------------|-------------------------|-------------------------|
| MSEL0 (6)                  | 18                  | 25                  | 29                  | P1                      | L19                     |
| MSEL1 (6)                  | 19                  | 26                  | 30                  | P2                      | L18                     |
| nSTATUS (6)                | 57                  | 82                  | 92                  | AF15                    | W11                     |
| nCONFIG (6)                | 22                  | 29                  | 33                  | R1                      | M19                     |
| DCLK (6)                   | 93                  | 132                 | 152                 | N25                     | L5                      |
| CONF_DONE<br>(6)           | 58                  | 83                  | 93                  | AE15                    | W10                     |
| INIT_DONE(4)               | 121                 | 178                 | 206                 | A16                     | G13                     |
| nCE (6)                    | 91                  | 130                 | 150                 | P26                     | M4                      |
| nCEO (6)                   | 128                 | 185                 | 213                 | A12                     | E12                     |
| nWS (2)                    | 103                 | 145                 | 164                 | H22                     | M7                      |
| nRS (2)                    | 102                 | 142                 | 161                 | H24                     | L8                      |
| nCS (2)                    | 101                 | 141                 | 160                 | J24                     | K7                      |
| CS (2)                     | 98                  | 138                 | 157                 | K25                     | P4                      |
| RDYnBSY (2)                | 120                 | 177                 | 205                 | B16                     | G12                     |
| CLKUSR (2)                 | 119                 | 176                 | 204                 | C16                     | H12                     |
| DATA7 (2)                  | 104                 | 146                 | 166                 | G23                     | K8                      |
| DATA6 (2)                  | 105                 | 150                 | 169                 | F24                     | J6                      |
| DATA5 (2)                  | 109                 | 157                 | 181                 | C24                     | D4                      |
| DATA4 (2)                  | 111                 | 160                 | 185                 | A25                     | E7                      |
| DATA3 (2)                  | 112                 | 163                 | 189                 | B22                     | D8                      |
| DATA2 (2)                  | 115                 | 168                 | 195                 | B20                     | G10                     |
| DATA1 (2)                  | 117                 | 173                 | 200                 | B18                     | H11                     |
| DATA0 (6), (7)             | 94                  | 133                 | 153                 | M26                     | L4                      |
| TDI (6)                    | 90                  | 129                 | 149                 | P25                     | M5                      |
| TDO (6)                    | 123                 | 180                 | 208                 | B15                     | E11                     |
| TCK (6)                    | 52                  | 76                  | 87                  | AE12                    | W12                     |
| TMS (6)                    | 51                  | 75                  | 86                  | AF11                    | W13                     |
| TRST (6)                   | 129                 | 186                 | 214                 | B12                     | D12                     |
| Dedicated Fast<br>I/O Pins | 53, 56, 124, 127    | 77, 81, 181, 184    | 88, 91, 209, 212    | A13, A15,<br>AF12, AE14 | D11, F12, V11,<br>V12   |
| CLK1p                      | 20                  | 27                  | 31                  | P3                      | M18                     |
| CLK2p                      | 92                  | 131                 | 151                 | N26                     | L6                      |
| CLK3p                      | 23                  | 31                  | 34                  | R4                      | K17                     |
| CLK4p                      | 95                  | 134                 | 154                 | M23                     | N4                      |
| LOCK2 (9)                  | 80                  | 119                 | 138                 | T24                     | R4                      |
| LOCK4 (9)                  | 78                  | 116                 | 135                 | V25                     | U5                      |
| CLKLK_ENA<br>(6), (8)      | 21                  | 28                  | 32                  | P4                      | M14                     |
| CLKLK_OUT2p<br>(10)        | 81                  | 120                 | 139                 | R23                     | P5                      |
| CLKLK_FB2p                 | 96                  | 135                 | 155                 | L25                     | R6                      |
| DEV_CLRn (4)               | 97                  | 137                 | 156                 | L23                     | N7                      |
| DEV_OE (4)                 | 84                  | 124                 | 143                 | R26                     | N6                      |

| Pin Name           | 144-Pin TQFP<br>(1)                                                  | 208-Pin PQFP<br>(1)                                                                                     | 240-Pin PQFP<br>(1)                                                                                              | 356-Pin BGA                                                                                                                                                                       | 484-Pin<br>FineLine BGA                                                                                                                                                                                                    |
|--------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VCCINT             | 1, 8, 16, 32, 36,<br>55, 73, 86, 108,<br>125                         | 1, 11, 23, 48,<br>52, 79, 105,<br>109, 126, 148,<br>156, 182                                            | 1, 14, 27, 52,<br>60, 90, 122,<br>127, 145, 168,<br>179, 210                                                     | A14, AB25,<br>AB3, AF13,<br>AF14, B14,<br>E23, E1, H1,<br>J23, L1, M25,<br>R2, T22, U4,<br>Y26                                                                                    | AA1, AA22, B1, B<br>22, H9, J13, J8,<br>K11, K14, L10,<br>M13, M22, N12,<br>N9, P10, P15,<br>R14, R7                                                                                                                       |
| VCCIO1             | 116                                                                  | 172                                                                                                     | 199                                                                                                              | C14, A26                                                                                                                                                                          | G8, J10                                                                                                                                                                                                                    |
| VCCIO2             | 144                                                                  | 189, 208                                                                                                | 229                                                                                                              | A1, C12                                                                                                                                                                           | H14, K12                                                                                                                                                                                                                   |
| VCCIO3             | 5                                                                    | 8                                                                                                       | 12                                                                                                               | M5, C1                                                                                                                                                                            | J15, L13                                                                                                                                                                                                                   |
| VCCIO4             | 45                                                                   | 53, 80                                                                                                  | 67                                                                                                               | AD1, P5                                                                                                                                                                           | L22, N14, R16                                                                                                                                                                                                              |
| VCCIO5             | 28                                                                   | 42                                                                                                      | 45                                                                                                               | AD12, AF1                                                                                                                                                                         | P13, T15                                                                                                                                                                                                                   |
| VCCIO6             | 89                                                                   | 115                                                                                                     | 97, 120                                                                                                          | AF26, AD14                                                                                                                                                                        | N11, R9, T8                                                                                                                                                                                                                |
| VCCIO7             | 61                                                                   | 86                                                                                                      | 148                                                                                                              | P22, AD26                                                                                                                                                                         | M10, P8                                                                                                                                                                                                                    |
| VCCIO8             | 107                                                                  | 136                                                                                                     | 177                                                                                                              | C26, M22                                                                                                                                                                          | H7, K9, L1                                                                                                                                                                                                                 |
| VCC_CKCLK2<br>(3)  | 85                                                                   | 125                                                                                                     | 144                                                                                                              | P23                                                                                                                                                                               | L9                                                                                                                                                                                                                         |
| VCC_CKCLK4<br>(3)  | 100                                                                  | 140                                                                                                     | 159                                                                                                              | K24                                                                                                                                                                               | M8                                                                                                                                                                                                                         |
| VCC_CKOUT2<br>(11) | 83                                                                   | 123                                                                                                     | 142                                                                                                              | R25                                                                                                                                                                               | T5                                                                                                                                                                                                                         |
| GND                | 4, 9, 12, 17, 31,<br>34, 42, 54, 72,<br>74, 77, 87, 106,<br>126, 134 | 10, 12, 16, 24,<br>39, 43, 47, 64,<br>78, 95, 110,<br>114, 118, 127,<br>143, 147, 149,<br>169, 183, 199 | 15, 19, 26, 28,<br>42, 51, 56, 78,<br>89, 108, 128,<br>132, 137, 146,<br>162, 165, 167,<br>188, 211, 218,<br>240 | AB4, AB5, AC3,<br>AC22, AC23,<br>AC24, AD2,<br>AD13, AD25,<br>AE1, AE13,<br>AE26, B1, B13,<br>B26, C2, C13,<br>C25, D3, D4,<br>D22, D23, D24,<br>E5, N3, N4, N5,<br>N22, N23, N24 | A1, A11, A22,<br>AA2, AA21,<br>AB1, AB11,<br>AB22, B2, B21,<br>F17, F6, G16,<br>G7, H15, H8,<br>J14, J9, J11,<br>K10, K13, L11,<br>L12, L2, M1,<br>M11, M12, M21,<br>N10, N13, P14,<br>P9, R15, R8,<br>T16, T7, U17,<br>U6 |
| GND_CKCLK2<br>(3)  | 88                                                                   | 128                                                                                                     | 147                                                                                                              | P24                                                                                                                                                                               | M9                                                                                                                                                                                                                         |
| GND_CKCLK4<br>(3)  | 99                                                                   | 139                                                                                                     | 158                                                                                                              | L22                                                                                                                                                                               | N8                                                                                                                                                                                                                         |
| GND_CKOUT2<br>(11) | 82                                                                   | 122                                                                                                     | 141                                                                                                              | R24                                                                                                                                                                               | T4                                                                                                                                                                                                                         |

| Pin Name                    | 144-Pin TQFP<br>(1) | 208-Pin PQFP<br>(1) | 240-Pin PQFP<br>(1) | 356-Pin BGA | 484-Pin<br>FineLine BGA                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------|---------------------|---------------------|---------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No Connect<br>(N.C.)        |                     |                     |                     |             | A10, A12, A13,<br>A14, A15, A16,<br>A17, A18, A19,<br>A2, A20, A21,<br>A3, A4, A5, A6,<br>A7, A8, A9,<br>AB10, AB12,<br>AB13, AB14,<br>AB15, AB16,<br>AB17, AB18,<br>AB19, AB2,<br>AB20, AB21,<br>AB3, AB4, AB5,<br>AB6, AB7, AB8,<br>AB9, C1, C22,<br>D1, D22, E1,<br>E22, F1, F22,<br>G1, G22,<br>H1, H22, J1,<br>J22, K1, K22,<br>N1, N22, P1,<br>P22, R1, R22,<br>T1, T22, U1,<br>U22, V1, V22,<br>W1, W22, Y1,<br>Y22 |
| Total User I/O<br>Pins (12) | 88                  | 143                 | 175                 | 271         | 316                                                                                                                                                                                                                                                                                                                                                                                                                        |

Notes:

- (1) For the 144-pin, 208-pin, and 240-pin QFP packages, four unique VCCIO levels are supported. The VCCIO pins for I/O banks 1 and 8 must be at the same level; the VCCIO pins for banks 6 and 7 must be at the same level; the VCCIO pins for I/O banks 2 and 3 must be at the same level. However, unique VREF settings are supported for each of the eight I/O banks.
- (2) This pin can be used as a user I/O pin after configuration.
- (3) This pin is the power or ground for the ClockLock and ClockBoost circuitry. To ensure noise resistance, the power and ground supply to the ClockLock and ClockBoost circuitry should be isolated from the power and ground to the rest of the device. VCC\_CKCLK has the same voltage specifications as the VCCINT and should be connected to a 1.8-V power supply. If the ClockLock or ClockBoost circuitry is not used, this power or ground pin should be connected to VCCINT or GNDINT, respectively.
- (4) This pin can be used as a user I/O pin if it is not used for its device-wide or configuration function.
- (5) This pin is the complementary signal for the LVDS pair on dedicated inputs and outputs that can be configured for the LVDS standard. If not used for the LVDS pair, these pins are regular I/O pins. Pins with the "n" suffix carry the negative signal for the LVDS channel. Pins with a "p" suffix carry the positive signal for the LVDS channel.
- (6) This pin is a dedicated pin; it is not available as a user I/O pin.
- (7) This pin is tri-stated in user mode.
- (8) This pin is the active high enable pin for all of the PLL circuits in the device. When de-asserted, all PLLs are reset to their default, unlocked state and will stop clocking. Once re-asserted, the PLLs will lock again and start clocking. If this pin function is not needed, the pin should be connected to VCCINT.
- (9) This pin shows the status of the ClockLock and ClockBoost circuitry. When the ClockLock and ClockBoost circuitry is locked to the incoming clock and generates an internal clock, LOCK is driven high. LOCK remains high if a periodic clock stops clocking. The LOCK function is optional; if the LOCK output is not used, this pin is a user I/O pin.
- (10) The CLKCLK\_OUT pin is powered by the VCC\_CKOUT and GND\_CKOUT pins.
- (11) This pin is the power or ground for the external output of a PLL. These pins should be set to the VCCIO level/standard desired for the external clock output. To ensure noise resistance, the power and ground supply to the PLL external output should be isolated from the power and ground to the rest of the VCCIO and GNDIO pins. If the PLL or external output is not used, this power or ground pin should be connected to VCCIO or GNDIO, respectively.
- (12) The user I/O pin count includes dedicated inputs and dedicated clock inputs. It does not include the dedicated clock feedback and output pins.

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