Date: 04-Mar-15

# cCARD Pinout: F28377D (180pin)

HSEC Pinout: 2.11

| | HSEC pin | MCU pin | Most compatible use - HSEC cCARD standard | Most compatible use - HSEC cCARD standard | MCU pin | HSEC pin | |
|---|---|---|---|---|---|---|---|
| | 1 | GPIO-71 ** | JTAG-EMU1 | JTAG-EMU0 | GPIO-70 ** | 2 | |
| | 3 | TMS | JTAG-TMS | JTAG-TRSTn | TRSTn | 4 | |
| | 5 | TCK | JTAG-TCK | JTAG-TDO | TDO | 6 | |
| | 7 | | GND | JTAG-TDI | TDI | 8 | |
| Analog | 9 | ADC-A0, DAC | ADC1 (and/or DACA) | GND | | 10 | |
| | 11 | ADC-A1, DAC | ADC1 (and/or DACB) | ADC2 | ADC-B0 | 12 | Analog |
| | 13 | | Rsvd | ADC2 | ADC-B1 | 14 | |
| | 15 | ADC-A2, COMP+ | ADC1 (and/or CMPIN+) | Rsvd | | 16 | |
| | 17 | ADC-A3 | ADC1 | ADC2 | ADC-B2, COMP+ | 18 | |
| | 19 | | GND | ADC2 | ADC-B3 | 20 | |
| | 21 | ADC-A4, COMP+ | ADC1 (and/or CMPIN+) | GND | | 22 | |
| | 23 | ADC-A5 | ADC1 | ADC2 | ADC-B4, COMP+ | 24 | |
| | 25 | ADCIN14, COMP+ | ADC (and/or CMPIN+) | ADC2 | ADC-B5 | 26 | |
| | 27 | ADCIN15 | ADC | ADC | ADC-D0, COMP+ | 28 | |
| | 29 | | Rsvd | ADC | ADC-D1 | 30 | |
| | 31 | ADC-C2, COMP+ | ADC | Rsvd | | 32 | |
| | 33 | ADC-C3 | ADC | ADC | ADC-D2, COMP+ | 34 | |
| | 35 | | GND | ADC | ADC-D3 | 36 | |
| | 37 | ADC-C4 | ADC | GND | | 38 | |
| | 39 | ADC-C5 | ADC | ADC | ADC-D4 | 40 | |
| | 41 | | Rsv | ADC | ADC-D5 | 42 | |
| | 43 | | A-GND (VREFLO on certain MCU) | Rsv | | 44 | |
| | 45 | All VREFHIs * | Rsv (VREFHI on certain MCU) | GND | | 46 | |
| | 47 | | GND | 5V0 | | 48 | |
| Digital | 49 | GPIO-00 | PWM1A | PWM3A | GPIO-04 | 50 | Digital |
| | 51 | GPIO-01 | PWM1B | PWM3B | GPIO-05 | 52 | |
| | 53 | GPIO-02 | PWM2A | PWM4A | GPIO-06 | 54 | |
| | 55 | GPIO-03 | PWM2B | PWM4B | GPIO-07 | 56 | |
| | 57 | GPIO-08 | PWM5A | PWM7A or TZ1 | GPIO-12 | 58 | |
| | 59 | GPIO-09 | PWM5B | PWM7B or TZ2 | GPIO-13 | 60 | |
| | 61 | GPIO-10 | PWM6A | PWM8A or TZ3 | GPIO-14 | 62 | |
| | 63 | GPIO-11 | PWM6B | PWM8B or TZ4 | GPIO-15 | 64 | |
| | 65 | | GND | Reserved (12V0?) | | 66 | |
| | 67 | GPIO-16 | SPISIMOA | QEP1A (McBSP-MDXA) | GPIO-20 | 68 | |
| | 69 | GPIO-17 | SPISOMIA | QEP1B (McBSP-MDRA) | GPIO-21 | 70 | |
| | 71 | GPIO-18 | SPICLKA | QEP1S (McBSP-MFSXA) | GPIO-22 | 72 | |
| | 73 | GPIO-19 | SPISTEA | QEP1I (McBSP-MCLKXA) | GPIO-23 | 74 | |
| | 75 | GPIO-24 | CAP1 or SPISIMOB | SCIRXA/UARTRXA | GPIO-28 | 76 | |
| | 77 | GPIO-25 | CAP2 or SPISOMIB | SCITXA/UARTTXA | GPIO-29 | 78 | |
| | 79 | GPIO-26 | CAP3 or SPICLKB | CANRXA | GPIO-30 | 80 | |
| | 81 | GPIO-27 | CAP4 or SPISTEB | CANTXA | GPIO-31 | 82 | |
| | 83 | | GND | 5V0 | | 84 | |
| | 85 | GPIO-32 | I2CSDAA | GPIO | GPIO-34 | 86 | |
| | 87 | GPIO-33 | I2CSCLA | GPIO | GPIO-39 | 88 | |
| | 89 | GPIO-40 | GPIO | GPIO | GPIO-44 | 90 | |
| | 91 | GPIO-41 | GPIO | GPIO | GPIO-45 | 92 | |
| | 93 | GPIO-42 *** | GPIO | GPIO | GPIO-46 *** | 94 | |
| | 95 | GPIO-43 *** | GPIO | GPIO | GPIO-47 *** | 96 | |
| | 97 | | GND | 5V0 | | 98 | |
| | 99 | GPIO-48 | GPIO | QEP2A or GPIO | GPIO-54 | 100 | |
| | 101 | GPIO-49 | GPIO | QEP2B or GPIO | GPIO-55 | 102 | |
| | 103 | GPIO-50 | GPIO | QEP2S or GPIO | GPIO-56 | 104 | |
| | 105 | GPIO-51 | GPIO | QEP2I or GPIO | GPIO-57 | 106 | |
| | 107 | GPIO-52 | GPIO | GPIO (McBSP-MCLKRA) | GPIO-58 | 108 | |
| | 109 | GPIO-53 | GPIO | GPIO (McBSP-MFSRA) | GPIO-59 | 110 | |
| | 111 | | GND | 5V0 | | 112 | |
| | 113 | | Rsv | Rsv | | 114 | |
| | 115 | | Rsv | Rsv | | 116 | |
| | 117 | | Rsv | Rsv | | 118 | |
| | 119 | | Rsv | Device Reset (Active low) | XRSn | 120 | |
| | 121 | GPIO-35 | GPIO | GPIO | GPIO-36 | 122 | |
| | 123 | GPIO-37 | GPIO | GPIO | GPIO-38 | 124 | |
| | 125 | GPIO-60 | GPIO | GPIO | GPIO-61 | 126 | |
| | 127 | GPIO-62 | GPIO | GPIO | GPIO-63 | 128 | |
| | 129 | GPIO-64 | GPIO | GPIO | GPIO-65 | 130 | |
| | 131 | GPIO-66 | GPIO | GPIO | GPIO-67 | 132 | |
| | 133 | GPIO-68 | GPIO | GPIO | GPIO-69 | 134 | |
| | 135 | | GND | Reserved (12V0?) | | 136 | |
| | 137 | GPIO-70 | GPIO | GPIO | GPIO-71 | 138 | |
| | 139 | GPIO-72 | GPIO | GPIO | GPIO-73 | 140 | |
| | 141 | GPIO-74 | GPIO | GPIO | GPIO-75 | 142 | |
| | 143 | GPIO-76 | GPIO | GPIO | GPIO-77 | 144 | |
| | 145 | GPIO-78 | GPIO | GPIO | GPIO-79 | 146 | |
| | 147 | GPIO-80 | GPIO | GPIO | GPIO-81 | 148 | |
| | 149 | GPIO-82 | GPIO | GPIO | GPIO-83 | 150 | |
| | 151 | GPIO-84 | GPIO | GPIO | GPIO-85 | 152 | |
| | 153 | GPIO-86 | GPIO | GPIO | GPIO-87 | 154 | |
| | 155 | GPIO-88 | GPIO | GPIO | GPIO-89 | 156 | |
| | 157 | | GND | 5V0 | | 158 | |
| | 159 | GPIO-90 | GPIO | GPIO | GPIO-91 | 160 | |
| | 161 | GPIO-92 | GPIO | GPIO | GPIO-93 | 162 | |
| | 163 | GPIO-94 | GPIO | GPIO | GPIO-133 | 164 | |
| | 165 | GPIO-120 *** | GPIO | GPIO | GPIO-121 *** | 166 | |
| | 167 | GPIO-161 | GPIO | GPIO | GPIO-162 | 168 | |
| | 169 | GPIO-163 | GPIO | GPIO | GPIO-164 | 170 | |
| | 171 | | Rsv | Rsv | | 172 | |
| | 173 | | Rsv | Rsv | | 174 | |
| | 175 | | Rsv | Rsv | | 176 | |
| | 177 | | Rsv | Reserved (12V0?) | | 178 | |
| | 179 | | GND | 5V0 | | 180 | |

* Switches may be altered to connect this HSEC pin to the MCU's VREFHI inputs

** 0ohm resistors can be removed in order to tie GPIO-70 and 71 to EMU0 and EMU1

*** Can be dedicated to on-card USB or brought through the connector via jumpers on the cCARD