

## dsPIC33FJ32MC204 PIM Information Sheet

The dsPIC33FJ32MC204 PIM is designed to demonstrate the capabilities of the dsPIC33FJ32MC204 family of general purpose devices using the Explorer 16 Development Board and the PICtail™ Plus daughter boards.

The dsPIC33FJ32MC204 is a high-performance 16-bit digital signal controller within a small 44-pin QFN package.

The dsPIC33FJ32MC204 is equipped with Peripheral Pin Select (PPS), which allows many of the digital peripherals to be remapped to use any number of pins on the device.

The PIM takes advantage of PPS by using zero ohm resistors to connect the I/O to the 100-pin Explorer 16 Development Board. Simply removing the zero ohm resistors and using the test points associated with each I/O pin (i.e., Pin1, Pin2, etc.), allows the designer to reroute the pin to any of the available pins on the Explorer 16 Development Board. This capability enables easier and faster design times.

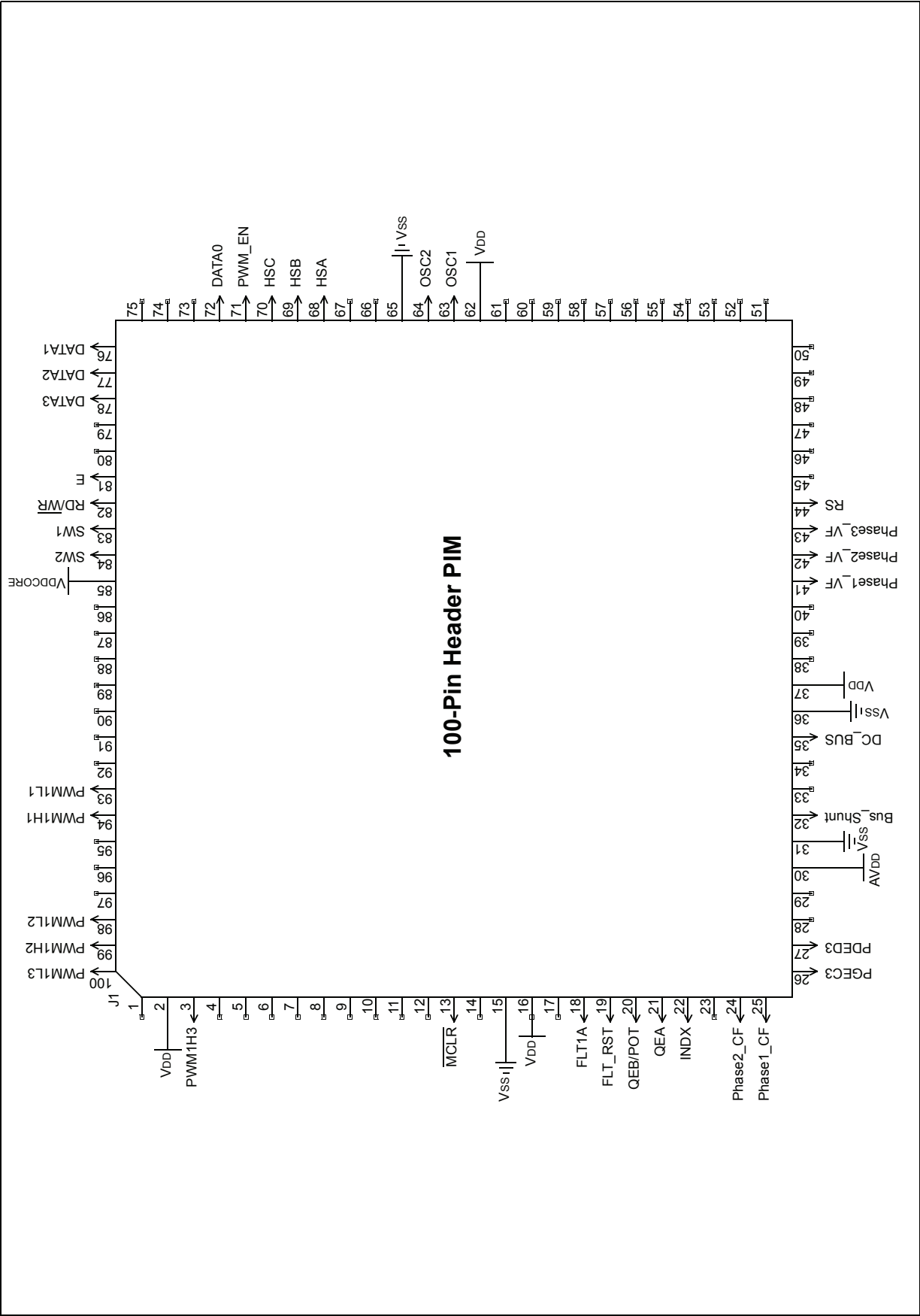
Table 1 shows the mapping between the Explorer 16 functions and the device pins.

**TABLE 1: 44-PIN TO 100-PIN PINOUT**

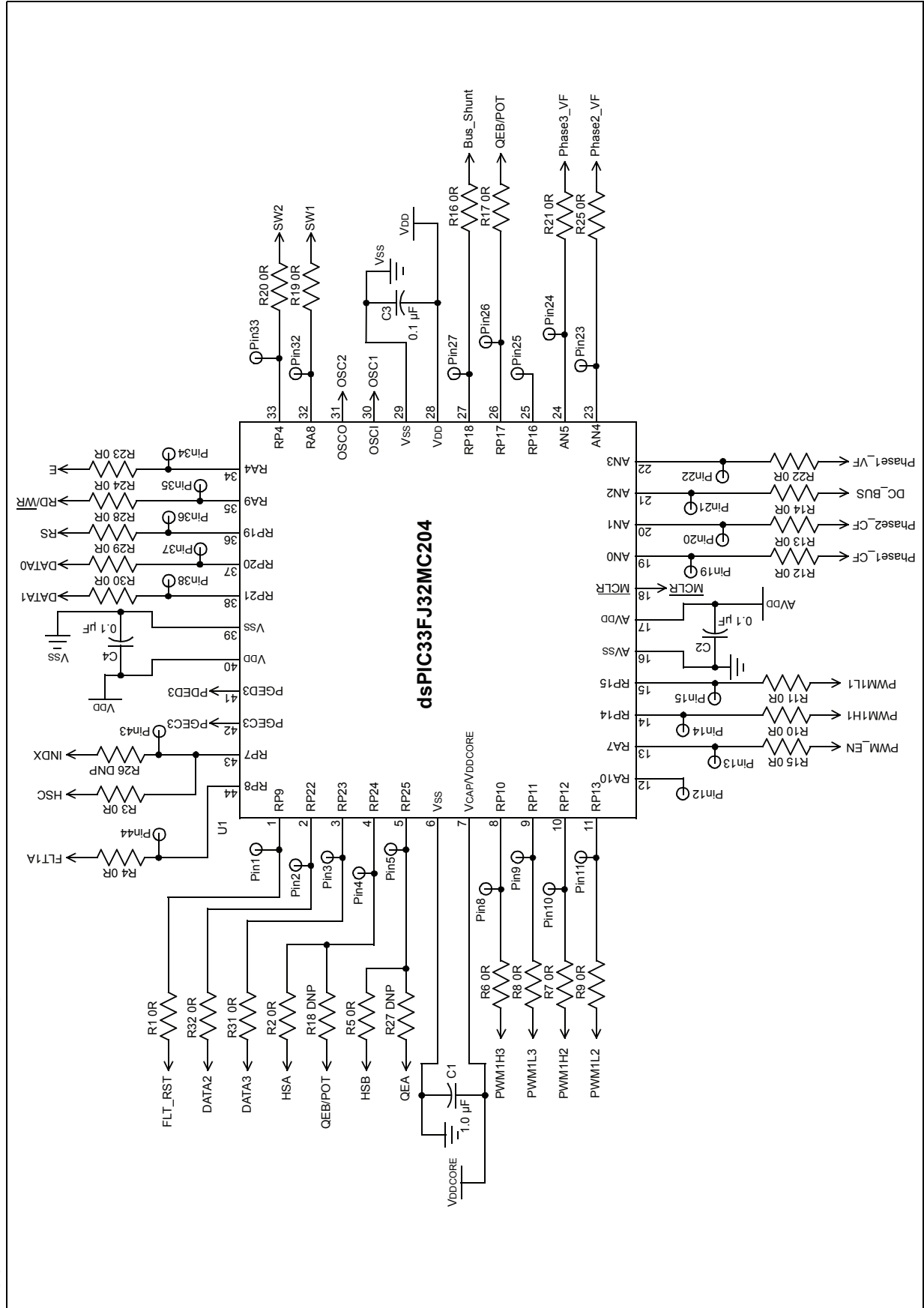
| Device Pin Number | dsPIC33FJ32MC204                  | PIM Pin Number | Functional Description   |
|-------------------|-----------------------------------|----------------|--------------------------|
| 1                 | SDA1/RP9/CN21/RB9                 | 19             | Fault Reset              |
| 2                 | PWM2H1/RP22/CN18/RC6              | 77             | Data 2                   |
| 3                 | INT0/RP23/CN23/RB7                | 78             | Data 3                   |
| 4                 | TCK/PWM2H1/SCL1/RP24/CN22/RB8     | 68, 20         | Hall Sensor A/ QEB_POT   |
| 5                 | TDO/PWM2L1/SDA1/RP25/CN21/RB9     | 69, 21         | Hall Sensor B/ QEA       |
| 6                 | Vss                               | 65             |                          |
| 7                 | VCAP/VDDCORE                      | 85             |                          |
| 8                 | TDI/PWM1H3/RP10/CN16/RB10         | 3              | PWM1H3                   |
| 9                 | TMS/PWM1L3/RP11/CN15/RB11         | 100            | PWM1L3                   |
| 10                | PWM1H2/RP12/CN14/RB12             | 99             | PWM1H2                   |
| 11                | PWM1L2/RP13/CN13/RB13             | 98             | PWM1L2                   |
| 12                | TMS/RA10                          |                |                          |
| 13                | TCK/RA7                           | 71             | PWM Enable               |
| 14                | PWM1H1/RP14/CN12/RB14             | 94             | PWM1H1                   |
| 15                | PWM1L1/RP15/CN11/RB15             | 93             | PWM1L1                   |
| 16                | AVss                              | 31             |                          |
| 17                | AVDD                              | 30             |                          |
| 18                | MCLR                              | 13             |                          |
| 19                | AN0/VREF+/CN2/RA0                 | 25             | Phase 1 Current Feedback |
| 20                | AN1/VREF-/CN3/RA1                 | 24             | Phase 2 Current Feedback |
| 21                | PGED1/EMUD1/AN2/C2IN-/RP0/CN4/RB0 | 35             | DC Bus                   |
| 22                | PGEC1/EMUC1/AN3/C2IN+/RP1/CN5/RB1 | 41             | Phase 1 Voltage Feedback |

| Device Pin Number | dsPIC33FJ32MC204               | PIM Pin Number | Functional Description   |
|-------------------|--------------------------------|----------------|--------------------------|
| 23                | AN4/RP2/CN6/RB2                | 42             | Phase 2 Voltage Feedback |
| 24                | AN5/RP3/CN7/RB3                | 43             | Phase 3 Voltage Feedback |
| 25                | AN6/RP16/CN8/RC0               |                |                          |
| 26                | AN7/RP17/CN9/RC1               | 20             | QEB_POT                  |
| 27                | AN8/RP18/CN10/RC2              | 32             | Bus Shunt                |
| 28                | VDD                            | 16             |                          |
| 29                | Vss                            | 15             |                          |
| 30                | OSCI/CLKI/CN30/RA2             | 63             | OSC1                     |
| 31                | OSCO/CLKO/CN29/RA3             | 64             | OSC2                     |
| 32                | TDO/RA8                        | 83             | Switch 1                 |
| 33                | SOSCI/RP4/CN1/RB4              | 84             | Switch 2                 |
| 34                | SOSCO/T1CK/CN0/RA4             | 81             | Enable                   |
| 35                | TDI/RA9                        | 82             | RD/WR                    |
| 36                | RP19/CN28/RC3                  | 44             | RS                       |
| 37                | RP20/CN25/RC4                  | 72             | Data 0                   |
| 38                | RP21/CN26/RC5                  | 76             | Data 1                   |
| 39                | Vss                            | 36             |                          |
| 40                | VDD                            | 37             |                          |
| 41                | PGED3/EMUD3/ASDA1/RP5/CN27/RB5 | 27             | Debug                    |
| 42                | PGEC3/EMUC3/ASCL1/RP6/CN24/RB6 | 26             | Debug                    |
| 43                | INT0/RP7/CN23/RB7              | 22, 70         | Index/Hall Sensor C      |
| 44                | SCL1/RP8/CN22/RB8              | 18             | Fault A                  |

FIGURE 1: 100-PIN HEADER SCHEMATIC



**FIGURE 2: 44-PIN DEVICE SCHEMATIC**



# dsPIC33FJ32MC204

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NOTES:

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