# Introducing the PIC24FJ128GB204 PIM

## Overview

The PIC24FJ128GB204 PIM is designed to demonstrate the capabilities of the PIC24FJ128GB204 family using the Explorer 16 Demonstration Board kit and the PICtail™ Plus daughter boards. The PIC24FJ128GB204 is a 44-pin device with USB On-The-Go (OTG), XLP Technology and Peripheral Pin Select (PPS) features. The PPS feature of this PIC24F family allows many of the digital peripherals on the part to be remapped to use any of a number of pins on the device. This allows for significant improvements in ease of design and helps to reduce cost by allowing for the smallest possible size devices to be used. The following two tables detail the pin mapping of the 44-pin device to the 100-pin PIM header.

- The 44-pin to 100-pin table (Table 1) lists the device pins and shows what functions are mapped to each pin. This table is most useful for viewing multiplexing conflicts which prevent some functions from being used simultaneously.
- The 100-pin to 44-pin table (Table 2) shows a listing of the Explorer 16 functions and what device pin is mapped to that function.

All supporting documentation and software for the Explorer 16 Development Board can be found at www.microchip.com/explorer16.

## PIC24FJ128GB204 PIM Features

Due to the flexibility allowed by the PPS feature, the 44-pin device is capable of performing all of the base functions on the 100-pin Explorer 16 board. In addition, the PIM is compatible with most of the PICtail Plus daughter boards for the Explorer 16, including the USB PICtail Plus Daughter Board (AC164131).

## PIC24FJ128GB204 PIM Limitations

The result of multiplexing the functions from a 44-pin part to the 100-pin PIM header is that many of the functions cannot be used simultaneously. Explorer 16 board LEDs are multiplexed on switch and PMP lines, which means they will not always be usable if these functions are in use. The Explorer 16 potentiometer and temperature sensor cannot be used with PMP, and are selectable through Jumpers J6 and J7. Smart Card cannot be used along with PMP, and is selectable through Jumpers J2 and J3. $I^2S$ and USB cannot be used simultaneously, and the function is selectable through Jumper J5. The programming lines, PGC1/PGD1, cannot be used with the USB and are selectable through Jumpers J8 and J9. The PICtail Plus daughter boards have similar limitations. All daughter boards will work by themselves, however, most PICtail Plus daughter boards will not work if two are installed simultaneously. Additionally, a PICtail Plus daughter board may not work with all of the default Explorer 16 functionality. If a PICtail Plus daughter board is designed to work with a Microchip Library, the respective system configuration may have to be modified to function with the PIM pinout and PPS feature. Please check the pinouts of the components you are using to ensure compatibility before attempting to use multiple peripheral functions or more than one PICtail Plus daughter board at the same time.

## Tips for Using the PIC24FJ128GB204 PIM

- The Explorer 16 LEDs are multiplexed with a number of functions and so may not be useful in some situations. Make sure to check the mapping tables for conflicts.
- The PIC24FJ128GB204 port pins are not mapped to the corresponding port I/O on the Explorer 16. Make sure to use the following pinout tables as a cross reference to ensure you use the correct device pin in your application.
- Many of the peripherals used by the Explorer 16 and PICtail Plus daughter boards are implemented on pins with analog functionality. These peripherals may not conflict with analog features on other PIC24F PIMs. Make sure to add any necessary code to override this analog functionality in the application code used.
- Some Explorer 16 boards have a 5V LCD. If you are using a function which is multiplexed onto the PMP pins on one of these boards, it may be necessary to manually drive the pins initially. The pins must be driven in order to ensure the bus is driven to either VDD or VSS, instead of floating at 5V.
- **Jumper Settings:**

  Jumper J1 Pins (1-2) select the USB OTG ID Pin (USBID);
  Pins (2-3) select the $I^2S$ bit Clock Line (I2S_SCK).

  Jumper J2 Pins (1-2) select PMP Data<5> (PMD5);
  Pins (2-3) select the Smart Card's RX Pin (SC_RX).

  Jumper J3 Pins (1-2) select the PMP Read Strobe (PMRD);
  Pins (2-3) select the Smart Card's TX Pin (SC_TX).

  Jumper J4 Pins (1-2) select the Explorer 16 Serial EEPROM CS (EE_CS);
  Pins (2-3) select the Device PORTA<8> Connection to Explorer 16 PORTD<1> (RD1).

  Jumper J5 Pins (1-2) select the $I^2S$ Channel Select Line (I2S_SS);
  Pins (2-3) select the USB Voltage and PMP Data<6> (VBUS/PMD6).

  Jumper J6 Pins (1-2) select the PMP Chip Select 2 Strobe (PMCS2);
  Pins (2-3) select the Explorer 16 Potentiometer Function (POT).

  Jumper J7 Pins (1-2) select the PMP Byte Enable 1 Strobe (PMBE1);
  Pins (2-3) select the Explorer 16 Analog Temperature Sensor (TEMP).

  Jumper J8 Pins (1-2) select the Programming Clock 2 and USB Differential Minus Line (PGC2/D-);
  Pins (2-3) select the Programming Clock 1 (PGC1).

  Jumper J9 Pins (1-2) select the Programming Data Line 2 and USB Differential Plus Line (PGD2/D+);
  Pins (2-3) select the Programming Data Line 1 (PGD1).
- It is not possible to use the Explorer 16 LCD and USB when debugging on this PIM. When debugging and using the LCD on the Explorer 16, connect Jumper J8 (2-3) = PGC1 and J9 (2-3) = PGD1. When debugging and using USB, connect Jumper J8 (1-2) = PGC2/D- and J9 (1-2) = PGD2/D+.
- Many PICtail Plus daughter boards use the EEPROM, SPI and UART2 (which has the RS-232 port functionality). These functions are mapped to ensure that they can be used together to allow support for these boards.

## Table 1: 44-Pin to 100-Pin Pinout

| Device Pin # | PIC24FJ128GB204 Pinout | Jumper | PIM Pin # | PIM Func #1 | Jumper | PIM Pin # | PIM Func #2 | Jumper | PIM Pin # | PIM Func #3 | Jumper | PIM Pin # | PIM Func #4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C1INC/C2INC/C3INC/RP9/SDA1/ T1CK/CTED4/PMD3/CN21/RB9 | | 56 | RG3/SDA1(1) | | 99 | RE3/ PMD3 | | | | | | |
| 2 | RP22/PMA1/PMALH/CN18/RC6 | J5-I2S_SS | 1 | RG15/VBUS | | 23 | RB2/SS1/ AN2(1) | | 43 | RB14/ PMA1 | | 92 | RA7 |
| 3 | RP23/PMA0/PMALL/CN17/RC7 | | 39 | RF13/ U2RTS(1) | | 44 | RB15/ PMA0 | | 77 | RD2 | | | |
| 4 | RP24/PMA5/CN20/RC8 | | 10 | RG6/PMA5/ SCK2 | | 48 | RD15/ U1RTS(1) | | | | | | |
| 5 | RP25/CTED7/PMA6/CN19/RC9 | | 29 | RA10/PMA6 | | 50 | RF5/ PMA8/ U2TX | | 66 | RA14/ INT3(1) | | 72 | RD0(1) |
| 6 | VBAT | | 86 | VBAT | | | | | | | | | |
| 7 | VCAP | | 85 | VCAP | | | | | | | | | |
| 8 | RP10/CTED11/CN16/PGD2/D+/RB10 | J9-PGD2/D+ | 27 | RB7/AN7/ PGD/D+ | | 90 | RG0 | | | | | | |
| 9 | REFI/RP11/CTED9/CN15/PGC2/D-/ RB11 | J8-PGC2/D- | 26 | RB6/AN6/ PGC/D- | | 89 | RG1 | | | | | | |
| 10 | VUSB3V3 | | 16 | VDD | | | | | | | | | |
| 11 | AN7/C1INC/REFO/RP13/CTPLS/ PMRD/CN13/RB13 | J3-SC_TX | 51 | RF3/U1TX | J3-PMRD | 82 | RD5/ PMRD | | | | | | |
| 12 | TMS/PMA2/PMALU/CN36/RA10 | | 14 | RG9/PMA2/ SS2 | | 17 | RA0/TMS | | 69 | RD9 | | 83 | RD6 |
| 13 | TCK/PMA7/CN33/RA7 | | 28 | RA9/PMA7 | | 38 | RA1/TCK | | 80 | RD13 | | | |
| 14 | CVREF/AN6/C3INB/RP14/RTCC/ CTED5/CN12/RB14 | | 40 | RF12/U2CTS | | 68 | RD8 | | | | | | |
| 15 | AN9/C3INA/RP15/T3CK/T2CK/ CTED6/PMA14/CS1/CN11/PMCS/ PMCS1/RB15 | | 7 | RC2(1) | | 33 | RB9/ AN9(1) | | 55 | RF6/SCK1 | | | |
| 16 | AVSS/VSS | | 31 | AVSS | | | | | | | | | |
| 17 | AVDD | | 30 | AVDD | | | | | | | | | |
| 18 | MCLR | | 13 | MCLR | | | | | | | | | |
| 19 | CVREF+/VREF+/AN0/C3INC/RP5/ ASDA1/CTED1/CN2/PMD7/PGD3/ RA0 | | 5 | RE7/PMD7 | | 25 | RB0/ AN0(1) | | | | | | |
| 20 | CVREF-/VREF-/AN1/C3IND/RP6/ ASCL1/CTED2/CN3/PGC3/RA1 | | 24 | RB1/AN1(1) | | | | | | | | | |
| 21 | AN2/CTCMP/C2INB/RP0/CN4/PGD1/ HLVDIN/PMD0/RB0 | J9-PGD1 | 27 | RB7/AN7/ PGD/D+ | | 93 | RE0/ PMD0 | | | | | | |
| 22 | AN3/C2INA/RP1/CTED12/CN5/ PMD1/PGC1/RB1 | J8-PGC1 | 26 | RB6/AN6/ PGC/D- | | 94 | RE1/ PMD1 | | | | | | |
| 23 | AN4/C1INB/RP2/SDA2/T5CK/T4CK/ CTED13/CN6/PMD2/RB2 | | 19 | RE9/INT2(1) | | 59 | RA3/SDA2 | | 87 | RF0(1) | | 98 | RE2/ PMD2 |
| 24 | AN5/C1INA/RP3/SCL2/CTED8/CN7/ PMWR/RB3 | | 47 | RD14/ U1CTS(1) | | 58 | RA2/SCL2 | | 81 | RD4/ PMWR | | 88 | RF1(1) |
| 25 | AN10/RP16/PMBE1/CN8/RC0 | J7-TEMP | 21 | RB4/AN4 | J7-PMBE1 | 34 | RB10/ PMA13 | | 53 | RF8/SDO1 | | | |
| 26 | AN11/RP17/CN9/RC1 | J6-POT | 20 | RB5/AN5 | | 54 | RF7/SDI1 | J6-PMCS2 | 70 | RD10/ PMCS2 | | | |
| 27 | AN12/RP18/PMACK1/CN10/RC2 | | 6 | RC1(1) | | 18 | RE8/ INT1(1) | | 32 | RB8/AN8(1) | | | |
| 28 | VDD | | 46 | VDD | | 62 | VDD | | | | | | |
| 29 | VSS | | 15 | VSS | | 45 | VSS | | 75 | VSS | | | |
| 30 | OSCI/C1IND/CLKI/PMCS1/CN30/RA2 | | 63 | OSC1 | | 71 | RD0(1) | | | | | | |
| 31 | OSCO/C2IND/CLKO/CN29/RA3 | | 64 | OSC2 | | | | | | | | | |
| 32 | TDO/PMA8/CN34/RA8 | | 61 | RA5/TDO | J4-RD1 | 76 | RD1 | J4-EE_CS | 79 | RD12 | | | |
| 33 | SOSCI/CN1/RPI4/RB4 | | XT on PIM | | | | | | | | | | |
| 34 | SOSCO/SCLKI/CN0/RA4 | | XT on PIM | | | | | | | | | | |
| 35 | TDI/PMA9/CN35/RA9 | | 22 | RB3/AN3(1) | | 60 | RA4/TDI | | 84 | RD7 | | 96 | RG12 |
| 36 | RP19/PMBE0/CN28/RC3 | | 49 | RF4/PMA9/ U2RX | | 67 | RA15/ INT4(1) | | 78 | RD3/PMBE | J1-I2S_SCK | 95 | RG14/ USBID |
| 37 | RP20/PMA4/CN25/RC4 | | 11 | PMA4/SDI2 | | 96 | RG12 | | | | | | |
| 38 | RP21/PMA3/CN26/RC5 | | 12 | PMA3/SDO2 | | 91 | RA6 | | 97 | RG13 | | | |
| 39 | VSS | | 15 | VSS | | 45 | VSS | | 75 | VSS | | | |
| 40 | VDD | | 46 | VDD | | 62 | VDD | | | | | | |
| 41 | CN27/USBID/RB5 | J1-USBID | 95 | RG14/USBID | | | | | | | | | |
| 42 | PMD6/CN24/VBUS/RB6 | J5-VBUS/PMD6 | 1 | RG15/VBUS | | 4 | RE6/ PMD6 | | | | | | |
| 43 | RP7/CTED3/INT0/CN23/PMD5/RB7 | J2-PMD5 | 3 | RE5/PMD5 | J2-SC_RX | 52 | RF2/U1RX | | | | | | |
| 44 | RP8/SCL1/CTED10/PMD4/CN22/ USBOEN/RB8 | | 57 | RG2/SCL1(1) | | 100 | RE4/ PMD4 | | | | | | |

**Note 1:** This pin is a common or required signal for PICtail™ Plus daughter boards.

## Table 2: 100-Pin to 44-Pin Pinout

| Exp 16 Pin # | PIM Function | Jumper | Device Pin # | PIC24FJ128GB204 Pinout |
|---|---|---|---|---|
| 1 | RG15/VBUS | J5-I2S_SS | 2 | RP22/PMA1/PMALH/CN18/RC6 |
| | | J5-VBUS/PMD6 | 42 | PMD6/CN24/VBUS/RB6 |
| 2 | VDD | | | |
| 3 | RE5/PMD5 | J2-PMD5 | 43 | RP7/CTED3/INT0/CN23/PMD5/RB7 |
| 4 | RE6/PMD6 | | 42 | PMD6/CN24/VBUS/RB6 |
| 5 | RE7/PMD7 | | 19 | CVREF+/VREF+/AN0/C3INC/RP5/ASDA1/CTED1/CN2/PMD7/PGD3/RA0 |
| 6 | RC1(1) | | 27 | AN12/RP18/PMACK1/CN10/RC2 |
| 7 | RC2(1) | | 15 | AN9/C3INA/RP15/T3CK/T2CK/CTED6/PMA14/CS1/CN11/PMCS/PMCS1/RB15 |
| 8 | RC3 | | | |
| 9 | RC4 | | | |
| 10 | RG6/PMA5/SCK2 | | 4 | RP24/PMA5/CN20/RC8 |
| 11 | PMA4/SDI2 | | 37 | RP20/PMA4/CN25/RC4 |
| 12 | PMA3/SDO2 | | 38 | RP21/PMA3/CN26/RC5 |
| 13 | $\overline{MCLR}$ | | 18 | $\overline{MCLR}$ |
| 14 | RG9/PMA2/$\overline{SS2}$ | | 12 | TMS/PMA2/PMALU/CN36/RA10 |
| 15 | VSS | | 29 | VSS |
| | | | 39 | VSS |
| 16 | VDD | | 10 | VUSB3V3 |
| 17 | RA0/TMS | | 12 | TMS/PMA2/PMALU/CN36/RA10 |
| 18 | RE8/INT1(1) | | 27 | AN12/RP18/PMACK1/CN10/RC2 |
| 19 | RE9/INT2(1) | | 23 | AN4/C1INB/RP2/SDA2/T5CK/T4CK/CTED13/CN6/PMD2/RB2 |
| 20 | RB5/AN5 | J6-POT | 26 | AN11/RP17/CN9/RC1 |
| 21 | RB4/AN4 | J7-TEMP | 25 | AN10/RP16/PMBE1/CN8/RC0 |
| 22 | RB3/AN3(1) | | 35 | TDI/PMA9/CN35/RA9 |
| 23 | RB2/SS1/AN2(1) | | 2 | RP22/PMA1/PMALH/CN18/RC6 |
| 24 | RB1/AN1(1) | | 20 | CVREF-/VREF-/AN1/C3IND/RP6/ASCL1/CTED2/CN3/PGC3/RA1 |
| 25 | RB0/AN0(1) | | 19 | CVREF+/VREF+/AN0/C3INC/RP5/ASDA1/CTED1/CN2/PMD7/PGD3/RA0 |
| 26 | RB6/AN6/PGC/D- | J8-PGC2/D- | 9 | REFI/RP11/CTED9/CN15/PGC2/D-/RB11 |
| | | J8-PGC1 | 22 | AN3/C2INA/RP1/CTED12/CN5/PMD1/PGC1/RB1 |
| 27 | RB7/AN7/PGD/D+ | J9-PGD2/D+ | 8 | RP10/CTED11/CN16/PGD2/D+/RB10 |
| | | J9-PGD1 | 21 | AN2/CTCMP/C2INB/RP0/CN4/PGD1/HLVDIN/PMD0/RB0 |
| 28 | RA9/PMA7 | | 13 | TCK/PMA7/CN33/RA7 |
| 29 | RA10/PMA6 | | 5 | RP25/CTED7/PMA6/CN19/RC9 |
| 30 | AVDD | | 17 | AVDD |
| 31 | AVSS | | 16 | AVSS/VSS |
| 32 | RB8/AN8(1) | | 27 | AN12/RP18/PMACK1/CN10/RC2 |
| 33 | RB9/AN9(1) | | 15 | AN9/C3INA/RP15/T3CK/T2CK/CTED6/PMA14/CS1/CN11/PMCS/PMCS1/RB1 |
| 34 | RB10/PMA13 | J7-PMBE1 | 25 | AN10/RP16/PMBE1/CN8/RC0 |
| 35 | RB11/PMA12 | | | |
| 36 | VSS | | | |
| 37 | VDD | | | |
| 38 | RA1/TCK | | 13 | TCK/PMA7/CN33/RA7 |
| 39 | RF13/$\overline{U2RTS}$(1) | | 3 | RP23/PMA0/PMALL/CN17/RC7 |
| 40 | RF12/$\overline{U2CTS}$ | | 14 | CVREF/AN6/C3INB/RP14/RTCC/CTED5/CN12/RB14 |
| 41 | RB12/PMA11 | | | |
| 42 | RB13/PMA10 | | | |
| 43 | RB14/PMA1 | | 2 | RP22/PMA1/PMALH/CN18/RC6 |
| 44 | RB15/PMA0 | | 3 | RP23/PMA0/PMALL/CN17/RC7 |
| 45 | VSS | | 29 | VSS |
| | | | 39 | VSS |
| 46 | VDD | | 28 | VDD |
| | | | 40 | VDD |
| 47 | RD14/$\overline{U1CTS}$(1) | | 24 | AN5/C1INA/RP3/SCL2/CTED8/CN7/PMWR/RB3 |
| 48 | RD15/$\overline{U1RTS}$(1) | | 4 | RP24/PMA5/CN20/RC8 |
| 49 | RF4/PMA9/U2RX | | 36 | RP19/PMBE0/CN28/RC3 |
| 50 | RF5/PMA8/U2TX | | 5 | RP25/CTED7/PMA6/CN19/RC9 |

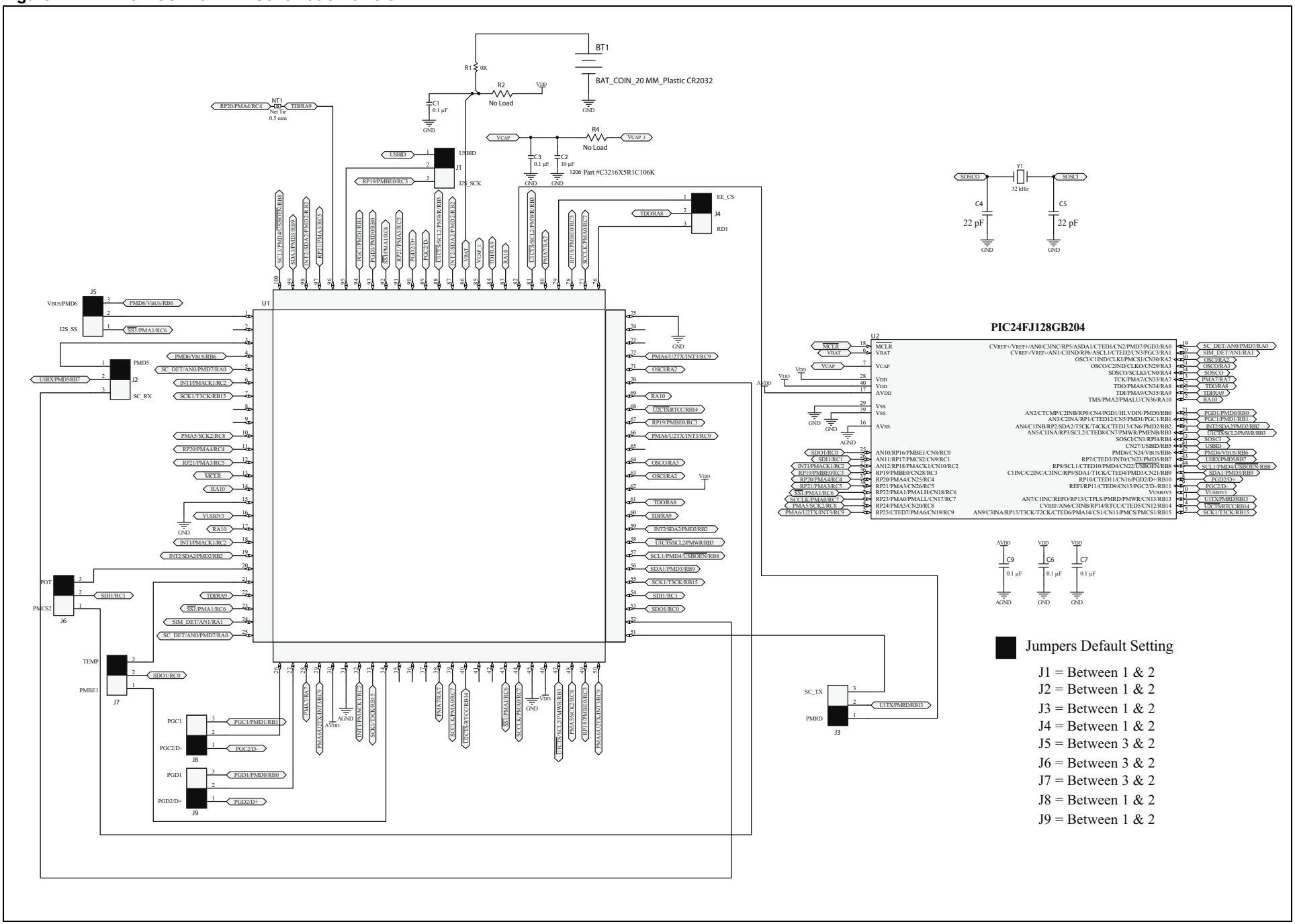
**Note 1:** This pin is a common or required signal for PICtail™ Plus daughter boards.

## Table 2: 100-Pin to 44-Pin Pinout (Continued)

| Exp 16 Pin # | PIM Function | Jumper | Device Pin # | PIC24FJ128GB204 Pinout |
|---|---|---|---|---|
| 51 | RF3/U1TX | J3-SC_TX | 11 | AN7/C1INC/REFO/RP13/CTPLS/PMRD/CN13/RB13 |
| 52 | RF2/U1RX | J2-SC_RX | 43 | RP7/CTED3/INT0/CN23/PMD5/RB7 |
| 53 | RF8/SDO1 | | 25 | AN10/RP16/PMBE1/CN8/RC0 |
| 54 | RF7/SDI1 | | 26 | AN11/RP17/CN9/RC1 |
| 55 | RF6/SCK1 | | 15 | AN9/C3INA/RP15/T3CK/T2CK/CTED6/PMA14/CS1/CN11/PMCS/PMCS1/RB1 |
| 56 | RG3/SDA1(1) | | 1 | C1INC/C2INC/C3INC/RP9/SDA1/T1CK/CTED4/PMD3/CN21/RB9 |
| 57 | RG2/SCL1(1) | | 44 | RP8/SCL1/CTED10/PMD4/CN22/USBOEN/RB8 |
| 58 | RA2/SCL2 | | 24 | AN5/C1INA/RP3/SCL2/CTED8/CN7/PMWR/RB3 |
| 59 | RA3/SDA2 | | 23 | AN4/C1INB/RP2/SDA2/T5CK/T4CK/CTED13/CN6/PMD2/RB2 |
| 60 | RA4/TDI | | 35 | TDI/PMA9/CN35/RA9 |
| 61 | RA5/TDO | | 32 | TDO/PMA8/CN34/RA8 |
| 62 | VDD | | 28 | VDD |
| | | | 40 | VDD |
| 63 | OSC1 | | 30 | OSCI/C1IND/CLKI/PMCS1/CN30/RA2 |
| 64 | OSC2 | | 31 | OSCO/C2IND/CLKO/CN29/RA3 |
| 65 | VSS | | | |
| 66 | RA14/INT3(1) | | 5 | RP25/CTED7/PMA6/CN19/RC9 |
| 67 | RA15/INT4(1) | | 36 | RP19/PMBE0/CN28/RC3 |
| 68 | RD8 | | 14 | CVREF/AN6/C3INB/RP14/RTCC/CTED5/CN12/RB14 |
| 69 | RD9 | | 12 | TMS/PMA2/PMALU/CN36/RA10 |
| 70 | RD10/PMCS2 | J6-PMCS2 | 26 | AN11/RP17/CN9/RC1 |
| 71 | RD11/PMCS1 | | 30 | OSCI/C1IND/CLKI/PMCS1/CN30/RA2 |
| 72 | RD0(1) | | 5 | RP25/CTED7/PMA6/CN19/RC9 |
| 73 | RC13/SOSCI | | | |
| 74 | RC14/SOSCO | | | |
| 75 | VSS | | 29 | VSS |
| | | | 39 | VSS |
| 76 | RD1 | J4-RD1 | 32 | TDO/PMA8/CN34/RA8 |
| 77 | RD2 | | 3 | RP23/PMA0/PMALL/CN17/RC7 |
| 78 | RD3/PMBE | | 36 | RP19/PMBE0/CN28/RC3 |
| 79 | RD12 | J4-EE_CS | 32 | TDO/PMA8/CN34/RA8 |
| 80 | RD13 | | 13 | TCK/PMA7/CN33/RA7 |
| 81 | RD4/PMWR | | 24 | AN5/C1INA/RP3/SCL2/CTED8/CN7/PMWR/RB3 |
| 82 | RD5/PMRD | J3-PMRD | 11 | AN7/C1INC/REFO/RP13/CTPLS/PMRD/CN13/RB13 |
| 83 | RD6 | | 12 | TMS/PMA2/PMALU/CN36/RA10 |
| 84 | RD7 | | 35 | TDI/PMA9/CN35/RA9 |
| 85 | VCAP | | 7 | VCAP |
| 86 | VBAT | | 6 | VBAT |
| 87 | RF0(1) | | 23 | AN4/C1INB/RP2/SDA2/T5CK/T4CK/CTED13/CN6/PMD2/RB2 |
| 88 | RF1(1) | | 24 | AN5/C1INA/RP3/SCL2/CTED8/CN7/PMWR/RB3 |
| 89 | RG1 | | 9 | REFI/RP11/CTED9/CN15/PGC2/D-/RB11 |
| 90 | RG0 | | 8 | RP10/CTED11/CN16/PGD2/D+/RB10 |
| 91 | RA6 | | 38 | RP21/PMA3/CN26/RC5 |
| 92 | RA7 | | 2 | RP22/PMA1/PMALH/CN18/RC6 |
| 93 | RE0/PMD0 | | 21 | AN2/CTCMP/C2INB/RP0/CN4/PGD1/HLVDIN/PMD0/RB0 |
| 94 | RE1/PMD1 | | 22 | AN3/C2INA/RP1/CTED12/CN5/PMD1/PGC1/RB1 |
| 95 | RG14/USBID | J1-USBID | 41 | CN27/USBID/RB5 |
| | | J1-I2S_SCK | 36 | RP19/PMBE0/CN28/RC3 |
| 96 | RG12 | | 35 | TDI/PMA9/CN35/RA9 |
| | | | 37 | RP20/PMA4/CN25/RC4 |
| 97 | RG13 | | 38 | RP21/PMA3/CN26/RC5 |
| 98 | RE2/PMD2 | | 23 | AN4/C1INB/RP2/SDA2/T5CK/T4CK/CTED13/CN6/PMD2/RB2 |
| 99 | RE3/PMD3 | | 1 | C1INC/C2INC/C3INC/RP9/SDA1/T1CK/CTED4/PMD3/CN21/RB9 |
| 100 | RE4/PMD4 | | 44 | RP8/SCL1/CTED10/PMD4/CN22/USBOEN/RB8 |

**Note 1:** This pin is a common or required signal for PICtail™ Plus daughter boards.

**Figure 1: PIC24FJ128GB204 PIM Schematic Revision 1.2**




**Note on Secondary Oscillator Crystal Selection:**

An example crystal circuit is shown here. Please refer to *AN1798, "Crystal Selection for Low-Power Secondary Oscillator"* for guidance on selecting the right crystal and the recommended layout for the application.

**Americas**
Atlanta - 678-957-9614
Austin - 512-257-3370
Boston - 774-760-0087
Chicago - 630-285-0071
Cleveland - 216-447-0464
Dallas - 972-818-7423
Detroit - 248-848-4000
Houston - 281-894-5983
Indianapolis - 317-773-8323
Los Angeles - 949-462-9523
New York - 631-435-6000
Phoenix - 480-792-7200
San Jose - 408-735-9110
Toronto - 905-673-0699

**Asia/Pacific**
Australia - Sydney - 61-2-9868-6733
China - Beijing - 86-10-8569-7000
China - Chengdu - 86-28-8665-5511
China - Chongqing - 86-23-8980-9588
China - Hangzhou - 86-571-8792-8115
China - Hong Kong SAR - 852-2943-5100
China - Nanjing- 86-25-8473-2460
China - Qingdao - 86-532-8502-7355
China - Shanghai - 86-21-5407-5533
China - Shenyang - 86-24-2334-2829
China - Shenzhen - 86-755-8864-2200
China - Wuhan - 86-27-5980-5300
China - Xiamen - 86-592-2388138
China - Xian - 86-29-8833-7252
China - Zhuhai - 86-756-3210040
India - Bangalore - 91-80-3090-4444
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