

Pmod Shield Reference Manual

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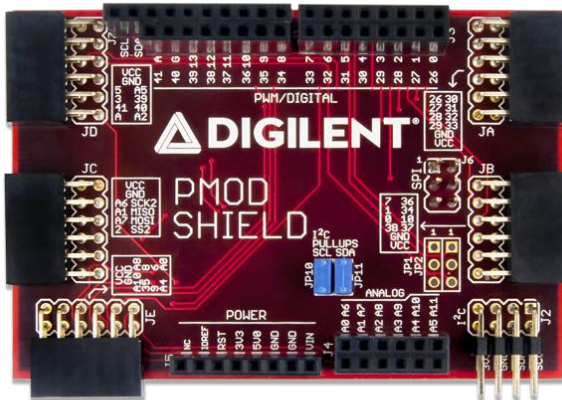
This manual applies to the Pmod Shield rev. B

Overview

The Pmod Shield is an adapter board from the Uno R3 style shield headers present on many Digilent system boards to Pmod. It provides the additional circuitry and connectors necessary to allow Digilent Pmods to be plugged directly in without the hassle of messy wires and cables. The Pmod Shield has five 2×6 Digilent Pmod ports and provides access to the I/O available via the shield headers.

Features include:

- Compatible with the uC32, WF32, Wi-FIRE, PYNQ, Arty boards
- Provides access to our full line of peripheral modules (Pmod)
- Five 2×6-pin Digilent Pmod connectors with GPIO, SPI, UART, and I2C support
- One I2C daisy chain connector
- One additional 6-pin SPI connector



The Pmod Shield.

1 Functional Description

The Digilent Pmod Shield follows the Uno R3 header standard but adds an additional row of headers for greater IO access. The Pmod Shield is compatible with Arduino base boards supporting the Uno R3 standard, but is primarily designed for use with Digilent host boards. When used in conjunction with Digilent boards, the Pmod Shield provides the necessary supporting hardware and connectors to easily add Pmods to your design.

The Pmod Shield has the following connectors:

J1 & J3: Digital Signal Pass-Through Connectors

- This connector provides most of the signals used by the host board to the Pmod Shield board. The remaining signals are passed through the Pmod Shield.

J2: I²C Daisy Chain Connector

- This is a 2×4 pin male connector that provides access to the I²C signals SDA and SCL as well as power from the 3.3 V power bus and ground. This can be used to extend the I²C bus off of the board and to power external I²C devices. Digilent has MTE cables and a selection of I²C peripheral modules that can be accessed using this connector. All Digilent I²C Pmods are designed to be daisy chained if desired.

J4: Analog Signal Pass-Through Connector

- This connector passes the analog input pins on the host through the Pmod Shield board.

J5: Power Pass-Through Connector

- This connector passes the power connector from the host through the Pmod Shield board, and powers the Pmod Shield from the host.

J6: Default SPI Connector

- This connector provides access to the SPI signals SS, MOSI, MISO, and SCK.

J7: I²C Connector

- This connector provides access to the same SCL and SDA pins provided on J2 but through a female header.

JA-JE: Digilent Pmod Connectors

- These connectors provide access to the signals of the host in a form factor which readily allows Digilent Pmods to be connected. UART, SPI and GPIO protocols are supported via the Pmod connectors.

2 I²C Busses and Connectors

The Inter-Integrated Circuit (I²C) Interface provides a medium speed (100K or 400K bps) synchronous serial communications bus. The I²C interface provides master and slave operation using either 7-bit or 10-bit device addressing. Each device is given a unique address, and the protocol provides the ability to address packets to a specific device or to broadcast packets to all devices on the bus. Refer to the host board manufacturer's datasheet for detailed information on configuring and using the I²C interface.

The Pmod Shield is designed to provide access to both I²C interfaces present on the Digilent microcontroller boards. One of the I²C connectors is available on header J2 and the other connector is located on several other connectors on the Pmod Shield. J2 is a standard 2×4 pin header connector with 0.100" spaced pins. It provides access to the I²C signals, SCL and SDA, plus VCC3V3 and ground. The VCC3V3 can be used to power external I²C devices. SCL and SDA are also provided on header J7 as female pins.

The I²C bus uses open collector drivers to allow multiple devices to drive the bus signals. This means that pull-up resistors must be provided to supply the logic high state for the signals. Generally, only one set of pull-ups are used on the bus. Jumpers JP10 and JP11 can be used to disable the on-board pull-ups on I²C #1 if a different value is needed or some other device on the bus is providing the pull-ups or if I²C #1 isn't being used and the pull-ups are interfering with the use of the pins. The on-board pull-ups are enabled by install shorting blocks on JP10 and JP11. Removing the shorting blocks disables the pull-ups.

Digilent has several small I/O modules available that can be connected using the I²C connector. These include a 3-axis accelerometer, 4-channel, 12-bit A/Dconverter, serial character LCD panel, 3-axis gyroscope, real-time clock/calendar, an I/O expander, and more.

3 SPI Connector

The SPI connector pins on header J6 are as follows: Pin 1 (MISO), Pin 3 (SCK), Pin 4 (MOSI), and Pin 5 (SS). These signals also appear on Digilent host microcontroller boards. Jumpers are available on Digilent host microcontroller boards that can be used to select whether the host operates as a Master (transmit on MOSI, receive on MISO) or a Slave (transmit on MISO, receive on MOSI) device. By default, the shorting blocks are normally placed in the Master position for the Digilent microcontroller boards to function as an SPI master. Also, a jumper is available on Digilent microcontroller boards that is used to select PWM output (in RD4 position) or the SPI SS function on Pin 5 (in RG9 position).

These same signals can also be accessed on the top row (pins 1-4) of Pmod header JC.

Appendix: Pmod Shield Pinout Tables

Protocol Compatibility Overview

Pmod Header	Wi-FIRE	WF32	uC32	Arduino Uno
JA	GPIO	GPIO	GPIO	GPIO
JB	UART (minus CTS and RTS), GPIO	UART (minus CTS and RTS), GPIO	SPI, UART, GPIO	UART (top row only)
JC	GPIO, SPI, UART (minus CTS and RTS)	SPI, GPIO	GPIO, SPI	SPI (top row only), GPIO (top row only)
JD	GPIO, UART (minus CTS and RTS)	GPIO, UART (minus CTS and RTS)	UART, GPIO, I2C (top row only)	Extra signals for use with wires
JE	GPIO	GPIO	GPIO	Extra signals for use with wires

Header JA

Pmod Shield Pin	Pmod Shield Silk Screen #	Wi-FIRE PIC32 Signal	Wi-FIRE Function	WF32 PIC32 signal	WF32 Function	uC32 PIC32 signal	uC32 Function	Arduino Uno ATmega328P Signal	Arduino Uno Function
JA1	26	EBID0/PMD0/RE0	GPIO	PMD0/RE0	GPIO	PMD0/RE0	GPIO	N/A	N/A
JA2	27	EBID1/PMD1/RE1	GPIO	PMD1/RE1	GPIO	PMD1/RE1	GPIO	N/A	N/A
JA3	28	EBID2/PMD2/RE2	GPIO	PMD2/RE2	GPIO	PMD2/RE2	GPIO	N/A	N/A
JA4	29	EBID3/RPE3/PMD3/RE3	GPIO	PMD3/RE3	GPIO	PMD3/RE3	GPIO	N/A	N/A

Pmod Shield Pin	Pmod Shield Silk Screen #	Wi-FIRE PIC32 Signal	Wi-FIRE Function	WF32 PIC32 signal	WF32 Function	uC32 PIC32 signal	uC32 Function	Arduino Uno ATmega328P Signal	Arduino Uno Function
JA7	30	EBID4/AN18 /PMD4/RE4	GPIO	PMD4/RE4	GPIO	PMD4/RE4	GPIO	N/A	N/A
JA8	31	EBID5/AN17 /RPE5/PMD 5/RE5	GPIO	PMD5/RE5	GPIO	PMD5/RE5	GPIO	N/A	N/A
JA9	32	EBID6/AN16 /PMD6/RE6	GPIO	PMD6/RE6	GPIO	PMD6/RE6	GPIO	N/A	N/A
JA10	33	EBID7/AN15 /PMD7/RE7	GPIO	PMD7/RE7	GPIO	PMD7/RE7	GPIO	N/A	N/A

*Header JA is incompatible with single row based Arduino header style boards.

Header JB

Pmod Shield Pin	Pmod Shield Silk Screen #	Wi-FIRE PIC32 Signal	Wi-FIRE Function	WF32 PIC32 signal	WF32 Function	uC32 PIC32 signal	uC32 Function	Arduino Uno ATmega328P Signal	Arduino Uno Function
JB1	7	AN26/A ERXD1/ RPE9/R E9	Analog input, IC2, INT2, SPI1,3,4,5 slave select, GPIO	AERXD1 /INT2/R E9	GPIO, external INT, USBOT INT	IC2/U1CTS/ INT2/RD9	GPIO, UART1 CTS, external interrupt	AIN1/PCINT23 /PD7	GPIO
JB2	1	EBIRDY 2/RPF8/ SCL3/R F8	SPI1 slave select, I2C3 serial cock, GPIO, U4TX	SCL3/S DO3/ U1TX/R F8	I2C3 serial clock, MOSI, UART1 TX, GPIO	U1TX/SDO1 /RF3	GPIO, UART1 TX, MOSI	PCINT17/TXD/ PD1	UART TX, GPIO
JB3	0	EBIRDY 3/RPF2/ SDA3/R F2	SPI2 slave select, I2C3 serial data, GPIO, U4RX	SDA3/S DI3/ U1RX/R F2	I2C3 serial data, MISO, UART1 RX, GPIO	U1RX/SDI1/ RF2	GPIO, UART1 RX, MISO	PCINT16/RDX/ PDO	UART RX, GPIO
JB4	38	EBID12/ ETXD2/ RPD12/ PMD12 /RD12	UART5 CTS, GPIO, T3CK	T5CK/S DI1/RC4	MISO, GPIO	U1RTS/BCLK 1/ SCK1/INT0/ RF6	UART1 RTS, UART1 IrDA Baud Clock, SPI clock 1, external interrupt input, GPIO	N/A	N/A
JB7	36	EBID10/ ETXD0/ RPF1/P MD10/ RF1	GPIO, T6CK	ETXEN/ PMD14 / CN15/R D6	GPIO	CN15/RD6	GPIO	N/A	N/A
JB8	34	SQICS1/ RPD5/R D5	GPIO, T4CK	PMRD/ CN14/R D5	GPIO	PMRD/CN1 4/RD5	GPIO	N/A	N/A
JB9	10	AN11/C 2/INC/ RPG9/P MA2/R G9	GPIO, Analog, SPI_SS2, PWM 5, OC9, IC6	OC5/P MWR/ CN13/R D4	PWM 5, GPIO	PMWR/OC5 / IC5/CN13/R D4	PWM 5, GPIO	SS/OC1B/ PCINT2/PB2	PWM, GPIO

Pmod Shield Pin	Pmod Shield Silk Screen #	Wi-FIRE PIC32 Signal	Wi-FIRE Function	WF32 PIC32 signal	WF32 Function	uC32 PIC32 signal	uC32 Function	Arduino Uno ATmega328P Signal	Arduino Uno Function
JB10	37	EBICS0/SCL2/R A2	GPIO	ETXCLK/PMD15 / CN16/R D7	GPIO	CN16/RD7	GPIO	N/A	N/A

Header JC

Pmod Shield Pin	Pmod Shield Silk Screen #	Wi-FIRE PIC32 Signal	Wi-FIRE Function	WF32 PIC32 signal	WF32 Function	uC32 PIC32 signal	uC32 Function	Arduino Uno ATmega328P Signal	Arduino Uno Function
JC1	10 (SS)	RGP9/R G9	GPIO, SPI_SS2, PWM 5, OC9, IC6	OC5/PMW R/ CN13/RD4	PWM 5 (JPR to digital pin 10 position)	PMWR/OC5 / IC5/CN13/R D4	PWM 5 (JPR to digital pin 10 position)	SS/OC1B/ PCINT2/PB2	SS, PWM, GPIO
JC2	11 (MOSI)	RPD11/RD11	GPIO, SPI_SDO2 / SDI2 PWM 6, OC7	SCL4/SDO 2/ U3TX/PM A3/ CN10/RG8	MOSI2, U3TX, GPIO, SCL4	(SDO2/PMA 3/ CN10/RG8) or (SDI2/PMA5 / CN9/RG7)	MOSI2, GPIO, MISO2	MOSI/OC2A/ PCINT3/PB3	MOSI, PWM, GPIO
JC3	12 (MISO)	RPF0/P MD11/ RF0	GPIO, SPI_SDI2/ SDO2, T5CK(+)	SDA4/SDI2 / U3RX/PM A4/ CN9/RG7	MISO2, U3RX, SDA4, GPIO	(SDI2/PMA5 / CN9/RG7) or (SDO2/PMA 3/ CN10/RG8)	MISO2, GPIO or MOSI2	MISO/PCINT4/ PB4	MISO, GPIO
JC4	13 (SCK)	AN14/C 1IND/ ECOL/R PG6/ SCK2/R G6	GPIO, SPI_SCK2, USER LED1	SCK2/U6T X/ U3RTS/P MA5/ CN8/RG6	SCK2, GPIO, User LED LD6	SCK2/PMA5 / CN8/RG6	SCK2, GPIO	SCK/PCINT5/P B5	SCK, GPIO
JC7	2	AN25/A ERXD0/ RPE8/R E8	GPIO, IC1, INT1	AERXD0/I NT1/RE8	GPIO, external INT	IC1/RTCC/ INT1/RD8	IC1, Real-Time Clock Alarm Output, external INT, GPIO	PCINT18/INT0/ PD2	INT, GPIO
JC8	A7	AN2/C2 INB/ RPB2/R B2	AIN7, GPIO	AN5/C1IN +/ VBUSON/ CN7/RB5	AIN7, P32_VBUS ON, GPIO	C1IN+/AN5/ CN7/RB5	AN5, GPIO	N/A	N/A
JC9	A1	EBIA7/A N49/ RPB9/P MA7/R B9	AIN1, GPIO	AN4/C1IN- / CN6/RB4	AIN1, GPIO	C1IN-/AN4/ CN6/RB4	AN4, GPIO	ADC1/PCINT9/ PC1	ADC1, GPIO
JC10	A6	AN3/C2 INA/ RPB3/R B3	AIN6, GPIO	AN3/C2IN +/ CN5/RB3	AIN6, GPIO	C2IN+/AN3/ CN5/RB3	AN3, GPIO	N/A	N/A

Header JD

Pmod Shield Pin	Pmod Shield Silk Screen #	Wi-FIRE PIC32 Signal	Wi-FIRE Function	WF32 PIC32 signal	WF32 Function	uC32 PIC32 signal	uC32 Function	Arduino Uno ATmega328P Signal	Arduino Uno Function
JD1	A2	EBIA12/ AN21/ RPC2/P MA12/ RC2	AIN2, GPIO	AN8/C10 UT/RB8	AIN2, GPIO	U2CTS/C 10UT/ AN8/RB8	U2CTS, AIN2, GPIO	ADC2/PCINT10 /PC2	ADC2, GPIO
JD2	40	AN33/R PD15/ SCK6/R D15	GPIO, U1TX	SCK3/U4 TX/ U1RTS/C N21/RD1 5	GPIO, U4TX	PMA8/U2 TX/ SCL2/CN1 8/RF5	U2TX, SCL2, GPIO	N/A	N/A
JD3	39	AN32/R PD14/R D14	GPIO, U1RX	SS3/U4R X/ U1CTS/C N20/RD1 4	GPIO, U4RX	PMA9/U2 RX/ SDA2/CN 17/RF4	U2RX, SDA2, GPIO	N/A	N/A
JD4	A5	AN12/R PG8/ SCL4/P MA3/R G8	AIN5, SCL4, GPIO	AN11/P MA12/R B11	AIN5, GPIO	PMALH/P MA1/ U2RTS/A N14/RB1 4	U2RTS, AIN5, GPIO	ADC5/SCL/ PCINT13/PC5	ADC5, SCL, GPIO
JD7	A	VREF+/ CVREF+ / AN28/R A10	VREF+, GPIO	Vref+/CV ref+/ PMA6/R A10	VREF+, GPIO	PGED1/P MA6/ AN0/VRE F+/ CVREF+/C N2/RB0	Vref+, GPIO	AREF	analog reference
JD8	41	VREF-/ CVREF- / AN27/R A9	VREF-, GPIO	Vref-/ CVref-/ PMA7/R A9	GPIO, VREF-	PGC1/AN 1/ VREF-/ CVREF-/ CN3/RB1	Vref-, GPIO	N/A	N/A
JD9	3	RPD0/R TCC/ INT0/R D0	PWM 1, INT0, OC1, GPIO	SDO1/OC 1/ INT0/RD 0	PWM 1, GPIO	OC1/RD0	PWM, GPIO	PCINT19/OC2B / INT1/PD3	INT, PWM, GPIO
JD10	5	RPD1/S CK1/RD 1	PWM 2, OC2, GPIO	OC2/RD1	PWM2, GPIO	OC2/RD1	PWM, GPIO	PCINT21/OC0B / T1/PD5	PWM, GPIO

*Header JD does not directly support any Pmods with single row based Arduino header style boards

Header JE

Pmod Shield Pin	Pmod Shield Silk Screen #	Wi-FIRE PIC32 Signal	Wi-FIRE Function	WF32 PIC32 signal	WF32 Function	uC32 PIC32 signal	uC32 Function	Arduino Uno ATmega328P Signal	Arduino Uno Function
JE1	A0	AN45/C 1INA/ RPB5/R B5	AIN0, GPIO	AN2/C2I N-/ CN4/RB2	AIN0, GPIO	C2IN-/AN2/ SS1/CN4/RB 2	AIN0, GPIO	ADC0/PCINT 8/PC0	ADC0, GPIO
JE2	6	EBID14/ ETXEN/ RPD2/P MD14/ RD2	PWM, GPIO	OC3/RD2	PWM, GPIO	OC3/RD2	PWM, GPIO	PCINT22/OC 0A/ AIN0/PD6	PWM, AIN0, GPIO

Pmod Shield Pin	Pmod Shield Silk Screen #	Wi-FIRE PIC32 Signal	Wi-FIRE Function	WF32 PIC32 signal	WF32 Function	uC32 PIC32 signal	uC32 Function	Arduino Uno ATmega328P Signal	Arduino Uno Function
JE3	8	AETXCLK/RPA14/SCL1/RA14	GPIO, IC3, INT3	AETXCLK/SCL1/INT3/RA14	GPIO, external INT (shared with P32_USBOC)	IC3/PMCS2/PMA15/INT3/RD10	INT3, GPIO	PCINT0/CLK0 / ICP1/PB0	GPIO
JE4	A8	AN4/C1INB/RB4	AIN8, GPIO	AN9/C2OUT/RB9	AIN8, GPIO	PMA7/C2OUT/AN9/RB9	AIN8, GPIO	N/A	N/A
JE7	A4	AN13/C1INC/RPG7/SDA4/PMA4/RG7	AIN4, GPIO	AN10/CVrefout/PMA13/RB10	AIN4, GPIO	TCK/PMA11 / AN12/RB12	AIN4, GPIO	ADC4/SDA/PCINT12/PC4	ADC4, SDA, GPIO
JE8	9	EBID15/ETXCLK/RPD3/PMD15/RD3	PWM, GPIO	OC4/RD3	PWM, GPIO	OC4/RD3	PWM, GPIO	OC1A/PCINT1/PB1	PWM, GPIO
JE9	35	EBIA6/AN22/RPC1/PMA6/RC1	GPIO, T2CK, IC7	IC4/PMCS1/PMA14/RD11	GPIO	IC4/PMCS1/PMA14/INT4/RD11	GPIO	N/A	N/A
JE10	A10	AN48/RPB8/PMA10/RB8	AIN10, GPIO	AN14/PMA1/RB14	AIN10, GPIO	TDI/PMA10/AN13/RB13	AIN10, GPIO	N/A	N/A

*Header JE does not directly support any Pmods with single row based Arduino header style boards

Header J1

Pmod Shield Silk Screen #	Pmod Shield Pin	Wi-FIRE PIC32 Signal	WF32 PIC32 signal	uC32 PIC32 signal
8	JE3	RPA14/SCL1/RA14	SCL1/INT3/RA14	IC3/PMCS2/PMA15/INT3/RD10
34	JB8	SQICS1/RPD5/RD5	PMRD/CN14/RD5	PMRD/CN14/RD5
9	JE8	RPD3/PMD15/RD3	OC4/RD3	OC4/RD3
35	JE9	EBIA6/AN22/RPC1/PMA6/RC1	IC4/PMCS1/PMA14/RD11	IC4/PMCS1/PMA14/INT4/RD11
10	JB9	EBIA2/AN11/RPG9/PMA2/RG9	OC5/PMWR/CN13/RD4	PMWR/OC5/IC5/CN13/RD4
36	JB7	EBID10/RPF1/PMD10/RD1	ETXEN/PMD14/CN15/RD6	CN15/RD6
11 (MOSI)	JC2	RPD11/RD11	SCL4/SDO2/U3TX/PMA3/CN10/RG8	(SDO2/PMA3/CN10/RG8) or (SDI2/PMA5/CN9/RG7)
37	JB10	EBICS0/SCL2/RA2	ETXCLK/PMD15/CN16/RD7	CN16/RD7
12 (MISO)	JC3	RPF0/PMD11/RD0	SDA4/SDI2/U3RX/PMA4/CN9/RG7	(SDI2/PMA5/CN9/RG7) or (SDO2/PMA3/CN10/RG8)

Pmod Shield Silk Screen #	Pmod Shield Pin	Wi-FIRE PIC32 Signal	WF32 PIC32 signal	uC32 PIC32 signal
38	JB4	RPD12/PMD12/RD12	T5CK/SDI1/RC4	U1RTS/BCLK1/SCK1/INT0/RF6
12 (SCK)	JC4	AN14/C1IND/ECOL/RPG6/SCK2/RG6	SCK2/U6TX/U3RTS/PMA5/CN8/RG6	SCK2/PMA5/CN8/RG6
39	JD3	AN32/RPD14/RD14	SS3/U4RX/U1CTS/CN20/RD14	PMA9/U2RX/SDA2/CN17/RF4
G		GND	GND	GND
40	JD2	AN33/RPD15/SCK6/RD15	SCK3/U4TX/U1RTS/CN21/RD15	PMA8/U2TX/SCL2/CN18/RF5
A	JD7	VREF+/CVREF+/AN28/RA10	Vref+/CVref+/AERXD3/PMA6/RA10	PGED1/PMA6/AN0/VREF+/CVREF+/CN2/RB0
41	JD8	VREF-/CVREF-/AN27/RA9	Vref-/CVref-/AERXD2/PMA7/RA9	PGC1/AN1/VREF-/CVREF-/CN3/RB1

Header J2

Pmod Shield Silk Screen Number	Wi-FIRE PIC32 Signal	WF32 PIC32 Signal	uC32 PIC32 Signal
SCL	AN12/RPG8/SCL4/PMA3/RG8	SCL2/RA2	SCL1/RG2
SDA	AN13/RPG7/SDA4/PMA4/RG7	SDA2/RA3	SDA1/RG3
GND	GND	GND	GND
VCC	VCC	VCC	VCC

Header J3

Pmod Shield Silk Screen Number	Pmod Shield Pin	Wi-FIRE PIC32 Signal	WF32 PIC32 signal	uC32 PIC32 signal
0	JB3	RPF2/SDA3/RF2	SDA3/SDI3/U1RX/RF2	U1RX/SDI1/RF2
26	JA1	EBID0/PMD0/RE0	PMD0/RE0	PMD0/RE0
1	JB2	RPF8/SCL3/RF8	SCL3/SDO3/U1TX/RF8	U1TX/SDO1/RF3
27	JA2	EBID1/PMD1/RE1	PMD1/RE1	PMD1/RE1
2	JC7	AN25/RPE8/RE8	INT1/RE8	IC1/RTCC/INT1/RD8
28	JA3	EBID2/PMD2/RE2	PMD2/RE2	PMD2/RE2
3	JD9	RPD0/RTCC/INT0/RD0	SDO1/OC1/INT0/RD0	OC1/RD0
29	JA4	EBID3/RPE3/PMD3/RE3	PMD3/RE3	PMD3/RE3
4		EBIRDY1/SDA2/RA3	ETXD0/PMD10/RF1	RF1
30	JA7	EBID4/AN18/PMD4/RE4	PMD4/RE4	PMD4/RE4
5	JD10	RPD1/SCK1/RD1	OC2/RD1	OC2/RD1
31	JA8	EBID5/AN17/RPE5/PMD5/RE5	PMD5/RE5	PMD5/RE5
6	JE2	RPD2/PMD14/RD2	OC3/RD2	OC3/RD2
32	JA9	EBID6/AN16/PMD6/RE6	PMD6/RE6	PMD6/RE6
7	JB1	AN26/RPE9/RE9	INT2/RE9	IC2/U1CTS/INT2/RD9
33	JA10	EBID7/AN15/PMD7/RE7	PMD7/RE7	PMD7/RE7

Header J4

Pmod Shield Silk Screen Number	Pmod Shield Pin	Wi-FIRE PIC32 Signal	WF32 PIC32 signal	uC32 PIC32 signal
A0	JE1	AN45/C1INA/RPB5/RB5	AN2/C2IN-/CN4/RB2	C2IN-/AN2/SS1/CN4/RB2
A6	JC10	AN3/C2INA/RPB3/RB3	AN3/C2IN+/CN5/RB3	C2IN+/AN3/CN5/RB3
A1	JC9	EBIA7/AN49/RPB9/PMA7/RB9	AN4/C1IN-/CN6/RB4	C1IN-/AN4/CN6/RB4
A7	JC8	AN2/C2INB/RPB2/RB2	AN5/C1IN+/VBUSON/CN7/RB5	C1IN+/AN5/CN7/RB5
A2	JD1	EBIA12/AN21/RPC2/PMA12/RC2	AN8/C1OUT/RB8	U2CTS/C1OUT/AN8/RB8
A8	JE4	AN4/C1INB/RB4	AN9/C2OUT/RB9	PMA7/C2OUT/AN9/RB9
A3		EBIA0/AN10/RPB15/OCFB/PMA0/RB15	PGED1/AN0/CN2/RB0	TMS/CVREFOUT/PMA13/AN10/RB10
A9		PGEC1/AN1/RPB1/RB1	PGEC1/AN1/CN3/RB1	TDO/PMA12/AN11/RB11
A4	JE7	EBIA4/AN13/RPG7/SDA4/PMA4/RG7	AN10/CVrefout/PMA13/RB10	TCK/PMA11/AN12/RB12
A10	JE10	AN48/RPB8/PMA10/RB8	AN14/PMA1/RB14	TDI/PMA10/AN13/RB13
A5	JD4	EBIA3/AN12/RPG8/SCL4/PMA3/RG8	AN11/PMA12/RB11	PMALH/PMA1/U2RTS/AN14/RB14
A11		PGED1/AN0/RPB0/RB0	AN15/PMALL/PMA0/CN12/RB15	PMALL/PMA0/AN15/OCFB/CN12/RB15

Header J5

Pin Function	Pmod Shield Pin	Wi-FIRE PIC32 Signal	WF32 PIC32 signal	uC32 PIC32 signal
Not Connected	J5-1			
IOREF	J5-2	3.3 V	3.3 V	3.3 V
RST	J5-3	P32_RST	P32_RST	P32_RST
3v3	J5-4	3.3 V	3.3 V	3.3 V
5V0	J5-5	5.0 V	5.0 V	5.0 V
GND	J5-6	GND	GND	GND
GND	J5-7	GND	GND	GND
VIN	J5-8	VIN	VIN	VEXT

Header J6

Pin Function	Pmod Shield Pin	Wi-FIRE PIC32 Signal	WF32 PIC32 signal	uC32 PIC32 signal
MISO	J6-1 (JC3)	RPF0/PMD11/RFO	SDA4/SDI2/U3RX/PMA4/CN9/RG7	(SDI2/PMA5/CN9/RG7) or (SDO2/PMA3/CN10/RG8)
	J6-2			
SCK	J6-4 (JC4)	AN14/C1IND/ECOL/RPG6/SCK2/RG6	SCK2/U6TX/U3RTS/PM A5/CN8/RG6	SCK2/PMA5/CN8/RG6

Pin Function	Pmod Shield Pin	Wi-FIRE PIC32 Signal	WF32 PIC32 signal	uC32 PIC32 signal
MOSI	J6-3 (JC2)	RPD11/RD11	SCL4/SDO2/U3TX/PMA3/CN10/RG8	(SDO2/PMA3/CN10/RG8) or (SDI2/PMA5/CN9/RG7)
SS	J6-5 (JB9)	EBIA2/AN11/RPG9/PMA2/RG9	OC5/PMWR/CN13/RD4	PMWR/OC5/IC5/CN13/RD4
GND	J6-6	GND	GND	GND

Header J7

Pmod Shield Silk Screen Number	Wi-FIRE PIC32 Signal	WF32 PIC32 signal	uC32 PIC32 signal
SCL	AN12/RPG8/SCL4/PMA3/RG8	SCL2/RA2	SCL1/RG2
SDA	AN13/RPG7/SDA4/PMA4/RG7	SDA2/RA3	SDA1/RG3