



FIM Application Kit

Hardware Reference

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1 Overview

This document describes the details of the FIM application kit board. This board will be called in advance FIM_APPKIT.

The FIM_APPKIT board provides the external interfaces needed to test the different FIM interfaces available on the ConnectCore 9P 9215 and Digi Connect ME 9210 modules.

The FIM_APPKIT is designed to be connected to the ConnectCore 9P 9215 development board and to the Digi Connect ME 9210 development board.

For the purposes of this document, and since the ConnectCore Wi-9P and 9P 9215 modules share the same development board, the shared development board will be referred to only as the ConnectCore 9P 9215 development board.

The FIM_APPKIT is powered from the base board where it's connected.



2 Features

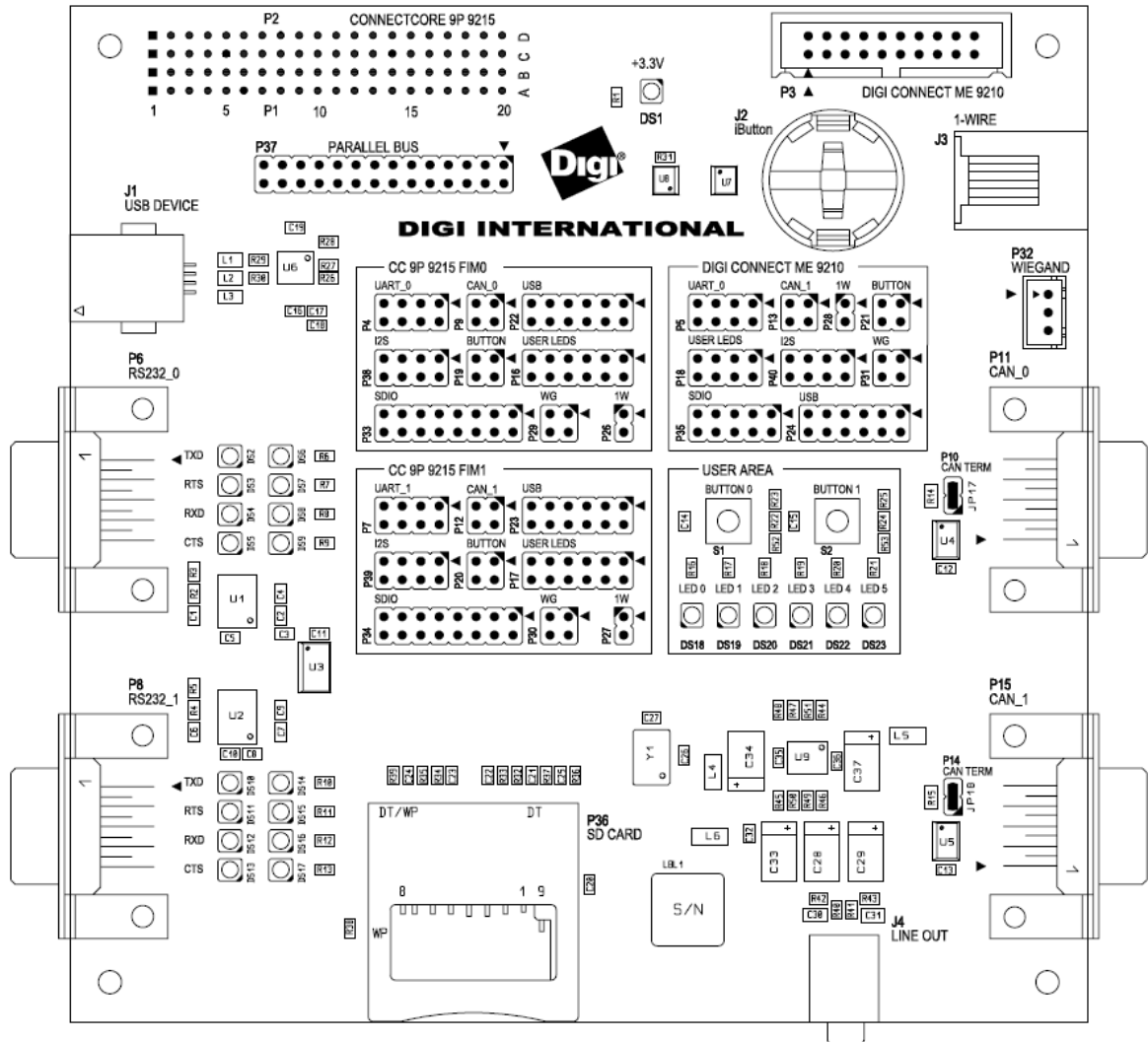
The following are major features of the FIM_APPKIT board:

- Connector to connect the board to the ConnectCore 9P 9215 development board
- Connector to connect the board to the Digi Connect ME 9210 development board
- 6 user LEDs
- One power LED
- 2 user buttons
- Two UART interfaces with status LED's
- Two CAN interfaces
- USB device interface
- 1-Wire interface with one iButton holder and one 1-Wire EEPROM
- Audio interface to test the I2S bus
- Wiegand reader interface
- SD-Card interface
- Pin header with the signals of the parallel busses of the two FIM's



3 Basic description

The following figure shows the placement of the FIM_APPKIT board.



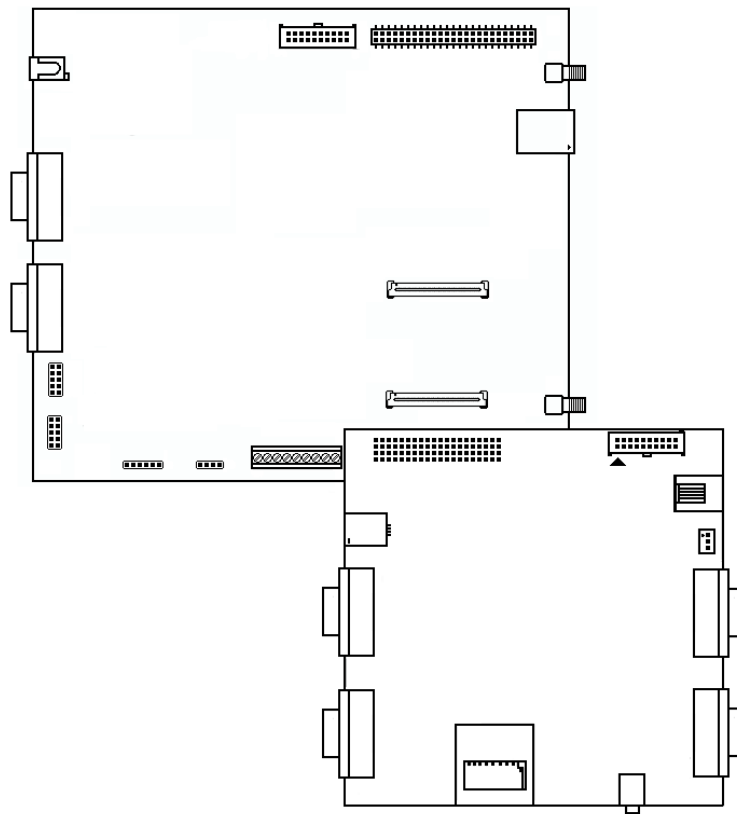
4 Connection to development board

The FIM_APPKIT has two connectors P1/P2 and P3 for connecting the board to the ConnectCore 9P 9215 development board and to the Digi Connect ME 9210 development board.

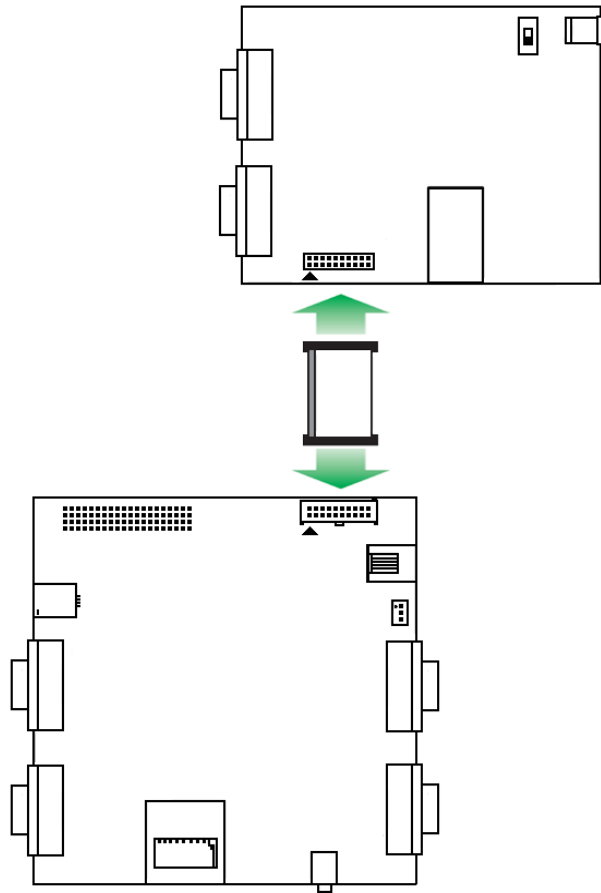
4.1 Connection to the ConnectCore 9P 9215 development board

The connection between the FIM_APPKIT and the ConnectCore 9P 9215 development board is done with two board to board connectors. The FIM_APPKIT will be connected in the X20, X21 rail to rail connectors of the ConnectCore 9P 9215 development board.

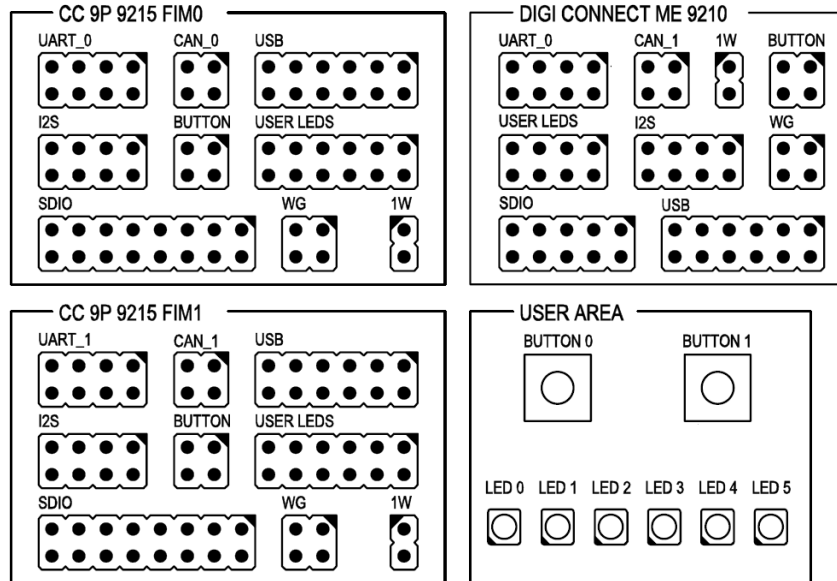
The following figure shows how the FIM_APPKIT is connected to the ConnectCore 9P 9215 development board.



The following figure shows how the FIM_APPKIT is connected to the Digi Connect ME 9210 development board.



5.1 Block diagram



In the following paragraphs the specific configuration for each interface will be described.

5.3 Types of interfaces

According to how the interfaces of the FIM_APPKIT are connected to the FIMs of the development kits they are classified in two different types:

- **Dedicated interface:** the interfaces of this type are duplicated in the FIM_APPKIT board, one is connected to the FIM0 and the other one is connected to the FIM1. The UART and the CAN are the dedicated interfaces implemented on the FIM_APPKIT. The advantage of these interfaces is that they can be used at the same time in the two FIMs (i.e. CAN0 can be connected to FIM0 and CAN1 can be connected to FIM1).
- **Shared interface:** the interfaces of this type are connected to the FIM0 and to the FIM1. Selection between FIM0 or FIM1 will be done with the configuration jumpers. These interfaces cannot be used at the same time in two FIMs.

5.4 Interface table

The following table shows the interfaces provided in the FIM_APPKIT and the FIM that they can be connected.

Interface	ConnectCore 9P 9215	Digi Connect ME 9210
UART_0	FIM0	FIM0
UART_1	FIM1	
CAN_0	FIM0	
CAN_1	FIM1	FIM0*
USB DEV	FIM0 and FIM1	FIM0
SDIO	FIM0 and FIM1 (4-bit)	FIM0 (1-bit)
1-WIRE	FIM0 and FIM1	FIM0
I2S	FIM0 and FIM1	FIM0
WIEGLAND	FIM0 and FIM1	FIM0
Parallel Bus	FIM0 and FIM1	
User Buttons	FIM0 and FIM1	FIM0
User LEDs	FIM0 and FIM1 (6 LEDs)	FIM0 (4-LEDs)

* **Note:** A special version of the Digi Connect ME 9210 module is required to use the CAN interface. See the Digi Connect ME 9210 Hardware Reference Guide or <http://www.digi.com/products/embeddeddsolutions/digiconnectme9210.jsp#models> for details.

5.5 Interface specification

5.5.1 UART_0

A UART interface is provided in the FIM_APPKIT to test the UART firmware implemented on the FIM0 of the ConnectCore 9P 9215 and Digi Connect ME 9210.

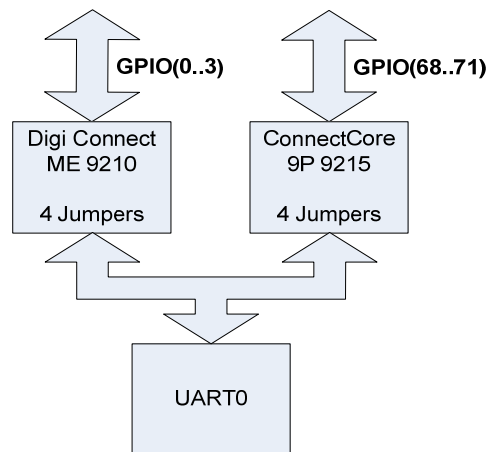
The UART_0 interface provides RXD, TXD, RTS and CTS signals. To test the UART interface using two wire mode, only the TXD and RXD jumpers must be connected. To test the UART interface using four wire mode, all the jumpers must be connected.

Eight LEDs are used to show the status of the four lines of the UART interface.

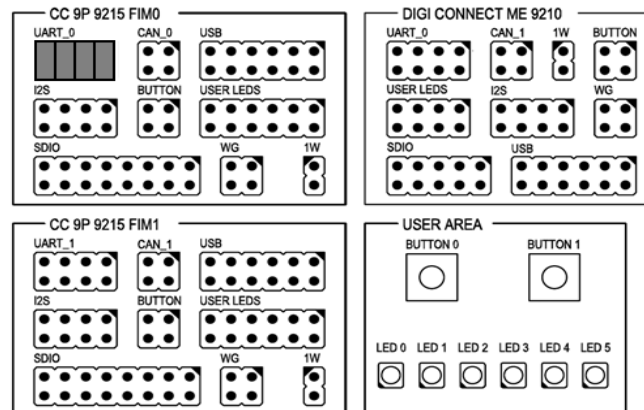
One 9-pin, sub-D, male connector is provided on the board to allow the UART interface to communicate to an external serial port device like a modem or a PC terminal.

Note: there is an RS232 transceiver between the UART interface and the 9-pin connector.

The following figure shows the block diagram of the UART_0 interface.

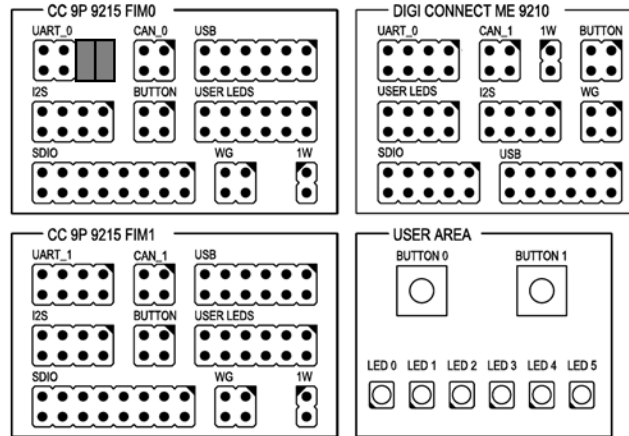


The following figure shows the configuration jumpers that have to be connected to test the four wire UART interface using FIM0 of the ConnectCore 9P 9215.

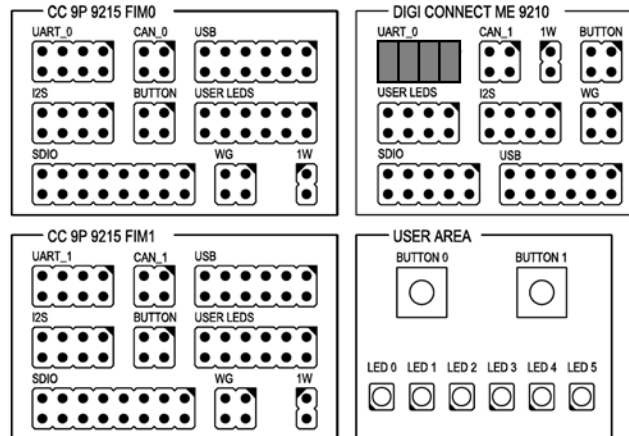




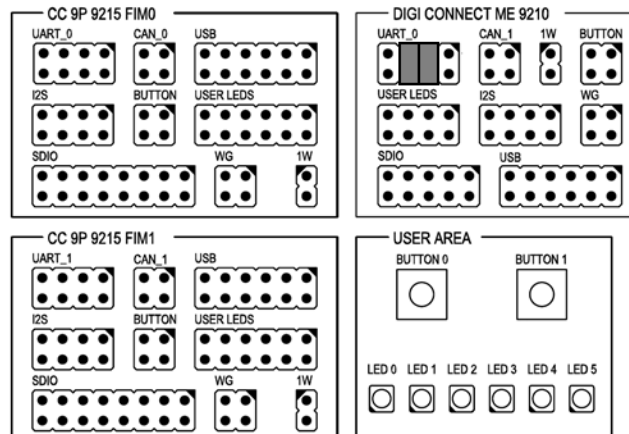
The following figure shows the configuration jumpers that have to be connected to test the two wire UART interface using FIM0 of the ConnectCore 9P 9215.



The following figure shows the configuration jumpers that have to be connected to test the four wire UART interface using FIM0 of the Digi Connect ME 9210.



The following figure shows the configuration jumpers that have to be connected to test the two wire UART interface using FIM0 of the Digi Connect ME 9210.



5.5.2 UART_1

A UART interface is provided in the FIM_APPKIT to test the UART firmware implemented on the FIM1 of the ConnectCore 9P 9215.

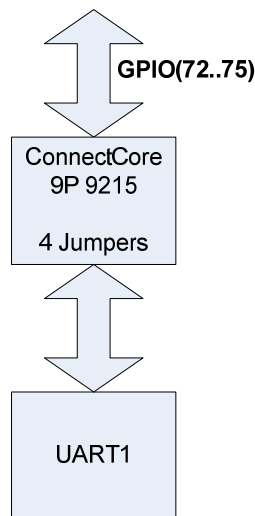
The UART_1 interface provides RXD, TXD, RTS and CTS signals. To test the two wire UART interface, only the TXD and RXD jumpers have to be connected. To test the four wire UART interface the four UART_1 jumpers must be connected.

Eight LEDs are used to show the status of the four lines of the UART interface.

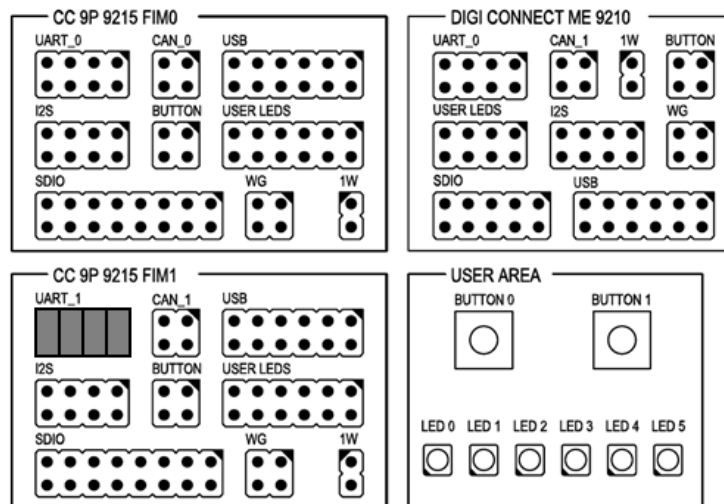
One 9-pin, sub-D, male connector is provided on the board to allow the UART interface to communicate with an external serial port device like a modem or a PC terminal.

Note: there is an RS232 transceiver between the UART interface and the 9-pin connector.

The following figure shows the block diagram of the UART_1 interface.

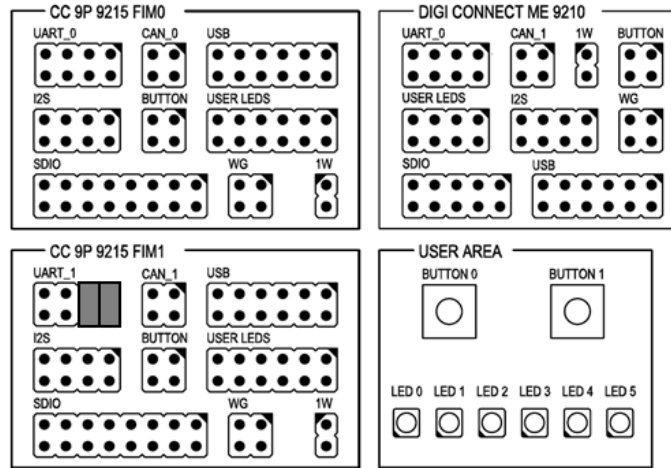


The following figure shows the configuration jumpers that have to be connected to test the four wire UART interface using FIM1 of the ConnectCore 9P 9215.





The following figure shows the configuration jumpers that have to be connected to test the two wire UART interface using FIM1 of the ConnectCore 9P 9215.



5.5.3 CAN_0

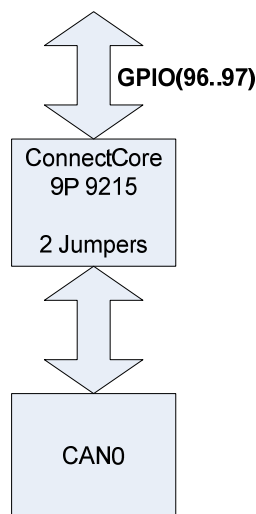
A CAN interface is provided in the FIM_APPKIT to test the CAN firmware implemented on the FIM_0 of the ConnectCore 9P 9215.

One jumper (P10) is used on the board to connect or disconnect one 120R termination resistor to the CAN bus. If the jumper is connected (default configuration) the termination resistor is connected to the bus.

One 9-pin, sub-D, male connector is provided on the board to connect the CAN interface to an external CAN port.

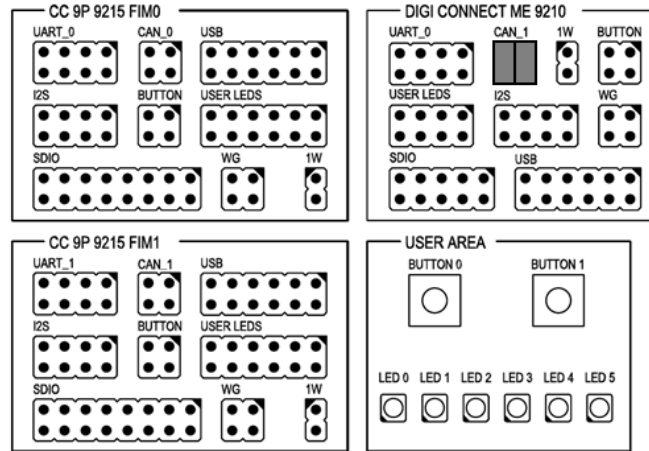
Note: there is a CAN transceiver between the CAN interface and the 9-pin connector.

The following figure shows the block diagram of the CAN_0 interface.

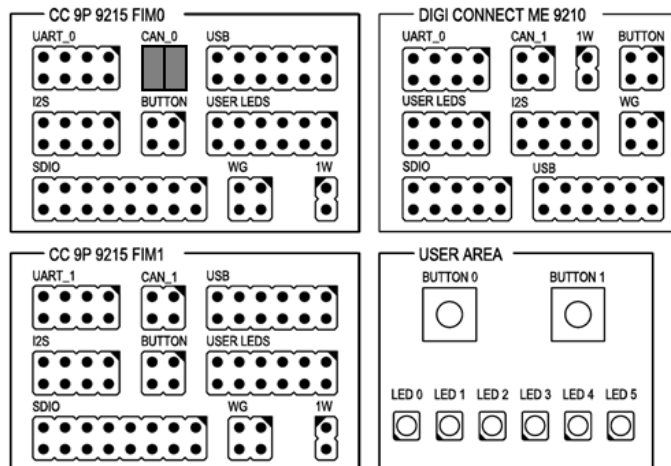




The following figure shows the configuration jumpers that have to be connected to test the CAN interface using FIM0 of the Digi Connect ME 9210



The following figure shows the configuration jumpers that have to be connected to test the CAN interface using FIM0 of the ConnectCore 9P 9215.



5.5.4 CAN_1

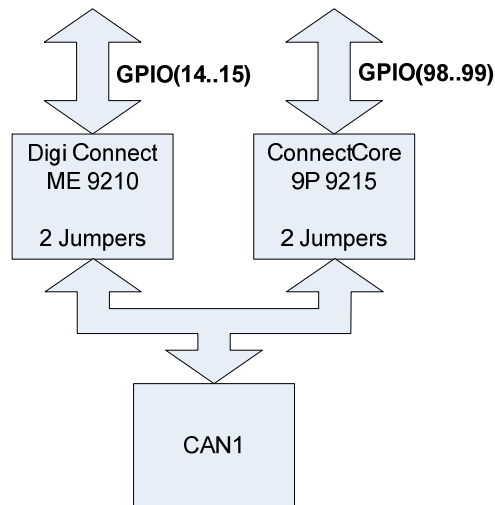
A CAN interface is provided in the FIM_APPKIT to test the CAN firmware implemented on the FIM1 of the ConnectCore 9P 9215 and Digi Connect ME 9210.

One jumper (P14) is used on the board to connect or disconnect one 120R termination resistor to the CAN bus. If the jumper is connected (default configuration) the termination resistor is connected to the bus.

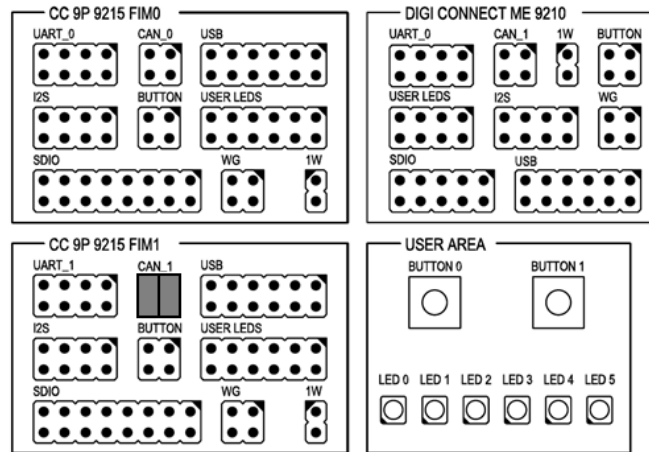
One 9-pin, sub-D, male connector is provided on the board to connect the CAN interface to an external CAN port.

Note: there is a CAN transceiver between the CAN interface and the 9-pin connector.

The following figure shows the block diagram of the CAN1 interface.



The following figure shows the configuration jumpers that have to be connected to test the CAN interface using FIM1 of the ConnectCore 9P 9215.



5.5.5 USB device

One USB device interface is provided in the FIM_APPKIT to test the USB device interface for the FIM0 and FIM1 of the ConnectCore 9P 9215 and Digi Connect ME 9210.

The interface is fully compatible with USB 1.1 and USB 2.0.

The USB device interface operates at low (1.5Mbps) speed.

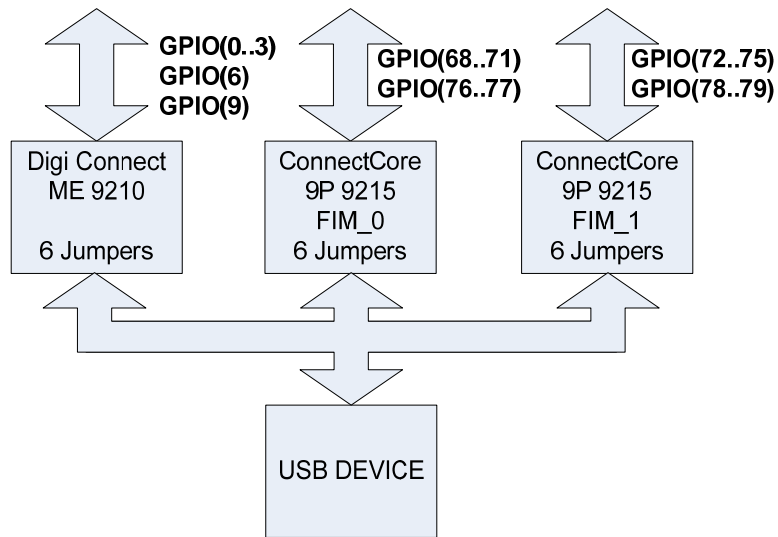
The USB device interface provides a power save mode, controlled by the “USB_SPND” signal. A pull-down resistor is used in the FIM_APPKIT to set the USB device interface to normal operation if this signal is not connected (i.e. in the Digi Connect ME 9210).

The USB device interface allows for the enumeration function that allows software control of USB enumeration, simulating the removal of the device from the USB cable.

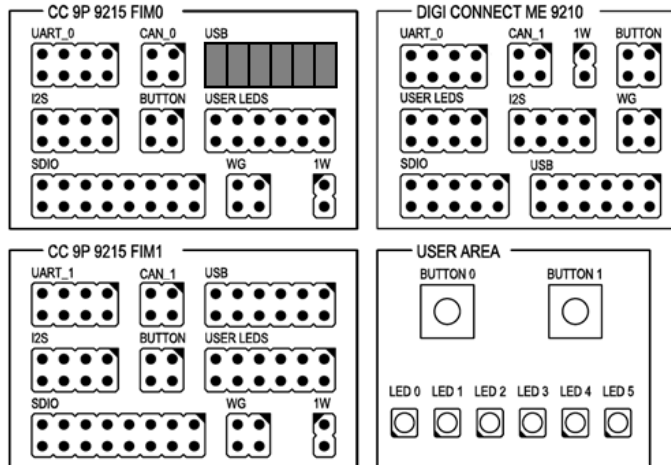
The USB device interface is not self-powered. One +5V external power supply must be connected to the VBus pin (pin-1) of the USB connector.

One USB type B connector is provided on the board for this interface.

The following figure shows the block diagram of the USB device interface.

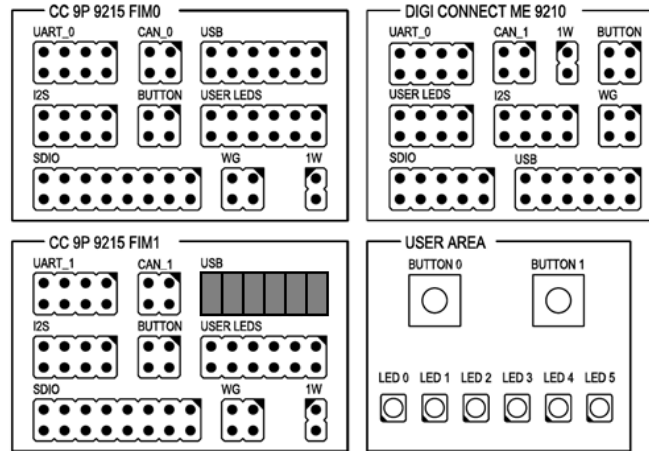


The following figure shows the configuration jumpers that have to be connected to test the USB device interface using FIM0 of the ConnectCore 9P 9215.

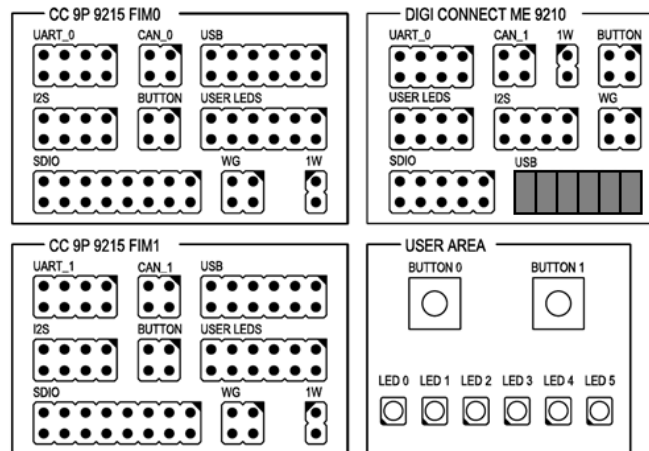




The following figure shows the configuration jumpers that have to be connected to test the USB device interface using FIM1 of the ConnectCore 9P 9215.



The following figure shows the configuration jumpers that have to be connected to test the USB device interface using FIM0 of the Digi Connect ME 9210.



5.5.6 SDIO-Card

One SDIO card interface is provided in the FIM_APPKIT to test the SDIO interface using FIM0 and FIM1 of the ConnectCore 9P 9215 and Digi Connect ME 9210 modules.

The SDIO interface supports 4-wire and 1-wire SDIO controllers. Due to the reduced number of GPIO available on the Digi Connect ME 9210 module, the SD controller implemented on this module is a 1-bit SDIO type.

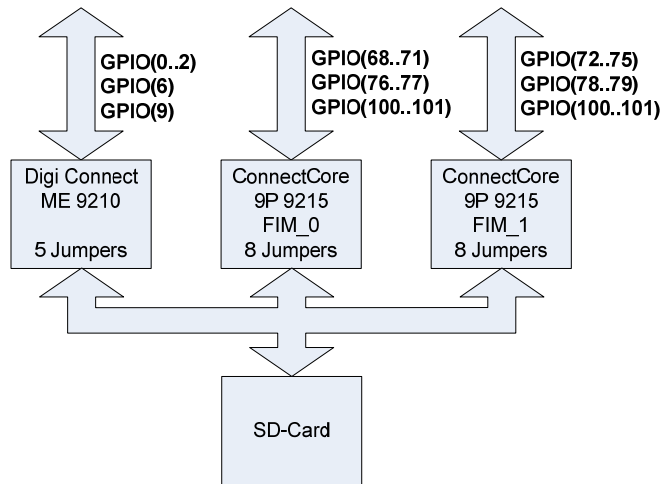
The SDIO interface provides a card detect signal. This signal is connected in the ConnectCore 9P 9215 to an interrupt input (GPIO101/EINT3). This signal is connected in the Digi Connect ME 9210 to an interrupt input (GPIO9/EINT0).

The SDIO interface provides a write protect signal. This signal is connected in the ConnectCore 9P 9215 to a standard GPIO not assigned to the FIM. In the Digi Connect ME 9210 this signal is connected to the GPIO6.

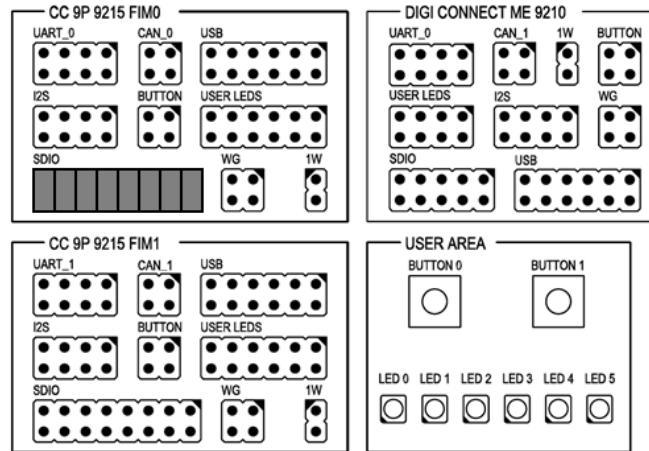
One SD Card connector is provided on the board for this interface.



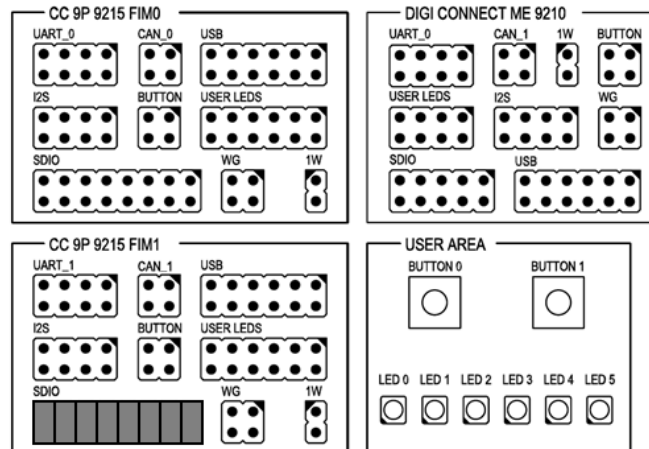
The following figure shows the block diagram of the SDIO interface.



The following figure shows the configuration jumpers that have to be connected to test the SDIO interface using FIM0 of the ConnectCore 9P 9215.

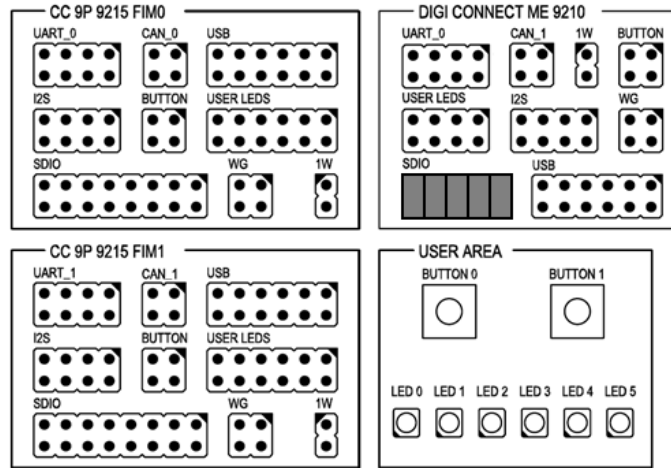


The following figure shows the configuration jumpers that have to be connected to test the SDIO interface using FIM1 of the ConnectCore 9P 9215.





The following figure shows the configuration jumpers that have to be connected to test the SDIO interface using FIM0 of the Digi Connect ME 9210.



5.5.7 1-Wire

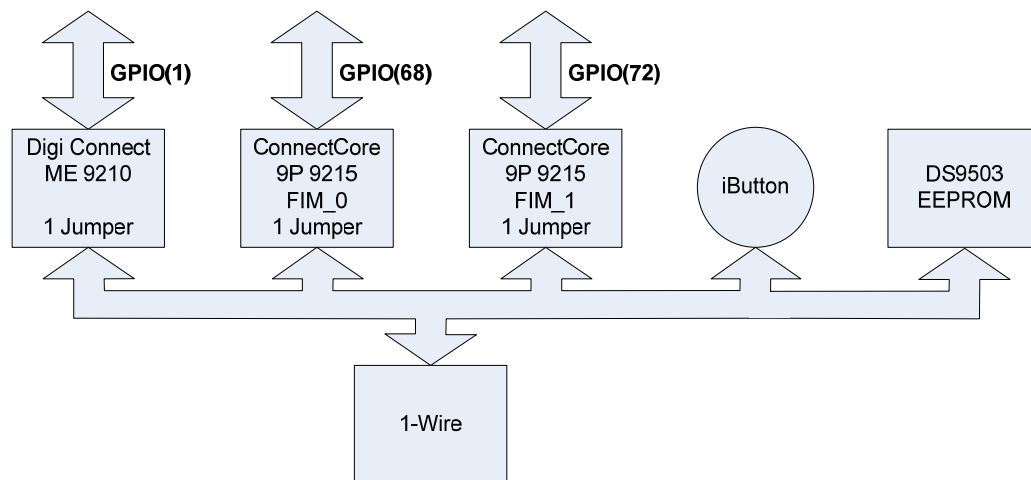
One 1-Wire interface is provided in the FIM_APPKIT to test the 1-Wire interface using FIM0 and FIM1 of the ConnectCore 9P 9215 and Digi Connect ME 9210.

One DS2431 1-Wire EEPROM is mounted in the FIM_APPKIT to test the 1-Wire interface.

The 1-Wire interface provides one iButton retainer to secure an iButton on the FIM_APPKIT.

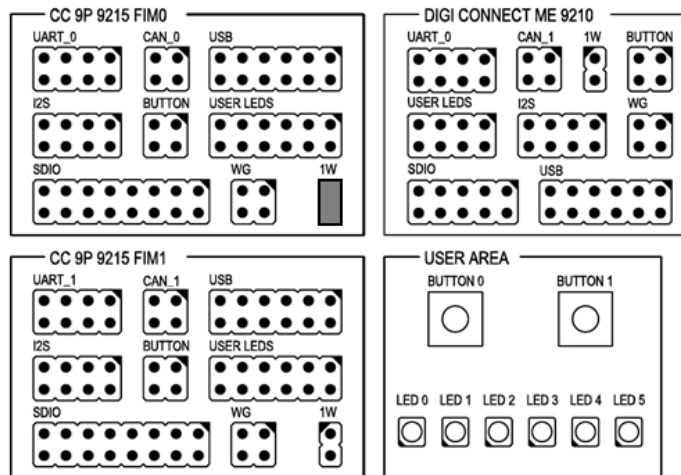
One RJ-11 connector is provided on the board to attach an external 1-Wire device.

The following figure shows the block diagram of the SDIO interface.

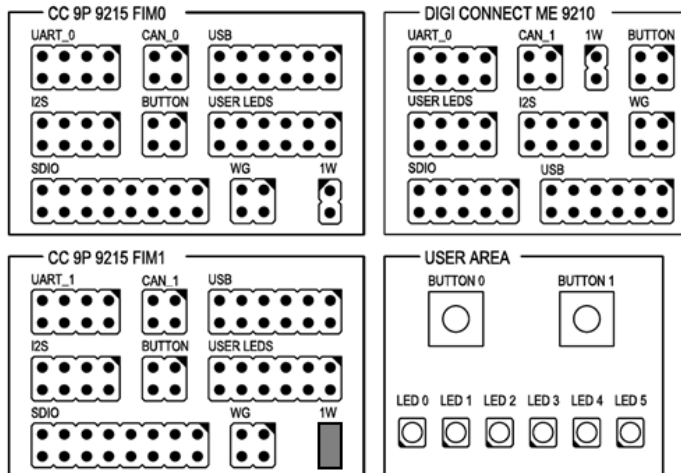




The following figure shows the configuration jumpers that have to be connected to test the 1-Wire interface using FIM0 of the ConnectCore 9P 9215.

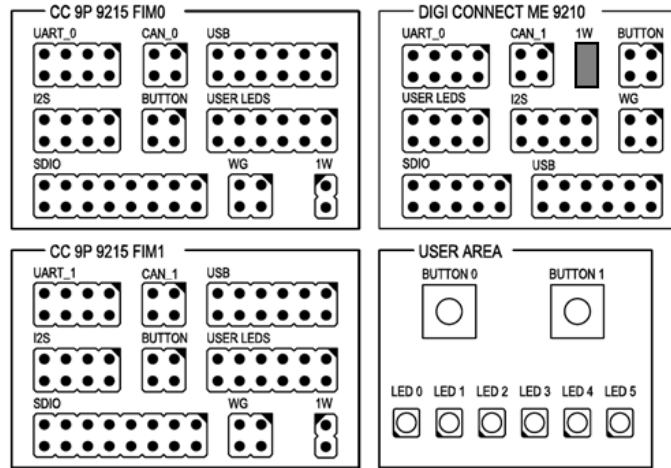


The following figure shows the configuration jumpers that have to be connected to test the 1-Wire interface using FIM1 of the ConnectCore 9P 9215.





The following figure shows the configuration jumpers that have to be connected to test the 1-Wire interface using FIM0 of the Digi Connect ME 9210.



5.5.8 I2S

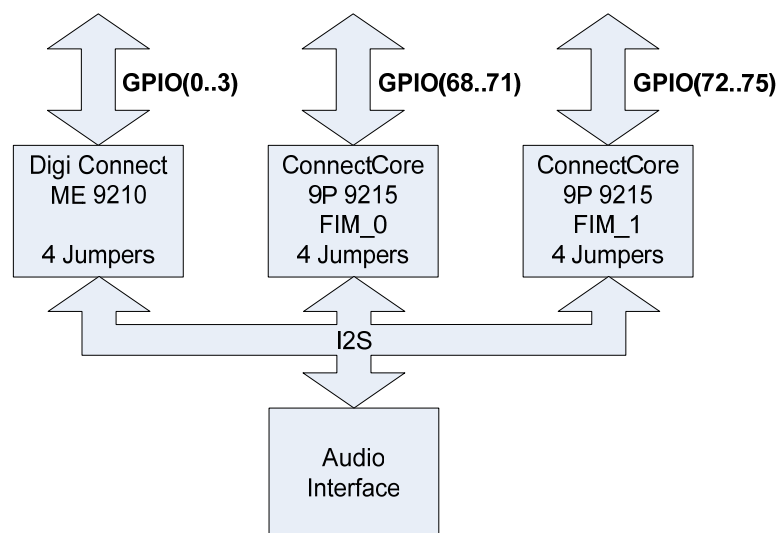
One audio interface is provided in the FIM_APPKIT to test the I2S interface using FIM0 and FIM1 of the ConnectCore 9P 9215 and Digi Connect ME 9210.

The audio interface provides one UDA1334ATS audio decoder to play Wav audio files. This audio decoder is controlled with an I2S bus.

One 11.2896MHz clock is provided to generate the audio clock signal. This clock is connected to the FIMs to generate the I2S signals with the standard audio bit rates. By default this oscillator will not be used and the audio clock will be generated in the FIM with the internal clocks of the module.

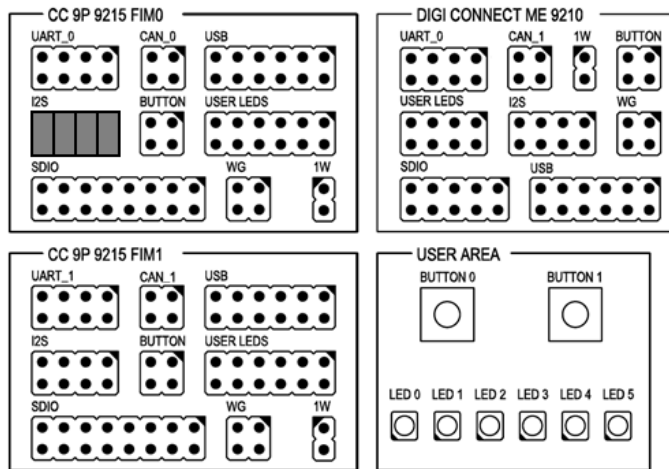
One stereo audio jack is used in the board to plug a headphone to test the audio output.

The following figure shows the block diagram of the I2S interface.

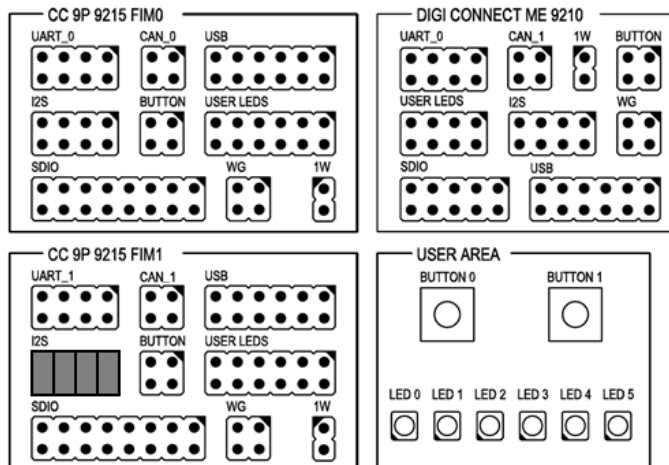




The following figure shows the configuration jumpers that have to be connected to test the I2S interface using FIM0 of the ConnectCore 9P 9215.

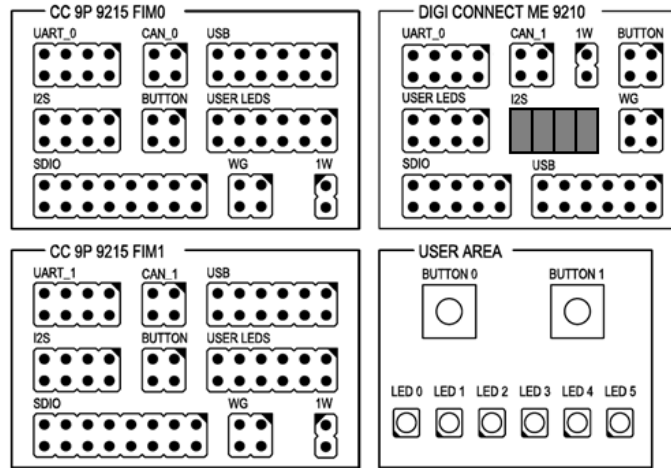


The following figure shows the configuration jumpers that have to be connected to test the I2S interface using FIM1 of the ConnectCore 9P 9215.





The following figure shows the configuration jumpers that have to be connected to test the I2S interface using FIM0 of the Digi Connect ME 9210.

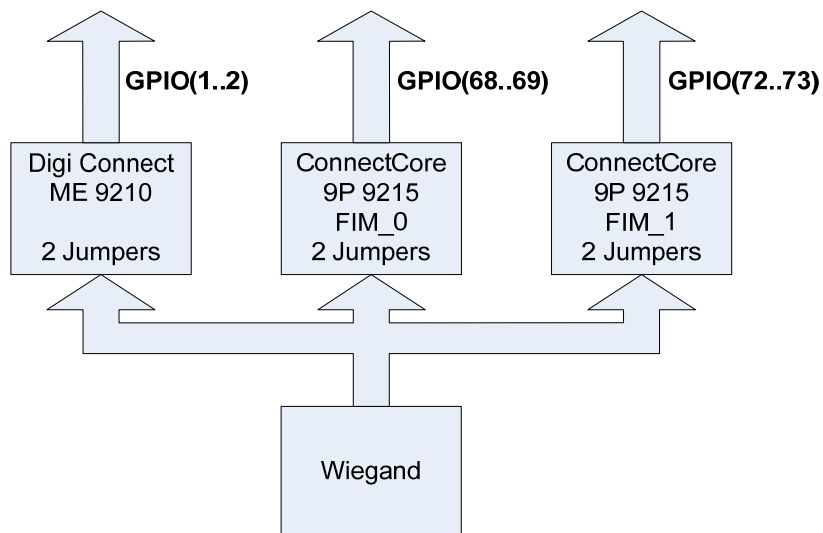


5.5.9 Wiegand

One Wiegand interface is provided in the FIM_APPKIT to test the Wiegand interface using FIM0 and FIM1 of the ConnectCore 9P 9215 and Digi Connect ME 9210.

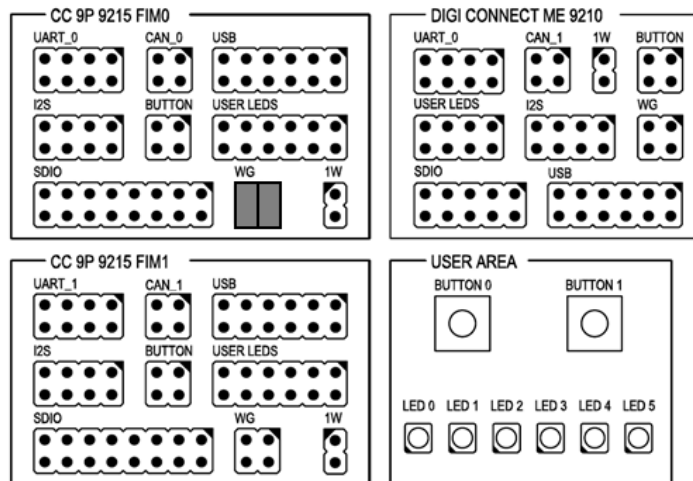
One 2mm, male, 3-pin connector is provided on the board to attach an external Wiegand device.

The following figure shows the block diagram of the Wiegand interface.

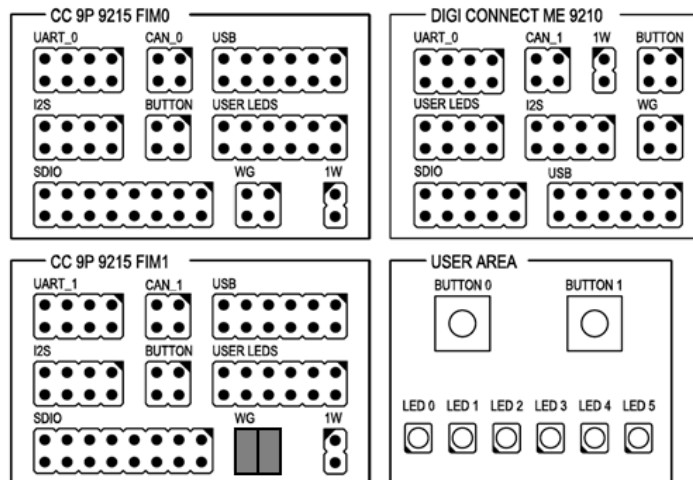




The following figure shows the configuration jumpers that have to be connected to test the Wiegand interface using FIM0 of the ConnectCore 9P 9215.

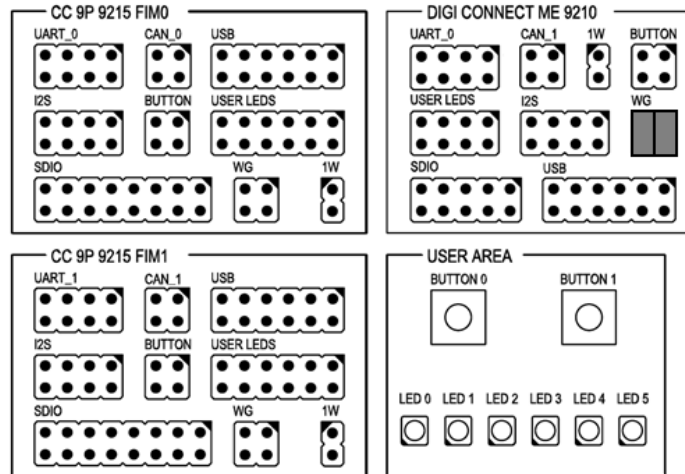


The following figure shows the configuration jumpers that have to be connected to test the Wiegand interface using FIM1 of the ConnectCore 9P 9215.





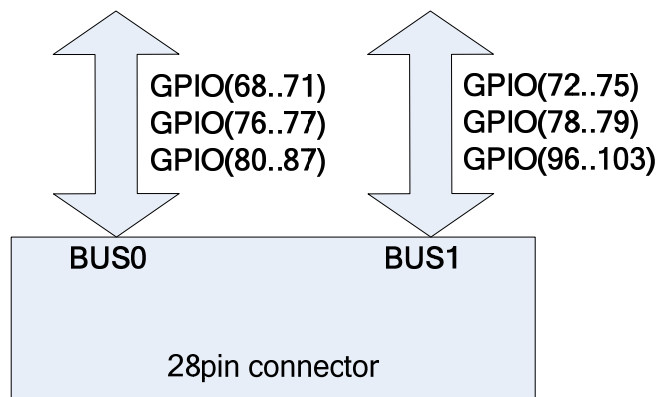
The following figure shows the configuration jumpers that have to be connected to test the Wiegand interface using FIM0 of the Digi Connect ME 9210.



5.5.10 Parallel bus

One 2x14 pin, 2.54mm, male connector is provided in the FIM_APPKIT to be able to access to all the signals of the parallel bus implemented on the FIM0 and FIM1 of the ConnectCore 9P 9215.

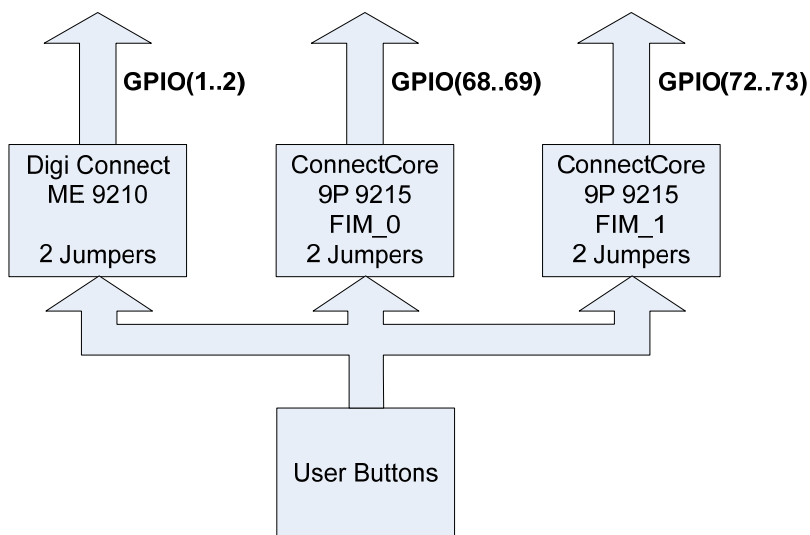
The following figure shows the block diagram of the parallel bus interface.



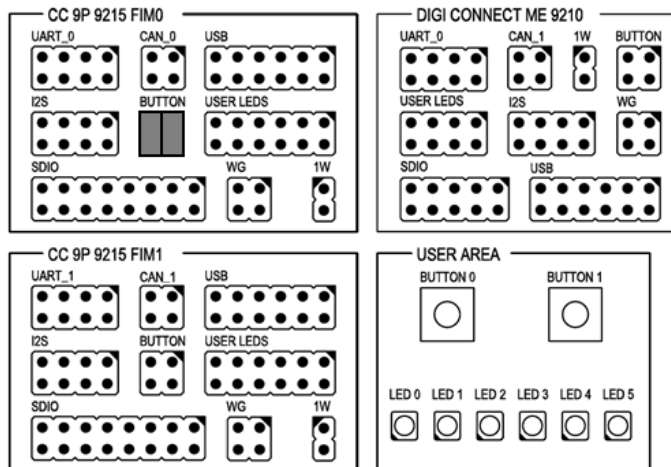
5.5.11 User Buttons

Two buttons are provided in the FIM_APPKIT to test a digital input firmware implemented on the FIM0 and FIM1 of the ConnectCore 9P 9215 and Digi Connect ME 9210.

The following figure shows the block diagram of the user button interface.

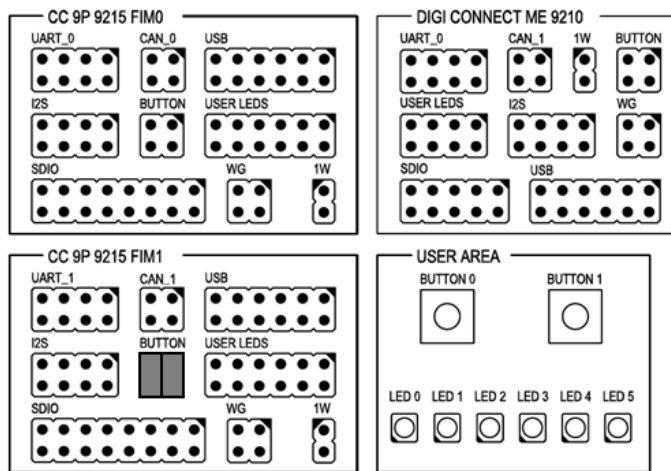


The following figure shows the configuration jumpers that have to be connected to test the buttons interface using FIM0 of the ConnectCore 9P 9215.

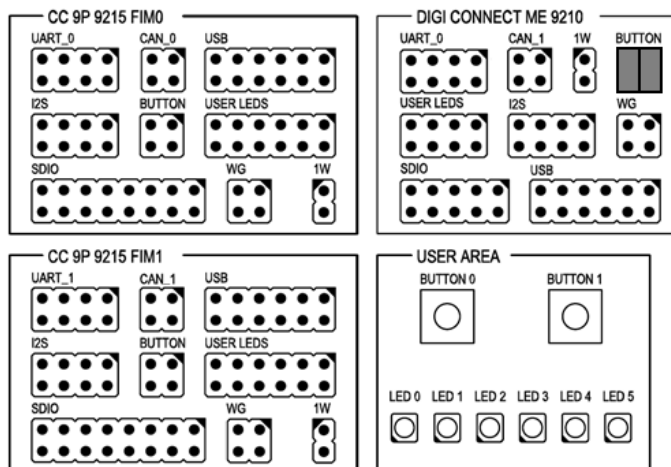




The following figure shows the configuration jumpers that have to be connected to test the buttons interface using FIM1 of the ConnectCore 9P 9215.



The following figure shows the configuration jumpers that have to be connected to test the buttons interface using FIM0 of the Digi Connect ME 9210.

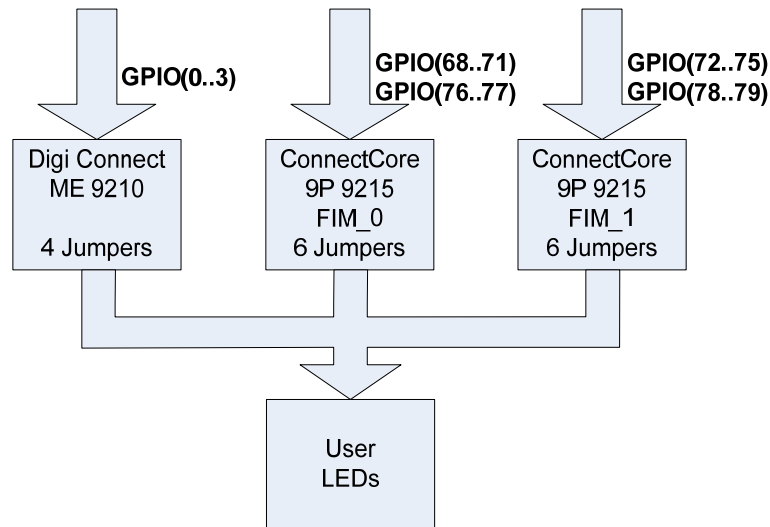


5.5.12 User LEDs

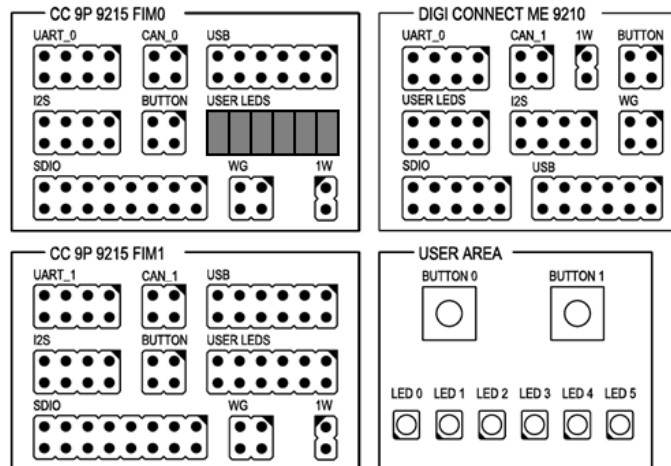
Six LEDs are provided in the FIM_APPKIT to test a digital output firmware implemented on the FIM0 and FIM1 of the ConnectCore 9P 9215 and Digi Connect ME 9210.

The Digi Connect ME 9210 can control only four LEDs due to the reduced number of GPIO available on this module.

The following figure shows the block diagram of the user LEDs interface.

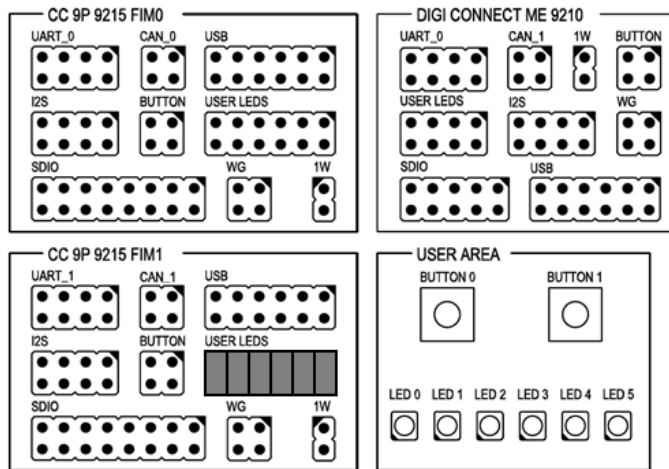


The following figure shows the configuration jumpers that have to be connected to test the LED interface using FIM0 of the ConnectCore 9P 9215.

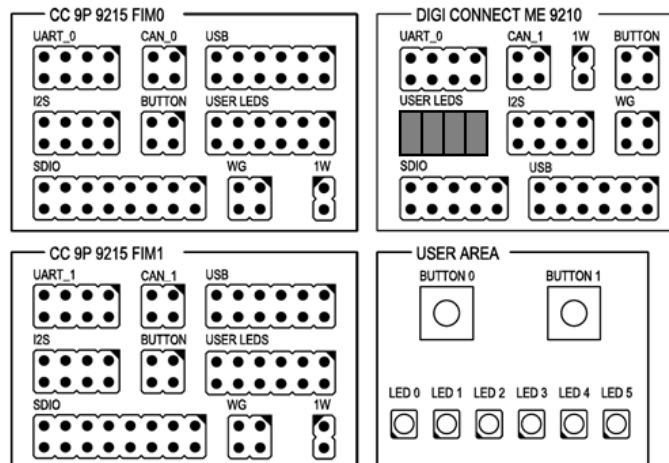




The following figure shows the configuration jumpers that have to be connected to test the LED interface using FIM1 of the ConnectCore 9P 9215.



The following figure shows the configuration jumpers that have to be connected to test the LED interface using FIM0 of the Digi Connect ME 9210.





5.6 GPIO assignment table

The following table shows the assignment between the GPIO of the ConnectCore 9P 9215 and the FIM signals for each FIM interface.

GPIO	UART_0	UART_1	CAN_0	CAN_1	USB DEV	SDIO	1-WIRE	I2S	WIEGAND	Parallel	User LED	User Buttons
GPIO68	UART_0_TX				USB_VP_FIM0	SD_D0_FIM0	1-WIRE_FIM0	I2S_WS_FIM0	WG_D0_FIM0	FIM_GEN_IO0	LED0_FIM0	BTN_0_FIM0
GPIO69	UART_0_RX				USB_VM_FIM0	SD_D1_FIM0		I2S_SDI_FIM0	WG_D1_FIM0	FIM_GEN_IO1	LED1_FIM0	BTN_1_FIM0
GPIO70	UART_0_RTS#				USB_RCV_FIM0	SD_D2_FIM0		I2S_BCLK_FIM0		FIM_GEN_IO2	LED2_FIM0	
GPIO71	UART_0_CTS#				USB_OE_FIM0#	SD_D3_FIM0		I2S_SYSCLK_FIM0		FIM_GEN_IO3	LED3_FIM0	
GPIO72		UART_1_TX			USB_VP_FIM1	SD_D0_FIM1	1-WIRE_FIM1	I2S_WS_FIM1	WG_D0_FIM1	FIM_GEN_IO4	LED0_FIM1	BTN_0_FIM1
GPIO73		UART_1_RX			USB_VM_FIM1	SD_D1_FIM1		I2S_SDI_FIM1	WG_D1_FIM1	FIM_GEN_IO5	LED1_FIM1	BTN_1_FIM1
GPIO74		UART_1_RTS#			USB_RCV_FIM1	SD_D2_FIM1		I2S_BCLK_FIM1		FIM_GEN_IO6	LED2_FIM1	
GPIO75		UART_1_CTS#			USB_OE_FIM1#	SD_D3_FIM1		I2S_SYSCLK_FIM1		FIM_GEN_IO7	LED3_FIM1	
GPIO76					USB_ENUM_FIM0	SD_CLK_FIM0				FIM_CTL_IO0	LED4_FIM0	
GPIO77					USB_SPND_FIM0	SD_CMD_FIM0				FIM_CTL_IO1	LED5_FIM0	
GPIO78					USB_ENUM_FIM1	SD_CLK_FIM1				FIM_CTL_IO2	LED4_FIM1	
GPIO79					USB_SPND_FIM1	SD_CMD_FIM1				FIM_CTL_IO3	LED5_FIM1	
GPIO80										FIM_BUS_0_0		
GPIO81										FIM_BUS_0_1		
GPIO82										FIM_BUS_0_2		
GPIO83										FIM_BUS_0_3		
GPIO84										FIM_BUS_0_4		
GPIO85										FIM_BUS_0_5		
GPIO86										FIM_BUS_0_6		
GPIO87										FIM_BUS_0_7		
GPIO93												
GPIO94												
GPIO95												
GPIO96			CAN0_RXD							FIM_BUS_1_0		
GPIO97			CAN0_TXD							FIM_BUS_1_1		
GPIO98				CAN1_RXD						FIM_BUS_1_2		
GPIO99				CAN1_TXD						FIM_BUS_1_3		
GPIO100						SDIO_WP				FIM_BUS_1_4		
GPIO101						SDIO_CD#				FIM_BUS_1_5		
GPIO102										FIM_BUS_1_6		
GPIO103										FIM_BUS_1_7		



The following table shows the assignment between the GPIO of the Digi Connect ME 9210 and the FIM signals for each FIM interface.

GPIO	UART_0	UART_1	CAN_0	CAN_1	USB DEV	SDIO	1-WIRE	I2S	WIEGAND	Parallel	User LEDs	User Buttons
GPIO0	UART_0_RTS#				USB_VP_FIM0	SD_D0_FIM0		I2S_WS_FIM0			LED0_FIM0	
GPIO1	UART_0_TX				USB_VM_FIM0	SD_CLK_FIM0	1-WIRE_FIM0	I2S_SDI_FIM0	WG_D0_FIM0		LED1_FIM0	BTN_0_FIM0
GPIO2,14	UART_0_RX		CAN0_RXD		USB_RCV_FIM0	SD_CMD_FIM0		I2S_BCLK_FIM0	WG_D1_FIM0		LED2_FIM0	BTN_1_FIM0
GPIO3	UART_0_CTS#				USB_OE_FIM0#			I2S_SYSCLK_FIM0			LED3_FIM0	
GPIO6,15			CAN0_TXD		USB_ENUM_FIM0	SDIO_WP						
GPIO9					USB_SPND_FIM0	SDIO_CD#						

6 Board Connectors

6.1 P1/P2: ConnectCore 9P 9215

This connector will be a 4-row, 20 pin, PC/104 type connector.

Pin	Name	Pin	Name	Pin	Name	Pin	Name
A1	GND	B1	GND	C1	-	D1	-
A2	-	B2	-	C2	-	D2	-
A3	-	B3	-	C3	-	D3	-
A4	-	B4	-	C4	-	D4	-
A5	-	B5	-	C5	-	D5	-
A6	-	B6	-	C6	-	D6	-
A7	-	B7	-	C7	-	D7	-
A8	-	B8	-	C8	-	D8	-
A9	-	B9	-	C9	-	D9	GPIO_68
A10	GPIO_69	B10	GPIO_70	C10	GPIO_71	D10	GPIO_72
A11	GPIO_73	B11	GPIO_74	C11	GPIO_75	D11	GPIO_76
A12	GPIO_77	B12	GPIO_78	C12	GPIO_79	D12	GPIO_80
A13	GPIO_81	B13	GPIO_82	C13	GPIO_83	D13	GPIO_84
A14	GPIO_85	B14	GPIO_86	C14	GPIO_87	D14	-
A15	-	B15	-	C15	GPIO_96	D15	GPIO_97
A16	GPIO_98	B16	GPIO_99	C16	GPIO_100	D16	GPIO_101
A17	GPIO_102	B17	GPIO_103	C17	-	D17	-
A18	-	B18	-	C18	-	D18	-
A19	-	B19	-	C19	-	D19	-
A20	+3.3V	B20	+3.3V	C20	GND	D20	GND

6.2 P3: Digi Connect ME 9210

The CME9210 connector will be a 2x10pin, RM2.54, male straight connector.

Pin	Name	Comment
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	RXDA	-
8	TXDA	-
9	GPIO4	-

Pin	Name	Comment
10	GPIO6, 15	-
11	GPIO2, 14	-
12	GPIO2, 14	-
13	GPIO1	-
14	-	-
15	+3.3V	-
16	GND	-
17	-	-
18	-	-
19	-	-
20	-	-

6.3 P6: UART_0

The UART_0 connector will be a 9-pin, sub-D, male connector.

Pin	Name	Comment
1	-	-
2	UART_0_RXD	-
3	UART_0_TXD	-
4	-	-
5	GND	-
6	-	-
7	UART_0_RTS#	-
8	UART_0_CTS#	-
9	-	-

6.4 P8: UART_1

The UART_1 connector will be a 9-pin, sub-D, male connector.

Pin	Name	Comment
1	-	-
2	UART_1_RXD	-
3	UART_1_TXD	-
4	-	-
5	GND	-
6	-	-
7	UART_1_RTS#	-
8	UART_1_CTS#	-
9	-	-

The CAN_0 connector will be a 9-pin, sub-D, male connector.

Pin	Name	Comment
1	-	-
2	CAN_0_L	-
3	GND	-
4	-	-
5	-	-
6	GND	-
7	CAN_0_H	-
8	-	-
9	-	-

The CAN_0 connector will be a 9-pin, sub-D, male connector.

Pin	Name	Comment
1	-	-
2	CAN_1_L	-
3	GND	-
4	-	-
5	-	-
6	GND	-
7	CAN_1_H	-
8	-	-
9	-	-

The USB device connector will be a USB type-B connector.

Pin	Name	Comment
1	VBUS	+5V external power input-
2	USB_DN	-
3	USB_DP	-
4	GND	-

6.8 P36: SD-CARD

The SDIO connector will be a normal type SD-Card header.

Pin	Name	Comment
1	SD_D3	-
2	SD_CMD	Command
3	GND	-
4	+3.3V	-
5	SD_CLK	-
6	GND	-
7	SD_D0	-
8	SD_D1	-
9	SD_D2	-
DT	SD_CD#	Card Detection
DT/WP	-	-
WP	SD_WP	Write Protection

6.9 J3: 1-Wire

The 1-Wire connector will be a RJ11 connector.

Pin	Name	Comment
1	-	-
2	-	-
3	1-WIRE_D	-
4	GND	-
5	-	-
6	-	-

6.10 J4: Audio Line-Out

The Audio line-out connector will be a 3.5mm stereo audio jack

Pin	Name	Comment
1	GND	-
2	LINE_OUT_R	Right channel
3	LINE_OUT_L	Left channel
4	GND	-
5	GND	-

6.11 P32: Wiegand

The Wiegand connector will be a 3-pin, RM2.5, male connector

Pin	Name	Comment
1	WG_D0	-
2	WG_D1	-
3	GND	-

6.12 P37: Parallel bus

The parallel bus connector will be a 2x14pin, RM2.54, male straight connector.

Pin	Name	Comment	Pin	Name	Comment
1	GPIO80	FIM_BUS_0_0	2	GPIO96	FIM_BUS_1_0
3	GPIO81	FIM_BUS_0_1	4	GPIO97	FIM_BUS_1_1
5	GPIO82	FIM_BUS_0_2	6	GPIO98	FIM_BUS_1_2
7	GPIO83	FIM_BUS_0_3	8	GPIO99	FIM_BUS_1_3
9	GPIO84	FIM_BUS_0_4	10	GPIO100	FIM_BUS_1_4
11	GPIO85	FIM_BUS_0_5	12	GPIO101	FIM_BUS_1_5
13	GPIO86	FIM_BUS_0_6	14	GPIO102	FIM_BUS_1_6
15	GPIO87	FIM_BUS_0_7	16	GPIO102	FIM_BUS_1_7
17	GPIO68	FIM_GEN_IO0	18	GPIO72	FIM_GEN_IO4
19	GPIO69	FIM_GEN_IO1	20	GPIO73	FIM_GEN_IO5
21	GPIO70	FIM_GEN_IO2	22	GPIO74	FIM_GEN_IO6
23	GPIO71	FIM_GEN_IO3	24	GPIO75	FIM_GEN_IO7
25	GPIO76	FIM_CTL_IO0	26	GPIO78	FIM_CTL_IO2
27	GPIO77	FIM_CTL_IO1	28	GPIO79	FIM_CTL_IO3



7 Factory Default Board Configuration

By default the two CAN termination resistor jumpers will be closed.

By default all the configuration jumpers will be open.