Digital GPIO	Directly Mapped To FPGA	Connector	FPGA Pins	Notes
F0 - F8	yes	Expansion Board Header	documented on expansion board	
User I/O 1 - 5	yes	J22 (under OLED display)	J19, J20, J21, J22, K19 respectively	
LED alternate (5-8)	yes	JP7 (right side of board with jumpers)	H20, C21, D21, G21 respectively	Only SmartFusion (Rev 2) Must move middle 4 jumpers to left header pair. Connect to remaining right pins. LEDS 5-8 will be disabled.
MSS (GPIO) 0 - 15	no	Expansion Board Header	documented on expansion board	mapped and controlled thru MSS GPIO
additional GPIO	no			Consider using an I2C GPIO expander device like the I2C PCF8574N
Analog IO				
DAC0 and DAC1		BNC connectors on expansion board		An ACE (analog computing engine) MSS component. Two single channel DACs are available: DAC0 and DAC1
ADC channels 0 - 7		Expansion Board Header		An ACE (analog computing engine) MSS component. ADC 0 -1 channels are not available. There are 2 ADCs: ADC0 and 1. Channels 0-3 are muxed into ADC0 and channels 5-8 are muxed to ADC1.
additional ADC/DAC				Consider using SPI or I2C devices like Philips PCF8591
Serial IO				
MSS UART1		JP8 header		MSS UART1 only available on SmartFusion (rev2)
MSS SPI1		JP23 header		MSS SPI1 only available on SmartFusion (rev2)
MSS I2C1		JP9 header		MSS I2C1 only available on SmartFusion (rev2)
MSS UART0, SPIO and I2C0		Not accessable		These devices are not accessable with external IO. They are only used for devices on the kit.
Additional serial IO		FPGA GPIO: Expansion header, User IO header, Alternate LED header		Serial IO are available by instantaiting core library available in the Libero catalog. GPIO pins that connect directly to the FPGA must be used.