Pin Information for the MAX®10 10M08SA Device
Version 2017.02.21
Note *(1)*

Bank Number	VREF	Pin Name/Function	Optional Function(s)	Configuration Function	Dedicated Tx/Rx Channel	Emulated LVDS Output Channel	IO Performance	E144 *(2)*	MAX10M08 Eval Kit Function	Atari PBI Function
1A	VREFB1N0	IO	ADC1IN1		DIFFIO_RX_L1n	DIFFOUT_L1n	Low_Speed	6	Arduino_A0	
1A	VREFB1N0	IO	ADC1IN2		DIFFIO_RX_L1p	DIFFOUT_L1p	Low_Speed	7	Arduino_A1	
1A	VREFB1N0	IO	ADC1IN3		DIFFIO_RX_L3n	DIFFOUT_L3n	Low_Speed	8	Arduino_A2	
1A	VREFB1N0	IO	ADC1IN4		DIFFIO_RX_L3p	DIFFOUT_L3p	Low_Speed	10	Arduino_A3	
1A	VREFB1N0	IO	ADC1IN5		DIFFIO_RX_L5n	DIFFOUT_L5n	Low_Speed	11	Arduino_A4	
1A	VREFB1N0	IO	ADC1IN6		DIFFIO_RX_L5p	DIFFOUT_L5p	Low_Speed	12	Arduino_A5	
1A	VREFB1N0	IO	ADC1IN7		DIFFIO_RX_L7n	DIFFOUT_L7n	Low_Speed	13	Arduino_A6	
1A	VREFB1N0	IO	ADC1IN8		DIFFIO_RX_L7p	DIFFOUT_L7p	Low_Speed	14	Arduino_A7	
1B	VREFB1N0	IO		JTAGEN				15	JTAGEN	
1B	VREFB1N0	IO		TMS	DIFFIO_RX_L11n	DIFFOUT_L11n	Low_Speed	16	TMS	
1B	VREFB1N0	IO	VREFB1N0					17		
1B	VREFB1N0	IO		TCK	DIFFIO_RX_L11p	DIFFOUT_L11p	Low_Speed	18	TCK	
1B	VREFB1N0	IO		TDI	DIFFIO_RX_L12n	DIFFOUT_L12n	Low_Speed	19	TDI	
1B	VREFB1N0	IO		TDO	DIFFIO_RX_L12p	DIFFOUT_L12p	Low_Speed	20	TDO	
1B	VREFB1N0	IO			DIFFIO_RX_L14n	DIFFOUT_L14n	Low_Speed	21		
1B	VREFB1N0	IO			DIFFIO_RX_L14p	DIFFOUT_L14p	Low_Speed	22		
1B	VREFB1N0	IO			DIFFIO_RX_L16n	DIFFOUT_L16n	Low_Speed	24		
1B	VREFB1N0	IO			DIFFIO_RX_L16p	DIFFOUT_L16p	Low_Speed	25		
2	VREFB2N0	IO	CLK0n		DIFFIO_RX_L18n	DIFFOUT_L18n	High_Speed	26		
2	VREFB2N0	IO	CLK0p		DIFFIO_RX_L18p	DIFFOUT_L18p	High_Speed	27		
2	VREFB2N0	IO	CLK1n		DIFFIO_RX_L20n	DIFFOUT_L20n	High_Speed	28	J8-28	
2	VREFB2N0	IO	CLK1p		DIFFIO_RX_L20p	DIFFOUT_L20p	High_Speed	29	J8-26	
2	VREFB2N0	IO	VREFB2N0					30		
2	VREFB2N0	IO	PLL_L_CLKOUTn		DIFFIO_RX_L27n	DIFFOUT_L27n	High_Speed	32	J8-27	
2	VREFB2N0	IO	PLL_L_CLKOUTp		DIFFIO_RX_L27p	DIFFOUT_L27p	High_Speed	33	J8-25	
3	VREFB3N0	IO			DIFFIO_TX_RX_B1n	DIFFOUT_B1n	High_Speed	38	J8-20	A0
3	VREFB3N0	IO			DIFFIO_TX_RX_B1p	DIFFOUT_B1p	High_Speed	39	J8-18	A1
3	VREFB3N0	IO			DIFFIO_TX_RX_B3n	DIFFOUT_B3n	High_Speed	41	J8-19	A2
3	VREFB3N0	IO			DIFFIO_TX_RX_B3p	DIFFOUT_B3p	High_Speed	43	J8-17	A3
3	VREFB3N0	IO			DIFFIO_TX_RX_B5n	DIFFOUT_B5n	High_Speed	44	J8-16	A4
3	VREFB3N0	IO			DIFFIO_TX_RX_B5p	DIFFOUT_B5p	High_Speed	45	J8-14	A5
3	VREFB3N0	IO			DIFFIO_TX_RX_B7n	DIFFOUT_B7n	High_Speed	46	J8-15	A6
3	VREFB3N0	IO			DIFFIO_TX_RX_B7p	DIFFOUT_B7p	High_Speed	47	J8-13	A7
3	VREFB3N0	IO			DIFFIO_TX_RX_B9n	DIFFOUT_B9n	High_Speed	50	J8-12	A8
3	VREFB3N0	IO	VREFB3N0					48		
3	VREFB3N0	IO			DIFFIO_TX_RX_B9p	DIFFOUT_B9p	High_Speed	52	J8-10	A9
3	VREFB3N0	IO						54		
3	VREFB3N0	IO			DIFFIO_TX_RX_B12n	DIFFOUT_B12n	High_Speed	55	J8-11	A10
3	VREFB3N0	IO			DIFFIO_TX_RX_B12p	DIFFOUT_B12p	High_Speed	56	J8-9	A11
3	VREFB3N0	IO			DIFFIO_TX_RX_B14n	DIFFOUT_B14n	High_Speed	57	J8-8	A12
3	VREFB3N0	IO			DIFFIO_TX_RX_B14p	DIFFOUT_B14p	High_Speed	58	J8-6	A13
3	VREFB3N0	IO			DIFFIO_TX_RX_B16n	DIFFOUT_B16n	High_Speed	59	J8-7	A14
3	VREFB3N0	IO			DIFFIO_TX_RX_B16p	DIFFOUT_B16p	High_Speed	60	J8-5	A15
4	VREFB4N0	IO	VREFB4N0					61		
4	VREFB4N0	IO						62	Arduino_IO8	
4	VREFB4N0	IO			DIFFIO_TX_RX_B23n	DIFFOUT_B23n	High_Speed	64	Arduino_IO9	
4	VREFB4N0	IO			DIFFIO_TX_RX_B23p	DIFFOUT_B23p	High_Speed	65	Arduino_IO10	
4	VREFB4N0	IO						66	Arduino_IO11	
4	VREFB4N0	IO			DIFFIO_TX_RX_B27n	DIFFOUT_B27n	High_Speed	69	Arduino_IO12	
4	VREFB4N0	IO			DIFFIO_TX_RX_B27p	DIFFOUT_B27p	High_Speed	70	Arduino_IO13	
5	VREFB5N0	IO			DIFFIO_RX_R1p	DIFFOUT_R1p	High_Speed	75	Arduino_IO1	
5	VREFB5N0	IO			DIFFIO_RX_R2p	DIFFOUT_R2p	High_Speed	74	Arduino_IO0	
5	VREFB5N0	IO			DIFFIO_RX_R1n	DIFFOUT_R1n	High_Speed	77	Arduino_IO3	
5	VREFB5N0	IO			DIFFIO_RX_R2n	DIFFOUT_R2n	High_Speed	76	Arduino_IO2	
5	VREFB5N0	IO			DIFFIO_RX_R7p	DIFFOUT_R7p	High_Speed	79	Arduino_IO4	
5	VREFB5N0	IO						78		
5	VREFB5N0	IO			DIFFIO_RX_R7n	DIFFOUT_R7n	High_Speed	81	Arduino_IO5	

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Note *(1)*

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5	VREFB5N0	IO	VREFB5N0					80		
5	VREFB5N0	IO			DIFFIO_RX_R10p	DIFFOUT_R10p	High_Speed	85		
5	VREFB5N0	IO			DIFFIO_RX_R11p	DIFFOUT_R11p	High_Speed	84	Arduino_IO6	
5	VREFB5N0	IO			DIFFIO_RX_R10n	DIFFOUT_R10n	High_Speed	87		
5	VREFB5N0	IO			DIFFIO_RX_R11n	DIFFOUT_R11n	High_Speed	86	Arduino_IO7	
6	VREFB6N0	IO	CLK2p		DIFFIO_RX_R14p	DIFFOUT_R14p	High_Speed	88	J9-5	RESERVED (IRQ)
6	VREFB6N0	IO	CLK2n		DIFFIO_RX_R14n	DIFFOUT_R14n	High_Speed	89	J9-7	RESERVED (RDY)
6	VREFB6N0	IO	CLK3p		DIFFIO_RX_R16p	DIFFOUT_R16p	High_Speed	90	J9-6	PHI2
6	VREFB6N0	IO	CLK3n		DIFFIO_RX_R16n	DIFFOUT_R16n	High_Speed	91	J9-8	EXTENB
6	VREFB6N0	IO			DIFFIO_RX_R18p	DIFFOUT_R18p	High_Speed	92	J9-9	
6	VREFB6N0	IO			DIFFIO_RX_R18n	DIFFOUT_R18n	High_Speed	93	J9-11	
6	VREFB6N0	IO	DPCLK3		DIFFIO_RX_R26p	DIFFOUT_R26p	High_Speed	96	J9-10	D0
6	VREFB6N0	IO	VREFB6N0					97		
6	VREFB6N0	IO	DPCLK2		DIFFIO_RX_R26n	DIFFOUT_R26n	High_Speed	98	J9-12	D1
6	VREFB6N0	IO			DIFFIO_RX_R27p	DIFFOUT_R27p	High_Speed	99	J9-13	D2
6	VREFB6N0	IO			DIFFIO_RX_R28p	DIFFOUT_R28p	High_Speed	100	J9-14	D3
6	VREFB6N0	IO			DIFFIO_RX_R27n	DIFFOUT_R27n	High_Speed	101	J9-15	D4
6	VREFB6N0	IO			DIFFIO_RX_R28n	DIFFOUT_R28n	High_Speed	102	J9-16	D5
6	VREFB6N0	IO			DIFFIO_RX_R33p	DIFFOUT_R33p	High_Speed	105	J9-17	D6
6	VREFB6N0	IO			DIFFIO_RX_R33n	DIFFOUT_R33n	High_Speed	106	J9-19	D7
7	VREFB7N0	IO			DIFFIO_RX_T1p	DIFFOUT_T1p	High_Speed	110	J9-25	DATA_DIR
7	VREFB7N0	IO			DIFFIO_RX_T1n	DIFFOUT_T1n	High_Speed	111	J9-27	N_DATA_OE
7	VREFB7N0	IO	VREFB7N0					112		
7	VREFB7N0	IO						113	J9-32	N_RESET
7	VREFB7N0	IO						114	J9-34	RW
7	VREFB7N0	IO			DIFFIO_RX_T10p	DIFFOUT_T10p	High_Speed	118	J9-26	N_MPD
7	VREFB7N0	IO			DIFFIO_RX_T10n	DIFFOUT_T10n	High_Speed	119	J9-28	EXTSEL
8	VREFB8N0	IO			DIFFIO_RX_T16p	DIFFOUT_T16p	Low_Speed	120	/SWITCH1	
8	VREFB8N0	IO		DEV_CLRn	DIFFIO_RX_T16n	DIFFOUT_T16n	Low_Speed	121	RESET_N (Button 1)	
8	VREFB8N0	IO		DEV_OE				122		
8	VREFB8N0	IO	VREFB8N0					123		
8	VREFB8N0	IO		CONFIG_SEL				126	BOOT_SEL (Switch 6)	
8	VREFB8N0	IO			DIFFIO_RX_T19p	DIFFOUT_T19p	Low_Speed	124	/SWITCH2	
8	VREFB8N0	Input_only		nCONFIG				129	NCONFIG (Button 2)	
8	VREFB8N0	IO			DIFFIO_RX_T19n	DIFFOUT_T19n	Low_Speed	127	/SWITCH3	
8	VREFB8N0	IO			DIFFIO_RX_T20p	DIFFOUT_T20p	Low_Speed	130	/SWITCH4	
8	VREFB8N0	IO			DIFFIO_RX_T20n	DIFFOUT_T20n	Low_Speed	131	/SWITCH5	
8	VREFB8N0	IO			DIFFIO_RX_T22p	DIFFOUT_T22p	Low_Speed	132	/LED1	
8	VREFB8N0	IO		CRC_ERROR	DIFFIO_RX_T22n	DIFFOUT_T22n	Low_Speed	134	/LED2	
8	VREFB8N0	IO						135	/LED3	
8	VREFB8N0	IO		nSTATUS	DIFFIO_RX_T24p	DIFFOUT_T24p	Low_Speed	136	PULL UP	
8	VREFB8N0	IO		CONF_DONE	DIFFIO_RX_T24n	DIFFOUT_T24n	Low_Speed	138	PULL UP	
8	VREFB8N0	IO			DIFFIO_RX_T26p	DIFFOUT_T26p	Low_Speed	140	/LED4	
8	VREFB8N0	IO			DIFFIO_RX_T26n	DIFFOUT_T26n	Low_Speed	141	/LED5	
		GND						95		
		GND						83		
		GND						68		
		GND						63		
		GND						53		
		GND						42		
		GND						142		
		GND						137		
		GND						133		
		GND						125		
		GND						116		
		GND						104		
		REFGND						4		

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Bank Number	**VREF**	**Pin Name/Function**	**Optional Function(s)**	**Configuration Function**	**Dedicated Tx/Rx Channel**	**Emulated LVDS Output Channel**	**IO Performance**	**E144** ***(2)***	**MAX10M08 Eval Kit Function**	**Atari PBI Function**
		VCCIO1A						9		
		VCCIO1B						23		
		VCCIO2						31		
		VCCIO3						49		
		VCCIO3						40		
		VCCIO4						67		
		VCCIO5						82		
		VCCIO6						94		
		VCCIO6						103		
		VCCIO7						117		
		VCCIO8						139		
		VCCIO8						128		
		VCCA1						35		
		VCCA2						34		
		VCCA3						107		
		VCCA4						143		
		VCCA5						71		
		VCCA6						2		
		VCC_ONE						73		
		VCC_ONE						72		
		VCC_ONE						51		
		VCC_ONE						37		
		VCC_ONE						36		
		VCC_ONE						144		
		VCC_ONE						115		
		VCC_ONE						109		
		VCC_ONE						108		
		VCC_ONE						1		
		ADC_VREF						5		
		ANAIN1						3		
Notes:										
(1) For more information about pin definition and pin connection guidelines, refer to the										
MAX 10 FPGA Device Family Pin Connection Guidelines.										
(2) The E144-pin package has an exposed ground pad at the bottom of the package. The exposed ground pad is used for electrical connectivity and not for thermal purposes. You must connect the exposed ground pad to the ground plane of the PCB.										