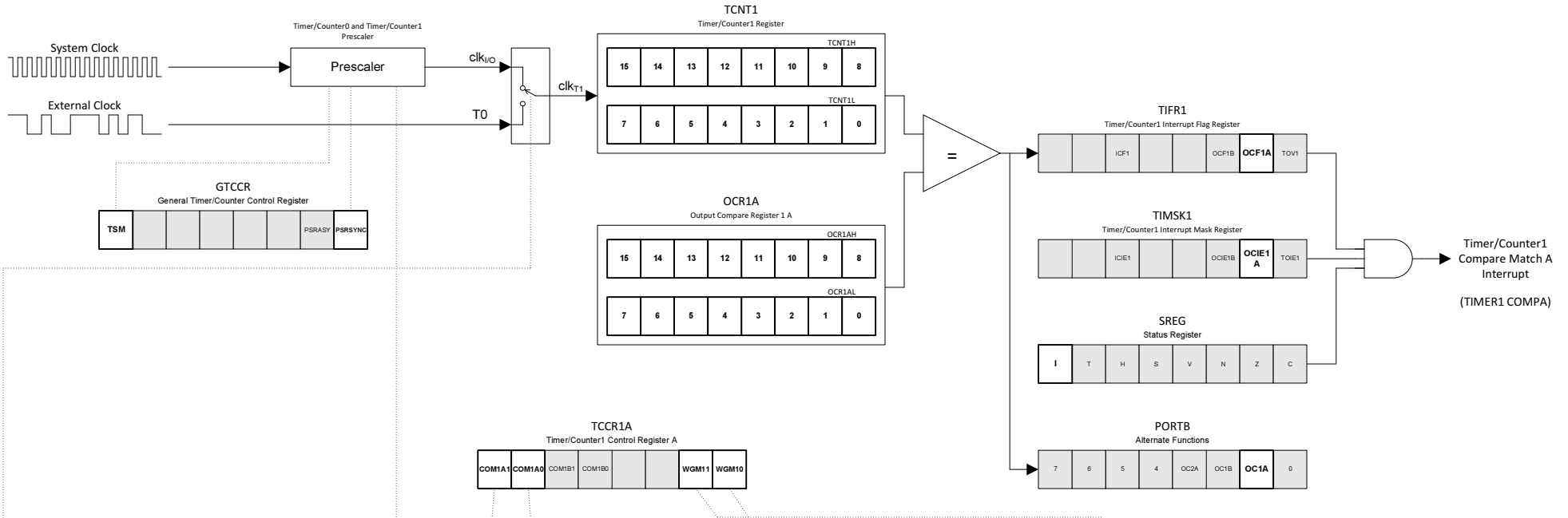


Timer/Counter1 Compare Match A

ATmega48/88/168/328 etc.



TCCR1B
Timer/Counter1 Control Register B

ICNC1	ICES1	WGM13	WGM12	CS12	CS11	CS10
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CS12	CS11	CS10	Clock Select
0	0	0	Timer/Counter stopped
0	0	1	clk _{IO}
0	1	0	clk _{IO} / 8
0	1	1	clk _{IO} / 64
1	0	0	clk _{IO} / 256
1	0	1	clk _{IO} / 1024
1	1	0	External clock source on T1 pin. Clock on falling edge
1	1	1	External clock source on T1 pin. Clock on rising edge

Compare Output Mode

COM1A1	COM1A0	Mode
0	0	Normal Port Operation, OC1A disconnected
0	1	Toggle OC1A on Compare Match
1	0	Clear OC1A on Compare Match
1	1	Set OC1A on Compare Match

Fast PWM Mode
(WGM modes 5, 6, 7, 14, and 15)

COM1A1	COM1A0	Mode
0	0	Normal Port Operation, OC1A disconnected
0	1	Mode 14 or 15: Toggle OC1A on Compare Match. All other modes: Normal Port Operation, OC1A disconnected
1	0	Clear OC1A on Compare Match, set OC1A at BOTTOM (non-inverting mode)
1	1	Set OC1A on Compare Match, clear OC1A at BOTTOM (inverting mode)

Phase Correct PWM Mode
(WGM modes 1, 2, 3, 8, 9, 10, and 11)

COM1A1	COM1A0	Mode
0	0	Normal Port Operation, OC1A disconnected
0	1	Modes 9 or 11: Toggle OC1A on Compare Match. All other modes: Normal Port Operation, OC1A disconnected
1	0	Clear OC1A on Compare Match when up-counting. Set OC1A on Compare Match when down-counting.
1	1	Set OC1A on Compare Match when up-counting. Clear OC1A on Compare Match when down-counting.

Waveform Generation Mode

Mode	WGM13	WGM12	WGM11	WGM10	Timer / Counter Mode of Operation	TOP	Update of OCR1A at	TOV1 Flag Set on
0	0	0	0	0	Normal	0xFFFF	Immediate	MAX
1	0	0	0	1	PWM, Phase Correct, 8-bit	0x00FF	TOP	BOTTOM
2	0	0	1	0	PWM, Phase Correct, 9-bit	0x01FF	TOP	BOTTOM
3	0	0	1	1	PWM, Phase Correct, 10-bit	0x03FF	TOP	BOTTOM
4	0	1	0	0	CTC	OCR1A	Immediate	MAX
5	0	1	0	1	Fast PWM, 8-bit	0x00FF	BOTTOM	TOP
6	0	1	1	0	Fast PWM, 9-bit	0x01FF	BOTTOM	TOP
7	0	1	1	1	Fast PWM, 10-bit	0x03FF	BOTTOM	TOP
8	1	0	0	0	PWM, Phase and Frequency Correct	ICR1	BOTTOM	MAX
9	1	0	0	1	PWM, Phase and Frequency Correct	OCR1A	BOTTOM	BOTTOM
10	1	0	1	0	PWM, Phase Correct	ICR1	TOP	BOTTOM
11	1	0	1	1	PWM, Phase Correct	OCR1A	TOP	BOTTOM
12	1	1	0	0	CTC	ICR1	Immediate	MAX
13	1	1	0	1	Reserved			
14	1	1	1	0	Fast PWM	ICR1	BOTTOM	TOP
15	1	1	1	1	Fast PWM	OCR1A	BOTTOM	TOP

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