



Microcontroladores

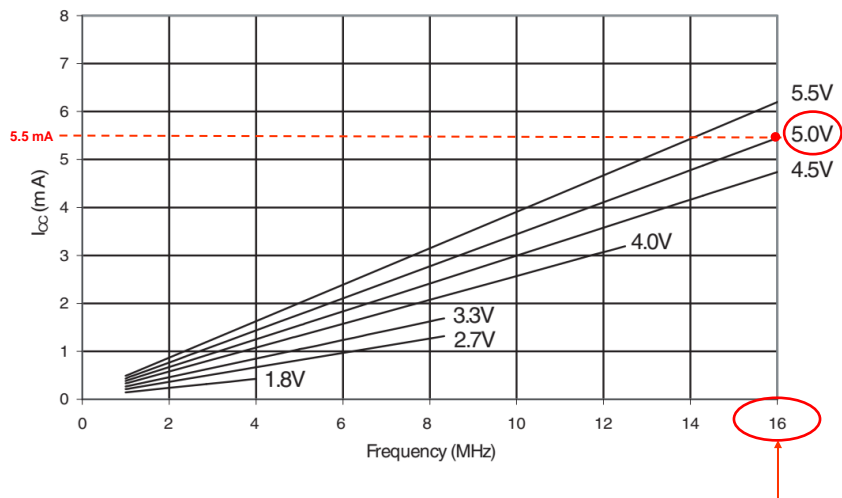
Timer2 (AVR)



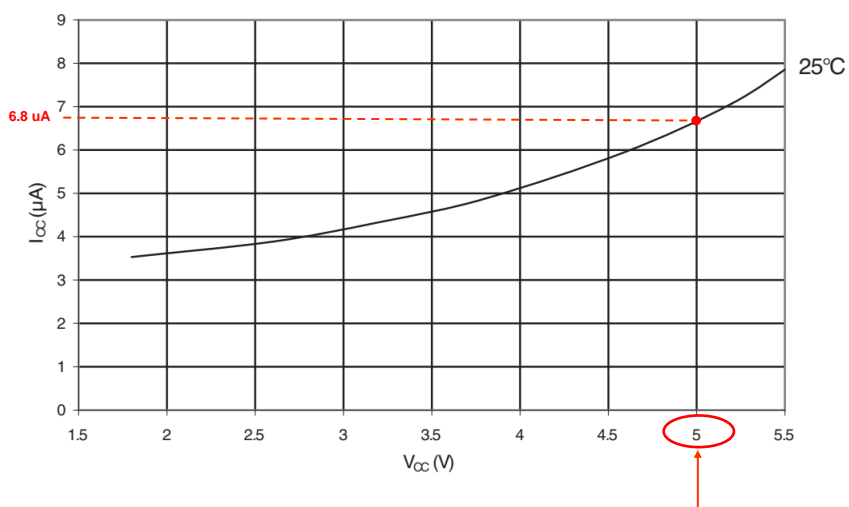
Timer2/Counter2 (8 bits):

- Contador de un solo canal
- Borrado del Temporizador si coincide en comparación (Auto-Reload)
- Modulación por ancho de pulso (PWM)
- Generador de Frecuencia
- Pre-escalador de 10-bit
- Interrupción por sobre flujo y en comparación exitosa (TOV2 y OCF2A y OCF2B)
- Permite fuente de oscilación externa de 32 KHz independiente del reloj principal

Consumo de corriente (1 MHz – 16 MHz)



Consumo de corriente para Power-Save Mode



Sleep Modes

Sleep Mode	Active Clock Domains					Oscillators		Wake-up Sources						
	clk _{CPU}	clk _{FLASH}	clk _{IO}	clk _{APC}	clk _{ASY}	Main Clock Source Enabled	Timer Osc Enabled	INT7:0 and Pin Change	TWI Address Match	Timer2	SPM/EEPROM Ready	ADC	WDT Interrupt	Other I/O
Idle			X	X	X	X	X ⁽²⁾	X	X	X	X	X	X	X
ADCNRM				X	X	X	X ⁽²⁾	X ⁽³⁾	X	X ⁽²⁾	X	X	X	
Power-down								X ⁽³⁾	X				X	
Power-save					X		X ⁽²⁾	X ⁽³⁾	X	X			X	
Standby ⁽¹⁾						X		X ⁽³⁾	X				X	
Extended Standby					X ⁽²⁾	X	X ⁽²⁾	X ⁽³⁾	X	X			X	

Note:

1. Only recommended with external crystal or resonator selected as clock source.
2. If Timer/Counter2 is running in asynchronous mode.
3. For INT7:4, only level interrupt.

Diagrama de bloques de Timer2/Counter2:

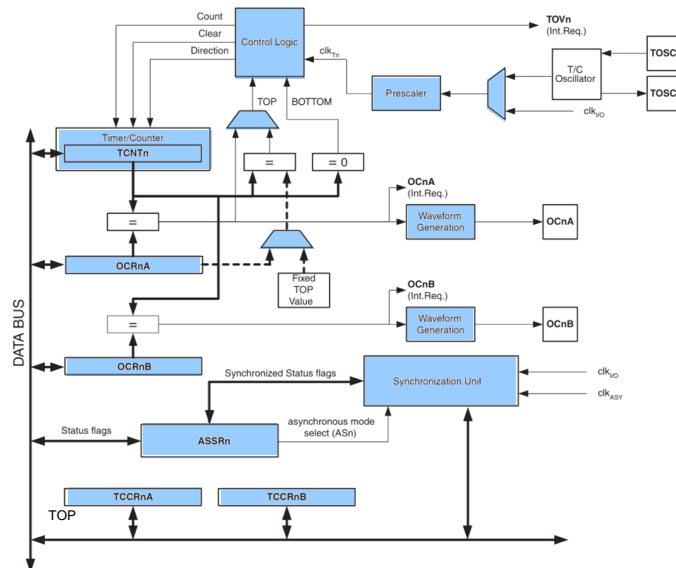


Diagrama de bloques de Timer2/Counter2:

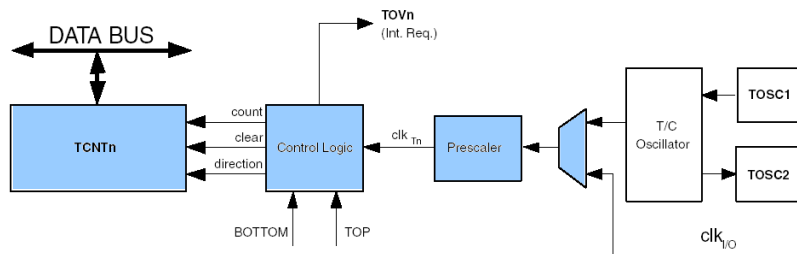


Diagrama de bloques de Timer2/Counter2:

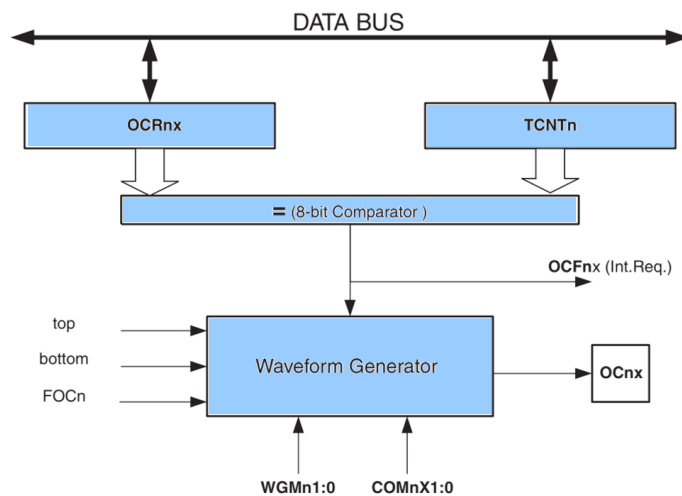


Diagrama del preescalador

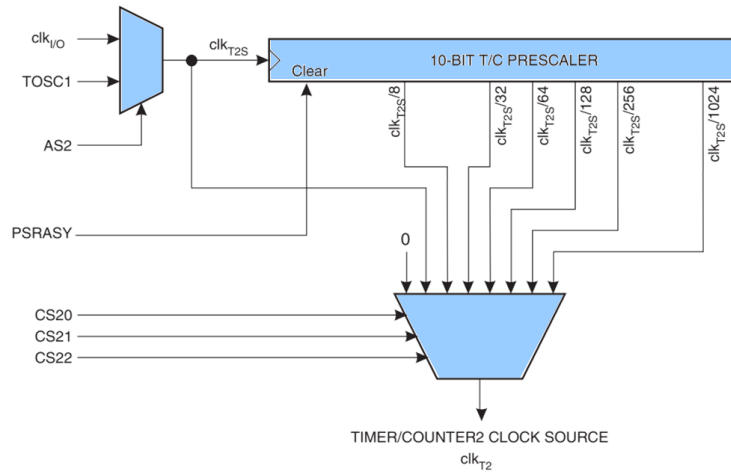
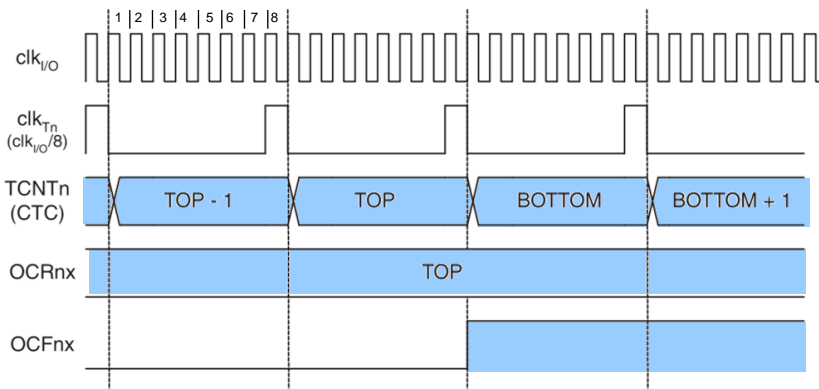


Diagrama de Tiempo (con pre-escalador de 8)

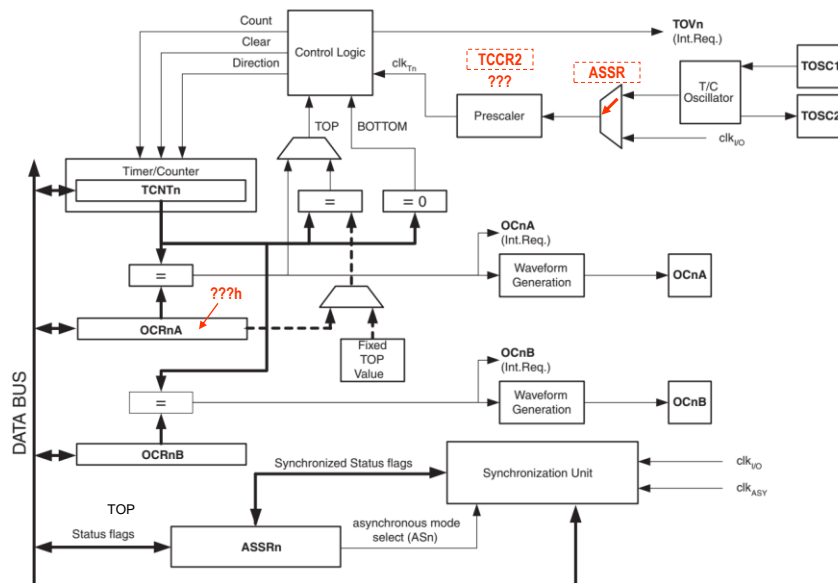


Waveform Generator Mode

Mode	WGM2	WGM1	WGM0	Timer/Counter Mode of Operation	TOP	Update of OCRx at	TOV Flag Set on ⁽¹⁾⁽²⁾
0	0	0	0	Normal	0xFF	Immediate	MAX
1	0	0	1	PWM, Phase Correct	0xFF	TOP	BOTTOM
2	0	1	0	CTC	OCRA	Immediate	MAX
3	0	1	1	Fast PWM	0xFF	BOTTOM	MAX
4	1	0	0	Reserved	—	—	—
5	1	0	1	PWM, Phase Correct	OCRA	TOP	BOTTOM
6	1	1	0	Reserved	—	—	—
7	1	1	1	Fast PWM	OCRA	BOTTOM	TOP

Notes: 1. MAX = 0xFF.
2. BOTTOM = 0x00.

Diagrama de bloques de Timer2/Counter2:





A safe procedure for switching clock source is:

1. Disable the Timer/Counter2 interrupts by clearing OCIE2x and TOIE2.
2. Select clock source by setting AS2 as appropriate.
3. Write new values to TCNT2, OCR2x, and TCCR2x.
4. To switch to asynchronous operation: Wait for TCN2UB, OCR2xUB, and TCR2xUB.
5. Clear the Timer/Counter2 Interrupt Flags.
6. Enable interrupts, if needed.