

## CNT-90 family Pulse Width Calculator Instructions

The Pulse Width Calculator for the CNT-90 family was created to help in two ways:

1. Determine if a CNT-90 will measure a particular Pulse/Burst.
2. Provide appropriate CNT-90 settings to measure that Pulse/Burst.

The top portion of the Excel Spreadsheet lists each CNT-90 with the Band C prescaler frequency option. By inputting the desired pulse width you intend to measure into the box to the right of the appropriate model/prescaler, the minimum pulse width (burst) the counter can measure will be calculated and shown (must be over 20 ns). The CNT-90, 8 GHz counter is not recommended for Pulse/Burst measurements. In this case, a customer should use a CNT-90, 14 GHz counter.

To use the Pulse/Burst Width setting calculator, enter the desired values into the yellow boxes:

1. Input the burst frequency to be measured in GHz.  
e.g.: If the customer is working at 3 GHz, they would input 3. If the customer is working at 300 MHz, they would input 0.3; 10 MHz, would be input at 0.01.
2. Input the Pulse width in ns.  
e.g.: 10 for 10 ns; 1000 for 1  $\mu$ s; 10000000 for 1 ms.
3. Input PRI in  $\mu$ s.  
e.g.: 10 for 10  $\mu$ s; 1000 for 1 ms.

*Note: If only the PRF is given, you can input the PRF into cell B16 (in kHz) and the spreadsheet will compute the PRI (in  $\mu$ s.) and display it in cell C16 You will then need to input this PRI value into cell B14.*

Based on the entered values for Burst Frequency, Pulse Width, and PRI/PRF, the appropriate value to input into the counter will be automatically computed and displayed in the blue boxes. These numbers will provide you the CNT-90 settings to measure a Pulse/Burst correctly. The three settings important to measuring Pulse/Burst are Sync Delay, Start Delay, and Meas Time.

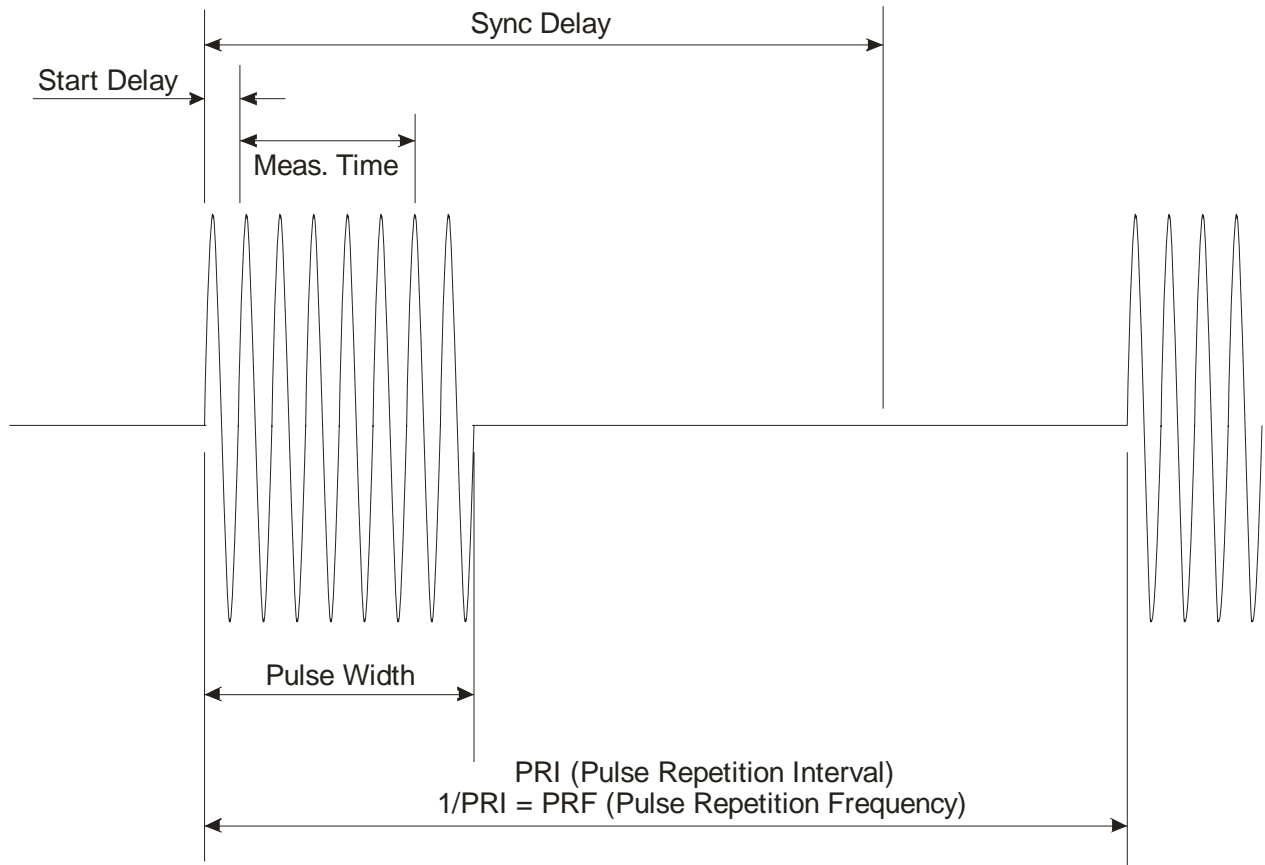
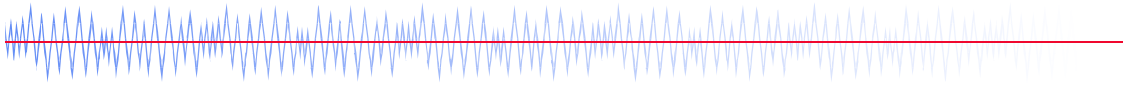
Here are the steps to setting up the CNT-90 for Pulse/Burst measurements:

- Step 1: Press [MEAS FUNC] Button (Blue button)
- Step 2: Select pFreq] (displayed on screen)
- Step 3: Select pFreq Burst] (displayed on screen)
- Step 4: Select [C], or appropriate input channel (displayed on screen)

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- Step 5: Press [Settings] button (numeric button #8)
- Step 6: Select [Burst] (displayed on screen)
- Step 7: Select [Sync Delay] (displayed on screen) and input number calculated in cell B19
- Step 8: Select [Start Delay] (displayed on screen) and input number calculated in cell B20
- Step 9: Select [Meas Time] (displayed on screen) and input number calculated in cell B21
- Step 10: *Band A or B only.* If you are measuring bursts below 300 MHz in Bands A or B select [Freq. A, B Limit] and toggle to either 300 MHz or 160 MHz (if frequency is below 160 MHz).
- Step 11: [Exit]. CNT-90 should now be ready to measure Pulse/Burst signals.

If additional help is needed, please contact Technical Support at Pendulum Instruments at 510-428-9488



### Burst/Pulse Measurement Parameters