

## How to Simply Generate a Pulse Train

A **pulse train** is a series of generated pulses. The pulses in a pulse train can be identical or unique.

The Tabor family of Arbitrary Waveform Generators (AWGs) is designed for easy programming of pulse trains. This document will quickly guide you through the process of pulse train generation.

The front panel of the AWG is depicted below.

MENU	(	CHI CH2 OUTPUT STINC	FUNCTION CONTROL
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	Period P111 10.800,800x		Annay 10-700
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To generate a pulse train using the front panel:

**1.** Press the Pulse button in the function menu.





To generate a regular pulse please refer to the *How to Simply Generate a Pulse* solution note. To generate a pulse train, scroll down to the bottom of the menu and select the **Pulse Composer** menu button.



## TIP

Whenever the 😒 icon is displayed there are more attribute menu buttons to be shown below. Simply scroll down using the dial or cursor key.

**3.** Here you can program the pulse train with the table displayed. There are two types of pulse trains that can be programmed depending on the transition type selected. To select the transition type, scroll down to the bottom of the menu and press the **Transition Type** menu button.



- **Fast.** User programs only the DC level and the duration time of that level, all transitions are done as fast as possible.
- Linear. User programs initial level, final level and the transition time between them.



► P	▶ Pulse Composer				
	Apply hanges	Segn	Level (V)	Segment Duration	Pattern Duration
	-	1	+1.500	200.00000m	200.00000m
	Edit	2	+1.400	5.000000m	205.00000m
	Step	3	+1.300	10.00000m	215.00000m
	. <b>©</b>	4	+1.200	15.000000m	230.00000m
_	Step				
- [	Append Line				
BR	ISE MODE	SYNC	OUT CCH	IJ EV	ENT INPUT
CO RU	UPLE: DC N: CONT	POS: 0 WIDTH	)Pts :4Pts	LEVEL: SLOPE:	+1.60U POSITIVE

4. In **Fast** transition, program the series of pulses, as shown below.

Use the Edit Step, Insert Step, Append Line or Delete Line menu buttons to edit the table.

Each row in the table includes the following parameters:

- **Segm.** The index number of the segment.
- Level. The voltage level of the pulse.
- Segment Duration. The duration of the segment, in units of time.
- **Pattern Duration.** The accumulated duration of the pulse pattern, in units of time.
- 5. In Linear transition, program the series of pulses, as shown below.



Use the Edit Step, Insert Step, Append Line or Delete Line menu buttons to edit the table.



Simulate, Stimulate, Test...

Each row in the table includes the following parameters:

- Segm. The index number of the segment.
- Initial Level. The initial voltage level of the pulse.
- Final Level. The final voltage level of the pulse.
- **Transition Time.** The duration of the level transition in time.
- 6. After selecting the attribute for modification, modify the displayed value using the dial or the cursor keys, or by entering the value using the numeric keypad. Press **ENTER** to save the modified parameter value.

CHI	CH2	OUTPUT	SYNC	
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7		9	*1/m	-
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-	155C</td <td>D</td> <td>TER</td> <td>V SV</td>	D	TER	V SV

7. Press the **Output** button in the control menu to configure the output settings.

FUNCTION		CONTROL
	G G Standard Racillada	
	G O Abley Bulles	
	Q Q Sequence Utility	
	O O	

8. Define the channels in the **Output** section as being ON or OFF, modifying the settings using the dial or the cursor keys.

(Eltr		CHI CH2 OUTPUT SINC
+ Dutput	<b>2</b> (01)	
Plant Dedged	DH2 CH2 OH1 OF #	
Sync Dutput	Output OFF lowest low insettance on the output terminals	
X-Channel	Chilped Couple CH25 DC # CH11 DC #	
I-brain.	SC and SRC are output differen- tially: RC output is single-ended	
HAR HER	THE BUTCHLE DARK LINC	9 5 9 5 9 5
RUNN CONT	NIDTH APLE BLOCK POLITICE	
Record Constant		



## TIP

You can quickly modify the output settings by selecting **CH1** or **CH2** on the keypad, and toggling the **OUTPUT** key to turn the channel on or off.



- **9.** Select the output path of the channels in the Output Couple section, modifying the settings using the dial or the cursor keys.
  - DC (2Vp-p into 50 Ω DC coupled)
  - HV (High-Voltage 4Vp-p into 50 Ω DC coupled)
  - AC (-20 to +10 dBm into 50  $\Omega$  AC coupled)

Press **ENTER** to save the output settings.



## For More Information

To learn more about Tabor's solutions or to schedule a demo, please contact your local Tabor representative or email your request to <u>info@tabor.co.il</u>. More information can be found at our website at <u>www.taborelec.com</u>

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