Aero

Application Note How to use the TOMBAK GATE feature

Multiboard Series

TOMBAK : Synchronization electronic board



How to use the TOMBAK Gate feature

<u>Pre-requirement:</u> Before using the TOMBAK board, make sure you followed all the instructions mentioned in the Operating Manual

1. Presentation

2. Timing Diagram

Signal gating allow user to enable output for a specific time windows. Input signal frequency is then reproduced on the output with a software programmable delay and pulse width.

Pulse-IN reference signal Gate-IN Burst Adj. Adj. Delay Control Contro

Figure 1 : Gated output from Gate-IN external signal







4. Cabling

- 1. Plug the USB-Jack cable in the "USB In" connector
- 2. Plug the power supply to the "*Power In*" connector to power on the board
- 3. Connect the Gate signal that will enable the output to Gate-In connector
- 4. Connect the reference signal (i.e. the signal that will drive the output when Gate-In signal is high level) to "*Pulse In*" connector
- 5. Gated signal will output on the "Pulse Out" connector



5. Software configuration

Launch the ALPhANOV Control Software and click on *Connect* to start the TOMBAK hardware detection. The software automatically detects the TOMBAK board.



A window will appear for each TOMBAK connected to the computer.



The main configuration windows must be configured as follow :

PP 17E01 - Line	1 - Alphano	ov Control Sof	tware		_ 0 <mark>_ ×</mark>		
File Config In	fo						
Working Mod	e						
On	Off	On	Off	On	Off		
Board		Shaper		Inverse			
High	Pick	Gen	Sync				
Advanced Mo	de						
Input Pulse							
	2,00 V	100,0 kHz					
Threshold			Pulse Freq				
	1	•	Direc	t	Daisy		
Division			Source				
Ouput Pulse							
1,000 µs 🗼 10 Width Delay			ns 🛓	0,00 Auto Fine	ns 🔶 Delay 🗌		
Synchro Inpu	ıt						
Int	Ext	None	Gate	Burst	Soft		
Source		Mode					
100,000 k	:Hz 景	1	A V	Trig	ger		
Frequency		Burst Size					
Synchro Output							
Sync	Trig	Delay	Pulse				
Source				Centre Technologiqu	e Optique et Lasers		

- Working Mode window :

 Set the Shaper button to Off
 Set the Inverse button to Off unless you need to invert the output

 signal
 - Unset all Advanced Mode
 - Finally set the **Board** On

Working Mode							
On	Off	On	Off	On	Off		
Board		Shaper		Inverse			
High	Pick	Gen	Sync				
Advanced Mode							



- Input pulse window :
 - Configure the Threshold voltage so that the input pulse frequency is detected and the same as your pulse generator system
 - Set the **Division** factor to 1
 - Set the input pulse Source to Direct



- Output Pulse window :
 - Choose the output **delay value**
 - Choose the output pulse width
 - Auto Fine Delay may be let in auto mode
- Synchro input windows:
 - Source : not used in this mode
 - o Mode : Gate
 - Frequency : not used in this mode
 - Burst size : not used in this mode
- Synchro ouput window (default settings) :
 Source : Pulse



Don't forget to save the settings by clicking on the "Save" button in the bar menu.







Gate

None

Mode

Burst S

100,00 ns

Auto Fine Delay

Burst

Soft

Ouput Pulse

Int

100,000 kHz

1,000 µs

6. Main features

Adjustable pulse width ⇒ resolution (pulse width [5ns – 510ns]) ⇒ resolution (pulse width [511ns – 2 ⁶² ns])	[5ns – >>1000s] 2ns 5ns
Adjustable pulse delay ⇔ resolution	[70ns – >>1000s] 10ps
Input Gate Voltage ⇒ Logic Low ⇒ Logic High	[0-0.8V] [1.7-3.3V]
Input PulseIn voltage	30 mV – 3,3V
Output Voltage	1 / 3,3 / 5 Volts (hardware setup)
Output maximum frequency	20 MHz

