

Universal Trigger Unit

The universal trigger unit allows the synchronisation of multiple acoustic systems with the aim of reducing mutual interference. By integrating the triggers from multiple systems a survey vessel can cover an area in a single pass where previously two or even three passes were required.



Simple Design

The Universal Trigger Unit is designed to be simple to operate, All control is via a simple user interface using four buttons and an alphanumeric display.

Four main operating modes:-

Internal Trigger

The unit can generate a trigger at a rate between once every 2ms and once every 65 seconds. Trigger lengths and polarity are fully customisable. An inhibit signal can be applied to stop trigger generation during critical periods

External Trigger

In external trigger mode either a TTL pulse or a serial data string can be used to initiate a trigger output from the box. Any trigger signal applied to the box can be processed by delay and division to produce a rate and time shifted trigger output. Again polarities are fully customisable for both input and output and an inhibit signal may be applied.

Flip Flop

Flip flop mode operates essentially in the same way as external trigger mode, however in flip flop mode both outputs from the unit are activated in turn, this mode is specifically designed for firing alternate seismic sources. By firing two separate sources in turn the maximum shot rate for any particular source is doubled. As previously' outputs are customisable for polarity and length and an inhibit signal may be applied

GI mode.

GI mode is specifically designed for operating GI air guns. Output 1 is triggered immediately upon reception of a trigger input to the box, and output two is initiated a set delay after trigger 1. Again; delays, pulse lengths, and polarities, are fully customisable and an inhibit signal may be applied.

TTL Inputs	2	Trigger Input	TTL or Serial (RS232)
TTL Outputs	2	Inhibit Input	Off, -ve, or +ve, TTL
Serial Inputs	1	Baud Rate	9600
Data Bits	8	Parity	1
Flow Control	None	Settings retention	>40 years
Min Trigger Rate	2ms	Max Trigger Rate	65000ms
Min O/P Pulse Length	1ms	Operating Modes	4
Max O/P Pulse Length	255ms		Internal Trigger
Max Delay	65000ms		External Trigger
Max Inputs per Output	255		Flip Flop
Power	7-35v AC/DC		GI Gun

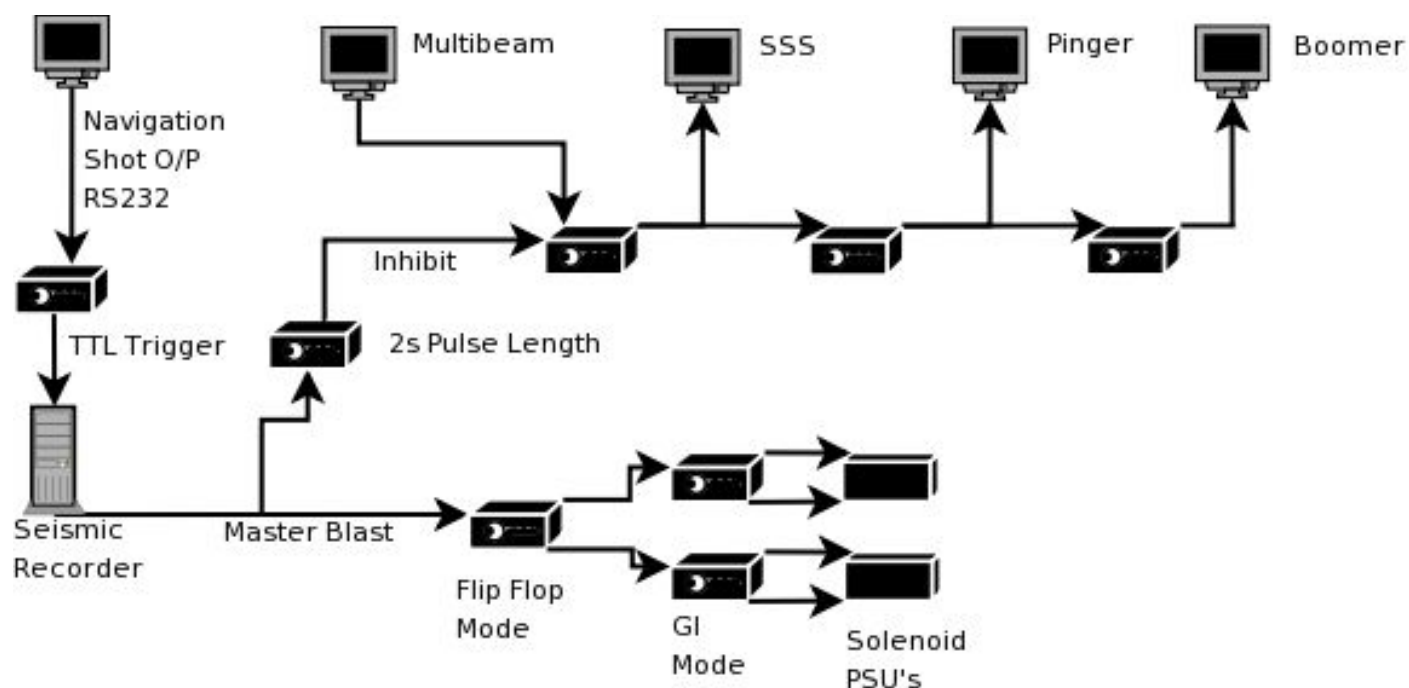


Illustration 1: Example system configuration diagram

Versatility

Any Universal trigger Unit can take up any location in the survey system, be it taking the serial trigger from the navigation system and converting it to TTL for the Seismic Recorder, Generating an inhibit signal to blank the analogue sensors during seismic recording or synchronising the Sub bottom profilers to ensure their transmit pulse always falls in the water column of the side scan sonar data.