

ED702-5U – Synth-A-Scope

The ED702 – Synth-A-Scope is a utility module that provides the user with the ability to quickly visualise many signals in their system.

This 5U version integrate a Pedal Interface based on the DotCom Q142. The ED702-5U Module requires +15V @ 90mA and -15V @ 10mA

The ED702 – uses a 2.4" 320 x 240 pixel colour TFT liquid-crystal display (LCD) as the display interface and incorporates a simple front-end to interface the external signal to the internal analogue-to-digital converter (ADC).

The input can be AC or DC coupled while the [VOLTS/DIV] switch allows for signals up to 40Vpk-pk.

A switch allows selection from one of two signal sources presented to [IN 1] and [IN 2]

General Operation

[SELECT]

Press [SELECT] to cycle through the parameters that can be adjusted:-

1. Time - Timebase
2. T-Mode - Trigger Mode
3. T-Edge - Trigger Edge
4. T_Pos - Trigger Position
5. H-Pos - Horizontal Position
6. V-Pos - Vertical Position

{1} Time (Timebase)

Press [-] or [+] to step through the timebase settings:- 10uS, 20uS, 50uS, 100uS, 200uS, 500uS and 1S per division. The current selection is shown in the 3rd column at the bottom of the screen.

{2} T-Mode (Trigger Mode)

Press [-] or [+] to set the Trigger Mode: Auto, Normal or Single.

Auto Mode

In Auto Mode the Synth-A-Scope will continually refresh irrespective of the trigger condition. When triggers are detected , the waveform display will be displayed with reference to the trigger point.

Normal Mode

In Normal Mode, the Synth-A-Scope will only perform a display refresh when there is a trigger.

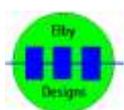
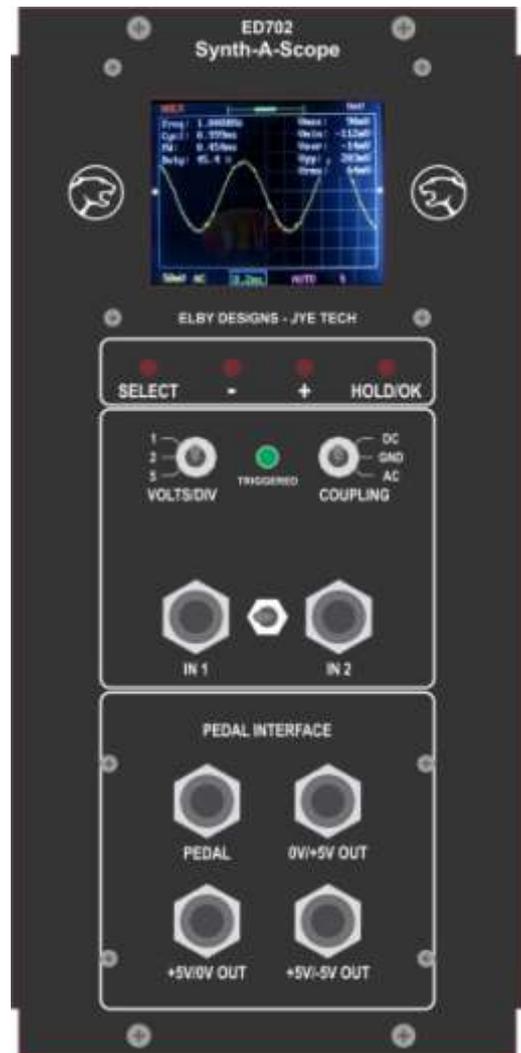
Single Mode

In Single Mode the Synth-A-Scope will go in to the HOLD state after a trigger has been detected and the display has been updated.

The currently select trigger mode is shown in the 4th column at the bottom of the screen.

{3} T-Edge - Trigger Edge

Press [-] to select a 'falling edge' trigger or press [+] to select a 'rising edge' trigger. The current selection is shown in the 5th column at the bottom of the screen



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{4} T-Pos (Trigger Position)

Press and hold [-] or [+] to move the Trigger Position. The current position is indicated by the pointer at the right side of the screen which will turn blue when selected.

{5} H-Pos (Horizontal Position)

Press and hold either [-] or [+] to move the horizontal trigger position. The current position is shown in the scroll bar at the top of the screen.

{6} V-Pos (Vertical Position)

Press and hold either the [-] or [+] buttons to move the '0V' position for the trace. The current position is indicated by the pointer at the left side of the screen which will turn blue when selected.

[OK]/[HOLD]

Press [HOLD] to freeze the current waveform display. Press [HOLD] again to return to normal operation.

Screen Display

{A} Volts/Div

Displays the currently selected 'signal settings' as set by the [VOLTS/DIV] and [COUPLING] switches

{B} Trigger Level

{C} Status

Shows the status of the ED702 selected by pressing the [OK/HOLD] button:-

- **HOLD:** Freezes the current display and data-logger
- **Running:** Normal data-capture mode

Supplementary Functions

1st Time Initialisation

The first time you power up the ED702 you should initialise the internal data logger by performing the following steps. This will align the 0V trace to the VPos indicator.

1. Set [COUPLING] to 'GND'.
2. Select {VPOS} using the [SELECT] button
3. Set [VOLTS/DIV] to '1'
4. Hold [OK] for 2 seconds
5. Set [VOLTS/DIV] to '2'
6. Hold [OK] for 2 seconds
7. Set [VOLTS/DIV] to '5'
8. Hold [OK] for 2 seconds

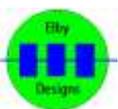
Restore Factory Settings

The ED702 can be returned to its default factory settings by holding the [-] and [+] for 2 seconds

Auto-centre Trigger Level

To quickly relocate the Trigger Level indicator {4} to the centre of the screen:-

1. Select the Trigger Level indicator {4} using the [SELECT] button
2. Hold [OK] for 2 seconds



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Auto-centre Horizontal Position (HPOS)

To quickly relocate the Horizontal Position indicator {5} to the centre of the screen:-

1. Select the [HPOS] indicator {5} using the [SELECT] button
2. Hold [OK] for 2 seconds

Data Logger Readouts

Data Logger data displayed is:-

- [Freq] - The *Frequency* is the inverse of the Period and is measured in Hertz
- [Vavr] - The *Average* reading is the mean vertical level of the entire captured waveform
- [Vpp] - Returns the difference between the extreme *Maximum* and *Minimum* values

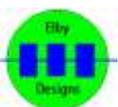
Screen-Capture - Save & Recall

The current waveform display can be saved to internal non-volatile memory and recalled at a later date

1. SAVE - Press [SELECT] and [+] together
2. RECALL - Press [SELECT] and [-] together

Specifications

Maximum realtime sample rate	1MSa/s
Analogue bandwidth	0 - 200kHz
Maximum input voltage	50Vpk
Input impedance	1M ohm/20pF
Resolution	12-bits
Record length	1024 points
Trigger position range	50%



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Pedal Interface

The Pedal Interface offers a way for foot pedals, both on/off switch and potentiometer types, to control your synthesiser.

The interface can be used to control volume, filter sweep, pitch bend, pan/fade, and much more.

Specifications

Input	Accepts switch or variable pedal inputs. Dry contact switch or 10K-100K potentiometer
0V/+5 Output	Provides an output from 0V to +5V
+5V/0V Output	Provides an output from +5V to 0V
+5V/-5V Output	Provides an output from -5V to +5V

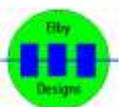
Switch Pedals

Many switch pedals have an option for normally-closed or normally-open but this is not important for this unit as it outputs both polarity signals.

Variable Pedals

Variable pedals provide continuous control of a parameter and are great for controlling filter frequency and resonance.

Power Consumption	+15V @ 100mA, -15V @ 20ma
Module Width	Double width, 4.25" x 8.75"
Module Depth	60mm



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