# 4 port relay sequencer with bias control port

A 4 port relay sequencer that includes an amplifier bias controller .
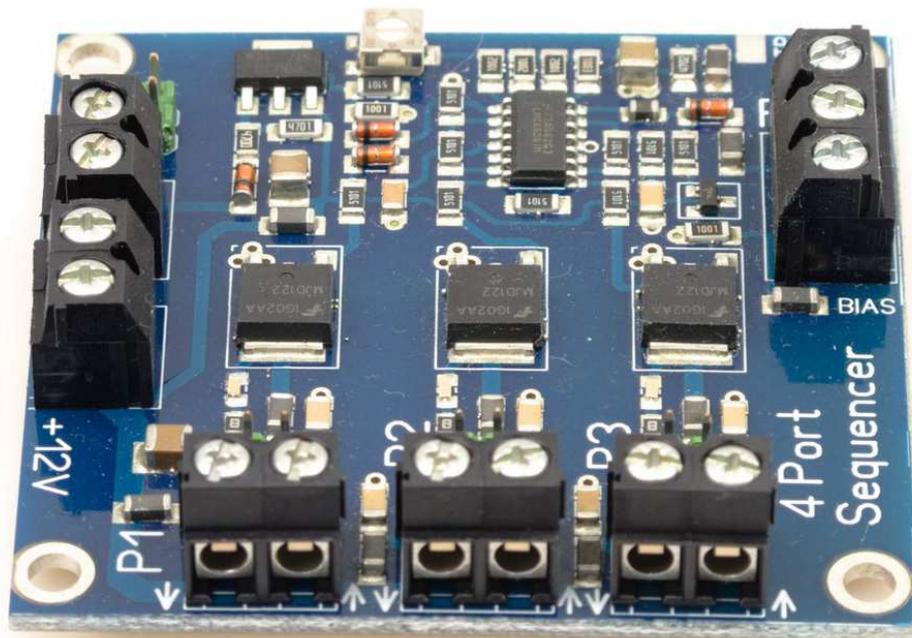


### Features

- PTT switch to activate relay sequence.
- Sequencer function with 3 event ports, with overall adjustable delay between event ports.

| | |
|---|---|
| Port 1 | Open collector output, active high, can handle up to 1A with internal 12V. |
| Port 2 | Open collector output, active high, can handle up to 1A with internal 12V. |
| Port 3 | Open collector output, active high, can handle up to 1A with internal 12V. |
| Port 4 | AGC controler / bias controler. |

All ports are in off position until sequencer is activated. . In off  mode, ports 1, 2  & 3 are in "high" state (high=10V) and port 4 in "low" state (low = 0V).

# Connections and functions explained.

**+12..15V DC**,  VCC input, this dc input powers the board functions and relays connected to the board (if the on board +12V connections are used)

**GND**, circuits ground

**PTT**, is a remote switch used to activate or deactivate the sequencer (relays/event) circuit. This PTT port is an active high, connected to ground will result in starting the sequencer board to handle all events. Most transceiver or transmitter systems have a PTT connection. Check your system if it is present, if yes, then use it.

**Sequencer circuit**.
This is a circuit with sequenced and delayed control ports. There are 4 control / event ports, all ports will activate and deactivate after another with an adjustable time delay (50ms-0.5sec). You can set this delay to correct the switching time of relays or other circuits. All ports are in "off " mode until the sequencer starts. In "off " mode, ports 1, 2  & 3 are in "high" state (high=10V) and port 4 in "low" state (low = 0V).

Adjusting the time delay *between* the ports can be set with the variable SMD resistor **event delay**.

Ports 1, 2 & 3  have a 12V output to drive the + connection of a relay, The return port  is connected to the – connection of the relay. When this port is activated, the relays will also activate.  Port 4 controls the Bias <u>or</u> AGC of the RF amplifier used in this circuit.

**Port 1,** this port is the first to activate as soon as the sequencer circuits starts. When the sequencer disconnects the ports, Port 1 is the last port to disconnect. In most cases, this port is used for the relays that is last in line, near the antenna. (see our example page for more details) (if port is activated, a red led will glow)

**Port 2,** this port is the second to activate as soon as the sequencer circuits starts. When the sequencer disconnects the ports, it is the 3nd port to disconnect. In most cases, this port is used for the relay first in line, near the transceiver / transmitter. (see our example setup for more details) (if port is activated, a red led will glow)

**Port 3,** this port is the 3rd to activate as soon as the sequencer circuits starts. When the sequencer disconnects the ports, it is the 2nd port to disconnect. This port can be interchanged by port 2 or used for optional relays or other electronics. (if port is activated, a red led will glow)

**Port 4**, This port has a double function, it can control an AGC or Power down connection of an amplifier or power up a bias circuit if present on your amplifer (max 100mA). This port is the last to activate, but first to deactivate when the sequencer disconnects the ports.

**event delay,** a variable SMD resistor that sets the time delay between the event ports. Delay can be set from 50ms – 0.5 seconds. This delay can be used to correct the switching time of relays or other control circuits. This is a test it your self-function and cannot be factory pre-set. Set the delay to a level that the relays switch on after each other and Port 3 will activate after the last relay has been fully switched on.