Building and using: Island Keyer II extension
from Jackson Harbor Press

Introduction:

TheIsland Keyer II extension is intended to provide both a low power, regulated 5 volt supply AND a tube transmiter keying relay for the Island Keyer II kit. Instead of having a separate circuit board (as was done previously with the Keyer Accessory kit), the keying and regulator circuits were added to the Island Keyer II circuit board on an extension on the right side.

General notes on building the Island Keyer II extension

The Solid State Relay (S1)is an MOS device. This means that it should be handled as little as possible to prevent static damage. The builder should use a grounding strap and anti-static mat if available or at the very least, work on a grounded metal surface and be sure to touch ground prior to touching these devices.

The pads and traces are small and delicate - a small tipped, low power (25 watts or less) soldering iron should be used.

Building the Island Keyer II extension:

Step 1) Get the parts together: All of the board mounted components have been supplied but you will still have to provide off-board items to fully implement the kit. These items include:

Input power connector (for example: a 9V battery "snap" )
Output keying connector

Step 2) Identify and orient the components: Most of the components should be fairly easy to identify and place - see the parts list and the parts placement diagram for descriptions. C3, the tantalum cap is marked for polarity - be sure to orient the side with the red (positive +) stripe (this side bulges out slightly) to match the + sign on the circuit board.

step 3) Place and solder the components on the main circuit board: Use the parts placement diagram for information on the placement and orientation of the parts. Clip the leads of the through hole parts after soldering.

a) the 6 pin socket for S1, orient the notch side towards the right side of the board

b) U1, TO92 packaged +5V regulator IC. orient U1 with the flat side towards the right side of the board.

c) R1, 1k (brown, black, red, gold), above the S1 socket.

d) C1, .1 uF, (light blue or yellow, marked 104), placed to the right of R1

e) C3, 2.2 uF, place at the top right of the board with positive stripe (bluging side) towards the + symbol ob the board (right)

f) Connect the 9V battery snap (or other power input connector to the ground and +Vin holes on the right side of the board. connect the black wire of the snap to ground, the red wire to +Vin.

h) S1, form the leads of S1 and insert into the socket, with the pin 1 side (indicated by the round indented circle on the top of the part) towards the right side of the board.

i) Connect the outputs of S1 to the output connector, usually one side of the connector will be grounded, it doesn't matter which of the two outputs of S1 are grounded. S1 will key both positive and negative voltages.

step 4) Check the board: Before proceeding, take the time to check the bottom of the board for solder bridges. Use the parts placement and bottom view diagrams as a guide to visually check for these shorts. It may help to clean the flux from the board and then use a strong light in conjunction with a magnifying glass to see these problems. Also, double check the orientation of the critical components such as the 2.2 uf tantalum cap and U1.. After you are convinced that the board is OK, connect the board to a 9V battery using a VOM to measure the current used, current should be less than 2 mA (depending on the keyer), if it's larger, power down and re-check the board for shorts and polarity problems. If the current is relatively low, power down, disconnect the meter, the board is ready for use.

Circuit description:

The circuit consists of a a low quiescent power, low dropout +5V regulator, the LM2936. C1 and C3 are bypass capacitors used to prevent problems with RFI and oscillatrion. U1 should use about 7 uA of current at 9 volts of input. This is low enough that a power switch may not be required. U1 is quite rugged and should be able to withstand relatively high input voltages (35 volts) along with polarity reversals. The keying circuit uses a 6 pin Solid State Relay (SSR) which can switch up to 400 V DC or AC at 120 mA of load current.

Please feel free to email with any questions, comments, suggestion or problems with this kit. My email address is:

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Thanks for choosing the Island Keyer II extension and
Best Regards,

Chuck Olson, WB9KZY



List of parts included with the Island Keyer II extension

| Ref | designation | Description |
|---|---|---|
| C1 | .1M or 104 | .1 uf multilayer ceramic .1" lead space cap |
| C3 | .2u2 16 | 2.2 uf tantalum .1" lead space cap, red stripe indicates positive (+) side |
| R1 | 1000 ohms | brown, black, red, gold 1/4 watt resistor |
| S1 | AQV214EH | SSR (Solid State Relay), 6 pin DIP, 400 V, 120 mA |
| U1 | LM2936 | low power, +5V regulator IC |
| | | circuit board |

Items you may need to provide to complete the Island Keyer II extension

9V battery snap connector OR other power connector
transmitter output jack
solder, wire, good quality desoldering braid



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