Mini Yack *II$_B$*
Iambic Keyer/Trainer

Mini-Yack2b is a basic Iambic keyer based on the open source DK3LJ Mini-Yack engine and enhanced with additional features:

- Keying from 1WPM to 50WPM
- 2 memories with 75+ characters each
- HF Beacon and FM beacon modes for 2M FM fox hunting
- Straight key operation bypass (limited keyer functionality)
- Iambic practice modes including a progressive mode which increases/decreases speed
- Built in speaker with stereo headphone jack for private listening
- Positive transmitter keying up to 60V/200mA (300mW total)
- Negative grid transmitter keying up to -100V/500mA (200mW total)

Battery Installation (Assembled units)

Remove the 4 screws on the front panel. Slide assembly and speaker out. Insert 2 AA batteries observing the polarity as shown on the battery holder. Place speaker on top of batteries, align the PCB and speaker with the slots in the enclosure and slide in place. Replace the 4 screws on the front panel.

Flashing or Re-programming the IC

Disconnect all keys, speakers, transmitters, and batteries from the keyer prior to connecting the programmer. Place the power switch in the OFF position. Failure to do so can damage both the keyer and programmer.

OPERATION

Plug your straight or Iambic key into the KEY jack.   With the key down adjust the volume as needed. If using the headphone jack (SPKR stereo 3.5mm) ALWAYS turn the volume control fully counter-

clockwise BEFORE plugging in. Then with the key down adjust the volume to a comfortable level. Plug a transmitter into the KEY jack (Stereo or Mono).

Circuit Description

The heart of the circuit is the AtTiny85 micro controller hosting the Mini-Yack firmware. Diodes D6, D7, and D10 provide protection to the speaker and controller when accidentally plugging a voltage source (such as -65V or +12V from a transmitter). The command and playback buttons uses a resistor divider chain to drive the ADC on the controller. Q2 provides positive keying while Q1 and Q3 provide negative keying. Diodes D1 and D2 protect the keying inputs from negative or over voltage. An internal reset button allows for factory default values along with re-programming – see the YACK operation manual for details.

Specifications:

- Supply Voltage: 2xAA Batteries ~3.5V (typical)
- Current consumption: 1.3mA idle, 4.8mA (no volume), 14.8mA keyed (full volume),

- Positive transmitter keying up to 60V/200mA (300mW total)
- Negative grid transmitter keying up to -100V/500mA (200mW total)

[SCHEMATIC]