Getting started with the CW Beacon Module

Background

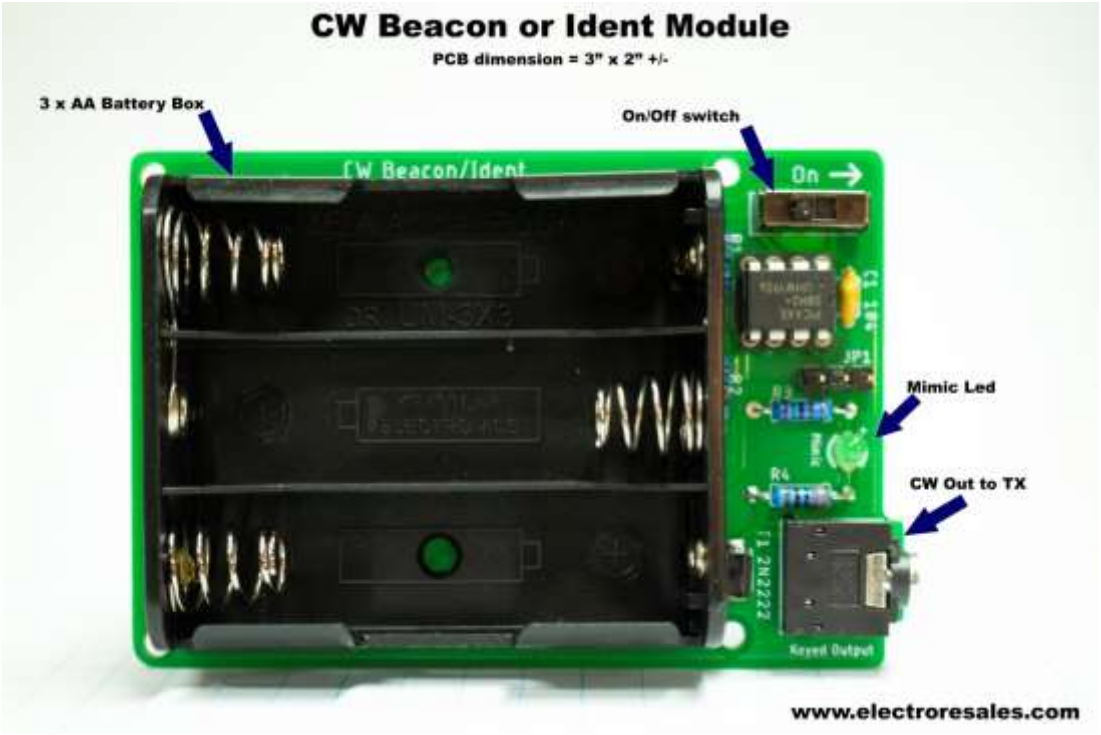
The beacon module (hereafter called a CWB) is designed to be used with a transmitter or Morse oscillator to allow the repetitive transmission of a short CW message. Please be aware that the CWB is not suitable for directly keying a tube transmitter.

As the CWB is software driven various parameters can be changed to alter the final features of the unit. Typically the CWB would have a unique call sign and possibly locator information coded in, other parameters that may be changed are the speed of transmission, number of times to send the message and the gap between each message sent.

Initial Setup

Review the attached picture of the unit while reading these notes.

The CWB requires three AA size batteries to be installed in the battery box, make sure the on/off switch is in the off position and please observe the polarity on each cell as marked in the battery box. The beacon is connected to the transmitting apparatus via the 3.5mm audio jack located on the upper right of the board.



Please note that this is a PCB module and as such the underside of the PCB has exposed connections, these can be shorted if the PCB is placed on a metal or conducting surface. Please take care to avoid this by mounting the PCB in a box or on a non-conducting surface.

After making the connection to the transmitter the unit may be powered on by moving the slide switch to the on position as shown on the PCB. After a very short (1/2 second) delay the programmed message will be sent. The LED on the PCB will flash in sympathy with the outgoing Morse code and if a side tone is operating on the transmitter the code will also be heard.

The message will repeat at the pre-coded interval for the pre-coded number of times or until the unit powers down or is switched off.

After the preset number of transmissions the unit will go to sleep to preserve battery life, this is reset by cycling the power switch.

Operation

After initial set-up of the unit, operation will depend to a degree on your usage requirements. If the beacon is going to be used in conjunction with a commercial transceiver please refer to that unit's operation manual for details on how the transceiver is keyed for CW. Most modern transceiver units will generate a side tone without having the transmitter actually activate. This feature allows the output of the CWB to be checked 'Off Air'.

With a Morse code oscillator the connections from the CWB to the Oscillator key jack may need to be reversed if the CWB fails to activate the oscillator, however, most oscillators will work with a straight connection.

Software Update

The code inside the PICAXE chip can be changed at any time and as the code used in this unit is open source, it can be altered by the user or we will be happy to re-program your chip for you or for a small fee provide a new chip with the code updates requested. Please contact us:

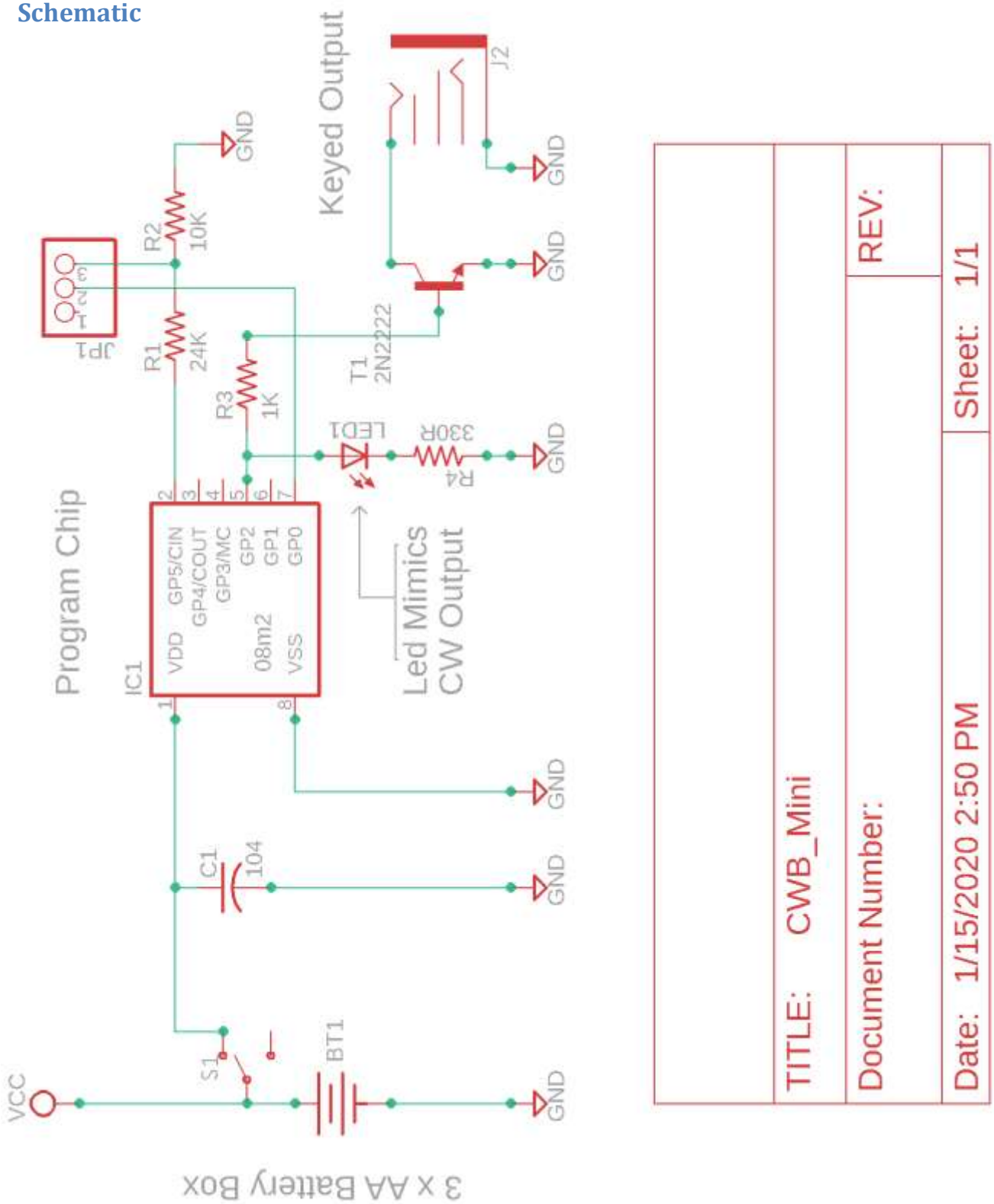
steve@electroresales.com

For full details on how this works.

Final Notes

Attached schematic is correct as of 2/2020.

Schematic


Keyed Output
J2
GND
R2
10K
JP1
R1
24K
R3
1K
T1
2N2222
LED1
330R
R4
Program Chip
IC1
VDD
GP5/CIN
GP4/COUT
GP3/MC
GP2
GP1
GP0
08m2
VSS
Led Mimics
CW Output
C1
104
S1
BT1
VCC
3 x AA Battery Box
TITLE: CWB_Mini
Document Number:
REV:
Date: 1/15/2020 2:50 PM
Sheet: 1/1

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