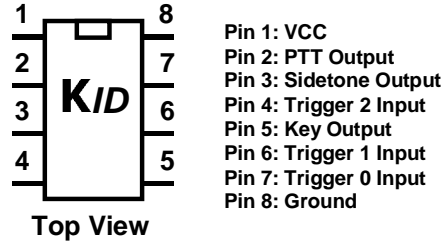


**FEATURES**

- Seven Triggerable Messages
- PTT Output: High true (TTL Level)
- Key Output: High true (TTL Level)
- Sidetone: ~800 Hz Square Wave
- Single Trigger or Repeat
- Timed key down
- Lower QRSS speed support (.2 and .02 WPM)
- Operating Voltage: 5 VDC, built in oscillator
- Power Consumption: < 5 ma
- 256 character total message space
- Fixed WPM rate set at factory (5 to 40 WPM)
- Fixed message contents set at factory
- Fixed beacon interval 5 – 600 seconds set at factory

**DESCRIPTION**

The K-ID is a single chip CW Identifier unit that provides seven pre-programmed messages that can be played when triggered or repeated at a fixed interval. The K-ID uses a Microchip PIC12C509 single chip microprocessor and requires minimal components for operation.



**Introduction**

The K-ID was designed to fulfill a need for an inexpensive CW Identifier that can be used in a variety of applications from repeater ID'ers to HF beacons, Fox transmitter controllers, or balloon message generators.

Three inputs are used to select one of seven pre-programmed hard coded CW messages. Each message is programmed to the purchaser's specification. There are a total of 256 characters of message memory available that can be divided up into seven message slots. Asserting a binary code on the message inputs triggers a message to be played. The following table illustrates how selection works:

Trigger 2	Trigger 1	Trigger 0	Message Played
1	1	1	None
1	1	0	Message 1
1	0	1	Message 2
1	0	0	Message 3
0	1	1	Message 4
0	1	0	Message 5
0	0	1	Message 6
0	0	0	Message 7

Table 1 – Message Selection Matrix

K-ID has built in pull up resistors on the trigger-input lines so that no external components are required in most applications. The Key and PTT outputs are high true TTL outputs that are intended to be used to drive open collector output transistor stages. The outputs can be used without buffering and provide a sink current of 25 Ma when asserted low and 25 Ma source current when asserted high.

**Triggered Message Mode**

In this mode a CW ID can be sent on demand by switching the trigger inputs to ground momentarily. The particular message selected is determined by the binary combination of trigger inputs pulled low per Table 1. There must be minimal skew between the trigger inputs and they must be kept asserted for a time of at least 10 uSec. In the example below the code 010 is asserted which selects message 5. In the example, message 5 is just the letter I. Note that the PTT line is asserted first to key a transmitter (if desired) followed by a delay of 1 second. After the PTT delay the message is sent, key is asserted for each dit or dah interval and sidetone is

generated. After the message completes there is a short delay before PTT is deasserted. A new trigger input can be asserted as soon as PTT returns low.

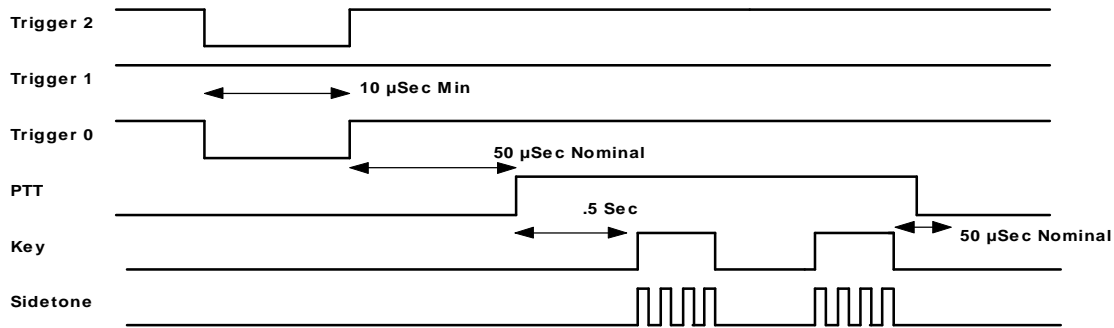


Figure 1 - Triggered Message

**Beacon/Repeat**

Normally the trigger-input lines are strobed with a low going pulse of short duration to trigger a single message output. If the input lines are continually asserted then the selected message will be repeated at a time interval pre-programmed according to purchaser's specification. The time interval can be in the range of 5 to 60 seconds.

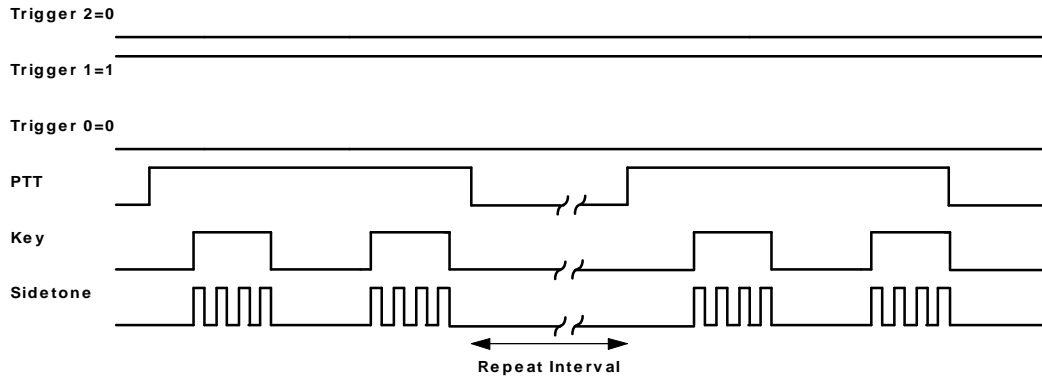


Figure 2 – Message Repeat

**Accuracy**

The K-ID uses the internal oscillator inside the PIC12C509 as a timebase for CW speed and interval measurement. This oscillator is accurate to +/- 5% with a regulated 5-volt supply. This means that the WPM rate and time interval will be accurate to the same degree.

**PTT Delay**

After a message trigger is asserted, the PTT output is immediately asserted followed by a fixed delay of .5 second. After this delay the message output starts. After the message finishes the PTT output is deasserted almost immediately.

**Input Protection**

The K-ID inputs are limited to TTL levels only. If higher voltages than +4.5 VDC are to be used to trigger the K-ID inputs use an NPN transistor stage to protect the K-ID. Fig. 3 shows one possibility (note inversion of level):

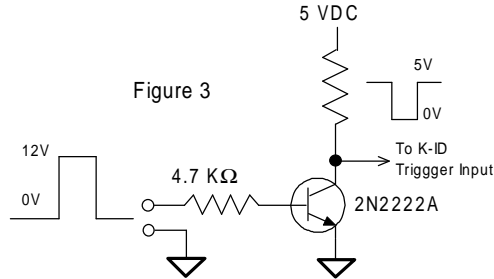


Figure 3 – Input Level Translation

**Typical K-ID Applications**

Figure 4 is a schematic of a CW Identifier using a minimum of components. In this application the K-ID is used as a pushbutton triggered CW ID'er. Its outputs are used to switch a transmitter to transmit and then key its output in CW mode. Message 6 is selected when the pushbutton is pressed. The sidetone output is not used and the unused trigger input 0 can be left floating since an internal pullup will keep it at logic one (high).

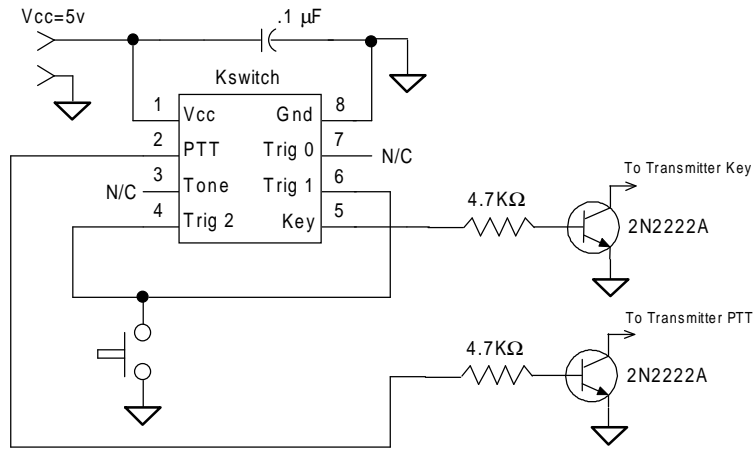


Figure 4

Figure 5 illustrates a way to use diodes to select different messages.

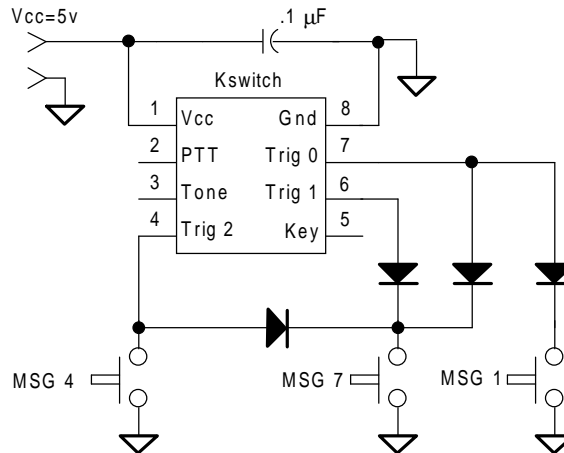


Figure 5

### Ordering Information

When ordering a Kid submit the desired sending speed and a detailed description of each message. The total length of all messages added together must be less than 512 characters. Include **Key Down** requests or **Pauses** within the message.

Here are some examples of how to submit the data:

**Message1:** K1EL BEACON XR455 <keydown for 5 seconds> <pause for 120 seconds>  
**Message2:** K1EL XBN <keydown for 10 seconds> <pause for 10 seconds>  
**Message3:** K1EL BEDFORD NH  
**Message4:** K1EL K1EL K1EL <keydown for 10 seconds>  
**Message5:** K1EL  
**Message6:** K1EL BCN <pause for 10 secs> K1EL BCN <pause for 120 seconds>  
**Message7:** <keydown for 30 seconds>

If message 1 is sent continually there will be a 120 second pause between each transmission, this is how the beacon interval is set. Message 2 will repeat every 10 seconds. Alternatively you could have a message like Message 3 which has no pause at the end, you could repeat this at whatever spacing you like by triggering the message from an outside control mechanism. Note that PTT is released during pauses.

For Lowfer applications two fixed super slow sending speeds are supported, .2 WPM (1 dit = 6 seconds) and .02 WPM (1dit = 1minute) To enter a slow speed setting into a message format it like this:

**Message1:** <Set .2 WPM> K1EL XBN  
**Message2:** <Set .02 WPM> K1EL XBN <Reset Speed> K1EL FN43

Message 1 will be sent at .2 WPM, message 2 has two parts, the first part sent at .02 WPM and a second part which is a quick ID sent at the normal WPM setting.

The K-ID is fully guaranteed and if you are not satisfied please return the KID IC for a full refund. Any questions will be handled by snail-mail or e-mail via these addresses:

Steven T. Elliott K1EL  
 43 Meadowcrest Drive  
 Bedford, NH 03110 USA

or e-mail: K1EL@aol.com

Watch the K1EL Website for latest updates and new products:

<http://members.aol.com/k1el/index.html>