



# MorseCode App

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## Overview

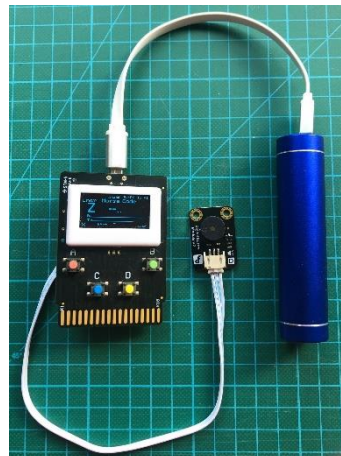
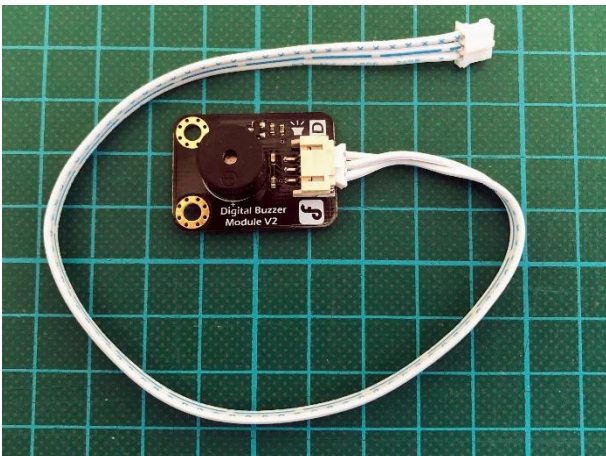
This MorseCode app represents characters (data) as symbols in [Morse Code](#).

Text messages can be created and listened to; just as a telegraph operators would have heard them at the turn of the 20th Century. They can also be exchanged between connected Kookaberries.

## Step 1: Setup

### Listen

Connect a [Buzzer](#) to P1 on the back of the Kookaberry. This will sound out the morse code messages.

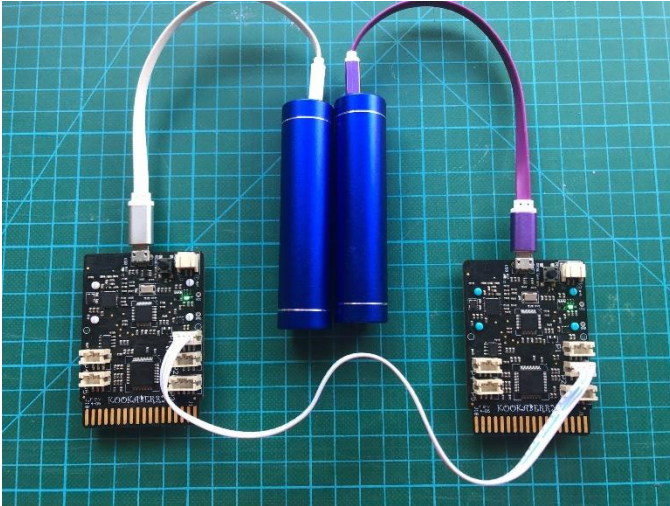




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## Transmit and Receive

To allow two Kookaberries to send morse messages to each other, connect them together with a 3 pin JST lead. Connect P1 on the transmitting Kookaberry to P2 on the receiving Kookaberry.



## Step 2: Running and using the app

Navigate to the MorseCode app and press Button B to run. There are four modes controlled by successive presses of Button B. These are

### Home Screen

This is where all the letters in the alphabet, plus numbers 0-9 and a space, together with their equivalents in morse code, are shown. **NOTE:** the space between words is represented by "/" on the Kookaberry's screen.

Pressing Button D sends the code of the character selected to Pin 1. The transmit trace (Row 5) will show the pulses corresponding to the dots and dashes of code of the character selected.





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## What is showing on the Home screen?

1. **Top Row:** Name of app; Pin designations
2. **Second Row:** Headers for Text or number character and Morse Code equivalent
3. **Third Row:** Character and Code equivalent
4. **Fourth Row:** Trace showing morse code pulses received by the Kookaberry (not used in this screen)
5. **Fifth Row:** Trace showing transmitted pulses. These are shown when Button D is pressed.
6. **Bottom Row:** Button A is Exit; Button C shows the next character; Button D send the character shown; Button B takes you to the Message mode

## Message Screen

This is where a text message can be created and edited before being sent to P1. The default message is shown with a cursor beneath.



## What is showing on the Message screen?

1. **Top Row:** Name of app; Pin designations
2. **Second Row:** Default text
3. **Third Row:** Cursor
4. **Fourth Row:** Morse code for character selected
5. **Fifth Row:** Trace showing morse code pulses received by the Kookaberry (not used in this screen)
6. **Sixth Row:** Trace showing transmitted pulses (not used in this screen)
7. **Bottom Row:** Button A is Exit; Button C substitutes the next available character; Button D moves the cursor to the next character to the right; Button B takes you to the Transmit/Send mode



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## Transmit Screen

This is the transmit screen. Button C (Send) will cause the Morse Code sequence to be sent as a digital signal out of P1.

Each press will resend the sequence. As each character is sent, the cursor moves to the right and the character Morse Code is displayed below the cursor. The red LED will flash, mirroring the output from P1



What is showing on the Transmit screen?

1. **Top Row:** Name of app; Pin designations
2. **Second Row:** Text Message
3. **Third Row:** Cursor
4. **Fourth Row:** Morse code equivalent of cursor-selected character.
5. **Fifth Row:** Trace showing morse code pulses received by the Kookaberry (not used in this screen)
6. **Sixth Row:** Trace showing transmitted pulses. These are shown when Button D is pressed
7. **Bottom Row:** Button A is Exit; Button C sends the coded message to P1; After sending the message, Button B takes you to the Receive (Rx) Message mode



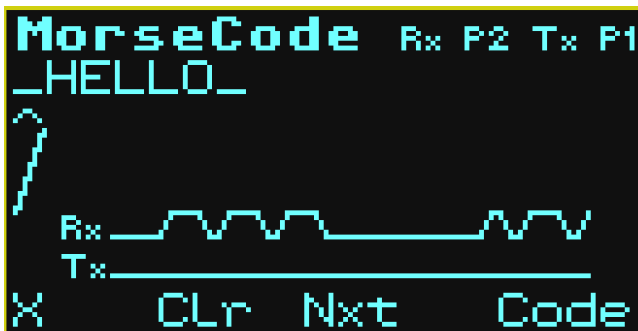
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## Receive Screen

This is the receive screen. P2 is designated the receiver input pin. It will decode any Morse Code signals it receives (provided the timing is the same), as it is received and display both the message and its pattern of received pulses (Row 4).

The green LED mirrors the P2 input state so you can see that a signal is being received. Pressing Button B takes you back to the Home (Code) screen.

You can connect P1 from one Kookaberry to P2 on another Kookaberry and vice versa, to set up a Morse Code transceiver system.



## What is showing on the Receive screen?

1. **Top Row:** Name of app; Pin designations
2. **Second Row:** This is where the received, de-coded, message will appear.
3. **Third Row:** Cursor
4. **Fourth Row:** The first character (Space) of the message. Pressing Next (Button D) will progressively show the code of the received character.
5. **Fifth Row:** Trace showing morse code pulses received by the Kookaberry.
6. **Sixth Row:** Trace showing transmitted pulses. (Not used in this screen)
7. **Bottom Row:** Button A is Exit; Button C clears any incoming message; Button D displays the code of character selected by the cursor.