



# RTTLMusicDemo App (KAP019)

<p>Digital Speaker Module</p> <p>Plugged into P2</p>	<p><a href="#">FIT0449</a></p>		
<p>KookalIDE</p>			

## Context

Illustrating how the Kookaberry can play tunes from an indexed list and demonstrating the musical notation used on the Micro:Bit to write tunes.

## Directions

1. Plug the speaker module into P4
2. Select from list of 21 tunes by scrolling up (Button D) or down (Button C). When selected, play by pressing Button B
3. To stop playing whilst in the middle of a tune, press reset (small button on rear of board).
4. If reset is pushed the Kookaberry needs to be restarted and the Music Demo app selected again.

## RTTL musical notation

A very good RTTL description, including a good explanation of how to convert to/from standard music notation, is contained in the Pearson InformIT online article "[The world of mobile ringtones](#)". Alternatively, the [Wikipedia entry for RTTL](#) provides a good basic description.

The code for an RTTL tune consists of a string with three parts separated by colons.

1. **Part 1:** Name of ringtone
2. **Part 2:** The default values of the major characteristics of the tune. These are the note duration (d), octave (o), and beat/tempo (b) of the tune that are understood by the programme to be the required values unless otherwise specified.



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- Part 3:** The notes. Each note is separated by a comma and includes, in sequence: a duration specifier, a standard music note, either a, b, c, d, e, f or g, and an octave specifier. If no duration or octave specifier are present, the default applies

### Viewing RTTL notation

1. Connect the Kookaberry to a PC and open KookaIDE.
2. Load and run the **songs.py** programme from the **lib** folder of the Kookaberry.
3. The instructions for the first two opening notes to the **Entertainer** are:
  - **'Entertainer:** which is the name of the ring tone
  - **d=4** is the default note duration is a quarter note – or crotchet.
  - **0=5** is the default octave which is the fifth octave. RTTL supports playing tunes in four octaves from A below middle C, to four scales up. RTTL refers to these octaves by the numbers 5-8.
  - **b=140** is the default beat which is 140 beats per minute.
  - **8d** is an eighth note (quaver) of the note D in the default octave (5). It's frequency is approximately 264 Hz
  - **8d#** is an eighth note (quaver) of the note D in the default octave (5). It's frequency is approximately 311 Hz

The notation for a pause (p) of an eighth note length (quaver) is **8p**

### Open Question

What are the main differences between the RTTL and micro:bit musical notations? Check out the latter in the [Music Demo app](#) description.