

# Bluetooth communication documentation

*(Bluetooth communication between the Android App and the RFS board)*

**Initial handshaking message:** The RFS board side should be waiting for incoming connection request at the beginning. The Android App are responsible for initiating the Bluetooth connection request.

Step 1: Once connection is established, RFS will send a hello message("hello") to the app.

Step 2: The Android app then will send all game settings in one 3-byte string:  
game difficulty level(easy ["e"], medium ["m"], hard ["h"]),  
bird's color(red["re"], black["bk"], orange["or"],green["gr"], yellow["ye"], blue["bu"])).

Here is the format for sending game settings:

Difficulty level	Bird's color
Byte 2	Bytes 0 and 1

For example, If the player selects "median" difficulty level and green bird, the Android App should send a string "mgr".

Step 3: After RFS board receives the game setting signal, it sends back an acknowledgement message("OK") to the App.

After all the above handshaking process, now the Android App can start the game by sending the player's username(username is a string  $\leq 16$  characters) to RFS board.

**Jump signal:** Android App sends any 1 character(e.g. "1") to RFS board.

(once the game logic C++ code detect an incoming character, it will let the bird jump)

**Closing signal(Indicating game over):** RFS board sends the gaming score(e.g. "60") to the Android App as a closing signal.

**Below is the sequence diagram of the above's process:**

