Chessnut AIR

CA100

manual

（English）

1. Introduction

Warmly welcome to Chessnut AIR. The Chessnut AIR provides highly reliable piece detection sensor that every single piece could be identified by type and color on each square.

Chessnut develops multi-platform (incl. Windows, Mac OS, Android and iOS) software for users to support different ways of using the Digital Chess Set. Users can use the Digital Chess Set to record a game, also simply broadcast the game to others via internet. The software also provides strong chess AI engines, users can play against chess engine and even develop or plug in AI engine which supports UCI standard by themselves. A function named " Board Editor" can let users input a chess game via physical chess board or upload a PGN for further analysis, users can learn and play again to make improvement. Furthermore, the Chessnut AIR can save more than twenty offline games while users play against friend or other player, these games could be imported to PC for records and analysis thereafter, and due to the accurate and fast-response sensor, blitz could be well support by the detection system.

To use the Chessnut AIR, iOS and Android can be connected via Bluetooth, and Mac OS also support wireless connection. As for Windows users, it can be connected via USB HID connection.

We hope you have an enjoyable time with Chessnut AIR!

Technical specifications

Board size: 330 x 330 mm (13" x 13") Field size 35 x 35 mm (1.4" x 1.4")

Power Supplied: via the internal Li-ion battery Charging Via power adapter and 2M USB cable (included)

e-Piece support: All Chessnut Digital Chess Pieces (separately ordered) , which are assembled from a variety of material shells (including various wood and plastic) and built-in sensors developed by Chessnut

Net weight :4.2 Kg (148 oz.) e-Board only

Gross weight: 4.5 Kg (159 oz.) e-Board, e-pieces, USB-C cable, documentation

2. LED Status explanation

Power LED: Green (Chess board On); Red (Chess board On with less than 10% battery power)

Bluetooth LED: Sparkling Blue (Waiting to be connected) BLUE (Bluetooth connected to device)

Game Status LED & “ +” button:

a. To start an offline game, put the piece on physical board, then press “ +” button, Yellow LED on means the chess board is ready to record a new game.

b. While the game is over, long press “ +” button for 3s, the game is saved and Yellow LED off.

c. A sparkling Yellow LED means the memory is full, users can upload the saved game to PC in order to release memory.

3. Piece Recognition

Chessnut’s patented electromagnetic resonance (EMR) technology consists of a layer of sensors that sits behind the chess board. It can detect the moves of e-pieces(sensors inside) precisely and quickly. Based on this technology and advanced algorithm, users can play Blitz or even Bullet mode on it and no need to worry about the recognition that cannot keep up the speed of your chess.

Notice: Due to the limitation of EMR technology, please DO NOT place any metal or magnetic objects near the chess board when it is working, which may affect the recognition of chess pieces.

4. Recording a game

Without any connection to a computer or a smartphone, Chessnut AIR can independently record a game into its built-in storage.

While the chess board is ON, press “ +” button to start an offline game. At this moment, all executable moves would be recorded into the internal memory of chess board. At a later time, the log file will be transferred from internal memory to your PC, it is supposed to be PGN file. However, if there is exception occurred, let’s say, the illegal moves, the PGN file could not be generated as usual.

Chessnut PC software provides the ability to let users view every single move of the recording game and edit, the purpose of this function is to correct illegal move or missing status, then users can let software to generate a PGN for further analysis.

5. Play online at mainstream platform

The Chessnut AIR support mainstream platform like Chess.com and Lichess. Users can play online against human opponents with a natural chess set and get rid of the shackles of screen and mouse. It is very simple to use this function by entering play online module in the app. For Chess.com, users just log in the platform as usual by our built-in browser to enjoy the game. For Lichess, users need to do a Lichess authorization process in our app.

6. Board Editor

Board editor is a function that allows users to input any chess status via the physical chess board. Users can also set parameters like O-O, O-O-O and decide which color to take the next move.

While users finish the input, it can be started to play against a chess engine or your friend nearby, it also be supported to output a FEN then upload to a third-party engine like Lichess analysis module.

7. Broadcast a game online

Chessnut is maintaining a server to broadcast the games. Users can simply generate by sending a request to the server via app, share the URL which could provide live show of a game to anyone.

8. Play against AI engine

By default, an AI engine Stockfish v12 was built in the software, users can challenge the difficulty level from 1 to 5. The AI engine can also provide hints and analysis for users to improve. In addition, Chessnut team develops a very strong take-back logic to handle users' possible take-back action on physical chess board, the purpose of this logic is help users think and learn in a user-friendly way.

For users who have programming knowledge, the Chessnut software on Windows and Mac OS provide the ability to build up AI engine by themselves. Usually, the open source AI engine will follow a standard named UCI, Chessnut software provides a GUI interface to support UCI, which means it's easy to integrate 3rd party engine while users want to use.

9. Standard one-year manufacturer Warranty and Condition(s)

Chessnut warrants its products to the original consumer purchaser. Except for software and consumable items such as the battery, we guarantee our products to be free from defects in materials and workmanship under normal use and service.

10. Disclaimers

Chessnut spared no efforts to ensure that the information in this manual is correct and complete. However, there shall be no liability for any errors or omissions. Chessnut reserves the right to change the specifications of the hardware and software described in this manual without prior notice. No part of this manual may be reproduced, transmitted nor translated in any language in any form, by any means, without the prior written permission of Chessnut.

FCC Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates,uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

15.19 Labelling requirements.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1)This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC RF warning statement: the device has been evaluated to meet general RF exposure requirement , The device can be used in portable exposure condition without restriction.