Type 2 Liverpool Ringing Simulator

00 – RELEASE NOTES

Author: Andrew Instone-Cowie
Date: 09 July 2025
Version: 1.2

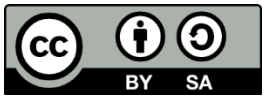
Contents

Document History

Version	Author	Date	Changes
1.0	A J Instone-Cowie	27/06/2024	First Version.
1.1	A J Instone-Cowie	14/04/2025	Type 1 – Type 2 Interface Adapter, Upcoming KiCad migration.
1.2	A J Instone-Cowie	09/07/2025	A1120 Support

Cover photograph: Prototype magnet mount, Liverpool Cathedral treble.

Licence



Attribution

[1] http://creativecommons.org/licenses/by-sa/4.0/

RELEASE NOTES

June 2024

Documentation Updates

After several years, the entire documentation set has now been updated, part numbers checked and amended, and guides updated with the latest tested versions of Simulator Software.

Component Costs

The price of many electronic components and other parts used in the simulator (particularly neodymium magnets) have increased dramatically over the last few years. The indicative cost of an 8-bell simulator with magneto-resistive sensors, which in 2019 would have been around £220, is now closer to £325. The ***Cost Estimation Tool*** spreadsheet has been updated with current, June 2024, prices. You may be able to reduce costs by sourcing parts from other vendors, but take particular care with low-priced semiconductors (which may not be as described), and with anything with obvious safety implications (such as power supplies).

ATmega328P

Microchip have recently announced that the ATmega328P microcontroller is “no longer recommended for new designs”, the first step towards being discontinued. However, the microcontroller is still widely available. The Simulator Interface code will in theory work on the ATmega168P microcontroller, but changes to the build process are required for this. Contact the project if this applies to your build.

Component Changes

Some minor component changes have been made to reflect changes in availability from vendors:

- The 5V voltage regulator previously specified has been discontinued. An equivalent replacement has been selected.
- Some IC socket part number have been changed, to reflect availability and minimum order quantity changes.
- The Screwfix part number for 20mm closed grommets has changed.

April 2025

Type 1 – Type 2 Interface Adapter

PCB design files and Gerbers have been provided for a simple interface adapter, which allows Type 2 sensors to be connected to a Type 1 interface, and vice-versa. As this is expected to be something of a niche requirement, the details are documented in the ***Technical Reference Guide***, not the ***Build & Installation Guide***.

RIP Eagle, PCB Migration to KiCad

The fortunes of the once-popular Cadsoft Eagle PCB design tool among the hobbyist and maker community have waned over recent years, following the acquisition by AutoDesk and changes to the

licensing regime. AutoDesk have announced[2] that Eagle will cease to be available or supported as a free-standing product in June 2026.

Like many other small projects, the Liverpool Ringing Simulator Project will migrate PCB designs to the open source KiCad EDA tool over the coming months. Existing Gerber files remain valid in the interim.

July 2025

Magnetic Sensor Support for A1120EUA-T Hall Effect Sensor

The Type 2 simulator Magnetic Sensor Module now supports the Allegro Microsystems A1120EUA-T Hall Effect sensor as a lower cost alternative to the Honeywell 2SS52M magneto-resistive sensor. This support is based on work by Alan Griffin and Derek Livesey.

Magnetic Sensor PCB Rev E is required for the A1120EUA-T, and the updated PCB can accommodate either one A1120 device or one 2SS52M device, in right- and left-handed configurations. The details can be found in the updated ***Build & Installation Guide***.

[2] https://www.autodesk.com/support/technical/article/caas/sfdcarticles/sfdcarticles/Autodesk-EAGLE-Announcement-Next-steps-and-FAQ.html