

Design Brief

Specification

Eebug challenge:

- The bug must follow a track marked in fading greyscale //leaving a marked trail where it has been.
- At the end of this track the bug must continue for straight on for 10cm and then draw a spiral with decreasing radius.
- Must complete at least one full turn before stopping.
- The bug must draw a line indicating the path it has taken throughout the test.
- NB extra functions will gain extra marks.

The playing field:

- Dimensions 1250mm x 610mm.
- Clear polycarbonate cover covering a sheet of paper (white A1) with the track drawn on.
- The track is approximately 6mm wide.
- Minimum curve radius of 7cm.
- 20mm thick black border around the edge.

Eebug design constraints:

- The design must implement an improved version of the stock Eebug.
- Enhancements must not exceed £8 per bug.
- Maximum of two sensors.
- All circuits nodes must be represented on the supplied breadboard.
- Maximum of 4 AA batteries.
- Must be completely autonomous.
- Basic bug architecture must not be altered.
- Microprocessors must not exceed 8 pins.
- The bug must not be confused by uneven lighting conditions.
- Must have a single switch (or equivalent system) to start. Making a bread board connection is not acceptable.
- Logbooks must contain a single page of operating instructions.
- Must work with used batteries (>4A when shorted through an AVO set to 10A DC range).