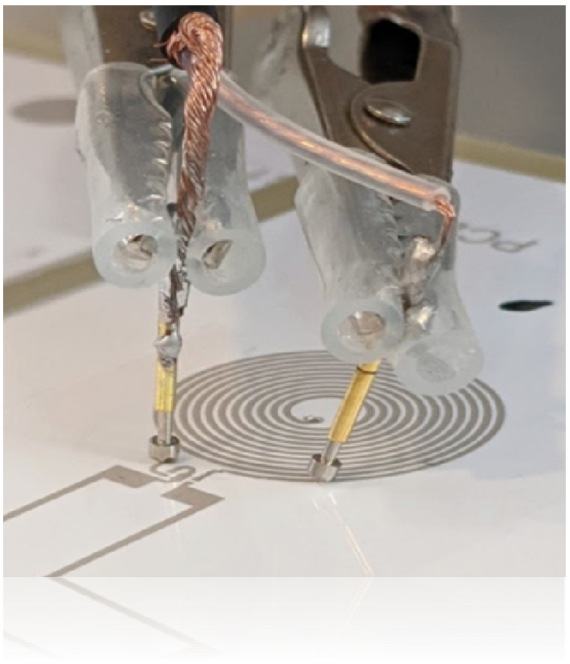
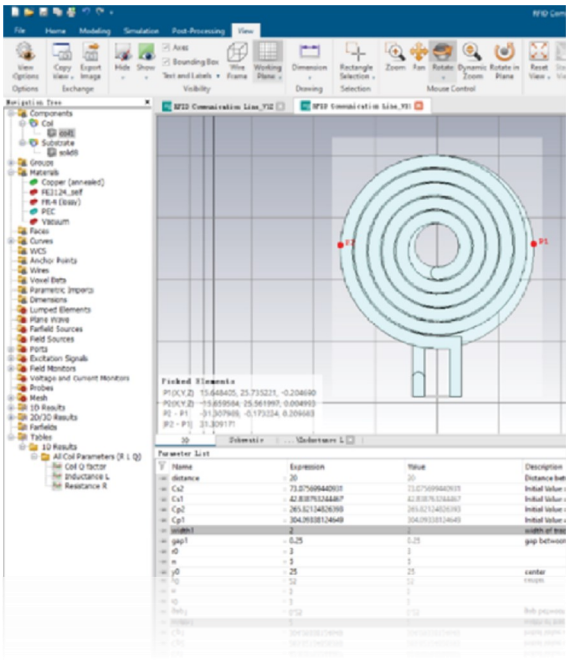
PRINTED ELECTRONICS
RFID (NFC) COILS

HENWAY Technologies





- **RF Antenna Design**
- **Printed Electronics**
- **Wearable Electronics**
- **RF Simulation**
- **Custom Test Fixture**
- **Quick Turn**

Project Overview

We helped a customer design an RF antenna out of FE3124 to be printed on PET material. The diameter of the antenna needed to be small and the overall resistance of the printed traces needed to be minimum in order to achieve maximum RF distance.

The goal was to achieve a specific Q factor at 13.56MHz with an inductance within 1.35-2.40uH in order to satisfied with the requirements of the RFID chip chosen by the customer. We chose the following development process for this project:

- Simulate the antenna using the properties of the ink, the material it's printed on, and the enclosure.
- Make several predictions and produce several samples with differing LRC components
- Measure the samples and compare the results against the RF simulation
- Test RF range using several different mobile phones
- Do a second iteration and retest

The result were that we could get 20mm of NFC range using a Google Pixel 2 while inside it's plastic enclosure.

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