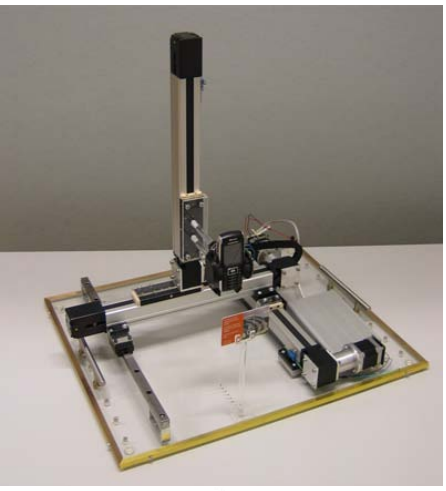

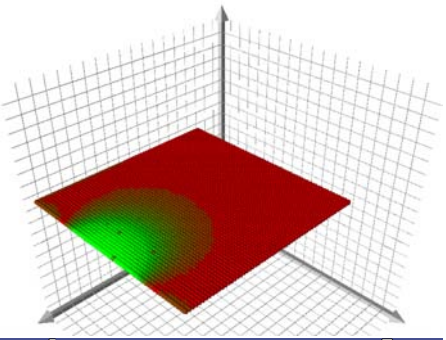

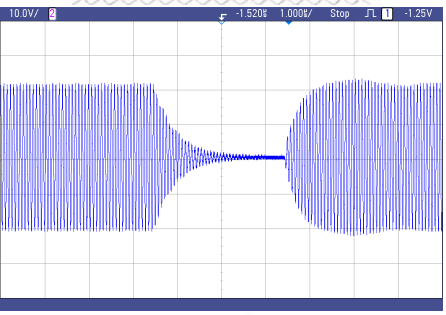

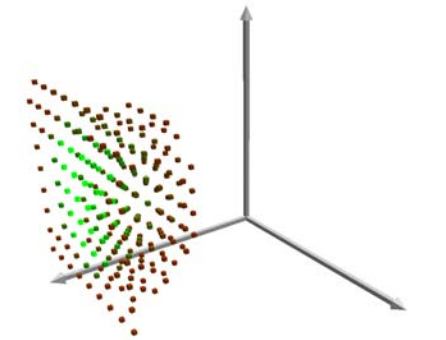

NFC Testing

Robot based Testing System for NFC Devices

Overview

The focus of the NFC Testing project is the development of profound measurements methods to verify interoperability between different Near Field Communication (NFC) devices. From the results of the theoretical analysis we developed a robot-based testing system.

The device under test (DUT) can be moved in x-, y- and z-coordinates, thus the measurement results of the connection status can be displayed in 2D and 3D. The whole system is controlled by a test suite on a personal computer. The test suite takes over tasks like: controlling the robot, acquisition and illustration of the measurement points, managing tests and results, and handling devices under test. The communication between the test suite and the DUT can be established by using Bluetooth, GPRS, WLAN or PC/SC.

Another feature of the test suite is the integration of an oscilloscope for the measurement of the field amplitude. It is also possible to include an NFC protocol analyzer.

With the robot-based testing system the interoperability within new NFC devices like mobile phones, PDAs and contactless readers can be tested to grant the reliability of the near field communication. Another focus of the test system are performance tests to check power aware methods, circuit and antenna modifications and positioning considerations.

Technical Specification

- Simultaneous movement in three dimensions
- Maximum deflexion in all three directions: 191 mm (765 steps)
- Step size of 0.25 mm
- Three speed grades:
  - 0.7 mm/sec in slow modus
  - 2.8 mm/sec in medium modus
  - 30 mm/sec in fast modus
- Connection to computer (test suite) via USB
- Connection to the DUT via Bluetooth, GPRS, WLAN or PC/SC
- Power Supply:
  - Stepping motor supply: 230 V, 3.3 A
  - Controller supply: 5 V from the USB

Contact Information

University of Applied Sciences of Upper Austria
NFC Research Lab • Research Center Hagenberg
Dipl.-Ing. (fh) Christian Saminger
4232 Hagenberg • Austria • Softwarepark 11
Tel. +43 (0)7236 3888-7146 • Fax +43 (0)7236 3888-7199
christian.saminger@fh-hagenberg.at • www.nfc-research.at