

Aufgabe der Abschlussarbeit im ISE Bachelorstudiengang

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- gestellt von:** Prof. Dr.-Ing. Klaus Solbach
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- Thema:** **Development and Implementation of an Automated Measurement System for RF Parameters of a DECT System**

Beschreibung:

An automated measurement system is to be developed as an extension of the Lantiq's own Software "Coreco". The system is to be used to test DECT (Digital Enhanced Cordless Telecommunications) RF-parameters according to ETSI (The European Telecommunications Standards Institute) specifications. As the Programming Language TCL and the GUI toolkit TK should be used. The automated system should be able to communicate with the required test equipment through GPIB or serial ports, automatically carry out the specified test case and acquire the data.

DECT standard is used for short-ranged cordless communications (voice and data traffic) in the frequency band of 1880 MHz to 1900 MHz (inside Europe). ETSI EN 301 406 is part of a set of standards designed to test RF DECT parameters.

The task:

1. Develop an understanding of the concepts in ETSI standard with the help of the related literature.
2. Learn and use the programming language TCL to extend the Lantiq's own Software "Coreco".
3. Perform the measurements manually first, then automate the test case. The required test cases in the ETSI EN 301 406 include:
 - Accuracy and stability of RF carriers
 - Accuracy and stability of timing parameters
 - Transmission burst
 - Transmitted power
 - RF carrier modulation
 - Unwanted RF power radiation
 - Radio receiver testing
4. Interpret the measurement results and compare the automated test results with the manual measurement results.

A final presentation of the results has to be given in the department of Hochfrequenztechnik (HFT).