# Implement a High-speed Side-channel Capture Interface

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## Motivation

This project aims to improve and optimize the measurement interface used in side-channel analysis. In this field, tens of millions of independent measurements must be taken to evaluate side-channel countermeasures, therefore an efficient and well-optimized measurement interface needs to be implemented which can generate, measure and validate these experiments. Your task would be to design and implement such an interface for evaluating side-channel countermeasures on FPGAs and embedded devices. The skills would include embedded programming, FPGA hardware design and protocol development and the intended target is the CW305 FPGA board. The outcome would be an efficient measurement system you create which combines the evaluation target, high-speed oscilloscope and associated software.

## Goals and Tasks

- Design and implement an optimized protocol based on device characteristics.

- Develop the software/hardware to implement your design.
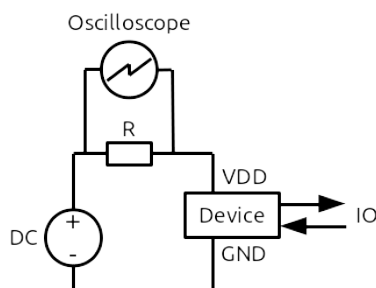


## Literature

> NewAE
  CW305
  https://chipwhisperer.readthedocs.io/en / latest / Targets / CW305 % 20Artix % 20FPGA.html

## Courses & Deliverables

- ☑ **Master Project**
    Project code
    Report
    Presentation

## Recommended if you're studying

☑ CS    ☑ ICE    ☑ SEM

## Prerequisites

> Hardware design, Embedded Programming

> Programming in C, Systemverilog and Python

## Advisor Contact

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