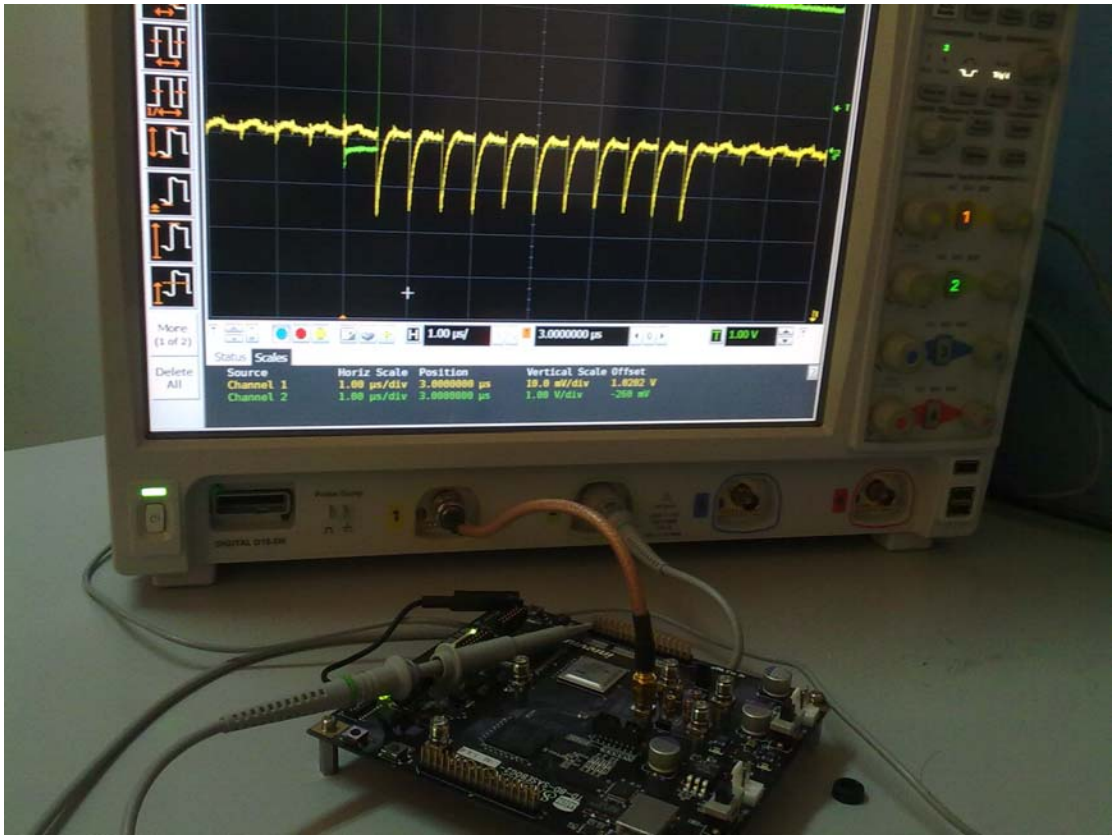
Description

Platform:



We connect SASEBO to Agilent DSO9104A, using SMA cable(J2) and one probe(1st pin of J6) .

The oscilloscope we used is Agilent DSO9104A.

DSO9104A collect power consumption traces and store them in disk, and then PC accesses them by LAN.

After collect power consumption, the next two steps we did were as follow:

1. Resynchronization

   Like AOC, we define Pearson correlation $cor(X,Y)_i = \sigma(X_{1\sim(n-i)}, Y_{i\sim n})$, where X and Y are traces, with n samples respectively.

$$\sigma(X,Y) = \frac{\mathrm{cov}(X,Y)}{\sigma_X \sigma_Y} = \frac{E(XY) - E(X)\cdot E(Y)}{\sigma_X \sigma_Y}$$

   $\hat{k} = \arg\max_{1\le k\le n-1}(cor(X,Y)_k)$, move the Y with $\hat{k}$ samples.

2. Averaging

   For each traces X, note X_i the sample of X at date $i \in Z$.

   Every X_i are replaced by $X_i^{'} = \frac{1}{2K+1}\sum_{j=i-K}^{i+k} X_j$, we find that K=5 give the best result.

At last, we only select the last 2000 sample points each trace.