

Progress of IRS Testing

Chih-Ching Chen

Chiu-Chuan Yao and Ming-Yuan Liu

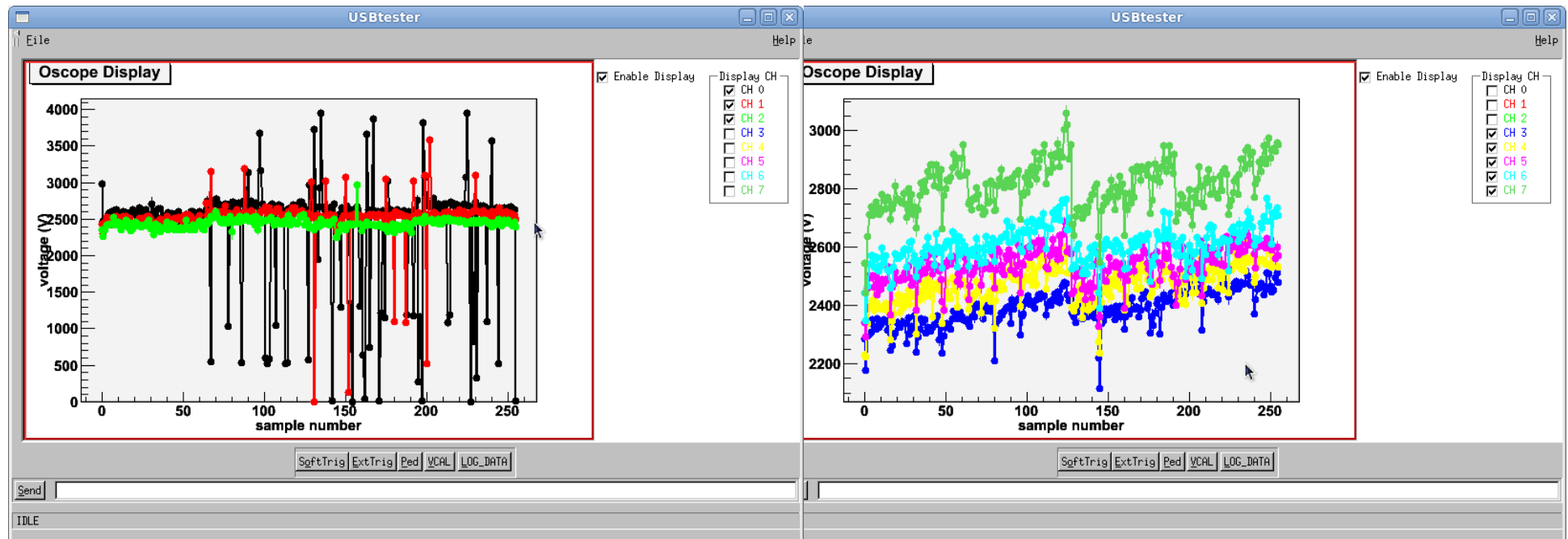
09/16/2010

List of Gary's Suggestion

- Check TSA sampling trigger timing
- Voltage calibration
- Sampling timing calibration (Δt)
- CMPBias study

Channel Problem

- The CH0-CH2 signal are bad after 64 sampling points in new IRS chip.



IRS Board testing

- Checked all DC voltage value for all board
 - all of the value is correct.

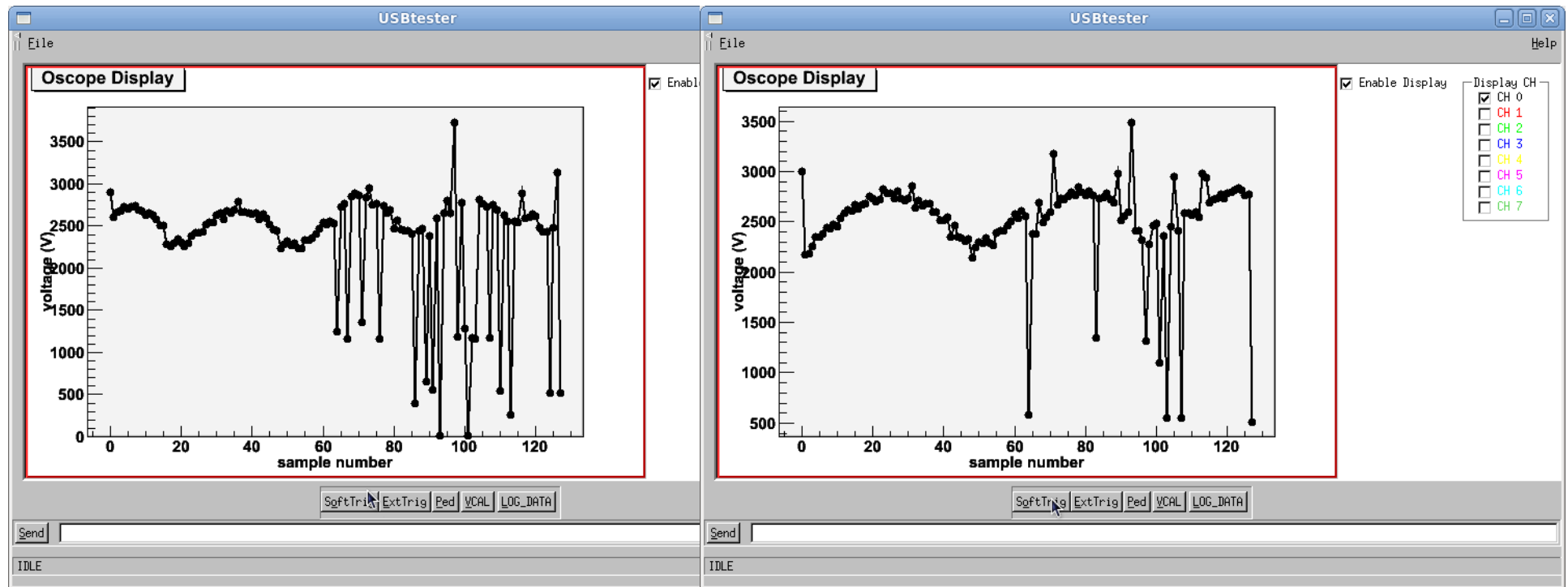
Checked DAC output value – correct

New IRS Board:

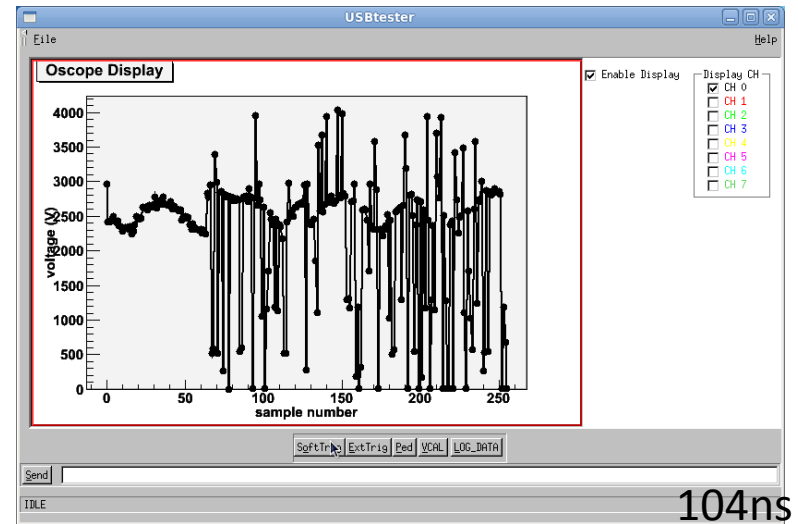
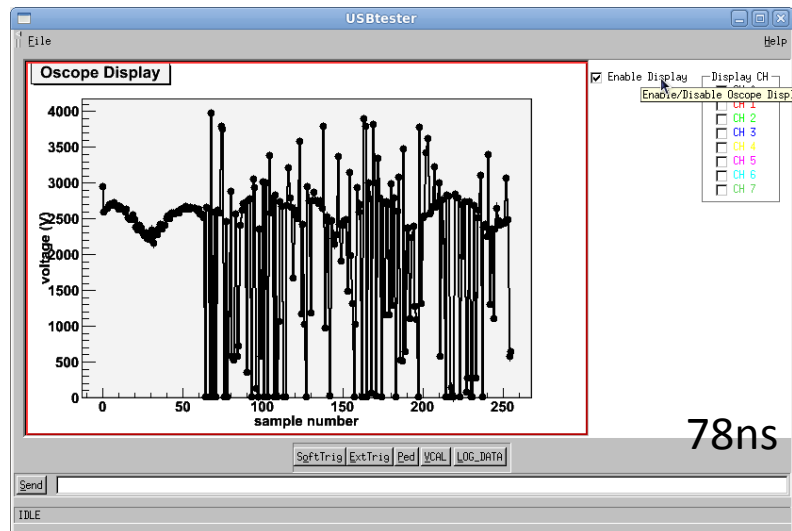
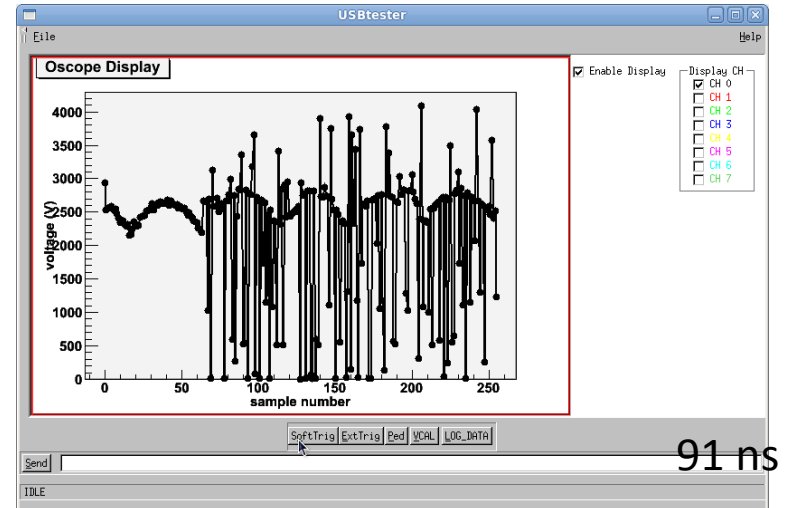
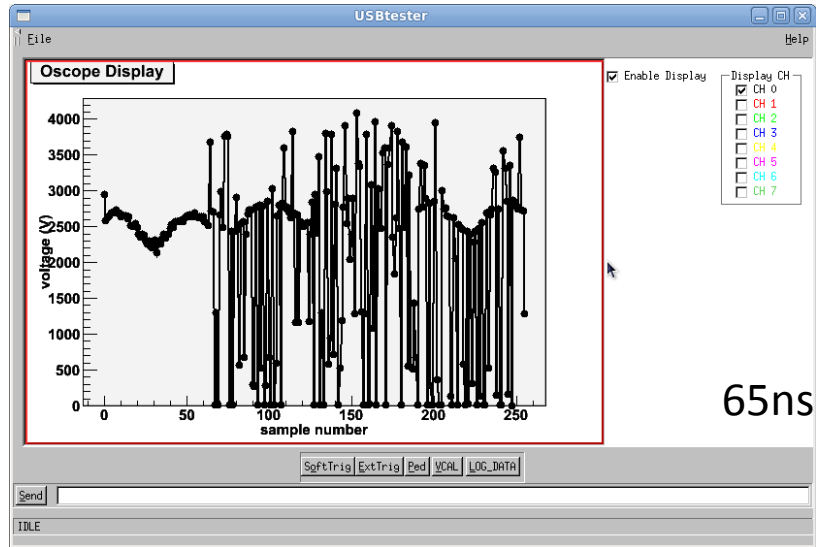
We will receive new backup board at Friday.

TSA testing

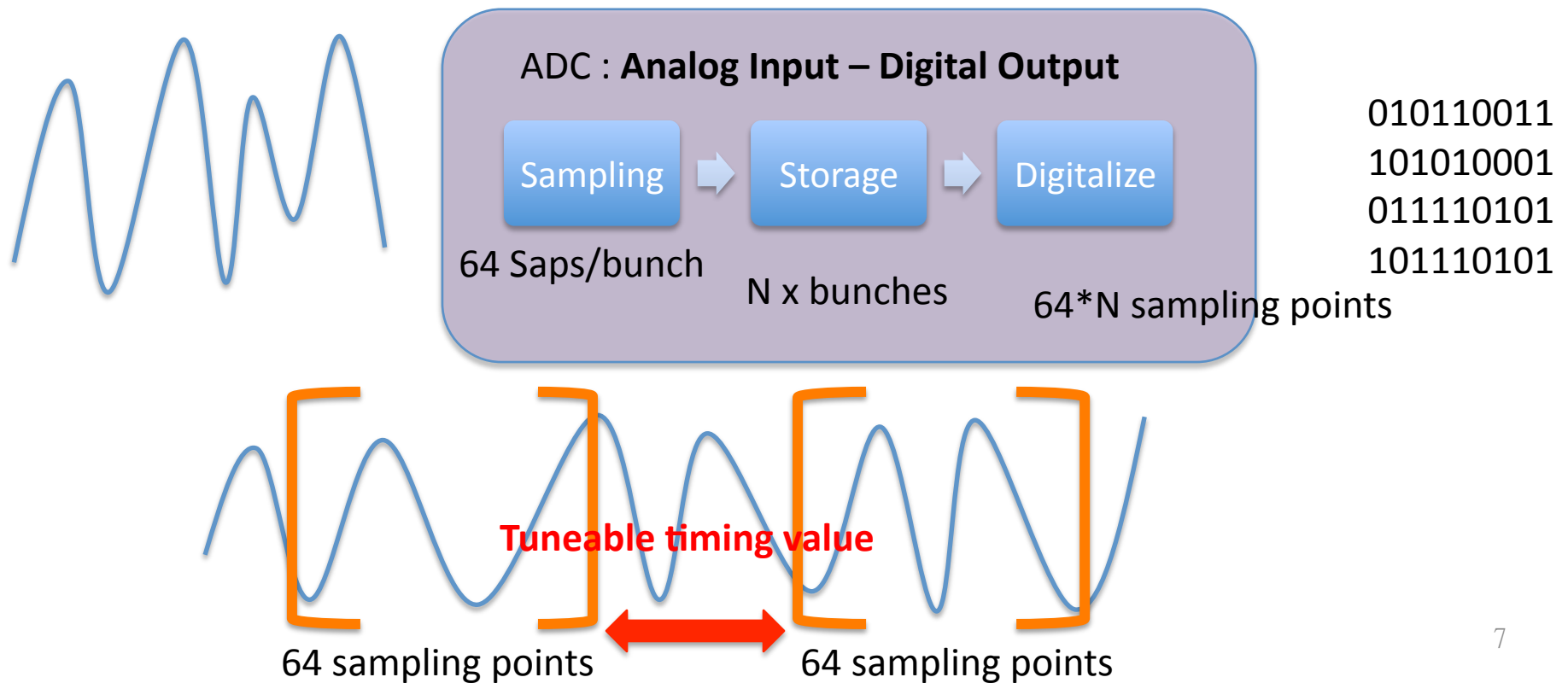
- The timing setup can't fix this problem
 - This is storage or digitized part problem



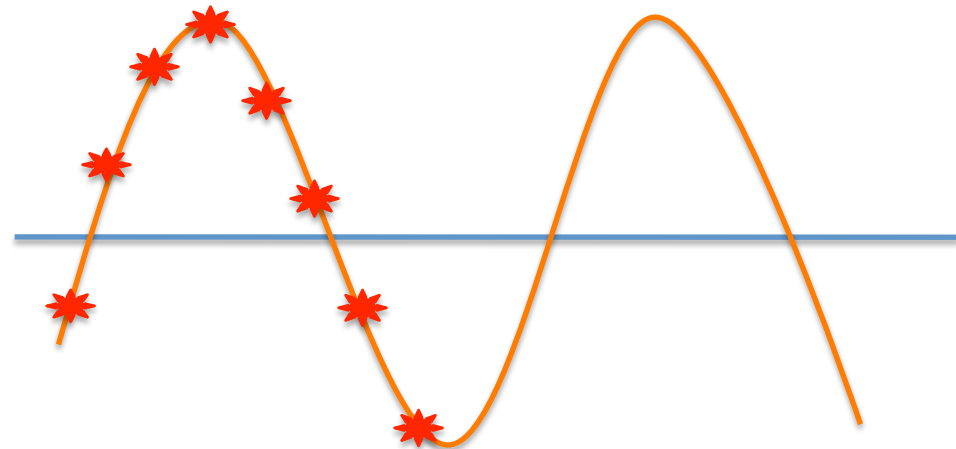
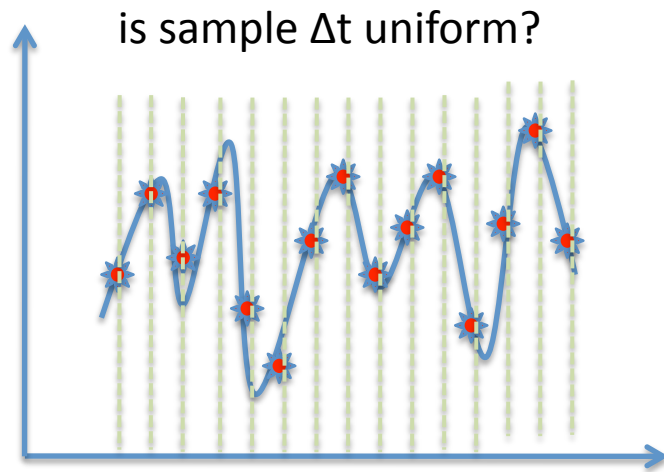
Different TSA value



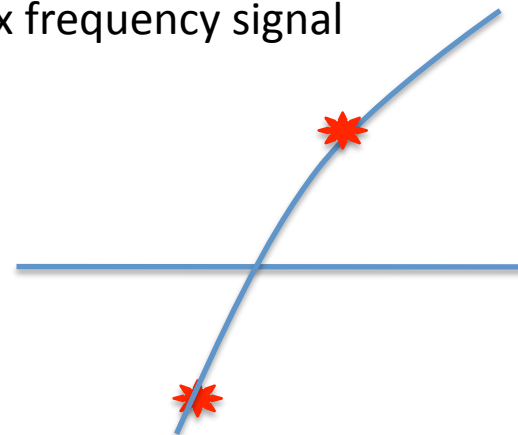
IRS Chip Working Method



Sampling Timing Calibration by zero-crossing



Fix frequency signal



$$A * x = y$$

$x:[256]$

$A:[N][256]$

$Y:[N]$

least squares solution:

$$X = (T(A) * A)^{-1} * T(A) * y.$$

singular value decomposed solution