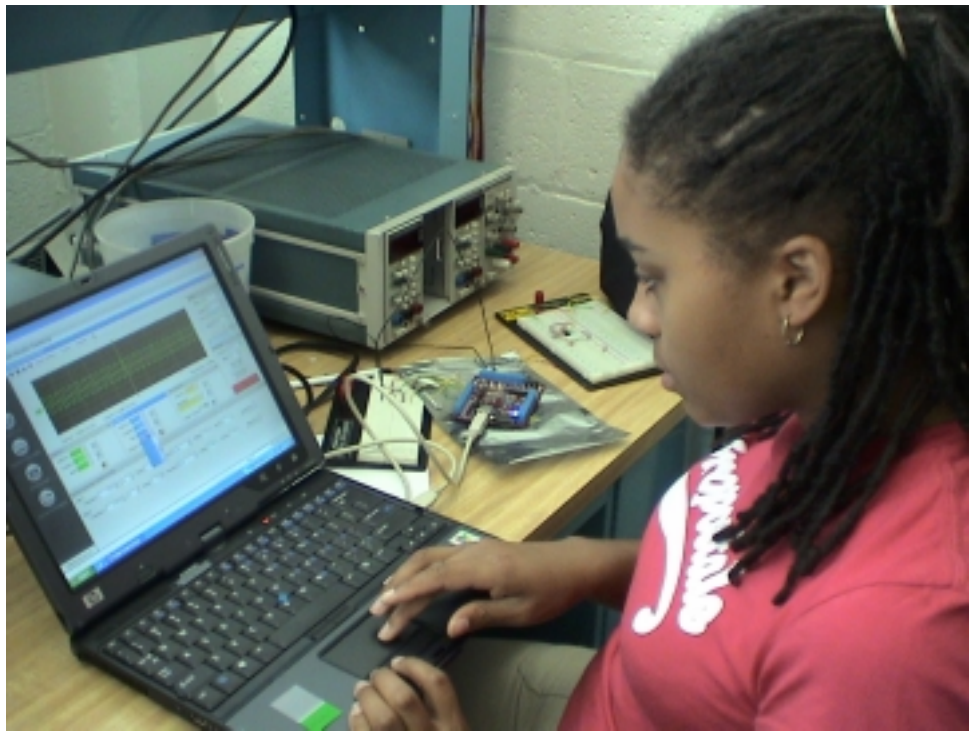
Howard University
Mobile Studio Lab
Tutorial

WWW.MWFTR.COM



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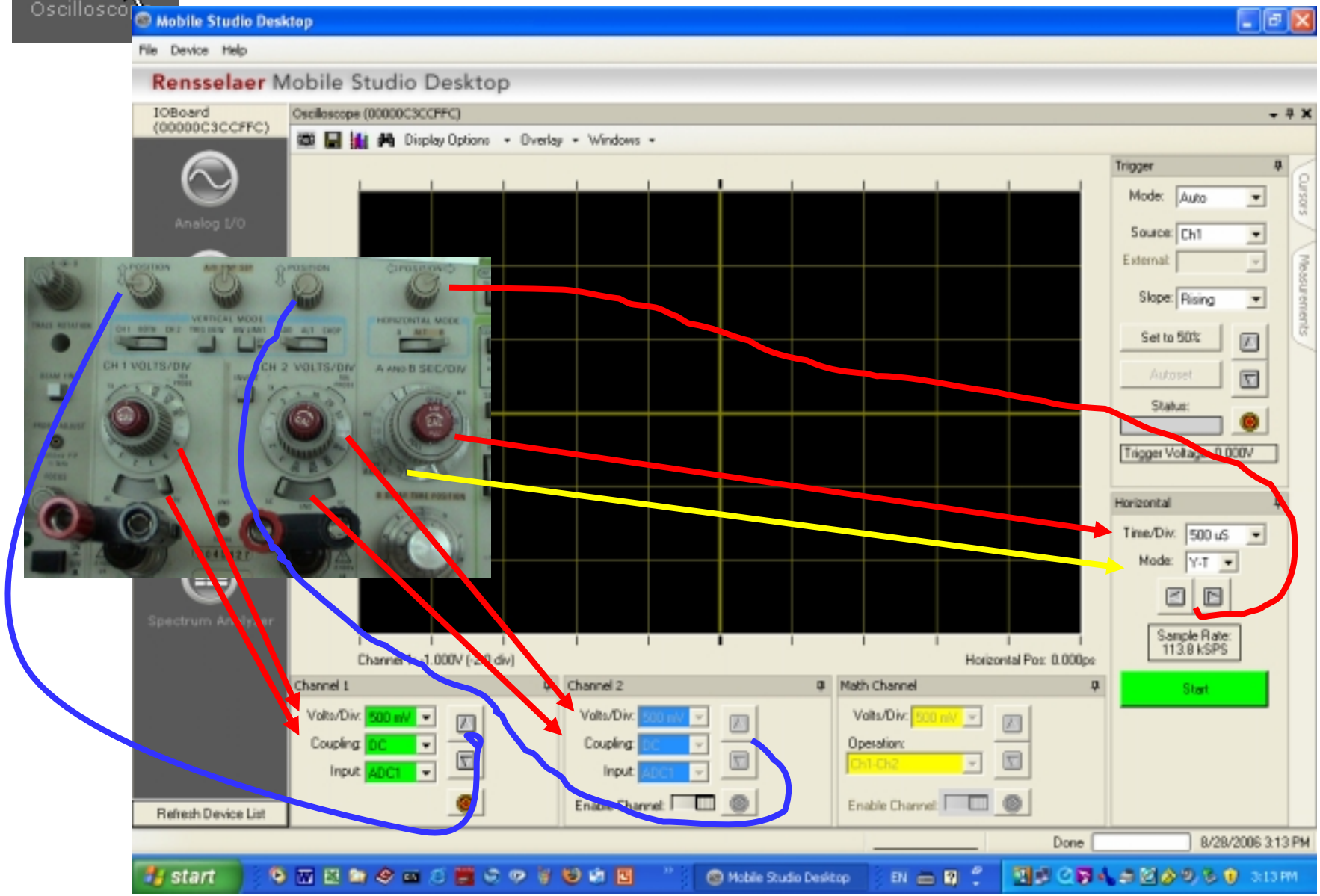
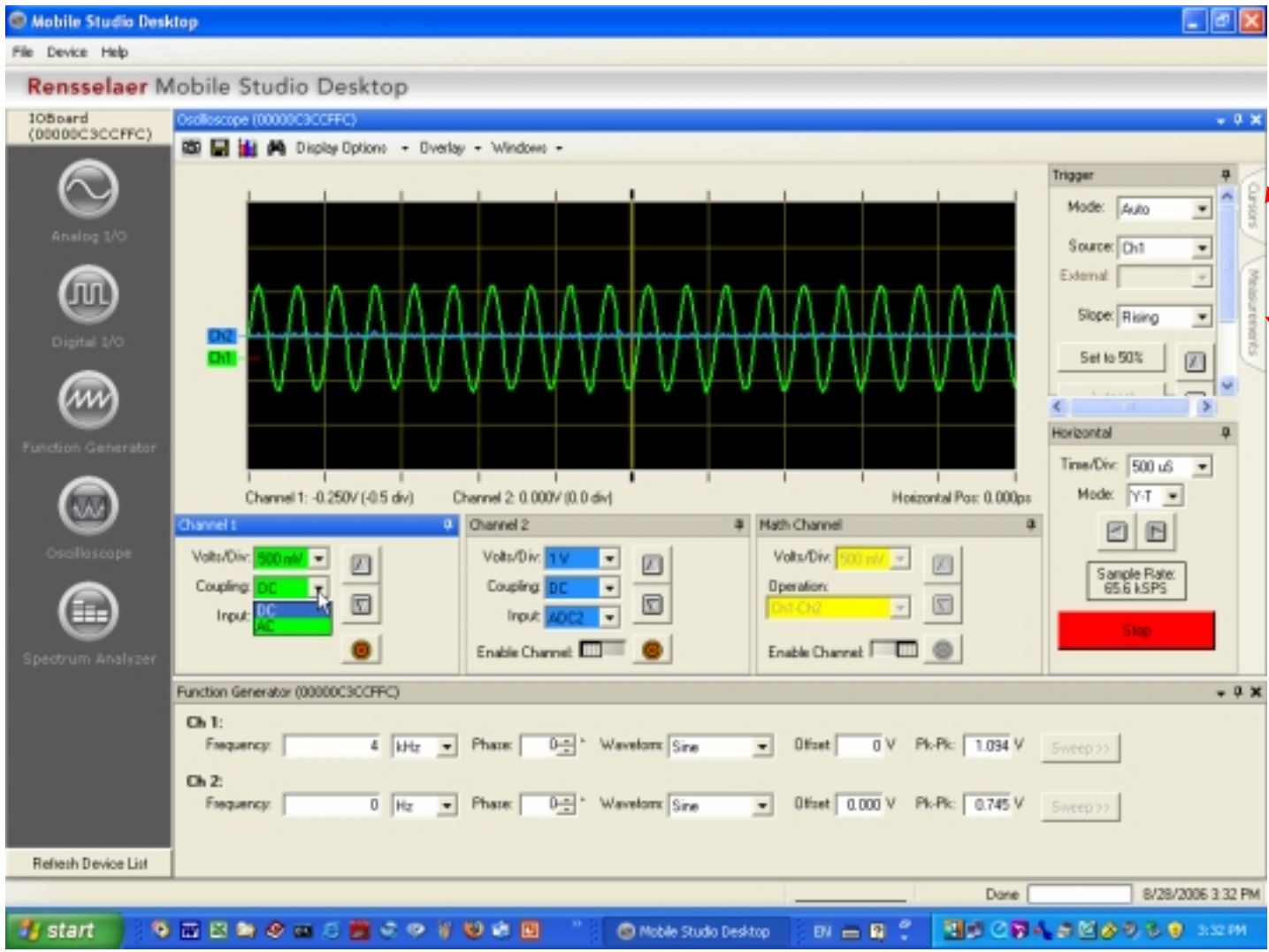
Mobile Studio Desktop Functionality

Scope Function



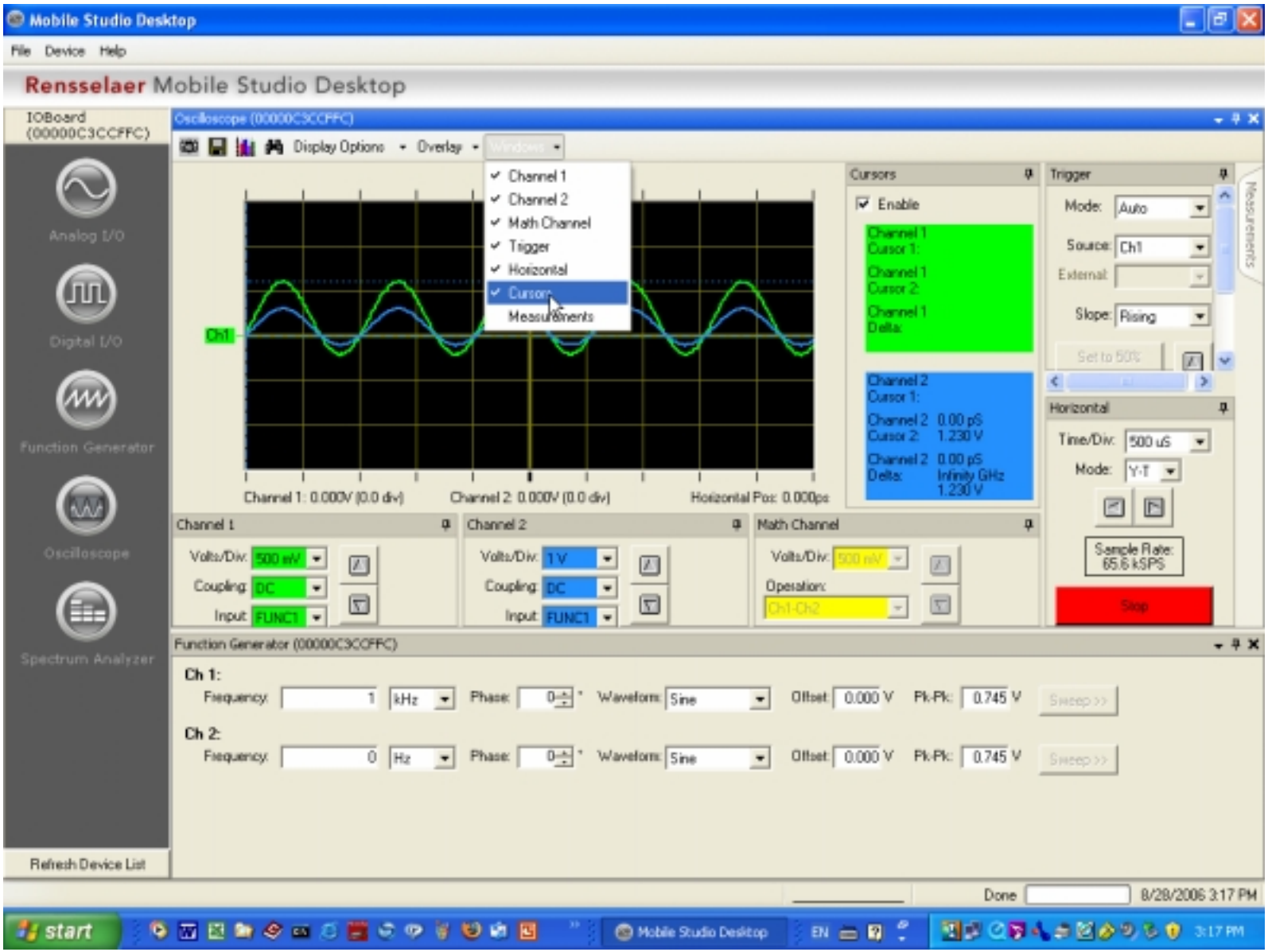
Scope and Function Gen Functions



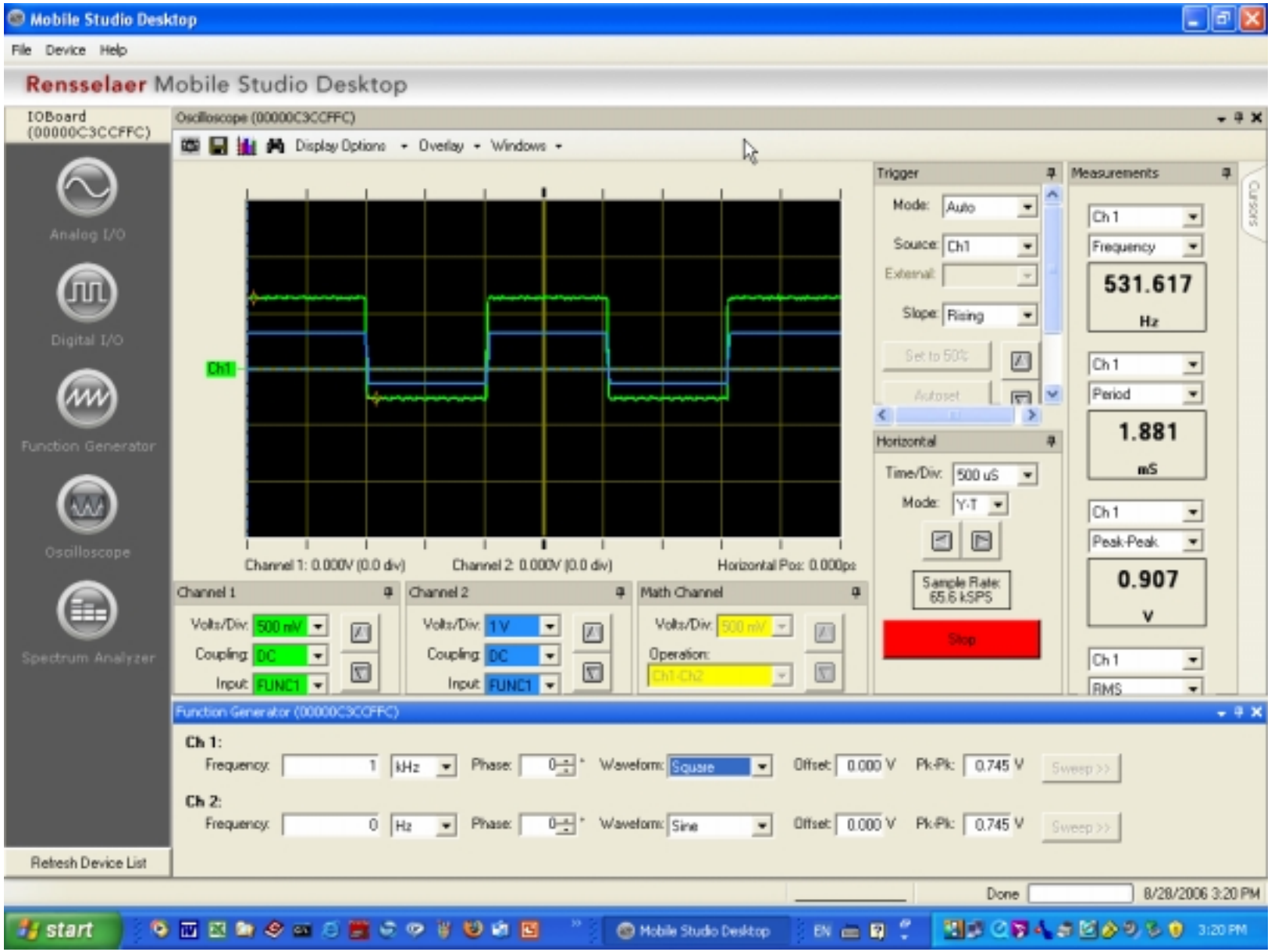
Cursor

Meas.

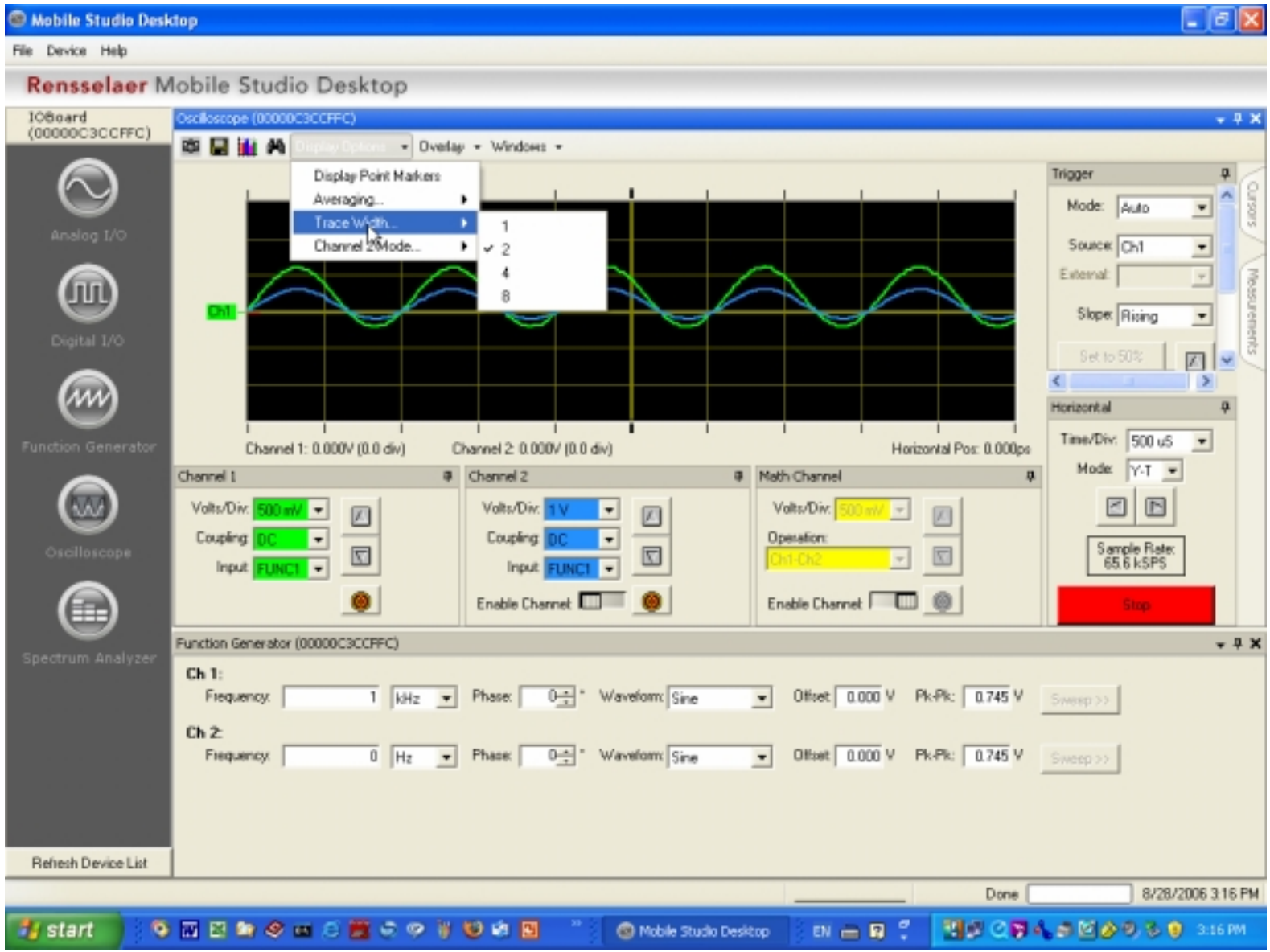
Scope & Function Gen with Cursor Option



Scope & Function Gen with Measurement Option



Scope function with Line Width Selection

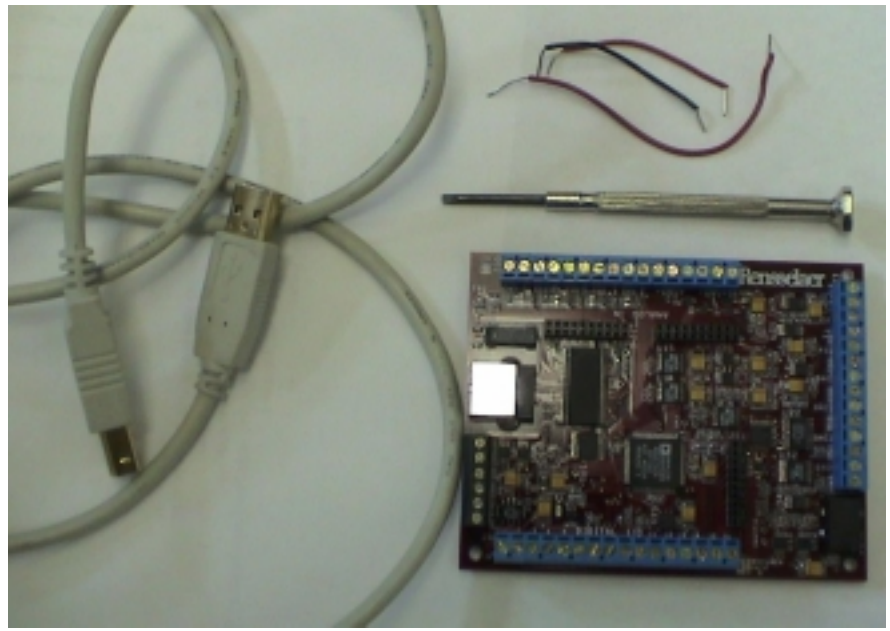


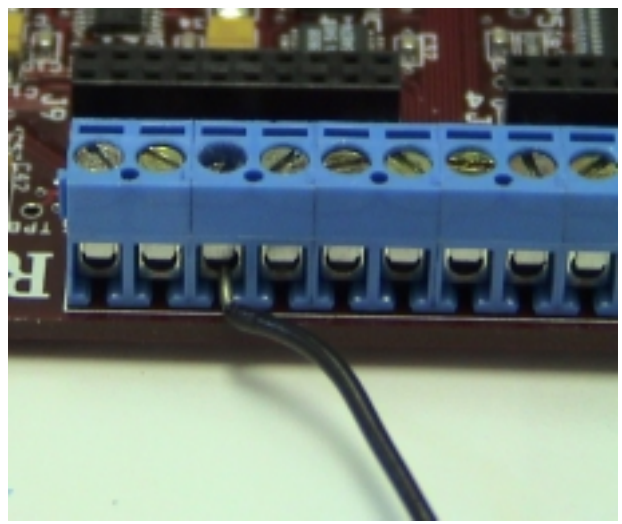
Example Lab – Voltage across a resistor

- Lab Ex1
  - Purpose: Familiarity with HU Mobile Lab Studio
  - Equipment List: None
  - Preparation: HU Mobile Studio, Wires, Breadboard, 2 Resistors
  - Procedure 1:
    - Connect 2 resistors (10K and 20K) in series
    - Apply +5V at the two ends of the series resistors
    - Measure the voltage across each resistor
    - Verify the “Voltage Divider”
  - Procedure 2:
    - Do the same experiment as Procedure 1 while, in place of the +5V above, applying 400Hz sinusoidal source with peak-to-peak voltage of 1V.

Lab Ex1 in Mobile Studio Lab

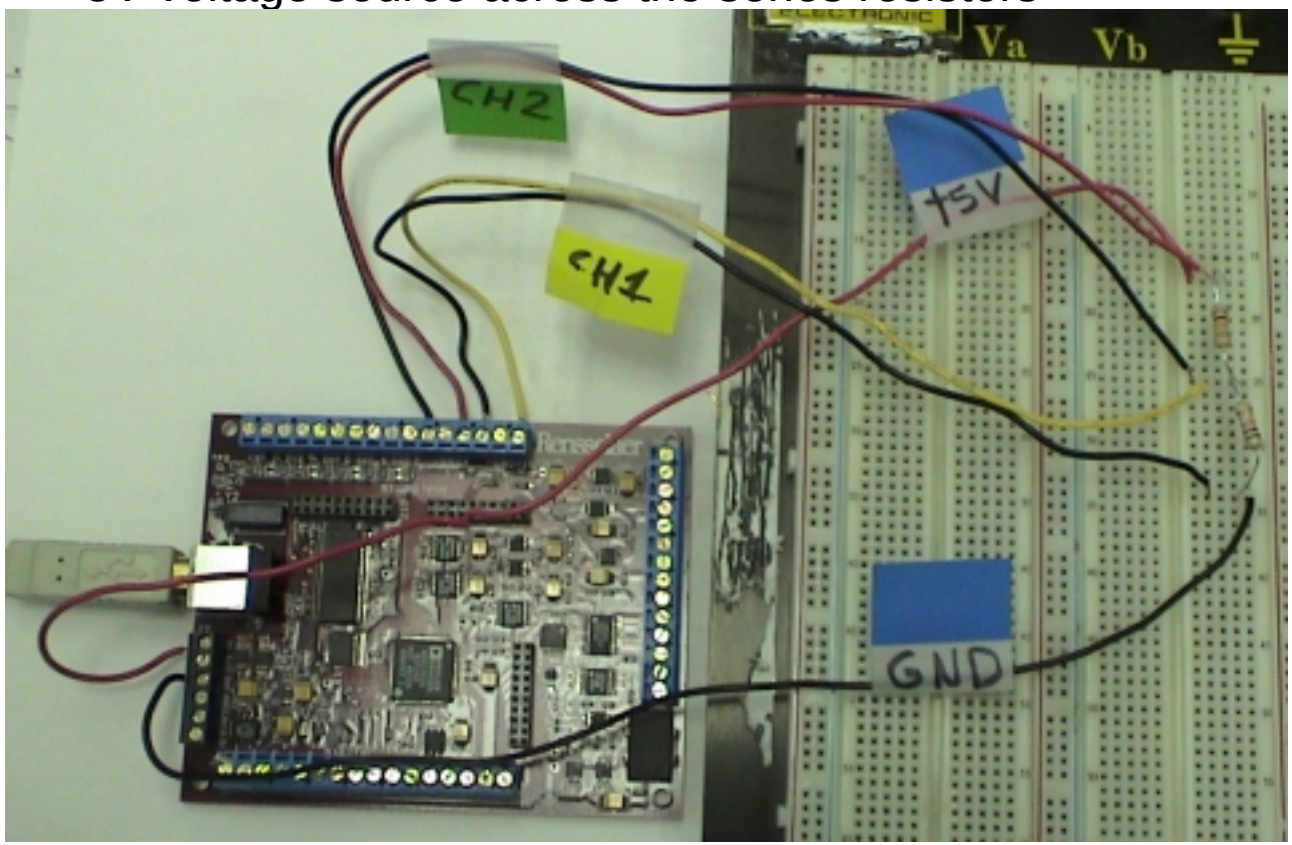
– Preparation:
  - *IOBoard*
  - USB Cable
  - Wires
  - Small Screw Driver
  - Wire cutter/stripper





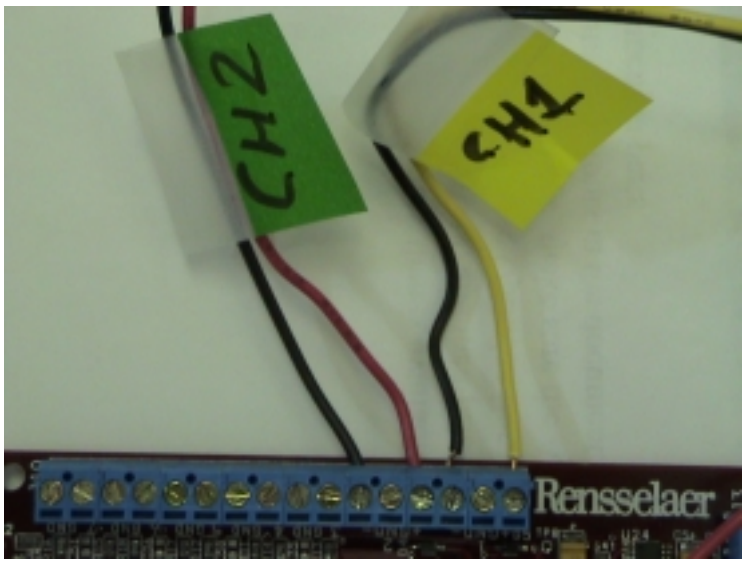
Lab Ex1 in Mobile Studio Lab

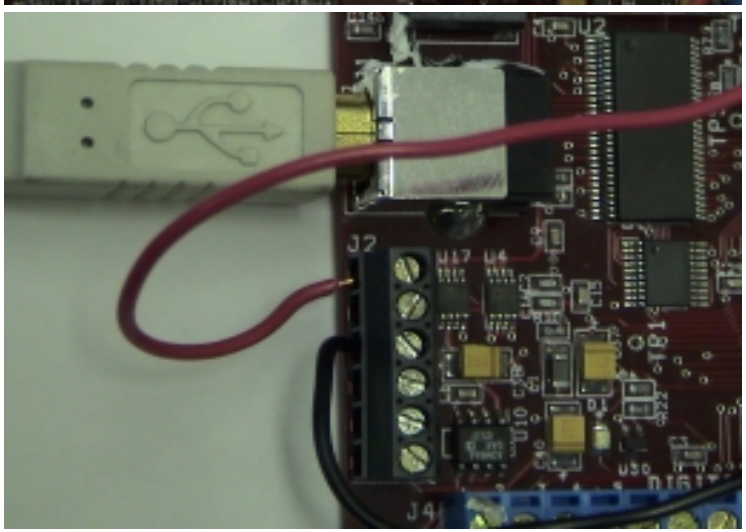
- Procedure 1
  - Step 1: Circuit and Connection
    - Scope Ch1 for lower resistor
    - Scope Ch2 for upper resistor
    - +5V voltage source across the series resistors

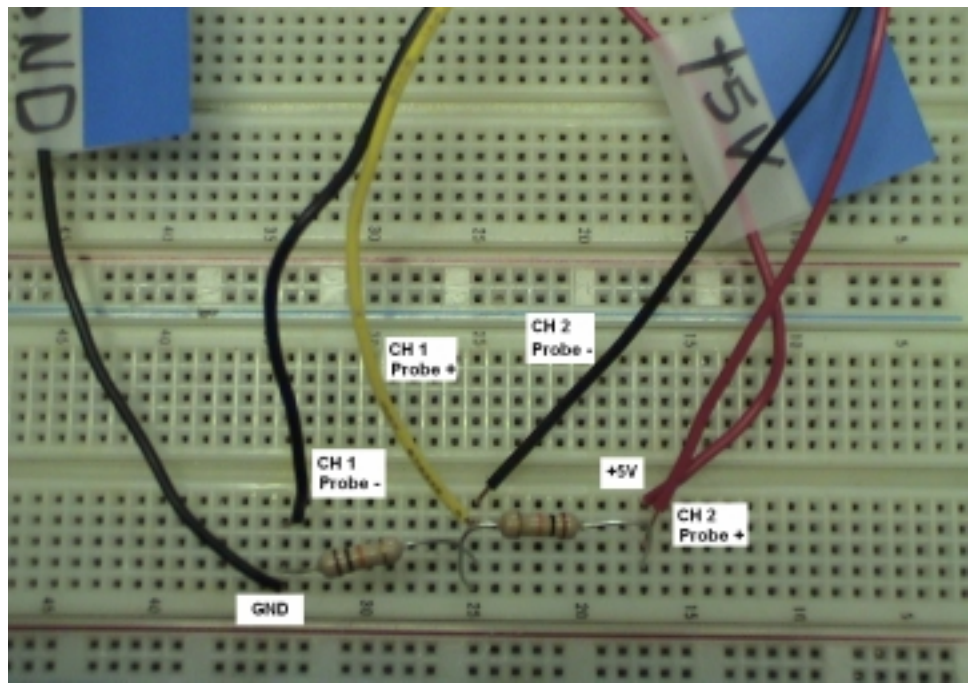


Lab Ex1 in Mobile Studio Lab

– Step 1 – connection details



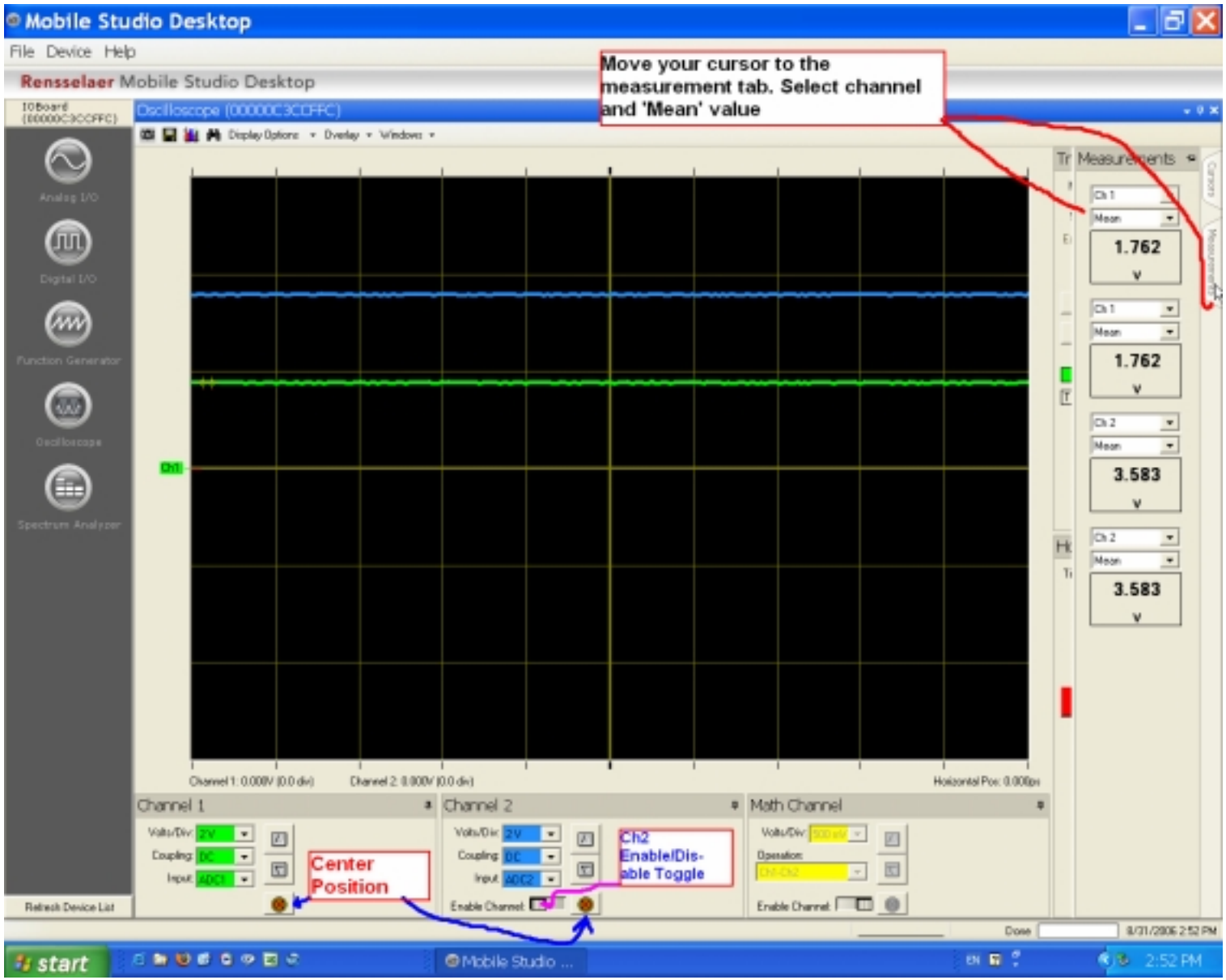




Lab Ex1 in Mobile Studio Lab

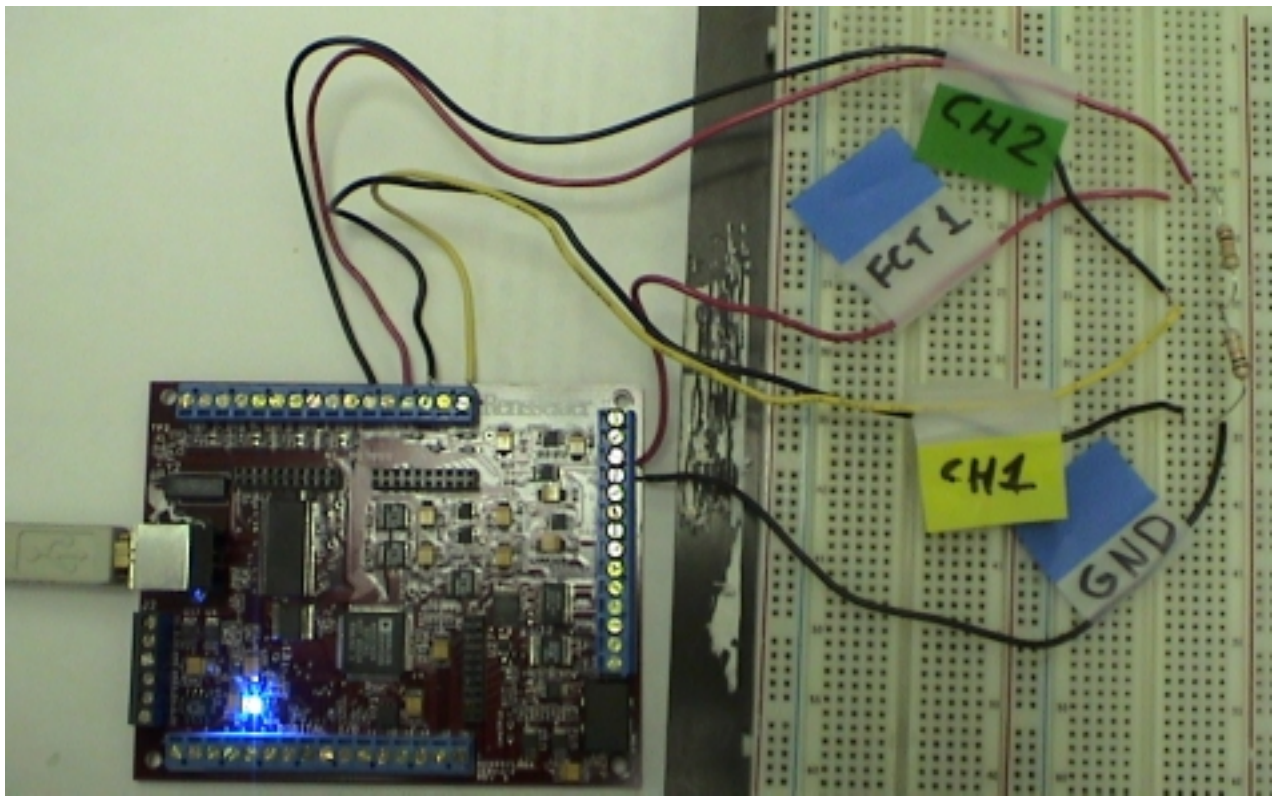
- Procedure 1
  - Step 2: USB connection between IOBOARD and PC [Laptop, TabeltPC, etc]
  - Step 3: Run “Mobile Studio Desktop”
  - Step 4: Select “scope” from the vertical bar
  - Step 5: Click ‘Start’

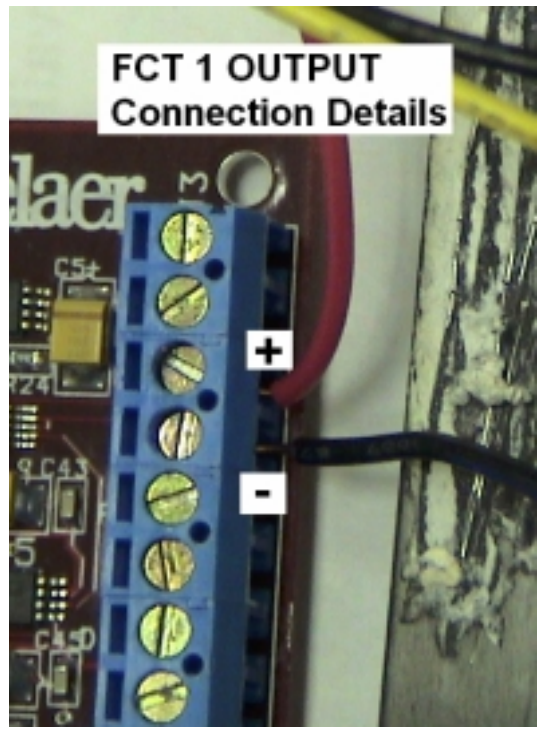
Screen Shot


Mobile Studio Desktop
File Device Help
Rensselaer Mobile Studio Desktop
Move your cursor to the measurement tab. Select channel and 'Mean' value
Oscilloscope (00000C3CCFFC)
Measurements
1.762
1.762
3.583
3.583
Channel 1
Channel 2
Math Channel
Center Position
Ch2 Enable\Disable Toggle
start
Mobile Studio ...
2:52 PM

Lab Ex1 in Mobile Studio Lab

- Procedure 2 – Voltage Divider with Sinusoidal Signal
  - Step 1: Circuit and Connection
    - Scope Ch1 for lower resistor
    - Scope Ch2 for upper resistor
    - Function generator 1 output across the series resistors

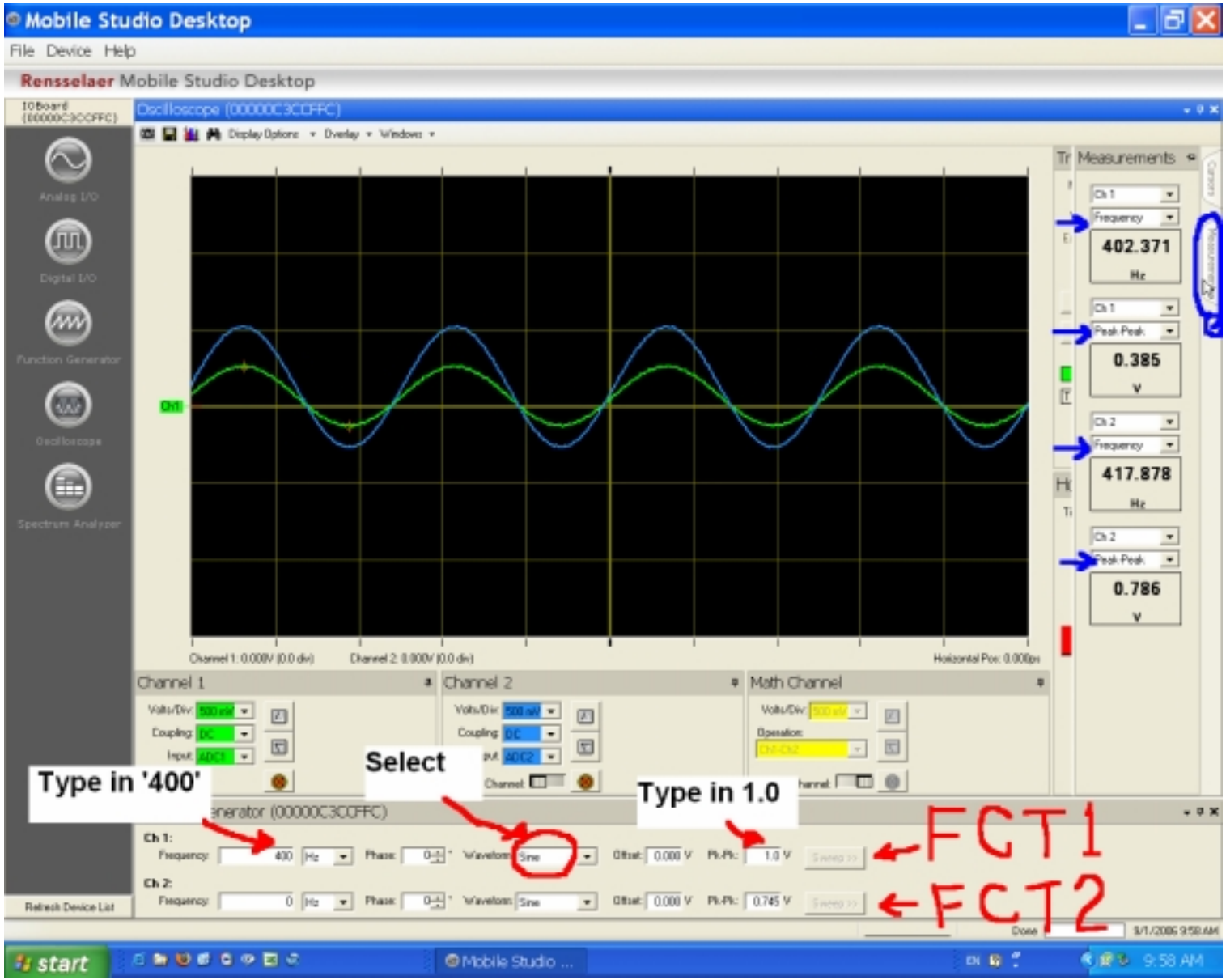




Lab Ex1 in Mobile Studio Lab

- Procedure 2
  - Step 2: USB connection between IOBOARD and PC [Laptop, TabeltPC, etc]
  - Step 3: Run “Mobile Studio Desktop”
  - Step 4: Select “scope” from the vertical bar and Click “start”
  - Step 5: Select “Function Generator” from the vertical bar
  - Step 6: Arrange two function windows appropriately.

Screen Shot


Mobile Studio Desktop
File Device Help
Rensselaer Mobile Studio Desktop
Oscilloscope (00000C3CCFFC)
Measurements
402.371
Hz
0.385
V
417.878
Hz
0.786
V
Channel 1
Channel 2
Math Channel
Type in '400'
Select
Type in 1.0
FCT1
FCT2
start