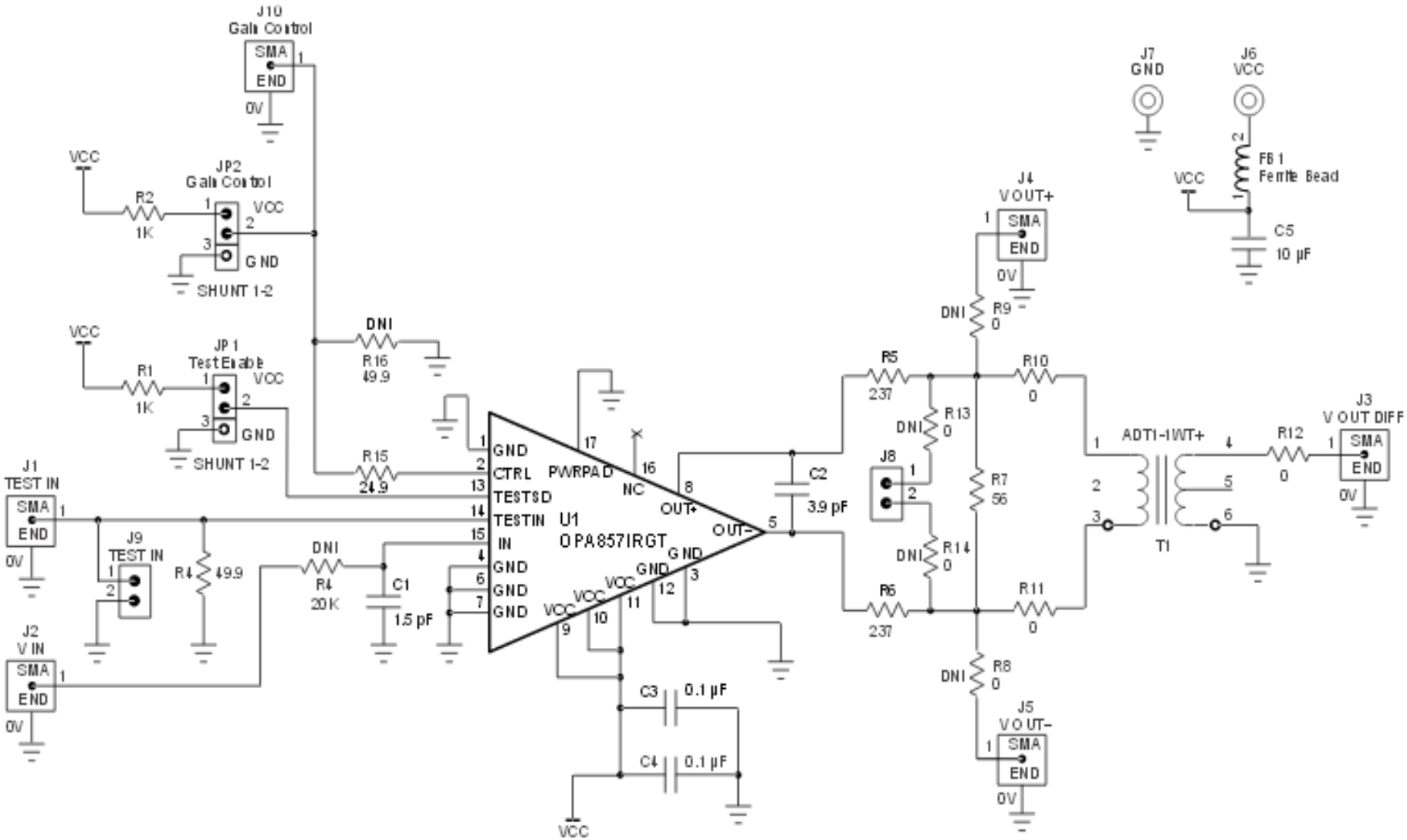
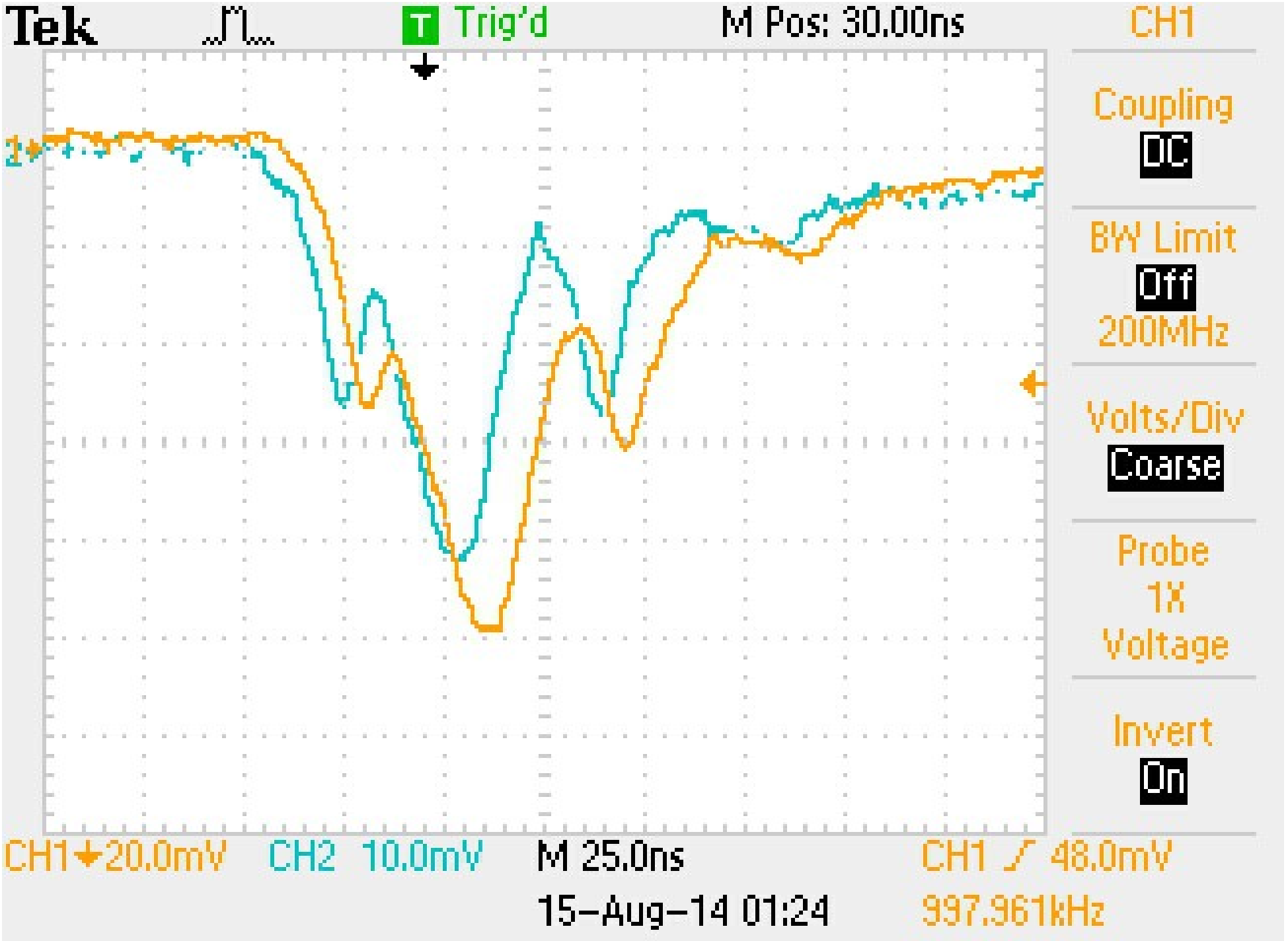
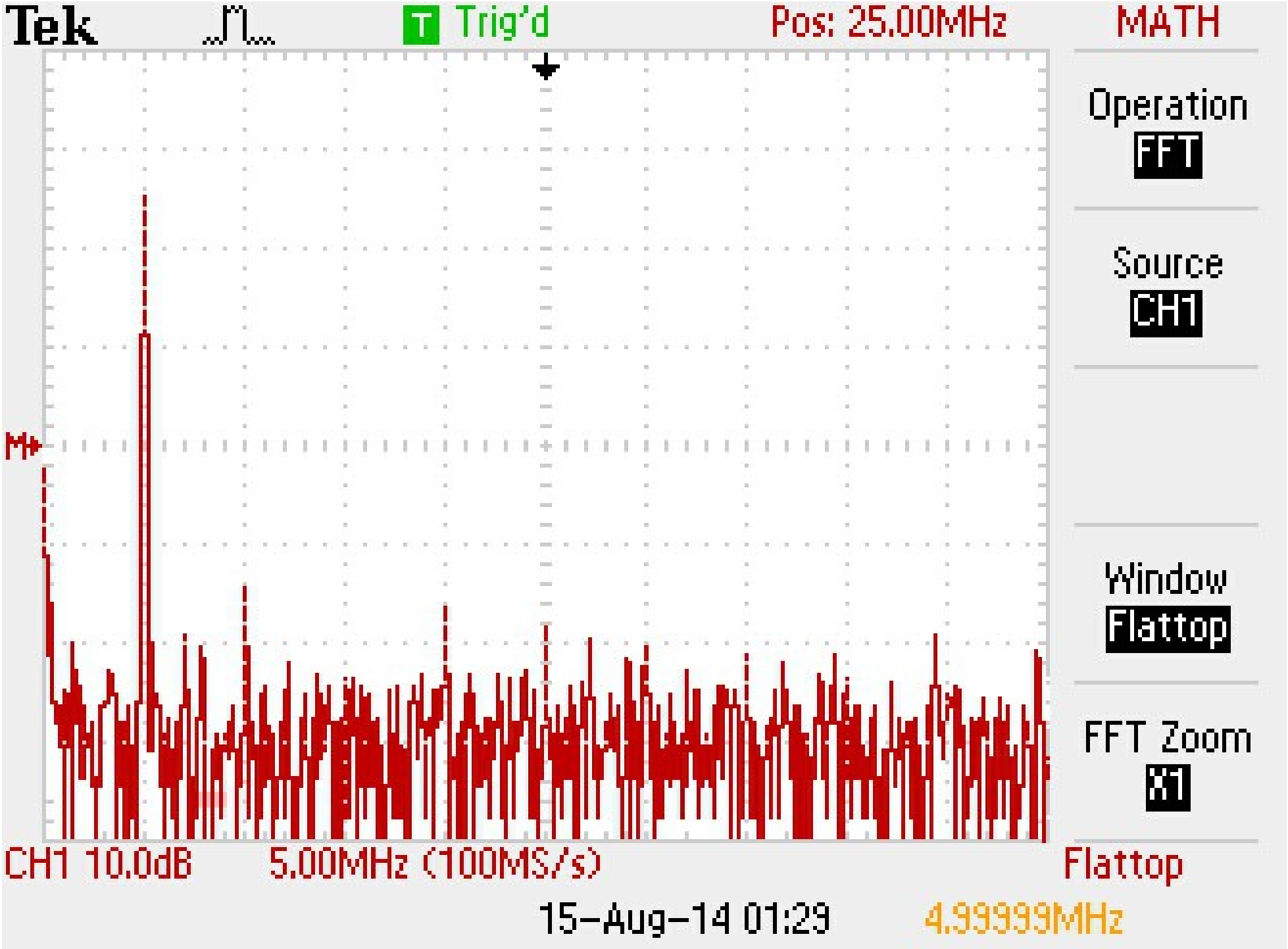
Update on MWPC Electronics

Week of August 19

OPA857 Breakout Board




Tek
Trig'd
M Pos: 30.00ns
CH1
Coupling
DC
BW Limit
Off
200MHz
Volts/Div
Coarse
Probe
1X
Voltage
Invert
On
CH1 20.0mV
CH2 10.0mV
M 25.0ns
CH1 48.0mV
15-Aug-14 01:24
997.961kHz


Tek
Trig'd
Pos: 25.00MHz
MATH
Operation
FFT
Source
CH1
Window
Flattop
FFT Zoom
X1
M
CH1 10.0dB
5.00MHz (100MS/s)
Flattop
15-Aug-14 01:29
4.99999MHz

OPA857 Results

Bandwidth: ~50 MHz

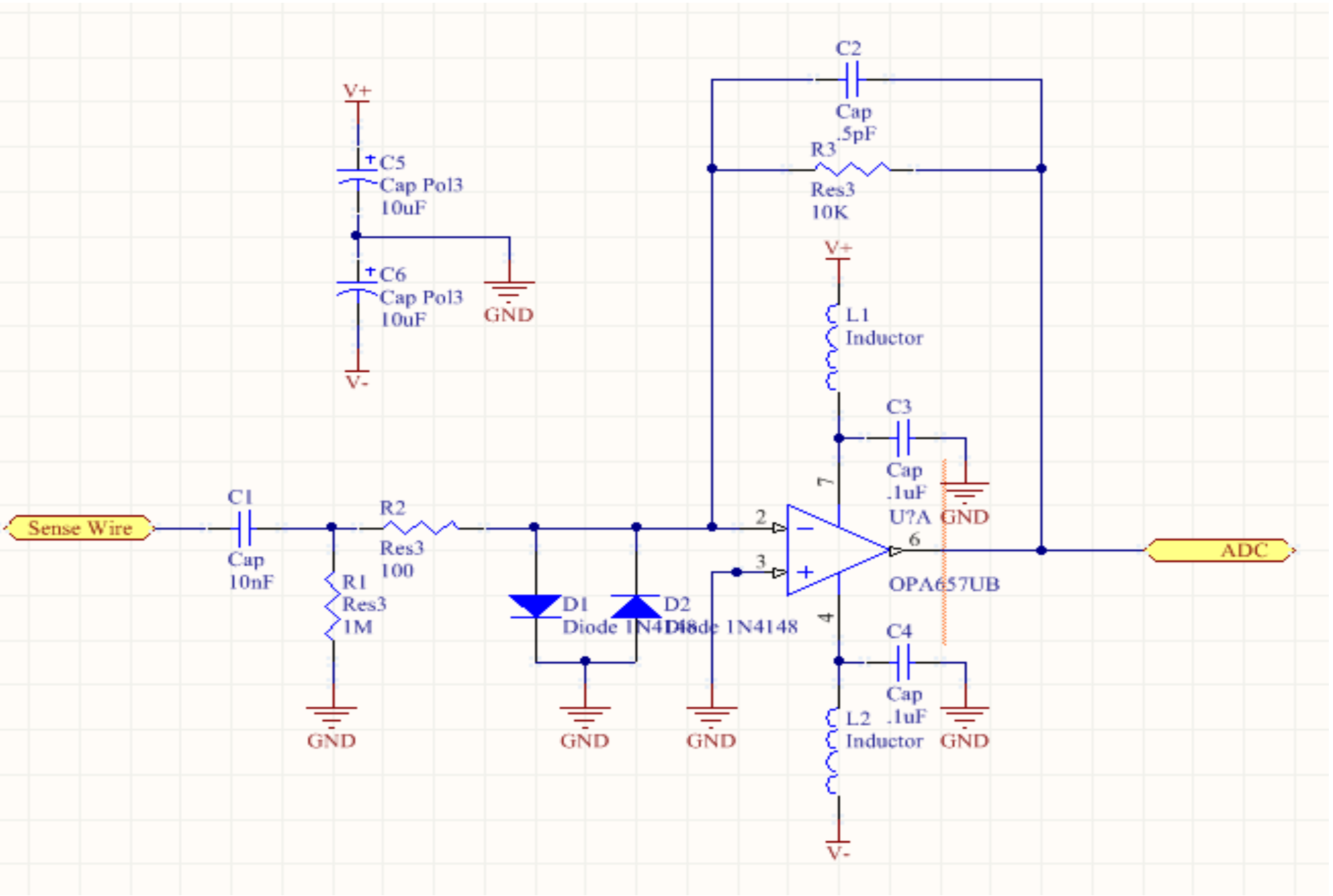
Pros:

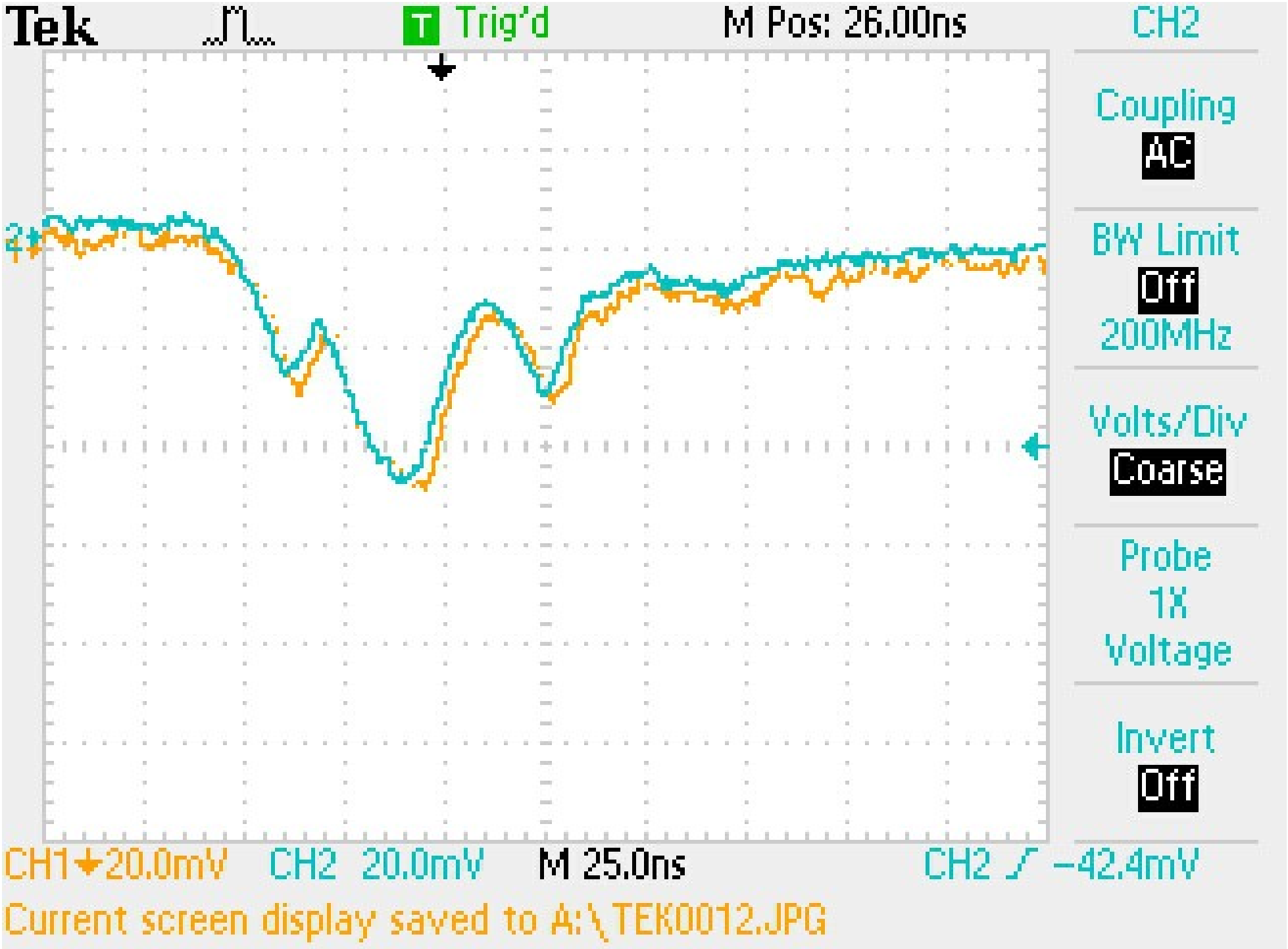
- Single integrated TIA with differential transceiver has fewer parts and may help to reduce channel crosstalk

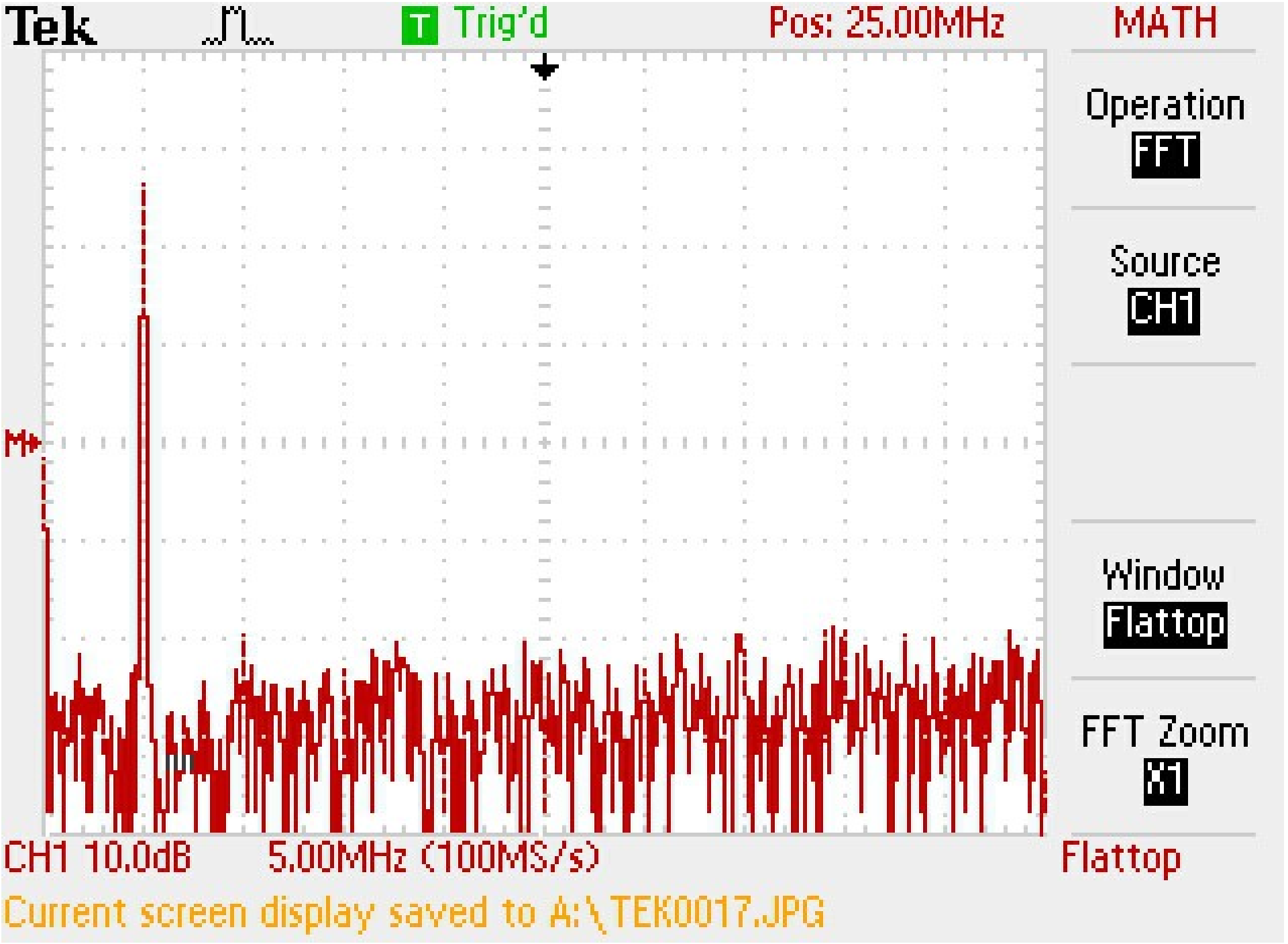
Cons:

- Lower bandwidth than desired
- Small pitch part is difficult to prototype and more expensive to assemble

OPA657


C2
Cap
.5pF
R3
Res3
10K
V+
C5
Cap Pol3
10uF
C6
Cap Pol3
10uF
GND
V-
L1
Inductor
C3
Cap
.1uF
U?A
GND
Sense Wire
C1
Cap
10nF
R2
Res3
100
R1
Res3
1M
D1
D2
Diode 1N4148
OPA657UB
ADC
C4
Cap
.1uF
L2
Inductor
GND
GND
GND
GND
V-


Tek
Trig'd
M Pos: 26.00ns
CH2
Coupling
AC
BW Limit
Off
200MHz
Volts/Div
Coarse
Probe
1X
Voltage
Invert
Off
CH1 20.0mV
CH2 20.0mV
M 25.0ns
CH2 -42.4mV
Current screen display saved to A:\TEK0012.JPG


Tek
Trig'd
Pos: 25.00MHz
MATH
Operation
FFT
Source
CH1
Window
Flattop
FFT Zoom
X1
M
CH1 10.0dB
5.00MHz (100MS/s)
Flattop
Current screen display saved to A:\TEK0017.JPG

OPA657 Results

Bandwidth: >80 MHz

Pros

- Excellent bandwidth and signal quality
- Easier and cheaper to prototype and assemble

Cons

- Will require adding an external differential driver chip to be compatible with the ADCs