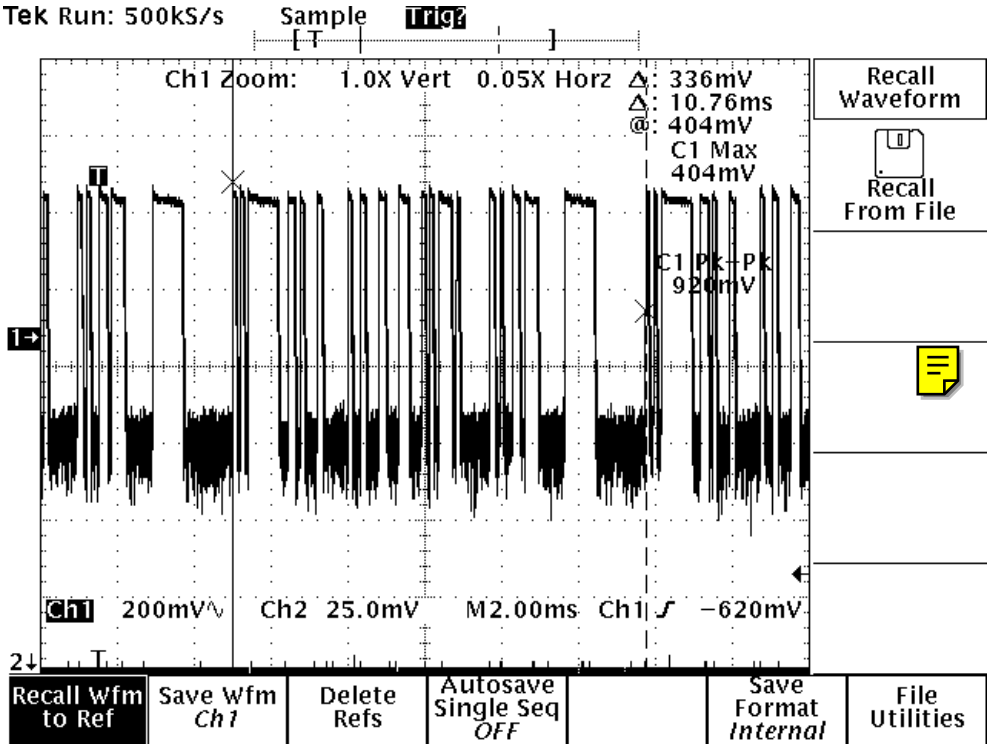
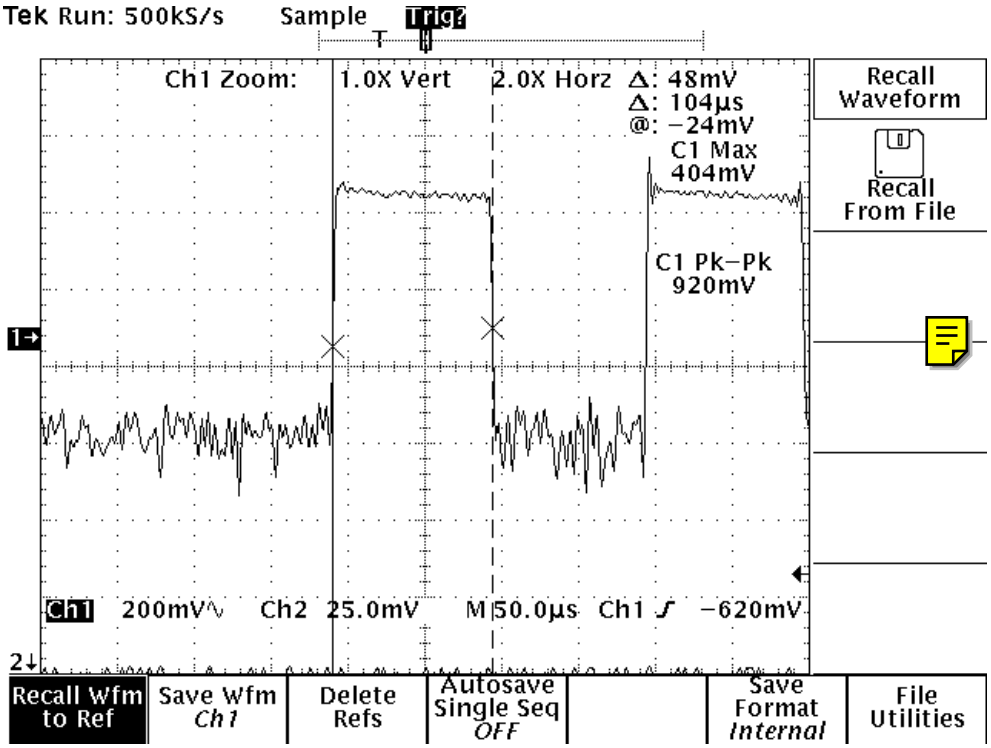
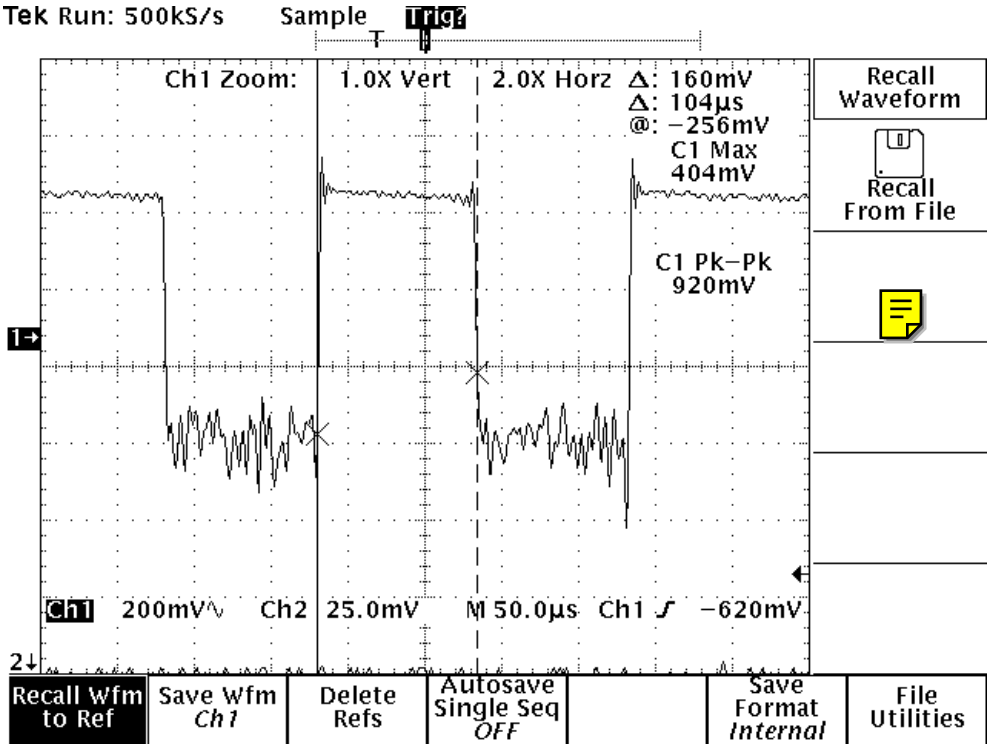
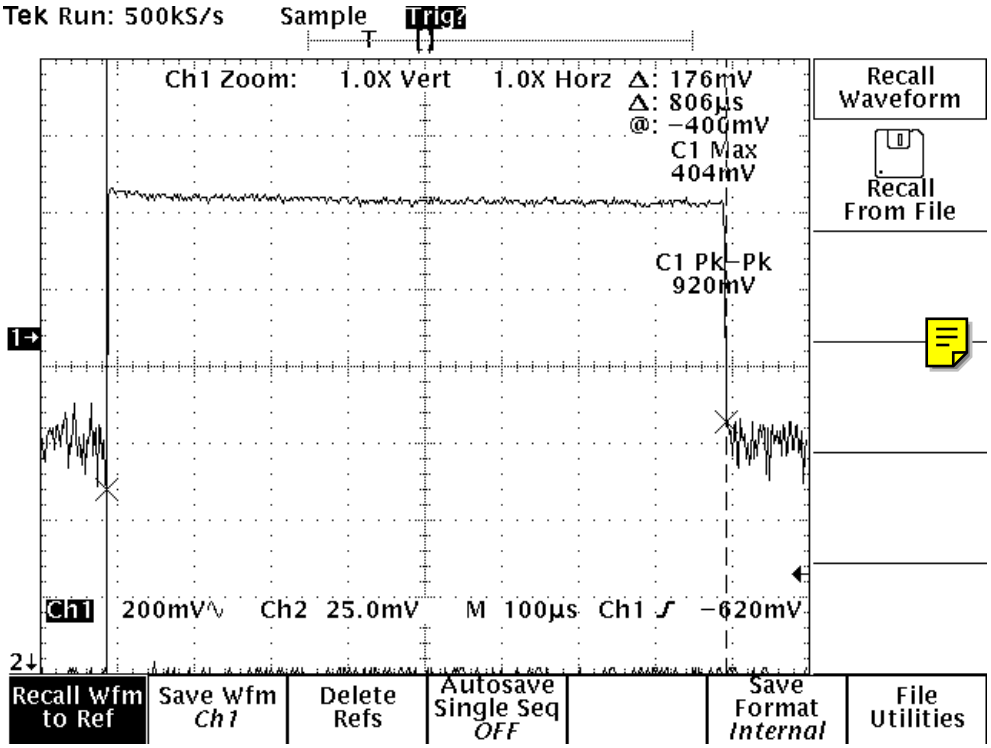
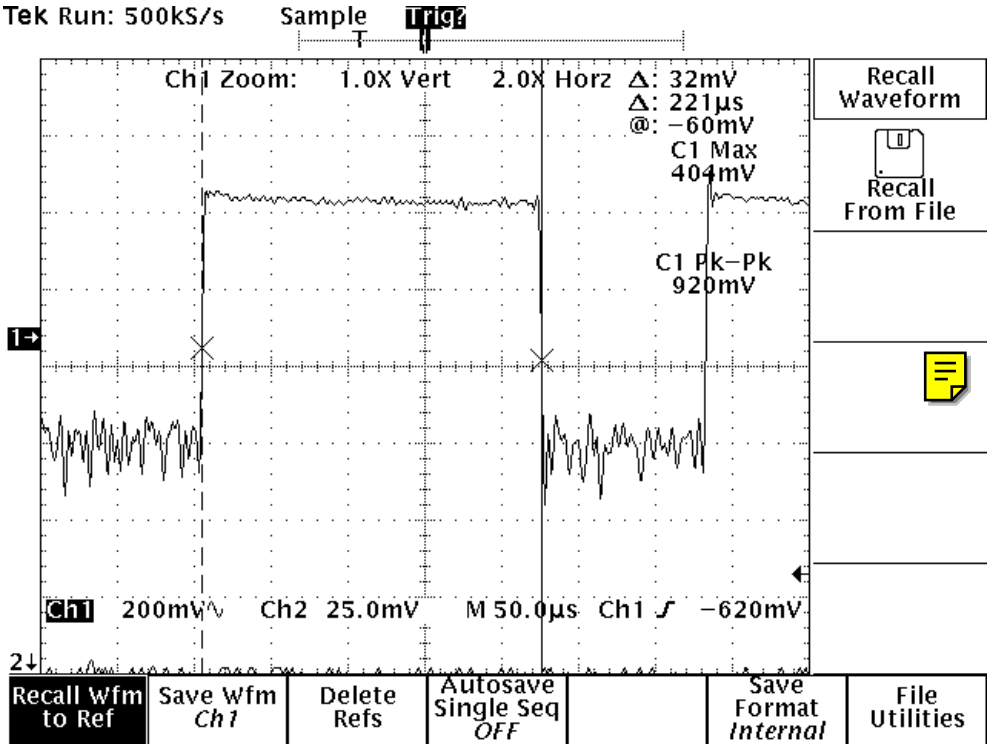
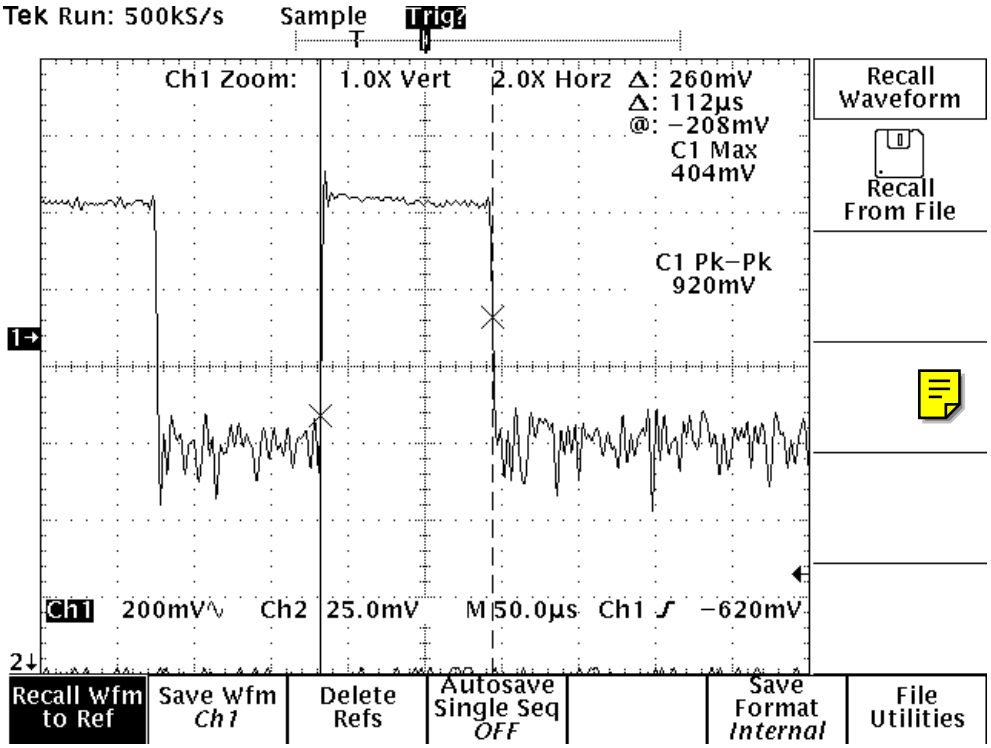

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 0.05X Horz
Δ: 336mV
Δ: 10.76ms
@: 404mV
C1 Max
404mV
C1 Pk-Pk
920mV
Ch1 200mV
Ch2 25.0mV
M2.00ms Ch1 ƒ −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

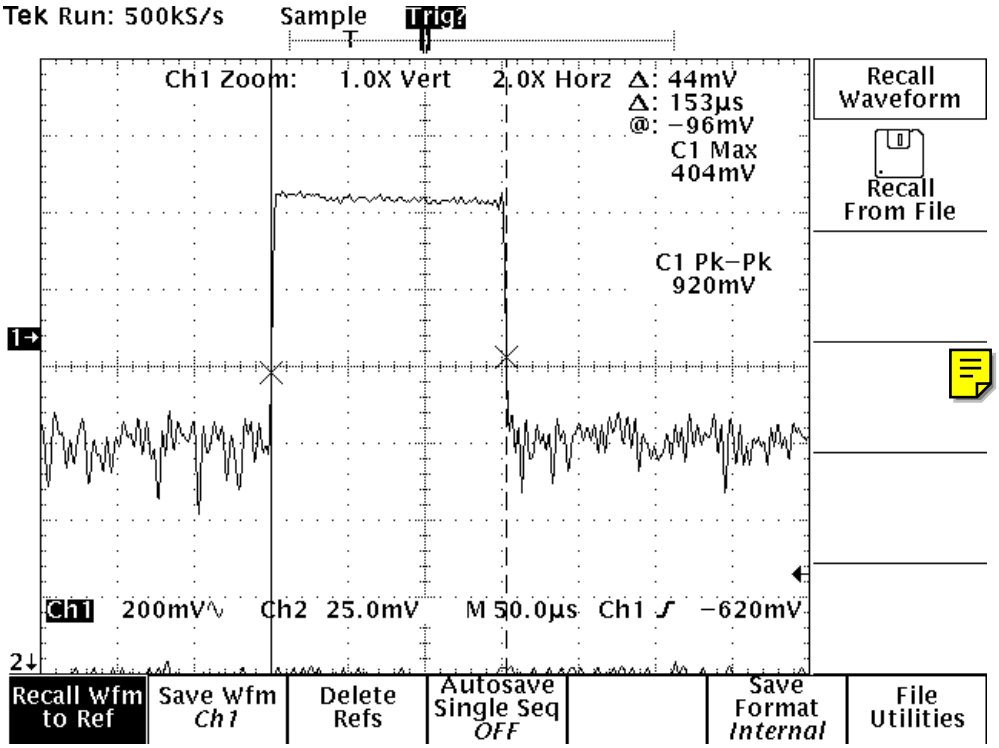

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 2.0X Horz Δ: 48mV
Δ: 104µs
@: −24mV
C1 Max
404mV
C1 Pk−Pk
920mV
Ch1 200mV Ch2 25.0mV M 50.0µs Ch1 ƒ −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

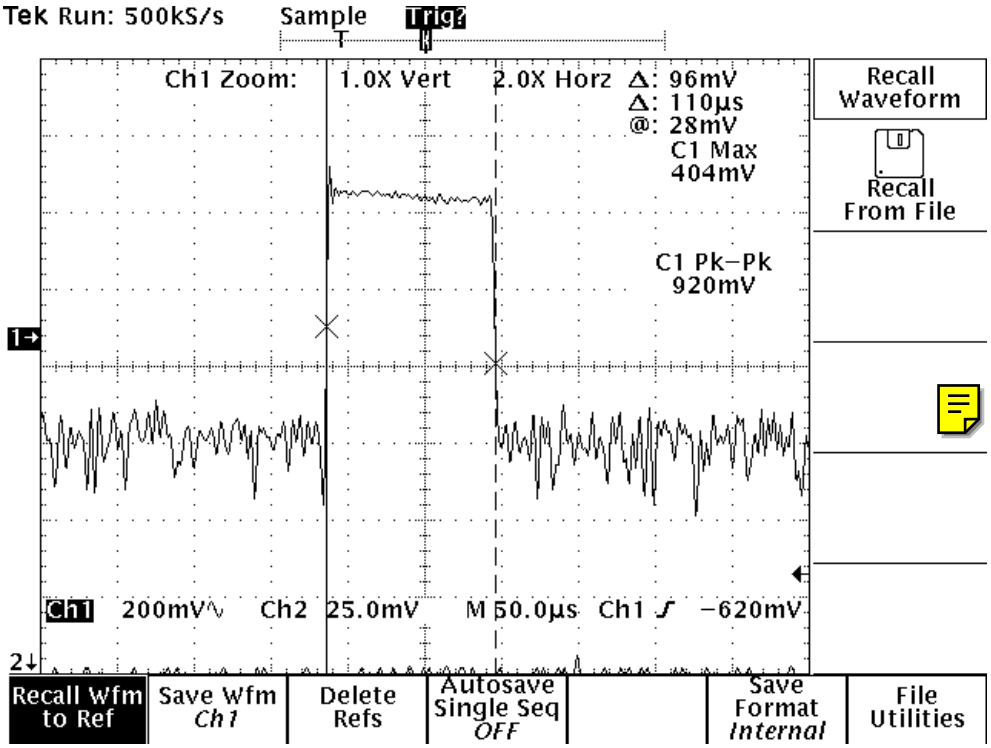

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 2.0X Horz Δ: 160mV
Δ: 104µs
@: −256mV
C1 Max
404mV
C1 Pk−Pk
920mV
Ch1 200mV Ch2 25.0mV M 50.0µs Ch1 −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

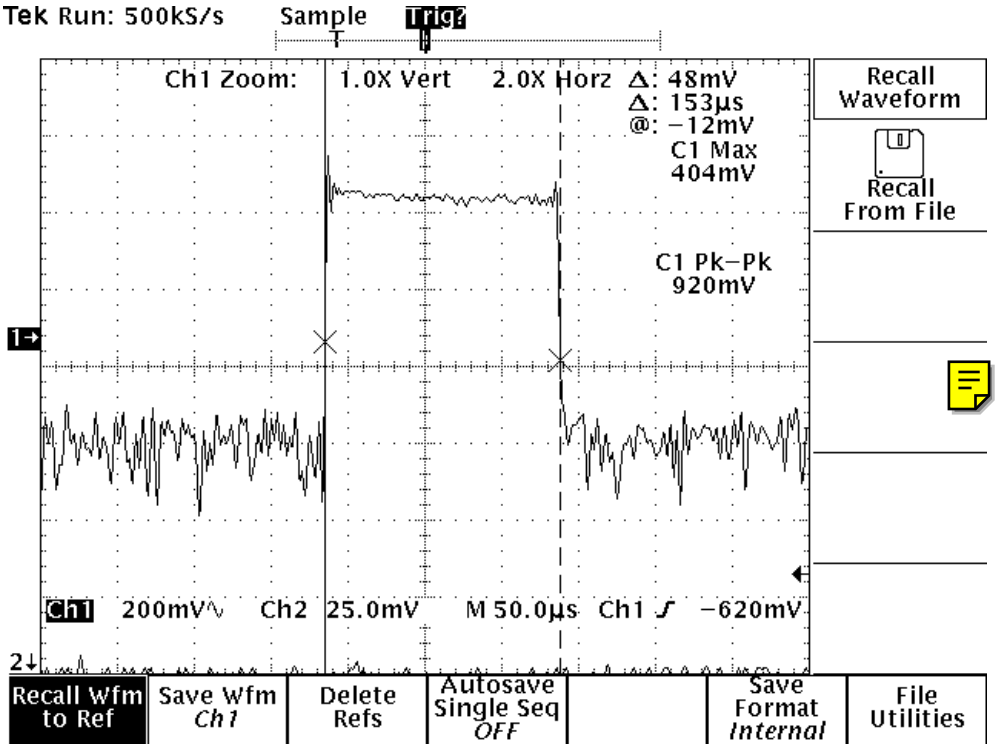

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 1.0X Horz Δ: 176mV
Δ: 806µs
@: −400mV
C1 Max
404mV
C1 Pk−Pk
920mV
Recall Waveform
Recall From File
Ch1 200mV Ch2 25.0mV M 100µs Ch1 ƒ −620mV
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

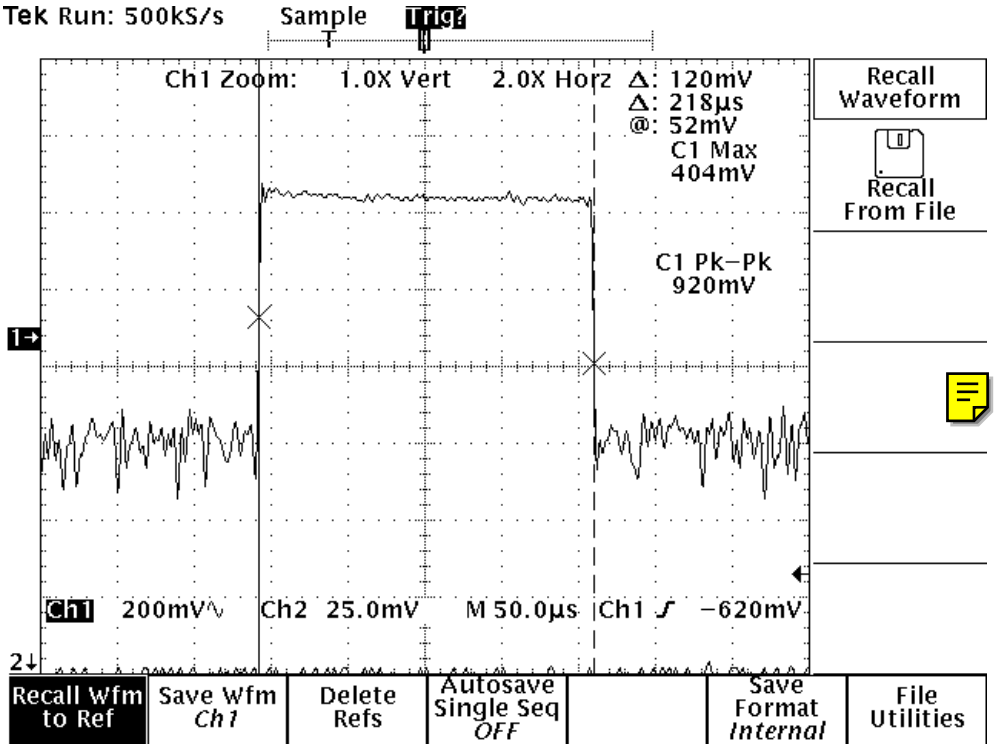

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 2.0X Horz Δ: 32mV
Δ: 221µs
@: −60mV
C1 Max
404mV
C1 Pk−Pk
920mV
Ch1 200mV Ch2 25.0mV M 50.0µs Ch1 ƒ −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

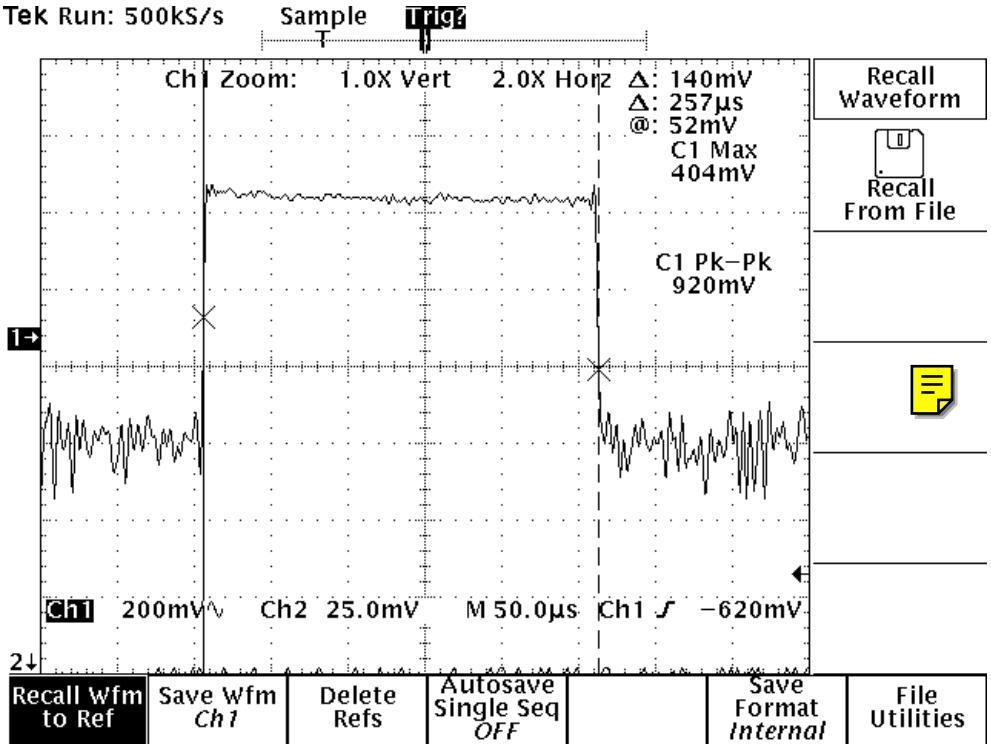

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 2.0X Horz Δ: 260mV
Δ: 112µs
@: −208mV
C1 Max
404mV
C1 Pk−Pk
920mV
Ch1 200mV Ch2 25.0mV M 50.0µs Ch1 ƒ −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

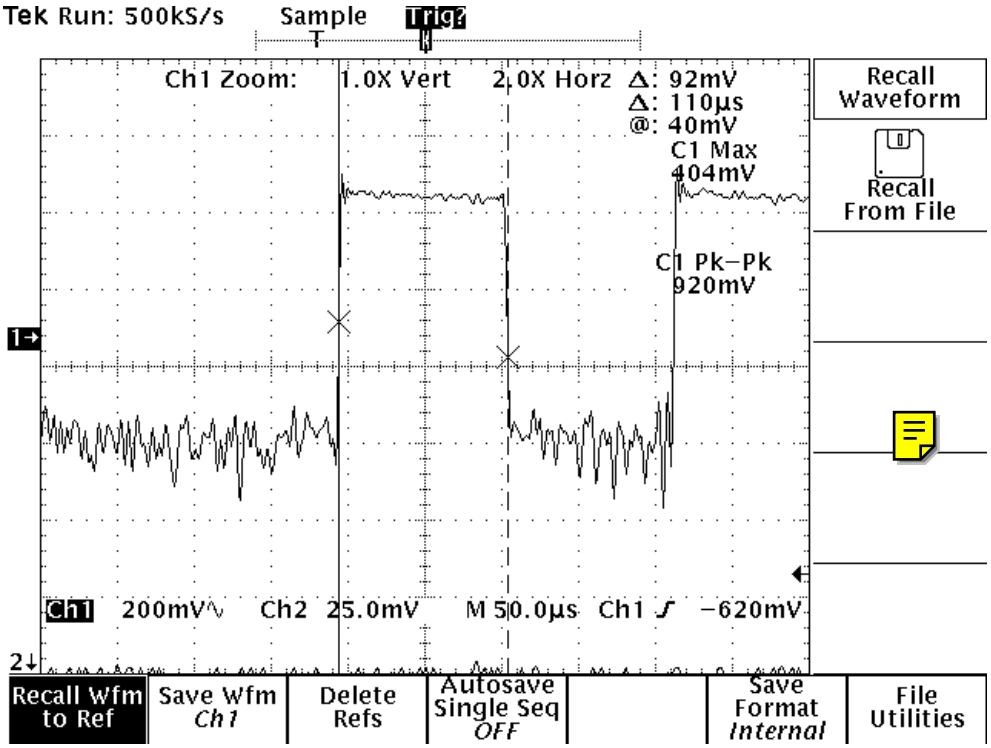

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 2.0X Horz Δ: 44mV
Δ: 153µs
@: −96mV
C1 Max
404mV
C1 Pk−Pk
920mV
Recall Waveform
Recall From File
Ch1 200mV Ch2 25.0mV M 50.0µs Ch1 ƒ −620mV
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

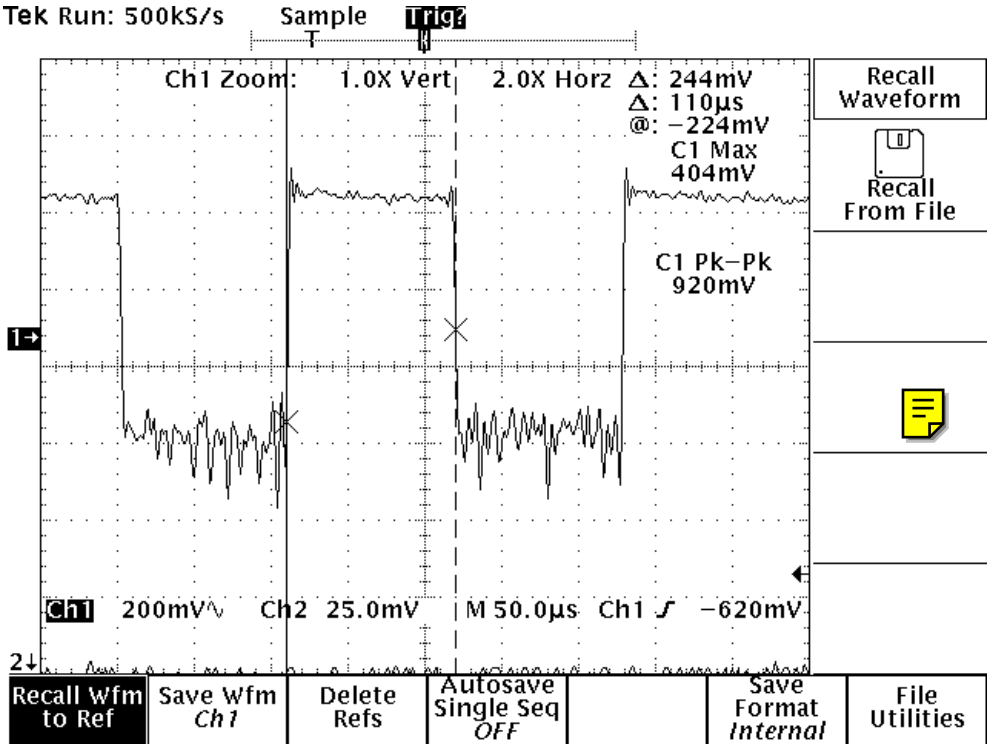

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 2.0X Horz Δ: 96mV
Δ: 110µs
@: 28mV
C1 Max
404mV
C1 Pk-Pk
920mV
Ch1 200mV Ch2 25.0mV M 50.0µs Ch1 ƒ -620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

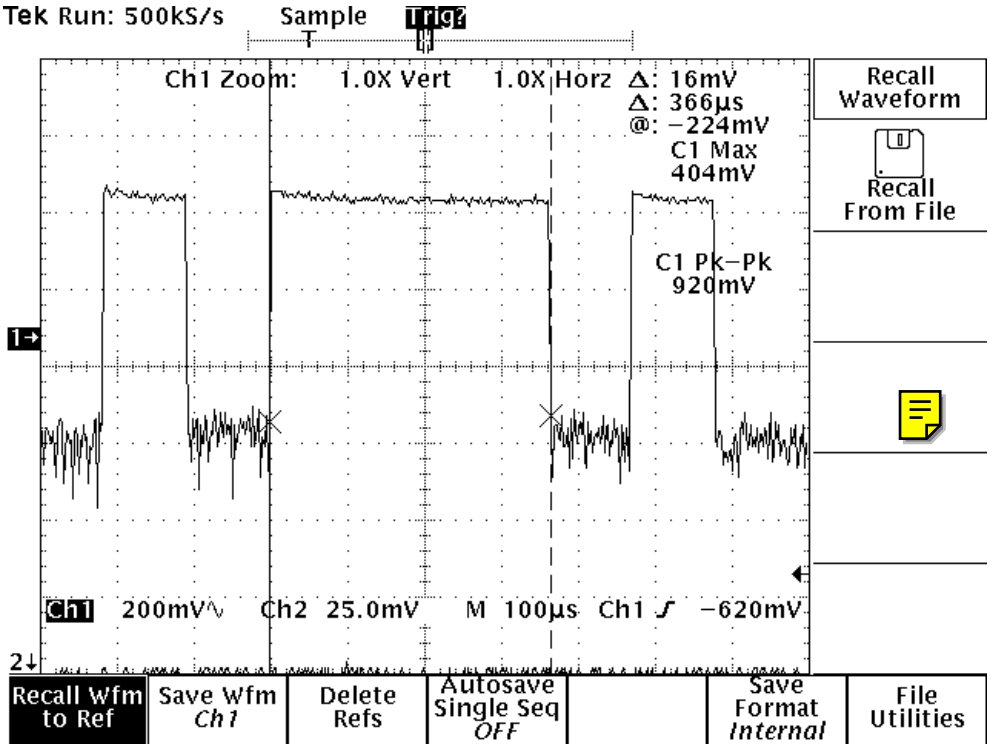

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 2.0X Horz Δ: 48mV
Δ: 153µs
@: −12mV
C1 Max
404mV
C1 Pk−Pk
920mV
Ch1 200mV Ch2 25.0mV M 50.0µs Ch1 ƒ −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

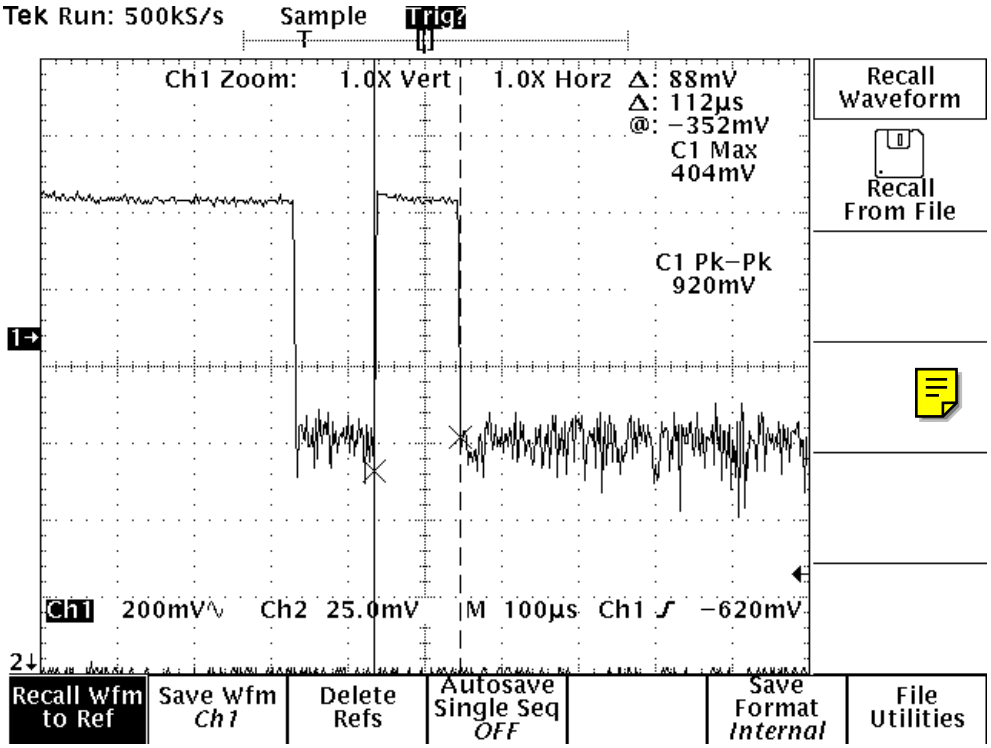

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 2.0X Horz Δ: 120mV
Δ: 218µs
@: 52mV
C1 Max
404mV
C1 Pk-Pk
920mV
Ch1 200mV Ch2 25.0mV M 50.0µs Ch1 ƒ -620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

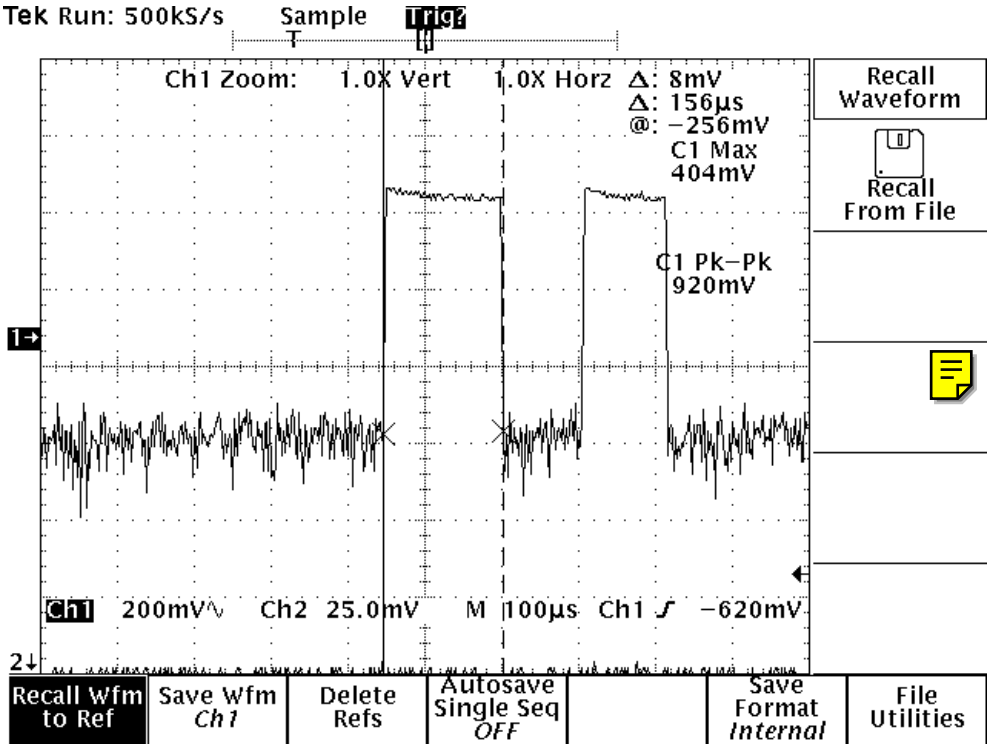

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 2.0X Horz
Δ: 140mV
Δ: 257µs
@: 52mV
C1 Max
404mV
C1 Pk-Pk
920mV
Ch1 200mV
Ch2 25.0mV
M 50.0µs
Ch1 ƒ -620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

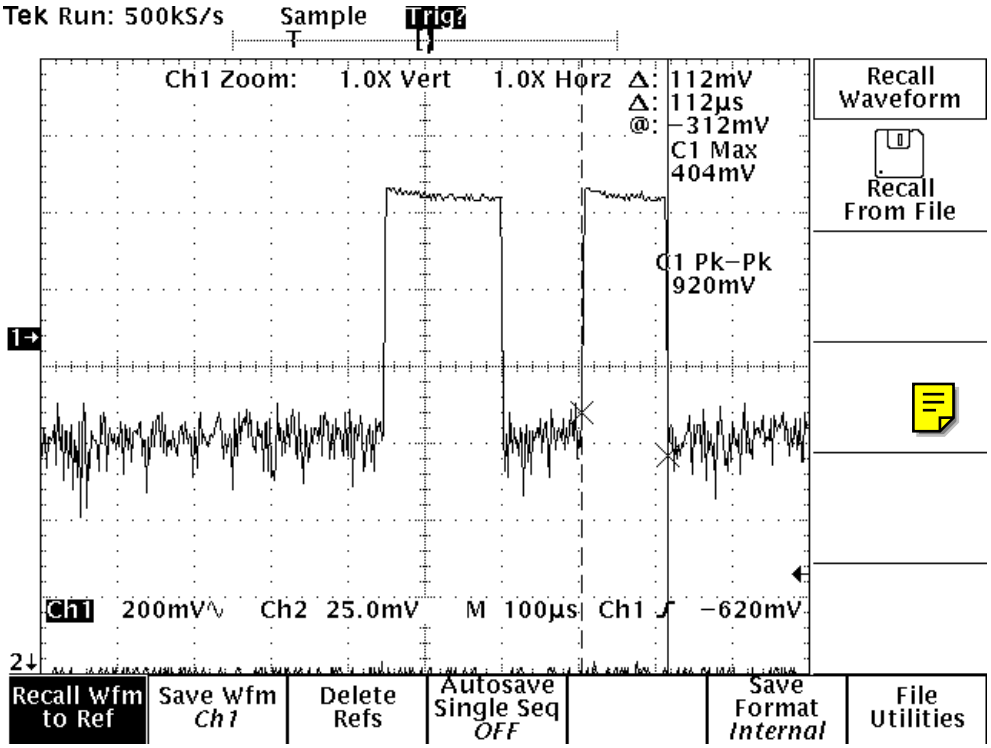

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 2.0X Horz Δ: 92mV
Δ: 110µs
@: 40mV
C1 Max
404mV
C1 Pk-Pk
920mV
Ch1 200mV Ch2 25.0mV M 50.0µs Ch1 ƒ -620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

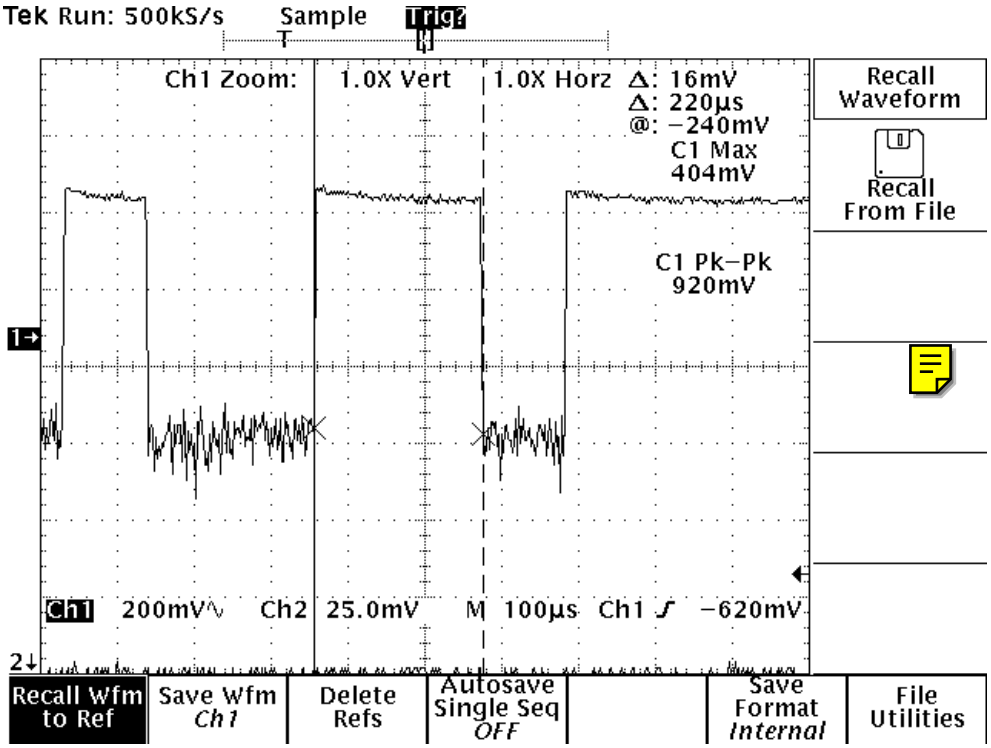

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 2.0X Horz Δ: 244mV
Δ: 110µs
@: −224mV
C1 Max
404mV
C1 Pk−Pk
920mV
Ch1 200mV Ch2 25.0mV M 50.0µs Ch1 ƒ −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

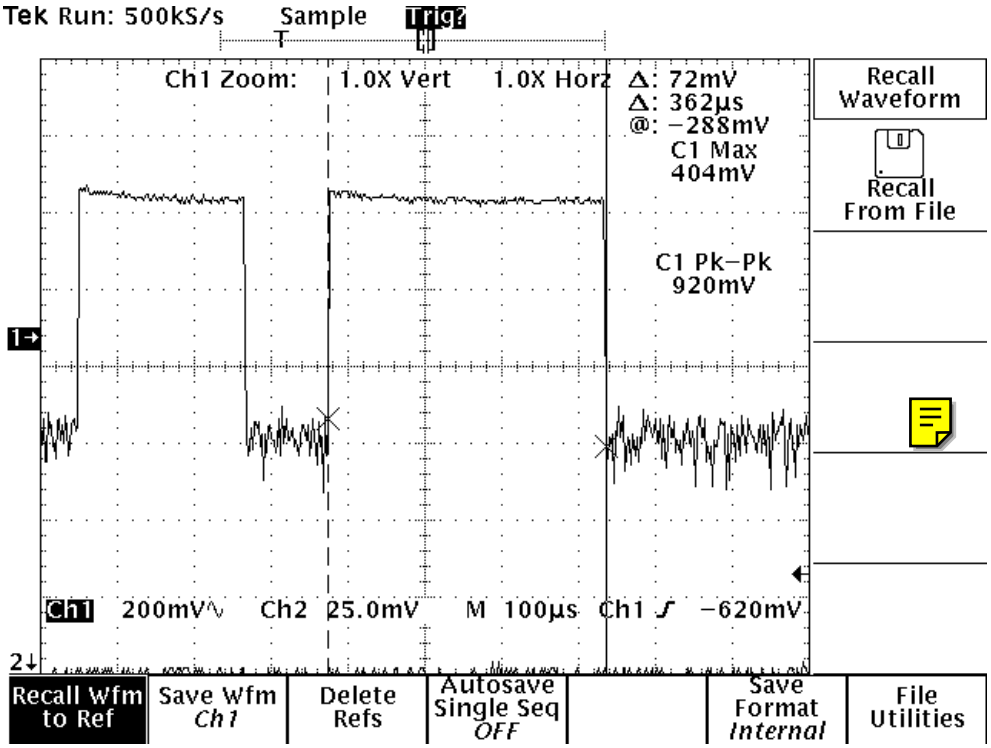

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 1.0X Horz Δ: 16mV
Δ: 366µs
@: −224mV
C1 Max
404mV
C1 Pk−Pk
920mV
Ch1 200mV Ch2 25.0mV M 100µs Ch1 ƒ −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

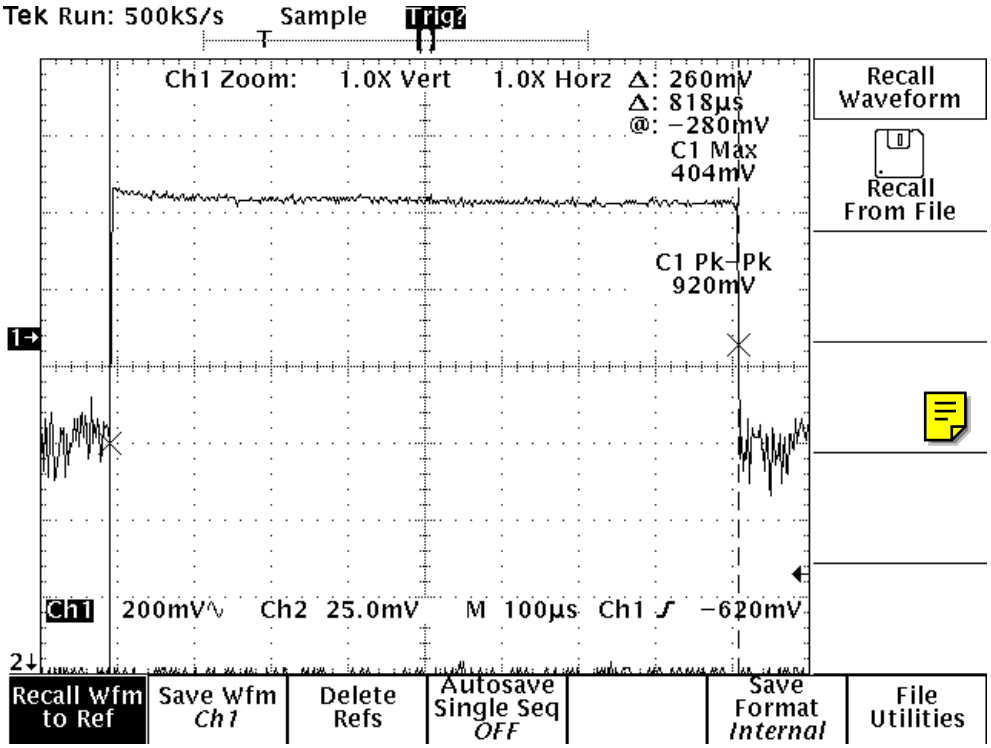

Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 1.0X Horz Δ: 88mV
Δ: 112µs
@: −352mV
C1 Max
404mV
C1 Pk−Pk
920mV
Ch1 200mV Ch2 25.0mV M 100µs Ch1 ƒ −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities


Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 1.0X Horz Δ: 8mV
Δ: 156µs
@: −256mV
C1 Max
404mV
C1 Pk−Pk
920mV
Ch1 200mV Ch2 25.0mV M 100µs Ch1 ƒ −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities


Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 1.0X Horz Δ: 112mV
Δ: 112µs
@: −312mV
C1 Max
404mV
C1 Pk−Pk
920mV
Ch1 200mV Ch2 25.0mV M 100µs Ch1 −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities


Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 1.0X Horz Δ: 16mV
Δ: 220µs
@: −240mV
C1 Max
404mV
C1 Pk−Pk
920mV
Ch1 200mV Ch2 25.0mV M 100µs Ch1 ƒ −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities


Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 1.0X Horz
Δ: 72mV
Δ: 362µs
@: −288mV
C1 Max
404mV
C1 Pk−Pk
920mV
Ch1 200mV Ch2 25.0mV M 100µs Ch1 ƒ −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities


Tek Run: 500kS/s Sample Trig?
Ch1 Zoom: 1.0X Vert 1.0X Horz Δ: 260mV
Δ: 818µs
@: −280mV
C1 Max
404mV
C1 Pk-Pk
920mV
Ch1 200mV Ch2 25.0mV M 100µs Ch1 −620mV
Recall Waveform
Recall From File
Recall Wfm to Ref
Save Wfm Ch1
Delete Refs
Autosave Single Seq OFF
Save Format Internal
File Utilities

Pulse Number	time of pulse (uS)
1	104
2	104
3	806
4	221
5	112
6	153
7	110
8	153
9	218
10	257
11	110
12	110
13	366
14	112
15	156
16	112
17	220
18	362
19	818
Total:	4604

Total Duty Cycle = 4.604 mS / 10.76 mS = 42.79%

MS Series Encoder Data Structure

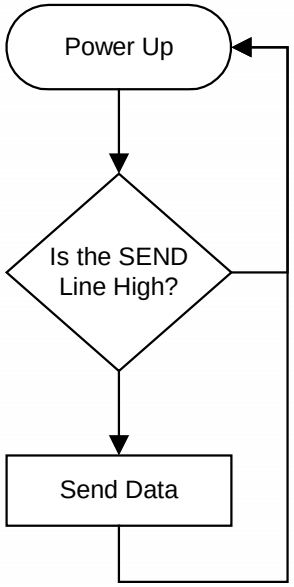
The MS Series encoder is designed to securely register button presses or switch closures over a wireless link for remote control applications. It will turn eight parallel input lines into a secure, encoded serial bit stream output.

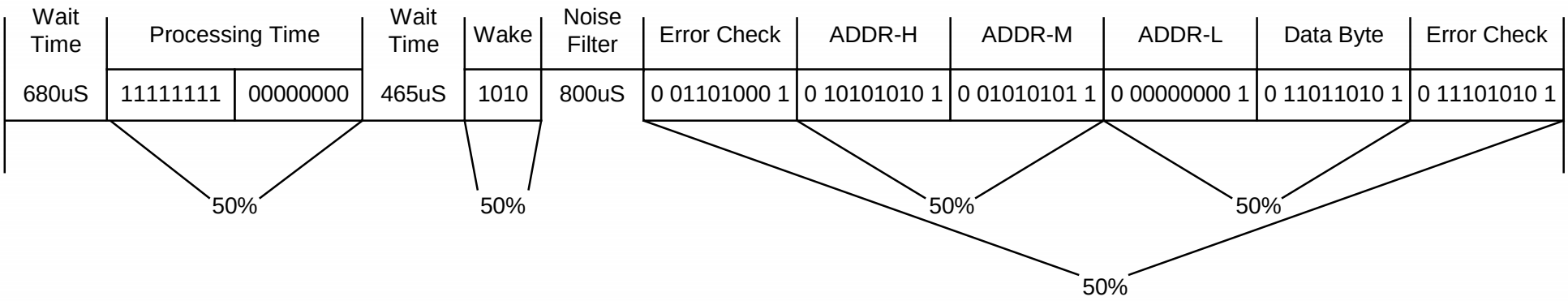
The MS Series algorithm is designed to create a data stream with 5 High Data Bits at 9600bps.

Logic State Description:
- 1 = HIGH
- 0 = LOW

Total bits, including start and stop bits = 80
- Total 1's = 40
- Total 0's = 40

Value for each bit per baud rate:
- 2400bps = 417uS or 1.18% of duty cycle
- 9600bps = 104uS or 1.01% of duty cycle
- 19200bps = 52uS or 0.85% of duty cycle
- 28800bps = 35uS or 0.74% of duty cycle





$$\text{Duty Cycle} = \frac{\text{Time High}}{\text{Total Time}} \rightarrow \frac{37 \text{ bits} + 800\text{uS}}{80 \text{ bits} + 680\text{uS} + 465\text{uS} + 800\text{uS}} \rightarrow \frac{(37*104\text{uS}) + 800\text{uS}}{(80*104\text{uS}) + 1{,}945\text{uS}} = \frac{4{,}648\text{uS}}{10{,}265\text{uS}} = 45.28\%$$