

## Firmware 2.06.3 bug list:

Current firmware bold border marked.

Colors : red - bug, light red – minor bug, orange - sill something to fix but progress, yellow – almost there ..., green – fixed

Bug number	2.06.3 120224.0	2.06.3 120423.0	2.06.3 130114.0	2.06.3 130131.0	2.06.3 130202.0	2.06.3 130205.0	
1	Only on B models	Only on B models	fixed	fixed	fixed	fixed	
2	see description	see description	see description	see description	see description	see description	
3	see description	see description	see description	see description	see description	see description	
4	BUG	BUG	Bug – for now disabled	Bug – for now disabled	Bug – for now disabled	Bug – for now disabled	
5	BUG	GPL released, SDK code missing	GPL released, SDK code missing	GPL released, SDK code missing	GPL released, SDK code missing	GPL released, SDK code missing	
6	see description	see description	see description	see description	see description	see description	
7	BUG	BUG	Removed from to-do	Removed from to-do	Removed from to-do	Removed from to-do	
8	BUG	BUG	BUG	fixed	fixed	fixed	
9	BUG	see description	fixed	fixed	fixed	fixed	
10	BUG	see description	fixed	fixed	fixed	fixed	
11	BUG	BUG	fixed	fixed	fixed	fixed	
12	BUG	BUG	fixed	fixed	fixed	fixed	
13	BUG	BUG	BUG levels better, but not yet 100% ok	BUG levels better, but not yet 100% ok	When fix not possible leave it as is	When fix not possible leave it as is	
14	BUG	BUG	fixed	fixed	fixed	fixed	

Bug number	2.06.3 120224.0	2.06.3 120423.0	2.06.3 130114.0	2.06.3 130131.0	2.06.3 130202.0	2.06.3 130205.0	
15	BUG	BUG	BUG	BUG	BUG	Will be fixed in the future	
16	BUG	fixed	fixed	fixed	fixed	fixed	
17	BUG	Partially fixed	fixed	fixed	fixed	fixed	
18	BUG	BUG	BUG	fixed	fixed	fixed	
19	BUG	BUG	BUG	fixed	fixed	fixed	
20	BUG	BUG	BUG	fixed	fixed	fixed	
21	BUG	BUG	BUG	fixed	fixed	fixed	
22	BUG	BUG	BUG	fixed	fixed	fixed	
23	BUG	BUG	Bug – for now disabled	Bug – for now disabled	Bug – for now disabled	Bug – for now disabled	
24	BUG	BUG	See description	fixed	fixed	fixed	
25	BUG	BUG	fixed	fixed	fixed	fixed	
26	OK in this version	OK in this version	BUG	Partially fixed	Still bug	Still bug	
27	OK in this version	OK in this version	fixed	fixed	fixed	fixed	
28	BUG	BUG	fixed	fixed	fixed	fixed	
29	BUG	BUG	BUG	fixed	fixed	fixed	
30	BUG	BUG	fixed	fixed	fixed	fixed	

Bug number	2.06.3 120224.0	2.06.3 120423.0	2.06.3 130114.0	2.06.3 130131.0	2.06.3 130202.0	2.06.3 130205.0	
31	BUG	BUG	fixed	fixed	fixed	fixed	
32	Not exist in this version	Not exist in this version	Not exist in this version	Not exist in this version	fixed	fixed	
33	OK in this version	BAD	BAD	Proposition is OK	Proposition is OK	Proposition is OK	
34	BUG	BUG	BUG	fixed	fixed	fixed	
35	Not exist in this version	Not exist in this version	Not exist in this version	Not exist in this version	fixed	fixed	
36	Not exist in this version	Not exist in this version	Not exist in this version	Not exist in this version	fixed	fixed	
37	BUG	BUG	BUG	fixed	fixed	fixed	
38	BUG	BUG	BUG	fixed	fixed	fixed	
39	BUG	BUG	BUG	fixed	fixed	fixed	
40	BUG	BUG	fixed	fixed	fixed	fixed	
41	OK in this version	OK in this version	BUG	Partially fixed	fixed	fixed	
42	Not tested on this version	Not tested on this version	BUG	fixed	fixed	fixed	
43	Not exist in this version	Not exist in this version	To be fixed	fixed	fixed	fixed	
44	Not exist in this version	Not exist in this version	Not exist in this version	Not exist in this version	Not exist in this version	Not exist in this version	
45	Not exist in this version	Not exist in this version	Not exist in this version	Not exist in this version	Not exist in this version	Not exist in this version	
46	BUG	BUG	BUG	BUG	BUG	fixed	
47	Not tested on this version	Not tested on this version	Not tested on this version	BUG	BUG	BUG	

Bug number	2.06.3 120224.0	2.06.3 120423.0	2.06.3 130114.0	2.06.3 130131.0	2.06.3 130202.0	2.06.3 130205.0	
48	Not tested on this version	Not tested on this version	Not tested on this version	BUG	BUG	fixed	
49	Not tested on this version	Not tested on this version	BUG	BUG	BUG	Will be fixed in the future	
50	Not tested on this version	Not tested on this version	Not tested on this version	OK in this version	OK in this version	BUG	
51	Not tested on this version	Not tested on this version	Not tested on this version	OK in this version	OK in this version	BUG	
52	Not tested on this version	Not tested on this version	Not tested on this version	Not tested on this version	Not tested on this version	BUG ???	
53	Not tested on this version	Not tested on this version	Not tested on this version	Not tested on this version	Not tested on this version	BUG	

## List of bugs/improvement requests

1. Select any of the new functions like "Printer Cfg", "Option, Wave" (any many others), push HELP button on the front panel and the DSO is crashing and not responding anymore.
2. Apply test signal, do auto setup to trigger properly. Set time base to 4ns/DIV, change Acquisition mode from "Real Time" to "Equ Time", hide menu by pushing F0, turn time base knob from 4ns/DIV to 2ns/DIV and DSO is crashing and not responding anymore. **This bug seems to exist only on DSOs where the factory calibration (not self-calibration!) is somehow invalid. After user-executed factory calibration bug disappeared. Is there something in "chk1kb\_091023" which can be changed to fix that? (User-executed factory calibration is not an option).**
3. Apply test signal, do auto setup to trigger properly. Set time base to 4ns/DIV, change Acquisition mode from "Real Time" to "Equ Time", hide menu by pushing F0. When menu hidden you can see artifacts on the right side of the screen. They don't need to be there. **This bug seems to exist only on DSOs where the factory calibration (not self-calibration!) is somehow invalid. After user-executed factory calibration bug disappeared. Is there something in "chk1kb\_091023" which can be changed to fix that? (User-executed factory calibration is not an option).**
4. Digital Filters to be implemented properly.
5. GPL and SDK documentation and example code to be released.
6. Update FPGA design to match ADC skew/timings in 125MHz/1GSs mode (this is already known issue and listed in old "issue list", posting once again in this list as reminder)

FPGA design revision 83E8 sample rate 1GS/s clocks skew (**must be always 1000ps**):

Clock 8->Clock 1: 1010ps

Clock 1->Clock 7: 1250ps

Clock 7->Clock 2: 550ps

Clock 2->Clock 6: 1230ps

Clock 6->Clock 3: 1000ps

Clock 3->Clock 5: 1280ps

Clock 5->Clock 4: 500ps

Clock 4->Clock 8: 1250ps

FPGA design revision 83E8 sample rate <= 800MS/s clocks skew (**must be always 1250ps**):

Clock 8->Clock 1 1250ps

Clock 1->Clock 7 1260ps

Clock 7->Clock 2 1280ps  
Clock 2->Clock 6 1230ps  
Clock 6->Clock 3 1260ps  
Clock 3->Clock 5 1280ps  
Clock 5->Clock 4 1230ps  
Clock 4->Clock 8 1260ps

FPGA design revision 83E9:

~~not yet measured, but Hantek statement "It's impossible for us to achieve it now" is not really optimistic.~~

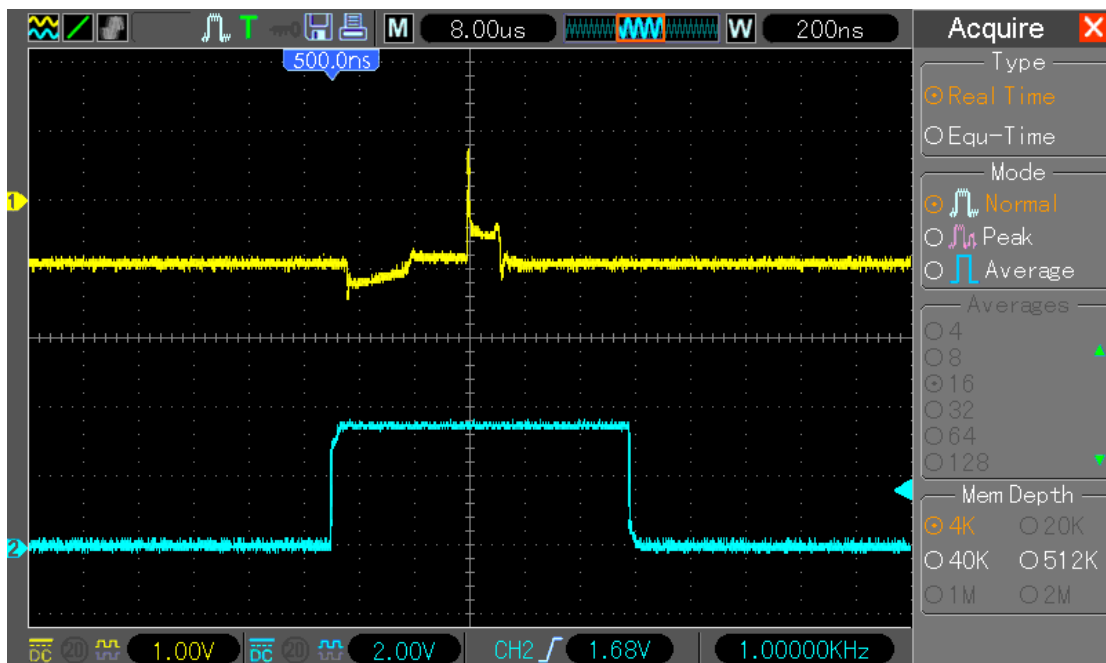
**I did some measurements and the skew is a bit smaller. As Tekway/Hantek will probably have to touch this again to fix bug 49, I'm marking this for now as "light green"**

7. add 20ksamples/16ksamples/8ksamples (whatever possible, if possible) to memory depth, preferred with highest possible sample rate. This is in principle what already published as "available" in the user manual or on Tekway and Hantek websites.

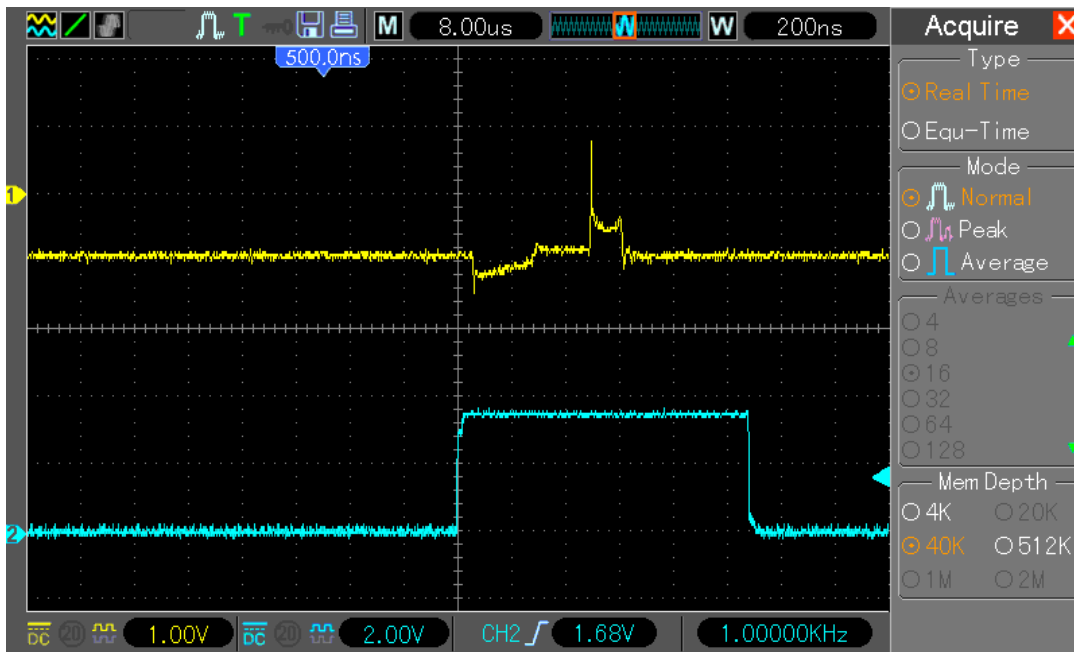
This was only proposal, it has been removed from to-do as "not important".

8. In single window, sample memory  $\geq 40k$ , both channels (ch1, ch2) enabled and time base from 400ns/div up to 2ns/div the position change (fine and coarse) control is not working. Only scale is moving, but not the waveform. See attached picture to understand issue:

with 4k memory when changing position waveform is moving



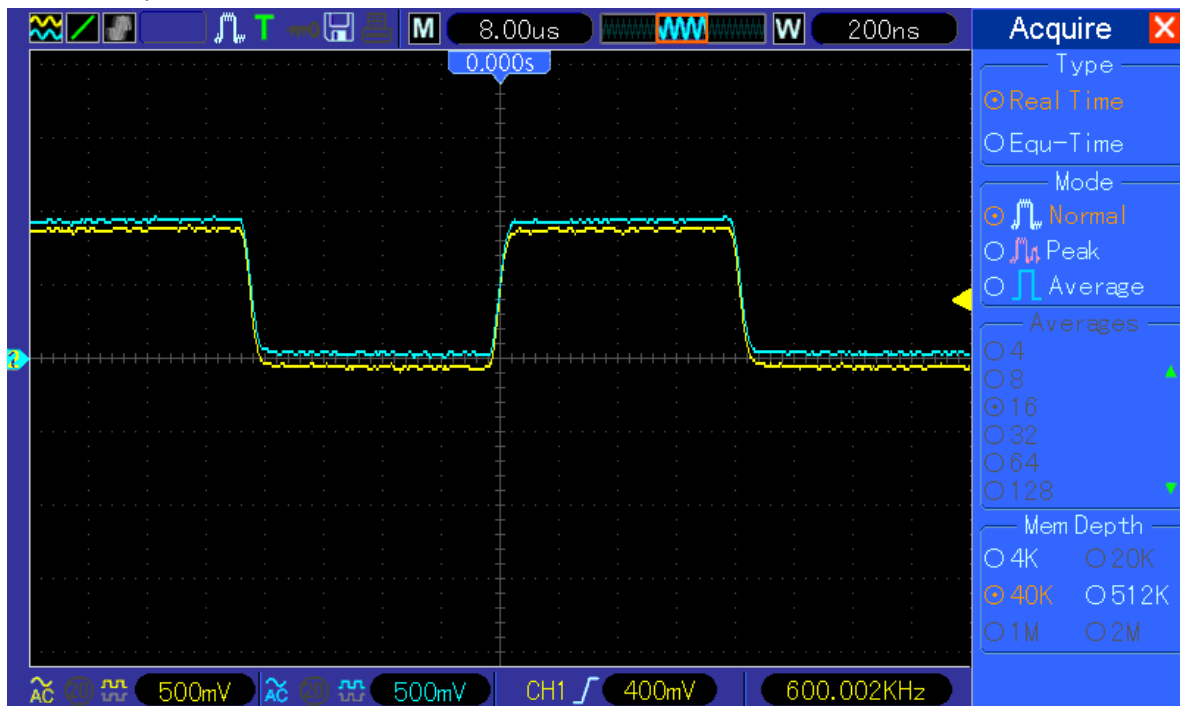
with 40k and above, when moving changing time base position waveform is NOT moving when in RUN mode (but works in STOP mode)



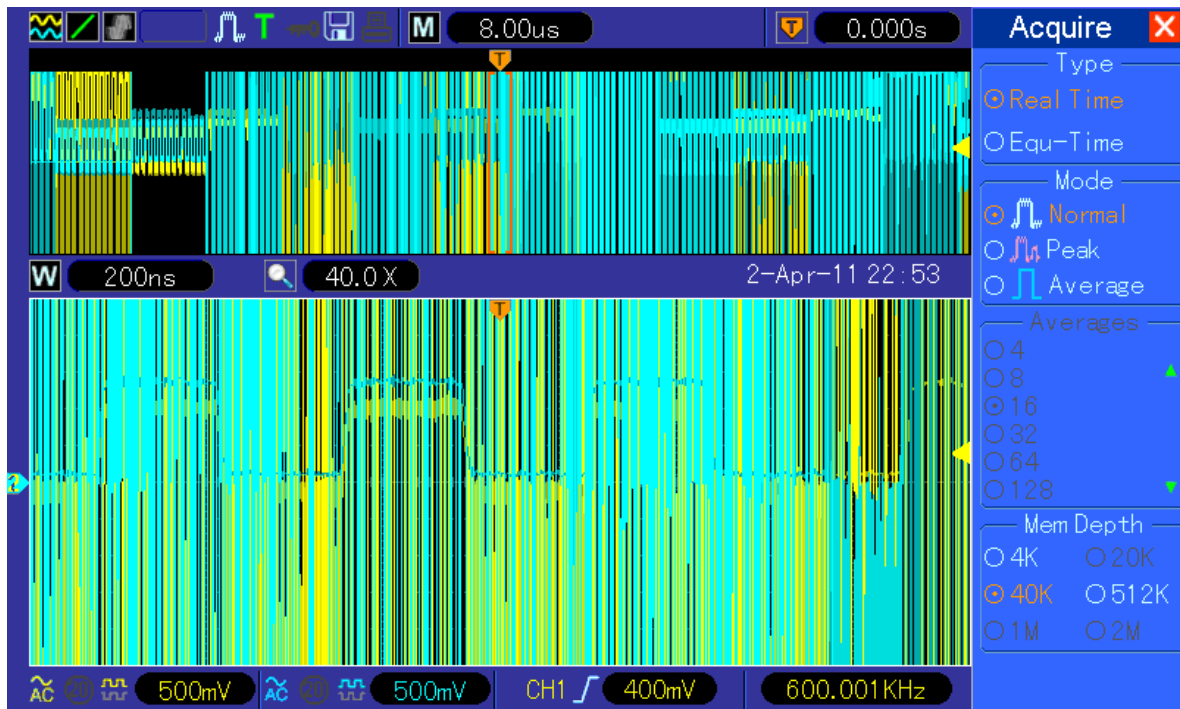
- In single window mode, sample memory 40k, both channels (ch1, ch2) enabled – while switching to dual window mode artifacts on screen and DSO later crashing and not responding.

**Artifacts disappear when changing timebase just after switch to dual window, so just an init error?**

Set like on picture



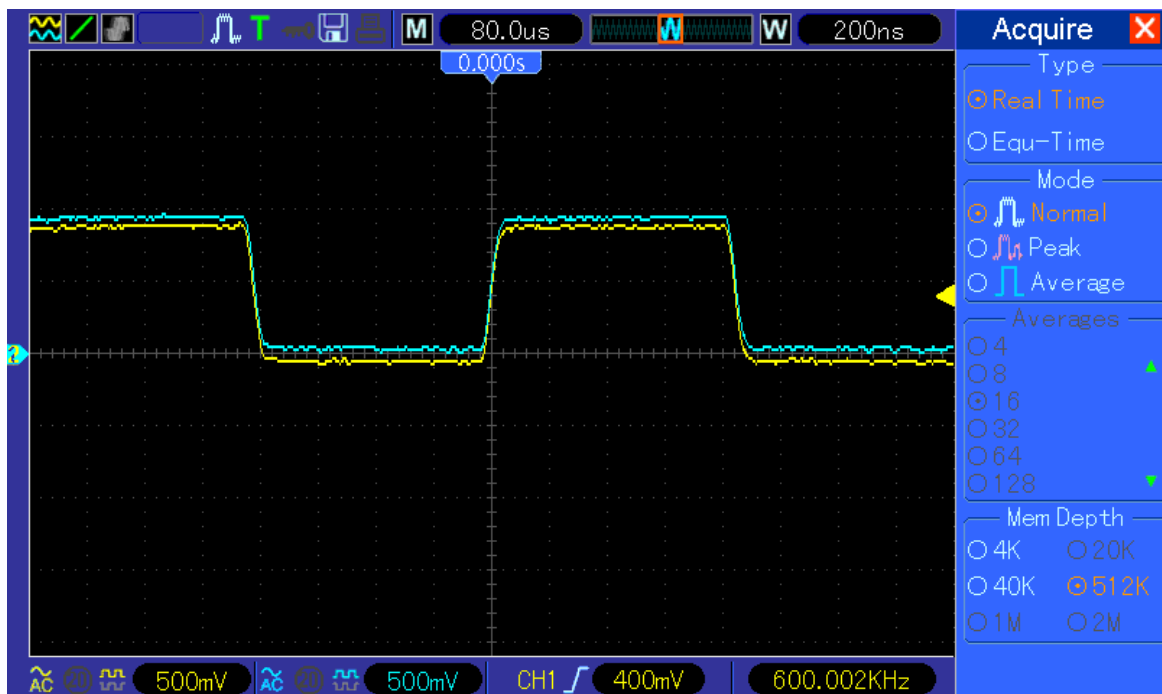
and switch dual window mode to see artifacts like this:



10. In single window mode, sample memory 512k, both channels (ch1, ch2) enabled – when switching to dual window mode artifacts on screen and DSO later crashing and not responding

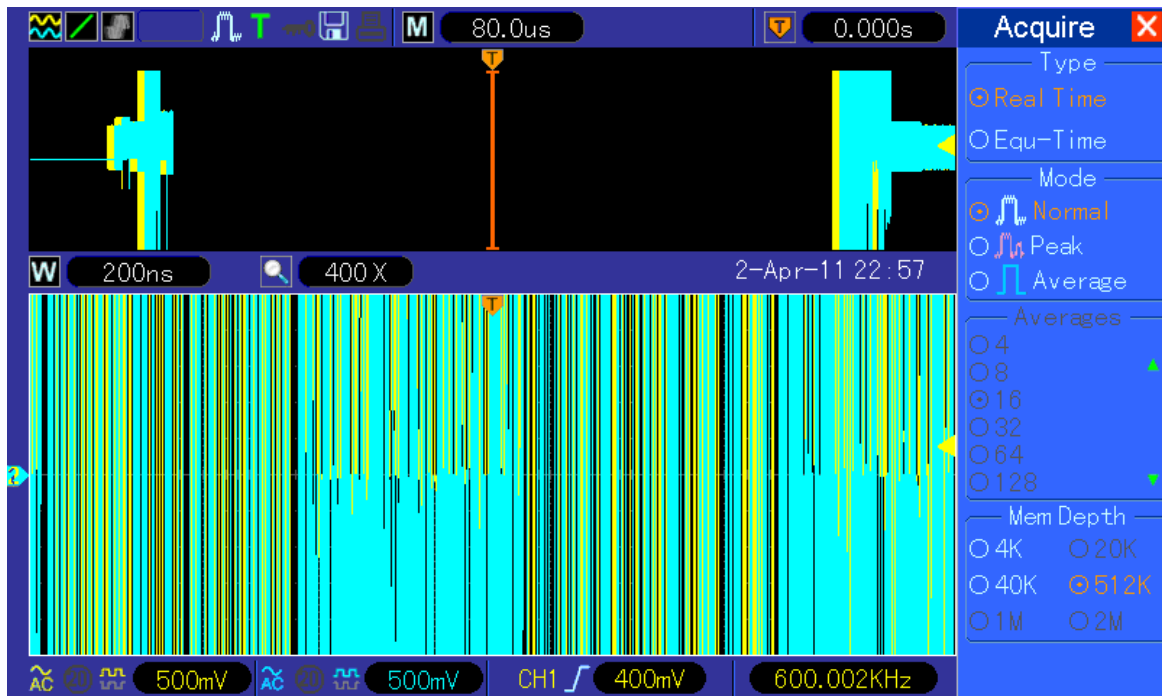
**Artifacts disappear when changing timebase just after switch to dual window, so just an init error?**

Set DSO like on picture

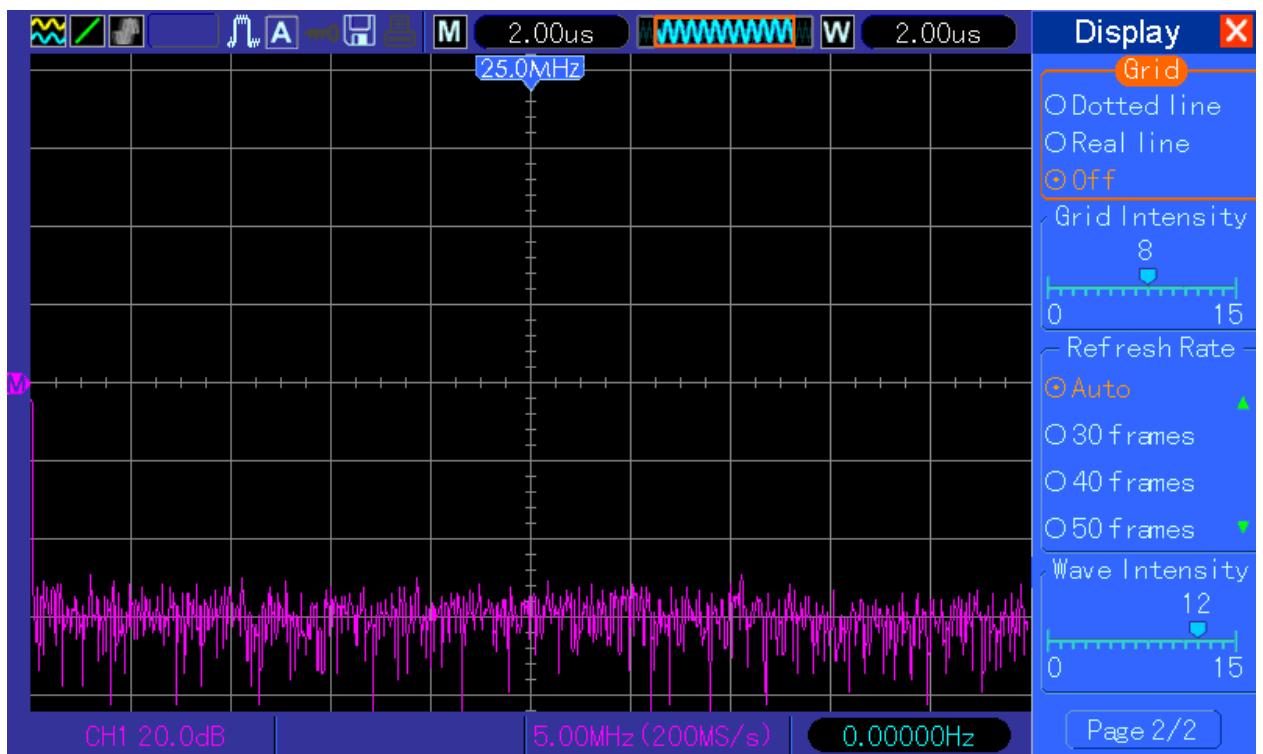


and switch dual window mode to see artifacts like this:



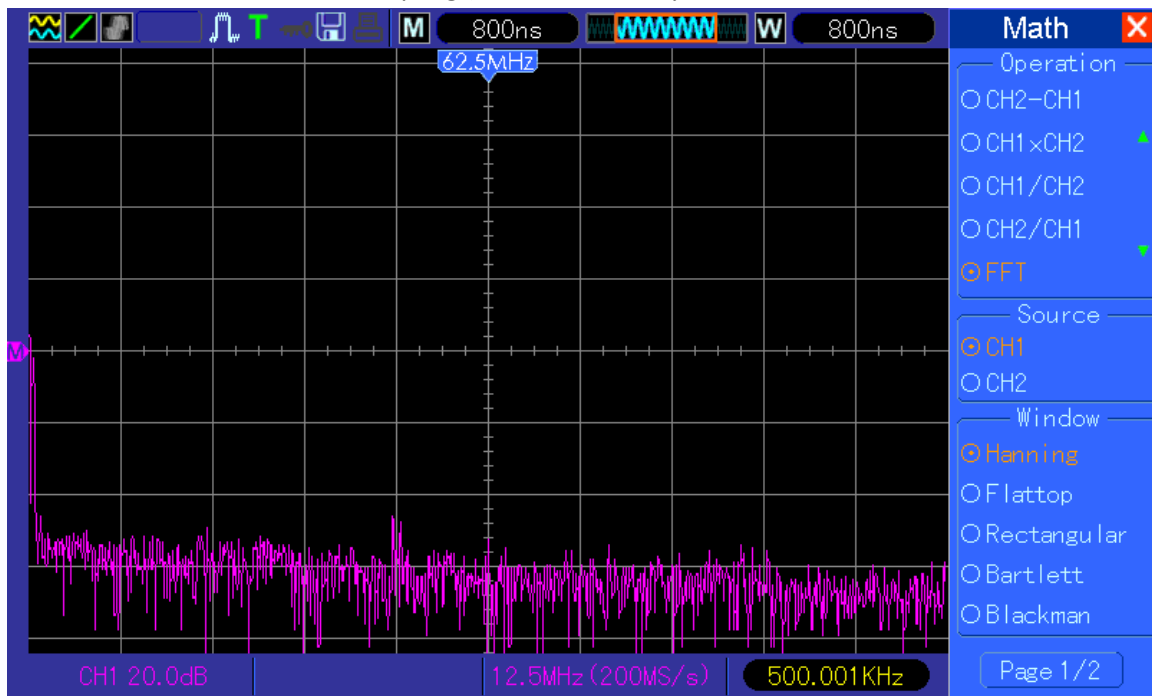


11. In FFT mode the Display -> Grid option is not changing the grid, it is always “real line” and not possible to change to “dotted line” or “off”.

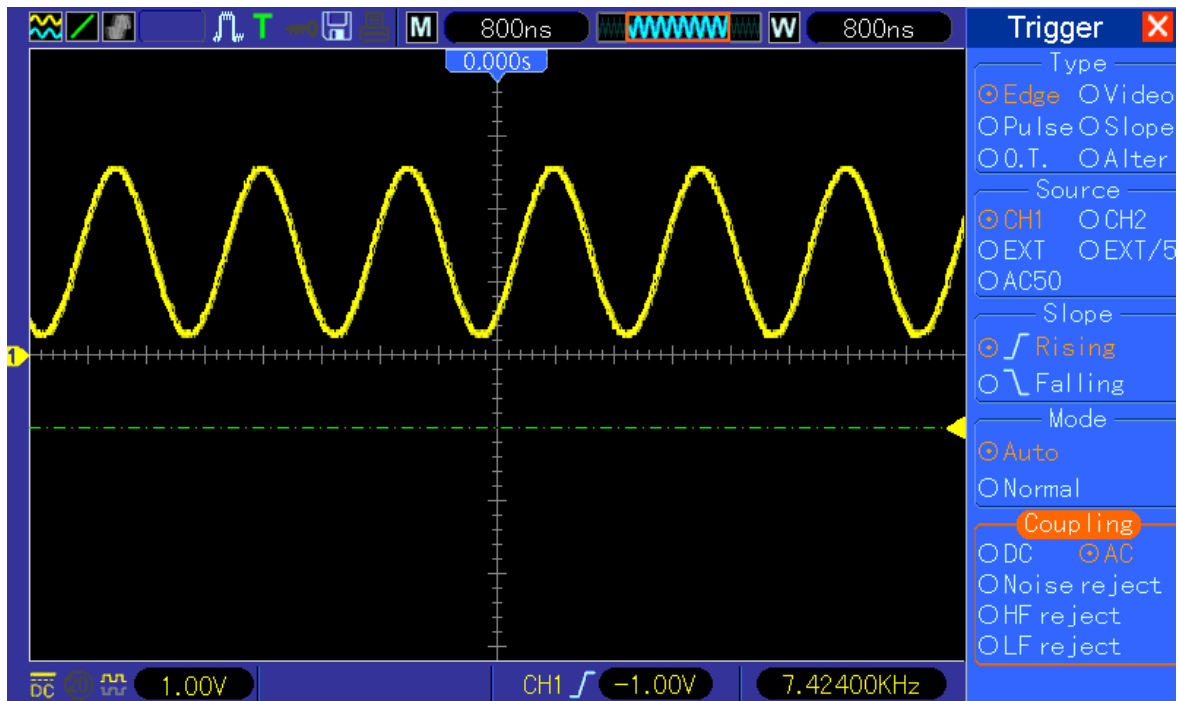


12. In FFT mode “Full span” is higher than Nyquist (sample rate / 2 )  
 Example: 800ns/DIV, sample rate is 200MSs, full span 125MHz. Easy to fix by enabling from

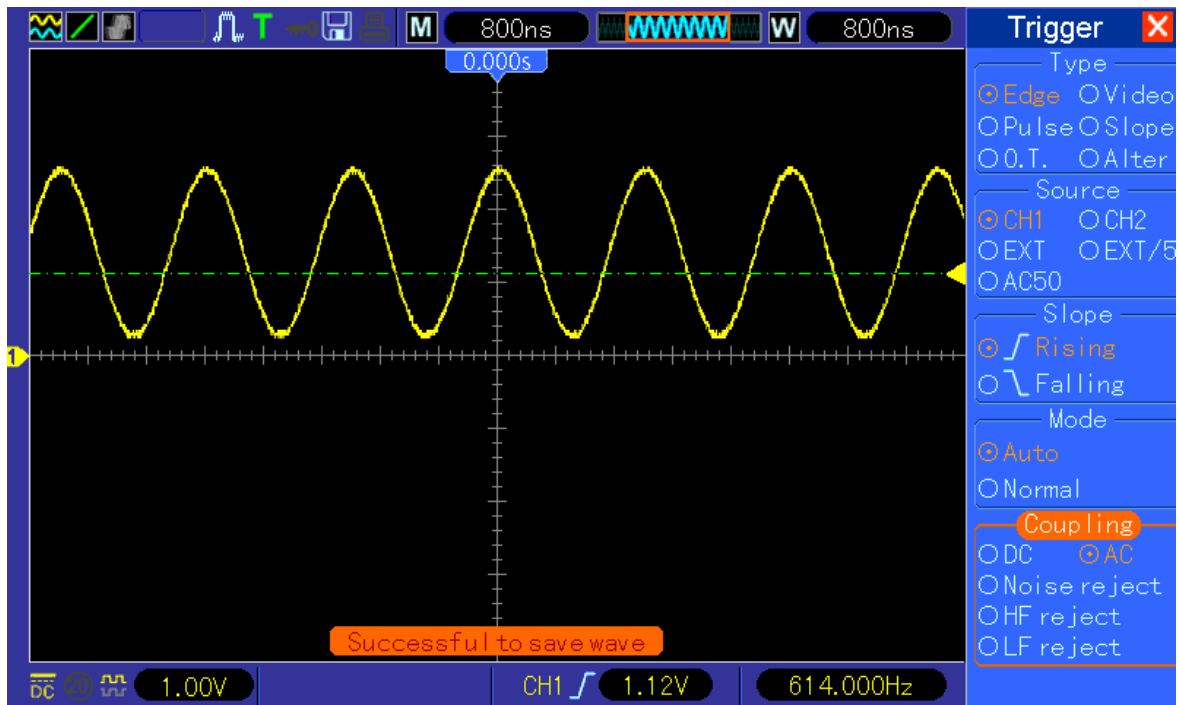
800ns/DIV to 20ns/DIV 1GSs sampling (when 4k memory or FFT enabled)



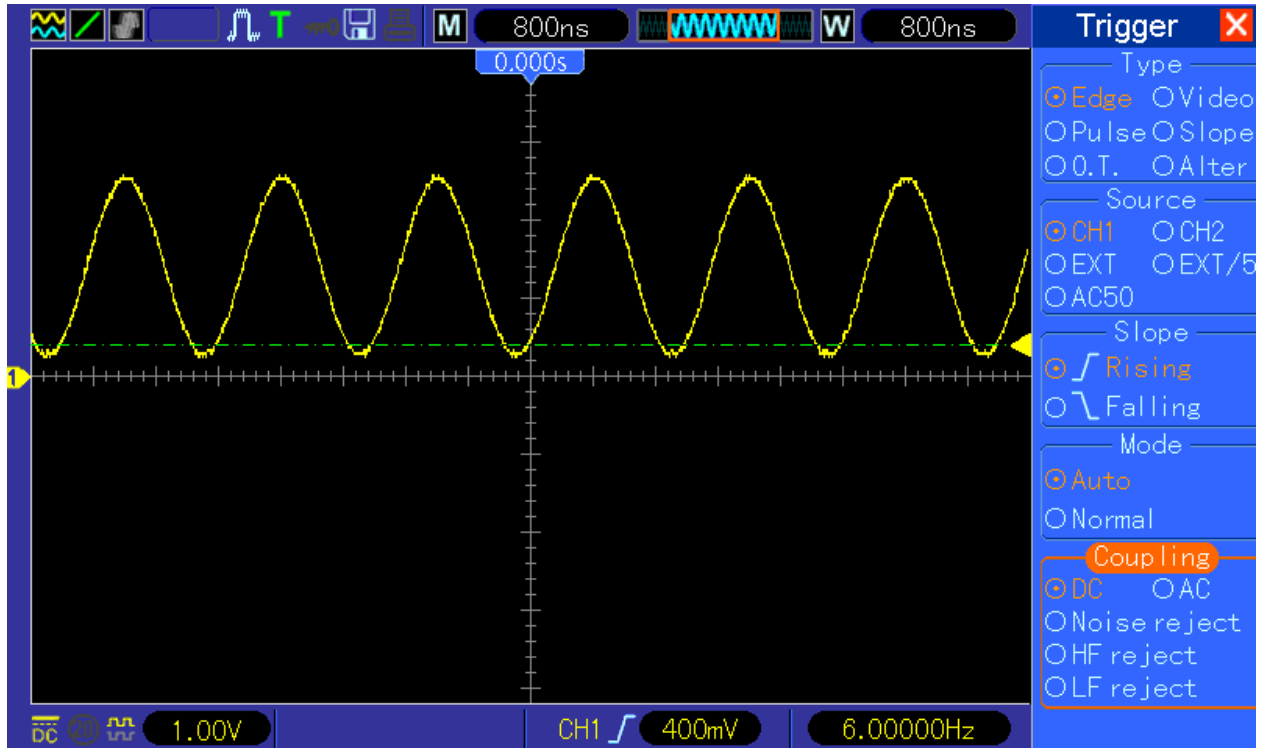
13. AC trigger indicator and line wrong. Set ch1, signal DC coupled, trigger AC coupled. The trigger lowest level below signal :

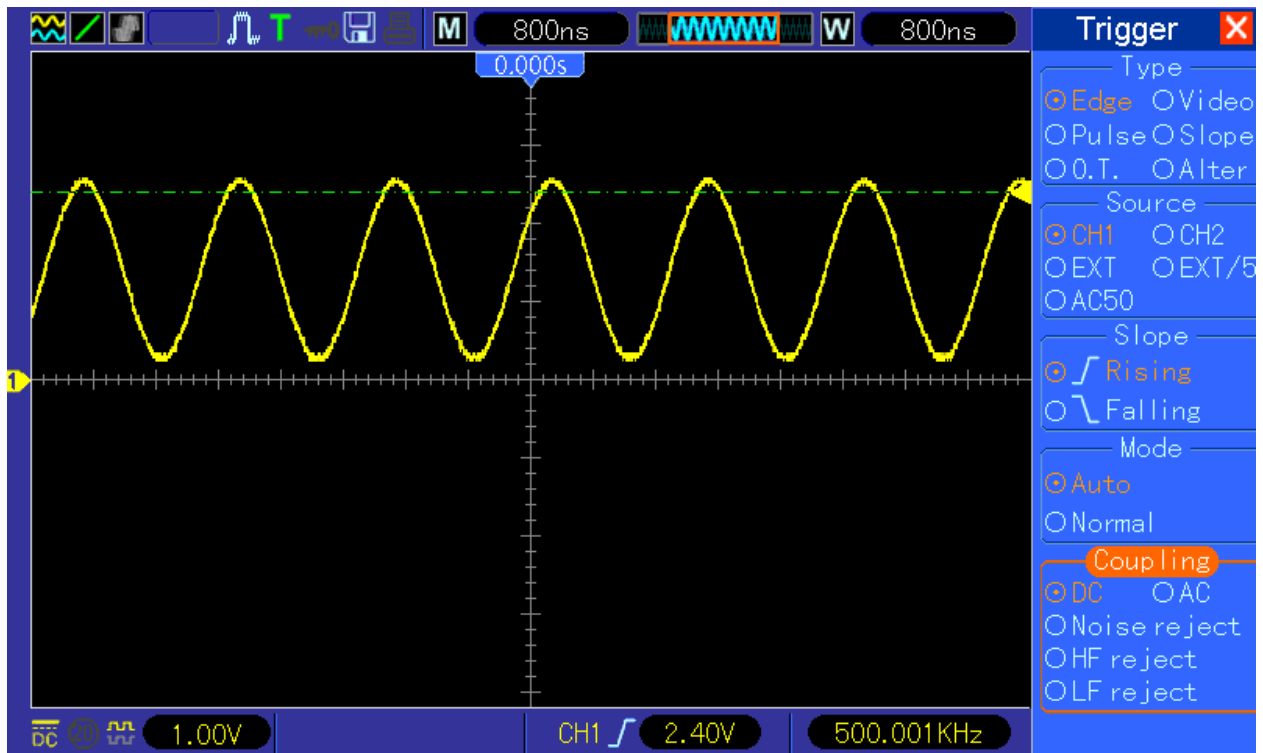


highest level only mid of signal

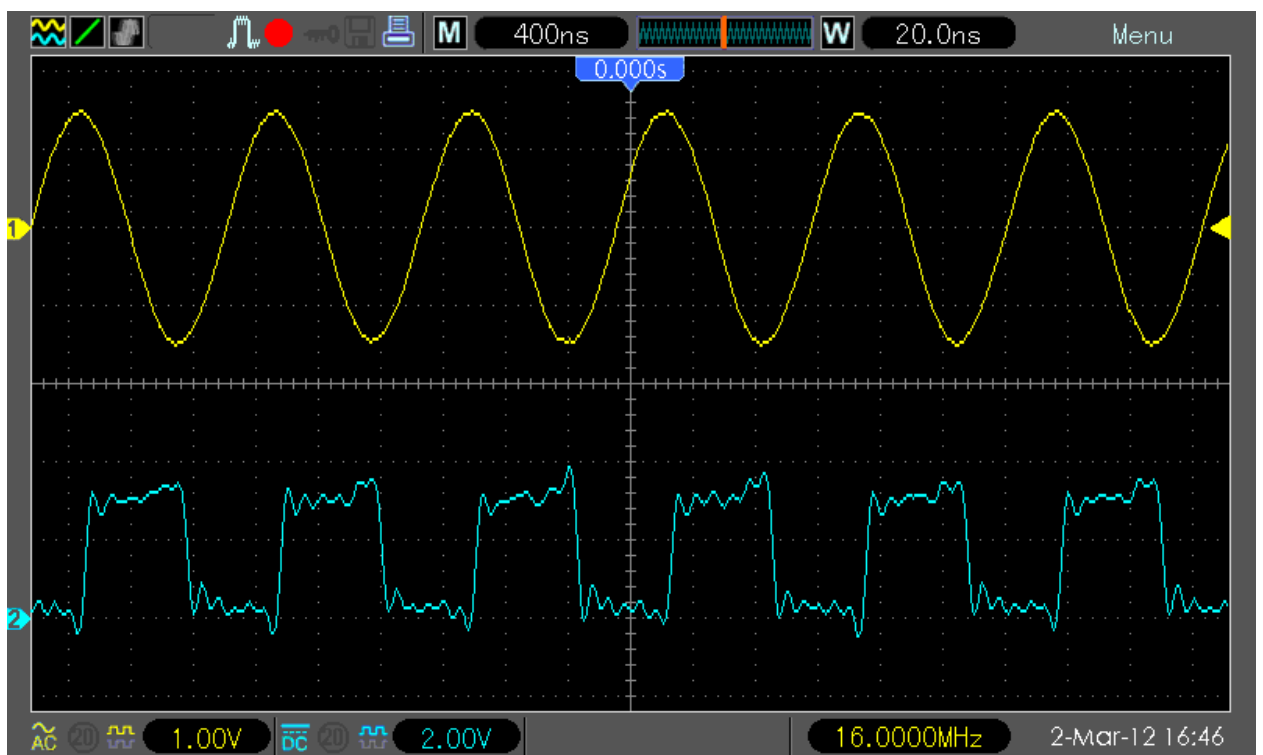


But both should look like when trigger coupled in DC mode:

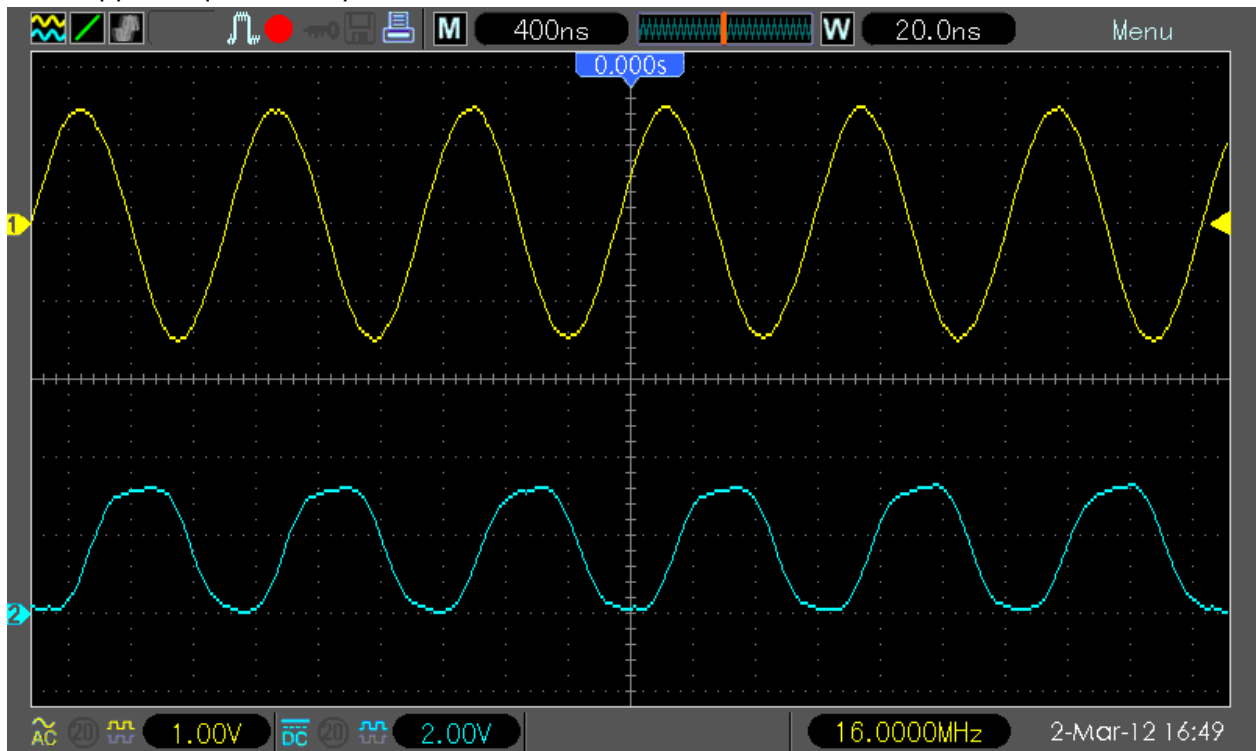




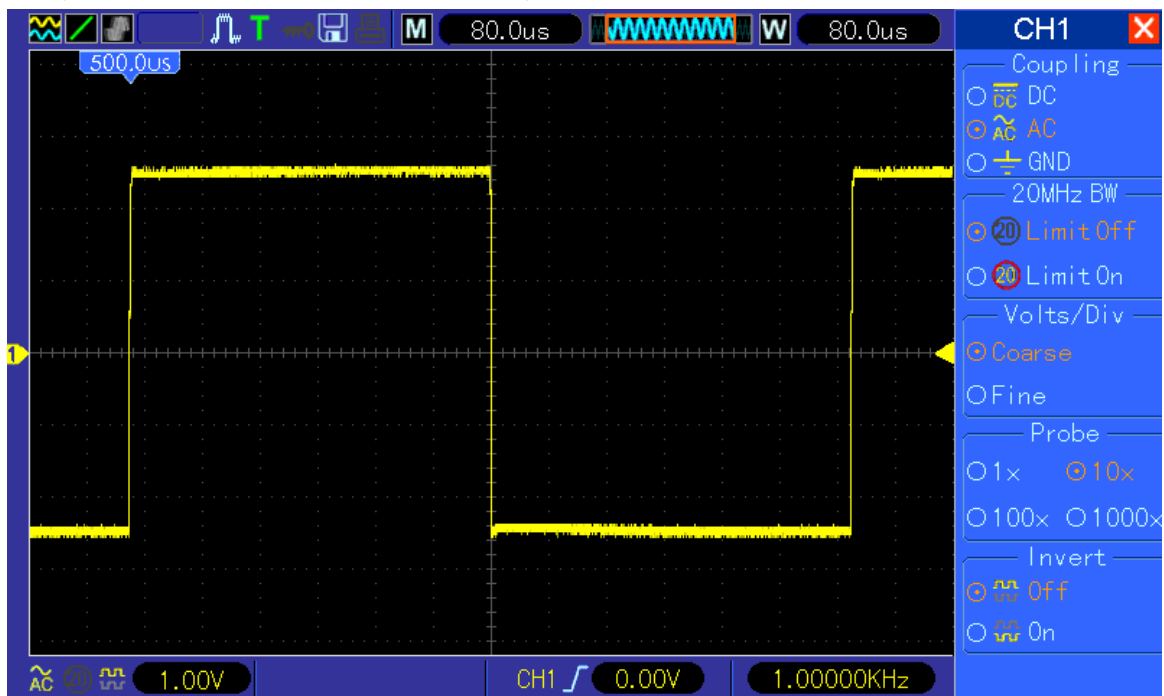
14. Dithering/interpolation filter of waveform too sharp. When enabling both channels (this also occurs in single channel mode and 1GSs, but test signal need to be higher to get same error) and applying for example 16MHz square wave the waveform is switching between proper square:



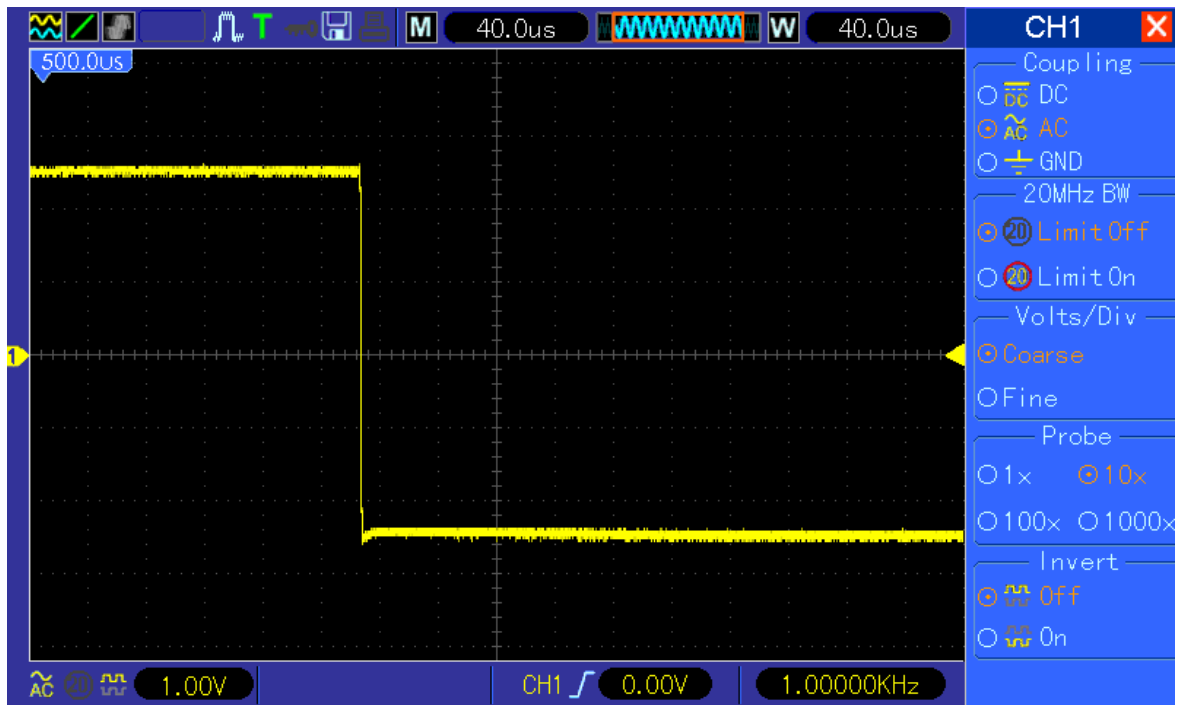
and crippled square every second:



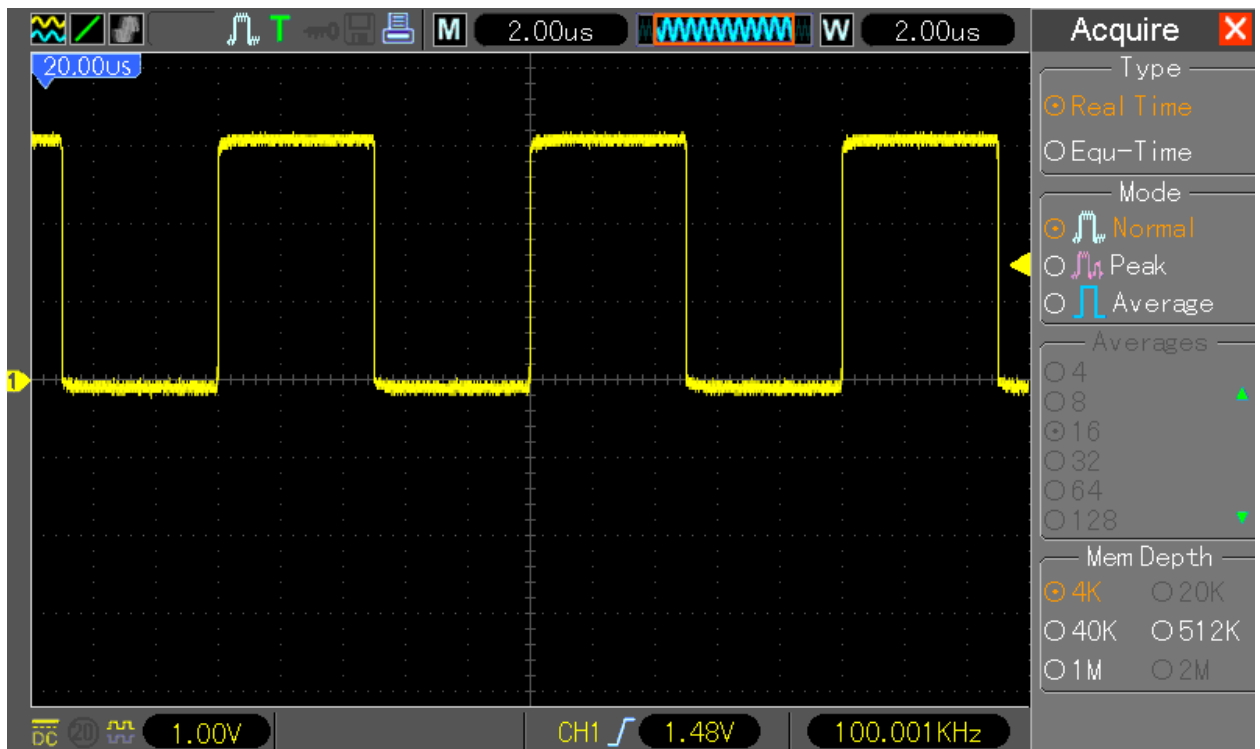
- Display / Time base scaling strange behavior. When you apply e.g. 1kHz signal, set time base to 80us/DIV and move the waveform to 500us/DIV:



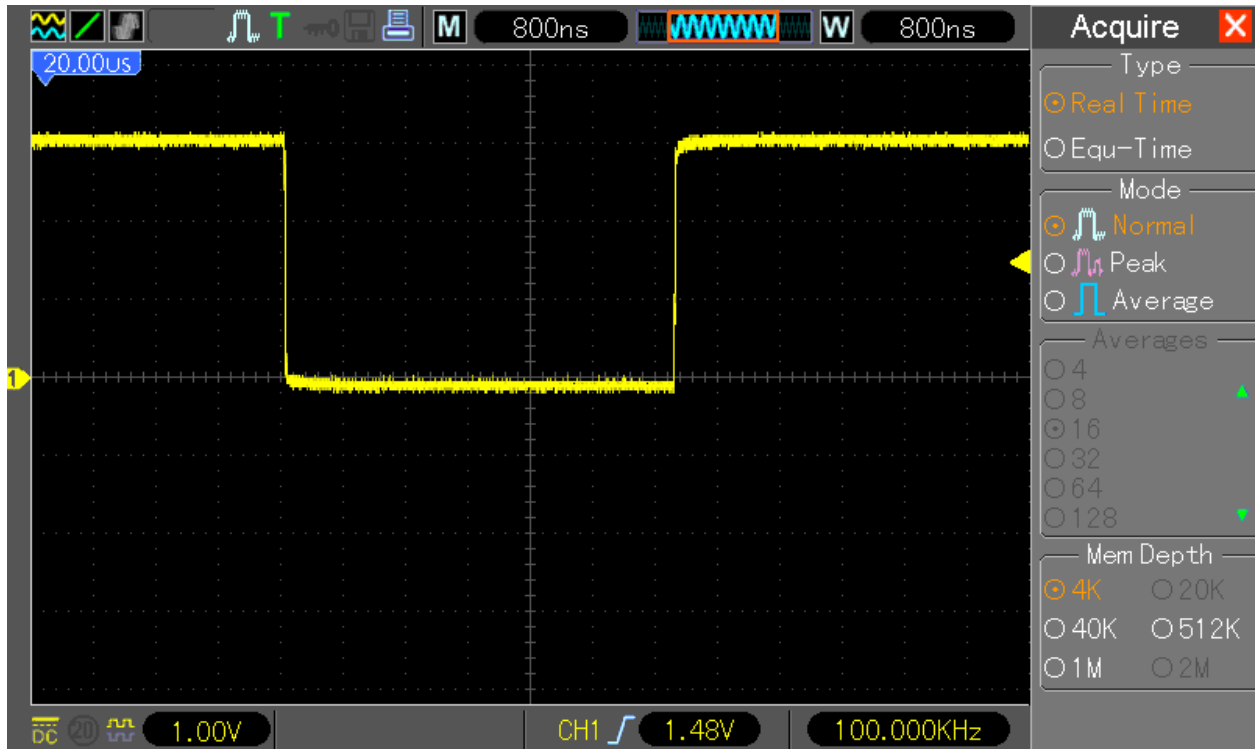
When you now change time base to 40uS/DIV the falling edge (which should be still in the middle of the screen) has been moved to 454uS position (but it should stay on 500uS). The same happens of course with 20uS/DIV.



Another example , waveform moved to trigger delayed by 20us:



when zoomed it is not ok, it is off by 1.8us already!



in principle in 4k, 40k and 512k everywhere same error, move waveform by more that MTB, do zoom and it is not ok anymore.

#### 16. Develop failsafe into rcS-script.

Currently when firmware does have bug and DSO is crashing, or even with no bug but when user is powering off the DSO while the dso.exe is saving the profile/DSO settings into the

`/param/sav/run1kb_XXXXX`

file it is possible that this file will get damaged. When this happens DSO is not starting up properly.

The failsafe can be separate executable loaded in rcS before dso.exe is loaded. This file will then check if "default button" is pressed. If so, this executable will purge settings/profiles and terminate itself. The dso.exe will then start up with default settings as no profiles saved.

#### 17. The new function "Wave" is no working properly in some models. There is missing the directory `/param/sav/wave_sav` on 2.6.13 kernel loaded DSOs.

Additionally there is typo in ARM source code,

```

GetWaveAreaAndRight .text 0004
GetWaveAreaGridKind .text 0004
GetWaveDispMode .text 000C
GetWaveSaveFileName .text 000E
GetWaveSignType .text 0001
GetWaveSpecExtremeVal .text 000E
GetWinAreaBufDrawYStart .text 000E
GetWinAreaHeadTail .text 000E
GetWinTextId .text 000C
GetWindowDataYHeadTail .text 000A
GetWindowStopModeParamDisp .text 0003
GetWindowWaveParam .text 0003
GetWindowWaveParamFromAcq .text 0003
GetWindowWaveParamFromAcqBak .text 0003
GetWindowWaveParamFromAcqBak2 .text 0003
GetWindowWaveParamFromAcqBak21 .text 0003
GetWindowWaveParamFromAcqBak3 .text 0003
GetWindowWaveParamFromDisp .text 0003
GetWindowZoom .text 0007
GetWindowZoomFact .text 0007
GetWindowZoomx .text 000B
Get_AutoMeasureWave .text 0006
Get_CursorDelta .text 000C
Get_DotNumPerVerticLine .text 0006
Get_DstTypeNum .text 0007
Get_FFTPerColPixelCnt .text 0003
Get_FixedWidthStrLineXYLen .text 000B
Get_HelpDBByAlias .text 0002
Get_HelpInfo2Disp .text 0002
Get_HelpPageContentByID .text 0002
Get_HelpPageContentInfo .text 0002
Get_HelpPageInfoKeyword .text 0002

```

```

.text:00059110 LDR R1, -aSDS ; "%s%d%s"
.text:00059114 LDR R2, -aParamSauWave_s ; "/param/sau/wave_sau/"
.text:00059118 MOV R3, R12
.text:00059120 BL sprintf
.text:00059124 loc_59154
.text:00059124 ; CODE XREF: GetWaveSaveFileName+4C7j
.text:00059124 LDR R3, -p_dso_4
.text:00059128 LDR R2, [R3]
.text:0005912C MOV R3, 0x1198
.text:00059134 LDR R12, [R2,R3]
.text:00059138 LDR R3, -a_hsw ; ".hsw"
.text:0005913C STR R3, [SP,#0x14+var_14]
.text:00059140 LDR R0, [R11,#5] ; s
.text:00059144 LDR R1, -aSDS ; "%s%d%s"
.text:00059148 LDR R2, -aMntSdWave_sau ; "/mnt/sd/wave_sau/"
.text:0005914C MOV R3, R12
.text:00059150 BL sprintf
.text:00059154 loc_59154
.text:00059154 ; CODE XREF: GetWaveSaveFileName+507j
.text:00059154 ; GetWaveSaveFileName+487j
.text:00059154 SUB SP, R11, #4
.text:00059158 LDMFD SP!, {R11,LR}
.text:0005915C BX LR
.text:0005915C ; End of Function GetWaveSaveFileName
.text:0005915C ; -----
.text:00059160 off_59160 DCD p_dso_4 ; DATA XREF: GetWaveSaveFileName+207r
.text:00059160 ; GetWaveSaveFileName:loc_590F07r ...
.text:00059164 off_59164 DCD a_hsw ; DATA XREF: GetWaveSaveFileName+687r
.text:00059164 ; GetWaveSaveFileName+9C7r
.text:00059164 ; ".hsw"
.text:00059168 ; char *off_59168
.text:00059168 off_59168 DCD aSDS ; DATA XREF: GetWaveSaveFileName+747r
.text:00059168 ; GetWaveSaveFileName+887r

```

a\_hws DCB ".hws",0

once the file extension is .hsw and another time it is .hws – this is preventing the save/reload from USB to work properly and even sometimes crashing DSO.

From the file format I assume .hws is the proper file extension name



18. The protocol.inf file in every 2.06.03 firmware (DSO5xxxB, BV, BMV and DSO1xxxB) contains error in the definition of [TRIG-SWAP-CH1-PULSE-TIME]. It is defined as "1" byte long but it should be "8" byte. The firmware itself is using 8 byte, only the "protocol.inf" file is wrong.
19. The protocol.inf file in ever 2.06.3 firmware (DSO5xxxB, BV, BMV and DSO1xxxB) contains error in the definition of ALT trigger. The entries for ALT-O.T.CH1 and ALT.O.T.CH2 are missing :  
[TRIG-SWAP-CH1-VPOS] 2  
[TRIG-SWAP-CH1-OVERTIME-NEG] 1  
[TRIG-SWAP-CH1-OVERTIME-TIME] 8  
[TRIG-SWAP-CH2-VPOS] 2  
[TRIG-SWAP-CH2-OVERTIME-NEG] 1  
[TRIG-SWAP-CH2-OVERTIME-TIME] 8
20. Every 2.06.3 firmware (DSO5xxxB, BV, BMV and DSO1xxxB) contains error in the "Trans\_DSIOeachData" and "Trans\_PCeachData" functions. The "g\_FFTWin" table is defined too small, due this SYSData FFT status is having only  
0x00 : hanning  
0x01 : flattop  
0x02 : rectangular  
Barlett and Blackman are missing (always sending 0x00 and 0x01 instead of 0x03 and 0x04)
21. In every 2.06.3 firmware (DSO5xxxB, BV, BMV and DSO1xxxB) in SYSData definition the field for FFT -> Vrms is missing, only dBrms available.
22. ~~Every 2.06.3 firmware (DSO5xxxB, BV, BMV and DSO1xxxB) contains error in the "Trans\_DSIOeachData" and "Trans\_PCeachData" functions. The "g\_MSItem" table is defined too small, is having only 0x0B size but since year there are 22 measurement's available. Almost ok, but small error still there. All measurements from "off" with "ID=0" to "Pulse Width" with "ID=11" are ok, but then the next one "Delay1 2Rise" is having "ID=14" and not "ID=12". The next measurement item is having then "ID=13" and so forth. As the total amount of IDs = 32 the last measure items "LFF" and "LFR" are not having proper ID number but zero.~~  
All above fixed, but the order on DSO display is not matching order by read-back, it is now 0,1,2,3,4,5,6,7,8,9,10,11,25,28,12,13,14,15,16,17,20,23,18,19,21,22,24,26,27,29,30,31,32.  
(bug fix priority set down to yellow)
23. Equivalent sampling not working properly. Two things could be done there
  - the filter corner frequency could be moved to e.g. 500MHz
  - when enabled, the equ mode should show better and cleaner waveform from 800ns/DIV (or at least 200ns/DIV) to 2ns/DIV
  - when signal higher than Nyquist frequency equ sampling should give big improvement of sampled data.
24. ~~No real difference when changing Screen Refresh rate (Auto, 30, 40, 50). It looks like "30" is maximum what the current firmware is able to handle, when changing to "40" or "50" no visible difference. This seems to be the case in all firmware's since end of Nov 2011. This was one of~~

the unique features and need to be changed back to what it was before!

Edit- a little bit better, Auto and 30 are ok, but 50 is still equal to 40 (but it should refresh faster)

I got told that there is no room for improvement, the firmware is running with "full speed"

Honestly I don't believe that, but for now I would say "fix other bugs first".

Seems to be again improved a bit. I think due the amount of implemented features it will be not as fast as it was 2 years ago, so I would say "as long it will not get slower it's ok"

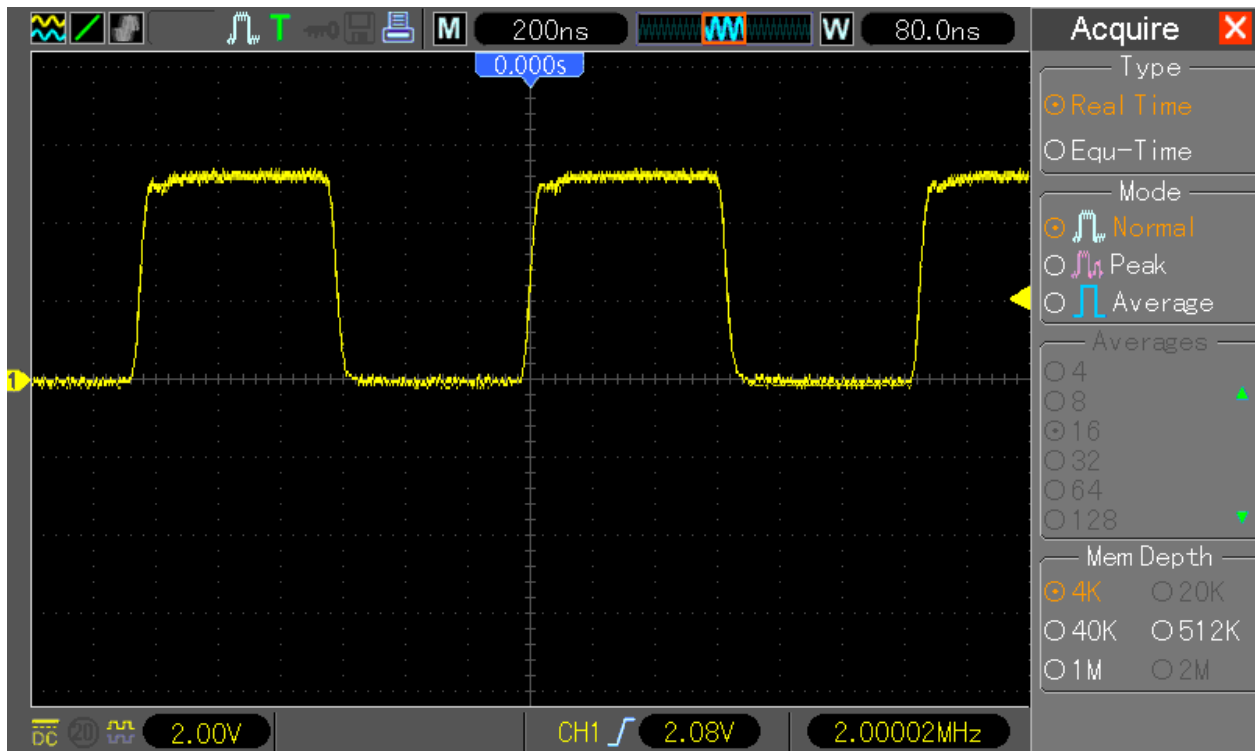
25. Waveforms in memory (in some combination of Timebase and memory depth), in display memory and exported data having at begin or/and end of the waveform random data. Also the buffer length seems to be not as it should be, e.g. 4100 instead of 4000 samples. This error seems to be in all firmwares since Mid-December 2011. UPDATE: Exported (csv checked, other formats not because they not documented nor open) data seems to be fine. Display data seems to be fine for Normal and Peak sampling, in average probably still some issues (not sure if this is now related to bug nr. 27 or if still belongs to 25).
26. While switching to Dual Window (F7), if  $WTB < MTB$ , the MTB displayed value is not always set properly. ~~Up to fw 120423.0 it was working properly, in 120808.0 and 121027.0 the MTB scale changed in a completely wrong way (see bug 27), in fw 121208.3 following behavior:~~ This seems to be only issue when  $MTB < WTB$ , with  $MTB = WTB$  it does works properly.
- Update 130202.0** – when switching from single into dual window scaling works. But still there is another one kind of this bug:

Set following on your DSO :

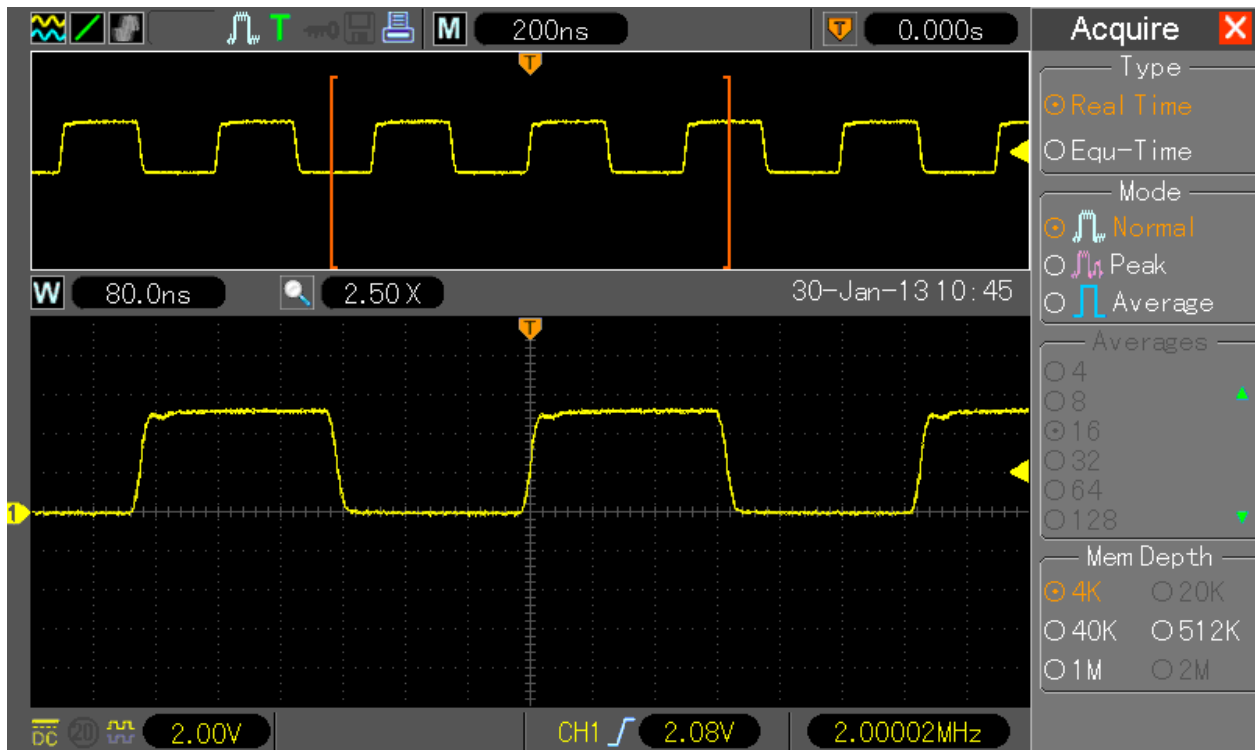
1ch, 80ns/DIV, 4k memory depth, apply 2MHz square signal.

The DSO is displaying as MTB 200ns and WTB 80ns/DIV.

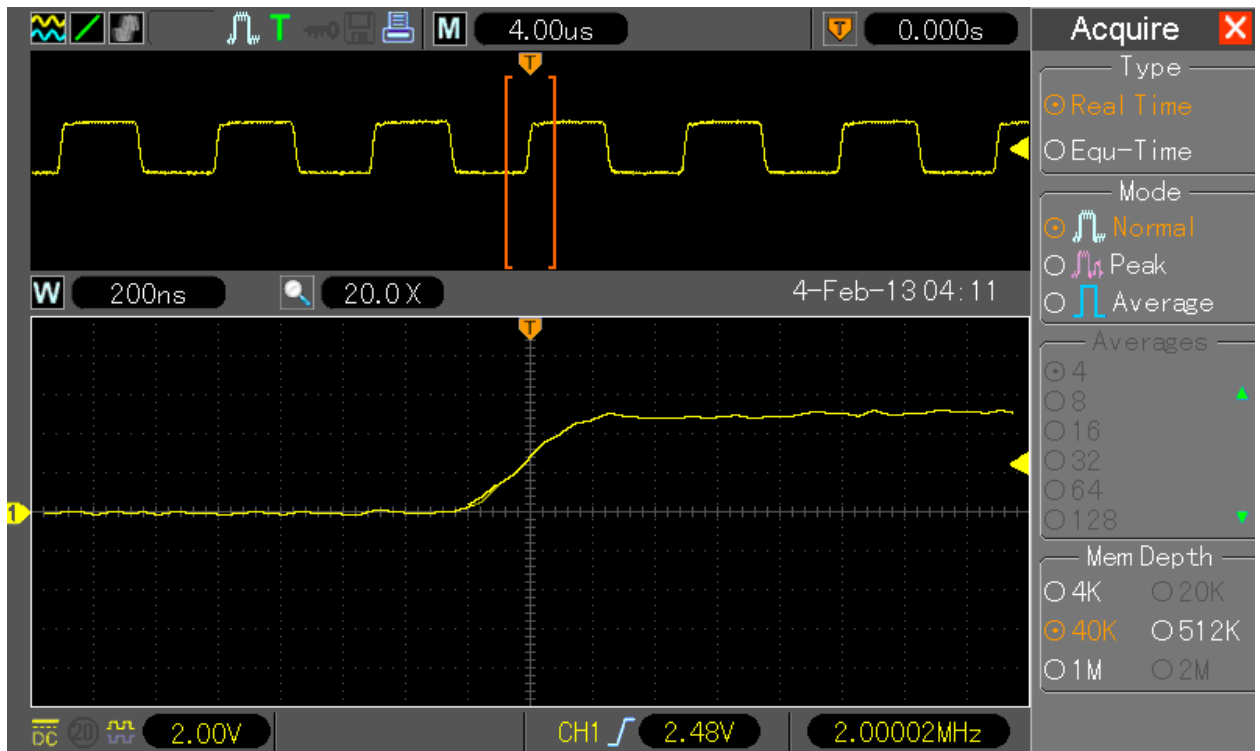
You should see now 2.5 period on screen like here:



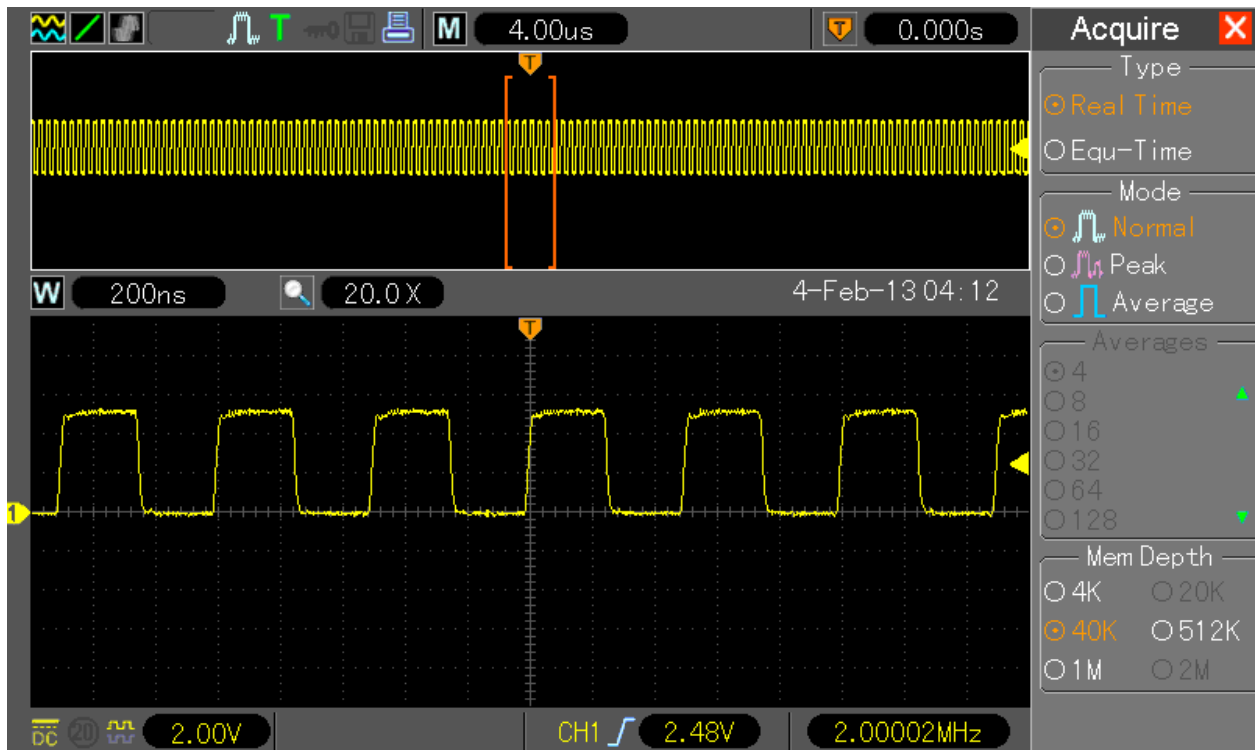
Now press F7 to enable dual window. The top MTB window show 6.5 periods and bottom window WTB shows 2.5 periods, which is what it should be:



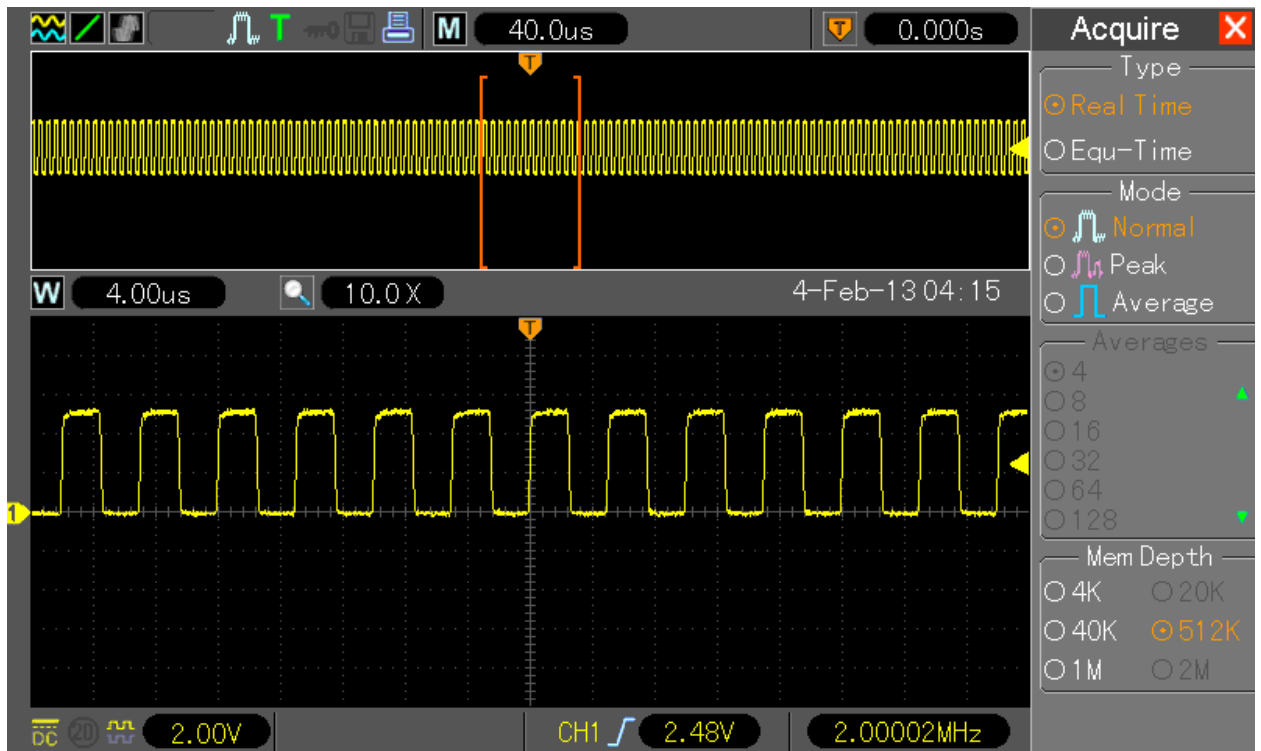
Now change memory depth to 40k, top window is having still 6.5 periods, this is **wrong**



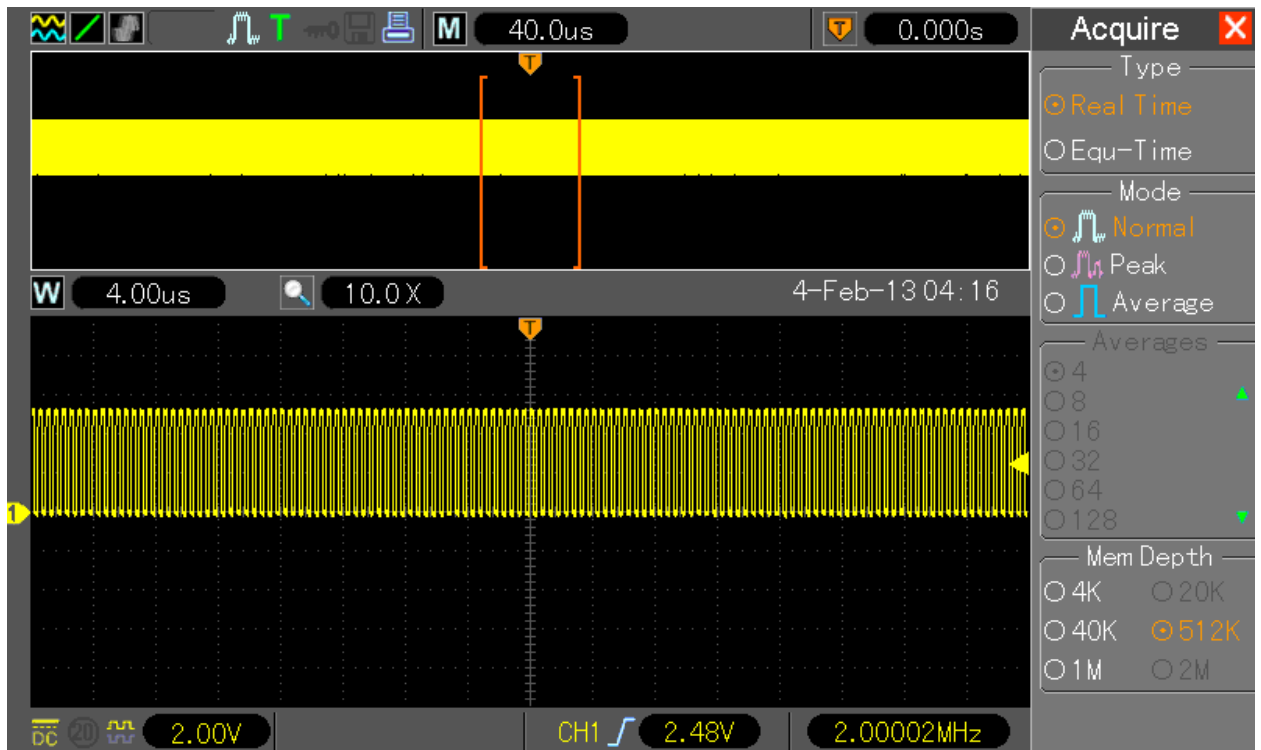
Switch now focus to top window and turn timebase one position up, the display will be now refreshed to **proper values**:



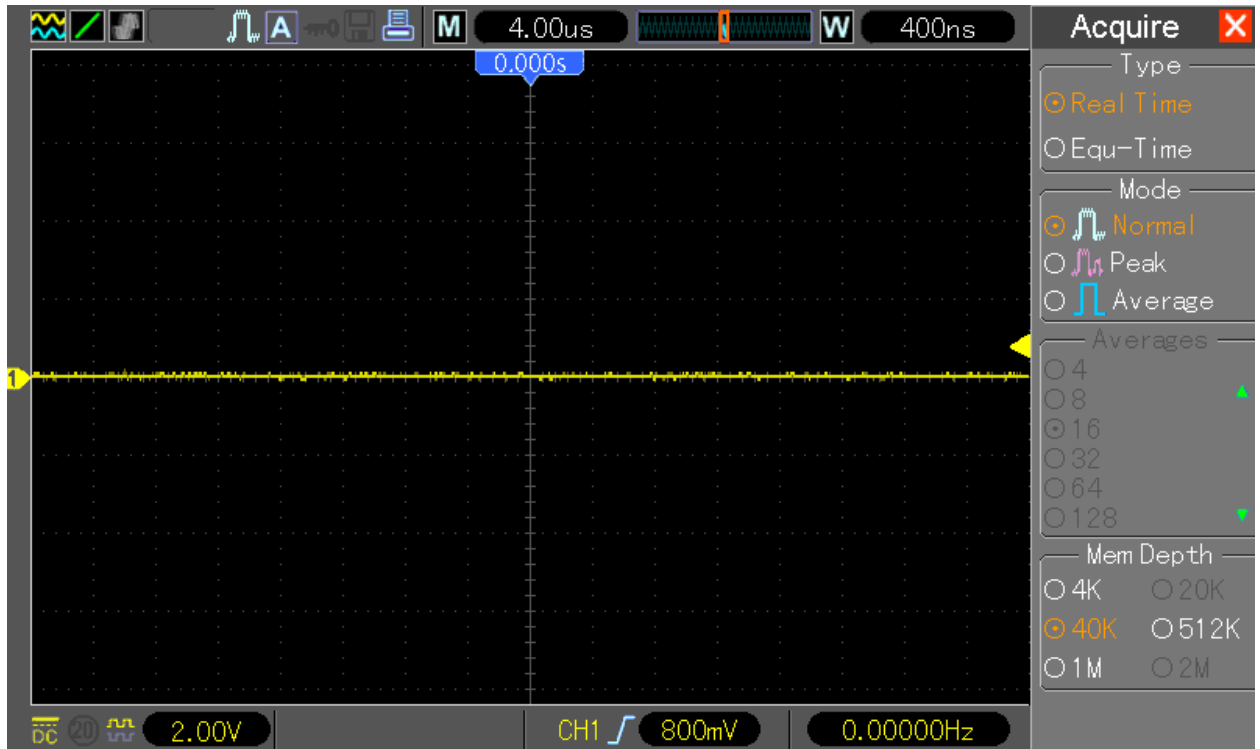
the same error is there if you change to 512k (and 1M exact same error), push now F5 to change to 512k, picture looks like



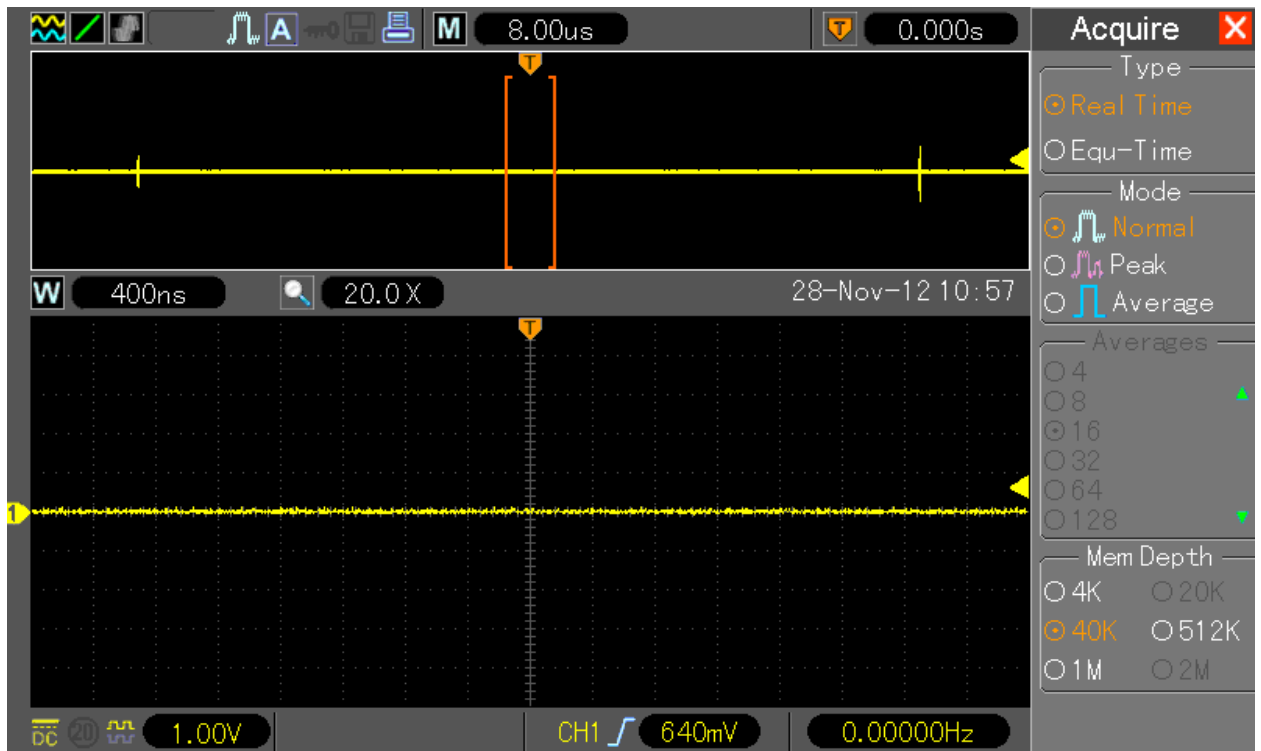
Switch now focus to top window and turn timebase one position up, the display will be refreshed to **proper values**:



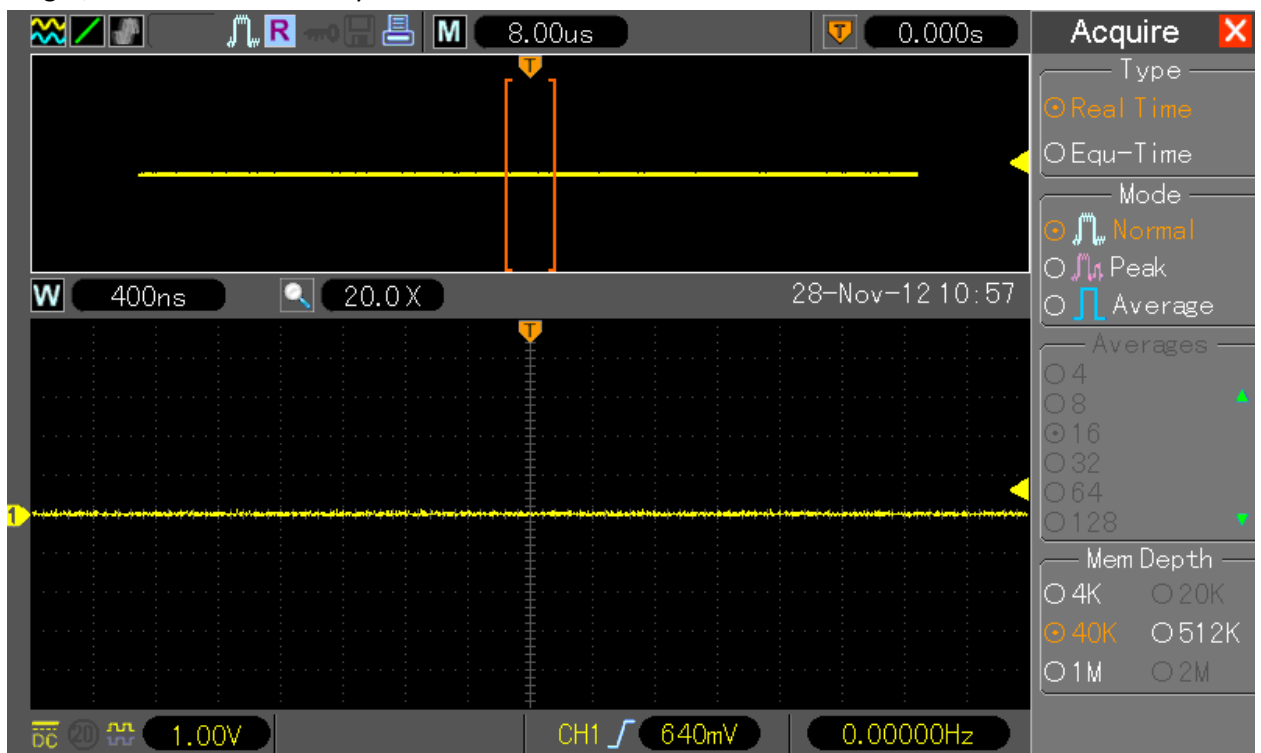
27. While switching from single into dual window mode the main timebase is changing with a wrong factor, e.g. from 200ns/DIV in single into 400ns/DIV in dual window mode. Similar issue in 40k/512k and 1M – in dual window the MTB is twice that high as before in single window mode. Due incorrect timebase the display buffer is showing artifacts on both right and left side of the waveform (end of buffer). Example: CH1 enabled, 40k memory, single window and windows timebase smaller than main timebase, here 400ns/DIV (Main TB is 4us/DIV for 40k)

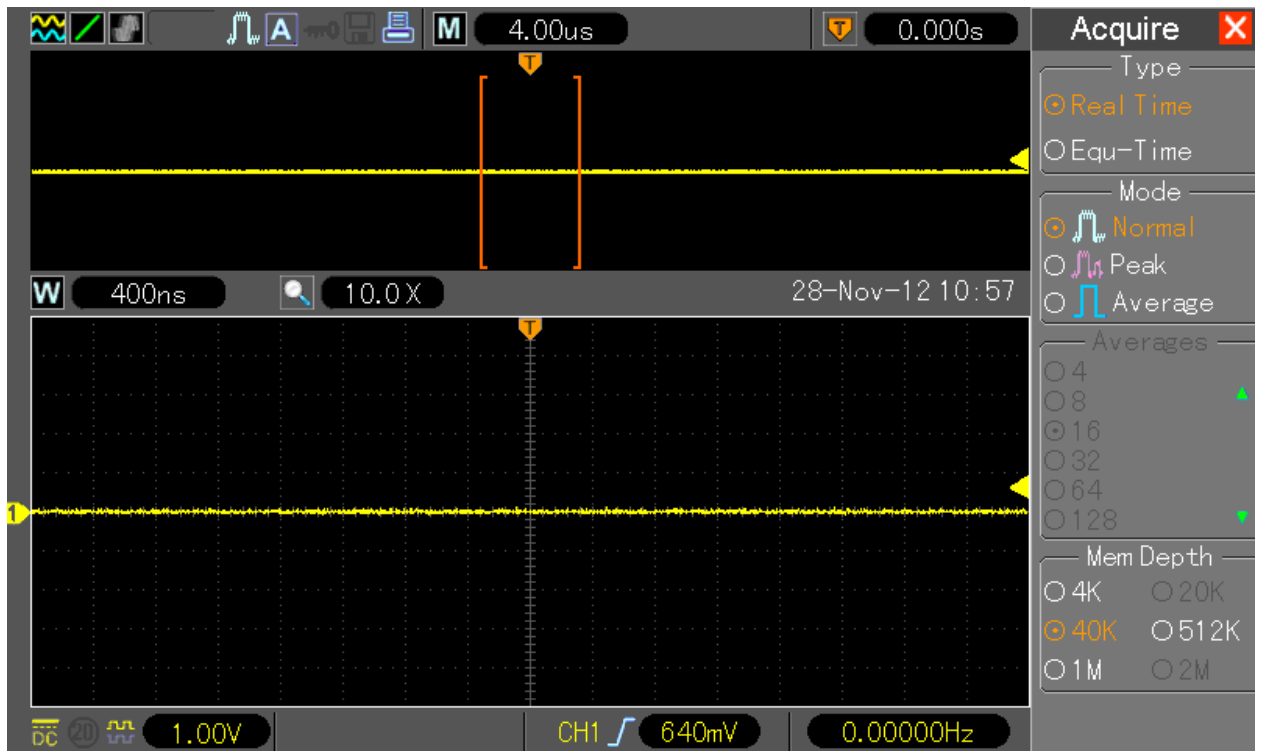


Now when switching to dual window the Main TB is changing to wrong value (here from 4us/DIV to 8us/DIV – actually it will be always doubled in length) and artifacts from “end of buffer” right and left in top window are shown:

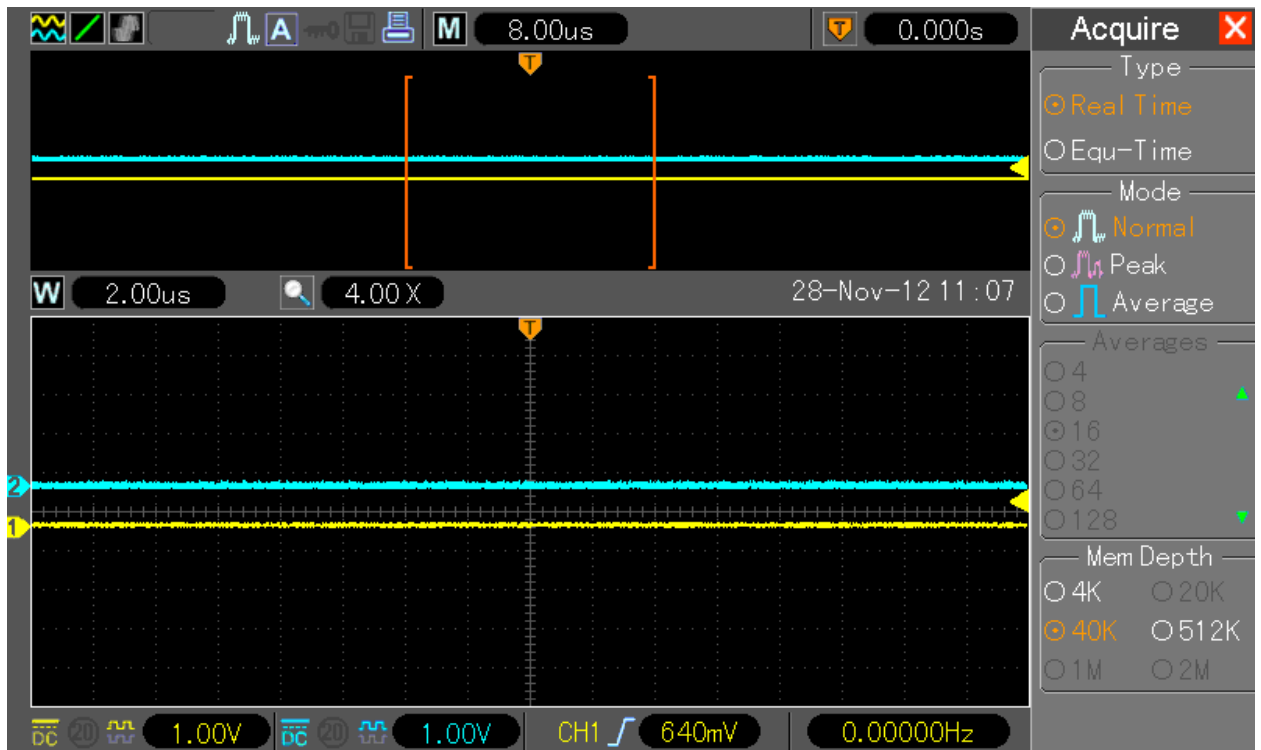


When the Acquisition would be stopped and restarted or Timebase changed one position forth and back (while Main window is focused) the Main TB and displayed data will be fixed to proper length; no artifacts shown anymore:





With 2 channels enabled this bug **DOES NOT EXIST**, this is because the doubled Main TB value is exactly what it should be for dual channel view:





28. Someone told me that there was “problem in csv exported data, no timestamp inside. This seems to be fixed in 2.06.3\_121027.0”. Honestly, I see timestamp in scientific format but no idea if this is really fixed; for me it’s a bit strange when multiple data points are on same stamp, e.g. (steps are here in ns valued but then cut in format):

1.58E-03,0.000

1.59E-03,0.080

1.59E-03,0.080

1.59E-03,0.080

If the smallest step is e.g. 40ns then timestamp for every point should be always in ns and not increasing:

4.00E-07,0.002

8.00E-07,0.000

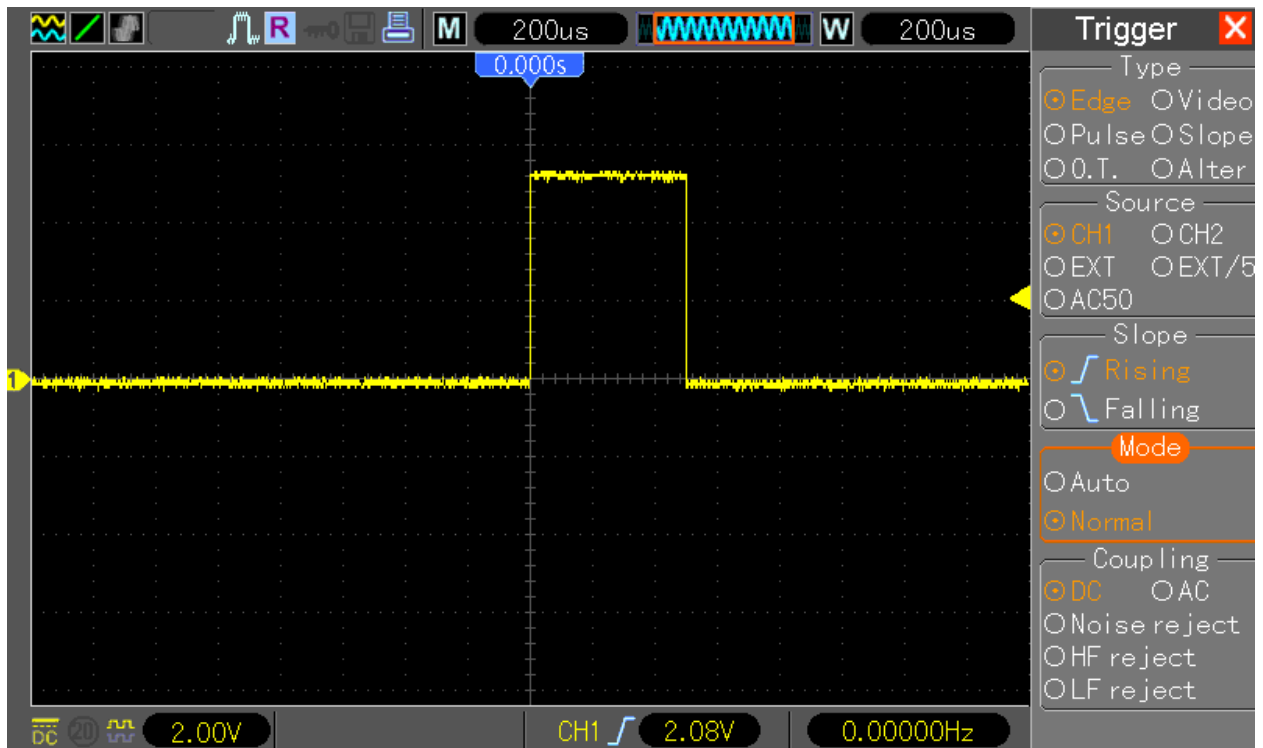
12.00E-07,0.002

16.00E-07,0.000

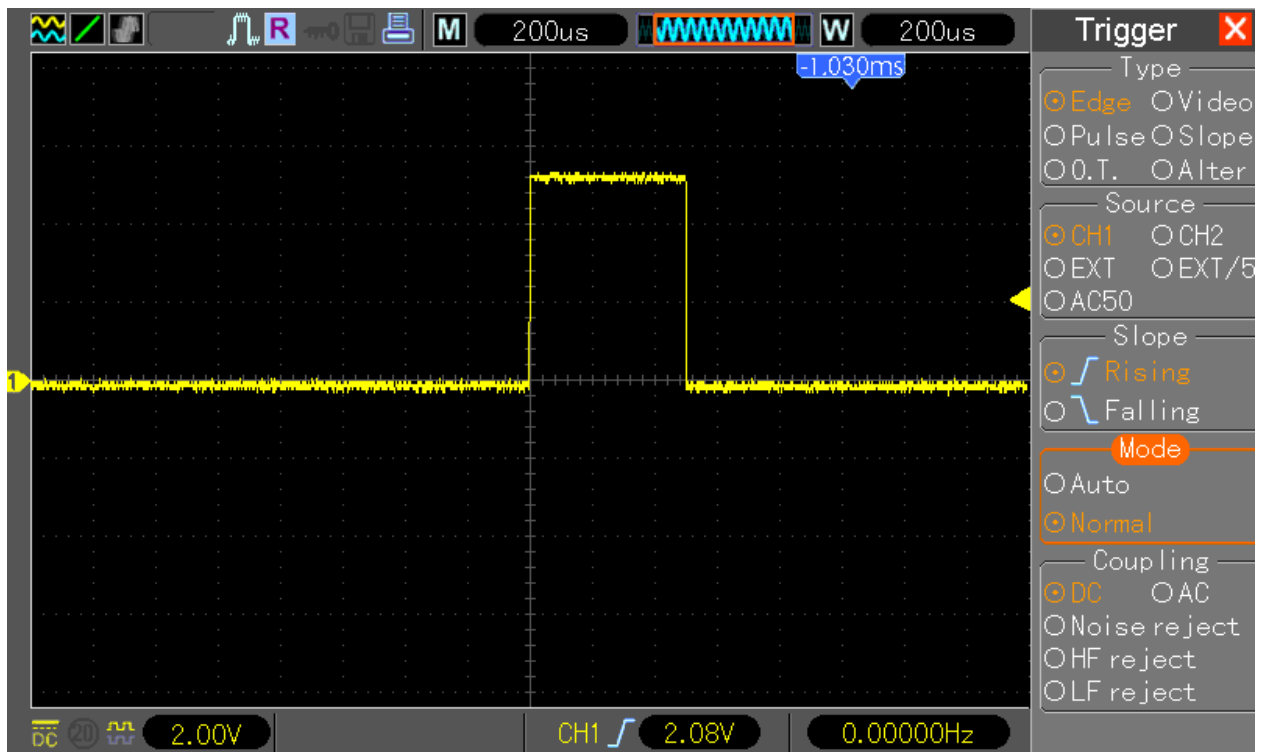
29. Horizontal Position knob not moving display data when trigger in “Armed” position and acquisition in “RUN” mode. To understand this error set following on DSO:

1ch, 4k memory depth, Trigger “Normal”, Signal generator to 500us pulse repeating for example every 5 seconds.

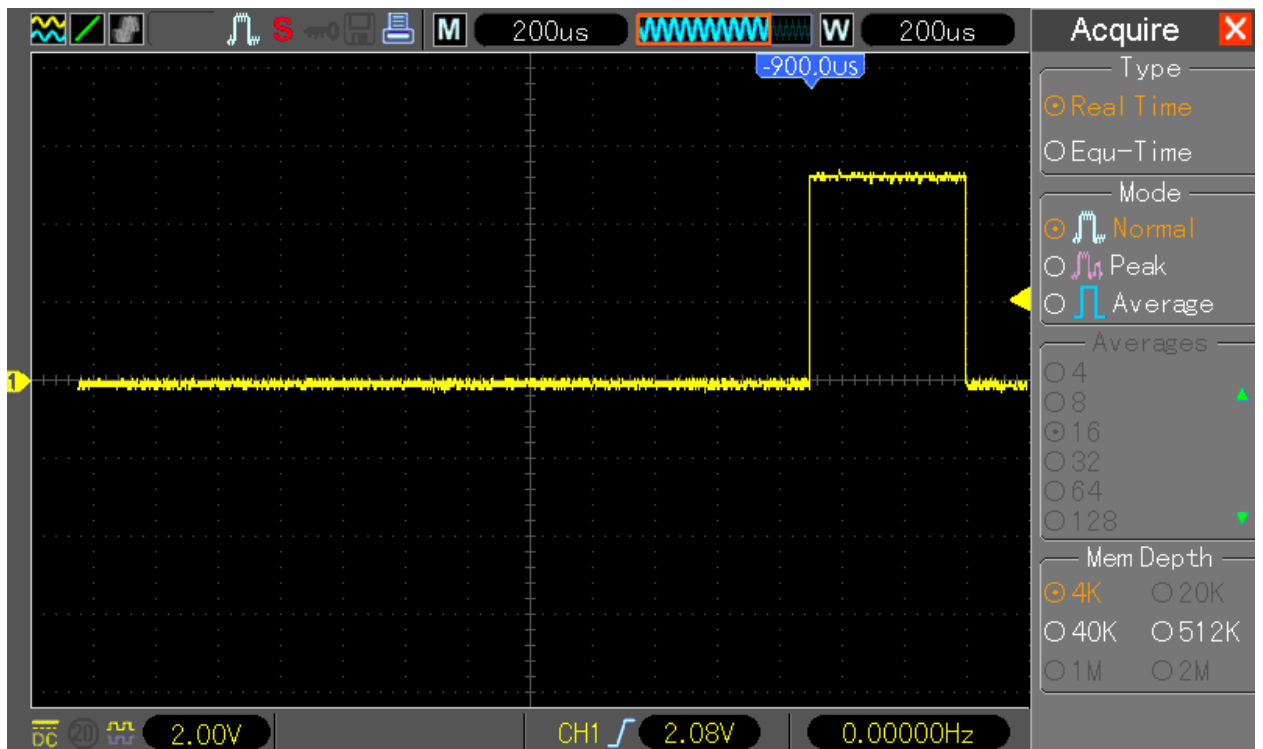
After first trigger event the waveform will appear as following on screen:



Now when you turn the Horizontal position knob to left or right to change the position, the blue trigger indicator is changing as expected, but the already captured waveform is not moving (which is a bug, it make sense to be able to move already captured waveform while waiting for next trigger event. )



However, when working with acquisition in “Single shot” mode the waveform can be moved together with the trigger indicator :



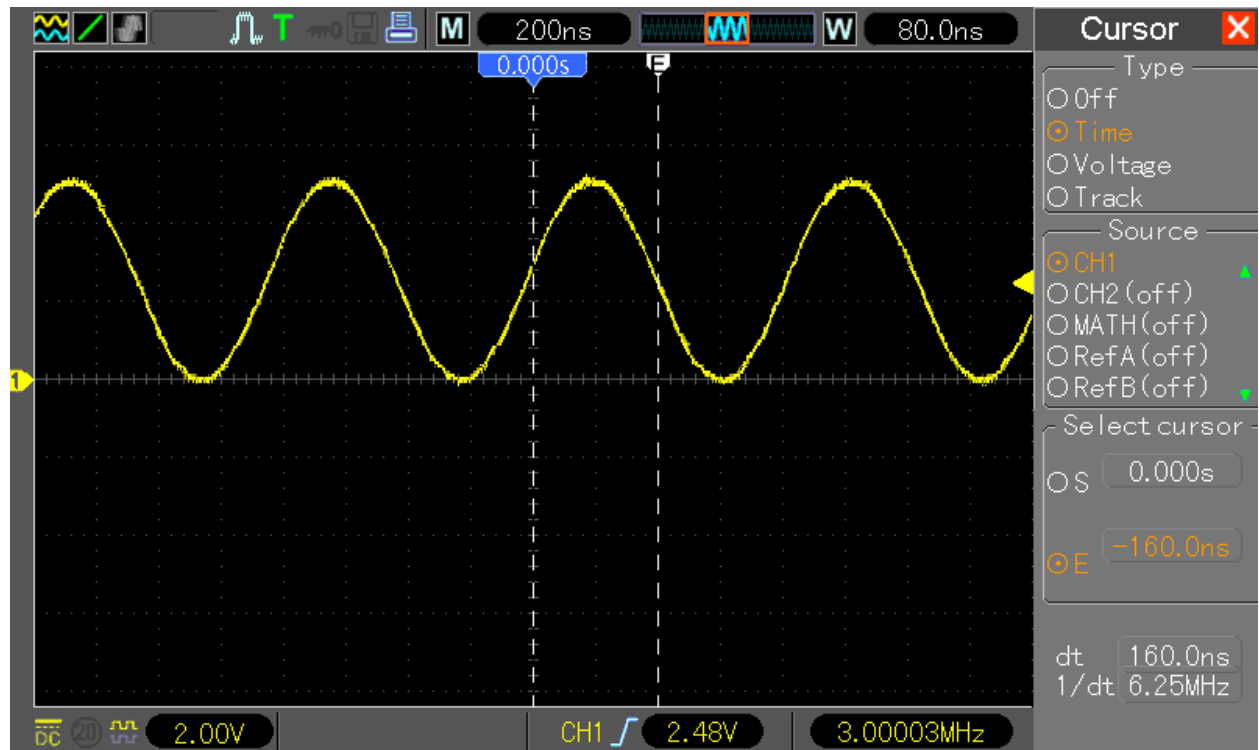
30. Cursor cannot be moved smoothly anymore. Every firmware update is slowing down more and more the V0 knob response. In firmware 110923.1 every kind of cursor was easy movable, in latest firmware (121027.0) is crazy slow, stumbling while changing V0 knob position.

Generally, bug 29 and 30 have something to do (in my opinion) with the fact that screen data is dependent on trigger. You can easily see the difference e.g. in cursor, while moving them with no trigger (e.g. normal mode, trigger level above signal level) the cursor is working just fine.

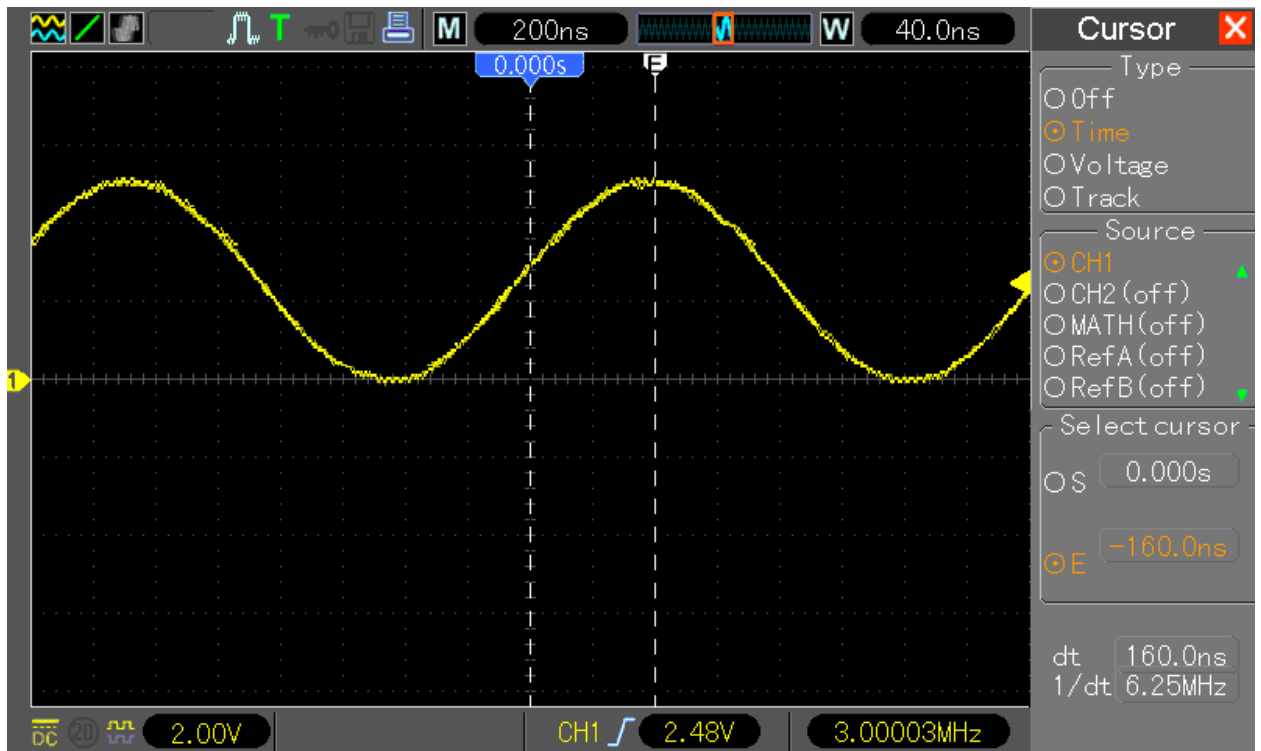
Maybe it would be good idea to remove the trigger event link from screen refresh (why is this linked together anyway? It cannot be necessary for the firmware because older versions never had this bug).

31. In RUN and STOP mode, while changing Timebase the Time Cursor values S and E not refreshing automatically. Any changes to Menu (hide/show with F0), other Knobs (like V0) position or any Buttons (e.g. push Measure button and again Cursor button) is refreshing the S and E values in Menu.

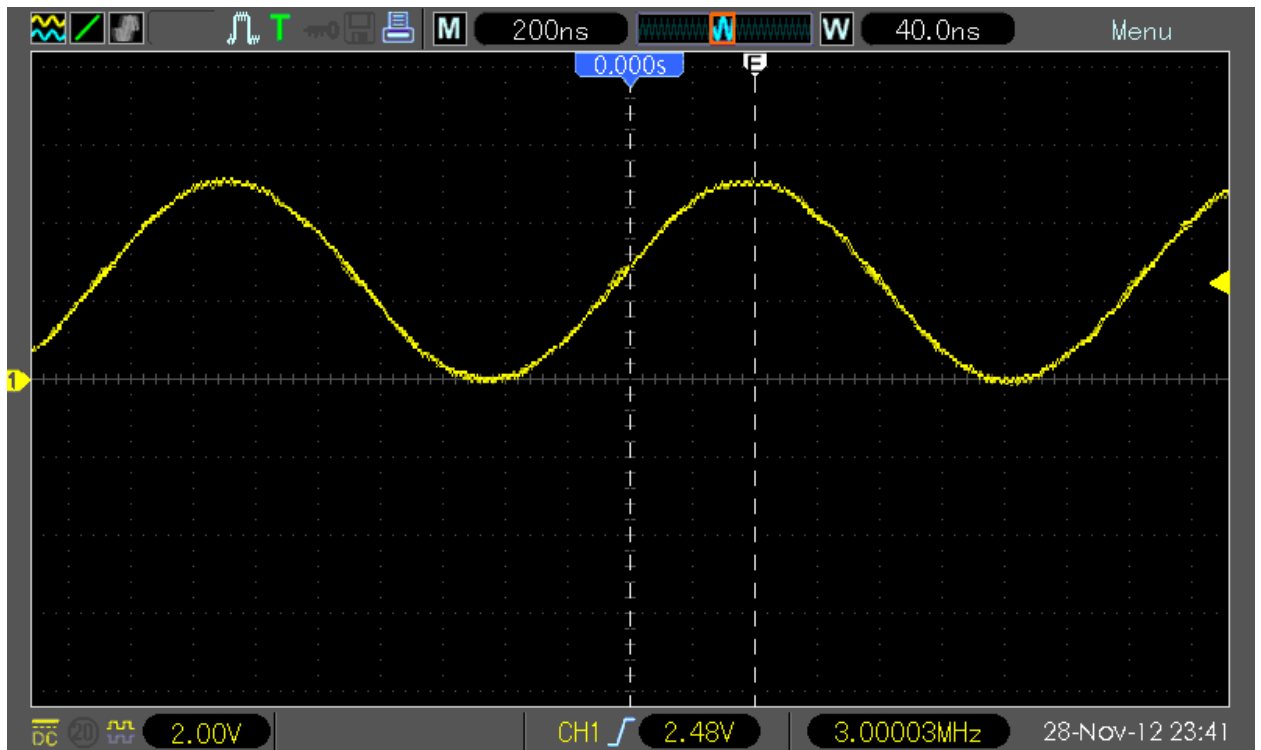
Here example, TB set to 80ns/DIV, cursor S to 0.0ns and E to -160ns:



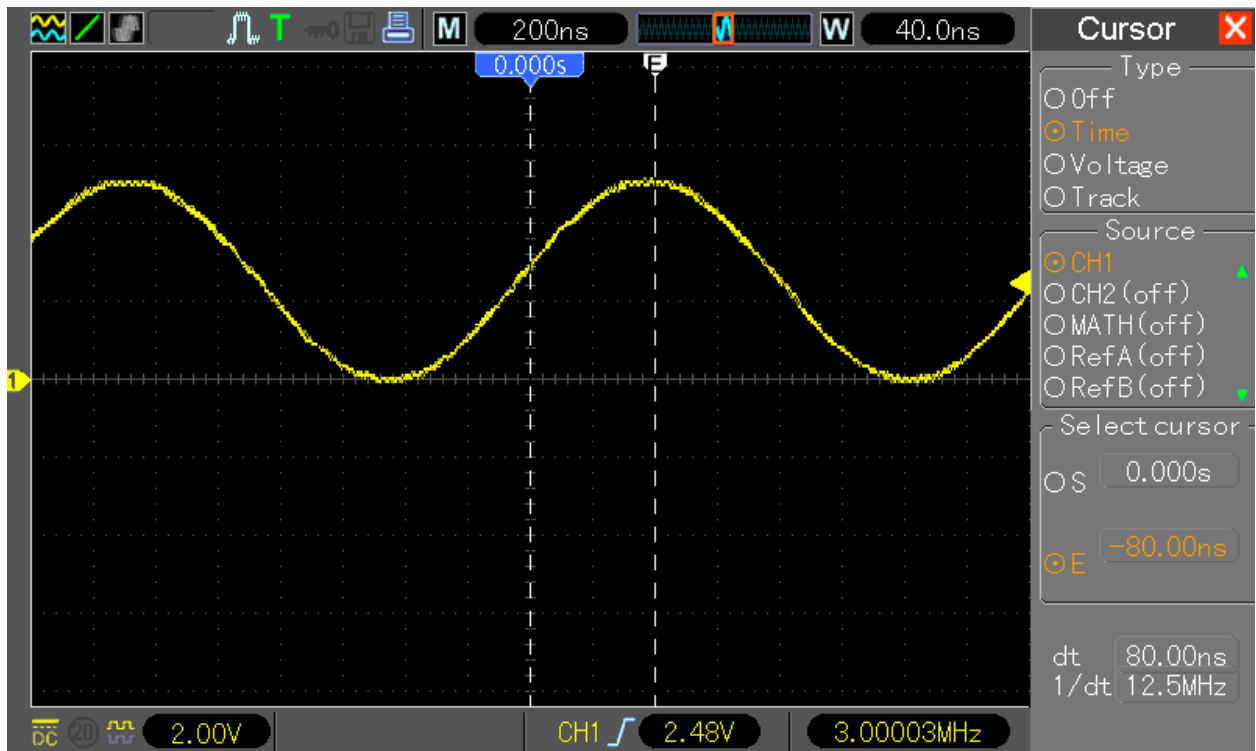
Then TB changed to 40ns/DIV, but displayed value for E still -160ns:



Now disabling Menu with F0:



and enabling Menu again with F0. The E cursor value is now having proper value (-80ns):



This was working properly the last time in firmware 110923.1

32. **Request** – add Edge Trigger on both falling and rising edges simultaneously.
33. ~~Debug symbols (.stab and .stabstr sections) removed (stripped) since 120423.0 from dso.exe file. Why that? It seems that you guys don't want to spend money for Quality Control or Firmware Testing in house, there was not a SINGLE ONE firmware update in last 3 years without new bugs, "small mistakes", typos, etc. I can't believe that your engineer don't see all these things, but probably in hurry not checking everything. Fine (actually not really fine, but based on the small revenue I can understand this), we can do the QC and Testing for you (and continue to update this Bug List), but without debug symbols you slowing down us, and our time costs money as well! You can as well release each time two versions—one with and one without debug symbols, there is not a real work effort for you.~~  
Hantek proposed to send, on request, debug version of specific firmware, "debug version is slower, and we don't want to confuse our end-users. To build and publish debug version each time firmware has been updated is unnecessary extra workload. However, on request, we can always build and provide debug version to every requester"
34. CSV Exported data, if MTB from 40s/DIV to 4ms/DIV the amount of samples is wrong as well the displayed MTB value seems to be wrong. Example :  
4k depth, 4ms/DIV -> CSV shows #timebase= -294967296(ps) and not 4000000000(ps)  
40k depth, 4ms/DIV -> CSV shows #timebase= -294967296(ps) and not 4000000000(ps)  
512k depth, 4ms/DIV -> CSV shows #timebase= -294967296(ps) and not 4000000000(ps)  
1M depth, 4ms/DIV -> CSV shows #timebase= -294967296(ps) and not 4000000000(ps)

4k depth, 8ms/DIV -> CSV shows #timebase= **-589934592**(ps) and not **8000000000**(ps)

..

1M depth, 8ms/DIV -> CSV shows #timebase= **-589934592**(ps) and not **8000000000**(ps)

4k depth, 20ms/DIV -> CSV shows #timebase= **-1474836480**(ps) and not **20000000000**(ps)

..

1M depth, 20ms/DIV -> CSV shows #timebase= **-1474836480**(ps) and not **20000000000**(ps)

**The number -294967296 is nothing else than buffer overflow by 3999999999, -589934592 buffer overflow by 7999999999, etc.**

A quick check of “**SaveWaveDataToCSVFile**” shows the problem source ->

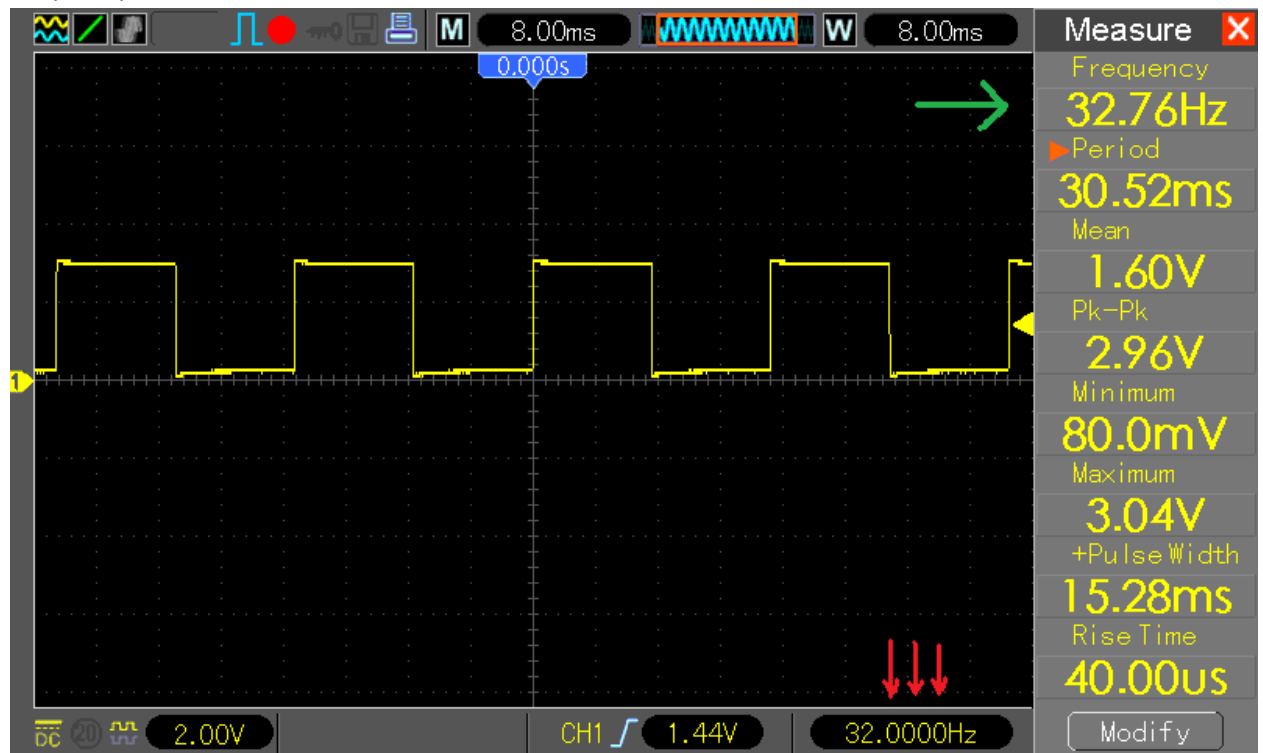
**sprintf “#timebase=%d(ns)\r\n,”** is using **%d** but I think **%lld** was supposed to be there to allow maximum of 40s/DIV to be saved in pico seconds. The “**RecallCSVDataToDispBuf**” need of course to be changed as well to allow read-back of the CSV data longer than 20000000000 ps.

35. **Request** – remove following automatic “20MHz lowpass filter” :

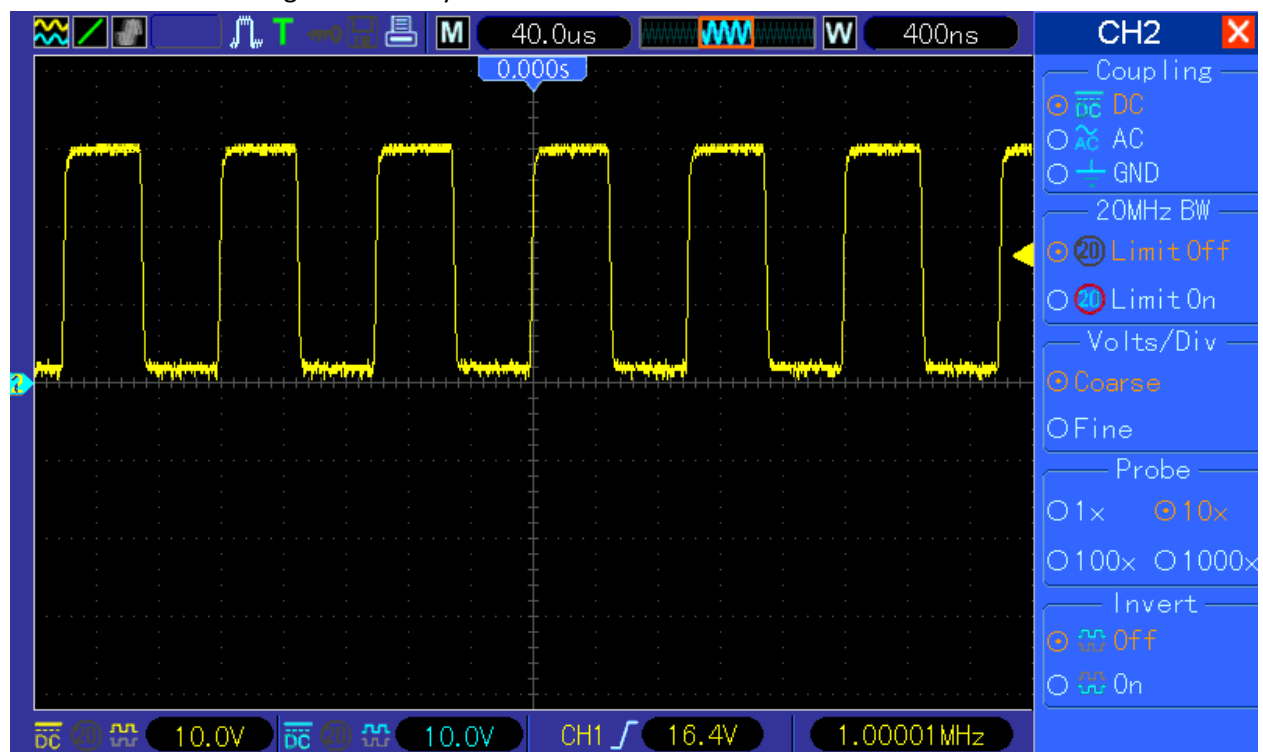
- while changing from 5mV/DIV to 2mV/DIV (the user can enable it if he/she need it, automatic lowpass is annoying)
- if Volt/DIV already 2mV/DIV, 20MHz lowpass off -> while changing Memory Depth (this one is really annoying, user have to go back to channel, disable filter, go back to acquire menu to continue to work )

36. If possible change the Frequency Counter to display in mHz resolution when counter value between 1Hz and 99.999kHz (99999Hz). If not possible change displayed value to cut (trailing) zeros, when there is no mHz no need to see zeros instead (e.g 10Hz should be shows as 10Hz and not 10.0000Hz). This might be sometimes very confusing for the user, imagine e.g.

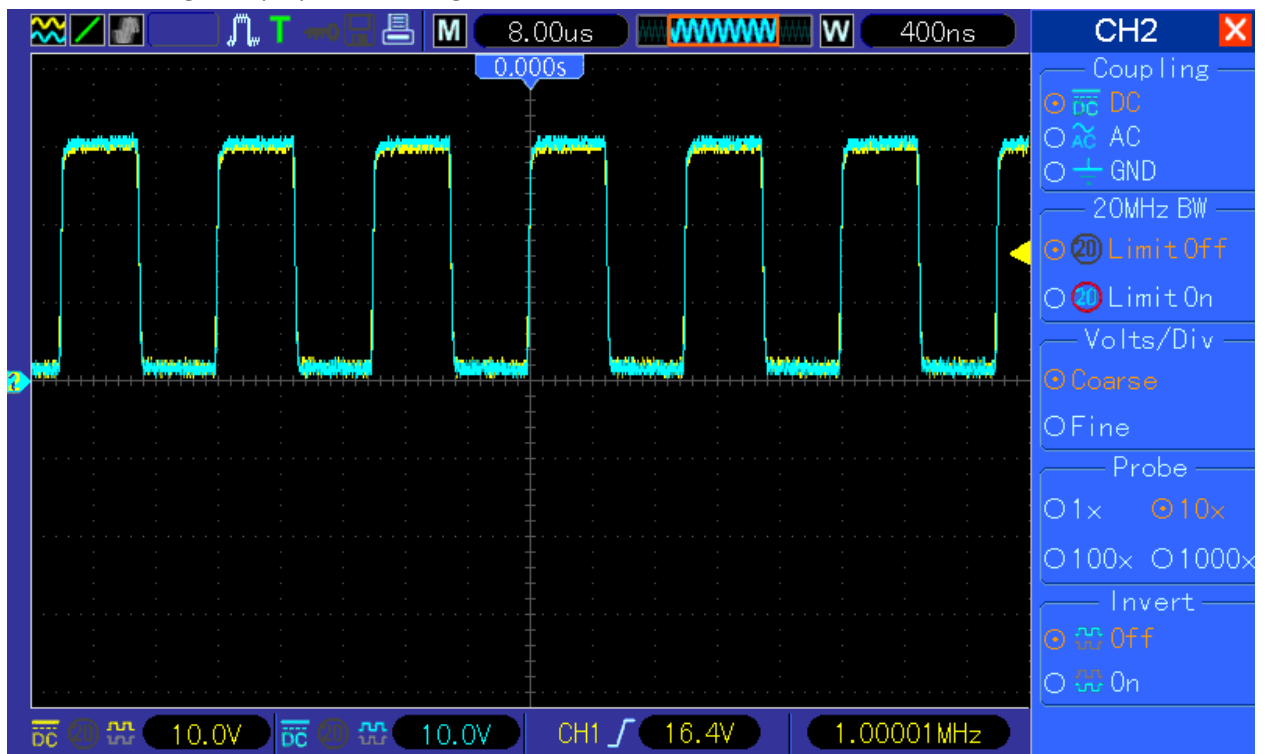
frequency of 32.768Hz – the counter will show 32.000Hz (and Wave measure 32.76Hz).



37. With Long Memory enabled (40k, 512k, 1M, 2M?) when the WTB is 400ns/DIV (and lower, up to 2ns/DIV) when enabling second channel the indicator in status line will be already displayed but the waveform is missing. Additionally the CH2 LED is off :

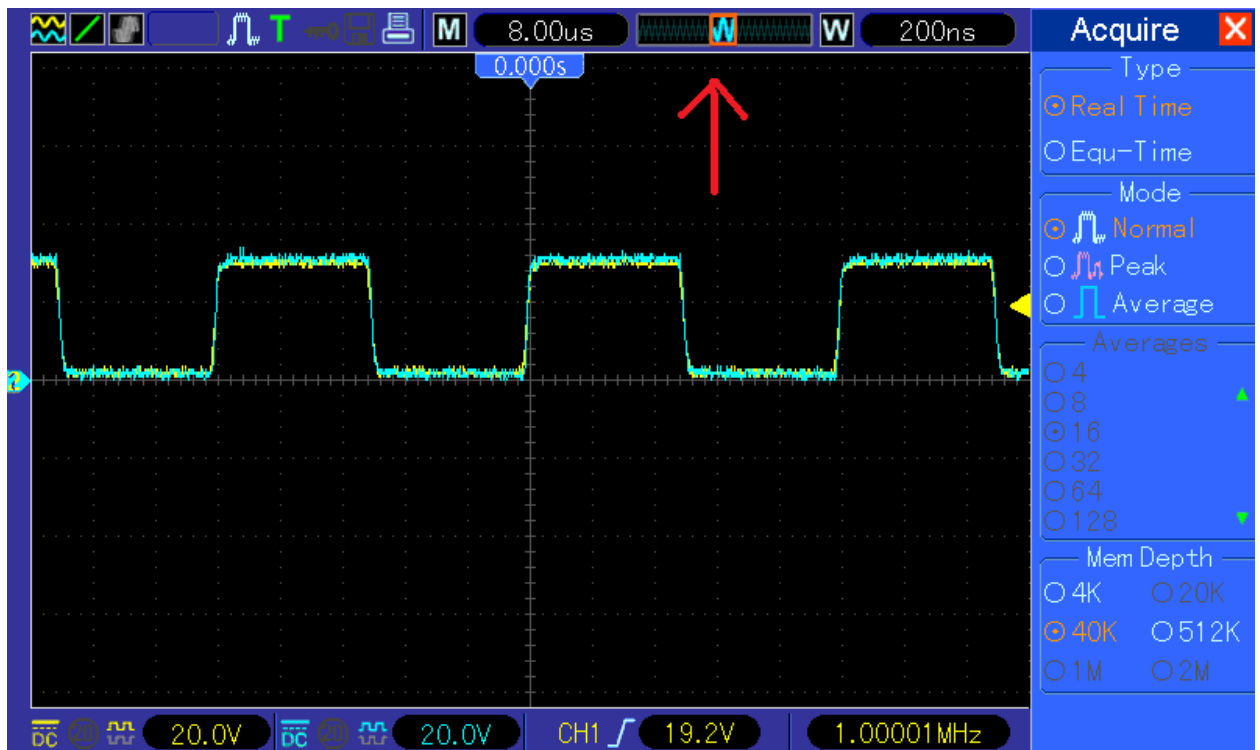
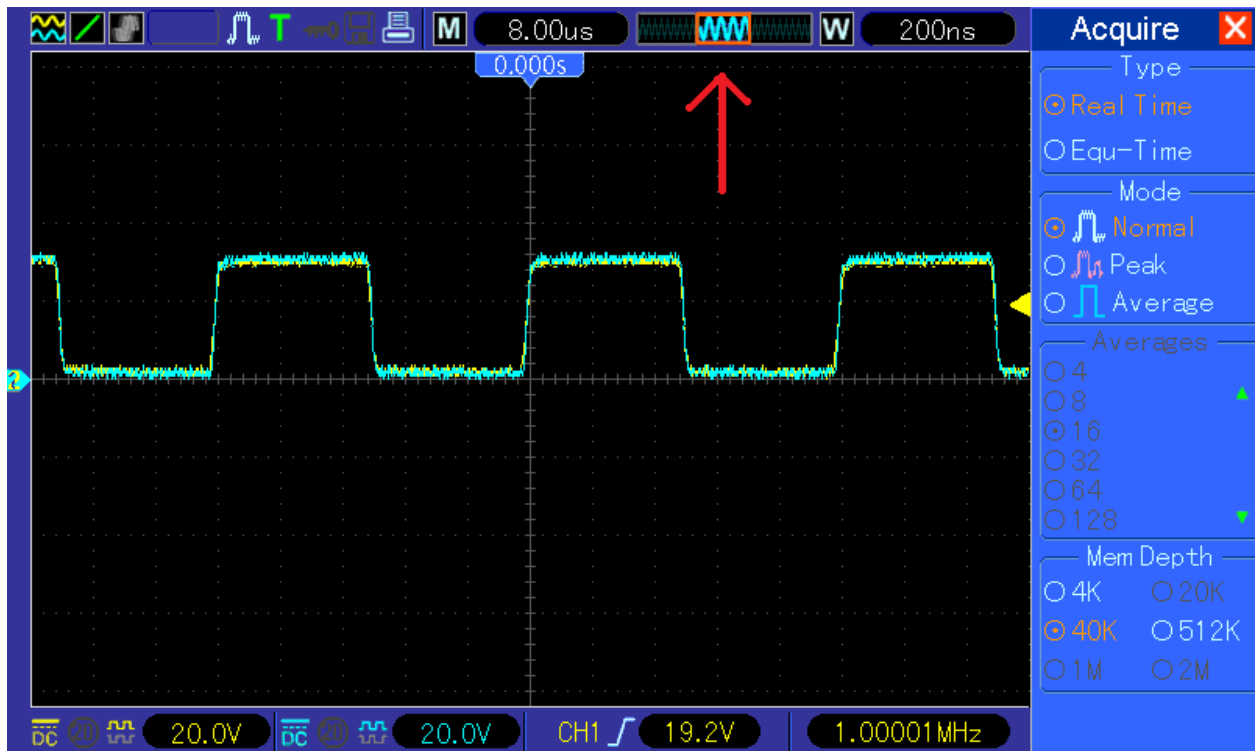


But after changing Timebase (or wave position) one position forth and back the second channel waveform will get displayed and LED gets on :



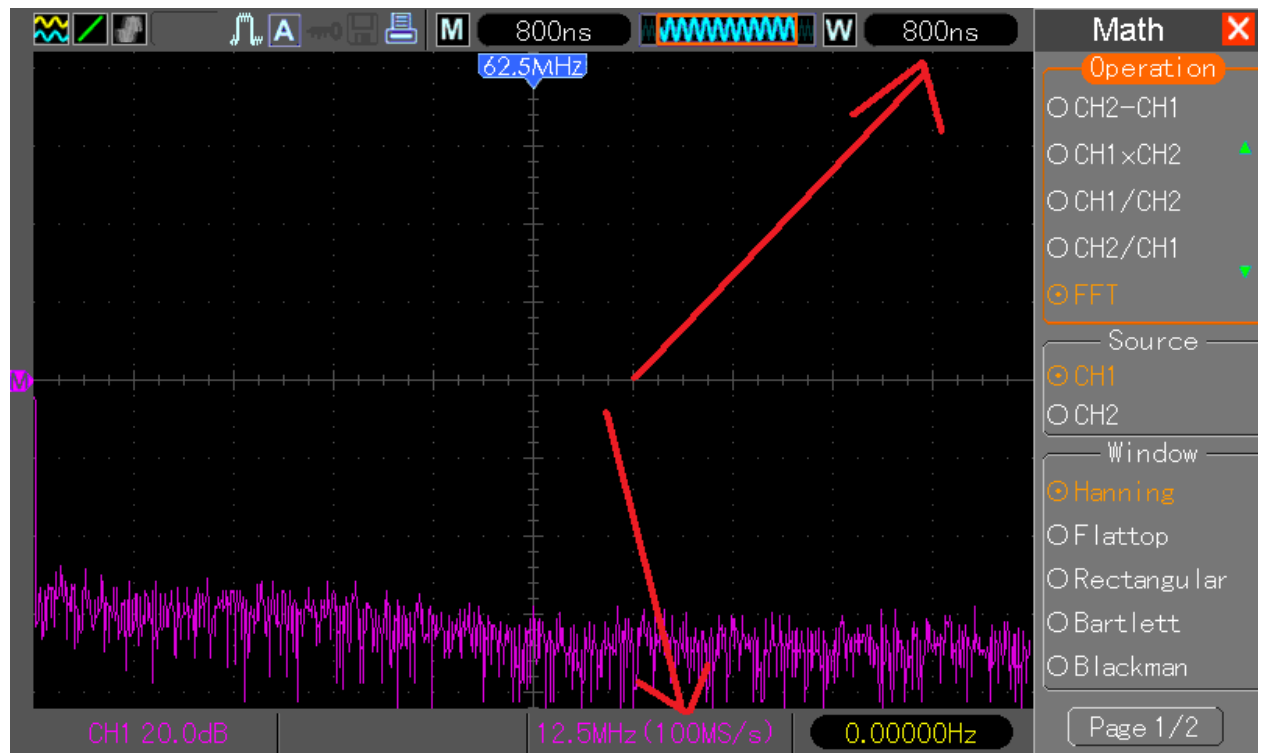
38. MTB Area indicator is blinking! Select 40k depth (or 512k), enable both channels set WTB to 400ns/DIV or 200ns/DIV and watch the area blinking :





39. Within FFT the information in status bar is not always showing the proper sampling rate, sometimes even jumping from proper to bad value. As the FFT cursor is taking in count the sampling rate, the measure value might be not correct. Example random values in 800ns/DIV

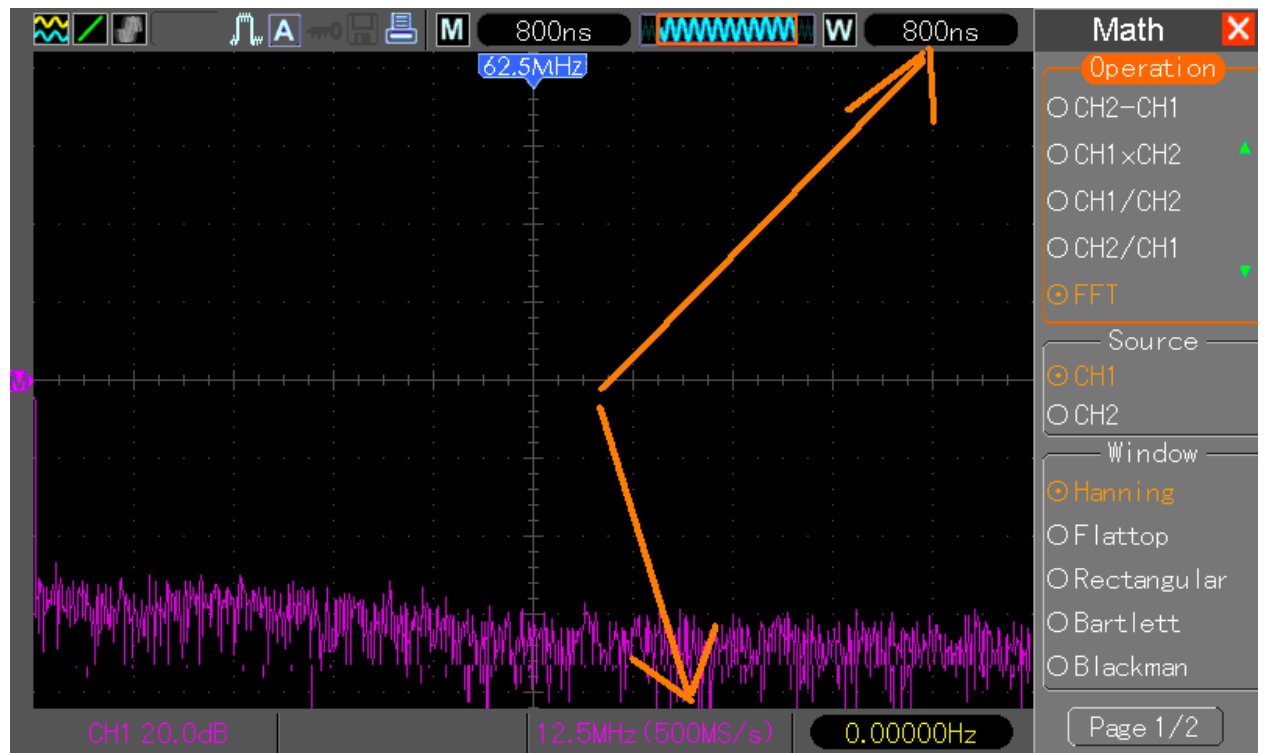
FFT , here 100MS/s



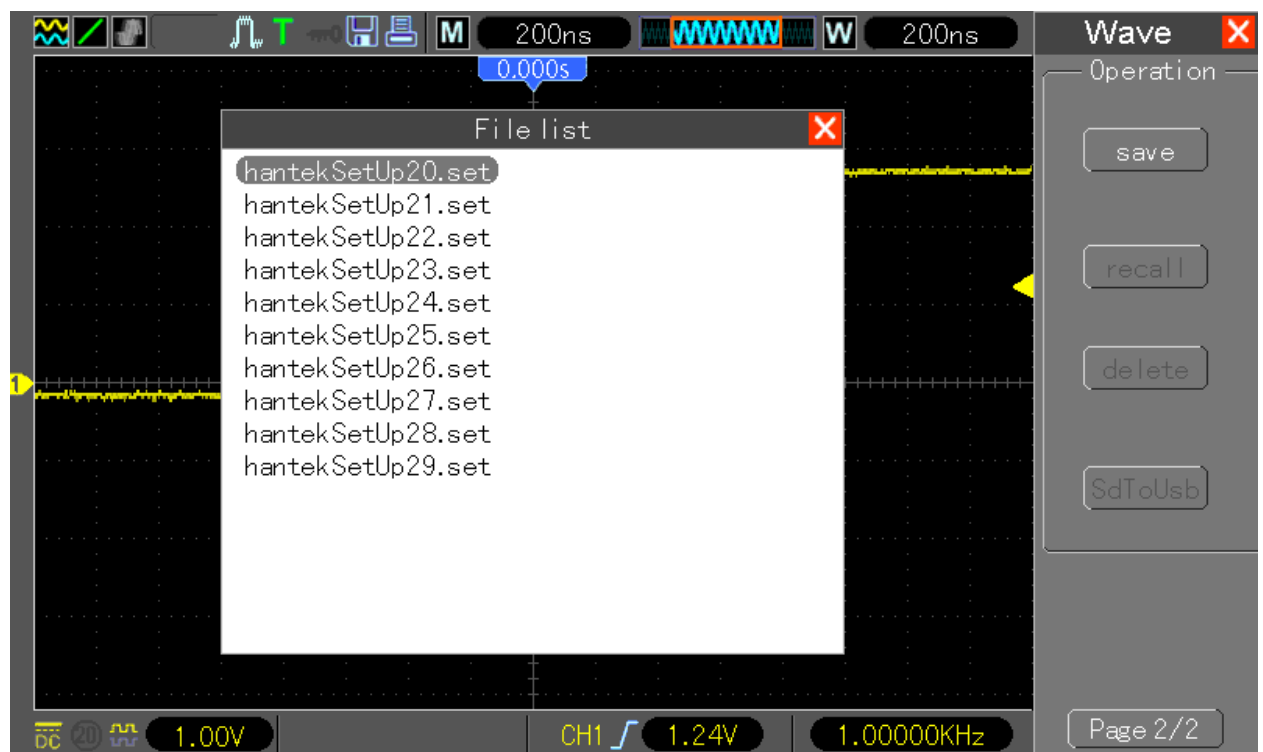
then 250MS/s (but still 800ns/DIV)

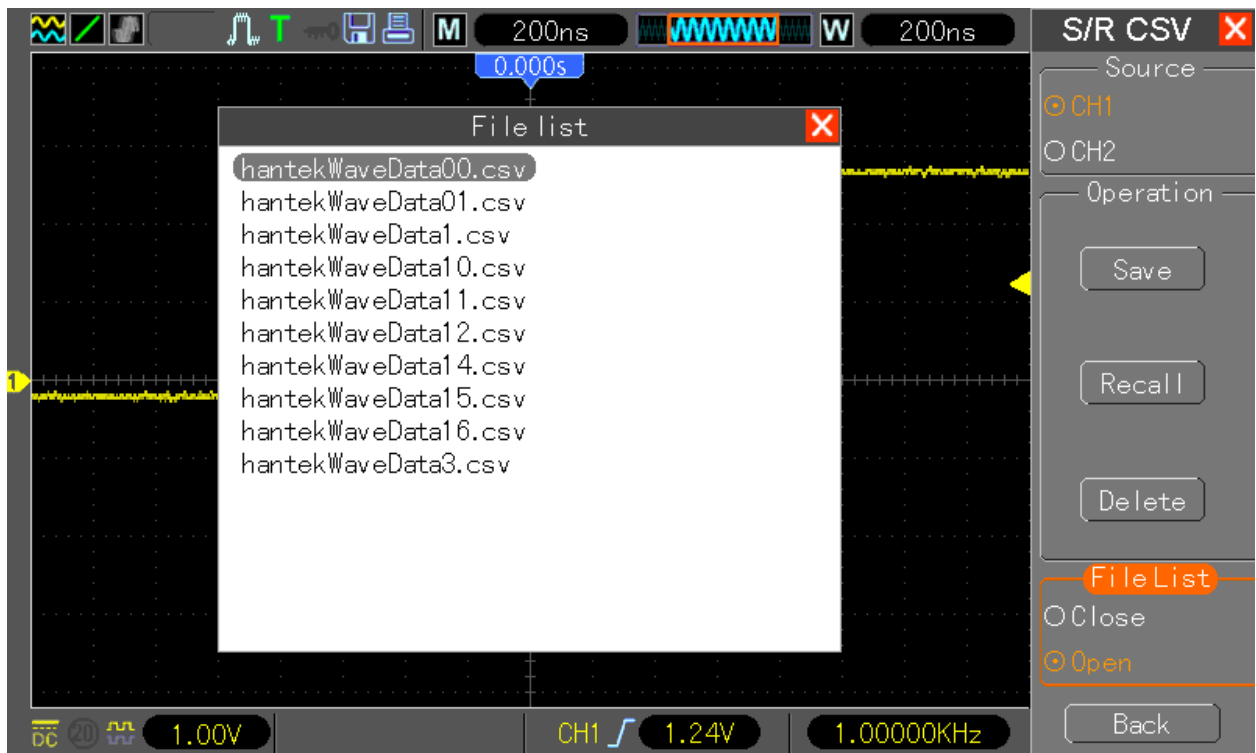


and here 500MS/s (but still 800ns/DIV)



40. Flash Drive directory listing (in CSV Save/Recall and DSO Setup Save/Recall menus) is showing maximum 10 files. Additionally no option to scroll over the directory to choose other than one of the listed 10 files



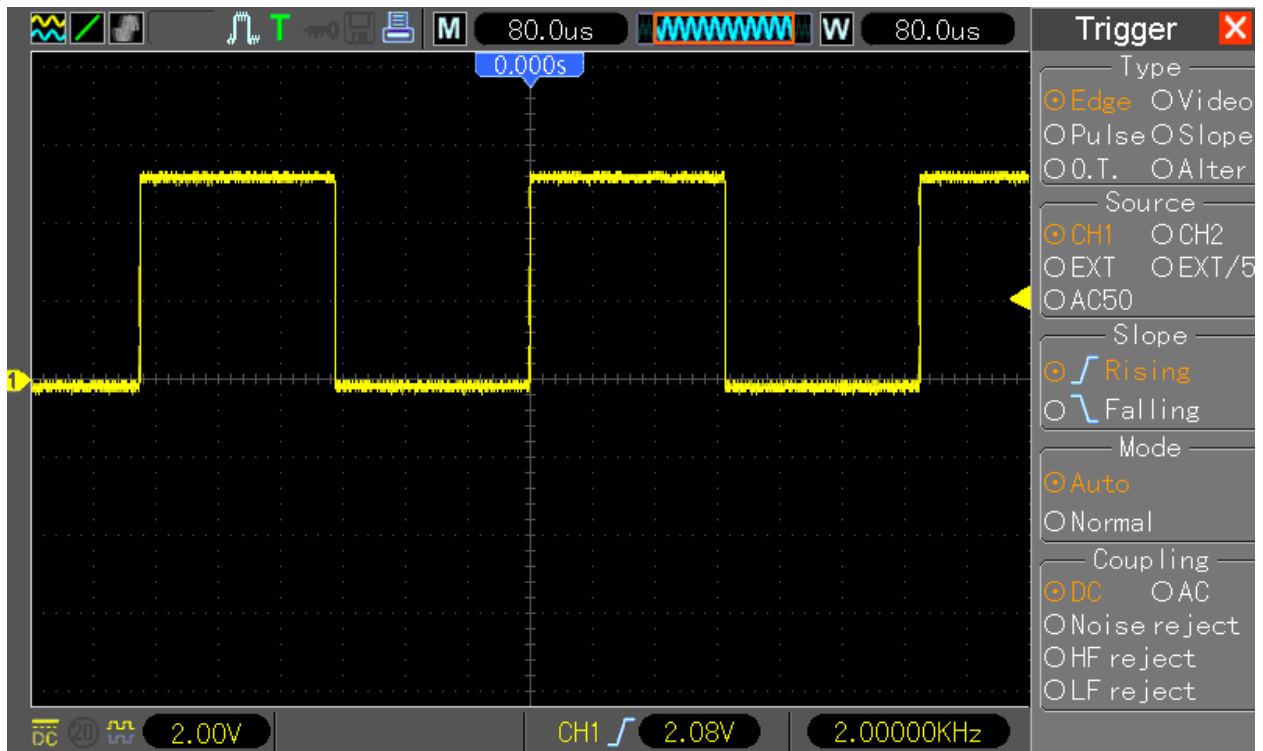


41. **~~This bug was already there in 2011, then it has been fixed. Now it's again there.~~**  
**~~This is one of the DSO basic functions; this bug is really annoying and need to be fixed FIRST.~~**  
 Apply any test signal, push "STOP" button to stop the Acquisition, e.g.:  
 now change to Dual Window by pushing F7, the Waveform disappeared from the Screen!!!:  
**~~UPDATED: In fw 130130, the waveform is not disappearing from window anymore, but is not usable at all, it can not be moved or zoomed, because it does not change on screen).~~**  
**UPDATED: In fw 130131, the waveform is not disappearing from window anymore; it can be moved and/or zoomed as well. However two small issues still there:**

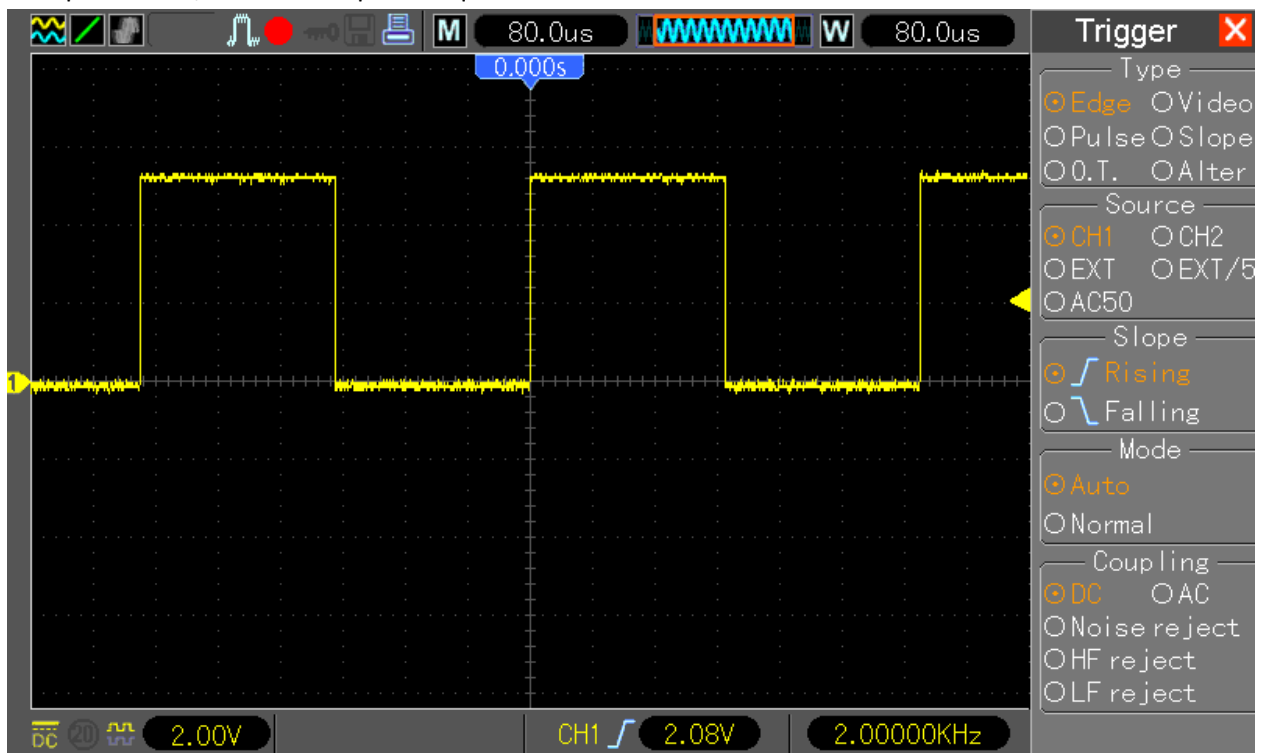
To understand this bug set DSO as following:

1ch, 4k memory depth, signal generator to 2kHz square, timebase to 80ns/DIV.

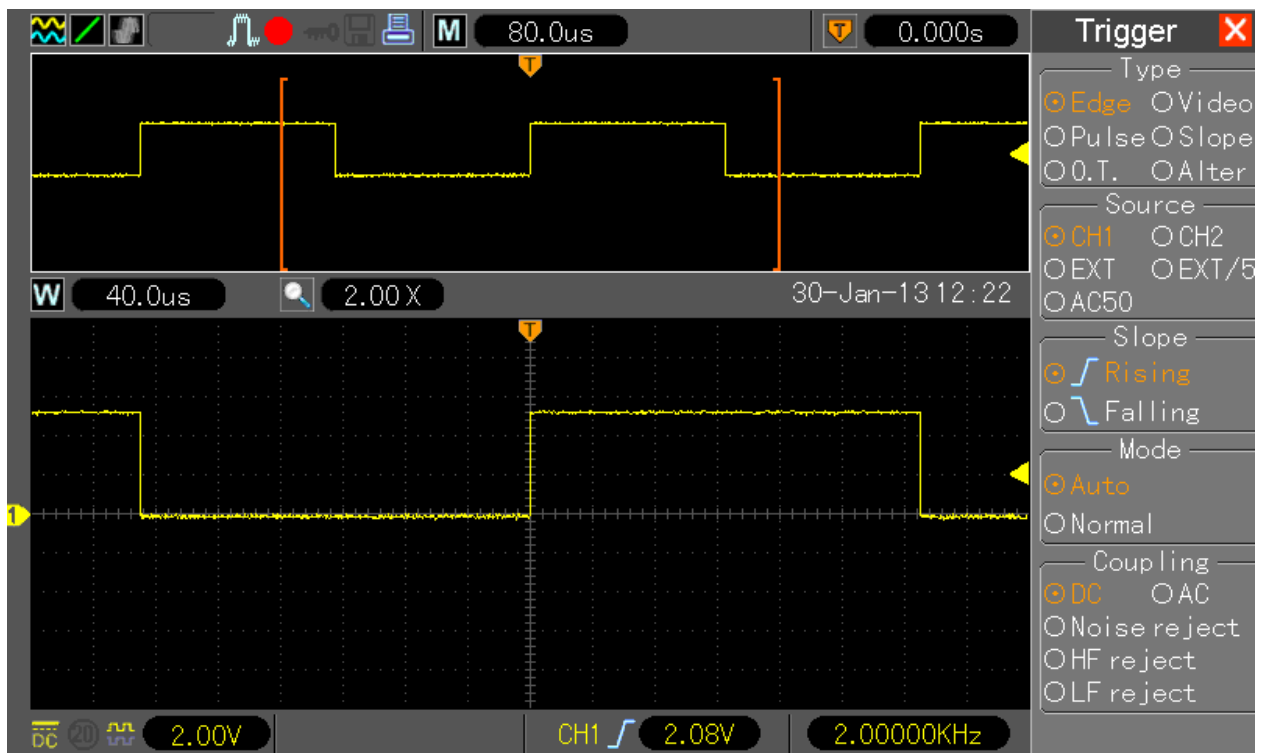
The DSO should display 2.5 periods of the waveform:



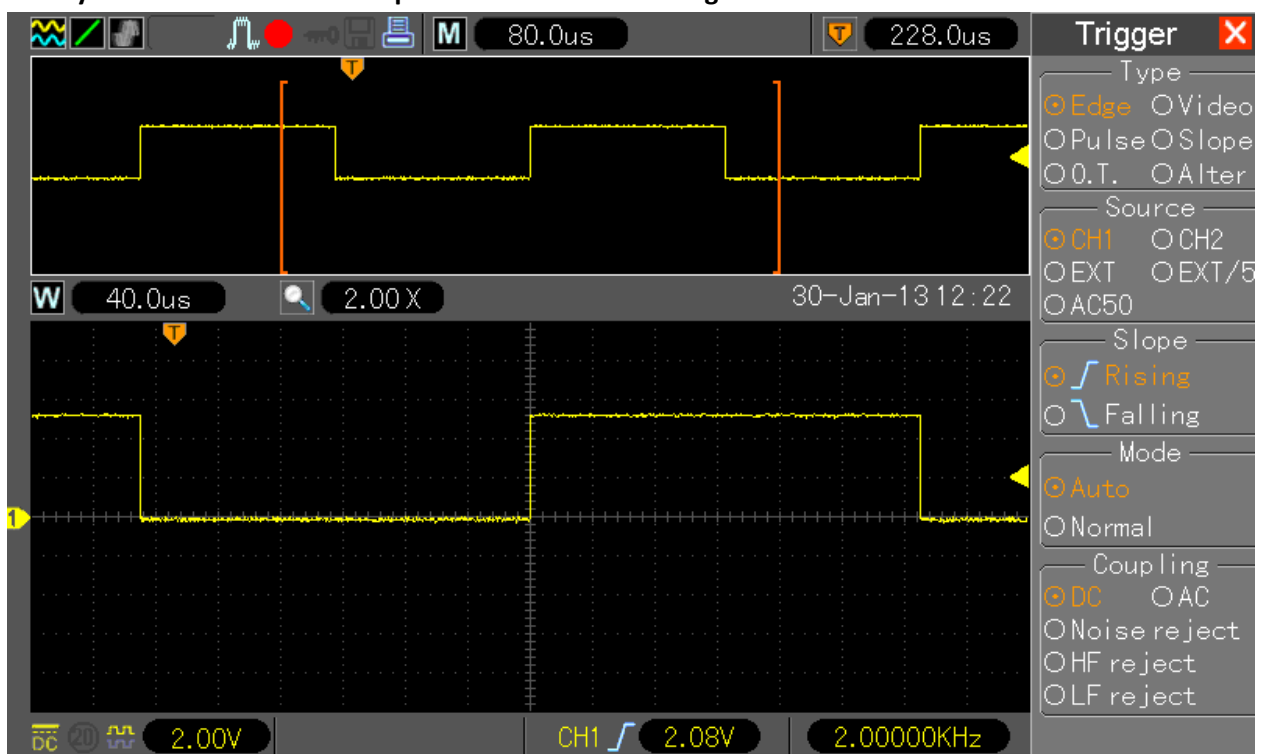
now push "RUN/STOP" to stop the acquisition:



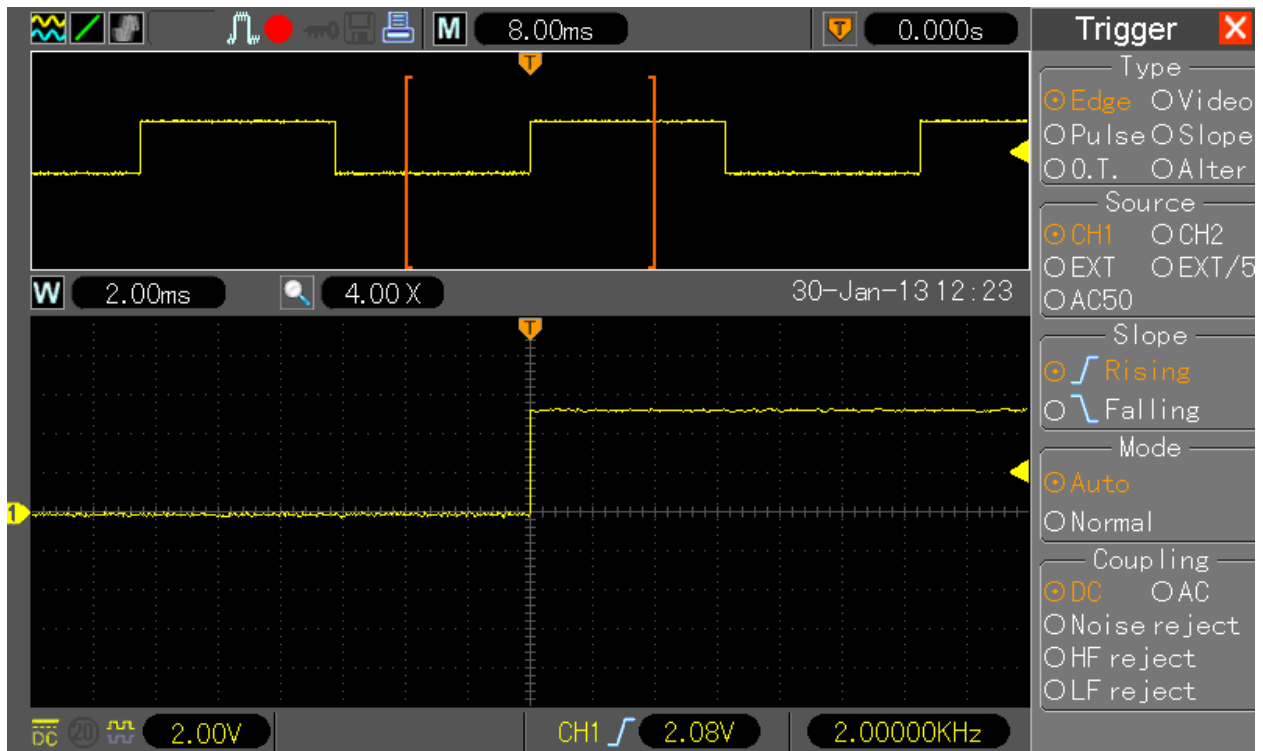
and push F7 to switch into dual window, the waveform seems to be, top window displaying properly 2.5 periods:



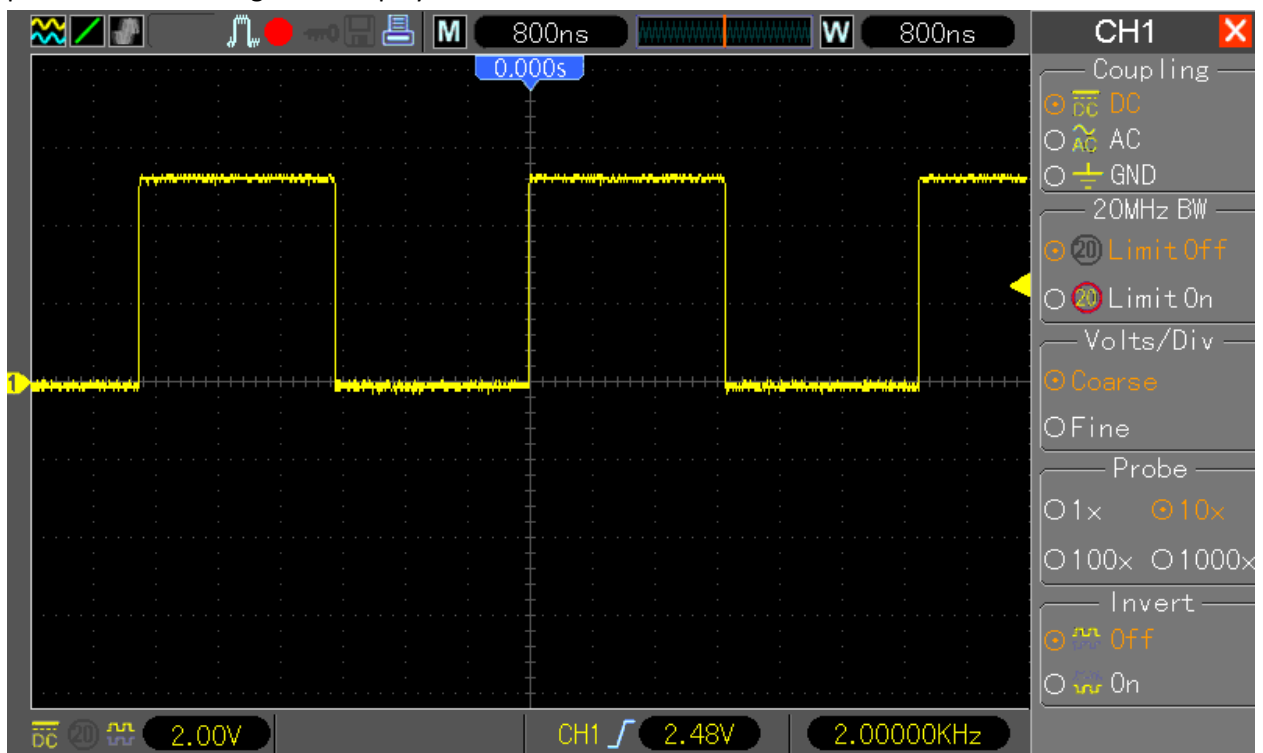
but try now to move horizontal position: wave not moving:



or try to change in MTB window (top window) the timebase, look on my picture, already 8ms/DIV but still only 2.5 periods displayed, so nothing refreshed on display:

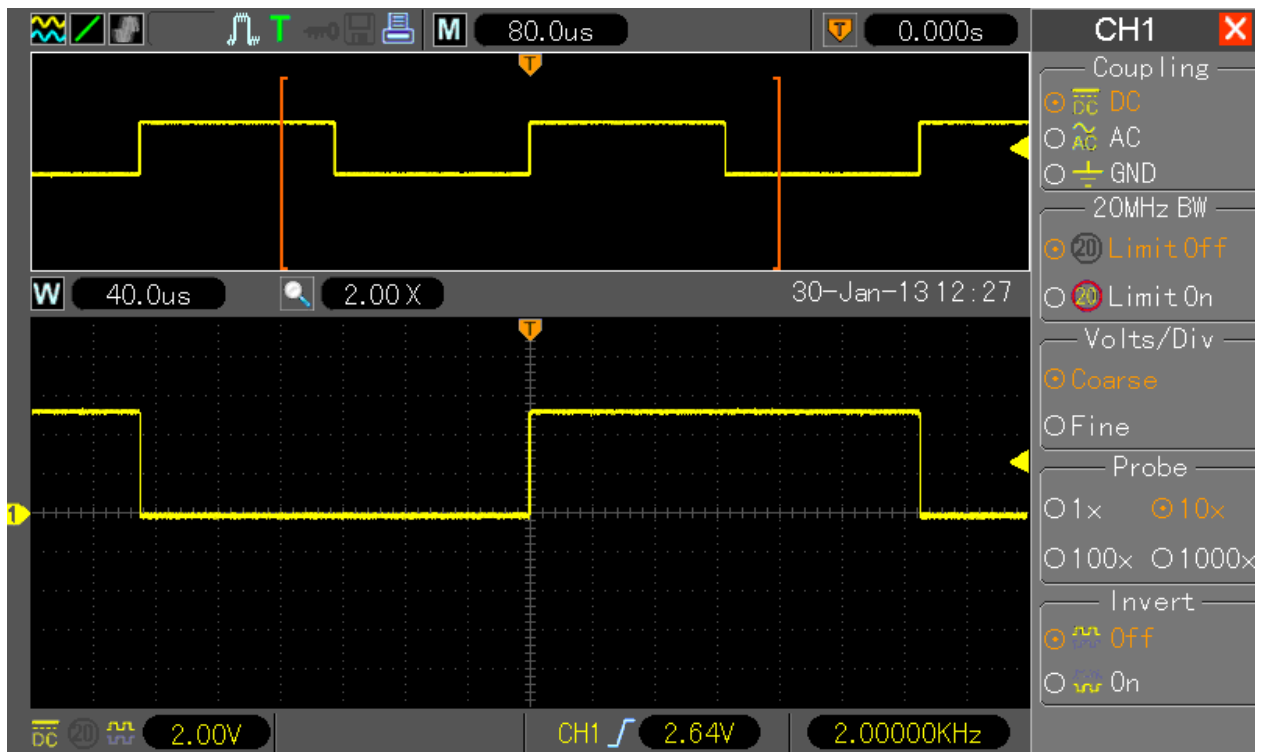


or try to push again F7 to go back to single window mode, the waveform will be there but it can not be moved not changed by tuning timeabse knob, look on my picture, 800ns/DIV but still 2.5 periods from 1kHz signal on display:

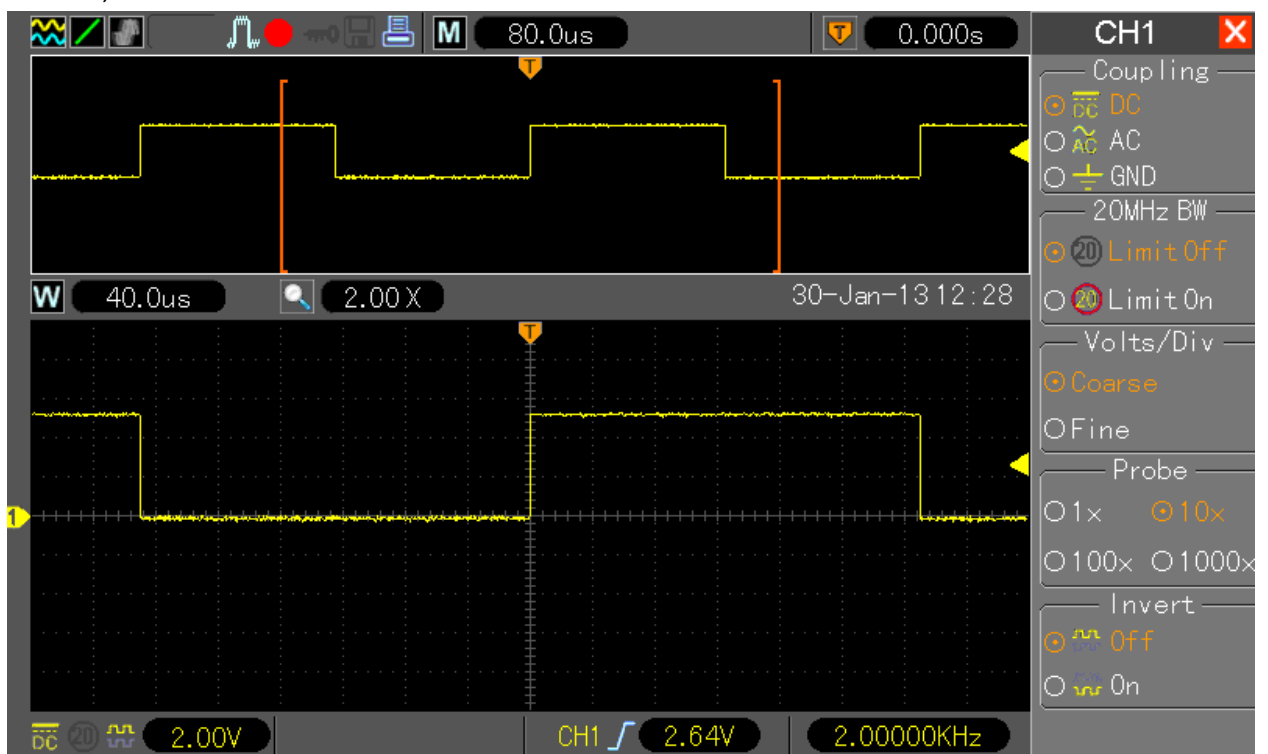


Second example:

Set DSO to 1ch, 4k memory depth, signal generator to 2kHz square, timebase to 80ns/DIV, dual window mode enabled:

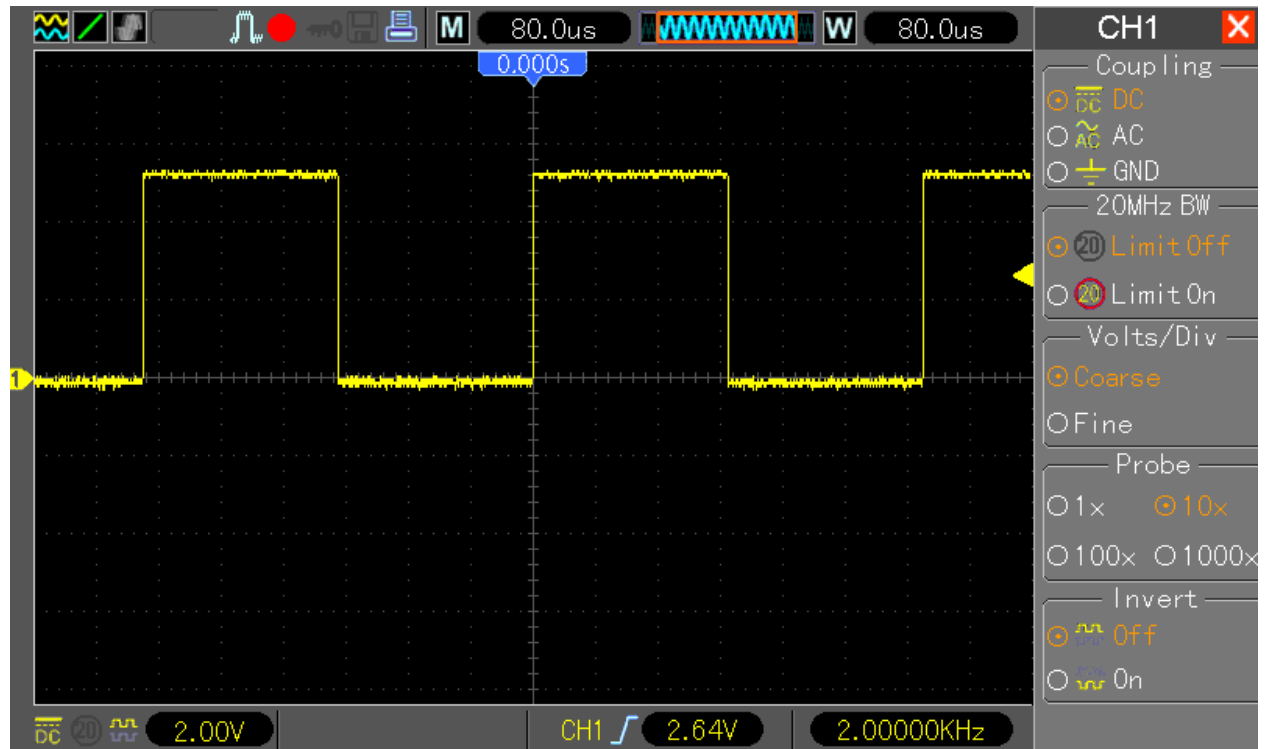


now push "RUN/STOP" button to stop acquisition, the waveform is still ok, can be moved or zoomed, etc:

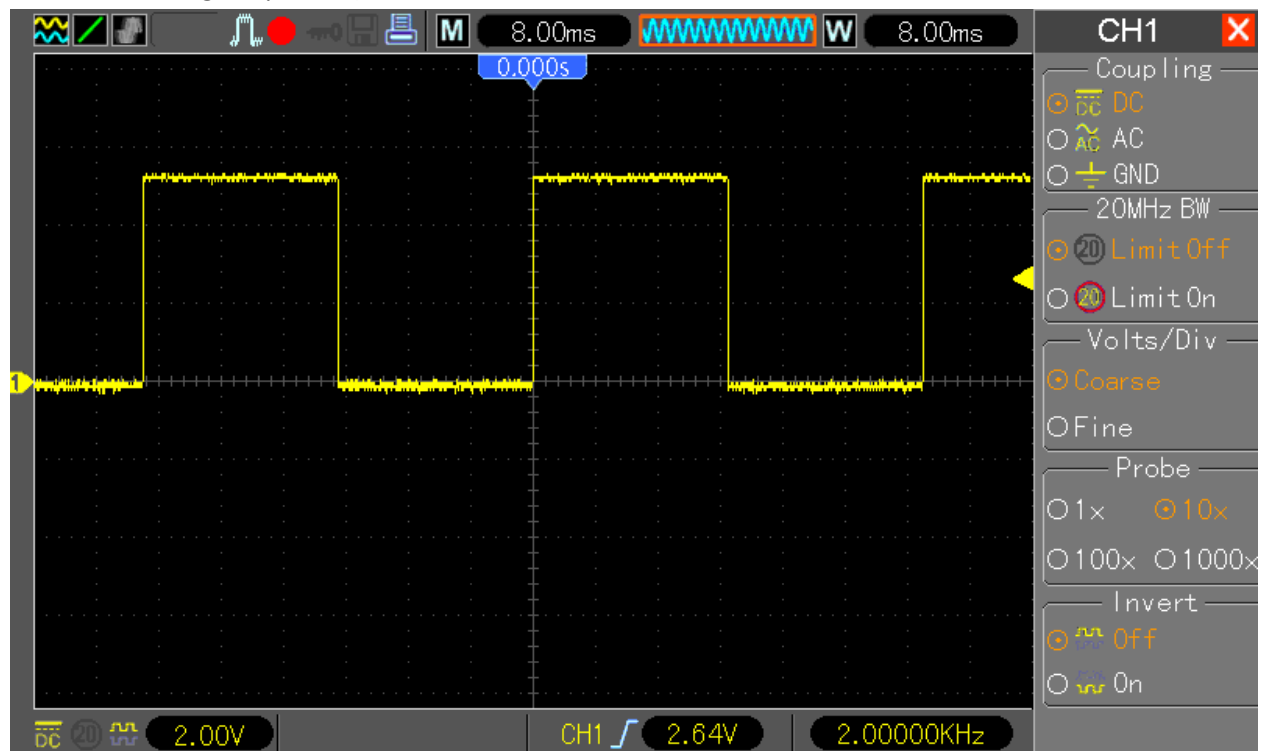




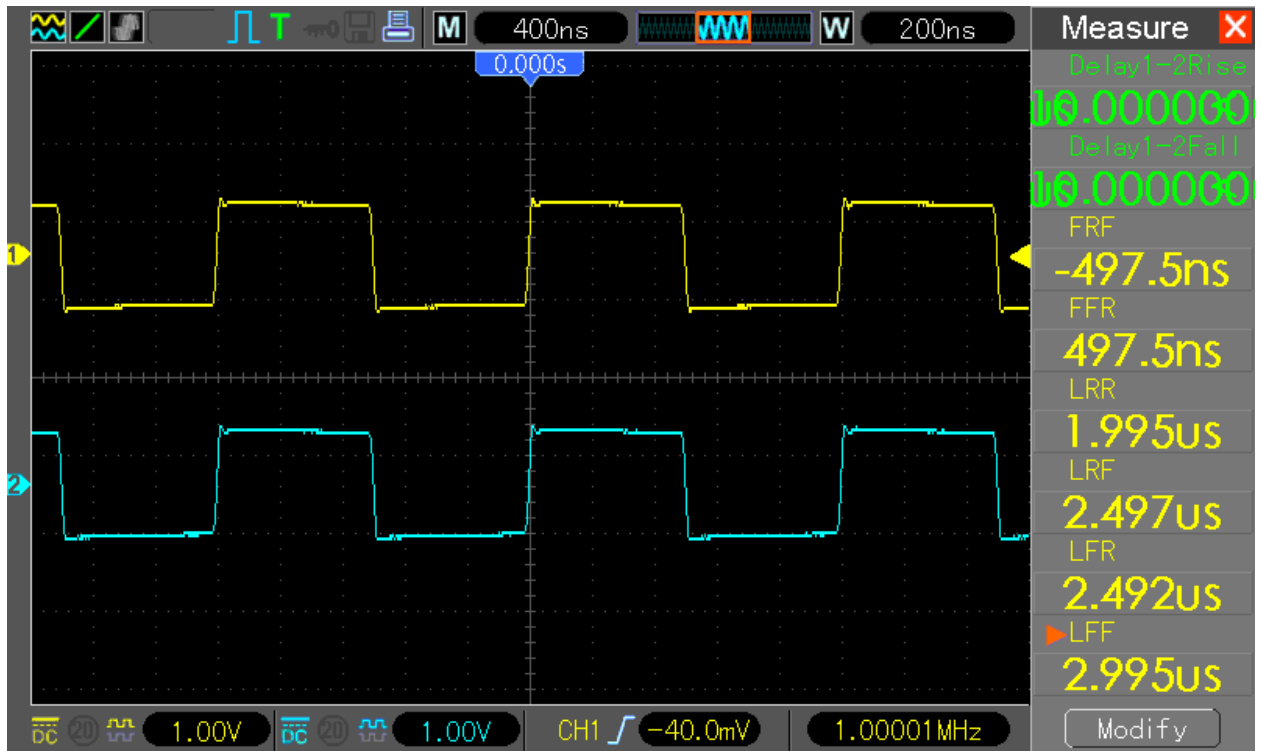
push now F7 to switch to single window mode, the waveform seems to look ok:



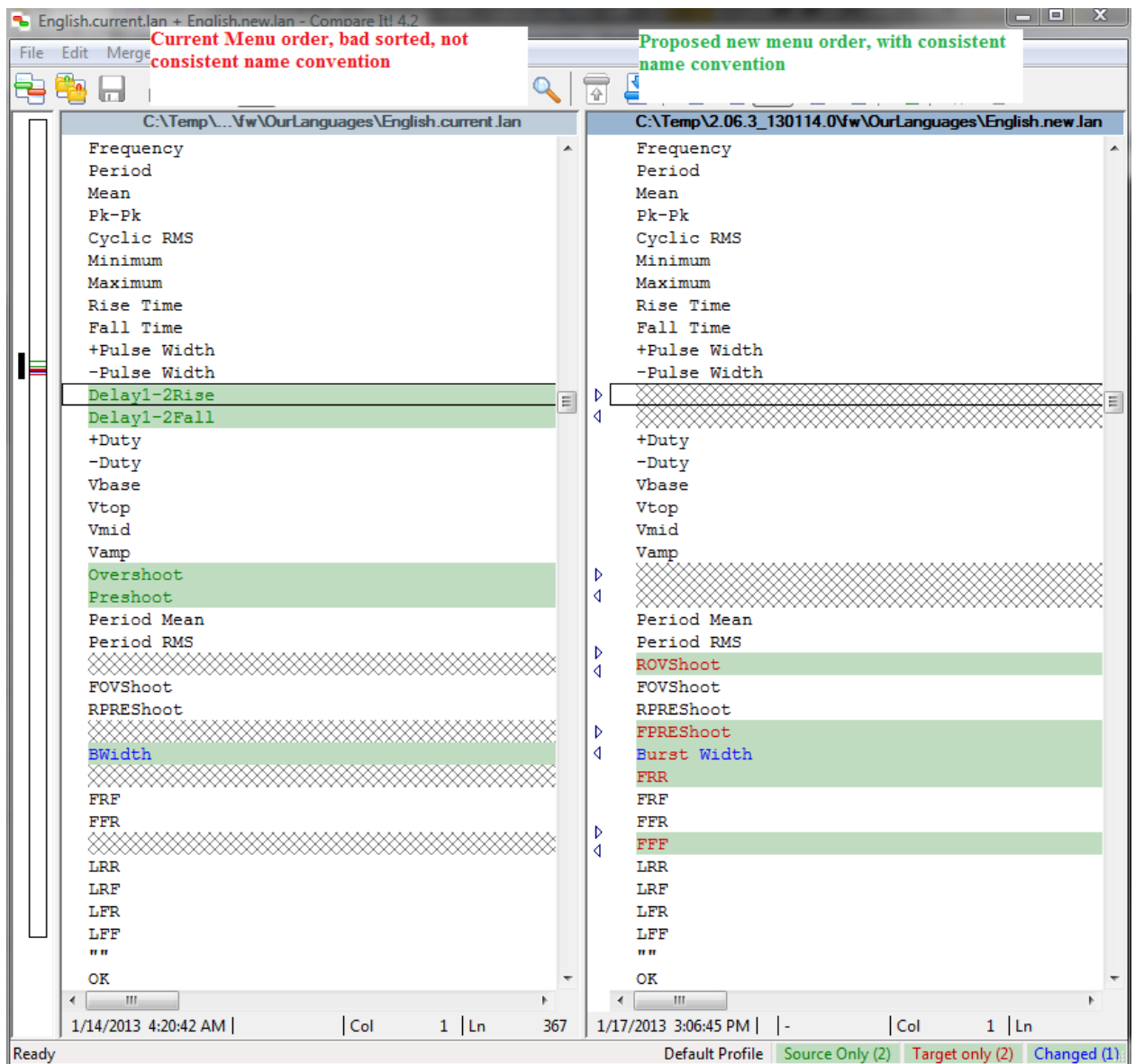
but when you try to move it, or turn timebase nothing changing (see my picture, 8ms/DIV but DSO still showing 2.5 periods):



42. Measurement “Delay1-2Rise” and “Delay1-2Fall” displaying too long (wrong) result when the delay is equal zero (no delay):



43. The current Measurement menu not consistent (sorting/name convention) and hard readable.  
New proposed sorting and name convention :



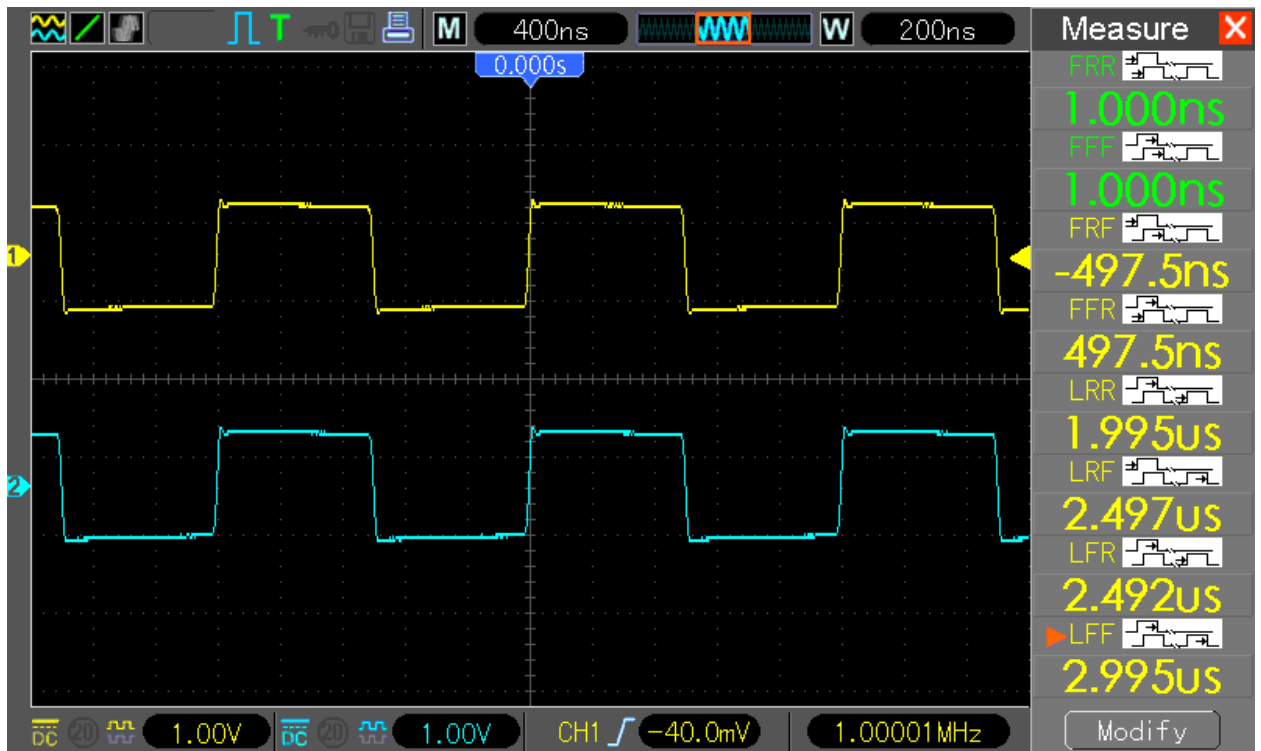
additionally a set of icons should be to allow the End-user to quick identify all the new measurements ("LFF,LFR,LRF,LRR,FFF,FFR,FRF,FRR") without detailed knowledge of the "cryptic" names. I've prepared already all necessary icons:



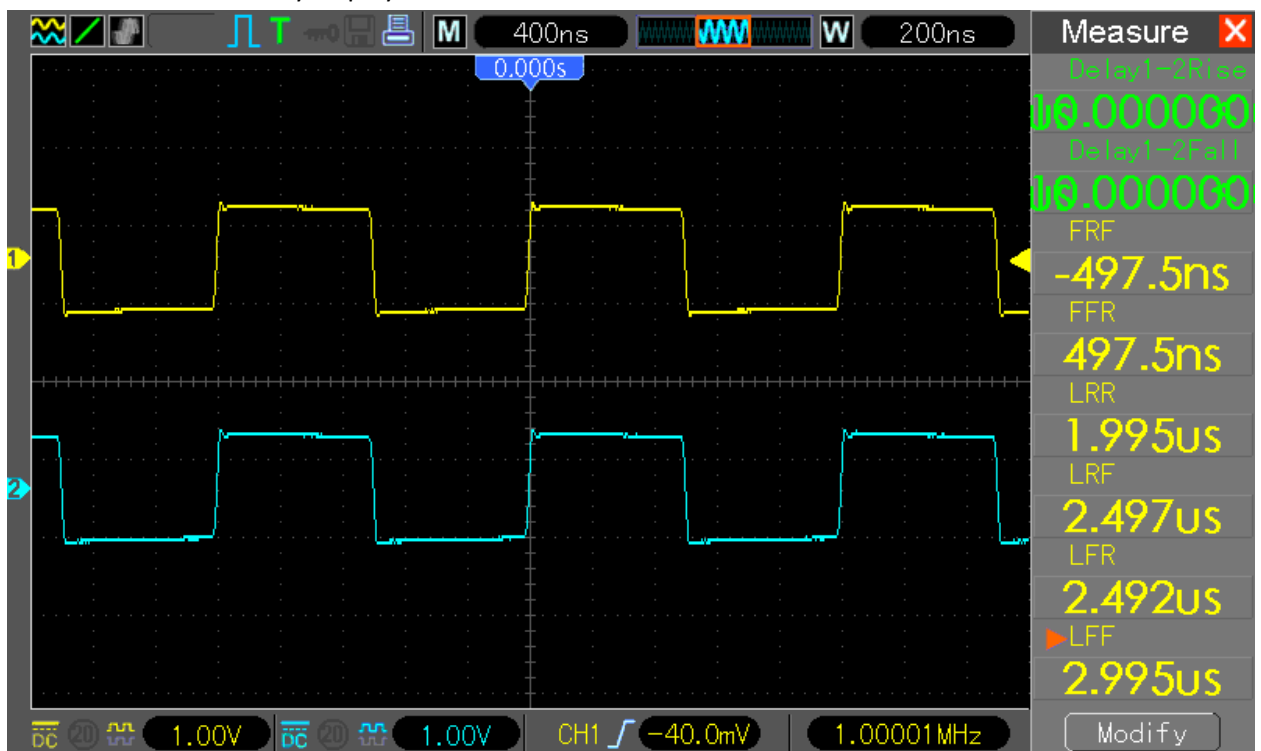
new\_icons.zip

the developer need only to add them into "Icon\_Init" procedure and into Language files.

The measure menu can then looks like following picture :



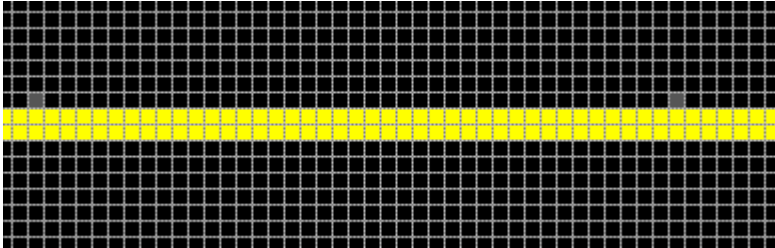
instead of what currently displayed:



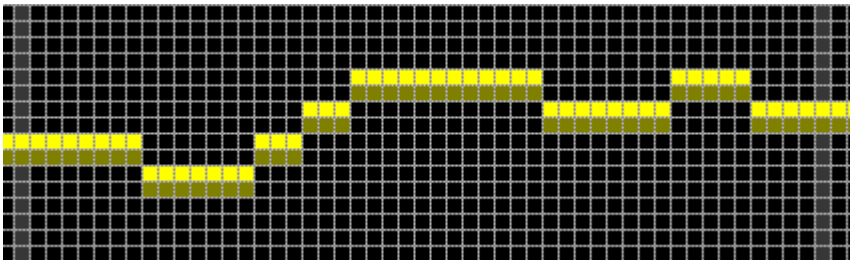
44. **Request** – add “Math” as source for “Measurements”.

45. **Request** – add shading for pixels on screen. To optimize the view shading for pixels could be added (maybe even as separate Menu, to enable/disable shading)

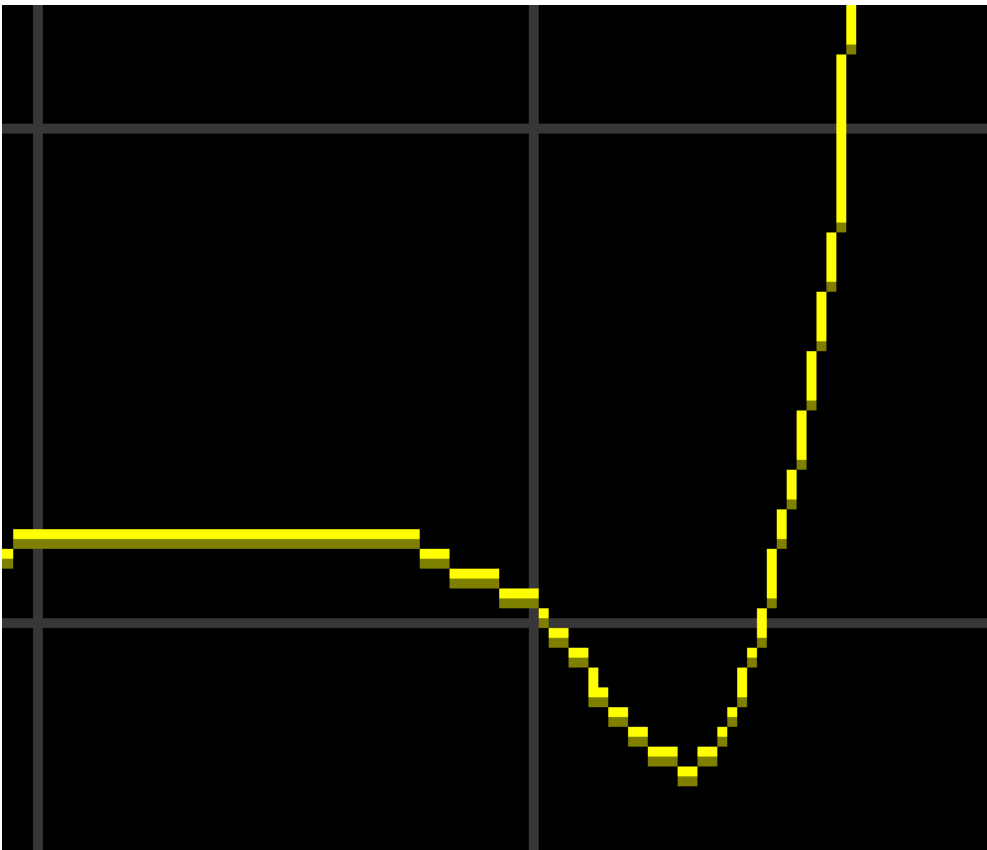
Currently a line on displays is made from 2 pixels, they have same color:



However this could be improved by changing the **FIRST bottom pixels with shaded color**, like:

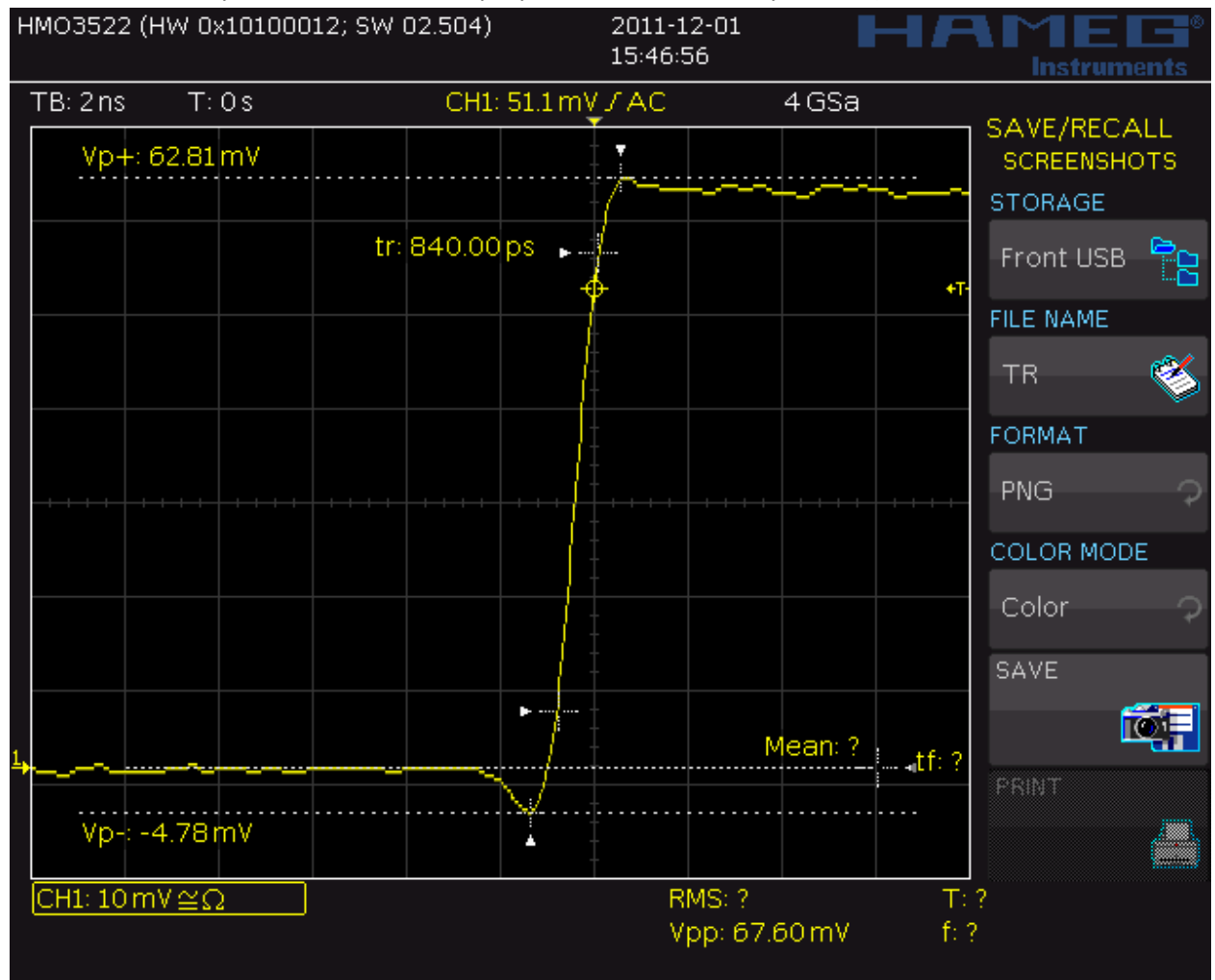


and the **pixels above with normal color** like:



which is zoomed part of this Hameg HMO picture, on which line look really sharp (where we

know that in reality it is exact the same 2pix per line like on Tekway/Hantek)



46. Change all non-SI conform values to SI-conform :

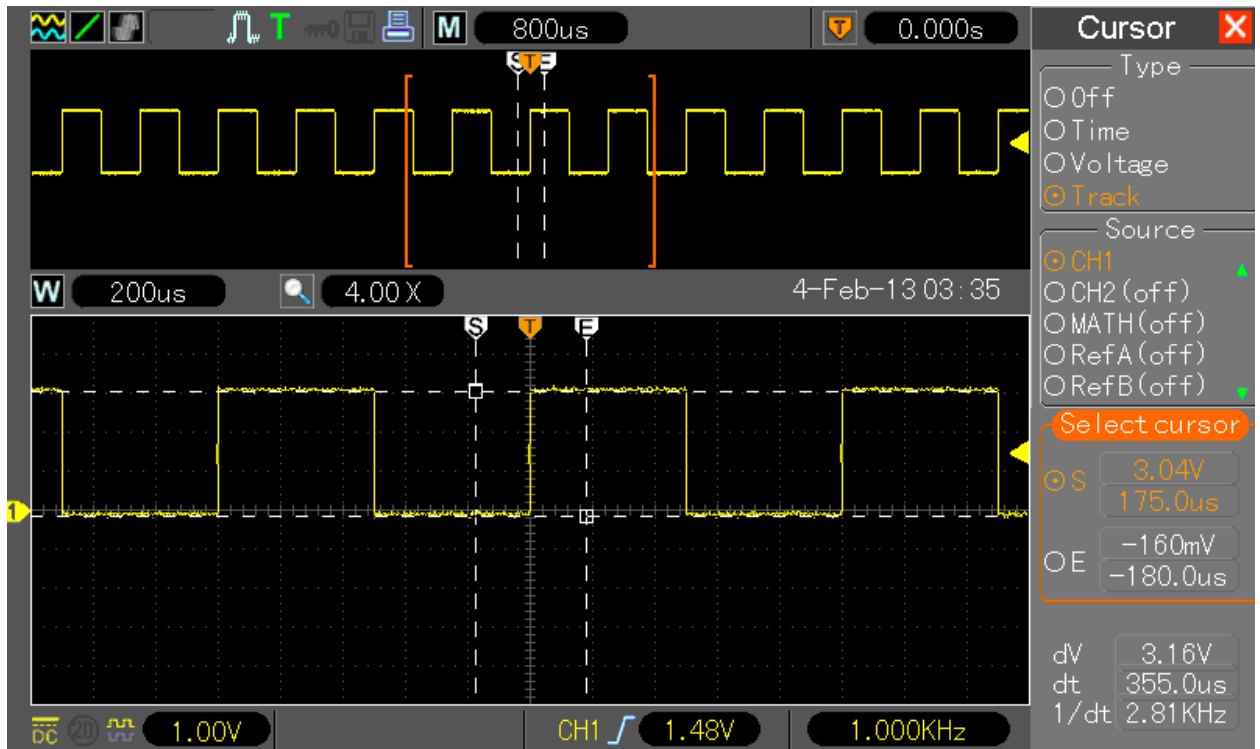
unit\_KV is now "KV" but should be "kV"

unit\_KHz is now "KHz" but should be "kHz"

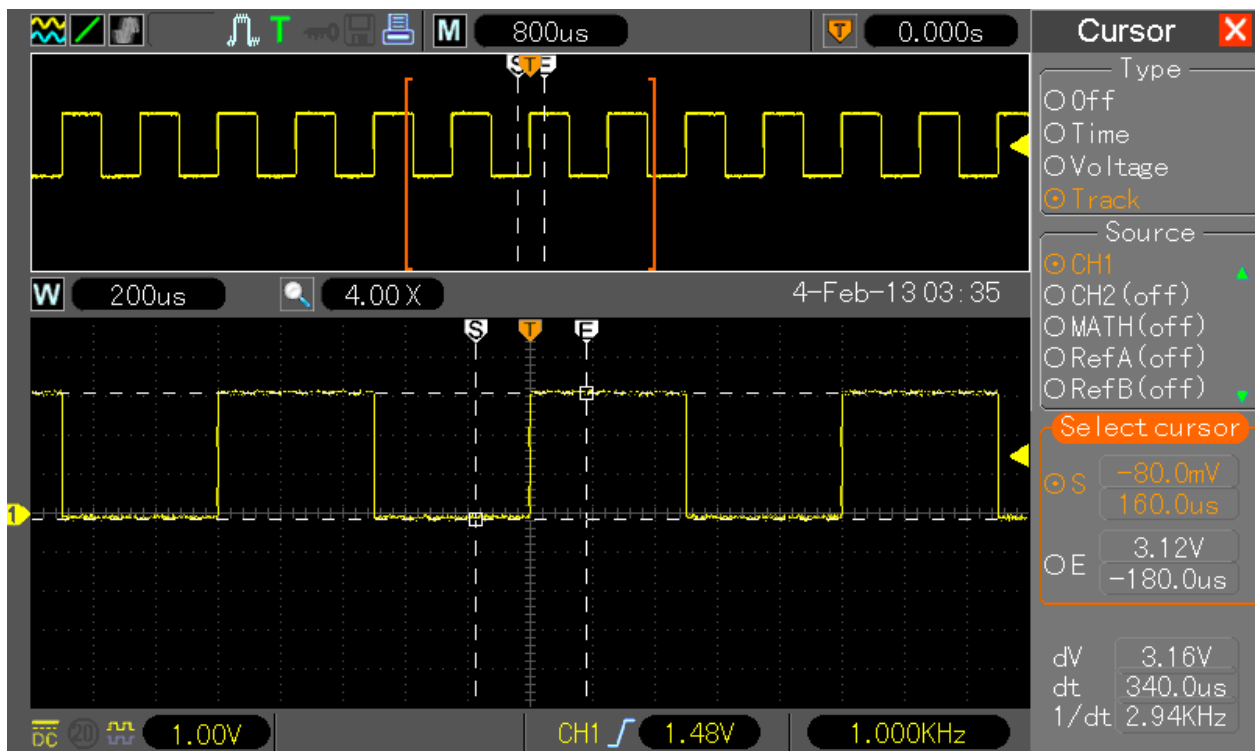
unit\_KS\_S is now "KS/s" but it should be "ks/s"

unit\_krads is now "Krad/s" but it should be "krad/s"

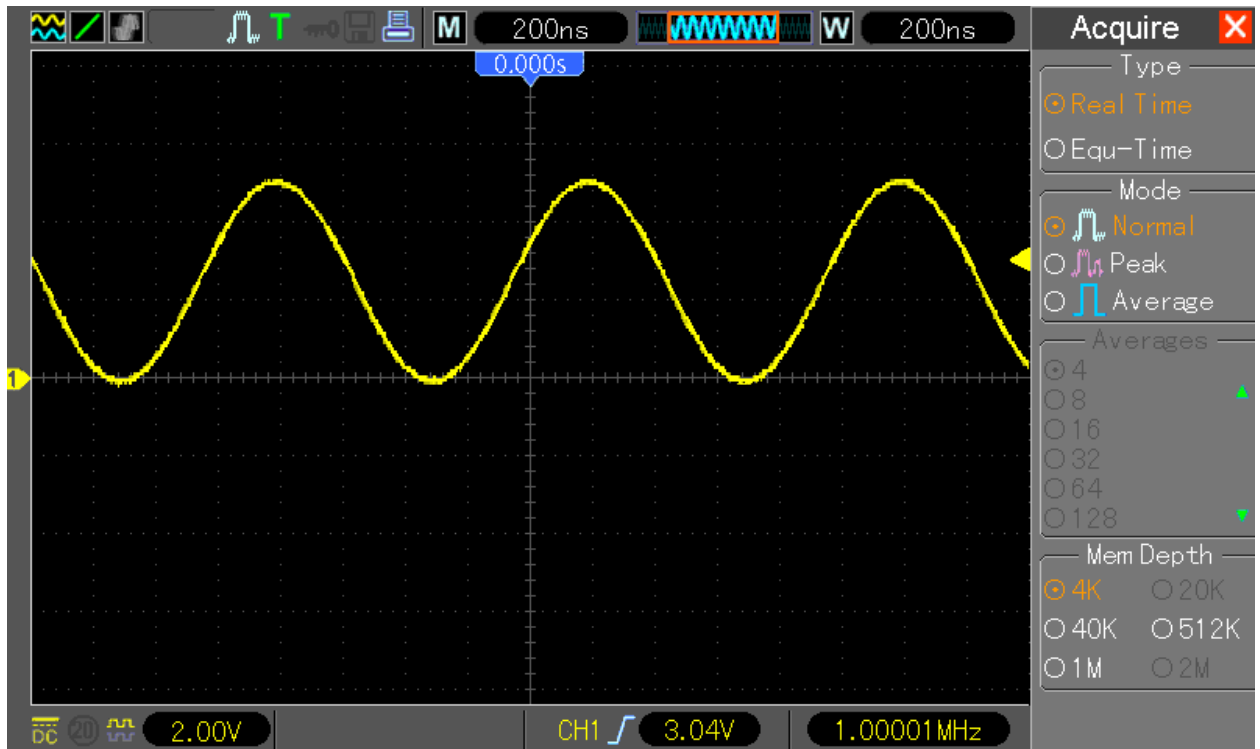
47. Tracking cursor not working when Zoom (W) window focused



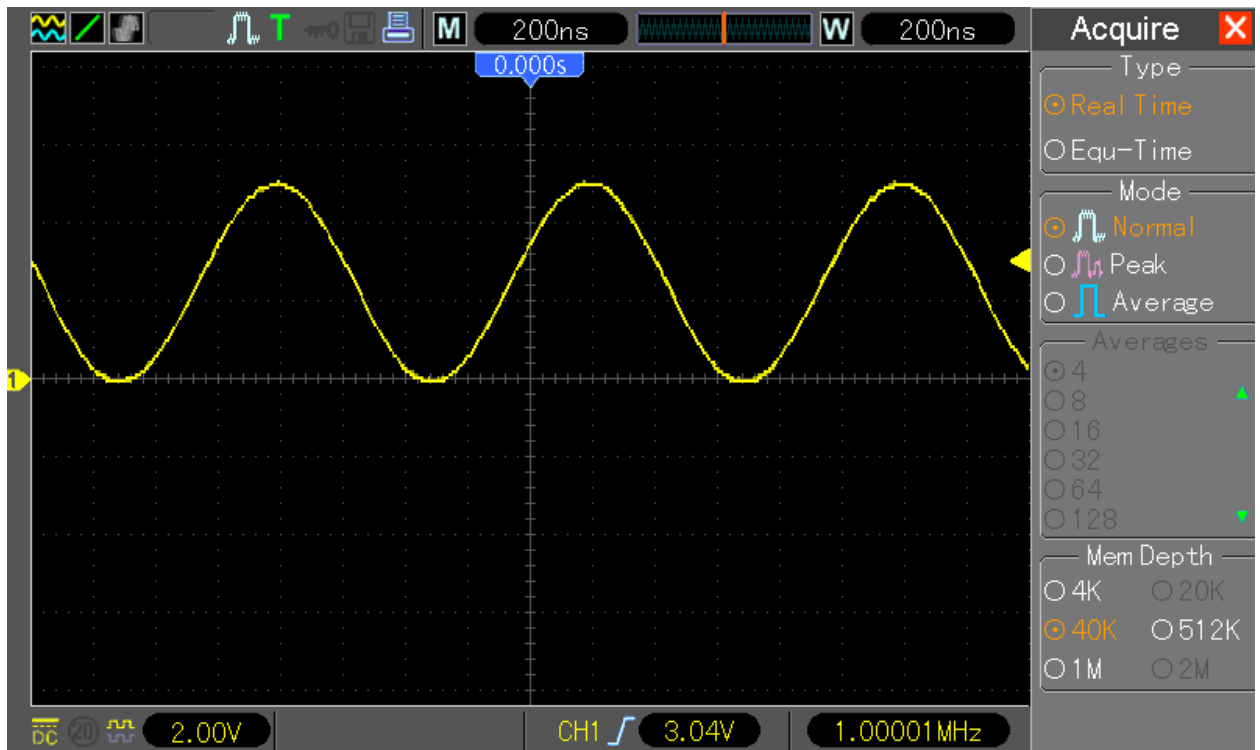
When Main Windows selected (M) the tracking cursor however works good:



48. When changing memory depth, the MTB is not changing automatically together. Set following on DSO, 4k, 1ch, 200ns/DIV MTB:

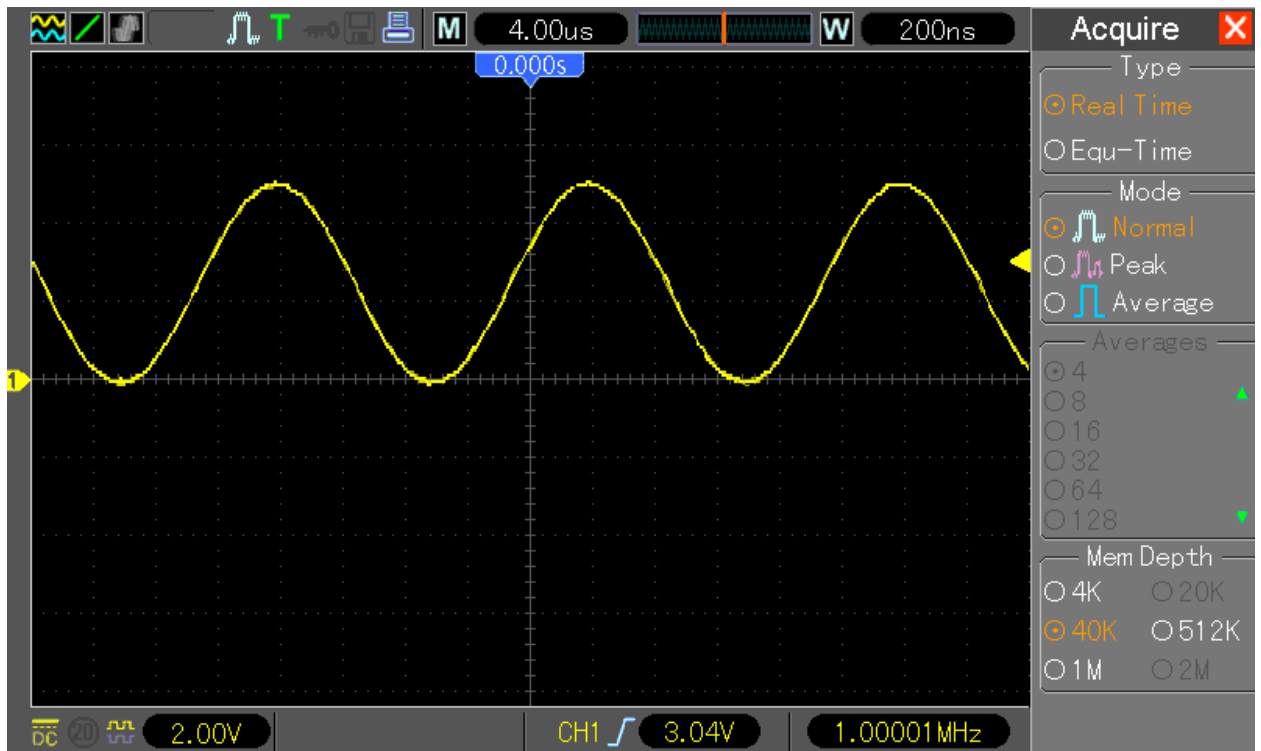


change now memory depth to 40k, the MTB is still displaying 200ns/DIV

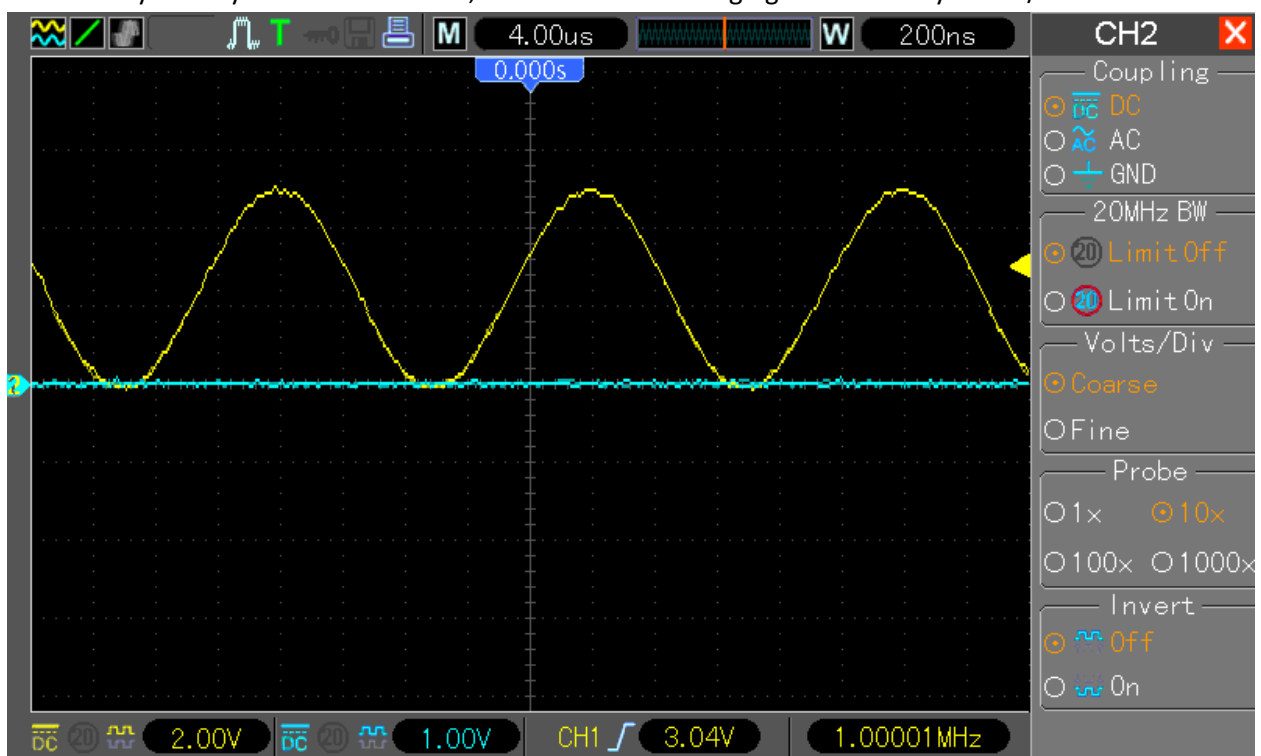


when you turn now timebase now one position up and down the MTB is displaying proper value, 4us/DIV:

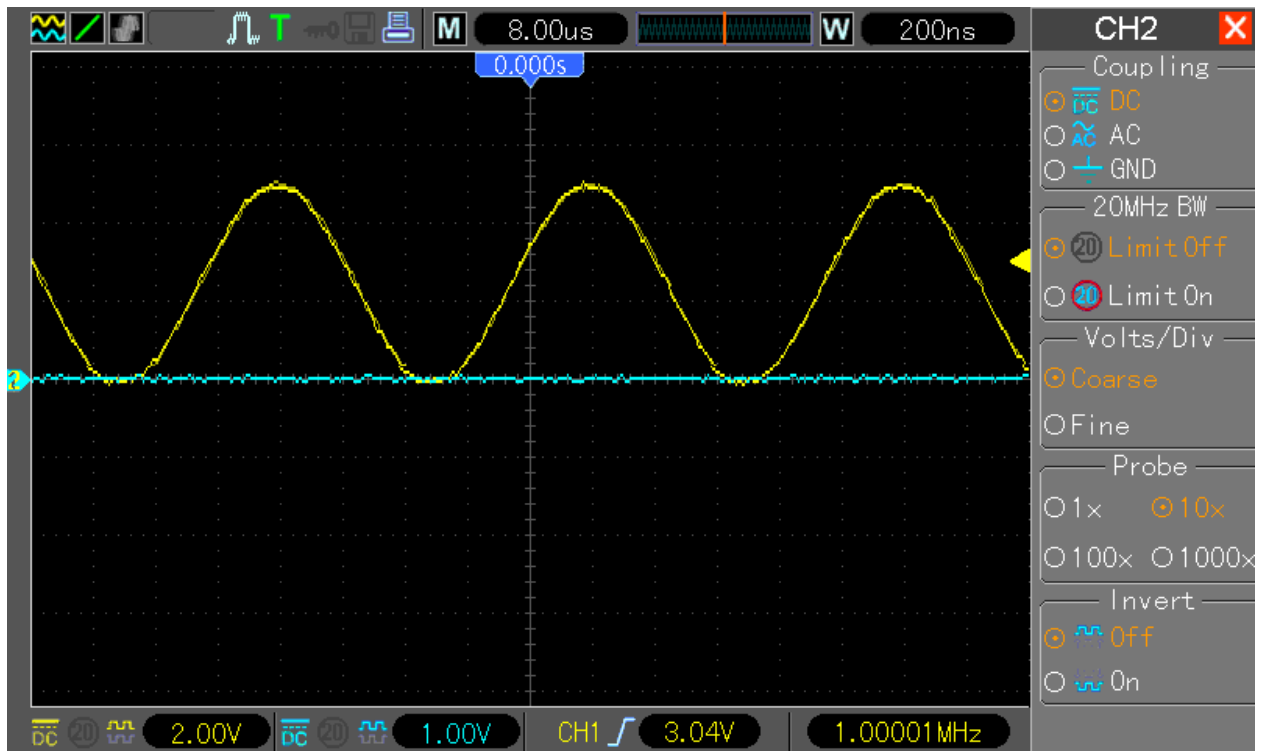




Additionally when you enable now ch2, the value is not changing automatically to 8us/DIV:

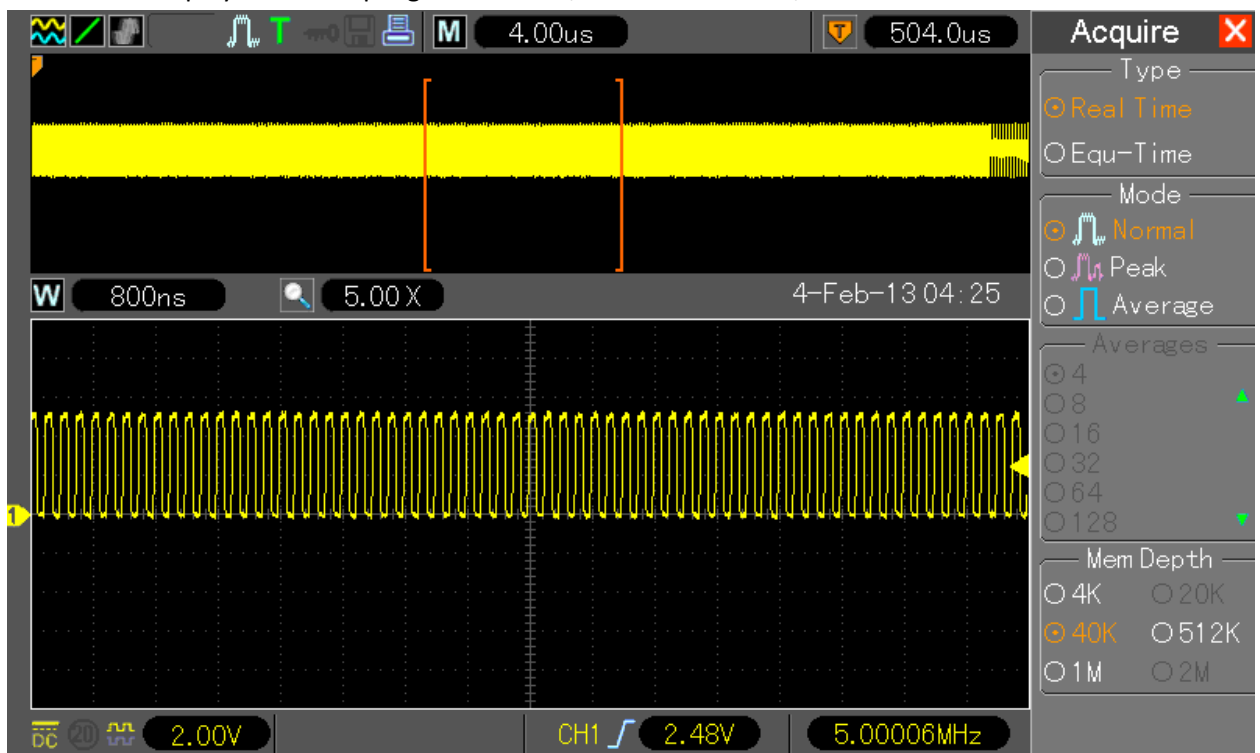


you have to turn again timebase knob one up and down position to get display updated to proper value which is in this example 8us/DIV:

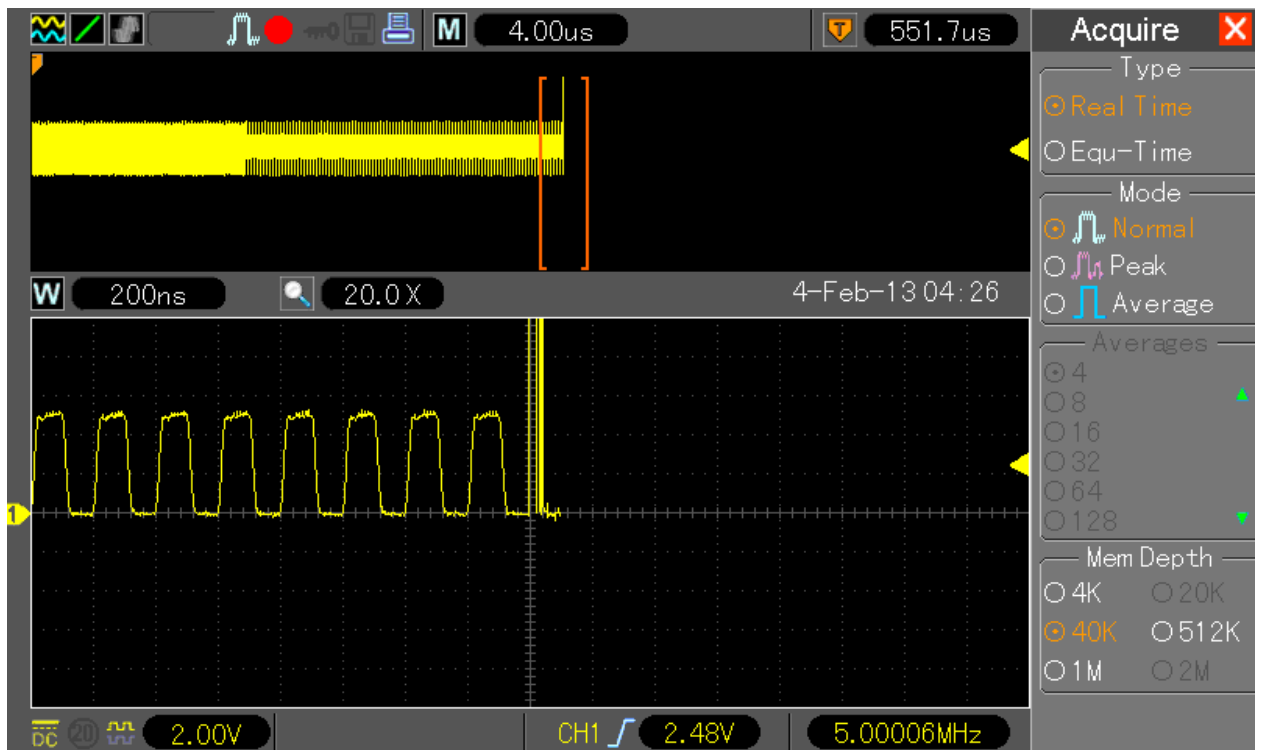
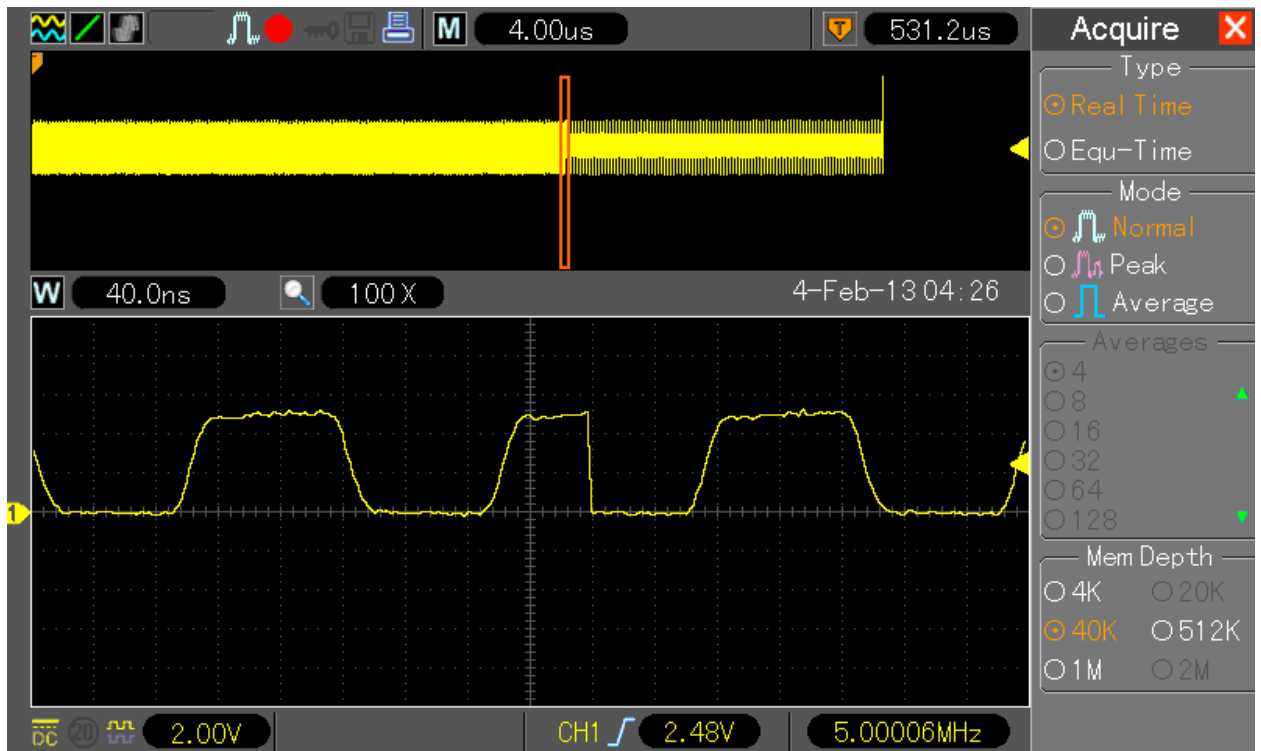


All these error are as well when changing from 40k to 512k and from 51k to 1M.

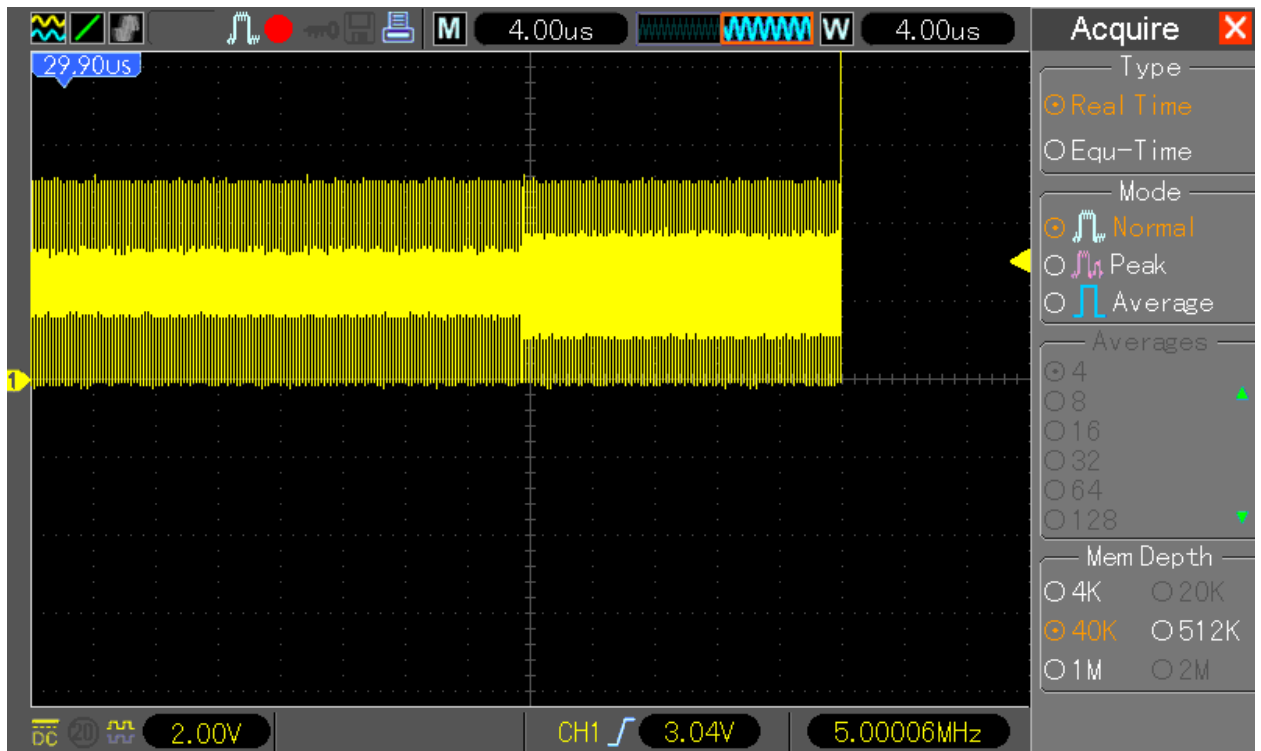
49. Artifacts on display when sampling with 400MS/s. Set 40k and 4us/DIV:



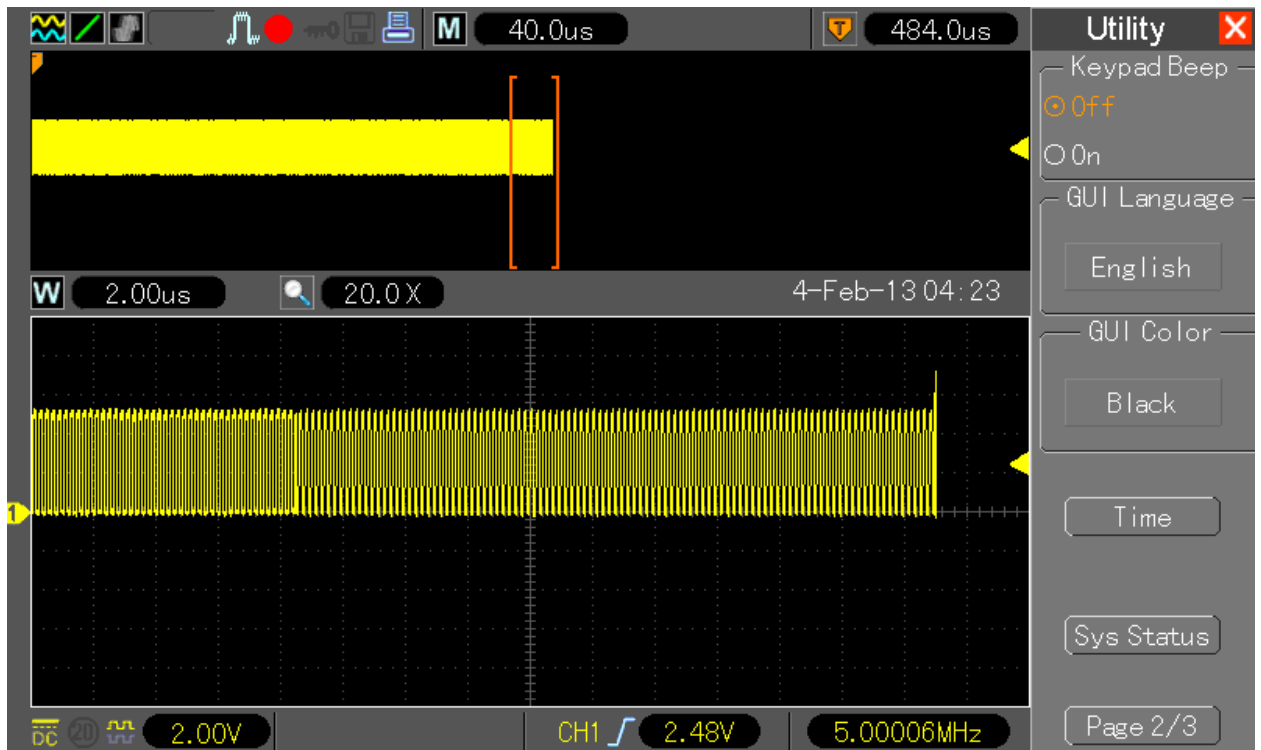
on the right part of the picture you can already see different waveform, when you move and zoom you see what's wrong:

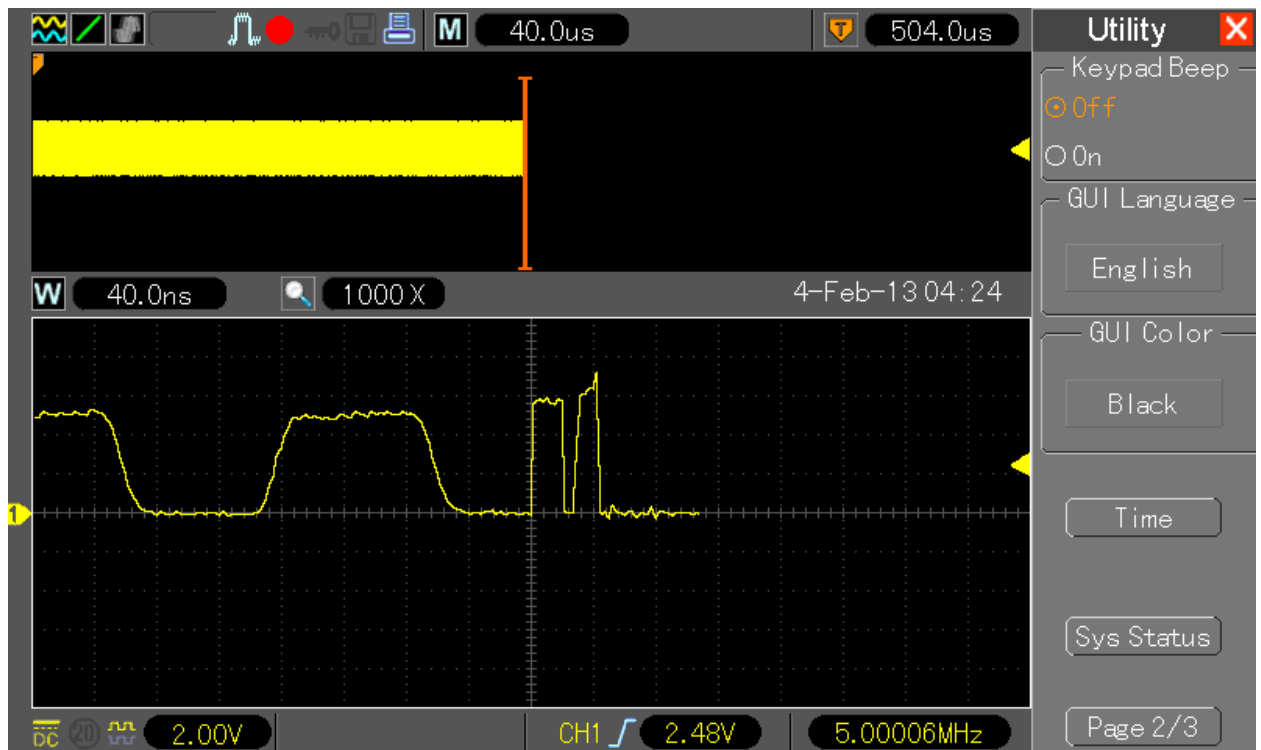
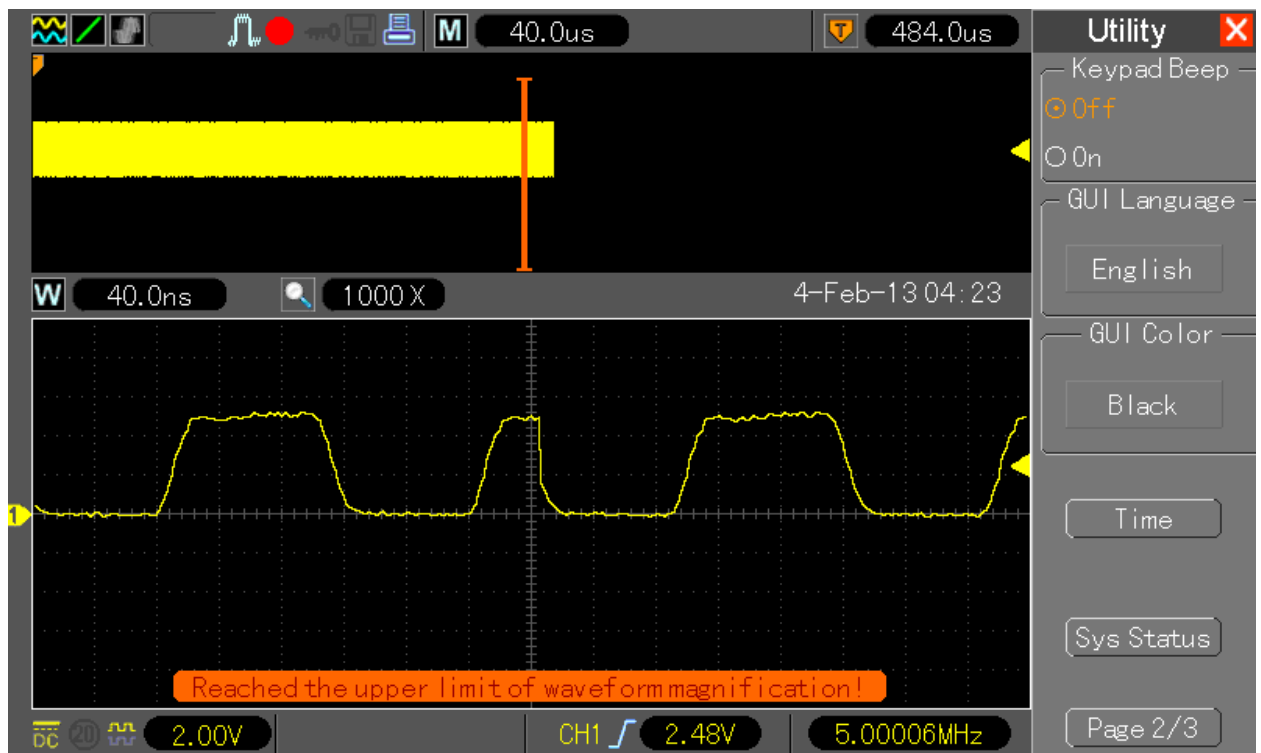


Of course the same is visible in single window mode, so it does not have anything to do with window mode:

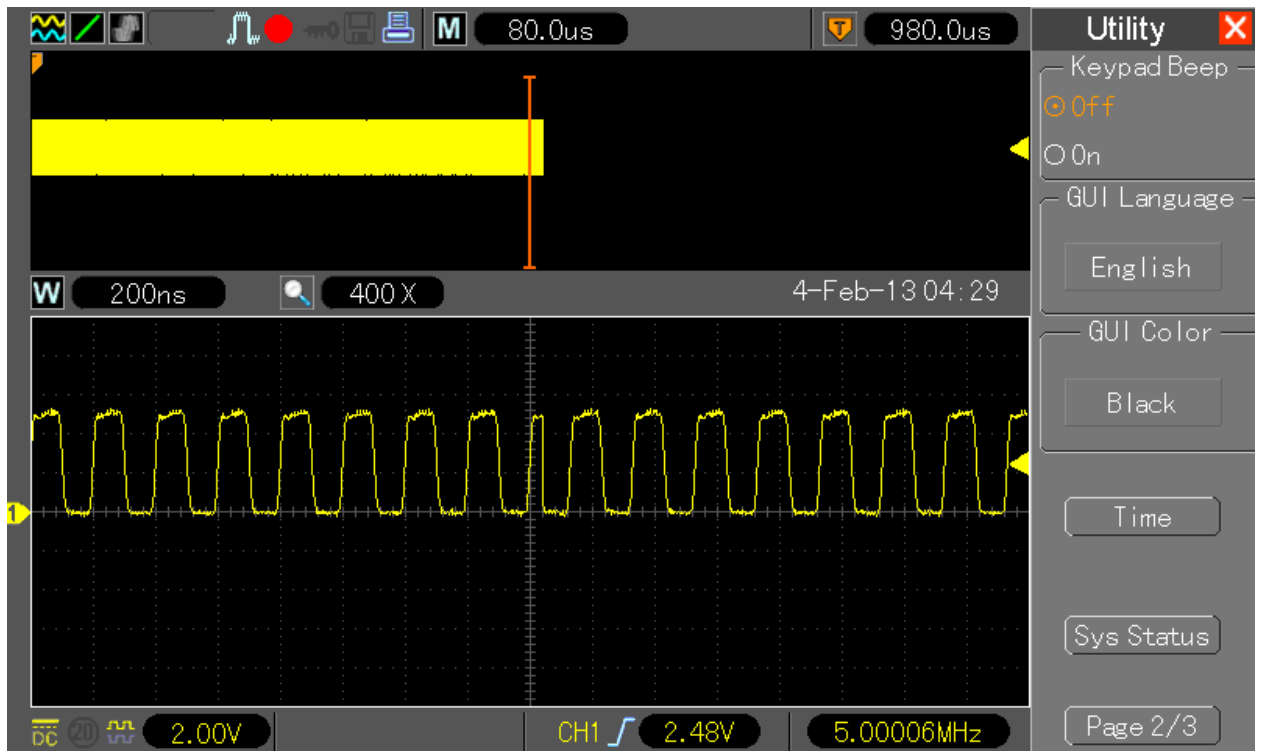


Same kind of error in 512k memory selection and 40us/DIV:



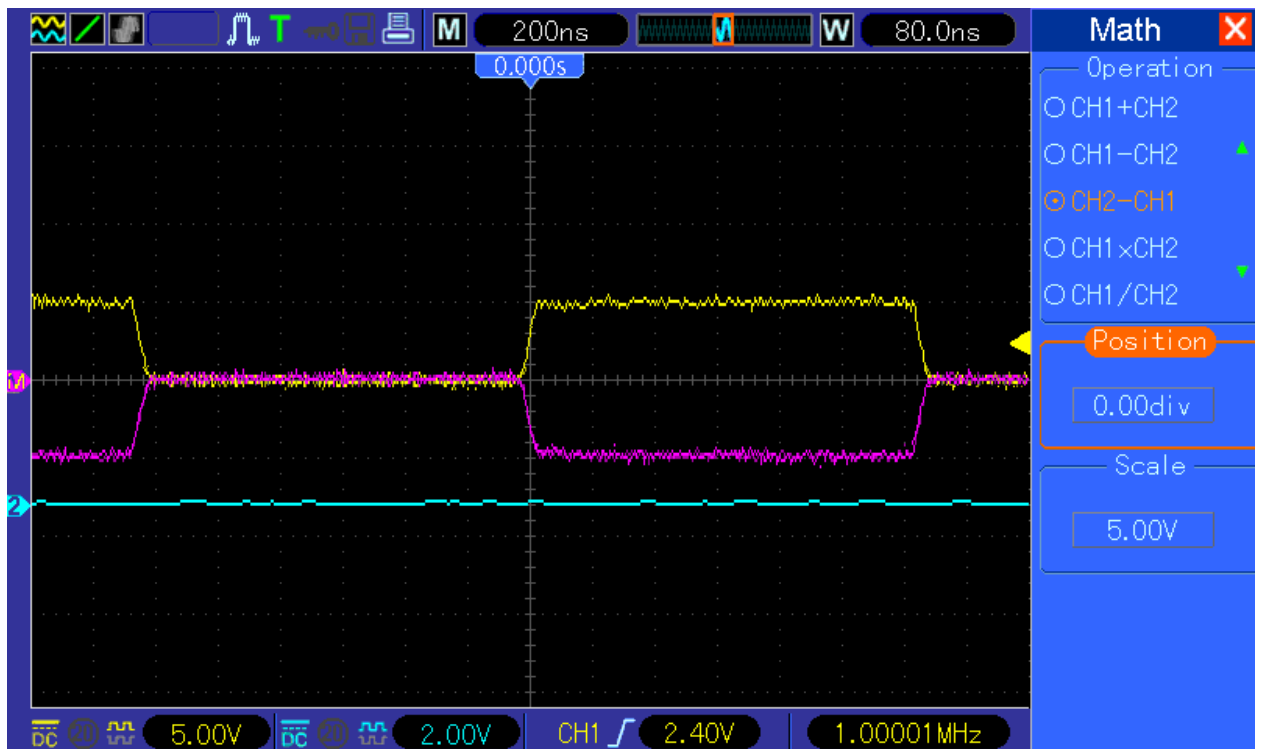


and as well in 1M and 80us/DIV:

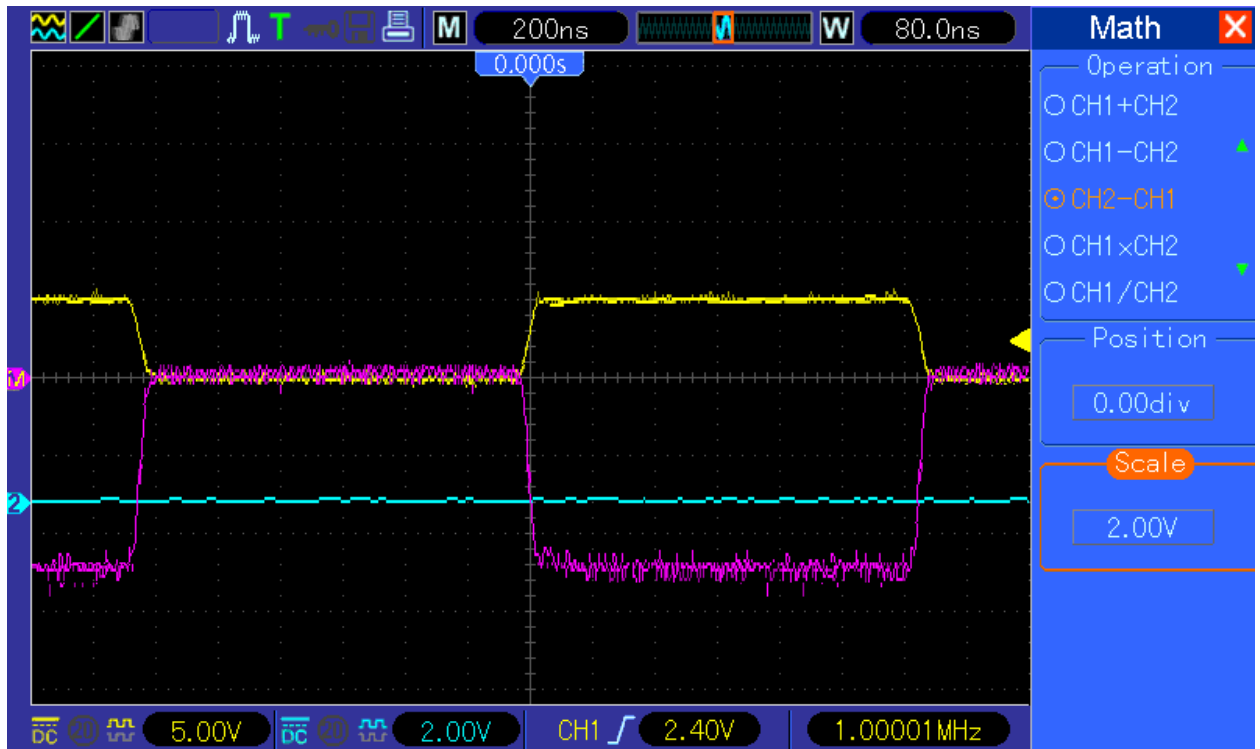


It seems that no matter if the DSO is sampling with 200MS/s, 400MS/s or even 500MS/s (I played a bit deeper) the error is there in 40k, 512k and 1M always somewhere at the end of buffer (up to last ~ 3%).

50. In Math menu, when trying to change waveform position with V0 knob:

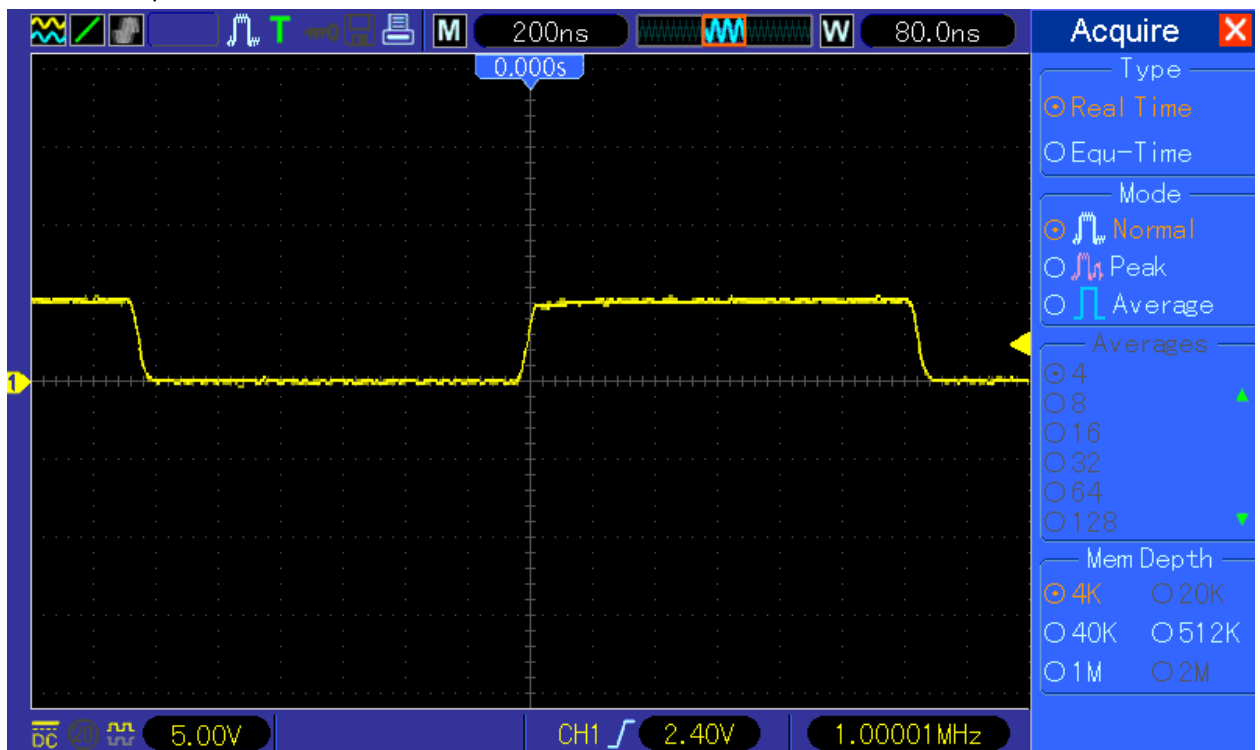


the value of “Position” is not changing. Additionally the focus is jumping to “Scale” from “Position” and the value changing there:

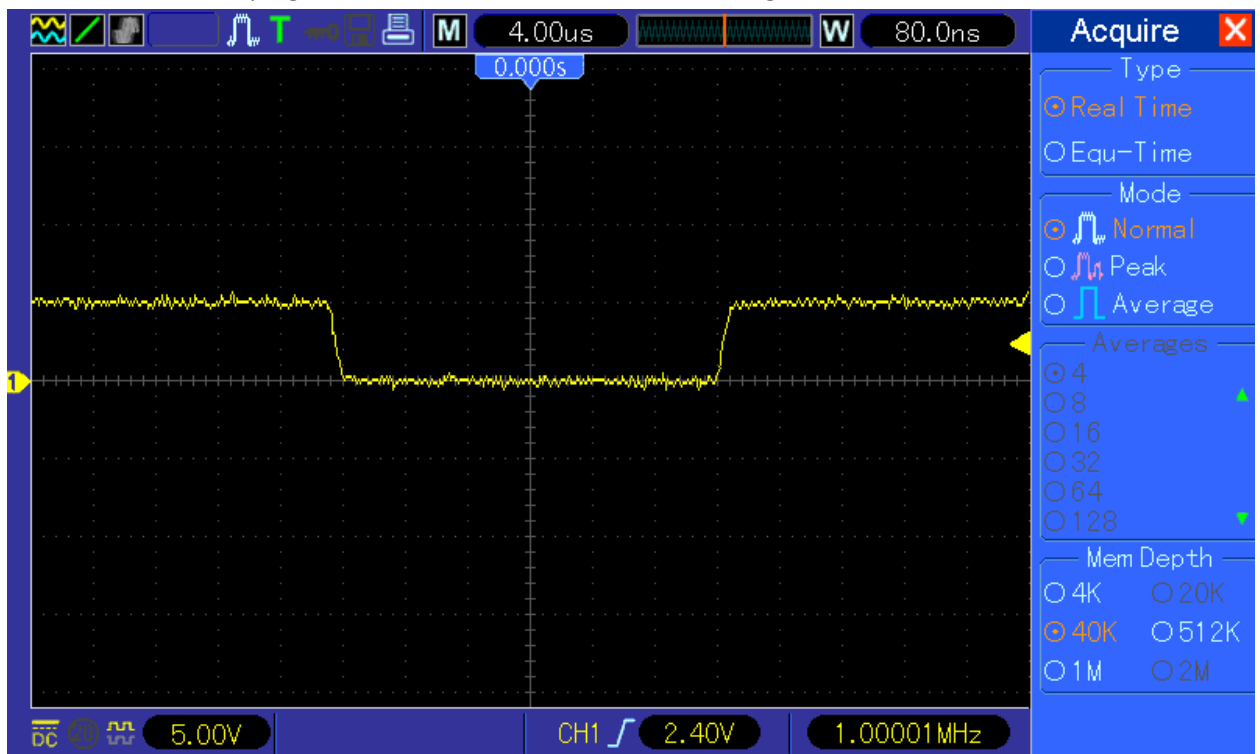


51. Trigger position broken in 40k, 512k and 1M memory depth mode.

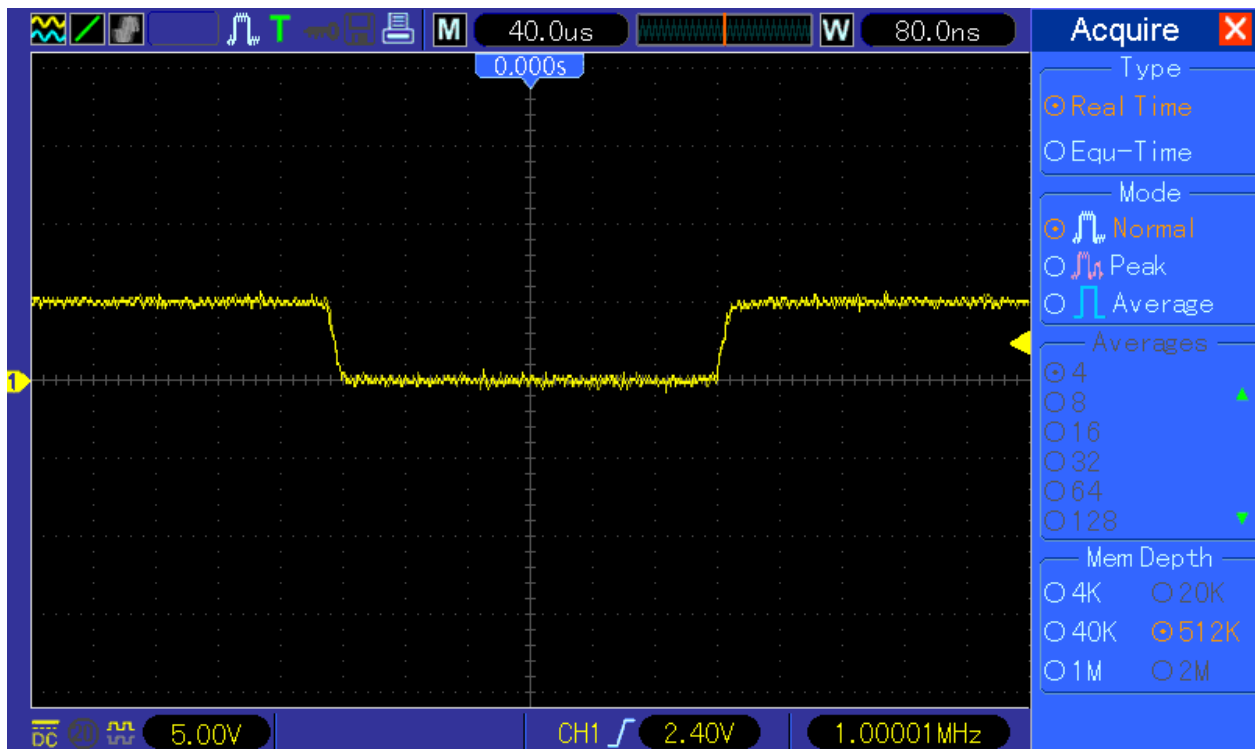
Set DSO to 4k, 80ns/DIV, ch1 enabled, apply 1MHz square, the trigger is in the middle of the screen as expected:



Switch now to 40k, trigger is moved, zeroing of trigger position, selfcalibartion and even factory calibration is not helping. Tested with 83E9 and 83EB FPGA designs:

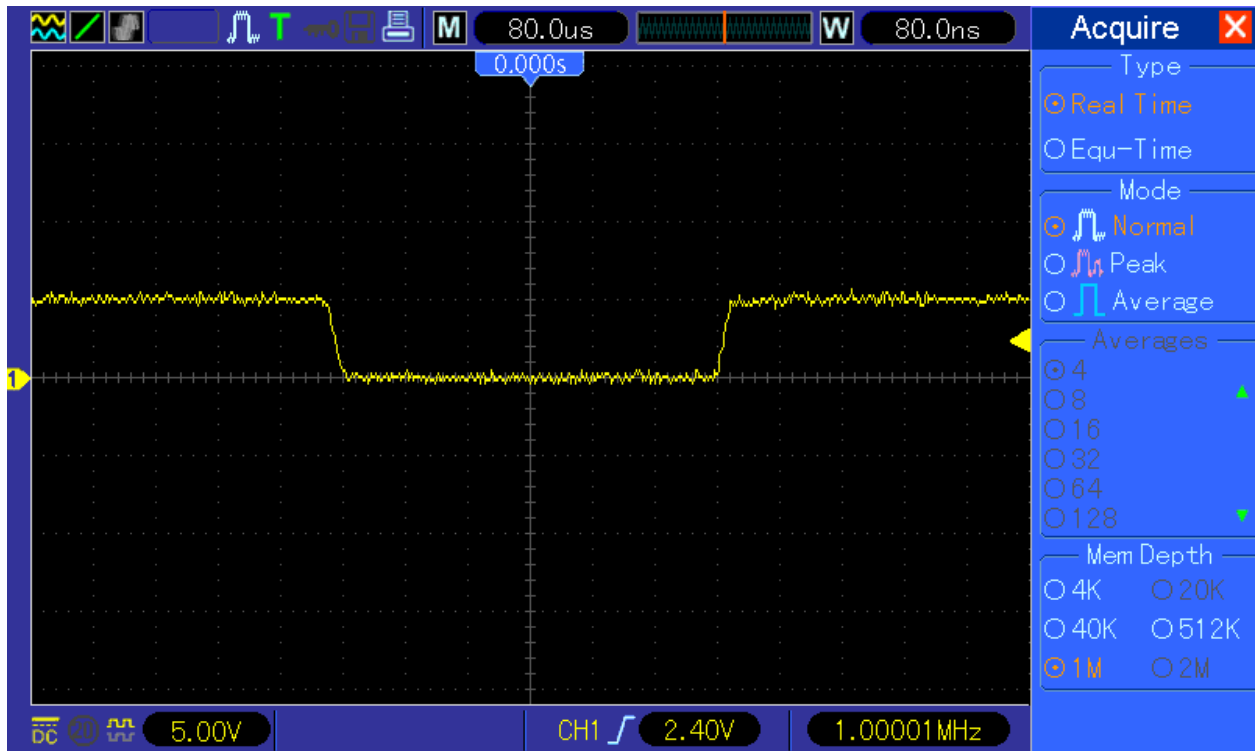


same problem in 512k:

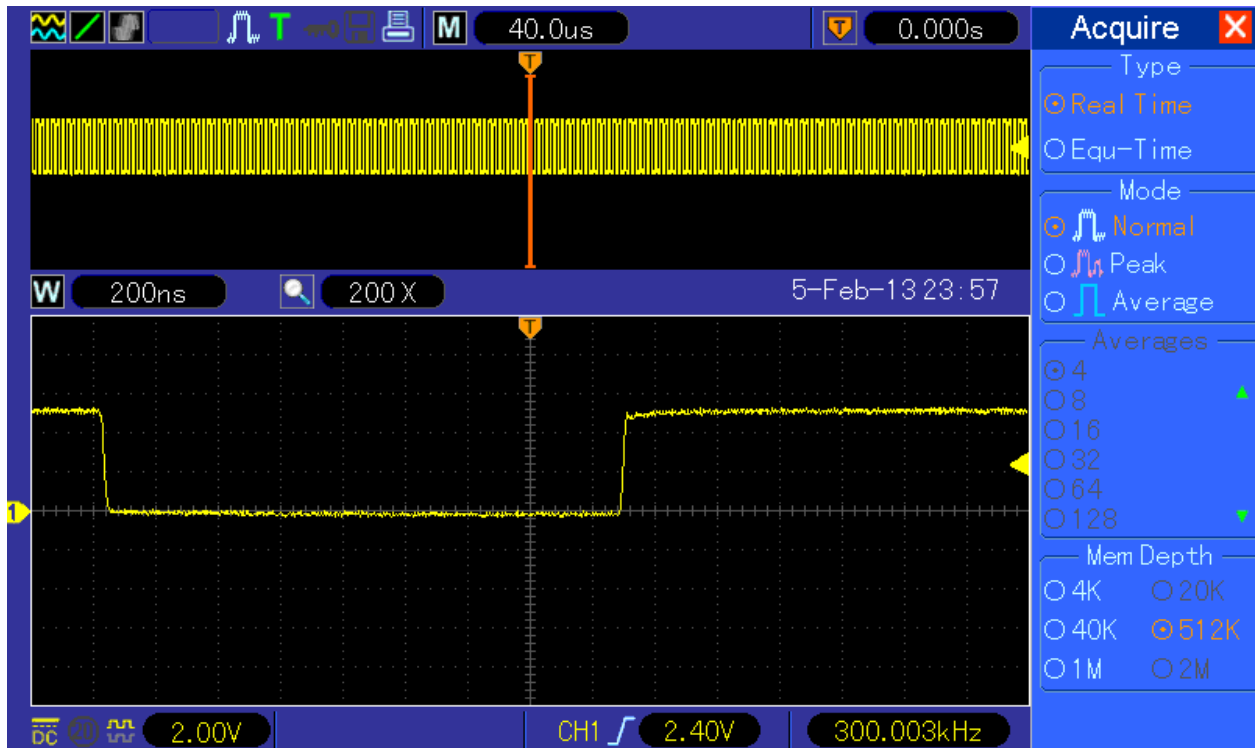




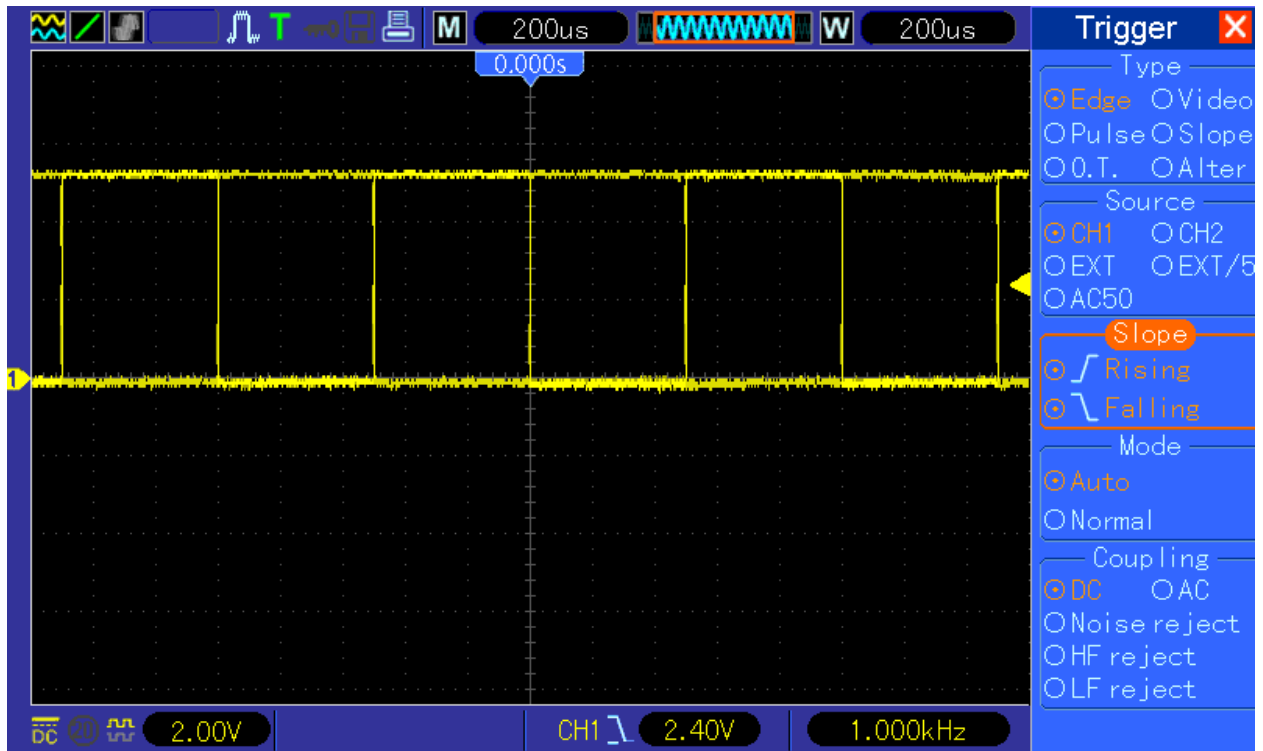
and in 1M:



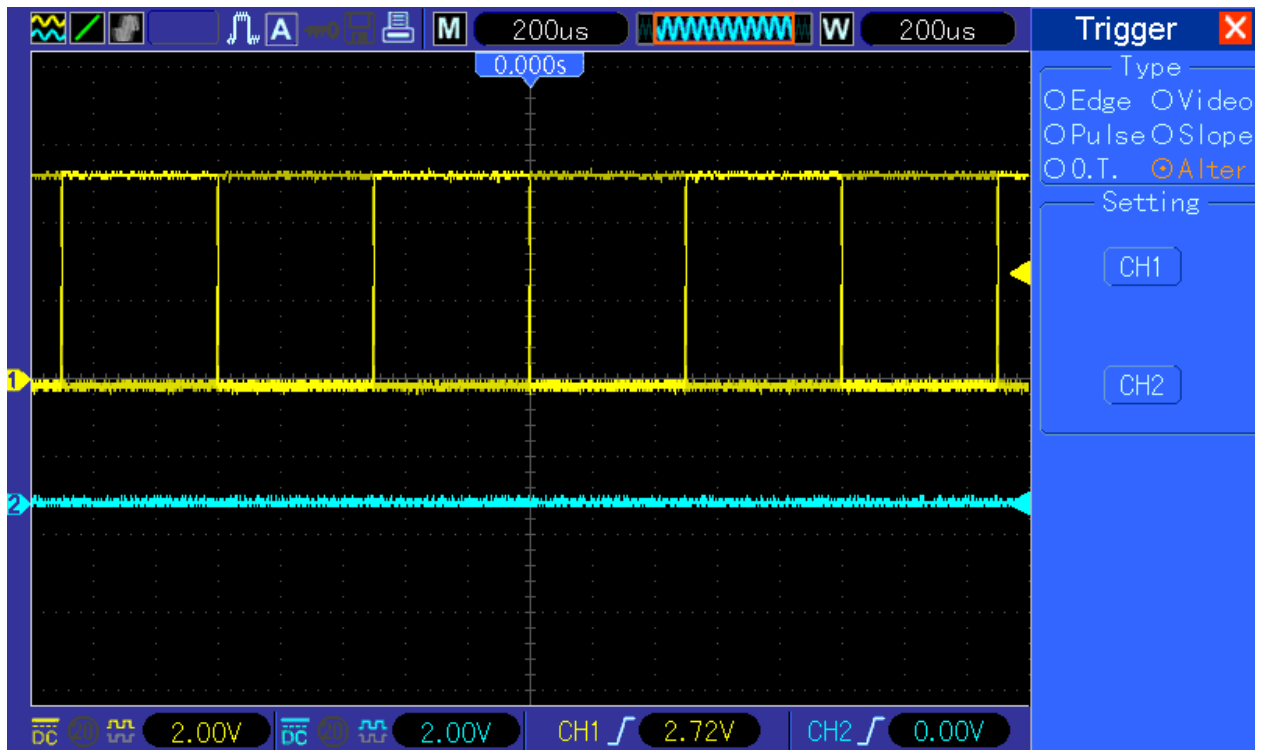
in dual window same problem in 40k/512k and 1M memory depth:



52. After enabling the Dual Slope in Edge trigger:

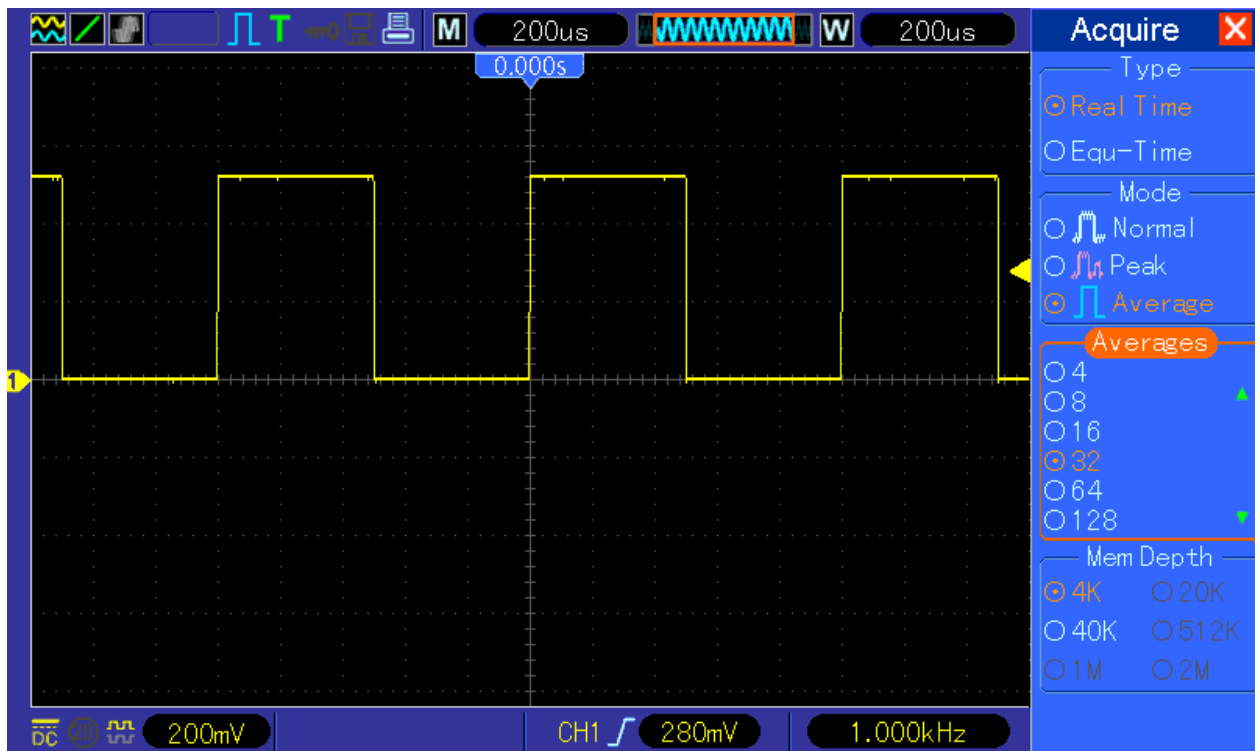


and changing to Alternate Trigger mode, the Dual Slope seems to be still on:

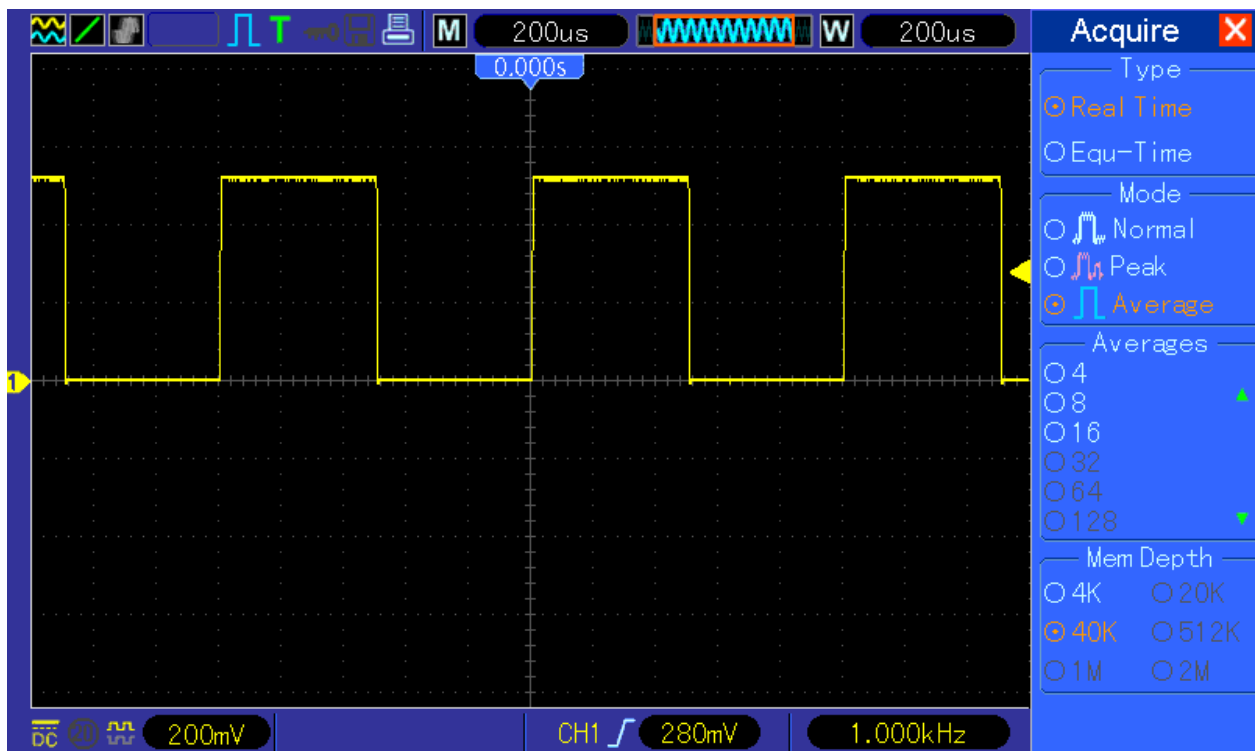


but I assume should be off? (I'm not sure about the intention here).

53. When number of Averages is higher than 16, and changing from 4k memory depth:



to 40k memory depth, the number of averages is showing nothing:





## List of workarounds – by bug number

I've marked all workarounds with colors: red – bad one, yellow – sill bug, but workaround exists, green – not a bug or I don't care about. Note – these colors represents what I think and feel.

Update: Some of them already fixed

1. ~~Don't use help~~ **Fixed**
2. ~~Run factory calibration (only Edge calibration) and after that self-calibration. This bug seems to be only valid for hacked models, it does not exist on real 200MHz models (on which the factory calibration was executed after 2ns/DIV and other 200MHz features has been enabled).~~  
**Fixed**
3. ~~Run factory calibration (only Edge calibration) and after that self-calibration. This bug seems to be only valid for hacked models, it does not exist on real 200MHz models (on which the factory calibration was executed after 2ns/DIV and other 200MHz features has been enabled).~~  
**Fixed**
4. **No Workaround available.**
5. Well, you can build your own SDK/LabView/what so ever support based on the already published information's:  
[http://www.mikrocontroller.net/articles/Hantek\\_Protokoll](http://www.mikrocontroller.net/articles/Hantek_Protokoll)  
[http://elinux.org/Das\\_Oszi\\_Protocol](http://elinux.org/Das_Oszi_Protocol)
6. There is no affordable workaround for now. Changes to hardware are possible but expensive. I've tested Silicon Labs jitter cleaner, Murata LDHxxx delay lines and a combination of other solutions. I was more than satisfied with achieved results, expect the costs.  
For now we have to use what available, both manufacturers developed within last 2 years few FPGA design versions, the best is from upcoming Tekway MST DSOs and Hantek Handhelds – however they not allowing dual channel 500MS/s sampling in long memory; Hantek's bench DSO hw1007 83E9 design allows such faster sampling but the skew is still far from perfect. I did publish all these FPGA designs, you can play with them to which is best for you. **But note – do not do this when you own hw1005 DSO, they can't be modified!**  
For those of you who don't know what this bug means – Google for waveform/interleave distortion and/or Agilent 5989-5732EN.
7. This is improvement proposal and not a bug. It has been removed from to-do as “not important”.
8. ~~This is a very unfortunate bug; possible workaround is to use dual window mode or less memory depth (both with disadvantages)~~  
**Fixed**
9. ~~Workaround is to change Timebase (just one step forward and back) right after dual window enabled. Note – the main window (top) need to be activated, the bug have something to do~~

with main TB buffer initialization.

Fixed

10. Workaround is to change Timebase (just one step forward and back) right after dual window enabled. Note — the main window (top) need to be activated, the bug have something to do with main TB buffer initialization.

Fixed

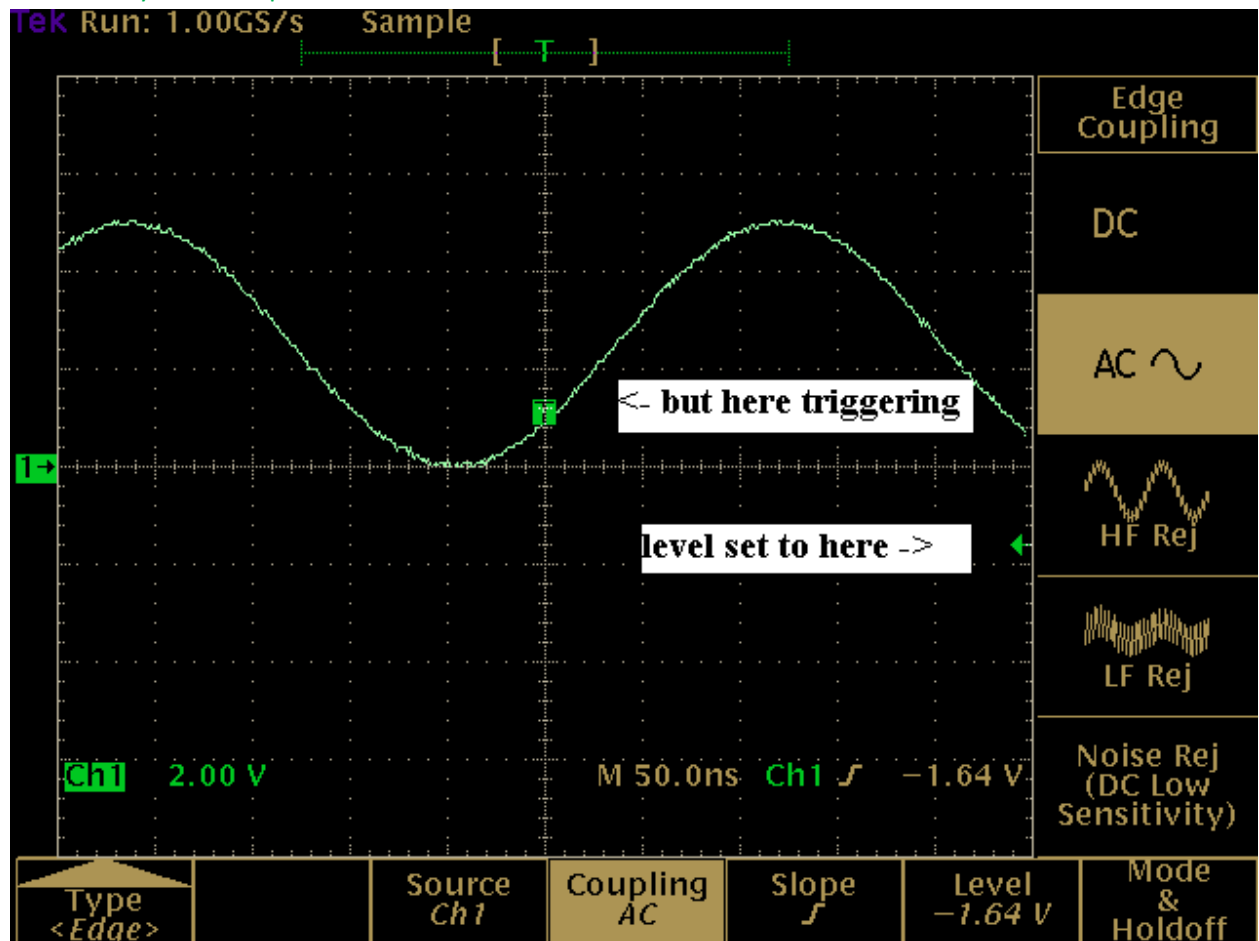
11. This is improvement proposal and not a bug.

Fixed

12. Use my firmware (2.06.3\_120507.6), I removed that bug.

Fixed

13. Use DC trigger coupling or “add offset” when you set trigger point. On some other good known DSOs (e.g. Tektronix TDS7xxx) there is exact the same DC-signal/AC-trigger “dependency” (bug) and nobody ever complained about.



14. For sure a stupid bug, but since you can see when the signal is “wobbling” you can quick change (when necessary) to single channel to observe the waveform with better resolution and without

~~webble.~~

**Fixed**

15. Funny bug, but easy to omit since we know it.
16. ~~This is already fixed, the /dsod (or /dso/app/dsod — this depends on fw/DSO model version) binary is working perfectly as watch dog monitoring potential profile issues.~~  
**Fixed**
17. ~~Not a big deal~~  
**Fixed**
18. ~~Not a big deal, you can update the protocol.inf file.~~  
**Fixed**
19. ~~(yellow as this is an bug only when accessing remotely) — need to be implemented properly in the firmware; a pure protocol.inf change is not enough.~~  
**Fixed**
20. ~~(yellow as this is an bug only when accessing remotely) — need to be implemented properly in the firmware.~~  
**Fixed**
21. ~~(yellow as this is an bug only when accessing remotely) — need to be implemented properly in the firmware.~~  
**Fixed**
22. ~~(yellow as this is an bug only when accessing remotely) — need to be implemented properly in the firmware.~~  
**Fixed**
23. ~~No workaround, it was never properly implemented, now even completely disabled.~~
24. ~~Workaround could be to switch back to firmware from Mid-2011, but honestly this is really annoying bug. I can't understand why there is no QC?~~  
**Fixed**
25. ~~No workaround, it looks just crap. Sure, when we know that there is crap on begin and end we can think the crap away, but what when there is a real spike? UPDATE: see description in bug section above.~~  
**Fixed.**
26. Almost fixed. For now simply – when changing memory depth in dual window mode – turn once the timebase knob one position to right (smaller timebase) and if necessary back. That's all.
27. ~~Switch once focus from minor (bottom window) to major (top window) window by pushing timebase knob down, turn then timebase one position fort and back to get rid of waveform~~

~~artifacts on left and right side of the waveform.~~

**Fixed**

28. ~~Nothing to say here.~~

**Fixed**

29. ~~Nothing to say here.~~

**Fixed**

30. ~~Simply set Screen Refresh Rate to 40 or 50 Frames/s (Display Menu → Page 2 → Refresh Rate)~~

**Fixed – screen refresh set to 50 works best.**

31. ~~Nothing to say here.~~

**Fixed**

32. ~~Nothing to say here.~~

**Fixed**

33. ~~Nothing to say here.~~

**Fixed**

34. ~~We could patch it with Hex Editor from %d to %lld to allow CSV export, but import need to be changed in source code (to work properly), so I would say “let’s wait for official fix”.~~

**Fixed**

35. ~~Not a bug – but really annoying thing.~~

**Fixed**

36. ~~Not a bug, but who need to see trailing zeros?~~

**Fixed**

37. ~~Turn Timebase knob one position forth and back.~~

**Fixed**

38. ~~This is funny bug, isn’t?~~

**Fixed**

39. ~~Turn Timebase knob one position forth and back, in most cases the Sampling Rate within FFT will be then updated to proper value.~~

**Fixed**

40. ~~Ensure that no more than 10 file on the Flash Drive.~~

**Fixed**

41. ~~No fix for this~~

**Fixed**



42. ~~Nothing to say here.~~

**Fixed**

43. ~~Nothing to say here.~~

**Fixed**

44. This is request – not bug – so nothing to say here

45. This is request – not bug – so nothing to say here

46. This is really minor, when you don't know that this is simply typo in firmware, then you have real problem – but not with DSO :)

47. When measuring waveform(s) use the tracking cursor only in main window. In wave/FFT mode it does work properly.

48. This is mid minor bug, simply turn timebase one position back and forth when you wish to get the MTB value updated. It does not have any influence on the firmware functionality.

49. Simply ignore 5% of the right data/display region (when you look on display, the data near menu).

50. Watch bug table in which fw version this is a bug and in which not – I assume it is temp only in 130205.0 and will be fixed after Feb 16<sup>th</sup> 2013.

51. Watch bug table in which fw version this is a bug and in which not – I assume it is temp only in 130205.0 and will be fixed after Feb 16<sup>th</sup> 2013.

52. Is this really bug? I don't know I assume yes, but maybe not.

53. This is really minor bug, simply chose 4, 8 or 16 and your fine.