Gen Series dY/dT trigger explained

Basic setting definitions:

dY : The result of substracting 2 ADC values
dT : Specifies the time between the 2 samples substracted

These 2 setting values are independent from each other. So the user needs to specify both explicitly for the trigger unit to do a correct job. Perception, nor the Gen Series can recalculate the 2 settings to extract a useable setting.
It is the user that needs to specify both settings within limits that the Gen Series can use.

Notes on setting definitions:

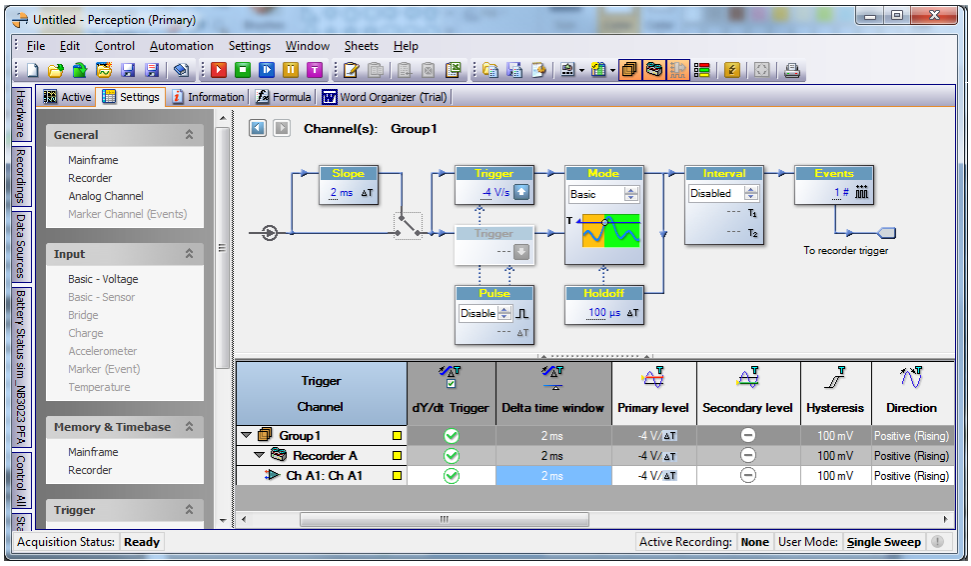
dY: Specified in technical user units so scales with changes of technical units. Maximum dY depends on your amplifier range and technical unit scaling. Perception might turn the background yellow to inform you a change in the amplifier settings is required to be able to actually generate a trigger for you. Say Amplifier is set to 100V range and dY of 110V can never be measured with this sensitivity. However applying a Technical Unit multiplier of 10 or decreasing the amplifier sensitivity to 200V range both would make this setting valid. Do not expect Perception to re-calculate the dY/dT of 110V/10ms to be recalculated to 55V/5ms. What choice should Perception make here 11V/1ms would also be possible. But this leads to completely different trigger behavior as the noise sensitivity goes down from 110V to 11V and this might not be what you want.

dT : Specified in seconds, used in samples. Setting is samplerate dependant. Maximum dT in samples is 1023. For user convenience we allow entry in time. But the hardware works in samples. Therefore changing samplerates might make your setting unusable. Eg. 1023ms is OK as long as the samplerate is 1kS/s. At 1MS/s the maximum dT time is 1.023ms.
Whenever a dT is not useable with the selected samplerate the background of this setting will turn yellow within Perception (Perception indicates this setting is not valid with the current settings that are dependant for this setting).

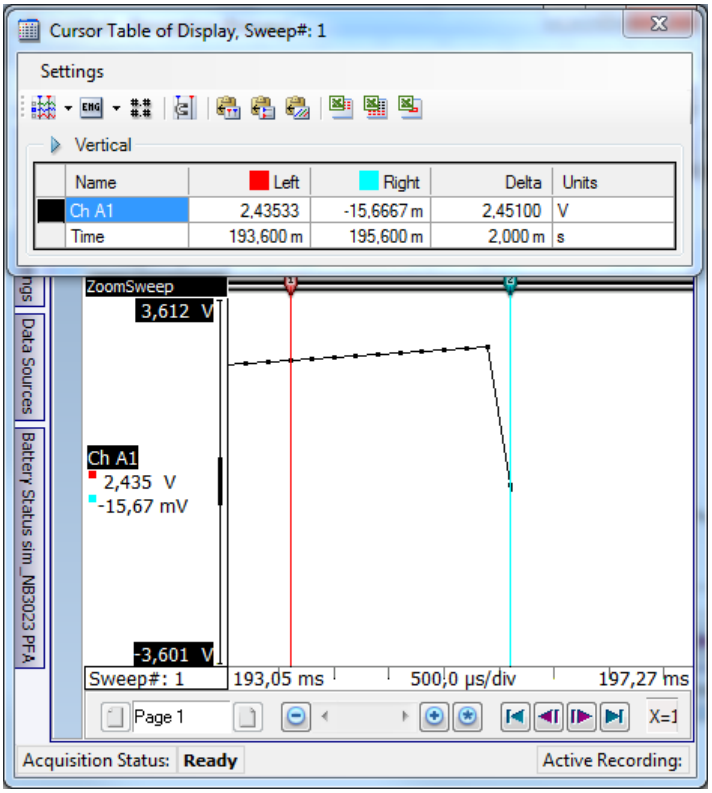
Remember:

Always specify your requested dY and dT values the way you expect Gen Series to look at your signals.

Example:
dY set to -4V
dT set to 2ms.
Basic trigger,
Falling Edge.



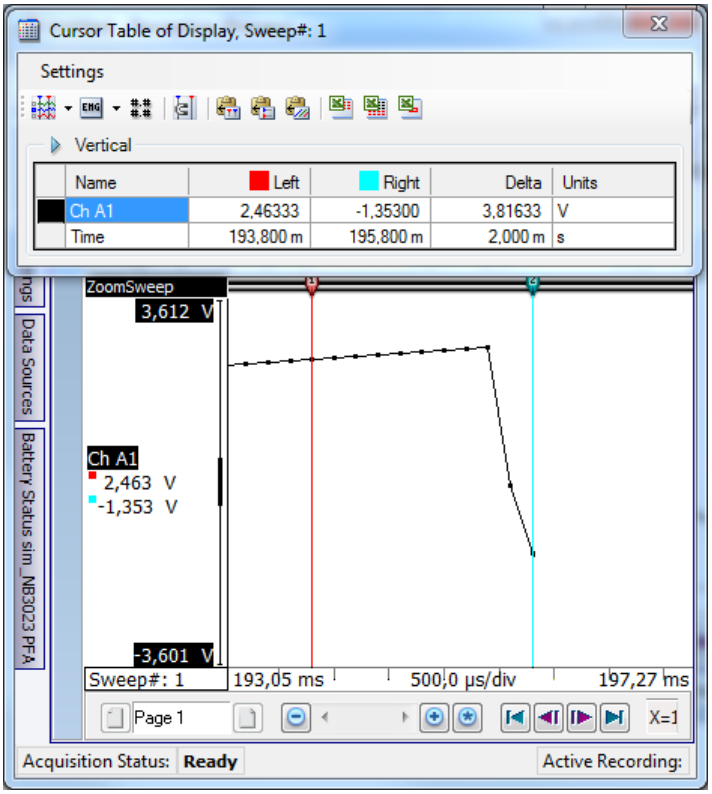
With the next pictures the 2 cursors are set to 2ms. This means the difference between the blue and the red cursor will be the value send to the trigger unit.



Next sample recorded (Sample of Blue cursors).

Difference is -2.451V.

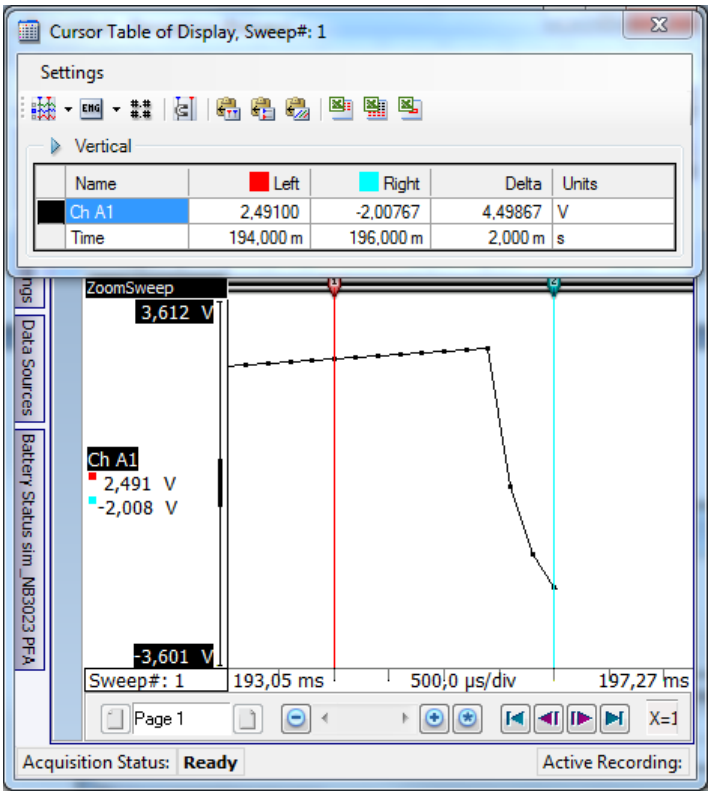
dY not met, no trigger.



Next sample recorded
(Sample of Blue cursors).

Difference now is -3.81633V.

dY not met, no trigger.



Next sample recorded
(Sample of Blue cursors).

Difference now is -4.49867V.

dY met,
As previous dY was higher value,
this is a falling edge : Trigger

Note:
Trigger edge in this case is the
edge of the differentiated signal.
Not the signal itself.