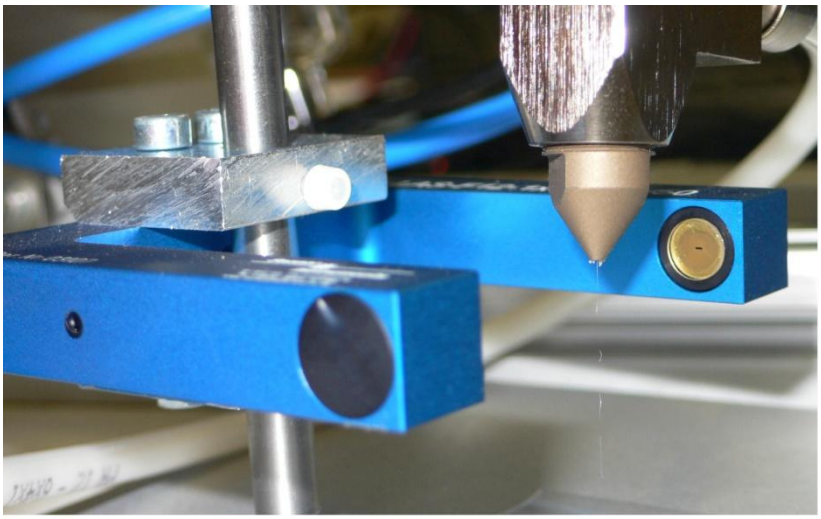
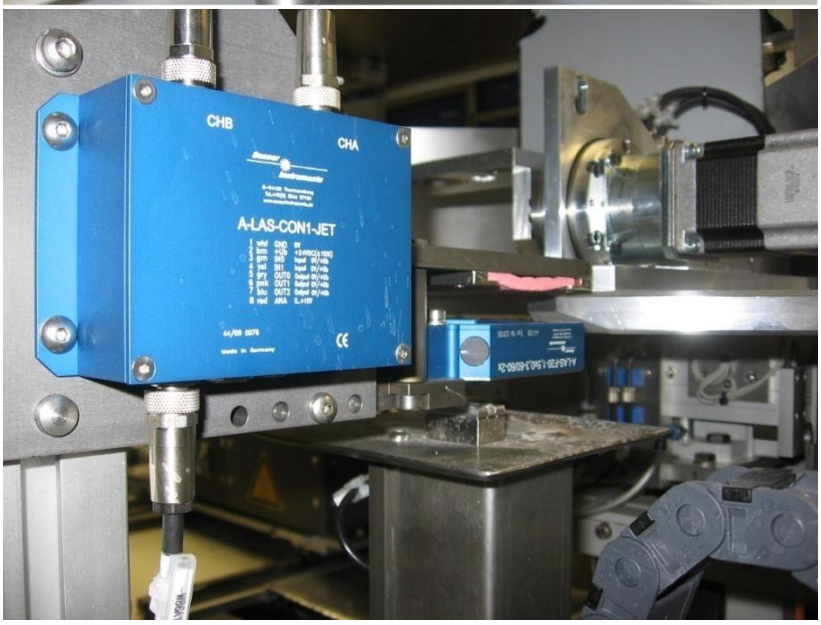
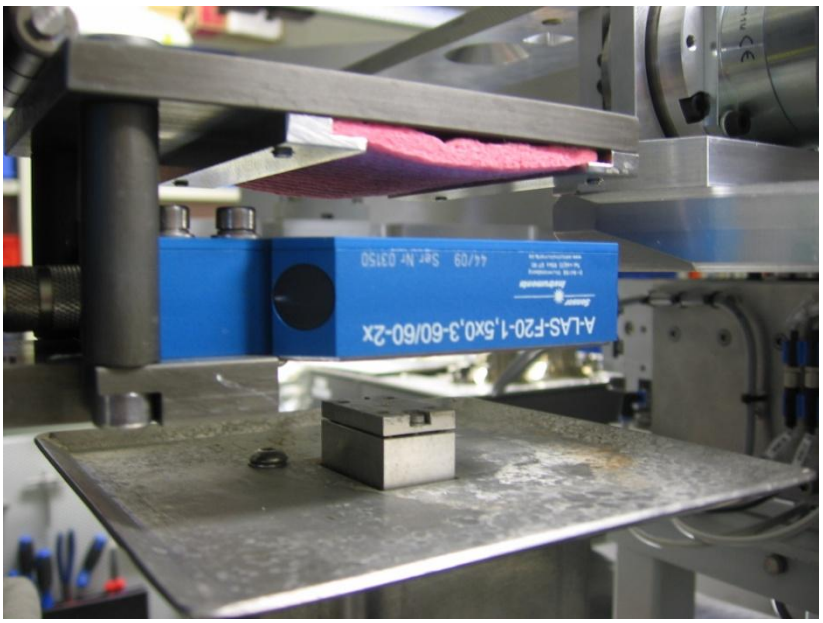
1. Soldering flux control during the selective flux application

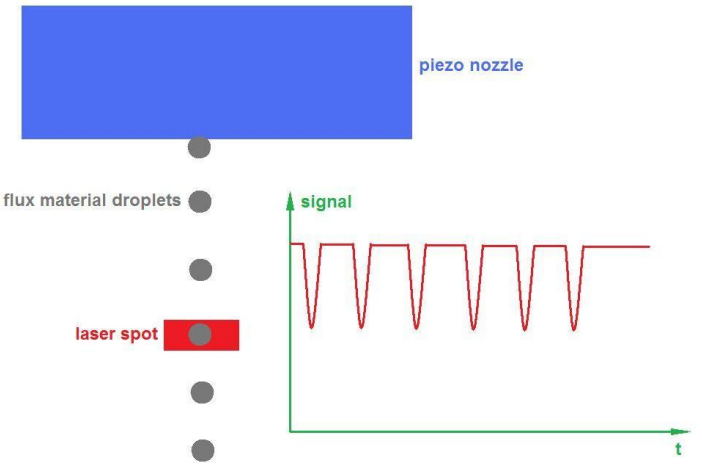
Selective soldering in combination with selective flux application becomes more and more popular. Especially manufacturers of mixed assembled PCB boards benefit from this new technology. Only the areas which will be soldered will be covered from the soldering flux. To achieve this, a piezo nozzle is used to generate small flux droplets with a diameter of a few tenth of a millimeter. At this the scattering angle is very small which make sure, that the droplets strike only the scheduled area. Due to the fact, that the aperture of the piezo nozzle is very small, the nozzle tends to be blocked sporadically from remnants of the flux, thus the direction of flight as well as the size of the droplets can be negative influenced. With the spray jet control system **A-LAS-CON1** (formerly A-LAS-CON1-JET) in connection with an **A-LAS-…** analog laser sensor the amount of flux as well as the direction of flight of the droplets can be controlled. Mainly small apertures will be used for the respective **A-LAS** sensor, which helps to increase the signal attenuation due to a droplet. One dimensional as well as two dimensional systems (cross wise) exists. The scan frequency (10 kHz) of the **A-LAS-CON1** (formerly A-LAS-CON1-JET) system is adapted to the repetition rate of the droplets of approximately 5 ms. The screen shots show a sequence of four (six) droplets with a different diameter. For the evaluation of the spray volume INT of one sequence the area dA will be divided by the area A and multiplied with a certain constant factor. T inform

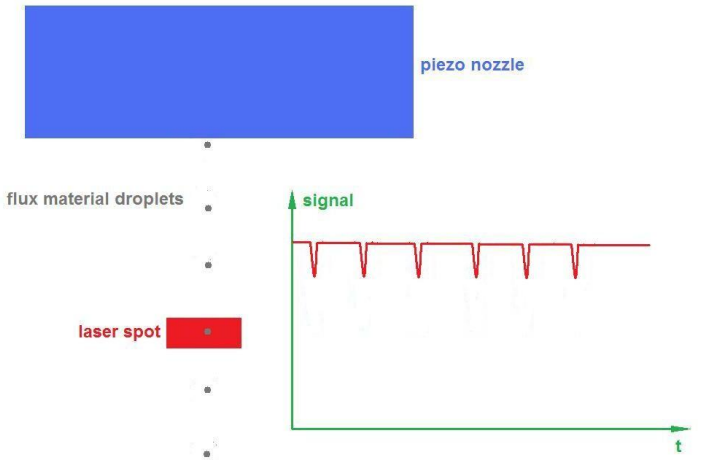


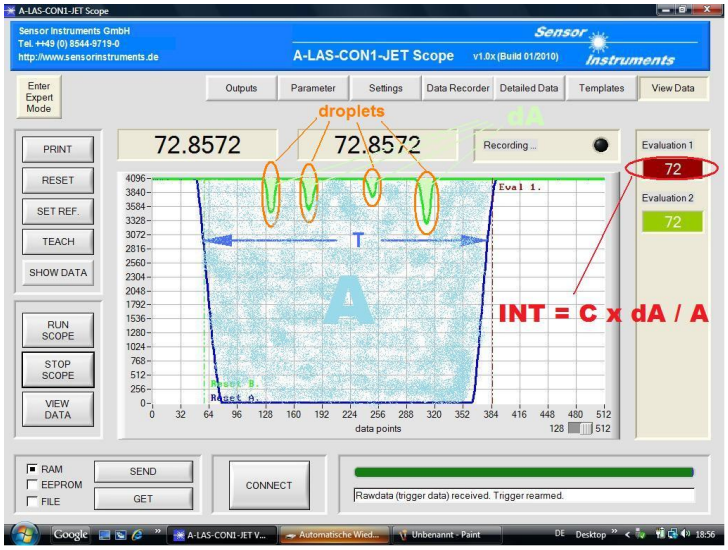


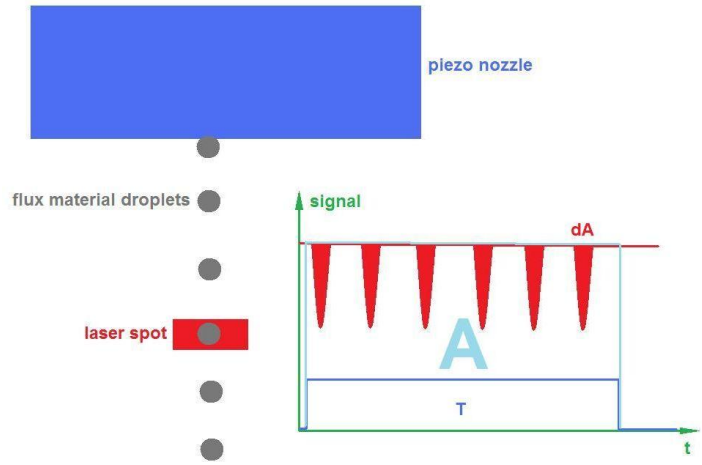


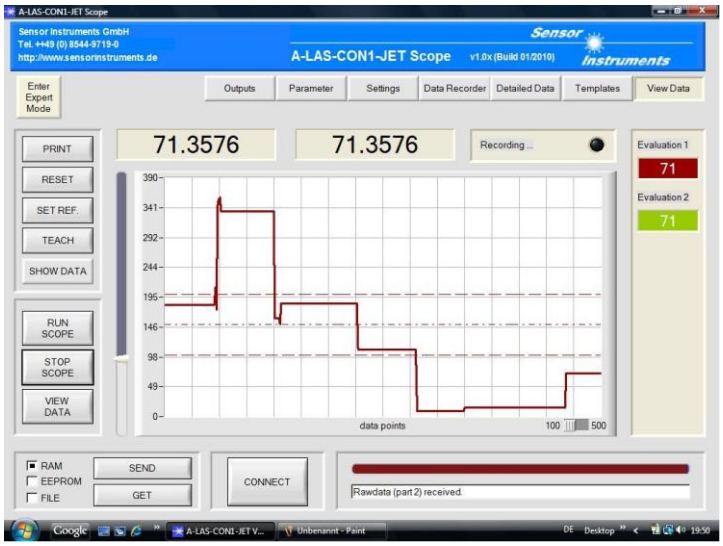
about the time length of the sequence. The system is working either in the self trigger mode or in the external trigger mode. In the self trigger mode the system is detecting the first pulse (droplet) and the values will be integrated as long as the last droplet has passed the laser light curtain. In the external trigger mode the values will be integrated as long as the external pulse is present. In the software an upper as well as a lower threshold can be set for the INT value, thus the operator will be informed about the correct spray volume with a digital signal (HI,LO,GO). Furthermore the system delivers an analog signal which is proportional to the INT value.

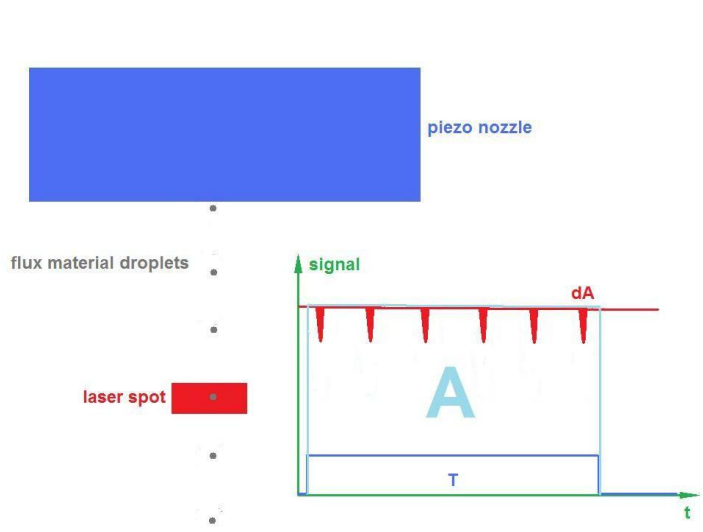


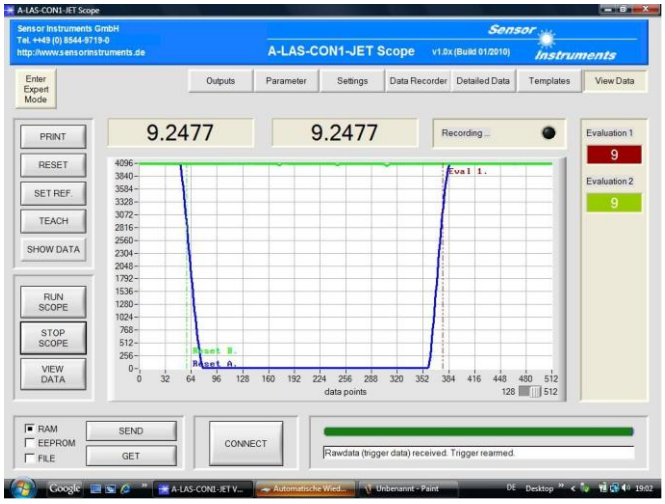








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http://www.sensorinstruments.de
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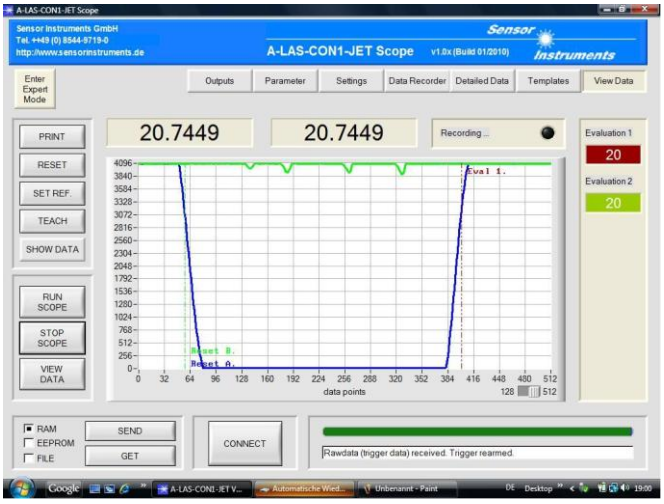
Sensor Instruments
Enter Expert Mode
Outputs
Parameter
Settings
Data Recorder
Detailed Data
Templates
View Data
PRINT
RESET
SET REF.
TEACH
SHOW DATA
RUN SCOPE
STOP SCOPE
VIEW DATA
9.2477
9.2477
Recording ...
Evaluation 1
9
Evaluation 2
9
Eval 1.
Reset B.
Reset A.
data points
RAM
EEPROM
FILE
SEND
GET
CONNECT
Rawdata (trigger data) received. Trigger rearmed.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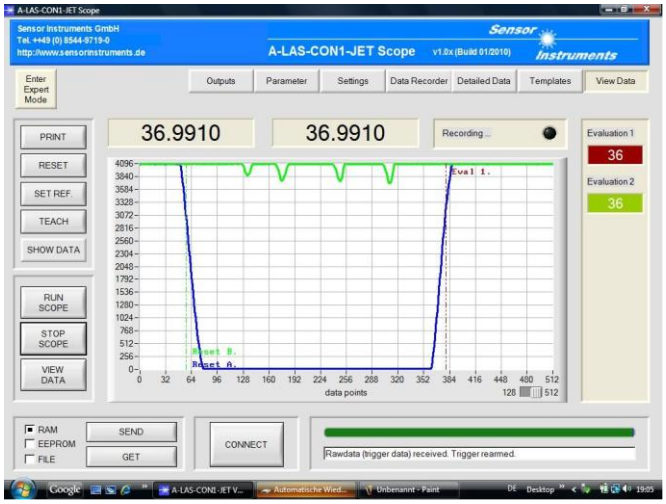
RUN SCOPE
STOP SCOPE
VIEW DATA
20.7449
20.7449
Recording ...
Evaluation 1
20
Evaluation 2
20
Eval 1.
Reset B.
Reset A.
data points
RAM
EEPROM
FILE
SEND
GET
CONNECT
Rawdata (trigger data) received. Trigger rearmed.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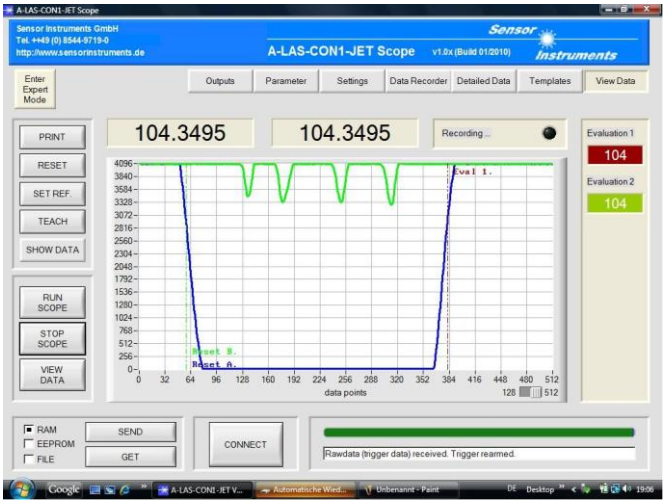
RUN SCOPE
STOP SCOPE
VIEW DATA
36.9910
36.9910
Recording ...
Evaluation 1
36
Evaluation 2
36
Eval 1.
Reset B.
Reset A.
data points
RAM
EEPROM
FILE
SEND
GET
CONNECT
Rawdata (trigger data) received. Trigger rearmed.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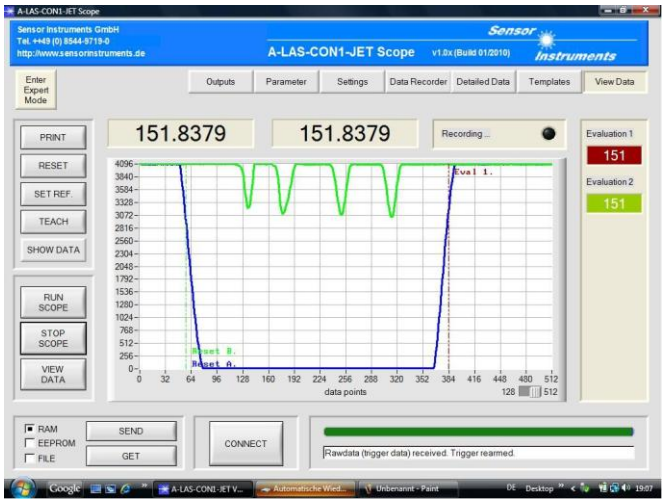
RUN SCOPE
STOP SCOPE
VIEW DATA
104.3495
104.3495
Recording ...
Evaluation 1
104
Evaluation 2
104
Eval 1.
Reset B.
Reset A.
data points
RAM
EEPROM
FILE
SEND
GET
CONNECT
Rawdata (trigger data) received. Trigger rearmed.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RUN SCOPE
STOP SCOPE
VIEW DATA
151.8379
151.8379
Recording ...
Evaluation 1
151
Evaluation 2
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Reset A.
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EEPROM
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GET
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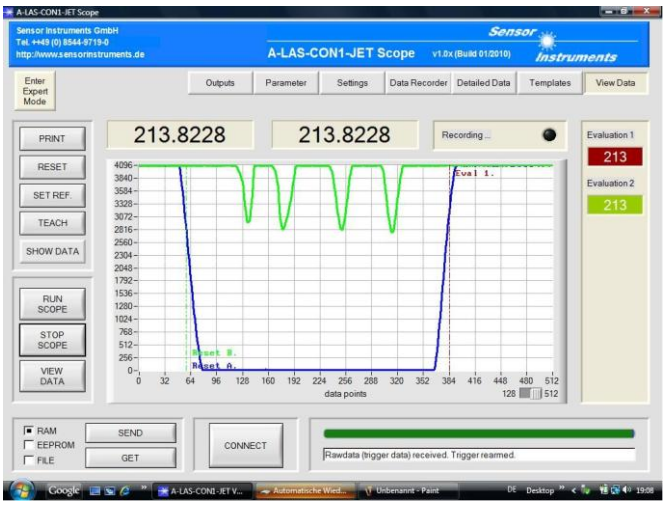
Rawdata (trigger data) received. Trigger rearmed.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PRINT
RESET
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TEACH
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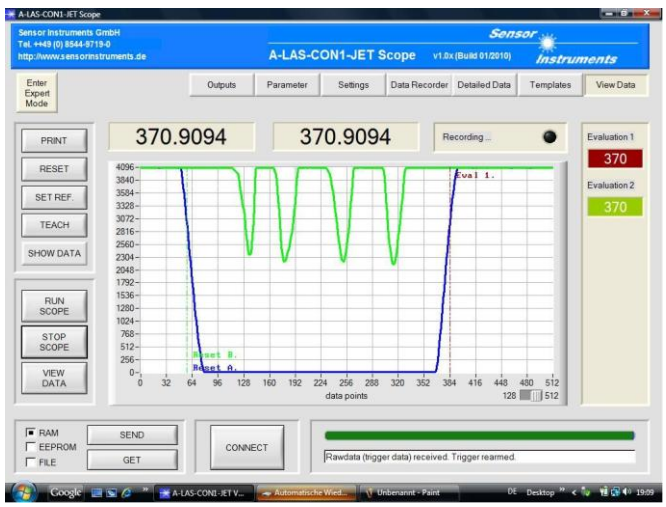
RUN SCOPE
STOP SCOPE
VIEW DATA
213.8228
213.8228
Recording ...
Evaluation 1
213
Evaluation 2
213
Eval 1.
Reset B.
Reset A.
data points
RAM
EEPROM
FILE
SEND
GET
CONNECT
Rawdata (trigger data) received. Trigger rearmed.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RUN SCOPE
STOP SCOPE
VIEW DATA
370.9094
370.9094
Recording ...
Evaluation 1
370
Evaluation 2
370
Eval 1.
Reset B.
Reset A.
data points
RAM
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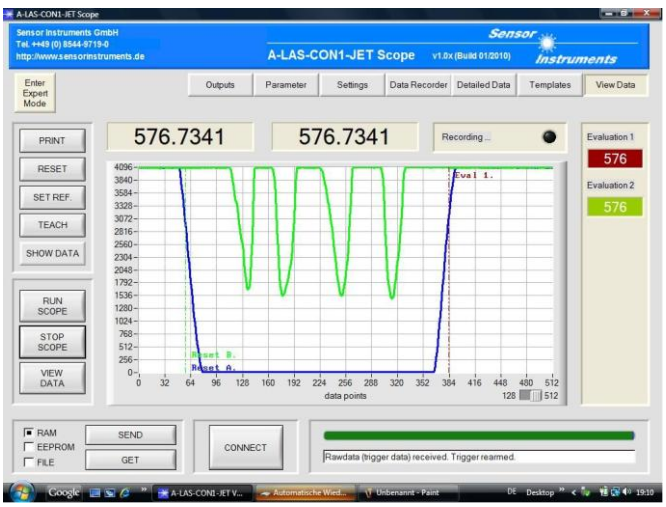
FILE
SEND
GET
CONNECT
Rawdata (trigger data) received. Trigger rearmed.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RUN SCOPE
STOP SCOPE
VIEW DATA
576.7341
576.7341
Recording ...
Evaluation 1
576
Evaluation 2
576
Eval 1.
Reset B.
Reset A.
data points
RAM
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FILE
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