
NANODRIVE DATA FORMAT

The data file contains several parts: the [Data Version] section, the [Data Parameters] section, the [PreProcessing] section, the [System Info] section, and the [Data] section. The order of sections and field could be varied.

[Data Version]

This section describes the program name what the data belongs to and data version.

[Data Parameters]

The section contains parameters of measured data. The <Leveling> field points has this data been already processed.

[PreProcessing]

The section tells that data possible was processed (leveled) in the data acquisition program.

[Piezo Parameters]

The section contains the piezo scanner X, Y, and Z transfer coefficients.

[System Info]

The section informs about system parameters what were used for scanning.

[Data]

The last section has data itself in the binary format. In general, the measured data is a float format data (four bytes) and it represents either some voltage what is taken from a measurement channel of the system or the number of counts if the channel is Photo Counter.

[Data Version]

Program=<The name of the program, **String**>

Version=<The number of the data version, **String**>

[Data Parameters]

CreationTime=<The time when data was created, **String**>

DataName=<The name of measured data, **String**>

DataOffset=<The first byte position of the data in the file, **Integer**>

ScanRangeX=<The scan area size in the X direction, **Float**, μm >

ScanRangeY=<The scan area size in the Y direction, **Float**, μm >

OffsetX=<The scan area offset in the X direction, **Float**, μm >

OffsetY=<The scan area offset in the Y direction, **Float**, μm >

Rotation=<The scan area rotation angle, **Float**, $^\circ$ >

ScanningRate=<The scanning rate, **Float**, $\mu\text{m/s}$ >

ResolutionX=<The number of measured point per row, **Integer**>

ResolutionY=<The number of measured rows, **Integer**>

ScanDirection=<FORWARD / BACKWARD> **String**>

ZTransferCoefficient=<The transfer coefficient, “the gate to the World”, **Float**, Unit/V >

Leveling=<The leveling type, **String**>

[PreProcessing]

Leveling=<The leveling type, **String**>

[Piezo Parameters]

X Transfer Coefficient=<**Float**, $\mu\text{m}/\text{V}$ >

Y Transfer Coefficient=<**Float**, $\mu\text{m}/\text{V}$ >

Z Transfer Coefficient=<**Float**, $\mu\text{m}/\text{V}$ >

[System Info]

Mode=<Microscope mode, **String**>

SetPoint=<The setpoint value, **Float**, V>

GainP=<The feedback proportional gain, **Float**, (gain ratio), **Float** >

GainI=<The integral proportional gain, **Float**, (gain ratio), **Float** >

GainD=<The feedback differential gain, **Float**, (gain ratio), **Float** >

XLinGainP=<The X closedloop proportional gain, **Float**, (gain ratio), **Float** >

XLinGainI=<The X closedloop integral gain, **Float**, (gain ratio), **Float** >

XLinGainD=<The X closedloop differential gain, **Float**, (gain ratio), **Float** >

YLinGainP=<The Y closedloop proportional gain, **Float**, (gain ratio), **Float** >

YLinGainI=<The Y closedloop integral gain, **Float**, (gain ratio), **Float** >

YLinGainD=<The Y closedloop differential gain, **Float**, (gain ratio), **Float** >

DriveFrequency=<The tapping drive frequency, **Float**, kHz>

DriveAmplitude=<The tapping drive amplitude, **Float**, V>

DrivePhase=<The tapping drive phase, **Float**, °>

InputGainSelector=<The input gain selector, **String**>

[Data]

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Example:

[Data Version]

Program=SPMLab

Version=1.00

[Data Parameters]

CreationTime=Apr/24/2007 1:15:37 PM

DataName=Height Sensor

DataOffset= 865

ScanRangeX=90.0000 μm

ScanRangeY=90.0000 μm

OffsetX=0.0000 μm

OffsetY=0.0000 μm

Rotation=0.0 $^{\circ}$

ScanningRate=360.0000 $\mu\text{m/s}$

ResolutionX=128

ResolutionY=128

ScanDirection=BACKWARD

ZTransferCoefficient=1.0000 V/V

Leveling=None

[PreProcessing]

Leveling=None

[Piezo Parameters]

X Transfer Coefficient=4.772518 $\mu\text{m/V}$

Y Transfer Coefficient=5.297536 $\mu\text{m/V}$

Z Transfer Coefficient=0.348771 $\mu\text{m/V}$

[System Info]

Mode=Tapping

SetPoint=0.308200 V

GainP=1.000000 (100.000000)

GainI=0.120000 (100.000000)

GainD=0.000000 (100.000000)

XLinGainP=0.800000 (10.000000)

XLinGainI=0.100000 (10.000000)

XLinGainD=0.000000 (10.000000)

YLinGainP=0.800000 (10.000000)

YLinGainI=0.100000 (10.000000)

YLinGainD=0.000000 (10.000000)

DriveFrequency=0.000000 kHz

DriveAmplitude=0.000000 V

DrivePhase=0.0 $^{\circ}$

InputGainSelector=IOMOD_IN_GAIN_1

[Data]

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