A. REMOTE CONTROL

The USB 1.1 interface is the serial one working with 12 MHz clock which enables one to control remotely the unit. Its speed is relatively high and it ensures the common usage of USB in all produced nowadays Personal Computers.

The functions, which are developed in order to control data flow in the serial interfaces, ensure:

- Bi-directional data transmission,
- Remote control of the instrument.

The user, in order to programme the serial interface, has to:

1. send "the function code",
2. send an appropriate data file

or

3. receive a data file.

A.1. Input / Output transmission types

The following basic input / output transmission types (called functions) are available:

#1 input/output of the control setting codes,

#2 read-out of the measurement results in the **VLM** mode,

#3 read-out of the measurement results in the **1/1 OCTAVE** mode

#4 read-out of the data file from the internal flash-disc,

#7 special control functions,

#9 writing the data file into the internal flash-disk.

A.2. FUNCTION #1 - Input/Output of the control setting codes

#1 function enables the user to send the control setting codes to the instrument and read out a file containing the current control state. A list of the control setting codes is given in Tab. A.1. The format of #1 function is defined as follows:

#1,Xccc,Xccc,(...),Xccc;

or

#1,Xccc,X?,Xccc,(...),X?,Xccc;

where:

X - the group code, **ccc** - the code value,
X? - the request to send the current X code setting.

The instrument outputs in this case a control settings file for all requests X? in the following format:

#1,Xccc,Xccc,(...),Xccc;

In order to read out all current control settings the user should send to the device the following sequence of characters:

#1;

The instrument outputs in this case a file containing all control settings given in Tab. A1 in the format:

#1,Xccc,Xccc,(...),Xccc;

Example: The instrument sends the following sequence of characters as an answer for the mentioned above request:

#1,U100,N1234,WL1.12,W1.12.1,Q0.01:1,Q0.03:2,Q0.05:3,q120.00:1,q120.00:2,q120.00:3,M4,I17:1,I17:2,I16:3,E4:1,E4:2,E4:3,G29:1,G0:2,G0:3,g0,d1s,D10s,K5,L0,Y3,y15,XA1,XR0,XP0,XM0,Xm1,Xf910:1,Xf910:2,Xf910:3,XF1:1,XF1:2,XF1:3,Xb115:1,Xb115:2,Xb115:3,XB0:1,XB0:2,XB0:3,XV2,XT0,XQ4,XL,S0,T1,e480,J1.10:1,J1.01:2,J1.03:3,m0,k3,s4,l100,p2,n10;

means that:

- the SV 100 is investigated (U100);
- its number is 1234 (N1234);
- the instrument has the **LEVEL METER** software version number 1.12 (WL1.12);
- the **DOSE METER** software version number is 1.12.1 (W1.12.1);
- the calibration factor is equal to 0.01 dB (Q0.01:1) in channel X, calibration factor is equal to 0.03 dB (Q0.03:2) in channel Y and calibration factor is equal to 0.05 dB (Q0.05:3) in channel Z;
- the calibration level is equal to 120.00 dB (q120.00:1) in channel X, calibration level is equal to 120.00 dB (q120.00:2) in channel Y and calibration factor is equal to 120.00 dB (q120.00:3) in channel Z;
- the **DOSE METER** mode is selected (M4);
- the **Wd** filter is selected in channel X (I17:1);
- the **Wd** filter is selected in channel Y (I17:2);
- the **Wk** filter is selected in channel Z (I16:3);
- the **1.0s** detector is selected in channel X (E4:1);
- the **1.0s** detector is selected in channel Y (E4:2);
- the **1.0s** detector is selected in channel Z (E4:3);
- the **PEAK**, **MAX**, **RMS** and **VDV** values are stored in the files of the logger from channel X, (G29:1);
- the logger's buffer is not filled by the results from channel Y (G0:2);
- the logger's buffer is not filled by the results from channel Z (G0:3);
- the **1/1 OCTAVE** results are not saved in the logger's file (g0);
- the results are stored in a logger's file every 1 second (d1s);
- the integration period is equal to 10 seconds (D10s);
- the measurement has to be repeated 5 times (K5);
- the linear detector is selected to the **LEQ** calculations (L0);
- the delay of the start of the measurements is equal to 3 seconds (Y3);
- the delay of the stop of the measurement is equal to 15 seconds (y15);
- the **AUTO SAVE** function is switched on (XA1);
- the RAM file is switched off (XR0);
- the file replacement is switched off (XP0);
- the saving of Max spectrum is switched off (XM0);
- the saving of Min spectrum is switched on (Xm1);
- the **E**xposure **A**ction **V**alue in channel X is equal to 9.10 (**Xf910:1**);
- the **E**xposure **A**ction **V**alue in channel Y is equal to 9.10 (**Xf910:2**);
- the **E**xposure **A**ction **V**alue in channel Z is equal to 9.10 (**Xf910:3**);
- the **E**xposure **A**ction **V**alue unit in channel X is $m/s^{1.75}$ (**XF1:1**);
- the **E**xposure **A**ction **V**alue unit in channel Y is $m/s^{1.75}$ (**XF1:2**);
- the **E**xposure **A**ction **V**alue unit in channel Z is $m/s^{1.75}$ (**XF1:3**);
- the **E**xposure **L**imit **V**alue in channel X is equal to 1.15 (**Xb115:1**);
- the **E**xposure **L**imit **V**alue in channel Y is equal to 1.15 (**Xb115:2**);
- the **E**xposure **L**imit **V**alue in channel Z is equal to 1.15 (**Xb115:3**);
- the **E**xposure **L**imit **V**alue unit in channel X is m/s^2 (**XB0:1**);
- the **E**xposure **L**imit **V**alue unit in channel Y is m/s^2 (**XB0:2**);

- the **E**xposure **L**imit **V**alue unit in channel Z is m/s^2 (**XB0:3**);
- the **EAV** alarm source is selected (**XV2**);
- the measure triggering is switched off (XT0);
- the RMS value from channel Z is treated as a source of the measure triggering signal (XQ4);
- the measure trigger level is equal to 123 dB (XL123);
- the instrument is in the Stop state (S0);
- the logger is active (T1);
- the exposition time is set to 8 hours (e480);
- the **1.10** coefficient is selected in channel X, for calculating Vector (J1.10:1);
- the **1.01** coefficient is selected in channel Y, for calculating Vector (J1.01:2);
- the **1.03** coefficient is selected in channel Z, for calculating Vector (J1.03:3);
- the time-domain signal recording is switched off (m0);
- the samples from channel X and channel Y are stored in a logger's file (k3);
- the RMS value from channel Z is treated as a source of the triggering signal (s4);
- the trigger level is equal to 100 dB (l100);
- the additional recording time before the triggering is equal 2 seconds (p2);
- the recording time is equal to 10 seconds (n10).

Note: *All bytes of that transmission are ASCII characters.*

A.3. FUNCTION #2 - measurement results read-out in the VLM mode

#2 function enables one to read-out the current measurement result from the selected channel in the **VLM** mode.

Notice: *This function can also be programmed while measurements are taking place. In this case, the RMS values measured* ***after entering #2 function*** *are sent out.*

#2 function has the format defined as follows:

#2,p,X?,X?,X?,(...),X?;

where:
X - the code of the result,
p - the number of channel:
1 - channel **X**,
2 - channel **Y**,
3 - channel **Z**.

Notice: *After finishing the measurement,* ***#2*** *function is no longer active and has to be reprogrammed in order to read-out successive measurements.*

The instrument sends the values of results in the format defined as follows:

#2,p,Xccc,Xccc,Xccc,(...),Xccc; (where **p** - the number of channel)

or

#2,?; (when the results are not available).

The codes of the results from the **DOSE METER** mode are defined as follows:

v the under-range flag (ccc equals to 0 when the overload did not occur, 1 when the under-range took place during the last measurement period);
V the overload flag (ccc equals to 0 or 1);
T time of the measurement (ccc – value in seconds);
P the **PEAK** value (ccc – the value in dB);
Q the **P_P** value (ccc – the value in dB);
M the **MAX** value (ccc – the value in dB);
R the **RMS** value (ccc – the value in dB);
H the **VDV** result (ccc – the value in dB);
F the **CRF** result;
s the **MSDV** value (ccc – the value in dB);
O the **VEC** result (ccc – the value in dB);
a the **CDose** result (ccc – the value in dB);
b the **DDose** result (ccc – the value in dB);
c the **CExp** result (ccc – the value in dB);
f the **A(8)** result (ccc – the value in dB);
g the **EAVTT** result (ccc – the value in s);
h the **EAVTL** result (ccc – the value in s);
i the **ELVTT** result (ccc – the value in s);
j the **ELVTL** result (ccc – the value in s);
m the **NDNTT** result (ccc – the value in s);
n the **NDNTL** result (ccc – the value in s).

The exemplary results of the instrument's response after sending to it the following sequence of characters: **#2,1;** coming from the channel **X** are given below:

#2,1,v1,V0,T7,P83.2,Q88.3,M75.0,R72.4,H80.9,F3.47,s80.9,O82.6,a92.9,b111.0,c45.3,f81.4,o83.5,r81.4,p92.9,g172800,h172800,i172800,j172800,m172800,n172800;

Notice: *The presented above order of the measurement results sent out by the instrument does not depend about the characters sent to the unit.*

Example: After sending to the instrument the string:

#2,1,T?,R?,V?,P?;

the unit sends out the results of measurement coming from the channel X in predefined, described above, order:

#2,1,V0,T7,P83.2,R72.4;

Notice: *The value displayed on the screen during the result's presentation is sent out from the instrument in the case when* ***nn*** *is not given after* ***X*** *character.*

Notice: *All bytes of that transmission are ASCII characters.*

A.4. FUNCTION #3 - Read-out of the measurement results in 1/1 octave modes

#3 function enables one to read out the current measurement results in **1/1 OCTAVE** mode.

#3 function format is defined as follows:

#3; The device responds, sending the last averaged spectrum.

#3,A; The device responds, sending the last averaged spectrum

#3,I; The device responds, sending the last instantaneous spectrum

#3,M; The device responds, sending the last max spectrum

#3,N; The device responds, sending the last min spectrum

The device responds, sending the last measured spectrum (when the instrument is in STOP state) or currently measured spectrum (when the instrument is in RUN state) in the following format:

#3;<Status Byte> <LSB of the transmission counter> <MSB of the transmission counter> <X channel data byte> (...) <X channel data byte> <Y channel data byte> (...) <Y channel data byte> <Z channel data byte> (...) <Z channel data byte>

Status Byte gives the information about the current state of the instrument.

D7	D6	D5	D4	D3	D2	D1	D0

where:

D7 = 0 means that "overload does not happen" in Z channel,
= 1 means that “overload appeared” in Z channel,
D6 = 0 means that "overload does not happen" in Y channel,
= 1 means that “overload appeared” in Y channel,
D5 = 0 means that "overload does not happen" in X channel,
= 1 means that “overload appeared” in X channel,
D4 = 0 the instantaneous current result (RUN State),
= 1 the final result (STOP State),
D3 = 1 reserved,
D2 = 1 the **1/1 OCTAVE** results,
D1,D0 – type of spectrum:
00 means that averaged spectrum,
01 means that instantaneous spectrum,
10 means that max spectrum,
11 means that min spectrum,

Note: *The measurement result is coded in binary form as dB•10 (e.g. 34.5 dB is sent as binary number 345).*

A.5. FUNCTION #4 - read-out of the data file from the internal flash-disc

#4 function enables the user to read-out the data file from the internal Flash-disc memory. The data file formats are given in Appendix B.

#4 function formats are defined as follows:

#4,0,\; the file containing the catalogue,

#4,0,?; the count of the files,

#4,0,index,count; the part of the file containing the catalogue,

where:

index - first record,
count - number of records in the catalogue.

#4,1,fname; the file containing the measurement results,
#4,1,fname,?; file size,
#4,1,fname,offset,length; the part of the file containing the measurement results,
#4,1<address,length; the part of the file containing the measurement results,

where:
fname - name containing not more than eight characters,
offset - offset from the beginning of the file,
length - number of bytes to read,
address - absolute internal address,

#4,2,fname; the file containing the logger results,
#4,2,fname,?; file size,
#4,2,fname,offset,length; the part of file containing the logger results,

where:
fname - name containing not more than eight characters
offset - offset from the beginning of the file,
length - number of bytes to read,

#4,3; the RAM file,
#4,3,?; size of RAM file,
#4,3,offset,length; the part of RAM file,

where:
offset - offset from the beginning of the RAM file,
length - number of bytes to read,

#4,4; the Settings file,
#4,4,?; size of Settings file,
#4,4,offset,length; the part of Settings file,

where:
offset - offset from the beginning of the Settings file,
length - number of bytes to read,

Notice: *The "\" character is treated as the file name of the catalogue and must be sent to the instrument.*

All data words are sent as **<LSB>**,**<MSB>**.

When an error is detected in the file specification or data, the instrument will send:

#4,?;

The catalogue of the files is a set of the records containing 16 words (16 bits each). Each record describes one file saved in the instrument's Flash-disc. The record structure is as follows:

words 0 - 3 8 characters of the file name,
word 4 file type (binary number),
word 5 reserved,
word 6 the least significant word of the file size,
word 7 the most significant word of the file size,
words 8 - 15 reserved.

A.6. FUNCTION #7 - special control functions

#7 function enables the user to perform special control functions. **Some of them should be used with the extreme care.**

#7 function formats are defined as follows:

#7,CB;

This function clears the logger memory - all logger files will be deleted. The function returns **#7,CB;** This function is not accepted while the instrument is in the RUN state.

#7,BF;

This function returns logger memory free space in the format: **#7,BF,ddddd;** (**ddddd** - number of bytes in decimal format).

#7,BA;

This function returns logger memory size in the format: **#7,BA,ddddd;** (**ddddd** - number of bytes in decimal format).

#7,IF;

This function returns file memory free space in the format: **#7,IF,ddddd;** (**ddddd** - number of bytes in decimal format).

#7,IA;

This function returns file memory size in the format: **#7,IA,ddddd;** (**ddddd** - number of bytes in decimal format).

#7,BN;

This function returns the number of logger files created to the current time in the format: **#7,BN,ddddd;** (**ddddd** - number of logger files in decimal format).

#7,RT;

This function returns current real time clock settings in the format: **#7,RT,hh,mm,ss,DD,MM,YYYY;** where **hh:mm:ss** denotes the time and **DD/MM/YYYY** gives the date.

#7,RT,hh,mm,ss,DD,MM,YYYY;

This function sets the current real time clock and returns the sequence of characters: **#7,RT;**

#7,AS;

Reserved.

#7,IC;

Reserved.

#7,SC;

Reserved.

#7,DA;

This function deletes all files (result files and setup files). The function returns **#7,DA;**
This function is not accepted while the instrument is in the RUN state.

#7,LP;

Reserved.

#7,BP;

Reserved.

#7,ME;

This function returns the size of internal flash memory in format **#7,ME,FlashMB;**

#7,LS,setup_name;

This function loads setup and writes settings into EEPROM. The selected file must exist. The function returns **#7,LS;**

#7,SS;

This function creates setup file based on the current settings. The function returns **#7,SS;**

#7,CS;

This function clears current setup.

#7,DF;
#7,DF,file_name;
#7,DF,file_name<address;

This function deletes all result files or deletes file specified by **file_name** or internal flash address.

#7,DS;
#7,DS,file_name;
#7,DS,file_name<address;

This function deletes all setup files or deletes file specified by **file_name** or internal flash address.

#7,US;

This function returns unit subversion.

#7,BV;

Reserved.

#7,LA;

This function returns current language for Advanced Dosimeter mode in the format: **#7,LA,xx;** where **xx** is language codes: **GE** (German), **EN** (English), **IT** (Italian), **PL** (Polish), **RU** (Russian), **HU** (Hungarian), **TU** (Turkish), **NL** (Flemish), **FR** (French), **SP** (Spanish).

#7,PO;

This function switches the instrument to standby mode.

#7,WS;

Reserved.

#7,PI;

This function returns PIC version.

#7,MM;

This function returns Measurement Mode.

#7,MM,x;

This function sets the Measurement Mode (x:0 - Measure, x:1 - Calibration) and returns the following sequence of characters: **#7,MM;**

#7,IM;

This function returns Mode.

#7,IM,x;

This function sets the Mode (x:0 - Simple Dosimeter, x:1 - Advanced Dosimeter) and returns the following sequence of characters: **#7,IM;**

#7,PF;

This function returns Pressure Force for Advanced Dosimeter mode in 0.1N.

#7,PF,x;

This function sets the Pressure Force and returns the following sequence of characters: **#7,PF;**

#7,CP;

This function returns selected **Standard** for Advanced Dosimeter mode in the format: **#7,CP,xx;** where **xx** is the country code: **UK** (English), **IT** (Italian), **PL** (Polish), **FR** (French), **UD** (User defined).

#7,TP;

This function returns temperature in ℃.

#7,RF;

Reserved.

#7,SD;

This function returns Standby Delay for Advanced Dosimeter mode in seconds.

#7,SD,x;

This function sets the Standby Delay for Advanced Dosimeter mode and returns the following sequence of characters: **#7,SD;**

#7,AF;

This function returns Alarm Flags.

#7,BV;

This function returns power source voltage in 10 mV.

#7,PM;

Reserved.

For the unknown function and/or in the case of the other error, all these functions return the following sequence of characters: **#7,?;**

A.7. FUNCTION #9 - write-in the data file into the internal flash-disc

#9 function enables the user to write-in the data file into the internal Flash-disc memory. The data file formats are given in Appendix B.

#9 function formats are defined as follows:

#9,FILE_TYPE,FILE_LENGTH,DATA

where:

FILE_TYPE	type of the file 1 - result file, 2 - setup file,
FILE_LENGTH	length of the file in bytes,
DATA	binary content of the file.

A.8. Control setting codes

The control setting codes used in the SV 100 instrument (the internal software revision 1.12 / 1.12.1) are given in the table below.

Table A.1. Control setting codes

Group name	Group code	Code description
Unit type	**U**	U100 (read only)
Serial number	**N**	Nxxxx (read only)
LEVEL METER software version	**WL**	WLxxx xxx - revision number (read only)
DOSE METER software version	**W**	Wyyy yyy - revision number (read only)
Calibration factor	**Q**	Qnnnn:c nnnn - real number with the value of the calibration factor ∈ (-99.9 ÷ 99.9) c - the number of the channel: 1: X, 2: Y, 3: Z
Calibration level	**q**	qnnnn:c nnnn - real number with the value of the calibration level ∈ (95.00 ÷ 145.00) c - the number of the channel: 1: X, 2: Y, 3: Z
Measurement function	**M**	M2 - **1/1 OCTAVE** analyser M4 - **DOSE METER**
Filter type in channel n for Advanced Dosimeter mode	**I**	I16:n **Wk** filter for channel n I17:n **Wd** filter for channel n I20:n **Wm** filter for channel n I23:n **Wb** filter for channel n I24:n **Wf** filter for channel n I116:n band limit of **Wk** filter for channel n I117:n band limit of **Wd** filter for channel n I120:n band limit of **Wm** filter for channel n I123:n band limit of **Wb** filter for channel n I124:n band limit of **Wf** filter for channel n n - the number of the channel: 1: X, 2: Y, 3: Z
Detector type in channel n	**E**	E4:n - **1.0s** detector in profile n n - the number of the channel: 1: X, 2: Y, 3: Z

Logger type in channel n for Advanced Dosimeter mode	**G**	Gx:n - x - sum of the following flags flags: 1 - logger with **PEAK** values in profile n 2 - logger with **P–P** values in profile n 4 - logger with **MAX** values in profile n 8 - logger with **RMS** values in profile n 16 - logger with **VDV** values in profile n n - the number of the channel: 1: X, 2: Y, 3: Z
Storing the results of **1/1 OCTAVE** analysis in logger's file in Advanced Dosimeter mode	**g**	g0 - switched off (**[ ]**) g1 - switched on (**[√]**)
Vector Coefficient for Advanced Dosimeter mode	**J**	Jnnn:c nnn - real number with the value of the vector coefficient ∈ (0.00 ÷ 2.00) c - the number of the channel: 1: X, 2: Y, 3: Z
Logger step for Advanced Dosimeter mode	**d**	Dnns - nn number in seconds ∈ (1 ÷ 60) dnnm - nn number in minutes ∈ (1 ÷ 60)
Integration period for Advanced Dosimeter mode	**D**	D0 - infinity (measurement finished by pressing the **Stop** or remotely - by sending S0 control code) Dnns - nn number in seconds Dnnm - nn number in minutes Dnnh - nn number in hours
Repetition of the measurement cycles (RepCycle) for Advanced Dosimeter mode	**K**	K0 - infinity (measurement finished by pressing the **Stop** or remotely - by sending S0 control code) ..... Knnnn - nnnn number of repetitions ∈ (1 ÷ 1000)
Detector type in the **RMS** function	**L**	L0 - **LINEAR** L1 - **EXPONENTIAL**
Exposure Time for Advanced Dosimeter mode	**e**	ennn - nnn time in minutes ∈ (1 ÷ 480)
Logger for Advanced Dosimeter mode	**T**	T0 - switched off (**[ ]**) T1 - switched on (**[√]**)
Delay in the start of measurement for Advanced Dosimeter mode	**Y**	Ynn - nn delay given in seconds ∈ (0 ÷ 60)
Delay in the stop of measurement for Advanced Dosimeter mode	**y**	ynn - nn delay given in seconds ∈ (1 ÷ 60)
State of the instrument (Stop or Start)	**S**	S0 - **STOP** S1 - **START**
Time-domain signal recording mode	**m**	m0 - switched off (**OFF**) m1 - recording all measurement m2 - recording on trigger **SLOPE +** m3 - recording on trigger **SLOPE –** m4 - recording on trigger **LEVEL +** m5 - recording on trigger **LEVEL –**
Time-domain signal recording: stored channel	**k**	kx - x - sum of the following flags: 1 - channel X 2 - channel Y 4 - channel Z
Time-domain signal recording: source of the triggering signal	**s**	sx - x - sum of the following flags: 1 - the RMS in channel X 2 - the RMS in channel Y 4 - the RMS in channel Z

Time-domain signal recording: triggering level	**I**	Innn - nnn level in dB ∈ (70 ÷ 140)
Time-domain signal recording: pre-trigger time	**p**	pnnn - nnn time in second ∈ (0 ÷ 7)
Time-domain signal recording: recording time	**n**	nkkk - kkk time in second ∈ (1 ÷ 1800) n0 - recording to the end of measurement
Exposure **A**ction **V**alue for **Standard** set to User Defined and for Advanced Dosimeter mode	**Xf**	Xfnnn:c nnn - **E**xposure **A**ction **V**alue given in 0.01 c - the number of the channel: 1: X, 2: Y, 3: Z
Exposure **A**ction **V**alue unit for **Standard** set to User Defined and for Advanced Dosimeter mode	**XF**	Unit for **E**xposure **A**ction **V**alue: XF0:c - m/s^2 XF1:c - $m/s^{1.75}$ c - the number of the channel: 1: X, 2: Y, 3: Z
Exposure **L**imit **V**alue for **Standard** set to User Defined and for Advanced Dosimeter mode	**Xb**	Xbnnn:c nnn - **E**xposure **L**imit **V**alue given in 0.01 c - the number of the channel: 1: X, 2: Y, 3: Z
Exposure **L**imit **V**alue unit for **Standard** set to User Defined and for Advanced Dosimeter mode	**XB**	Unit for **E**xposure **L**imit **V**alue: XB0:c - m/s^2 XB1:c - $m/s^{1.75}$ c - the number of the channel: 1: X, 2: Y, 3: Z
Alarm Mask for Advanced Dosimeter mode	**XV**	XVx - x - activated alarm defined as a sum of the following flags: 1 - **EAV** 2 - **ELV** 4 - **NDN**
Auto Save for Advanced Dosimeter mode	**XA**	XA0 - switched off (**[ ]**) XA1 - switched on (**[√]**)
RAM File for Advanced Dosimeter mode	**XR**	XR0 - switched off (**[ ]**) XR1 - switched on (**[√]**)
Replace File in Advanced Dosimeter mode	**XP**	XP0 - switched off (**[ ]**) XP1 - switched on (**[√]**)
Save Max Spectrum in Advanced Dosimeter mode	**XM**	XM0 - switched off (**[ ]**) XM1 - switched on (**[√]**)
Save Min Spectrum in Advanced Dosimeter mode	**Xm**	Xm0 - switched off (**[ ]**) Xm1 - switched on (**[√]**)
Measure Triggering mode (TriggerMode) in Advanced Dosimeter mode	**XT**	XT0 - switched off (**OFF**) XT2 - **SLOPE +** XT3 - **SLOPE –** XT4 - **LEVEL +** XT5 - **LEVEL –**
Source of the measure triggering signal (TriggerSource) in Advanced Dosimeter mode	**XQ**	XQx - x - sum of the following flags: 1 - the RMS in channel X 2 - the RMS in channel Y 4 - the RMS in channel Z
Measure Triggering level (TriggerLev) in Advanced Dosimeter mode	**XL**	XLnnn - nnn level in dB ∈ (70 ÷ 140)