Technical Note DOSE 2_TN001_151124 01

Subject:	DOSE^2 RS232 Command Set
Product affected	DOSE^2
Product functions affected	Communication with a PC via RS232 port
Type of action:	Follow the instruction in this Technical Note
Technical Note release:	2015-11-24, Schwarzenbruck

The DOSE^2 electrometer features the ability to exchange commands and communication with a PC via an RS232 port. When using applications such as Tera Term Pro to facilitate communication between the host PC and DOSE2, the PC RS232 interface should be set to 19200 baud, 8 databits and no parity. All commands are ASCII based.

Command Structure

The command structure is defined as a stream of bytes with the structure:

Start Char	Command	Stop Char

Where:
Start Char '<'
Command see *Command Summary* section
Stop Char '>'

Response Structure

All responses have the same structure called the Response Structure. The Response Structure is defined as:

Command Status Character	Command Response

Where:
Status Character Indicates whether previous command was successful.

Status Character	Description
*	Command received and executed normally.
!	Command received but could not execute
?	Unknown Command

Command Response Command result if applicable, see *Command Detail* section.

IBA Dosimetry GmbH Bahnhofstraße 5 | 90592 Schwarzenbruck | Deutschland | Tel.: +49 9128 607 0 | Fax: +49 9128 607 10 |
Register-Ger. Nürnberg, HR B 4262 | WEEE-Reg.-Nr. DE 65960409 | Geschäftsführer: Olivier Legrain, Rob Plompen |
info@iba-dosimetry.com | www.iba-dosimetry.com

Command Summary

1)	**<GID>**	Get the identification of the electrometer
2)	**<GSN>**	Get the serial number of the electrometer
3)	**<GRGx>**	Get the selected range for a specified channel
4)	**<GBSx>**	Get the selected bias setting for a specified channel
5)	**<GBVx>**	Get the selected measured bias value for a specified channel
6)	**<GRx>**	Get the rate for a specified channel
7)	**<GCx>**	Get the charge for a specified channel
8)	**<GDRx>**	Get the doserate for a specified channel
9)	**<GDx>**	Get the dose for a specified channel
10)	**<GCS>**	Get the charge status
11)	**<GCT>**	Get charge type
12)	**<GZS>**	Get the zeroing status
13)	**<SRGx y>**	Set input range for specified channel
14)	**<SBSx y>**	Set bias setting for specified channel
15)	**<SCT x>**	Set charge collection type
16)	**<SVx>**	Set channel view
17)	**<DZ>**	Do zeroing
18)	**<STRC>**	Start charge collection
19)	**<STPC>**	Stop charge collection
20)	**<EDCx>**	Data recording toggle
21)	**<SRUx>**	Unfiltered rate outpu

Command Detail

1. Get Identification
Get the identification of the electrometer

Syntax: <GID>
Parameters: None
Return: “DOSE2”
Example: **<GID>*DOSE2**

2. Get Serial Number
Get the serial number of the electrometer

Syntax: <GSN>
Parameters: None
Return: 7 digit serial number
Example: **<GSN>*0123456**

3. Get Range
Get the selected range for a specified channel

Syntax: <GRGx>
Parameters: x: 1 = Channel 1, 2 = Channel 2
Return: H high range
L low range
Example: **<GRG1>*H**

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4. Get Bias Setting
Get the selected bias setting for a specified channel

Syntax: <GBSx>
Parameters: x: 1 = Channel 1, 2 = Channel 2
Return: bias setting in volts
Example: **<GBS1>*150**

5. Get Bias Value
Get the selected measured bias value for a specified channel

Syntax: <GBVx>
Parameters: x: 1 = Channel 1, 2 = Channel 2
Return: bias value in volts
Example: **<GBV1>*-152**

6. Get Rate
Get the rate for a specified channel

Syntax: <GRx>
Parameters: x: 1 = Channel 1, 2 = Channel 2
Return: measured rate
Example: **<GR1>*-0.011 nA**

7. Get Charge
Get the charge for a specified channel

Syntax: <GCx>
Parameters: x: 1 = Channel 1, 2 = Channel 2
Return: measured charge
Example: **<GC1>*-0.082 nC**
8. Get DoseRate
Get the dose rate for a specified channel
.
Syntax: <GDRx>
Parameters: x: 1 = Channel 1, 2 = Channel 2
Return: measured doserate
Example: **<GDR1>*-0.082 Rm^2/hA**

9. Get Dose
Get the dose for a specified channel.

Syntax: <GDx>
Parameters: x: 1 = Channel 1, 2 = Channel 2
Return: measured dose
Example: **<GD1>*-0.082 Ci**

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10. Get Charge Status
Get the charge status
Syntax: <GCS>
Parameters: none
Return: charge status

Status Character	Description
I	Idle
C	Collection in progress
A	Armed and waiting for trigger

Example: **<GCS>*I**

11. Get Charge Type
Get charge type

Syntax: <GCT>
Parameters: none
Return: charge type
T x timed, x = duration in seconds
C Continuous
TRG trigger

Example: **<GCT>*T 15**

12. Get Zero Status
Get the zeroing status

Syntax: <GZS>
Parameters: none
Return: zeroing status
0 = zeroing not in progress
1 = zeroing in progress

Example: **<GZS>*1**
13. Set Range
Set input range for specified channel

Syntax: <SRGx y>
Parameters: x: channel, 1 = channel 1, 2 = channel 2
y: range, H = high range, L = low range
Return: status (see response structure)

Example: **<SRG1 L>***

14. Set Bias Setting
Set bias setting for specified channel

Syntax: <SBSx y>
Parameters: x: channel, 1 = channel 1, 2 = channel 2
y: bias setting in volts, +-1000
Return: status (see response structure)

Example: **<SBS1 150>***

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15. Set Charge Type
Set charge collection type

Syntax: <SCT x>
Parameters: x: charge type C = continuous
Ty = timed, y = duration in seconds
TRG = trigger
Return: status (see response structure)

Example: **<SCT T15>***

16. Set Channel View
Set channel view

Syntax: <SVx>
Parameters: x: channel view
1 = Channel 1view
2 = Channel 2 view
B = dual channel view
Return: status (see response structure)

Example: **<SVB>***

17. Do Zero
Do zeroing

Syntax: <DZ>
Parameters: none
Return: status (see response structure)

Example: **<DZ>***

18. Start Charge Collection
Start charge collection

Syntax: <STRC>
Parameters: none
Return: status (see response structure)

Example: **<STRC>***

*Note: with DOSE2 software version 2.0, a function was added which requires pressing of the **Clear** button after the completion of a charge collection before starting a new collection. From the command side, this is accomplished by sending an additional <STRC> command.*

19. Stop Charge Collection
Stop charge collection

Syntax: <STPC>
Parameters: none
Return: status (see response structure)

Example: **<STPC>***

IBA Dosimetry GmbH Bahnhofstraße 5 | 90592 Schwarzenbruck | Deutschland | Tel.: +49 9128 607 0 | Fax: +49 9128 607 10 |
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20. Data Recording Toggle
Enable or disable recording data to the Add List when using the standard measurement Mode

Syntax: <EDCx>
Parameters: x: enable/disable
0 = Disable data recording
1 = Enable data recording
Return: status (see response structure)

Example: **<EDC0>***

Note: When the DOSE2 is turned off and back on via the power button or via unplugging re-plugging, the data recording is automatically re-enabled.

21. Unfiltered Rate Output
Enable or disable streaming display of unfiltered (10 Hz) rate data for both channels

Syntax: <SRUx>
Parameters: x: enable/disable
0 = Disable streaming
1 = Enable streaming
Return: channel1value,channel2value (values shown in fA)

Example: <SRU1>852,-1653

In case of any further questions, please contact us under:

IBA Dosimetry GmbH
Service Department
Bahnhofstrasse 5
DE-90592 Schwarzenbruck, Germany
Phone: +49 9128 607 38
Fax: + 49 9128 607 26
Mailto: service@iba-group.com