DRM-3000/DPU3 Protocol Extract

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Scope

This document is an extract from document named “Rotem’s New Protocol Structure” (Document reference # RD-4-03-001).
It is aimed to assist users who do not deploy Rotem’s WebiSmarts or RMVC software packages to communicate with the DRM-3000/DPU3.
This document provides the essential protocol commands, their description and samples.

General:

- Each message starts with “\n” character and ends with “\r” character.
- The fourth character corresponds to the detector number (0-4) according to the following:
  - **0** - Internal detector, **1** = External detector 1, **2** - External detector 2, **3** - External detector 3, **4** - AUX (4-20)
  - For example, the message: “\n#11A01\r” sends the message to External Detector number 1.
  - In all the following examples the messages are sent to the Internal detector.
- When there is multiple data to be read, it would be separated by comma '**,**'

Protocol Messages Examples:

1. **Device ID** – Read Identification details
   - Read message: “\n#10A01\r”
   - Response message: “\n#10A09,220,**1.15**,**300019-002**,**979002**,**1**\r”
     - Detector board FW version number = ”1.15”
     - Serial Number = “300019-002”
     - Communication Serial Number (WRM) = “979002”
     - Measuring Units = “1” , according to the following:
       - ‘1’ – mR/h, ‘2’ – uSv/h, ‘3’ – uR/h, ‘4’ – CPS, ‘5’ - CPM
2. **Current Reading** – Reading dose, rate, and status
   - Read message: “\n#10B01\r”
   - Response message: “\n#10B09,**0.02**,0.00,1,**0.27**,**0123**,\r”
     - Rate = “0.02”
     - Dose = “0.27”
     - Status = “0**123“**
       - Each char in status value converted to binary value with 4 bits. Each bit indicates if the specific status is on (1) or off (0). List of status bits according to the following:

Char	Bit3	Bit2	Bit1	Bit0
1	0	0	0	1
Description	N/A	N/A	"Voltage (Battery) Low "	"**WRM not mounted** "
2	0	0	1	0
Description	"No External Detector detected"	"High Detector Fault"	"**Low Detector Fault** "	"Low Background"
3	0	0	1	1
Description	"Low H.V"	"High Background"	"**Over Threshold**"	"**Rate Overflow**"

- In such a way, the Final Status in the sample above corresponds to: "WRM not mounted, Low Detector Fault, Rate Overflow, Over Threshold"

3. **Detector's Reset Dose**. Message: "\n#10Ah2\r"
4. **Thresholds** – Read and Set detector's thresholds.
   - Read Thresholds messages: The bold data is the received threshold.
     - Threshold #1: "\n#10Fa1\r", Response: "\n#10Fa9,**5**\r"
     - Threshold #2: "\n#10Fb1\r", Response: "\n#10Fb9,**67**\r"
     - User Threshold: "\n#10Fc1\r", Response: "\n#10Fa9,**0.5**\r"
   - Set Thresholds messages: The bold data is the threshold value to be set.
     - Threshold #1: "\n#10Fa1,**6**\r"
     - Threshold #2: "\n#10Fb1,**10**\r"
     - User Threshold: "\n#10Fc1,**0.8**\r"
5. **Wireless** (WRM) – Turn WRM (wireless) communication on and off.
   - Turn WRM on: "\n#10P01,2,**1**,0,Rotem,1234\r".
     This command turns on the transmission using WRM protocol (as described in the user manual) via the WRM wireless module and via the TCP/IP port.
   - Turn WRM off: "\n#10P01,2,**0**,0,Rotem,1234\r".
     This message stops the transmission using WRM protocol.