# B. DATA FILE STRUCTURES

## B.1. General structure of the SV 100 file

Each file containing data from the **SV 100** instrument consists of several groups of words. In the case of the **SV 100** (the internal file system rev. **1.12.1**), there are different types of files containing:

- the results stored in the file in the instrument's logger (cf. App. B.2)
- the measurement results from the **V**ibration **L**evel **M**eter mode and **DOSE METER** (cf. App. B.3)
- the setup data (cf. App. B.4)

Each file has the following elements:

- a file header (cf. Tab. B.1.1)
- the unit and internal software specification (cf. Tab. B.1.2)
- the user's text (a header) stored together with the measurement data (cf. Tab. B.1.3)
- the parameters and global settings, common for all channels (cf. Tab. B.1.4)
- the measure trigger parameters (cf. Tab. B.1.6)
- the time-domain signal recording parameters (cf. Tab. B.1.7)
- the special settings for channels (cf. Tab. B.1.9)
- the Vector measurement settings (cf. Tab. B.1.10)
- the marker for the end of the file (cf. Tab. B.1.20)

The other elements of the file structure are not obligatory for each file type stated above. They depend on the file type (**VLM**, **DOSE METER**, **1/1 OCTAVE**, file from the logger). These elements are as follows:

- the main results (cf. Tab. B.1.11_VLM)
- the settings of the instrument saved in the setup file (cf. Tab. B.1.14)
- the header of the file from the logger (cf. Tab. B.1.15)
- the data stored during the measurements in the file of the logger (cf. Tab. B.1.16)
- the results coming from **1/1 OCTAVE** analysis (cf. Tab. B.1.17)

Below, all file structure groups are described separately in Tab. B.1.1 – Tab. B.1.20. The format used in the columns, named **Comment** with the square parenthesis ( [xx, yy] ), means the contents of the word with; **xx** is the most significant byte (MSB) and **yy** the lowest significant byte (LSB) of the word. The format 0xnnnn means that the nnnn is four-digit number in hexadecimal form.

**Table B.1.1. File header**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0xnn01 | [01, nn=header's length] |
| 1..4 | FileName | name of the file or logger (8 characters) |
| 5 | Reserved | reserved |
| 6 | CurrentDate | file creation date (cf. App. B.5) |
| 7 | CurrentTime | file creation time (cf. App. B.5) |
| 8..11 | AssBufFileName | name of the associated logger or file (8 bytes) |
| 12 | LoggerDate | creation date of associated buffer |
| 13 | LoggerTime | creation time of associated buffer |
| … | … | … |

**Table B.1.2. Unit and software specification**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0xnn02 | [02, nn=specification's length] |
| 1 | UnitNumber | unit number |
| 2 | UnitType | type of the unit: 100 |
| 3 | SoftwareVersion | software version: 112 |
| 4 | SoftwareIssueDate | software issue date |
| 5 | DeviceMode | mode of the instrument: 0 - **Vibration Level Meter** / **Analyser** |
| 6 | UnitSubtype | subtype of the unit: 1 - SV 100 |
| 7 | FileSysVersion | file system version:112 |
| 8 | LevelMetVersion | level meter version: 112 |
| 9 | SoftwareSubversion | software subversion: 1 |
| … | … | … |

**Table B.1.3. USER's text**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0xnn03 | [03, nn=specification's length] |
| 1… | title text | the user's text (two characters in a word) finished with one or two null bytes |

**Table B.1.4. Parameters and global settings**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0xnn04 | [04, nn=block's length] |
| 1 | MeasureStartDate | measurement start date (cf. App. B.5) |
| 2 | MeasureStartTime | measurement start time (cf. App. B.5) |
| 3 | DeviceFunction | device function:<br>1 - **LEVEL METER**<br>2 - **1/1 OCTAVE** analyser<br>4 - **DOSE METER**<br>6 - **FFT** analyser |
| 4 | MeasureInput | measurement input type:<br>5 - **Accelerometer** |
| 5 | Range | measurement range:<br>2 - **SINGLE** |
| 6 | UnitFlags | calibration flags |
| 7 | RepCycle | repetition cycle:<br>0 - infinity<br>nnnn - number of repetitions $\in (1 \div 1000)$ |
| 8 | NofChan | number of channels (3) |
| 9 | NofProf | number of profiles (1) |
| 10 | TimeToStart | start-delay-time specified in seconds:<br>0..60 |

| | | |
|---|---|---|
| 11..12 | IntTimeSec | integration time specified in seconds |
| 13 | | reserved |
| 14 | RmsInt | detector's type in the **RMS** function:<br>0 - **LINEAR**<br>1 - **EXPONENT.** |
| 15 | SpectrumFilter | **1/1 OCTAVE** or **FFT** analysis filter:<br>0 - **Z**<br>in other cases:<br>reserved |
| 16 | SpectrumBuff | **1/1 OCTAVE** or **FFT** logger:<br>0 - **OFF**, 1 - **ON**<br>in other cases:<br>reserved |
| 17 | ExposureTime | exposure time:<br>0xffff - Exposure Time is equal to time of the measurement<br>1..480 (min) |
| 18 | RefLev_a | reference level for acceleration given in $\mu ms^{-2} \in (1 \div 100)$ |
| 19 | RefLev_v | reference level for velocity given in $nms^{-1} \in (1 \div 100)$ |
| 20 | RefLev_d | reference level for displacement given in $pm \in (1 \div 100)$ |
| 21 | CalibrType | last calibration type in **X channe**l:<br>0 - none<br>1 - by measurement |
| 22 | CalibrType | last calibration type in **Y channel**:<br>0 - none<br>1 - by measurement |
| 23 | CalibrType | last calibration type in **Z channel**:<br>0 - none<br>1 - by measurement |
| 24 | CalibrDate | last calibration date in **X channel** (cf. App. B.5) |
| 25 | CalibrDate | last calibration date in **Y channel** (cf. App. B.5) |
| 26 | CalibrDate | last calibration date in **Z channel** (cf. App. B.5) |
| 27 | CalibrTime | last calibration time in **X channel** (cf. App. B.5) |
| 28 | CalibrTime | last calibration time in **Y channel** (cf. App. B.5) |
| 29 | CalibrTime | last calibration time in **Z channel** (cf. App. B.5) |
| 30 | | reserved |
| 31 | | reserved |
| 32 | | reserved |
| 33 | | reserved |
| 34 | | reserved |
| 35 | | reserved |
| 36 | NDN8 | NDN8 gives in 0.01 $m/s^2$ |
| 37 | Country | **Standard**:<br>0 - **German**<br>1 - **English**<br>3 - **Italian**<br>5 - **French**<br>7 - **Polish**<br>255 - **User defined** |
| 38 | AlarmMask | activated alarm defined as a sum of:<br>0 - none<br>1 - **EAV**<br>2 - **ELV**<br>4 - **NDN** |

| | | |
|---|---|---|
| 39 | AlarmFlags | alarm defined as a sum of:<br>0 - none<br>1 - **EAV**<br>2 - **ELV**<br>4 - **NDN** |
| 40 | Mode | mode:<br>0 - **Simple dosimeter**<br>1 - **Advanced dosimeter** |
| 41 | TimeToStop | stop-delay-time specified in seconds:<br>1..60 |
| 42 | EAV (X) | Exposure Action Value in **X channel** given in 0.01 EAVunit |
| 43 | EAVunit (X) | Exposure Action Value unit in **X channel**:<br>0 - $m/s^2$<br>1 - $m/s^{1.75}$ |
| 44 | EAV (Y) | Exposure Action Value in **Y channel** given in 0.01 EAVunit |
| 45 | EAVunit (Y) | Exposure Action Value unit in **Y channel**:<br>0 - $m/s^2$<br>1 - $m/s^{1.75}$ |
| 46 | EAV (Z) | Exposure Action Value in **Z channel** given in 0.01 EAVunit |
| 47 | EAVunit (Z) | Exposure Action Value unit in **Z channel**:<br>0 - $m/s^2$<br>1 - $m/s^{1.75}$ |
| 48 | ELV (X) | Exposure Limit Value in **X channel** given in 0.01 ELVunit |
| 49 | ELVunit (X) | Exposure Limit Value unit in **X channel**:<br>0 - $m/s^2$<br>1 - $m/s^{1.75}$ |
| 50 | ELV (Y) | Exposure Limit Value in **Y channel** given in 0.01 ELVunit |
| 51 | ELVunit (Y) | Exposure Limit Value unit in **Y channel**:<br>0 - $m/s^2$<br>1 - $m/s^{1.75}$ |
| 52 | ELV (Z) | Exposure Limit Value in **Z channel** given in 0.01 ELVunit |
| 53 | ELVunit (Z) | Exposure Limit Value unit in **Z channel**:<br>0 - $m/s^2$<br>1 - $m/s^{1.75}$ |
| 54 | SpectrumFilterTotal[1] | **1/1 OCTAVE** or **FFT** analysis filter for Total 1:<br>124 - band Limit of **Wf**<br>in other cases:<br>reserved |
| 55 | SpectrumFilterTotal[2] | **1/1 OCTAVE** or **FFT** analysis filter for Total 2:<br>117 - band Limit of **Wd**<br>in other cases:<br>reserved |
| 56 | SpectrumFilterTotal[3] | **1/1 OCTAVE** or **FFT** analysis filter for Total 3:<br>120 - band Limit of **Wm**<br>in other cases:<br>reserved |
| 57..59 | | reserved |
| … | … | … |

**Table B.1.6. MEASURE TRIGGER parameters**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0xnn2B | [2B, nn=block's length] |

| | | |
|---|---|---|
| 1 | Mode | mode:<br>0 - **OFF**<br>2 - recording on trigger **SLOPE+**<br>3 - recording on trigger **SLOPE–**<br>4 - recording on trigger **LEVEL+**<br>5 - recording on trigger **LEVEL–** |
| 2 | TriggerSource | source of the triggering signal defined as a sum of:<br>1 - the RMS in channel **X**<br>2 - the RMS in channel **Y**<br>4 - the RMS in channel **Z** |
| 3 | TriggerLevel | level of triggering: 70 ÷ 140 dB (*10) |
| 4 | TriggerGrad | reserved |
| 5 | TriggerPreTime | reserved |
| 6 | TriggerPost | reserved |
| 7 | Sampling | reserved |
| 8 | RecTime | reserved |
| 9 | BitsPerSample | reserved |
| 10 | Channels | reserved |
| 11 | Range (X) | reserved |
| 12 | Range (Y) | reserved |
| 13 | Range (Z) | reserved |
| 14 | RefLev | reserved |
| … | … | …. |

**Table B.1.7. Time-domain signal recording parameters**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0xnn31 | [31, nn=block's length] |
| 1 | Mode | mode:<br>0 - **OFF**<br>1 - recording all measurement<br>2 - recording on trigger **SLOPE+**<br>3 - recording on trigger **SLOPE–**<br>4 - recording on trigger **LEVEL+**<br>5 - recording on trigger **LEVEL–** |
| 2 | TriggerSource | source of the triggering signal defined as a sum of:<br>1 - the RMS in channel **X**<br>2 - the RMS in channel **Y**<br>4 - the RMS in channel **Z** |
| 3 | TriggerLevel | level of triggering: 70 ÷ 140 dB (*10) |
| 4 | TriggerGrad | reserved |
| 5 | TriggerPreTime | recording time before triggering in seconds |
| 6 | TriggerPost | reserved |
| 7 | Sampling | sampling frequency in 0.1Hz (312.5 Hz) |
| 8 | RecTime | recording time of single data block:<br>0 - recording to the end of measurement<br>1..1800 (sec) |
| 9 | BitsPerSample | bits/sample (16) |
| 10 | Channels | signal recorded form channel defined as a sum of:<br>1 - channel **X**<br>2 - channel **Y**<br>4 - channel **Z** |

| | | |
|---|---|---|
| 11 | Range (X) | range value of the **X** channel in 0.01dB |
| 12 | Range (Y) | range value of the **Y** channel in 0.01dB |
| 13 | Range (Z) | range value of the **Z** channel in 0.01dB |
| 14 | RefLev | reserved |
| … | … | …. |

**Table B.1.9. Special settings for channels**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0xnn05 | [05, nn=block's length] |
| 1 | 0x0307 | [used_profile, profile's mask] |
| | | |
| 2 | 0xmm06 | [06, mm=sub-block's length] |
| 3 | DetectorP[1] | detector type in the **X** channel:<br>0 - **100ms**<br>1 - **125ms**<br>2 - **200ms**<br>3 - **500ms**<br>4 - **1s**<br>5 - **2s**<br>6 - **5s**<br>7 - **10s** |
| 4 | FilterP[1] | filter type in the **X** channel:<br>17 - **Wd**<br>20 - **Wm**<br>24 - **Wf**<br>117 - band Limit of **Wd**<br>120 - band Limit of **Wm**<br>124 - band Limit of **Wf** |
| 5 | LoggerP[1] | logger contents in the **X** channel defined as a sum of:<br>0 - none<br>1 - **PEAK**<br>2 - **P–P**<br>4 - **MAX**<br>8 - **RMS**<br>16 - **VDV** |
| 6 | CalibrFactor[1] | calibration factor (*10 dB) in the **X** channel |
| 7 | ProfileFlags[1] | flags in the **X** channel |
| | | |
| 8 | 0xmm06 | [06, mm=sub-block's length] |
| 9 | DetectorP[2] | detector type in the **Y** channel:<br>0 - **100ms**<br>1 - **125ms**<br>2 - **200ms**<br>3 - **500ms**<br>4 - **1s**<br>5 - **2s**<br>6 - **5s**<br>7 - **10s** |

| | | |
|---|---|---|
| 10 | FilterP[2] | filter type in the **Y** channel:<br>17 - **Wd**<br>20 - **Wm**<br>24 - **Wf**<br>117 - band Limit of **Wd**<br>120 - band Limit of **Wm**<br>124 - band Limit of **Wf** |
| 11 | LoggerP[2] | logger contents in the **Y** channel: defined as a sum of:<br>0 - none<br>1 - **PEAK**<br>2 - **P–P**<br>4 - **MAX**<br>8 - **RMS**<br>16 - **VDV** |
| 12 | CalibrFactor[2] | calibration factor (*10 dB) in the **Y** channel |
| 13 | ProfileFlags[2] | flags in the **Y** channel |
| | | |
| 14 | 0xmm06 | [06, mm=sub-block's length] |
| 15 | DetectorP[3] | detector type in the **Z** channel:<br>0 - **100ms**<br>1 - **125ms**<br>2 - **200ms**<br>3 - **500ms**<br>4 - **1s**<br>5 - **2s**<br>6 - **5s**<br>7 - **10s** |
| 16 | FilterP[3] | filter type in the **Z** channel:<br>16 - **Wk**<br>20 - **Wm**<br>23 - **Wb**<br>24 - **Wf**<br>116 - band Limit of **Wk**<br>120 - band Limit of **Wm**<br>123 - band Limit of **Wb**<br>124 - band Limit of **Wf** |
| 17 | LoggerP[3] | logger contents in the **Z** channel defined as a sum of:<br>0 - none<br>1 - **PEAK**<br>2 - **P–P**<br>4 - **MAX**<br>8 - **RMS**<br>16 - **VDV** |
| 18 | CalibrFactor[3] | calibration factor (*10 dB) in the **Z** channel |
| 19 | ProfileFlags[3] | flags in the **Z** channel |
| … | … | … |

**Table B.1.10. Vector Measurement Settings**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0xnn40 | [05, nn=block's length] |
| 1 | VectorLoggerP | vector result logging:<br>0 - **OFF**, 1 - **ON** |

| | | |
|---|---|---|
| 2 | VectorCoeff[1] | vector coefficient for the RMS value from the **X** channel (*100) |
| 4 | VectorCoeff[2] | vector coefficient for the RMS value from the **Y** channel (*100) |
| 5 | VectorCoeff[3] | vector coefficient for the RMS value from the **Z** channel (*100) |
| 6 | VectorOn[1] | RMS value from the **X** channel used for calculation: 0 - no, 1 - yes |
| 7 | VectorOn[2] | RMS value from the **Y** channel used for calculation: 0 - no, 1 - yes |
| 8 | VectorOn[3] | RMS value from the **Z** channel used for calculation: 0 - no, 1 - yes |
| 9 | VectorResult | **VECTOR** result value (in 0.1dB) |
| … | … | … |

**Table B.1.11_VLM Main results in VLM mode**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0xnn07 | [07, nn=block's length] |
| 1 | 0x0307 | [used_profile, profile's mask] |
| | | |
| 2 | 0xmm08 | [08, mm=sub-block's length] |
| 3..4 | MeasureTime | time of the measurement |
| 5..6 | OVL[1] | overload time in the **X** channel |
| 7 | Result[1][1] | **PEAK** value in the **X** channel |
| 8 | Result[1][2] | **P–P** value in the **X** channel |
| 9 | Result[1][3] | maximal value (**MAX**) in the **X** channel |
| 10 | Result[1][4] | **RMS** value in the **X** channel |
| 11 | Result[1][5] | **VDV** value in the **X** channel |
| 12 | Result[1][6] | reserved |
| 13 | Result[1][7] | reserved |
| 14 | UnderRes[1] | under-range value in the **X** channel |
| | | |
| 15 | 0xmm08 | [08, mm=sub-block's length] |
| 16..17 | Reserved | reserved |
| 18..19 | OVL[2] | overload time in the **Y** channel |
| 20 | Result[2][1] | **PEAK** value in the **Y** channel |
| 21 | Result[2][2] | **P–P** value in the **Y** channel |
| 22 | Result[2][3] | maximal value (**MAX**) in the **Y** channel |
| 23 | Result[2][4] | **RMS** value in the **Y** channel |
| 24 | Result[2][5] | **VDV** value in the **Y** channel |
| 25 | Result[2][6] | reserved |
| 26 | Result[2][7] | reserved |
| 27 | UnderRes[2] | under-range value in the **Y** channel |
| | | |
| 28 | 0xmm08 | [08, mm=sub-block's length] |
| 29..30 | Reserved | reserved |
| 31..32 | OVL[3] | overload time in the **Z** channel |
| 33 | Result[3][1] | **PEAK** value in the **Z** channel |
| 34 | Result[3][2] | **P–P** value in the **Z** channel |
| 35 | Result[3][3] | maximal value (**MAX**) in the **Z** channel |
| 36 | Result[3][4] | **RMS** value in the **Z** channel |
| 37 | Result[3][5] | **VDV** value in the **Z** channel |
| 38 | Result[3][6] | reserved |

| | | |
|---|---|---|
| 39 | Result[3][7] | reserved |
| 40 | UnderRes[3] | under-range value in the **Z** channel |
| … | … | … |

**Table B.1.14. SETUP file**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0x0041 | [41, 00] |
| 1 | BlockLength | length of the block |
| 2..BlockLength-1 | SetupTextData | saved setup values |

**Table B.1.15. Header of the file from the logger**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0xnn0F | [0F, nn=header's length] |
| 1 | BuffTSec | logger time-step - full seconds part |
| 2 | BuffTMilisec | logger time-step - milliseconds part |
| 3 | LowestFreq | the lowest **1/1 OCTAVE** frequency (*100 Hz) |
| 4 | NOctTer | number of **1/1 OCTAVE** results per channel |
| 5 | NOctTerTot | number of **TOTAL** values per channel |
| 6..7 | BuffLength | logger length (bytes) |
| 8..9 | RecsInBuff | number of records in the logger |
| 10..11 | RecsInObserv | number of records in the observation period equal to:<br>number of records in the logger + number of records not saved |
| 12..13 | TDRecs | number of time-domain signal records in the logger |
| … | … | … |

***Note:*** *The current logger time-step in seconds can be obtained from the formulae:*
*T = BuffTSec + BuffTMillisec / 1000*

**Table B.1.16. Contents of the file from the logger**

| Word number | Name | Comment |
|---|---|---|
| 0..(BuffLength/2-1) | | result#1, result#2, ... result#(BuffLength/2-1) |

**Table B.1.17. 1/1 OCTAVE analysis results**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0xnn0E, 0xnn26, 0xnn27 | [block_id, nn=block_length]<br>0xnn**0E** - averaged spectrum results,<br>0xnn**26** - min. spectrum results,<br>0xnn**27** - max. spectrum results |
| 1 | 0x0303 | [used_channel, channel's mask] |
| 2 | LowestFreq | the lowest **1/1 OCTAVE** frequency (*100 Hz): 25 |
| 3 | NOct | number of **1/1 OCTAVE** values: 10 |
| 4 | NOctTot | number of **TOTAL** values: 3 |
| | | |
| 5…14 | Octave[0][i] | 1/1 octave[i] value (*10 dB); i=1..NOct+NoctTot (1..10) in X channel |
| 15…24 | Octave[1][i] | 1/1 octave[i] value (*10 dB); i=1..NOct+NoctTot (1..10) in Y channel |
| 25…34 | Octave[1][i] | 1/1 octave[i] value (*10 dB); i=1..NOct+NoctTot (1..10) in Z channel |
| … | … | … |

**Table B.1.20. File-end-marker**

| Word number | Name | Comment |
|---|---|---|
| 0 | 0xFFFF | file end marker |

## B.2. Structure of the file containing results from logger's file

File header - cf. Tab. B.1.1.
Unit and software specification - cf. Tab. B.1.2.
USER'S text - cf. Tab. B.1.3.
Parameters and global settings - cf. Tab. B.1.4.
Measure trigger parameters - cf. Tab. B.1.6.
Time-domain signal recording parameters - cf. Tab. B.1.7.
Special settings for channels - cf. Tab. B.1.9.
Vector measurement settings - cf. Tab. B.1.10.
**Header of the file from the logger** - cf. Tab. B.1.15.
**Contents of the file from the logger** - cf. Tab. B.1.16. and the description in B.2.1.
File-end-marker - cf. Tab. B.1.20.

### B.2.1. The contents of the files in the logger

The records with the results and the records with the state of the markers as well as the records with the breaks in the results registration are saved in the files in the logger.

#### B.2.1.1. Record with the results

The content of the record with the results depends on the selected measurement function and the value set in the **LOGGER** position of the **CHANNEL**: **x** and **SPECTRUM** windows. The following elements can be present (in the given sequence):

(1) results of the measurement from the **X** channel; up to five words are written:

<result1> - **PEAK** result, depending on the value of LoggerP[1] (cf. Tab. B.1.9)
<result2> - **P–P** result, depending on the value of LoggerP[1] (cf. Tab. B.1.9)
<result3> - **MAX** result, depending on the value of LoggerP[1] (cf. Tab. B.1.9)
<result4> - **RMS** result, depending on the value of LoggerP[1] (cf. Tab. B.1.9)
<result4> - **VDV** result, depending on the value of LoggerP[1] (cf. Tab. B.1.9)

(2) results of the measurement from the **Y** channel; up to five words are written:

<result1> - **PEAK** result, depending on the value of LoggerP[2] (cf. Tab. B.1.9)
<result2> - **P–P** result, depending on the value of LoggerP[2] (cf. Tab. B.1.9)
<result3> - **MAX** result, depending on the value of LoggerP[2] (cf. Tab. B.1.9)
<result4> - **RMS** result, depending on the value of LoggerP[2] (cf. Tab. B.1.9)
<result4> - **VDV** result, depending on the value of LoggerP[2] (cf. Tab. B.1.9)

(3) results of the measurement from the **Z** channel; up to five words are written:

<result1> - **PEAK** result, depending on the value of LoggerP[3] (cf. Tab. B.1.9)
<result2> - **P–P** result, depending on the value of LoggerP[3] (cf. Tab. B.1.9)
<result3> - **MAX** result, depending on the value of LoggerP[3] (cf. Tab. B.1.9)
<result4> - **RMS** result, depending on the value of LoggerP[3] (cf. Tab. B.1.9)
<result4> - **VDV** result, depending on the value of LoggerP[3] (cf. Tab. B.1.9)

(4) results of the measurement from the all channels; up to one word is written:

<result1> - **VECTOR** result, depending on the value of VectorLoggerP[1] (cf. Tab. B.1.10)

(5) results of **1/1 OCTAVE** analysis from **X** channel if **1/1 OCTAVE** analysis was selected and the **LOGGER SPECTRUM** was activated; the sequence of words is written:

<flags> <Octave[1]> <Octave[2]> ... <Octave[Noct+NOctTot]>
where:
flags = 1 - the overload detected, 0 - the overload not detected
Octave[i] - the result of **1/1 OCTAVE** analysis (*10 dB); i = 1..NOct+NOctTot (1..10)

(6) results of **1/1 OCTAVE** analysis from **Y** channel if **1/1 OCTAVE** analysis was selected and the **LOGGER SPECTRUM** was activated; the sequence of words is written:

<flags> <Octave[1]> <Octave[2]> ... <Octave[Noct+NOctTot]>
where:
flags = 1 - the overload detected, 0 - the overload not detected
Octave[i] - the result of **1/1 OCTAVE** analysis (*10 dB); i = 1..NOct+NOctTot (1..10)

(7) results of **1/1 OCTAVE** analysis from **Z** channel if **1/1 OCTAVE** analysis was selected and the **LOGGER SPECTRUM** was activated; the sequence of words is written:

<flags> <Octave[1]> <Octave[2]> ... <Octave[Noct+NOctTot]>
where:
flags = 1 - the overload detected, 0 - the overload not detected
Octave[i] - the result of **1/1 OCTAVE** analysis (*10 dB); i = 1..NOct+NOctTot (1..10)

#### B.2.1.2. Record with the state of the markers

The record with the state of the markers consists of one word:

<0x8nnn>

in which 12 bits nnn denote the state of the markers:

b11 = state of #12 marker
b10 = state of #11 marker
...
b1 = state of #2 marker
b0 = state of #1 marker

#### B.2.1.3. Record with the breaks in the results registration

The record with the breaks in the results registration consists of four words:

<0xB0ii> <0xB1jj> <0xB2kk> <0xB3nn>

in which ii, jj, kk, nn bytes denote 4-bytes counter of left or skipped records: nnkkjjii (ii is the least significant byte, nn - the most significant byte).

#### B.2.1.4. Record with the auto-save file name

The record with the auto-save file name consists of six words:

**<0xC0aa>**
**<0xccbb>**
**<0xeedd>**
**<0xggff>**
**<0xiihh>**
**<0xC8aa>**

in which:
**aa** - size of records,
**bb cc dd ee ff gg hh ii** - 8-bytes name of auto-save file name

#### B.2.1.5. Record with the breaks in the results registration

The record with the breaks in the results registration consists of four words:

<0xB0ii> <0xB1jj> <0xB2kk> <0xB3nn>

in which ii, jj, kk, nn bytes denote 4-bytes counter of left or skipped records: nnkkjjii (ii is the least significant byte, nn - the most significant byte).

#### B.2.1.6. Record with Time-domain signal data

This record exists only in the case when the **Time-domain signal recording** is active. The samples of the signal are saved in the blocks. Each block is divided into frames, which are stored in a file among the logger results. The frame starting block and the frame ending it are marked with the b10 and b9 bits set in the header of the frame, respectively. It happens in the case of stopping the recording that the ending frame does not exist.

The format of the data frame is as follows:

| HS | L | S | L | HE |
|---|---|---|---|---|

where:

HS starting header (1 word)
L block length (1 word), expressed in words (4 + number of samples)
S samples of the measured signal (each sample is written in two bytes; the recording starts with the least significant byte)
HE ending header (1 word), which differs from the HS only on b11 bit (thanks to it, it is possible to analyse the recorded file starting from its end)

The HEADER format is as follows:

| b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

where:

b15 - 1
b14 - 0
b13 - 0
b12 - 1, bits b15 ÷ b12 = 9 constitute the marker of the frame
b11 - header type:
0 - HS
1 - HE
b10 - 1 denotes the first frame in the block
b9 - 1 denotes the last frame in the block
b7 - 1 denotes an error (the samples were overwritten in the cycle buffer, which means that the recording in the analysed block is not correct)
b8, b6÷b0 - reserved

## B.3. Structure of the file with the results from the VLM and DOSE METER modes

File header - cf. Tab. B.1.1.
Unit and software specification - cf. Tab. B.1.2.
USER'S text - cf. Tab. B.1.3.
Parameters and global settings - cf. Tab. B.1.4.
Measure trigger parameters - cf. Tab. B.1.6.
Time-domain signal recording parameters - cf. Tab. B.1.7.
Special settings for profiles - cf. Tab. B.1.9.
Vector measurement settings - cf. Tab. B.1.10.
**Main results** - cf. Tab. B.1.11_VLM.
File-end-marker - cf. Tab. B.1.20.

## B.4. Structure of the file with the results from the 1/1 OCTAVE modes

File header - cf. Tab. B.1.1.
Unit and software specification - cf. Tab. B.1.2.
USER'S text - cf. Tab. B.1.3.
Parameters and global settings - cf. Tab. B.1.4.
Measure trigger parameters - cf. Tab. B.1.6.
Time-domain signal recording parameters - cf. Tab. B.1.7.
Special settings for profiles - cf. Tab. B.1.9.
Vector measurement settings - cf. Tab. B.1.10.
**Main results** - cf. Tab. B.1.11_VLM.
**1/1 OCTAVE analysis results** - cf. Tab. B.1.17.
**MIN results of 1/1 OCTAVE analysis** - cf. Tab. B.1.17.
**MAX results of 1/1 OCTAVE analysis** - cf. Tab. B.1.17.
File-end-marker - cf. Tab. B.1.20.

## B.5. Structure of the SETUP file

File header - cf. Tab. B.1.1.
Unit and software specification - cf. Tab. B.1.2.
**SETUP DATA** - cf. Tab. B.1.14.
File-end-marker - cf. Tab. B.1.20.

## B.6. Date and time

Following function written in C explain how the date and time are coded:

```
void ExtractDateTime(int date, int time, int dt[])
{
      int sec,year;

      sec = ((0xffff&time)<<1); /* time<<1; */
      dt[0] = sec%60; /* sec */
      dt[1] = (sec/60)%60; /* min */
      dt[2] = sec/3600; /* hour */

      dt[3] = date&0x1F; /* day */
      dt[4] = (date>>5)&0x0F; /* month */
      year = (date>>9) & 0x07F;
      dt[5] = year+2000; /* year */
}
```