

B. DATA FILE STRUCTURES

B.1. Structure of the SVAN 979 file

Each file containing data from the SVAN 95x instrument consists of several groups of words. In the case of the **SVAN 979** (the internal file system version **1.19**) there are different types of files that contain:

- the results stored in the file in the instrument's logger (cf. App. B.2)
- the measurement results from the **Sound Level Meter** mode (cf. App. B.3)
- the measurement results from the **Vibration Level Meter** mode (cf. App. B.4)
- the results from **1/1 OCTAVE** analysis (cf. App. B.6)
- the results from **1/3 OCTAVE** analysis (cf. App. B.7)
- the results from the **FFT** analysis (cf. App. B.8)
- the results of the **TONALITY** function analysis (cf. App. B.9)
- the results of the **RT60** function (cf. App. B.12)
- setup data (cf. App. B.13)

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 profiles (cf. Tab. B.1.4_SLM and Tab. B.1.4_VLM)
- parameters for measurement trigger (cf. Tab. B.1.5)
- parameters for logger trigger (cf. Tab. B.1.6)
- parameters for recorder trigger (cf. Tab. B.1.7)
- Extended I/O settings (cf. Tab. B.1.8)
- special settings for profiles (cf. Tab. B.1.9_SLM and Tab. B.1.9_VLM)
- RTF parameters (cf. Tab. B.1.24)
- Marker parameters – cf. Tab. B.1.41
- the marker for the end of the file (cf. Tab. B.1.33)

The other elements of the file structure are not obligatory for each file type stated above. They depend on the file type (**VLM**, **1/1 OCTAVE**, **1/3 OCTAVE**, file from the logger). These elements are as follows:

- the main results (cf. Tab. B.1.10_SLM and Tab. B.1.10_VLM)
- the results coming from **1/1 OCTAVE** analysis (cf. Tab. B.1.11)
- the results coming from **1/3 OCTAVE** analysis (cf. Tab. B.1.12)
- the statistical levels (cf. Tab. B.1.18)
- the header of the statistical analysis (cf. Tab. B.1.19)
- the results of the statistical analysis (cf. Tab. B.1.20)
- the header of the statistical analysis performed in **1/1 OCTAVE** or **1/3 OCTAVE** analysis (cf. Tab. B.1.21)
- the results of the statistical analysis made in **1/1 OCTAVE** or **1/3 OCTAVE** analysis (cf. Tab. B.1.22)
- the **RPM** results (cf. Tab. B.1.29)
- the settings of the instrument saved in the setup file (cf. Tab. B.1.30)
- the logger header (cf. Tab. B.1.31)
- the data stored during the measurements in the logger (cf. Tab. B.1.32)
- the **EVENT TRIGGER** parameters (cf. Tab. 1.36)

Below, all file-structure groups are described separately in Tab. B.1.1 ÷ Tab. B.1.36. 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 = id, nn = block's length]
1÷4	FileName	file or logger name (8 characters)
5	Reserved	reserved
6	CurrentDate	file creation date
7	CurrentTime	file creation time
8÷11	AssBufFileName	name of the associated logger or file (8 bytes)
12	LoggerDate	associated logger creation date
13	LoggerTime	associated logger creation time
...

Table B.1.2. Unit and software specification

Word number	Name	Comment
0	0xnn02	[02 = id, nn = block's length]
1	UnitNumber	unit number
2	UnitType	unit type: 979
3	SoftwareVersion	software version * 100
4	SoftwareIssueDate	software issue date
5	DeviceMode	device mode: 0 - Vibration Level Meter / Analyser (VLM) 1 - Sound Level Meter / Analyser (SLM)
6	UnitSubtype	unit subtype: 1
7	FileSysVersion	file system version
8	LevelMetVersion	level meter version
9	SoftwareSubversion	software subversion
10		reserved
...

Table B.1.3. USER's text

Word number	Name	Comment
0	0xnn03	[03 = id, nn = block's length]
1...	title text	the user's text (two characters in a word) finished with one or two

		null bytes
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Table B.1.4_SLM. Parameters and global settings in the case of SLM mode

Word number	Name	Comment
0	0xnn04	[04 = id, nn = block's length]
1	MeasureStartDate	measure start date
2	MeasureStartTime	measure start time
3	DeviceFunction	device function: 1 - LEVEL METER , 2 - 1/1 OCTAVE analyser, 3 - 1/3 OCTAVE analyser
4	MeasureInput	measurement input type: 2 - Microphone
5	Range	measurement range: 1 - LOW , 2 - HIGH
6	UnitFlags	Flags: b0 – measurement with calibration b1 – overload b2 – Human Vibrations not available b3 – day measure b4 – evening measure b5 – night measure b6 – self vibration b7 – measurement start by the Timer b9 – measurement start synchronized with GPS
7	RepCycle	repetition cycle: 0 - infinity nnnn - number of repetitions $\in(1\div 1000)$
8	NofProf	number of profiles (3)
9	StartDelay	start delay time specified in seconds: 0÷60
10÷11	IntTimeSec	integration time specified in seconds
12	MicFieldCorr	field correction: 0 - FREE , 1 - DIFFUSE
13	LeqInt	detector's type in the LEQ function: 0 - LINEAR , 1 - EXPONENTIAL
14	SpectrumFilter	1/1 or 1/3 OCTAVE analysis filter: 0 - HP , 1 - Z , 2 - A , 3 - C , 5 - B
15	SpectrumBuff	1/1 or 1/3 OCTAVE logger: 0 – off, 1 – on in other cases reserved
16	ExposureTime	exposure time: 1÷480 (min)
17	CriterionLevel or	reserved

	RT60Method	
18	ThresholdLevel	reserved
19	ExchangeRate	reserved
20	CalibrType	last calibration type: 0 - none, 1 - by measurement, 2 - by sensitivity, 3 - factory calibration
21	CalibrDate	last calibration date
22	CalibrTime	last calibration time
23		reserved
24		reserved
25	OutdoorFilter	outdoor filter: 0 - off, 1 - on
26	OutdoorType	outdoor filter type: 0 - ENVIRONMENT , 1 - AIRPORT
27	MicComp	compensating filter for microphones: 0 - off, 1 - on
28	VoltageInput	voltage input: 0 - off, 1 - on
29	HighCurrentIEPE	0 - 1.5 mA, 1 - 4.5 mA
30	Spectrum RMS Detector	1/3 OCTAVE with AUDIO BAND : 0 - LINEAR , 1 - FAST , 2 - SLOW 1/3 OCTAVE with FULL BAND : 0 - LINEAR , otherwise reserved
31	GpsLastSyncTime	The time between clock synchronization from GPS module and the start of measurement. 0xffff - no synchronization
32-47		reserved
...

Table B.1.4_VLM. Parameters and global settings in the case of VLM mode

Word number	Name	Comment
0	0xnn04	[04 = id, nn = block's length]
1	MeasureStartDate	measure start date
2	MeasureStartTime	measure start time
3	DeviceFunction	device function: 1 - LEVEL METER , 2 - 1/1 OCTAVE analyser, 3 - 1/3 OCTAVE analyser,
4	MeasureInput	measurement input type: 5 - Accelerometer
5	Range	measurement range: 1 - LOW , 2 - HIGH
6	UnitFlags	Flags: b0 - measurement with calibration

		b1 – overload b2 – Human Vibrations not available b3 – day measure b4 – evening measure b5 – night measure b6 – self vibration b7 – measurement start by the Timer b9 – measurement start synchronized with GPS
7	RepCycle	repetition cycle: 0 - infinity nnnn - number of repetitions $\in(1\div1000)$
8	NofProf	number of profiles (3)
9	StartDelay	start delay time specified in seconds: 0÷60
10÷11	IntTimeSec	integration time specified in seconds
12	Reserved	reserved
13	LeqInt	detector type in the RMS function: 0 - LINEAR , 1 - EXPONENTIAL
14	SpectrumFilter	1/1 or 1/3 OCTAVE analysis filter: 0 - HP
15	SpectrumBuff	1/1 or 1/3 OCTAVE logger: 0 - off, 1 - on in other cases: reserved
16		reserved
17	RefLev_a	reference level for acceleration given in μms^{-2} $\in(1\div100)$
18	RefLev_v	reference level for velocity given in nms^{-1} $\in(1\div100)$
19	RefLev_d	reference level for displacement given in pm $\in(1\div100)$
20	CalibrType	last calibration type: 0 - none, 1 - by measurement, 2 - by sensitivity, 3 - factory calibration
21	CalibrDate	last calibration date
22	CalibrTime	last calibration time
23	RPM_On	RPM measure 0 - off, 1 - on
24	RPM_Pulse	RPM pulse: 1÷360
25		reserved
26		reserved
27		reserved
28	VoltageInput	voltage input: 0 - off, 1 - on
29	HighCurrentIEPE	0 - 1.5 mA, 1 - 4.5 mA
30÷47		reserved
...

Table B.1.5. MEASURE TRIGGER parameters

Word number	Name	Comment
0	0xnn2B	[2B = id, nn = block's length]
1	TriggerMode	trigger mode: 0 - OFF, 1 - SLOPE +, 2 - SLOPE -, 3 - LEVEL +, 4 - LEVEL -, 6 - GRAD + 7 - EXTENDED I/O
2	TriggerSource	source of the triggering signal: 0 - RMS(1) the RMS result from the first profile
3	TriggerLev	level of triggering: 24÷136 dB (*10)
4	TriggerGrad	gradient of triggering (in the case of TriggerMode=GRAD +): 1dB/ms÷100dB/ms
5	TriggerPre	reserved
6	TriggerPost	reserved
7	Sampling	reserved
8	RecTime	reserved
9	BitsPerSample	reserved
10	Channel	reserved
11	OnMarker	reserved
12	Step	trigger period: 5 – 0.5 ms
...

Table B.1.6. LOGGER TRIGGER parameters

Word number	Name	Comment
0	0xnn2C	[2C = id, nn = block's length]
1	TriggerMode	trigger mode: 0 - OFF, 3 - LEVEL +, 4 - LEVEL -
2	TriggerSource	source of the triggering signal: 0 - RMS(1) the RMS result from the first profile in the case of 1/1 OCTAVE analyser nn - number of 1/1 OCTAVE filter ∈(8÷NOct) in the case of 1/3 OCTAVE analyser nn - number of 1/3 OCTAVE filter ∈(23÷NTER)
3	TriggerLev	level of triggering: 24÷136 dB (*10)
4	TriggerGrad	Reserved

5	TriggerPre	number of the records taken into account before the fulfilment of the triggering condition $\in(1\div 50)$
6	TriggerPost	number of the records taken into account after the fulfilment of the triggering condition $\in(1\div 200)$
7	Sampling	Reserved
8	RecTime	Reserved
9	BitsPerSample	Reserved
10	Channel	Reserved
11	OnMarker	reserved
12	Step	trigger period: 5 – 0.5 ms 1000 – 100 ms 10000 – 1 s
...

Table B.1.7. RECORDER TRIGGER parameters

Word number	Name	Comment
0	0xnn2D	[2D = id, nn = block's length]
1	TriggerMode	trigger mode: 0 - OFF , 1 - SLOPE + , 2 - SLOPE - , 3 - LEVEL + , 4 - LEVEL - , 7 - EXTENDED I/O
2	TriggerSource	source of the triggering signal: 0 - RMS(1) the RMS result from the first profile
3	TriggerLev	level of triggering: 24÷136 dB (*10)
4	TriggerGrad	reserved
5	TriggerPre	reserved
6	TriggerPost	reserved
7	Sampling	reserved
8	RecTime	reserved
9	BitsPerSample	reserved
10	Channel	reserved
11	OnMarker	reserved
12	Step	trigger period: 5 – 0.5 ms 1000 – 100 ms 10000 – 1 s
...

Table B.1.8. EXTENDED I/O parameters

Word number	Name	Comment
0	0xnn2E	[2E = id, nn = block's length]
1	Mode	mode: 0 - ANALOG OUT, 1 - DIGITAL IN, 2 - DIGITAL OUT
2	Function	in the case of ANALOG OUT: reserved in the case of DIGITAL IN: 0 - EXTERNAL TRIGGER in the case of DIGITAL OUT: 0 - TRIG. PULSE, 1 - ALARM PULSE
3	ActiveLevel	in the case of DIGITAL OUT and ALARM PULSE: 0 - LOW, 1 - HIGH in other cases reserved
4	Source	in the case of DIGITAL OUT and ALARM PULSE: 0 - PEAK(1), 1 - SPL(1), 2 - LEQ(1) in other cases reserved
5	AlarmLevel	in the case of DIGITAL OUT and ALARM PULSE: 30÷140 dB (*10) in other cases reserved
6	AO_Direct	in the case of ANALOG OUT 0 - off, 1 - on in other cases reserved
7	AO_DA	in the case of ANALOG OUT 0 - off, 1 - on in other cases reserved
8	AO_Source	in the case of ANALOG OUT and AO_DA: 0 - A, 1 - C, 2 - Z, 3 - RTF1, 4 - RTF2, 5 - RTF3 in other cases reserved
9	Polarisation/Slope	in the case of DIGITAL OUT and TRIG. PULSE: Polarisation (0 - POSITIVE, 1 - NEGATIVE) in the case of DIGITAL IN Slope (0 - POSITIVE, 1 - NEGATIVE) in other cases reserved
...

Table B.1.9_SLM. Special settings for profiles in the case of SLM mode

Word number	Name	Comment
0	0xnn05	[05 = id, nn = block's length]

1	0x0307	[used_profile, profile's mask]
2	0xmm06	[06 = id, mm = sub-block's length]
3	DetectorP[1]	detector type in the 1 st profile: 0 - IMP. , 1 - FAST , 2 - SLOW
4	FilterP[1]	filter type in the 1 st profile: -3 - R3 , -2 - R2 , -1 - R1 , 1 - Z , 2 - A , 3 - C , 4 - G , 5 - B
5	BufferP[1]	logger contents in the 1 st profile defined as a sum of: 0 - none, 1 - PEAK , 2 - MAX , 4 - MIN , 8 - RMS
6	CalibrFactor[1]	calibration factor (*10 dB) in the 1 st profile
7	ProfileFlags[1]	flags in the 1 st profile
8	0xmm06	[06 = id, mm = sub-block's length]
9	DetectorP[2]	detector type in the 2 nd profile: 0 - IMP. , 1 - FAST , 2 - SLOW
10	FilterP[2]	filter type in the 2 nd profile: -3 - R3 , -2 - R2 , -1 - R1 , 1 - Z , 2 - A , 3 - C , 4 - G , 5 - B
11	BufferP[2]	logger contents in the 2 nd profile defined as a sum of: 0 - none, 1 - PEAK , 2 - MAX , 4 - MIN , 8 - RMS
12	CalibrFactor[2]	calibration factor (*10 dB) in the 2 nd profile
13	ProfileFlags[2]	flags in the 2 nd profile
14	0xmm06	[06 = id, mm = sub-block's length]
15	DetectorP[3]	detector type in the 3 rd profile: 0 - IMP. , 1 - FAST , 2 - SLOW
16	FilterP[3]	filter type in the 3 rd profile: -3 - R3 , -2 - R2 , -1 - R1 , 1 - Z , 2 - A , 3 - C , 4 - G , 5 - B
17	BufferP[3]	logger contents in the 3 rd profile defined as a sum of: 0 - none, 1 - PEAK , 2 - MAX , 4 - MIN , 8 - RMS
18	CalibrFactor[3]	calibration factor (*10 dB) in the 3 rd profile
19	ProfileFlags[3]	flags in the 3 rd profile
...

Table B.1.9_VLM. Special settings for profiles in the case of VLM mode

Word number	Name	Comment
0	0xnn05	[05 = id, nn = block's length]
1	0x0307	[used_profile, profile's mask]
2	0xmm06	[06 = id, mm = sub-block's length]
3	DetectorP[1]	detector type in the 1 st profile: 0 - 100 ms , 1 - 125 ms , 2 - 200 ms , 3 - 500 ms ,

		4 - 1 s, 5 - 2 s, 6 - 5 s, 7 - 10 s
4	FilterP[1]	filter type in the 1 st profile: -3 - R3, -2 - R2, -1 - R1, 0 - HP, 1 - HP1, 2 - HP3, 3 - HP10, 4 - Vel1, 5 - Vel3, 6 - Vel10, 7 - VelMF, 8 - Dil1, 9 - Dil3, 10 - Dil10, 11 - W-Bxy, 12 - W-Bz, 13 - H-A, 14 - W-Bc, 15 - KB, 16 - Wk, 17 - Wd, 18 - Wc, 19 - Wj, 20 - Wm, 21 - Wh, 22 - Wg, 23 - Wb
5	BufferP[1]	logger contents in the 1 st profile defined as a sum of: 0 - none, 1 - PEAK, 2 - P-P, 4 - MAX, 8 - RMS
6	CalibrFactor[1]	calibration factor (*10 dB) in the 1 st profile
7	ProfileFlags[1]	flags in the 1 st profile
8	0xmm06	[06 = id, mm = sub-block's length]
9	DetectorP[2]	detector type in the 2 nd profile: 0 - 100 ms, 1 - 125 ms, 2 - 200 ms, 3 - 500 ms, 4 - 1 s, 5 - 2 s, 6 - 5 s, 7 - 10 s
10	FilterP[2]	filter type in the 2 nd profile: -3 - R3, -2 - R2, -1 - R1, 0 - HP, 1 - HP1, 2 - HP3, 3 - HP10, 4 - Vel1, 5 - Vel3, 6 - Vel10, 7 - VelMF, 8 - Dil1, 9 - Dil3, 10 - Dil10, 11 - W-Bxy, 12 - W-Bz, 13 - H-A, 14 - W-Bc, 15 - KB, 16 - Wk, 17 - Wd, 18 - Wc, 19 - Wj, 20 - Wm, 21 - Wh, 22 - Wg, 23 - Wb
11	BufferP[2]	logger contents in the 2 nd profile defined as a sum of: 0 - none, 1 - PEAK, 2 - P-P, 4 - MAX, 8 - RMS
12	CalibrFactor[2]	calibration factor (*10 dB) in the 2 nd profile
13	ProfileFlags[2]	flags in the 2 nd profile
14	0xmm06	[06 = id, mm = sub-block's length]
15	DetectorP[3]	detector type in the 3 rd profile: 0 - 100 ms, 1 - 125 ms, 2 - 200 ms, 3 - 500 ms, 4 - 1 s, 5 - 2 s, 6 - 5 s, 7 - 10 s
16	FilterP[3]	filter type in the 3 rd profile: -3 - R3, -2 - R2, -1 - R1, 0 - HP, 1 - HP1, 2 - HP3, 3 - HP10, 4 - Vel1, 5 - Vel3, 6 - Vel10, 7 - VelMF, 8 - Dil1, 9 - Dil3, 10 - Dil10, 11 - W-Bxy, 12 - W-Bz, 13 - H-A, 14 - W-Bc, 15 - KB, 16 - Wk, 17 - Wd, 18 - Wc, 19 - Wj, 20 - Wm, 21 - Wh, 22 - Wg, 23 - Wb

17	BufferP[3]	logger contents in the 3 rd profile defined as a sum of: 0 - none, 1 - PEAK , 2 - P-P , 4 - MAX , 8 - RMS
18	CalibrFactor[3]	calibration factor (*10 dB) in the 3 rd profile
19	ProfileFlags[3]	flags in the 3 rd profile
...

Table B.1.10_SLM. Main results in the case of SLM mode

Word number	Name	Comment
0	0xnn07	[07 = id, nn = block's length]
1	0x0307	[used_profile, profile's mask]
2	0xmm08	[08 = id, mm = sub-block's length]
3÷4	MeasureTime	time of the measurement
5	Result[1][1]	PEAK value in the 1 st profile
6	Result[1][2]	reserved
7	Result[1][3]	maximal value (MAX) in the 1 st profile
8	Result[1][4]	minimal value (MIN) in the 1 st profile
9	Result[1][5]	SPL value in the 1 st profile
10	Result[1][6]	LEQ value in the 1 st profile
11	Result[1][7]	Lden value in the 1 st profile
12	Result[1][8]	Ltm3 value in the 1 st profile
13	Result[1][9]	Ltm5 value in the 1 st profile
14	Result[1][10]	reserved
15	Result[1][11]	reserved
16	UnderRes[1]	underrange value in the 1 st profile
17	0xmm08	[08 = id, mm = sub-block's length]
18÷19	OVL	overload time
20	Result[2][1]	PEAK value in the 2 nd profile
21	Result[2][2]	reserved
22	Result[2][3]	maximal value (MAX) in the 2 nd profile
23	Result[2][4]	minimal value (MIN) in the 2 nd profile
24	Result[2][5]	SPL value in the 2 nd profile
25	Result[2][6]	LEQ value in the 2 nd profile
26	Result[2][7]	Lden value in the 2 nd profile
27	Result[2][8]	Ltm3 value in the 2 nd profile
28	Result[2][9]	Ltm5 value in the 2 nd profile
29	Result[2][10]	reserved
30	Result[2][11]	reserved
31	UnderRes[2]	underrange value in the 2 nd profile
32	0xmm08	[08 = id, mm = sub-block's length]
33÷34	Reserved	reserved
35	Result[3][1]	PEAK value in the 3 rd profile

36	Result[3][2]	reserved
37	Result[3][3]	maximal value (MAX) in the 3 rd profile
38	Result[3][4]	minimal value (MIN) in the 3 rd profile
39	Result[3][5]	SPL value in the 3 rd profile
40	Result[3][6]	LEQ value in the 3 rd profile
41	Result[3][7]	Lden value in the 3 rd profile
42	Result[3][8]	Ltm3 value in the 3 rd profile
43	Result[3][9]	Ltm5 value in the 3 rd profile
44	Result[3][10]	reserved
45	Result[3][11]	reserved
46	UnderRes[3]	underrange value in the 3 rd profile
...

Table B.1.10_VLM. Main results in the case of VLM mode

Word number	Name	Comment
0	0xnn07	[07 = id, nn = block's length]
1	0x0307	[used_profile, profile's mask]
2	0xmm08	[08 = id, mm = sub-block's length]
3÷4	MeasureTime	time of the measurement
5	Result[1][1]	PEAK value in the 1 st profile
6	Result[1][2]	P-P value in the 1 st profile
7	Result[1][3]	maximal value (MAX) in the 1 st profile
8	Result[1][4]	minimal value (MIN) in the 1 st profile
9	Result[1][5]	SPL value in the 1 st profile
10	Result[1][6]	RMS value in the 1 st profile
11	Result[1][7]	VDV value in the 1 st profile
12	Result[1][8]	reserved
13	Result[1][9]	reserved
14	Result[1][10]	reserved
15	Result[1][11]	reserved
16	UnderRes[1]	underrange value in the 1 st profile
17	0xmm08	[08 = id, mm = sub-block's length]
18÷19	OVL	overload time
20	Result[2][1]	PEAK value in the 2 nd profile
21	Result[2][2]	P-P value in the 2 nd profile
22	Result[2][3]	maximal value (MAX) in the 2 nd profile
23	Result[2][4]	minimal value (MIN) in the 2 nd profile
24	Result[2][5]	SPL value in the 2 nd profile
25	Result[2][6]	RMS value in the 2 nd profile
26	Result[2][7]	VDV value in the 2 nd profile
27	Result[2][8]	reserved
28	Result[2][9]	reserved

29	Result[2][10]	reserved
30	Result[2][11]	reserved
31	UnderRes[2]	underrange value in the 2 nd profile
32	0xmm08	[08 = id, mm = sub-block's length]
33-34	Reserved	reserved
35	Result[3][1]	PEAK value in the 3 rd profile
36	Result[3][2]	P-P value in the 3 rd profile
37	Result[3][3]	maximal value (MAX) in the 3 rd profile
38	Result[3][4]	minimal value (MIN) in the 3 rd profile
39	Result[3][5]	SPL value in the 3 rd profile
40	Result[3][6]	RMS value in the 3 rd profile
41	Result[3][7]	VDV value in the 3 rd profile
42	Result[3][8]	reserved
43	Result[3][9]	reserved
44	Result[3][10]	reserved
45	Result[3][11]	reserved
46	UnderRes[3]	underrange value in the 3 rd profile
...

Table B.1.11. 1/1 OCTAVE analysis results

Word number	Name	Comment
0	0xnn0E, 0xnn26, 0xnn27	[block_id, nn=block_length] 0xnn 0E – averaged spectrum results, 0xnn 26 – min. spectrum results, 0xnn 27 – max. spectrum results
1	0x0101	[used_profile, profile's mask]
2	LowestFreq	the lowest 1/1 OCTAVE frequency (*100 Hz): 100 (FULL BAND) or 3150 (AUDIO BAND)
3	NOct	number of 1/1 OCTAVE values: 15 (FULL BAND) or 10 (AUDIO BAND)
4	NOctTot	number of TOTAL values: 3
5÷20	Octave[i]	1/1 octave[i] value (*10 dB); i=1÷NOct+NoctTot (1÷16)
...

Table B.1.12. 1/3 OCTAVE analysis results

Word number	Name	Comment
0	0xnn10, 0xnn28, 0xnn29	[block_id, nn=block_length] 0xnn 10 – averaged spectrum results, 0xnn 28 – min. spectrum results, 0xnn 29 – max. spectrum results
1	0x0101	[used_profile, profile's mask]

2	LowestFreq	the lowest 1/3 OCTAVE frequency (*100 Hz): 80 (FULL BAND) or 2000 (AUDIO BAND)
3	NTer	number of 1/3 OCTAVE values: 45 (FULL BAND) or 31 (AUDIO BAND)
4	NTerTot	number of TOTAL values: 3
5÷50	Tercje[i]	1/3 octave[i] value (*10 dB); i=1÷NTer+NTerTot (1÷46)
...

Table B.1.13. Header of the FFT analysis in the whole band in TONALITY function

Word number	Name	Comment
0	0xnn15	[15 = id, nn = block_length]
1	Reserved	reserved
2	LowestFreqNo	number of the first line in the FFT spectrum = 0
3	NFft	number of lines in the spectrum = 800
4	NFftTot	number of TOTAL lines in the spectrum = 0
5	FftBand	band of the FFT analysis: 1 - 18.75 kHz
6	FftWindow	window in the FFT analysis: 0 - HANNING
7	FftAverag	type of averaging in the FFT analysis: 0 - LINEAR , 1 - EXPONENTIAL
8÷9	FftSampFreq	sampling frequency (48000 kHz)
10	Ton_wfactor	176
11	Reserved	
...

Table B.1.14. Header of the FFT analysis in the shortened band performed in TONALITY function

Word number	Name	Comment
0	0xnn16	[16 = id, nn = block_length]
1	Reserved	reserved
2	LowestFreqNo	number of the first line in the FFT spectrum = 0
3	NFft	number of lines in the spectrum = 800
4	NFftTot	number of TOTAL lines in the spectrum = 0
5	FftBand	band of the FFT analysis: 1 - 3.125 kHz
6	FftWindow	window in the FFT analysis: 0 - HANNING
7	FftAverag	type of averaging in the FFT analysis: 0 - LINEAR , 1 - EXPONENTIAL
8÷9	FftSampFreq	sampling frequency (8000 kHz)
10	Ton_wfactor	176
11	Reserved	

...
-----	-----	-----

Table B.1.15. Header of the FFT analysis

Word number	Name	Comment
0	0xnn11	[11 = id, nn = block's length]
1	reserved	reserved
2	LowestFreqNo	number of the first line in the FFT spectrum
3	NFft	number of lines in the spectrum
4	NFftTot	number of TOTAL lines in the spectrum
5	FftBand	band of the FFT analysis: 1 - 20 kHz , 2 - 10 kHz , 3 - 5 kHz , 4 - 2.5 kHz , 5 - 1.25 kHz , 6 - 625 Hz , 7 - 312 Hz , 8 - 156 Hz , 9 - 78 Hz
6	FftWindow	window in the FFT analysis: 0 - HANNING , 1 - RECTANGLE , 2 - FLAT TOP , 3 - KAISER-BESSEL
7	FftAverag	type of averaging in the FFT analysis: 0 - LINEAR
8÷9	FftSampFreq	sampling frequency
10	FFT_wfactor	
11	Reserved	
...

Table B.1.16. FFT analysis results

Word number	Name	Comment
0	0x0012	[12 = id, 0 (block is longer than 256 words, the length is given in the second word)]
1	FftBlockLength	$2 + \text{NFft} + \text{NFftTot} = 2 + 1920 + 1 = 1923$
2÷1922	FFT[i]	value of the FFT line (*10 dB); $i = 1÷1921$

Table B.1.17. TONALITY results

Word	Name	Comment
------	------	---------

number		
0	0x001D	[1D = id, 00 = block length in the second word]
1	SubblockLength	TonCount+13
2	MaxToneBand	max tone bandwidth relative to critical bandwidth [%]
3	ToneSeek	tone seek criteria [dB]
4	RegressionRange	regression range [%]
5	ToneBand	dB level which determinates tone width [dB]
6	DeltaFreq	spectrum resolution *1000
7	TonPenalty	penalty
8	Lpt	tone level in critical band [dB]
9	Lpn	noise level in critical band [dB]
1A	Lta	tonal audibility [dB related to MT]
1B	cbCenterLine	critical band centre line index
1C	TonCount	number of tones
1D÷1D+ TonCount	Tones[i]	Tone[i] index
...

Table B.1.18. Statistical levels

Word number	Name	Comment
0	0xnn17	[17 = id, nn = block's length]
1	0xpprr	[pp=used_profile, rr=profile's mask]
2	N_stat_level	number of statistical levels = N
3+i*(pp+1)	nn[i]	number of the Lnn statistics; i=0÷N-1
3+i*(pp+1)+ p	Lnn[i,p]	value of the Lnn statistics for profile p (p=1÷pp)
...

Table B.1.19. Header of the statistical analysis in profiles

Word number	Name	Comment
0	0xnn09	[09 = id, nn = block's length]
1	0x0703	[03=number of profiles, 07=active profiles mask]
2	0xmm0A	[0A = id, mm = sub-block's length]
3	NofClasses[1]	number of classes in the 1 st profile (120)
4	BottomClass[1]	bottom class boundary (*10 dB) in the 1 st profile
5	ClassWidth[1]	class width (*10 dB) in the 1 st profile
6	0xmm0A	[0A = id, mm = sub-block's length]
7	NofClasses[2]	number of classes in the 2 nd profile (120)
8	BottomClass[2]	bottom class boundary (*10 dB) in the 2 nd profile
9	ClassWidth[2]	class width (*10 dB) in the 2 nd profile

10	0xmm0A	[0A = id, mm = sub-block's length]
11	NofClasses[3]	number of classes in the 3 rd profile (120)
12	BottomClass[3]	bottom class boundary (*10 dB) in the 3 rd profile
13	ClassWidth[3]	class width (*10 dB) in the 3 rd profile
...

Table B.1.20. Results of the statistical analysis in profiles

Word number	Name	Comment
0	0x010B	[0B = id, prof_mask#1]
1	Sub-blockLength	2 * number of classes in the 1 st profile + 2
2÷3	Histogram[1][1]	the first counter in the 1 st profile
4÷5	Histogram[1][2]	the second counter in the 1 st profile
...
0	0x020B	[0B = id, prof_mask#2]
1	Sub-blockLength	2 * number of classes in the 2 nd profile + 2
2÷3	Histogram[2][1]	the first counter in the 2 nd profile
4÷5	Histogram[2][2]	the second counter in the 2 nd profile
...
0	0x040B	[0B = id, prof_mask#3]
1	Sub-blockLength	2 * number of classes in the 3 rd profile + 2
2÷3	Histogram[3][1]	the first counter in the 3 rd profile
4÷5	Histogram[3][2]	the second counter in the 3 rd profile
...

Table B.1.21. Header of the statistical analysis performed in 1/1 OCTAVE or 1/3 OCTAVE mode

Word number	Name	Comment
0	0xnn13	[13 = id, nn = block's length]
1	NofHist	number of histogramms (number of 1/1 OCTAVE (15) or 1/3 OCTAVE (45) filters and TOTAL value (1))
2	NofClasses	number of classes in the histogramm (120)
3	BottomClass	bottom class boundary (*10 dB)
4	ClassWidth	class width (*10 dB)
...

Table B.1.22. Results of the statistical analysis performed in 1/1 OCTAVE or 1/3 OCTAVE mode

Word number	Name	Comment
0	0x0114	[14 = id, 01 = number of the histogramm (1/1 OCTAVE or 1/3 OCTAVE)]
1	Sub-blockLength	2 * NofClasses + 2 (242)
2÷3	Histogram[1][1]	first counter for the first 1/1 OCTAVE or 1/3 OCTAVE filter
4÷5	Histogram[1][2]	second counter for the first 1/1 OCTAVE or 1/3 OCTAVE filter
...
0	0x0214	[14 = id, 02 = number of the histogramm (1/1 OCTAVE or 1/3 OCTAVE)]
1	Sub-blockLength	2 * NofClasses + 2 (242)
2÷3	Histogram[2][1]	first counter for the second 1/1 OCTAVE or 1/3 OCTAVE filter
4÷5	Histogram[2][2]	second counter for the second 1/1 OCTAVE or 1/3 OCTAVE filter
...
...
0	0xnn14	[14 = id, nn = NofHist = number of the last histogramm (1/1 OCTAVE or 1/3 OCTAVE)]
1	Sub-blockLength	2 * NofClasses + 2 (242)
2÷3	Histogram[nn][1]	first counter for the last 1/1 OCTAVE or 1/3 OCTAVE filter
4÷5	Histogram[nn][2]	second counter for the last 1/1 OCTAVE or 1/3 OCTAVE filter
...

Table B.1.24. RTF parameters

Word number	Name	Comment
0	0xnn21	[21 = id, nn = block's length]
1	Type [1]	type of 1 st user filter: 0 - HIGHPASS , 1 - LOWPASS , 2 - BANDPASS
2	Rank [1]	rank of 1 st user filter: in the case of BANDPASS : 4 in other cases: 2
3÷4	Lower pole [1]	
5÷6	Upper pole [1]	
7	Type [2]	type of 2 nd user filter: 0 - HIGHPASS , 1 - LOWPASS , 2 - BANDPASS
8	Rank [2]	rank of 2 nd user filter: in the case of BANDPASS : 4 in other cases: 2
9÷10	Lower pole [2]	
11÷12	Upper pole [2]	

13	Type [3]	type of 3 rd user filter: 0 - HIGHPASS , 1 - LOWPASS , 2 - BANDPASS
14	Rank [3]	rank of 3 rd user filter: in the case of BANDPASS : 4 in other cases: 2
15÷16	Lower pole [3]	
17÷18	Upper pole [3]	
...

Table B.1.26. RT60 parameters block

Word number	Name	Comment
0	0xnn1A	[1A = id, nn = block's length]
1	RT60SaveMode	type of results in block 1B: 1 - results, 2 - averaged results
2	RT60Method_p	calculation method: 1 - DECAY , 2 - IMPULSE
3	RT60Spectrum	type of spectrum: 1 - 1/1 OCTAVE , 2 - 1/3 OCTAVE
4	buff_step_p	logger time step in milliseconds
5	ResponseTime_p	1÷30
6	Reserved	reserved
7	DispSmooth	0÷15
8	NoiseMargin	0÷20 (*10dB)
9	RT60Averaging	0 - Off, 1 - On
10	RT60MeasureNo	averaging number
...

Table B.1.27. RT60 results block

Word number	Name	Comment
0	0x001B	[1B = id, 00 = block's length in the second word]
1	BlockLength	$7 + ((N2_rt60_freq - N1_rt60_freq + 1) + N_max_total) * 9$
2	LowestFreq	the lowest 1/3 OCTAVE frequency (*100 Hz) = 80
3	NTer	
4	NTotal	
5	N1_rt60_freq	
6	N2_rt60_freq	
7+i	calculated[i]	$i = N1_rt60_freq + N2_rt60_freq$; $i = N_tercje + N_tercje + N_max_total - 1$

8+i	edt[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
9+i	rt_20[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
10+i	rt_30[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
11+i	rt_user[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
12+i	cor_edt[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
13+i	cor_rt_20[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
14+i	cor_rt_30[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
15+i	cor_rt_user[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
...

Table B.1.28. RT60 averaged results block

Word number	Name	Comment
0	0x001C	[1C = id, 00 = block's length in the second word]
1	BlockLength	$7 + ((N2_rt60_freq - N1_rt60_freq + 1) + N_max_total) * 9$
2	LowestFreq	the lowest 1/3 OCTAVE frequency (*100 Hz) = 80
3	NTer	Number of 1/3 OCTAVE values
4	NTotal	Number of TOTAL values
5	N1_rt60_freq	First frequency
6	N2_rt60_freq	Last frequency
7+i	Reserved	Reserved
8+i	edt[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
9+i	rt_20[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
10+i	rt_30[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
11+i	rt_user[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
12+i	cor_edt[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
13+i	cor_rt_20[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
14+i	cor_rt_30[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
15+i	cor_rt_user[i]	i=N1_rt60_freq+N2_rt60_freq; i=N_tercje÷N_tercje+N_max_total-1
...

Table B.1.29. RPM results (the presence depends on the **RPM_On** position)

Word number	Name	Comment
0	0xnn1F	[1F = id, nn = block's length]
1	f_RpmRes.rpm[0]	RPM[0]
2	f_RpmRes.rpm[1]	RPM[1]
3	F_RpmRes.rpmx[0]	RPM Max[0]
4	F_RpmRes.rpmx[1]	RPM Max[1]
5	F_RpmRes.rpmn[0]	RPM Min[0]
6	F_RpmRes.rpmn[1]	RPM Min[1]
...

Table B.1.30. SETUP data

Word number	Name	Comment
0	0x0041	[41 = id, 00 = block's length in the second word]
1	BlockLength	length of the block
2÷BlockLength-1	SetupData	saved setup values
...

Table B.1.31. Header of the logger file

Word number	Name	Comment
0	0xnn0F	[0F = id, nn = header's length]
1	BuffTSec	logger time step - full seconds part
2	BuffTMilisc	logger time step - milliseconds part
3	LowestFreq	the lowest 1/1 OCTAVE or 1/3 OCTAVE frequency (*100 Hz)
4	NOctTer	number of 1/1 OCTAVE or 1/3 OCTAVE results
5	NOctTerTot	number of TOTAL values
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: number of records in the logger + number of records not saved
12÷13	AudioRecords	number of audio records in the logger
14	MStUnitNumber	monitoring station unit number (ignored if 0xFFFF)
15	MStUnitType	type of the monitoring station: 211 (SV 211) or 210 (SV 210) (ignored if 0xFFFF)
16	MStSoftwareVersion	monitoring station software version (ignored if 0xFFFF)
17..18	MStIntTimeSec	integration period of meteo results in seconds

		(ignored if 0xFFFF)
...



Note: The current logger time step in seconds can be obtained from the formulae:

$$T = \text{BuffTSec} + \text{BuffTMiliseC} / 1000$$

Table B.1.32. Contents of the logger file

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

Table B.1.33. File-end marker

Word number	Name	Comment
0	0xFFFF	file end marker

Table B.1.36. EVENT TRIGGER parameters

Word number	Name	Comment
0	0xnn31	[31 = id, nn = block's length]
1	TriggerMode	trigger mode: 0 - OFF , 1 - SLOPE + , 2 - SLOPE - , 3 - LEVEL + , 4 - LEVEL - , 7 - EXTENDED I/O
2	TriggerSource	source of the triggering signal: 0 - RMS(1) the RMS result from the first profile
3	TriggerLev	level of triggering: 24÷136 dB (*10)
4	TriggerGrad	reserved
5	TriggerPre	PreTrigger: 0 - non active 1 - active recording time before trigger depending on sampling frequency: 48 kHz - 1s 24 kHz - 2s

		12 kHz - 4s
6	TriggerPost	reserved
7	Sampling	sampling frequency: 0 - 48 kHz, 1 - 24 kHz, 2 - 12 kHz
8	RecTime	recording time of single event (audio data block)
9	BitsPerSample	bits/sample: 24
10	Channel	1
11	OnMarker	trigger on marker: 0 – OFF 1 – ON
12	Step	trigger period: 5 - 0.5 ms 1000 – 100 ms 10000 – 1 s
...

Table B.1.37. METEO data

Word number	Name	Comment
0	0xnn2A	[2A = id, nn = block's length]
1	BlockLength	block length
2	UnitNumber	unit number
3	UnitType	type of the unit: 211 or 210 (SV 211 or SV 210)
4	SoftwareVersion	software version
5..6	IntTimeSec	integration time speci_ed in seconds
7	Temperature	temperature [*10 °C]
8	Pressure	pressure [hPa]
9	Humidity	humidity [*10 %]
10	AvgWindSpeed	average wind speed [*10 m/s]
11	WindDirection	wind direction for max wind speed [°] (0xFFFF if direction is unavailable)
12	MaxWindSpeed	max wind speed [*10 m/s] (ignored if WindDirection is unavailable)
13..14	WindDirTotalPuffs	wind direction distribution vector number of total wind puffs
15	NofWindDir	wind direction distribution vector number of elements
16 .. 16+NofWindDir-1	WindDir[i]	WindDir[i] value [*10 %]
16+NofWindDir	NofWindMax	max wind speed distribution vector number of elements

17+NofWindDir ... 17+NofWindDir+NofWindMax-1	WindMax[i]	WindMax[i] value [*10 m/s]
17+NofWindDir+NofWindMax	NofWindAvg	avg wind speed distribution vector number of elements
18+NofWindDir+NofWindMax ... 18+NofWindDir+NofWindMax+NofWindAvg-1	WindAvg[i]	WindAvg[i] value [*10 m/s]
18+NofWindDir+NofWindMax+NofWindAvg	RainDetection	rain detection flag
...

Table B.1.38. Total description

Word number	Name	Comment
0	0xnn18	[18 = id, nn = block's length]
1	Filter	Filter: 0 - A 1 - C 2 - Z 0 - HP 1 - PR2 2 - PR3 3 - USER_1 4 - USER_2 5 - USER_3
2	Type	Type (only VLM): 0 - ACC 1 - VEL 2 - DIL
3	CalFactor	Calibration factor value (*10dB) (only VLM)
4	Value	Calculated total value (*10dB) (only VLM)
5	Filter	Filter: 0 - A 1 - C 2 - Z 0 - HP

		1 - PR2 2 - PR3 3 - USER_1 4 - USER_2 5 - USER_3
6	Type	Type (only VLM): 0 – ACC 1 – VEL 2 – DIL
7	CalFactor	Calibration factor value (*10dB) (only VLM)
8	Value	Calculated total value (*10dB) (only VLM)
9	Filter	Filter: 0 - A 1 - C 2 – Z 0 - HP 1 - PR2 2 - PR3 3 - USER_1 4 - USER_2 5 - USER_3
10	Type	Type (only VLM): 0 – ACC 1 – VEL 2 – DIL
11	CalFactor	Calibration factor value (*10dB) (only VLM)
12	Value	Calculated total value (*10dB) (only VLM)

Table B.1.39. User Filter description

Word number	Name	Comment
0	0xnn19	[19 = id, nn = block's length]
1	Filter	Filter: 0 - A 1 - C 2 – Z 0 - HP 1 - PR2 2 - PR3

		3 - USER_1 4 - USER_2 5 - USER_3
2..4	Name	Filter name
5..49	Value[i]	Value[i] i=0..44

Table B.1.40. GPS data

Word number	Name	Comment
0	0xnn34 0xnn35	[34 = id, nn = block's length] GPS data on measurement start [35 = id, nn = block's length] GPS data on measurement end
1	Quality	Signal quality: 0 - GPS_NOT_FIX (no signal) 1 - GPS_FIX 2 - GPS_FIX_DIF
2	Time.Sec	Seconds part of time
3	Time.Min	Minutes part of time
4	Time.Hour	Hours part of time
5	Date.Day	Day
6	Date.Month	Month
7	Date.Year	Year
8	Latitude . Deg	Degree part of latitude
9	Latitude . Min	Minutes part of latitude
10	Latitude . Sec	Seconds part of latitude
11	Latitude.MiliSec	Miliseconds part of latitude
12	Latitude . Dir	Latitude direction: N, S
13	Longitude . Deg	Degree part of longitude
14	Longitude . Min	Minutes part of longitude
15	Longitude . Sec	Seconds part of longitude
16	Longitude.MiliSec	Miliseconds part of longitude
17	Longitude . Dir	Longitude direction: E, W
18	Altitude	Altitude
19	Altitude . 10	Decimal part of altitude
20	Speed	Speed * 100 (km/h)
21..31	Reserved	

Table B.1.41. Marker parameters

Word number	Name	Comment
0	0x0043	[43 = id, nn = block's length]
1	BlockLength	Block's length
2	MarkerCount	Number of markers
3..7	MarkerName[1]	Name of 1st marker (10 characters length)
8	MarkerEvt[1]	1st marker event: 0 – OFF 1 – ON
9	MarkerPoint[1]	1st marker point: 0 – OFF 1 – ON
10..14	MarkerName[2]	Name of 2nd marker (10 characters length)
15	MarkerEvt[2]	2nd marker event: 0 – OFF 1 – ON
16	MarkerPoint[2]	2nd marker point: 0 – OFF 1 – ON
17..21	MarkerName[3]	Name of 3rd marker (10 characters length)
22	MarkerEvt[3]	3rd marker event: 0 – OFF 1 – ON
23	MarkerPoint[3]	3rd marker point: 0 – OFF 1 – ON
24..28	MarkerName[4]	Name of 4th marker (10 characters length)
29	MarkerEvt[4]	4th marker event: 0 – OFF 1 – ON
30	MarkerPoint[4]	4th marker point: 0 – OFF 1 – ON

B.2. Structure of the file containing results from logger

| 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_SLM or Tab. B.1.4_VLM.

MEASUREMENT TRIGGER parameters – cf. Tab. B.1.5.

LOGGER TRIGGER parameters – cf. Tab. B.1.6.

RECORDER TRIGGER parameters – cf. Tab. B.1.7.

EVENT TRIGGER parameters – cf. Tab. B.1.36.

EXTended I/O parameters – cf. Tab. B.1.8.

Special settings for profiles - cf. Tab. B.1.9_SLM or Tab. B.1.9_VLM.

RTF parameters – cf. Tab. B.1.24 .

Marker parameters – cf. Tab. B.1.41

Header of the FFT analysis - cf. Tab. B.1.15.

RT60 parameters - cf. Tab. B.1.26.

Header of the logger file - cf. Tab. B.1.31.

Contents of the logger file - cf. Tab. B.1.32. and the description in B.2.1.

File-end marker - cf. Tab. B.1.33.

B.2.1 Contents of the files in the logger

The records with the results and (starting from the internal software version 2.30) the records with the state of the markers as well as the records with the breaks in the results registration are saved in the logger files.

B.2.1.1 Record with the results

The contents of the record with the results depends on the selected device mode, measurement function and the value set in the proper **LOGGER** line (*path: MENU / INPUT / PROFILE X / LOGGER xxx*).

The following elements can be present (in the given sequence):

- (1) results of the measurement from the first profile if the corresponding **LOGGER** position was active (*paths: MENU / INPUT / PROFILE 1 / LOGGER PEAK; MENU / INPUT / PROFILE 1 / LOGGER MAX; MENU / INPUT / PROFILE 1 / LOGGER MIN; MENU / INPUT / PROFILE 1 / LOGGER RMS*); up to four words are written:

SLM mode:

<result1> - **PEAK** result, depending on the value of BufferP[1] (cf. Tab. B.1.9)

<result2> - **MAX** result, depending on the value of BufferP[1] (cf. Tab. B.1.9)

<result3> - **MIN** result, depending on the value of BufferP[1] (cf. Tab. B.1.9)

<result4> - **RMS** result, depending on the value of BufferP[1] (cf. Tab. B.1.9)

VLM mode:

<result1> - **PEAK** result, depending on the value of BufferP[1] (cf. Tab. B.1.9)

<result2> - **P-P** result, depending on the value of BufferP[1] (cf. Tab. B.1.9)

<result3> - **MAX** result, depending on the value of BufferP[1] (cf. Tab. B.1.9)

<result4> - **RMS** result, depending on the value of BufferP[1] (cf. Tab. B.1.9)

- (2) results of the measurement from the second profile if the corresponding **LOGGER** position was active (*paths: MENU / INPUT / PROFILE 2 / LOGGER PEAK; MENU / INPUT / PROFILE 2 / LOGGER MAX; MENU / INPUT / PROFILE 2 / LOGGER MIN; MENU / INPUT / PROFILE 2 / LOGGER RMS*); up to four words are written:

SLM mode:

<result1> - **PEAK** result, depending on the value of BufferP[2] (cf. Tab. B.1.9)

<result2> - **MAX** result, depending on the value of BufferP[2] (cf. Tab. B.1.9)

<result3> - **MIN** result, depending on the value of BufferP[2] (cf. Tab. B.1.9)

<result4> - **RMS** result, depending on the value of BufferP[2] (cf. Tab. B.1.9)

VLM mode:

<result1> - **PEAK** result, depending on the value of BufferP[2] (cf. Tab. B.1.9)

<result2> - **P-P** result, depending on the value of BufferP[2] (cf. Tab. B.1.9)

<result3> - **MAX** result, depending on the value of BufferP[2] (cf. Tab. B.1.9)

<result4> - **RMS** result, depending on the value of BufferP[2] (cf. Tab. B.1.9)

- (3) results of the measurement from the third profile if the corresponding **LOGGER** position was active (*paths: MENU / INPUT / PROFILE 3 / LOGGER PEAK; MENU / INPUT / PROFILE 3 /*

LOGGER MAX; MENU / INPUT / PROFILE 3 / LOGGER MIN; MENU / INPUT / PROFILE 3 /
LOGGER RMS); up to four words are written:

SLM mode:

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

VLM mode:

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

(4) results of **1/1 OCTAVE** analysis if **1/1 OCTAVE** analysis was selected as the measurement function and the **LOGGER** was active (*path: MENU / INPUT / SPECTRUM / LOGGER*); 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÷16)

(5) results of **1/3 OCTAVE** analysis if **1/3 OCTAVE** analysis was selected as the measurement function and **LOGGER** was active (*path: MENU / INPUT / SPECTRUM / LOGGER*); the sequence of words is written:

<flags> <Terave[1]> <Terave [2]> ÷. <Terave[NT]>

where:

flags = 1- the overload detected, 0 - the overload not detected

Terave[i] - the result of **1/3 OCTAVE** analysis (*10 dB); i = 1÷NT (1÷46 or 1÷31)

The value of NT parameter depends on the **LOGGER STEP** selection (*path: MENU / INPUT / MEASUREMENT SETUP / LOGGER STEP*). For the periods greater than 2 ms the value of NT is equal to NTer+NTerTot: the outputs from all **1/3 OCTAVE** filters from 0.8 Hz up to 20 kHz and the TOTAL value are written (45 + 1 = 46). For the periods equal to 2 ms the value of NT is equal to 31: the outputs from **1/3 OCTAVE** filters from 25 Hz up to 20 kHz and the TOTAL value are written (30 + 1 = 31).

(6) RPM result if the corresponding **LOGGER** position was active (*path: MENU / INPUT / RPM / RPM*) written as two words:

<word1><word2>

WYK_OKR_OBR = 64

m = ((res[1] & 0x00007f)<<16) | ((res[0] & 0x007fff)<<1)

w = ((res[1]>>8) & 0x00007f)-23-WYK_OKR_OBR

d=m*pow(2.0,w)

RPS = 1/d

RPM = 60/d

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: nnkjiii (ii is the least significant byte, nn – the most significant byte).

B.2.1.4 Record with audio data

This record exists only in the case when the **EVENT RECORDING** function is active (*path: MENU / SETUP / USB-HOST PORT / EVENT RECORDING*). Samples of the signal, taken in the periods from 1 second to 60 seconds, 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 set b10 and b9 bits 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)*1.5)

S samples of the measured signal (in the case of SVAN 979 each sample is written in three 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.2.1.5 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.2.1.6 Record with the meteo data

Word number	Name	Comment
0	0xC1nn	nn= size of records
1	Temperature	temperature [*10 °C]
2	Pressure	pressure [hPa]
3	Humidity	humidity [*10 %]
4	AvgWindSpeed	average wind speed [*10 m/s]
5	WindDirection	wind direction for max wind speed [°] (0xFFFF if direction is unavailable)
6	MaxWindSpeed	max wind speed [*10 m/s] (ignored if WindDirection is unavailable)
7..8	WindDirTotalPuffs	wind direction distribution vector number of total wind puffs
9	RainDetection	rain detection flag
10	0xC9nn	nn = size of records
...

B.3. Structure of the file containing results from the SLM mode

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_SLM.

MEASUREMENT TRIGGER parameters – cf. Tab. B.1.5.

LOGGER TRIGGER parameters – cf. Tab. B.1.6.

RECORDER TRIGGER parameters – cf. Tab. B.1.7.

EVENT TRIGGER parameters – cf. Tab. B.1.36.

EXTended I/O parameters – cf. Tab. B.1.8.

Special settings for profiles - cf. Tab. B.1.9_SLM.

RTF parameters – cf. Tab. B.1.24.

Marker parameters – cf. Tab. B.1.41

Main results - cf. Tab. B.1.10_SLM.

Statistical levels - cf. Tab. B.1.18.

RPM results - cf. Tab. B.1.29. (the presence depends on the **RPM_On** flag).

Meteo data – cf. Tab. B.1.37. (this block is not obligatory)

Header of the statistical analysis in profiles (the presence depends on the **SAVE STAT.**) - cf. Tab. B.1.19.

Results of the statistical analysis in profiles (the presence depends on the **SAVE STAT.**) - cf. Tab. B.1.20.

File-end marker - cf. Tab. B.1.33.

B.4. Structure of the file containing results from the VLM mode

| 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_VLM.

MEASUREMENT TRIGGER parameters – cf. Tab. B.1.5.

LOGGER TRIGGER parameters – cf. Tab. B.1.6.

RECORDER TRIGGER parameters – cf. Tab. B.1.7.

EVENT TRIGGER parameters – cf. Tab. B.1.36.

EXTended I/O parameters – cf. Tab. B.1.8.

Special settings for profiles - cf. Tab. B.1.9_VLM.

RTF parameters – cf. Tab. B.1.24.

Marker parameters – cf. Tab. B.1.41

Main results - cf. Tab. B.1.10_VLM.

RPM results - cf. Tab. B.1.29. (the presence depends on the **RPM_On** flag).

Meteo data - cf. Tab. B.1.37. (this block is not obligatory)

File-end marker - cf. Tab. B.1.33.

B.6. Structure of the file containing results of the 1/1 OCTAVE analysis

| 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_SLM or Tab. B.1.4_VLM.

MEASUREMENT TRIGGER parameters – cf. Tab. B.1.5.

LOGGER TRIGGER parameters – cf. Tab. B.1.6.

RECORDER TRIGGER parameters – cf. Tab. B.1.7.

EVENT TRIGGER parameters – cf. Tab. B.1.36.

EXTended I/O parameters – cf. Tab. B.1.8.

Special settings for profiles - cf. Tab. B.1.9_SLM or Tab. B.1.9_VLM.

RTF parameters – cf. Tab. B.1.24.

Marker parameters – cf. Tab. B.1.41

Main results - cf. Tab. B.1.10_SLM or Tab. B.1.10_VLM.

STATISTICAL LEVELS - cf. Tab. B.1.18. (SLM only).

RPM RESULTS - cf. Tab. B.1.29. (the presence depends on the **RPM_On** flag).

Meteo data - cf. Tab. B.1.37. (this block is not obligatory)

1/1 OCTAVE analysis results - cf. Tab. B.1.11.

MIN results of 1/1 OCTAVE analysis (the presence depends on the **MIN SPECT.**) - cf. Tab. B.1.11.

MAX results of 1/1 OCTAVE analysis (the presence depends on the **MAX SPECT.**) - cf. Tab. B.1.11.

Header of the statistical analysis (SLM only - the presence depends on the **SAVE STAT.**) - cf. Tab. B.1.19.

Results of the statistical analysis (SLM only - the presence depends on the **SAVE STAT.**) - cf. Tab. B.1.20.

Header of the statistical analysis performed in 1/1 OCTAVE mode (SLM only - the presence depends on the **SAVE STAT.**) - cf. Tab. B.1.21.

Results of the statistical analysis performed in 1/1 OCTAVE mode (SLM only - the presence depends on the **SAVE STAT.**) - cf. Tab. B.1.22.

File-end marker - cf. Tab. B.1.33.

B.7. Structure of the file containing results of the 1/3 OCTAVE analysis

| 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_SLM or Tab. B.1.4_VLM.

MEASUREMENT TRIGGER parameters - cf. Tab. B.1.5.

LOGGER TRIGGER parameters - cf. Tab. B.1.6.

RECORDER TRIGGER parameters - cf. Tab. B.1.7.

EVENT TRIGGER parameters - cf. Tab. B.1.36.

EXTended I/O parameters - cf. Tab. B.1.8.

Special settings for profiles - cf. Tab. B.1.9_SLM or Tab. B.1.9_VLM.

RTF parameters - cf. Tab. B.1.24.

Marker parameters - cf. Tab. B.1.41

Main results - cf. Tab. B.1.10_SLM or Tab. B.1.10_VLM.

Statistical levels - cf. Tab. B.1.18. (SLM only).

RPM results - cf. Tab. B.1.29. (the presence depends on the **RPM_On** flag).

Meteo data - cf. Tab. B.1.37. (this block is not obligatory)

1/3 OCTAVE analysis results - cf. Tab. B.1.12.

MIN results of 1/3 OCTAVE analysis (the presence depends on the **MIN SPECT.**) - cf. Tab. B.1.12.

MAX results of 1/3 OCTAVE analysis (the presence depends on the **MAX SPECT.**) - cf. Tab. B.1.12.

Header of the statistical analysis (SLM only - the presence depends on the **SAVE STAT.**) - cf. Tab. B.1.19.

Results of the statistical analysis (SLM only - the presence depends on the **SAVE STAT.**) - cf. Tab. B.1.20.

Header of the statistical analysis performed in 1/3 OCTAVE mode (SLM only - the presence depends on the **SAVE STAT.**) - cf. Tab. B.1.21.

Results of the statistical analysis performed in 1/3 OCTAVE mode (SLM only - the presence depends on the **SAVE STAT.**) - cf. Tab. B.1.22.

File-end marker - cf. Tab. B.1.33.

B.8. Structure of the file containing results of the FFT analysis

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_SLM or Tab. B.1.4_VLM.

MEASUREMENT TRIGGER parameters - cf. Tab. B.1.5.

LOGGER TRIGGER parameters - cf. Tab. B.1.6.

RECORDER TRIGGER parameters - cf. Tab. B.1.7.

EVENT TRIGGER parameters - cf. Tab. B.1.36.
EXTended I/O parameters - cf. Tab. B.1.8.
Special settings for profiles - cf. Tab. B.1.9_SLM or Tab. B.1.9_VLM.
RTF parameters - cf. Tab. B.1.24.
Marker parameters – cf. Tab. B.1.41
Main results - cf. Tab. B.1.10_SLM or Tab. B.1.10_VLM.
Statistical levels - cf. Tab. B.1.18. (SLM only).
RPM results - cf. Tab. B.1.29. (the presence depends on the **RPM_On** flag).
Meteo data - cf. Tab. B.1.37. (this block is not obligatory)
Header of the FFT analysis - cf. Tab. B.1.15.
FFT analysis results - cf. Tab. B.1.16.
Header of the statistical analysis (SLM only - the presence depends on the **SAVE STAT.**) -
cf. Tab. B.1.19.
Results of the statistical analysis (SLM only - the presence depends on the **SAVE STAT.**) -
cf. Tab. B.1.20.
File-end marker - cf. Tab. B.1.33.

B.9. Structure of the file containing results of the tonality analysis

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_SLM.
MEASUREMENT TRIGGER parameters - cf. Tab. B.1.5.
LOGGER TRIGGER parameters - cf. Tab. B.1.6.
RECORDER TRIGGER parameters - cf. Tab. B.1.7.
EVENT TRIGGER parameters - cf. Tab. B.1.36.
EXTended I/O parameters - cf. Tab. B.1.8.
Special settings for profiles - cf. Tab. B.1.9_SLM.
RTF parameters - cf. Tab. B.1.24.
Marker parameters – cf. Tab. B.1.41
Main results - cf. Tab. B.1.10_SLM.
Statistical levels - cf. Tab. B.1.18.
RPM results - cf. Tab. B.1.29. (the presence depends on the **RPM_On** flag).
Meteo data - cf. Tab. B.1.37. (this block is not obligatory)
Header of the FFT analysis results in the whole band performed in the TONALITY function -
cf. Tab. B.1.13.
FFT analysis results in the whole band performed in the TONALITY function - cf. Tab. B.1.16.
Header of the FFT analysis results in the shortened band performed in the TONALITY function -
cf. Tab. B.1.14.
FFT analysis results in the shortened band performed in the TONALITY function - cf. Tab. B.1.16.
TONALITY results - cf. Tab. B.1.17.
Header of the statistical analysis (SLM only - the presence depends on the **SAVE STAT.**) -
cf. Tab. B.1.19.
Results of the statistical analysis (SLM only - the presence depends on the **SAVE STAT.**) -
cf. Tab. B.1.20.
File-end marker - cf. Tab. B.1.33.

B.12. Structure of the file containing results of RT60 function

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_SLM.
 MEASUREMENT TRIGGER parameters - cf. Tab. B.1.5.
 LOGGER TRIGGER parameters - cf. Tab. B.1.6.
 RECORDER TRIGGER parameters - cf. Tab. B.1.7.
 EVENT TRIGGER parameters - cf. Tab. B.1.36.
 EXTended I/O parameters - cf. Tab. B.1.8.
 Special settings for profiles - cf. Tab. B.1.9_SLM.
 RTF parameters - cf. Tab. B.1.24.
 Marker parameters – cf. Tab. B.1.41
 Main results - cf. Tab. B.1.10_SLM.
 Statistical levels - cf. Tab. B.1.18.
 RPM results - cf. Tab. B.1.29. (the presence depends on the **RPM_On** flag).
 Meteo data - cf. Tab. B.1.37. (this block is not obligatory)
RT60 parameters - cf. Tab. B.1.26.
RT60 results - cf. Tab. B.1.27. or **RT60 averaged RESULTS** - cf. Tab. B.1.28.
 File-end marker - cf. Tab. B.1.33.

B.13. 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.1.30.
 File-end marker - cf. Tab. B.1.33.

B.15. DATE and TIME

Following function written in C explains 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 */
}
  
```