

APPENDIX B. DATA FILE STRUCTURES

B.1. GENERAL STRUCTURE OF THE SVAN 94x FILE

Each file containing data from the SVAN 94x instrument consists of several groups of words. In the case of the **SVAN 945A** (the internal software revision 5.12) there are 8 different types of files containing:

- the measurement results from the **Sound Level Meter** mode (cf. App. B.2);
- the results from **1/1 OCTAVE** analysis (cf. App. B.3);
- the results from **1/3 OCTAVE** analysis (cf. App. B.4);
- the results of the **TONALITY** function analysis (cf. App. B.5);
- the results of the **FFT** analysis (cf. App. B.6);
- the results stored in the file in the instrument's buffer (cf. App. B.7);
- the results of the **LOUDNESS** function (cf. App. B.8);
- the results of the **ENVELOPING** function (cf. App. B.9);
- the results of the **RT60** function (cf. App. B.10).

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);
- special settings for profiles (cf. Tab. B.1.5);
- the marker for the end of the file (cf. Tab. B.1.24).

The other elements of the file structure are not obligatory for each file type stated above. They depend on the file type (**SLM**, **1/1 OCTAVE**, **1/3 OCTAVE**, **FFT**, **LOUDNESS**, **ENVELOPING** or **TONALITY** analysis, file from the buffer) and on the setting of the **SAVE STAT.** (*path: MENU / FILE / SAVE OPTIONS / SAVE STAT.*). These elements are as follows:

- the main results (cf. Tab. B.1.6);
- the results coming from **1/1 OCTAVE** analysis (cf. Tab. B.1.7);
- the results coming from **1/3 OCTAVE** analysis (cf. Tab. B.1.8);
- the header of the **FFT** analysis in the whole band made in the **TONALITY** function (cf. Tab. B.1.9);
- the header of the **FFT** analysis in the shortened band performed in the **TONALITY** function (cf. Tab. B.1.10);
- the header of the **FFT** analysis in the selected band (cf. Tab. B.1.11);
- the results of the **FFT** analysis (cf. Tab. B.1.12);
- the header of the statistical analysis (cf. Tab. B.1.13);
- the results of the statistical analysis (cf. Tab. B.1.14);
- the header of the statistical analysis performed in **1/1 OCTAVE** or **1/3 OCTAVE** analysis (cf. Tab. B.1.15);
- the results of the statistical analysis made in **1/1 OCTAVE** or **1/3 OCTAVE** analysis (cf. Tab. B.1.16);
- the results from the **TONALITY** function (cf. Tab. B.1.17);
- the results from the **LOUDNESS** function (cf. Tab. B.1.18);
- the settings of the instrument saved in the setup file (cf. Tab. B.1.19);
- the parameters of the **UHP** (cf. Tab. B.1.20);
- the parameters of the **ENVELOPING** function (cf. Tab. B.1.21);
- the parameters of the **RT60** function (cf. Tab. B.1.25);
- the results from the **RT60** function (cf. Tab. B.1.26);
- the averaged results from the **RT60** function (cf. Tab. B.1.27);
- statistical levels (cf. Tab. B.1.28);
- the header of the file from the buffer (cf. Tab. B.1.22);
- the data stored during the measurements in the file of the buffer (cf. Tab. B.1.23);
- the meteorological results (cf. Tab. B.1.29).

Below, all file structure groups are described separately in Tab. B.1.1 – Tab. B.1.24. 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 buffer (8 characters)
5	Reserved	reserved
6	CurrentDate	file creation date
7	CurrentTime	file creation time
8..11	AssBufFileName	name of the associated buffer or file (8 bytes)
...

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: 945 (SVAN 945 or SVAN 945A)
3	SoftwareVersion	software version
4	SoftwareIssueDate	software issue date
5	DeviceMode	mode of the instrument
6	UnitSubtype	subtype of the unit: 0 - SVAN 945, 1 - SVAN 945A
7	FileSysVersion	file system version
8	LevelMetVersion	level meter version
...

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	measure start date
2	MeasureStartTime	measure start time
3	DeviceFunction	1 - SOUND LEVEL METER , 2 - 1/1 OCTAVE analyser, 3 - 1/3 OCTAVE analyser, 5 - LOUDNESS function, 6 - FFT analyser, 7 - TONALITY function, 8 - RT60 function, 9 - ENVELOPING function
4	MeasureInput	Input
5	Range	1 - 105 dB , 2 - 130 dB
6	UnitFlags	calibration flags

7	RepCycle	0 - infinity, measurement stopped by pressing <START / STOP> push-button or remotely by sending S0 control code nnnn - number of repetition of the measurement cycles $\in (1 \div 1000)$
8	NofProf	number of profiles
9	StartDelay	start delay time
10..11	IntTimeSec	integration time specified in seconds
12	TriggerMode	trigger mode: 0 - OFF , 1 - SLOPE'+ , 2 - SLOPE'- , 3 - LEVEL'+ , 4 - LEVEL'- , 5 - BUFFER , 6 - GRAD +
13	TriggerSource	source of the triggering signal: in the case of the SLM : 0 - SPL(1) the SPL result from the first profile in the case of TriggerMode=SLOPE+: 1 - External IO in the case of 1/1 OCTAVE analyser nn - number of 1/1 OCTAVE filter $\in (8 \div NOct)$ in the case of 1/3 OCTAVE analyser nn - number of 1/3 OCTAVE filter $\in (23 \div NTert)$
14	TriggerLev	level of triggering: 24..136 dB
15	TriggerPre	number of the records taken into account before the fulfilment of the triggering condition $\in (1 \div 50)$
16	TriggerPost	number of the records taken into account after the fulfilment of the triggering condition $\in (1 \div 200)$
17	MicFieldCorr	field correction: 0 - FREE , 1 - DIFFUSE
18	MicCompensFil	compensating filter for microphones: 0 - switched off, 1- switched on
19	MicPolar	polarisation of the microphone: 0 - 0 V , 1 - 200 V
20	LeqInt	detector type in the LEQ function: 0 - LINEAR , 1 - EXPONENT .
21	SpectrumFilter	for DeviceFunction = 2, 3: filter in 1/1 OCTAVE , 1/3 OCTAVE or FFT analysis: 0 - HP , 1 - LIN , 2 - A , 3 - C for DeviceFunction = 1, 5, 7, 8, 9: reserved
22	SpectrumBuff	for DeviceFunction = 2, 3: 1/1 OCTAVE or 1/3 OCTAVE buffering: 0-off, 1-on for DeviceFunction = 1, 5, 6, 7, 8, 9: reserved
23	Reserved	reserved
24	RT60Method	in case of RT60 function: 1 - DECAY , 2 - IMPULSE in other cases reserved
25	Reserved	reserved
26	Reserved	reserved
27	CalibrType	last calibration type: 0 - none, 1 - by measurement, 2 - by sensitivity
28	CalibrDate	last calibration date
29	CalibrTime	last calibration time
30	RPM_On	reserved
31	RPM_Pulse	reserved
32	TriggerGrad	gradient of triggering: 1 dB/ms..100 dB/ms
...

Table B.1.5. SPECIAL SETTINGS FOR PROFILES

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 first profile: 0 - IMPULSE , 1 - FAST , 2 - SLOW
4	FilterP[1]	filter type in the first profile: 1 - LIN , 2 - A , 3 - C , 4 - G
5	BufferP[1]	buffer contents definition in the first profile: 0 - None , 1 - PEAK , 2 - MAX , 3 - MIN , 4 - RMS
6	CalibrFactor[1]	calibration factor (*10 dB) in the first profile
7	ProfileFlags[1]	flags in the first profile
8	0xmm06	[06, mm=sub-block's length]
9	DetectorP[2]	detector type in the 2 nd profile: 0 - IMPULSE , 1 - FAST , 2 - SLOW
10	FilterP[2]	filter type in the second profile: 1 - LIN , 2 - A , 3 - C , 4 - G
11	BufferP[2]	buffer contents definition in the second profile: 0 - None , 1 - PEAK , 2 - MAX , 3 - MIN , 4 - RMS
12	CalibrFactor[2]	calibration factor (*10 dB) in the second profile
13	ProfileFlags[2]	flags in the second profile
14	0xmm06	[06, mm=sub-block's length]
15	DetectorP[3]	detector type in the third profile: 0 - IMPULSE , 1 - FAST , 2 - SLOW
16	FilterP[3]	filter type in the third profile: 1 - LIN , 2 - A , 3 - C , 4 - G
17	BufferP[3]	buffer contents definition in the third profile: 0 - None , 1 - PEAK , 2 - MAX , 3 - MIN , 4 - RMS
18	CalibrFactor[3]	calibration factor (*10 dB) in the third profile
19	ProfileFlags[3]	flags in the third profile
...

Table B.1.6. MAIN RESULTS

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 in the first profile
5	Result[1][1]	PEAK value in the first profile
6	Result[1][2]	P-P value in the first profile
7	Result[1][3]	maximal value (MAX) in the first profile
8	Result[1][4]	minimal value (MIN) in the first profile
9	Result[1][5]	SPL value in the first profile
10	Result[1][6]	LEQ value in the first profile
11	Result[1][7]	Lden value in the first profile
12	Result[1][8]	Ltm3 value in the first profile
13	Result[1][9]	Ltm5 value in the first profile
14	Result[1][10]	reserved
15	Result[1][11]	reserved
16	0xmm08	[08, mm=sub-block's length]
17..18	MeasureTime	time of the measurement in the second profile
19	Result[2][1]	PEAK value in the second profile
20	Result[2][2]	P-P value in the second profile
21	Result[2][3]	maximal value (MAX) in the second profile
22	Result[2][4]	minimal value (MIN) in the second profile
23	Result[2][5]	SPL value in the second profile
24	Result[2][6]	LEQ value in the second profile
25	Result[2][7]	Lden value in the second profile
26	Result[2][8]	Ltm3 value in the second profile
27	Result[2][9]	Ltm5 value in the second profile

28	Result[2][10]	reserved
29	Result[2][11]	reserved
30	0xmm08	[08, mm=sub-block's length]
31..32	MeasureTime	time of the measurement in the third profile
33	Result[3][1]	PEAK value in the third profile
34	Result[3][2]	P-P value in the third profile
35	Result[3][3]	Maximal value (MAX) in the third profile
36	Result[3][4]	minimal value (MIN) in the third profile
37	Result[3][5]	SPL value in the third profile
38	Result[3][6]	LEQ value in the third profile
39	Result[3][7]	Lden value in the third profile
40	Result[3][8]	Ltm3 value in the third profile
41	Result[3][9]	Ltm5 value in the third profile
42	Result[3][10]	reserved
43	Result[3][11]	reserved
...

Table B.1.7. 1/1 OCTAVE ANALYSIS RESULTS

Word number	Name	Comment
0	0xnn0E, 0xnn26, 0xnn27	block_id: [block_id, nn=block's length] 0x0E - averaged spectrum results, 0x26 - MIN spectrum results, 0x27 - MAX spectrum results
1	Reserved	reserved
2	LowestFreq	the lowest 1/1 OCTAVE frequency (*100 Hz) = 100
3	NOct	number of 1/1 OCTAVE values = 15
4	NOctTot	number of TOTAL values = 3
5	Octave[i]	1/1 octave[i] value (*10 dB); i = 1..Noct+NoctTot (1..18)
...		

Table B.1.8. 1/3 OCTAVE ANALYSIS RESULTS

Word number	Name	Comment
0	0xnn10, 0xnn28, 0xnn29	block_id: [block_id, nn=block's length] 0x10 - averaged spectrum results, 0x28 - MIN spectrum results, 0x29 - MAX spectrum results
1	Reserved	reserved
2	LowestFreq	the lowest 1/3 OCTAVE frequency (*100 Hz) = 80
3	Ntter	number of 1/3 OCTAVE values = 45
4	NterTot	number of TOTAL values = 3
5	Terave[i]	1/3 octave[i] value (*10 dB); i = 1..Nter+NterTot (1..48)
...		

Table B.1.9. HEADER OF THE FFT ANALYSIS IN THE WHOLE BAND IN TONALITY FUNCTION

Word number	Name	Comment
0	0xnn15	[15, nn=block's 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 (48 000 Hz)
10	Ton_wfactor	176
11	Reserved	reserved
...

Table B.1.10. HEADER OF THE FFT ANALYSIS IN THE SHORTENED BAND PERFORMED IN TONALITY FUNCTION

Word number	Name	Comment
0	0xnn16	[16, nn=block's 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 (8 000 Hz)
10	Ton_wfactor	176
11	Reserved	reserved
...

Table B.1.11. HEADER OF THE FFT ANALYSIS PERFORMED IN THE SELECTED BAND

Word number	Name	Comment
0	0xnn11	[11, nn=block's length]
1	Reserved	reserved
2	LowestFreqNo	number of the first line in the FFT spectrum = 0
3	Nfft	number of lines in the spectrum = 1920
4	NfftTot	number of TOTAL lines in the spectrum = 0
5	FftBand	band of the FFT analysis: 1 - 22.4 kHz , 2 - 11.2 kHz , 3 - 5.6 kHz , 4 - 2.8 kHz , 5 - 1.4 kHz , 6 - 700 Hz , 7 - 350 Hz , 8 - 175 kHz , 9 - 87.5 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 , 1 - EXPONENTIAL
8..9	FftSampFreq	sampling frequency (48 000 Hz)
10	FFT_wfactor	
11	Reserved	reserved
...

Table B.1.12. FFT ANALYSIS RESULTS

Word number	Name	Comment
0	0xnn12, 0xnn24, 0xnn25	[block_id, 00=block's length in the second word] block_id: 0x12 - FFT, 0x24 - TONALITY (whole band), 0x25 - TONALITY (shortened band)
1	FftBlockLength	2 + Nfft + NfftTot: for TONALITY = 2 + 800 + 0 = 802; for FFT = 2 + 1920 + 1 = 1923
2..	FFT[i]	value of the FFT line (*10 dB) for TONALITY function i = 1..800; for FFT analysis i = 1..1921

Table B.1.13. STATISTICS HEADER (the presence depends on the SAVE STAT. position)

Word number	Name	Comment
0	0x0E09	[09, nn=block's length]
1	0x0703	[03=number of profiles, 07=active profiles mask]
2	0xmm0A	[0A, mm=sub-block's length]
3	NofClasses[1]	number of classes in the first profile (120)
4	BottomClass[1]	bottom class boundary (*10 dB) in the first profile
5	ClassWidth[1]	class width (*10 dB) in the first profile
6	0xmm0A	[0A, mm=sub-block's length]
7	NofClasses[2]	number of classes in the second profile (120)
8	BottomClass[2]	bottom class boundary (*10 dB) in the second profile
9	ClassWidth[2]	class width (*10 dB) in the second profile
10	0xmm0A	[0A, mm=sub-block's length]
11	NofClasses[3]	number of classes in the third profile (120)
12	BottomClass[3]	bottom class boundary (*10 dB) in the third profile
13	ClassWidth[3]	class width (*10 dB) in the third profile
...

Table B.1.14. RESULTS OF THE STATISTICAL ANALYSIS

Word number	Name	Comment
0	0x010B	[0B, prof_mask#1]
1	SubblockLength	2 * number of classes in the first profile + 2
2..3	Histogram[1][1]	the first counter in the first profile
4..5	Histogram[1][2]	the second counter in the first profile
.....
0	0x020B	[0B, prof_mask#2]
1	SubblockLength	2 * number of classes in the second profile + 2
2..3	Histogram[2][1]	the first counter in the second profile
4..5	Histogram[2][2]	the second counter in the second profile
.....
0	0x040B	[0B, prof_mask#3]
1	SubblockLength	2 * number of classes in the third profile + 2
2..3	Histogram[3][1]	the first counter in the third profile
4..5	Histogram[3][2]	the second counter in the third profile
.....

Table B.1.15. HEADER OF THE STATISTICAL ANALYSIS PERFORMED IN 1/1 OCTAVE OR 1/3 OCTAVE MODE

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

Table B.1.16. RESULTS OF THE STATISTICAL ANALYSIS PERFORMED IN 1/1 OCTAVE OR 1/3 OCTAVE MODE

Word number	Name	Comment
0	0x0114	[14, 01= number of the histogram (1/1 OCTAVE or 1/3 OCTAVE)]
1	SubblockLength	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, 02 = number of the histogram (1/1 OCTAVE or 1/3 OCTAVE)]
1	SubblockLength	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, nn = NofHist = number of the last histogram (1/1 OCTAVE or 1/3 OCTAVE)]
1	SubblockLength	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.1.17. TONALITY RESULTS

Word number	Name	Comment
0	0x001D	[1D, 00=block's 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. LOUDNESS RESULTS

Word number	Name	Comment
0	0x001E	[1E, 00=block's length in the second word]
1	SubblockLength	BarkCount+3
2	LoudResult	
3..3+ BarkCount	LoudAvgBarkTab[i]	LoudAvgBarkTab[i]

Table B.1.19. SETUP FILE

Word number	Name	Comment
0	0x0020	[20, 00=block's length in the second word]
1	BlockLength	length of the block
2..BlockLen gth-1	SetupData	saved setup values

Table B.1.20. UHP PARAMETERS

Word number	Name	Comment
0	0xnn21	[21, nn=block's length]
1	0	type of the first user filter [1]
2	2	reserved [1]
3..4	100.0 (0x0000, 0x8664)	lower pole [1]
5..6	0.0	upper pole [1]
7	0	type of the second user filter [2]
8	2	reserved [2]
9..10	100.0 (0x0000, 0x8664)	lower pole [2]
11..12	0.0	upper pole [2]
13	0	type of the third user filter [3]
14	2	reserved [3]
15..16	100.0 (0x0000, 0x8664)	lower pole [3]
17..18	0.0	upper pole [3]
...

Table B.1.21. ENVELOPING PARAMETERS

Word number	Name	Comment
0	0xnn22	[22, nn=block's length]
1	env_filter_p	1/3 octave filter selected: 0..14 (1 - 800 Hz, ..., 14 - 20 kHz)
2	Reserved	reserved
...

Table B.1.22. HEADER OF THE FILE FROM THE BUFFER

Word number	Name	Comment
0	0xnn0F	[0F, nn=header's length]
1	BuffTSec	buffer time step - full seconds part
2	BuffTMiliseC	buffer time step - milliseconds part
3	LowestFreq	the lowest 1/1 OCTAVE or 1/3 OCTAVE frequency (*100 Hz) for 1/1 OCTAVE mode equal to 100 for 1/3 OCTAVE mode: if BUFFER STEP = 2 ms equal to 2500 if BUFFER STEP >2 ms equal to 80
4	NOctTer	number of 1/1 OCTAVE or 1/3 OCTAVE results for 1/1 OCTAVE mode equal to 15 for 1/3 OCTAVE mode: if BUFFER STEP = 2 ms equal to 30 if BUFFER STEP >2 ms equal to 45
5	NOctTerTot	number of TOTAL values = 3
6..7	BuffLength	buffer length (bytes)
8..9	RecsInBuff	number of records in the buffer
10..11	RecsInObserv	number of records in the observation period equal to: number of records in the buffer + number of records not saved
...



Note: The current buffer time step in seconds can be obtained from the formulae:
 $T = \text{BuffTSec} + \text{BuffTMiliseC} / 1000$

Table B.1.23. CONTENTS OF THE FILE FROM THE BUFFER

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

Table B.1.24. FILE END MARKER

Word number	Name	Comment
0	0xFFFF	file end marker

Table B.1.25. RT60 PARAMETERS BLOCK

Word number	Name	Comment
0	0xnn1A	[1A, nn=block's length]
1	RT60SaveMode	
2	RT60Method_p	
3	RT60Spectrum	
4	buff_step_p	
5	ResponseTime_p	
6	TriggerLevMin_p	
7	DispSmooth	
8	NoiseMargin	
9	RT60Averaging	

10	RT60MeasureNo	
...

Table B.1.26. RT60 RESULTS BLOCK

Word number	Name	Comment
0	0x001B	[1B, 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.1.27. RT60 AVERAGED RESULTS BLOCK

Word number	Name	Comment
0	0x001C	[1C, 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
...

B.1.28. STATISTICAL LEVELS

Word number	Name	Comment
0	0x2B17	[17, 2B=block's length]
1	0x0307	[used_profile, profile's mask]
2	N_stat_level	number of statistical levels = 10
3+i	StatN[i]	nn number of the Lnn statistics; i = 0..9
4+i	StatLn[i]	value of the Lnn statistics; i = 0..9

B.1.29. METEOROLOGICAL RESULTS BLOCK

Word number	Name	Comment
0	0xnn23	[23, nn=block's length]
1	Temperature	
2	Pressure	
...	...	

B.2. STRUCTURE OF THE FILE WITH THE 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.
- SPECIAL SETTINGS FOR PROFILES - cf. Tab. B.1.5.
- MAIN RESULTS** - cf. Tab. B.1.6.
- STATISTICAL LEVELS - cf. Tab. B.1.28.
- METEOROLOGICAL RESULTS - cf. Tab. B.1.29.
- HEADER OF THE STATISTICAL ANALYSIS (the presence depends on the **SAVE STAT.** position) - cf. Tab. B.1.13.
- RESULTS OF THE STATISTICAL ANALYSIS (the presence depends on the **SAVE STAT.** position) - cf. Tab. B.1.14.
- FILE END MARKER - cf. Tab. B.1.24.

B.3. STRUCTURE OF THE FILE WITH 1/1 OCTAVE ANALYSIS RESULTS

- 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.
- SPECIAL SETTINGS FOR PROFILES - cf. Tab. B.1.5.

MAIN RESULTS - cf. Tab. B.1.6.
 STATISTICAL LEVELS - cf. Tab. B.1.28.
 METEOROLOGICAL RESULTS - cf. Tab. B.1.29.
1/1 OCTAVE ANALYSIS RESULTS - cf. Tab. B.1.7.
1/1 OCTAVE ANALYSIS MIN RESULTS (the presence depends on the **MIN SPECT.** position) - cf. Tab. B.1.7.
1/1 OCTAVE ANALYSIS MAX RESULTS (the presence depends on the **MAX SPECT.** position) - cf. Tab. B.1.7.
 HEADER OF THE STATISTICAL ANALYSIS (the presence depends on the **SAVE STAT.** position) - cf. Tab. B.1.13.
 RESULTS OF THE STATISTICAL ANALYSIS (the presence depends on the **SAVE STAT.** position) - cf. Tab. B.1.14.
 HEADER OF THE STATISTICAL ANALYSIS PERFORMED IN 1/1 OCTAVE MODE (the presence depends on the **SAVE STAT.** position) - cf. Tab. B.1.15.
 RESULTS OF THE STATISTICAL ANALYSIS PERFORMED IN 1/1 OCTAVE MODE (the presence depends on the **SAVE STAT.** position) - cf. Tab. B.1.16.
 FILE END MARKER - cf. Tab. B.1.24.

B.4. STRUCTURE OF THE FILE WITH 1/3 OCTAVE ANALYSIS RESULTS

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.
 SPECIAL SETTINGS FOR PROFILES - cf. Tab. B.1.5.
 MAIN RESULTS - cf. Tab. B.1.5.
 STATISTICAL LEVELS - cf. Tab. B.1.28.
 METEOROLOGICAL RESULTS - cf. Tab. B.1.29.
1/3 OCTAVE ANALYSIS RESULTS - cf. Tab. B.1.7.
1/3 OCTAVE ANALYSIS MIN RESULTS (the presence depends on the **MIN SPECT.** position) - cf. Tab. B.1.7.
1/3 OCTAVE ANALYSIS MAX RESULTS (the presence depends on the **MAX SPECT** position) - cf. Tab. B.1.7.
 HEADER OF THE STATISTICAL ANALYSIS (the presence depends on the **SAVE STAT.** position) - cf. Tab. B.1.13.
 RESULTS OF THE STATISTICAL ANALYSIS (the presence depends on the **SAVE STAT.** position) - cf. Tab. B.1.14.
 HEADER OF THE STATISTICAL ANALYSIS PERFORMED IN 1/3 OCTAVE MODE (the presence depends on the **SAVE STAT.** position) - cf. Tab. B.1.15.
 RESULTS OF THE STATISTICAL ANALYSIS PERFORMED IN 1/3 OCTAVE MODE (the presence depends on the **SAVE STAT.** position) - cf. Tab. B.1.16.
 FILE END MARKER - cf. Tab. B.1.24.

B.5. STRUCTURE OF THE FILE WITH THE TONALITY ANALYSIS RESULTS

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.
 SPECIAL SETTINGS FOR PROFILES - cf. Tab. B.1.5.
 MAIN RESULTS - cf. Tab. B.1.5.
 STATISTICAL LEVELS - cf. Tab. B.1.28.
 METEOROLOGICAL RESULTS - cf. Tab. B.1.29.
HEADER OF THE FFT ANALYSIS IN THE WHOLE BAND PERFORMED IN THE TONALITY FUNCTION - cf. Tab. B.1.9.

FFT ANALYSIS RESULTS IN THE WHOLE BAND PERFORMED IN THE TONALITY FUNCTION - cf. Tab. B.1.12.

HEADER OF THE FFT ANALYSIS IN THE SHORTENED BAND PERFORMED IN THE TONALITY FUNCTION - cf. Tab. B.1.10.

FFT ANALYSIS RESULTS IN THE SHORTENED BAND PERFORMED IN THE TONALITY FUNCTION - cf. Tab. B.1.12.

TONALITY RESULTS - cf. Tab. B.1.17.

FILE END MARKER - cf. Tab. B.1.24.

B.6. STRUCTURE OF THE FILE WITH FFT ANALYSIS RESULTS

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.

SPECIAL SETTINGS FOR PROFILES - cf. Tab. B.1.5.

MAIN RESULTS - cf. Tab. B.1.5.

STATISTICAL LEVELS - cf. Tab. B.1.28.

METEOROLOGICAL RESULTS - cf. Tab. B.1.29.

HEADER OF THE FFT ANALYSIS - cf. Tab. B.1.11.

RESULTS OF THE FFT ANALYSIS - cf. Tab. B.1.12.

HEADER OF THE STATISTICAL ANALYSIS (the presence depends on the **SAVE STAT.** position) - cf. Tab. B.1.13.

RESULTS OF THE STATISTICAL ANALYSIS (the presence depends on the **SAVE STAT.** position) - cf. Tab. B.1.14.

FILE END MARKER - cf. Tab. B.1.24.

B.7. STRUCTURE OF THE FILE CONTAINING RESULTS FROM BUFFER'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.

SPECIAL SETTINGS FOR PROFILES - cf. Tab. B.1.5.

HEADER OF THE FFT ANALYSIS - cf. Tab. B.1.11.

HEADER OF THE FILE FROM THE BUFFER - cf. Tab. B.1.22.

CONTENTS OF THE FILE FROM THE BUFFER - cf. Tab. B.1.23. and the description in B.7.1.

FILE END MARKER - cf. Tab. B.1.24.

B.7.1. The contents of the files in the buffer

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 files in the buffer.

B.7.1.1. Record with the results

The contents of the record with the results depends on the selected measurement function and the value set in the **BUFFER** position of the **PROFILE x** and **SPECTRUM** sub-lists. The following elements can be present (in the given sequence):

- (1) result of the measurement from the first profile if in the **BUFFER** position of the **PROFILE 1** sub-list other than **None** value was selected; one word is written:

<result>- **PEAK, MAX, MIN** or **RMS** result, depending on the selected value in the **BUFFER** position;
 (2) result of the measurement from the second profile if in the **BUFFER** position of the **PROFILE 2** sub-list other then **None** value was selected; one word is written:

<result>- **PEAK, MAX, MIN** or **RMS** result, depending on the selected value in the **BUFFER** position;
 (3) result of the measurement from the third profile if in the **BUFFER** position of the **PROFILE 3** sub-list other then **None** value was selected; one word is written:

<result>- **PEAK, MAX, MIN** or **RMS** result, depending on the selected value in the **BUFFER** position;
 (4) results of **1/1 OCTAVE** analysis if **1/1 OCTAVE** analysis was selected as the measurement function and in the **BUFFER** position of the **SPECTRUM** sub-list other then **None** value was selected; 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..18)

(5) results of **1/3 OCTAVE** analysis if **1/3 OCTAVE** analysis was selected as the measurement function and in the **BUFFER** position of the **SPECTRUM** sub-list other then **None** value was selected; 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..48 or 1..33)

The value of NT parameter depends on the **BUF. STEP** selection (the position in the **MEASURE SETUP** sub-list). For the buffer steps greater then 2 ms the value of NT is equal to NTer+NterTot which is 48; the outputs from all **1/3 OCTAVE** filters from 0.8 Hz up to 20 kHz and 3 TOTAL values are written. For the buffer step equal to 2 ms the value of NT is equal to 33; the outputs from **1/3 OCTAVE** filters from 25 Hz up to 20 kHz and 3 TOTAL values are written.

B.7.1.2. 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.7.1.3. 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.8. STRUCTURE OF THE FILE CONTAINING LOUDNESS FUNCTION RESULTS

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.
SPECIAL SETTINGS FOR PROFILES - cf. Tab. B.1.5.
MAIN RESULTS - cf. Tab. B.1.5.
STATISTICAL LEVELS - cf. Tab. B.1.28.
METEOROLOGICAL RESULTS - cf. Tab. B.1.29.
LOUDNESS RESULTS - cf. Tab. B.1.18.
FILE END MARKER - cf. Tab. B.1.24.

B.9. STRUCTURE OF THE FILE CONTAINING ENVELOPING FUNCTION RESULTS

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.
SPECIAL SETTINGS FOR PROFILES - cf. Tab. B.1.5.
MAIN RESULTS - cf. Tab. B.1.5.
STATISTICAL LEVELS - cf. Tab. B.1.28.
METEOROLOGICAL RESULTS - cf. Tab. B.1.29.
ENVELOPING PARAMETERS - cf. Tab. B.1.21
HEADER OF THE FFT ANALYSIS PERFORMED IN THE SELECTED BAND - cf. Tab. B.1.11.
RESULTS OF THE FFT ANALYSIS - cf. Tab. B.1.12.
HEADER OF THE STATISTICAL ANALYSIS (the presence depends on the **SAVE STAT.** position) -
cf. Tab. B.1.13.
RESULTS OF THE STATISTICAL ANALYSIS (the presence depends on the **SAVE STAT.** position) -
cf. Tab. B.1.14.
FILE END MARKER - cf. Tab. B.1.24.

B.10. STRUCTURE OF THE FILE CONTAINING RT60 FUNCTION RESULTS

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.
SPECIAL SETTINGS FOR PROFILES - cf. Tab. B.1.5.
MAIN RESULTS - cf. Tab. B.1.5.
STATISTICAL LEVELS - cf. Tab. B.1.28.
METEOROLOGICAL RESULTS - cf. Tab. B.1.29.
RT60 PARAMETERS BLOCK - cf. Tab. B.1.25.
RT60 RESULTS - cf. Tab. B.1.26. **or RT60 AVERAGED RESULTS** - cf. Tab. B.1.27.
FILE END MARKER - cf. Tab. B.1.24.