B. DATA FILE STRUCTURES (v3.21)

B.1. Structure of the SVAN 106 file

Each file containing data from the SVAN instrument consists of several groups of words. In the case of the **SVAN 106** there are some different types of files that contain:

- the measurement results from the Level Meter mode (cf. App. B.3.1.);
- the results from the Level Meter mode stored in the file in the instrument's logger (cf. App. B.3.1. and App. B.4);
- the setup data of the instrument (cf. App.B.3.3);
- the results from 1/1 OCTAVE analysis (cf. App. B.3.4.);
- the results from 1/3 OCTAVE analysis (cf. App. B.3.5.);
- the results from 1/1 OCTAVE or 1/3 OCTAVE analysis stored in the file in the instrument's logger (cf. App. B.4 and App. B.3.6);

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 marker for the end of the file (cf. Tab. B.1.11).

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

- the parameters and global settings, common for all channels (cf. Tab. B.1.3);
- the hardware settings for channels (cf. Tab. B.1.4);
- the software settings for channels (cf. Tab. B.1.5);
- the VECTOR measurement settings (cf. Tab. B.1.6);
- the hand-arm and whole-body vibration dose measurement settings (cf. Tab. B.1.7);
- the main results (cf. Tab. B.1.8);
- the logger header (cf. Tab. B.1.9);
- the data stored during the measurements in the logger (cf. Tab. B.1.10);
- the setup data of the instrument (cf. Tab. B.1.12);
- the trigger settings (cf. Tab. B.1.13, Tab.B.1.14);
- event recording settings(cf. Tab.B.1.15);
- the 1/1 OCTAVE or 1/3 OCTAVE analysis header (cf. Tab. B.1.16);
- the results coming from 1/1 OCTAVE analysis (cf. Tab. B.1.17);
- the results coming from 1/3 OCTAVE analysis (cf. Tab. B.1.18);
- the totals description in 1/1 OCTAVE or 1/3 OCTAVE analysis (cf. Tab. B.1.19);
- the user-defined filter description (cf. Tab. B.1.21);
- the 1/1 OCTAVE or 1/3 OCTAVE logger header (cf. Tab. B.1.22);
- the Max results coming from 1/1 OCTAVE analysis (cf. Tab. B.1.23);
- the Min results coming from 1/1 OCTAVE analysis (cf. Tab. B.1.24);
- the Max results coming from 1/3 OCTAVE analysis (cf. Tab. B.1.25);
- the Min results coming from 1/3 OCTAVE analysis (cf. Tab. B.1.26);
- the SEAT measurements settings (cf. Tab. B.1.27);

Below, all file structure groups are described separately in Tab. B.1.1 \div Tab. B.1.27. 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 least 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 / Value	Comment
0	0xnn01	[01, nn=header_length]
14	FileName	file or logger name (8 characters) if the name starts with two '@' characters, following 6 bytes contain measurement date and time coded as BCD (each saved digit is increased by one)
5	FileType	0x0000 - file containing results from logger's file 0x01nn - file containing measurements results 0x0200 - file containing instrument's setup data 0x4000 - file containing time-domain signal
6	CurrentDate	file creation date
7	CurrentTime	file creation time
811	AssBufFileName	name of the associated logger or file (8 bytes)

Table B.1.2. Unit and software specification

Word number	Name / Value	Comment
0	0xnn02	[02, nn=specification_length]
1	UnitNumber	unit number
2	UnitType	unit type: 106
3	SoftwareVersion	software version * 100
4	SoftwareIssueDate	software issue date
5	UnitSubtype	unit subtype: 1
6	FilesystemVersion	file system version * 100
7	reserved	Reserved
8	0xmmcc	[mm=software minor version, cc=software subversion]

Table B.1.3. Parameters and global settings

Word number	Name / Value	Comment
0	0xnn04	[04, nn=block_length]
1	CycleStartDate	measurement cycle start date
2	CycleStartTime	measurement cycle start time
3	DeviceFunction	 1 - LEVEL METER, 2 - 1/1 OCTAVE analyser, 3 - 1/3 OCTAVE analyser, 4 - sound DOSE METER, 6 - FFT analyser, 8 - RT60 meter, 13 - FFT CROSS-SPECTRUM, 14 - SOUND INTENSITY, 17 - WAVERECORDER

flags word (16 bits): b15 b3 b2 b1 b0 b0 - if set to 1: collibration coefficient is used b1 - if set to 1: overload occurred b2 - if set to 1: return an vibrations" excluded (0 - means "Human vibrations" excluded (0 - means "Human vibrations" included and then VDV result is present) b5,b4,b5; type of the result Result[pl[7] (p = 1,2,3,4) 000 - Lde result result result pl[7] (p = 1,2,3,4) 000 - Lde result and then vDV result is present) 010 - Ld result 011 - Lde result 011 - Lde result 100 - Ln result 110 - Len result 110 - Len result 111 - Lden result 111 - Lden result 111 - Lden result 110 - Len result 111 - Lden result 110 - Len result 111 - Lden result 110 - Len result	4	UnitFlags	b0 - if set to 1: calibration coefficient is used b1 - if set to 1: overload occurred b2 - if set to 1: "Human vibrations" excluded (0 - means "Human vibrations" included and then VDV result is present) b5,b4,b3: type of the result Result[p][7] (p = 1,2,3,4) 000 - Lden result is not available 001 - Ld result 010 - Le result 011 - Lde result 100 - Ln result
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b8 - if set to 1: overload occurred in the 4th channel b9 - if set to 1: overload occurred in the 3th channel b10 - if set to 1: overload occurred in the 2th channel b11 - if set to 1: overload occurred in the 2th channel b11 - if set to 1: overload occurred in the 1st channel b12,, b15 - reserved 5 RepCycle 0 - infinity nnnn - number of repetitions ∈ (1 ÷ 1000) 6 StartDelay start delay time specified in milliseconds ∈ (1 ÷ 60000) 78 IntTimeSec 0 - infinity integration time specified in seconds source channel of the triggering signal: 0 (the 1st channel) . 5 (the 6th channel) 10 MeasureTriggerChann el 0 + trigger mode: 0 - OFF, 1 - SLOPE+, 2 - SLOPE−, 3 - LEVEL+, 4 - LEVEL−, 6 - GRADIENT+, 7 - RTC 11 MeasureTriggerSource 1 + the VEC 4-6 result 1 - the VEC 4-6			b6 - if set to 1: overload occurred in the 6" channel
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b12,, b15 - reserved 5 RepCycle 0 - infinity nnnn - number of repetitions ∈ (1 ÷ 1000) 5 StartDelay 1ntTimeSec 1ntTimeSec 1 - infinity integration time specified in milliseconds ∈ (1 ÷ 60000) 78 IntTimeSec 9 MeasureTriggerChann el 10 MeasureTriggerMode 11 MeasureTriggerMode 12 MeasureTriggerLev 1 - the VEC 1-3 result 1 - the VEC 4-6 result 4 - the RMS(1) result from the selected channel 5 - the External trigger 12 MeasureVecTriggerLev 1 - the VEC 4-6 result 4 - the RMS(1) result from the selected channel 5 - the External trigger 12 LoggerTriggerPre 13 MeasureVecTriggerLev 1 the vec 1-3 result 1 LoggerTriggerProst 1 LoggerTrigger on the records taken into account before the fulfilment of the triggering condition ∈ (1 ÷ 20) 1 LoggerTriggerPost 1 Reserved 1 Reserved 1 Reserved 1 Reserved 1 Reserved 1 RefLev_a reference level for velocity given in nms² ∈ (1 ÷ 100) 2 RefLev_d reference level for displacement given in pm ∈ (1 ÷ 100) 2 RefLev_d reference level for displacement given in pm ∈ (1 ÷ 100) 2 NofChannels number of profiles (12)			
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20 RefLev_d reference level for displacement given in pm ∈ (1 ÷ 100) 21 NofChannels number of channels (6) 22 NofProfiles number of profiles (12)	18	RefLev_a	reference level for acceleration given in $\mu ms^{-2} \in (1 \div 100)$
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NofProfiles number of profiles (12)		_	
' '	23	NotSpect	number of spectrum
24 reserved Reserved	24	reserved	Reserved

25	CalibrType	calibration type: 0 - calibration not performed 1 - calibration by measurement 2 - calibration by sensitivity
26	CalibrDate	date of the last calibration
27	CalibrTime	time of the last calibration
28	MeasureTriggerGrad	the gradient level for gradient trigger mode
29	reserved	Reserved
30	reserved	Reserved
31	reserved	Reserved
32	reserved	Reserved
33	reserved	Reserved
34	reserved	Reserved
35	reserved	Reserved
36	CycleMeasurementSta rtDate	measure start date
3738	CycleMeasurementSta rtTime	measure start time
39	enabledChannels	Channels used for measurement as bitfield: b0 - channel 1 enabled b1 - channel 2 enabled b5 - channel 6 enabled

Table B.1.4. Hardware settings for channels

Word number	Name / Value	Comment
0	0xnn05	[05, nn=block_length]
1	0xkk06	[06, kk=sub-block_length]
2	ChannelMode[1]	mode of the 1 st channel 0 - Vibration Level Meter / Analyser
3	CalibrFactor[1]	calibration factor (*10 dB) in the 1st channel
4	Reserved	always 1
5	Reserved	Reserved
6	Reserved	Reserved
7	Reserved	Reserved
8	Reserved	Reserved
9	RangeDB[1]	Range in the 1 st channel as dB*100
	•••	
kk*5 + 1	0xkk06	[06, kk=sub-block_length]
kk*5 + 2	ChannelMode[6]	mode of the 6 th channel: 0 - Vibration Level Meter / Analyser
kk*5 + 3	CalibrFactor[6]	calibration factor (*10 dB) in the 6 th channel
kk*5 + 4	Reserved	always 1
kk*5 + 5	Reserved	Reserved
kk*5 + 6	Reserved	Reserved
kk*5 + 7	Reserved	Reserved
kk*5 + 8	Reserved	Reserved
kk*5 + 9	RangeDB[6]	Range in the 6 th channel as dB*100

force_flags1	flags word (16 bits): b15 b3 b2 b1 b0 b0 - if set to 1: 1st force channel results have been calculated b1 b15 – reserved
force_buffer1	logger contents in the 1st force channel defined as a sum of: 1 - for PEAK results, 2 - for MAX results, 4 - for MIN results, 8 - for AVER results,
force_flags2	flags word (16 bits): b15 b3 b2 b1 b0 b0 - if set to 1: 2nd force channel results have been calculated b1 b15 - reserved
force_buffer2	logger contents in the 2nd force channel defined as a sum of: 1 - for PEAK results, 2 - for MAX results, 4 - for MIN results, 8 - for AVER results,
 •••	

Table B.1.5. Software settings for channels

Word number	Name / Value	Comment
0	0xnn07	[07, nn=block_length]
1	0x040C	[used_channel, used profile]
27	ProfileSett[1]	the 1 st profile settings for the 1 st channel, defined in the case of VLM mode - in Table B.1.5_VLM
813	ProfileSett[2]	the 1 st profile settings for the 2 nd channel, defined in the case of VLM mode - in Table B.1.5_VLM
1419	ProfileSett[3]	the 1 st profile settings for the 3 rd channel, defined in the case of VLM mode - in Table B.1.5_VLM
2025	ProfileSett[4]	the 1 st profile settings for the 4 th channel, defined in the case of VLM mode - in Table B.1.5_VLM
2631	ProfileSett[5]	the 1 st profile settings for the 5 th channel, defined in the case of VLM mode - in Table B.1.5_VLM
3237	ProfileSett[6]	the 1 st profile settings for the 6 th channel, defined in the case of VLM mode - in Table B.1.5_VLM
3843	ProfileSett[7]	the 2 nd profile settings for the 1 st channel, defined in the case of VLM mode - in Table B.1.5_VLM
4449	ProfileSett[8]	the 2 nd profile settings for the 2 nd channel, defined in the case of VLM mode - in Table B.1.5_VLM
5055	ProfileSett[9]	the 2 nd profile settings for the 3 rd channel, defined in the case of VLM mode - in Table B.1.5_VLM
5661	ProfileSett[10]	the 2 nd profile settings for the 4 th channel, defined in the case of VLM mode - in Table B.1.5_VLM
6267	ProfileSett[11]	the 2 nd profile settings for the 5 th channel, defined in the case of VLM mode - in Table B.1.5_VLM

6873		the 2 nd profile settings for the 6 th channel, defined in the case of VLM mode - in Table B.1.5_VLM
	•••	

Table B.1.5_VLM. Software settings for a channel in the case of VLM mode

Word number	Name / Value	Comment
0	0xnn08	[08, nn=sub-block_length]
1	ChannelNo	channel number: 0 - the 1 st channel
2	FilterP	filter type in the channel: 0 - HP , 5 - VEL3 , 16 - Wk , 17 - Wd , 18 - Wc , 19 - Wj , 20 - Wm , 21 - Wh , 22 - Wg , 23 - Wb , 24 - Wf , 116 - BL Wk , 117 - BL Wd , 118 - BL Wc , 119 - BL Wj , 120 - BL Wm , 121 - BL Wh , 122 - BL Wg , 123 - BL Wb , 124 - BL Wf
3	DetectorP	detector type in the channel: 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	BufferP	logger contents in the channel defined as a sum of: 1 - for PEAK results, 2 - for P-P results, 4 - for MAX results, 8 - for RMS results, 16 - for VDV results
5	ProfileFlags	flags word (16 bits): b15 b3 b2 b1 b0 b0 - if set to 1: profile results have been calculated b1 b15 - reserved

Table B.1.6. Vector measurement settings

Word number	Name / Value	Comment
0	0xnn38	[1E, nn=sub-block_length]
1	vecNo	Vector id: 0 - VEC 1-3, 1 - VEC 4-6
		Channels used for vector calculation:
		b0 - if set to 1: channel 1 was used for calculation
		b1 - if set to 1: channel 2 was used for calculation
2	vecChMask	b2 - if set to 1: channel 3 was used for calculation
		b3 - if set to 1: channel 4 was used for calculation
		b4 - if set to 1: channel 5 was used for calculation
		b5 - if set to 1: channel 6 was used for calculation
3	Buffer	vector result logging: 0 - OFF, 8 - RMS
4	VectorCoeff[1]	vector coefficient for the RMS value from the 1 st channel (*100)
5	VectorCoeff[2]	vector coefficient for the RMS value from the 2 nd channel (*100)
6	VectorCoeff [3]	vector coefficient for the RMS value from the 3 rd channel (*100)
7	VectorCoeff [4]	vector coefficient for the RMS value from the 4 th channel (*100)

8	VectorCoeff [5]	vector coefficient for the RMS value from the 5 th channel (*100)
9	VectorCoeff [6]	vector coefficient for the RMS value from the 6 th channel (*100)
10	type	vector type: 0 - RMS vector, 1 - MTVV, 2 - PPV
	•••	

Table B.1.7. Settings for vibration dose measurement

Word number	Name / Value	Comment
0	0xnn1F	[1F, nn=block_length]
1	doseldx	0 - dosimeter 1-3 1 - dosimeter 4-6
2	doseType	type of dosimeter: 1 - Hand-Arm measurement, 2 - Whole-Body measurement
3	xAxis	channel of x axis
4	yAxis	channel of y axis
5	zAxis	channel of z axis
6	ExposureTime	exposure time in minutes
7	Standard	standard: 0 - UK, 1 - Italy, 2 - Poland, 3 - French, 4 - User, 5 - German
8	HAV_EAV_X	Hand-Arm x-axis action value*100
8	HAV_EAV_Y	Hand-Arm y-axis action value*100
8	HAV_EAV_Z	Hand-Arm z-axis action value*100
9	HAV_ELV_X	Hand-Arm x-axis limit value*100
9	HAV_ELV_Y	Hand-Arm y-axis limit value*100
9	HAV_ELV_Z	Hand-Arm z-axis limit value*100
10	WBV_EAV_X	Whole-Body x-axis action value*100
10	WBV_EAV_Y	Whole-Body y-axis action value*100
10	WBV_EAV_Z	Whole-Body z-axis action value*100
11	WBV_ELV_X	Whole-Body x-axis limit value*100
11	WBV_ELV_Y	Whole-Body y-axis limit value*100
11	WBV_ELV_Z	Whole-Body z-axis limit value*100
12	Unit[1]	type of HAV_EAV value (0 - RMS based, 1-VDV based)
13	Unit[2]	type of HAV_ELV value (0 - RMS based, 1-VDV based)
14	Unit[3]	type of WBV_EAV value (0 - RMS based, 1-VDV based)
15	Unit[4]	type of WBV_ELV value (0 - RMS based, 1-VDV based)

Table B.1.8. Main results

Word number	Name / Value	Comment
0	0xnn0D	[0D, nn=sub-block_length]
1	0x040C	[used_channel, used profiles]
215	MainResults[1]	main results from the 1 st profile of the 1 st channel, defined in the case of VLM mode - in Table B.1.8_VLM
1629	MainResults[2]	main results from the 1 st profile of the 2 nd channel, defined in the case of VLM mode - in Table B.1.8_VLM
3043	MainResults[3]	main results from the 1 st profile of the 3 rd channel, defined in the case of VLM mode - in Table B.1.8_VLM

	4457	MainResults[4]	main results from the 1 st profile of the 4 th channel, defined in the case of VLM mode - in Table B.1.8_VLM
	5871	MainResults[5]	main results from the 1 st profile of the 5 th channel, defined in the case of VLM mode - in Table B.1.8_VLM
	7285	MainResults[6]	main results from the 1 st profile of the 6 th channel, defined in the case of VLM mode - in Table B.1.8_VLM
	8699	MainResults[7]	main results from the 2 nd profile of the 1 st channel, defined in the case of VLM mode - in Table B.1.8_VLM
	100113	MainResults[8]	main results from the 2 nd profile of the 2 nd channel, defined in the case of VLM mode - in Table B.1.8_VLM
	114127	MainResults[9]	main results from the 2 nd profile of the 3 rd channel, defined in the case of VLM mode - in Table B.1.8_VLM
	128141	MainResults[10]	main results from the 2 nd profile of the 4 th channel, defined in the case of VLM mode - in Table B.1.8_VLM
	142155	MainResults[11]	main results from the 2 nd profile of the 5 th channel, defined in the case of VLM mode - in Table B.1.8_VLM
	156169	MainResults[12]	main results from the 2 nd profile of the 6 th channel, defined in the case of VLM mode - in Table B.1.8_VLM
	170	Vec13	RMS value of vector VEC 1-3 (*100 dB)
ĺ	171	Vec46	RMS value of vector VEC 4-6 (*100 dB)
ĺ	172	Force13	main results from the 1 st force channel
ĺ		Force46	main results from the 2 nd force channel
ĺ		***	

Table B.1.8_VLM. One-profile main results in the case of VLM mode

Word number	Name / Value	Comment
0	0xnn0E	[0E, nn=sub-block_length]
12	MeasureTime	time of the measurement in the channel (if the 1 st profile in channel) overload time in the channel (if second profile in channel)
3	Result[1]	PEAK value in the profile (*100 dB)
4	Result[2]	P–P value in the profile (*100 dB)
5	Result[3]	reserved
6	Result[4]	reserved
7	Result[5]	MTVV (or MAX) value in the profile (*100 dB)
8	Result[6]	VDV value in the profile (if UnitFlags bit b2 is set to 0) (*100 dB)
9	Result[7]	RMS value in the profile (*100 dB)
10	Result[8]	reserved
11	Result[9]	reserved
12	Result[10]	reserved
13	Result[11]	reserved
	•••	

Table B.1.8_FORCE. One force channel main results

Word number	Name / Value	Comment
0	0xnn49	[49, nn=sub-block_length]
1	Result[1]	PEAK force value (*100 N)
2	Result[2]	MIN force value (*100 N)

3	Result[3]	MAX force value (*100 N)
4	Result[4]	AVERAGE force value (*100 N)
	•••	

Table B.1.9. Header of the file from the logger

Word number	Name / Value	Comment
0	0xnn18	[18, nn=header_length]
1	BufResOffs	position of the first saved result
2	BuffTSec	logger time-step - full seconds part
3	BuffTMilisec	logger time-step - milliseconds part
45	BuffLength	logger length (bytes)
67	RecsInBuff	number of records in the logger
89	RecsInObserv	number of records in the observation period equal to: number of records in the logger + number of records not saved
1011	AudioRecs	number of audio records in the logger
	•••	



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

Table B.1.10. Contents of the file from the logger

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

Table B.1.11. File end marker

Word number	Name / Value	Comment
0	0xFFFF	file end marker

Table B.1.12. Data block of instrument's setup

Word number	Name / Value	Comment
0	0x0020	[20, 00=block length in the next word]
1	BlockLength	block length
2BlockLength-1	SetupData	saved setup values

Table B.1.13. Trigger settings

Word number	Name / Value	Comment
0	0x0031	[31, 00=block length in the next word]
1	BlockLen	block length
2	NProfileTriggers	number of trigger conditions per profile
3	NSpectTriggers	number of trigger conditions per spectrum channel
4	NVectTriggers	number of trigger conditions per vector
5	Vector13Condidtion	vector 1-3 trigger block (table B.1.14)
	Vector46Condidtion	vector 4-6 trigger block (table B.1.14)
	ProfTriggCond1	trigger condition block for the 1 st profile (table B.1.14)
	•••	
	ProfTrigCondN	trigger condition block for the last profile (table B.1.14)
	SpectTriggCond1	trigger condition block for the first spectrum (table B.1.14)

	SpectTriggCondN	trigger condition block for the last spectrum (table B.1.14)
	AlarmCond	alarm trigger (table B.1.28)
	LoggerCond	logger trigger (table B.1.28)
	WaveCond	wave recording trigger (table B.1.28)
	SMSCond	SMS alert trigger (table B.1.28)
	MailCond	E-mail alert trigger (table B.1.28)
	EventCond	event recording trigger (table B.1.28)
	•••	

Table B.1.14. Trigger condition block

Word number	Name / Value	Comment
0	0xnn32	[32, nn=block length]
12	Flags	b1 - logger integration step b2 - 100ms integration step b3 - 1s integration step b4 - current time integration step b9 - trigger action: alarm b12 - trigger action: logger b15 - integration period step b17 - trigger action: wave b19 - trigger action: SMS b21 - trigger action: E-MAIL b23 - trigger action: event recorder
3	Mode	0 - OFF, 1 - LEVEL -, 2 - LEVEL +, 3 - SLOPE -, 4 - SLOPE +, 5 - GRADIENT -, 6 - GRADIENT +, 7 - DECAY
4	Source	0 - VECTOR RMS, 1 - PEAK, 2 - P-P, 3 - MAX, 4 - MIN, 5 - RMS, 6 - VDV, 7 - PEAK, 8 - MAX, 9 - MIN, 10 - RMS
5	primaryLevel	triggering level in dB*100
6	secondaryLevel	in the case of GRADIENT mode: gradient level in dB*100 in the case of DECAY mode: signal drop level in dB*100
	•••	

Table B.1.15. Event Recording Settings

Word number	Name / Value	Comment
0	0xnn39	[39, nn=block length]
1	eventSampleRate	sampling rate: 0 - 6kHz
2	eventChannel	recorded channels mask: b0 - 1st channel b1 - 2nd channel b5 - 6th channel
3	event16b	1 - 16 bits per sample
4	eventGain	0 - signal gain +0dB
5	triggerEventTime	time constant for triggerEventTimeLimit in seconds
6	triggerEventTimeLimit	0 - unlimited recording time 1 - fixed length 2 - maximum length
	•••	

Table B.1.16. Octave analysis header

Word number	Name / Value	Comment
0	0xnn09	[09, nn=block_length]
1	0xkknn	[nn=spectrum_mask, kk=used_spectrum]
25	OctaveHead[1]	header of the first enabled octave analysis, defined in Table B.1.16_VLM
2+4*used		
spectrum	OctaveHead[used_spe	header of the last enabled octave analysis, defined
5+4*used_	ctrum]	in Table B.1.16_VLM
spectrum	_	

Table B.1.16_VLM. Octave analysis header entry

Word number	Name / Value	Comment
0	0xnn0A	[0A, nn=sub-block length]
1	SpectrumChannel	spectrum channel
2	SpectrumFilter	1/1 or 1/3 OCTAVE analysis filter: 0 - HP
3	SpectrumBuff	1/1 or 1/3 OCTAVE logging: 1 - ON, 0 - OFF

Table B.1.17. One-channel 1/1 OCTAVE analysis results

Word number	Name / Value	Comment
0	0xnn0F	[0F, nn=block_length]
1	LowestFreq	the lowest 1/1 OCTAVE frequency (*100 Hz)
2	Noct	number of 1/1 OCTAVE values
3	NoctTot	number of TOTAL values = 3
4 block_ length	Octave[i]	1/1 octave[i] value (*100 dB); i=1NOct+NOctTot
	•••	

Note: The TOTAL values, correspond to the HP, Profile 1 and Profile 2 filters – respectively.

Table B.1.18. One-channel 1/3 OCTAVE analysis results

Word number	Name / Value	Comment
0	0xnn10	[10, nn=block_length]
1	LowestFreq	the lowest 1/3 OCTAVE frequency (*100 Hz)
2	Nter	number of 1/3 OCTAVE values
3	NterTot	number of TOTAL values = 3
4 block_ length	Tercje[I]	1/3 octave[i] value (*100 dB); i=1NTer+NTerTot
	•••	

Note: The TOTAL values, correspond to the HP, Profile 1 and Profile 2 filters – respectively.

Table B.1.19. TOTALS description

Word number	Name / Value	Comment
0	0xnn1A	[1A, nn=block_length = 1+(1 + Ntotal*4)*k (words)]
1 1+4*Ntotal	OneChnlTotDesc[1]	one-channel totals description block for the first channel with TOTALS in user filters (Table B.1.20.)
	•••	
	OneChnlTotDesc[k]	one-channel totals description block for the last channel with TOTALS in user filters (Table B.1.20.)

Note: This data block is created only in the case when the file was saved for 1/1 OCTAVE or 1/3 OCTAVE analysis and the TOTAL values were calculated for the filters selected by the user (USER FILTERS). The TOTAL values corresponding to those filters are given in the TotValue positions and the definitions of the proper filters are presented in the Table B.1.20.

Table B.1.20. One-channel TOTALS description

Word number	Name / Value	Comment
0	0xnn1B	[1B, nn=block_length = 1 + Ntotal*4 (words)]
1	SpectChannel	spectrum channel
2	FilterNo[1]	logical filter no. for the first total value 0, 1, 2 - standard filters 3, user-defined filters
3	FilterType[1]	for sound: 0 for vibration: 0 - ACC., 1 - VEL., 2 - DIL.
4	calFactor[1]	calibration factor used to modify the computed TOTAL value
5	TotValue[1]	TOTAL value computed for the filter with logical no. FilterNo or zero value for standard filter
nn-4	FilterNo[Ntotal]	logical filter no. for the last total value 0, 1, 2 - standard filters 3, user-defined filters
nn-3	FilterType[Ntotal]	0 - ACC., 1 - VEL., 2 - DIL.
nn-2	calFactor[Ntotal]	calibration factor used to modify the computed TOTAL value
nn-1	TotValue[Ntotal]	TOTAL value computed for the filter with logical no. FilterNo or zero value for standard filter

Table B.1.21. Description of user-defined filter

Word number	Name / Value	Comment
0	0xnn1D	[1D, nn=block_length = 5 + NTer (words)]
1	FilterNo	FilterNo as saved in one-channel description (Table B.1.20)
24	FilterName	filter name (up to 5 letters, zero-ending string)
549	FilterVal[i]	filter value (*10 dB) corresponding to the 1/3 octave[i] position; i=1NTer (145)
	•••	

Note: Such data block is created for each filter with the logical number FilterNo greater or equal to 3, expressed in the TOTALS DESCRIPTION block (cf. Tab. B.1.19 and Tab B.1.20). The description of the filter with the logical number FilterNo is given only once, disregarding the number of FilterNo repetition in Tab. B.1.20.

Table B.1.22. Spectrum header of the file from the logger

Word number	Name / Value	Comment
0	0xnn21	[21, nn=block_length=1+4*NumberOfBufferedSpectrums]
1	ChannelNo	channel number of the first logged spectrum minus 1

2	LowestFreq	the lowest 1/1 OCTAVE or 1/3 OCTAVE frequency (*100 Hz) of the first logged spectrum
3	NSpectRes	number of 1/1 OCTAVE or 1/3 OCTAVE results of the first logged spectrum
4	NTotal	number of TOTAL values of the first logged spectrum
block_ length-4	ChannelNo	channel number of the last logged spectrum minus 1
block_ length-3	LowestFreq	the lowest 1/1 OCTAVE or 1/3 OCTAVE frequency (*100 Hz) of the last logged spectrum
block_ length-2	NSpectRes	number of 1/1 OCTAVE or 1/3 OCTAVE results of the last logged spectrum
block_ length-1	NTotal	number of TOTAL values of the last logged spectrum
	•••	

Table B.1.23. Maximum results of 1/3 OCTAVE analysis in one channel

Word number	Name / Value	Comment
0	0xnn2D	[2D, nn=block length]
1	LowestFreq	the lowest 1/1 OCTAVE frequency (*100 Hz)
2	Noct	number of 1/1 OCTAVE values
3	NoctTot	number of TOTAL values = 3

4 - length block	MaxOctave[i]	maximum result of the 1/1 octave analysis (*100 dB); i = 1NOct + NOctTot

Note: The TOTAL values, correspond to the HP, Profile 1 and Profile 2 filters – respectively.

Table B.1.24. Minimum results of 1/1 OCTAVE analysis in one channel

Word number	Name / Value	Comment
0	0xnn2E	[2E, nn=block length]
1	LowestFreq	the lowest 1/1 OCTAVE frequency (*100 Hz)
2	Noct	number of 1/1 OCTAVE values
3	NoctTot	number of TOTAL values = 3
4 - length block	MinOctave[i]	minimum result of the 1/1 octave analysis (*100 dB); i = 1NOct + NOctTot

respectively.

Note: The TOTAL values, correspond to the HP, Profile 1 and Profile 2 filters – ctively.

Table B.1.25. Maximum results of 1/3 OCTAVE analysis in one channel

Word number	Name / Value	Comment			
0	0xnn2F	[2F, nn=block length]			
1	LowestFreq	the lowest 1/3 OCTAVE frequency (*100 Hz)			
2	Nter	number of 1/3 OCTAVE values			
3	NterTot	number of TOTAL values = 3			
	•••				
4 - length block	MaxTercje[I]	maximum result of the 1/3 octave analysis (*100 dB); i = 1NTer + NterTot			
	•••				

respectively.

Note: The TOTAL values, correspond to the HP, Profile 1 and Profile 2 filters -

Table B.1.26. Minimum results of 1/3 OCTAVE analysis in one channel

Word number	Name / Value	Comment					
0	0xnn30	[30, nn=block length]					
1	LowestFreq	the lowest 1/3 OCTAVE frequency (*100 Hz)					
2	Nter	number of 1/3 OCTAVE values					
3	NterTot	number of TOTAL values = 3					
	•••						
4 - length block	MinTercje[I]	minimum result of the 1/3 octave analysis (*100 dB); i = 1NTer + NterTot					

 \triangle

Note: The TOTAL values, correspond to the HP, Profile 1 and Profile 2 filters -

Table B.1.27. Seat measurement

Word number	Name / Value	Comment
0	0xnn2C	[2C, nn=block length]
1	SEATBase	base channels: 0 - channels 1-3, 1 - channels 4-6
2	SEATSeat	seating channels: 0 - channels 1-3, 1 - channels 4-6
	•••	

Table B.1.28. Trigger condition block

Word number	Name / Value	Comment					
0	0xnn4C	[4C, nn=block length]					
12	Flags	b1 - logger integration step b2 - 100ms integration step b3 - 1s integration step b4 - current time integration step b9 - trigger action: alarm b12 - trigger action: logger b15 - integration period step b17 - trigger action: wave b19 - trigger action: SMS b21 - trigger action: E-MAIL b23 - trigger action: event recorder					
3	Mode	0 - OFF, 1 - LEVEL -, 2 - LEVEL +, 3 - SLOPE -, 4 - SLOPE +, 5 - GRADIENT -, 6 - GRADIENT +, 7 - DECAY					
4	Source	0 - VECTOR RMS, 1 - PEAK, 2 - P-P, 3 - MAX, 4 - MIN, 5 - RMS, 6 - VDV, 7 - PEAK, 8 - MAX, 9 - MIN, 10 - RMS					
5	primaryLevel	triggering level in dB*100					
6	secondaryLevel	in the case of GRADIENT mode: gradient level in dB*100 in the case of DECAY mode: signal drop level in dB*100					
7	srcIndex	in case of VECTOR Source: 0 - channels 1-3 1 - channels 4-6 other cases: channel No + 1					
8	srcType	Trigger source 0 - vector 1 - profile 2 - spectrum					

Table B.1.29. TEDS data block

Word number	Name / Value	Comment					
0	0xnn4A	[4A, nn=block length]					
1	TEDSCnt	Number of TEDS data blocks					
2	FORCECnt	Number of force inputs					
3	TEDSBlock1	first TEDS data block (cf. Tab B.1.30)					

	TEDSBlockN	last TEDS data block (cf. Tab B.1.30)					
k	valid[1]	0 - channel 1 data is valid					
K	valid[1]	1 - channel 1 data is invalid					
	•••						
k+Channel	valid[ChannelsCount]	0 - last channel data is valid					
sCount-1	vandjonarnielscountj	1 - last channel data is invalid					
k+Channel	validF[1]	0 - force channel 1 data is valid					
sCount	valiur[1]	1 - force channel 1 data is invalid					

k+Channel sCount+F ORCECnt- 1	validF[FORCECnt]	0 - last force channel data is valid 1 - last force channel data is invalid
k+Channel sCount+F ORCECnt	calFact[1]	calibration factor read from TEDS for the first channel in dB*100
	•••	
k+2*Chan nelsCount +FORCEC nt-1	calFact[ChannelsCount]	calibration factor read from TEDS for the last channel in dB*100
k+2*Chan nelsCount +FORCEC nt	reserved	
k+2*Chan nelsCount +2*FORC ECnt-1	reserved	

B.2. Structure of the block with meteorological data

In the case when the instrument is working in a monitoring station which contains also the components for the meteorological measurements (temperature, pressure, humidity, wind speed and its direction), the data coming from them are added by SvanPC+ software to all files with the data from SVAN 106. The structure of such data block is presented in the Tab. B.2.1.

Table B.2.1. METEO data from monitoring station

Word number	Name / Value	Comment
0	0x0033	[33, 00=block length in the next word]
1	BlockLen	block length
2	UnitNumber	unit number
3	UnitType	type of the unit: 211 or 210 (SV 211 or SV 210)
4	SoftVersion	software version
56	IntTimeSec	integration time specified in seconds
7	Temperature	temperature [*10 °C]
8	Pressure	pressure [hPa]
9	Humidity	humidity [*10%]
10	AvgWindSpeed	Average wind speed [*10m/s ²]
11	WindDirection	wind direction for max wind speed [degrees]. 0xFFFF if direction is unavailable
12	MaxWindSpeed	max wind speed [*10 m/s] (ignored if WindDirection is unavailable)
1314	WindDirTotalPuffs	number of total wind puffs in distribution vector of wind direction
15	NofWindDir	number of elements in distribution vector of wind direction

16 16+NofWindDir-1	WindDir[i]	WindDir[i] value [*10 %]
16+NofWindDir	NofWindMax	number of elements in distribution vector of max wind speed
17+NofWindDir 17+NofWindDir+ NofWindMax-1	WindMax[i]	WindMax[i] value [*10 m/s]
17+NofWindDir+ NofWindMax	NofWindAvg	number of elements in distribution vector of avg wind speed
18+NofWindDir+ NofWindMax 18+NofWindDir+ NofWindMax+ NofWindAvg-1	WindAvg[i]	WindAvg[i] value [*10 m/s]
18+NofWindDir+ NofWindMax+ NofWindAvg	RainDetection	Rain detection flag

B.3.1. Structure of the file with the results from Level Meter Mode

File header - cf. Tab. B.1.1.

Unit and software specification - cf. Tab. B.1.2.

Parameters and global settings - cf. Tab. B.1.3.

Hardware settings for channels - cf. Tab. B.1.4.

Software settings for channels - cf. Tab. B.1.5.

Trigger settings (cf. Tab. B.1.13, Tab.B.1.14).

Vector measurement settings - cf. Tab. B.1.6.

Settings for vibration dose measurement (the presence depends on the **MEASURE DOSE** and channel filter settings) - cf. Tab. B.1.7.

Main results - cf. Tab. B.1.8.

File end marker - cf. Tab. B.1.11.

B.3.2. Structure of the file containing LM results from logger's file

File header - cf. Tab. B.1.1.

Unit and software specification - cf. Tab. B.1.2.

Parameters and global settings - cf. Tab. B.1.3.

Hardware settings for channels - cf. Tab. B.1.4.

Software settings for channels - cf. Tab. B.1.5.

Trigger settings (cf. Tab. B.1.13, Tab.B.1.14).

Vector measurement settings - cf. Tab. B.1.6.

Event Recording settings - cf. Tab. B.1.15.

Header of the file from the logger - cf. Tab.B.1.9.

Contents of the file from the logger - cf. Tab.B.1.10.

File end marker - cf. Tab. B.1.11.

B.3.3. Structure of the file containing saved instrument's setup

File header - cf. Tab. B.1.1.

Unit and software specification - cf. Tab. B.1.2.

Data block of instrument's setup - cf. Tab.B.1.12.

File end marker - cf. Tab. B.1.11.

B.3.4. 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.

Parameters and global settings - cf. Tab. B.1.3.

Hardware settings for channels - cf. Tab. B.1.4.

Software settings for channels - cf. Tab. B.1.5.

Trigger settings (cf. Tab. B.1.13, Tab.B.1.14).

Vector measurement settings - cf. Tab. B.1.6.

Octave analysis header - cf. Tab.B.1.16.

The hand-arm and whole-body vibration dose measurement settings - cf. Tab. B.1.7.

Main results - cf. Tab. B.1.8.

One-channel 1/1 Octave analysis results (one for each channel with spectrum analysis enabled) - cf. Tab. B.1.17.

TOTALS description (if needed) - cf. Tab. B.1.19.

Description of user-defined filter (if needed) - cf. Tab. B.1.21.

Maximum 1/1 Octave analysis results in one channel (one for each channel with spectrum analysis enabled, presence depends on the **MAX. SPECT.** setting) - cf. Tab. B.1.23.

Minimum 1/1 Octave analysis results in one channel (one for each channel with spectrum analysis enabled, presence depends on the **MIN. SPECT.** setting) - cf. Tab. B.1.24.

File end marker - cf. Tab. B.1.11.

B.3.5. 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.

Parameters and global settings - cf. Tab. B.1.3.

Hardware settings for channels - cf. Tab. B.1.4.

Software settings for channels - cf. Tab. B.1.5.

Trigger settings (cf. Tab. B.1.13, Tab.B.1.14).

Vector measurement settings - cf. Tab. B.1.6.

Octave analysis header - cf. Tab.B.1.16.

The hand-arm and whole-body vibration dose measurement settings - cf. Tab. B.1.7.

Main results - cf. Tab. B.1.8.

One-channel 1/3 OCTAVE analysis results (one for each channel with spectrum analysis enabled) - cf. Tab. B.1.18.

Maximum 1/3 OCTAVE analysis results in one channel (one for each channel with spectrum analysis enabled, presence depends on the **MAX. SPECT.** setting) - cf. Tab. B.1.25.

Minimum 1/3 OCTAVE analysis results in one channel (one for each channel with spectrum analysis enabled, presence depends on the **MIN. SPECT.** setting) - cf. Tab. B.1.26.

TOTALS description (if needed) - cf. Tab. B.1.19.

Description of user-defined filter (if needed) - cf. Tab. B.1.21.

File end marker - cf. Tab. B.1.11.

B.3.6. Structure of the file containing 1/1 or 1/3 OCTAVE analysis results from logger's file

File header - cf. Tab. B.1.1.

Unit and software specification - cf. Tab. B.1.2.

Parameters and global settings - cf. Tab. B.1.3.

Hardware settings for channels - cf. Tab. B.1.4.

Software settings for channels - cf. Tab. B.1.5.

Trigger settings (cf. Tab. B.1.13, Tab.B.1.14).

Vector measurement settings - cf. Tab. B.1.6.

Header of the file from the logger - cf. Tab.B.1.9.

Octave analysis header - cf. Tab.B.1.16.

Spectrum analysis header of the file from the logger - cf. Tab.B.1.22.

Contents of the file from the logger - cf. Tab.B.1.10.

File end marker - cf. Tab. B.1.11.

B.4. Contents of the file 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.4.1. Record with the results

The contents of the record with the results depends on the measurement function, selected channels modes, values set in the **Logger** menu and its sub-lists. Profile results are written on 15 most significant bits in dB*10, while least significant bit is used for overload indication flag. The following elements can be present (in the given sequence):

- results of the measurement from the 1st profile of the 1st channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if any position in **Channel 1 Profile 1** (path: MENU / Measurement / Logging / Logger / Logger Result / Channel 1 Profile 1) **Log** column was selected, up to five words are written in the given sequence:
 - <result1> PEAK result in the case of VLM if the first position was marked, else no value is written;
 - <result2> P-P result in the case of VLM if the second position was marked, else no value is written;
 - <result3> MAX result in the case of VLM if the third position was marked, else no value is written;
 - <result4> RMS result in the case of VLM if the fourth position was marked, else no value is written;
 - <result5> VDV result in the case of VLM if the fifth position was marked, else no value is written;
- results of the measurement from the 1st profile of the 2nd channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (*path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On*) and if any position in **Channel 2 Profile 1** (*path: MENU / Measurement / Logging / Logger / Logger Result / Channel 2 Profile 1*) **Log** column was selected, up to five words are written in the given sequence:
 - <result1> PEAK result in the case of VLM if the first position was marked, else no value is written;
 - <result2> P-P result in the case of VLM if the second position was marked, else no value is written;
 - <result3> MAX result in the case of VLM if the third position was marked, else no value is written;
 - <result4> RMS result in the case of VLM if the fourth position was marked, else no value is written;
 - <result5> VDV result in the case of VLM if the fifth position was marked, else no value is written;
- results of the measurement from the 1st profile of the 3rd channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if any position in **Channel 3 Profile 1** (path: MENU / Measurement / Logging /

Logger / Logger Result / Channel 3 Profile 1) Log column was selected, up to five words are written in the given sequence:

- <result1> PEAK result in the case of VLM if the first position was marked, else no value is written;
- <result2> P-P result in the case of VLM if the second position was marked, else no value is written;
- <result3> MAX result in the case of VLM if the third position was marked, else no value is written;
- <result4> RMS result in the case of VLM if the fourth position was marked, else no value is written;
- <result5> VDV result in the case of VLM if the fifth position was marked, else no value is written;
- results of the measurement from the 1st profile of the 4th channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if any position in **Channel 4 Profile 1** (path: MENU / Measurement / Logging / Logger / Logger Result / Channel 4 Profile 1) **Log** column was selected, up to five words are written in the given sequence:
 - <result1> PEAK result in the case of VLM if the first position was marked, else no value is written;
 - <result2> P-P result in the case of VLM if the second position was marked, else no value is written;
 - <result3> MAX result in the case of VLM if the third position was marked, else no value is written;
 - <result4> RMS result in the case of VLM if the fourth position was marked, else no value is written;
 - <result5> VDV result in the case of VLM if the fifth position was marked, else no value is written;
- results of the measurement from the 1st profile of the 5th channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if any position in **Channel 5 Profile 1** (path: MENU / Measurement / Logging / Logger / Logger Result / Channel 5 Profile 1) **Log** column was selected, up to five words are written in the given sequence:
 - <result1> PEAK result in the case of VLM if the first position was marked, else no value is written;
 - <result2> P-P result in the case of VLM if the second position was marked, else no value is written;
 - <result3> MAX result in the case of VLM if the third position was marked, else no value is written;
 - <result4> RMS result in the case of VLM if the fourth position was marked, else no value is written;
 - <result5> VDV result in the case of VLM if the fifth position was marked, else no value is written;
- results of the measurement from the 1st profile of the 6th channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if any position in **Channel 6 Profile 1** (path: MENU / Measurement / Logging / Logger / Logger Result / Channel 6 Profile 1) **Log** column was selected, up to five words are written in the given sequence:
 - <result1> PEAK result in the case of VLM if the first position was marked, else no value is written;
 - <result2> P-P result in the case of VLM if the second position was marked, else no value is written;
 - <result3> MAX result in the case of VLM if the third position was marked, else no value is written;
 - <result4> RMS result in the case of VLM if the fourth position was marked, else no value is written;
 - <result5> VDV result in the case of VLM if the fifth position was marked, else no value is written;
- results of the measurement from the 2nd profile of the 1st channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if any position in **Channel 1 Profile 2** (path: MENU / Measurement / Logging / Logger / Logger Result / Channel 1 Profile 2) **Log** column was selected, up to five words are written in the given sequence:
 - <result1> PEAK result in the case of VLM if the first position was marked, else no value is written;
 - <result2> P-P result in the case of VLM if the second position was marked, else no value is written;
 - <result3> MAX result in the case of VLM if the third position was marked, else no value is written;
 - <result4> RMS result in the case of VLM if the fourth position was marked, else no value is written;
 - <result5> VDV result in the case of VLM if the fifth position was marked, else no value is written;
- results of the measurement from the 2nd profile of the 2nd channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if any position in **Channel 2 Profile 2** (path: MENU / Measurement / Logging /

Logger / Logger Result / Channel 2 Profile 2) Log column was selected, up to five words are written in the given sequence:

- <result1> PEAK result in the case of VLM if the first position was marked, else no value is written;
- <result2> P-P result in the case of VLM if the second position was marked, else no value is written;
- <result3> MAX result in the case of VLM if the third position was marked, else no value is written;
- <result4> RMS result in the case of VLM if the fourth position was marked, else no value is written;
- <result5> VDV result in the case of VLM if the fifth position was marked, else no value is written;
- results of the measurement from the 2nd profile of the 3rd channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if any position in **Channel 3 Profile 2** (path: MENU / Measurement / Logging / Logger / Logger Result / Channel 3 Profile 2) **Log** column was selected, up to five words are written in the given sequence:
 - <result1> PEAK result in the case of VLM if the first position was marked, else no value is written;
 - <result2> P-P result in the case of VLM if the second position was marked, else no value is written;
 - <result3> MAX result in the case of VLM if the third position was marked, else no value is written;
 - <result4> RMS result in the case of VLM if the fourth position was marked, else no value is written;
 - <result5> VDV result in the case of VLM if the fifth position was marked, else no value is written;
- results of the measurement from the 2nd profile of the 4th channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (*path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On*) and if any position in **Channel 4 Profile 2** (*path: MENU / Measurement / Logging / Logger / Logger Result / Channel 4 Profile 2*) **Log** column was selected, up to five words are written in the given sequence:
 - <result1> PEAK result in the case of VLM if the first position was marked, else no value is written;
 - <result2> P-P result in the case of VLM if the second position was marked, else no value is written;
 - <result3> MAX result in the case of VLM if the third position was marked, else no value is written;
 - <result4> RMS result in the case of VLM if the fourth position was marked, else no value is written;
 - <result5> VDV result in the case of VLM if the fifth position was marked, else no value is written;
- results of the measurement from the 2nd profile of the 5th channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if any position in **Channel 5 Profile 2** (path: MENU / Measurement / Logging / Logger / Logger Result / Channel 5 Profile 2) **Log** column was selected, up to five words are written in the given sequence:
 - <result1> PEAK result in the case of VLM if the first position was marked, else no value is written;
 - <result2> P-P result in the case of VLM if the second position was marked, else no value is written;
 - <result3> MAX result in the case of VLM if the third position was marked, else no value is written;
 - <result4> RMS result in the case of VLM if the fourth position was marked, else no value is written;
 - <result5> VDV result in the case of VLM if the fifth position was marked, else no value is written;
- results of the measurement from the 2nd profile of the 6th channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (*path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On*) and if any position in **Channel 6 Profile 2** (*path: MENU / Measurement / Logging / Logger / Logger Result / Channel 6 Profile 2*) **Log** column was selected, up to five words are written in the given sequence:
 - <result1> PEAK result in the case of VLM if the first position was marked, else no value is written;
 - <result2> P-P result in the case of VLM if the second position was marked, else no value is written;
 - <result3> MAX result in the case of VLM if the third position was marked, else no value is written;
 - <result4> RMS result in the case of VLM if the fourth position was marked, else no value is written;
 - <result5> VDV result in the case of VLM if the fifth position was marked, else no value is written;
 - VECTOR 1-3 measurement result if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if position at VEC13 row Log column (path: MENU / Measurement / Logging / Logger / Logger Result / Auxiliary Logger) is selected and VECTOR 1-3 measurement was enabled; one word is

written;

- VECTOR 4-6 measurement result if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if position at VEC46 row Log column (path: MENU / Measurement / Logging / Logger / Logger Result / Auxiliary Logger) is selected and VECTOR 4-6 measurement was enabled; one word is written;
- results of the measurement from the 1st force channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if any position in **Force 1-3 Logger** (path: MENU / Measurement / Logging / Logger / Logger Result / Auxiliary / Force 1-3 Logger) **Log** column was selected, up to four words are written in the given sequence:
 - <result1> PEAK result if the first position was marked, else no value is written;
 - <result2> MAX result if the second position was marked, else no value is written;
 - <result3> MIN result if the third position was marked, else no value is written;
 - <result4> AVER result if the fourth position was marked, else no value is written;
- results of the measurement from the 2nd force channel if the **LOGGER** list was marked and **LOGGER MODE** was set to **ON** (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if any position in **Force 4-6 Logger** (path: MENU / Measurement / Logging / Logger / Logger Result / Auxiliary / Force 4-6 Logger) **Log** column was selected, up to four words are written in the given sequence:
 - <result1> PEAK result if the first position was marked, else no value is written;
 - <result2> MAX result if the second position was marked, else no value is written;
 - <result3> MIN result if the third position was marked, else no value is written;
 - <result4> AVER result if the fourth position was marked, else no value is written;
- results of 1/1 OCTAVE analysis from the 1st channel if 1/1 OCTAVE analysis was selected as the measurement function and if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if Channel 1 position (path: MENU / Measurement / Logging / Logger / Logger Result / 1/1 Octave Logger) is 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 (*100 dB); i = 1..NOct+NOctTot
- results of 1/1 OCTAVE analysis from the 2nd channel if 1/1 OCTAVE analysis was selected as the measurement function and if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger / Logger Mode: On) and if Channel 2 position (path: MENU / Measurement / Logging / Logger / Logger Result / 1/1 Octave Logger) is 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 (*100 dB); i = 1..NOct+NOctTot
- results of 1/1 OCTAVE analysis from the 3rd channel if 1/1 OCTAVE analysis was selected as the measurement function and if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger / Logger Mode: On) and if Channel 3 position (path: MENU / Measurement / Logging / Logger / Logger Result / 1/1 Octave Logger) is 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 (*100 dB); i = 1..NOct+NOctTot

results of 1/1 OCTAVE analysis from the 4th channel if 1/1 OCTAVE analysis was selected as the measurement function and if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger / Logger Mode: On) and if Channel 4 position (path: MENU / Measurement / Logging / Logger / Logger Result / 1/1 Octave Logger) is 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 (*100 dB); i = 1..NOct+NOctTot

results of 1/1 OCTAVE analysis from the 5th channel if 1/1 OCTAVE analysis was selected as the measurement function and if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if Channel 5 position (path: MENU / Measurement / Logging / Logger / Logger Result / 1/1 Octave Logger) is 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 (*100 dB); i = 1..NOct+NOctTot

results of 1/1 OCTAVE analysis from the 6th channel if 1/1 OCTAVE analysis was selected as the measurement function and if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if Channel 6 position (path: MENU / Measurement / Logging / Logger / Logger Result / 1/1 Octave Logger) is 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 (*100 dB); i = 1..NOct+NOctTot

- results of 1/3 OCTAVE analysis from the 1st channel if 1/3 OCTAVE analysis was selected as the measurement function and if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger / Logger Mode: On) and if Channel 1 position (path: MENU / Measurement / Logging / Logger / Logger Result / 1/3 Octave Logger) is selected; the sequence of words is written:
 - <flags> <Terave[1]> < Terave [2]> ... < Terave [Nter+NterTot]> where:

flags = 1 - the overload detected, 0 - the overload not detected Terave[i] - the result of 1/3 OCTAVE analysis (*100 dB); i = 1..Nter+NterTot

- results of 1/3 OCTAVE analysis from the 2nd channel if 1/3 OCTAVE analysis was selected as the measurement function and if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if Channel 2 position (path: MENU / Measurement / Logging / Logger / Logger Result / 1/3 Octave Logger) is selected; the sequence of words is written:
 - <flags> <Terave[1]> < Terave [2]> ... < Terave [Nter+NterTot]> where:

flags = 1 - the overload detected, 0 - the overload not detected Terave[i] - the result of 1/3 OCTAVE analysis (*100 dB); i = 1..Nter+NterTot

- results of 1/3 OCTAVE analysis from the 3rd channel if 1/3 OCTAVE analysis was selected as the measurement function and if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if Channel 3 position (path: MENU / Measurement / Logging / Logger / Logger Result / 1/3 Octave Logger) is selected; the sequence of words is written:
 - <flags> <Terave[1]> < Terave [2]> ... < Terave [Nter+NterTot]> where:

flags = 1 - the overload detected, 0 - the overload not detected Terave[i] - the result of 1/3 OCTAVE analysis (*100 dB); i = 1..Nter+NterTot

- results of 1/3 OCTAVE analysis from the 4th channel if 1/3 OCTAVE analysis was selected as the measurement function and if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger Setup / Logger Mode: On) and if Channel 4 position (path: MENU / Measurement / Logging / Logger / Logger Result / 1/3 Octave Logger) is selected; the sequence of words is written:
 - <flags> <Terave[1]> < Terave [2]> ... < Terave [Nter+NterTot]> where:

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

Terave[i] - the result of 1/3 OCTAVE analysis (*100 dB); i = 1..Nter+NterTot

- results of 1/3 OCTAVE analysis from the 5th channel if 1/3 OCTAVE analysis was selected as the measurement function and if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger Setup / Logger Mode: On) and if Channel 5 position (path: MENU / Measurement / Logging / Logger / Logger Result / 1/3 Octave Logger) is selected; the sequence of words is written:
 - <flags> <Terave[1]> < Terave [2]> ... < Terave [Nter+NterTot]> where

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

Terave[i] - the result of 1/3 OCTAVE analysis (*100 dB); i = 1..Nter+NterTot

- results of 1/3 OCTAVE analysis from the 6th channel if 1/3 OCTAVE analysis was selected as the measurement function and if the LOGGER list was marked and LOGGER MODE was set to ON (path: MENU / Measurement / Logging / Logger / Logger Setup / Logger Mode: On) and if Channel 6 position (path: MENU / Measurement / Logging / Logger / Logger Result / 1/3 Octave Logger) is selected; the sequence of words is written:
 - <flags> <Terave[1]> < Terave [2]> ... < Terave [Nter+NterTot]> where:

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

Terave[i] - the result of 1/3 OCTAVE analysis (*100 dB); i = 1..Nter+NterTot

B.4.2. 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.4.3. 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.4.4. Record with the breaks account PAUSE in the results registration

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

<0xA0ii> <0xA1jj> <0xA2kk> <0xA3nn>

in which ii, jj, kk, nn bytes denote 4-bytes counter duration of PAUSE in milliseconds: nnkkjjii (ii is the least significant byte, nn - the most significant byte).

Pause duration means time passed between pressing **Pause**> key and measurement continuation key. Start delay after pressing continuation key isn't added to the counter.

B.4.5 Record with the auto-save file name

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

<0xC0aa>

<0xccbb>

<0xeedd>

<0xggff>

<0xight>

<0xC8aa>

in which:

aa - size of record.

bb cc dd ee ff gg hh ii - 8-bytes name of auto-save file name

B.4.6 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:

110	1	C	
1 HS	L	l S	

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	h14	b13	h12	h11	b10	b9	b8	b7	b6	b5	b4	b3	b2	h1	b0
	D14	סוט	012	ווטן		Do	DO	D1	טט	DO	D -1	DO	UZ	וטו	DU

where:

b15 - 1

b14 - 0

b13 - 0

b12 - 1, bits $b15 \div b12 = 9$ 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.4.6 Record with the meteo data

Word number	Name / Value	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 [*10m/s ²]
5	WindDirection	wind direction for max wind speed [degrees]. 0xFFFF if direction is unavailable
6	MaxWindSpeed	max wind speed [*10 m/s] (ignored if WindDirection is unavailable)
78	WindDirTotalPuffs	number of total wind puffs in distribution vector of wind direction
9	RainDetection	Rain detection flag
10	0xC9nn	nn= size of records

B.5. 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 */
}
```