

Description of data formats for the data file A4M_STAT.DAT

Data format can be changed without further notice

Updated 10 April 2017

The format of the A4M_STAT.DAT version 3.2 & 3.1 & 3.0 & 2.1:

Every record is stored as:

Version header + Text header + User header +
User data + Record header + Active data.

Name	Function	Length	Type of data
Version header	= Format code	2	byte bin
	Record Length	2	byte bin
Text header	= Type name	12	byte char
	Month	2	byte char
	Date	2	byte char
	Year	2	byte char
	Hour	2	byte char
	Minute	2	byte char
	Second	2	byte char
User header	= User fields	2	byte bin (0 = no user data)
	User record length	2	byte bin
User data	= User data length	2	byte bin
	User header	1	byte bin
	User data	data length - 1	byte bin
Record header	= Start frequency	2	byte bin
	End frequency	2	byte bin
	Test points	2	byte bin
	Active channels	2	byte bin
Active data	= Channel no	2	byte bin
	Scale Log / Lin	2	byte bin
	Scale value (gain)	2	byte bin
	Smoothing	2	byte bin
	Curve format #	2	byte bin
	Filter Gain **	2	byte bin
	Gain-Product #	8	byte bin (double format)
	Data	2*(test points)	byte bin
	Data - no smooth.	2*(test points)	byte bin
	(Only if smoothing > 0)		

added from version 3.0

** added from version 3.2

Format of the A4M_STAT.DAT old versions:

Every record is stored as:

Text header + Record header + Active data.

Name	Function	Length	Type of data
Text header	= Type name	12	byte char
	Month	2	byte char
	Date	2	byte char
	Year	2	byte char
	Hour	2	byte char
	Minute	2	byte char
Record header	= Start frequency	2	byte bin
	End frequency	2	byte bin
	Test points	2	byte bin
	Active channels	2	byte bin
Active data	= Channel no	2	byte bin
	Scale Log / Lin	2	byte bin
	Scale value (gain)	2	byte bin
	Data	2*(test points)	byte bin

Code information

Version header:

Format code - This must be 31, 30 or 21 for new format else the record is an old format
Record Length - Length of this record in bytes including this header

Text header:

Type name – Name of this test (12 char text string)
Month – Month of this data (1-12)
Date – Date of this data (1-31)
Year – Year of this data (two last digits in the year - example 04)
Hour – Hour of this data (0-23)
Minute – Minute of this data (0-59)
Second – Second of this data (0-59)

User header:

User fields – Number of user Fields in this record – none is 0
User record length – Length of all user data in bytes including this header

User data:

User data length – Length of this user data field including this record
User data - User data – First byte tells the type of this user data

Record header:

Start frequency – Start frequency of sweep (10 – 20000)
End frequency – End frequency of sweep (20 – 30000)
Test points – Number of test points (10 – 250)
Active channels – Number of active channels in this record (1 – 5)

Active data:

Channel no – Channel saved

- 1 = Ch A
- 2 = Ch B
- 3 = Ch C
- 4 = Ch D
- 5 = Ch C-2
- 6 = Phase Ch A (added from version 31)
- 7 = Thd (added from version 31)
- 8 = BL (added from version 31)

Scale Log / Lin – Used scale for saved data

- 0 = Log scale
- 1 = Lin scale

Scale value (gain) – Used gain for selected channel

For channel A, B and D:

Note if Spl scale is used – use Log mode and add the Spl offset.

The Spl sensitivity is found under User Data Code 0xBF.

- 0 = -40 db / 100 V
- 1 = -34 db / 50 V
- 2 = -30 db / 31.6 V
- 3 = -26 db / 20 V
- 4 = -20 db / 10 V
- 5 = -14 db / 5 V
- 6 = -10 db / 3.16 V
- 7 = -6 db / 2 V
- 8 = 0 db / 1 V
- 9 = 6 db / 500 mV
- 10 = 10 db / 316 mV
- 11 = 14 db / 200 mV
- 12 = 20 db / 100 mV
- 13 = 26 db / 50 mV
- 14 = 30 db / 31.6 mV
- 15 = 34 db / 20 mV
- 16 = 40 db / 10 mV
- 17 = 50 db / 3.16 mV

For channel C:

- 0 = Rs is 0.1, 0-50 db / 0-50 ohm
- 1 = Rs is 0.1, 0-50 db / 0-50 ohm
- 2 = Rs is 0.1, 0-50 db / 0-50 ohm
- 3 = Rs is 1, 10-60 db / 0-500 ohm
- 4 = Rs is 1, 10-60 db / 0-500 ohm
- 5 = Rs is 1, 10-60 db / 0-500 ohm
- 6 = Rs is 10, 20-70 db / 0-5 Kohm
- 7 = Rs is 10, 20-70 db / 0-5 Kohm
- 8 = Rs is 10, 20-70 db / 0-5 Kohm

Smoothing - The smoothing value

0 = off

1 = 1/48

2 = 1/24

3 = 1/12

4 = 1/6

5 = 1/3

6 = 2/3

7 = 3/3

Data – Data of the channel

Data in Log mode is between 0 and 4095

For Ch A, B, C-2 & D the fill scale is 80 db.

Value in db is: $(\text{Data} * 80 / 4096)$

For Ch C the fill scale is 50 db.

Value in db is: $(\text{Data} * 50 / 4096)$

Data in Lin mode is between 0 and 4095

Value is: $(\text{selected gain for Channel in volt /ohm}) * \text{Data} / 4096$

User Data Field Codes:

First byte = 0xFF Serial Number
 = 0xEF Test Results
 = 0xDF User Reject
 = 0xCF User Error code
 = 0xBF SPL sensitivity for used inputs

Serial Number:

First byte = code
Version 21: Text string 8 chars long for 8 digits
Added from version 30: Text string 16 chars long for 16 digits

Test Results:

First byte = code
User ID a text string 10 chars long. If no ID these fields are filled out with spaces.
Test result Ch A 1 char long. "0"=approved, "1"=rejected, "*"=not used
Test result Ch B 1 char long. "0"=approved, "1"=rejected, "*"=not used
Test result Ch C 1 char long. "0"=approved, "1"=rejected, "*"=not used
Test result Ch D 1 char long. "0"=approved, "1"=rejected, "*"=not used
Polarity Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
Sensitivity Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
Resonance Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
F-Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
Loudness Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
Q-Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
If 3-Limit function is present in the program
 2-Limit Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
 3-Limit Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
End for 3-Limit function
 Space separator 1 char long (end of test results)
 Resonance frequency in hertz, text 11 chars long. "*"=not used
 Resonance frequency value in dBR or Ohm, text 12 chars long, "*"=not used
 Minimum frequency in hertz, text 11 chars long, "*"=not used
 Minimum frequency value in dBR or Ohm, text 12 chars long, "*"=not used
 Q-value of resonance, text 6 chars long, "*"=not used
 F-value of resonance (in hertz), text 6 chars long, "*"=not used
 Loudness value in db, text 10 chars long, "*"=not used
If frequency average test is present in the program
 Frequency-Ave Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
End average test
If Channel C-2 is present
 Channel C-2 I-Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
End Channel C2 test
If Sensitivity-5 test is present
 Sensitivity ave-1 Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
 Sensitivity ave-2 Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
 Sensitivity - 1 Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used

Sensitivity - 2 Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
Sensitivity - 3 Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
Sensitivity - 4 Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
Sensitivity - 5 Test result 1 char long. "0"=approved, "1"=rejected, "*"=not used
End Sensitivity-5 test
If frequency average test is present in the program
 Frequency-Ave value in db, text 10 chars long, "*"=not used
End average test
If Sensitivity-5 test is present
 Sensitivity ave-1 value in db, text 10 chars long, "*"=not used
 Sensitivity ave-2 value in db, text 10 chars long, "*"=not used
End Sensitivity-5 test

User Reject:

First byte = code
User rejects 1 byte long. 0x1 = reject, 0x2 = approve, "*"=not used

User Error Code:

First byte = code
User Error Code, 3 bytes long.
Data byte 1: allowed lowest code value, 0-15, "*"=not used
Data byte 2: allowed highest code value, 0-15, "*"=not used
Data byte 3: actual error code, >= byte 1 and <= byte 2, (0-15), "*"=not used

SPL sensitivity for used inputs:

First byte = code
Data byte 1: Channel A, SPL: 0= off, 1 = on
Data byte 2: Channel B, SPL: 0= off, 1 = on
Data byte 3: Channel D, SPL: 0= off, 1 = on
Sensitivity for microphone in Ch A in db, 1 double (64 bit long) 8 byte
Sensitivity for microphone in Ch B in db, 1 double (64 bit long) 8 byte
Sensitivity for microphone in Ch D in db, 1 double (64 bit long) 8 byte
(The double type contains 64 bits: 1 for sign, 11 for the exponent, and 52 for the mantissa. Its range is +/-1.7E308 with at least 15 digits of precision.)

The format of the A4STAT.DBF

(A4STAT.TXT as the DBF without dbf header)

Updated 10 April 2017

Note older formats do not have all fields or data length changed

DBF Header	Length	Contains	
"TYPE",	12	type number	
"CHAIN",	12	chain type number	
"DATE",	6	actual test date + month + year	
"HOUR",	2	actual test hour	
"MINUTE",	2	actual test minute	
"USER_ID",	10	actual user id	
"CH_A",	1	test result Ch A	0=ok, 1=fail, *=not active
"CH_B",	1	test result Ch B	0=ok, 1=fail, *=not active
"CH_C",	1	test result Ch C	0=ok, 1=fail, *=not active
"CH_D",	1	test result Ch D	0=ok, 1=fail, *=not active
"POL",	1	polarity test	0=ok, 1=fail, *=not active
"SEN",	1	sensitivity test	0=ok, 1=fail, *=not active
"RES",	1	resonance freq test	0=ok, 1=fail, *=not active
"F",	1	F test (fres/Q)	0=ok, 1=fail, *=not active
"LOUD",	1	loudness test	0=ok, 1=fail, *=not active
"Q_TEST",	1	Q test	0=ok, 1=fail, *=not active
"I_TEST",	1	I test (Channel C-2)	0=ok, 1=fail, *=not active
"2_LIM",	1	2-lim test	0=ok, 1=fail, *=not active
"3_LIM",	1	3-lim test	0=ok, 1=fail, *=not active
"AVE_TEST",	1	Frequency Average test result	0=ok, 1=fail, *=not active
"AVE1_TST",	1	Sensitivity Average-1 test result	0=ok, 1=fail, *=not active
"AVE2_TST",	1	Sensitivity Average-2 test result	0=ok, 1=fail, *=not active
"SEN1_TST",	1	Sensitivity-1 test result	0=ok, 1=fail, *=not active
"SEN2_TST",	1	Sensitivity-2 test result	0=ok, 1=fail, *=not active
"SEN3_TST",	1	Sensitivity-3 test result	0=ok, 1=fail, *=not active
"SEN4_TST",	1	Sensitivity-4 test result	0=ok, 1=fail, *=not active
"SEN5_TST",	1	Sensitivity-5 test result	0=ok, 1=fail, *=not active
"PH_TEST",	1	Phase test result	0=ok, 1=fail, *=not active
"THD_TEST",	1	Thd test result	0=ok, 1=fail, *=not active
"BL_TEST",	1	BL test result	0=ok, 1=fail, *=not active
"SLP_TEST",	1	Slope test result	0=ok, 1=fail, *=not active
"NUMBER",	16	number code	
"USER",	1	User result (optional)	0=ok, 1=fail, *=not active
"U_CODE",	3	User Code (optional)	
"ZF_VAL",	10	resonance freq	value Hz, *=not active
"ZV_VAL",	12	resonance freq value	Ohm/dBR, *=not active
"ZF_MIN",	10	minimum impedance freq	value Hz, *=not active
"ZV_MIN",	12	minimum impedance value	Ohm/dBR, *=not active
"ZQ_VAL",	6	Total Q of resonance	value, *=not active
"F_VAL",	6	F = fres/Q	value, *=not active
"LOUDNESS",	10	loudness result	value, *=not active

“AVE_VAL”,	10	Frequency Average	value,	*=not active
“AVE1_VAL”,	10	Sensitivity Average-1	value,	*=not active
“AVE2_VAL”,	10	Sensitivity Average-2	value,	*=not active
“EBP_VAL”,	6	EBP	value,	*=not active
“RE_VAL”,	7	RE	value,	*=not active
“SLP_VAL”,	7	Slope	value,	*=not active