



Test Report



Report No	288/7387780 Part 2 of 2	This report consists of 10 pages
Licence/Certificate No	KM 532936	
Client	GLT Exports Limited 72-78 Morfa Road Hafod Swansea SA1 2EN United Kingdom	
Authority & date	BSI Service Management Order 7387780 dated 04 June 2009 Equipment Record No. 10105142	
Item tested	Maxitone ZMT/8 Type A Conventional Sounder	
Specifications	BS EN 54-3:2001 Incorporating Amendment A1.	
Results	See Assessment Summary for details	
Prepared by	E Attoh 	Engineer
Authorized by	R Hearty 	Team Leader
Issue Date	21 July 2010	
Conditions of issue	This Test Report is issued subject to the conditions stated in current issue CP0322 'Conditions of Contract for Testing'. The results contained herein apply only to the particular sample/s tested and to the specific tests carried out, as detailed in this Test Report. The issuing of this Test Report does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of any product. No extract, abridgement or abstraction from a Test Report may be published or used to advertise a product without the written consent of the Managing Director, BSI Testing Services, who reserves the absolute right to agree or reject all or any of the details of any items or publicity for which consent may be sought.	



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INTRODUCTION

For the purposes of product certification the sounders detailed below, were submitted on behalf of GLT Exports Ltd to BSI for testing. Limited testing was carried out as prescribed by Product Certification Schedule of tests for sounders.

This Report only relates to the actual samples that have been tested and assessed. The results obtained do not necessarily relate to samples from the production line and in no way imply the performance or quality of the continuing production will be maintained.

The tests and assessments contained in this report were undertaken by BSI EMC-Environmental laboratory from 16 June 2009.

PRODUCT INFORMATION

Maxitone ZMT/8 Type A Conventional Sounder.

PRODUCT PICTURE



General view showing Maxitone ZMT/8 Type A Conventional Sounder

SCHEDULE OF TEST

Clause	Title of Requirement	Perform Test Variants
4.2	Sound level	√
4.3	Frequency and sound pattern	√
4.4	Durability	√
4.5	Construction	√
4.6	Marking and data	√
5.2	Reproducibility	√
5.3	Operational performance	√
5.4	Durability	√
5.5	Dry heat (Operational)	X
5.6	Dry heat (Endurance)	X
5.7	Cold (Operational)	X
5.8	Damp heat, cyclic (Operational)	X
5.9	Damp heat, steady state (Endurance)	X
5.10	Damp heat, cyclic (Endurance)	X
5.11	Sulphur dioxide (SO ₂), corrosion (Endurance)	X
5.12	Shock (Operational)	X
5.13	Impact (Operational)	X
5.14	Vibration, sinusoidal (Operational)	X
5.15	Vibration, sinusoidal (Endurance)	X
5.16	Electromagnetic compatibility (EMC), immunity (Operational)	√
5.17	Enclosure protection	X

√: Test Performed

N/A: Test Not Applicable

X: Do Not Perform this test

ASSESSMENT SUMMARY FOR ALTERNATING SOUND PATTERN TYPE A SOUNDER

Clause	Title	PASS/FAIL
4.2	Sound level	PASS
4.3	Frequency and sound pattern	PASS
4.4	Durability	PASS
4.5	Construction	PASS
4.6	Marking and data	PASS
5.2	Reproducibility	PASS
5.3	Operational performance	PASS
5.4	Durability	PASS
5.5	Dry heat (Operational)	N/A
5.6	Dry heat (Endurance)	N/A
5.7	Cold (Operational)	N/A
5.8	Damp heat, cyclic (Operational)	N/A
5.9	Damp heat, steady state (Endurance)	N/A
5.10	Damp heat, cyclic (Endurance)	N/A
5.11*	Sulphur dioxide (SO ₂), corrosion (Endurance)	N/A
5.12	Shock (Operational)	N/A
5.13	Impact (Operational)	N/A
5.14	Vibration, sinusoidal (Operational)	N/A
5.15	Vibration, sinusoidal (Endurance)	N/A
5.16	Electromagnetic compatibility (EMC), Immunity (Operational)	PASS
5.17	Enclosure protection	N/A

N/A: Test Not Applicable

RESULTS

Clauses	Test	Assessment
4.2	Sound level	Complied. Tone: 800Hz- 970Hz, The peak sound level 101.06 dB at 1m and the average sound level 96.8 dB at 35VDC.
4.3	Frequency and sound pattern	Complied. Information declared, the Tone frequency range is 800Hz - 970H
4.4	Durability	Complied
4.5	Construction	
4.5.1	Provision for external conductors	Complied
4.5.2	Materials	Complied
4.5.3	IP rating	N/A
4.5.4	Access	Complied
4.6	Marking & Data	
4.6.1	Marking Each fire alarm sounder shall be clearly marked with the following information:	It's required by the manufacturer to mark on the product. Manufacturer has however provided technical documentation file.
a)	Number of this standard (EN 54-3)	-
b)	Environment type (Type A or B)	-
c)	Name or trademark of manufacturer or supplier	-
d)	Manufacturer or supplier model designation (type or number)	-
e)	Terminal designations	-
f)	Rated supply voltage or voltage ranges (a.c. or d.c.)	-
g)	Power and current consumption	-
h)	A mark(s) or code(s) (for example, serial number or batch code), by which the manufacturer can identify, at least the date or batch and place of manufacturer and the version number of any software contained within the device	Complied

4.6.2	Data	
	The information required in 4.6.1 together with the following shall be supplied with the device, or shall be given in a data sheet or technical manual identified on, or with each device	
Information required in 4.6.1		
a)	Number of this standard (EN 54-3)	Complied
b)	Environment type (Type A or B)	Complied
c)	Name or trademark of manufacturer or supplier	Complied
d)	Manufacturer or supplier model designation (type or number)	Complied
e)	Terminal designations	Complied
f)	Rated supply voltage or voltage ranges (A.C. or D.C.)	Complied
g)	Power and current consumption	Complied
h)	A mark(s) or code(s) (for example, serial number or batch code), by which the manufacturer can identify, at least the date or batch and place of manufacturer and the version number of any software contained within the device	Complied
Other information		
a)	Operating voltage range(s);	Complied
b)	Supply frequency ranges, where relevant;	Complied
c)	The minimum A weighted sound level in direction through a semi circular arc;	Complied. Note: Manufacturer is to publish the values obtained during the assessments as the stated values for data sheets/Technical file details.
d)	Main sound frequency (ies), Frequency range(s) and sound pattern(s);	Complied
e)	IP Code to EN 60529:1991;	Complied
f)	Any other information necessary to allow correct installation, operation and maintenance of the device;	Complied

Clause 5.2 Reproducibility

Model	Maxitone ZMT/8 Type A Conventional Sounder
Sample Number	All
Voltage	24V

Sample	Coordinate							
	1	2	3	4	5	6	7	8
1	108.4	106.7	111	109	106.8	113.4	113.6	112.1
2	108.4	107.7	112.3	111.3	107.7	114.7	114.2	113.9
3	109.4	108.8	113.9	109.4	107.8	113.1	114.1	112.3
4	108.8	107.6	111.7	108	106.8	112.3	113.6	112
5	106.4	104.5	109	108.9	107.7	111.9	111.1	110.6
6	109.5	109.5	113.7	109.1	107.9	113.9	114.7	113.1
7	107.7	108.2	112.5	110.8	107.9	115	114.2	114.2
8	108.1	106.6	111.3	109.7	109.3	113.7	112.7	113.2
9	107.5	105.4	109.8	108.4	109.2	111.5	111.1	110.6
10	110.5	107.3	110.9	107.3	110.4	112.6	111.2	111.6

Averages

Sample	Average SPL dB(A)			
1	110.88		$L_{min} =$	109.33 dB(A)
2	112.09		$L_{max} =$	112.20 dB(A)
3	111.71			
4	110.74			
5	109.33			
6	112.11			
7	112.20			
8	111.19			
9	109.56			
10	110.56			

Max Limit	$(L_{max} - L_{min})$	6 dB(A)
Actual	$(L_{max} - L_{min})$	2.86 dB(A)

Assessment	Complied
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Clause 5.3 Operational Performance

Model	Maxitone ZMT/8 Type A Conventional Sounder
Sample Number	No.1

		Voltage: 17VDC		Voltage: 35VDC			
		Sound: Alternating		Sound: Alternating			
Position	Angle (°)	A-Weighted Level @ 3m	Corrected for 1m (dB (A))	A-Weighted Level @ 3m	Corrected for 1m (dB (A))	Max/Min V, level Diff dB(A)	Max/Min limit dB(A)
Horizontal	15	77.68	87.22	81.80	91.34	4.12	6.00
	45	83.93	93.47	88.25	97.79	4.32	6.00
	75	87.19	96.73	91.51	101.05	4.32	6.00
	105	86.57	96.11	90.78	100.32	4.21	6.00
	135	83.73	93.27	88.09	97.63	4.36	6.00
	165	77.80	87.34	82.45	91.99	4.65	6.00
	Vertical	15	78.07	87.61	82.14	91.68	4.07
45		83.91	93.45	88.17	97.71	4.26	6.00
75		87.36	96.90	91.52	101.06	4.16	6.00
105		86.62	96.16	90.91	100.45	4.29	6.00
135		84.22	93.76	88.38	97.92	4.16	6.00
165		78.5	88.04	82.7	92.24	4.20	6.00

Additionally, the A-weighted sound level was greater than 65 dB in at least one direction and did not exceed 120dB in any direction. Compliance was achieved as the manufacturer published these values obtained during these assessments as the stated values for data sheets/Technical file details.

Assessment	Complied
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Clause 5.4 Durability

Model	Maxitone ZMT/8 Type A Conventional Sounder
Sample Number	2

Individual Values

Sample/ Condition	Coordinate measured level dB(A)							
	1	2	3	4	5	6	7	8
Initial Values (clause 5.2)	108.4	107.7	112.3	111.3	107.7	114.7	114.2	113.9
Post- Durability conditioning	110.5	108.3	112.7	111.5	108.9	111.8	113.9	114.4

Averages

Sample/ Condition	Average SPL dB(A)
Initial Value	112.09
Post- Durability conditioning	111.96

Max Limit ($L_{max} - L_{min}$)	6 dB(A)
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Actual ($L_{max} - L_{min}$)	0.13 dB(A)
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Comments:

Post Durability visual examination of the sample revealed no obvious physical degradation.
No false operation was detected during test.

Assessment	Complied
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Clause 5.16 Electromagnetic Compatibility (EMC) immunity (operational)

For EMC test details, See Test Report 2244/7491836.

Test Report No: EM10045314 Issue 2.

Model	Maxitone ZMT/8 Type A Conventional Sounder
Sample Number	8

	Coordinate measured level dB(A)							
Sample/ Condition	1	2	3	4	5	6	7	8
Initial Values	109.3	108.2	113.4	107.8	107.7	109.6	113.4	110.6
Post- EMC	101.9	103.8	107.8	103.6	102.0	107.9	109.1	106.6

Averages

Sample/ Condition	Average SPL dB(A)
Initial Value	110.58
Post- EMC	106.12

Max Limit ($L_{max} - L_{min}$)	6 dB(A)
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Actual ($L_{max} - L_{min}$)	4.46 dB(A)
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Comment:

The Initial and Post EMC Sound Output measurements were performed by BSI.

The A-weighted sound levels measured after the recovery period did not decrease by more than 6 dB from that measured for the same specimen in the reproducibility test.

The EMC testing was carried out by external testing house.

Maxitone conventional sounder ZMT/8

Submission 1 – No modifications; failed.

Submission 2 – PCB modified to make it double sided with a ground plane and a small power plane along with the use of shielded cable (as opposed to two core cable). There is no change in the component placement.

Refer to BSI SMO – 2244/7491836.

Test report number – EM10045314 Issue 2.

Assessment	Complied
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