

harman consumer group

Engineering Design
Specification

Date

8/5/2011

Rev #

X4

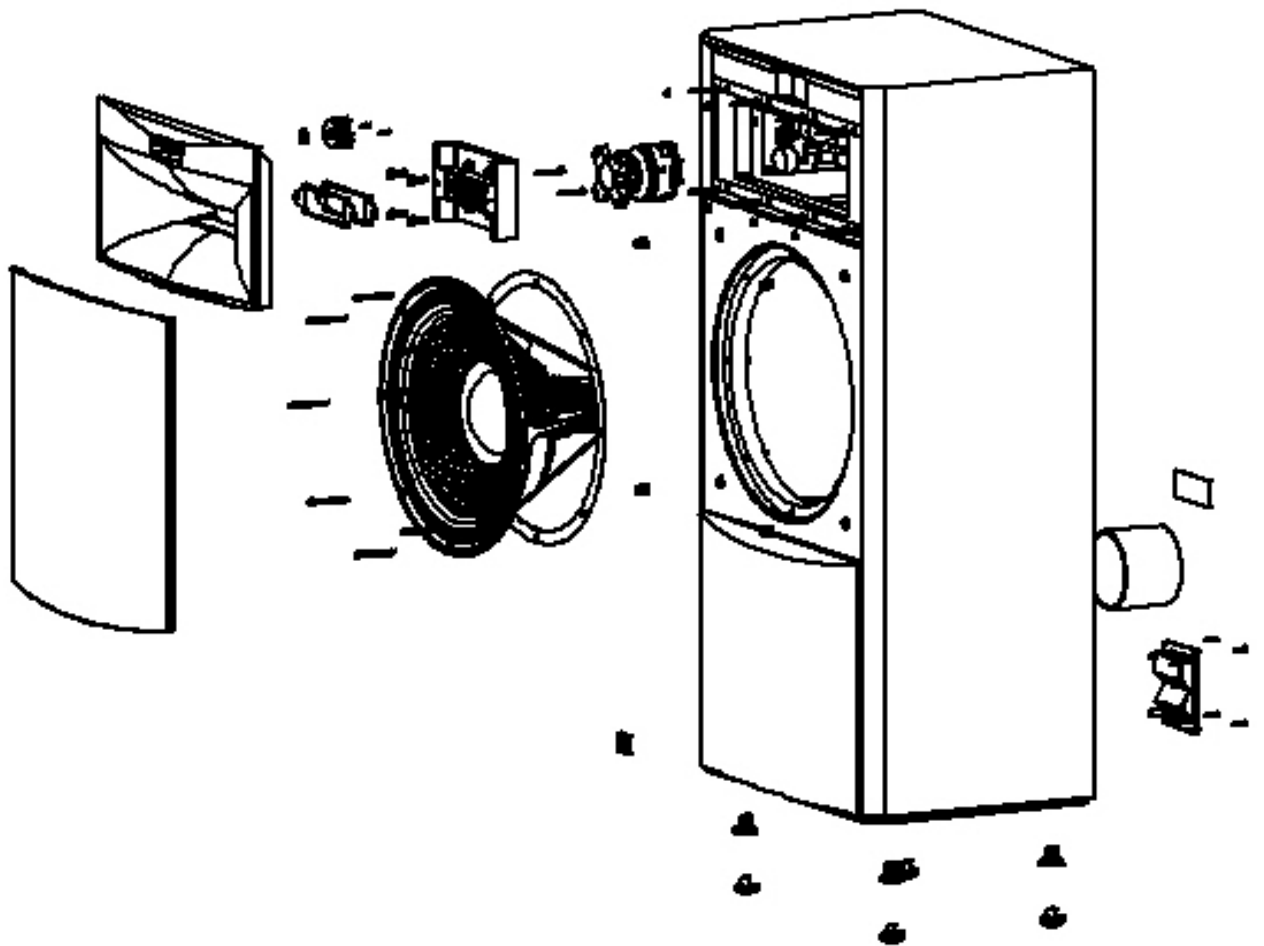
Document Number

9900514

S4700



S4700



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System Physical Specifications

may be superceded by information on the drawings

Description:

15" 3-Way compression driver Louspeaker

Specification:

Material	MDF, man made walnut veneer
Panel Thickness	1"
Ext.Dimensions	42.38" x 18.75" x 14.63", Including feet
Weight	120 pounds
Net Internal Vol	4.78 Cu. Ft., 135 liter
Sub Enclosure	N/A
Bracing	2 perimeter braces
Feet	Yes, Array
Finish	Medium brown sealed top coat, satin
Grille	Plastic frame
Grille Cup	4 rubber cups
Port	4.13 I.D., 3.62 long, 32 Hz tuning
Damping Material	1" Fiberglass
Terminals	Dual 5-way binding posts with shorting straps
Terminal Cup	Standard JBL, plastic
Front Controls	N/A
Badging	Front mounted JBL Logo
Product ID Label	Rear mounted polycarbonite
Mounting Features	N/A
RoHS	All material specified in this EDS shall comply with European Directive 2002 / 95 / EC

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System Physical Specifications (continued)

may be superceded by information on the drawings

Driver(s)	Qty	Size	Supplier	Model /Part #	Specification
Low Frequency Transducer:	1	15"	HAdM	2216Nd	EDS 990013
Mid Frequency Transducer:					
High Frequency Transducer:	1	1 3/4"	HAdM	175Nd-3	EDS 364018
UHF Transducer:	1	3/4"	Falcon	138Nd	EDS 364385

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Acoustical and Electrical Specifications

System:

Sensitivity: 94 dB for 2.83 v @ 1 m

Nominal Impedance: 6 Ω

Minimum Impedance: 4.5 Ohms @ 100 Hz

Power Dissipation: 20 v IEC Noise, 6 dB crest

Bandwidth (-6 dB): 38 Hz - 40 kHz (2 pi), 50 Hz - 40 kHz (Anechoic)

f_3 (-3 dB): 50 Hz (2 pi), 58 Hz (Anechoic)

Distortion Criteria

System Polarity: EIA

Crossover (Acoustic)

Description	Frequency	Slope (HP/LP)
LF/HF	800 Hz	24 dB/Oct
HF/UHF	12 kHz	24 dB/Oct
LF (-6 dB electronic)	500 Hz	24 dB/Oct
HF (-6 dB electronic)	450 Hz	12 dB/Oct
UHF (-6 dB electronic)	12.5 kHz	24 dB/Oct
HF Turn off	None	N/A

Network:

Voltage Drive: See Attachment

Schematic: See Attachment

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System Test Specifications

production testing quantities per HCG QA AQL

System:

Reliability Test: HCG Reliability Test Plan for Passive Loudspeaker System (Latest Revision)

Visual Criteria: HCG QA Visual Inspection Criteria (Latest Revision) Level:

Dynamic Test:

Sine Sweep Voltage:	6 v
Frequency Range:	20 Hz - 20 kHz
Sweep Duration:	10 Seconds

Power Test:

Input Signal:	20 v, IEC Noise Shape, 6 dB Crest
Duration:	8 + 92 hours
Control Settings:	N/A

Polarity Test:

Microphone Position:

Control Position:

Frequency Response:	Window	Smoothing	Step Size
	+/- 1.5 dB, 40 Hz - 2000 Hz	1/3 Octave	1/24th Octave
	+/- 1.5 dB @ 2000 Hz	1/3 Octave	1/24th Octave
	+/- 2.5 dB @ 9 kHz	1/3 Octave	1/24th Octave
	+/- 2.5 dB @ 9 kHz	1 Octave	1/24th Octave
	+/- 3 dB @ 20 kHz	1 Octave	1/24th Octave

Network:

Voltage Drive:	Window	Smoothing	Step Size
LF 8 Ω	+/- 0.5 dB, 20 Hz - 200 Hz	1/6 Octave	1/24th Octave
	+/- 0.75 dB, 200 Hz - 800 Hz	1/6 Octave	1/24th Octave
	+/- 1.0 dB, 800 Hz - 1600 Hz	1/6 Octave	1/24th Octave
	+/- 1.5 dB, 1600 Hz - 8000 Hz	1/3 Octave	1/24th Octave
MF Ω		1/3 Octave	1/24th Octave
		1/6 Octave	1/24th Octave
		1/6 Octave	1/24th Octave
		1/6 Octave	1/24th Octave
		1/3 Octave	1/24th Octave
HF 8 Ω	+/- 1.5 dB, 100 Hz - 400 Hz	1/3 Octave	1/24th Octave
	+/- 1.0 dB, 400 Hz - 800 Hz	1/6 Octave	1/24th Octave
	+/- 0.5 dB, 800 Hz - 8000 Hz	1/6 Octave	1/24th Octave
	+/- 0.75 dB, 8000 Hz - 20000 Hz	1/6 Octave	1/24th Octave
		1/3 Octave	1/24th Octave
UHF 8 Ω	+/- 1.5 dB, 1000 Hz - 4000 Hz	1/3 Octave	1/24th Octave
	+/- 1.0 dB, 4000 Hz - 8000 Hz	1/6 Octave	1/24th Octave
	+/- 0.75 dB, 8000 Hz - 20000 Hz	1/6 Octave	1/24th Octave
		1/6 Octave	1/24th Octave

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System Package Specifications

may be superceded by information on the drawings

Accessories:

Owners Manual

Yes

Warranty Card

No

Wire

No

Hardware

No

Other

4 Spike Feet, 4 Metal coasters

Other

Packaging:

Material

Cardboard, double wall corugated

Thickness

350 pound

Colors

Black, Orange

Finish

Brown Kraft

Endpad Material

EPE

Master Carton

Full overlap, side open

Other

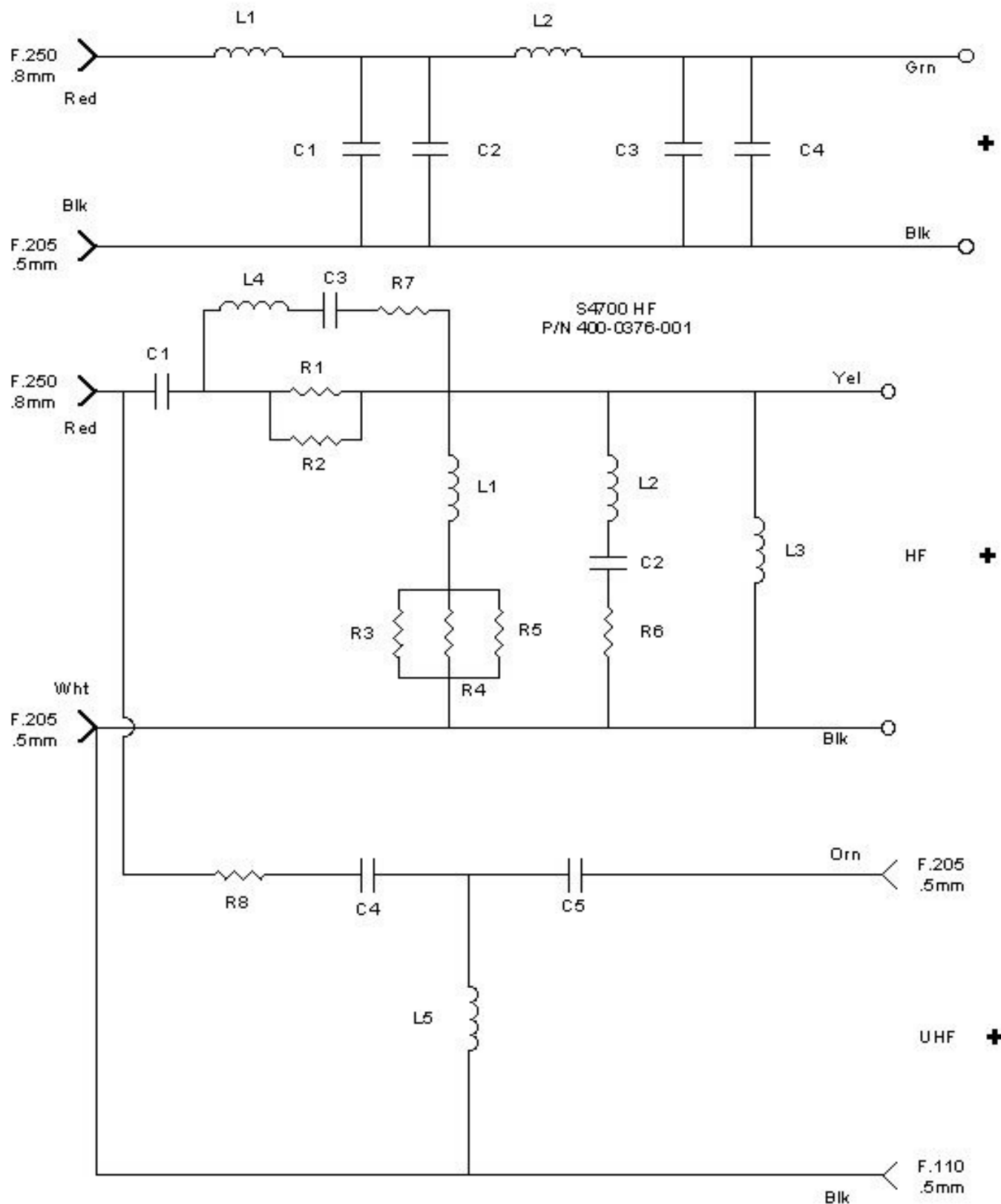
2 side filler sleeves

Other

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S4700 LF
P/N 400-0376-002

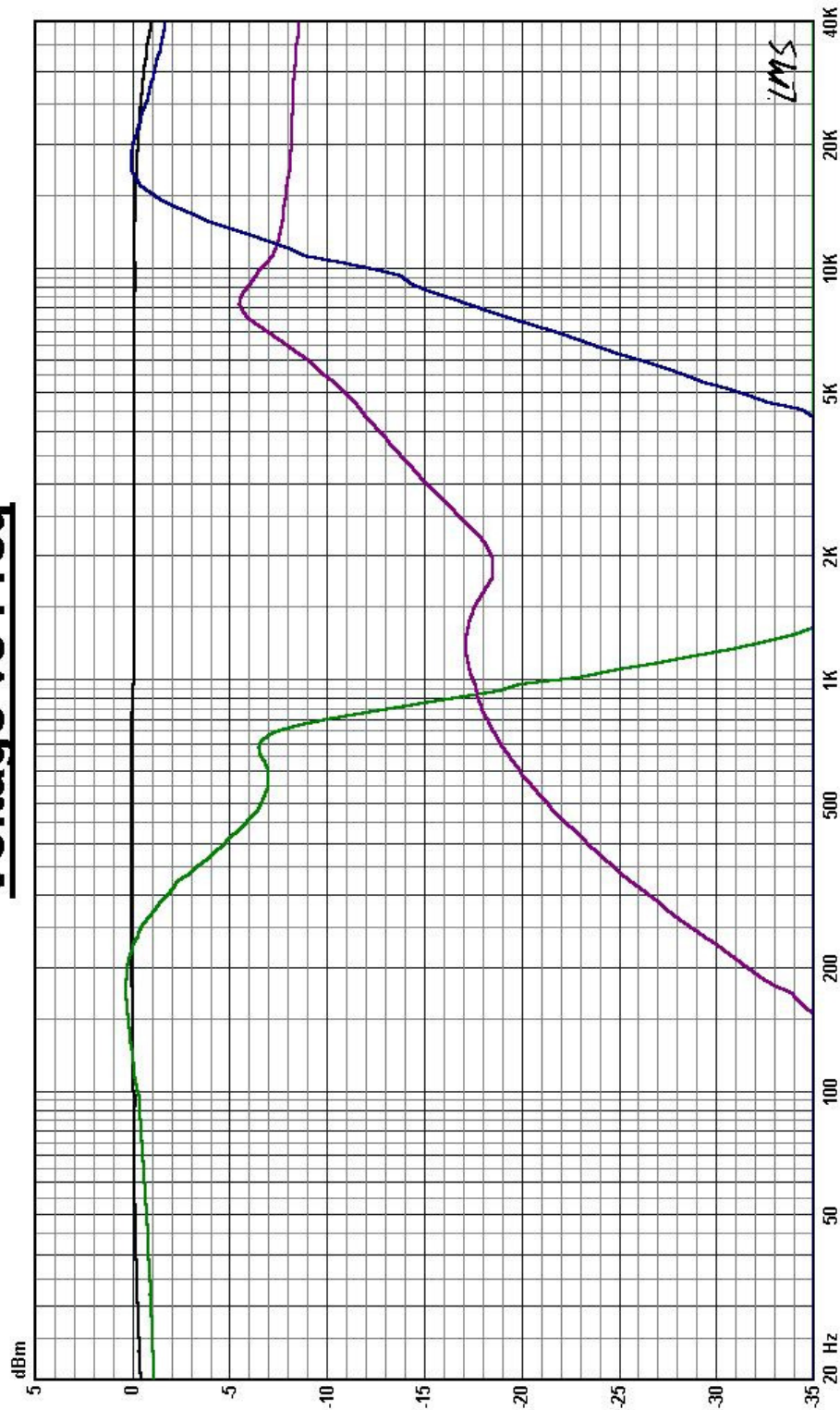
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Rev. 3
G.T.



Engineering Standard Network	Date	Rev #	Document Number
	8/5/2011	X4	9900514
S4700			
S4700 LF P/N 400-0376-002 L1 - 3.8 mH $\pm$ 5%, Air Core, DCR < 0.5 Ohm L2 - 2.0 mH $\pm$ 5%, Air Core, DCR < 0.4 Ohm C1 - 43 uF $\pm$ 5%, 100 V NPE, DF < 4%, Case diameter - 12mm minimum C2 - 5.1 uF $\pm$ 5%, 100 V Polypropylene C3 - 43 uF $\pm$ 5%, 100 V NPE, DF < 4%, Case diameter - 12mm minimum C4 - 3.0 uF $\pm$ 5%, 100 V Polypropylene Red - LF Input, 8" long, 14 AWG Stranded OFC, F.250 (0.8mm) Blk - LF Input, 8" long, 14 AWG Stranded OFC, F.205 (0.5mm) Grn - LF Output, 28" long, 14 AWG Stranded OFC, Stripped and tinned 10 mm Blk - LF Output, 28" long, 14 AWG Stranded OFC, Stripped and tinned 10 mm PCB to be 1.5mm thick with 1 oz copper foil, FR4 material All inductors must be securely fastened to the PCB with nylon ties and/or adhesive as required to pass reliability test S4700 HF P/N 400-0376-001 C1 - 20 uF $\pm$ 5%, 100 V Polypropylene C2 - 13 uF $\pm$ 5%, 100 V Polypropylene C3 - 0.56 uF $\pm$ 5%, 100 V Polypropylene C4 - 1.5 uF $\pm$ 5%, 100 V Polypropylene C5 - 1.5 uF $\pm$ 5%, 100 V Polypropylene L1 - 0.2 mH $\pm$ 5%, Air Core, DCR < 0.25 ohm L2 - 0.5 mH $\pm$ 5%, Air Core, DCR < 0.5 ohm L3 - 1.0 mH $\pm$ 5%, Air Core, DCR < 0.8 ohm L4 - 0.6 mH $\pm$ 5%, Air Core, DCR < 0.6 ohm L5 - 0.04 mH $\pm$ 5%, Air Core, DCR < 0.2 ohm R1 - 22 ohm $\pm$ 5%, 5 W Metal Oxide R2 - 22 ohm $\pm$ 5%, 5 W Metal Oxide R3 - 7.5 ohm $\pm$ 5%, 5 W Metal Oxide R4 - 7.5 ohm $\pm$ 5%, 5 W Metal Oxide R5 - 7.5 ohm $\pm$ 5%, 5 W Metal Oxide R6 - 3.0 ohm $\pm$ 5%, 5 W Metal Oxide R7 - 8.2 ohm $\pm$ 5%, 5 W Metal Oxide R8 - 1.2 ohm $\pm$ 5%, 2 W Metal Oxide Red - HF Input (+), 36" long, 16 AWG Stranded OFC, F.250 (0.8mm) Red/Blk - HF Input (-), 36" long, 16 AWG Stranded OFC, F.205 (0.8mm) Yel - HF Output (+), 15" long, 16 AWG Stranded OFC, Strip and tin 10 mm Blk - HF Output (-), 15" long, 16 AWG Stranded OFC, Strip and tin 10 mm Orn - UHF Output (+), 17" long, 20 AWG Stranded OFC, F.205 (0.5mm) Blk - UHF Output (-), 17" long, 20 AWG Stranded OFC, F.110 (0.5mm) Connection wires can be clear or colored jacket with colored shrink tubing at the ends to indicate the wire color. Separate HF and UHF circuits physically on the single circuit board PCB to be 1.5mm thick with 1 oz copper foil, FR4 material PCB to have 4 mounting eyelets All inductors must be securely fastened to the PCB with nylon ties and/or adhesive as required to pass reliability test Orient adjacent air core Inductors at 90 degrees from each other			

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Voltage vs Freq



Map
5: Ref
10: LF Rev.3
11: HF Rev.3
12: UHF Rev.3

Notes

LMs
4.6.0.371
May/29/2007

Person:
Company:

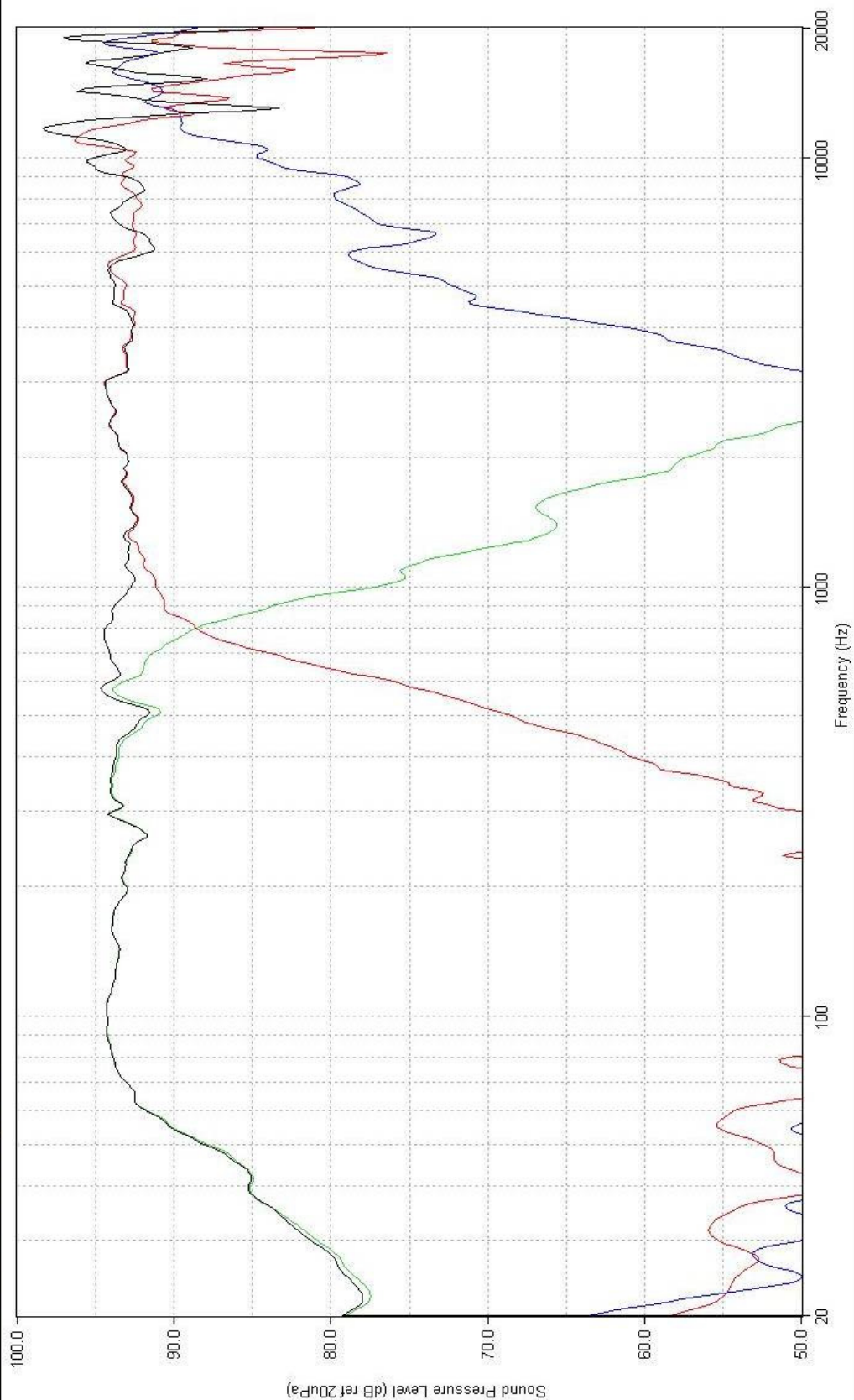
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S4700

HARMAN Audio Test System



45: LF, 135 g RevB 46: S4700 Revised LF, UHF +

47: HF 48: UHF

Greg - 5/5/2011 8:31:15 AM - C:\Program Files\Harman International\HATS\Greg\S4700\S4700.hats

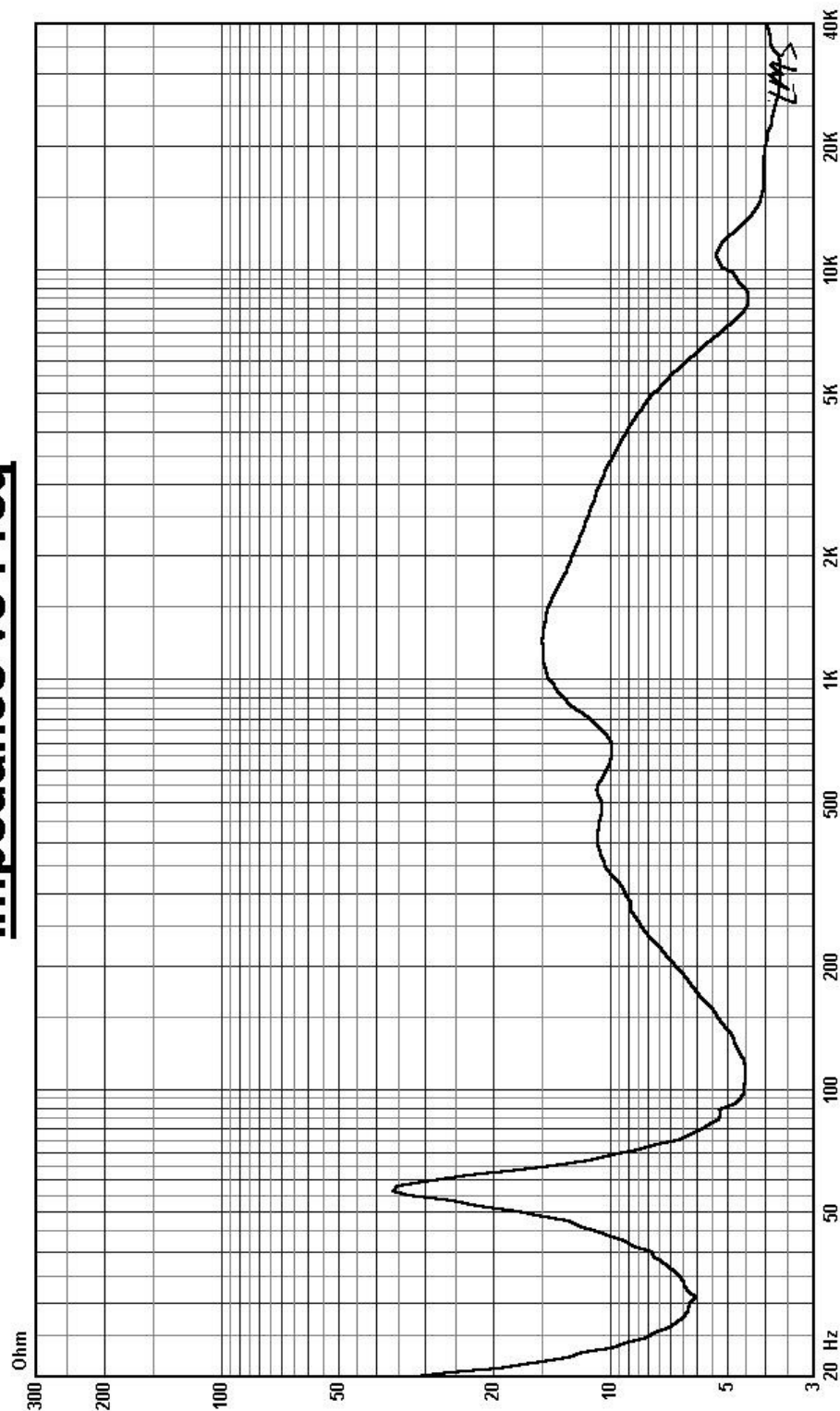
HARMAN Audio Test System



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S4700

Impedance vs Freq



— 4: S4700 System Impedance

Map

Notes

LMS
4.6.0.371
May 29/2007

Person:
Company:

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May 5, 2011
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