

## ARE YOUR TUBES ..... TESTED WITH SOFIA?

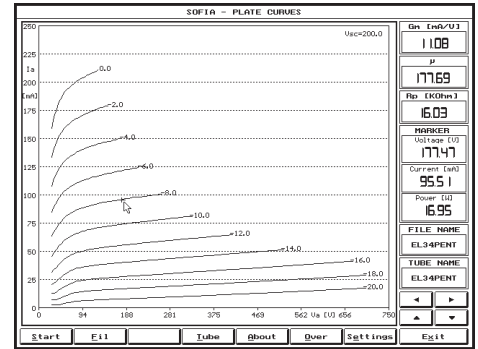
Sofia , by Audiomatica, is a PC based vacuum tubes curve tracer designed to assist professional operators in tubes selection and manufacturing process. The extremely flexible hardware performs measures on diodes, triodes, tetrodes and pentodes; test voltages ranges are completely user-definable and can be, together with several important related information, stored and retrieved at any time. Tetrodes and pentodes can be characterized in ultra-linear configuration with definable percentage. Use of an external IBM™-PC or compatible as main controller makes extremely easy future upgrades and lets the user to take advantage of the continuous increase in power typical of computers world. The RS-232 link between Sofia and PC enhances compatibility and allows use of Lap-Top units, a valuable feature in many environments.

### A GENERAL LOOK AT THE HARDWARE OF SOFIA

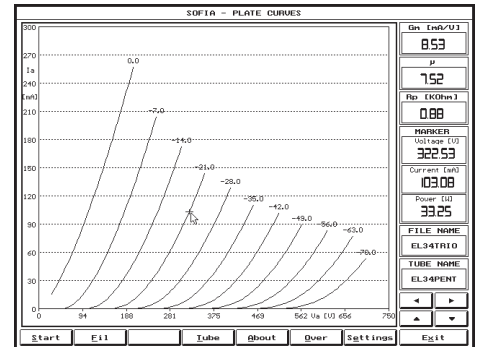
Sofia is housed in a stand alone box and is powered from the mains. On the top panel the most widespread tubes sockets are present, together with the routing system. Heart of the system are four high resolution (16 bit) voltage generators for filament, plate, grid, screen grid and three high resolution (16 bit) milliamperometers used to resolve the currents involved in this kind of measurements. The achieved resolution together with gain control facilities for voltage and current allows to measure tubes curves with enormous dynamic range. State of the art circuitry and sophisticated digital control greatly enhance reliability, a main topic in high voltage devices. A microprocessor handles both the RS-232 link to the PC and the internal logic requirements. The flexible manual routing system makes easy the connection of tubes that don't fit in the sockets provided; furthermore allows several circuital configurations (cascode, srpp ...) to be evaluated as a single tube.

### SOFIA'S SYSTEM SOFTWARE

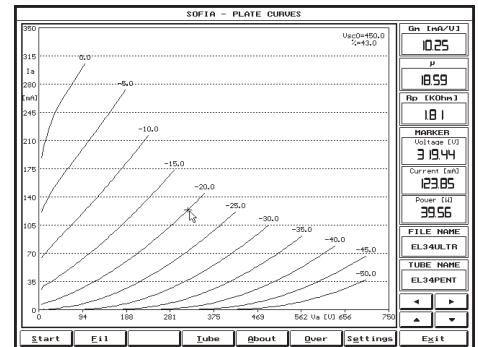
A powerful Windows™-like software with a mouse oriented user interface allows an immediate control over all the measure processes. Basic tubes parameters as transconductance, plate resistance and amplification factor are shown in real time for any operating area within the displayed curves. Sofia's system software handles tube directories containing all the manufacturer's mechanical data and electrical measurement limits. Automatic pass-fail Quality Control procedures make easy and quick any tubes selection process. Also included, best match routines choose for you pairs or quartets of tubes within a batch.



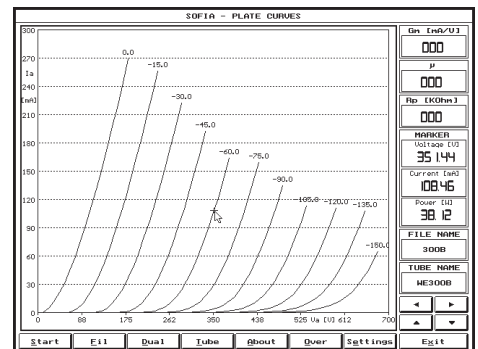
EL34PENTODE



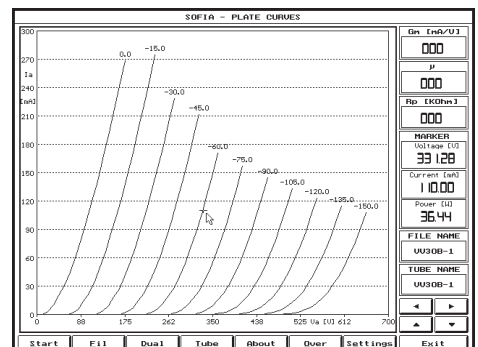
EL34TRIODE



EL34ULTRA-LINEAR



300B



VV30B

# Sofia

VACUUM TUBES CURVE-TRACER

BY:



AUDIOMATICA



SOFIA - QUALITY CONTROL

**AUDIOMATICA SRL**  
6DJ8 QUALITY CONTROL

**TEST N°:**  
**23**      **GOOD**

**INSERT TUBE**

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Date : 03/01/98      Ufil I(U): 6.3      Ifil I(A): 0.343  
 Total : 23      U<sub>g</sub> I(U): -5.0  
 Good : 19      U<sub>g</sub> I(U): 195      Ia I(A): 6.37  
 Bad : 4      Vsc I(U): 0      Isc I(A): 0.07

SETUP: 6DJ8\_QC      REPORT: 6DJ8.REP

Quality control

SOFIA - MATCHING TOOL

NAME 1	NAME 2	ERR	NAME 1	NAME 2	ERR	NAME 1	NAME 2	ERR
TUBE1.PT2	TUBE2.PT2	19	TUBE5.PT1	TUBE3.PT1	125			
TUBE3.PT1	TUBE23.PT2	20	TUBE18.PT1	TUBE18.PT2	141			
TUBE1.PT2	TUBE18.PT2	26	TUBE6.PT1	TUBE10.PT2	176			
TUBE2.PT2	TUBE18.PT1	30	TUBE18.PT1	TUBE18.PT2	186			
TUBE28.PT2	TUBE30.PT1	34	TUBE8.PT1	TUBE28.PT1	198			
TUBE22.PT2	TUBE23.PT1	42	TUBE14.PT2	TUBE30.PT2	460			
TUBE7.PT2	TUBE11.PT2	44						
TUBE3.PT1	TUBE18.PT1	48						
TUBE1.PT1	TUBE28.PT2	61						
TUBE16.PT1	TUBE27.PT2	62						
TUBE17.PT2	TUBE18.PT2	65						
TUBE12.PT2	TUBE14.PT1	67						
TUBE4.PT2	TUBE24.PT1	69						
TUBE6.PT2	TUBE22.PT1	68						
TUBE4.PT1	TUBE8.PT1	66						
TUBE20.PT2	TUBE27.PT1	67						
TUBE5.PT2	TUBE16.PT1	74						
TUBE11.PT1	TUBE13.PT2	78						
TUBE3.PT1	TUBE26.PT2	81						
TUBE5.PT2	TUBE8.PT2	83						
TUBE12.PT1	TUBE16.PT1	80						
TUBE12.PT1	TUBE20.PT1	83						
TUBE7.PT1	TUBE8.PT2	87						
TUBE11.PT1	TUBE28.PT2	113						

FILE: NONAME    DIRECTORY: 6S70101

Pairs match

SOFIA - MATCHING TOOL

NAME 1	NAME 2	NAME 3	NAME 4	ERR	NAME 1	NAME 2	NAME 3	NAME 4	ERR
TUBE1.PT2	TUBE18.PT2	TUBE16.PT2	TUBE23.PT2	27					
TUBE2.PT2	TUBE18.PT1	TUBE23.PT1	TUBE28.PT2	41					
TUBE20.PT2	TUBE27.PT1	TUBE28.PT2	TUBE30.PT1	46					
TUBE1.PT1	TUBE3.PT2	TUBE22.PT2	TUBE25.PT2	58					
TUBE3.PT1	TUBE7.PT2	TUBE11.PT2	TUBE18.PT1	66					
TUBE4.PT1	TUBE6.PT2	TUBE10.PT2	TUBE22.PT1	71					
TUBE16.PT1	TUBE21.PT1	TUBE21.PT2	TUBE26.PT1	72					
TUBE4.PT2	TUBE11.PT1	TUBE17.PT2	TUBE18.PT2	82					
TUBE8.PT1	TUBE3.PT1	TUBE26.PT2	TUBE29.PT1	86					
TUBE6.PT2	TUBE17.PT1	TUBE27.PT2	TUBE28.PT1	109					
TUBE7.PT1	TUBE9.PT2	TUBE12.PT1	TUBE20.PT1	116					
TUBE12.PT2	TUBE18.PT1	TUBE13.PT2	TUBE14.PT1	141					
TUBE14.PT2	TUBE18.PT1	TUBE19.PT2	TUBE28.PT1	217					
TUBE4.PT1	TUBE10.PT1	TUBE24.PT1	TUBE30.PT2	270					

FILE: NONAME    DIRECTORY: 6S70101

Quartets match

TUBE DATA

EL34PENT

Npin [ ] 8    Pin 1 [ ] SUPPRESSOR  
 Ufil I(U) [ ] 6.30    Pin 2 [ ] FIL  
 Ifil I(A) [ ] 2.00    Pin 3 [ ] ANODE  
 Ua max I(U) [ ] 700.00    Pin 4 [ ] GRID SCR  
 Ia max I(A) [ ] 250.00    Pin 5 [ ] GRID  
 Usc I(U) [ ] 200.00    Pin 6 [ ] N.C.  
 Iscmax I(A) [ ] 250.00    Pin 7 [ ] FIL  
 P max I(U) [ ] 30.00    Pin 8 [ ] CATHODE  
 Ug max I(U) [ ] 0.00    Pin 9 [ ]  
 Ug min I(U) [ ] -20.0  
 Ultra I(A) [ ] 0.00  
 Ua0 I(U) [ ] 0.00

JOB1  
 6C33C.TBE  
 12AX7.TBE  
 2A3.TBE  
 5998.TBE  
 5U4.TBE  
 12AT7.TBE  
 6DJ8.TBE  
 6SL7.TBE  
 8417PENT.TBE  
 8417ULTR.TBE  
 8417ULTR.TBE  
 EF86.TBE  
 EL34PENT.TBE  
 EL34TRIO.TBE

MODE  
 Triode  
 Pentode  
 Pseudo  
 Ultra  
 Diode

Sofia's tubes directory

TECHNICAL SPECIFICATION

DC GENERATORS

ROUTINGSYSTEM

Type: 4 channels voltage generator  
 Resolution: 16 bit  
 Plate voltage range: 0÷700 V  
 Grid screen voltage range: 0÷700 V  
 Filament voltage range: 0÷24 V  
 Filament max. supply current: 5 A  
 Grid voltage range: +10÷-150 V

Type: manual with supplied cords  
 Test sockets furnished:  
 - Octal  
 - Noval  
 - Four  
 - Transmitting seven

Hard Disk  
 Free RS-232 port  
 Co-processor required

DC ANALYZERS

Type: 3 channels milliamperometer  
 Resolution: 16 bit

PC CHARACTERISTICS

80286 or more  
 640 Kbytes RAM or more  
 VGA video adapter or more

MISCELLANEOUS

Dimensions (approx.): 44x24x12 cm.  
 Weight: 7 Kg.  
 AC voltage: 110-120 220-240 V  
 AC power consumption: 200W

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 Windows is a registered trademark of Microsoft Corporation

Sofia

VACUUM TUBES CURVE-TRACER



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