



# SFX DSP MODULE

p/n 005-3876-008

# SERVICE MANUAL

SFX DSP MODULE  
(This is the model name for warranty claims)

# SERVICE MANUAL

MAY 1998

## IMPORTANT NOTICE:

**Warranty philosophy on the DSP module is to replace, rather than repair it. The information presented in this manual is for reference when servicing one of the units that this product is utilized in.**

The information contained herein is CONFIDENTIAL and PROPRIETARY to Fender Musical Instruments Corp. It is disclosed solely for use by qualified technicians for purposes of equipment maintenance and service. It is not to be disclosed to others without the expressed permission of Fender Musical Instruments Co. All specifications subject to change without notice.

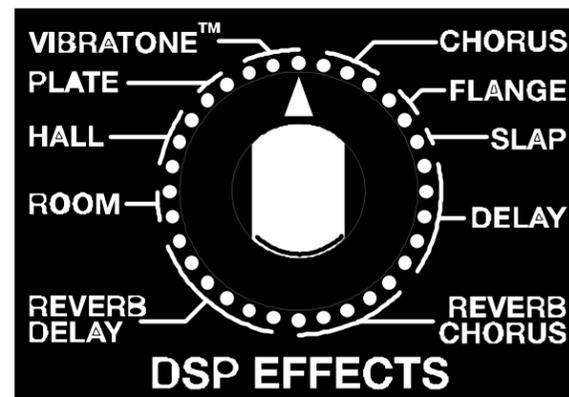
For warranty repair service, only Fender specified part numbers are to be used. It is recommended they also be used for post-warranty maintenance and repair.

Parts marked with an asterisk (\*) indicate the required use of that specific part. This is necessary for RELIABILITY and SAFETY requirements. **DO NOT USE A SUBSTITUTE!**

A coded naming convention is used in the description of certain parts. The codes and what they mean are as follows:

### CONTENTS:

- Notices
- Specifications
- Circuit Notes
- Parts lists
- Schematic
- PCB layout



### CAPACITOR CODES

- CAP AE = Aluminum Electrolytic
- CAP CA = Ceramic Axial
- CAP CD = Ceramic Disk
- CAP MPF = Metalized Polyester Film
- CAP MY = Mylar
- CAP PFF = Polyester Film/Foil

### RESISTOR CODES

- RES CC = Carbon Comp
- RES CF = Carbon Film
- RES FP = Flame Proof
- RES MF = Metal Film
- RES WW = Wire Wound

### HARDWARE CODES

- BLX = Black Oxide
- CR = Chrome Plated
- HWH = Hex Washer Head
- M = Machine Screw
- NI = Nickel Plated
- OHP = Oval Head Phillips
- PB = Particle Board
- PHP = Pan Head Phillips
- PHPS = Pan Head Phillips Sems
- SMA = Sheet Metal "A" Point
- SMB = Sheet Metal "B" Point
- SS = Stainless Steel
- TF = Thread Forming
- ZI = Zinc Plated

**SPECIFICATIONS**

**Product Release No.:** PR 369 *(This is not a model number)*

**Part Number:**

PART NO.	PRODUCT
0053876008	All (DSP board w/o Eprom)
0053874008	SFX Satellite
0053875008	SFX Keyboard
0053567008	Acoustasonic SFX

\*\*\*\* Note: Blank rows are provided for adding future products, as they become available. \*\*\*\*

**Power Requirements:** Board runs off of +5 Volts supplied by host product

**Dimensions:** Unit is contained on one 3.2" x 5.1" PC board

**\*\*\* PLEASE NOTE: THIS MODULE IS ESD SENSITIVE. USE ANTI - STATIC PRECAUTIONS \*\*\***

**POWER FOR DSP CARD**

The +5 volts for the **DSP** card is supplied by a regulated +5V supply in the Host product.

**SELF - TEST OF DSP MODULE**

To initiate self - test of the **DSP** module, short **TP2** to **TP1** while turning power from off to on. Self - test pass is indicated when the yellow LED remains on continuously. Failure is indicated when the red LED blinks, or the yellow LED fails to light. If a passing condition exists, the module will operate in the loopback mode until the power is cycled off to on with **TP2** not shorted to **TP1**. In the loopback mode the module's output ( at **TP9** and **TP10** ) will be a replica of the input signals ( **TP6** and **TP8** ).

**TP2** is the inboard end of **R14**; **TP1** is ground, and is found on pins **2, 4, and 6** of **P1** (also, the chassis of the host product)].

When test mode is initiated, 2 tests will be performed:

- a) EPROM test
- b) RAM test
- c) After passing these tests (estimated time = 10 ms), the module goes into loopback mode.

*Product specifications are subject to change without notice*

**PARTS LIST**

*NOTE: SHADED ITEMS ARE FOR REFERENCE ONLY*

**EPROMS**

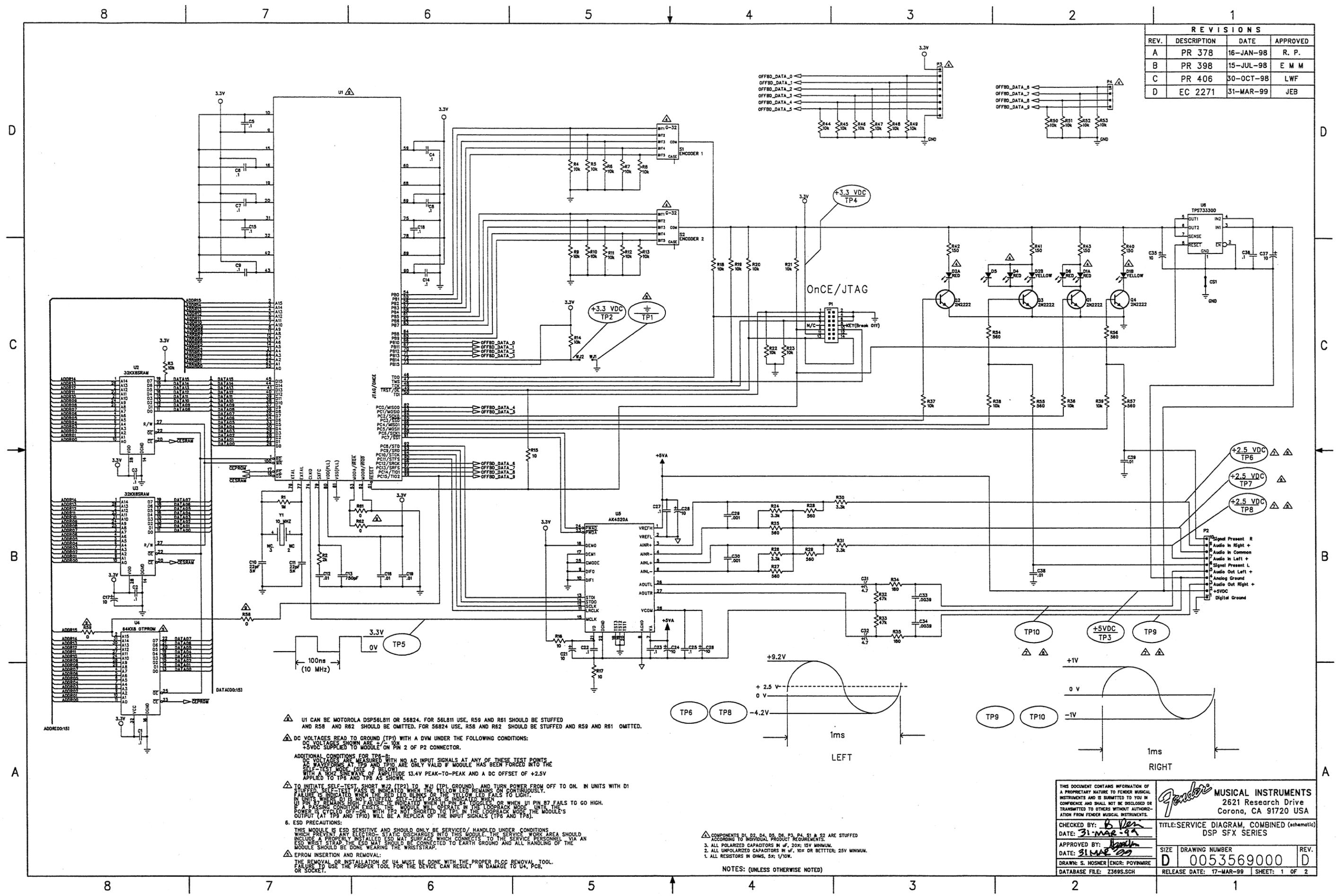
<b>QTY</b>	<b>PART #</b>	<b>DESCRIPTION</b>	<b>REFERENCE DESIGNATION</b>
1	053871	IC EPROM ACST SFX	ACOUSTASONIC SFX
1	053872	IC EPROM SFX SATELLITE	SFX SATELLITE
1	053873	IC EPROM SFX KEYBOARD 200	SFX KEYBOARD 200

**OTHER PARTS**

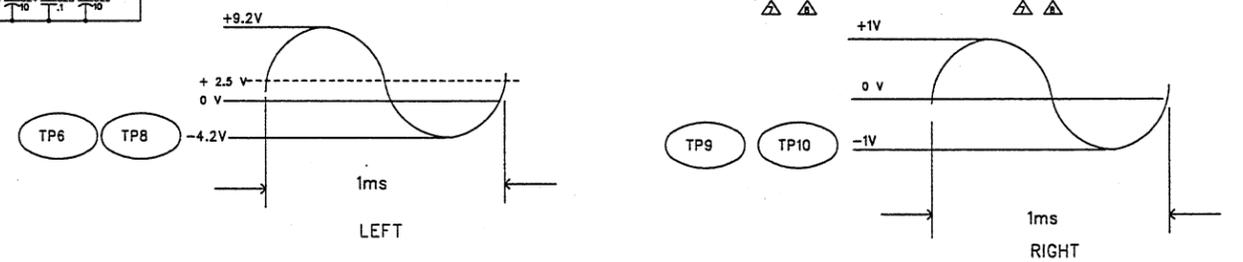
<b>QTY</b>	<b>PART #</b>	<b>DESCRIPTION</b>	<b>REFERENCE DESIGNATION</b>
1	048332	LED RED PNL MT 7"	USED ON SFX SATELLITE

\*\*\*\* Note: Blank rows are provided for adding future products, as they become available. \*\*\*\*

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR 378	16-JAN-98	R. P.
B	PR 398	15-JUL-98	E. M. M.
C	PR 406	30-OCT-98	LWF
D	EC 2271	31-MAR-99	JEB



⚠ U1 CAN BE MOTOROLA DSP56L811 OR 56B24. FOR 56L811 USE, R59 AND R61 SHOULD BE STUFFED AND R58 AND R62 SHOULD BE OMITTED. FOR 56B24 USE, R58 AND R62 SHOULD BE STUFFED AND R59 AND R61 OMITTED.  
 ⚠ DC VOLTAGES READ TO GROUND (TP1) WITH A DVM UNDER THE FOLLOWING CONDITIONS:  
 - DC VOLTAGES SHOWN ARE IN VDC.  
 - +5VDC SUPPLIED TO MODULE ON PIN 2 OF P2 CONNECTOR.  
 ADDITIONAL CONDITIONS FOR TP6-8:  
 - DC VOLTAGES ARE MEASURED WITH NO AC INPUT SIGNALS AT ANY OF THESE TEST POINTS.  
 - ALL WAVEFORMS AT TP6 AND TP10 ARE ONLY VALID IF MODULE HAS BEEN FORCED INTO THE SELF-TEST MODE (SEE 7).  
 - A PASSING CONDITION FOR THE MODULE WILL OPERATE IN THE LOOPBACK MODE UNTIL THE POWER IS CYCLED OFF-ON WITH TP2 NOT SHORTED TO TP1 IN THE LOOPBACK MODE THE MODULE'S OUTPUT (AT TP9 AND TP10) WILL BE A REPLICATION OF THE INPUT SIGNALS (TP6 AND TP8).  
 6. ESD PRECAUTIONS:  
 THIS MODULE IS ESD SENSITIVE AND SHOULD ONLY BE SERVICED/HANDLED UNDER CONDITIONS WHICH PREVENT ANY ELECTRO-STATIC DISCHARGES INTO THIS MODULE. THE SERVICE WORK AREA SHOULD INCLUDE A PROPERLY INSTALLED ESD MAT SURFACE WHICH CONNECTS TO THE SERVICE PERSONNEL VIA AN ESD WRIST STRAP. THE ESD MAT SHOULD BE CONNECTED TO EARTH GROUND AND ALL HANDLING OF THE MODULE SHOULD BE DONE WEARING THE WRISTSTRAP.  
 ⚠ EPROM INSERTION AND REMOVAL:  
 THE REMOVAL OR INSTALLATION OF U4 MUST BE DONE WITH THE PROPER PLCC REMOVAL TOOL. FAILURE TO USE THE PROPER TOOL FOR THE DEVICE CAN RESULT IN DAMAGE TO U4, PCB, OR SOCKET.

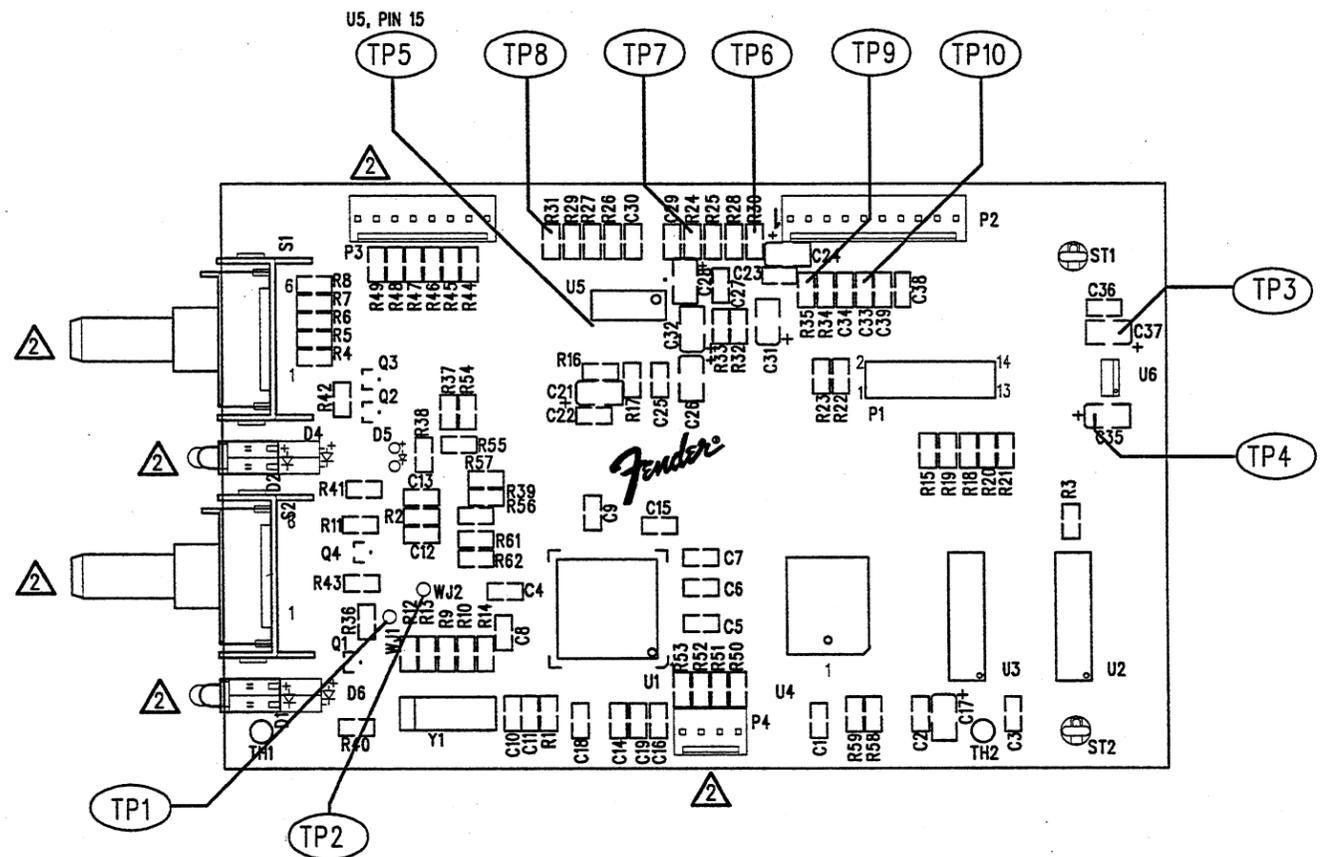


NOTES: (UNLESS OTHERWISE NOTED)  
 1. COMPONENTS D1, D2, D4, D5, D6, P3, P4, S1 & S2 ARE STUFFED ACCORDING TO INDIVIDUAL PRODUCT REQUIREMENTS.  
 2. ALL POLARIZED CAPACITORS IN  $\mu$ F, 20% OR BETTER; 25V MINIMUM.  
 3. ALL UNPOLARIZED CAPACITORS IN  $\mu$ F, 10% OR BETTER; 25V MINIMUM.  
 4. ALL RESISTORS IN OHMS, 5% 1/10W.

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CHECKED BY: <i>B. Ven</i> DATE: <i>31-mar-99</i>	TITLE: SERVICE DIAGRAM, COMBINED (schematic) DSP SFX SERIES	
APPROVED BY: <i>[Signature]</i> DATE: <i>31-mar-99</i>	SIZE: <b>D</b> DRAWING NUMBER: <b>0053569000</b>	REV. <b>D</b>
DRAWN: S. HOSNER ENGR: POVMNRE DATABASE FILE: Z369S.SCH	RELEASE DATE: 17-MAR-99 SHEET: 1 OF 2	

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FILM/DWG: SERVICE DIAGRAM  
 DATABASE: Z369P.PCB DATE: 31-MAR-99



- 3. TEST POINT LOCATIONS AND VALUES ARE VALID FOR ALL PRODUCT CONFIGURATIONS.
- △ COMPONENTS D1, D2, D4, D5, D6, P3, P4, S1 & S2 ARE STUFFED ACCORDING TO INDIVIDUAL PRODUCT REQUIREMENTS. SEE SPECIFIC PRODUCT BILL OF MATERIALS TO DETERMINE WHICH COMPONENTS SHOULD BE PRESENT. REFERENCE MASTER ASSEMBLY DRAWING 0053567000
- 1. SEE SHEET 1 FOR TEST CONDITIONS AND TEST POINT VALUES.

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APPROVED BY: <i>J. Rockman</i> AP DATE: <i>30 MAR 99</i>		SIZE <b>B</b>	DRAWING NUMBER <b>0053569000</b>
DRAWN: S. HOSNER   ENGR: R. POVINMIRE		RELEASE DATE: 16-JAN-98	REV. <b>D</b>
DATABASE FILE: Z369P.PCB		SHEET 2 OF 2	