

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR 616	08-SEP-04	MCU

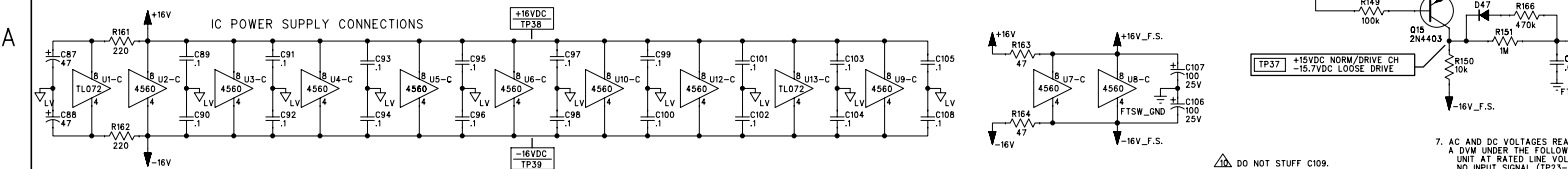
MUSICAL INSTRUMENTS
 Corona, CA U.S.A.

CHECKED BY: _____
 DATE: _____
 APPROVED BY: _____
 DATE: _____
 DRAWN: MULRICH ENGR: MULRICH
 DATABASE FILE: Z616S1.SCH

TITLE: SERVICE DIAGRAM, COMBINED (schematic)
 METALHEAD PRE-AMPLIFIER
 SIZE: DRAWING NUMBER REV.
D **0068747000** **A**
 RELEASE DATE: 10-SEP-04 SHEET: 1 OF 2

TP30 (INPUT PNL CH SELECT):
 WITH FOOTSWITCH - - -
 < -2.8VDC CH SELECT OFF (NORM CH)
 -7.4VDC CH SELECT ON (DIRTY "YEL")
 -6.9VDC CH SELECT ON (LOOSE "RED")
 WITH FRONT PANEL SWITCHES (S1/S2) - - -
 < -8.8VDC S1 IN, S2 OUT (NORM CH)
 -7.2VDC S1 IN, S2 OUT (DIRTY "YEL")
 -9.3VDC S1 IN, S2 IN (LOOSE "RED")
 TP31 (REF PNL CH SELECT):
 -6.9VDC CH SELECT OFF
 -6.9VDC CH SELECT ON
 TP32: -10.0VDC
 TP34 (INPUT PNL LOOSE SELECT):
 WITH FOOTSWITCH - - -
 < -8.9VDC CH SELECT OFF (NORM CH)
 -8.9VDC CH SELECT ON (DIRTY "YEL")
 -12.3VDC CH SELECT ON (LOOSE "RED")
 WITH FRONT PANEL SWITCHES (S1/S2) - - -
 < -4.3VDC S1 IN, S2 OUT (NORM CH)
 -8.7VDC S1 IN, S2 OUT (DIRTY "YEL")
 -12.0VDC S1 IN, S2 IN (LOOSE "RED")
 TP35 (REF PNL LOOSE SELECT):
 -10.0VDC LOOSE SELECT OFF
 -9.3VDC LOOSE SELECT ON

IC POWER SUPPLY CONNECTIONS



- 7. AC AND DC VOLTAGES READ TO GROUND WITH A DVM UNDER THE FOLLOWING CONDITIONS:
 UNIT AT RATED LINE VOLTAGE
 NO INPUT SIGNAL (TP23-TP42 ONLY)
 VOLTAGES MAY VARY +/-20%
 - 8. LAST REFERENCE DESIGNATORS: C109, D47, J1, PW102, Q16, R166, S4, U15.
 - 9. THIS SCHEMATIC IS FOR PCB FABRICATION P/N 0064727000 AND PCB ASSEMBLY P/N 0064726000.
 - 10. ALL DIODES ARE 1N4448.
 - 11. ALL POLARIZED CAPACITORS IN uF, 20% OR BETTER; 50V MINIMUM.
 - 12. ALL UNPOLARIZED CAPACITORS IN nF, 10% OR BETTER; 50V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20%).
 - 13. ALL RESISTORS IN OHMS, 5% 1/4W.
- NOTES: (UNLESS OTHERWISE NOTED)

DO NOT STUFF C109.
 P41 VARY DEPENDENT ON SETTING OF LEVEL AND TIME/RATE CONTROLS.
 ADDITIONAL CONDITION FOR TP12-14: LOOSE (S2) IN "RED"

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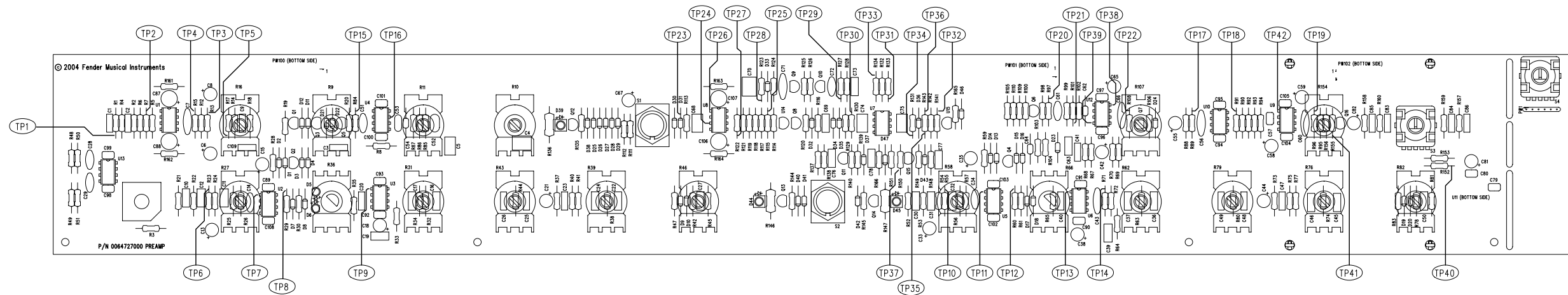
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR 616	08-SEP-04	MCU



FILM/DWG: SERVICE DIAGRAM
 DATABASE: Z616P1.PCB DATE: 23-SEP-04

1. SEE SHEET 1 FOR TEST CONDITIONS, TEST POINT VALUES, AND POWER AMP INTERCONNECTION.
 NOTES: (UNLESS OTHERWISE NOTED)

TOLERANCES (UNLESS OTHERWISE SPECIFIED)
 X.XXX = +/- .005"
 X.XX = +/- .010"
 X.X = +/- .025"
 ANGLE = +/- .10°

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CHECKED BY: _____ DATE: _____		TITLE: SERVICE DIAGRAM, COMBINED (PCB assy) MH-500 PRE-AMPLIFIER	
APPROVED BY: _____ DATE: _____		SIZE: D	DRAWING NUMBER: 0068747000
DRAWN: R. HAACK	ENGR: M. ULRICH	RELEASE DATE: 23-SEP-04	SHEET 2 OF 2
DATABASE FILE: Z616P1.PCB		REV. A	

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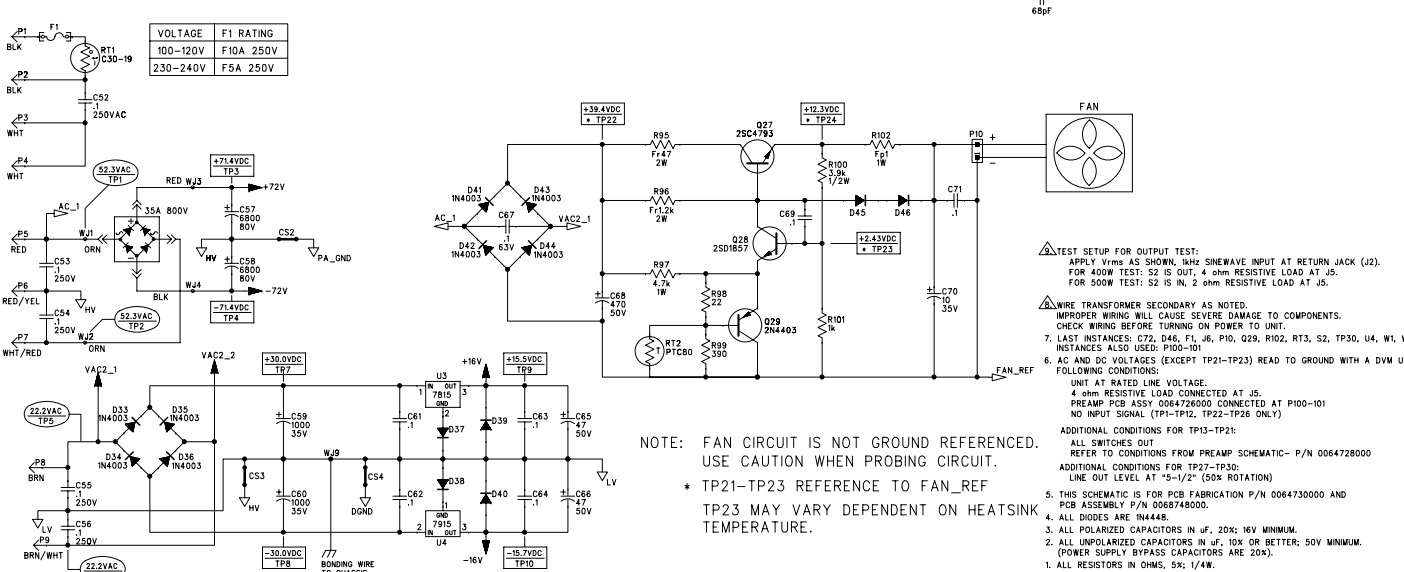
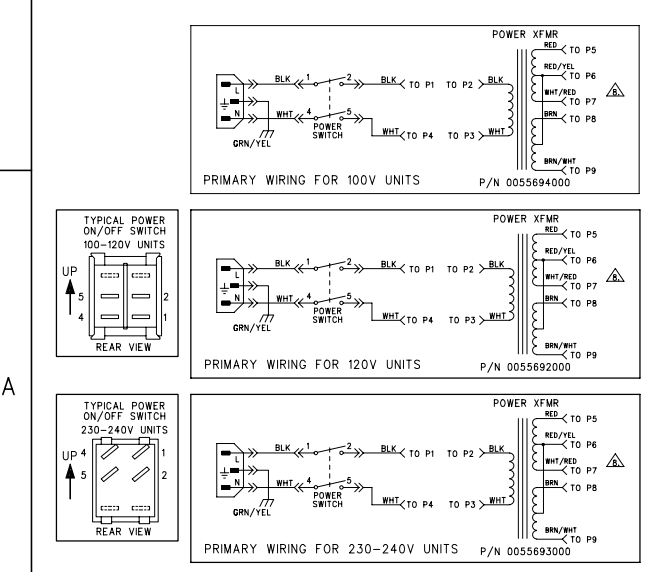
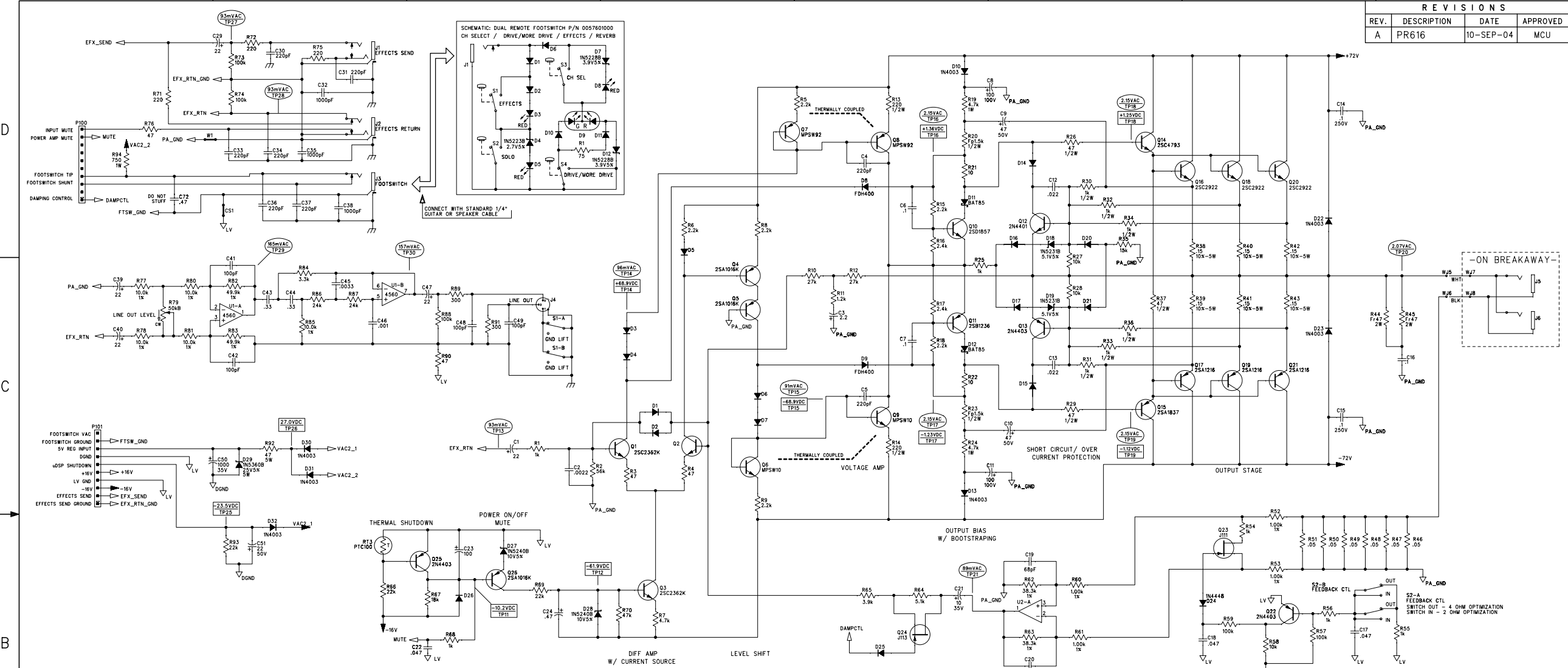
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR616	10-SEP-04	MCU



TEST SETUP FOR OUTPUT TEST:
APPLY Vrms AS SHOWN, 1kHz SINEWAVE INPUT AT RETURN JACK (J2).
FOR 400W TEST: S2 IS OUT, 4 ohm RESISTIVE LOAD AT J5.
FOR 500W TEST: S2 IS IN, 2 ohm RESISTIVE LOAD AT J5.

WIRE TRANSFORMER SECONDARY AS NOTED.
IMPROPER WIRING WILL CAUSE SEVERE DAMAGE TO COMPONENTS.
CHECK WIRING BEFORE TURNING ON POWER TO UNIT.

7. LAST INSTANCES: C72, D46, F1, J6, P10, Q29, R102, R13, S2, TP30, U4, W1, W9
INSTANCES ALSO USED: P100-101

6. AC AND DC VOLTAGES (EXCEPT TP21-TP23) READ TO GROUND WITH A DVM UNDER THE FOLLOWING CONDITIONS:
UNIT AT RATED LINE VOLTAGE.
4 ohm RESISTIVE LOAD CONNECTED AT J5.
PREAMP PCB ASSY 0064728000 CONNECTED AT P100-101
NO INPUT SIGNAL (TP1-TP12, TP22-TP26 ONLY)

ADDITIONAL CONDITIONS FOR TP13-TP21:
ALL SWITCHES OUT
REFER TO CONDITIONS FROM PREAMP SCHEMATIC- P/N 0064728000
ADDITIONAL CONDITIONS FOR TP22-TP30:
LINE OUT LEVEL AT "5-1/2" (50% ROTATION)

5. THIS SCHEMATIC IS FOR PCB FABRICATION P/N 0064730000 AND PCB ASSEMBLY P/N 0068748000.

4. ALL DIODES ARE 1N4448s.

3. ALL POLARIZED CAPACITORS IN uf, 20%; 16V MINIMUM.

2. ALL UNPOLARIZED CAPACITORS IN uf, 10% OR BETTER; 50V MINIMUM.
(POWER SUPPLY BYPASS CAPACITORS ARE 20%).

1. ALL RESISTORS IN OHMS, 5%; 1/4W.

NOTES: (UNLESS OTHERWISE NOTED)

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APPROVED BY: _____
DATE: _____

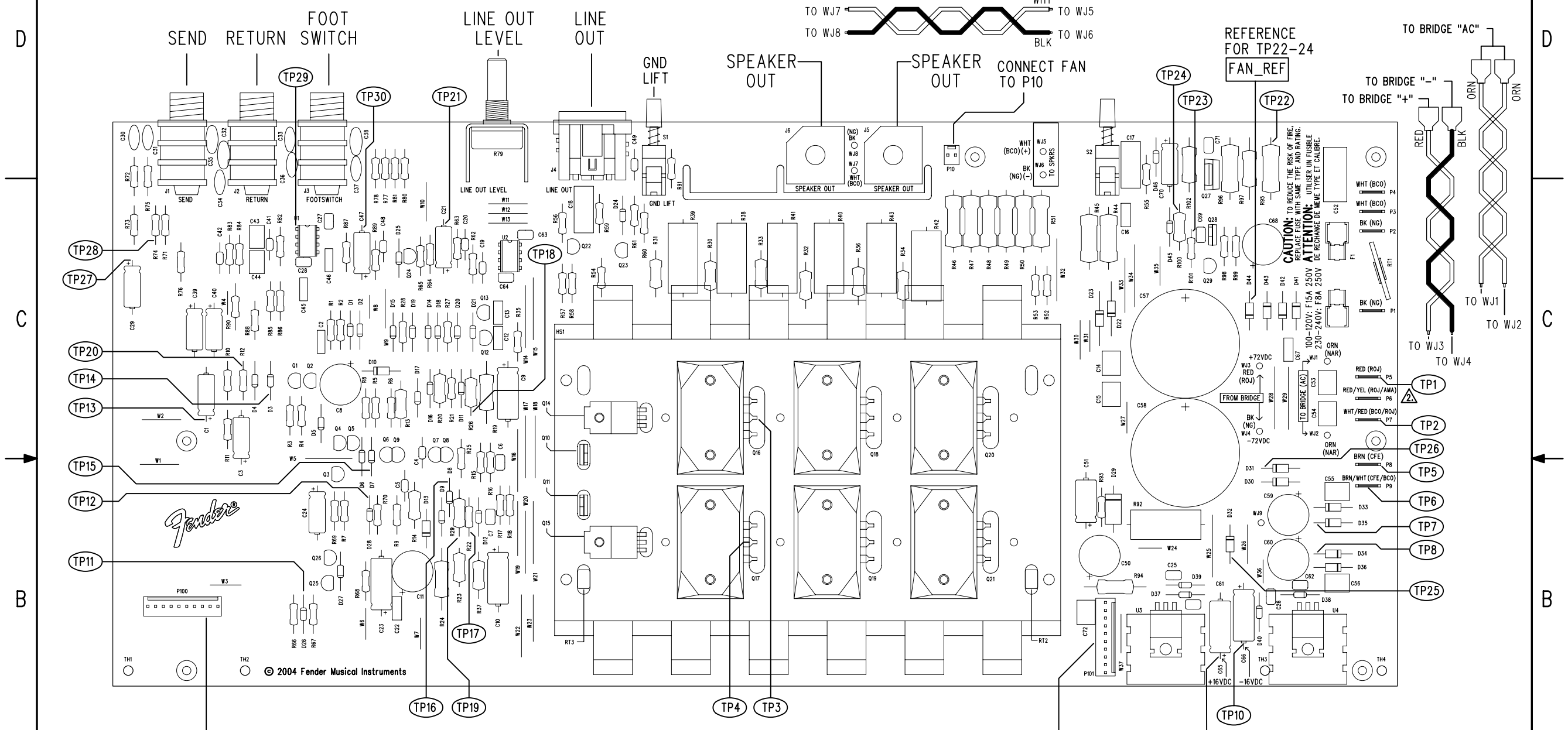
DRAWN: BHARTMAN ENGR: MULLRICH
DATABASE FILE: Z616S2.SCH

TITLE: SERVICE DIAGRAM, COMBINED (schematic)
MH-500
POWER AMP

SIZE: D
DRAWING NUMBER: 0064731000
RELEASE DATE: 10-SEP-04 SHEET: 1 OF 2

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REVISIONS			
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A	PR 616	10-SEP-04	MCU



CONNECT WITH PW100 FROM PREAMP PCB ASSEMBLY

FILM/DWG: SERVICE DIAGRAM
 DATABASE: Z616P2.PCB DATE: 10-SEP-04

CONNECT WITH PW101 FROM PREAMP PCB ASSEMBLY

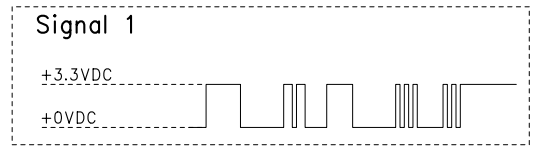
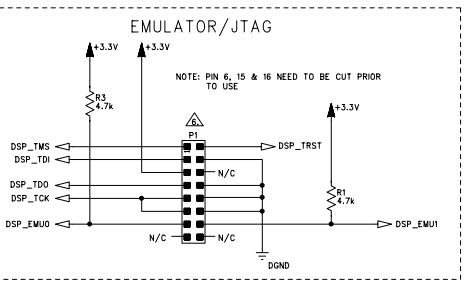
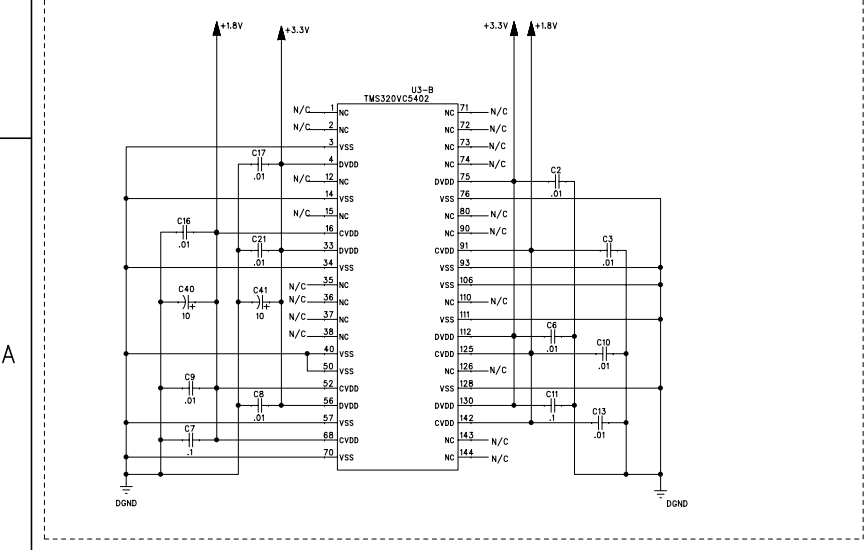
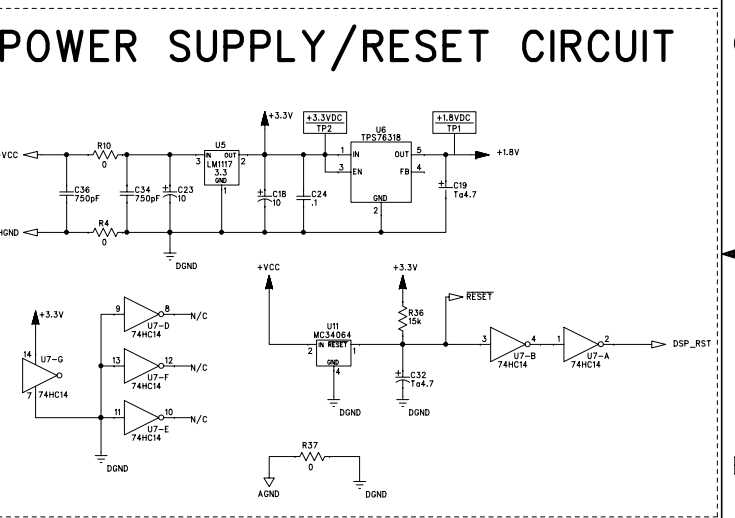
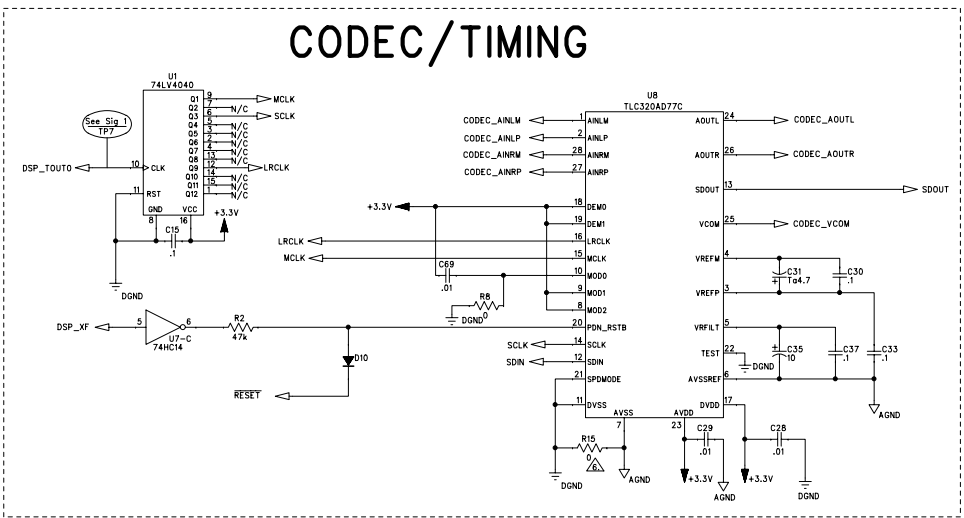
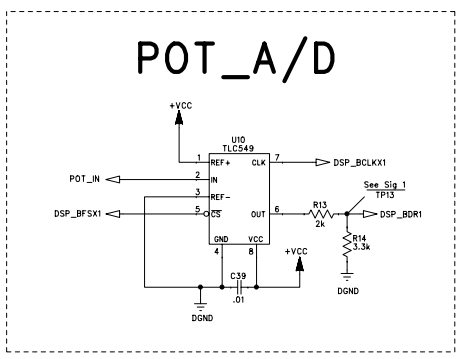
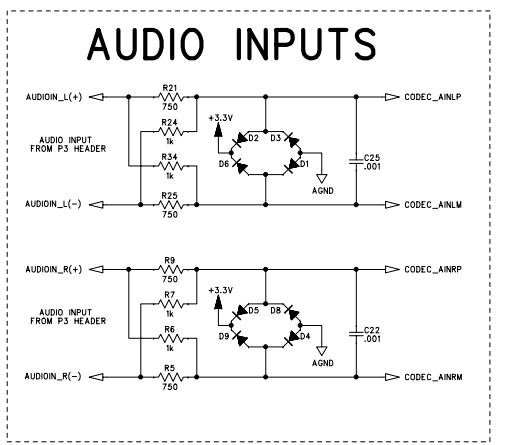
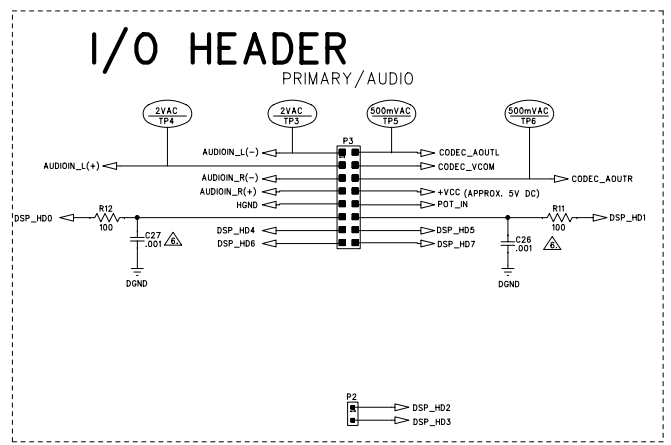
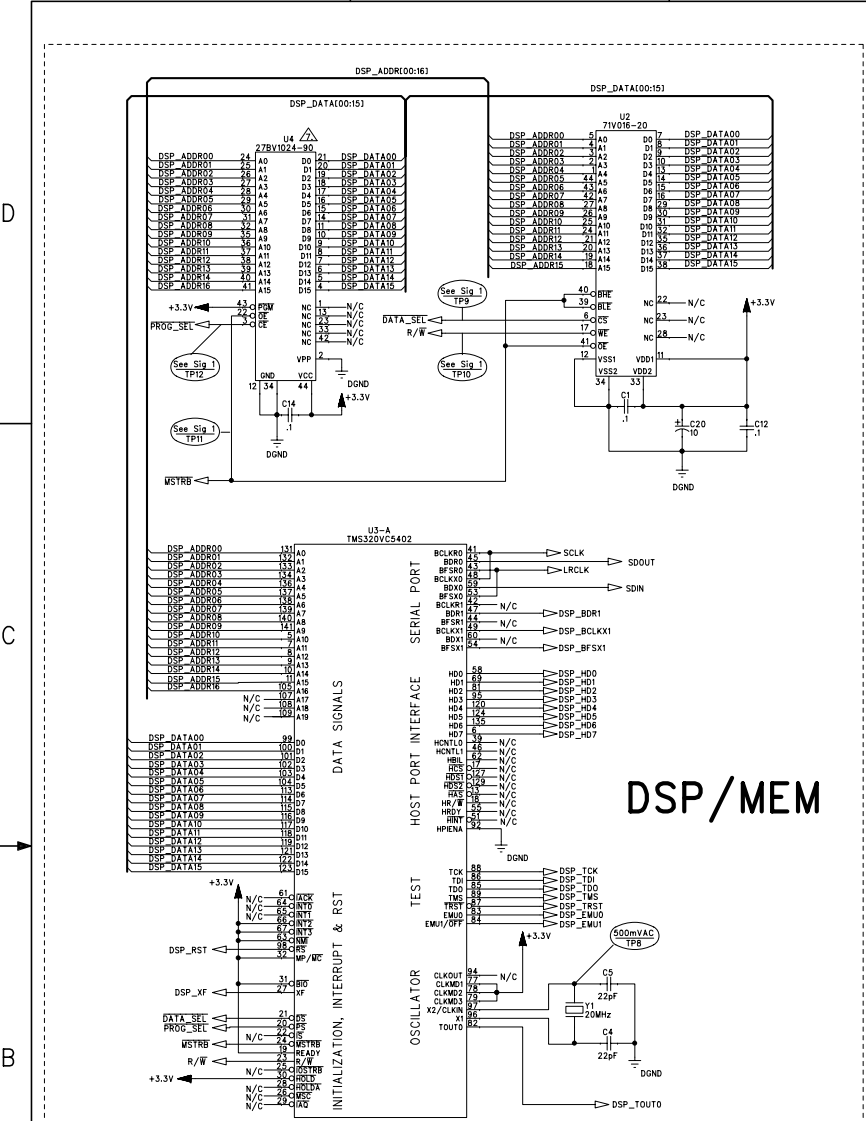
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REFER TO SHEET 1 FOR PROPER SECONDARY WIRING.
 1. SEE SHEET 1 FOR PRIMARY WIRING, TEST CONDITIONS, TEST POINT VALUES, AND OUTPUT POWER TEST SETUP.
 NOTES: (UNLESS OTHERWISE NOTED)

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CHECKED BY: _____ DATE: _____		TITLE: SERVICE DIAGRAM, COMBINED (PCB assy) MH-500 POWER AMP	
APPROVED BY: _____ DATE: _____		SIZE C	DRAWING NUMBER 0064731000
DRAWN: MULRICH ENGR: MULRICH	DATABASE FILE: Z616P2.PCB	RELEASE DATE: 10-SEP-04	REV. A SHEET 2 OF 2

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR480	29-NOV-01	J T L
B	EC 2743	07-MAR-02	J T L
C	EC 2789	10-JUN-02	J C S
D	PR542	25-APR-03	R J D



- NOTES: (UNLESS OTHERWISE NOTED)
- INSTALL IC IN SOCKET. FENDER P/N 0056585005
 - DO NOT STUFF C26-27, P1, R15.
 - THIS SCHEMATIC IS FOR PCB FABRICATION P/N 0057284000 AND PCB ASSEMBLY P/N 0057285000.
 - ALL DIODES ARE 1N4148.
 - ALL POLARIZED CAPACITORS IN uF, 20% 15V MINIMUM.
 - ALL UNPOLARIZED CAPACITORS IN uF, 10% OR BETTER; 16V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20%).
 - ALL RESISTORS IN OHMS, 5% 1/10W.

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Fender MUSICAL INSTRUMENTS
Corona, CA U.S.A.

CHECKED BY: _____
DATE: _____

APPROVED BY: _____
DATE: _____

DRAWN: J. Jimenez ENGR: J. Lamb
DATABASE FILE: Z4815.SCH

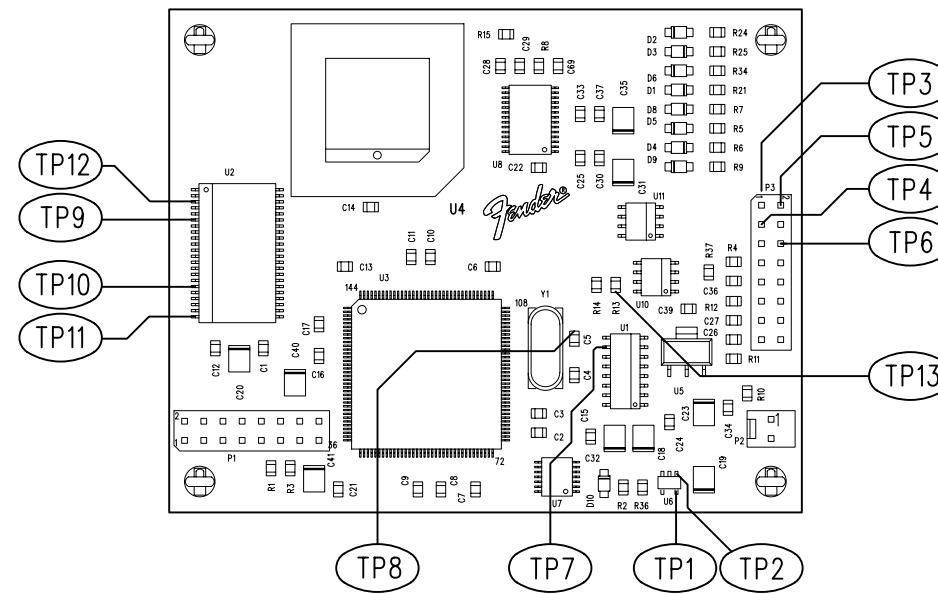
TITLE: SERVICE DIAGRAM, COMBINED (schematic) MICRO DSP

SIZE: D
DRAWING NUMBER: 0057283000
RELEASE DATE: 29-NOV-01 SHEET: 1 OF 2

REV. _____

REVISIONS


REV.	DESCRIPTION	DATE	APPROVED
A	PR480	30-NOV-01	J T L
B	EC 2743	07-MAR-02	J T L
C	EC 2789	10-JUN-02	J C S
D	PR542	25-APR-03	R J D



FILM/DWG: SERVICE DIAGRAM
 DATABASE: Z481P.PCB DATE: 25-APR-03

1. SEE SHEET 1 FOR TEST CONDITIONS AND TEST POINT VALUES.

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CHECKED BY: _____ DATE: _____		TITLE: SERVICE DIAGRAM, COMBINED (PCB assy) uDSP SERIES	
APPROVED BY: _____ DATE: _____		SIZE B	DRAWING NUMBER 0057283000
DRAWN: J. Jimenez	ENGR: J. Lamb	REV. D	
DATABASE FILE: Z481P.PCB		RELEASE DATE: 30-NOV-01	SHEET 2 OF 2