REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR 2467	28-JUN-13	IDK/dBL

THESE COMPONENTS ARE FOR RUMBLE 200 & 500 ONLY

*TP27-28: MEASURED >2 MINUTES AFTER FULL POWER SINEWAVE SIGNAL PRESENT AT POWER AMP OUTPUT (TP44-45 ON SHEET 2).
LOAD NOT CONNECTED TO MINIMIZE HEATING.

REAR IO PCB
SEE SHEET 2

EXTERNAL FOOTSWITCH (NOT INCLUDED)
LATCHING SWITCH
LED IS OPTIONAL

ON REAR I/O PCB
J204 FOOTSWITCH
R244 1k 1/4W

*WITH FOOTSWITCH CONNECTED AT J204 AND LATCHING SWITCH CLOSED.

**OVERDRIVE ON VIA S4 OR FOOTSWITCH

**POWER AMPLIFIER DRIVEN BEYOND ONSET OF LIMITER WHERE SOFT CLIPPING IS VISIBLE ON SCOPE, 100Hz

7. COMPONENTS WITH VALUE D.N.S. (DO NOT STUFF) SHOULD NOT BE INSTALLED IN THE PCB: C20-22, C43, C45, C69, R39-40, R47, R85, R93, R105, R138, R140
6. AC AND DC VOLTAGES ARE READ WITH RESPECT TO GROUND WITH A DVM UNDER THE FOLLOWING CONDITIONS:
   ALL CONTROLS AT 50% ROTATION (12:00).
   ALL PUSH-BUTTONS IN THE OUT POSITION
   ALL PCBS INTERCONNECTED AND INSTALLED IN CHASSIS
   UNIT AT RATED LINE VOLTAGE.
   TP20, TP22, TP25-32 ARE MEASURED WITH NO INPUT SIGNAL DC VOLTAGES MAY VARY BY +/-10%.
   TP1-19, TP21, AND TP23-24 ARE MEASURED WITH THE FOLLOWING SIGNAL: 20mVrms, 100Hz, SINE WAVE APPLIED TO INPUT JACK OVERDRIVE BUTTON IN FOR TP6-TP14 (SCOPE WAVEFORMS REFERENCED TO GND) AC VOLTAGES MAY VARY BY +/-20%.
5. THIS SCHEMATIC (SHEET 1, CONTROL) IS FOR PCB FABRICATION P/N 2467ICT008 AND PCB ASSEMBLY P/Ns:
   2465ICT007: RUMBLE 40/100
   2467ICT007: RUMBLE 200/500
4. ALL DIODES ARE 1N4148 OR 1N4448.
3. ALL POLARIZED CAPACITORS IN uF, 20%; 25V MINIMUM.
2. ALL UNPOLARIZED CAPACITORS IN uF, 10% OR BETTER; 50V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20%).
1. ALL RESISTORS IN OHMS, 5%; 1/10W.

NOTES: (UNLESS OTHERWISE NOTED)

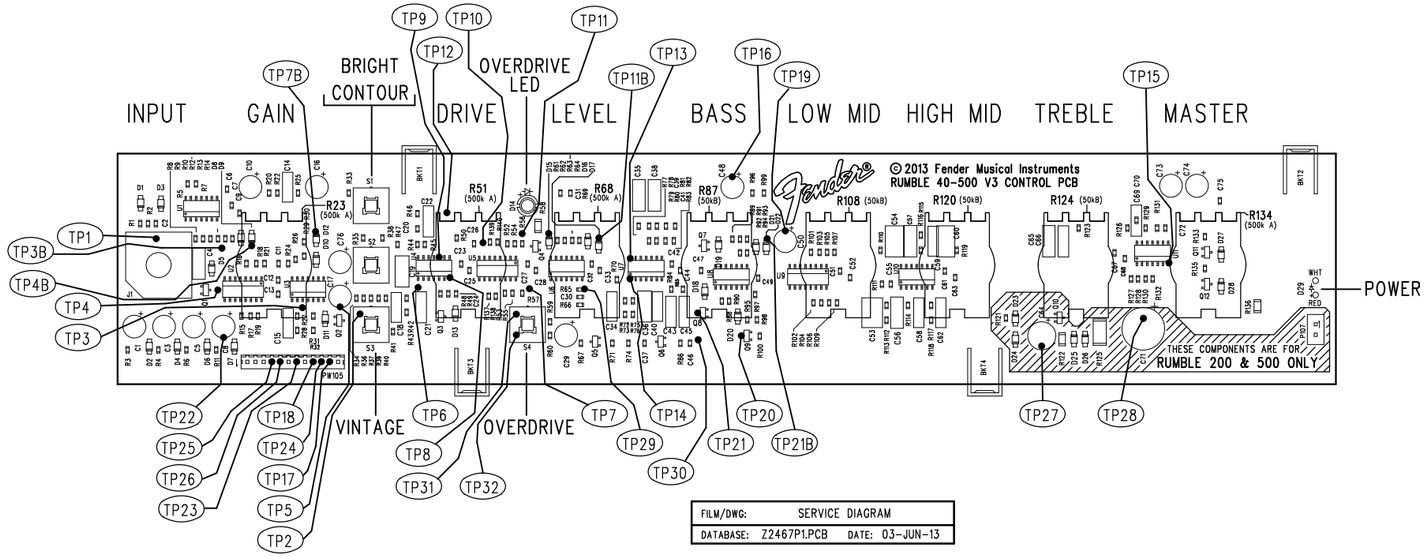
Fender MUSICAL INSTRUMENTS
Corona, CA U.S.A.

CHECKED BY:
DATE: 26-MAR-14
APPROVED BY:
DATE: 24-MAR-14
DRAWN: I.KOTHRADE ENGR: I.KOTHRADE
DATABASE FILE: Z2467S1.SCH

TITLE: SERVICE DIAGRAM, COMBINED (schematic)
RUMBLE 40-500 V3
CONTROL PCB

SIZE D | DRAWING NUMBER 2467ICT011 | REV. A
RELEASE DATE: 28-JUN-13 | SHEET: 1 OF 4

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR2467	03-JUN-13	dBL



FILM/DWG:	SERVICE DIAGRAM
DATABASE: Z2467P1.PCB	DATE: 03-JUN-13

2. WHERE POSSIBLE, THRU HOLE PADS WERE SELECTED FOR TEST POINTS, BUT SOME TEST POINTS ARE ONLY FOUND ON TOP SIDE SMT PADS. REFER TO PCB BOTTOM SIDE SILKSCREEN TO HELP IDENTIFY TEST POINT LOCATIONS.

1. SEE SHEET 1 FOR STUFFING OPTIONS, TEST CONDITIONS, AND TEST POINT VALUES.

NOTES: (UNLESS OTHERWISE NOTED)

CHECKED BY: _____
DATE: 26-MAR-14

APPROVED BY: _____
DATE: 25-MAR-14

DRAWN: I.KOTHRADE | ENGR: I.KOTHRADE

DATABASE FILE: Z2467P1.PCB

MUSICAL INSTRUMENTS
Corona, CA U.S.A.

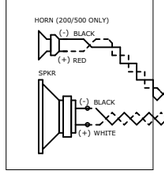
TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)
RUMBLE 40-500 V3
CONTROL PCB

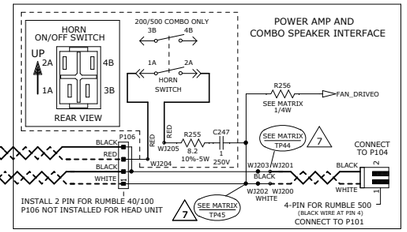
SIZE	DRAWING NUMBER	REV.
C	2467ICT011	A

RELEASE DATE: 03-JUN-13 | SHEET 3 OF 4

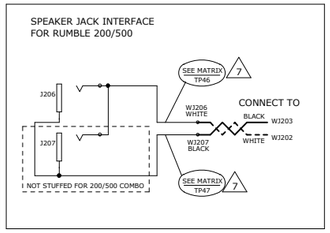
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR2467	10-JUL-2013	dBL

COMBO UNIT INTERNAL SPEAKERS





SPEAKER JACK INTERFACE FOR RUMBLE 200/500



SPEAKER OUTPUT MATRIX				
	R500	R200	R100	R40
R256	18.2k 1%	9.09k 1%	9.76k 1%	11.0k 1%
TP44	1.86VAC	1.24VAC	1.27VAC	1.55VAC
TP45	1.86VAC	1.24VAC	1.27VAC	0V
TP46	1.86VAC	1.24VAC	-	-
TP47	1.86VAC	1.24VAC	-	-

CAUTION: (7) MODELS RUMBLE 100,200,500 OUTPUT IS NOT GROUND REFERENCED! DO NOT GROUND EITHER TERMINAL (I.E. WITH OSCILLOSCOPE PROBE GROUND LEAD) OR UNIT WILL BE DAMAGED. VIEW OUTPUT WITH 'SCOPE IN DIFFERENTIAL MODE (RECOMMENDED) OR FLOAT 'SCOPE FROM EARTH GND.

TP44-45 AND TP46-47: AC VOLTAGES SHOWN ARE FOR MEASUREMENTS TAKEN BETWEEN TP AND CHASSIS GROUND. THE VALUES WILL BE TWICE AS LARGE IF MEASURED WITH THE VOLMETER BETWEEN DIRECTLY ACROSS THE AMPLIFIER OUTPUT (BETWEEN TP 44-TP45 OR TP46-TP47).

NOTE: POWER MODULE USES SWITCHING TECHNOLOGY RESULTING IN HIGH FREQUENCY NOISE (>100kHz) AT THE OUTPUT. RECOMMEND USING A LOW-PASS FILTER (SUCH AS THE AP AUX-0025 SWITCHING AMPLIFIER MEASUREMENT FILTER) FOR OPTIMUM VIEWING AND MEASURMENT OF OUTPUT SIGNALS.

OUTPUT POWER TEST: (1)
RESISTIVE LOAD CONNECTED AT P106 (DISCONNECT COMBO SPEAKERS)
RATED LINE VOLTAGE SUPPLIED TO UNIT
SINEWAVE INPUT SIGNAL APPLIED TO **AUX-IN** JACK (J202)
OUTPUT VOLTAGE MEASURED WITH A DVM ACROSS RESISTIVE LOAD
OSCILLOSCOPE PROBE MAY BE CONNECTED EITHER SIDE OF LOAD, BUT **DO NOT GROUND EITHER (+ OR -) CONNECTION TO THE LOAD!**
UNDER THESE CONDITIONS, ADJUST INPUT TO VERIFY THE FOLLOWING:

LOAD	FREQ = 100Hz	FREQ = 1kHz
8 OHM (ONSET OF LIMITER)	99.4W (28.2Vrms) < 0.1% THD	100W (28.3Vrms) < 0.1% THD

OUTPUT POWER TEST: (1)
RESISTIVE LOAD CONNECTED AT J206 (DISCONNECT COMBO SPEAKERS)
RATED LINE VOLTAGE SUPPLIED TO UNIT
SINEWAVE INPUT SIGNAL APPLIED TO **AUX-IN** JACK (J202)
OUTPUT VOLTAGE MEASURED WITH A DVM ACROSS RESISTIVE LOAD
OSCILLOSCOPE PROBE MAY BE CONNECTED EITHER SIDE OF LOAD, BUT **DO NOT GROUND EITHER (+ OR -) CONNECTION TO THE LOAD!**
UNDER THESE CONDITIONS, ADJUST INPUT TO VERIFY THE FOLLOWING:

LOAD	FREQ = 100Hz	FREQ = 1kHz
8 OHM (ONSET OF LIMITER)	91.8W (27.1Vrms) < 0.1% THD	93.2W (27.3Vrms) < 0.1% THD
4 OHM (ONSET OF LIMITER)	155W (24.9Vrms) < 0.1% THD	160W (25.3Vrms) < 0.1% THD

OUTPUT POWER TEST: (1)
RESISTIVE LOAD CONNECTED AT J206 (DISCONNECT COMBO SPEAKERS)
RATED LINE VOLTAGE SUPPLIED TO UNIT
SINEWAVE INPUT SIGNAL APPLIED TO **AUX-IN** JACK (J202)
OUTPUT VOLTAGE MEASURED WITH A DVM ACROSS RESISTIVE LOAD
OSCILLOSCOPE PROBE MAY BE CONNECTED EITHER SIDE OF LOAD, BUT **DO NOT GROUND EITHER (+ OR -) CONNECTION TO THE LOAD!**
UNDER THESE CONDITIONS, ADJUST INPUT TO VERIFY THE FOLLOWING:

LOAD	FREQ = 100Hz	FREQ = 1kHz
8 OHM (ONSET OF LIMITER)	221W (42.0Vrms) < 0.1% THD	222W (42.2Vrms) < 0.1% THD
4 OHM (ONSET OF LIMITER)	400W (40.0Vrms) < 0.1% THD	400W (40.0Vrms) < 0.1% THD

RUMBLE 100
100W SMPS + PWR ASSY

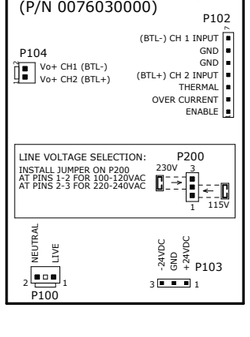
OUTPUT POWER TEST:
RESISTIVE LOAD CONNECTED AT P106 (DISCONNECT COMBO SPEAKERS)
RATED LINE VOLTAGE SUPPLIED TO UNIT
SINEWAVE INPUT SIGNAL APPLIED TO **AUX-IN** JACK (J202)
OUTPUT VOLTAGE MEASURED WITH A DVM ACROSS RESISTIVE LOAD
OUTPT IS GROUND REFERENCED (AT TP44)

UNDER THESE CONDITIONS, ADJUST INPUT TO VERIFY THE FOLLOWING:

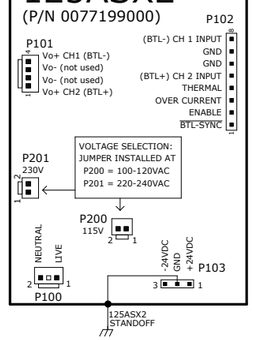
LOAD	FREQ = 100Hz	FREQ = 1kHz
8 OHM (ONSET OF LIMITER)	39.6W (17.8Vrms) < 0.1% THD	40W (17.9Vrms) < 0.1% THD

RUMBLE 40
40W PWR PCB ASSY

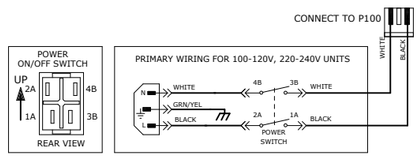
50ASX2(BTL)
(P/N 0076030000)



125ASX2
(P/N 0077199000)



RUMBLE 200/500 COMBO UNITS



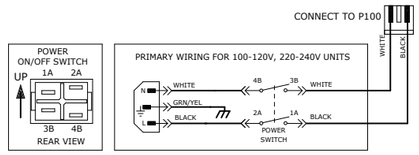
RUMBLE 500 = ICEPower 125ASX2

RUMBLE 200 = ICEPower 50ASX2

RUMBLE 100 = 100W SMPS + PWR ASSY
SEE SCHEMATIC P/N 2465ICT011

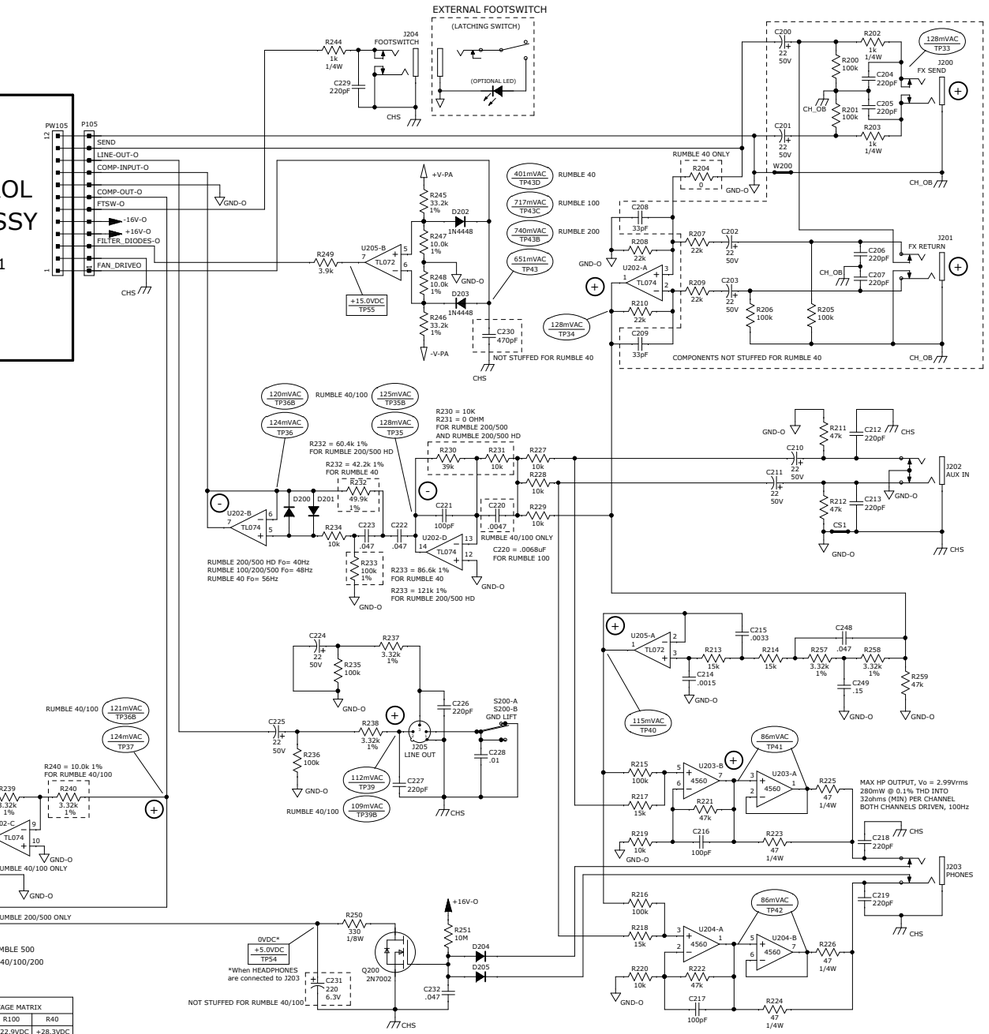
RUMBLE 40 = 40W PWR PCB ASSY
SEE SCHEMATIC P/N 2464ICT014

RUMBLE 200/500 HEAD UNITS

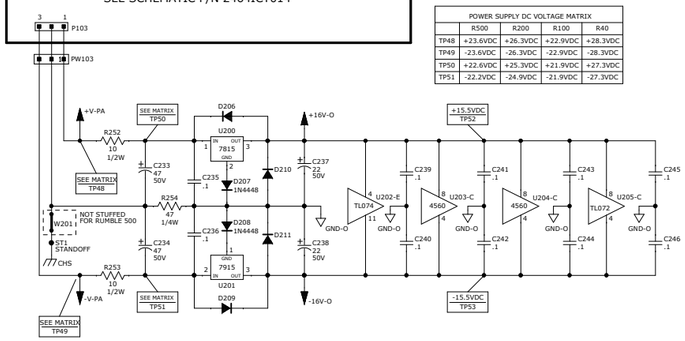


CONTROL PCB ASSY
SEE SHEET 1

EXTERNAL FOOTSWITCH



POWER SUPPLY DC VOLTAGE MATRIX				
	R500	R200	R100	R40
TP48	+23.6VDC	+26.3VDC	+22.9VDC	+28.3VDC
TP49	-23.6VDC	-26.3VDC	-22.9VDC	-28.3VDC
TP50	+22.6VDC	+25.3VDC	+21.9VDC	+27.3VDC
TP51	-22.2VDC	-24.9VDC	-21.9VDC	-27.3VDC



(1) SEE OUTPUT POWER TEST

6. AC AND DC VOLTAGES ARE READ WITH RESPECT TO GROUND WITH A DVM UNDER THE FOLLOWING CONDITIONS:
   ALL CONTROLS AT 50% ROTATION (12:00).
   ALL PUSH-BUTTONS IN THE OUT POSITION
   ALL PCBS INTERCONNECTED AND INSTALLED IN CHASSIS UNIT AT RATED LINE VOLTAGE.
   TP48-55 ARE MEASURED WITH NO INPUT SIGNAL DC VOLTAGES MAY VARY BY +/-10%.
   TP33-47 ARE MEASURED WITH THE FOLLOWING SIGNAL: 20mVrms, 100Hz, SINE WAVE APPLIED TO INPUT JACK AC VOLTAGES MAY VARY BY +/-20%.
5. THIS SCHEMATIC (SHEET 2, REAR IO) IS FOR PCB FABRICATION P/N 2467ICT010 AND PCB ASSEMBLY P/Ns:
   2467ICT009 REAR IO RUMBLE 500 V3
   2633ICT004 REAR IO RUMBLE 500 V3 HD
   2466ICT008 REAR IO RUMBLE 200 V3
   2634ICT004 REAR IO RUMBLE 200 V3 HD
   2465ICT008 REAR IO RUMBLE 100 V3
   2464ICT008 REAR IO RUMBLE 40 V3
4. ALL DIODES ARE 1N4148 OR 1N4448.
3. ALL POLARIZED CAPACITORS IN uF, 20%; 25V MINIMUM.
2. ALL UNPOLARIZED CAPACITORS IN uF, 10% OR BETTER; 50V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20%).
1. ALL RESISTORS IN OHMS, 5%; 1/10W.

NOTES: (UNLESS OTHERWISE NOTED)

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

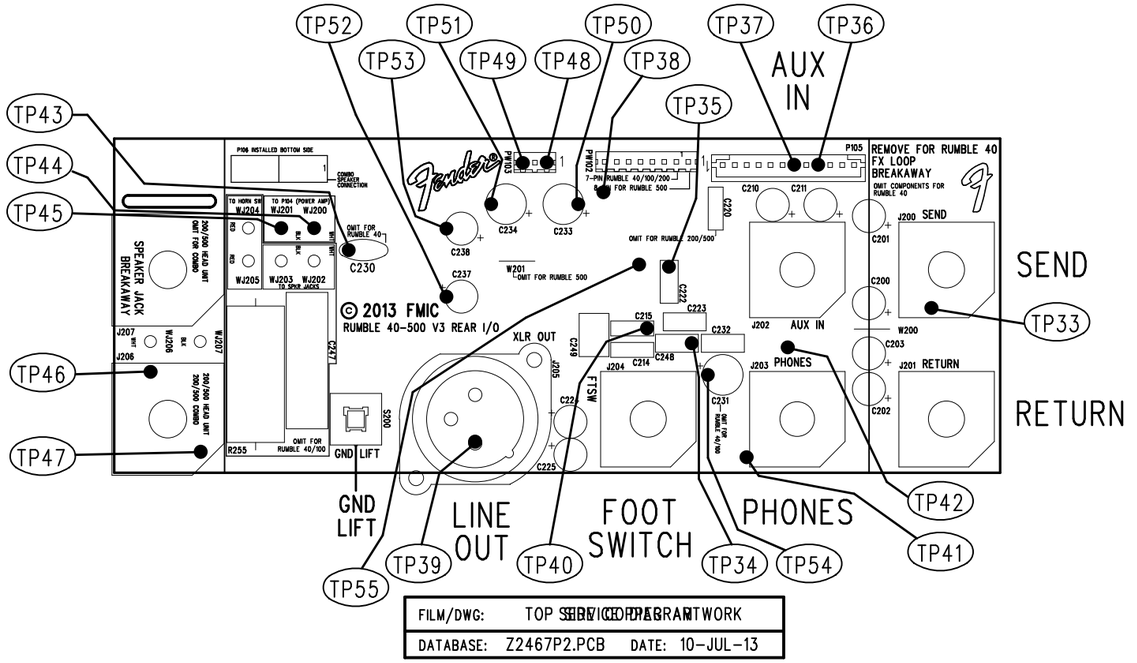
CHECKED BY:
DATE: 26-MAR-14
APPROVED BY:
DATE: 21-MAR-14
DRAWN: D. LEWIS
ENGR: D. LEWIS
DATABASE FILE: Z2467S2.SCH

TITLE: SERVICE DIAGRAM, COMBINED (schematic)
RUMBLE 40-500 V3
REAR IO PCB

SIZE D | DRAWING NUMBER 2467ICT011 | REV. A

RELEASE DATE: 10-JUL-13 | SHEET: 2 OF 4

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR2467	10-JUL-13	dBL



FILM/DWG: TOP SILKSCREEN ARTWORK

DATABASE: Z2467P2.PCB DATE: 10-JUL-13

2. WHERE POSSIBLE, THRU HOLE PADS WERE SELECTED FOR TEST POINTS, BUT SOME TEST POINTS ARE ONLY FOUND ON BOTTOM (SMT) SIDE. REFER TO PCB BOTTOM (SMT) SIDE SILKSCREEN TO HELP IDENTIFY TEST POINT LOCATIONS.

1. SEE SHEET 2 FOR TEST CONDITIONS, TEST POINT VALUES, AND STUFFING DIFFERENCES BETWEEN MODELS.

NOTES: (UNLESS OTHERWISE NOTED)

CHECKED BY: _____

DATE: 26-MAR-14

APPROVED BY: _____

DATE: 25-MAR-14

DRAWN: D. LEWIS | ENGR: D. LEWIS

DATABASE FILE: Z2467P2.PCB

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

TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)
RUMBLE 40-500 V3
REAR I/O PCB

SIZE	DRAWING NUMBER	REV.
B	2467ICT011	A

RELEASE DATE: 10-JUL-13 | SHEET 4 OF 4