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 24671CT008 AND PCB ASSEMBLY P/Ns:
   24651CT007: RUMBLE 40/100
   24671CT007: 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)

MUSICAL INSTRUMENTS
Corona, CA U.S.A.

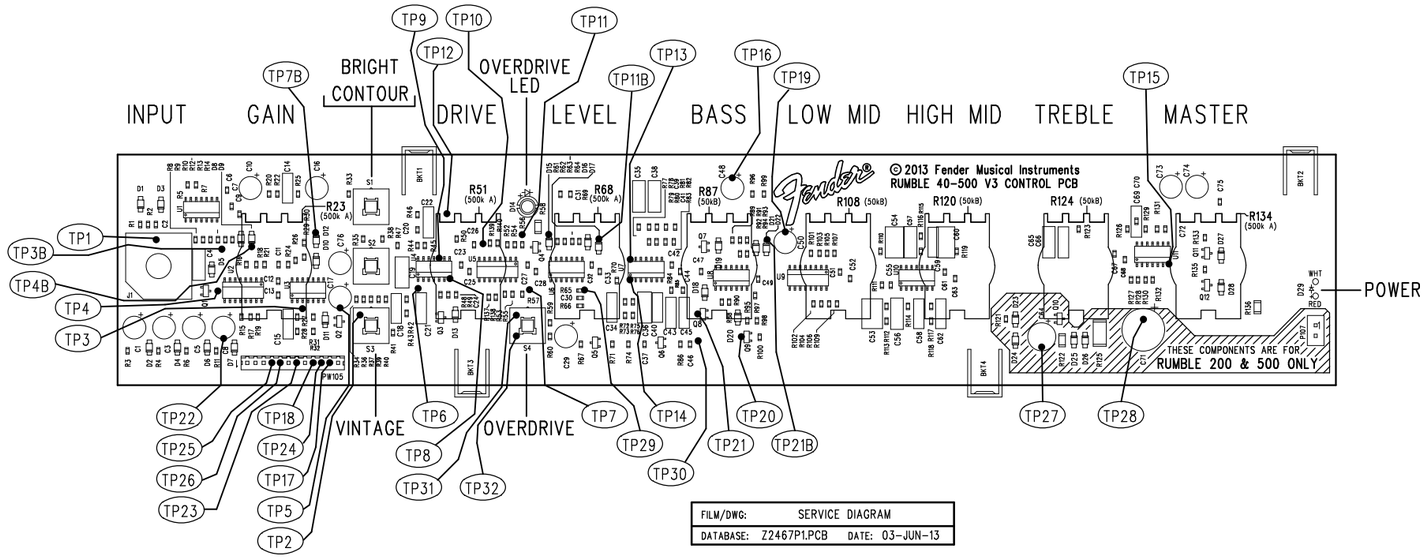
CHECKED BY:	
DATE:	26-MAR-14
APPROVED BY:	
DATE:	24-MAR-14
DRAWN: I.KOTHRADE	ENGR: I.KOTHRADE
DATABASE FILE: Z2467S1.SCH	

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

SIZE	DRAWING NUMBER	REV.
D	2467ICT011	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

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

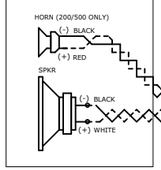
TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)
RUMBLE 40-500 V3
CONTROL PCB

SIZE	DRAWING NUMBER	REV.
C	2467ICT011	A

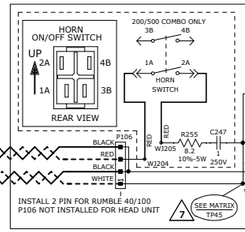
RELEASE DATE: 03-JUN-13 | SHEET 3 OF 4

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

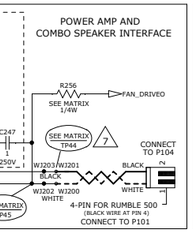
COMBO UNIT INTERNAL SPEAKERS



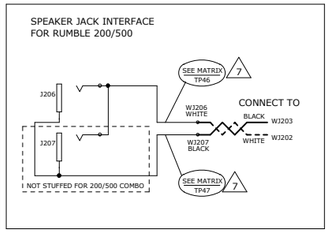
HORN ON/OFF SWITCH



POWER AMP AND COMBO SPEAKER INTERFACE



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: 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: (7)

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: (7)

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: (7)

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:

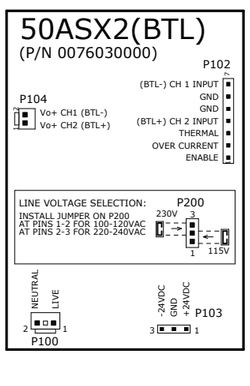
RESISTIVE LOAD CONNECTED AT P106 (DISCONNECT COMBO SPEAKERS)
RATED LINE VOLTAGE SUPPLIED TO UNIT
SINEWAVE INPUT SIGNAL APPLIED TO **AUX-IN** JACK (J202)
OUTPUT VOLTAGE MEASURED WITH A DVM ACROSS RESISTIVE LOAD
OUTPT IS GROUND REFERENCED (AT TP44)

UNDER THESE CONDITIONS, ADJUST INPUT TO VERIFY THE FOLLOWING:

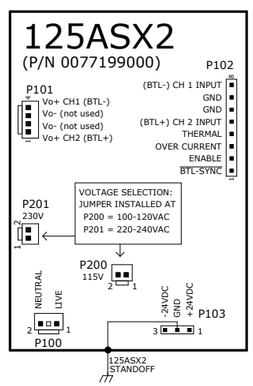
LOAD	FREQ = 100Hz	FREQ = 1kHz
8 OHM (ONSET OF LIMITER)	39.6W (17.8Vrms) < 0.1% THD	40W (17.9Vrms) < 0.1% THD

RUMBLE 40
40W PWR PCB ASSY

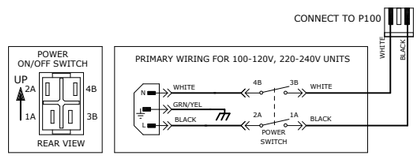
50ASX2(BTL)
(P/N 0076030000)



125ASX2
(P/N 0077199000)



RUMBLE 200/500 COMBO UNITS



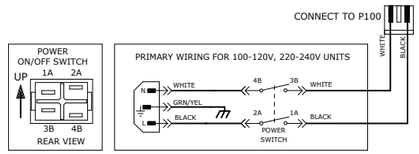
RUMBLE 500 = ICEPower 125ASX2

RUMBLE 200 = ICEPower 50ASX2

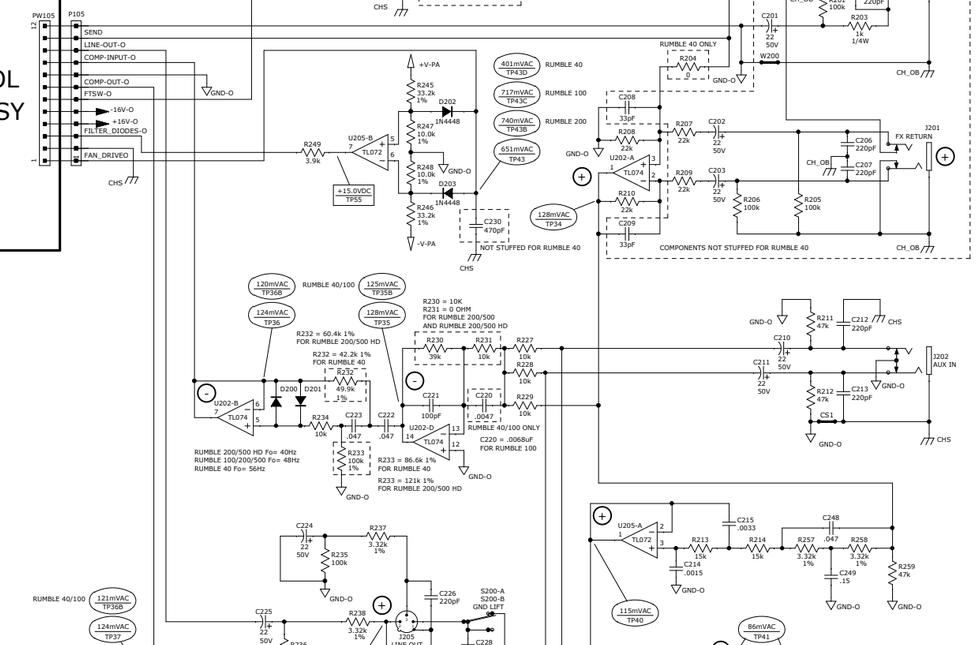
RUMBLE 100 = 100W SMPS + PWR ASSY
SEE SCHEMATIC P/N 2465ICT011

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

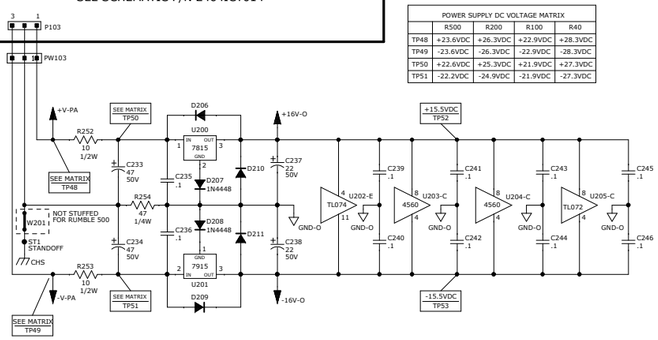
RUMBLE 200/500 HEAD UNITS



CONTROL PCB ASSY
SEE SHEET 1



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



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)

MUSICAL INSTRUMENTS
Corona, CA U.S.A.

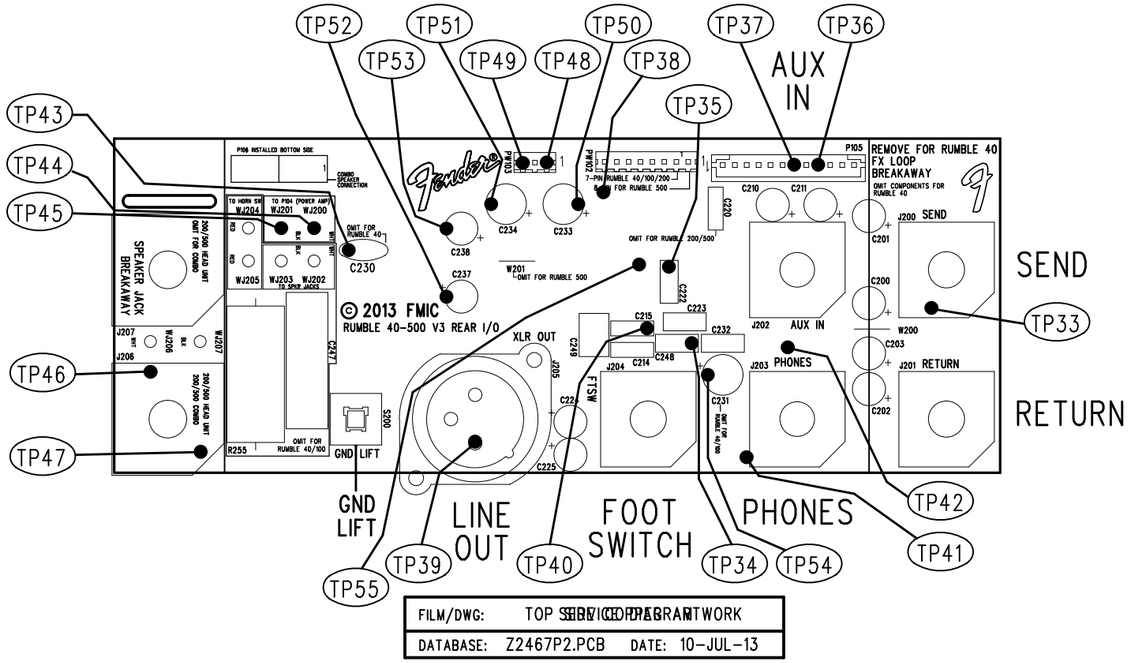
CHECKED BY:
DATE: 26-MAR-14
APPROVED BY:
DATE: 21-MAR-14
DRAWN: D. LEWIS
ENGR: D. LEWIS
DATABASE FILE: Z2467S2.SCH

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



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

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

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR2465	18-JUN-13	dBL

JP301 used for USA/JAPAN 100V - 120V version only

ADD Ferrite VDSON P/N: VDRH 3.5 x 5 x 1.3/E

ADD Ferrite VDSON P/N: VDRH 3.5 x 5 x 1.3/E

R307 - INSTALL JUNPER WIRE AC150

OMIT FOR RUMBLE 100

OMIT FOR RUMBLE 100

For 220-240V units,R303-306 are all 150k
For 100-120V units, R303 & R304 are 36k
(R305 & R306 are not used for 100-120V units)

For 220-240V(L308) : P/N VD4924/E
For 100-120V(L308) : P/N TC2510-10mH

Do Not Stuff J300.
Solder L and N twisted pair wires to PCB
and secure with approved glue.

TYPICAL POWER ON/OFF SWITCH

REAR VIEW

Table I: Component Differences AC100/150		
Location	AC100	AC150
VDD	+24V	+37V
VSS	-24V	-37V
T300	P/N VD3774/E	P/N VD4579/E
L307	180uH	240uH
Q302	SPP08N80C3	SPP11N80C3
C370	100n/50V	100n/100V
C371	100n/50V	100n/100V
C375	100n/50V	100n/100V
C376	100n/50V	100n/100V
Z302	30V	47V
R361	220K	301K
R338	110K	150K
R384	6.2K	5.23K
C351	150p/1kV	47p/1kV
R374	39K	150K
C361	1000p/1kV	2200p/1kV
R329	75K/3W	220K/3W
R329A	OPEN	220K/3W
R307	1.5 OHM	0 OHM
YC300	680P/Y1	1000P/Y1
YC301	680P/Y1	1000P/Y1
R326	22 ohm	47 ohm
R350	510 ohm	1K
L310	VD4456	VD4307

NOTE: EXCEPT WHERE NOTED, COMPONENTS STUFFED AS AC100 FOR MODEL RUMBLE 100 V3.

NOTES: (UNLESS OTHERWISE NOTED)

1. ALL RESISTORS IN OHMS, 5%; 1/4W.
2. ALL UNPOLARIZED CAPACITORS IN uF, 10% OR BETTER; 50V MINIMUM.
3. ALL POLARIZED CAPACITORS IN uF, 20%; 50V MINIMUM.
4. ALL DIODES ARE 1N4448.
5. THIS SCHEMATIC IS FOR PCB FABRICATIONS P/N 841ICT025 (AC100/150) AND 2465ICT014 (RUMBLE 100) AND PCB ASSEMBLIES P/N 0092460000 (AC100 120V), P/N 0092461000 (AC100 230V), P/N 0092462000 (AC150 120V), P/N 0092463000 (AC150 230V), P/N 2465ICT009 (RUMBLE 100 120V), P/N 2465ICT010 (RUMBLE 100 230V).
6. DNS = DO NOT STUFF.

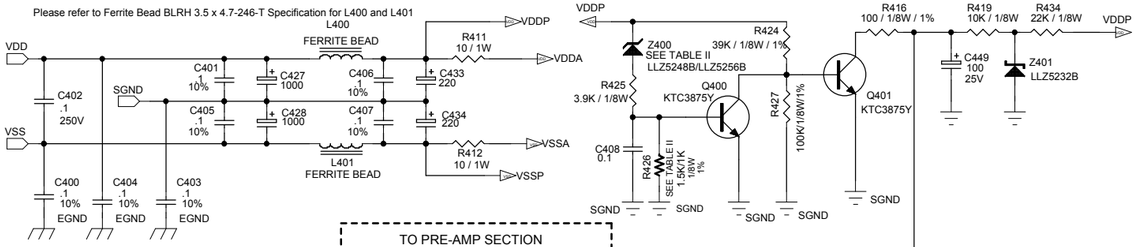
FENDER MUSICAL INSTRUMENTS
Corona, CA U.S.A.

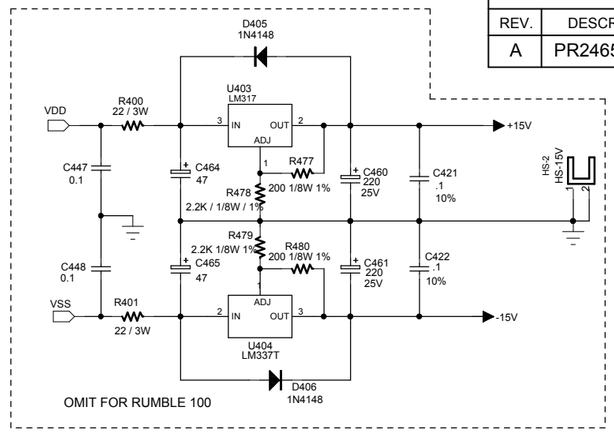
CHECKED BY:
DATE: 25-MAR-14
APPROVED BY:
DATE: 25-MAR-14
DRAWN: CORBIN
ENGR: D. LEWIS
DATABASE FILE: Z2465S.SCH

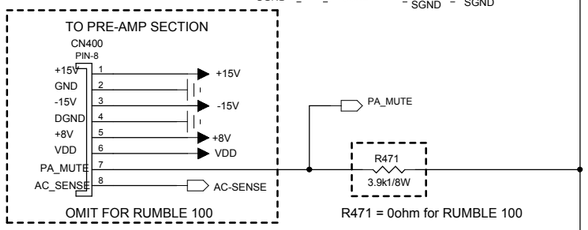
TITLE: SERVICE DIAGRAM, COMBINED (schematic)
RUMBLE 100 V3
PWR AMP_SMPS MODULE 100W BTL

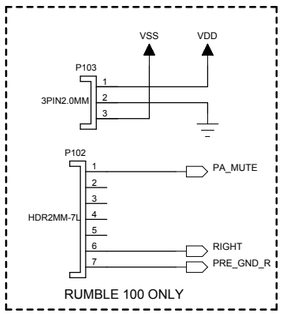
SIZE: B
DRAWING NUMBER: 2465ICT011
REV.: A
RELEASE DATE: 18-JUN-13
SHEET: 1 OF 3

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR2465	18-JUN-13	dBL

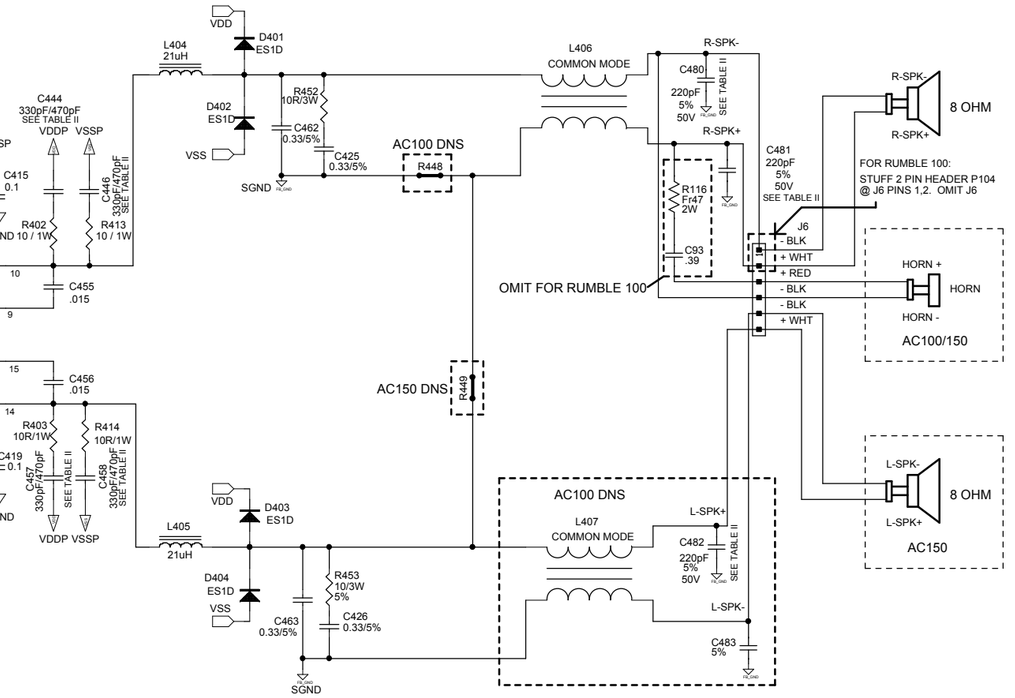


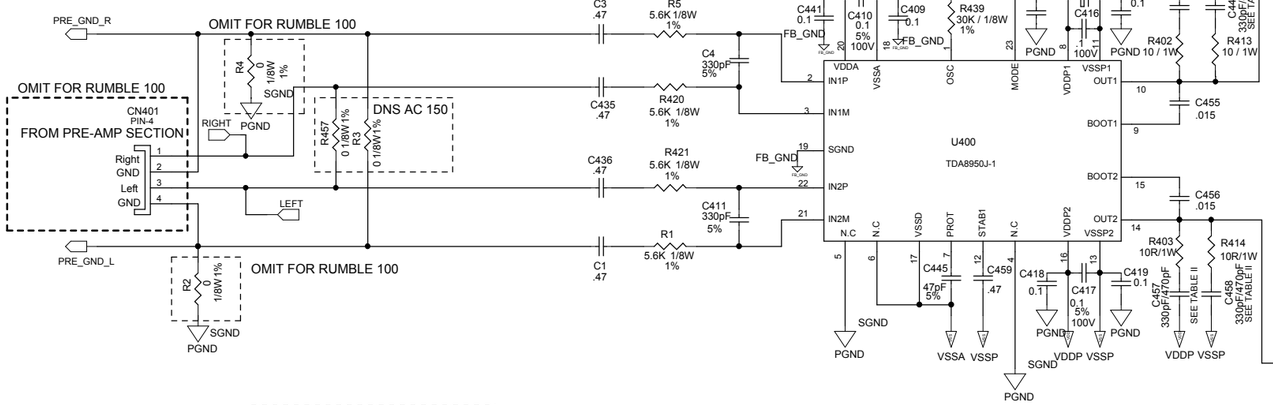


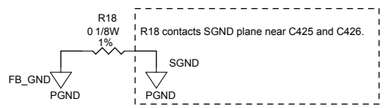




NOTE: EXCEPT WHERE NOTED, COMPONENTS STUFFED AS AC100 FOR MODEL RUMBLE 100 V3.







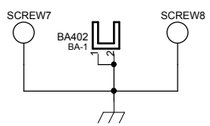


Table II : Component Difference AC100/150		
Location	AC100	AC150
R457	0R	OPEN
R3	0R	OPEN
J6	4 PIN	6 PIN
L407	OPEN	CMODE
C444	330P	470P
C446	330P	470P
C457	330P	470P
C458	330P	470P
Z400	18V	30V
R426	1.5K	1.0K
C480	N/A	220P
C481	N/A	220P
C482	N/A	220P
C483	N/A	220P

MUSICAL INSTRUMENTS
Corona, CA U.S.A.

CHECKED BY:
DATE: 25-MAR-14
APPROVED BY:
DATE: 25-MAR-14
DRAWN: CORBIN
ENGR: D. LEWIS
DATABASE FILE: PR2465.SCH

TITLE: SERVICE DIAGRAM, COMBINED (schematic)
RUMBLE 100 V3
PWR AMP_SMPS MODULE 100W BTL

SIZE B | DRAWING NUMBER 2465ICT011 | REV. A
RELEASE DATE: 21-MAY-12 | SHEET: 2 OF 3

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR2465	16-JUL-13	dBL

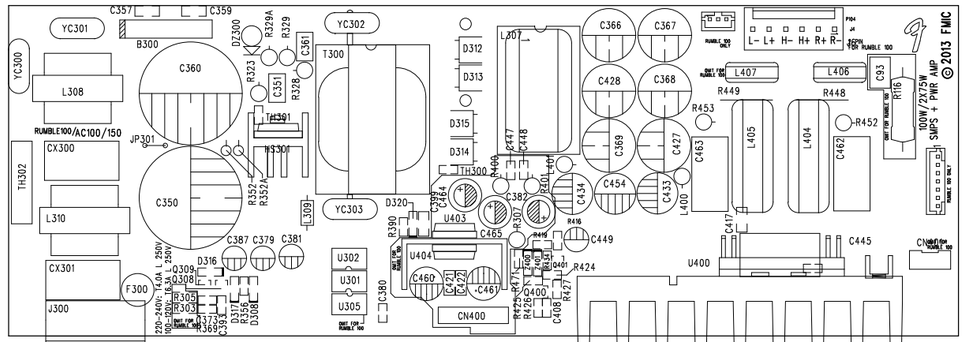
Table I : Component Difference AC100/150 (2)

Location	AC100	AC150
VDD	+24V	+37V
VSS	-24V	-37V
L310	VD4456	VD4307
T300	P/N VD43774/E	P/N VD4579/E
L307	180uH	240uH
Q302	SPP08N80C3	SPP11N80C3
C351	150p/1kV	47p/1kV
C361	1000p/1kV	2200p/1kV
R329	75K/3W	220K/3W
R329A	OPEN	220K/3W
R307	1.5 OHM	JUMPER WIRE (0 OHM)
YC300	680P/Y1	1000P/Y1
YC301	680P/Y1	1000P/Y1
L407	OPEN	CMODE
Z400	18V	30V
R426	1.5K	1.0K

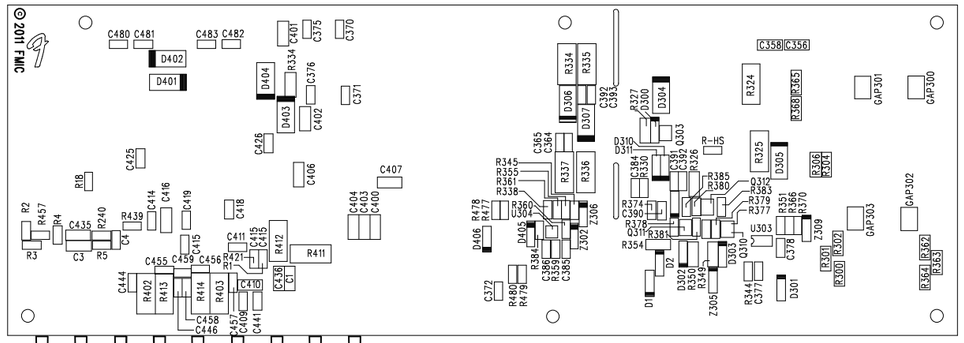
Table II : Component Difference AC100/150 (3)

Location	AC100	AC150
VDD	+24V	+37V
VSS	-24V	-37V
C370	100n/50V	100n/100V
C371	100n/50V	100n/100V
C375	100n/50V	100n/100V
C376	100n/50V	100n/100V
Z302	30V	47V
R361	220K	301K
R338	110K	150K
R384	6.2K	5.23K
R374	39K	150K
R326	22ohm	47ohm
R350	510ohm	1K
R457	OR	OPEN
R3	OR	OPEN
C444	330P	470P
C446	330P	470P
C457	330P	470P
C458	330P	470P
C480	N/A	220P
C481	N/A	220P
C482	N/A	220P
C483	N/A	220P

VIEWED FROM TOP SIDE (2) (4)



FILM/DWG:	SERVICE DIAGRAM	
DATABASE: Z2465P1.PCB	DATE: 16-JUL-13	



VIEWED FROM BOTTOM SIDE (3) (4)

(4) COMPONENTS STUFFED AS AC100 FOR RUMBLE 100. SEE SHEET 1 FOR STUFFING DIFFERENCES.

(3) SEE TABLE II (BOTTOM SIDE) AND BOM FOR ALTERNATE STUFFINGS.

(2) SEE TABLE I (TOP SIDE) AND BOM FOR ALTERNATE STUFFINGS.

(1) SEE SHEETS 1 AND 2 FOR VALUES AND CONDITIONS.

NOTES: (UNLESS OTHERWISE NOTED)

MUSICAL INSTRUMENTS
Corona, CA U.S.A.

CHECKED BY: _____
DATE: 26-MAR-14

APPROVED BY: _____
DATE: 26-MAR-14

DRAWN: PK CORBIN | GALLAGHER/LEWIS

DATABASE FILE: Z2465P1.PCB

TITLE: SERVICE DIAGRAM, COMBINED
RUMBLE 100 V3
PWR AMP_SMPS MODULE 100W BTL

SIZE C | DRAWING NUMBER 2465ICT011 | REV. A

RELEASE DATE: 16-JUL-13 | SHEET 3 OF 3