G-DEC® 30

(This is the model name for warranty claims)

p/n 2350500000 (120V)

SERVICE MANUAL

ATTENTION:

WARRANTY SERVICE PROCEDURES

Domestic (U.S. & Canada Only)**:** The G-Dec 30 Amplifier is not available for warranty field service. Any Dealer/Service Center in possession of a G-Dec 30 with a warrantable defect should contact the Fender Customer Service Support Center toll free at (866) 345-3642 or email service@fender.com to arrange for a replacement. ***This manual should only be referred to for non-warranty repairs.***

Non-Domestic: FMIC acknowledges that many of our International Distributors are able to perform field or in-house warranty service on the G-Dec 30 Amplifier.

Fender Musical Instruments Corporation, 8860 East Chaparral Road Suite 100 Scottsdale, AZ 85250
Issued: December, 2006

G-DEC® 30

(This is the model name for warranty claims)

December, 2006

IMPORTANT NOTICE

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

PARTS LIST CODES

The description codes used in the itemized Parts Lists are defined below:

CAPACITOR CODES

CAP AE	=	Aluminum Electrolytic
CAP CA	=	Ceramic Axial
CAP CD	=	Ceramic Disk
CAP CR	=	Ceramic Radial
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 MOX	=	Metal Oxide
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

G-DEC® 30
(This is the model name for warranty claims)

SPECIFICATIONS

Model Name:		**G-DEC® 30**
Release Number:		PR 695
Part Numbers	**(120V, 60Hz) US:**	2350500000
	(240V, 50Hz) AUS:	2350503900
	(230V, 50Hz) UK:	2350504900
	(230V, 50Hz) EUR:	2350506900
	(100V, 50/60Hz) JPN:	2350507900
Power Requirement:		75W
Fuses:		F1A, 250V for 100-120V versions F500mA, 250V for 230-240V versions
Power Output:		30W (15.5Vrms) into 8 ohms @ < 5%THD, 100Hz
Impedances	**Input (Front/Rear):**	1M Ohm
	Aux In L/R:	2.5k Ohm
Speaker Complement:		10”, 8 ohm, special design (P/N 0072797000)
Dimensions	**Height:**	15.5 in (40 cm)
	Width:	16.75 in (43 cm)
	Depth:	8.125 in (21 cm)
Weight:		21 lbs (9.6 kg)

Product specifications are subject to change without notice

SERVICE NOTES

1. **CHASSIS REMOVAL** is accomplished by first removing the five (5) screws from the cabinet back panel. The cab back may be removed by gently prying it out using a flat screwdriver. Next remove the three (3) screws from the back of the chassis into the top of the cabinet. Last remove the four (4) chassis screws at the cabinet top that secure the chassis. Disconnect the speaker wires form the speaker and gently slide the chassis out from the rear.
2. **DSP PCB REMOVAL** is accomplished by removing the three (3) screws that secure the DSP PCB to the main board. Carefully remove the two (2) ribbon cables to the keypad PCB and LCD at P24A and P71. Gently lift the DSP PCB up and disconnecting it from the header on the main board.
3. **MAIN PCB REMOVAL** is accomplished by first removing the two (2) nuts from the front panel jacks. Next remove the three (3) knobs and then removing the nuts and washers at the pots. Then remove the two (2) PCB mounting screws. Disconnect all ribbon cables (P6A, P9A, P10A), transformer wire connector (P5), and unplug the speaker wire faston connectors at P1-P2. Last remove the two (2) screws, nuts, and washers from the main heatsink at the chassis bottom. If the DSP PCB is still connected, remove the two (2) ribbon cables from the keypad PCB and LCD at P24A and P71. Gently slide the PCB back enough for the jacks and pots to clear the chassis holes. ***It is recommended that as much troubleshooting and rework as possible be performed with this PCB installed in the chassis with the DSP PCB connected.***
4. **REAR PCB(S) REMOVAL** is accomplished by removing all nuts and screws at the jacks. Disconnect the ribbon cables from the headers (P6B, P9B, P10B) and unplug the black/white wires from P1-P2 on the main board.
5. **KEYPAD PCB REMOVAL** is accomplished by first removing all the ribbon cables at the DSP PCB (P24A, P71). Next remove the four (4) screws holding the plastic faceplate to the chassis. Then remove the five (5) screws securing the PCB. Remove the grey data wheel and the nut/washer at the encoder. Disconnect the wire connector at P11. The PCB may now be removed from the faceplate.

PCB EXCHANGE POLICY

Parts marked with a single asterisk (*) in the Part Lists are not field replaceable. If a failure due to one of these components is detected, please contact the FMIC Customer Service Department to order the complete PCB Assembly.

CIRCUIT DESCRIPTION

This section provides concise information about new or unusual circuitry designs incorporated into this amplifier model. The purpose is to aid the service technician by providing insight into the design areas most likely to become obstacles in troubleshooting. Information is focused for its effective use while maintaining the security of Fender® proprietary information wherever possible.

Note: Troubleshooting to component level on the Main and Keypad PCBs is best accomplished in Self-Test Mode (pass thru screen). Refer to Self-Test Procedure found after DSP PCB. All test points found on the service diagram are located on the Main PCB top for easy access.

MAIN PCB - ANALOG INPUTS/OUTPUTS

Op-amps U1A-B provide high impedance inputs to the front and rear instrument inputs with 12db of input gain. Op-amps U3A-B comprise differential amps (unity gain) for increased noise immunity. Op-amps U4A-B provide differential inputs with 12dB of gain to the Aux In L&R signals. Buffer amplifiers U50A-B, U51A-B, U12A-B, and U53A-B provide differential inputs to the ADCs U11 and U21. These stages attenuate 15dB to compensate the for the full scale input voltage of the ADCs. These inputs are biased to +2.51VDC reference voltage from the VQ pins on U11 and U21.

Op-amps U52A-B act as a differential reconstruction filter (anti-aliasing) for the main (instrument, aux in, MIDI) stereo output signals received from DAC U6, and stereo Line Out signals from DAC U30.

Op-amps U24A-B and followers U14A-B provide 12dB of gain and sufficient current capability to drive the stereo Phones jack.

MAIN PCB - POWER AMPLIFIER

Input signal is applied to the power amp at C120. The power amplifier U10 (LM3886) is provided negative current feedback from sense resistor R119 through C92 and R112. DC feedback is provided by network R102, R108, and C92. Current feedback affects the power amplifier output resistance so it reacts with the speaker load similar to a tube amplifier. The main internal speaker (8ohms minimum load) is connected at P3-4. The internal speaker is disconnected if a connection is made to the External Speaker Out jack J8.

MAIN PCB - POWER IC BIAS/MUTE PIN

Power IC U10 (LM3886) has a bias/mute pin which requires >1mA of current for the amplifier to come out of mute. When AC power is first applied, the base of Q11 is held at -31VDC keeping Q11 off and preventing current flow from bias pin U10.8. The power amplifier remains muted until C118 charges to a voltage above zener D11 (10V) and Q11 Vbe (approximately -21VDC) and Q11 turns on allowing current to flow.

If nothing is plugged into the Phones jack, R48 is held at ground turning on PNP transistor Q8. With Q8 on, the collector of Q8 is at +5VDC driving the base of Q6 to above -5.5VDC. Zener D10 clamps the emitter of Q6 to -6VDC. With the base of Q6 above -6VDC, Q6 turns on allowing current to flow from bias pin U10.8 bringing the amplifier out of mute. If headphones (or other ¼" plug) are connected to the Phones jack, R48 is lifted from ground turning off Q8. This forces the base of Q6 to below -6VDC shuting it off and preventing current from flowing from bias pin U10.8 muting the amplifier. The current through Q11 is now shunted from D10.

DSP PCB

The DSP PCB is connected to the main PCB via 30 pin header U24 for all power supply, master clock and I/O data signals. It also connects to the keypad PCB via connector at P24A for signals to read the front panel buttons, read the 16-position rotary encoder, and drive the front panel LEDs and LCD backlight. The LCD display is connected via the ribbon cable at P71. The DSP PCB contains the microprocessor (uPC) U5 (DSPB56367) and associated memory (static RAM U7-9, flash ROM U16).

Note: Troubleshooting this PCB to component level beyond verification of power supplies, clock, and data signals is NOT recommended. Use Self-Test Mode to test all controls and DSP functions.

Self-Test Mode Procedure:

1. Apply power to unit while holding Song/Tuner and Amp buttons.

2. Follow on-screen directions. In the event of errors, messages will be displayed on the screen. Press Exit to skip to next test.

3. After passing all self tests, at pass thru screen (last test) set Gn=0.5 (use Data Wheel) to verify test point voltages on service diagram.

KEYPAD PCB

The Keypad PCB is a breakaway from the Main PCB and is home to the front panel buttons (S1, S3, S5-14), front panel LEDs (D2-3, D41-49, D51-52), and the Data Wheel (16-position rotary encoder S2). The LCD backlight is connected to at P11.

POWER SUPPLIES

The power transformer (PT) secondaries are connected to the main PCB at connector P5.

The +/-31VDC power supplies for the solid-state power are derived from the red secondary of the power transformer via full bridge rectifiers D15-16, D27-28, and main filter caps C129-130. This yellow center tap lead and the system's chassis connection are placed between these caps, making this the system ground star.

The +/-12VDC power supplies for the op-amps are regulated down from the +/-31VDC supplies through dropping resistors R129-130 and regulators U27 (7812) and U28 (7912).

The +/-5VDC power supplies for the Digital circuitry, front panel LEDs, and LCD backlight are derived from the blue secondary of the power transformer via full bridge rectifiers D59-62 and filter caps C131-132. These raw supplies are then regulated down to +/-5VDC by regulators U20 (7805) and U25 (7905). The center tap (yellow lead mentioned above) is internally connected inside the transformer and is common to all supplies.

The +5VDC supply powers ADCs U11 and U21, DACs U6 and U30, MIDI IN/OUT circuitry, and is regulated down to +2.5VDC (regulator U23) for the Dream Chip U2 and +3.3VDC (regulator U32) for the microprocessor U5 (DSPB56367) and all other chips/memory on both the Main and DSP PCBs. Reset controller U13 monitors the +5V supply and shuts down all ICs in the event of power loss.

The -5VDC supply powers the front panel LEDs and the LCD backlight.

MIDI INTERFACE

MIDI In/Out signals are connected to the main DSP through P6A-B and processed by an auxiliary uPC (U17) and MIDI Synthesizer Chip (U2). MIDI In signals are buffered by opto-isolator U22 and translated to +3.3V logic. MIDI Out signals are buffered by transistor pair Q4-5 which translates to +5V logic.

Note: General MIDI functionality (pass thru) can be tested in Self-Test Mode. Software/firmware updates can be downloaded via MIDI connection to a PC / MAC using Updater utility available from www.fender.com.

USER INTERFACE

Button operation is created by contacts on the backside of the elastomeric keypad shorting to adjacent pads on the keypad PCB when pressed.

The Data Wheel (16 position rotary encoder S2) produces 4 bits of data that is processed directly by the uPC. All user interface buttons and the red/green LED status of the Save (D3 and D51), Song/Tuner (D4 and D52), and Start-Stop (D2) buttons are also directly controlled by the uPC.

The 3 potentiometers (Volume VR60, Guitar Tone VR2, and Backing Level VR1) generate DC voltages (+3.3V to 0V) that are read by A/D inputs (pins 2-4) on the auxiliary uPC (U17) for processing by the uPC.

FOOTSWITCH

The optional ULT-4 footswitch is connected at the Footswitch jack J5 with a standard 2 conductor cable. The ULT-4 footswitch has an internal uPC which directly communicates with pins 5, 7, and 26 of the auxiliary uPC (U17) on the main PCB to handle all switching and tuner functions.

G-DEC® 30

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.PARTS LIST: MAIN – PCB ASSEMBLY

QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0072798000	*PCB ASSY G-DEC 30 MAIN	COMPLETE PCB ASSY
	FIELD SERVICE ON THIS ASSY. LIMITED TO THE PART NUMBERS LISTED BELOW		
2	0072781000	JACK DIN 5 B/GDEC 30	J9-10 **MIDI IN, MIDI OUT**
3	0062770000	CONTROL SNAPIN 10k2B W/ DTNT RUMBLE	VR1-2, VR6 **BACKING LVL, GTR TONE, VOL**
1	0072778000	ENCODER 16PS 4BITGRY RTRY B/GDEC 30	S2 **DATA WHEEL**
1	0066396000	IC POWER AMP 56W/MUTE LM3886	U10
1	0072801000	*HEATSINK G-DEC 30	@ U10
1	REF	SCREW M) 3X10 BLK B/H	@ U10
1	REF	NUT M) 3 NIP	@ U10
1	REF	WASHER LOCK DIA 3.0	@ U10
1	REF	BUSHING PATR-2935	@ U10
1	REF	MICA PAD MULTIWATT-15	@ U10
4	0072789000	JACK MONO 1/4" B/GDEC 30	J1 J2 J5 J8 **INPUT (F/R), FTSW, EXT SPKR**
1	0072780000	JACK RCA DUAL B/GDEC 30	J3 **AUX IN**
2	0070924000	JACK STEREO 1/4" B/GDEC 30	J6 J7 **LINE OUT (RT, LFT)**
1	0072790000	JACK STEREO 1/4" HP B/GDEC 30	J4 **PHONES**

PARTS LIST: DSP – PCB ASSEMBLY

QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0069345000	*PCB ASSY DEC 30 DSP	COMPLETE PCB ASSEMBLY

PARTS LIST: CHASSIS ASSEMBLY

QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	REF	CHASSIS G-DEC 30	
1	REF	PANEL FRONT B-DEC 30	
1	REF	PANEL REAR B-DEC 30	
1	0053860000	**CAP MPF .1uF 250VAC 20%	@ AC INLET
1	0072813000	**XFMR B/GDEC 30 120V	
-	0072814000	**XFMR B/GDEC 30 230V	
-	0072815000	**XFMR B/GDEC 30 100V	
3	0072851000	KNOB ROTARY G-DEC 30	@ POTS
1	0072779000	KNOB ENCODER B/GDEC 30	DATA WHEEL
1	0069960000	**SWITCH RUMBLE SERIES	POWER SWITCH
1	0072791000	**IEC INLET W/ FUSE B/GDEC 30	AC INLET
2	REF	SCREW M) 3X8 BLK F/H	@ AC INLET
1	0048381000	**FUSE F1A 5X20MM	100-120V UNITS ONLY
-	0048377000	**FUSE F500mA 5X20MM	230-240V UNITS ONLY
3	REF	FERRITE CORE HF70 SH 35X1.3X12	@ RIBBON CABLES TO DSP PCB
1	REF	BUSHING 3N-4P	@ SPKR WIRES
3	REF	STANDOFF M 2.6X11.5L	@ DSP PCB
6	REF	SCREW M) 2.6X6 ZNP B/H	@ DSP STANDOFFS
3	REF	SCREW M) 4X10 ZNP T/H	@ XFMR, GND
3	REF	FLANGE NUT M) 4 ZNP	@ XFMR, GND
2	REF	SCREW M) 3X10 BLK B/H	@ HEATSINK
4	REF	NUT M) 3 NIP	@ HEATSINK / AC INLET

* Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

shaded + * Access to this part or assembly is controlled. Please contact the FMIC Customer Service Department.

** Safety Requirement part. Replacement must match Safety Agency…–*Value,* if specified –*Type,* if specified –*Approval Mark(s)* if on part.

shaded + ** Both a unique Fender® part and a Safety Requirement part as defined above.

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PARTS LIST: CHASSIS ASSEMBLY

QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
2	REF	WASHER LOCK DIA 3.0	@ HEATSINK
6	REF	SCREW TF) 4-40X6 ZNP B/H	@ FACEPLATE / MAIN PCB
1	0072784000	*FACEPLATE B/GDEC 30	
1	REF	WINDOW ACRL 59X38X1.0 T	@ FACEPLATE
1	0072786000	*KEYPAD B/GDEC 30	@ FACEPLATE
1	0072785000	*LCD MODULE B/GDEC 30	@ FACEPLATE
4	REF	SCREW T) 1.6X4 BLK R/H-#2	@ LCD MODULE
5	REF	SCREW T) 2X6 BLK R/H	@ FACEPLATE / KEYPAD PCB
1	REF	CABLE RIBBON 5 CKT	@ P9A-P9B
2	REF	CABLE RIBBON 6 CKT	@ P6A-P6B, P10A-P10B
1	REF	CABLE FLEX FLAT 20 CKT	@ P24A-P24B
1	REF	SCREW T) 3X10 BLK P/H-#2	@ RCA JACK
4	REF	SCREW T) 2.1X8 BLK R/H	@ MIDI JACKS
3	REF	WASHER TOOTH AW-3	@ AC INLET / DSP PCB

PARTS LIST: CABINET ASSEMBLY

QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
1	0072800000	*CABINET ASSY G-DEC 30	COMPLETE CABINET
4	0029071000	CORNER 2 HOLE NI	@ CAB REAR
2	0026566000	CORNER 2 HOLE W/HOOK	@ CAB FRONT BTM
8	REF	SCREW T) 3.5X10 NIP T/H-#1	@ CORNERS
1	0062774000	HANDLE RUMBLE 60/100	W/ INSERT
2	0072792000	BRACKET HANDLE GDEC 30	@ HANDLE
2	REF	SCREW M) 4X30 NIP O/H	@ HANDLE
7	REF	NUT T M4	@ CAB BACK / HANDLE
4	REF	STUD BOLT M) 4X35L BLK	@ BAFFLE (SPEAKER)
4	REF	SCREW T) 3.5X30 BLK T/H-#1	@ BAFFLE CLEATS
4	0072803000	FOOT RUBBER 18X10	
4	REF	SCREW T) 3.5X15 BLK T/H-#1	@ FEET

***** Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

shaded + ***** Access to this part or assembly is controlled. Please contact the FMIC Customer Service Department.

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shaded + ****** Both a unique Fender® part and a Safety Requirement part as defined above.

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PARTS LIST: **END ITEM ASSEMBLY**

QTY.	PART #	DESCRIPTION	REFERENCE DESIGNATION
5	REF	SCREW M) 4X30 BLK T/H	@ CAB BACK
1	0072797000	SPEAKER 10" 8 OHM G-DEC 30	
4	REF	NUT FLANGE M) 4 ZNP	@ SPEAKER
1	0047248000	**CORD PWR W/IEC CONN DOM	120V ONLY
-	0047249000	**CORD PWR W/IEC CONN 230V UK	230V UK ONLY
-	0047250000	**CORD PWR W/IEC CONN 240V	240V AUS ONLY
-	0047251000	**CORD PWR W/IEC CONN 230V	230V EUR ONLY
-	0053997000	**CORD PWR W/IEC CONN 100V JPN	100V JPN ONLY
1	0072802000	*BADGE G-DEC 30	
2	REF	SCREW T) 2.1X10 NIP R/H	@ BADGE
1	0029906000	*NAMEPLATE FENDER GENERIC	
2	REF	SCREW T) 2.8X12 BLK O/H	@ NAMEPLATE
1	REF	MANUAL OWNERS G-DEC 30	
4	REF	SCREW NO. 8 U32X30 BLK O/H	@ CHASSIS
3	REF	SCREW M) 3.5X10 BLK T/H	@ CHASSIS REAR
4	REF	WASHER BLK FINISHING TYPE	@ CHASSIS

***** Non-serviceable part. Replace complete parent assembly. See PCB EXCHANGE POLICY section above.

shaded Unique Fender® part. Order directly from the FMIC Parts Department.

shaded + ***** Access to this part or assembly is controlled. Please contact the FMIC Customer Service Department.

****** Safety Requirement part. Replacement must match Safety Agency…*–Value,* if specified *–Type,* if specified *–Approval Mark(s)* if on part.

shaded + ****** Both a unique Fender® part and a Safety Requirement part as defined above.

Service Diagram List

Service Diagram (Schematic) .....DEC 30 MAIN PCB
Service Diagram (PCB Assembly) .....DEC 30 MAIN PCB
Service Diagram (Schematic) .....DEC 30 DSP PCB
Service Diagram (PCB Assembly) .....DEC 30 DSP PCB

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR 683/695	21-AUG-06	dBL
B	UPDATE	03-OCT-06	dBL

REAR PANEL INPUT PCB

GDEC ONLY

REAR ANALOG PCB

BDEC ONLY

(BDEC COMPONENT VALUES)

OUTPUT POWER: (PASS THRU MODE) [6]
0.92VRMS, 1kHz SINEWAVE INPUT AT J1 (BDEC 30)
1.04VRMS, 1kHz SINEWAVE INPUT AT J1 (GDEC 30)
30W (15.5VRMS) MIN @ <0.02% THD INTO 8ohm
RESISTIVE LOAD AT J8 (TPT34)
UNIT AT RATED LINE VOLTAGE

VOLTAGE	FUSE VALUE (F1)	XFMR P/N (T1)
100V	F1AL 250V 5x20mm	PA101381
120V	F1AL 250V 5x20mm	PA101376
220-240V	F500mAL 250V 5x20mm	PA101380

[6] AC AND DC VOLTAGES READ TO GROUND WITH A DVM UNDER THE FOLLOWING CONDITIONS:
UNIT AT RATED LINE VOLTAGE, 8ohm RESISTIVE LOAD AT J8
NO INPUT SIGNAL (TPT1-17, TPT58-60)
INPUT AT J1 FOR TPT18-34, TPT49-55
INPUT AT J2 FOR TPT35-39 ONLY
INPUT AT J3 FOR TPT40-48 ONLY
CONTROLS AT 50% ROTATION, FOOTSWITCH NOT CONNECTED
VOLTAGES MAY VARY +/- 20%
UNIT IN TEST MODE: (PRESS AND HOLD SONG/TUNER + AMP AT POWER ON)
FOLLOW DIRECTIONS ON SCREEN THROUGH SELF TESTS (PRESS EXIT TO SKIP)
AT PASS THRU SCREEN SET GN=0.5 (USE DATA WHEEL)

5. THIS SCHEMATIC IS FOR PCB FABRICATION P/N 683ICT008 AND PCB ASSEMBLIES P/N 683ICT009 (BDEC 30) AND 695ICT020 (GDEC 30).
4. ALL DIODES ARE 1N4448.
3. ALL POLARIZED CAPACITORS IN uF, 20%; 50V 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)

CHECKED BY: _____
DATE: _____
APPROVED BY: _____
DATE: _____
DRAWN: CCA/dBL ENGR: CCA/dBL
DATABASE FILE: Z683S1.SCH

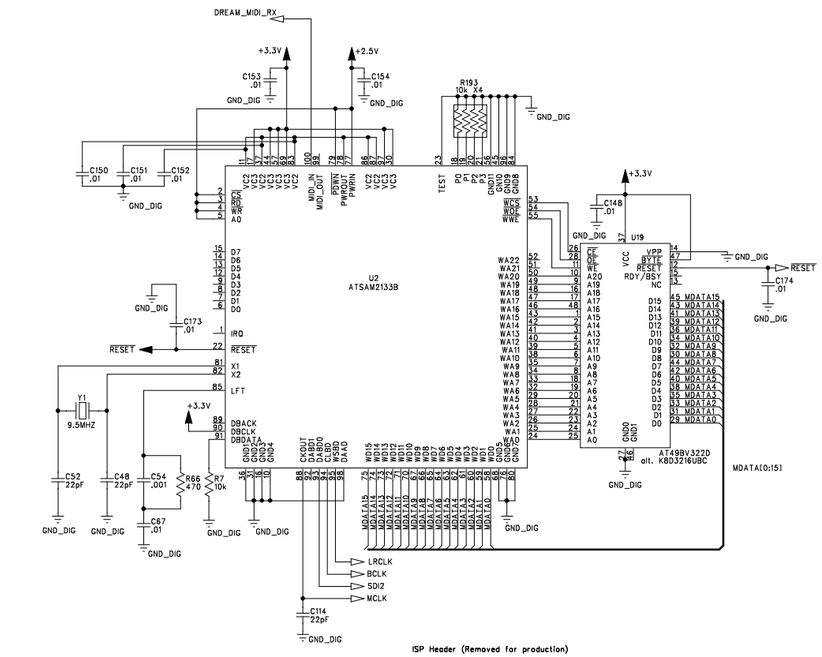
Fender MUSICAL INSTRUMENTS
Corona, CA U.S.A.

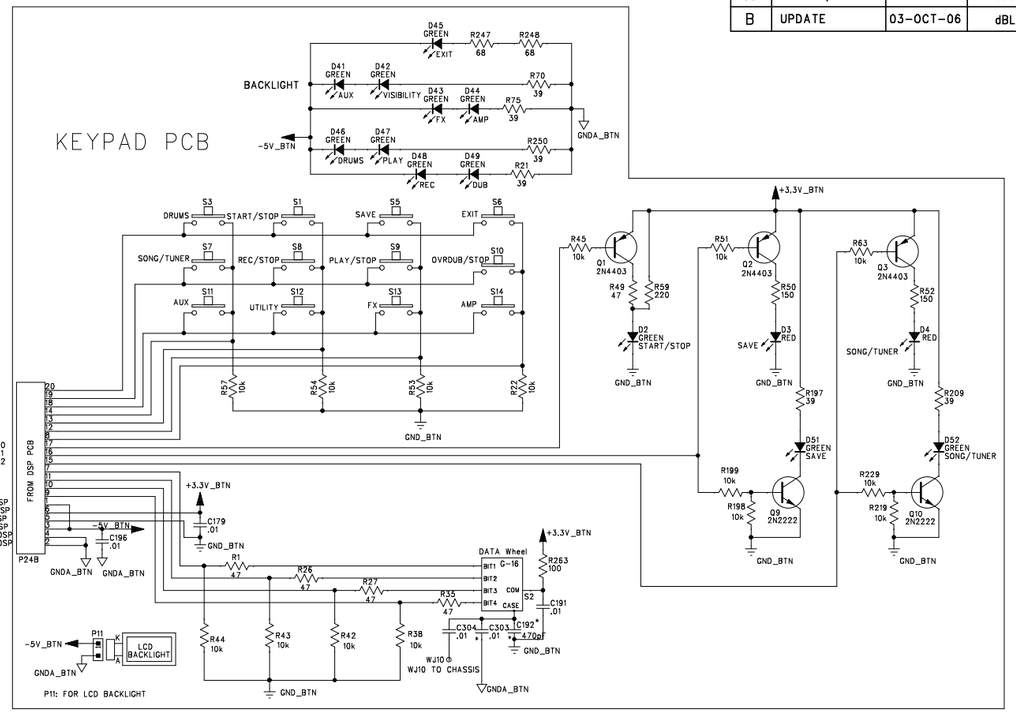
TITLE: SERVICE DIAGRAM, COMBINED (schematic)
DEC 30 MAIN
ANALOG SECTION

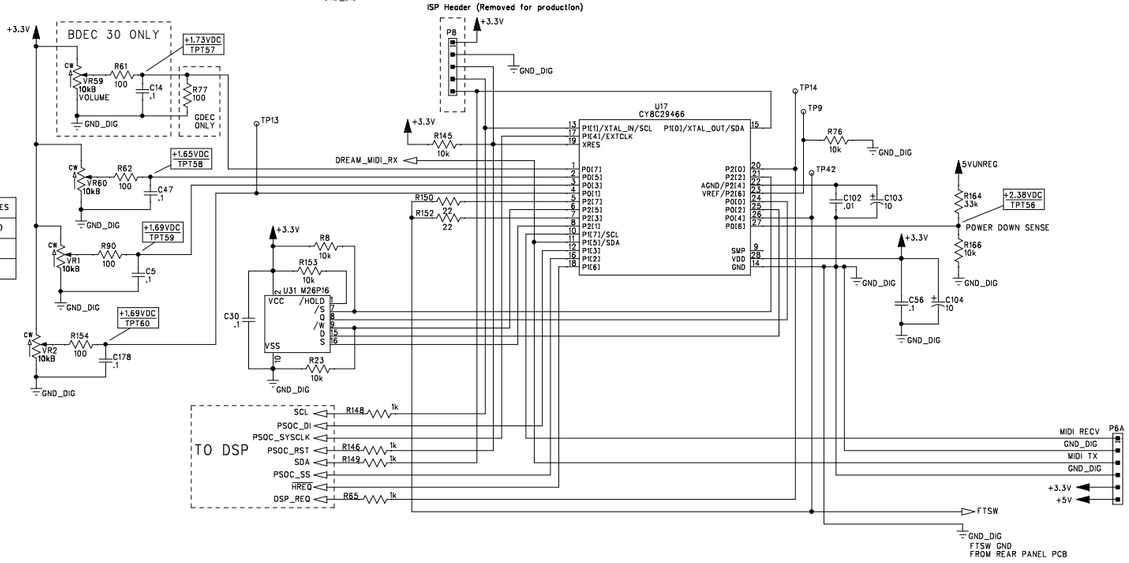
SIZE	DRAWING NUMBER	REV.
D	683ICT010	B

RELEASE DATE: 17-AUG-06 SHEET: 1 OF 3

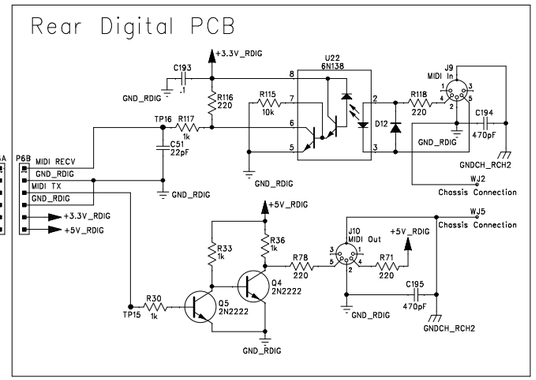
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR 683/695	21-AUG-06	dBL
B	UPDATE	03-OCT-06	dBL







BDEC 30	GDEC 30	REF DES
BASS	VOLUME	VR60
MID	GUITAR TONE	VR2
TREBLE	BACKING LEVEL	VR1



NOTES: (SEE SHEET 1)

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

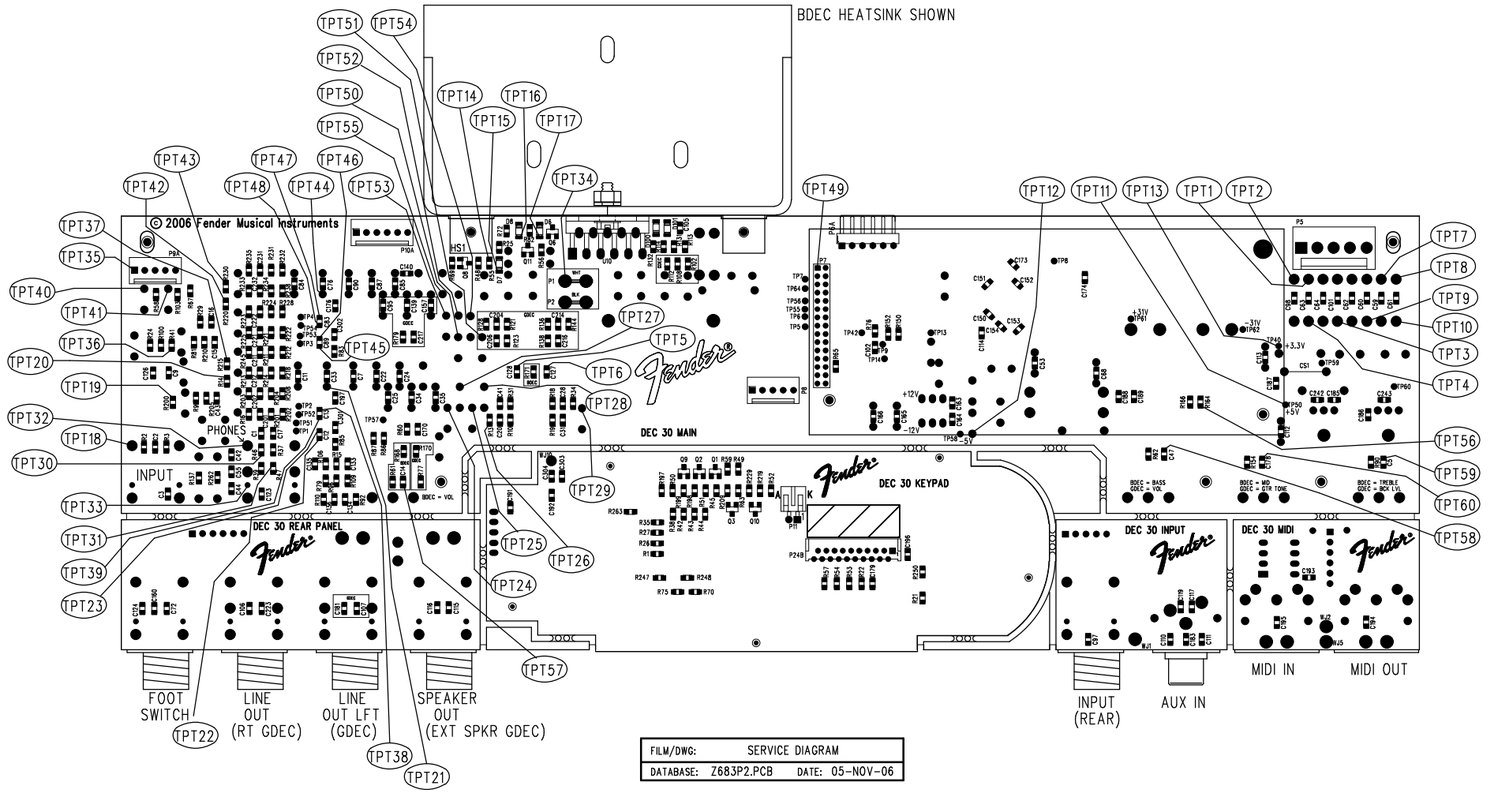
CHECKED BY: _____
DATE: _____
APPROVED BY: _____
DATE: _____
DRAWN: CCA/dBL | ENGR: CCA/dBL
DATABASE FILE: Z683S1.SCH

TITLE: SERVICE DIAGRAM, COMBINED (schematic)
DEC 30 MAIN
DIGITAL SECTION/KEYPAD

SIZE	DRAWING NUMBER	REV.
D	683ICT010	B

RELEASE DATE: 15-AUG-06 | SHEET: 2 OF 3

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR 683/695	18-AUG-06	dBL
B	UPDATE	05-NOV-06	dBL



FILM/DWG:	SERVICE DIAGRAM
DATABASE: Z683P2.PCB	DATE: 05-NOV-06

1. SEE SHEETS 1-2 FOR PRIMARY WIRING, TEST CONDITIONS, TEST POINT VALUES, AND STUFFING DIFFERENCES BETWEEN MODELS.

NOTES: (UNLESS OTHERWISE NOTED)

CHECKED BY: _____
DATE: _____

APPROVED BY: _____
DATE: _____

DRAWN: D. Lewis | ENGR: D. Lewis

DATABASE FILE: Z683P1.PCB

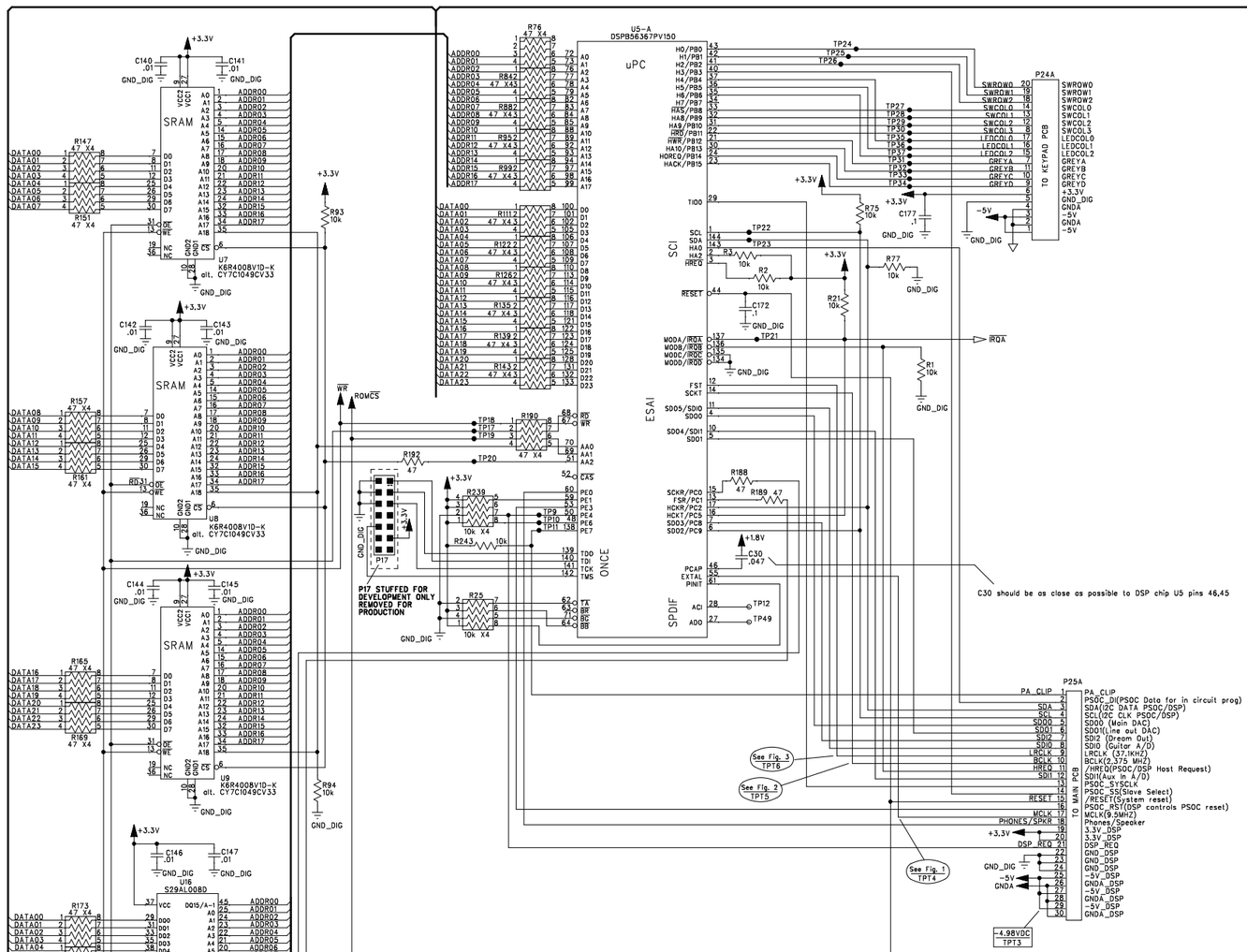
Fender® MUSICAL INSTRUMENTS
Corona, CA U.S.A.

TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)
DEC 30
MAIN PCB

SIZE	DRAWING NUMBER	REV.
C	683ICT010	B

RELEASE DATE: 17-AUG-06 | SHEET 3 OF 3

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR 683/695	09-AUG-06	CCA/dBL
B	EC ICT3833	15-DEC-06	dBL



WAVEFORMS

FIG. 1 — MCLK 9.5MHz — 3.2VDC / 0VDC — .11usec

FIG. 2 — BCLK 2.375MHz — 3.2VDC / 0VDC — .42usec

FIG.3 — LRCLK 37.1kHz — 3.2VDC / 0VDC — 27usec

NOTES: (UNLESS OTHERWISE NOTED)

1. ALL RESISTORS IN OHMS, 5%; 1/10W.
2. ALL UNPOLARIZED CAPACITORS IN uF, 10% OR BETTER; 50V MINIMUM. (POWER SUPPLY BYPASS CAPACITORS ARE 20%).
3. ALL POLARIZED CAPACITORS IN uF, 20%; 50V MINIMUM.
4. ALL DIODES ARE IN4448.
5. THIS SCHEMATIC IS FOR PCB FABRICATION P/N 683ICT018 AND PCB ASSEMBLY P/N 683ICT019.
6. DC VOLTAGES MEASURED TO GND WITH DVM, NO INPUT SIGNAL, UNIT AT RATED LINE VOLTAGE.
7. AC WAVEFORMS MEASURED TO GND WITH OSCILLOSCOPE, NO INPUT SIGNAL, UNIT AT RATED LINE VOLTAGE.

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

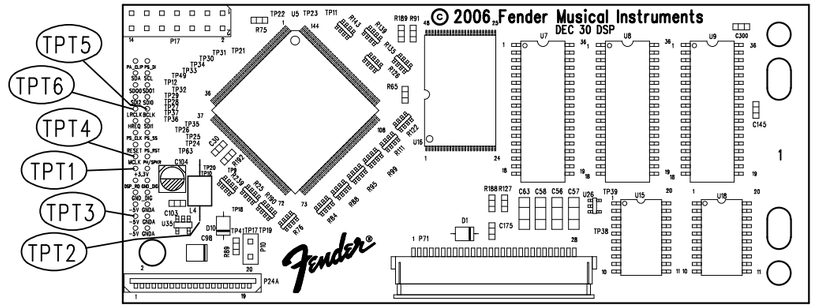
CHECKED BY: _____ DATE: _____
APPROVED BY: _____ DATE: _____
DRAWN: CCA/dBL ENGR: C. ADAMS
DATABASE FILE: DEC30_DSP.SCH

TITLE: SERVICE DIAGRAM, COMBINED (schematic)
DEC 30
DSP PCB

SIZE	DRAWING NUMBER	REV.
D	683ICT020	B

RELEASE DATE: 09-AUG-06 SHEET: 1 OF 2

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PR683/695	16-AUG-06	dBL
B	EC ICT3833	15-DEC-06	dBL



FILM/DWG:	SERVICE DIAGRAM
DATABASE: Z683P2.PCB	DATE: 15-DEC-06

2. L4 STUFFED WITH JUMPER.

1. SEE SHEET 1 FOR TEST POINT VALUES.

NOTES: (UNLESS OTHERWISE NOTED)

CHECKED BY: _____

DATE: _____

APPROVED BY: _____

DATE: _____

DRAWN: CCA/dBL | ENGR: CCA/dBL

DATABASE FILE: Z683P2.PCB

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

TITLE: SERVICE DIAGRAM, COMBINED (PCB assy)
DEC 30
DSP PCB

SIZE	DRAWING NUMBER	REV.
B	683ICT020	B

RELEASE DATE: 05-NOV-06 | SHEET 2 OF 2