Marshall

DSL40CR

SERVICE MANUAL

BOOK-80015-01

MARSHALL.COM

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THE DSL40CR HAS BEEN DESIGNED WITH A 12" G-12 V-TYPE SPEAKER FOR THOSE WHO NEED EXCEPTIONAL TONE AND FLEXIBILITY. WITH RICH FUNCTIONALITY INCLUDING THE ABILITY TO MOVE BETWEEN TWO SOUNDS WITHIN EACH GAIN CHANNEL, PLAYERS CAN EXPERIMENT AND RELEASE THEIR PERSONALITY THROUGH SOUND.

DSL40CR

VALVES
4 x ECC83, 2 x EL34

CHANNELS
2, ultra gain and classic gain

POWER CONTROL
40W or 20W

EQUALISATION
Tone shift switch, treble, middle, bass,
deep EQ shift, resonance and presence

EFFECTS
Reverb (per channel)

SPEAKER
1 x 12" Celestion V-Type

SPEAKER OUTPUTS
5 x 1/4" jack sockets
(16Ω load/8Ω load/4Ω load)

OUTPUTS
1 x 1/4" jack emulated line out
Effects loop send/return

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WARNING! SAFETY INSTRUCTIONS

PLEASE READ THE FOLLOWING NOTICE IN FULL BEFORE ATTEMPTING TO REPAIR, SERVICE OR DISMANTLE ANY ITEM OF MARSHALL AMPLIFICATION PLC.

PLEASE NOTE THAT FAILURE TO OBSERVE THE CONDITIONS SET OUT IN THIS NOTICE MAY RESULT IN DEATH OR SERIOUS INJURY TO YOURSELF AND/OR OTHERS. IT MAY ALSO INVALIDATE THE MANUFACTURER'S WARRANTY IN RESPECT OF THE ITEM OF EQUIPMENT CONCERNED.

1. The information contained in this Service Manual (and in all annexes, diagrams and documents attached to or accompanying this Service Manual) is intended to be used by authorised Marshall Amplification Plc service centres or by approved waste electrical and electronic equipment reprocessing and recycling centres only.

2. All repairs and servicing of Marshall Amplification Plc equipment ('Marshall Equipment') should only be carried out by suitably trained and qualified personnel at an authorised Marshall Amplification Plc service centre. For details of your nearest authorised service centres please contact the 'Service Department' at Marshall Amplification Plc.

3. All reprocessing and recycling of Marshall Equipment at the end of its useful life should only be carried out by suitably trained and qualified personnel at properly approved waste electrical and electronic equipment reprocessing and recycling centres.

4. Marshall Equipment should always be fully disconnected from the mains electricity supply before attempting to carry out any repair, servicing or disassembly.

5. Even when Marshall Equipment has been disconnected from the mains electricity supply it may still retain high voltage electrical charges that are potentially hazardous to life and health. Marshall Equipment may also contain parts that remain at a high temperature for a considerable period of time after use. Extreme caution should always therefore be exercised when carrying out any repairs, servicing or disassembly of any Marshall Equipment.

6. All Marshall Equipment (including its component parts) conform and comply with relevant laws applicable at the time of manufacture (including but not limited to laws relating to electrical safety, electromagnetic compatibility and the presence of hazardous substances.) Furthermore all components are specific for their intended use and have undergone appropriate conformity approval. In the event that during the repair or servicing of any Marshall Equipment it is necessary to replace any component, part or material, it is therefore essential that only components, parts or materials that have been approved by Marshall Amplification Plc should be used.

7. Any safety warnings attached to an item of Marshall Equipment will comply with laws and industry standards applicable at the time such item of Marshall Equipment was manufactured but may not necessarily reflect current law or standards. No safety warning attached to any item of Marshall Equipment should be removed during servicing or repair.

Save as set out below, Marshall Amplification Plc accepts no responsibility for any death, injury, loss or damage arising from any non-observance of the above conditions.

Nothing in these conditions shall limit Marshall Amplification Plc's liability for death or injury to the extent that it results from their direct negligence or its employees.

MAINS INPUT & FUSE

The specific mains input voltage rating that your amp has been manufactured for is indicated on the rear panel of the amp. Your amp is provided with a detachable mains (power) lead, which should be connected to the mains input socket on the rear panel of the amp. The correct value and type of mains fuse is specified on the rear panel of the amp.

Never attempt to bypass the fuse or fit one of the incorrect value or type.

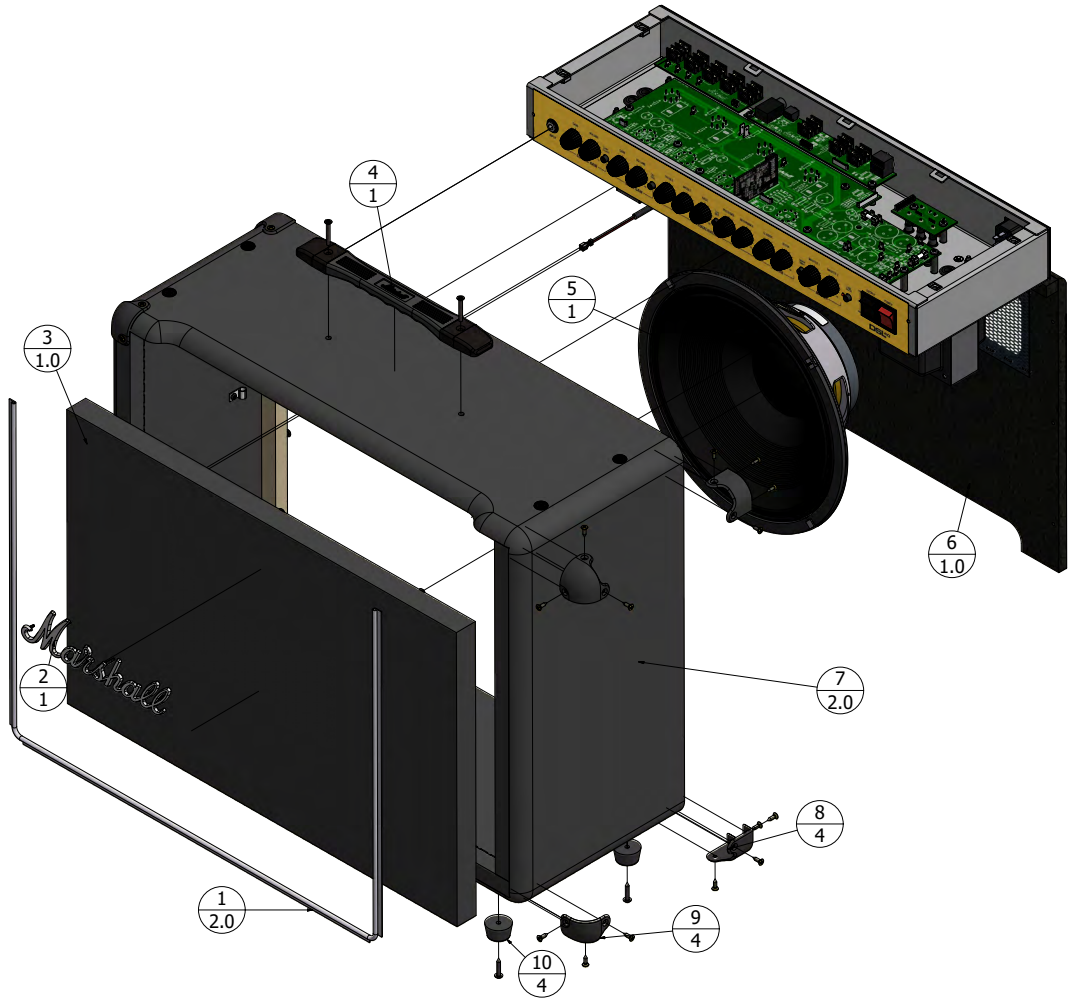
COUNTRY IDENTIFICATION CODES

COUNTRY IDENTIFICATION CODES LISTED BELOW ARE USED THROUGHOUT THIS SERVICE MANUAL.

CODE	COUNTRY	CABLE (UK/VT)	VOLTAGE	POWER
A	Australia, New Zealand	CBLM-00007 / CBLM-90004	230V	50HZ
B	Brazil	CBLM-00011 / CBLM-90005	127V	60HZ
C	Canada	CBLM-00002 / CBLM-90003	120V	60HZ
D	Argentina	CBLM-00010 / CBLM-90007	220V	50HZ
E	Andorra, Armenia, Austria, Bolivia, Bulgaria, Chile, Croatia, Cyprus, Czech Republic, Gran Canaria, Egypt, Estonia, France, French Polynesia, Germany, Ghana., Greece, Guadeloupe, Hungary, Iceland, India, Iran, Italy, Jordan, Kuwait, Lebanon, Malta, Martinique, Netherlands, New Caledonia, Nigeria, Poland, Portugal, Reunion Island, Russia, Singapore, Slovenia, South Africa, Spain, Tenerife, Thailand, Tunisia, Turkey, Uruguay	CBLM-00003 / CBLM-90002	230V	50HZ
F	Columbia, Costa Rica, Dominican Republic, Equador, El Salvador, Panama, Venezuela	CBLM-00005 / CBLM-90003	120V	60HZ
H	Home Market (UK), Ireland, Malaysia, Gibraltar, UAE, Bangladesh, Northern Cyprus	CBLM-00006 / CBLM-90001	230V	50HZ
I	Israel	CBLM-00015 / CBLM-90009	230V	50HZ
J	Japan	CBLM-00012 / CBLM-90010	100V	50/60HZ
K	Korea	CBLM-00014 / CBLM-90011	220V	60HZ
L	Indonesia	CBLM-00003 / CBLM-90002	230V	50HZ
M	Mexico	CBLM-00005 / CBLM-90003	130V	60HZ
Q	China	CBLM-00013 / CBLM-90013	220V	50HZ
S	Semko Denmark, Sweden, Finland, Norway	CBLM-00003 / CBLM-90002	230V	50HZ
T	Taiwan	CBLM-00009 / CBLM-90003	120V	60HZ
U	USA	CBLM-00005 / CBLM-90003	120V	60HZ
X	Hong Kong	CBLM-00006 / CBLM-90001	220V	50HZ

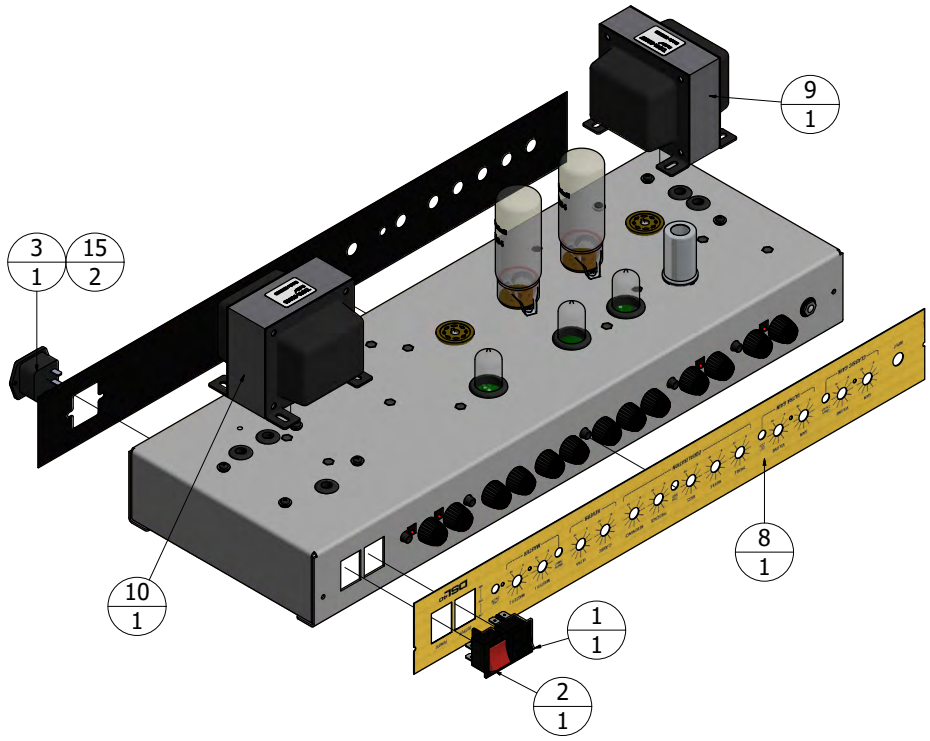
DSL40CR EXTERIOR

PARTS LIST			
ITEM	QTY	DESCRIPTION	STOCK NO.
1	2.0	WHITE PVC 5.0DIA X 13	PIPE-90002
2	1	SMALL WHITE LOGO	LOGO-01204
3	1.0	BLACK FRET COVERING	FRET-90027
4	1	HANDLE OVERMOULD WITH BLACK END CAPS	HNDL-90014
5	1	12" SPEAKER (16OHM) V-TYPE	SPKR-91009
6	1.0	BLACK ELEPHANT GRAIN	CVER-90002
7	2.0	BLACK ELEPHANT GRAIN	CVER-90002
8	4	90 DEGREE REAR CORNER	CORN-91008
9	4	90 DEGREE FRONT CORNER	CORN-91007
10	4	RUBBER FEET (BIG)	FEET-90026



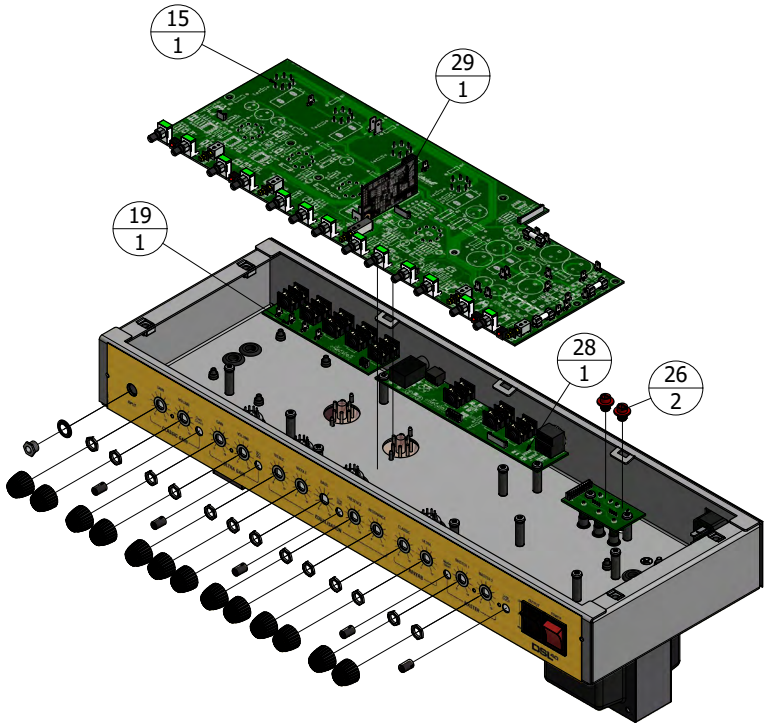
AMP ASSEMBLY

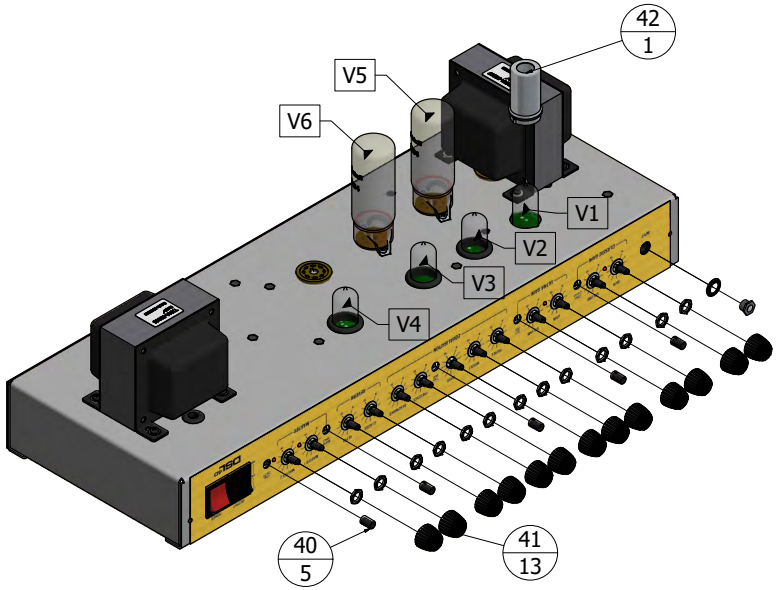
PARTS LIST			
ITEM	QTY	DESCRIPTION	STOCK NO.
1	1	ROCKER BLACK 6 PIN	SWTM-90010
2	1	MAIN SWICH WITH LED	REF. TABLE 6
3	1	IEC POWER SOCKET	SKTM-90002
8	1	DSL40CR FRONT PANEL	REF. TABLE 2
9	1	OUTPUT TRANSFORMER D2507	TXOP-91007
10	1	POWER TRANSFORMER MD175XX	REF. TABLE 1
12	1	DSL40CR REAR PANEL	REF. TABLE 3
15	2	POWER SOCKET LITTELFUSE TO FIT SKTM-90002	REF. TABLE 4



AMP ASSEMBLY (CONTINUED)

PARTS LIST			
ITEM	QTY	DESCRIPTION	STOCK NO.
15	1	MAIN PCB ASSEMBLY	PCBA-90023
19	1	SPEAKER OUTPUT PCB ASSEMBLY	PCBA-00025
26	2	BIAS KNOB 0 DEGREE, RED	KNOB-00052
28	1	REAR PCB ASSEMBLY, DSL-100M2-61-00-V4A	PCBA-90025
29	1	DXF1 MODULE	DFXP-90004
40	5	PUSH SW KNOB D=7	SWTP-90021
41	13	BROWN BODY GOLD CAP KNOB	REF. TABLE 5
42	1	TUBE SHIELD-1 2.4-50 SHORT SPRING	VLVE-90108
	1	VACUUM TUBE ECC83 (V1,V2)	REF. VALVE CHART
	1	VACUUM TUBE ECC83 (V3,V4)	REF. VALVE CHART
	1	VACUUM TUBE EL34 II JJ (V5,V6)	REF. VALVE CHART





AMP ASSEMBLY TABLES

TABLE 1 – MAINS TRANSFORMERS

VOLTAGE SPEC	QTY	DESCRIPTION	STOCK NO.
A, D, E, H, I,K, L, Q, S, X	1	POWER TRANSFORMER MD173DE	TXMA-91066
B, C, F, M, T, U	1	POWER TRANSFORMER MD173DU	TXMA-91067
J	1	POWER TRANSFORMER MD173DJ	TXMA-91068

TABLE 2– FRONT PANELS

MODEL	QTY	DESCRIPTION	STOCK NO.
DSL40CR	1	DSL40CR FRONT PANEL	PANL-91096

TABLE 3 – REAR PANELS – COMBO

VOLTAGE SPEC	QTY	DESCRIPTION	STOCK NO.
A, D, E, H, I,K, L, Q, S, X	1	DSL40CR REAR PANEL 230V	PANL-91097
B, C, F, M, T, U	1	DSL40CR REAR PANEL 120V	PANL-91098
J	1	DSL40CR REAR PANEL 100V	PANL-91099
DSL40CR (CCC)	1	DSL40CR REAR PANEL (CCC)	PANL-91100

TABLE – 4 MAINS INPUT FUSES

VOLTAGE SPEC	QTY	DESCRIPTION	STOCK NO.
A, D, E, H, I, K, L, Q, S, X	1	T1A 5X20 0219001.MXAP	FUSE-90018
B, C, F, J, M, T, U	1	T2A 5X20 0219002.MXAP	FUSE-90017

TABLE 5 – KNOBS

MODEL	QTY	DESCRIPTION	STOCK NO.
DSL40CR	1	BROWN BODY GOLD CAP D FLAT D=19.5, LINE OPP, FLAT TOL 5%	KNOB-90047

TABLE 6 – MAIN SWITCHES

VOLTAGE SPEC	QTY	DESCRIPTION	STOCK NO.
A, D, E, H, I, K, L, Q, S, X	1	MAIN SWITCH WITH RED LIGHT 220V	SWTM-90009
B, C, F, J, M, T, U	1	MAIN SWITCH WITH RED LIGHT 110V	SWTM-90012

VOLTAGE AND WAVEFORM TESTING

TEST POINTS AND RELEVANT WIRING DIAGRAMS WITH RESULTS ALL DISPLAYED IN THE PAGES THAT FOLLOW.

TO TEST VOLTAGES, SET AMPLIFIER TO:

1. Set all pots to maximum (10)
2. No tone shift
3. Output set to “Low”
4. No signal in inputs
5. Amplifier plugged into an 16ohm load
6. Mains Switch “On”
7. Channel set to “Clean”
8. Loop set to “Off”

Voltages 1 to 11 - Power Supply
Voltages 12 - BIAS Switching
Voltages 13 to 24 - PreAmp
Voltages 25 to 31 - PowerAmp
Voltages 32 to 33 - DXF1
Voltages 34 - Emulator

TO TEST SIGNAL, SET AMPLIFIER TO:

1. Set all pots to maximum (10)
2. Output set to “Low”
3. Amplifier plugged into an 16ohm load
4. Signal generator set to 1kHz (9mV rms or 25.46mV pp) sine wave

With signal 9mV rms or 25.46mV pp in (T) JS206 (Return) signal on (T) JS201 (16ohm) = 941mV rms or 2.86V pp.

To get full output on (S) JS201 (16ohm) Signal in Return (T) JS206 set to 90mV rms or 255mV pp signal on (S) JS201 (16ohm)
= 9.1V rms or 25V pp (LOW)
= 19V rms or 58V pp (HIGH)

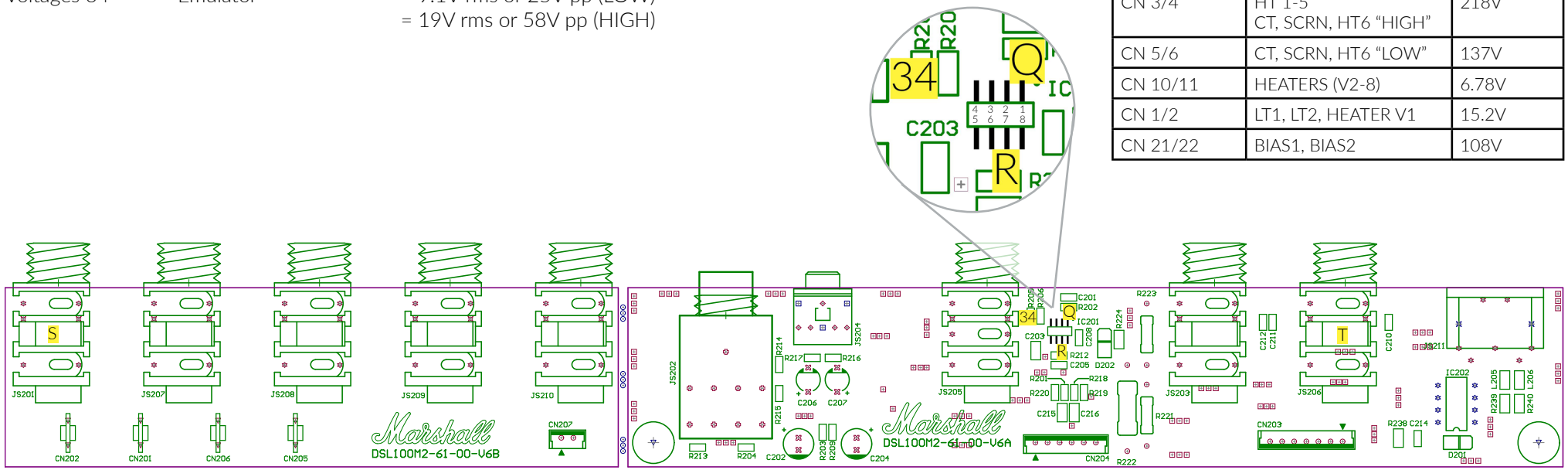
PLEASE NOTE: Due to possible variations in Mains voltages and component tolerances, deviation of up to 20% from the readings is generally acceptable particularly with Waveform/signal readings.

THROUGHOUT THIS SERVICE MANUAL

CL = CLEAN
CR = CRUNCH
OD = OVERDRIVE
B = BASE
E = EMITTER
C = COLLECTOR
TS = TONE SHIFT

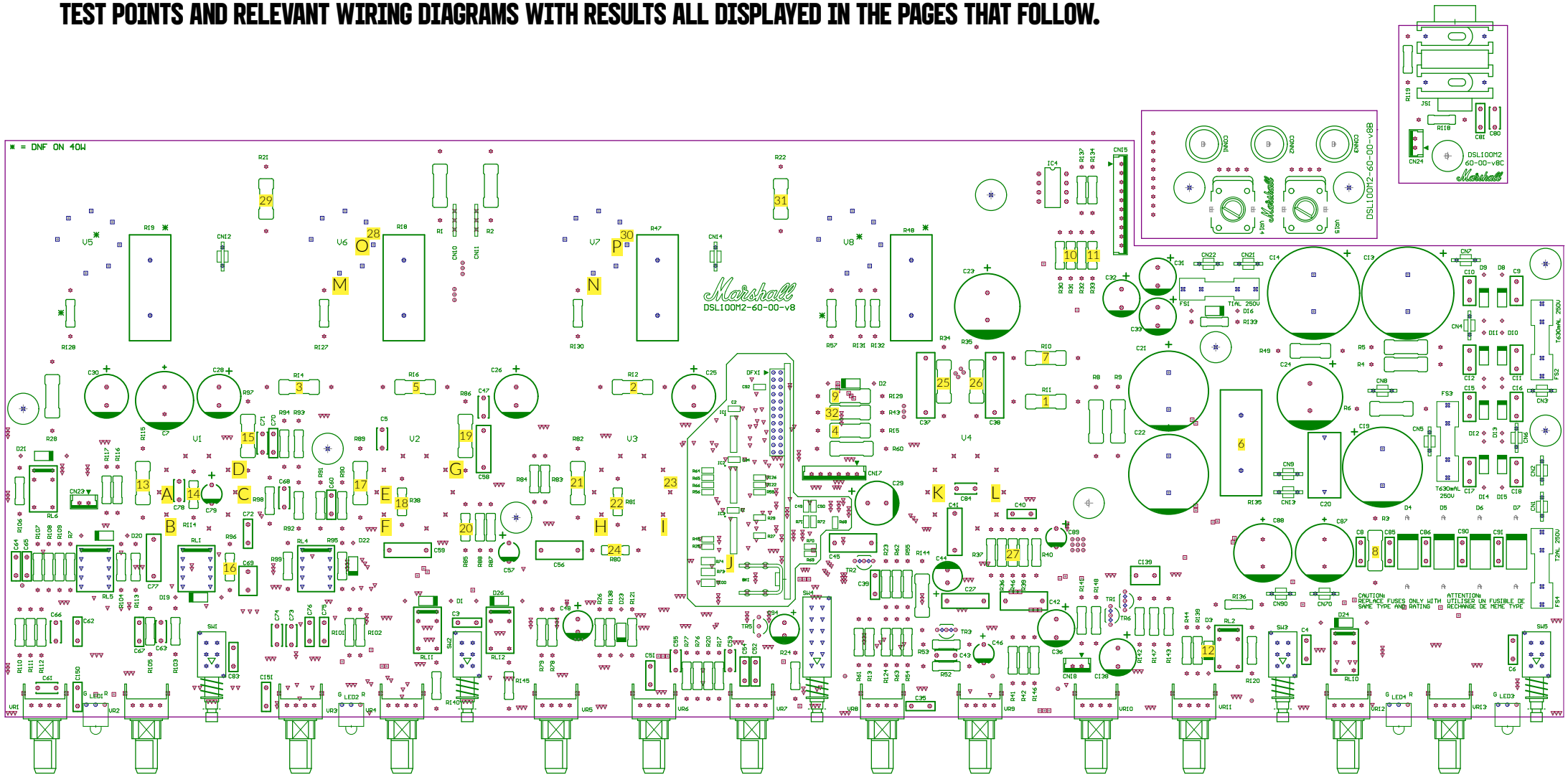
Standby Switch Off

MAINS TRANSFORMER SECONDARY WINDINGS		
TEST POINT	**FEED(S) SUPPLIED**	**VOLTAGE**
CN 3/4	HT 1-5 CT, SCRN, HT6 “HIGH”	218V
CN 5/6	CT, SCRN, HT6 “LOW”	137V
CN 10/11	HEATERS (V2-8)	6.78V
CN 1/2	LT1, LT2, HEATER V1	15.2V
CN 21/22	BIAS1, BIAS2	108V

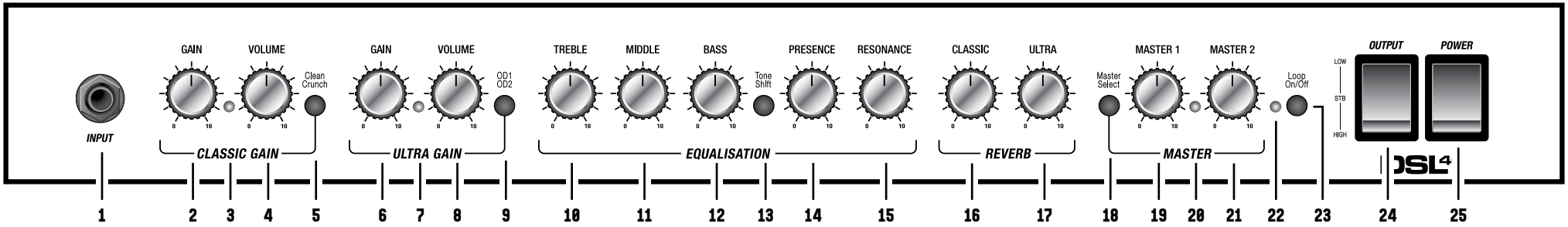


VOLTAGE AND WAVEFORM TESTING (CONTINUED)

TEST POINTS AND RELEVANT WIRING DIAGRAMS WITH RESULTS ALL DISPLAYED IN THE PAGES THAT FOLLOW.



FRONT PANEL FUNCTIONS



1. INPUT
Input jack socket for your guitar cable. Use a good quality screened/shielded guitar cable to help prevent noise interference.

CLASSIC GAIN CHANNEL

2. GAIN
Controls the gain level for the classic gain channel. As the amount of gain increases, so will the distortion level in your sound.

3. MODE STATUS LED
This LED lights green to indicate that clean mode is selected and red to indicate crunch mode is selected.

4. VOLUME
Controls the volume level of the classic gain channel.

5. CLEAN/CRUNCH
Press to select clean or crunch mode. The classic gain channel's two modes take your sound from clean to overdriven tones.

ULTRA GAIN CHANNEL

6. GAIN
Controls the gain level for the ultra gain channel. As the amount of gain increases, so will the distortion level in your sound.

7. MODE STATUS LED
This LED lights green to indicate that OD1 mode is selected and red to indicate OD2 mode is selected.

8. VOLUME
Controls the volume level of the ultra gain channel.

9. OD1/OD2
Press to select OD1 or OD2 mode. The ultra gain channel's two modes go from an open, high gain overdrive to a mid-boosted tone with even higher gain possibilities.

NOTES ON USING CHANNELS AND MODES:
The channel is automatically selected when a mode switch is pressed: Clean/Crunch or OD1/OD2.

When you select a channel its previous mode, FX loop and master volume settings will be recalled.

The channel can also be selected using the supplied 2-way footswitch. When the 2-way footswitch is connected, the front panel mode switch (Clean/Crunch or OD1/OD2) will be active only on the selected channel.

Use the optional 6-way footswitch (PEDL-91016) to switch between channels, modes and more – see the 'DSL footswitching' section in the user manual for further info.

EQUALISATION SECTION

10. TREBLE
Controls the higher frequency content of your sound. Turning clockwise will increase the highs making the sound brighter and more crisp.

11. MIDDLE
Controls the middle frequency of your sound. Turning clockwise adds girth. Turning anticlockwise reduces the middle frequencies 'scooping' your sound – this is accentuated when used in conjunction with Tone Shift.

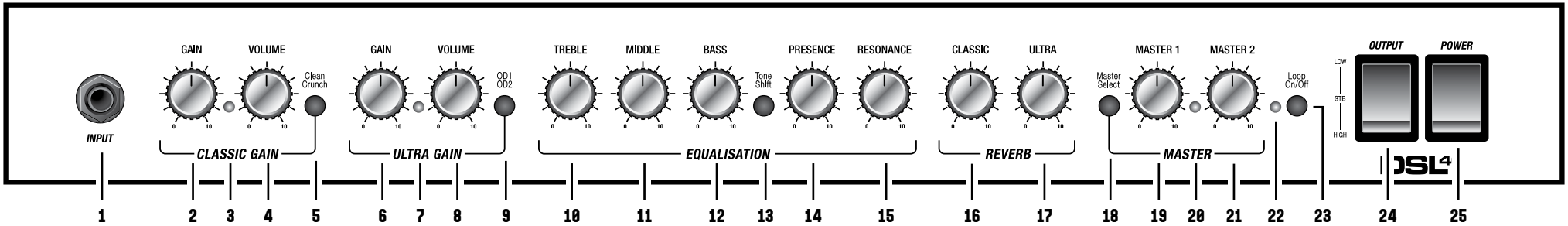
12. BASS
Controls the amount of lower frequency, or bottom-end, in your sound. Turning clockwise will increase the bottom-end making the sound fuller.

13. TONE SHIFT
Tone Shift reconfigures the preamp EQ network adding a new dimension to tonal shaping.

14. PRESENCE
Controls the amount of higher frequencies of your sound. Turn clockwise to add crispness and bite for a more cutting tone. Presence is a power-stage function and acts independently of the preamp EQ controls.

15. RESONANCE
Controls the amount of lower frequencies

FRONT PANEL FUNCTIONS (CONTINUED)



in your sound. Turning this control clockwise adds a resonant bass boost, increasing bottom-end. Resonance is a power-stage function and acts independently of the preamp EQ controls.

REVERB SECTION

16. REVERB CLASSIC
Controls the reverb level of the classic gain channel.

17. REVERB ULTRA
Controls the reverb level of the ultra gain channel.

MASTER VOLUME SECTION

18. MASTER SELECT
This switches between master 1 and master 2.

19. MASTER 1
Controls the overall volume level of the amplifier when selected.

20. MASTER STATUS LED
This LED lights green to indicate that master 1 is selected and red to indicate master 2 is selected.

21. MASTER 2
Controls the overall volume level of the amplifier when selected.

22. LOOP STATUS LED
This LED lights red to indicated that the FX loop is on. It is unlit when the FX loop off.

23. LOOP ON/OFF
This switch activates and deactivates the FX loop

Note: FX loop on/off is footswitchable using the supplied 2-way footswitch or the optional 6-way footswitch.

24. OUTPUT
This three position rocker switch combines STB (standby) and HIGH/LOW output power functions.

The output stage and power control for this amplifier has been designed to deliver the optimum tonal performance at all power levels. The high and low output functions allow the user to choose between two configurations of the internal power supply. These two configurations give the choice between two output power levels, but ensure that the output valves behave in the same way for both. This means the amplifier can be put into low power mode without compromising on tone.

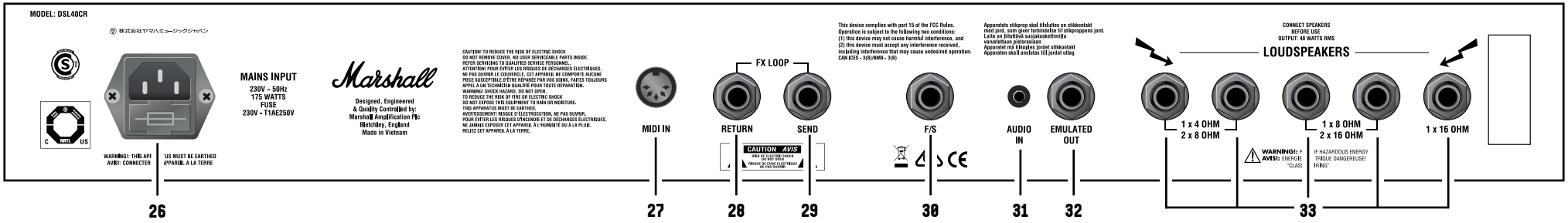
HIGH: This is the 100 Watt setting for the DSL100HR and the 40 Watt setting for the DSL40CR.

STB (standby): This is used in conjunction with the mains POWER switch (Front Panel Function #25). When powering up, always switch mains power on first, leaving the output switch in the STB (standby) position. Standby mode should also be used to mute the amp during breaks in performances to avoid stress to the valves of the amplifier.

LOW: This is the 50 Watt setting for the DSL100HR and the 20 Watt for the DSL40CR.

25. POWER
Mains power on/off switch.

REAR PANEL FUNCTIONS



26. MAINS INPUT
Connects the amplifier to the mains electricity supply.

Note: The mains input socket has an integrated fuse compartment. Ensure that the value of a replacement fuse matches the labelling on the amplifier rear panel. You must switch the amplifier off and disconnect it from the mains electricity supply before attempting to access the fuse compartment. If in doubt, contact your Marshall dealer.

27. MIDI IN
Connect your external MIDI device to the MIDI IN socket.

Note: The amplifier only accepts incoming data and it is not able to send any MIDI commands.

You can set the channel, the state of the loop and master volume via MIDI messages.

MIDI commands allow the remote control of some front panel functions (refer to MIDI implementation chart in the user manual).

The MIDI receive channel is factory-set to channel 1. In order to set a different channel, press and hold the Loop On/Off switch (front panel function #23) while powering up the amplifier to activate MIDI waiting mode. The LED will flash until a valid MIDI command is received. The MIDI receive channel will be set to the channel of that command.

To select MIDI OMNI receive, put the amplifier into MIDI waiting mode and then press and hold the Master Select switch (front panel function #18) until its LED lights up.

Note: When the 2-way footswitch is connected the amplifier will not respond to any MIDI messages.

28. FX LOOP RETURN
Connect the output of an external FX pedal or processor.

29. FX LOOP SEND
Connect the input of an external FX pedal or processor.

30. F/S
Connect the supplied 2-way footswitch or the optional 6-way footswitch here.

31. AUDIO IN
Connect an external device here to practice with or to jam along to music.

32. EMULATED OUT
Emulated line level output for headphones or connection to a mixer. The DSL is equipped with a high quality emulated output using Softube-designed studio cabinet emulation. This ensures that your headphone and output signal from this socket provide the best possible tone for practice or recording.

Note: Using the emulated out does not omit the need for a speaker load to be connected to the amplifier (rear panel function #33).

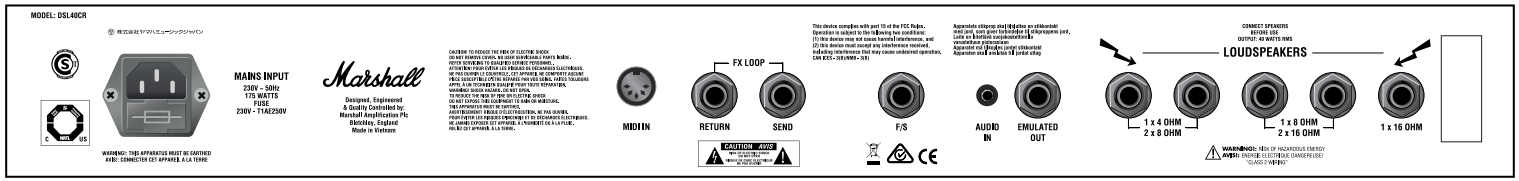
Note: For silent recording via emulated out set the output switch to STB (front panel function #24).

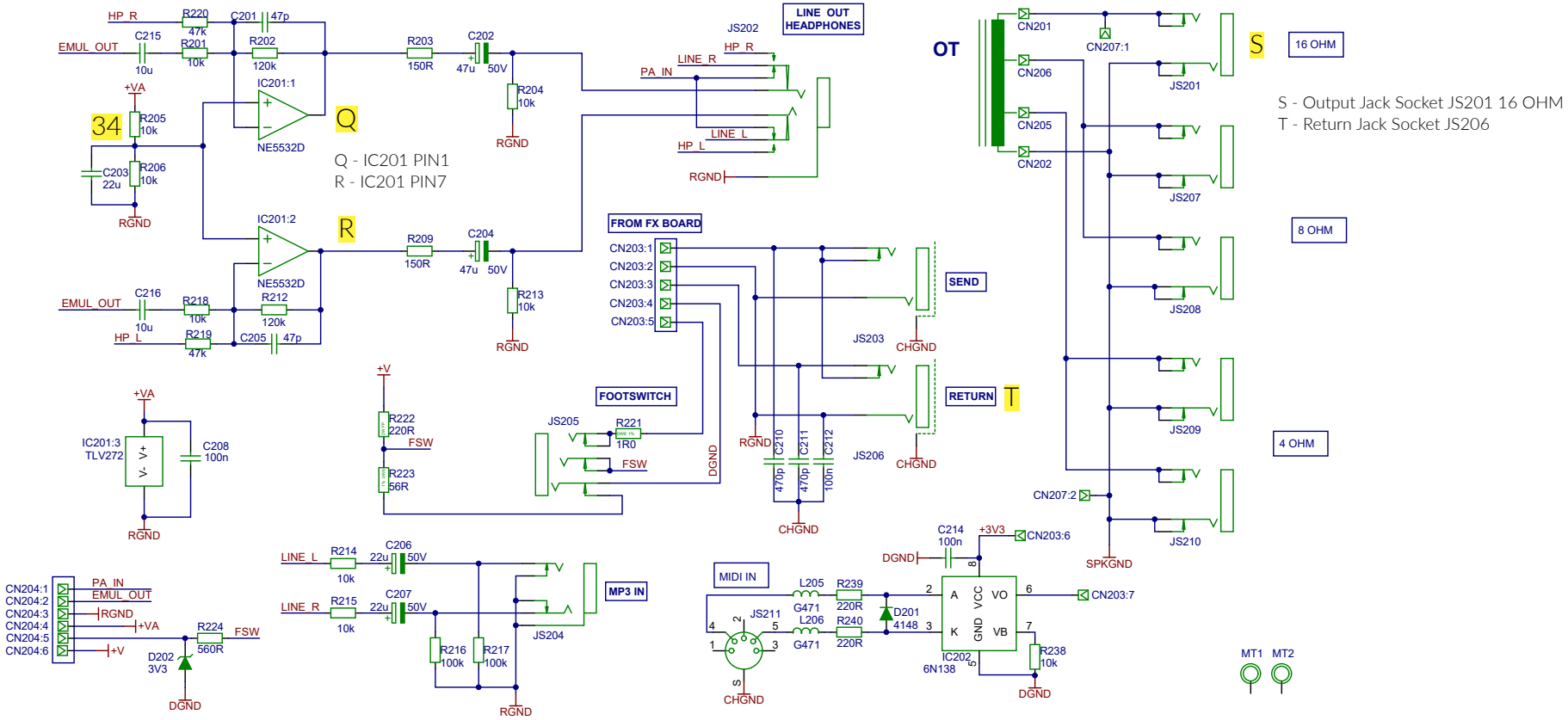
33. LOUDSPEAKERS
There are five speaker outputs available. They are labelled according to the intended impedances:

- **1 x 16 Ohm:** connect a single 16 Ohm speaker cabinet to this jack.
- **1x 8 Ohm or 2 x 16 Ohm:** connect a single 8 Ohm speaker cabinet or two 16 Ohm speaker cabinets.
- **1 x 4 Ohm or 2 x 8 Ohm:** connect a single 4 Ohm speaker cabinet or two 8 Ohm speaker cabinets.

WARNING: Although the amplifier has five speaker outputs, never attempt to connect more speaker cabinets than rated. The safe combinations are: 1 x 16 Ohm, 1 x 8 Ohm, 2 x 16 Ohm, 1 x 4 Ohm or 2 x 8 Ohm only. Any other speaker cabinet configuration may stress the power amplifier section and in extreme cases may lead to valve and/or output transformer failure. Never use DSL100HR or DSL40CR without a speaker load.

REAR PANEL PCB

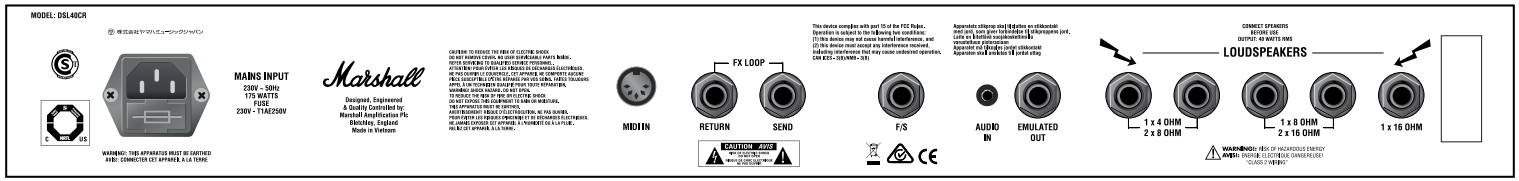


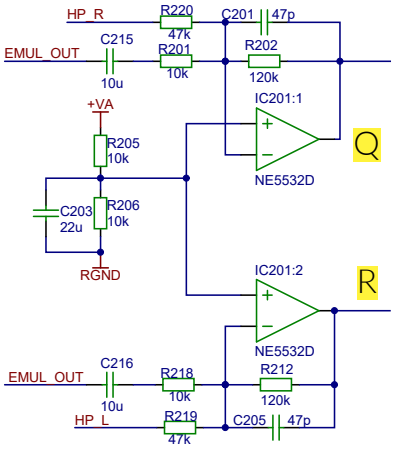


EMULATOR VOLTAGES

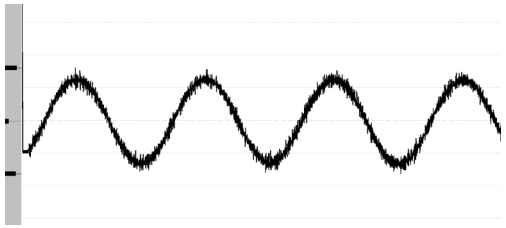
No.	TYPE	PCB No.	FEED	V1 (DC)	V2 (DC)
34	10K	R205	TLV272 (P3, P5)	9.25V	4.61V

REAR PANEL PCB (CONTINUED)

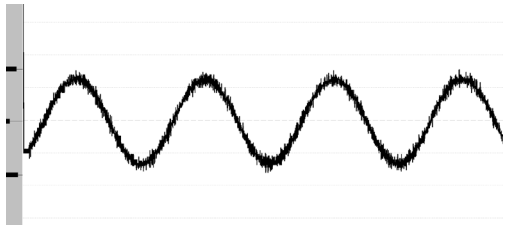




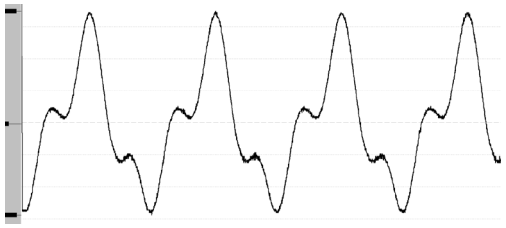
Q - IC201 PIN1
R - IC201 PIN7



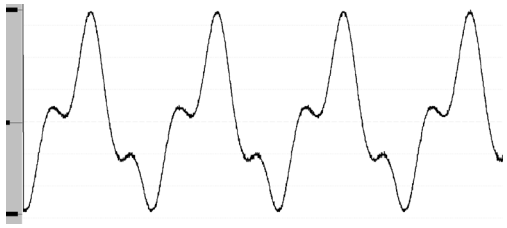
FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT Q (CL)
IC201 PIN1 V(rms) 47.9mV and V(pp) 164mV
FREQUENCY:1kHz - “HIGH”
IC201 PIN1 V(rms) 45.1mV and V(pp) 152mV



FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT R (CL)
IC201 PIN7 V(rms) 47.1mV and V(pp) 158mV
FREQUENCY:1kHz - “HIGH”
IC201 PIN7 V(rms) 45.6mV and V(pp) 154mV



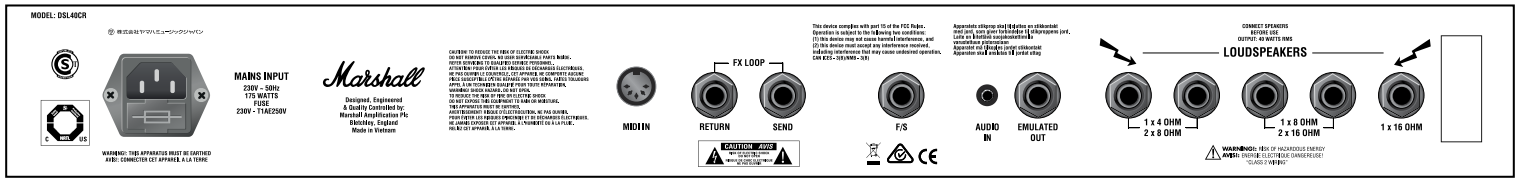
FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT Q (OD1)
IC201 PIN1 V(rms) 443mV and V(pp) 1.58V
FREQUENCY:1kHz - “HIGH”
IC201 PIN1 V(rms) 334mV and V(pp) 1.26V

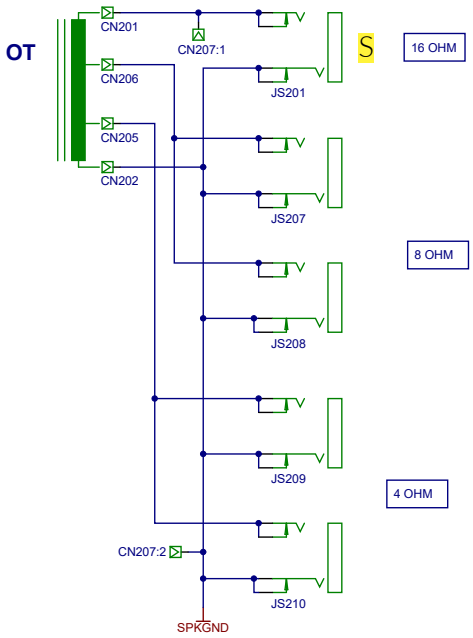


FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT R (OD1)
IC201 PIN7 V(rms) 443mV and V(pp) 1.58V
FREQUENCY:1kHz - “HIGH”
IC201 PIN7 V(rms) 333mV and V(pp) 1.26V

CL - Clean
OD1 - Overdrive 1

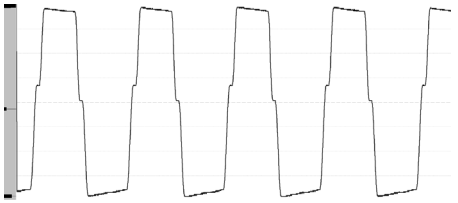
REAR PANEL PCB (CONTINUED)



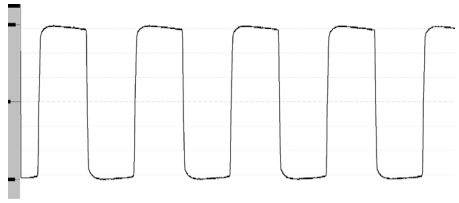


S - Output JS201

FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT S (CL)
JS201 V(rms) 8.65V and V(pp) 24.4V

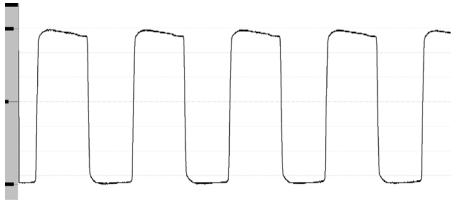


FREQUENCY:1kHz - “HIGH”
RESULTS FOR TEST POINT S (CR)
JS201 V(rms) 32.8V and V(pp) 75.6V



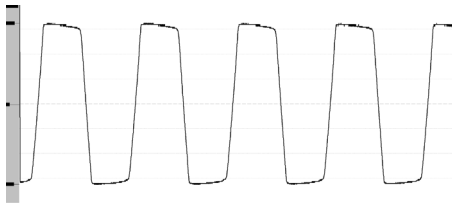
FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT S (OD2)
JS201 V(rms) 15.0V and V(pp) 31.3V

FREQUENCY:1kHz - “HIGH”
RESULTS FOR TEST POINT S (CL)
JS201 V(rms) 17.4V and V(pp) 52.8V



FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT S (OD1)
JS201 V(rms) 14.9V and V(pp) 31.6V

FREQUENCY:1kHz - “HIGH”
RESULTS FOR TEST POINT S (OD2)
JS201 V(rms) 35.2V and V(pp) 76.8V

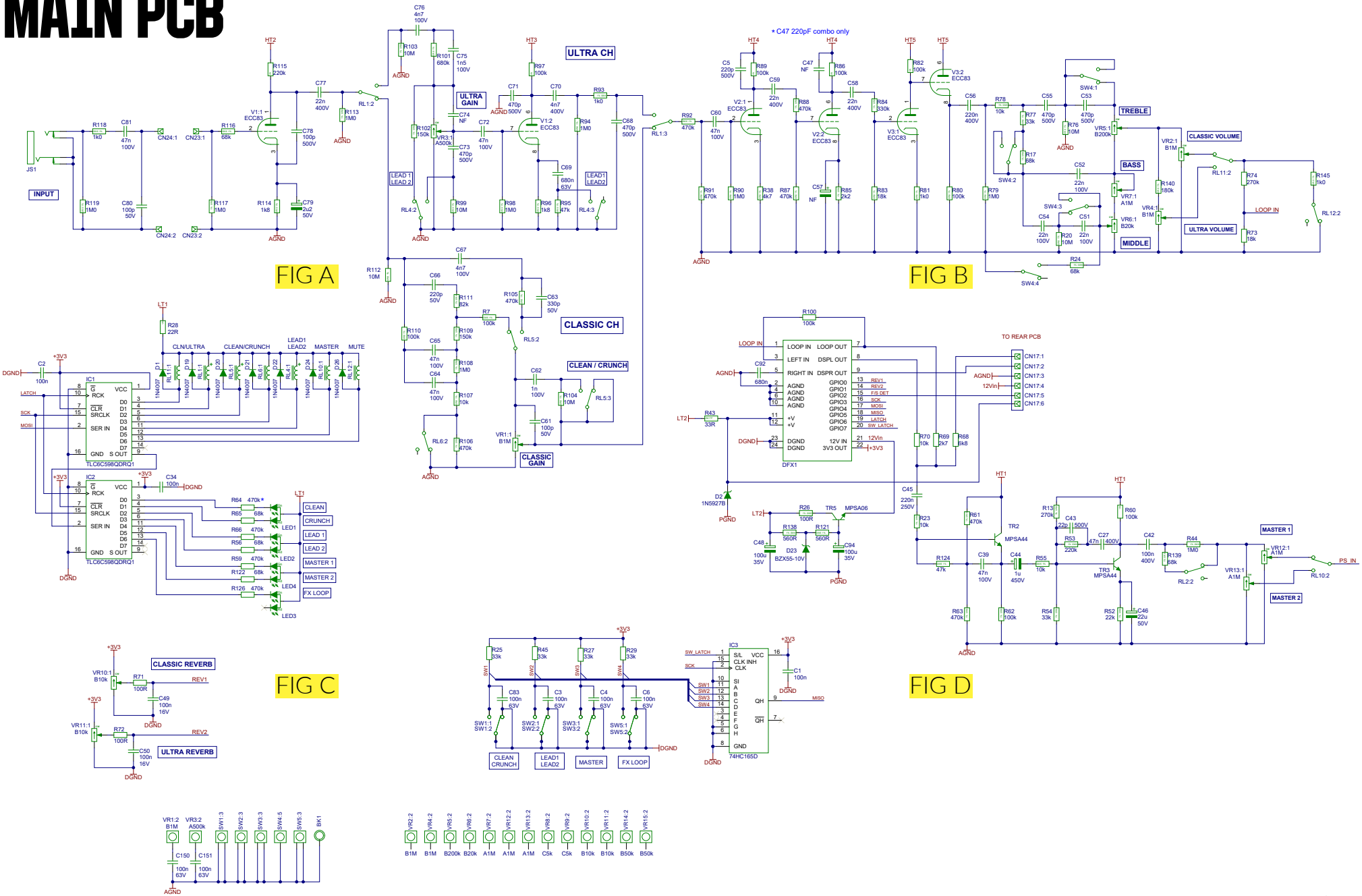


FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT S (CR)
JS201 V(rms) 14.3V and V(pp) 32V

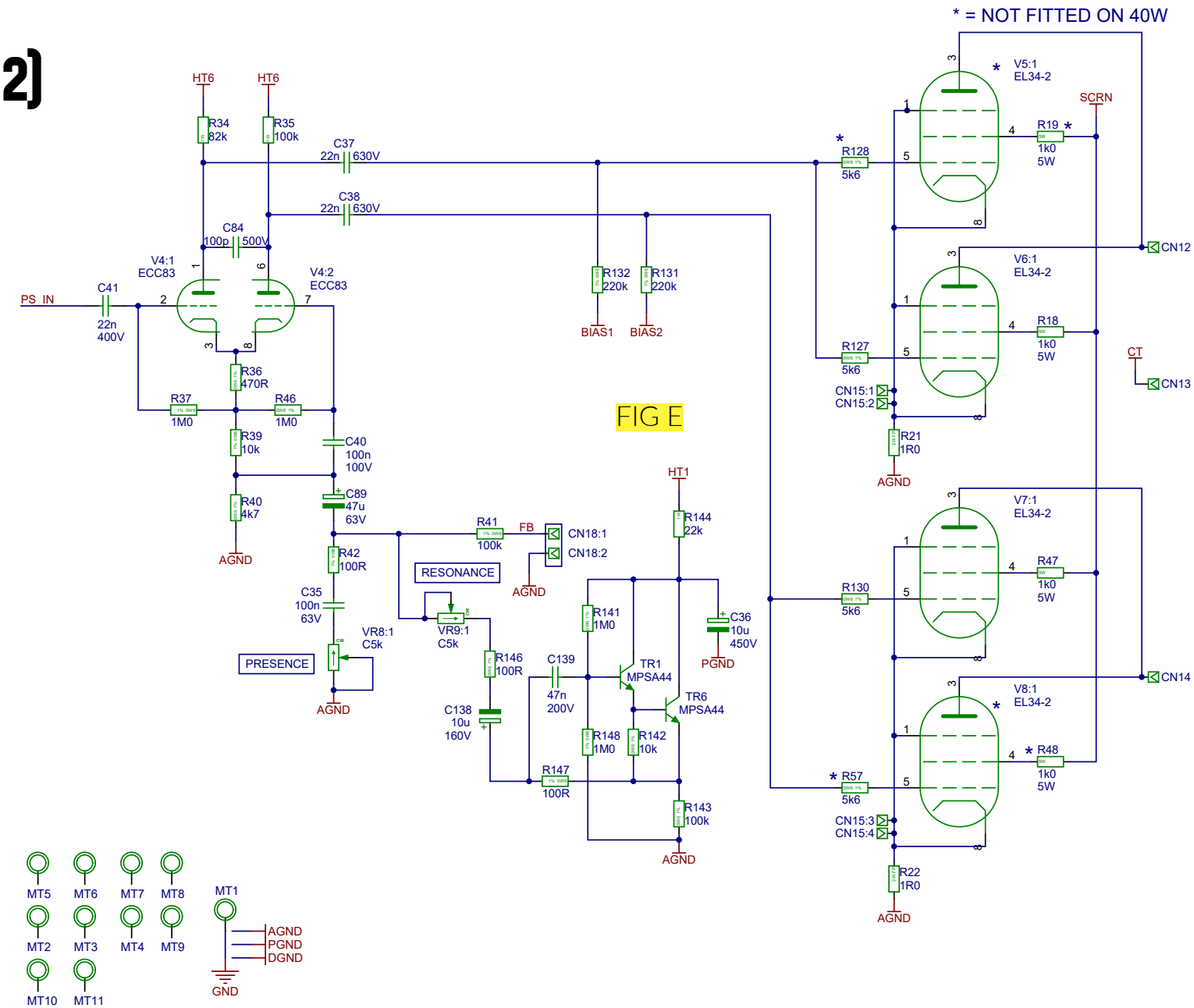
FREQUENCY:1kHz - “HIGH”
RESULTS FOR TEST POINT S (OD1)
JS201 V(rms) 33.7V and V(pp) 76.8V

CL - Clean
CR - Crunch
OD1 - Overdrive 1
OD2 - Overdrive 2

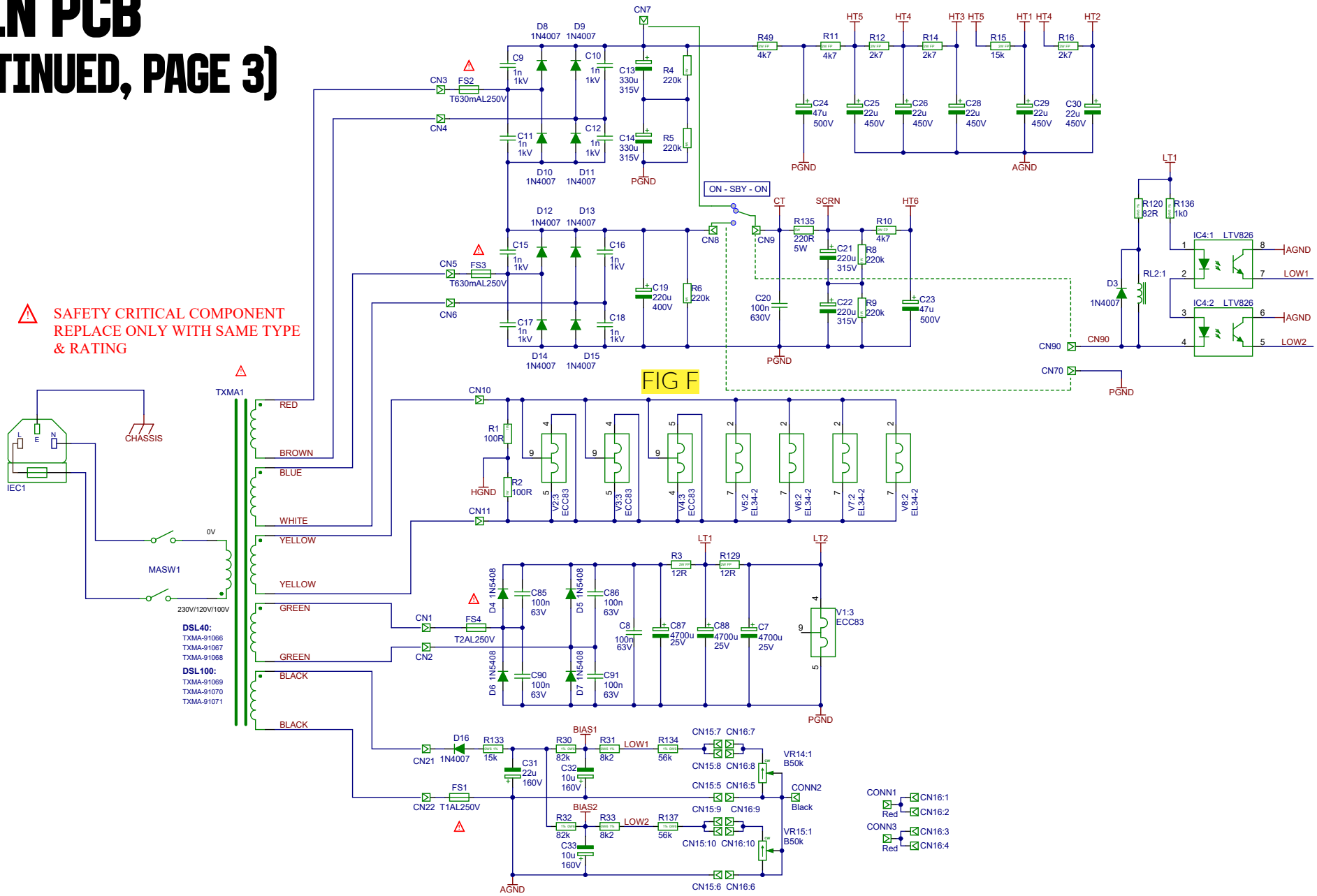
MAIN PCB


INPUT
ULTRA CH
ULTRA GAIN
CLASSIC CH
CLASSIC GAIN
CLEAN / CRUNCH
LEAD1 LEAD2
* C47 220pF combo only
TREBLE
BASS
MIDDLE
CLASSIC VOLUME
ULTRA VOLUME
LOOP IN
TO REAR PCB
CLN/ULTRA
CLEAN/CRUNCH
MASTER
MUTE
CLEAN
CRUNCH
LEAD 1
LEAD 2
MASTER 1
MASTER 2
FX LOOP
CLASSIC REVERB
ULTRA REVERB
FIG A
FIG B
FIG C
FIG D

MAIN PCB
(CONTINUED, PAGE 2)



MAIN PCB
(CONTINUED, PAGE 3)



MAIN PCB – FIG. A VOLTAGES

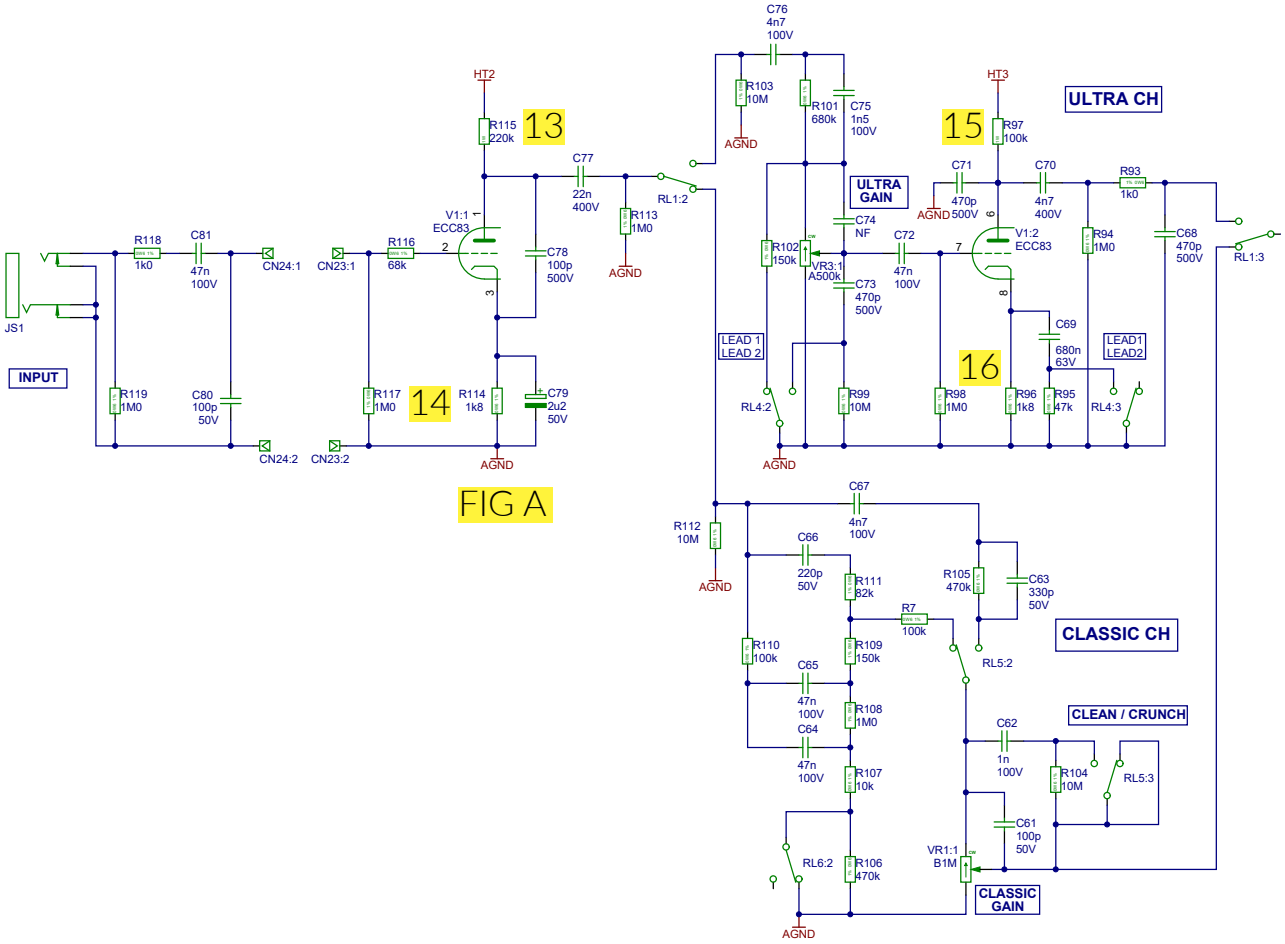


FIG A

PREAMP VOLTAGES – OUTPUT SET TO STANDBY

No.	TYPE	PCB No.	FEED	V1 (DC)	V2 (DC)
13	220k	R115	V1 P1	358V	181V
14	1k8	R114	V1 P3	1.48V	AGND
15	100k	R97	V1 P6	359V	252V
16	1k8	R96	V1 P8	1.88V	AGND

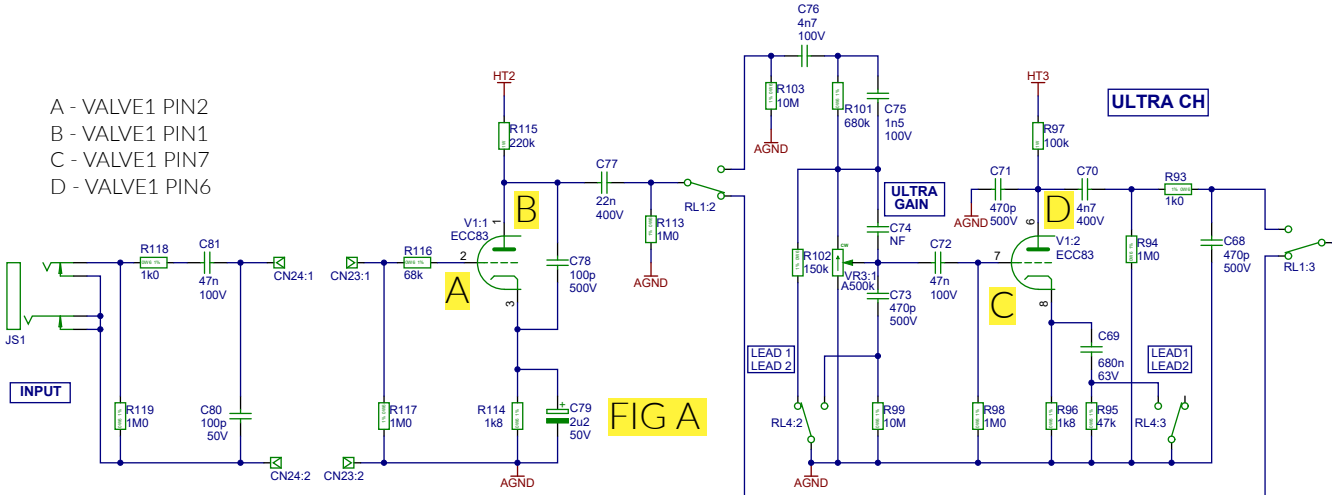
PREAMP VOLTAGES – OUTPUT SET TO LOW

No.	TYPE	PCB No.	FEED	V1 (DC)	V2 (DC)
13	220k	R115	V1 P1	339V	174V
14	1k8	R114	V1 P3	1.36V	AGND
15	100k	R97	V1 P6	339V	240V
16	1k8	R96	V1 P8	1.72V	AGND

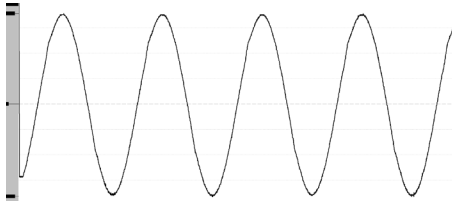
PREAMP VOLTAGES – OUTPUT SET TO HIGH

No.	TYPE	PCB No.	FEED	V1 (DC)	V2 (DC)
13	220k	R115	V1 P1	331V	169V
14	1k8	R114	V1 P3	1.34V	AGND
15	100k	R97	V1 P6	331V	234V
16	1k8	R96	V1 P8	1.69V	AGND

MAIN PCB – FIG. A WAVEFORMS



FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT A
V1 PIN2 V(rms) 8.35mV and V(pp) 26.2mV



FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT C (OD1)
V1 PIN7 V(rms) 247mV and V(pp) 716mV

FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT D (OD1)
V1 PIN6 V(rms) 6.16V and V(pp) 17.8V

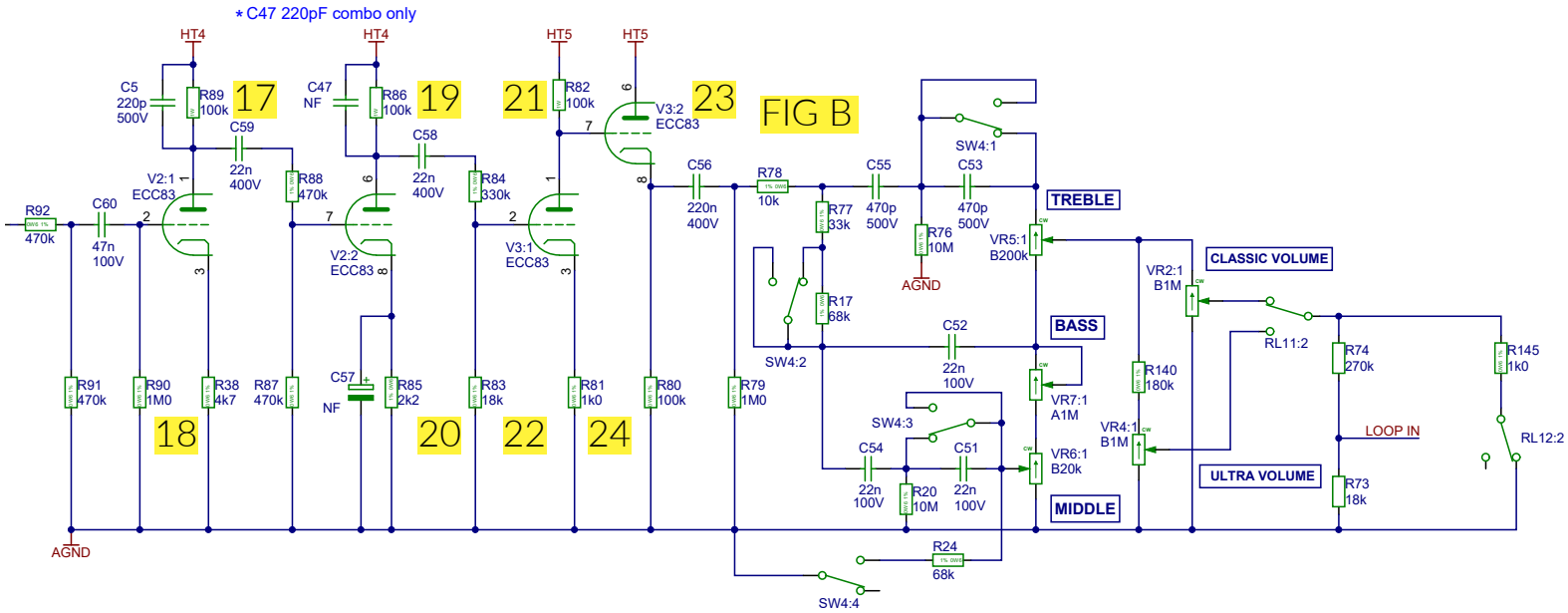
FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT B
V1 PIN1 V(rms) 395mV and V(pp) 1.15V

FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT C (OD2)
V1 PIN7 V(rms) 327mV and V(pp) 952mV

FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT D (OD2)
V1 PIN6 V(rms) 17.7V and V(pp) 51.2V

OD1 - Overdrive 1
OD2 - Overdrive 2

MAIN PCB – FIG. B VOLTAGES



PREAMP VOLTAGES – OUTPUT SET TO STANDBY

No.	TYPE	PCB No.	FEED	V1 (DC)	V2 (DC)
17	100k	R89	V2 P1	360V	289V
18	4k7	R38	V2 P3	3.25V	AGND
19	100k	R86	V2 P6	360V	253V
20	2k2	R85	V2 P8	2.39V	AGND
21	100k	R82	V3 P1	370V	220V
22	1k	R81	V3 P3	1.53V	AGND
23	ECC83	V3 P6	N/A	370V	N/A
24	100k	R80	V3 P8	224V	AGND

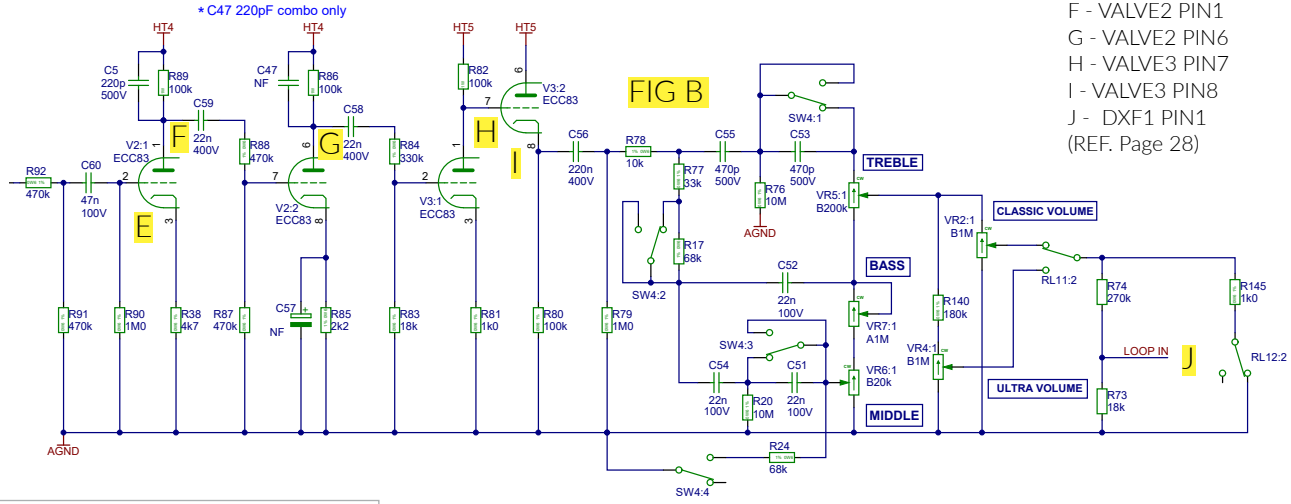
PREAMP VOLTAGES – OUTPUT SET TO LOW

No.	TYPE	PCB No.	FEED	V1 (DC)	V2 (DC)
17	100k	R89	V2 P1	341V	274V
18	4k7	R38	V2 P3	3.09V	AGND
19	100k	R86	V2 P6	341V	239V
20	2k2	R85	V2 P8	2.26V	AGND
21	100k	R82	V3 P1	350V	210V
22	1k	R81	V3 P3	1.43V	AGND
23	ECC83	V3 P6	N/A	350V	N/A
24	100k	R80	V3 P8	212V	AGND

PREAMP VOLTAGES – OUTPUT SET TO HIGH

No.	TYPE	PCB No.	FEED	V1 (DC)	V2 (DC)
17	100k	R89	V2 P1	333V	267V
18	4k7	R38	V2 P3	3.02V	AGND
19	100k	R86	V2 P6	333V	234V
20	2k2	R85	V2 P8	2.20V	AGND
21	100k	R82	V3 P1	343V	205V
22	1k	R81	V3 P3	1.39V	AGND
23	ECC83	V3 P6	N/A	343V	N/A
24	100k	R80	V3 P8	207V	AGND

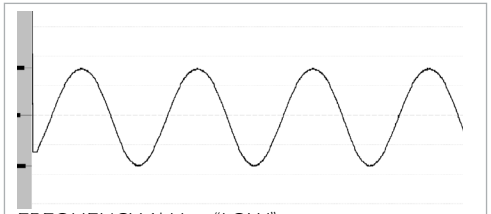
MAIN PCB – FIG. B WAVEFORMS



E - VALVE2 PIN2
F - VALVE2 PIN1
G - VALVE2 PIN6
H - VALVE3 PIN7
I - VALVE3 PIN8
J - DXF1 PIN1
(REF. Page 28)

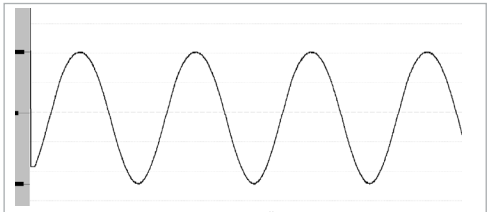
CL - Clean
CR - Crunch
OD1 - Overdrive 1
OD2 - Overdrive 2

FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT E (CL)
V2 PIN2 V(rms) 17.7mV and V(pp) 52.8mV
FREQUENCY:1kHz - “HIGH”
V2 PIN2 V(rms) 17.5mV and V(pp) 53.6mV

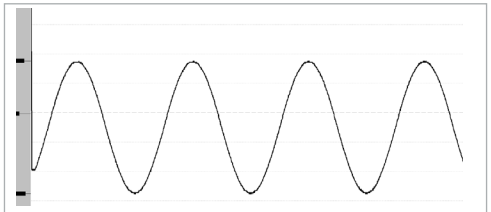


FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT E (OD1)
V2 PIN2 V(rms) 2.02V and V(pp) 5.8V
FREQUENCY:1kHz - “HIGH”
V2 PIN2 V(rms) 1.89V and V(pp) 5.48V

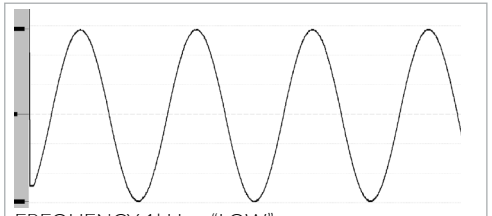
FREQUENCY:1kHz - “HIGH”
RESULTS FOR TEST POINT E (OD2)
V2 PIN2 V(rms) 5.2V and V(pp) 14.8V



FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT F (CR)
V2 PIN1 V(rms) 1.6V and V(pp) 4.52V
FREQUENCY:1kHz - “HIGH”
V2 PIN1 V(rms) 1.56V and V(pp) 4.4V



FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT F (OD1)
V2 PIN1 V(rms) 31.1V and V(pp) 89.6V
FREQUENCY:1kHz - “HIGH”
V2 PIN1 V(rms) 28.8V and V(pp) 81.6V



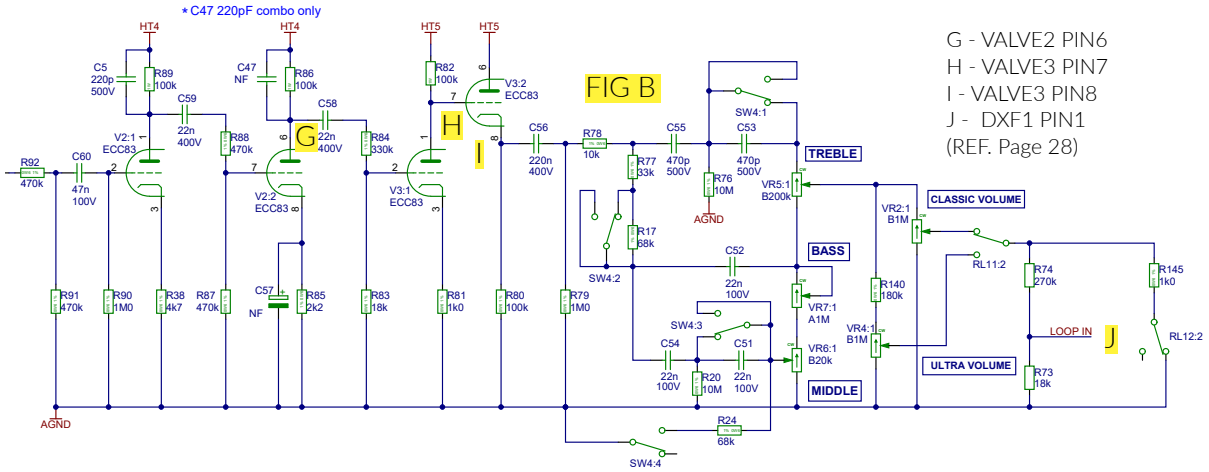
FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT E (CR)
V2 PIN2 V(rms) 101mV and V(pp) 292mV
FREQUENCY:1kHz - “HIGH”
V2 PIN2 V(rms) 97.5mV and V(pp) 282mV

FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT E (OD2)
V2 PIN2 V(rms) 5.7V and V(pp) 16.6V

FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT F (CL)
V2 PIN1 V(rms) 267mV and V(pp) 776mV
FREQUENCY:1kHz - “HIGH”
V2 PIN1 V(rms) 262mV and V(pp) 760mV

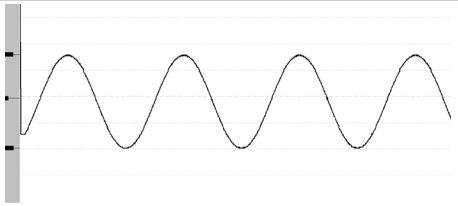
FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT F (OD2)
V2 PIN1 V(rms) 68.2V and V(pp) 178V
FREQUENCY:1kHz - “HIGH”
V2 PIN1 V(rms) 56.4V and V(pp) 144V

MAIN PCB – FIG. B WAVEFORMS (CONTINUED)



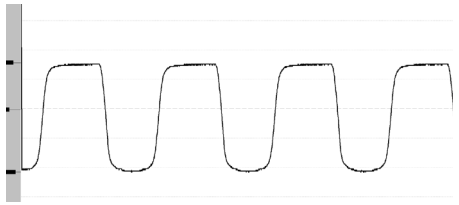
G - VALVE2 PIN6
H - VALVE3 PIN7
I - VALVE3 PIN8
J - DXF1 PIN1
(REF. Page 28)

CL - Clean
CR - Crunch
OD1 - Overdrive 1

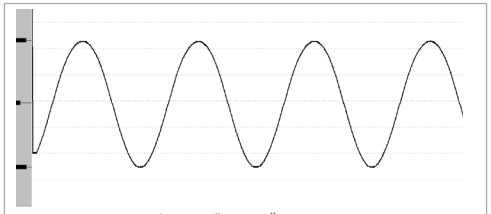


FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT I (CL)
V3 PIN8 V(rms) 5.94V and V(pp) 17.2V
FREQUENCY:1kHz - "HIGH"
V3 PIN8 V(rms) 5.73V and V(pp) 16.8V

FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT G (CL)
V2 PIN6 V(rms) 2.79V and V(pp) 8.08V
FREQUENCY:1kHz - "HIGH"
V2 PIN6 V(rms) 2.73V and V(pp) 8.0V

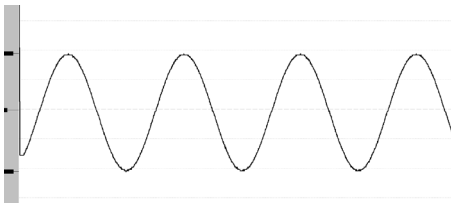


FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT G (OD1)
V2 PIN6 V(rms) 86.8V and V(pp) 198V
FREQUENCY:1kHz - "HIGH"
V2 PIN6 V(rms) 66.2V and V(pp) 148V



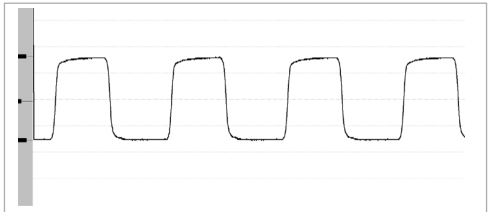
FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT H (CR)
V3 PIN7 V(rms) 33.3V and V(pp) 96V
FREQUENCY:1kHz - "HIGH"
V3 PIN7 V(rms) 30.5V and V(pp) 87.2V

FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT I (CR)
V3 PIN8 V(rms) 32.7V and V(pp) 93.6V
FREQUENCY:1kHz - "HIGH"
V3 PIN8 V(rms) 29.7V and V(pp) 85.6V

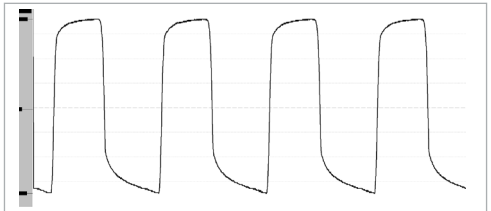


FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT G (CR)
V2 PIN6 V(rms) 16.2V and V(pp) 46.8V
FREQUENCY:1kHz - "HIGH"
V2 PIN6 V(rms) 15.5V and V(pp) 44.8V

FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT H (CL)
V3 PIN7 V(rms) 5.74V and V(pp) 16.8V
FREQUENCY:1kHz - "HIGH"
V3 PIN7 V(rms) 5.49V and V(pp) 16V



FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT H (OD1)
V3 PIN7 V(rms) 90.7V and V(pp) 196V
FREQUENCY:1kHz - "HIGH"
V3 PIN7 V(rms) 72.3V and V(pp) 156V



FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT I (OD1)
V3 PIN8 V(rms) 77V and V(pp) 174V
FREQUENCY:1kHz - "HIGH"
V3 PIN8 V(rms) 62.8V and V(pp) 141V

MAIN PCB – FIG. C

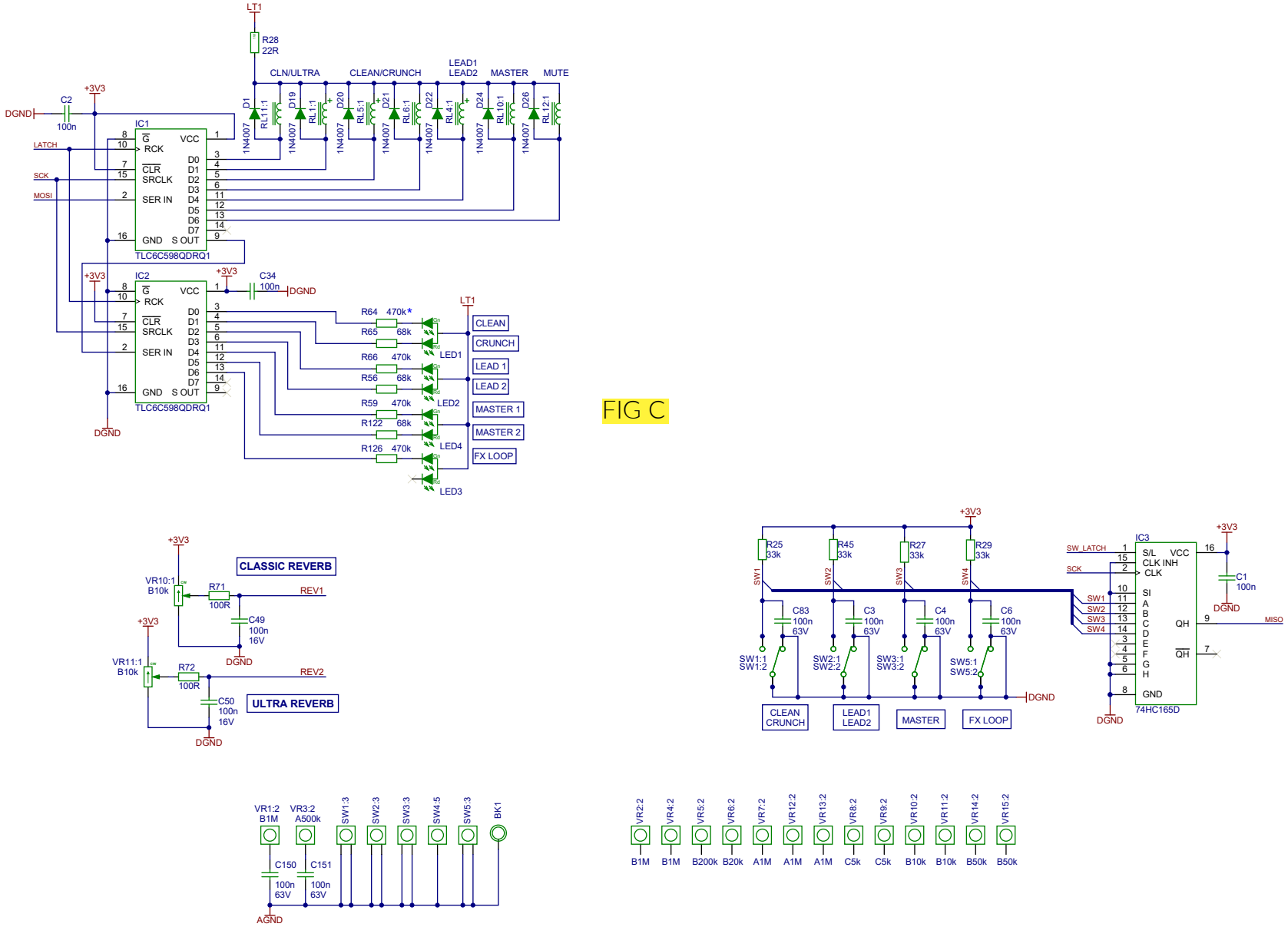
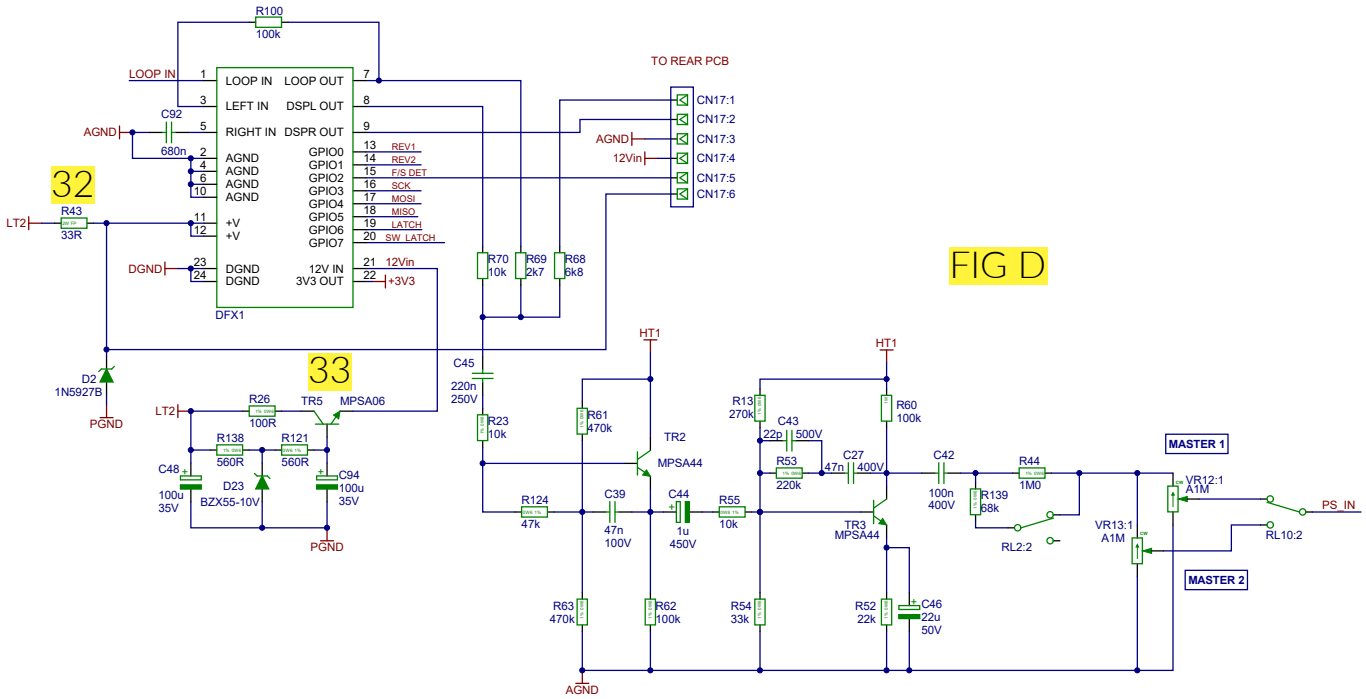


FIG C

MAIN PCB – FIG. D VOLTAGES



Output Setting
S - Standby
L - Low
H - High

C - Collector
B - Base
E - Emitter

DFX VOLTAGES – CLASSIC GAIN TO CLEAN					
No.	**TYPE**	**PCB No.**	**FEED**	**V1 (DC)**	**V2 (DC)**
32 (S)	33R	R43	DFX1 P11, P12	12.6V	9.69V
32 (L)	33R	R43	DFX1 P11, P12	11.7V	8.86V
32 (H)	33R	R43	DFX1 P11, P12	11.8V	8.98V

DFX VOLTAGES – CLASSIC GAIN TO CLEAN						
No.	**TYPE**	**PCB No.**	**FEED**	**V1 (DC)**	**V2 (DC)**	**V3 (DC)**
33 (S)	MPSA06	TR5	DFX1 P21	11.4V (C)	10.0V (B)	9.34V (E)
33 (L)	MPSA06	TR5	DXF1 P21	10.5V (C)	9.98V (B)	9.31V (E)
33 (H)	MPSA06	TR5	DXF1 P21	10.7V (C)	9.99V (B)	9.32V (E)

MAIN PCB – FIG. D WAVEFORMS DFX1

J - DXF1 PIN1

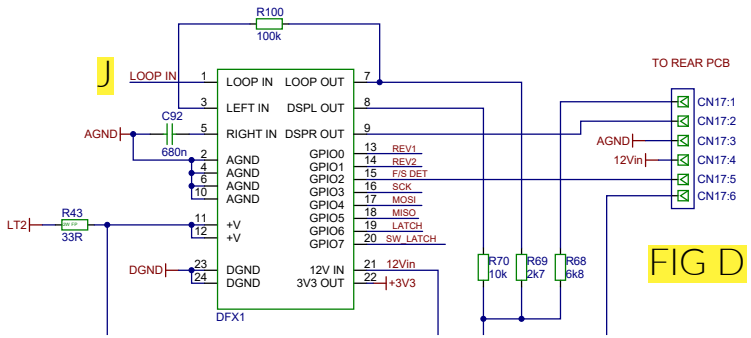
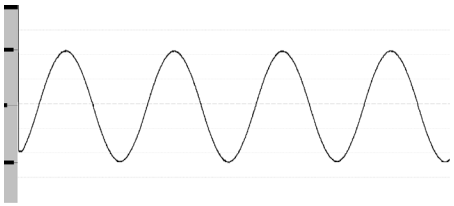


FIG D

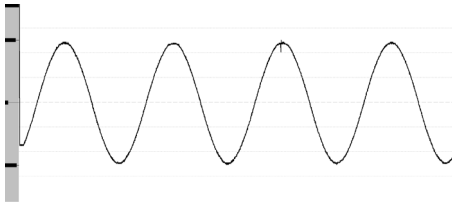
CL - Clean
CR - Crunch
OD1 - Overdrive 1
TS - Tone Shift



FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT J (CL)
DFX1 PIN1 V(rms) 80.2mV and V(pp) 232mV
FREQUENCY:1kHz - “HIGH”
DFX1 PIN1 V(rms) 77.5mV and V(pp) 224mV

FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT J (CR)
DFX1 PIN1 V(rms) 472mV and V(pp) 1.36V
FREQUENCY:1kHz - “HIGH”
DFX1 PIN1 V(rms) 432mV and V(pp) 1.24V

FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT J (OD1)
DFX1 PIN1 V(rms) 904mV and V(pp) 4.0V
FREQUENCY:1kHz - “HIGH”
DFX1 PIN1 V(rms) 716mV and V(pp) 3.22V

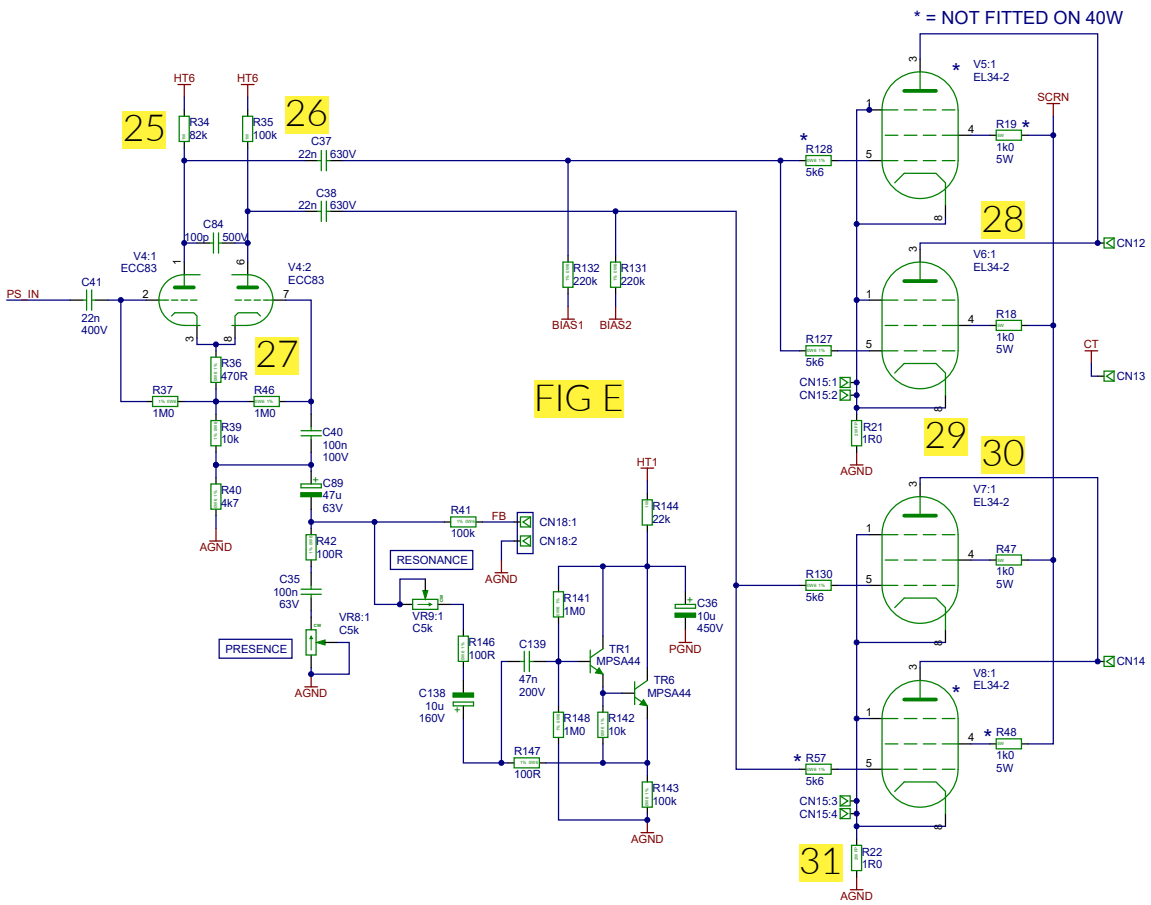


FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT J (CL) (TS)
DFX1 PIN1 V(rms) 33.9mV and V(pp) 100mV
FREQUENCY:1kHz - “HIGH”
DFX1 PIN1 V(rms) 33.6mV and V(pp) 99.2mV

FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT J (CR) (TS)
DFX1 PIN1 V(rms) 209mV and V(pp) 604mV
FREQUENCY:1kHz - “HIGH”
DFX1 PIN1 V(rms) 195mV and V(pp) 560mV

FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT J (OD1) (TS)
DFX1 PIN1 V(rms) 630mV and V(pp) 3.72V
FREQUENCY:1kHz - “HIGH”
DFX1 PIN1 V(rms) 508mV and V(pp) 3.06V

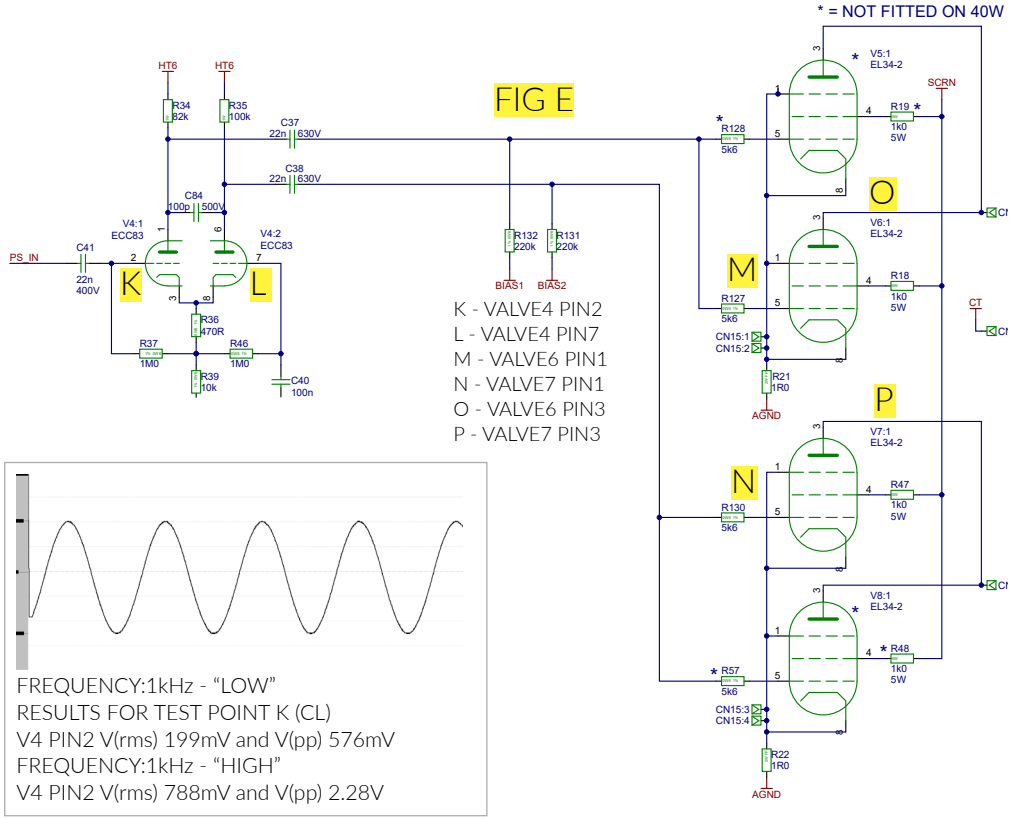
MAIN PCB – FIG. E VOLTAGES



POWERAMP VOLTAGES – OUTPUT SET TO LOW					
No.	**TYPE**	**PCB No.**	**FEED**	**V1 (DC)**	**V2 (DC)**
25	82k	R34	V4 P1	162V	119V
26	100k	R35	V4 P6	162V	109V
27	470R	R36	V4 P3/8	15.9V	15.4V
28	EL34	V6 P3	Output TX	166V	N/A
29	1R	R21	V6 P1/8	4.7mV	86.6mV
30	EL34	V7 P3	Output TX	167V	N/A
31	1R	R22	V7 P1/8	3.2mV	88.9mV

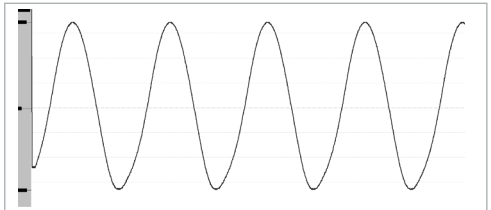
POWERAMP VOLTAGES – OUTPUT SET TO HIGH					
No.	**TYPE**	**PCB No.**	**FEED**	**V1 (DC)**	**V2 (DC)**
25	82k	R34	V4 P1	428V	295V
26	100k	R35	V4 P6	428V	278V
27	470R	R36	V4 P3/8	47.8V	46.2V
28	EL34	V6 P3	Output TX	444V	N/A
29	1R	R21	V6 P1/8	1.9mV	37.4mV
30	EL34	V7 P3	Output TX	444V	N/A
31	1R	R22	V7 P1/8	1.4mV	37.9mV

MAIN PCB – FIG. E WAVEFORMS



CL - Clean
CR - Crunch
OD1 - Overdrive 1

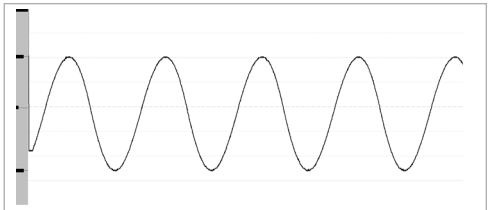
FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT K (CL)
V4 PIN2 V(rms) 199mV and V(pp) 576mV
FREQUENCY:1kHz - “HIGH”
V4 PIN2 V(rms) 788mV and V(pp) 2.28V



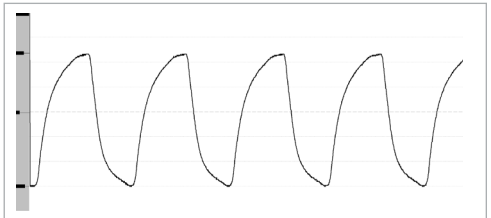
FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT K (CR)
V4 PIN2 V(rms) 1.18V and V(pp) 3.38V
FREQUENCY:1kHz - “HIGH”
V4 PIN2 V(rms) 4.66V and V(pp) 13.4V

FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT K (OD1)
V4 PIN2 V(rms) 2.01V and V(pp) 7.44V
FREQUENCY:1kHz - “HIGH”
V4 PIN2 V(rms) 8.09V and V(pp) 35.2V

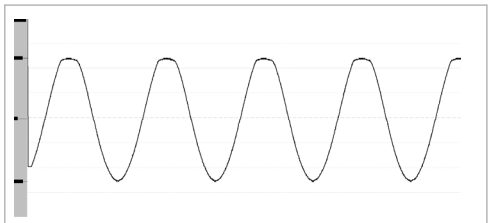
FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT L (CL)
V4 PIN7 V(rms) 58.2mV and V(pp) 172mV
FREQUENCY:1kHz - “HIGH”
V4 PIN7 V(rms) 139mV and V(pp) 404mV



FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT L (CR)
V4 PIN7 V(rms) 307mV and V(pp) 896mV
FREQUENCY:1kHz - “HIGH”
V4 PIN7 V(rms) 811mV and V(pp) 2.32V

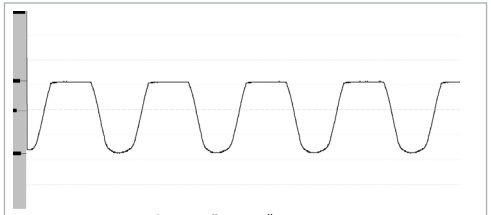


FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT L (OD1)
V4 PIN7 V(rms) 386mV and V(pp) 1.10V
FREQUENCY:1kHz - “HIGH”
V4 PIN7 V(rms) 988mV and V(pp) 2.68V

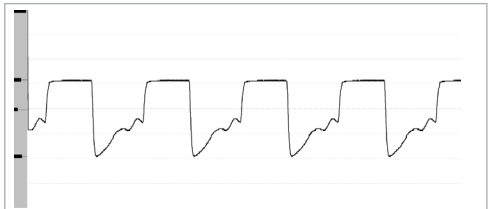


FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT M (CR)
V6 PIN1 V(rms) 3.54V and V(pp) 9.92V

FREQUENCY:1kHz - “HIGH”
RESULTS FOR TEST POINT M (CR)
V6 PIN1 V(rms) 15.2V and V(pp) 44V



FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT M (CR)
V6 PIN1 V(rms) 16.5V and V(pp) 40.4V
FREQUENCY:1kHz - “HIGH”
V6 PIN1 V(rms) 59.6V and V(pp) 146V



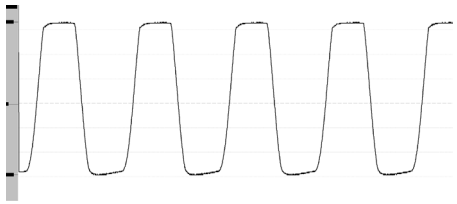
FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT M (OD1)
V6 PIN1 V(rms) 18.2V and V(pp) 49.2V
FREQUENCY:1kHz - “HIGH”
V6 PIN1 V(rms) 54.9V and V(pp) 154V

MAIN PCB – FIG. E WAVEFORMS (CONTINUED)

CL - Clean
CR - Crunch
OD1 - Overdrive 1

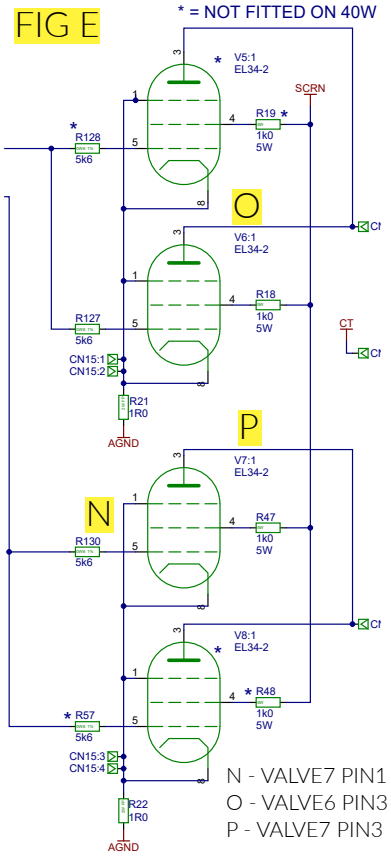
FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT N (CL)
V7 PIN1 V(rms) 3.64V and V(pp) 10.2V

FREQUENCY:1kHz - “HIGH”
RESULTS FOR TEST POINT N (CL)
V7 PIN1 V(rms) 15.6V and V(pp) 45.2V

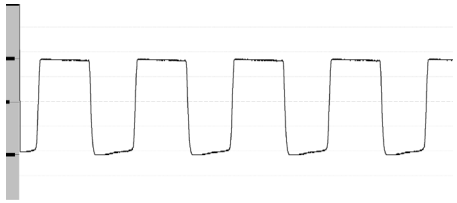


FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT N (CR)
V7 PIN1 V(rms) 15.7V and V(pp) 37.6V
FREQUENCY:1kHz - “HIGH”
V7 PIN1 V(rms) 54.4V and V(pp) 125V

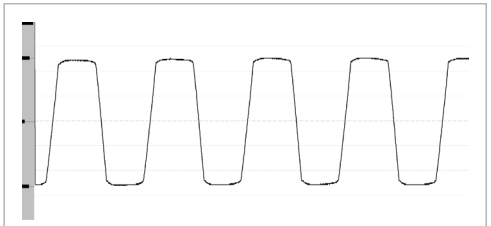
FIG E



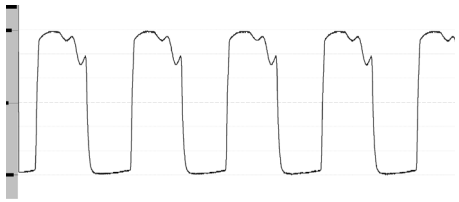
N - VALVE7 PIN1
O - VALVE6 PIN3
P - VALVE7 PIN3



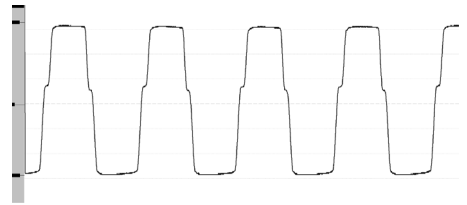
FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT N (OD1)
V7 PIN1 V(rms) 18.2V and V(pp) 38.8V



FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT O (CR)
V6 PIN3 V(rms) 113V and V(pp) 254V



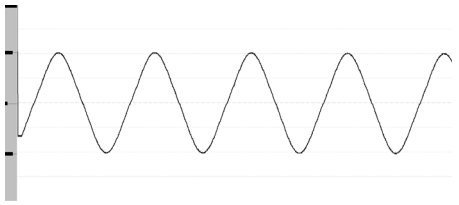
FREQUENCY:1kHz - “HIGH”
RESULTS FOR TEST POINT N (OD1)
V7 PIN1 V(rms) 53.3V and V(pp) 118V



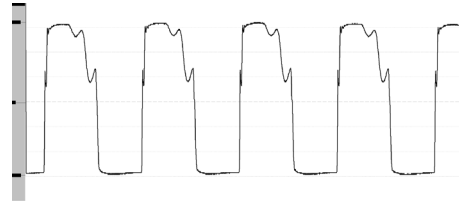
FREQUENCY:1kHz - “HIGH”
RESULTS FOR TEST POINT O (CR)
V6 PIN3 V(rms) 266V and V(pp) 612V

FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT O (CL)
V6 PIN3 V(rms) 65.7V and V(pp) 188V

FREQUENCY:1kHz - “LOW”
RESULTS FOR TEST POINT O (OD1)
V6 PIN3 V(rms) 120V and V(pp) 252V

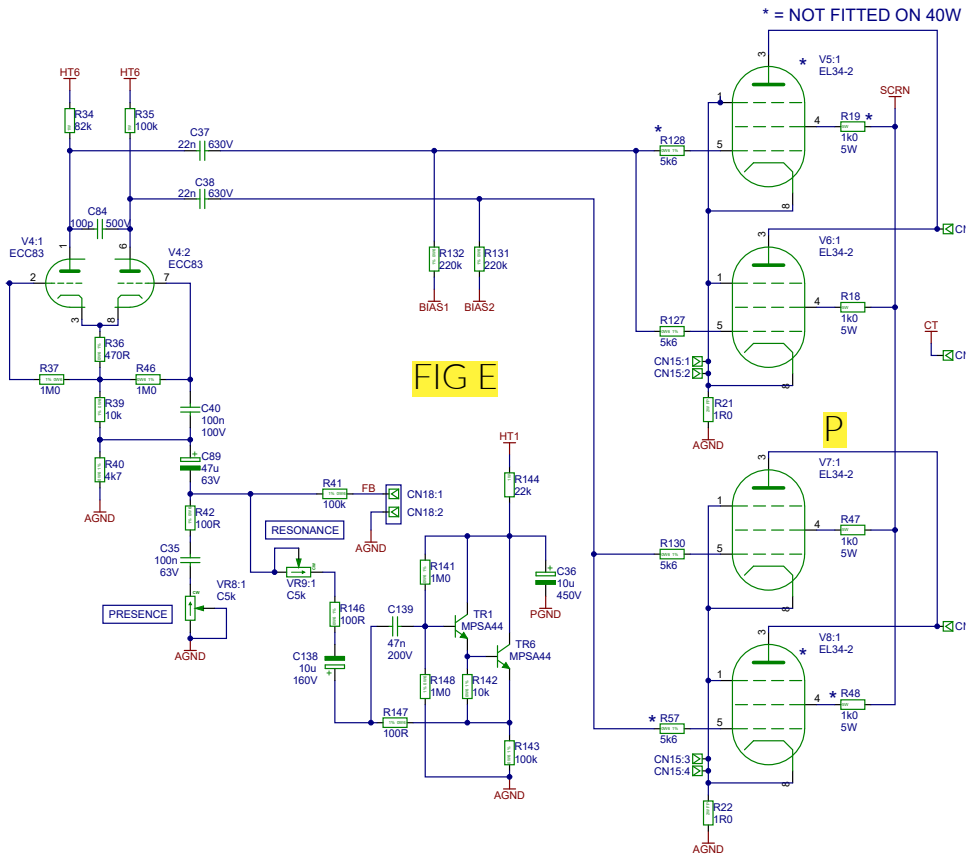


FREQUENCY:1kHz - “HIGH”
RESULTS FOR TEST POINT O (CL)
V6 PIN3 V(rms) 134V and V(pp) 408V



FREQUENCY:1kHz - “HIGH”
RESULTS FOR TEST POINT O (OD1)
V6 PIN3 V(rms) 269V and V(pp) 604V

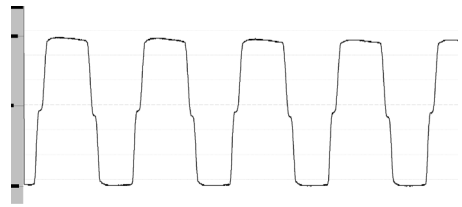
MAIN PCB – FIG. E WAVEFORMS (CONTINUED)



P - VALVE7 PIN3

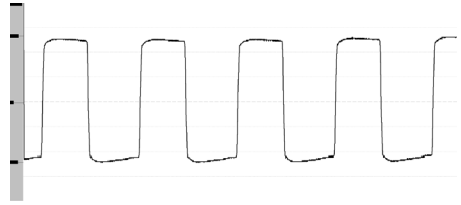
CL - Clean
CR - Crunch
OD1 - Overdrive 1

FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT P (CL)
V7 PIN3 V(rms) 64.8V and V(pp) 186V

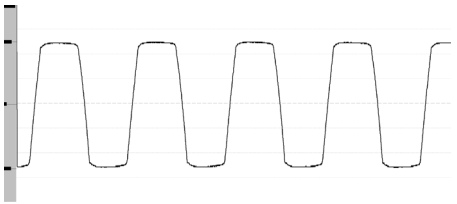


FREQUENCY:1kHz - "HIGH"
RESULTS FOR TEST POINT P (CR)
V7 PIN3 V(rms) 262V and V(pp) 600V

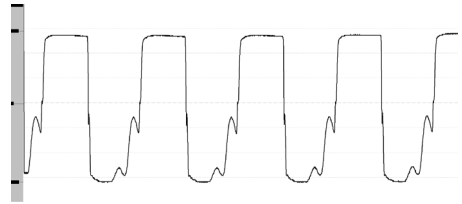
FREQUENCY:1kHz - "HIGH"
RESULTS FOR TEST POINT P (CL)
V7 PIN3 V(rms) 132V and V(pp) 408V



FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT P (OD1)
V7 PIN3 V(rms) 118V and V(pp) 250V

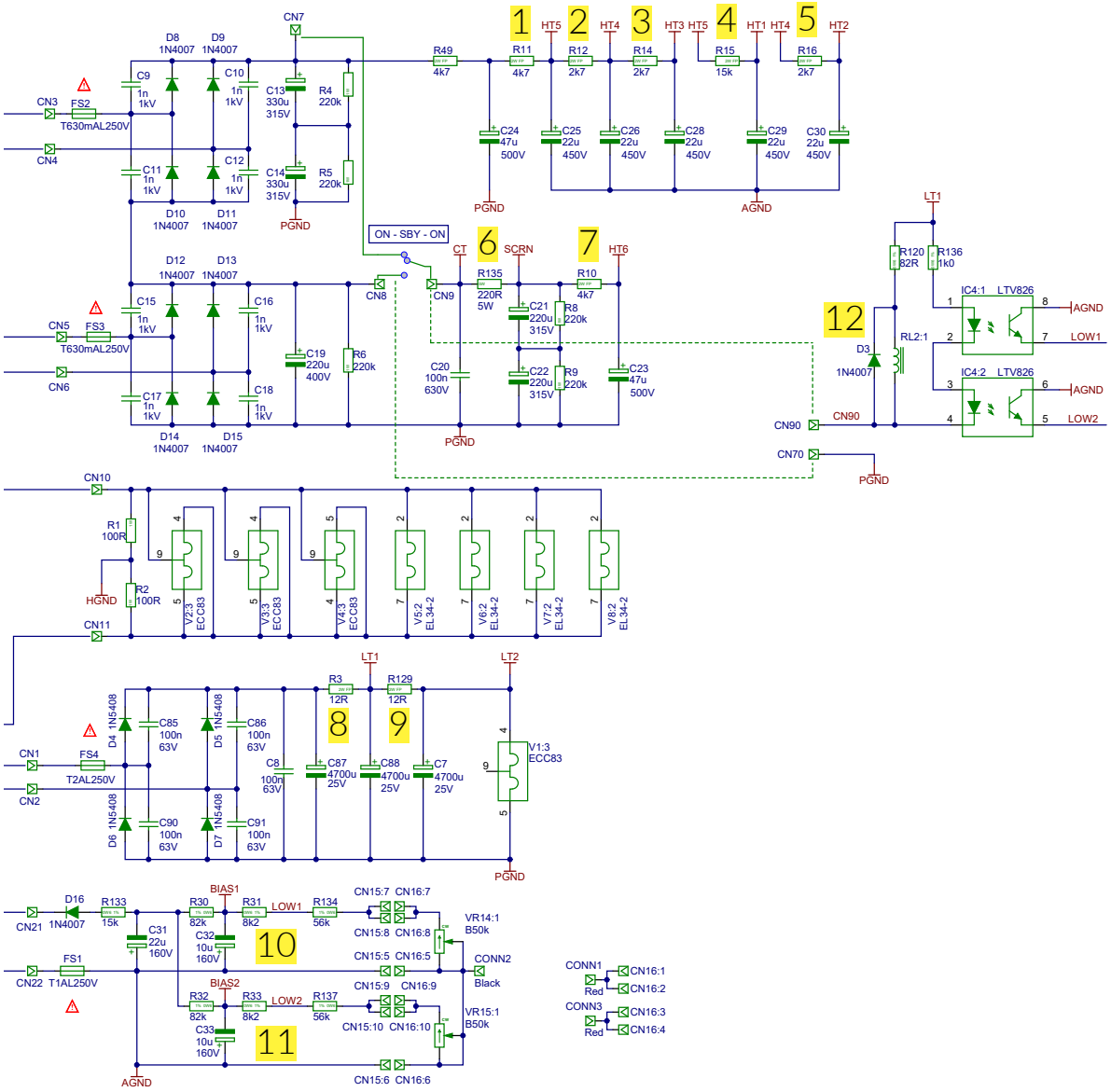


FREQUENCY:1kHz - "LOW"
RESULTS FOR TEST POINT P (CR)
V7 PIN3 V(rms) 112V and V(pp) 252V



FREQUENCY:1kHz - "HIGH"
RESULTS FOR TEST POINT P (OD1)
V7 PIN3 V(rms) 258V and V(pp) 604V

MAIN PCB – FIG. F VOLTAGES



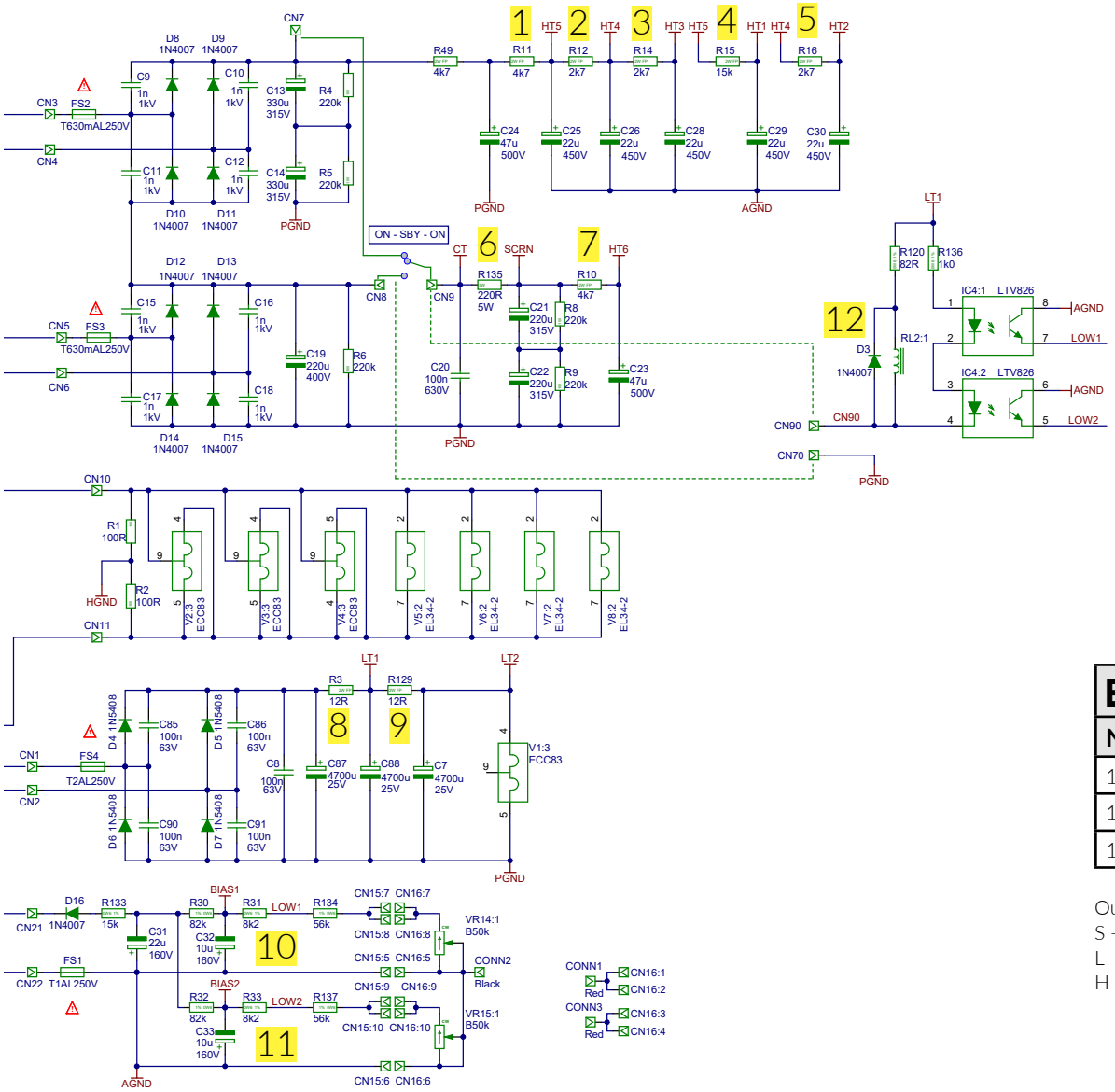
POWER SUPPLY VOLTAGES – OUTPUT SET TO STANDBY

No.	TYPE	PCB No.	FEED	V1 (DC)	V2 (DC)
1	4k7	R11	HT5	429V	370V
2	2k7	R12	HT4	370V	360V
3	2k7	R14	HT3	360V	359V
4	15k	R15	HT1	370V	290V
5	2k7	R16	HT2	360V	358V
8	12R	R3	LT1	18.8V	15.6V
9	12R	R129	LT2	15.6V	12.6V
10	8k2	R31	BIAS1	-42.3V	-38.2V
11	8k2	R33	BIAS2	-41.8V	-37.7V

POWER SUPPLY VOLTAGES – OUTPUT SET TO LOW

No.	TYPE	PCB No.	FEED	V1 (DC)	V2 (DC)
1	4k7	R11	HT5	406V	350V
2	2k7	R12	HT4	350V	341V
3	2k7	R14	HT3	341V	339V
4	15k	R15	HT1	350V	274V
5	2k7	R16	HT2	341V	339V
6	220R	R135	SCRN	172V	167V
7	4k7	R10	HT6	167V	163V
8	12R	R3	LT1	17.9V	14.6V
9	12R	R129	LT2	14.6V	11.7V
10	8k2	R31	BIAS1	-5.86V	-53.3mV
11	8k2	R33	BIAS2	-5.85V	-53.2mV

MAIN PCB – FIG. F VOLTAGES (CONTINUED)

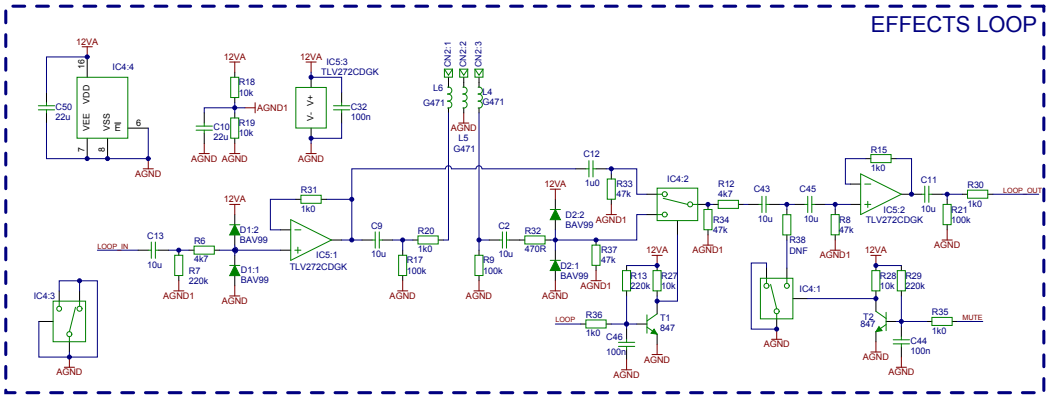


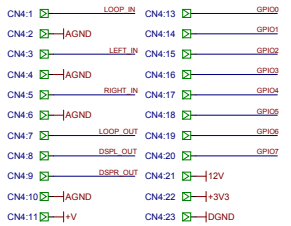
POWER SUPPLY VOLTAGES – OUTPUT SET TO HIGH					
No.	TYPE	PCB No.	FEED	V1 (DC)	V2 (DC)
1	4k7	R11	HT5	398V	343V
2	2k7	R12	HT4	343V	333V
3	2k7	R14	HT3	333V	331V
4	15k	R15	HT1	343V	268V
5	2k7	R16	HT2	333V	331V
6	220R	R135	SCRN	451V	448V
7	4k7	R10	HT6	448V	433V
8	12R	R3	LT1	17.8V	14.7V
9	12R	R129	LT2	14.7V	11.8V
10	8k2	R31	BIAS1	-41.9V	-37.9V
11	8k2	R33	BIAS2	-41.4V	-37.4V

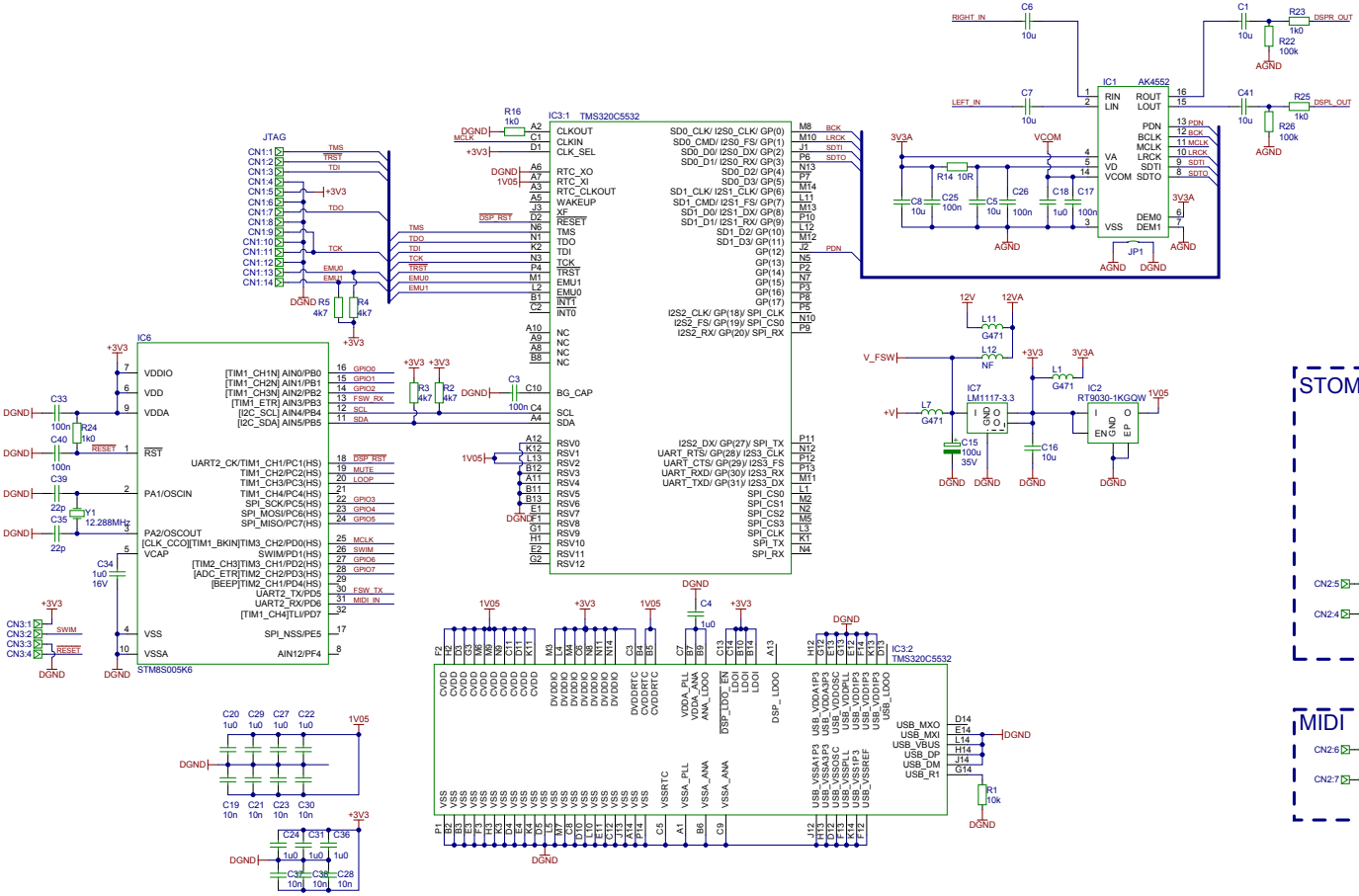
BIAS SWITCHING VOLTAGES					
No.	TYPE	PCB No.	FEED	Anode (DC)	Cothode (DC)
12 (S)	1N4007	D3	LOW1/2	-1.9mV	13.5V
12 (L)	1N4007	D3	LOW1/2	15.6V	15.6V
12 (H)	1N4007	D3	LOW1/2	14.7V	14.7V

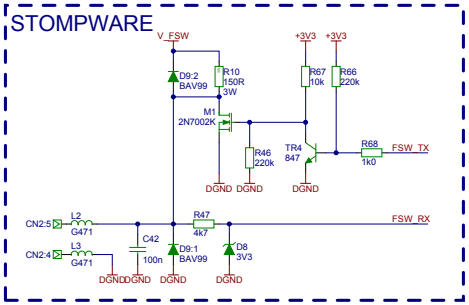
Output Setting
S - Standby
L - Low
H - High

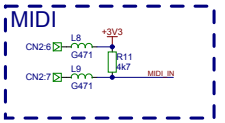
DFX1 MODULE PCB



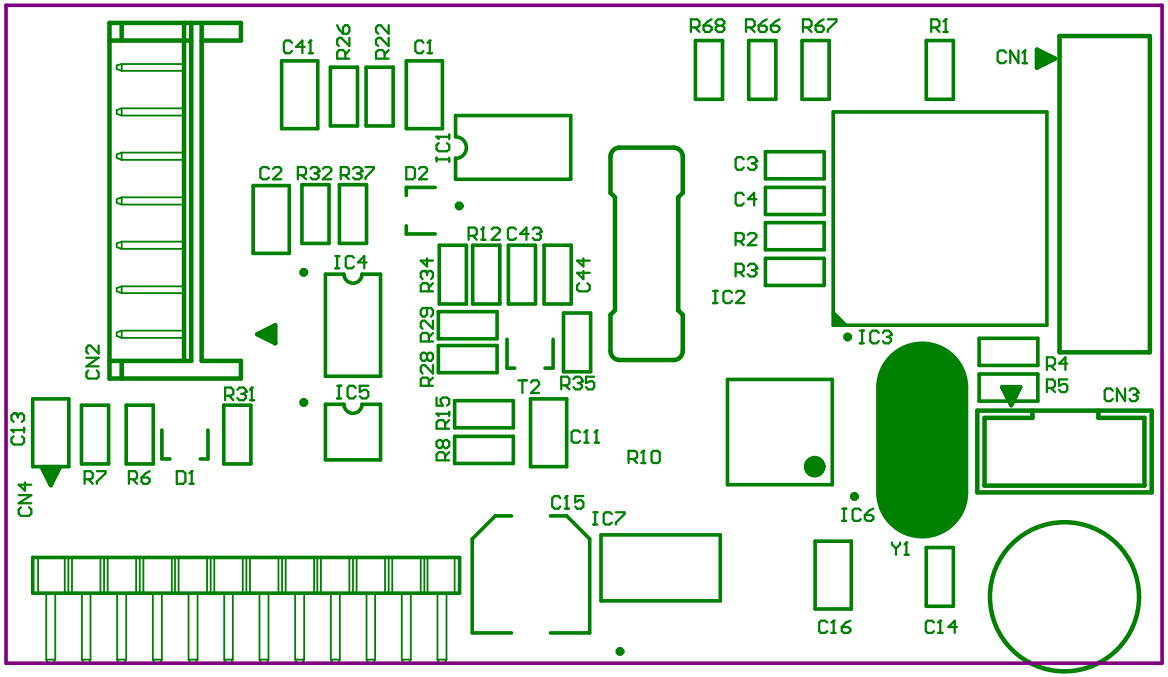


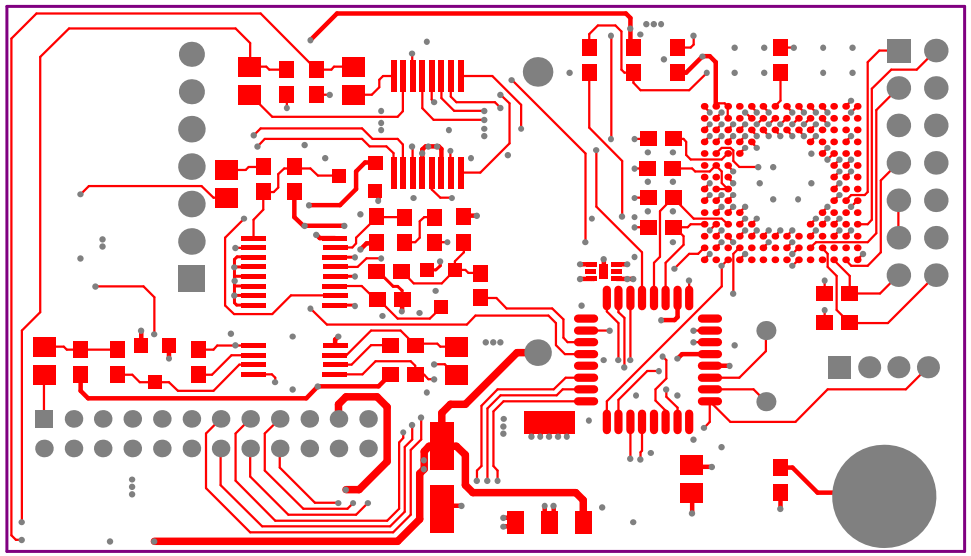


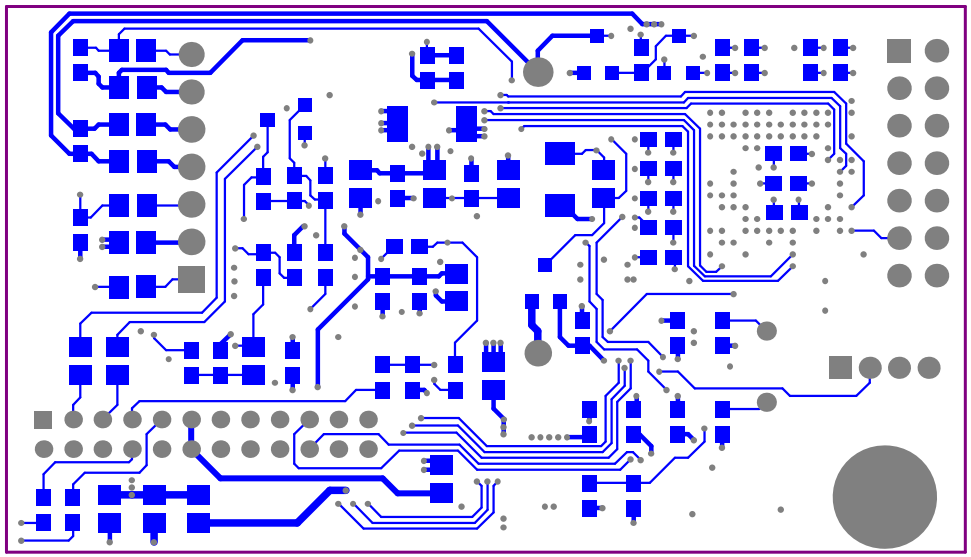




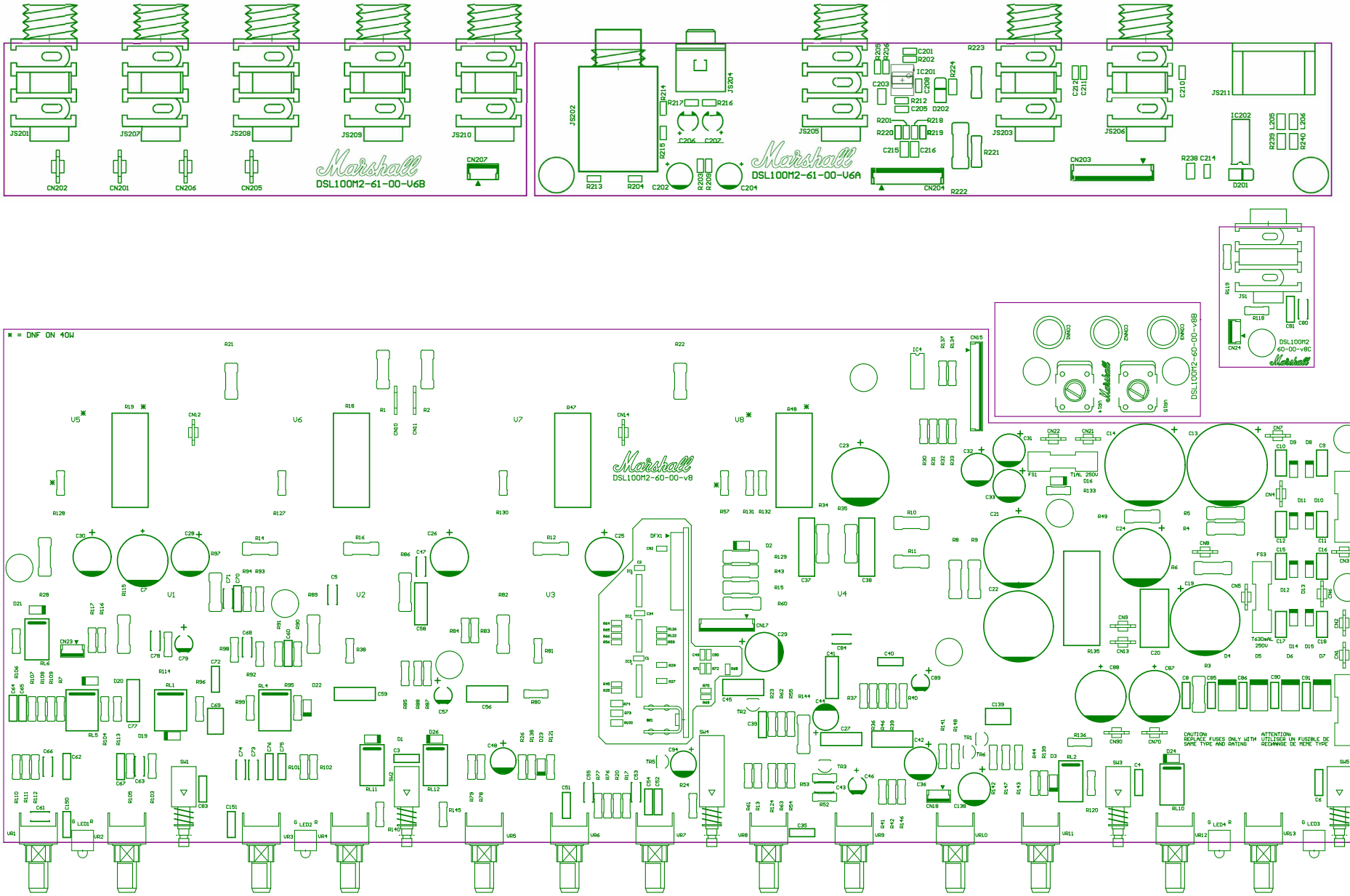
DFX1 PCBPS


C41
R26
R22
C1
IC1
R68
R66
R67
R1
CN1
C2
R32
R37
D2
C3
C4
R2
R3
IC2
R12
C43
IC4
R34
C44
R29
R28
IC3
R4
R5
CN3
CN2
R31
IC5
T2
R35
C13
R15
R8
C11
R10
CN4
R7
R6
D1
C15
IC7
IC6
Y1
C16
C14

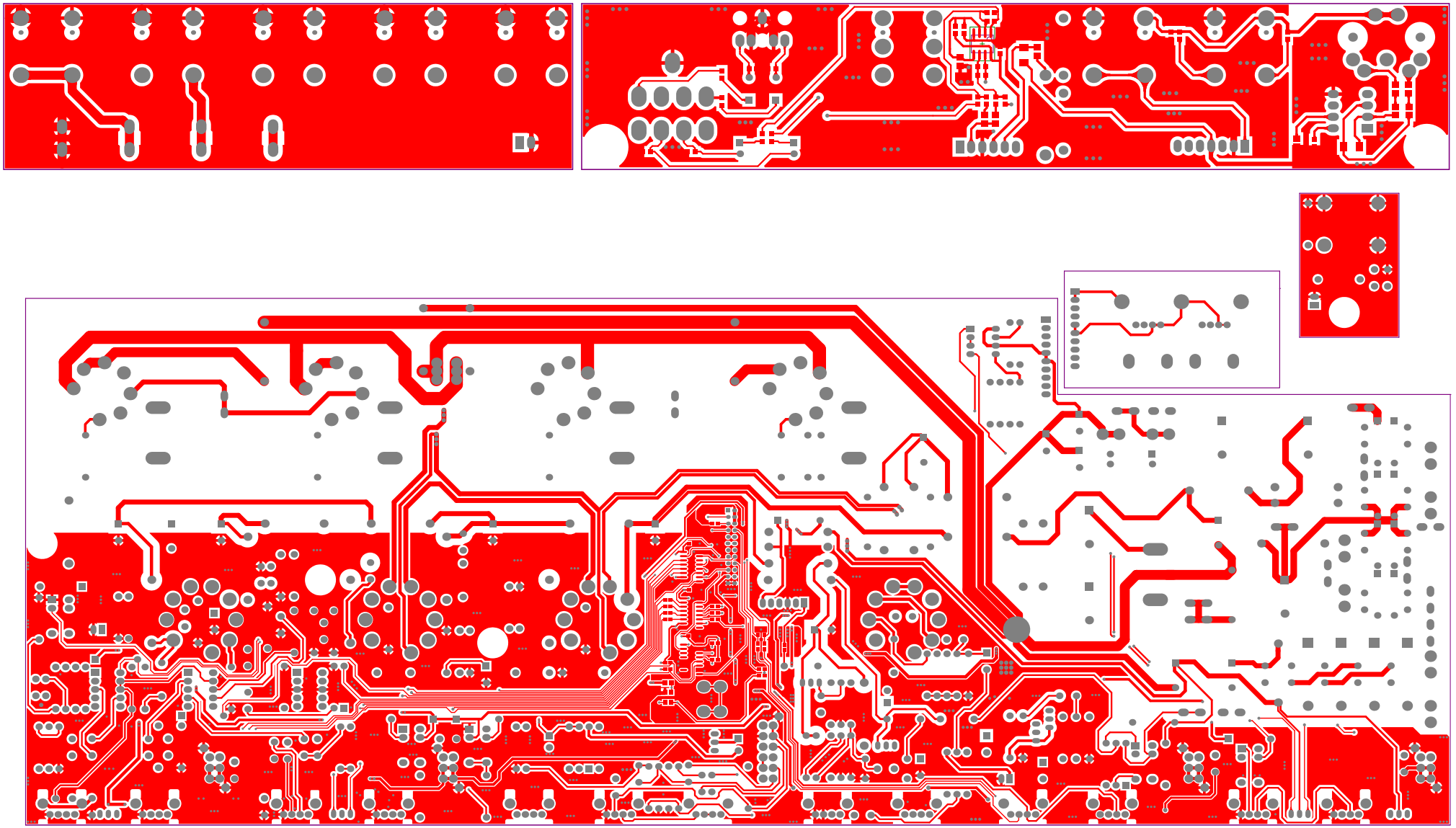




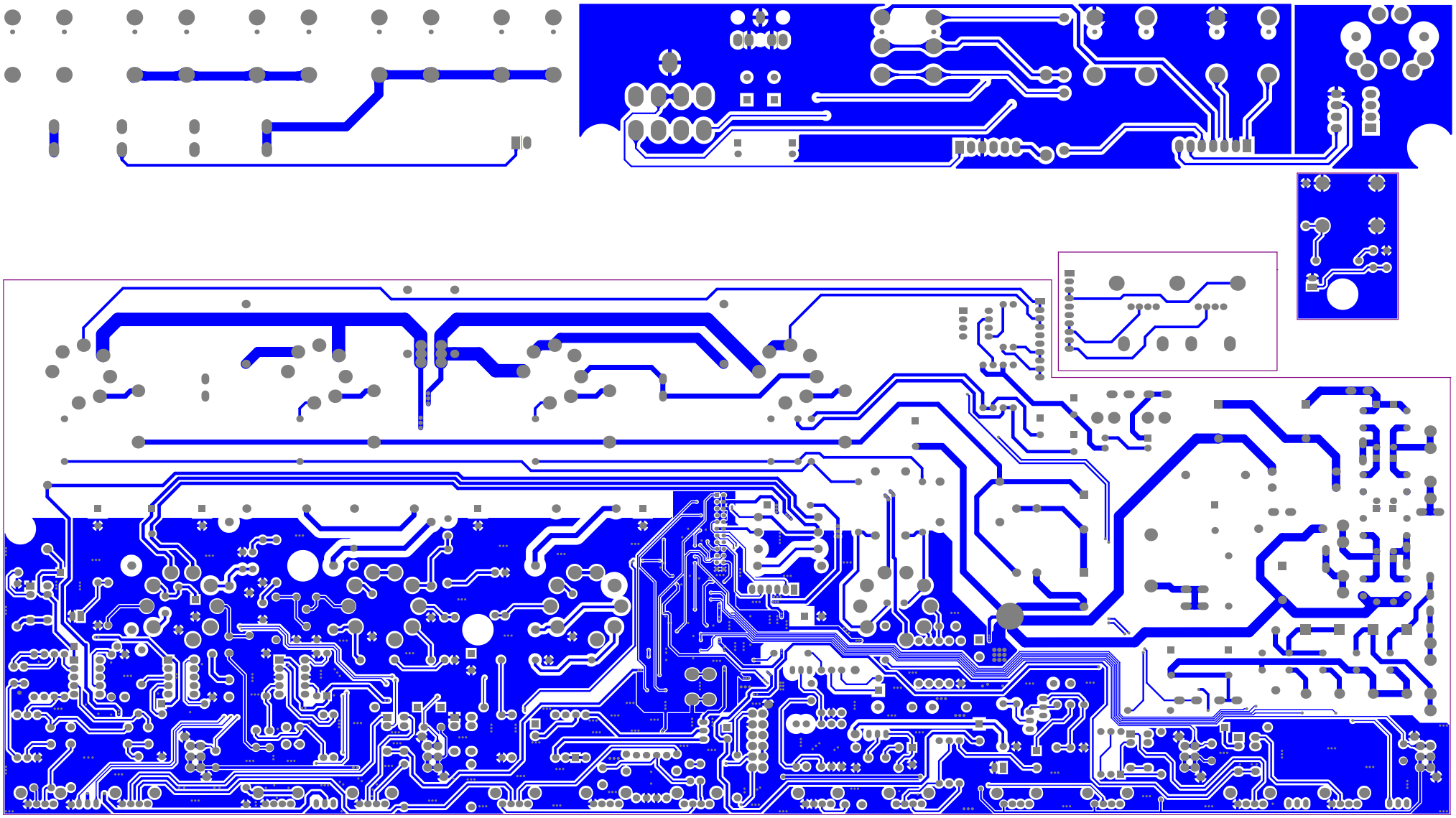
COMPONENT IDENTIFICATION PCBP



COMPONENT SIDE TRACK PCBP



SOLDER SIDE TRACK PCBP



SPARES LIST DSL40CR

STOCK NO.	DESCRIPTION	UOM	QTY
PIPE-90002	WHITE PVC 5.0DIA X 13	MTR	2.0
LOGO-01204	SMALL WHITE LOGO	EA	1
FRET-90027	BLACK FRET COVERING	MTR	1.0
HNDL-90014	HANDLE OVERMOULD WITH BLACK END CAPS	EA	1
SPKR-91009	12" SPEAKER (16OHM) V-TYPE	EA	1
CVER-90002	BLACK ELEPHANT GRAIN	MTR	1.0
CVER-90002	BLACK ELEPHANT GRAIN	MTR	2.0
CORN-91008	90 DEGREE REAR CORNER	EA	4
CORN-91007	90 DEGREE FRONT CORNER	EA	4
FEET-90026	RUBBER FEET (BIG)	EA	4
PANL-91096	DSL40CR FRONT PANEL	EA	1
PANL-91097	DSL40CR REAR PANEL - R A, D, E, H, I,K, L, Q, S, X	EA	1
PANL-91098	DSL40CR REAR PANEL - B, C, F, M, T, U	EA	1
PANL-91099	DSL40CR REAR PANEL - J	EA	1
PANL-91100	DSL40CR REAR PANEL (CCC)	EA	1
KNOB-90047	BROWN BODY GOLD CAP D FLAT D=19.5, LINE OPP, FLAT TOL 5%	EA	1
PCBA-90023	MAIN PCB ASSEMBLY	EA	1
PCBA-00025	SPEAKER OUTPUT PCB ASSEMBLY	EA	1
PCBA-90025	REAR PCB ASSEMBLY	EA	1
TXOP-91007	OUTPUT TRANSFORMER D2507	EA	1
TXMA-91066	MD173DE MAINS 230V - A, D, E, H, I,K, L, Q, S, X	EA	1
TXMA-91067	MD173DU MAINS 120V - B, C, F, M, T, U	EA	1
TXMA-91068	MD173DJ MAINS 100V - J	EA	1
SWTP-90021	PUSH SW KNOB D=7	EA	5
SKTM-90002	IEC POWER SOCKET	EA	1
FUSE-90018	0219001.MXAP FUSE - A, D, E, H, I, K, L, Q, S, X	EA	1
FUSE-90017	0219002.MXAP FUSE - B, C, F, J, M, T, U	EA	1
KNOB-00052	BIAS KNOB 0 DEGREE, RED	EA	2

STOCK NO.	DESCRIPTION	UOM	QTY
DFXP-90004	DXF1 MODULE	EA	1
VLVE-90108	TUBE SHIELD-1 2.4-50 SHORT SPRING	EA	1
REF. VALVE CHART	VACUUM TUBE ECC83 (V1,V2)	EA	1
REF. VALVE CHART	VACUUM TUBE ECC83 (V3,V4)	EA	1
REF. VALVE CHART	VACUUM TUBE EL34 II JJ (V5,V6)	EA	1
SWTM-90010	ROCKER BLACK 6 PIN	EA	1
SWTM-90009	MAIN SWITCH 220V - A, D, E, H, I, K, L, Q, S, X	EA	1
SWTM-90012	MAIN SWITCH 110V - B, C, F, J, M, T, U	EA	1

REVISIONS

As and when revisions are made, the service manual will be updated.

WHILST THE INFORMATION CONTAINED HEREIN IS CORRECT AT THE TIME OF PUBLICATION, DUE TO ITS POLICY OF CONSTANT IMPROVEMENT AND DEVELOPMENT, MARSHALL AMPLIFICATION PLC RESERVES THE RIGHT TO ALTER SPECIFICATIONS WITHOUT PRIOR NOTICE.

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