

Service Manual

Model: ALTODRIVE3.4

3-WAY STEREO DIGITAL X - OVER



www.altoproaudio.com

Version: 1.1

CONTENTS

1. Specification.....	1
2. Block Diagram.....	0
3. Schematic Diagram... ..	9
4. Printed Circuit Board.....	19
5. Wiring Diagram.....	1
6. Test Procedure.....	0
7. Electrical Parts List.....	16
8. Exploded Views & Mechanical Parts List.....	1
9. Troubleshooting.....	0
10. Notes.....	0

Input Channel

Digital Input Gain

- /+ 12 dB / step 0.5 dB

4 Parametric Filters

Gain - /+ 15 dB / step 0.5 dB

Freq 20 Hz - 20 KHz step 1/12 oct

BandWidth 0.05 oct - 3 oct / step 0.05 oct

Delay line

Up to 512 ms minimum step 21us

Output Channel

Digital Out Volume

- /+ 12 dB / step 0.5 dB

Delay line

Up to 512 ms minimum step 21us

5 Parametric Filters

Gain - /+ 15 dB / step 0.5dB

Freq 20 Hz - 20 KHz / step 1/12 oct

BandWidth 0.05 oct - 3 oct step 0.05 oct

High Pass filter type Butterworth

Freq: 20 Hz - 20 KHz / step 1/12 oct

Slope: Bypass, 1stord, 2ndord, 3rdord, 4thord

Low Pass filter type Butterworth

Freq: 20 Hz - 20 KHz / step 1/12 oct

Slope: Bypass, 1stord, 2ndord, 3rdord, 4thord

Polarity

Phase 0° or 180°

Limiter

Threshold - 29 dB up to 0 dB / step 1dB

Release Time 0.4 s, 0.5 s, 0.7 s, 1.4 s

Attack Time 0.05 s, 0.10 s, 0.20 s, 0.30 s

The Whole Unit

Memory

1 Factory Preset

64 User Preset

Analog

Inputs

2 XLR - F (BAL)

Outputs

6 XLR - M (BAL)

Input Impedance

>40k Ω

Output Impedance

<200 Ω

Input MAX Level

12dBv

Output MAX Level

12dBv

A/D Converter

20BITS Sigma-Delta

D/A Converter

24BITS Sigma-Delta

Performance

THD+N

0.02%(1KHz - 3dBFS)

Amplitude

20Hz - 20KHz

S/N Ratio

>97dBa

Digital

Processor speed

36 MIPS

DSP resolution

24x32 bits

Control

Microprocessor

MIDI section

Connections

Input/output/thru

Sockets

5 - poles DIN(female)

Mode

Photocoupled

Power Supply

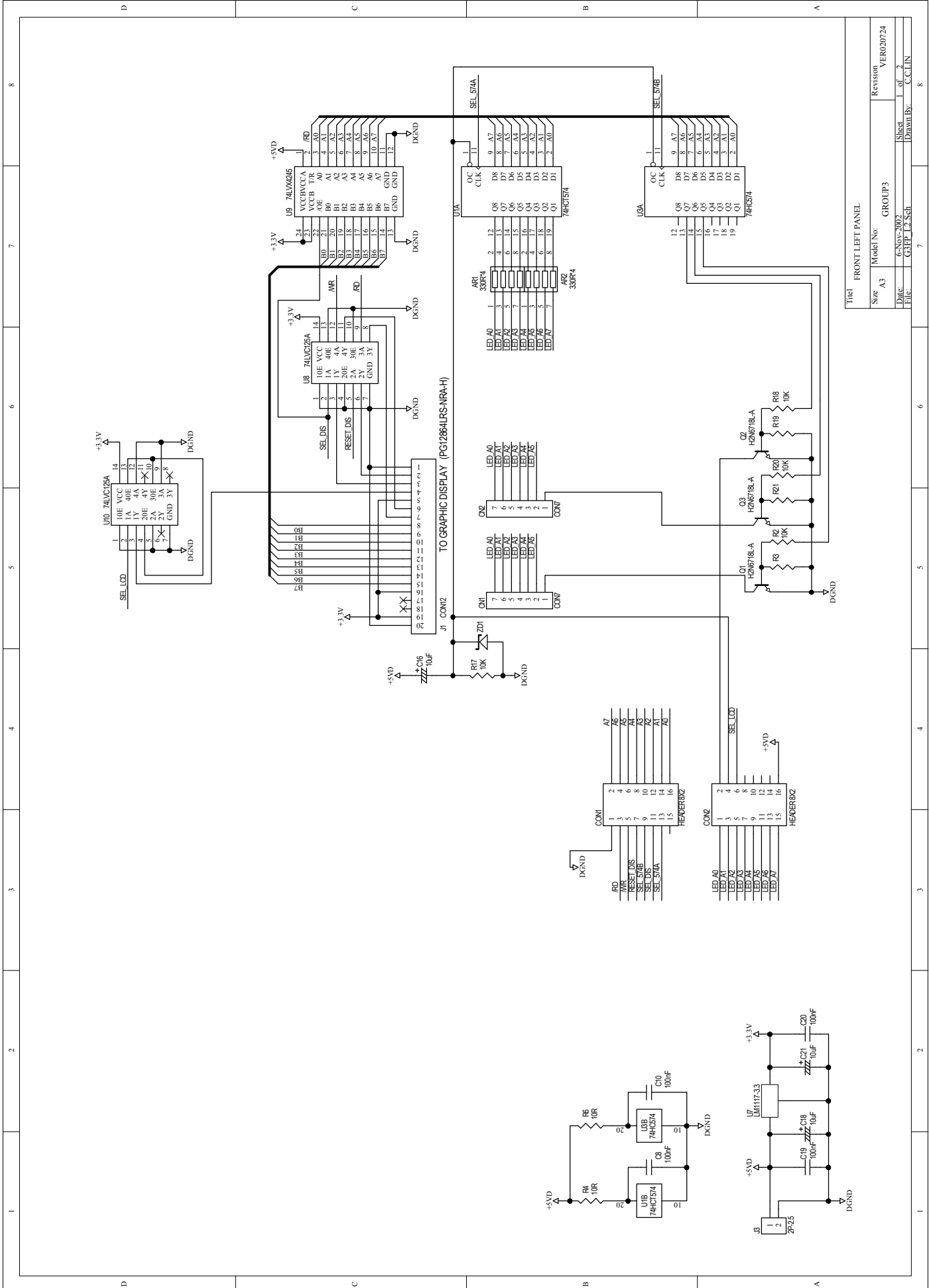
Connector type	3 - poles DIN (female)
Type	Servo controlled, Switching
fuse	210 - 240V: T250mAL250VAC 95 - 120V: 500mAL250VAC
AC Input	95 - 240V~60 - 50Hz
rated power consumption	15W

User Interface

Graphic display	128×64 dots
Keyboard	14 user keys/ 8LEDs
Vu meter	2×6 LEDs

Physical

Size	Standard 19"rack Mounting
Dimensions	483(W)×232.5(D)×44(H)mm(19"×9.3"×1.7")
weight	3.5Kg(7.72lb)

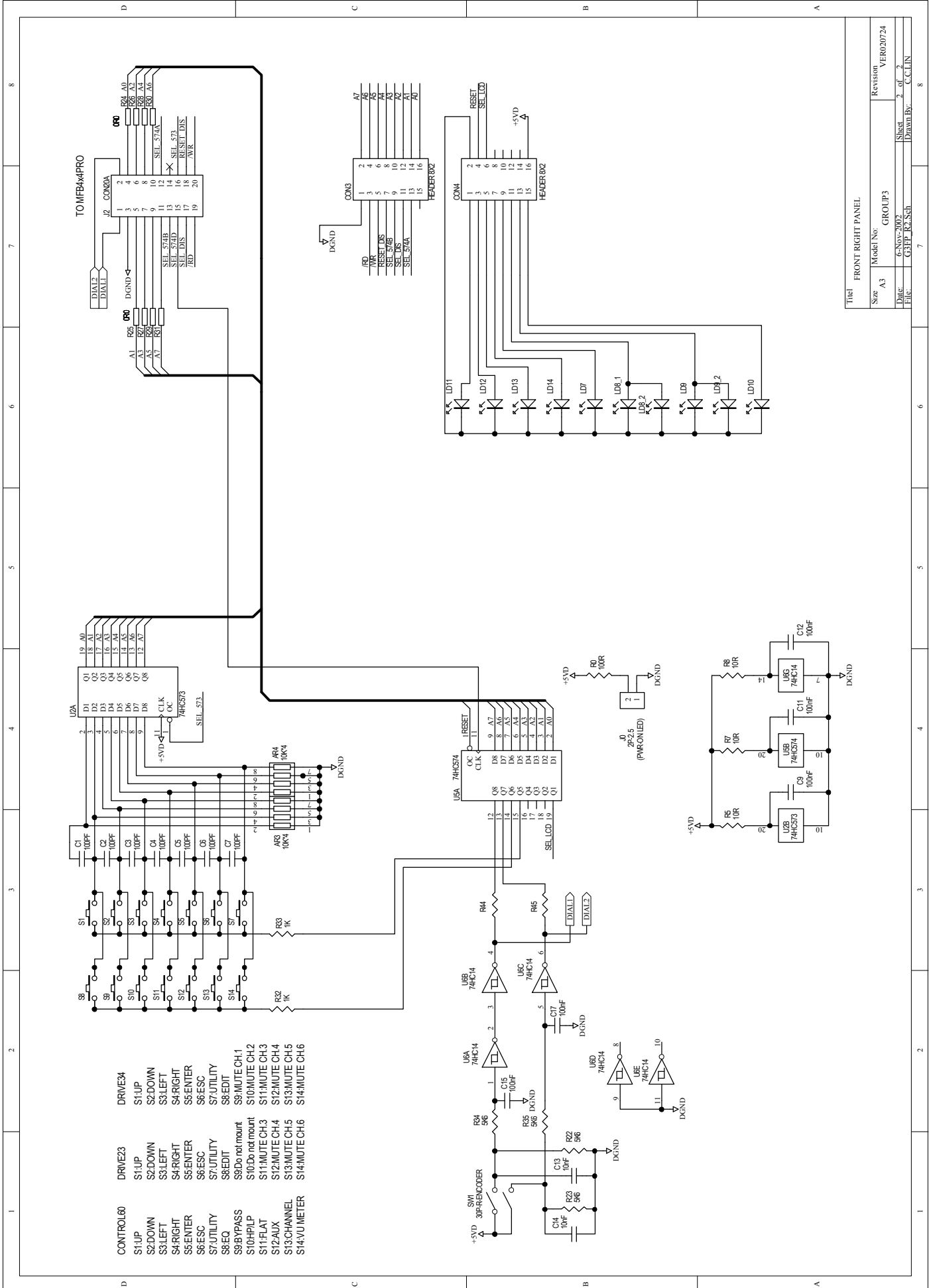


FRONT LEFT PANEL

Model No:	GROUP3
Revision:	VER020724
Date:	6/25/2007
File:	CEP-12.Sch
Sheet:	of 2
Drawn By:	C.C.LIN

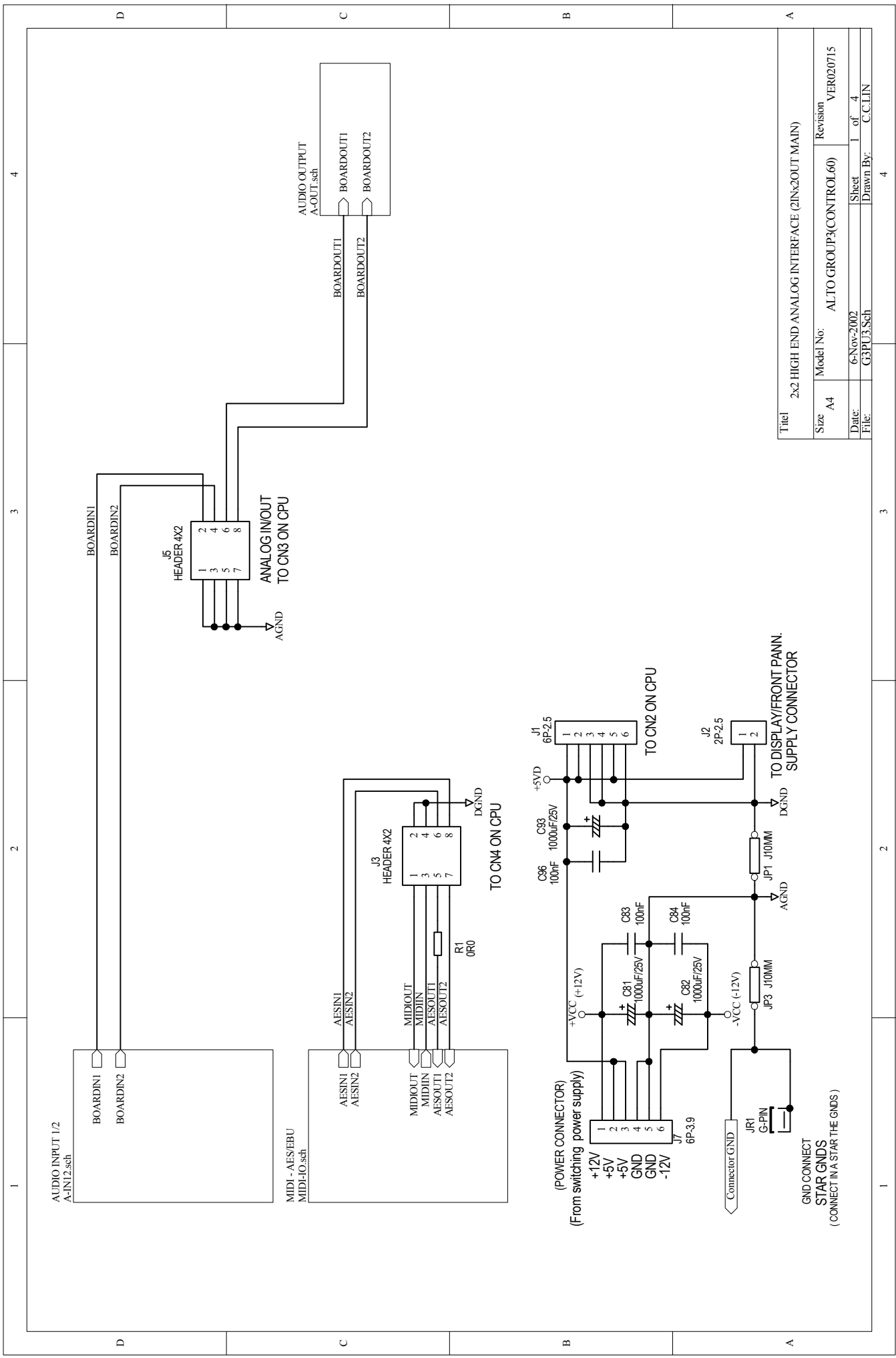
1 2 3 4 5 6 7 8

D C B A

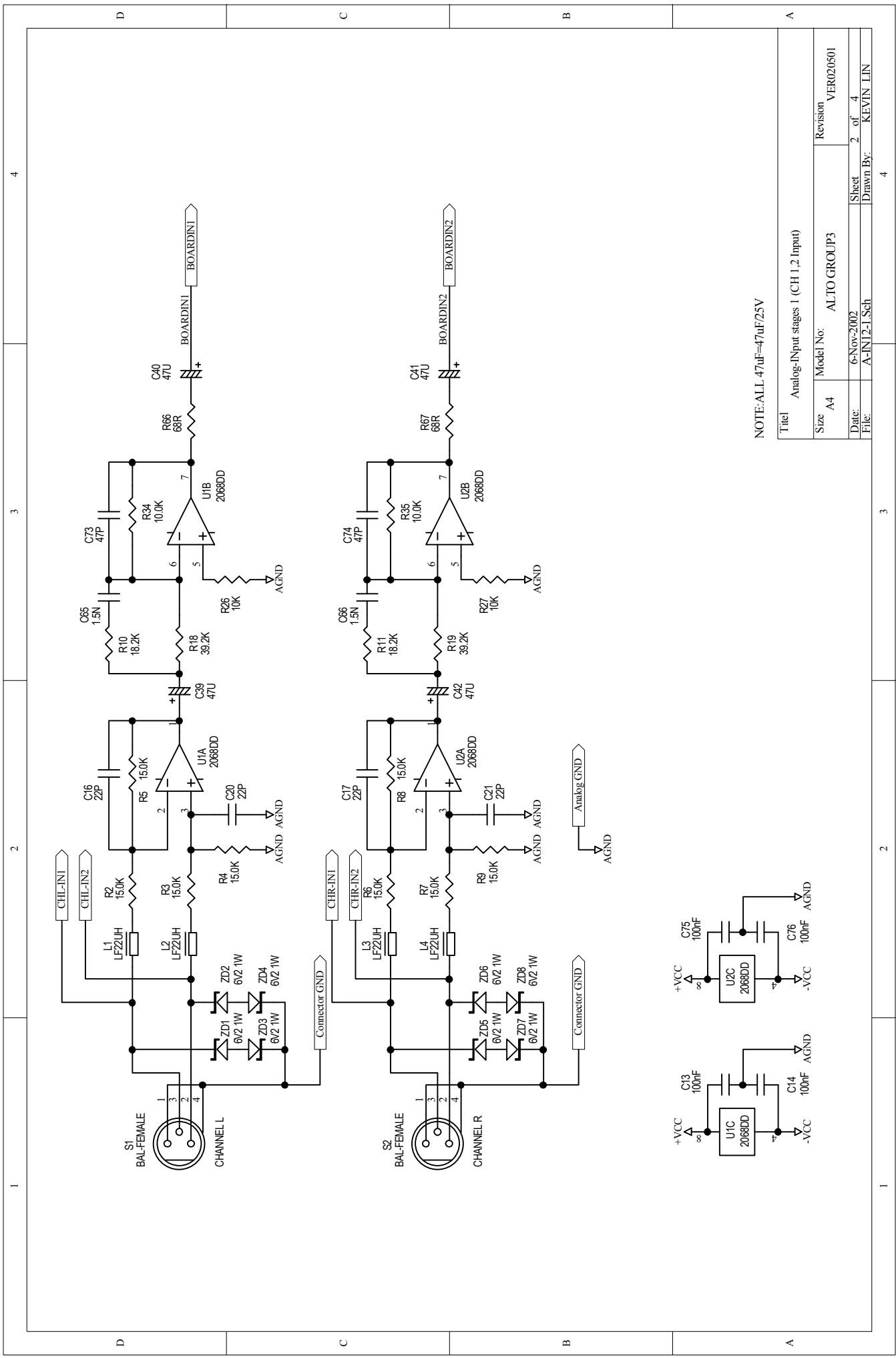


- CONTROL60
 - S1:UP
 - S2:DOWN
 - S3:LEFT
 - S4:RIGHT
 - S5:ENTER
 - S6:ESC
 - S7:UTILITY
 - S8:EQ
 - S9:PASS
 - S10:PLP
 - S11:FLAT
 - S12:AUX
 - S13:CHANNEL
 - S14:METER
- DRIVE23
 - S1:UP
 - S2:DOWN
 - S3:LEFT
 - S4:RIGHT
 - S5:ENTER
 - S6:ESC
 - S7:UTILITY
 - S8:EDIT
 - S9:Do not mount
 - S10:Do not mount
 - S11:MUTE CH3
 - S12:MUTE CH4
 - S13:MUTE CH5
 - S14:MUTE CH6
- DRIVE34
 - S1:UP
 - S2:DOWN
 - S3:LEFT
 - S4:RIGHT
 - S5:ENTER
 - S6:ESC
 - S7:UTILITY
 - S8:EDIT
 - S9:MUTE CH1
 - S10:MUTE CH2
 - S11:MUTE CH3
 - S12:MUTE CH4
 - S13:MUTE CH5
 - S14:MUTE CH6

Title		FRONT RIGHT PANEL	
Size	A3	Model No.	GROUP3
Date	6/15/2002	Revision	VER020724
File	CEP-RA-Sub	Sheet	2 of 2
		Drawn By	C.C.LIN

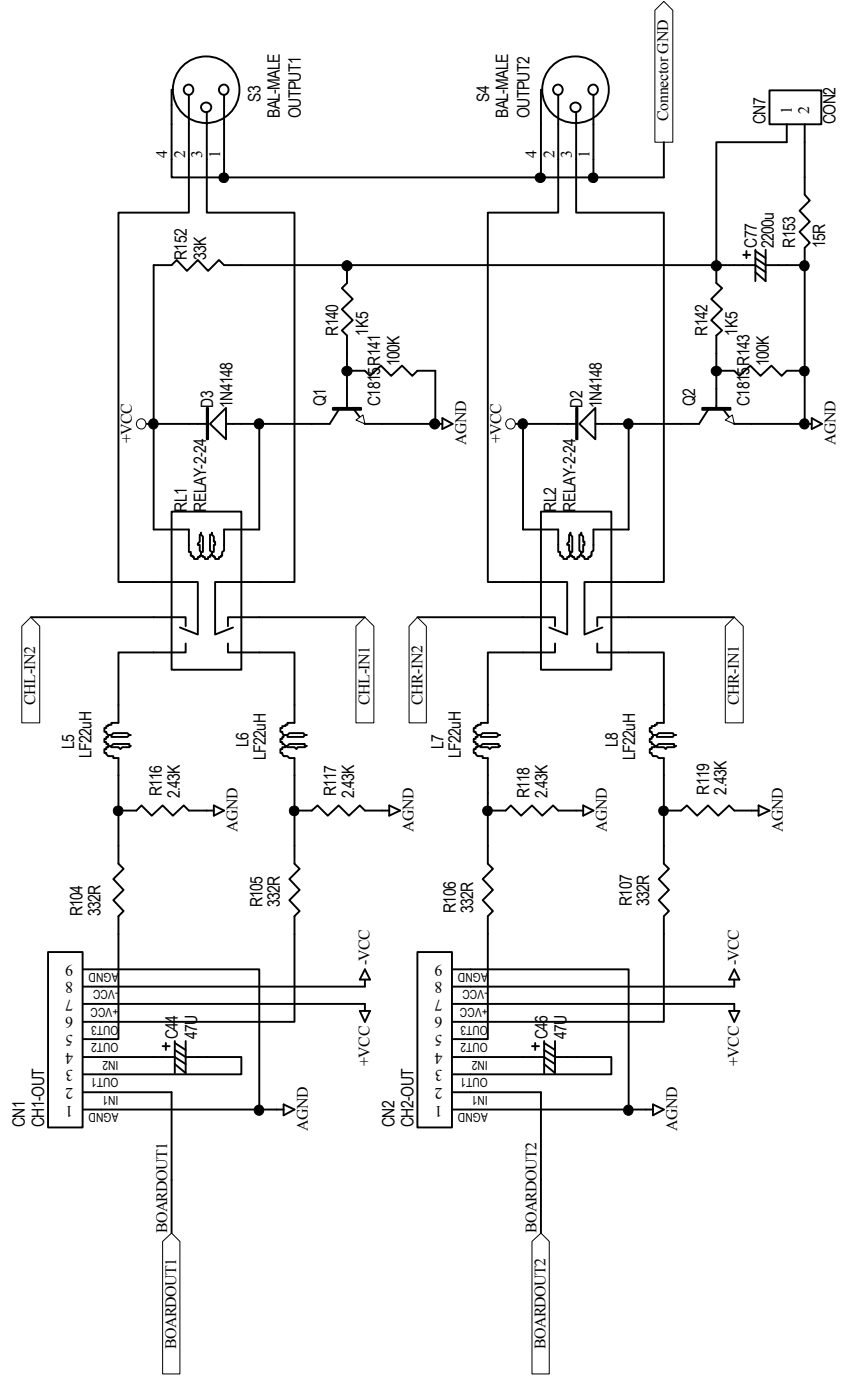


Title		2x2 HIGH END ANALOG INTERFACE (2INx2OUT MAIN)	
Size	A4	Model No:	AL TO GROUP3(CONTROL60)
Date:	6-Nov-2002	Revision	VER020715
File:	G3PU3.Sch	Sheet	1 of 4
		Drawn By:	C.CLIN

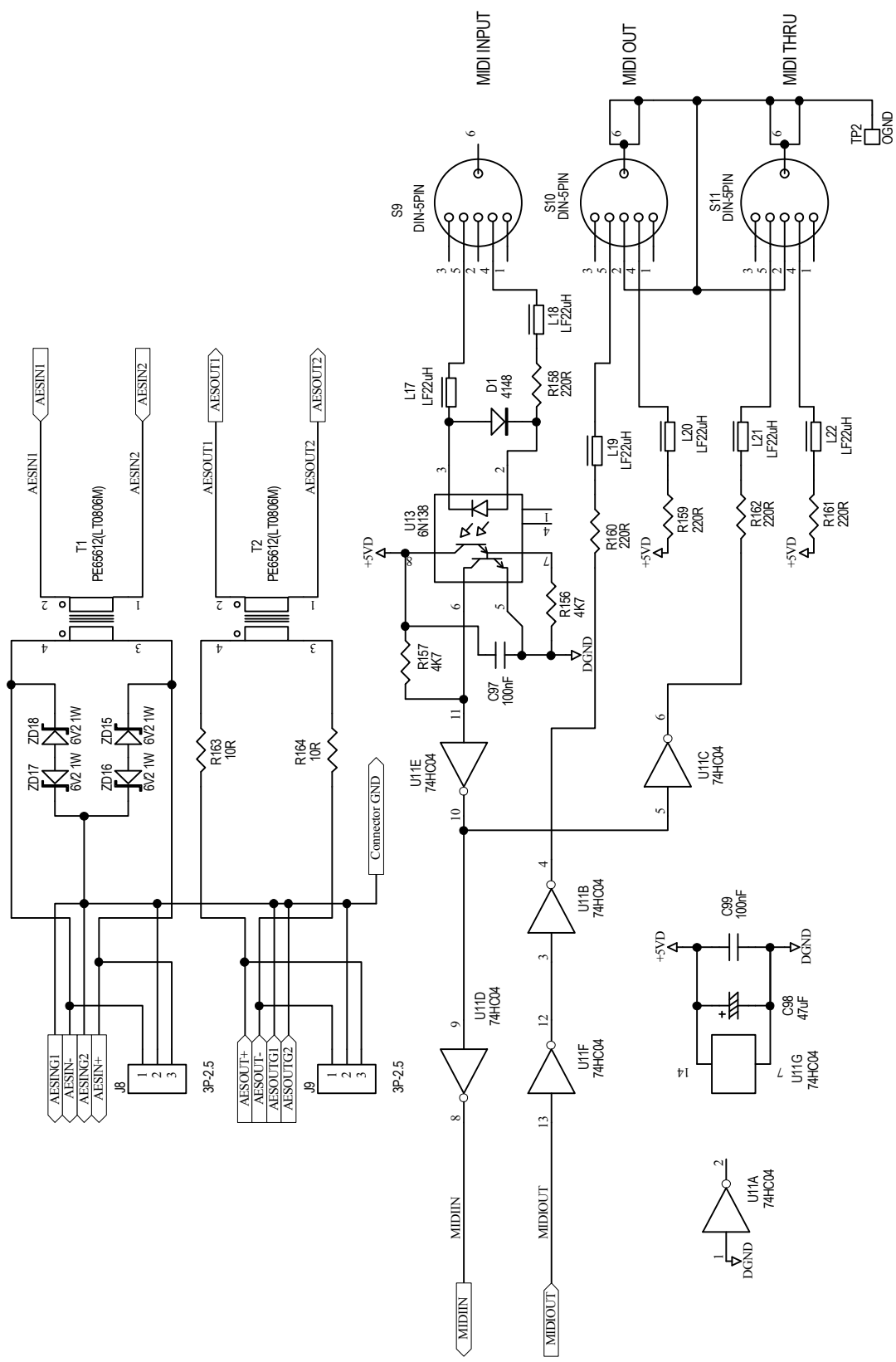


NOTE: ALL 47uF=47uF/25V

Title		Analog-Input stages 1 (CH 1,2 Input)	
Size	A4	Model No:	ALTO GROUP3
Date:	6-Nov-2002	Revision	VER020501
File:	A-IN12-1.Sch	Sheet	2 of 4
		Drawn By:	KEVIN LIN

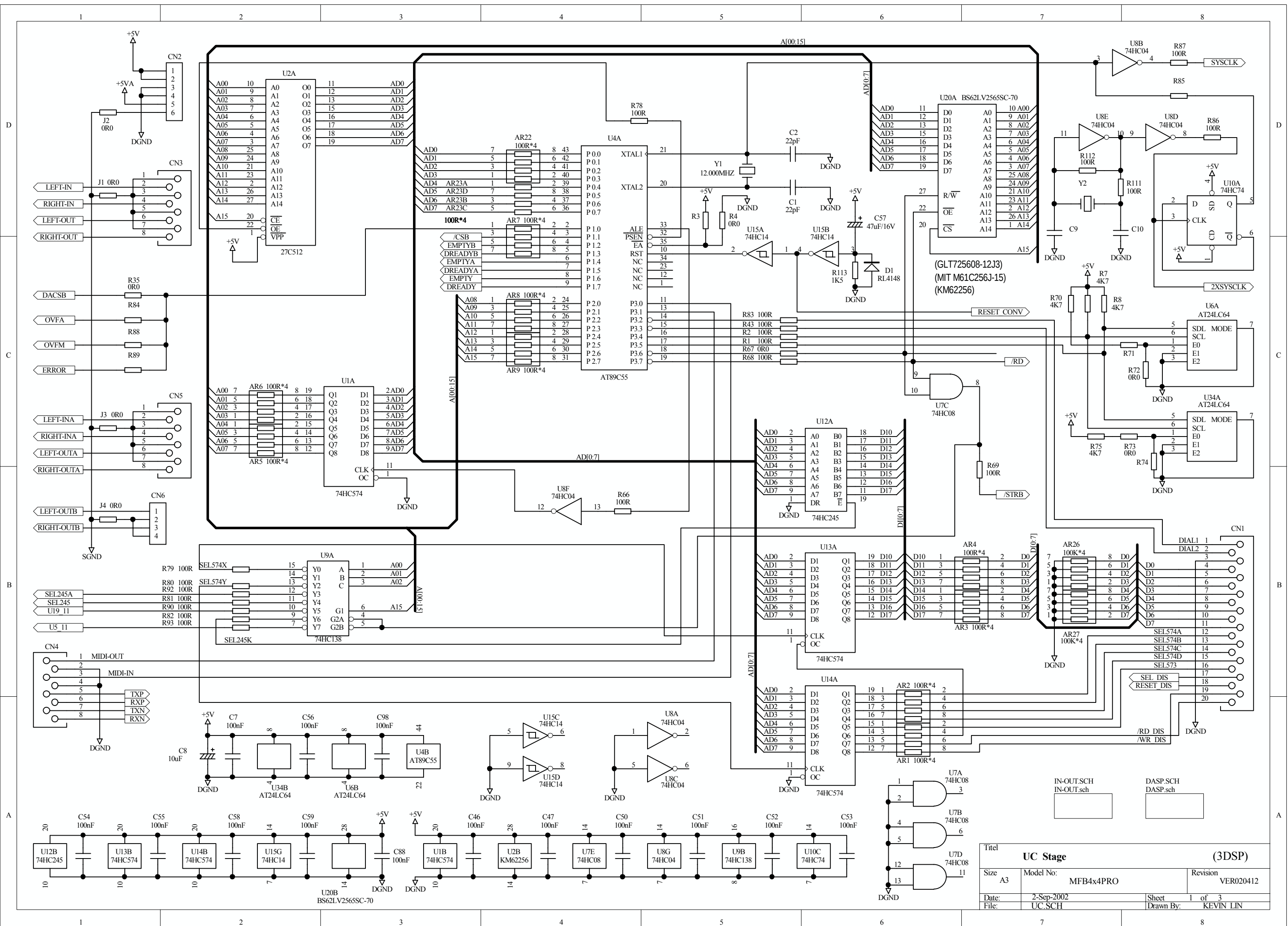


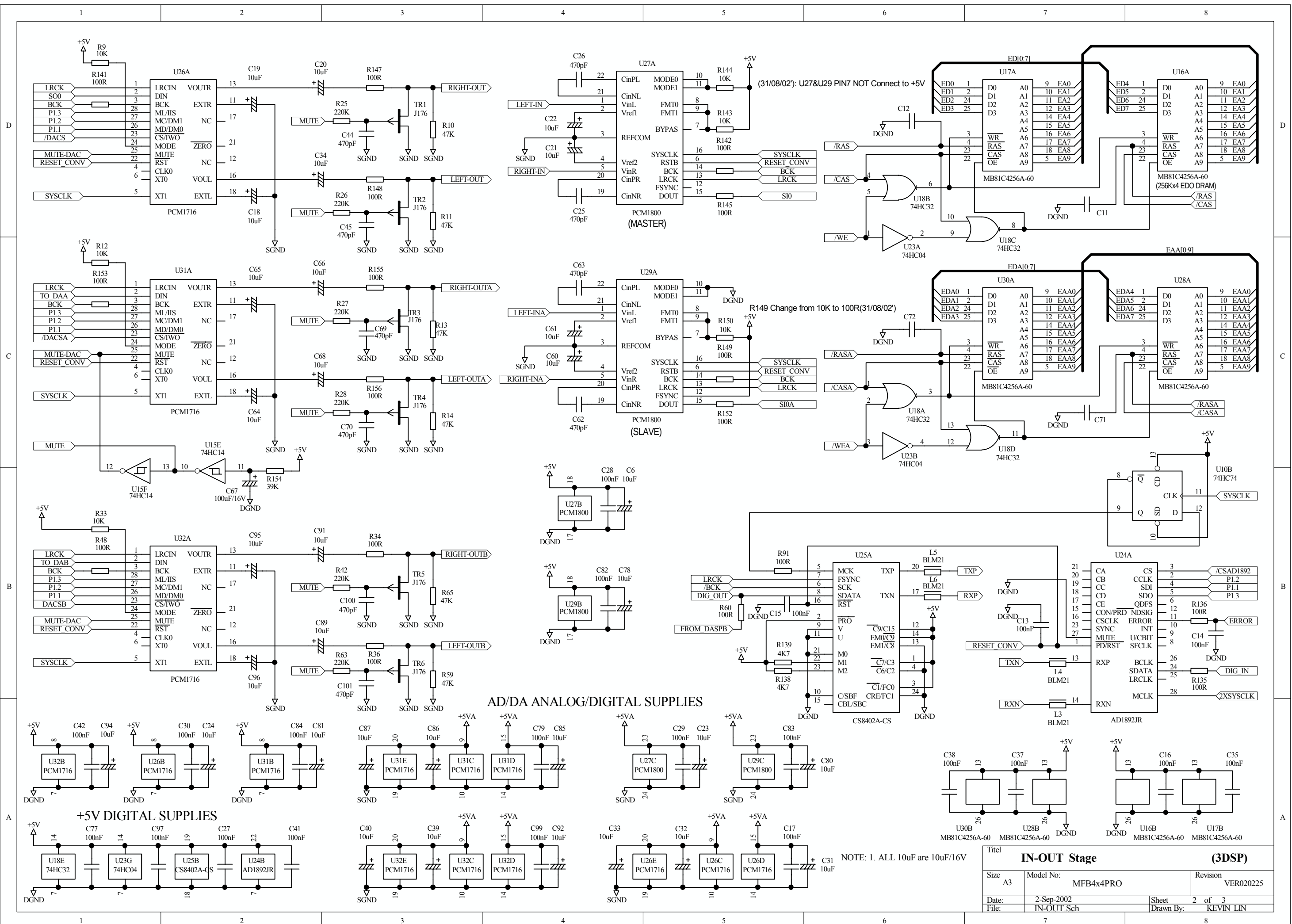
Title		Analog-Output	
Size	A4	Model No:	ALTO GROUP3(CONTROL60)
Date:	6-Nov-2002	Revision	VER020715
File:	A-OUT1.Sch	Sheet	3 of 4
		Drawn By:	C.CLIN



Title: MIDI IN-OUT & AES/EBU DIGITAL STAGE

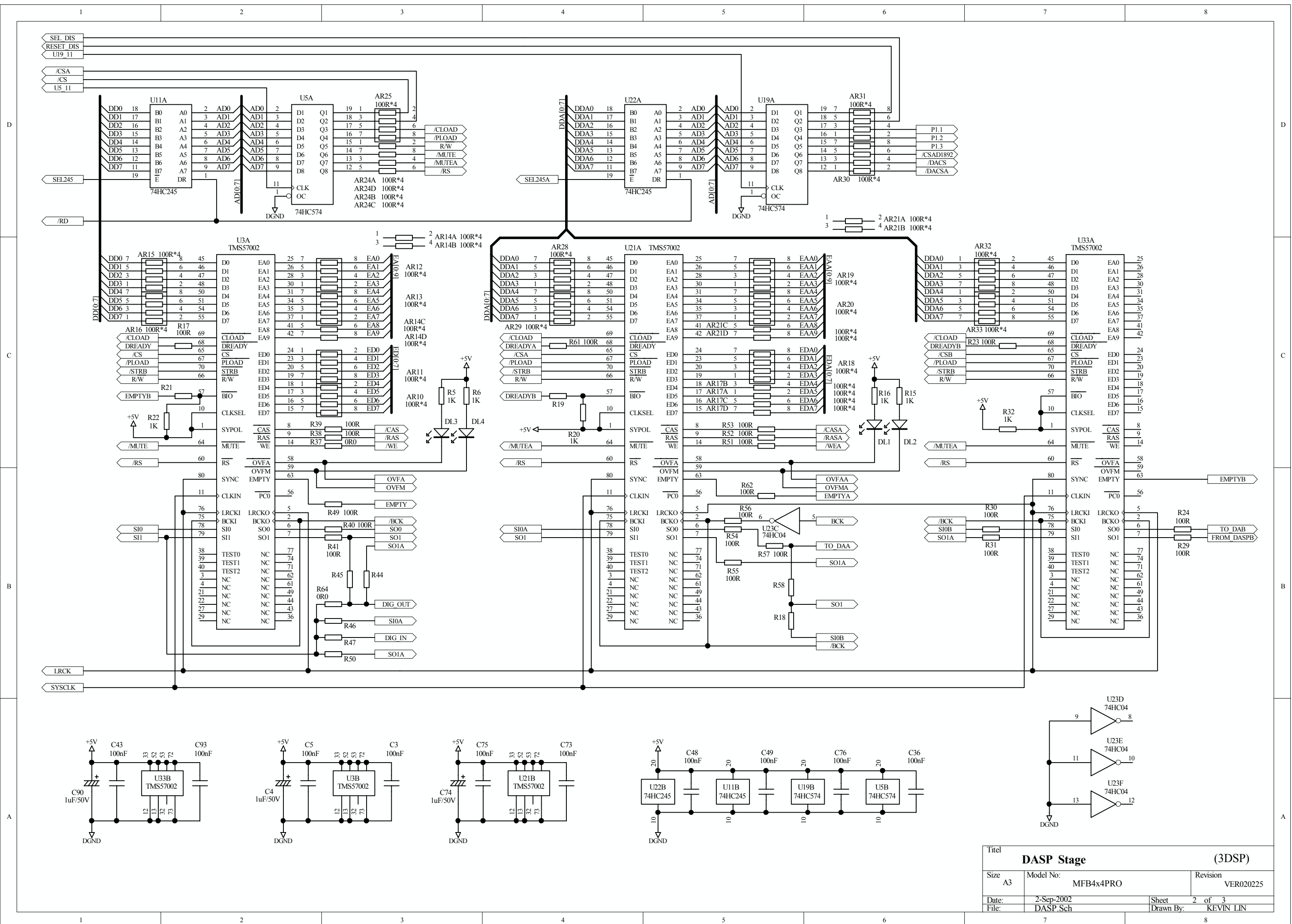
Size: A4	Model No: ALTO GROUP(CONTROL 60)	Revision: VER020715
Date: 6-Nov-2002	Sheet: 4 of 4	
File: MIDI-I/O.Sch	Drawn By: C.C.LIN	



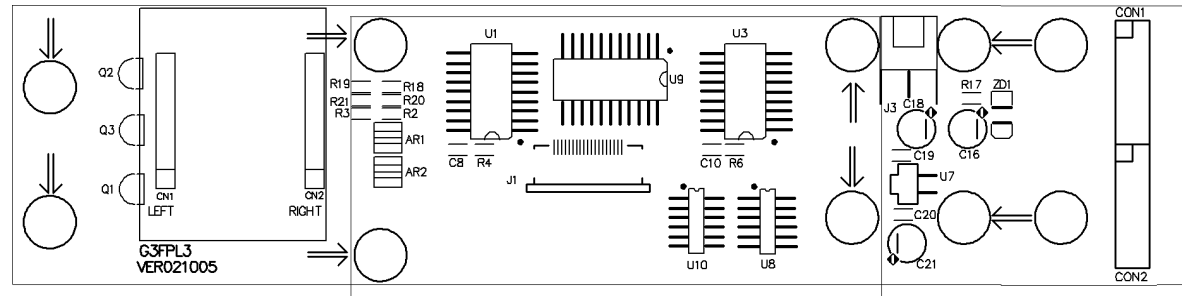


IN-OUT Stage		(3DSP)	
Size	A3	Model No:	MFB4x4PRO
Date:	2-Sep-2002	Revision	VER020225
File:	IN-OUT_Sch	Sheet	2 of 3
		Drawn By:	KEVIN LIN

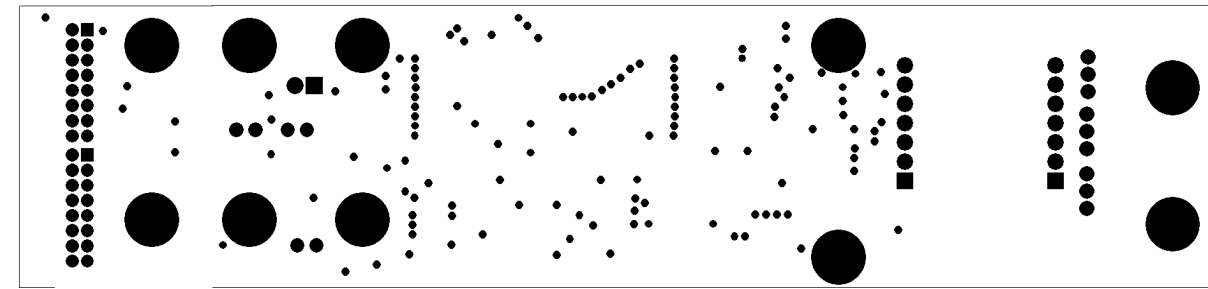
NOTE: 1. ALL 10uF are 10uF/16V



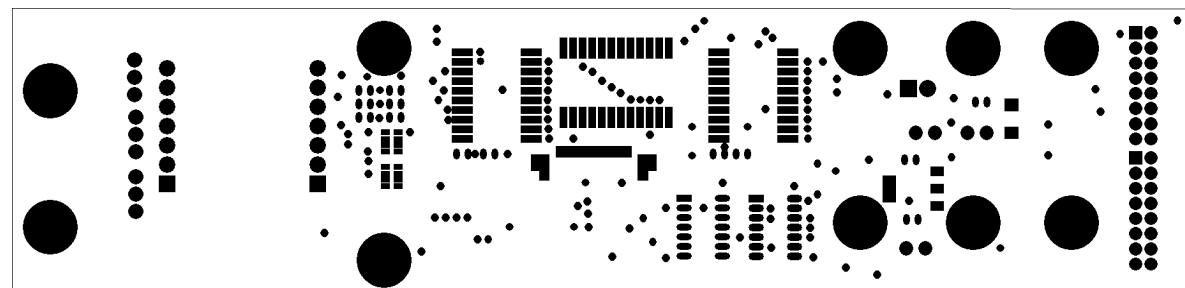
Titel		DASP Stage (3DSP)	
Size	A3	Model No:	MFB4x4PRO
Date:	2-Sep-2002	Revision	VER020225
File:	DASP.Sch	Sheet	2 of 3
		Drawn By:	KEVIN LIN



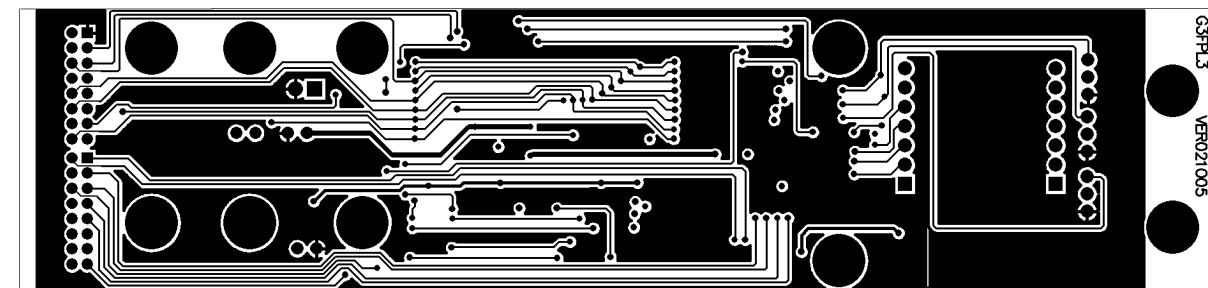
G3FPL3 Top Silkscreen



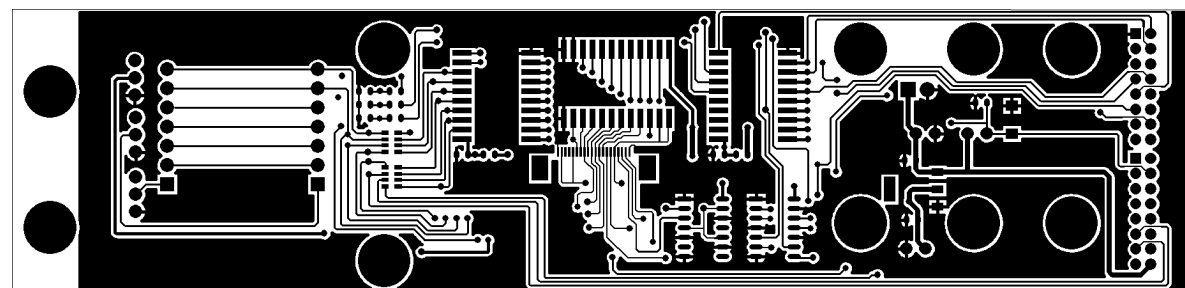
G3FPL3 Bottom Solder Mask



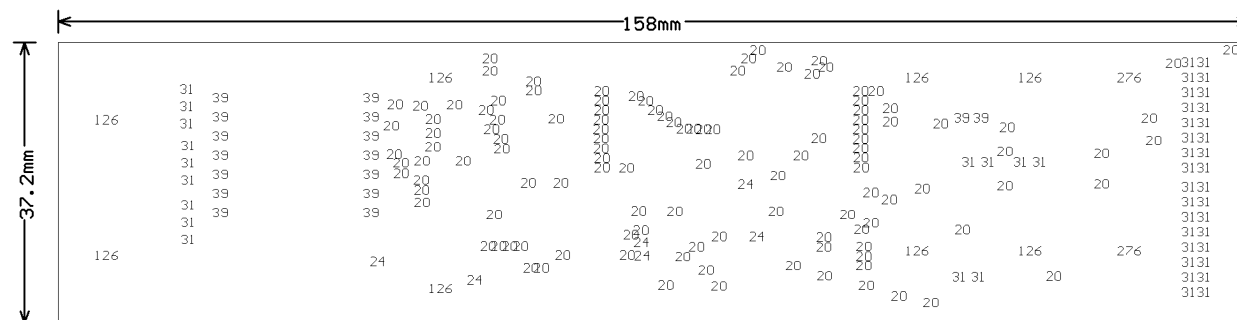
G3FPL3 Top Solder Mask



G3FPL3 Bottom Layer

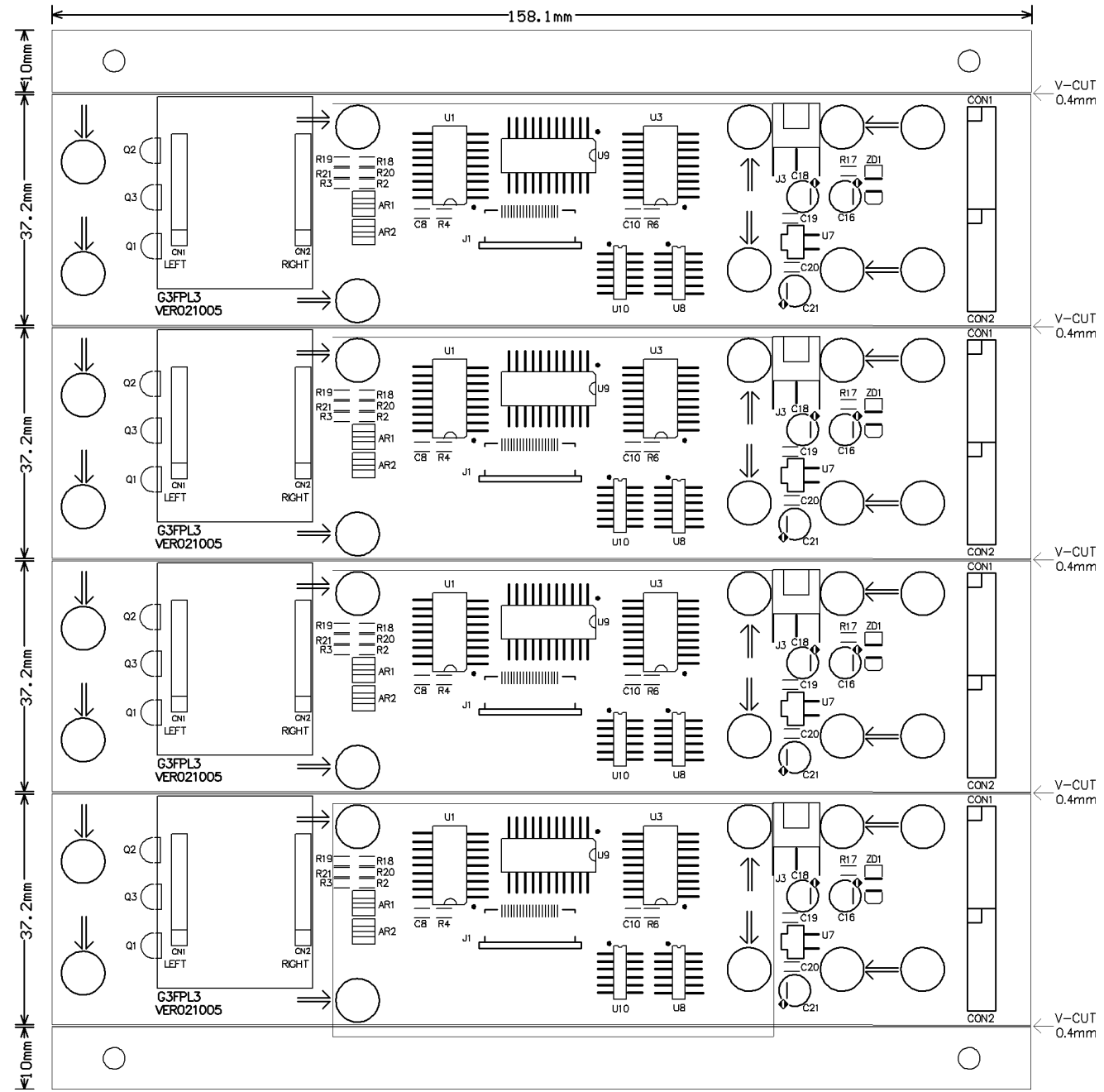


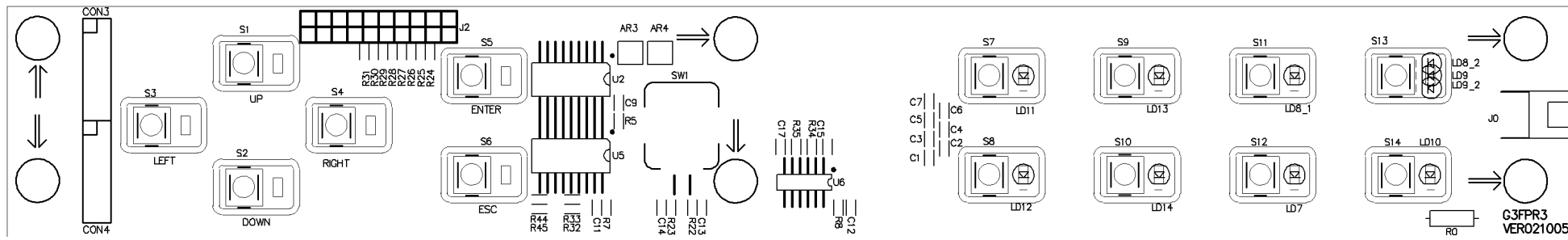
G3FPL3 Top Layer



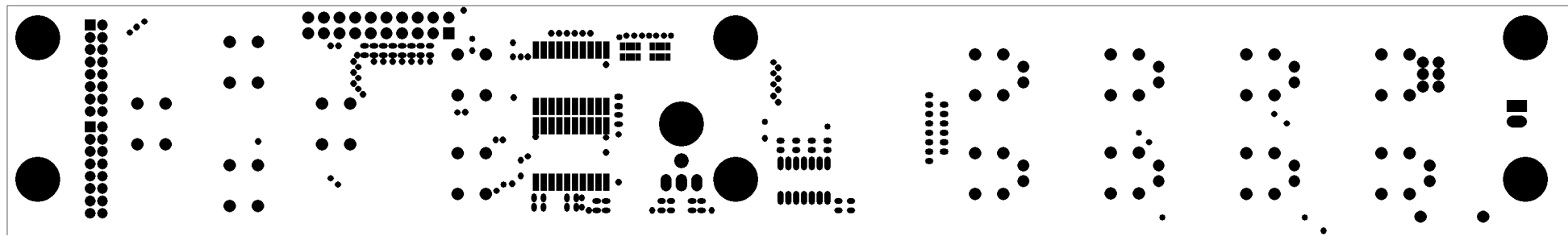
G3FPL3 Drill Drawing

Tool	Hole Size	Hole Count Plated	
T1	20mil (0.508mm)	119	
T2	24mil (0.6096mm)	7	
T3	31mil (0.7874mm)	47	
T4	39mil (0.9906mm)	16	
T5	126mil (3.2004mm)	8	NPTH
T6	276mil (7.0104mm)	2	NPTH
Totals		198	

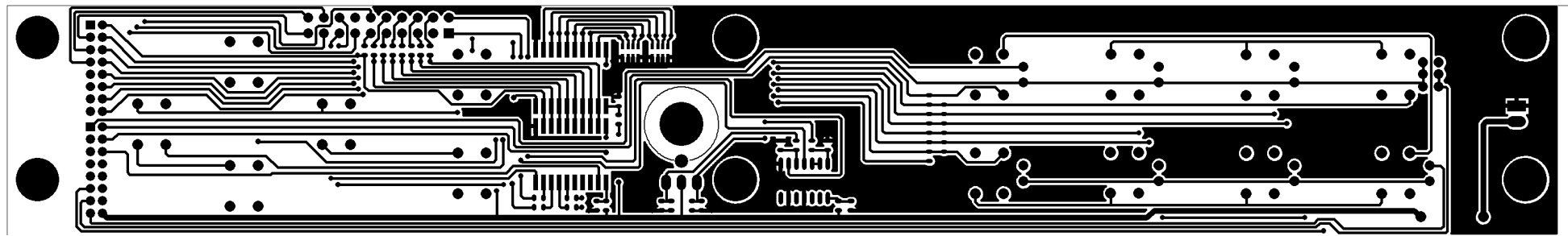




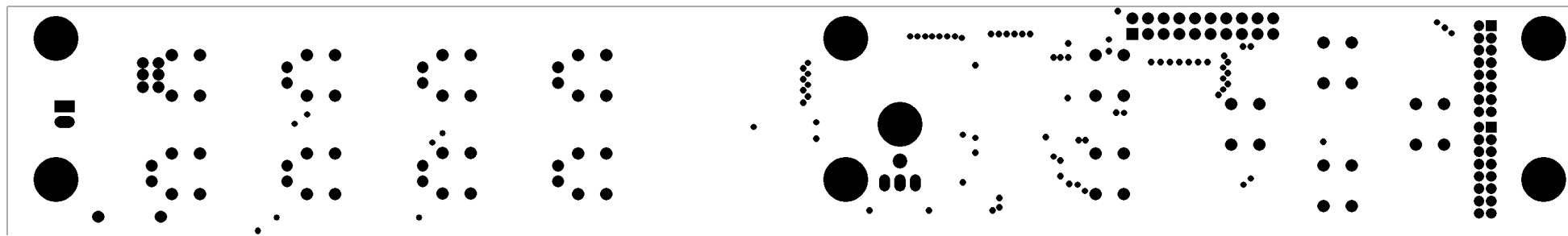
G3FPR3 Top Silkscreen



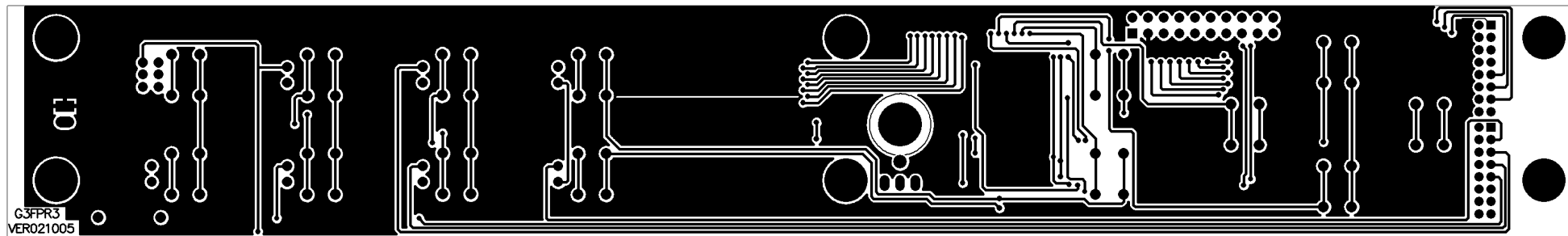
G3FPR3 Top Solder Mask



G3FPR3 Top Layer

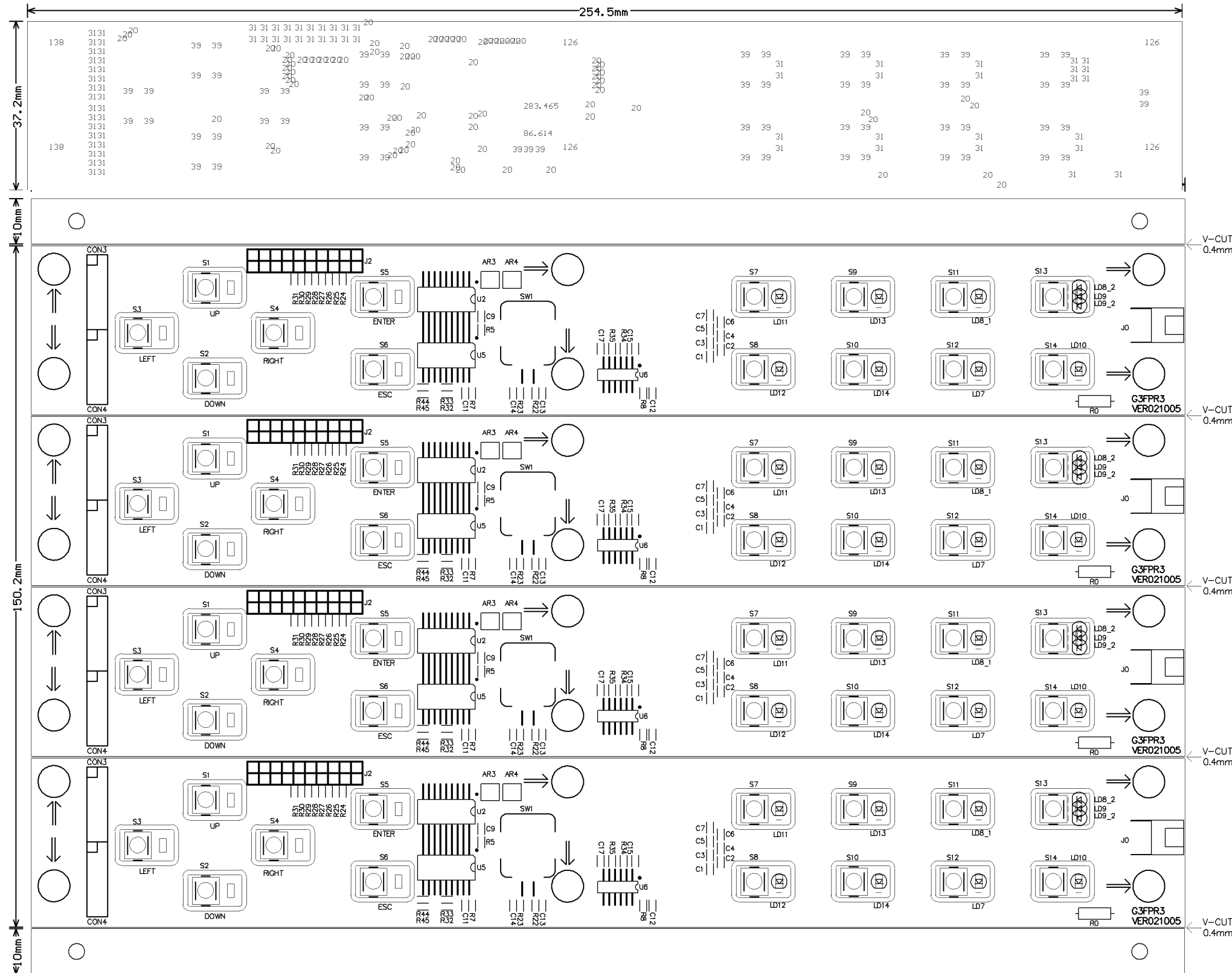


G3FPR3 Bottom Solder Mask



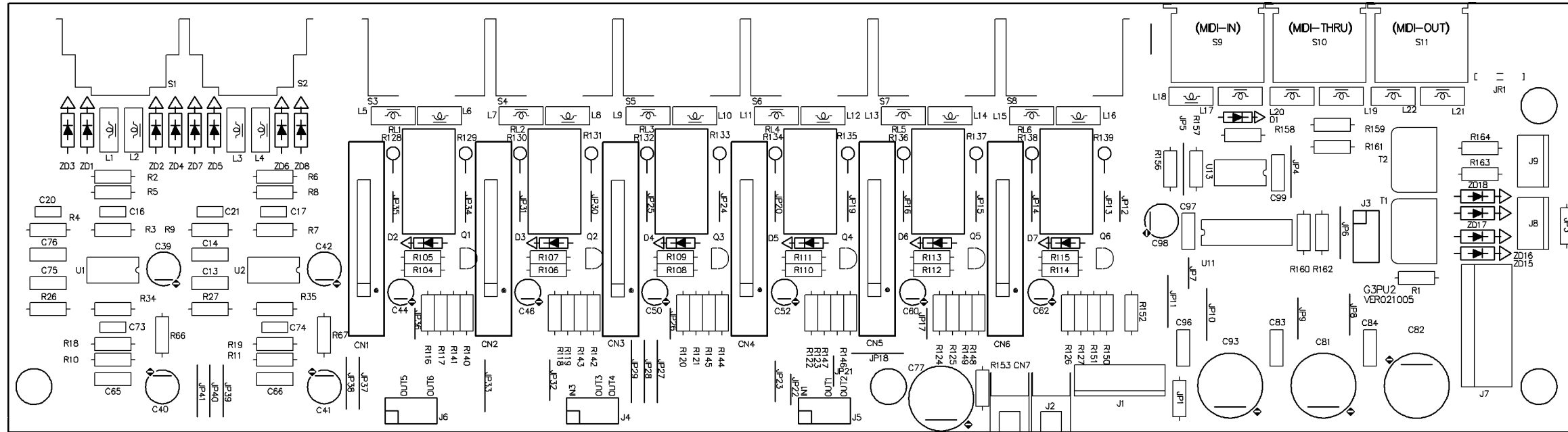
G3FPR3 Bottom Layer

G3FPR3
VER021005

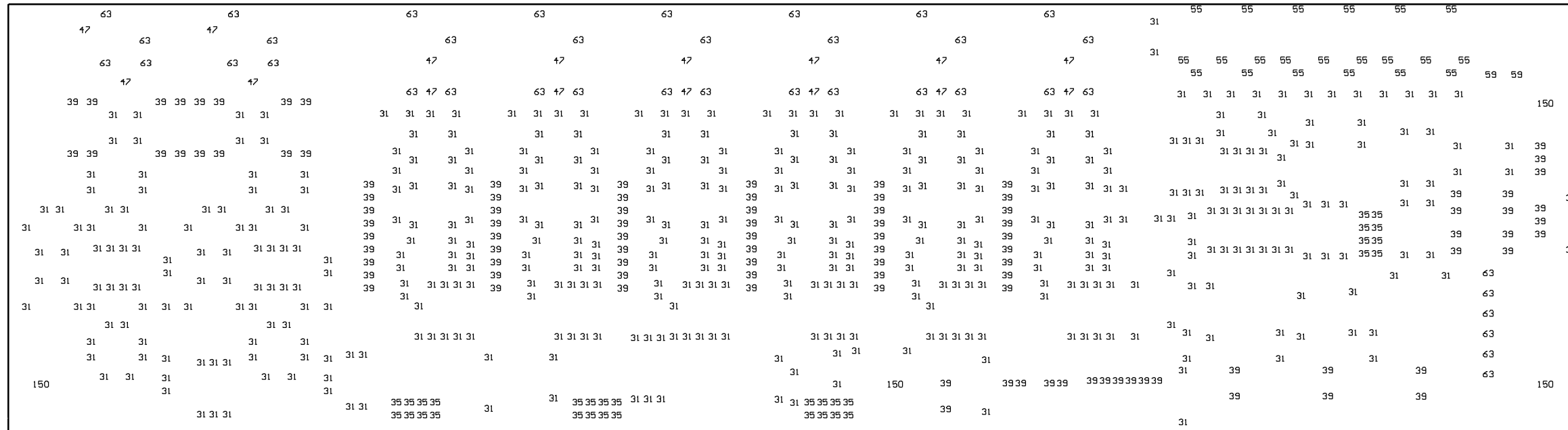


G3FPR3 Drill Drawing

Tool	Hole Size	Hole Count Plated	
T1	20mil (0.508mm)	84	
T2	31mil (0.7874mm)	74	
T3	39mil (0.9906mm)	61	
T4	87mil (2.2098mm)	1	
T5			
T6	280mil (7.112mm)	1	
T8	126mil (3.2004mm)	4	NPTH
T9	138mil (3.5052mm)	2	NPTH
Totals		227	



G3PU2 Top Scilkscreen



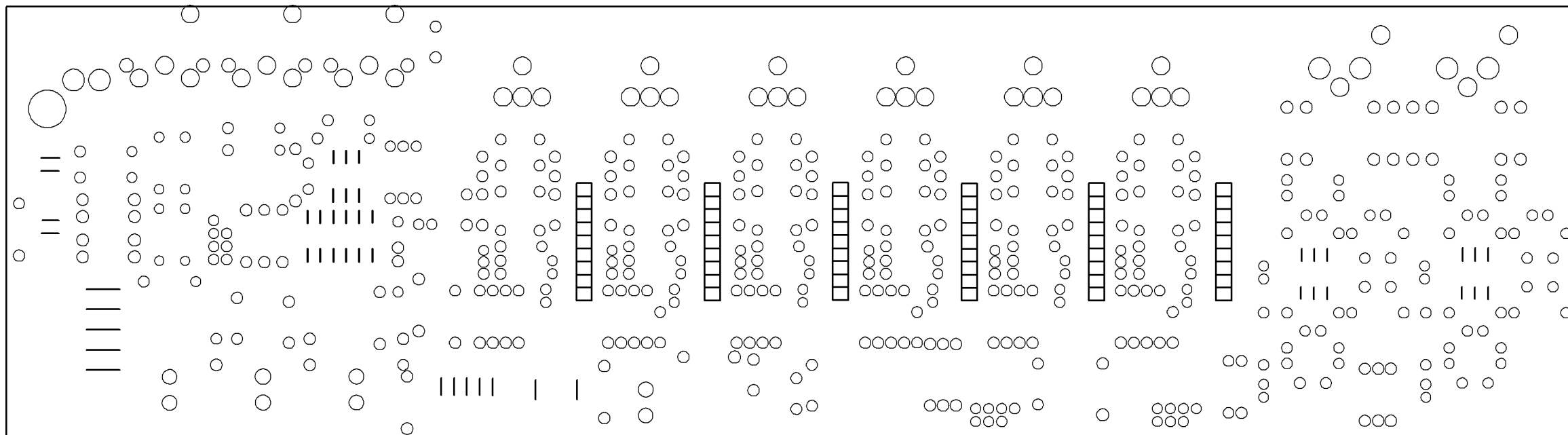
G3PU2 Drill Drawing

Tool	Hole Size	Hole Count Plated
T1	31mil (0.7874mm)	464
T2	35mil (0.889mm)	32

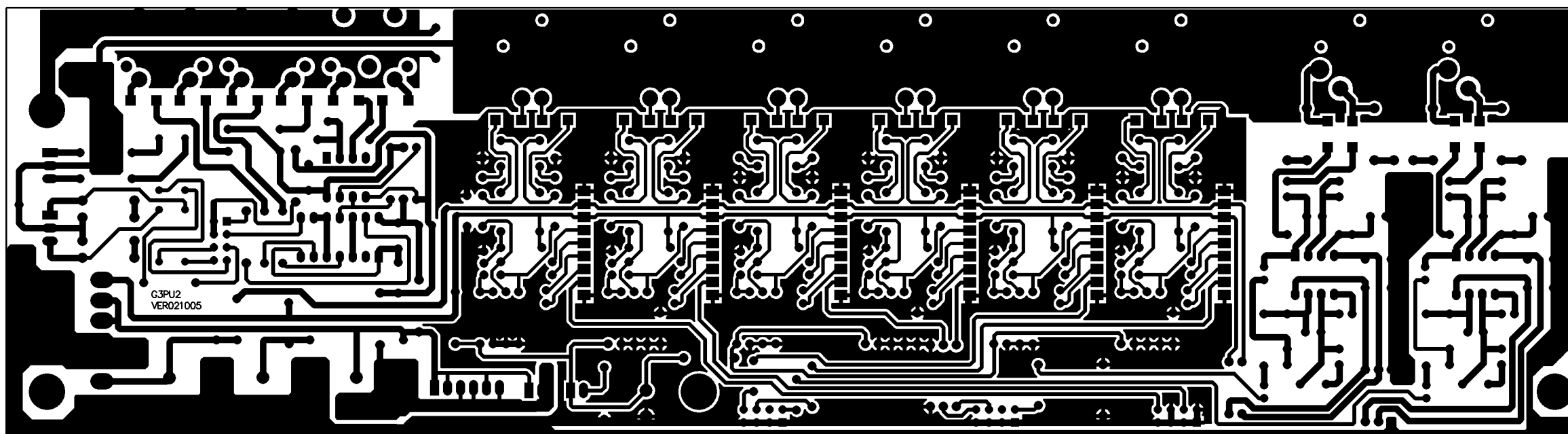
T3	39mil (0.9906mm)	102
T4	47mil (1.1938mm)	16
T5	55mil (1.397mm)	21
T6	59mil (1.4986mm)	2

T7	63mil (1.6002mm)	26
T8	150mil (3.81mm)	4
T9	63mil (1.6002mm)	12
Totals		679

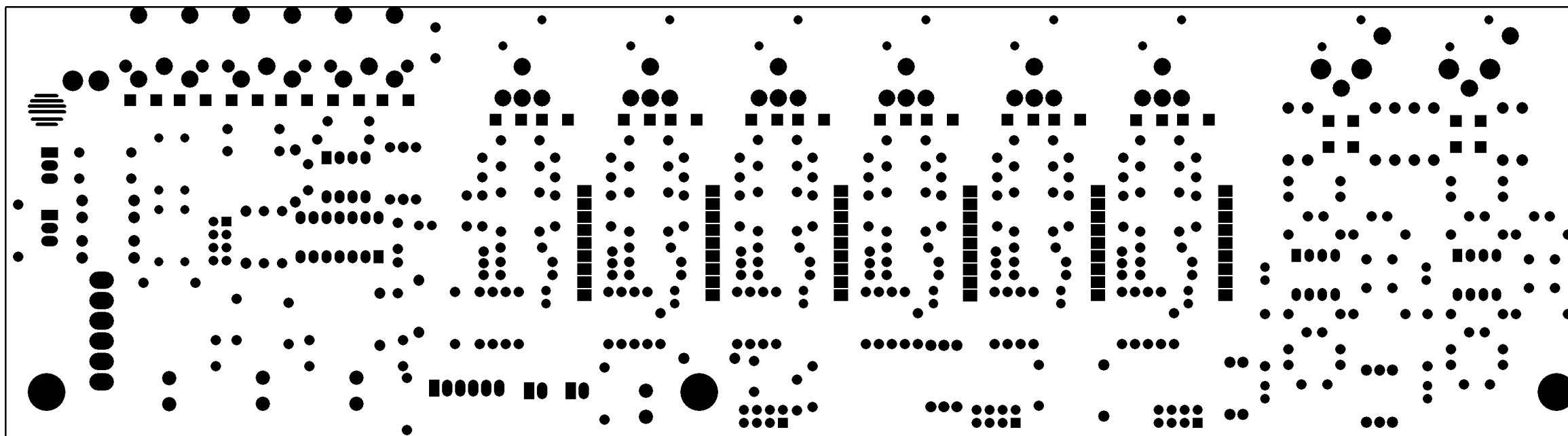
NPTH



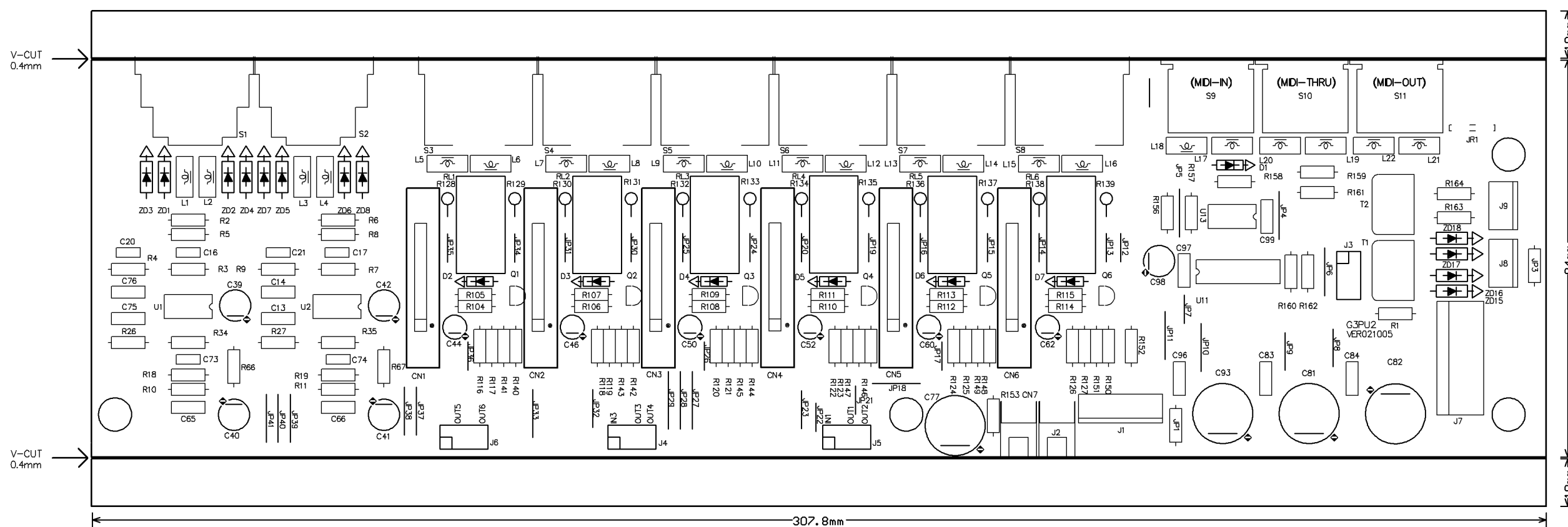
G3PU2 Bottom Scilkscreen

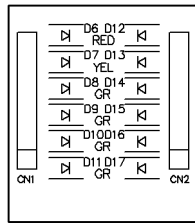


G3PU2 Bottom Layer

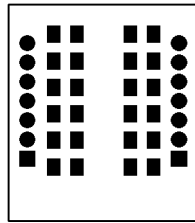


G3PU2 Bottom Solder Mask

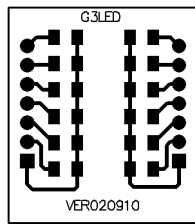




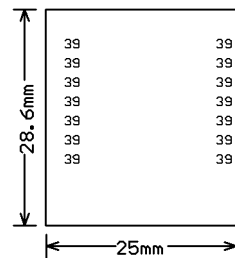
G3LED Top Silkscreen



G3LED Top Solder Mask

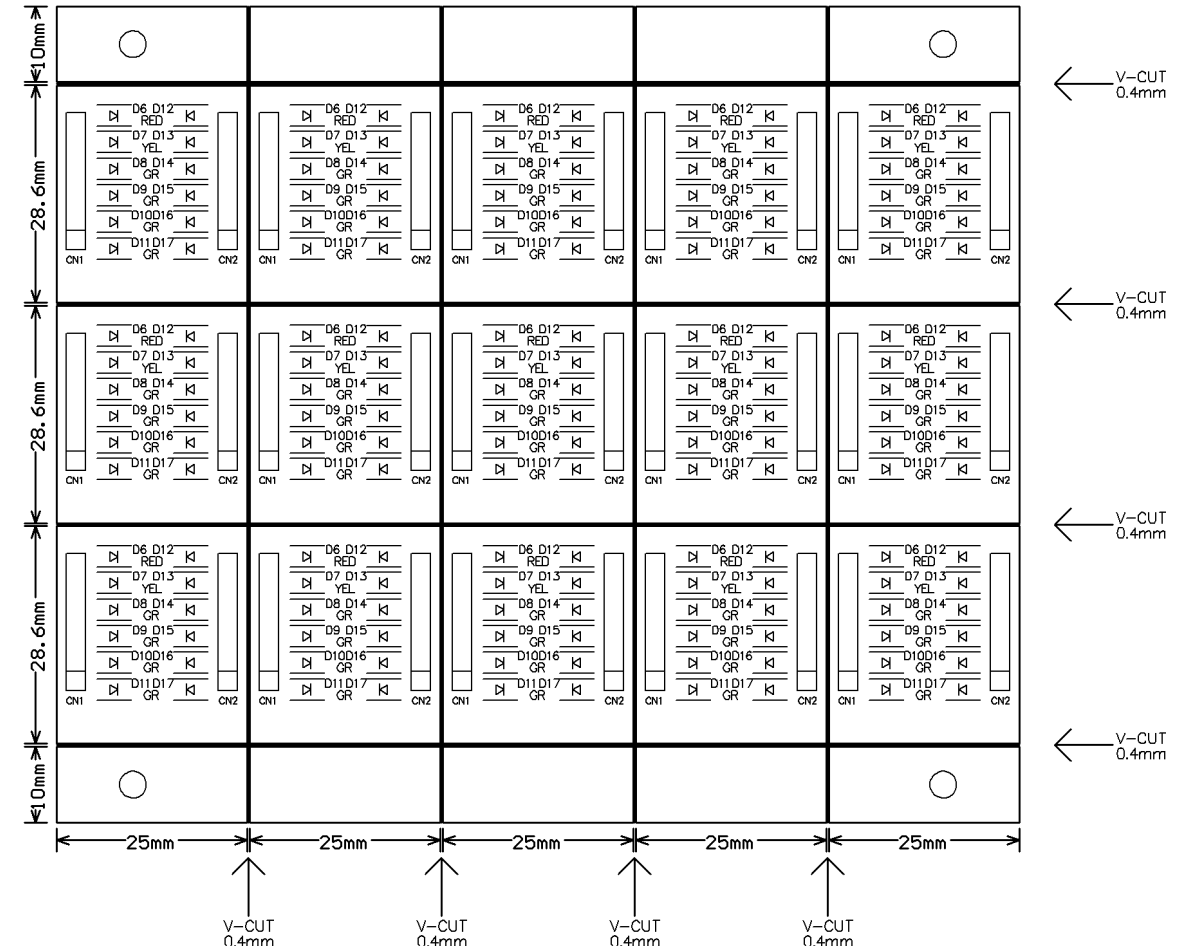


G3LED Top Layer

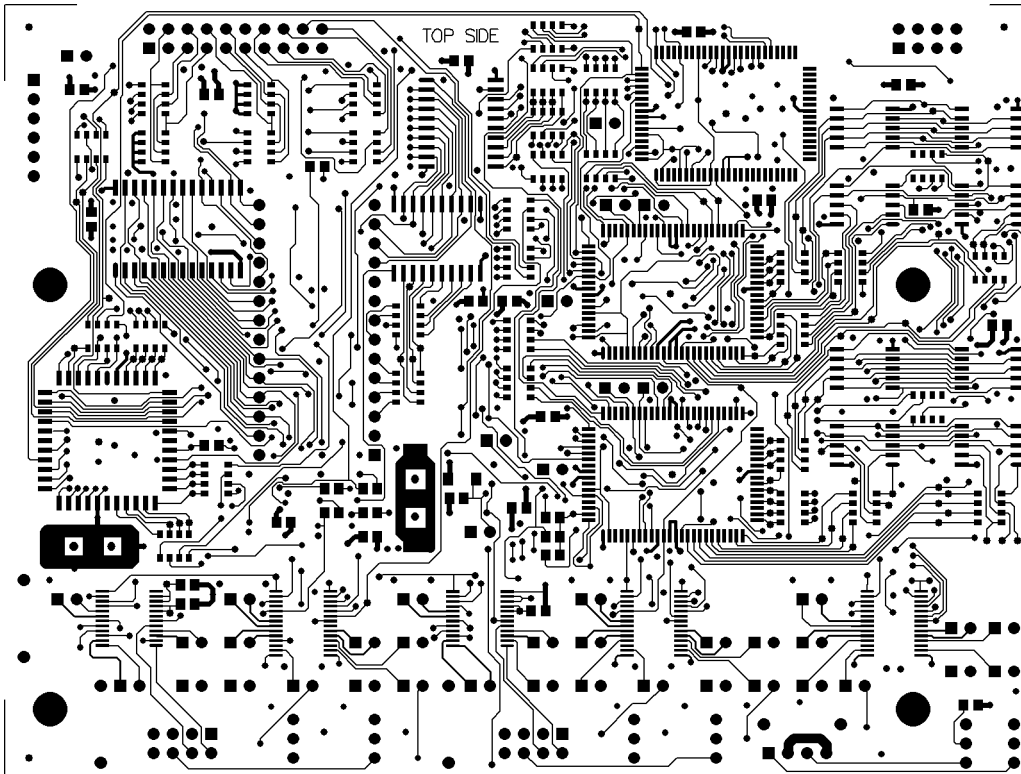


G3LED Drill Drawing

Tool	Hole Size	Hole Count Plated
T1	39mil (0.9906mm)	14
Totals		14

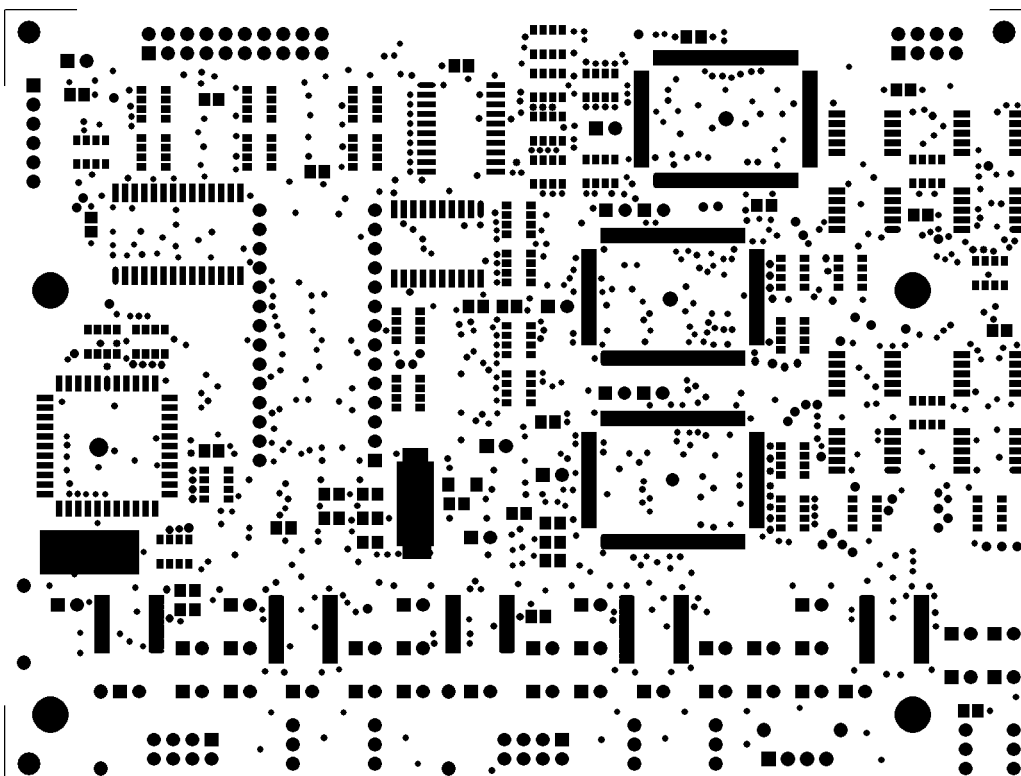


PCB#MFB4x4PRO TOP LAYER

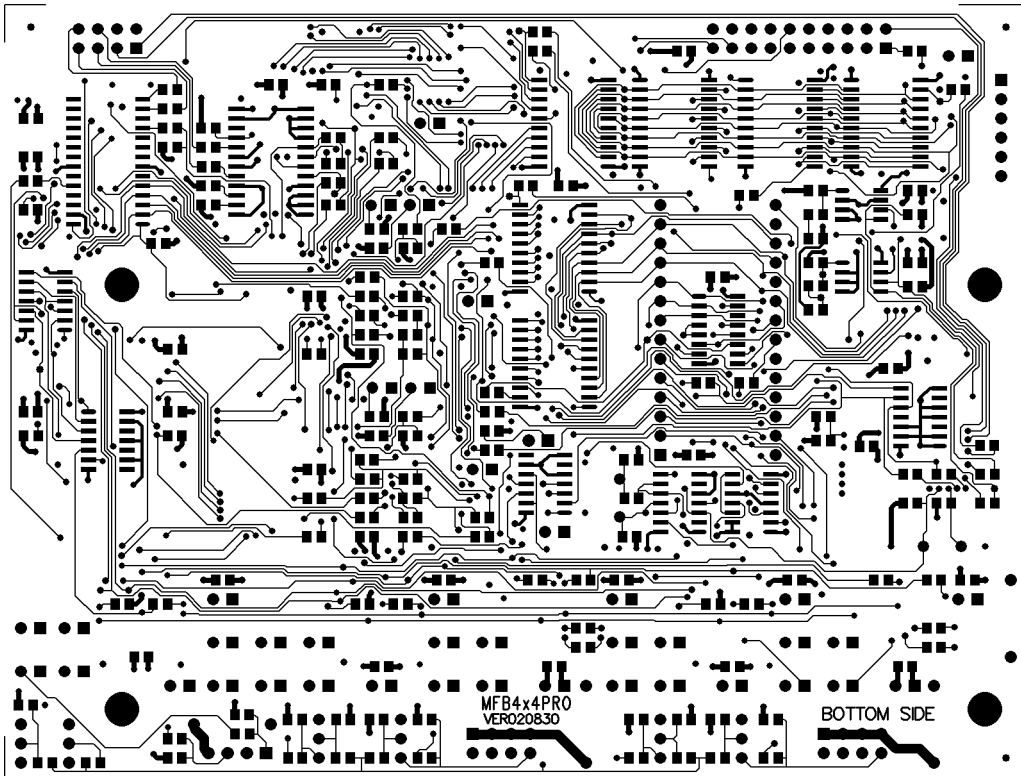


SEED-cod. MFB4x4PRO VER020830

PCB#MFB4x4PRO TOP SOLDER MASK

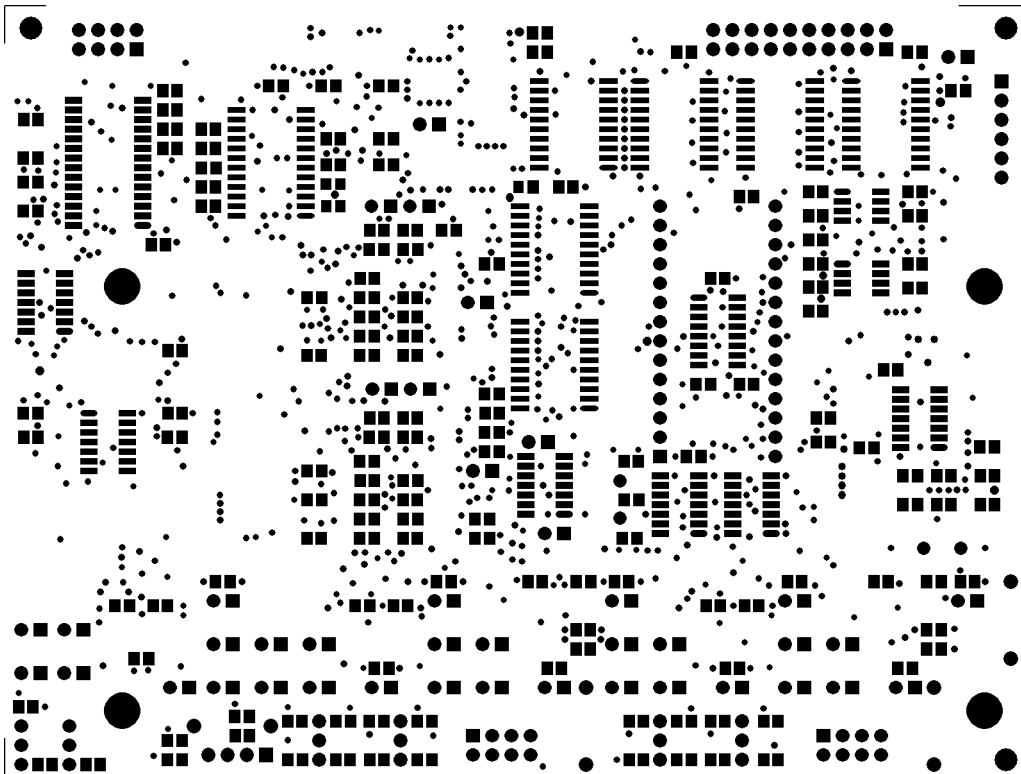


PCB#MFB4x4PRO BOTTOM LAYER



SEED-cod. MFB4x4PRO VERO20830

PCB#MFB4x4PRO BOTTOM SOLDER MASK

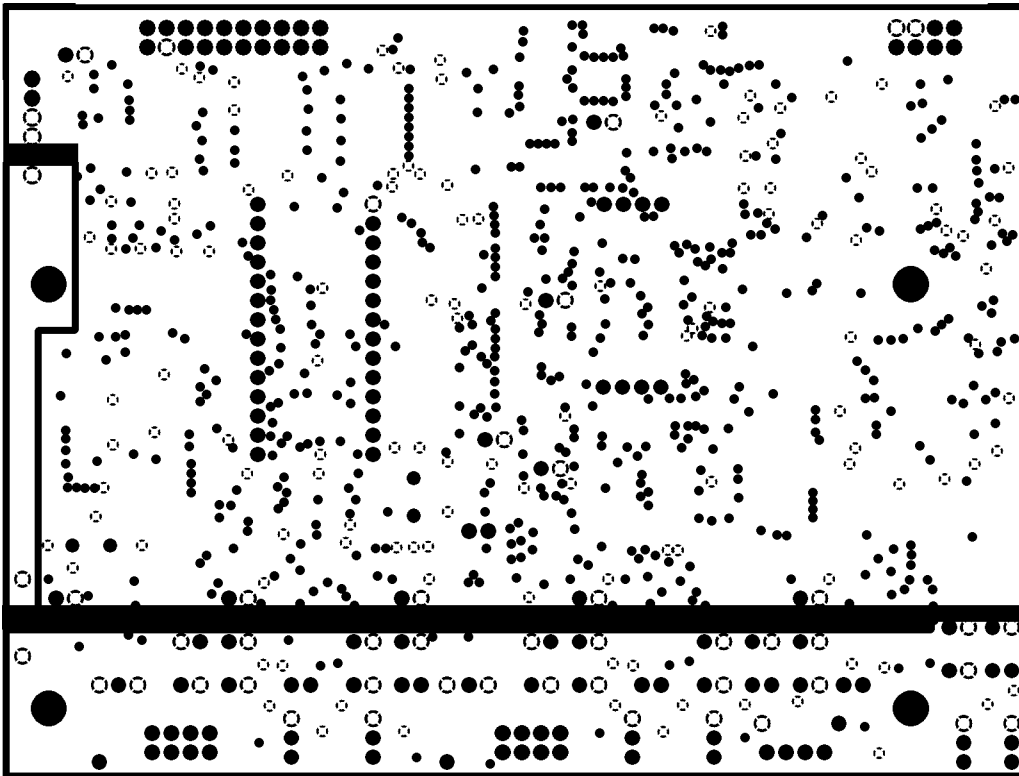


PCB#MFB4x4PRO INTERNAL PLANE1 (VCC)



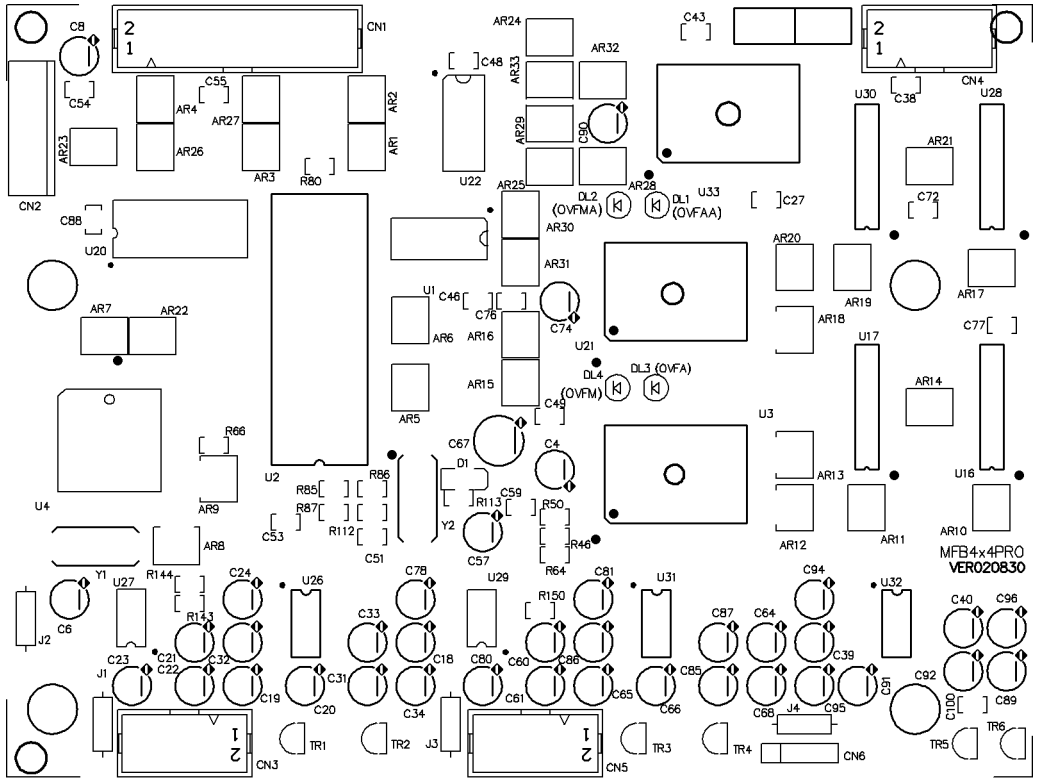
INTERNAL PLANE1(VCC)

PCB#MFB4x4PRO INTERNAL PLANE2 (GND)



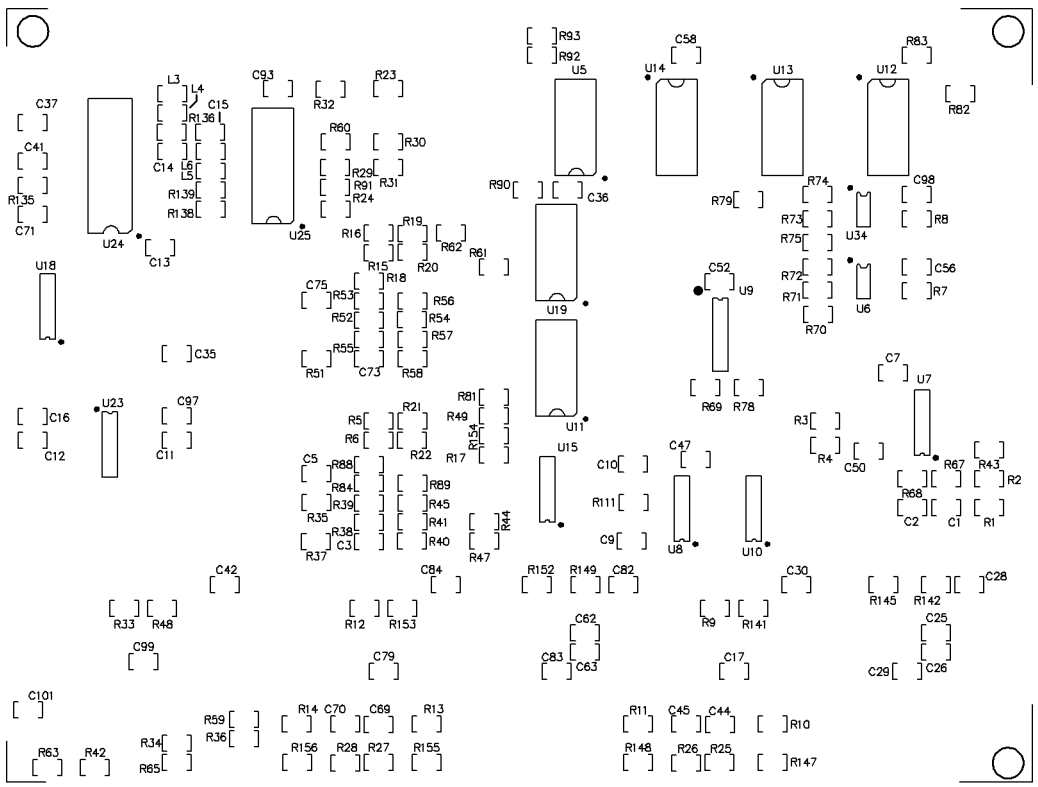
INTERNAL PLANE2(GND)

PCB#MFB4x4PRO SILKSCREEN TOP LAYER



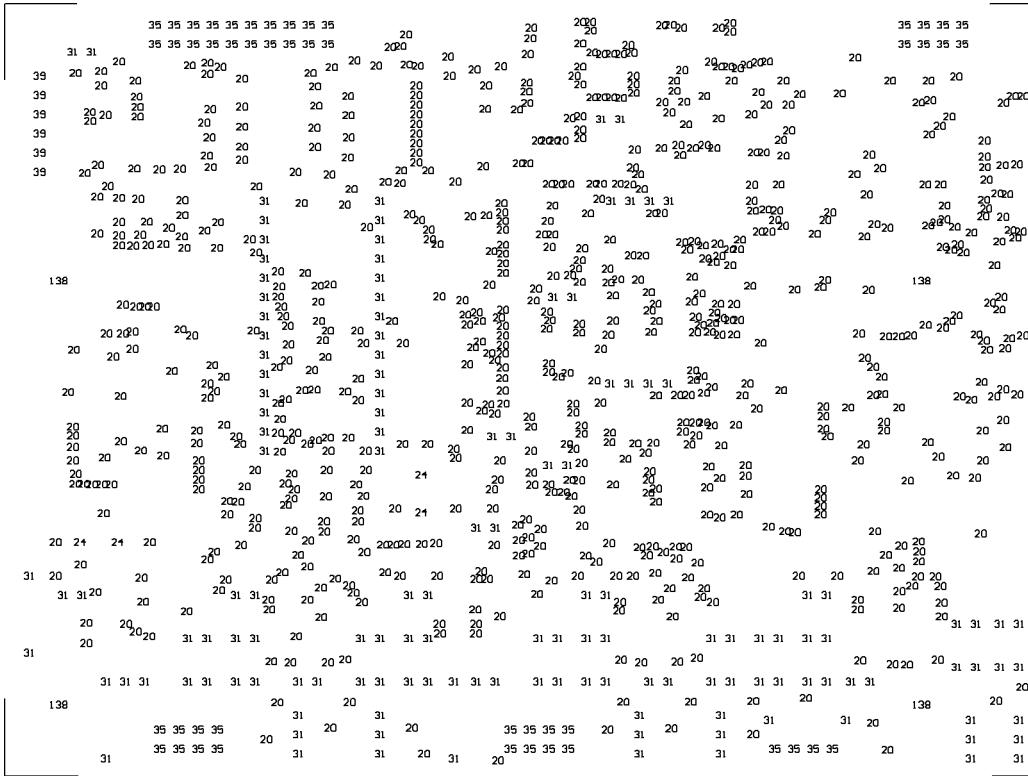
SILKSCREEN TOP

PCB#MFB4x4PRO SILKSCREEN BOTTOM LAYER



SILKSCREEN BOTTOM

PCB#MFB4x4PRO DRILL DRAWING

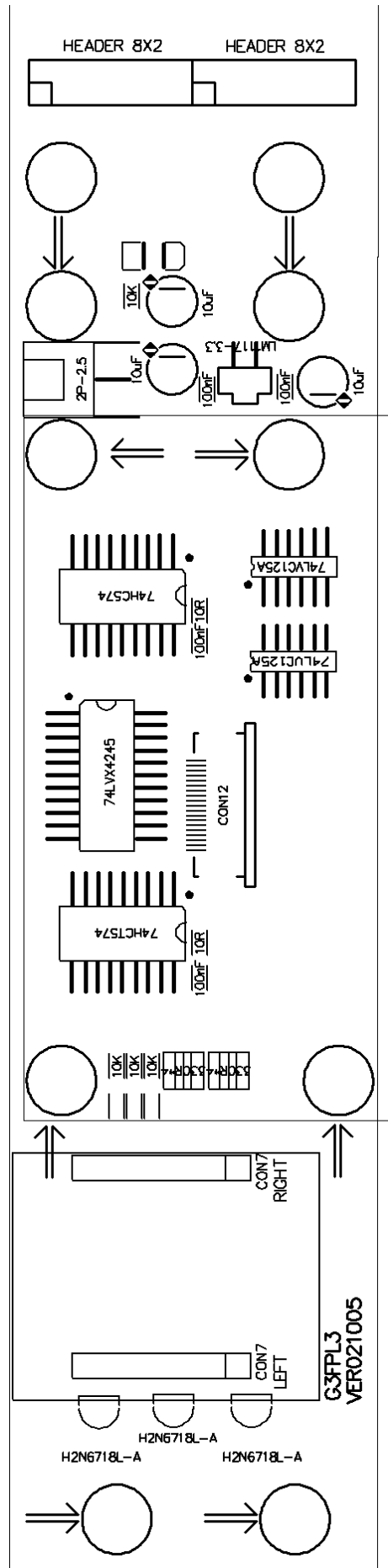
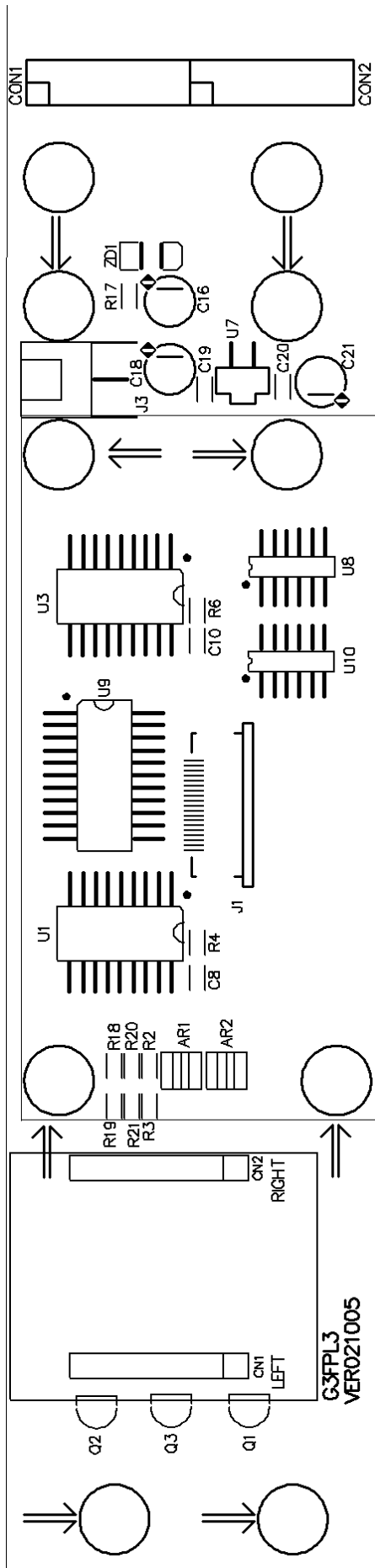


 NCDrill File Report For: MFB4x4PRO.PCB 31-Aug-2002

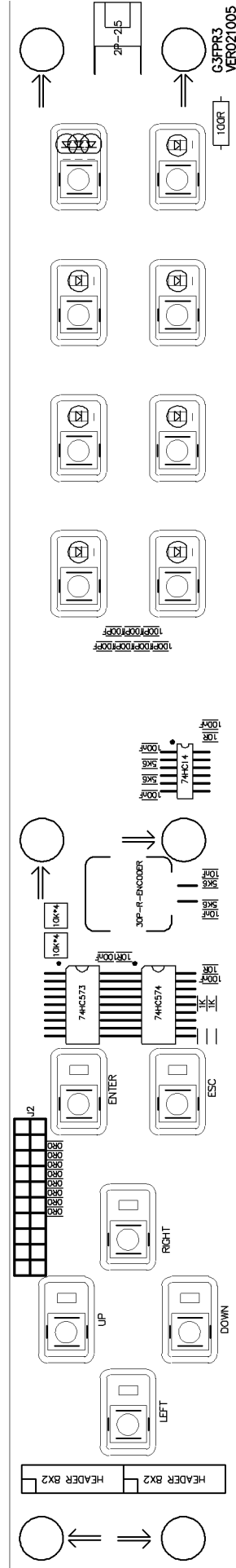
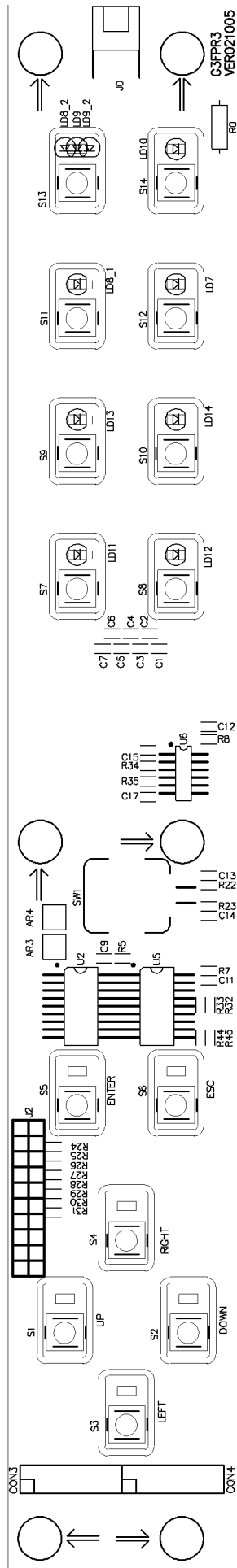
Layer Pair : TopLayer to BottomLayer
 ASCII File : NCDrillOutput.TXT
 EIA File : NCDrillOutput.DRL

Tool	Hole Size	Hole Count	Plated
T1	20mil (0.508mm)	742	
T2	24mil (0.6096mm)	4	
T3	31mil (0.7874mm)	138	
T4	35mil (0.889mm)	48	
T5	39mil (0.9906mm)	6	
T6	138mil (3.5052mm)	4	NPTH
Totals		942	

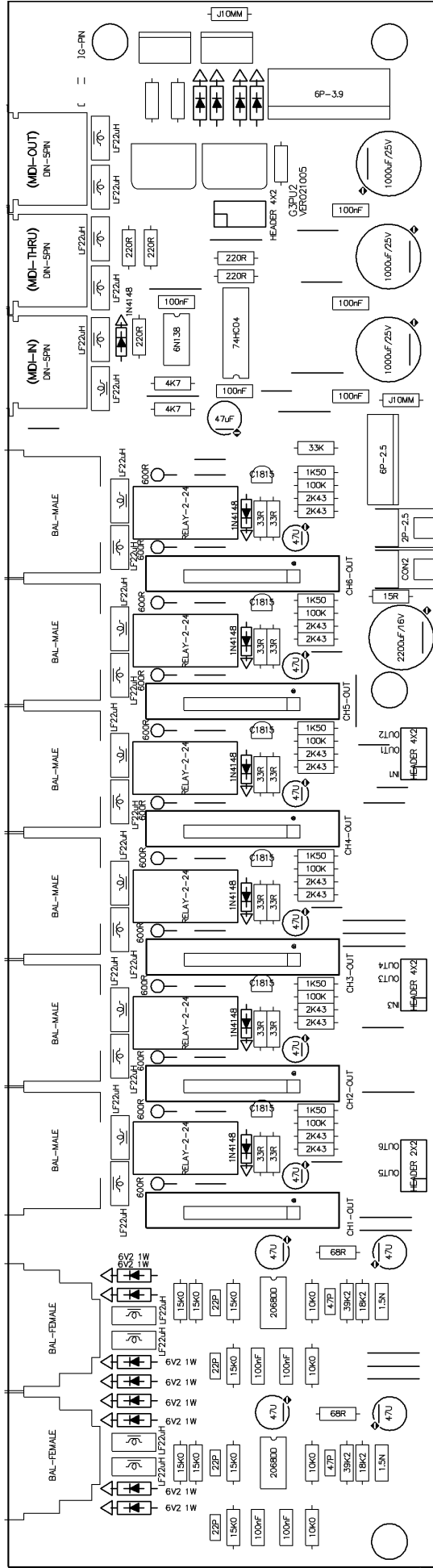
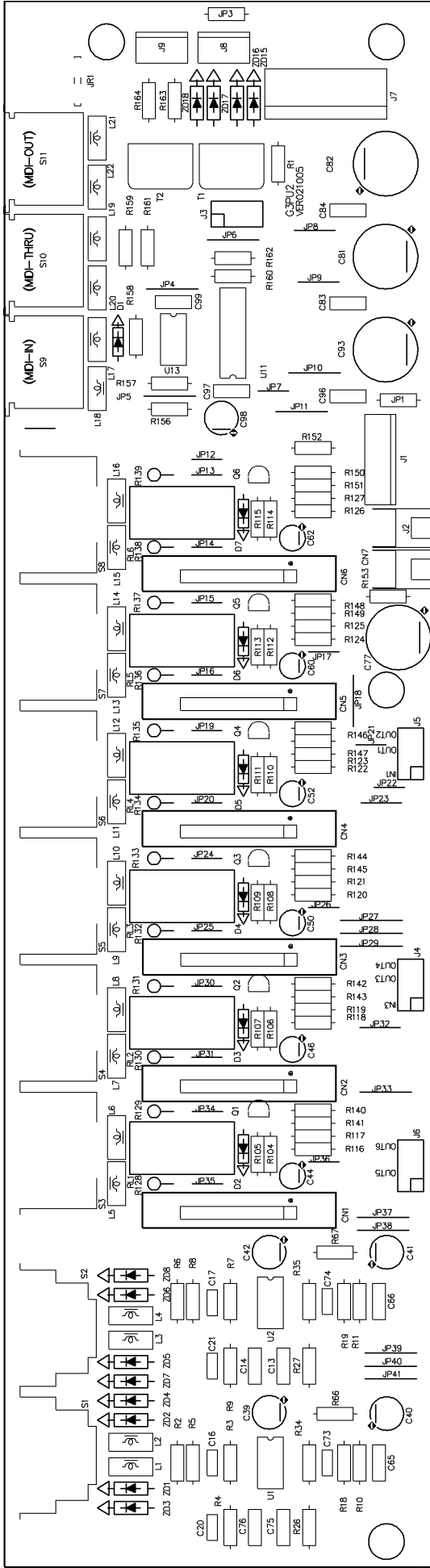
G3FPL3 (VER021005)



G3FPR3 (VER021005)

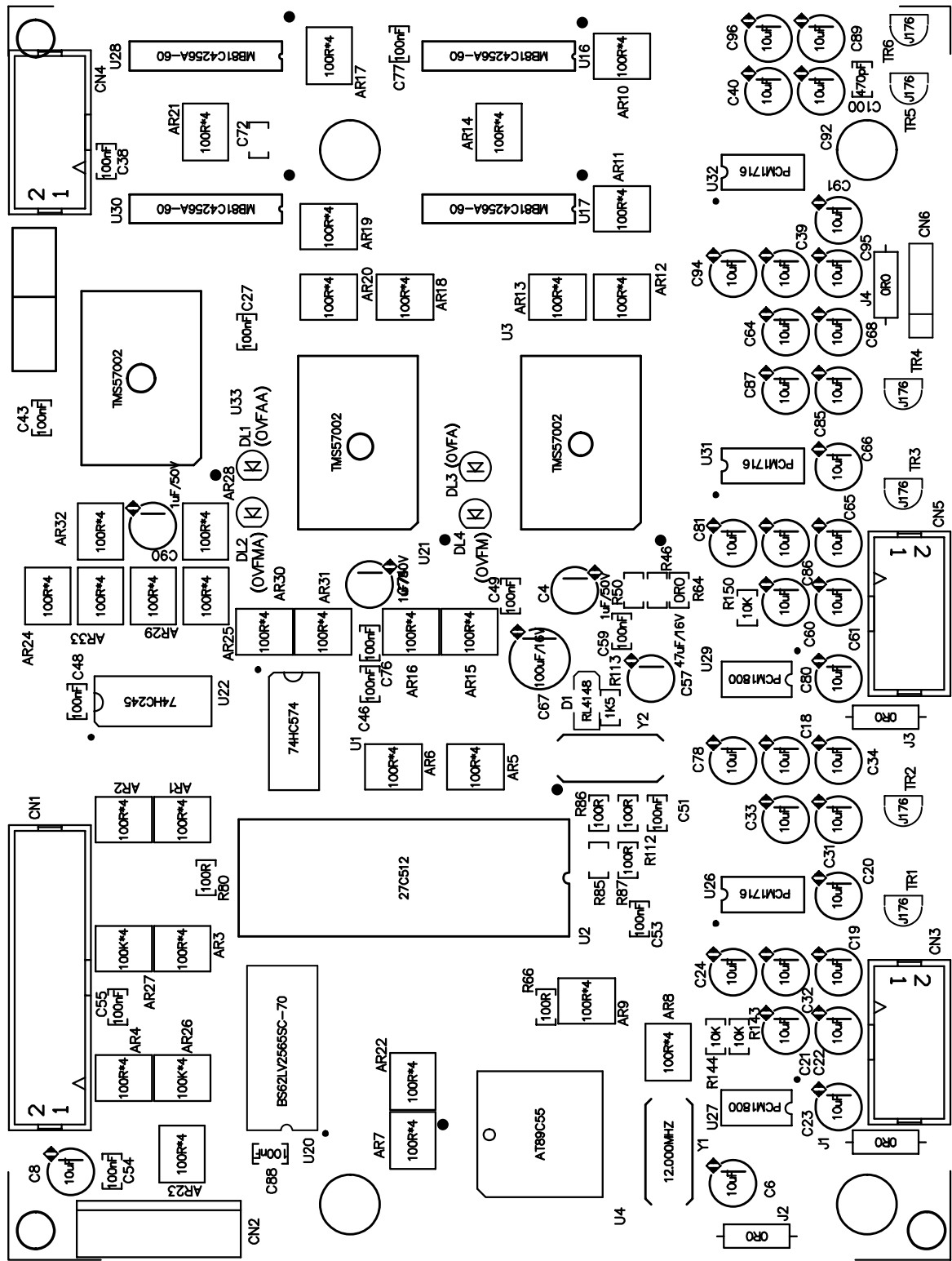


G3PU2 (VER021005)

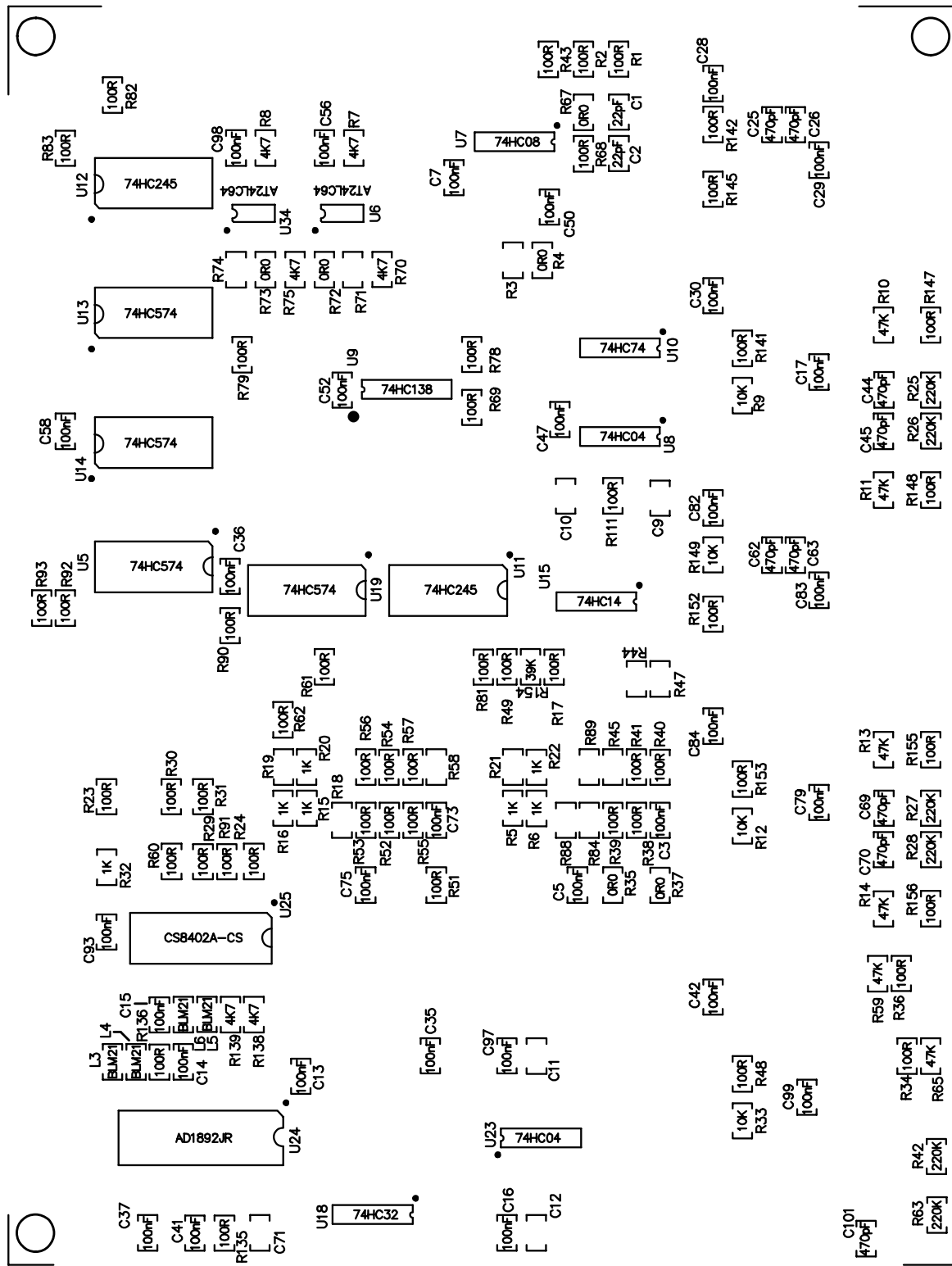


G3LED (VER020915)

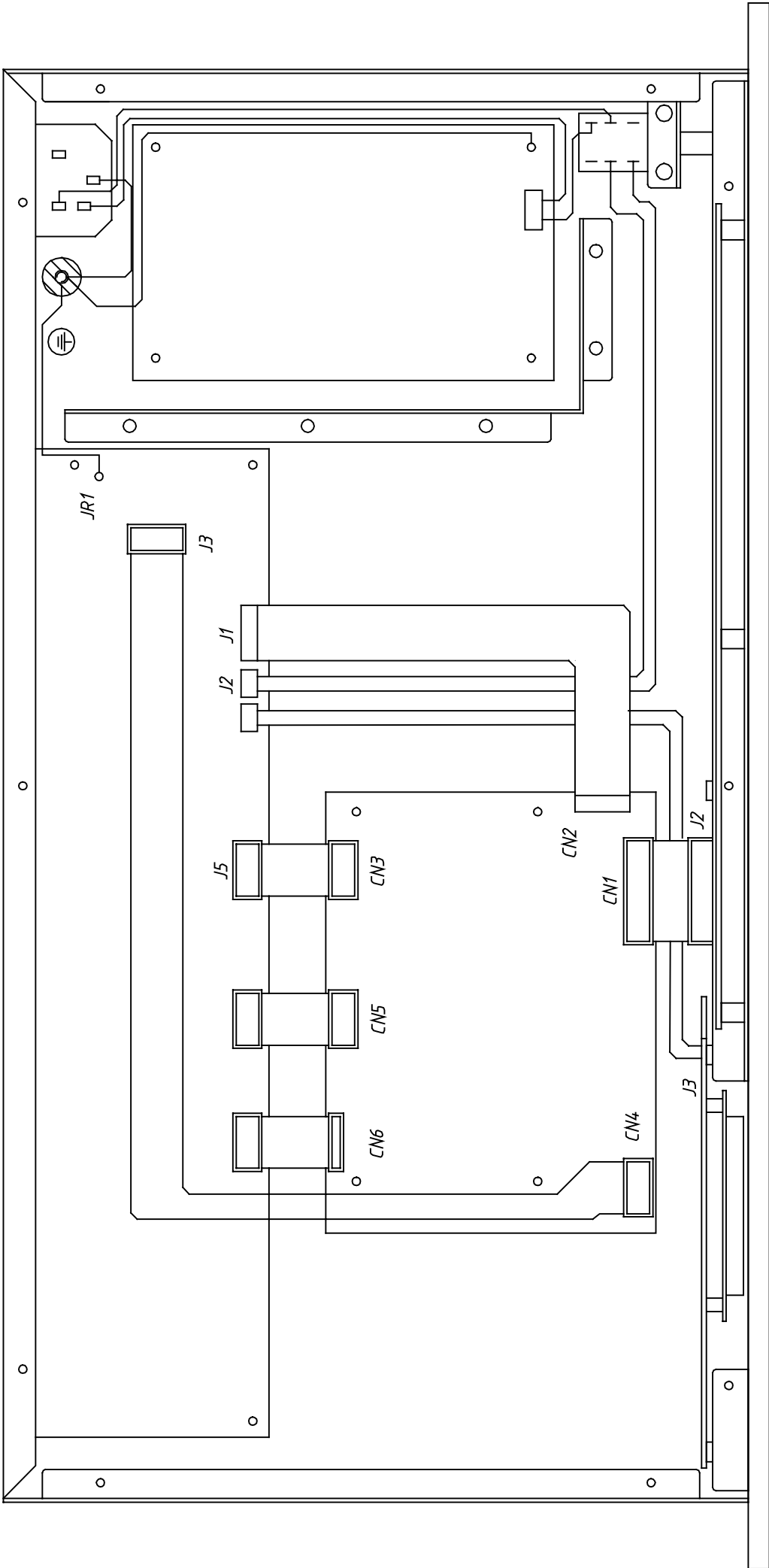
○				○
○				○

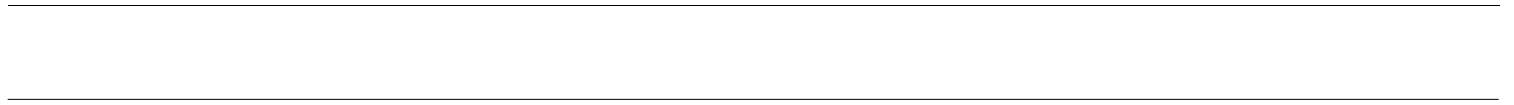


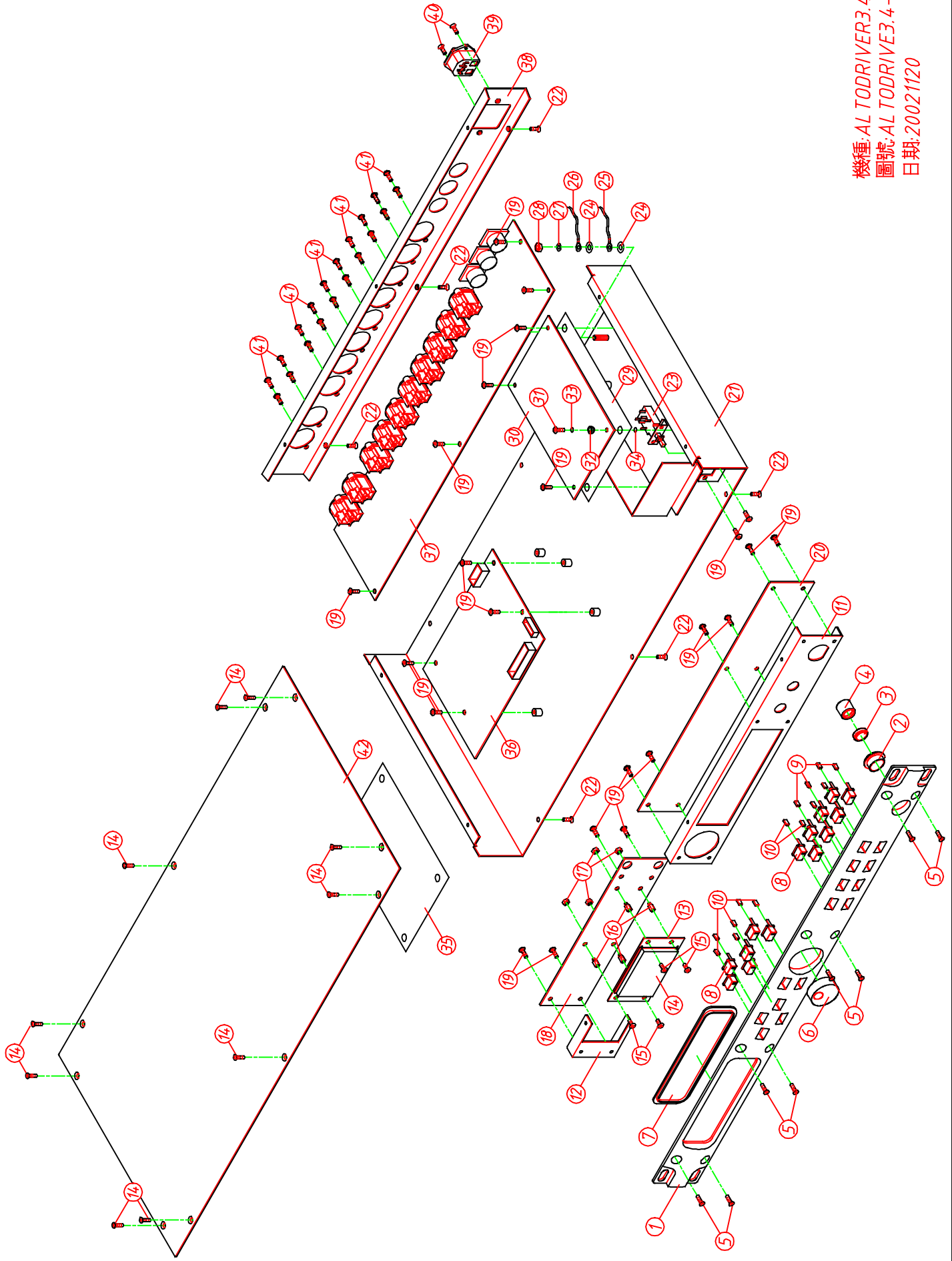
SILKSCREEN TOP



SILKSCREEN BOTTOM







機種:AL TODRIVER3.4
圖號:AL TODRIVER3.4-00
日期:20021120