

# Service Manual

**Model: X-P234** (2,3-WAY STEREO 4-WAY MONO )  
ACTIVE CROSSOVER



[www.altoproaudio.com](http://www.altoproaudio.com)

Version: 1.1

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# 1. SPECIFICATION (X-P234)

## INPUT

Connectors	XLR
Type	Electronically servo-balanced, RF filtered
Impedance	Balanced >50K Ohms, unbalanced >25K Ohms
Max. Input Level	+22dBu typical, balanced or unbalanced
CMRR	>40dB, typically > 55 dB at 1 KHz

## OUTPUT

Connectors	XLR
Type	Electronically servo-balanced, RF filtered
Impedance	Balanced 60 Ohms, unbalanced 30 Ohms
Max. Output Level	+20dBu balanced or unbalanced

## PERFORMANCE

Bandwidth	20Hz to 20KHz, +0/-0.5dB	
Frequency Response	<5Hz to>90KHz, +0/-3dB	
Signal to Noise	Ref: +4dBu, 20Hz to 20KHz, unweighted	
	Stereo Mode:	Mono Mode:
Low Output	>93dBu	>93dBu
Low-Mid Output		>94dBu
Mid Output	>95dBu	
High-Mid Output		>94dBu
High Output	>90dBu	>88dBu
Dynamic Range	>106dB, unweighted	
THD& Noise	Limiter Off	Limiter On
	<0.04%	<0.5 %
Interchannel Crosstalk	High to Low:	<93dBu
	High to Mid:	<94dBu
	Mid to Low:	<95dBu
	High to High-Mid:	<95dBu
	High-Mid to Low-Mid:	<95dBu
	Low-Mid to Low:	<92dBu

## CROSSOVER

Filter Type	Linkwitz-Riley, 24dB/Octave, state-variable	
Stereo Mode Frequencies	x1	x10
Low/High	44Hz to 930Hz	440Hz to 9.3KHz
Low/Mid	44Hz to 930Hz	440Hz to 9.3KHz
Mid /High	440Hz to 9.3KHz	
Mono Mode Frequencies	x1	x10
Low/Low-Mid	44Hz to 930Hz	440Hz to 9.3KHz
Low-Mid/High-Mid	440Hz to 9.3KHz	
High-Mid/High	440Hz to 9.3KHz	

## FUNCTION SWITCHES

Front Panel	
Low Cut	Activates 25 Hz Butterworth, 12 dB/Octave high-pass filter
Mute	Mutes the individual output
Phase Invert	Inverts the phase at the individual output
CD Horn	Corrects CD horn frequency response above 3.5KHz
Limiter	Activates the limiter function for all outputs
Rear Panel	
Xover Frequency	Mutiplies crossover frequency range by 10
Mode	Selects stereo /mono and 2/3/4-way operation
LF Sum	Selects normal stereo or mono-summed low frequency operation ON=Channel1 +6dB Louder, Channal2: the same as before

**CONTROLS**

Input	Controls the input gain(+/-12dB)
Xover Frequency	Controls the crossover frequency
Delay	Controls the delay at the low output(0 to 2 msec.)
Gain	Controls the output gain(+/-6dB)
Threshold	Controls the threshold of the limiter (-6dB to OFF)

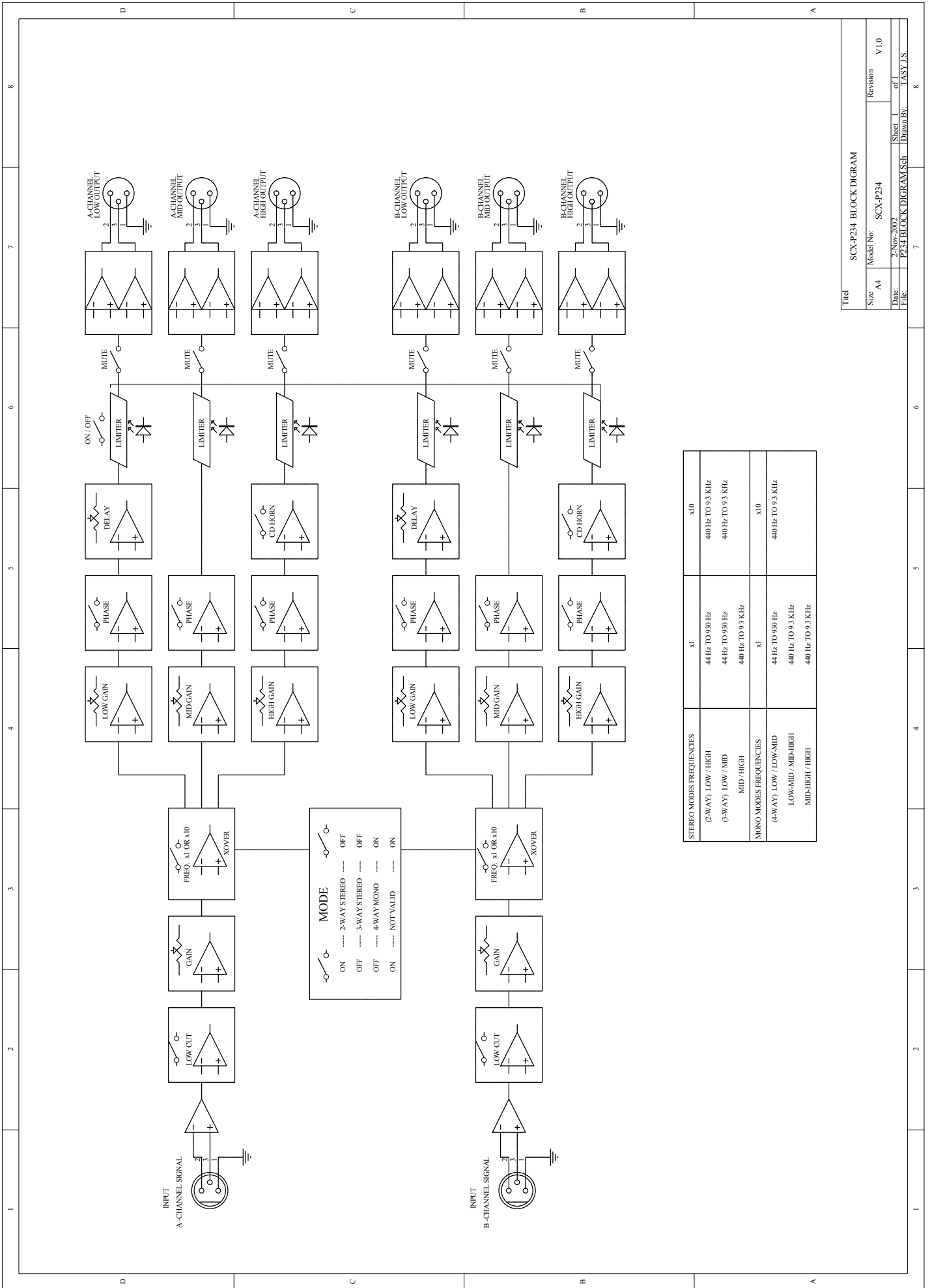
**POWER SUPPLY**

Connector type	3-pole IEC, grounded
Type	serve controlled, stabilized
Mains supply	95-120V~/210-240V~,60-50Hz
Power Rating	<17W
Fuse	210-240V: T250mAL 250VAC 95-120V: 500mA 250VAC

**PHYSICAL**

Dimensions	483(W)×194.5(D) × 44(H)mm(19"× 7.7"× 1.7")
Net Weight	3.3Kg(7.27lb)

# 2. Block Diagram



Title SCX-P234 BLOCK DIAGRAM

Size A4

Model No. SCX-P234

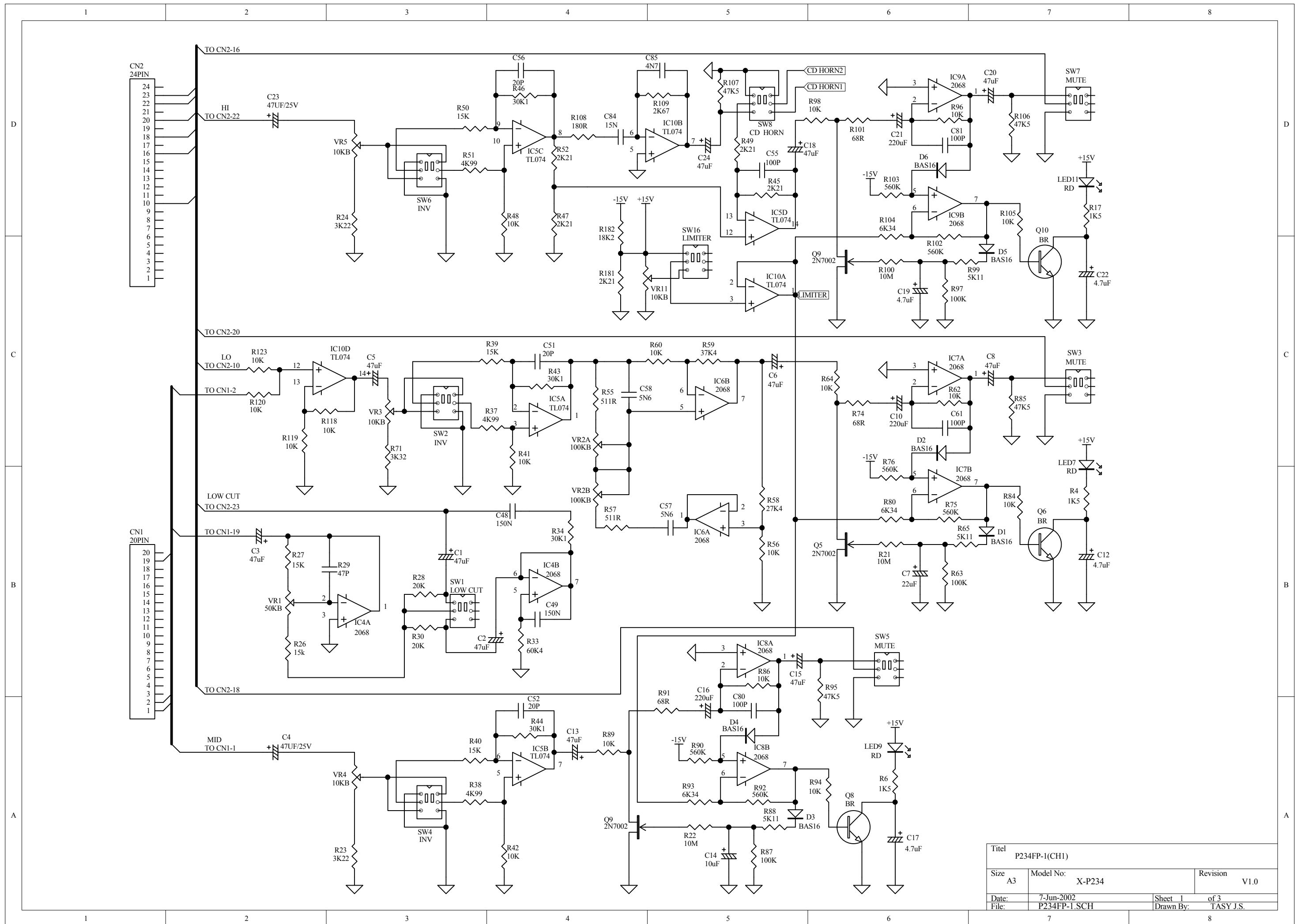
Revision V 1.0

Date: 23/05/2007

Sheet 1 of 1

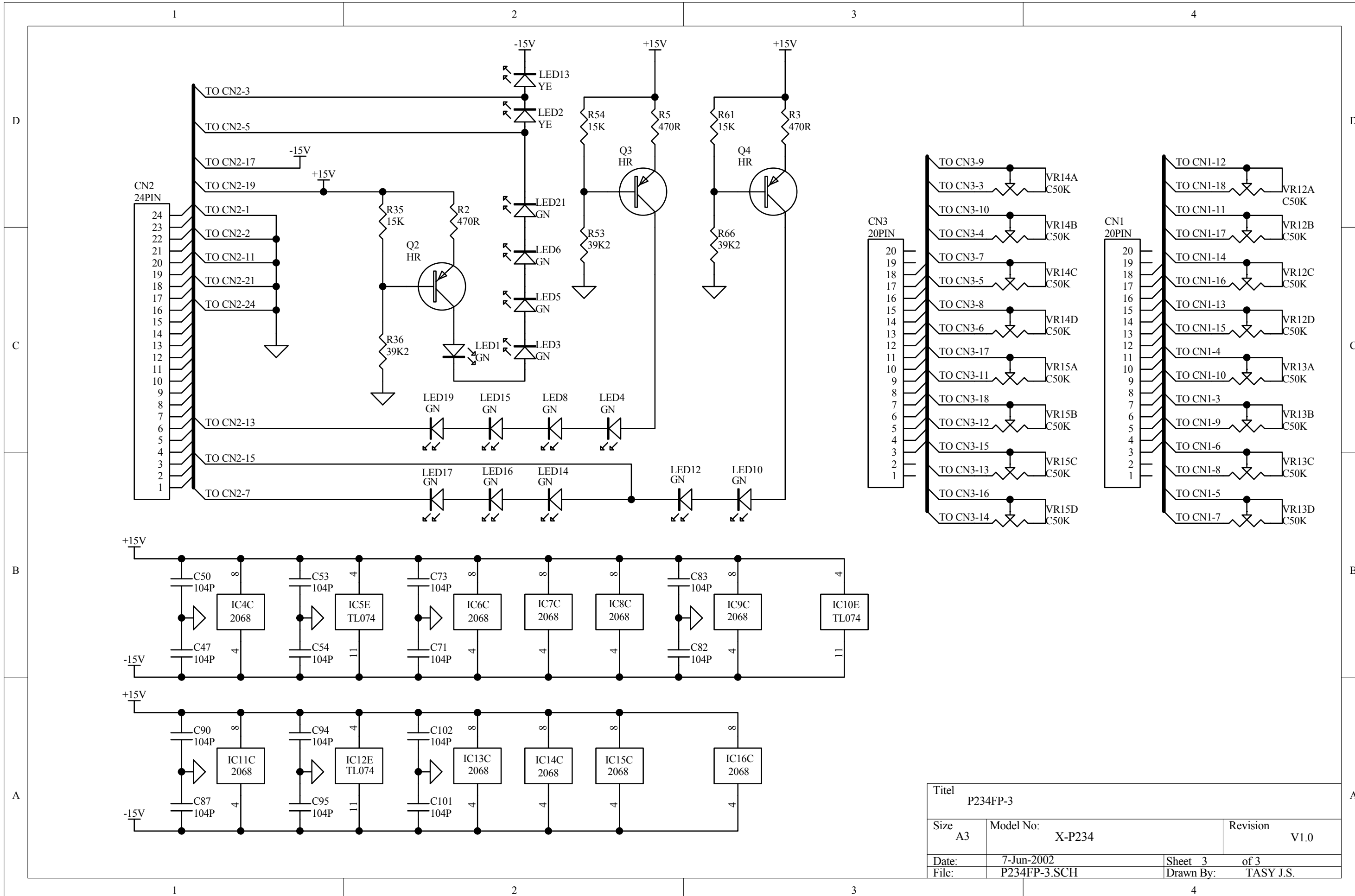
Drawn By: TASY J.S.

### 3. Schematic Diagram



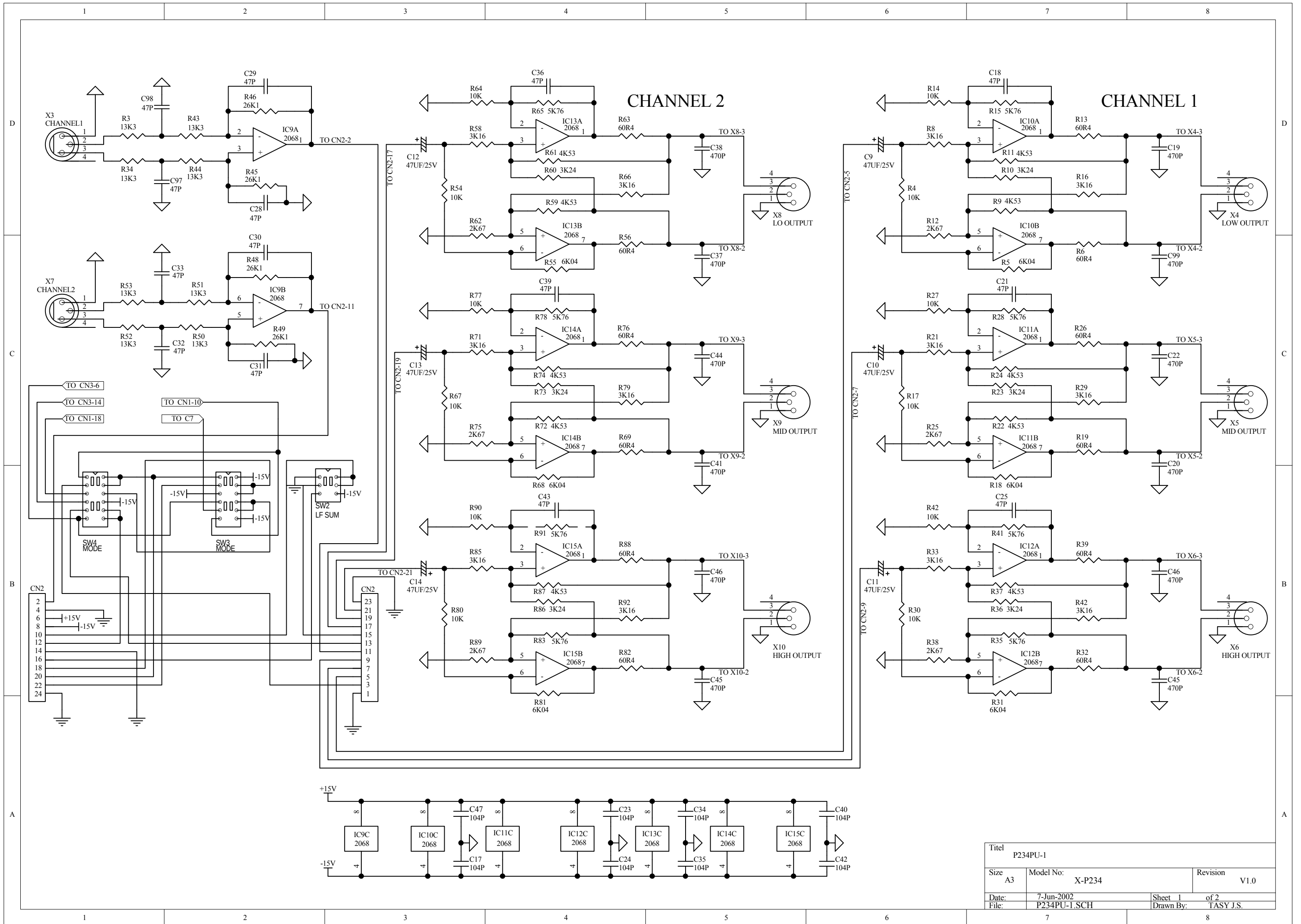
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Size	A3	Model No:	X-P234
		Revision	V1.0
Date:	7-Jun-2002	Sheet	1 of 3
File:	P234FP-1.SCH	Drawn By:	TASY J.S.



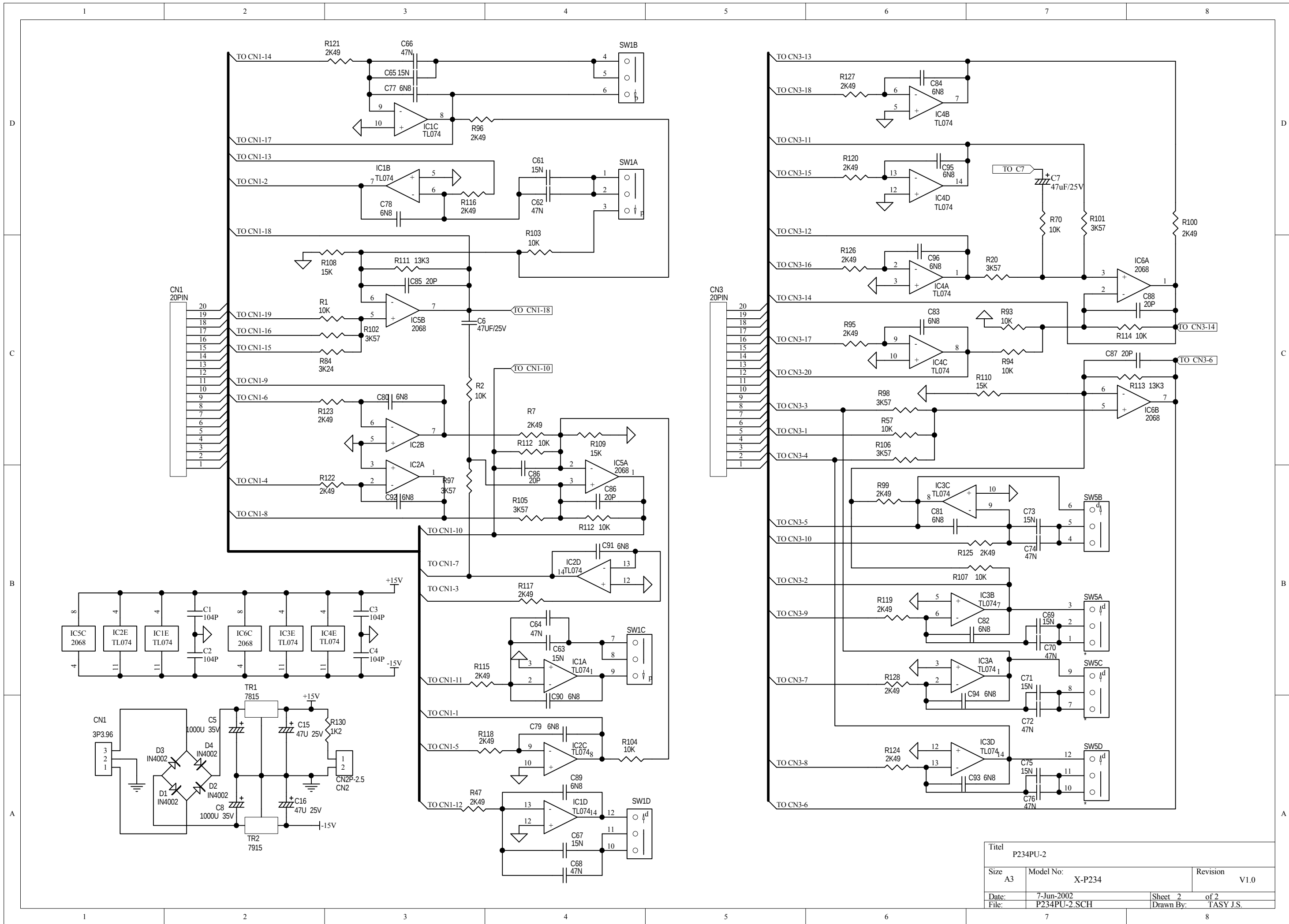


Titel			P234FP-3			
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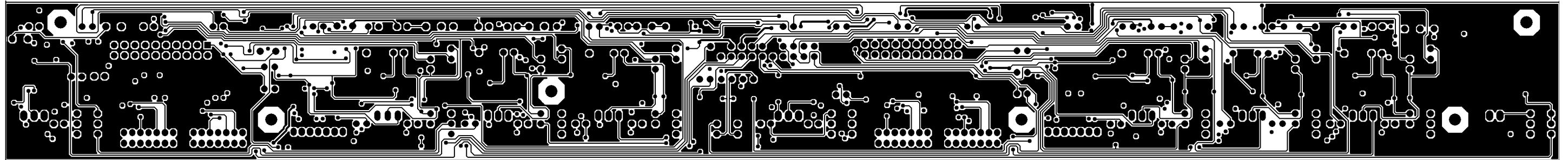


Titel		
P234PU-1		
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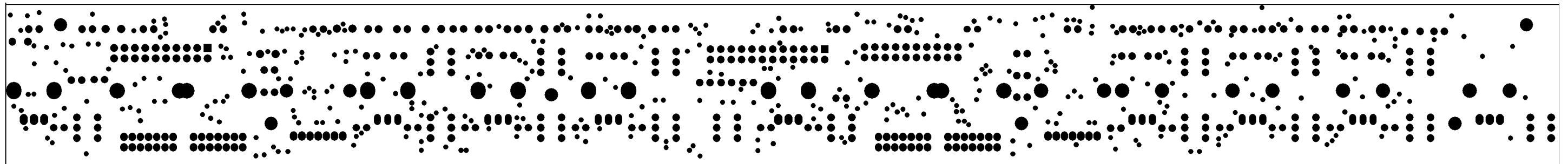


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		Revision	V1.0

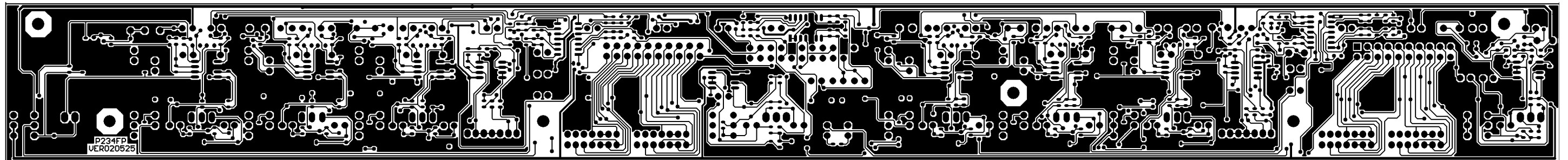
P234FP PCB LAYOUT



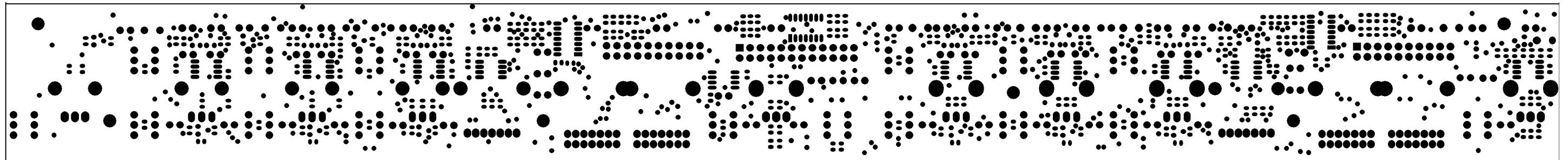
PCB : P234FP Top Layer



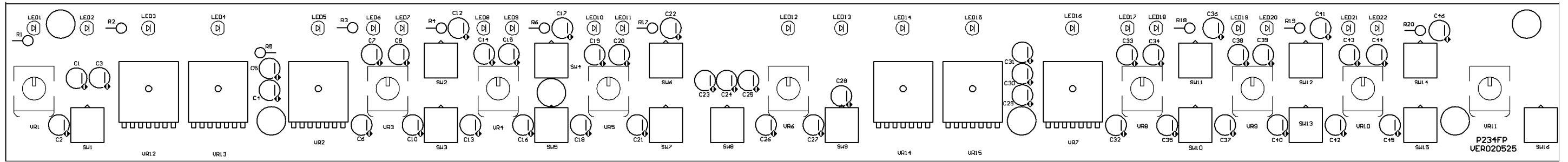
PCB : P234FP Top Solder Mask



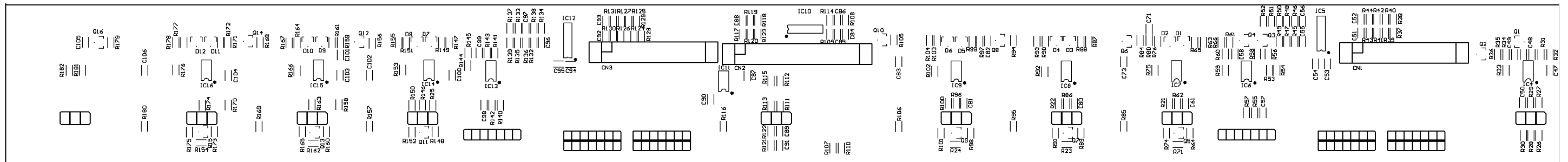
PCB : P234FP Bottom Layer



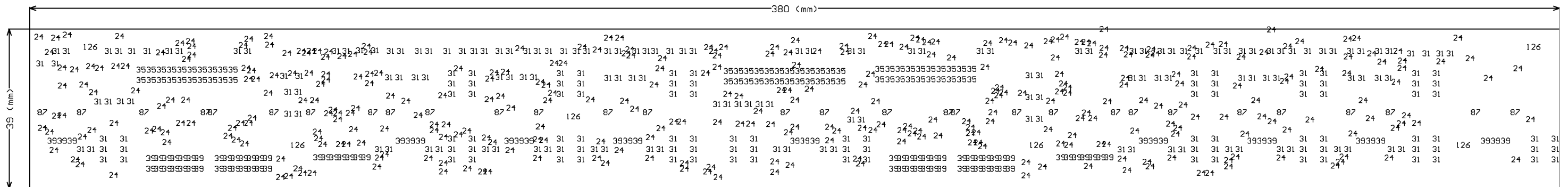
PCB : P234FP Bottom Solder Mask



PCB : P234FP Top Overlay

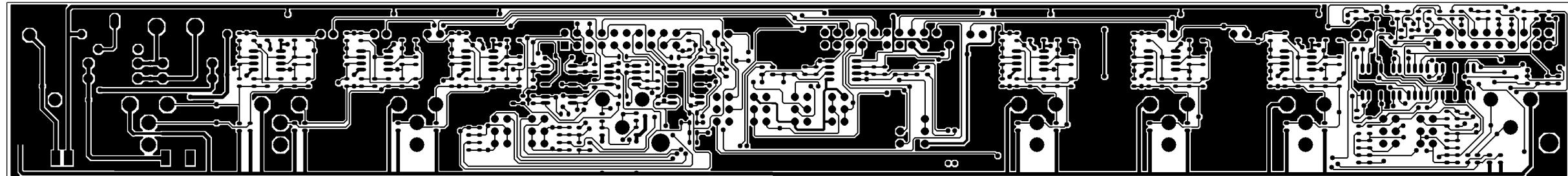


PCB : P234FP Bottom Overlay

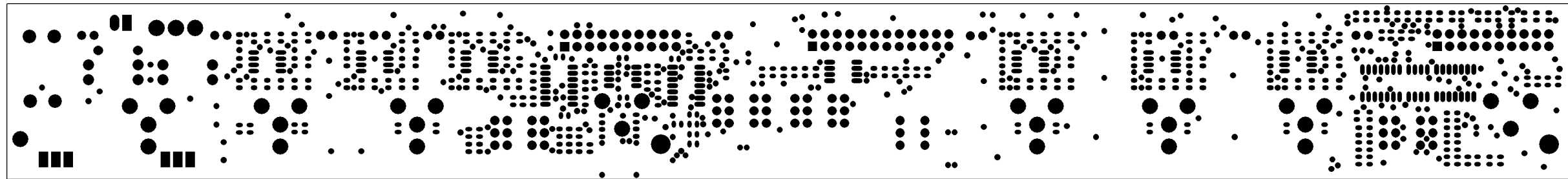


Hole Size	Hole Count
24mil (0.6mm)	353
31mil (0.8mm)	248
35mil (0.9mm)	64
39mil (1.0mm)	97
87mil (2.2mm)	30
126mil (3.2mm)	6
Totals	798

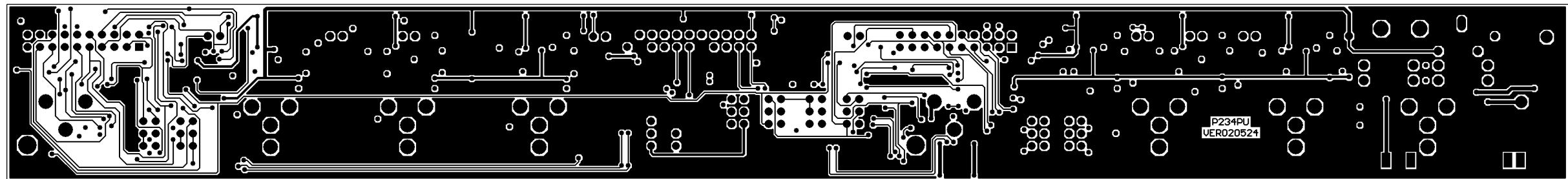
P234PU PCB LAYOUT



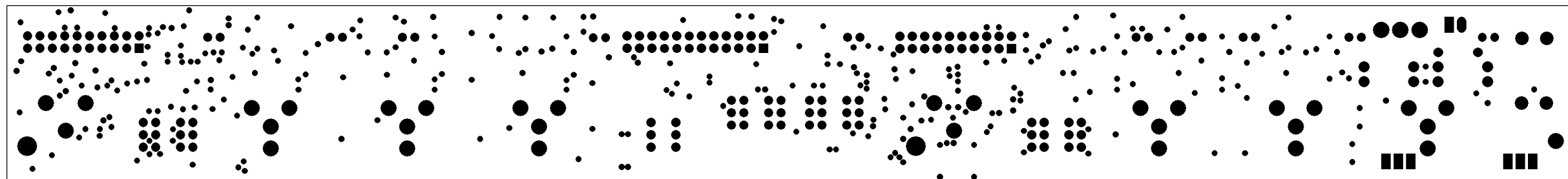
PCB : P234PU Top Layer



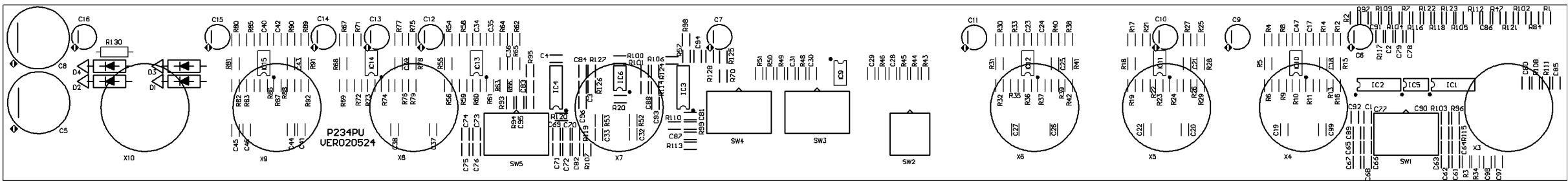
PCB : P234PU Top Solder Mask



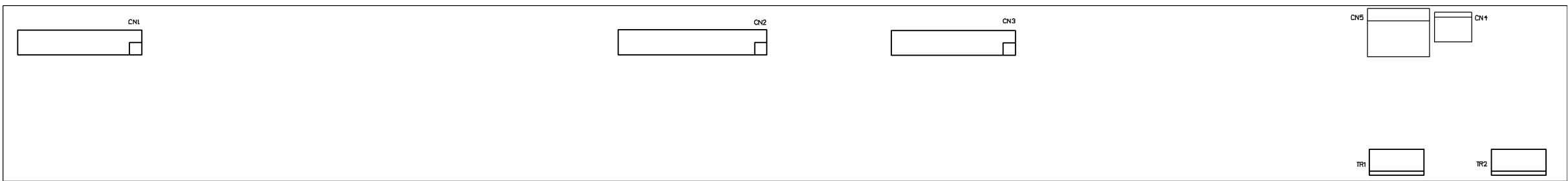
PCB : P234PU Bottom Layer



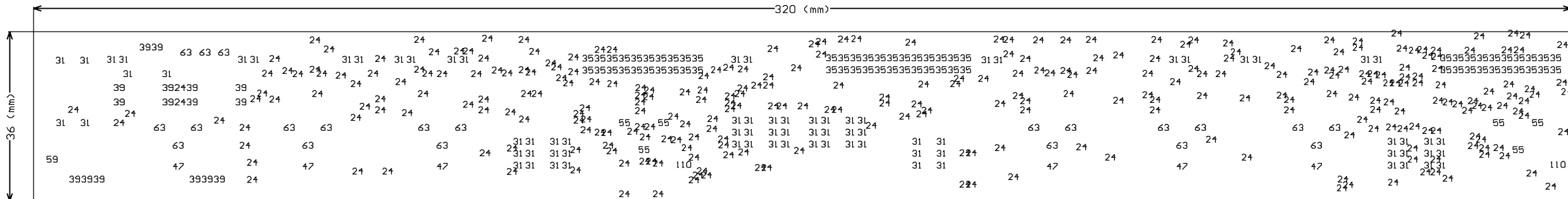
PCB : P234PU Bottom Solder Mask



PCB : P234PU Top Overlay



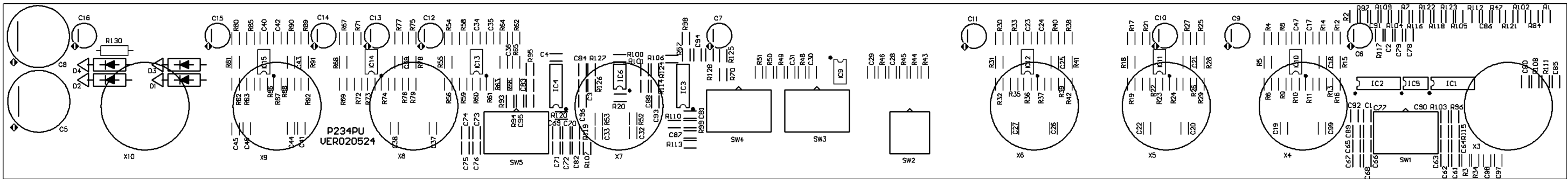
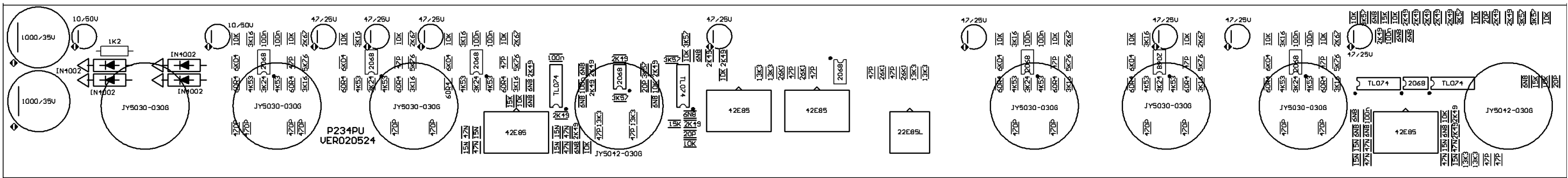
PCB : P234PU Bottom Overlay



PCB : P234PU Drill Drawing Plots

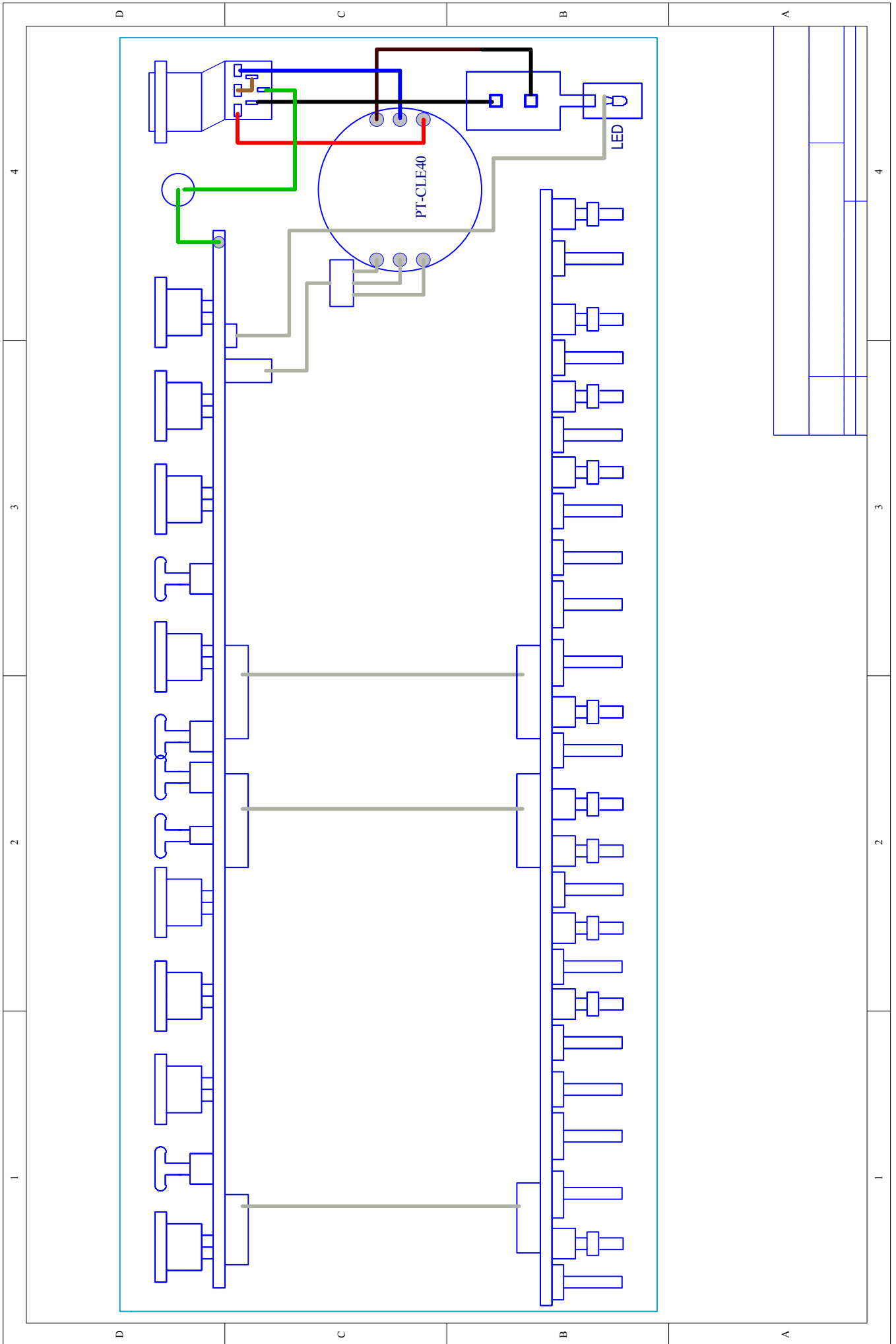
Hole Size		Hole Count
24mil	(0.6mm)	303
31mil	(0.8mm)	80
35mil	(0.9mm)	64
39mil	(1.0mm)	16
47mil	(1.2mm)	6
55mil	(1.4mm)	6
59mil	(1.5mm)	1
63mil	(1.6mm)	21
110mil	(2.8mm)	2
Totals		499







# 5. Wiring Diagram



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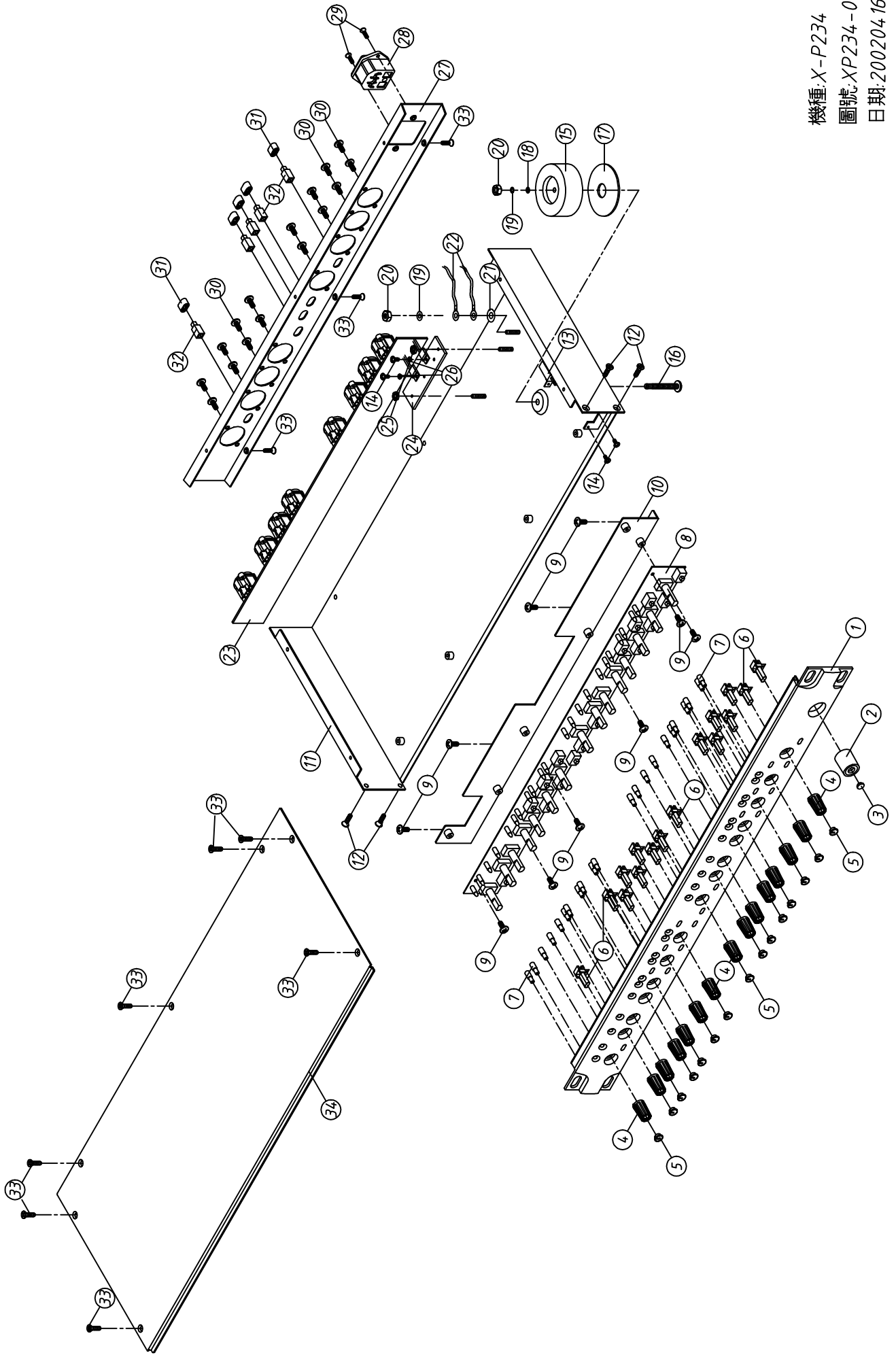
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# 8. Exploded Views

SEKAKU



機種: X-P234  
圖號: XP234-00  
日期: 20020416