| REVISIONS | | | |
|---|---|---|---|
| REV | DESCRIPTION | DATE | APPROVED |
| 1 | PROTOTYPE RELEASE | | |
| 2 | PROTOTYPE RELEASE | | |
| 3 | PROTOTYPE RELEASE | | |
| 4 | PROTOTYPE RELEASE | | |
| A | PROTOTYPE RELEASE | | |
| B | PROTOTYPE RELEASE | | |
| C | RELEASE FOR PRODUCTION PER ER#42-541 | 01-25-95 | T.M. |
| D | REVISED PER ECO# 3065 | 3/21/95 | TM |


SHT 1 COVER SHEET

SHT 2 CHANNELS 1 & 2 INPUT DIFF AMPS AND FRONT PANEL CONNECTORS.

SHT 3 CHANNELS 3 & 4 INPUT DIFF AMPS.

SHT 4 HEADPHONE AMP AND GUITAR & MIC INPUT PREAMPS.

SHT 5 CHANNELS 1 & 2 INPUT MUTING, PRE-EMPHASIS AND FILTER.

SHT 6 CHANNELS 3 & 4 INPUT MUTING, PRE-EMPHASIS AND FILTER.

SHT 7 CHANNELS 1 & 2 A/D CONVERTER.

SHT 8 CHANNELS 3 & 4 A/D CONVERTER AND MASTER CLOCK GENERATOR.

SHT 9 D/A CONVERTER AND SAMPLE AND HOLDS.

SHT 10 OUTPUT FILTERS, DE-EMPHASIS AND PRE MIXING.

SHT 11 CHANNELS 1 & 2 OUTPUT DRIVERS WITH MUTING AND POST MIXING.

SHT 12 CHANNELS 3 & 4 OUTPUT DRIVERS WITH MUTING AND POST MIXING.

SHT 13 VOLTAGE REGULATORS, +4/-10 SWITCH AND OFF BOARD CONNECTORS.

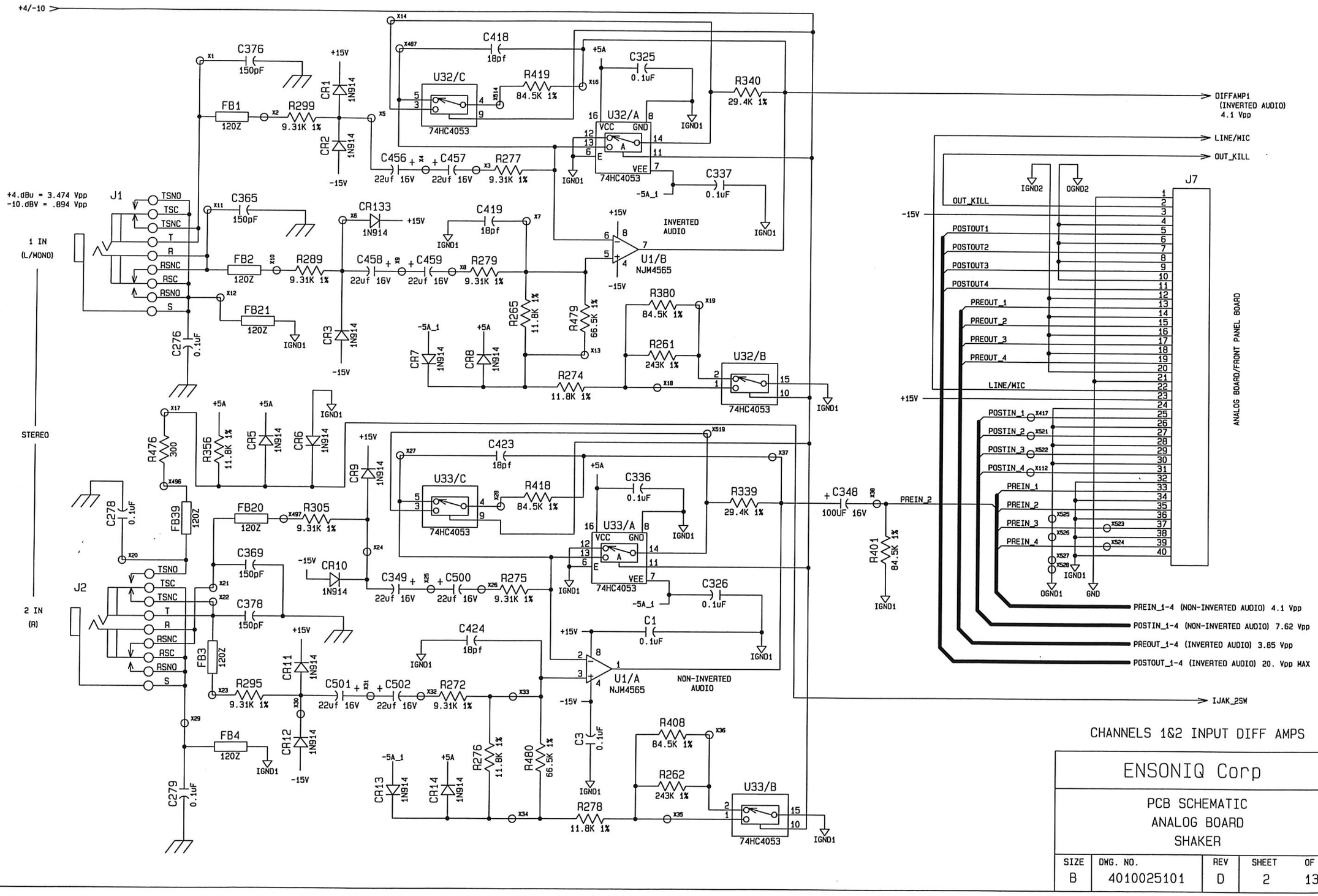

3. ALL 0.1UF BYPASS CAPACITORS ARE 50V +80/-20% Z5U.
2. ALL CAPACITOR VALUES ARE IN MICROFARADS, 16V MINIMUM.
1. ALL RESISTOR VALUES ARE IN OHMS, 1/8W 5%.

NOTES - UNLESS SPECIFIED OTHERWISE:

COVER SHEET

ENSONIQ Corp
155 GREAT VALLEY PKWY, MALVERN PA 19355

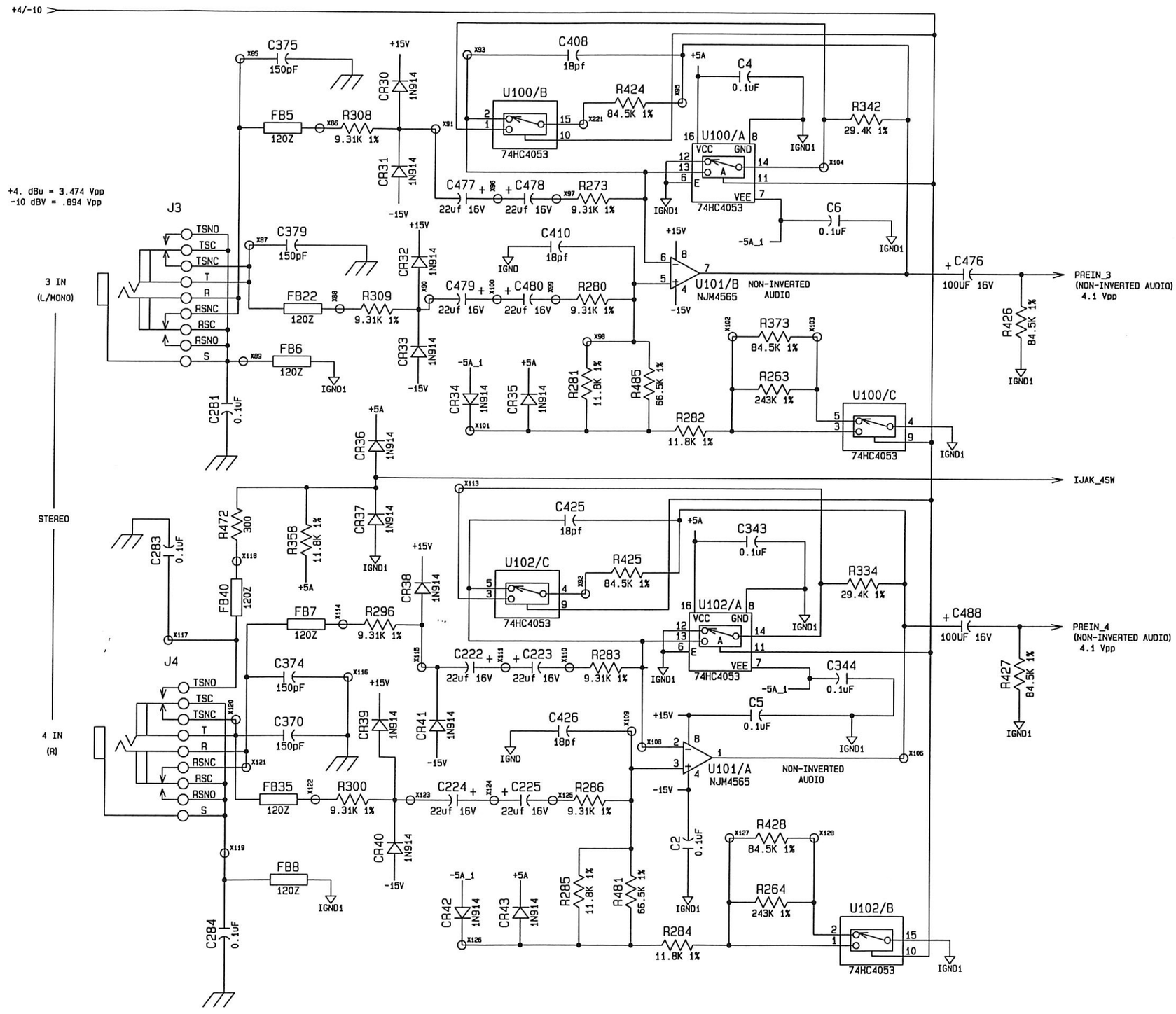
| APPROVALS | DATE | PCB SCHEMATIC ANALOG BOARD SHAKER | | |
|---|---|---|---|---|
| DWN BY: BAVL | 8-4-94 | | | |
| CHKD BY: | | | | |
| APPD BY: | | SIZE B | DWG. NO. 4010025101 | REV D |
| USED ON: | | SCALE — | SHEET 1 OF 13 | |




ENSONIQ Corp

PCB SCHEMATIC
ANALOG BOARD
SHAKER

| SIZE | DWG. NO. | REV | SHEET | OF |
|---|---|---|---|---|
| B | 4010025101 | D | 2 | 13 |

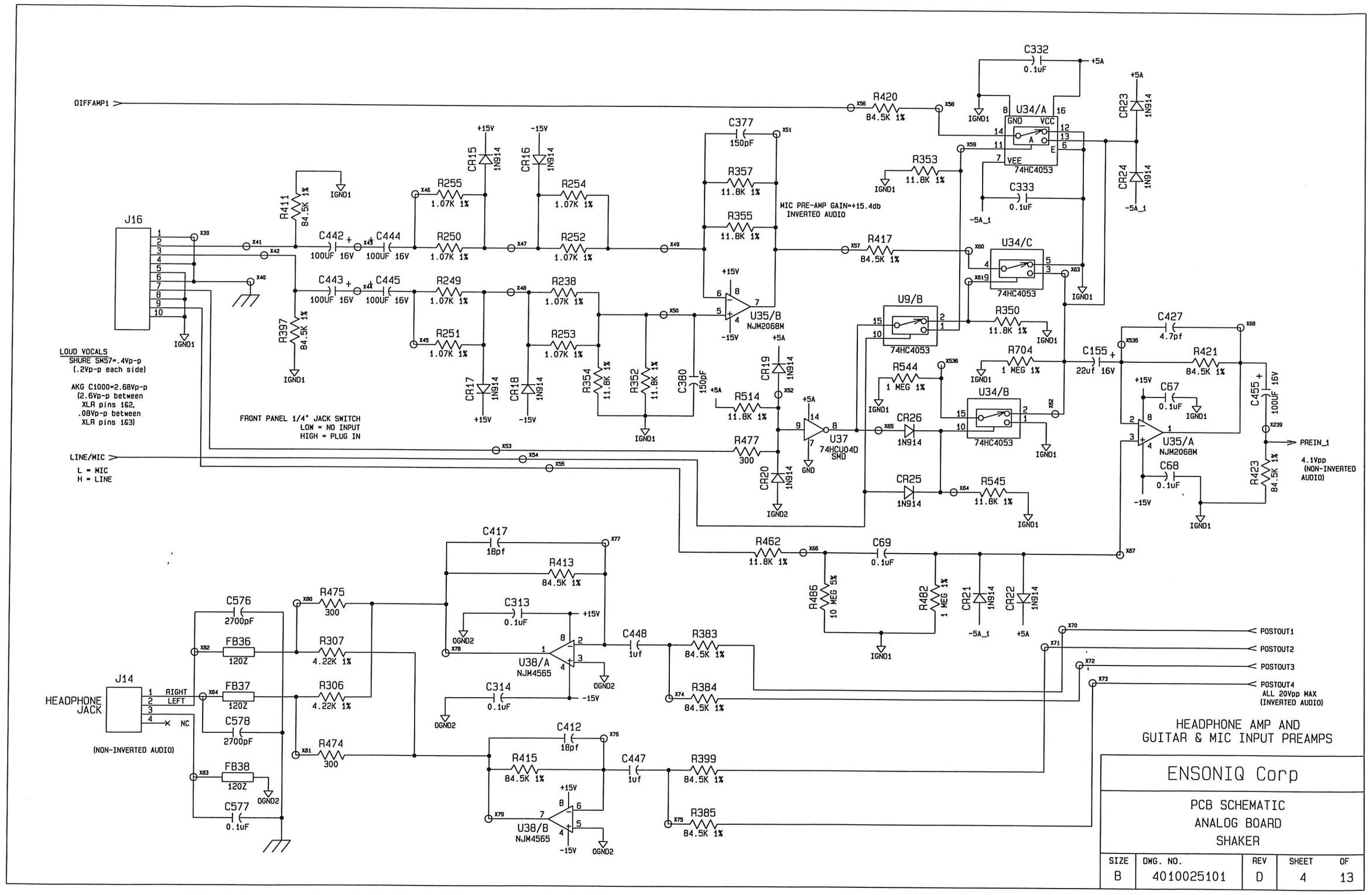


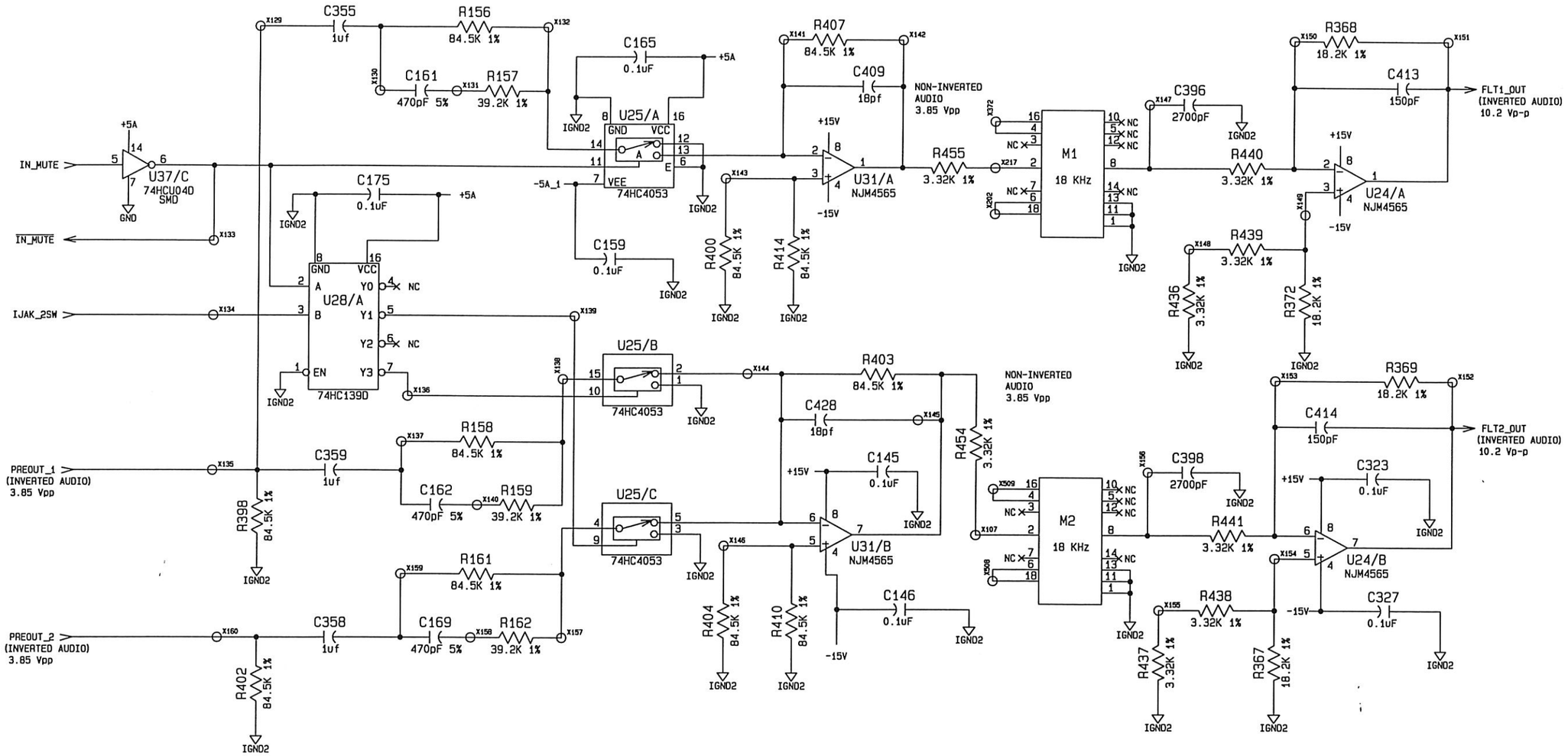

CHANNELS 1&2 INPUT DIFF AMPS

ENSONIQ Corp

PCB SCHEMATIC
ANALOG BOARD
SHAKER

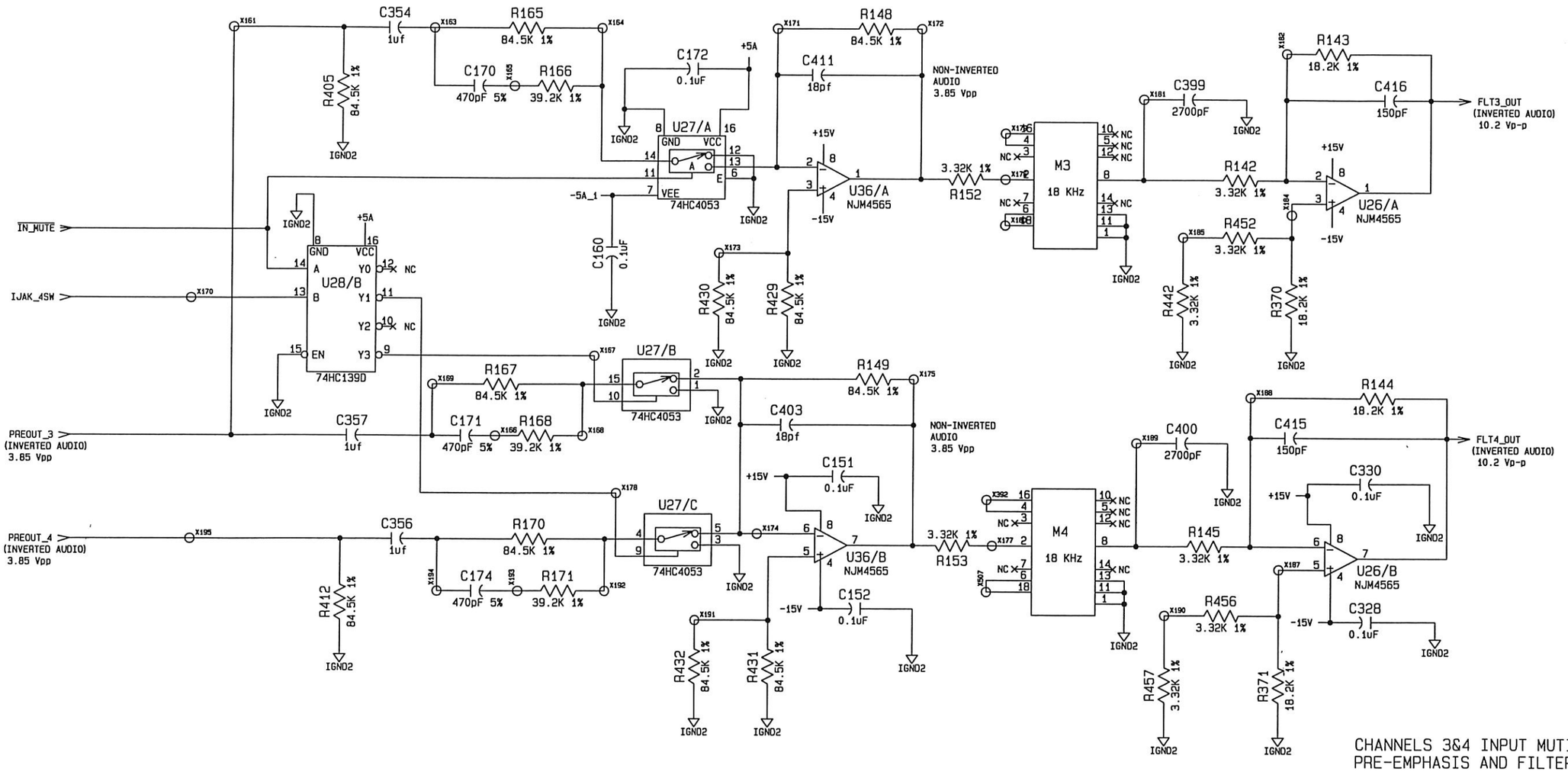
| SIZE | DWG. NO. | REV | SHEET | OF |
|---|---|---|---|---|
| B | 4010025101 | D | 3 | 13 |


DIFFAMP1
LINE/MIC
L = MIC
H = LINE
LOUD VOCALS
SHURE SM57=.4Vp-p
(.2Vp-p each side)
AKG C1000=2.68Vp-p
(2.6Vp-p between
XLR pins 1&2,
.08Vp-p between
XLR pins 1&3)
FRONT PANEL 1/4" JACK SWITCH
LOW = NO INPUT
HIGH = PLUG IN
MIC PRE-AMP GAIN=+15.4db
INVERTED AUDIO
J16
J14
HEADPHONE JACK
RIGHT
LEFT
NC
(NON-INVERTED AUDIO)
U35/B NJM2068M
U35/A NJM2068M
U37 74HCU04D SMD
U9/B 74HC4053
U34/A 74HC4053
U34/B 74HC4053
U34/C 74HC4053
U38/A NJM4565
U38/B NJM4565
PREIN_1
4.1Vpp
(NON-INVERTED AUDIO)
POSTOUT1
POSTOUT2
POSTOUT3
POSTOUT4
ALL 20Vpp MAX
(INVERTED AUDIO)
HEADPHONE AMP AND
GUITAR & MIC INPUT PREAMPS
ENSONIQ Corp
PCB SCHEMATIC
ANALOG BOARD
SHAKER
SIZE B
DWG. NO. 4010025101
REV D
SHEET 4
OF 13




CHANNELS 1&2 INPUT MUTING,
PRE-EMPHASIS AND FILTER.

| ENSONIQ Corp | | | | |
|---|---|---|---|---|
| PCB SCHEMATIC<br>ANALOG BOARD<br>SHAKER | | | | |
| SIZE | DWG. NO. | REV | SHEET | OF |
| B | 4010025101 | D | 5 | 13 |




| ENSONIQ Corp | | | | |
|---|---|---|---|---|
| PCB SCHEMATIC<br>ANALOG BOARD<br>SHAKER | | | | |
| SIZE | DWG. NO. | REV | SHEET | OF |
| B | 4010025101 | D | 6 | 13 |

CHANNELS 1&2 A/D CONVERTER.

| ENSONIQ Corp | | | | |
|---|---|---|---|---|
| PCB SCHEMATIC<br>ANALOG BOARD<br>SHAKER | | | | |
| SIZE | DWG. NO. | REV | SHEET | OF |
| B | 4010025101 | D | 7 | 13 |

S/H_2
S/H_1
FLT3_OUT
10.2 Vp-p
(INVERTED AUDIO)
FLT4_OUT
10.2 Vp-p
(INVERTED AUDIO)
LIN_RES
AIN_RES
U22/C
74HC4053
U22/A
U22/B
U23/C
U23/A
U23/B
R247
1.07K 1%
C119
1500pf 5%
POLYSTYRENE
7.0 Vp-p
C139
0.1uF
C140
0.1uF
C141
0.1uF
C142
0.1uF
C121
0.1uF
C122
1500pf 5%
POLYSTYRENE
R242
1.07K 1%
R240
1.07K 1%
R243
1.07K 1%
R259
1.07K 1%
R237
1.07K 1%
R260
1.07K 1%
CR55
1N914
CR56
1N914
CR59
1N914
CR60
1N914
U18/A
TL072
U18/B
TL072
R303
4.22K 1%
R304
4.22K 1%
CR57
1N914
CR58
1N914
CR61
1N914
CR62
1N914
R451
3.32K 1%
R448
3.32K 1%
R450
2.80K 1%
R449
2.80K 1%
POT7
1K
CHANNEL 3
DC OFFSET
POT8
1K
CHANNEL 4
DC OFFSET
C557
22uf 16V
C131
0.1uF
C538
0.1uF
C537
22uf 16V
C134
0.1uF
C133
0.1uF
C120
0.1uF
C605
4.7pf
C606
4.7pf
R335
11.8K 1%
R337
11.8K 1%
CR63
1N914
CR64
1N914
U19/A
NJM4565
U19/B
NJM4565
R244
1.07K 1%
R246
1.07K 1%
C126
150pF
C128
150pF
R112
3.32K 1%
R114
1.07K 1%
R116
3.32K 1%
R119
1.07K 1%
CHANNEL 3
DIST. ADJUST
1K
POT3
CHANNEL 4
DIST. ADJUST
1K
POT4
CW
C125
0.1uF
C602
22uf 16V
C127
0.1uF
C603
22uf 16V
C124
0.1uF
R434
49.9K 1%
R375
NOT USED
+15_A/D
CONV_COM
A/D_MODE
75.4_MHZ
BCLK
AD_3_4
(INVERTED DATA)
+5_A/D
C115
3.3uf 50V
C118
0.1uF
R443
3.32K 1%
C116
0.1uF
CR65
1N914
C391
2700pF
C422
4.7pf
L1
0.27uH
Y1
75.4426 MHz
C110
18pf
R236
1.07K 1%
U37/E
74HCU04D
SMD
18MHZ
R478
39.2K 1%
U37/F
74HCU04D
SMD
C312
0.1uF
U17
CX20018
-5_A/D_1
-5_A/D_2
C239
3.3uf 50V
C556
3.3uf 50V
C329
0.1uF
R453
3.32K 1%
C112
0.1uF
CR150
1N914
C113
3.3uf 50V
C114
0.1uF
IGND2
-5A_1
-15V
+15V
+5A

CHANNELS 3&4 A/D CONVERTER
AND MASTER CLOCK GENERATOR.

| ENSONIQ Corp | | | | |
|---|---|---|---|---|
| PCB SCHEMATIC<br>ANALOG BOARD<br>SHAKER | | | | |
| SIZE | DWG. NO. | REV | SHEET | OF |
| B | 4010025101 | D | 8 | 13 |

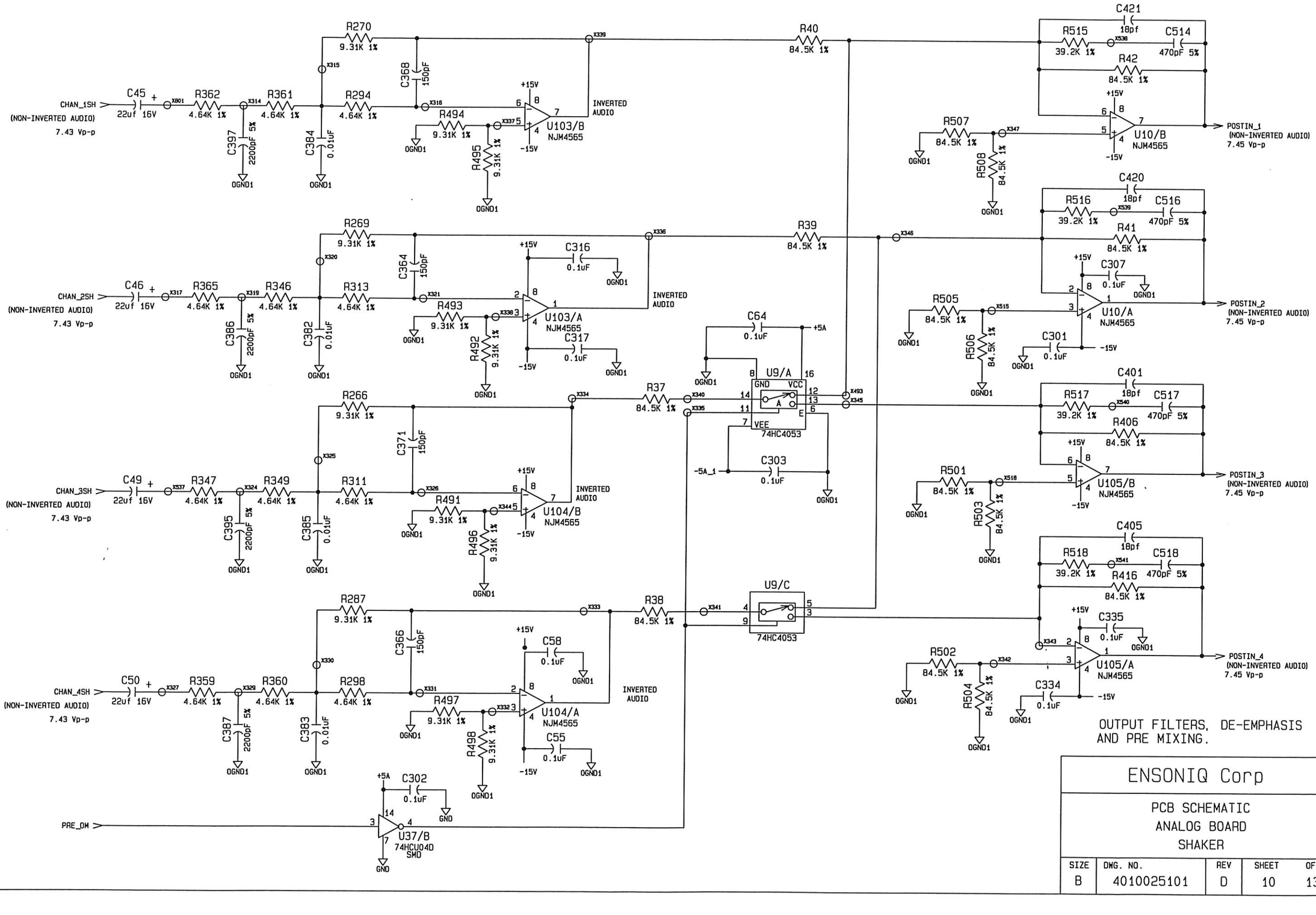
SH_2
S/H_2
SH_1
S/H_1
DACLK
DA_3_4 (INVERTED DATA)
DA_1_2 (INVERTED DATA)
EXOR
BCLK
BCLK
LE
NON-INVERTED DATA
U30/A 74HC04AD
U30/B 74HC04AD
U29/C 74HC86D
U29/D 74HC86D
U30/F 74HC04AD
U30/C 74HC04AD
U2 TDA1541A
DATAR/SCK
DATAL/DATA
BCLK
LE/WS
OB/TWC
VDD1
VDD2
VDD
DGND
AGND
OSC1
OSC2
C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13 C14
R435 3.32K 1%
R257 1.07K 1%
R234 1.07K 1%
CR66 MMSZ5234B
CR70 1N914
CR71 1N914
CR72 1N914
CR73 1N914
R458 3.32K 1%
R290 4.22K 1%
C367 150pF
R459 3.32K 1%
R291 4.22K 1%
C381 150pF
R489 1.07K 1%
R488 1.07K 1%
R490 1.07K 1%
R487 1.07K 1%
C555 22uF 16V
C446 0.1uF
C429 22uF 20V TANT
C8 0.1uF
C363 150pF
C9 C10 C13 C14 C15 C16 C17 C18 C19 C11 C12 C294 C295 C296 C297 C298 C299 C300 C30 C29 C177 C35 C36 C33 C34 C39 C40 C37 C41 C43 C38 C42 C44 0.1uF
U3 NJM4565
U3/A NJM4565
U4/A U4/C U5/A U5/B U5/C 74HC4053
U6/A U6/B TL072
U7/A U7/B TL072
-5A_1
CHAN_1SH (NON-INVERTED AUDIO) 7.43 Vp-p
CHAN_2SH (NON-INVERTED AUDIO) 7.43 Vp-p
CHAN_3SH (NON-INVERTED AUDIO) 7.43 Vp-p
CHAN_4SH (NON-INVERTED AUDIO) 7.43 Vp-p
NON-INVERTED AUDIO
5600pf

D/A CONVERTER & SAMPLE AND HOLDS

ENSONIQ Corp

PCB SCHEMATIC
ANALOG BOARD
SHAKER

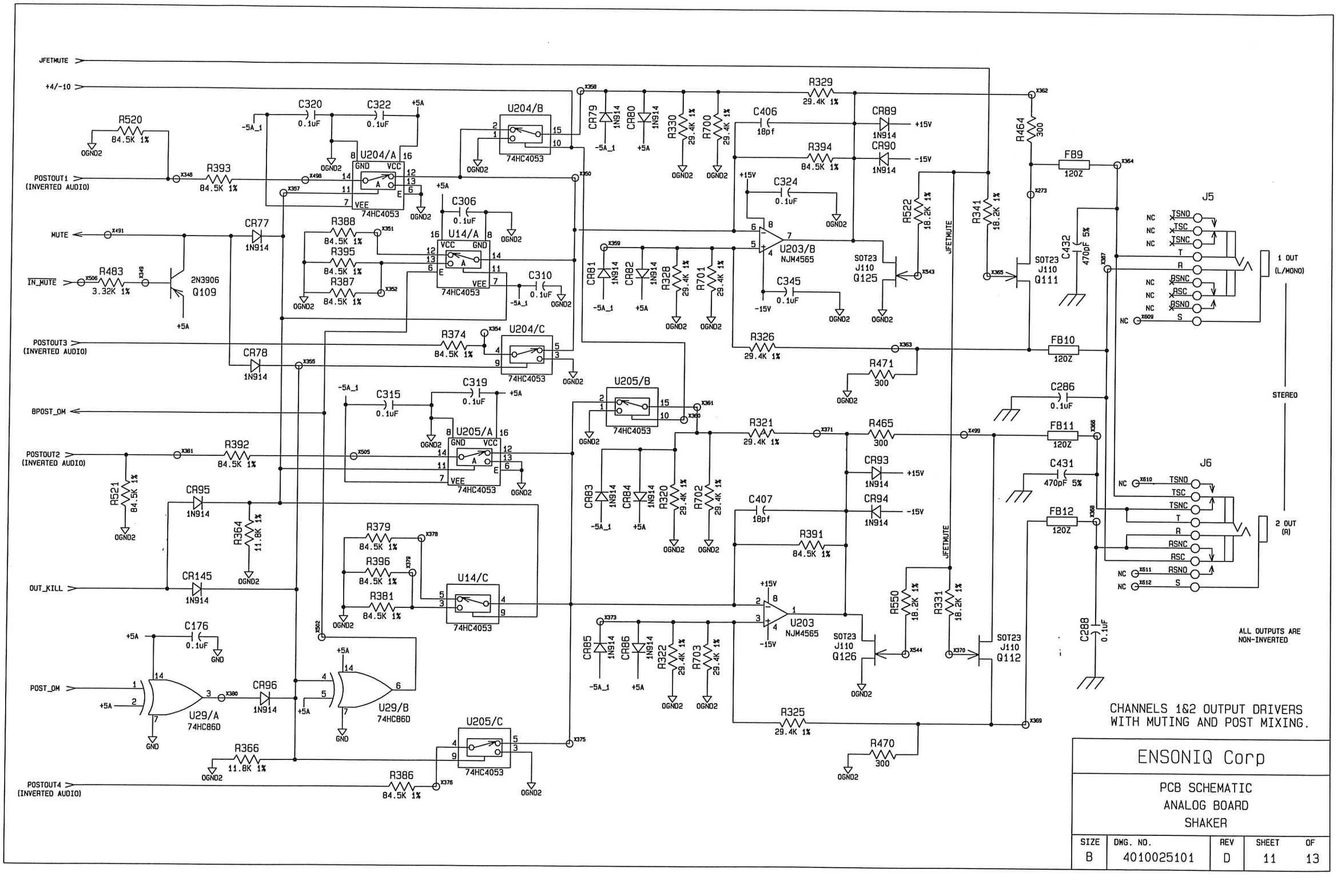
| SIZE | DWG. NO. | REV | SHEET | OF |
|---|---|---|---|---|
| B | 4010025101 | D | 9 | 13 |



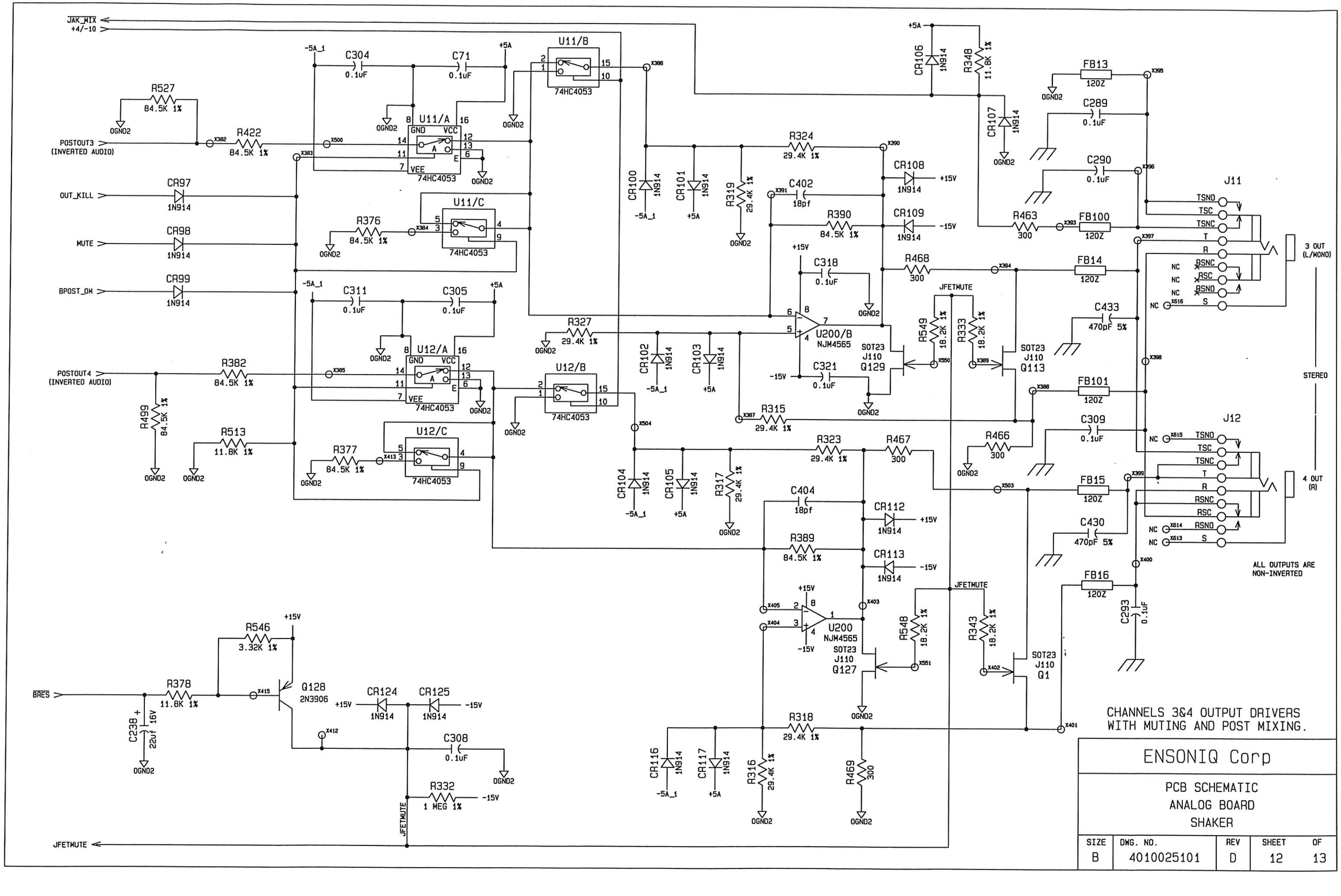

ENSONIQ Corp

PCB SCHEMATIC
ANALOG BOARD
SHAKER

| SIZE | DWG. NO. | REV | SHEET | OF |
|---|---|---|---|---|
| B | 4010025101 | D | 10 | 13 |




| | | | | |
|---|---|---|---|---|
| ENSONIQ Corp | | | | |
| PCB SCHEMATIC<br>ANALOG BOARD<br>SHAKER | | | | |
| SIZE | DWG. NO. | REV | SHEET | OF |
| B | 4010025101 | D | 11 | 13 |


JAK_MIX
+4/-10
POSTOUT3
(INVERTED AUDIO)
POSTOUT4
(INVERTED AUDIO)
OUT_KILL
MUTE
BPOST_DM
BRES
JFETMUTE
R527
84.5K 1%
R422
84.5K 1%
R382
84.5K 1%
R499
84.5K 1%
R513
11.8K 1%
R376
84.5K 1%
R377
84.5K 1%
R546
3.32K 1%
R378
11.8K 1%
R332
1 MEG 1%
C238
22uf 16V
C304
0.1uF
C71
0.1uF
C311
0.1uF
C305
0.1uF
C308
0.1uF
C318
0.1uF
C321
0.1uF
C402
18pf
C404
18pf
C433
470pF 5%
C430
470pF 5%
C289
0.1uF
C290
0.1uF
C309
0.1uF
C293
0.1uF
R324
29.4K 1%
R327
29.4K 1%
R315
29.4K 1%
R323
29.4K 1%
R318
29.4K 1%
R319
29.4K 1%
R317
29.4K 1%
R316
29.4K 1%
R390
84.5K 1%
R389
84.5K 1%
R468
300
R467
300
R466
300
R469
300
R463
300
R348
11.8K 1%
R549
18.2K 1%
R333
18.2K 1%
R548
18.2K 1%
R343
18.2K 1%
CR97
1N914
CR98
1N914
CR99
1N914
CR100
1N914
CR101
1N914
CR102
1N914
CR103
1N914
CR104
1N914
CR105
1N914
CR106
1N914
CR107
1N914
CR108
1N914
CR109
1N914
CR112
1N914
CR113
1N914
CR116
1N914
CR117
1N914
CR124
1N914
CR125
1N914
Q128
2N3906
U11/A
74HC4053
U11/B
74HC4053
U11/C
74HC4053
U12/A
74HC4053
U12/B
74HC4053
U12/C
74HC4053
U200/B
NJM4565
U200
NJM4565
SOT23
J110
Q129
SOT23
J110
Q113
SOT23
J110
Q127
SOT23
J110
Q1
FB13
120Z
FB100
120Z
FB14
120Z
FB101
120Z
FB15
120Z
FB16
120Z
J11
TSNO
TSC
TSNC
T
R
RSNC
RSC
RSNO
S
3 OUT
(L/MONO)
STEREO
J12
4 OUT
(R)
ALL OUTPUTS ARE
NON-INVERTED
JFETMUTE
-5A_1
+5A
+15V
-15V
OGND2
CHANNELS 3&4 OUTPUT DRIVERS
WITH MUTING AND POST MIXING.
ENSONIQ Corp
PCB SCHEMATIC
ANALOG BOARD
SHAKER
SIZE B
DWG. NO. 4010025101
REV D
SHEET 12
OF 13

POWER

J10

1 +VA
2 -VA
3 -VD

LUG1
0.187

CASE_GND IGND2 OGND1 GND

ANALOG MAIN/DIGITAL MAIN

J9

BRES X418
JAK_MIX X419
POST_OM X420
PRE_OM X421
OUT_KILL X422
LRCLK X423
18MHZ X424
LINRES X425
RINRES X426
AD_1_2 X427
AD_3_4 X428
BCLK X429
IJAK_MUX
IN_MUTE X430
SH_1 X431
SH_2 X432
DACLK X433
CE X434
EXOR X435
DA_1_2 X436
DA_3_4 X437

NC pins 9, 11, 13, 15, 17, 19

GND

U4/B

IJAK_2SW
IJAK_4SW
LRCLK

74HC4053

C801 0.1uF
C800 0.1uF

OGND1

X439 X438 X440

VR1 7805
C439 0.22uF
C111+ 3.3uf 50V
C341 0.1uF

VR7 7815
C435 0.22uF
C167+ 3.3uf 50V
C338 0.1uF
X473 X472 X471 X470 X469 X468 X467 X466
X464 X463 X462 X461 X465
X446 X445 X444 X443 X442 X441
+15V
+5A

VR2 LOW NOISE 7905
C437 0.22uF
+C168 3.3uf 50V
C340 0.1uF

VR8 7915
C438 0.22uF
+C543 3.3uf 50V
C339 0.1uF
X450 X449 X448 X447
X455 X454 X453 X452 X451
-15V
-5A_1

VR6 LOW NOISE 7905
C440 0.22uF
+C231 3.3uf 50V
C342 0.1uF
X456 X457 X458 X459 X460
-5A_2

IGND1 OGND2

CR126 1N914
CR127 1N914
CR128 1N914
CR129 1N914

X481 X480 X479 X478
X474 X475 X476 X477

+5A

R351 11.8K 1%

CR134 1N914
CR135 1N914

+4/-10

R473 300 X483
FB111 120Z
X482

SW1

C346 0.1uF
X486

CASE_GND

+4/-10
UP = +4 (OPEN) HIGH
DOWN = -10 (CLOSED) LOW

UNUSED GATES

U14/B

74HC4053

OGND2 OGND2

NOTE: THE ENABLE PIN ON THIS PART IS CONTROLLED BY THE BPOST_OM SIGNAL.

VOLAGE REGULATORS, +4/-10 SWITCH AND OFF BOARD CONNECTORS.

ENSONIQ Corp

PCB SCHEMATIC
ANALOG BOARD
SHAKER

| SIZE | DWG. NO. | REV | SHEET | OF |
|---|---|---|---|---|
| B | 4010025101 | D | 13 | 13 |