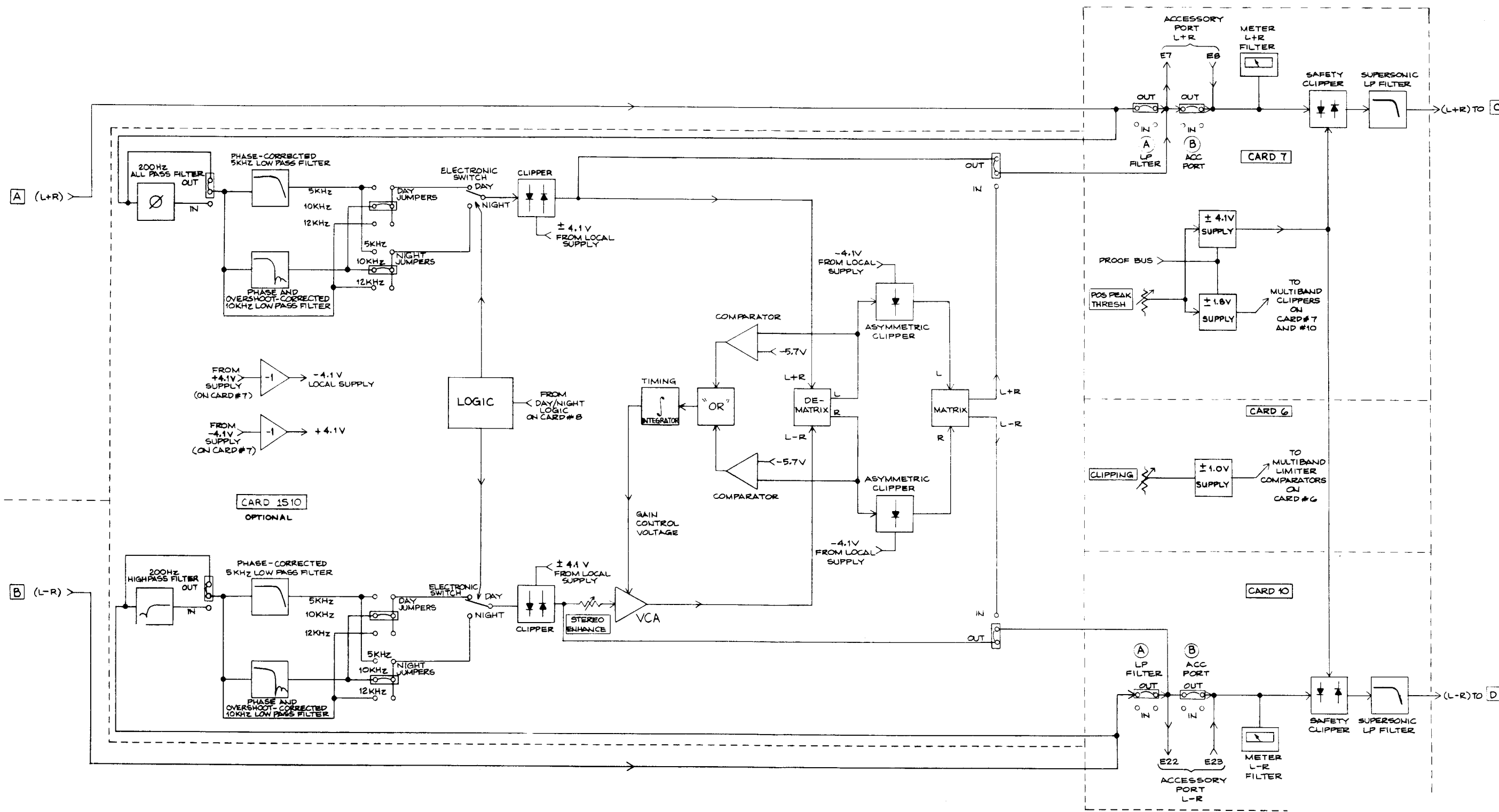
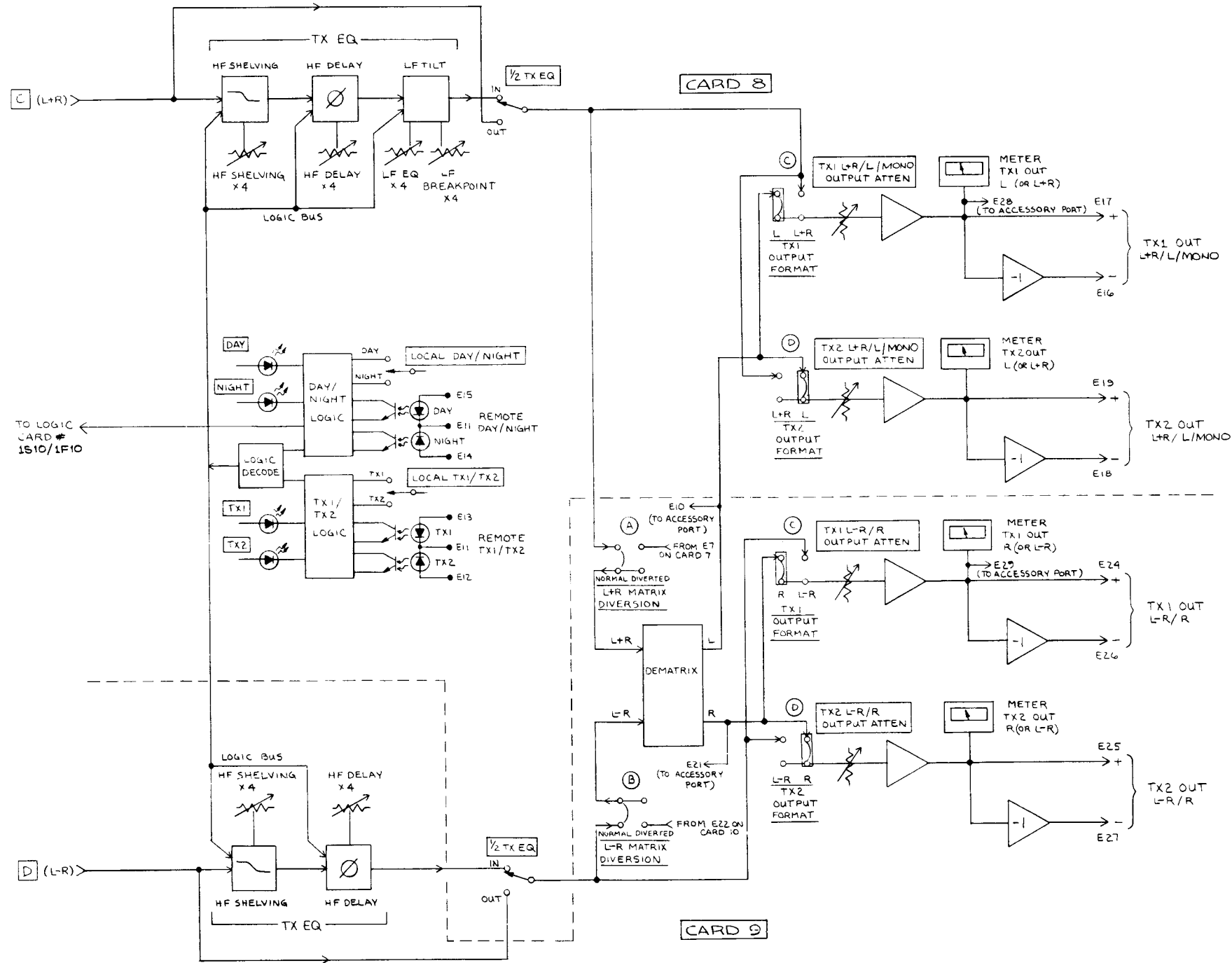


3. REF CARD *1-5 BLOCK DIAGRAM #60140-000
 2. ∅ MEANS PHASE SHIFTER.
 1. ∫ MEANS INTEGRATOR.
 NOTES:

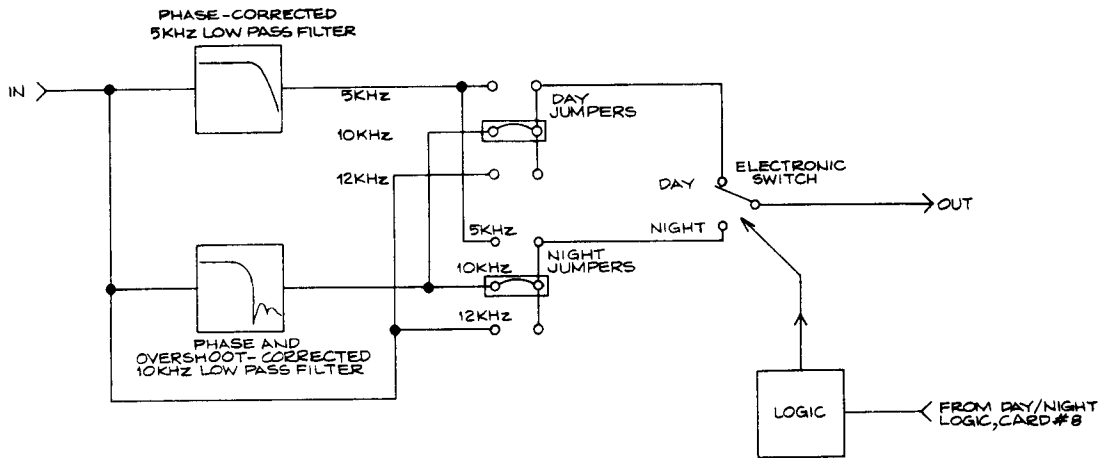
orban
 TITLE: BLOCK DIAGRAM 9100B
 1 OF 3
 60162-000-01



orban
 TITLE: BLOCK DIAGRAM 9100B
 2 OF 3
 60162-000-01

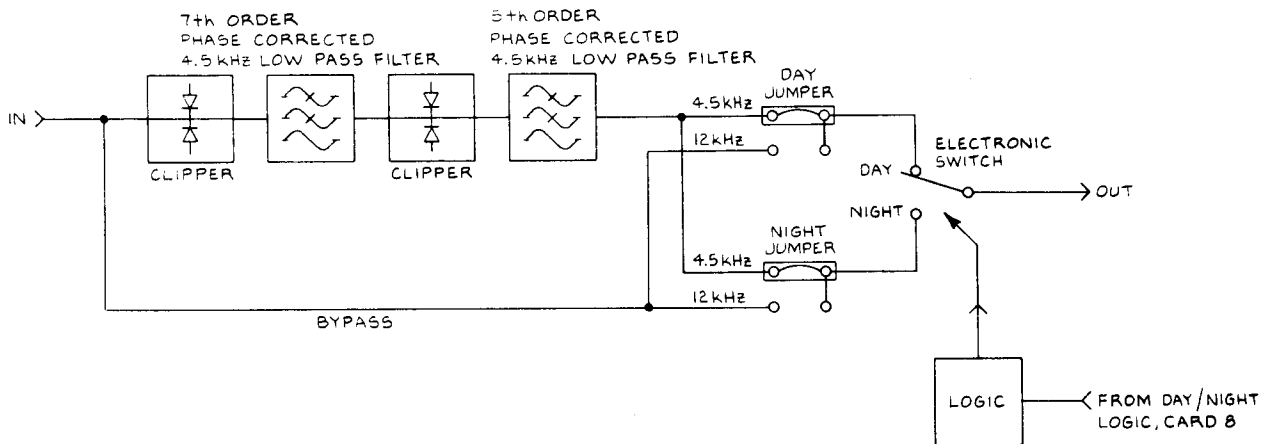


orban
 TITLE: BLOCK DIAGRAM 9100B
 3 OF 3
 60162-000-01




1. REPLACES CARD #1 IN MAIN BLOCK DIAGRAM.

CARD #1F10

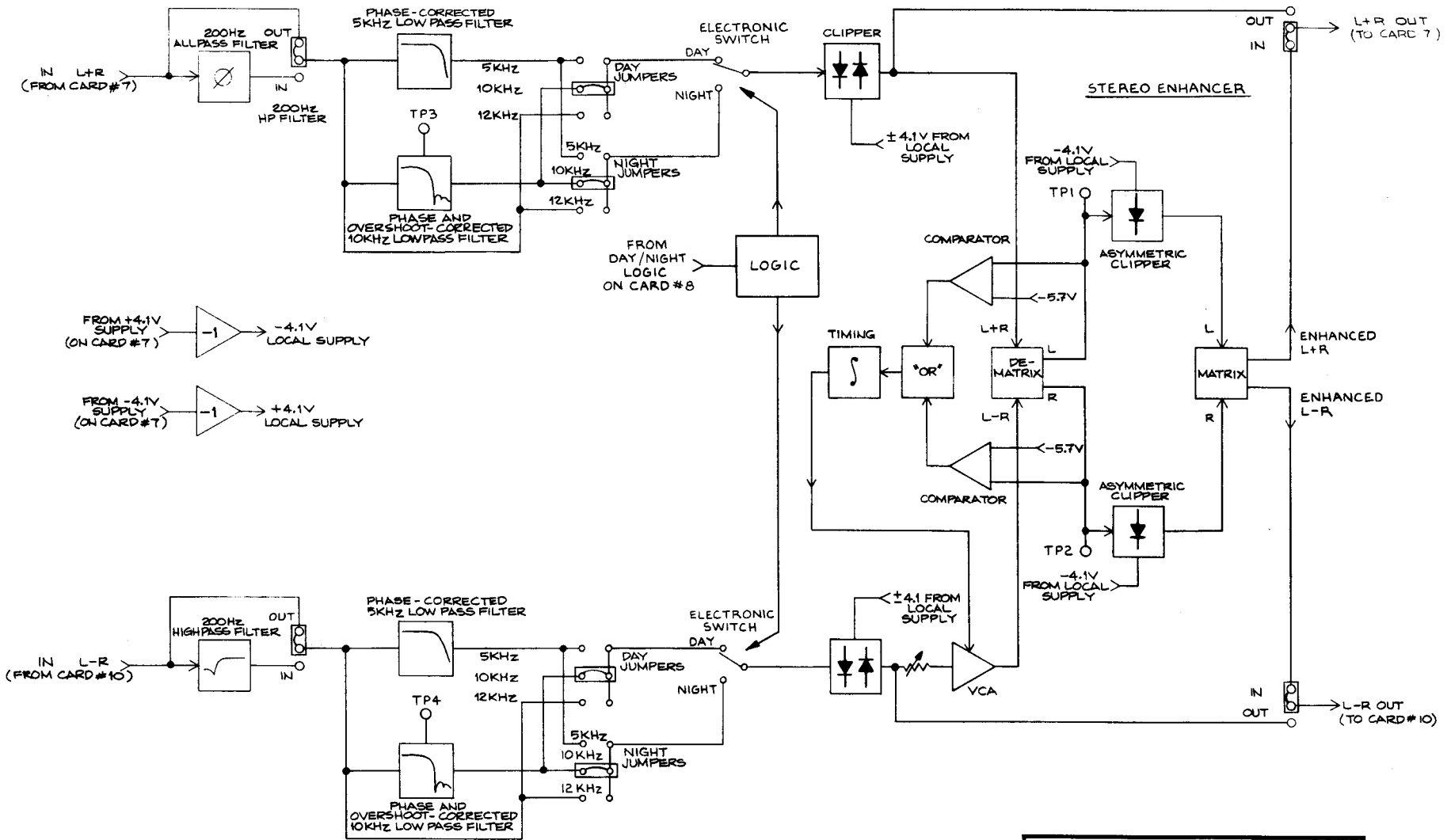


1. REPLACES CARD 1 IN MAIN BLOCK DIAGRAM, 60162-000.
 NOTES: (UNLESS OTHERWISE SPECIFIED)

CARD #1F4.5

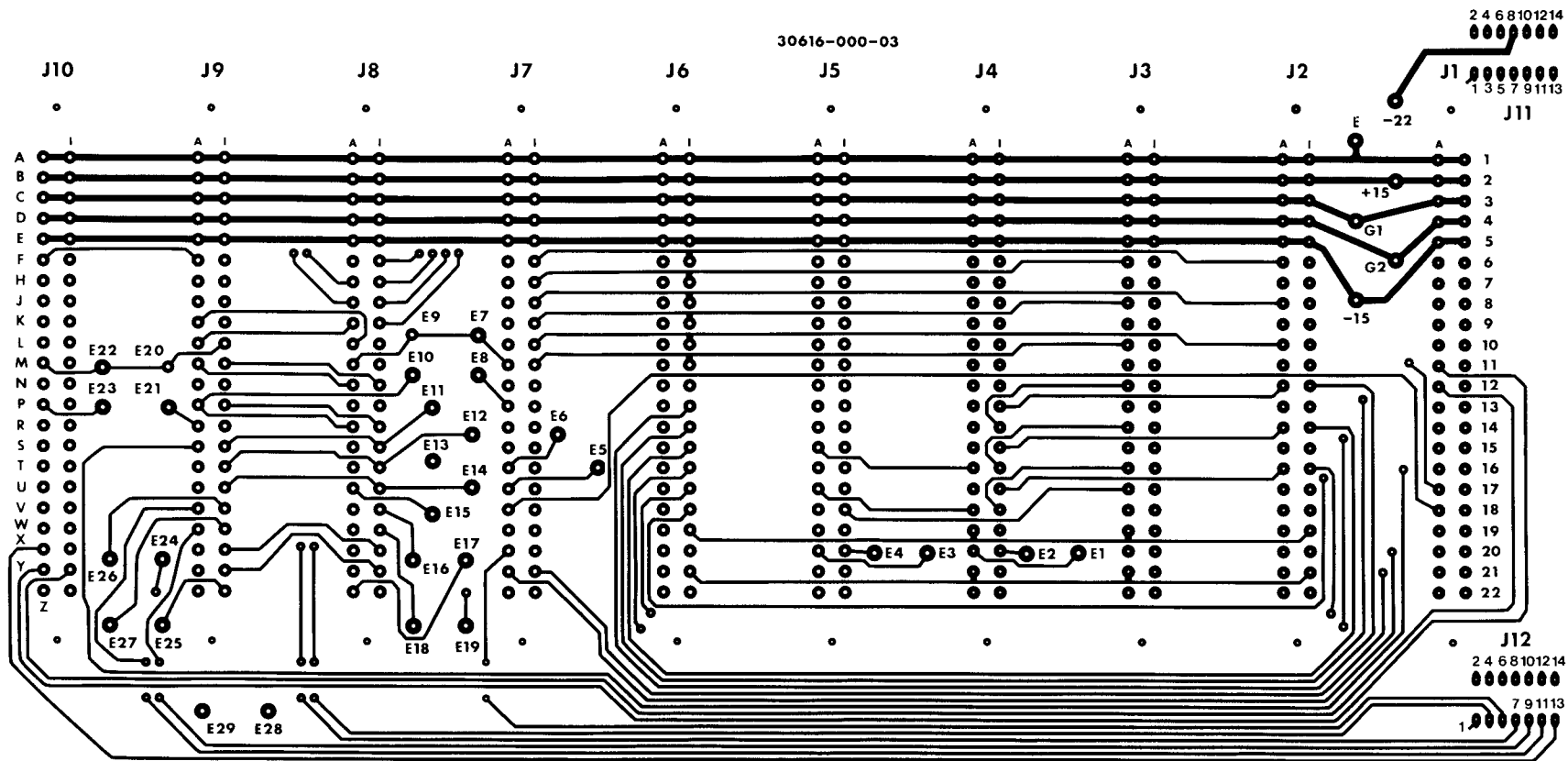


TITLE: BLOCK DIAGRAM
 CARD #1F10 AND CARD #1F4.5
 60167-000-01

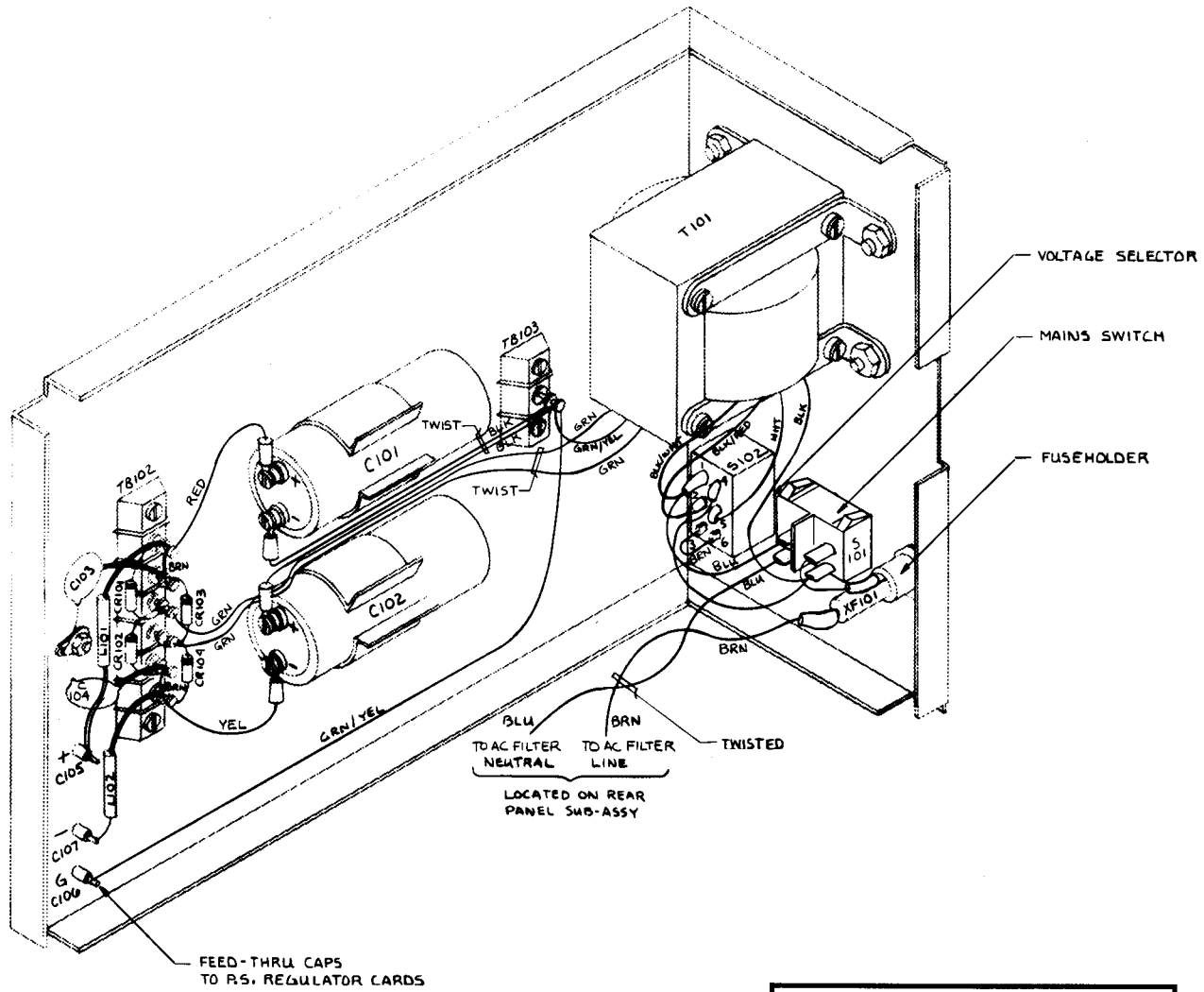


3. REPLACES CARD 1 IN MAIN BLOCK DIAGRAM.
 2. ∅ MEANS PHASE SHIFTER.
 1. ∫ MEANS INTEGRATOR.
 NOTES:

urban	
TITLE: BLOCK DIAGRAM CARD #1S10 60168-000-01	

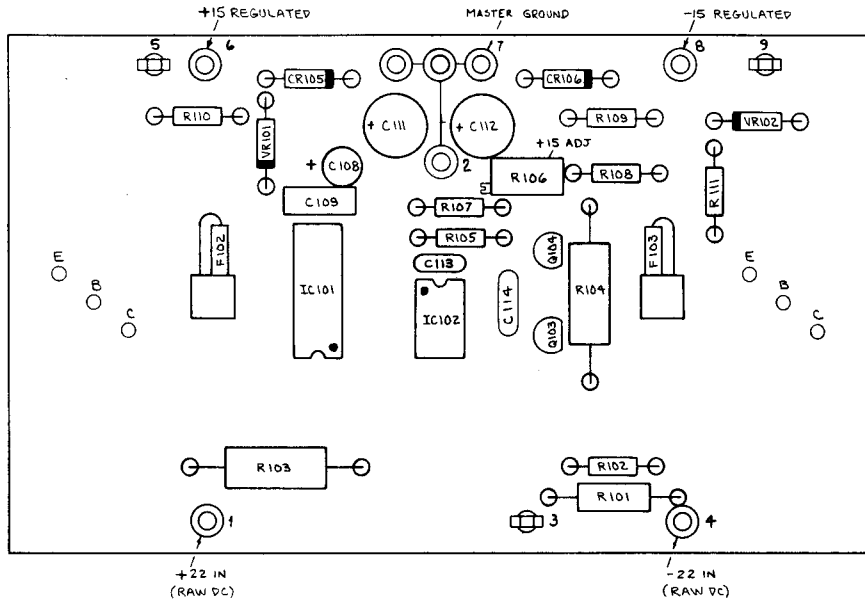


orban	
TITLE:	MOTHERBOARD 31020-000-03

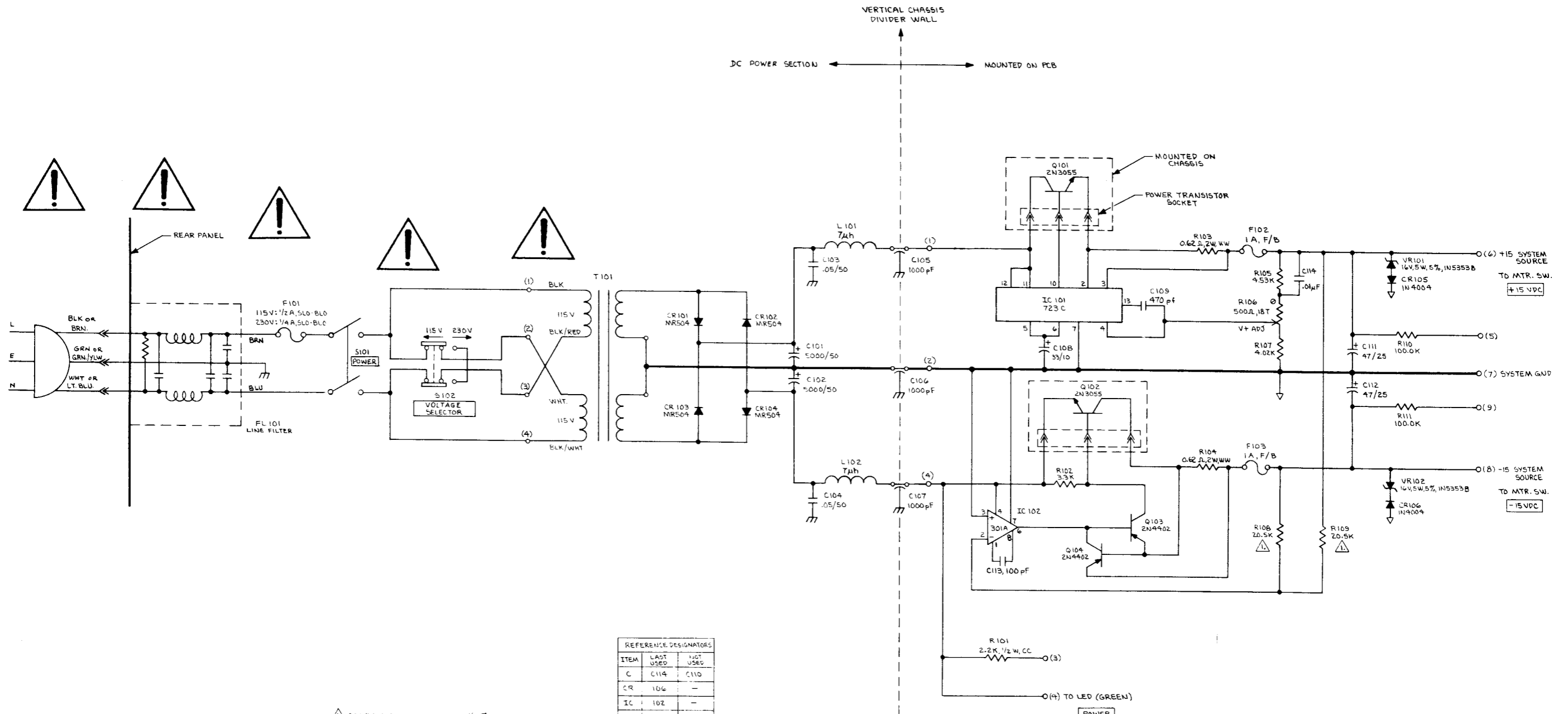


- ⚠ SLEEVE ALL AC LINE CONNECTIONS.
 1. USE 18 AWG, UL 1015, 16/30 STRAND.
 NOTES: UNLESS OTHERWISE SPECIFIED

orban	
TITLE: WIRING DIAGRAM DC POWER SUPPLY 60106-000-07	



orban
TITLE: PCB ASSEMBLY DRAWING POWER SUPPLY 30310-000-06



ITEM	LAST USED	NOT USED
C	C114	C110
CR	106	-
IC	102	-
Q	104	-
P	111	-
S	102	-
VR	102	-
FL	101	-
T	101	-
L	102	-
F	103	-

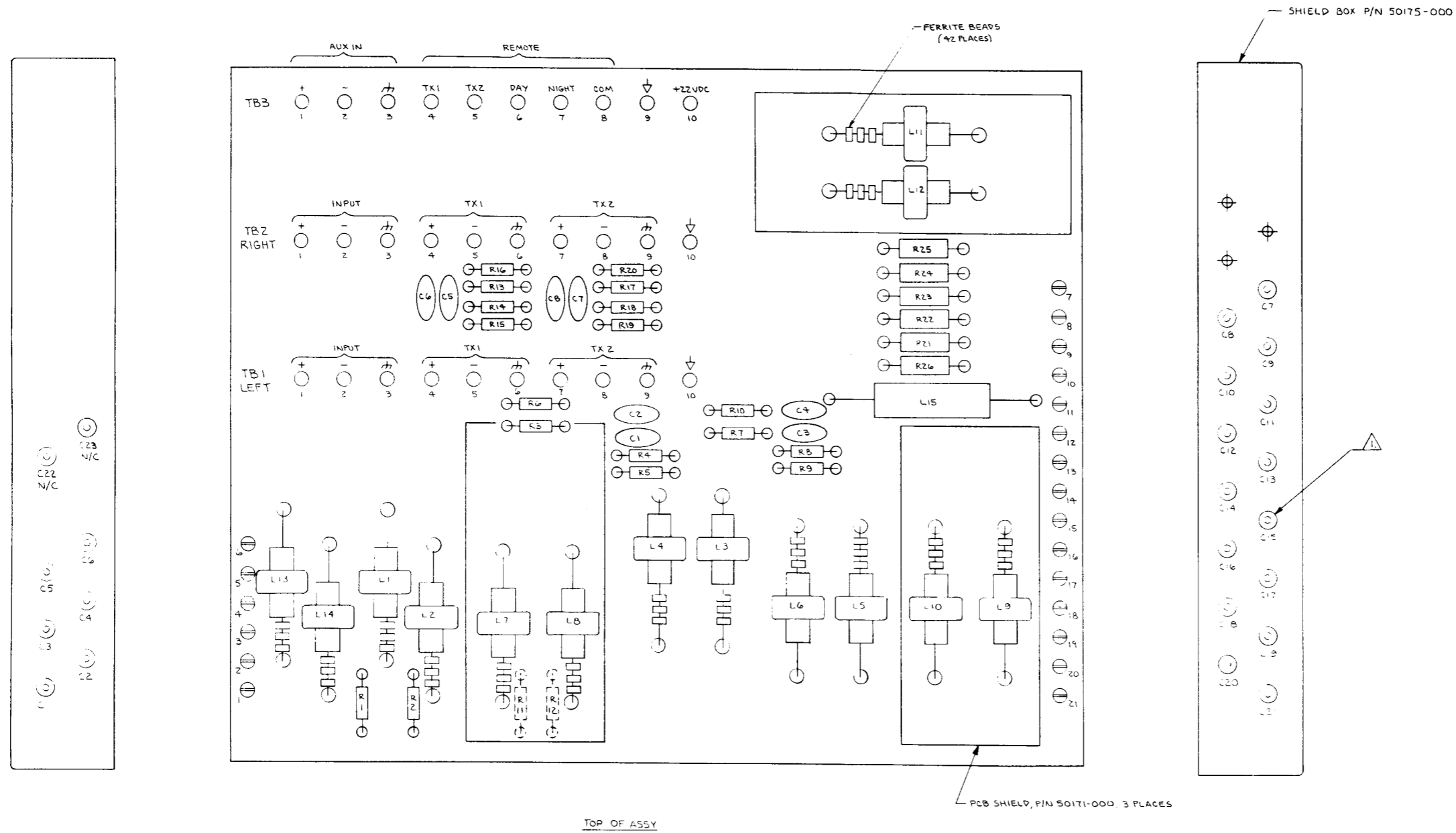
⚠ SELECTED: MATCHED TO 1/4%
NOTES:

⚠ COMPONENTS MARKED WITH THIS SYMBOL HAVE CRITICAL SPECIFICATIONS IMPORTANT FOR PROTECTION FROM FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING, IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR REPLACEMENT.

PRIOR TO THE RETURN OF THIS APPLIANCE TO THE CUSTOMER, AND UPON COMPLETION OF SERVICING, SERVICE PERSONNEL ARE REQUIRED TO TEST THIS UNIT FOR ADEQUATE INSULATION RESISTANCE BETWEEN THE POWER SUPPLY AND EXPOSED PARTS.

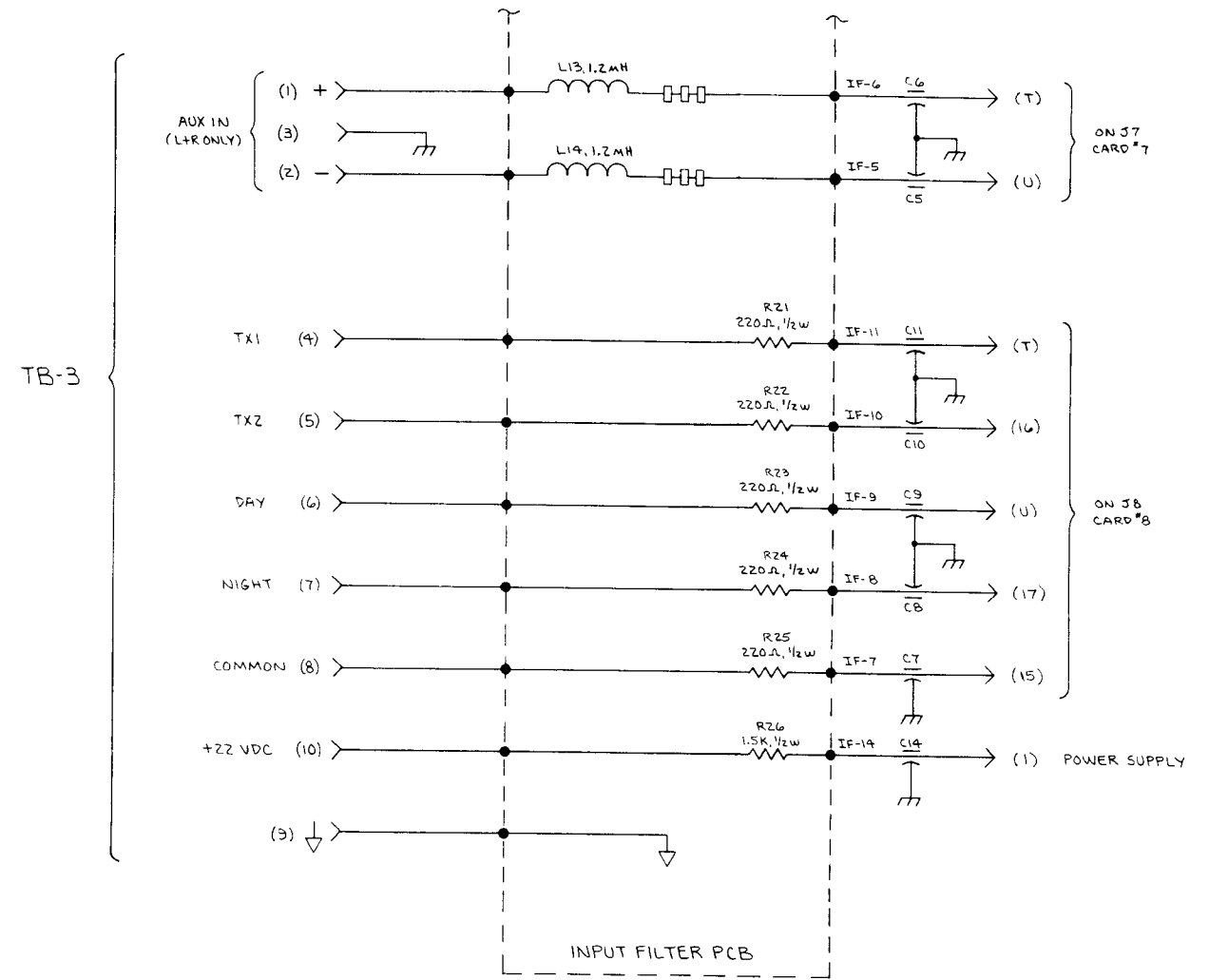
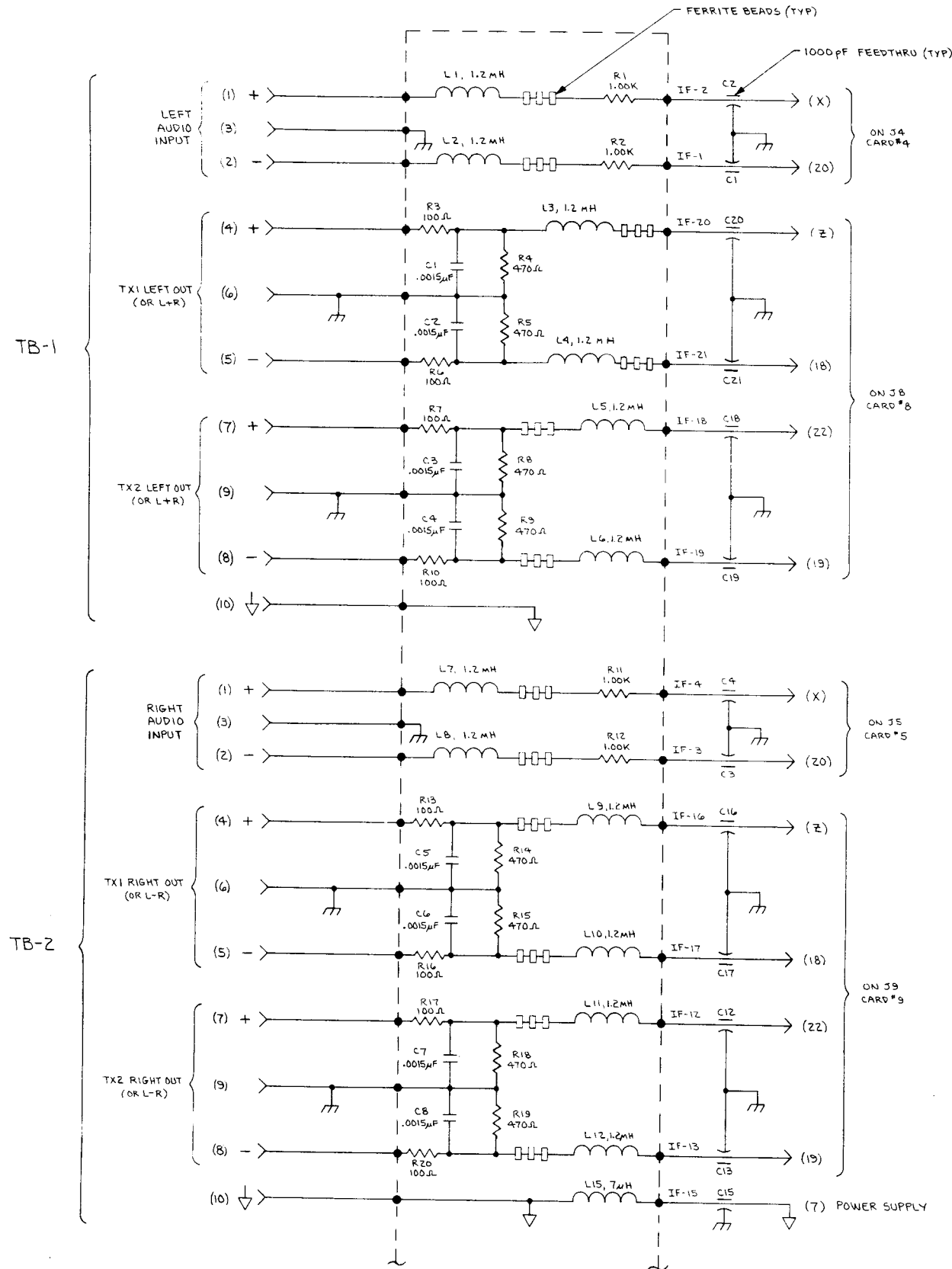
orban

TITLE: SCHEMATIC POWER SUPPLY 60021-000-08



▲ FEED-THRU CAPS C1-C23 ARE SHOWN FOR REFERENCE ONLY.
NOTES:

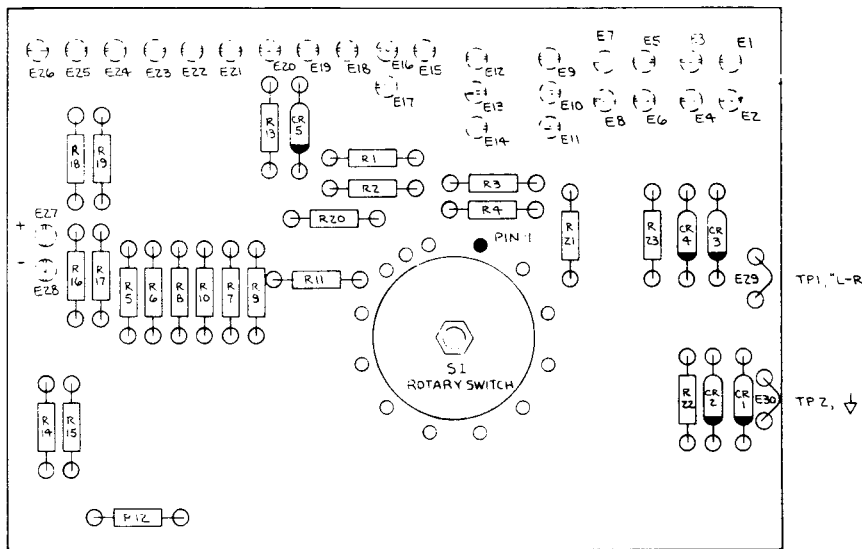
orban
TITLE: PCB ASSEMBLY DRAWING
INPUT FILTER
30620-000-03



orban

TITLE:


SCHMATIC
INPUT FILTER
60062-000-02

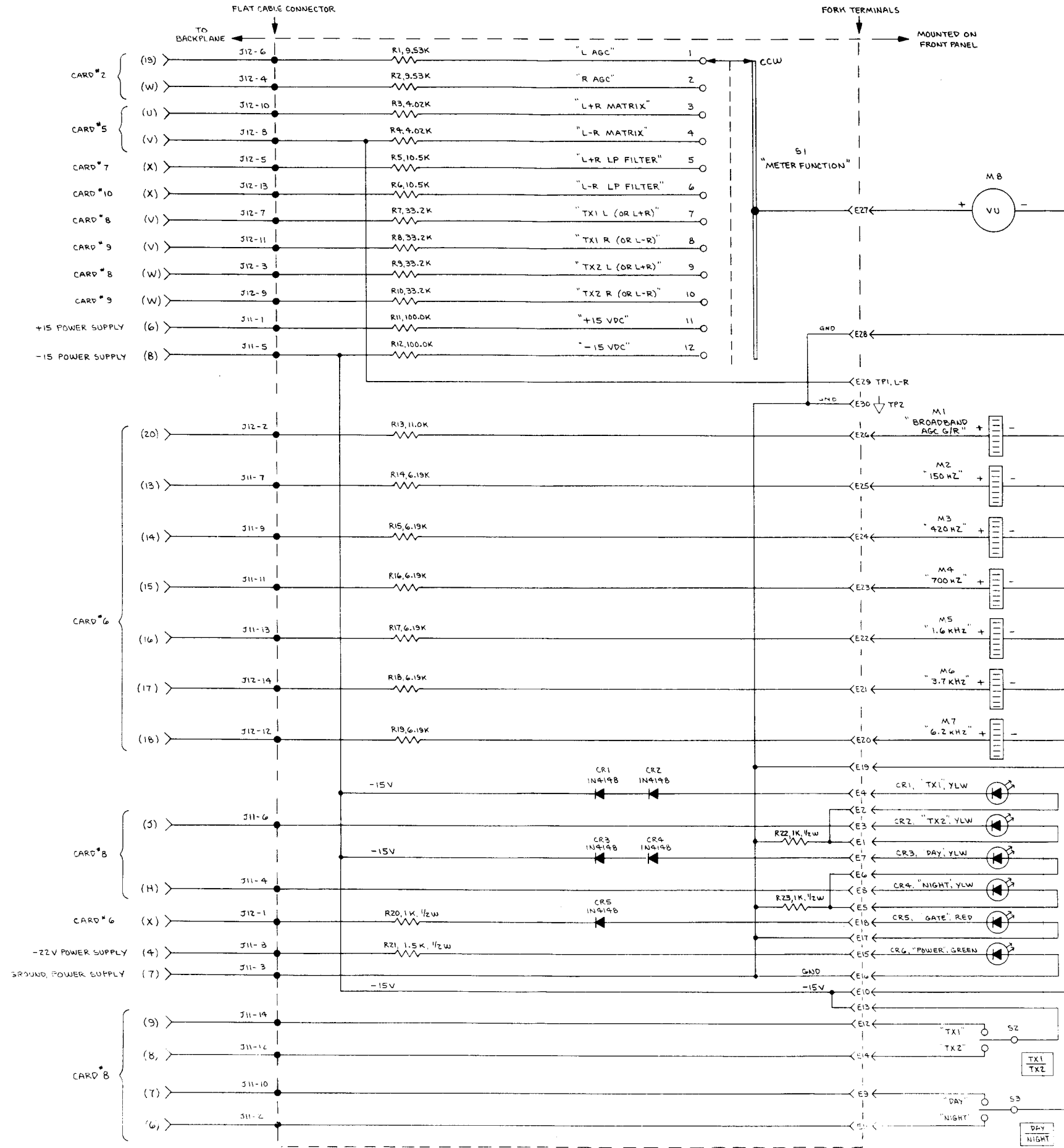


BOTTOM OF UNIT
COMPONENT SIDE
(FRONT OF UNIT)

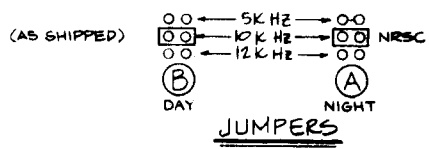
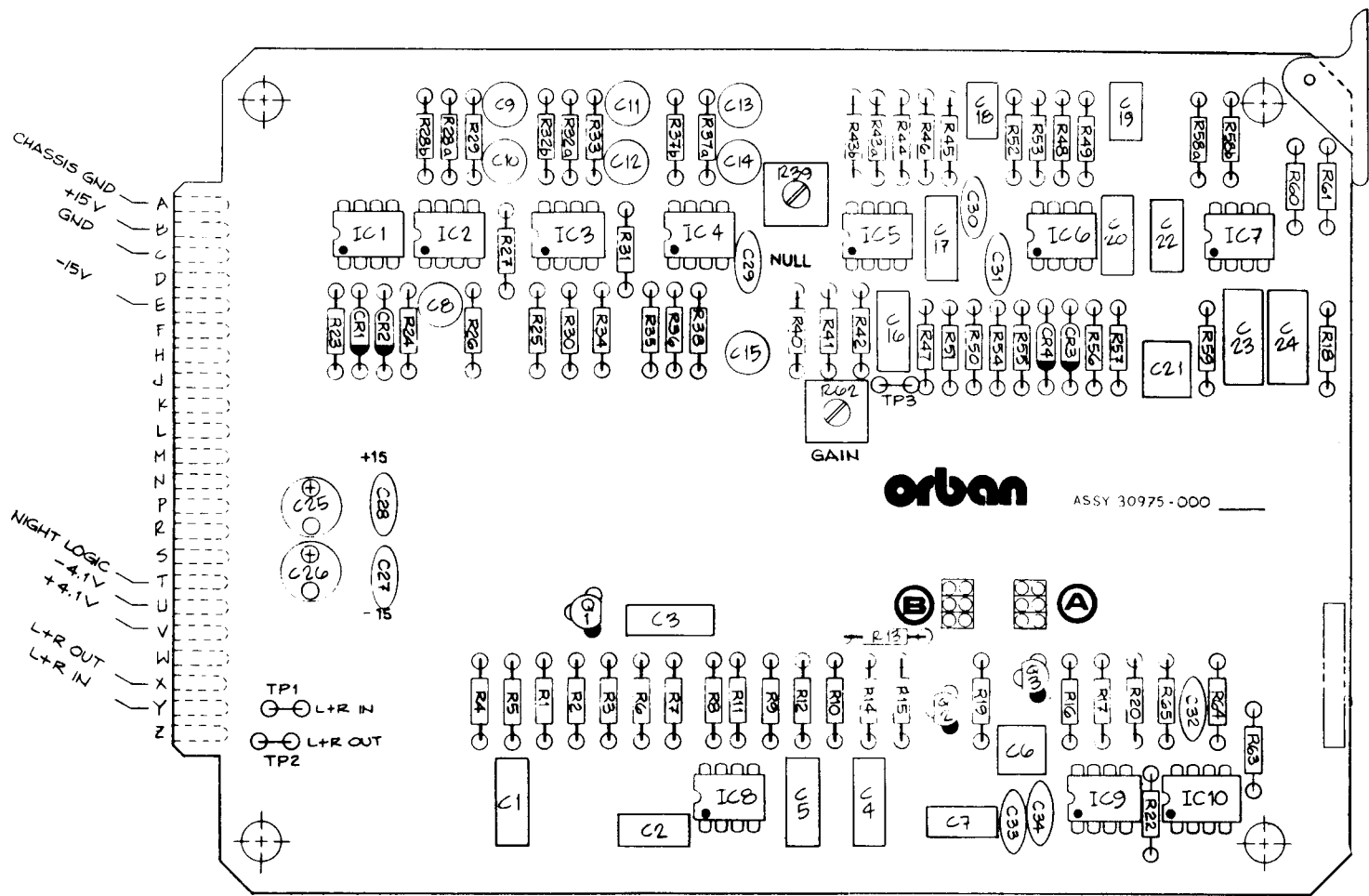
1. REFERENCE SCHEMATIC PIN 60060-000.

NOTES:


TITLE: PCB ASSEMBLY DRAWING METER RESISTOR 30605-000-02



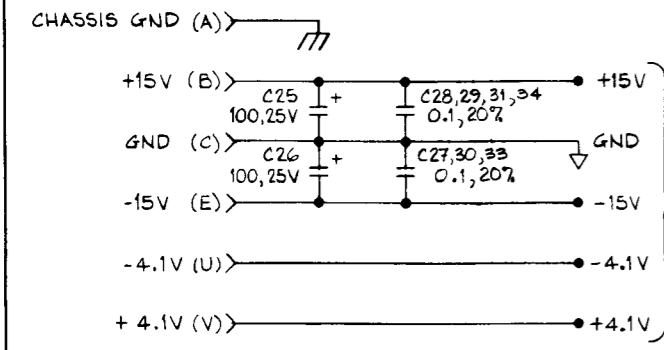
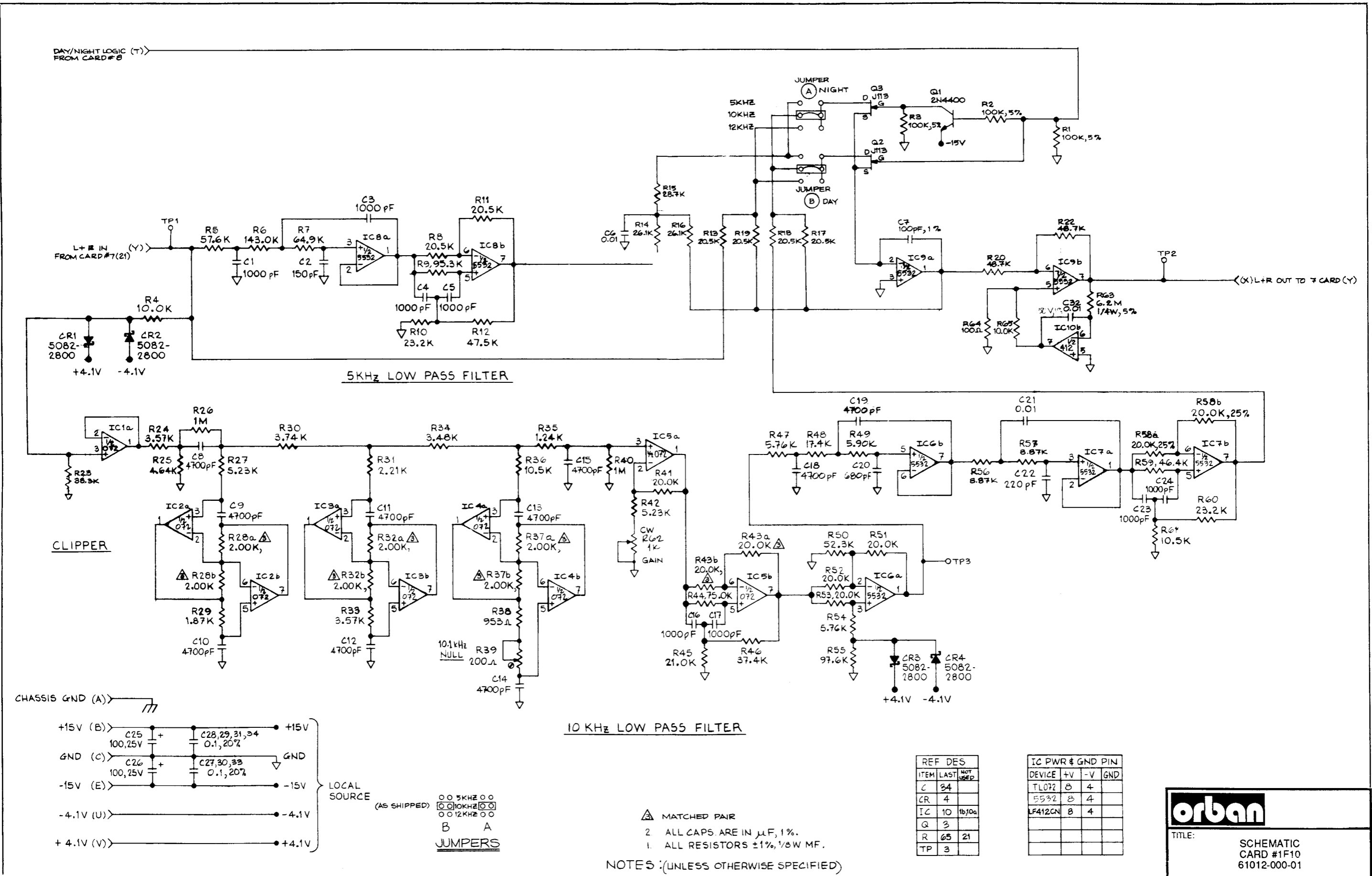
orban
 TITLE: SCHEMATIC
 METER RESISTOR
 60060-000-01



1. TIC MARK INDICATES PIN 1 OF IC'S, CATHODE OF DIODE, POS. SIDE OF CAPS, EMITTERS OF TRANSISTORS.
 NOTES: (UNLESS OTHERWISE SPECIFIED)

orban

TITLE: PC ASSEMBLY DRAWING
 CARD #1F10
 30975-000-01



10 KHz LOW PASS FILTER

- ▲ MATCHED PAIR
- 2 ALL CAPS ARE IN μ F, 1%.
- 1 ALL RESISTORS \pm 1%, 1/8W MF.

NOTES :(UNLESS OTHERWISE SPECIFIED)

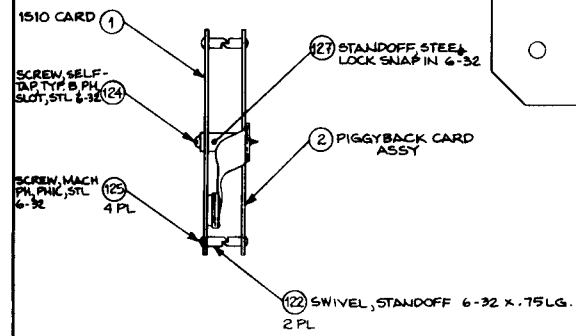
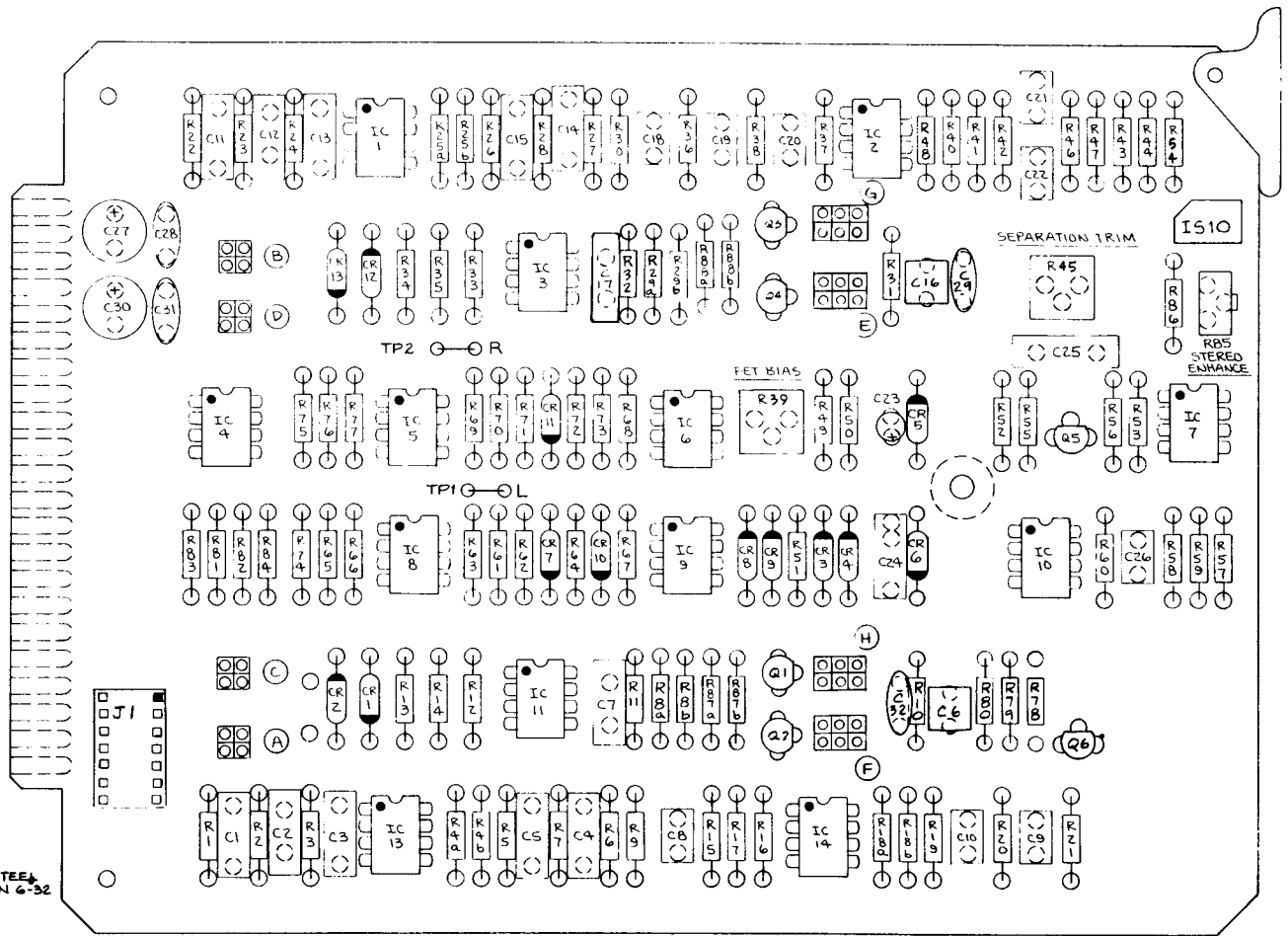
REF	DES	LAST	NOT USED
C	34		
CR	4		
IC	10	1b10a	
Q	3		
R	65	21	
TP	3		

IC	PWR	GND	PIN
TL072	B	4	
5532	B	4	
LF412CN	B	4	

orban

TITLE: SCHEMATIC CARD #1F10 61012-000-01

SIDE		COMPONENT
SOLDER		
A	CHASSIS GND	1
B	+15V	2
C	GND	3
D		4
E	-15V	5
F		6
H		7
J		8
K		9
L		10
M	L-R OUT	11
N	L-R IN	12
P		13
R		14
S		15
T	NIGHT LOGIC	16
U	-4.1V	17
V	+4.1V	18
W		19
X	L+R OUT	20
Y	L+R IN	21
Z		22



SIDE VIEW

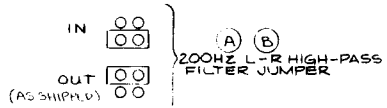
3. TIC MARKS INDICATE PIN ONE OF IC'S AND MODULES, CATHODE OF DIODES, POSITIVE SIDES OF CAPACITORS, EMITTER OF TRANSISTORS.

2. USE COMPONENT MTG. PADS, P/N 15051-000 FOR C27, C30.

1. REF. SCHEMATIC P/N G1015-000

NOTES: (UNLESS OTHERWISE SPECIFIED)

COMPONENT SIDE

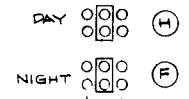
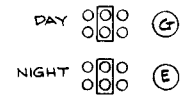


200HZ L-R HIGH-PASS FILTER JUMPER



SINGLE-CHANNEL LIMITER STEREO ENHANCER JUMPER

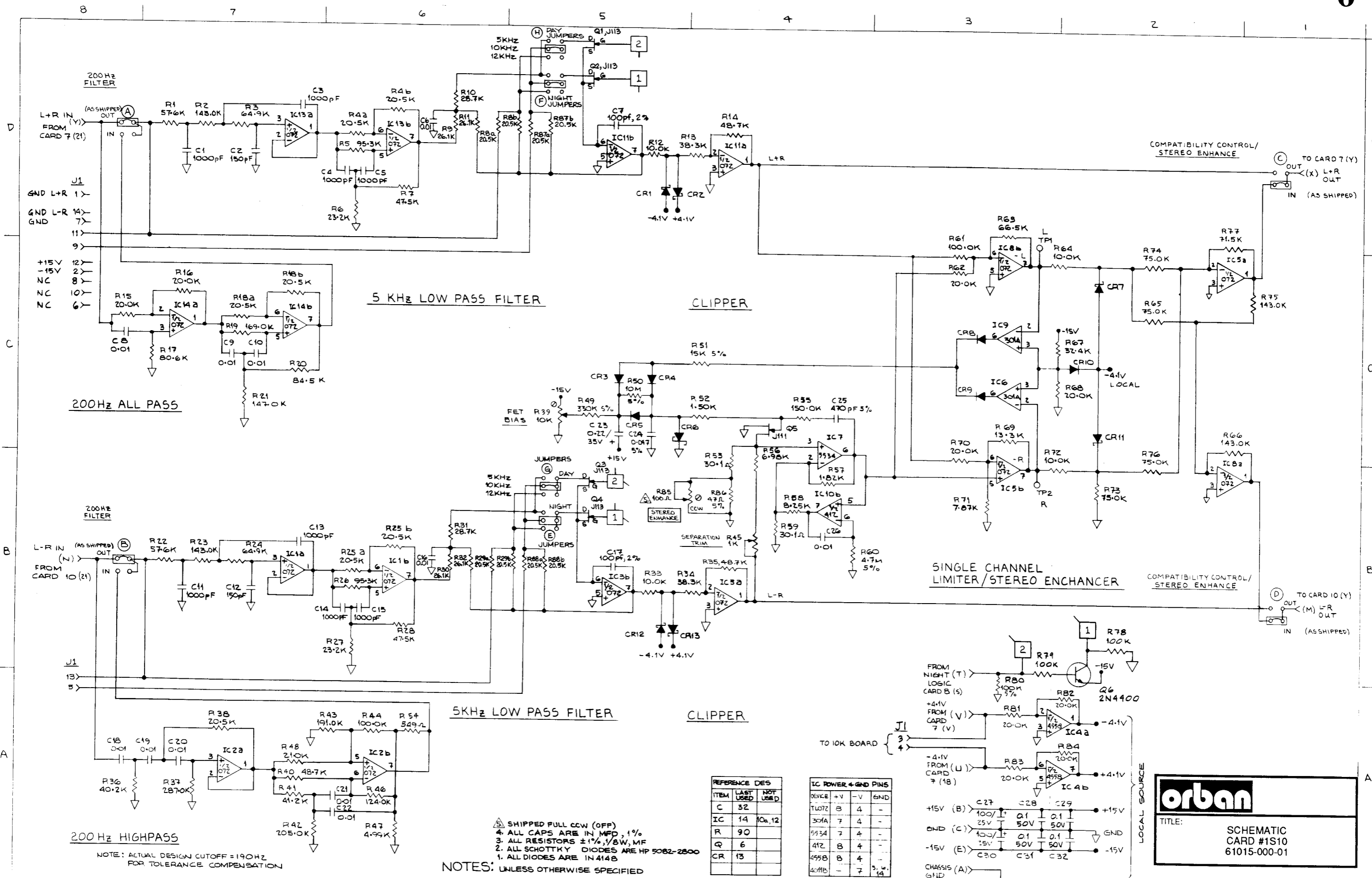
LOW-PASS FILTER JUMPERS



5 KHZ
10 KHZ (AS SHIPPED)
12 KHZ



TITLE:
PCB ASSEMBLY BOARD
CARD #1S10
31015-000-01

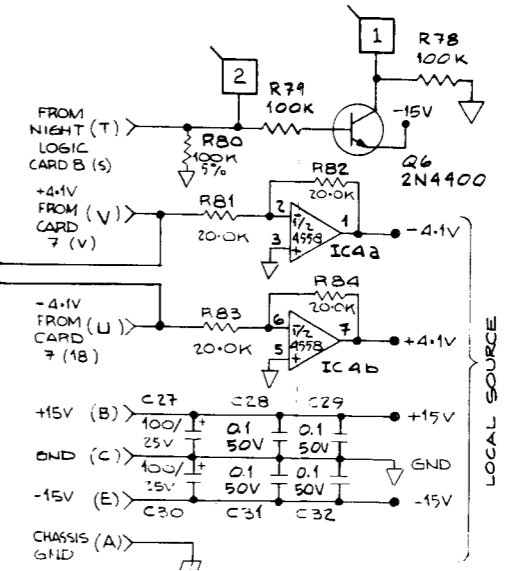


NOTE: ACTUAL DESIGN CUTOFF = 190HZ FOR TOLERANCE COMPENSATION

NOTES: UNLESS OTHERWISE SPECIFIED

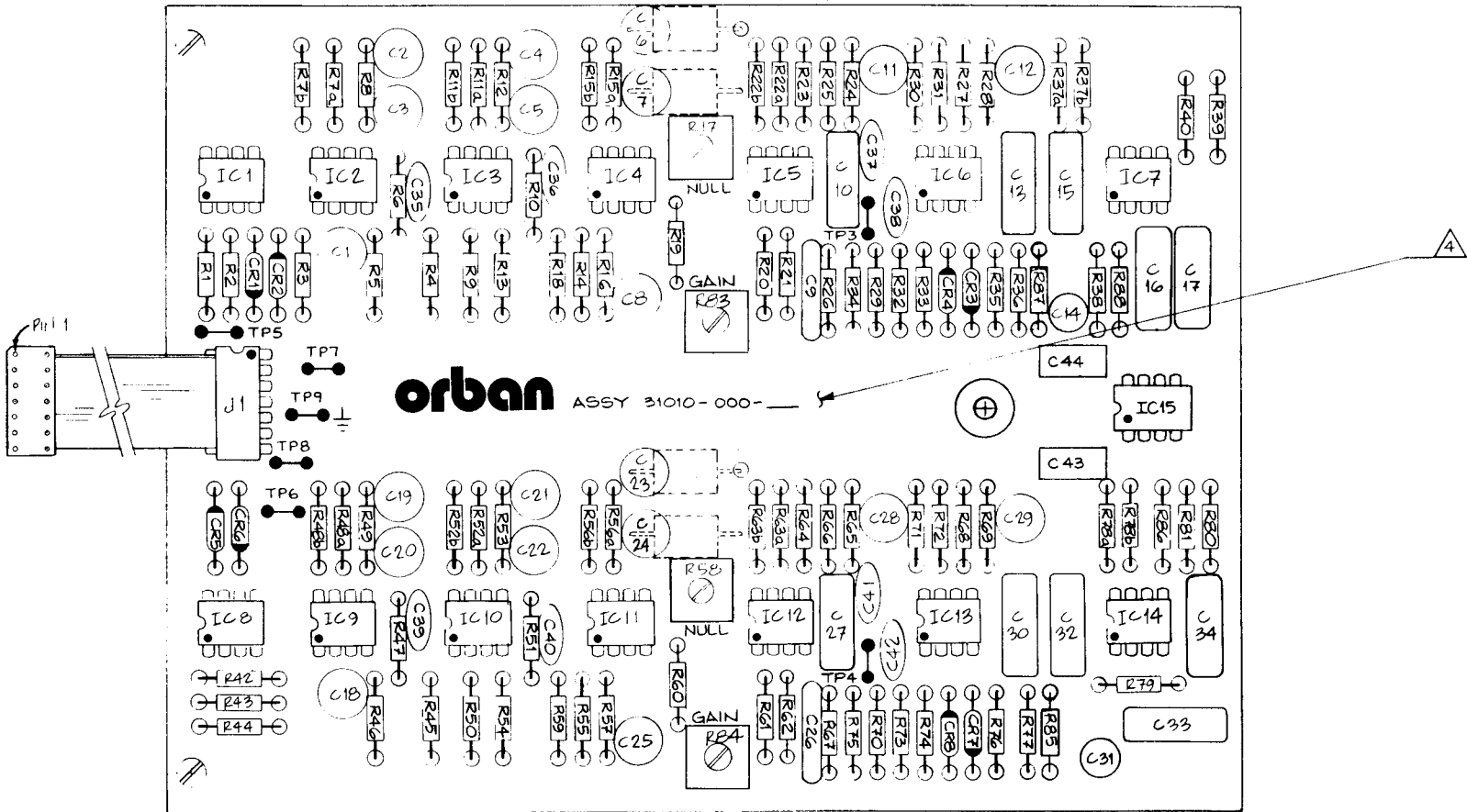
ITEM	LAST USED	NOT USED
C	32	
IC	14	10, 12
R	90	
Q	6	
CR	13	

DEVICE	+V	-V	END
TL072	B	4	-
301A	7	4	-
5534	7	4	-
412	B	4	-
4558	B	4	-
4011B	-	7	3, 4, 14



urban

TITLE: SCHEMATIC CARD #1S10 61015-000-01



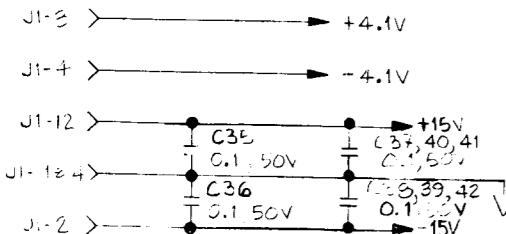
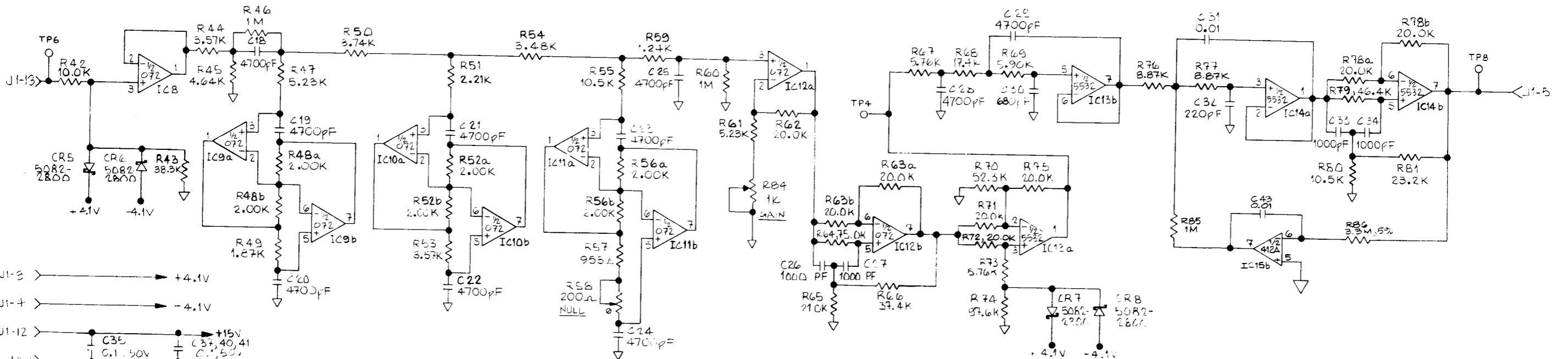
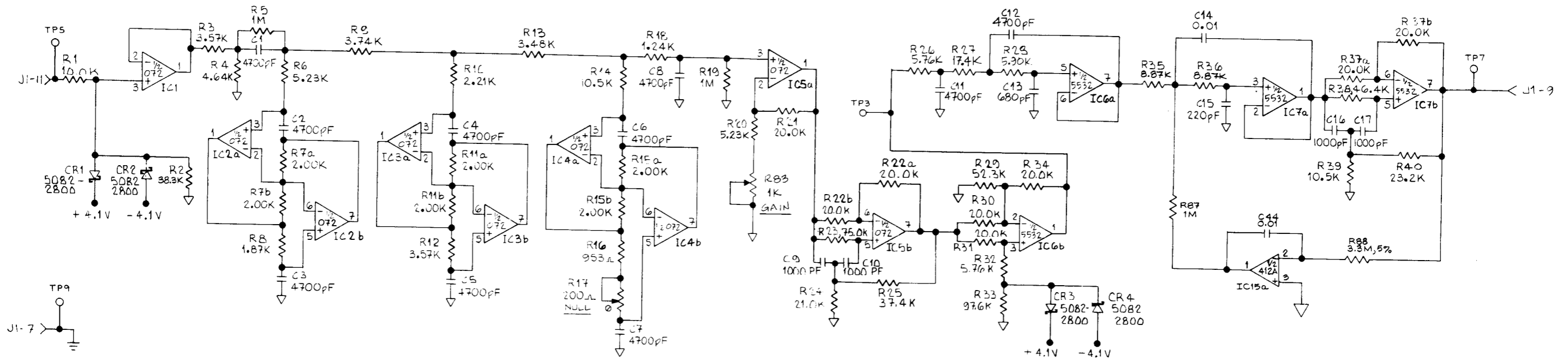
△ MARK ASSY REV LEVEL IN SPACE PROVIDED.

3. ALTERNATE PACKAGE MAY BE USED FOR C6,7,23,24 INDICATED BY DASHED LINES.
2. TIC MARKS INDICATE PIN 1 OF IC'S, CATHODE OF DIODES.
1. REF. SEE SCHEMATIC F/N 61013

NOTES: (UNLESS OTHERWISE SPECIFIED)

orban

TITLE: PCB ASSEMBLY DRAWING
10kHz FILTER
31010-000-02



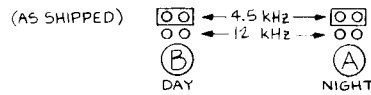
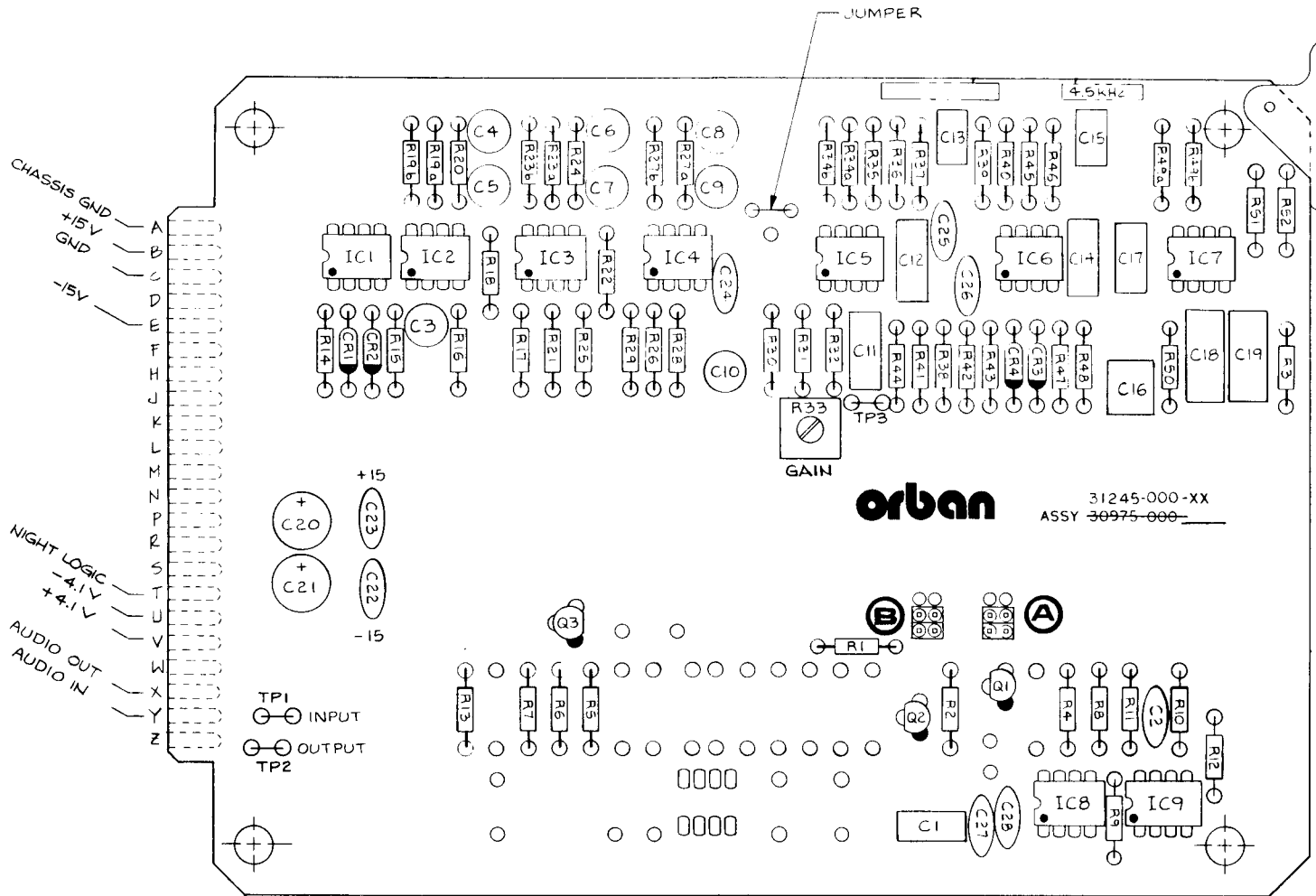
REF DES		
ITEM	LAST	UNUSED
C	44	
CR	8	
IC	15	
R	88	
TP	9	1,2

IC PWR & GND PIN			
DEVICE	+V	-V	GND
072	8	4	
5532	8	4	
412	8	4	

3. THIS BOARD IS AUXILIARY TO SCHEMATIC 61015.
 2. ALL CAPACITORS ARE IN μ , 1%.
 1. ALL RESISTORS \pm 1%, 1/8W, MF.
 NOTES: (UNLESS OTHERWISE SPECIFIED.)

urban

TITLE: SCHEMATIC
 10kHz FILTER
 (AUXILIARY FOR CARD #1S10)
 61013-000-02



1. TIC MARK INDICATES PIN 1 OF IC'S, CATHODE OF DIODES, POS SIDE OF CAPACITORS, EMITTER OF TRANSISTORS.

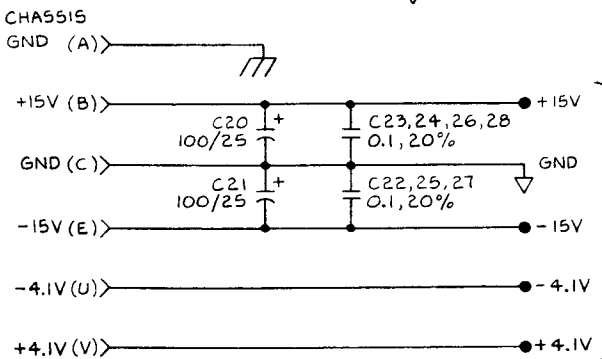
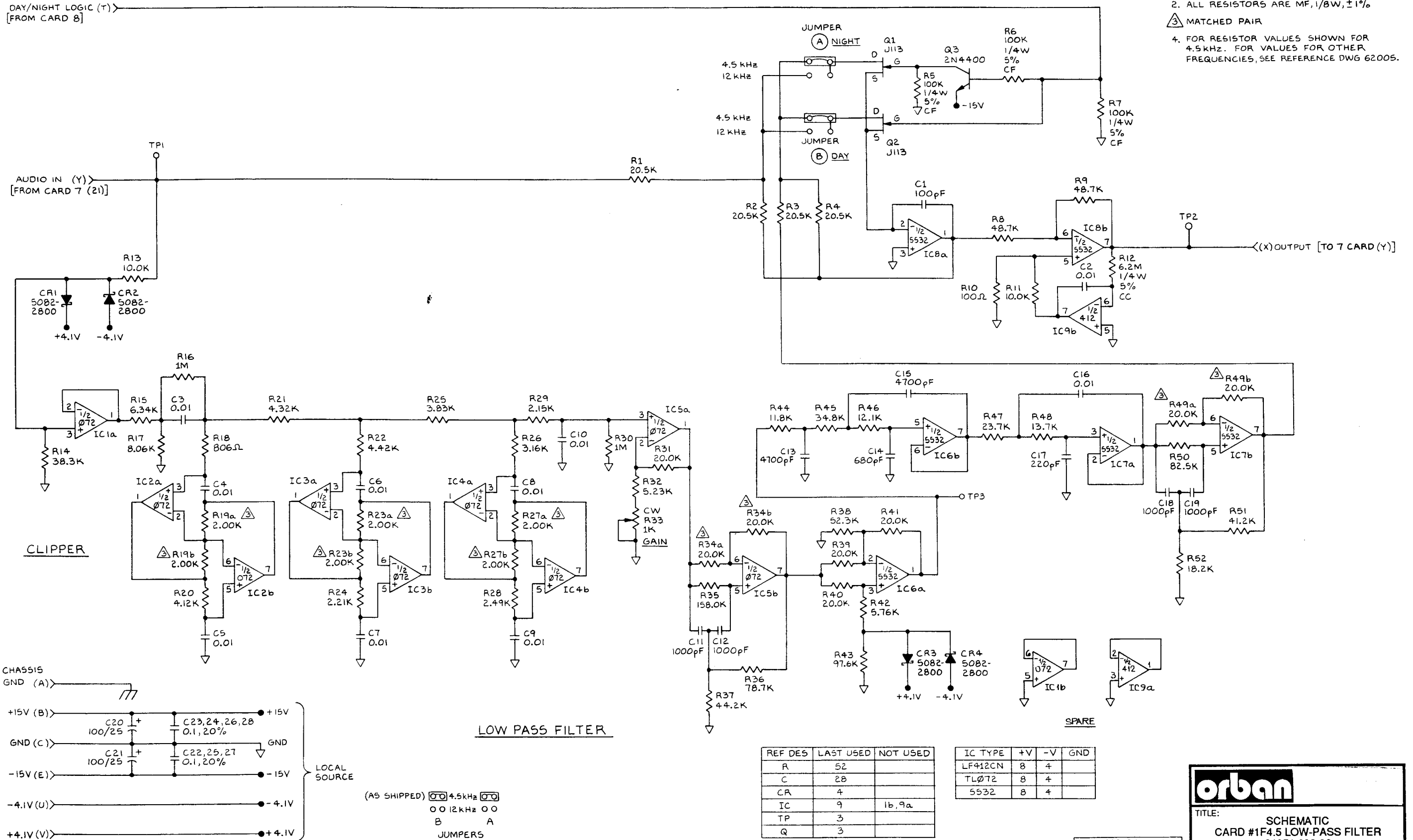
NOTES: (UNLESS OTHERWISE SPECIFIED)

RELATED DRAWING:
30975 (1F10 CARD)

orban

TITLE: ASSEMBLY DRAWING
CARD #1F4.5 LOW-PASS FILTER
31245-000-01

- NOTES: (UNLESS OTHERWISE SPECIFIED)
1. ALL CAPS ARE IN μF , $\pm 1\%$
 2. ALL RESISTORS ARE MF, 1/8W, $\pm 1\%$
 3. MATCHED PAIR
 4. FOR RESISTOR VALUES SHOWN FOR 4.5 KHz. FOR VALUES FOR OTHER FREQUENCIES, SEE REFERENCE DWG 62005.



(AS SHIPPED) 4.5 kHz

0.0 12 kHz

B A

JUMPERS

REF DES	LAST USED	NOT USED
R	52	
C	28	
CR	4	
IC	9	1b, 9a
TP	3	
Q	3	

IC TYPE	+V	-V	GND
LF412CN	8	4	
TL072	8	4	
5532	8	4	

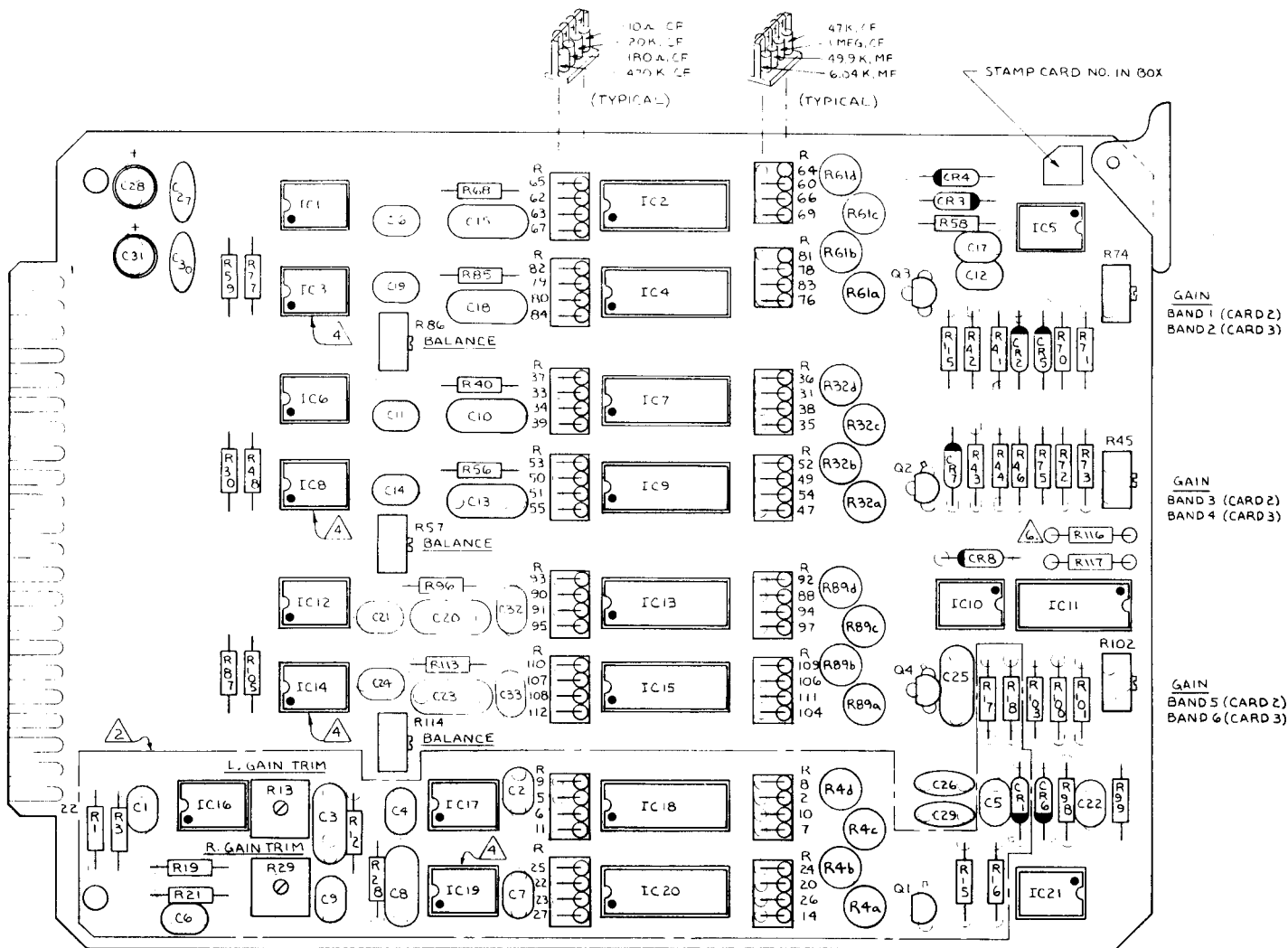
RELATED DRAWING: 61012 [1F10 CARD]

orban

TITLE: SCHEMATIC CARD #1F4.5 LOW-PASS FILTER 61051-000-02

SIDE		SOLDER COMPONENT	
A	CHASSIS GND	1	—
B	+15V	2	—
C	GND	3	—
D	—	4	—
E	-15V	5	—
F	BAND [2] L-R COMP. OUT	6	—
H	BAND [2] L-R COMP. OUT	7	CONTROL NODE (VER. 003 ONLY)
J	BAND [4] L-R COMP. OUT	8	—
K	BAND [3] L-R COMP. OUT	9	—
L	BAND [6] L-R COMP. OUT	10	—
M	BAND [6] L-R COMP. OUT	11	—
N	BAND [2] L-R COMP. IN	12	BAND [2] COMP. CONTROL
P	BAND [2] L-R COMP. IN	13	—
R	BAND [3] L-R COMP. IN	14	BAND [3] COMP. CONTROL
S	BAND [4] L-R COMP. IN	15	—
T	BAND [6] L-R COMP. IN	16	BAND [6] COMP. CONTROL
U	BAND [6] L-R COMP. IN	17	—
V	—	18	—
W	R BBD AGC OUT	19	L BBD AGC OUT
X	—	20	BBD AGC CONTROL
Y	R BBD AGC IN	21	L BBD AGC IN
Z	—	22	—

MNEMONICS IN BRACKETS LISTED ABOVE INDICATE ; (2 CARD)
[(3 CARD)

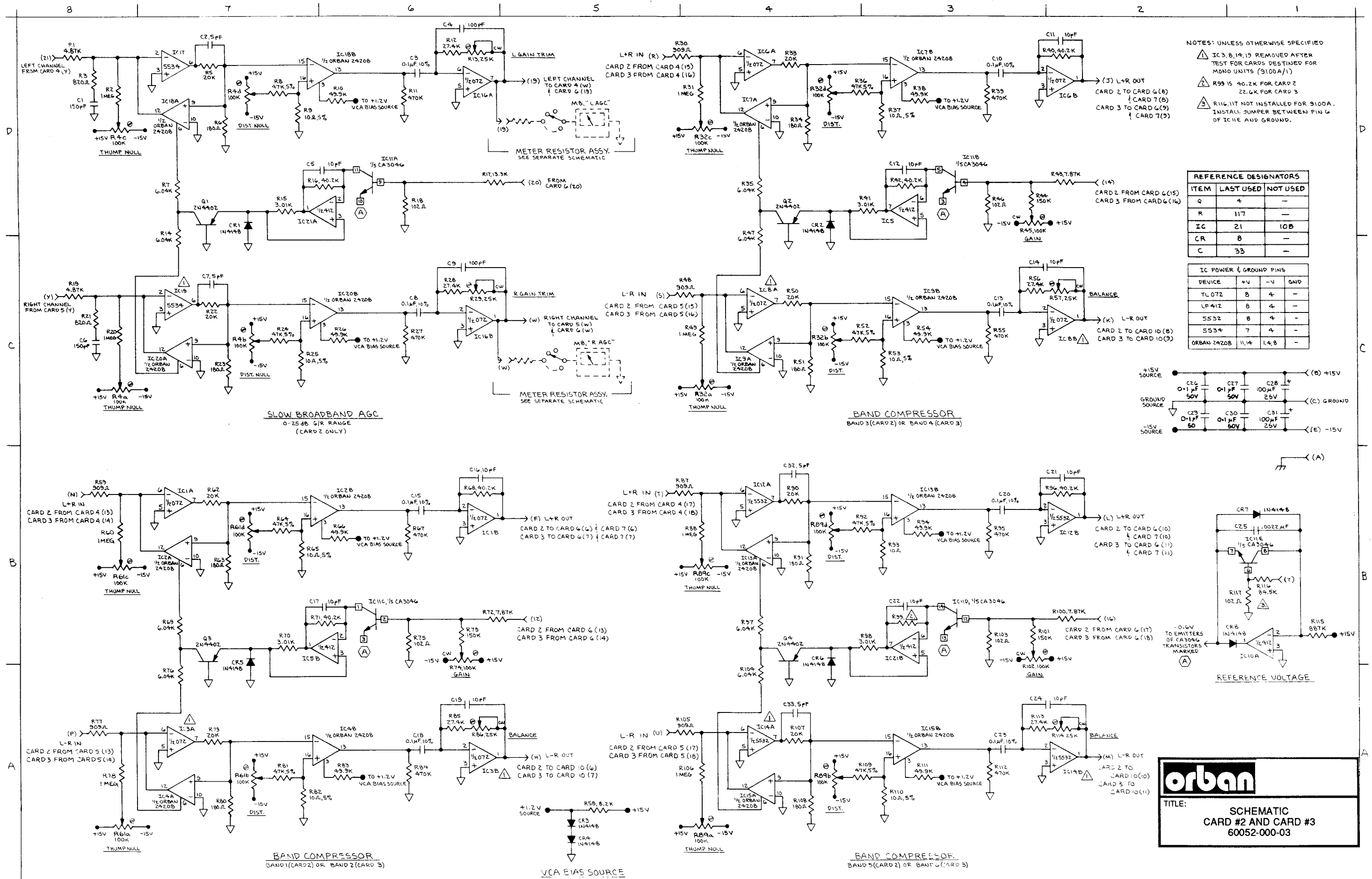


- △ VER. 001, 002: R117 IS A JUMPER
VER. 003: R116, 117 INSTALLED, SEE P/L
5. USE COMP. MTG. PADS FOR C28, 31.
- △ VER. 001, 002: IC 3, 8, 19 REMOVED AFTER TEST FOR BOARDS DESTINED FOR MONO UNITS (9100A/1).
3. REF SCHEMATIC P/N 60052-000.
- △ NOT LOADED ON *3 CARD.
1. VER 001 = 2 CARD, 9100A
VER 002 = 3 CARD, 9100A

NOTES: UNLESS OTHERWISE SPECIFIED

orban

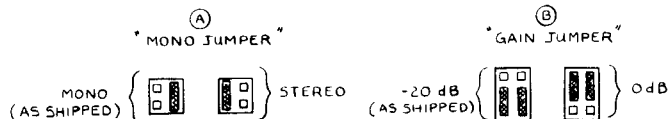
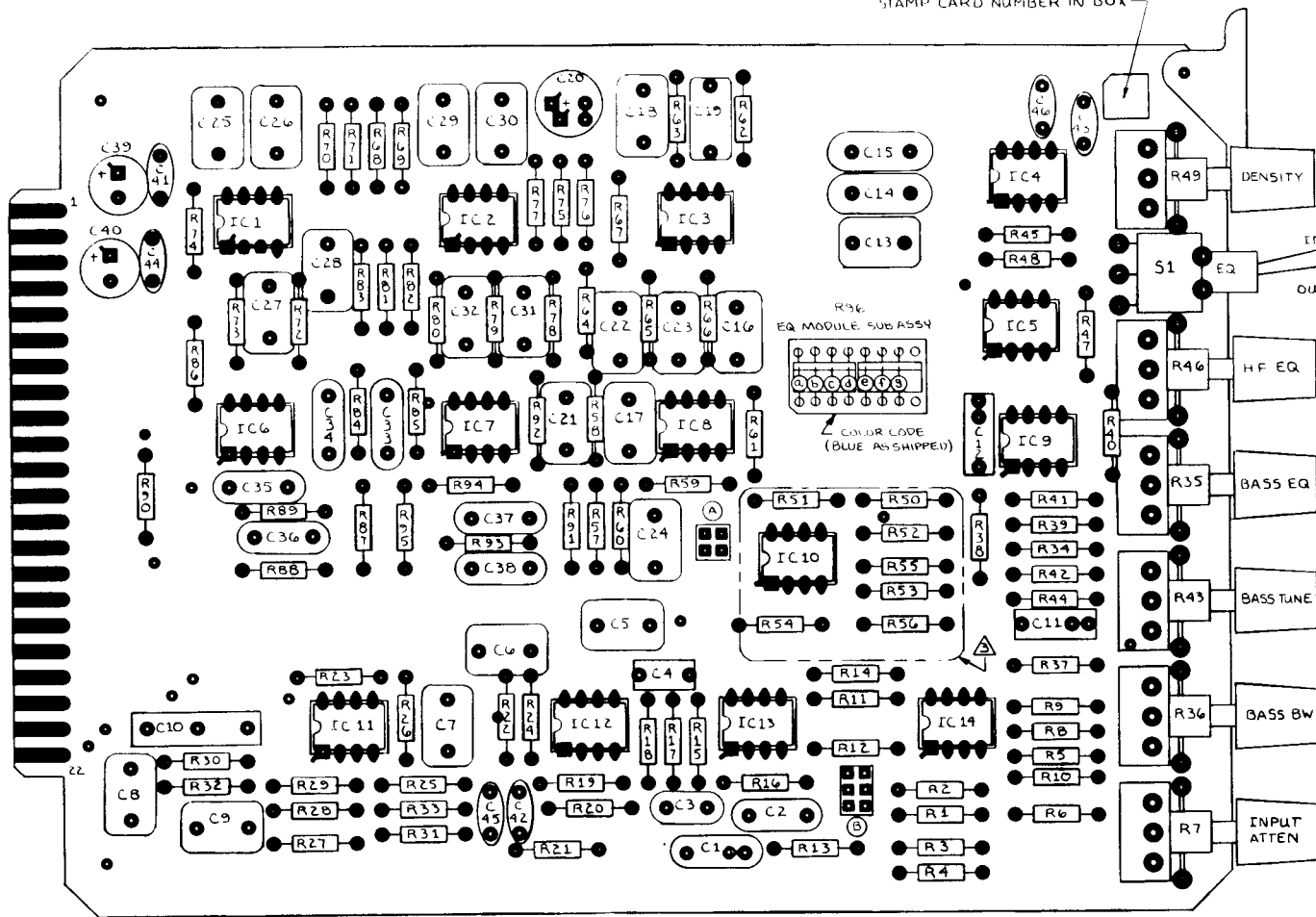
TITLE: PCB ASSEMBLY DRAWING
CARD #2 AND CARD #3
30625-VER-03



STAMP CARD NUMBER IN BOX

SIDE		COMPONENT	
SOLDER			
A		1	
B	+15V	2	
C	GND	3	
D		4	
E	-15V	5	
F		6	
H		7	
J		8	
K		9	
L		10	
M		11	
N		12	
P		13	[4 L R] COMP OUT BAND 1
R		14	[4 L R] COMP OUT BAND 2
S	MATRIX IN	15	[4 L R] COMP OUT BAND 3
T	MATRIX IN	16	[4 L R] COMP OUT BAND 4
U	[4 L R] MATRIX OUT	17	[4 L R] COMP OUT BAND 5
V	[4 L R] MATRIX OUT	18	[4 L R] COMP OUT BAND 6
W	[4 L R] BBD AGC OUT	19	
X	[4 L R] AUDIO IN HI	20	[4 L R] AUDIO IN LO
Y	[4 L R] HP FILTER OUT	21	
Z		22	[4 L R] XOVER OUT

MNEMONICS IN BRACKETS LISTED ABOVE INDICATE ; [4 CARD 5 CARD]



4. USE COMP. MTG. PADS FOR C20,39,40.

⚠ LOAD ON 5 CARD ONLY.

2. VERSIONS: -001 = 4 CARD, -002 = 5 CARD.

1. REF SCHEMATIC: *60054-000.

NOTES:

orban

TITLE: PCB ASSEMBLY DRAWING
CARD #4 AND CARD #5
30640-VER-05

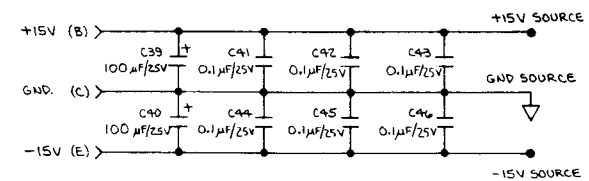
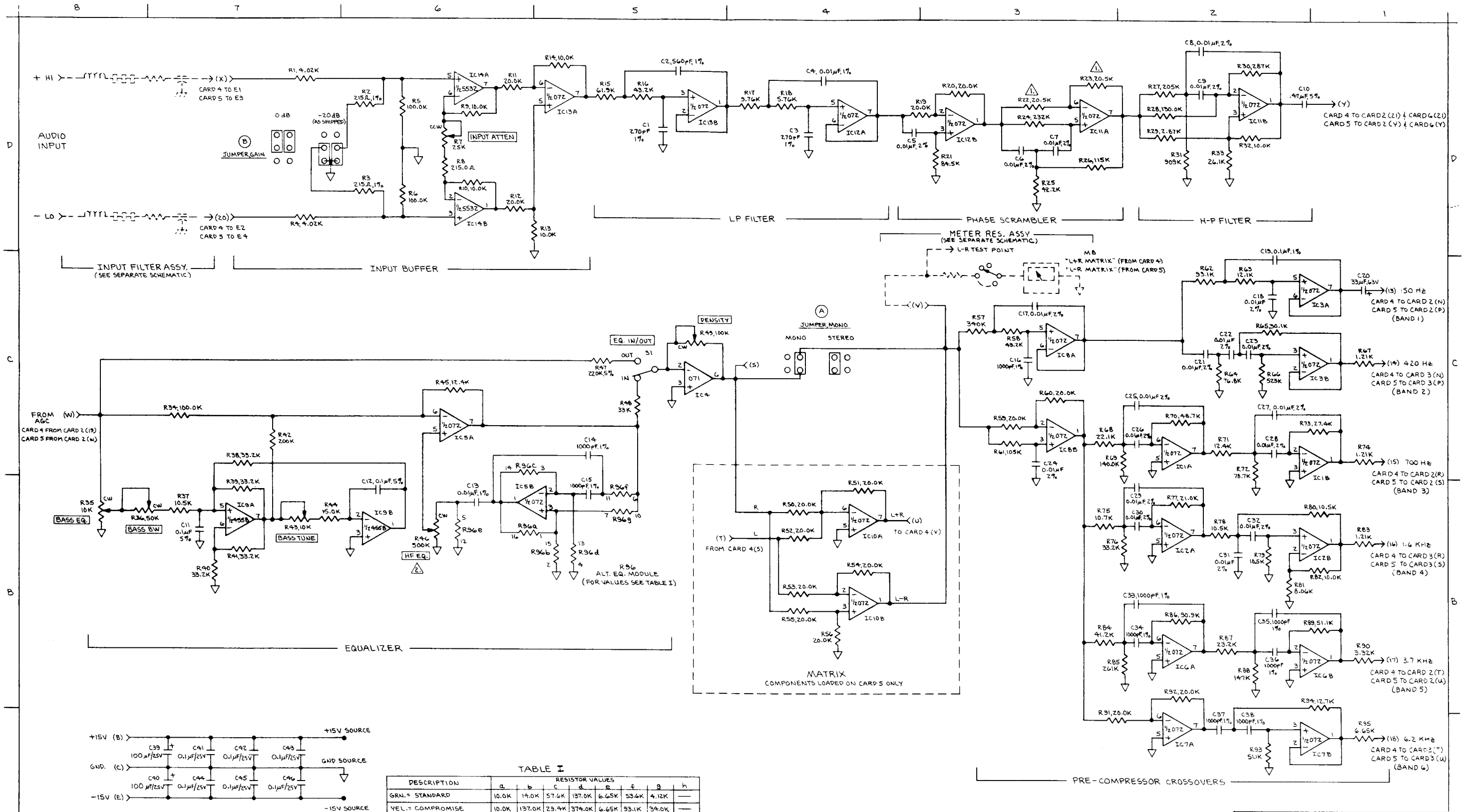


TABLE I

DESCRIPTION	RESISTOR VALUES							
	a	b	c	d	e	f	g	h
GRN. = STANDARD	10.0K	14.0K	57.6K	137.0K	6.65K	53.4K	4.12K	—
YEL. = COMPROMISE	10.0K	137.0K	23.4K	374.0K	6.65K	93.1K	34.0K	—
RED = TRANSITIONAL AM STEREO	10.0K	44.2K	44.2K	205.0K	6.65K	6.65K	10.5K	—
BLU = NRSC	—	10.0K	JUMPER	—	7.68K	—	4.87K	—

REFERENCE DESIGNATORS

ITEM	LAST USED	NOT USED
C	46	—
IC	14	—
R	96	—
S	1	—

IC POWER & GROUND PINS

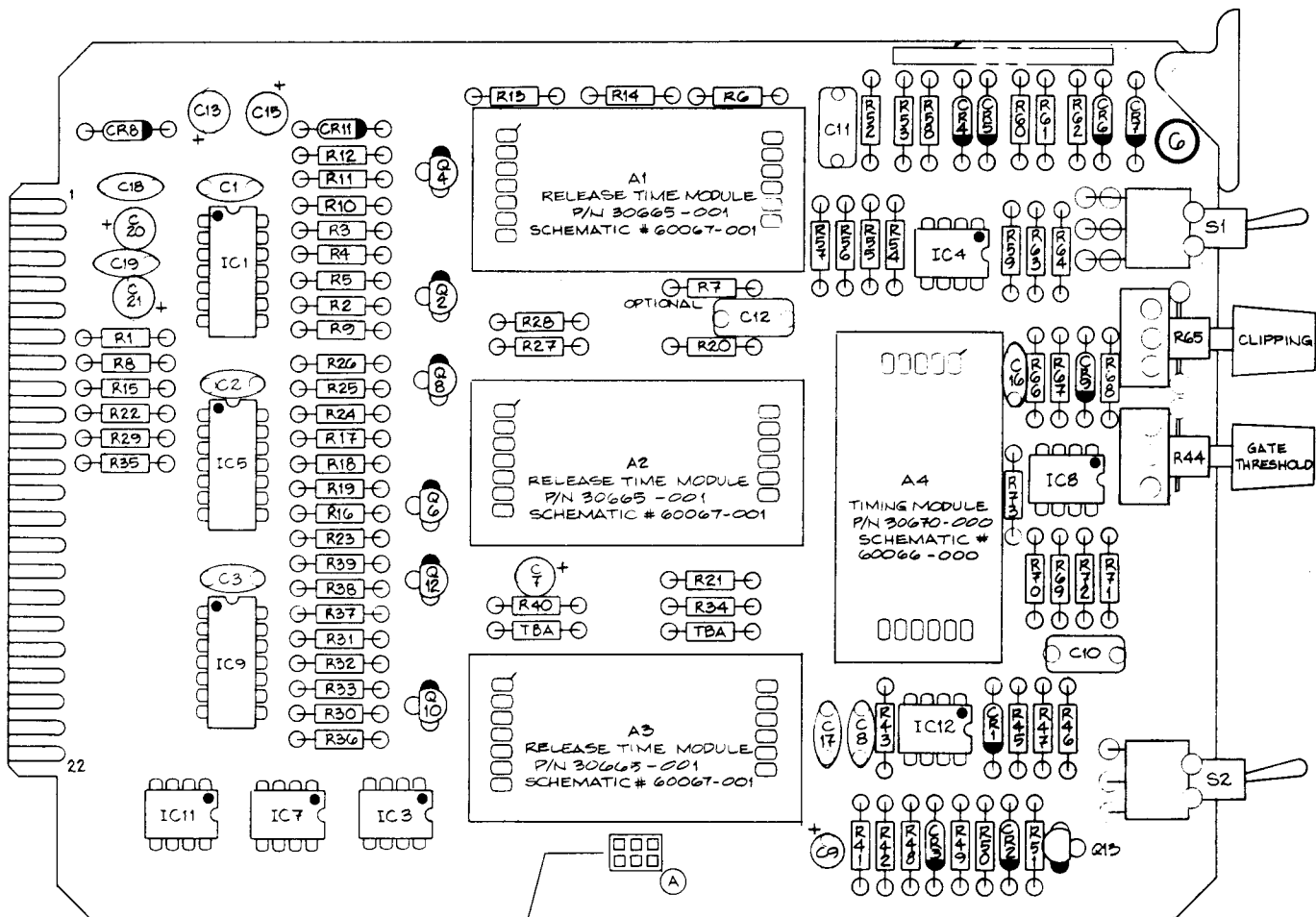
DEVICE	+V	-V	GND
TLO72	8	4	—
455B	8	4	—
5532	8	4	—
TLO71	7	4	—

⚠ PATENT PENDING ON HF EQUALIZER CIRCUIT.
 ⚡ SELECTED
 NOTES: UNLESS OTHERWISE SPECIFIED

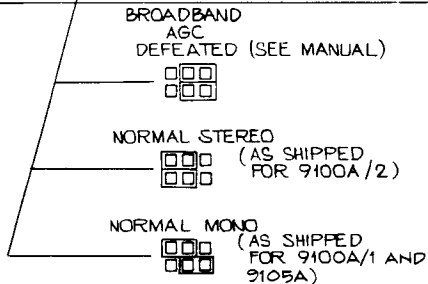
orban

TITLE: PCB SCHEMATIC
 CARD #4 AND CARD #5
 60054-000-03

CARD #4: L+R (OR MONO)
 CARD #5: L-R



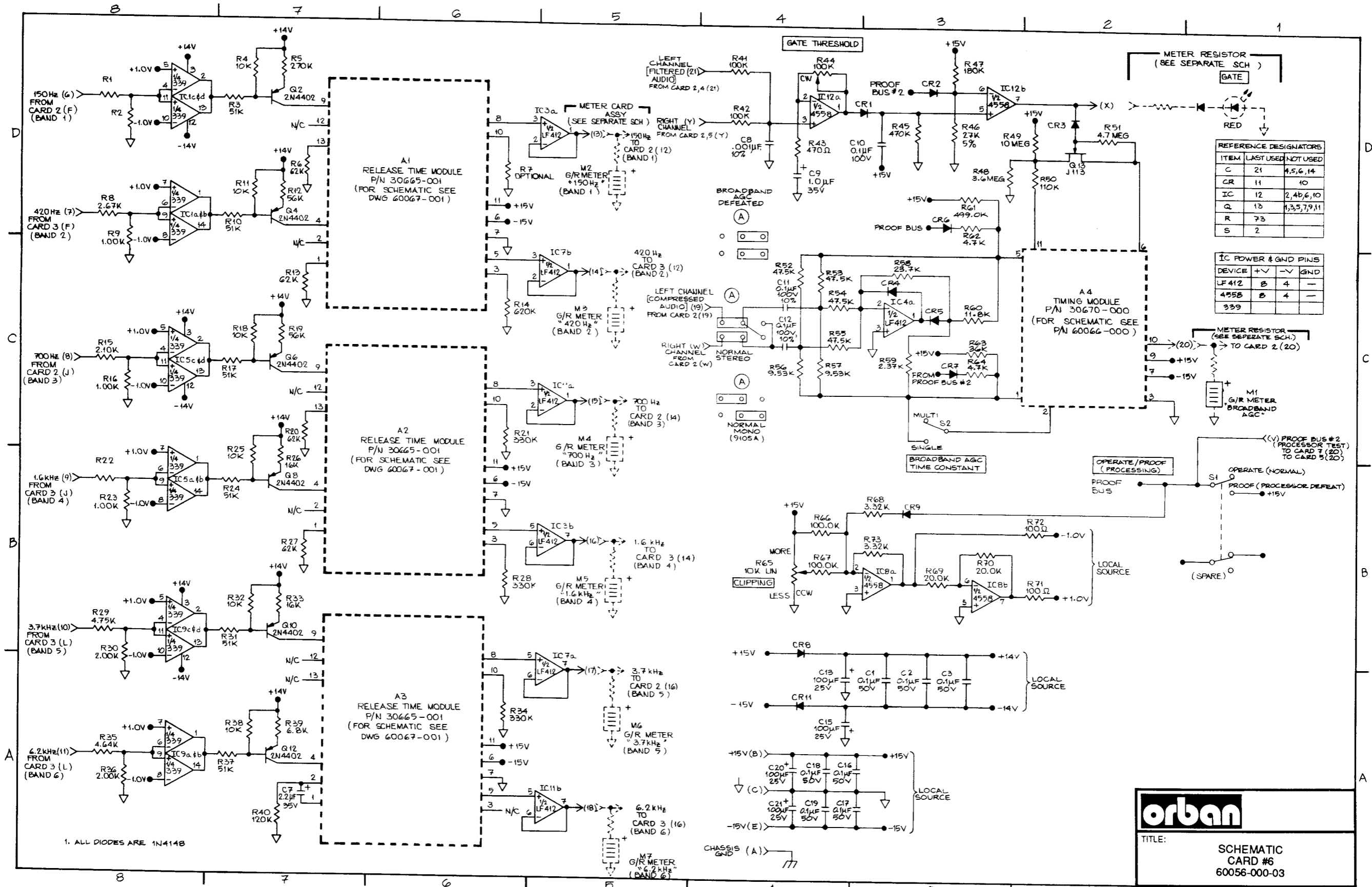
COMPONENT SIDE



1. TIC MARKS INDICATE PIN (1) OF MODULES, IC'S, CATHODE OF DIODES, POSITIVE SIDE OF CAPACITORS, AND EMITTERS OF TRANSISTORS

orban

TITLE:
PCB ASSEMBLY DRAWING
CARD #6
30660-000-04



REFERENCE DESIGNATORS

ITEM	LAST USED	NOT USED
C	21	4,5,6,14
CR	11	10
IC	12	2,4,6,10
Q	13	1,3,5,7,9,11
R	73	
S	2	

IC POWER & GND PINS

DEVICE	+	-	GND
LF412	8	4	-
4558	8	4	-
339			

1. ALL DIODES ARE 1N4148

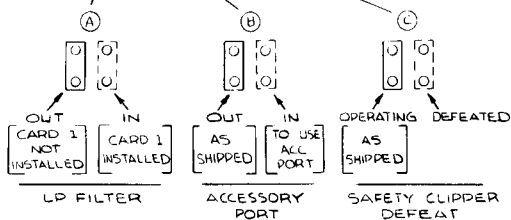
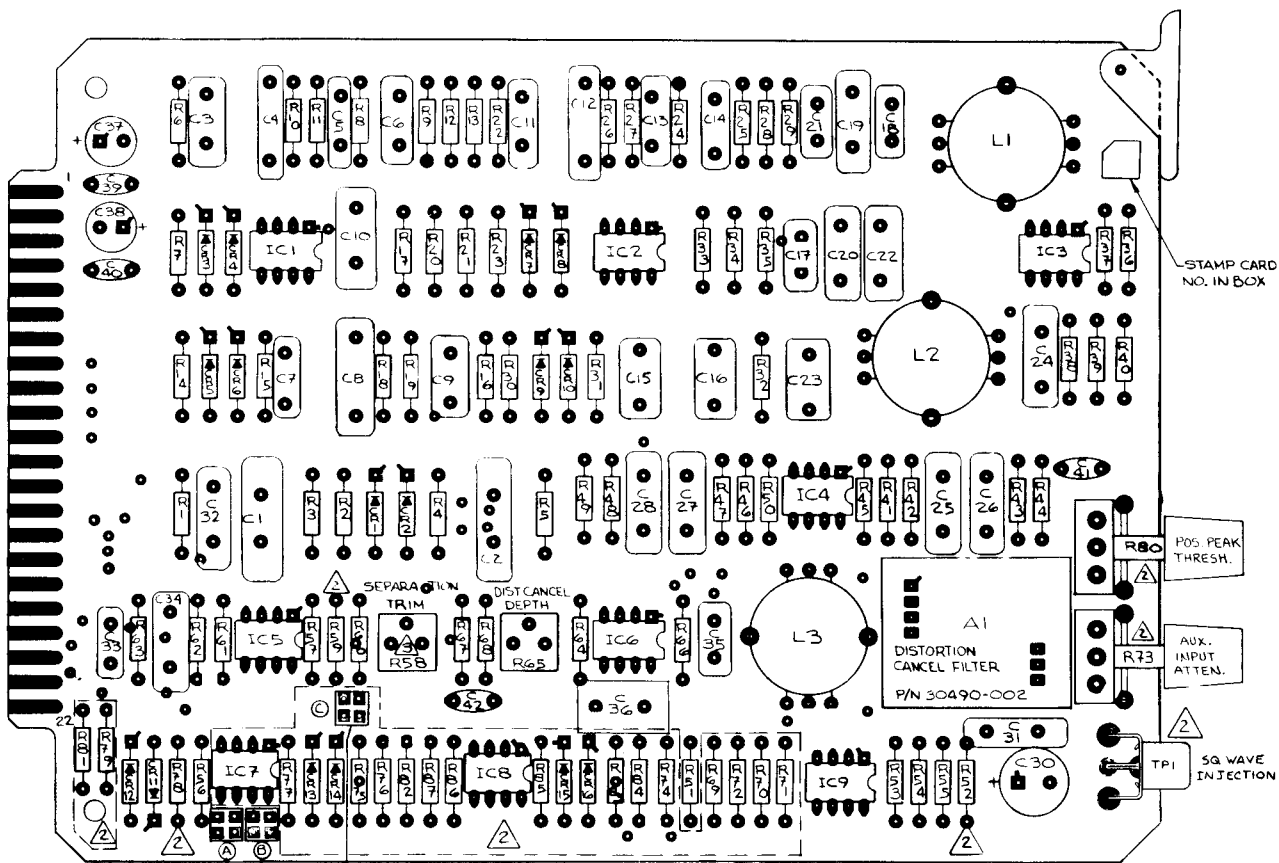
orban

TITLE: SCHEMATIC CARD #6
60056-000-03

SIDE		COMPONENT	
A	SOLDER	1	-
B	+15V	2	-
C	SIGNAL GND	3	-
D	-	4	-
E	-15V	5	-
F	[L-R] CARD OUT	6	BAND 1 [L-R] COMP OUT
H	-	7	BAND 2 [L-R] COMP OUT
J	-	8	BAND 3 [L-R] COMP OUT
K	-	9	BAND 4 [L-R] COMP OUT
L	-	10	BAND 5 [L-R] COMP OUT
M	[L-R] FROM LP FILTER	11	BAND 6 [L-R] COMP OUT
N	-	12	-
P	METER 'LP FILTER'	13	-
R	-	14	-
S	-	15	-
T	AUX IN (+)	16	-
U	AUX IN (-)	17	-
V	+4.1V	18	-4.1V
W	+1.8V	19	-1.8V
X	METER 'LP FILTER'	20	PROOF BUS #2
Y	[L-R] FROM LP FILTER	21	[L-R] TO LP FILTER
Z	-	22	-

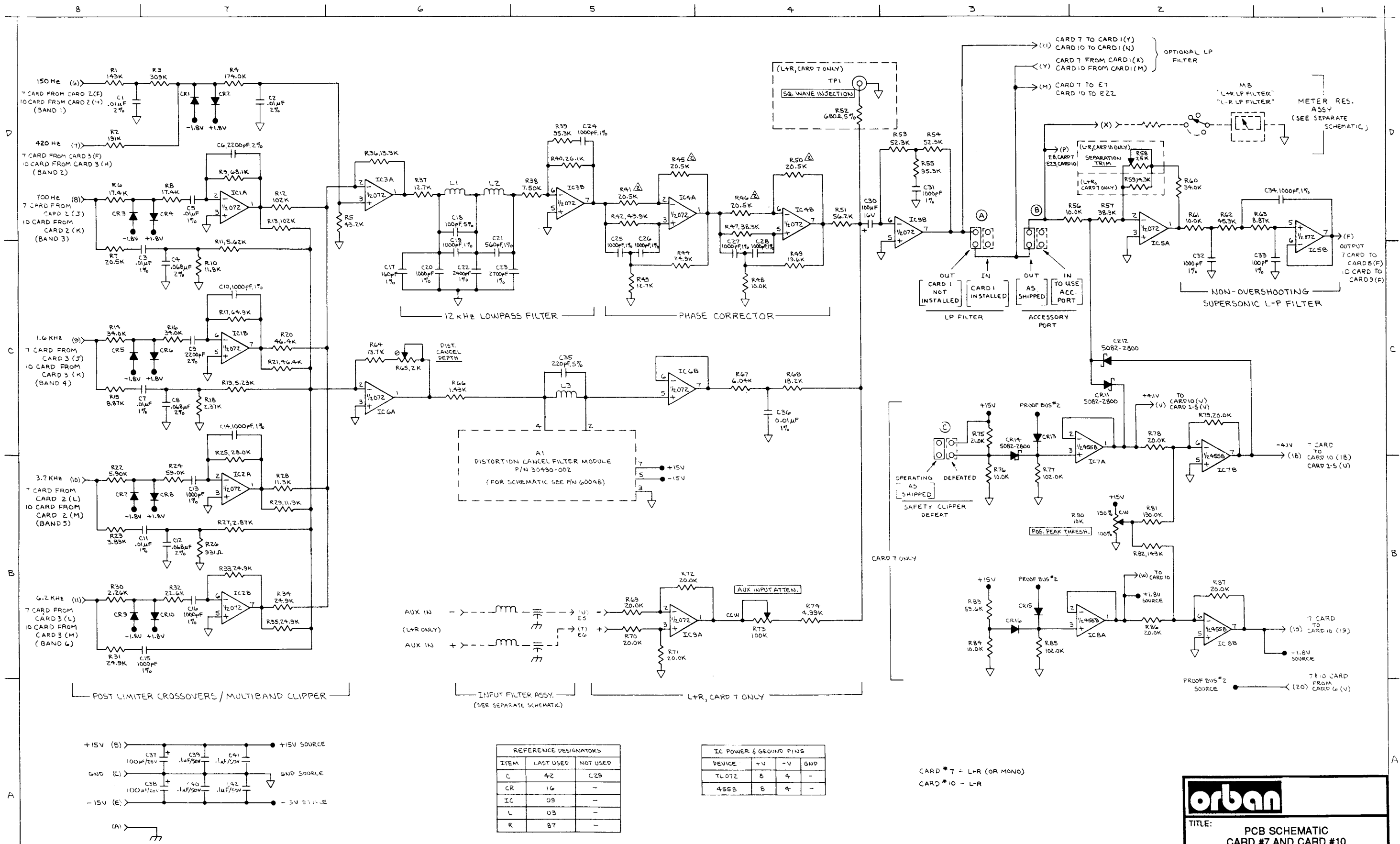
MNEMONICS IN BRACKETS LISTED ABOVE INDICATE [(7 CARD)] [(10 CARD)]

- 5. REF SCHEMATIC P/N 60057-000.
- 4. USE COMP. MTG PADS FOR C30, 37, 38.
- ⚠ NOT LOADED ON 7 CARD.
- ⚠ NOT LOADED ON 10 CARD.
- 1. VER -001 = 7 CARD
-002 = 10 CARD



orban

TITLE:
PCB ASSEMBLY DRAWING
CARD #7 AND CARD #10
307000-VER-01



REFERENCE DESIGNATORS

ITEM	LAST USED	NOT USED
C	42	C29
CR	16	-
IC	09	-
L	03	-
R	87	-

IC POWER & GROUND PINS

DEVICE	+V	-V	GND
TL072	8	4	-
4558	8	4	-

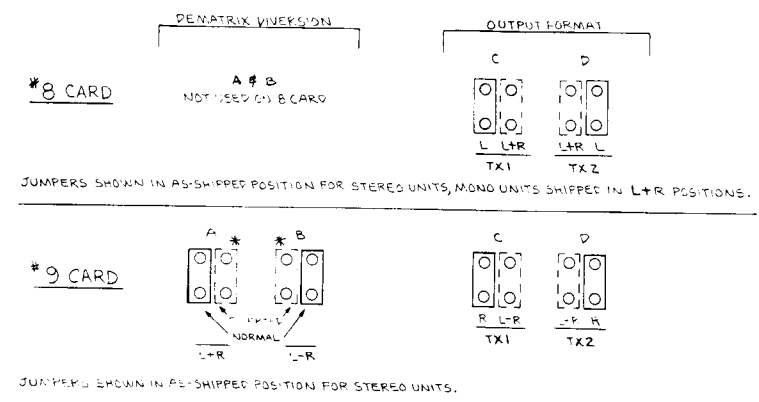
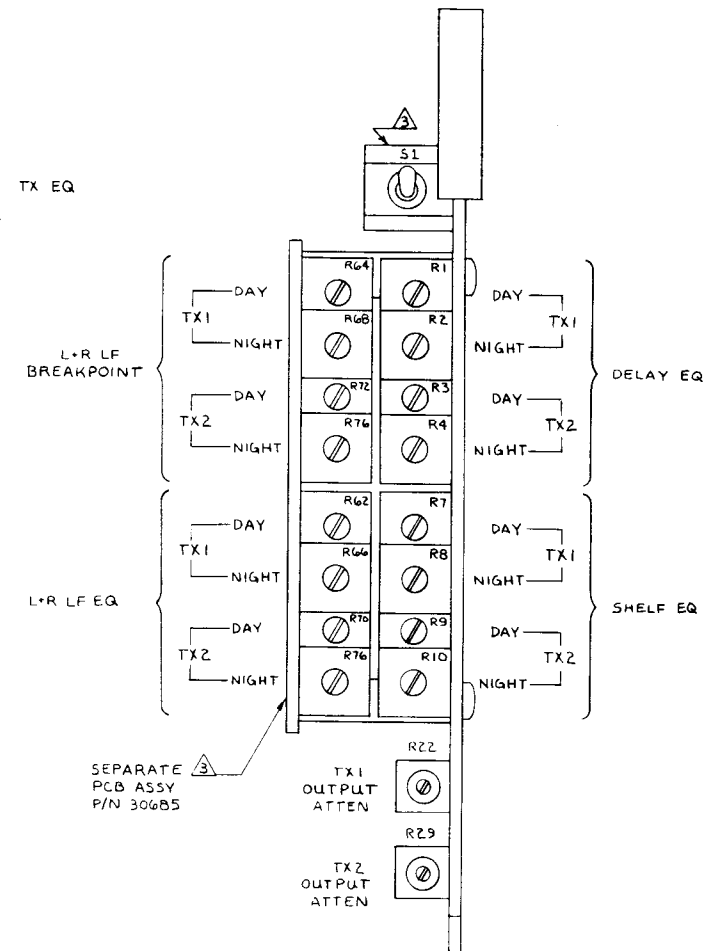
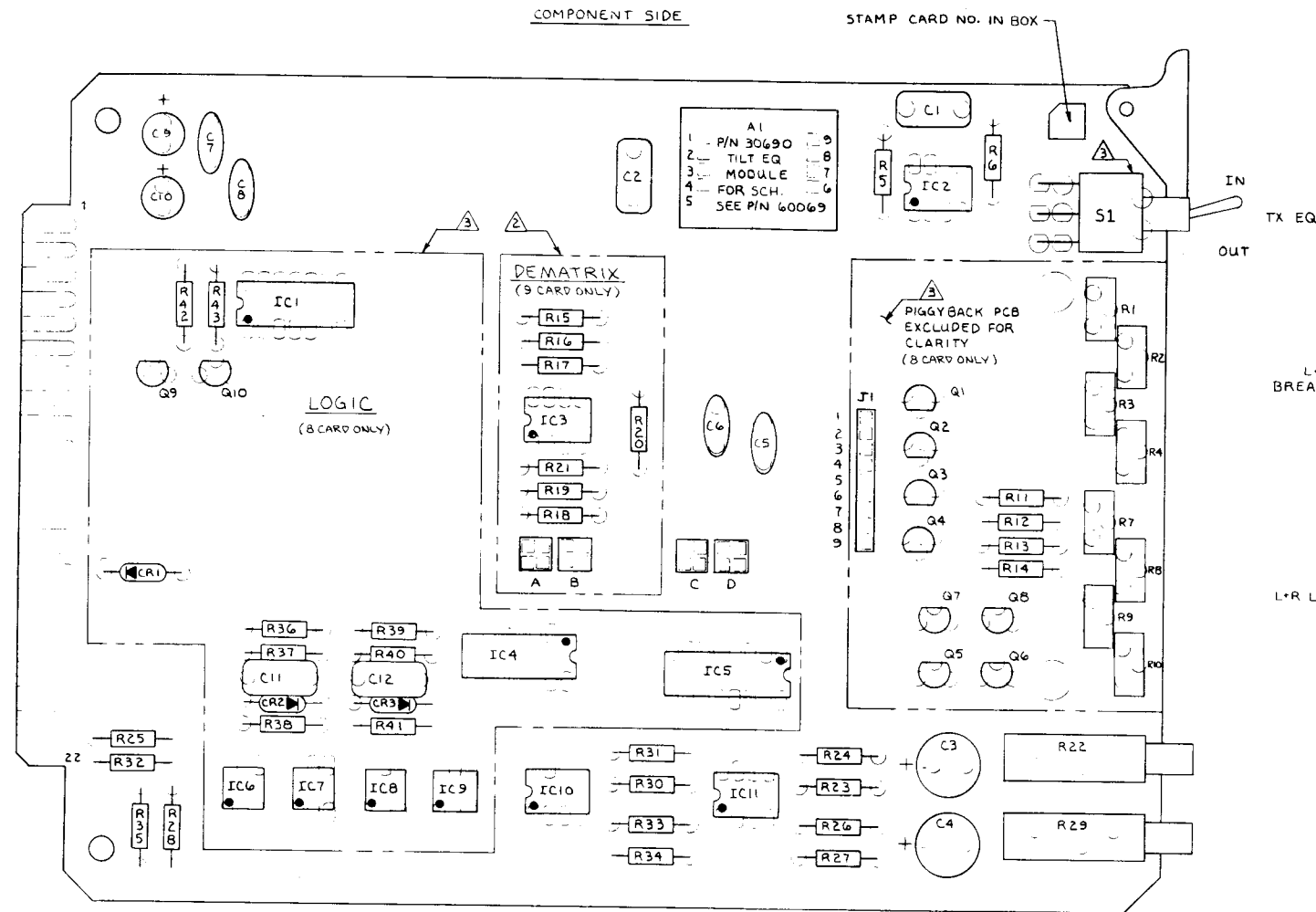
CARD #7 = L+R (OR MONO)
CARD #10 = L-R

orban
TITLE: PCB SCHEMATIC
CARD #7 AND CARD #10
60057-000-03

NOTE: 1. ALL VALUES ARE IN % UNLESS OTHERWISE SPECIFIED

SIDE		COMPONENT	
SOLDER			
A	CHASSIS GND	1	
B	+15V	2	
C	GND	3	
D	LOGIC GND	4	
E	-15V	5	
F	[L+R] LP FILTER	6	[SWITCH NIGHT]
H	[LED NIGHT]	7	[SWITCH DAY]
J	[LED TX2]	8	[SWITCH TX2]
K	L-R TX EQ IN	9	[SWITCH TX1]
L	L-R TX EQ IN	10	
M	L-R DEMATRIX IN	11	L-R TX EQ OUT
N	L-R DEMATRIX IN	12	L-R TX EQ OUT
P	DE-MATRIX OUT	13	L-R DEMATRIX IN
R	DE-MATRIX OUT	14	L-R DEMATRIX IN
S	NIGHT LOGIC	15	LOGIC INPUT COM
T	LOGIC INPUT TX1	16	LOGIC INPUT TX2
U	LOGIC INPUT DAY	17	LOGIC INPUT NIGHT
V	METER OUT TX1	18	[LEFT TX1 LD]
W	METER OUT TX2	19	[LEFT TX2 LD]
X	DAY TX1	20	NIGHT TX1
Y	DAY TX2	21	NIGHT TX2
Z	[LEFT TX1 HI]	22	[LEFT TX2 HI]

MNEMONICS IN BRACKETS LISTED ABOVE INDICATE (8 CARD) (9 CARD)



- 6. 9 CARD NOT INSTALLED IN 9100A/1 (MONO UNIT).
- 5 USE COMPONENT MOUNTING PADS FOR C3,4,9,10.
- 4 REF SCHEMATIC P/N 60058-000 (8 CARD), 60063-000 (9 CARD)
- 3 NOT LOADED ON 9 CARD
- 2 NOT LOADED ON 8 CARD

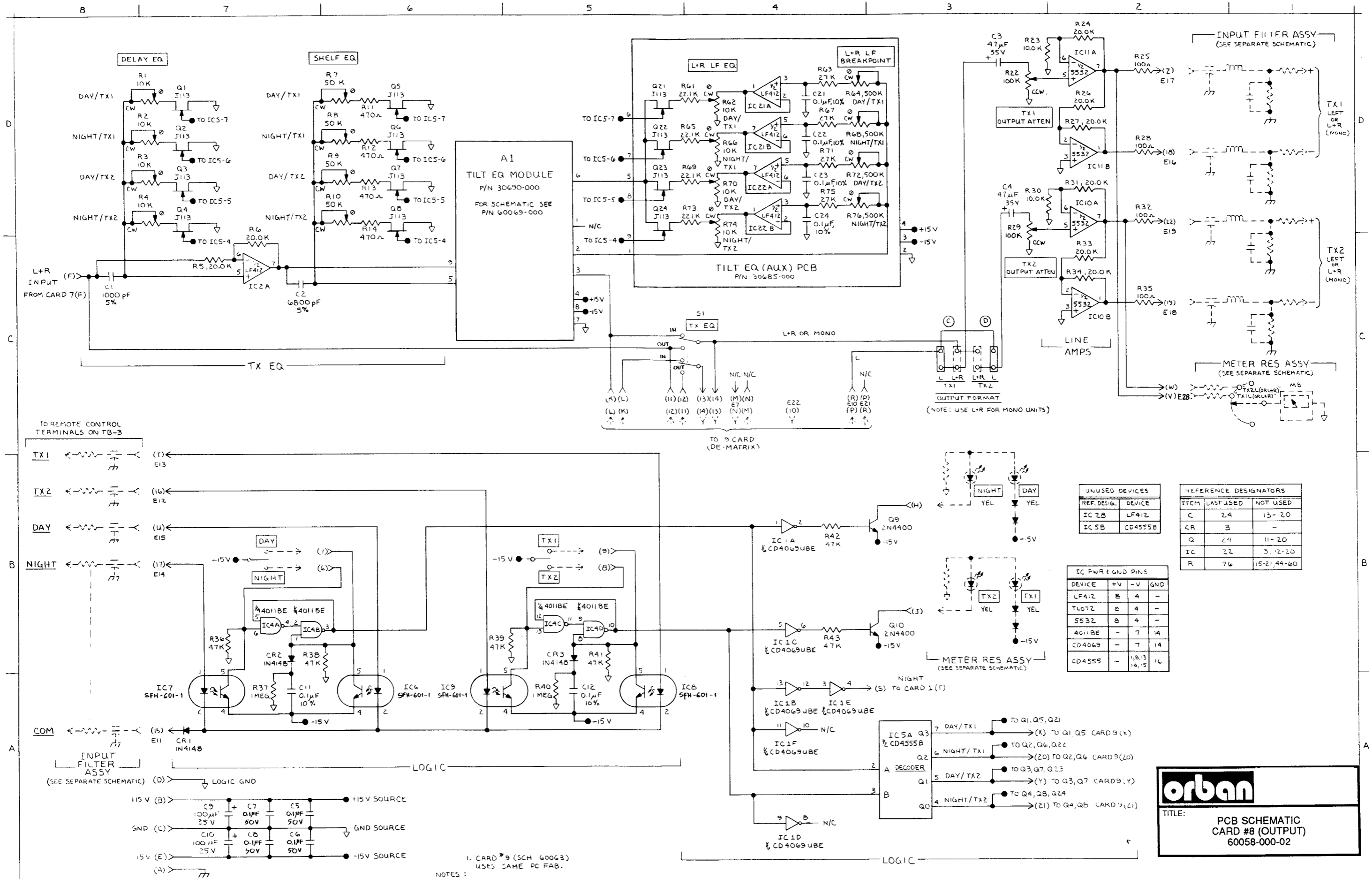
1. VER-001 = 8 CARD
VER-002 = 9 CARD

NOTES: UNLESS OTHERWISE SPECIFIED

* WHEN DE-MATRIX JUMPERS ARE IN DIVERTED POSITION, THE DE-MATRIX IS ACCESSIBLE FROM BACKPLANE FORK TERMINALS.

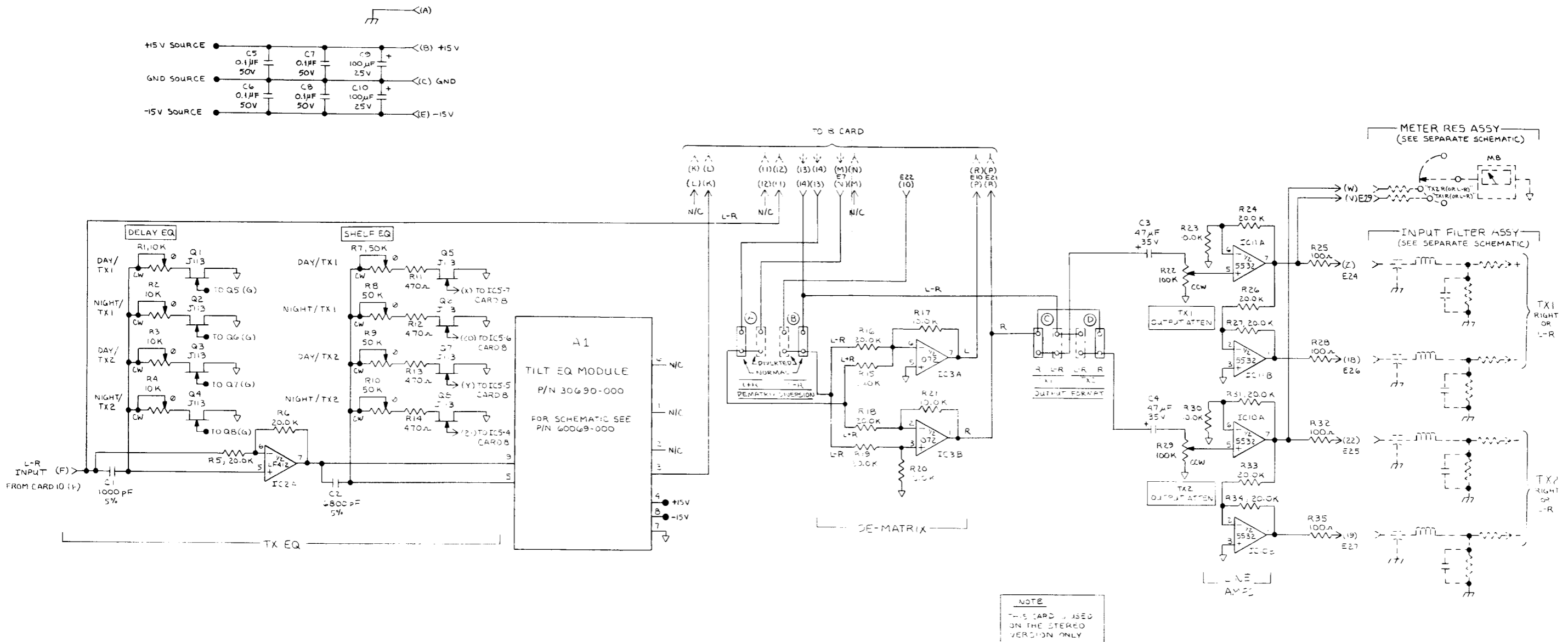
orban

TITLE: PCB ASSEMBLY DRAWING
CARD #8 AND CARD #9
30680-VER-03



orban

TITLE: **PCB SCHEMATIC CARD #8 (OUTPUT) 60058-000-02**



NOTE
THIS CARD IS USED
ON THE STEREO
VERSION ONLY

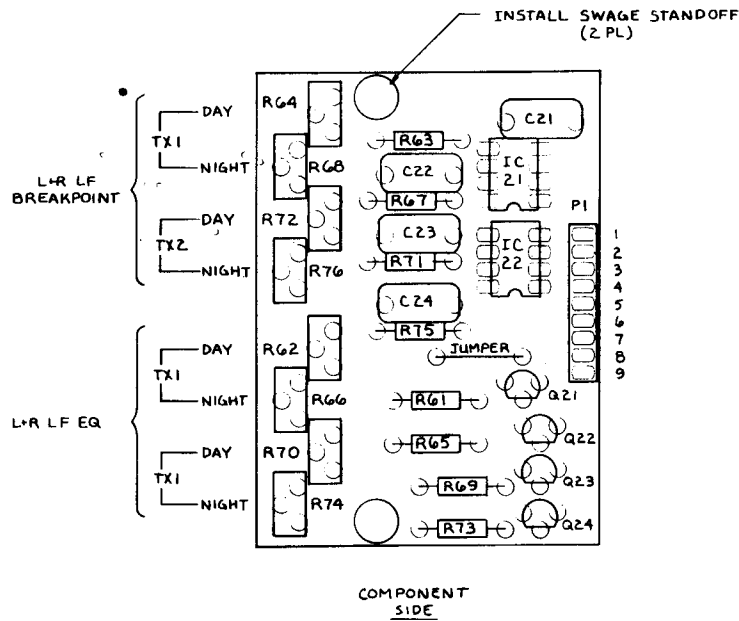
IC PWR & GND PINS			
DEVICE	+V	-V	GND
LF412	B	4	-
TL072	B	4	-
5532	B	4	-

UNUSED DEVICES	
REF. DES.	DEVICE
IC2B	LF412

REFERENCE DESIGNATORS		
ITEM	LAST USED	NOT USED
C	10	-
Q	8	-
IC	11	1, 4-9
R	35	-

orban

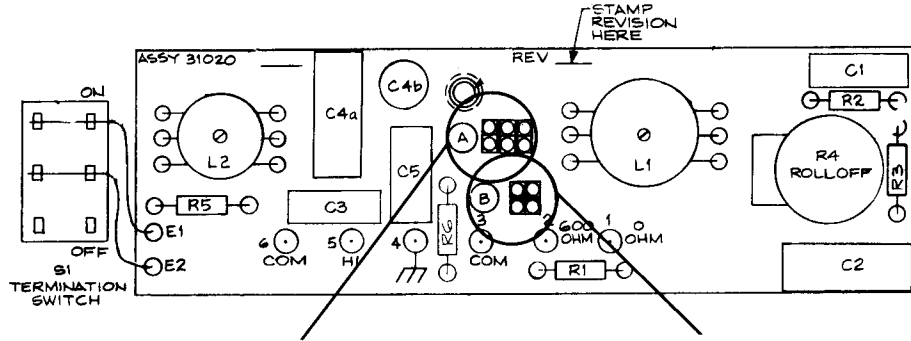
TITLE:
PCB SCHEMATIC
CARD #9 (OUTPUT)
60063-000-02



2. USED ON 8 CARD (30680-001) ONLY.
 1. REF SCHEMATIC : 60058-VER
- NOTES:

orban

TITLE: PCB ASSEMBLY DRAWING
 TILT EQ. AUX.
 30685-000-01



JUMPER A

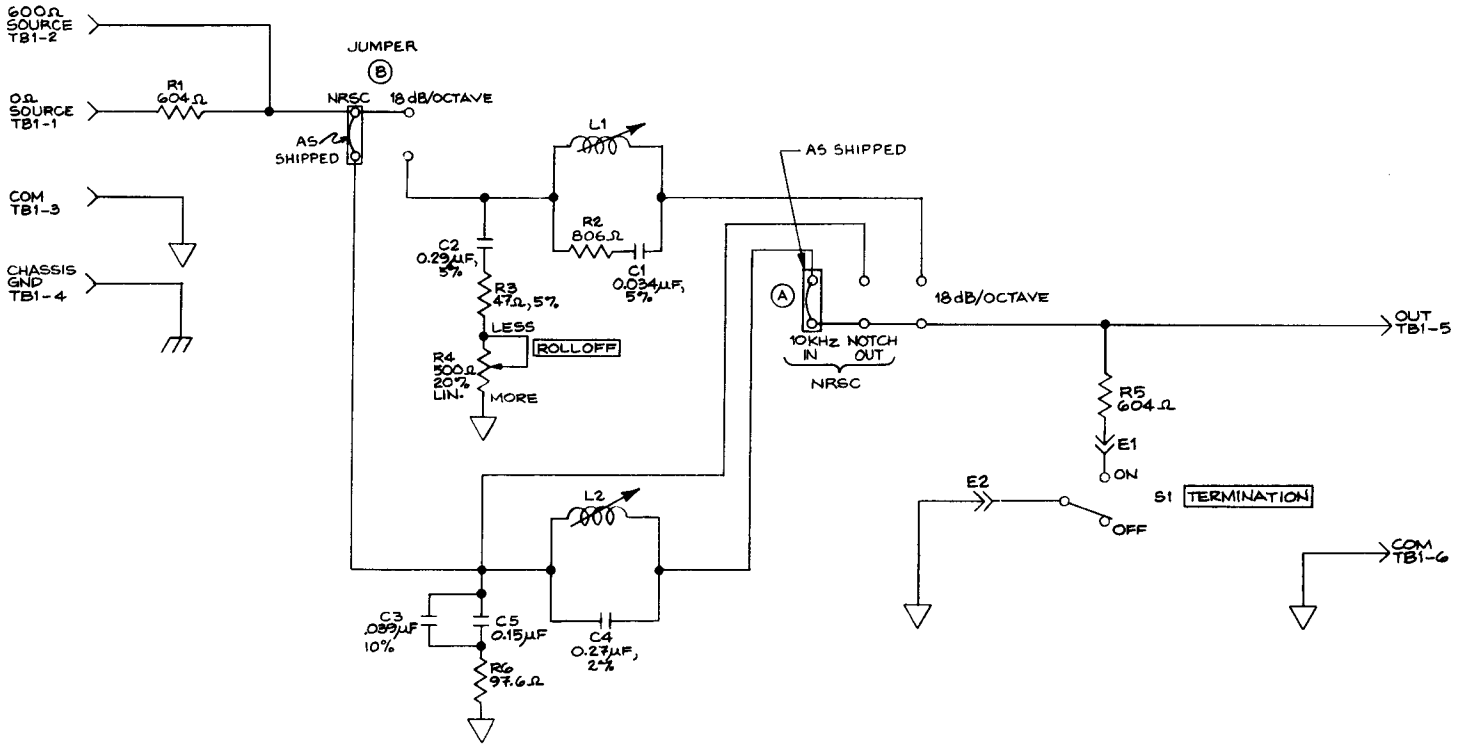
JUMPER B

- NRSC with
10kHz NOTCH IN
(as shipped)
- 10kHz NOTCH OUT
- 18dB/OCTAVE

- NRSC
(as shipped)
- NRSC
- 18dB/OCTAVE

orban

TITLE: PCB ASSEMBLY DRAWING
MONITOR ROLL-OFF FILTER
31020-000-03



NOTES: 1. ALL RESISTORS ARE MF, 1/8W, 1% (UNLESS OTHERWISE SPECIFIED)

orban	
TITLE:	
SCHEMATIC MONITOR ROLL-OFF FILTER 31020-000-03	

Abbreviations

Some of the abbreviations used in this manual may not be familiar to all readers:

AGC	automatic gain control
CCIF	International Telephone Consultative Committee
CD	Compact disc
DAC	digital-to-analog converter
dBu	0dBu = 0.775Vrms. For this application, the dBm into 600Ω scale on voltmeters can be read as if it were calibrated in dBu.
DJ	disk jockey, an announcer who plays records in a club or on the air
EBS	Emergency Broadcasting System
EBU	European Broadcasting Union
EMI	electromagnetic interference
FCC	Federal Communications Commission (USA)
FDNR	Frequency-Dependent Negative Resistor
FET	field-effect transistor
G/R	gain reduction
HF	high-frequency
HP	high-pass
IC	integrated circuit
IEC	International Electrotechnical Commission
IF	intermediate frequency
IM	intermodulation (or 'intermodulation distortion')
ips	inches per second
JFET	junction field-effect transistor
LED	light-emitting diode
LF	low-frequency
LP	low-pass
NAB	National Association of Broadcasters (USA)
N&D	noise and distortion
NRSC	National Radio Systems Committee (USA)
PM	phase modulation
PPM	peak program meter
RF	radio frequency
RFI	radio-frequency interference
SCA	Subsidiary Communication Authorization (FM subchannel)
SID	slew-induced distortion
SMPTE	Society of Motion Picture and Television Engineers
S/N	signal-to-noise ratio
STL	studio-transmitter link
THD	total harmonic distortion
TX	transmitter
VCA	voltage-controlled amplifier
VU	volume-unit