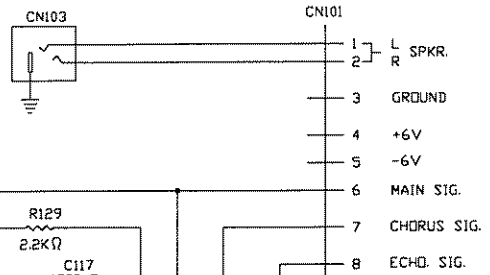


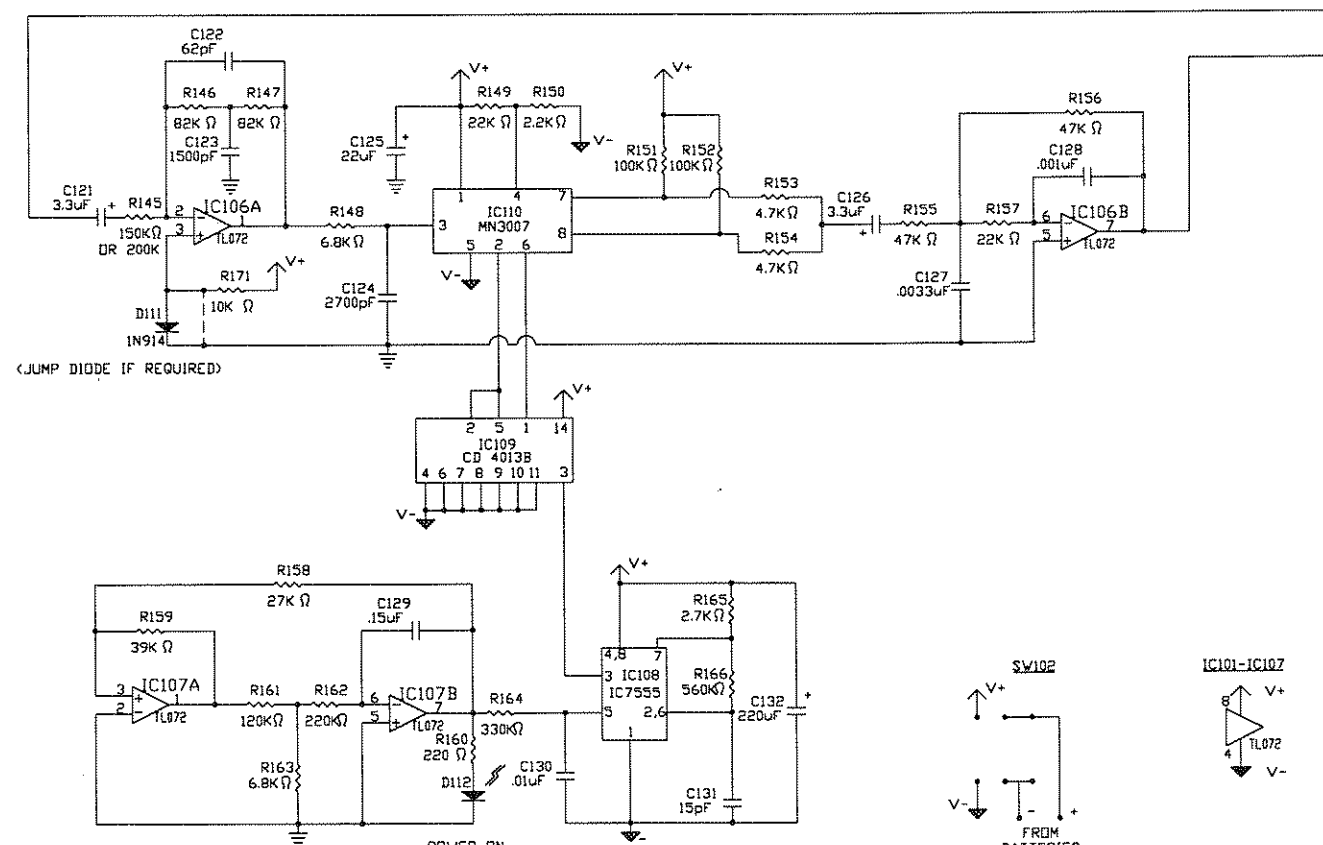
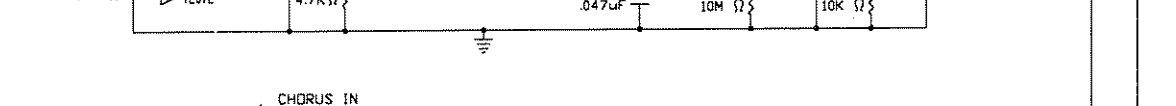
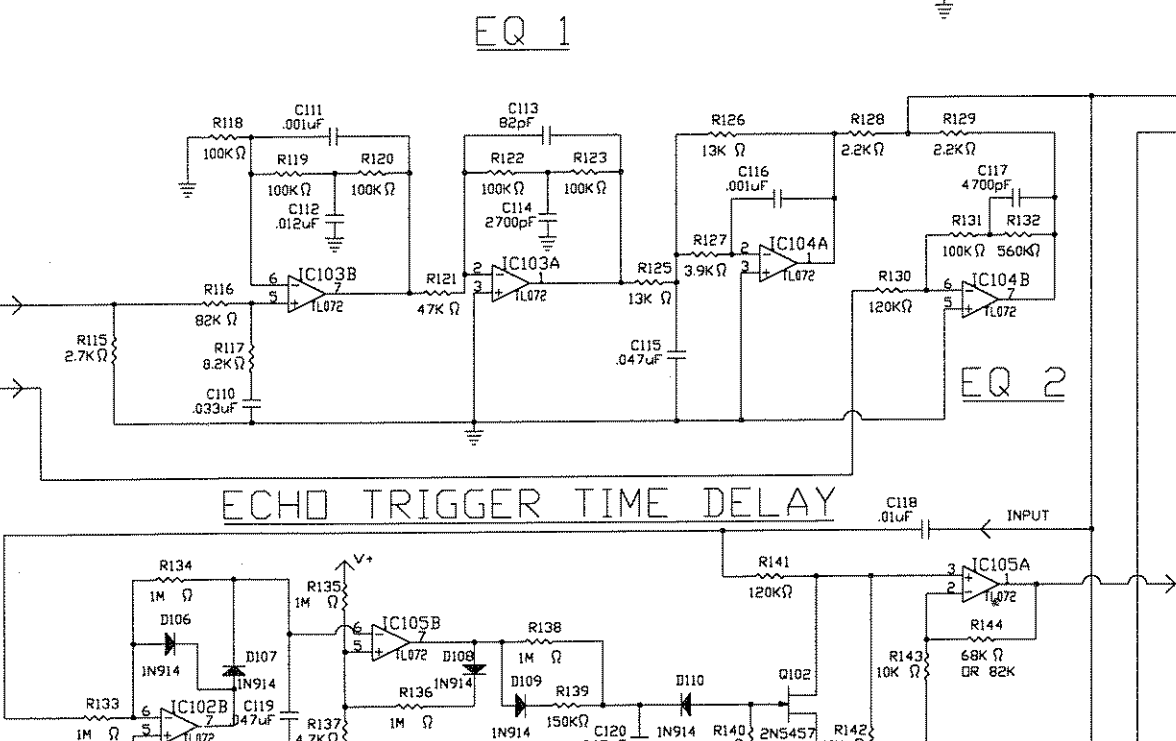
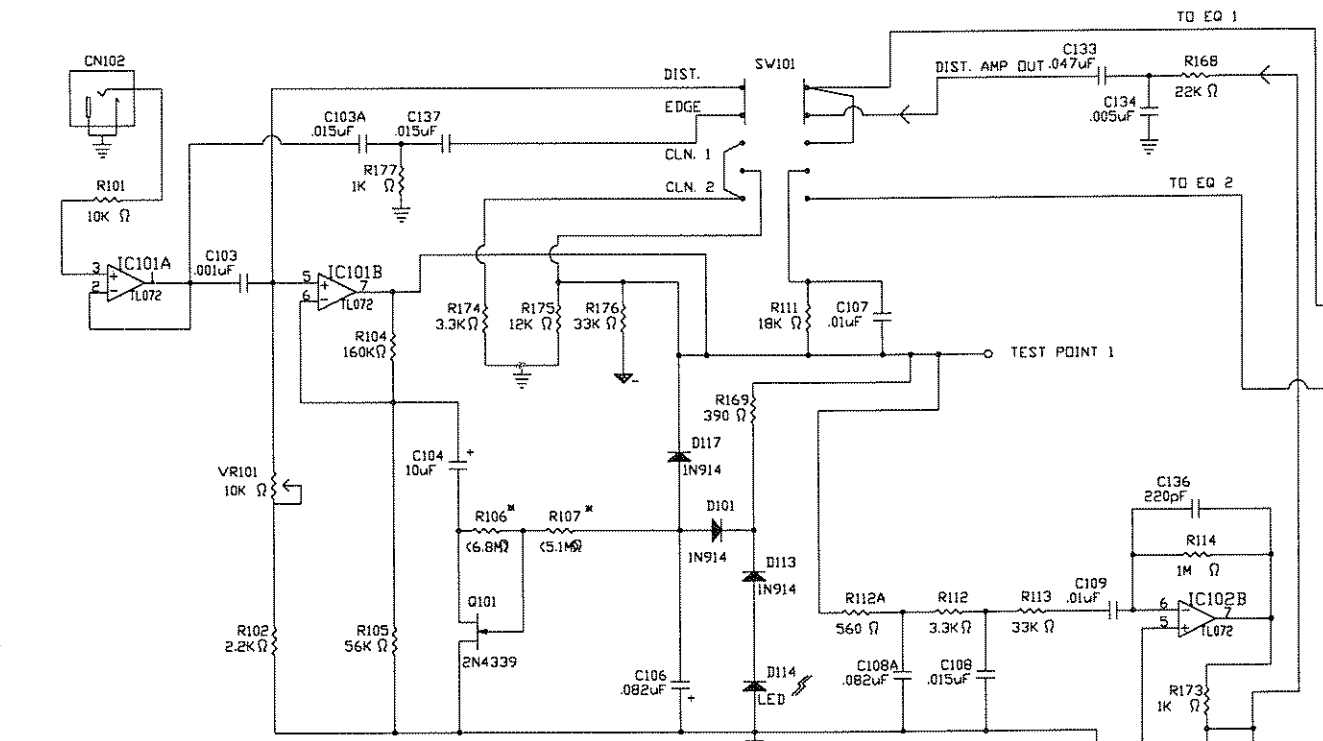
PREAMP AND DISTORTION

EQ 1



ECHO TRIGGER TIME DELAY

STEREO CHORUS



*NOTE:
R106 & R107 ARE FACTORILY SELECTED
TO MATCH THE CHARACTERISTICS OF
FET Q101.

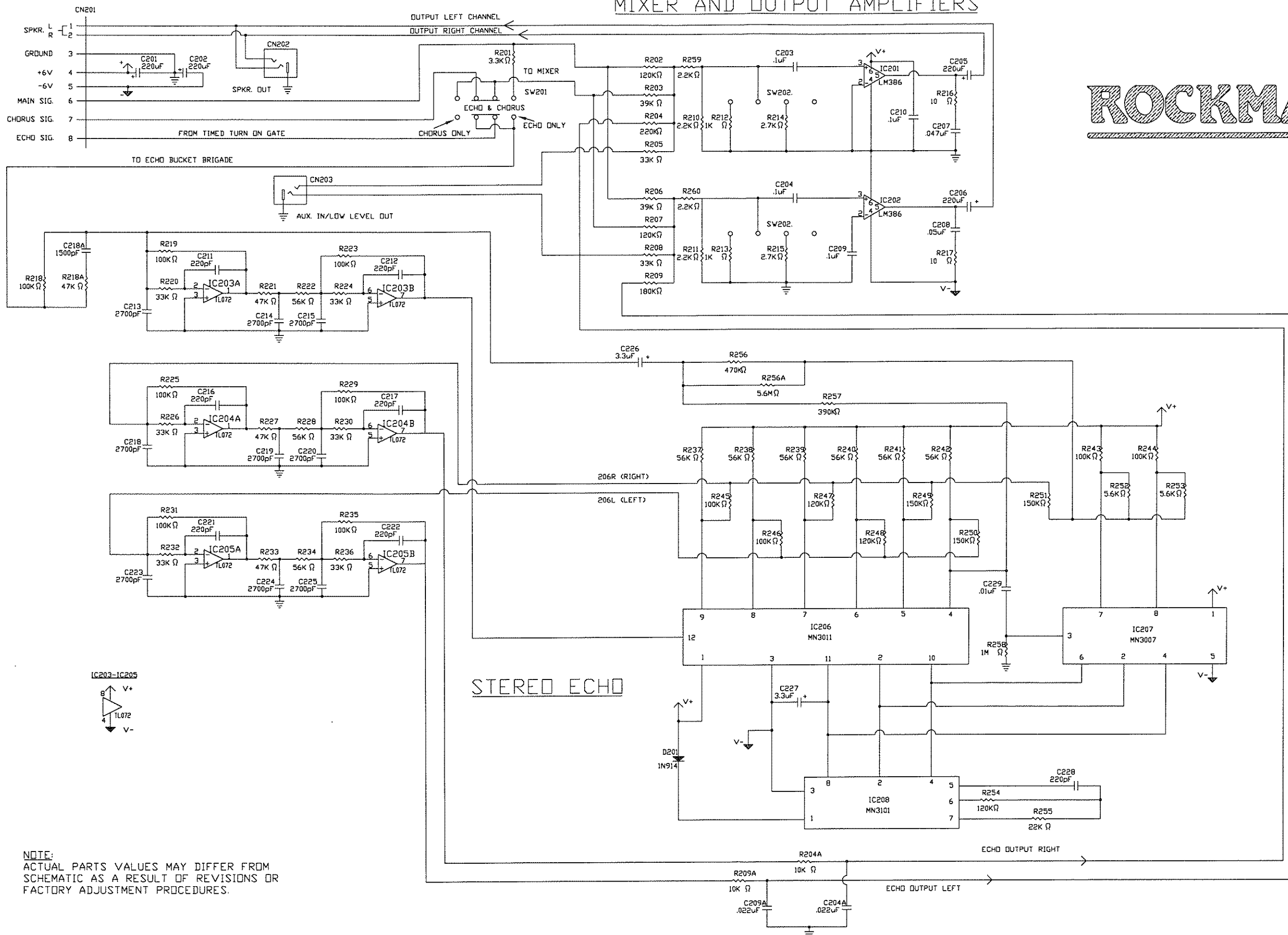
(JUMP DIODE IF REQUIRED)

NOTE:
ACTUAL PARTS VALUES MAY DIFFER FROM
SCHEMATIC AS A RESULT OF REVISIONS OR
FACTORY ADJUSTMENT PROCEDURES.

REVISION	DATE	REVISION DESCRIPTION	BY	APP.

CAD FILE NAME: ROCKMAN X100	E=MC ²	ALLEGRA MICHIGAN
PLOT SCALE: 1" = 1"		DRIVING TITLE: SCHULZ
SCALE: 1" = 1"	DESCRIPTION: ROCKMAN X100	100 BOARD REV. 10
CREATED BY: STEPHEN J. ROOT		
CREATION DATE: 02/21/07		
EQUIPMENT NO.		
ROCKMAN X-100		
SHEET NO. 1 OF 9		
REVISION		
BOARD REV.10		

MIXER AND OUTPUT AMPLIFIERS



F
E
D
C
B
A

F
E
D
C
B
A

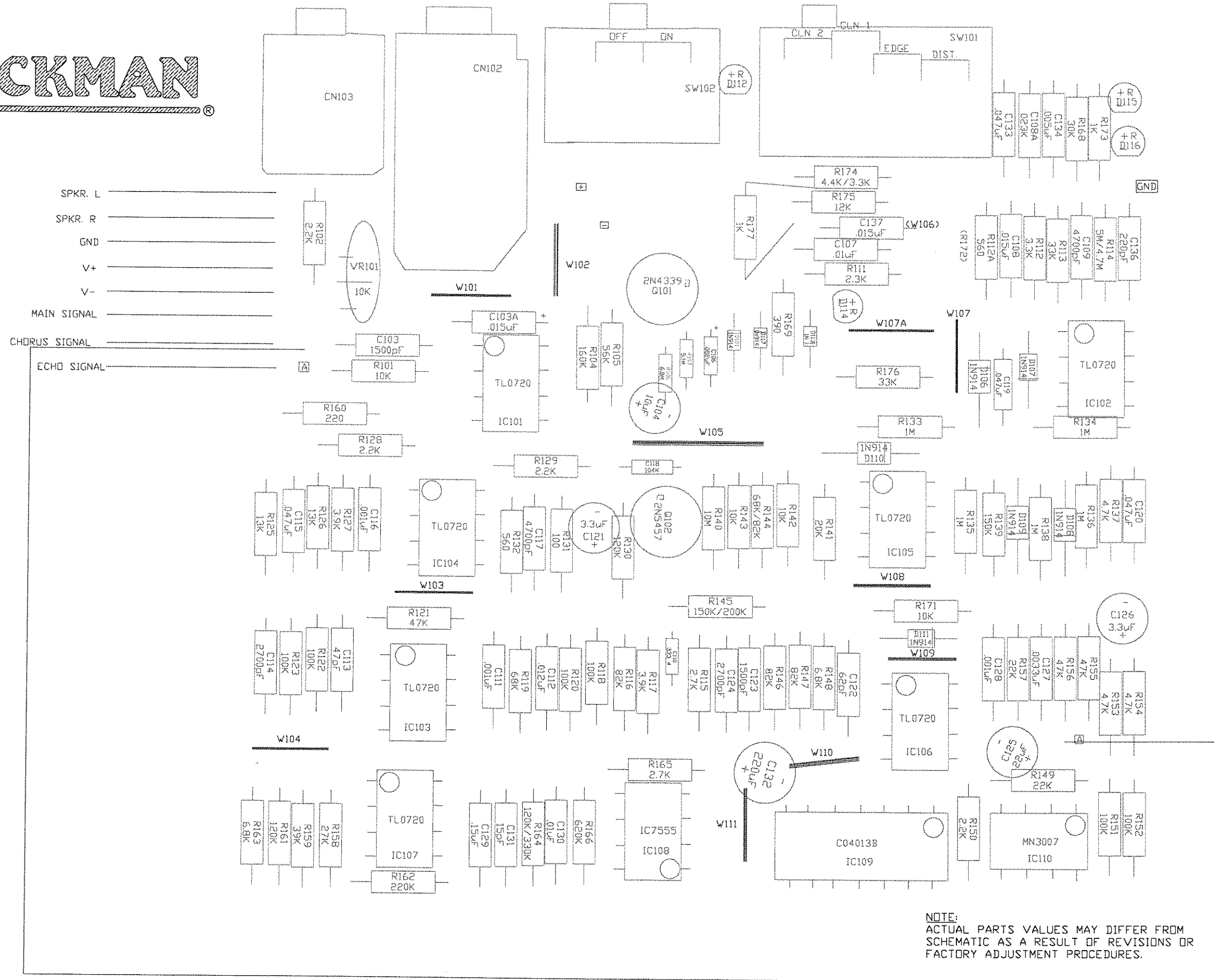
REVISION	DATE	REVISION DESCRIPTION	BY	APP.

CAD FILE NAME: ROCKMAN X100	ALLEGRA DRAWING TITLE SCHOLZ	MICHIGAN ROCKMAN X100
PLOT SCALE: 1" = 1"		
SCALE: 1" = 1"	CREATED BY: STEPHEN J. ROOT	DESCRIPTION: 200 BOARD REV. 10
CREATION DATE: 02/21/07	EQUIPMENT NO. ROCKMAN X-100	
SHEET NO. 2 OF 9		
REVISION BOARD REV.10		

NOTE:
ACTUAL PARTS VALUES MAY DIFFER FROM
SCHEMATIC AS A RESULT OF REVISIONS OR
FACTORY ADJUSTMENT PROCEDURES.

8 7 6 5 4 3 2 1

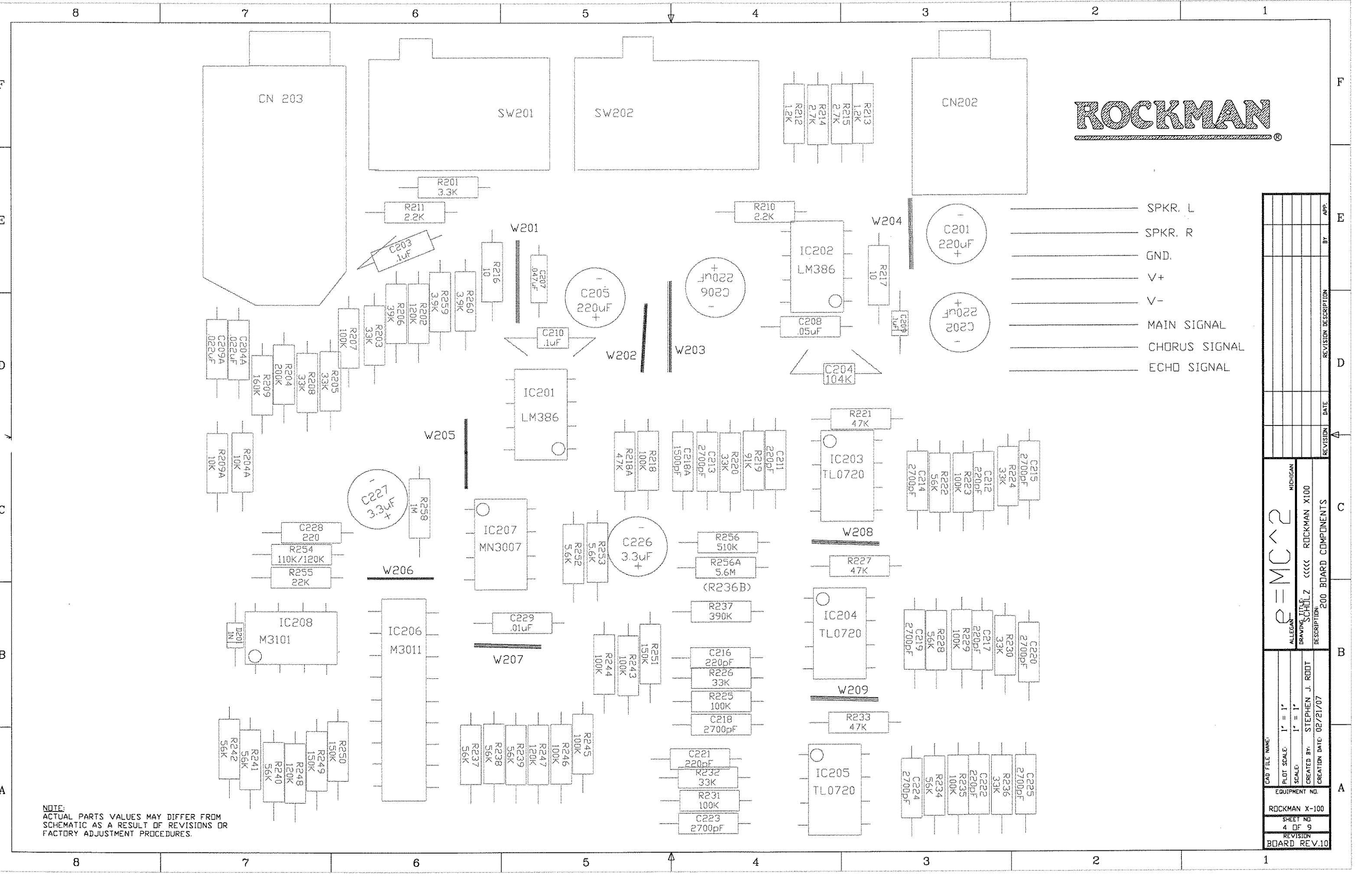
ROCKMAN[®]



NOTE:
ACTUAL PARTS VALUES MAY DIFFER FROM
SCHEMATIC AS A RESULT OF REVISIONS OR
FACTORY ADJUSTMENT PROCEDURES.

REVISION	DATE	REVISION DESCRIPTION	BY	APP.

CAD FILE NAME:	ALLEGRA	MICHIGAN
PLOT SCALE:	1" = 1"	ROCKMAN X100
SCALE:	1" = 1"	DRAWING TITLE
CREATED BY:	STEPHEN J. ROOT	SCHOLZ
CREATION DATE:	02/21/07	DESCRIPTION:
EQUIPMENT NO.:	100	BOARD COMPONENTS
ROCKMAN X-100		
SHEET NO.	3	OF
	9	
REVISION		
BOARD REV.10		



- SPKR. L
- SPKR. R
- GND.
- V+
- V-
- MAIN SIGNAL
- CHORUS SIGNAL
- ECHO SIGNAL

NOTE:
ACTUAL PARTS VALUES MAY DIFFER FROM
SCHEMATIC AS A RESULT OF REVISIONS OR
FACTORY ADJUSTMENT PROCEDURES.

REVISION	DATE	REVISION DESCRIPTION	BY	APP.

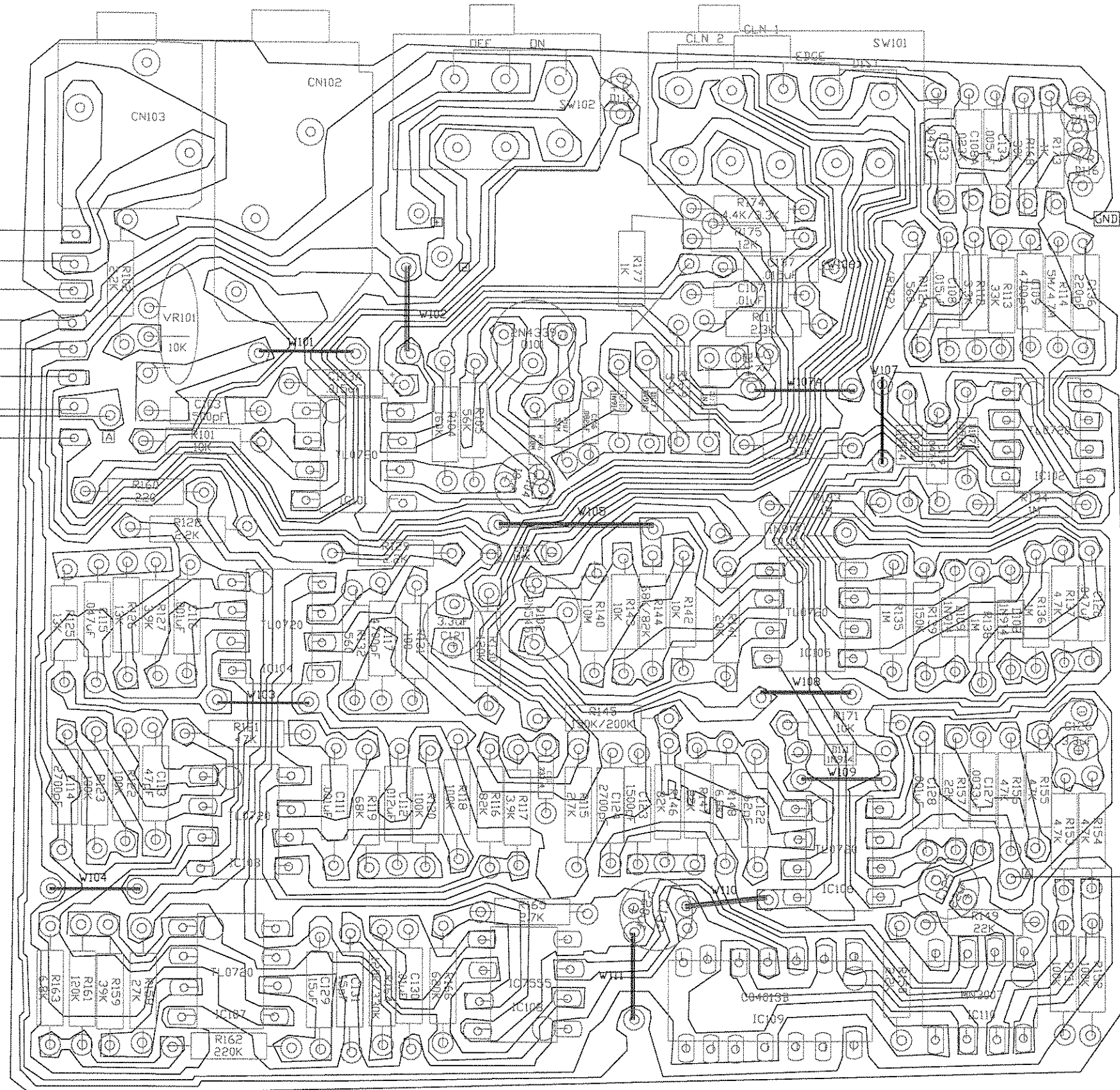
CAD FILE NAME	
PLOT SCALE	1" = 1"
SCALE	1" = 1"
CREATED BY	STEPHEN J. ROIT
CREATION DATE	02/21/07
EQUIPMENT NO.	
ROCKMAN X-100	
SHEET NO.	4 OF 9
REVISION	
BOARD REV.10	

ALLEGRA MICHIGAN
DRAWING TITLE: ROCKMAN X100
DRAWING NO.: SCHOLZ
DESCRIPTION: 200 BOARD COMPONENTS



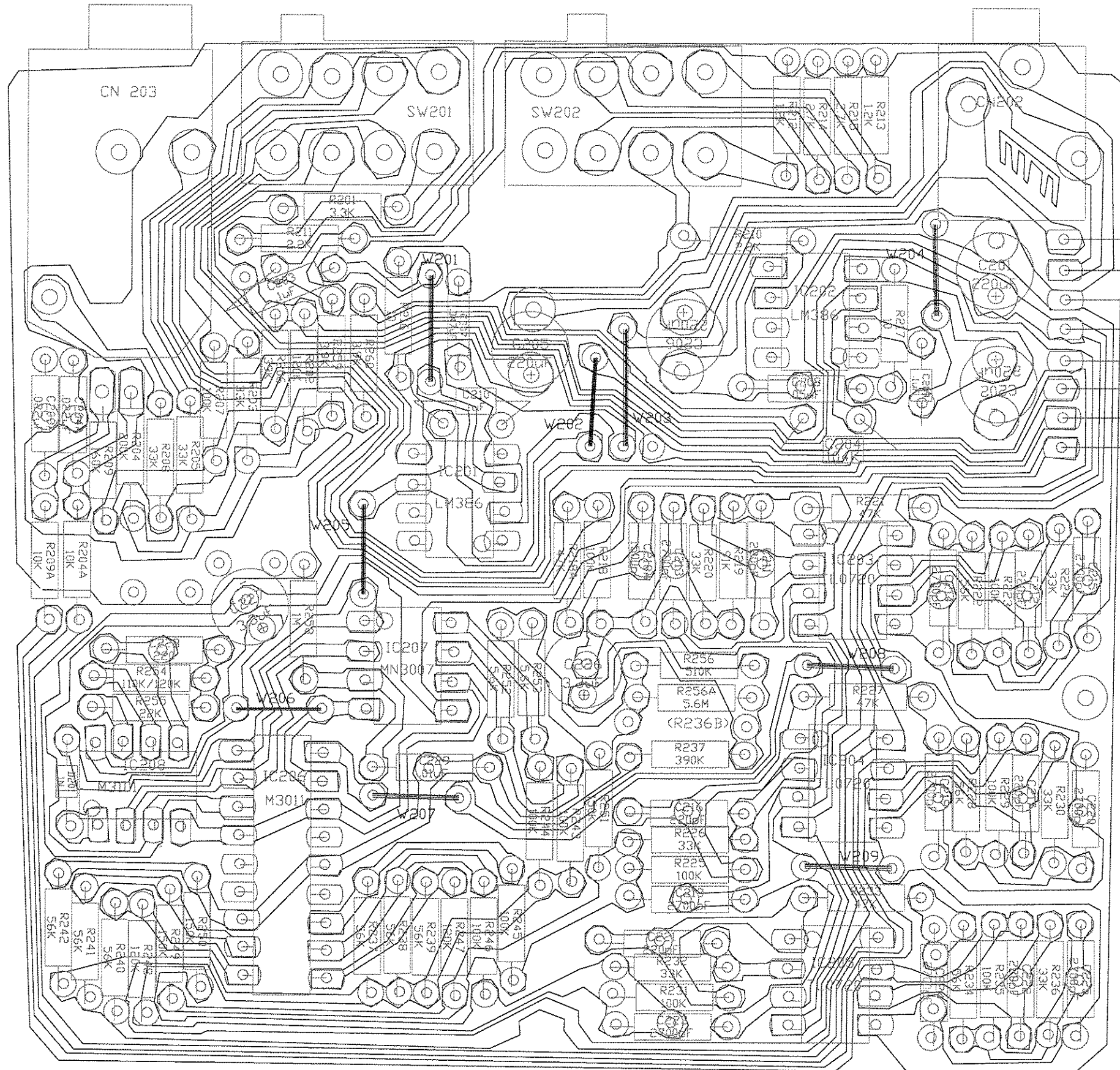
SPKR. L
 SPKR. R
 GND
 V+
 V-
 MAIN SIGNAL
 CHORUS SIGNAL
 ECHO SIGNAL

NOTE:
 ACTUAL PARTS VALUES MAY DIFFER FROM
 SCHEMATIC AS A RESULT OF REVISIONS OR
 FACTORY ADJUSTMENT PROCEDURES.



CAD FILE NAME: E=MC^2		ALLEGRA: MICHIGAN	BY: APP.
PLOT SCALE: 1" = 1"		DRAWING TITLE: SCHOLZ	REVISION DESCRIPTION
SCALE: 1" = 1"		DESCRIPTION: 100BD TRACES & COMPONENTS	DATE
CREATED BY: STEPHEN J. ROOT		ROCKMAN X100	REVISION
CREATION DATE: 02/21/07		100BD TRACES & COMPONENTS	DATE
EQUIPMENT NO.		ROCKMAN X-100	BY
ROCKMAN X-100		SHEET NO.	APP.
SHEET NO.		5 OF 9	
REVISION		BOARD REV.10	

ROCKMAN



SPKR. L
SPKR. R
GND.
V+
V-
MAIN SIGNAL
CHORUS SIGNAL
ECHO SIGNAL

NOTE:
ACTUAL PARTS VALUES MAY DIFFER FROM
SCHEMATIC AS A RESULT OF REVISIONS OR
FACTORY ADJUSTMENT PROCEDURES.

REVISION	DATE	REVISION DESCRIPTION	BY	APP.

E=MC^2	
ALLEGAN	MICHIGAN
DRAWING TITLE	ROCKMAN X100
DRIVER	SCHULZ
DESCRIPTION	200BD TRACES & COMPONENTS
CAD FILE NAME:	
PLOT SCALE:	1" = 1"
SCALE:	1" = 1"
CREATED BY:	STEPHEN J. ROOT
CREATION DATE:	02/21/07
EQUIPMENT NO.	
ROCKMAN X-100	
SHEET NO.	6 OF 9
REVISION	
BOARD REV.10	

100 BOARD COMPONENTS



COMPONENT	VALUE
R101	10K
R102	2.2K
R104	160K
R105	56K
R106	FET BIAS
R107	FET BIAS
R111	18K
R112	3.3K
R112A	560
R113	33K
R114	1M
R115	2.7K
R116	82K
R117	8.2K
R118	100K
R119	100K
R120	100K
R121	47K
R122	100K
R123	100K
R125	13K
R126	13K
R127	3.9K
R128	2.2K
R129	2.2K
R130	120K
R131	100K
R132	560K
R133	1M
R134	1M
R135	1M
R136	1M
R137	4.7K
R138	1M
R139	150K
R140	10M
R141	120K
R142	10K
R143	10K
R144	68K/82K
R145	150K/200K

COMPONENT	VALUE
R146	82K
R147	82K
R148	6.8K
R149	22K
R150	2.2K
R151	100K
R152	100K
R153	4.7K
R154	4.7K
R155	47K
R156	47K
R157	22K
R158	27K
R159	39K
R160	220
R161	120K
R162	220K
R163	6.8K
R164	330K
R165	2.7K
R166	560K
R168	22K
R169	390
R171	10K
R173	1K
R174	3.3K
R175	12K
R176	33K
R177	1K
VR101	10K

COMPONENT	VALUE
C103	.001uF
C103A	.015uF
C104	10uF
C106	.082uF
C107	.01uF
C108	.015uF
C108A	.082uF
C109	4700pF
C110	.033uF
C111	.001uF
C112	.012uF
C113	82pF
C114	2700pF
C115	.047uF
C116	.001uF
C117	4700pF
C118	.01uF
C119	.047uF
C120	.047uF
C121	3.3uF
C122	62pF
C123	1500pF
C124	2700pF
C125	22uF
C126	3.3uF
C127	.0033uF
C128	.001uF
C129	.15uF
C130	.01uF
C131	15pF
C132	220uF
C133	.047uF
C134	.005uF
C136	220pF
C137	.015uF

COMPONENT	VALUE
D101	1N914
D106	1N914
D107	1N914
D108	1N914
D109	1N914
D110	1N914
D111	1N914
D112	RED LED
D113	1N914
D114	RED LED
D115	RED LED
D116	RED LED
D117	1N914
Q101	2N4339
Q102	2N5457
IC101	TL072
IC102	TL072
IC103	TL072
IC104	TL072
IC105	TL072
IC106	TL072
IC107	TL072
IC108	IC7555
IC109	CD 4013B
IC110	MN3007
SW101	DP4P
SW102	DP2P
CN101	RIBBON-8
CN102	1/4" MONO
CN103	1/8" STEREO

<p style="font-size: 2em; margin: 0;">E=MC²</p> <p style="font-size: 0.8em; margin: 0;">ALLEGRA MICHIGAN DRAWING TITLE SCHULZ <<<< ROCKMAN X100 DESCRIPTION 100 BOARD COMPONENT LIST REV. 10</p>																										
<p style="font-size: 0.8em; margin: 0;">CAD FILE NAME: ROCKMAN X-100 PLOT SCALE: 1" = 1" SCALE: 1" = 1"</p> <p style="font-size: 0.8em; margin: 0;">CREATED BY: STEPHEN J. ROOT CREATION DATE: 02/21/07</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REVISION</th> <th>DESCRIPTION</th> <th>DATE</th> <th>BY</th> <th>APP.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REVISION	DESCRIPTION	DATE	BY	APP.																				
REVISION	DESCRIPTION	DATE	BY	APP.																						
<p>EQUIPMENT NO. ROCKMAN X-100</p> <p>SHEET NO. 7 OF 9</p> <p>REVISION BOARD REV.10</p>																										

NOTE: ACTUAL PARTS VALUES MAY DIFFER FROM SCHEMATIC AS A RESULT OF REVISIONS OR FACTORY ADJUSTMENT PROCEDURES.

200 BOARD COMPONENTS



COMPONENT	VALUE
R201	3.3K
R202	120K
R203	39K
R204	220K
R204A	10K
R205	33K
R206	39K
R207	120K
R208	33K
R209	180K
R209A	10K
R210	2.2K
R211	2.2K
R212	1K
R213	1K
R214	2.7K
R215	2.7K
R216	10
R217	10
R218	100K
R218A	47K
R219	100K
R220	33K
R221	47K
R222	56K
R223	100K
R224	33K
R225	100K
R226	33K
R227	47K
R228	56K
R229	100K
R230	33K
R231	100K
R232	33K
R233	47K
R234	56K
R235	100K
R236	33K
R237	56K
R238	56K
R239	56K

COMPONENT	VALUE
R240	56K
R241	56K
R242	56K
R243	100K
R244	100K
R245	100K
R246	100K
R247	120K
R248	120K
R249	150K
R250	150K
R251	150K
R252	5.6K
R253	5.6K
R254	120K
R255	22K
R256	470K
R256A	5.6M
R257	390
R258	1M
R259	2.2K
R260	2.2K

COMPONENT	VALUE
C201	220uF
C202	220uF
C203	.1uF
C204	.1uF
C204A	.022uF
C205	220uF
C206	220uF
C207	.047uF
C208	.05uF
C209	.1uF
C209A	.022uF
C210	.1uF
C211	220pF
C212	220pF
C213	2700pF
C214	2700pF
C215	2700pF
C216	220pF
C217	220pF
C218	2700pF
C218A	1500pF
C219	2700pF
C220	2700pF
C221	220pF
C222	220pF
C223	2700pF
C224	2700pF
C225	2700pF
C226	3.3uF
C227	3.3uF
C228	220pF
C229	.01uF

COMPONENT	VALUE
D201	1N914
IC201	LM386
IC202	LM386
IC203	TL072
IC204	TL072
IC205	TL072
IC206	MN3011
IC207	MN3007
IC208	MN3101
SW201	DP3P
SW202	DP3P
CN201	RIBBDN-8
CN202	1/8" STEREO
CN203	1/4" STEREO

REVISION	DESCRIPTION	DATE	BY	APP.

CAD FILE NAME: ROCKMAN X100
 PLOT SCALE: 1" = 1"
 SCALE: 1" = 1"
 CREATED BY: STEPHEN J. ROOT
 CREATION DATE: 02/21/07
 ALLEGRA: P=MC^2 MICHIGAN
 DRAWING TITLE: ROCKMAN X100
 DESCRIPTION: 200 BOARD COMPONENT LIST REV. 10

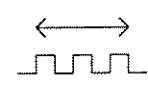
EQUIPMENT NO.
 ROCKMAN X-100
 SHEET NO.
 8 OF 9
 REVISION
 BOARD REV.10

NOTE:
 ACTUAL PARTS VALUES MAY DIFFER FROM
 SCHEMATIC AS A RESULT OF REVISIONS OR
 FACTORY ADJUSTMENT PROCEDURES.

ROCKMAN®

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE
LED NO BLINK	-CHECK POWER SUPPLY 4.8-6.0V -CHECK POWER DRAW 48-62mA
	-BROKEN FRONT LED (TOUCH SCOPE PROBE TO POSITIVE LEAD OF LED; SCOPE WAVE SHOULD SWEEP NEG. TO POS., WITH PAUSE FOR DISCHARGE AT POS. PEAK. -CHECK LOW FREQUENCY OSCILLATOR
CHORUS WHISTLES & NOISY	-IC 106 -INSURE PROPER LFO INPUT TO IC7555 (TIMER) -IC7555 OUTPUT (PIN3)
NO TIMER OUTPUT (PIN3)	-REPLACE TIMER
NO OUTPUT	-IF INPUT TO LM386 (PIN3) IS O.K., REPLACE LM386 AND CORRESPONDING 220uF CAPACITOR.
NO DISTORTION, EDGE, OR CLEAN1	-CHECK C111, C112, C110 FOR BROKEN JOINTS.
VERY NOISY OUTPUT; NO LEFT OUTPUT	-CHECK C209 FOR BROKEN JOINTS.
X-100 UPDATES, NO EDGE & DISTORTION	-CHECK DOUBLE LED FOR CONTACT BETWEEN POLES.
MASSIVE PREAMP	-CHECK TRIMPOT FOR BREAKS (JUMP WITH PLIERS, ETC.)



NOTE:
ACTUAL PARTS VALUES MAY DIFFER FROM SCHEMATIC AS A RESULT OF REVISIONS OR FACTORY ADJUSTMENT PROCEDURES.

APP.									
BY									
REVISION DESCRIPTION									
DATE									
REVISION									
<p>ALLEGAN MICHIGAN $E=MC^2$ DRAWING TITLE: SCHOLZ <<<< ROCKMAN X100 TROUBLESHOOTING GUIDE DESCRIPTION: TROUBLESHOOTING GUIDE</p>									
<p>EQUIPMENT NO. ROCKMAN X-100</p>									
<p>CREATED BY: STEPHEN J. ROOT CREATION DATE: 02/21/07</p>									
<p>PLOT SCALE: 1" = 1" SCALE: 1" = 1"</p>									
<p>ROCKMAN X-100 SHEET NO. 9 OF 9 REVISION BOARD REV.10</p>									