

**SERVICE MANUAL
LCR METER
MODEL LCR-9063**

- 1. PARTS LIST**
- 2. CALIBRATING PROCEDURE**
- 3. TROUBLE SHOOTING STRATEGY**
- 4. PCB LAYOUT**
- 5. CIRCUIT DIAGRAM**

A. EDIT DATE : Aug. 2nd 1997
B. MODIFY DATE :
C. MODIFY DATE :

ELECTRICAL PARTS LIST OF LCR-9063

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DATE:8/2/97

- NOTE: 1. WHEN IT IS NECESSARY TO REPLACE ANY OF THE ELECTRICAL COMPONENTS SPECIFIED IN THIS PARTS LIST, USE COMPONENTS OF EQUAL OR BETTER SPECIFICATIONS.
2. ALL THE PARTS DESCRIBED IN THIS ELECTRICAL PARTS LIST ARE SUBJECT TO CHANGE DUE TO ENGINEERING CHANGES FOR IMPROVEMENT.
3. FOR ORDERING SPARE OR REPLACEMENT PARTS, REFER TO THE PARTS DESCRIPTIONS SHOWN FOR EACH ITEM.

CIRCUIT REF. NO.	DESCRIPTION	RATING
C	1 CERAMIC	100 pF, NPO
C2	METAL FILM	0.1 uF / 63V
C3	METAL FILM	0.1 uF / 63V
C4	METAL FILM	0.22 uF / 63V
C5	METAL FILM	0.22 uF / 63V
C6	CERAMIC	0.1 uF / 50V STACK FILM
C7	METAL FILM	0.01 uF / 100V
C8	METAL FILM	0.047 uF / 63V
C10	ELECTROLYTIC	1 uF / 50V
C11	ELECTROLYTIC	1 uF / 50V
R1	CARBON FILM	100 K 5% 1/4 W
R2	CARBON FILM	47 K 5% 1/4 W
R3	CARBON FILM	470 K 5% 1/4 W
R4	CARBON FILM	470 K 5% 1/4 W
R5	CARBON FILM	220 K 5% 1/4 W
R6	METAL FILM	13.3 K 1% 1/4 W
R7	METAL FILM	430 ohm 1% 1/4 W
R8	CARBON FILM	470 K 5% 1/4 W
R9	CARBON FILM	470 K 5% 1/4 W
R10	CARBON FILM	470 K 5% 1/4 W
R11	CARBON FILM	470 K 5% 1/4 W
R12	METAL FILM	931 K 1% 1/4 W
R13	CARBON FILM	560 K 5% 1/4 W
R14	CARBON FILM	4.7 K 5% 1/4 W
R15	METAL FILM	9 M ohm 0.25% 1/2 W
R16	METAL FILM	900 K 0.25% 1/4 W
R17	METAL FILM	90 K 0.25% 1/4 W
R18	METAL FILM	9 K 0.25% 1/4 W

ELECTRICAL PARTS LIST OF LCR-9063

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CIRCUIT REF. NO.	DESCRIPTION	RATING
R19	METAL FILM	900 ohm 0.25% 1/4 W
R20	METAL FILM	100 Ohm 0.5% 1/4 w
R21	THERMISTER, PTC	2 K ohm 2W 500V
R22	METAL FILM	1 M 1% 1/4 W
R23	METAL FILM	100 K 1% 1/4 W
R24	METAL FILM	10 K 1% 1/4 W
R25	METAL FILM	1 K 1% 1/4 W
R26	METAL FILM	100 ohm 0.5% 1/4 W
R27	METAL FILM	51 ohm 0.5% 1/4 W
R28	CARBON FILM	1 K 5% 1/4 W
R29	METAL FILM	20 ohm 1% 1/4 W
R30	METAL FILM	100 K 1% 1/4 W
R31	CARBON FILM	220 K 5% 1/4 W
R32	METAL FILM	1.74 K 1% 1/4 W
R33	METAL FILM	10 K 0.25% 1/4 W
R34	METAL FILM	90 K 0.5% 1/4 W
R35	METAL FILM	10 K 1% 1/4 W
R36	METAL FILM	10 K 1% 1/4 W
R37	CARBON FILM	10 K 5% 1/4 W
R38	METAL FILM	110 K 1% 1/4 W
R39	CARBON FILM	1 M 5% 1/4 W
R40	CARBON FILM	270 K 5% 1/4 W
R41	METAL FILM	100 K 1% 1/4 W
R42	METAL FILM	27 K 1% 1/4 W
R43	CARBON FILM	1 K 5% 1/4 W

VARIABLE RESISTOR

VR1	METAL FILM 100 ohm	6 mm
VR2	METAL FILM 100 ohm	6 mm
VR3	METAL FILM 2.2k ohm	6 mm

INTEGRATE CIRCUITS

U1	A/D CONVERTER	7106
U2	DUAL OP AMP.	TL072
U3	DUAL OP AMP.	TL062
U4	DUAL OP AMP.	LM358
U5	ELECTRONIC SW.	MC14066
U6	NAND GATE	TC4093

ELECTRICAL PARTS LIST OF LCR-9063

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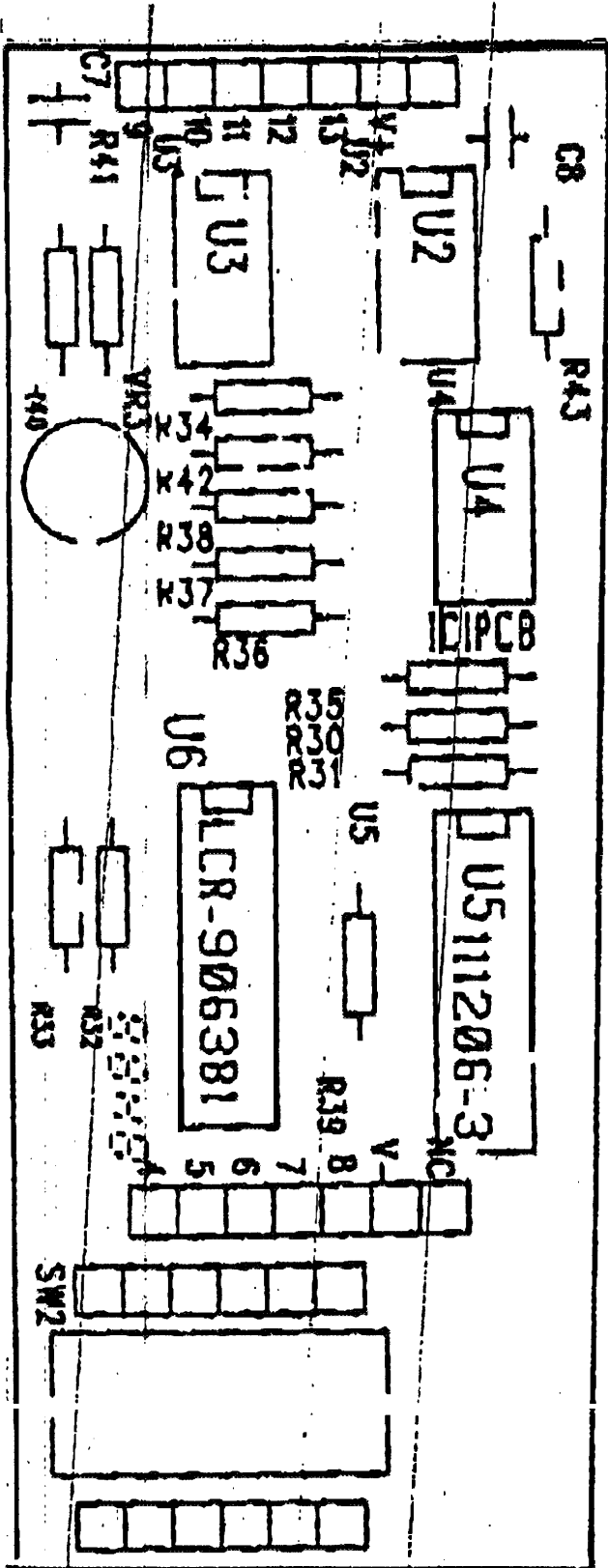
CIRCUIT REF. NO.	DESCRIPTION	RATING
	DIODES	
D2	DIODE	IN4001
D3	DIODE	IN4001
D4	DIODE	IN4001
D5	DIODE	IN4001
	LCD DISPLAY	
LCD	LCR9063 LCD DISPLAY	
	SWITCHES	
SW1	LCR-9063	POWER ON/OFF SWITCH
SW2	LCR-9063	R/LC SELECT SWITCH

- (1) **RESISTANCE RANGE ADJUSTMENT**
Due to the resistance measurement circuit are used the "ratio measurement principal". So it is not to make the calibration typically.
- (2) **L/C ADJUSTMENT**
Set the range to " 2 mH " position. Input one Standrad inductor its value near the 2 mH then adjust VR3 cooperate with VR1 until the display value same as the standard exactly.
- (3) Check the ranges of 20 mH, 200 mH, 2 H, 20 H to see if the values within the spec. accuracy.
- (4) Check the ranges of 2 nF, 20 nF, 200 nF, 2 uF, 20 uF to see if the values within the spec. accuracy.
- (5) Set the range to " 200 uF " position. Input one standrad capacitor its value near the 200 uF then adjust VR2 until the display value same as the standard exactly.

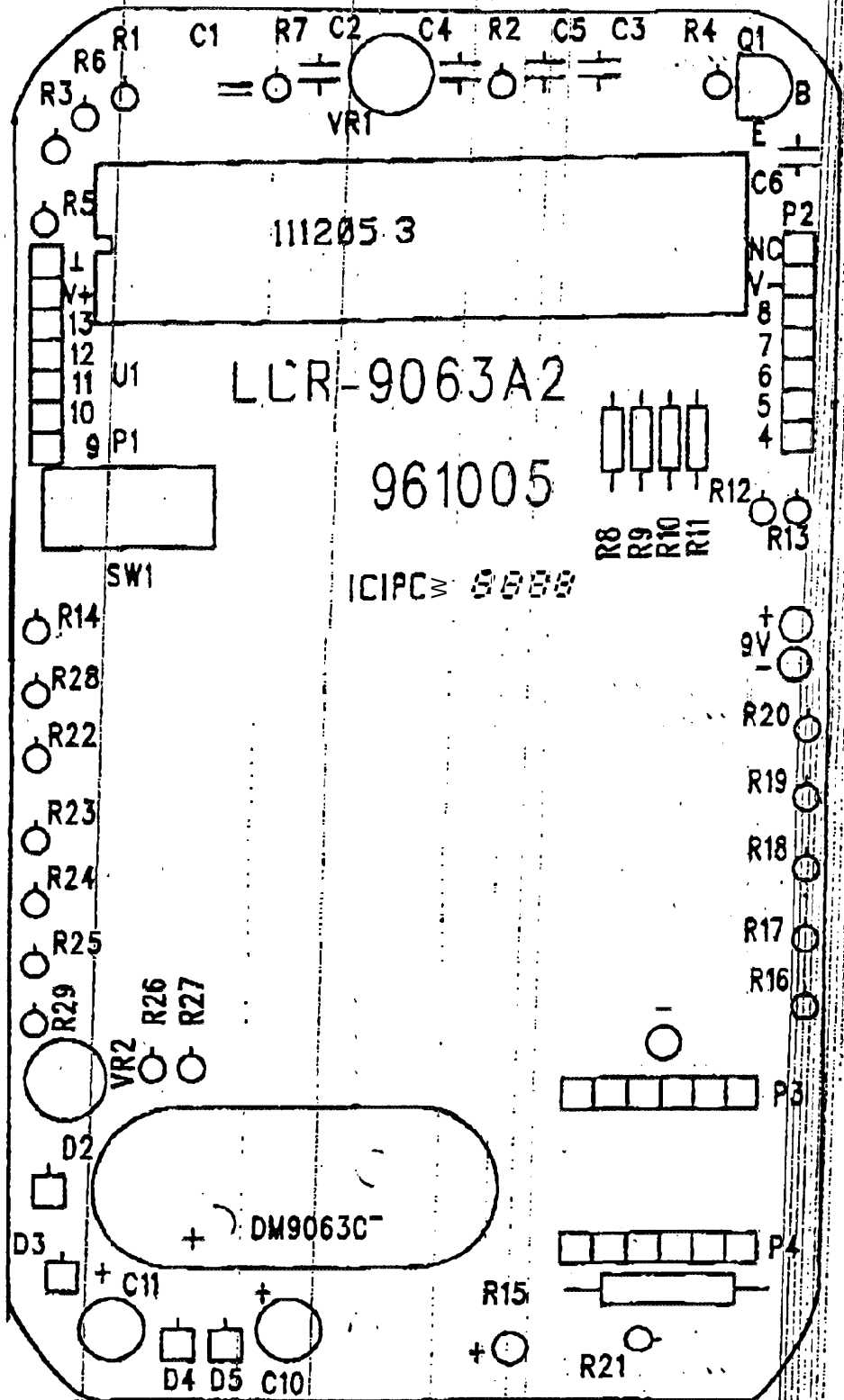
TROUBLE SHOOTING STRATEGY OP LCR-9063

- (1) **LCD NO DISPLAY (after power on) :**
CHECK U1, LCD, C1, R1, R2, C2, C4, C5
- (2) **DECIMAL POINT HAS PROBLEM :**
CHECK R8, R9, R10, LCD, DECIMAL POINT SWITCH
- (3) **LOW BATTERY INDICATOR HAS PROBLEM :**
CHECK Q1, R11, R12, R13, C6, LCD
- (4) **" ohm " FUNCTION CAN NOT MAKE MEASUREMENT :**
CHECK R14 to R42, SW2, RANGE SWITCH
- (5) **" C " FUNCTION CAN NOT MAKE MEASUREMENT**
CHECK R22 to R42, C7, C8, VR2, U2 to U6, RANGE SWITCH
- (6) **" L " FUNCTION CAN NOT MAKE MEASUREMENT**
CHECK R24 to R42, C7, C8, VR2, U2 to U6, RANGE SWITCH

LCR-9063B



LCR-9063A



LCR-9063A2

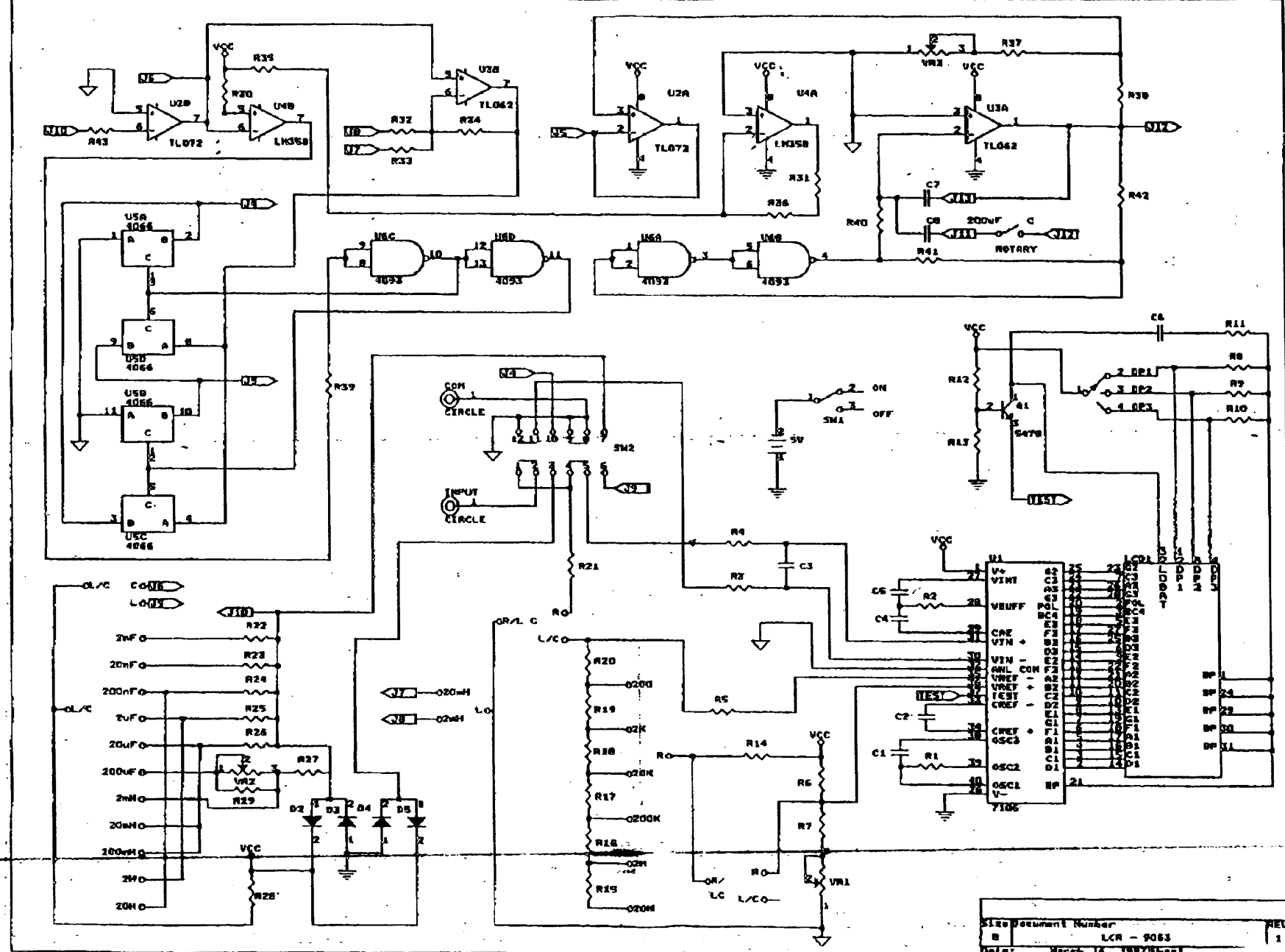
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DM9063C

CIRCUIT DIAGRAM



Size	Document Number	REV
B	LCR - 9063	1
Date		March 14, 1997/Rev 1