



MOTOROLA INC.

Communications
Sector

DTMF Decoder

Model HLN3146A

1. Description

The HLN3146A DTMF decoder board Kit must be used with an HLN9313A Logic Board.

2. Unique Items

HLN9376A	DTMF decoder board
HKN9362A	Cable and connector assembly
HLN9459A	Hardware

3. Installation

(1) Program the radio codeplug for DTMF decode on the RADIO WIDE screen of the Radio Service Software by adding DTMF as an internal accessory. Use the CHANGE/VIEW Signal Screens to configure the decoder as needed.

(2) Following the Radio Disassembly and Assembly procedure as described in your Motorola Service Manual remove the Control Head and the Logic Board from the Radio.

(3) Solder the six wires of the HKN9362A to the feed-through holes provided on the Logic Board as follows (see diagram).

Wire number/color	Logic Board hole/pad
1-----Red	+5V
2-----Orange	ACC8
3-----Yellow	ACC12
4-----Green	ACC6
5-----Black	Gnd
6-----Blue	DRXA

(4) Reinstall the Logic Board in the chassis. Again it is very important to follow the procedure described in your Service Manual for Disassembly and Assembly of your radio.

(5) Route the interface cable wire bundle along the edge of the 14 pin connector (P6) and through the chassis connector opening in the front. Install the chassis covers and screws.

(6) Remove the four Torx pan head screws, securing the Display Board, from the control head. Resecure the Display Board using the four slotted stand-off screws supplied.

(7) Install the DTMF decoder board over the stand-offs with connector (J4101) facing up for accessibility. Secure the board using the four M3x6mm machine Torx screws provided (Do not use the screws removed from display board).

(8) Connect the interface cable to the DTMF decoder board. Reconnect the two control cables to the logic board and the two speaker wires to the speaker.

(9) Finally secure the control head to the chassis.

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68P80900Z88-A



MOTOROLA INC.

MANUAL REVISION

**for
Manuals No. 68P80900Z88-A
DTMF DECODER MODEL HLN3146A
Instruction Manual**

This revision outlines changes that have occurred since the printing of your manual. Use this information to supplement your manual. Installation of these changes in earlier equipment is not necessary except as recommended in Motorola Service and Repair Notes (SRN's).

REVISION DETAILS

In Step 6 of the Installation procedure add one nylon washer (P/N 0480149A01) to each of the four slotted stand-off screws supplied before they are installed in the Display Board to prevent possible shorting of circuit traces on the Display Board.

900 MHz ONLY !

GENERAL

This revision outlines changes that have occurred since the printing of your instruction leaflet. Use this information to update your leaflet.

INSTRUCTION LEAFLET AFFECTED

68-80900Z88-O DTMF Decoder Model HLN3146A

REVISION DETAILS

Steps 1, 2 and 4 through 9 of the Installation paragraph remain unchanged. Step 3 now reads as follows:

(3) Solder the six wires of HKN9362A to the feedthrough holes provided on the Logic Board as follows:

Wire Number/Color	Logic Board Hole/Pad
1 ----- Red	+ 5V
2 ----- Orange	ACC8
3 ----- Yellow	ACC12
4 ----- Green	ACC6
5 ----- Black	Gnd
6 ----- Blue	R543 (see Figure 1)

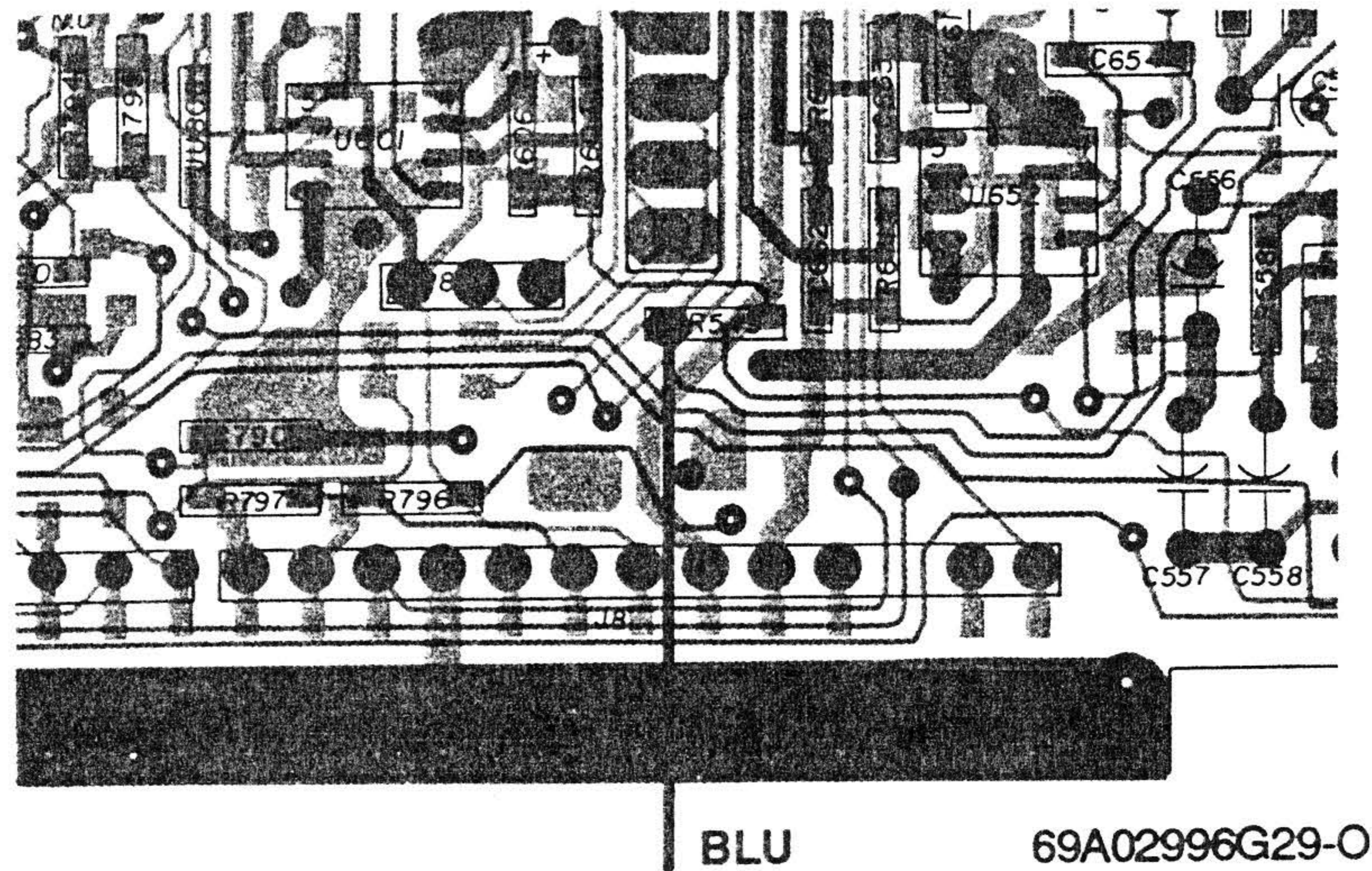
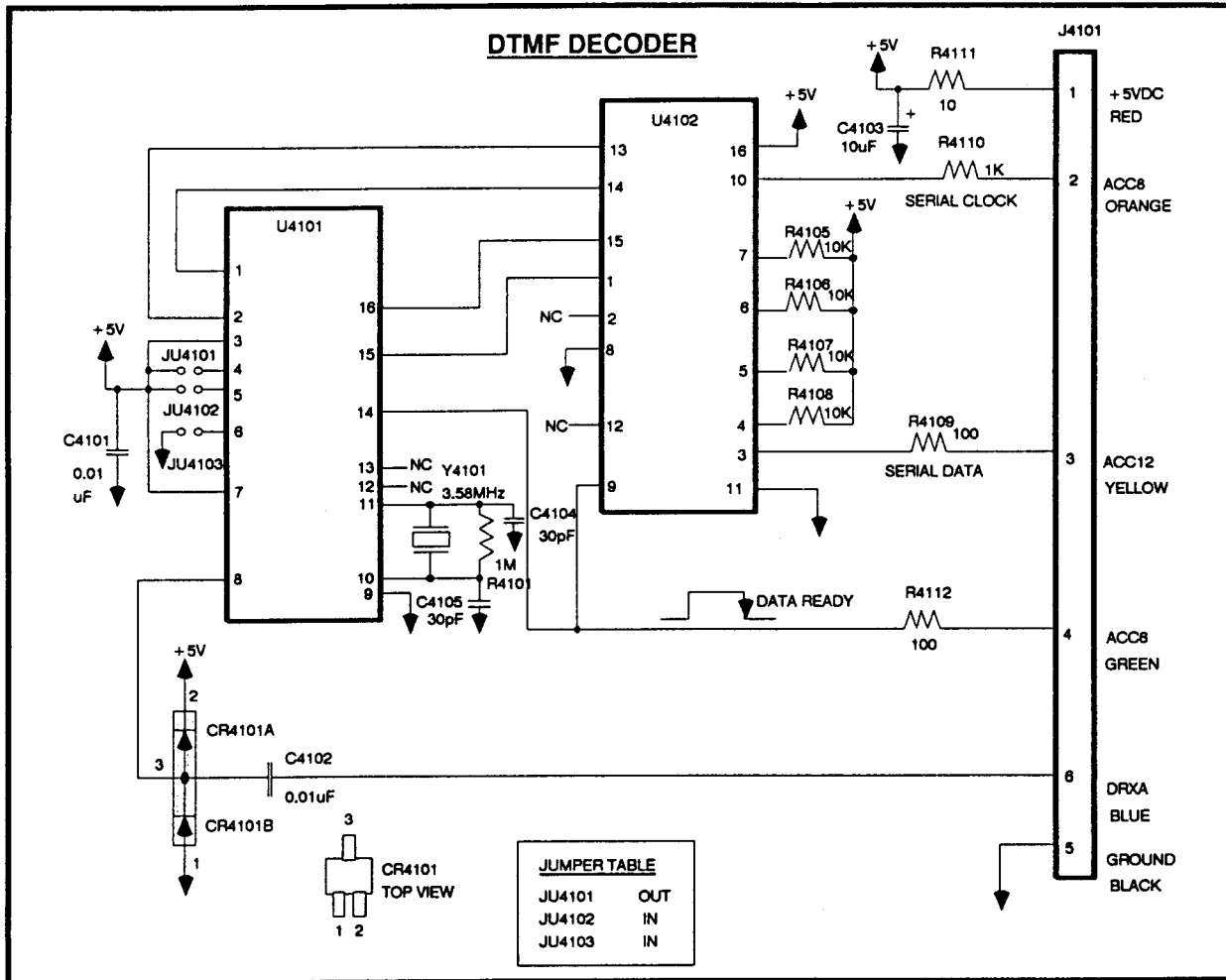


Figure 1. Logic Board Detail



HLN9376A DTMF Decoder Circuit Board

REFERENCE NUMBER	MOTOROLA PART NO.	DESCRIPTION
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Capacitor, chip, 5%, 50V unless otherwise indicated

C4101	21-13741B45	.01 uF
C4102	21-13741B45	.01 uF
C4103	23-62998B73	tantalum 10 uF 20% 16V
C4104	21-13740B36	30 pF
C4105	21-13740B36	30 pF

Diode (see note)

CR4101	48-84336R03	silicon, type MMBD7000
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Connector, jack

J4101	28-80128M03	6-pin header
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Jumper

JU4102	06-11077A01	chip type
JU4103	06-11077A01	chip type

Resistors, chip, 5%, 1/8 watt, unless otherwise indicated

R4101	06-11077B47	1 meg
R4105	06-11077A98	10k
R4106	06-11077A98	10k
R4107	06-11077A98	10k
R4108	06-11077A98	10k
R4109	06-11077A50	100

R4110	06-11077A74	1k
R4111	06-11077A26	10
R4112	06-11077A50	100

Integrated Circuit (see note)

U4101	51-80914W01	DTMF decoder
U4102	51-84704M47	8 bit shift register

Resonator

Y4101	48-80915W01	ceramic, 3.58 MHz
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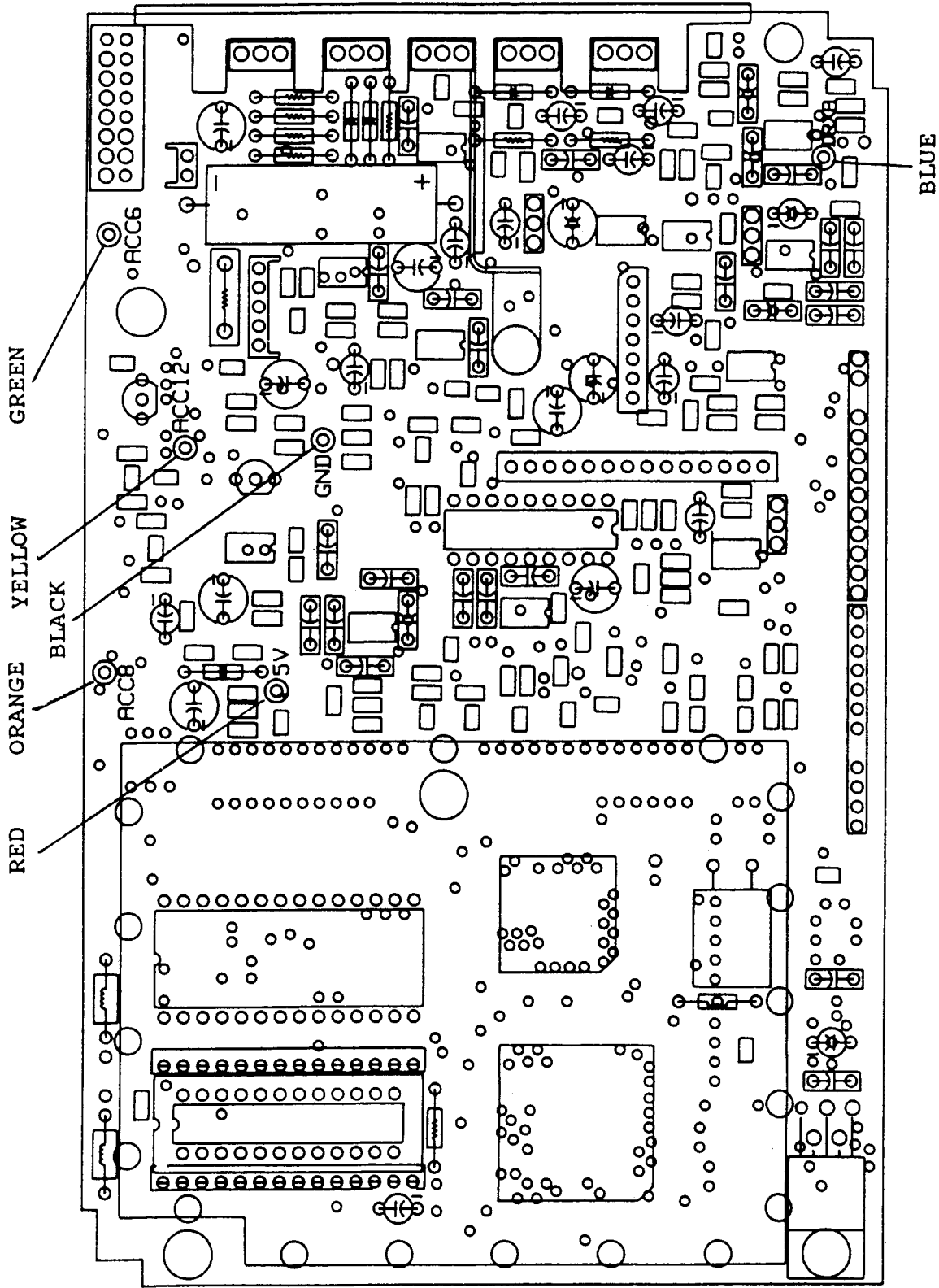
Note: For optimum performance, diodes, transistors and integrated circuits must be ordered by Motorola part numbers.

HLN9459A DTMF Hardware

QUANTITY	MOTOROLA PART NO.	DESCRIPTION
4	03-10908A18	machine screw M3x.5x6
4	43-80905W01	threaded spacer

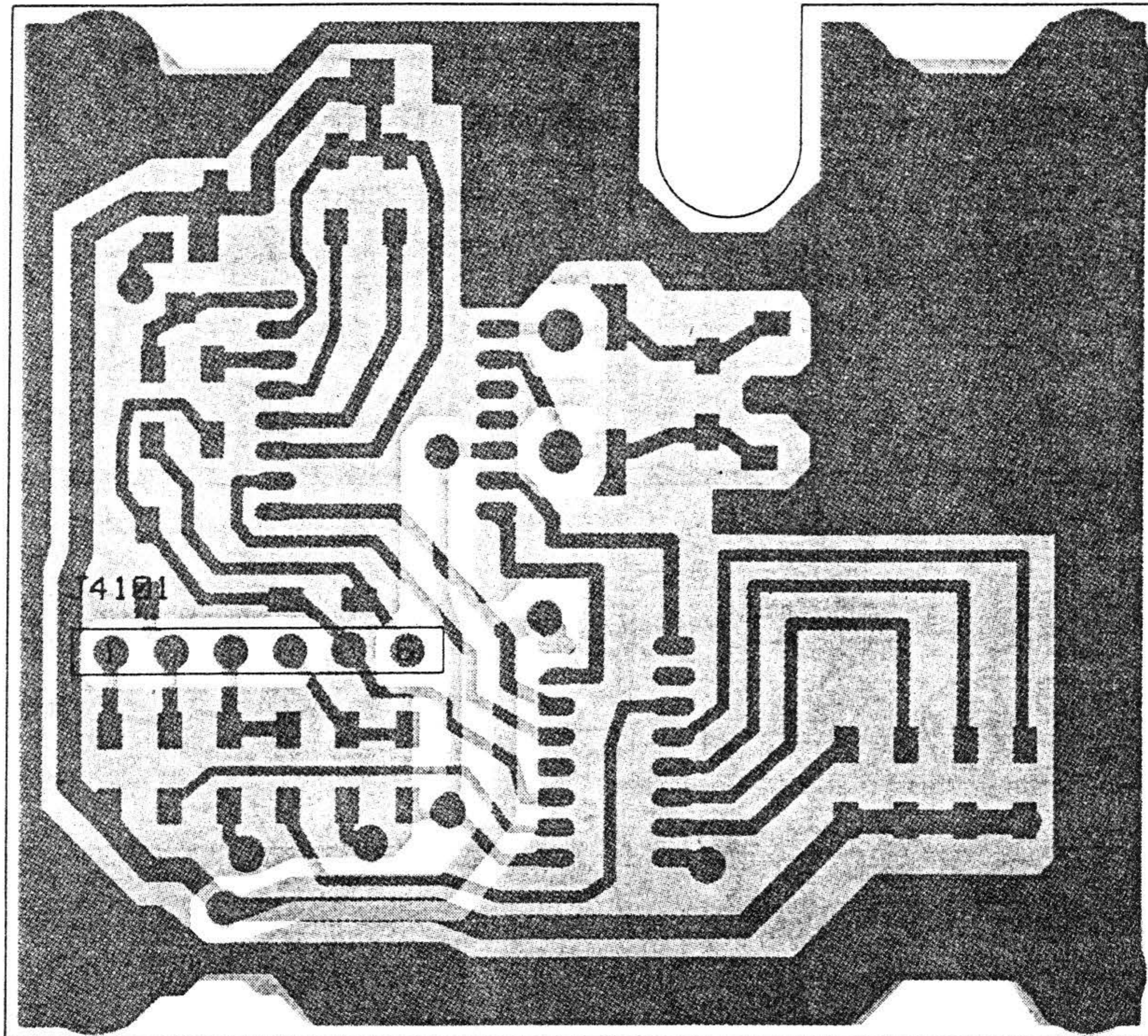
HKN9362A DTMF Interface Cable

QUANTITY	MOTOROLA PART NO.	DESCRIPTION
6	09-80133M01	receptacle, connector
1	15-80075M03	housing, connector



COMPONENT SIDE

COMPONENT SIDE



SOLDER SIDE

