OKI Semiconductor

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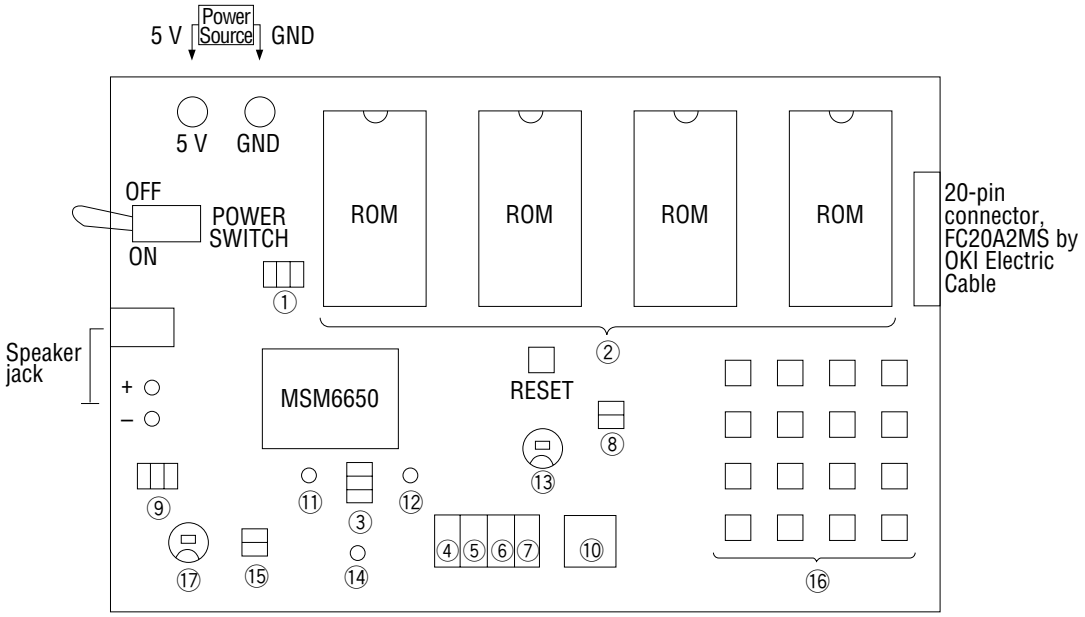
MSM6650 EVA BOARD

MSM6650 Evaluation Board

BOARD DESIGN



BOARD FEATURES

① ROM capacity switching jumpers
1M-bit and 4M-bit CMOS type EPROMs can be used. For a 1M-bit EPROM, set the three jumpers to the lower pins. For a 4M-bit EPROM, set them to the upper pins.

② EPROM socket
Insert EPROMs fabricated by voice analysis, sequentially from the left.

③, ④ XT/$\overline{\text{CR}}$ selector switch and jumpers
This switch selects RC oscillation or crystal oscillation. To operate the IC with RC oscillation, turn the DIP switch to the lower side and set the two jumpers in ③ to the upper side. To operate the IC with crystal oscillation, turn the DIP switch to the upper side and set the two jumpers in ③ to the lower side.

⑤ Standalone/microcontroller selector switch
This switch selects the operation by a standalone mode or by a microcontroller interface mode. For a standalone mode, turn the DIP switch to the lower side. For a microcontroller, turn the DIP switch to the upper side. When a microcontroller is connected, all necessary signals are connected to the 20-pin connector. The connector pins are arranged as shown below. If a standalone computer is used, turn the SIRI switch ⑥ to the lower side.

Connector pin No.	Signal	Connector pin No.	Signal
1	DV_{DD}	11	I5
2	DV_{DD}	12	I6
3	DV_{DD}	13	$\overline{CH}$
4	NC	14	$\overline{RESET}$
5	NC	15	$\overline{ST}$
6	I0	16	$\overline{CMD}$
7	I1	17	$\overline{BUSY}$/NAR
8	I2	18	GND
9	I3	19	GND
10	I4	20	GND

⑥ Serial input interface/parallel input interface selector switch
When a microcontroller is used, this switch selects the serial inputs of addresses and command data or the parallel inputs of them. For the serial inputs, turn the switch to the upper side. For the parallel inputs, turn the switch to the lower side.

⑦ Standby selector switch
When the switch is turned to the lower side and the board is not activated toward the next phrase within 0.2 second after the voice is terminated, the board enters the standby state. (In the standby state, all the functions of the IC are stopped.)

⑧ $\overline{BUSY}$/NAR switching jumper
When the jumper is turned to the upper side, the $\overline{BUSY}$ signal is output from the 20-pin connector. When the jumper is turned to the lower side, the NAR signal is output from the 20-pin connector. When a standalone computer is used, set the jumper to the upper side.

⑨ AMP/TR switching jumpers
To amplify an analog signal which is output from AOUT, with transistors, set the two jumpers to the left side. To amplify it with an amplifier, turn the two jumpers to the right.

⑩ Address specification switch
When a standalone computer is used, select a word to be reproduced by this HEX switch. 0 to 7 in this HEX switch correspond to A0 to A2 in binary data. When a microcontroller is used, set the HEX switch to 0.

⑪ LPF output pin
This pin outputs a voice signal passed through the low path filter. When the DA converter is selected by option, this pin works as the DA converter pin.

⑫ Frequency check pin (OSC3)
This pin monitors and checks the oscillation frequency.

⑬ Variable resistor (VR2) for adjusting the frequency of RC oscillation.
This variable resistor can change the frequency of RC oscillation. When the resistor is turned to the right, the frequency goes low. When the resistor is turned to the left, the frequency goes high. In this case, the frequency can be monitored by the OSC3.

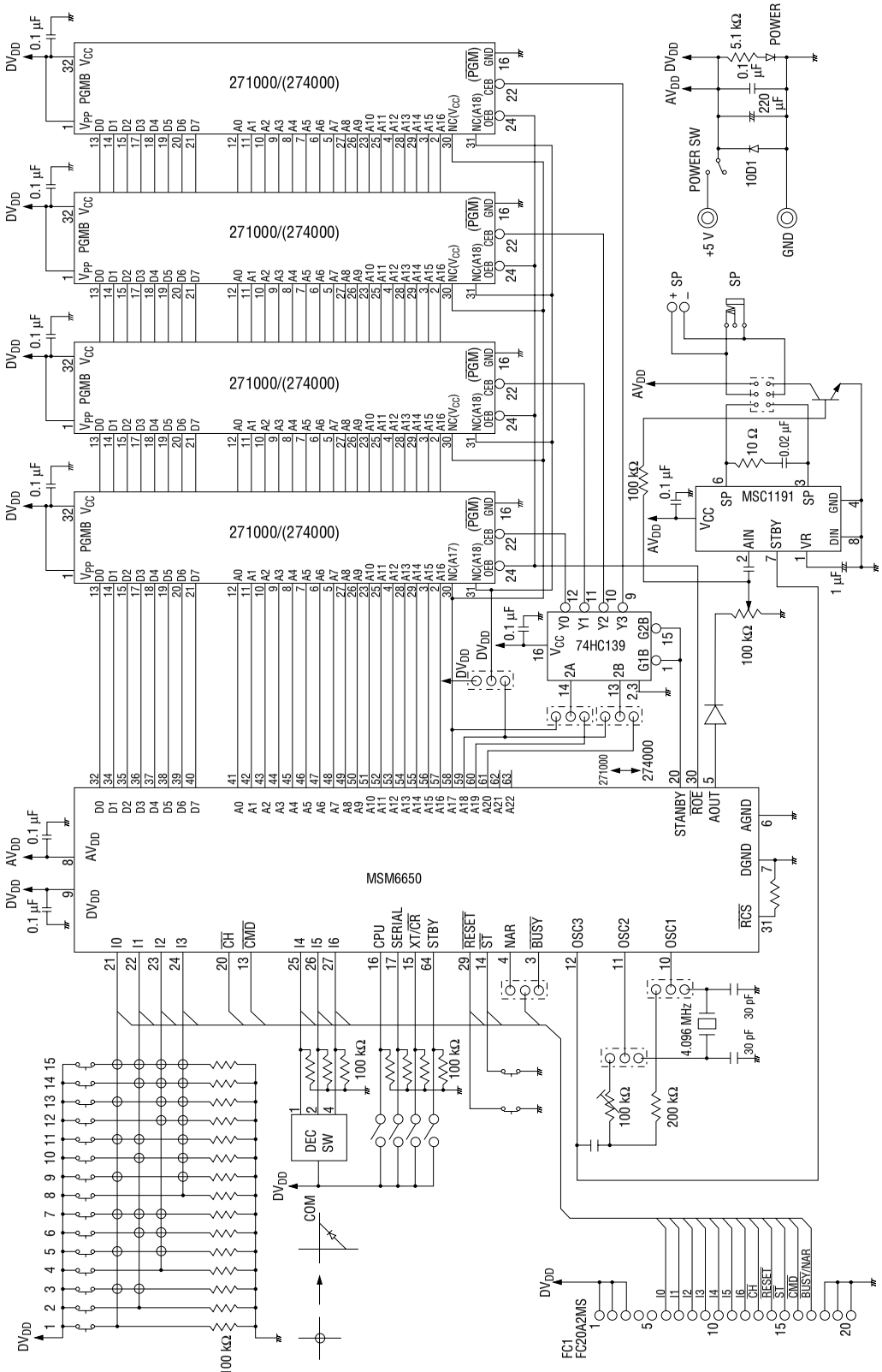
⑭ GND pin

⑮ OSC/GND switching jumper
Set the jumper to the up side.

⑯ Complete SW input interface
When a standalone mode is used, press the 1 to F buttons to play voices corresponding to 1 to F of SW3 to SW0. Press the lower left ST button (random voice playback button) to play voices that are randomly selected from 31 types of phrases corresponding to A0 and SW3 to SW0. But, when the ST switch is pressed while turning the power ON or during the input of $\overline{\text{RESET}}$, firstly voice playback is made starting from the 1st phrase and beyond secondly it is made randomly.

⑰ Speaker amplifier volume (VR1 shared by AMP and TR)
Turn the volume switch to the right to increase the sound volume. Turn the volume switch to the left to reduce the sound volume.

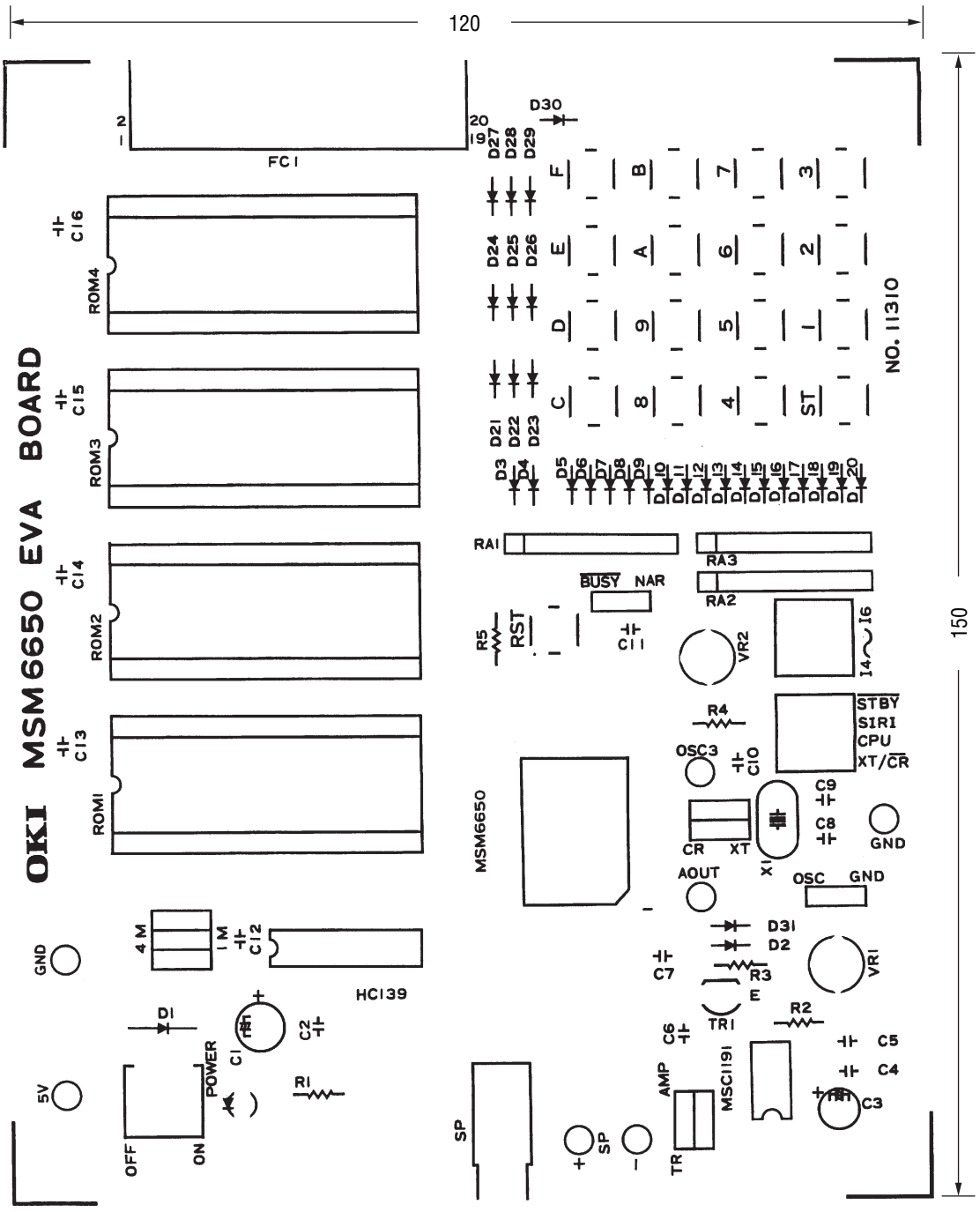
CIRCUIT DIAGRAM



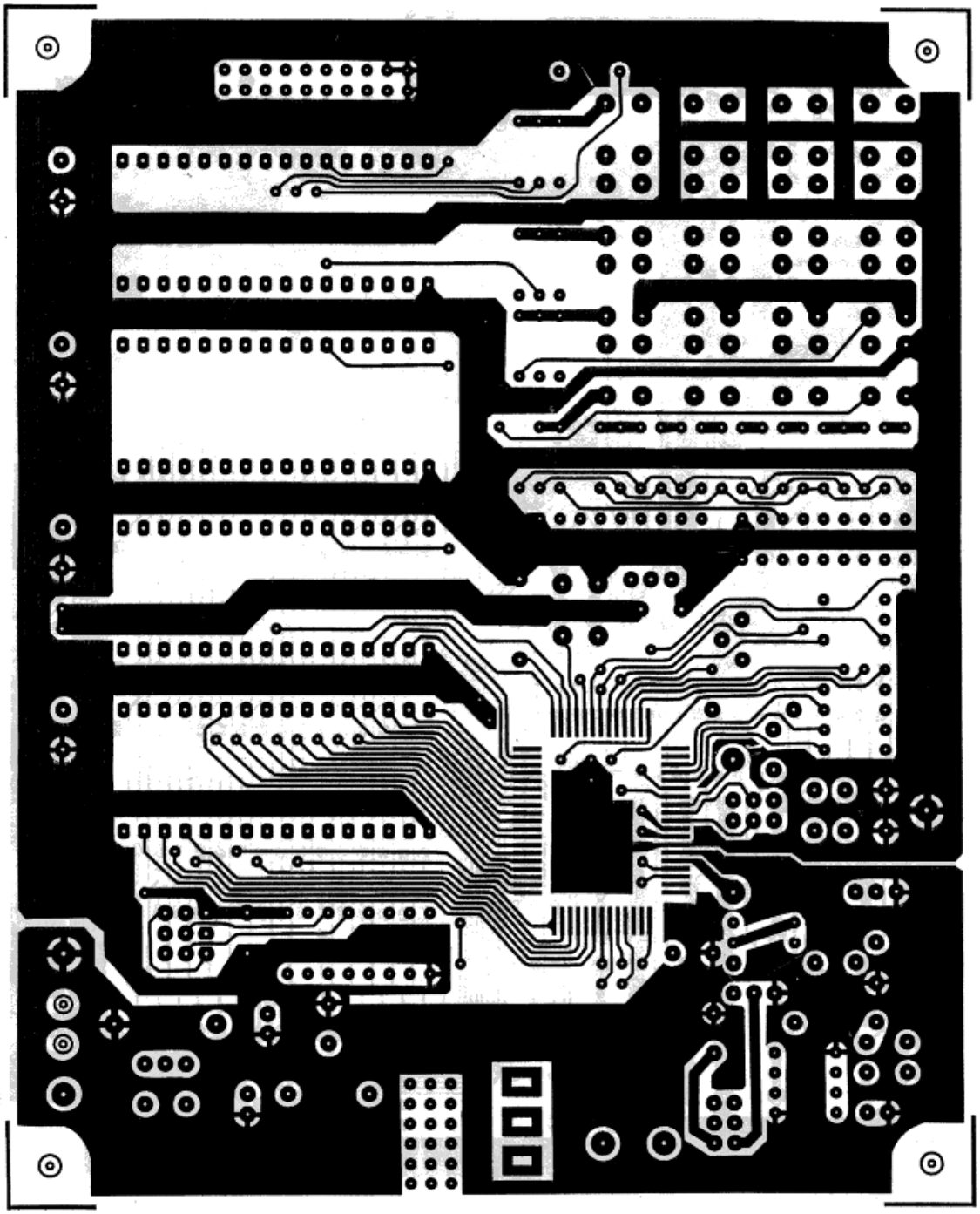
PATTERN LAYOUT

Silk Screen

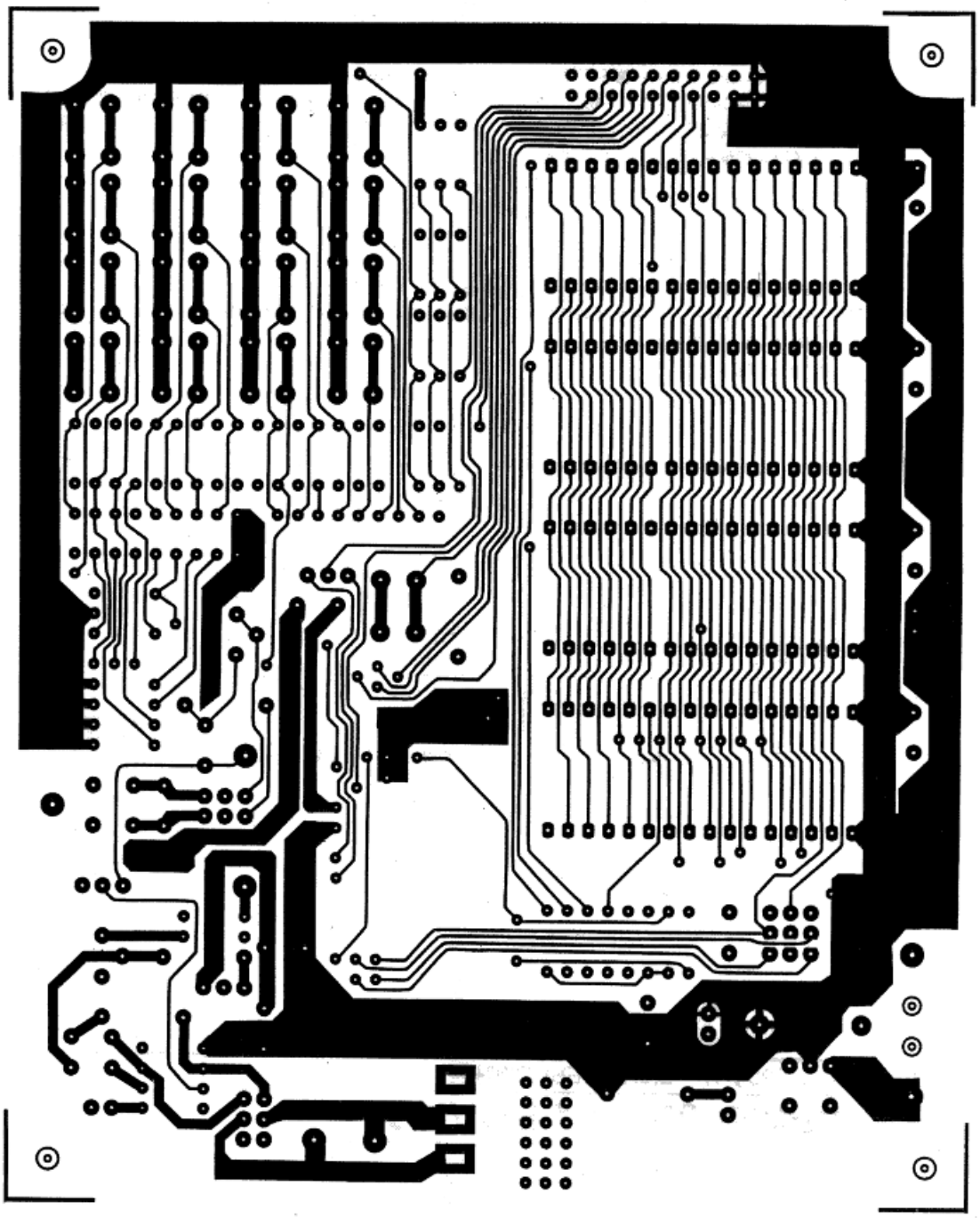
(Unit: mm)



Mounting Side



Solder Side



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