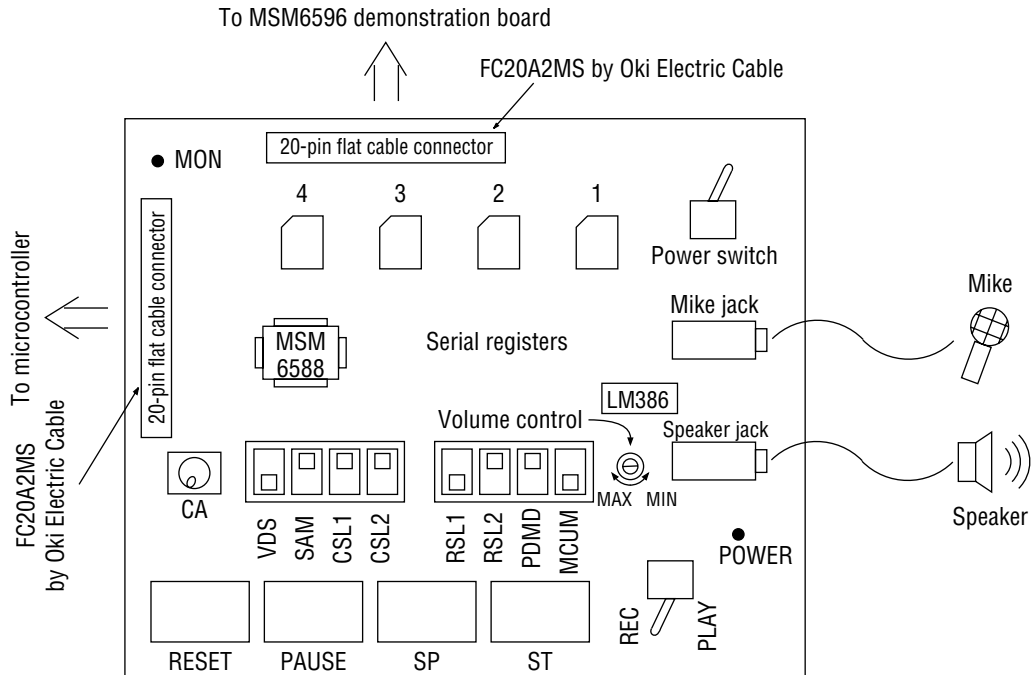


MSM6588 DEMO BOARD**MSM6588 Demonstration Board****BOARD DESIGN****CONDITIONS SETTING PROCEDURE**

Set the recording conditions with the two DIP switches and one rotary switch. After setting the switches, recording for 85 seconds can be done using the two serial registers of 1M-bit at 8 kHz sampling (3-bit ADPCM 8 kHz sampling).

- Set MCUM of the DIP switch to OFF.
The MSM6588 enters the stand-alone mode. (When the MCUM is set to ON the MSM6588 enters the microcontroller interface mode.)
- Set RSL1 and RSL2 of the DIP switches as shown in the table below depending on the number of serial registers mounted.

RSL2	OFF		ON	
	OFF	ON	OFF	ON
RSL1	OFF	ON	OFF	ON
Number of serial registers	256K or 512K-bit 1pc.	1M-bit 1pc.	1M-bit 2pcs.	1M-bit 4pcs.

3. Specify the control mode and channel number for recording by CSL1 and CSL2 of the DIP switch.

CSL2	OFF		ON	
CSL1	OFF	ON	OFF	ON
Control mode	Fixed mode			Flex mode
Number of channels	8-word	4-word	2-word	8-word

Fixed mode:

The recording time of each channel is the time equivalent of the memory capacity equally divided by the memory capacity of the external serial registers and the number of channels.

The recording of each channel can be obtained from the following equations.

$$\text{Recording time} = \frac{1.024 \times 1024 \text{ (K bit)} \times \text{Number of serial registers}}{\text{Sampling frequency (kHz)} \times 3 \text{ (bit)} \times \text{Number of channels}} \text{ (sec)}$$

For example, the recording time for each channel with two serial registers on two channels at the sampling frequency of 8 kHz (RSL1=OFF, RSL2=ON, CSL1=OFF, CSL2=ON and SAM=ON) is as shown below.

$$\text{Recording time} = \frac{1.024 \times 1024 \text{ (K bit)} \times 2}{8 \text{ (kHz)} \times 3 \times 2} \approx 44 \text{ (sec)}$$

Flex mode:

The recording time of each channel becomes available within the range of the memory capacitor for the external serial registers and is recorded to ch0, ch1, and ch7.

4. Set the rotary switch (CA) to the channel to be recorded.

CA	Fixed Mode			Flex Mode
	8-word	4-word	2-word	8-word
0	ch0	ch0	ch0	ch0
1	ch1			ch1
2	ch2	ch2		
3	ch3	ch3		
4	ch4	ch2	ch1	ch4
5	ch5			ch5
6	ch6	ch3		ch6
7	ch7			ch7

5. Specify the sampling frequency at SAM of the DIP switch.

SAM	OFF	ON
Sampling frequency	$\frac{f_{osc}}{768}$	$\frac{f_{osc}}{512}$
f_{smp}	(5.3 kHz)	(8.0 kHz)

The frequencies within the parentheses are at the original oscillation $f_{OSC}=4.096$ MHz.

6. Set the PDMD of the DIP switch to ON.

OFF: The MSM6588 enters the power-down state except recording and playback.

ON: The MSM6588 always enters the stand-by state. The time lag up to starting the playback decreases after input.

7. Select whether or not the voice is activated by VDS with the DIP switch.

OFF: Ordinary mode, the voice is not activated.

ON: The voice is activated.

Note: When the activation of the voice is required, use the DC stabilized power supply without using the battery driving power. In the case of the battery, the power fluctuation of a few mV in starting the recording is amplified and results in determining that there is sound.

RECORDING PROCEDURE

1. Turn the toggle switch on the upper right of the demonstration board to ON to engage power. The LED on the lower left of the demonstration board lights.
2. Set the conditions as specified in the Conditions Setting Procedure section.
3. Set the toggle switch on the lower right of the demonstration board to REC to select the recording mode.
4. Press the ST button and record the voice via the mike. During recording, the LED (MON) on the demonstration board lights.
5. When the voice is recorded to the last of the channel memory, the recording automatically finishes. To stop recording halfway through, press the SP button.

PLAYBACK PROCEDURE

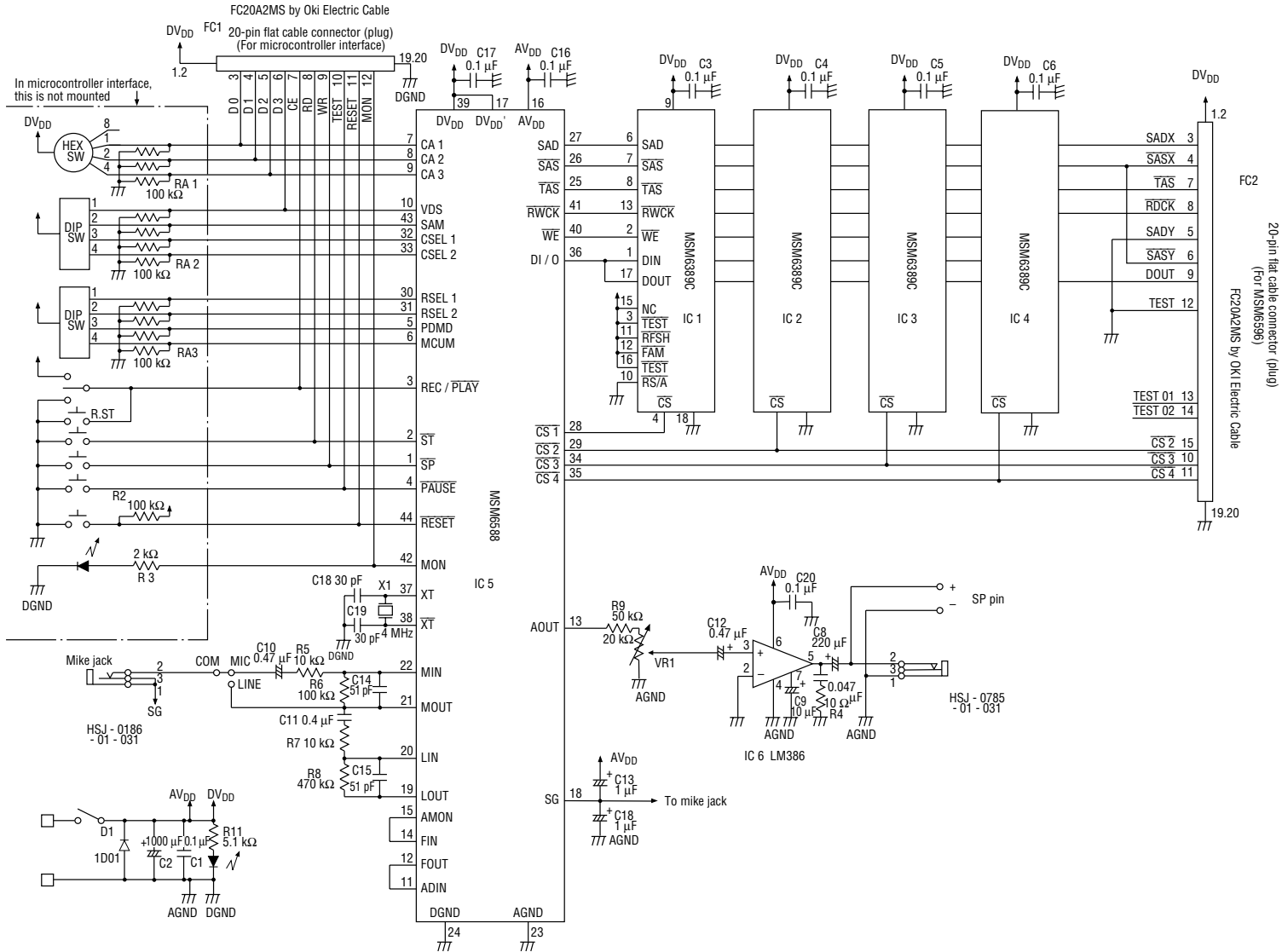
1. Set the toggle switch on the lower right of the demonstration board to PLAY to select the playback mode.
2. Press the ST button to start the playback. During the playback, the LED (MON) comes on.
3. When the playback is complete, the recording is automatically terminated. To stop the playback halfway through, press the SP button again.
4. Use the volume control to adjust the playback volume.

PAUSE PROCEDURE OF RECORD/PLAYBACK

1. When the PAUSE button is pressed during record/playback, the record/playback pauses.
2. Press the ST button again, and the playback starts again.

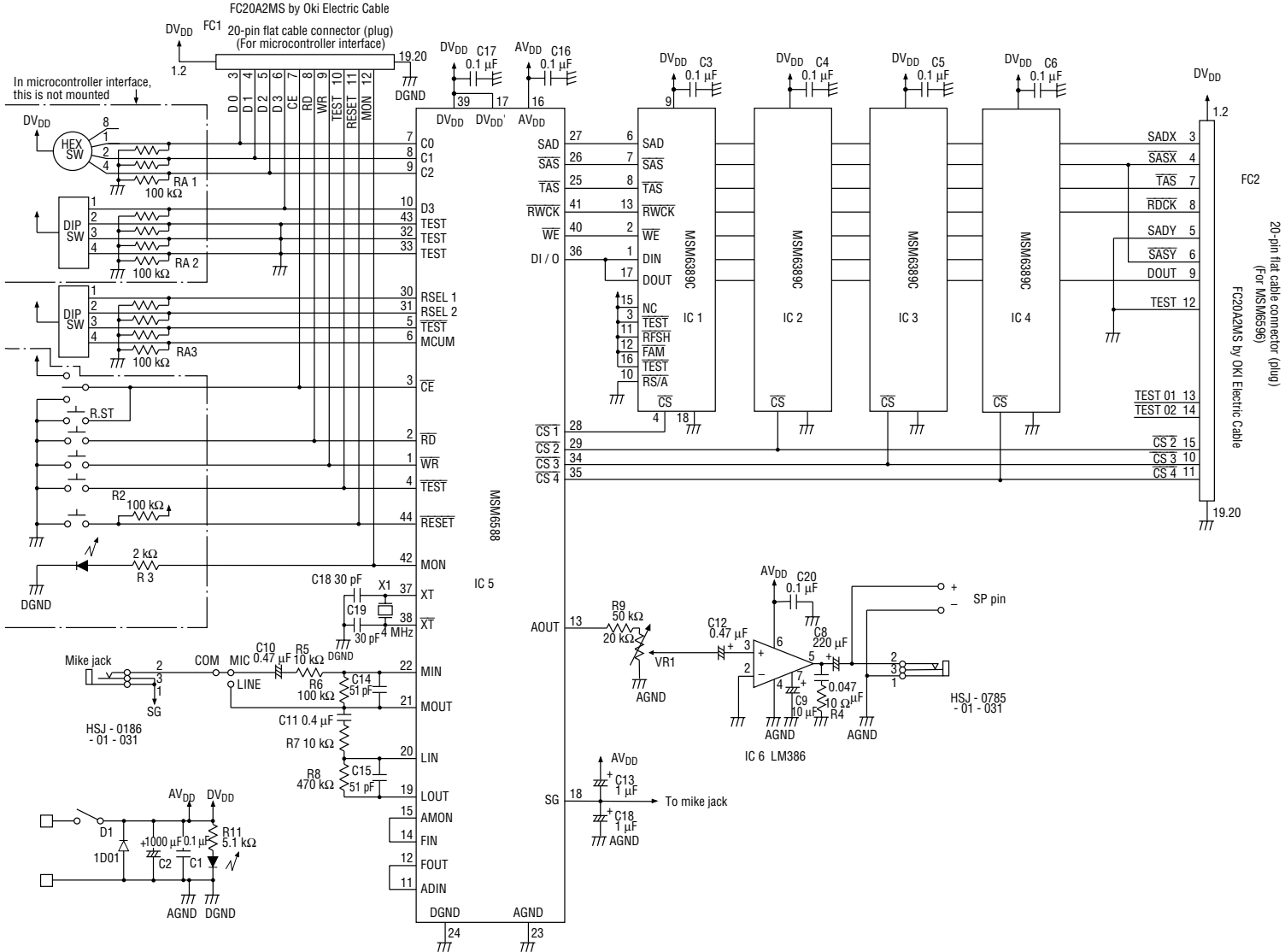
CIRCUIT DIAGRAMS

Stand-alone Type

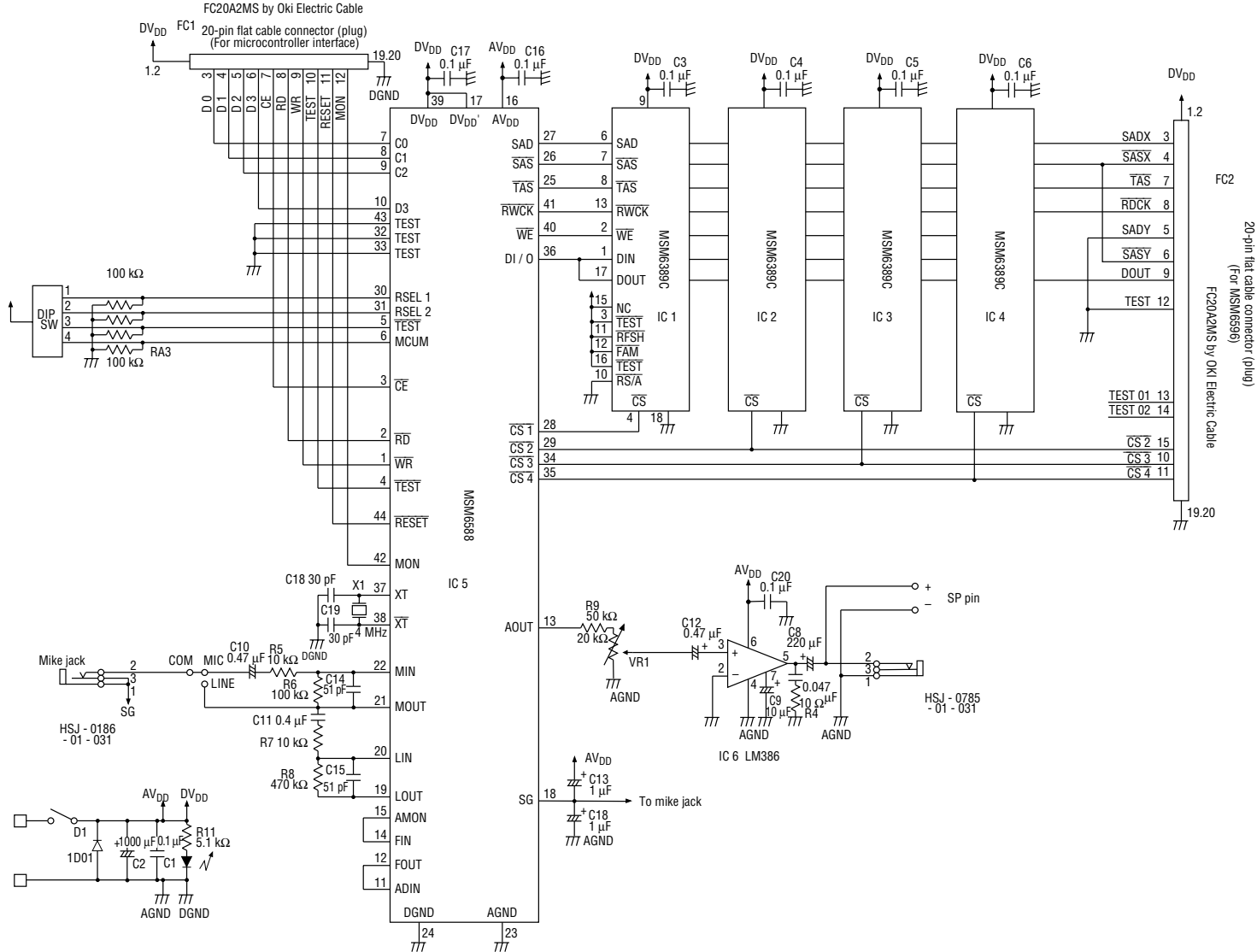


Microcontroller Interface Mode

Change method for microcontroller interface mode



Note: 10-pin (VDS), 43-pin (SAM), 32-pin(CSEL1), and 33-pin (CSEL2) should be grounded.



Microcontroller Type

OKI Semiconductor

MSM6588 DEMO BOARD

SETTING PROCEDURE OF CONDITIONS (Microcontroller Type)

Set the recording conditions by one DIP switch.

Set the RSL1 and RSL2 of DIP switch as listed below according to the number of serial registers to be mounted.

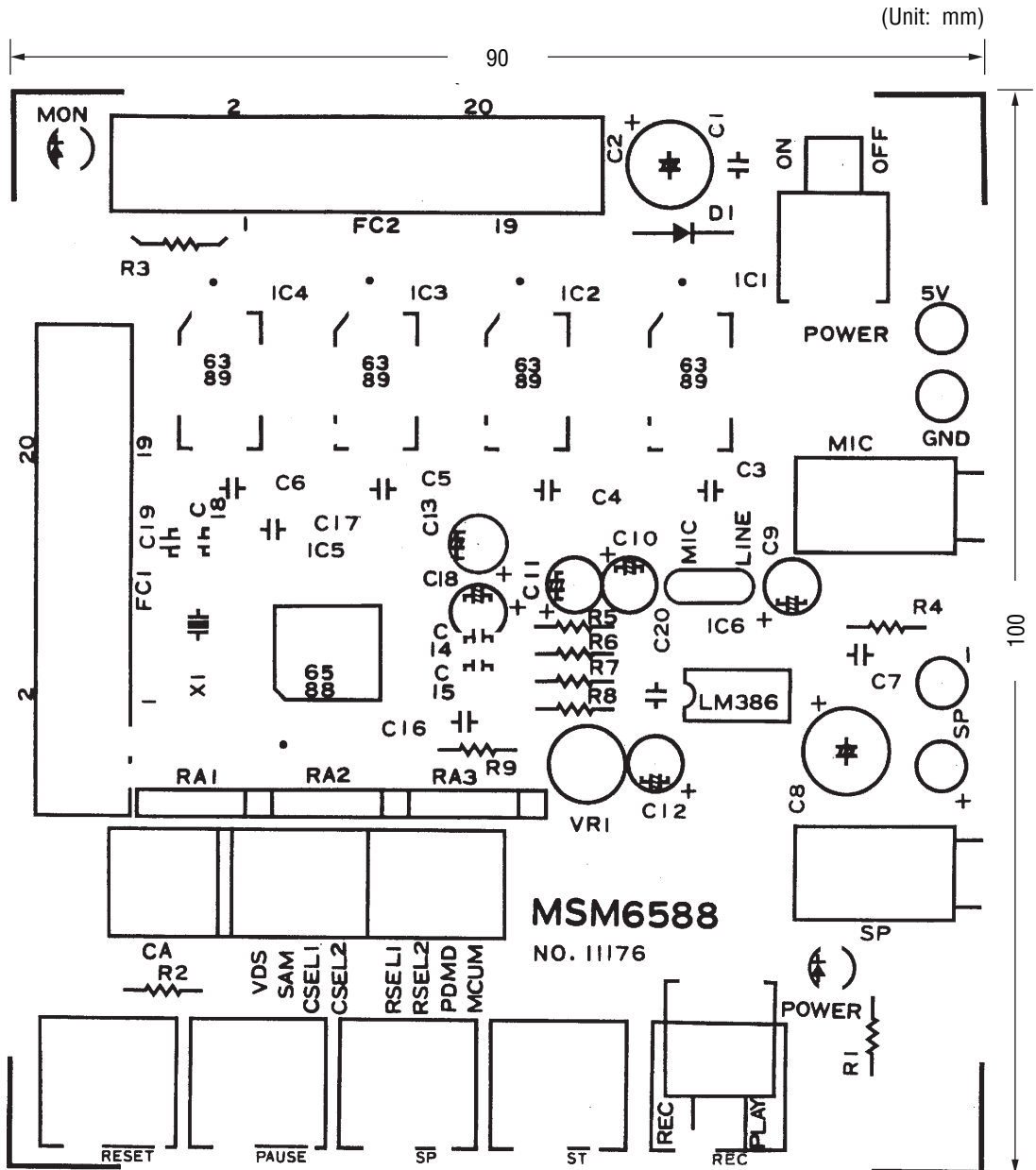
RSL2	OFF		ON	
RSL1	OFF	ON	OFF	ON
Number of Serial Registers	256Kbits or 512Kbits 1 piece	1Mbits 2 pieces	1Mbits 3 pieces	1Mbits 4 pieces

Set the PDMD of DIP switch to ON side.

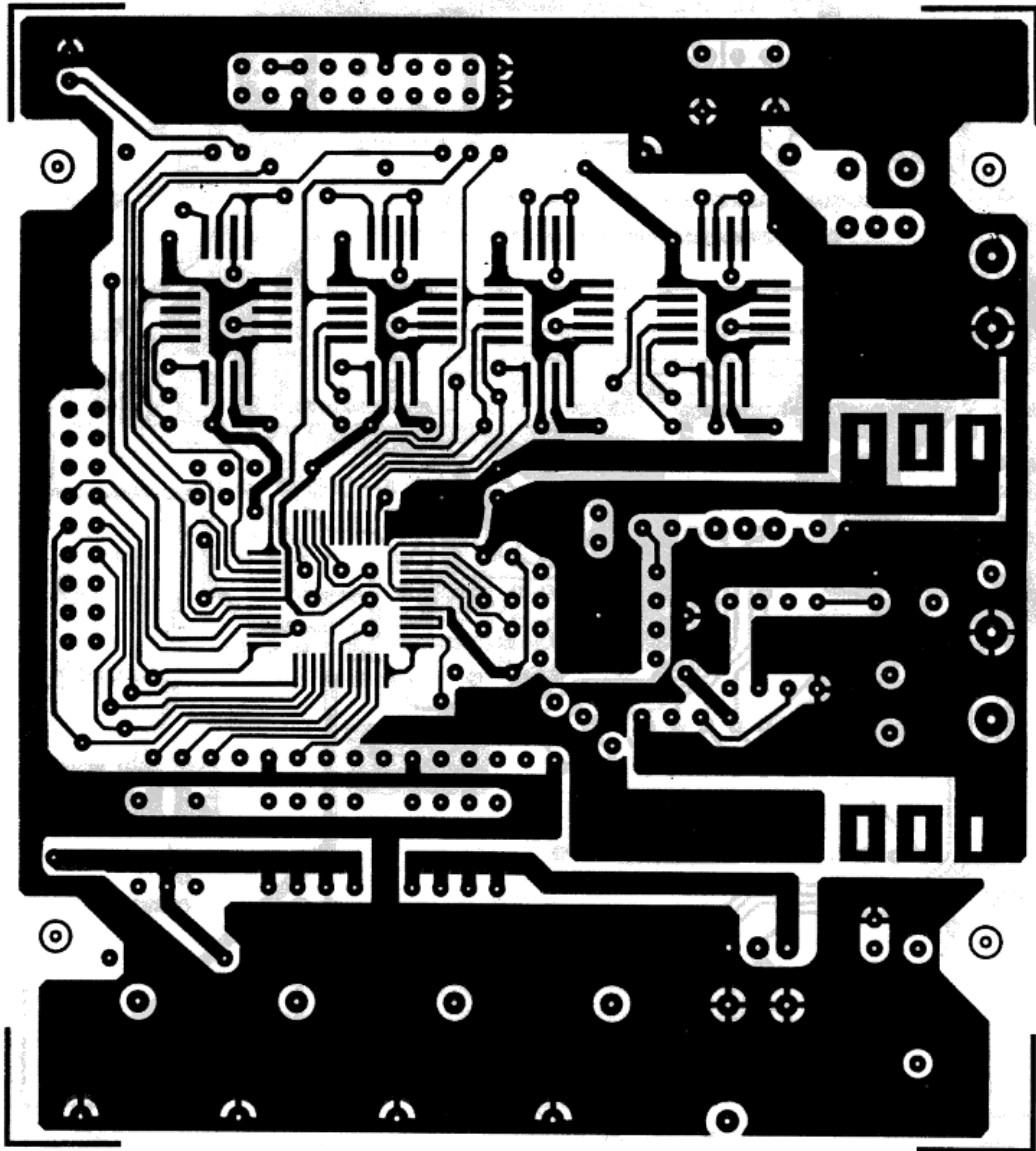
Set the MCUM of DIP switch to ON side.

PATTERN LAYOUT

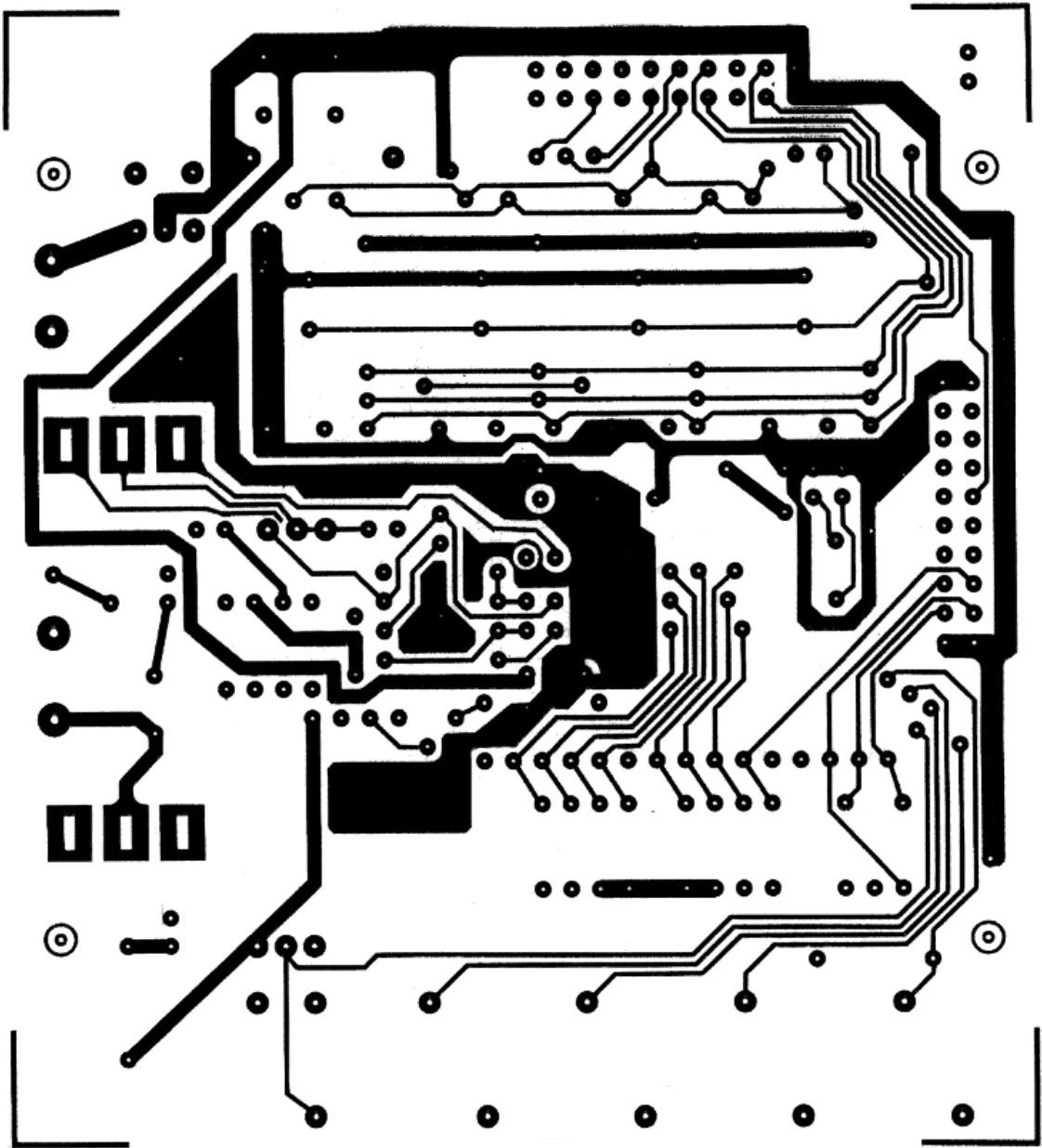
Silk Screen



Mounting Side



Solder Side



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