



**Replacing SM5964, SM5964A, SM8954A, SM8958A, SM89516A,  
SM8952A with SM5964B, SM8954B, SM8958B, SM89516B, SM8952B**  
**Application Note**

一、 **Applicable Products:** SM5964B, SM8954B, SM8958B, SM89516B, SM8952B

● **Replacing SM5964, SM5964A with SM5964B**

Replacing SM5964C40PP, SM5964AC40PP, SM5964AL25PP with SM5964BW40PP

Replacing SM5964C40JP, SM5964AC40JP, SM5964AL25JP with SM5964BW44JP

Replacing SM5964C40QP, SM5964AC40QP, SM5964AL25QP with SM5964BW44QP

● **Replacing SM8954A with SM8954B**

Replacing SM8954AC25PP, SM8954AC40PP, SM8954AL25PP with SM8954BW40PP

Replacing SM8954AC25JP, SM8954AC40JP, SM8954AL25JP with SM8954BW44JP

Replacing SM8954AC25QP, SM8954AC40QP, SM8954AL25QP with SM8954BW44QP

● **Replacing SM8958A with SM8958B**

Replacing SM8958AC25PP, SM8958AC40PP, SM8958AL25PP with SM8958BW40PP

Replacing SM8958AC25JP, SM8958AC40JP, SM8958AL25JP with SM8958BW44JP

Replacing SM8958AC25QP, SM8958AC40QP, SM8958AL25QP with SM8958BW44QP

● **Replacing SM89516A with SM89516B**

Replacing SM89516AC25PP, SM89516AC40PP, SM89516AL25PP with SM89516BW40PP

Replacing SM89516AC25JP, SM89516AC40JP, SM89516AL25JP with SM89516BW44JP

Replacing SM89516AC25QP, SM89516AC40QP, SM89516AL25QP with SM89516BW44QP

● **Replacing SM8952A with SM8952B**

Replacing SM8952AC25PP, SM8952AC40PP, SM8952AL25PP with SM8952BW40PP

Replacing SM8952AC25JP, SM8952AC40JP, SM8952AL25JP with SM8952BW44JP

Replacing SM8952AC25QP, SM8952AC40QP, SM8952AL25QP with SM8952BW44QP



## 二、 Comparison:

### Comparison of SM5964B, SM5964 and SM5964A:

| Feature                           | SM5964B                                                                                                                                                                                         | SM5964                                                                   | SM5964A                                    |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------|
| VDD (V)                           | 2.4~5.5V                                                                                                                                                                                        | C version:4.5~5.5V                                                       | L version: 3.0~3.6V<br>C version: 4.5~5.5V |
| Instruction Timing                | 12T and 6T                                                                                                                                                                                      | 12T                                                                      | 12T                                        |
| Program Flash                     | 64KB                                                                                                                                                                                            | 64KB                                                                     | 64KB                                       |
| RAM ( byte)                       | 256+768                                                                                                                                                                                         | 256+768                                                                  | 256+768                                    |
| Expanded RAM (Default)            | Enable<br>(SCONF bit1)                                                                                                                                                                          | Enable<br>(SCONF bit1)                                                   | Disable<br>(SCONF bit1)                    |
| Power Down Wake-Up                | RST/INT                                                                                                                                                                                         | RST                                                                      | RST/INT                                    |
| WDT Clock Source                  | External crystal                                                                                                                                                                                | External crystal                                                         | No                                         |
| ISP                               | Yes                                                                                                                                                                                             | Yes                                                                      | Yes                                        |
| ISP Page Selection                | 512byte(Default) 、 256 byte 、 128byte ( setting by bi4~bit6 of ISPC)                                                                                                                            | One page of flash memory is 512 byte                                     | One page of flash memory is 512 byte       |
| IIC (TWSI)                        | Yes                                                                                                                                                                                             | No                                                                       | Yes                                        |
| PWM                               | 2-ch PWM (P1.2, P1.3)                                                                                                                                                                           | 5-ch PWM(P1.3~P1.7)                                                      | 2-ch PWM (P1.2, P1.3)                      |
| ALE As Clock Source               | When using expanded 768bytes SRAM, we don't suggest ALE as clock source.                                                                                                                        | When using expanded 768bytes SRAM, we don't suggest ALE as clock source. | Yes                                        |
| Programming Configuration Setting | System Clock, ISP Block, ISP Entry Mechanism , OSC Drving Capacity, Noise Filter, LVR Filter                                                                                                    | ISP Block                                                                | ISP Block                                  |
| Universal Writer Support          | The programming timing is different from SM5964 & SM5964B. It needs extra support by universal writer. In addition, EA and PSEN don't connect to ground or decoupling capacitor in application. | -                                                                        | -                                          |



Comparison of SM8954B/58B/516B and SM8954A/58A/516A:

| Feature                           | SM8954B/58B/516B                                                                                                                                                                                | SM8954A/58A/516A                           |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| VDD (V)                           | 2.4~5.5V                                                                                                                                                                                        | L version: 3.0~3.6V<br>C version: 4.5~5.5V |
| Instruction Timing                | 12T                                                                                                                                                                                             | 12T                                        |
| Program Flash ( byte)             | 16/32/64KB                                                                                                                                                                                      | 16/32/64KB                                 |
| RAM ( byte)                       | 256+768                                                                                                                                                                                         | 256+768                                    |
| Expanded RAM (Default)            | Enable<br>(SCONF bit1)                                                                                                                                                                          | Disable<br>(SCONF bit1)                    |
| Power Down Wake-Up                | RST/INT                                                                                                                                                                                         | RST                                        |
| WDT Clock Source                  | External crystal                                                                                                                                                                                | Internal 250KHz                            |
| IIC (TWSI)                        | Yes                                                                                                                                                                                             | No                                         |
| PWM                               | 2-ch PWM (P1.2, P1.3)                                                                                                                                                                           | 5-ch PWM(P1.3~P1.7)                        |
| ALE As Clock Source               | When using expanded 768bytes SRAM, we don't suggest ALE as clock source.                                                                                                                        | Yes                                        |
| Programming Configuration Setting | OSC Drving Capacity, Noise Filter, LVR Filter                                                                                                                                                   | Without                                    |
| Universal Writer Support          | The programming timing is different from SM8954A/58A/516A. It needs extra support by universal writer. In addition, EA and PSEN don't connect to ground or decoupling capacitor in application. | -                                          |



**Comparison of SM8952B and SM8952A:**

| Feature                           | SM8952B                                                                                                                                                                                | SM8952A                                    |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| VDD (V)                           | 2.4~5.5V                                                                                                                                                                               | L version: 3.0~3.6V<br>C version: 4.5~5.5V |
| Instruction Timing                | 12T                                                                                                                                                                                    | 12T                                        |
| Program Flash ( byte)             | 8KB                                                                                                                                                                                    | 8KB                                        |
| RAM ( byte)                       | 256                                                                                                                                                                                    | 256                                        |
| Power Down Wake-Up                | RST                                                                                                                                                                                    | RST                                        |
| WDT Clock Source                  | External crystal                                                                                                                                                                       | External crystal                           |
| Programming Configuration Setting | OSC Drving Capacity,<br>LVR Filter                                                                                                                                                     | Without                                    |
| Universal Writer Support          | The programming timing is different from SM8952A. It needs extra support by universal writer. In addition, EA and PSEN don't connect to ground or decoupling capacitor in application. | -                                          |



### 三、 Configuration setting:

Replacing SM5964 with SM5964B:

| Output              | Configuration |
|---------------------|---------------|
| ▲ System Clock      |               |
| System Clock        | 12T           |
| ▲ ISP Block (N)     |               |
| ISP Block (N)       | N=1 (FE00H)   |
| ▲ ISP Entry Mech.   |               |
| P2.6/P2.7 = 0       | Disable       |
| P4.3 = 0            | Disable       |
| ▲ Osc. Driving Cap. |               |
| Osc. Driving Cap.   | High Speed    |
| ▲ Noise Filter      |               |
| Noise Filter        | 40 MHz        |
| ▲ LVR Filter        |               |
| LVR Filter          | Enable        |

Replacing SM5964A with SM5964B:

| Output              | Configuration |
|---------------------|---------------|
| ▲ System Clock      |               |
| System Clock        | 12T           |
| ▲ ISP Block (N)     |               |
| ISP Block (N)       | N=1 (FE00H)   |
| ▲ ISP Entry Mech.   |               |
| P2.6/P2.7 = 0       | Enable        |
| P4.3 = 0            | Enable        |
| ▲ Osc. Driving Cap. |               |
| Osc. Driving Cap.   | High Speed    |
| ▲ Noise Filter      |               |
| Noise Filter        | 40 MHz        |
| ▲ LVR Filter        |               |
| LVR Filter          | Enable        |

Replacing SM8954A/58A/516A with  
SM8954B/58B/516B:

| Output              | Configuration |
|---------------------|---------------|
| ▲ Osc. Driving Cap. |               |
| Osc. Driving Cap.   | High Speed    |
| ▲ Noise Filter      |               |
| Noise Filter        | 40 MHz        |
| ▲ LVR Filter        |               |
| LVR Filter          | Enable        |

Replacing SM8952A with SM8952B:

| Output              | Configuration |
|---------------------|---------------|
| ▲ Osc. Driving Cap. |               |
| Osc. Driving Cap.   | High Speed    |
| ▲ LVR Filter        |               |
| LVR Filter          | Enable        |



#### 四、 DC Characteristics Comparison:

##### Comparison of SM5964B, SM5964 and SM5964A:

###### VCC = 5.0V

| Symbol | Parameter            | Valid        | Test Conditions       | SM5964B | SM5964  |
|--------|----------------------|--------------|-----------------------|---------|---------|
| VIL1   | Input Low Voltage    | port 0,1,2,3 |                       | 1.4V    | 1.58V   |
| VIL2   | Input Low Voltage    | RES          |                       | 1.69V   | 1.83V   |
| VIH1   | Input High Voltage   | port 0,1,2,3 |                       | 1.63V   | 1.82V   |
| VIH2   | Input High Voltage   | RES          |                       | 1.78V   | 2.06V   |
| IOL1   | Output Low Current   | port 0       | Vin=0.45V             | 14.8mA  | 13.85mA |
| IOL2   | Output Low Current   | port 1,2,3   | Vin=0.45V             | 15.95mA | 11mA    |
| IOH2   | Output High Current  | port 1,2,3   | Vin=2.4V              | 355.6uA | 133.7uA |
| I CC   | Power Supply Current | Vdd          | Active mode,<br>16MHz | 3.726mA | 16.6mA  |
|        |                      |              | Power down<br>mode    | 3.55uA  | 20.45uA |

###### VCC = 3.0V

| Symbol | Parameter            | Valid        | Test Conditions       | SM5964B | SM5964A |
|--------|----------------------|--------------|-----------------------|---------|---------|
| VIL1   | Input Low Voltage    | port 0,1,2,3 |                       | 0.98V   | 0.95V   |
| VIH1   | Input High Voltage   | port 0,1,2,3 |                       | 1.2V    | 1.25V   |
| IOL1   | Output Low Current   | port 0       | Vin=0.45V             | 10.32mA | 8.4mA   |
| IOL2   | Output Low Current   | port 1,2,3   | Vin=0.45V             | 10.83mA | 7.1mA   |
| IOH2   | Output High Current  | port 1,2,3   | Vin=2.4V              | 68.3uA  | 50uA    |
| I CC   | Power Supply Current | Vdd          | Active mode,<br>16MHz | 2.473mA | 5.69mA  |
|        |                      |              | Power down<br>mode    | 1.79uA  | 6.43uA  |

##### Comparison of SM8954B/58B/516B and SM8954A/58A/516A:

###### VCC = 5.0V

| Symbol | Parameter            | Valid        | Test Conditions       | SM8954B/58B/516B | SM8954A/58A/516A |
|--------|----------------------|--------------|-----------------------|------------------|------------------|
| VIL1   | Input Low Voltage    | port 0,1,2,3 |                       | 1.4V             | 1.65V            |
| VIL2   | Input Low Voltage    | RES          |                       | 1.69V            | 1.85V            |
| VIH1   | Input High Voltage   | port 0,1,2,3 |                       | 1.63V            | 1.78V            |
| VIH2   | Input High Voltage   | RES          |                       | 1.78V            | 2V               |
| IOL1   | Output Low Current   | port 0       | Vin=0.45V             | 14.8mA           | 14.83mA          |
| IOL2   | Output Low Current   | port 1,2,3   | Vin=0.45V             | 15.95mA          | 12.81mA          |
| IOH2   | Output High Current  | port 1,2,3   | Vin=2.4V              | 355.6uA          | 128uA            |
| I CC   | Power Supply Current | Vdd          | Active mode,<br>16MHz | 3.726mA          | 5.82mA           |
|        |                      |              | Power down<br>mode    | 3.55uA           | 1.62uA           |



## Comparison of SM8952B and SM8952A:

**VCC = 5.0V**

| Symbol | Parameter            | Valid        | Test Conditions       | SM8952B | SM8952A |
|--------|----------------------|--------------|-----------------------|---------|---------|
| VIL1   | Input Low Voltage    | port 0,1,2,3 |                       | 1.3V    | 1.44V   |
| VIL2   | Input Low Voltage    | RES          |                       | 1.83V   | 1.89V   |
| VIH1   | Input High Voltage   | port 0,1,2,3 |                       | 1.92V   | 1.88V   |
| VIH2   | Input High Voltage   | RES          |                       | 1.95V   | 1.99V   |
| IOL1   | Output Low Current   | port 0       | Vin=0.45V             | 15.31mA | 15.07mA |
| IOL2   | Output Low Current   | port 1,2,3   | Vin=0.45V             | 15.75mA | 13.45mA |
| IOH2   | Output High Current  | port 1,2,3   | Vin=2.4V              | 317.8uA | 314.5uA |
| I CC   | Power Supply Current | Vdd          | Active mode,<br>16MHz | 2.51mA  | 8.94mA  |
|        |                      |              | Power down mode       | 2.1uA   | 6.09uA  |



## 五、 SFR comparison of SM5964B, SM5964 and SM5964A:

SM5964B SFR TABLE :

|     |                    |                    |                     |                     |                      |                      |                     |                    |     |
|-----|--------------------|--------------------|---------------------|---------------------|----------------------|----------------------|---------------------|--------------------|-----|
| F8h |                    |                    |                     |                     |                      |                      |                     |                    | FFh |
| F0h | B<br>0000 0000     |                    |                     |                     | ISPF AH<br>0000 0000 | ISPF AL<br>0000 0000 | ISPF D<br>0000 0000 | ISPC<br>0000 0000  | F7h |
| E8h |                    |                    |                     |                     |                      |                      |                     |                    | EFh |
| E0h | ACC<br>0000 0000   |                    |                     |                     |                      |                      |                     |                    | E7h |
| D8h | P4<br>xxxx 1111    |                    |                     |                     |                      |                      |                     |                    | DFh |
| D0h | PSW<br>0000 0000   |                    |                     | PWMC0<br>0000 0000  | PWMC1<br>0000 0000   |                      |                     |                    | D7h |
| C8h | T2CON<br>0000 0000 | T2MOD<br>0000 0000 | RCAP2L<br>0000 0000 | RCAP2H<br>0000 0000 | TL2<br>0000 0000     | TH2<br>0000 0000     |                     |                    | CFh |
| C0h | TWSIS<br>0000 0000 | TWSIA<br>1010 0000 | TWSIC1<br>0000 0001 | TWSIC2<br>0000 0000 | TWSITXD<br>1111 1111 | TWSIRXD<br>0000 0000 |                     |                    | C7h |
| B8h | IP<br>0000 0000    | IP1<br>0000 0000   |                     |                     |                      |                      |                     | SCONF<br>0000 0010 | BFh |
| B0h | P3<br>1111 1111    |                    |                     | PWDD0<br>0000 0000  | PWMD1<br>0000 0000   |                      |                     |                    | B7h |
| A8h | IE<br>0000 0000    | IE1<br>0000 0000   | IFR<br>0000 0000    |                     |                      |                      |                     |                    | AFh |
| A0h | P2<br>1111 1111    |                    |                     |                     |                      |                      |                     |                    | A7h |
| 98h | SCON<br>0000 0000  | SBUF<br>0000 0000  |                     | P1CON<br>0000 0000  |                      |                      |                     | WDTC<br>0000 0000  | 9Fh |
| 90h | P1<br>1111 1111    |                    |                     |                     |                      |                      |                     |                    | 97h |
| 88h | TCON<br>0000 0000  | TMOD<br>0000 0000  | TL0<br>0000 0000    | TL1<br>0000 0000    | TH0<br>0000 0000     | TH1<br>0000 0000     |                     |                    | 8Fh |
| 80h | P0<br>1111 1111    | SP<br>0000 0111    | DPL<br>0000 0000    | DPH<br>0000 0000    |                      | RCON<br>0000 0000    | DBANK<br>0000 0001  | PCON<br>0000 0000  | 87h |

SM5964A SFR TABLE :

|     |                    |                    |                     |                     |                      |                      |                     |                   |     |
|-----|--------------------|--------------------|---------------------|---------------------|----------------------|----------------------|---------------------|-------------------|-----|
| F8h |                    |                    |                     |                     |                      |                      |                     |                   | FFh |
| F0h | B<br>0000 0000     |                    |                     |                     | ISPF AH<br>0000 0000 | ISPF AL<br>0000 0000 | ISPF D<br>0000 0000 | ISPC<br>0000 0000 | F7h |
| E8h |                    |                    |                     |                     |                      |                      |                     |                   | EFh |
| E0h | ACC<br>0000 0000   |                    |                     |                     |                      |                      |                     |                   | E7h |
| D8h | P4<br>xxxx 1111    |                    |                     |                     |                      |                      |                     |                   | DFh |
| D0h | PSW<br>0000 0000   |                    |                     | PWMC0<br>0000 0000  | PWMC1<br>0000 0000   |                      |                     |                   | D7h |
| C8h | T2CON<br>0000 0000 | T2MOD<br>xxxx xx00 | RCAP2L<br>0000 0000 | RCAP2H<br>0000 0000 | TL2<br>0000 0000     | TH2<br>0000 0000     |                     |                   | CFh |

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|     |                    |                    |                     |                     |                      |                      |  |                    |     |
|-----|--------------------|--------------------|---------------------|---------------------|----------------------|----------------------|--|--------------------|-----|
| C0h | TWSIS<br>0000 0000 | TWSIA<br>1010 0000 | TWSIC1<br>0000 0001 | TWSIC2<br>0000 0000 | TWSITXD<br>1111 1111 | TWSIRXD<br>0000 0000 |  |                    | C7h |
| B8h | IP<br>0000 0000    | IP1<br>0000 0000   |                     |                     |                      |                      |  | SCONF<br>0000 0000 | BFh |
| B0h | P3<br>1111 1111    |                    |                     | PWMD0<br>0000 0000  | PWMD1<br>0000 0000   |                      |  |                    | B7h |
| A8h | IE<br>0000 0000    | IE1<br>0000 0000   | IFR<br>0000 0000    |                     |                      |                      |  |                    | AFh |
| A0h | P2<br>1111 1111    |                    |                     |                     |                      |                      |  |                    | A7h |
| 98h | SCON<br>0000 0000  | SBUF<br>0000 0000  |                     | P1CON<br>0000 0000  |                      |                      |  |                    | 9Fh |
| 90h | P1<br>1111 1111    |                    |                     |                     |                      |                      |  |                    | 97h |
| 88h | TCON<br>0000 0000  | TMOD<br>0000 0000  | TL0<br>0000 0000    | TL1<br>0000 0000    | TH0<br>0000 0000     | TH1<br>0000 0000     |  |                    | 8Fh |
| 80h | P0<br>1111 1111    | SP<br>0000 0111    | DPL<br>0000 0000    | DPH<br>0000 0000    |                      | RCON<br>0000 0000    |  | PCON<br>0000 0000  | 87h |

SM5964 SFR TABLE :

|     |                    |                    |                     |                     |                      |                      |                     |                     |     |
|-----|--------------------|--------------------|---------------------|---------------------|----------------------|----------------------|---------------------|---------------------|-----|
| F8h |                    |                    |                     |                     |                      |                      |                     |                     | FFh |
| F0h | B<br>0000 0000     |                    |                     |                     | ISPF AH<br>0000 0000 | ISPF AL<br>0000 0000 | ISPF D<br>0000 0000 | ISPC<br>0000 0000   | F7h |
| E8h |                    |                    |                     |                     |                      |                      |                     |                     | EFh |
| E0h | ACC<br>0000 0000   |                    |                     |                     |                      |                      |                     |                     | E7h |
| D8h | P4<br>xxxx 1111    |                    |                     |                     |                      |                      |                     |                     | DFh |
| D0h | PSW<br>0000 0000   |                    |                     |                     |                      |                      |                     |                     | D7h |
| C8h | T2CON<br>0000 0000 | T2MOD<br>xxxx xx00 | RCAP2L<br>0000 0000 | RCAP2H<br>0000 0000 | TL2<br>0000 0000     | TH2<br>0000 0000     |                     |                     | CFh |
| C0h |                    |                    |                     |                     |                      |                      |                     |                     | C7h |
| B8h | IP<br>0000 0000    |                    |                     |                     |                      |                      |                     | SCONF<br>0000 0010  | BFh |
| B0h | P3<br>1111 1111    |                    |                     |                     |                      |                      |                     |                     | B7h |
| A8h | IE<br>0000 0000    |                    |                     |                     | SPWMD4<br>0000 0000  |                      |                     |                     | AFh |
| A0h | P2<br>1111 1111    |                    |                     | SPWMC<br>xxxx xx00  | SPWMD0<br>0000 0000  | SPWMD1<br>0000 0000  | SPWMD2<br>0000 0000 | SPWMD3<br>0000 0000 | A7h |
| 98h | SCON<br>0000 0000  | SBUF<br>0000 0000  |                     | P1CON<br>0000 0000  |                      |                      |                     |                     | 9Fh |
| 90h | P1<br>1111 1111    |                    |                     |                     |                      |                      |                     | WDTC<br>0000 0000   | 97h |
| 88h | TCON<br>0000 0000  | TMOD<br>0000 0000  | TL0<br>0000 0000    | TL1<br>0000 0000    | TH0<br>0000 0000     | TH1<br>0000 0000     |                     |                     | 8Fh |
| 80h | P0<br>1111 1111    | SP<br>0000 0111    | DPL<br>0000 0000    | DPH<br>0000 0000    |                      | RCON<br>0000 0000    |                     | PCON<br>0000 0000   | 87h |



## 六、 SFR comparison of SM8954B/58B/516B and SM8954A/58A/516A

SM8954B/58B/516B SFR TABLE :

|     |                    |                    |                     |                     |                      |                      |                    |                    |     |
|-----|--------------------|--------------------|---------------------|---------------------|----------------------|----------------------|--------------------|--------------------|-----|
| F8h |                    |                    |                     |                     |                      |                      |                    |                    | FFh |
| F0h | B<br>0000 0000     |                    |                     |                     |                      |                      |                    |                    | F7h |
| E8h |                    |                    |                     |                     |                      |                      |                    |                    | EFh |
| E0h | ACC<br>0000 0000   |                    |                     |                     |                      |                      |                    |                    | E7h |
| D8h | P4<br>xxxx 1111    |                    |                     |                     |                      |                      |                    |                    | DFh |
| D0h | PSW<br>0000 0000   |                    |                     | PWMC0<br>0000 0000  | PWMC1<br>0000 0000   |                      |                    |                    | D7h |
| C8h | T2CON<br>0000 0000 | T2MOD<br>0000 0000 | RCAP2L<br>0000 0000 | RCAP2H<br>0000 0000 | TL2<br>0000 0000     | TH2<br>0000 0000     |                    |                    | CFh |
| C0h | TWSIS<br>0000 0000 | TWSIA<br>1010 0000 | TWSIC1<br>0000 0001 | TWSIC2<br>0000 0000 | TWSITXD<br>1111 1111 | TWSIRXD<br>0000 0000 |                    |                    | C7h |
| B8h | IP<br>0000 0000    | IP1<br>0000 0000   |                     |                     |                      |                      |                    | SCONF<br>0000 0010 | BFh |
| B0h | P3<br>1111 1111    |                    |                     | PWDD0<br>0000 0000  | PWMD1<br>0000 0000   |                      |                    |                    | B7h |
| A8h | IE<br>0000 0000    | IE1<br>0000 0000   | IFR<br>0000 0000    |                     |                      |                      |                    |                    | AFh |
| A0h | P2<br>1111 1111    |                    |                     |                     |                      |                      |                    |                    | A7h |
| 98h | SCON<br>0000 0000  | SBUF<br>0000 0000  |                     | P1CON<br>0000 0000  |                      |                      |                    | WDTC<br>0000 0000  | 9Fh |
| 90h | P1<br>1111 1111    |                    |                     |                     |                      |                      |                    |                    | 97h |
| 88h | TCON<br>0000 0000  | TMOD<br>0000 0000  | TL0<br>0000 0000    | TL1<br>0000 0000    | TH0<br>0000 0000     | TH1<br>0000 0000     |                    |                    | 8Fh |
| 80h | P0<br>1111 1111    | SP<br>0000 0111    | DPL<br>0000 0000    | DPH<br>0000 0000    |                      | RCON<br>0000 0000    | DBANK<br>0000 0001 | PCON<br>0000 0000  | 87h |

SM8954A/58A/516A SFR TABLE :

|     |                    |                    |                     |                     |                  |                  |  |  |     |
|-----|--------------------|--------------------|---------------------|---------------------|------------------|------------------|--|--|-----|
| F8h |                    |                    |                     |                     |                  |                  |  |  | FFh |
| F0h | B<br>0000 0000     |                    |                     |                     |                  |                  |  |  | F7h |
| E8h |                    |                    |                     |                     |                  |                  |  |  | EFh |
| E0h | ACC<br>0000 0000   |                    |                     |                     |                  |                  |  |  | E7h |
| D8h | P4<br>xxxx 1111    |                    |                     |                     |                  |                  |  |  | DFh |
| D0h | PSW<br>0000 0000   |                    |                     |                     |                  |                  |  |  | D7h |
| C8h | T2CON<br>0000 0000 | T2MOD<br>xxxx xx00 | RCAP2L<br>0000 0000 | RCAP2H<br>0000 0000 | TL2<br>0000 0000 | TH2<br>0000 0000 |  |  | CFh |

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|     |                   |                   |                  |                    |                     |                     |                     |                     |     |
|-----|-------------------|-------------------|------------------|--------------------|---------------------|---------------------|---------------------|---------------------|-----|
| C0h |                   |                   |                  |                    |                     |                     |                     |                     | C7h |
| B8h | IP<br>0000 0000   |                   |                  |                    |                     |                     |                     | SCONF<br>0000 0000  | BFh |
| B0h | P3<br>1111 1111   |                   |                  |                    |                     |                     |                     |                     | B7h |
| A8h | IE<br>0000 0000   |                   |                  |                    | SPWMD4<br>0000 0000 |                     |                     |                     | AFh |
| A0h | P2<br>1111 1111   |                   |                  | SPWMC<br>xxxx xx00 | SPWMD0<br>0000 0000 | SPWMD1<br>0000 0000 | SPWMD2<br>0000 0000 | SPWMD3<br>0000 0000 | A7h |
| 98h | SCON<br>0000 0000 | SBUF<br>0000 0000 |                  | P1CON<br>0000 0000 |                     |                     |                     | WDTC<br>0000 0000   | 9Fh |
| 90h | P1<br>1111 1111   |                   |                  |                    |                     |                     |                     | WDTKEY<br>0000 0000 | 97h |
| 88h | TCON<br>0000 0000 | TMOD<br>0000 0000 | TL0<br>0000 0000 | TL1<br>0000 0000   | TH0<br>0000 0000    | TH1<br>0000 0000    |                     |                     | 8Fh |
| 80h | P0<br>1111 1111   | SP<br>0000 0111   | DPL<br>0000 0000 | DPH<br>0000 0000   |                     | RCON<br>0000 0000   |                     | PCON<br>0000 0000   | 87h |