

September 2006

MSM9169 Application Note

For SyncMOS e-MCU Used

SM9169 V3.X AP Writer User Manual (1 to 1 Writer)

1. Introduction :

MSM9169 Writer can be use for programming all SyncMOS products(including Flash and e-MCU, such as SM79xx,SM89xx,and SM59xx).

2. Basic Operations :

MSM9169 Writer can operate in two modes :

- 2.1 On-line programming: used MSM9169 connect with PC which can download program code into target IC.
- 2.2 Off-line programming: when PC download program code into writer's controller, offline programming can be achieved without PC via "Auto" button .



Fig 1 MSM9169 Writer

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3. Components :

- 3.1 MSM9169 board.
- 3.2 Windows 95/98/2000/XP OS.
- 3.3 DB-9 pin cable (for serial port) or USB To COM Port connector (for USB).
- 3.4 Writer application utility.
- 3.5 One power adapter +12V DC, connector (inside "+",outside "-").

4. Setup Procedure :

- 4.1 Copy MSM9169 application utility in your OS, then run SyncMOS Writer Setup.exe which support Windows 95/98/2000/XP OS.
- 4.2 Use DB-9 pin cable to connect PC's COM port and MSM9169's RS232 Port.
- 4.3 Plug the 12 DC power adapter in to MSM9169's DC Power Jack . Note : the power adapter which plug in the writer is anode inside and negative pole outside . Then the Power LED will light.
- 4.3 When MSM9169's power LED is light, MSM9169 has ready to work.



5. User Interface:

🧐 - MSM9169 ¥3.1			
File(F) Edit(E) View(V) Setting(O) Tools(T)	Help(<u>H</u>)		
Load Save Edit IC Auto Erase	Prog. Blank Verify Secur. Conf.	Send Read	
IC INFORMATION IC Type SM59264 Features 128K Flash (64K Code Flash +64k Data Flash) 1K RAM ISP(In System Program) SPWM(Specific Pulse Width Modulation) IIC Interface	OPERATION Auto Erase Blank Check Program + Boot Verify Sum Configure		
BUFFER SETTING File C:\Program Files\SyncMOS Writer V31\MSM9169_V31.bin Total Size: PASS : 0 FA	MSM9169 eck Sum: 1cdaae4 H		
Ready		NUM	



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6. Update: Update Writer Timing

MSM9169 V3.x can update writer timing without modifying hardware.

- 6.1 Click "Update (ISP)" from Tools item.
- 6.2 Warning message for notice will come up.
- 6.3 Select target file for update.





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File(F) Edit(E) View(V) Sett	ing(Q) Tools(T) Help(H)	
Load Save Edit	Auto Erase Prog. Blank Verify Secur. Conf. Send Read	
IC INFORMATION IC Type SM59264	OPERATION Auto Erase	
Features	【開啓 [2] 🔀 [2]	
128K Flash (64K Code Flash +64k Data Flash) 1K RAM ISP(In System Progr SPWM(Specific Puls Modulation) IIC Interface	搜尋位置①: È MSM9169 V31 _ ← È 於 图- UnInstall ● BufferData.bin ● MSM9169_V31.bin	
BUFFER SETTING File 檔案結種①: 位案類型①: 回M檔(*.bin) ▼ 取消 C:\Program Files\Syl V31\MSM9169_V31.bin		
PASS :	bytes Check Sum: Icdaae4 H O FAIL: 0	
Ready	N	UM //

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7. Connect:

7.1 After MSM9169 V3.x running, system will check connection with PC. If the connection successful, a "Connect Success MSM9169 V3.x" message will pop-up.



Connection Success



7.2 If connection fail, a "Connect Fail, No Respond" message will pop-up.

S - MSM9169 ¥3.1	
File(E) Edit(E) View(V) Setting(Q) Tools(I) Help(H)	
Load Save Edit IC Auto Erase Prog. Blank Verify Secur. Conf. Send Read	
IC INFORMATION OPERATION IC Type Auto SM59254 Frase Features Diank Check I28K Flash Frase Blank Check Program + Boot Verify Sum Verify Sum ISP[In System Program] SPWM(Specific Pulse Width IC Interface Connect Feil, No Respond. IIC Interface Immodeling BUFFER SETTING File C:\Program Files\SyncMOS Writer\MSM9169 Icdaae4 Y31\MSM9169_V31.bin Icdaae4 PASS : 0 FAIL: 0 FAIL: 0	
Ready NUM	

Connect Fail



8. Tool Bar Explanation :





9. Connect USB to COM Port:

9.1 When you connect USB to COM Port, you will get COM information form "Control Panel→System→Hardware→Device Manager".

😼 Control Panel		_ 🗆 ×
<u>File E</u> dit <u>V</u> iew Favorite	es <u>I</u> ools <u>H</u> elp	1
🕝 Back 🝷 🕥 👻 🏂	System Properties	
Address Control Panel Control Panel Control Panel Control Panel See Also Windows Update Help and Support	System Properties System Restore Automatic Updates Remote General Computer Name Hardware Advanded Device Manager Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device. Device Manager Image: Diversigning lets you make sure that installed trivers are compatible with Windows. Windows Update Drivers are how Windows Update Drivers are how Windows Update Drivers and how Windows connects to Windows Update Drivers. Driver Signing Windows Update Drivers are different hardware configurations. Hardware Profiles Hardware configurations. Mark are profiles Image: Driver Signing lets provide a way for you to set up and store different hardware configurations. Mark are profiles Image: Driver Signing lets provide a way for you to set up and store different hardware configurations. Hardware Profiles Hardware Profiles Image: Driver Signing lets provide a way for you to set up and store different hardware configurations. Image: Driver Signing lets provide a way for you to set up and store different hardware configurations.	Go
	OK Cancel Apply	



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🚇 Device Manager	
<u>File Action View H</u> elp	
$\leftarrow \rightarrow \blacksquare \textcircled{=} \textcircled{2} \textcircled{3}$	
🗄 🌏 Computer	
🗄 🛫 Disk drives	
🕀 😼 Display adapters	
🗄 📹 Floppy disk controllers	
🕀 🧏 Floppy disk drives	
IDE ATA/ATAPI controllers	
🕀 🥪 IEEE 1394 Bus host controllers	
🕀 🛃 Infrared devices	
🕀 🦢 Keyboards	
Mice and other pointing devices	
🛨 🦢 Modems	
• Wonitors	
Betwork adapters	
PCMCIA adapters	
Ports (COM & LPT)	
Communications Port (COM1)	
Printer Port (LPT1)	
Here was processors	
E Sound, video and game controllers	
Him 😴 System devices	
E Controllers	<u> </u>

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10. Re-connect with COM Port:

- 10.1 When connection has fail, please check connection of MSM9169 and PC. It may have been connected to an incorrect COM Port.
- 10.2 If you want to reconnect MSM9169 with PC, you can select "COM Port" from "Setting" item .

File (E) Edit(E) View(Y) Setting(Q) Tools(T) Help (H) Load Save Edit COM1 COM2 Edit(X) Secur. Conf. Send Read Ic Instruction COM4 RATION COM4 RATION Erase SM59264 Erase Blank Check Blank Check Blank Check
Image: Save Port Sel COM1 Connect COM2 COM2 Flank Verify Secur. Conf. Send Read IC INFORMATION COM4 COM4 RATION COM4 RATION Flank Flank
Program + Boot 128K Flash (64K Code Flash +64k Data Flash) 1K RAM ISP[In System Program] SPWM[Specific Pulse Width Modulation] IIC Interface 1
BUFFER SETTING File C:\Program Files\SyncMOS Writer\MSM9169 V31\MSM9169_V31.bin Total Size: 65536 bytes Check Sum: 1cdaae4 H PASS : 0 FAIL: 0

Reconnect COM Port



11. IC Type Selection :

You can select IC type for programming from tool bar.



Finish Select IC

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12. Load File for Programming:

12.1 Select File\ Open(Load) : Open file and load to Buffer.

12.2 If change IC type, please reload file.

🧐 - MSM9169 ¥3.1	
File (E) Edit(E) View (Y) Setting (O) Tools (I) Help (H)	
Load Save Edit IC Auto Erase Prog. Etal Verify Secur. Conf. Send Read	
IC INFORMATION OPERATION	
SM59264 建築位置①: MSM9169 ¥31 ・ ● <th></th>	
128K Flash [64K Code Flash +64k Data Flash] 1K RAM ISP[In System Pro SPWM(Specific Pt Modulation) IIC Interface 描案名種(M): 3 開際(O)	
BUFFER SETTING 檔案類型(①: BIN檔(*.bin) 文 取消	
C:\Program Files\SyncMOS Writer\MSM9169 V31\MSM9169_V31.bin Total Size: 65536 bytes Check Sum: 1cdaae4 H	
PASS: 0 FAIL: 0	IUM //



Load & Buffer Setting	×	
Target File Name: Form Buffer Address: O×00	19169_V31.bin 100 H	
Buffer Initial Data—		
○ All Zero (0×00h)		
⊙ All Full (0×FFh) 5		
O Don't Care		
OK 6 Cancel		

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13. Edit Auto Function :

You can edit a sequence of functions to be executed with "Auto Function" button $\,^\circ$

- 13.1 Select "Edit Auto" from "Setting" menu.
- 13.2 An Auto Selection message box will show up, then you can choose which function to execute Push OK button to complete.
- 13.3 Double check the window which displays the functions you selected.
- 13.4 Push AUTO button on tool bar, then it will execute the functions that you

have selected.		
📀 - MSM9169 ¥3.1		
File(F) Edit(E) View(V) Setting(O) Tools(T)	Help(<u>H</u>)	
Load Save Edit Port Sel. Connect Pase Edit Auto	Prog. Blank Verify Secur. Conf.	Send Read
	OPERATION	
ІС Туре	Auto	
SM59264	Erase Black Chack	
Features	Program + Boot	
128K Flash (64K Code Flash +64k Data Flash) 1K RAM ISP(In System Program) SPWM(Specific Pulse Width Modulation) IIC Interface	Verify Sum Configure 1	
BUFFER SETTING		
C:\Program Files\SyncMOS Write V31\MSM9169_V31.bin	ЛМ ЅМ9169	
Total Size: 65536 bytes Ch	neck Sum: 1cdaae4 H	
PASS : 0 F	AIL: 0	
		NUM //

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	Auto Selection Select Menu Chip Erase Blank Check	

Verify

ΟK

E Security

Cancel

🧟 - MSM9169 ¥3.1	
File(F) Edit(E) View(V) Setting(O) Tools(I) Help(H)	
Load Save Edit IC Auto Frase Prog. Blank Verify Secur. Conf. Send Read	
IC INFORMATION IC Type SM59264 Features 128K Flash (64K Code Flash +64k Data Flash) 1K RAM ISP(In System Program) SPWM(Specific Pulse Width Modulation) IIC Interface BUFFER SETTING File C:Program Files{SyncMOS Writer{MSM9169 V311MSM9169_V31.bin	
Total Size: Uyle's Check Sum:	
PASS : 0 FAIL: 0	
Ready	NUM



14. Display Programming Status:

🤏 - MSM9169 ¥3.1			
File (F) Edit(E) View (Y) Setting (O) Tools(I) Help (H)			
Load Save Edit IC Auto Erase	Prog. Blank Verify Secur. Conf. Sen	d Read	
IC INFORMATION IC Type SM8951A Features 4K Code Flash 256 Byte RAM	OPERATION Auto Erase Blank Check Program + Boot Verify Sum Verify Sum Configure	- AUTO RUN START 17:03:41 SE • Erase =>PASS NK CHECK • K Check =>PASS • GRAM • gram =>PASS • IFY • fy =>PASS, Sum: 6d168 H AUTO RUN END 17:03:45	
BUFFER SETTING File			
E:\Customer code\Fx637.bin Total Size: 4096 bytes Check Sum: 6d168 H PASS : 1 FAIL: 0			
Ready		NUM	

14.1 Programming OK :

After you push AUTO button, MSM9169 will execute functions which you selected. If the execution is successful, it will turn on green PASS light accompanied with a short buzz.

14.2 Programming Fail:

If the execution fail, it will turn on red FAIL light accompanied with a long buzz.

14.3 Program Timing :

After you push AUTO button, AUTO RUN START displays start time, AUTO RUN END displays end time (If only single function executed, it will not display time).



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15. Configure Setting :

Set ISP size for SM59xx.

15.1 Select the "Conf." button on tool bar.

15.2 Set Configure size.

🌀 - MSM9169 ¥3.1		
File(F) Edit(E) View(V) Setting(O) Tools	(I) Help(H)	
Load Save Edit IC Auto Er	ase Prog. Blank Verify Secur Conf. Serv	a 🚱 d Read
IC INFORMATION	Config Setting	- 17:03:41
SM8951A	0x0000h	○ N=8 (0×F000h)
4K Code Flash 256 Byte BAM	Total	← N=7 (0×F200h)
	64K	○ N=6 (0×F400h) ○ N=5 (0×F600h)
		C N=4 (0xF800h) - 17:03:45
		○ N=3 (0×FA00h)
BUFFER SETTING	$\uparrow \qquad 1 \text{K} \qquad \leftarrow 8 \text{ (max.)}$	• N=1 (0xFE00h)
File E:\Customer code\Rx637.bin		○ N=0 (0×FFFFh)
	· · · · · · · · · · · · · · · · · · ·	
Total Size: 4096 bytes	Size = Num *512Byte	
PASS: 1	OK 3 Cancel	Read Config.
Ready		NUM //



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File(F) Edit(E) View(V) Setting(O) Tools(T) Help(H)	
File Edit@ View(V) Setting(V) Tools(T) Help(H) I could Save With IC Auto Enable Auto Enable Auto I C INFORMATION OPERATION Auto Erase Blank Verify Secur. Cont Feadures SM8951A Features Auto Erase Blank Check Phogram + Boot Yerify Sum Program + Boot Verify Sum Program =>PASS PROGRAM 256 Byte RAM Configure I Verify =>PASS, Sum: 6d168 H BUFFER SETTING File E:(Customer code\Px637.bin Fd168 Total Size: 1 FAIL: 0	
Ready	

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16. Read : Read Target IC Data

16.1 First click "Read" button, which will read Flash data from Target IC.

16.2 Click "Edit" to show data with a window.

16.3 In case of target IC being protected, all data will show "0".



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17. Send: (for Offline Programming)

MSM9169 support off-line programming, as below:

- 17.1 Push "Send" button, after you selected IC type and loaded file to buffer.
- 17.2 Then PC will download data to MSM9169 Controller MCU. MSM9169 board's busy LED(Yellow) will lighted

 After finish loading that the green LED will lighted and a message of "Transmit Data to MCU => PASS" will show on the message field, while the busy LED will turn off.
- 17.3 Push MSM9169 AUTO button, to start offline programming.



Specifications subject to change without notice, contact your sales representatives for the most recent information.

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18. Notice:

18.1 Please don't replace or remove any component from MSM9169 writer .

- 18.2 If it stops abnormally, please close MSM9169 V3.X Utility and reset board. Then re-start MSM9169.
- 18.3 Make sure the target IC is place correctly, otherwise IC could be permanently damaged.
- 18.4 If MSM9169 programming OK, it will show "PASS" message and a short buzz • Meanwhile GOOD LED will light. If MSM9169 programming fail, it will show "FAIL" message and a long buzz • Also, FAIL LED will light.
- 18.5 Please reload file for programming, after you change IC type.
- 18.6 If you want to install a new MSM9169 Utility, please uninstall the old version first .