

RS232 Flash Memory SM60128/SM64096/SM68192

SM60128/SM64096/SM68192 are non-volatile data storage devices. They have industry standard RS232 interface and USB 2.0 interface. The data from RS232 port will be saved in flash memory. The data can be transferred to computer using USB interface. The flash memory is erasable and rewritable. Microsoft Windows virtual COM port device driver is provided. Windows application software can read the memory using COM port. A software tool, eeTerminal, is provided to manage the flash memory.

Features:

- Non-volatile Flash memory
- RS232 interface write in
- USB interface read out
- Microsoft Windows virtual COM port device driver
- Memory access LED indication
- 2 AA battery powered
- Touch button power switch
- Battery level meter
- Battery overdischarge protection (manually activate)
- ESD surge protected
- Available in 128k, 4096k, 8192k bytes
- Utility software eeTerminal



Specifications:

USB	USB specification 2.0 compliant	
	USB full speed 12Mbps transmission	
	USB Micro-B receptacle connector	
RS232	Connector: DB9 male	
	Baud rate: 300bps to 115200bps	
	Parity: Even, Odd, None, Mark, Space	
	Data length: 5-bit, 6-bit, 7-bit, 8-bit	
	Stop bits: 1-bit, 2-bit	
Power	Two 1.5v AA batteries.	
Software	Microsoft Windows virtual COM port device driver, eeTerminal.	
Part Number	SM60128	128k bytes
	SM62048	2048k bytes
	SM64096	4096k bytes

System Requirements

Microsoft Windows 8, Windows 7, Windows Vista, or Windows XP

RS232 Data Logging

- Verify serial port setting. The serial settings are shown on the toolbar when use the device with eeTerminal. The flash memory's RS232 settings must match the data device's RS232 settings.
- Power up the flash memory and verify it is empty. Connect flash memory's USB port to a powered USB port. The LED will be solid on if the flash memory is empty. The LED will be flashing at 1/2Hz rate if the flash memory is not empty. Erase the memory using eeTerminal if it is not empty.
- Connect the flash memory's RS232 port to data device's RS232 port.
- Monitor logging status. The LED will be flashing at 5Hz rate when there are data saved to flash memory. The LED will be flashing at 1/2Hz rate when flash memory is full.
- Unplug flash memory's power when finish data logging.
- Upload the data from your Windows application software, or upload the data using eeTerminal.

Device Driver Installation:

The software package is supplied in a compressed folder file named *USB_COM_1P_Driver* or a CD. Here are the installation steps.

DEVICE FUNCTIONS

1. If you have file *USB_COM_1P_Driver*, rename *USB_COM_1P_Driver* to *USB_COM_1P_Driver.zip*, extract all files to a file folder on your local disk or USB drive, double click *setup.exe* to start software installation.
2. If you have the software CD, insert the software CD into your computer's disc drive, the software installation will start automatically.
3. Follow the on-screen instructions until the setup wizard finishes.
4. Plug the adapter's USB cable to the computer's USB port.
5. Follow the on-screen instructions if any to complete the software installation.

Use Your Windows Application Software with Flash Memory

Your Microsoft Windows application software must support Microsoft Windows COM port device. Your application can open the flash memory's virtual COM port and configure the flash memory's RS232 serial settings. Your application software reads from flash memory. It will not read from flash memory's RS232 port directly. Your application software can write to flash memory's RS232 port directly.

Use eeTerminal with Flash Memory

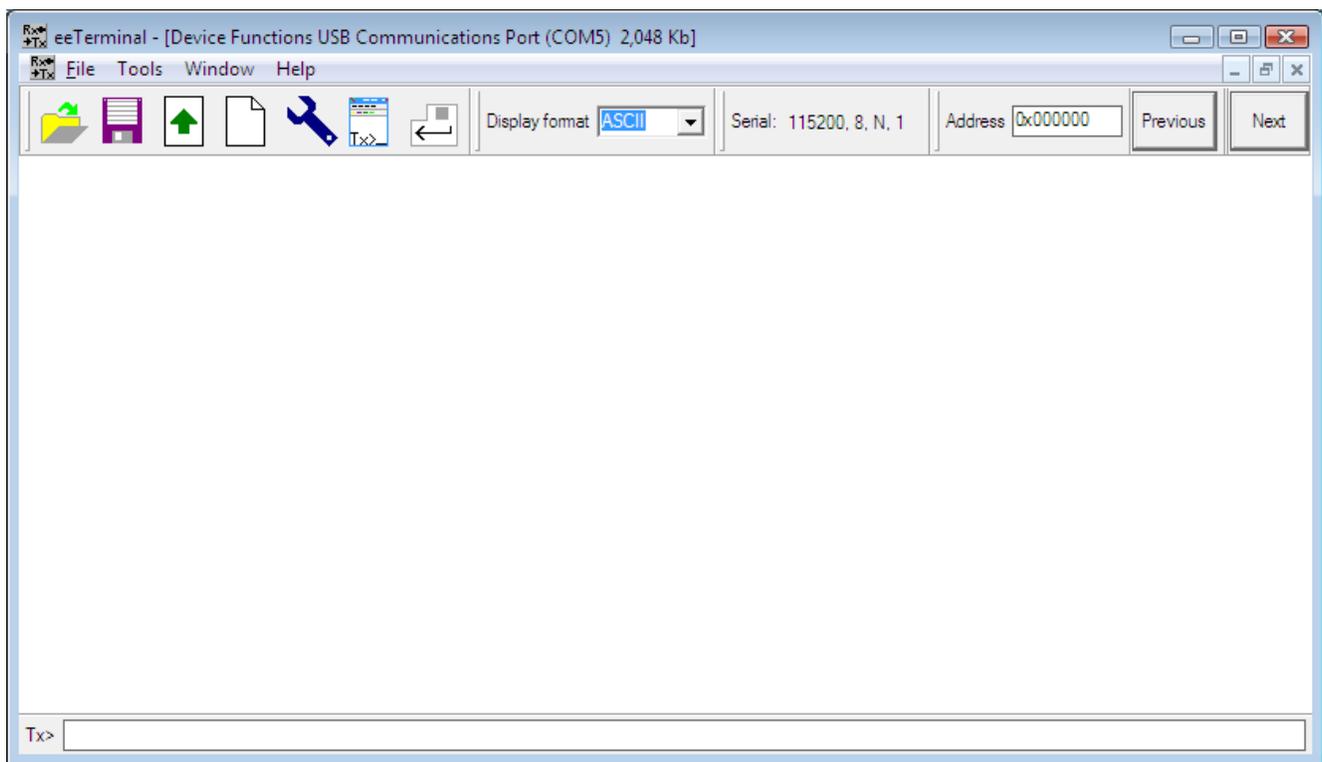


Figure 1

Connect flash memory's USB port to computer's USB port. Start **eeTerminal** application by double clicking **eeTerminal** icon .

1. **Open Device.** To open a flash memory device, select **File** from menu bar, and select **Open Device**. eeTerminal lists all compatible devices in a pop-up window. Select the flash memory device by its COM port number from the list and click **Open** button. A memory access window, as Figure 1, will open. To open another device, click  on the toolbar or use **Open Device** from menu bar. Each device has its own window within **eeTerminal**. Window arrangement tools are under **Window** menu. The device windows can be placed side by side horizontally or vertically within **eeTerminal**.
2. **Close Device.** Select **File** from menu bar and select **Close**, or click on the windows Close button.

DEVICE FUNCTIONS

3. **Upload Data.** Click  on the toolbar. A window, as Figure 2, will pop up. It shows the number of bytes uploaded from flash memory. The eeTerminal will update the display window when the uploading process is completed.



Figure 2

4. **Display format.** eeTerminal supports data display in ASCII, HEX, and Decimal. Click on the selection box next to **Display format** on the toolbar to change between ASCII, HEX, and Decimal.
5. **Browse data.** To check information at a specific location (in HEX format) in the **Address** box on the toolbar. Use **Previous** and **Next** button on the toolbar to move backward and forward page by page.
6. **Open File.** Click  on the toolbar to open a file, or select **File** from menu bar and select **Open File** to open a file.
7. **Save to File.** To save data to a file, click  on the toolbar, or select **File** from menu bar and select **Save to File**. eeTerminal provides an interface to select a file name. After successfully select a file name, a window, as Figure 3, will pop up. The default is to save the whole flash memory to a file. To save only part of the flash memory to a file, modify the starting address in **From** box and ending address in the **To** box. Click **Save** to save the file. Click **Cancel** to exit without saving a file.

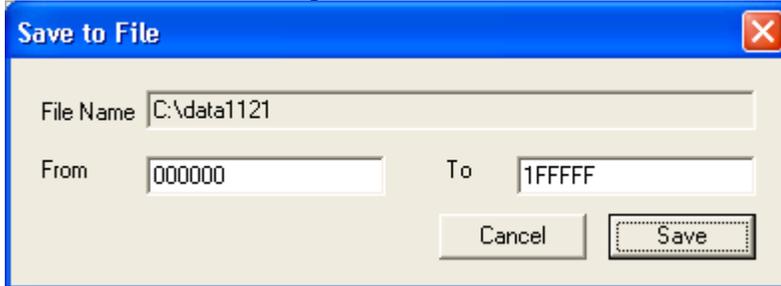


Figure 3

8. **Erase Flash Memory.** Click  on the toolbar. A window, as Figure 4, will pop up. It shows that a flash memory erasing process is in progress. The eeTerminal will update the display window when the erasing process is completed.

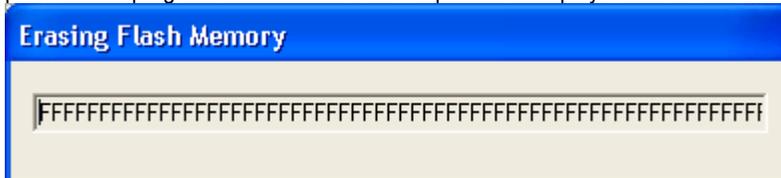


Figure 4

9. **Configuration.** Click  on the toolbar. A window, as Figure 5, will pop up. Select the required serial settings and click **Ok** to save the new settings. The serial information on the toolbar will also reflect the new settings. Click **Cancel** to exit configuration without any changes.

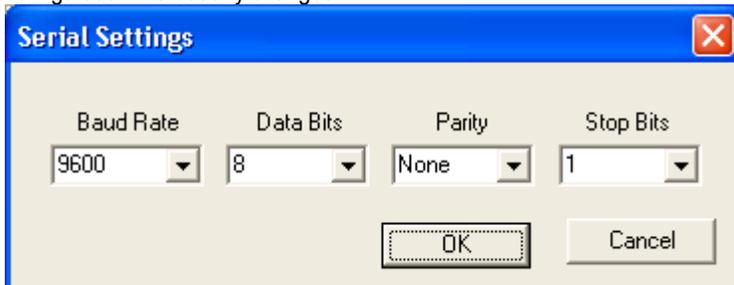


Figure 5

10. **Send Data in ASCII, HEX, or Decimal Formats.** Inside eeTerminal, data to be sent is represented as a sequence of bytes. It can be input in ASCII, Hexadecimal, or Decimal symbols. The input window Tx> is at the bottom of eeTerminal window. In ASCII mode, input each data byte as an ASCII character and press Enter to send the data, for example, "test string". To send

carriage return-line feed with data, click  on the toolbar and this button will be displayed as  and carriage return-

line feed will be added to data sequence when the ENTER key is pressed. Click  to disable this feature. In HEX mode, input each data byte as one hexadecimal digit (0 to 15) or two hexadecimal digits (16 to 255) and separate two data bytes by a space, for example, 5 F 1E. Press Enter to send the data. In Decimal mode, input each data bytes as one decimal digit (0 to 9) or two decimal digits (10 to 99) or three decimal digits (100 to 255), for example, 2 12 124. Press Enter to send the data. In HEX mode and Decimal mode, data can also be input as an ASCII string or an ASCII character. The ASCII string must be included in “ ” and an ASCII character must be included in ‘ ’, for examples, “This is a software setting”, ‘S’. In HEX mode and

Decimal mode,  has no effect and carriage return-line feed sequence will not be sent. The carriage return-line feed must be coded in data sequence if needed. Click the **Data format** dropdown list from toolbar to set the data format to ASCII, HEX, or Decimal.

DB9 Connector Pin Descriptions

Pin #	Signal/Pin Connection
1	1 - 4 - 6
2	Rx
3	Tx
4	1 - 4 - 6
5	GND
6	1 - 4 - 6
7	7 - 8
8	7 - 8
9	NC

LED Indicator – Flash memory

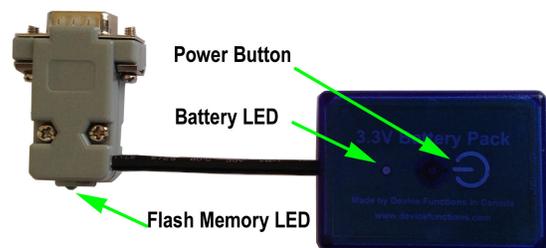
Status	LED Flash Rate
Idle, erasing, uploading	Solid on
Saving data	5
Memory not empty at power on, memory full	1/2

LED Indicator - Battery meter and battery switch

Status	LED Flash Rate
Battery switch (touch button)	Solid on while touching, otherwise off
Battery good	LED off
Battery low (Alkaline)	Once every 3 or 2 seconds
Battery extremely low (Alkaline)	Once per second
Battery low (Rechargeable)	Once per second
Battery cutoff (Rechargeable)	LED off

Battery Power On and Power Off

Touch on power button  until battery LED lights up. Left your finger. Touch twice more consecutively. The battery LED must be on with each touch. This turns on battery power. The same procedure is used to turn off battery power.



DEVICE FUNCTIONS

Battery Level Meter

The battery level meter tells the current battery power in percentage. Power on the adapter. Place your finger on  power button. The battery LED will start flashing in a few seconds. Count the number of flashing until the battery LED stops flashing. Lift your finger. The battery level is read as,

Number of Flashing	Battery Power Level
10	90% - 100%
9	80% - 90%
8	70% - 80%
7	60% - 70%
6	50% - 60%
5	40% - 50%
4	30% - 40%
3	20% - 30%
2	10% - 20%
1	Less than 10%

Change Batteries

Two 1.5v AA batteries are required. Both Alkaline and rechargeable batteries can be used. Unscrew the screw on the battery pack. Remove the cover gently. Remove the old batteries and place the new batteries in. Align the + and - signs on the batteries with the + and - signs on the battery holder. Put on the cover and tighten the screw.

Rechargeable Battery Overdischarge Protection

This feature can be activated when changing batteries to rechargeable batteries. It prevents rechargeable batteries degradation caused by overdischarge. To activate overdischarge protection, touch on  power button while placing in the second rechargeable battery. The LED must be solid on. Left your finger. Touch twice more consecutively. The LED will flash three times. This indicates that the over discharge protection is activated.

Overdischarge protection is off by default. You need to activate this feature every time when you change rechargeable batteries.

Touch Button Adjustment

Unscrew the screw and gently remove the cover. Remove one battery. Touch on  power button while placing back the battery. The LED is solid on. Keep touching on  power button until LED off. Lift your finger. Wait until the LED is solid on again. Place your finger over  power button. Keep your finger on  power button until LED starts flashing. Lift your finger. When the LED stops flashing, the touch button recalibration is done.

The following procedure can be used to restore manufacture's touch button setting. Unscrew the screw and gently remove the cover. Remove one battery. Touch on  power button while placing back the battery. The LED is solid on. Keep your finger on  power button until LED off. Continue keeping your finger on  power button until LED starts flashing. Lift your finger. When the LED stops flashing, the touch button is restored.

Environmental Conditions

Operating temperature range	0°C TO +45°C
Storage temperature range	-20°C TO +35°C
Relative humidity	0% to 90%, non-condensing

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