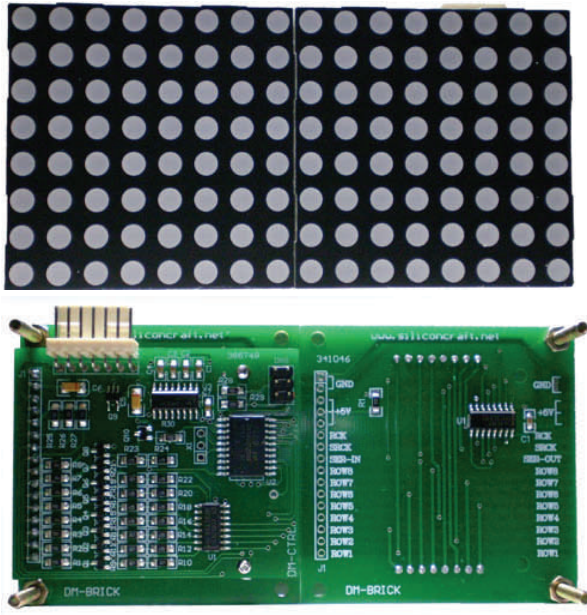


SCDM168—16x8 Serial Dot Matrix LED Display Module



- 16x8 LED Dot Matrix
- RS232 Interface
- Simple Serial Command
- Built in ASCII characters font
- 4 Built in Animation
- 120mm x 60mm
- 10 user's define characters/bitmap
- Scrolling Message
- 30 characters Message Storage

General Description

SCDM168 is a 16 x 8 dot matrix LED module that can be easily controlled with simple serial command.

It accepts data from any host device with RS232 interface. Data can be ASCII character or bitmap.

It features both 5x7 and 6x8 characters font. Built in ASCII characters font bitmap plus 10 user's defined characters or bitmaps.

Scroll 30 characters message with 4 speed selection

Programmable start up mode.

Serial Interface

One wire RS232 , baud rate 9600 bps , 8 Data Bits, No Parity , 1 Stop Bit

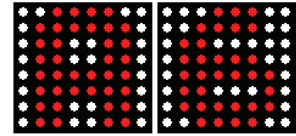
Serial Command Summary

Command	Code
Show Static ASCII Characters	[0xFE] [Character 0] [Character 1]
Scrolling Message	[0xFD] [30 ASCII Characters]
Show 8 x 8 Bitmap	[0xFC] [Location] [8 Bytes Bitmap]
Set Scrolling Speed	[0xFA] [Speed]
Save Bitmap	[0xF9] [Page] [8 Bytes Bitmap]
Show Built in Animation	[0xF8] [Animation Page] [Location]
Set Current Screen As Default Mode	[0xF7] [0x1B]

0xXX Denotes Hexadecimal Number

Show Static ASCII Character

,	-	.	/	0	1	2	3	4	5	6	7
8	9	:	;	<	=	>	?	@	A	B	C
D	E	F	G	H	I	J	K	L	M	N	O
P	Q	R	S	T	U	V	W	X	Y	Z	[
\]	^	_	`	a	b	c	d	e	f	g
h	i	j	k	l	m	n	o	p	q	r	s
t	u	v	w	x	y	z					



Character 1 Character 0

Example:

To display “A6” send
[0xFE] [0x41] [0x36]

Apart from the characters listed above, user can define 10 more characters. These characters are stored in memory page 0 to 9. 0x00 denote custom character at memory page 0. 0x09 denote custom character at memory page 9.

Example: to display custom character 0 and custom character 3 send [0xFE] [0x00] [0x03]

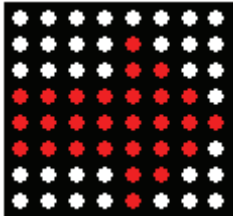
Scrolling Message

Scroll message of up to 30 characters. Scrolling start from right to left.

Example : Scroll “8251” Send [0xFD][0x38][0x32][0x35][0x31]

Display 8 x 8 Bitmap

You can send a 8 x 8 bitmap data to be displayed. This 8 x 8 data can be saved on the built in non volatile memory for later retrieval.



Example :

Bitmap for the arrow sign is [0x83][0x83][0x83][0x83][0xEF][0xC7][0x83][0x01]

To display this on character location 0 send

[0xFC] [0x00][0x83][0x83][0x83][0x83][0xEF][0xC7][0x83][0x01]

Custom Characters

10 memory slots available to store user’s defined characters. Each character consist of 8 bytes data. To store the character , send [0xF9] [Page] [8 Bytes Bitmap]

Where page is 0 to 9.

Example :

To save the arrow graphic above onto location page 1 ,

Send [0xFC] [0x01] [0x83][0x83][0x83][0x83][0xEF][0xC7][0x83]

Scrolling Speed

To change the speed of animation and message scrolling use command [0xFA] [Speed]

Where speed = 0x39 , 0x31, 0x29, 0x21

0x39 being the slowest (1s interval) and 0x21 the fastest (0.125s)

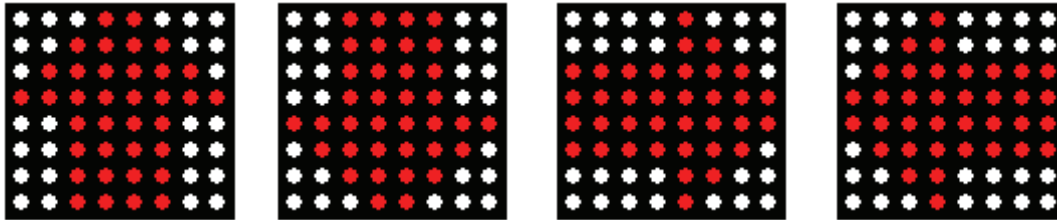
Factory default is 0x29.

Startup Mode

Startup mode is the what the module will display upon power up.

User can set the current screen (static or scrolling) to be the startup mode by sending command [0xF7] [0x1B]

Built in Animation



Up Arrow
[0xF8][0x00][L]

Down Arrow
[0xF8] [0x01] [L]

Right Arrow
[0xF8] [0x02] [L]

Left Arrow
[0xF8] [0x03] [L]

Where L is c=where the animation to be displayed. 0 or 1

Delay between command

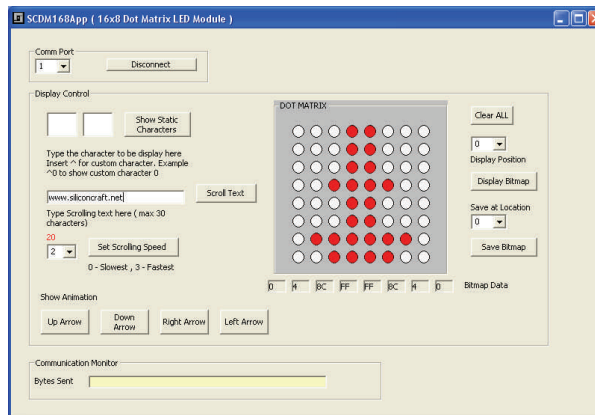
A delay of minimum 50 ms is needed before the next command can be send.

Test and Configuration Software

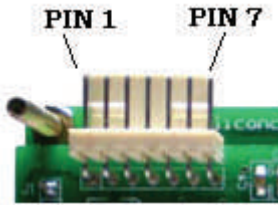
SCDM168App Software is available for free from www.siliconcraft.net/download.htm

It works on PC running Windows 98,XP and 2000.

It is created to test and configure SCDM168 module attached to the RS232 Serial Port of the PC



Pin Connection

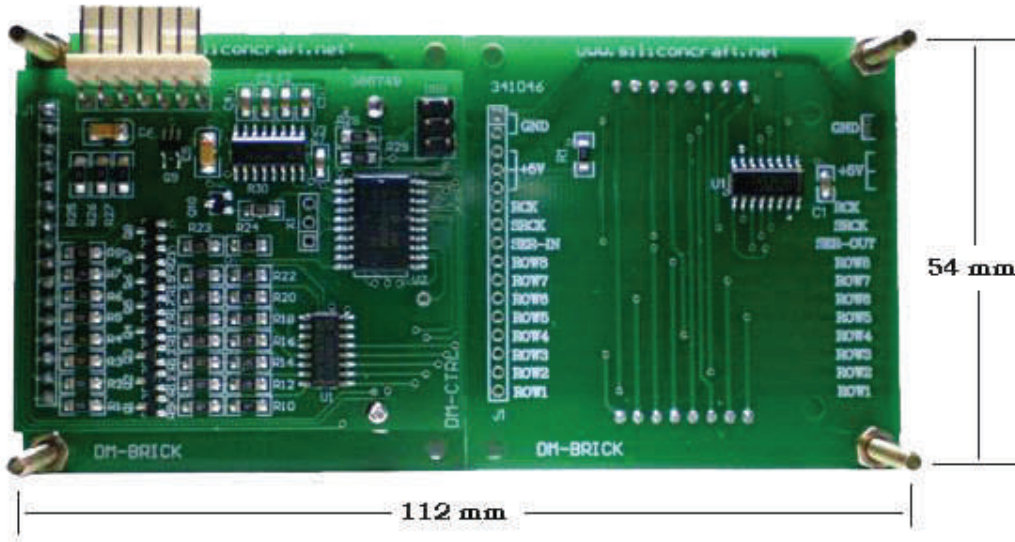


Data and Power Pin Out

PIN 1	-	5VDC IN
PIN 2	-	5VDC IN
PIN 3	-	5VDC IN
PIN 4	-	GND
PIN 5	-	GND
PIN 6	-	RS232 Transmit (Data from LED module)
PIN 7	-	RS232 Receive (Data to LED Module)

Note : PIN 6 connection is only needed
When configuring the module with
SCDM168App Software

Mechanical Dimension (mm)



Mounting Holes Locations. (Screw Diameter 3mm)



Electrical Specification

Power Supply	5VDC +/- 10%
Operating Temperature	0°C to 70°C
Maximum Current Consumption	1400 mA