LCD Controller Manual
MMS1264K Version 1.1

2

————————.

[1.] MMS1264K   Special Font

1. MMS1264K   ,

♦ MMS1264K

   ♦   LCD Resolution   : Mono 128*64 dots
   ♦   :
                              KS5601
   ♦   Font   :   16*16 dots
                                      8*16 dots
                            16*16

♦ MMS1264K

   ♦   CPU   : Atmega128
   ♦   LCD Controller   : KS0108B
   ♦   Display Type   : Mono 128*64 dots
   ♦   : DC 5[V]/350[mA]
   ♦   : RS-232C 9600, 19200, 57600, 115200 [bps]

♦ MMS1264K

   ♦   ,   :   2   ,   2   ,   2
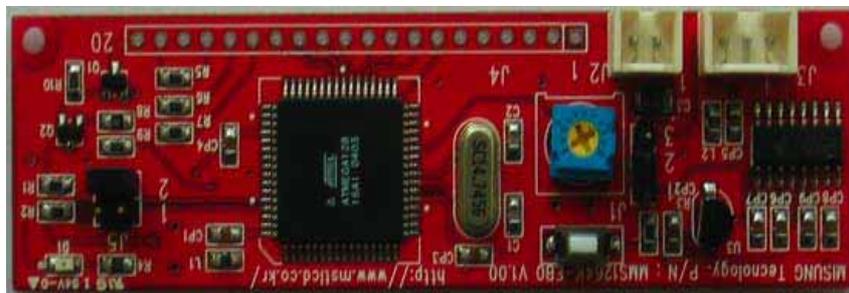   ♦   Graphic   :   , Line, Rectangle,   ,
   ♦   /   Font
   ♦   Cursor
   ♦   Clear   : Block   Clear   ,   Clear
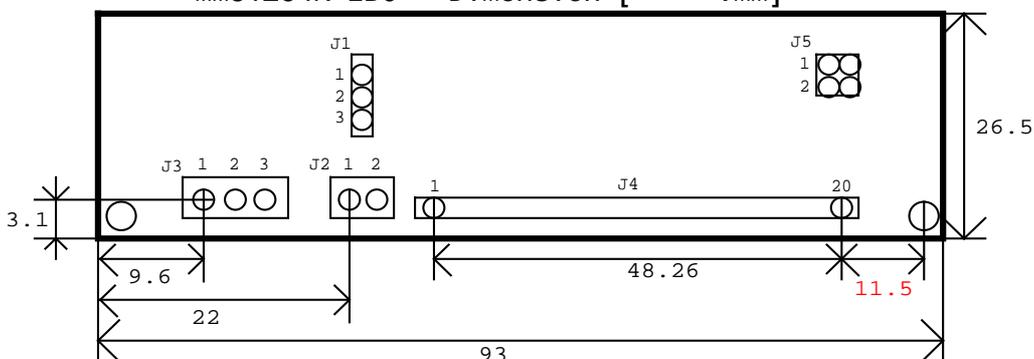   ♦

2. MMS1264K   Connector

2   MMS1264K   Dimensions   Connector   .

MMS1264K

MMS1264K-EBO   Dimension [: mm]

2-1. RS-232C Connector : J3

Pin Number	Symbol	Description
1	RXD_RS232C Level	Receive Data : LCD Controller
2	RXD_TTL Level	Receive Data : LCD Controller
3	GND	Ground

2-2. Power Connector : J2

Pin Number	Symbol	Description
1	VCC	+5[VDC]/350[mA]
2	GND	Ground

2-3. RXD Level Select : J1

Pin Number	Symbol	Description
1 – 2 (Short)	RXD_RS232C Level	Receive Data
2 – 3 (Short)	RXD_TTL Level	Receive Data

2- 4. LCD Connector : J4

Pin Number	Symbol	Description
1	VSS	Ground
2	VCC	+ 5[VDC]
3	VO	Power Supply for LCD
4	RS	Register Selection
5	R/W	Read/Write
6	E	Enable
7	DB0	Data 0
8	DB1	Data 1
9	DB2	Data 2
10	DB3	Data 3
11	DB4	Data 4
12	DB5	Data 5
13	DB6	Data 6
14	DB7	Data 7
15	CS1	Chip Seletion
16	CS2	Chip Seletion
17	/RST	Reset
18	Vout	Negative Voltage
19	LEDA	LED Power
20	LEDK	LED Power

2- 5. Serial Baud Rate : J5

Pin Number	Symbol	Description
1	-	BaudRate Select
2	-	BaudRate Select

** BaudRate   J5   Head pin   .

Pin NO.	J5 1	J5 2	BaudRate [bps]
	ON	ON	9,600
	ON	OFF	19,200
	OFF	ON	57,600
	OFF	OFF	115,200

3.

'Esc' = 0x1b [hex]

			Parameter		
'Esc'	'K'	'0x01'			3-1-1
		'0x02'		KS5601　　　　　　　(default)	
		'0x03'			
		'0x04'		(default)	
'Esc'	'E'	'0x01'		(default)	3-1-2
		'0x02'			
		'0x03'		(default)	
		'0x04'			
'Esc'	'P'	'0x01'		ON (default)	3-1-3
		'0x02'		ON	
		'0x05'		Font　　　　　　ON	3-1-4
		'0x06'		Font　　　　　　ON	
		'0x07'		Font　　　　　　ON	
		'0x08'		Font　　　　　　OFF (default)	
'Esc'	'D'	'0x01'		clear	3-1-5
		'0x03'	(X1,Y1,X2,Y2)	Graphic　　　clear (X1, Y1, X2, Y2　hex 　　:0x000 ~ 0x7f　　:0x00 ~ 0x3f)	
'Esc'	'C'	'0x05'	(X,Y)	Graphic X,Y　　　cursor (X,Y　hex 　　:0x00 ~ 0x7f　　:0x00 ~ 0x3f)	3-1-6
'Esc'	'L'	'0x01'		LED Power ON (default)	3-1-7
		'0x02'		LED Power OFF	
'Esc'	'G'	'0x01'	(X,Y)	Graphic X:0x000 ~ 0x7f　Y:0x00 ~ 0x3f	3-1-8
		'0x02'	(X,Y)	Graphic X:0x000 ~ 0x7f　Y:0x00 ~ 0x3f	
		'0x03'	(X1,Y1,X2,Y2)	Graphic　　　　　　**Line** X1,X2:0x000 ~ 0x7f　Y1,Y2:0x00 ~ 0x3f	3-1-9
		'0x04'	(X1,Y1,X2,Y2)	Graphic　　　　　　**Line** X1,X2:0x000 ~ 0x7f　Y1,Y2:0x00 ~ 0x3f	
		'0x05'	(X1,Y1,X2,Y2)	Graphic　　　　　　　**Rectangle** X1,X2:0x000 ~ 0x7f　Y1,Y2:0x00 ~ 0x3f	3-1-10
		'0x06'	(X1,Y1,X2,Y2)	Graphic　　　　　　　**Rectangle** X1,X2:0x000 ~ 0x7f　Y1,Y2:0x00 ~ 0x3f	
		'0x07'	(X1,Y1,X2,Y2)	Graphic　　　　　　　**Rectangle** X1,X2:0x000 ~ 0x7f　Y1,Y2:0x00 ~ 0x3f	
		'0x08'	(X1,Y1,X2,Y2)	Graphic　　　　　　　**Rectangle** X1,X2:0x000 ~ 0x7f　Y1,Y2:0x00 ~ 0x3f	

			Parameter		
		'0x09'	(X,Y,radius)	Graphic X Y X:0x000 ~ 0x7f Y:0x00 ~ 0x3f Radius :0x00 ~ 0x1f	3-1-11
		'0x0a'	(X,Y,radius)	Graphic X Y X:0x000 ~ 0x7f Y:0x00 ~ 0x3f Radius :0x00 ~ 0x1f	
		'0x0b'	(X,Y,radius)	Graphic X Y X:0x000 ~ 0x7f Y:0x00 ~ 0x3f Radius :0x00 ~ 0x1f	
		'0x0c'	(X,Y,radius)	Graphic X Y X:0x000 ~ 0x7f Y:0x00 ~ 0x3f Radius :0x00 ~ 0x1f	
		'0x0d'	(X,Y,a,b)	Graphic X Y X:0x000 ~ 0x7f Y:0x00 ~ 0x3f a :128/2 b :64/2	3-1-12
		'0x0e'	(X,Y,a,b)	Graphic X Y X:0x000 ~ 0x7f Y:0x00 ~ 0x3f a :128/2 b :64/2	
		'0x0f'	(X,Y,a,b)	Graphic X Y X:0x000 ~ 0x7f Y:0x00 ~ 0x3f a :128/2 b :64/2	
		'0x10'	(X,Y,a,b)	Graphic X Y X:0x000 ~ 0x7f Y:0x00 ~ 0x3f a :128/2 b :64/2	

3-1.

Parameter '+'   .

'Esc' = 0x1b (Hex)

3-1-1.

	'ESC'+ 'K'
	'0x01' or '0x02'
Parameter	
	'ESC'+ 'K'+ '0x01' => 'ESC'+ 'K'+ '0x02' => KS5601 'ESC'+ 'K'+ '0x03' => 'ESC'+ 'K'+ '0x04' =>

3-1-2.

	'ESC'+ 'E'
	'0x01' or '0x02'
Parameter	
	'ESC'+ 'E'+ '0x01' => ASCII 256 'ESC'+ 'E'+ '0x02' => 'ESC'+ 'E'+ '0x03' => 'ESC'+ 'E'+ '0x04' =>

3-1-3.

	'ESC'+ 'P'
	'0x01' or '0x02'
Parameter	
	'ESC'+ 'P'+ '0x01' => 'ESC'+ 'P'+ '0x02' =>

3-1-4.

	'ESC'+ 'P'
	'0x04' or '0x05' or '0x06' or '0x07'
Parameter	

	'ESC'+ 'P'+ '0x04' => Text Layer Font
	      8*16 dots => 16*32 dots 16*16 dots => 32*32 dots
	'ESC'+ 'P'+ '0x05' => Text Layer Font
	      8*16 dots => 16*16 dots 16*16 dots => 32*16 dots
	'ESC'+ 'P'+ '0x06' => Text Layer Font
	      8*16 dots => 8*32 dots 16*16 dots => 16*32 dots
	'ESC'+ 'P'+ '0x07' => Text Layer Font OFF

3-1-5.   Clear

	'ESC'+ 'D' 9
	'0x01' or '0x03'
Parameter	'X1'+ 'Y1'+ 'X2'+ 'Y2'
	'ESC'+ 'D'+ '0x01' => Clear (10, 10, 100, 31) Clear =>'ESC'+ 'D'+ '0x03'+ '0x0a'+ '0x0a'+ '0x64'+ '0x1f' : Clear

3-1-6. Cursor

	'ESC'+ 'C'
	'0x05'
Parameter	'X'+ 'Y'
	'ESC'+ 'C'+ '0x05'+ 'X'+ 'Y' => Graphic (X, Y) Cursor

3-1-7. LED Power ON/OFF

	'ESC'+ 'L'
	'0x01' or '0x02'
Parameter	
	'ESC'+ 'L'+ '0x01' => LED Power ON 'ESC'+ 'L'+ '0x02' => LED Power OFF

3-1-8. Graphic   /

	'ESC'+ 'G'
	'0x01' or '0x02'
Parameter	'X'+ 'Y'

	'ESC'+ 'G'+ '0x01'+ 'X'+ 'Y' => (X, Y) .
	    ) Graphic (50, 80)
	    => 'ESC'+ 'G'+ '0x01'+ '0x32'+ '0x50'
	 'ESC'+ 'G'+ '0x02'+ 'X'+ 'Y' => (X, Y) .
	    ) Graphic (50, 80)
	    => 'ESC'+ 'G'+ '0x02'+ '0x32'+ '0x50'

3-1-9. Graphic   Line   /

	'ESC'+ 'G'
	'0x03' or '0x04'
Parameter	'X1'+ 'Y1'+ 'X2'+ 'Y2'

	'ESC'+ 'G'+ '0x03'+ 'X1'+ 'Y1'+ 'X2'+ 'Y2'
	 => (X1,Y1,X2,Y2) Line .
	   ) Graphic (0, 10, 63, 31) Line
	   => 'ESC'+ 'G'+ '0x03'+ '0x00'+ '0x0a'+ '0x3f'+ '0x1f'
	'ESC'+ 'G'+ '0x04'+ 'X1'+ 'Y1'+ 'X2'+ 'Y2'
	 => (X1,Y1,X2,Y2) Line .
	   ) Graphic (0, 10, 63, 31) Line
	   => 'ESC'+ 'G'+ '0x04'+ '0x00'+ '0x0a'+ '0x3f'+ '0x1f'
	        (Graphic) : X 0x00 ~ 0x7f, Y 0x00 ~ 0x3f

3-1-10. Graphic   /   Rectangle   /

	'ESC'+ 'G'
	'0x05' or '0x06' or '0x07' or '0x08'
Parameter	'X1'+ 'Y1'+ 'X2'+ 'Y2'

	'ESC'+ 'G'+ '0x05'+ 'X1'+ 'Y1'+ 'X2'+ 'Y2'
	 => (X1,Y1,X2,Y2) Rectangle .
	   ) Graphic (10, 10, 100, 31) Rectangle
	   => 'ESC'+ 'G'+ '0x05'+ '0x0a'+ '0x0a'+ '0x64'+ '0x1f'
	'ESC'+ 'G'+ '0x06'+ 'X1'+ 'Y1'+ 'X2'+ 'Y2'
	 => (X1,Y1,X2,Y2) Rectangle .
	   ) Graphic (10, 10, 100, 31) Rectangle .
	   => 'ESC'+ 'G'+ '0x06'+ '0x0a'+ '0x0a'+ '0x64'+ '0x1f'
	'ESC'+ 'G'+ '0x07'+ 'X1'+ 'Y1'+ 'X2'+ 'Y2'
	 => (X1,Y1,X2,Y2) Rectangle .
	   ) Graphic (10, 10, 100, 31) Rectangle .
	   => 'ESC'+ 'G'+ '0x07'+ '0x0a'+ '0x0a'+ '0x64'+ '0x1f'
	'ESC'+ 'G'+ '0x08'+ 'X1'+ 'Y1'+ 'X2'+ 'Y2'
	 => (X1,Y1,X2,Y2) Rectangle .
	   ) Graphic (10, 10, 100, 31) Rectangle .
	   => 'ESC'+ 'G'+ '0x08'+ '0x0a'+ '0x0a'+ '0x64'+ '0x1f'
	        (Graphic) : X 0x00 ~ 0x7f, Y 0x00 ~ 0x3f

3-1-11. Graphic   /   /

	'ESC'+ 'G'
	'0x09' or '0x0a' or '0x0b' or '0x0c'
Parameter	'X'+ 'Y'+ radius

	'ESC'+ 'G'+ '0x09'+ 'X'+ 'Y'+ 'radius'
	 => (X,Y) 'radius' .
	   ) Graphic (63, 31) radius = 31
	    => 'ESC'+ 'G'+ '0x09'+ '0x3f'+ '0x1f'+ '0x1f'
	'ESC'+ 'G'+ '0x0a'+ 'X'+ 'Y'+ 'radius'
	 => (X,Y) 'radius' .
	   ) Graphic (63, 31) radius = 31 .
	    => 'ESC'+ 'G'+ '0x0a'+ '0x3f'+ '0x1f'+ '0x1f'
	'ESC'+ 'G'+ '0x0b'+ 'X'+ 'Y'+ 'radius'
	 => (X,Y) 'radius' .
	   ) Graphic (63, 31) radius = 31 .
	    => 'ESC'+ 'G'+ '0x0b'+ '0x3f'+ '0x1f'+ '0x1f'
	'ESC'+ 'G'+ '0x0c'+ 'X'+ 'Y'+ 'radius'
	 => (X,Y) 'radius' .
	   ) Graphic (63, 31) radius = 31 .
	    => 'ESC'+ 'G'+ '0x0c'+ '0x3f'+ '0x1f'+ '0x1f'
	       (Graphic) : X 0x00 ~ 0x7f, Y 0x00 ~ 0x3f
	  radius '0x01' ~ '0x1f'

3-1-12. Graphic   /   /

	'ESC'+ 'G'
	'0x0d' or '0x0e' or '0x0f' or '0x10'
Parameter	'X'+ 'Y'+ 'a'+ 'b'

	'ESC'+ 'G'+ '0x0d'+ 'X'+ 'Y'+ 'a'+ 'b'
	 => (X,Y) 'a', 'b' .
	   ) Graphic (63, 31) 'a'= 31, 'b'= 63
	    => 'ESC'+ 'G'+ '0x0d'+ '0x3f'+ '0x1f'+ '0x1f'+ '0x3f'
	'ESC'+ 'G'+ '0x0e'+ 'X'+ 'Y'+ 'a'+ 'b'
	 => (X,Y) 'a', 'b' .
	   ) Graphic (63, 31) 'a'= 31, 'b'= 63
	    => 'ESC'+ 'G'+ '0x0e'+ '0x3f'+ '0x1f'+ '0x1f'+ '0x3f'
	'ESC'+ 'G'+ '0x0f'+ 'X'+ 'Y'+ 'a'+ 'b'
	 => (X,Y) 'a', 'b' .
	   ) Graphic (63, 31) 'a'= 31, 'b'= 63
	    => 'ESC'+ 'G'+ '0x0f'+ '0x3f'+ '0x1f'+ '0x1f'+ '0x3f'
	'ESC'+ 'G'+ '0x10'+ 'X'+ 'Y'+ 'a'+ 'b'
	 => (X,Y) 'a', 'b' .
	   ) Graphic (63, 31) 'a'= 31, 'b'= 63
	    => 'ESC'+ 'G'+ '0x10'+ '0x3f'+ '0x1f'+ '0x1f'+ '0x3f'
	       (Graphic) : X 0x00 ~ 0x7f, Y 0x00 ~ 0x3f
	  'a' '0x01' ~ '0x1f', 'b' '0x01 ~ 0x3f'

[1.] MMS1264K   Special Font

<   1- 1 > MMS1264K   (Special Font)   .

Special   <   1- 1 >   .

< 1 - 1 >