

LCD Controller Manual

MCT4823K Version 2.03



3 48-6

110002

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1. MCT4823K

2. MCT4823K Connector

- 2-1 RS-232C Connector
- 2-2 Power Connector
- 2-3 System configuration setting

3.

4. MCT4823K Image Overwrite

[1.] MCT4823K Special Font

1. MCT4823K

◆ MCT4823K

◆ LCD Resolution : 16bit Color TFT 480*234 dots

◆

:

KS5601

◆ LCD Back Light : CCFL Type

◆ Font : 16*16 dots

16*16 dots

8*16 dots

8*16 dots

16*16

◆ Image File Memory

16bit Color/480*234 => 61 [Page] .

Font

/

◆ MCT4823K

◆ CPU : ARM920T 200[MHz]

◆ Display Type : 16Bit Color TFT 480*234 dots

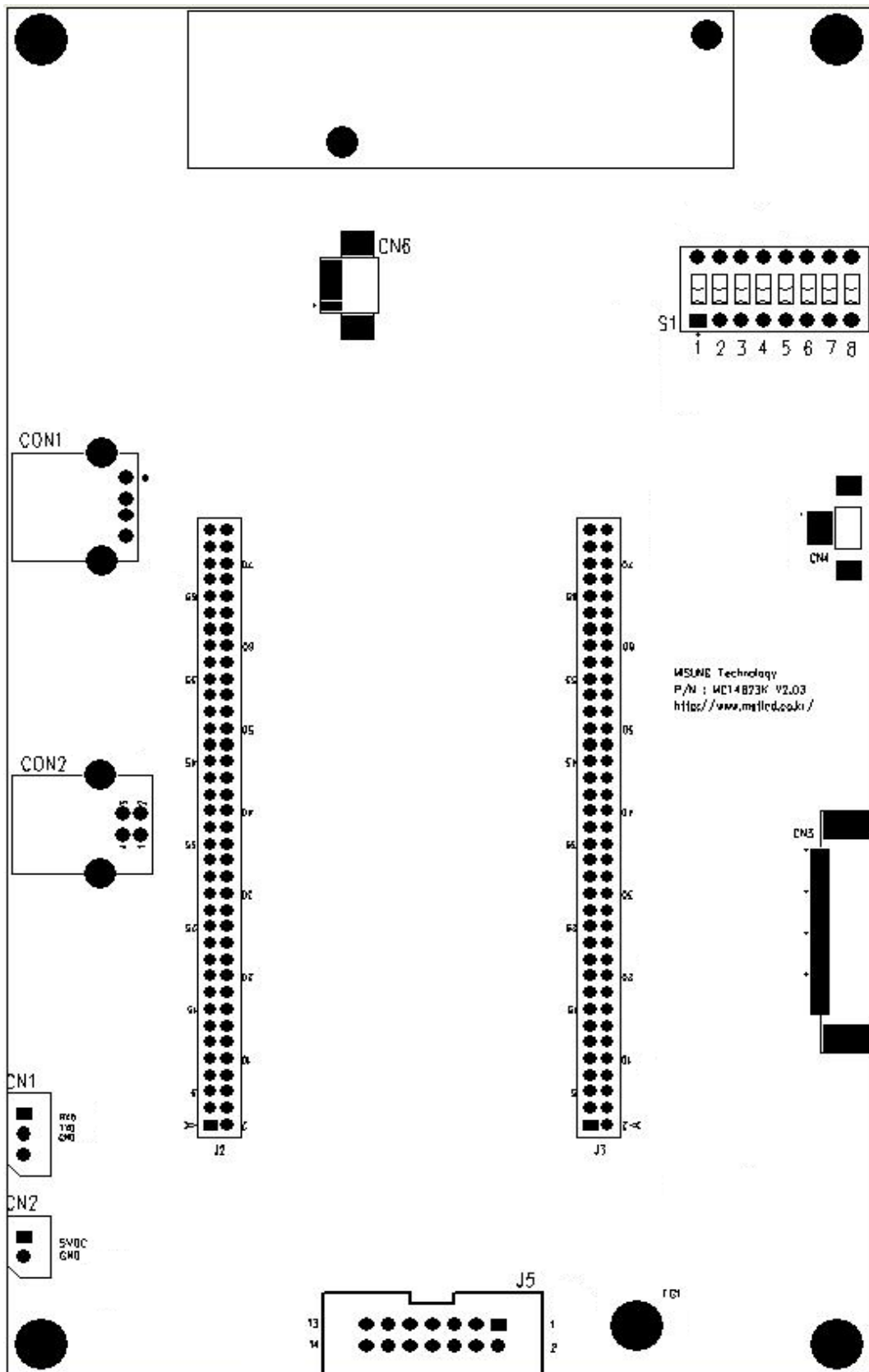
◆ : +5[VDC]

◆ : RS-232C => 9600, 19200, 57600, 115200 [bps]

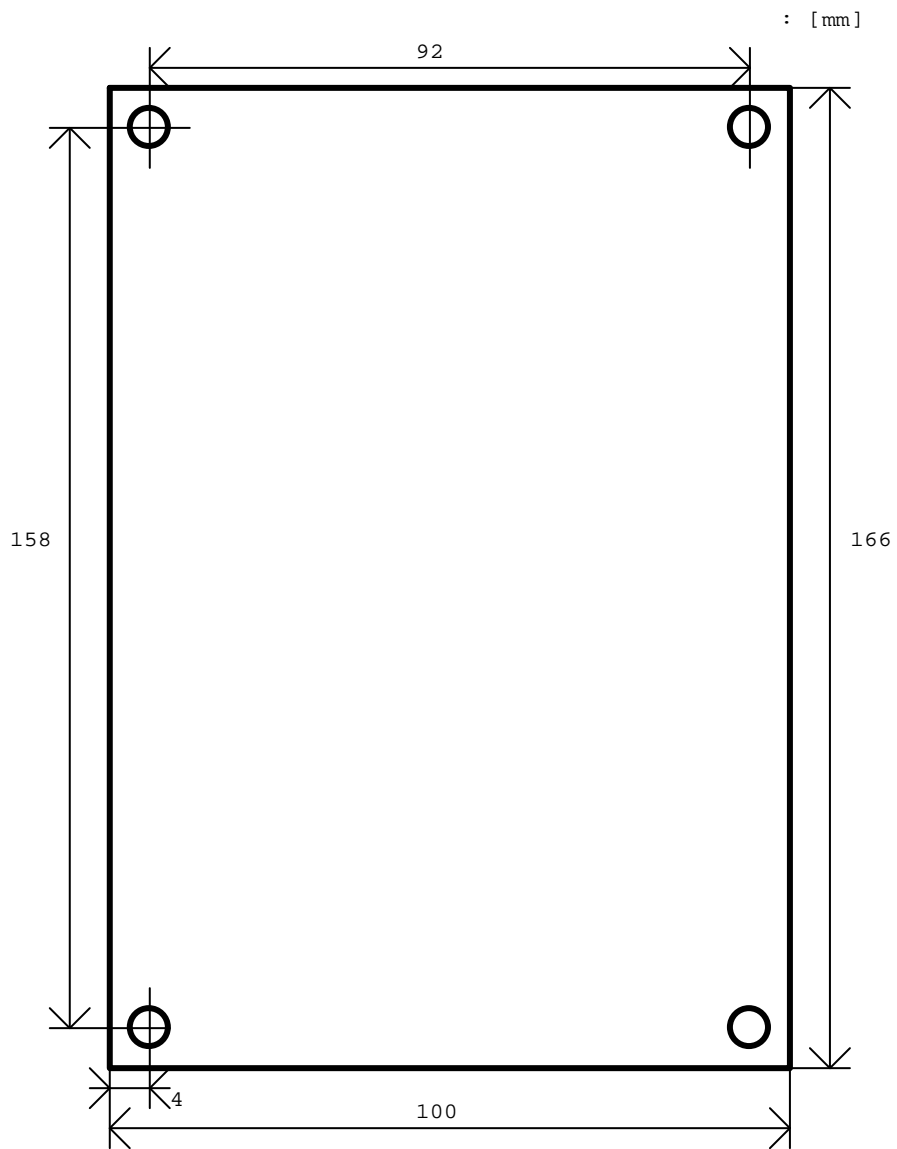
2. MCT4823K Connector

2 MCT4823K Dimensions Connector

<Connector >



MCT4823K Dimensions



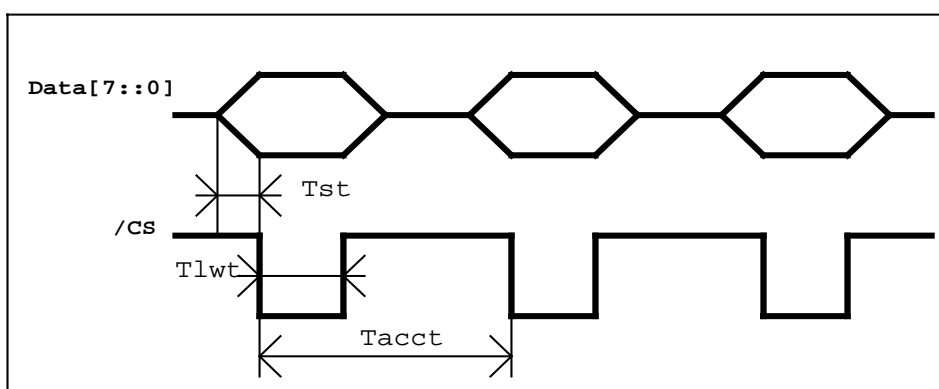
2-1. RS-232C Connector : CN1

Pin Number	Symbol	Description
1	RXD	Receive Data : LCD Controller
2	TXD	Transmit Data : LCD Controller
3	GND	DC Ground

2-2. Parallel Connector: J5

Pin Number	Symbol	Description
1	BUSY	Busy Output(Active Low)
2	RESERVED	Reserved
3	RESERVED	Reserved
4	RESERVED	Reserved
5	GND	Ground
6	/CS	Chip Select(Falling Edge Active)
7	D7	Data 7
8	D6	Data 6
9	D5	Data 5
10	D4	Data 4
11	D3	Data 3
12	D2	Data 2
13	D1	Data 1
14	D0	Data 0

Parallel Timing



Tst : Setup Time : 1[us] < Tst.

Tlwt : Low Width Time : 1[us] < Tlwt.

Tacct : Access Time : 100[us] < Tacct.

2-3. Power Connector : CN2

Pin Number	Symbol	Description
1	VCC5	+5[VDC]
2	GND	DC Ground

2-4. USB Device Connector : CON2**2-5. USB Host Connector: CON1 => Reserved****2-6. Touch : CN5****2-7. Switch : S1**

Pin Number	Symbol	Description
1		BaudRate
2		
3		8/16bit color
4		USB download
5		Reserved
6		Logo image display
7		Parallel on/off
8		Reserved

**** BaudRate : S1-1,2 Switch on/off**

S1-1	S1-2	BaudRate [bps]
ON	ON	9,600
ON	OFF	19,200
OFF	ON	57,600
OFF	OFF	115,200

**** 8/16bit Color : S1-3 Switch on/off**

S1-3	Symbol	Description
OFF	8Bit(256) Color	8Bit(256) Color
ON	16Bit Color	16Bit Color

**** USB download : S1-4 Switch on/off**

S1-4	Symbol	Description
ON		USB image download
OFF		

**** Logo image display : S1-6 Switch on/off**

S1-6	Symbol	Description
ON		Logo image display
OFF		

**** Parallel interface : S1-7 Switch on/off**

S1-7	Symbol	Description
ON		Parallel interface
OFF		

3.

'Esc' = 0x1b [hex]

			Parameter	
'Esc'	'K'	'0x01'		
		'0x02'		KS5601
		'0x03'		(default)
		'0x04'		
'Esc'	'E'	'0x01'		
		'0x02'		
		'0x03'		(default)
		'0x04'		
		'0x05'		MST1 FONT
'Esc'	'P'	'0x01'		Text reverse off
		'0x02'		Text reverse on
		'0x03'		Reserved
		'0x04'		Reserved
		'0x05'		Text under line on
		'0x06'		Text under line off
		'0x07'		Font ON
		'0x08'		Font 가 ON
		'0x09'		Font ON
		'0x0a'		Font OFF
		'0x0b'		Reserved
		'0x0c'		Reserved
		'0x0d'		Reserved
		'0x0e'		Reserved
		'0x0f'		Reserved
		'0x10'		Reserved
		'0x11'		Reserved
'0x12'		Reserved		
'0x13'		Reserved		
'0x14'		Font 가 3 , 2		
'0x15'		Font 가 2 , 3		
'0x16'		Font 가 3 , 3		
'Esc'	'D'	'0x01'		clear
		'0x02'	(X1,Y1,X2,Y2)	Text Clear (X1, Y1, X2, Y2 hex X1,X2:0x00 ~ 0x1e, Y1,Y2:0x00 ~ 0x0e)
		'0x03'		Reserved
		'0x04'	(X1,Y1,X2,Y2)	Graphic clear (X1, Y1, X2, Y2 hex X1,X2:0x000 ~ 0x1df, Y1,Y2:0x000 ~ 0xe9)

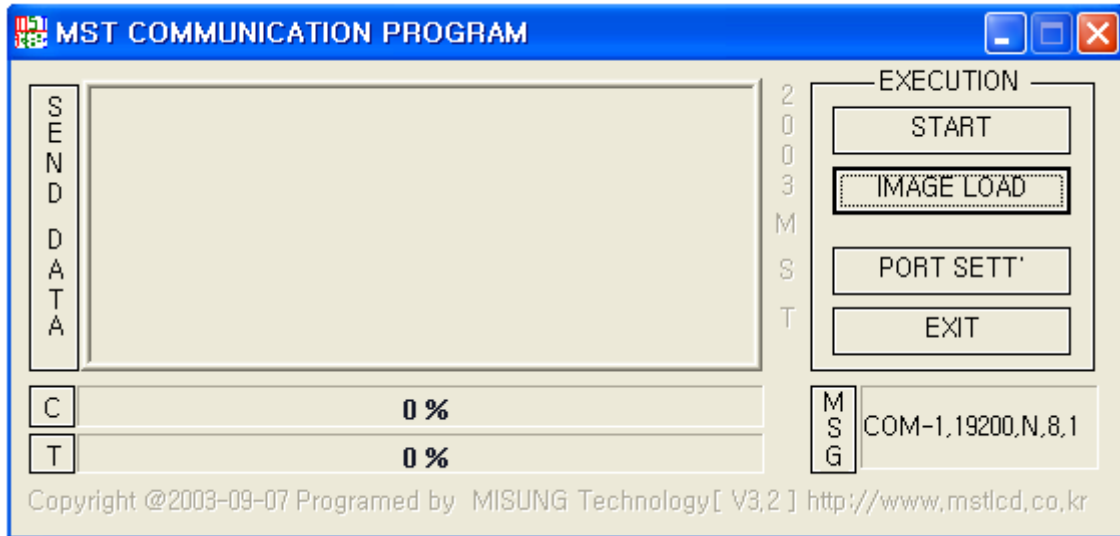
			Parameter	
'Esc'	'C'	'0x01'	(X,Y)	Text X,Y cursor . (X,Y hex 가 :0x00 ~ 0x1e :0x00 ~ 0x0e)
		'0x02'		Reserved
		'0x03'		Reserved
		'0x04'		Reserved
		'0x05'		Reserved
		'0x06'	(X,Y)	Graphic X,Y cursor . (X, Y) X1,X2:0x000 ~ 0x1df, Y1,Y2:0x000 ~ 0xe9
'Esc'	'L'	'0x01'		LCD Back Light OFF
		'0x02'		LCD Back Light ON
'Esc'	'V'	'0x01'		LCD Back Light UP
		'0x02'		LCD Back Light DOWN
'Esc'	'G'	'0x01'	(X,Y)	Graphic _____ X:0x000 ~ 0x1df, Y:0x000 ~ 0xe9
		'0x02'	(X,Y)	Graphic _____ X:0x000 ~ 0x1df, Y:0x000 ~ 0xe9
		'0x03'	(X1,Y1,X2,Y2)	Graphic Line _____ X1,X2:0x000 ~ 0x1df, Y1,Y2:0x000 ~ 0xe9
		'0x04'	(X1,Y1,X2,Y2)	Graphic Line _____ X1,X2:0x000 ~ 0x1df, Y1,Y2:0x000 ~ 0xe9
		'0x05'	(X1,Y1,X2,Y2)	Graphic Rectangle _____ X1,X2:0x000 ~ 0x1df, Y1,Y2:0x000 ~ 0xe9
		'0x06'	(X1,Y1,X2,Y2)	Graphic Rectangle _____ X1,X2:0x000 ~ 0x1df, Y1,Y2:0x000 ~ 0xe9
		'0x07'	(X1,Y1,X2,Y2)	Graphic Rectangle _____ X1,X2:0x000 ~ 0x1df, Y1,Y2:0x000 ~ 0xe9
		'0x08'	(X1,Y1,X2,Y2)	Graphic Rectangle _____ X1,X2:0x000 ~ 0x1df, Y1,Y2:0x000 ~ 0xe9
		'0x09'	(X,Y,radius)	Graphic _____ X Y X:0x000 ~ 0x1df, Y:0x000 ~ 0xe9 Radius :0x00 ~ 0xe9
		'0x0a'	(X,Y,radius)	Graphic _____ X Y X:0x000 ~ 0x1df, Y:0x000 ~ 0xe9 Radius :0x00 ~ 0xe9
		'0x0b'	(X,Y,radius)	Graphic _____ X Y X:0x000 ~ 0x1df, Y:0x000 ~ 0xe9 Radius :0x00 ~ 0xe9
		'0x0c'	(X,Y,radius)	Graphic _____ X Y X:0x000 ~ 0x1df, Y:0x000 ~ 0xe9 Radius :0x00 ~ 0xe9
		'0x0d'	(X,Y,a,b)	Graphic _____ X Y X:0x000 ~ 0x1df, Y:0x000 ~ 0xe9 a :480/2 b :234/2

			Parameter	
		'0x0e'	(X,Y,a,b)	Graphic _____ X Y X:0x000 ~ 0x1df, Y:0x000 ~ 0xe9 a :480/2 b :234/2
		'0x0f'	(X,Y,a,b)	Graphic _____ X Y X:0x000 ~ 0x1df, Y:0x000 ~ 0xe9 a :480/2 b :234/2
		'0x10'	(X,Y,a,b)	Graphic _____ X Y X:0x000 ~ 0x1df, Y:0x000 ~ 0xe9 a :480/2 b :234/2
'Esc'	'A'	'0x01'		Reset (MCT4823K Rebooting)
		'0x02'		LCD Back light -> delay 3sec
		'0x03'		Echo '0x06' Send
		'0x04'		User font display 16Byte Send Image data 7 16Byte dummy data 16Byte .
		'0x05'	(I)	16Bit Color mode I:R.G.B [Bytes]. R.G.B =>R:0x00~0xff; G:0x00~0xff; B:0x00~0xff
		'0x06'	(I)	16Bit Color mode I:R.G.B [Bytes]
		'0x07'		Reserved
		'0x08'	(I)	Text overlay on
		'0x09'	(I)	Text overlay off
		'0x0a'	(I)	Image overlay on
		'0x0b'	(I)	Image overlay off
		'0x0c'	(I)	Image overlay background color setting
'Esc'	'I'	'0x01'	(I)	Image One page draw (I 16bit-0x00~0x3d)
		'0x02'		Reserved
		'0x03'		Reserved
		'0x04'		Reserved
		'0x05'		Reserved
		'0x06'	(I,X1,Y1,X2,Y2)	I: Page Number, X1,Y1(start point), X2,Y2(end point) 2byte .
		'0x07'	(I,X1,Y1,X2,Y2)	I: Page Number, X1,Y1 - image start point X2,Y2 - image size
'Esc'	'T'	'0x01'		Reserved
		'0x02'		Reserved
		'0x03'		Touch start -> x,y 000,000 7byte .
		'0x04'		Touch stop
		'0x05'		Touch down
		'0x06'		Touch up #up# serial .
		'0x0a'		Touch calibration Data . #OK# data 7 }

			Parameter	
'Esc'	'S'	'0x01'	(l)	l->1byte(0~9) SDRM Page number display data SDRAM 1page #OK# data가
		'0x02'	(l)	l->1byte(0~9) SDRM Page number SDRAM 1page display.
		'0x03'	(l)	l->1byte(0~9) SDRM Page number SDRAM 1page delete.
		'0x04'		SDRAM page size l->1byte(0~9) SDRM Page number x1,x2,y1->start sx1,sx2,sy2-> size d1, d2, dy2->SDRAM point
		'0x05'		cursor l, size display l->1byte(0~9) SDRM Page number x1,x2,y1->start sx1,sx2,y1->Imgag size
		'0x06'		SDRAM data(1page) flash l1->SDRAM page number l2->Flash memory page number #OK# data
'Esc'	'Z'	'0x01'		Viewport move left top
		'0x02'		Viewport move right top
		'0x03'		Viewport move right bottom
		'0x04'		Viewport move left bottom

4. MCT4823K Image Overwrite

Image Overwrite Application Program



MCT4823K Image display ,
 Image page Overwrite .

MCT4823K PC Serial Cable

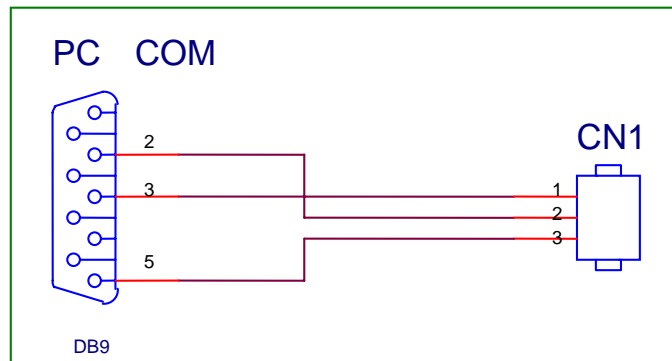
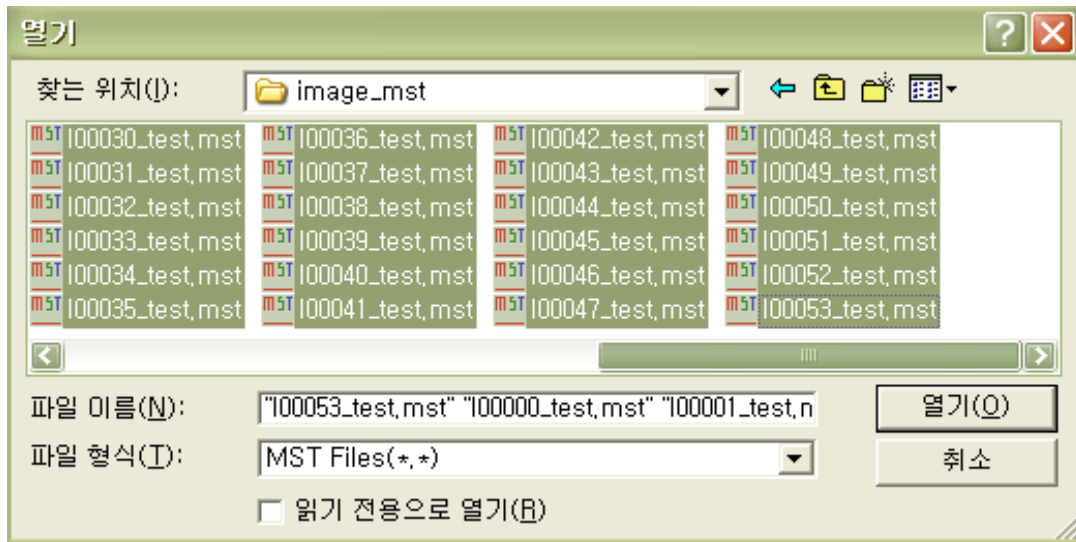
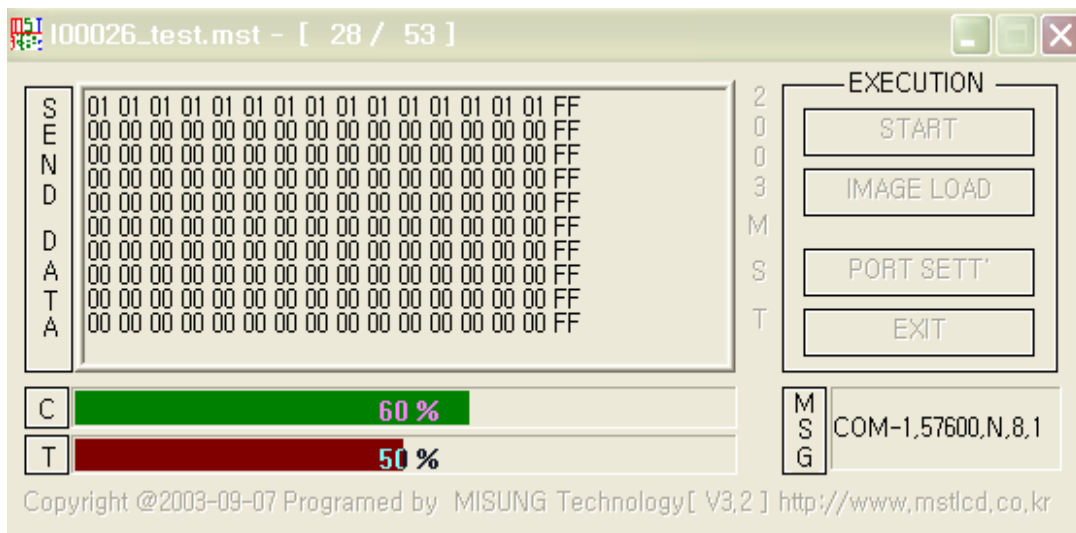


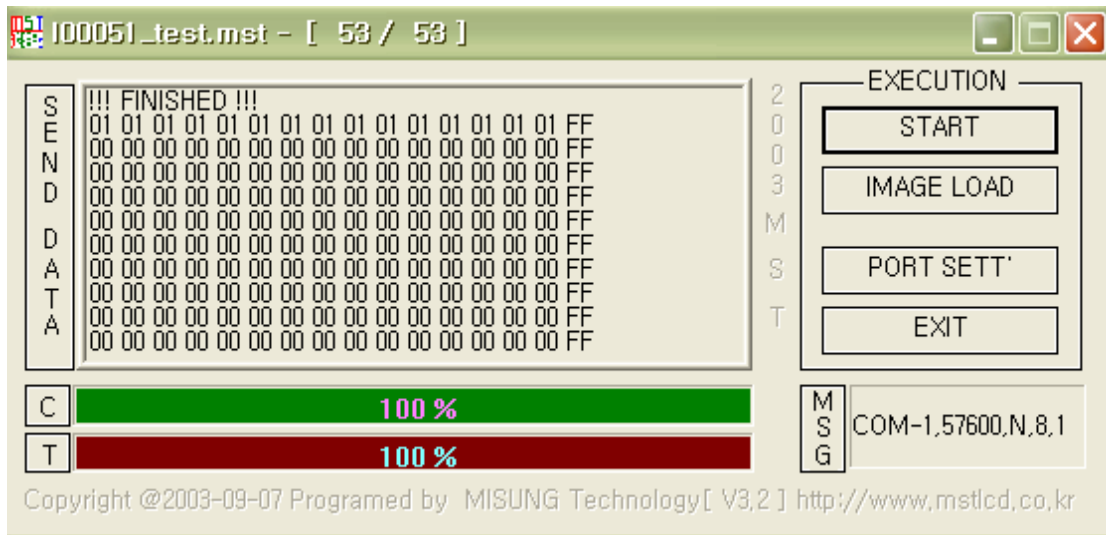
image , 'IMAGE LOAD'



, 'START' MCT4823K Overwrite

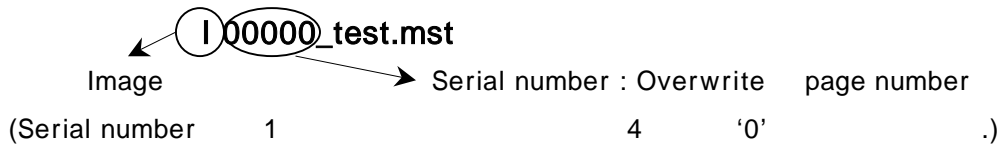


Bar Bar Download
, Bar
Bar 가 '100%' Image Overwrite



'IMAGE LOAD'

Image



Ex) 1 page Overwrite file I00001_test.mst

[1.] MCT4823K

Special Font

< 1- 1 > MCT4823K (Special Font)

Special < 1- 1 >

	0x00	0x01	0x02	0x03	0x04	0x05	0x06	0x07	0x08	0x09	0x0A	0x0B	0x0C	0x0D	0x0E	0x0F
0x00		☎	☎	☎	☎	☎	☎	☎	No.	Co.	TM.	am.		FM.	Tel.	
0x10	I	II	III	IV	V	VI	VII	VIII	IX	X	ℓℓ	mℓ	dℓ	ℓ	kℓ	cc
0x20	mm ³	cm ³	m ³	km ³	fm	nm	μm	mm	cm	km	mm ²	cm ²	m ²	km ²	ha	ℓg
0x30	m ^g	k ^g	kt	cal	kcal	dB	°/s	°/s	ps	ns	μs	ms	pV	nV	μV	mV
0x40	kV	MV	PA	nA	μA	mA	KA	FW	nW	μW	mW	kW	MW	Hz	kHz	MHz
0x50	GHz	THz	Ω	kΩ	MΩ	PF	nF	μF	mol	cd	rad	rad/s	rad/s	sr	Pa	kPa
0x60	MPa	GPa	Wb	Im	lx	Bq	Gy	Sv	°/kg	㉿	㊀	㊁	㊂	㊃	㊄	㊅
0x70	㊆	㊇	㊈	㊉	㊊	㊋	㊌	㊍	㊎	㊏	㊑	㊒	㊓	㊔	㊕	㊖
0x80	㊗	㊘	㊙	㊚	㊛	a	b	c	d	e	f	g	h	i	j	k
0x90	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯
0xA0	⑰	⑱	⑲	⑳	㉑	㉒	㉓	㉔	㉕	㉖	㉗	㉘	㉙	㉚	㉛	㉜
0xB0	㉝	㉞	㉟	㊀	㊁	㊂	㊃	㊄	㊅	㊆	㊇	㊈	㊉	㊊	㊋	㊌
0xC0	㊍	㊎	㊏	㊑	㊒	㊓	㊔	㊕	㊖	㊗	㊘	㊙	㊚	㊛	㊜	㊝
0xD0	㊞	㊟	㊠	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
0xE0	(n)	(o)	(p)	(q)	(r)	(s)	(t)	(u)	(v)	(w)	(x)	(y)	(z)	(1)	(2)	(3)
0xF0	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)				

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