Sauls Wharf House
Crittens Road
Great Yarmouth
Norfolk
NR31 0AG

Telephone +44 (0)1493 602602
Email:sales@midasdisplays.com
Email:tech@midasdisplays.com
www.midasdisplays.com

MC21605H6W-BNMLW-V2	2 x 16	5mm Character Height	LCD Module
Specification			
Version: 1		Date: 12/05/2017	
Revision			
1	10/05/2017	First Issue	

Display Features	
Character Count	2 x 16
Appearance	White on Blue
Logic Voltage	5V
Interface	Parallel
Font Set	English / Japanese
Display Mode	Transmissive
Character Height	4.99mm
LC Type	Blue STN
Module Size	65.50 x 36.70 x 13.50 mm
Operating Temperature	-20°C ~ +70°C
Construction	COB
LED Backlight	White

RoHS compliant

Box Quantity	Weight / Display
---	---

MIDAS DISPLAYS
DESIGN • MANUFACTURE • SUPPLY

* - For full design functionality, please use this specification in conjunction with the ST7066U + ST7065C specification. (Provided Separately)

Display Accessories

Part Number	Description
MCCMDB-16SIL	LCD Interconnect board, can be driven from either a PC or a single Board computer with a USB output.
MCCBL1A16SLIP -16DILS-150	16 Way, Single in-line to Dual In-line connector Cable.
MCCBL1A16SLIP -16SILS-150	16 Way, Single in-line to Single In-line connector Cable.

Optional Variants

Fonts	Appearances	Voltage
English/Euro English/Cyrillic	Black on Yellow/ Green Black on White Black on RGB	3V 3.3V

FEATURES

AVAILABLE OPTIONS	CHARACTERISTICS
DISPLAY FORMAT	**16Characters by 2 Lines**
POLARIZER OPTIONS	**Negative Transmissive**
BACKLIGHT TYPE OPTIONS	**Edge Type LED Backlight (Long life span version)**
BACKLIGHT COLOR OPTIONS	**White color**
LCD PANEL OPTIONS	**Blue STN**
VIEWING ANGLE OPTIONS	**6:00 (BOTTOM)**
TEMPERATURE RANGE OPTIONS	**-20°C ~ 70°C, Single Supply Voltage**
SUGGESTED DRIVING VOLTAGE	**Vlcm = 5.0V Vled = 5.0V**
SUGGESTED LED DRIVING MODE	**PIN15: LED+, PIN16:LED-**
CONTROLLER	**ST7066U + ST7065C**
FONT MAP CODE	**E Version**
DRIVING DUTY	**1/16**
DRIVING BIAS	**1/5**

MECHANICAL SPECIFICATIONS

OVERALL SIZE	**65.5W x 36.7H**	**mm**	THICKNESS	**max 13.5**	**mm**
VIEWING AREA	**54.0W x 14.4H**	**mm**	HOLE-HOLE	**60.5W x31.7H**	**mm**
CHARACTER SIZE	**2.55W x 4.99H**	**mm**	CHARACTER PITCH	**0.61W x0.42H**	**mm**
DOT SIZE	**0.47W x 0.58H**	**mm**	DOT PITCH	**0.05W x 0.05H**	**mm**

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
POWER SUPPLY (LOGIC)	Vdd	25°C	**-0.3**	—	**7.0**	**V**
POWER SUPPLY (LCD)	V0	25°C	**Vdd -13.5**	—	**Vdd +0.3**	**V**
INPUT VOLTAGE	Vin	25°C	**-0.3**	—	**Vdd +0.3**	**V**
OPERATING TEMPERATURE	Vopr	—	**-20**	—	**70**	**°C**
STORAGE TEMPERATURE	Vstg	—	**-30**	—	**80**	**°C**

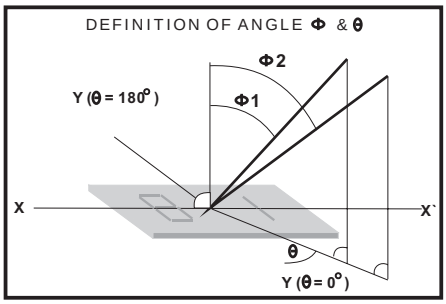
ELECTRONIC CHARACTERISTICS*

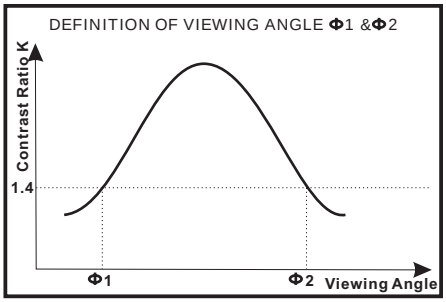
	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
	INPUT VOLTAGE	Vlcm = Vdd	—	—	**5.0**		**V**
	SUPPLY CURRENT	Idd	**Vdd=5.0V**		**1.5**	—	**mA**
	DRIVING VOLTAGE FOR LCD PANEL	Vlcd = (Vdd - V0)	**-20°C**	**4.40**	—	**4.80**	**V**
			0°C	**4.30**	—	**4.75**	
			25°C	**4.20**	**4.50**	**4.70**	
			50°C	**4.10**	—	**4.65**	
			70°C	**4.00**	—	**4.60**	

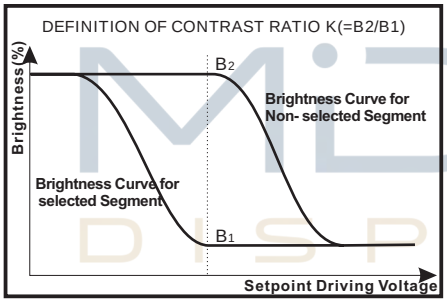
MIDAS DISPLAYS
DESIGN • MANUFACTURE • SUPPLY

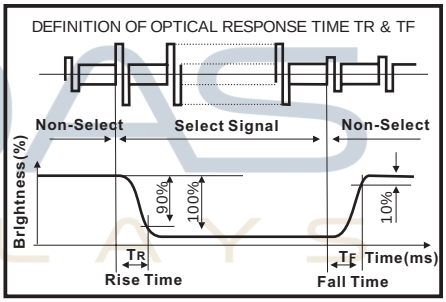
LCD CHARACTERISTICS

FOR STN/**FSTN** TYPE LCD **Panel** (TA=25°C, V**lcd**=5.0V ± 0.5V)							
	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
	VIEWING ANGLE	Φ2 − Φ1	K=4	40	—	—	deg
		θ		60			
	CONTRAST RATIO	K	—	6	—	—	—
	RESPONSE TIME(RISE)	TR	—	—	150	250	ms
	RESPONSE TIME(FALL)	TF	—	—	150	250	ms









LED CHARACTERISTICS

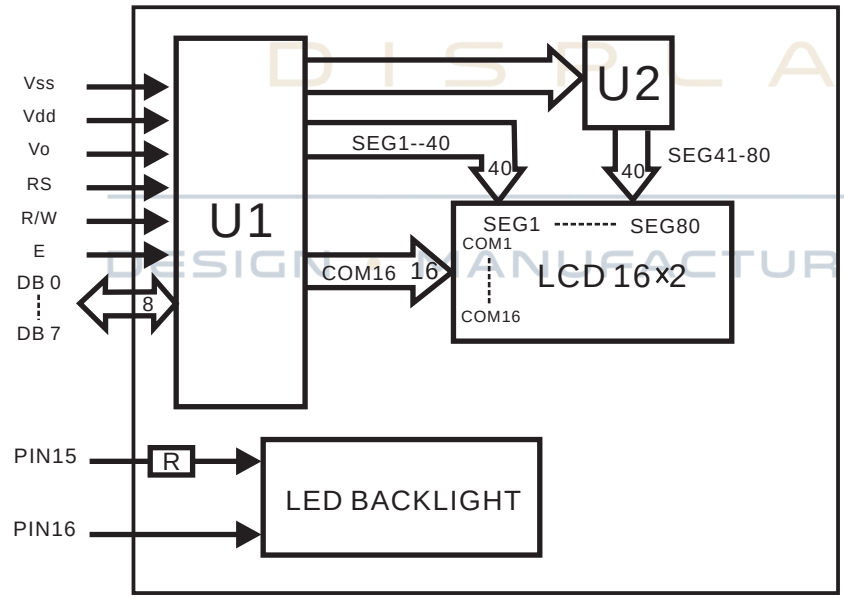
	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
	LED FORWARD VOLTAGE	Vf	25°C If = 17mA	—	3.0	—	V
	LED FORWARD CURRENT	If	25°C	—	17	—	mA
	LED REVERSE CURRENT	Ir	25°C Vr=5.0V	—	—	30	μA
	LED COLOR RANGE	X coordinate	25°C If = 17mA	0.26	—	0.30	—
		Y coordinate		0.27	—	0.31	—
	LED BRIGHTNESS (WITHOUT LCD)	Lv	25°C If = 17mA	—	320	—	cd/m^2
	LED BRIGHTNESS UNIFORMITY	Lvmin/Lvmax	25°C If = 17mA	70	—	—	Ratio
	LED LIFE TIME	—	25°C If = 17mA	20K	—	—	Hours

MIDAS DISPLAYS
DESIGN • MANUFACTURE • SUPPLY

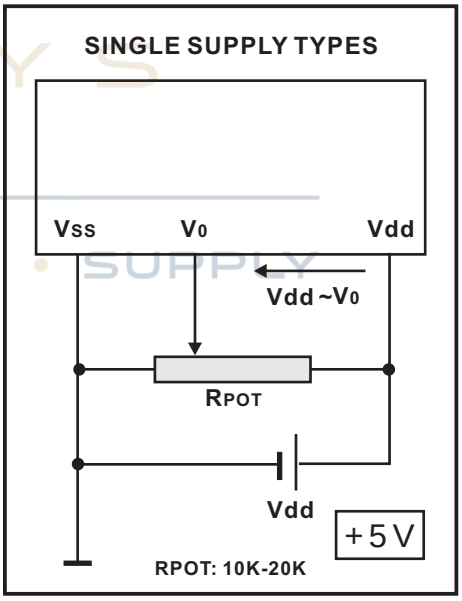
PIN ASSIGNMENT

PIN	SYMBOL	DESCRIPTION	REMARKS
1	Vss	GND	
2	Vdd	Power supply for LCM	5.0V
3	V0	Contrast Adjust	
4	RS	Register Select Signal	
5	R/W	Data Read / Write	
6	E	Enable Signal	
7	DB0	Data bus line	
8	DB1	Data bus line	
9	DB2	Data bus line	
10	DB3	Data bus line	
11	DB4	Data bus line	
12	DB5	Data bus line	
13	DB6	Data bus line	
14	DB7	Data bus line	
15	LED+	Power supply for BKL	5.0V
16	LED-	Power supply for BKL	

BLOCK DIAGRAM

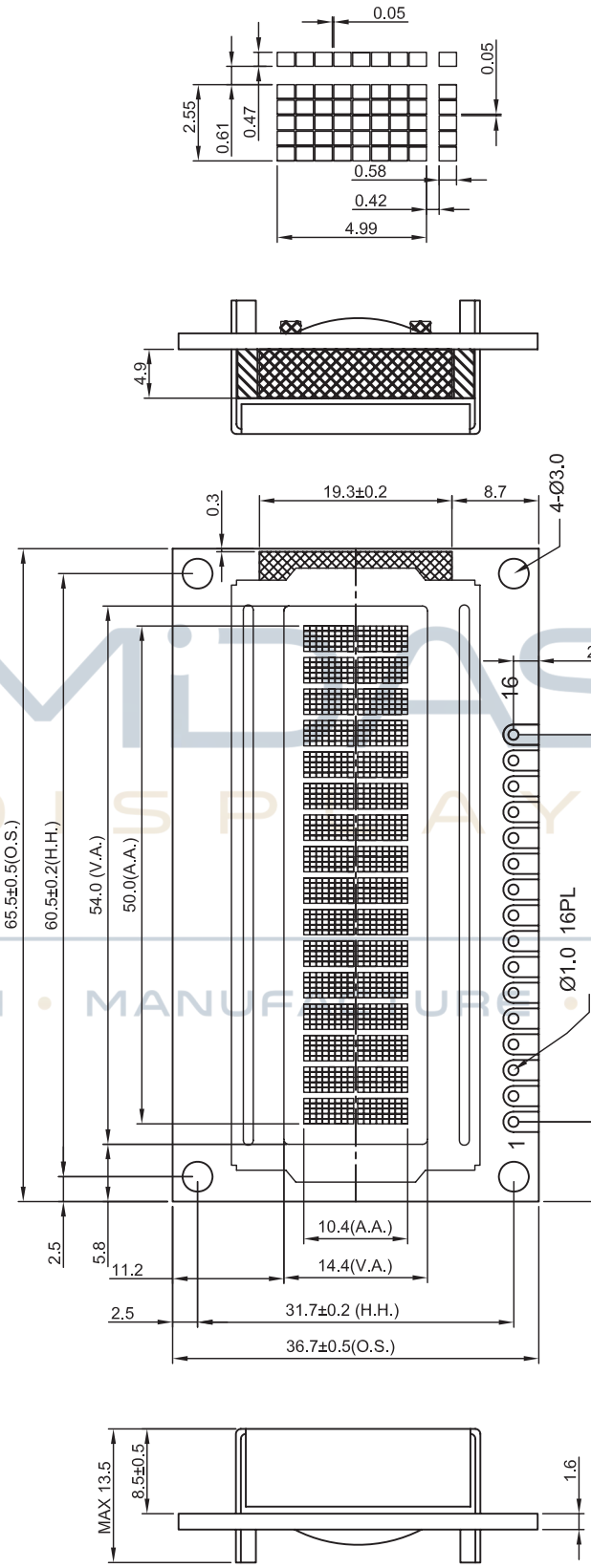


POWER SUPPLY DIAGRAM



MIDAS DISPLAYS
DESIGN • MANUFACTURE • SUPPLY

Upper 4bit / Lower 4bit	LLLL	LLLH	LLHL	LLHH	LHLL	LHLH	LHHL	LHHH	HLLL	HLLH	HLHL	HLHH	HHLL	HHLH	HHHL	HHHH
LLLL	CG RAM (1)															
LLLH	(2)															
LLHL	(3)															
LLHH	(4)															
LHLL	(5)															
LHLH	(6)															
LHHL	(7)															
LHHH	(8)															
HLLL	(1)															
HLLH	(2)															
HLHL	(3)															
HLHH	(4)															
HHLL	(5)															
HHLH	(6)															
HHHL	(7)															
HHHH	(8)															



MIDAS DISPLAYS
DESIGN • MANUFACTURE • SUPPLY