

- 5x7 dots with cursor
- 1/16 duty
- Controller (KS0066 or Equivalent) built in
- +5V single supply
- B/L driven by pin1 and 2 or A,K

Pin Assignment

No.	Symbol	Function
1	Vss	Gnd, 0V
2	Vdd	+5V
3	Vee	LCD Drive
4	RS	Function Select
5	R/W	Read/Write
6	E	Enable Signal
7-14	DB0-DB7	Data Bus Line

Mechanical Data

Item	Standard Value	Unit
Module Size	58.0 x 32.0	mm
Viewing Area	38.0 x 16.0	mm
Dot Size	0.56 x 0.66	mm
Character Size	2.96 x 5.56	mm

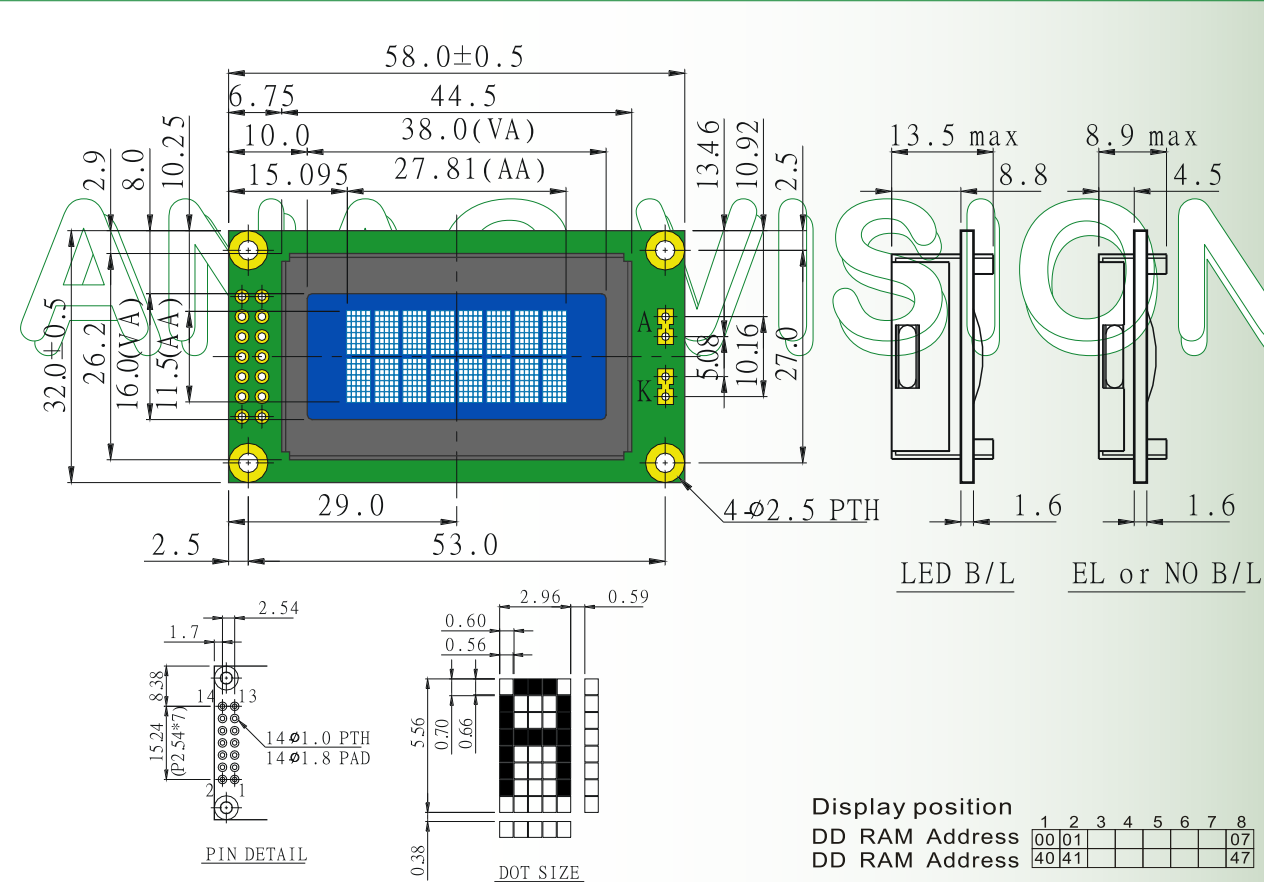
Absolute Maximum Rating

Item	Symbol	Standard Value			Unit
		min.	typ.	max.	
V-Module	Vdd-Vss	-0.3	---	7.0	V
V-Input	VI	-0.3	---	Vdd	V

Vss=0V, Vdd=5.0V

Electronical Characteristics

Item	Symbol	Condit.	Standard Value			Unit
			min.	typ.	max.	
Input Voltage	Vdd	Vdd=+5V	4.7	5.0	5.3	V
Supply Current	Idd	Vdd=+5V	---	1.5	1.7	mA
Recommended LC Driving Voltage for Standard Temp. Modules	Vdd-V0	-20 °C	4.9	5.2	5.5	V
		0 °C	4.5	4.8	5.1	
		25 °C	4.1	4.4	4.7	
		50 °C	3.8	4.2	4.4	
LED Forward Voltage	Vf	25 °C	---	4.2	---	V
		70 °C	3.5	4.0	4.1	
LED Forward Current	If	25 °C	---	70	140	mA
EL Power Supply Current	IEL	Vel=110V AC;400Hz	---	---	5.0	Vrms



Verfügbar: STN grün reflektiv positiv, STN grün LED gelb positiv, STN blau negativ LED weiß
CONRAD Best.-Nr.: 183369-07 183512-07

Command	Code										Description	Execution Time	
	RS	R/W	DB7	DB6	DB5	DB4	DB3	DB2	DB1	DB0			
Clear Display	0	0	0	0	0	0	0	0	0	1	Clear the display and return the cursor to the home position (address 0).	82 μs - 1.64ms	
Return Home	0	0	0	0	0	0	0	0	0	1	*	Return the cursor to the home position(address 0).also return a shifted display to the home position.DDRAM contents remain unchanged.	40 μs - 1.6ms
Entry Mode Set	0	0	0	0	0	0	0	0	1	I/D	S	Set the cursor's move direction and enable/disable the display.	40 μs
Display On/off Control	0	0	0	0	0	0	0	1	D	C	B	Turn the display ON/OFF(D),or the cursor ON/OFF(C),and blink of the character at the cursor position(B).	40 μs
Cursor & Display Shift	0	0	0	0	0	1	S/C	R/L	*	*	*	Move the cursor and shift the display without changing the DD RAM contents.	40 μs
Function Set	0	0	0	0	1	DL	N	F	*	*	*	Set the data width(DL),the number of lines in display(L), and the character font(F).	40 μs
Set CGRAM Address	0	0	0	1	Acc						Set the CG RAM address.CG RAM data can be read or altered after making this setting.	40 μs	
Set DDRAM Address	0	0	1	Add						Set the DD RAM address.Data may be written or read after making this setting.	40 μs		
Read Busy Flag & Address	0	1	BF	AC						Read the busy flag(BF)indicating that an internal operation is being performed and read the address counter contents.	1 μs		
Write Data to CG or DD RAM	1	0	Write Data						Write data into DD RAM or CG RAM.	43 μs			
Read Data from CG or DDRAM	1	1	Read Data						Read data from DD RAM or CG RAM.	43 μs			
	I/D=1:Increment I/D=0:Decrement S=1:Accompanies Display Shift. S/C=1:Display Shift S/C=0:Cursor Move R/L=1:Shift To The Right. R/L=0:Shift To The Left. DL=1:8 Bits DL=0:4 Bits N=1:2 Lines N=0:1 Line F=1:5x10 Dots F=0:5x7 Dots BF=1:Busy BF=0:Can Accept Data										DD RAM:Display data RAM CG RAM:Character generator RAM Acc:CG RAM Address Add:DD RAM Address Corresponds to cursor address. AC:Address counter Used for both DD and CG RAM address.		

* *: don't care fosc: 27KHZ

Engl./Jap. Font Table (Std.)

Upper 4 bit Lower 4 bit	LLLL	LLLH	LLHL	LLHH	LHLL	LHLH	LHHL	LHHH	HLLL	HLLH	HLHL	HLHH	HHLL	HHLH	HHHL	HHHH
LLLL	CG RAM (1)			0	1	2	3	4					5	6	7	8
LLLH	(2)		!	1	A	a					9	7	8	9	0	1
LLHL	(3)		"	2	B	b	r				"	4	5	6	7	8
LLHH	(4)		#	3	C	c	s				7	8	9	0	1	2
LHLL	(5)		\$	4	D	d	t				\	E	T	t	W	0
LHLH	(6)		%	5	E	e	u				.	S	A	1	2	3
LHHL	(7)		&	6	F	f	v				ラ	カ	ニ	ヨ	シ	ジ
LHHH	(8)		'	7	G	g	w				フ	キ	ス	ラ	9	4
HLLL	(1)		(	8	H	h	x				4	ウ	キ	リ	4	5
HLLH	(2)		)	9	I	i	y				5	エ	リ	ウ	5	6
HLHL	(3)		*	0	J	j	z				6	フ	リ	エ	6	7
HLHH	(4)		+	1	K	k	3				7	カ	ロ	カ	7	8
HHLL	(5)		,	2	L	l	4				8	シ	フ	フ	8	9
HHLH	(6)		-	3	M	m	5				9	ス	ハ	ハ	9	0
HHHL	(7)		.	4	N	n	6				0	セ	ハ	ハ	0	1
HHHH	(8)		/	5	O	o	7				1	ウ	マ	マ	1	2

Always initialize by setting the software (character type LCM)

Refer to figures 1 and 2 for the procedures on 8-bit and 4-bit initializations, respectively.

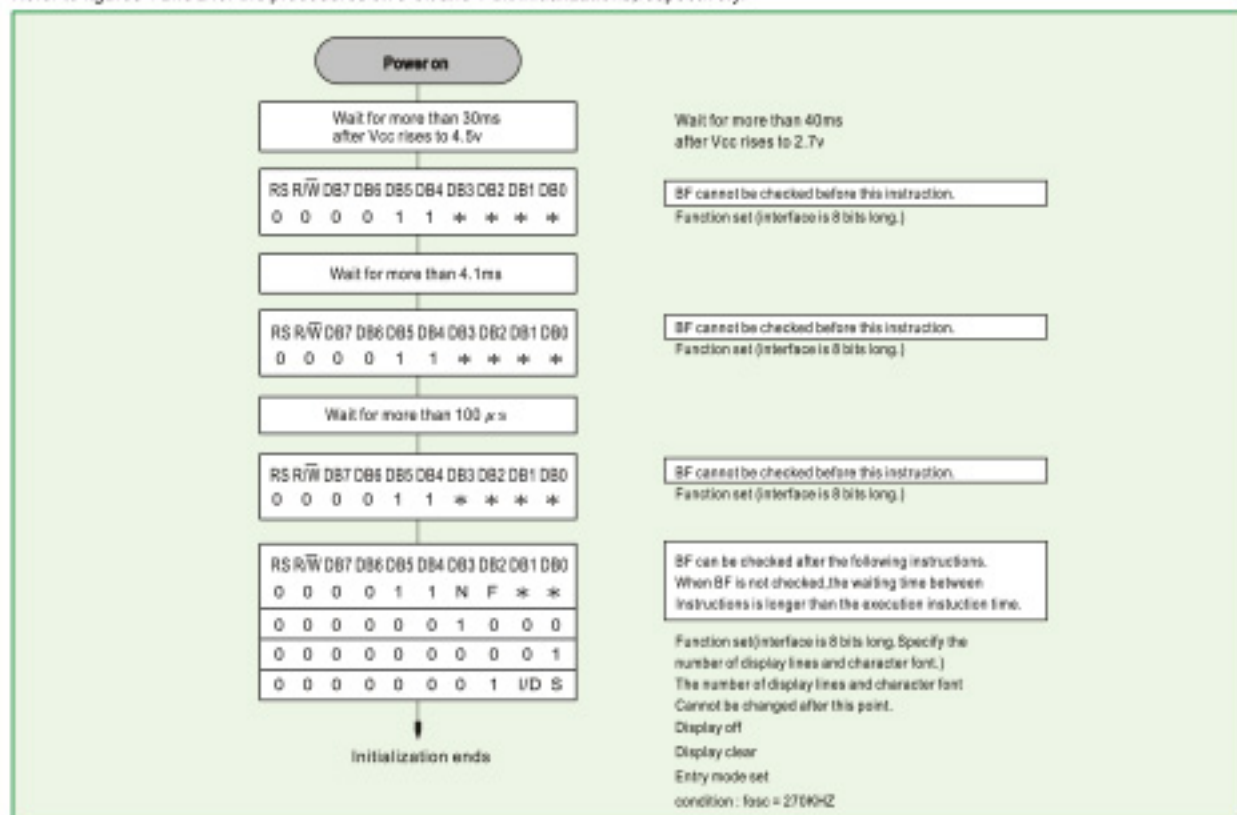


Figure 1 8-bit interface

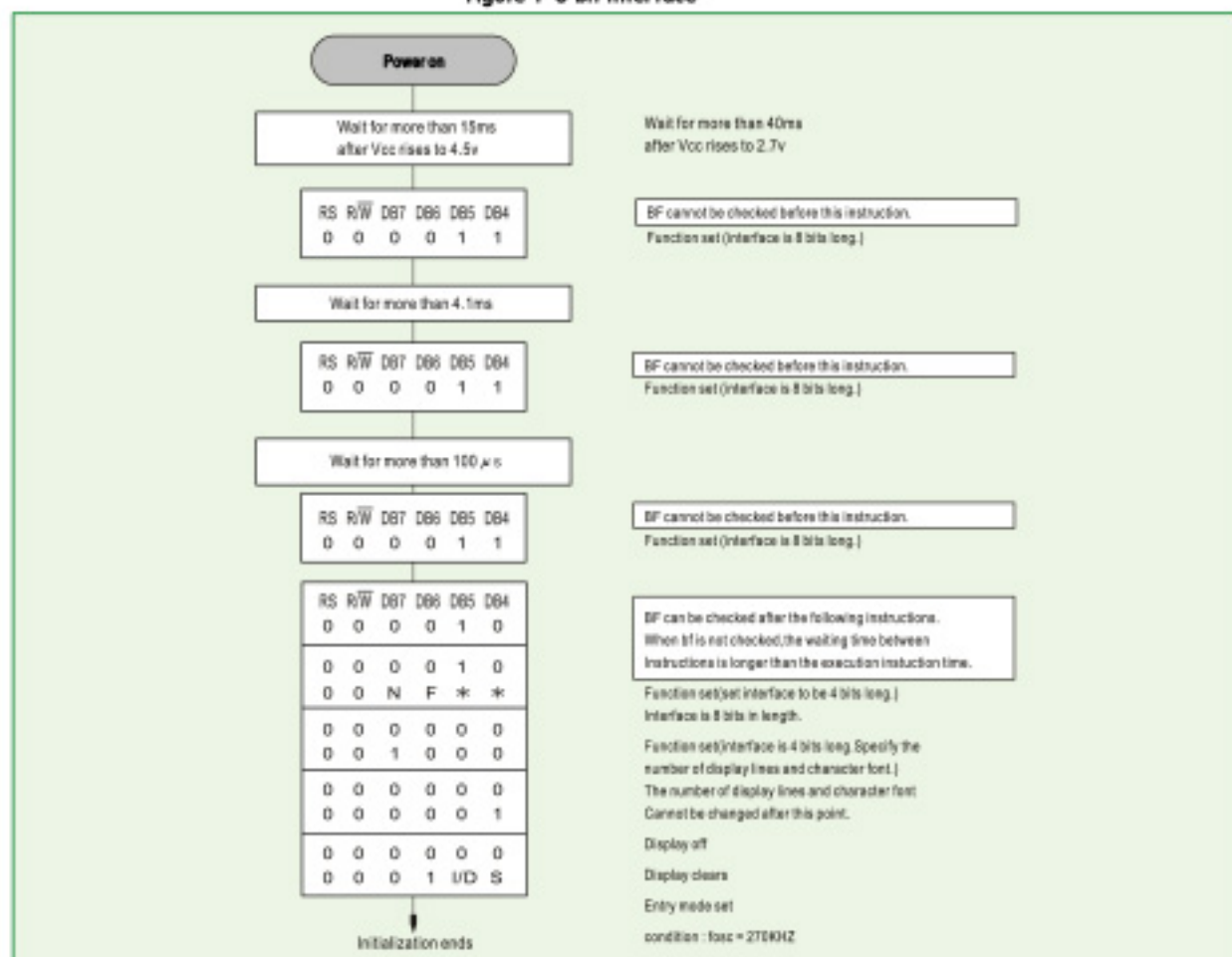


Figure 2 4-bit interface