LCD Display with I2C Module

LCD Display

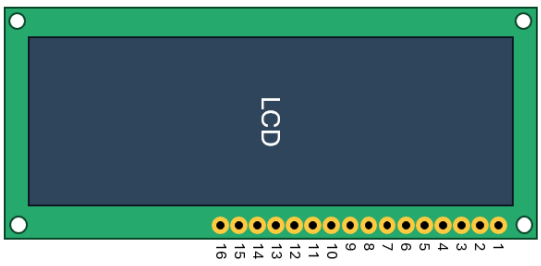
Basic Specifications LCD Display

- White Font on Blue Background
- Module dimensions: 80 mm x 36 mm x 12.5 mm
- View area: 12 mm x 56 mm
- Resolution: 16 Characters x 2 Lines
- Backlight: ED, White
- View Angle: 180 degrees
- Modes: Parallel (8bit and 4bit)
- Operating Voltage: 5V
- Operating temperature: from -10°C to +60°C
- Storage temperature: from -30°C to +80°C

Absolute Maximum Ratings LCD Display

Item	Symbol	Min.	Max.	Unit
Supply Voltage for Logic	V_{DD}-V_{SS}	-0,3	+7	V
Power Supply for LCD	V_0	V_{DD}-15,0	V_{DD}+0,3	V
Input Voltage	V_{IN}	-0,3	V_{DD}+0,3	V
Supply Current for Backlight	I_{LED}	-	25	mA

Pin assignment LCD Display



Pin	Symbol	Description
1	V_{SS}	Ground (0V)
2	V_{DD}	Power Supply (+5V)
3	V_0	LCD Contrast Pin, analog voltage to set up the screen contrast level. Hardware contrast adjustment can be done by using voltage divider or potentiometer.

Pin	Symbol	Description
4	RS	Register Select (0 = command, 1 = data)
5	RW	Read/Write (0 = write to display module, 1 = read from display module)
6	E	Clock Enable (falling-edge triggered)
7	D0	Data Input/Output Pin 0
8	D1	Data Input/Output Pin 1
9	D2	Data Input/Output Pin 2
10	D3	Data Input/Output Pin 3
11	D4	Data Input/Output Pin 4
12	D5	Data Input/Output Pin 5
13	D6	Data Input/Output Pin 6
14	D7	Data Input/Output Pin 7
15	A	Backlight LED + (Anode)
16	K	Backlight LED - (Cathode)

Notes:

- Standard HD44780-compatible LCD display
- Can operate in 4-bit mode using only D4-D7 data pins

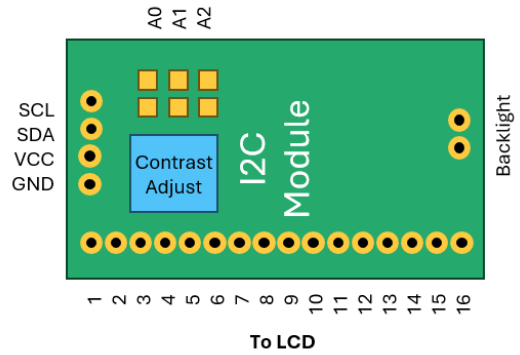
Electrical Characteristics LCD Display

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply for LCM	V_{DD}	Measured against V_{SS}	4,8	5,0	5,2	V
Input Voltage	V_{IL}	L Level, all logic pins	-0,2	-	1	V
Input Voltage	V_{IH}	H Level, all logic pins	V_{DD}-1,0	-	V_{DD}	V
LCD Driving Voltage	V_O	Measured against V_{SS}	4,5	4,8	5,1	V
Supply Current for LCM	I_{DD}	VDD=5V	-	-	1500	µA
Supply Current for LCM	I_{DD}	VDD=3.3V	-	-	1250	µA
Supply Current for Backlight	I_0	-	-	15	-	mA

I2C Module

- Operating temperature: from -10°C to +60°C
- Storage temperature: from -30°C to +80°C
- I2C Adapter Default I2C Address: 0x27; Address selectable - Range 0x20 to 0x27

Pin Assignment I2C Module



Pin	Description
SCL	SPI Clock
SDA	SPI Data
VCC	Power Supply (+5V)
GND	Ground (0V)
Backlight	Jumper to enable the backlight of the connected module
A0	Address bridge (normally open)
A1	Address bridge (normally open)
A2	Address bridge (normally open)

I2C addresses

A2	A1	A0	I2C Slave Address
CLOSED	CLOSED	CLOSED	0x20
CLOSED	CLOSED	OPEN	0x21
CLOSED	OPEN	CLOSED	0x22
CLOSED	OPEN	OPEN	0x23
OPEN	CLOSED	CLOSED	0x24
OPEN	CLOSED	OPEN	0x25
OPEN	OPEN	CLOSED	0x26
OPEN	OPEN	OPEN	0x27 (default)

Absolute Maximum Ratings I2C Module

Parameter	Symbol	Condition	MIN	MAX	UNIT
Supply voltage range	V_{CC}		-0,5	6,5	V
Input voltage range	V_I		-0,5	VCC + 0,5	V
Input clamp current	I_{IK}	VI < 0		-20	mA

Electrical Characteristics I2C Module

Parameter	Symbol	MIN	MAX	UNIT
Supply voltage	VCC	2,5		V
High-level input voltage	VIH	0,7 × VCC	VCC + 0,5	V
Low-level input voltage	VIL	-0,5	0,3 × VCC	V
High-level output current	IOH		-4	mA
Low-level output current	IOL		25	mA

Quality

This product is RoHS and REACH compliant, details see www.pinetek-networks.com/quality

IMPORTANT NOTICE: The information contained in this datasheet is subject to change without notice. Specifications, electrical characteristics, and performance parameters may be revised in future product versions or documentation updates. Users should verify current specifications and contact the manufacturer for the most up-to-date information before finalizing designs.