Nextion NX3224F028 HMI display datasheet

Transcription of the manufacturer web datasheet. Nextion (ITEAD Studio) publishes the NX3224F028 datasheet only as a web page: https://nextion.tech/datasheets/nx3224f028/ (page dated 2025-03-11, retrieved 2026-10-28). This PDF transcribes its specification tables verbatim (values and units unchanged) and reproduces the official product dimension drawing NX3224F028_dimension.pdf (revision 2.0, https://cdn.nextion.tech/wp-content/uploads/2022/03/NX3224F028_dimension.pdf). Prepared by Embedr; no values were added.

1. Overview

Nextion is a Human Machine Interface (HMI) solution combining an onboard processor and memory touch display with Nextion Editor software for HMI GUI project development. Using the Nextion Editor software, you can quickly develop the HMI GUI by drag-and-drop components (graphics, text, button, slider, etc.) and ASCII text-based instructions for coding how components interact at the display side. Nextion HMI display connects to peripheral MCU via TTL Serial (5V, TX, RX, GND) to provide event notifications that peripheral MCU can act on, the peripheral MCU can easily update progress, and status back to Nextion display utilizing simple ASCII text-based instructions. Comparing with Basic Series, the Discovery Series has a better MCU performance, the same functionalities as Basic, and lower price.

Package include: Nextion NX3224F028 HMI Display x1, XH2.54 4P wire x1, power supply test board x1. The small power supply test board and connecting wire allow you to test if the electrical supply is enough or not.

Nextion Models table on the page: Nextion Type "Basic Series", Nextion Models NX3224F028. (The same page and the nextion.tech datasheet index list NX3224F028 under the Discovery Series; the table entry is transcribed as printed.)

2. Specifications

Item	Data	Description
Color	64K 65536 colors	16 bit 565, 5R-6G-5B
Layout size	85(L) x 50(W) x 5.55(H) mm	NX3224F028
Active Area (A.A.)	57.6 mm(L) x 43.2 mm(W)	
Resolution	320 x 240 pixel	Also can be set as 240 x 320
Touch type	Resistive	
Touches	> 1 million	
Backlight	LED	
Backlight lifetime (average)	> 30,000 hours	
Brightness	300 nit	0% to 100%, the interval of adjustment is 1%
Weight	22 g	

3. Electronic characteristics

Parameter	Test conditions	Min	Typical	Max	Unit
Operating voltage		4.5	5.0	6.0	V
Operating current	VCC = +5 V, brightness 100%	-	105	-	mA
Normal sleep mode (lowpower=0)		-	4.5	-	mA
Deep sleep mode (lowpower=1)		-	0.25	-	mA

1. Power supply recommend: 5 V, 500 mA, DC.
2. In deep sleep mode the wake-up time will be longer; data will probably be lost when the serial port is receiving the wake-up command. It is therefore recommended to send a void command and delay 50 ms before operating.

4. Working environment and reliability

Parameter	Test conditions	Min	Typical	Max	Unit
Working temperature	5 V, humidity 60%	-20	25	70	°C
Storage temperature		-30	25	80	°C
Working humidity	25 °C	10%	60%	90%	RH

5. Interfaces performance

Parameter	Test conditions	Min	Typical	Max	Unit

Serial port baudrate	Standard	2400	9600	921600	bps
Output high voltage	IOH = -1 mA	3.0	3.2		V
Output low voltage	IOL = 1 mA		0.1	0.2	V
Input high voltage		2.0	3.3	5.0	V
Input low voltage		-0.7	0.0	1.3	V

Serial port mode	TTL 3.3V
Serial port	4Pin_2.54mm
USB interface	NO
SD card socket	Yes (FAT32 format), support maximum 32G Micro SD Card. The microSD card socket is exclusively used to upgrade Nextion firmware / HMI design.

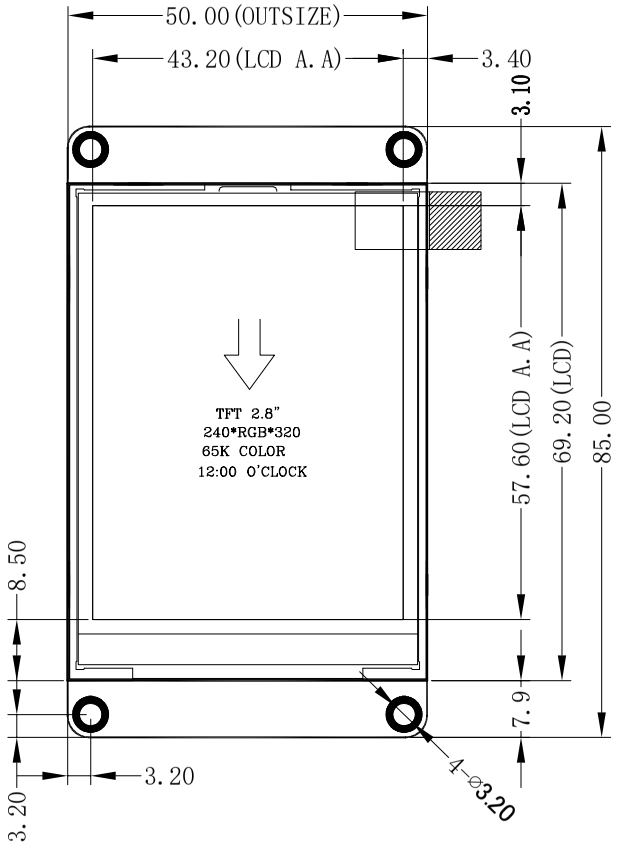
6. Memory features

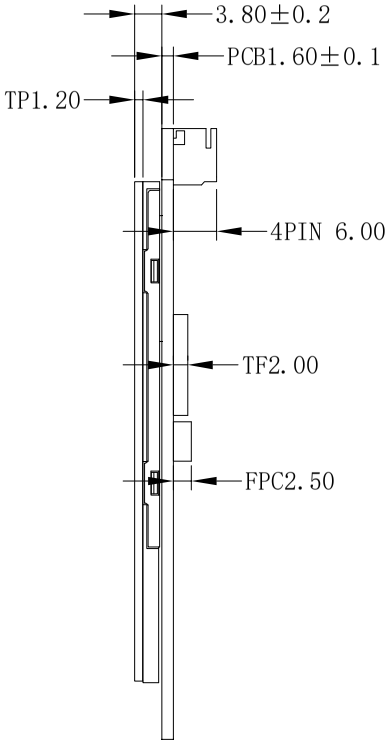
Memory type	Use	Typical	Unit
FLASH memory	Store fonts and images	4	MB
RAM memory	Store variables	3584	BYTE
Instruction buffer		1024	BYTE

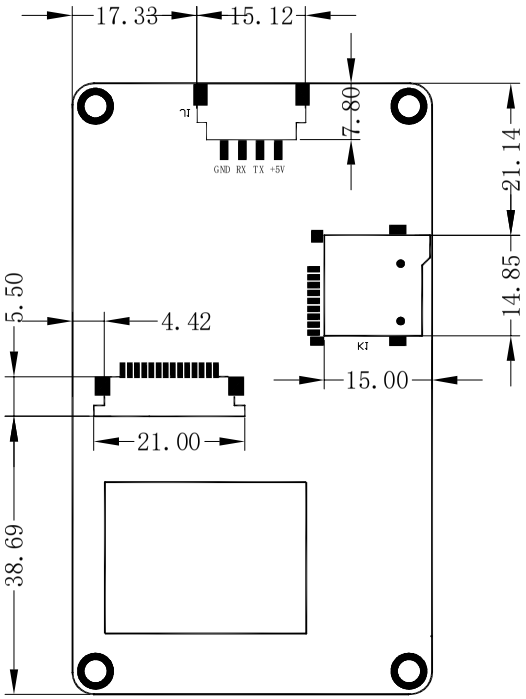
7. Product dimensions

Official drawing "F Series 2.8 inch Nextion Dimension", NX3224F028_dimension.pdf, revision 2.0, unit mm, tolerances +/-0.2 mm (reproduced on the next page). Key values printed on the drawing:

Feature	Value (mm)
Outline (PCB)	85.00 x 50.00 (OUTSIZE)
Mounting holes	4 x diameter 3.20 (4-Ø3.20); hole centre 3.20 from the left edge and 3.20 from the top edge (dimensioned once; holes drawn symmetric)
LCD	69.20 long, 7.9 from the left outline edge (front view)
LCD active area	57.60 x 43.20; 8.50 from LCD left edge, 3.10 from LCD right edge; 3.40 between active-area edge and outline (dimensioned at the bottom)
PCB thickness	1.60 +/- 0.1
Touch panel thickness	1.20 (TP1.20)
PCB underside to touch panel surface	3.80 +/- 0.2
Rear 4-pin serial connector J1 (GND, RX, TX, +5V)	height 6.00 below PCB; body 7.80 deep from the outline edge; 17.33 and 15.12 positional dimensions (rear view)
Rear TF (microSD) socket	height 2.00; 14.85 wide, 21.14 from outline edge, 15.00 deep
Rear LCD FPC connector	height 2.50; 21.00 long, 5.50 wide, 38.69 from left edge, 4.42 from top edge (rear view)







NEXTION				UNIT: mm
PRODUCT NO.	DWN			
NX3224F028	CHK			
	APP			TOLERANCES: ±0.2mm
REWVISON:2.0				