NanoShield V2.2 – Raspberry PI 3 and NanoDLP

NanoShield V2.2 Board

https://de.aliexpress.com/item/1-pc-Nanodlp-V2-2-PCB-Doppel-platine-f-r-Nanodlp-schild-V2-2-PCB-f/32967475128.html

Nanoshield V2.1 / V2.2 Parts.

https://de.aliexpress.com/item/1-set-Komponente-f-r-Nanodlp-schild-V2-1-V2-2-PCB-f-r-SLA-Nano/32885420521.html?spm=a2g0x.10010108.100007.3.1bcee2ab2MXL4q&pvid=80c557c4-2220-40ad-8c2a-e3c0d59f5e4f&gps-id=pcDetailLeftTopSell&scm=1007.13482.95643.0&scm-url=1007.13482.95643.0&scm_id=1007.13482.95643.0

Important: R2, R3, R4, R5 replace with 20K

Z-STOP_B

SIG – GND – 5V

Z-STOP_T

SIG – GND – 5V

I2C_LCD

GND - 5V- SDA - SCL

NEXTION

GND - 5V – TXD – RXD

See Page 2 – Nextion Display

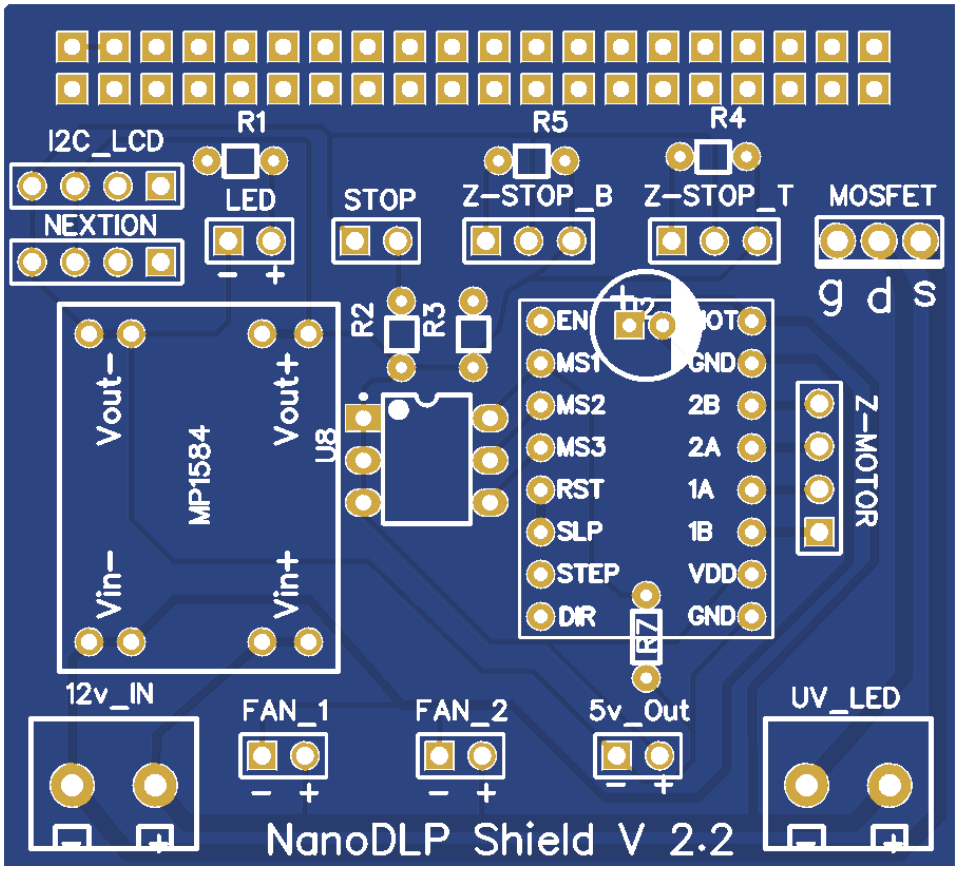
U8 Dip Switch

MS1 On

MS2 On

MS3 Off

8 Step



Z-MOTOR

2B

2A

1A

1B

HIGH IMPORTANT: Before placing A4988 or connect Shield to Raspberry PI 3 or connecting optical END stops adjust first the MP1584 so VOut+ is 5.00 V See Page2 – Adjust MP1584

BOM:

R1--100 ohm

R7 -- 100 k ohm

R2, R3, R4, R5, --20 kOhm (Take care to change 10 k in 20 k)

H2 Elektrolytcondensator --100 uf

Mosfet-IRFZ44N

U8 Dip Switch (Microsteps A4988)

Adjust MP1584

Go to: https://www.youtube.com/watch?v=Wb5JIAkboEg

We use the part that starts from 2.35 Minutes – 5.48 to adjust. (all other parts are for the old NanoShield V1.0)

Nextion Display

Connector
Shield

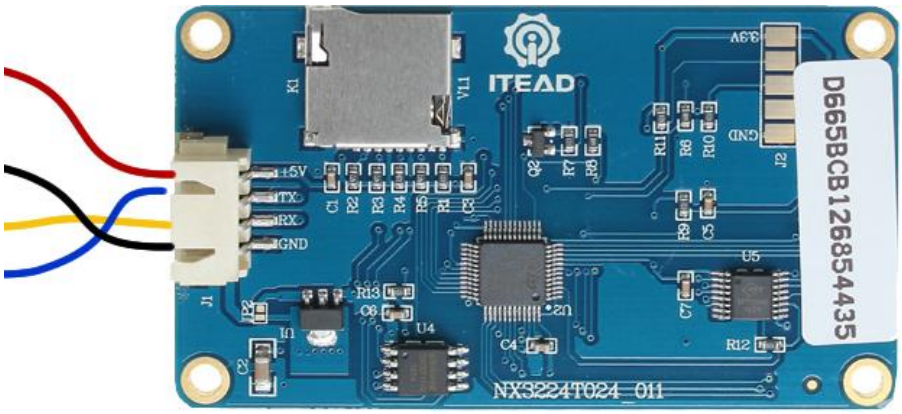
5V ← 5V

GND ← GND

TXD ← RX

RXD ← TX

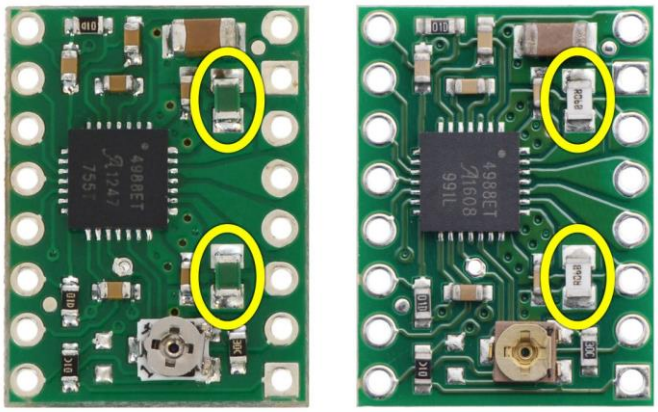
So: TXD and RXD are crossed.



Adjust Vref A4988

VREF=8 x IMAX x RCS IMAX is current Steppermotor.

RCS is the current sense resistance; original versions of this board used 0.050 Ω current sense resistors, but we switched to using 0.068 Ω current sense resistors in January 2017, which makes more of the adjustment potentiometer's range useful. The following picture shows how to identify which current sense resistors your board has:



Identification of original 50 mΩ sense resistors (left) and 68 mΩ sense resistors (right) introduced in January 2017.

To measure please use a multimeter connect the minus (black) to GND and set the positive (red) pin on the disc of the trimpot and set the voltage which match with VREF.

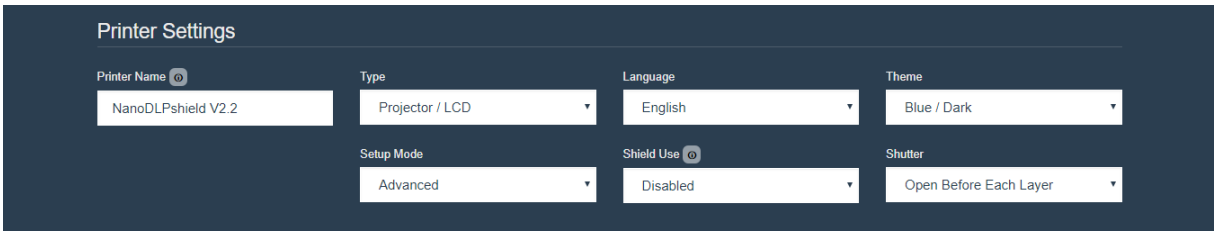
NanoDLP Settings

Important: The connections of the Shield V2.2 are different then you see on the Aliexpress site and also different from https://www.thingiverse.com/thing:2749678 if you use this settings your Raspberry PI3 will be damaged totally

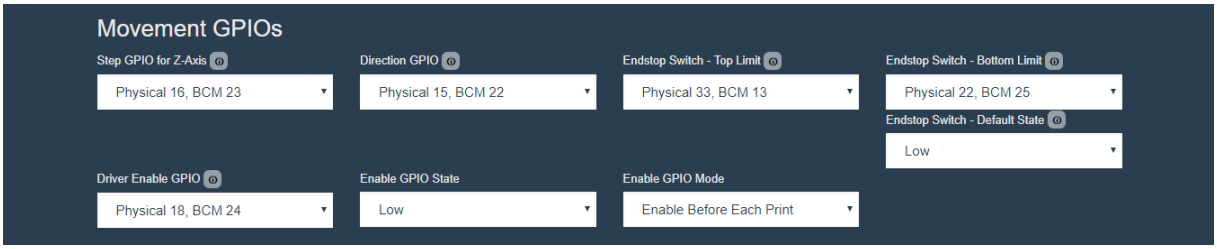
Here are the correct settings for NanoDLP Software.

NanoDLP Shield V2.2	BCM NanoDLP	Name	Physical Board		Name	BCM NanoDLP	NanoDLP Shield V2.2
		3.3V	1	2	5V		5V
I2C-SDA		SDA 1	3	4	5V		5V
I2C-SCL		SCL 1	5	6	GND		GND
		GPIO 7	7	8	TXD		Nextion TXD
		GND	9	10	RXD		Nextion RXD
		GPIO 0	11	12	GPIO 1		
STOP	BCM 27	GPIO 2	13	14	GND		
DIR	BCM 22	GPIO 3	15	16	GPIO 4	BCM 23	STEP
		3.3V	17	18	GPIO 5	BCM 24	EN
		MOSI	19	20	GND		
		MISO	21	22	GPIO 6	BCM 25	Z-STOP_Bottum
		SLCK	23	24	CE0		
		GND	25	26	CE1		
		SDA 0	27	28	SCL 0		
		GPIO 21	29	30	GND		
		GPIO 22	31	32	GPIO 26		
Z-STOP_TOP	BCM 13	GPIO 23	33	34	GND		
		GPIO 24	35	36	GPIO 27		
UV_LED	BCM 26	GPIO 25	37	38	GPIO 28		
		GND	39	40	GPIO 29		

Print screens settings NanoDLP Software.

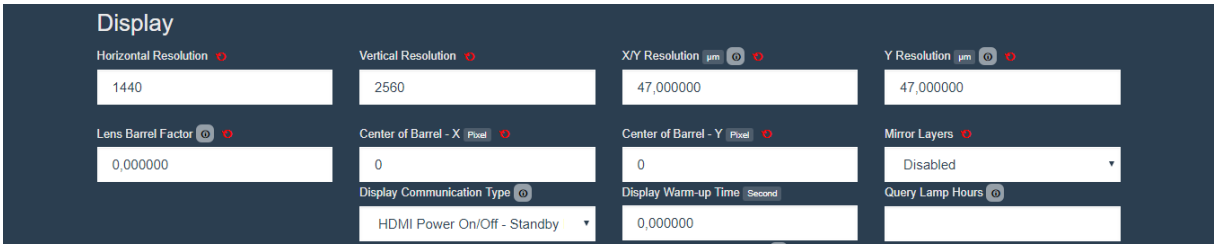


Set: Printername – NanoDLPxxx Setup Mode -Advanced Shield Use – Disabled.



Setup: Movement GPIOs See: [Page4 – NanoDLP Settings]

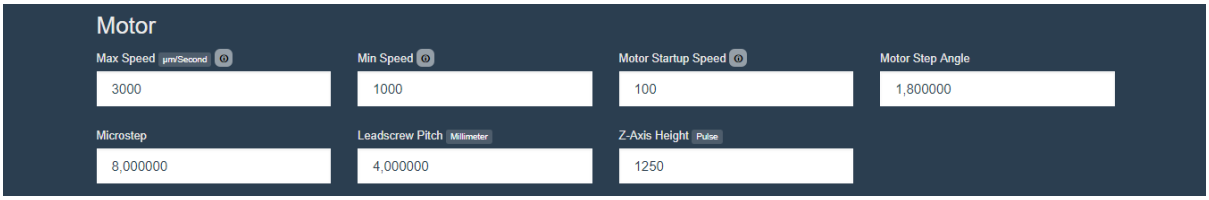
Set: Shutter Type – True/False Signal Shutter GPIO See: [Page4 – NanoDLP Settings]



If LCD Display is: 5.5 inch 2 k LCD voor DLP/SLA 3d printer Model KLD-1260

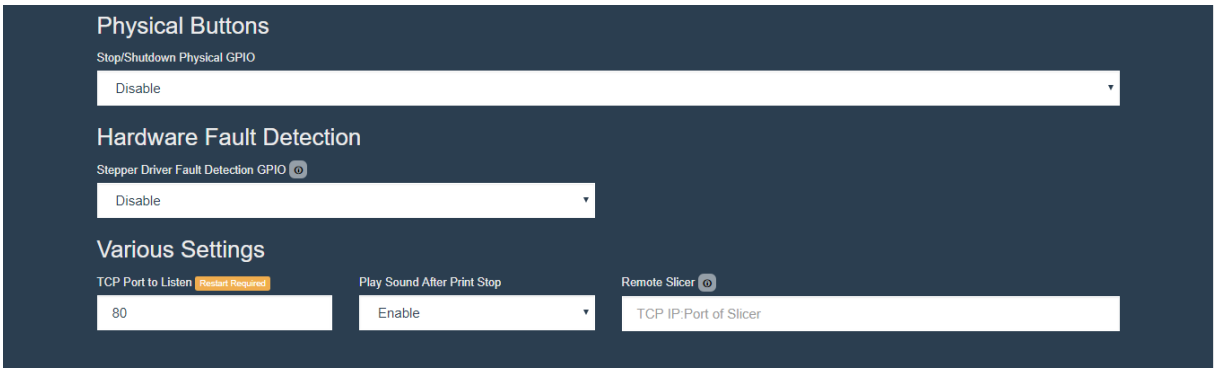
Set: Horizontal Res 1140 Vertical Res 2560 X/Y Res 47,000000 Y Res 47,000000

Display Communication Type HDMI Power On/Off-StandBy



Set: Max Step Angle 1,800000 (Most common) Micro Step 8,000000

Lead Screw Pitch 4,000000 (check Screw pitch) Z-Axis Height 1250 (Set Max distance between Z-Stop_Bottum and Z-Stop_Top)


Physical Buttons
Stop/Shutdown Physical GPIO
Disable
Hardware Fault Detection
Stepper Driver Fault Detection GPIO
Disable
Various Settings
TCP Port to Listen
Restart Required
80
Play Sound After Print Stop
Enable
Remote Slicer
TCP IP:Port of Slicer

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