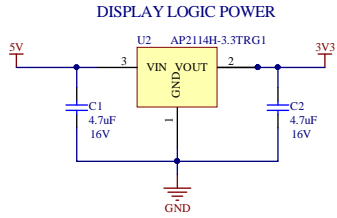


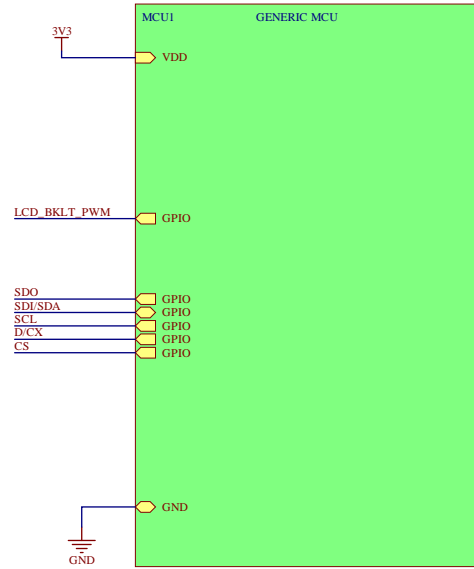
DT022CTFT Serial Data Reference Design

(SERIAL IMAGE AND CONFIGURATION DATA)



THESE SERIAL DATA SIGNALS ARE NOT FULLY COMPATIBLE WITH STANDARD SPI DATA PROTOCOLS. CUSTOM DRIVERS ARE NEEDED TO USE SPI HARDWARE PORTS.

A BIT-BANGED IMPLEMENTATION IS AVAILABLE IN THE SAMPLE DRIVER CODE.

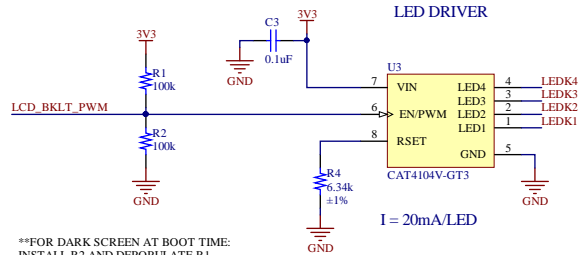
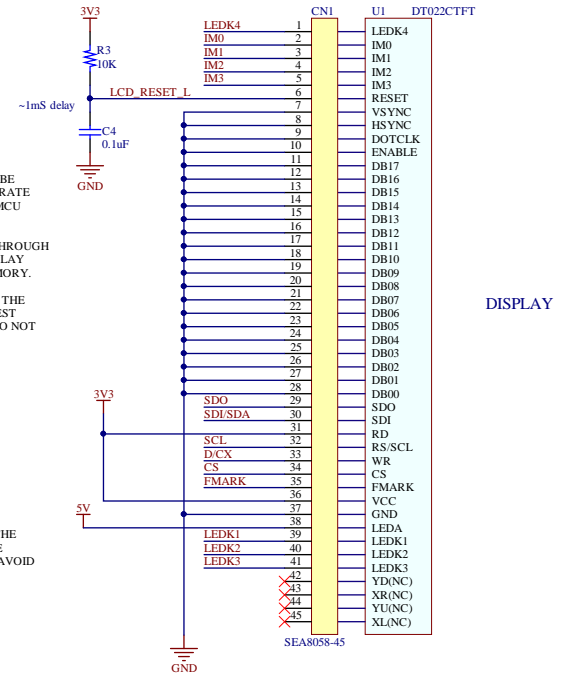


THE DISPLAY DRIVER (ILI9341) MUST BE CONFIGURED TO GENERATE FRAME RATE SIGNALS INTERNALLY. SIMILAR TO MCU MODE.

DISPLAY IMAGE DATA IS WRITTEN THROUGH THE SERIAL INTERFACE TO THE DISPLAY DRIVER GRAPHICS RAM (GRAM) MEMORY.

DUE TO THE LIMITED DATA RATE OF THE SERIAL INTERFACE, THIS MODE IS BEST SUITED FOR STATIC IMAGES THAT DO NOT CHANGE RAPIDLY OVER TIME.

FMARK SIGNAL INDICATES THE BEGINNING OF A NEW IMAGE FRAME. IT CAN BE USED TO AVOID IMAGE TEARING.



**FOR DARK SCREEN AT BOOT TIME: INSTALL R2 AND DEPOPULATE R1.


**FOR NORMAL SCREEN AT BOOT TIME: INSTALL R1 AND DEPOPULATE R2.

DT022CTFT Interface Mode Settings (Serial)					
IM3	IM2	IM1	IM0	Interface Mode	Pins
0	1	0	1	3-wire, 9-bit bus	SDA(in/out) + SCL
0	1	1	0	4-wire, 8-bit bus	SDA(in/out) + SCL + D/CX
1	1	0	1	3-wire, 9-bit bus	SDI(in) + SDO(out) + SCL
1	1	1	0	4-wire, 8-bit bus	SDI(in) + SDO(out) + SCL + D/CX

LOGIC 1 = VDD (3.3V)
LOGIC 0 = GND

CHIP SELECT (CS) SIGNAL IS USED IN ALL SERIAL MODES TO INITIATE A DATA TRANSFER SEQUENCE.

THE DIFFERENCE BETWEEN 3-WIRE AND 4-WIRE SERIAL IS THE HANDLING OF THE DATA COMMAND SIGNAL (D/CX). 3-WIRE SERIAL SENDS THE D/CX SIGNAL IN A 9TH DATA BIT. 4-WIRE SERIAL USES A SEPARATE WIRE FOR THE D/CX SIGNAL. THERE IS NO RELATIONSHIP WITH THE PHYSICAL NUMBER OF WIRES USED.

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