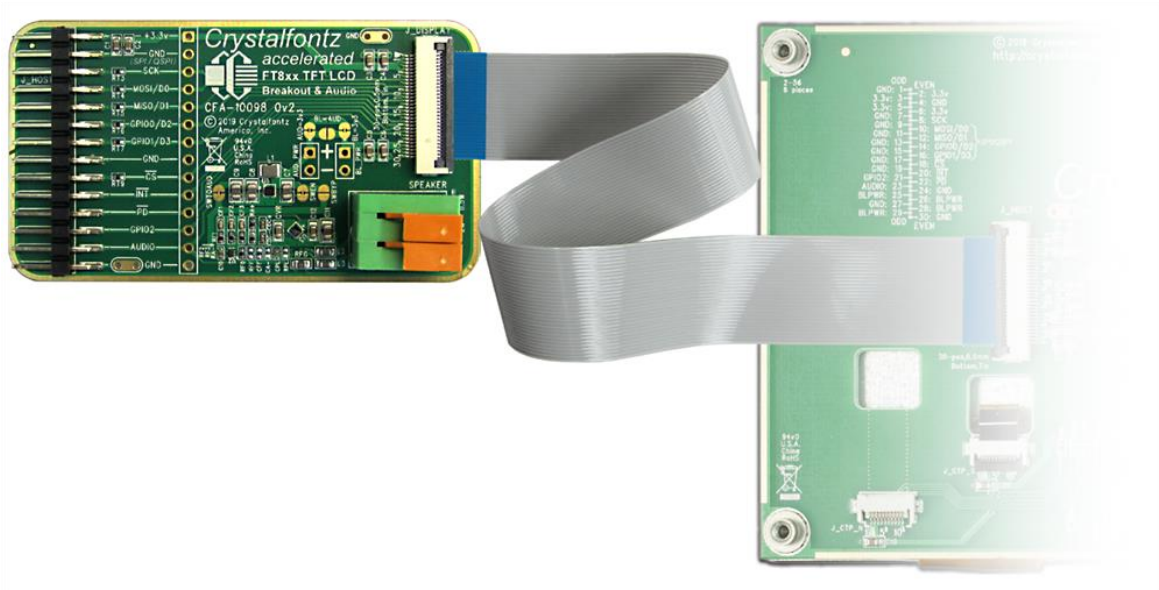




BREAKOUT / AUDIO BOARD
FOR
CRYSTALFONTZ DISPLAYS WITH FT8xx
EVE GRAPHICS ACCELERATOR

DATASHEET



CFA10098

Datasheet Release: 2019/04/15

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1. General Information

Datasheet Revision History

Datasheet Release: 2019/04/15
Datasheet for the CFA10098 display module.

Product Change Notifications

You can check for or subscribe to [Part Change Notices](#) for this display module on our website.

Variations

Slight variations between lots are normal (e.g., contrast, color, or intensity).

Volatility

This display module has volatile memory.

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2. Introduction

The Crystalfontz CFA10098 is a breakout and audio amplification board intended for development use with Crystalfontz FT8xx EVE accelerated TFT displays.

This board provides easy to use 0.1-in header pins ideal for testing, prototyping and one-off use with microcontroller based boards and other host interfaces.

Example source-code for the attached EVE accelerated TFT display product is provided on our website.

3. Key Features

- Easy to use 0.1 inch header pins
- 30 position connector for flat-cable connection to the Crystalfontz EVE accelerated displays
- Jumper configurable power and audio options
- EVE compatible PWM audio filter and 2W Class D speaker amplifier

4. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Logic Supply Power	VCC (3v3)	0.0	4.0	V
Backlight Supply Power	BL_PWR	<i>see display module datasheet used in conjunction with this adapter board</i>		V
Audio Power Supply	AUD_PWR	0.0	6.0	V
Speaker Load Resistance	R _{J_SPKR}	3.2	-	ohms

Notes:

- *These are stress ratings only. Extended exposure to the absolute maximum ratings listed above may affect device reliability or cause permanent damage.*

5. Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit
Logic Supply Power	VCC (3v3)	(note 1)	3.3	(note 1)	V
Backlight Supply Power	BL_PWR	<i>see display module datasheet used in conjunction with this adapter board</i>			V
Audio Power Supply	AUD_PWR	2.5	3.3	5.5	V
Speaker Load Resistance	R _{J_SPKR}	4.0	4.0	8.0	ohms

Notes:

1. *Functional operation should be restricted to the limits in the display datasheet used in conjunction with this adapter board*



6. Jumper Locations and Functions

6.1. Power Steering Jumpers

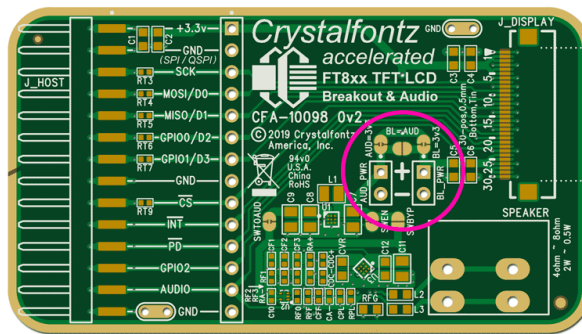
By default, backlight and audio amplifier power is sourced from pin-1 on the JHOST header (typically 3.3V).

If a separate power supply is required for the display backlight, open the BL=3v3 jumper link, then use the BL_PWR header pins to supply power (see note 1).

If a separate power supply is required for the speaker audio amplifier, open the AUD=3v3 jumper link, then use the AUD_PWR header pins to supply power (see note 1).

Note:

1. 0.1 inch headers may need to be soldered on the board to access these power connections



power steering jumper locations

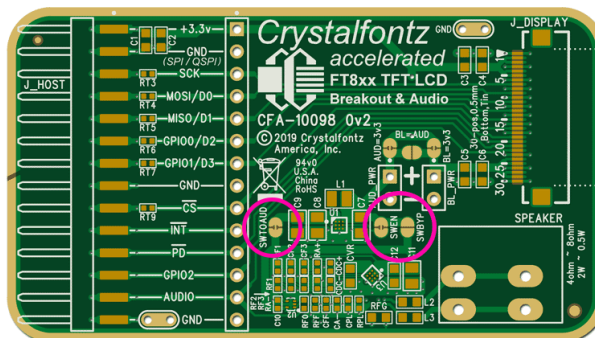
6.2. Audio Amplifier Configuration

By default, the audio amplifier is supplied 3.3V from the logic power supply:

- SWBYP = closed
- SWEN = open
- SWTOAUD = open

There is an experimental 3.3v to 5v 500mA boost supply on the 10098. This circuit may be useful for higher impedance loads, or to isolate the audio supply from a noisy 3.3v main supply. To enable the experimental 3.3v to 5v 500mA boost supply:

- SWBYP = open
- SWEN = closed
- SWTOAUD = closed

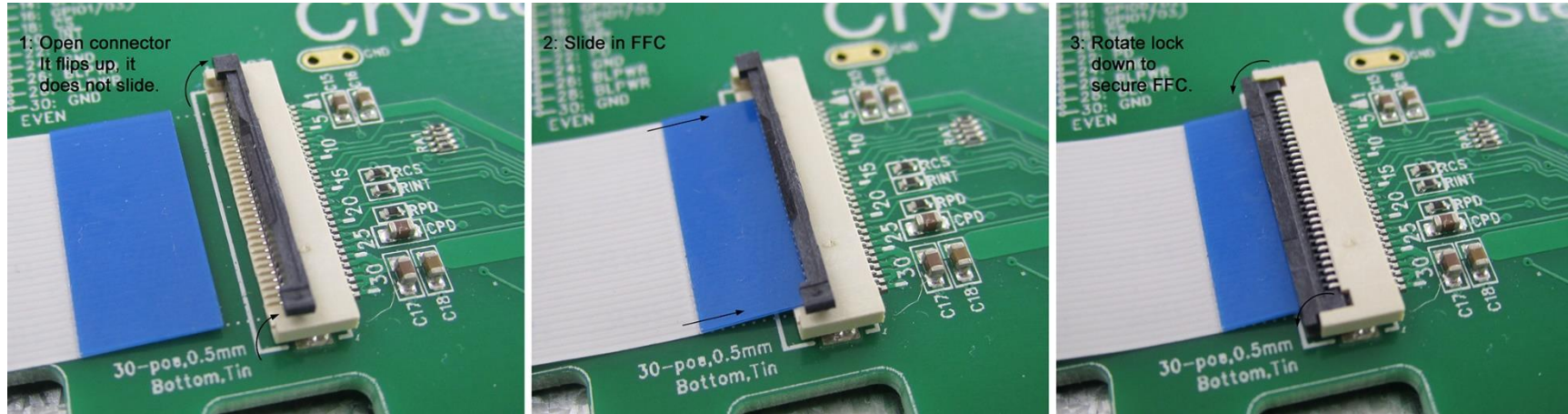


audio configuration jumpers

7. Connection Information

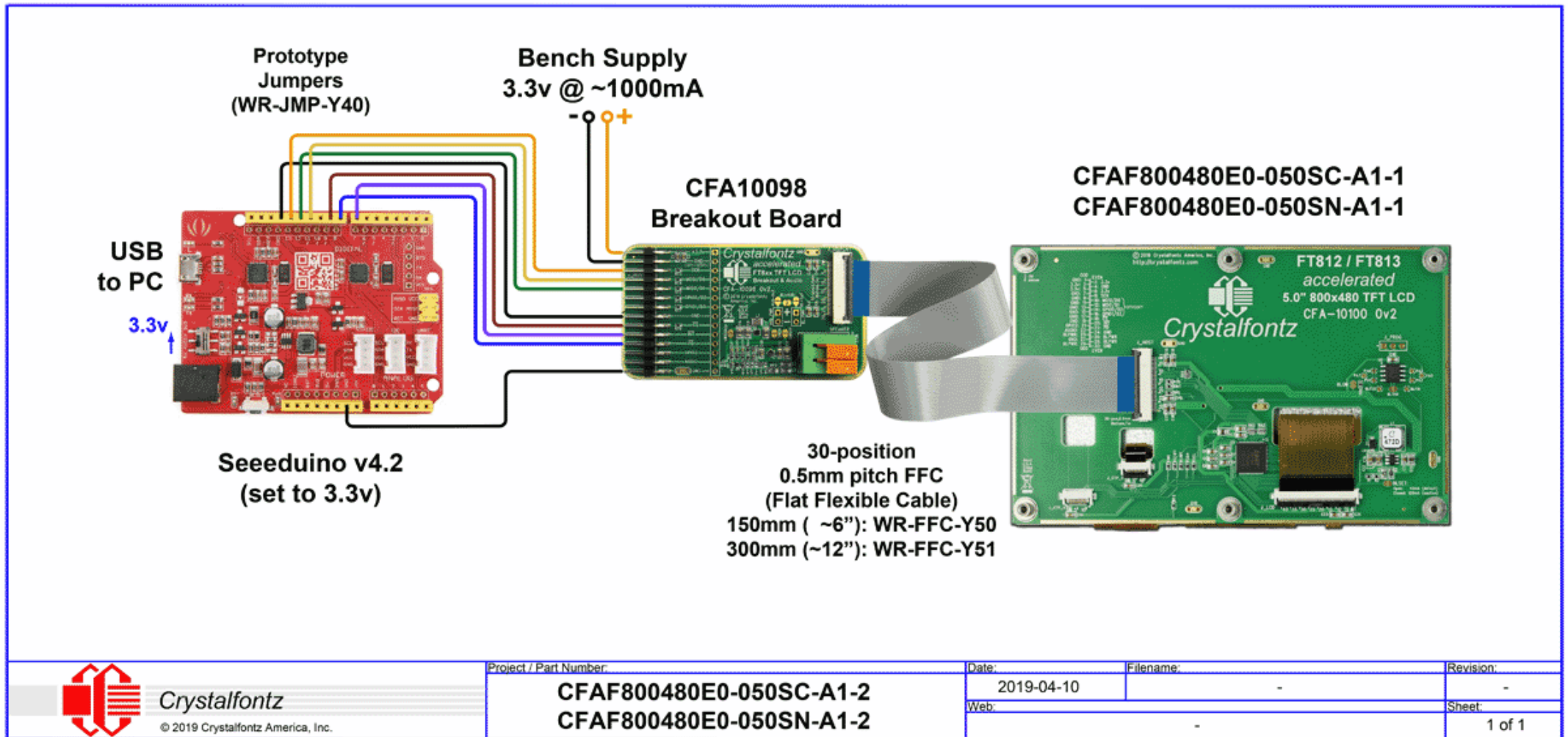
7.1. ZIF Connector Use With Flat-Flex-Cable (FFC)

Please take note of the orientation of the flat-flex-cable, and use of the locking clip in the following photos.



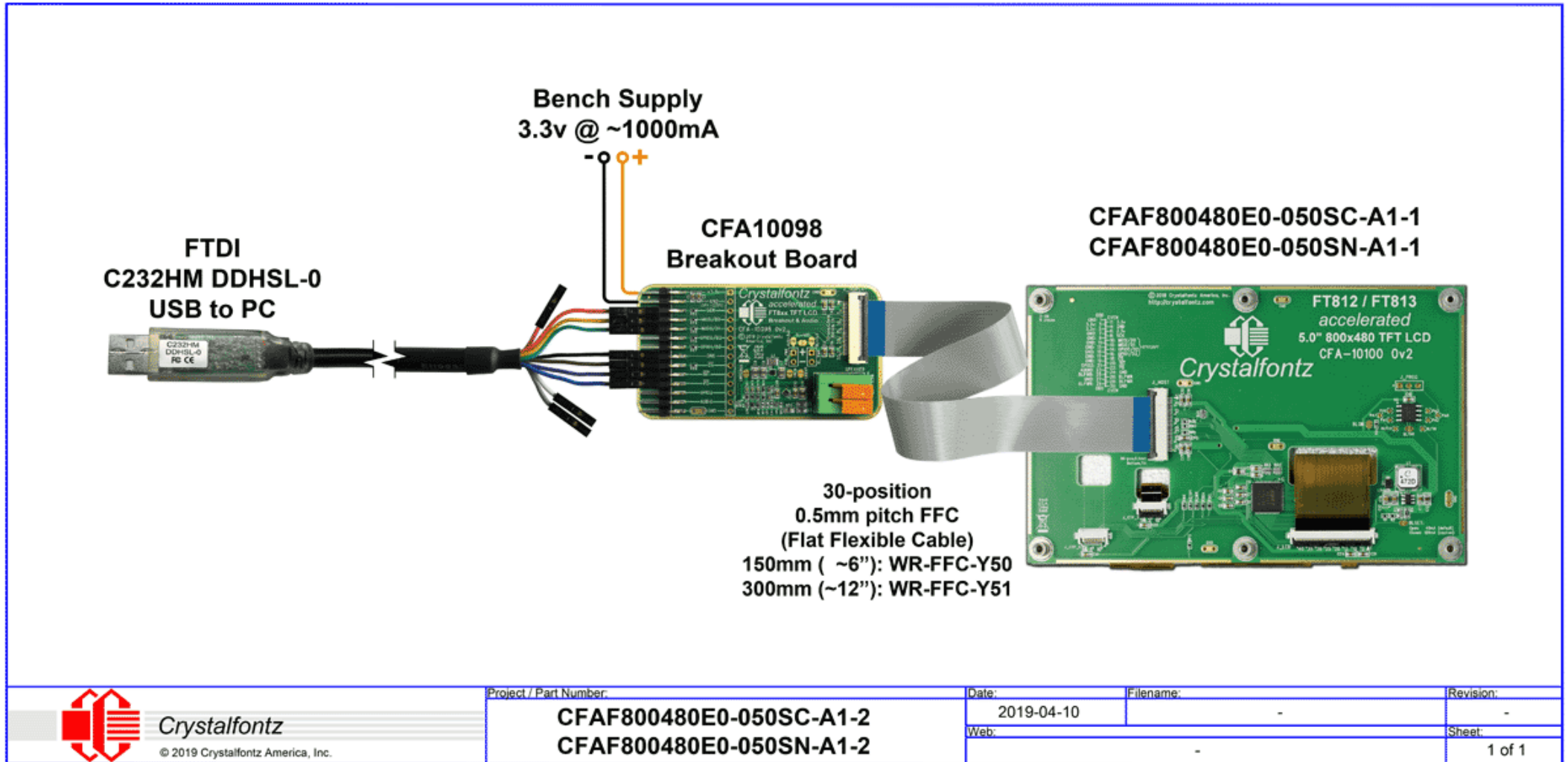
7.2. Example Display Connection #1

This example shows connection of the CFA10098 to a CFAF800480E0-050SC-A1 display, and a Seeeduino v4.2 microcontroller board.



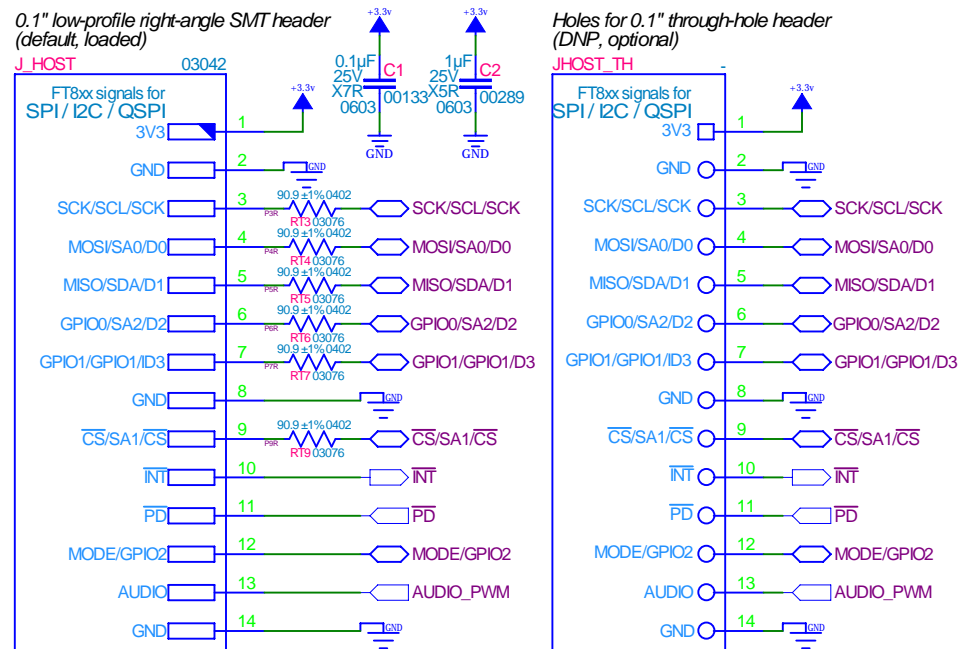
7.3. Example Display Connection #2

This example shows connection of the CFA10098 to a CFAF800480E0-050SC-A1 display, and a FTDI C232HM USB programming cable.



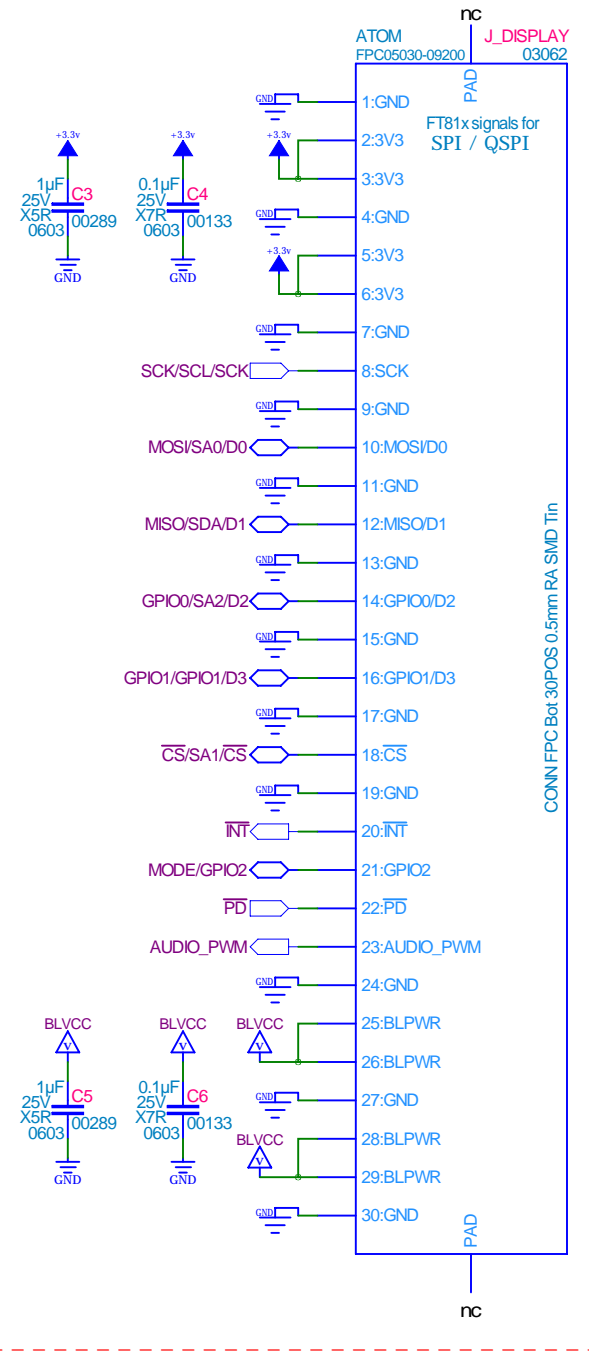
REV	ENGINEER	DATE	REMARKS
0v0	BAC	2018-08-23	Initial Creation
0v1	BAC	2018-10-10	Changed to PAM8012AZN
0v2	BAC	2018-12-31	Change to 30-pin connector.
-	-	-	-
-	-	-	-

Host Connection

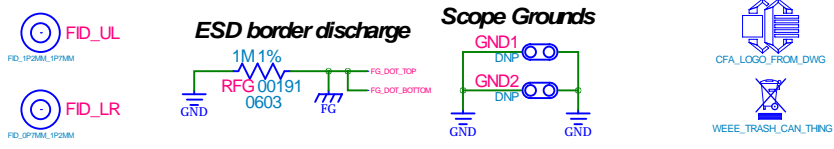
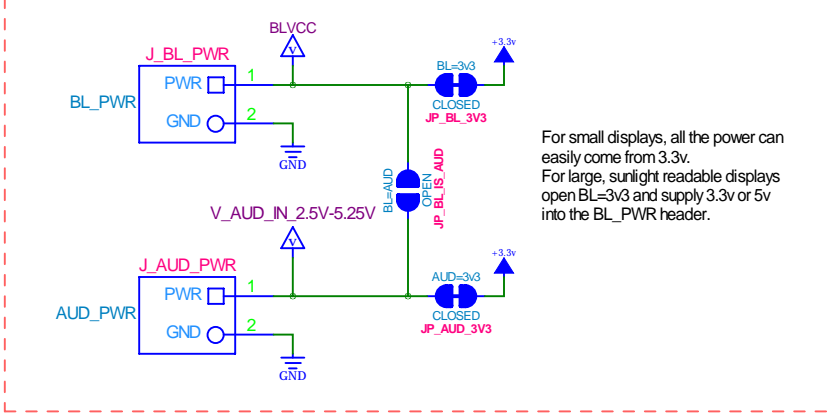


Crystalfontz Accelerated TFT Module Connection

FPC: 0.5mm, 30 pos, tin, bottom



Power Steering Jumpers



Crystalfontz America, Inc.

CFA-10098: FT8xx Breakout & Audio

Page 1/2: Host and Device Connections

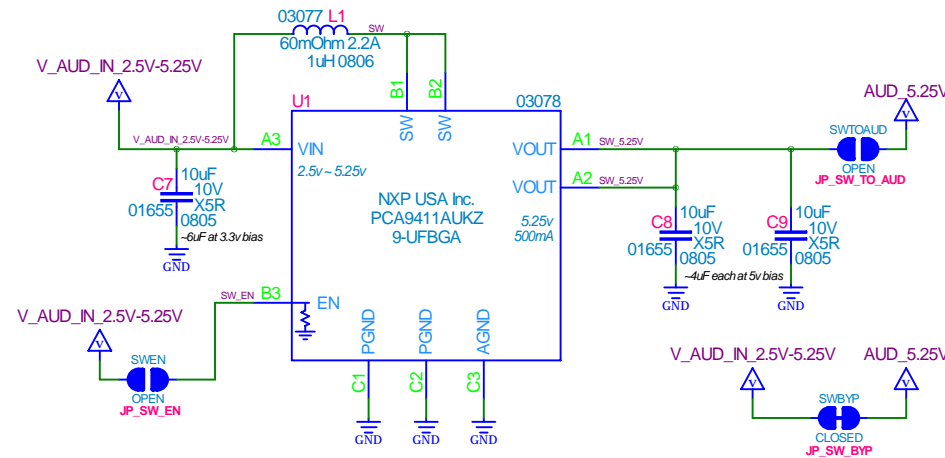
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PRODUCT NAME:	PRODUCT REVISION:	PCB NUMBER:	PCB REVISION:
CFA-10098	0v2	PCB10098	0v2

REV	ENGINEER	DATE	REMARKS
0v0	BAC	2018-08-23	Initial Creation
0v1	BAC	2018-10-10	Changed to PAM8012AZN
0v2	BAC	2018-12-31	Added 5.25v power supply.
-	-	-	-
-	-	-	-

Experimental Section: Switching Supply: 2.5v~5.25v In 3.3v Out

This section can be enabled to allow the 3.3v main supply to be switched up to 5.25v for the audio amplifier. The current is limited to 500mA. This might be useful for:
 1) larger output swing for higher impedance loads
 2) isolation of the audio supply from a noisy 3.3v supply



Class-D 2W Audio Amplifier

