

ePoster T-CON Board EJ1000 Product Specification

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Record of Revision

Version	Date	Page	Description
1.00	2021/5/4		First Release
1.01	2021/11/4	12, 13	Add detail connector information for item 3.4/3.5/3.6/ 3.8
1.02	2022/2/8	4	Add a new feature: wide input voltage range

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1. General Information

1.1. Introduction

EJ1000 is designed for driving Electrical Paper Display with the following features:

- Support EPD panel modules:
 - EINK ED280TT1
 - EINK ED253TT1
- Two Adjustable LDOs for Source Driver Supply
 - VGH: 15V, 2000mV at VIN=12V (VPOS)
 - VGL: -15V, 800mV at VIN=12V (VNEG)
- Adjustable VCOM Driver for Accurate Panel Backplane Biasing 0V to -5.11V
- External IO
 - Micro USB x 1
 - USB (Wafer 5P, Pitch=2.0mm) x 1
 - Power Control (Wafer 3P, Pitch=2.0mm) x 1
 - SPI (Wafer 6P, Pitch=2.0mm) x 1
 - DC-in 12V x 1
 - DC-in 12V (Wafer 4P, Pitch=2.0mm) x1
- Wide Input Voltage Range: 4.5V-16.0V (Type. 12V)
- Wide Working Temperature: -15°C-70°C
- Dimension: 400mm x 65 mm
- Weight: 120 g

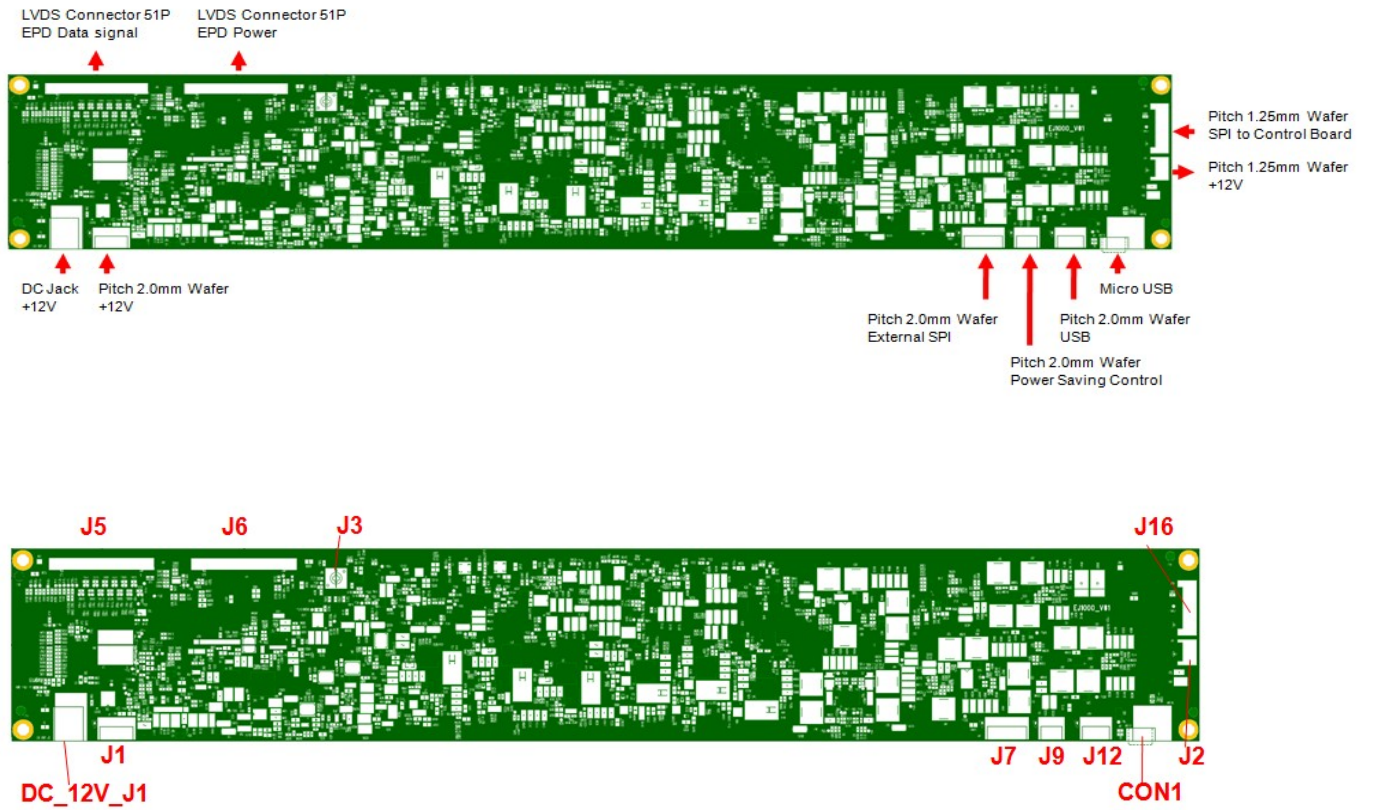
1.2. Electrical Characteristics

Item	Symbol	Min	Max	I
Power Supply	Vs	4.5V	16.0V	
Panel Power	VGH	+26.0V	+28.0V	1000mA
	VGL	-21.0V	-19.0V	1500mA
	VCOM	-5.0V	0V	1000mA
	VPOS	+5.0V	+21.5V	1700mA
	VNEG	-20.0V	-4.9V	1500mA
	VP3	+6.0V	+36.0V	1500mA
	VN3	-36.0V	-6.0V	1500mA

1.3. Power Consumption

Item	Min	Max	Unit
T-CON Board Only		16.0	W
Standby		0.5	W

2. Mechanical Drawing



3. Electrical Definition

3.1. Panel Data Out [J5], JAE FI-RE51S-HF-R1500 compatible(51)

PIN	SIGNAL	DESCRIPTION
1	VSS	Ground
2	LV0P-D0	Data signal source driver
3	LV0N-D1	Data signal source driver
4	VSS	Ground
5	LV1P-D2	Data signal source driver
6	LV1N-D3	Data signal source driver
7	VSS	Ground
8	LV2P-D4	Data signal source driver
9	LV2N-D5	Data signal source driver
10	VSS	Ground
11	LV3P-D6	Data signal source driver
12	LV3N-D7	Data signal source driver
13	VSS	Ground
14	LV4P-D8	Data signal source driver
15	LV4N-D9	Data signal source driver
16	VSS	Ground
17	LV5P-D10	Data signal source driver
18	LV5N-D11	Data signal source driver
19	VSS	Ground
20	CLKP_CKH	Data signal source driver
21	CLKN_GLOSTL	Data signal source driver
22	VSS	Ground
23	LV6P-D12	Data signal source driver
24	LV6N-D13	Data signal source driver
25	VSS	Ground
26	LV7P-D14	Data signal source driver
27	LV7N-D15	Data signal source driver
28	VSS	Ground
29	LV8P	Data signal source driver
30	LV8N	Data signal source driver
31	VSS	Ground

32	LV9P	Data signal source driver		
33	LV9N	Data signal source driver		
34	VSS	Ground		
35	LV10P	Data signal source driver		
36	LV10N	Data signal source driver		
37	VSS	Ground		
38	LV11P	Data signal source driver		
39	LV11N	Data signal source driver		
40	VSS	Ground		
41	CKV	Data gate driver		
42	VSS	Ground		
43	SPH1	Start pulse source driver		
		SHR	Start pulse input	Start pulse output
		H	SPH1	SPH2
		L	SPH2	SPH1
44	SPH2	Start pulse source driver		
		SHR	Start pulse input	Start pulse output
		H	SPH1	SPH2
		L	SPH2	SPH1
45	SPV1	Start pulse gate driver		
		UD	Start pulse input	Start pulse output
		H	SPV1	SPV2
		L	SPV2	SPV1
46	SPV2	Start pulse gate driver		
		UD	Start pulse input	Start pulse output
		H	SPV1	SPV2
		L	SPV2	SPV1
47	SHR	Shift direction control pin source driver SHR=H: Data shift direction from S800 to S1 SHR=L: Data shift direction from S1 to S800		
48	UD	Shift direction control pin gate driver		

		UD=H: Data shift direction from G1 to G800 UD=L: Data shift direction from G800 to G1
49	OEH	Outputs enabled when OE is logic "H" Outputs forced to GND when OE is logic "L"
50	LEH	Latch enable source driver
51	DSEL	Data input select

3.2. Panel Power Out [J6], JAE FI-RE51S-HF-R1500 compatible(51)

PIN	SIGNAL	DESCRIPTION
1	MODE	Output enable gate driver
2	XON	XON signal gate driver
3	STBYB	mini-LVDS enable
4	NC	No Connection
5	NC	No Connection
6	NC	No Connection
7	NC	No Connection
8	VGL	Negative power supply gate driver
9	VGL	Negative power supply gate driver
10	NC	No Connection
11	VN3	Negative power supply source driver
12	VN3	Negative power supply source driver
13	VN3	Negative power supply source driver
14	NC	No Connection
15	VN2	Negative power supply source driver
16	VN2	Negative power supply source driver
17	VN2	Negative power supply source driver
18	NC	No Connection
19	VN1	Negative power supply source driver
20	VN1	Negative power supply source driver
21	VN1	Negative power supply source driver
22	NC	No Connection
23	VSS	Ground
24	VSS	Ground
25	NC	No Connection
26	VDD	Logic power
27	VDD	Logic power
28	NC	No Connection
29	VP1	Positive power supply source driver
30	VP1	Positive power supply source driver
31	VP1	Positive power supply source driver
32	NC	No Connection

33	VP2	Positive power supply source driver
34	VP2	Positive power supply source driver
35	VP2	Positive power supply source driver
36	NC	No Connection
37	VP3	Positive power supply source driver
38	VP3	Positive power supply source driver
39	VP3	Positive power supply source driver
40	NC	No Connection
41	VGH	Positive power supply gate driver
42	VGH	Positive power supply gate driver
43	NC	No Connection
44	BORDER	Border Connection
45	NC	No Connection
46	VCOM	Common Voltage
47	VCOM	Common Voltage
48	NC	No Connection
49	VCOM	Common Voltage
50	VCOM	Common Voltage
51	VCOM	Common Voltage

3.3. USB [CON1], Micro USB

PIN	FUNCTION
1	+5V
2	D+
3	D-
4	GND

3.4. USB [J12], Wafer 5P Pitch=2.0mm, JST S5B-PH-K-S compatible

PIN	FUNCTION
1	+5V
2	D+
3	D-
4	GND
5	NC

3.5. SPI [J7], Wafer 6P Pitch=2.0mm, JST S6B-PH-K-S compatible

PIN	FUNCTION
1	HSPI_CS_N
2	HSPI_SCK
3	HSPI_SI
4	HSPI_SO
5	HSPI_MDIO3(HRDY)
6	GND

3.6. Power Control [J9], Wafer 3P Pitch=2.0mm, JST S3B-PH-K-S compatible

PIN	FUNCTION
1	5V_SW
2	RESET
3	GND

3.7. DC-In 12V [DC_12V_J1], DC Jack 5.5mm/2.5mm

PIN	FUNCTION
1	DC 12V
2	GND

3.8. DC-In 12V [J1], Wafer 4P Pitch=2.0mm, JST S4B-PH-K-S compatible

PIN	FUNCTION
1	DC 12V
2	DC 12V
3	GND
4	GND

4. Packing Information

Packing Size: 54cm(L)x54cm(W)x20cm(H)/Box

Q'ty: 30 pcs. (15 pcs./Layer, 2 Layer/Box)

