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Datasheet

Ortustech

IF422-00 LVDS/TTL + LED Driver Ortustech

ZU-02-422

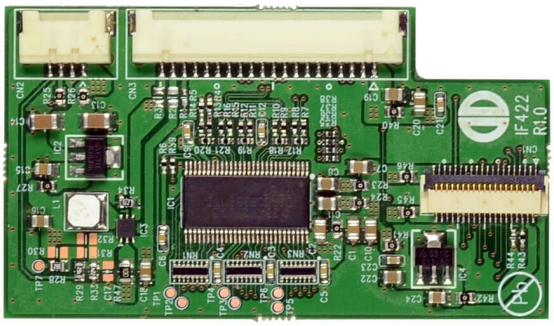


Table of Contents

1 Revision History 3

2 Overview 4

3 General Features 4

4 Absolut Maximum Ratings 4

5 Electrical Specification 5

6 Mechanical Specification 5

7 Connectors 6

7.1 Input Connectors 6

7.2 Output Connectors 7

8 Ordering Information 7

1 Revision History

Date	Rev.No.	Description	Page
13.03.2019	1.0	Initial version	All
29.03.2019	1.1	Add LVDS receiver description; Ordering Information	4,6,7
09.01.2020	1.2	Two new Ortustech TFT displays added	4

2 Overview

The IF422-00 is an interface board with an integrated LVDS to TTL converter and LED driver for Ortustech panels.

3 General Features

Integrated +3.3V LVDS Receiver TI DS90CF386
Integrated LED driver TI TPS61158
Backlight control via PMW
Standby/Enable control
Compatible with 24V Power Networks combined with Prisma 24V series

Designed for following Ortustech displays:

Distec part number:	OR-20-005	COM35H3P08ULC 3,5/Blan1/480x640/250cd
Distec part number:	OR-20-021	COM35H3P39ULC 3,5/Blan1/480x640/250cd
Distec part number:	OR-20-002	COM43H4M85ULC 4,3/Blan2/WVGA/400cd
Distec part number:	OR-20-023	COM43H4N58ULC 4,3/Blan2/480x800/400cd

4 Absolut Maximum Ratings

Item	Symbol	Min.	Max	Unit	Note
LED Supply Voltage	V_{LED}	9	35	VDC	1, 2
LVDS Supply Voltage	V_{CC}	2.8	4	VDC	1, 2
Control Voltages	V_{EN}, V_{PDIM}, V_{ADMIM}	0.3	6.3	V	2
Storage Temperature	T_{st}	-30	+80	°C	2
Operating Temperature	T_{op}	-20	+70	°C	2, 3

Note (1) Within operating temperature range.

Note (2) Permanent damage to the device may occur if maximum values are exceeded.

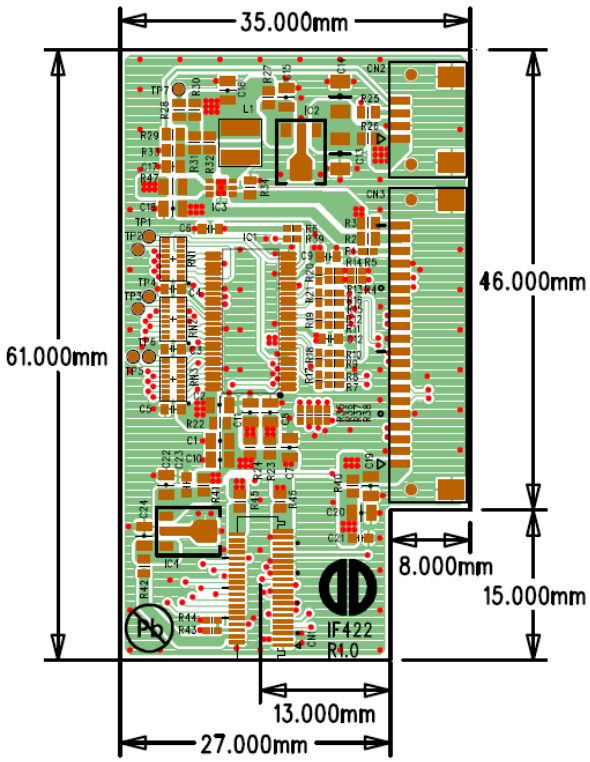
Note (3) In the upper range of T_{OP} total output power as well as the heat dissipation/cooling has to be checked. Forced airflow might be required.

5 Electrical Specification

Item	Symbol	Min.	Typ.	Max	Unit	Note
LVDS Supply Voltage	V_{CC}	3	3.3V	3.6	VDC	
LVDS Input Power	P_{VCC}		1.93	2.16	W	
LVDS Current	I_{VCC}		585	600	mA	
LED Supply Voltage	V_{LED}	10	12	24	VDC	
LED Input Power	P_{LED}		0.97	1.1	W	
LED Current	I_{LED}		10		mA	BLL
Efficiency			88		%	
Min. On Level voltage	$V_{EN,}$ V_{PDIM}	1.2	3.3	5.5	V	
Max. Off Level voltage	$V_{EN,}$ V_{PDIM}			0.4	V	
PWM Frequency	F_{PWM}	20	20	100	kHz	
PWM Duty	D_{PWM}	1		100	%	
PWM Voltage	V_{PWM}		3.3		V	

6 Mechanical Specification

Item	Description	Note
Length	61 mm	± 0.2mm
Width	35 mm	± 0.2 mm
Height (top side)	tbd mm	± 0.2 mm
Height (PCB)	1.6 mm	± 0.1 mm
Height (Bottom)	0.0 mm	No components on bottom side



7 Connectors

CON	Description	Type	Manufacturer
CN1	Panel Connector	FH23-39S-0.3SHW(05)	Hirose
CN2	Backlight driver	DF14-4P-1.25H(26)	Hirose
CN3	LVDS Data	DF14-20P-1.25H(26)	Hirose

7.1 Input Connectors

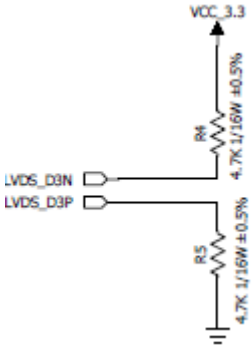
CN2 Backlight Driver

Pin	Signal	Description
1	V_{LED}	LED Supply Voltage
2	GND	Ground
3	EN	Backlight on/off control
4	PDIM	PWM Brightness control

CN3 LVDS Data (TI DS90CF386 LVDS Receiver)

Pin	Signal	Description		Pin	Signal	Description
1	V_{CC}	LVDS Power		11	GND	Ground
2	GND	Ground		12	R1+	LVDS DATA1(+)
3	R3+	LVDS DATA3(+) [1]		13	R1-	LVDS DATA1(-)
4	R3-	LVDS DATA3(-) [1]		14	GND	Ground
5	GND	Ground		15	R0+	LVDS DATA0(+)
6	R2+	LVDS DATA2(+)		16	R0-	LVDS DATA0(-)
7	R2-	LVDS DATA2(-)		17	GND	Ground
8	GND	Ground		18	NC	Not connected
9	CLK+	LVDS Clock(+)		19	NC	Not connected
10	CLK-	LVDS Clock(-)		20	NC	Not connected

Note 1: R3- is pulled high, R3+ is pulled down



7.2 Output Connectors

CN1 Panel Connector

Pin	Signal	Description		Pin	Signal	Description
1	VSS	Ground		21	D14	Green
2	VSS	Ground		22	D15	Green MSB
3	VDD	Panel Power input		23	D20	Red LSB
4	VCCIO	Logic Power input		24	D21	Red
5	GND	Ground		25	D22	Red
6	RESETB	Sys Reset (Low active)		26	D23	Red
7	HSYNC	Horizontal sync (negative polarity)		27	D24	Red
8	VSYNC	Vertical sync (negative polarity)		28	D25	Red MSB
9	CLK	Clock (Data input on falling edge)		29	VSS	Ground
10	VSS	Ground		30	DE	Input data effective signal (“H”)
11	D00	Blue LSB		31	STBYB	Standby Signal
12	D01	Blue		32	Test1	Connect to Ground
13	D02	Blue		33	NC	No Connection
14	D03	Blue		34	NC	No Connection
15	D04	Blue		35	NC	No Connection
16	D05	Blue MSB		36	NC	No Connection
17	D10	Green LSB		37	Test2	Connect to Ground
18	D11	Green		38	BLH	LED driver source (A)
19	D12	Green		39	BLL	LED driver source (C)
20	D13	Green				

8 Ordering Information

Part Number	Description	Note
ZU-02-422	IF422-00 LVDS/TTL + LED Driver Ortustech	
OR-03-003	COM35H3P08ULC-IF 3,5/Bl1/480x640/250cd+C	Preassembled interface
OR-03-004	COM43H4M85ULC-IF 4,3/Bl2/WVGA/400cd+C	Preassembled interface
KA-31-052	Cable PMini-HDMI-DP / IF422-00 50mm	Prisma LVDS cable
KA-31-053	Conv.cable PMini-HDMI-DP / IF422-00 70mm	Prisma Backlight cable
KI-52-012	3,5 COM35H3P08ULC-IF/PrismaMINI-HDMI-DP	PrismaMINI Kit
KI-52-013	4,3 COM43H4M85ULC-IF/PrismaMINI-HDMI-DP	PrismaMINI Kit

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