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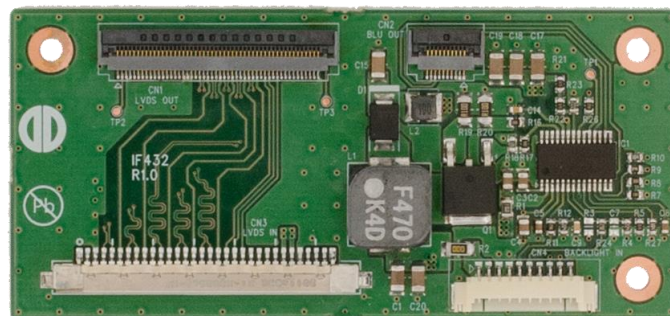
Datasheet

Distec

IF432-00

IF432-00 INX G104ACJ-L01 A+ LED

ZU-02-432



Version 1.0

10.12.2019

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1 Revision History

| Date | Rev.No. | Description | Page |
|------------|---------|-----------------|------|
| 10.12.2019 | 1.0 | Initial version | All |
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2 Overview

The IF432-00 is an interface board with an FFC to PCB cable adapter and an integrated LED driver for the Innolux G104ACJ-L01 display.

Note: requires an LVDS source with at least 960x1280 resolution.

3 General Features

Integrated LED driver

Backlight control via PWM

Standby/Enable control

Compatible with 24V Power Networks combined with Prisma 24V series

4 Absolut Maximum Ratings

| Item | Symbol | Min. | Max | Unit | Note |
|------------------------------|----------|------|-------|------|------|
| LED FW Current per Input Pin | I_F | | 100mA | mA | |
| LED Supply Voltage | V_R | | 50 | VDC | 1, 2 |
| LVDS Supply Voltage | V_{CC} | -0.3 | 4 | VDC | 1, 2 |
| Control Voltages | V_{IN} | -0.3 | 4 | V | 2 |
| Storage Temperature | T_{st} | -40 | +90 | °C | 2 |
| Operating Temperature | T_{op} | -40 | +85 | °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} | | 0.50 | 0.66 | W | |
| LVDS Current | I_{VCC} | | 150 | 200 | mA | White pattern, $I_{RUSH} = 2A$ |
| LED Supply Voltage | V_{LEDI} | tbd | 12 | 24 | VDC | |
| LED Input Power | P_{LEDI} | | (10.0) | (11.0) | W | Est. |
| LED Current | I_{LEDI} | | 95 | | mA | BLL |
| Efficiency | | | 88-95 | | % | |
| Min. On Level voltage | V_{INH} | 0.7 | | V_{CC} | V | |
| Max. Off Level voltage | V_{INL} | GND | | $0.3V_{CC}$ | V | |
| PWM Frequency | F_{PWM} | 100 | 240 | 1000 | Hz | |
| PWM Duty | D_{PWM} | 1 | | 100 | % | |
| PWM Voltage | V_{PWM} | | 3.3 | | V | |

6 Mechanical Specification

| Item | Description | Note |
|-------------------|-------------|-------------------------------------|
| Length | 82.0 mm | ± 0.2mm |
| Width | 38.0 mm | ± 0.2 mm |
| Height (top side) | 4.5 mm | ± 0.2 mm |
| Height (PCB) | 1.6 mm | ± 0.1 mm |
| Height (Bottom) | 0.0 mm | No parts on bottom side, only label |

7 Connectors

| CON | Description | Type | Manufacturer |
|-----|------------------|----------------|--------------|
| CN1 | Panel Connector | FH52-50S-0.5SH | Hirose |
| CN2 | Backlight driver | FH52-10S-0.5SH | Hirose |
| CN3 | Input LVDS | FI-X30SSLA-HF | JAE |
| CN4 | Input BLK | 53261-1071 | Molex |

7.1 Input Connectors

7.1.1 CN3 Input LVDS Connector

| Pin | Signal | Description | Pin | Signal | Description |
|-----|--------|---------------|-----|-----------------|-------------------------|
| 1 | NC | No connection | 16 | R0- | LVDS DATA0(-) |
| 2 | GND | Ground | 17 | GND | Ground |
| 3 | R3+ | LVDS DATA3(+) | 18 | STBYB | Standby signal |
| 4 | R3- | LVDS DATA3(-) | 19 | RL | Left/right scan control |
| 5 | GND | Ground | 20 | TB | Up/down scan control |
| 6 | R2+ | LVDS DATA2(+) | 21 | NC | No connection |
| 7 | R2- | LVDS DATA2(-) | 22 | NC | No connection |
| 8 | GND | Ground | 23 | NC | No connection |
| 9 | CLK+ | LVDS Clock(+) | 24 | NC | No connection |
| 10 | CLK- | LVDS Clock(-) | 25 | V _{CC} | Panel Power |
| 11 | GND | Ground | 26 | V _{CC} | Panel Power |
| 12 | R1+ | LVDS DATA1(+) | 27 | GND | Ground |
| 13 | R1- | LVDS DATA1(-) | 28 | NC | No connection |
| 14 | GND | Ground | 29 | NC | No connection |
| 15 | R0+ | LVDS DATA0(+) | 30 | NC | No connection |

7.1.2 CN4 Input Backlight Connector

| Pin | Signal | Description | Pin | Signal | Description |
|-----|-------------------|--------------------------|-----|--------|------------------|
| 1 | V _{LEDI} | LED Supply Voltage | 6 | PWM | PWM Control |
| 2 | V _{LEDI} | LED Supply Voltage | 7 | NC | No Connection |
| 3 | GND | Ground | 8 | NTC+ | NTC Thermistor + |
| 4 | GND | Ground | 9 | NTC- | NTC Thermistor - |
| 5 | V _{IN} | EN Enable/ STBYB Standby | 10 | NC | No Connection |

Display integrated NTC Thermistor type: Murata NCU15XH103F6SRC

To prevent self-heating of the NTC and improve the measurement accuracy, recommend operating current of the NTC is less than 0.031mA.

7.2 Output Connectors

7.2.1 CN1 Panel Connector

| Pin | Signal | Description | Pin | Signal | Description |
|-----|---------|------------------------------------|-----|--------|---|
| 1 | NC | For test, please keep it floating. | 26 | GND | Analog ground |
| 2 | TP_SYNC | Output V_sync signal for touch | 27 | NIND2 | LVDS signal data line 2 negative |
| 3 | GND | Analog ground | 28 | PIND2 | LVDS signal data line 2 positive |
| 4 | GND | Analog ground | 29 | GND | Analog ground |
| 5 | NC | For test, please keep it floating. | 30 | NINC | LVDS signal clock line negative |
| 6 | NC | Not Connect | 31 | PINC | LVDS signal clock line positive |
| 7 | NC | Not Connect | 32 | GND | Analog ground |
| 8 | NC | Not Connect | 33 | NIND3 | LVDS signal data line 3 negative |
| 9 | NC | For test, please keep it floating. | 34 | PIND3 | LVDS signal data line 3 positive |
| 10 | NC | Not Connect | 35 | GND | Analog ground |
| 11 | NC | Not Connect | 36 | GRB | Reset pin, low active |
| 12 | NC | Not Connect | 37 | STBYB | Standby pin, low active |
| 13 | NC | For test, please keep it floating. | 38 | RL | Left/right scan control, internal pull high |
| 14 | VCC | Digital power (typ. 3.3V) | 39 | VCC | Digital power (typ. 3.3V) |
| 15 | VCC | Digital power (typ. 3.3V) | 40 | TB | Up/down scan control, internal pull high |
| 16 | NC | Not Connect | 41 | NC | For test, please keep it floating. |
| 17 | GND | Analog ground | 42 | NC | For test, please keep it floating. |
| 18 | GND | Analog ground | 43 | NC | For test, please keep it floating. |
| 19 | GND | Analog ground | 44 | GND | Analog ground |
| 20 | GND | Analog ground | 45 | NC | For test, please keep it floating. |
| 21 | NIND0 | LVDS signal data line 0 negative | 46 | NC | Not Connect |
| 22 | PIND0 | LVDS signal data line 0 positive | 47 | NC | For test, please keep it floating. |
| 23 | GND | Analog ground | 48 | NC | Not Connect |
| 24 | NIND1 | LVDS signal data line 1 negative | 49 | NC | Not Connect |
| 25 | PIND1 | LVDS signal data line 1 positive | 50 | GND | Analog ground |

7.2.2 CN2 Backlight Connector

| Pin | Signal | Description | Pin | Signal | Description |
|-----|--------|---------------------|-----|--------|-----------------------|
| 1 | VLED | LED Voltage (anode) | 6 | NTC- | NTC Thermistor - |
| 2 | VLED | LED Voltage (anode) | 7 | NC | No Connection |
| 3 | VLED | LED Voltage (anode) | 8 | C1 | Cathode of LED string |
| 4 | NC | No connection | 9 | C2 | Cathode of LED string |
| 5 | NTC+ | NTC Thermistor + | 10 | C3 | Cathode of LED string |

Display integrated NTC Thermistor type: Murata NCU15XH103F6SRC

To prevent self-heating of the NTC and improve the measurement accuracy, recommend operating current of the NTC is less than 0.031mA.

8 Ordering Information

| Part Number | Description | Note |
|-------------|--------------------------------------|------|
| ZU-02-432 | IF432-00 INX G104ACJ-L01 A+ LED | |
| | | |
| CH-01-065 | G104ACJ-L01 10,4/AAS//960x1280/900cd | |

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