# Part number: FL-ADT0XXXL030-XX

# Description: Board HDMI to LVDS converter Board

# Revision Number: 03

Prepared By David

Prepared Date 11 August 2015

Approved By Ricky

Approved Date: 15 August 2015

History of Changes

| No | Change | Name | Date | Revision |
|----|--------|------|------|----------|
| 01 | First spec release | David | 11 may 2015 | 01 |
| 02 | Drawing update | Ricky | 15 June 2015 | 02 |
| 03 | Add board difference low profile | David | 15 August 2015 | 03 |
|  |  |  |  |  |

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# 1.    SCOPE

## HDMI to LVDS Driver Board with Compact and low profile size .



USB 2.0 Output    Keypad + Backlight connector    LVDS output

DC Power    USB 2.0 (pass through) (Optional for Touch)    HDMI    VGA    DVI
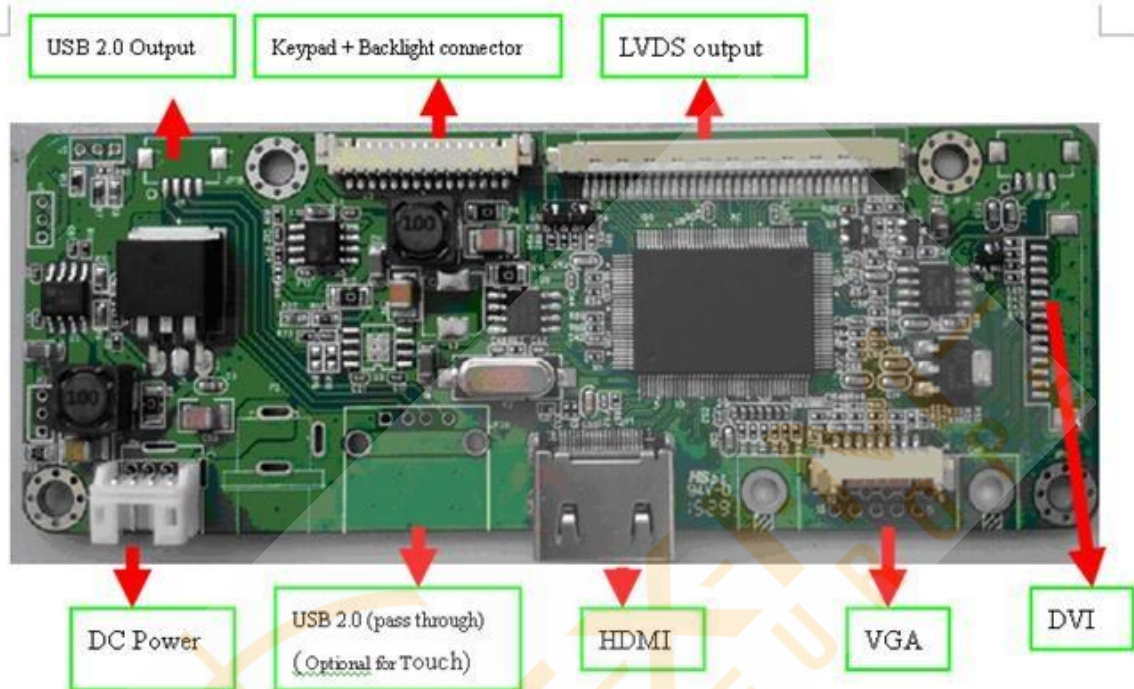
## 1.1    PRODUCT FEATURES

- Support HDMI V1.1 (1080P)
- Support DVI (Option)
- USB2.0 Pass-through Connector (option)
- Audio Amp for HDMI (optional)
- Output data type : LVDS 18bit,24bit,36Bit,48bit.
- Small and Compact size with low profile

## POWER

- Two input for control board : 12V to 24 DC

  (a) Jack 5.5×2.1Φ

  (b) Wafer 4P 2.0mm (for multi-power source)
- Output for LCD panel :   3.3V / 5V / 12V. (Default is 5V)

## Model Name definition:

- -W:   Install 4 Pin connector Wafer
- -J:    DC-JACK

| P/N | Description |
|-----|-------------|
| -J  | DC Jack + HDMI   ( Standard Version) |
| -W  | WAFER+ HDMI      ( Standard Version) |

## 2.    ELICTRICAL POWER CONSUMPTION

| Working condition | Consuming current | Watt |
|---|---|---|
| Board only @running mode | 156mA @12V | 1.9W |
| Board only @No sync mode | 80 mA @ 12V | 0.96W |
| Board only @sleep mode | 50mA @ 12V | 0.6W |
| Panel Power Consumption | Depend on LCD Power Consumption | check |
|  |  |  |

## 2.1    OPERTION TEMPERATURE

- Warm up time                    :    $\geq$ 30min.
- Operation Temperature     :    -20℃ ～  70℃
- Storage Temperature        :    -30℃ ～  80℃
- Operation Humidity           :    10% ～  80%
- Storage T Humidity           :     5% ～  90%

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## 2.2 PRESET TIMING CHART

### 2.2.2 FACTORY PRESETTED AND PREDEFINED TIMINGS

| VESA MODES | | | |
|---|---|---|---|
| Mode | Resolution | Horizontal Frequency | Vertical Frequency |
| 1 | 640 × 480@60Hz | 31.469 KHz | 59.940 Hz |
| 2 | 640 × 480@72Hz | 37.861 KHz | 72.809 Hz |
| 3 | 640 × 480@75Hz | 37.500 KHz | 75.00 Hz |
| 4 | 800 × 600@56Hz | 35.156 KHz | 56.250 Hz |
| 5 | 800 × 600@60Hz | 37.879 KHz | 60.317 Hz |
| 6 | 800 × 600@72Hz | 48.077 KHz | 72.188 Hz |
| 7 | 800 × 600@75Hz | 46.875 KHz | 75.000 Hz |
| 8 | 1024 × 768@60Hz | 48.363 KHz | 60.004 Hz |
| 9 | 1024 × 768@70Hz | 56.476 KHz | 70.609 Hz |
| 10 | 1024 × 768@75Hz | 60.023 KHz | 75.029 Hz |
| 11 | 1280 × 1024@60Hz | 63.981 KHz | 60.020 Hz |
| 12 | 1280 × 1024@75Hz | 79.976 KHz | 75.025 Hz |
| 13 | 1360 × 768@60Hz | 47.712 KHz | 60.015 Hz |
| 14 | 1440 × 900@60Hz | 55.935 KHz | 59.887 Hz |
| 15 | 1440 × 900@75Hz | 70.635 KHz | 74.984 Hz |
| 16 | 1680 ×1050@60Hz | 65.290 KHz | 59.954 Hz |
| 17 | 1680 ×1050@75Hz | 82.306 KHz | 74.892 Hz |
| 18 | 1920 ×1080@60Hz | 67.158 KHz | 59.963 Hz |

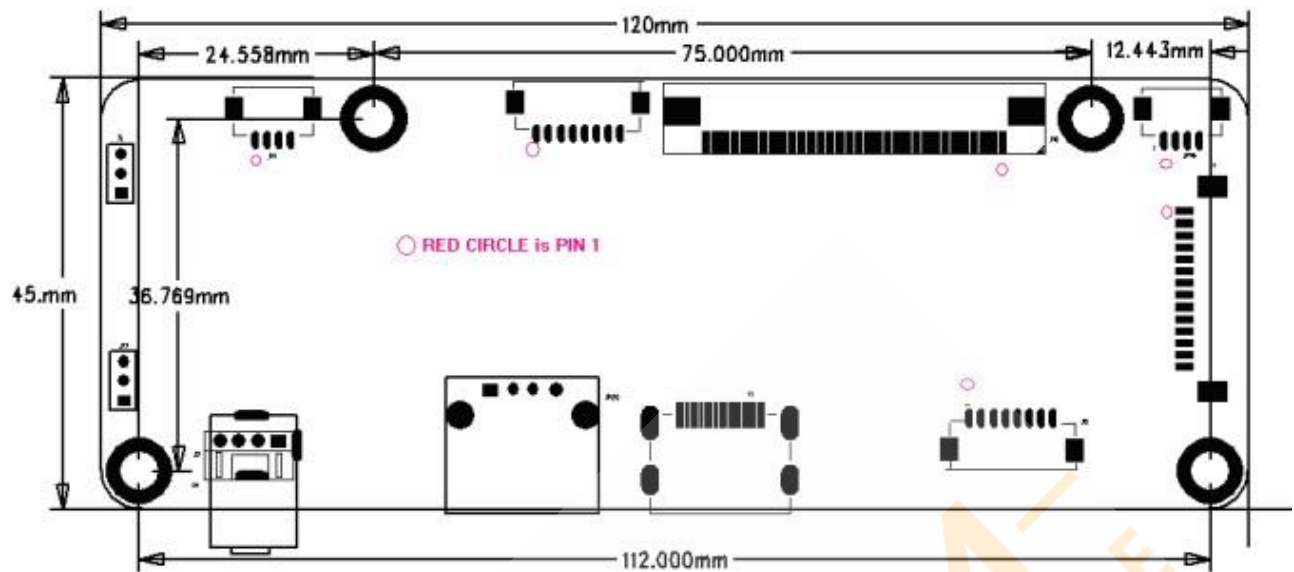# 3.    DIMENSIONS

## 3.1  COMPONENT  SIZE



Standard Version: DC Jack



Standard Version: Wafer

## 3.2 SOLDER SIDE



## 4. CONNECTOR

### 4.1 POWER CONNECTOR (P1 ) 5.5×2.1⏀

| PIN | Symbol | Description |
|-----|--------|-------------|
| 1 | DC IN | POWER SUPPLY DC IN (12V or 12-24V) |
| 3 | GND | POWER SUPPLY GROUND |

### 4.2 POWER CONNECTOR ( J3 ) Wafer 4P 2.0 mm

| PIN | Symbol | Description |
|-----|--------|-------------|
| 1 | DC IN | Power DC IN |
| 2 | Gnd | Ground |
| 3 | Gnd | Ground |
| 4 | DC IN | Power DC IN |

## 4.5     HDMI CONNECTOR (     )—D-19P

| PIN | Symbol | Description | PIN | Symbol | Description |
|-----|--------|-------------|-----|--------|-------------|
| 1 | HDMI_0+ | HDMI_0+ | 11 | GND | Ground |
| 2 | GND | Ground | 12 | HDMI_CLK- | HDMI_CLK- |
| 3 | HDMI_0- | HDMI_0- | 13 | CEC | CEC |
| 4 | HDMI_1+ | HDMI_1+ | 14 | N.C | NO Connection |
| 5 | GND | Ground | 15 | HDMI_SCL | HDMI_SCL |
| 6 | HDMI_1- | HDMI_1- | 16 | HDMI_SDA | HDMI_SDA |
| 7 | HDMI_2+ | HDMI_2+ | 17 | GND | Ground |
| 8 | GND | Ground | 18 | HD_5V | +5V input |
| 9 | HDMI_2- | HDMI_2- | 19 | HDMI_PLGDET1 | HDMI_PLGDET |
| 10 | HDMI_CLK+ | HDMI_CLK+ | | | |

## 4.6     LVDS OUTPUT CONNECTOR (J10 )--Header JAE 30 pin ,   Pitch=1.0

| PIN | Symbol | Description | PIN | Symbol | Description |
|-----|--------|-------------|-----|--------|-------------|
| 1 | LCD VCC | | 16 | TXO1- | |
| 2 | LCD VCC | | 17 | TXO0+ | |
| 3 | BLK_EN | | 18 | TXO0- | |
| 4 | BLK_PWM | | 19 | GND | |
| 5 | BLK_VCC | | 20 | TXE3+ | |
| 6 | GND | | 21 | TXE3- | |
| 7 | GND | | 22 | TXECK+ | |
| 8 | GND | | 23 | TXECK- | |
| 9 | TXO3+ | | 24 | TXE2+ | |
| 10 | TXO3- | | 25 | TXE2- | |
| 11 | TXOCK+ | | 26 | TXE1+ | |
| 12 | TXOCK- | | 27 | TXE1- | |
| 13 | TXO2+ | | 28 | TXE0+ | |
| 14 | TXO2- | | 29 | TXE0- | |
| 15 | TXO1+ | | 30 | GND | |

4.7      Backlight   and   Keypad   CONNECTOR ( J5   )—Molex 1.25mm

| PIN | Symbol | Description |
|-----|--------|-------------|
| 1 | LED_1 | LED_1 |
| 2 | LED_2 | LED_2 |
| 3 | GND | |
| 4 | SW0 | POWER KEY |
| 5 | SW1 | MENU KEY |
| 6 | SW2 | LEFT KEY |
| 7 | SW3 | RIGHT KEY |
| 8 | SW4 | EXIT KEY |
| 9 | BLK_EN | Backlight enable |
| 10 | BLK_PWM | Backlight digital PWM |
| 11 | BLK_analog_dim | Backlight analog Dimming |
| 12 | GND | GND |
| 13 | GND | GND |
| 14 | BLK_VCC | Backlight VCC |
| 15 | BLK_VCC | Backlight VCC |