

# 盟訊科技 Display A/D Board

## 產品承認書

客戶名稱 Customer		
產品型號 Part No.	UL676H	
客戶型號		
產品內容 Product type	Display A/D Board	
客戶確認簽章: Signature by Customer:		
Checked By	Rechecked By	Approved By
<b>SAN SHEN</b>	<b>ERIC HUANG</b>	<i>HANSOM</i>
備註	ROHS	

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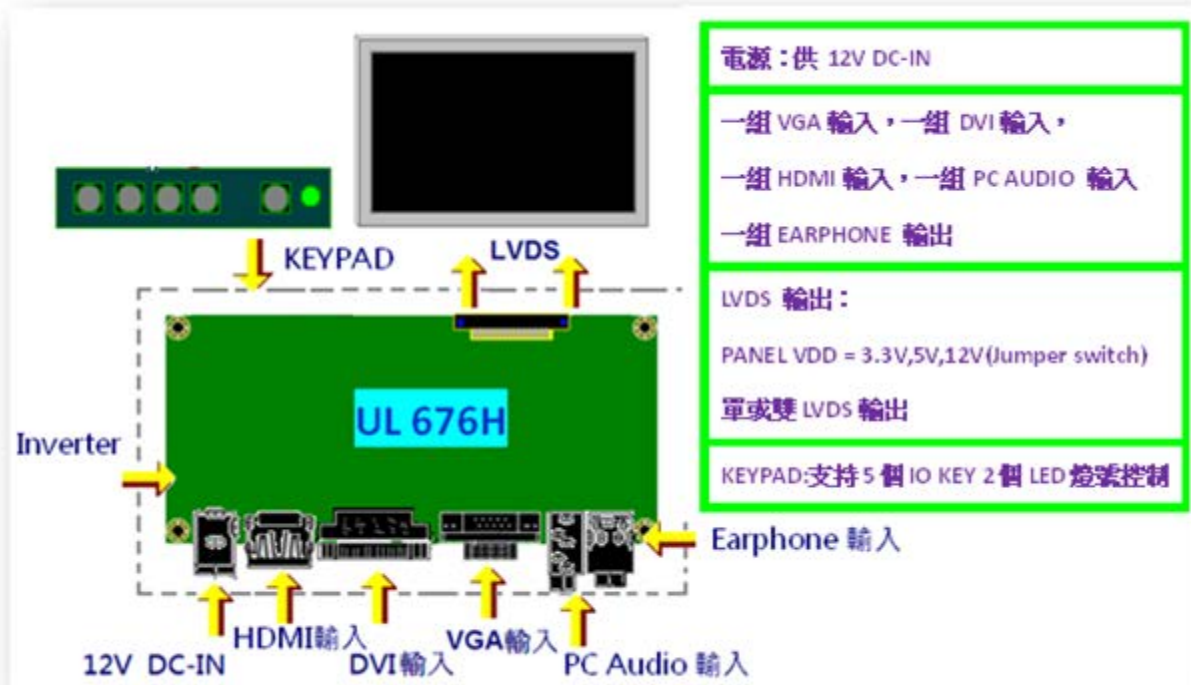
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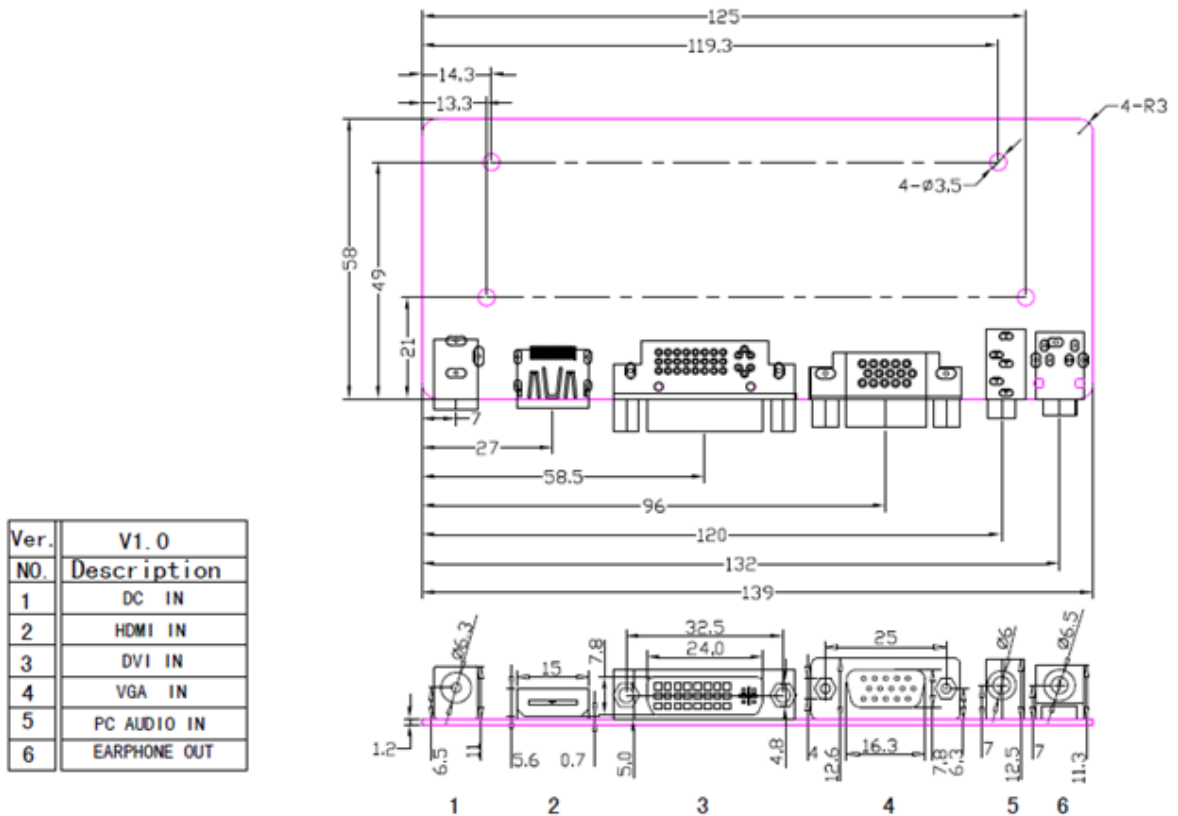
## I. 功能與規格



## I. 功能與規格

### 1. 尺寸說明

The size : 139mm(L)\*58mm(W)\*17mm(H).



## I. 功能與規格

### 2. 電子規格

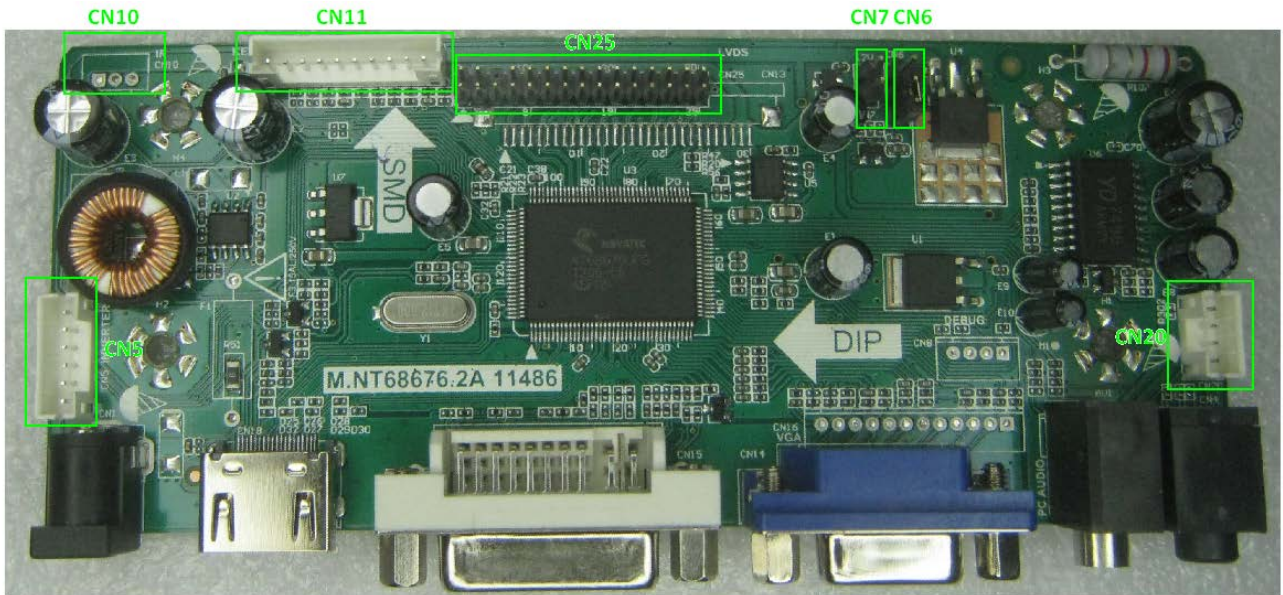
板厚:1.2 mm 兩層板 單面上件

電源	DC Power IN: 12V ; DC Power Jack 插座			
支援 Panel 種類	NT68676UFG of Resolution Support RGB WUXGA 1920x1200@60Hz,			
Panel 功能相關	LVDS 訊號	30PIN 雙排排針式輸出		
	供電	3.3V 、5V 、12V 可供選擇		
	背光	背光開關	有 F/W 支援	6PIN-2.0mm Connector (12V 2PIN , GND 2PIN)
調光方式		PWM		
輸入	輸入端子	DVI 端子	有	DVI-I
		VGA 端子	有	DB15 90 度端子
		HDMI 端子	有(without CEC function)	480i,480p,576i,576p,720p,1080i,1080p
		PC Audio IN	有	2X1W(8Ω),0.5Vrms
		Earphone Output	有	0.2~2.0Vrms
其它功能	特別功能	額外電源輸出	無	
		CEC	無	
KeyPad	對外指示燈號輸出組 , 對外接受按鍵 5 組			
昇級	昇級方式採 VGA 端子..IIC 寫入			

## II. 板子與各端子說明

### 1. 各端子位置

TOP VIEW:



FRONT VIEW:



**CN1 : DC Power IN (DC 12V 電源輸入)**

**CN18 : HDMI 輸入端子**

**CN15 : DVI 輸入端子**

**CN14: VGA 輸入端子**

**CN12 : PC AUDIO 輸入**

**CN4 : EARPHONE 輸出**

**CN5 : 背光電源與訊號輸出**

**CN10 : IR Inverter**

**CN11:KeyPAD (按鍵) 輸入**

**CN25: LVDS 排針式(pin header)輸出**

**CN20:Speaker 輸出**

**CN6: PANEL (3.3V 和 5V) 輸出 ; CN7: PANEL (12V) 輸出**

## II. 板子與各端子說明

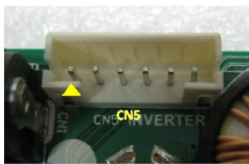
### 2.各插座說明

(1) . **CN1** : DC Power IN (DC 12V 電源輸入), DC Power Jack 插座

(2) . **CN10(3PIN/2.0/NC)** : IR Interface Connector

PIN1	PIN2	PIN3
IR Receiver	GND	5V DC Power Supply

(3). **CN5(6PIN/2.0)** : 背光電源與訊號輸出 , 下圖箭頭表 PIN1



PIN1	PIN2	PIN3	PIN4	PIN5	PIN6
12V	12V	BL ON/OFF	BL ADJ	GND	GND

(4) . **CN25(2X15PIN/2.0)** : LVDS 排針式(pin header)輸出,信號排列如下表

PIN 2	PIN 4	PIN 6	PIN 8	PIN 10	PIN 12	PIN 14	PIN 16	PIN 18	PIN 20	PIN 22	PIN 24	PIN 26	PIN 28	PIN 30
VSEL	GND	GND	TX00+	TX01+	TX02+	GND	TX0C+	TX03+	TXE0+	TXE1+	TXE2+	GND	TXEC+	TXE3+
PIN 1	PIN 3	PIN 5	PIN 7	PIN 9	PIN 11	PIN 13	PIN 15	PIN 17	PIN 19	PIN 21	PIN 23	PIN 25	PIN 27	PIN 29
VSEL	VSEL	GND	TX00-	TX01-	TX02-	GND	TX0C-	TX03-	TXE0-	TXE1-	TXE2-	GND	TXEC-	TXE3-

(5) . **CN11 (10PIN/2.0)**: KeyPAD (按鍵) 輸入 , 箭頭表 PIN1



PIN No.	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN9	PIN10
Sch Nane	Key 0	LED R	LED G	GND	Key 1	Key2	Key 3	Key 4	No Supply	No Supply
對應 function	Key 0	紅色燈號	綠色燈號	GND	Key 1	Key2	Key 3	Key 4	No Supply	No Supply

(6). **CN20(4PIN/2.0)** : Speaker Connector

PIN1	PIN2	PIN3	PIN4
LO	GND	GND	RO



### III. 板子設定

注意事項:

- (1) Panel 電源需正確
- (2) Panel 參數需正確

#### 1. 跳 PIN(Jumper)的說明



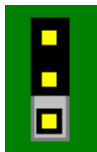
表 Jumper 未插上



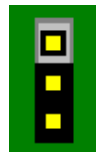
表 Jumper 插上



(1) CN6 : Panel 電源選擇



Panel 電源為 5V 時



Panel 電源為 3.3 V 時

(2) CN7 : Panel 電源選擇



Panel 電源為 12V 時



## IV. OSD 功能表說明

功能選單	色彩調整	對比度	0~100
		亮度	0~100
		色溫	9300K 6500K User
		離開選單	離開選單
		影像調整	水平位置
		垂直位置	0~100
		相位	0~100(本功能依要求已去除)
		時脈	0~100
		銳度	1 2 3 4 5
		離開選單	離開選單
自動校正		自動影像調整	是 否
	自動色彩調整	是 否	
	離開選單	離開選單	
	選單調整	語言選擇	8 國語言
	選單水平位置	0~100	
	選單垂直位置	0~100	
	選單時間	ON OFF	
	離開選單	離開選單	
	其它	重置	是 否
	音量	無使用	
	Input	VGA DVI	
	離開選單	離開選單	

## V. Main Chip Features

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# NT68676UFG

### Features

#### Analog Graphic Input

- ◆ Support RGB WUXGA 1920x1200@60, 2048x1152@60hz input for NT68676UFG and WSXGA 1680x1050@75hz for NT68676FG.
- ◆ Triple 8bit 250Mhz ADCs (0.55 ~ 0.9V) Bandwidth
- ◆ 205Mhz HPLL With 64 steps phase Adjust for RGB Channel in NT68676UFG and 166Mhz HPLL for NT68676FG
- ◆ Auto Offset for Component Video
- ◆ Sync. Processor for H/V Sync. Measurement with SOG support
- ◆ Supports Both Non-interlaced and Interlaced Input signals

#### Digital Graphic Input

- ◆ Integrated Single Link TMDS Receiver up To 225MHz deep color mode
- ◆ Support HDCP V1.1 Compliant
- ◆ Support HDMI V1.3 8/10/12 bit deep color mode. Resolutions up To 1080p @ 60Hz
- ◆ Compliant with 8CH Audio decode
- ◆ Build in H/W CEC Controller.

#### Video Processing

- ◆ Zoom and shrink engine with non-linear scaling in horizontal direction for wide screen panels
- ◆ The 4<sup>rd</sup> generation Bright Frame with adaptive contrast control, 24 color tones adjustment , sRGB real color engine and edge enhancement functions
- ◆ Support Linear & Non-linear 4/8/16/32 Segment Histogram & I-Gamma Curve
- ◆ Adjustable sharpness setting
- ◆ Built-in 2D Noise Reduction function and noise meter
- ◆ Dynamic ghost/ ringing reduction filter
- ◆ Dynamic backlight control for ultra-high contrast and power saving
- ◆ Advance dithering enhancement for smoothing gray object that support 16.7M color

#### Sync Processor

- ◆ Support TTL Sync-On-Green (SOG) , (Including Sync Slicer)
- ◆ Polarity detection
- ◆ Frequency measurement
- ◆ Fast mode change detection
- ◆ Interlace or non-interlace input detection

- ◆ Separate or composite sync auto switching (including Sync Separator)

#### Internal OSD

- ◆ Programmable multi-color RAM font as well as a bitmapped graphical OSD are supported
- ◆ Provide 1,2,3,4 bits/pixel RAM Fonts
- ◆ Optional 10x18, 12x18, 10x16, 12x16 dot matrix
- ◆ Internal SRAM allows up to **8192** characters, with programmable OSD frame size. Width is **128** column, and Height is **64** row
- ◆ Programmable shadow or border control for each character by each row
- ◆ Programmable blinking effects for each character
- ◆ Spacing control to avoid expansion distortion
- ◆ Supports simultaneous display of up to 8 OSD windows for Frame1 (extra 4 windows for Frame2)
- ◆ Maximum 4 times of global zoom for horizontal and vertical axis
- ◆ Separate row zoom control
- ◆ Support flexible FG or BG optional transparent, translucent, and opaque effects
- ◆ 256 palette with 64K color selectable
- ◆ Top-bottom flip, left-right mirror and 90 degree / 270 degree rotated
- ◆ Flexible Fade-in, Fade-out effect
- ◆ Splitting OSD frame supported
- ◆ Gradient fade-in/fade -out
- ◆ Insert variable space by row
- ◆ 2 Independent control Frame control supported.
- ◆ Pixel base adjustment for window size control.
- ◆ Up to **18K** byte RAM size (6Kx24bits)

#### Display Output

- ◆ 8/6 bit single/dual port WUXGA ,LVDS panels for NT68676UFG and WSXGA for NT68676FG.
- ◆ LVDS Dual port support up to 200MHz ( AC spec ).
- ◆ All of output keep “Low” after power up

#### Audio Output

- ◆ 1 Channel R/L analog output for external amplifier ( output 0 ~ 1Vrms)
- ◆ 1 S/PDIF digital output
- ◆ 1 I2S digital output for external amplifier

#### Built-in Dual Pixel LVDS Transmitter

- ◆ Integrate the Dual Port, 4 Data Channel and Clock-Out Low-Voltage differential LVDS transmitter to supports single or dual pixel 6/8-bit display data transmission
- ◆ Suited for single pixel VGA, SVGA, XGA and dual pixel SXGA, WSXGA, WUXGA(NT68676UFG only) display transmission from controller to display with low EMI

#### **Embedded Microcontroller**

- ◆ External SPI flash IF (Support flash size up to 4Mbits)
- ◆ 4 Hardware DDC ports
- ◆ Provide 3 timers for software application.
- ◆ Low power detector function.

#### **Misc.**

- ◆ Buuild In 3.3V to 1.8V LDO

#### **Power**

- ◆ 3.3V/1.8V power supply
- ◆ Support Ultra-Low Power Standby Mode.

#### **Package**

- ◆ QFP 128 pin

## VI. Revision History

版本	變更內容	變更時間
Ver . A	初版	2015/03/31