

# USER MANUAL

TITLE	Industrial Monitor / Monitor		
MODEL NAME	IDS31-156W		
SERIAL NAME	IDS31-156WP30DVA1E		
Signature _____ _____	Date _____ _____	Prepared by _____	Date _____
Please return 1 copy for our confirmation with your signature and comments			

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## BSMI 甲類

警告使用者這是甲類資訊產品, 在居住的環境中使用時, 可能會造成射頻干擾, 在這種情況下, 使用者會被要求採取某些適當的對策.

警告: 使用過度恐傷害視力

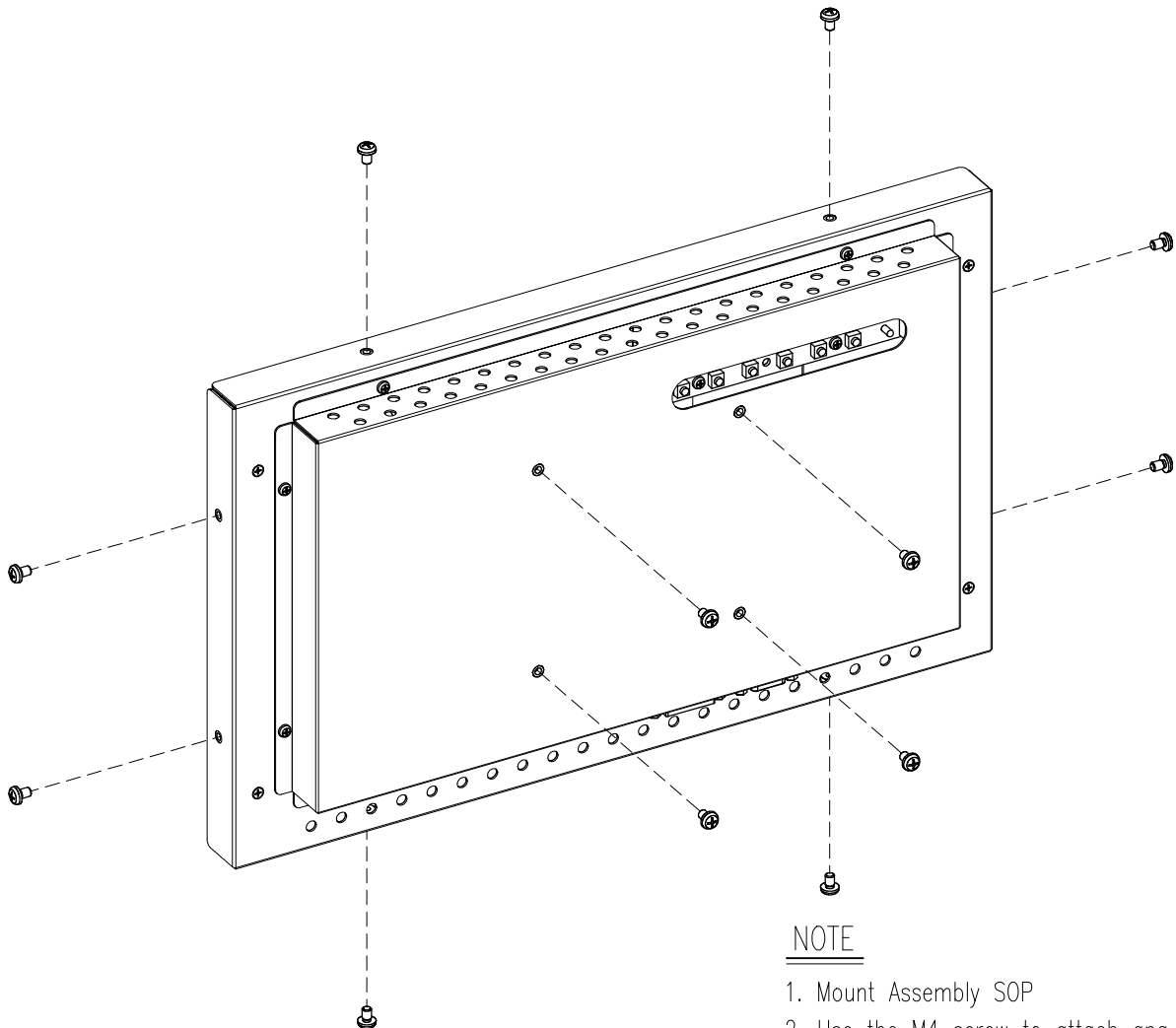
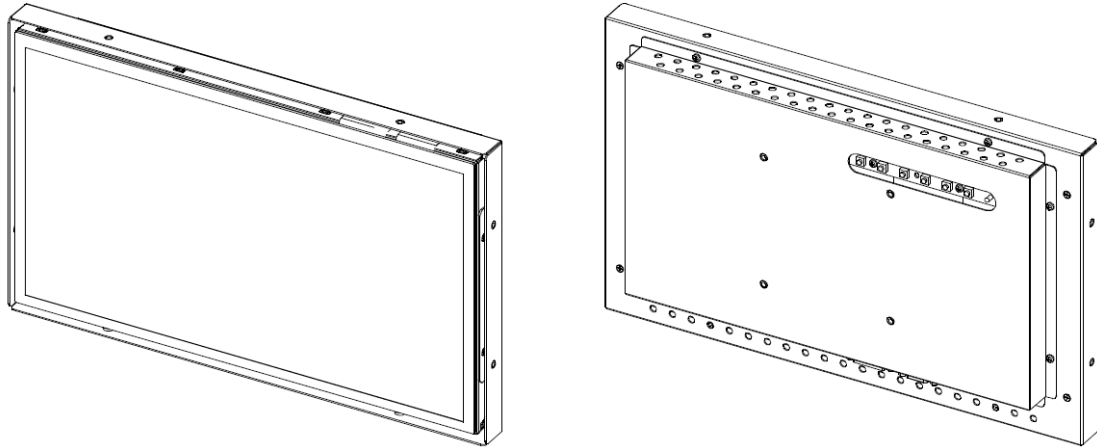
(1) 使用30分鐘請休息10分鐘。

(2) 2歲以下幼兒不看螢幕, 2歲以上每天看螢幕不要超過1小時。

## I . OVERVIEW

The IDS31-156WP30DVA1E is designed 15.6 inch monitor

- Support the monitor with 1366 × 768 resolution.
- Brightness - 300 cd/m<sup>2</sup> (without Touch)
- Contrast Ratio : 500:1



NOTE

1. Mount Assembly SOP
2. Use the M4 screw to attach and tighten as follows.

## II . General Description

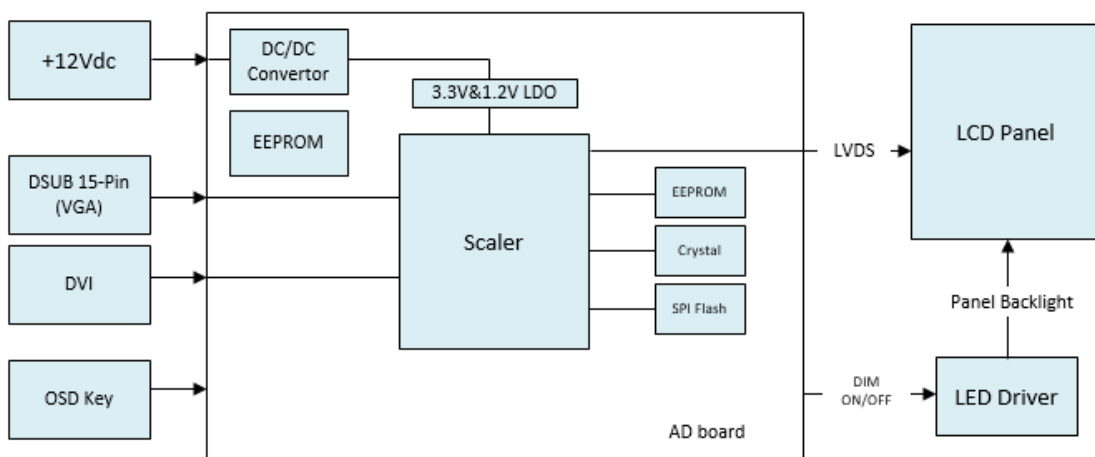
Display Type	TFT LCD Panel (15.6 inch)	
Pixel Pitch	0.252(H)mm X 0.252(V)mm	
Pixel Format	1366 Hor. By 768 Ver. Pixels RGB vertical stripe	
Display Colors	16.7M colors	
Brightness	300 cd/m <sup>2</sup> (Typical)	
Contrast Ratio	500 : 1 (Typical)	
Response Time	8 ms (T <sub>R</sub> + T <sub>F</sub> )	
Viewing Angle	Horizontal	170 °
	Vertical	160 °
Life Time	50,000 Hr (Typical)	
Input Signal	Analog RGB, DVI-D	
OSD Controls	Soft Power(On/Off), Menu, Select, Up, Down, Auto	
Power Saving (LED Display)	VESA DPMS, On (Green), Stand-By (Green blinking), Suspend (Green blinking), Off	
Dimension	377.0(H) x 230.0(V) x 45.0(D)	
Weight	3.35kg	
Operating Temp.	0 °C ~+50 °C	
Storage Temp.	-20 °C ~ +60 °C	

### III. Electrical Specifications

#### 1-1. Electrical Characteristics

Power	DC Input Voltage		12V <sub>DC</sub> / 3.5A ± 10%	
	Standby power		1.0 W	
	Power consumption		16 W	
Analog	Video Signal	Type	Analog RGB	
		Gain Level	0.714 ± 5%	
		Input impedance	75ohm ± 5%(terminated)	
		Pixel frequency	Max. 165MHz	
		Resolution	Max. 800×480 / 60Hz	
	Input Sync Signal	Type	H/V, Separate only	
		Gain Level	TTL level (High ≥ 2.0V, Low ≤ 0.8V)	
		Polarity	Positive or Negative	
		Maximum Duty	Max. 25%	
		Frequency Range	Horizontal	31.43 ~ 88.8KHz,
		Vertical	56.25 ~ 75.03Hz	
DVI	Differential output		150 ~ 1200 mVp-p	
	Input clock freq		20 ~ 135 MHz	

#### 1-2 Board Block Diagram



## 2. I/O Port (Interface Connections)

### 2-1. Analog RGB Pin Assignment

Connector	P/No.	Symbol	Description
VGA Input connector For 15P D-sub	1	Red	Red, analog input
	2	Green	Green, analog input
	3	Blue	Blue, analog input
	4	N.C	Not connected
	5	DGND	Digital ground
	6	Red GND	Ground for Red return
	7	Green GND	Ground for Green return
	8	Blue GND	Ground for Blue return
	9	N.C	Not connected
	10	DGND	Detect connector
	11	N.C	Not connected
	12	DDC Data	DDC Data
	13	H-sync	Horizontal sync, input
	14	V-sync	Vertical sync, input
	15	DDC Clk	DDC Clk

### 2-2. DVI Jack Pin Assignment

Connector	P/No.	Symbol	Description
DVI	1	RX2N	TMDS Data 2-
	2	RX2P	TMDS Data 2+
	3	GND	TMDS Data 2/4 Shield
	4	NC	TMDS Data 4-
	5	NC	TMDS Data 4+
	6	SCL-DVI-1	DDC Clock
	7	SDA-DVI-1	DDC Data
	8	VSYNC	Analog Vertical Sync
	9	RX1N	TMDS Data 1-
	10	RX1P	TMDS Data 1+
	11	GND	TMDS Data 1/3 Shield
	12	NC	TMDS Data 3-
	13	NC	TMDS Data 3+
	14	+5V Power	DVI+5V
	15	GND	Ground
	16	HPD	Hot Plug Detect
	17	RX0N	TMDS Data 0-
	18	RX0P	TMDS Data 0+

	19	GND	TMD5 Data 0/5 Shield
	20	NC	TMD5 Data 5-
	21	NC	TMD5 Data 5+
	22	GND	TMD5 Clock Shield
	23	RXCP	TMD5 Clock +
	24	RXCN	TMD5 Clock -
	C1	NC	Analog Red
	C2	NC	Analog Green
	C3	NC	Analog Blue
	C4	HSYNC	Analog Horizontal Sync

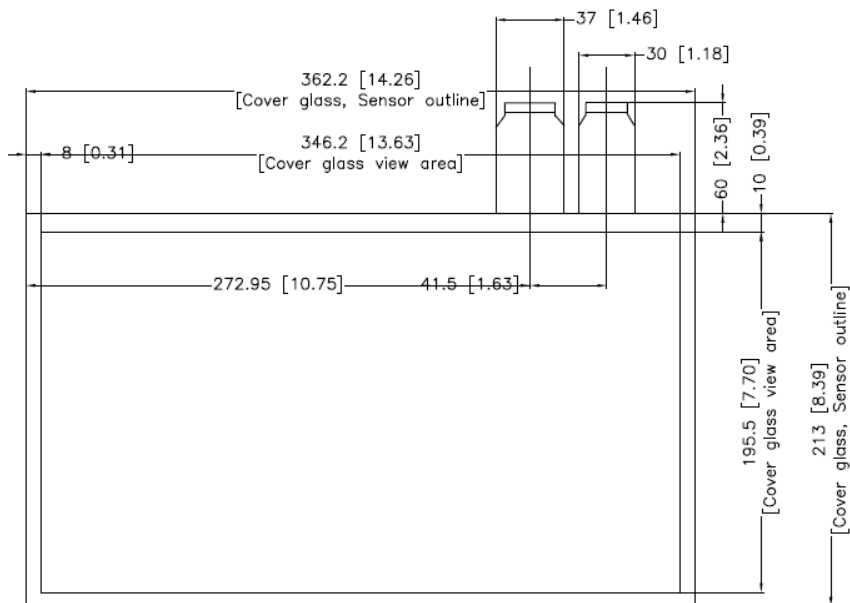
**2-3. Input Signal format**

Character Mode	Pixel Freq. MHz	Horizontal Timing				Vertical Timing			
		Sync Polar	Freq. KHz	Total Pixel	Active Pixel	Sync Polar	Freq. Hz	Total Line	Active Line
		640x480 @60Hz	-	31.47	800	640	-	59.94	525
800x600 @60Hz	40.000	-	37.88	1056	800	-	60.32	628	600
1024x768 @60Hz	65.000	-	48.36	1344	1024	-	60.00	806	768
1360x768 @60Hz			46.87	1776	1360		58.81	797	768

Sync : H/V Separated LVDS

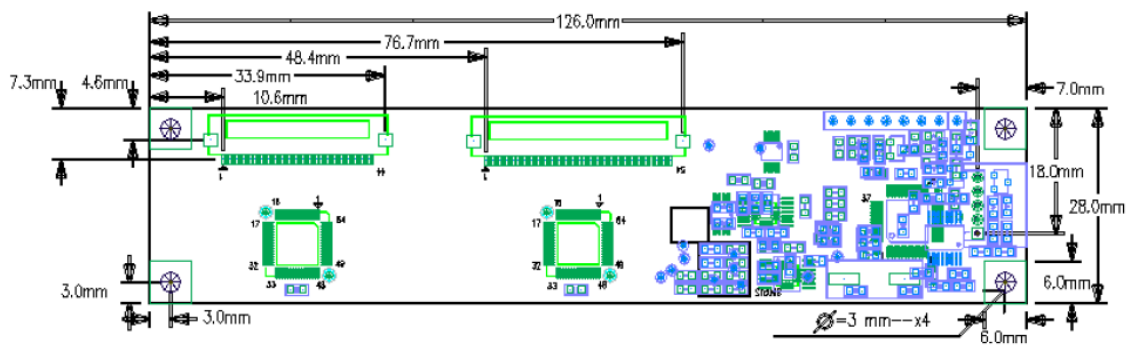
**2-4. Touch Glass / Touch Controller**

<b>Projected Capacitive Touch</b>	
Input Method	Finger, Limited gloves
Light Transmittance	More than 82% (Typical)
Operating Temperature	-25°C ~ 70°C Humidity 90% RH at max 35°C
Storage Temperature	-30°C ~ 80°C Humidity 90% RH at max 35°C



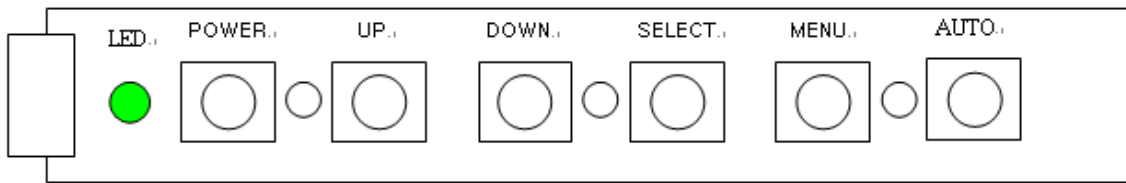
- Note
- 1. Total Thickness :  $2.52 \pm 10\%$
- 2. Cover Glass Thickness : 2.0T ( Tempered glass )
- 3. Film Thickness : Top 0.21mm, Bottom 0.21mm(PET + Printed layer)
- 4. Transparency : 82% or More
- 5. Tail : FPC style ( Copper trace )

Controller Board	
Circuit Board Dimension	28mm x 126mm
Channels of Panel	Max. Y:44 X:54 channels
Input Voltage	3.5V~5.5V.Typical 5V.
Operating Temperature	-40 to 85 °C
Storage Temperature	-40 to 90 °C
Relative Humidity	95% at 60 °C, RH Non-condensing
Interface	USB: 1.1 Full Speed
Resolution	2048×2048 resolution
Power consumption	Active Mode: Max 50 mA Idle Mode : 5mA Sleep Mode :0.5mA
Response time	Max. 20 ms





**IV. OSD Function**



**1) Button**

Button	Function	Notes
Power	Power on/off button - Turn power on or off	
Menu	Main menu on/move button - Show OSD menu on the screen - Exit the main menu or submenu	
SLEECT	Menu off button - Submenu Select - Input Source Select(RGB/DP)	
DOWN	Adjust button - OSD Menu Down - Moves the bar left to decrease the adjustment	
UP	Adjust button - OSD Menu UP - Moves the bar right to increase the adjustment	
AUTO	- Auto Adjust (Only VGA Mode)	

**2) Menu**

Image	<b>Sub Menu : Brightness, Contrast, Sharpness, Color</b> Use the 'Adjust -' or 'Adjust +' button to decrease or increase the setting
Display	<b>Sub Menu : Auto Adjust, Phase, Clock, Display Position, Panel Select</b> Use the 'Adjust -' or 'Adjust +' button to decrease or increase the setting
System	<b>Sub Menu : Input Source, OSD Setting, Language, Dimming, Reset</b> Use the 'Adjust -' or 'Adjust +' button to adjust the settings automatically

## V. Environment Specifications

Parameter	Values		Units	Notes
	Min.	Max.		
Operating Temperature	0	+50	°C	
Storage Temperature	-20	+60	°C	
Operating Humidity	5	90	%RH	
Storage Humidity	5	90	%RH	

## VI. Reliability

No.	Test Item	Conditions	
1	High temperature operating test	Ta : 50 °C, 120Hr	
2	Low temperature operating test	Ta : 0 °C, 120Hr	
3	High temperature storage test	Ta : 60 °C, 120Hr	
4	Low temperature storage test	Ta : -20 °C, 120Hr	
5	High humidity operating test	Ta : 50 °C, 80%RH, 120Hr	
6	High humidity storage test	Ta : 50 °C, 90%RH, 120Hr	
7	Thermal shock operation test	Ta : 0 °C, 60min → 0 °C~50 °C, 30min → 50 °C, 60min, 50Cycle	
8	Thermal shock storage test	Ta : -20 °C, 60min → -20 °C~60 °C, 30min → 60 °C, 60min, 50Cycle	
9	ESD	Contact	8KV,1sec/cycle
		Air	15KV,1sec/cycle
10	Vibration (Non-Operation)	Linear sweep 30minutes, 10~200Hz 1.5G, X, Y, Z direction	
11	Shock (Non-Operation)	50G, 20ms, Half-sine wave ±X, ±Y, ±Z	

**VII. Inspection standard**

**1. Description**

These inspection standards shall be applied to LCD monitor supplied by GTT.

**2. The condition of inspection**

2.1 Inspection Environment

- 1) Ambient temperature : 15~25°C
- 2) Humidity : 25~75%RH
- 3) Ambient Illumination :  
 400~600Lux for external appearance inspection  
 100~200Lux for light on inspection

2.2 Inspection condition

- Viewing Distance : 30~50<sup>cm</sup> from the surface of the monitor.
- Viewing Angle : 90 degree to the front surface of display panel.
- Viewing Distance : 30<sup>cm</sup> from the surface of the monitor.
- Viewing Angle : 90 degree to the front surface of display panel.
- Inspection time for 15seconds.
- while the monitor is on the display and while running the Color patterns(White/Red/Green/Blue)
- Under the inspection condition above, we judge a failure in the inspection if stain or finger print are detected by naked eyes .

2.3 Inspection resolution

1366×768, 60Hz

**3. Visual inspection**

3.1 Packing inspection

Item	Standard	Inspection equipment
Carton label	The character(Model, P/N, S/N etc...) can be discerned.	* Visual
Box	No broken and dirty	

3.2 Appearance inspection of monitor

Item	Standard	Inspection equipment
Rear & side	No crack, Broken and Distortion	* Visual * Calipers * Steel scale
Scratch	Noticeable scratch and exfoliation coating are not permitted	
Mounting hole	No omission	
Rear label	The character(Model, P/N, S/N etc...) can be discerned.	
Dimension and hole size	Tolerance : ± 0.2mm	

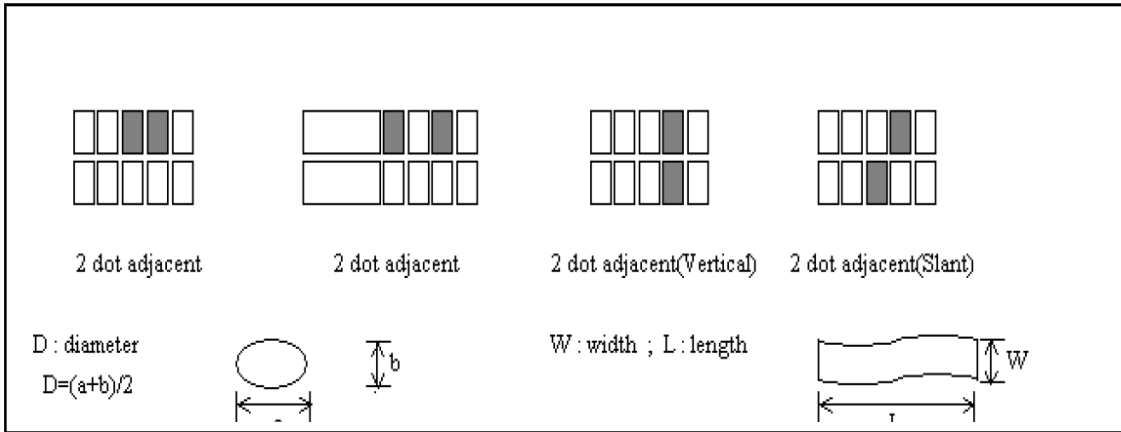
3.3 LCD visual inspection

[unit : mm]

Item	Standard		Inspection equipment
Dot (Bright & Dark)	Random	$N \leq 8$	* PC for inspection * Pattern generator * Lupe : $\times 10$ * N-test program * ND Filter
	2 adjacent	$N \leq 4$ (Note 1)	
	3 adjacent or more	$N \leq 2$	
	Total	$N \leq 12$	
Mura(Note 4)	Judged by 2% ND filter in gray pattern		
Line defect	Not allowed		

\* D : Diameter, W : Width, L : Length, N : Count

Note (1) Two dot adjacent



Note (4) The inspection method of ND filter – holding ND filter in front of the panel around 1cm

and examine the panel from  $35 \pm 5$ cm in the front view for 3 seconds.

3.4 Touch glass & LCD Panel visual inspection

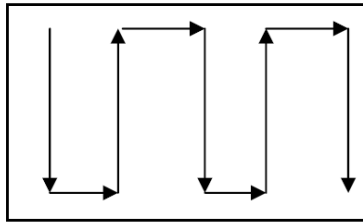
[unit ; mm]

Item	Defect size	Q'ty	Inspection equipment
Circular defect	$D < 2.0$	Ignore	* Visual * Lupe ; $\times 10$
	$D \geq 2.0$	0	
Liner defect (Scratch, Foreign object)	$W < 0.5, L < 15$	Ignore	
	$W \geq 0.5, L \geq 15$	0	

\*out-of-box cosmetic criteria within the viewing area while the touch sensor is on the display and while running the “Colors” program

\* Inspection method

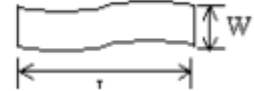
- Position front of touch screen 50cm form your eye.
- Inspection for 15seconds.
- Use one of the following patterns to aid eye.



D : diameter  
 $D=(a+b)/2$



W : width ; L : length



**4. Function inspection (Resolution 1366\*768 at 60Hz)**

4.1 OSD key function inspection

Item	Standard	Inspection equipment
Key function	Function normally each key button on the PC mode.	* PC

4.2 Display inspection

Item	Standard	Inspection equipment
Color	No strange color displaying	* PC * Pattern generator
Flicker	No flicker	
Noise	No critical noise	
Jittering	No critical jittering	
Power LED indicator	Power & signal on      Green	

4.3 Function inspection of touch screen

Item	Standard	Inspection equipment
Accuracy	Within 2.5mm each target & 10% Jitter limit on moving	* Finger

**VIII. Accessory**

**1) VGA Cable**

P1 HDB15(M)	WIRE COLOR	P2 HDB15(M)
1	COAX RED WIRE	1
6	COAX RED GND	6
2	COAX GREEN WIRE	2
7	COAX GREEN GND	7
3	COAX BLUE WIRE	3
8	COAX BLUE GND	8
9	BLACK	9
10	VIOLET	10
12	ORANGE	12
13	COAX NATURE WIRE	13
14	YELLOW	14
15	WHITE	15
4		4
5		5
11	Braid-coax NATURE GND	11
		SHELL

**REMARK:**

1. JUL 1354 (30AWG\*1C+EA)\*3+UL 1792 (30AWG\*1C+EA)\*1+UL 1061 30AWG\*5C+AB OD=φ5.5mm  
PVC JACKET COLOR: BLACK (HL-201)
2. HDB 15P (MALE, SOLID PIN, FULL PIN, PIN G.F, BLACK INSULATION, SHELL TIN PLATED)  
AFTER INNER-MOLDED MUST ADD COPPER FOIL AND SOLDERED AROUND 360° TO CONNECTOR  
SHELL AND CABLE SHIELD THEN 45P PVC OUTER MOLDED (45P COLOR: BLUE 661C HL-501)
3. FERRITE CORE (OD) 10.0(L) 13.5\*(ID) 6.35mm
4. THUMB SCREW φ 2.8\*L 32mm #4-40 NI PLATED ABS MOLDED COLOR: BLUE 661C (HL-501)
5. PVC 45P COLOR: BLACK (HL-201)
6. DUST CAP: USED FOR HDB15P(M) PVC COLOR: CLEAR (HL-002).
7. FINISHED PRODUCT BENDING TEST: 300g, φ60, 250TIMES MIN, 25CYCLES/MIN
8. SALT SPRAY: 35±2°C SOLUTION 5:1% SPRAY 24 HOURS, PH=6.5-7.2 AIR PRESSURE 1.0±0.01KGf/c  
TEST RELATIVE HUMIDITY 10-85%, TEST STANDARD: CONTACT RESISTANCE LESS THAN  
TWICE OF INITIAL, NO EVIDENCE OF DAMAGES

		HONGLIN ELECTRONIC CO., LTD 泓淋电子有限公司	
CUSTOMER	SE MYOUNG	HONGLIN PIN	110-2701
REVISIONS	DESCRIPTION	DATE	APPVD
ECN NO.	REV	A/0	2006.02.08
	INITIAL RELEASE		
	CHECKED	1032.2010	0208/1630
	APPROVED	1032.2010	0208/1630
TOLERANCES			
X. ± mm			
X. X ± mm			
X. XX ± mm			
X. XXX ± mm			
X. XXXX ± mm			
METRIC: MM			
TITLE: SIGNAL CABLE ASSY		DATE: 2006.02.08	
DRAWN: Betty		SHEET: 1/1	
SCALE: NONE		REV: A/0	
DRAWING: 110-2701.DWG			

## 2) DVI Cable

**WIRE CONNECTION**

DVI 18+1	COLOR	DVI 18+1
PIN 1	WHITE	PIN 1
PIN 2	RED	PIN 2
PIN 3	GND	PIN 3
PIN 6	VIOLET	PIN 6
PIN 7	RED	PIN 7
PIN 9	WHITE	PIN 9
PIN 10	GREEN	PIN 10
PIN 11	GND	PIN 11
PIN 14	YELLOW	PIN 14
PIN 15	ORANGE	PIN 15
PIN 16	WHITE	PIN 16
PIN 17	WHITE	PIN 17
PIN 18	BLUE	PIN 18
PIN 19	GND	PIN 19
PIN 22	GND	PIN 22
PIN 23	BROWN	PIN 23
PIN 24	WHITE	PIN 24
SHELL	BRAID	SHELL

**REMARK:**

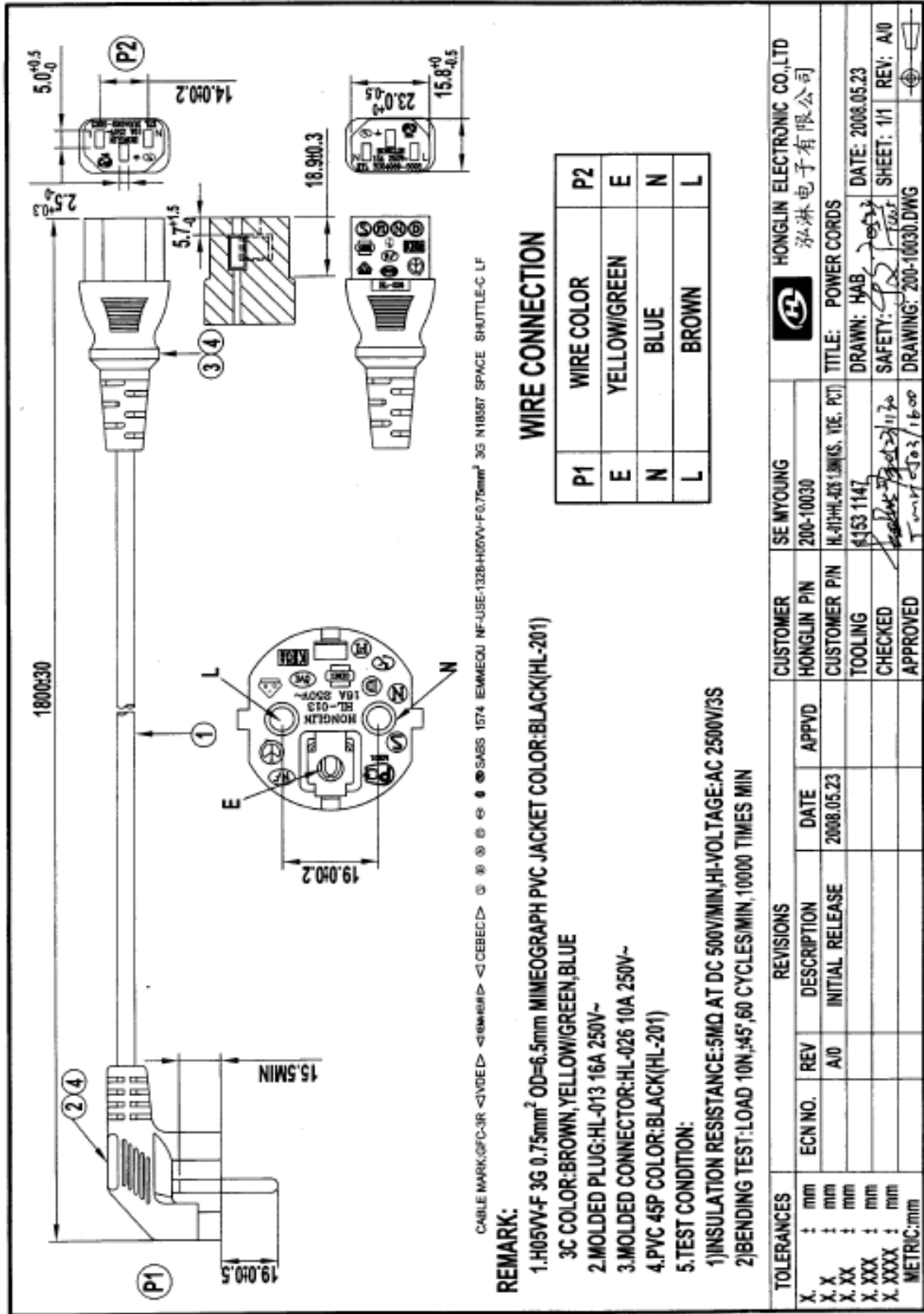
1. UL20276 APPROVED (28AWG\*1P+EAM)\*4+28AWG\*1P+28AWG\*3C+DAB OD:Ø7.3mm  
PVC JACKET COLOR:BLACK(HL-201)
2. DVI-D(18+1) MALE, ASSEMBLY TYPE, SOLID PIN, PIN G/F, BLACK INSULATION, SHELL NI PLATED  
AFTER ADD METAL CAN AND SOLDERED AROUND 360° TO CONNECTOR SHELL AND CABLE SHIELD.  
THEN ASSEMBLY THE OUTER MOLDED SHELL [COLOR:BLACK(HL-201)]
3. THUMB SCREW: Ø4.0\*45mm #4-40 NI PLATED ABS MOLDED COLOR:BLACK(HL-201)
4. FERRITE CORE: (OD)17.5\*(L)28.5\*(ID)9.5mm
5. PVC: 45P COLOR:BLACK(HL-201)
6. SALT SPRAY: 3.5% NaCl SOLUTION 54% SPRAY 24 HOURS  
PH=6.5~7.2 AIR PRESSURE 1.0±0.01KG/C  
TEST RELATIVE HUMIDITY 10~85%  
TEST STANDARD: CONTACT RESISTANCE LESS THAN  
TWICE OF INITIAL, NO EVIDENCE OF DAMAGE

TOLERANCES	REVISIONS	CUSTOMER	SE MYOUNG	HONGLIN ELECTRONIC CO.,LTD
X. mm ±	REV	HONGLIN PIN	180-2300	弘霖电子有限公司
X. X	A/0	CUSTOMER PIN	DVI-D TO DVI-D CABLE(18M)	
X. XX		TOOLING	1002.2037	
X. XXX		CHECKED	<i>Tony</i>	
X. XXXX		APPROVED	<i>Tony</i>	
METRIC:MM				

DATE: 2006.02.07  
DRAWN: Betty  
SCALE: NONE  
SHEET: 1/1 REV: A/0  
DRAWING: 180-2300.DWG



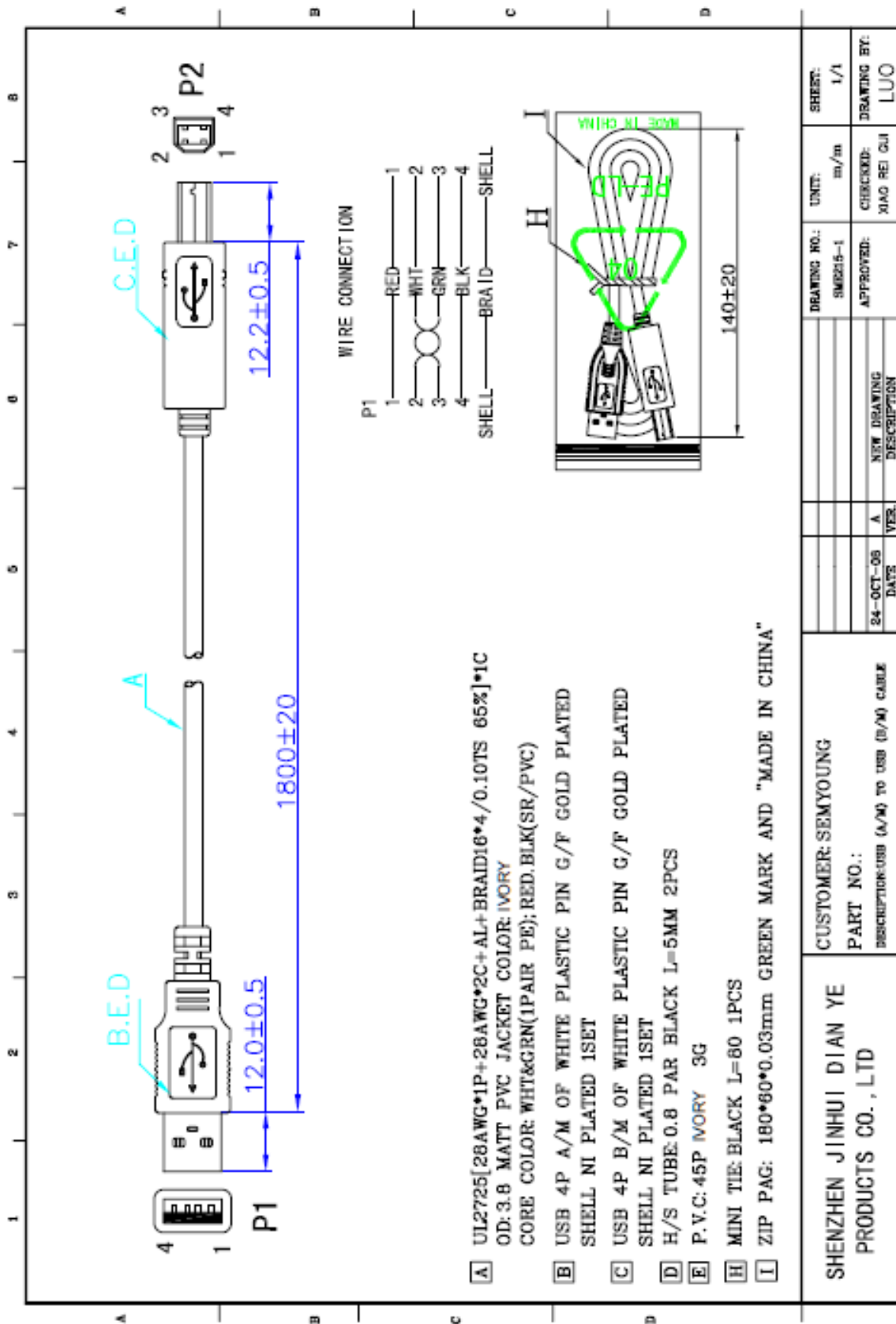
3) AC Cord



TOLERANCES		REVISIONS			CUSTOMER		SE MYOUNG		HONGLIN ELECTRONIC CO.,LTD 泓淋电子有限公司	
X.	± mm	ECN NO.	REV	DESCRIPTION	DATE	APPVD	HONGLIN PIN	200-10030		
X.X	± mm	A/0		INITIAL RELEASE	2008.05.23		CUSTOMER PIN	H-JH-HL-026 10A(S, 10E, PCT)	TITLE: POWER CORDS	
X.XX	± mm						TOOLING	4153 1147	DRAWN: HAB	
X.XXX	± mm						CHECKED		DATE: 2008.05.23	
X.XXXX	± mm						APPROVED		SAFETY: <i>[Signature]</i>	
METRIC:mm									DRAWING: 200-10030.DWG	
									SHEET: 1/1 REV: A/0	



4) USB Cable



## 5) Adaptor

		<p>with a minimum value of 4mm</p> <p>with a minimum value of 1mm</p>																									
<p>1.5:1</p>		<p>1:1</p>																									
<p>(X)此代碼表生產工廠: X=F(表帝閣深圳生產) X=G(表帝閣龍川廠生產)</p>		<p>NOTE:</p> <ol style="list-style-type: none"> <li>顏色: 銀底黑字</li> <li>材質: 清銀龍加亮面(UL, CSA APPROVAL) 環保材料</li> <li>處理: 永久背膠</li> <li>須由UL, CSA合格廠商承制.</li> <li>儲存溫度: -20C及+70C之範圍.</li> <li>將業務確認安規等各項再行制作生產.</li> <li>凹形及CE logo 高度最小需達到5mm</li> <li>LABEL厚度為0.25<math>\pm</math>0.02mm</li> <li>禁止使用DVE所禁用之危害物質</li> </ol>																									
<p>DEE VAN ENTERPRISE CO., LTD.</p>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>DEPARTMENT</th> <th>UNIT</th> <th>CASE</th> <th>PART NO.</th> <th>SALE</th> <th>備註</th> </tr> <tr> <td>R&amp;D SPS</td> <td>mm</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>APPD. BY</th> <th>CHD. BY</th> <th>DWG. BY</th> <th>DRAWING NO.</th> <th>SAFETY</th> <th>備註</th> </tr> <tr> <td></td> <td></td> <td>ZPH</td> <td></td> <td></td> <td></td> </tr> </table>	DEPARTMENT	UNIT	CASE	PART NO.	SALE	備註	R&D SPS	mm					APPD. BY	CHD. BY	DWG. BY	DRAWING NO.	SAFETY	備註			ZPH				
DEPARTMENT	UNIT	CASE	PART NO.	SALE	備註																						
R&D SPS	mm																										
APPD. BY	CHD. BY	DWG. BY	DRAWING NO.	SAFETY	備註																						
		ZPH																									
MODEL NO.:	DSA-42D-12	PAGE 10FI																									

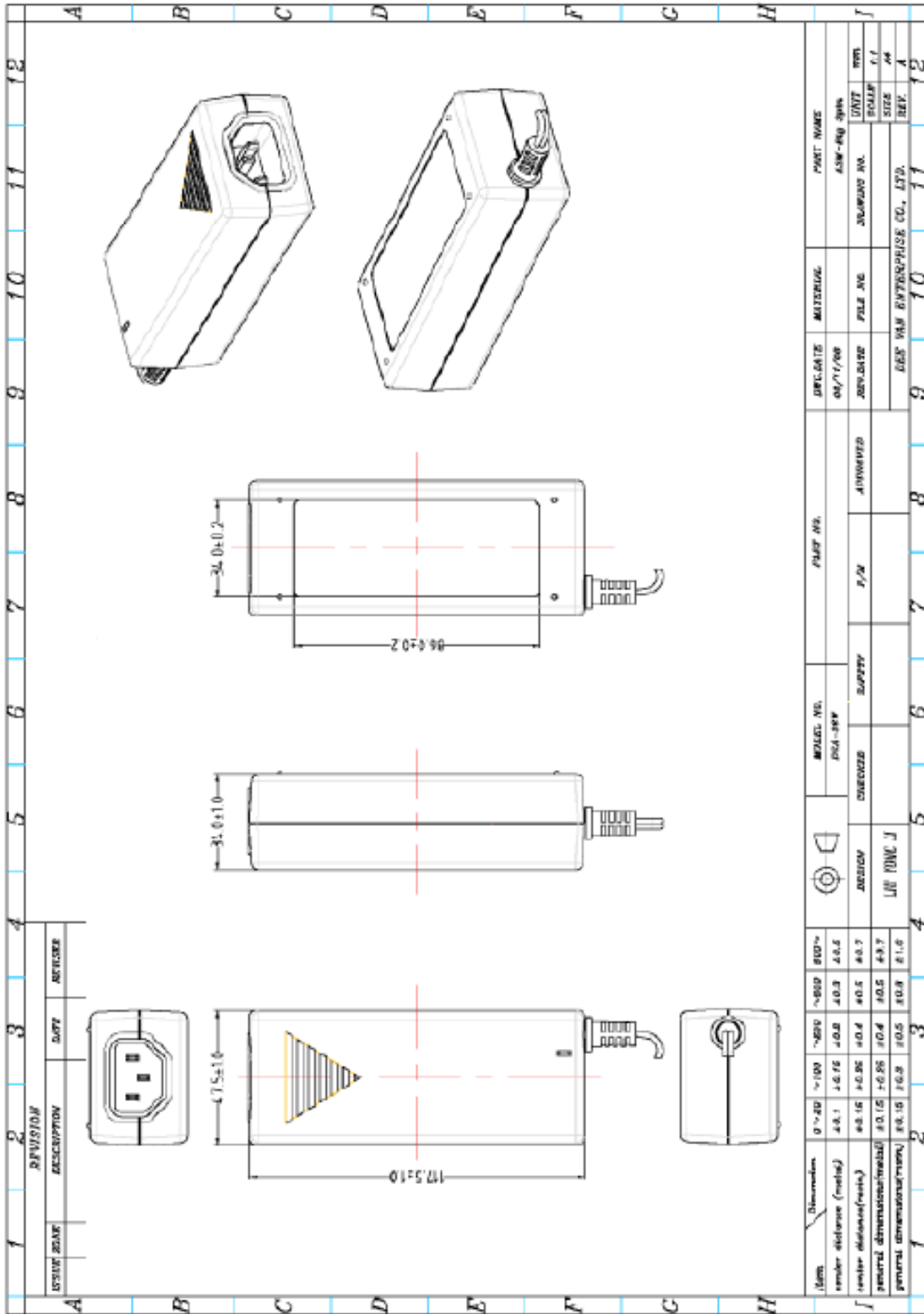
REV. NO.	DESCRIPTION	DATE	REVISION

白色線接PLUG口中央  
18AWG/1C+S# 11B5

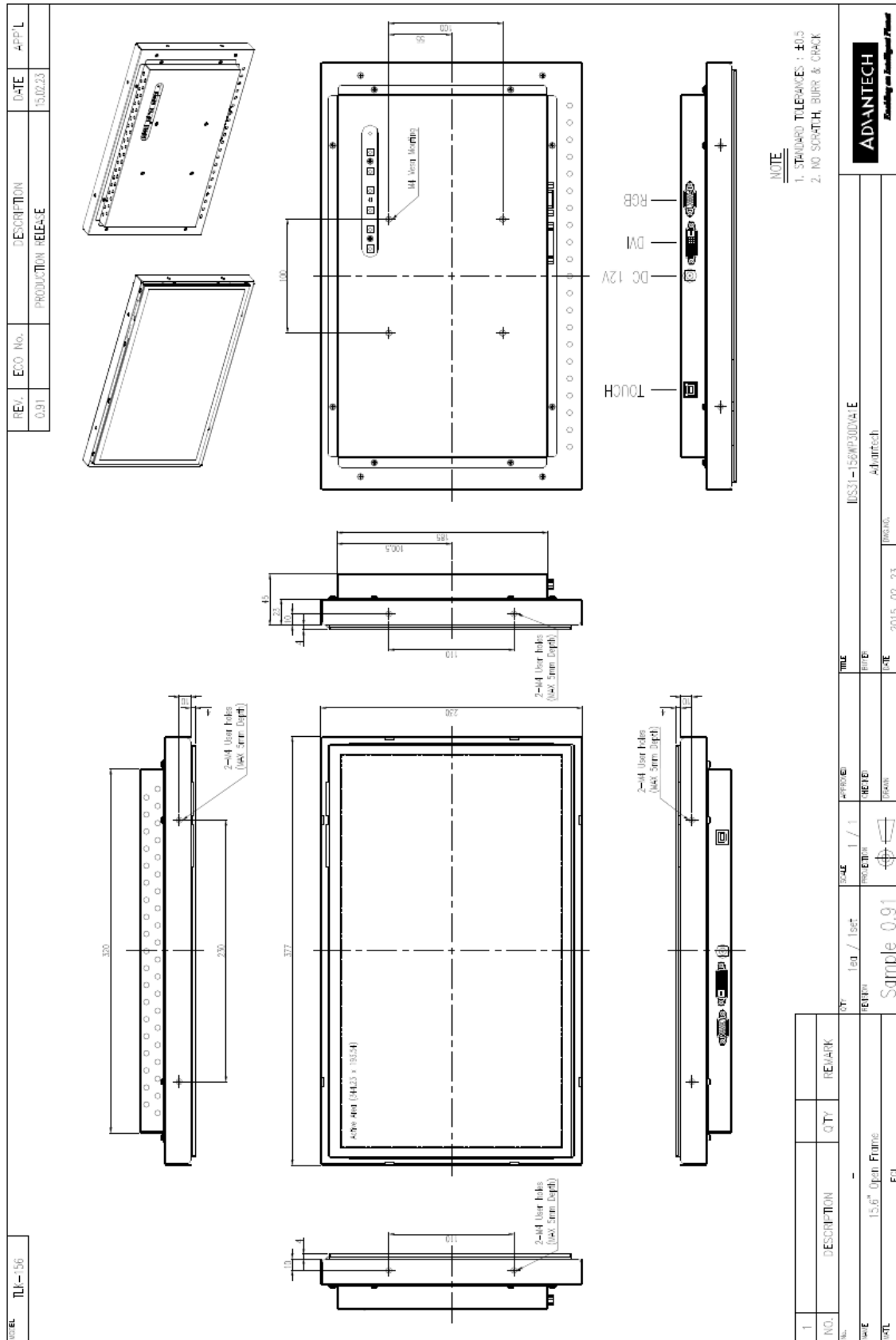
NOTE:

- PLUG MATERIAL: 黑色PVC料30-40P;  
PLUG頭絕緣紙為DE, 音叉式帶防滑四槽;
- SR MATERIAL: 黑色PVC料60-70P 拉力20LBS/min;
- 插板裝法依照LABEL指示;
- 材質須符合"ROHS"要求;
- 禁止使用DVE所禁用之危害物質.

Dimension	0	+0.1	+0.2	+0.3	+0.4	+0.5		MODEL NO.	PART NO.	SYMBOL	MATERIAL	PART NAME
length	±0.1	±0.15	±0.2	±0.3	±0.4	±0.5		DSA-42D		7008.FG.86		DC CORD
width	±0.15	±0.2	±0.3	±0.4	±0.5	±0.6						
height	±0.1	±0.15	±0.2	±0.3	±0.4	±0.5						
weight	±0.1	±0.15	±0.2	±0.3	±0.4	±0.5						
	±0.15	±0.2	±0.3	±0.4	±0.5	±0.6						

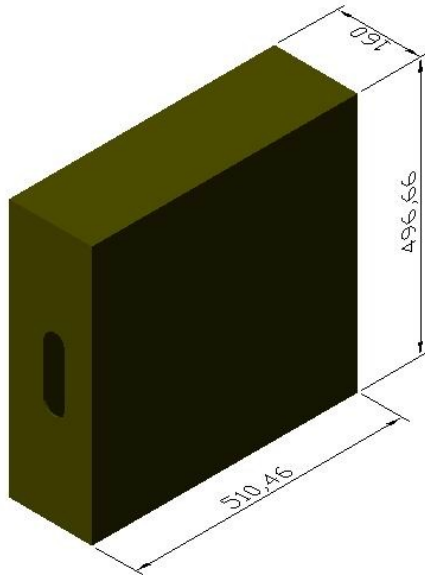


## IX. Mechanical Characteristics

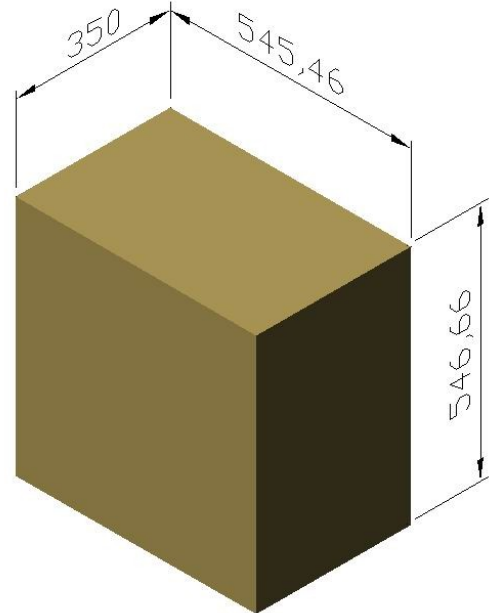


**X. Packing**

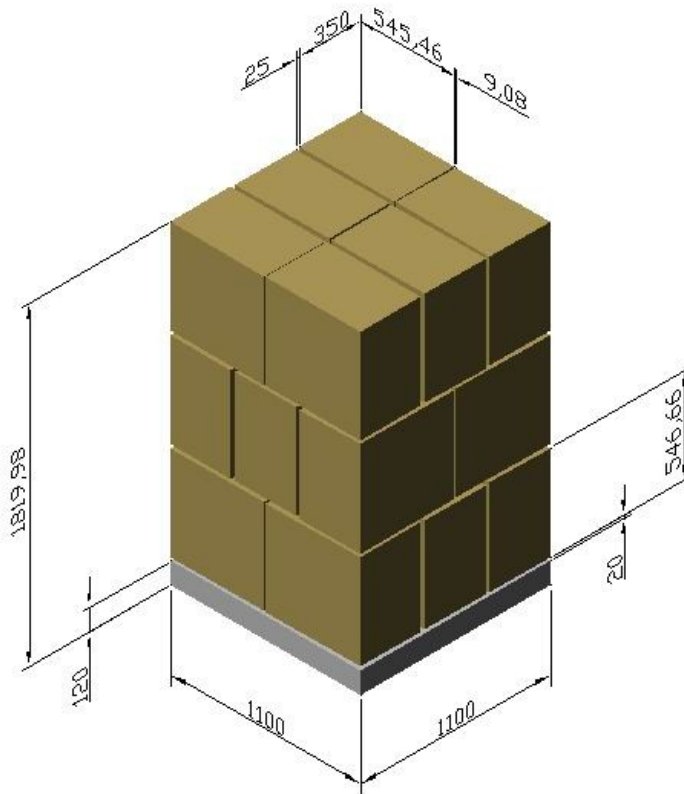
1) Packing Method



**Gift Box**



**C/T Box (Gift box X 2)**



**Pallet (C/T box X 18)**

**Standard packing for ship by sea**

- 40 feet container  
: 20 pallets = 720 monitors
- 20 feet container  
: 10 pallets = 360 monitors
- 1 pallet  
: 18 C/T boxes = 36 monitors
- 1 carton box  
: 2 gift boxes = 2 monitors
- 1 gift box : 1 monitor