USER MANUAL

TITLE	Industrial Monitor / Monitor
MODEL NAME	IDS31-320W
SERIAL NAME	IDS31-320WP35DVA1E
Signature Date _____ _____ _____ _____ _____ _____	Prepared by Date
Please return 1 copy for our confirmation with your signature and comments	

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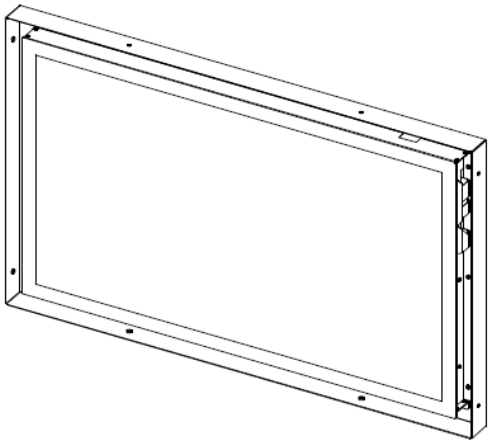
BSMI 甲類
警告使用者這是甲類資訊產品, 在居住的環境中使用時, 可能會造成射頻干擾, 在這種情況下, 使用者會被要求採取某些適當的對策.

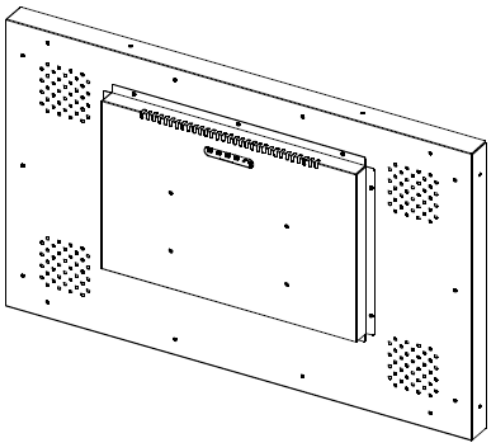
警告 : 使用過度恐傷害視力
(1) 使用30分鐘請休息10分鐘。
(2) 2歲以下幼兒不看螢幕, 2歲以上每天看螢幕不要超過1小時。

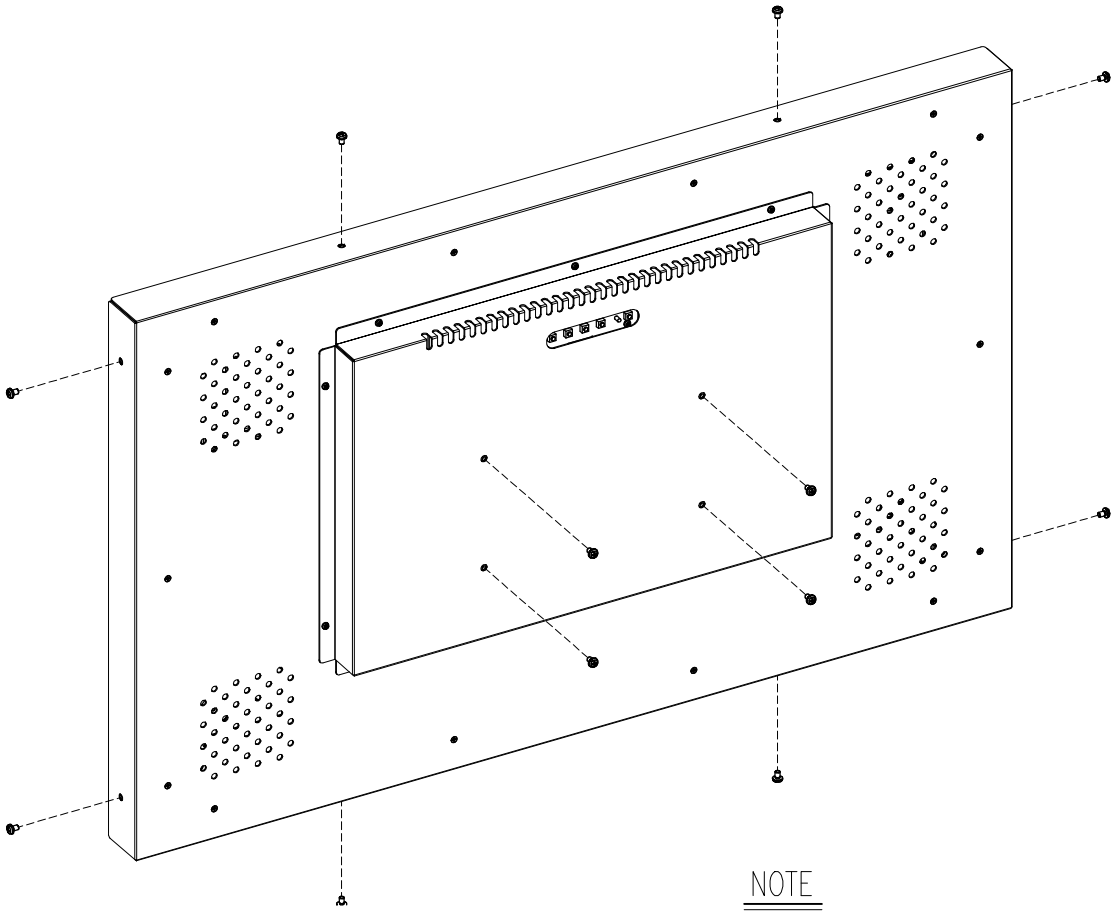
Ⅰ. OVERVIEW

The IDS31-320WP35DVA1E is designed 32.0 inch monitor

- Support the monitor with 1920 × 1080 resolution.
- Brightness - 350 cd/㎡ (without Touch)
- Contrast Ratio : 3000:1







NOTE

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

II. General Description

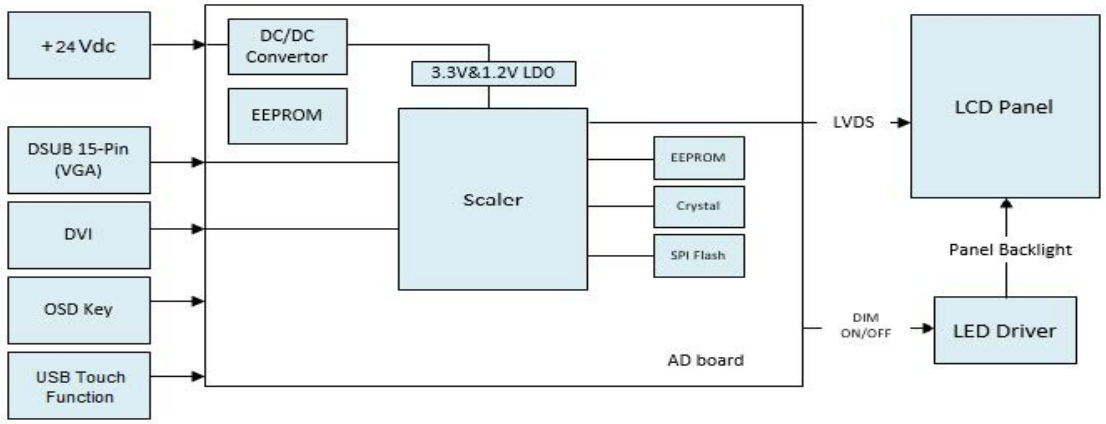
Display Type		TFT LCD Panel (32.0 inch) - P320HVN01.0_AUO
Pixel Pitch		0.3637(H)mm X 0.3637(V)mm
Pixel Format		1920 Hor. By 1080 Ver. Pixels RGB vertical stripe
Display Colors		16.7M colors
Brightness		350 cd/㎡ (Typical)
Contrast Ratio		3000 : 1 (Typical)
Response Time		8 ms (G to G)
Viewing Angle	Horizontal	178 ˚
	Vertical	178 ˚
Life Time		50,000 Hr (Typical)
Input Signal		Analog RGB, DVI-D
OSD Controls		Soft Power(On/Off), Menu, Select, Up, Down
Power Saving (LED Display)		VESA DPMS, On (Green), Stand-By (Green blinking), Suspend (Green blinking), Off
Dimension		805.0(H) x 495.0(V) x 73.0(D)
Weight		14.5 kg
Operating Temp.		0℃ ~+50℃
Storage Temp.		-20℃ ~ +60℃

Ⅲ. Electrical Specifications

1-1. Electrical Characteristics

Power	DC Input Voltage		24VDC/ 5.0A ±10%	
	Standby power		2.0 W	
	Power consumption		48 W	
Analog	Video Signal	Type	Analog RGB	
		Gain Level	0.714 ± 5%	
		Input impedance	75ohm ± 5%(terminated)	
		Pixel frequency	Max. 165MHz	
		Resolution	Max. 1920×1080 / 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	TMDS Data 0/5 Shield
	20	NC	TMDS Data 5-
	21	NC	TMDS Data 5+
	22	GND	TMDS Clock Shield
	23	RXCP	TMDS Clock +
	24	RXCN	TMDS 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.	Horizontal Timing				Vertical Timing			
		Sync Polar	Freq.	Total	Active	Sync Polar	Freq.	Total	Active
	MHz		KHz	Pixel	Pixel		Hz	Line	Line
640x480 @60Hz	25.175	-	31.47	800	640	-	59.94	525	480
800x600 @60Hz	40.000	-	37.88	1056	800	-	60.32	628	600
1024x768 @60Hz	65.000	-	48.36	1344	1024	-	60.00	806	768
1680x1050@60Hz	119.000	-	64.72	1840	1680	-	60.02	1080	1050
1920x1080@60Hz	148.500	-	66.60	2160	1920	-	60.00	1235	1080

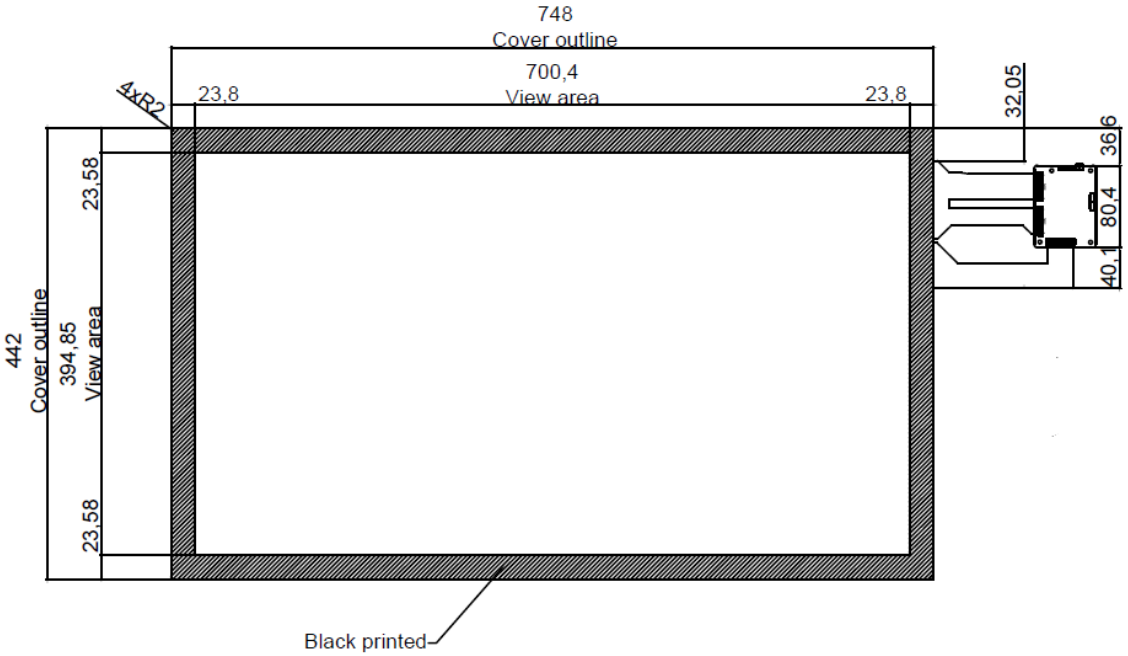
Sync : H/V Separated LVDS

2-4. Touch Glass / Touch Controller

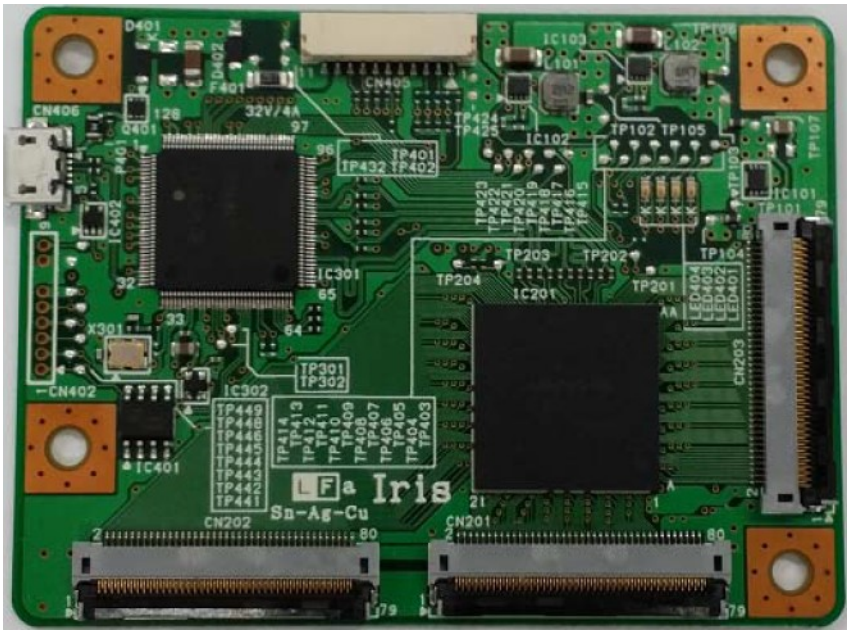
Projected Capacitive Touch	
Input Method	Finger, Limited gloves
Light Transmittance	More than 82% (Typical)
Operating Temperature	-25℃ ~ 70℃ Humidity 90% RH at max 35℃
Storage Temperature	-30℃ ~ 80℃ Humidity 90% RH at max 35℃

- Note

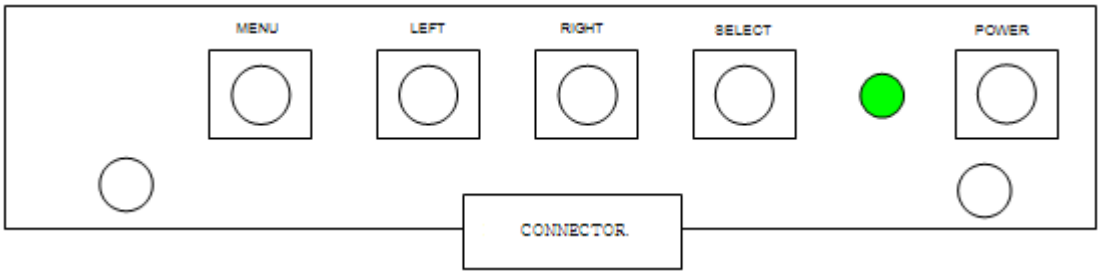
1. Total Thickness : 2.52 ± 10%
2. Cover Glass Thickness : 2.0T (Tempered glass)
3. Film Thickness : Top 0.21mm, Bottom 0.21mm(PET + Printed layer)
4. Transparency : 82% or More
5. Tail : FPC style (Copper trace)



Controller Board (LR0G956)	
Circuit Board Dimension	80 mm x 60 mm
Channels of Panel	Max. Y:141 X:78 channels
Input Voltage	Typical 3.3v
Operating Temperature	-10 to 60 ℃
Storage Temperature	-20 to 70 ℃
Interface	USB: 1.1 Full Speed
Power consumption	Idle mode : 900mW 240Hz (typ)
Report rate	Max 240Hz



IV. OSD Function



1) Button

Button	Function	Notes
POWER	Power on/off button - Turn power on or off	
MENU	Main menu on/off - Show OSD menu on the screen - Exit the main menu or sub menu	
RIGHT	Adjust button - Moves the bar right to increase the adjustment - Moves the main menu or sub menu	
LEFT	Adjust button - Moves the bar left to decrease the adjustment - Moves the main menu or sub menu	
SELECT	Menu select/Mode select - Moves the highlighted area to select one of the function - Analog or DVI select	

2) Menu

BRIGHTNESS /CONTRAST	**Sub Menu : Brightness, Contrast)** Use the 'Adjust –' or 'Adjust +' button to decrease or increase the setting
COLOR	**Sub Menu : Color Temp. (Red, Green, Blue),Auto color** Use the 'Adjust –' or 'Adjust +' button to decrease or increase the setting
POSITION	**Sub Menu : Horizontal, Vertical, Clock, Phase, Auto Adjust** Use the 'Adjust –' or 'Adjust +' button to decrease or increase the setting
SETUP	**Sub Menu : OSD Position, OSD Time, OSD Language, Input Source, Scale Ratio, Recall, XGA/WXGA Sel.** Use the 'Adjust –' or 'Adjust +' button to decrease or increase the setting
EXIT	Select one of the seven language

Ⅴ. Environment Specifications

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

Ⅵ. Reliability

No.	Test Item		Conditions
1	High temperature operating test		Ta : 50℃, 120Hr
2	Low temperature operating test		Ta : 0℃, 120Hr
3	High temperature storage test		Ta : 60℃, 120Hr
4	Low temperature storage test		Ta : -20℃, 120Hr
5	High humidity operating test		Ta : 50℃, 80%RH, 120Hr
6	High humidity storage test		Ta : 50℃, 90%RH, 120Hr
7	Thermal shock operation test		Ta : 0℃, 60min → 0℃~50℃, 30min → 50℃, 60min, 50Cycle
8	Thermal shock storage test		Ta : -20℃, 60min → -20℃~60℃, 30min → 60℃, 60min, 50Cycle
9	ESD	Contact	8KV,1sec/cycle
		Air	15KV,1sec/cycle
10	Vibration (Non-Operation)		Wave form: random Vibration level : 1.0G RMS Bandwidth : 10-300Hz Duration : X,Y,Z 10min per axes X,Y,Z: Horizontal, face up
11	Shock (Non-Operation)		Shock level 50G ,20ms ±X,Y,Z axis Waveform: half sine wave Direction: One time each direction

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℃

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㎝ from the surface of the monitor.
- Viewing Angle : 90 degree to the front surface of display panel.
- Viewing Distance : 30㎝ 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

1920×1080, 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

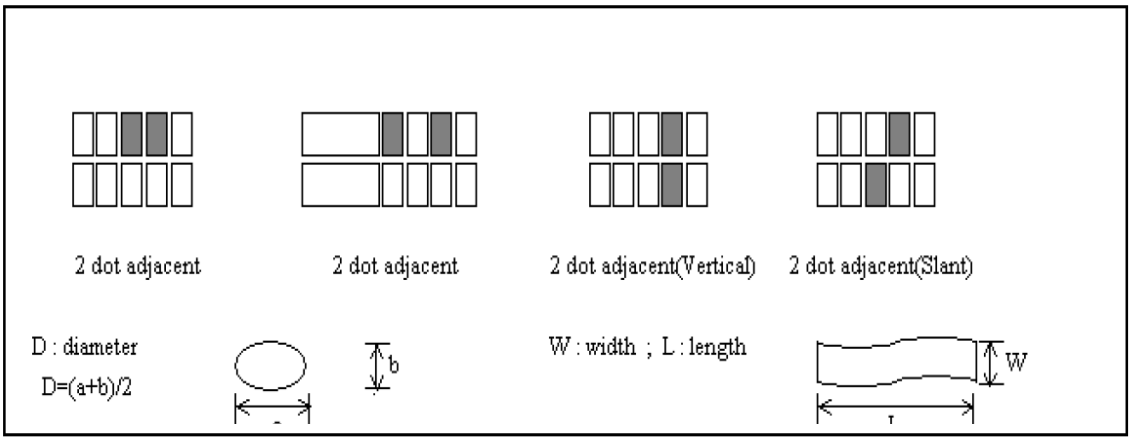
Item	Standard	Inspection equipment
Rear & side	No crack, Broken and Distortion	* Visual * Calipers * Steel scale
Scratch	Noticeable scratch and exfoliation coating are not permitted	
Mounting hole	No omission	
Rear label	The character(Model, P/N, S/N etc…) can be discerned.	
Dimension and hole size	Tolerance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

3.3 LCD visual inspection
[unit : mm]

Item	Standard		Inspection equipment
Dot (Bright & Dark)	Random	N≤ 10	* PC for inspection * Pattern generator * Lupe : ×10 * N-test program * ND Filter
	2 adjacent	N≤ 5 (Note 1)	
	3 adjacent or more	N≤ 2	
	Total	N≤ 14	
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±5cm in the front view for 3 seconds.

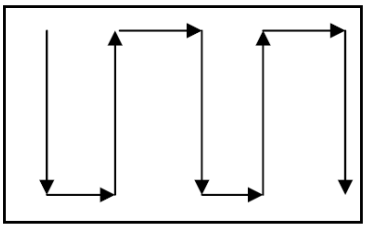
3.4 Touch glass & LCD Panel visual inspection

[unit ; mm]

Item	Defect size	Q'ty	Inspection equipment
Circular defect	D<2.0	Ignore	* Visual * Lupe ; ×10
	D≥2.0	0	
Liner defect (Scratch,Foreign object)	W<0.5, L<20	Ignore	
	W≥0.5, L≥20	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.

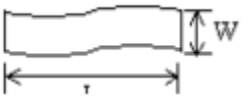




D : diameter
D=(a+b)/2



W : width ; L : length



4. Function inspection (Resolution 1920*1080 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

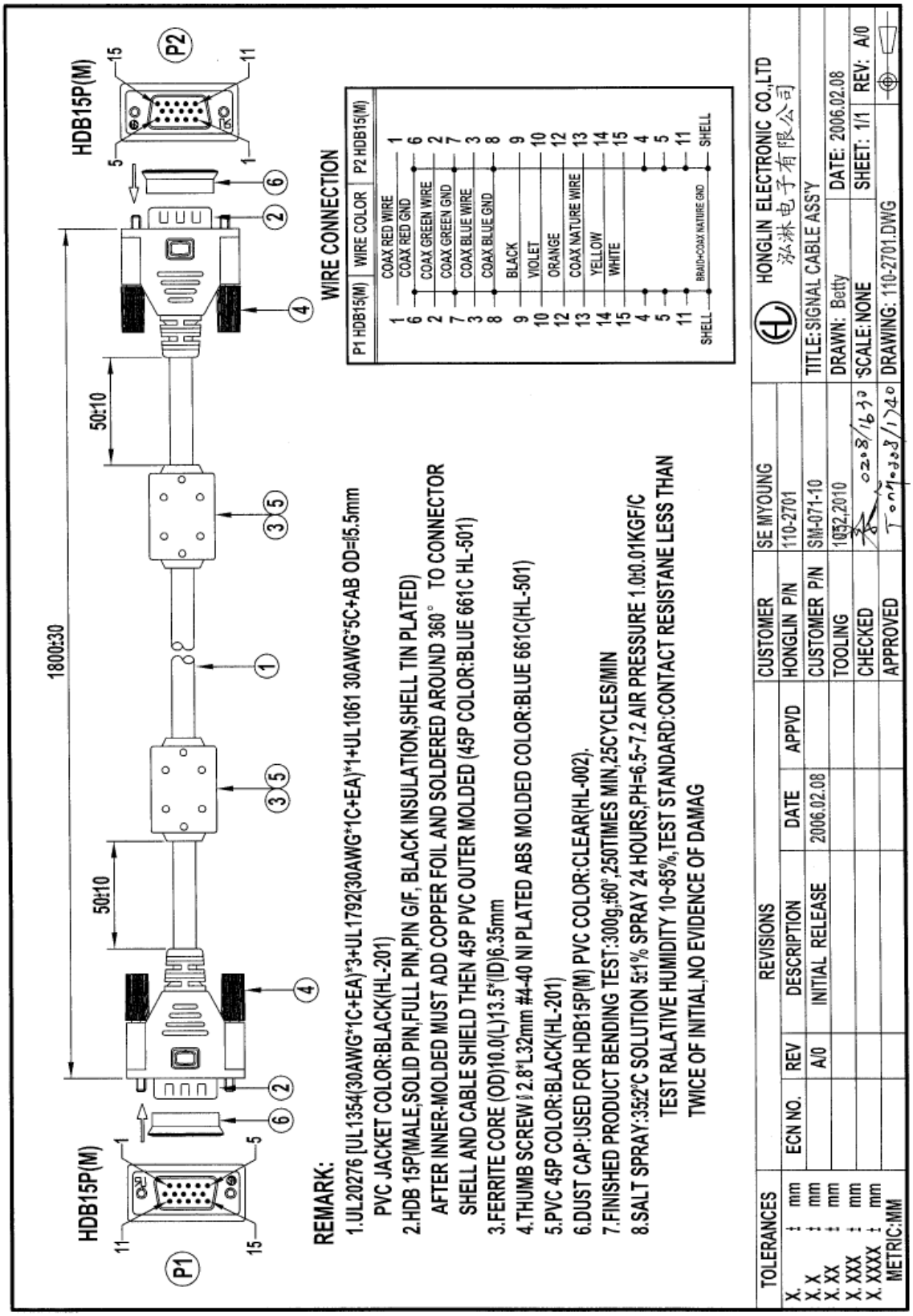
Item	Standard		Inspection equipment
Color	No strange color displaying		* PC * Pattern generator
Flicker	No flicker		
Noise	No critical noise		
Jittering	No critical jittering		
Power LED indicator	Power & signal on	Green	

4.3 Function inspection of touch screen

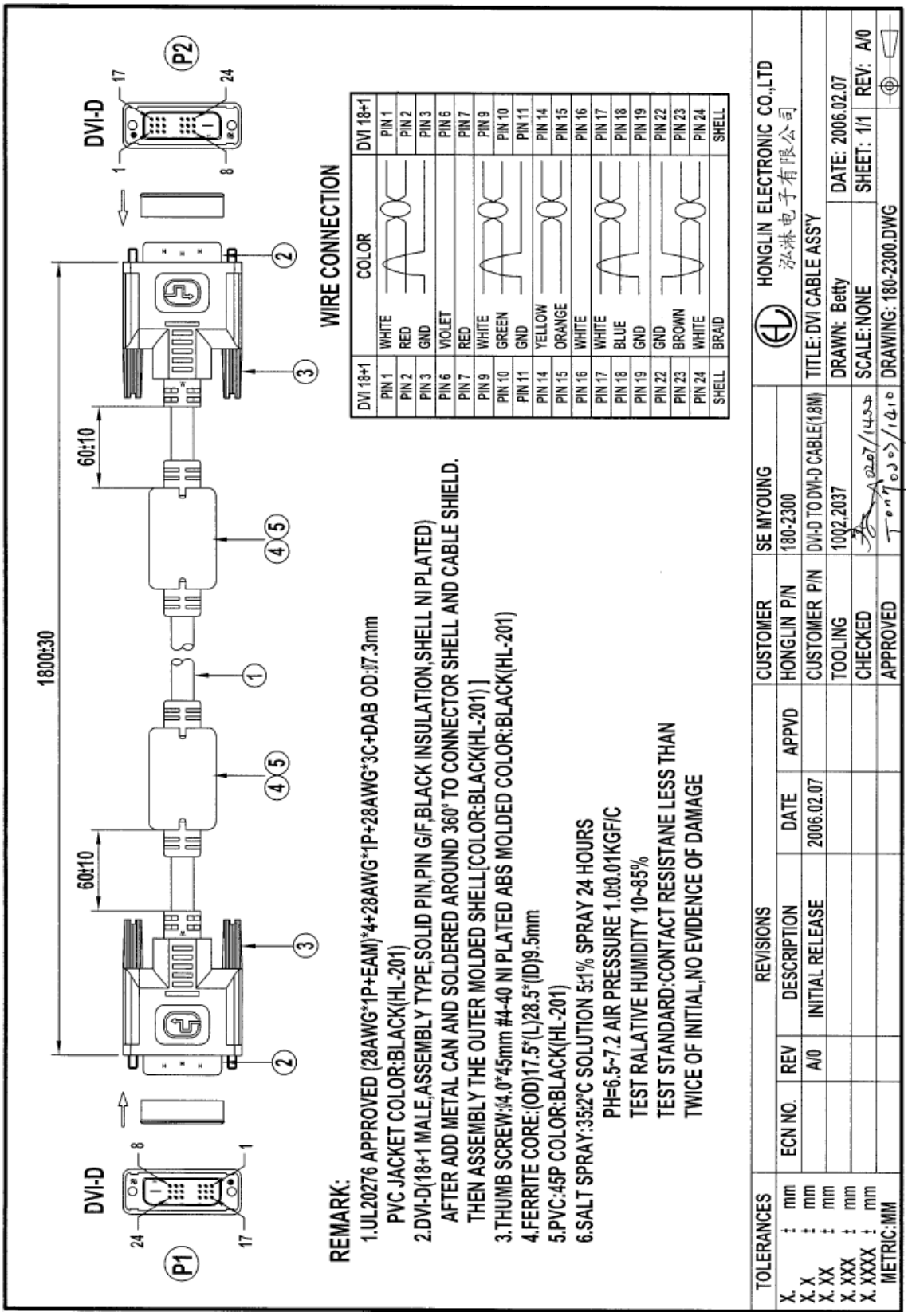
Item	Standard	Inspection equipment
Accuracy	Within 2.5mm each target & 10% Jitter limit on moving	* Finger

Ⅷ. Accessory

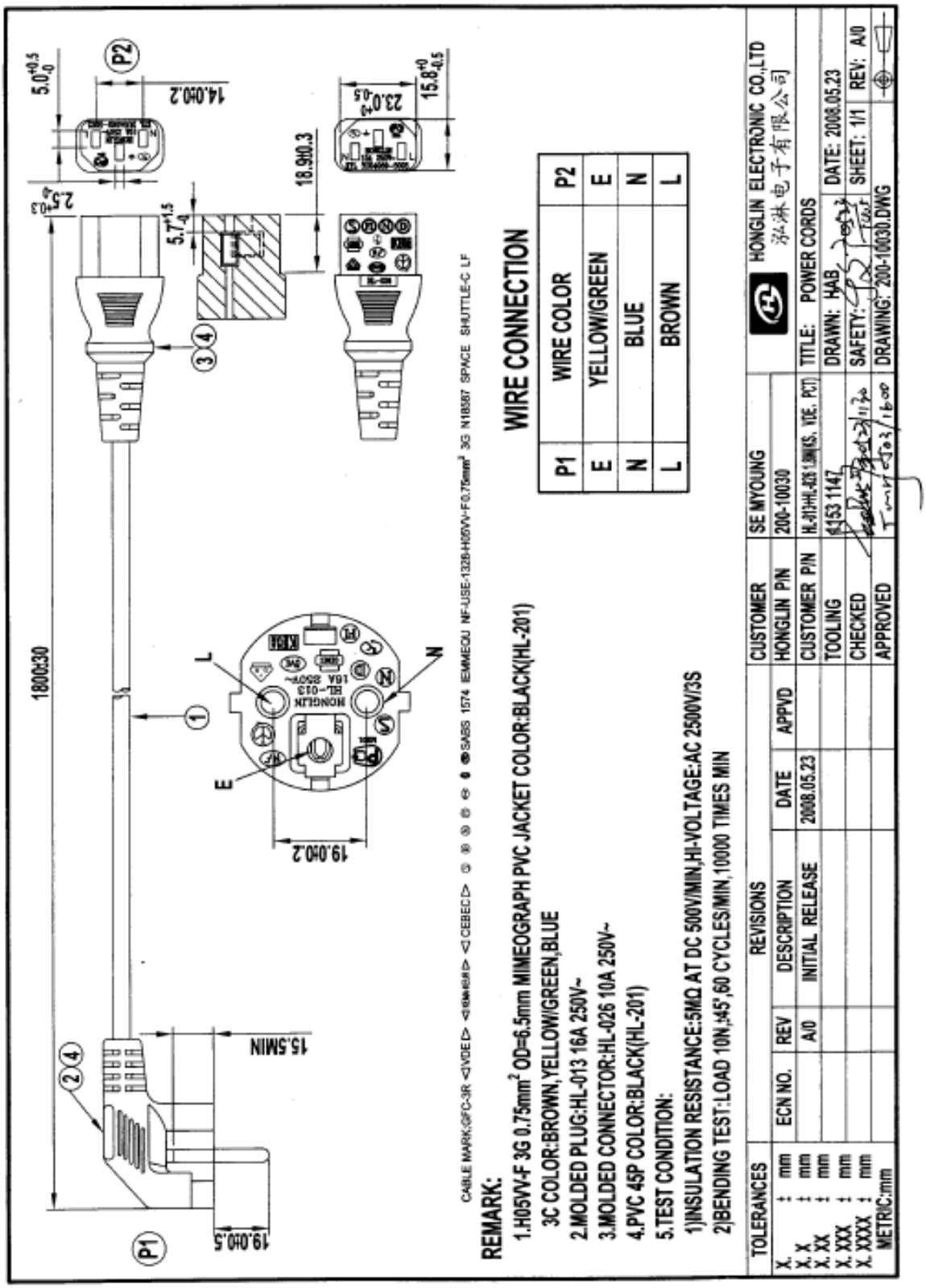
1) VGA Cable



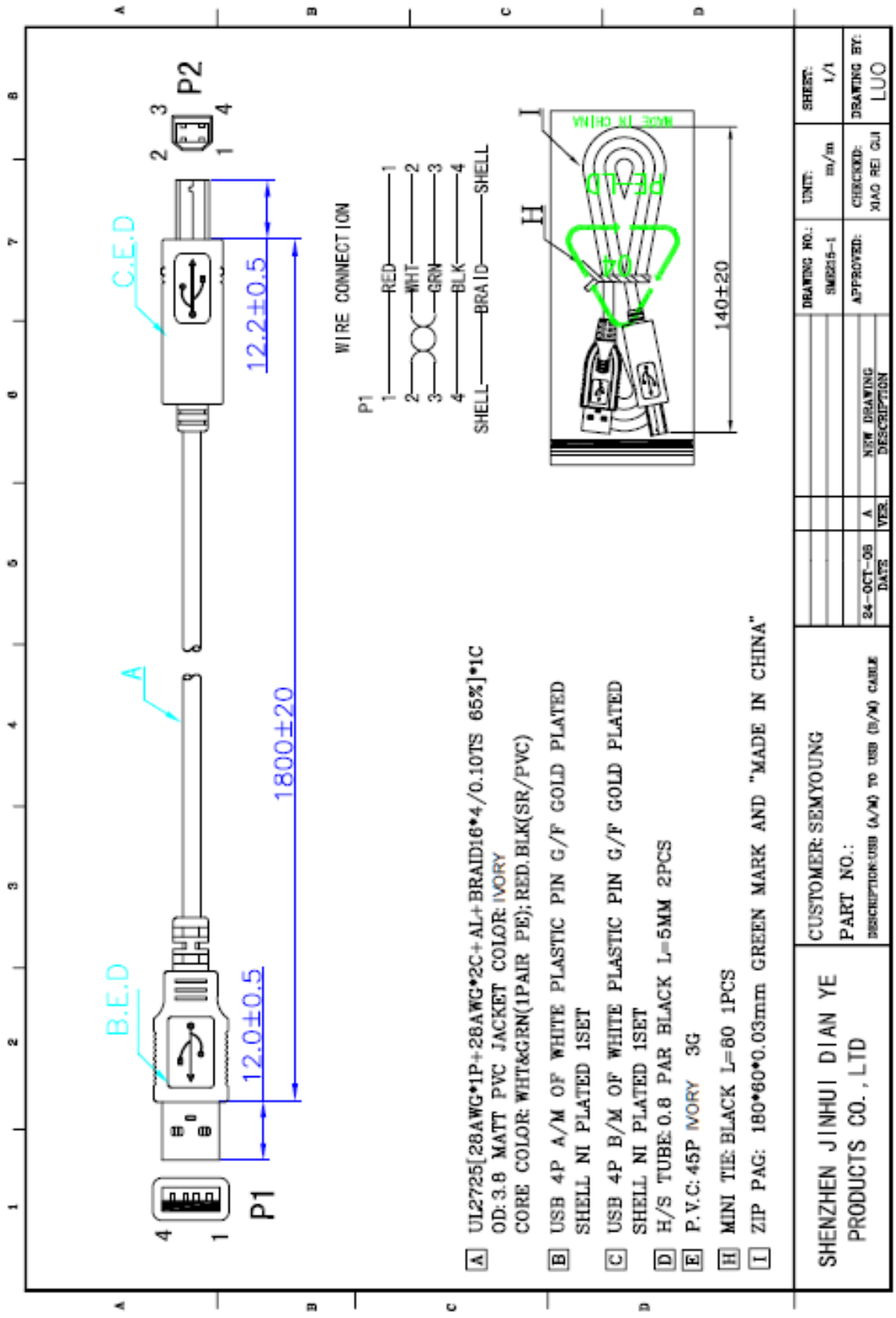
2) DVI Cable


DVI-D
P1
P2
1800±30
60±10
60±10
WIRE CONNECTION
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:35±2°C SOLUTION 5±1% SPRAY 24 HOURS
PH=6.5~7.2 AIR PRESSURE 1.0±0.01KGF/C
TEST RALATIVE HUMIDITY 10~85%
TEST STANDARD:CONTACT RESISTANE LESS THAN
TWICE OF INITIAL,NO EVIDENCE OF DAMAGE
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
TOLERANCES
X. ± mm
X.X ± mm
X.XX ± mm
X.XXX ± mm
X.XXXX ± mm
METRIC:MM
REVISIONS
ECN NO. REV DESCRIPTION DATE APPVD
A/0 INITIAL RELEASE 2006.02.07
CUSTOMER SE MYOUNG
HONGLIN P/N 180-2300
CUSTOMER P/N DVI-D TO DVI-D CABLE(1.8M)
TOOLING 1002.2037
CHECKED
APPROVED
HONGLIN ELECTRONIC CO.,LTD
TITLE:DVI CABLE ASS'Y
DRAWN: Betty
DATE: 2006.02.07
SCALE:NONE
SHEET: 1/1
REV: A/0
DRAWING: 180-2300.DWG

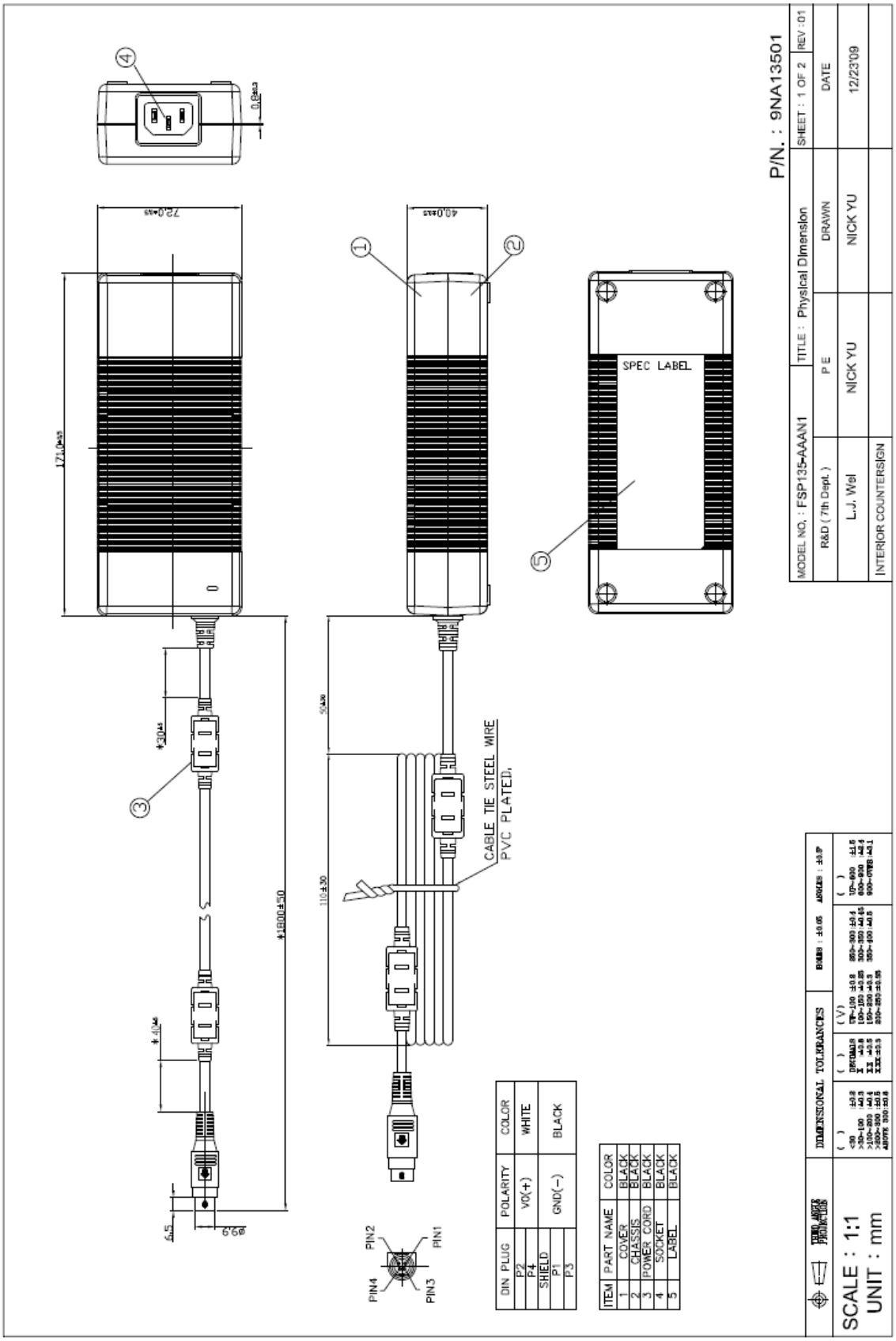
3) AC Cord


1800±30
15.5MIN
19.0±0.5
19.0±0.2
14.0±0.2
5.0+0.5 -0
2.5+0.3 -0
5.7+1.5 -4
18.9±0.3
23.0±0.5
15.8+0 -0.5
L
N
E
NONGLIN HL-013 10A 250V~
WIRE CONNECTION
P1 P2
E E
N N
L L
WIRE COLOR
YELLOW/GREEN
BLUE
BROWN
REMARK:
1.H05VV-F 3G 0.75mm² OD=6.5mm MIMEOGRAPH PVC JACKET COLOR:BLACK(HL-201)
3C COLOR:BROWN,YELLOW/GREEN,BLUE
2.MOLDED PLUG:HL-013 16A 250V~
3.MOLDED CONNECTOR:HL-026 10A 250V~
4.PVC 45P COLOR:BLACK(HL-201)
5.TEST CONDITION:
1)INSULATION RESISTANCE:5MΩ AT DC 500V/MIN,HI-VOLTAGE:AC 2500V/3S
2)BENDING TEST:LOAD 10N,±45',60 CYCLES/MIN,10000 TIMES MIN
TOLERANCES
X. ± mm
X.X ± mm
X.XX ± mm
X.XXX ± mm
X.XXXX ± mm
METRIC:mm
REVISIONS
ECN NO. REV DESCRIPTION DATE APPVD
A/0 INITIAL RELEASE 2008.05.23
CUSTOMER
HONGLIN P/N
CUSTOMER P/N
TOOLING
CHECKED
APPROVED
SE MYOUNG
200-10030
4153 1147
HONGLIN ELECTRONIC CO.,LTD
TITLE: POWER CORDS
DRAWN: HAB
DATE: 2008.05.23
SAFETY:
SHEET: 1/1
REV: A/0
DRAWING: 200-10030.DWG

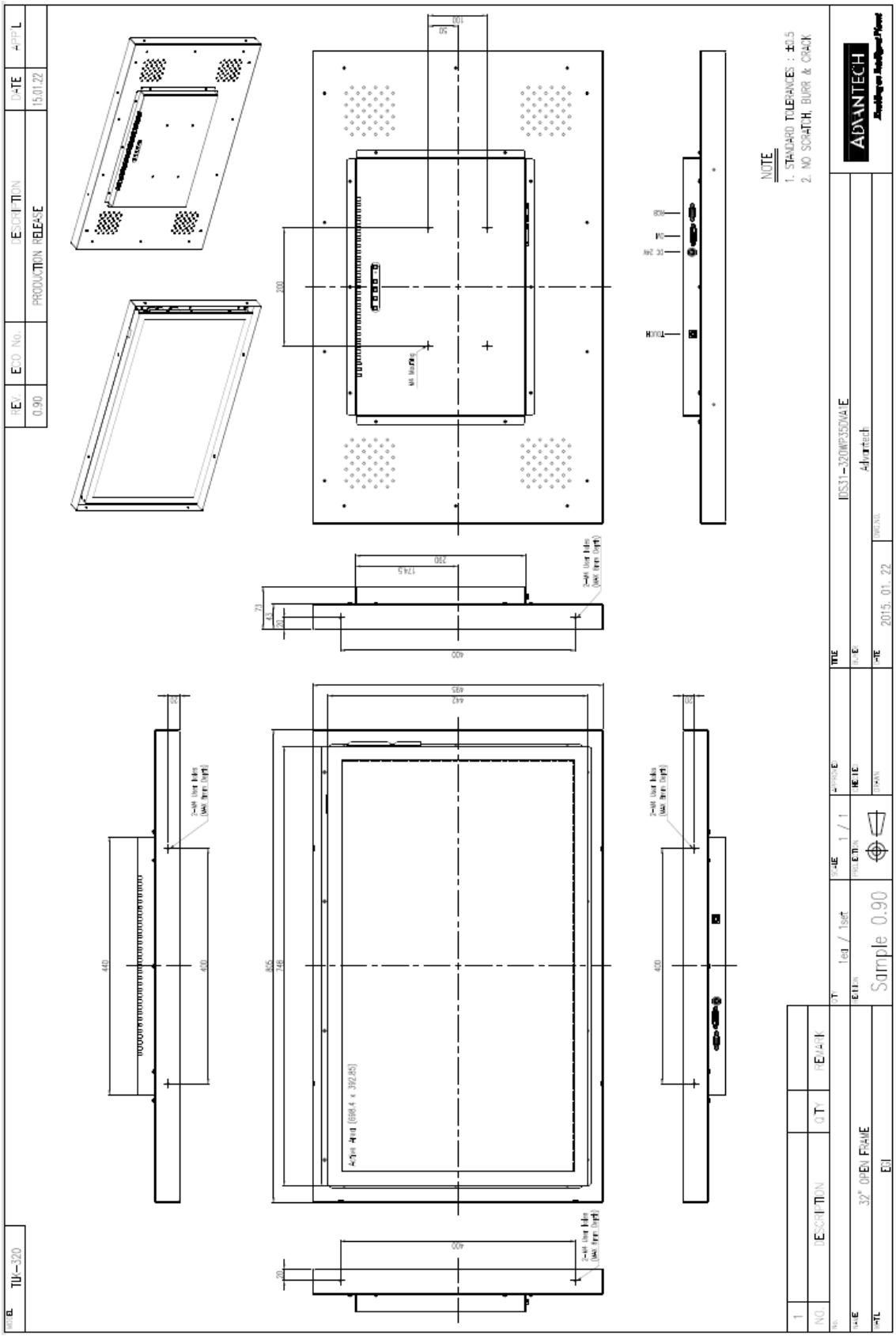
4) USB Cable


P2
C.E.D
A
B.E.D
P1
12.2±0.5
1800±20
12.0±0.5
WIRE CONNECTION
P1
1 RED 1
2 WHT 2
3 GRN 3
4 BLK 4
SHELL BRAID SHELL
H
I
MADE IN CHINA
140±20
A UL2725[28AWG*1P+28AWG*2C+AL+BRAID16*4/0.10TS 65%]*1C
OD:3.8 MATT PVC JACKET COLOR: IVORY
CORE COLOR: WHT&GRN(1PAIR PE); RED.BLK(SR/PVC)
B USB 4P A/M OF WHITE PLASTIC PIN G/F GOLD PLATED
SHELL NI PLATED 1SET
C USB 4P B/M OF WHITE PLASTIC PIN G/F GOLD PLATED
SHELL NI PLATED 1SET
D H/S TUBE:0.8 PAR BLACK L=5MM 2PCS
E P.V.C:45P IVORY 3G
H MINI TIE:BLACK L=80 1PCS
I ZIP PAG: 180*60*0.03mm GREEN MARK AND "MADE IN CHINA"
SHENZHEN JINHUI DIAN YE PRODUCTS CO., LTD
CUSTOMER: SEMYOUNG
PART NO.:
DESCRIPTION:USB (A/M) TO USB (B/M) CABLE
24-OCT-06
DATE
A
VER.
NEW DRAWING
DESCRIPTION
DRAWING NO.: SM0216-1
APPROVED:
UNIT: m/m
CHECKED: XIAO REI GUI
SHEET: 1/1
DRAWING BY: LUO

5) Adaptor

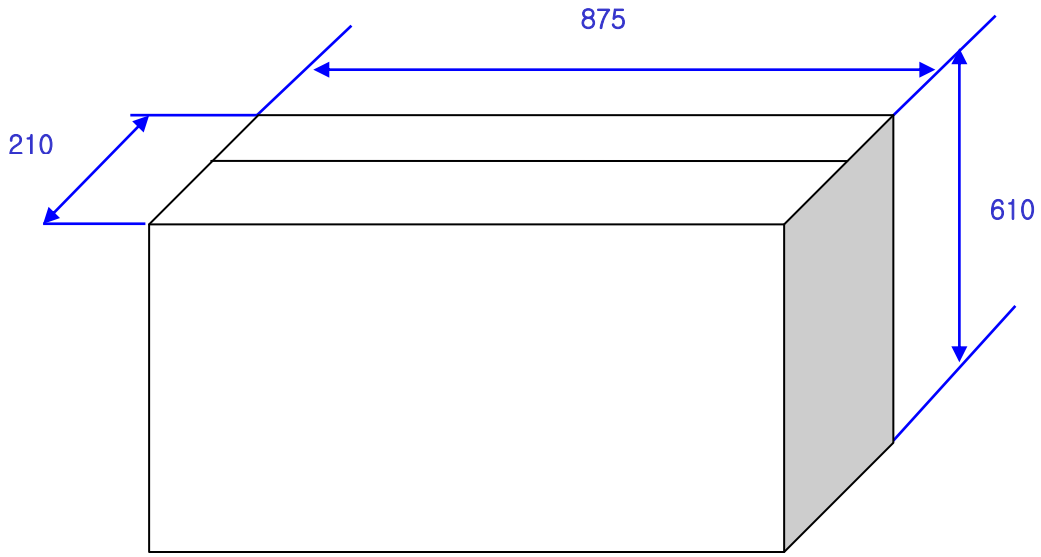

P/N. : 9NA13501
MODEL NO. : FSP135-AAAN1
TITLE : Physical Dimension
SHEET : 1 OF 2
REV : 01
R&D (7th Dept.)
P E
DRAWN
DATE
L.J. Wei
NICK YU
NICK YU
12/23/09
INTERIOR COUNTERSIGN
SPEC LABEL
CABLE TIE STEEL WIRE
PVC PLATED.
SCALE : 1:1
UNIT : mm
DIN PLUG
P2
P4
SHIELD
P1
P3
POLARITY
VO(+)
GND(-)
COLOR
WHITE
BLACK
ITEM
PART NAME
COLOR
1 COVER BLACK
2 CHASSIS BLACK
3 POWER CORD BLACK
4 SOCKET BLACK
5 LABEL BLACK
PIN1
PIN2
PIN3
PIN4

IX. Mechanical Characteristics

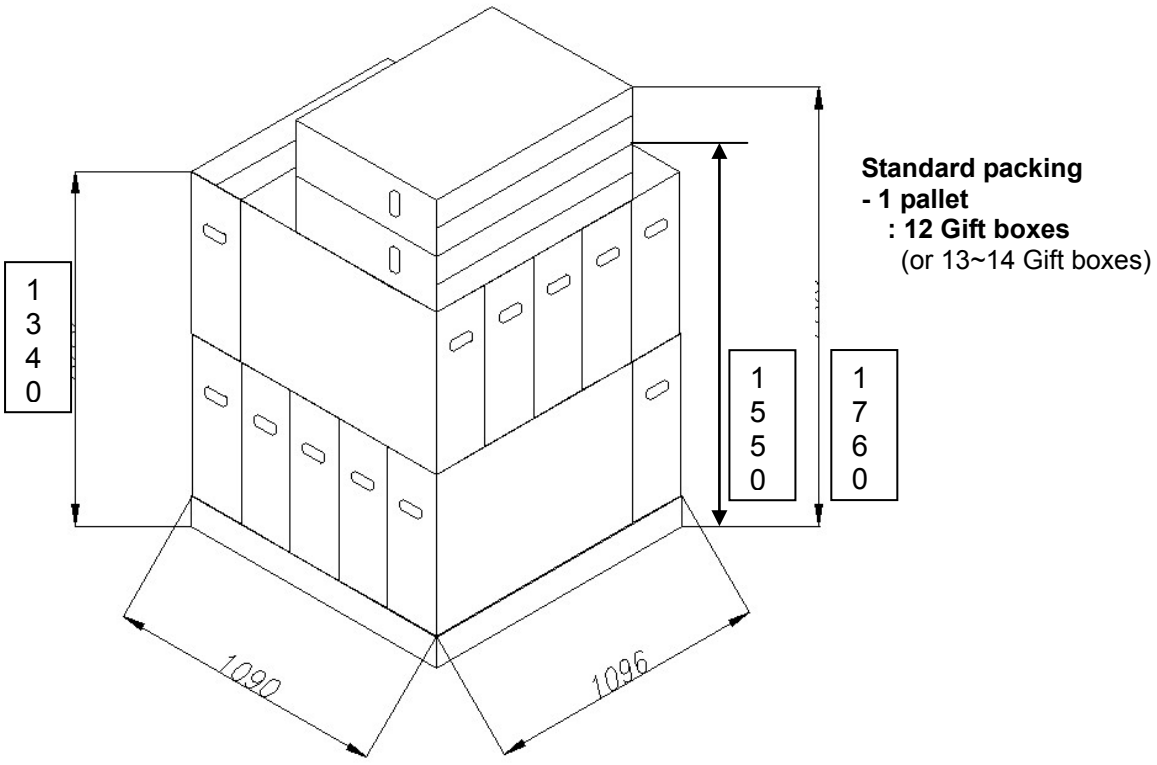


X. Packing

1) Packing Method



Gift Box (1 monitor)



Standard packing
- 1 pallet
: 12 Gift boxes
(or 13~14 Gift boxes)

Pallet (Gift box X 12 or ~14)