



Product Specification

M195RTN01.0

AU OPTRONICS CORPORATION

() Preliminary Specification
(V) Final Specification

Module	19.5" Color TFT-LCD
Model Name	M195RTN01.0

<table><tr><td>Customer</td><td>Date</td></tr><tr><td>_____</td><td>_____</td></tr><tr><td>Approved by</td><td></td></tr><tr><td>_____</td><td>_____</td></tr></table>	Customer	Date	_____	_____	Approved by		_____	_____	<table><tr><td>Approved by</td><td>Date</td></tr><tr><td><u>Howard Lee</u></td><td><u>Mar 25, 2013</u></td></tr><tr><td>Prepared by</td><td>Date</td></tr><tr><td><u>Eric Lee</u></td><td><u>Mar 25, 2013</u></td></tr></table>	Approved by	Date	<u>Howard Lee</u>	<u>Mar 25, 2013</u>	Prepared by	Date	<u>Eric Lee</u>	<u>Mar 25, 2013</u>
Customer	Date																
_____	_____																
Approved by																	
_____	_____																
Approved by	Date																
<u>Howard Lee</u>	<u>Mar 25, 2013</u>																
Prepared by	Date																
<u>Eric Lee</u>	<u>Mar 25, 2013</u>																
Note: This Specification is subject to change without notice.	AU Optronics corporation																

Contents

1 Handling Precautions.....	4
2 General Description	5
2.1 Display Characteristics.....	5
2.2 Absolute Maximum Rating of Environment	6
2.3 Optical Characteristics	7
3 TFT-LCD Module.....	11
3.1 Block Diagram	11
3.2 Interface Connection	12
3.2.1 Connector Type	12
3.2.2 Connector Pin Assignment	12
3.3 Electrical Characteristics	14
3.3.1 Absolute Maximum Rating	14
3.3.2 Recommended Operating Condition.....	14
3.4 Signal Characteristics.....	15
3.4.1 LCD Pixel Format.....	15
3.4.2 LVDS Data Format	15
3.4.3 Color versus Input Data	16
3.4.4 LVDS Specification.....	17
3.4.5 Input Timing Specification	19
3.4.6 Input Timing Diagram	20
3.5 Power ON/OFF Sequence	21
4 Backlight Unit	22
4.1 Block Diagram	22
4.2 Interface Connection	23
4.2.1 Connector Type	23
4.2.2 Connector Pin Assignment	25
4.3 Electrical Characteristics	26
4.3.1 Absolute Maximum Rating	26
4.3.2 Recommended Operating Condition.....	26
5 Reliability Test.....	28
6 Shipping Label	29
7 Mechanical Characteristics	30
8 Packing Specification.....	31
8.1 Packing Flow	31
8.2 Pallet and shipment information.....	32

2 General Description

This specification applies to the 19.5 inch wide Color a-Si TFT-LCD Module M195RTN01.0. The display supports the HD+ - 1600(H) x 900(V) screen format and 16.7M colors (RGB 6-bits + Hi-FRC data). The input interface is Dual channel LVDS and this module doesn't contain an driver board for backlight.

2.1 Display Characteristics

The following items are characteristics summary on the table under 25℃ condition:

ITEMS	Unit	SPECIFICATIONS
Screen Diagonal	[mm]	495.3 (19.5")
Active Area	[mm]	433.92(H) x 236.34 (V)
Pixels H x V	-	1600(x3) x 900
Pixel Pitch	[um]	0.2712 x 0.2626
Pixel Arrangement	-	R.G.B. Vertical Stripe
Display Mode	-	TN Mode, Normally White
White Luminance (Center)	[cd/m ²]	250 (Typ.)
Contrast Ratio	-	1000 (Typ.)
Response Time	[msec]	5 (Typ., on/off)
Power Consumption (LCD Module + Backligh unit)	[Watt]	LED line : PBLU (typ) = 7.44 W VDD line : PDD (typ)= 3.0 W
Weight	[Grams]	1430
Outline Dimension	[mm]	452.0(H)x263(V)x10.5(D)
Electrical Interface	-	Dual channel LVDS
Support Color	-	16.7M colors (RGB 6-bit + Hi_FRC)
Surface Treatment	-	Anti-Glare, 3H
Temperature Range		
Operating	[°C]	0 to +50
Storage (Shipping)	[°C]	-20 to +60
RoHS Compliance	-	RoHS Compliance
TCO Compliance	-	TCO 6.0 Compliance

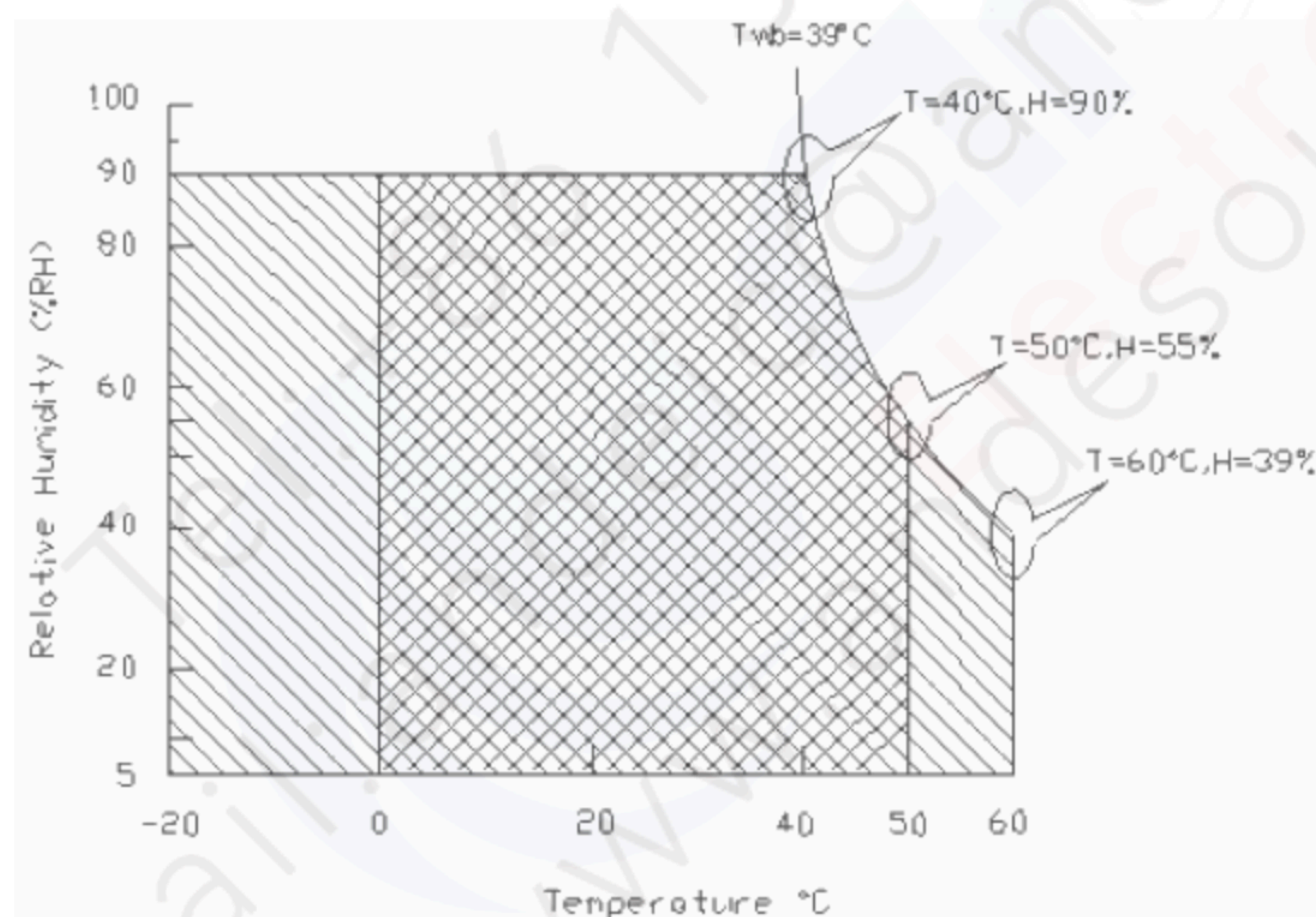
2.2 Absolute Maximum Rating of Environment

Permanent damage may occur if exceeding the following maximum rating.

Symbol	Description	Min.	Max.	Unit	Remark
TOP	Operating Temperature	0	+50	[°C]	Note 2-1
TGS	Glass surface temperature (operation)	0	+65	[°C]	Note 2-1 Function judged only
HOP	Operation Humidity	5	90	[%RH]	Note 2-1
TST	Storage Temperature	-20	+60	[°C]	
HST	Storage Humidity	5	90	[%RH]	

Note 2-1: Temperature and relative humidity range are shown as the below figure.

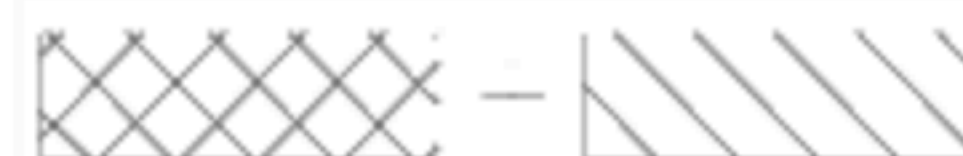
1. 90% RH Max ($T_a \leq 39^\circ\text{C}$)
2. Max wet-bulb temperature at 39°C or less. ($T_a \leq 39^\circ\text{C}$)
3. No condensation



Operating Range



Storage Range



2.3 Optical Characteristics

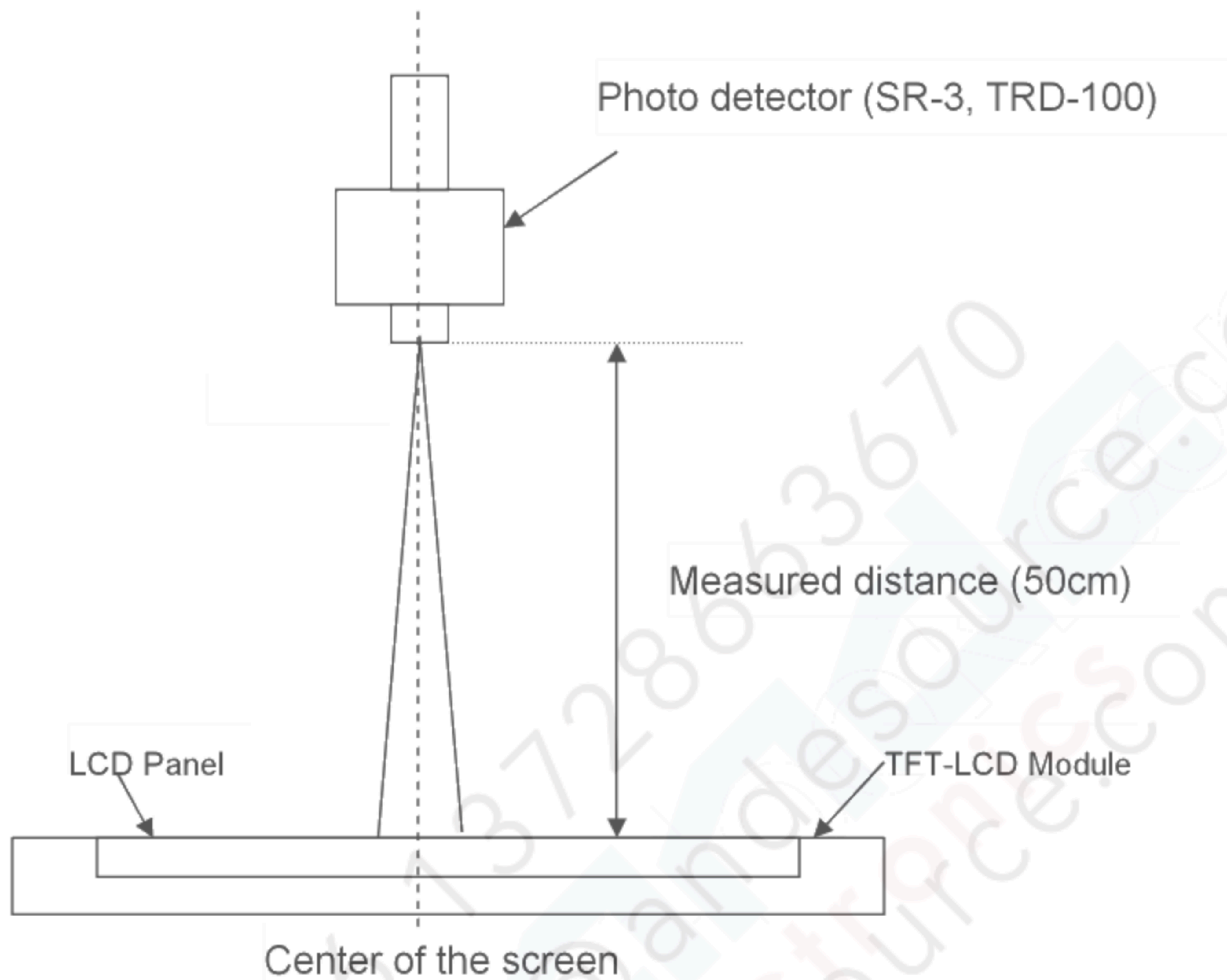
The optical characteristics are measured on the following test condition.

Test Condition:

1. Equipment setup: Please refer to **Note 2-2**.
2. Panel Lighting time: 30 minutes
3. VDD=5.0V, Fv=60Hz, Is=65mA, Ta=25°C

Symbol	Description		Min.	Typ.	Max.	Unit	Remark
L _w	White Luminance (Center of screen)		200	250	-	[cd/m ²]	Note 2-2 By SR-3
L _{uni}	Luminance Uniformity (9 points)		75	80	-	[%]	Note 2-3 By SR-3
CR	Contrast Ratio (Center of screen)		600	1000	-	-	Note 2-4 By SR-3
θ _R	Horizontal Viewing Angle (CR=10)	Right	75	85	-	[degree]	Note 2-5 By SR-3
θ _L		Left	75	85	-		
Φ _H	Vertical Viewing Angle (CR=10)	Up	70	80	-		
Φ _L		Down	70	80	-		
θ _R	Horizontal Viewing Angle (CR=5)	Right	75	88	-		
θ _L		Left	75	88	-		
Φ _H	Vertical Viewing Angle (CR=5)	Up	70	85	-		
Φ _L		Down	70	85	-		
T _R	Response Time	Rising Time	-	3.8	5.5	[msec]	Note 2-6 By TRD-100
T _F		Falling Time	-	1.2	2.5		
-		Rising + Falling	-	5	8		
R _x	Color Coordinates (CIE 1931)	Red x	0.614	0.644	0.674	-	By SR-3
R _y		Red y	0.303	0.333	0.363		
G _x		Green x	0.292	0.322	0.352		
G _y		Green y	0.593	0.623	0.653		
B _x		Blue x	0.125	0.155	0.185		
B _y		Blue y	0.028	0.058	0.088		
W _x		White x	0.283	0.313	0.343		
W _y		White y	0.299	0.329	0.359		
CT	Crosstalk		-	-	1.5	[%]	Note 2-7 By SR-3
F _{dB}	Flicker (Center of screen)		-	-	-20	[dB]	Note 2-8 By SR-3

Note 2-2: Equipment setup :

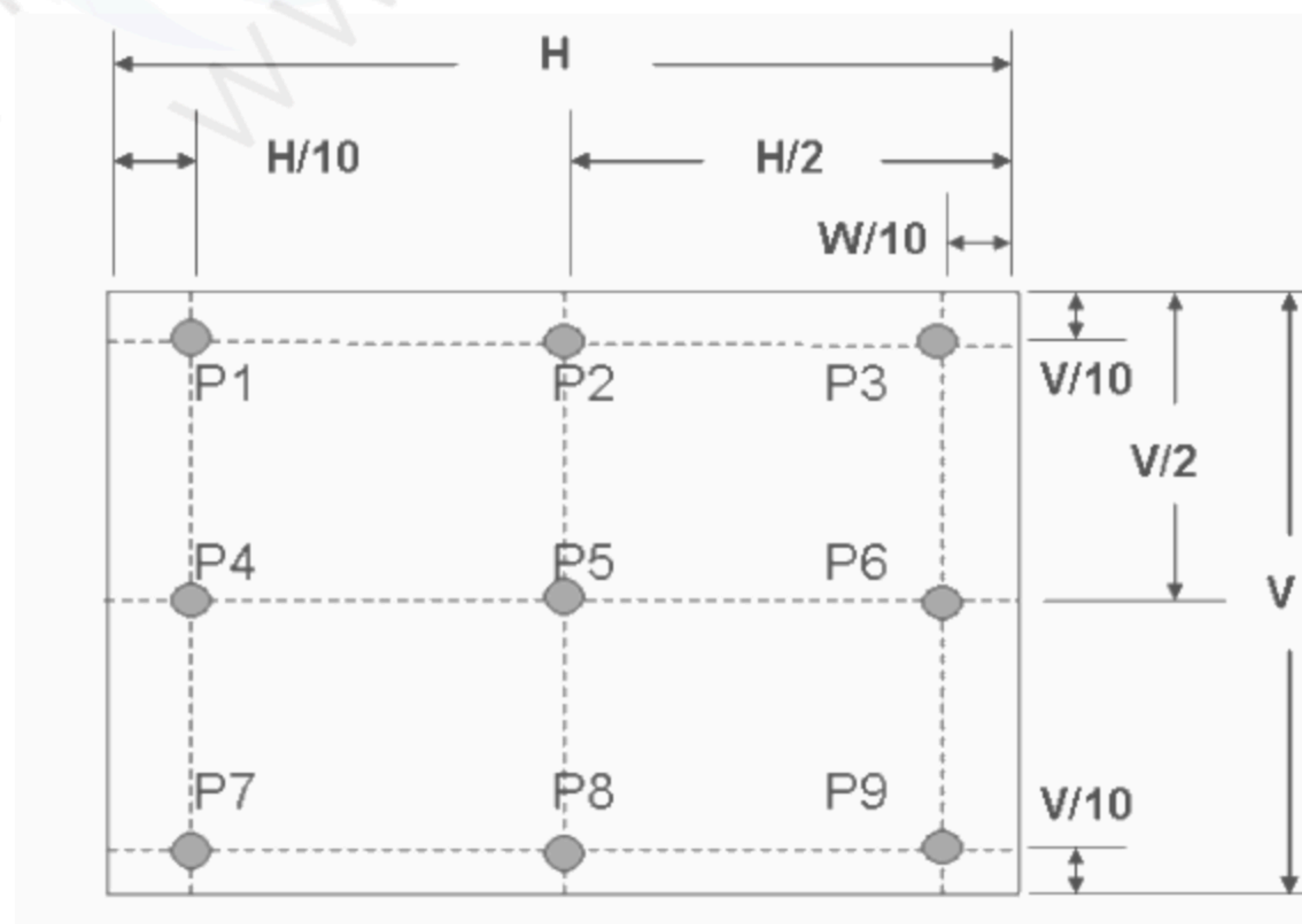


Note 2-3: Luminance Uniformity Measurement

Definition:

$$\text{Luminance Uniformity} = \frac{\text{Minimum Luminance of 9 Points (P1 ~ P9)}}{\text{Maximum Luminance of 9 Points (P1 ~ P9)}}$$

a. Test pattern: White Pattern



Note 2-4: Contrast Ratio Measurement

Definition:

$$\text{Contrast Ratio} = \frac{\text{Luminance of White pattern}}{\text{Luminance of Black pattern}}$$

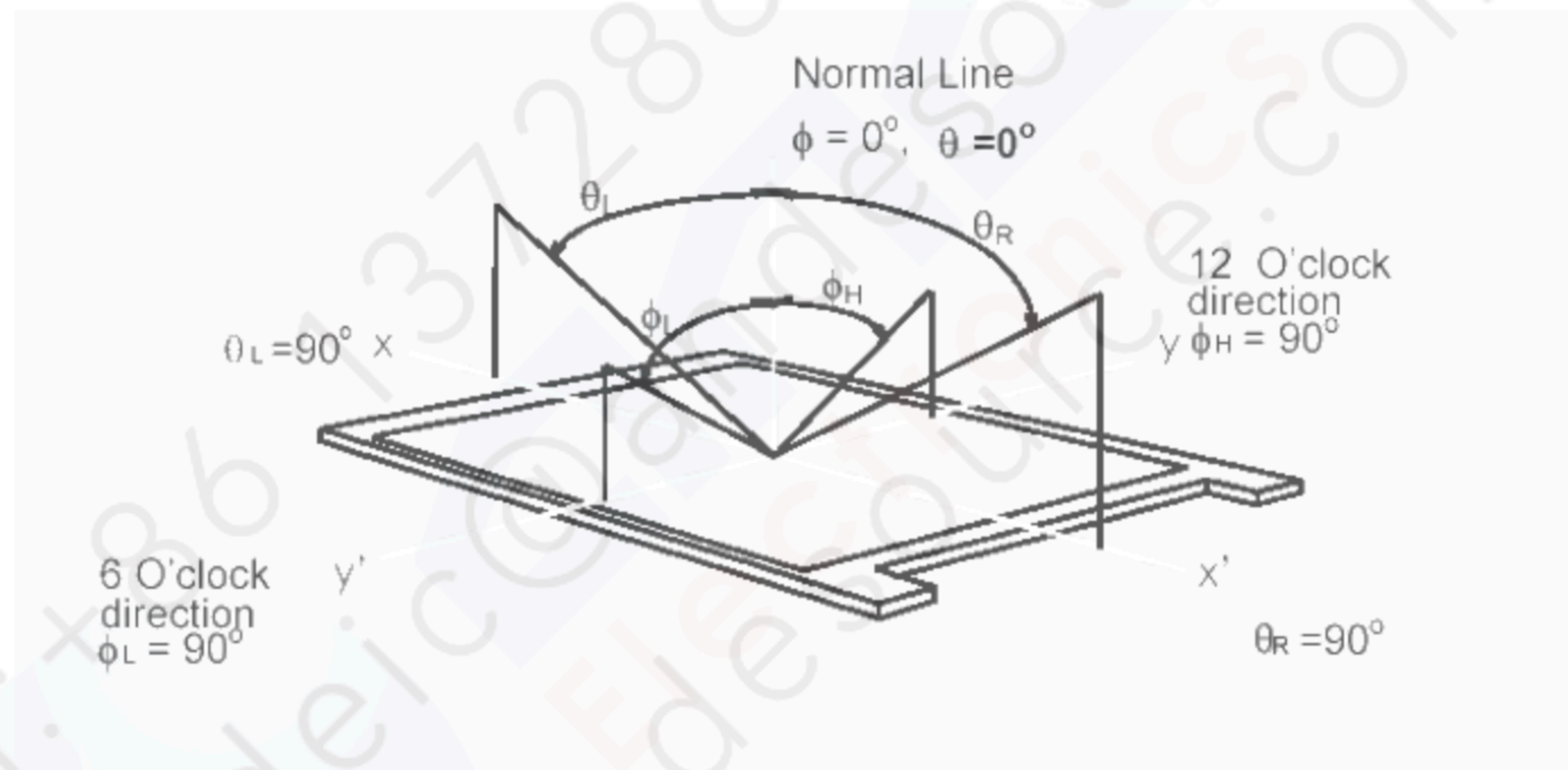
- a. Measured position: Center of screen (P5) & perpendicular to the screen ($\theta = \phi = 0^\circ$)

Note 2-5: Viewing angle measurement

Definition: The angle at which the contrast ratio is greater than 10 & 5.

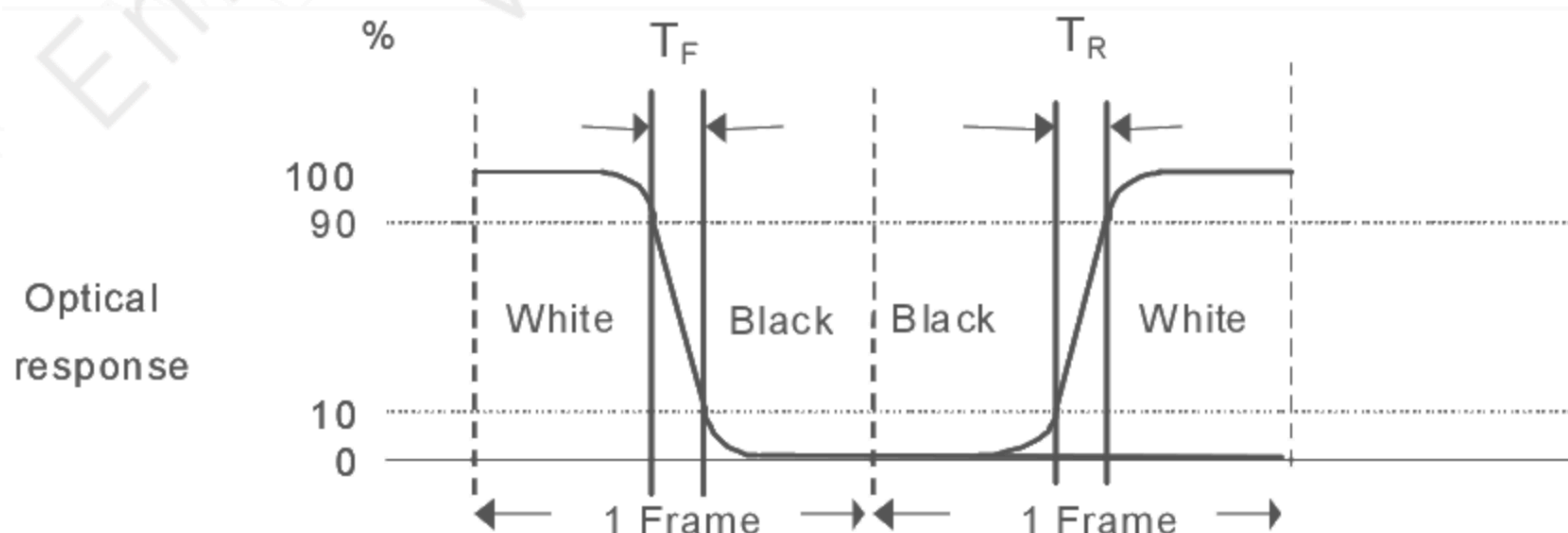
- a. Horizontal view angle: Divide to left & right (θ_L & θ_R)

Vertical view angle: Divide to up & down (ϕ_H & ϕ_L)



Note 2-6: Response time measurement

The output signals of photo detector are measured when the input signals are changed from "Black" to "White" (rising time, T_R), and from "White" to "Black" (falling time, T_F), respectively. The response time is interval between the 10% and 90% of optical response. (Black & White color definition: Please refer section 3.4.3)



Note 2-7: Crosstalk measurement

Definition:

$$CT = \text{Max. } (CT_H, CT_V);$$

Where

a. Maximum Horizontal Crosstalk :

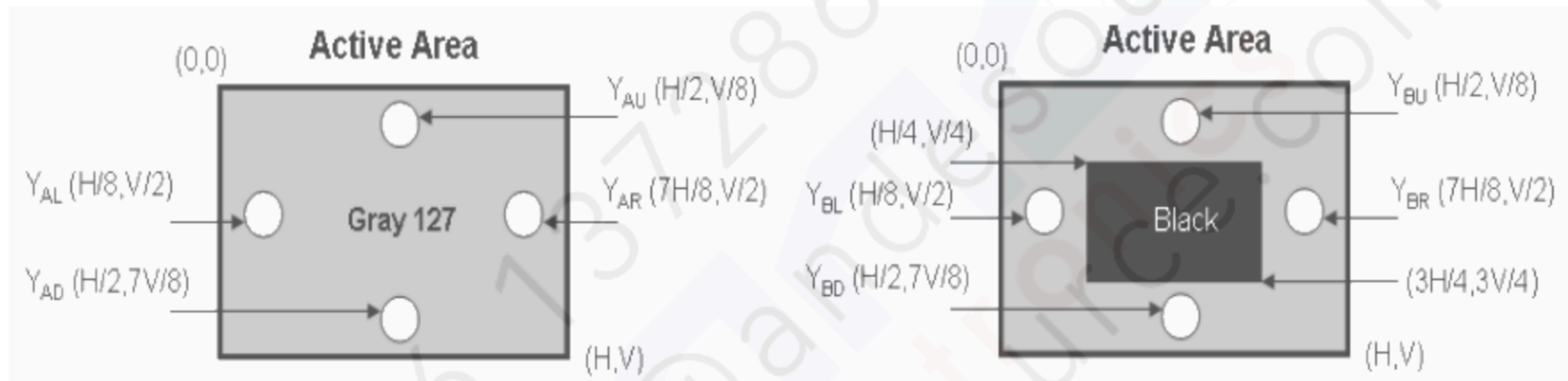
$$CT_H = \text{Max. } (|Y_{BL} - Y_{AL}| / Y_{AL} \times 100 \%, |Y_{BR} - Y_{AR}| / Y_{AR} \times 100 \%);$$

Maximum Vertical Crosstalk:

$$CT_V = \text{Max. } (|Y_{BU} - Y_{AU}| / Y_{AU} \times 100 \%, |Y_{BD} - Y_{AD}| / Y_{AD} \times 100 \%);$$

b. Y_{AU} , Y_{AD} , Y_{AL} , Y_{AR} = Luminance of measured location without Black pattern

Y_{BU} , Y_{BD} , Y_{BL} , Y_{BR} = Luminance of measured location with Black pattern



Note 2-8: Flicker measurement

a. Test pattern: It is listed as following.



R: Red, G: Green, B: Blue



Gray level = L0



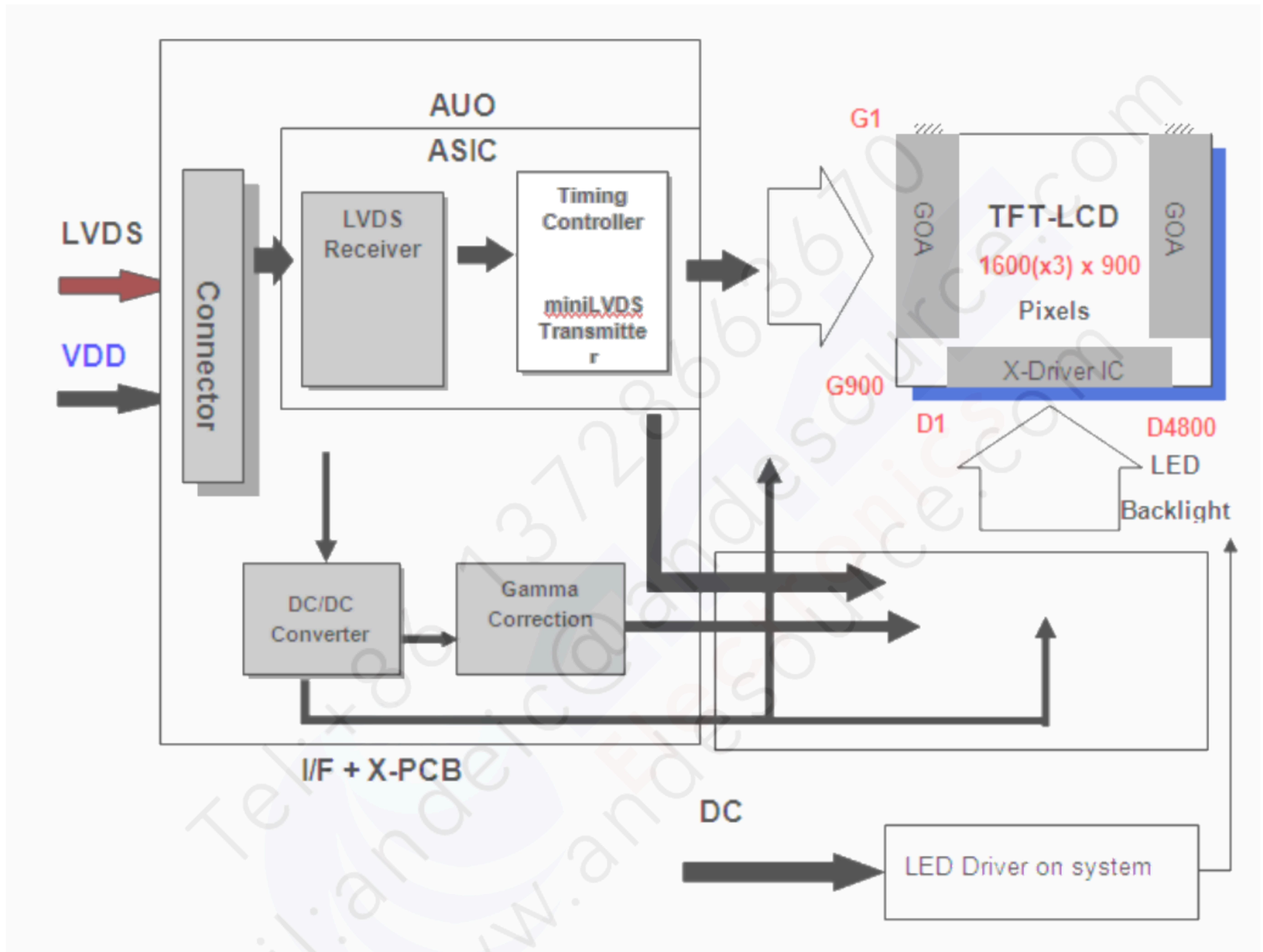
Gray level = L127

b. Measured position: Center of screen (P5) & perpendicular to the screen ($\theta = \Phi = 0^\circ$)

3 TFT-LCD Module

3.1 Block Diagram

The following shows the block diagram of the 19.5 inch Color TFT-LCD Module.



3.2 Interface Connection

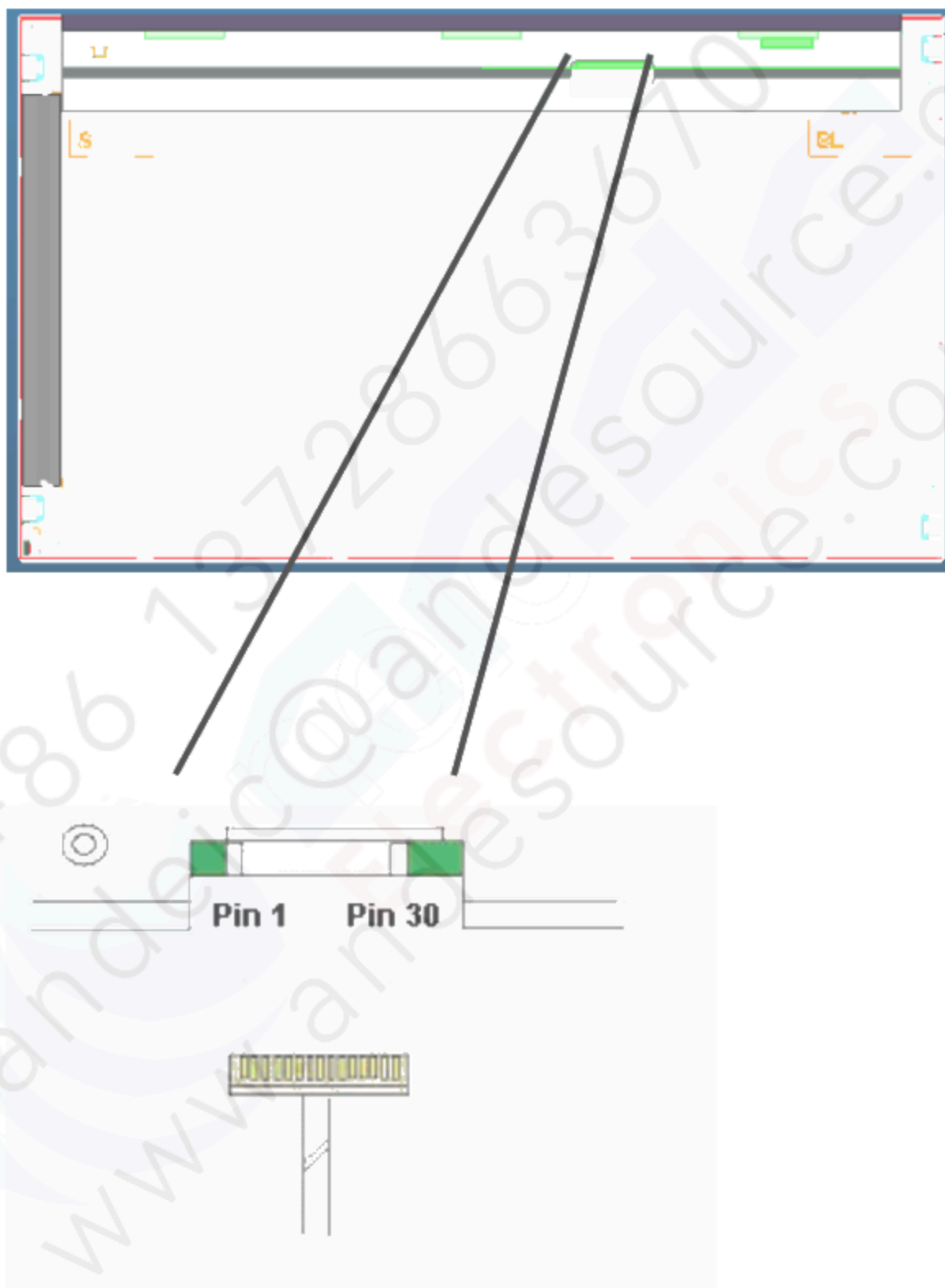
3.2.1 Connector Type

TFT-LCD Connector	Manufacturer	P-TWO	STM
	Part Number	AL230F-A0G1D-P	MSCKT2407P30HB
Mating Connector	Manufacturer	JAE	
	Part Number	FI-X30HL (Locked Type)	

3.2.2 Connector Pin Assignment

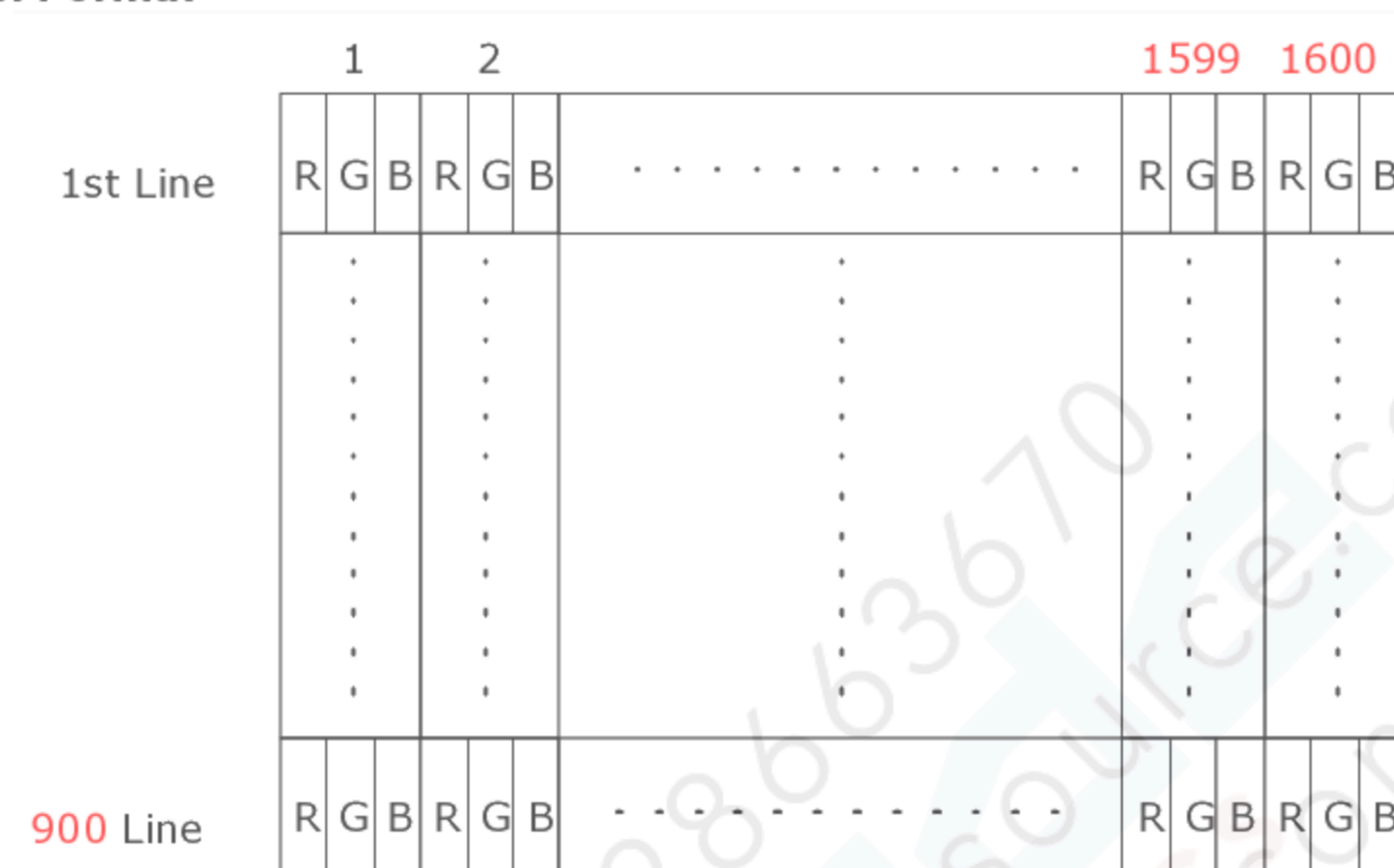
PIN #	Symbol	Description	Remark
1	RxO0-	Negative LVDS differential data input (Odd data)	
2	RxO0+	Positive LVDS differential data input (Odd data)	
3	RxO1-	Negative LVDS differential data input (Odd data)	
4	RxO1+	Positive LVDS differential data input (Odd data)	
5	RxO2-	Negative LVDS differential data input (Odd data)	
6	RxO2+	Positive LVDS differential data input (Odd data)	
7	GND	Ground	
8	RxOCLK-	Negative LVDS differential clock input (Odd clock)	
9	RxOCLK+	Positive LVDS differential clock input (Odd clock)	
10	RxO3-	Negative LVDS differential data input (Odd data)	
11	RxO3+	Positive LVDS differential data input (Odd data)	
12	RxE0-	Negative LVDS differential data input (Even data)	
13	RxE0+	Positive LVDS differential data input (Even data)	
14	GND	Ground	
15	RxE1-	Negative LVDS differential data input (Even data)	
16	RxE1+	Positive LVDS differential data input (Even data)	
17	GND	Ground	
18	RxE2-	Negative LVDS differential data input (Even data)	
19	RxE2+	Positive LVDS differential data input (Even data)	
20	RxECLK-	Negative LVDS differential clock input (Even clock)	
21	RxECLK+	Positive LVDS differential clock input (Even clock)	
22	RxE3-	Negative LVDS differential data input (Even data)	
23	RxE3+	Positive LVDS differential data input (Even data)	
24	GND	Ground	
25	NC	No connection (for AUO test only. Do not connect)	
26	NC	No connection (for AUO test only. Do not connect)	

27	NC	No connection (for AUO test only. Do not connect)	
28	VDD	Power Supply Input Voltage	
29	VDD	Power Supply Input Voltage	
30	VDD	Power Supply Input Voltage	

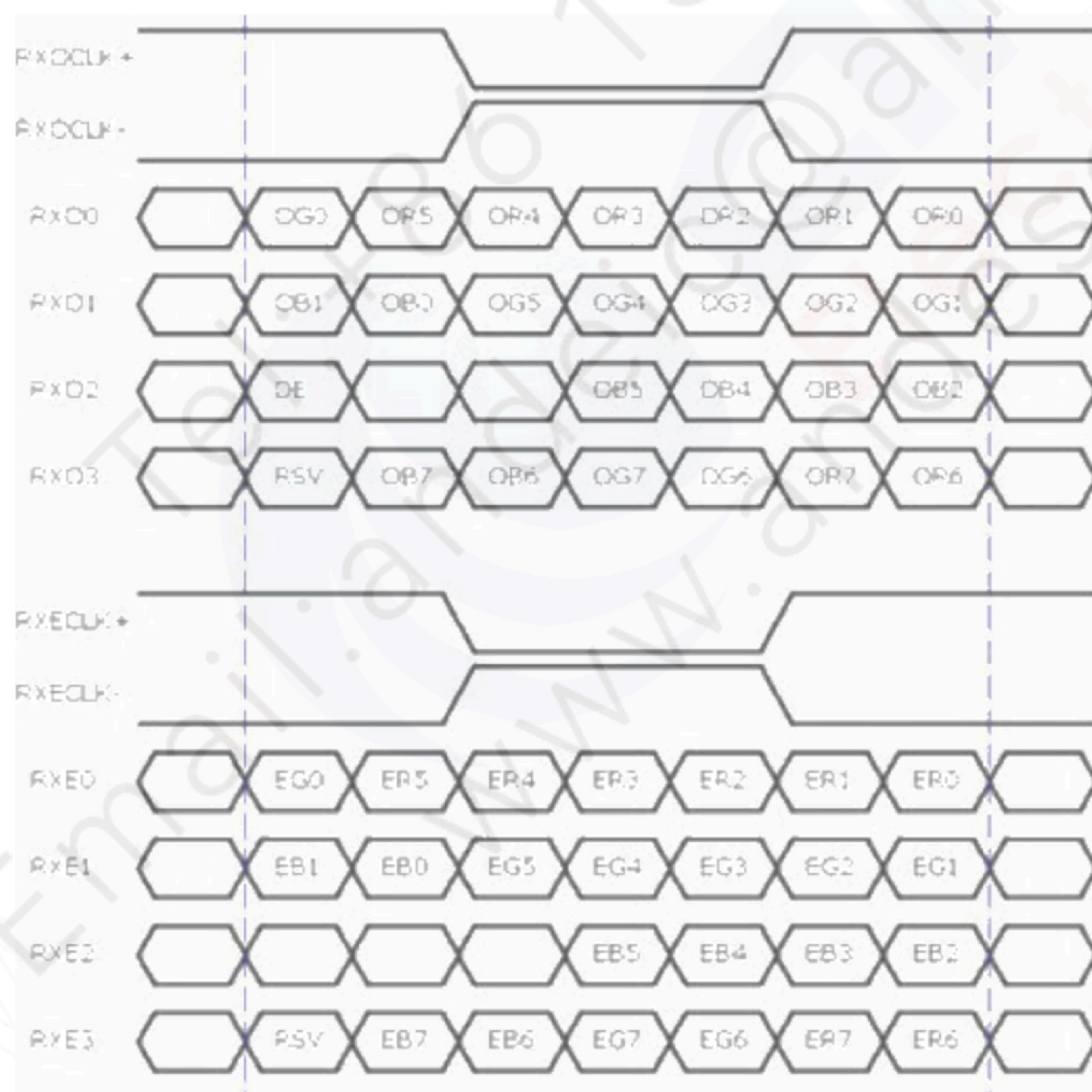


3.4 Signal Characteristics

3.4.1 LCD Pixel Format



3.4.2 LVDS Data Format



8 Bit Color Bit Order			
MSB	R7	G7	B7
	R6	G6	B6
	R5	G5	B5
	R4	G4	B4
	R3	G3	B3
	R2	G2	B2
	R1	G1	B1
LSB	R0	G0	B0

Note 3-2:

- O = "Odd Pixel Data" E = "Even Pixel Data"
- Refer to 3.4.1 LCD pixel format, the 1st data is 1 (Odd Pixel Data), the 2nd data is 2 (Even Pixel Data) and the last data is 1600 (Even Pixel Data).

3.4.3 Color versus Input Data

The following table is for color versus input data (8bit). The higher the gray level, the brighter the color.

Color	Gray Level	Color Input Data																								Remark
		RED data (MSB :R7, LSB :R0)								GREEN data (MSB :G7, LSB :G0)								BLUE data (MSB :B7, LSB :B0)								
		R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0	
Black	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
White	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Gray 127	-	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1		
Red	L0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Black	
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:		
	L255	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Green	L0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Black	
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:		
	L255	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0		
Blue	L0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Black	
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:		
	L255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1		

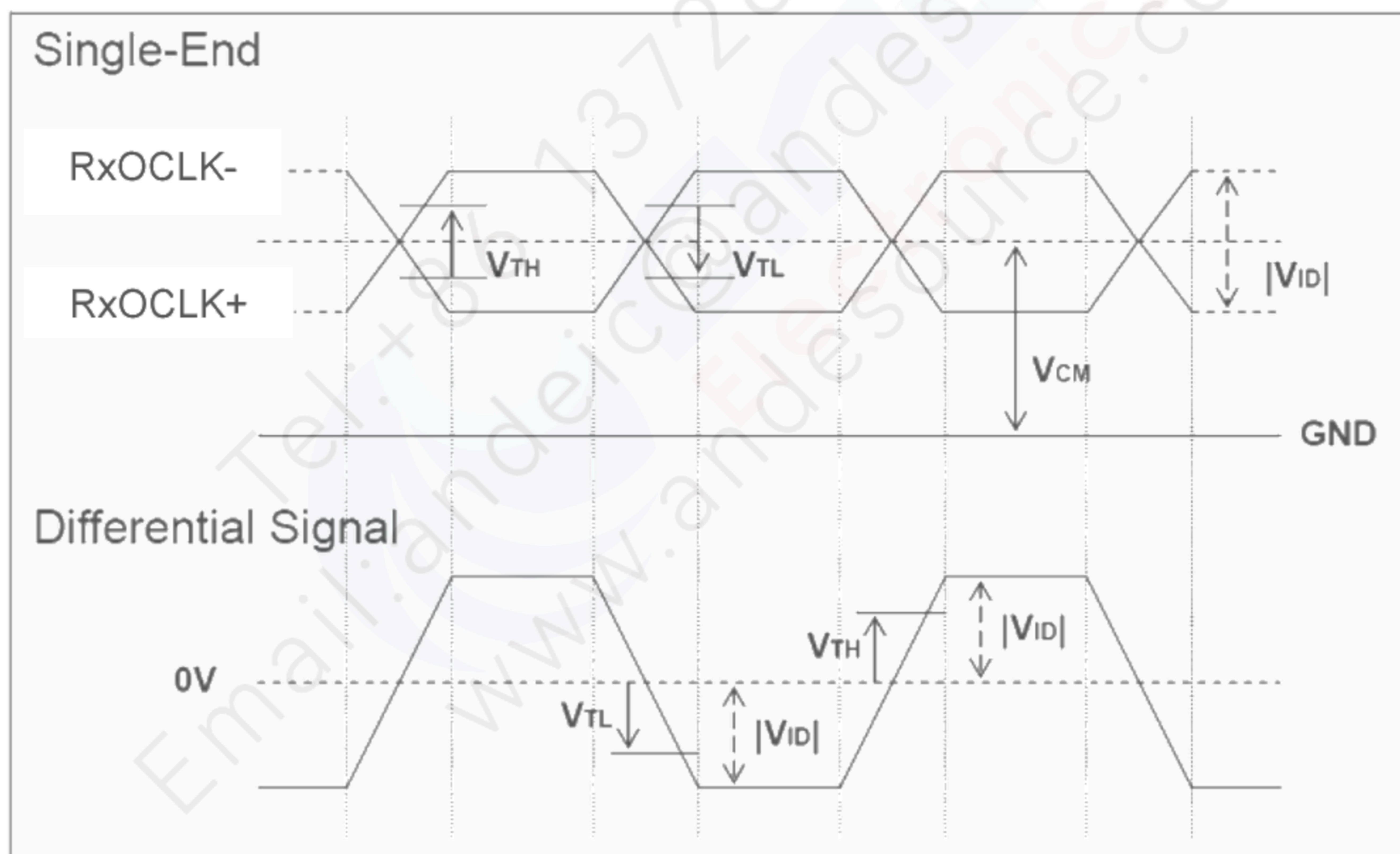
3.4.4 LVDS Specification

a. DC Characteristics:

Symbol	Description	Min	Typ	Max	Units	Condition
V_{TH}	LVDS Differential Input High Threshold	-	-	+100	[mV]	$V_{CM} = 1.2V$
V_{TL}	LVDS Differential Input Low Threshold	-100	-	-	[mV]	$V_{CM} = 1.2V$
$ V_{ID} $	LVDS Differential Input Voltage	100	-	600	[mV]	
V_{CM}	LVDS Common Mode Voltage	+1.0	+1.2	+1.5	[V]	$V_{TH} - V_{TL} = 200mV$

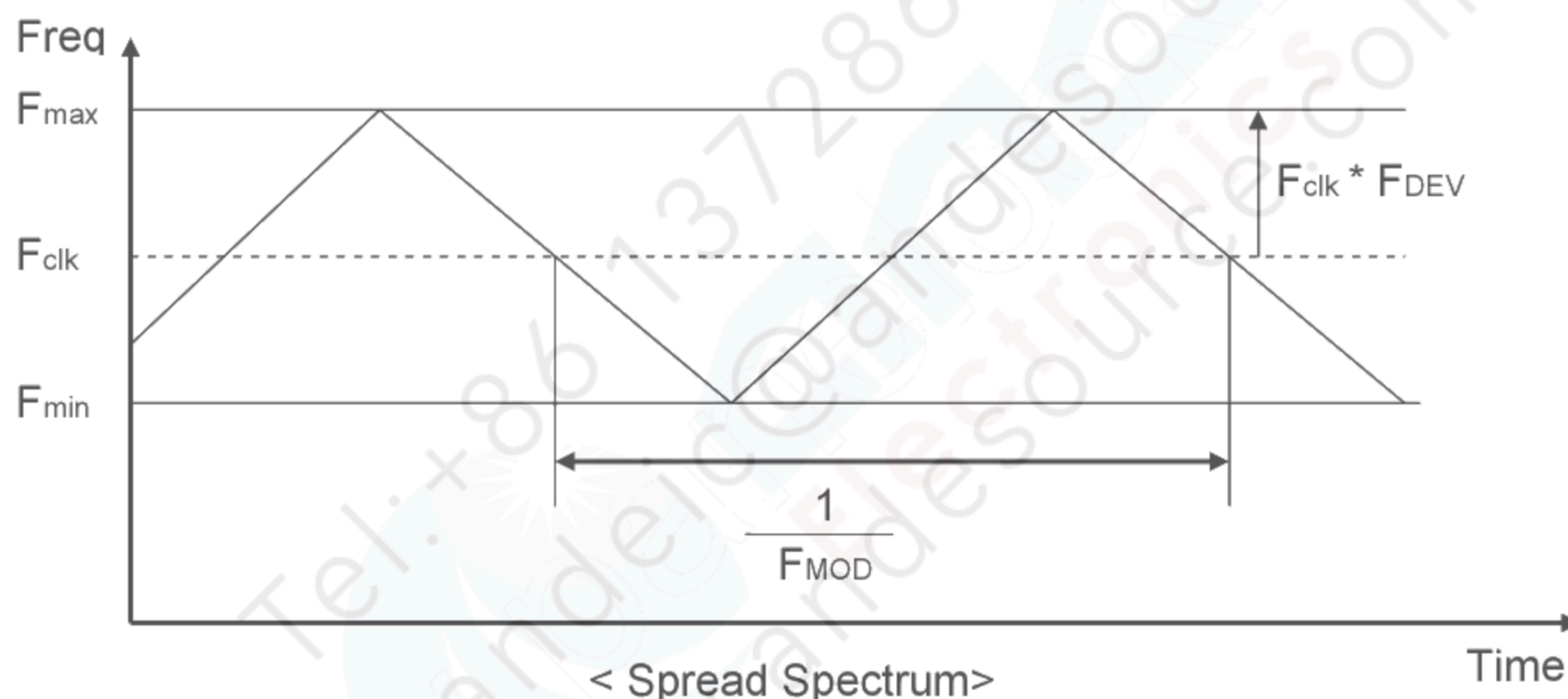
LVDS Signal Waveform:

Use RxOCLK- & RxOCLK+ as example.



b. AC Characteristics:

Symbol	Description	Min	Max	Unit	Remark
F_{DEV}	Maximum deviation of input clock frequency during Spread Spectrum	-	± 3	%	
F_{MOD}	Maximum modulation frequency of input clock during Spread Spectrum	-	200	KHz	



Fclk: LVDS Clock Frequency

3.4.5 Input Timing Specification

It only support DE mode, and the input timing are shown as the following table.

Symbol	Description		Min.	Typ.	Max.	Unit	Remark
Tv	Vertical Section	Period	912	934	1564	Th	
Tdisp (v)		Active	900	900	900	Th	
Tblk (v)		Blanking	12	34	664	Th	
Fv		Frequency	50	60	76	Hz	
Th	Horizontal Section	Period	980	1080	1150	Tclk	
Tdisp (h)		Active	800	800	800	Tclk	
Tblk (h)		Blanking	180	280	350	Tclk	
Fh		Frequency	45.6	56.0	78.2	KHz	Note 3-3
Tclk	LVDS Clock	Period	13.0	16.5	22.4	ns	1/Fclk
Fclk		Frequency	44.7	60.5	76.6	MHz	Note 3-4

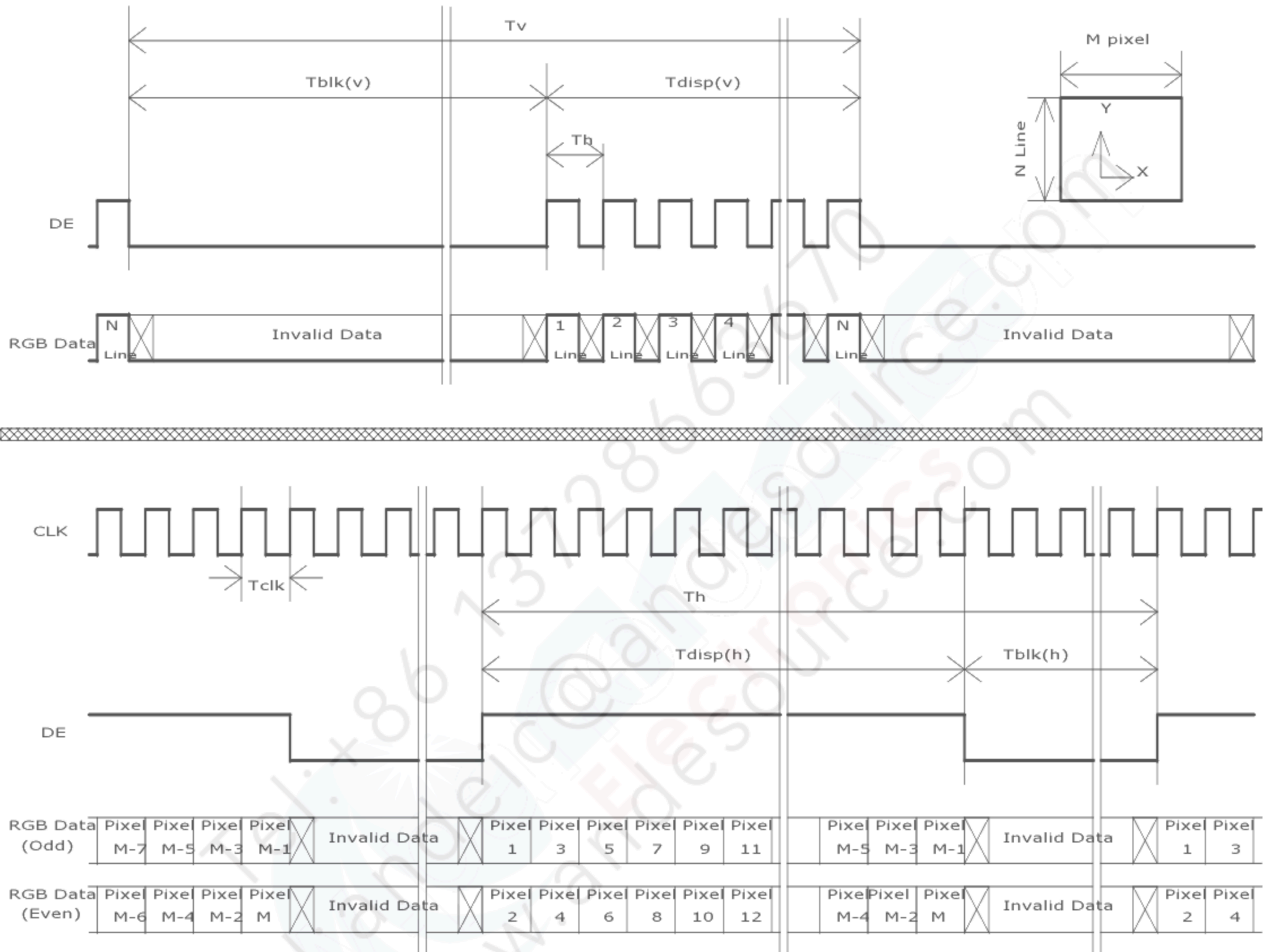
Note 3-3: The equation is listed as following. Please don't exceed the above recommended value.

$$\begin{aligned} Fh (\text{Min.}) &= Fclk (\text{Min.}) / Th (\text{Min.}); \\ Fh (\text{Typ.}) &= Fclk (\text{Typ.}) / Th (\text{Typ.}); \\ Fh (\text{Max.}) &= Fclk (\text{Max.}) / Th (\text{Min.}); \end{aligned}$$

Note 3-4: The equation is listed as following. Please don't exceed the above recommended value.

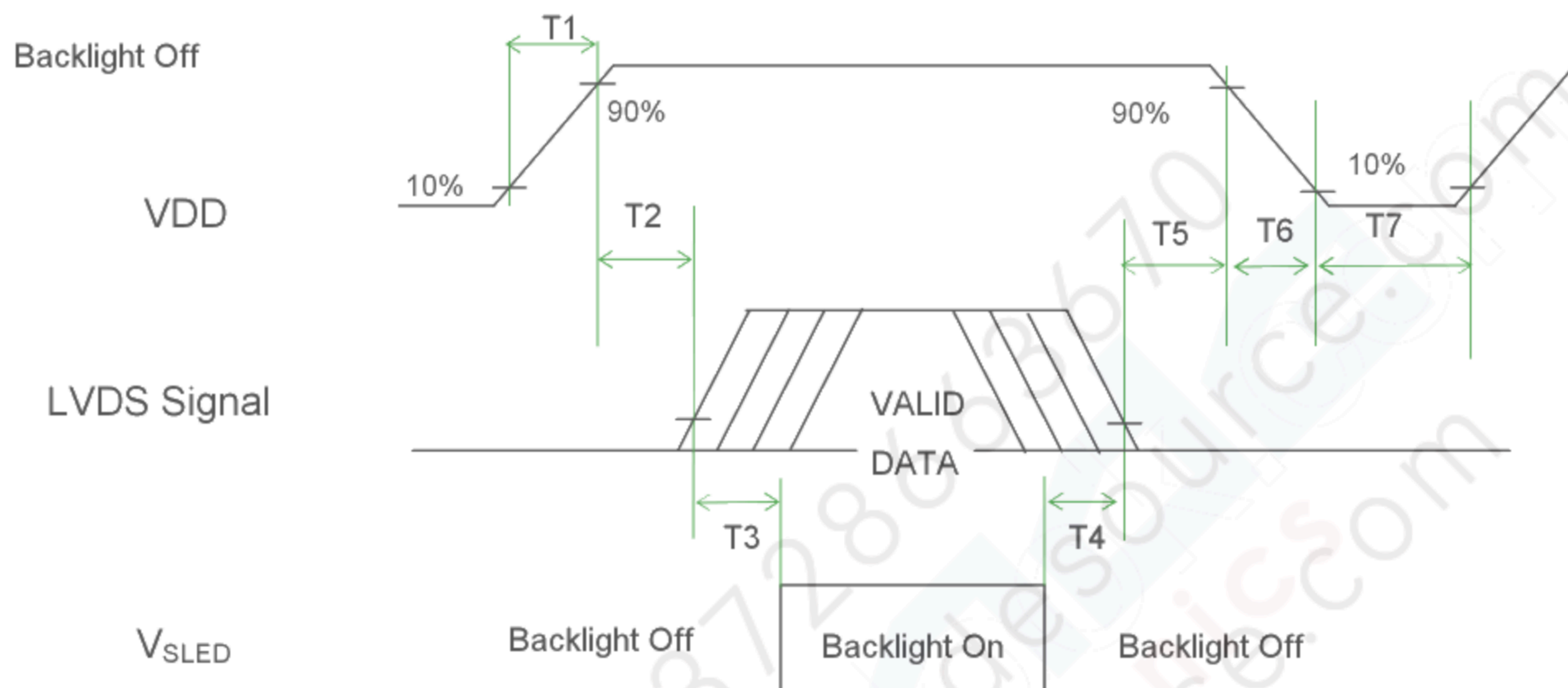
$$\begin{aligned} Fclk (\text{Min.}) &= Fv (\text{Min.}) \times Th (\text{Min.}) \times Tv (\text{Min.}); \\ Fclk (\text{Typ.}) &= Fv (\text{Typ.}) \times Th (\text{Typ.}) \times Tv (\text{Typ.}); \\ Fclk (\text{Max.}) &= Fv (\text{Max.}) \times Th (\text{Typ.}) \times Tv (\text{Typ.}); \end{aligned}$$

3.4.6 Input Timing Diagram



3.5 Power ON/OFF Sequence

VDD power, LVDS signal and backlight on/off sequence are as following. LVDS signals from any system shall be Hi-Z state when VDD is off.



Power Sequence Timing

Symbol	Value			Unit	Remark
	Min.	Typ.	Max.		
T1	0.5	-	10	[ms]	
T2	0	-	50	[ms]	
T3	500	-	-	[ms]	
T4	100	-	-	[ms]	
T5	0	-	50	[ms]	Note 3-5 Note 3-6
T6	0	-	150	[ms]	Note 3-6
T7	1000	-	-	[ms]	

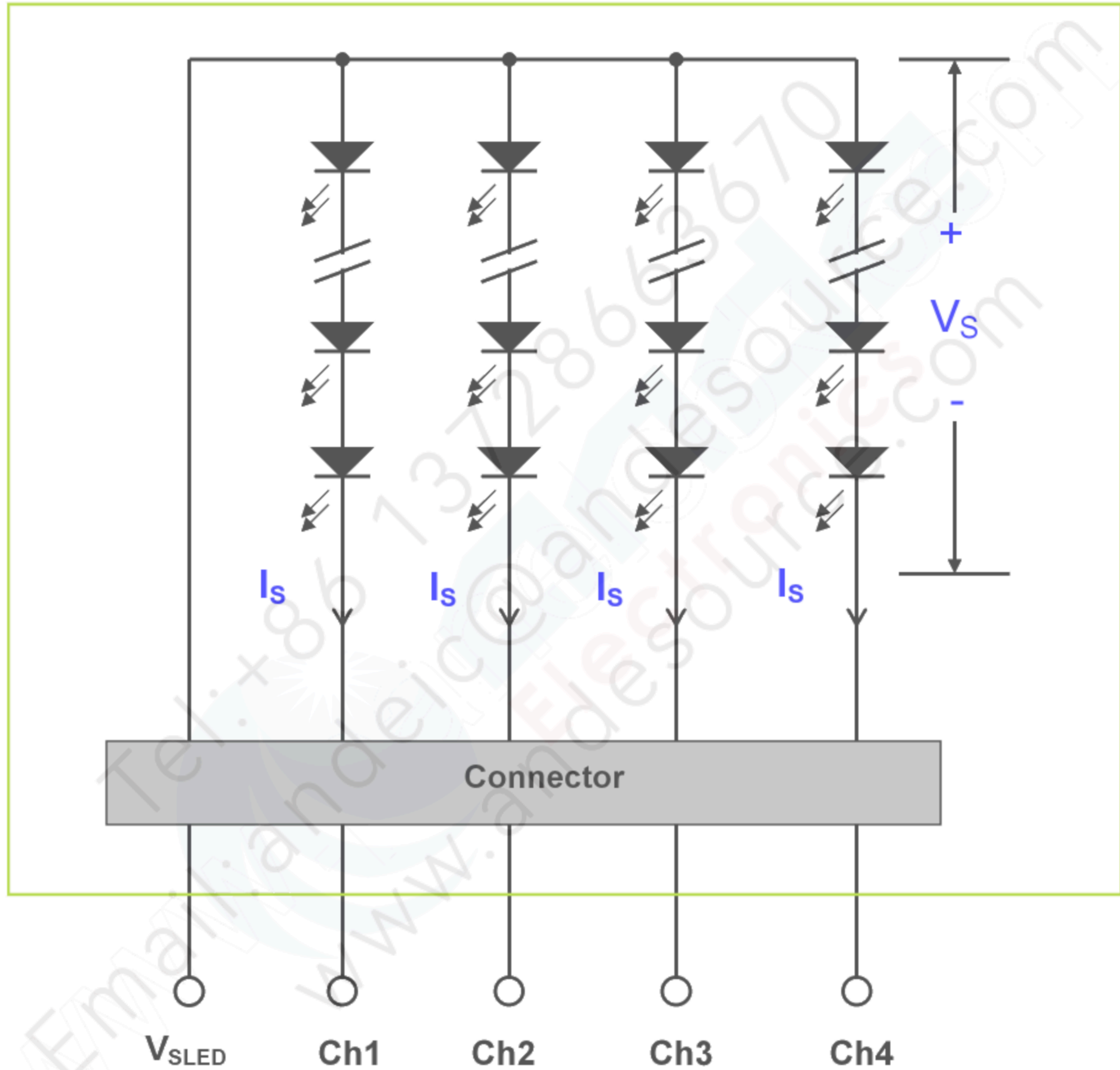
Note 3-5 : Recommend setting T5 = 0ms to avoid electronic noise when VDD is off.

Note 3-6 : During T5 and T6 period , please keep the level of input LVDS signals with Hi-Z state.

4 Backlight Unit

4.1 Block Diagram

The following shows the block diagram of the 19.5 inch Backlight Unit. And it includes 40 pcs LED in the LED light bar. (4 strings and 10 pcs LED of one string).



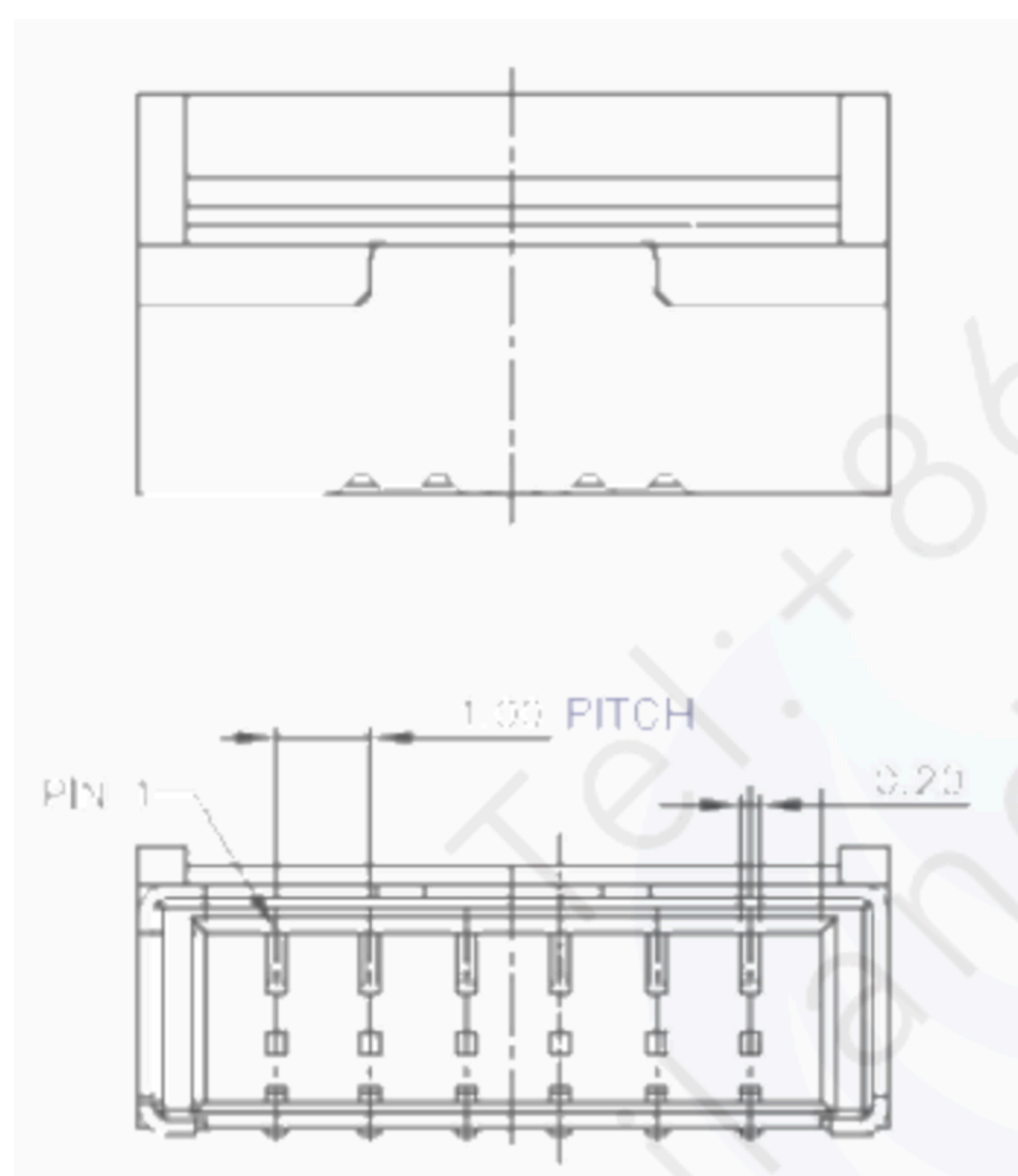
4.2 Interface Connection

4.2.1 Connector Type

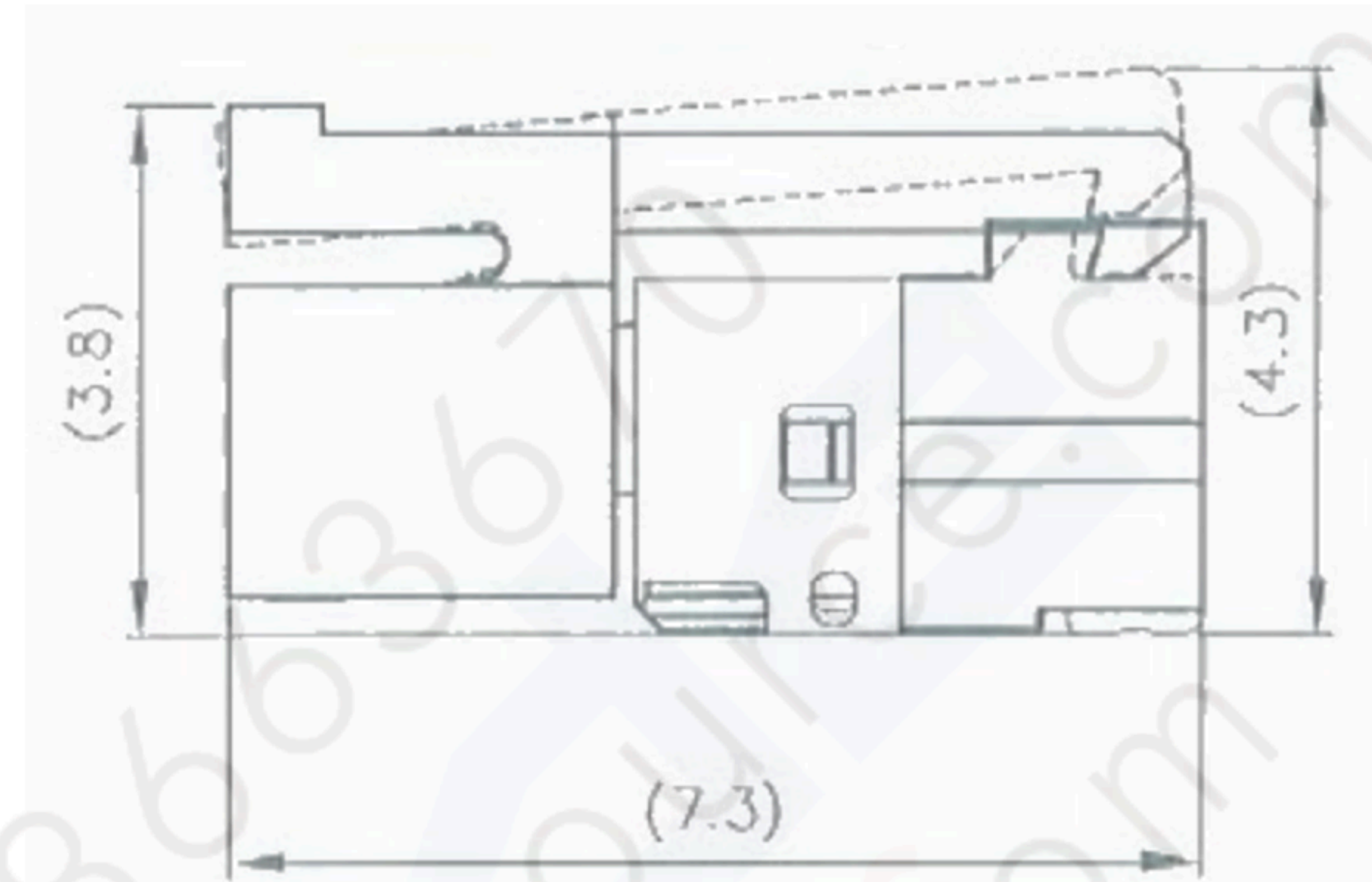
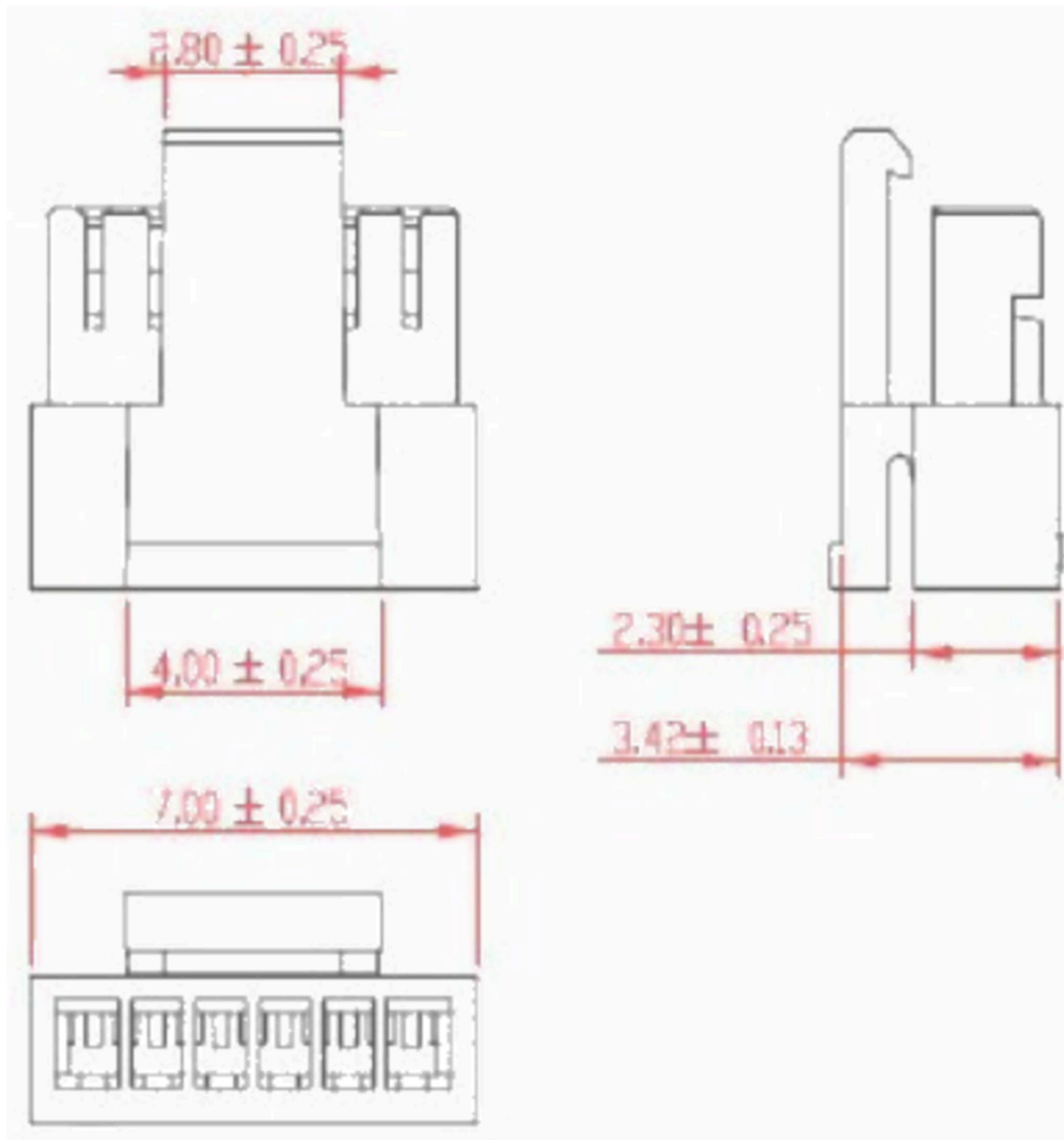
Backlight Connector	Manufacturer	ENTERY
	Part Number	3707K-S06N-21R
Mating Connector	Manufacturer	ENTERY
	Part Number	H112K-P06N-13B (Locked type)

Backlight Connector dimension:

$H \times V \times D = 13.9 \times 3.00 \times 4.25$, Pitch = 1.0(unit = mm)

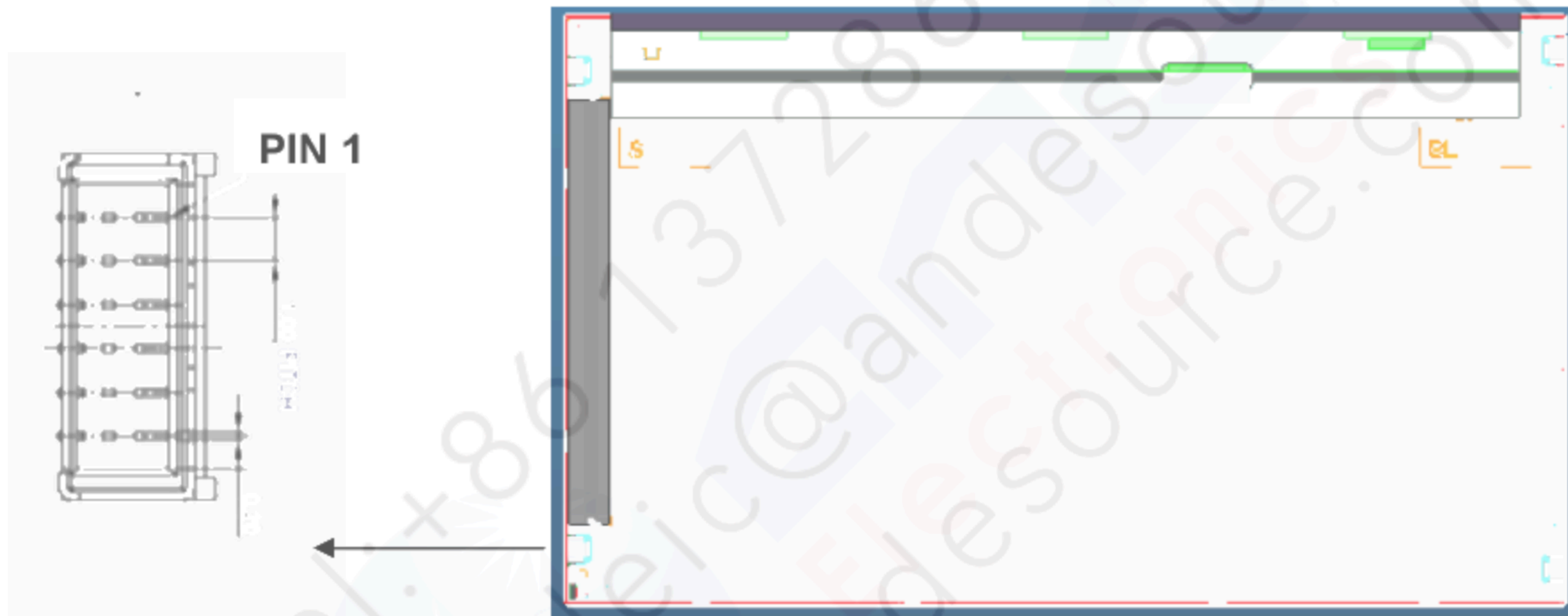


Mating Connector dimension:



4.2.2 Connector Pin Assignment

Pin#	Symbol	Description	Remark
1	Ch1	LED Current Feedback Terminal (Channel 1)	
2	Ch2	LED Current Feedback Terminal (Channel 2)	
3	V _{SLED}	LED Power Supply Voltage Input Terminal	
4	V _{SLED}	LED Power Supply Voltage Input Terminal	
5	Ch3	LED Current Feedback Terminal (Channel 3)	
6	Ch4	LED Current Feedback Terminal (Channel 4)	



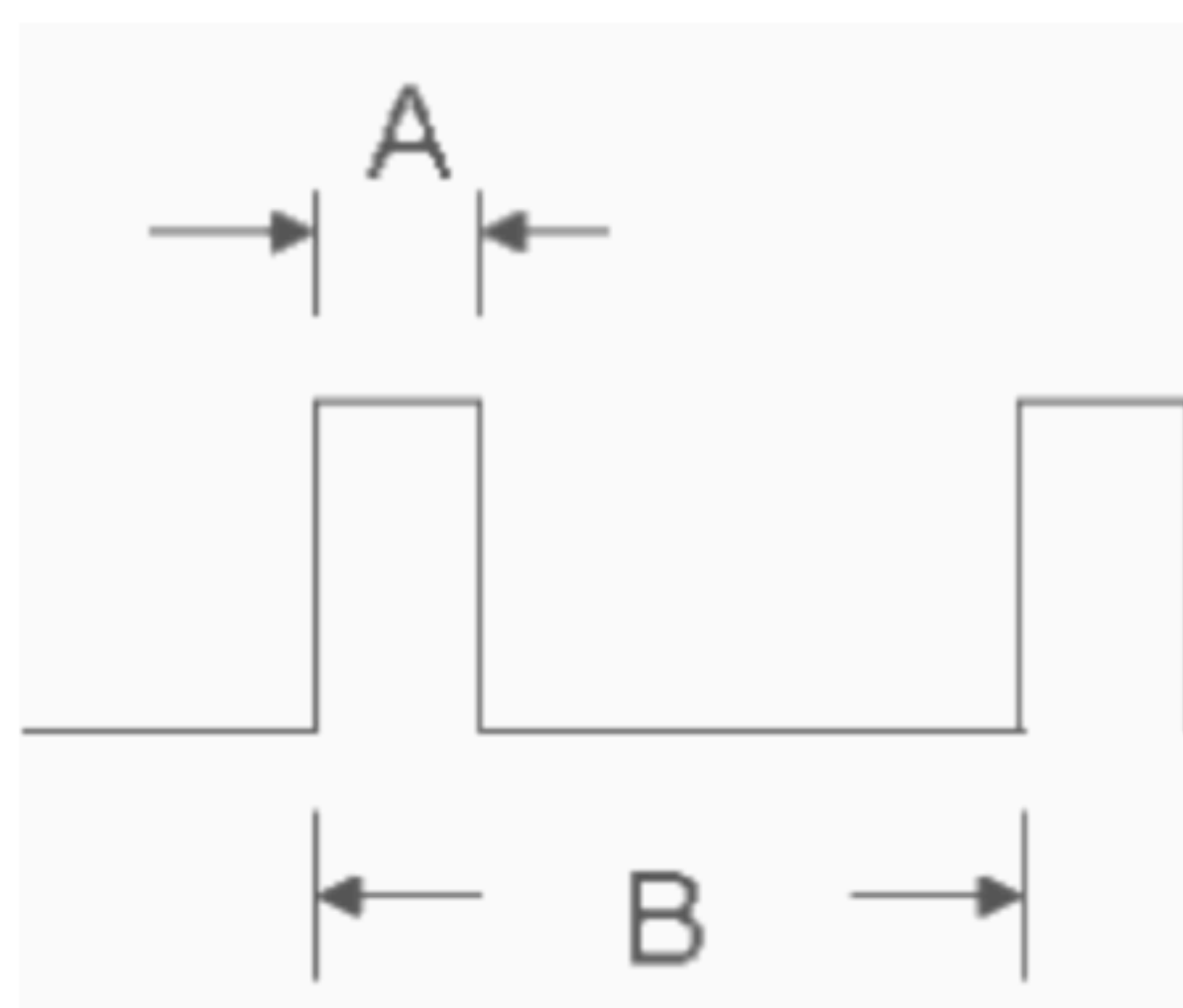
4.3 Electrical Characteristics

4.3.1 Absolute Maximum Rating

Permanent damage may occur if exceeding the following maximum rating.

(Ta=25°C)

Symbol	Description	Min	Max	Unit	Remark
Is	LED String Current	0	90	[mA]	100% duty ratio
			150	[mA]	Duty ratio ≤ 10% Pulse time=10 ms



Duty ratio= (A / B) X 100% ; (A: Pulse time, B: Period)

4.3.2 Recommended Operating Condition

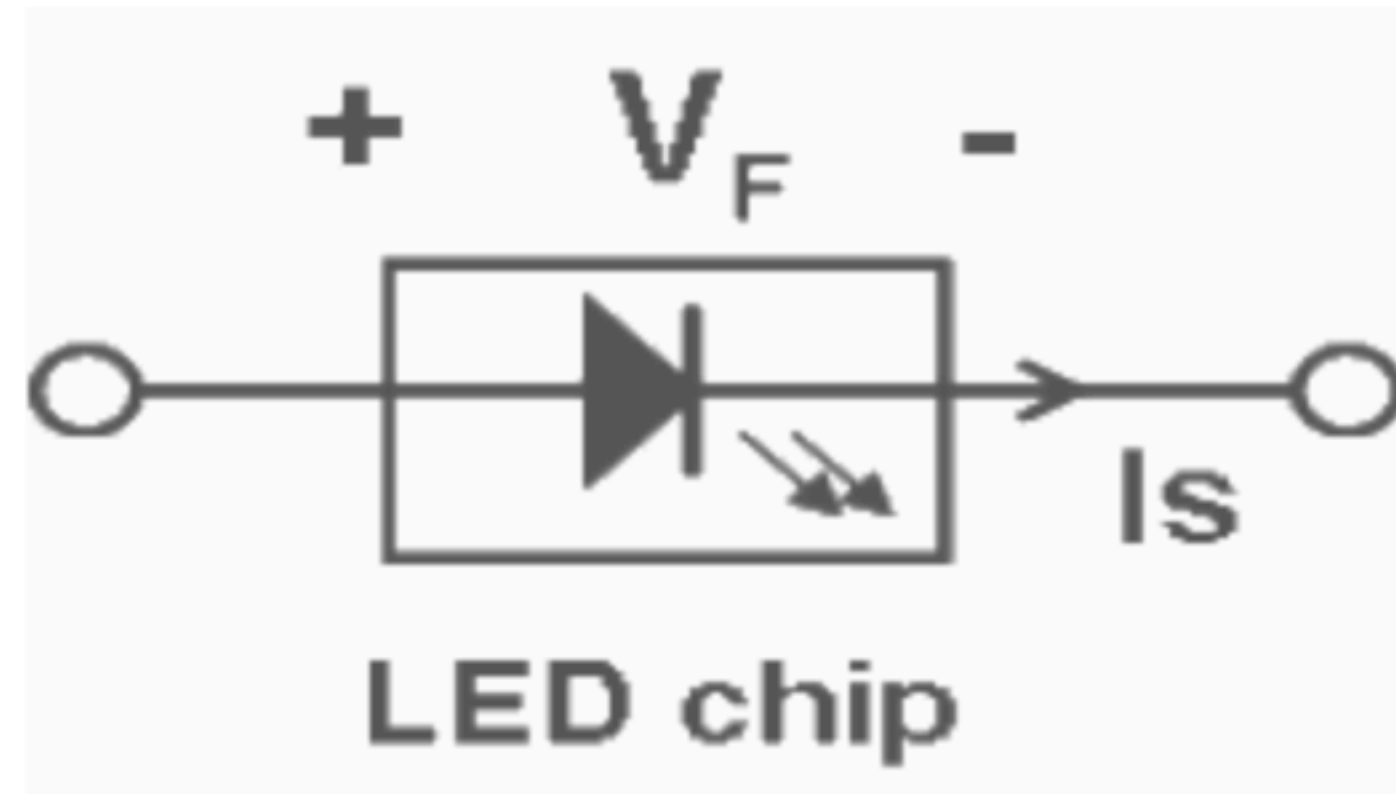
(Ta=25°C)

Symbol	Description	Min.	Typ.	Max.	Unit	Remark
Is	LED String Current	-	60	66	[mA]	100% duty ratio of LED chip
Vs	LED String Voltage	28	31	34	[Volt]	Is=60mA @ 100% duty ratio; Note 4-1
ΔVs	Maximum Vs Voltage Deviation of light bar	-	-	2	[Volt]	Is=60mA @ 100% duty ratio; Note 4-2
P _{BLU}	LED Light Bar Power Consumption	6.72	7.44	8.98	[Watt]	Note 4-3
LT _{LED}	LED Life Time	30,000	-	-	[Hour]	Note 4-4

Note 4-1: $V_s (\text{Typ.}) = V_F (\text{Typ.}) \times \text{LED No. (one string)}$;

a. V_F : LED chip forward voltage, $V_F (\text{Min.})=2.8\text{V}$, $V_F (\text{Typ.})=3.1\text{V}$, $V_F (\text{Max.})=3.4\text{V}$

b. The same equation to calculate $V_s (\text{Min.})$ & $V_s (\text{Max.})$ for respective $V_F (\text{Min.})$ & $V_F (\text{Max.})$;



Note 4-2: $\Delta V_s (\text{Max.}) = \Delta V_F \times \text{LED No. (one string)}$;

a. ΔV_F : LED chip forward voltage deviation; (0.2 V , each Bin of LED V_F)

Note 4-3: $P_{BLU} (\text{Typ.}) = V_s (\text{Typ.}) \times I_s (\text{Typ.}) \times 4$; (4 is total String No. of LED Light bar)

$P_{BLU} (\text{Max.}) = V_s (\text{Max.}) \times I_s (\text{Max.}) \times 4$;

Note 4-4: Definition of life time:

a. Brightness of LED becomes to 50% of its original value

b. Test condition: $I_s = 60\text{mA}$ and 25°C (Room Temperature)

5 Reliability Test

AUO reliability test items are listed as following table. (*Bare Panel only*)

Items	Condition	Remark
Temperature Humidity Bias (THB)	Ta= 50℃, 80%RH, 300hours	
High Temperature Operation (HTO)	Ta= 50℃, 50%RH, 300hours	
Low Temperature Operation (LTO)	Ta= 0℃, 300hours	
High Temperature Storage (HTS)	Ta= 60℃, 300hours	
Low Temperature Storage (LTS)	Ta= -20℃, 300hours	
Vibration Test (Non-operation)	Acceleration: 1.5 Grms Wave: Random Frequency: 10 - 200 Hz Sweep: 30 Minutes each Axis (X, Y, Z)	
Shock Test (Non-operation)	Acceleration: 50 G Wave: Half-sine Active Time: 20 ms Direction: ±X, ±Y, ±Z (one time for each Axis)	
Drop Test	Height: 46cm, package test	
Thermal Shock Test (TST)	-20℃/30min, 60℃/30min, 100 cycles	Note 5-1
On/Off Test	On/10sec, Off/10sec, 30,000 cycles	
ESD (Electro Static Discharge)	Contact Discharge: ± 15KV, 150pF(330Ω) 1sec, 8 points, 25 times/ point.	Note 5-2
	Air Discharge: ± 15KV, 150pF(330Ω) 1sec 8 points, 25 times/ point.	
Altitude Test	Operation:18,000 ft Non-Operation:40,000 ft	

Note 5-1: a. A cycle of rapid temperature change consists of varying the temperature from -20℃ to 60℃, and back again. Power is not applied during the test.

b. After finish temperature cycling, the unit is placed in normal room ambient for at least 4 hours before power on.

Note 5-2: EN61000-4-2, ESD class B: Certain performance degradation allowed

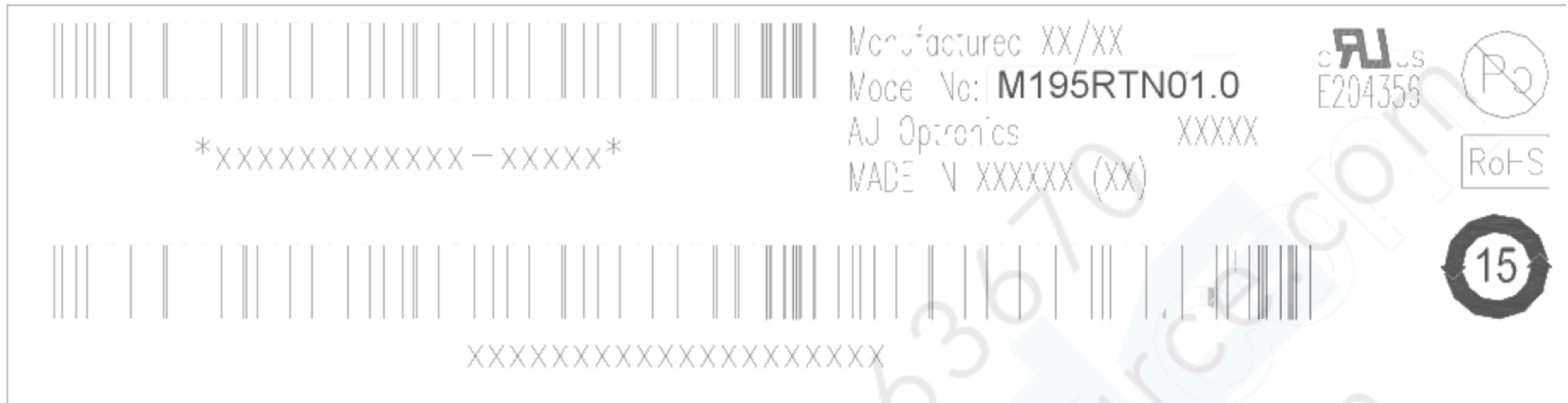
No data lost

Self-recoverable

No hardware failures.

6 Shipping Label

The label is on the panel as shown below:



Note 6-1: For Pb Free products, AUO will add  for identification.

Note 6-2: For RoHS compatible products, AUO will add  for identification.

Note 6-3: For China RoHS compatible products, AUO will add  for identification.

Note 6-4: The Green Mark will be presented only when the green documents have been ready by AUO Internal Green Team.

NOTE:

1. THE DIMENSION EXCLUDES DEFORMATION.
2. TOLERANCE WITHOUT NOTICED TO BE $\pm 0.5\text{mm}$.
3. SUGGEST FOR CUSTOMER SCREW SELECTION:
CUSTOMER ASSEMBLY TOLERANCE + CUSTOMER CHASSIS THICKNESS
4. TORQUE OF M3 USER HOLE SHOULD BE WITHIN 3 kgf-cm
AND JUST RESCREW 10 TIMES.
5. USER HOLE SCREW PENETRATION IS 2.1mm MAX.

SECTION A-A
SCALE 2:000

SECTION B-B
SCALE 2:000

SECTION C-C
SCALE 2:000

SECTION D-D
SCALE 2:000

SECTION E-E
SCALE 2:000

SECTION F-F
SCALE 2:000

SECTION G-G
SCALE 2:000

SECTION H-H
SCALE 2:000

SECTION I-I
SCALE 2:000

SECTION J-J
SCALE 2:000

SECTION K-K
SCALE 2:000

SECTION L-L
SCALE 2:000

SECTION M-M
SCALE 2:000

SECTION N-N
SCALE 2:000

SECTION O-O
SCALE 2:000

SECTION P-P
SCALE 2:000

SECTION Q-Q
SCALE 2:000

SECTION R-R
SCALE 2:000

SECTION S-S
SCALE 2:000

SECTION T-T
SCALE 2:000

SECTION U-U
SCALE 2:000

SECTION V-V
SCALE 2:000

SECTION W-W
SCALE 2:000

SECTION X-X
SCALE 2:000

SECTION Y-Y
SCALE 2:000

SECTION Z-Z
SCALE 2:000

SECTION AA-AA
SCALE 2:000

SECTION BB-BB
SCALE 2:000

SECTION CC-CC
SCALE 2:000

SECTION DD-DD
SCALE 2:000

SECTION EE-EE
SCALE 2:000

SECTION FF-FF
SCALE 2:000

SECTION GG-GG
SCALE 2:000

SECTION HH-HH
SCALE 2:000

SECTION II-II
SCALE 2:000

SECTION JJ-JJ
SCALE 2:000

SECTION KK-KK
SCALE 2:000

SECTION LL-LL
SCALE 2:000

SECTION MM-MM
SCALE 2:000

SECTION NN-NN
SCALE 2:000

SECTION OO-OO
SCALE 2:000

SECTION PP-PP
SCALE 2:000

SECTION QQ-QQ
SCALE 2:000

SECTION RR-RR
SCALE 2:000

SECTION SS-SS
SCALE 2:000

SECTION TT-TT
SCALE 2:000

SECTION UU-UU
SCALE 2:000

SECTION VV-VV
SCALE 2:000

SECTION WW-WW
SCALE 2:000

SECTION XX-XX
SCALE 2:000

SECTION YY-YY
SCALE 2:000

SECTION ZZ-ZZ
SCALE 2:000

SECTION AA-AA
SCALE 2:000

SECTION BB-BB
SCALE 2:000

SECTION CC-CC
SCALE 2:000

SECTION DD-DD
SCALE 2:000

SECTION EE-EE
SCALE 2:000

SECTION FF-FF
SCALE 2:000

SECTION GG-GG
SCALE 2:000

SECTION HH-HH
SCALE 2:000

SECTION II-II
SCALE 2:000

SECTION JJ-JJ
SCALE 2:000

SECTION KK-KK
SCALE 2:000

SECTION LL-LL
SCALE 2:000

SECTION MM-MM
SCALE 2:000

SECTION NN-NN
SCALE 2:000

SECTION OO-OO
SCALE 2:000

SECTION PP-PP
SCALE 2:000

SECTION QQ-QQ
SCALE 2:000

SECTION RR-RR
SCALE 2:000

SECTION SS-SS
SCALE 2:000

SECTION TT-TT
SCALE 2:000

SECTION UU-UU
SCALE 2:000

SECTION VV-VV
SCALE 2:000

SECTION WW-WW
SCALE 2:000

SECTION XX-XX
SCALE 2:000

SECTION YY-YY
SCALE 2:000

SECTION ZZ-ZZ
SCALE 2:000

SECTION AA-AA
SCALE 2:000

SECTION BB-BB
SCALE 2:000

SECTION CC-CC
SCALE 2:000

SECTION DD-DD
SCALE 2:000

SECTION EE-EE
SCALE 2:000

SECTION FF-FF
SCALE 2:000

SECTION GG-GG
SCALE 2:000

SECTION HH-HH
SCALE 2:000

SECTION II-II
SCALE 2:000

SECTION JJ-JJ
SCALE 2:000

SECTION KK-KK
SCALE 2:000

SECTION LL-LL
SCALE 2:000

SECTION MM-MM
SCALE 2:000

SECTION NN-NN
SCALE 2:000

SECTION OO-OO
SCALE 2:000

SECTION PP-PP
SCALE 2:000

SECTION QQ-QQ
SCALE 2:000

SECTION RR-RR
SCALE 2:000

SECTION SS-SS
SCALE 2:000

SECTION TT-TT
SCALE 2:000

SECTION UU-UU
SCALE 2:000

SECTION VV-VV
SCALE 2:000

SECTION WW-WW
SCALE 2:000

SECTION XX-XX
SCALE 2:000

SECTION YY-YY
SCALE 2:000

SECTION ZZ-ZZ
SCALE 2:000

SECTION AA-AA
SCALE 2:000

SECTION BB-BB
SCALE 2:000

SECTION CC-CC
SCALE 2:000

SECTION DD-DD
SCALE 2:000

SECTION EE-EE
SCALE 2:000

SECTION FF-FF
SCALE 2:000

SECTION GG-GG
SCALE 2:000

SECTION HH-HH
SCALE 2:000

SECTION II-II
SCALE 2:000

SECTION JJ-JJ
SCALE 2:000

SECTION KK-KK
SCALE 2:000

SECTION LL-LL
SCALE 2:000

SECTION MM-MM
SCALE 2:000

SECTION NN-NN
SCALE 2:000

SECTION OO-OO
SCALE 2:000

SECTION PP-PP
SCALE 2:000

SECTION QQ-QQ
SCALE 2:000

SECTION RR-RR
SCALE 2:000

SECTION SS-SS
SCALE 2:000

SECTION TT-TT
SCALE 2:000

SECTION UU-UU
SCALE 2:000

SECTION VV-VV
SCALE 2:000

SECTION WW-WW
SCALE 2:000

SECTION XX-XX
SCALE 2:000

SECTION YY-YY
SCALE 2:000

SECTION ZZ-ZZ
SCALE 2:000

SECTION AA-AA
SCALE 2:000

SECTION BB-BB
SCALE 2:000

SECTION CC-CC
SCALE 2:000

SECTION DD-DD
SCALE 2:000

SECTION EE-EE
SCALE 2:000

SECTION FF-FF
SCALE 2:000

SECTION GG-GG
SCALE 2:000

SECTION HH-HH
SCALE 2:000

SECTION II-II
SCALE 2:000

SECTION JJ-JJ
SCALE 2:000

SECTION KK-KK
SCALE 2:000

SECTION LL-LL
SCALE 2:000

SECTION MM-MM
SCALE 2:000

SECTION NN-NN
SCALE 2:000

SECTION OO-OO
SCALE 2:000

SECTION PP-PP
SCALE 2:000

SECTION QQ-QQ
SCALE 2:000

SECTION RR-RR
SCALE 2:000

SECTION SS-SS
SCALE 2:000

SECTION TT-TT
SCALE 2:000

SECTION UU-UU
SCALE 2:000

SECTION VV-VV
SCALE 2:000

SECTION WW-WW
SCALE 2:000

SECTION XX-XX
SCALE 2:000

SECTION YY-YY
SCALE 2:000

SECTION ZZ-ZZ
SCALE 2:000

SECTION AA-AA
SCALE 2:000

SECTION BB-BB
SCALE 2:000

SECTION CC-CC
SCALE 2:000

SECTION DD-DD
SCALE 2:000

SECTION EE-EE
SCALE 2:000

SECTION FF-FF
SCALE 2:000

SECTION GG-GG
SCALE 2:000

SECTION HH-HH
SCALE 2:000

SECTION II-II
SCALE 2:000

SECTION JJ-JJ
SCALE 2:000

SECTION KK-KK
SCALE 2:000

SECTION LL-LL
SCALE 2:000

SECTION MM-MM
SCALE 2:000

SECTION NN-NN
SCALE 2:000

SECTION OO-OO
SCALE 2:000

SECTION PP-PP
SCALE 2:000

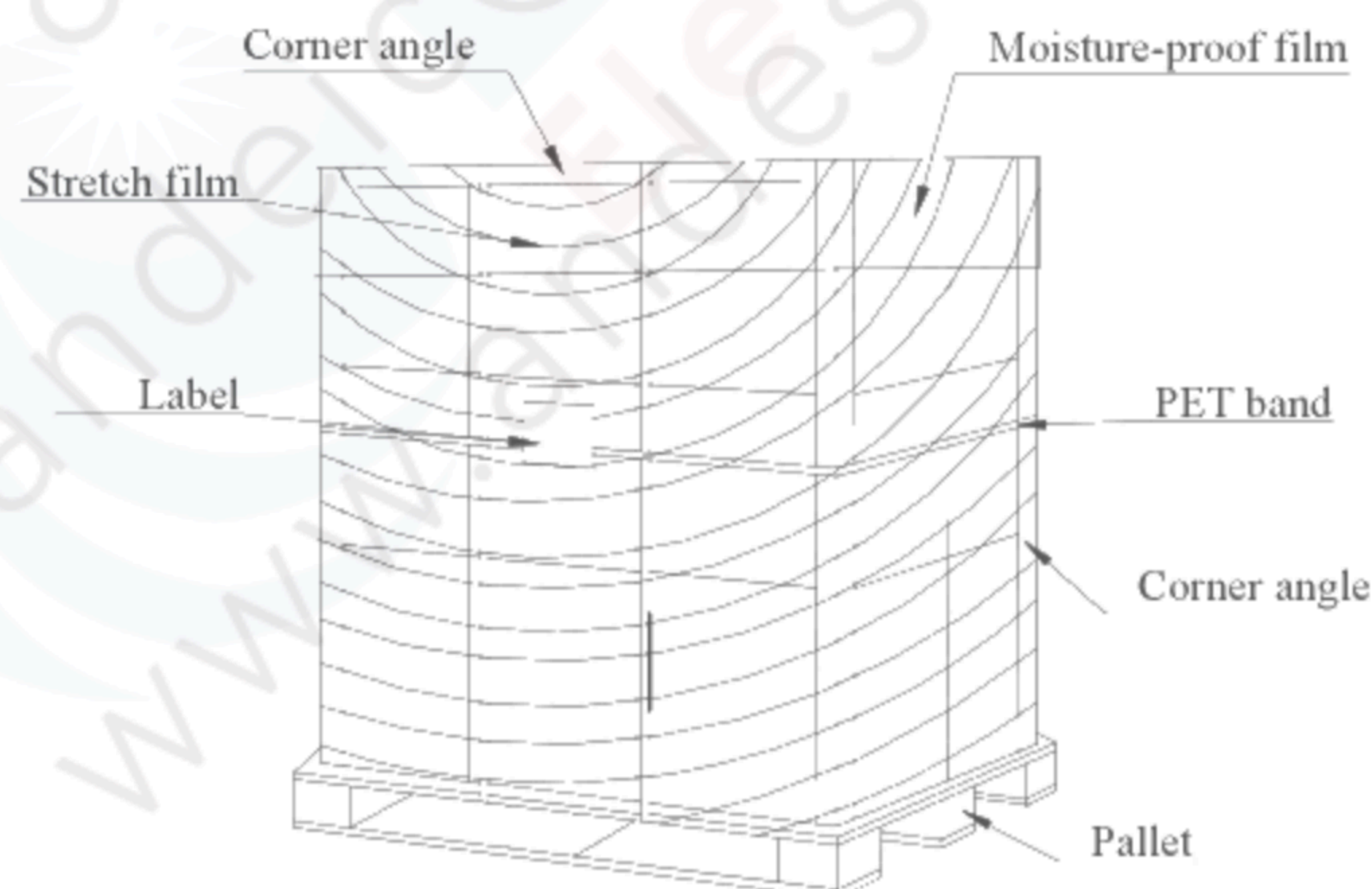
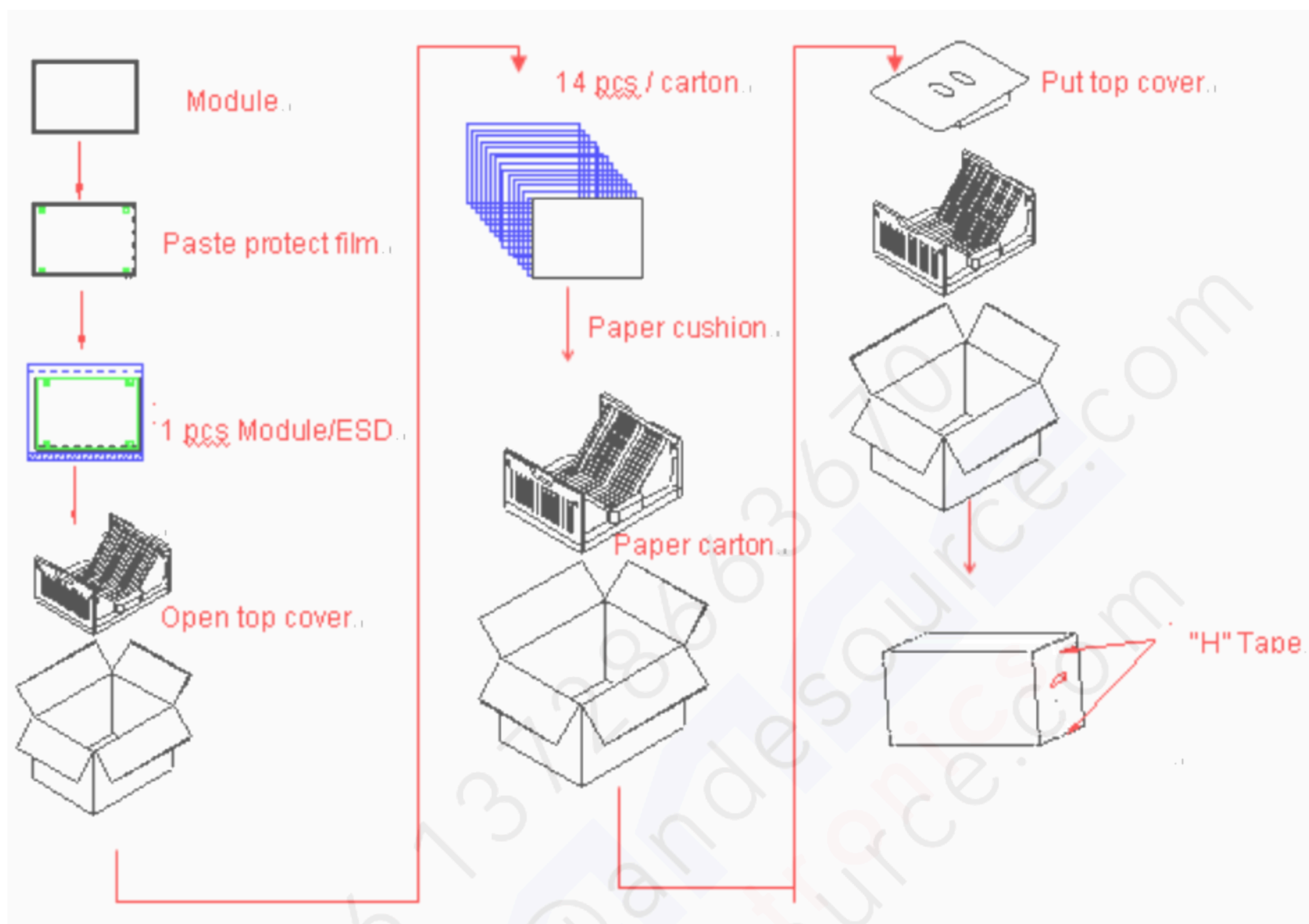
SECTION QQ-QQ
SCALE 2:000

SECTION RR-RR

Avoid touching COF position when doing mechanical design

8 Packing Specification

8.1 Packing Flow



8.2 Pallet and shipment information

Item	Specification			Remark
	Q'ty	Dimension	Weight(kg)	
1	Panel	1	452.0(H)mmx263(V)mmx10.5(D)mm	1.4 Kg
2	Cushion	1	-	1.92 Kg
3	Box	1	526(L)mm x 299(W)mm x 335(H)mm	0.7Kg
4	Packing Box	14 pcs/Box	526(L)mm x 299(W)mm x 335(H)mm	22.22Kg
5	Pallet	1	1150(L)mm x 910(W)mm x 138(H)mm	15Kg
6	Pallet after Packing	18boxes/ pallet	1150(L)mm x 910(W)mm x 1143(H)mm	414.96Kg