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MODEL NO. : ET-G1323TC101FF-002

ISSUED DATE: **2019-02-25**

VERSION : **A0**

□**Preliminary Specification**

■**Final Product Specification**

Customer :

Approved by	Notes

GVO Confirmed :

Prepared by	Checked by	Approved by

This technical specification is subjected to change without notice.

Table of Contents

Record of Revision

Rev	Issue Date	Description	Editor
A0	2019-02-25	Draft	Yang Xingxing

1 General Specifications

Feature		Spec	Remark
Display Spec	Screen Size (inch)	4.01	
	Display Mode	AMOLED	
	Resolution(dot)	192(W) x 960(H)	
	Active Area(mm)	19.99(W)×99.94 (H)	
	Pixel Pitch (um)	104.1(W) x 104.1 (H)	
	Pixel Configuration	V-Style3	
	Technology Type	LTPS	
	Color Depth	16.7M	
	Interface	MIPI 1 LANE	
	Surface Treatment	Hard Coating	
Mechanical Characteristics	With TP/Without TP	With TP	
	Module Outline Dimension(W x H x D) (mm)	27.39(W) x 111.74(H) x 0.81（D）	Including Cover lens
	Minimum Bending Radius(mm)	15	
Electronic	Driver IC(Type)	RM69330	
	Refresh frequency	Normal mode:42HZ	
		AOD mode : 30HZ	
		Allowable error：set value±4HZ	
	Touch IC(Type)	GT9886	

Note 1: Requirements on Environmental Protection: RoHS 2.0.

2 Input/output Terminals

2.1 Main FPC Pin Assignment

FPC connector:：BM23FR0.6-30DP-0.35V(51) （HIROSE）

Main board recommended connector ： BM23FR0.6-30DS-0.35V(51) （HIROSE）

No	Symbol	I/O	Description
1	GND	GND	Ground
2	GND	GND	Ground
3	TP_SDA	I/O	SDA pin for TP
4	GND	GND	Ground
5	TP_SCL	I	SCL pin for TP
6	ELVSS_O	POWER	AMOLED negative power supply
7	TP_RESET	I	Reset Pin for TP, Active low
8	ELVSS_O	POWER	AMOLED negative power supply
9	TP_INT	O	TP Interrupt
10	GND	GND	Ground
11	TP_VDD	POWER	TP Power
12	ELVDD_O	POWER	AMOLED positive power supply
13	GND	GND	Ground
14	ELVDD_O	POWER	AMOLED positive power supply
15	CLKP	I	MIPI positive clock signal
16	VCI	POWER	Power supply for driver IC analog circuit
17	CLKN	I	MIPI negative clock signal
18	GND	GND	Ground
19	GND	GND	Ground
20	SWIRE	O	SWIRE signal for power IC control
21	D0P	I/O	MIPI positive data signal
22	XRES	I	Display reset. Active low.
23	D0N	I/O	MIPI negative data signal
24	TE	O	Vsync signal output from panel to avoid tearing effect
25	GND	GND	Ground
26	OTP	POWER	Power supply for MTP Programming or Erase. If it is not used please open it.

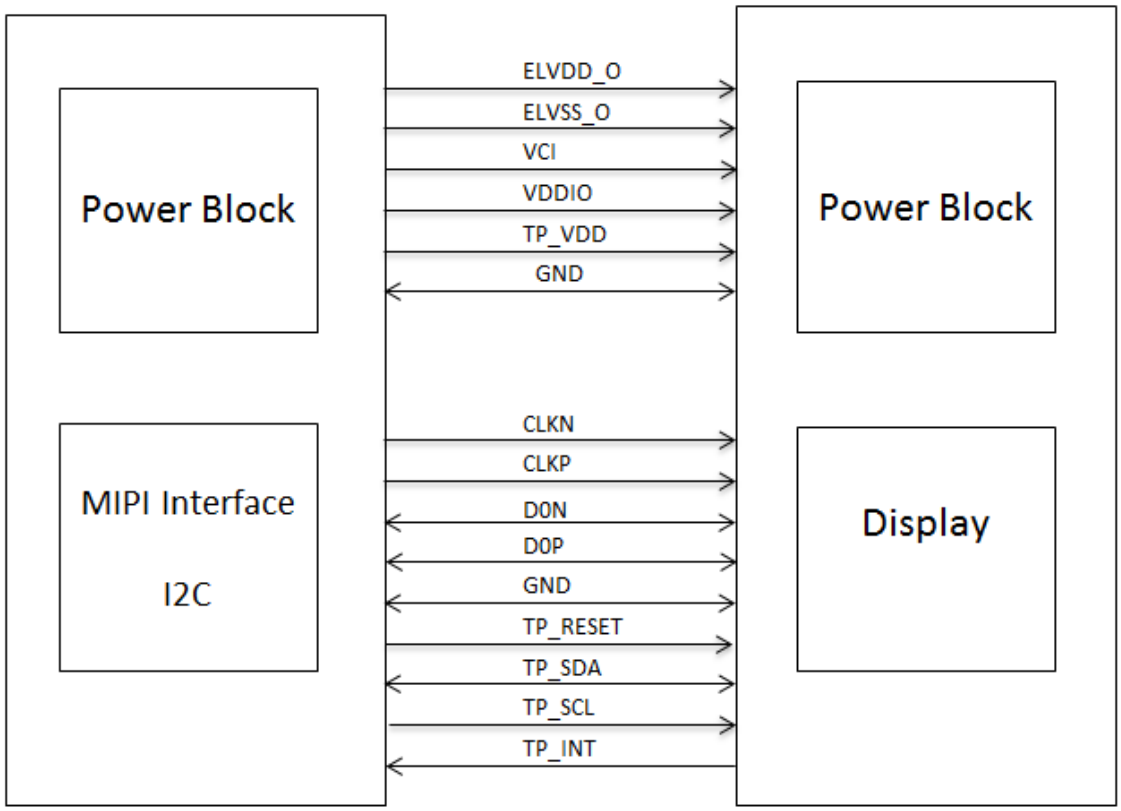
27	VDDIO	POWER	Power supply for driver IC digital circuits
28	GND	GND	Ground
29	GND	GND	Ground
30	GND	GND	Ground

Note: I=Input; O=Output; P=Power; I/O=Input / Output

2.2 TP FPC Pin Assignment

No	Symbol	I/O	Description
1	GND	GND	Ground
2	TP_VDD	POWER	TP Power
3	TP_SDA	I/O	SDA pin for TP
4	TP_SCL	I	SCL pin for TP
5	TP_INT	O	TP Interrupt
6	TP_RESET	I	Reset Pin for TP, Active low
7	GND	GND	Ground

2.3 System BD and Display Module Interface Conflagration



3 Absolute Maximum Ratings

3.1 Driving AMOLED Panel

Maximum Ratings (Voltage Referenced to VSS) VSS=0V, Ta=25ºC

Item	Symbol	MIN	MAX	Unit
Analog Power supply	VCI	-0.3	+5.5	V
Logic Power supply	VDDIO	-0.3	+5.5	V
Positive power for OLED	ELVDD	+4.0	+5.0	V
Negative power for OLED	ELVSS	-1.0	-5.0	V
Touch analog power supply	TP_VDD	-0.3	4.2	V
Touch IC input current at any pin		-	+/-100	mA

Note: Functional operation should satisfy the limits in the Electrical Characteristics tables or Pin Description section. If the module exceeds the absolute maximum ratings, permanent damage may occur. Besides, if the module is operated with the absolute maximum ratings for a long time, the reliability may also drop.

4 Electrical Characteristics

4.1 Driving AMOLED Panel

Ta=25℃

Item		Symbol	MIN	TYP	MAX	Unit
Logic Power supply		VDDIO	1.65	1.80	3.30	V
Analog Power supply		VCI	2.70	2.80	3.60	V
Default Positive Output Voltage		ELVDD	-	4.60	-	V
Positive Output voltage total variation			-0.80	-	+0.80	%
Default Negative Output voltage		ELVSS	-1.00	-3.00	-4.00	V
Negative output voltage total variation			-1.00	-	+1.00	%
Touch analog power supply		TP_VDD	2.7	2.8/3.3	3.4	V
Input Signal Voltage	High Level	VIH	0.80*VDDIO	-	VDDIO	V
	Low Level	VIL	0.00	-	0.20*VDDIO	V
Output Signal Voltage	High Level	VOH	0.80*VDDIO	-	VDDIO	V
	Low Level	VOL	0.00	-	0.20*VDDIO	V
Normal		I_{ELVDD} /I_{ELVSS}	-	52	55.26	mA
		I_{VCI}	-	6.5	8	mA
		I_{VDDIO}	-	2.6	3.2	mA
Stand-by		I_{VCI}	-	0.7	1.0	uA

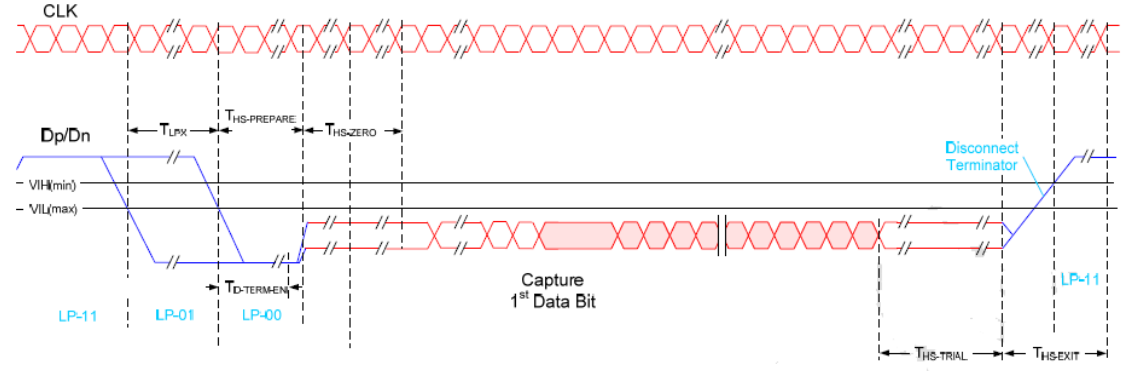
	I_{VDDIO}	-	5.6	6.4	uA
Normal	$P_{ELVDD- ELVSS}$	-	395.2	420	mW
	P_{VCI}	-	18.2	22.4	mW
	P_{VDDIO}	-	4.68	5.76	mW
Stand-by	P_{VCI}	-	1.96	2.8	uW
	P_{VDDIO}	-	10.08	11.52	uW

Note: The current and power consumption were tested under White pattern，25℃

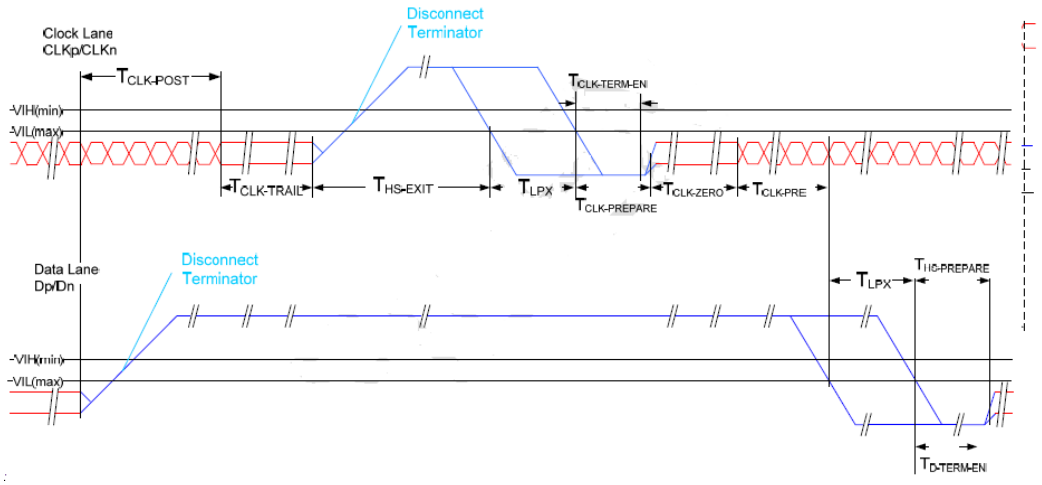
5 AC Characteristics

5.1 MIPI Interface Characteristics

HS Data Transmission Burst



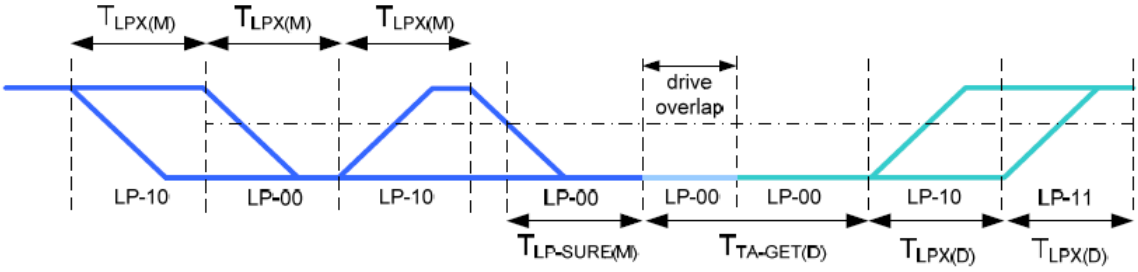
HS clock transmission



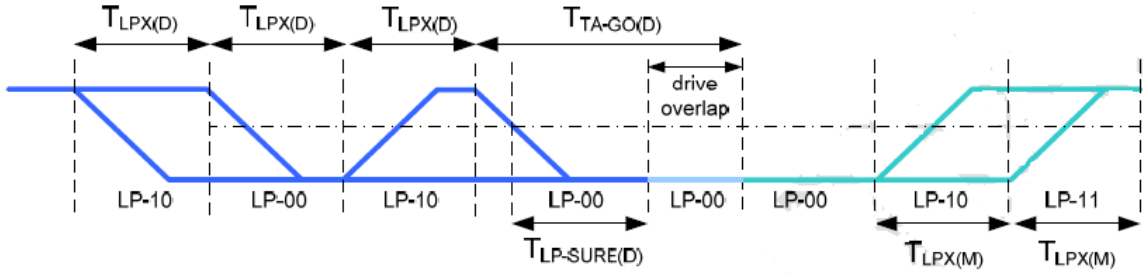
Timing Parameter:

Parameter	Description	Min	Typ	Max	Unit
$T_{CLK-POST}$	Time that the transmitter continues to send HS clock after the last associated Data Lane has transitioned to LP Mode. Interval is defined as the period from the end of $T_{HS-TRAIL}$ to the beginning of $T_{CLK-TRAIL}$.	60ns + 52*UI			ns
$T_{CLK-TRAIL}$	Time that the transmitter drives the HS-0 state after the last payload clock bit of a HS transmission burst.	60			ns
$T_{HS-EXIT}$	Time that the transmitter drives LP-11 following a HS burst.	**300**			ns
$T_{CLK-TERM-EN}$	Time for the Clock Lane receiver to enable the HS line termination, starting from the time point when Dn crosses $V_{IL,MAX}$.	Time for Dn to reach $V_{TERM-EN}$		38	ns
$T_{CLK-PREPARE}$	Time that the transmitter drives the Clock Lane LP-00 Line state immediately before the HS-0 Line state starting the HS transmission.	38		95	ns
$T_{CLK-PRE}$	Time that the HS clock shall be driven by the transmitter prior to any associated Data Lane beginning the transition from LP to HS mode.	8			UI
$T_{CLK-PREPARE}$ + $T_{CLK-ZERO}$	$T_{CLK-PREPARE}$ + time that the transmitter drives the HS-0 state prior to starting the Clock.	300			ns
$T_{D-TERM-EN}$	Time for the Data Lane receiver to enable the HS line termination, starting from the time point when Dn crosses $V_{IL,MAX}$.	Time for Dn to reach $V_{TERM-EN}$		35 ns +4*UI	
$T_{HS-PREPARE}$	Time that the transmitter drives the Data Lane LP-00 Line state immediately before the HS-0 Line state starting the HS transmission	40ns + 4*UI		85 ns + 6*UI	ns
$T_{HS-PREPARE}$ + $T_{HS-ZERO}$	**$T_{HS-PREPARE}$ + time that the transmitter drives the HS-0 state prior to transmitting the Sync sequence.**	**145ns + 10*UI**			**ns**
$T_{HS-TRAIL}$	Time that the transmitter drives the flipped differential state after last payload data bit of a HS transmission burst	60ns + 4*UI			ns

Turnaround Procedure



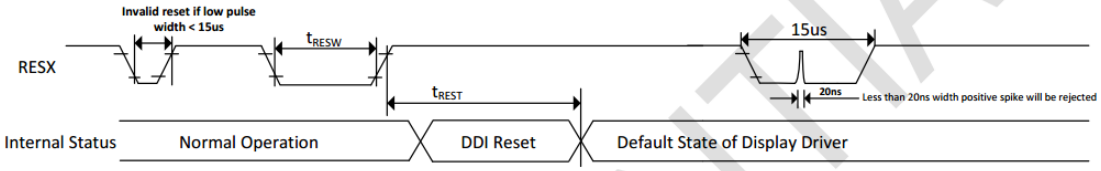
Bus turnaround (BAT) from MPU to display module timing



Low Power Mode：

Parameter	Description	Min	Typ	Max	Unit	Notes
$T_{LPX(M)}$	Transmitted length of any Low-Power state period of MCU to display module	50		**150**	ns	1,2
$T_{TA-SURE(M)}$	Time that the display module waits after the LP-10 state before transmitting the Bridge state (LP-00) during a Link Turnaround.	$T_{LPX(M)}$		$2*T_{LPX(M)}$	ns	2
$T_{LPX(D)}$	Transmitted length of any Low-Power state period of display module to MCU	50		**150**	ns	1,2
$T_{TA-GET(D)}$	Time that the display module drives the Bridge state (LP-00) after accepting control during a Link Turnaround.		$5*T_{LPX(D)}$		ns	2
$T_{TA-GO(D)}$	Time that the display module drives the Bridge state (LP-00) before releasing control during a Link Turnaround.		$4*T_{LPX(D)}$		ns	2
$T_{TA-SURE(D)}$	Time that the MPU waits after the LP-10 state before transmitting the Bridge state (LP-00) during a Link Turnaround.	$T_{LPX(D)}$		$2*T_{LPX(D)}$	ns	2

5.2 Display RESET Timing Characteristics
Reset input timing:



VDDIO=1.65 to 3.3V, VCI=2.7 to 3.6V, AGND=DGND=0V, Ta=-40 to 85℃

Timing Parameters

Symbol	Parameter	Related Pins	MIN	TYP	MAX	Note	Unit
t_{RESW}	*1) Reset low pulse width	RESX	10	-	-	-	µs
t_{REST}	*2) Reset complete time	-	-	-	5	When reset applied during Sleep in mode	ms
		-		-	120	When reset applied during Sleep out mode	ms

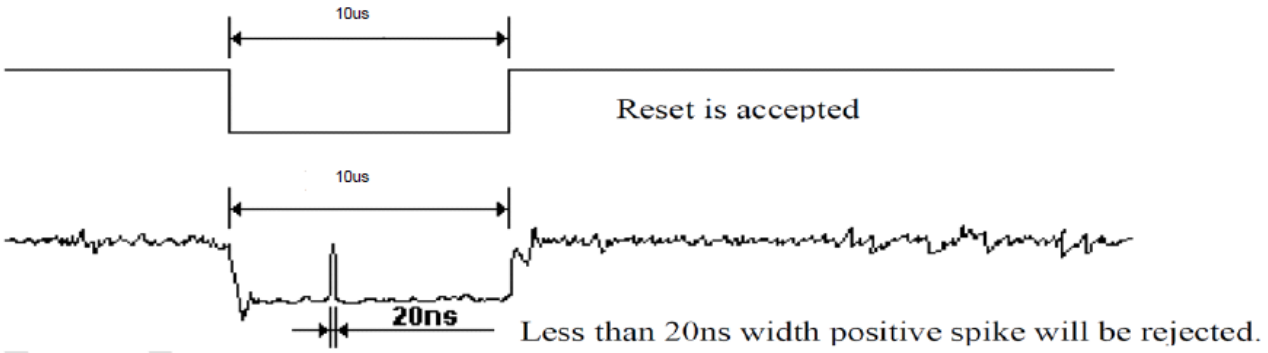
Note1.Spike caused by an electrostatic discharge on RESX line does not cause irregular system reset according to the table below.

RESX Pulse	Action
Shorter than 5µs	Reset Rejected
Longer than 10µs	Reset
Between 5µs and 10µs	Reset starts (It depends on voltage and temperature condition.)

Note 2. During the resetting period, the display will be blank (The display is entering blanking sequence, whose maximum time is 120 ms, when Reset Starts in Sleep Out –mode. The display remains blank in Sleep In –mode) and then return to Default condition for H/W reset.

Note 3. During Reset Complete Time, data in OTP will be latched to internal register during this period. This loading is done every time when there is H/W reset complete time (tREST) within 5ms after a rising edge of RESX.

Note 4. Spike Rejection also applies during a valid reset pulse as shown below:

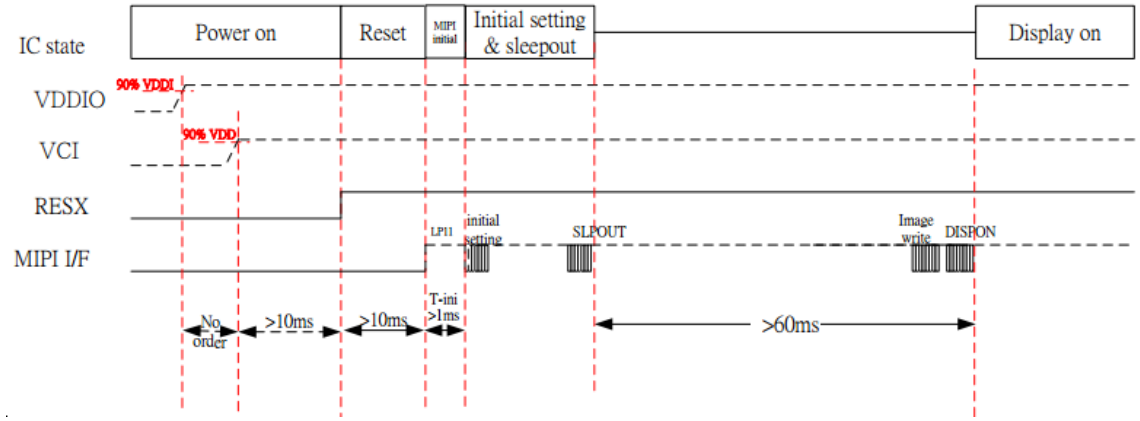


Note 5. It is necessary to wait 5msec after releasing RESX before sending commands. Also Sleep Out command cannot be sent for 120msec.

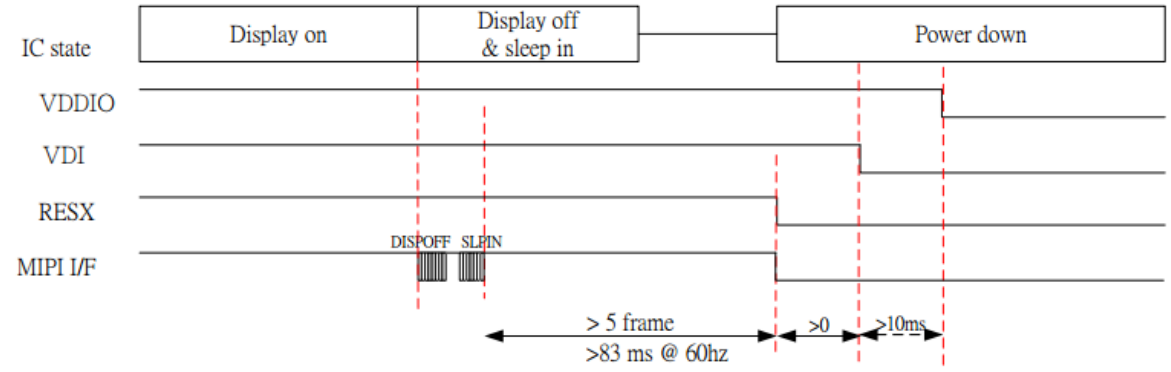
6 Recommended Operating Sequence

6.1 Display Power on / off Sequence

6.1.1 Power On Sequence



6.1.2 Power Off Sequence



7 Optical Characteristics Optical Specification

Item		Symbol	Condition	Min	Typ	Max	Unit	Remark
View Angle		θT	CR≥10	75	85		Degree	Note 2 Test Equipment：CS2000A
		θB		75	85			
		θL		75	85			
		θR		75	85			
Contrast Ratio		CR	θ=0°	17500				Note1 Note3 Test Equipment：CS2000A
Response Time		T_{ON}	25℃			1	ms	Note1 Note4 Test Equipment：Admesy MSE
		T_{OFF}						
Chromaticity	White	x		(0.285)	(0.300)	(0.315)		Test Equipment：CS2000A Note: Chromaticity can be modified according to customer demand
		y		(0.295)	(0.310)	(0.325)		
	Red	x		(0.655)	(0.680)	(0.705)		
		y		(0.29)	(0.315)	(0.34)		
	Green	x		(0.220)	(0.250)	(0.280)		
		y		(0.680)	(0.710)	(0.740)		
	Blue	x		(0.115)	(0.140)	(0.165)		
		y		(0.025)	(0.050)	(0.075)		
Uniformity		U		80			%	Note1 Note6 luminance of center point is 350±50nits Test Equipment：CS2000A
NTSC				90	100		%	Note5
Luminance		L		300	350	400	Cd/m^2	Note1 Note7 Test Equipment：CS2000A
Cross-talk						1.5	%	Note8 L≤350nits Test Equipment：CS2000A

Gamma			2.0	2.2	2.4		Gamma=2.2±0.2（L≤350nits）； Gamma Self-adjustment (L＞350nits) Test Equipment：CS2000A

Test Conditions:

1. the ambient temperature is 25℃.
2. The test systems refer to Note1 and Note2.

Note 1: Definition of optical measurement system.

The optical characteristics should be measured in dark room. The optical properties are measured at the center point of the AMOLED screen. All input terminals AMOLED panel must be ground when measuring the center area of the panel.

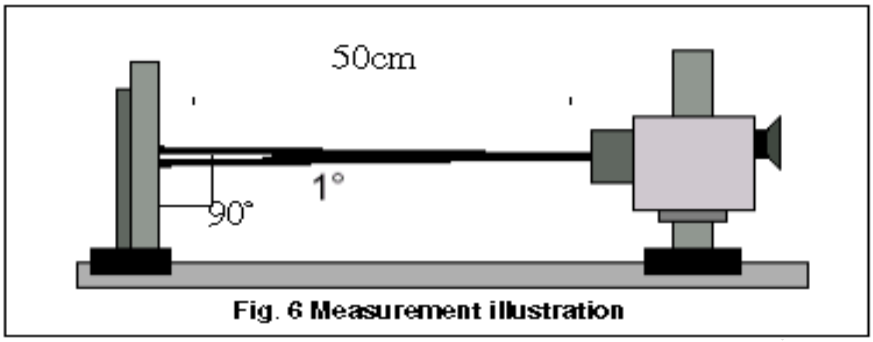
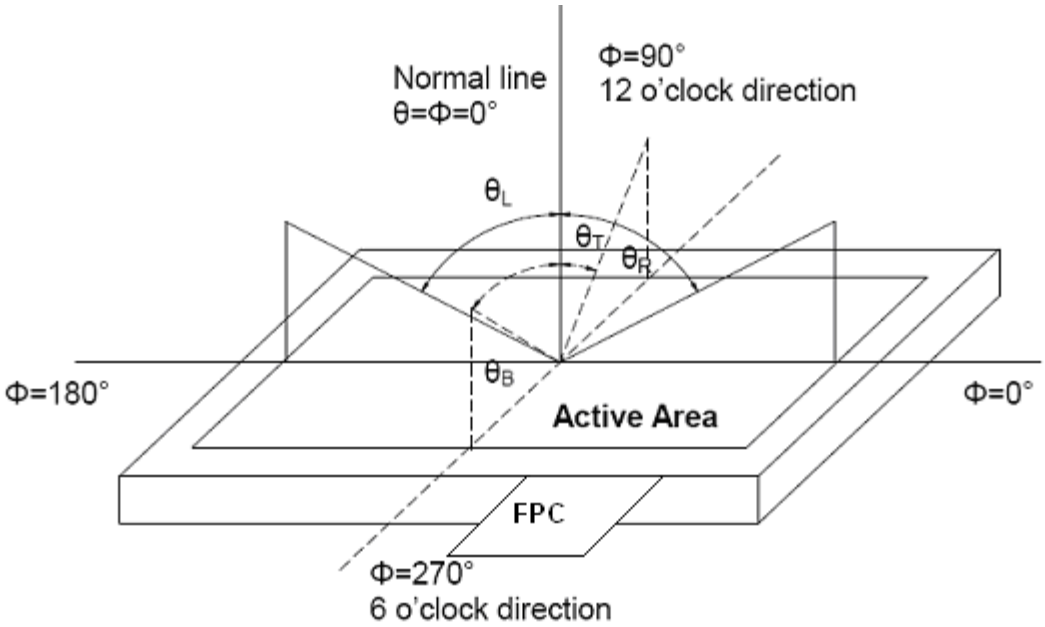


Fig. 6 Measurement illustration

Note 2: Definition of viewing angle range and measurement system.



Note 3: Definition of contrast ratio

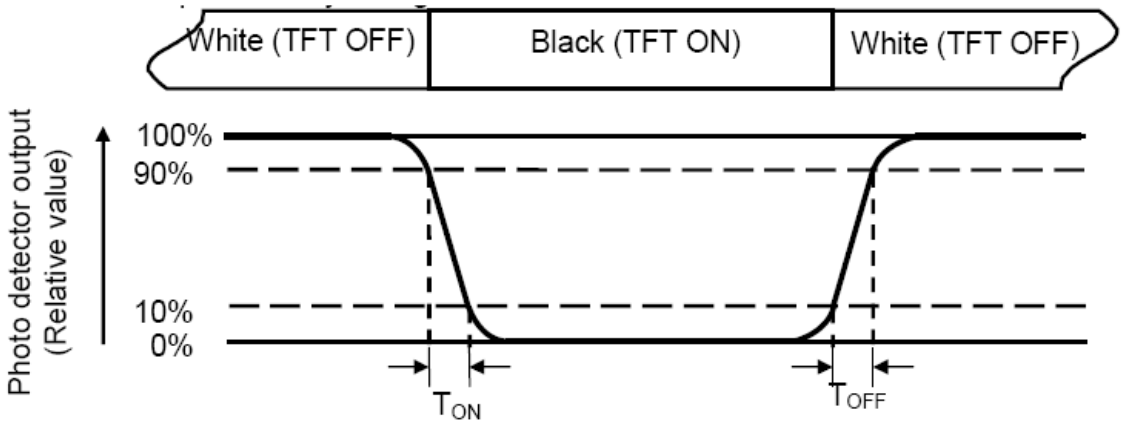
$$\text{Contrast ratio(CR)} = \frac{\text{Luminance measured when LCD is on the "white" state}}{\text{Luminance measured when LCD is on the "Black" state}}$$

“White state “: A state where the AMOLED should be driven by Vwhite.

“Black state”: A state where the AMOLED should be driven by Vblack.

Note 4: Definition of response time

The response time is defined as the AMOLED optical switching time interval between “White” state and “Black” state. Rise time (T_{ON}) is the time between photo detector output intensity changing from 90% to 10%. And fall time (T_{OFF}) is the time between photo detector output intensity changing from 10% to 90%.



Note 5: Definition of color chromaticity (CIE1931)

Color coordinates measured at center point of AMOLED.

Note 6: Definition of luminance uniformity

Active area is divided into 9 measuring areas (Refer Fig. 2). Every measuring point is placed at the center of each measuring area.

Luminance Uniformity(U) = Lmin/ Lmax

L-------Active area length W----- Active area width

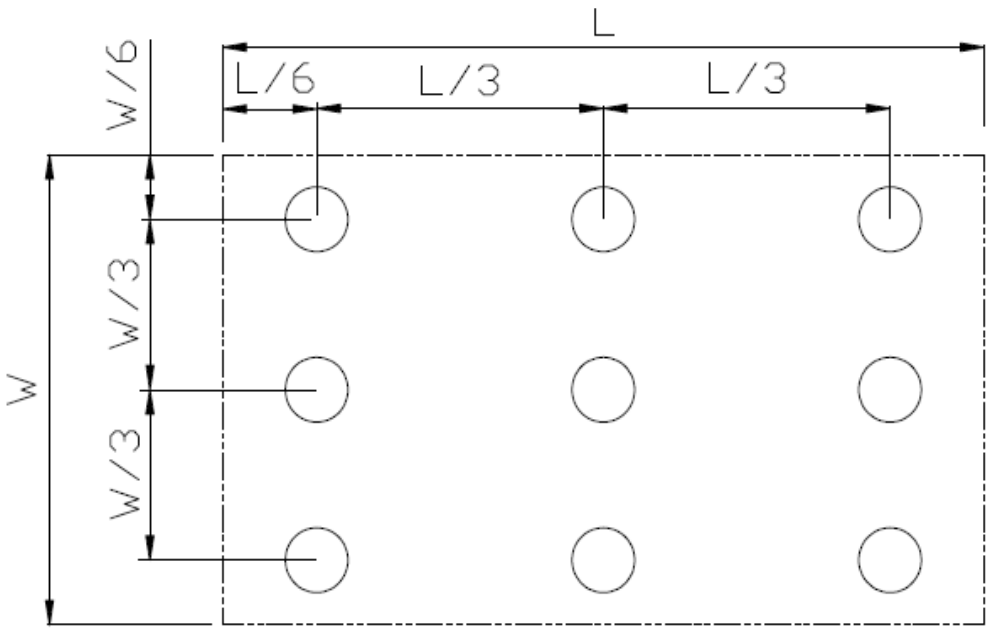


Fig. 2 Definition of uniformity

Lmax: The measured maximum luminance of all measurement position.

Lmin: The measured minimum luminance of all measurement position.

Note 7: Definition of luminance:

Measure the luminance of white state at center point.

Note 8: Cross Talk

A. Measure luminance at the position, P0.

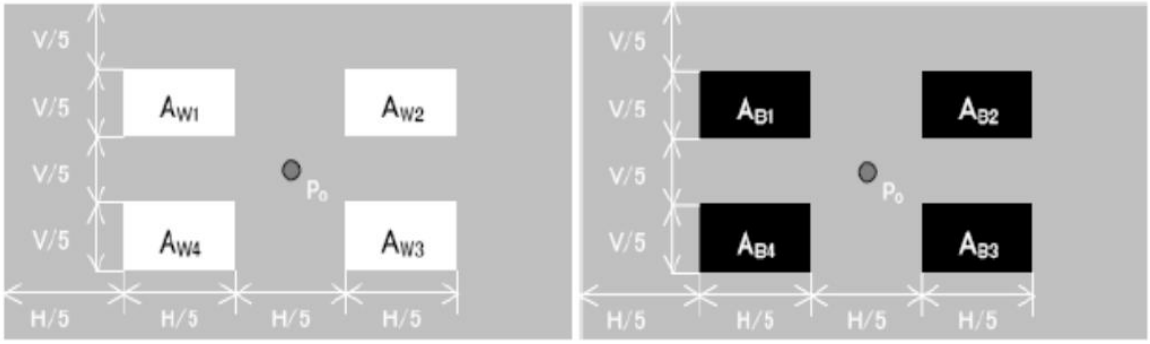
B. Calculate cross talk as below equation.

$$L_{W\_OFF} = \frac{L_{W1} + L_{W2} + L_{W3} + L_{W4}}{4}$$

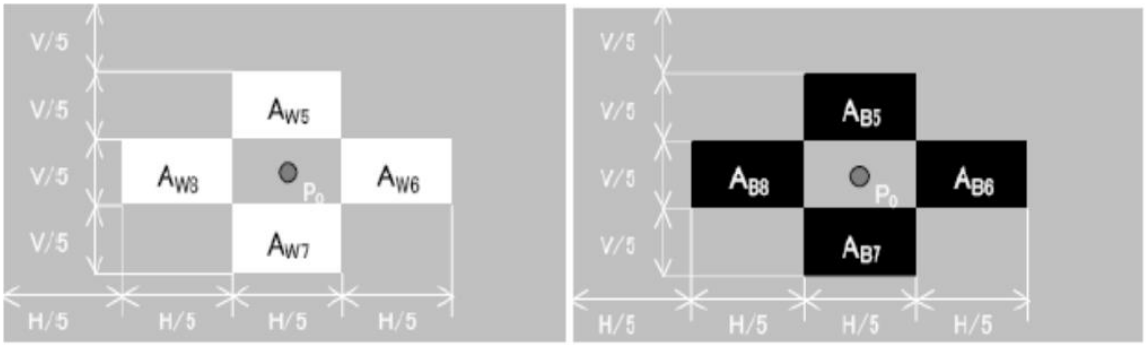
$$L_{B\_OFF} = \frac{L_{B1} + L_{B2} + L_{B3} + L_{B4}}{4}$$

$$crosstalk = \frac{|L_{Wi\_ON} - L_{W\_OFF}|}{L_{W\_OFF}} \times 100\% \qquad (i = 5 \text{ to } 8)$$

$$crosstalk = \frac{|L_{Bi\_ON} - L_{B\_OFF}|}{L_{B\_OFF}} \times 100\% \qquad (i = 5 \text{ to } 8)$$

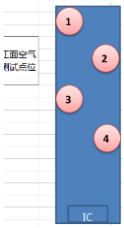
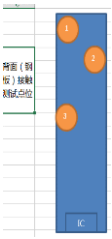


(a) L_{W_OFF}, L_{B_OFF} measuring pattern



(b) L_{W_ON}, L_{B_ON} measuring pattern

8 Environmental / Reliability Test

No	Test Item	Condition	Remark
1	High Temperature Operation	+60℃, 120hrs	IEC60068-2-2,GB2423.2
2	Low Temperature Operation	-20℃, 120hrs	IEC60068-2-1 GB2423.1
3	High Temperature Storage	+70℃, 120hrs	IEC60068-2-2 GB2423.2
4	Low Temperature Storage	-40℃, 120hrs	IEC60068-2-1 GB2423.1
5	High Temperature & High Humidity Operation	60℃, 90% RH,120hrs	IEC60068-2-78 GB/T2423.3
6	Thermal Shock (Non-operation)	-40℃(60 min)~+80℃(60 min), 24Cycles	Start with cold temperature, End with high temperature, IEC60068-2-14,GB2423.22
7	Electro Static Discharge (Operation)	C=150pF, R=330Ω，3 points/panel Air:±8KV, 10 times; Contact:±4KV, 10 times; (Environment: 15℃~35℃, 30%~60%, 86Kpa~106Kpa).  	IEC61000-4-2 GB/T17626.2 Note: **Steel grounding**

9 Quality Level

9.1 AMOLED Module of Characteristic Inspection

The environmental condition and visual inspection shall be conducted as below:

(1) Ambient temperature: 23± 3℃

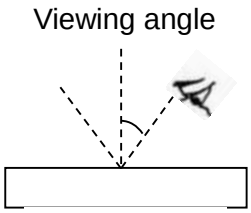
(2) Humidity: 55 ± 10%RH

(3) Ambient light intensity of visual inspection: 800 ~1300 lux

(4) Ambient light intensity of electrical inspection: <200lux

(5) Viewing Distance: 30~35cm

(6) Viewing angle: ±45°



9.2 Sampling Procedures for each item acceptance table

Defect type	Sampling Procedures	AQL
Major defect	GB/T2828.1-2012 Inspection levelⅡ normal inspection single sample inspection	0.4
Minor defect	GB/T2828.1-2012 Inspection levelⅡ normal inspection single sample inspection	0.65

Major defect:

Any defect may result in functional failure, or reduce the usability of product for its purpose. For example, no display, abnormal display, bright lines, dark lines, dimensional mismatch, etc.

Minor defect:

A defect does not reduce the usability of product for its intended purpose, such as bright and dark dot, foreign body, scratch, bubble, un-uniformity display, etc.

The criteria on major and/or minor judgment will be according with the degree of impact on the quality of product.

9.3 Appearance Inspection Item

No	Item	Level Surface	Criterion of Inspection	Defect Type
1	Dot defect(visible in appearance and invisible in light mode)	Level 0/1	1.D≤0.1mm, DS≥5mm, N ignore; 2.0.1 mm < D≤0.2mm, DS≥10mm, N≤2; 3.0.2mm< D, NG	Minor
2	Line defect(visible in appearance and invisible in light mode, such	Level 0/1	1.W≤0.03mm, ignore 2.0.03mm<W≤0.05mm, L≤2mm, DS≥10mm, N≤2;	Minor

	as fine scratch, filament, etc.)		3.0.05mm<W or L>2mm, NG		
3	Crack	/	Not allowed		Major
4	Hard scratch	Level 0/1	Not allowed		Minor
5	Bubble ray	Level 0/1	Pol bubble ray reach AA edge, AA to VA≥1/2(LCM BM). And need to meet full lamination design limit.		Minor
6	Handwriting, visual mark,etc.	/	Not allowed		Minor
7	Lamination dirt	Level 0/1	According to criterion of dot and line, limit sample control if necessary		Minor
8	Cover Chromatism	Level 1	Not allowed(refer to limit sample if necessary)		Minor
9	Cover edge cutting serration	Level 1	Not allowed（refer to limit sample if necessary）		Minor
10	Cover edge paint loss	Level 1	Not allowed（refer to limit sample if necessary）		Minor
11	Flexible Cover edge breakage	Level 1	Acute defect is not allowed, quantitative criteria will be defined later		Minor
12	Flexible CG edge breakage	Level 2	Not allowed（refer to limit sample if necessary）		Major
13	Cover side damage	Level 1	Not allowed（refer to limit sample if necessary）		Minor
14	Cover ink crack	Level 1	Not allowed		Minor
15	Cover edge corrosion	Level 1	Not allowed（refer to limit sample if necessary）		Minor
16	BM/silk-screen printing ink serration	Level 0	H≤0.05, The whole is flat or smooth		Minor
17	Indentation	Level 0/1/2	refer to limit sample		Minor
18	FPCA	Level 2	Broken line, defect	Copper foil is not allowed to have broken line and defect (width≥1/4 line width).	Minor
			Scratch	FPC can’t have scratches. Hard scratch (length≥2mm) is not allowed. Circuit damaged is not allowed.	Minor
			Unfilled corner	FPC can’t have unfilled corner(area≥2mmX2mm). Circuit damaged is not allowed.	Minor
			Damaged edge	FPC can’t have damaged edge(length≥1mm or depth≥1mm). Circuit damaged is not allowed.	Minor

			Foreign body	Dirt or foreign body is not allowed on the FPC gold finger.	Minor
			Blister	FPC is not allowed to blister.	Minor
			Burrs	Burrs≤0.1 is acceptable. Subject to matching with actual shell material if exceeds.	Minor
			Hardcore crease	Not allowed	Major
			Breakage	The top coating of component is not allowed to be damaged in the range from the edge ≥ 0.25mm in the length direction.	Minor
			Less component	Less component is not allowed.	Minor
			Fracture	Component is not allowed to be fractured.	Minor
			Component weld wrong	Component welding reversely is not allowed.	Minor
			Golden finger	Golden finger wrinkle/dart: sharp corner wrinkle/dart are not allowed.	Minor
			Connector	Connector is not allowed to be damaged.	Minor
19	The size of BM area on both sides is different in lamination process.	Level 1	Not allowed		Minor
20	Pull glue	Level 0	The distance from PI edge to the inner edge of glue is ≤ 1.5mm.		Minor
21	Bump point	Level 0	refer to limit sample		Minor
22	Package	Level 2	Mildew, moisture, wet, dirty, deformed, damaged, mixed are not allowed. RoHS label must be attached		Major
			Stacking method should be neat and order.Disorder and scatter are not allowed.		Minor
			The material code, specification model, quantity, weight, production date, production batch, and version number must be clearly identified. The repair product must have the “maintenance product” logo.		Minor

9.4 Telecommunications Inspection Item

No	Item	Level Surface	Criterion of Inspection	Defect Type
1	Dot defect(visible in light mode)	Level 0	D≤0.1mm and DS≥10mm, N ignore	Minor
			0.1 mm<D≤0.15mm and DS≥10mm, N≤2	

			0.15mm< D, NG	
2	Bright /slight light dot	Level 0	Not allowed	Minor
3	Dark dot	Level 0	N≤2, No obvious flicker	Minor
	Pocking dot	Level 0/1	In the area of 10 mm x 10 mm, if there is a dense point of D ≤ 0.1 mm, which is judged to be pocking dot. Other point defect of D ≤ 0.1 mm is not applicable to pocking dot under negligible condition.	
			D≤0.1mm, N≤2 , No control; D≤0.1mm, N=3, One place is allowed; N>3, Not allowed, refer to limit sample if necessary. Adjacent point is not allowed to be dense.	
4	Line defect(visible in light mode, such as fine scratch, filament, etc.)	Level 0	W≤0.02mm, L≤3mm, ignore	Minor
			0.02mm<W≤0.03mm, L≤1mm, N≤1	
			0.03mm<W ,L>1mm, NG	
5	TP function NG		Not allowed	Major
6	No display/ abnormal display/ can't switch	Level 0	Not allowed	Major
7	Bright line/ multiple bright line, dark line, half line	Level 0	Not allowed	Major
8	Mura(include yellowing)	Level 0	Class A customer standard (refer to limit sample control if there is any objection).	Minor
9	ELA Mura	Level 0	refer to limit sample	Minor
10	Etched lines	Level 0	Not allowed in light mode, check sample if necessary.	Minor
11	Other defects	Level 0/1/2	Subject to the sealed sample, develop limit samples if necessary.	/
12	Color deviation	Level 0	Not allowed（refer to limit sample if necessary）	Minor
13	Leakage around	Level 0	Not allowed	Minor

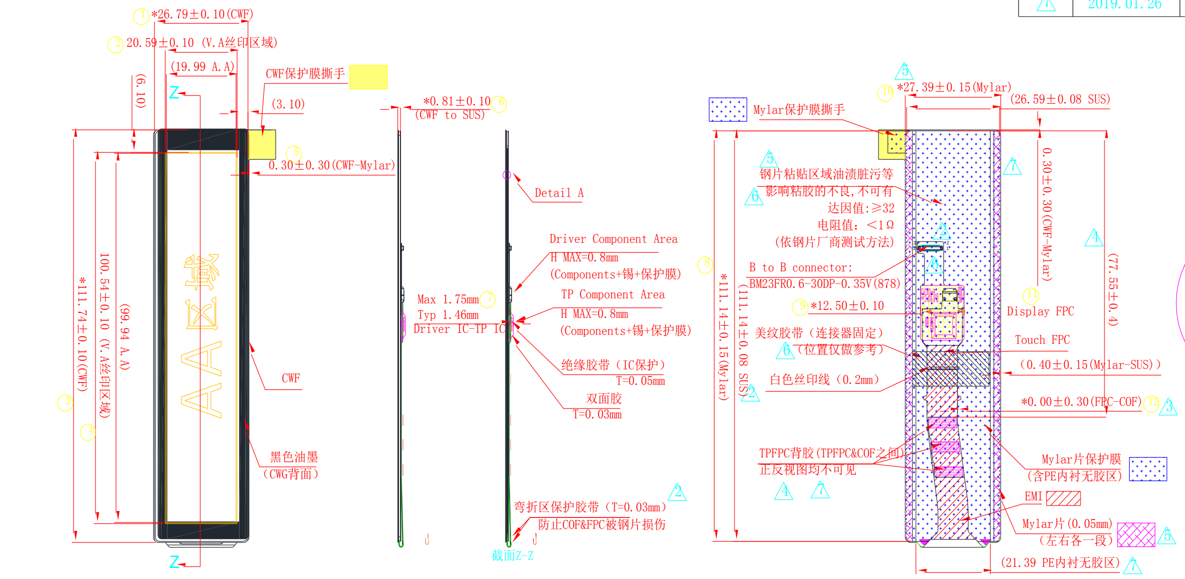
Note: If some product specifications are not clearly defined, they will be not allowed in control.
Level surface instruction:
Level 0: Important areas such as information or taking photo on the phone. For example, AA display area, camera hole area, ICON silk screen area, IR hole area.

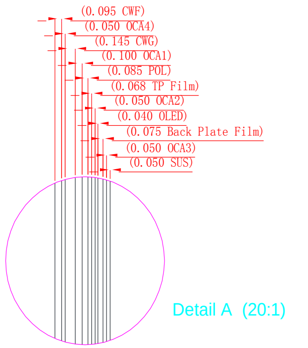
Level 1: The main surface exposed can be seen directly during normal use, such as the front side except level 0. For example, non-display area outside AA area, CG ink area.

Level 2: The reverse side of screen except camera hole, ICON, and IR hole area, such as FPC.

如本印章非红色，则表明该文件为非受控版本，不会受到控制和更新．请使用受控文件． 分发号：	受控章

Rev.	Date	Notes
1	2018.07.16	Primary
2	2018.10.23	1、钢片外形变更;2、TPFPC丝印线及双面胶位置变更 3、DriverFPC外形变更;4、弯折区尺寸变更 5、增加COF弯折区保护胶带;6、钢片尺寸精度&小耳朵外形更新 7、保护胶带厚度更新
3	2018.11.16	1、FPC定位小耳朵更新;2、FPC&COF位置公差更新
4	2018.11.21	1、更新组立段需求，COF仅用美纹胶带固定，双面胶撕离把手保存，部分尺寸取消
5	2018.12.11	1、增加Mylar保护，钢片保护膜同步调整; 2、钢片外形及达因值要求更新。
6	2019.01.05	1、修改FPC外形。2、更新部分说明
7	2019.01.26	1、Mylar取消中间部分(保护膜保留，保护膜含PE内衬无胶区)，钢片背面双面胶贴附取消，电阻值要求更新，钢片背面丝印线取消。





PIN No.	PIN assignment	PIN No.	PIN assignment
29	GND	30	GND
27	VDDIO	28	GND
25	GND	26	OTP
23	DON	24	TE
21	DOP	22	XRES
19	GND	20	SWIRE
17	CLKN	18	GND
15	CLKP	16	VCI
13	GND	14	ELVDD_0
11	TP_VDD	12	ELVDD_0
9	TP_INT	10	GND
7	TP_RESET	8	ELVSS_0
5	TP_SCL	6	ELVSS_0
3	TP_SDA	4	GND
1	GND	2	GND

NOTES:

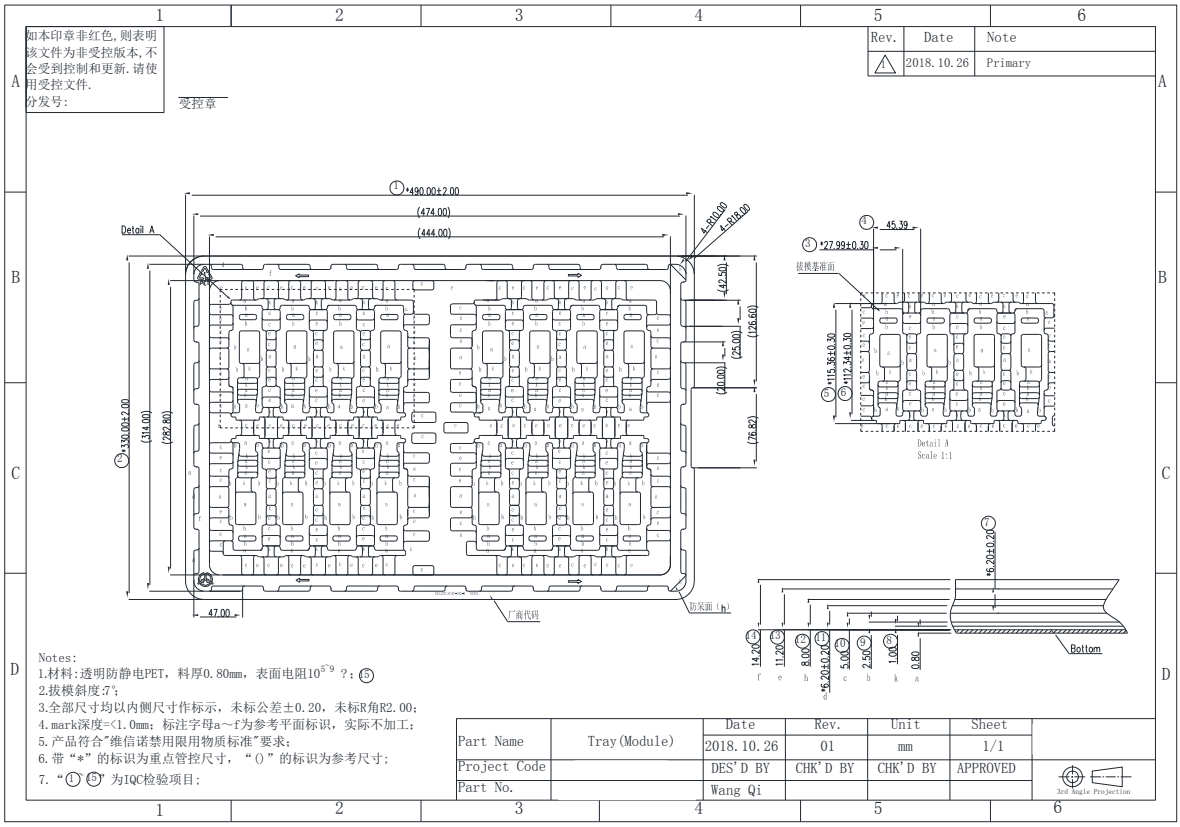
1. Unspecified tolerance is ±0.2mm;
2. ():Reference Dimension;
3. "*"Critical Dimension;
4. B to B connector: BM23FR0.6-30DP-0.35V(878) ;
   ZIF connector:FH42-7S-0.3SHW(10);
5. Driver IC: RM69330; TP IC: GT9886
6. 符合“维信诺禁用限用物质标准”；

Part Name	Module drawing	Date	Rev.	Unit	Sheet
		2019.01.26	07	mm	1/1
Project Code		DES'D BY	CHK'D BY	CHK'D BY	APPROVED
Part No.		Wang Qi			

3rd Angle Projection

Packing Drawing

Packing Condition	Contents
Packing Type	TRAY + Carton packing type
TRAY material model	tray (10^5~$10^9\Omega$)
Tray packing type	See the picture 1
Number of panels per tray	16 pieces
Number of Tray per carton	24units ((22 units + 2 empty)PET tray)
Number of panels per carton	352 pieces



Picture 1

11 Precautions for Use of AMOLED Modules

11.1 Handling Precautions:

11.1.1 The display panel is made of glass. Do not subject it to a mechanical shock by dropping it from height.

11.1.2 Do not press down the screen or the adjoining areas too hard because the color tone may be shifted.

11.1.3 The polarizer covering the display surface of the AMOLED module is soft and easily scratched. Handle this polarizer carefully.

11.1.4 If the display surface is contaminated, blow on the surface and gently wipe it with a soft dry cloth. If it is still not completely clear, moisten the cloth with ethyl alcohol.

11.1.5 Solvents may damage the polarizer. Do not use water, ketone or aromatic solvents except ethyl alcohol.
Do not attempt to disassemble the AMOLED Module.

11.1.6 If the logic circuit power is off, do not apply the input signals.

11.1.7 To prevent destruction from static electricity, be careful to maintain an optimum working environment.

11.1.8 Be sure to make yourself in contact with the ground when handling with the AMOLED Modules.

11.1.9 Tools required for assembly, such as soldering irons, must be properly ground.

11.1.10 To reduce the generation of static electricity, do not conduct assembly or other work under dry conditions.

11.1.11 To protect the display surface, the AMOLED Module is coated with a film. Be careful when peeling off this protective film, because static electricity may generate.

11.2 Storage Precautions:

11.2.1 When storing the AMOLED modules, be sure that they are not directly exposed to the sunlight or the light of fluorescent lamps.

11.2.2 The AMOLED modules should be stored under the storage temperature range. If the AMOLED modules will be stored for a long time, the recommended condition is:
Temperature: 0℃~40℃ Relatively humidity: ≤80%

11.2.3 The AMOLED modules should be stored in the room without acid, alkali or harmful gas.

11.3 Transportation Precautions:

11.3.1 The AMOLED modules should not be suffered from falling and violent shocking during transportation. Besides, excessive press, water, damp and sunshine, should be avoided.