



Product Change Notice

EC No		Date	2022/3/22
Customer			
Model Name	Original	PH128800T 10.1 TFT series (attached list)	
	New	No change	
Cause of Change	1. Due to unstable supply , LED Drive TI IC (TPS61194PWPR), alternative solution Anax (ANX6903) 2. To add UL recognition mark for USA and Canada area		
Content of Modification	- Appearance : Different mark on PCB (as below) <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Before :</p>  </div> <div style="text-align: center;"> <p>New :</p>  </div> </div>		
	- Electric parameter : No change - Attached comparison table.		
Type of Acting	<input checked="" type="checkbox"/> Running Change <input type="checkbox"/> Cut in <input type="checkbox"/> 2nd source Approval <input type="checkbox"/> Others: _____		
Powertip Signature	Action	Signature	Date
	Prepared by	Lisa Change	2021/3/24
	Checked by	Joanne Lee	2021/3/24
Appendix Documents			
For customer			
Signature	Action	Signature	Date
	Checked by		
Customer's Comment			

Appendix 1 :

- Related Models :

PN.	PN.
PH128800T004-ZFA03	PH128800T004-ZNA01
PH128800T004-ZFC07	PH128800T004-ZNC01
PH128800T004-ZFC13	PH128800T004-ZZA01
PH128800T004-ZFC14	PH128800T004-ZZA03
PH128800T004-ZFC19	PH128800T004-ZZC02
PH128800T004-ZFM	PH128800T004-ZZC04
PH128800T004-ZHA	PH128800T004-ZZC06
PH128800T004-ZHC	PH128800T004-ZZC11
PH128800T004-ZHC01	PH128800T004-ZZC13
PH128800T004-ZHC08	PH128800T004-ZNR
PH128800T004-ZNC02	PH128800T004-ZZR01
PH128800T004-ZHC02	PH128800T004-ZZR
PH128800T004-ZFA	PH128800T004-ZNR01
PH128800T004-ZFA01	PH128800T004-ZNA02
PH128800T004-ZFC	PH128800T004-ZZC15
PH128800T004-ZFC03	PH128800T004-ZHA02
PH128800T004-ZFC05	PH128800T004-ZHP02
PH128800T004-ZFC06	PH128800T004-ZHR
PH128800T004-ZFC10	PH128800T004-ZHC07
PH128800T004-ZFC11	PH128800T004-ZHP
PH128800T004-ZFC12	
PH128800T004-ZFC20	
PH128800T004-ZFC24	
PH128800T004-ZFC26	
PH128800T004-ZNA03	
PH128800T004-ZFC02	
PH128800T004-ZFC18	

Appendix 2:

Comparison table and thermal testing report

Module comparison

		PH128800T004-ZZC02						Actual (High Brightness 200mA)		Meet spec.	Change Module Spec.
Item	Symbol	Condition	Min.	Typ.	Max.	Unit	TPS61194PWPR	ANX6903			
Power Supply Voltage For LCD Driver	VDD	-	3.0	3.3	3.6	V			YES	NO	
Power Supply Voltage For LED Driver	VLED	-	9.0	12.0	15.0	V			YES	NO	
Power Supply Current	IDD	VDD=3.3v	-	400	600	mA	530mA	460mA	YES	NO	
Power Supply Current For LED Driver	ILED	VLED=12v	-	600	1000	mA	556mA	551mA	YES	NO	
PWM Signal Voltage	High	VPWM	-	0.8*VLED_EN	-	5.25	V		YES	NO	
	Low		-	0	-	0.2*VLED_EN	V		YES	NO	
LED Enable Voltage	High	VLED_EN	-	1.65	-	5.25	V		YES	NO	
	Low		-	0	-	0.4	V		YES	NO	
LED PWM Frequency	FPWM	-	100	-	20K	Hz			YES	NO	

		PH128800T004-ZFA						Actual (Low Brightness 80mA)		Meet spec.	Change Module Spec.
Item	Symbol	Condition	Min.	Typ.	Max.	Unit	TPS61194PWPR	ANX6903			
Power Supply Voltage For LCD Driver	VDD	-	3.0	3.3	3.6	V			YES	NO	
Power Supply Voltage For LED Driver	VLED	-	9.0	12.0	15.0	V			YES	NO	
Power Supply Current	IDD	VDD=3.3v	-	400	600	mA	465mA	460mA	YES	NO	
Power Supply Current For LED Driver	ILED	VLED=12V	-	300	500	mA	282mA	235mA	YES	NO	
PWM Signal Voltage	High	VPWM	-	0.8*VLED_EN	-	5.25	V		YES	NO	
	Low		-	0	-	0.2*VLED_EN	V		YES	NO	
LED Enable Voltage	High	VLED_EN	-	1.65	-	5.25	V		YES	NO	
	Low		-	0	-	0.4	V		YES	NO	
LED PWM Frequency	FPWM	-	100	-	20K	Hz			YES	NO	

Thermal testing report

Junction to case (TOP) thermal resistance							
Manufacturer	IC	Normal Temp (25°C)	IDD	IBL	Chamber (80°C in 24hrs)	IDD	IBL
Texas Instruments	TPS61194	48.2~50.8°C/W	530mA	556mA	81.0~82.2°C/W	522mA	560mA
ANAX	ANX6903	51.5°C/W	460mA	551mA	82.9~83.2°C/W	483mA	553mA

IC comparison

Item	Original	Alternative	Remark
Brand	Texan Instruments	Anax Tenhnology	
Model Number	TPS61194PWPR TPS61194PWPRQ1	ANX6903	
Input Supply Voltage	4.5V ~ 40V	4.2V ~ 24V	VLED specification 12V typical
Voltage on CH1~CH4	-0.3V ~ 45.0V	-0.3V ~ 43.0V	Backlight Forward voltage 31V max.
Voltage on EN,PWM	-0.3V ~ 5.5V	-0.3V ~ 27.0V	meet original specification
Voltage on COMP, RT,ISET	-0.3V ~ 5.5V	-0.3V ~ 6.0V	meet original specification
Storage temperature range	-65 deg.C ~ 150 deg. C	-65 deg.C ~ 150 deg. C	meet original specification
ESD, Huam body mode	2KV	4KV	meet original specification
LED current per channel (MAX)	100mA	80mA	meet requested specification 20mA/50mA
PWM Dimming Frequency	100-20KHz	100~30KHz	meet original specification