ACT I³

INTELLIGENT • INDUSTRIAL • INTERFACE

CAN A DISPLAY MANUFACTURER CREATE A DISPLAY INTERFACE STANDARD?

This is what we set out to achieve: to create a unified, common interface for TFTs between 3.5" and 7.0".

It was immediately clear to us that such a concept would provide the ideal basis for directly addressing the typical challenges that arise during the design-in process.

Whilst the idea is not entirely new, we have created a TFT display concept combining a unique set of useful features for you:

- HIGH PERFORMANCE BACKLIGHT
- EMC OPTIMIZED
- CONVENIENT CONTROL
- COMMERCIALLY SMART

BUT WHAT DOES THAT EXACTLY MEAN?

A **brightness of 1,000 nits** combined with a **lifetime of at least 50,000 hours**. The backlight driver is integrated and works in a wide operating range from 5-12V. The brightness can be controlled via a **PWM-Pin**. To further increase the lifetime expectancy beyond 50,000 hours, you can simply reduce the basic brightness below the typical 1,000 nits.

A **low-impedance ground reference** is not only the fundamental basis of a reliable signal integrity, but also greatly influences the overall EMC-performance. Most displays only provide a few ground lines, thus resulting in a floating ground reference due to the high-speed clock signals. Such a display not only tends to massively radiate electromagnetic emissions, but is also significantly vulnerable to external interference, like motor controll applications or switch mode power supplies (SMPS). Our unique solution comes with a **standard 50-pin interface** that provides several ultra-low impedance ground lines that ensure a reliable and tightly coupled connection between the display and the target application - even at high speed data throughput. This excellent EMC-performance has been optimized to a maximum by an additional metal plate stiffener in combination with a highly conductive thin layer silver coating.

The thin-film-transistors of the active matrix in a TFT LCD necessarily require a number of "inconvenient" voltages. All ACT I³ displays generate these voltages entirely on the FPC. To support you during the design-in process, we offer a comprehensive **hardware and software development environment**. It's based on the powerful SMT32F469 from STMicroelectronics.

This enables you to get the display up and running in only a few minutes.

The **long-term availability** of a display is one of the most difficult and at the same time most important factors when selecting a display.

All ACT I³ displays have been explicitly designed to provide an outstanding long term avaibility of ≥ 10 years.

Flexibility based on an industrial standard – that was our idea – a truly modular system. All displays are optionally available with touch (resistive or capacitive), optically or air-gap bonded, customized cover lenses and many other modifications are possible. If required, even relatively small quantities are available.

WITH OUR INNOVATIVE CONCEPT WE CREATED A NEW STANDARD – A CENTERED FPC AND COMMON INTERFACE

ACT I³ SERIES

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ACT I³

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TWO TOUCH SYSTEMS | THREE SERIES | ONE INTERFACE

In addition to the well established PURE series, we have continued to develop and improve these displays and introduced the new PRO X series. How does it differ to the PURE series? First and foremost, we have upgraded to newest TFT cells which use state of the art technology to further increase both contrast ratio and viewing angles in all directions. The PRO series therefore offers significantly improved optical performance. Our new PRO X series convinces with a modern design, very wide operating temperature range and a 2mm cover lens. While developing this series, full compatibility between both series was of paramount important to us.

Anyone using a PURE series display, can easily upgrade to a PRO or PRO X series display without any hard- or software changes.

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FEATURES	SERIES PURE	PRO	PROX
Unified 24bit RGB-Interface	•	•	•
min. 50,000 hours Backlight Lifetime	•	•	•
Backlight driver Onboard (PWM & digital)	•	•	•
1.000 nits Brightness (without touch)	•	•	•
EMC optimized	•	•	•
unified 50-pin interface	•	•	•
wide voltage range 5-15V	•	•	•
automatic display recognition	•	•	•
slim design	•	•	•
long-term avaibility	•	•	•
OPERATING TEMPERATURE			
from -20°C to +70 °C	•	•	
from -30°C to +80 °C			•
SIZES			
3,5"	•	•	•
4,3"	•	•	•
5"	•	•	•
7"	•		•
TOUCH			
resistive touch	•	optional	
capacitive multi-touch (PCAP)	•	•	•
SPI KONFIGURATION			
Image rotation		•	•
Color adjustment		•	•
Gamma setting		•	•
ENHANCED WIRDE VIEWING ANGLE		•	•
HIGH CONTRAST RATIO		•	•

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OVERVIEW

Size	Part.-No.	RTP	PCAP	PCAP BlackC/L	Bright-ness	Lifetime min.	EMV	identical PinOut	B/L Driver integrated	PURE	PRO	PROX
3.5″	PH320240T-023-IHA				1.000 nits	50.000 h	optimized	50 pins	•	•		
	PH320240T-023-IHB	•								•		
	PH320240T-023-IHC04			•						•		
	PH320240T-023-IHC06		•							•		
	PH320240T-028-ZHA										•	
	PH320240T-028-ZHC			•							•	
	PH320240T-028-ZHC01		•								•	
	ET035023UDBA											•
	ETML035023UDRA			•								•
4.3″	PH480272T-009-IHA				1.000 nits	50.000 h	optimized	50 pins	•	•		
	PH480272T-009-IHB	•								•		
	PH480272T-009-IHC05			•						•		
	PH480272T-009-IHC07		•							•		
	PH480272T-016-ZHA										•	
	PH480271T-016-ZHC03			•							•	
	PH480272T-016-ZHC04		•								•	
	ET043023UDBA											•
	ETML043023UDRA			•								•
5″	PH800480T-024-IHA				1.000 nits	50.000 h	optimized	50 pins	•	•		
	PH800480T-024-IHB	•								•		
	PH800480T-024-IHC07			•						•		
	PH800480T-024-IHC11		•							•		
	PH800480T-030-ZHA01										•	
	PH800480T-030-ZHC06			•							•	
	PH800x480T-030-ZHC07		•								•	
	ET050023UDBA											•
	ETML050023UDRA			•								•
7″	PH800480T-013-IHA				1.000 nits	50.000 h	optimized	50 pins	•	•		
	PH800480T-013-IHB	•								•		
	PH800480T-013-IHC09			•						•		
	PH800480T-013-IHC12		•							•		
	ET070023UBDA											•
	ETML070023UDRA			•								•

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