

PanL50 (PD50) Touch Display Datasheet



1 Introduction

The PanL50 Touch Display provides users an intuitive interface option to monitor and trigger control events when working alongside PanL Hub. Unlike mobile devices that usually requires recharging, the display can be placed at highly accessible areas with continuous power supply from PanL Hub through an Ethernet cable. PD50 is built with 5 inch full color TFT LCD powered by Bridgetek's very own Embedded Video Engine (EVE) Graphic Controller chip that enables rich and intuitive multi touch GUIs displays.

1.1 Features

PanL50 (PD50) has the following features:

- Integrated FT903 32-bit RISC microcontroller (MCU) with 100Mhz system clock
- In-built advanced FT813Q graphics controller with display, touch and audio functionality
- 5.0" high brightness TFT LCD (800*480 pixels) with capacitive 5 touch supported

- Ambient Light Sensor
- Built In Buzzer
- Two RJ45 Ports support RS485 Interface to PanL Hub, PanL Terminator, daisy chain to another PanL50 Touch Display or other PanL Devices
- Powered by PanL Hub at 24V DC Input through either RJ45 port
- Operating temperature range : 0°C to +55°C



2 Ordering Information

Part No.	Description
PD500000A	5" PanL Landscape LCD Display

Table 1 – PanL50 (PD50) Touch Display - Part Number

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3 Specifications

PLATFORM	Microcontroller	FT903Q
	Graphic Controller	FT813
DISPLAY	Display Size	5.0 inch TFT LCD
	Display Type	Capacitive touch panel
	Number of Pixels	800 (RGB) x 480
	Active Display Area	108 (H) x 64.8 (V) mm
	Light Intensity (Brightness)	420 cd/m ²
	Display Colour	16.7M colors
	Viewing Angels	65°/55°/65°/65° (U/D/L/R)
FEATURES	Sound Alert	90 dB buzzer @3.1khz
	Ambient Light Sensor	-
	Reset Button	Push Switch
	Device Indicator	RGB LED
	Single Wire Debug	Reserved for factory use only
POWER PARAMETER	Input Voltage	DC 9-24V
	Connectivity	2x RJ45 Ports
	Micro USB	Reserved for factory use only
PHYSICAL CHARACTERISTICS	Color	White
	Housing	Polycarbonates
	Dimensions	145.09 x 116.37 x 16.72 mm
	Weight	275g
ENVIRONMENTAL LIMITS	Operating Temperature	0 to 55°C
	Storage Temperature	0 to 70°C
	Ambient Relative Humidity	20 to 80% (non-condensing)
STANDARDS & CERTIFICATIONS	EMC (FCC/CE)	EN 55032:2015+AC:2016 Class B CISPR 32:2015+C1: 2016 Class B EN 55035:2017 FCC PART 15, Subpart B
PACKAGE CONTENTS	Hardware components	1x PD50 4x M3 Screws (Arlington LV2 Wall Mounting)
	Documentation	1x Quick Start Guide

Table 2 – PanL50 (PD50) Touch Display Specifications

4 Hardware Features

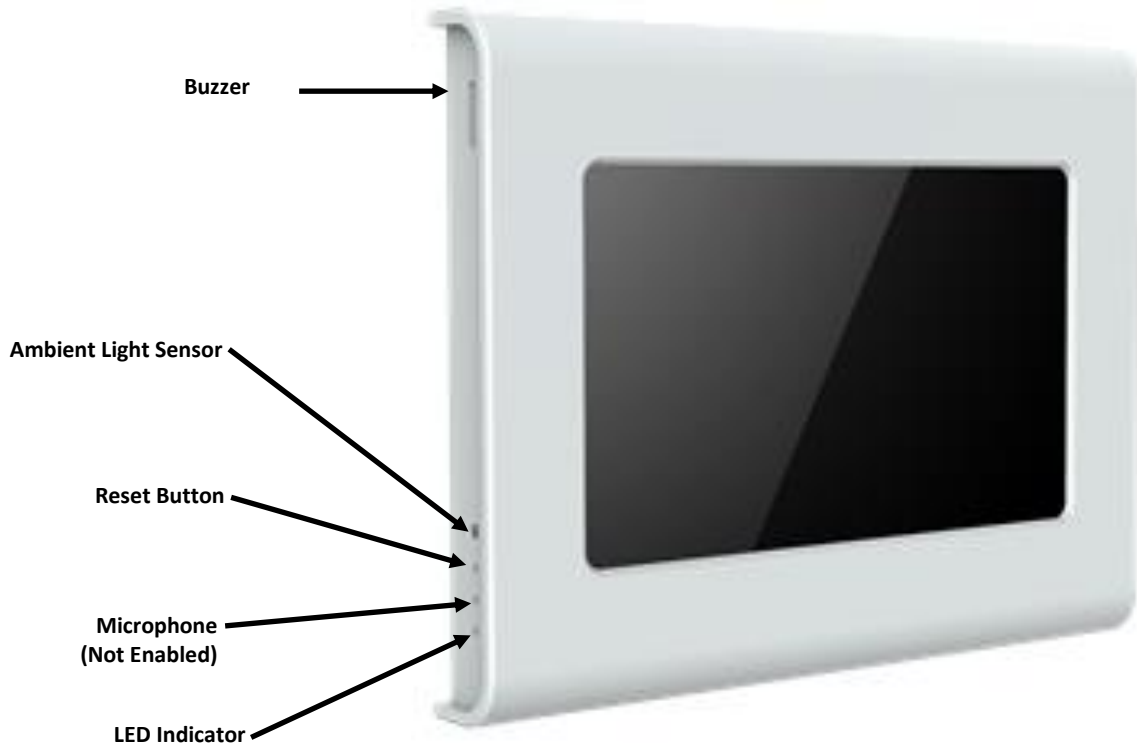


Figure 1 - PanL50 (PD50) Touch Display Front View

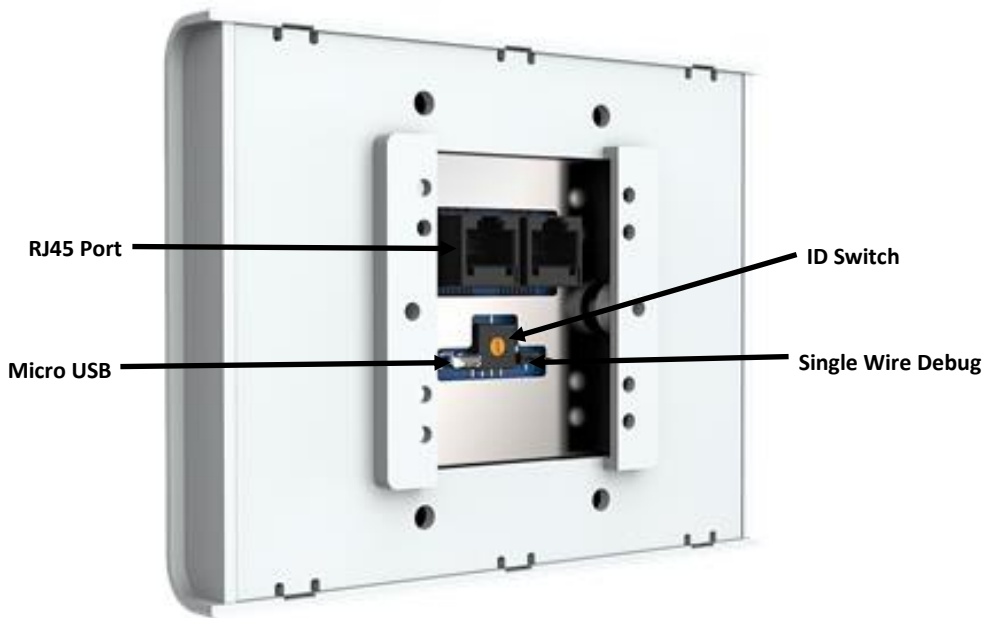


Figure 2 - PanL50 (PD50) Touch Display Rear View

4.1 Power Supply

The PD50 receives power externally from Hub through either RJ45 ports. Input supply voltage is 9VDC to 24V DC (nominally 24V, 500mA from Hub).

4.2 Microcontroller

The [FT9030](#) 100-pin QFN microcontroller which is provided on the board belongs to the 32-bit FT90X Super Bridging Microcontroller family from [Bridgetek](#).

4.3 Graphic Controller

The [FT811](#) is Bridgetek’s very own Advanced Embedded Video Engine (EVE) with high resolution graphics and video playback. FT811 functionality includes graphic control, audio and touch control interface.

4.4 LED Indicator

An LED indicator that indicates the functioning status of the PD50. Refer to the table given below –













Status	LED Color (Normal Mode)		LED Color (Failsafe Mode)	
Booting Up	Red		Red	
Boot Success	Green		Red (Blink – slow speed, twice a second)	
Lost Link To Hub	Yellow		Red (Blink – medium speed, five times a second)	
While communicating with Hub	Green (Blink – fast speed, ten times a second)		Red (Blink – fast speed, ten times a second)	
Waiting for Recovery	NA	NA	Red <-> Green (Alternate blink – slow speed, twice a second)	
Recovery in Progress	NA	NA	Red <-> Yellow (Alternate blink – slow speed, twice a second)	
Recovery Done	NA	NA	Green (Blink – fast speed, ten times a second)	
Waiting for Configuration	Yellow (Blink – slow speed, twice a second)		NA	NA

Table 3 – LED Status Indicator

4.5 RJ45 Port

The RJ45 ports are used either as an input or output terminal that is connected to the Hub, other PanL Devices or another PD50 as illustrated in the picture. For single PD50 connection to a PanL Hub port, the maximum length of the RJ45 8P8C cable is 100 meters. Connect the PanL terminator provided in PanL Hub box to the unconnected PD50 port. For multiple PD50 connections to a single PanL Hub port, the 1st connection to PanL Hub and the subsequent connections in between the PD50 displays must not exceed 50 meters in cable length each. A single PanL Hub port can support up to two PanL50. The total combined cable lengths must not exceed 100 meters. Connect the terminator provided in PanL Hub box to the last unconnected PD50 port.



Figure 3 – Daisy Chain Network

4.6 ID Switch

For multiple PD50 connections or mixed PanL Device daisy chain connection to a single PanL Hub port, the ID switch at the back of the displays must be configured to be unique. Using a Philip head screw driver, set a unique number for each device between 0-7 (8-9 are reserved). For example, if connecting two PD50 to a PanL Hub port, you may set it as **0 and 1**. Displays connected to different PanL Hub ports can share the same unique number. A maximum of 2 PanL devices is allowed for daisy chain if there are more than one PD70, PD70PLUS or PD50 device or any combination of these present. Any other combinations will have a maximum limit of three devices.

4.7 Reset Button

It is a device reset pin which is used to restart the PD50.

4.8 Micro USB

This is reserved for factory use.

4.9 Single Wire Debug

This is reserved for factory use.

4.10 Buzzer

Trigger sound to user to signify an event.

5 Mechanical Dimensions

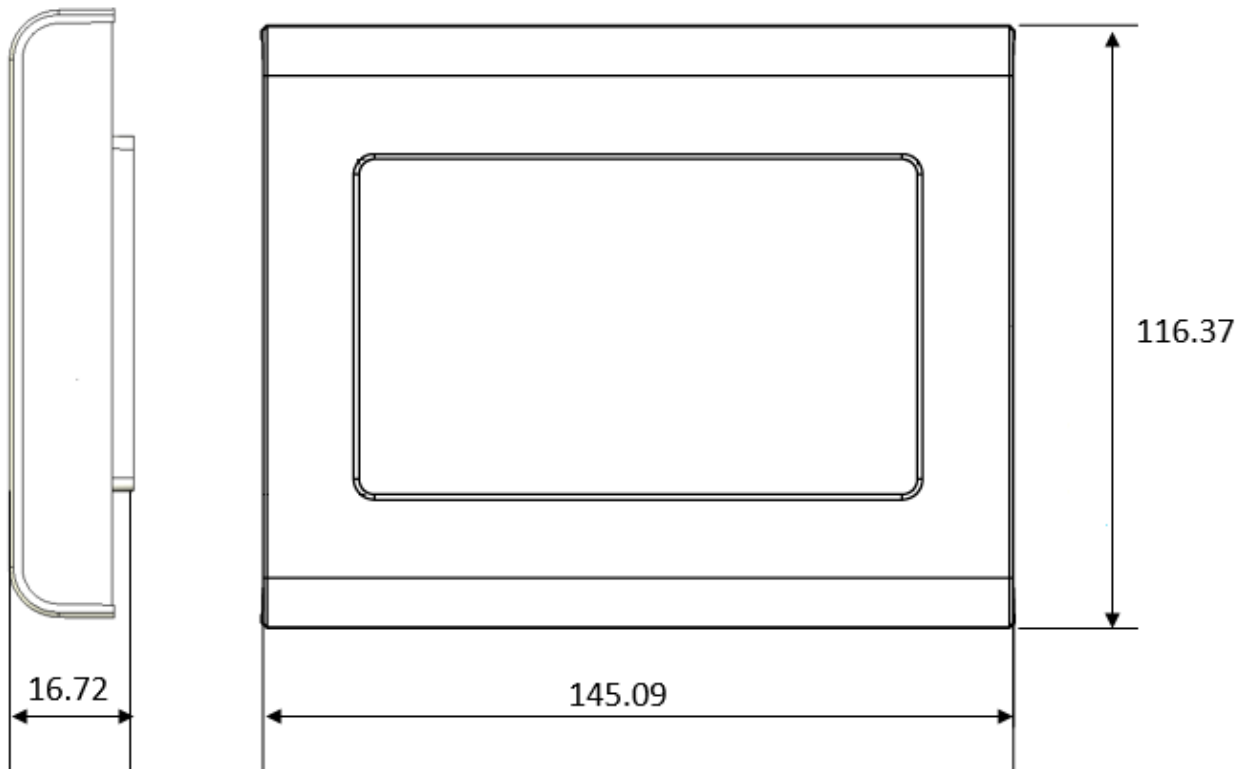


Figure 4 – PanL50 (PD50) Touch Display Dimensions

6 Contact Information

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Appendix A - References

Document References

NA

Acronyms and Abbreviations

Terms	Description
EVE	Embedded Video Engine
FCC	Federal Communications Commission
LCD	Liquid Crystal Display
LED	Light Emitting Diode
MCU	Microcontroller Unit
QFN	Quad Flat No Leads Package
RGB	Red Green Blue
TFT	Thin Film Transistor
USB	Universal Serial Bus

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Appendix C – Revision History

Document Title: PanL50 (PD50) Touch Display Datasheet
Document Reference No.: BRT_000287
Clearance No.: BRT#150
Product Page: <https://panl.brtchip.com>
Document Feedback: [Send Feedback](#)

Revision	Changes	Date
Version 1.0	Initial Release	2019-12-31