

# HTT Series

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For all variants of the HTT50A and HTT70A

**Hardware Manual**

Revision 1.0



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## Revision History

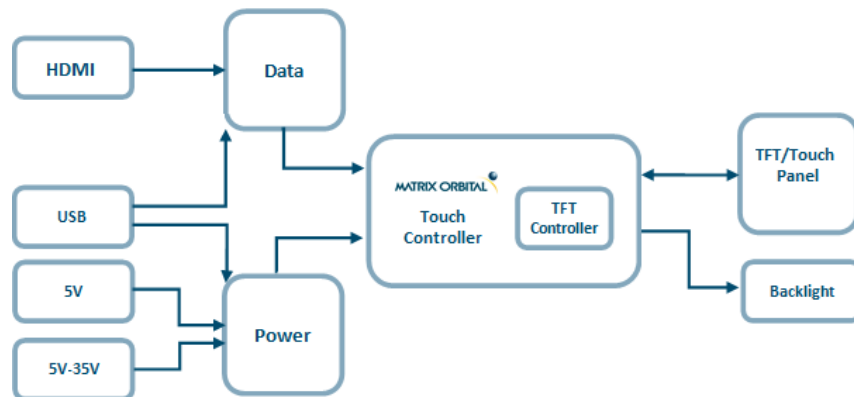
Revision	Date	Description	Author
1.0	November 6, 2017	First Release	Henry Jakl

## Introduction

The HTT series offers full colour TFT displays, with a simple HDMI and USB plug and play interface. The HTT can be configured with a touch screen, providing control without the need of a mouse or keyboard. Designed with industrial applications in mind, the HTT is perfect for panel mounted applications and HMI interfaces.

## Features

- Plug and Play
- Works with Raspberry Pi, Windows, Linux and other systems
- Available Sizes
  - 5.0" 800x480 24bit RGB
  - 7.0" 800x480 24bit RGB
- USB for touch screen, HMI mouse interface
- Available in:
  - Non-touch,
  - Resistive touch
  - Capacitive touch
- Upgradable touch driver firmware
- DVI/HDMI interface
- Automatic resolution detected provided by EDID
- Low profile mounting holes
- Power through USB (HTT50A)
- Industrial 5-35V power input (-VPT) option



## Extended Display Information Data (EDID)

The HTT's on-board EDID comes preconfigured, so users won't have to worry about setting up their screen resolution or display timings. Once plugged in, the EDID will automatically detect the HTT display resolution.

## Part Numbering Scheme

Table 1: Part Numbering Scheme

HTT	70	A	-TPR	-BLM	-B0	-H1	-CH	-V5
1	2	3	4	5	6	7	8	9

## Options

Table 2: Display Options

#	Designator	Options
1	Product Type	HTT: Graphic TFT Display
2	Display Size	50: 5.0", 70: 7.0"
3	Screen Type	A: A Type
4	Touch	-TPN: No touch panel -TPR: Resistive touch panel -TPC: Capacitive touch panel
5	Backlight	-BLM: 300 Nit < Brightness < 600 Nit -BLH: 600 Nit < Brightness < 1000 Nit -BLD: Brightness > 1000 Nit
6	Bezel	-B0: None
7	Headers	-H5: Horizontal Connectors -H6: Vertical Connectors
8	Protocol	-CH: HDMI interface
9	Voltage	-V5: 5.0V Input Voltage -VPT: Regulated 5V - 35V Input Voltage

## Power Options

-V5: Power through the USB port, 4.5-5.5V

-VPT: Power through a 2-pin header, 5–35V, industrial applications

## USB Drivers

Once the HTT is properly installed in windows, 3 new devices will be present in Device manager.

- HID-Compliant Mouse
- USB Composite Device
- WinUsb Device

Table 3: HTT Device VID/PID

VID	0x1B3D
PID	0x14C2

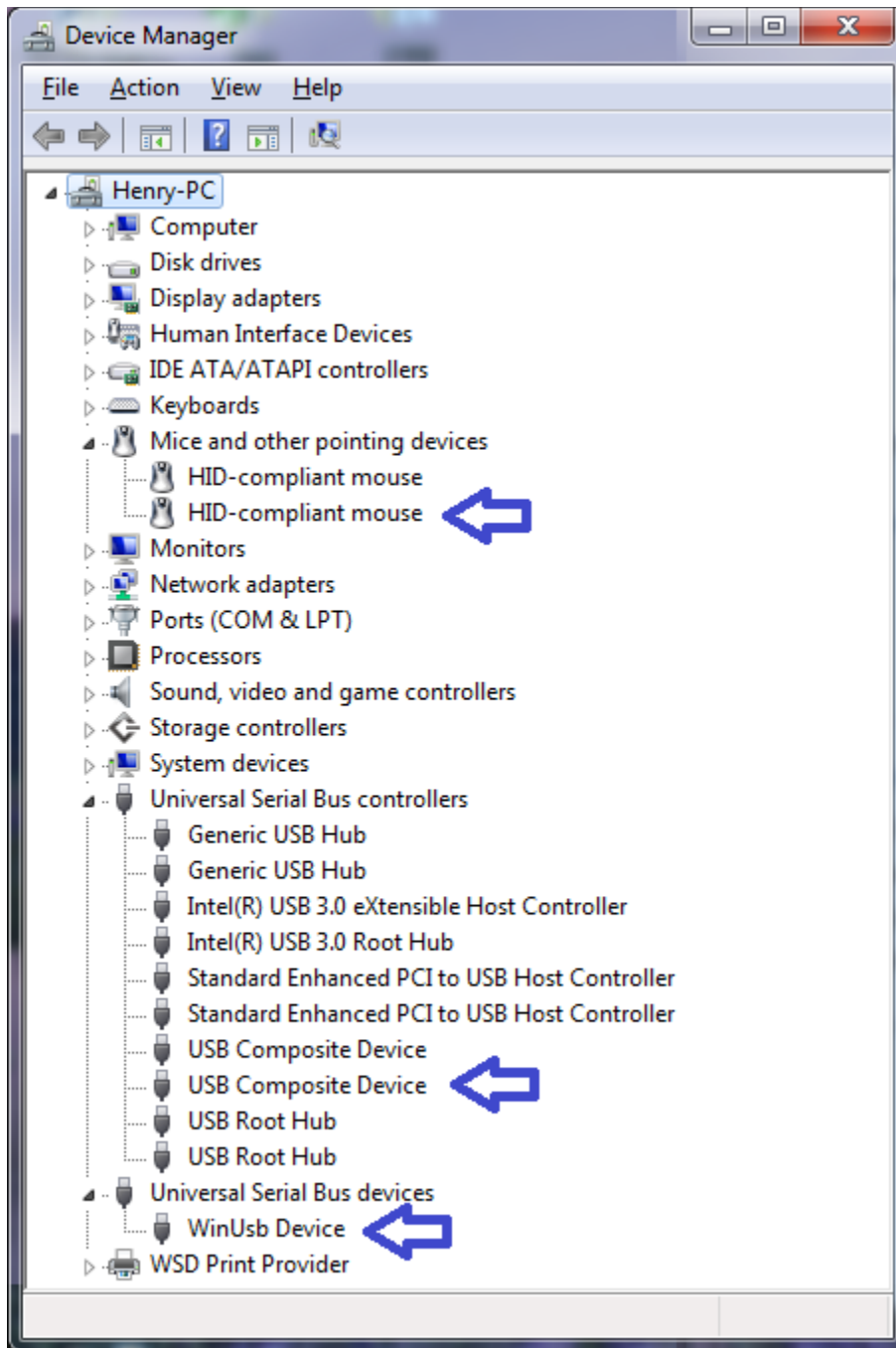


Figure 1: HTT USB Driver Listing

## HTT50A Technical Specifications

The HTT50 is a 5.0" TFT display with an HDMI interface. The 800x480 resolution offers crisp images, and video feedback, with 24-bit Full colour capabilities. The HTT can be configured with resistive, capacitive, or non-touch panels, making this display suitable for any application.

### Available Headers

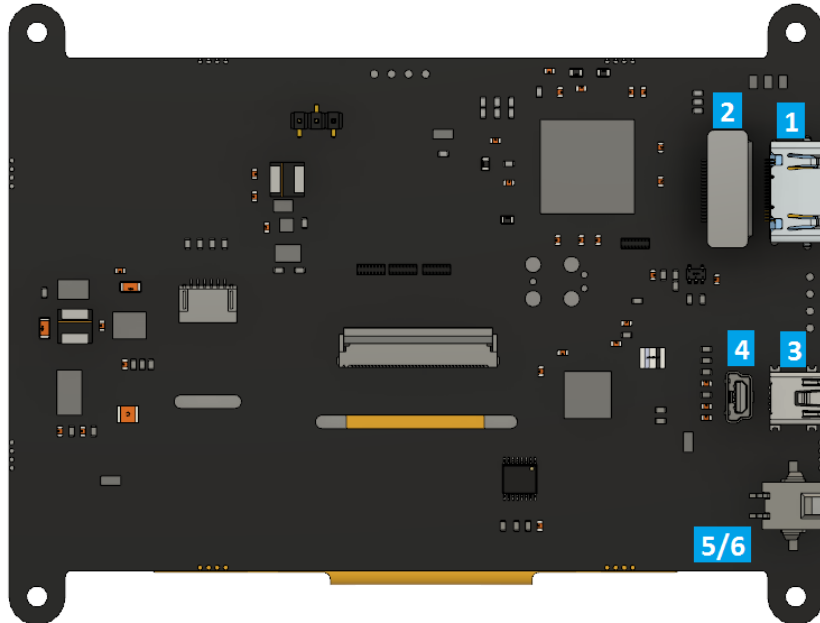


Table 4: HTT50A Headers and Mates

#	Header	Standard Mate	Population
1	HDMI Port, Horizontal, Type A Standard	Type A Standard HDMI	-H5
2	HDMI Port, Vertical, Type A Standard	Type A Standard HDMI	-H6
3	Mini USB, Horizontal: Touch & Power	Mini-B USB	-H5
4	Mini USB, Vertical: Touch & Power	Mini-B USB	-H6
5	Barrel Jack: 2.1mm Center Positive	PWR-ACDC-5V2A	Optional
6	External Power, 2-1445057-2	Micro MATE-N-LOCK 1445022-2	-VPT model

### HDMI Port

The HTT uses HDMI/DVI 1.0 and is only compatible with unencrypted video signals. HDCP video signals are not supported.

### Mini USB

Up to 500mA of power can be provided through the Mini-USB header to power the HTT. Touch communication also occurs over USB.

## Optical Characteristics

Table 5: HTT50A Optical Characteristics

Module Size	121.20 x 92.25 x 12.07	mm
Viewing Area	110.70 x 67.40	mm
Active Area	108.00 x 64.80	mm
Pixel Pattern	800 x 480 x 24bit RGB	
Pixel Pitch	0.135 x 0.135	mm
Luminance	380	cd/m <sup>2</sup>
Viewing Angle	70° Left, Right, Up 50° Down	
Contrast Ratio	500:1	
Backlight Half-Life	20,000 hours	

## Environmental Characteristics

Table 6: HTT50A Environmental Characteristics

Operating Temperature	0°C to +70°C
Storage Temperature	-30°C to +80°C
Operating Relative Humidity*	90% (T < 60°C)

\*Note: No condensation at any temperature

## Power

Table 7: HTT50A Maximum Power Characteristics

Parameter	Min	Typ	Max	Unit	Remarks
Supply Voltage	4.75	5.0	5.25	V	Standard Voltage (V5)
	9.0	12.0	35.0	V	Wide Voltage (VPT)

Table 8: HTT50A Typical Power Characteristics

Parameter	Min	Typ	Max	Unit	Remarks
Logic	-	275	-	mA	Backlight Off
Backlight	0	-	225	mA	Off, Mid, Max



## Dimensional Drawing

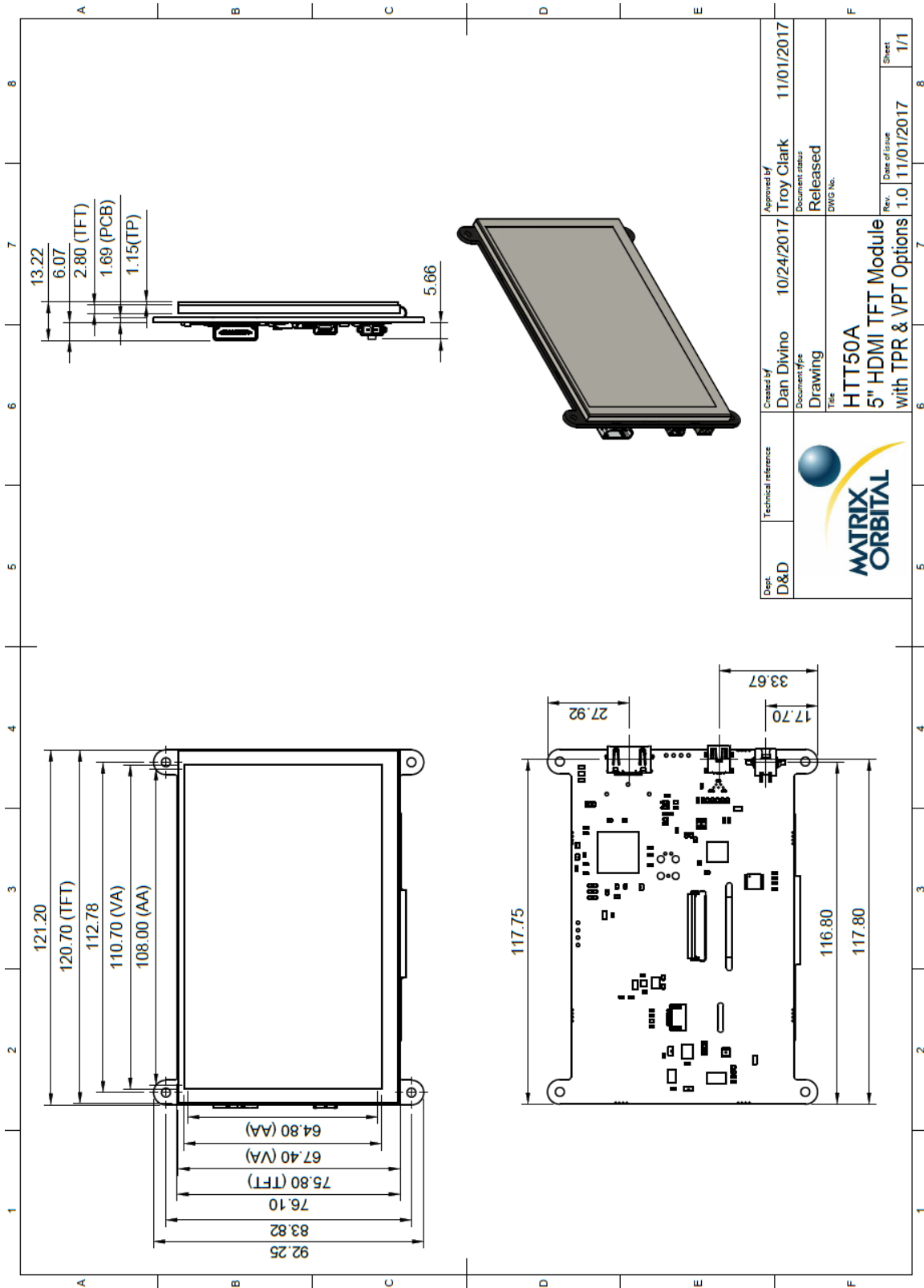


Figure 2: HTT50A Dimensional Drawing

## HTT70A Technical Specifications

The HTT70A is a HDMI compatible 7.0" Full color TFT, with an 800x480 resolution. Resistive, capacitive, and non-touch panels are available for the HTT70A, making it suitable for any application.

### Available Headers

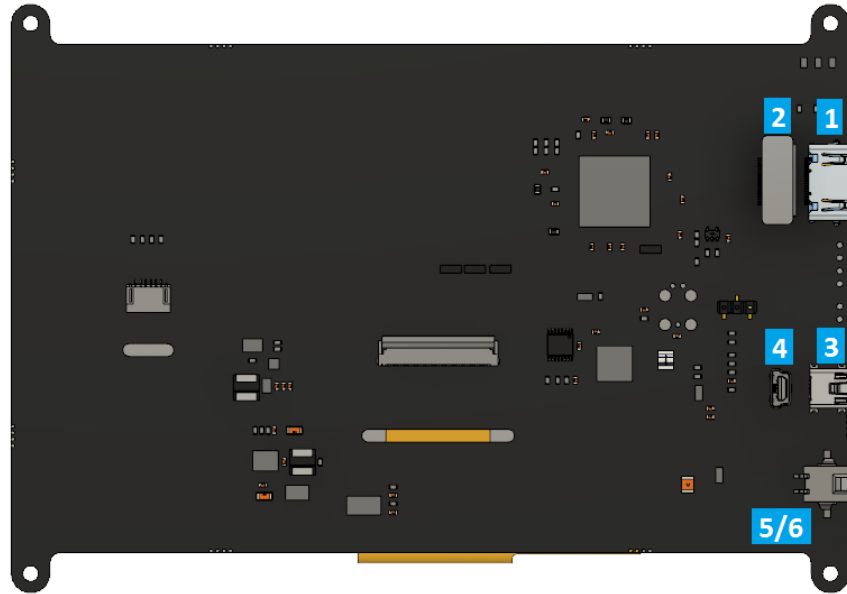


Table 9: HTT70A Headers and Mates

#	Header	Standard Mate	Population
1	HDMI Port, Horizontal, Type A Standard	Type A Standard HDMI	-H5
2	HDMI Port, Vertical, Type A Standard	Type A Standard HDMI	-H6
3	Mini USB, Horizontal: Touch & Power	Mini-B USB	-H5
4	Mini USB, Vertical: Touch & Power	Mini USB	-H6
5	Barrel Jack: 2.1mm Center Positive	PWR-ACDC-5V2A	-H6
6	External Power, 2-1445057-2	Micro MATE-N-LOCK 1445022-2	-VPT model

### HDMI Port

The HTT uses HDMI/DVI 1.0 and is only compatible with unencrypted video signals. HDCP video signals are not supported.

### Mini USB

Up to 500mA of power can be provided through the Mini-USB header to power the HTT. Touch communication also occurs over USB.

### Barrel Jack

Additional 5V power can be applied to the display through the barrel jack header. It is recommended that 900mA is supplied to the display.

## Optical Characteristics

Table 10: HTT70A Optical Characteristics

Module Size	164.90 x 115.88 x 12.77	mm
Viewing Area	157.00 x 89.10	mm
Active Area	153.84 x 85.63	mm
Pixel Pattern	800 x 480 x 24bit RGB	
Pixel Pitch	0.1923 x 0.1784	mm
Luminance	520	cd/m <sup>2</sup>
Viewing Angle	70° Left, Right, Up 60° Down	
Contrast Ratio	500:1	
Backlight Half-Life	20,000 hours	

## Environmental

Table 11: HTT70A Environmental Characteristics

Operating Temperature	0°C to +70°C
Storage Temperature	-30°C to +80°C
Operating Relative Humidity*	90% (T < 60°C)

\*Note: No condensation at any temperature

## Power

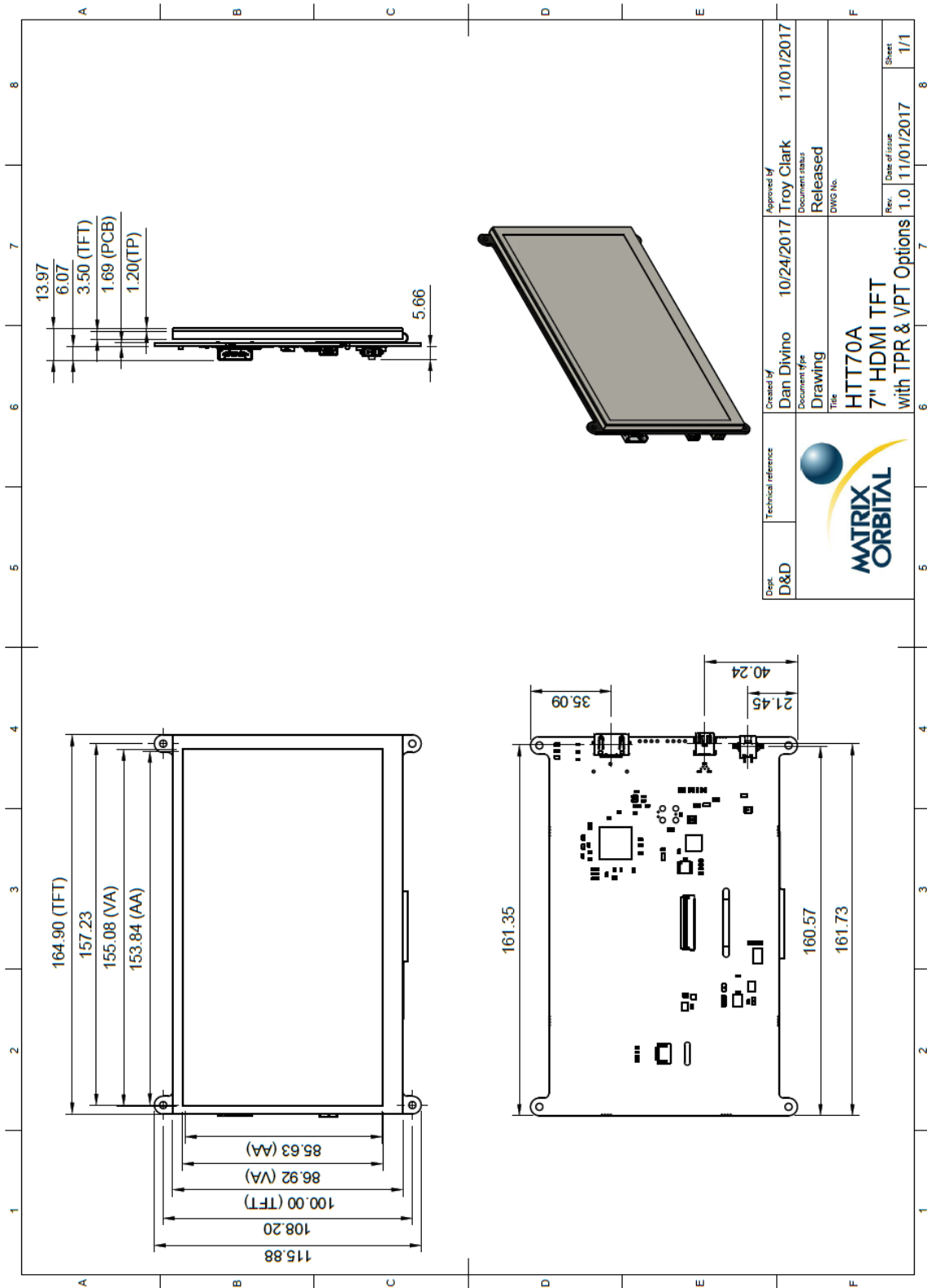
Table 12: HTT70A Maximum Power Characteristics

Parameter	Min	Typ	Max	Unit	Remarks
Supply Voltage	4.75	5.0	5.25	V	Standard Voltage (V5)
	9.0	12.0	35.0	V	Wide Voltage (VPT)

Table 13: HTT70A Typical Power Characteristics

Parameter	Min	Typ	Max	Unit	Remarks
Logic	-	375	-	mA	Backlight Off
Backlight	0	-	465	mA	Off, Mid, Max

# Dimensional Drawing




Dept. D&D	Technical reference	Created by Dan Divino	Approved by Troy Clark	11/01/2017
		Document type Drawing	Document status Released	
		Title HTT70A 7" HDMI TFT with TPR & VPT Options		
			Rev. 1.0	Date of Issue 11/01/2017
				Sheet 1/1

Figure 3: HTT70A Dimensional Drawing

## Recommended Accessories

### USB Communication



Figure 4: EXTMUSB3FT

EXTMUSB3FT

3ft (1m) Mini-B USB Cable

### HDMI Cable



Figure 5: HDMI Cable

3ft (1m) HDMI Cable

6ft (2m) HDMI Cable

### External Power



Figure 6: PWR-ACDC-5V2A

PWR-ACDC-5V2A

Input Voltage: 100-240V AC

Output Voltage: 5V DC @ 2A

Length: 9ft / 2.7m

Barrel Jack: 2.1mm Center Positive

AC Plugs Included: North American (NEMA), Europlug (Type C), UK (Type G), Australia/China/New Zealand/Argentina (Type I)

## Support

Phone: 403.229.2737

Email: [support@matrixorbital.ca](mailto:support@matrixorbital.ca)

Manuals and Drivers: <http://www.matrixorbital.ca>

Forums: <http://www.lcdforums.com/forums>

## Contact

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