NTEA-SM Kit

1 DESCRIPTION

The NTEA Series Kits a set of kits that consist of the NTEA-LG Kit, the NTEA-MD Kit, and the NTEA-SM Kit. NTEA stands for Nano Terminal Expansion Adapter, which come in three sizes (LG for Large, MD for Medium, and SM for Small). These boards are designed to interface with the common Nano microcontroller development board and allow for quick prototyping.

The *NTEA-SM* is the most compact member of the *NTEA-Series*. This breakout board provides screw terminal access to each Nano pin, making it ideal for quick prototyping. It also features mounting holes for secure installation.



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2 DOCUMENT REVISION HISTORY

Current document revision is Rev 1.

Changed to Rev 1:

- Updated *NTEA-SM* to version V2.0 and changed the datasheet accordingly (photos, compatibility).
- Added Chapters 4, 5, and 9.



3 PRODUCT FEATURES

This section highlights notable features of the NTEA-SM Kit.

3.1 Compatibility

The *NTEA-SM* board is compatible with a range of Nano microcontroller development boards including:

- PTSolns Nano Flip
- Arduino Nano Every
- Arduino Nano 33 IOT
- Arduino Nano 33 BLE REV2
- Arduino Nano 33 BLE Sense
- Arduino Nano RP2040
- Arduino Nano ESP32
- Other boards with the Nano form factor

3.2 Features of the NTEA-SM

The features of the *NTEA-SM* are graphically shown in Figure 1. This board has the smallest footprint of the *NTEA Series*. Indeed, the *NTEA-SM* is smaller in length than the actual Nano microcontroller. All of the pins are broken out on either side of the Nano with a row of screw terminals.





3.3 Mark of Authenticity

Authentic PTSolns PCBs have a black solder mask color and are marked with the "PTSolns" logo in white silkscreen printing. The "Canadian Designed" symbol, consisting of the Canadian Maple Leaf with the word "Designed" underneath, can also be found on the PCB in white silkscreen printing. The "PTSolns" trademark and the "Canadian Designed" symbols are shown in Figure 2.



Figure 2: The "Canadian Designed" symbol found on authentic PTSolns PCBs.



4 PHYSICAL PROPERTIES

The physical properties of the *NTEA-SM* are outlined in Table 1.

	Quantity	Value	Reference
PCB	Length	40.2 mm	Figure 3
	Width	33.2 mm	Figure 3
	Thickness	1.6 mm	Figure 3
	Weight (with header/terminals)	14 g	
	Color	Black	
	Silkscreen	White	
Material	Lead free HASL-RoHS surface finish		
	FR-4 base		
Mounting Holes	2x each with 3.2 mm diameter		Figure 3

Table 1: Physical Properties.



Figure 3: Dimensions of the NTEA-SM.

5 ELECTRICAL PROPERTIES

The electrical ratings for the *NTEA-SM* are outlined in Table 2. The copper traces connecting each of the Nano pinouts to the breakout pins of the header and screw terminal are 1 mm thick, poured on 1 oz/ft^2 .

NOTE: The user is cautioned when drawing the rated current as shown in Table 2, as many or most Nano microcontroller development boards are not rated for such currents on any of their pins.

Table 2: Electrical ratings for the NTEA-SM.

Туре	Rating
Current rating	1.5 A

7 USAGE AND APPLICATION

The *NTEA-SM* is typically used with one of the common Nano form factor microcontroller development boards, such as the PTSolns *Nano Flip*, or the Arduino Nano. This smallest form factor of the NTEA-Series breaks each of the Nano pins out with a corresponding screw terminal pin, as shown in Figure 4.

The user can also assemble the NTEA-SM with one of both screw terminals on the bottom side of the PCB. This is sometimes a unique requirement that is supported with dual-sided silkscreen printing.



Figure 4: NTEA-SM typical application.



8 KIT PACKAGE CONTENTS

The following items are included in the NTEA-SM Kit. The kits are unassembled.

This kit includes:

- 1pc PCB PTSolns NTEA-SM
- 2pcs 2.54mm 15-pin screw terminals
- 2pcs 1x15 pin female header



9 REFERENCES

This section lists relevant references.

- PTSolns Documentation Repository: https://docs.PTSolns.com
- PTSolns website: https://PTSolns.com
- PTSolns support: https://ptsolns.com/pages/contact