TREEDIX USB Cable Data Line Test Board Instruction Manual

Contents

TREEDIX USB Cable Data Line Test Board
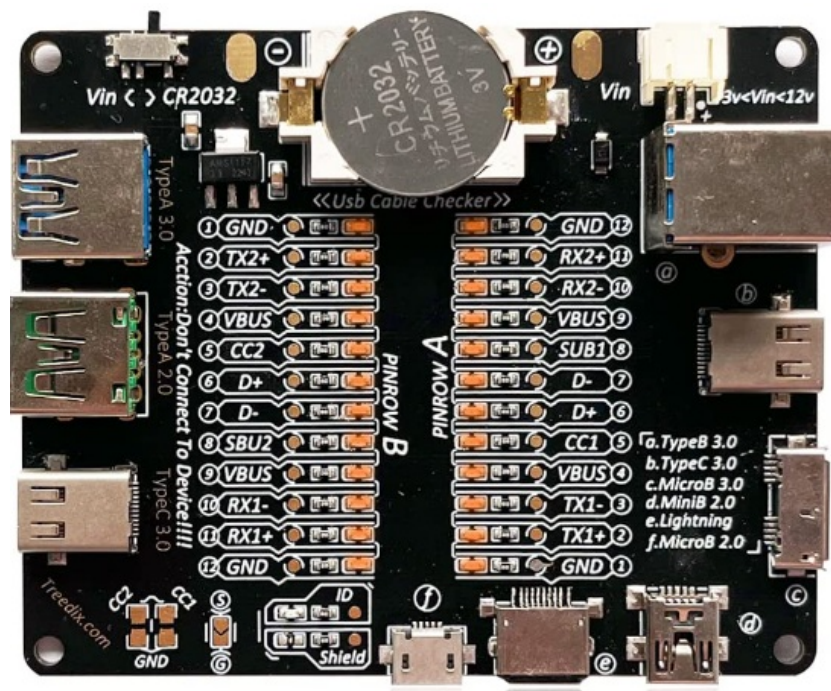
Specifications

- **USB Ports:** Type-B 3.0, Type-B 2.0, Type-C 3.0, Micro-B 3.0, Micro-B 2.0, Mini-B 2.0, Lightning

Battery Usage Instruction

1. Pull out the plastic tab by the battery (3-1).
2. If you want to remove the battery, please follow the picture and use a tool to take out the battery (3-2).
3. Insert the battery into the battery holder at a 45-degree angle, and switch the toggle to 'CR2032.' Be careful not to insert the battery vertically, as this will push the positive terminal of the battery holder (the two yellow metal points on the right) below the battery, causing the test board to not function properly (3-2).

Instructions for Use

1. Measurement Types: Type-B 3.0, Type-B 2.0, Type-C 3.0, Micro-B 3.0, Micro-B 2.0, Mini-B 2.0, Lightning. Because the pins of TypeC 3.0 are the same as those of TypeC 3.1 and TypeC 3.2, they are compatible with TypeC 3.1 and TypeC 3.2.
2. Insert a CR2032 button battery or connect Vin (3V < Vin < 12V). Ensure the power switch is set correctly based on the connected power source.
3. Connect the USB cable to be tested. The LED on the corresponding pin will illuminate. (Please note that short-circuited pins, diodes, active electronics, or other cable faults may lead to inaccurate results.)

PCB Board Design Principles

POWER USB PORT A USB cable external connection

USB PORT B

1. The connection schematic for each LED is shown on the left.

- Each pin of the A-end connector is connected to the power source, while each pin of the B-end connector is individually wired to the LEDs (5-1).

2. See the silkscreen on the back of the PCB for specific wiring. (Because non-3.0 cables do not utilize all LED indicators, the detection pins for TypeB 3.0, TypeB 2.0, MicroB 3.0, MicroB 2.0, MiniB 2.0, and Lightning are all connected to the LED indicators on PINROW B side.) (5-2)

USB Pinouts

- **USB Type-C** A1 A2 A3 A4 A5 A6 GND TX1+ TX1- VBUS CC1 D+ A7 A8 A9 A10 A11 A12 D- SBU1 VBUS RX2- RX2+ GND GND RX1+ RX1- VBUS SBU2 D- D+ CC2 VBUS TX2- TX2+ GND B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1
- **Type-C 3.0** 98765 1234 Type-A 3.0 56789 21 34 12345 Type-B 3.0 678910 Micro-B 3.0 USB2.0 1234 Type-A 2.0 12345 Mini-B 2.0 12345 Micro-B 2.0
- **Lightning** 87654321 Pin 1 Pin 2 Pin 3 Pin 4 Pin 5 Pin 6 Pin 7 Pin 8 GND Ground L0p Lane 0 Positive L0n Lane 0 negative ID0 Identification/control 0 PWR Power (charger or battery) L1n Lane 1 negative L1p Lane 1 positive LD1 Identification/Control 1

FAQ

- The Reference of Different Cables to Different Lights
- Sorry, the information about the reference of different cables to different lights is not provided in the text extract from the user manual.
- Please refer to the complete user manual or contact customer support for further assistance.
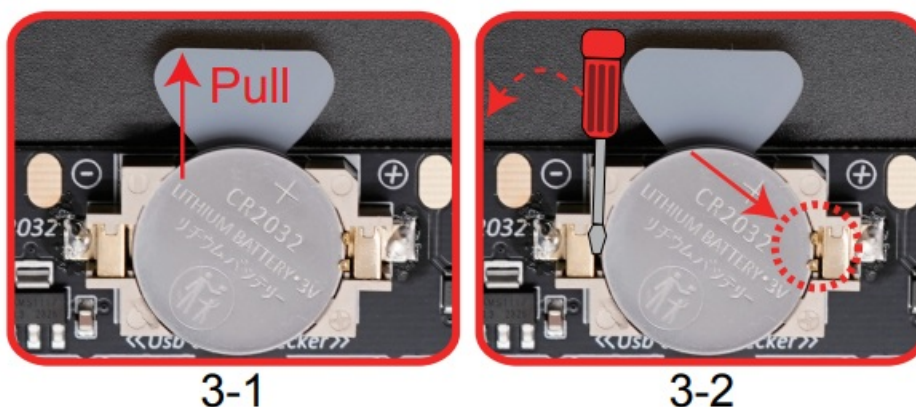
USB Ports

Electrical Test Point   24xLED Indicator
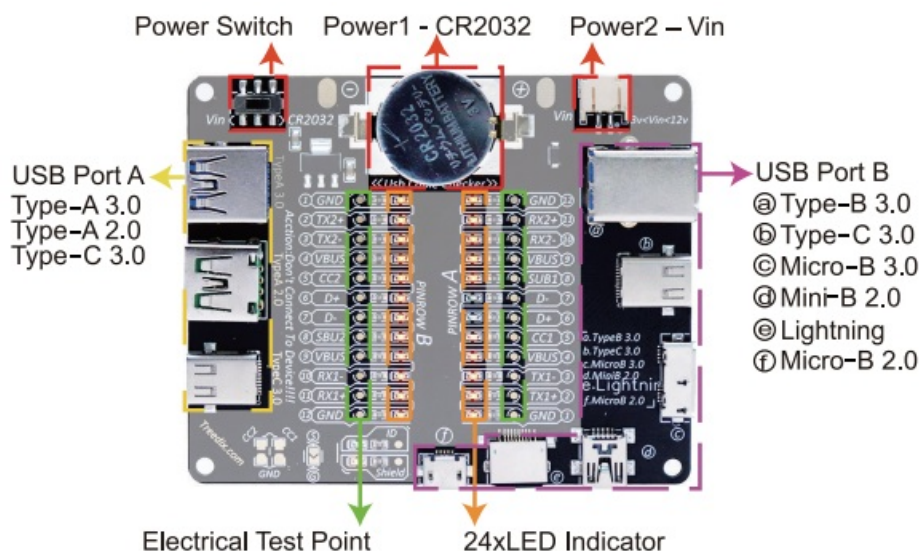
USB Cable Tester Pinouts

Pinrow B	Name	Description		Pinrow A	Name	Description
B1	GND	Ground		A12	GND	Ground
B2	TX2+	SuperSpeed differential pair 3 TX,		A11	RX2+	Super Speed differential pair 4 , RX,
B3	TX2-	SuperSpeed differential pair 3 TX,		A10	RX2-	Super Speed differential pair 4 , RX,
B4	VBUS	Bus power		A9	VBUS	Bus power
B5	CC2	Configuration channel		A8	SBU1	Side Band Use (SBU)
B6	D+	USB Data Positive		A7	D-	USB Data Minus
B7	D-	USB Data Minus		A6	D+	USB Data Positive
B8	SBU2	Side Band Use (SBU)		A5	CC1	Configuration channel
B9	VBUS	Bus power		A4	VBUS	Bus power
B10	RX1-	Super Speed differential pair 2, RX,		A3	TX1-	SuperSpeed differential pair 1 TX,
B11	RX1+	Super Speed differential pair 2, RX,		A2	TX1+	SuperSpeed differential pair 1 TX,
B12	GND	Ground		A1	GND	Ground

Battery Usage Instruction

1. Pull out the plastic tab by the battery(3-1)
2. If you want to remove the battery, please follow the picture and use a tool to take out the battery. (3-2)
3. Insert the battery into the battery holder at a 45-degree angle, and switch the toggle to 'CR2032.' Be careful not to insert the battery vertically, as this will push the positive terminal of the battery holder (the two yellow metal points on the right) below the battery, causing the test board to not function properly. (3-2)
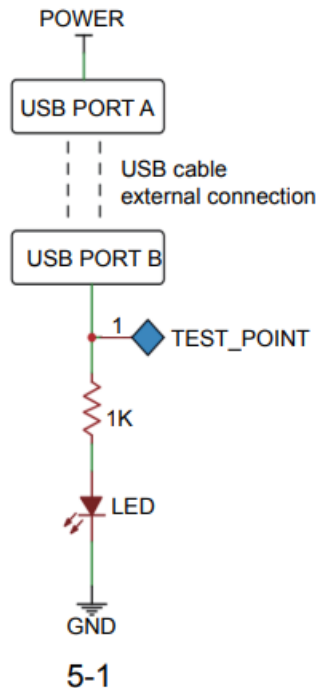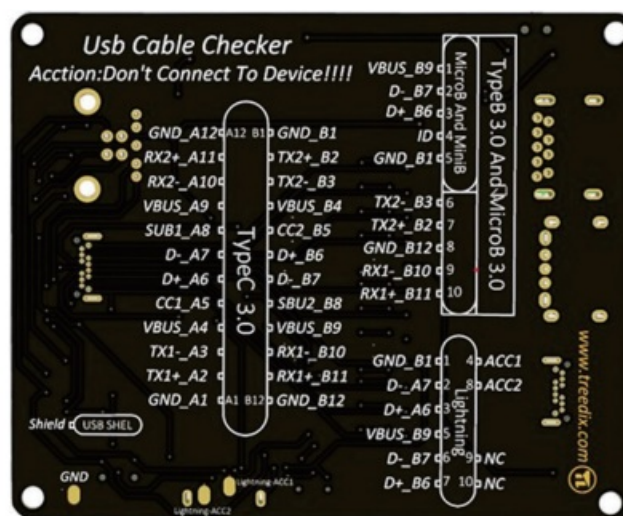

Instructions for Use

1. Measurement Types: Type-B 3.0, Type-B 2.0, Type-C 3.0, Micro-B 3.0, Micro-B 2.0, Mini-B 2.0, Lightning
   Because the pins of TypeC 3.0 are the same as those of TypeC 3.1 and TypeC 3.2, they are compatible with TypeC 3.1 and TypeC 3.2.

2. Insert a CR2032 button battery or connect Vin (3V < Vin < 12V). Ensure the power switch is set correctly based on the connected power source.
3. Connect the USB cable to be tested. The LED on the corresponding pin will illuminate. (Please note that short-circuited pins, diodes, active electronics, or other cable faults may lead to inaccurate results.)
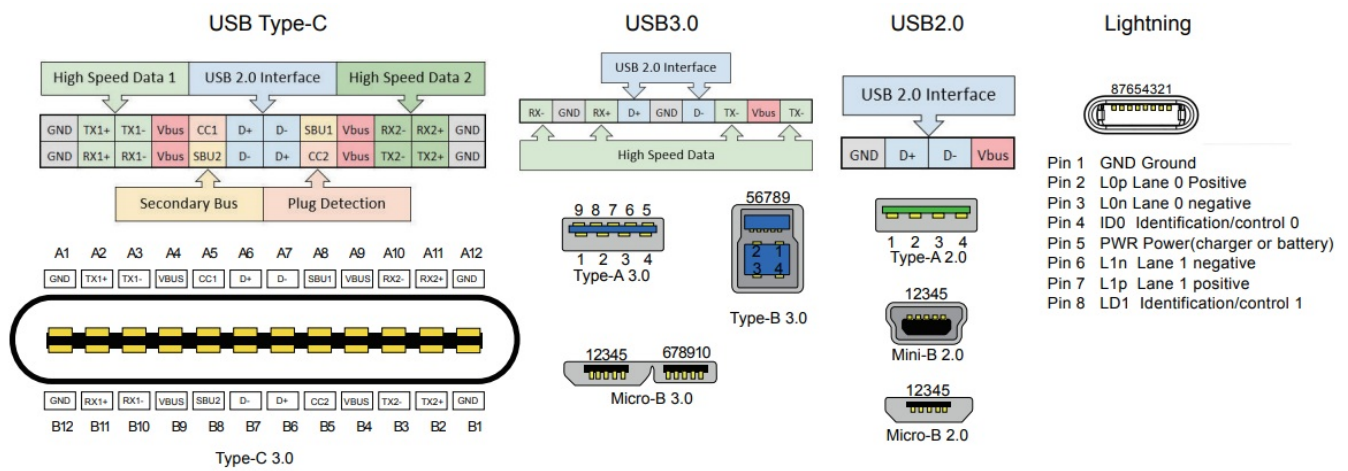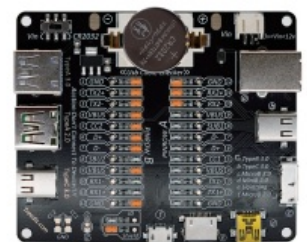
PCB Board Design Principles

5-1

1. The connection schematic for each LED is shown on the left. Each pin of the A-end connector is connected to the power source, while each pin of the B-end connector is individually wired to the LEDs.(5-1)
2. See the silkscreen on the back of the PCB for specific wiring.(Because non-3.0 cables do not utilize all LED indicators, the detection pins for TypeB 3.0, TypeB 2.0, MicroB 3.0, MicroB 2.0, MiniB 2.0, and Lightning are all connected to the LED indicators on the PINROW B side.)(5-2)

5-2

USB Pinouts

| USB Type-C											
High Speed Data 1			USB 2.0 Interface				High Speed Data 2				
GND	TX1+	TX1-	Vbus	CC1	D+	D-	SBU1	Vbus	RX2-	RX2+	GND
GND	RX1+	RX1-	Vbus	SBU2	D-	D+	CC2	Vbus	TX2-	TX2+	GND

Secondary Bus   Plug Detection

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
GND	TX1+	TX1-	VBUS	CC1	D+	D-	SBU1	VBUS	RX2-	RX2+	GND

GND	RX1+	RX1-	VBUS	SBU2	D-	D+	CC2	VBUS	TX2-	TX2+	GND
B12	B11	B10	B9	B8	B7	B6	B5	B4	B3	B2	B1

Type-C 3.0

USB3.0

USB 2.0 Interface

RX-	GND	RX+	D+	GND	D-	TX-	Vbus	TX+

High Speed Data

9 8 7 6 5
1 2 3 4
Type-A 3.0

56789
2 1
3 4
Type-B 3.0

12345   678910
Micro-B 3.0

USB2.0

USB 2.0 Interface

GND	D+	D-	Vbus

1 2 3 4
Type-A 2.0

12345
Mini-B 2.0

12345
Micro-B 2.0

Lightning

87654321

Pin 1   GND   Ground
Pin 2   L0p   Lane 0 Positive
Pin 3   L0n   Lane 0 negative
Pin 4   ID0   Identification/control 0
Pin 5   PWR Power(charger or battery)
Pin 6   L1n   Lane 1 negative
Pin 7   L1p   Lane 1 positive
Pin 8   LD1   Identification/control 1

## The Reference of Different Cables to Different Lights

- When GND and VUBS lights are on, it indicates that the USB data cable only has to charge functionality.
- When GND, VUBS, D+, and D- lights are on, it indicates that the USB data cable has both charging and data transmission capabilities.
- When GND, TX2+, TX2-, RX2+, RX2-, VUBS, CC2, D+, and D- lights are on, it indicates that the USB data cable has both charging and high-speed data transmission capabilities. It is a USB 3.0, 3.1 or 3.2 cable.
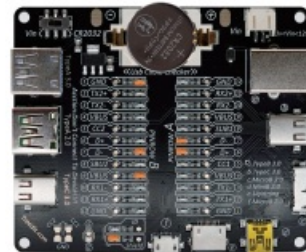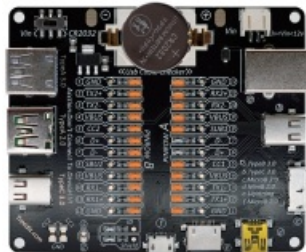
- When all the lights are on (except for one D+ and one D-), it indicates that the USB data cable supports comprehensive functionality, including charging, data transmission, audio, and video transmission.
- Lightning data cable detection schematic.
- Because there are various types of USB cables, we are only showing a partial representation in the image, but the method for identifying USB data cables remains the same.
- Please refer to the image description for guidance.
- Thank you for your understanding!
- **Email:** treedix@outlook.com
- **Notice:** Do not connect to any other device!
- www.treedix.com

Documents / Resources
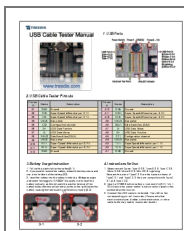
TREEDIX USB Cable Data Line Test Board [pdf] Instruction Manual
USB Cable Data Line Test Board, Cable Data Line Test Board, Data Line Test Board, Line Test Board, Test Board, Board

References

- **User Manual**