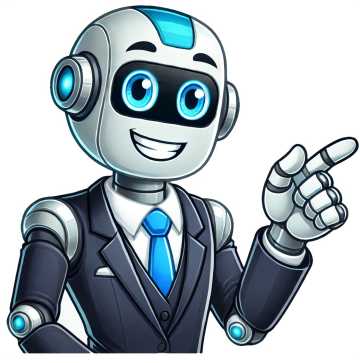Continue

Usb port tester

Free USB Analyzer is a non-intrusive software USB sniffer and protocol analyzer for Windows.This software-based USB protocol analyzer allows you to monitor the data transferred between USB applications and devices connected to your computer via USB interfaces. All Windows desktop/server 32-bit and 64-bit platforms starting from Windows Vista are supported. Windows 11 ARM64 is also supported.Our USB monitoring program may be an excellent alternative to hardware analyzers because it intercepts all Windows API function calls which are transferred between USB applications and device drivers, parses transmitted packets and shows all captured data in a several convenient forms, which is virtually impossible for hardware solutions due to their low level view.This Freeware USB data snooping utility requires no additional hardware or cables to operate. It runs smoothly, processes monitored packets in real-time even on high data rates (up to 20 Gbit/s). It allows efficient USB protocol analysis for High Speed USB 2.0, SuperSpeed USB 3.0 and SuperSpeed+ USB 3.x communications.For the best user experience, our product supports data filtering. Free version supports filtering by USB endpoints and requests. Paid version also supports filtering by parsed protocol fields and provides you with a lot of custom filtering options.The free version provides all the basic tools for convenient tracing and exploring captured USB data. It includes browsing, searching for specific data patterns and exporting features. Paid version also supports USB data recording (USB data logger function), sending packets to USB HID devices in response to triggered events and allows you to automate workflow with scripts (written in JavaScript or TypeScript).This USB sniffer helps in developing, debugging, testing and analyzing devices, their drivers, and other software/hardware solutions that exchange data using USB communication protocols.Download this Free USB Sniffer and trace USB communications in seconds.How Free USB Analyzer WorksThe program installs a filter driver between the USB host controller driver and the device driver and then intercepts all USB Request Blocks (URBs), displaying them to the user in an easily readable format.This free USB monitoring and analysis utility is designed for efficient interception, capturing and decoding of communication data generated by any USB application and device connected to a local or remote PC via the USB interfaces.Free USB Analyzer supports advanced data filtering by URB type and USB endpoints.Capturing and interactively displaying data transferred over a USB connection is now made easy!Free USB Sniffer FeaturesWith our free USB port monitor you can:View USB device stack layout: device objects for each device driverView USB device descriptor, configuration descriptor, interface descriptor, endpoint descriptor, HID descriptorView USB device properties and Plug & Play (PnP) related informationAnalyze USB Host Controllers, USB Hubs and USB Devices activityMonitor the bus traffic, decode and display the USB data, filter bus trafficIntercept and view USB control transfers, interrupt transfers, bulk transfers and isochronous transfersParse and reverse engineer USB protocols, reverse engineer USB devices, drivers and USB applicationsCapture data streamed via Hi-Speed USB and SuperSpeed Plus USB host controllersCapture data sent to the target Full-Speed USB 2.0 devicesMonitor data that flows between device interface and USB interface portAnalyze data transfer protocols for local or even remote USB devicesIf you are looking for an entirely software-based monitoring solution that facilitates development and debugging of USB devices, drivers and applications, then our Free USB Snooper is exactly what you need. It requires no additional hardware and allows you to debug communication protocol errors, view and test device failures.Free USB Port Monitor OS support:Our software Universal Serial Bus Analyzer supports all modern Windows server and desktop platforms starting from Windows Vista x86 and x64 operating systems. Monitoring of USB devices on Windows 10, Windows 11 and Windows Server 2022 are also supported.Free USB Protocol Analyzer UsageYou can use this USB communications viewer and debugger for:Debugging USB-related software applications and hardware devicesUSB hardware and device driver developmentTesting and troubleshooting USB software and hardwareReverse engineering of USB devices, drivers, applications and protocolsCapturing and parsing USB descriptors, exploring USB device propertiesSnooping USB communications data, I/O requests and control requestsExporting device communication data to your hard disk drive or removable mediaSpying and analyzing remote USB communications, remote data snoopingUnderstanding proprietary databus protocolsResearching functionality of any third-party software applications and hardware devicesDetecting errors in USB data transmissionTesting and troubleshooting USB protocolsFree USB Protocol Analyzer Target GroupsFree USB protocol analyzer and decoder is an extremely useful tool for the following target groups:USB hardware and software developersIT system integrators and consultants, lab expertsEngineers working in the field or in the labSCADA software system engineers and embedded engineersUSB Programmers, testers and IT support specialistsIndustrial control equipment support personnelUSB device developers, manufacturers and vendorsScience technicians and university studentsView detailed information for our USB sniffer usage scenariosUsing this freeware USB explorer you also can:View the properties and nested devices of local and remote USB devices:USB driver stack: Device objects associated with each USB device driver used for I/O operations.USB descriptors: USB device descriptor, USB configuration descriptor, USB interface descriptor, USB endpoint descriptor.USB Plug and Play related information: Instance ID, Hardware ID, Software Key and more.Capture and decode the following kind of data passed over USB device stack:USB Request Blocks (URBs) and structures used by device drivers.I/O Request Packets (IRPs) used by PnP.I/O Control Requests (IOCTLs) used by kernel-mode drivers and user-mode applications.Incoming and outgoing data packets flowing through USB interface.You'll find our Free USB sniffer and protocol analyzer useful while working with the following USB device classes:Audio (Sound card, speaker, microphone, MIDI)Communications and CDC Control (Ethernet adapter, Wi-Fi adapter, modem)Human Interface device (HID) (Keyboard, joystick, mouse)Physical Interface Device (PID) (Force feedback joystick)Image (Webcam, scanner)Printer (Inkjet printer, laser printer, CNC machine)Mass storage (MSC or UMS) (Memory card reader, USB flash drive, digital camera, digital audio player, external drive)USB hub (Full bandwidth hub)Smart Card (USB smart card reader)Content security (Fingerprint reader)Video (Webcams)Personal Healthcare (Pulse monitor)Audio/Video (AV) (Webcam, TV)Diagnostic Device (USB compliance testing device)Wireless Controller (Bluetooth adapter)Miscellaneous (ActiveSync devices)Application-specific (IrDA Bridge, Test and Measurement Class (USBTMC) for test and measurement equipment, USB DFU (Direct Firmware update))Vendor-specific device classOur Freeware USB Explorer is the most effective tool for developers, dealing with the following device classes:USB composite devicesUSB mass storage / USB drive devicesUSB Media Transfer Protocol (MTP) devicesUSB Human interface (HID) devicesUSB Video / Audio MIDI devicesOur Free Software USB Logic Analyzer will help you to capture USB Request Blocks and decode data received from the following USB Devices:USB to Serial adapter, USB Ethernet adapter, USB Modem, USB Serial (COM) Port, USB KVM switch, USB TV Tuner, USB Serial converter, USB Bluetooth adapter, USB Bar-code reader.USB Webcam, Video device, USB Microphone, Audio device.USB CD, DVD, Blu-ray Disc, BD players/recorders, Sound Bars and Home Theater Systems, USB Hard Disk Drives, HDD, USB pen drive (pendrive), USB Memory Cards.USB Joysticks, Keypads, Mice.USB Cameras, Receivers, Digital Camcorders, TV, Projectors and Screens, USB Printers, MP3 Players, Radios, Amps and Tuners.USB Gadgets, iPod, iPad, USB Tablets, E-Readers, Mobile Phones, Smartphone, Cell Phones, GPS Navigators.USB Networking and Wireless adapters, Computer Peripherals, USB Host Controllers and much more.Download this Free USB tracer and analyze USB communication bits and bytes in seconds!Free USB Analyzer AdvantagesFast. It runs smoothly at high data rates without compromising PC performance.Flexible. It supports advanced data filtering and layout customization.Remote. It monitors devices connected to the remote computer.Social. It allows you to ask questions and get answers from experts.FREE. It costs nothing! Checking USB ports on a Windows 11 computer is a simple task that can come in handy when you're troubleshooting device connection issues. By following a few steps, you can quickly determine if your USB ports are functioning correctly. Step by Step Tutorial: How to Check USB Ports on Windows 11 Before we dive into the steps, it's important to understand what we're trying to achieve. We want to verify if the USB ports on your computer are working properly. This can be particularly useful if you're having trouble connecting devices such as flash drives, external hard drives, or peripherals like mice and keyboards. Step 1: Plug in a USB Device Connect a USB device that you know is working to one of your computer's USB ports. If the device lights up or shows signs of receiving power, that's a good initial indicator that the port is functioning. However, lighting up alone doesn't mean the port is fully operational, so we'll need to check further. Step 2: Check Device Manager Open Device Manager by right-clicking the Start button and selecting 'Device Manager' from the list of options. In Device Manager, you'll see a list of all the hardware connected to your computer. If there's an issue with any of the USB ports, you might see a yellow exclamation mark next to the 'Universal Serial Bus controllers' section. Step 3: Look for Error Messages Click on 'Universal Serial Bus controllers' to expand the section and look for any devices with a yellow exclamation mark or error message. An error message or exclamation mark indicates that there's a problem with the USB port or the drivers. You may need to update your drivers or troubleshoot further. Step 4: Test All Ports Repeat steps 1-3 for all USB ports on your computer. Testing all ports ensures that you're not dealing with a single faulty port. If multiple ports are not working, it could be a more significant issue with the USB controller or motherboard. Step 5: Use Device Performance and Health Access 'Device Performance and Health' in Windows Security to see if there are any reported issues with your USB ports. This feature scans your system for any hardware issues and can give you a more comprehensive overview of any problems with your USB ports. After completing these steps, you should have a clear idea of whether your USB ports are functioning correctly. If you discover that one or more ports are not working, you can begin troubleshooting or consider having your computer serviced by a professional. Tips: How to Check USB Ports on Windows 11 Always use a USB device that you know is in good working condition when testing your USB ports. If a port isn't working, try plugging in a different device to rule out the possibility that the first device is defective. Check for Windows Updates, as a recent update might include fixes for USB port issues. If your USB ports are not working after an update, you might need to roll back your drivers to a previous version. Remember, front panel USB ports on a desktop computer can have separate issues from the motherboard's rear ports, so test both sets. Frequently Asked Questions What do I do if my USB ports are not working? If your USB ports are not working, you can try updating your drivers, checking for Windows Updates, or using the built-in troubleshooter to fix the issue. If these steps don't work, it might be a hardware problem, and you should consider contacting a professional. Can a USB port stop working because of a software issue? Yes, a USB port can stop working due to a software issue, such as outdated or corrupted drivers. Keeping your system updated can help prevent these issues. How do I update my USB port drivers? To update your USB port drivers, go to Device Manager, right-click on the USB controller, and select 'Update driver.' You can then choose to search automatically for updated driver software. Is it possible for a USB port to wear out? Yes, with physical wear and tear over time, a USB port can become loose or damaged and may need to be replaced. Can I check USB port voltage and current on Windows 11? Windows 11 does not have a built-in feature that allows you to check the voltage and current of USB ports. However, you can use third-party software or a multimeter to check these parameters. Summary Plug in a known working USB device. Open Device Manager. Look for error messages on 'Universal Serial Bus controllers.' Test all USB ports. Use 'Device Performance and Health' in Windows Security. Conclusion Knowing how to check USB ports on Windows 11 is an essential skill for troubleshooting potential issues with your computer's connectivity. Whether you're a tech-savvy individual or just someone who uses a lot of USB devices, following the steps outlined in this article will help you identify and resolve any USB port problems you may encounter. Remember, keeping your drivers updated and your system in good condition is key to ensuring all your ports function correctly. If you're still experiencing issues after going through these steps, don't hesitate to reach out to a professional for assistance. Matt Jacobs has been working as an IT consultant for small businesses since receiving his Master's degree in 2003. While he still does some consulting work, his primary focus now is on creating technology support content for SupportYourTech.com. His work can be found on many websites and focuses on topics such as Microsoft Office, Apple devices, Android devices, Photoshop, and more. Free USB Analyzer uses the special monitoring driver to let you monitor all USB devices connected to the computer either directly or via the external hubs. In addition, full device information is displayed in corresponding windows, including Device Descriptor, Configuration Descriptor, HID descriptor and others. If device is plugged or unplugged, Free USB Analyzer automatically updates the list.You may also monitor the early device enumeration stages using product's unique "Next connected device" monitoring capability.Restart any connected device or watch its properties using commands from the context menu.URB View visualizer is the view on the underlying Windows USB model protocol. It displays each USB request block (URB) sent and received by the device driver. Both packet information and payload data are displayed. Visualizer operates in two modes. Basic mode generally collapses the payload part of the packet, while the Complete mode always displays the whole packet, including the payload. The visualizer may be switched to one of those modes as a whole, or allows an individual packet to be switched.All monitored data or a selected part of it may be copied into the Clipboard or exported into external file in text or HTML formats. Visualizer also allows searching for a pattern or going directly to a packet referenced by its number.This visualizer consists of two panes. Upper pane shows short packet information in several columns, such as packet capture time, packet type, payload data size and so on. Lower pane shows detailed information for a selected packet.Lower pane consists of several tabs. Switch the tabs to view the selected packet using the corresponding visualizer.Visualizer's contents may be copied into the Clipboard and exported to text or CSV file.Support for filtering selected endpoints in the URB View visualizer windows.One of the convenient usage cases is having several URB View visualizers, each showing packets from its own endpoint.Support for selecting colors of different elements in the URB View visualizer.Use remote monitoring feature to monitor USB devices connected to a remote computer. You must have Device Monitoring Studio Server installed and running on a remote computer and you must have appropriate permissions to successfully connect and monitor. Excessive requests per second (please login) Extensions triggering background page requests (e.g. Ghostery) Cookies disabled (3rd party not required) Automated (robot) requests Comment spam Blocked proxy server Free USB Protocol AnalyzerScreenshotsMonitor and Analyze Your USB Connections Welcome to NerdTechy, your go-to destination for the latest and greatest in tech! Today, we've got a treat for gadget enthusiasts and tech professionals alike. The is a comprehensive roundup of the best USB power testers that have passed through our rigorous testing process. These handy devices are crucial for monitoring voltage, current, and capacity of USB ports, cables, and devices, helping you ensure everything is charging correctly and efficiently. From sleek and compact models perfect for on-the-go diagnostics to feature-packed testers for the most demanding tech buffs, our roundup covers the top four. Join us as we explore the best performers in the market, breaking down their features, performance, and reliability to help you make an informed decision for your tech toolkit. Key Takeaways: #1 – Klein Tools ET920 USB Power Meter – A durable, reliable tester with a USB-A and Type-C cable connected. Stores previous 10 readings with a wide voltage and current range. #2 – Eversame 2-in-1 USB Power Tester – Uniquely designed digital tester with support for USB-A, Type-C and even microUSB. Brightly lit LCD with several available settings. #3 – MakerHawk USB Multimeter – Extremely compact and highly capable with a beautifully bright 1.44″ LCD. While it's certainly more fragile than most, it provides a vast array of features. #4 – Plugable USB-C Power Meter Tester – A super-simple, updated option that has an OLED screen, but does not support USB-A or microUSB. But it is backed by an impressive 2 year warranty. Need some help? Check our FAQs section for specific information in regards to USB power testers, how to use them, and how they typically operate. Key Takeaways: Simple, battery-free operation. Power is supplied via the plugged-in device. Includes both USB-A and USB-A portscables. Rugged design that's able to withstand worksite abuse. Stores 10 past readings, but capacities are reset during a power loss. Supports 3-20V DC, and currents ranging from 0.05-3A for USB-A and 0.05-5A for Type-C. Brightly lit LCD. Exploring the intricate world of USB power testing, we have had hands-on experience with the Klein Tools ET920. This is a device that left a lasting impression due to its solid design and extensive functionality. Its compactness pairs seamlessly with its rugged build, delivering a feeling of high quality and resilience. Even after a drop test from 2 meters, the ET920 continued to function flawlessly, proving its durability and robustness. The ET920 includes a comprehensive set of features, accommodating both USB-C and USB-A cables and ports. Despite the limitation that these ports cannot be used simultaneously, it provides accurate monitoring of USB output, measuring parameters like voltage, current, capacity (mAh), energy (Wh), and resistance with precision. Safety is a critical aspect of USB power testing, and the ET920 ensures protection with its ability to detect voltage and current overloads. It showcases a broad measurement range, handling voltages from 3 to 20V DC, and currents ranging from 0.05 to 3A for USB-A and 0.05 to 5A for USB-C. Operation is straightforward. Simply power it on, connect the device source to the input, and link the load output to the device being charged. The ET920's user-friendly interface ensures that even those new to USB power testing can navigate its features with ease. It comes with a memory function, offering 10 storage slots for data retention, although it does not maintain measurement records after a power loss. It's important to note that the mAh measurement resets when the connected battery pack is depleted. The bright LCD screen of the ET920 is a worthwhile feature, ensuring readability in both low and high light conditions, providing clear insights at a glance. Our hands-on testing confirmed that this USB power meter delivers reliable performance, making it a valuable tool for anyone looking to gain accurate insights into their USB devices' power consumption and performance. Key Takeaways: Simple, easy to understand, battery-free operation. Supports USB-C, USB-A and microUSB. 8-color LCD with auto rotating for easy readability. Automatic data save function. Our testing adventures brought us to the Eversame 2-in-1 USB Power Tester, a device that caught our attention and left a strong impression. Its compact nature places it among the most portable options we've encountered. Featuring a large 1.44″ LCD screen, the MakerHawk provides clear and readable data, surpassing many other USB power testers we've experimented with. The screen's 360-degree auto-rotation function is a thoughtful touch, ensuring that readability remains consistent regardless of how the device is positioned. However, it's important to note that while the screen is impressively large, it does feel somewhat fragile, necessitating careful handling. It comes generously equipped with five connection ports: USB-A and USB-C for both input and output, along with a microUSB input. This array of options opens the door for a variety of testing scenarios, catering to a range of gadgets and cables. Operating the MakerHawk is straightforward, thanks to its four functional buttons. These allow easy access to the main interface, quick and standard charging recording, wire impedance, a graphical view, and system parameter settings. In terms of measurement capabilities, it supports voltage ranges from 3.8V to 30V and currents up to 3.0A. During our testing, we found it to be highly accurate and reliable, but be aware that for proper functionality, both input and output must be used simultaneously. Safety is a paramount concern, and the MakerHawk addresses this with built-in alarms. The temperature alarm activates when readings surpass 113 degrees Fahrenheit, while the voltage and current alarms trigger when readings fall below 3.8V, exceed 30V, or surpass 3A, respectively. These alarms manifest as a flashing display, ensuring that any potential issues are promptly identified and addressed. While the MakerHawk may not match the ruggedness of some other models like the Klein Tools, it offers sufficient durability for most standard testing scenarios. Overall, our hands-on experience with the MakerHawk USB Multimeter confirmed its reliability, ease of use, and comprehensive functionality, making it a worthy addition to any tech enthusiast's toolkit. Key Takeaways: Only suitable for USB-C devices. Brightly lit OLED screen. No auto-rotate, but can manually rotate with a physical button. Operating range of 4V-22V and 50mA-6.5A. 2 year warranty. Our testing adventures brought us to the Plugable USB-C Power Meter Tester. This is a simple yet highly reliable option designed to deliver voltage and amperage readings for the latest USB-C devices. Its straightforward nature ensures that even tech novices can harness its capabilities without feeling overwhelmed. It sports a brightly lit OLED screen, showcasing current (amps), voltage (volts), and an arrow indicator for current flow direction. This vivid display ensures that readings are clear and easy to understand from any direction, although the Plugable lacks an auto-rotate function, a handy physical button allows users to manually adjust the screen orientation to suit their preferences. One of the significant advantages is its bidirectional reading capability. This means it can be connected in any orientation without affecting its performance. This proved to be a time-saver during our testing period, streamlining the hassle of ensuring it was connected in a specific way. The Plugable supports a full range of USB Power Delivery voltages, ranging from 5 to 20V, with an operating range of 4V-22V and 50mA-6.5A. However, it is important to note that it does not support the USB-PD R3.1 Extended Power Range, which includes 28V, 36V, and 48V. Despite this, it's compatible with all USB data from 1.1 through 3.1 Gen 2, ensuring its applicability across a broad spectrum of devices and scenarios. Functioning as both a data and power quality meter, the Plugable allows USB data pass-through, USB-C Alt Mode video, and USB-C charging. Just like the other products we've introduced in this article, it can be used inline with USB-C docking stations, chargers, accessories, and more. However, it's not compatible with Thunderbolt 3 devices, a detail worth considering. We loved the incredibly portable design. It resembles a USB flash drive and measures just 0.88″ x 2.52″, making it a convenient tool to carry around for on-the-go testing. And with a 2-year warranty included, the Plugable USB-C Power Meter Tester left us feeling secure in its reliability and longevity after extensive hands-on testing. What is a USB power tester? A USB power tester is a device that helps you measure the voltage, current, and other electrical parameters of USB ports and devices to ensure they are working correctly and efficiently. Can USB power testers measure both input and output power? Yes, most USB power testers are designed to measure both input and output power, but it's essential to check the specific model's capabilities before purchasing. However, the ones we introduced in this article are capable of both. Are USB power testers compatible with all types of USB ports? USB power testers are commonly compatible with USB-A, USB-C, and microUSB ports. However, the compatibility varies by model, so it's crucial to verify the specifications of the tester you are interested in. Do USB power testers require any additional software or drivers? Most USB power testers are plug-and-play devices that do not require additional software or drivers. They display the measurements directly on the built-in screen. None of the devices we introduced require any sort of software or special setup. Can I use a USB power tester to determine the charging speed of my device? Yes, a USB power tester can help you determine the charging speed of your device by measuring the voltage and current during the charging process. This is a main reason why most people use them. How do I use a USB power tester? Similar to using a USB data blocker, simply connect it to the USB port or device you want to measure. The tester will display the electrical parameters on its screen, allowing you to assess the performance. They are powered via the connected device and draw power internally via the attached battery. Can USB power testers detect issues with USB cables? Yes, USB power testers can help identify issues with USB cables by measuring the voltage drop across the cable, indicating potential damage or poor quality. Testing multiple cables back-to-back can help determine which ones may have potential issues. Meet Ry, "TechGuru," a 36-year-old technology enthusiast with a deep passion for tech innovations. With extensive experience, he specializes in gaming hardware and software, and has expertise in gadgets, custom PCs, and audio. Besides writing about tech and reviewing new products, he enjoys traveling, hiking, and photography. Committed to keeping up with the latest industry trends, he aims to guide readers in making informed tech decisions. A USB tester is a simple measuring tool that is widely utilized for several measurements of the electrical properties of USB. It measures the USB current, voltage, power, charging speed, discharge capacity, and so on. In addition to its functions, simultaneously, the current state of the art of the USB tester can also be applied to overload or low voltage current protection. This advantage allows you to easily find out the charging problems with USB cables, car charging, and charging protocol of some other models like the USB tester. In the market and hopefully, one of them suits your needs. These are 5 best USB testers that we gather from the market and hopefully, one of them suits your needs. These are 5 best USB testers that we gather from the market and hopefully, one of them suits your needs. These are 5 best USB testers that we gather from the market and hopefully, one of them suits your needs. We suggest you take a moment to read the buying guide below. This will help you comprehend the technical specifications of each USB tester and make you better understand which USB tester suits you best. Our team spent many hours to come up with this list of the best USB tester. We hope our list will help you find the USB tester that is ideal for you. We researched the features, read the customer reviews and above all, we really care for our readers, so we only put the best USB testers in this article. Best USB Tester Reviews in 2025 ProductsPicturesDescriptionPrice 1. KJ-KayJI [Best Overall] - 2 in 1 USB tester - IPS screen - comes with clip cable support Price! 2. AVHzY CT-3USB 3.1 Tester comes with PC software for data logging and is also programmablePrice? 3. Klein Tools ET920USB-A and USB-C Digital Meter capable of storing and recalling up to 10 readingsPrice! 4. PemenolSupporting 3 input: Regular USB, USB type C, and Micro USBPrice! 5. Walfront UT658Dual USB tester with cable supportPrice? 1. KJ-KayJI Regular & USB C Tester [Best Overall] This is the overall best USB tester that we recommend first. It's a 2 in 1 USB tester, IPS digital multimeter, and comes with clip cable support. All of these provide a perfect combination for tech lovers. The multimeter can monitor different parameters at a time which include current, voltage, capacity, power, D/D- voltage, electric quantity, temperature, load impedance, resistance, charging time, and other relevant data for USB or type C port gadgets. In terms of the screen display, it contains the latest version of the IPS color screen which also provides eight colors for different data and makes it clearer. A 180-degree flipping feature is also available in this multifunctional device. In addition to the data monitoring function, this measuring device comes up with built-in circuits for overload voltage protection, low voltage protection, and over current protection to avoid any type of MA functionality at user devices. Overall, we love to recommend this. It supports QC3.0 (3.8-12V), Android BC1.2 (5V), QC2.0 (5V/9V/12V/20V), MTK-PE (5V/7V/9V/12V), Apple 5V/2.5A, and various other QUALCOMM fast chargers. It can ensure the safety of devices while meeting the output of two devices at the same time. Buy Now! Pros: High Resolution of recorded data Can perform multifunction's at a time 18 months of warranty Current adjustment according to the ambient temperature change Cons: Large size 2.5 × 2 × 0.4 inches High self-current consumption 2. AVHzY CT-3 USB 3.1 Tester If you have the budget and need a more advanced USB tester, AVHzY CT-3 is the best choice. It comes second for many more reasons it offers. And if not for its high price tag, it could have been first on the list. AVHzY CT-3 USB tester is capable of 0-26V and 0-6A voltage and current measurements. It shows reading on its brightly colored TFT screen. This tester gives accurate voltage and current readings to 4.5 digits with a maximum gain error of 0.1%. AVHzY CT-3 is suitable for almost all applications. Thanks to its support of various communication protocols. It is uncomplicated to operate due to its QC3.0, QC3.0, QC4.0, Huawei SCP, SSCP, FCP, Samsung AFC, VOOC, etc. This USB tester has two unique features: data logging and programmability. It has powerful PC software that allows data recording for most of the charging protocols and for programmability. It has powerful PC software that allows data recording for most of the charging diagnosis. You can program the AVHzY CT-3 USB tester and set your scripts to run on boot. It features 12Mbytes internal memory used for program code storage. The manufacturer also provides APIs and interpreters inside the device to make it convenient for users to customize features. Buy Now! Pros: Programmable Supports data logging and PC software data analysis Features PD listener for device diagnosis Supports older USB protocols Large brightly colored TFT screen for data display Cons: Very expensive Relatively big in size for those looking for a more portable USB tester. 3. Klein Tools ET920 USB-A and USB-C Digital Meter Klein Tools is one of the reputable brands for manufacturing high-quality testing and measuring instruments. The same is reflected in their ET920 USB Power Meter. The device is ruggedly built with ABS casing for durability. Klein Tools ET920 is a dual USB tester supporting the highest power capacity. It is rated between 3-20V and 0.05-3A for USB-A and 3-20V and 0.05-5A for USB-C with an accuracy of 1%. The device can continuously monitor up to 1000 hours of voltage, current, energy, capacity or charge delivered, and resistance. It also features a high-resolution LCD screen that allows usage in areas with low ambient lighting. The Klein Tools ET920 is built for safety. It features overvoltage and overcurrent protection. Buy Now! Pros: Tests USB type A and C Can continuously monitor ports for up to 1,000 hours Overcurrent and overvoltage protection Lightweight and durable Very accurate Cons: Relatively expensive Relatively bulky 4. Pemenol Multifunctional USB Tester + Supply Module Multifunctional voltage, ammeter, and temperature display integrated with the buck-boost power supply module makes this gadget more reliable for not only testing the electronic equipment but also serve as a voltage meter supply. Its automatic calibration, safety, auto-protection, real-time display, and portability can perfectly suitable for electronic engineers to develop, debug electronic instruments. It supports three voltage inputs ways: Regular USB, USB type C, and Micro USB. This USB tester is also very easy to carry and comes with an outer shell for protection against step-up module damaged. This gadget can protect your hardware from being damaged from overpowering, over current, and under-voltage. The buck-boost converter can automatically calibrate the voltage and current to meet your requirements accurately. It can convert DC 3.0V-12V to DC 1.0V-24 V and power approximately 2W-3W. You could use it on various small devices like laptops, chargers, etc. as a multifunctional measuring device. Further, it can also use for providing require DC power to certain low power projects. Buy Now! Pros: Dual Operating System Three voltage inputs ways Automatic calibration of voltage and current High power measuring range 0-110W Mini size Cons: This device does not support protection against reverse connection Low power supply range Each time you have to adjust the working mode before use. 5. Walfront UT658 Dual USB tester. The device looks great and is suitable for various applications, such as engineering, verification, and DIY projects. Walfront UT658 tester efficiently monitors charging efficiency and protects the charging equipment. This dual USB tester supports USB types A and C. It measures voltage within the range of 4-24V DC for both USB types with a resolution of 0.01V. For measuring current, Walfront UT658 provides a range of 0.05-3.00A for types A and C with 0.01A resolution. Walfront UT658 is one of the USB testers with the highest power capacity. It is rated between 0-4,000Wh. It can also store up to 10 groups of data and is compatible with USB 2.0 and 3.0. Buy Now! Pros: Protect charging equipment Monitors charging efficiency Easy to carry Stores up to 10 groups of data Large screen displays voltage, current, power, capacity, and voltage reading Cons: Relatively big as a USB tester 9. Yogre USB Tester Yogre USB 3.0 tester is a premium quality low-cost solution to examine the USB charging voltage and current instantly. It's lightweight, small size, durable, and extremely portable. No extra cables or power sources are needed to operate. It supports the USB interface with electronic devices ranging from 3V-30V and 0.00-5.10 A. This USB tester is extensively utilized in the scrutiny of 3C digital peripheral solutions. This device successfully ensures the protection of our digital devices. It has a voltage measurement resolution of 0.01 V along with a current measurement resolution of 0.01A. It can operate in a significant temperature range of from -10°C up to 60°C. On this tester, you could simply set up your timer off or full charge power off. That means the tester has two functions, either you can set a timer to turn off the tester or turn the tester off automatically when the charging is full. It will automatically cut the power with a notification sound. Real-time monitoring of voltage and current values can be done through this, but when you set a specific value the tester will give a beep and power off automatically until the value falls or exceed above. Buy Now! Pros: High quality with low cost Small size with the dimensions of 3.78 × 1.89 × 0.98 inches Good capacity measurement range of 0-99999mAh Cons: It cannot detect the fast-charging feature Dull display Low voltage measuring resolution 7. Eversame USB C Power Meter Tester Eversame is a multifunctional tool capable of charging, data wire resistance value testing, cable impedance measurement, and data storage. It allows you to check the charge performance of a USB output port and test a power bank's capacity and electric energy. This voltage tester should be one of the best to include on your list. It gives you the most bang for your money with many features and is compact and portable. The device is designed with a high-grade LCD monitor and an intuitive user interface, making it interactive. Buy Now! Eversame USB C Power Meter has insane technical specifications, which include the following: Capacity range: 0-99999mAh; Energy range: 0-99999mWh; Load impedance range: 1.50-9999.9Ω; Time range: 0.99 hours 59 minutes 59 seconds; Temperature measurement error: ±3°C/±6°F; Delay off screen time: 0-9 minutes; Current curve range: 0-3A; Temperature Range: -10°C to 100°C/0°F to 200°F; Voltage curve range: 4.5V-24V; Voltage resolution: 0.01V; Current resolution: 0.001A; Voltage measurement accuracy: ±0.2%; Current measurement accuracy: ±0.8%; Pros: Intuitive user interface Safe and reliable for monitoring voltages and current Supports a high-resolution LCD screen that allows usage in areas with low ambient lighting. These things could have been more compact 8. Eversame 2-in-1 USB Tester Eversame 2-in-1 USB Tester is a cost-effective option for you. It has many features and can do the job quite well. You can use this USB tester to measure the capacity of your mobile battery, charger bank, and charging speed. This USB tester is capable of bidirectional current detection - measures both negative and positive currents. The readings can then be displayed on the TFT screen. You can use it for first charging and checking the charging speed and quality of a USB cable. The technical specifications are as follows: Capacity range: 0-99999mAh; Energy range: 0-99999mWh; Load impedance range: 1.50-9999.9Ω; Current curve range: 0-5.1A; Temperature Range: 0°C to 80°C/32°F to 176°F; Voltage curve range: 3.6V-32V; Voltage resolution: 0.01V; Current resolution: 0.001A; Buy Now! Pros: Supports screen rotation Overcurrent and overvoltage protection and warning Multipurpose - suits many applications Wide voltage detection range Affordable Cons: Relatively big for a USB tester 9. MakerHawk USB Tester USB Tester High quality, reasonable price, and small size make this USB tester more attractive for buyers. There is no need for any type of professional wiring. You just plug in this MakerHawk USB Tester in your device to run your job and could directly see the charging status, capacity, and voltage along with quality alarm system to protect the device from over-voltage, over-current, under-voltage, and under power conditions. The intelligent automatic power-off system makes it more appealing when considering the high-quality tester at a reasonable price. This device has an operating range of 50-100MA. It can store mAH power-off for a maximum of 60 minutes. Whether it lost the power-off for a maximum of time, and not whether the capacitance of the charging gadget is true or false. With the HD color display screen, the data on the tester's screen will be brighter and clearer. It is compatible with QC 2.0/3.0 and PD protocol and intelligently detects fast charging as well. Buy Now! Pros: Good quality with a reasonable price Intelligent memory charging capacity Temperature Measurement Cons: Provides rough details about the capacitance Limited Features Low refreshing rate 10. MakerHawk Multimeter USB Tester High-resolution voltage, current resistance meter supported with regular USB and Type-C port, DC 4.0- 24V 5.00A USB charger, HD IPS color screen display, and much more comes up with this MakerHawk USB input port can withstand a high current range up to 5A supported with high power input. It consists of an internal as well as external NTC temperature sensor which enables us to identify the temperature during measuring or providing the high power to the output. These sensors have a wide range of measurements -20°C - +120°C. It is recommended to use Type-C port when high power input or output is needed. This device comes up with a wide IPS HD color LCD screen for data monitoring from different ports at the same time. It has the capacity record of 0-99999Ah along with 0-99999Wh. The IPS screen will help you see the reading clearly even though you are outdoor. Built-in functional protect your device in under-voltage and an over-current situation. Precision, accuracy, high resolution of 0.0001 for both complex tasks with a USB tester. Just hook it up to a USB port, and you get all the color complex tasks with a USB tester. Just hook it up a USB port, and you get all the color complex tasks with a USB tester. Just hook it up a USB port, and you get all the color complex tasks with a USB tester. Just hook it up to a USB port, and you get all the data you need. The multimeter can monitor different parameters at a time and high-power operations Automatic recovery of voltage Cons: Only Type-C can handle high power Large size 2.64 × 1.5 × 0.47 inches High Self-power consumption Buying Guide of USB Tester We have spent many hours researching, comparing, and deciding the best USB tester based on all specifications and needs on the market. But if you still want to look for other USB testers elsewhere, this buying guide should help you. Consider the following features: 1. Ease of Operation The best product should be plug-and-play unless you want to do other complex tasks with a USB tester. Just hook it up a USB port, and you get all the data you need. 2. Voltage and Current Measurement Range This depends on the intended application, but always choose a USB tester with wide voltage and current measurement ranges. Also, consider the power output from the device you want to buy. This is crucial if you want to use it to charge your other devices. 3. Safety Features A reliable USB tester should have safety features. Overcurrent and overvoltage protection ensures you don't suddenly fry the device. Some will alert you if you are just about to exceed voltage or current limits. Also, consider a USB tester that protects any equipment connected to it. You don't want to ruin your phone if you connect it to a USB charger, do you? 4. Refresh Rate This is the time a USB tester takes to update on its display. The shorter it takes, the better it will be, especially if you are testing for a USB port or cable quality. 5. Industry Standards USB ports in different equipment and devices vary. They have varying voltage and current ratings. So, the USB tester you buy should conform to the standards of what you want to test. If the USB tester is specified as USB 3.1, check if it supports USB 3.0 or USB 2.0 Current, voltage, and data transfer rates in these are all different. You should also check if it is a USB type A, B, or C and buy what matches the device you want to test. 6. Durability and Size Determine the size of the USB tester you want to buy. This is purely a personal preference. But when it comes to durability, you want to go for the best. Consider the material and general built quality of what you want to buy. Those having a plastic or casing USB tester. Ones with ABS casing are the best in this case, though they can look bulky sometimes. Conclusion The above-mentioned USB tester is the best solution to test your electronic devices/components. They vary in price according to the number of features and resolution of recorded data. These testers are widely used in testing single small devices and provide real-time monitoring of data which is helpful in the protection of pricey devices.