# Quick Start Guide

SharkTapBYP 10/100/1G

The SharkTap makes a copy of the packets on the NETWORK ports and sends them to the TAP port. You can use the "Wired TAP" port to delivery these packet copies to a standard ethernet port, or they can be delivered to a virtual ethernet port via USB. So there are two 'use cases'.

To use the Wired TAP port:

1) Connect the NETWORK ports of the SharkTap to the link to be monitored, shown as A <-> B below. Connect the existing network cable to A or B, then complete the network connection using a patch cable from the opposite port. Note that you will get a network connection, through the relay bypass, even if the SharkTap is not powered.
2) Connect an RJ45 from the Wired-TAP to your PC ethernet port, or other capture device.
3) Connect the supplied microB cable to any USB port on your PC. The SharkTap only uses power from this connection, not the USB signals. You can also use a cell phone charger or other 'wall wart' that has a micro-USB plug. The current draw depends on the speed of the links, but the worst case is less than 500mA (Worst case is three 1000Base-T links, no EEE)
4) Your PC port does not need an IP address, nor any protocol configuration. There is no communication with the SharkTap, just copies of Network packets broadcast over the Wired TAP port. Programs like Wireshark will set your PC port to "promiscuous mode" where it simply passes along all packets received.
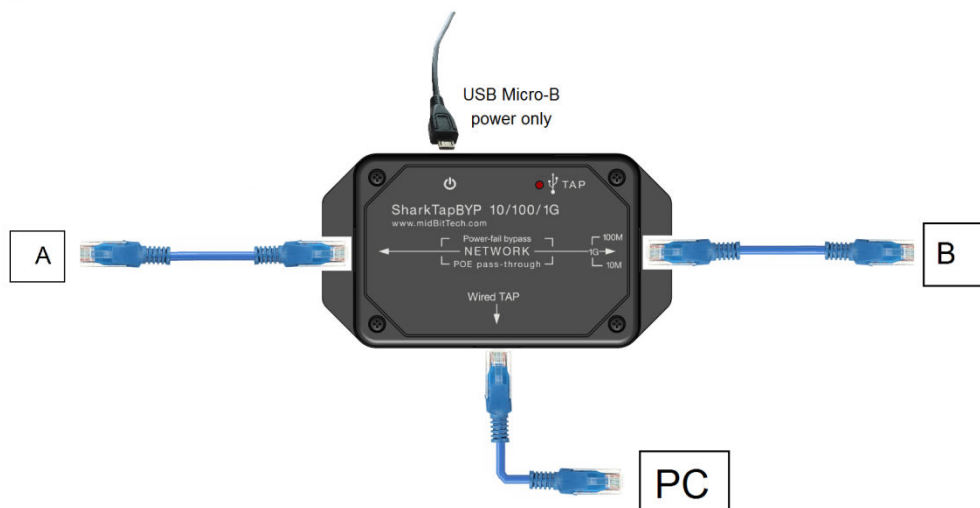
To use the SharkTap in USB mode:
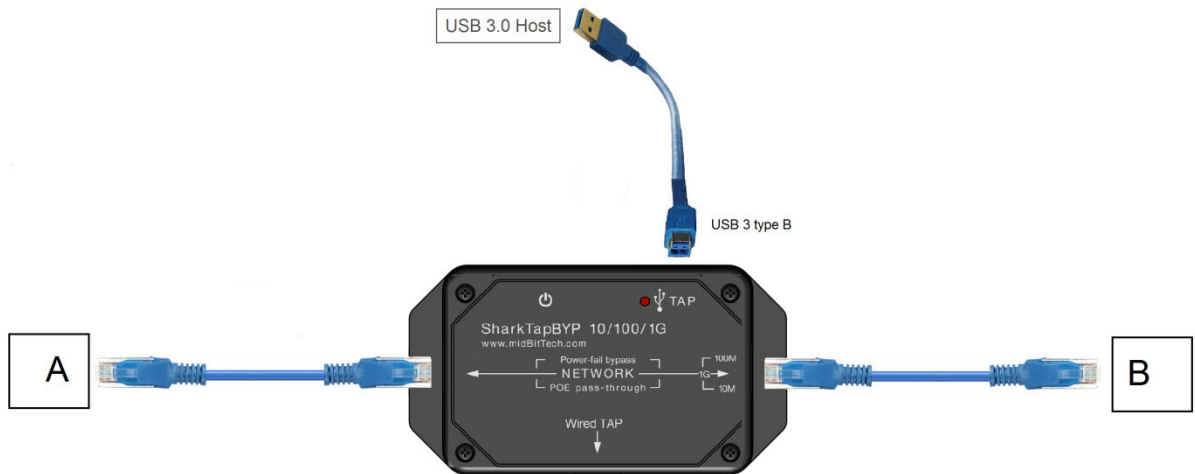
1) Connect the NETWORK ports of the SharkTap to the link to be monitored, shown as A <-> B below. Connect the existing network cable to A or B, then complete the network connection using a patch cable from the opposite port. Note that you will get a network connection, through the relay bypass, even if the SharkTap is not powered.

2) Connect the USB Tap port to a USB 3 host port with the blue USB provided (or equivalent). You can use a USB 2 port, but the SharkTap draws up to 750mA in USB mode, which exceeds the USB 2 limit of 500mA. Many USB 2 ports will handle this easily, but if the SharkTap port lights are flashing on and off, you probably don't have enough power. Also, USB 2 will only provide 300-400Mbps throughput. This is adequate for 10/100 sniffing, but you may lose mirrored packets on a gigabit network, depending on the amount of traffic. Packets will not be dropped on NETWORK ports, only on the USB Tap port.

3) You can connect the microB cable as well to provide additional power. In a permanent installation you might maintain power with the micro-USB cord and only insert the USB3 (blue) cable when you want to view packets.

4) See "USB Device Driver" section below for the configuration of your USB connection.

USB Device Driver:

When connected to the full size type B jack (blue cable), the SharkTap will show up on your PC as a new Network Adaptor. On Windows 7 or later, Windows Update will automatically install a driver the first time the SharkTap is plugged in. The SharkTap uses the industry standard ASIX AX88179 Gigabit Ethernet Adapter chip, which has mainstream support.
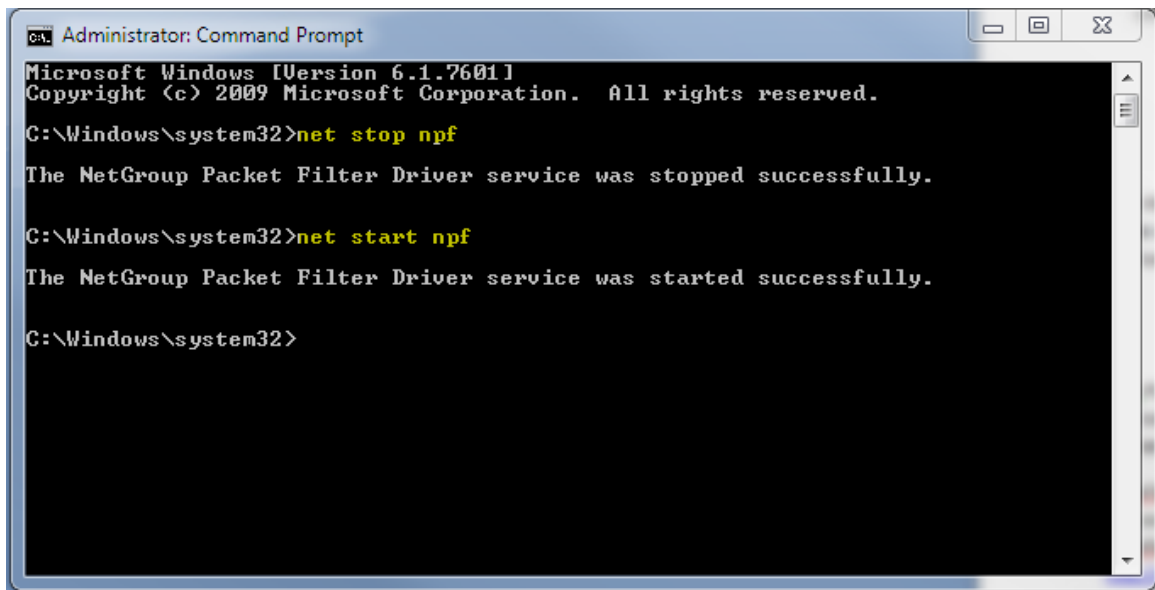
Once the driver is installed, configuring the SharkTap is identical to configuring a built-in Ethernet port. You don't need to assign an IP address or other network configuration. Our website, http://www.midbittech.com/usb/ provides expert tips for setting up your network adapter for the cleanest WireShark experience. Wireshark or other capture software will set the network port to capture all packets, so any protocol settings are irrelevant.

 For recent **Linux** distributions, the SharkTap will "just work" and show up as usbx, or enx70b3d5ebxxxx if you have 'predictable interface naming'. You do not need to configure an IP address, and probably don't want to. AX88179 support has been part of the official tree since 2.6

(Note: Any packets generated by your PC will not actually be routed to the NETWORK ports).

For older Windows or Linux machines, or other OS's, ASIX provides driver support at http://www.asix.com.tw/download.php?sub=driverdetail&PItemID=131

WinPCap Driver: Wireshark, on Windows, includes a software driver called WinPCap that may not recognize the SharkTap until the PC is restarted. You can avoid doing a restart as follows: Open a Command Prompt with supervisor privileges (right click on the command prompt icon, select 'Run as Administrator'), and type 'net stop npf'<enter> then 'net start npf'   You should only need to do this the first time the SharkTap is plugged into your PC.

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Administrator: Command Prompt

Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Windows\system32>net stop npf

The NetGroup Packet Filter Driver service was stopped successfully.

C:\Windows\system32>net start npf

The NetGroup Packet Filter Driver service was started successfully.

C:\Windows\system32>
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Indicators:

The Red LED glows when power is applied, from either or both cords. The SharkTap uses the standard 5V power from a USB port, and draws 750mA or less current (500mA in wired-TAP mode).

Each port jack has two LEDs. At least one LED is on when there is a valid link connection. (Note that the SharkTap has a feature called MDIX, meaning that it will automatically crossover Tx and Rx pairs, so no crossover cable is ever needed.) The Yellow LED (only) is on if the link is 10Base-T. The Green LED (only) is on if the link is 100Base-T. Both LEDs are on if the connection is 1000Base-T. The LED(s) will blink when there are packets sent or received on that port.

Power Over Ethernet: If there is DC power on the NETWORK ports (a VOIP phone system, for instance), it will be passed through. There are no settings, power is just passed through.

Speed Matching: The two Network ports may autoconfigure at different speeds, which may or may not be desirable for your purposes. You can force the higher speed Network port to run at the speed of the lower speed link. Just plug the low speed link in first and wait for its LED(s) to illuminate. The second port plugged into the tap is then limited to the first port's speed. The same thing can be accomplished by removing the higher speed port and then re-connecting it. If you want a port to remain at its higher speed, connect it first, then connect the slower port.   Disconnecting both Network cables will reset the speed matching logic.

 The TAP port will always connect at the maximum speed.

Power-fail Bypass feature:

 The SharkTapBYP includes latching relays that provide a direct link between NETWORK ports A & B when the SharkTap has no power. For those interested in the details, a representative diagram of one of the 4 ethernet pairs in bypass mode is show below. The PoE bypass, made through the pulse transformer center taps, remains the same whether the device is powered or not. The power-fail bypass is made on the 'inside' of the two pulse transformers. This means that the power-fail bypass is transformer coupled, and the advantage of this technique is that PoE is not interrupted when the SharkTap switches to bypass. So a VoIP phone, for example, will not have to reboot, just re-link.
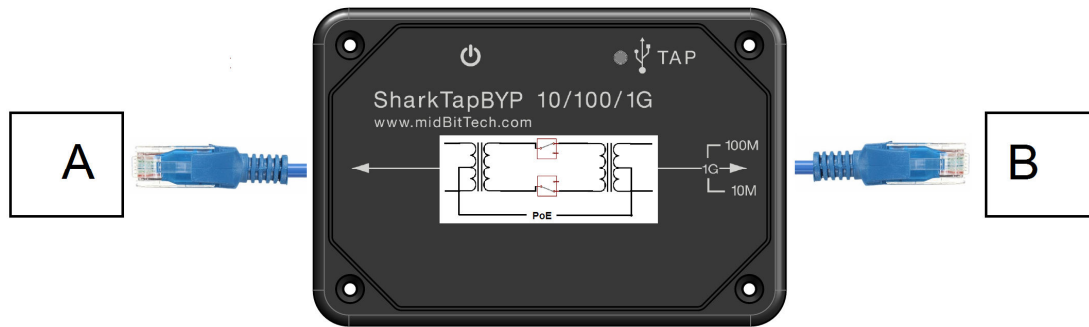
Questions? Send us an email at support@midbittech.com

www.midbittech.com

Warranty Information: We do not warrant SharkTap performance or suitability for any purpose. You are given 30 days from purchase, during which time you can return the SharkTap for any reason. Evaluate the SharkTap: If you like what it does, keep it. If not, return the SharkTap for a refund. If, during the first year, the SharkTap stops doing what it used to do, due to defect in materials or workmanship, we will replace it for free.