

USING "WiDi" TO WIRELESSLY CONNECT YOUR COMPUTER TO A TV OR A MONITOR



An International
Association of Technology
& Computer User Groups

Virtual Technology Conference
August 15, 2015

by Francis Chao
fchao2@yahoo.com



Web location for this presentation

<http://aztcs.org>

Click on “**Meeting Notes**”

SUMMARY

"WiDi" is a robust technology that can wirelessly connect your "Windows.." computer to a TV or a monitor. "WiDi" is also known as "Intel Wireless Display".

TOPICS

- "WiDi" Fundamentals
- Using "WiDi"
- Obtaining a Computer That Supports "WiDi"
- Installing a "WiDi" Receiver For a TV or a Monitor

"WiDi" FUNDAMENTALS

- **"WiDi"** stands for "Intel Wireless Display"
- You can use "WiDi" to wirelessly connect a "Windows.." computer directly to a monitor or a TV set. This wirelessly-connected monitor or TV becomes an additional monitor for your computer.

"WiDi" FUNDAMENTALS

- At the computer end, video and sound is transmitted by a WiDi-capable Wi-Fi wireless networking adapter
- At the TV or monitor end, either you need to add a "WiDi Receiver" or your "smart tv" may already have one in it

"WiDi" FUNDAMENTALS

- If your Intel "Windows.." computer only has one monitor attached to it, "WiDi" cannot be used to connect this single monitor to your computer.

"WiDi" FUNDAMENTALS

- At the computer end, you usually have to buy the computer with "WiDi" already designed into the computer
- At the computer end, you usually cannot add in "WiDi" capability if this capability was not part of the computer when you purchased it.

"WiDi" FUNDAMENTALS

- **Warning:**
"WiDi" and other wireless technologies all have too much latency and unpredictability for serious gaming (You must use wired HDMI or DVI cables for serious gaming.)



WiDi-
capable
Computer

Wireless
WiFi
radio
signals



TV
or
Monitor



WiDi /
Miracast
receiver

"WiDi" FUNDAMENTALS

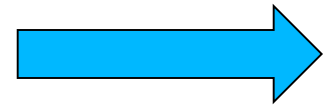
At the computer end, your computer needs to have **all** of the following:

- ✓ **Intel WiDi-capable Intel processor**
- ✓ **Intel WiDi-capable Intel display adapter**
- ✓ **Intel WiDi-capable Intel WiFi network adapter**
- ✓ **"Windows 7" or "Windows 8" or "Windows 8.1" or "Windows 10"**

"WiDi" FUNDAMENTALS

- At the computer end:

Computer
with Intel WiDi-capable
processor,
Intel WiDi-capable display
adapter,
Intel WiDi-capable WiFi
adapter,
and Windows 7, 8, 8.1, or
10



2.4 GHz
or
5 GHz
wireless
WiFi
signal
goes
to
WiDi
Receiver
at TV or
monitor

"WiDi" FUNDAMENTALS

- For detailed software and hardware requirements at the computer end, see <http://supportkb.intel.com/wireless/wireless-display/templates/selfservice/intelwidi/#portal/1026/article/16168>

"WiDi" DETAILS

- "WiDi" displays the entire monitor screen at the remote TV or monitor
- Your computer "sees" the "WiDi"-connected TV or your (second) monitor as an extra monitor.

"WiDi" DETAILS

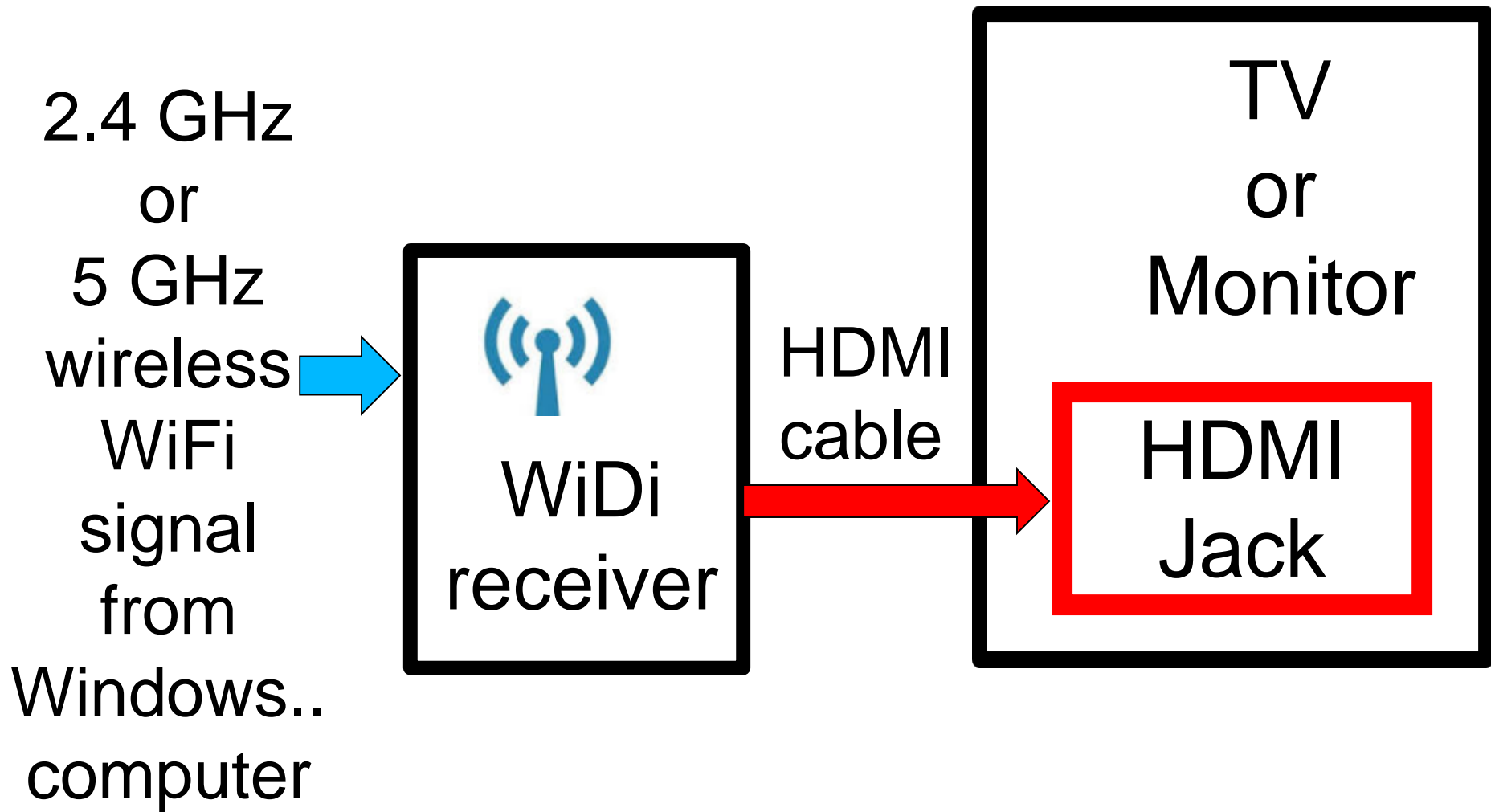
- At the TV or monitor end, the WiDi receiver has a wireless router inside of it. The virtual wireless router provides a real wireless access point with a real SSID for the WiFi wireless networking adapter at the computer end to communicate with.

"WiDi" DETAILS

- "SSID" =
"Service Set Identifier" which is
broadcast by a "Wireless Access Point"
of a "wireless router"

"WiDi" FUNDAMENTALS

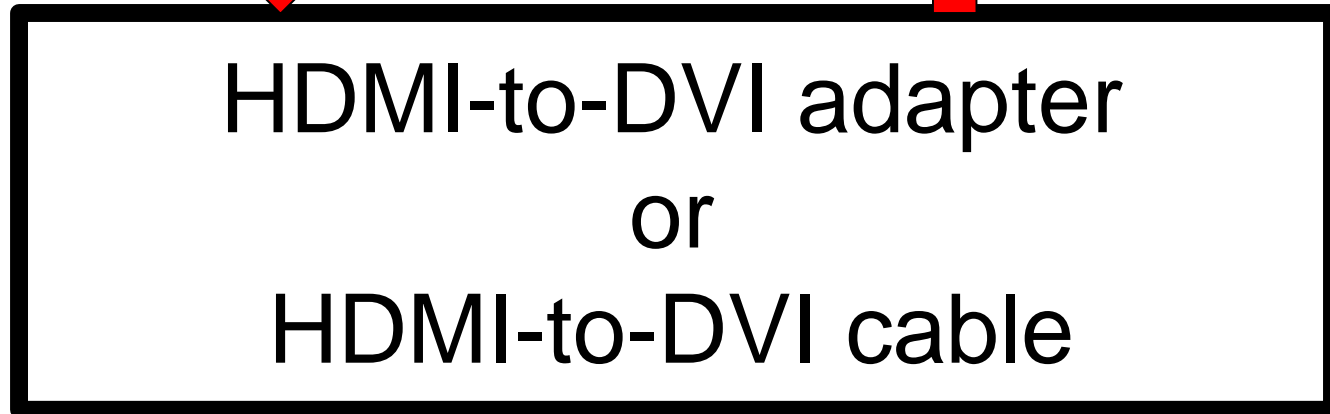
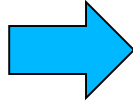
- At the TV or monitor end, the WiDi receiver attaches to the TV or monitor by means of HDMI:



"WiDi" FUNDAMENTALS

- Or, if your TV or monitor only has a DVI jack, you can use an HDMI-to-DVI adapter or adapter cable to connect the WiDi receiver to the TV or monitor:

2.4 GHz or
5 GHz
WiFi
signal
from
Windows..
computer



No audio is transmitted from the PC
to the TV or Monitor

"WiDi" DETAILS

- "WiDi" displays the entire monitor screen: Your computer "sees" the "WiDi"-connected TV or "WiDi"-connected monitor as an extra monitor.



"WiDi" DETAILS

- "WiDi" is also known as "Intel Wireless Display"
- In some specifications for computers or TVs, it is simply called "Wireless Display".

"WiDi" DETAILS

- If both your computer AND your TV are both "WiDi" capable, all you have to do is to activate "WiDI" in the TV (using the TV remote) and then configure a WiDi-based (additional) monitor from inside the computer:



WiDi-capable
computer
**with Intel
processor
chip set that
has "WiDi"
capability**

TV
or Flatscreen
Monitor
**with
WiDi/Miracast
Receiver that
is part of the
TV set**

"WiDi" DETAILS

- If your computer is "WiDi" capable but your TV is not "Widi" capable, lots of "WiDi" receivers are available for your TV including ones made by "Actiontec", "Microsoft", and "Netgear":



WiDi-capable
computer
**with Intel
processor
chip set that
has "WiDi"
capability**

TV
or Flatscreen
Monitor
**with
XYZ
Company's
"WiDi"
receiver**



WiDi-capable
computer
**with Intel
processor
chip set that
has "WiDi"
capability**

TV
or Flatscreen
Monitor
**with Microsoft
"Wireless
Display
Adapter"**



WiDi-capable
computer
**with Intel
processor
chip set that
has "WiDi"
capability**

TV
or Flatscreen
Monitor
**with Netgear
"Push2TV"**



WiDi-capable
computer
**with Intel
processor
chip set that
has "WiDi"
capability**

TV
or Flatscreen
Monitor
**with Actiontec
"ScreenBeam"
Receiver**

"WiDi" DETAILS

- At the TV end, "WiDi" requires either a WiDi-capable television or a WiDi receiver device.
- The WiDi receiver device requires a HDMI port or a DVI port in the television or monitor.

"WiDi" DETAILS

- A WiDi receiver works best when you connect it to one of the HDMI ports of a TV.
- When you do so, both video and audio is transmitted from the computer to the TV.

"WiDi" DETAILS

- A WiDi receiver also works when you use an HDMI-to-"DVI" adapter cable to connect it to an DVI port on a TV or a flatscreen monitor.
- However, only video is transmitted and no audio is transmitted.

"WiDi" DETAILS

- Most of the flat screen monitors that have been sold for the past 6 years have one or more HDMI ports which you can connect to a WiDi receiver.
- When you connect a WiDi receiver to the HDMI port of a flat screen monitor, you can usually get audio from an audio jack on the monitor:





"WiDi" DETAILS

- "WiDi" is point to point. It does not require an existing "Wireless Access Point".
- "WiDi" works even if your local network has "wireless isolation" (= "AP isolation" = "Access Point isolation").

"WiDi" DETAILS

- "WiDi" displays the mouse cursor at the remote TV or monitor.

"WiDi" DETAILS

- If your laptop or desktop computer has an "Intel" processor and the computer is "WiDi Ready", you will find "WiDi" or "Intel Wireless Display" or "Wireless Display" in it's specifications

Intel® Wireless Display-capable

Wirelessly stream entertainment from your laptop to your HDTV* — photos, music, Web videos, Internet TV — whether on the hard drive or online.

"WiDi" DETAILS

- To determine if your laptop or desktop computer is "WiDi Ready", download and run the "Intel WiDi Update Tool" at <http://supportkb.intel.com/wireless/wireless-display/templates/selfservice/intelwidi/#portal/1026/article/16168>

"WiDi" DETAILS

- At the monitor or television end, you either need to have a "WiDi capable" television or a "WiDi" HDMI receiver dongle.

"WiDi" DETAILS

- "WiDi" works even if you do not have an active "WiFi" "wireless access point" in your local network, since "WiDi" is point-to-point.

"WiDi" DETAILS

- Processor graphics render a second virtual display (adapter), which is broadcast via Wi-Fi through a feature in Intel Centrino wireless chipsets called My Wi-Fi (which creates a "Microsoft Wi-Fi Direct Virtual Adapter").

"WiDi" DETAILS

- The "Microsoft Wi-Fi Direct Virtual Adapter" provides a Wireless Access Point with a unique SSID that the WiDi receiver at the TV or monitor connects to:

Network and Sharing Center



Control Panel Home

View your basic network information and set up connections

View your active networks


DG1670AD2-5G Private network	Access type: Internet HomeGroup: Joined Connections: Wi-Fi 2 (DG1670AD2-5G)
DIRECT-YBWINLAPTOP4657 Public network	Access type: No Internet access Connections: Local Area Connection* 5
Unidentified network Private network	Access type: No Internet access HomeGroup: Joined Connections: Ethernet

Change your networking settings

-  [Set up a new connection or network](#)
Set up a broadband, dial-up, or VPN connection; or set up a router or access point.
-  [Troubleshoot problems](#)
Diagnose and repair network problems, or get troubleshooting information.

See also

- HomeGroup
- Internet Options
- Windows Firewall



DIRECT-YBWINLAPTOP4657

Public network



All Control Panel I

Control Panel Home

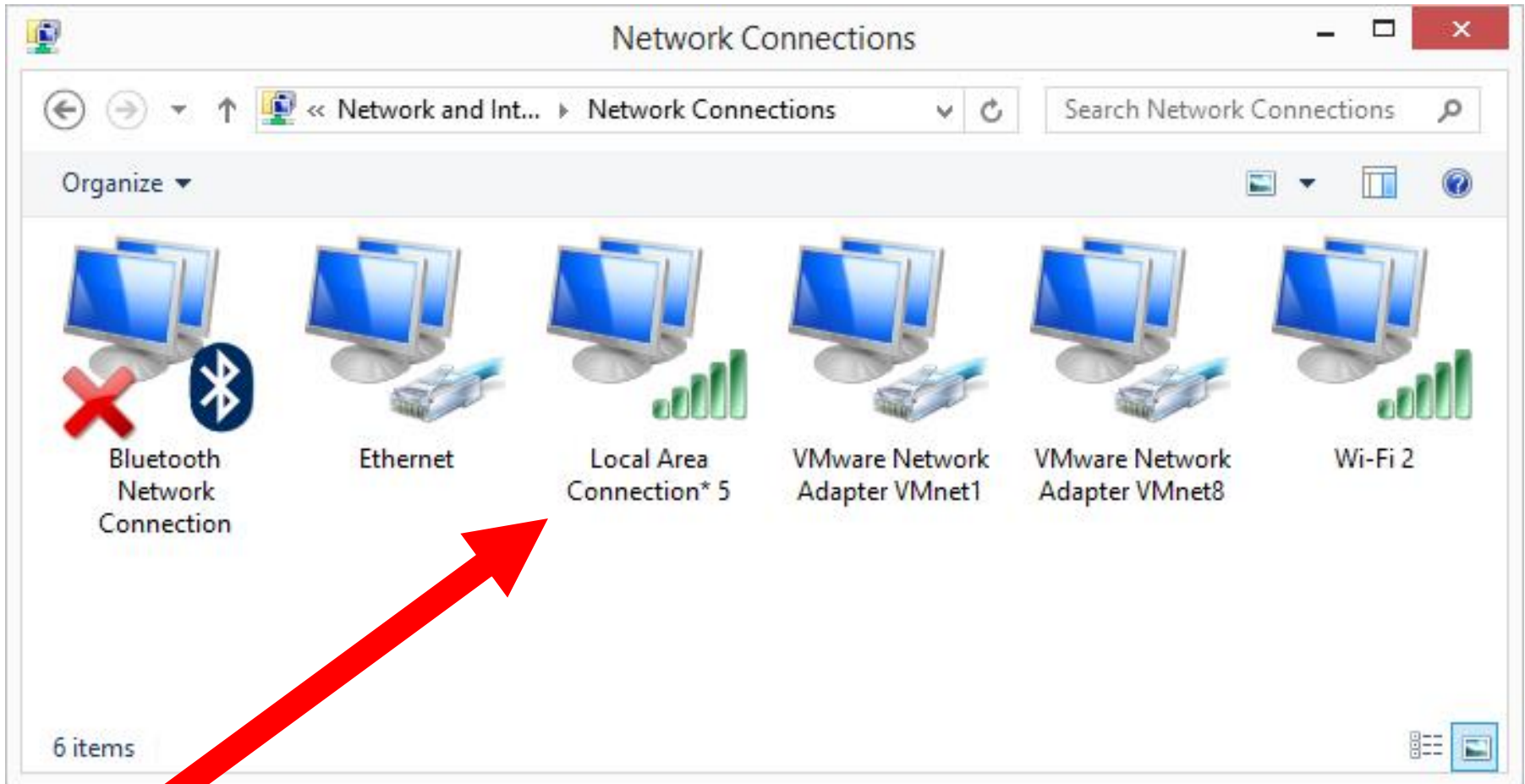
View

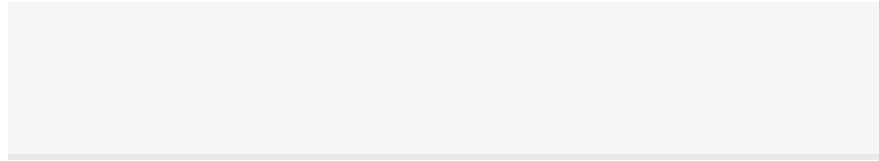
Change adapter settings

View



Change advanced sharing settings







Local Area Connection* 5

 Local Area Connection* 5 Status 



General

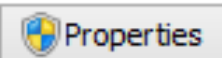
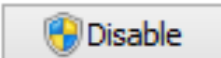
Connection

IPv4 Connectivity:	No Internet access
IPv6 Connectivity:	No network access
Media State:	Enabled

[Details...](#)

Activity

	Sent		Received
Bytes:	99,523,758		6,932

[Close](#)

IPv4 Connectivity:

No Internet access

IPv6 Connectivity:

No network access

Media State:

Enabled

Details...

Activity



Local Area Connection* 5 Status

Network Connection Details

Network Connection Details:

Property	Value
Connection-specific DN...	
Description	Microsoft Wi-Fi Direct Virtual Adapter #4
Physical Address	36-DE-1A-4F-C1-9A
DHCP Enabled	No
IPv4 Address	192.168.173.1
IPv4 Subnet Mask	255.255.255.0
IPv4 Default Gateway	
IPv4 DNS Server	
IPv4 WINS Server	
NetBIOS over Tcpip En...	Yes
Link-local IPv6 Address	fe80::2dd7:c867:7def:57c2%21
IPv6 Default Gateway	
IPv6 DNS Servers	fec0:0:0:ffff::1%1 fec0:0:0:ffff::2%1 fec0:0:0:ffff::3%1

Close

Local Area Connection* 5 Status

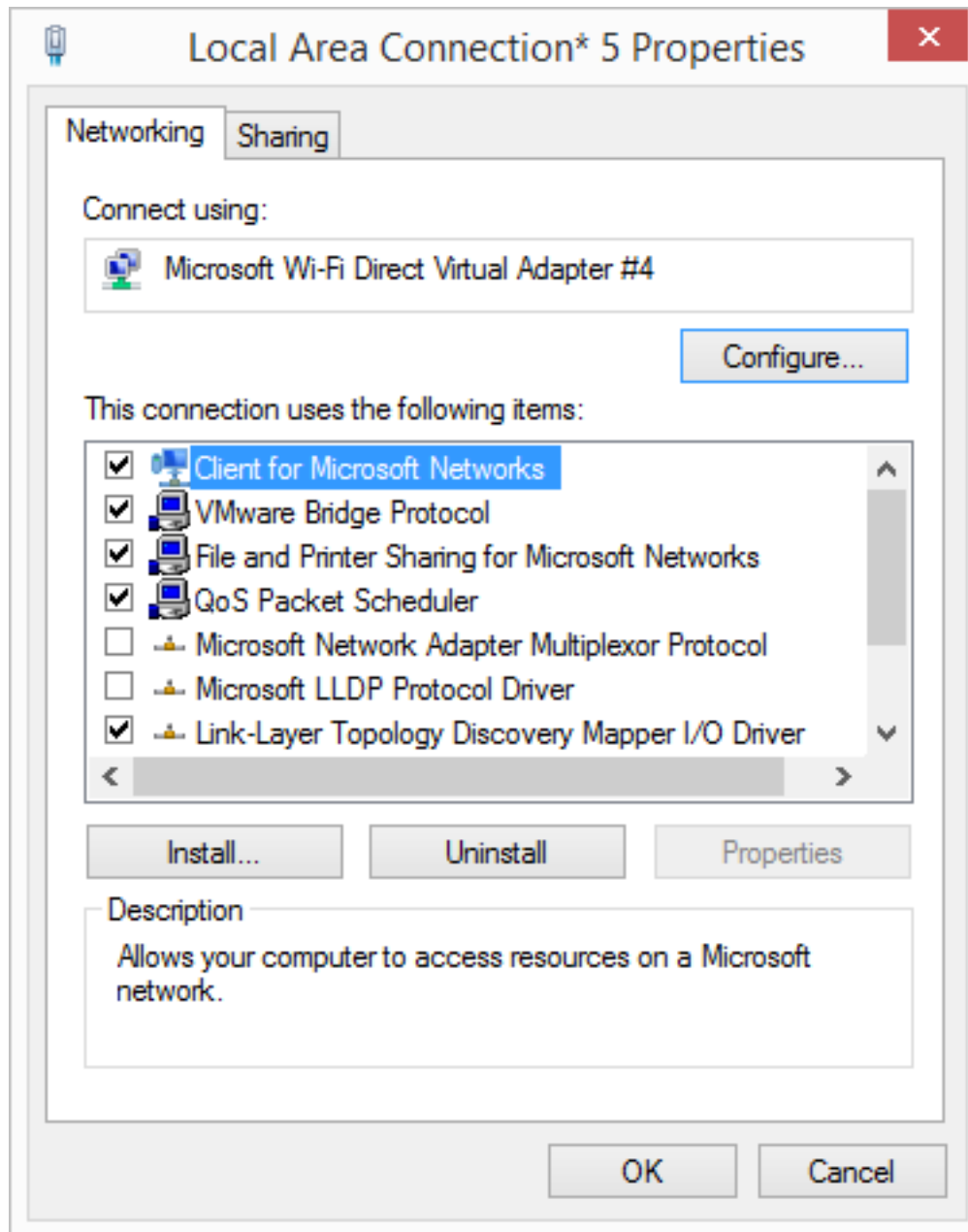
Network Connection Details

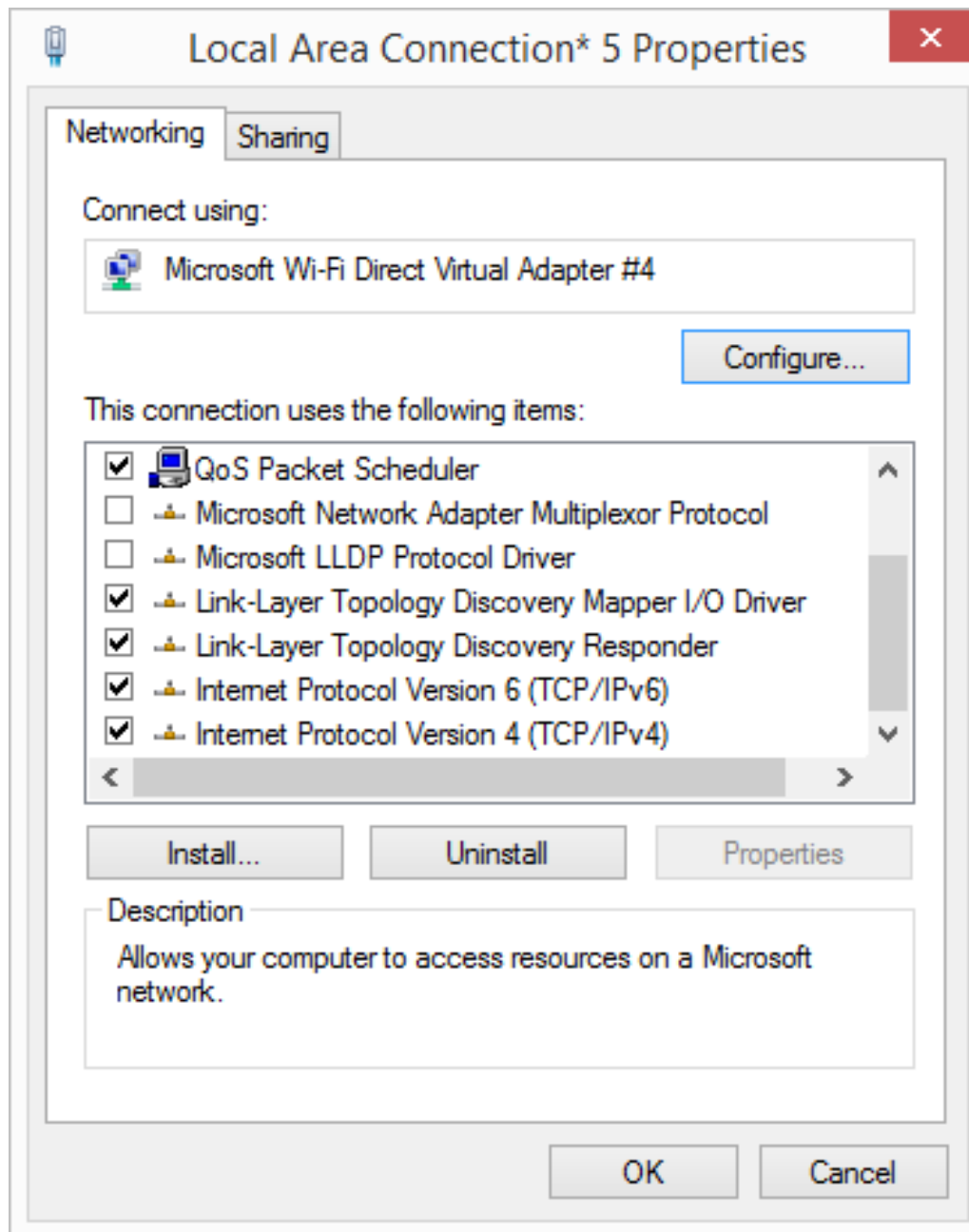
Network Connection Details:

Property	Value
Connection-specific DN...	
Description	Microsoft Wi-Fi Direct Virtual Adapter #4
Physical Address	36-DE-1A-4F-C1-9A
DHCP Enabled	No
IPv4 Address	192.168.173.1
IPv4 Subnet Mask	255.255.255.0
IPv4 Default Gateway	
IPv4 DNS Server	
IPv4 WINS Server	
NetBIOS over Tcpi... En...	Yes
Link-local IPv6 Address	fe80::2dd7:c867:7def:57c2%21
IPv6 Default Gateway	
IPv6 DNS Servers	fec0:0:0:ffff::1%1 fec0:0:0:ffff::2%1 fec0:0:0:ffff::3%1


Close

Description	Microsoft Wi-Fi Direct Virtual Adapter #4
Physical Address	36-DE-1A-4F-C1-9A
DHCP Enabled	No
IPv4 Address	192.168.173.1
IPv4 Subnet Mask	255.255.255.0













Currently connected to:

 **Network 2**
Internet access

Wireless Network Connection

TP-LINK_0269	
DG1670AD2	
TP-LINK_Guest_0269	
NETGEAR27	
belkin.97c	
DIRECT-ZHWINLAPTOP0837	
belkin.97c.guests	
ORGV5	

[Open Network and Sharing Center](#)

4:27 PM
5/31/2015



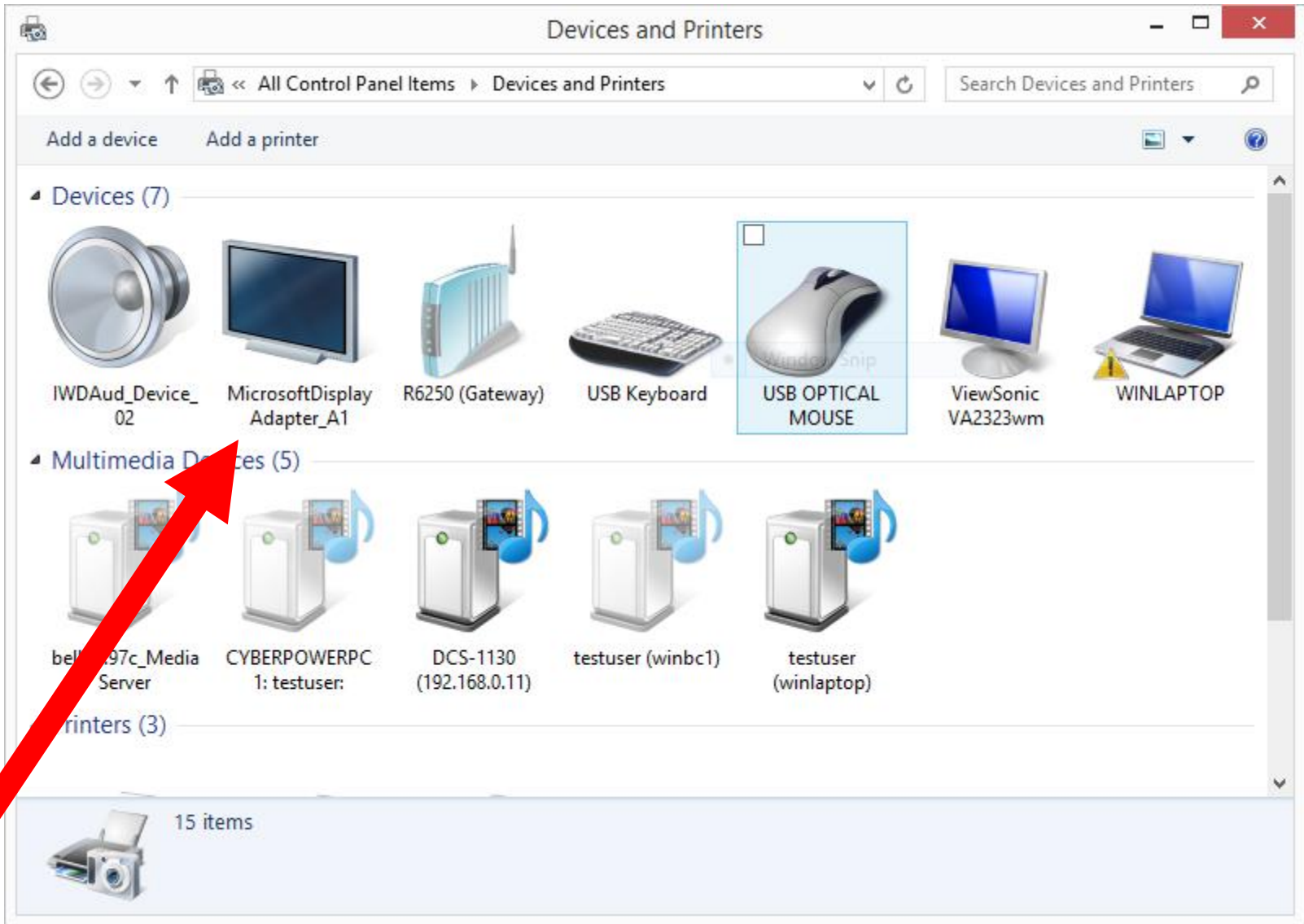
DIRECT-ZHWINLAPTOP0837

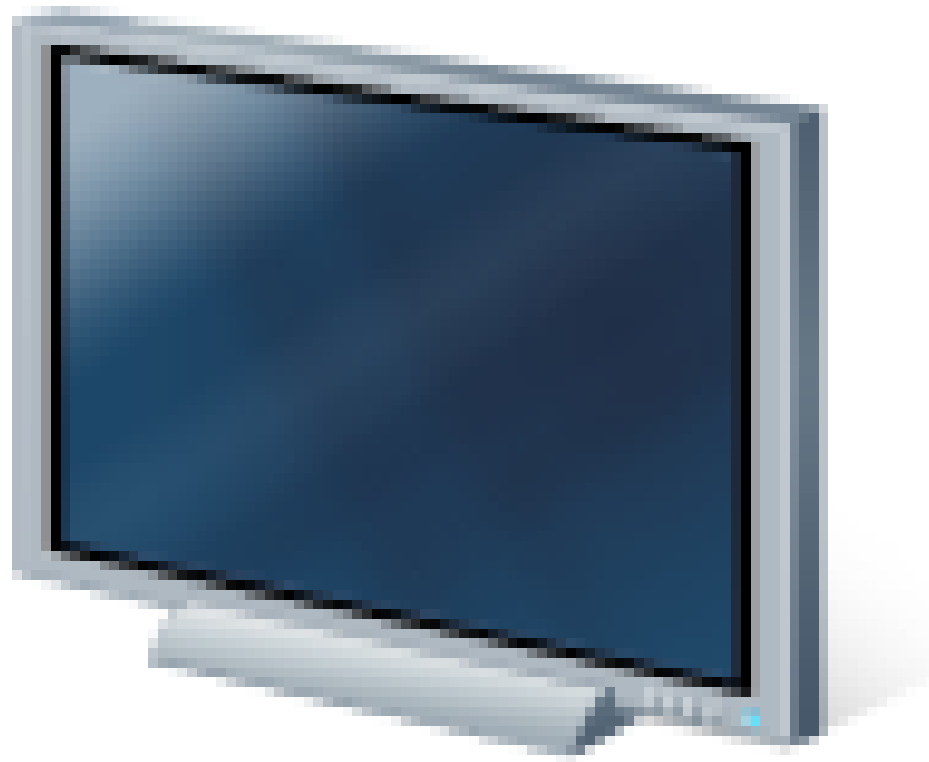
belkin.97c.guests

ORGV5

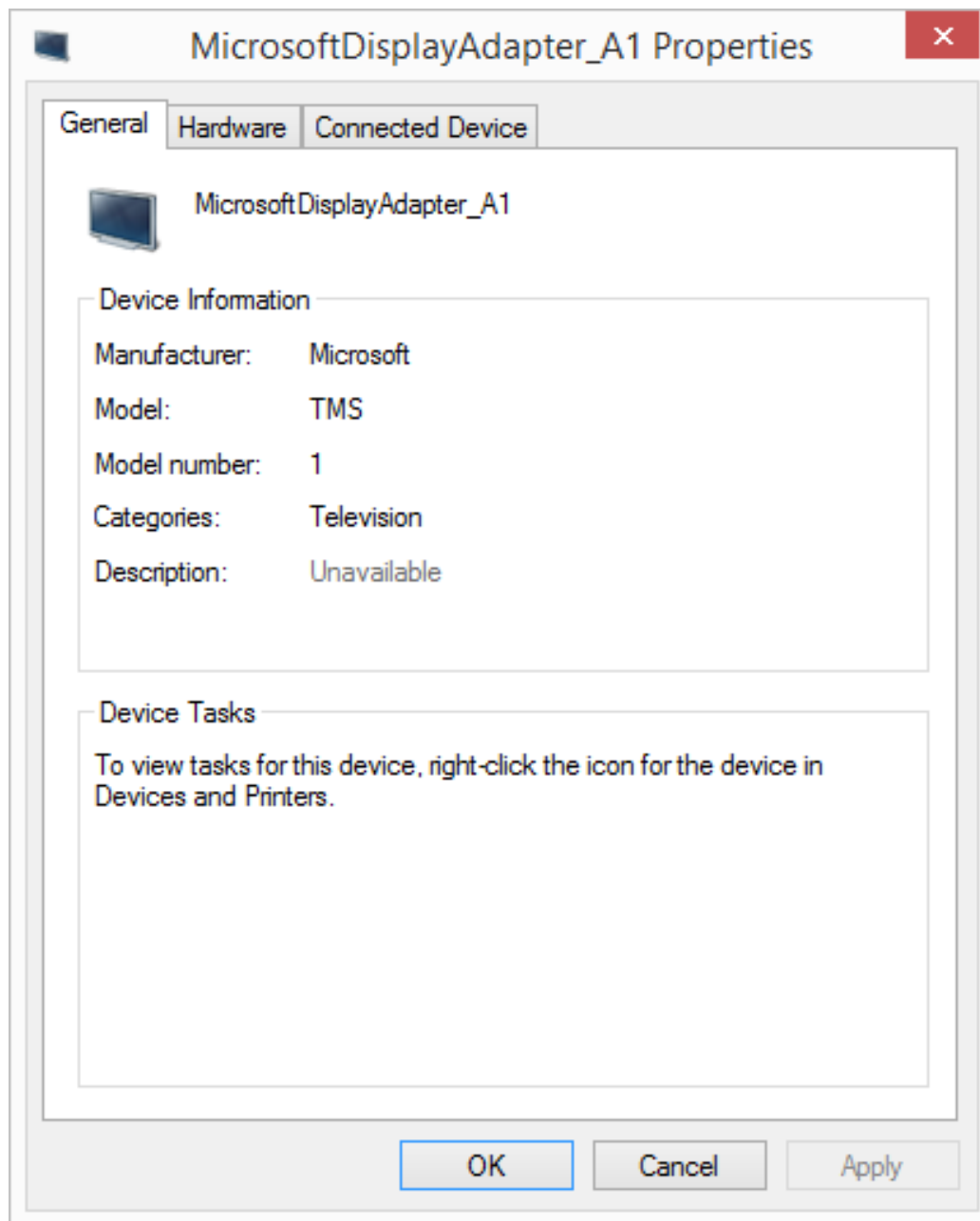
Open Network and Sharing Center

4:27 PM
5/31/2015

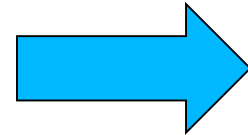
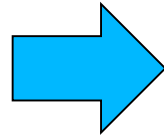




MicrosoftDisplay
Adapter_A1



WiDi Transmitter At The Computer End



Wireless WiFi signal to the TV or monitor

"WiDi" DETAILS

- On the TV side, a receiver converts the signal and passes it to the TV.
- The receiver is available as an add-on adapter and a growing number of multifunction TVs, Blu-ray players and set-top boxes are coming to market with WiDi receiver adapters built in.

"WiDi" DETAILS

- If you hibernate a Windows.. computer that is connected to a television by means of WiDi, and then you turn the computer back on, you have to re-start the WiDi connection to get back any Windows.. that you "extended" into the WiDi-connected television.

"WiDi" DETAILS

- Since "WiDi" creates a virtual monitor that your computer's hardware and software "see" as a real monitor, any second monitor that you already have or add to your computer will be treated as a third monitor and this will have some strange effects on versions of "Windows.." prior to "Windows 10".

"WiDi" DETAILS

- A USB "DisplayLink" adapter (for connecting a second monitor to a computer) interferes with the ability to connect to a "Microsoft Display Adapter."

"WiDi" DETAILS

- "WiDi"-capable computers are not compatible with "Internet Connection Sharing".

"WiDi" DETAILS

- If you are using the internal WiFi adapter of a WiDi-capable laptop or desktop is already being used for "Internet connection sharing" (to another network adapter), the "Internet connection sharing" will be disconnected when you make a WiDi connection to the TV.

"WiDi" DETAILS

- If your WiDi-capable laptop is connected via a WiDi connection to a TV, and you then start up "Internet connection sharing", the WiDi connection to the TV will be turned off.

"WiDi" DETAILS

- **"WiDi"** is a proprietary product of Intel while **"Miracast"** is one of the standards of the "Wi-Fi Alliance."

"WiDi" DETAILS

- You will never find a specification for a computer that says the computer is "Miracast" compatible.
- Instead, you will find the terms "Wireless Display", "Intel Wireless Display", or "WiDi" in specifications for Windows..
Computers.

"WiDi" DETAILS

- The term "Miracast" is used by the computer industry only for tablets and cell phones.

"WiDi" DETAILS

- "Miracast" is called by various other names by different equipment manufacturers.

"WiDi" DETAILS

- LG calls their Miracast support "SmartShare," Samsung calls it "AllShare Cast," Sony calls it "screen mirroring," and Panasonic calls it "display mirroring."

"WiDi" DETAILS

- You might pick up a new Samsung TV, see the “AllShare Cast” logo on the box, and not be aware that this is theoretically a Miracast-compatible TV.
- You’d probably assume that it only worked with other Samsung devices supporting AllShare Cast — and you might not be wrong, considering how many theoretically compatible Miracast devices are incompatible with each other!

"WiDi" DETAILS

- AMD's **"AMD Wireless Display"** is not compatible with "Intel Wireless Display" ("WiDi").
- See <http://support.amd.com/en-us/recommended/wireless-displays>
- According to this Web site, the Actiontec "Screenbeam" receiver is compatible with "AMD Wireless Display" (in addition to being compatible with "Intel Wireless Display" ("WiDi")).

"WiDi" DETAILS

- Intel's Web site for getting "WiDi" working is located at <http://supportkb.intel.com/wireless/wireless-display/templates/selfservice/intelwidi/#portal/1026/article/16168>

"WiDi" DETAILS

- "WiDi" receivers for your TV or (second) monitor:
 - **Actiontec "ScreenBeam Receiver"**
 - **Microsoft Display Adapter**
 - **Netgear "Push2TV"**

"WiDi" DETAILS

- "WiDi" receivers for your TV or (second) monitor:
 - **Actiontec "ScreenBeam Receiver" (\$70, best one that we tested)**
 - **Microsoft Display Adapter (\$50, poor documentation, cannot attach with an HDMI extension cable that is longer than 6 inches)**
 - **Netgear "Push2TV" (\$60, found positive review but we did not test this model)**

"WiDi" DETAILS

- "WiDi" receivers for your TV or (second) monitor:
 - **Details about the Actiontec "ScreenBeam Receiver":**

Actiontec SBWD100A01 ScreenBeam Pro Wireless Display Receiver for WiDi Laptops/ Miracast Devices



< Back to search results for "actiontec screenbeam receiver"



Roll over image to zoom in

Actiontec SBWD100A01 ScreenBeam Pro Wireless Display Receiver for WiDi Laptops/ Miracast Devices

by Actiontec

★★★★☆ 140 customer reviews | 57 answered questions

Price: \$69.99 & FREE Shipping. Details

In Stock.

Ships from and sold by Amazon.com.

Want it Monday, May 18? Order within 16 hrs 38 mins and choose One-Day Shipping at checkout. Details

- Wirelessly beam the display of your laptop, smartphone or tablet screens directly onto your HDTV.
- Extend your device screen for multitasking and entertainment. Write emails or browse the web during a video broadcast.
- The first wireless receiver to fully support 4th Generation Intel WiDi features. Works with Wi-Fi certified Mira cast smartphones and tablets.
- Delivers smooth high-definition video with lower latency for all content, including 3D, Blu-ray and premium online video.
- For notebooks and Ultrabooks with Intel WiDi 3.5 and higher, or Wi-Fi Certified Miracast smartphones and tablets

Price: **\$69.99** & **FREE Shipping.**

"WiDi" DETAILS

- Physical installation of the Actiontec "ScreenBeam Receiver" into the HDMI port of a TV or a monitor:



power
adapter
plugs into
power
outlet

HDMI plug of HDMI
cable plugs into
HDMI jack of TV or
monitor



"WiDi" DETAILS

- "WiDi" receivers for your TV or (second) monitor:
 - **DETAILS ABOUT THE "MICROSOFT DISPLAY ADAPTER":**

"WiDi" DETAILS

- The "Microsoft Display Adapter", model = 1628, is a WiDi receiver for a TV or a (second) monitor:

Microsoft Wireless Display Adapter

by [Microsoft](#)



< Back to search results for "microsoft display adapter"



Microsoft Wireless Display Adapter

by [Microsoft](#)

★★★★☆ ▾ [111 customer reviews](#) | [64 answered questions](#)

List Price: ~~\$59.95~~

Price: **\$49.99** + \$4.99 shipping

You Save: **\$9.96 (17%)**

Only 6 left in stock.

Ships from and sold by [joporras](#).

Estimated Delivery Date: June 11 - 18 when you choose Expedited S

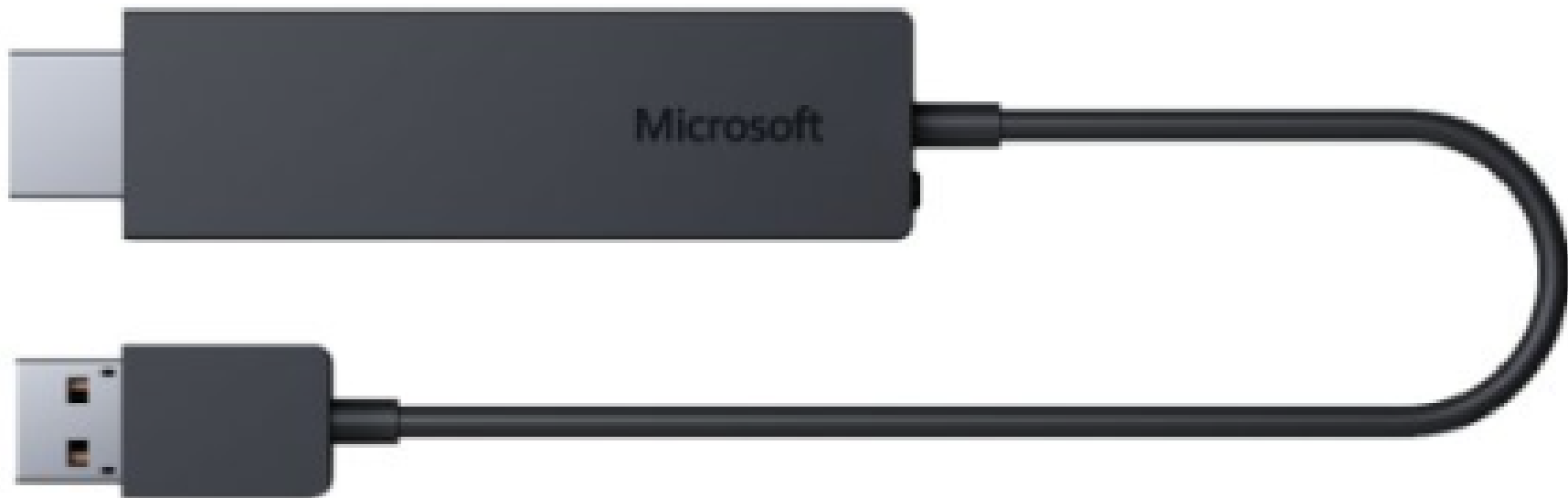
- Wirelessly project
- Enjoy movies, personal videos, photos, games, websites, and even your HDTV
- Modernize your meetings

44 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

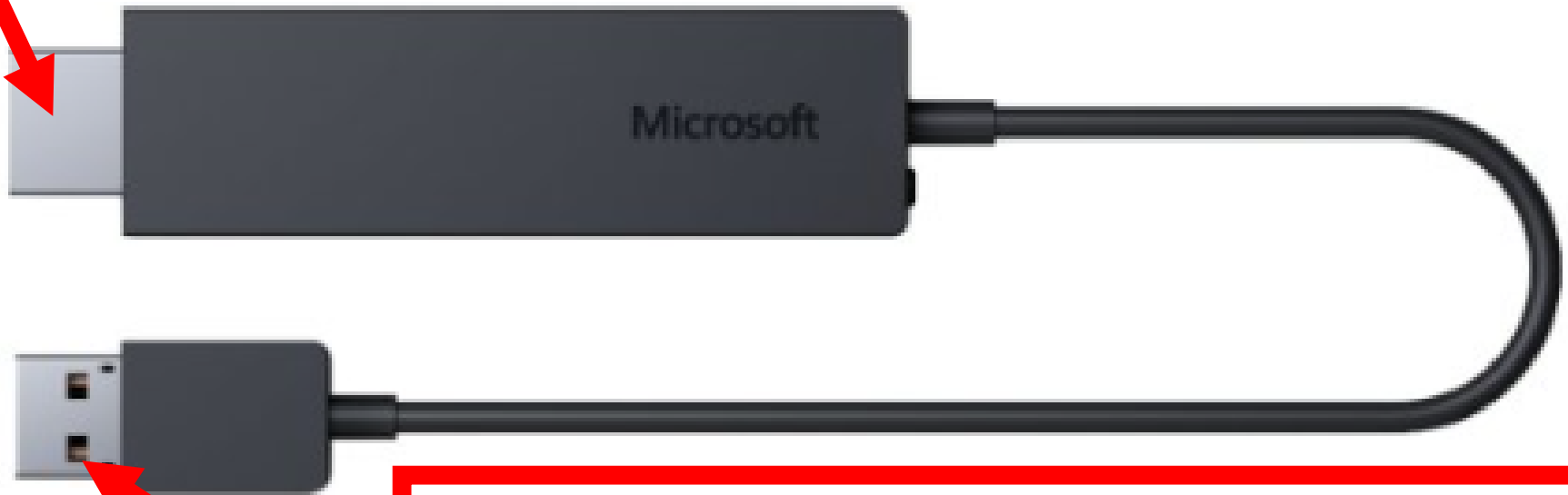
Price: **\$49.99** + \$4.99 shipping

"WiDi" DETAILS

- Similar to "EZCast", a USB-type power supply is not included:



HDMI plug of HDMI cable plugs either directly or by means of a 6-inch or shorter HDMI extension cable into the HDMI jack of a TV or a monitor



USB plug plugs into a USB port or a USB-type power supply to supply power for the "Microsoft Display Adapter"

"WiDi" DETAILS

- <http://www.microsoft.com/hardware/en-us/help/support/how-to/adapters/setup>

"WiDi" DETAILS

- <http://www.microsoft.com/hardware/en-us/p/wireless-display-adapter>

"WiDi" DETAILS

- <http://www.microsoft.com/hardware/en-us/help/support/troubleshooting/adapters/common-issues>

"WiDi" DETAILS

- <http://www.microsoft.com/hardware/en-us/help/support/troubleshooting/adapters/compatibility>

"WiDi" DETAILS

- Once you get over the terrible documentation and the limited cable length for the HDMI plug, you have a great product.
- See <https://www.thurrott.com/hardware/1454/use-microsoft-wireless-display-adapter>

"WiDi" DETAILS

- "WiDi" receivers for your TV or (second) monitor:
 - **DETAILS ABOUT THE NETGEAR'S "PUSH2TV":**

NETGEAR Push2TV Wireless Display HDMI Adapter with Miracast (PTV3000) Certified for use with Kindle Fire HDX
by [Netgear](#)



< Back to search results for "netgear push2tv"



NETGEAR Push2TV Wireless Display HDMI Adapter with Miracast (PTV3000) Certified for use with Kindle Fire HDX

by [Netgear](#)

★★★★☆ ▾ [1,255 customer reviews](#) | [454 answered questions](#)

List Price: ~~\$79.99~~

Price: **\$59.99** & FREE Shipping. [Details](#)

You Save: **\$20.00 (25%)**

In stock on June 12, 2015.

Order it now.

Sold by [earlybirdstart](#) and [Fulfilled by Amazon](#). Gift-wrap available.

- Wirelessly display content in up to 1080p HD video resolution.
- Flexible power option by using the USB port on the TV.
- Small size for easy placement and portability.

› [See more product details](#)

[13 new](#) from **\$59.99** [16 used](#) from **\$33.00**

Warranty Information: This product comes with a 1 Year Limited warranty

Price: **\$59.99** & **FREE Shipping**

Questions??