

Wireless Sniffers



Three Good Ones

What are Channels Anyway?

- All wireless devices use a central frequency.
- Wireless Routers were originally assigned 14 frequencies; 2412 MHz, 2417 MHz,
- These were given numbers 1, 2, ..., 14 are easier to use than the frequencies. These are called “Channels”. Only 1 – 11 are used.



5.0 GHz Band

- Later more frequencies were allocated to Wireless Routers. These were much higher.
- “Unfortunately” the frequencies assigned depend on where you live. For the US, these are 5180 MHz, 5200 MHz, ... with no simple pattern as for the 2.4 GHz band.
- Channel numbers are 36, 40, 44, ..., 60 and 149, 153, ..., 165.

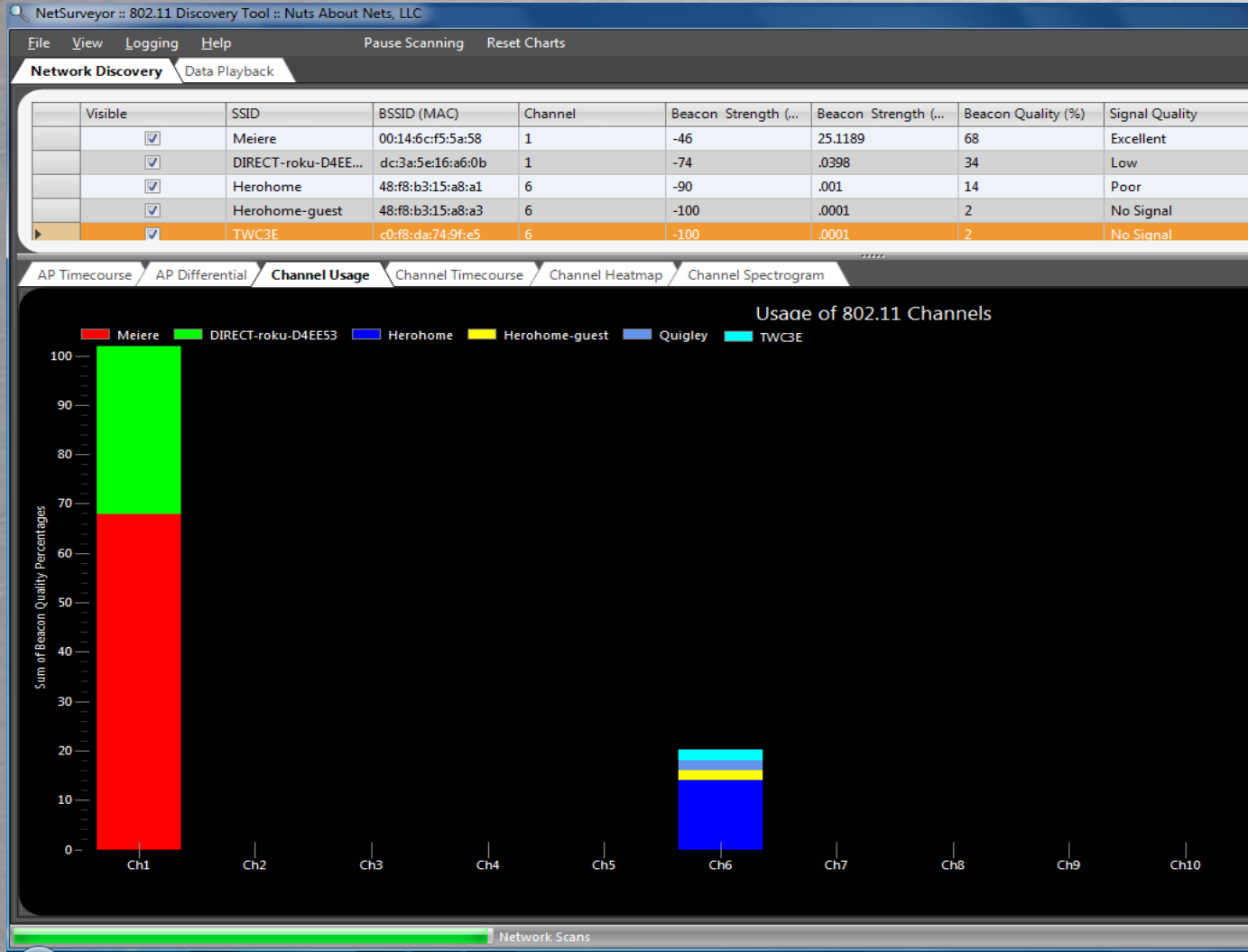


Sniffer Programs

- www.nutsaboutnets.com/netsurveyor-wifi-scanner/
- WiFi Inspector (see presentation)
- www.techspot.com/downloads/5936-inssider.html
 - The only sniffer to display the 5.0 GHz band.



NetSurveyor



Wi-Fi Inspector


Xirrus Wi-Fi Inspector

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XIRRUS
Wi-Fi Inspector

Radars



Connection - Intel(R) Wireless WiFi Link 4965AGN - 12.4.1.4

Wireless
SSID: Meiere
BSSID: Netgear:F5:5A:58
Channel: 1
Signal: -48 dBm
Mode: 802.11g

Addresses
MAC: 00:13:E8:7F:0C:2F
IP: 192.168.1.2
DNS: 192.168.1.1
Gateway: 192.168.1.1
External IP:

Connect/Disconnect
Enable/Disable

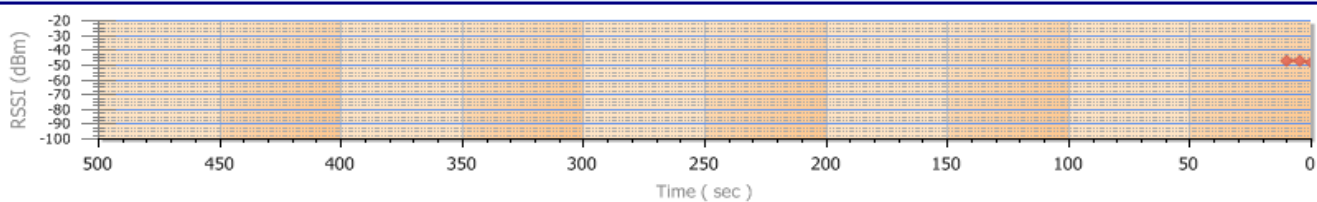
Networks

Adapter Name ▲ Total SSIDs: 4 Total BSSIDs: 4 Right click on SSID name to Locate

SSID	Signal (dBm)	Network M...	Default Enc...	Default Auth	Vendor	BSSID	Channel	Frequency	Network Type	Graph
Meiere	-48	802.11g	TKIP	WPA/PSK	Netgear	00:14:6C:F5:5A:1	1	2412	Access Point	<input checked="" type="checkbox"/>
DIRECT-roku	-68	802.11n	AES-CCMP	WPA2/PSK	Unknown	DC:3A:5E:16:A6:1	1	2412	Access Point	<input type="checkbox"/>
Herohome-gu	-82	802.11n	None	Open	Unknown	48:F8:B3:15:A8:6	6	2437	Access Point	<input type="checkbox"/>
Herohome	-85	802.11n	None	Open	Unknown	48:F8:B3:15:A8:6	6	2437	Access Point	<input type="checkbox"/>

Adapter Name: Intel(R) Wireless WiFi Link 4965AGN

Signal History



RSSI (dBm)

Time (sec)

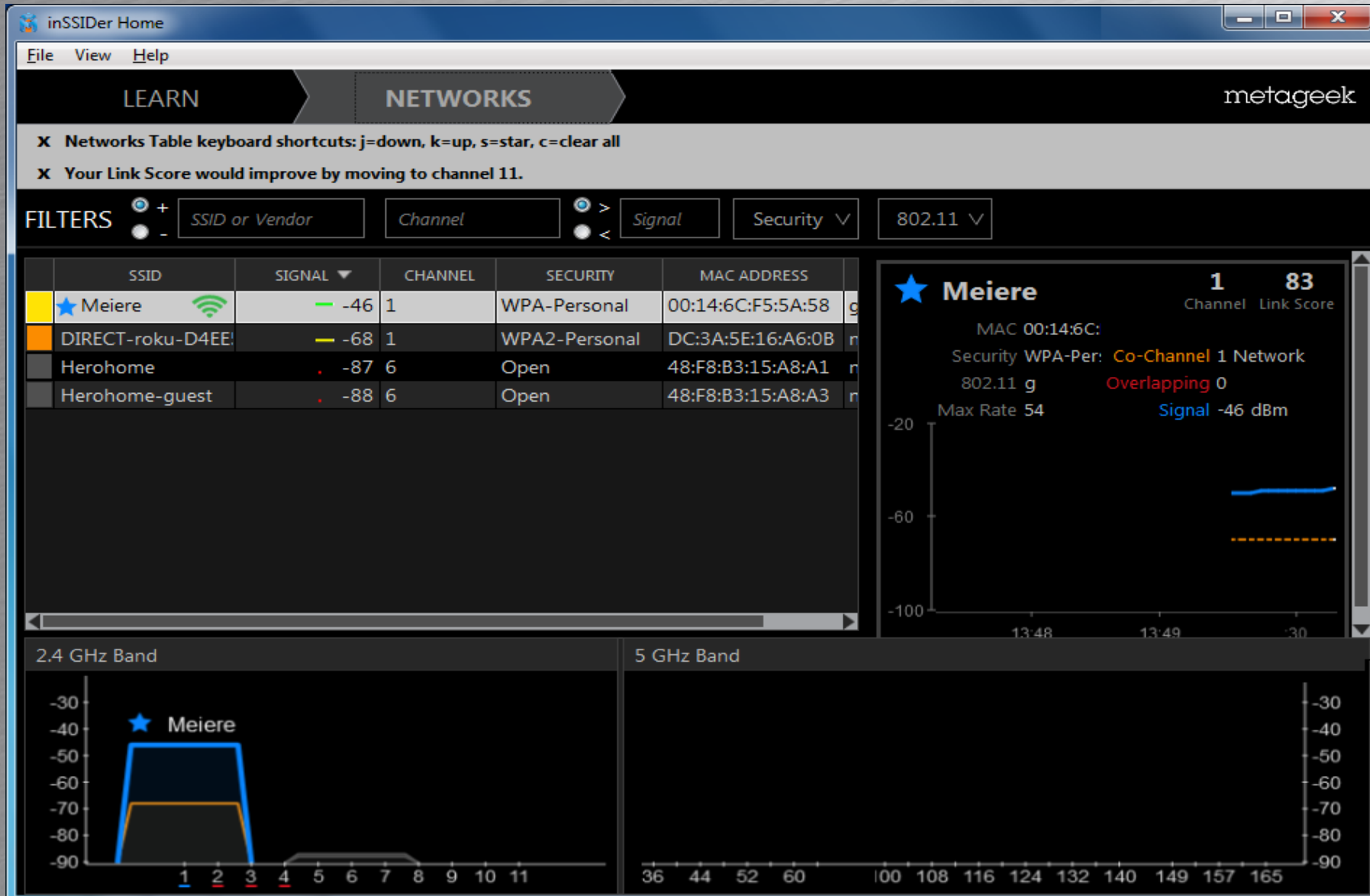
Meiere 00:14:6C:F5:5A:58

Shift-Click / Alt-Click to Zoom

Channel 1

Channel 6

inSSIDer



Make the Best Choice

- Once you look at which channels are being used, you can decide if you should change.
- If you are the only network that shows up, don't change.
- If are using a channel with others, you may want to change. Be careful with 2.4 GHz!



Channel 1- 11

- These channels 'overlap'. For example, Channel 6 may use frequencies all the way from Channel 2 to Channel 10.
- This means that if you use Channel 6 and your neighbor uses Channel 5, you will interfere with each other. Worse than slowing.
- Therefore, use only Channel 1, 6 or 11. If you see anyone using any other Channel, call me.



Channel 36 -165

- Not all of these are available in the US.
- However, the ones that are available do NOT overlap. As far as I know, they all work fine.
- If you use 'simultaneous' mode, you will use one of these channels and one from 1-11. As far as I know, there is no specific rule about how to match these together.
- There are advantages and disadvantages to these higher channels.



Advantages/Disadvantages

- Higher Channels (36-165) have the potential to use higher speeds.
- Paired with lower channels, they have the potential to greatly increase wireless speeds.
- Remember: You can NOT go faster than the speed of your Internet provider; e.g. TW.
- Higher Channels have noticeably shorter ranges. May be problem in large house.

