IoT Bluetooth & Wi-Fi and EC2 Cloud Projects

Wi-Fi Analysis Project

Wi-Fi Analysis Project

❖ Wi-Fi Network Analyzer

- Provide Wi-Fi connection information
  - IP address of Default gateway, DNS server, device IP (internal and external), Subnet Mask, MAC address
  - Connected AP's SSID, PHY channel used, Signal strength, Link speed, etc.

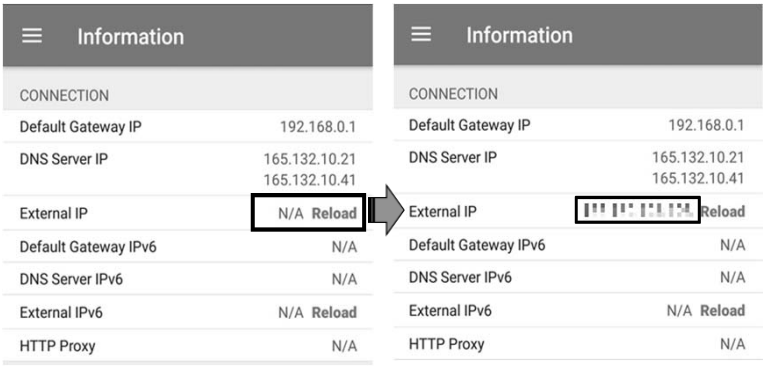
Network Analyzer
Available at Play Store and App Store

Android: http://play.google.com/store/apps/details?id=net.techet.netanalyzerlite.an
iPhone: https://itunes.apple.com/us/app/network-analyzer-lite/id562315041?mt=8

Wi-Fi Analysis Project

❖ Wi-Fi Network Analyzer

- Network connection
  - Check network IPs and device's IP



Wi-Fi Analysis Project

❖ Wi-Fi Network Analyzer

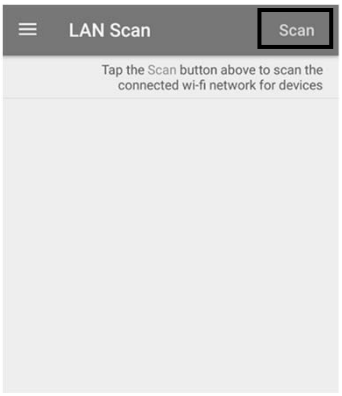
- Wi-Fi information

Key	Value	Description
SSID	CNL 5GHz	Wi-Fi ID (Name)
Channel	153	PHY channel using on
IP Address	192.168.0.7	Internal Address
Speed	150 Mbps	Link datarate
Signal Strength	-59 dBm	RSSI

Wi-Fi Analysis Project

❖ Wi-Fi Network Analyzer

- LAN Scan



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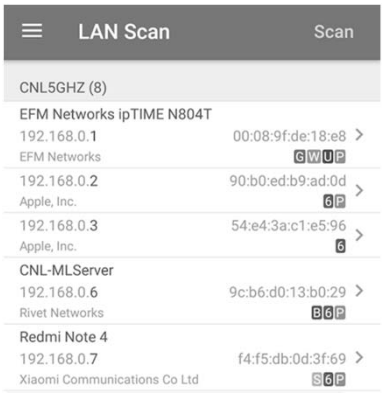
❖ Wi-Fi Network Analyzer

- LAN Scan

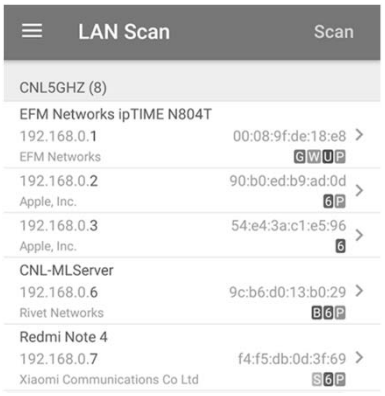


- G: Gateway
- W: Web interface available (port 80 or 443 open)
- U: If the device provides UPnP/DLNA services
  - UPnP: Universal Plug-and-Play
  - DLNA: Digital Living Network Alliance
  - Use to share multimedia

Wi-Fi Analysis Project

❖ Wi-Fi Network Analyzer

- LAN Scan

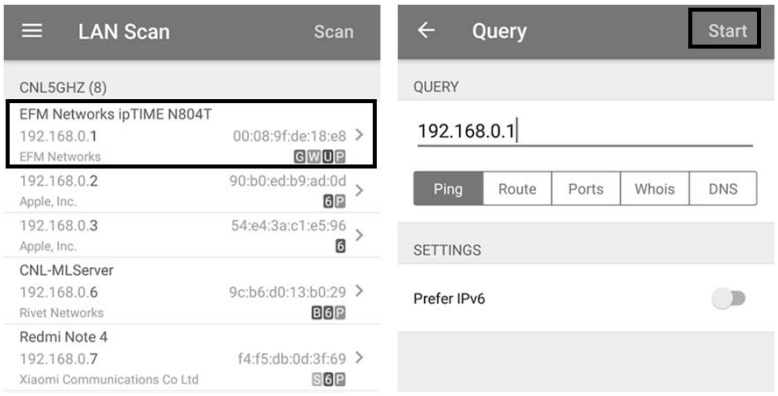


- P: Pingable
  - Device responds to ICMP ping requests
- 6: IPv6 address exists
- B: Device provides Bonjour service
  - Bonjour was developed by Apple
  - Used to find printers and file-sharing servers
- S: Scanning device (your device)

Wi-Fi Analysis Project

❖ Wi-Fi Network Analyzer

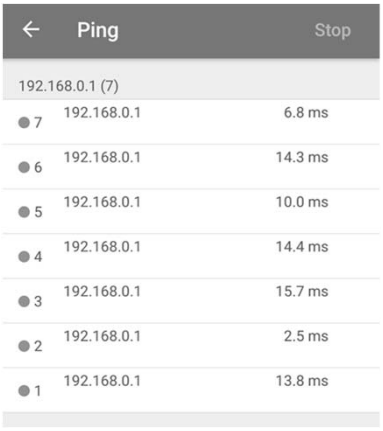
- Send Ping to the Gateway



Wi-Fi Analysis Project

❖ Wi-Fi Network Analyzer

- Send Ping to the Gateway



Wi-Fi Analysis Project

❖ Wi-Fi Network Analyzer

- Wi-Fi Signal Scan

Wi-Fi Analysis Project

❖ Wi-Fi Network Analyzer

- Wi-Fi Signal Scan

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: Frequency band (5 GHz/2.4 GHz) switch by pressing

Wi-Fi Analysis Project

❖ Wi-Fi Network Analyzer

- Wi-Fi signal scan

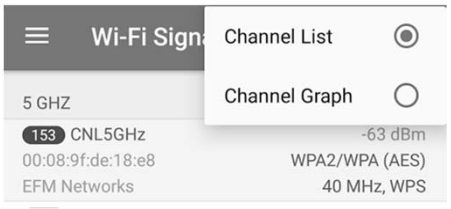
- Shows RSSI, SSID, MAC address of AP, Bandwidth and PHY channel used, Encryption scheme, etc.
  - RSSI: -59 dBm
  - SSID: CNL5GHz
  - Encryption: WPA2/WPA (AES)
  - Bandwidth: 40 MHz
  - PHY Channel:153rd channel

Wi-Fi Analysis Project

❖ Wi-Fi Network Analyzer

- Wi-Fi signal scan

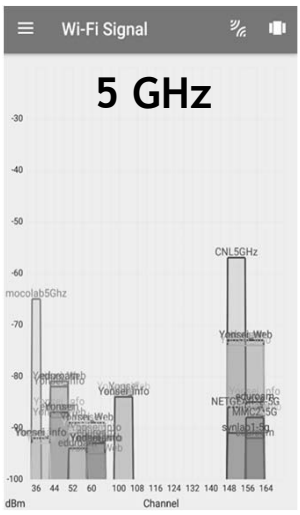
-  : Channel List/Graph switcher

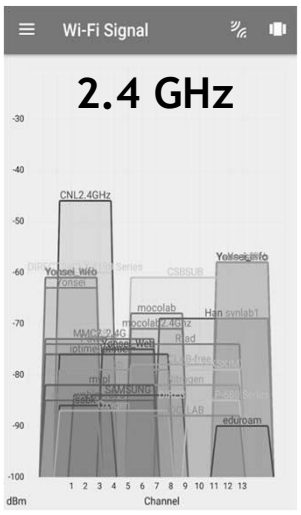


Wi-Fi Analysis Project

❖ Wi-Fi Network Analyzer

- Channel graph





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References

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