

William Prado
05/18/2025

speaker tomorrow - Edwin Katabaro

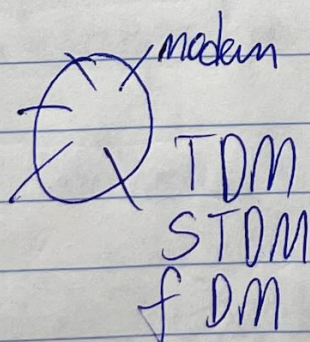
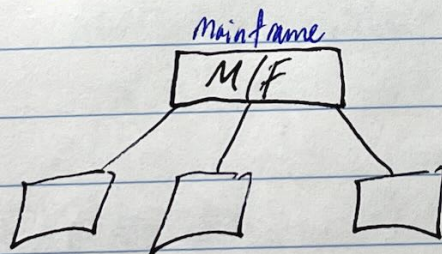
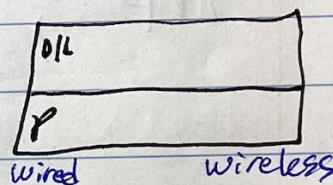
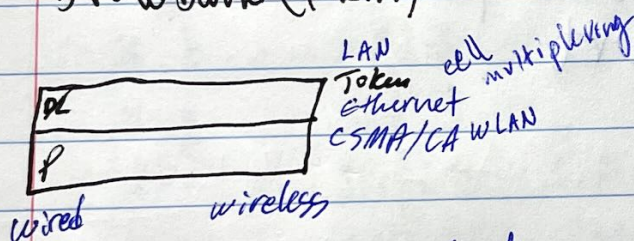
analog signal vs Digital Signal
Multiplexing - sharing the medium. There is wired or wireless.

Time Division Multiplexing (TDM).
Statistical Multiplexing.

FDM - Frequency Division Multiplexing.

Baseband (TDM)

Broadband (FDM)



How does cellular network work?

Mobile Switching Center (MSC)

central office (CO)

mobile switching > base station & antenna > cell

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handoff vs Roaming.

YTB How does your mobile phone work? ICT

Cell 1G - 2.4

Cell 2G - 64 kbps

Cell 3G - 2,000

Cell 4G - 100,000

Cell - 5G cellular

Powercert
Videos

YTB - RSSI, SNR, Noise Floor + Margins

Difference btw modem + router.

Modem Layer 1.

router Layer 3.

Modem - connects you to the internet. Modulate and demodulate.

Router - distributes the internet connection to multiple devices in your home or office.

note: Phone is analog
Computer is digital

YTB Wireless Access Point vs. Wifi Router.
WAP vs. Wifi Router

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Wired

Twisted Pair (T/P)

coaxial

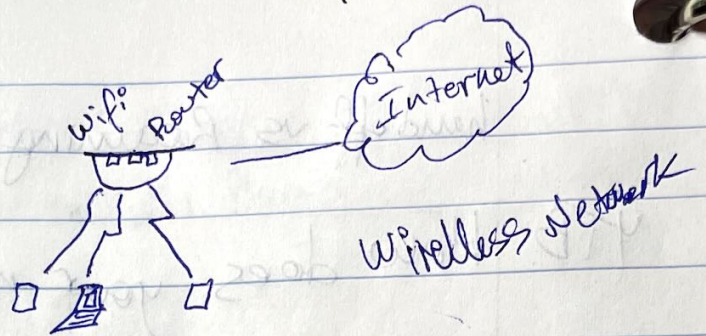
Fiber

Media converter

wireless

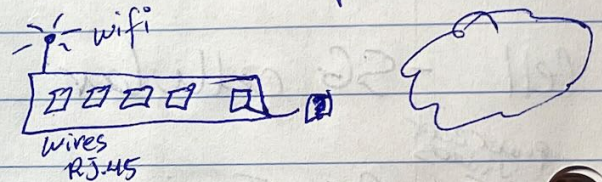
Antenna

repeater hub



Switch and access point do same thing, they move frames.

Wifi Range Extender - wifi booster explained - which is the best!

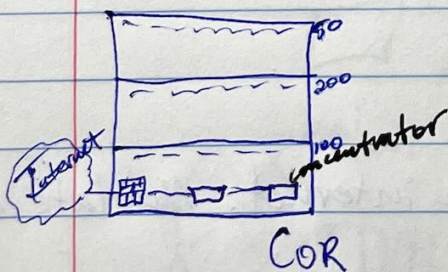


Wifi router -

Access point -

Sunny YTB

Wireless LAN: WAP, BSS, BSSID, SSID, ESS, ESSID



WAP - wireless Access point

BSS - Basic Service Set

BSSID - Basic Service Set Identifier

SSID - service Set Identifier

ESS - Service Set Identifier

ESSID - Extended Service Set Identifier

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12.2

Infrastructure - Access Point "AP"

AD HOC IBSS (Independent Basic Service Set, peer to peer)

SSID

BSSID "MAC" Addr

ESSID

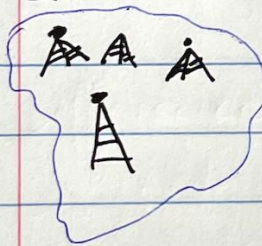
Distribution System (wired)

Range + Signal Strength

2.4 GHz has greater range

5 & 6 is faster, penetration, smaller coverage area.

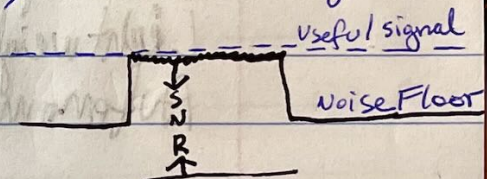
Inside Wireless: Noise Floor.



Omnidirectional
Antenna
(Normal gain)



Directional



Wireless Site Design.

Site survey

Basic Service Area (BSA)

Extended Service Area (ESA)

Heatmaps

Spectrum analyzer

Creating a wifi heatmap: A step by step Guide
Wireless Distribution System.

Netgear
VTB
VTB

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Wireless Roaming

Roaming

Associate/Disassociate

802.11r - "fast roaming"

Association - process of exchanging packets btw STA & AP

Wireless Distribution System (WDS)

WDS

Wireless LAN Controllers.

Hub & spoke

Light weight (thin) AP

Autonomous (Fat) AP

