

PRACTICAL SESSION 1

RECEIVED SIGNAL STRENGTH(RSS) IN GSM & WIFI

Understanding the Use of dBs in Day-to-Day Communication

ECE 516E– ANTENNA & RADIOWAVE COMMUNICATION

Monday, September 22, 2025

RECEIVE SIGNAL LEVEL IN GSM

1. Go to settings on your phone and change the “**Network Mode**” to ‘**GSM**’ or “**2G Only.**” whichever is supported.
2. Go the keyboard and type ***#0011#** to enter the **service mode** for Samsung or **search on Google** how to enter service mode for other types of phones.
3. Write down the following:
 - a) Public Landline Mobile Number(PLMN)
 - b) Location Area Code(LAC)
 - c) Receive (RX) Power(Pwr)
 - d) Broadcast Control Channel (BCCH)
 - e) Receive Power (RX Pwr)

RECEIVE SIGNAL LEVELS FOR WIFI

1. Download the App: '**Netspot**' from the Internet and install on your phone.
2. Start **Netspot** and select '**WiFi Inspector.**'
3. **Click on 'Networks.'** Write down the following for each network shown on your device:
 - a) Band
 - b) Signal strength
4. **Click on 'Channels.'** Write down available channels in the following bands
 - a) 2.4GHz
 - b) 5 GHz
5. **Click on 'Comparison'** and draw the graph you get.
 1. Explain the graph.
 2. How is communication supported on overlapping channels?

WHAT IS A GOOD RECEIVE SIGNAL STRENGTH FOR A CELL PHONE?

SIGNAL STRENGTH	CONNECTION QUALITY
-50 to -79 dBm	Excellent (~4 to 5 bars)
-80 to -89 dBm	Good (~3 to 4 bars)
-90 to -109 dBm	Fair (~2 to 3 bars)
-100 to -109 dBm	Weak (~1 to 2 bars)