- Matt, KD6KCK, opened the meeting at 9:05 AM.
- Make arrangements with Jeff Hendricks to check out pagers for Weather Alert
- K9VV Fred Kleber gave a talk on PCS – Personal Communication Service.
  - Introduction/ Regulatory
    - Regulated by FCC Wireless Telecom Bureau
    - Nine possible providers in an area now
    - Licenses auctioned electronically = raised $Bs
    - Telecom Reform Act of 1996
      - Local zoning may not unreasonably discriminate among competing telecommunications service providers
      - Local zoning requirements may not directly/indirectly prohibit te provision of wireless telecom services
  - Expect to have 50% of all Voice traffic wireless in 10 years.
  - Wireless communication
    - Convenience – Multi-function portable
    - Call Security
    - Non polluting high tech industry presence
    - Cellular Across the US (800 MHz)
      - 333 MSAs + 3000 RSAs
    - PCS Across the US (1900 MHz)
      - 51 MTAs (Major Trading Area)
    - 50 million US wireless Users
    - Three Access Technologies
      - FDMA
        - Frequency division multiple access
        - AMPS (analog cellular)
        - Basically cellular
        - Limited capability
      - TDMA
        - Time division multiple access
        - IS 136 (US, TDMA)
        - GSM9 PCS (1900)
        - First generation digital
        - Evolved late 1980's
        - Voice quality limited
        - GSM = European digital
        - Had to overlay & fit on to existing analog
      - CDMA
        - Code division multiple access
        - IS 95
        - Evolved from government secure communications
        - Greater capacity per unit frequency
        - Secure communications due to encryption
        - Near land-line quality – wideband digital
        - Frequency & path diversity benefits
        - Path Diversity – loves multipath
        - Mobile radio may have 4 receivers
        - Closed loop Power Control
        - No Hard Hand-Off
        - CDMA Uses a Soft Hand-Off
        - There are 2 to $64^{th}$ codes used in encrypting
        - Improved "signal S/N" improves "noise".
        - The digital phones have 80 db dynamic range compared to Cellular that is 16 db

- System Design Strategies
  - Similar to putting together a “high tech” puzzle.
  - Consider demographic and terrain environments.
  - System coverage – sufficient signal level
  - System capacity – short/long range growth
  - Ability to “gracefully grow” system expansion
  - System design drives antenna placement.
- Key Design Objectives
  - Leverage existing sites/structures
  - Cover key areas (Airports, sports complexes, governmental buildings malls, convention centers, etc.)
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