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# *Chelmsford Amateur Radio Society*

# Foundation Course

# Nature of Amateur Radio

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Chelmsford Amateur Radio Society  
Foundation Licence Course

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Slide Set 1 : v1.1, 16-Dec-2007  
(1) Nature of Amateur Radio



# Amateur Radio

- **Nature** Amateur Radio is for self-training and experimentation, and is non-commercial in nature
- **Benefits** Amateur Radio is of value in areas of
  - Technical Innovation
  - Emergency Communications
  - Development of Skills
  - International Friendship
  - Recreational Activity
- **The Foundation Licence is the entry level to Amateur Radio in the UK**



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# Amateur Radio Aspects

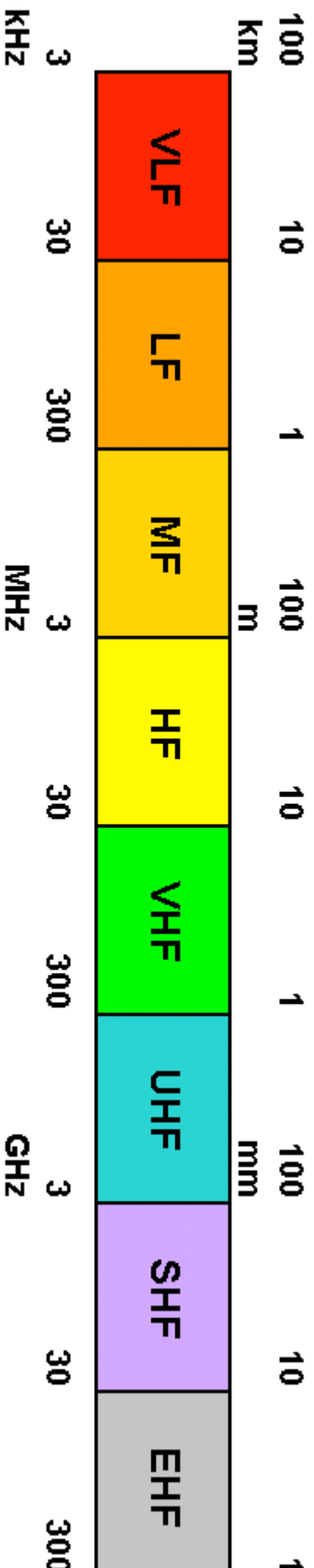
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- **BANDS** HF, VHF, UHF (and Microwave)
- **SPECIAL** Repeaters, Internet Links, Packet/UIView, DX Cluster, RAYNET and Satellites/ISS
- **MODES** Voice, Morse, Data/Packet, SlowScan TV
- **MODULATION** CW, AM, SSB, FM, FSK, PSK31 etc
- **OTHER** RSGB/Radcom, Clubs/Events, QSL Cards, Rallies Contests, Awards



Understand the Terminology  
for the Radio Spectrum

Wavelength



Frequency



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# Frequency Ranges

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- **Remember ranges for Radio Frequencies (RF):-**
  - HF: 3-30MHz
  - VHF: 30-300MHz
  - UHF: >300MHz
- **Compare with UK AC Mains = 50Hz**
- **General Audio (AF) for Normal Hearing: 100Hz-15kHz**
- **Frequencies for Audio Communications: 300Hz-3kHz**



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# Frequency Bands

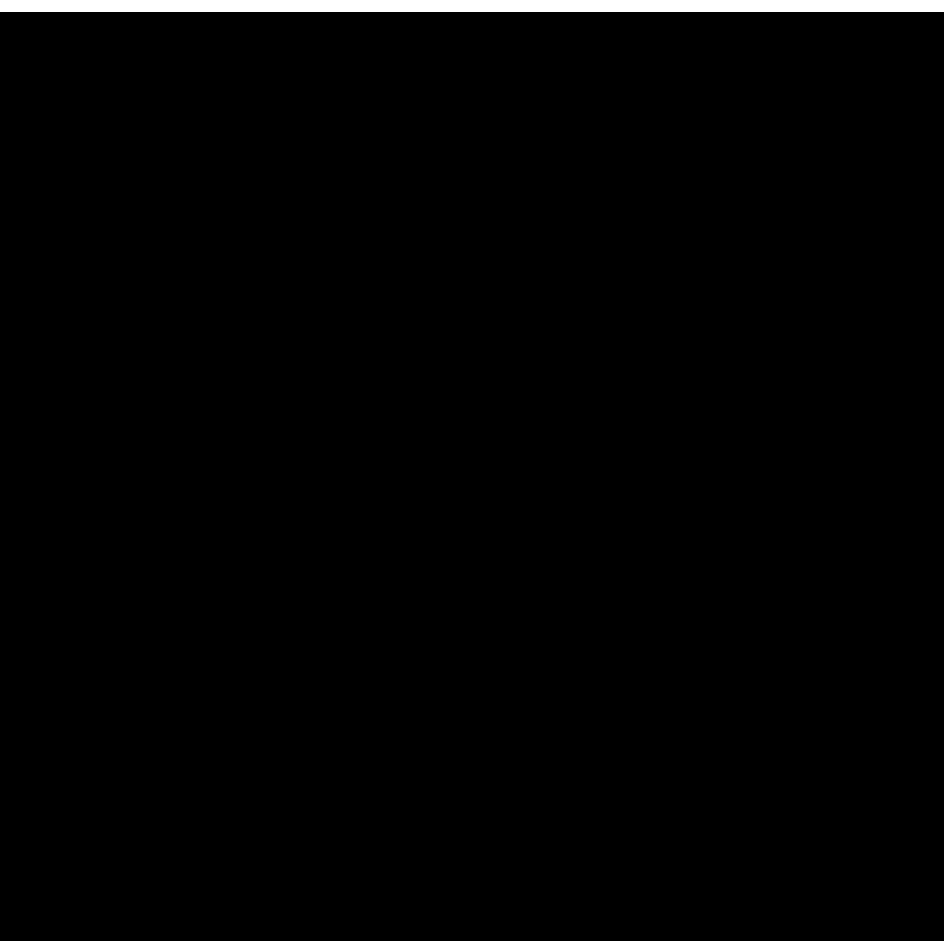
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- Amateurs often refer to their bands in terms of either wavelength or frequency
- Try to familiarise how bands may be described
  - HF: 7MHz = 40m 10MHz = 30m 29MHz = 10m
  - VHF: 50MHz = 6m 145MHz = 2m
  - UHF: 430MHz = 70cms
- Note how the wavelengths decrease as frequencies rise
  - as per the earlier slide and the conversion chart



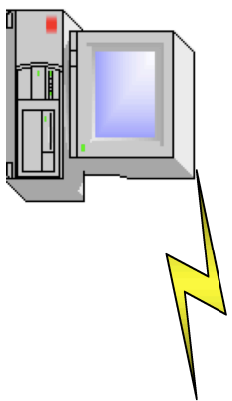
# Other Radio Users

- The radio spectrum is divided into agreed allocations to coordinate various uses
- The table opposite is a VHF example and may be used in the exam
- Amateurs have to share radio spectrum with many other services
- Other services may be in adjacent bands, but sometimes may be within an Amateur band

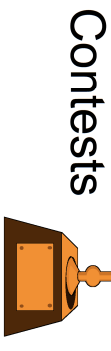




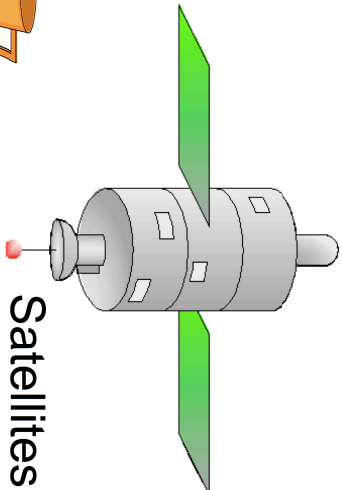
# Amateur Radio at Large



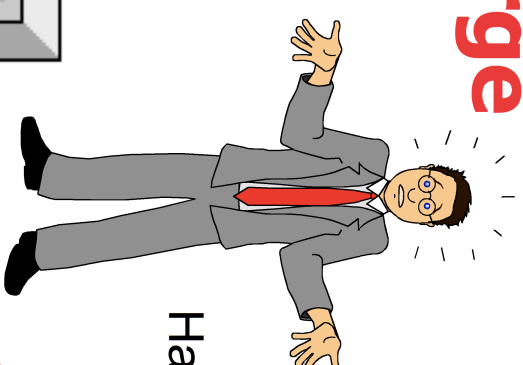
Packet Data



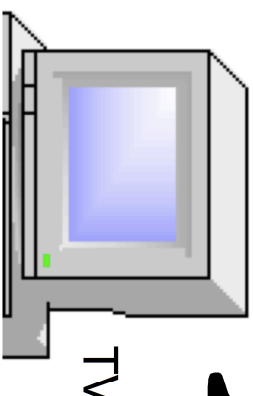
Contests



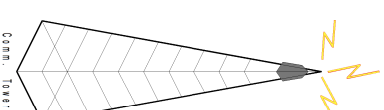
Satellites & ISS



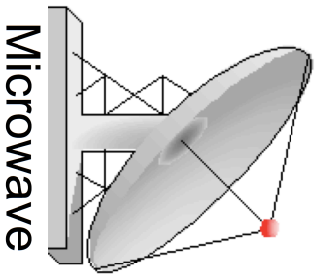
Handheld



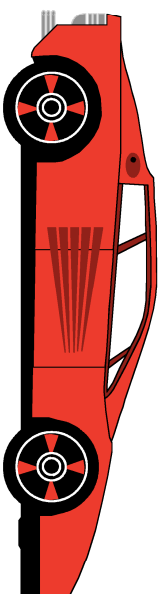
TV



Repeater



Microwave



Mobile