MOBILE UNIT ANTENNAS

Mobile unit antennas are **Omni directional** antennas which can be located as high as possible from the point of reception.

Generally these mobile unit antennas are categorized into four types

1. Roof mounted antennas
2. Glass mounted antennas
3. Mobile high gain antennas
4. Space diversity antennas

Roof mounted antennas

- For the roof mounted antennas, the antenna pattern is more r less uniformly distributed around the mobile unit, when measured at an antenna Range in free space.
- The antenna gain used at the mobile unit must be limited to 3 db, if it is more than 3 db the antenna can receive only a limited portion of total multipath signal in elevation as measured under the out of side condition.

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Glass mounted antennas

- In the glass mounted antennas, energy is coupled through the glass. And some energy is dissipated on passage through the glass.
- Always the antenna gain lies between 1 to 3 db depending on operating frequency.
- Hence, the position of glass mounted antenna is always lower than that of the roof mounted antenna. In general, there is 2db difference between these two antennas.

Mobile high gain antennas

- Mobile high gain antennas are the antennas, whose antenna gain is lies in between 2 to 3 db, which is adequate for general use.
- In the high gain antenna, the antenna beam pattern is suppressed vertically, where as it is suppressed horizontally in the directional antenna.

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Space diversity antennas

•A space diversity receiver with two branches, mounted on a motor vehicle a the advantage of reducing fading and thus can operate at a lower reception level.

•In general we mainly use the space diversity receiver to reduce the interference. These space diversity antennas are of two types

I. Horizontally oriented space diversity antennas
II. Vertically oriented space diversity antennas

Horizontally oriented space diversity antennas:

- In this space diversity scheme the two vehicle mounted antennas are separated horizontally by 0.5λ wave length with which, we can achieve the advantage of diversity.

Vertically oriented space diversity antennas

- In this two antennas are vertically separated by 1.5λ wavelengths. This separation can be achieved from the correlation between their received signal.

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