Data transmission in computer networks

Technology, Computer

Why can beckon with a really low frequence follow the Earth 's surface? Why are they non used for informations transmittal in computing machine webs?

Answers:

Radio moving ridges which are below 2 MHz follow the land. Following are the ground why its happened,

1. Diffraction
2. Current induced in the Earth 's surface, which slows moving ridges near the Earth, and because of this moving ridge forepart tilt downward.

These can be some ground that why Low frequence are non used for informations transmittal in computing machine webs.

Low frequences - & A ; agrave ; lower information rates (Nyquist/Shannon)

As more power is needed to convey and have low frequences, for this big aerial are needed.

Penetration of Lower frequences to stuff is high.

Why does the ITU-R lone regulate 'lower ' frequences (up to some hundred GHz) and non higher frequences (in the THz scope) ?

Answers:

THz scope frequences, such as infrared, seeable visible radiation, do n't interfere with other transmittal because ther are are blocked easy when obstructions are nowadayss.

So merely the standard safety ordinances applied to the systems.

Its non easy to bring forth the higer freuencies when the wireless systems stay beyond the 100 GHz.

What are the different attacks in reulation sing nomadic phone systems in Europe and the US? What are the effects?

Answers:

European attack

- Classical attack which was that, standardisation and regulate before any merchandises were available.
- ETSI which is founded by EU authoritiess to harmonise national ordinances.
- All states had to obey or follow the criterions set by ETSI.

American Approach

- Companies develop the systems, so market success attempt to coerce the criterion, or companies itself try to standardise.
- FCC is the illustration.

Affects of different Approachs

- Some criterions failed and some succeeded merely in Europe, HIPERLAN 1 (wholly failed) , and ISDN (Succeeded) . Some become the worldwide (GSM) .
- US attack is better for the most of the systems, i. e. initial merchandises, and after it, standardized. WLAN 802. 11 is a good illustration for the USA attack. But criterions about nomadic market

which are good established in Europe but its non even known in US. i. e. free roaming, MMS, GPRS roaming.

Why is the international handiness of the same ISM bands of import?

Answers:

International handiness of same ISM set is of import because of

1. Interoperability.
2. big plenty market to do the consumer devices cheap.

What are the chief jobs of signal extension? Why do wireless moving ridges non ever follow a consecutive line? Why is contemplation both utile and harmful?

Answers:

Following are the ground which cause the signal extension,

1. Attenuation
2. Dispersing
3. Diffraction
4. Contemplation
5. Refraction

In the presence of big edifices, without multipath extension or contemplation of signal we ca n't have radio signal. Inter symbol intervention (ISI) is due to multipath extension.

Why, typically, is digital transition non plenty for wireless transmittal? What are general ends for digital transition? What are typical strategies?

Answers:

FDM is used worldwide for dividing different systems. So all the wireless system must utilize linear transition for modulating the digital signal onto a bearer frequence. Most of the wireless Stationss want to convey at the same clip, because of this ground all the signal should be transition onto different bearer frequences.

Other ground behind digital transition,

1. Antenna and medium features.

Features for digital transition are

1. Spectral efficiency
2. Power efficiency
3. Robustness.

Typical strategies are

1. Ask
2. PSK
3. FSK

What are the chief benefits of a spread spectrum system? How can distributing be achieved? How can DSSS systems profit from multi-path extension?

Answers:

Benefits of a Spread Spectrum System:

1. Robust against intervention
2. Built-in security
3. Footing for CDMA engineerings
4. If the signal degree is low plenty so it can be used as background of bing systems.

By Chiping sequence or frequence hopping (XORing) a spot, we can accomplish Spreading. Guard infinites are now the perpendicularity of the splintering sequences or skiping forms. Higher Orthogonality- & A ; agrave ; Lower the correlativity of spread signals, or lower the hit chance of frequence skiping systems.

To recombining signals going along different waies, DSSS system typically use rake receiving systems.

What limits the figure of coincident users in a TDM/FDM system compared to a CDM system? What happens to the transmittal quality of connexions if the burden gets higher in a cell, i. e. , how does an extra user influence the other users in the cell?

Answers:

Mentions:

1. Jochen Schiller, `` MobileCommunication'' , 2nd ed. , Addison-Wesley