

SATELLITE COMMUNICATIONS

1.1 Introduction

Features offered by satellite communications

- Large areas of the earth are visible from the satellite, thus the satellite can form the star point of a communications net linking together many users simultaneously, users who may be widely separated geographically.
- Provide communications links to remote communities.
- Remote sensing detection of pollution, weather conditions, search and rescue operations.

1.2 Frequency allocations

International Telecommunication Union (ITU) coordination and planning World divided into three regions:

Region 1: Europe, Africa, formerly Soviet Union, Mongolia

Region 2: North and South America, Greenland

Region 3: Asia (excluding region 1), Australia, south west Pacific

Within regions, frequency bands are allocated to various satellite services:

- Fixed satellite service (FSS)
 - Telephone networks, television signals to cable
- Broadcasting satellite service (BSS)
 - Direct broadcast to home Astro is a subscription-based direct broadcast satellite (DBS) or direct-to-home satellite television and radio service in Malaysia and Brunei
- Mobile satellite service
 - Land mobile, maritime mobile, aeronautical mobile
- Navigational satellite service
 - Global positioning system
- Meteorological satellite service

Frequency band designations in common use for satellite service

TABLE 1.1 Frequency Band Designations

Frequency range, GHz	Band designation
0.1–0.3	VHF
0.3–1.0	UHF
1.0–2.0	L
2.0–4.0	S
4.0–8.0	C
8.0–12.0	X
12.0–18.0	Ku
18.0–27.0	K
27.0–40.0	Ka
40.0–75	V
75–110	W
110–300	mm
300–3000	μm

1.3 Intelsat

- International Telecommunications Satellite
- Created in 1964, now has 140 member countries, >40 investing entities
- Geostationary orbit ----orbits earth`s equitorial plane.
- Atlantic ocean Region (AOR), Indian Ocean Region (IOR), Pacific Ocean Region.
education, interactive video and multimedia
- Latest INTELSAT IX satellites wider range of service such as internet, Direct to home TV, telemedicine, tele- education, interactive video and multimedia

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