

Recommendation 13-3R1

**DATA RELAY SATELLITE CHANNEL PLANS
FOR THE 23 AND 26 GHZ BANDS**

The SFCG,

CONSIDERING

- a) that the frequency bands 22.55 - 23.55 GHz and 25.25 - 27.50 GHz are allocated to the inter-satellite service,
- b) that the band 22.55 - 23.55 GHz is recommended for forward inter-orbit links from geostationary data relay satellites (DRS) to low-orbiting spacecraft and the band 25.25 - 27.5 GHz is recommended for return inter-orbit links from low-orbiting spacecraft to DRSs (Recommendation ITU-R SA.1019);
- c) that data relay satellites are planned to use these bands for inter-orbit links;
- d) that ESA, NASA and NASDA through the Space Networks Interoperability Panel (SNIP) have recommended that data relay satellites be designed to allow interoperable cross-support of each other's user spacecraft.
- e) that SNIP has recommended a standard channel plan in these frequency bands;

RECOMMENDS

1. that DRS systems using the 22.55 - 23.55 GHz band for forward inter-orbit links use the following channel centre frequencies:
 - 23.205 GHz
 - 23.265 GHz
 - 23.325 GHz
 - 23.385 GHz
 - 23.445 GHz
 - 23.505 GHz
2. that these forward channels have a minimum bandwidth of 50 MHz;

3. that DRS systems using the 25.25 - 27.50 GHz band for return inter-orbit links use the following channel centre frequencies:

25.600 GHz

25.850 GHz

26.100 GHz

26.350 GHz

26.600 GHz

26.850 GHz

27.100 GHz

27.350 GHz

4. that these return channels have a minimum bandwidth of 225 MHz;
5. that data relay satellites be able to transmit forward signals on either left-hand or right-hand circular polarisation, and receive return signals on the same polarisation;
6. that data relay satellites transmitting a tracking beacon in these bands use one of the following frequencies;

23.530 GHz
23.535 GHz
23.540 GHz
23.545 GHz
7. that such tracking beacons be transmitted with left-hand circular polarisation.