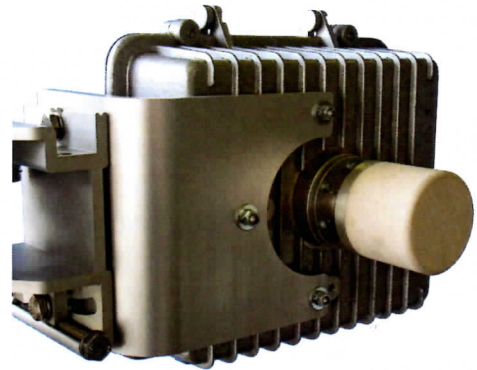


- 432 TV-programs of broadcasting quality
- 3.24 Gbps per cell sector
- DVB-S standard
- L-band interface

Applications

- Digital TV and/or IP broadcasting in urban areas

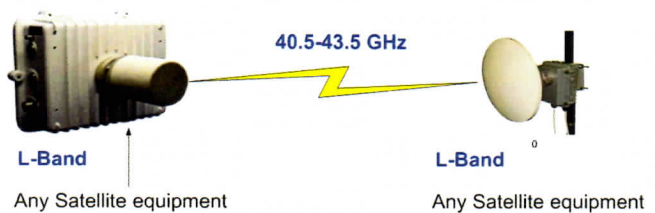


Description

City-1 operates in mm-wave frequencies, from 40.5 to 43.5GHz.

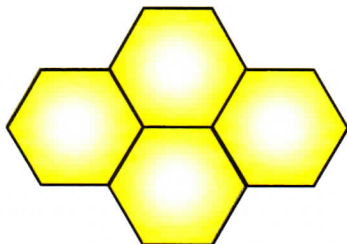
Operation principle

The City-1 system is based on DVB-S standard as in satellite. TV/IP broadcasting. The only difference is a frequency range. For full compatibility to satellite equipment, City-1 transmitter and receiver have L-band interface (IF = 950 to 2150 MHz). This allows using any satellite equipment both at base station and receiver side.



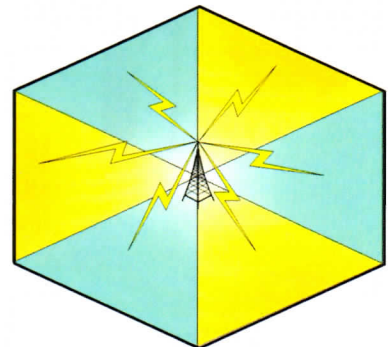
Network topology

City-1 transmitter can be deployed on TV tower or any high tall building. Transmitter range is up to 10 km, depending on a rain statistic in an area.



TRx is equipped with 30, 45, 60, or 90° sector antenna. To cover all directions, the cell topology is used. Depending on antenna pattern, the cell can be formed from 4, 6, 8, or 12 sectors.

To cover larger territory, multiple cell can be deployed.



An example of frequency allocation plan

Let 40.5–43.5 GHz band is split in 39 MHz bands, like in Satellite broadcasting. We will have 72 bands of vertical polarization and 72 bands of horizontal polarization. Each 39 MHz band is equivalent to satellite 'transponder', i. e. can carry 6 TV-channels of broadcasting quality or 45 Mbps data stream.

Operator can use from 1 to 72 bands in any sector, according to his needs. It is important that due to quasi-optical propagation in 40 GHz, the same frequencies can be used in all cell sectors and in all cells. To avoid interference at sector margins, it is enough to use different polarization in adjacent sectors.