

PoC in Turkcell-Erzurum Province 80 Ghz RL Setup and Results

Problem

In spite of the increasing capacity need in GSM systems, the insufficient capacity in standard frequencies, the use of only fiber optic systems as a solution to this capacity need, and the difficulties of installation of these systems, as well as the fact that the installation is sometimes not possible, and also the installation and operating costs.

Solution

The system installed with CTech 80 GHz Radio Link provides a capacity of up to 10 Gbps (20 Gbps in 2+0 XPIC). In this way;

- 1. High capacity need is provided with a single hardware
- 2. Cost advantage is obtained
- 3. Ease of installation and operation occurs

Customer Comment

ILKER BILGE, Turkcell Access Transport Network Strategic Planning Master Expert

The first field trials of the CTech E-Band (80 GHz) RL product took place in 2 Hops in our Erzurum Region. In the observations made within a certain period, no problem was observed in the highcapacity links. In the next period, the performances of the products installed within the scope of the "observation period" will continue to be observed during the longer observation period with the first installations.

EXECUTIVE SUMMARY

Short Summary

Sector : Telecommunication

Company : Turkcell

Glance

- Insufficient capacity at standard frequencies in response to the increasing capacity need in GSM systems
- 2. Difficulty in installation and high operating cost of Fiber optic systems that can meet the need for E-band external capacity

Solution

- The need for high capacity was provided by the 80 GHz RL system (10 Gbps)
- 2. The capacity provided by fiber optic systems was provided
- Ease of operation was provided with easy installation and remote intervention



Results

- The links established as a result of the work carried out worked smoothly even in harsh climatic conditions, providing the desired high capacity and uninterrupted communication.
- After our 80 GHz Radio link installation, Turkcell left the fiber optic system, which it used for transmission, as a backup system at the installation sites.

Summary

- Since Turkcell wanted to test the product in the harshest climatic conditions, Erzurum chose the region.
- As a result of the meeting with Turkcell, 4 GSM points to be installed were determined
- The fieldwork was done in two stages.
 - i. Firstly, 2 CTech 80 GHz Radio links with antennas of 30 cm and 60 cm diameters were installed in 3 different sites in August 2020 and observed until January 18, 2021.
 - ii. CTech 80 GHz Radiolink with 1 x 60cm diameter antenna was installed and operated in 2 sites between 19 January-18 April 2021.
- NMS was installed on Turkcell network for RLs.
- · For a period of time RLs worked without traffic
- As there was no problem, Turkcell Mobile user traffic has been transferred from fiber optic systems to 80 GHz RLs.
- RLs worked for 2 months and performance monitoring (Alarm, Capacity, etc.) was done.
- Turkcell Central and Regional planning teams reported that the PoC work was completed smoothly and there was no problem in using 80 GHz RLs in their networks.

