

How to determine the cellular signal strength on BEC 4G LTE router

Summary

This article shows how to check the signal strength and quality values for a BEC 4G LTE router. Knowing the actual values of the signal strength and quality is the first step to troubleshooting connection issues and can be helpful if the necessity of adding high-gain external antennas are needed.

Configuration

Step 1: Log into router's Web GUI page.

Step 2: Click on the Status and select 4G/LTE Status from the menu

Status

- Device Info
- System Status
- System Log
- 4G/LTE Status
- Wireless Status
- GPS Status
- Hardware Monitor
- Hotspot Status
- Statistics
- DHCP Table
- IPSec Status
- PPTP Status
- L2TP Status
- GRE Status
- OpenVPN Status
- Disk Status
- ARP Table
- VRRP Status
- Quick Start
- Configuration

Status

4G/LTE -1 Status

WAN: 4G/LTE -1

Current SIM Slot in Use: SIM 1

Status: Up

SIM Status: SIM Card Ready

Signal Strength: [Bar Chart] RSSI: -72dbm RSSI(Diversity): -72dbm

Signal Information: RSRP: -103 , RSRP(Diversity): -103 , RSRQ: -10.5 , SINR: 7.2

Network Name:

Cell ID: 1FFE00C

Physical Cell ID: 6

Card IMEI: 359072060257488

Card IMSI: 311480992721908

Network Mode: LTE

Network Band: B4 , Bandwidth:20MHz

Usage Allowance

Amount usedOnly Download: 1.61Hours of 720Hours

Billing period: [Bar Chart] Day:25

Clean Save Refresh

Step 3: Look for the following values:

- Signal Strength
- Signal Information
- Network Mode

Step 4: Monitor the numbers for 1 or 2 minutes to get a measure of how much the current signal characteristics fluctuate.

Step 5: Compare your values with the table below

RSRP

RSRP	Signal strength	Description
>= -80 dBm	Excellent	Strong signal with maximum data speeds
-80 dBm to -90 dBm	Good	Strong signal with good data speeds
-90 dBm to -100 dBm	Fair to poor	Reliable data speeds may be attained, but marginal data with drop-outs is possible. When this value gets close to -100, performance will drop drastically
<= -100 dBm	No signal	Disconnection

RSRQ

RSRQ	Signal quality	Description
>= -10 dB	Excellent	Strong signal with maximum data speeds
-10 dB to -15 dB	Good	Strong signal with good data speeds
-15 dB to -20 dB	Fair to poor	Reliable data speeds may be attained, but marginal data with drop-outs is possible. When this value gets close to -20, performance will drop drastically
<= -20 dB	No signal	Disconnection

SINR

SINR	Signal strength	Description
>= 20 dB	Excellent	Strong signal with maximum data speeds
13 dB to 20 dB	Good	Strong signal with good data speeds
0 dB to 13 dB	Fair to poor	Reliable data speeds may be attained, but marginal data with drop-outs is possible. When this value gets close to 0, performance will drop drastically
<= 0 dB	No signal	Disconnection

RSSI

RSSI	Signal strength	Description
> -65 dBm	Excellent	Strong signal with maximum data speeds
-65 dBm to -75 dBm	Good	Strong signal with good data speeds
-75 dBm to -85 dBm	Fair	Fair but useful, fast and reliable data speeds may be attained, but marginal data with drop-outs is possible
-85 dBm to -95 dBm	Poor	Performance will drop drastically
<= -95 dBm	No signal	Disconnection

Troubleshooting

If you did not get required minimum values, you can try some of the suggestions listed below to improve your connection:

- Move the router to a side of the building that face the carrier's cellular tower.
- Move the router to a higher point in the building, close to the window, or on top of the cabinets.
- Do not place the router near any electrical devices, wiring, or radio devices.
- Use high-gain antenna if needed.