



## Normal range of communication base station level value

What are the disadvantages of a base station? Base Station capacity - High network congestion due to excessive mobile users. Proximity to the base station - The farther away you are, the weaker the signal reception. Competing Signals - Interference from other networks or nearby electronic devices can weaken connectivity. Which signal analyzer is best for 5G NR base stations? The N9032B PXA and N9042B UXA signal analyzers are by far the most advanced signal analysis products to fulfill the latest testing requirements for 5G NR base stations. These solutions perform up to 40% faster with the new CPU to help you quickly make computation-intensive measurements, such as demodulation and EVM. What if RSRP -120 dBm is not lit? If no indicator is lit, then the signal strength is insufficient to connect to the LTE network. With RSRP = -120 dBm and below, the LTE connection may be unstable or not installed at all. RSRQ RSRQ (Reference Signal Received Quality) - characterizes the quality of the received pilot signals. How far is a -80 dBm signal? For example, in the above image, if the center dark-blue circle were 1/2 mile across at -70dBm signal, the -80dBm range would be about 1 mile, the -90dBm circle 2 miles and the -100dBm circle 4 miles across. But, remember that most all communication systems on earth are limited by terrain not line-of-sight distance. What is a good RSSI signal strength? Signal strengths near a base station are typically in the -30 to -60dBm range. Most Raveon radios can measure an RSSI as large as -60dBm. Above that, they will report some maximum value such as -58. The upper limit varies by model. Here is a rough summary of RSSI signal implications. How does input signal level affect EVM value? As the input signal level decreases, the EVM value increases. Engineers typically reduce the attenuation of the signal analyzer to improve the SNR. However, even when the set input attenuation is 0 dB, the SNR may still be too low for accurate signal analysis. Per ITU-R P. recommendations, base station antenna heights typically range between 15-60 meters. Urban deployments favor 25-35m, rural coverage requires 40-55m, while 5G mmWave systems operate efficiently at 15-25m. Critical factors include propagation models, terrain, and Per ITU-R P. recommendations, base station antenna heights typically range between 15-60 meters. Urban deployments favor 25-35m, rural coverage requires 40-55m, while 5G mmWave systems operate efficiently at 15-25m. Critical factors include propagation models, terrain, and That's why it's important to understand the three key signal metrics--RSSI, RSRP, and RSRQ--and what they reveal about your network health. Avoid placing the antenna near metal objects or inside enclosures that may block signal. Try selecting different LTE bands to find the most stable connection. Signal strength values are defined by a few different measurements which vary even more for different service modes. These measurements are as follows: More on these measurements in separate service mode sections. There are many different factors that influence signal strength and quality The following table shows the different values of these parameters, which correspond to very poor (Cell Edge), poor (Mid Cell), good (Good) and very good (Excellent) signal quality: Next, we briefly explain each parameter that determines the quality of the signal. Signal strength The signal This paper discusses 5G NR Release 16 base station transmitter conformance testing requirements and the specific challenges that arise in millimeter



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wave (mmWave) frequency testing. We will also discuss how to stay compliant with standards using the new designs in Keysight signal analysis

Note 1: For single entry analysis, the maximum antenna height of 60 meters for base stations and 1.5 meters for mobile/portable stations will be used. For aggregate analysis antenna heights will be varied between the minimum and maximum values shown in the table.

Note 3: A base station typically ETSI EN 301 489-50: "Electromagnetic compatibility (EMC) standard for radio equipment and services; Part 50: Specific conditions for cellular communication base station (BS), repeater and ancillary equipment; Harmonised standard covering the essential requirements of article 3.1(b) of the Directive

### Understanding Cellular Signal Strength and Quality

There's no single "ideal" value--actual speeds depend on a mix of strength, quality, and congestion. Even with good signal strength, you may experience slow speeds due to tower

### Mobile Signal Strength Recommendations

### Summary

### Signal Measurement

### 2G/3G/4G and 5G

### How Do I Check The Signal Quality on A Teltonika device?

### Improving Signal Parameters

This chapter is an overview of recommended signal strength levels for different mobile service modes. Note: The following recommendations apply for both Quectel and MeigLink modules used in Teltonika devices. See more on [wiki.teltonika-networks.com](http://wiki.teltonika-networks.com)

### Signal quality [LTE/5G ] - LTE and 5G signal quality parameters

This article will answer questions what are the LTE signal levels and what should be the optimal values and what are the 5G signal levels

### Ensure Your Base Station Transmitter Complies with 5G NR Table 1

summarizes base station conformance tests for conducted and radiated situations. 3GPP specifies four types of base station configurations, depending on the configuration, whether the

### The equipment characteristics for LTE FDD transmitters and

See 3GPP TS 36.101, §6.3.2 for minimum transmit power of -40 dBm, with maximum transmit power of 23 dBm the power control range is 63 dB. Values are only valid if the operating

### TS 138 113

The level of the signal supplied to the equipment should be within the range for which the assessment of throughput is not impaired. Power control shall be OFF during the immunity

### What do Received Signal Level (RXLEV) and RXQUAL is expressed as a value between 0 and 7, with higher values indicating better signal quality.

Measurement: RXQUAL is calculated based on the bit error rate (BER) of the received signal.

### RSSI and Communication Range -- Raveon

Signal strengths near a base station are typically in the -30 to -60dBm range. Most Raveon radios can measure an RSSI as large as -60dBm. Above that, they will report some maximum value such as -58.

### Base Station Antenna Height Recommendations

Per ITU-R P. recommendations, base station antenna heights typically range between 15-60 meters. Urban deployments favor 25-35m, rural coverage requires 40-55m, while 5G mmWave systems

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In this case, the signal quality is actually very poor. This could be due to the device being some distance away from the base station. It's also possible that something is interfering with the

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