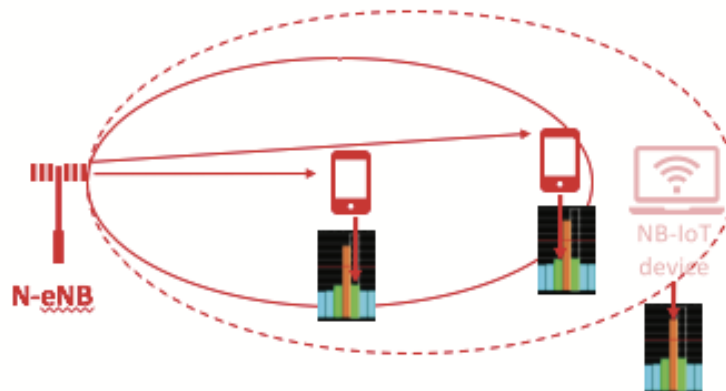


## Same Cell Site Interference When Installing In-band NB-IoT

In a previous tech tip, we spoke of the [three main items to check](#) during installation and certification of In-band Narrowband Internet of Things (NB-IoT). One of the common issues that comes up is intra-Physical Resource Block (PRB) interference within the same cell site. In this tip, we'll take a quick look at how this can happen and the best way to eliminate the problem.

When validating an LTE base station with a new NB-IoT service, one of the first items to check is any possible impact the active NB-IoT signal may have on adjacent PRBs. These adjacent PRBs may be rendering Voice over LTE (VoLTE) or other traffic data to non-IoT devices like smartphones being served by that same cell site.



### Effect of NB-IoT power boosting on adjacent PRBs from the same cell site

In the scenario shown above, it is important to ensure the NB-IoT PRB is not leaking any significant amount of power to adjacent PRBs allocated to other user equipment like smartphones, tablet devices with cellular service, etc. being served by that same cell site.

One of the most effective test procedures to detect intra-PRB interference in an LTE/NB-IoT combined cell site is to use the VIAVI CellAdvisor Data Allocation Map and measuring the power levels and Error Vector Magnitude (EVM) values for adjacent PRBs within the supported dynamic

range. The first tech tip (linked at the beginning of this tip) will give you the acceptable ranges for these values.

For a more in-depth look at In-band deployments, read the white paper [A Practical Guide for Field Testing NB-IoT](#).

Short on time? Read the blog post [3GPP NB-IoT Deployment and Optimization Challenges](#).

### **Products Used for Testing**

[CellAdvisor Base Station Analyzer](#)