

# Technical Bulletin CS-09-08

PTB4xx vs. LTB100 – Radio Comparison



## Problem

Belief that LTB100 radio performance is sub-standard when compared to existing PTB4xx phones.

## System Affected

PTB4xx – SpectraLink 400, 410, 450  
LTB100 – SpectraLink 6020

## Description

Customers have a perception when using an LTB100 handset after having used previous PTB4xx handsets that the LTB100 doesn't perform to expected levels. This is generally noticed when in call as the PTB4xx handsets appear to have greater range before a call is lost versus the LTB100 handsets which seem to have a more limited range before losing a call.

## Resolution

The radios within the handsets are physically different but are still held to the same specification, but there is some variability in the manufacturing process where some phones may perform slightly better. However, all handsets meet the minimum manufacturing sensitivity requirements. In the most extreme cases of radio variability, the performance difference between handsets could be greater than ~5dB where it typically may be possible for a user to notice auditory differences between handsets. This is true for both PTB4xx and LTB100 handsets but such extreme variability is highly unlikely to occur.

There is also a difference in the messaging function of the phones, i.e. how the phone communicates with the system. The PTB4xx will accept a much higher frame loss and therefore has a much longer timeout period before dropping a call. The LTB100 will not tolerate the higher frame loss and so will timeout the call sooner. This results in the perception that the range, aka performance, is different between the two handsets.

If the PTB4xx handset begins experiencing high frame loss the user will get poor call quality, i.e. static, choppy audio, etc., rather than dropping the call. The acceptable operational specification for range is identical for both handsets. What this equates to is that the LTB100 handset will provide clear evidence of coverage problems in a system where the PTB4xx would not.

Comparison of the PTB4xx handsets versus the LTB100 leads to the conclusion that there is no difference between the handsets in performance. The real issue is the perception of a difference based on past user experience with PTB4xx handsets retaining calls in areas insufficiently covered for acceptable voice communication.

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