Tempest® NG900 Start-Up Procedure

(For multi-BaseStation systems only)

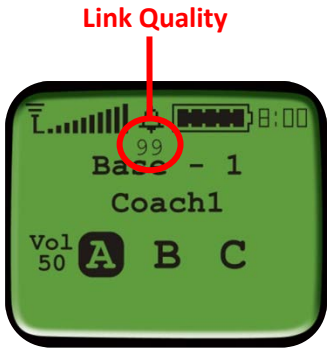
Objective

The purpose of this document is to provide a start-up procedure for multi-BaseStation Tempest NG900 wireless systems on game day as well as instruction on the new "Reset Radio" feature. Failure to follow this procedure could result in poor performance of your NG900 wireless system. This procedure does not apply to Tempest NG (2.4GHz) systems as long as the Zero Hop Sync Generator and Base Sync connections are properly installed on your 2.4GHz BaseStations.

Overview

The latest firmware update (v6.10.00) for Tempest NG includes a numeric "Link Quality (LQ)" metric that appears on the BeltPack LCD display (just above the Base Name.) This LQ indicator will serve as a diagnostic tool when initially powering on your Tempest NG900 BaseStations. Additionally, this update includes a "Reset Radio" feature in the event you do not have adequate LQ at start-up.

What is Link Quality?



The Link Quality (LQ) is a numeric value that provides a real-time metric on the quality of communication between the radio in the BaseStation/Remote Transceiver and the radio in the BeltPack. The LQ serves as a diagnostic tool for proper system operation and troubleshooting BeltPacks. Link Quality indicators can be disabled in the <Tech Menu> of each BeltPack under <Diagnostics>. The default status is "enabled."

What should the LQ value be during operation?

There is no exact value that LQ will remain at during system operation. Depending on what degree of outside interference or attenuation (blocking) is present, the LQ will fluctuate during normal operation. Fluctuations in LQ can and will span a wide range of values, however what is acceptable will vary from game to game. The lower the LQ, the poorer the audio quality will be during operation. During start-up, within adequate range and no outside influences present, the LQ should display "*99*" which is the highest LQ value a BeltPack can have.

What if the LQ on all my NG900 BeltPacks is below "99" at start-up?

At start-up, two NG900 BaseStation's hopping patterns can initialize on top of one another affecting the LQ. This is likely the case if the LQ dropped below "99" after powering up the 2nd NG900 BaseStation. Resetting the radio in the 2nd BaseStation will correct this conflict. This start-up procedure will assist you with this process.

What if the LQ on a single BeltPack is below "99" at start-up?

This depends on where the BeltPack is located at start-up, but if the other BeltPacks on the same BaseStation are at "99" there is a good chance it is an isolated radio issue within that BeltPack. If the LQ value has dropped considerably lower or if that unit is experiencing poor audio quality it may require service.

Does LQ apply to both my 2.4GHz and my 900MHz Tempest NG models?

The LQ is the same for both models of Tempest NG; however the 2.4GHz model uses ZSync™ technology which prevents the need to follow this start-up procedure as long as the ZSync components are installed properly in your Tempest NG 2.4GHz system. Those components consist of the Zero Hop Sync Generator and the Base Sync connections.

NG900 Start-Up Procedure

Please read and follow these steps in order to properly configure your Tempest NG900 BaseStations for game day operation. This procedure should take place once you have completed set up of your sideline trunk including dry pair and antenna connections.
Note: For instruction purposes, we will refer to the first/top NG900 BaseStation as "Base A" and the second/bottom NG900 BaseStation as "Base B."

IMPORTANT: Once this procedure is complete and the NG900 BaseStations are ready to use, do NOT turn off the power to those BaseStations or unplug the Remote Transceivers. Doing so may result in having to repeat this procedure. It is okay, however, to turn off the wireless BeltPacks after completing the start-up procedure.

1. Be sure the power to ALL of your wireless BaseStations and BeltPacks is OFF.
    a. No headsets are required for this procedure.
2. Take the first set of BeltPacks paired to the NG900 Base A approximately 10 yards to one side of the sideline trunk/antenna, place them face-up on a table or the bench, and turn them ON.
    a. It is important to maintain adequate distance between your BeltPacks and the antennas at all times. Placing any NG900 BeltPack too close to the antenna(s) could cause desensing to occur and result in poor performance on the NG900 system. If any NG900 BeltPacks are not in use they should be turned off so not to affect the performance of the other NG900 BeltPacks in use.
3. Take the second set BeltPacks paired to the NG900 Base B approximately 10 yards to the opposite side of the sideline trunk/antenna from where you placed the first set, place them face up on a table or bench, and turn them ON.
4. Power up Base A and observe the LQ at the corresponding BeltPacks. The LQ should read "99" at start-up.
    a. If they do not read "99", power OFF the BaseStation and be sure no other 900 MHz devices are operating near your system. Antennas on the opposite sideline should not impact your start-up LQ.
    b. If they do read "99" continue on to the next step.
5. Power up Base B and observe the LQ on the FIRST set of BeltPacks that correspond to Base A.
    a. If the LQ reads "99" then confirm the LQ for the second set of BeltPacks for Base B is also "99." If so, your NG900 BaseStations are configured and ready to use.
    b. If the LQ reads anything other than "99", then follow the next step to reset the radio on Base B.
6. If LQ does not read "99" at start-up, reset the radio on Base B within the "Tech Menu":
    a. On the front of Base B, Press MENU
    b. Press "1-BaseStation Settings"
    c. Scroll to "6-Tech Menu" and press ENT
    d. Press ENT thru Warning Message
    e. Scroll to "3-Diagnostics"
    f. Scroll to "2-Reset Radio" and the "Reset Radio" screen will display the LQ values for each of the BeltPacks on Base B.

IMPORTANT: While in the "Reset Radio" menu the audio across that BaseStation will be negatively affected; do NOT monitor LQ values from this menu during game operation or walk-testing!

7. Press ENT to reset the radio for Base B. After a few seconds the LQ values on the screen will begin re-initializing. This process should only take 4-5 seconds.
    a. If the LQ values for Base B are "99" then confirm the LQ for Base A BeltPacks are also "99." If so, then your NG900 system is ready for use.
    b. If the LQ values indicate anything other than "99" on Base B, then press ENT to reset the radio again for Base B. Follow step 7 until the LQ for Base B reads "99" for all of your belts.