

White Paper

Rebanding Impact on Public Safety In-building Signal Booster Installations.

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There are several different scenarios concerning the impact the FCC mandated 800 MHz rebanding process will have upon signal booster installations. Some costs of retuning signal boosters is eligible for reimbursement, other may not be. The following discussion shows the importance of separating 'public safety only' installations from multiple use installations.

Retuning of public safety only signal boosters is the least complicated of all possibilities. Most in-building 800 MHz antennas, coaxial cables, power dividers, etc. are unaffected by a frequency change within the 800 MHz band and no retuning is required.

Almost all 800 MHz signal boosters currently in service are FCC Class B (wideband) and fall into three categories based on their filter pass bandwidth:

A. 821 - 824 / 866 - 869 MHz (NPSPAC) signal boosters that have 3 MHz passbands are dedicated to public safety use only.

B. Non-NPSPAC (806 – 821 / 851 – 866 MHz)

C. All band, 806 – 869 / 851 – 869 MHz.

Most public safety rated signal boosters are capable of being retuning from the 821 - 814 / 866-869 range to the 806 - 809 / 851 - 854 range. The method used to retune these signal boosters include field retuning or reprogramming, filter replacement or swapping and factory retuning.

Since this retune is mandated 100% by the Transition Administrator(TA), all public safety agency costs should be eligible for reimbursement.

Type A must be retuned to be operational when rebanding is implemented.

It should be noted that some agencies have in-building codes or ordinances that require private building owners to install public safety coverage. If the signal booster is ONLY used for public safety communications, the building owner should be eligible for reimbursement of mandatory retuning costs.

Local jurisdictions with in-building ordinances should notify building owners who are on record as having complied with these ordinances and establish acceptable costs. The agency costs of notification and coordinating private owned public safety signal boosters should be reimbursable as well.

The private retuning would be included in the itemized reimbursement request to the TA. TA Schedule C, which is the cost estimate for rebanding, allows the filing agency to specify the who is to be paid for each specific item. The payee has to be listed in the middle column to be reimbursed directly. A direct reimbursement payment to the building owner (or their retuning contractor) will avoid any complexities and legalities that may arise from mixing public and private funds.

Type B and C (15 MHz and 18 MHz passband) signal boosters may not be considered eligible for retuning reimbursement, especially those in private structures. Since these signal boosters already pass the rebanded public safety frequencies, any retuning or reimbursement will require special considerations as outlined below.

It may be argued by public safety agencies the interference caused by Sprint Nextel will not be minimized until these signal boosters are retuned to reject the new Sprint - Nextel channels at 817 - 824 / 862 - 869 MHz. The 15 MHz models already reject above 821 and 866, but NOT the 817 - 821 and 862 - 866 bands that will be used exclusively by Sprint Nextel after rebanding is completed.

If a private user, in complying with local public safety ordinances requiring public safety coverage enhancement within their structure, also uses the 15 or 18 MHz bandwidths to improve his own private channels or those of Sprint-Nextel, there are little grounds for reimbursement as a result of 800 public safety retuning.

However, it may be to Sprint -Nextel's advantage to support BDA retuning to operate outside of the new ESMR band. In addition to providing better service and less interference for both public safety and themselves, this action could be used as a vehicle to inventory the many so called "Nextel BDA"s purchased by consumers. For consumers, properly tuned signal boosters will improve Sprint Nextel band performance by reducing undesired public safety channels.

In either case the agency and signal booster owner will probably have to provide convincing evidence these signal boosters were exclusively used to meet public safety communications requirements and any other communications function was not intended or permitted before and after rebanding.

It should be noted many inexpensive signal boosters can not be retuned due to the types of low cost filters used and the method of mounting these filters on printed circuit boards. Any of these type signal booster that MUST be retuned will have to be completely replaced with new units.

Additionally, the FCC may revise future signal booster rules so that ESMR signal boosters are no longer permitted to amplify and public safety channels to prevent future interference between these two radio services. This would support the need for rebanding to reduce interaction between these two distinctive and different user groups. However, a petition for this has not been presented to the FCC at this time

Jack Daniel
 Jack Daniel Company

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Additional resources:

<http://wireless.fcc.gov/publicsafety/800MHz/bandreconfiguration/releases.html>

<http://www.800ta.org/default.asp>

<http://RFSolutions.com>

