



Buncombe County Fire Marshal Office

164 Erwin Hills Rd Asheville, NC 28806

Office: (828) 250-6620 Fax: (828) 250-6215

Emergency Responder Radio Coverage System

North Carolina Fire Code requires that emergency responder's radio systems be fully operable in the interior of most new buildings. Some modern energy-efficient construction techniques and materials (such as Low – E glass, cementitious coatings and steel roofs) tend to attenuate the radio signals penetrating the exterior of some new buildings. Per North Carolina 2018 Fire Code Section 510, all new buildings constructed in Buncombe County after January 1, 2019 (except for one and two family residences) are required to ensure that the Buncombe County Public Safety Radio System has sufficient radio signal strength to be fully operable throughout the interior of the building.

New building owners subject to the 2018 North Carolina Fire Code section 510 are required to submit a Radio Signal Strength Study that demonstrates that the existing Buncombe County Radio System signal levels meet the code requirements or they will be required to install an Emergency Responder Radio Coverage System (ERRCS) to boost the radio signals up to the required levels. All owners of new buildings, as well as their general contractors and ERRCS vendors/installers, should be familiar with all provisions of the relevant codes.

Radio Signal Strength Studies

Studies on new buildings must be performed by a suitably qualified engineer or technician with an FCC General Radio Operator's License or acceptable alternative qualifications. Acceptance of alternative technical qualifications will be done on a case by case basis by the Fire Marshal's Office. Signal studies can only be conducted once the building is closed in, all windows, doors, dry wall, exterior coatings and the roof in place.

Radio Signal Strength Studies shall be conducted in compliance with the 20-grid method for each floor as outlined in North Carolina Fire Code Section 510.5.3. In addition to showing one measurement in the center of each grid, the study must also show the signal levels as measured in each critical area. Critical Areas as defined in 2013 NFPA 72 section 24.5.2.2.1 are fire command centers, fire pump rooms, exit stairs, exit passageways, elevator lobbies, standpipe cabinets and sprinkler valve locations.

Critical areas will be required to have 99% floor area radio coverage. Documentation submitted shall include a 20-grid floor plan for each floor with signal levels annotated on each grid of the floor plan as well as for all critical areas.

Personnel conducting signal surveys are encouraged to not use instantaneous signal level readings, but rather sample and average the signal levels for a period of several seconds before recording the signal level for each grid.

For exceptionally large floor areas such as schools and shopping malls, where dividing a large number of square feet into grids creates unreasonably large grids, building owners/managers are strongly encouraged to work with the Fire Marshal's Office personnel to develop a sampling strategy that does not leave large areas untested. The Fire Marshal's Office will work with the owner/manager of such buildings on a case by case basis.

All signal measurements will be conducted using an approved professional grade spectrum analyzer that has been calibrated within 12 months of the date of the study. A copy of the most recent spectrum analyzer calibration certificate shall be included with the radio signal strength study.

After submission of the study, the Fire Marshal's Office will notify the building owner as to whether the results were accepted or whether an ERRCS will be required. The Fire Marshal's Office reserves the right to do its own signal level spot checks to verify study results.



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ATTENTION:

All required study information must be submitted before a CO/Final will be issued.

If the radio coverage system is required the system will have to be installed and the acceptance test completed before a CO/Final is issued.

Vendors in the Area who will perform the testing for you:

<p><u>MSS Asheville</u> 125 Glenn Bridge Rd. Arden, NC 28704 828-273-8878</p>	<p><u>Diversified Electronics</u> 309 C Agnew Dr. Forest Park, GA 800-646-7278</p>
<p><u>Onepath</u> 170 Chastain Meadows Ct. Kennesaw, GA 678-695-5600</p>	<p><u>Harris Communications</u> Harriscommunications.com 803-670-8394</p>
<p><u>Communication Specialists, Inc.</u> Hal Deadwyler - hal@twoway1.com 4621 Broad River Rd Columbia, SC 29210 803-513-0008 cell / 803-798-1743 office</p>	<p><u>Infinity Alarms</u> 16 S Turkey Creek Rd Leicester, NC 28748 828-683-1420 (Will be available after March 1 2020)</p>

The Frequencies that must be used for Buncombe Co:

Mobile RX	Mobile TX
769.08125	799.08125
771.68125	801.68125
772.16875	802.16875
772.76875	802.76875
773.91875	803.91875
769.79375	779.79375
770.11875	800.11875
772.48125	802.48125
773.43125	803.43125
774.68125	804.68125

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