

## **North Carolina VIPER Radio Communication 2025**

As the North Carolina Voice Interoperability Project for Emergency Responders (VIPER) continues to grow in size, it is important that the system remains at the forefront of the technological improvements afforded to our end users. In order to maintain our technological timelines and to be able to make the most efficient use of the resources that we have available, VIPER must begin to address our ability to implement new capabilities to ensure that we are ready for not only the continued growth of the system but also for future system enhancements.

Under our current Project 25 (P25) system architecture, we support digital operation using the Frequency Division Multiple Access or FDMA technology. As VIPER completes the migration of our current Motorola Quantar base stations to the replacement GTR base stations, VIPER will be in a position to support P25 Phase 2 operation utilizing Time Division Multiple Access or TDMA operation. TDMA would allow us to divide each channel on the system that supports voice radio traffic into two separate talk “paths”, each supporting a unique voice radio conversation. This capability would allow VIPER to potentially support more concurrent voice conversations without adding additional base stations to address the need for growth.

A transition to TDMA is still some years away and many radios from both Motorola and EF Johnson that operated on the VIPER system during the years that we were operating as a Motorola SmartZone-OmniLink 4.1 system and prior to our conversion to P25 in June, 2014, are not capable of operating in a TDMA system environment. VIPER does however need to begin to plan for the future and to address the fact that end user agencies are continuing to purchase non TDMA radios on the used market and submit activation requests to add them to the VIPER system.

Effective 1 January, 2020, VIPER will no longer allow current or new VIPER end user agencies to activate non TDMA radios on the system. This would include all models from the below list of manufacturer radios;

Motorola – XTS1500, 2500 and 5000 portable radios

Motorola – XTL1500, 2500 and 5000 mobile radios

EF Johnson – 51SL/51ES portable radios

EF Johnson – 53SL/53ES mobile radios

If a current end user can demonstrate that they already had a radio of the type listed above in their inventory prior to 1 January, 2020, exceptions may be considered to activate single radios, but only as a short term swap in the case of a stolen, damaged or missing radio that was already active on the system.

**\*\*Note\*\***, this step in our continued effort to provide the best statewide, public safety radio system possible does **not** affect any radios currently in operation on the VIPER system.

Whereas a defined timeline for a system wide transition to TDMA has yet to be finalized, VIPER feels that it would be in the best interest of all end user agencies to afford them with as much advance notice and to provide some target timelines as it relates to current and future end user subscriber devices and their capabilities for TDMA operation.

Beyond the 1 January, 2020 date and the termination of the ability to add non TDMA radios to the VIPER system, there are two other future dates along with certain technical requirements associated with those dates that must be considered;

- Effective 1 July, 2022 all radios being added to the VIPER system must be ready to receive TDMA programming. It is extremely important that our end users understand exactly what this means. Many manufacturers radios may be capable of TDMA operation but were not ordered with the “feature” enabled from the factory. These radios will need to be modified in the field to add the TDMA feature, so as to be “**ready**” for a transition to TDMA in the future.
- Effective 1 July, 2025 all radios currently **active** on the VIPER system, along with all future additions to the system shall be ready to receive TDMA programming.

VIPER respects that these dates may represent challenges to our end users, especially in the area of funding since replacement radios or upgrades to existing radios will be necessary. However it is also important to consider that the system continues to grow and in order to maintain VIPER’s current level of system busies, that a move to TDMA operation would be the most cost effective manner to address future growth and system health.

VIPER would strongly recommend that as soon as feasibly possible, that end user agencies consider purchasing new radios **with the TDMA operation already included** in the radios features, so that it is not necessary to have to revisit radios to add the TDMA feature in advance of the above listed dates.

VIPER has created a new email address specifically for TDMA related questions regarding this memorandum and any other VIPER TDMA related items. Please utilize [viper-tdma@ncshp.org](mailto:viper-tdma@ncshp.org) for any TDMA related inquiries.