MOTOROLA SOLUTIONS

APX Zone Cloning Tool Release Notes

R1.0.0.2 Release

There is a growing need for an enhanced cloning capability via a PC-to-Radio tool to facilitate the mass cloning of radios on the incident scene.

Value provided to customers

- The tool enables cloneable zones to be stored on the PC and edited by the user. However, only the edits permitted by the radio during Front Panel Programming (FPP) are allowed. All radio operations will be managed via a USB connection.
- The tool significantly reduces errors (with the ability to create a zone clone template in the PC tool), and facilitates faster cloning on the incident scene.

FEATURES	
Edit	The user can edit a zone using the tool's Edit functionality. They will see a table with all the editable fields and can manipulate values at the zone or channel level. The editing constraints will be similar to those in the radio during FPP. Users can save their changes by overwriting the .xml file or saving as a separate .xml file using the *Save As* option.
Clone	The Clone functionality allows users to clone source zones stored on their PC to a target radio. Users are directed to a screen displaying a list of all the source zones stored on their PC. From there, they can read a target radio they want to perform clone operations on. The radio communications performed by the Read functionality are also carried out in the Clone functionality, showing a second list containing the cloneable "target zones." Users can "drag-and-drop" a source zone over a target zone to clone it onto their radio. If they "drag-and-drop" a source zone over a protected target zone, they must provide the Protected Zone Password for the tool to accept the changes. The tool will also indicate if the source zone contains channels with out-of-band frequencies. Users will need to either "force allow" the source zone or revert to the default target zone. Once selections are made, the radio will enter "Clone Mode," where the zones will be written to the radio, and upon successful completion, the radio will exit "Clone Mode." Users can then attach a new radio and repeat the clone process, with the tool attempting to "auto-map" the source zones to the new target zones.
Read	The tool will communicate with the radio to retrieve its cloneable information (e.g. clone enabled, number of cloneable zones, etc.). It will then present the user with a list of the cloneable zones stored in the radio. The protected cloneable zones will be shown and if the user would like to save one of those zones to their PC the user will need to provide the Protected Zone Password. Once the user selects the zones to save, each zone will be read from the radio to acquire all of the fields. The zones will be saved as an .xml file in a directory specified in the tool's settings.

System Requirements

- A computer with Windows 10 or above, as the tool will be available only for the Windows OS and is made using net8.0-windows.
- The user is expected to be familiar with the English language, as the tool will be developed in English only with no preparation for future localization.
- A clone-enabled radio that the tool can use to perform radio communications that contains cloneable zones.
- The user is expected to have basic knowledge of all the editable fields found in a cloneable zone, as there will be no context sensitive help and the help will be application level only.
- The user is expected to have basic knowledge of establishing a connection from a PC to a radio via a USB cable.
- The application is optimized for a screen resolution of 1920 x 1080. Other resolutions may result in scroll bars appearing in the application to help assist with navigation.

Supported Radios

All radios with FED Front Panel Programming (Q52) or Non-FED Front Panel Programming (Q53), and Zone Cloning capabilities.

Installation Notes

The APX Zone Cloning Tool requires the drivers to detect a Motorola radio to be installed:

1. Navigate to the **Drivers** folder found in the tool's installed location.
2. Right-click on *MotorolaRadioRNDISWin7.inf*
3. Click **Install**

Ensure that the APX Zone Cloning Tool is not already installed prior to attempting the installation process. To update to a newer version, uninstall any existing versions of the APX Zone Cloning Tool.

Important Programming Notes

DO NOT TURN THE RADIO OFF while the updating process on the radio is still in progress. During an update, the radio will reboot and display: "*Updating…*" on the front and/or top display. This update can take up to 90 seconds after the programming session has completed.

Always complete the current programming job session triggered by the programming tool before reusing the same or different programming tools (CPS, RM, or RC) to update the same radio(s). Otherwise, unexpected behavior may occur.

The APX Zone Cloning Tool supports the cloning of the MPL Clone Configuration list to a target radio containing an MPL Configuration List of up to 59 entries.

Special FCC Regulation Note

FCC NARROWBANDING MANDATE FOR ASTRO RADIOS

Per the FCC Rule Part 90 requirements on narrowbanding, VHF and UHF radios imported or manufactured after 12/31/2012 are no longer authorized to operate on 25 kHz channel bandwidth. The exception to the Rule Part 90 narrowbanding requirements are for radios operating only within 470-512 MHz frequencies (T-Band), which will continue to support 25 kHz channel bandwidth functionality. The FCC requires that a radio is authorized to operate within the specified bandwidth and that the user is required to have a FCC license to operate in that mode.

Note: Specific frequencies in VHF and UHF are still allowed to operate at 25 kHz. Examples of VHF and UHF services that are not subject to the Part 90 narrowband include: Part 80 marine frequencies, Part 87 aviation frequencies, Part 95, FRS/GMRS and MURS, Part 97 amateur frequencies, and NOAA weather channels.

Connecting your APX Radio to the PC

Only use the following direct PC to radio cables:

- **PMKN4013C** for the portable radios

The following describes troubleshooting procedures that may resolve issues concerning your APX device's wired or wireless connection to the PC.

Disable software that affects networking capabilities

Communication issues between the APX Zone Cloning Tool and the radio might be encountered due to firewall settings. Certain aspects of Proventia Desktop, BlackICE, and any other software that affects networking capability may need to be disabled. These programs can interfere with the APX Zone Cloning Tool's ability to read from and write to the radio. If BlackICE is installed and required for the PC, the BlackICE service may need to be stopped in order to successfully communicate with the radio.

Disable the *EACFILT.sys* driver

To prevent intermittent blue screen Windows crashes when attaching or detaching an APX radio to a PC using USB, verify that the Nortel Connectivity VPN Client Software is not installed on the PC. If it is installed and required for the PC, ensure that the *EACFILT.sys* driver is disabled on the "Motorola APX Series Radio" connection by performing the following steps:

1. Go to **Start → Control Panel → Network and Internet → Network and Sharing Center → Change adapter settings.**
2. Right-click on the LAN connection associated with the "Motorola APX Series Radio" connection and select **Properties.**
3. Uncheck the Eacfilt check box.

Set the interface metric

If the wireless Internet connection on the laptop/PC gets disabled when attaching the Motorola APX radio to the laptop/PC or if OTAP fails during wired Read/Clone, users should follow these troubleshooting steps shown below to address the problem:

1. Go to **Start → Control Panel → Network and Internet → Network and Sharing Center → Change adapter settings.**
2. Right-click on the LAN connection associated with the "Motorola APX Series Radio" device (ex. Network 7) and open **Properties.**
3. Under the subheading *"This connection uses the following items:"* , select **Internet Protocol Version 4 (TCP/IPv4)** and open **Properties.**
4. Click on **Advanced…**
5. Uncheck *Automatic metric* and set *Interface metric* to be greater than any other network connection.
6. Click OK to preserve changes.

   Note: In order to check the metric used by other network connections:

   1. Go to **Start → Command Prompt** and right-click the app and select *Run as administrator*.
   2. In the cmd window type *'route print'*.
   3. Look for network destination 0.0.0.0 and Interface IP of the other network card(s).
   4. The last column is Metric, set the radio metric higher than any other network connection.

      Note: This issue may also occur if the wireless driver utility is configured to disable Wi-Fi until all wired network connections are disconnected. Ensure that any such a setting is disabled, so that the wireless connection stays active even when a wired link is present.

Disable "Netbios over TCP/IP"

This will help reduce unnecessary traffic sent to the radio by the PC. Follow these steps:

1. Go to **Start → Control Panel → Network and Internet → Network and Sharing Center → Change adapter settings.**
2. Right-click on the LAN connection associated with "Motorola APX Series Radio" and select **Properties**.
3. Select "Internet Protocol (TCP/IP)" and click **Properties**.
4. Click on **Advanced…**
5. Go to the WINS tab and under the subheading *"NetBIOS setting"* select "Disable Netbios over TCP/IP".
6. Click OK on the pages opened for the setting to take effect.

Uncheck unused items on the Motorola APX Series Radio LAN connection

The LAN connection on the PC only requires the Internet Protocol to communicate with the radio. This ensures the other unused items don't create any undesirable effects when communicating with the radio device. Follow these steps:

1. Open Network Connections explorer window: **Start → Settings → Control Panel → Network Connections** (right-click and select Open)
2. Right-click on the LAN connection associated with "Motorola APX Series Radio" and select properties
3. In the **Networking** tab, under the subheading *"This connection uses the following items:"* uncheck all items except for Internet Protocol (TCP/IP).
   Note: If the PC supports both IPv4 and IPv6, keep both IPv4 and IPv6 checked.

Disable NetMotion wireless LAN software

NetMotion wireless LAN software may interfere with radio programming. When the radio registers on the system with an IP Address, the NetMotion software detects it and tries to manage it as a network. Disable this software for programming radios with the APX Zone Cloning Tool.

Legal Notices

For assistance with this tool, contact your MSI Technical Support Center at https://motorolasolutions.com/support.