Hytera

DMR Repeater

Upgrade Guide

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Documentation Information

This section describes the conventions and revision history of this document.

Documentation Conventions

Icons

Icon	Description
Tip	Indicates information that can help you make better use of your product.
Note	Indicates references that can further describe the related topics.
Caution	Indicates situations that could cause data loss or equipment damage.
Warning	Indicates situations that could cause minor personal injury.
Danger	Indicates situations that could cause major personal injury or even death.

Notations

Item	Description
“ ”	The quotation marks enclose the name of a software interface element. For example, click “OK”.
Bold	The text in boldface denotes the name of a hardware button. For example, press the **PTT** key.
->	The symbol directs you to access a multi-level menu. For example, to select “New” from the “File” menu, we will describe it as follows: File -> New.

Revision History

Version	Date	Description
V2.0	2018-08	Instructing you to upgrade repeater firmware to R9.0 (A9.00.08.308.iM/S9.00.08.308.iM/N9.00.08.308.iM/C9.00.08.308.iM).
V1.0	2018-08	Instructing you to upgrade repeater firmware to R9.0 (A9.00.08.008/S9.00.08.008/N9.00.08.008/C9.00.08.008).

1. Before You Start

1.1 Important Tips

Please carefully read the instructions below before operation:

- This document instructs you to upgrade repeater firmware to R9.0 (**A9.00.08.308.iM**, **S9.00.08.308.iM**, **N9.00.08.308.iM** or **C9.00.08.308.iM**).
- This document introduces the operations of local upgrade. For remote upgrade, refer to *DMR Conventional Series_Remote Upgrade_Application Notes*.
- Do not disconnect the repeater and the PC during upgrade; otherwise, data loss or repeater damage may occur.
- Do not run other Hytera applications during upgrade. If the upgrade is interrupted by another application, please try the upgrade again. But if the upgrade still fails, please restart the repeater and try the upgrade again.
- The RCDB data may be abnormal during upgrade due to unexpected reasons such as power-cut. Before upgrade, you can read the repeater through CPS and choose "File -> Save As" on CPS menu bar to back up the RCBD data. For RCBD data restore, see Step 4 in 2.2.1 Upgrade via Manual Mode.
- If the repeater is abnormally during upgrade processing, please try the upgrade again. But if the upgrade still fails, please restart the repeater and try the upgrade again.
- After successful upgrade, re-program the repeater with CPS **V9.00.07.512.iM** or above.

1.2 Preparations

Please prepare the following items before you start.

- PC with operating system Win 7, Win 8, Win 8.1 or Win 10 of 32/64-bit.

  Win7 is taken as the example hereinafter.
- Upgrade Tool (Multi-Terminal Batch Upgrade Tool): The software has been successfully installed on PC.
- USB Driver: Please install the latest USB driver (R5.0). Refer to *Digital USB Driver Installation Guide R5.0* for the installation.
- Repeater to be upgraded.
- CPS (Customer Programming Software)
- Programming Cable: Programming cables for different models are listed below.

Model	Programming Cable	
RD106X/RD98X/RD98XS/RD96X	PC47	

Model	Programming Cable	
	PC37	
RD62X	PC75	

Note

When PC37 is used, palm microphone and the hanger are also needed. Connect the palm microphone to the 10Pin port on the front panel of the repeater, and hook the palm microphone on the hanger.

1.3 Firmware Version Check

Caution

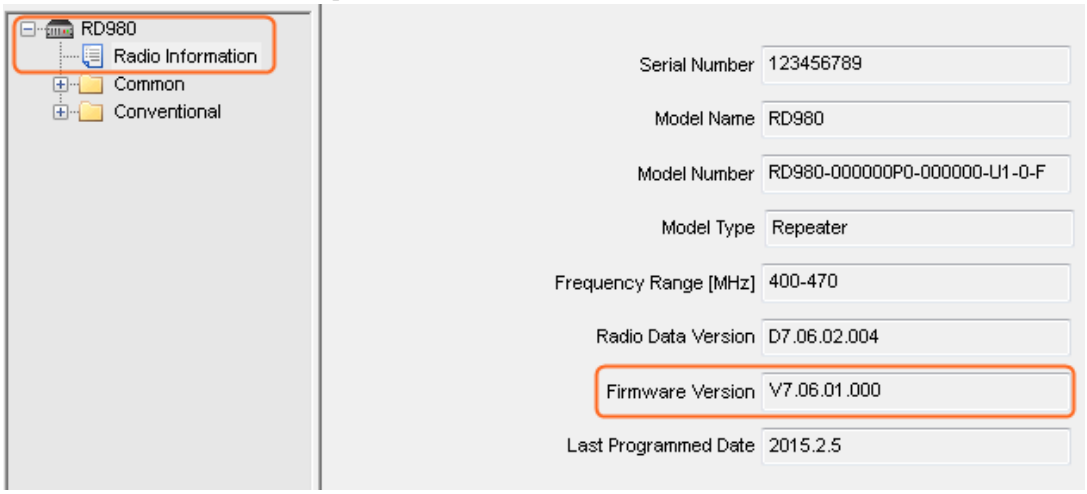
Please check whether repeater firmware satisfies the requirements before upgrade. If not applicable, please do not upgrade; otherwise the repeater may get damaged.

Step 1 Connect the repeater with the PC.

Step 2 Run the CPS to read data from the repeater.

Step 3 Click **Radio Information** on the left of the CPS to check whether Firmware Version satisfies the requirements specified in Appendix B: Applicable Model and Version.

RD98X is taken as the example:



Step 4 Disconnect the CPS and repeater.

2. Upgrade and Check

Before upgrade, please make the repeater enter the download mode first.

2.1 Enter Download Mode

2.1.1 RD106X/RD98X/RD98XS/RD96X

RD106X, RD98X, RD98XS and RD96X can be upgraded through PC47 or PC37 programming cable. The repeater enters the download mode differently when different programming cable is used.

Entering Download Mode via PC47

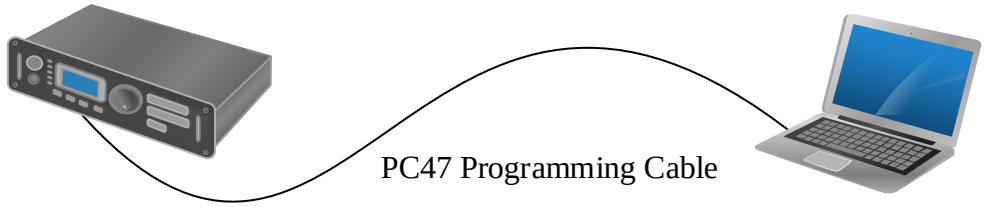
Step 1 Power off the repeater.

Step 2 Toggle the switch on PC47 to the **DL** end

Note

Do not toggle to the **DL** end during programming.

Step 3 Connect the repeater to the PC via PC47.



Step 4 Power on the repeater to enter the download mode.

The repeater enters download mode successfully when the LED flashes red for several seconds and then glows red solidly. Otherwise, power off the repeater and try the above operations again.

Entering Download Mode via PC37

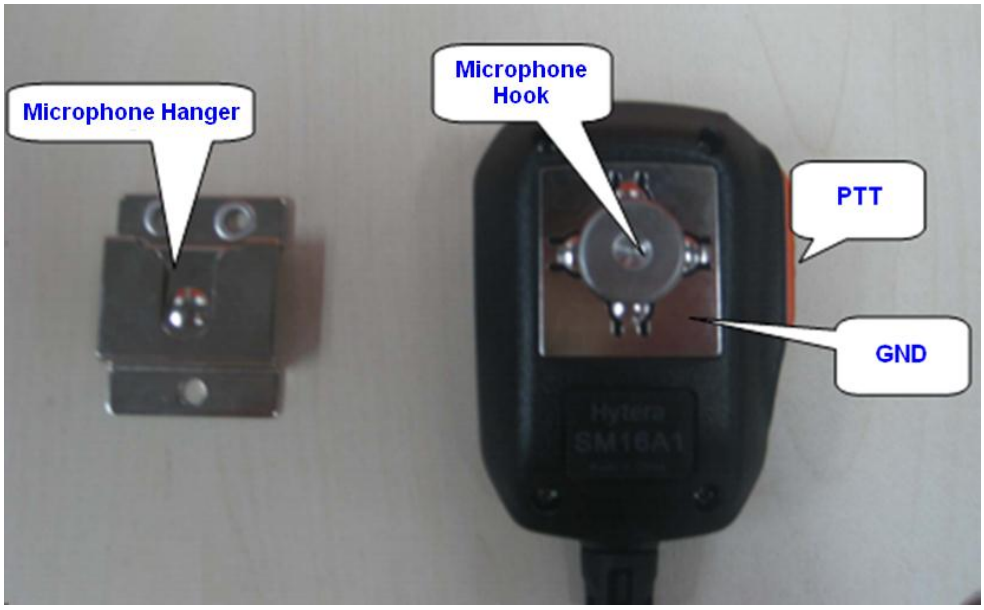
When PC37 is used, the palm microphone and its hanger are needed to make the repeater enter download mode.

Step 1 Power off the repeater.

Step 2 Connect the palm microphone to the 10Pin port on the front panel of the repeater, and hook the palm microphone on the hanger.

Note

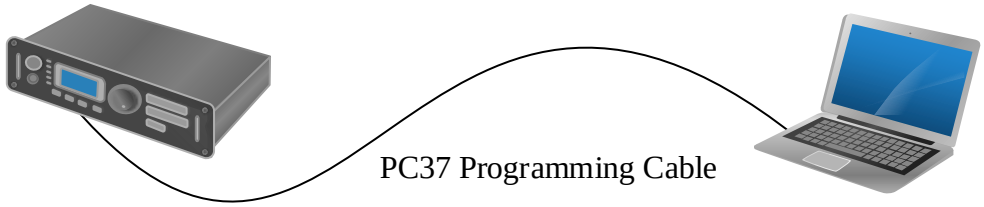
If the microphone hanger is not available, you can connect the hook to the GND using a metal conductor.



Step 3 Hold **PTT** key on the palm microphone and power on the repeater.

The repeater enters the download mode successfully when the LED flashes red for several seconds and then glows red solidly. Otherwise, power off the repeater and try the above operations again.

Step 4 Disconnect the palm microphone from the repeater, and connect the repeater to PC through PC37.



2.1.2 RD62X

The operations are the same as that in Entering Download Mode via PC47 in section 2.1.1 RD106X/RD98X/RD98XS/RD96X.

2.2 Start Upgrade

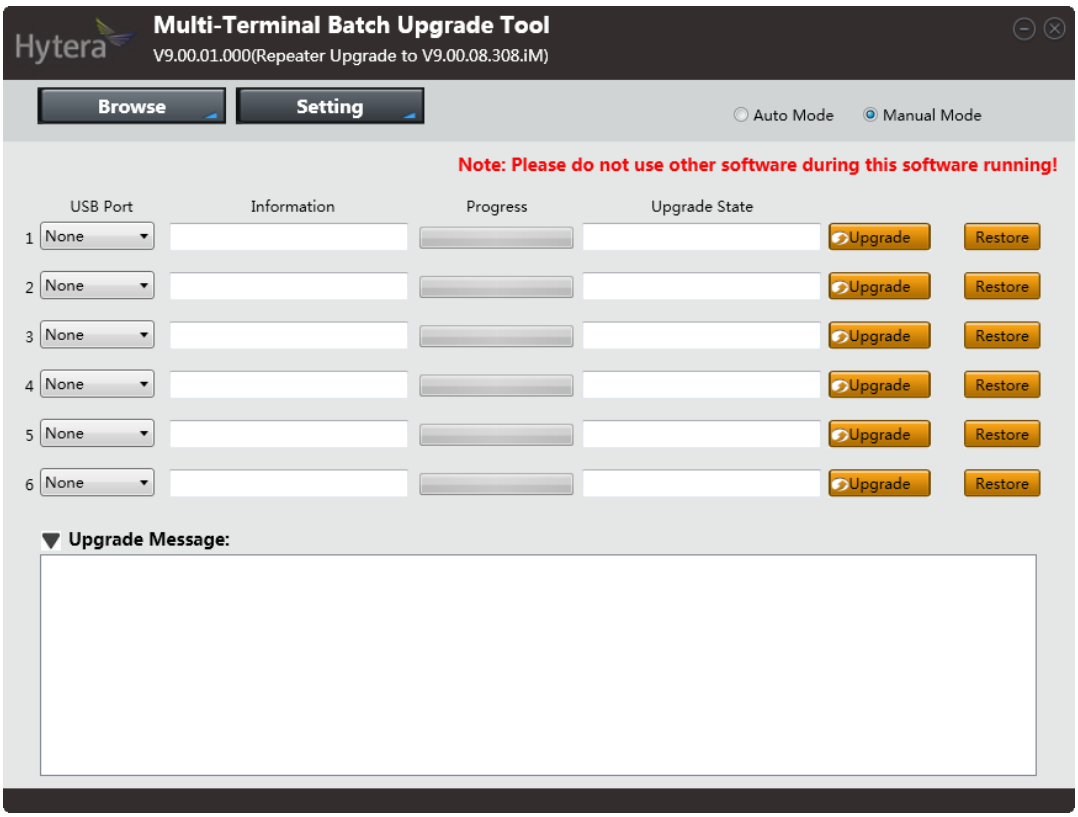
The Multi-Terminal Batch Upgrade Tool supports the upgrade in Manual Mode or Auto Mode.

- Manual Mode: Select the USB port one by one for repeater upgrade.
- Auto Mode: The repeater upgrades automatically upon connecting to the PC.

The two upgrade methods are introduced as follows.

2.2.1 Upgrade via Manual Mode

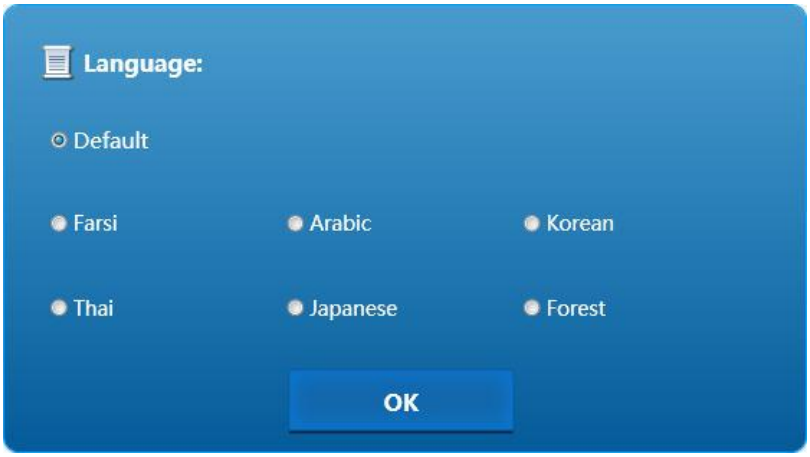
Step 1 Run the Multi-Terminal Batch Upgrade Tool.



Note

You can click **Setting** to select UI language of the upgrade tool.

Step 2 Click **Setting**, select **Upgrade Language**, and then choose the language to be burnt into the repeater in **Language** window, and click **OK**.



Note

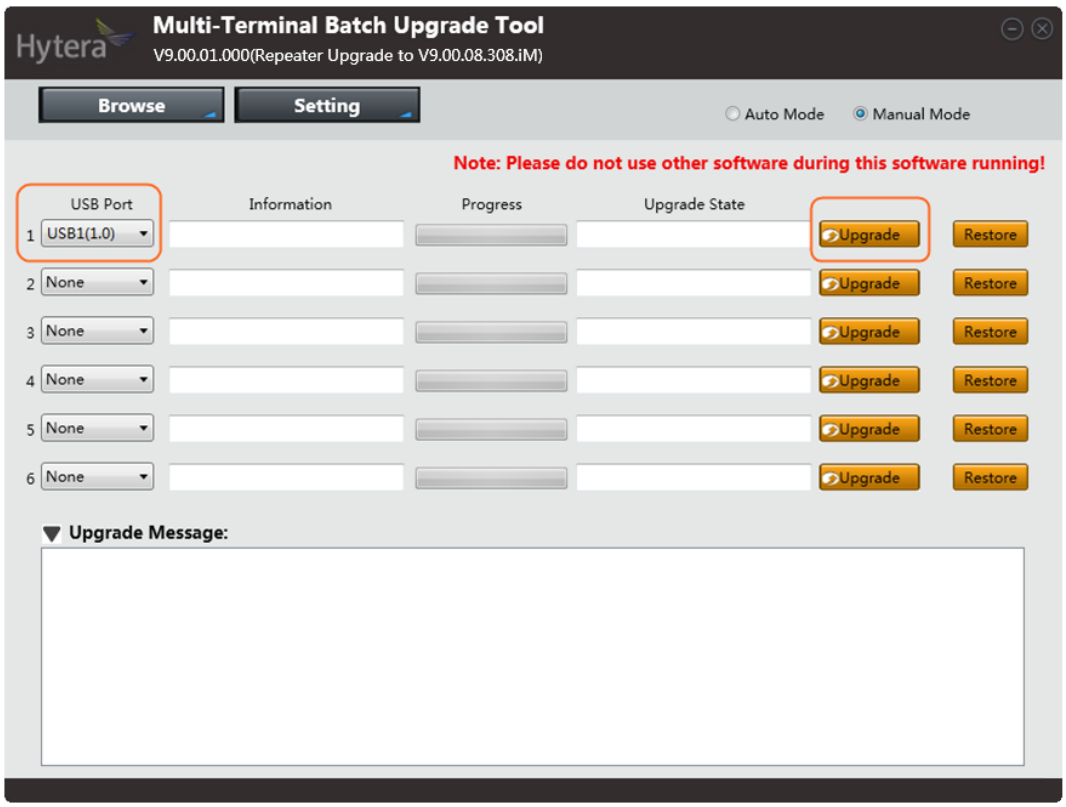
Currently, only **Default** and **Korean** options are available. When **Default** is selected, the upgrade tool automatically chooses the language package(s) based on the sales area of the repeater.

Step 3 Select the USB port on main interface of the upgrade tool, and then click **Upgrade**.

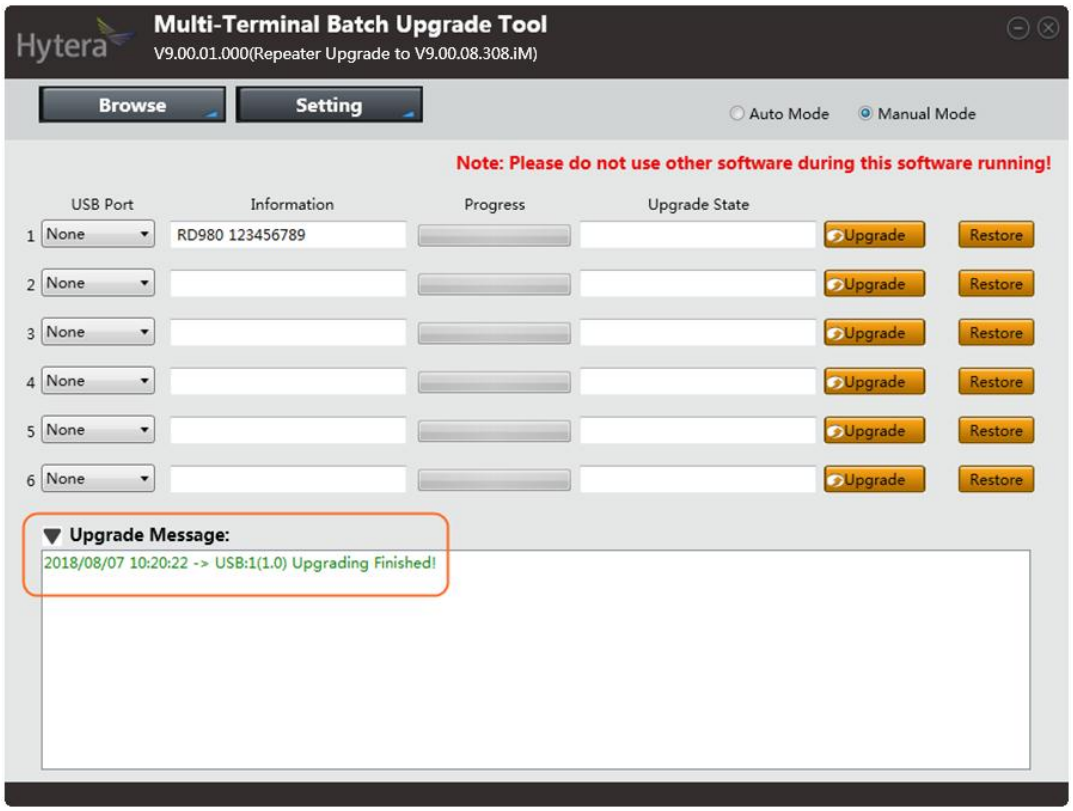
The upgrade tool starts to read data from the repeater, and then upgrades the repeater. Six repeaters with the same or different firmware version(s) can be upgraded at the same time.

Caution

Restart your computer when the tool warns that the current memory space does not meet the upgrade condition.



After the upgrade, repeater model and serial number appear in **Information**. If the upgrade is successful, "Upgrading Finished" appears in **Upgrade Message**. If failed, the cause appears in **Upgrade Message**, see Appendix A: Upgrade Failure Causes and Solutions for the solution.



Step 4 (Optional) If some unexpected reasons (e.g. power-cut during upgrade) cause the abnormity of RCDB data during upgrade, please click **Restore**, select the backup RCDB data, and then click **Open**.

The upgrade tool starts to restore RCDB data of the repeater. After it, the repeater starts to upgrade again.

Step 5 Power off the repeater.

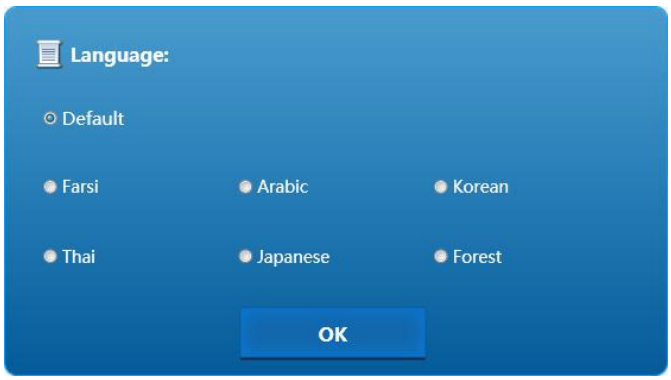
Note

After upgrade, please toggle the switch on PC47 or PC75 to the **CPS** end.

2.2.2 Upgrade via Auto Mode

Step 1 Run the Multi-Terminal Batch Upgrade Tool.

Step 2 Click **Setting**, select **Upgrade Language**, and then choose the language to be burnt into the repeater in **Language** window, and click **OK**.



Note

Currently, only **Default** and **Korean** options are available. When **Default** is selected, the upgrade tool automatically chooses the language package(s) based on the sales area of the repeater.

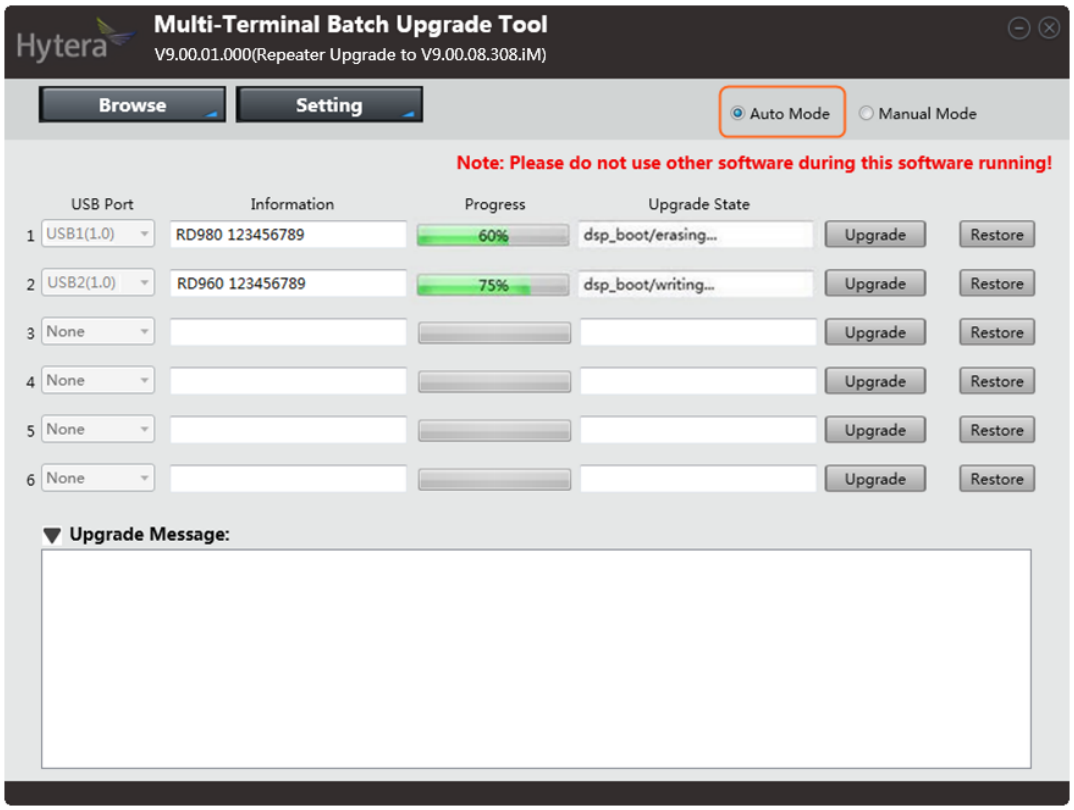
Step 3 Select **Auto Mode** on main interface of upgrade tool.

Step 4 Select **OK** to switch to Auto Mode.

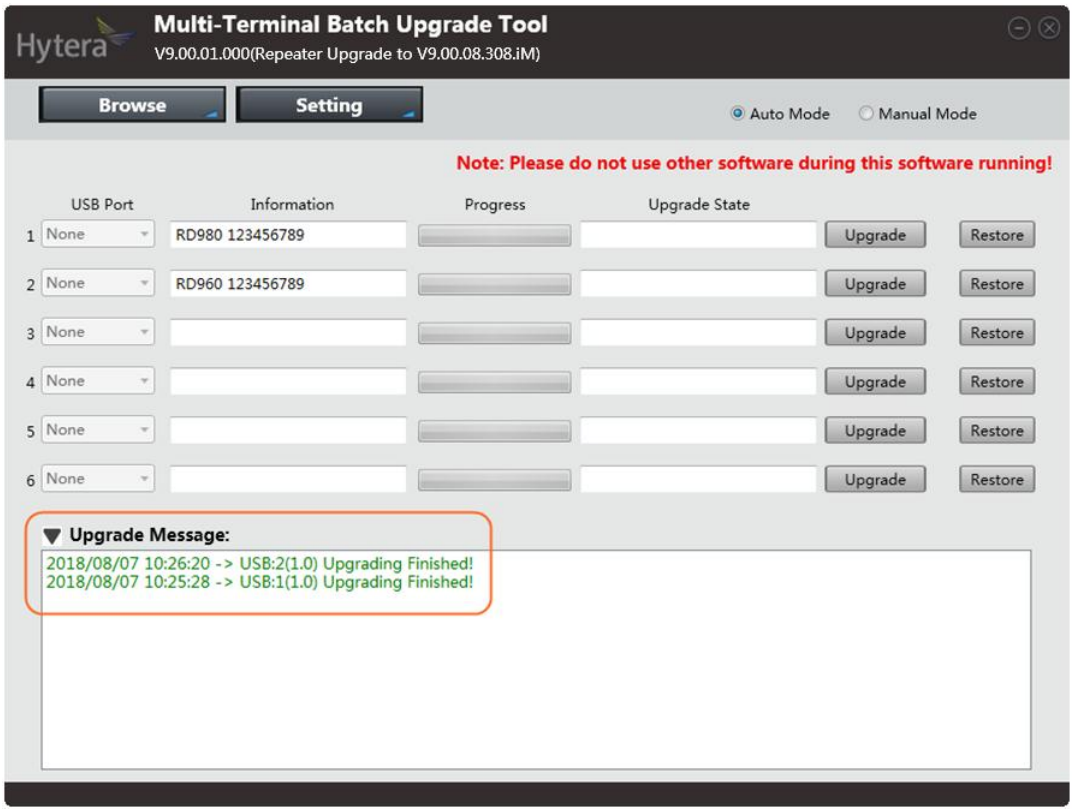
The upgrade tool starts to detect USB ports, read the data from the repeater, and then upgrades the repeater automatically. Six repeaters with the same or different firmware version can be upgraded at the same time.

Caution

Restart your computer when the tool warns that the current memory space does not meet the upgrade condition.



After the upgrade, repeater model and serial number appear in **Information**. If the upgrade is successful, "Upgrading Finished" appears in **Upgrade Message**. If failed, the cause appears in **Upgrade Message**, see Appendix A: Upgrade Failure Causes and Solutions for the solution.



Step 5 (Optional) If some unexpected reasons (e.g. power-cut during upgrade) cause the abnormity of RCDB data during upgrade, please first switch to Manual Mode, and then do as Step 4 in 2.2.1 Upgrade via Manual Mode to restore RCDB data of the repeater.

The upgrade tool starts to restore RCDB data of the repeater. After it, the repeater starts to upgrade again.

Step 6 Power off the repeater.

Note

After upgrade, please toggle the switch on PC47 or PC75 to the **CPS** end.

2.3 After-upgrade Check

After upgrade, you can check repeater firmware in **Radio Information** via CPS **V9.00.07.512.iM** or above.

For the repeater with display, you can check repeater firmware through repeater menu. Operate as follows.

Step 1 Power on the repeater.

Step 2 Press the **Navigation Knob** to enter the main menu.

Step 3 Rotate the **Navigation Knob** to select **Radio Info**.

Step 4 Press the **Navigation Knob** again to enter the **Radio Info** interface to check the repeater information.

The upgrade is successful if the firmware version is **A9.00.08.308.iM**, **S9.00.08.308.iM**, **N9.00.08.308.iM** or **C9.00.08.308.iM**.

Appendix A Upgrade Failures and Solutions

Upgrade Failure Message	Solution
Undetectable download mode USB port!	Please re-connect the repeater and the PC, re-connect the repeater and the cable, and then try the upgrade again.
Open USB failed!	Please check whether the cable is properly connected to the repeater, and whether the USB port on PC is busy with other hardware.
Get bootloader version fails!	Please re-connect the repeater and the PC, re-connect the repeater and the cable, and then try the upgrade again.
Upgrade components is incorrect, please re-install the upgrade program.	Please re-install the upgrade program.
The radio type XXX is beyond the upgrade software!	Do not upgrade the repeater.
The model number XXX is beyond the upgrade software!	Do not upgrade the repeater.
The firmware version XXX is beyond the upgrade software!	Do not upgrade the repeater.
Customer code is beyond the upgrade software!	Do not upgrade the repeater.
Opening file XXX failed!	Please click **Upgrade** again. If still failed, please re-install the upgrade program.
FUD file XXX format error!	Please click **Upgrade** again. If still failed, please re-install the upgrade program.
Data conversion failed, please re-upgrade!	Please re-upgrade.
The extern file XXX does not exist!	Please re-install the upgrade program.
Reading data error XXX!	Please restart the repeater and try the upgrade again.

Upgrade Failure Message	Solution
Writing data error! RCDB data is already saved to file, from which you can restore your data when necessary.	Please restore RCDB data according to Step 4 in 2.2.1 Upgrade via Manual Mode.
Automatic download mode failure, please manually enter the download mode.	Please make the repeater enter the download mode manually.

Appendix B Applicable Model and Version

Model	Firmware Version
RD98X	A9.00.08.008, S9.00.08.008, N9.00.08.008, C9.00.08.008
	A8.05.07.004, N8.05.07.004, S8.05.07.004, C8.05.07.004 A8.05.07.001, N8.05.07.001, S8.05.07.001, C8.05.07.001
	A8.01.03.001, S8.01.03.001, N8.01.03.001, C8.01.03.001 A8.01.04.004, S8.01.04.004, N8.01.04.004, C8.01.04.004
	A8.00.09.001, S8.00.09.001, N8.00.09.001, C8.00.09.001
	A7.06.04.000, N7.06.04.000, S7.06.04.000, C7.06.04.000
	A7.05.10.003, N7.05.10.003, S7.05.10.003
	A7.00.09.005, N7.00.09.005, S7.00.09.005
	A6.05.10.004, S6.05.10.004,
	A6.00.05.004, S6.00.05.004
	A5.05.10.007, S5.05.10.007
	A5.01.03.002, S5.01.03.002
	A5.00.10.005, S5.00.10.005
RD98XS	A9.00.08.008, S9.00.08.008, N9.00.08.008, C9.00.08.008
	A8.06.08.004, N8.06.08.004, S8.06.08.004, C8.06.08.004
	A8.05.07.004, N8.05.07.004, S8.05.07.004, C8.05.07.004 A8.05.07.001, N8.05.07.001, S8.05.07.001, C8.05.07.001
	A8.01.03.001, S8.01.03.001, N8.01.03.001, C8.01.03.001 A8.01.04.004, S8.01.04.004, N8.01.04.004, C8.01.04.004
	A8.00.09.001, S8.00.09.001, N8.00.09.001, C8.00.09.001
	A7.07.03.000, N7.07.03.000, S7.07.03.000, C7.07.03.000
	A7.06.04.000, N7.06.04.000, S7.06.04.000, C7.06.04.000
	A7.05.10.003, N7.05.10.003, S7.05.10.003

Model	Firmware Version
	A7.00.09.005, N7.00.09.005, S7.00.09.005
	A6.05.10.004, S6.05.10.004,
	A6.00.05.004, S6.00.05.004
	A5.06.06.000, S5.06.06.000
	A5.05.10.007, S5.05.10.007
RD62X	A9.00.08.008, S9.00.08.008, N9.00.08.008, C9.00.08.008
	A8.05.07.004, N8.05.07.004, S8.05.07.004, C8.05.07.004 A8.05.07.001, N8.05.07.001, S8.05.07.001, C8.05.07.001
	A8.01.03.001, S8.01.03.001, N8.01.03.001, C8.01.03.001 A8.01.04.004, S8.01.04.004, N8.01.04.004, C8.01.04.004
	A8.00.09.001, S8.00.09.001, N8.00.09.001, C8.00.09.001
	A7.06.04.000, N7.06.04.000, S7.06.04.000, C7.06.04.000
	A7.05.10.003, N7.05.10.003, S7.05.10.003
	A7.00.09.005, N7.00.09.005, S7.00.09.005
	A6.05.10.004, S6.05.10.004,
	A6.00.05.004, S6.00.05.004
	A5.06.06.000, S5.06.06.000
RD96X	A9.00.08.008, S9.00.08.008, N9.00.08.008, C9.00.08.008
	A8.05.07.004, N8.05.07.004, S8.05.07.004, C8.05.07.004 A8.05.07.001, N8.05.07.001, S8.05.07.001, C8.05.07.001
	A8.01.03.001, S8.01.03.001, N8.01.03.001, C8.01.03.001 A8.01.04.004, S8.01.04.004, N8.01.04.004, C8.01.04.004
	A8.00.09.001, S8.00.09.001, N8.00.09.001, C8.00.09.001
	A7.06.04.000, N7.06.04.000, S7.06.04.000, C7.06.04.000
	A7.05.10.003, N7.05.10.003, S7.05.10.003
	A7.00.09.005, N7.00.09.005, S7.00.09.005

Model	Firmware Version
	A6.05.10.004, S6.05.10.004,
	A6.00.05.004, S6.00.05.004
	A5.05.10.007, S5.05.10.007

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