

# N720

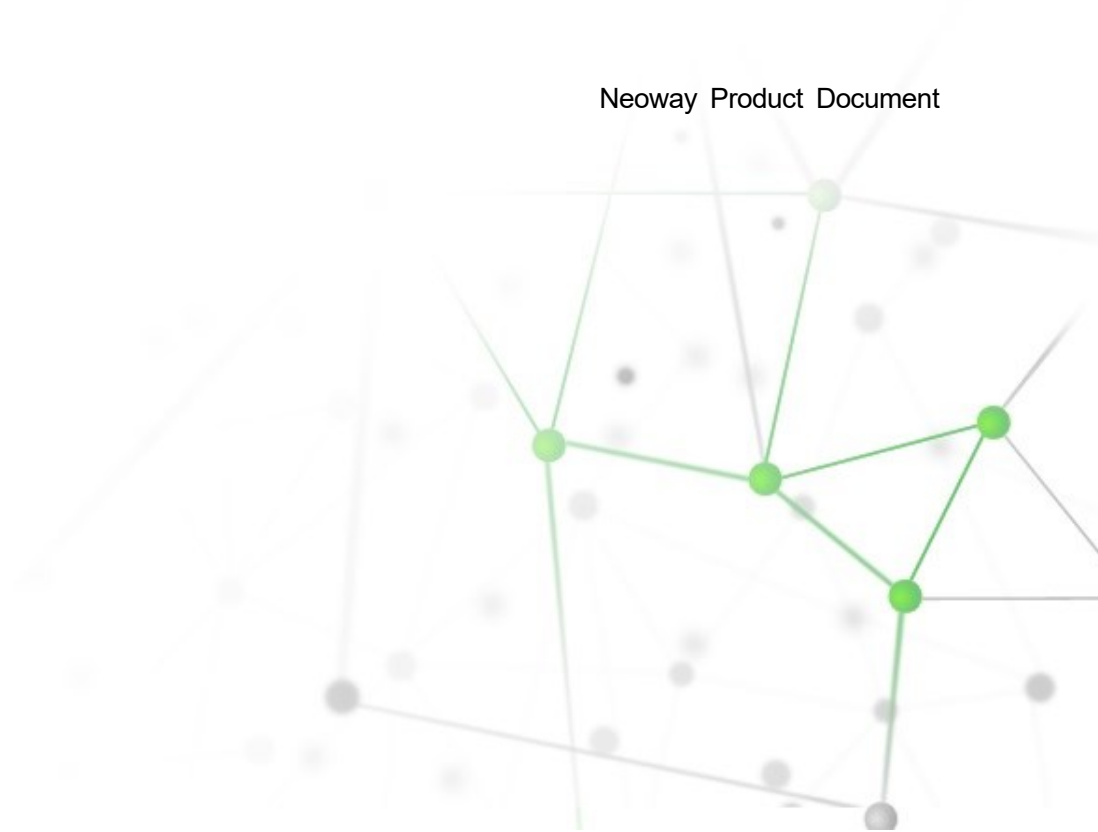
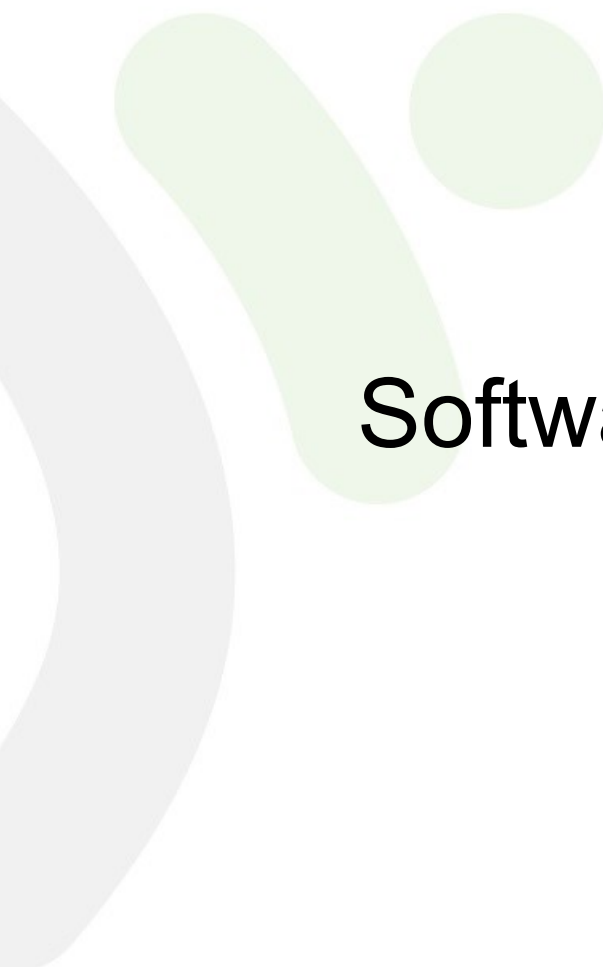
# Software Upgrade Guide

# (Linux)

Issue 1.0

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Neoway Product Document



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## Notice

This document provides guide for users to use N720.

This document is intended for system engineers (SEs), development engineers, and test engineers.

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# About This Document

## Scope

This document is applicable to N720 series.




## Audience

This document is intended for [system engineers \(SEs\)](#), [development engineers](#), and [test engineers](#).

## Change History

Issue	Date	Change	Changed By
1.0	2018-10	Initial draft	Wang Jie

## Conventions

Symbol	Indication
 Warning	This warning symbol means danger. You are in a situation that could cause fatal device damage or even bodily damage.
 Caution	Means reader be careful. In this situation, you might perform an action that could result in module or product damages.
 Note	Means note or tips for readers to use the module

# 1 Functions

libnwyupgradegk8602.a provides all APIs to be used in N720 upgrade and nwy\_upgrade.h provides functions of the library.

<b>Prototype</b>	int module_in_upgrade_mode(void);
<b>Description</b>	To check if the module has entered upgrade mode
<b>Parameter</b>	None
<b>Return</b>	0: yes -1: No or USB disconnected

<b>Prototype</b>	int module_set_upgrade_mode(int mode);
<b>Description</b>	To set upgrade mode This function is called to support power-down protection. Before calling this function, send <b>at+cfun=7,0\r</b> to enter upgrade mode.
<b>Parameter</b>	1: upgrade with power-down protection for all modules (recommended) 0: upgrade with power-down protection for one module
<b>Return</b>	0: Successful -1: Failed

<b>Prototype</b>	int module_enter_normal_mode(void);
<b>Description</b>	To restore the image data backed up in the <b>src</b> partition to the <b>dst</b> partition
<b>Parameter</b>	None
<b>Return</b>	0: Successful -1: Failed

<b>Prototype</b>	<code>int flash_image(const char *partition, const char *img_path);</code>
<b>Description</b>	To upgrade specified partition Before calling this function, send <b>at+cfun=7,0\r</b> to enter upgrade mode.
<b>Parameter</b>	partition: partition name img_path: image file path
<b>Return</b>	0: Successful -1: Failed

<b>Prototype</b>	<code>int flash_image_sparse(const char *partition, const char *img_path);</code>
<b>Description</b>	To upgrade specified partition by dividing image files Before calling this function, send <b>at+cfun=7,0\r</b> to enter upgrade mode. This function is called when the image file is very large and the host does not have enough flash memory. It will divide the image file into several files of 2MB to transfer.
<b>Parameter</b>	partition: partition name img_path: image file path
<b>Return</b>	0: Successful -1: Failed

<b>Prototype</b>	<code>int flash_data(const char *partition, void *data, int size);</code>
<b>Description</b>	To upgrade specified partition Before calling this function, send <b>at+cfun=7,0\r</b> to enter upgrade mode.
<b>Parameter</b>	partition: partition name data: data pointer of image file size: size of image file
<b>Return</b>	0: Successful -1: Failed

<b>Prototype</b>	<code>int module_upgrade_start(void);</code>
<b>Description</b>	<p>To trigger module upgrade after upgrade with power-down protection is configured</p> <p>After power-down protection is configured, file data is cached after calling upgrade functions. The upgrade process starts only after invoking this function.</p> <p>The module will start upgrade too after calling <code>module_enter_normal_mode</code> function if power-down protection is configured but this function is not called.</p>
<b>Parameter</b>	N/A
<b>Return</b>	0: Successful -1: Failed

## 2 Reference Design Case

Neoway provides a reference application **update\_tool\_lib\_GK8602**. This program implements simple upgrade function. It generated **nwy\_upgrade\_tool** executable file after compiling.

### 2.1 Executable File

Executable program: `nwy_upgrade_tool + [usb port] + upgrade version path`

The default path is the current one if no path is specified.

e.g. `nwy_upgrade_tool /dev/ttyUSB3 E:\work\perf_version\`

- **nwy\_upgrade\_tool** is upgrade program.  
An upgrade process starts after executing the above command.
- usb port is determined based on the actual conditions.
- Version specified for upgrade: The version directory contains **config.ini** and image files of the version.

### 2.2 config.ini File

config.ini specified the name of the partition to be upgraded.



## 3 Upgrade Images

Partition	Image File	Remarks
sbl	sbl1.mbn	Start image
rpm	rpm.mbn	Start image
tz	tz.mbn	Start image
about	appsboot.mbn	Start image
boot	mdm9607-boot.img	Kernel image
modem	NON-HLOS.ubi	Modem image
system	mdm9607-sysfs.ubi	System image



Note

- **sbl**, **rpm**, **tz**, and **about** are start images and do not support power-off protection. To upgrade these four images, ensure that the N720 module is not powered off during the upgrade. They will not be changed in software version generally. Do not upgrade them unless they are modified.
- It is recommended to upgrade **boot**, **modem**, and **system** images in version upgrade. If N720 is powered down during upgrade, the upgrade can restart and continue after N720 starts again so that ensure that the module can work properly.