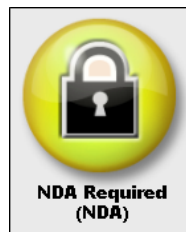


AMIBIOS8 ROM Utility User Guide

MMTOOL

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NDA REQUIRED



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Revision Information

Date	Rev	Description of Changes
2009-05-13	1.0.0	Initial Document.

Overview

MMTOOL is a BIOS module manipulation tool with graphical user interface. It allows you to manage AMIBIOS8 modules that are contained in a BIOS ROM file.

Features

This utility offers following features:

- Insert Module (including BIOS Option ROM)
- Replace Module
- Extract Module
- Delete Module
- Display ROM Information
- Display/Change ROM Hole Content
- Display NCB Information
- Edit CPU Micro Code Patches Module

Requirements

Supported Operating System

MMTOOL Utility is supported in the following operating systems:

- Microsoft® Windows® 98
- Microsoft® Windows® ME
- Microsoft® Windows® NT 4.0
- Microsoft® Windows® 2000
- Microsoft® Windows® XP/XP64
- Microsoft® Windows® PE
- Microsoft® Windows® Vista 32/64

BIOS Requirements

The loaded BIOS ROM file should have the followings:

- The file MUST be an AMIBIOS ROM file (Core version 8.xx.xx only)
- BIOS ROM file should be building via “8.00.08_AMITools_17” label or above.

Getting Started

Installation

Main Window

The screenshot shows the MMTOOL V3.10 application window. The title bar reads "MMTOOL V3.10". On the left side, there are four buttons stacked vertically: "Load ROM...", "Save ROM", "Save ROM as..", and "Close".

In the center-right area, there is a tabbed interface. The tabs are labeled: "Insert", "Replace", "Delete", "Extract", "ROM Info", "RomHole", "NCB", and "CPU PATCH". The "Insert" tab is currently selected.

Under the "Insert" tab, there are several input fields and options:

- "Module file:" followed by a text entry field and a "Browse..." button.
- "Module ID:" followed by a numeric spin box.
- "Offset/VID:" followed by a numeric spin box.
- "Seg./DID:" followed by a numeric spin box.
- A group box titled "For Adapter ROM only" containing:
 - ☐ Link Present
 - "Link Vendor ID:" followed by a numeric spin box.
 - "Link Device ID:" followed by a numeric spin box.
- An "Insert" button at the bottom center of the dialog.
- To the right of the main inputs, another section titled "Insert" contains:
 - ☒ Compress Module
 - ☐ Insert Uncompressed
 - "RomRegion" followed by a dropdown menu.

At the bottom of the window, there is a large table with 8 columns and many rows. The column headers are: "ID", "Name", "RomLoc", "Source size", "Size in Rom", "%%", "RunLoc", and "NCB". The table body consists of numerous empty rows for data entry.

Load ROM

Save ROM

Save ROM as..

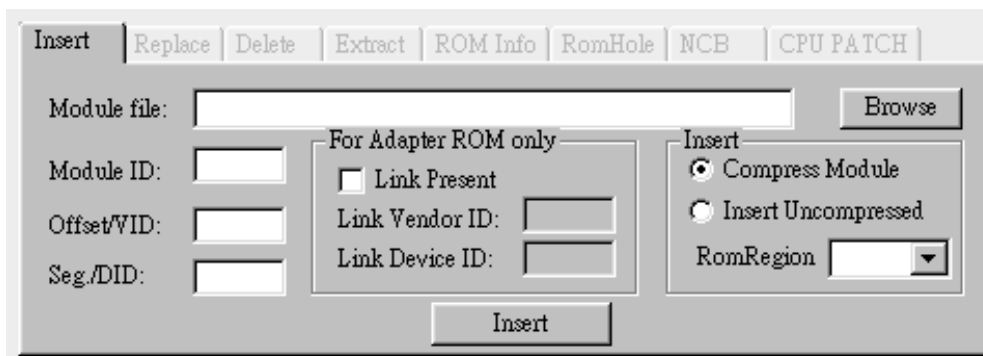
Close

Click this button to exit the program.

Function Frame

Insert Module

The function allows you to add a new BIOS module into the BIOS ROM file.



Field

Name	Description
Module File	This field is used to specify path/filename of new module file with extension.
Module ID	2-digits hexadecimal Module ID. See Appendix A Module ID Codes for detail.
Offset/VID	This field is used to enter a new module runtime Offset. This field is optional except when inserting an Adapter ROM or Multilanguage modules. You must enter the Vendor ID for the Adapter ROM. The default value for the Offset field is equal to zero. The value indicates that runtime location is dynamic.
Segment/DID	This field is used to enter a new module runtime Segment. This field is optional except when inserting an Adapter ROM or Multilanguage modules. You must enter the Device ID for the Adapter ROM. The default value for the Segment field is equal to zero. The value indicates that runtime location is dynamic.
Link Vendor ID	This field is used to enter the PCI vendor ID for the PCI device that uses the option ROM. Note: This field must be filled only if <i>Link Present</i> check box is selected. You must enter the vendor ID of the PCI device that shares the same option ROM with an existing device.
Link Device ID	This field is used to enter the PCI device ID for the PCI device that uses the option ROM. Note: This field must be filled only if <i>Link Present</i> check box is selected. You must enter the device ID of the PCI device that shares the same option ROM with an existing device.

RomRegion	<p>This field is used to insert the module into a Non-Critical region. User must be sure that region name is present in current BIOS ROM file, otherwise, the module will still insert to Main BIOS Image. You can type region name directly Or select an available region from drop-down menu.</p> <p>Note: Non-Critical Block contains BIOS modules that do not prevent BIOS POST from completing its execution. Examples of Non-Critical Blocks are option ROM for onboard devices, logos, language modules, setup clients and user defined modules.</p>
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Note : MMTOOL does not check to see if the module file is valid.

Buttons

Icon	Description
Browse	This button is used to search for a new module file from any storage location.
Insert	This button is used to launch the insert module operation.

Options

Name	Description
Link Present	This option(check box) is used to support multiple PCI devices with a single PCI adapter ROM. This option is only for PCI adapter ROM, thus, the Module ID is always fixed at 20h. User can input Linked Vendor ID/Device ID to share PCI adapter ROM with an existing one.
Compress Module	<p>This option is used to insert the new module in compact form.</p> <p>Note: Some modules MUST be uncompressed, for example: BootBlock-Runtime interface, CPU microcode or ROMID.</p>
Insert Uncompressed	This option is used to insert the module in its original form.

Replace Module

This function allows you to substitute an existing BIOS module into BIOS ROM file with a new one.



Field

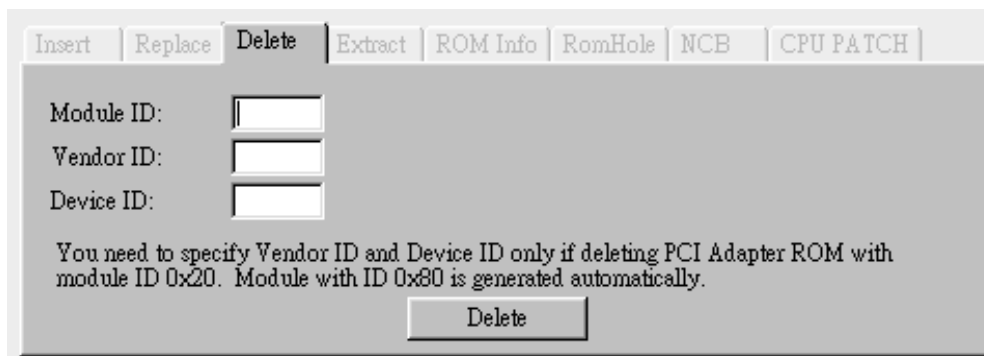
Name	Description
Module File	This field is used to specify path/filename of new module file with extension.
Module ID	2-digits hexadecimal Module ID. See Appendix A Module ID Codes for detail.
Offset/VID	This field is used to enter a new module runtime Offset. This field is optional except when inserting an Adapter ROM or Multilanguage modules. You must enter the Vendor ID for the Adapter ROM. The default value for the Offset field is equal to zero. The value indicates that runtime location is dynamic.
Segment/DID	This field is used to enter a new module runtime Segment. This field is optional except when inserting an Adapter ROM or Multilanguage modules. You must enter the Device ID for the Adapter ROM. The default value for the Segment field is equal to zero. The value indicates that runtime location is dynamic.

Buttons

Icon	Description
Browse	This button is used to search for a new module file from any storage location.
Insert	This button is used to launch the replace module operation.

Delete Module

This function allows you to remove BIOS module from the BIOS ROM file.



Note : A delete module is no longer available in the BIOS ROM file and cannot be recovered by using MMTOOL...

Field

Name	Description
Module ID	2-digits hexadecimal Module ID. See Appendix A Module ID Codes for detail.
Offset/VID	This field is used to enter a module runtime Offset. This field is optional except when deleting an Adapter ROM or Multilanguage modules. You must enter the Vendor ID for the Adapter ROM.
Segment/DID	This field is used to enter a module runtime Segment. This field is optional except when deleting an Adapter ROM or Multilanguage modules. You must enter the Device ID for the Adapter ROM.

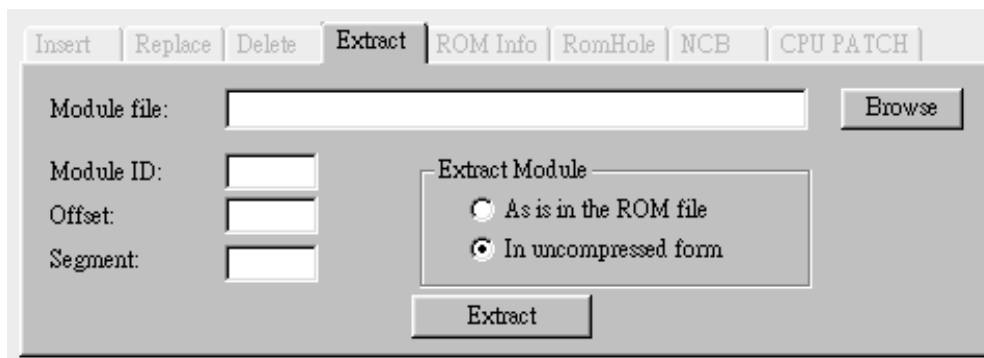
Buttons

Icon	Description
Insert	This button is used to launch the delete module operation.

Note : The original BIOS ROM file is not modified unless you use *Save ROM* button or the *Save ROM As* button to save changes.

Extract Module

This function allows you to copy any BIOS module from the BIOS ROM file.



Note : The BIOS Module is saved to selected file.

Field

Name	Description
Module File	This field is used to specify path/filename of new module file with extension.
Module ID	2-digits hexadecimal Module ID. See Appendix A Module ID Codes for detail.
Segment/VID	This field is used to enter a new module runtime Offset. This field is optional except when extracting an Adapter ROM or Multilanguage modules. You must enter the VendorID for the Adapter ROM.
Segment/DID	This field is used to enter a new module runtime Segment. This field is optional except when extracting an Adapter ROM or Multilanguage modules. You must enter the DeviceID for the Adapter ROM.

Buttons

Icon	Description
Browse	This button is used to search for a new module file from any storage location.
Extract	This button is used to launch the extract module operation.

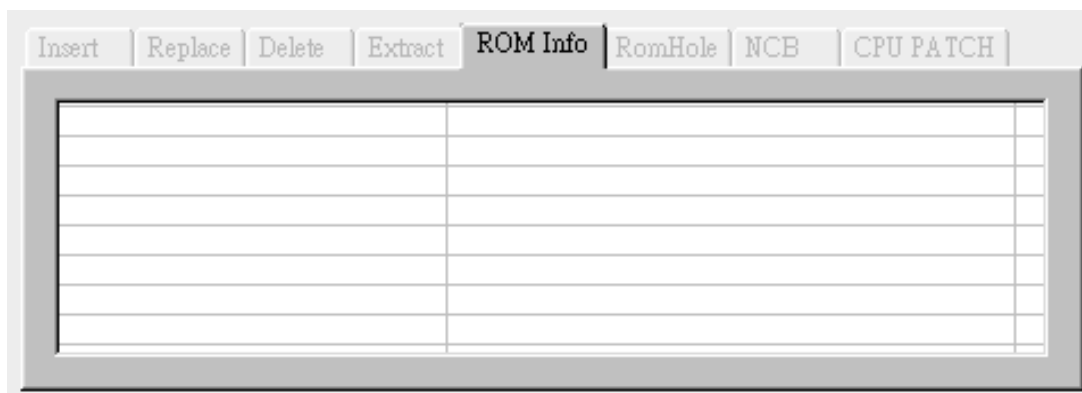
Options

Icon	Description
As is in ROM File	This option is used to extract module in the same way the module is present in BIOS ROM file.

In Uncompressed Form	This option is used to extract the module in its original form.
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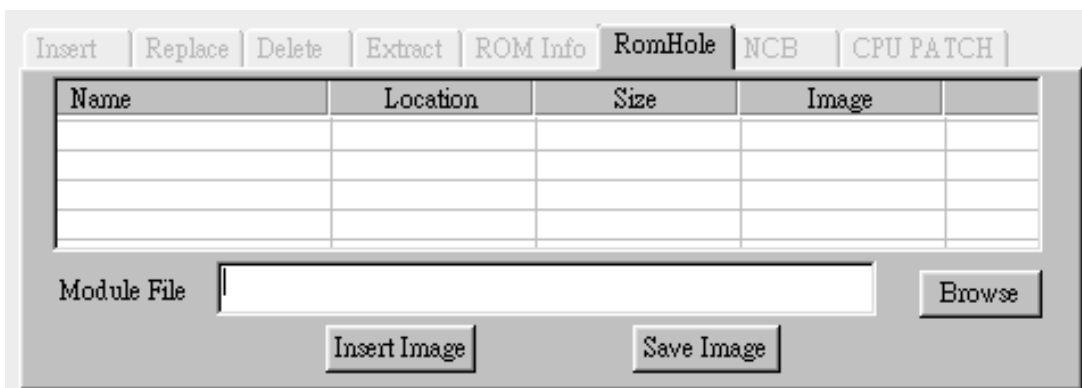
Note : Extracting a BIOS module will not affect the BIOS ROM file.

ROM Information



Note : This sheet displays ROM related information except ROM Hole and NCB.

ROM Hole



Name	Location	Size	Image	

Module File

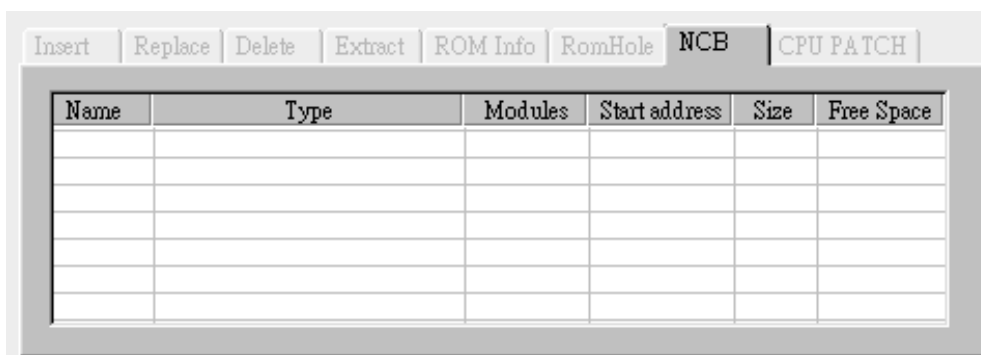
Field

Name	Description
Name	This field displays ROM Hole number in BIOS ROM file.
Location	This field displays the start address of ROM Hole in BIOS ROM file.
Size	This field displays the ROM Hole size.
Image	If a ROM Hole contains data, this field displays "Yes", or it will be "No".

Buttons

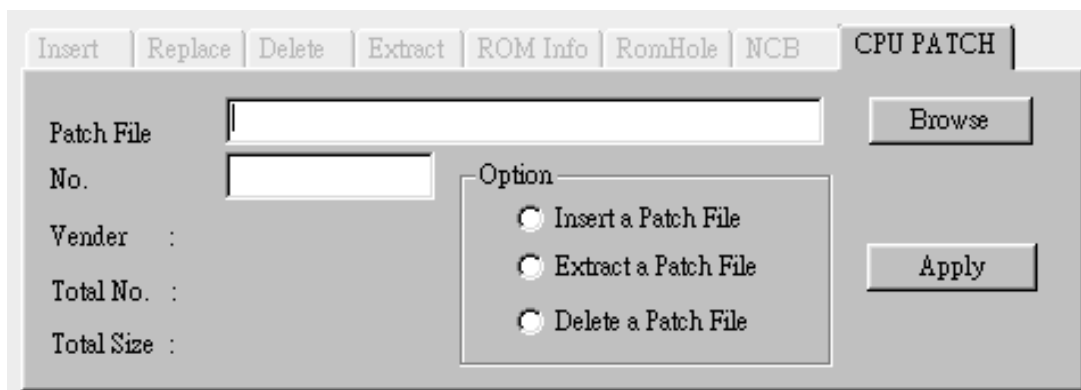
Icon	Description
Browse	This button is used to search for a new image file from any storage location.
Insert Image	This button is used to insert a new image into the marked ROM Hole.
Save Image	This button is used to save marked ROM Hole content into file.

NCB Information



Field	Description
Name	This field displays the NCB Region Name for identification.
Type	This field displays the region type. Usually, it is either <i>Extended Boot Block region</i> or <i>Generic region</i> .
Modules	This field displays how many modules inside this region.
Start Address	This field displays region's start address in BIOS ROM file.
Size	This field displays the region size in unit of byte.
Free Spaces	This field displays remaining size of the region.

CPU Patch



Field

Field	Description
Patch File	This field is used to specify path/filename of new patch file with extension.
No.	2-digits decimal patch data number in the CPU Micro Code Patches Module.
Vendor	Display the CPU manufacturer's name. This is a non-editable field.
Total No.	Display total patch data number. This is a non-editable field.
Total Size.	Display total patch data size. This is a non-editable field.

Buttons

Icon	Description
Browse	This button is used to search for a new patch file from any storage location.
Apply	This button is used to insert a new image into the marked ROM Hole.

Module Info Frame

ID	Name	RomLoc	Source size	Size in Rom	%%	RunLoc	NCB

Field	Description
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ID	2-digits hexadecimal Module ID. See Appendix A Module ID Codes for detail.
Name	BIOS module name. See Appendix A Module ID Codes for detail.
RomLoc	Module data location in BIOS ROM image.
Source size	Original module data source size in unit of bytes.
Size in ROM	Actual module data size in unit of bytes in BIOS ROM image.
%%	This field displays the module's compressed ratio. Usually, 0.00 means the module is uncompressed and -- means it is a linked module.
RunLoc	This field displays the address where the module will be uncompressed. For PCI Adapter ROM Module(20h), it is VendorID and DeviceID. For Multilanguage Module(21h), it is language ID and flags.
NCB	This unique name identifies the Non-Critical Block. If present, the module will be inserted to the region.

Appendix A : Module ID Codes

These are the Module Ids currently used by AMIBIOS8.

Note: Module Ids 00, 01, 02, 03, 05, 07, 09, 0A, 0B, 0D, 0F, 12, 13, 14, 16 and 17 were used by previous version of AMIBIOS and must not be assigned to any new module for AMIBIOS8.

Module ID (hex)	Description
0x04	Setup Engine (Client).
0x06	DMI Data (SMBIOS Data).
0x08	BootBlock-POST Interface module.
0x0C	ROM ID Module (BIOS Tag).
0x0E	OEM Logo (large) for Silent Boot.
0x10	ACPI AML
0x11	CPU microcode patches
0x15	External memory detection module.
0x18	ADM
0x19	ADM Font
0x1A	OEM Small Logo
0x1B	Main BIOS (SLAB)
0x1C	BCP Information Module (Created by AMIBCP)
0x1D	Dual Logo
0x1E	Intel OSB (On Screen Branding)
0x1F	<i>Currently unassigned</i>
0x20	PCI Addon ROM (Same for all PCI Option ROMs)
0x21	Language Module (Same for all languages)
0x22 – 0x25	<i>Currently unassigned</i>
0x26	Source level debugger
0x27	Source level debugger transport layer
0x28	BMC output redirection module
0x29	MBI file
0x2A	MBI test pattern
0x2B	More than 4GB memory test
0x2C – 0x2D	<i>Currently unassigned</i>
0x2E	PXE base rom
0x2F	Serial redirection module

0x30	Parties Logo
0x31	NEC CIM Module (Used by AMI Taiwan)
0x32	NEC battery refresh support (Used by AMI Taiwan)
0x38	Auto flash EC firmware (Used by AMI Taiwan)
0x80	BIOS information module
0xF0 – 0xFF	OEM modules