



Cable Equipment Inc.
www.tonercable.com

Model HDDM



 User's Manual

HD Digital Modulator

 QAM or 8VSB modulation output

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4. IP Network Connection through Ethernet (RJ45)

4-1. Using factory's IP address

Default IP address is 192.168.1.149

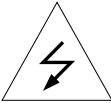

4-2. Using non factory's IP address/domain or Router

4-2-1. Connection – PC > Modulator

4-2-2. Connection – PC > Router > Modulator

1. Safety Instructions & Precautions

- Do not operate the HDDM in high-humidity areas, or expose it to water or moisture. Prevent moisture or liquids from dripping or entering the modulator
- Disconnect the modulator from the electrical source prior to cleaning. Use a light, damp cloth (no solvents) to dust or clean the product.
- Do not block or cover slots and openings in the HDDM. These are provided for ventilation and protection from overheating. Never place the HDDM near or over a radiator or heat register. Do not place the HDDM in an enclosure such as a cabinet without proper ventilation.
- It is recommended to properly ground the HDDM using the grounding screw
- Never insert objects of any kind into the HDDM through openings, as the objects may touch dangerous voltage points or short out parts. This also could cause fire or electrical shock.
- There are no user serviceable parts in the HDDM. Opening the HDDM will void the warranty

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER FROM THIS UNIT. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		
WARNING: TO PREVENT SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.		

2. Operation Guide

2-1. HDDM Diagram



- A. Connect the power supply.
- B. Connect the HDMI source to this product.
HDMI can reach HD resolution 1080p.
- C. Connect the RF Output to the RF network, STB or the TV set directly, be careful not to over drive the tuner in the TV if connected directly

2-2. Controls and Connections



1. LCD Monitor
2. Up / Down / Left / Right Buttons
3. Enter Button
4. Screw for ground wire
5. DC 12V IN : 12VDC 2A maximum power supply input
6. RF OUT : F female connector for RF output
7. Gain Control : Gain Adjustment $\pm 30\text{dB}$
8. HDMI : Digital Input

9. RJ45 : Ethernet connection for computer connection (setup only)

**** Important notes for HDMI input ** :**

When the HDMI input signal switches on and off or changes resolution the TV screen will freeze or go black. After about 15 seconds the image will resume.

NOTE: image resolution may change during commercial's.

2-3. Functions of Operating Button

Press the enter button to input the information on the display

- Enter a category to configure settings
- Confirm selected item or numbers. (press ENTER after each setting to save it. After saving the setting will be marked with an asterisk “ * ”)

“Up” / “Down” :

- Edit numbers
- Select different options in a category

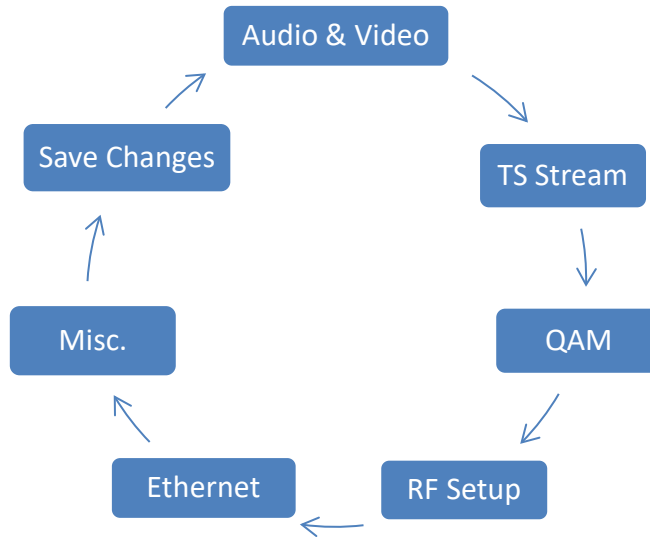
“Left” / “Right” :

- Left button also works as “EXIT”
- Move to digit places to set numbers
- Select different options in a category

3. System Configurations

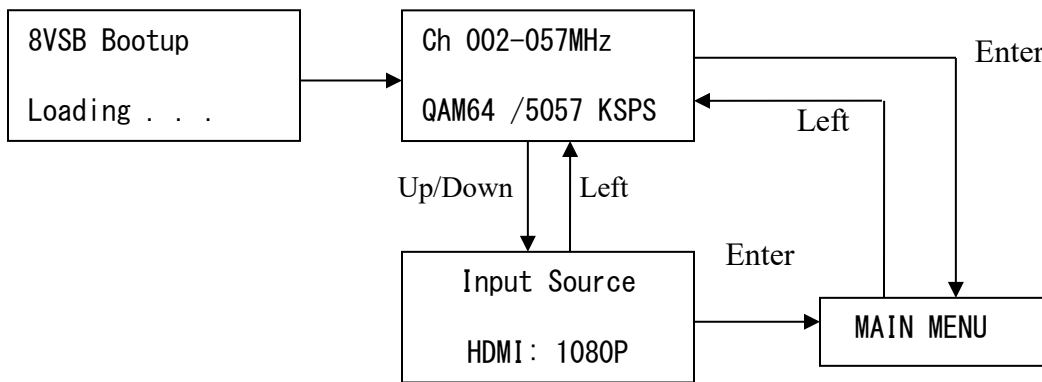
Configuration can be processed through control panel (front panel) or by a GUI via the Ethernet connection (RJ-45 Jack)

3-1. Structure of the System Menu



3-2. Configuration- Using Front Control Panel

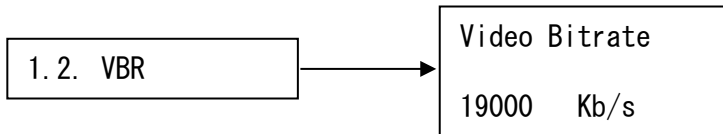
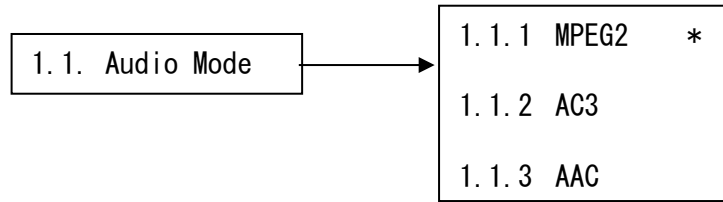
3-2-1. Initial display



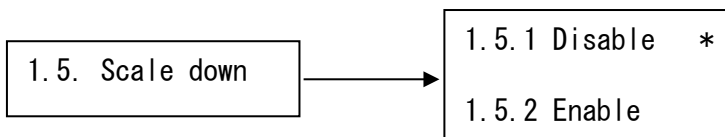
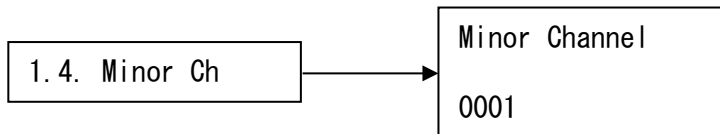
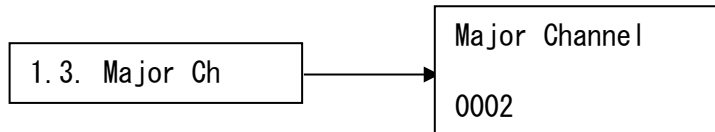
- Ch 002 / 57.000 MHz: RF output channel / frequency.
If the RF field is set to Frequency mode, the display shows “057MHz QAM64 /5057 KSPS”

- 8VSB : TV System/Modulation Type
- QAM 64 : QAM Modulation Type
- 5057 KSPS: Output Symbol Rate
(Output symbol rate will change based on Modulation type selected).
- HDMI : Input Interface
- 1080P : Input Video Resolution

3-2-2. Audio & Video - Audio & Video Input Configuration

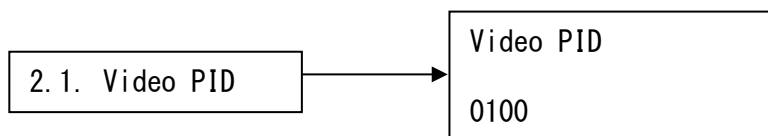


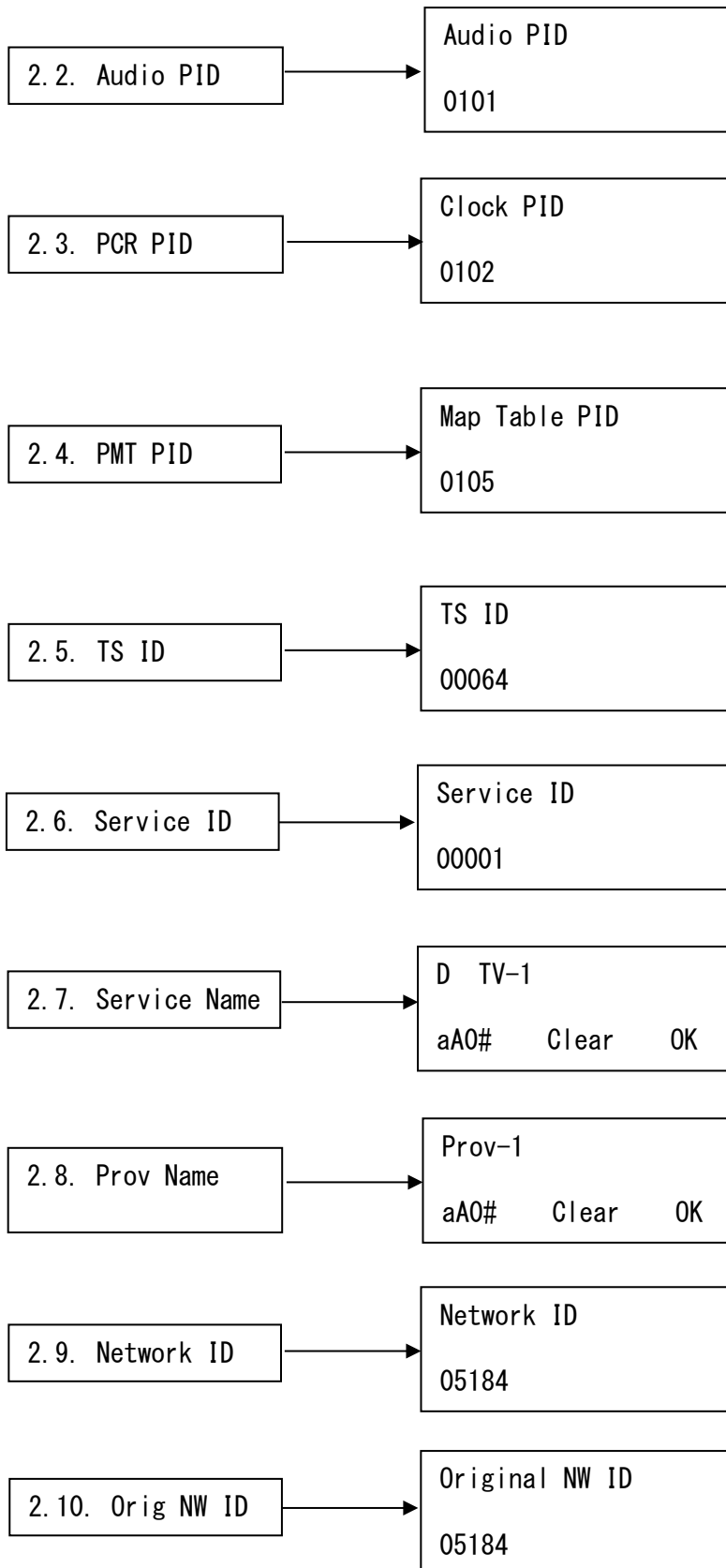
- VBR range : 5000~20000 kb/s



- Major / Minor Ch : Virtual channel setting

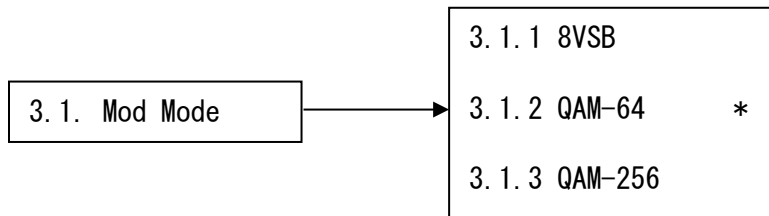
3-2-3. TS stream– stream editing





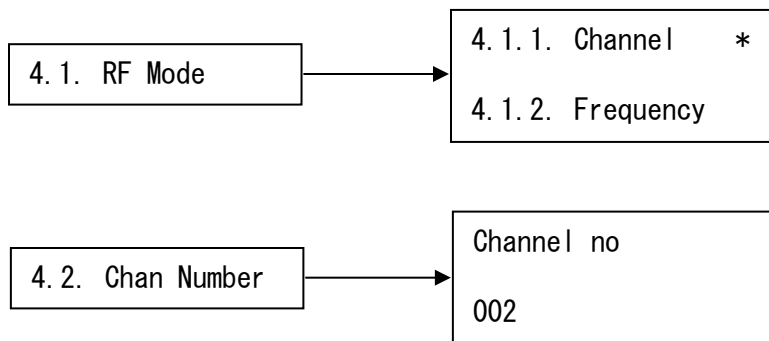
- The value of Video PID /Audio PID /PCR PID/ PMT PID MUST be unique to each other.
- You can set service / provider name through web browser.

3-2-4. QAM – Modulation Constellation setup

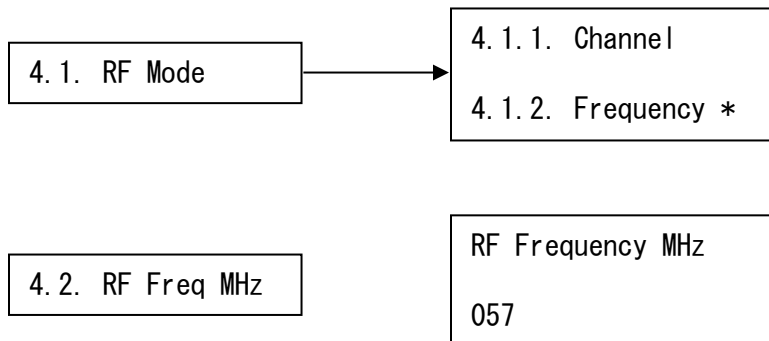


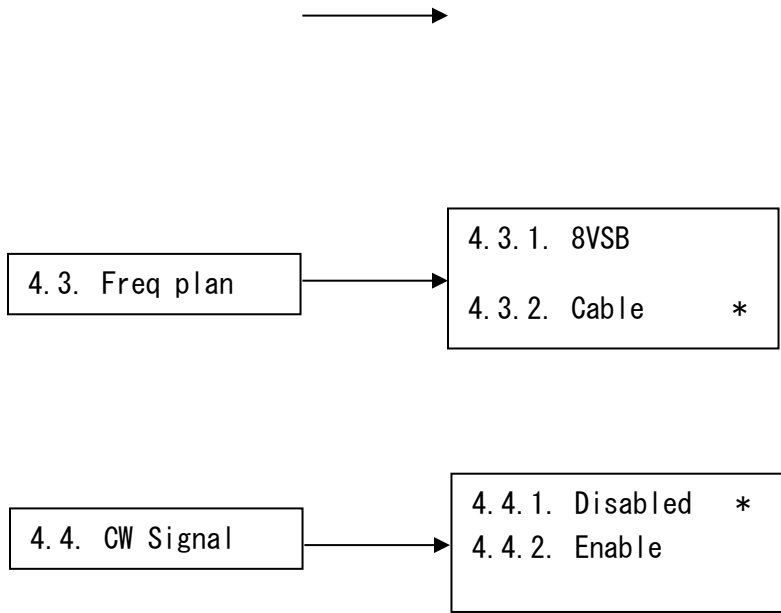
3-2-5. RF Setup

Channel Mode



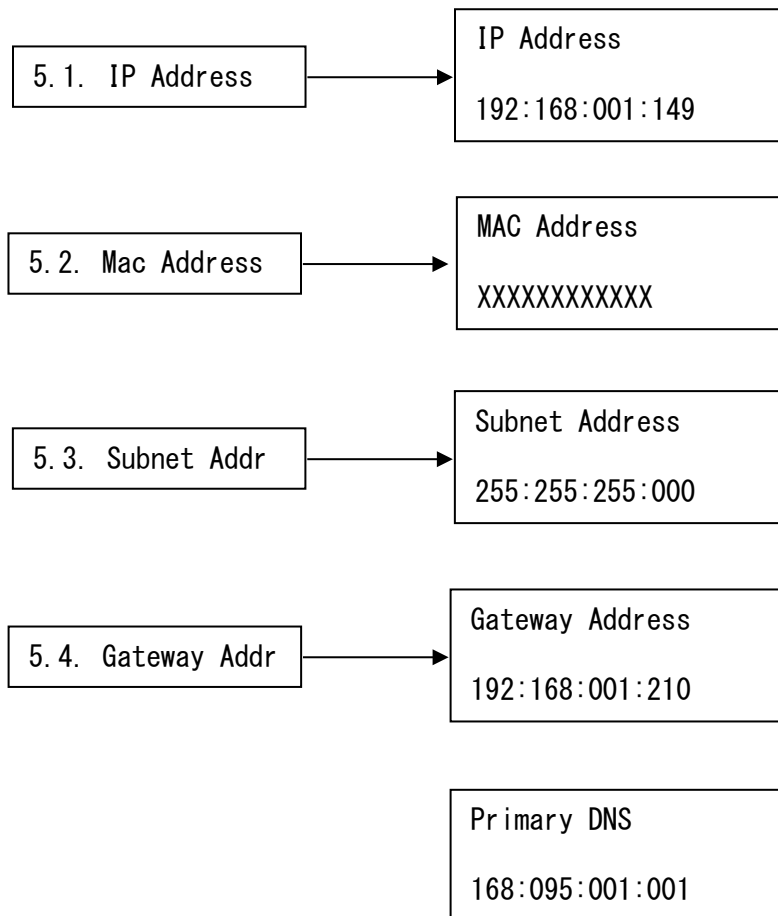
Frequency Mode





- **Keep the CW signal “Disabled”. This option is only for testing purpose in factory. The modulator will not work if CW is enabled.**

3-2-6. Ethernet – Web Configuration



5. 5. Primary DNS →

5. 6. Sec DNS →
Secondary DNS
000:000:000:000

3-2-7. Misc. – For system configuration

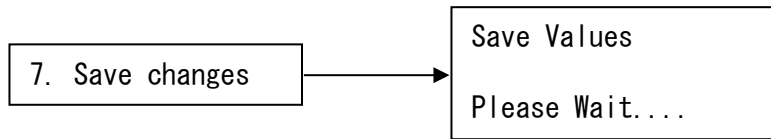
6. 1. Sys Version →
8VSB
SW-Toner.02

- SW: Software version

6. 2. Factory set. →
1. Preset B-64
2. Preset B-256
3. Preset 8VSB

- Options of factory default setting : B-64 (Annex B, 64QAM) / B-256
(Annex B, 256QAM) / 8VSB
- The system is set to QAMB-64 QAM when manufactured

3-2-8. Save Changes



- Display will go back to upper menu when saving is done.
- ★ **Any change of the configuration will not take effect if the changes are not saved first prior to reset. All encoder setting changes will be set back to the factory defaults if not saved.**
- ★ **All the saved values will be stored in the memory permanently until next value saved.**

3-3. Configure HDDM using Web Browser

Set an IP address for the modulator from the front panel if using the factory default IP address is not an option. Connect the modulator to a computer using a RJ45 cable.

Enter the IP address of the modulator (Default address: 192.168.1.149) on web browser



- ★ **Press <Update> after changing settings in each category. Go to SAVE page to save the configurations.**

3-3-1. Ethernet— For Web Configuration

Ethernet

MAC Address	00:50:C2:A1:75:94
Enable/Disable Editing	<input checked="" type="checkbox"/>
IP Address	192.168.1.149
Gateway	192.168.1.210
Subnet Mask	255.255.255.0
Primary DNS	168.95.1.1
Secondary DNS	0.0.0.0

Update

- All the values are locked. Uncheck <Enable/Disable Editing> to edit.

3-3-2. Audio & Video- Audio & Video Input Configuration

Audio & Video

Audio Mode	<input type="text" value="MPEG2"/>	▼
Video BitRate	<input type="text" value="19000"/>	Kbps
Major Channel	<input type="text" value="2"/>	(0~1023)
Minor Channel	<input type="text" value="1"/>	(0~1023)
1080P Scaledown	<input type="text" value="Disable"/>	▼

Update

- Video Bitrate Range : 5000~20000 kb/s

3-3-3. QAM – Modulation/Constellation setup

QAM

Mod Mode	<input type="text" value="QAM B - 64"/>	▼
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Update

3-3-4. RF - RF Output Configuration

Channel Mode

RF

RF Mode Channel

RF Frequency Plan Cable

RF Channel Number 2

CW Signal Disabled

Update

- Keep the “CW Signal” in “Disable” mode. This option is only for testing purpose during manufacturing. **The modulator will not work if the CW field is enabled.**

3-3-5. Ts Stream– stream editing

Ts Stream

Transport Stream ID 64 (1-65535)

Service ID 1

Video PID 100

Audio PID 101

PCR PID 102

PMT PID 105

Network ID 5184

Original Network ID 5184

Service Name D TV-1

Provider Name Prov-1

Update

- The value of Video PID /Audio PID /PCR PID/ PMT PID should be unique to each other.

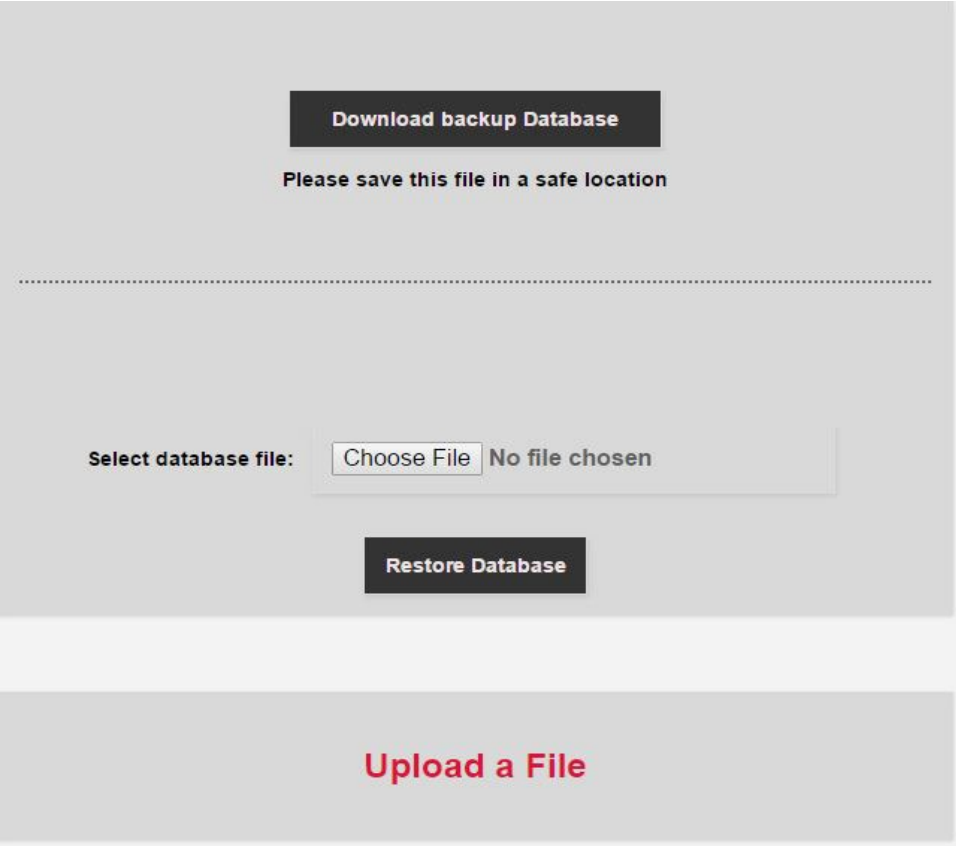
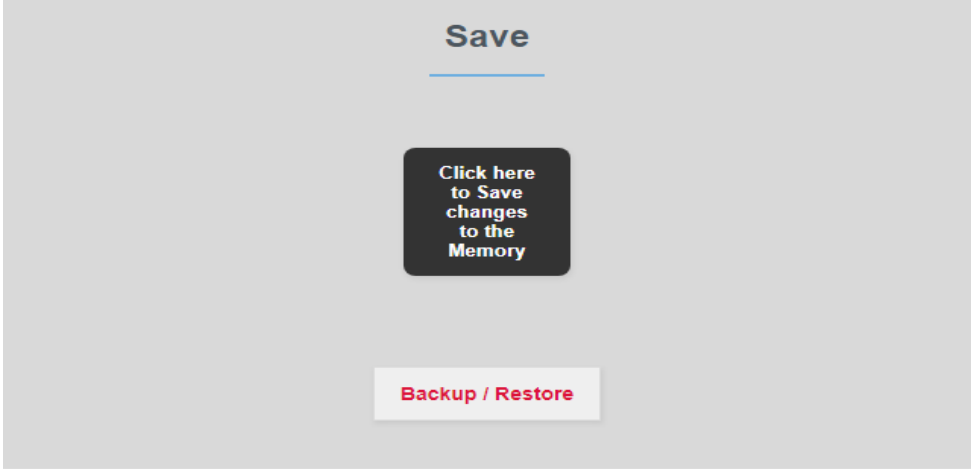
3-3-6. Misc. – For system configuration

The screenshot shows a configuration page titled "Misc". It contains four input fields and one button:

- Preset State:** A dropdown menu with the text "Select Preset State" and a downward arrow.
- Device Name:** A text input field containing the value "HDDM".
- Software Version:** A text input field containing the value "Toner.02".
- Hardware Version:** A text input field containing the value "2.1".
- Update:** A dark button with the text "Update" in white.

- Options of Factory default setting (Preset) :
B-64 (Annex B, 64QAM) / B-256 (Annex B, 256QAM) / 8VSB

3-3-7. Save – To save changes of configuration



3-3-8. Copy – To copy your exiting data, please take the following steps:

1. Go to “Save” tab in browser.
2. Click “Backup / Restore”.
3. Click “Download backup Database” button. Setting will be exported into a configuration file.

3-3-9. Restore – To restore your saved data, please take the following steps:

1. Go to “Save” tab in browser.
2. Click “Backup / Restore”.
3. Click “Choose File” to select the configuration file.
4. Click “Restore Database”.

3-3-10. Preset Values

The following table shows only differences between presets. Items not shown in the table are the same as default.

8VSB	B-64 (Default)
Frequency plan : NTSC-AIR	Frequency plan : NTSC-CATV
Modulation mode : 8VSB	Modulation mode : QAM B 64
B-256	
Frequency plan : NTSC-CATV	
Modulation mode : QAM_B_256	

4. IP Network Connection through Ethernet (RJ45)

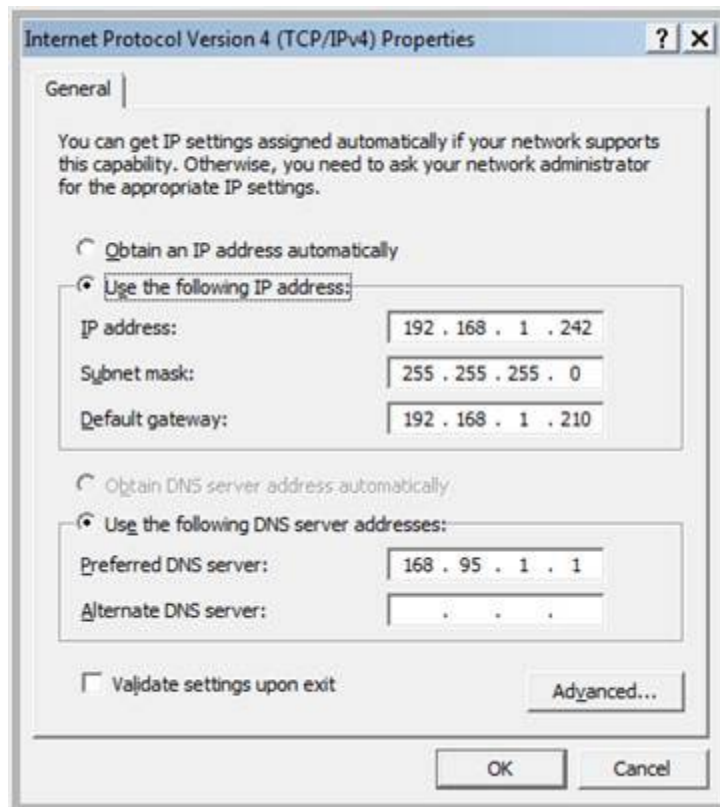
4-1. Using factory's IP address/domain

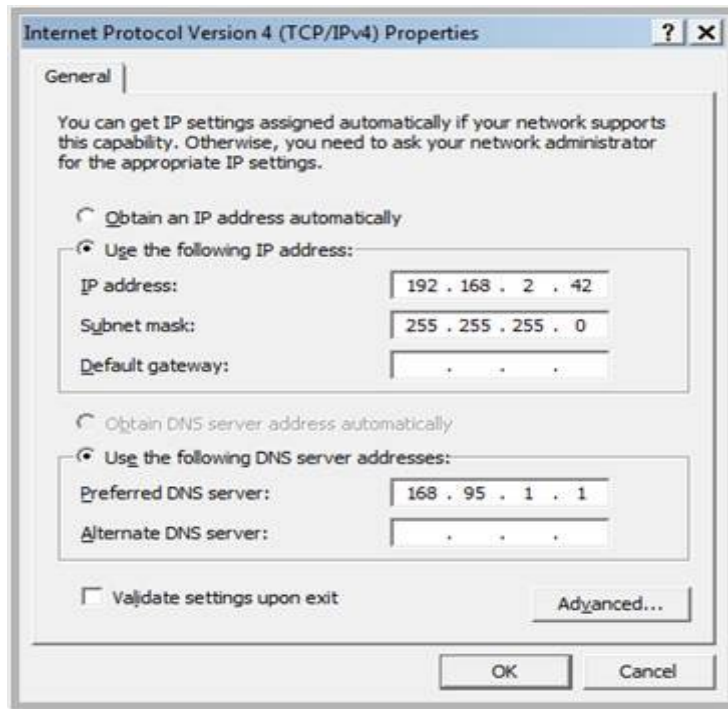
Please refer to IP address labeled on the modulator.

4-2. Using non factory's IP address/domain or Router

4-2-1. Connection - PC<==>Modulator

Example: Change IP 192.168.1.242 to 192.168.2.42



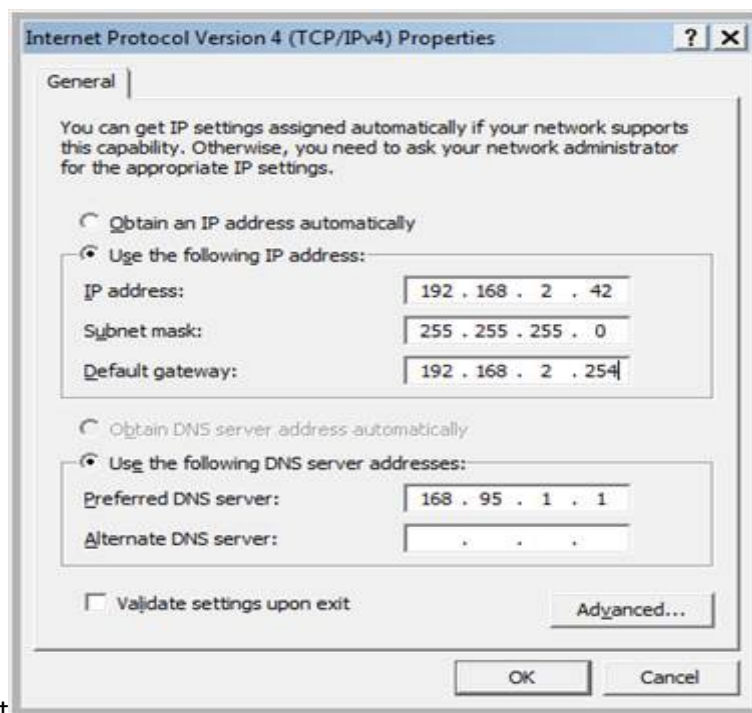


4-2-2. Connection - PC<==>Router<==>Modulator

Example: Gateway: 192.168.2.xxx

*Your Router and Network Domain are used (such as 192.168.2.0 or 192.168.100.0).

*Gateway address is always Router IP address such as 192.168.2.254.



Ethernet