

# HDMI Modulator DVB-T / DVB-C / IP

## HDM 1 T / HDM 1 C



## Bedienungsanleitung/ *User manual*

## Montage- und Sicherheitshinweise



### Achtung

Die auf dem Gerät angegebene Nennspannung muss mit der örtlichen Netzspannung übereinstimmen. Die Hinweise zum Betrieb des Gerätes sind zu beachten.



### Erdung und Potenzialausgleich

Vor Erstinbetriebnahme die Erdung herstellen und den Potenzialausgleich durchführen.



### Anschlusskabel

Stolperfrei mit einer Schlaufe verlegen, damit bei Kondenswasser- und/oder Schwitzwasserbildung kein Wasser ins Gerät läuft sondern auf den Boden abtropft.

### Aufstellungsort auswählen

Montage nur auf eine feste, ebene und möglichst brandresistente Oberfläche. Starke Magnetfelder in der Nähe vermeiden. Zu starke Hitzeeinwirkung oder Wärmestau haben einen negativen Einfluss auf die Lebensdauer. Nicht direkt über oder in der Nähe von Heizungsanlagen, offenen Feuerquellen o.ä. montieren, wo das Gerät Hitzestrahlung oder Öldämpfen ausgesetzt ist. Lüftergekühlte und passiv gekühlte Geräte so montieren, dass die Luft ungehindert durch die unteren Belüftungsschlitze angesaugt wird und die Wärme an den oberen Lüftungsschlitzen austreten kann. Für freie Luftzirkulation sorgen und unbedingt die richtige Einbaulage beachten!



### Feuchtigkeit

Tropf-, Spritzwasser und hohe Luftfeuchtigkeit schaden dem Gerät. Bei Kondenswasserbildung warten, bis die Feuchtigkeit abgetrocknet ist. Betriebsumgebung laut spezifizierter IP-Schutzklasse.



### Achtung Lebensgefahr!

Gemäß der aktuell gültigen Fassung der EN 60728-11 müssen koaxiale Empfangs- und Verteilanlagen den Sicherheitsanforderungen bezüglich Erdung, Potentialausgleich etc. entsprechen, sonst können Schäden am Produkt, ein Brand oder andere Gefahren entstehen. Sicherungen werden nur von autorisiertem Fachpersonal gewechselt. Es dürfen nur Sicherungen des gleichen Typs eingesetzt werden. Bei Beschädigung ist das Gerät außer Betrieb zu nehmen.



### Installations- und Servicearbeiten

Dürfen nur von autorisiertem Fachpersonal entsprechend den Regeln der Technik durchgeführt werden. Vor Beginn der Servicearbeiten die Betriebsspannung abschalten und gegen Wiedereinschalten sichern. Um die Störstrahlsicherheit zu garantieren, müssen sämtliche Geräteabdeckungen nach Öffnen wieder fest verschraubt werden.



### Gewitter

Aufgrund erhöhter Blitzschlaggefahr keine Wartungs- und/oder Installationsarbeiten am Gerät oder an der Anlage vornehmen.



### Umgebungstemperatur

Betrieb und Lagerung nur innerhalb des spezifizierten Temperaturbereichs.



### Abschluss / Terminierung

Nicht benutzte Teilnehmer-/ Stammleitungsausgänge sind mit 75 Ohm-Widerständen abzuschließen.



### Vorsicht! Laserstrahlung -> Unfallgefahr durch Blendung!

Nicht in den direkten oder reflektierten Strahl blicken. Es besteht Verletzungsgefahr für die Augen.



### Recycling

Unser gesamtes Verpackungsmaterial (Kartonagen, Einlegezettel, Kunststoff-Folien und -beutel) ist vollständig recyclingfähig.

## Bedingungen zur Sicherstellung der elektromagnetischen Verträglichkeit (EMV)

Alle Abdeckungen und Schrauben müssen fest montiert und angezogen sein, Kontaktfedern dürfen nicht oxidiert oder verbogen sein.

**„ Der Nutzer ist für die rechtliche zulässige Nutzung dieses Gerätes selber verantwortlich und muss im Zweifel juristische Beratung zur urheberrechtlichen Nutzungsbeschränkung einholen.“**

Unten stehende Hervorhebungen werden in diesem Handbuch mit folgenden Bedeutungen verwendet:

**HINWEIS** gilt für technische Erfordernisse, die der Benutzer der Geräte besonders beachten muss, um eine einwandfreie Funktion der Geräte/Anlage zu gewährleisten.

**ACHTUNG** bezieht sich auf Anweisungen, die genau einzuhalten sind, um eine Beschädigung oder Zerstörung des Gerätes zu vermeiden.

**VORSICHT** steht für Anweisungen, deren Nichtbeachtung eine Gefährdung von Personen nicht ausschließt.

Bei Hinweisen auf ein durch eine Ortszahl versehenes Bauteil z.B. (Bild 1/3) bezieht sich in diesem Beispiel der Hinweis auf Bild 1 Ortszahl 3.

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## Beschreibung

Modulator zur Umsetzung eines HDMI-Signals in einen DVB-T (COFDM) bzw. einen DVB-C (QAM) Kanal. Bei beiden Geräten steht das HDMI-Signal auch als IP-Stream zur Verfügung und kann in IPTV-Netzwerke eingespeist werden.

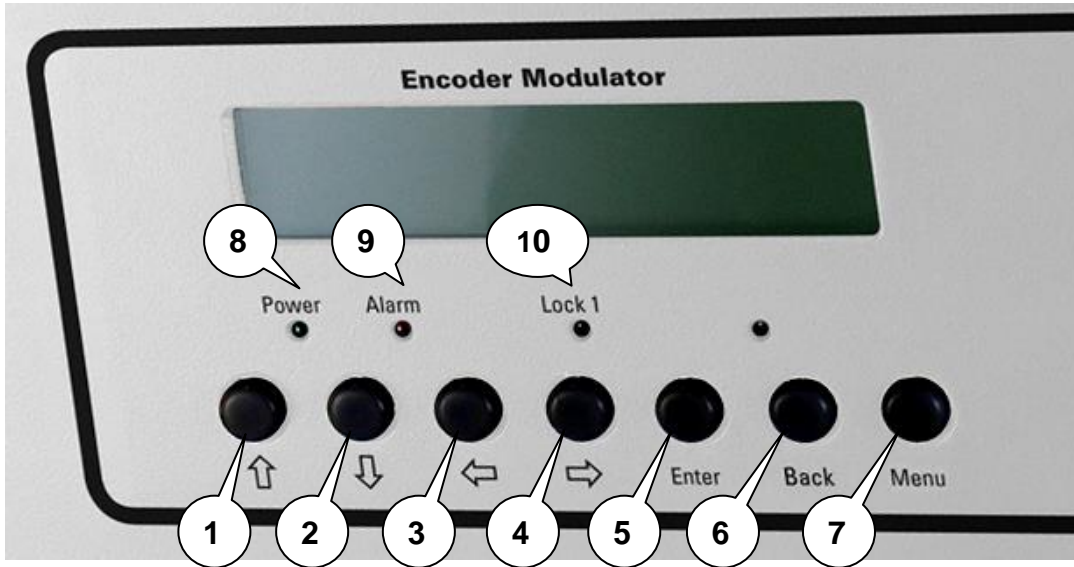
Als Videoformat wird der MPEG4 oder wahlweise auch der MPEG2 Standard genutzt.

Das Gerät ist flexibel einsetzbar und kann HDMI-Signale z.B. von Receivern, Computern, Kameras, DVD-Playern verarbeiten.

**HINWEIS** Nach einem Netzausfall bleiben alle Daten erhalten.



**Bedienelemente**



- 1 Taste nach oben im Menü
- 2 Taste nach unten im Menü
- 3 Taste nach links im Menü
- 4 Taste nach rechts im Menü
- 5 Taste Enter (Auswahl bestätigen)
- 6 Taste Back (im Menü einen Schritt zurück)
- 7 Taste Menu (um in das Menü zu kommen und es zu verlassen)
- 8 Anzeige Betriebsspannung
- 9 Anzeige Alarm, wenn kein Signal anliegt
- 10 Anzeige ob ein HDMI Signal anliegt

**Anschlüsse**



- 11 HDMI Eingang
- 12 Nicht belegt
- 13 Netzanschluss / Netzschalter / Netzsicherung



- 14 LAN-Anschluss zum Programmieren über Web-Browser
- 15 IP Ausgang
- 16 Durchschleifeingang (zum Zusammenschalten mit externen Signalquellen)
- 17 Ausgang

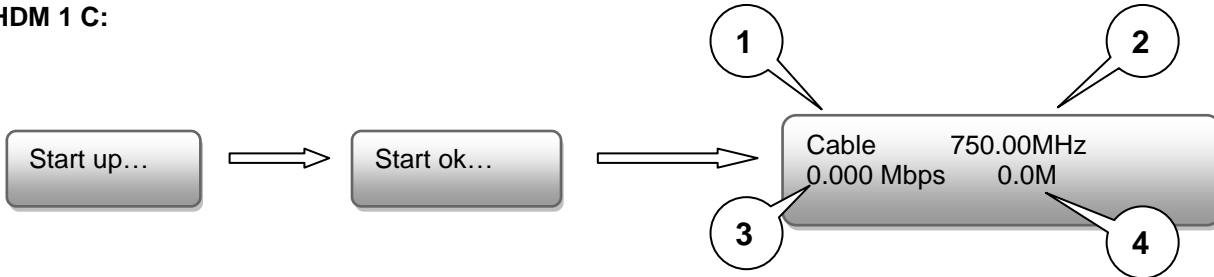
## Handprogrammierung am Gerät:

LCD Anzeige nach dem Einschalten:

### Beim HDM 1 T:



### Beim HDM 1 C:



1. Zeigt die Modulation des Ausgangssignals.
2. Zeigt die Ausgangsfrequenz.
3. Zeigt die Datenrate des Ausgangssignals.
4. Ohne Bedeutung

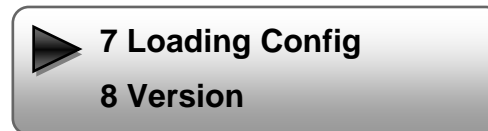
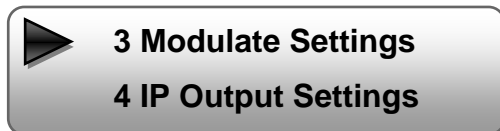
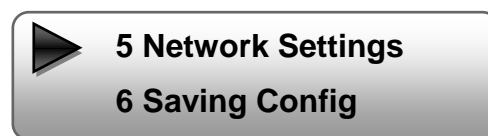
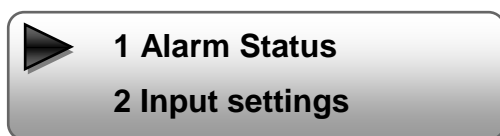
## Programmierung mittels Tasten

Das Hauptmenü erscheint nach Drücken der Taste „Menu“.

Mit den Pfeiltasten erfolgt die Steuerung durch das Menü.

Mit „Enter“ werden die Einstellungen bestätigt.

Mit „Back“ einen Schritt zurück in das vorherige Menü.



### 1. Alarm Status

Wenn kein HDMI Signal anliegt, steht unter dem Menüpunkt Alarm Status „No Video in“ und die LED (9) für Alarm leuchtet rot. Diese leuchtet auch rot, wenn am Ausgang ein Daten-Overflow besteht.

### 2. Input Settings / Eingangs-Einstellungen

#### 2.1 Input 1 / Auswahl des Eingangs:

In dieser Version des Gerätes nur Input 1 wählen.

##### 2.1.1 Video Format:

Auswahl: Mpeg2, H.264

Standard: H.264

### 2.1.2 Video Bit Rate:

Wert zwischen 1 und 19,5 Mbps einstellen  
Standard: 8 Mbps

### 2.1.3 Audio Format:

Auswahl: Mpeg2  
Standard: Mpeg2

### 2.1.4 Audio Bit Rate:

Auswahl: 64, 96, 128, 192, 256, 320 Kbps  
Standard: 192 Kbps

### 2.1.5 Low Latency / Latenzzeit

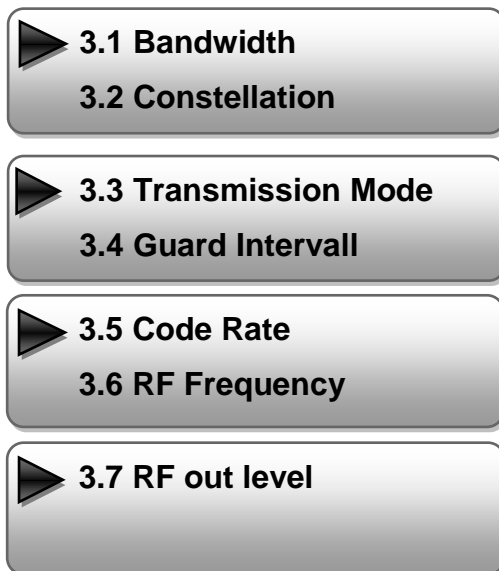
Auswahl: Normal, Mode1, Mode2  
Standard: Normal

2.2 Input 2 ohne Funktion

2.3 ASI ohne Funktion

## 3. Modulator Settings / Modulator-Einstellungen

### HDM 1 T:



3.1 Bandwidth  
3.2 Constellation

3.3 Transmission Mode  
3.4 Guard Intervall

3.5 Code Rate  
3.6 RF Frequency

3.7 RF out level

#### 3.1 Bandwidth / Bandbreite:

Ausgangssignal-Bandbreite: 6, 7 oder 8 MHz  
Standard: 8 MHz

#### 3.2 Constellation / QAM Mode:

Auswahl: QPSK, 16 QAM, 64 QAM  
Standard: 64 QAM

#### 3.3 Transmission Mode:

Auswahl: 2k oder 8k  
Standard: 2k

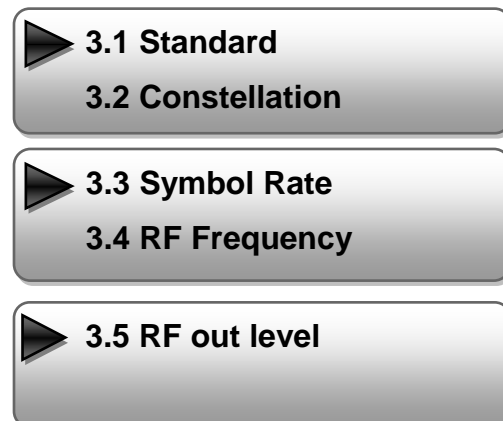
#### 3.4 Guard intervall:

Auswahl: 1/32, 1/16, 1/8 oder 1/4  
Standard: 1/32

#### 3.5 Code rate:

Auswahl: 1/2, 2/3, 3/4, 5/6, 7/8  
Standard: 5/6

### HDM 1 C:



3.1 Standard  
3.2 Constellation

3.3 Symbol Rate  
3.4 RF Frequency

3.5 RF out level

#### 3.1 Standard:

Auswahl: J.83A, J.83B, J.83C  
Standard: J.83A (DVB-C)

#### 3.2 Constellation / QAM Mode:

Auswahl: 16 QAM, 32 QAM, 64 QAM,  
128 QAM, 256 QAM  
Standard: 256 QAM

#### 3.3 Symbol Rate:

Auswahl 5 bis 9 Msps  
Standard: 6,900 Msps

#### 3.4 RF Frequency / Ausgangsfrequenz:

Bereich: 30-960 MHz  
Standard: 306 MHz

#### 3.5 RF output level / Ausgangspegel:

Pegelbereich -30 dBm bis -10 dBm

-30 dBm = 79 dB $\mu$ V

-25 dBm = 84 dB $\mu$ V

-20 dBm = 89 dB $\mu$ V

-15 dBm = 94 dB $\mu$ V

-10 dBm = 99 dB $\mu$ V



### 3.6 RF Frequency / Ausgangsfrequenz:

Bereich: 30-960 MHz  
Standard: 474 MHz


### 3.7 RF output level / Ausgangspegel:

Pegelbereich -30 dBm bis -10 dBm

-30 dBm = 79 dB $\mu$ V  
-25 dBm = 84 dB $\mu$ V  
-20 dBm = 89 dB $\mu$ V  
-15 dBm = 94 dB $\mu$ V  
-10 dBm = 99 dB $\mu$ V

## 4. IP Output Settings / IP Ausgangs-Einstellungen

 **4.1 IP Output**  
**4.2 Service IP**

 **4.3 Output IP**  
**4.4 Subnet Mask**

 **4.5 Gateway**  
**4.6 Port**

#### 4.1 IP Output:

IP-Ausgang "ON" oder "OFF"

#### 4.2 Service IP:

Eingangs-IP Adresse des HDM 1  
Standard: 192.168.002.137

#### 4.3 Output IP:

Multicast IP Adresse des ausgehenden Datenstroms  
Standard: 224.002.002.002

#### 4.4 Subnet Mask:

Standard: 255.255.255.000

#### 4.5 Gateway:

Standard: 192.168.002.000

#### 4.6 Port:

Standard: 02234

#### 4.7 Flt Null PKT / Nullpaket-Einfügung

Auswahl: „ON“ (Standard) oder „OFF“

## 5. Network Settings / Netzwerk- Einstellungen

#### 5.1 IP Address:

Einstellung der IP Adresse für den Webbrowser Zugang  
Standard: 192.168.001.225

#### 5.2 Subnet Mask:

Standard: 255.255.255.000

#### 5.3 Gateway:

Standard: 192.168.000.001

#### 5.4 MAC Address:

Wird dem Gerät vom Hersteller zugewiesen

#### 5.5 Reset Password:

Auswahl "Yes" oder "No". Das Passwort und der Username kann wieder auf die Werkseinstellungen (Passwort: admin und Username: admin) zurückgesetzt werden.

#### 5.6 Web Manager Port:

Standard: 00080

## 6. Save config / Einstellungen speichern

Auswahl: „Yes“ oder „No“

## 7. Loading config / Einstellungen speichern

### 7.1 Load saved CFG / Lade abgespeicherte Einstellungen

Auswahl: „Yes“ oder „No“

### 7.2 Load default / Lade Werkseinstellungen

Auswahl: „Yes“ oder „No“

**Achtung: Nach einem Reset müssen die Ausgangsparameter gemäß der Bedienungsanleitung auf die Standard-Werte eingestellt werden.**

## 8. Version

Software und Hardware Version

## Programmierung über Webbrowser (NMS)

Verbinden Sie den PC oder Notebook, durch ein Standard-Netzwerkkabel, mit der NMS-Buchse.

Falls ein Proxyserver verwendet wird ist dieser, in den Netzwerkverbindungen, zu deaktivieren.

Der verwendete PC muss sich im gleichen Netzwerk befinden wie das HDM 1 Gerät.

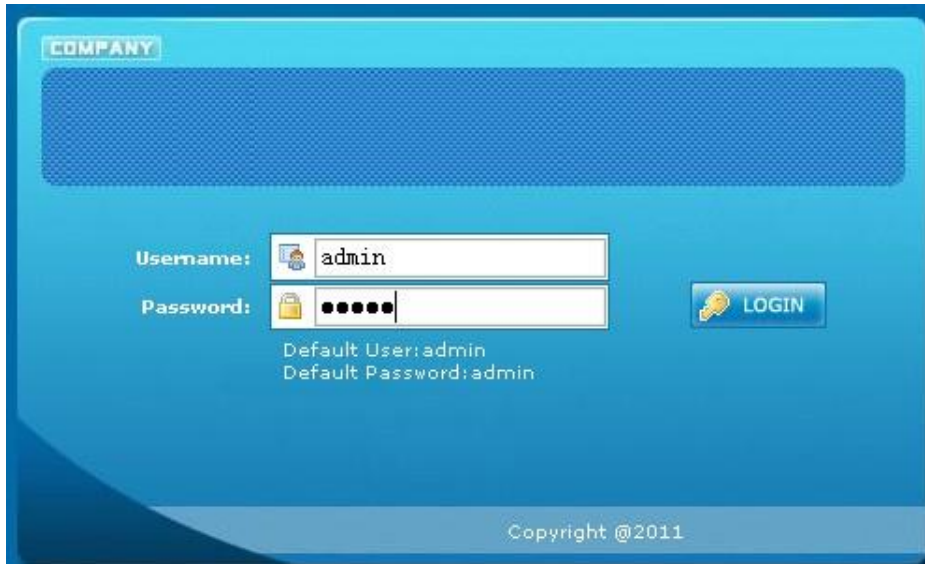
In der Grundeinstellung besitzt das Gerät die IP-Adresse 192.168.001.225. Dem PC muss somit die IP-Adresse 192.168.001.xxx zugewiesen werden. Nicht erlaubt sind die Ziffern 0, 255 oder bereits verwendete IP-Adressen. Diese Einstellung können Sie unter Netzwerkverbindungen -> LAN-Verbindung vornehmen.

Im Webbrowser folgende IP-Adresse eingeben:

<http://192.168.001.225>

Username: admin

Password: admin



The screenshot shows a web browser interface for the NMS (Network Management System). At the top, there is a header area with the word "COMPANY" in a small box. Below this is a large, empty blue rectangular area. The main content area contains a login form. On the left, there are labels "Username:" and "Password:". The "Username:" field contains the text "admin". The "Password:" field contains a series of black dots. To the right of the password field is a blue button with a key icon and the text "LOGIN". Below the password field, there is text that reads "Default User: admin" and "Default Password: admin". At the bottom of the page, there is a footer area with the text "Copyright @2011".



## Übersichtsseite

Web Management

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

Cable Encoder Modulator

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Version Information

Software Version:	4.05h Build 131 Feb 25 2013	
Hardware Version:	5.3	
Web Version:	4.01	

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Status Information

Input		
	Input 1	Input 2
Interface:	HDMI	unknown
Bitrate:	0.000 Mbps	0.000 Mbps

Output	
Maxout Bitrate:	38.014 Mbps
Current Out Bitrate:	0.035 Mbps
TS Overflow:	<span style="color: green; font-size: 1.2em;">●</span>
RF Frequency:	474.000 MHz
RF Outlevel:	-10.0 dBm

Auf der Übersichtsseite sind alle Statuswerte ersichtlich.

Angezeigt wird die Version der Software, Hardware und Weboberfläche.

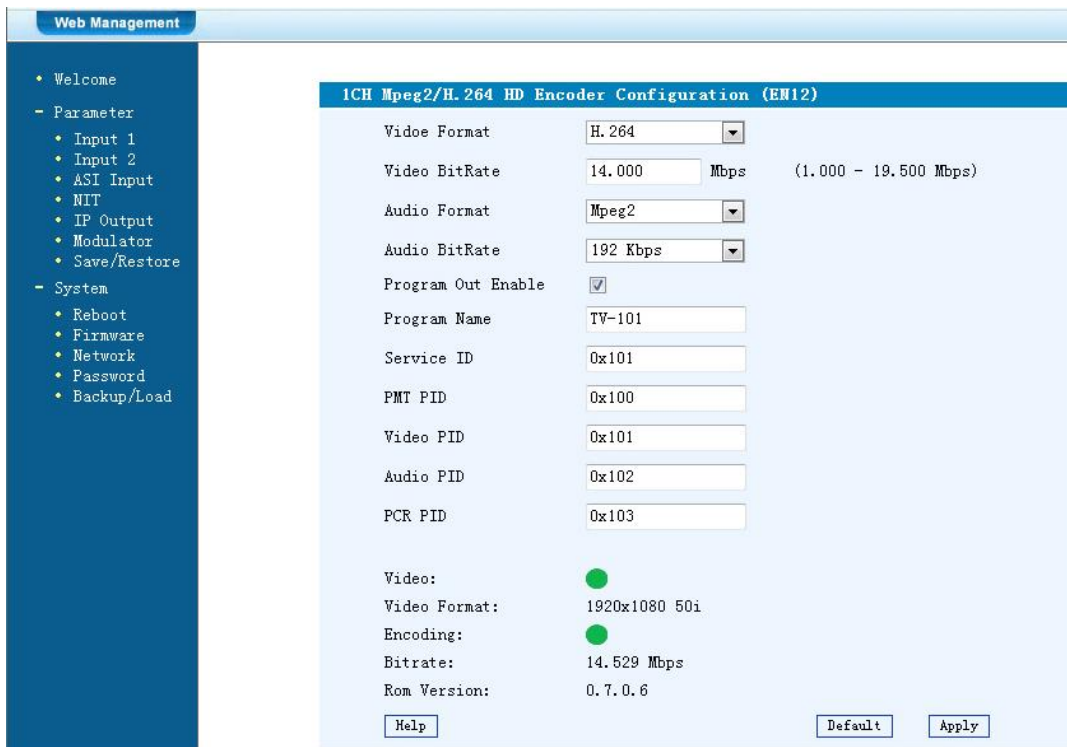
Zusätzlich können aktuelle Informationen über das Ein – und Ausgangssignal abgelesen werden.

In der linken Spalte können alle veränderbaren Parameter ausgewählt werden.

In dieser Version des HDM 1 sind folgende Punkte nicht aktiviert:

- **Input 2**
- **ASI Input**

## Input 1 Settings / Einstellungen



**Web Management**

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

**1CH Mpeg2/H.264 HD Encoder Configuration (EN12)**

Video Format:

Video BitRate:  Mbps (1.000 - 19.500 Mbps)

Audio Format:

Audio BitRate:

Program Out Enable:

Program Name:

Service ID:

PMT PID:

Video PID:

Audio PID:

PCR PID:

Video: ●

Video Format: 1920x1080 50i

Encoding: ●

Bitrate: 14.529 Mbps

Rom Version: 0.7.0.6

### Video Format:

Mpeg2 oder H.264

Standard: H.264

### Video Bit Rate:

Wert zwischen 1 und 19,5 Mbps einstellen

Standard: 8 Mbps

### Audio Format:

Auswahl: Mpeg2

Standard: Mpeg2

### Audio Bit Rate:

Auswahl: 64, 96, 128, 192, 256, 320 Kbps

Standard: 192 Kbps

### Program Out Enable / Program:

Standard: enable

### Program Name:

Hier kann dem Programm ein Name zugewiesen werden.

### Service ID, PMI, Video, Audio und PCR PID:

Das System erstellt automatisch die Standard Einstellungen.

Der User muss nur eingreifen, falls die gleiche PID in dem System bereits vergeben wurde.

### Video und Encoding Anzeige:

Die Anzeigen sollten grün leuchten.

### Video Format:

Zeigt das Format des Eingangssignals.

### Encoding:

Die Anzeigen sollten grün leuchten.

### Bitrate:

Zeigt die tatsächliche Encoding-Bitrate.

## NIT

In die NIT Einstellung muss nur in großen Netzen eingegriffen werden. Änderungen sollten nur von erfahrenen Nutzern durchgeführt werden.

Web Management

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - **NIT**
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

NIT Insert

Network Name		Network ID	0x0001
Transport Stream ID	0x0001	Original Network ID	0x0001
European <input type="radio"/>	NorDig V1 <input type="radio"/>	NorDig V2 <input type="radio"/>	
TSID	ONID	Freq(MHz)	Const
SymbolRate	LCN	<input type="button" value="Add"/> <input type="button" value="Del-All"/>	

## IP Output

Einstellungen für den IP Ausgang:

Web Management

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - **IP Output**
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

IP Output Configuration

IP Output Enable:  If not set, the following parameters will be no use, the IP Output will not work.

Service IP:  The IP Output port address. The format is xxx.xxx.xxx.xxx (like as 192.168.2.137).

Output IP:  The IP Output data receive address. The format is xxx.xxx.xxx.xxx (like as 224.2.2.2). After set the Output IP address, you must use the new address to receive IP Output data.

Subnet Mask:  General is 255.255.255.0, it is must the same in a local area network.

Gateway:  If the device is in different net segment, you must set the gateway.

Port:  The UDP protocol port (like as 8001), you should use Output IP and new port to receive IP Output data (like as udp://224.2.2.2:8001).

IP Output Enable:

Service IP:

Output IP:

Subnet Mask:

Gateway:

Port:

### IP Output:

IP Output "ON" oder "OFF"

### Service IP:

Eingangs-IP Adresse des HDM 1  
Standard: 192.168.002.137

### Output IP:

Multicast IP Adresse des ausgehenden Datenstroms

Standard: 224.002.002.002

Eingabe VLC Player: **udp://@ 224.002.002.002**

### Subnet Mask:

Standard: 255.255.255.000

### Gateway:

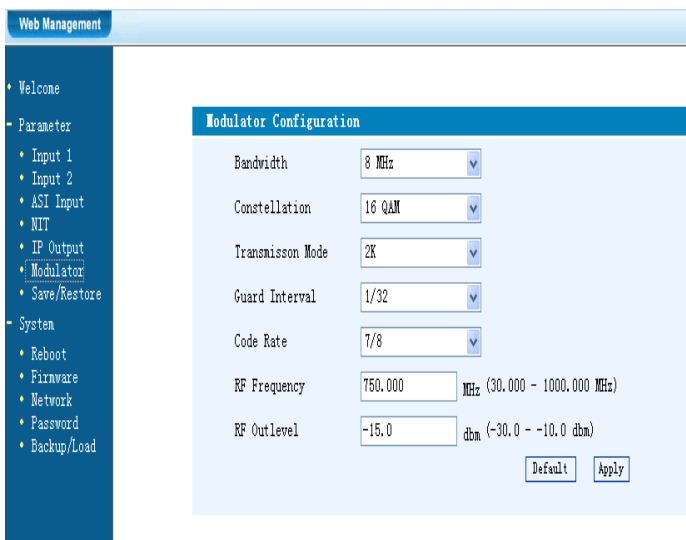
Standard: 192.168.002.000

### Port

Standard: 02234

## Modulator

### HDM 1 T:



The screenshot shows the 'Modulator Configuration' page in a web management interface. The left sidebar contains a navigation menu with options like 'Welcome', 'Parameter', 'Input 1', 'Input 2', 'ASI Input', 'NIT', 'IP Output', 'Modulator', 'Save/Restore', 'System', 'Reboot', 'Firmware', 'Network', 'Password', and 'Backup/Load'. The main content area displays the following configuration options:

- Bandwidth: 8 MHz
- Constellation: 16 QAM
- Transmission Mode: 2K
- Guard Interval: 1/32
- Code Rate: 7/8
- RF Frequency: 750.000 MHz (30.000 - 1000.000 MHz)
- RF Outlevel: -15.0 dbm (-30.0 - -10.0 dbm)

Buttons for 'Default' and 'Apply' are located at the bottom right of the configuration area.

### Bandwidth / Bandbreite:

Ausgangssignal-Bandbreite: 6, 7 oder 8 MHz

Standard: 8 MHz

### Constellation / QAM Mode:

Auswahl: QPSK, 16 QAM, 64 QAM

Standard: 64 QAM

### Transmission Mode:

Auswahl: 2k oder 8k

Standard: 2k

### Guard intervall:

Auswahl: 1/32, 1/16, 1/8 oder 1/4

Standard: 1/32

### Code rate:

Auswahl: 1/2, 2/3, 3/4, 5/6, 7/8

Standard: 5/6

### RF Frequency / Ausgangsfrequenz:

30-960 MHz

Standard: 474 MHz

### RF output level / Ausgangspegel:

Pegelbereich -30 dBm bis -10 dBm

-30 dBm = 79 dB $\mu$ V

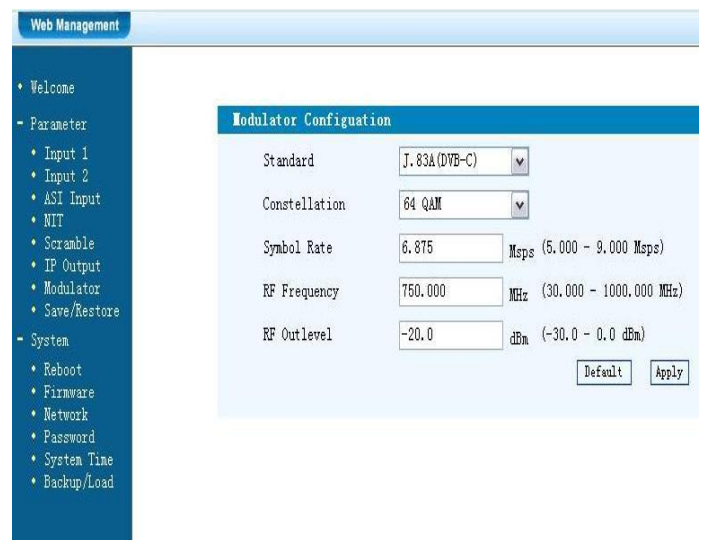
-25 dBm = 84 dB $\mu$ V

-20 dBm = 89 dB $\mu$ V

-15 dBm = 94 dB $\mu$ V

-10 dBm = 99 dB $\mu$ V

### HDM 1 C:



The screenshot shows the 'Modulator Configuration' page in a web management interface. The left sidebar contains a navigation menu with options like 'Welcome', 'Parameter', 'Input 1', 'Input 2', 'ASI Input', 'NIT', 'Scramble', 'IP Output', 'Modulator', 'Save/Restore', 'System', 'Reboot', 'Firmware', 'Network', 'Password', 'System Time', and 'Backup/Load'. The main content area displays the following configuration options:

- Standard: J.83A (DVB-C)
- Constellation: 64 QAM
- Symbol Rate: 6.875 Msps (5.000 - 9.000 Msps)
- RF Frequency: 750.000 MHz (30.000 - 1000.000 MHz)
- RF Outlevel: -20.0 dbm (-30.0 - 0.0 dbm)

Buttons for 'Default' and 'Apply' are located at the bottom right of the configuration area.

### Standard:

Auswahl: J.83A, J.83B, J.83C

Standard: J.83A (DVB-C)

### Constellation / QAM Mode:

Auswahl: 16 QAM, 32 QAM, 64 QAM,

128 QAM, 256 QAM

Standard: 256 QAM

### Symbol Rate:

Auswahl 5 bis 9 Msps

Standard: 6,900 Msps

### RF Frequency / Ausgangsfrequenz:

30-960 MHz

Standard: 306 MHz

### RF output level / Ausgangspegel:

Pegelbereich -30 dBm bis -10 dBm

-30 dBm = 79 dB $\mu$ V

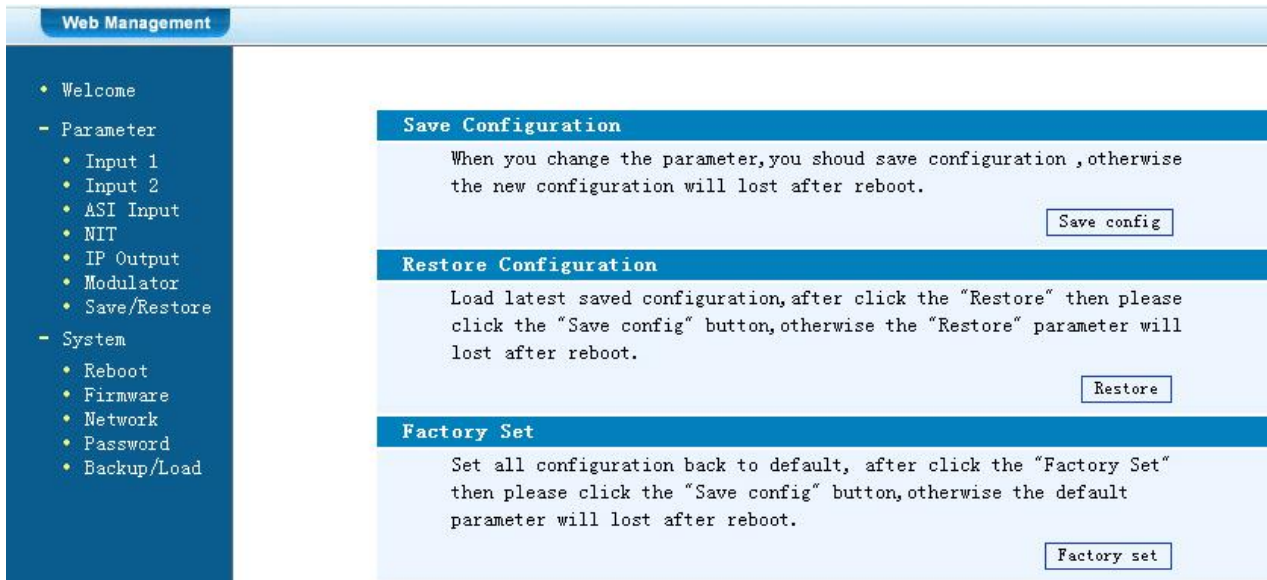
-25 dBm = 84 dB $\mu$ V

-20 dBm = 89 dB $\mu$ V

-15 dBm = 94 dB $\mu$ V

-10 dBm = 99 dB $\mu$ V

## Save and restore



The screenshot shows the 'Web Management' interface with a left-hand navigation menu and three main configuration sections on the right:

- Save Configuration:** A section with a blue header. The text reads: "When you change the parameter, you should save configuration, otherwise the new configuration will be lost after reboot." Below the text is a button labeled "Save config".
- Restore Configuration:** A section with a blue header. The text reads: "Load latest saved configuration, after click the 'Restore' then please click the 'Save config' button, otherwise the 'Restore' parameter will be lost after reboot." Below the text is a button labeled "Restore".
- Factory Set:** A section with a blue header. The text reads: "Set all configuration back to default, after click the 'Factory Set' then please click the 'Save config' button, otherwise the default parameter will be lost after reboot." Below the text is a button labeled "Factory set".

The left-hand navigation menu includes the following items:

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

### Save Configuration:

Ausgewählte Parameter speichern

### Restore Configuration:

Die zuletzt gespeicherten Parameter wiederherstellen.

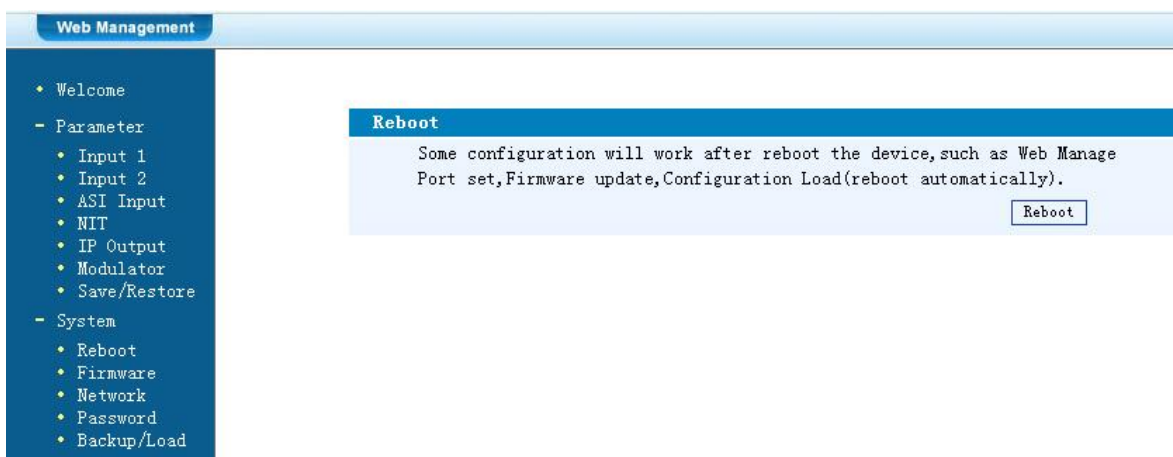
Danach speichern (Save Configuration) da sonst diese Daten bei einem Reboot verloren gehen.

### Factory Set:

Werkzeugeinstellungen: Stellt die „Default“-Parameter wieder her.

## Reboot

Neustart des HDM 1 nach Firmware update oder Einstellung anderer Parameter.



The screenshot shows the 'Web Management' interface with a left-hand navigation menu and a 'Reboot' section on the right:

- Reboot:** A section with a blue header. The text reads: "Some configuration will work after reboot the device, such as Web Manage Port set, Firmware update, Configuration Load (reboot automatically)." Below the text is a button labeled "Reboot".

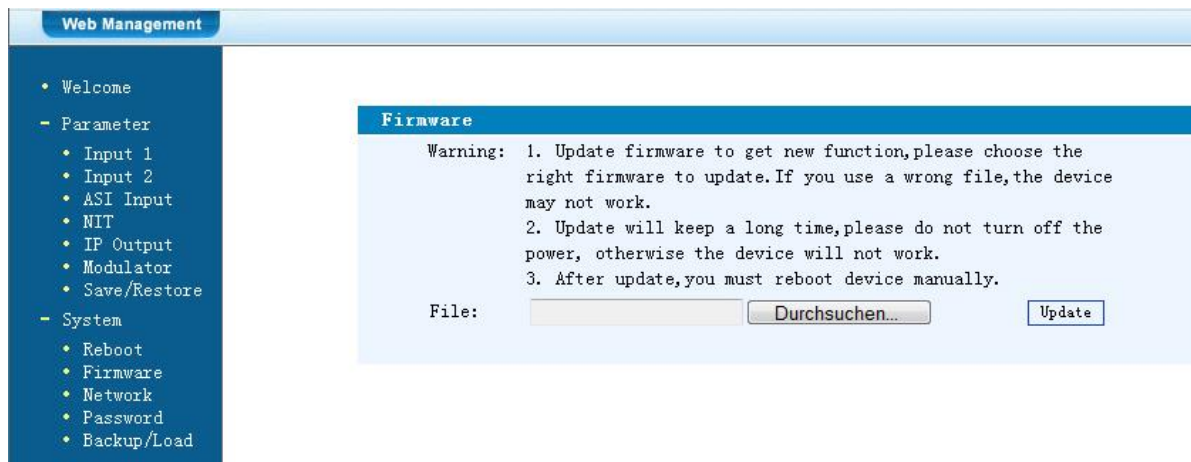
The left-hand navigation menu includes the following items:

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load



## Firmware Update

Mit "Durchsuchen" den Order mit dem Firmware-Update suchen und Datei auswählen.  
Danach auf „Update“ klicken.



**Web Management**

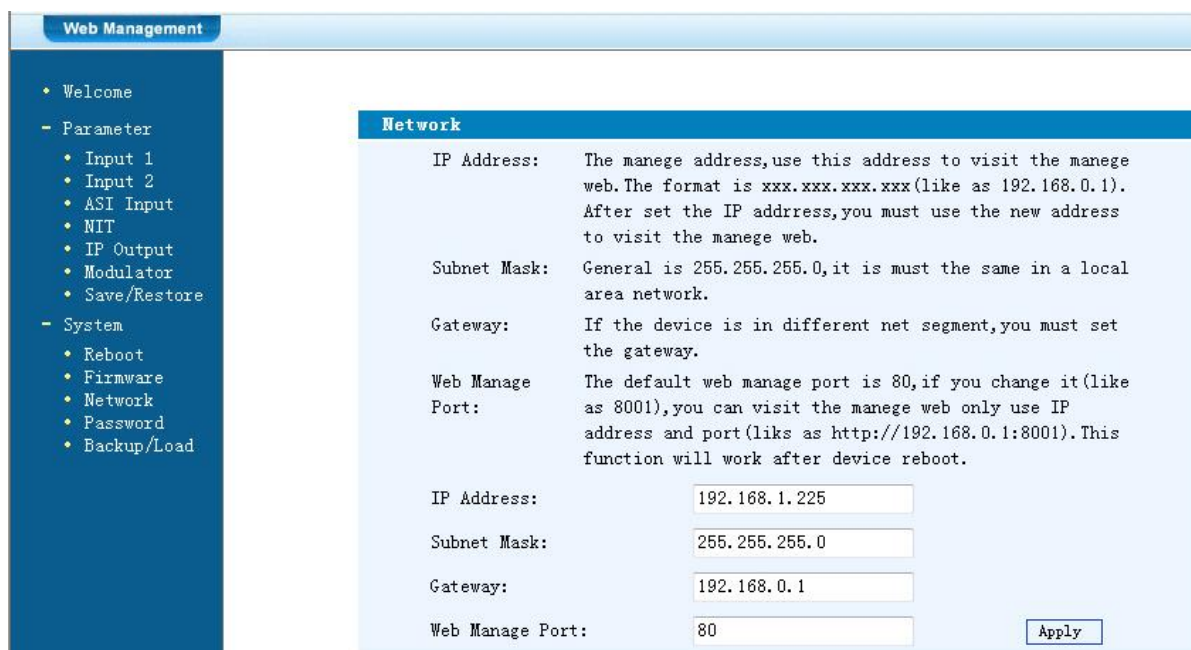
- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

**Firmware**

Warning: 1. Update firmware to get new function, please choose the right firmware to update. If you use a wrong file, the device may not work.  
2. Update will keep a long time, please do not turn off the power, otherwise the device will not work.  
3. After update, you must reboot device manually.

File:

## Network / Netzwerkeinstellungen



**Web Management**

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

**Network**

IP Address: The manege address, use this address to visit the manege web. The format is xxx.xxx.xxx.xxx (like as 192.168.0.1). After set the IP address, you must use the new address to visit the manege web.

Subnet Mask: General is 255.255.255.0, it is must the same in a local area network.

Gateway: If the device is in different net segment, you must set the gateway.

Web Manage Port: The default web manage port is 80, if you change it (like as 8001), you can visit the manege web only use IP address and port (like as http://192.168.0.1:8001). This function will work after device reboot.

IP Address:

Subnet Mask:

Gateway:

Web Manage Port:

### IP Address:

Einstellung der IP Adresse für den Webbrowser Zugang  
Standard: 192.168.001.225

### Subnet Mask:

Standard: 255.255.255.000

### Gateway:

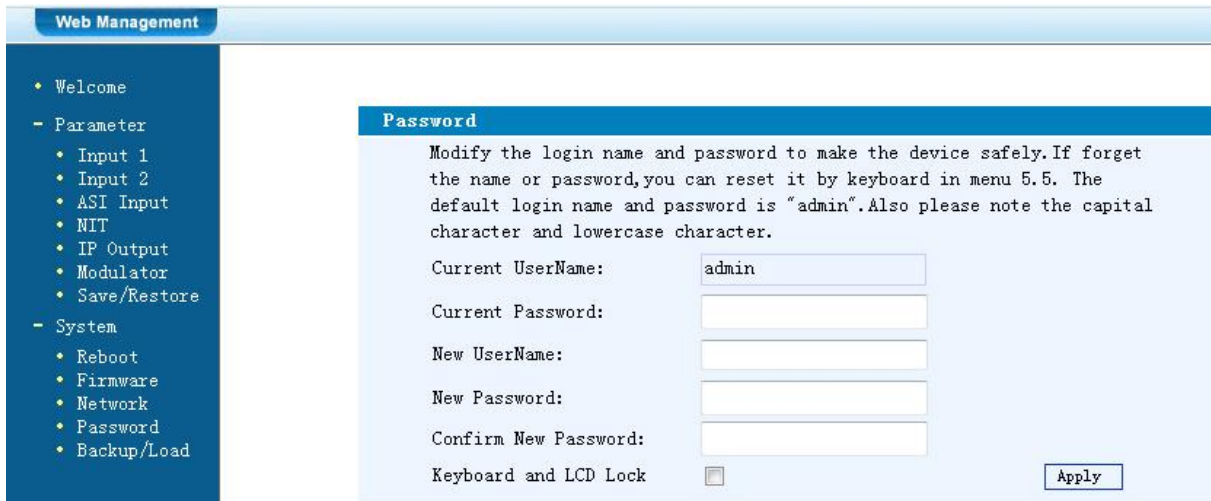
Standard: 192.168.000.001

### Web Manager Port:

Standard: 00080



## Password / Passwort und User Name ändern



**Web Management**

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

**Password**

Modify the login name and password to make the device safely. If forget the name or password, you can reset it by keyboard in menu 5.5. The default login name and password is "admin". Also please note the capital character and lowercase character.

Current UserName:

Current Password:

New UserName:

New Password:

Confirm New Password:

Keyboard and LCD Lock

### Current UserName:

Derzeitigen Benutzernamen eingeben (default admin)

### Current Password:

Derzeitiges Passwort eingeben (default admin)

### New UserName:

Neuen Usernamen eingeben

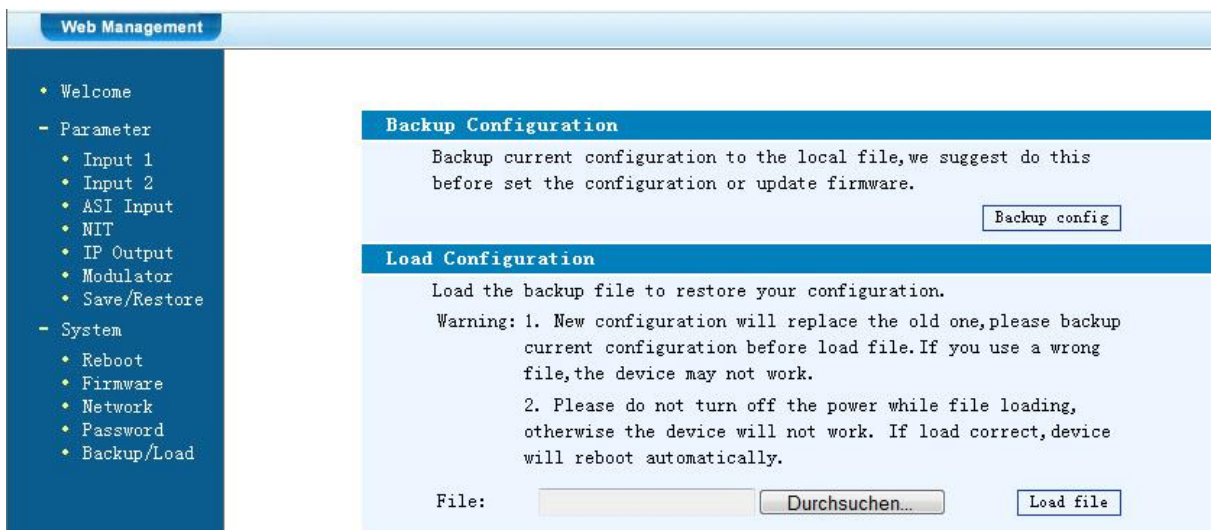
### New Password:

Neues Passwort eingeben

### Confirm New Password:

Passwort bestätigen

## Backup / Load



**Web Management**

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

**Backup Configuration**

Backup current configuration to the local file, we suggest do this before set the configuration or update firmware.

**Load Configuration**

Load the backup file to restore your configuration.

Warning: 1. New configuration will replace the old one, please backup current configuration before load file. If you use a wrong file, the device may not work.

2. Please do not turn off the power while file loading, otherwise the device will not work. If load correct, device will reboot automatically.

File:

### Backup Configuration:

Zum Speichern einer Backupdatei auf PC oder Notebook.

### Load Configuration:

Zum Laden einer Backupdatei von PC oder Notebook.

Mit "Durchsuchen" den Ordner mit der Backupdatei suchen und Datei auswählen.

Danach auf „Load file“ klicken.

## Mounting and safety instructions



### Attention

The rated voltage stated on the device must correspond with the mains voltage. The instructions for operating the device must be observed.



### Grounding and potential equalization

Please establish grounding and perform potential equalization before initial startup.



### Connection cable

Always install the connection cables with a loop so that no condensed water can penetrate along the cable.

### Select installation site

Install only on a solid, plane and at most fire-resistant surface. Avoid strong magnetic fields in the surroundings. Too strong heat effect or accumulation of heat will have an adverse effect on the durability. Don't mount directly over or nearby heating systems, open fire sources or the like, where the device is exposed to heat radiation or oil vapours. Don't block the ventilation slots of devices fitted with fans or heatsinks, as this will cause heat to build up inside the devices and may cause fire. Free air circulation is absolutely necessary to permit the device to function properly. It's imperative to observe the mounting position!



### Moisture

Protect the device from high humidity, dripping and splashing water. If there is condensation, wait until the device is completely dry. Operating environment according to the specified IP protection class.



### Caution! Danger of life!

According to the currently valid version of EN 60728-11, coaxial receiving and distribution systems must meet the safety requirements regarding grounding, potential equalization, etc., otherwise damage to the product, fire or other hazards may occur. Electrical fuses may only be replaced by authorised specialist persons. For the replacement of electric fuses, only same type and amperage have to be used. In case of damage the device has to be taken out of service.



### Mounting and service works

May be only done by authorized staff according to the rules of technology. Devices have to be switched off before starting any maintenance or service work. In order to guarantee interference immunity, all device covers must be screwed tight again after opening.



### Thunderstorm

Do not carry out maintenance or repair work on the device due to higher risk of lightning strike.



### Ambient temperature

Operation and storage only within the specified temperature range.



### Termination

Not used receiver and trunk line outputs have to be terminated with 75 Ohm-resistors.



### Caution! Laser beam -> risk of accidents due to blinding!

Don't look into the laser beam or at direct reflexes of reflecting or polished surfaces. There is a danger of injury to the eyes.



### Recycling

All of our packaging materials (packaging, identification sheet, plastic foil and bag) are fully recyclable.

## Precautions to ensure the electromagnetic compatibility (EMV)

All covers and screws must tightly be fitted and should be tightly fastened. Contact feathers should not be oxidized or deformed.

The operator or end user is self-responsible for the lawful use of the equipment and when doubt arises must get legal advice about the terms of usage

**NOTE** applies to technical requirements which must be taken into account to ensure a faultless function of the device/plant.

**ATTENTION** refers to instructions which have to be adhered exactly to avoid damage or destruction of the device.

**CAUTION** applies to instructions whose nonobservance doesn't exclude the endangering of persons.

At references to a component provided by a place number (e.g. figure 1/3) the reference corresponds to picture 1 place number 3

## Contents

Mounting and safety instructions .....	16
Description .....	17
Display and Buttons .....	18
Hand programming of the device.....	19-22
Programing via web browser (NMS).....	22-29
Factory settings.....	30
Technical data.....	31

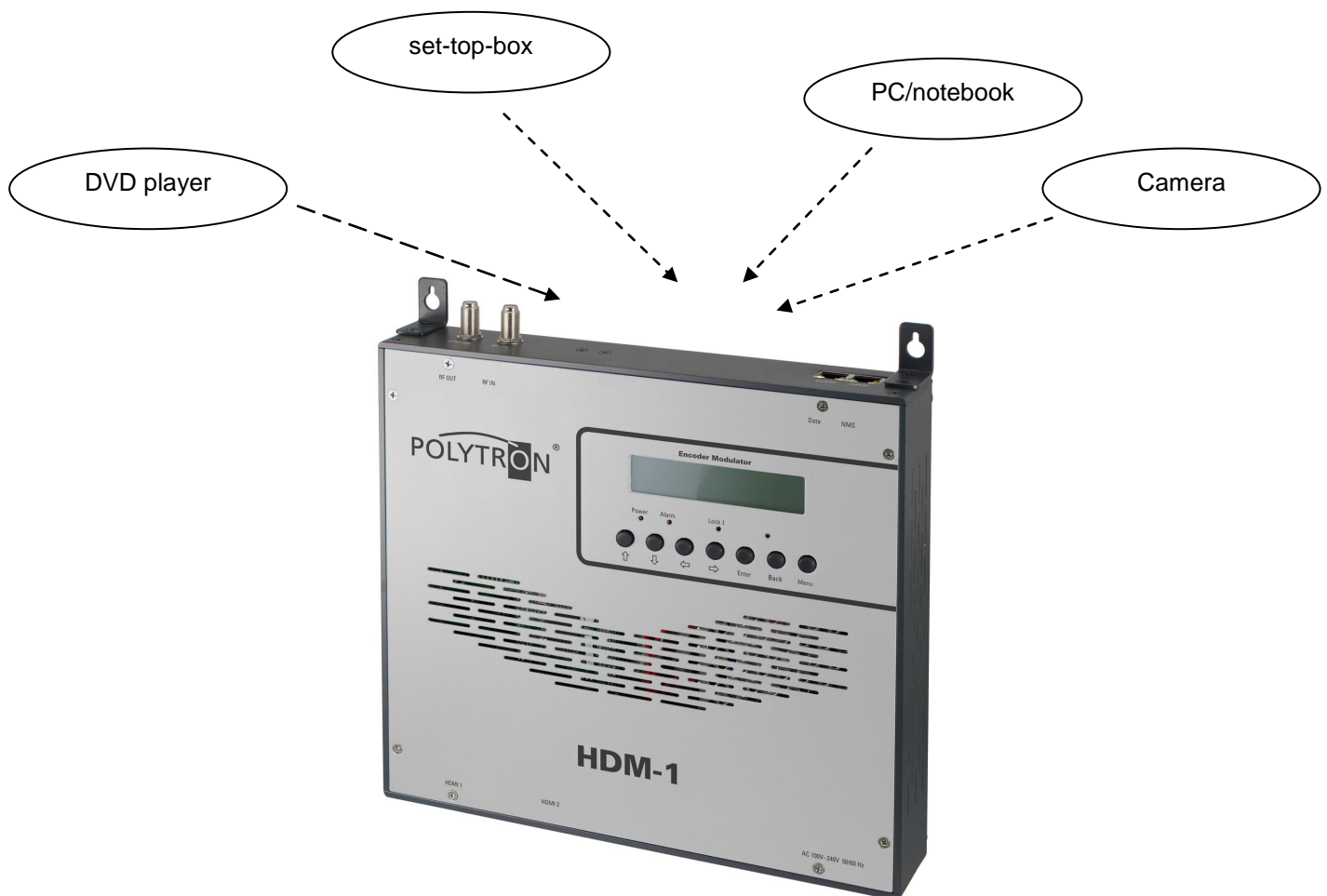
## Description

Modulator for conversion of a HDMI-Signal into a DVB-T (COFDM) or DVB-C (QAM) channel.

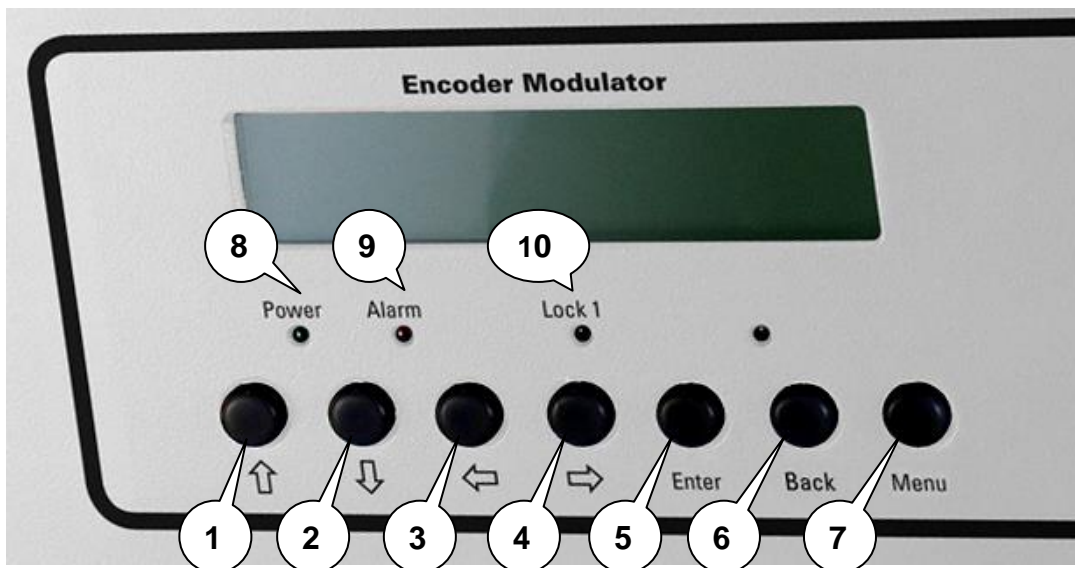
It is possible to distribute the HDMI signal, as an IP-stream, in IPTV networks.

The devices are wide range useable and can handle HDMI-signals from set-top-boxes, PC/notebooks, cameras, DVD players.

**NOTE** All data will remain intact after a power cut has occurred.



**Display and Buttons**



- 1 Button up in the menu
- 2 Button down in the menu
- 3 Button left in the menu
- 4 Button right in the menu
- 5 Button Enter (confirm selection)
- 6 Button Back (in menu one step back)
- 7 Button Menu (go inside menu and out)
- 8 Indicate Operating voltage
- 9 Indicate Alarm, if there is no signal
- 10 Indicate if there is a HDMI signal

**Connectors**



- 11 HDMI Input
- 12 Not in use
- 13 Mains connector / Mains switch / Mains fuse

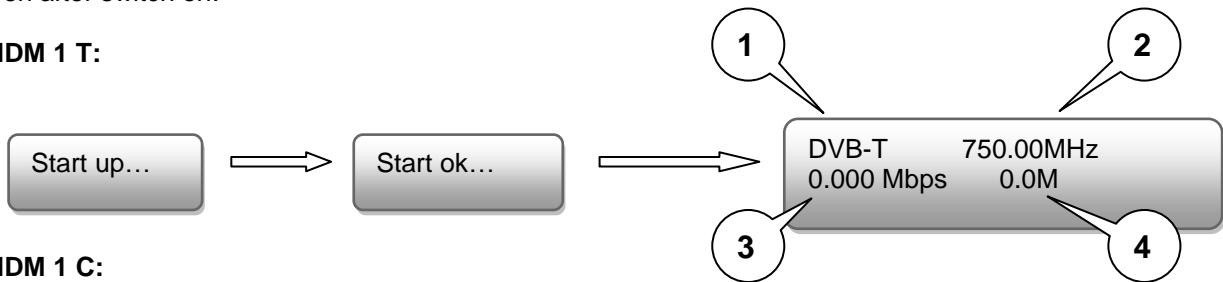


- 14 LAN input for programming via web browser
- 15 IP output
- 16 Combining-input (for external signal sources)
- 17 Output

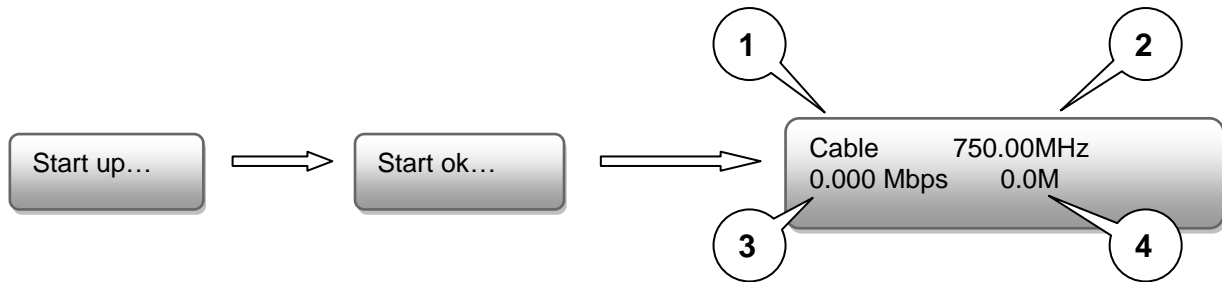
## Hand programming of the device

LCD Screen after switch on:

**For the HDM 1 T:**



**For the HDM 1 C:**



1. Shows the modulation of the output signal
2. Output frequency
3. Data rate of the output signal
4. Not relevant

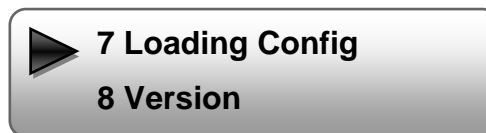
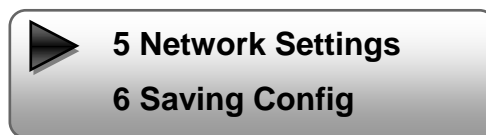
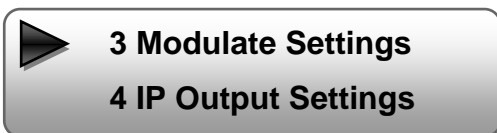
## Programming via Buttons

The main menu occurs after pushing the button "Menu".

Menu navigation by using arrow buttons.

Settings confirmation by "Enter".

One step back through pushing button "Back"



### 1. Alarm Status

If there is no HDMI signal at the input, the menu point "Alarm Status" will be shown: "No video in" and the alarm indicator (9) turns on. This lights also red if a bit rate overflow occurs at the output.

### 2. Input Settings

#### 2.1 Input 1:

In this version is only input 1 useable.

##### 2.1.1 Video Format

Selection: Mpeg2, H.264  
Default: H.264



### 2.1.2 Video Bit Rate:

Set value between 1 and 19,5 Mbps  
Default: 8 Mbps

### 2.1.3 Audio Format:

Selection: Mpeg2  
Default: Mpeg2

### 2.1.4 Audio Bit Rate:

Selection: 64, 96, 128, 192, 256, 320 Kbps  
Default: 192 Kbps

### 2.1.5 Low Latency

Selection: Normal, Mode1, Mode2  
Default: Normal

2.2 Input 2 no function

2.3 ASI no function

## 3. Modulator Settings

### HDM 1 T:

▶ 3.1 Bandwidth  
3.2 Constellation

▶ 3.3 Transmission Mode  
3.4 Guard Intervall

▶ 3.5 Code Rate  
3.6 RF Frequency

▶ 3.7 RF out level

#### 3.1 Bandwidth:

Output signal bandwidth: 6, 7 or 8 MHz  
Default: 8 MHz

#### 3.2 Constellation:

Selection: QPSK, 16 QAM, 64 QAM  
Default: 64 QAM

#### 3.3 Transmission Mode:

Selection: 2k oder 8k  
Default: 2k

#### 3.4 Guard intervall:

Selection: 1/32, 1/16, 1/8 oder 1/4  
Default: 1/32

#### 3.5 Code rate:

Selection: 1/2, 2/3, 3/4, 5/6, 7/8  
Default: 5/6

### HDM 1 C:

▶ 3.1 Standard  
3.2 Constellation

▶ 3.3 Symbol Rate  
3.4 RF Frequency

▶ 3.5 RF out level

#### 3.1 Standard:

Selection: J.83A, J.83B, J.83C  
Default: J.83A (DVB-C)

#### 3.2 Constellation:

Selection 16 QAM, 32 QAM, 64 QAM,  
128 QAM, 256 QAM  
Default: 256 QAM

#### 3.3 Symbol Rate:

Selection: 5 up to 9 Msps  
Default: 6,900 Msps

#### 3.4 RF Frequency:

Range: 30-960 MHz  
Default: 306 MHz

#### 3.5 RF output level:

Level range: -30 dBm to -10 dBm

-30 dBm = 79 dBμV  
-25 dBm = 84 dBμV  
-20 dBm = 89 dBμV  
-15 dBm = 94 dBμV  
-10 dBm = 99 dBμV



### 3.6 RF Frequency:

Range: 30-960 MHz  
Default: 474 MHz


### 3.7 RF output level:

Level range: -30 dBm to -10 dBm

- 30 dBm = 79 dB $\mu$ V
- 25 dBm = 84 dB $\mu$ V
- 20 dBm = 89 dB $\mu$ V
- 15 dBm = 94 dB $\mu$ V
- 10 dBm = 99 dB $\mu$ V

## 4. IP Output Settings

 **4.1 IP Output**  
**4.2 Service IP**

 **4.3 Output IP**  
**4.4 Subnet Mask**

 **4.5 Gateway**  
**4.6 Port**

#### 4.1 IP Output:

IP output "ON" or "OFF"

#### 4.2 Service IP:

Input-IP address of the HDM 1  
Default: 192.168.002.137

#### 4.3 Output IP:

Multicast IP address of the data stream  
Default: 224.002.002.002

#### 4.4 Subnet Mask:

Default: 255.255.255.000

#### 4.5 Gateway:

Default: 192.168.002.000

#### 4.6 Port:

Default: 02234

#### 4.7 Fit Null PKT (Null package insert)

Auswahl: „ON“ (Default) or „OFF“

## 5. Network Settings

#### 5.1 IP Address:

IP address for web browser access  
Default: 192.168.001.225

#### 5.2 Subnet Mask:

Default: 255.255.255.000

#### 5.3 Gateway:

Default: 192.168.000.001

#### 5.4 MAC Address:

Unique address from the producer.

#### 5.5 Reset Password:

Selection: "Yes" or "No". Restores the default password and Username  
(Password: admin and Username: admin).

#### 5.6 Web Manager Port:

Default: 00080

## 6. Save config

Select "Yes" or "No"

## 7. Loading config

### 7.1 Load saved settings

Select "Yes" or "No".

### 7.2 Load default

Select "Yes" or "No".

**Attention: After a reset, the output parameters must be set to the standard values according to the operating instructions.**

## 8. Version

Software and Hardware Version

## Programming via web browser (NMS)

Connect PC or laptop, via standard network cable, with the NMS-socket.

If you use a Proxy server, please deactivate them in the network settings.

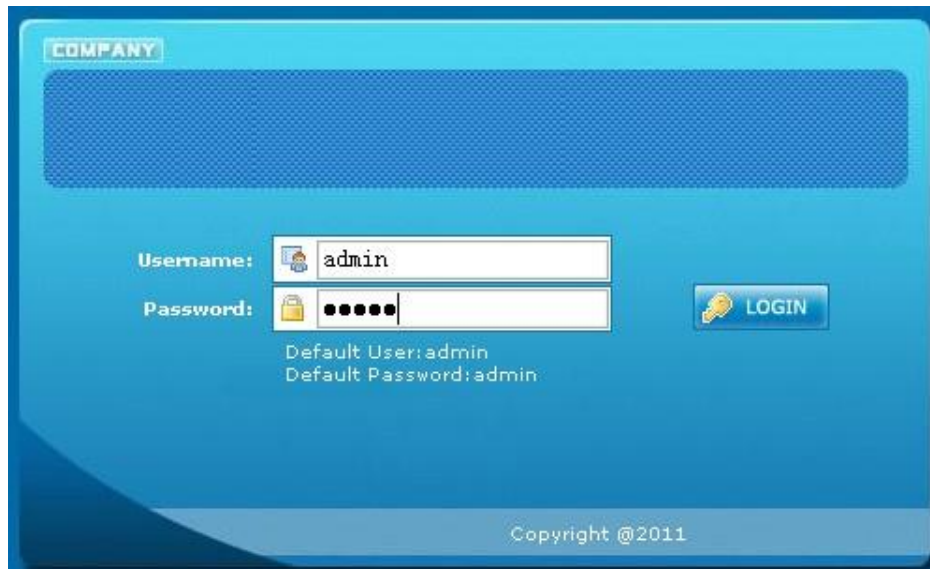
The PC has to be in the same network like the HDM 1 device. Default IP address of the device is 192.168.001.225. The PC needs in this case the IP address: 192.168.001.xxx. Not allowed is 0, 255 or already used ip addresses. This settings can be done in Windows -> Network connections -> LAN connection.

IP address to enter the web browser:

<http://192.168.001.225>

Username: admin

Password: admin



## Overview page

Web Management

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

Cable Encoder Modulator

Version Information

Software Version:	4.05h Build 131 Feb 25 2013
Hardware Version:	5.3
Web Version:	4.01

Status Information

Input		
	Input 1	Input 2
Interface:	HDMI	unknown
Bitrate:	0.000 Mbps	0.000 Mbps

Output	
Maxout Bitrate:	38.014 Mbps
Current Out Bitrate:	0.035 Mbps
TS Overflow:	<span style="color: green; font-size: 1.2em;">●</span>
RF Frequency:	474.000 MHz
RF Outlevel:	-10.0 dBm

On the overview page are all parameters visible.

Displayed is the version of the software, hardware and web interface.

Additionally shown is current information about the input and output signal.

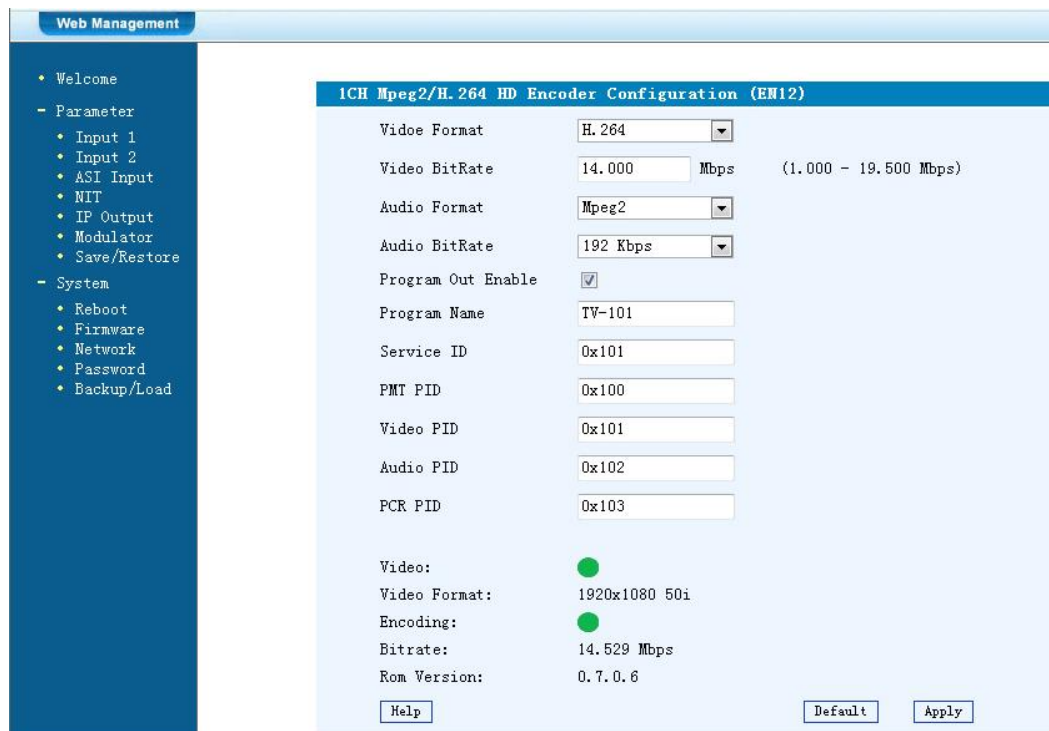
In the left column can all adjustable parameters be selected.

In this version of the HDM 1 are following points not available:

- **Input 2**
- **ASI Input**

23

## Input 1 Settings



The screenshot shows the 'Web Management' interface with a sidebar menu on the left and a main configuration area on the right. The sidebar menu includes 'Welcome', 'Parameter' (with sub-items: Input 1, Input 2, ASI Input, NIT, IP Output, Modulator, Save/Restore), and 'System' (with sub-items: Reboot, Firmware, Network, Password, Backup/Load). The main configuration area is titled '1CH Mpeg2/H.264 HD Encoder Configuration (EW12)' and contains the following settings:

Video Format	H.264	
Video BitRate	14.000	Mbps (1.000 - 19.500 Mbps)
Audio Format	Mpeg2	
Audio BitRate	192 Kbps	
Program Out Enable	<input checked="" type="checkbox"/>	
Program Name	TV-101	
Service ID	0x101	
PMT PID	0x100	
Video PID	0x101	
Audio PID	0x102	
PCR PID	0x103	
Video:	<input checked="" type="checkbox"/>	
Video Format:	1920x1080 50i	
Encoding:	<input checked="" type="checkbox"/>	
Bitrate:	14.529 Mbps	
Rom Version:	0.7.0.6	

At the bottom of the configuration area, there are three buttons: 'Help', 'Default', and 'Apply'.

### Video Format:

Mpeg2 or H.264  
Standard: H.264

### Video Bit Rate:

Set value between 1 and 19,5 Mbps  
Default: 8 Mbps

### Audio Format:

Mpeg2, Mpeg2 AAC or Mpeg4 AAC  
Standard: Mpeg2

### Audio Bit Rate:

Selection: 64, 96, 128, 192, 256, 320 Kbps  
Default: 192 Kbps

### Program Out enable:

If there is no HDMI signal only the channel name will be shown.  
If an input is not used, the program can be here switched off.  
With the hook you choose also the output channel (A up to D)

### Program Name:

Assign a free selectable name to the program.

### Service ID, PMI, Video, Audio und PCR PID:

The system creates automatically the default settings.  
Is the PID already used in the system, the user has to change this settings.

### Video and Encoding:

The points should light green.

### HDMI Input:

Show if there is an input signal.

### Video Format:

The format of the input signal is shown.

### Bitrate:

Displays the current encoding bitrate.

## NIT

The NIT settings have only to be modified in large networks.

Web Management

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - **NIT**
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

NIT Insert

Network Name		Network ID	0x0001
Transport Stream ID	0x0001	Original Network ID	0x0001
European <input type="radio"/>		NorDig V1 <input type="radio"/>	
		NorDig V2 <input type="radio"/>	
TSID	ONID	Freq(MHz)	Const
		SymbolRate	LCN
		<input type="button" value="Add"/> <input type="button" value="Del-All"/>	
<input type="button" value="Help"/>		<input type="button" value="Update NIT"/> <input type="button" value="Clear NIT"/>	

## IP Output

Settings for IP output

Web Management

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - **IP Output**
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

IP Output Configuration

IP Output Enable:  If not set, the following parameters will be no use, the IP Output will not work.

Service IP:  The IP Output port address. The format is xxx.xxx.xxx.xxx (like as 192.168.2.137).

Output IP:  The IP Output data receive address. The format is xxx.xxx.xxx.xxx (like as 224.2.2.2). After set the Output IP address, you must use the new address to receive IP Output data.

Subnet Mask:  General is 255.255.255.0, it is must the same in a local area network.

Gateway:  If the device is in different net segment, you must set the gateway.

Port:  The UDP protocol port (like as 8001), you should use Output IP and new port to receive IP Output data (like as udp://224.2.2.2:8001).

IP Output Enable:

Service IP:

Output IP:

Subnet Mask:

Gateway:

Port:

### IP Output:

IP output "ON" or "OFF"

### Service IP:

Input-IP address of the HDM 1

Default: 192.168.002.137

**Output IP:**

Multicast IP address of the data stream  
 Default: 224.002.002.002  
 Input VLC Player: **udp://@ 224.002.002.002**

**Subnet Mask:**

Default: 255.255.255.000

**Gateway:**

Default: 192.168.002.000

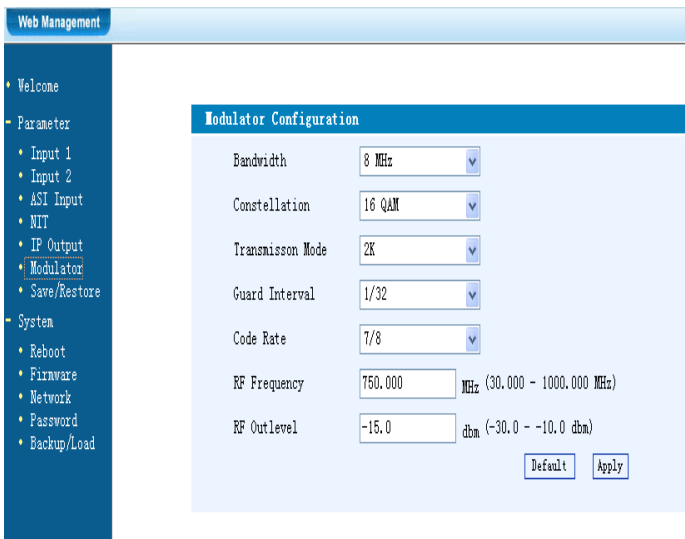
**Port:**

Default: 02234

**Modulator**

**HDM 1 T:**

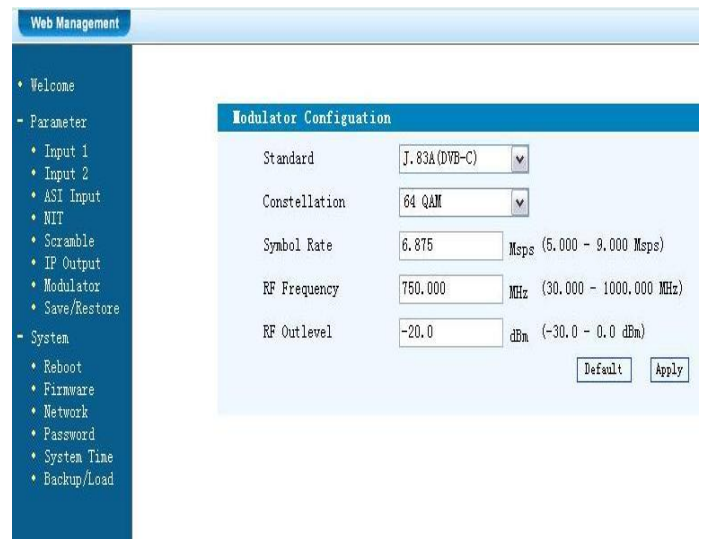
**HDM 1 C:**



The screenshot shows the 'Modulator Configuration' interface for HDM 1 T. The left sidebar contains a navigation menu with options like 'Welcome', 'Parameter', 'Input 1', 'Input 2', 'ASI Input', 'NIT', 'IP Output', 'Modulator', 'Save/Restore', 'System', 'Reboot', 'Firmware', 'Network', 'Password', and 'Backup/Load'. The main configuration area includes the following settings:

- Bandwidth: 8 MHz
- Constellation: 16 QAM
- Transmission Mode: 2K
- Guard Interval: 1/32
- Code Rate: 7/8
- RF Frequency: 750.000 MHz (30.000 - 1000.000 MHz)
- RF OutLevel: -15.0 dbm (-30.0 - -10.0 dbm)

Buttons for 'Default' and 'Apply' are located at the bottom right of the configuration area.



The screenshot shows the 'Modulator Configuration' interface for HDM 1 C. The left sidebar contains a navigation menu with options like 'Welcome', 'Parameter', 'Input 1', 'Input 2', 'ASI Input', 'NIT', 'Scramble', 'IP Output', 'Modulator', 'Save/Restore', 'System', 'Reboot', 'Firmware', 'Network', 'Password', 'System Time', and 'Backup/Load'. The main configuration area includes the following settings:

- Standard: J.83A (DVB-C)
- Constellation: 64 QAM
- Symbol Rate: 6.875 Msps (5.000 - 9.000 Msps)
- RF Frequency: 750.000 MHz (30.000 - 1000.000 MHz)
- RF Outlevel: -20.0 dbm (-30.0 - 0.0 dbm)

Buttons for 'Default' and 'Apply' are located at the bottom right of the configuration area.

**Bandwidth:**

Output bandwidth: 6, 7 or 8 MHz  
 Default: 8 MHz

**Constellation:**

Selection: QPSK, 16 QAM, 64 QAM  
 Default: 64 QAM

**Transmission Mode:**

Selection: 2k oder 8k  
 Default: 2k

**Guard intervall:**

Selection: 1/32, 1/16, 1/8 oder ¼  
 Default: 1/32

**Code rate:**

Selection: 1/2, 2/3, 3/4, 5/6, 7/8  
 Default: 5/6

**RF Frequency:**

Range: 30-960 MHz  
 Default: 474 MHz

**RF output level:**

Range -30 dBm to -10 dBm

- 30 dBm = 79 dBµV
- 25 dBm = 84 dBµV
- 20 dBm = 89 dBµV
- 15 dBm = 94 dBµV
- 10 dBm = 99 dBµV

**Standard:**

Selection: J.83A, J.83B, J.83C  
 Default: J.83A (DVB-C)

**Constellation:**

Selection: 16 QAM, 32 QAM, 64 QAM, 128 QAM, 256 QAM  
 Default: 256 QAM

**Symbol Rate:**

Selection: 5 up to 9 Msps  
 Default: 6,900 Msps

**RF Frequency:**

Range: 30-960 MHz  
 Default: 306 MHz

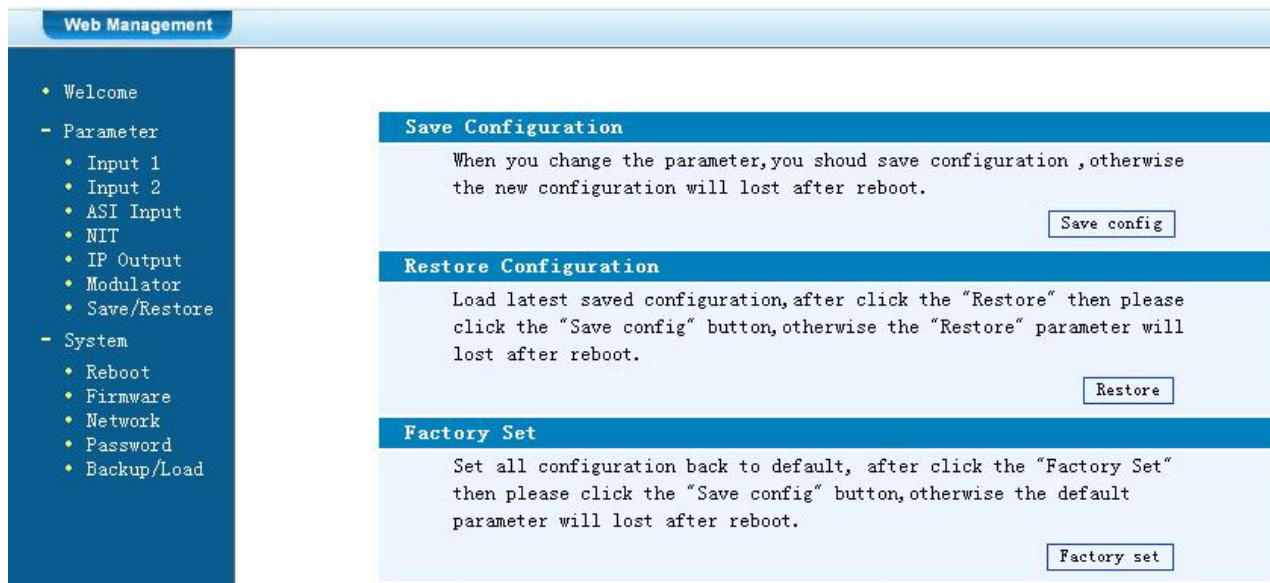
**RF output level:**

Range -30 dBm to -10 dBm

- 30 dBm = 79 dBµV
- 25 dBm = 84 dBµV
- 20 dBm = 89 dBµV
- 15 dBm = 94 dBµV
- 10 dBm = 99 dBµV



## Save and restore



The screenshot shows the 'Web Management' interface with a left sidebar and a main content area. The sidebar contains a menu with the following items:

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

The main content area displays three sections:

- Save Configuration**: When you change the parameter, you should save configuration, otherwise the new configuration will be lost after reboot.
- Restore Configuration**: Load latest saved configuration, after click the "Restore" then please click the "Save config" button, otherwise the "Restore" parameter will be lost after reboot.
- Factory Set**: Set all configuration back to default, after click the "Factory Set" then please click the "Save config" button, otherwise the default parameter will be lost after reboot.

### Save Configuration:

Save settings

### Restore Configuration:

Restore the last saved parameters.

Save after (Save Configuration).

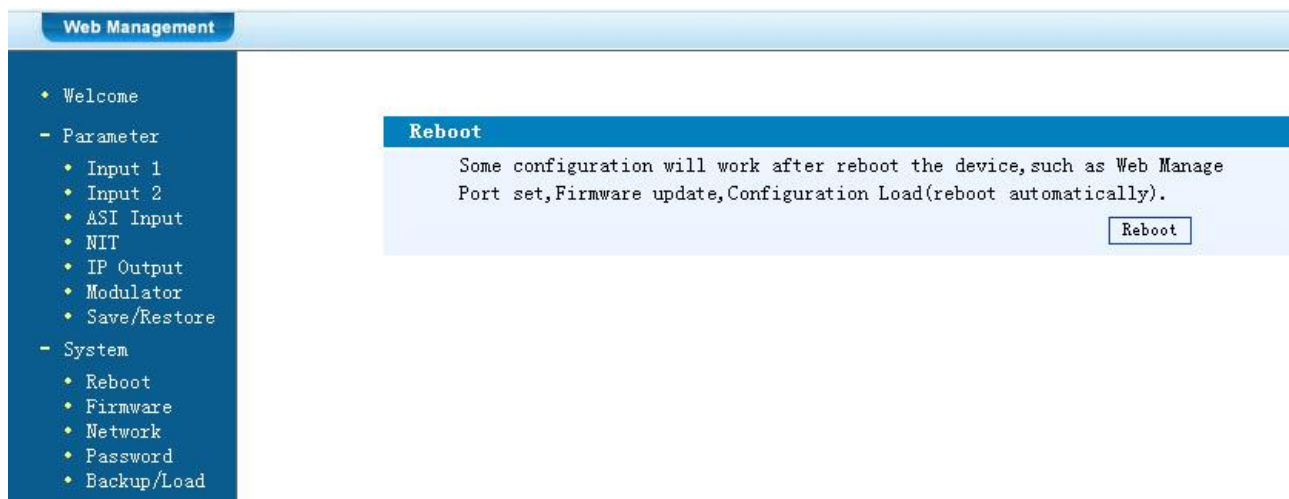
If not, the settings will be lost after the next reboot.

### Factory Settings:

Restore the default settings.

## Reboot

Reboot after firmware update or using new adjustments.



The screenshot shows the 'Web Management' interface with a left sidebar and a main content area. The sidebar contains a menu with the following items:

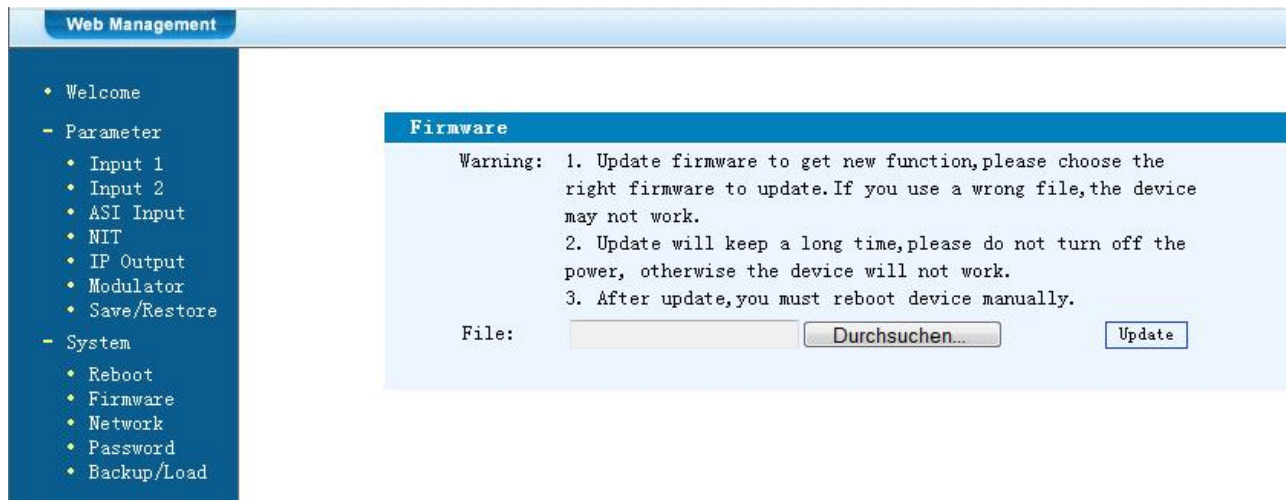
- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

The main content area displays one section:

- Reboot**: Some configuration will work after reboot the device, such as Web Manage Port set, Firmware update, Configuration Load (reboot automatically).

## Firmware Update

Choose with “Search or Find”, the directory where the firmware update is located.  
Then click to the button „Update“.



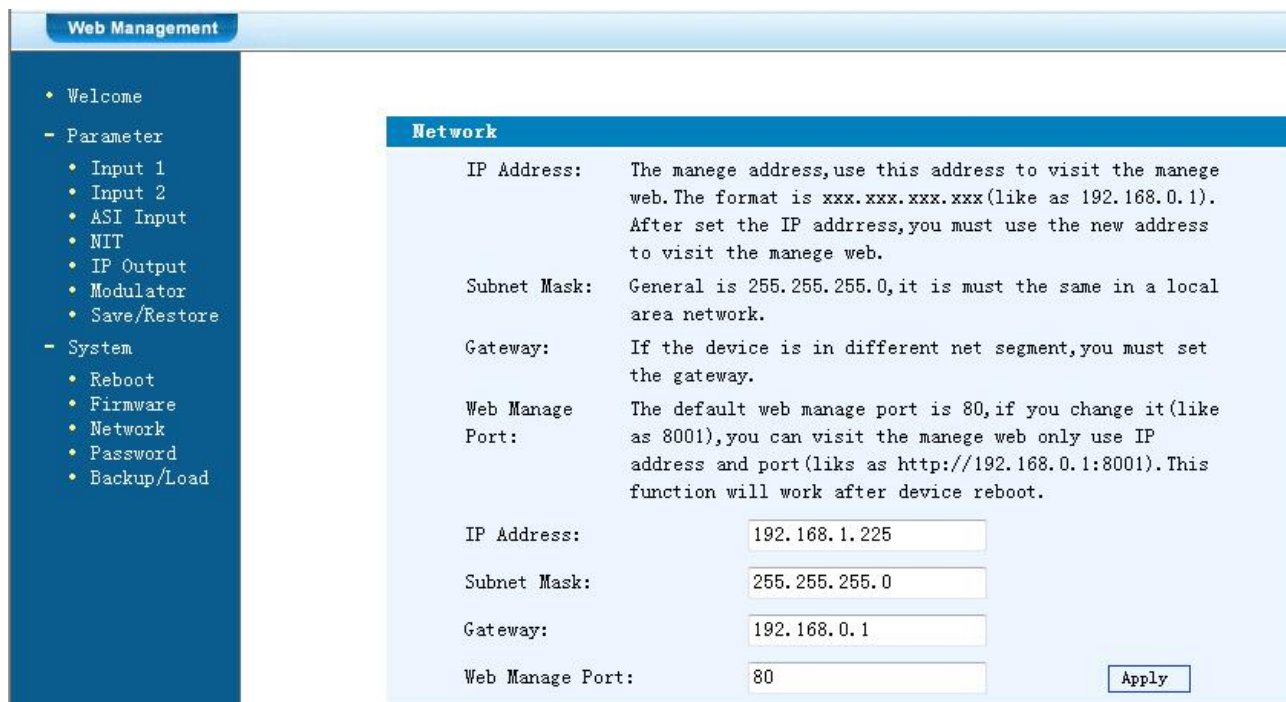
The screenshot shows the 'Web Management' interface. On the left is a navigation menu with 'Parameter' expanded to show 'Firmware'. The main content area is titled 'Firmware' and contains a warning message and a file selection interface.

**Warning:**

1. Update firmware to get new function, please choose the right firmware to update. If you use a wrong file, the device may not work.
2. Update will keep a long time, please do not turn off the power, otherwise the device will not work.
3. After update, you must reboot device manually.

File:

## Network



The screenshot shows the 'Web Management' interface with the 'Network' section selected. The left navigation menu has 'System' expanded to 'Network'. The main content area is titled 'Network' and lists configuration parameters with their descriptions and input fields.

**Network**

**IP Address:** The manage address, use this address to visit the manage web. The format is xxx.xxx.xxx.xxx (like as 192.168.0.1). After set the IP address, you must use the new address to visit the manage web.

**Subnet Mask:** General is 255.255.255.0, it is must the same in a local area network.

**Gateway:** If the device is in different net segment, you must set the gateway.

**Web Manage Port:** The default web manage port is 80, if you change it (like as 8001), you can visit the manage web only use IP address and port (like as http://192.168.0.1:8001). This function will work after device reboot.

IP Address:

Subnet Mask:

Gateway:

Web Manage Port:

### IP Address:

IP address for web browser access  
Default: 192.168.001.225

### Subnet Mask:

Default 255.255.255.000

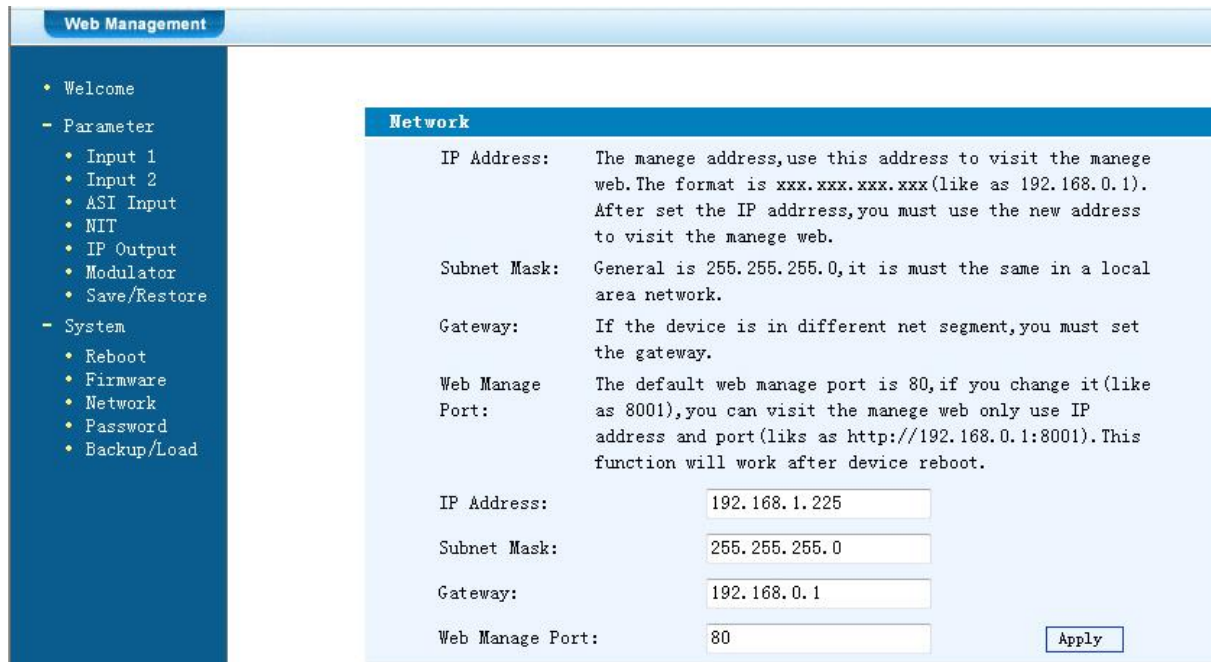
### Gateway:

Default 192.168.000.001

### Web Manager Port:

Default 00080

## Password



**Web Management**

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

**Network**

IP Address: The manage address, use this address to visit the manage web. The format is xxx.xxx.xxx.xxx (like as 192.168.0.1). After set the IP address, you must use the new address to visit the manage web.

Subnet Mask: General is 255.255.255.0, it is must the same in a local area network.

Gateway: If the device is in different net segment, you must set the gateway.

Web Manage Port: The default web manage port is 80, if you change it (like as 8001), you can visit the manage web only use IP address and port (like as http://192.168.0.1:8001). This function will work after device reboot.

IP Address:

Subnet Mask:

Gateway:

Web Manage Port:

### Current UserName:

Enter current UserName (default admin)

### Current Password:

Enter current Password (default admin)

### New UserName:

Enter new UserName

### New Password:

Enter new Password

### Confirm New Password:

Confirm the new password

## Backup / Load

### Backup Configuration:

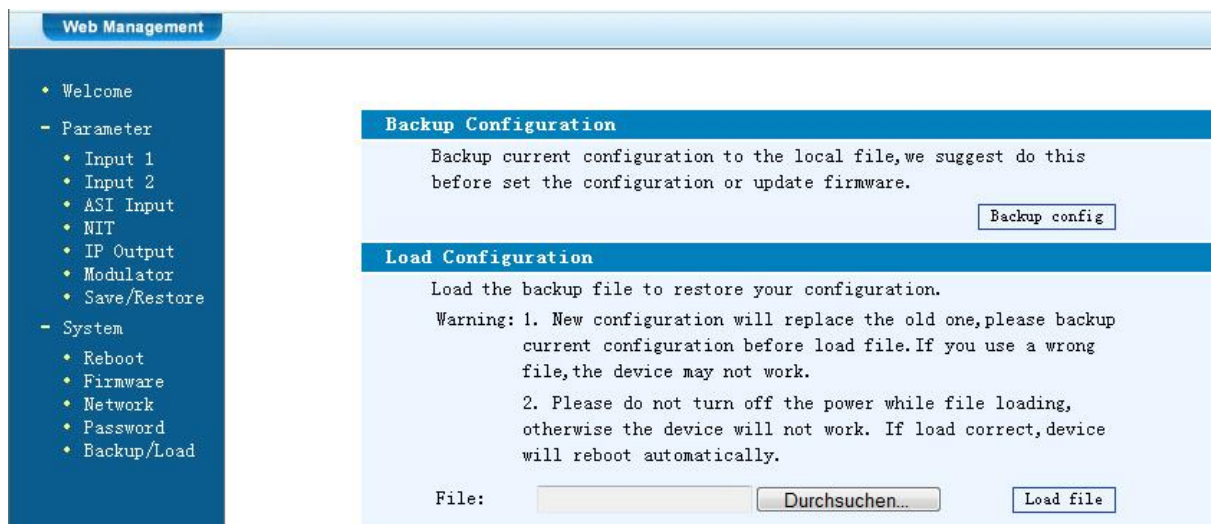
Save a backup file on PC or notebook.

### Load Configuration:

Load a backup file from PC or notebook.

Choose with "Search or Find", the directory where the backup file is located.

Then click to the button „Load file“



**Web Management**

- Welcome
- Parameter
  - Input 1
  - Input 2
  - ASI Input
  - NIT
  - IP Output
  - Modulator
  - Save/Restore
- System
  - Reboot
  - Firmware
  - Network
  - Password
  - Backup/Load

**Backup Configuration**

Backup current configuration to the local file, we suggest do this before set the configuration or update firmware.

**Load Configuration**

Load the backup file to restore your configuration.

Warning: 1. New configuration will replace the old one, please backup current configuration before load file. If you use a wrong file, the device may not work.

2. Please do not turn off the power while file loading, otherwise the device will not work. If load correct, device will reboot automatically.

File:

## Grundeinstellungen im Auslieferungszustand / Factory settings

Die HDM-Geräte sind im Auslieferungszustand entsprechend der Hardware-Bestückung vorkonfiguriert. Die Eingangssignale sind als H.264 Signale festgelegt. Die Modulator-Ausgänge sind alle aktiv. Am ASI-Ausgang wird das Signal des Modulators A zur Verfügung gestellt.

### HINWEIS

Die Modulatoren der DVB-C-Geräte sind nach Norm J.83A (DVB-C Annex A) vorkonfiguriert!

Der Auslieferungszustand kann jederzeit durch „Factory set“ hergestellt werden. Alle Transportstrominformationen werden neutral vorgegeben und können den Erfordernissen des Kabelnetzbetreibers angepasst werden.

The HDM devices are preconfigured in the delivery state according to the hardware configuration.

The input signals are defined as H.264 signals. The modulator outputs are all active. The signal of the modulator A is provided at the ASI output.

### Note

The modulators of the DVB-C devices are pre-configured according standard J.83A (DVB-C Annex A)!

The delivery status can be established at any time by "Factory set". All transport stream information is given neutral and can be adapted to the requirements of the cable network operator.

Die Grundeinstellungen der Geräte sind nachfolgend dargestellt/The basic settings of the devices are shown below:

	HDM 2 C01	HDM 2 T01
<b>Network*</b>		
IP Address	192.168.001.225	
Subnet mask	255.255.255.000	
Gateway	192.168.000.001	
Web NMS Port	80	
Login Username	admin	
Login Password	admin	
<b>Input 1</b>		
Video Format	H.264	
Aspect Ratio	Auto	
Low delay	Normal	
Video Bit Rate (Mbps)	8	
H.264 Profile	High Profile	
H.264 Level	Level 4.0	
Audio Format	Mpeg 2	
Audio Bit Rate	192 kbps	
Audio Gain (0-400%)	100%	
<b>IP Output</b>	all streams are activated	
SPTS	224.002.002.002 Port 2234 UDP	
Service IP	192.168.002.137	
Subnet mask	255.255.255.000	
Gateway	192.168.002.000	
<b>Modulator</b>	<b>DVB-C</b>	<b>DVB-T</b>
Standard	J.83A (DVB-C Annex A)	/
Constellation	256 QAM	64 QAM
Symbol Rate	6,9 Msps	/
Bandwidth	/	8 MHz
FFT Mode	/	1/32
Guard Interval	/	5/6
RF Frequency	306,00 MHz	474,00 MHz
RF Output level	-16,00 dBm	-16,00 dBm

\* Wird der Auslieferungszustand erneut hergestellt, so bleiben die Netzwerkeinstellungen unverändert gemäß der zuletzt gesicherten Konfigurationen erhalten.

\* If the delivery status is re-established, the network settings remain unchanged in accordance with the most recently saved configurations.

## Technische Daten / Technical Data

Typ / Type	HDM 1 C	HDM 1 T
Artikel-Nr. / Article no.	5741650	5741640
<b>Encoder Video</b>		
Videoformat / Video Format	MPEG-2 / MPEG-4	MPEG-2 / MPEG-4
Eingang / Input	1x HDMI	1x HDMI
Auflösung / Resolution	1920x1080_60P, 1920x1080_50P (for MPEG-4 AVC/H.264 only), 1920x1080_60i, 1920x1080_50i, 1280x720_60p, 1280x720_50P, 720x480_60i, 720x576_50i	1920x1080_60P, 1920x1080_50P (for MPEG-4 AVC/H.264 only), 1920x1080_60i, 1920x1080_50i, 1280x720_60p, 1280x720_50P, 720x480_60i, 720x576_50i
<b>Encoder Audio</b>		
Audioformat / Audio Format	MPEG1 Layer	MPEG1 Layer II
Samplingrate / Sampling Rate	48 kHz	48 kHz
Bit Rate	64 kbps, 96 kbps, 128 kbps, 192 kbps, 256 kbps, 320 kbps	64 kbps, 96 kbps, 128 kbps, 192 kbps, 256 kbps, 320 kbps
<b>Modulator</b>		
	<b>1x DVB-C</b>	<b>1xDVB-T</b>
Bandbreite / Bandwidth	6, 7, 8 MHz	6, 7, 8 MHz
Modulation	16 / 32 / 64 / 128 / 256 QAM	QPSK, 16 QAM, 64 QAM
Symbolrate / Symbol Rate	5...9 Msps	/
FFT Mode	/	2K, 8K
Guard Interval	/	1/4, 1/8, 1/16, 1/32
FEC	/	1/2, 2/3, 3/4, 5/6, 7/8
MER	≥42 dB	≥42 dB
Ausgangsfrequenz / Output Frequency	30...960 MHz (1 kHz-Schritte / steps)	30...960 MHz (1 kHz-Schritte / steps)
Ausgangspegel / Output Level	-30...-10 dBm (81...97 dBμV) (0,1 dB-Schritte / steps)	-30...-10 dBm (81...97 dBμV) (0,1 dB-Schritte / steps)
<b>System</b>		
Ausgänge / Outputs	1x HF (F) / 1x RF (F), 1x HF Durchschleif-IN / 1x RF Loop-IN, IP (RJ45)	1x HF (F) / 1x RF (F), 1x HF Durchschleif-IN / 1x RF Loop-IN, IP (RJ45)
Fernsteuerung / Remote Control	Web-Interface per Ethernet IP	Web-Interface per Ethernet IP
NMS Interface	RJ45, 100 Mbps	RJ45, 100 Mbps
Stream Port	RJ45, 100 Mbps (1 SPTS)	RJ45, 100 Mbps (1 SPTS)
IP-Protokoll / IP Protocol	IPv4 Multicast	IPv4 Multicast
<b>Betriebsparameter / Operating Parameters</b>		
Stromversorgung / Power Supply	100...240 V <sub>AC</sub>	100...240 V <sub>AC</sub>
Leistungsaufnahme / Power consumption	30 W	20 W
Betriebstemperatur / Operating Temp.	0...45 °C	0...45 °C
Abmessungen / Dimensions (B x H x T) / (W x H x D)	250 x 268 x 44 mm	250 x 268 x 44 mm

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