

# DMH-541

**Digital modulator DVB-T/C HD MPEG4 AVC  
with HDMI input and USB playback**

4K UltraHD HDMI 2.2 Loop through

High RF Output Level

USB pen drive video player

- Perfect image and audio synchronization
- RF Loop through 5... 2.200 MHz
- Video bit rate up to 30 Mbps
- Over 36 dB MER (Modulation Error Rate)
- Low consumption and energy saving function



Ready for  
**UHDTV**

Ver. 1.0

## AUDIO - VIDEO

VIDEO ENCODING		H.264 MPEG
VIDEO INTERFACE		HDMI 2.2
VIDEO RESOLUTION MODES		576p - 720p - 1080p
VIDEO BIT RATE	Mbp/s	5... 30
AUDIO MODE		MPEG AC3 DTS AAC
RF OUTPUT		
FREQUENCY RANGE	MHz	170... 230 / 470... 862
MER	dB	>36
RF OUTPUT LEVEL	dBµV	70... 100
RF LOOP PASS THROUGH		5... 2.200 MHz Loss ≤ 2
DVB-T		
CONSTELLATION - FEC		QPSK - 16QAM - 64QAM - 1/2 - 2/3 - 3/4 - 5/6 - 7/8
GUARD INTERVAL		1/4 - 1/8 - 1/16 - 1/32
MODULATION CARRIERS		2K/8K
SELECTABLE BANDWIDTH	MHz	6 / 7 / 8
DVB-C		
CONSTELLATION		16QAM - 32QAM - 64QAM - 128QAM - 256QAM

## GENERAL

POWER SUPPLY	Volt	15VDC (External PSU 100-240VAC 50/60Hz)
POWER CONSUMPTION	W	4,8 Watt Max. / 3,5 Watt Energy saving mode
DIMENSIONS	mm	193x109x39h
OPERATING TEMPERATURE	C°	0... 45

## DESCRIPTION OF SYMBOLS AND ELECTRICAL SAFETY



The equipment complies with the CE requirements



The equipment is designed for indoor use only



Equipment grounding terminal



This symbol indicates that the equipment complies with the safety requirements for class II equipment



To avoid the risk of electric shock, do not open the equipment.



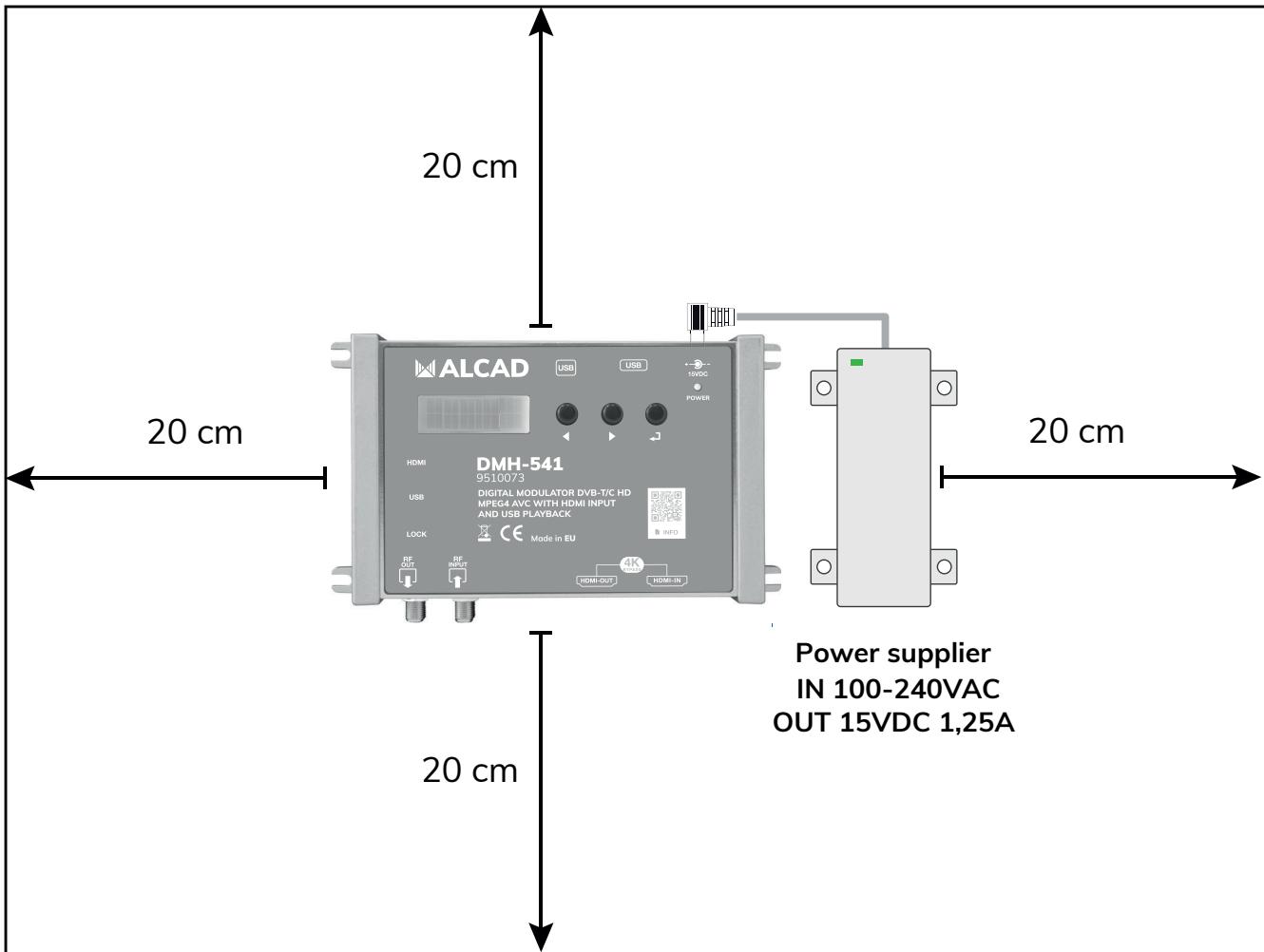
The equipment is compliant with RoHS 2011/65EU



Dispose according to local authorities recycling processes

## Safety instructions

1. Read carefully these instructions
2. Keep these instructions
3. Heed all warnings
4. Follow all instructions
5. Do not expose this apparatus to extreme temperatures
6. Do not install this apparatus near water or expose to rain and moisture
7. Place the apparatus in a dry and well-aired location
8. Install the unit on a vertical wall, or in a waterproof cabinet with a minimum IP55 rating, and fix it safely using the provided fixing plugs
9. Connect the power adapter cord to a detachable power supply socket
10. Unplug the apparatus during lighting storms or when unused for long time
11. Only use accessories specified by the manufacturer
12. Do not remove the cover without disconnecting from the mains first
13. Ambient temperature should not be higher than 45°
14. Please allow air circulation around the apparatus

**IMPORTANT!**

**Place the apparatus and the power supplier in a dry and well-aired location**

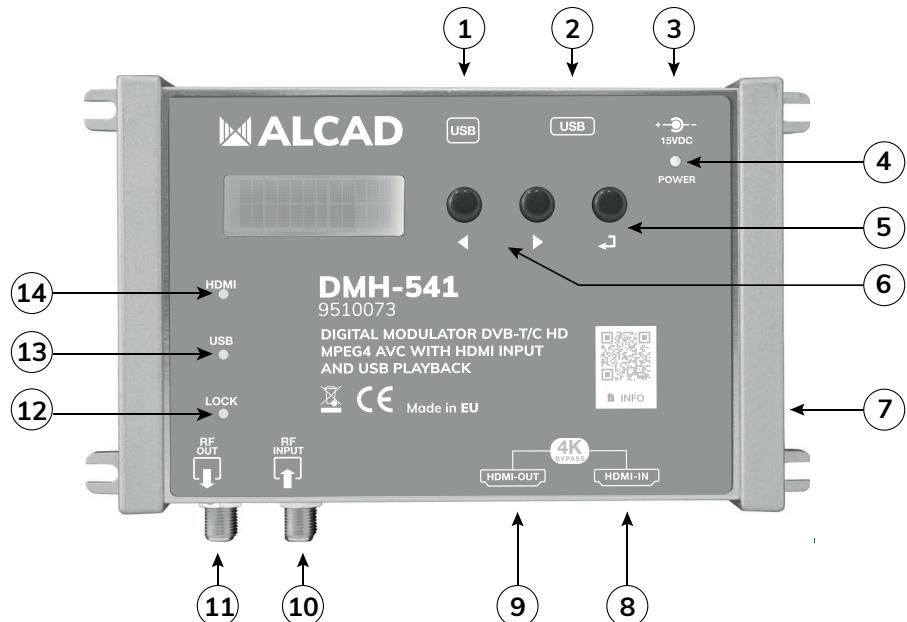
**Install the unit on a vertical wall, or in a waterproof cabinet with a minimum IP55 rating, and fix it safely using the provided fixing plugs**

**Use only the power supplier provided with the amplifier.**

**The use of not-original power suppliers determines the not-compliance of the product and can cause malfunctions and void the warranty**

# DMH-541 DESCRIPTION

- 1 USB Type B (F.W. Upgrade)
- 2 USB Type A (USB Pendrive for Video Play)
- 3 Power Input 15Vdc
- 4 Power Supply Status Led
- 5 Confirmation key
- 6 Menu navigation keys
- 7 Ground point
- 8 HDMI Input
- 9 HDMI Output
- 10 RF Input
- 11 RF Output
- 12 Video Signal Lock
- 13 USB TS Signal
- 14 HDMI Connected



**DVB-T available rates (Mbit/s) in 8MHz channels**

MODULATION	FEC Coding Rate	GUARD INTERVAL (TG)			
		1/4	1/8	1/16	1/32
QPSK	1/2	4.98	5.53	5.85	6.03
	2/3	6.64	7.37	7.81	8.04
	3/4	7.46	8.29	8.78	9.05
	5/6	8.29	9.22	9.76	10.05
	7/8	8.71	9.68	10.25	10.56
16QAM	1/2	9.95	11.06	11.71	12.06
	2/3	13.27	14.75	15.61	16.09
	3/4	14.93	16.59	17.56	18.10
	5/6	16.59	18.43	19.52	20.11
	7/8	17.42	19.35	20.49	21.11
64QAM	1/2	14.93	16.59	17.56	18.10
	2/3	19.91	22.12	23.42	24.13
	3/4	22.39	24.88	26.35	27.14
	5/6	24.88	27.65	29.27	30.16
	7/8	26.13	29.03	30.74	31.67

Table (1)

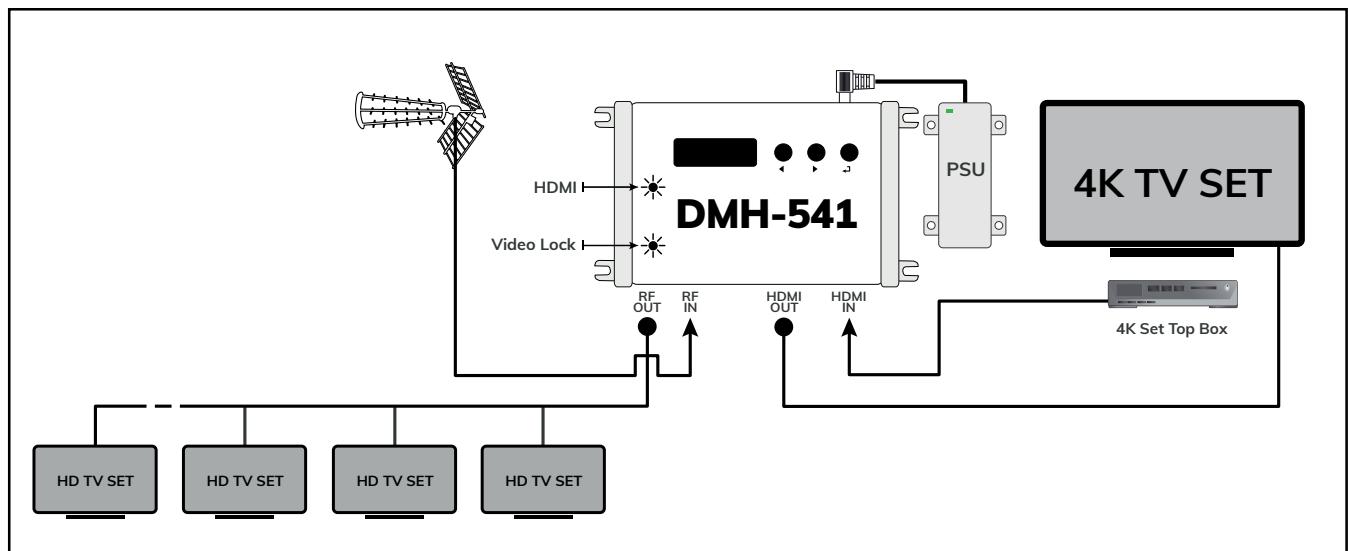
**DVB-C Available rates (Mbit/s)**

BANDWIDTH	MODULATION				
	16QAM	32QAM	64QAM	128QAM	256QAM
8MHz	25.64	32.05	38.47	44.88	51.29
6MHz	19.23	24.04	28.85	33.66	38.47

Table (2)

## CONNECTION TO A HDMI SOURCE

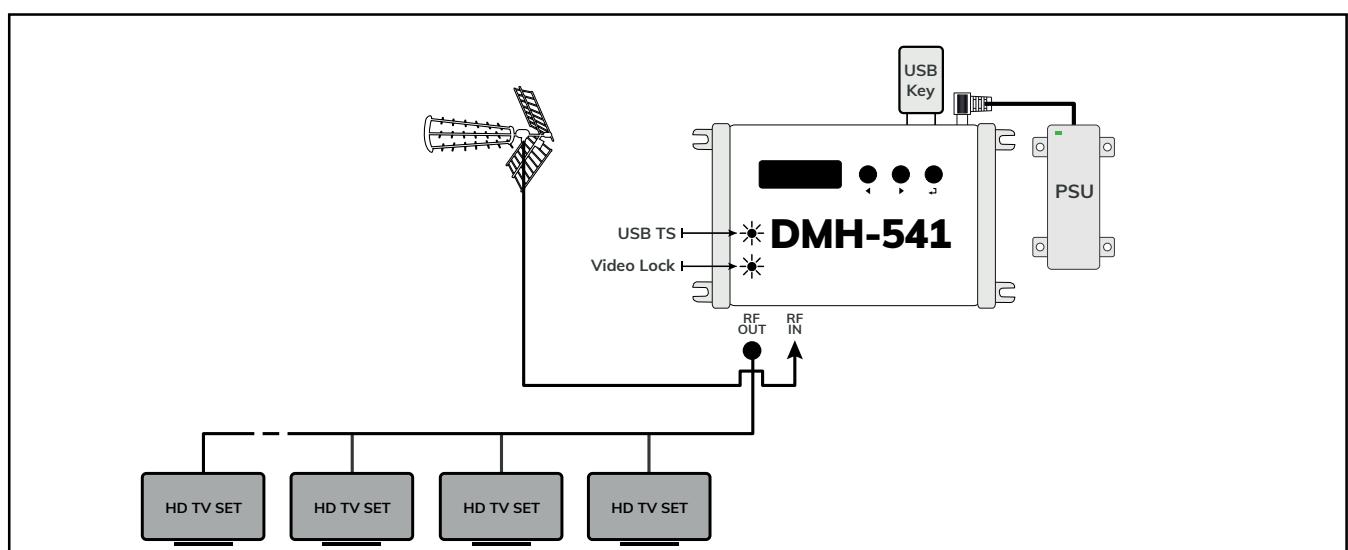
- 1\_Connect the RF coaxial input and output cables
- 2\_Connect the HDMI input and output cables
- 3\_Connect the power supplier unit to DMH-541 and only then connect the power supplier to mains plug. Wait the end of the booting procedure to start programming the DMH-541
- 4\_If the HDMI input source is correct the Led **HDMI** and **LOCK** will be lighted on



## CONNECTION TO A USB PEN DRIVE SOURCE

- 1\_Connect the RF coaxial input and output cables
- 2\_Connect the USB pendrive to the USB type A input containing a video file named **media.ts**
- 3\_Connect the power supplier unit to DMH-541 and only then connect the power supplier to mains plug. Wait the end of the booting procedure to start programming the DMH-541
- 4\_The Led **USB TS** and **LOCK** will be lighted on

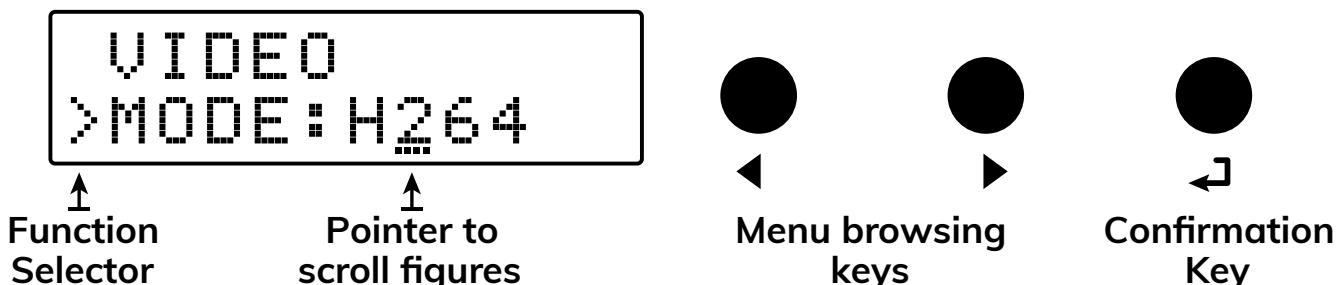
**Note:** the bitrate of the media.ts file cannot exceed the DMH-541 encoder bitrate



# DMH-541 Programming

1. Press ↪ to activate the display
2. Press ↪ and hold for five seconds to enter the programming menu

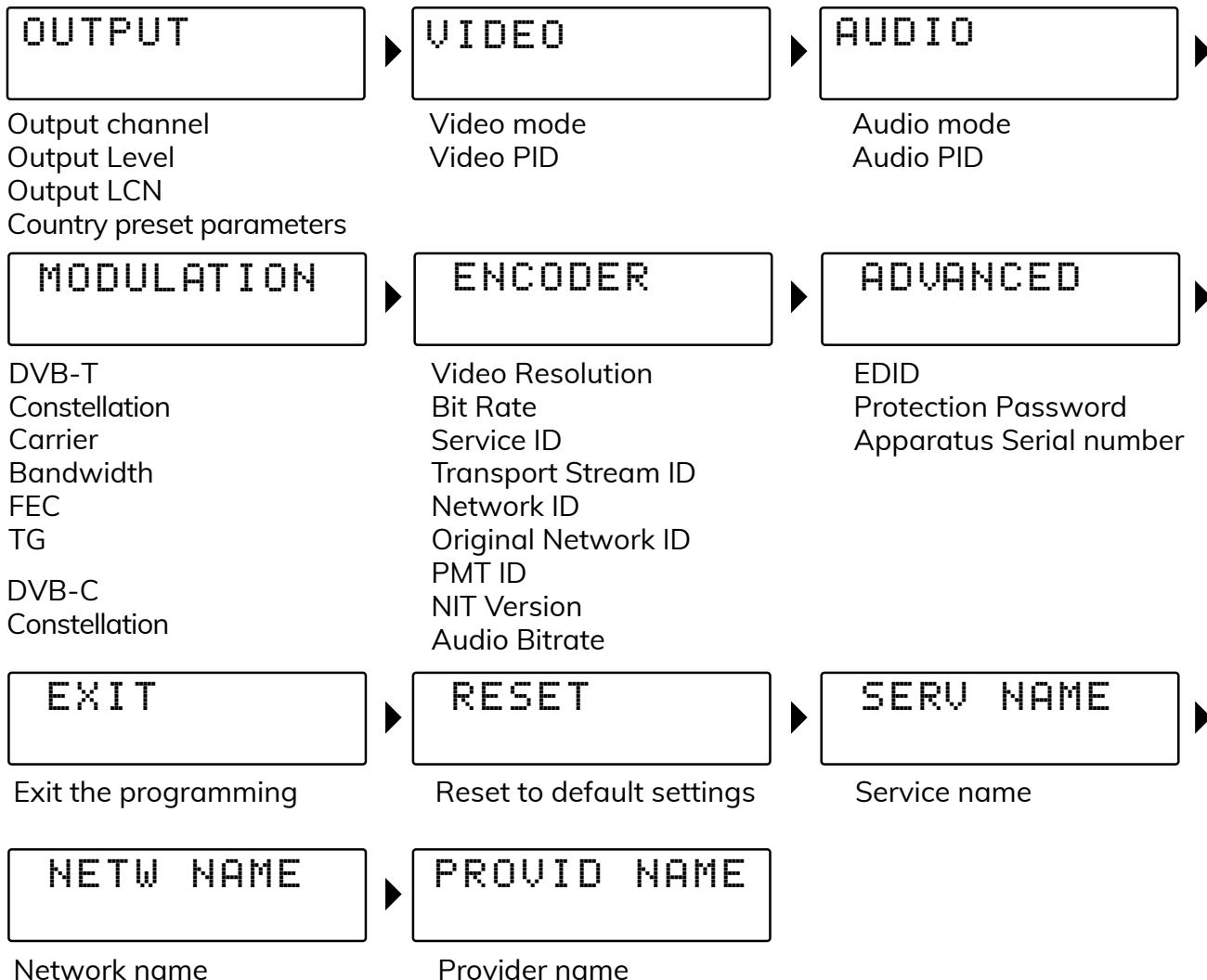
If any key is pressed for 3 minutes the display turn to standby mode. Press any key to re-activate.



DMH-541 has a built-in DVB-T/C tuner for self test. Every parameter modification is verified and stored and require from 10 to 15 seconds.

SETTING...  
PLEASE WAIT

## Menu Structure



# OUTPUT

## RF OUTUP

**OUTPUT**

Press **↔** to enter the **OUTPUT** menu.

## OUTPUT CHANNEL

**OUTPUT**

**>CH: 36-594.0**

E5÷E12 / E21÷E69

Default E36

## OUTPUT LEVEL

**CH: 36-594.0**

**>LEV: 90dBuV**

70÷ 100dB $\mu$ V (1dB step)

## OUTPUT LCN

**LEV: 90dBuV**

**>LCN: 00101**

00001 ÷ 65535

## Country preset parameters

**LCN: 00101**

**>CNTRY: ITA**

See Table below



On the right of the selected channel is displayed the center frequency in MHz.

Position the function selector > on **LEV** and press **↔** to activate the pointer --- and set the RF output level. To confirm your selection press **↔**.

Note: the maximum input level for a TV set is 75dB $\mu$ V



If in the network there are more than one DMH-541 to avoid TSID conflict when the LCN number is changed also the TSID is automatically reassigned.

AUSTRIA	AUT	GERMANY	DEU	NETHERLANDS	NLD	SLOVENIA	SVN
AUSTRALIA	AUS	GREECE	GRC	NORWAY	NOR	SPAIN	ESP
CROATIA	HRV	HUNGARY	HUN	NEW ZEALAND	NZL	SWEDEN	SWE
CZECH REP	CZE	ISRAEL	ISR	POLAND	POL	SWITZERLAND	CHE
DENMARK	DNK	IRELAND	IRL	PORTUGAL	PRT	UNITED KINGDOM	GBR
ESTONIA	EST	ITALY	ITA	RUSSIA	RUS		
FINLAND	FIN	LATVIA	LVA	SINGAPORE	SGP		
FRANCE	FRA	MALAYSIA	MYS	SLOVAKIA	SVK		

# AUDIO VIDEO SETUP

## VIDEO SET UP

**VIDEO**

Press **↔** to enter the menu to select the video compression required.

## VIDEO MODE

**VIDEO**  
**>MODE: H264****H264 / MPEG**

Position the function selector **>** on **MODE** and press **↔** to activate the pointer **---** and select **◀ ▶** the **VIDEO MODE**. To confirm your selection press **↔**.

## VIDEO PID

**MODE: H264**  
**>VPID: 01280****00001 ÷ 65535**

Position the function selector **>** on **MODE** and press **↔** to activate the pointer **---** and set **◀ ▶** **VPID**. To confirm your selection press **↔**.

## AUDIO

**AUDIO**

Press **↔** to enter the **AUDIO** menu.

## AUDIO MODE

**AUDIO**  
**>MODE: MPEG****MPEG / AC / DTS / AAC**

Press **↔** to enter the menu to select the **AUDIO MODE**. Select **▶** and confirm your choice pressing **↔**.

## AUDIO PID

**MODE: MPEG**  
**>APID: 01281****00001 ÷ 65535**

Position the function selector **>** on **APID** Press **↔** to activate the pointer **---** and set **◀ ▶** **APID**. To confirm your selection press **↔**.

# MODULATION

## MODULATION

### MODULATION MODE

DVBT: DVB-T  
DVB-C

DVBT - DVBC

## DVB-T

### CONSTELLATION

DVB: DVB-T  
COST: 64QAM

QPSK - 16 - 64QAM

### MODULATION CARRIER

COST: 64QAM  
CARR: 8K

2K - 8K

### BANDWIDTH

CARR: 8K  
BW: 8MHz

6 - 7 - 8 MHz

### FEC

BW: 8  
FEC: 7/8

1/2 - 2/3 - 3/4 - 5/6 - 7/8

### TG

FEC: 7/8  
Tg: 1/32

1/32 - 1/16 - 1/8 - 1/4

## DVB-C

### CONSTELLATION

DVB: DVB-C  
COST: 64QAM

16 - 32 - 64 - 128 - 256QAM

Press **↔** to enter the MODULATION menu.

Position the function selector > on **DVB** and press **↔** to activate the pointer --- and select the **DVB-T** or **DVB-C** modulation mode. To confirm your selection press **↔**.

Position the function selector > on **COST** and press **↔** to activate the pointer --- and select the constellation. To confirm your selection press **↔**.

Position the function selector > on **CARR** and press **↔** to activate the pointer --- and select the **2K** or **8K** carrier. To confirm your selection press **↔**.

Position the function selector > on **BW** and press **↔** to activate the pointer --- and select the bandwidth. To confirm your selection press **↔**.

The channel bandwidth is pre-set in relationship to the country channeling.

Position the function selector > on **FEC** and press **↔** to activate the pointer --- and select the Forward Error Correction value. To confirm your selection press **↔**.

Position the function selector > on **Tg** and press **↔** to activate the pointer --- and select the Tg value. To confirm your selection press **↔**.

Position the function selector > on **COST** and press **↔** to activate the pointer --- and select the constellation. To confirm your selection press **↔**.

# ENCODER

**ENCODER**

Press **↔** to enter the **ENCODER** menu  
 Line up the function selector **>** to the parameter  
 and press **↔** to activate the pointer **---** and select  
 the value pressing **◀ ▶**. To confirm the selection  
 press **↔**.

Video Resolution

**ENCODER**  
**>RESOL: 1080**

576 - 720 - 1080

Bit Rate

**RESOL: 1080**  
**>BRATE: 18000**

4000... 30.000 Mbps

See Table (1) or (2)

Service ID

**BRATE: 18000**  
**>SID: 00256**

00001÷65535

Transport Stream ID

**SID: 00256**  
**>TSID: 00101**

00001÷65535

Network ID

**TSID: 00101**  
**>NID: 01855**

00001÷65535

Original Network ID

**NID: 01855**  
**>ONID: 01855**

00001÷65535

PMT ID

**ONID: 01855**  
**>PMTID: 04651**

00001÷65535

NIT Version

**PMTID: 04651**  
**>NIT: 005**

001÷999

Audio Bitrate

**NIT: 005**  
**>ABR: 256Kbps**

64-96-112-128-160-192-  
 224-256-320-384 Kbps

# ADVANCED

**ADVANCED**

Press **↔** to enter the **ENCODER** menu  
 Line up the function selector **>** to the parameter  
 and press **↔** to activate the pointer **---** and select  
 the value prressing **◀ ▶**. To confirm the selection  
 press **↔**.

EDID

**ADVANCED**  
**>EDID: INT4K**

INT2K; INT4K; COPY

INT2K= HDMI Bypass HD only

INT4K= HDMI Bypass 4K and HD

COPY= Bypass resolution detected from TV input HDMI

Protection Password

**EDID: INT4K**  
**>PSW: 000**

Apparatus Serial number

**PSW: 000**  
**>SN: 00014**

**EXIT**

EXIT

To exit the setting procedure select **EXIT** and press ↵. Select **YES** and press ↵ to confirm.

CONFIRM?

YES NO

To continue the DMH-541 setting select **NO** and press ↵ to confirm.

**RESET**

RESET

To cancel all settings select the **RESET** menu pressing ↵ and Select **YES** and confirm ↵.  
All the factory settings will be restored and the DMH-541 rebooted.

CONFIRM?

YES NO

**SERVICE NAME**

SERV NAME

Press ↵ to enter **SERVICE NAME** menu  
Line up the function selector > to the parameter and press ↵ to activate the pointer --- and select the digit pressing ▲ ▼ . To confirm press ↵.



The preset service name is ALCADSERV but can assigned a different name with up to 11 digits

**NETWORK NAME**

NETW NAME

Press ↵ to enter **NETWORK NAME** menu  
Line up the function selector > to the parameter and press ↵ to activate the pointer --- and select the digit pressing ▲ ▼ . To confirm press ↵.

NETW NAME  
>ALCADNET**PROVIDER NAME**

PROVID NAME

Press ↵ to enter **PROVIDER NAME** menu  
Line up the function selector > to the parameter and press ↵ to activate the pointer --- and select the digit pressing ▲ ▼ . To confirm press ↵.

PROVID NAME  
>ALCADPROV

