

# MAW-300

Ref. 3030

HD Encoder & Modulator  
HDMI to DVB-T



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## Safety Instructions

**WARNING:** Hot plug is not allowed since it may cause system halted.

To prevent fire or electrical shock, do not expose the device to rain or moisture.

The encoder modulator is powered with a voltage of 12V DC. The power supply voltage must not exceed the recommended voltage, which otherwise may cause irreparable damage

to the device and the invalidation of the warranty. Therefore:

- Do not replace power supply with a voltage greater than 12V DC.
- Do not connect the device to the power if the power cord is damaged.
- Do not plug the device into mains supply until all cables have been connected correctly.
- Do not cut the cord.

Avoid placing the device next to central heating components and in areas of high humidity.

Do not cover the device with elements that obstruct the ventilation slots.

If the encoder modulator has been kept in cold conditions for a long time, keep it in a warm room minimum 2 hours before plugging into the mains.

Mount the device in vertical position with the connectors located on the top side.

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part.

Unauthorized substitutes may result in fire, electric shock or other hazards.

Safety check- Upon completion of any service or repairs to this device, ask the service technician to perform safety checks to determine that the device is in proper condition.

## General description

MAW-300 HD&SD encoder & modulator is designed based on consumer electronics which allow audio/video signal input in TV distributions with applications in home entertainment, surveillance control, hotel Digital Signage, shops etc.

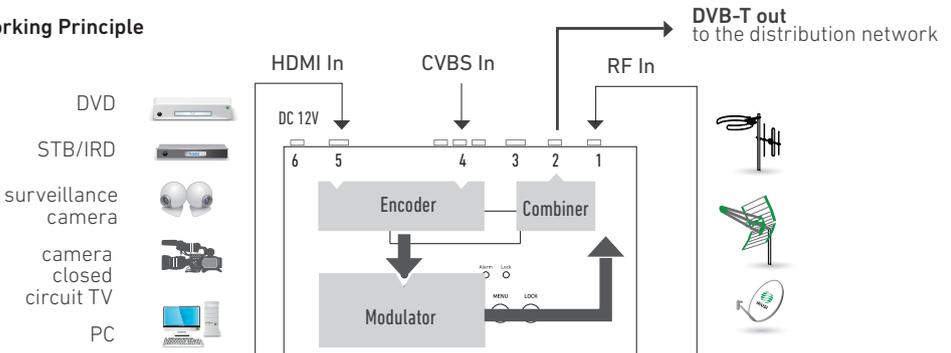
It is an all-in-one device integrating MPEG-4 AVC/H.264 encoding and modulating to convert audio/video signals into DVB-T RF out.

The signals source could be from STB, satellite receiver, closed-circuit television cameras and antenna etc. Its output signal is to be received by a DVB-T standard TVs or STBs etc.



1. RF input (10 dB attenuation)
2. RF out
3. USB port for upgrade
4. A/V in
5. HDMI in port
6. DC 12V power supply

## Working Principle



## Technical Specifications

MODEL		MAW-300
REF.		3030
Video input		CVBS, HDMI
HDMI encoding section		
Standard		PAL/NTSC/SECAM/B&W
Audio input		1 (mono y estéreo)
Encoding		H.264/MPEG4 MP@L 3.0/3.1/4.0
Video resolution		input: 480i60, 576i50, 720p60, 1080i50, 1080i60, 1080p60 output: 480p30, 576p25, 720p60, 1080p25, 1080p30
Aspect ratio		16:9, 4:3
Video Bit rate	Mbps	1000 - 18000
Audio sample rate	kHz	48
Audio Bit rate	kbps	64, 96, 128, 192, 256, 320
DVB-T Modulator section		
Standard		DVB-T
Bandwidth	MHz	6, 7, 8
Constellation		QPSK, 16QAM, 64QAM
Guard interval		1/32, 1/16, 1/8, 1/4
Code rate		1/2, 2/3, 3/4, 5/6, 7/8
Transmission mode		2K, 8K
MER	dB	≥32
RF frequency	MHz	139 - 862
RF output level	dBμV	94 - 104 (0,1 dB step)
General		
Management		Local LCD + control buttons
LCN insertion		Yes
Upgrade		USB
Power supply	VDC	12
Operating temperature	°C	0 - 45
Dimensions	mm	183 x 110 x 50
Weight	kg	1

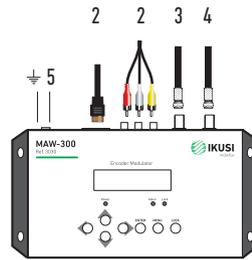
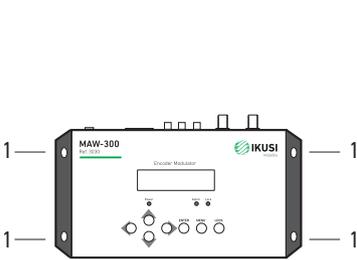
## Installation

### RISK of damage to the unit

Mechanically handling the unit may result in damage. Do not connect the unit to the power supply before or during assembly. Connect the unit as below instructed.

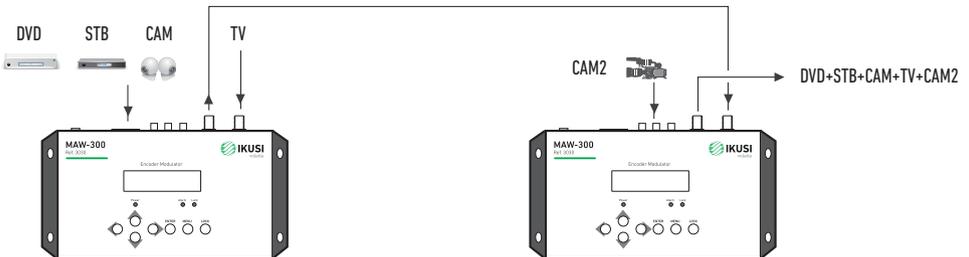
### NO HOT PLUG ANO CONNECT THE CABLE AS FOLLOWING STEPS

1. Mount and tighten the screws and plugs to secure the unit to the wall. Left 10 cm offree space around from each unit.
2. Connect the signal input in the respective connectors. The signal source can be from a surveillance monitor, DVD, set-top box, CCTV and etc.
3. Connect cable to RF output to o STB/TV.
4. Optionally, connect the loop-through RF input coaxial cable.
5. Power supply connection: a) Connect the earth cable; b) Connect the power plug to the unit mains connector; c) Connect the power plug to the mains socket.



## Cascade Installation

MAW-300 unit has 1 TV signal to RF output encoded as DVB-T Digital TV signal. Several MAW-300 units can be cascaded in order to increase the capacity. The maximum capacity of a series of N units is 1xN incorporated TV signals. To cascade 2 or more units, connect the RF output of the preceding unit to the TV input (loop-through) of the next unit (see right illustration).



## Typical Applications

- Communities of residents an information channel on their television.
- Restaurants (information about daily menus, special deals, etc.).
- Hotels (meeting rooms, exhibitions, message, etc).
- Hospitals (Information health guides).
- Public Spaces (advertising, user information, news, etc.).
- shopping centres (news collections, special deals, etc.).
- Boats (Logbook information, activities, schedules).

**Create your own advertising and information channel!**

... for communities of residents  
an information channel on their television



... for restaurants  
information about daily menus,  
special deals, etc.



... for hotels  
meeting rooms, exhibitions,  
message, etc.



... for Public Spaces

advertising, user information, news, etc.



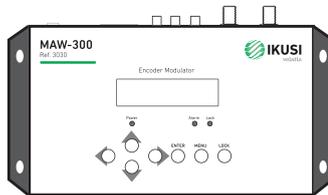
... for shopping centres

news collections, special deals, etc.



## Operations and Management

MAW-300 is controlled and managed through the key board and Leo display.



**Pantalla LCD:** It presents the selected menu and the parameter settings. The backlight in the display is on when the power is applied.

**LED.** These lights indicate the working status:

- Power: It lights on when the power supply is connected.
- Alarm: It lights on when there is error, such as the signal source loss.

**Left/Right/Up/Down buttons.** Use these buttons to turn the screen pages, shift the target items by moving the triangle, or change the parameter settings in the program mode.

**Enter.** Use this button to enter a submenu or save a new setting after adjustment; press it to start adjusting the value of certain items with Up/Down buttons when the corresponding underline flash



Press it to activate the hidden selections and change the setting with Up/Down (or Left/Right) buttons.



**Menu.** Press this button to step back.

**Lock.** Locking the screen / cancelling the lock state, and entering the main menu after the initialization of the device. After pressing lock key, the system will question the users to save present setting or not. If not, the LCD will display the current configuration state.

When the power is connected, the LCD will start to initialize the program. The LCD menu goes as below chart.

DVB-T	650,0 MHz
1080i	6,93 Mbps

1. DVB-T: Modulating standard; 650.0 MHz: the current output frequency; 1080i: video resolution of signal source; 6.93 Mbps: the current encoding bit rate.

Status
Alarm

2. Alarm Status: For example, if the signals lose, it will give alarm and display error type under this menu. For example: Video Not Lock.

Uptime
2 Days-01 : 25 : 38

3. Uptime: It displays the working time duration of the device. It times upon power on.

Encoder
Impedance ; Video in status ; Resolution ; Video Bitrate ; Audio Bitate

4. Encoder parameters: User can enter the items respectively to set Encoder parameters. Interface: To select the input port (HDMI or CVBS). Video In Status: User

can view the video status under this menu. Resolution: signal source resolution, read-only. Video Bit rate: adjust in the range of 1.000-18.000 Mbps. Audio Bit tute: Select audio bit rate among 64, 96, 128, 192, 256, 320kbps.

Stream  
 TSID ; ONID ; Network ID ; Network name ; Service name ; Provider name ; Program number ;  
 NIT insert ; LCN Mode ; LCN ; PMT PID ; Video PID ; Audio PID

5. Stream: User can view or adjust TSID (Transport Stream ID), ONID (Original Network ID), Network ID, Network Name, Program number, LCN (Logical channel number) and etc for the output TS after enter this menu.  
 NIT: (Network Information Table) NIT table is a very important table for describing the network and TS. User can enter the submenus displayed and edit the values or select modes.

Country  
 Default ; Australia ; Europe ; New Zealand ; Russia

6. Country: User can choose country under this menu. There are five options Default, Australia, New Zealand, Sweden and Italy. If user chooses Default, modulating parameters need to be set manually through advanced configuration. If choose other four, user do not need to set RF frequency, Bandwidth, Constellation, FEC, FFT, Guard interval and RF Level. It will configure automatically according to the Country and Channel. It is a shortcut.

Channel  
 \*471,5 CH 21

7. Channel: User can choose Channel under this submenu.

Bit rate (act/max)  
 6,986M/31,668M

8. Bit rate: User can read the current modulating bit rate and the maximum bit rate.

RF frequency  
 650.000 MHz

9. RF frequency: Adjust it at range of 142.5 MHz to 946MHz. Set it according your regional situation or inquire your local services..

Bandwidth  
 650.000 MHz

10. Bandwidth: choose between 6M, 7M and 8M.

Constellation  
64QAM

11. Constellation: DVB-T modulator contains 3 constellation modes: 64 QAM, QPSK and 16 QAM.

FEC  
7/8

12. Forward Error Correction rate. It contains 1/2, 2/3, 3/4, 5/6 y 7/8.

FFT  
2K 8K

13. FFT (Transmission Mode): Select between 2K and 8K.

Guard Interval  
1/32

14. Guard Interval: Select among 1/32, 1/16, 1/8 and 1/4.

RF Level  
-10 dBm

15. RF Level: Adjust it at range of -14 ~ + 6dBm

NOTE: The different combination of bandwidth, constellation, guard interval and FEC (code rate) will form a different output code rate. Please refer to appendix table 2. To ensure the output image quality, it is required the output code rate to be higher than 22 MHz.

Save Config?  
Yes ► NO

16. Save Config: Yes/No-to save/give up the adjustment of setting.

Load Saved CFG?  
Yes ► NO

17. Load Saved CFG: Yes/No-to load/not to load the saved configuration.

Reset all sets?  
Yes ► NO

18. Factory Reset: Yes/No-choose/not choose the factory's default configuration.

LCD Time Out

▶ 30s

19. LCD Time out: A time limit that LCD will light off. Choose among 5s, 10s, 45s, 60s, 90s and 120s (seconds).

Set Password

000000

20. Key Password: to set a 6-digit password for unlocking the keyboard.

Lock Keyboard

Yes ▶ NO

21. Lock Keyboard: Choose Yes to lock the keyboard, then the keyboard will be locked and cannot be applicable. It is required to input the password to unlock the key board. This operation is one-off. (Password forgotten, please use the universal code 000000.)

0035564905656

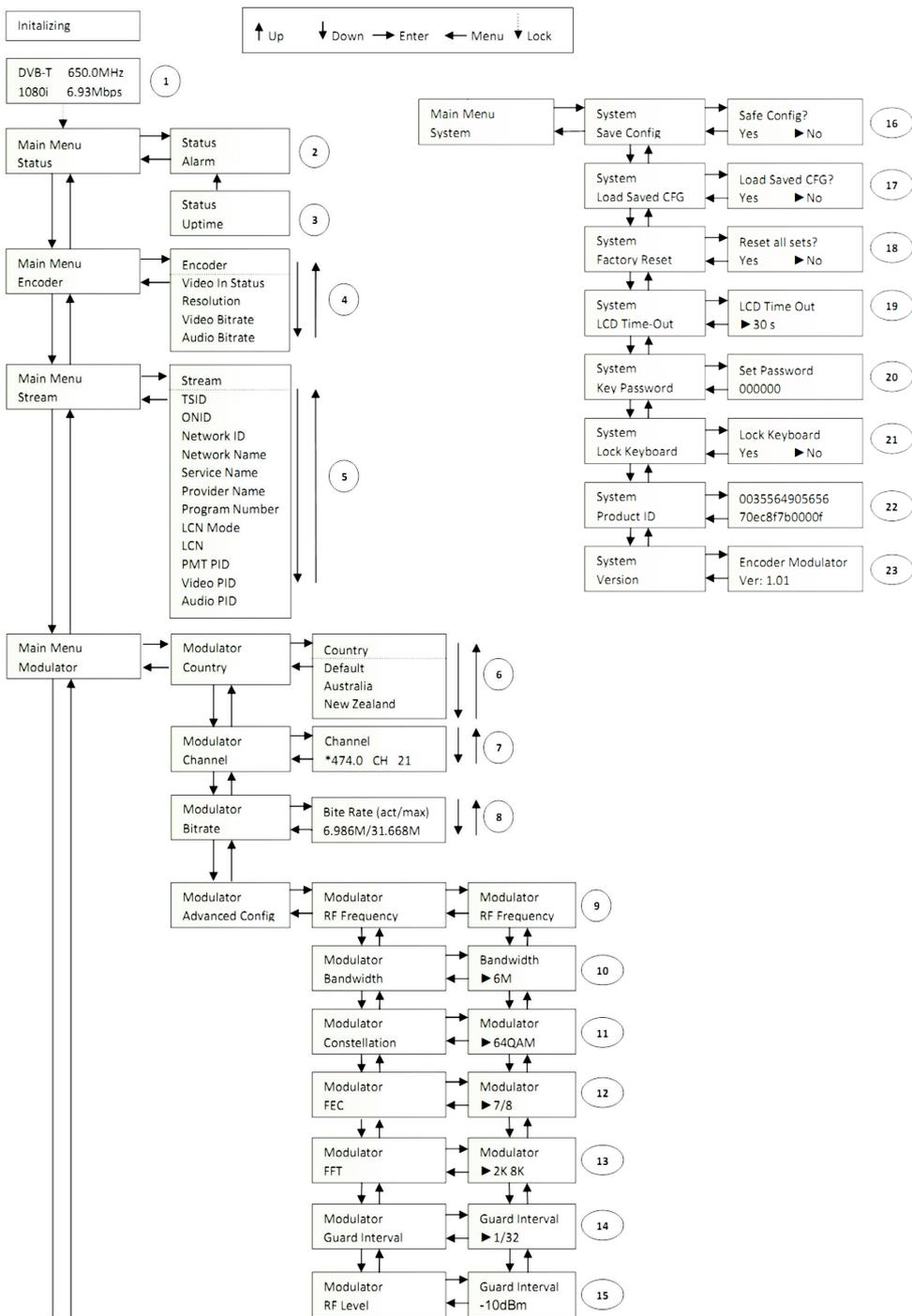
70ec8f7b0000f

22. Product ID: User can view the serial number of this device. It is read-only and unique.

Encoder Modulator

Ver:1.01

23. Version: It displays the version information of this device. Encoder Modulator: the name of the device; Ver: version number of this device.



## Appendix

Australia Air Channels				
Ch.	Frequency			
	Start	Center	End	
<b>VHF</b>				
C00	45	48.5	52	
C01	56	59.5	63	
C02	63	66.5	70	
C03	85	88.5	92	
C04	94	97.5	101	
C05	101	104.5	108	
C5A	137	140.5	144	
C06	174	177.5	181	
C07	181	184.5	188	
C08	188	191.5	195	
C09	195	198.5	202	
C9A	202	205.5	209	
C10	209	212.5	216	
C11	216	219.5	223	
C12	223	226.5	230	
<b>UHF</b>				
C20	470	473.5	477	
C21	477	480.5	484	
C22	484	487.5	491	
C23	491	494.5	498	
C24	498	501.5	505	
C25	505	508.5	512	
C26	512	515.5	519	
C27	519	522.5	526	
C28	526	529.5	533	
C29	533	536.5	540	
C30	540	543.5	547	
C31	547	550.5	554	
C32	554	557.5	561	
C33	561	564.5	568	
C34	568	571.5	575	
C35	575	578.5	582	
C36	582	585.5	589	
C37	589	592.5	596	

Australia Air Channels				
Ch.	Frequency			
	Start	Center	End	
C38	596	599.5	603	
C39	603	606.5	610	
C40	610	613.5	617	
C41	617	620.5	624	
C42	624	627.5	631	
C43	631	634.5	638	
C44	638	641.5	645	
C45	645	648.5	652	
C46	652	655.5	659	
C47	659	662.5	666	
C48	666	669.5	673	
C49	673	676.5	680	
C50	680	683.5	687	
C51	687	690.5	694	
C52	694	697.5	701	
C53	701	704.5	708	
C54	708	711.5	715	
C55	715	718.5	722	
C56	722	725.5	729	
C57	729	732.5	736	
C58	736	739.5	743	
C59	743	746.5	750	
C60	750	753.5	757	
C61	757	760.5	764	
C62	764	767.5	771	
C63	771	774.5	778	
C64	778	781.5	785	
C65	785	788.5	792	
C66	792	795.5	799	
C67	799	802.5	806	
C68	806	809.5	813	
C69	813	816.5	820	
C70	820	823.5	827	
C71	827	830.5	834	
C72	834	837.5	841	
C73	841	844.5	848	
C74	848	851.5	855	
C75	855	858.5	862	

Modulation Constellation	FEC	6MHz Bandwidth				7MHz Bandwidth				8MHz Bandwidth			
		Guard Interval				Guard Interval				Guard Interval			
		1/4	1/8	1/16	1/32	1/4	1/8	1/16	1/32	1/4	1/8	1/16	1/32
QPSK	1/2	<b>The weak ability of error-correcting and anti-interference in this area</b>											6.03
	2/3				6.03	5.80	6.45	6.83	7.03	6.64	7.37	7.81	8.04
	3/4		6.22	6.58	6.78	6.53	7.25	7.68	7.91	7.46	8.29	8.78	9.05
	5/6	6.22	6.91	7.31	7.54	7.25	8.06	8.53	8.79	8.29	9.22	9.76	10.05
	7/8	6.53	7.25	7.68	7.91	7.62	8.46	8.96	9.23	8.71	9.68	10.25	10.56
16QAM	1/2	7.46	8.29	8.78	9.04	8.70	9.67	10.24	10.55	9.95	11.06	11.71	12.06
	2/3	9.95	11.05	11.70	12.06	11.61	12.90	13.66	14.07	13.27	14.75	15.61	16.09
	3/4	11.19	12.44	13.17	13.57	13.06	14.51	15.36	15.83	14.93	16.59	17.56	18.10
	5/6	12.44	13.82	14.63	15.08	14.51	16.12	17.07	17.59	16.59	18.43	19.52	20.11
	7/8	13.06	14.51	15.36	15.83	15.24	16.93	17.93	18.47	17.42	19.35	20.49	21.11
64QAM	1/2	11.19	12.44	13.17	13.57	13.06	14.51	15.36	15.83	14.93	16.59	17.56	18.10
	2/3	14.92	16.58	17.56	18.09	17.41	19.35	20.49	21.11	19.91	22.12	23.42	24.13
	3/4	16.79	18.66	19.76	20.35	19.59	21.77	23.05	23.75	22.39	24.88	26.35	27.14
	5/6	18.66	20.73	21.95	22.62	21.77	24.19	25.61	26.39	24.88	27.65	29.27	30.16
	7/8	19.59	21.77	23.05	23.75	22.86	25.40	26.89	27.71	26.13	29.03	30.74	31.67

