



EKSELANS BY ITS MD HD L 4K RC Digital Modulator with Built-in DHMI 4K Loop User Guide

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EKSELANS BY ITS MD HD L 4K RC Digital Modulator with Built-in DHMI 4K Loop



Introduction

Digital modulator to COFDM/QAM/ISDB-T. 1 input + HDMI LOOP HDMI 4K. Output frequencies: 170-230MHz + 470- 862MHz. Output level (DIN 45004B): > 80dB μ V. RF mix input (5-862MHz). USB recorder / player. USB for programming professional parameters. IR transmitter 33-56 KHz modulated (included). Transmits 5Vdc for TRC powering.

Key features

- Resolution up to 1080p.
- Active HDMI source indication.
- LOOP HDMI IN / OUT.
- Excellent MER modulation quality ≥ 33 dB.
- Quick menu. Easy adjustment using channel buttons, attenuation, program ID.
- Easy Advanced Programming using PC Program (MDHDSOFT).
- Universal infrared extender Allows selection of infrared frequency 30-60KHz.
- High dynamic range IR reception (80dB).

Packaging content

1. 1 x MD HD L 4K.
2. 1 x Power supply 5V DC 2A.
3. 1 x Jack cable to IR.

Interfaces and connections



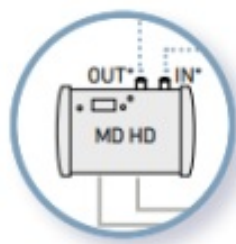
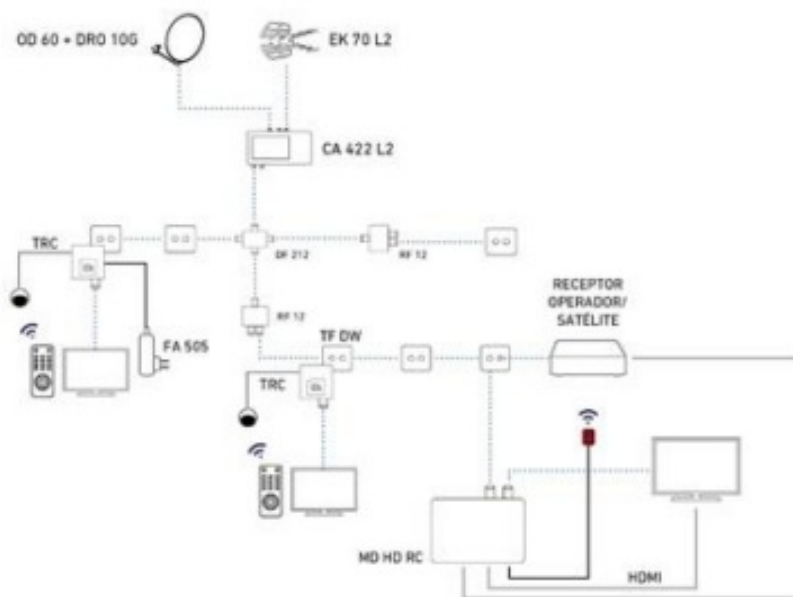
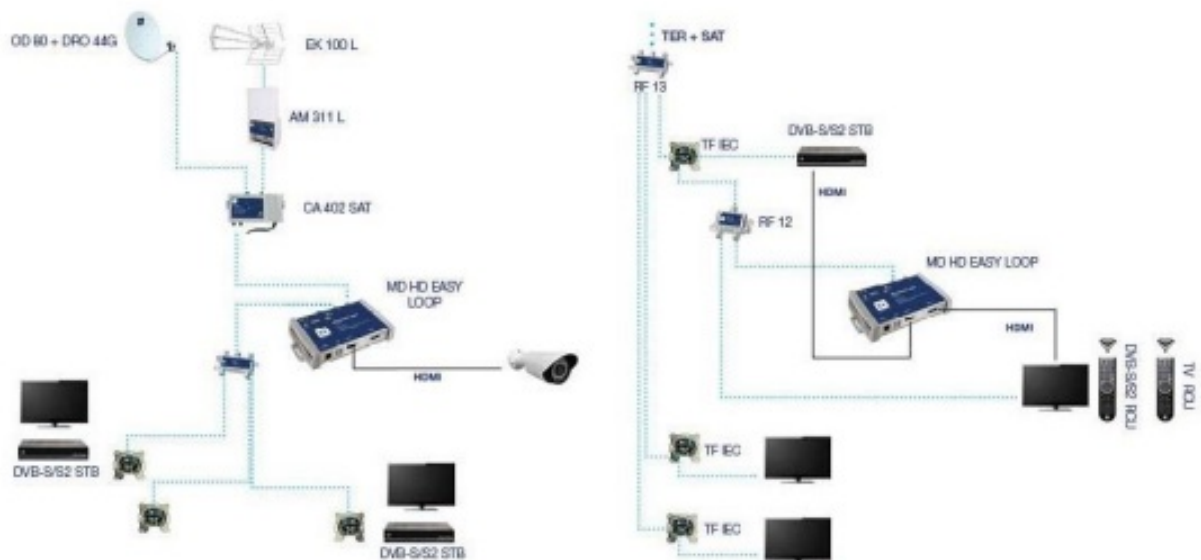
Interfaces:

1. – Buttons for programming.
2. Display
3. Buttons for programming.
4. RF output.
5. RF input.
6. 5V DC power supply.
7. USB Type B for setup.
8. HDMI Output (LOOP).
9. Micro-USB for FW uploading. 10.- HDMI input.
10. IR transmitter.

Diagrama de instalación



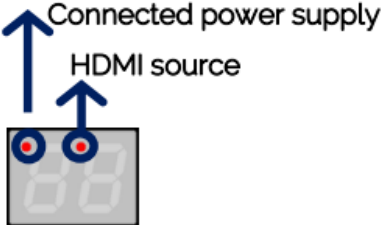
- 5.- RF input. Connect antenna signal, to the output we will have that signal with the modulated channel inserted.
- 4.- RF output.
- 6.- Connect 5V DC feeder.
- 7.- Connects to PC in case you need to configure with MD HD SOFT application.
- 8.- HDMI 4K (LOOP) output.
- 9.- The PC is connected if you need to upgrade FW using the DPA Upgrade app.
- 10.- 4K HDMI input.
- 11.- IR transmitter for TRC.



For your convenience, in case you have the modulator near the TV, you could use the **RF IN** input as an output for the TV.

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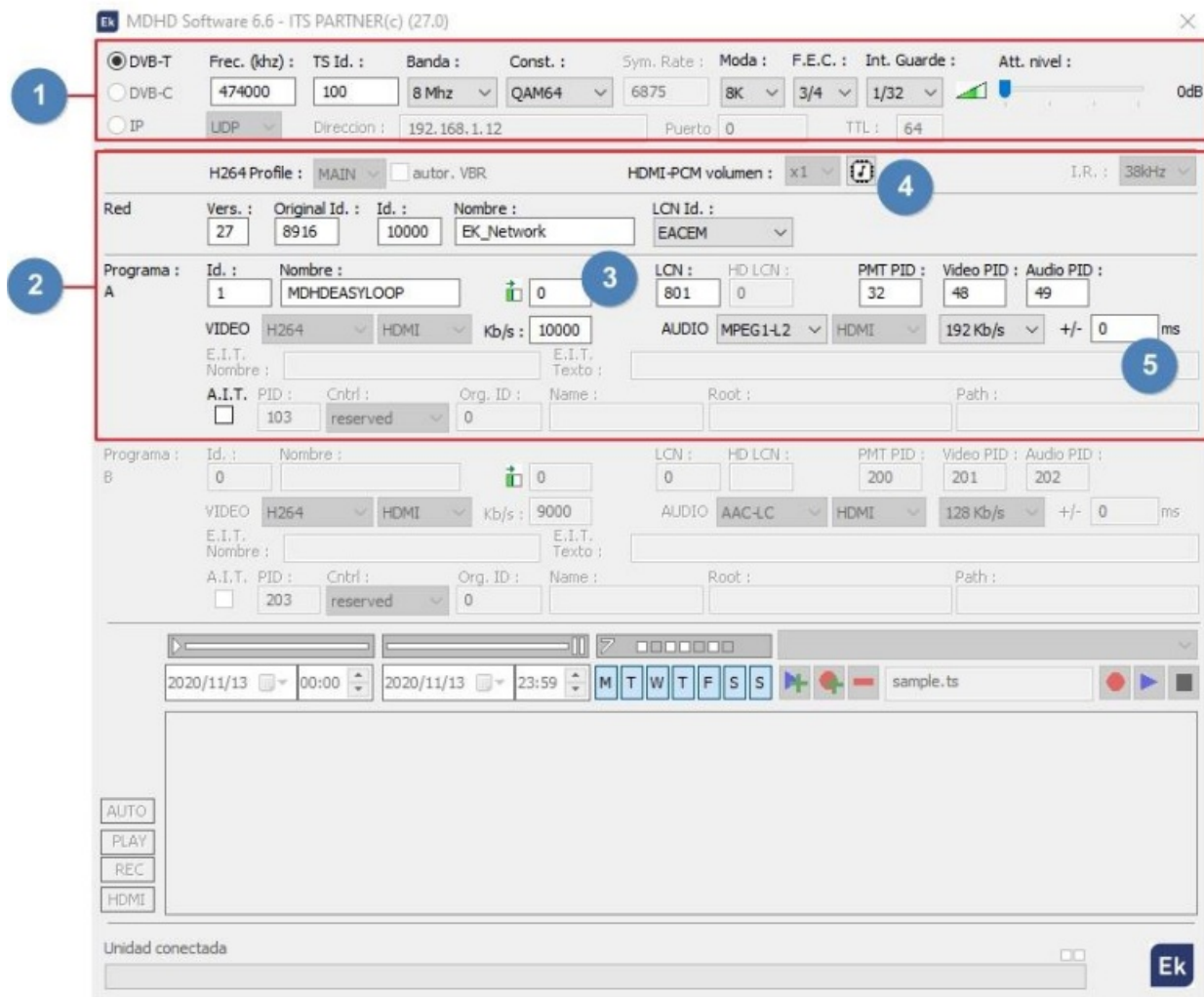
Basic programming using buttons

	
• Press ▲/▼ to change the menu option. • ch Sets the output channel [5... 12+ 21... 69]. • F4 Set to 'n' if the device connected to HDMI out does not support 4K. Set to 'y' if the device connected to HDMI out it supports 4K. • ir Adjusts the FREQUENCY of the IR carrier [38 / 46 / 56 KHz]. • id Modify the program ID [1... 34]. • At Sets the desired attenuation [0... 15dB]. • Press ENTER + ▲/▼ in the different options of menu to modify its parameters.	
• Press ▲ while the power is connected to defaults. Will be shown r5..	

Note: If you use more than one modulator for the same receiver or TV, you need to modify the “Program ID” to make them different.

Advanced programming using MD HD Soft

- For advanced programming, download the “MD HD Soft” Software from the website www.ek.plus.
- Connect modulator and computer via USB cable (Type A/Type B).



1. Settings RF.
2. Video and TS settings.
3. This option will be used to adjust some deviation in the video input signal. With some sources (very rare cases), a green band appears to the left of the image. This option will allow you to move this band until it disappears.
4. Use in case you do not listen to DD by RF output. Clicking this button will write the EDID table.
5. Offset between RF modulated audio and video. -999ms, indicates that the audio is almost 1 second ahead of the video.

Technical specifications

Reference		MD HD L 4K RC
Code		122016
IN		HDMI 2.0, fully compliant HDCP 2.2 backwards compliant HDMI 1.4
OUT		loop HDMI
VÍDEO		

Video resolution		480i@60Hz, 480p@60Hz, 576i@50Hz, 720p@50/60Hz, 1080p@50/60Hz, 1080i@50/60Hz, 4Kx2K@24/30/50Hz
Data rate		6Gbps por canal
Video compression		H.264
Video rate		15Mbps
AUDIO		
Audio compression		MPEG1-L2, AAC-LC
Audio rate	Kbps	128, 192, 256, 320, 384
MODULACION		
Resolution Video Output		1080p
DVB processing		NIT, PID
DVB configuration		NID, ONID, Network name, TSID, PID, Program name, PMT PID, Video PID, Audio PID
Output frequency	MHz	170-230 & 470-862
Output channel	N.	5...12 + 21...69
Output level	dB μ V	>80
Attenuation	dB	0...15
MER	dB	≥ 33
Bandwidth	MHz	6, 7, 8
Constellation		QPSK, 16QAM, 64QAM
Mode		2K, 8K
FEC		1/2, 2/3, 3/4, 5/6, 7/8
Guard interval		1/4, 1/8, 1/16, 1/32
LCN		EACEM, ITC, NORDIG
Loop RF	dB	-2
INFRARED EXTENDER		
Cable with IR emitter-Freq	KHz	38-46-56
USB		
USB connector		H.264 *.ts files Record & Play
GENERAL		
Supply voltage	Vdc	5 (RF OUT pass optional)
Power consumption	W	< 5
Size	mm	170x130x35

Weight	Kg	0.6
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Channel and Frequency Table (Standard B/G)

- Banda III. 7MHz Bandwidth.
- Banda IV – V. 8MHz Bandwidth.

Band	Channel	Start frequency	End frequency	Central frequency
III	5	174 MHz	181 MHz	177,5 MHz
	6	181 MHz	188 MHz	184,5 MHz
	7	188 MHz	195 MHz	191,5 MHz
	8	195 MHz	202 MHz	198,5 MHz
	9	202 MHz	209 MHz	205,5 MHz
	10	209 MHz	216 MHz	212,5 MHz
	11	216 MHz	223 MHz	219,5 MHz
	12	223 MHz	230 MHz	226,5 MHz

Band	LTE	Channel	Start frequency	End frequency	Central frequency
		38	606 MHz	614 MHz	610 MHz
		39	614 MHz	622 MHz	618 MHz
		40	622 MHz	630 MHz	626 MHz
		41	630 MHz	638 MHz	634 MHz
		42	638 MHz	646 MHz	642 MHz
		43	646 MHz	654 MHz	650 MHz
		44	654 MHz	662 MHz	658 MHz
		45	662 MHz	670 MHz	666 MHz
		46	670 MHz	678 MHz	674 MHz
		47	678 MHz	686 MHz	682 MHz
		48	686 MHz	694 MHz	690 MHz
	2	49	694 MHz	702 MHz	698 MHz
	2	50	702 MHz	710 MHz	706 MHz
	2	51	710 MHz	718 MHz	714 MHz
	2	52	718 MHz	726 MHz	722 MHz

V	2	53	726 MHz	734 MHz	730 MHz
	2	54	734 MHz	742 MHz	738 MHz
	2	55	742 MHz	750 MHz	746 MHz
	2	56	750 MHz	758 MHz	754 MHz
	2	57	758 MHz	766 MHz	762 MHz
	2	58	766 MHz	774 MHz	770 MHz
	2	59	774 MHz	782 MHz	778 MHz
	2	60	782 MHz	790 MHz	786 MHz
	1	61	790 MHz	798 MHz	794 MHz
	1	62	798 MHz	806 MHz	802 MHz
	1	63	806 MHz	814 MHz	810 MHz
	1	64	814 MHz	822 MHz	818 MHz
	1	65	822 MHz	830 MHz	826 MHz
	1	66	830 MHz	838 MHz	834 MHz
	1	67	838 MHz	846 MHz	842 MHz
	1	68	846 MHz	854 MHz	850 MHz
	1	69	854 MHz	862 MHz	858 MHz

Documents / Resources

	EKSELANS BY ITS MD HD L 4K RC Digital Modulator with Built-in DHMI 4K Loop [pdf] User Guide MD HD L 4K RC, Digital Modulator with Built-in DHMI 4K Loop
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References

- [Ek info@ek.plus](mailto:info@ek.plus)
- [Ek Ekselans by ITS](#)