EKSELANS BY ITS

USER MANUAL

MD HD EASY RC

122014

DIGITAL MODULATOR WITH IR

V03

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Introduction:

Description:

Digital modulator with which you can transfer an FHD signal over a coaxial cable network to your TV receivers with excellent quality.

Key features:

- Digital COFDM HD modulator-encoder with IR extender.
- Excellent modulation quality. MER ≥33 dB. HD resolution up to 1080p.
- Universal infrared extender. Allows IR frequency selection.
- LOOP HDMI IN / OUT.
- Recorder / Player USB.
- Quick menu. Easy selection with buttons of channel, attenuation, program indentifier and IR frequency.
- Advanced programming via PC software.
- High dynamic range> 80dB.

Contenido del embalaje:

1. 1 x MD HD EASY RC
2. 1 x Power supply5V DC.
3. 1 x Jack cable to IR.

INTERFACES AND CONNECTION:

Interfaces:

	1 y 2- Front programming buttons 3.-RF OUT. 4.-RF IN.. 5.-DC IN. 6.-USB B type programming. 7.-HDMI IN. 8.-USB (REC & PLAY). 9.-HDMI OUT (LOOP) 10.-IR transmitter.

	1 - 5VDC ON / OFF switch (To RF Out) 2.- Display 3.- Infrared (IR) cable transmitter.

Installation diagram:

1 y 2- They are used to configure.

3.- Connects to the facility (for receivers).

4.-RF signals are input.

5.- The built-in power supply is connected and plugged into the current.

6.-Connects to pc if necessary, to set up with **MD HD SOFT app.**

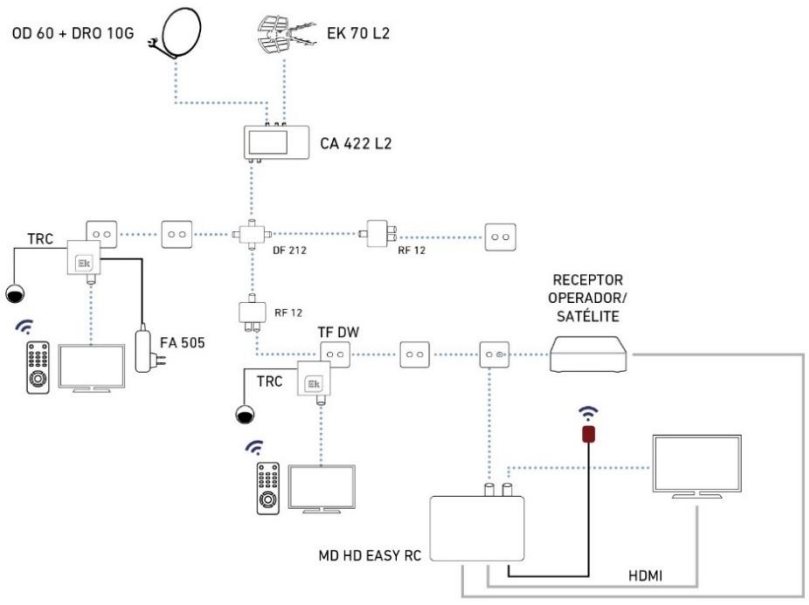
7.-It connects the signal you want to modulate.

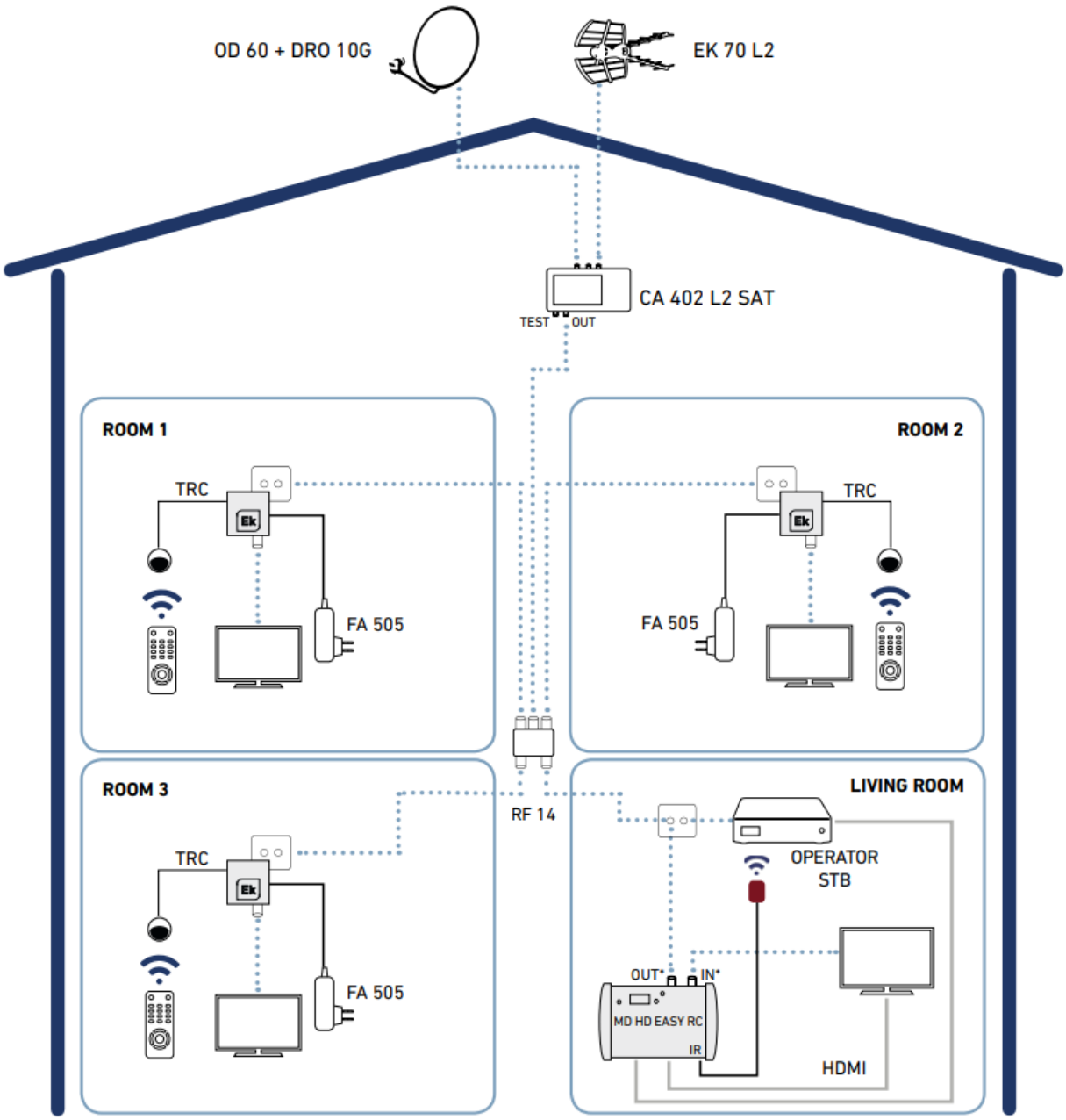
8.-The video you want to interleave is connected.

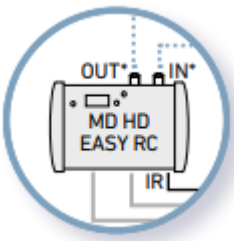
9.- LOOP from HDMI IN.

10.-In case that you needed; the IR extender could be connected .

The two TRC allow the STB to be controlled. One of them is fed to 5V directly from the MD HD EASY RC because there is current pass between them. The second TRC requires its FA 505 source because TAP does not allow current flow.***TRC not included**

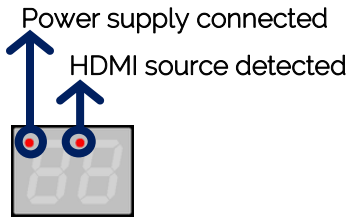






To obtain the maximum dynamic range and greater power it is recommended to connect the output of the modulator (OUT) to the TV socket and the TV to the INPUT connector of the modulator

Basic programming by buttons:



- Press ▲/▼ to change the menu option:
  - ch Setting the output channel [5…12+ 21…69]
  - ir Setting the IR carrier frequency [38 / 46 / 56 KHz]
  - id Setting the program identifier [1…34]
  - At Setting the desired output attenuation [0…15 dB]

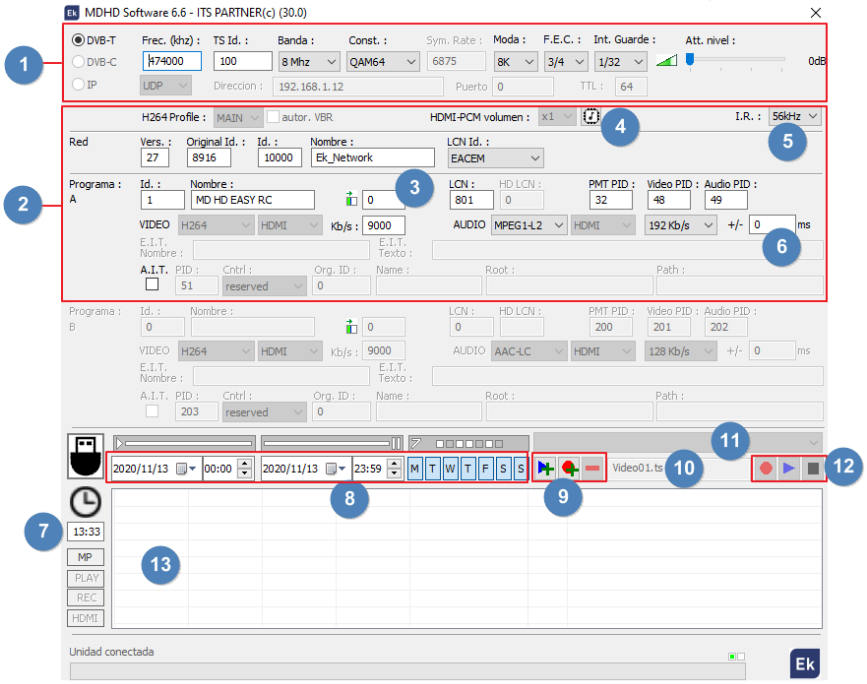
Press ENTER +▲/▼ menu options in order to modify their parameters.

- If a USB memory stick containing a file named "Video01.ts" is connected"
  - The file will be played when pressing PL.
  - The file will be created or overwritten when pressing rc. If it does not exist, it will be created.
  - Press St for finishing the recording or playing.
  - Playing, recording and stopping require confirmation. Press ENTER +▲/▼.
    - By Yes
    - bn No

- Press ▲ while connecting the power supply for factory default values. rS. Will appear on the display.
- Note:In case of using more than one modulator for the same receiver or TV set, it is necessary to modify the "Program ID" so that they have different values.

Advanced programming using MD HD Soft

- For advanced settings, download the SW "MD HD Soft" from the website: www.ek.plus
- Connect the modulator to the computer by using a Type A / Type B USB cable.

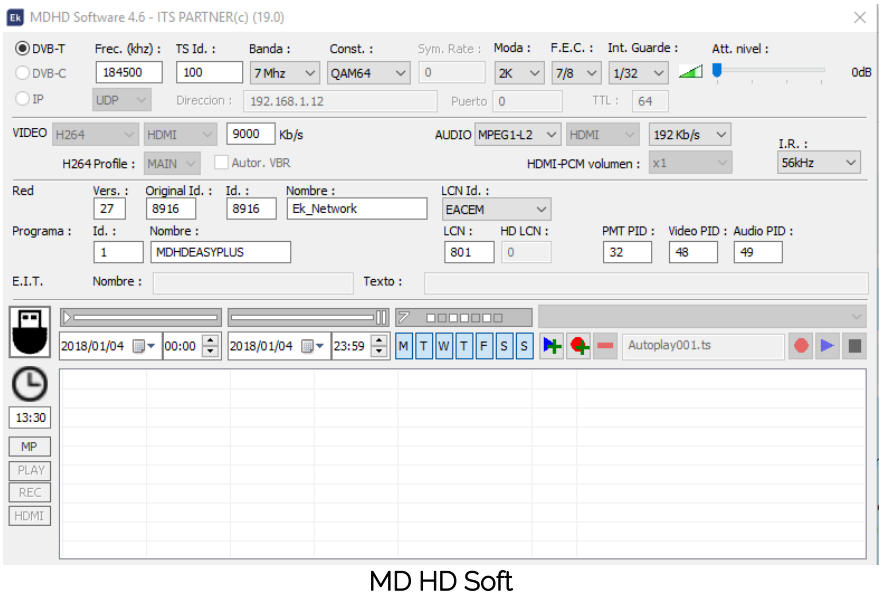


1. RF Parameters.
2. Video and TS parameters..
3. This box can be used to adjust an horizontal shift on the input video. With some sources (rare cases), customers were facing a green part on the left of the picture. With this setting, the picture can be moved to the left to make this green bar disappear.
4. Click the button on MDHDIface to write the EDID table in the modulator.
5. Frequency of the remote controller that points to the TRC.
6. Delay between audio and video of the output modulated signal. A delay of -999ms means that the video is almost 1s in front of the video
7. Current time and adjustment.
8. Schedule by date, time and days of the week.
9. Programming of scheduled events of recording and playing files to/from the USB memory stick
10. Name of the file that the modulator expects in the connected USB memory stick for playing or overwriting
11. Selection of the .ts file stored inside the connected USB memory stick
12. Control with MDHDSoft of the stored files in the USB memory stick. PLAY,STOP or Record.
13. Panel where uploaded videos will be displayed. .

USB MEMORY USE

- The modulator allows recording and playing .TS files.
- .TS files must be stored on a USB 3.0 memory with FAT32 files system.
- The **"EK Converter"** software can be found on the website https://ek.plus/software/. This converts the most common video and image formats to .TS format.
- Use the MD HD Soft software to program play / record time slots.
- The file "Video01.ts" hosted in the root of the memory will be played cyclically.
- If there are other files "Video02.ts", "Video03.ts", ... will be played consecutively.

Ek Converter



MD HD Soft

Technical data

REFERENCE		MD HD EASY RC
Code		122014
HDMI INPUT		
VIDEO		
Video resolution		480p/576p/720p/1080p @ 25/30/50/60 fps
Video compression		H.264
Video rate	Kbps	500-15000
AUDIO		
Audio compression		MPEG1-L2, AAC-LC
Audio rate	Kbps	128, 192, 256, 320
HDMI OUTPUT		LOOP
MODULATION		
DVB processing		NIT, PID
DVB adjustments		NID, ONID, Network ID, Network name, TS ID, Program ID, Program name, PMT PID, Video PID, Audio PID
Output frequency	MHz	170-230 & 470-862
Output channel	N.	5…12 + 21…69
Output level	dBµV	>80
Attenuation	dB	0…15
MER	dB	≥33
Bandwith	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
RF loop	dB	-2
INFRARED EXTENDER		
IR frequency carrier	KHz	38 / 46 / 56
IR emitter cable		Incluido / Included
Voltage RF output	Vdc	5 (ON / OFF Switch)
GENERAL		
Voltage feeding	Vdc	5
Power consumption	W	<5
Dimensions	mm	170 x 130 x 35

Frequency and channels table (Standard B/G)

- Band III. 7MHz Bandwidth.
- Band IV - V. 8MHz Bandwidth.

BAND	Channel	Start Freq.	End Freq	Central Freq
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	Channel	Start Freq.	End Freq	Central Freq
IV	21	470 MHz	478 MHz	474 MHz
	22	478 MHz	486 MHz	482 MHz
	23	486 MHz	494 MHz	490 MHz
	24	494 MHz	502 MHz	498 MHz
	25	502 MHz	510 MHz	506 MHz
	26	510 MHz	518 MHz	514 MHz
	27	518 MHz	526 MHz	522 MHz
	28	526 MHz	534 MHz	530 MHz
	29	534 MHz	542 MHz	538 MHz
	30	542 MHz	550 MHz	546 MHz
	31	550 MHz	558 MHz	554 MHz
	32	558 MHz	566 MHz	562 MHz
	33	566 MHz	574 MHz	570 MHz
	34	574 MHz	582 MHz	578 MHz
	35	582 MHz	590 MHz	586 MHz
	36	590 MHz	598 MHz	594 MHz
	37	598 MHz	606 MHz	602 MHz

BAND	LTE	Channel	Start Freq.	End Freq	Central Freq
V		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
	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