EKSELANS BY ITS

USER MANUAL

CM 8TC-IP

082293

DVB T/T2/C TRANSMODULATOR TO IP MULTICAST

V01

ITS Partner O.B.S S.L · Av. Cerdanyola 79-81 Local C
08172 Sant Cugat del Vallés · Barcelona (Spain) Phone:
+34935839543 · info@ek.plus · www.ek.plus

INDEX

INTRODUCTION:

Description:

2 inputs Transmodulator with 4 independent tuners per input or 1 input (Loop) for 8 DVB-T/T2/C tuners. Up to 64 SPTS/MPTS IP STREAMS output. Programming from PC connected to the power supply. Integrated remote access from the FA 524 Key power supply.

Key features:

- OCTO Terrestrial and Cable Module (DVB-T/T2/C).
- 2 inputs / 4 tuners per independent input + LOOP.
- IP output 1000Mbps SPTS/MPTS in UDP/RTP format.
- Up to 64 streams output / 512 PIDs.
- DRM Lynk.
- SAP function.
- IGMP Query and IGMP Auto-Join.
- Programming through PC Software (CM Management) for Windows.
- Configuration cloning and reporting.
- On-site (FA 510 / CM PR) or remote (FA 524) management using CM Key.

Packaging Contents:

- 1x CM 8TC-IP Module (082293)
- 1x Power cable (082123)
- 1x Mounting tab (251008)

CONNECTIONS AND INTERFACES:

1.-Status LEDs. Input tuner status information.

2.-Input connector and LOOP (Terrestrial Signal Passage).

3.- IP output up to 16 different output streams.

DIFFERENT output IPs are recommended for each Stream. The ports can be the same, but above 50000.

Example:

	S. Id.	Name	CI	OUT(12/64 - 114/512 PIDS)
I	149	Antena 3		239.255.254.40:55555
I	151	laSexta		239.255.254.43:55555
I	153	neox		239.255.254.44:55555
I	154	nova		239.255.254.46:55555
I	188	FDF		239.255.254.57:55555
I	189	Divinity		239.255.254.41:55555
I	190	Telecinco HD		239.255.254.42:55555
I	191	Cuatro HD		239.255.254.49:55555
I	490	tdp HD		239.255.254.47:55555
I	493	24h HD		239.255.254.54:55555
I	494	La 1 HD		239.255.254.55:55555
I	498	La 2 HD		239.255.254.45:55555

1.-Ventilation board.

2.-Power connector for the case of using a single module with FA 55 power supply.

3.-Module power port and input data bus. (IN)

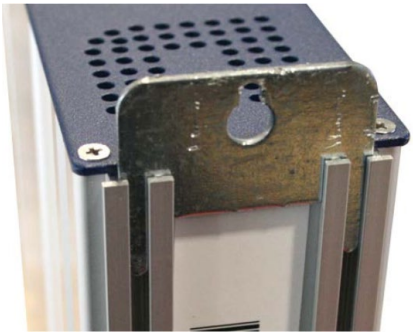
4.- Power port to the next module and output data bus. (OUT)

INSTALLATION AND CONNECTION:

General installation and connection:

1.- For installations of several modules (headend) or a single module, attach the transmodulator module to a wall chassis (CHM TR) or a rack chassis (CHR TR).

To do this, assemble the supplied metal part (COD: 251008) on the upper rear of the module as indicated in the image.



⚠ **Important note**: In the case of making a headend with several modules, always have the power supply to the **left** of the modules to be installed.

2.- Connect the power supply (FA 524) to the module, or connect it to the previous module using the supplied power cable.

The FA 55 power supply can also be used to power a single module.

3.- Connect the input signals to the transmodulator inputs.

⚠ **Important note**: Pay special attention to the type of entrance and the port. Follow the directions on the front.

4.- Install the "CM Management" software on the PC. It can be downloaded from the website www.ek.plus Software / CM Headers. Link

5.- To program the module, make any of the following connections:

5a.- Programming by PC – FA 524 via **USB.** Connect the FA 524 power supply to a PC using a USB (A) - USB (B) cable.

5b.- Programming by PC – FA 524 via **Ethernet**. Connect the source and PC via Ethernet cable, put them on the same LAN (the source comes with the address **192.168.0.222**).

If you need to connect from outside the LAN itself, you need to pre-activate the CM KEY passkey.

5c.- Programming by PC - CM PR via **USB.** Connect the module to the device using the power and data cable. Connect the PC to the CM PR using the USB cable.
6.- Execute the PC programming SW.
⚠ **Important note**: Connect the FA 524 power supply or the CM PR programming device and FA 55 power supply to the PC before running the software so that the PC driver detects it correctly.

Installing a multi-module headend:

If you want to install the module as one more element of a headend formed by other modules of the CM series, it is very important to follow the following instructions:

· Connect the different modules in series using the power cable provided after the power supply, which must always be to the left of the header.

· Verify the consumption of the modules. Up to 5 modules can usually be connected to an FA 524 power supply. However, we recommend checking the consumption of the modules to be installed.

·It is recommended to place IC modules next to the power supply.

PROGRAMMING SOFTWARE "CM Management":

The "CM Management" programming software allows you to program and manage all the modules of the CM header. The program is only available for Windows operating system (XP version, 7 and above). Once downloaded from the website www.ek.plus , Software / CM Header, run it having previously connected the PC to the USB port of the FA 524 or CM PR power supply. This will ensure that the driver detects the control panel.

Main screen:

The appearance of the main screen of the "CM Management" software is as follows:

Always check that you have the latest version of the WEBSITE software installed.

We can connect directly by USB or LAN.

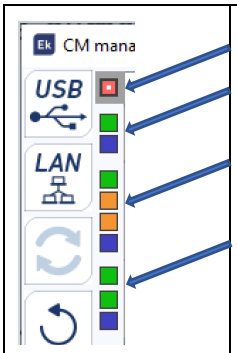
In the case of LAN, we will select the equipment and connect by pressing: 

- **ID:** We will enter the MAC of the corresponding power supply.
- **KEY:** we will enter the CM Key, if there is one. If not "0".
- **LOCAL IP:** we will enter the local IP in the case of connecting by LAN from the same network.
- **DESCRIPTION:** description.

Using the "CM Management" software, all modules connected to the power supply can be managed and programmed. Here's what each of the main side options does to do:

	Connect to the modules via the power supply using the USB connector.
	Connect to the modules via the power supply using the LAN interface.
	Button to update Firmware of any of the cards. If there is a SW available, the corresponding card will be marked with a white triangle in the inner left corner. Double-clicking will change color to orange and the icon will change from gray to blue. Clicking on the icon will update the FW of all selected cards. It is recommended to update one by one by doing a **power RESET** at the end.
	Reset selected card. This feature is not available for all cards.
	This option allows you to load a previously saved programming configuration on your PC to the header. The configuration file will have a *.dtc extension.
	This option allows you to save a programming configuration of a headend on the PC, to be later loaded following the steps in the previous point. **THE DISTRIBUTION OF THE MODULES MUST BE IDENTICAL TO THAT OF THE *.dtc file**.
	Data-logger. It allows you to save the data of the different modules of the header in a single *.html file.
	Allows you to change the output of DVB-T (COFDM) modules to DVB-C (QAM). After the change, a **power RESET must be done**. Not active for this model.

The main screen of the "CM Management" allows you to easily identify the different modules connected to the power supply, as can be seen in the following screen:



Power supply and header manager (red).

Identification of a module with an input card (green) and an output card (blue).

Identification of a module with one input card (green), two ICs (orange), and one output card (blue).

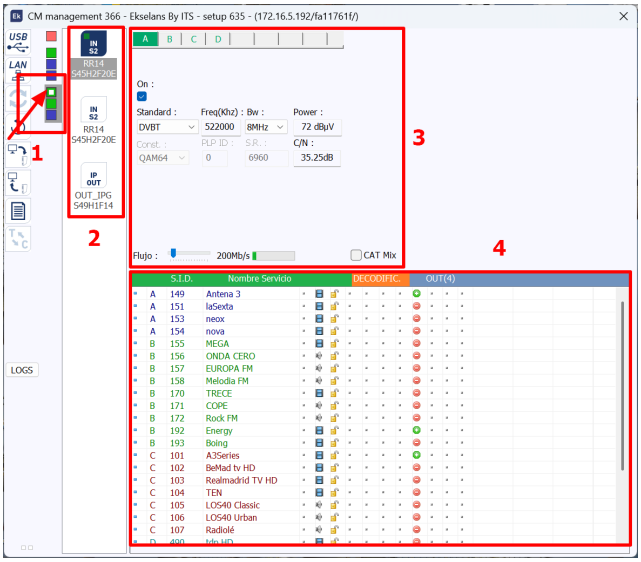
Identification of a module with two input cards (green) and one exit card (blue).

In this case we would have a power supply and three modules, each with its different internal cards.

By clicking on the corresponding module we will enter its specific configuration menu.

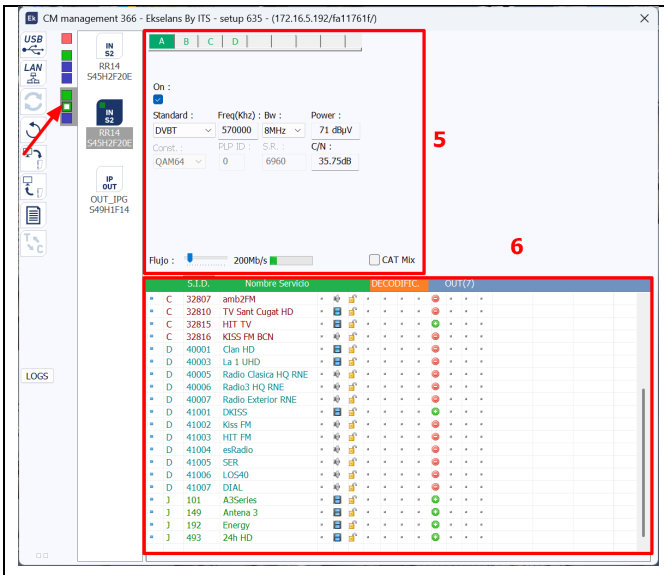
Never open the CM MANAGEMENT program twice, it will give you configuration problems.

CM 8TC-IP Module Configuration:

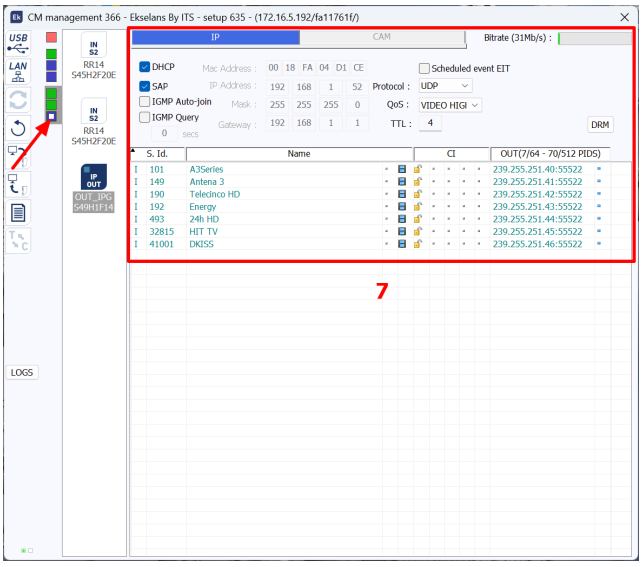


1. Selected module.
2. Configuration of the selected module.
3. 1st Entry card. Select between DVB-T / DVB-T2 and DVB-C.
4. Pool of programs available in the configured inputs of the first input card.

5. 2nd Entry card. Select between DVB-T / DVB-T2 and DVB-C.



6. A pool of programs available on the configured inputs of the first input card (marked as J) and the second input card.
Note: Services selected from the first entry card must be re-selected on the second card.



7. IP exit card. Only the selected services will appear. IP:port will be added as needed.

Entry Card:

This part of the menu will set up the input card. In this model there are two input cards, one corresponding to each green square, so this applies to both cards. By selecting A, B, C, or D we will select the input tuner that we want to configure:

ON: Enable or disable the selected demodulator.

Standard: Three types: DVB-T, DVB-T2 or DVB-C per selected demodulator.

Freq. (KHz): CENTRAL frequency of the MUX to be tuned to KHz. Channel 23 ➔ 490000

BW: Bandwidth. Selected channel width. 6 or 7 or 8 MHz. (8Mhz. UHF band)

Power: Input power at the selected frequency. (dBuV)

C/N: Input quality at the selected frequency. (dB)

If we select DVB-C, the following boxes are activated:

Const.: Constellation, select between QAM16-QUAM32-QUAM64-QUAM128 or QUAM256.

S.R.: Enter the required value.

Once the parameters have been configured correctly, the signal will be acquired, indicating in **Level** and **Quality** an approximate value of these parameters, in dBuV the Level and in dB the quality.

IT CANNOT BE CONSIDERED AS A PROFESSIONAL MEASURE.

Flow: maximum throughput in Mbps that will enter the modulator board. For this model, the maximum possible is 200Mbps. If this is not reached, this number could be reduced.

CAT Mix: Activate in the case of having encrypted channels from different providers in the MUXs. This will allow EMMs to renew rights in CAMs.

Program Pool:

In this table will be listed all the channels, services, that correspond to the selected inputs. From here, you select the services you want to assign to each outbound IP. Each service is assigned to the input tuner from which it has been tuned.

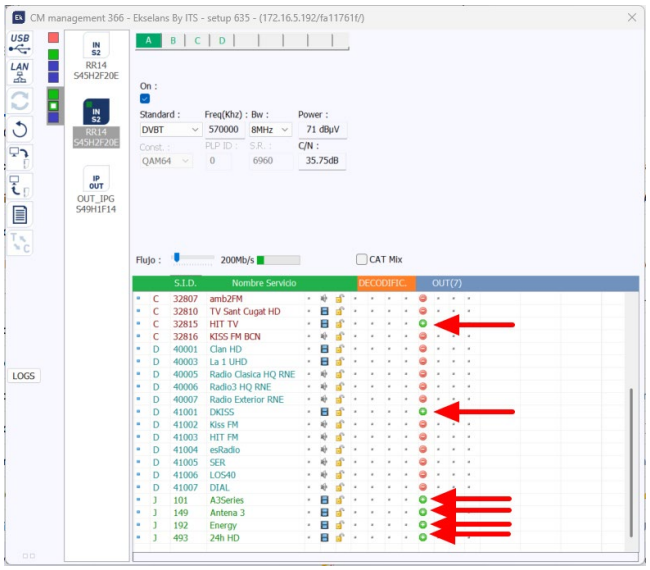
Since this module has two cards, the selection made in the first one will be dragged to the second and will appear in the pool with the letter J. They must be selected again to appear on the exit card.

S.I.D.: S.I.D. (Service Information Descriptor) assigned at origin to said service.

Service Name: Name assigned to the service at source. A symbol then appears indicating whether the service is TV or Radio, and whether it is encrypted or free-to-air. The name of the service is not editable/modifiable.

DECODE: This module does not have a PC.

OUT: Here you will be marking/selecting the services you want to have at the exit



Exit card:

This part of the menu will set up the exit card.

MAC Address: MAC address of the module.

IP Address, mask and gateway:

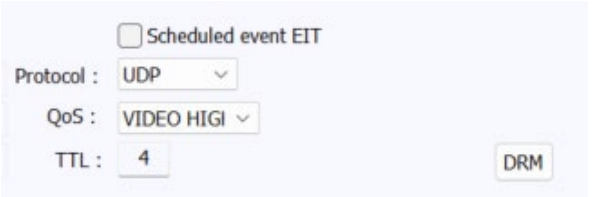
IP address, subnet mask, and gateway that can be set for the module.

DHCP: In case the protocol for automatic obtaining of network parameters is activated, the rest of the IP values will be disabled.

SAP: Service Anouncement Protocol. Activate this option if we want the network devices to find the services available on the network.

IGMP Query: Enables or disables the Querier. Activate only in the event that there is no Querier on the network. The range of the Queries can be configured in seconds.

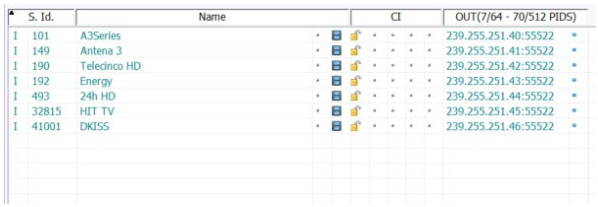
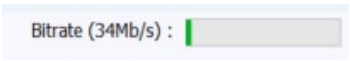
IGMP Auto-Join: Enables or disables AUTO JOIN.



Protocol: It is possible to choose the desired internet protocol for streaming the streams:

- **UDP** is the recommended protocol for streaming as it takes up less bandwidth.
- **RTP** offers additional signaling and is more convenient for real-time transmissions.

QoS: Quality of service. It allows you to choose the treatment that IP packets will

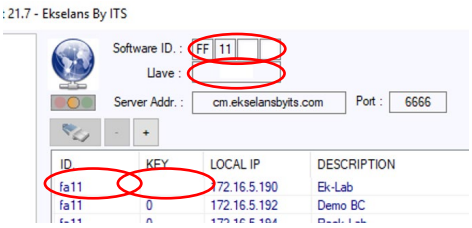
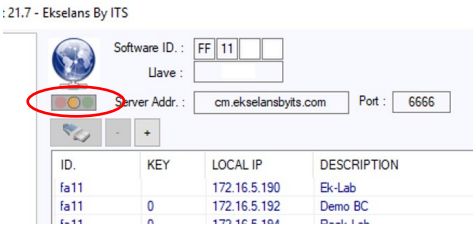
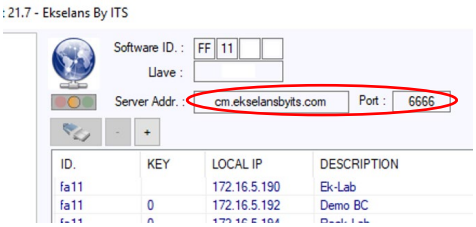
	receive when passing through different routers on the network. **TTL:** Time To Live: A numerical value that indicates the maximum number of routers that an IP packet can traverse. By default it is set at 128. **DRM:** In the event that DRM is required, you can select one of the available ones: Samsung Link or LG Pro-Idiom. **Scheduled event EIT:** If the check is not selected, only pass the *EPG present/following*. If selected, the scheduled EPG will pass.
	All the selected services are listed on the entry cards. Each one will be associated with an IP address and a port. **We recommend**, for example: **239.255.255.1** and the different ports, for example: **50001, etc.** **It is recommended that the IPs be different for each stream, and the port above 50000, but they can be the same.**
	**B.W.:** The image shows the total output bit rate of all the services added.

Remote management of the headend:

The CM header can be managed remotely. This function is integrated into the FA 524 power supply and each of the headend modules. To do this, you must have a CM KEY (code 082015).

Each CM KEY is associated with **a single power supply** and will only allow you to remotely manage that source. The installer will provide the Power Supply identifier to ITS Partner when requesting the CM KEY.

Each installation company, in any case, will have a unique Software ID and a Key that will be supplied together with the CM KEY.

	**Software ID:** Identifier of the Installer/Installation Company. **Key:** Identifier of the Installer/Installation Company. **ID:** Power Supply Identifier (MAC). **KEY:** CM KEY supplied.
	**Red:** No internet connection. **Orange:** Internet and server connection. **Green:** Connection established against the headend modules.
	Address and port of the data server that makes remote connection possible. **It comes configured by default. DO NOT MODIFY.**

FAQS

- What loads can I use for the module?

No charging required.

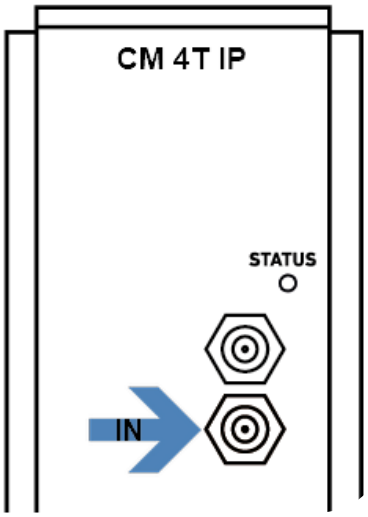
- Not detecting the headend module?

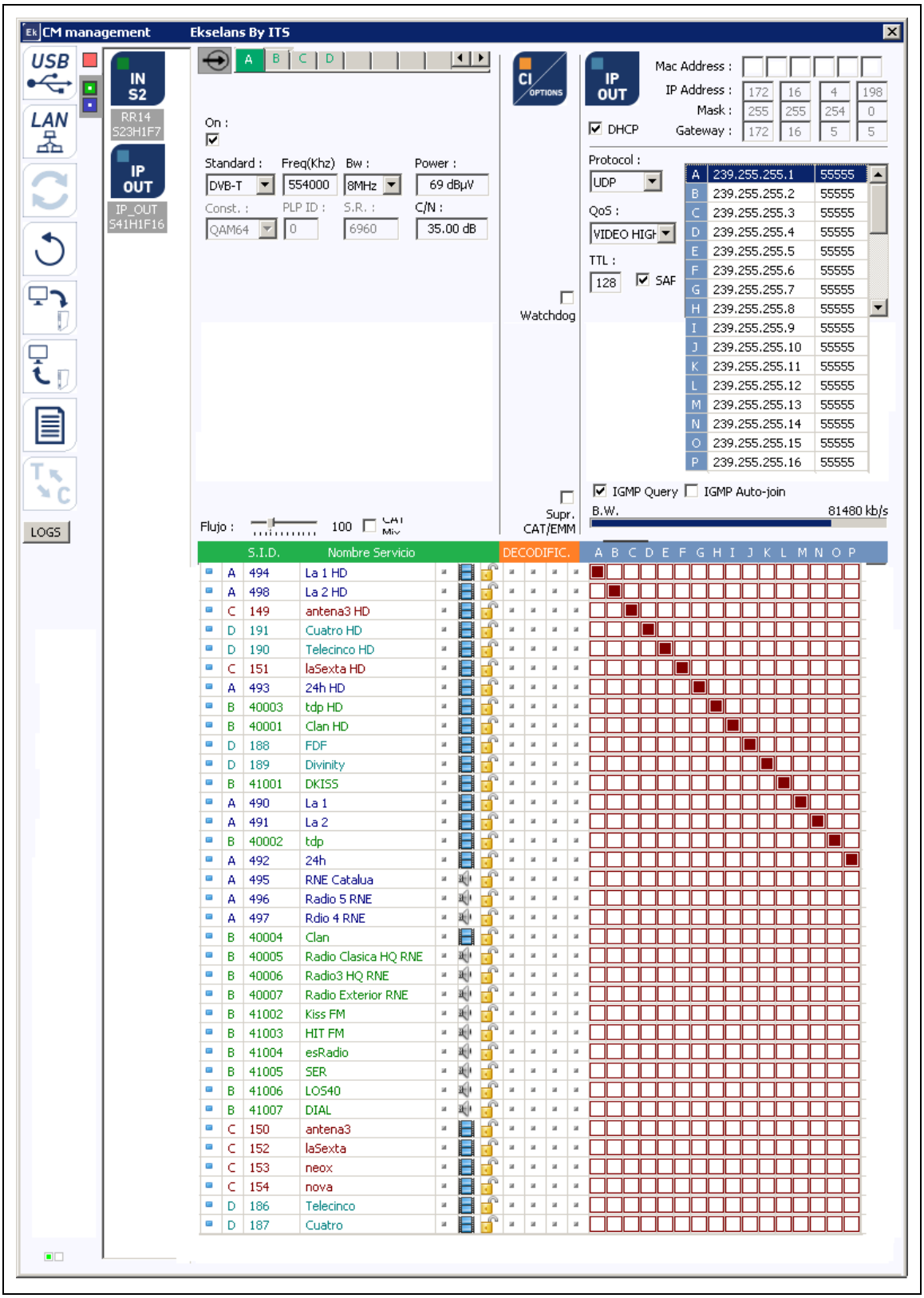
Put FA 524 on the left. Connect the headend module to the right. Plug the power into the FA 524, connect a USB cable to the PC and open the CM MANAGEMENT program. Press the USB button and it will connect to the module.

- I don't have a signal at the tuner input?

Check the input signal by plugging the Metek into the output of the "F" OUT connector.

- Can I see an example configuration?

	UHF input: A: DVB-T Channel 31 ➔ 554000/8MHz. B: DVB-T Channel 41 ➔ 634000/8MHz. C: DVB-T Channel 27 ➔ 522000/8MHz. D: DVB-T Channel 34 ➔ 578000/8MHz.


CM management
Ekselans By ITS
USB
LAN
LOGS
IN S2
RR14 S23H1F7
IP OUT
IP_OUT S41H1F16
A B C D
On :
Standard : DVB-T
Freq(Khz) 554000
Bw : 8MHz
Power : 69 dBµV
Const. : QAM64
PLP ID : 0
S.R. : 6960
C/N : 35.00 dB
CI OPTIONS
IP OUT
Mac Address :
IP Address : 172 16 4 198
Mask : 255 255 254 0
Gateway : 172 16 5 5
DHCP
Protocol : UDP
QoS : VIDEO HIGH
TTL : 128
SAF
Watchdog
A 239.255.255.1 55555
B 239.255.255.2 55555
C 239.255.255.3 55555
D 239.255.255.4 55555
E 239.255.255.5 55555
F 239.255.255.6 55555
G 239.255.255.7 55555
H 239.255.255.8 55555
I 239.255.255.9 55555
J 239.255.255.10 55555
K 239.255.255.11 55555
L 239.255.255.12 55555
M 239.255.255.13 55555
N 239.255.255.14 55555
O 239.255.255.15 55555
P 239.255.255.16 55555
IGMP Query
IGMP Auto-join
B.W. 81480 kb/s
Supr. CAT/EMM
Flujo : 100
S.I.D. Nombre Servicio DECODIFIC. A B C D E F G H I J K L M N O P
A 494 La 1 HD
A 498 La 2 HD
C 149 antena3 HD
D 191 Cuatro HD
D 190 Telecinco HD
C 151 laSexta HD
A 493 24h HD
B 40003 tdp HD
B 40001 Clan HD
D 188 FDF
D 189 Divinity
B 41001 DKISS
A 490 La 1
A 491 La 2
B 40002 tdp
A 492 24h
A 495 RNE Catalua
A 496 Radio 5 RNE
A 497 Rdio 4 RNE
B 40004 Clan
B 40005 Radio Clasica HQ RNE
B 40006 Radio3 HQ RNE
B 40007 Radio Exterior RNE
B 41002 Kiss FM
B 41003 HIT FM
B 41004 esRadio
B 41005 SER
B 41006 LOS40
B 41007 DIAL
C 150 antena3
C 152 laSexta
C 153 neox
C 154 nova
D 186 Telecinco
D 187 Cuatro

Specifications

To see the technical data sheet of the equipment, click on the following link:

https://ek.plus/search/082293

CE Certificate

To view the CE certificate of the equipment, click on the following link:

https://ek.plus/search/082293