



EKSELANS BY ITS

# USER MANUAL

## CM COMPACT 8S4

085001

4 input (8 tuner)  
DVB S-S2 multistream to COFDM-QAM  
4 RF (adjacent) output channels  
transmodulator

V01

# TABLE OF CONTENTS

INTRODUCTION:.....	3
Description:.....	3
Main features:.....	3
Package contents:.....	3
CONNECTIONS AND INTERFACES:.....	4
INSTALLATION AND CONNECTION:.....	5
General installation and connection:.....	5
“CM Management” PROGRAMMING SOFTWARE:.....	6
Main screen:.....	6
CM COMPACT 8S4 module configuration:.....	8
Inputs: Satellite input:.....	8
CAM:.....	9
Program pool:.....	10
Outputs: Output modulation.....	10
DVB-T output card:.....	10
DVB-C output card:.....	11
RF output channel parameters:.....	11
Status:.....	11
Advanced configuration:.....	12
FAQS.....	13
CONFIGURATION EXAMPLE.....	14

## INTRODUCTION:

### Description:

4 input (8 tuner) DVB S/S2 MULTISTREAM to COFDM/QAM TRA transmodulator. 95 dBuV Output level. MER (Modulation Error Rate) >35dB. Intelligent remultiplexing of services. Adjacent RF output channels. 13/18V, 22 KHz and DiSEqC. PC programming. Power supply included.


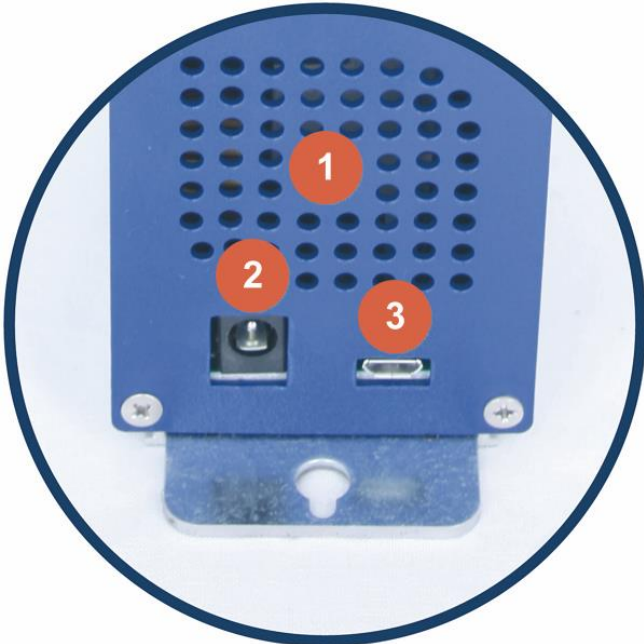
### Main features:

- OCTO module with 4 satellite inputs and 8 tuners (DVB-S/S2/S2X) MULTISTREAM
- Individual control of each of the four inputs of the module: 13/18V - 22KHz - DiSEqC (A/B/C/D). Subsequently, each tuner will be associated to the desired input.
- Flexible remultiplexing of services on any output channel.
- NIT table editing, SID remapping and transmission or deletion of EMM messages and CAT tables.
- Output of up to 4 adjacent COFDM/4 adjacent QAM channels.
- Programmable QAM/COFDM output.
- High output level.
- Excellent output signal quality with a high MER (Modulation Error Rate).
- LCN/LCN HD insertion.
- Programming via PC Software ("CM Management") for Windows.
- Configuration cloning and report generation.
- Power supply and USB-USB cable included.

### Package contents:






- CM COMPACT 8S4 module (085001)
- FA54 power supply unit (082026)
- 2x Mounting tabs (251008)
- USB A - micro-USB B cable (280022)

**CONNECTIONS AND INTERFACES:**

	<p>1- RF mix input connector.</p> <p>2- RF output connector. This output will supply the MUX's generated by the module itself, <u>plus those entering through connector number 1.</u></p> <p>3- Status LED. Displays the status of the input and output sequentially. This sequence starts with short blinks indicating the coupling status of the selected demodulators. Red: not coupled; Green: coupled. Followed by a longer blink indicating whether the modulator has started up or not. Red: not started up; Green: started up.</p> <p>4- Input connectors to each tuner.</p>
	<p>1- Ventilation grille.</p> <p>2- Power supply connector.</p> <p>3- Micro-USB B communication port for connection to the PC.</p>

## INSTALLATION AND CONNECTION:

General installation and connection:

<p>1. The unit has two tabs for mounting the unit directly to the wall.</p> <p>There is no chassis for the unit to be mounted in a RACK (Rackmount case).</p>	
	
<p>2. Connect the satellite signals to the inputs of the CM COMPACT 8S4 unit.</p>	
<p>3. </p>	<p><b>Important note:</b> Pay particular attention to the input type. Follow the instructions on the front panel.</p>
<p>4. Connect the power supply unit supplied. Remember that it must be 5V. 4A.</p>	
<p>5. Install the "CM Management" software on the PC. It can be downloaded from the website <a href="http://www.ek.plus">www.ek.plus</a> Software/CM Headends Section. <a href="#">Link</a></p>	
<p>6. Connect the PC to the CM COMPACT 8S4 using the USB cable supplied.</p>	
<p>7. Run the PC SW programming.</p>	
<p>8. </p>	<p><b>Important note:</b> Connect the power supply to the PC <u>before running the software</u> so that it is correctly detected by the PC driver.</p>

## “CM Management” PROGRAMMING SOFTWARE:

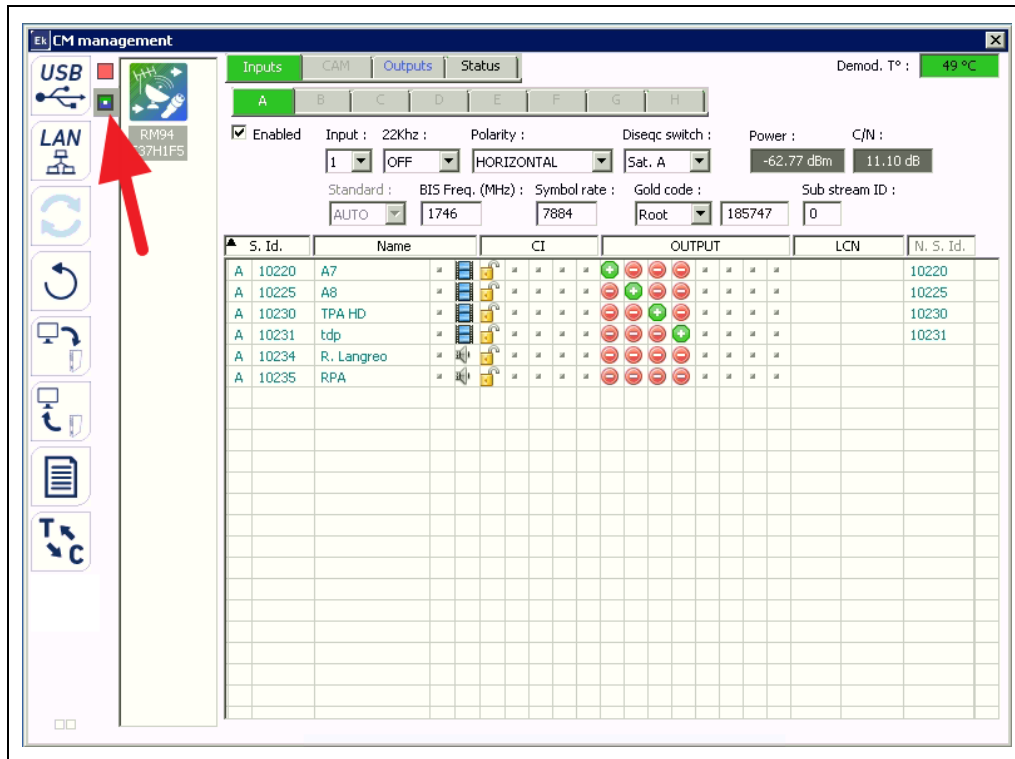
The “CM Management” programming software enables programming and controlling the CM COMPACT 8S4. The program is only available for Windows operating systems (version XP, 7 and higher). Once downloaded from the website [www.ek.plus](http://www.ek.plus), Software/CM Headend section, run the program after connecting the PC to the USB port. This will ensure that the driver detects the unit.

### Main screen:









The main screen of the “CM Management” software is displayed as follows:



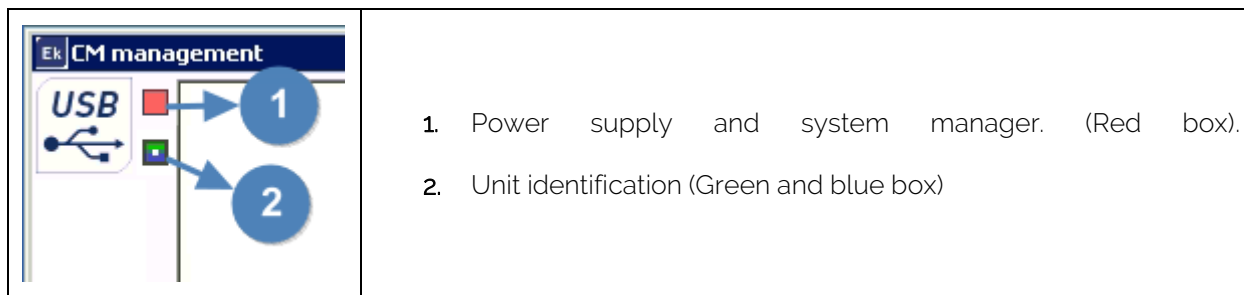
Always check that the latest software version from our [WEBSITE](http://www.ek.plus) is installed. By clicking on the “green and blue” colored square, the main configuration screen of the CM COMPACT 8S4 unit is displayed in the “inputs” tab:



Using the "CM Management" software, the module connected to the PC can be controlled and programmed. The function of each of the main side options is explained below:

	<p>Button to connect to the module using the USB connector.</p>
	<p>Option not available for this model.</p>
	<p>Button to <u>update Firmware</u>. If any SW is available, it will be displayed with a small white triangle in the inner left corner. By double clicking the button will change the colour to orange and the icon will change from grey to blue. Clicking the icon will update the FW of the module. <u>It is recommended to update each button one at a time via a RESET of the power supply at the end.</u></p>
	<p>Button for rebooting the unit.</p>
	<p>This option enables loading a programming configuration previously saved in the PC. The configuration file will have a <b>*.dtc</b> extension.</p>
	<p>This option enables the programming configuration of the unit to be saved in the PC, to be subsequently loaded following the steps of the preceding point.</p>
	<p>Data-logger button. Enables saving the unit data in a single <b>*.html</b> file.</p>
	<p>Button which enables changing the output of the <b>DVB-T (COFDM)</b> modules to <b>DVB-C (QAM)</b>.</p>

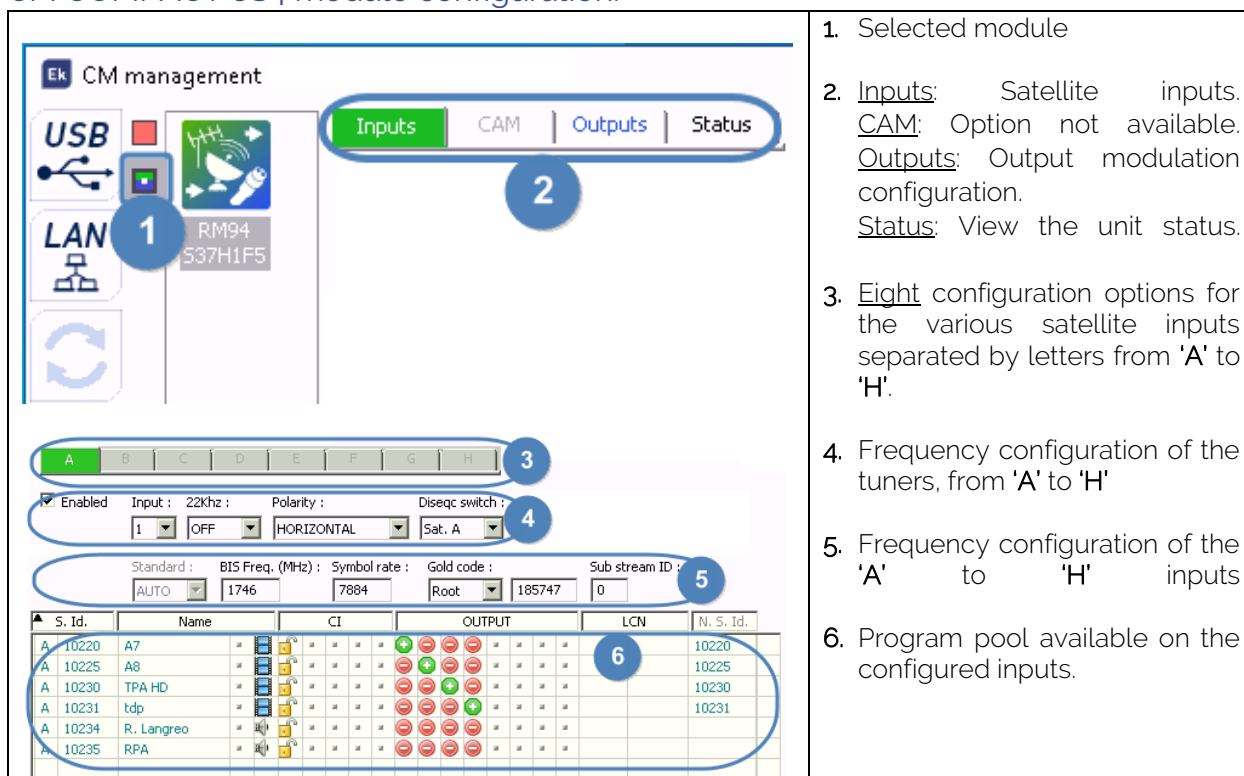
The main "CM Management" screen enables easy identification of the connected module, as can be seen in the following screen:



1. Power supply and system manager. (Red box).
2. Unit identification (Green and blue box)

Never open the CM MANAGEMENT program twice, this will cause configuration problems.

### CM COMPACT 8S4 module configuration:



1. Selected module
2. Inputs: Satellite inputs.  
CAM: Option not available.  
Outputs: Output modulation configuration.  
Status: View the unit status.
3. Eight configuration options for the various satellite inputs separated by letters from 'A' to 'H'.
4. Frequency configuration of the tuners, from 'A' to 'H'
5. Frequency configuration of the 'A' to 'H' inputs
6. Program pool available on the configured inputs.

### Inputs: Satellite input:

Select from A to H, the input tuner which are wished to be configured:

- **Enabled**: Enables or disables the selected physical input. (IN1 - IN2 - IN3 - IN4). It is important to DISABLE the inputs which are not used, disabling the Enabled check.
- **Input**: Select 1-2-3-4 in the drop-down menu the associated physical input. (IN1 - IN2 - IN3 - IN4)
- **22Khz**: ON/OFF: Select from the drop-down menu as to whether or not to enable the 22Khz. for high frequencies.
- **Polarity**: Select Vertical or Horizontal depending on the required channel.



- **Diseqc switch:** if having a DiSEqC multiswitch, select between A, B, C or D. If there is no DiSEqC multiswitch, the selected value will not any effect.
- **Standard:** Option not available.
- **Biss Freq. (MHz):** Frequency of the MUX to be tuned. The program uses IF (Intermediate Frequency), but carries out the conversion automatically if the frequency in MHZ is added.

**Example:**

If 11496Mhz., is entered, once the last number is pressed, 1746 will automatically appear.  
Calculation: 11496 - 9750 = 1746.

- **Symbol Rate:** Symbol Rate of the selected MUX.
- **Gold code:** Depending on the MUX, the following can be selected:  
None: None  
Root: Type of root code. Enter the code in the .  
Gold: Gold code type. Enter the code in the .
- **Sub stream ID:** Enter the stream associated with the selected MUX.

**Example:**

Information obtained from the WEBSITE:

Frequency and polarity	Symbol Rate (SR), FEC and modulation	Satellite	Orbital position
11496 H	7884 8/9 DVB-S2 8P SK	Hispasat 30W-4 (Hispasat 1D)	30° West
PLS Root: 185747 - PLS Gold: 25613 - PLS Combo: 25613			

CM Management configuration example:

Enabled    Input : 22Khz :    Polarity :    Diseqc switch :

Standard :    BISS Freq. (MHz) :    Symbol rate :    Gold code :    Sub stream ID :

S. Id.	Name	CI	OUTPUT	LCN	N. S. Id.
A 10220	A7				10220
A 10225	A8				10225
A 10230	TPA HD				10230
A 10231	tdp				10231
A 10234	R. Langreo				
A 10235	RPA				

CAM:

Not available for this model.

Program pool:

S. Id.	Name	CI	OUTPUT	LCN	N. S. Id.
A 10220	A7		+		10220
A 10225	A8		+		10225
A 10230	TPA HD		+		10230
A 10231	tdp		+		10231
A 10234	R. Langreo				
A 10235	RPA				

In this table all channels, services, which correspond to the selected entries will be listed. From here the services that are wished to be assigned to each output MUX can be selected. Each service is assigned to the input tuner from which it has been tuned.

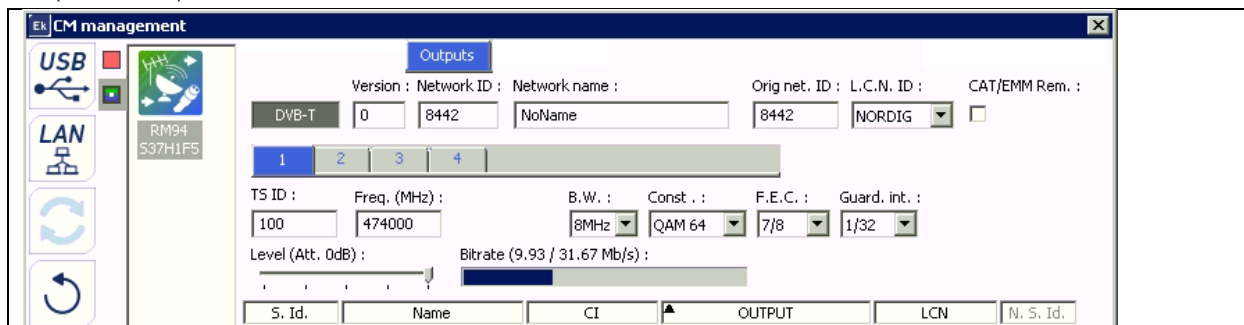
**S. Id.:** S.ID. (Service Identification) assigned at source to that service.

**Name: Service name:** name assigned to the service at source. Next, a symbol appears indicating whether the service is TV or Radio, and whether it is encrypted or open.

**CI.:** This module does not have a CI card.

**OUTPUT: MODULATION:** each circle corresponds to a MUX output: 1, 2, 3, 4, 5, 6, 7 or 8. By clicking on that circle, it changes from red to green, and this service is assigned to a MUX output.

Outputs: Output modulation.



DVB-T output card:

- **Version:** N.I.T. version
- **Network ID:** Original Network Identification Descriptor.
- **Network name:** Network name: Identifies the name of the local DVB-T (Digital Terrestrial Television) network.
- **Orig net. ID:** Network Identification Descriptor.
- **L.C.N. ID:** Logical Channel Number. LCN type selection (EACEM for Europe, ITC for the United Kingdom, Nordig for Nordic countries or Australia)
- **CAT/EMM Rem.:** Transmission or deletion of EMM messages and CAT tables.

**DVB-C output card:**

For the DVB-C everything is the same as for the DVB-T except for the modulation parameters:

- **Const.:** Select the desired output constellation: 256QAM, 128QAM, 64QAM, 16QAM.
- **Band:** Output channel bandwidth: 7MHz or 8MHz.
- **S.R.:** Enter the required value.

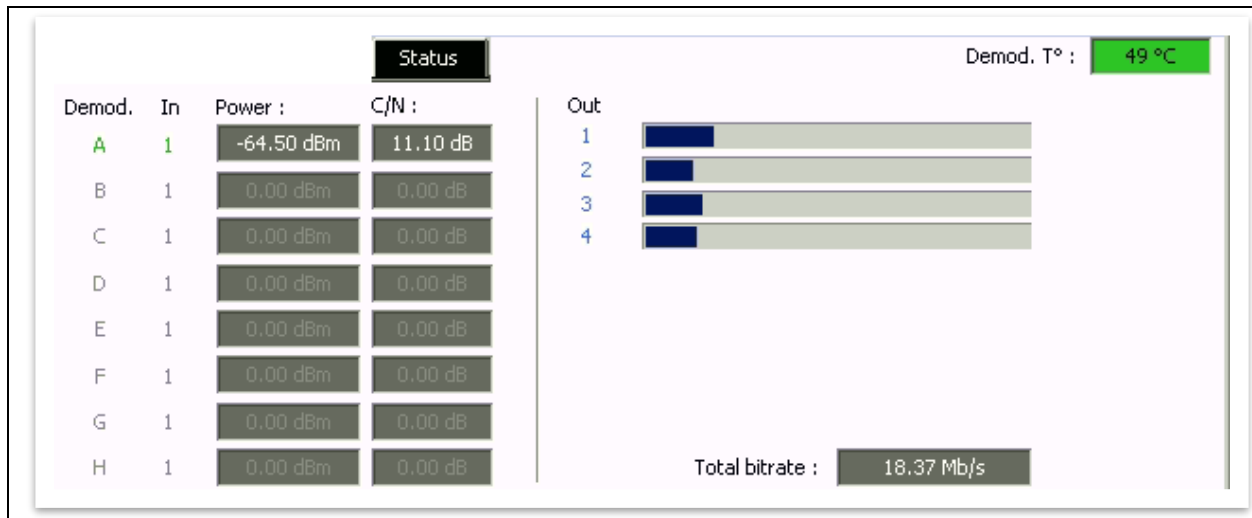
Whenever the modulation of the module is changed, the unit must be reset from the power supply.

**RF output channel parameters:**

- **T.S ID:** Identifier of the T.S. In general, it is not necessary to modify the identifier.
- **Freq. (MHz):** Center frequency of the first desired output channel. **E.g. CH21=474000**  
The first one is selected and the next three are adjacent. CH22-CH23-CH24
- **B.W.:** Bandwidth of the output channel: 7MHz or 8MHz.
- **Const.:** Constellation. Select the desired output constellation: 64QAM, 16QAM, QPSK.
- **F.E.C.:** (Forward Error Correction). Select the error correction level: 7/8, 5/6, 3/4, 2/3, 1/2.
- **Guard. Int.:** Guard Interval: Select guard interval: 1/32, 1/16, 1/8, 1/4.
- **Level:** The output level of the modulator is >95dBuV; it can be adjusted 20dB by using this attenuator.

**Status:**

Once the parameters have been configured correctly, the signal will be acquired and an approximate value of these parameters will be specified in **Power** and **C/N**. The power in dBm and the quality in dB. CANNOT BE CONSIDERED AS A PROFESSIONAL MEASUREMENT.



**Information window on each MUX output current:**

Four bars are displayed corresponding to each MUX output. The green line indicates the percentage of the channel occupied.

The "Total bitrate" or bit rate, indicates the total current being transmitted. It should not exceed 100Mb/s. It should not exceed 80% of the current, unless for services with constant current.

**Advanced configuration:**

**LCN**

**Function:**

The transmodulator enables tagging the Transport Streams of information so that the TV programs are displayed in order on the TV set, in its program guide as specified from the headend. In this way, all TV sets with the LCN function available will have the same content in each program number on the TV set. Whilst this function is useful for hotels or cable operators, as it avoids manual reordering of the programs on each TV set, tuning of each TV set is required. To carry out the program number assignment, simply double-click on the LCN column of the program to be modified and apply the number of the desired position. Example:

S. Id.	Name	CI	OUTPUT	LCN	N. S. Id.
A 17500	SAT.1			4	17500
A 17501	ProSieben			5	17501
A 17502	kabel eins			6	17502
A 17503	WELT			8	17503
A 17504	SAT.1 Gold			1	17504
A 17505	Pro7 MAXX			7	17505
A 17507	SAT.1 Bayern			2	17507
A 17508	SAT.1 NRW			3	17508
A 17509	kabel eins Doku			9	17509

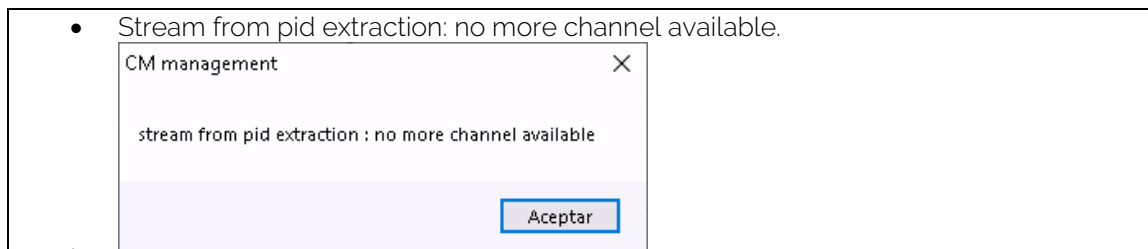
**Configuration of SID and NSID parameters:**

The transmodulators enables a "remapping" of the SID fields. This functionality will enable changing the content of a program on the TV set, leaving that program on the same output channel of the headend module, without requiring to retune the TV set. To do this, it is necessary to activate the new program to be transmitted in the same NSID where the previous one was being broadcast, by double clicking on the NSID column of the program to be modified. Example:

S. Id.	Name	CI	OUTPUT	LCN	N. S. Id.
A 17500	SAT.1			4	17500
A 17501	ProSieben			5	17501
A 17502	kabel eins			6	17502
A 17503	WELT			8	17503
A 17504	SAT.1 Gold			1	17504
A 17505	Pro7 MAXX			7	17505
A 17507	SAT.1 Bayern			2	17507
A 17508	SAT.1 NRW			3	17508
A 17509	kabel eins Doku			9	17509

## FAQS

- How many services can be installed on a MUX output?  
It depends on the size of the channel selected in the "Program Pool". For HD channels less channels can be installed than for SD channels.
- Why is the headend module not detected?  
Plug the transformer into the power supply, and connect the output connector to the CM COMPACT. Then connect a USB cable to the PC and open the CM MANAGEMENT program. Press the USB button and it will be connected to the module.
- Why is there no signal at the tuner input?  
Check the orientation of the satellite dish and the LNB with the [Metek](#).
- If the MER (Modulation Error Rate) is located next to the power socket, can it be improved?  
For installations where there are problems with the MER (Modulation Error Rate), an improved performance of the product can be obtained, in the event that it has been attenuated at the headend, leaving the attenuator at 0dB in the CM Management, and adding an external attenuator at the headend output until the same attenuation is obtained.
- How many input STREAMS can be added to the unit?  
The unit allows for a maximum of 8 Streams.
- How many output services can be added?  
The permitted maximum is 56 services in total, between TV and Radio.
- The following message is displayed:



What needs to be done?

The unit allows for a maximum of 8 Streams. A stream must be removed in order to be able to add another.

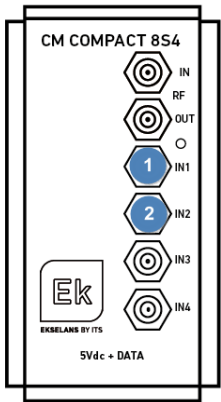
- Is there a button to save the configuration?  
The unit does not have any save button per se; it is saved automatically.
- Can the configuration be exported and saved in a file on my PC?

Press the CM MANAGEMENT button

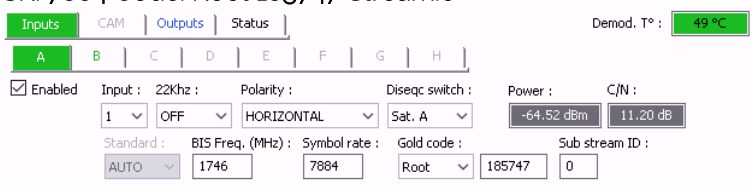


and it will be saved in a file with the '.DTC' extension.

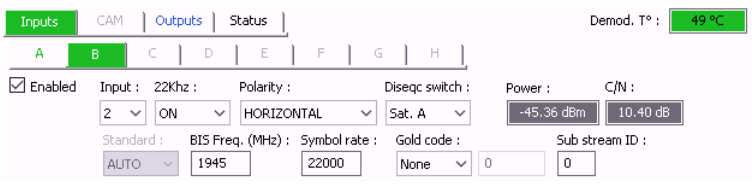
**CONFIGURATION EXAMPLE.**

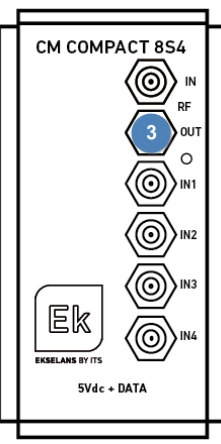


1. **IN1:** Hispasat Satellite  
**Input A:** Frequency: 11496MHz.-BIS:1746Mhz. (11496-9750)  
 Polarity: Horizontal LOW  
 SR: 7884 Code: Root 185747 Stream:0



2. **IN2:** Astra Satellite  
**Input B:** Frequency: 12545MHz.-BIS:1945Mhz. (12545-10600)  
 Polarity: Horizontal HIGH  
 SR: 22000





3. **OUT:** Modulated output CH21 - 474000Mhz.

S. Id.	Name	CI	OUTPUT	LCN	N. S. Id.
A 10220	A7		+	Canal 21	10220
A 10225	A8		+	Canal 21	10225
A 10230	TPA HD		+	Canal 22	10230
A 10231	tdp		+	Canal 22	10231
A 10234	R. Langreo		+	Canal 21	10234
A 10235	RPA		+	Canal 21	10235
B 17500	SAT.1		+	Canal 23	17500
B 17501	ProSieben		+	Canal 23	17501
B 17502	kabel eins		+	Canal 23	17502
B 17503	WELT		+	Canal 23	17503
B 17504	SAT.1 Gold		+	Canal 24	17504
B 17505	Pro7 MAXX		+	Canal 24	17505
B 17507	SAT.1 Bayern		+	Canal 24	17507
B 17508	SAT.1 NRW		+	Canal 24	17508
B 17509	kabel eins Doku		+	Canal 22	17509

Automatic adjacent outputs: CH22 – CH23 – CH24