CM 2STC CI-IP

082006

Common Interface

8PSK/COFDM/QAM - IP

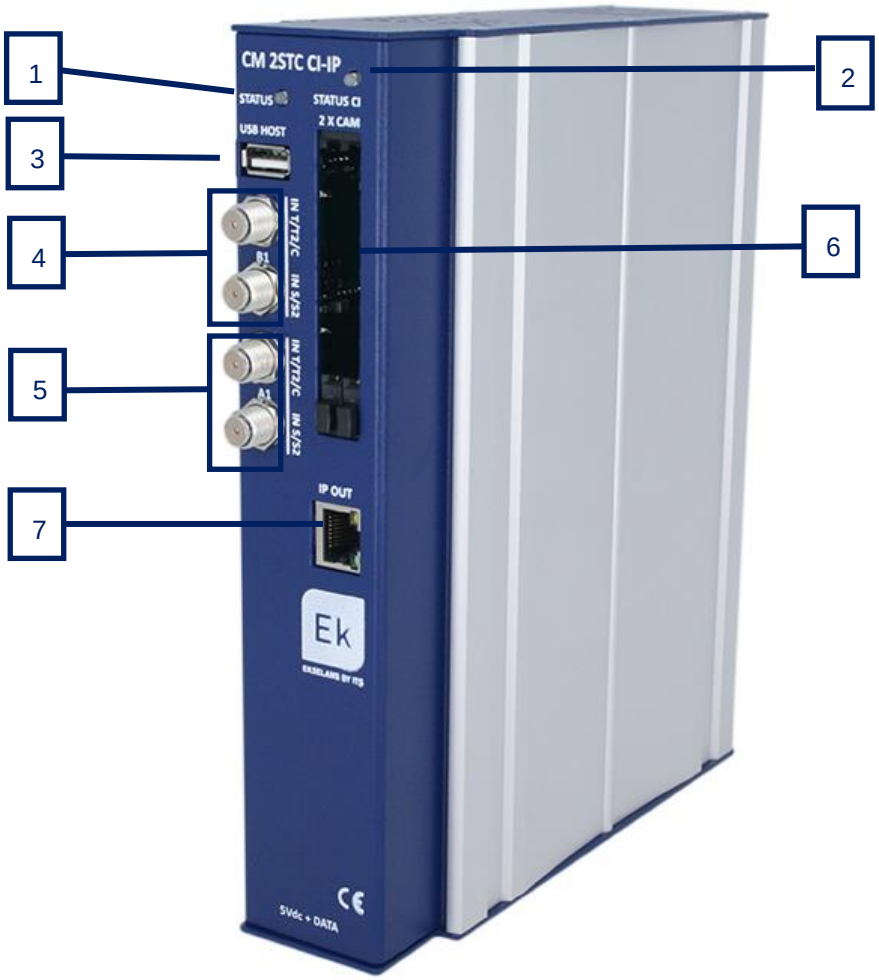
TWIN Transmodulator - Streamer

User's Manual

EKSELANS BY ITS

1 CM 2STCCI-IP – USER'S MANUAL

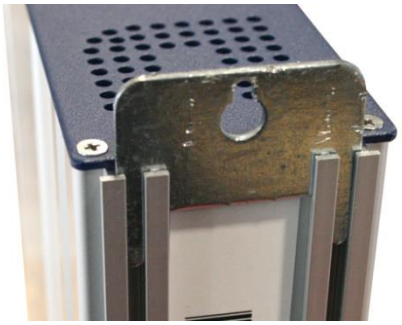
1.1 General Description



Number	Description
1	LED status. Displays the status of the A1 and B1 tuner inputs. The tuners will be operating properly when there is a 1 blinking sequence in red and 5 blinking sequences in green. Each blinking specifies: 1) USB connected. 2) Time/date received from the satellite. 3) Tuners A with locked signal. 4) Analysis of tuners A satellite tables. 5) Tuners B with locked signal. 6) Analysis of tuners satellite tables. Green blinking indicates OK and red NOT OK
2	LED CI status. Displays the operating status of the two Common Interface slots.
3	USB Host Connector. Connecting an external memory device to the host connector TS files can be played and modulated in RF.
4	SAT tuner, terrestrial and cable B1 and loop
5	SAT tuner, terrestrial and cable A1 and loop
6	(2) Common Interface Slots
7	RJ45 Connector. IP output

2. Installation and wiring

1. Fasten the transmodulator module to a wall frame (CHM TR) or a rack chassis (CHR TR). To this end assemble on the upper rear part of the module the supplied metal part, as is shown in the picture



2. Connect the power supply (FA 524) to the module or either connect same to the previous module using the supplied power cable
3. Connect the LNB(s) to the inputs of the transmodulator module. For professional installations

the use of a HV-HV Quattro LNB (LNB 44 model) is recommended.

4. So as to program the module, connect the FA 524 power supply to a PC via a USB-USB cable as follows:

Connect this part to the power supply

Connect this part to the PC

5. Install the “CMManagement” software on the PC or the or the "EK Pro" software package which is also included. Both programmes can be downloaded from the website www.ekselansbyits.com, Documentation >> Software section.
6. Run the programming software on the PC (**Important**: connect the FA 524 power supply to the PC before running the software so that the driver of the PC can correctly detect the software).

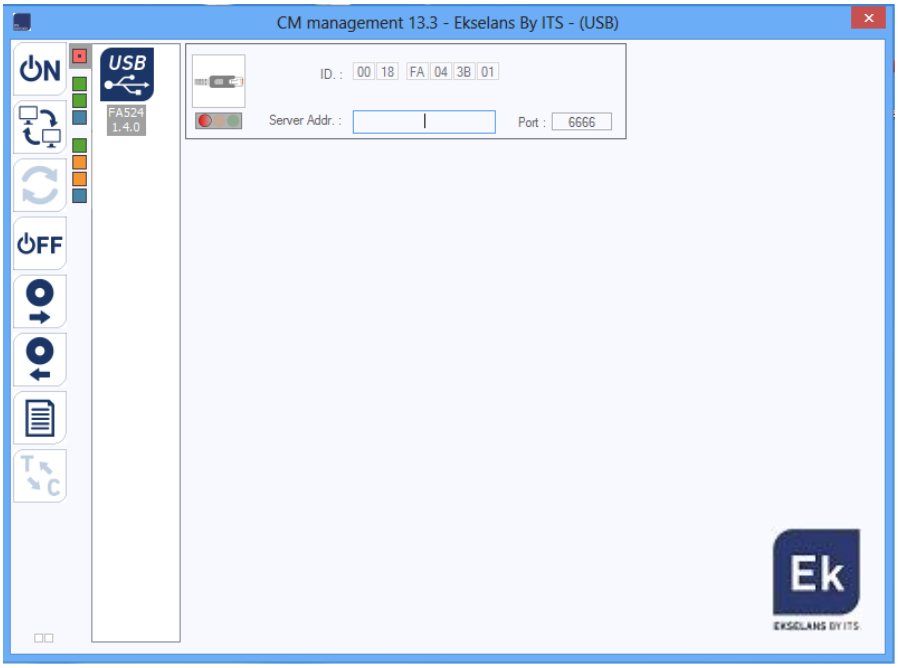
3. Software Programming: CM management

The "CM management" programming software enables the programming and running of all modules of the CM headend. The program is available only for Windows operating system (XP version 7 and above).

Once downloaded from the website www.ekselansbyits.com, Documentation >> Software section, having previously run the program with the PC connected to the USB port of the FA 524 power supply. In this fashion, it is ensured that the driver detects the core.

3.1.Main screen

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

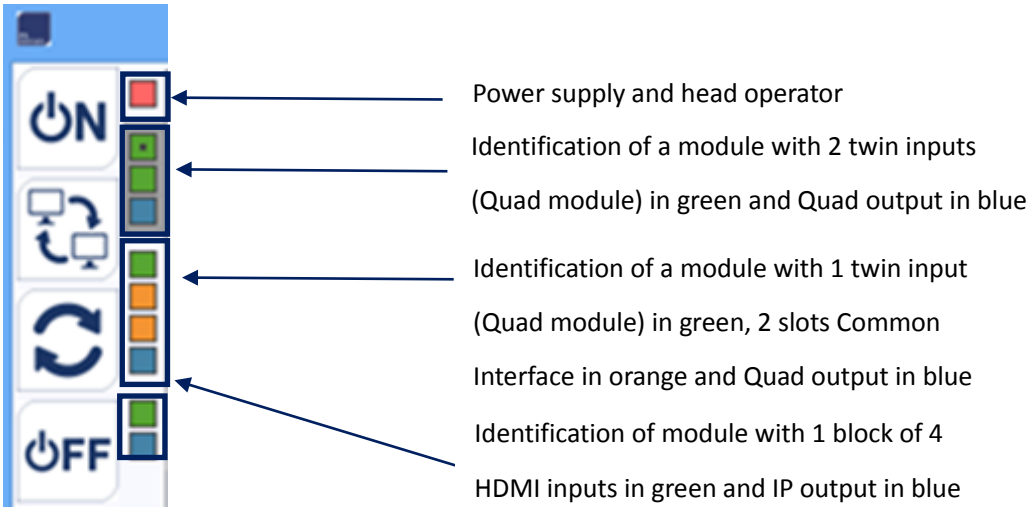


Through this function one can run and program all modules connected to the power supply. Explained below is the function of each of the options:

Number	Button	Function
1		Once connected the PC to the FA 524 power supply through the USB-USB cable, press this button in order for the power supply to identify the modules connected to it. Once activated, the blue logo is displayed
2		This icon will be displayed in blue with white lettering once the connection is established with the headend. If not, it will be otherwise the white logo with blue lettering which will be displayed, making it then necessary to press button 1 again.
3		Through the FA 524 it is possible to carry out a remote connection with a headend and to that end this button is used. The remote connection is explained below. If displayed in blue the remote connection is activated, and if

		white it is not activated.
4		Firmware updating. Press this button to load a file to update the firmware of the modules.
5		Press this button to switch off the FA 524 power supply of the operation of the various modules of the headend. If it is disconnected, the logo will be displayed in white and blue lettering.
6		This option enables one to load a configuration program previously saved on the PC. The configuration file will have the .dtc extension
7		This option enables saving on the PC a programming configuration of a module to be subsequently loaded using button 6. A .dtc format file will be created.
8		Enables changing the output of the DVB-T (COFDM) modules to DVB-C (QAM).
9		Data-logger. Enables saving the data of the different modules of the headend.

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



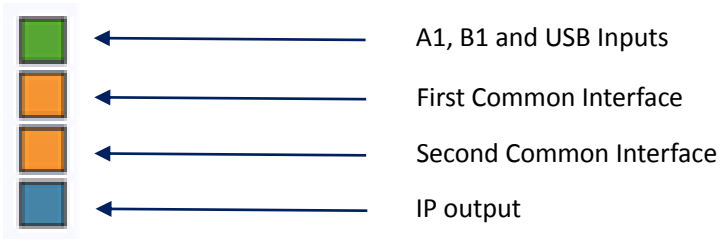
Each module is identified by means of a series of different coloured boxes. Depending on the module, this will be represented by 2, 3 or 4 boxes where the green represents the inputs,

the blue the output and the orange the Common Interface slots.

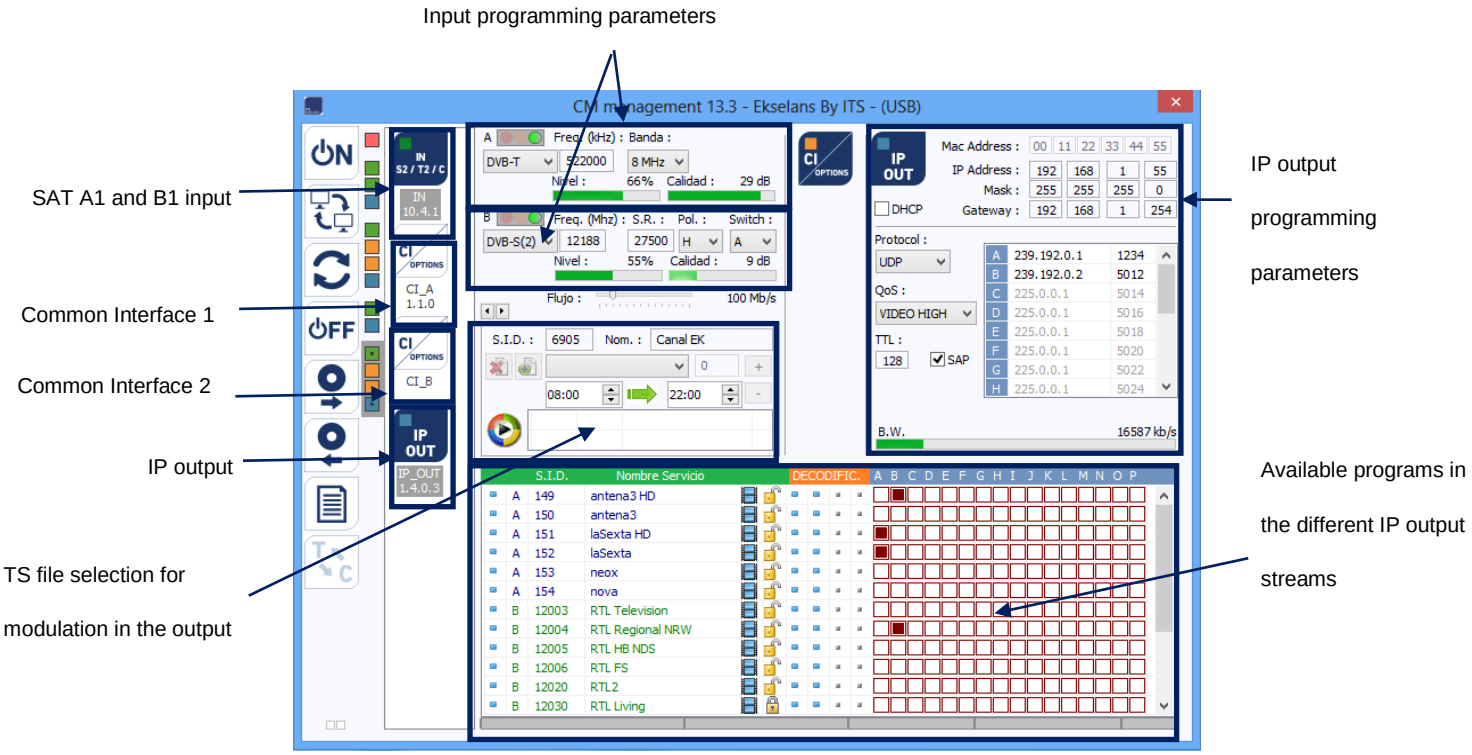
3.2. Programming of the CM 2STC-CI-IP module

3.2.1 Tuning of DVB-S/DVB-S2/DVB-T/DVB-C transponders

Once the CM 2STC-CI-IP module is connected to the FA 524 power supply, this in turn to the PC and the "CM management" programme open, select the CM 2STC-CI-TC which is represented as follows:



Selecting the upper green box the programming interface of the A1 and B1 inputs will be displayed:



In order to program the module, first select a signal type for each tuner: satellite (DVB-S/S2), terrestrial (DVB-T/T2) or cable (DVB-C).

If the satellite signal is selected, specify the parameters of the DVB-S/DVB-S2 input signals of each tuner specifying the frequency, symbol rate, polarity and DiSEqC (A, B, C, D) switch parameter, if they are any existing. Once these settings are specified, the program will search the transponder at the satellite input, tune the transponder and the corresponding tuner light will change to green. Similarly, the level and quality of the input signal will be estimated, and will be displayed in the area of the bottom of the window the services found in the transponder(s) in question.

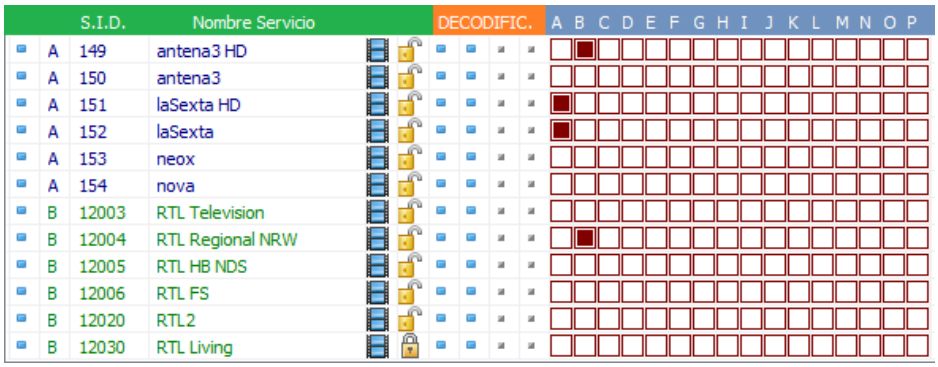
If the selected signal is terrestrial (DVB-T / DVB-T2) or cable (DVB-C), select the core frequency (in KHz) of the desired mux, and the bandwidth thereof (6, 7 or 8 MHz).

Important note: the level and quality percentage is an estimated value and for informational purposes only and under no circumstances whatsoever shall denote a professional measurement. To this end it is recommended to measure the signal using a field strength meter (for example, the Ekselans TSF 1).

Displayed in the bottom window are the transponder services selected in the input, similarly specifying as to whether or not they are television ( ) or radio ( ) programs, and whether or not they are open ( ) or are codified ( ).

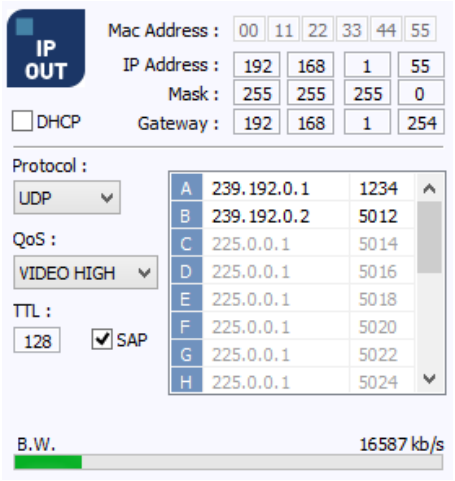
3.2.2 Conversion of the input services in IP. Streaming

After downloading the services which are wished to be transferred to the output, all these services will appear at the bottom of the screen. From here one can make his/her assignation to each of the two IP streams available in the output (up to 16). As shown in the figure below, in the section shown in red the 16 available streams (from A to P) are displayed.



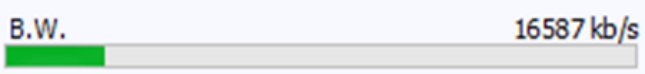
Depending on which column is selected the service  will appear in either output stream.

At the top right of the window one can set the IP output parameters:



- MAC Address: MAC (media access control address) address of the module
- IP Address, mask and gateway: IP address, subnet mask and gateway which can be assigned for the CM 2STC-IP module
- DHCP (Dynamic Host Configuration Protocol): if the protocol for automatically obtaining the network parameters is activated, the remaining IP settings are disabled
- Protocol: can select between UDP (User Datagram Protocol) and RTP (Real-time Transport Protocol). The UDP (User Datagram Protocol) protocol is recommended for streaming as it occupies less bandwidth.
- QoS (Quality of Service): enables the selection of the video quality of transmitted services
- TTL (Time to live or hop limit): a numeric value which specifies the maximum number of routers that an IP packet can pass through. The default value is set at 128.
- A – P: each letter corresponds to each of the possible streams which may exist in the output. Each letter can be associated with an IP address and a port, for example 239.192.0.1 and 1234 respectively

In this output parameter selection section there also appears information on the bit rate of each one of the mux outputs:

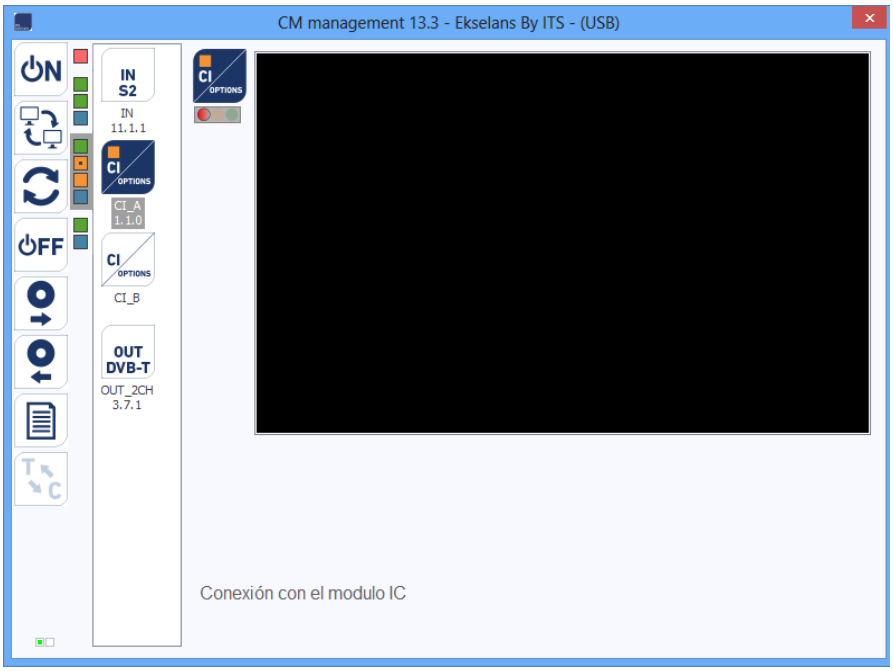


As shown above the overall bit rate of the output is displayed. The maximum carried is 100 Mbps.

3.2.3 Common Interface

The CM 2STC-CI-IP module has two Common Interface slots / keyways. Each slot can run a PCMCIA for the decryption of codified satellite services.

Selecting the second or third box - both orange in colour -  the 2SCI CM-TC module, the following window is displayed:



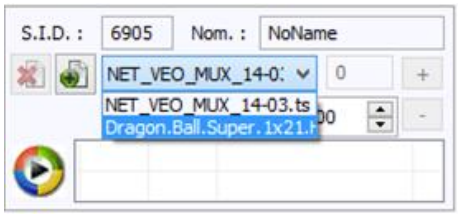
The connection between the transmodulator module and the selected PCMCIA is then activated, displaying its information.

3.2.4. TS file modulation

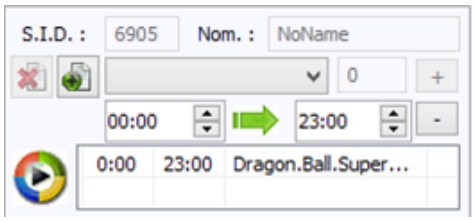
With the CM 2STC-CI-IP module it is possible to create a service from a .TS (transport stream) file and to locate it an IP stream. This option enables the creation of a local program and locate it in the IP output together with the other services from the satellite, terrestrial or cable.

Any type of video file or PowerPoint presentation, previously converted to the .TS format can be. transmitted. This conversion can be performed using the applications available for this purpose (for example, OJOsoft Total Video Converter, Moyea, ...).

Once the files are converted to the .TS format files, the files must be transferred to a USB memory device and connect the device to one of the two connectors marked "USB HOST" on the front of the module. When connecting USB memory device, the files contained in it may be viewed and the file which is wished to be modulated selected.



After selecting the desired file, the service name (Name option) can be changed, the program identifier (SID), which should be different from the other services downloaded from the satellite- and even specifying the time in which it is desired to play the file.



More than one .TS file can be included in the playing cycle if the files are in the USB memory device. Specific hours of playback can be allocated to each file and a local channel with different videos and presentations can be created.

When carried out, the service will be displayed in the output as an additional service, which can be selected as those downloaded from the satellite, which may be modulated in any of the output streams together with the other desired services.

3.2.6. Saving and loading a configuration

The "CM management" software enables saving on the PC the transmodulator for subsequently uploading to another CM 2STCCI-IP module. Its running is carried out using the following two

buttons, available in the vertical menu on the right:

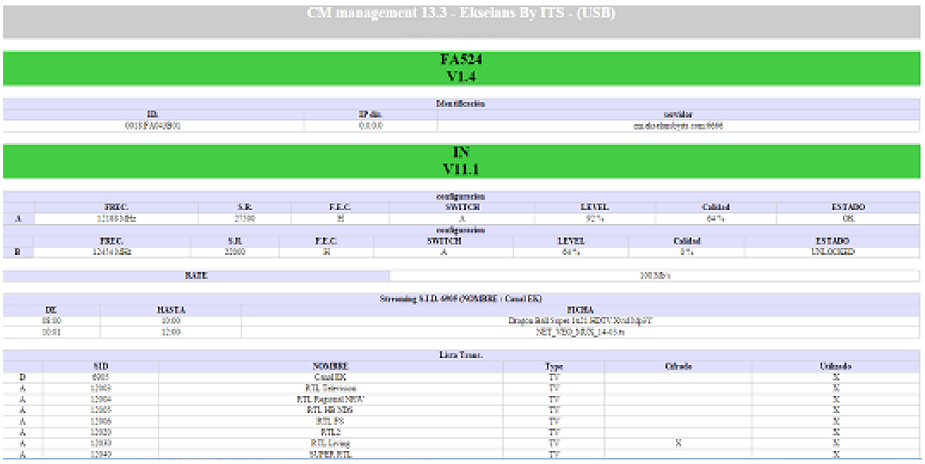
	Save on the PC a programming configuration of a module to be subsequently loaded. A .dtc format file will be created.
	Load a configuration program previously saved on the PC. The configuration file will have the .dtc extension

It is important to load onto the CM 2STCCI-IP a .dtc file previously created with another similar module. Otherwise, the "CM management" software will display that it is not possible to load it.

3.2.7. Data-logger

The "CM management" software, through the Data-logger option enables one to generate and save to the PC a report containing the data of the various modules connected to a head core.

To that end, click on the icon and specify the file name. A document with the html format which can be opened with a browser, similar to the following will be created.



Important: in order to generate this report it is necessary that the "CM Management" program be run as the administrator.

3.3 Remote management of the headend

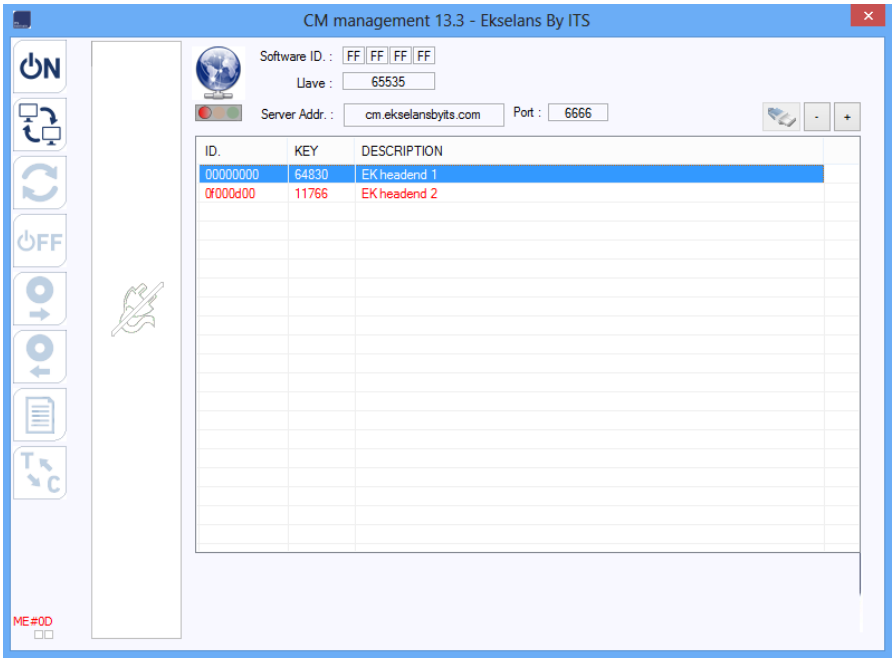
The headend CM can be run remotely. This function is integrated in the FA 524 power supply and

in each of the head modules.

3.3.1 Access and remote programming of the CM 2STCCI-IP module

It is possible to remotely access a CM 2STCCI-IP module. To do so it must be connected to the FA 524 power supply and this in turn to the Internet.

In order to remotely access a head in which the CM 2STCCI-IP module which is wished to be run is connected, press the menu icon on the left.  The following screen will then be displayed:



Upon the first connection the software's ID and a password must be specified. These are personal and non-transferable. In order to make use of same, please contact your Ekselans distributor so that it may be supplied. Once available, enter the password on the top part of the previous screen (Software ID and Password).

If all parameters are entered correctly, a connection with the cm.ekselansbyits.com server, dedicated to the remote running of the CM cores can be performed.

On this list all cores connected to the central server can be viewed. Remember that each 524 power supply includes FA the remote control manager, so that each power supply specifies a

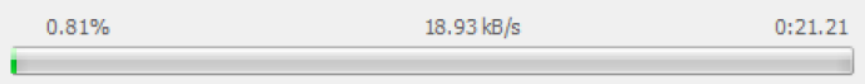
head. These are identified by an ID. Furthermore in order to access a password must be entered in the corresponding field.

If all data are correct, the connection to the server and the corresponding head shall be performed. When carried out, the head can be accessed as if it were in situ.

3.3.2 Remote modification of the .TS file

If the CM 2SCI-TC module has a USB memory device connected to the .TS files, the files may also be run remotely. To that end, once connected to the remote headend click on the icon. This will open a window in order to select the desired file from the local PC and transmit it to the head.

Whilst the file transfer is being carried out a message specifying the progress will be displayed:



Once this process is completed, the .TS file loaded into the USB memory device as is explained above can be programmed.

4 Technical specifications

Reference	CM 2STC CI IP
Code	082006
Inputs	
Number of inputs	2 (A1, B1)
Input frequency	47-862 MHz 950 – 2150 MHz
Input level	43 – 83 dBµV
Bandwidth	36 MHz
Modulation type	QPSK – 8PSK – COFDM – QAM
Remote power feeding	13V/18 V/22 KHz/DiSEqC (A/B/C/D)
Common Interface	2 x CI
Output	
Number of outputs	1
Protocol	Multicast IP UDP / RTP
Number of streams	Up to 16 simultaneous streams (100 Mbps)
Miscellaneous	
Programming	Software PC “CM management” PC Software via USB connected to a FA 524 power supply
Power Supply	5 Vdc
Consumption	1,5 A + LNB + CAM
Temperature range	0 – 40º