

SPI-300

BASIC GUIDE to Programme ClassA Modules



PRESENTATION

This guide explains the Basic Handling of the SPI-300 (Ref. 4070) Programming Unit to programme ClassA and SZB headend modules from IKUSI. The particular user guides for each type of module, which explain in detail the respective programming processes are on the website of each module.

All programming processes are carried out through a guided menu that uses the keypad of the SPI-300 :

Keys ↑ and ↓ :

- Vertical displacement of the slide.
- Modification of a parameter value.
- Change of page within a menu option.

Keys ← and → :

- Horizontal displacement of the slide.
- Change of the command displayed at the lower left corner of the screen.
- Change of page in selection lists.

Keys and :

- Use of the commands displayed at the lower corners of the screen (left and right, respectively).

Numerical keys :

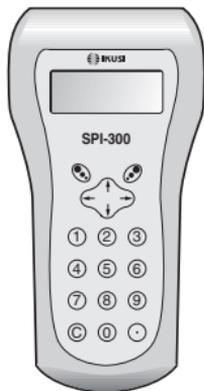
- Selection of menu option.
- Selection of parameter.
- Entry of parameter value.

Key "C" :

- Deletion of the character selected by the slide.

Key "." :

- Entry of decimal point.



Accessories

The SPI-300 is supplied with the following accessories:

- 1 "RJ-45 / DB-9" interfacing cable to link the unit to the ClassA modules.
- 1 "RJ45 / USB" interfacing cable to link to the SZB-400 modul. NO use to update or upload firmwares.



Cable RJ-45 / DB-9



Cable RJ-45 / USB

Connecting the Cable

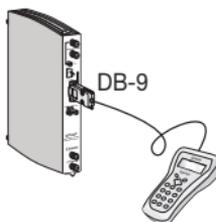
To programme ClassA modules you must use the enclosed RJ-45 / DB-9 cable. The RJ-45 tip plugs in the rear socket of the SPI-300 and the DB-9 tip plugs in the CONTROL socket of the module.

SPI-300

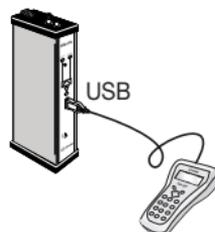


RJ-45 / DB-9

ClassA modul

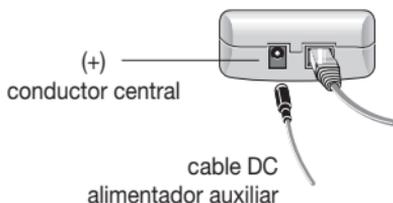


SZB-400 modul



Using an Auxiliary Power Supply

The SPI-300 does not require batteries, it is powered directly from the module to which is connected. Only if you are going to perform a firmware update through your PC, you need an auxiliary +15VDC/1A power supply. The DC cable of the power supply plugs in the rear jack socket of the programming unit.



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1. USER'S INTERFACE

Access to programming functions of the SPI-300 is very simple through a collection of screens that allow to select options, adjust parameters and obtain diverse information.

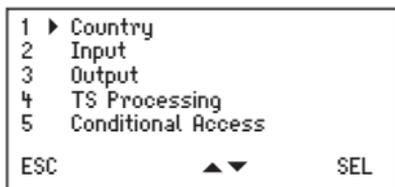
1.1 - Screens

All screens have a similar format. There are 5 types:

The Menu Screens, the Setting Screens, the Information Screens, the Warning Screens and the Error Screens. In the lower corners of every screen are displayed one or two commands which are used pressing the  keys and . (The key  is for the command on the left corner and the key  for that on the right corner).

Menu Screen

There is one main menu screen and several submenu screens. Within a menu or submenu, choosing of an option may be done in two ways:



- Placing the slide on the corresponding line of the screen and then using the SEL command (key ). Or, more directly:
- At the numerical keypad, pressing the digit that heads the screen line that refers to the option.

At the lower corners of the menu screens two commands appear: ESC (return to the previous menu) and SEL (access to the selected menu or submenu). When a menu or submenu has many options, it is displayed in several screens, so-called "pages". This pages present in the lower line the scroll arrows  ; change of page is accomplished through the keys  and .

Setting Screen

They allow to set the operating parameters of the connected module. A module may have several screens grouping parameters of a same section or category (for example: input parameters, video/audio selections, etc).

These screens show in the lower line the arrows ◀▶, which means that it is possible to change, through the keys ← and →, the command that appear at the left corner of the screen. These commands are the following:

- SEND : When you use this command, the setting values shown on the screen are established in the module. The SEND command will be automatically replaced by the DONE command just when the values have been sent.
- DONE : The setting values are simply stored in the SPI-300, so that they remain available either to be sent to the module (SEND command) or to constitute a "module configuration". After using the DONE command the programme goes back to the previous screen.
- CANCEL : This command closes the screen without saving any change or setting.

Selection of a parameter for adjusting it next may be done in two ways:

- Placing the slide on the corresponding line of the screen and then using the command (key ). Or, more directly:
- At the numerical keypad, pressing the digit that heads the screen line that refers to the parameter.

| | | | | |
|---|-------------|---|--------|---|
| 1 | ▶ Frequency | : | 1550 | |
| 2 | Symbol Rate | : | 27.500 | |
| ← | | | | ↵ |

When you select a parameter, the two commands at the lower corners of the screen are replaced for these others:

- ↵ : Validate a modified parameter value.
- ← : Invalidate the changes which you have done in the present screen.

When a module has many setting parameters within the same category (for example, it has many output parameters) the setting screen is composed of several pages, each one with scroll arrows ▲ and ▼ that warn such a circumstance. Change of page is accomplished through keys ↑ and ↓.

Information Screen

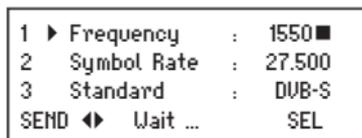
They present the results of a determined operation and inform about the configuration and status of the connected module. The About... screen is an example of this type of screens:



These screens close using the OK command at the lower right corner —by pressing, as it has already said, the key .

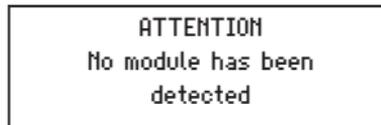
Warning Screen

They appear to inform about the development of an operation or to advise the cancellation. They close using the OK command (key .



Error Screen

They appear to inform about the impossibility to perform a determined operation or to complete the action of a command. They close, in the same way, using the OK command.



1.2 - The Main Menu Screen

From this screen you can accede all options, parameters and commands. It has 4 menus, among them the menu for changing the operation language.



–Language menu : The SPI-300 comes to operate in english. To change the language, press "4" on the numerical keypad. A list of languages appears. Place the slide on the wished line and press . Henceforth the SPI-300 will operate in the language you have chosen.

–General menu : Includes general application commands.

–Settings menu : Contains, grouped by sections or categories, all the setting parameters of the connected module.

–Info menu : Allows to get access to detailed information about the functioning of the module, further on the one provided by the screen that comes after the initial screen (this screen appears just when the SPI-300 is connected to the module).

The commands of the General menu are the same for all the modules:



- Detect : Performs the detection process of the connected module.
- Send : Establishes in the module the parameter values which have been modified.

- Update : Updates the firmware installed in the module.
- Recall : Brings back to the screen a "module configuration" which was previously created with the Save command. This menu option is manifested useful to quickly load repetitive data on different modules.
- Save : It is used to create a "module configuration" with the parameter values and use options which are currently displayed in the Settings menu.
- Factory Reset : Restores all parameter values that were established in the module when it left the factory.
- About... : Indicates simply the firmware version of the SPI-300.

The contents of the Settings and Info menus are different for each type of functional module and they are explained in the particular user guides.

1.3 - Entering Data

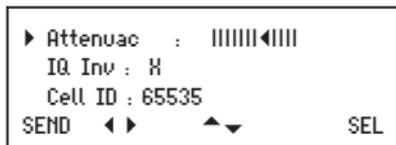
Three different types of elements may be presented on the screens to enter adjustment or selection data:

- "Numerical field" : As the name indicates, this element admits only numerical data. Modification of a number (value of parameter) may be carried out in three different ways:

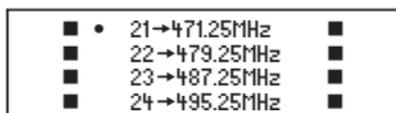
- a) Digit by digit. Place the slide on the digit you want to change (the slide is moved using keys ← and →) and then press repeatedly the key ↑ and ↓ until the desired digit appears.
- b) Changing the number complete. Place the slide on the first digit of the number you want to change and then enter the new number complete through the keypad. The key "C" is used to delete a wrong digit.
- c) Using increments. Place the slide on the right of the number you want to change and then press repeatedly the key ↑ (or ↓).

Each time the key is pressed the number is changed by a preestablished amount. If the key is held pressed, the change is effected fast.

- "Slide Icon" : This element is used to modify without precision the value of a parameter, by moving left-right the slide over a group of vertical bars which serve as reference for setting.



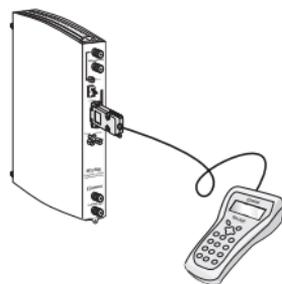
- "Pick list" : Is a element that contains a folded list. When you select it (SEL command), the choices of the list are displayed. Then you can select a choice. (With the keys ← and → you can browse through the pages of the list).



2. PROGRAMMING THE MODULES

2.1 - Connecting the SPI-300

The modules of a headend are programmed one by one through individual connections to the SPI-300. To begin the programming of a module, first power it and then plug the cable of the programming unit into the CONTROL socket.



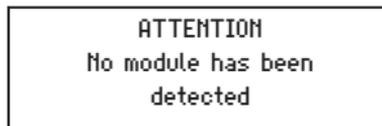
2.2 - Detection of the Module

When you connect the SPI-300 to the module, all data for identification, configuration and status of the module are loaded on the SPI-300. A detection screen appears for a short time, and next the display shows the Basic Information screen, which identifies the module and presents its most representative configuration and status data.



The screen closes using the OK command (key ). The Main Menu Screen appears; through the Settings and Info menus you can know in detail all current configuration and status data of the module.

If because of any circumstance the module has not been detected (it is not powered, there is a failure in the connection to the SPI-300, ...) the following error screen appears:



Close the screen by using the OK command. The Main Menu Screen appears. In this case —module not detected— the unique menu is General, which contains only the Detect and About Of commands. To perform again a module detection operation, choose the Detect command.

2.3 - Parameter Setting

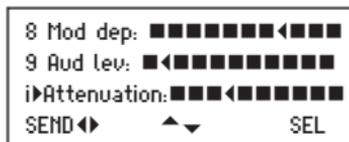
The parameter setting is carried out all the Settings menu long. This menu presents, throughout several screens, the module's parameters grouped by sections or categories.

Regardless the module type is, the setting process is as follows:

1. In the Settings menu, select the category of the parameters to be set (Input, Output, V/A Selections, ...).
2. Enter the setting values.
3. Send the set values to the module by using the SEND command at the left lower corner of the screen (key .
4. Select, if necessary, other parameter category and repeat the previous operations as far as all the parameter values have been set.

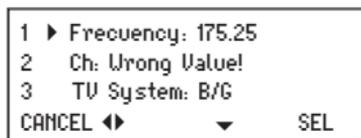
NOTE: Each time you use the SEND command, you send to the module not only the values you have modified in the present screen, but also all the values modified in the previous screens. Remember that the SEND command is also available in the General menu.

Nevertheless the process described, some parameters are set in real time, i.e. the values entered are transmitted instantaneously to the module (you have not to use the SEND command). It occurs, for example, with the "Modulation Depth" and "Audio Level" parameters:



If after entering new setting values you use the DONE command (left lower corner of the screen) instead of the SEND command, these values are not sent to the module, but they are stored in the RAM memory of the SPI-300. If you use the CANCEL command, the screen closes without having effect the parameter values previously entered.

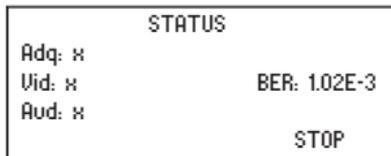
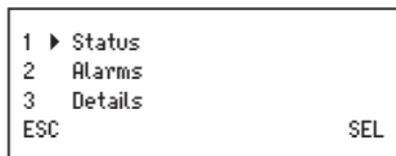
The software controls the setting values you enter, in such a way that an error message is displayed if these values are not appropriated. The message appears just when you try to make effective these values using the SEND or the DONE commands.



2.4 - Looking Up Information

From the Info menu you have access to detailed information about the connected module, regardless it has been programmed or not. Information is shown throughout three or more screens, each one related to a menu option. There are three available options for every module:

- Status : Displays the module working conditions.
- Alarms : Reports what alarms are active and the type of them.
- Details : Identifies the module and displays outstanding data.



The information is periodically updated. To close the screen, use the OK command (key )

2.5 - Using Module Configurations

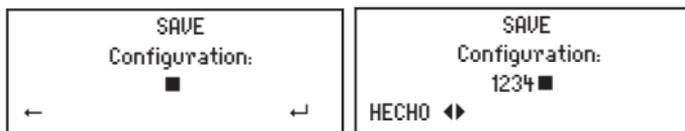
A Module Configuration is a collection of parameter values and use options. Working with configurations allow to quickly load repetitive data in different modules: instead of entering, one by one, the setting values for all the parameters and use options, you can enter a configuration by using a simple command. The SPI-300 allows to create, and to use later on, up to 500 different configurations for each type of module; for this, it utilizes the two following functions:

- a) Save Configuration: All parameter values and use options which are currently in the RAM of the SPI-300 (those displayed throughout the Settings menu after using the SEND or DONE commands) are stored in a register of the programming unit, with a configuration name which is assigned by the user.
- b) Recall Configuration: The parameter values and use options that correspond to a configuration are loaded onto the RAM of the SPI-300. Then they can be established in the module by using the SEND command.

Both functions are chosen from the Save and Recall options of the General menu:

– Save configuration :

When you choose the Save option in the General menu, a new screen appears. In this screens you must enter the name you want for the configuration:



You can use either numerical or alphabetical characters using the keypad. To write an alphabetical character, enter any digit and next press repeatedly the key \uparrow or \downarrow until the desired character appears (...7, 8, 9, A, B, C...).

Press the key \leftarrow (\leftarrow) to validate the name you have entered: a new screen appears. Use the DONE command (key \rightarrow) to finally create the configuration.

Or press the key \leftarrow (\leftarrow) to close the screen without creating any configuration.

– Recall option :

When you select the Recall option of the General menu, a screen with three options appears:



1 Configuration : You can select a configuration from a pick list.

2 View : Allows to view the contents of the configuration you have selected in the configuration option.

3 Clear : It is used to clear the configuration selected.

Once you have selected a configuration, you can either send it directly to the module (SEND command, key ) , or simply to load the data onto the RAM of the SPI-300 (DONE command) in order to modify some parameter value through the Settings menu. By using the CANCEL command you leave without doing any operation.

2.6 - Updating Module Firmware

The firmware is a software loaded on the module that takes charge of its basic functioning. This software is not modifiable by the user, but may be updated for some ClassA and ClassB modules (those where the General menu contains the Update option).

To perform a firmware update, you need, naturally, the corresponding file supplied by IKUSI (www.ikusi.tv).

To perform an update process, first you must load the firmware file on the SPI-300 in the way that is explained in the Appendix A - Firmware Update.

Once the firmware has been loaded on the SPI-300, choose Update in the General menu. The following screen appears:



"Firmware" : You can select a firmware file from a pick list.

"Clear" : It is used to clear in the list the file you have selected in the previous option. It allows to eliminate old files.

"Versions" : This line displays two version numbers: the current firmware version of the module —on the left of the arrow— and the version of the file shown in the "Firmware" line (that is to say, the last four digits). Make sure the version number on the right of the arrow is the one you want to load in the module.

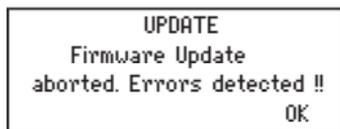
Use the SEND command (key ) Loading of firmware begins and a progress bar displays the course of the process:



Once loading is completed, an information message announcing that the firmware has been successfully updated appears on the screen. Use the OK command (key ) . The screen closes and the programme goes back to the General menu.



If diverse errors during firmware updating prevent go on the process, an error screen appears:



Use the OK command (key ) . The screen closes and the programme goes back to the General menu.

Appendix A — FIRMWARE UPDATE

The files required for using the SPI-300 are:

- The **Instaling Load software "Install SPI-300"**. Install the pc to interact with the SPI-300, when it is intended to update the firmware of both ClassA modules, such as the own SPI-300 to be able to recognize new control modules.

This application allows you to load the firmware from the pc to the SPI controller to be installed later in ClassA modules.

- **The SPI-300 firmware** is the operating system of the controller programming unit.

Both files can be downloaded from the website of ikusi, <http://www.ikusi.tv/en/headends/class-a/class-a-accessories/spi>

A.1 - Installing Load Software on the PC

The minimum requirements your computer needs to install Load Software are the following:

- Computer : IBM-Compatible 486 or higher
- Hard Disk : 10 MB free space
- Serial Port : COM Port, RS-232
- Mouse : Installed
- RAM : 16 MB (64 MB recommended with Windows 2000 and XP)
- Display : VGA
- Operating System : Windows® 95 / 98 / ME / NT / 2000 / XP

To install Load Software:

1. Start Microsoft Windows and open a web browser.
2. Enter to the Ikusi web page, <http://www.ikusi.tv/en/headends/class-a/class-a-accessories/spi>
3. Open the file " Instaling Load software".
4. By double-clicing in SETUP.EXE enter the installation screen.

Now the programmes folder of the Start Menu will include the "Install SPI-300" programme, from which you can launch the application.

The Load Software so installed allows:

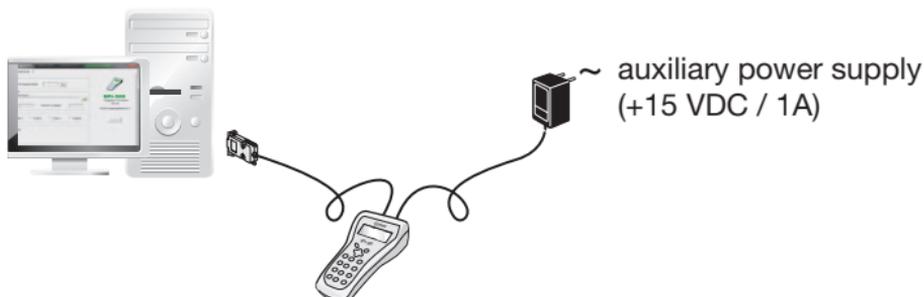
- a) To load in the SPI-300 new versions of firmware files for ClassA modules. These files will remain available to be installed on the modules.

b) To update directly the firmware of the SPI-300 Programming Unit.

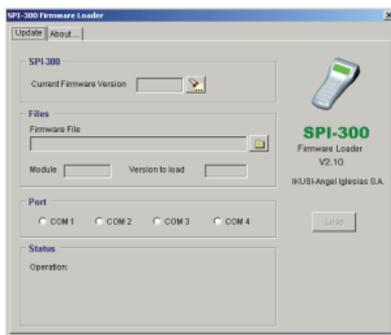
The firmware files are supplied by IKUSI and they can be downloaded from <http://www.ikusi.tv>. You must copy these files in the hard disk of your PC.

A.2 - Loading Firmware Files on the SPI-300

The load of the firmware files on the SPI-300 is carried out from the PC on which you have installed the Load Software. Using the RJ-45 / DB-9 cable, connect the SPI-300 to the serial port of the computer. You require also an auxiliary power supply to feed (15 VDC / 1 A) the SPI-300. The picture shows these interconnections:



Click on the Programmes folder of the Start menu. Then click on the "Install SPI-300". The "SPI-300 Firmware Loader" window appears. The window has 2 cards. The About... card shows simply the firmware version of the "Firmware Loader" software installed:



Click on the Update label. The Update card appears:

"SPI-300 - Current Firmware Version" : Shows the version number of the firmware which is currently installed on the SPI-300. If it does not appear, click on the icon  .

"Files - Firmware File" : Click on the "folder" icon  . Find along the hard disk the firmware file you want install on the SPI-300 and select it.

"Files - Module" : Name of the module to which the selected firmware file is related.

"Files - Version to Load" : Shows the version of the selected firmware.

"Port" : You must choose the serial port to which the SPI-300 is connected.

"Status" : During load process (Load button) a progress bar appears here.

Load button : Click here to begin the load process. At the end, the firmware you have selected will have been loaded on the SPI-300 and it will remain available to carry out the firmware update of the modules related.



A.3 - Updating SPI-300 Firmware

The load of the firmware files on the SPI-300 is carried out from the PC on which you have installed the Load Software. Using the RJ-45 / DB-9 cable, connect the SPI-300 to the serial port of the computer. You require also an auxiliary power supply to feed (15 VDC / 1A) the SPI-300 (see figure previous page).

Once finished the load process, the SPI-300 firmware will have been updated with the new version and, for that, new features will have been added (interface improvement, capacity to programme new type of modules, etc.).



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