**SETUP GUIDE FOR
«TPC» PROCESSORS
USING THE SPI-300 PROGRAMMING UNIT**

TERRESTRIAL/CABLE TV

IKUSI

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Programming the TPC Processors

1. THE START SCREENS

1.1 - Module Basic Information

As explained in the Basic Handling guide supplied with the SPI-300, when you connect this 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 basic information screen for TPC processors is the following:

```
TPC-110    F01.02     Alar:0
Inp.Freq.:  786.000
Out.Freq. :  490.000
Ch. Width :  8 MHz        OK
```

These are the meanings of the expressions and data displayed :
  - Name of the module.
  - "F-.-" : Version of the firmware (the firmware is the software stored in the module that manages its basic running).
  - "Alarm" : Informs about the existence or not of module working failures. Character "X" warns existence of alarm situation and character "0" means no alarm.
  - "Input Frequency" : Is the frequency in MHz of the input channel. If the channel is digital, it is the central frequency. If the channel is analogue (this is possible only for specific TPC-010), it is the video carrier.
  - "Output Frequency" : Is the frequency in MHz of the output channel. If the channel is digital, it is the central frequency. If the channel is analogue (this is possible only for specific TPC-010), it is the video carrier.
  - "Channel Width" : Is the width of the input channel.

The screen closes using the OK command (key ⊙). Then the Main Menu Screen appears (page 8 of the Basic Handling guide).

1.2 - Main Menus

As explained in the Basic Handling guide, the **General** menu is identical for all the modules and its contents was described on page 8. The **Settings** and **Info** menus include, however, options and information which are peculiar to each type of module. Those of the TPC processors are the following:

  - **Settings** Menu : Contains all the setting parameters of the connected processor. They are grouped in three sections :

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```
1   Mode        Converter
2 ► Input
3   Output
ESC                    SEL
```

- *Mode* : It must be selected to state whether the module is going to work as Converter (output channel is different to input channel) or as Processor (output channel is the same as input channel). Use the SEL command to open a pick list with the Converter and Processor options. Place the slide on the appropriate option and press ⊙ .
- *Input* : You must select it to set the parameter values related to the input section of the module.
- *Output* : You must select it to set the parameter values related to the output section of the module.

- **Info** Menu: Allows to get access to detailed information about the functionning of the module, further on the one provided by the basic information screen (see previous page). Information is distributed in two screens, each one related to a menu option:
  - *Alarms :* Informs whether the module has some alarm activated and its type.
  - *Details :* Identifies the module and displays outstanding data.

```
1 ► Alarms
2   Details

ESC                    SEL
```

2. THE SETTING SCREENS

### 2.1 - The Input Signal Parameters Screen

This screen appears when you select the *Input* option in the **Settings** menu. It has three pages, through which the different parameters and selection options are displayed (the scroll arrows ▲ and ▼ at the lower line warn that you are in a page). Remember that the change of page is accomplished by the keys ↑ or ↓ .
When you select the option the first page appears :
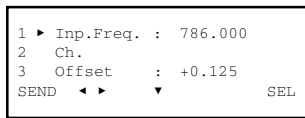
4

```
1 ▶ Inp.Freq. :  786.000
2   Ch.
3   Offset    :  +0.125
SEND   ◀ ▶       ▼          SEL
```

- "Input Frequency" : Is the frequency in MHz of the input channel. If the processor is for digital channel, it is the central frequency. If the processor is for analogue channel (possible only for specific TPC-010), it is the video carrier. You can enter the figure whether directly (see paragraph 1.3 on page 9 of the Basic Handling guide) or using the "Ch" option. The selection steps are 0.500 MHz for digital channel and 0.250 MHz for analogue channel.

- "Ch" : This screen allows to make the frequency selection (for digital as well as for analogue) in a secure way through two pick lists, "TV System" and "TV Channel", which are opened using the SEL command. In the firs list one select the particular TV system of the country and in the second list select the channel.

```
1 ▶ Sys: B/G
2   Ch: 48→687.25MHz

DONE   ◀ ▶                  SEL
```
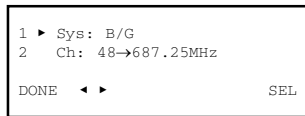
The frequency shown in the screen is that of the analogue channel, regardless the processor is for digital or analogue channel. Use the DONE command (key 🖱) to validate the selection, or the CANCEL command to not validate. The screen closes and the above first page appears showing the new value of Input Frequency; if the processor is for digital channel, the frequency shown will be the central frequency of the selected channel.

- "Offset" : When there is a strong, adjacent analog channel, it may be necessary to shift the correct tuning frequency of the processed channel in the sense of "moving" it away either from the audio carrier of the adjacent channel, if this one is lower, or from the video carrier if it is higher. One can get in this way, at expense of getting a little worse frequency response, to reduce significantly the adjacent channel interference.

The Offset option allows to displace the tuning of the processed channel in a positive sense (higher frequency) or negative one (lower frequency). Use the SEL command to open a pick list with the 9 offset values indicated here right. Place the slide on the desired value and press 🖱 .
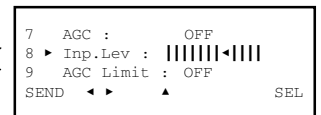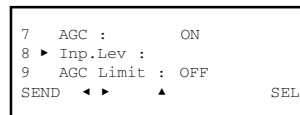
Offset values

+0.500 MHz	-0.125 MHz
+0.375 MHz	-0.250 MHz
+0.250 MHz	-0.375 MHz
+0.125 MHz	-0.500 MHz
0 MHz	

Press key ↓ to go to the second page of the *Input Signal Parameters* screen. Here you can do the following selections:

```
4   Signal Type: DIGIT
5 ▶ Ch. Width :  8 MHz

SEND   ◀ ▶       ▼ ▲        SEL
```
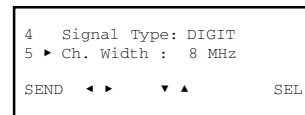
- "Signal Type" : This line is merely informative about the type of the channel that the present processor module can deal with: Digital or Analogue

- "Channel Width" : Is the width of the input channel. Use the SEL command to open a pick list with the 7 MHz and 8 MHz options. Place the slide on the appropriate option and press 🖱 .

Press key ↓ . The third page of the *Input Signal Parameters* screen appears. Here you can do the following settings :

```
7   AGC :         ON             7   AGC :          OFF
8 ▶ Inp.Lev :                    8 ▶ Inp.Lev : |||||◀||||
9   AGC Limit : OFF              9   AGC Limit : OFF
SEND  ◀ ▶      ▲        SEL      SEND  ◀ ▶      ▲        SEL
```

- "AGC" : Here you must indicate whether the automatic gain control (AGC) must be operative or not. Use the SEL command to open a pick list with the ON and OFF options. Place the slide on the desired option and press 🖱. As general rule, the OFF option (nonoperative AGC) must only be selected for System L analogue channels. For channels of DVB-T and DVB-C standards and rest of analogue TV systems (B/G, D/K, I), you must select the ON option (AGC being operative).

- "Input Level" : This option is enabled only if in the previous AGC option you selected OFF (because the input channel is L system's). It is used to adjust the gain of the processor's input circiuit in order to get an 80 dBµV level at the output of the processor. The setting is carried out in real time through a slide icon: when you move the slide with the keys ← y → , the output level of the peocessor changes at the same time. A level meter must be connected at the loop output port (the loop input port being terminated with 75 ohm). Prior to the adjustment you must check that the output attenuation of the processor is set to minimum; for this, go to the third line of the *Output Signal Parameters* screen, see next page, and slide the arrow up to the right end of the icon.

- "AGC Limit" : This option is used to limit to 3 dB the gain increment that the AGC circuit can provide. It is useful when using the TPC-010 in gap-fillers, providing for instabilities due to falls of the receiving level, including the disappearance of the signal.

Use the SEL command to open a pick list with the ON and OFF options. The OFF option (no AGC limit) must be selected in general.

The ON option (3 dB AGC limit) is advised, as mentioned above, for TPC-010 destined for gap-filler, and it can be selected only if the following selections have been done before :

   AGC : ON
   Mode : Processor

Place the slide on the ON-OFF desired option and press 🖱 . If ON was selected, the 3 dB additive limit is applied on the effective gain that the module has just when the option is selected.

2.2 - The Output Signal Parameters Screen
This screen appears when you select the *Output* option in the **Settings** menu. Here you can do the following selections and adjustments:

```
1 ▶ Out.Freq. :  490.000
2   Ch.
3   Atten. :  |||||||◀||||
SEND   ◀ ▶                  SEL
```

- "Output Frequency" : Is the frequency in MHz of the output channel. If the processor is for digital channel, it is the central frequency; if the processor is for analogue channel (possible only for specific TPC-010), it is the video carrier. The selection steps are the same as those indicated for input frequency.

IMPORTANT REMARKS :
1. If *Processor* mode was selected in the first line of the **Settings** menu, the value of the output frequency will appear automatically; this value is the same as that selected for input frequency and cannot be modified.
2. In order to avoid tuning problems in the Set Top Box (STB) of the subscribers, when the TPC module is used as digital channel converter, the output channel should be lower than the input channel.

- "Ch" : It is applicable what said for the input frequency.

- "Attenuation" : Is the attenuation for the channel output level. Setting is carried out in real time through a slide icon. To state the setting value of the level you must use a level meter.

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3. THE INFORMATION SCREENS

They provide information about working of the connected processor. Information is distributed in two screens which are related to the two options of the **Info** menu: *Alarms* and *Details*.

3.1 - The Alarms Screen
Informs about the existence of failures in the internal components of the module or bad processing of the signal. Character "X" warns there is an alarm situation and "0" means the status or working are correct:

```
          ALARMS
Status      : 0
Hardware:    : X
                   ALMSTOP
```
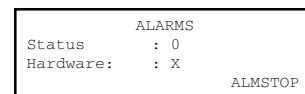
Use the ALMSTOP command (key 🖱) to stop the alarms information update. The OK command appears then in the same place; use now this one to close the screen.

3.2 - The Details Screen
This screen identifies the module and displays the firmware version :

```
          DETAILS
TPC-110   F01.02

                       OK
```
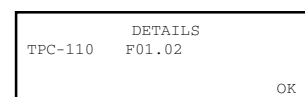
Use the OK command (key 🖱) to close the screen.

4. THE DIVERS SCREENS

It is one screen that befit an operation that has already described in the Basic Handling guide : Use of Configurations.

4.1 - The Configurations Screen
On pages 12/13 of the Basic Handling guide was defined what is a module configuration, were indicated the advantages of its use and were described the processes of creation and utilization through the screens that appear when you select the *Save* and *Recall* commands in the **General** menu. Therefore it is not to add more information.