DPA001

PROGRAMMABLE DIGITAL AMPLIFIER

Sommaire

1. Safety considerations

1.1 Connecting to the mains supply

This product has to be connected to the mains supply. If there is the slightest doubt concerning the type of connection available on the installation, please contact your supplier of electricity. Before carrying out maintenance operation or modification of the installation, the modulator has to be disconnected. Remark : only use the supplied power adaptor.

1.2 Overvoltage

An overvoltage on the mains supply can cause shortcircuits or fire. Never overload the power lines.

1.3 Liquids

This module should be protected from splashes. Please assure yourself that no containers containing liquids are placed on this module. Also be aware of other persons splashing liquids on the module.

1.4 Cleaning

Disconnect the module before cleaning. Use only a humid cloth without solvant.

1.5 Ventilation

In order to assure an adequate air circulation and to prevent overheating, the product should be installed vertically and the ventilation holes should not be obstructed. The module may not be installed in a hermetically sealed environment. Other electronic products or heat producing items may not be placed upon or near the module.

1.6 Accessories

The use of accessories not manufactured by the manufacturer can cause damage to the module.

1.7 Installation of the module

The module must be installed in a place well protected from direct sunlight. All measures have to be taken to avoid installation in humid or sunny place. Do not install near heating elements or other devices producing heat. Assure yourself that the module is placed at least 10 cm from other equipment with is susceptible to electromagnetic radiation. Do not install the module on instable items. A fall can cause physical or material damage

2. Description

2.1 Introduction

The DPA001 is a programmable digital amplifier that contains 32 ultra-selective digital filters allowing the selection, filtering and amplification of each digital multiplex of a collective or individual installation.
It also incorporates an automatic search function to allow a very fast configuration of the DTT multiplexes present at the input.
Its very hight selective filters guarantee a difference of less than 3dB between channels in the same band.

2.2 Main features

. 4 inputs (3 UHF/VHF inputs, 1 FM input)
. 2 outputs (1 terrestrial output, 1 test output / -30 dB)
. 32 ultra-selective digital filters
. LTE(4G)/LTE2(5G) filtering that can be activated or not
. Gain > 55dB
. Output level : 120dBuV(45004B) / 131dBuV(IMD3-36dB)
. Processing functionality for channel conversion
. Automatic multiplexes search
. Digital multiplexes input level measurement
. Real-time AGC
. Buttons and LCD display for a quick and friendly configuration via menu navigation

2.3 Options

. Power pre-amplifier
- Power supply from output connector

2.4 Description

1 UHF/VHF inputs
2 FM input
3 Earth connection
4 USB connector for future updates
5 Test output (-30dB)
6 TV output
7 230V-ca input

A 1 x 16 chars. LCD display
B *ENTER* button
C *PREVIOUS button*
D *NEXT* button

3. Setup

3.1 Introduction

The setting of the various parameters is done using the LCD display and 3 navigation buttons.

🡐 et 🡒 buttons allow you to navigate between menus and sub-menus when they are used with the ↵ button not held down.

🡐 et 🡒 buttons allow you to choose an option or change a parameter value when they are used while the ↵ button is held down.

On the display, each menu, option or value can be preceded by the ‹ and/or › symbols indicating that 🡐 and/or 🡒 can be used to navigate to the previous and/or next menu, option, value.

3.2 Menus navigation

3.2.1 Main Menu

After the DPA001 startup and after each wake up from sleep mode, the main menu is active. Navigating into the menu is done using 🡐 and 🡒 buttons. The selection of a sub-menu is explained below.

DPA001 ›	Keep ↵ help down to **Display the version number of the firmware**
‹FILTERS MENU›	Keep ↵ held dow et release on [YES] to **Go to filters adjustment**
‹POWER MENU›	Keep ↵ held down and release on [YES] to **Change input voltages and output level**
‹MISC. MENU	Keep ↵ held down and release on [NO] to **Go to miscellaneous parameters**

Remark : Whenever ↵ is held down, the first choice [NO] is proposed to allow cancellation of an inadvertently initiated action.
To validate an action, go to the choice [YES] using 🡒 and keeping ↵ held down. You can now release ↵ to enter into the selected sub-menu.
This technique has to be used whenever you want to select a menu or modify a value or an option.

3.2.2 FILTERS menu

The FILTERS menu, accessed from the main menu, allows you to enable/disable the LTE filtering, to add (manually or after an automatic search) up to 32 filters and to edit or delete them. Access to various function is done as below :

LTE FILTERS ›	Keep ↵ held down and release on [OFF]↔[LTE]↔[LTE2] to **Enable/Disable LTE(4G)/LTE2(5G) filters**
‹FILTER AUTO ADD ›	Keep ↵ held down and release on [YES] to **Start the automatic multiplexes search**
‹FILTER ADD ›	Keep ↵ held down and release on [YES] to **Manually add filters**
‹FILTER EDIT ›	Keep ↵ held down and release on [EXIT]↔[1...]↔[32] to **Edit the selected filter**
‹FILTER DELETE ›	Keep ↵ held down and release on [EXIT]↔[1...]↔[32] to **Delete the selected filter**
‹DELETE ALL ›	Keep ↵ held down and release on [YES] to **Delete all active filters**
‹EXIT	Press and release ↵ to **Go to main menu**

3.2.2.1 Automatic multiplexes search

The FILTER AUTO ADD sub-menu, accessed from the FILTERS menu, allows the user to automatically configure the filters according to multiplexes present at the inputs. Inputs and frequency range on which the search will be done are fully configurable. The search is done in that way :

IN PORT ›	Keep ↵ held down and release on [1]↔...↔[1&2&3] to **Select the input(s) on which to search**

‹START CHANNEL ›	Keep ↵ held down and release on [5]‹›...‹›[69] to **Select the start channel of the frequency range**
‹STOP CHANNEL ›	Keep ↵ held down and release on [5]‹›...‹›[69] to **Select the stop channel of the frequency range**
‹SEARCH ›	Keep ↵ held down and release on [ ]‹›[ERASE & SEARCH]‹›[SEARCH ONLY]‹›[EXIT]‹› to **Respectively : a) do nothing, b) delete the existing filters on the setup inputs and start the search, c) start the search keeping previously defined filters d) go back to the FILTERS menu without search.**

3.2.2.2 Manual addition of filters

The FILTER ADD sub-menu, accessed from the FILTERS menu, allows the user to manually add a filter by setting its input port and channel and also the output channel the users wants the multiplex to go to. The filter to be added can be configured as below :

IN PORT ›	Keep ↵ held down and release on [1]‹›...‹›[3] to **Select the input port of the multiplex**
‹START CHANNEL›	Keep ↵ held down and release on [5]‹›...‹›[69] to **Select the input channel of the multiplex**
‹STOP CHANNEL ›	Keep ↵ held down and release on [5]‹›...‹›[69] to **Select the output channel towards which the multiplex should be directed**
‹SAVE ›	Keep ↵ held down and release on [NO]‹›[YES]‹›[EXIT]‹› to **Respectively : a) do nothing, b) record the filter configuration and c) cancel the filter addition and go back to the FILTER Menu.**

3.2.2.3 Editing an existing filter

The FILTER EDIT sub-menu, accessed from the FILTERS menu, allows the user to change the configuration of a previously added (manually or automatically) filter.
In the case of a filter added by an automatic search, the output channel is, when available, the same as the input channel. The FILTER EDIT function may be useful in that case if the user wants the multiplex to be sent in another output channel.
If there is no filter defined in memory, the only available choice will be [EXIT], else, the user will be able to select a filter between all the existing ones.
During the selection of the filter to be edited, the display shows the actual configuration of the filter in the below form :
[X :II :OO] where X is the filter number, II the input channel and OO the output channel.

Once the filter as been chosen, the configuration can be changed in the same way as when adding a new filter. Please, refer to section 3.2.2.2.

3.2.2.3 Filter deletion

The FILTER DELETE sub-menu, accessed from the FILTERS menu, allows the user to delete a previouly added (manually or automatically) filter.

The selection of the filter to be deleted is done in the same way as when editing an existing filter. Please refer to section 3.2.2.3

Once the filter selected and the ↵ released, the filter is immediately removed from the filters list.

3.2.3 Power Menu

The POWER sub-menu, accessed from the main menu, can be used to enable the power supply at inputs, to set the FM gain as well as the output level and slope. To change those various parameters, proceed as follows :

IN1 POWER ▸	Keep ↵ held down and release on [OFF]⇹[ON] to **Disable/Enable power supply on input 1**
◂IN2 POWER ▸	Keep ↵ held down and release on [OFF]⇹[ON] to **Disable/Enable power supply on input 2**
◂IN3 POWER ▸	Keep ↵ held down and release on [OFF]⇹[ON] to **Disable/Enable power supply on input 3**
◂FM GAIN ▸	Keep ↵ held down and release on [8 dB]⇹[28 dB] to **Set the FM gain of FM input between 8 and 28 dB**
◂OUT LEVEL ▸	Keep ↵ held down and release on [95 dB]⇹[115 dB] to **Set the output level between 95dB and a maximum value automatically computed according to the number of active channels**
◂OUT SLOPE ▸	Keep ↵ held down and release on [0 dB]⇹[10 dB] to **Set the equalisation on the active channels pass band**
◂EXIT	Press and release ↵ to **Go to main menu**

3.2.4 Misc. Menu

The MISC. sub-menu, accessed from the main menu, allows the setting of various parameters.

LANGUAGE ›	Keep ↵ held down and release on [ENGLISH]↔[FRANCAIS]↔[ESPANOL]↔[ITALIANO] to **Change the displayed language**
‹DEFAULT VALUE›	Keep ↵ held down and release on [CANCEL]↔[EUROPE] ↔[...]↔[MEXIQUE] to **Reset the amplifier to its factory setting according to the selected zone.**
‹SET PIN ›	Keep ↵ held down and release on [YES] to **Change the installer code (0000 means no code required to access the configuration. This is the default value)**
‹BANDWIDTH COEF. ›	Keep ↵ held down and release on [50 %]↔[200 %] to **Change the bandwidth used in channel filtering (default value is 120%)**
‹EXIT	Press and release ↵ to **Go to main menu**

3.2.4.1 Installer code setting

The SET PIN sub-menu, accessed from MISC. menu, allows the installer to define a 4 digits pin code that will be required on startup and after each wake up from sleep mode to configure the amplifier. To delete it, just set this pin code to 0000. Proceed as follows to set a new pin code and/or to enter it when required :

*___ ›	Keep ↵ held down and release on [0] ↔[...]↔[9] to **Set the pin code 1st digit**
‹_*__›	Keep ↵ held down and release on [0] ↔[...]↔[9] to **Set the pin code 2nd digit**
‹__*_ ›	Keep ↵ held down and release on [0] ↔[...]↔[9] to **Set the pin code 3rd digit**
‹___* ›	Keep ↵ held down and release on [0] ↔[...]↔[9] to **Set the pin code 4th digit**

‹CONFIRM Keep ↵ held down and release on [YES] to **Valid or record the pin code**