MPX-S Multimode network splitter

User's manual

elettronica e telecomunicazioni

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Section 1

Introduction

1 Introduction

SPLIT MKII is an audio switcher for splitting advertising or regular programming over different areas. It is realized with fully solid state switches in order to maximize reliability. It can handle, using two 8-channels boards, up to 16 different zones and allows two network inputs.
Each output is monitored and can be programmed for auto-return to network programming, if a prolonged mute condition is detected on its input.
An internal DSP based high quality stereo decoder and subcarrier monitor with integrated RDS decoder, allows a quick and easy measurement of the main MPX parameters and RDS data on any network input and output.
As optionals, are available the redundant power supply and the mechanical bypass which switches all outputs to the network input 1, in case of power outage or internal malfunction.

1.1 List of changes

1.1.0 11/2/2015	first edition
1.2.0 18/12/2016	added MPX monitor description

1.2 Warnings

Before attempting any operation, please follow the safety instructions contained in the following paragraph.

The producer declines any liability for damage to people or things due to non-compliance, even if partial, of the following indications

• Ensure that the supply voltage corresponds to what is indicated on the apparatus.

• Ensure that the electrical system is equipped with a ground connection.

• Use only power sockets and cables with ground connection

• Disconnect power before attempting any operation inside the device.

• The power cutting device is the power cord, so this should be easily accessible and the socket must be positioned close to the apparatus.

• Any operation involving the access to internal parts must be performed only by trained service personnel.

1.3 Front panel

Front panel leds

- SPLIT: lit when network splitting is taking place.
- ALRM: alarm condition detected.
- COM : data communication active
- RUN: system heartbeat.

Menu navigation and parameters editing is done through the front panel knob.
he headphones output allows to listen to each output; the output selection is made through the "MpxAudio Monitor" menu.

1.4 Rear panel

MPX module 2 (optional) **Mpx Module 1**

Rear panel connector

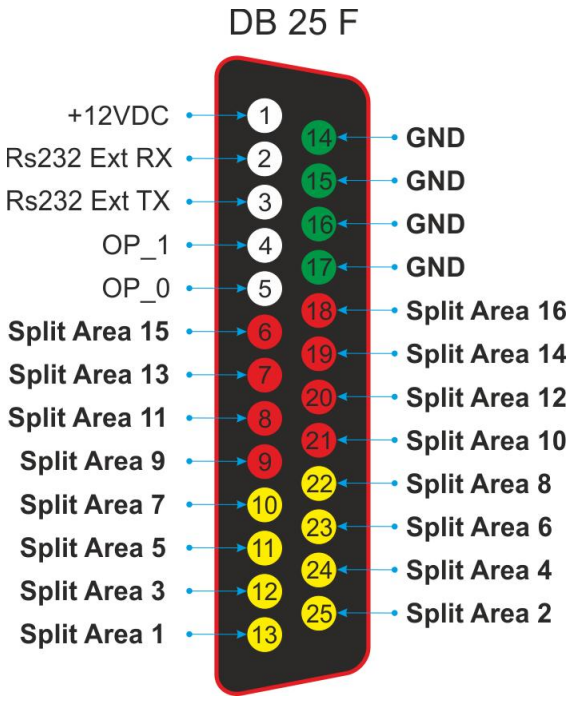
MPX modules 1/2

- NET IN 1 Main network mpx input
- NET IN 2 Backup network mpx input
- IN 1 Mpx input area 1
- IN 2 Mpx input area 2
- IN 3 Mpx input area 3
- IN 4 Mpx input area 4
- IN 5 Mpx input area 5
- IN 6 Mpx input area 6
- IN 7 Mpx input area 7
- IN 8 Mpx input area 8
- OUT 1 Mpx output area 1
- OUT 2 Mpx output area 2
- OUT 3 Mpx output area 3
- OUT 4 Mpx output area 4
- OUT 5 Mpx output area 5
- OUT 6 Mpx output area 6
- OUT 7 Mpx output area 7
- OUT 8 Mpx output area 8

CONTROL PORTS

- EXT CNT (DB25 F) parallel inputs (view pinout)
- RS232 (DSUB 9F) RS232
- LAN (RJ45) Ethernet connection

1.5 EXT CNT connector

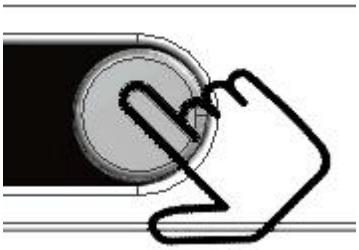


The EXT CNT connector is intended for parallel inputs control.
Switching inputs are designed to be coupled to open-collector outputs: no voltage is allowed to enter into the inputs.
The Mpx output switching, from network to local mpx, is done when the "Par" control is selected under System menu > Split Control and when its corresponding switching control input is driven to ground.
Yellow pins are the switching controls for module 1, red pins are for module 2.

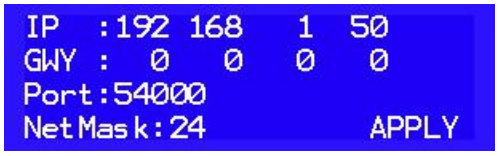
1.6 Editing and navigation

Menu navigation and parameters editing is done by the front panel knob.
On the main menu which appears after firmware boot, is possible to select the submenu for the various settings.

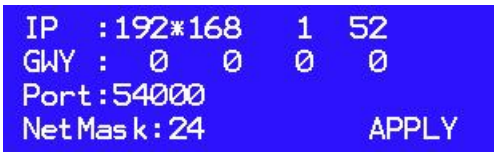
Pressing the knob, will enter the selected submenu.



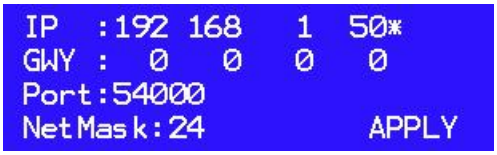
Once entered in the desired sub-menu, if there are adjustable parameters, you can proceed to editing



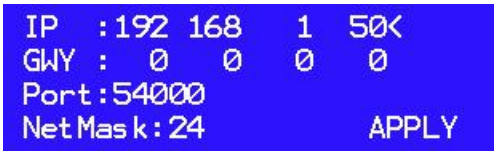
Pressing the knob, an asterisk "*" will appear next to the first editable element. This will not happen if, on the current window, there are no editable parameters.



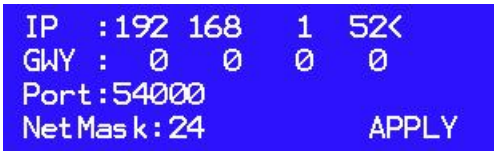
Turn the knob to position the "*" cursor on the other editable elements of the current window.



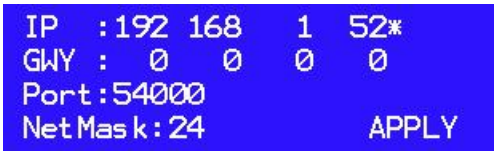
If you want now to change the analog input sensitivity, press the knob again. A "<" symbol will appear next to the parameter to indicate that this is being edited.



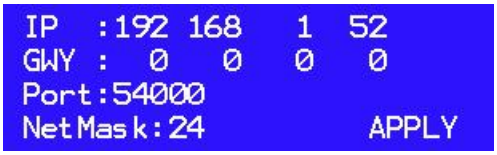
Turning the knob, you now will modify the selected parameter's value.



Once set the desired value, press the knob again. The cursor will switch to "*" again, indicating that items navigation mode is now active and other items can be selected and edited as described before.



If editing is however terminated, press the knob again and the "*" cursor will disappear and you can rotate the knob to navigate to other windows.



Inside any submenu, pressing the knob for more than 3 seconds, will cause a jump to the main menu.

When pressing the knob for 1 seconds, will appear the Headphone Level regulation.

Section 2

Front panel display

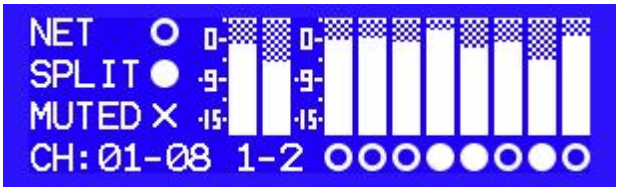
2 Front panel display

Following are listed all menus and functionalities available on the current firmware release.

2.1 Splitter status

Split status monitoring.

2.1.1 Input level



In this window is shown the network input (1-2) level and the output level and status.

○ Output is connected to network input.
● Output is connected to its local splitting input
☒ Output was switched back to main network input, because of muting condition detected.

2.1.2 Level monitor

Fine MPX input level monitor for network inputs and splitting outputs,

2.2 RDS and MPX Audio monitor

MPX stereo and RDS decoder monitor menu.

2.2.1 Mpx source selection and stereo levels

MPX input selection and decoded audio level display.

2.2.2 RDS flags

On this page are displayed the main RDS parameters:

PS **:**Program service name
PI **:**Program identification
PTY **:**Program type
TP **:**Traffic program
TA :Traffic announcement on air.
M/S **:**Music / Speech switch

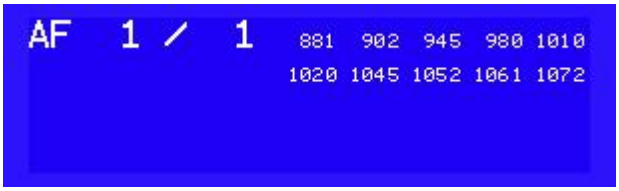
2.2.3 Radiotext

This window shows the current radiotext string

2.2.4 RDS blocks percentage monitor

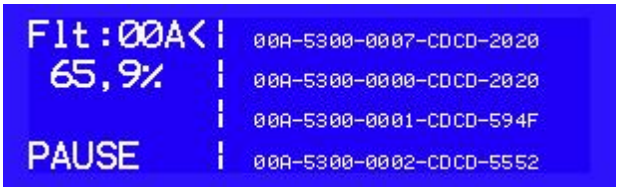
This page shows the percentage of the various blocks detected.
The block shown can be changed using the front panel knob.

2.2.5 AF tables



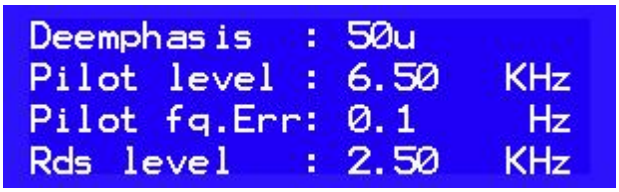
The AF tables being transmitted, are collected and displayed into this window.
User can select the AF table number, in case that more than one table is transmitted.

2.2.6 RDS Stream monitor



In this window, the complete RDS stream decoded is displayed.
The user can choose, using the front panel knob, to filter for one particular RDS block or to pause the scrolling.

2.2.7 Subcarrier monitor and deemphasis selection



Deemphasis	75/50uS/OFF, deemphasis setup for the stereo decoder.
Pilot level	pilot level indication. **The stereo decoder is active when this value is above 4KHz**.
Pilot fq.Err	Frequency error on pilot tone.
Rds level	RDS subcarrier level

2.3 Alarms

If one or more alarms are active, the front panel 

led is lit and, into this page, the alarm description is displayed.

Using the "RESET" function, it is possible to clear the stored alarms, if they are not longer active.

2.4 System setup

2.4.1 Display and Mpx inputs

Contrast display contrast setup
MpxInput main network input selection.
MpxAutoSw Min Lev dB: enable/disable channel auto-return if muted input is detected.
Alarm Timeout S: muted channel auto-return timeout (seconds).

2.4.2 Interfaces and input modules

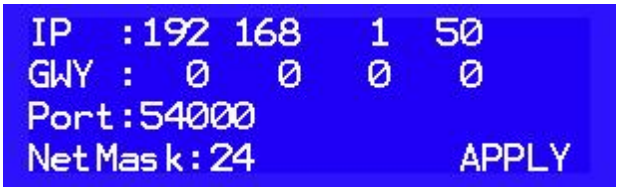
Split Blocks number of boards installed
Comm Autoreturn S automatically ends the splitting condition if no activity is detected on communication ports.
Mute Autoreturn dB audio level alarm threshold
Split Control splitting control source

2.4.3 Parallel status

On this page is shown the parallel port input status for the parallel 1 (related to board 1, yellow input pins) or parallel 2 (related to board 2, red input pins).

○ input is in open.
● input is in closed to ground.

2.4.4 Network setup



IP	own ip address
GWY	gateway address
Port	UDP communcation port setup.
NetMask	netmask in CIDR notation.
APPLY	apply current setup and restart network.

2.4.5 System info

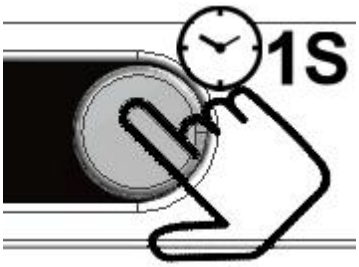
Sys: operating firmware revision
Hw: hardware revision
BL: bootloader revision
SN: serial number.

2.4.6 System manteinance

From this menu is possible to reboot the equipment.

2.5 Headphones Level

The headphone level can be adjusted using the front panel knob.
Pressing the knob for more than 1 second, will show the adjustment level menù.



After 3 seconds the level menù will close automatically.