

~~StepArray~~

User Manual for option SSS

1. Foreword

StepArray column loudspeakers use the digital signal processor UT26 and a multichannel amplifier. For a general presentation of these loudspeakers, please refer to the document "StepArray column loudspeakers - General Presentation and Principles".

One of the available options for these processors is option SSS, which consists in the supervision of the correct operation of the system as specified by standard EN-60849, which applies to PA systems which are used for diffusion of security announcements.

2. Principle of operation

The SSS option consists in :

- Two daughter boards in processor UT26,
- A user interface with 2 LEDs and a pushbutton on the front panel of UT26,
- A SSS box connected on one side to the outputs of the power amplifier, and on the other side to analog input 2 of processor UT26.

Figure 1 shows the cabling diagram of the system, and a photo of the SSS user interface on the UT26 front panel is presented on figure 2.

Processor UT26 equipped with the SSS option adds a high-frequency sine component to the audio signal on the outputs of the UT26 processor, and reads (on analog input 2 via the SSS box) the electric current at the outputs of the amplifier connected to the column. If a malfunction occurs, the processor is informed. In reaction, the processor beeps, the red LED on the front panel of the processor is lit, and the contact between pins 1 and 9 of the BCL port on the rear panel of processor is opened. The SSS detection is guaranteed within 1 second.

Examples of malfunctions :

- the column is disconnected from the amplifier,
- the outputs of the amplifier are shorted,
- the amplifier doesn't work,
- ...

Note that if the UT26 processor fails, the beep and LED signals won't work, but the SSS contact will still be opened, so that the failure can be reported to the rest of the system.

3. Installation

3.1 Cabling

Cabling must match the block diagram of figure 1.

All channels of the power amplifier have a common ground pin (noted " - " on amplifier MPA6150). Thus, the **ground pin** of the column connector (see figure 1 and the Technical Manual of the columns) must be connected to the terminal of the SSS box noted "From speaker", and terminal "To amplifier" of the SSS box must be connected to any of the **ground pins** of the amplifier outputs.

Output of the SSS box (noted "Out") must be connected to analog input 2 of the UT26 processor with an XLR 3 pin cable.

If the MIC option is used (in addition to option SSS), then the microphone should be connected to the input of the SSS box (noted "Mic In").

The SSS contact (pins 1 and 9 of the BCL connector of UT26) should be connected in order to inform the PA system about SSS errors.

3.2 Installation with the SAdrive software

When adding a processor ("component") equipped with the SSS option to a structure with SAdrive, check option SSS.

4. Using the SSS option

4.1 Calibration

After first power-up of the installation, it is necessary to calibrate the system. Similarly, if a modification is made on the amplifier and/or the columns (e.g. changing the amplifier gains, or replacing the column), a new calibration must be performed. Before starting the calibration process, make sure all channels work properly.

For launching the calibration process, press the pushbutton of the SSS user interface during 3 seconds. The yellow LED then blinks during the calibration, which lasts approximately for 20 to 30 seconds.

At the end of the calibration, the red LED blinks during 1 second. The SSS supervision is then functional.

4.2 Malfunction detection - rearming

When the system detects a malfunction on one of the amplifier output channels, the UT26 processor beeps, the red LED on the UT26 front panel is lit, and the SSS contact between pins 1 and 9 of the BCL port (on the rear panel of the processor) is opened.

After the cause of the malfunction detection has been identified and corrected, the system should be rearmed by pressing the SSS button on the front panel of the UT26 processor.

Note that an excessive output level (corresponding to a long overload of the amplifier) may trigger the SSS detection. In this case, both the yellow and the

Active Audio

red LEDs are lit. The level of the input signal or the gain of the processor should then be decreased before rearming the system.

When one saves the current parameters in permanent memory of the DSPs with SAdrive, an SSS detection occurs, which is normal since the audio signal is not transmitted during this operation. Acknowledge this SSS error by rearming the system.

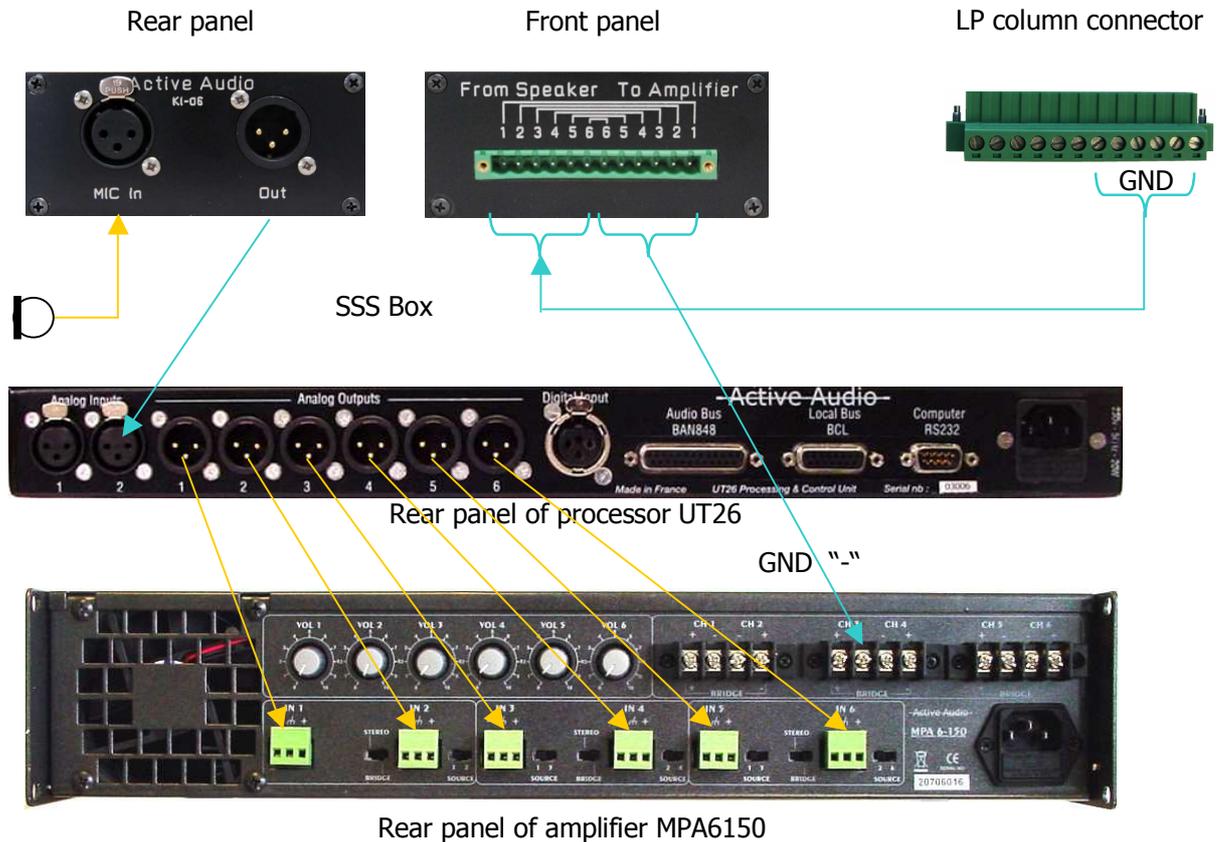


Figure 1 : Cabling diagram of the SSS option. Blue : SSS connections, yellow : non specific SSS connections. The green connection on the column LP connector is made inside the column. The microphone is not part of the SSS option.



Figure 2 : User interface of the SSS option on the UT26 processor front panel.

5- Technical data of the SSS box

Casing : Black aluminium.

Dimensions : 104 x 105 x 44 mm (without rubber feet and connectors).

Weight : 440 g.

Connectors :

Front panel : connector XLR 3 points male and XLR 3 points female

Rear panel : connector Phoenix 12G2.5mm².