TUBE-TECH SSA 2A
Stereo summing amplifier

Description:

The **TUBE-TECH Stereo summing amplifier SSA 2A** is aimed for use where extreme high quality summing of several signals into two channels is the target.

It has 4 mono input (hard wired to CH1 and CH2) and 8 stereo inputs, which is summed together into two outputs.

The SSA 2A consists of a summing amplifier at the input, a 23 stepped attenuator with a range of +/- 10 dB and an output stage.
Two large VU-meters show the levels on the XLR output sockets.
To avoid the distortion introduced by the VU-meters when connected directly to the output XLR sockets, symmetrical configured OP- amps buffer the VU-meters.

The summing amplifier is a symmetrical two-stage amplifier, designed around two dual, low impedance, and high transconductance triodes. The input transformer is part of the dual feedback configured as a so-called zero field transformer.
The attenuator is a heavy gilded 2x23 position switch with steps of +/- 0.5, 1, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10 dB.
The output stage is designed around two dual triodes in push-pull and an output transformer (with a static screen).
Both the summing amplifiers and the output amplifiers are symmetrical.

Summing-amplifier:

All inputs are balanced by two zero field transformers (one for each channel).

What is zero field transformer?
In the zero field transformer configurations, the transformer is part of the feedback circuit.

There are several benefits for this:

1. The voltage across the transformer is reduced substantially whereby a much smaller transformer is needed for the same specification.
   The reduction is of the same magnitude as the feedback applied.

2. The distortion at low frequencies is reduced substantially.

2. Frequency response in both the low and high range is extended.

3. Phase response in both the low and high range, is also reduced

(050320)

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To avoid a reduction of the crosstalk between the channels, it is important that all four mono inputs are terminated, either with a shorting plug or by a signal source.

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ADJUSTMENT PROCEDURE:

CAUTION:
Before making any adjustment let the unit heat-up at least 10 min.

Always check the DC voltages at the power supply.

1) The DC voltage in TP201 shall be +280V (265-295V).
2) The DC voltage in TP202 shall be +240V (238-242V).
3) The DC voltage in TP203 shall be +15,0V (14,7-15,3V).
4) The DC voltage in TP204 shall be -15,0V (14,7-15,3V).
5) The DC voltage in TP205 (across C211) shall be +12,0V (11,5-12,5V)
6) The DC voltage in TP206 shall be +238V (236,5-239,5V)

ADJUSTMENT OF PSU:

1) The DC voltage in TP202 shall be +240V.
   Adjust with P202.

ADJUSTMENT OF BASIC GAIN:

1) Set the **"OUTPUT GAIN"** on **"0"**.
2) Apply a signal of 1 kHz, 0,0 dBU to the input, either one mono or two stereo (one for each channel).
3) Adjust the preset "**Gain"** P1 (P101) (on amp/psu PCB) to an output reading of 0,0 dBU

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