



## SAP-1 AND SAP-2 SECOND AUDIO PROGRAM GENERATORS



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The SAP-1 and SAP-2 are each designed to encode a monaural audio signal into the standard BTSC format for use as a Second Audio Program channel for television transmission. Typical uses include transmission of second Language programming, local radio stations, promotions of pay services, weather reports, and FSK data.

### Now the SAP-1 and the SAP-2 have AGC

The New Built-in AGC (Automatic Gain Control) is provided to maintain average program levels within a reasonable range without reducing the dynamic range to the extent that quiet passages are no longer quiet and loud passages are no longer loud. It includes a gated-gain low-distortion compandor with a fast attack and slow release. When the program level falls over 20 dB below normal, the compandor assumes that there is a pause in the program and holds its gain setting for 10 seconds. The compandor then slowly resets its gain to 0 dB. The AGC is enabled by a front panel switch.

### SAP-1 INDEPENDENT SAP GENERATOR

The SAP-1 generator may be used in conjunction with virtually any existing BTSC-compatible mono or stereo TV-audio modulator. The SAP-1 may be used independently or with a BTSC stereo encoder which has an input for a SAP carrier. Two audio inputs are provided on the SAP-1; one for the SAP/A program and another for the MAIN/B program. A separate level control is provided for each input. When used on a mono (not stereo) channel, the main and SAP inputs are processed and combined into a composite multiplex signal which is sent to the TV-audio modulator. When used with stereo the SAP-1 can be configured for two SAP audio inputs, facilitating switch-over from the primary SAP program to an auxiliary input, such as a local commercial insert. The alternate signal is selectable by either a front panel switch or by remote control (contact closure).

Each SAP-1 is powered by a built-in power supply and is enclosed in an aluminum case which can be mounted on 1/3 of a Leaming PMU413 19-inch panel mount. These panel mounts accommodate up to three units.

## **SAP-2 DEPENDENT SAP GENERATOR**

The SAP-2 is designed specifically for use with Leaming's MTS-2 series and the MTS-4A series BTSC stereo generators. When used with the MTS-2 series generators or the MTS-4A, the SAP-2 derives its video sync and operating power from its related stereo generator. Two audio inputs can be provided to the SAP generator, facilitating switch-over from the primary SAP program to an auxiliary input, such as a local commercial insert. Individual level controls are provided for each input. The alternate signal is selectable by either a front panel switch or by remote control (contact closure).

Each SAP-2 is enclosed in an aluminum case which can be mounted on 1/3 of a Leaming PMU413 19-inch panel mount. These panel mounts accommodate up to three units. .

## **SPECIFICATIONS**

### **OVERALL PERFORMANCE**

#### **FREQUENCY RESPONSE:**

50 Hz to 10 kHz,  $\pm 1$  dB

#### **DISTORTION:**

1% maximum THD

#### **SIGNAL-TO-NOISE RATIO:**

50 dB minimum

#### **AUDIO PROCESSING:**

SAP Channel: BTSC standard companding, dbx

Main Channel: 75 microsecond pre-emphasis (SAP-1)

#### **AUDIO PROCESSING AGC:**

Automatic Gain Control (AGC)

2:1 Compressor (dB),  $\pm 10$  dB

#### **SAP SUBCARRIER TEST LEVEL:**

2.5 Vp-p (to produce  $\pm 25$  kHz deviation of 4.5 MHz)

### **AUDIO BASEBAND INPUT**

#### **NOMINAL INPUT LEVEL (APL):**

0 dBm, adjustable  $\pm 10$  dB

#### **AUDIO INPUT IMPEDANCE:**

100 k-ohms, balanced

### **SAP OUTPUT**

#### **SAP SUBCARRIER FREQUENCY:**

5H (78,670 Hz), locked to video sync

#### **SAP SUBCARRIER OPERATING LEVEL:**

1.5 Vp-p (to produce  $\pm 15$  kHz deviation of 4.5 MHz)

#### **SAP SUBCARRIER DEVIATION:**

$\pm 10$  kHz at 100% modulation

## FRONT PANEL INDICATORS

### AUDIO LEVEL:

- Two Peak-reading 5-segment LED bargraphs
- AGC ON LED
- SAP CARRIER ON LED

## FRONT PANEL CONTROLS

- INPUT LEVEL (2)
- INPUT SELECTOR SWITCH
- SAP CARRIER LEVEL
- SAP CARRIER ON/OFF-REMOTE/TEST SWITCH
- AGC ON/OFF SELECTOR SWITCH

## REAR PANEL CONNECTORS

Two 5-pin blocks, one 3-pin plug block

3-pin plug block:

- Subcarrier Output
- Ground
- High
- Low

5-pin plug block:

- Remote A/B Select
- Sync Input
- Ground
- 18V Input (SAP-2) Output (SAP-1)
- Remote SAP Enable

5-pin plug block:

- Audio Inputs
- Main and SAP (SAP-1)
- A/B
- Ground

Two F-type connectors; BNC optional:

- Video Sync Loop In & Out (SAP-1)

## POWER AND MECHANICAL

### POWER:

- SAP-1 105-125 V, 50-60 Hz, 5 VA  
220 Option, 210-250 VAC, 50-60 Hz, 5 VA (factory set)
- SAP-2 18 VDC @ 150 mA (from LEAMING MTS-2, MTS-4A, MTS-5)

### SIZE:

- 1.6" H x 5.5" W x 18" D
- Mounts on 1/3 of a PMU413 19" panel mount

### WEIGHT:

- 3-1/2 lb. net, 6 lb. shipping

Specifications subject to change without notice.

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**Phone (800) 4-LEAMING**  
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