

**SANYO**

No.1848B

**LA7710**SECAM, PAL (Quasi-Parallel)  
Audio IF Circuit**Overview**

The LA7710 is a SECAM (audio IF, electronic volume control, AF preamp)/PAL (quasi-parallel audio IF circuit) dual system IC that is packaged in a 16-pin DIP package. The LA7710 is applicable to the SECAM or PAL system by changing over the AGC system (pin 3 is brought to open state or grounded).

**Functions**

- IF amp
- Detector
- IF AGC (peak AGC, average AGC)
- Electronic volume control
- AF preamp
- PAL/SECAM switch

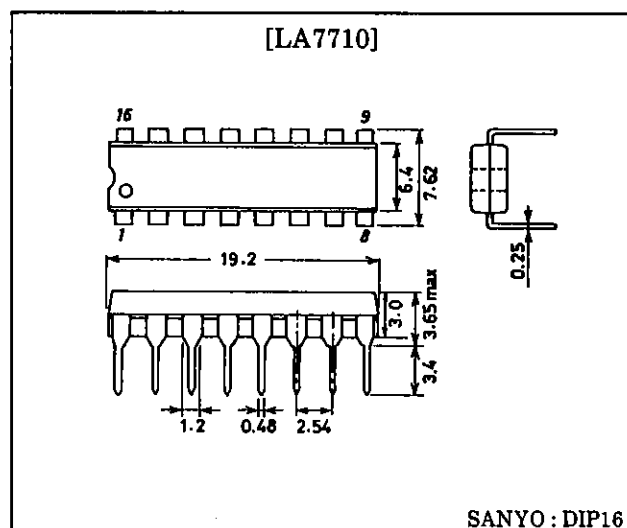
**Features**

- Used as SECAM audio IF circuit by bringing pin 3 to open state. Also used as PAL quasi-parallel audio IF circuit by grounding pin 3.
- Electronic volume control : 0dB output available

**Package Dimensions**

(unit : mm)

3006B-DIP16

**Specifications****Maximum Ratings at  $T_a = 25^\circ\text{C}$** 

|                             |              |             | Unit             |
|-----------------------------|--------------|-------------|------------------|
| Maximum Supply Voltage      | $V_{CC}$ max | 15          | V                |
| Maximum Flow-out Current    | $I_{11}$ max | -5          | mA               |
|                             | $I_5$ max    | -3          | mA               |
|                             | $I_4$ max    | -3          | mA               |
| Allowable Power Dissipation | $P_d$ max    | 900         | mW               |
| Operating Temperature       | $T_{opr}$    | -20 to +70  | $^\circ\text{C}$ |
| Storage Temperature         | $T_{stg}$    | -55 to +125 | $^\circ\text{C}$ |

**Operating Conditions at  $T_a = 25^\circ\text{C}$** 

|                            |             |           | Unit |
|----------------------------|-------------|-----------|------|
| Recommended Supply Voltage | $V_{CC}$    | 12        | V    |
| Operating Voltage Range    | $V_{CC}$ op | 9 to 13.5 | V    |

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61295HA(KOTO)/8238YT/8215KI/6105MW, TS No.1848-1/4

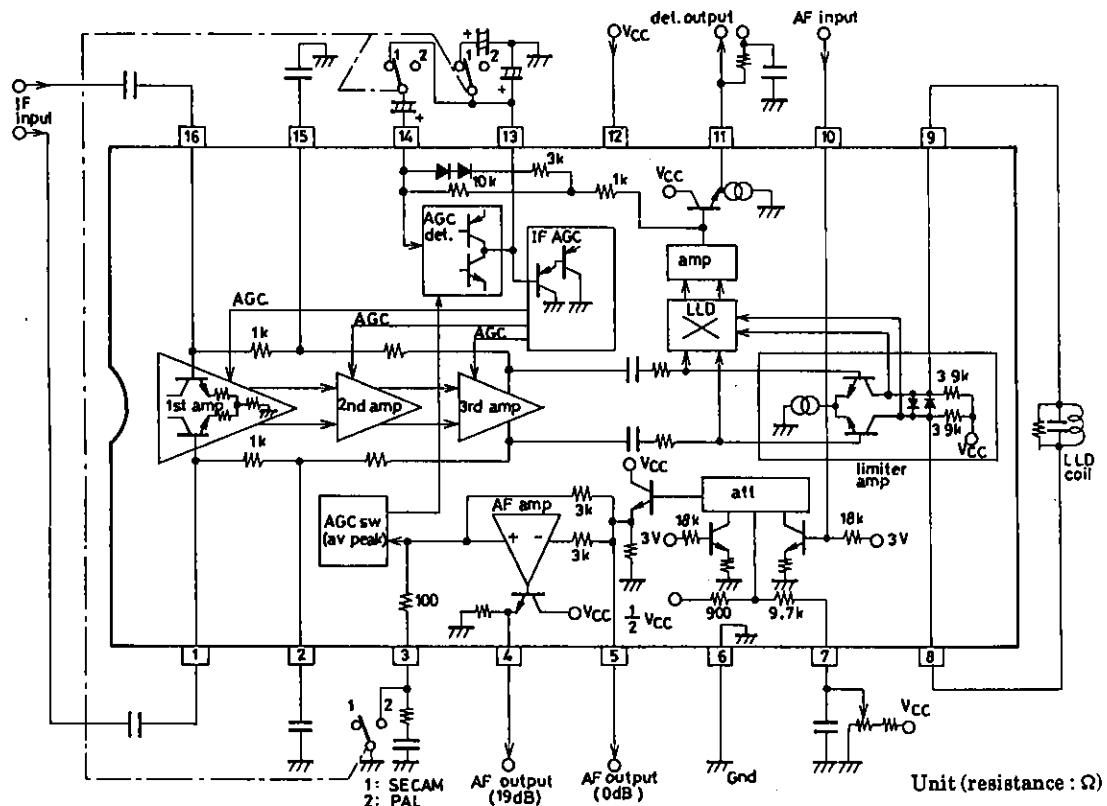
# LA7710

Operating Characteristics at  $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 12\text{V}$ ,  $f_s = 39.2\text{MHz}$ ,  $f_p = 32.7\text{MHz}$

|                             |             |                  | min | typ | max | Unit              |
|-----------------------------|-------------|------------------|-----|-----|-----|-------------------|
| Circuit Current             | $I_{12}$    |                  | 39  | 49  | 63  | mA                |
| Usable Sensitivity          | $V_i$ (S/N) | 400Hz-30% mod AM |     | 39  | 46  | dB                |
| Average Detection Output    | $V_{os}$    | //               | 190 | 280 | 360 | mV                |
| SECAM S/N                   | $S/N_s$     | //               | 52  | 59  |     | dB                |
| Detection Output Distortion | THDs        | //               |     | 0.5 | 1.0 | %                 |
| Maximum Allowable Input     | $V_i$ max   | THD=2%           | 92  | 98  |     | dB/ $\mu\text{V}$ |
| AGC Range                   | GR          |                  | 63  | 69  |     | dB                |
| Peak Output Amplitude       | $V_{op}$    | 15kHz-78% mod AM | 1.4 | 1.7 | 2.1 | V                 |
| SIF Output Amplitude        | $V_{SIF}$   | P/S : 20dB       | 50  | 90  | 130 | mV                |
| Frequency Characteristic    | $f_c$       | -3dB             | 5   | 7   |     | MHz               |
| Electronic Volume Control   | $V_{Gdc}$   |                  | -1  | 0   | +1  | dB                |
| Voltage Gain                |             |                  |     |     |     |                   |
| Electronic Volume Control   | THDatt      |                  |     | 0.1 | 0.4 | %                 |
| Distortion                  |             |                  |     |     |     |                   |
| Electronic Volume Control   | ATT         |                  | 70  | 80  |     | dB                |
| Max. Attenuation            |             |                  |     |     |     |                   |
| AF Amp Voltage Gain         | $V_{Gaf}$   |                  | 17  | 19  | 21  | dB                |
| AF Amp Distortion           | THDaf       |                  |     | 0.3 | 1.0 | %                 |

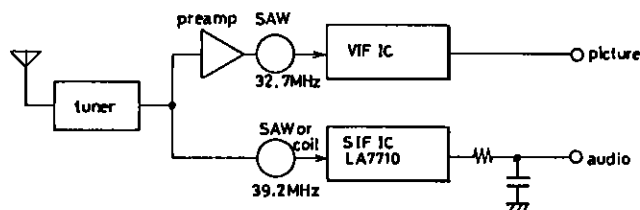
(Note) Current direction : + : Flowing into IC  
- : Flowing out of IC

## Equivalent Circuit Block Diagram

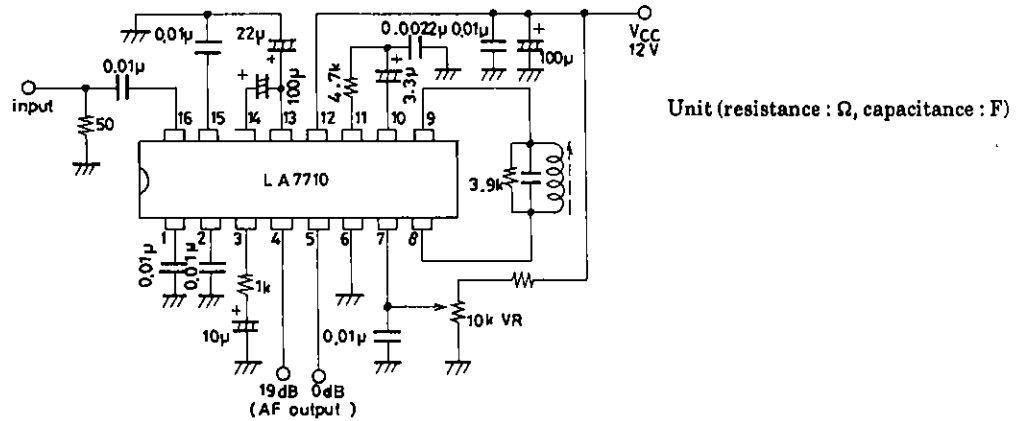


## Sample Application Circuits-Each system diagram and IC peripheral circuit

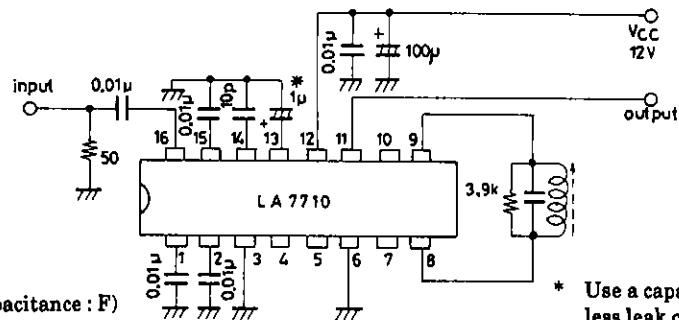
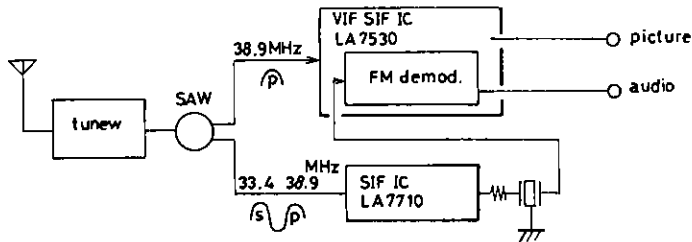
### (1) SECAM



# LA7710

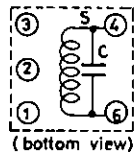


## (2) PAL



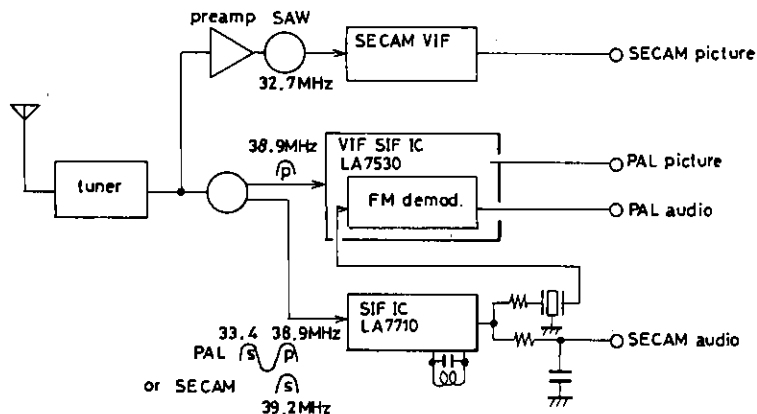
### [ Coil specification ]

Bobbin : 7mm square



|                 |     |         |
|-----------------|-----|---------|
| Number of turns | ④-⑥ | 7T      |
| Material        | UEW | 0.12φ   |
| Capacitance     |     | 33pF    |
| Frequency       |     | 39.2MHz |

## (3) PAL/SECAM



(Note) \*1 When selecting the PAL/SECAM, the LLD tuning point of the LA7710 must be changed over (38.9MHz → 39.2MHz).

\*2 When selecting the PAL/SECAM, the filter characteristic must be changed over.

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