

## Integrated PAL and PAL/NTSC TV Processor

### GENERAL DESCRIPTION

The ILA8362A are single-chip TV processor which contain nearly all small signal functions that are required for a colour television receiver. For a complete receiver the following circuits need to be added: a base-band delay line (ILA4661), a tuner and output stages for audio, video and horizontal and vertical deflection and SECAM decoder ILA8395.

### FEATURES

- Multistandard vision IF circuit (positive and negative modulation)
  - Multistandard FM sound demodulator (4.5 MHz to 6.5 MHz)
  - Source selection for external A/V inputs (separate Y/C signals can also be applied)
  - Integrated chrominance trap and bandpass filters (automatically calibrated)
  - Integrated luminance delay line
  - PAL/NTSC colour decoder with automatic search system
  - Easy interfacing with the ILA8395 (SECAM decoder) for multistandard applications
  - RGB control circuit with linear RGB inputs and fast blanking
  - Input for automatic cut-off control with compensation for leakage current of the picture tube
  - Horizontal synchronisation with two control loops and alignment-free horizontal oscillator without external components
  - Vertical count-down circuit (50/60 Hz) and vertical preamplifier
  - Low dissipation (600 mW)
  - Small amount of peripheral components compared with competition ICs
  - Only one adjustment (vision IF demodulator)
  - The supply voltage for the ICs is 8 V. They are mounted in a shrink DIL envelope with 52 pins and are pin compatible.
- Additional features

### QUICK REFERENCE DATA

PARAMETER	SYMBOL	MIN.	MAX.
Supply voltage, V	V <sub>P</sub>	7.2	8.8
Supply current, mA	I <sub>P</sub>	30	120
Video IF amplifier sensitivity (RMS value), $\mu$ V	U <sub>i(rms)</sub>	–	100
Gain control rang, dB	G <sub>cr</sub>	64	–
Bandwidth of demodulated output signal, MHz	B	6.0	–
Video non linearly, %	NL <sub>vid</sub>	–	5
Signal-to-noise ratio, dB	S/N	52	–
Minimum starting level voltage for tuner take-over (RMS value), mV	U <sub>min</sub>	0.15	0.5
Maximum starting level voltage for tuner take-over (RMS value), mV	U <sub>max</sub>	100	200
Output voltage swing AFC, V	U	6	–
AFC slope, mV/kHz	f <sub>sl</sub>	120	200
Output voltage: video not identified, V	U <sub>o</sub>	–	0.5
video identified; colour signal available; f <sub>osc</sub> =3.5 MHz, V		5.5	6.5
video identified; colour signal available/unavailable; f <sub>osc</sub> =4.4 MHz, V		7.1	8.8
Catching range PLL, MHz	$\delta$ f	4.2	6.8
Control rang, dB	VOL <sub>cr</sub>	60	–
Suppression of output signal when mute is active, mV	OSS	60	–
Sync pulse amplitude, mV	U <sub>13</sub>	50	–
Free running frequency, Hz	f <sub>fr</sub>	15310	15940
Holding range PLL, kHz	f <sub>HR</sub>	$\pm$ 0.8	$\pm$ 1.2
Catching range PLL, kHz	f <sub>CR</sub>	$\pm$ 0.6	$\pm$ 0.9
Voltage to switch on the X-ray protection, V	U <sub>39</sub>	6.0	–
Locking range, Hz	f <sub>lock</sub>	45	64.5
Locking range (lines/frame)	LF	488	722
Residual carrier output voltage (peak-to-peak value) (R-Y) and (B-Y) outputs, mV	U <sub>30</sub>	–	5
H/2 ripple at (R-Y) output (peak-to-peak value), mV	U <sub>30r</sub>	–	25
Saturation control range, dB	CR <sub>s</sub>	52	–
Contrast control range, dB	CR <sub>c</sub>	18	–
Brightness control range, V	CR <sub>b</sub>	$\pm$ 0.7	$\pm$ 1.3
Output voltage level, V	U <sub>o</sub>	2.8	5.2
Residual frequency at f <sub>osc</sub> in the RGB outputs (peak-to-peak value), mV	f <sub>res</sub>	–	25
Residual frequency at 2f <sub>osc</sub> plus higher harmonics in the RGB outputs (peak-to-peak value), mV		–	25
Difference in black level between the three outputs (nominal brightness), mV	U <sub>diff</sub>	–	50
Bandwidth of output signals for RGB input	B	8	–
CVBS input (f <sub>osc</sub> =3.58 MHz)		2.8	3
CVBS input (f <sub>osc</sub> =4.43 MHz)		3.5	4
S-VHS input		8	–

## PIN DESCRIPTION

PIN	SYMBOL	DESCRIPTION
01	AUDEEM	audio de-emphasise and modulation switch
02	IFDEM1	IF demodulator tuned circuit
03	IFDEM2	IF demodulator tuned circuit
04	IDENT	video identification output/MUTE input
05	SOIF	sound IF input and volume control
06	EXTAU	external audio input
07	IFVO	IF video output
08	DECdig	decoupling digital supply
09	AFCOUT	AFC output
10	Ucc	supply voltage (+8 V)
11	OV1	ground 1
12	DECft	decoupling filter tuning
13	CVBSint	internal CVBS input
14	BC	black current input
15	CVBSext	external CVBS input
16	CHROMA	chrominance and A/V switch input
17	BRI	brightness control input
18	BO	blue output
19	GO	green output
20	RO	red output
21	RGBIN	RGB insertion and blanking input
22	RI	red input
23	GI	green input
24	BI	blue input
25	CON	contrast control input
26	SAT	saturation control input
27	HUE	hue control input (or chrominance output)
28	BYI	B-Y input signal
29	RYI	R-Y input signal
30	RYO	R-Y output signal
31	BYO	B-Y output signal
32	XTALOUT	4.43 MHz output for TDA8395
33	DET	loop filter burst phase detector
34	XTAL1	3.58 MHz crystal connection
35	XTAL2	4.43 MHz crystal connection
36	HOSC	supply/start horizontal oscillator
37	HOUT	horizontal output
38	FBI/SCO	flyback input/sandcastle output
39	PH1LF	phase 2 loop filter
40	PH2LF	phase 1 loop filter
41	OV2	ground 2
42	VFB	vertical feedback input
43	VRAMP	vertical ramp generator
44	VOUT	vertical output
45	IFIN1	IF input 1
46	IFIN2	IF input 2
47	AGCOUT	tuner AGC output
48	DECcagc	AGC decoupling capacitor
49	TUNEadj	tuner take-over adjustment
50	AUOUT	audio output
51	DECdem	decoupling sound demodulator
52	DECbg	decoupling bandgap supply

BLOCK DIAGRAM

