# ILA8362A
# 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

Korzhenevskogo 12, Minsk, 220064, Republic of Belarus
Fax: +375 (17) 278 28 22,
Phone: +375 (17) 278 07 11, 277 24 70, 277 24 61, 277 69 16
E-mail: belms@belms.belpak.minsk.by
URL: www.bms.by

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## QUICK REFERENCE DATA

| Parameter | Symbol | Min. | Max. |
|---|---|---|---|
| Supply voltage, V | $V_P$ | 7.2 | 8.8 |
| Supply current, mA | $I_P$ | 30 | 120 |
| Video IF amplifier sensitivity (RMS value), µV | Ui(rms) | – | 100 |
| Gain control rang, dB | Gcr | 64 | – |
| Bandwidth of demodulated output signal, MHz | B | 6.0 | – |
| Video non linearly, % | NLvid | – | 5 |
| Signal-to-noise ratio, dB | S/N | 52 | – |
| Minimum starting level voltage for tuner take-over (RMS value), mV | Umin | 0.15 | 0.5 |
| Maximum starting level voltage for tuner take-over (RMS value), mV | Umax | 100 | 200 |
| Output voltage swing AFC, V | U | 6 | – |
| AFC slope, mV/kHz | fsl | 120 | 200 |
| Output voltage: | | | |
| video not identified, V | | – | 0.5 |
| video identified; colour signal available; fosc=3.5Ì Ãö, V | Uo | 5.5 | 6.5 |
| video identified; colour signal available/unavailable; fosc=4.4Ì Ãö, V | | 7.1 | 8.8 |
| Catching range PLL, MHz | δf | 4.2 | 6.8 |
| Control rang, dB | VOLcr | 60 | – |
| Suppression of output signal when mute is active, mV | OSS | 60 | – |
| Sync pulse amplitude, mV | U13 | 50 | – |
| Free running frequency, Hz | ffr | 15310 | 15940 |
| Holding range PLL, kHz | fHR | ±0.8 | ±1.2 |
| Catching range PLL, kHz | fCR | ±0.6 | ±0.9 |
| Voltage to switch on the X-ray protection, V | U39 | 6.0 | – |
| Locking range, Hz | flock | 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 | U30 | – | 5 |
| H/2 ripple at (R-Y) output (peak-to-peak value), mV | $U30_r$ | – | 25 |
| Saturation control range, dB | CRs | 52 | – |
| Contrast control range, dB | CRc | 18 | – |
| Brightness control range, V | CRb | ±0.7 | ±1.3 |
| Output voltage level, V | Uo | 2.8 | 5.2 |
| Residual frequency at $f_{OSC}$ in the RGB outputs (peak-to-peak value), mV | | | |
| Residual frequency at $2f_{OSC}$ plus higher harmonics in the RGB outputs (peak-to-peak value), mV | fres | – | 25 |
| | | – | 25 |
| Difference in black level between the three outputs (nominal brightness), mV | Udiff | – | 50 |
| Bandwidth of output signals for | | | |
| RGB input | | 8 | – |
| CVBS input ($f_{OSC}$=3.58 MHz) | B | 2.8 | 3 |
| CVBS input ($f_{OSC}$=4.43 MHz) | | 3.5 | 4 |
| S-VHS input | | 8 | – |

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BELMICROSYSTEMS

## 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 | DECagc | AGC decoupling capacitor |
| 49 | TUNEadj | tuner take-over adjustment |
| 50 | AUOUT | audio output |
| 51 | DECdem | decoupling sound demodulator |

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| | | |
|---|---|---|
| 52 | DECbg | decoupling bandgap supply |

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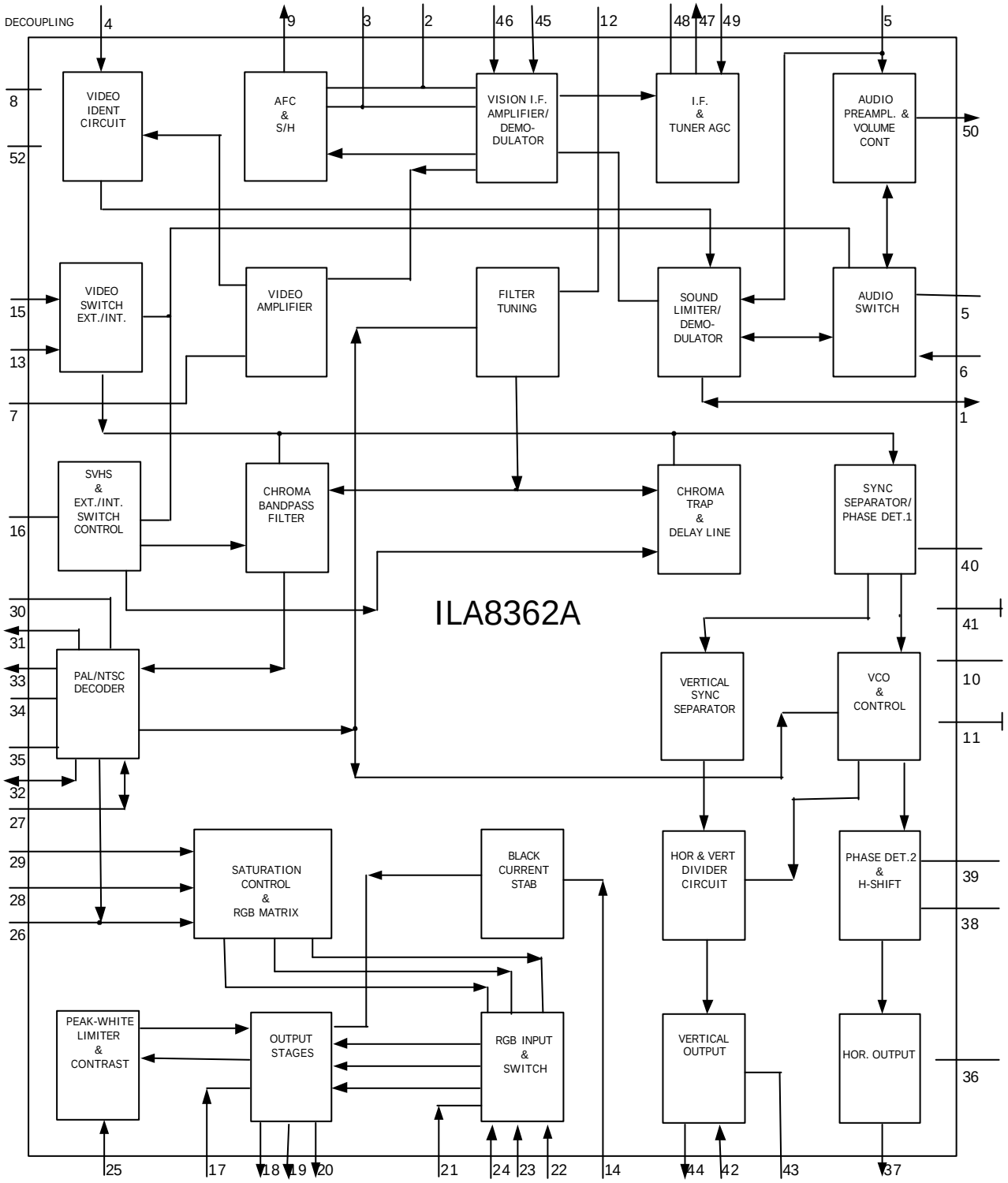
## BLOCK DIAGRAM

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