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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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M52770ASP

NTSC/PAL TV Signal Processor

REJ03F0182-0201

Rev.2.01

Mar 31, 2008

Description

The M52770ASP is a single chip CTV processor with has VIF/SIF, luminance, chrominance, mono sound, OSD display, RGB interface, and deflection.

And it is possible to control each parameters by I²C bus. A baseband 1H delay line is built-in, and conjunction with SECAM decoder M52325AP simplifies multi system CTV chassis.

Features

- Built-in 1H Delay Line using Bi-CMOS technology
- Multistandard PLL demodulator for IF
- Alignment-free sound demodulator
- Flexible source selection with internal CVBS and external CVBS or Y/C input signal
- Audio switch integrated
- Integrated chroma trap and bandpass filters with auto-calibration
- Luminance delay line integrated
- RGB control circuit with cut-off and drive
- Linear RGB inputs and fast blanking
- Horizontal synchronization with two control loops and alignment-free H-oscillator
- Vertical count-down circuit
- Vertical saw tooth generator integrated
- I²C Bus control of various functions
- Easy interfacing with SECAM decoder for multistandard applications
- Small amount of peripheral components

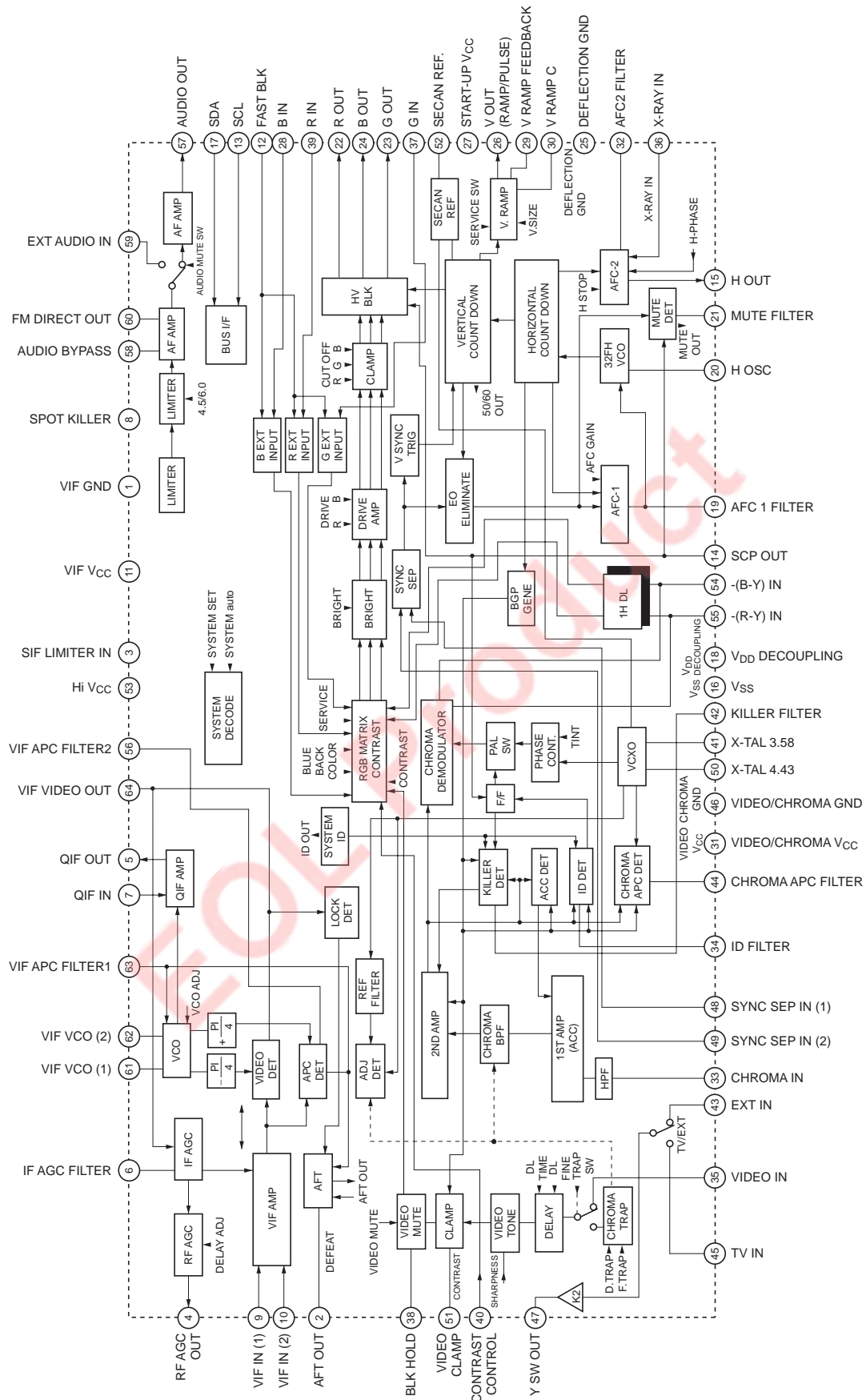
Application

NTSC/PAL Television

Quick Reference Data

• Supply voltage	pin11 (VIF), pin31 (video/chroma)	5.0 V
	pin27 (Start-up), pin53 (Output Stage)	9.0 V
• Supply current	pin11 and pin31	107 mA
	pin27 and pin53	56 mA
• Input signals	VIF input sensitivity	47 dB μ
	SIF limiting sensitivity	40 dB μ
	External audio input	1 Vp-p
	External CVBS/Y inputs	1 Vp-p
	External chroma input (burst amplitude)	0.3 Vp-p
	External RGB inputs	0.7 Vp-p
	Fast blanking Internal TV	0 to 0.8 V
	External RGB	1.2 to 3.3 V
	Half Tone	3.7 to 5 V
	-(R-Y) input	1.05 Vp-p
	-(B-Y) input	1.33 Vp-p
• Output signals	VIF CVBS det out	2.2 Vp-p
	RF AGC output range	0.3 to 8.7 V
	Video switch out	2.1 Vp-p
	RGB output Pedestal voltage	2.2 V
	amplitude	4.2 Vp-p
	Horizontal output amplitude	4.0 Vp-p
	Vertical ramp amplitude	2.0 Vp-p

Block Diagram



Pin Arrangement

M52770ASP

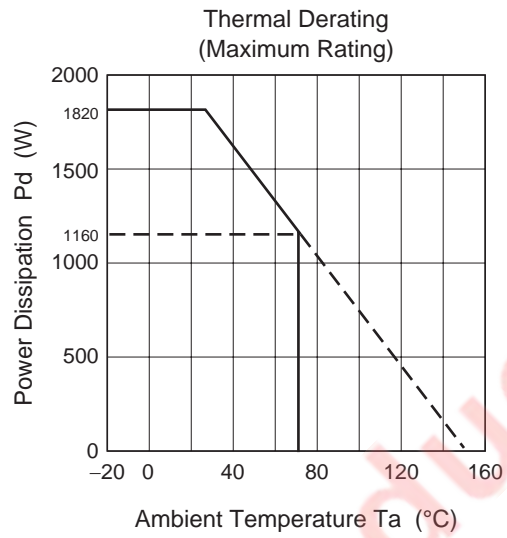
VIF GND	1	64	VIF VIDEO OUT
AFT OUT	2	63	VIF APC FILTER1
SIF LIMITER IN	3	62	VIF VCO (2)
RF AGC OUT	4	61	VIF VCO (1)
QIF OUT	5	60	FM DIRECT OUT
IF AGC FILTER	6	59	EXT AUDIO IN
QIF IN	7	58	AUDIO BYPASS
SPOT KILLER	8	57	AUDIO OUT
VIF IN (1)	9	56	VIF APC FILTER2
VIF IN (2)	10	55	-(R-Y) IN
VIF V _{CC}	11	54	-(B-Y) IN
FAST BLK	12	53	Hi V _{CC}
SCL	13	52	SECAM REF.
SCP OUT	14	51	VIDEO CLAMP
H OUT	15	50	X-TAL 4.43
V _{SS}	16	49	SYNC SEP IN (2)
SDA	17	48	SYNC SEP IN (1)
V _{DD} DECOUPLING	18	47	Y SW OUT
AFC 1 FILTER	19	46	VIDEO/CHROMA GND
H OSC	20	45	TV IN
MUTE FILTER	21	44	CHROMA APC FILTER
R OUT	22	43	EXT IN
G OUT	23	42	KILLER FILTER
B OUT	24	41	X-TAL 3.58
DEFLECTION GND	25	40	CONTRAST CONTROL
V OUT (RAMP/PULSE)	26	39	R IN
START-UP V _{CC}	27	38	BLK HOLD
B IN	28	37	G IN
V RAMP FEEDBACK	29	36	X-RAY IN
V RAMP C	30	35	VIDEO IN
VIDEO/CHROMA V _{CC}	31	34	ID FILTER
AFC 2 FILTER	32	33	CHROMA IN

(Top view)

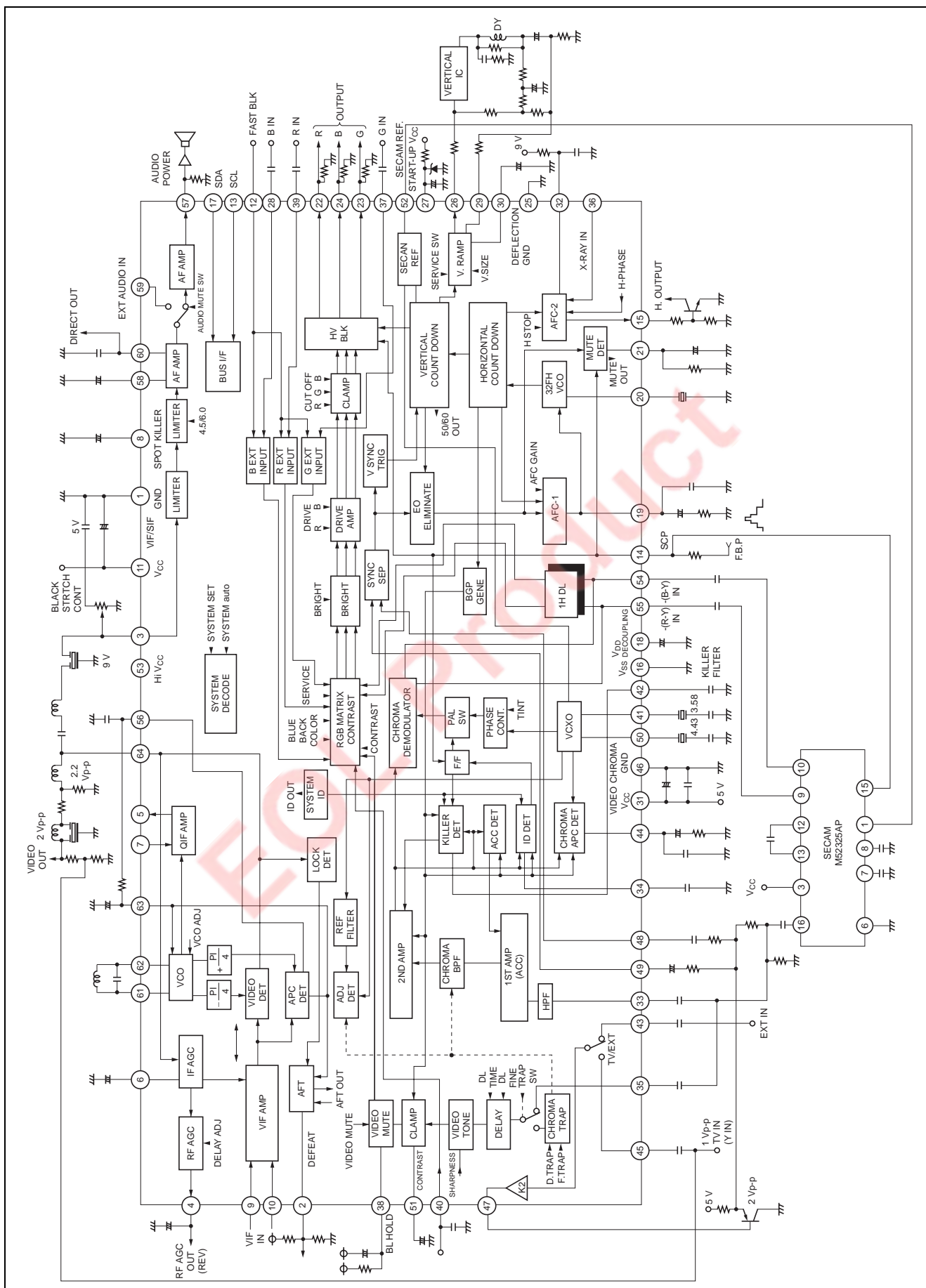
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Absolute Maximum Ratings

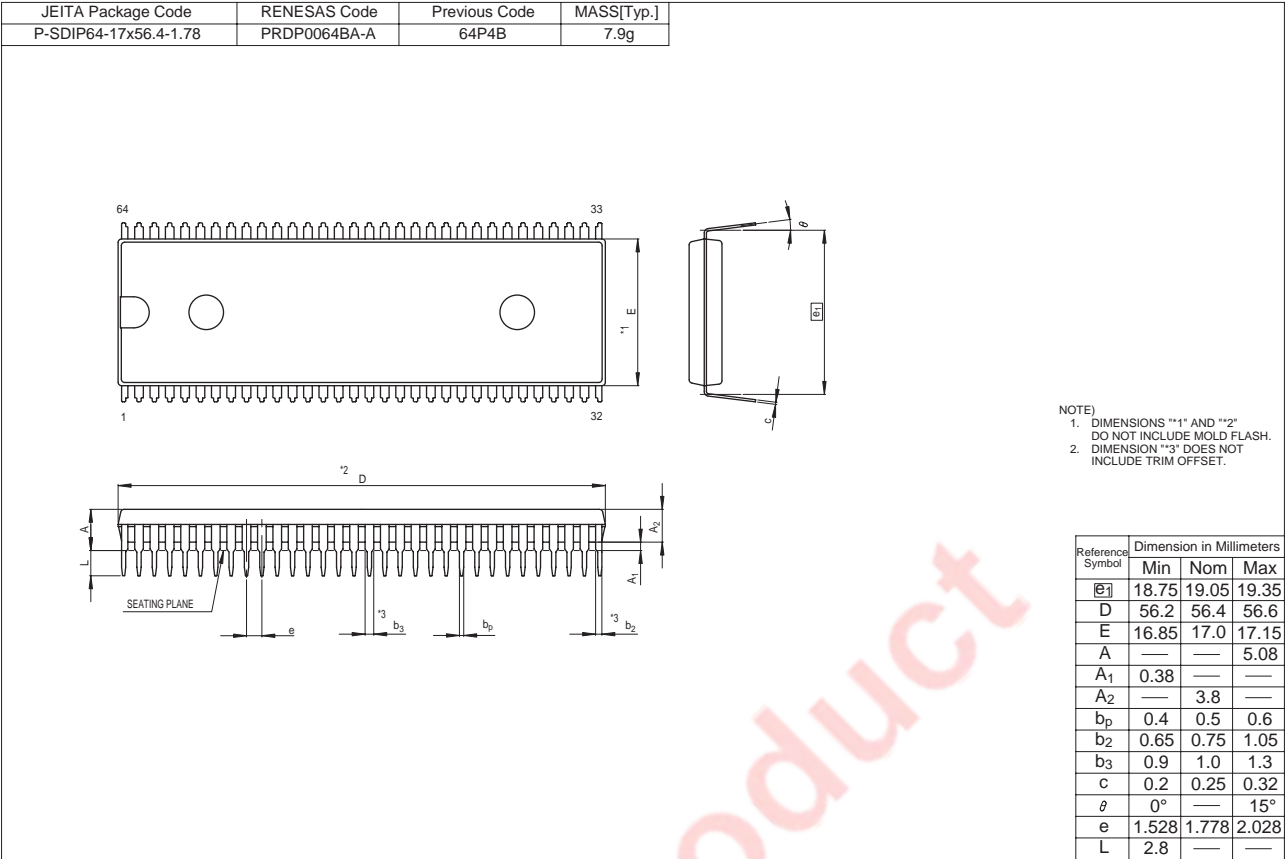
Item	Symbol	Ratings	Unit
Supply voltage	V_{CC}	0.0, 10.0	V
Power dissipation	P_d	1815	mW
Thermal derating	$K\theta$	14.52	mW/°C
Operating temperature	T_{opr}	–20 to +70	°C
Storage temperature	T_{stg}	–40 to +125	°C



Application Example



Package Dimensions



Notes:

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