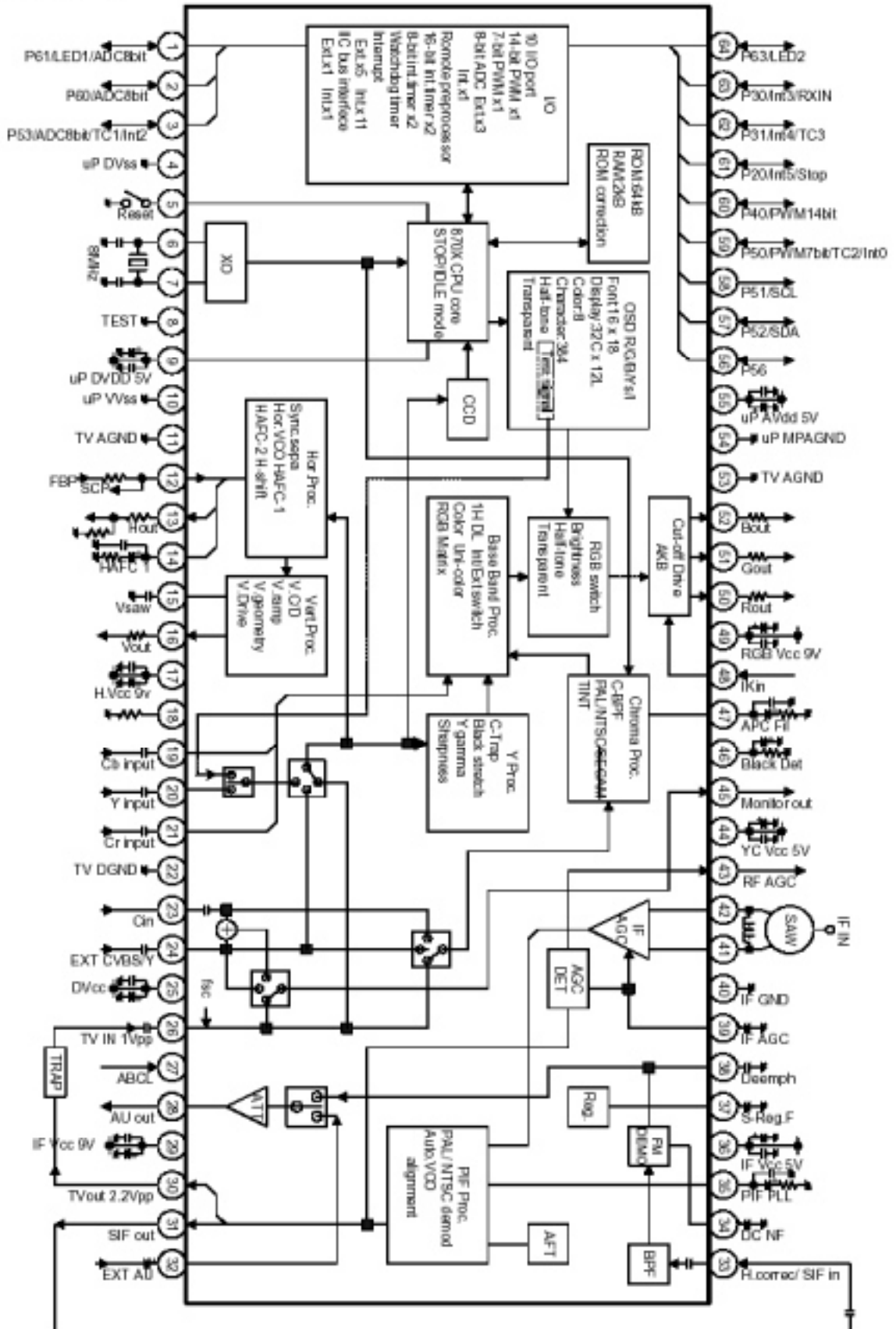




controller (MCU) and the other one is a signal processor (SP) for a color TV. The TV signal processor contains PIF, SIF, Video, multi-standard chroma, Sync, RGB processors.

BLOCK DIAGRAM



PINNING

SYMBOL	PIN	DESCRIPTION	SYMBOL	PIN	DESCRIPTION
BAND2	1	Band selector	SIF in	33	Input terminal for H correction and 2nd SIF.
TV/AV	2	TV/AV switch	DC NF	34	Terminal to be connected capacitor for DC Negative Feedback from SIF Det output.
KEY	3	Panel key input	PIF PLL	35	Terminal to be connected with loop filter for PIF PLL. This terminal voltage is controlled PIF VCO frequency.
GND	4	GND	IF vcc(5V)	36	Vcc terminal for IF circuit. Supply 5V.
RESET	5	System clock reset output	S-reg	37	Terminal to be connected capacitor for stabilizing internal bias.
X-TAL	6	X'tal connecting pins	Deepmph	38	Terminal to be connected capacitor for SIF Det De-Emphasis.
X-TAL	7		IF AGC	39	Terminal to be connected with IF AGC filter.
TEST	8	Test pin for out-going test. Be tied to low.	IF GND	40	GND terminal for IF circuit.
5V	9	Vdd Supply 5V	IF in	41	Input terminals for IF signals. Pin41 and Pin42 are both input poles of differential amplifier.
GND	10	GND for Slicer circuit	IF in	42	
GND	11	GND terminal for Analog block.	RF AGC	43	Output terminal for RF AGC control level.
FBP in /SCP out	12	Input terminal for FBP.	Y/C 5V	44	Vcc terminal for Y/C circuit. Supply 5V.
H out	13	Output terminal for Horizontal driving pulse.	AV out	45	Output terminal for CVBS or Y signal selected by BUS (Video SW).
H-AFC	14	Terminal to be connected capacitor for H AFC filter. This terminal voltage controls H VCO frequency.	BLACK DET	46	Terminal to be connected with Black Det filter for black stretch.
V saw	15	Terminal to be connected capacitor to generate V saw signal. V saw amplitude is kept constant by V AGC function.	APC FIL	47	Terminal to be connected with APC filter for Chroma demodulation. This terminal voltage controls frequency of VCXO
V out	16	Output terminal for Vertical driving pulse.	IK in	48	Input terminal to sense ACB cathode current.
H vcc	17	Vcc terminal for DEF circuit. Supply 9V.	RGB 9V	49	Vcc terminal for RGB circuit. Supply 9V.
N.C.	18	N.C.	R out	50	Output terminals for R /G/B signal.
Cb	19	Input terminal for Cb signal.	G out	51	



Y in	20	Input terminal for Y signal.	B out	52	
Cr	21	Input terminal for Cr signal.	GND	53	GND terminal for Analog block.
TV-GND	22	GND terminal for Digital block.	GND	54	GND for Oscillator circuit
C in	23	Input terminal for Chroma signal.	5V	55	Vdd for Oscillator circuit Supply 5V
EXT in	24	Input terminal for Video signal.	50/60	56	PAL/NTSC selector
DIG 5V	25	Vcc terminal for Digital block. This terminal voltage is clipped about 3.3V by regulator circuit.	SDA	57	I ² C bus serial data input /output
TV in	26	Input terminal for Video signal.	SCL	58	I ² C bus serial clock input /output
ABCL in	27	Input terminal for ABL/ACL control.	VOL	59	Volume control signal output
Audio out	28	Output terminal for Audio signal.	VT	60	Tune voltage controller
IF vcc(9V)	29	Vcc terminal for IF circuit. Supply 9V.	BAND1	61	Band selector
TV out	30	Output terminal for detected PIF signal.	TV sync	62	Sync signal input
SIF out	31	Output terminal for detected SIF signal.	RMT in	63	Remote control signal preprocessor input
EXT audio	32	Input terminal for External Audio signal.	POWER	64	LED output

SIGNAL PROCESSOR DESCRIPTIONS

1. Tank-coil-less PIF VCO

TMPA8803 adopts a tank-coil-less PIF VCO circuit, which has advantages of cost, performance of weak IF input and easy to design PCB layout. The PIF PLL system has self-alignment circuit, so that the micro controller needs only to order the PIF PLL system to start self-alignment through the IIC bus. The self-alignment finishes within 50 msec.

2. Built-in Sound Band Pass Filter

A sound band pass filter is integrated on the chip for multi frequency SIF systems. The 1st SIF demodulator multiplies PIF input signal and regenerated PIF carrier from VCO with 90-degree angle, and gets multi-frequency SIF signal as 6.5MHz, 6.0MHz, 5.5MHz and 4.5MHz according to the SIF system. A frequency converter converts one of those four SIF signals into 1 MHz-SIF signal by selecting the converting frequency through the IIC bus. The built-in sound BPF rejects undesired frequency components of 1MHz-SIF signal. A narrow-band 1 MHz PLL FM demodulator with no external tank-coil achieves to output sound signal with better S/N ratio.

3. AFT

A recent IF system adopts a digital AFT circuit. But analog DC voltage is used as interface between an IF system and a micro controller in the AFT control loop. TMPA8803 adopts a digital interface through IIC bus shown as below.

4. Non-standard IF signals

TMPA8803 prepares ways for non-standard IF inputs. The OVER MOD switch is available for over-modulated PIF signals in the condition of more than 87.5% modulation at 100 IRE, which is the maximum modulation Standard of PAL and NTSC. In addition, TMPA8803 has capability to