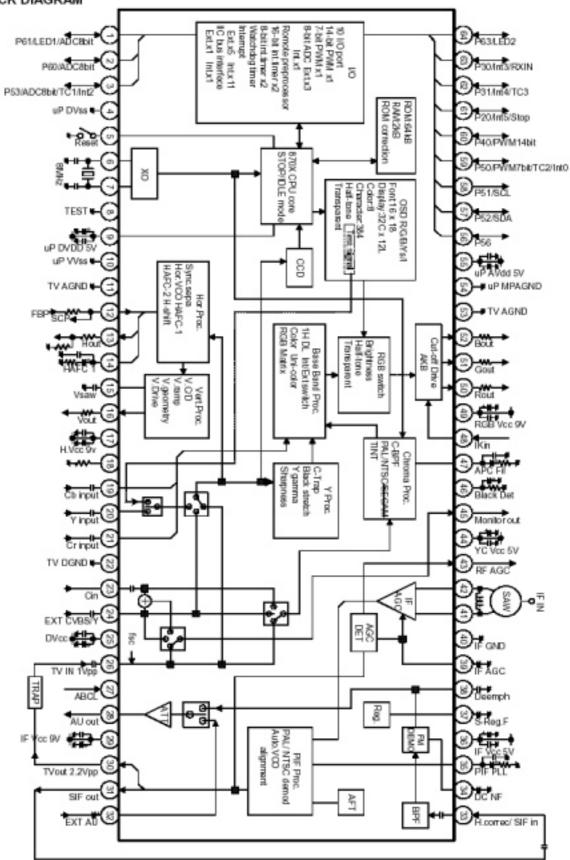




controller (MCU) and the other one is a signal processor (SP) for a color TV. The TV signal processor contains PIF, SIF, Video, multi-standard chroma, Sync, RGB processors.

## BLOCK DIAGRAM



# **PINNING**

SYMBOL SYMBOL	PIN	DESCRIPTION	SYMBOL	PIN	DESCRIPTION
					Input terminal for H correction and
BAND2	1	Band selector	SIF in	33	2nd SIF.
					Terminal to be connected capacitor
TV/AV	2	TV/AV switch	DC NF	34	for DC Negative Feedback from SIF
					Det output.
		Panel key input	PIF PLL	35	Terminal to be connected with loop
KEY	3				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.
	5	System clock reset output	S-reg	37	Terminal to be
RESET					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
		Test pin for out-going test. Be tied to			AGC filter.
TEST	8	low.	IF GND	40	GND terminal for IF circuit.
5V	9	Vdd Supply 5V	IF in	41	Input terminals for IF signals. Pin41
3 <b>v</b>		vad Suppry 5 v	11 111	71	and Pin42 are both input poles of
GND	10	GND for Slicer circuit	IF in	42	differential amplifier.
	11	GND terminal for Analog block.	RF AGC	43	Output terminal for RF AGC control
GND					level.
FBP in /SCP out	12	Input terminal for FBP.	Y/C 5V	44	Vcc terminal for Y/C circuit. Supply
					5V.
	13	Output terminal for Horizontal driving pulse.	AV out	45	Output terminal for CVBS or Y signal
H out					selected by BUS (Video SW).
		Terminal to be connected capacitor for	BLACK		Terminal to be connected with Black
H-AFC	14	H AFC filter. This terminal voltage	DET	46	Det filter for black stretch.
		controls H VCO frequency.	DET		Det filter for black sucten.
	15	Terminal to be connected capacitor to	APC FIL	47	Terminal to be connected with APC
V saw		generate V saw signal. V saw			filter for Chroma demodulation. This
v saw		amplitude is kept constant by V AGC			terminal voltage controls frequency of
		function.			VCXO
V out	16	Output terminal for Vertical driving	IK in	48	Input terminal to sense ACB cathode
		pulse.			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	

١		1	3

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 <sup>2</sup> C bus serial data input /output	
TV in	26	Input terminal for Video signal.	SCL	58	I <sup>2</sup> 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