Audio/Video RF Modulators
AS44CC37x

Overview

The Abilis AS44CC37x RF modulators can be programmed through a high speed I²C interface to support PAL, SECAM or NTSC standards. They are designed for use in Set-Top Boxes and similar devices. They are the latest generation of the legacy MC44BS37x family of devices from Freescale and are software compatible, providing straightforward transition for system upgrades.
The AS44CC37x devices are offered in an industry-standard 16-pin SOIC RoHS-compliant package.

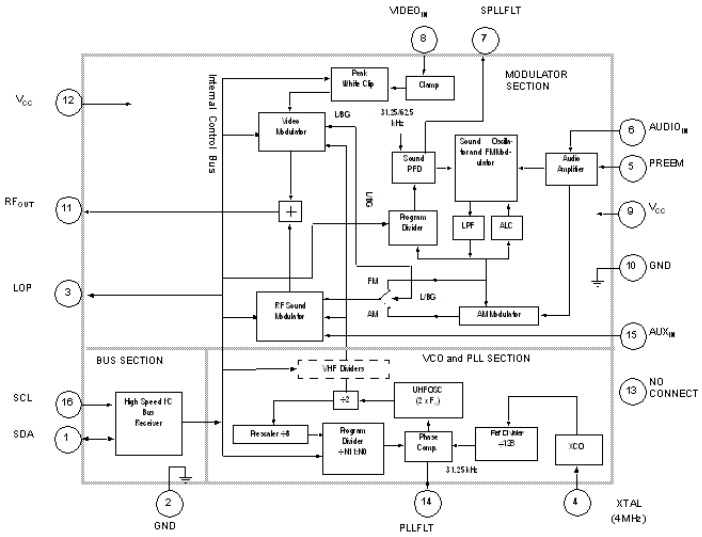

Fig 1 : AS44CC373 Functional Block Diagram

Applications

- Set-Top Box, IPTV box
- VCR, DVD players
- Game consoles

Benefits

- **New generation** of industry leading product family, based on cost effective **CMOS process.**
- Extremely **low BoM** :
  - Reduced board space
  - Simplified PCB layout and manufacturing
  - Simplified sourcing
- Shorter **time to market** :
  - Functional equivalent to industry standard devices
  - Backward software compatibility with legacy products
  - Available evaluation board and reference design

Features

- Multi Standard support : NTSC, PAL, SECAM (B/G, I, D.K, L, M/N)
- UHF operation (460 – 880 MHz)
- On chip tank circuits – no external varicaps, inductors or tuned components required.
- Program control via 800 kHz I²C bus .
- Programmable sound reference frequency (31.25 or 62.5 kHz)
- Direct sound modulator input (FM or AM)
- Auxiliary input bypassing AM/FM modulators for NICAM or BTSC applications
- Video modulation depth (96% typical in system L, 83% typical in the other standards).
- Programmable peak white clip.
- On-chip video test pattern generator with sound test signal (1 kHz).
- Low power stand-by mode.
- Output inhibit during PLL lock-up at power on.
- Logical output port controlled by I2C.

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Parameter	typical	unit
Temperature range	0-70	°C
Power supply	3.3	V
Supply current	85	mA
Power consumption	280	mW
RF output level	89	dBµV
UHF oscillator frequency	460-880	MHz
Sound subcarrier harmonics	-63	dBc
In band spurious (Fo @ 5 MHz)	-65	dBc
Video bandwidth	0.1	dB
Video input level	1.0	Vcvbs
White peak clip	94	%
Video S/N	55	dB
Differential phase	+/- 5	Deg
Differential gain	+/- 5	%
Luma/sync ratio	7.0/2.8	-
PAL video modulation depth	83	%
SECAM video modulation depth	96	%
Picture-to-sound ratio	12 or 16	dB
Audio input resistance	71	kΩ
Audio frequency response	-2.5/+2.0	dB
Audio distortion FM (THD only)	0.5	%
Audio distortion AM (THD only)	1.5	%
Audio S/N with sync buzz FM	54	dB
Audio S/N with sync buzz AM	50	dB

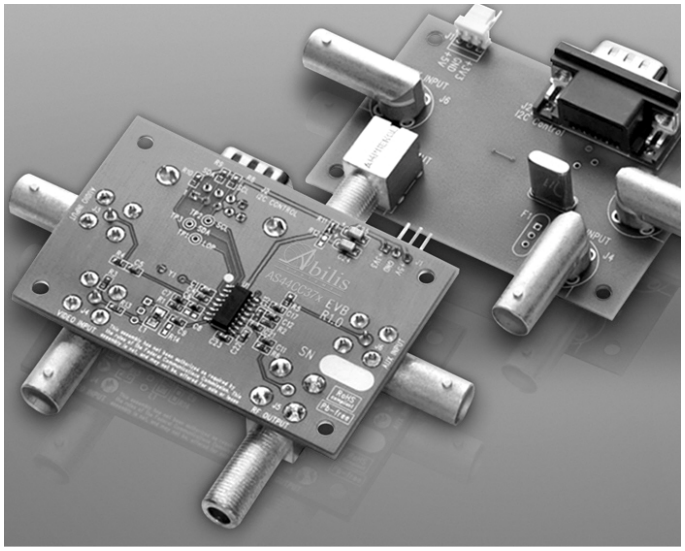

Fig 2: Evaluation Board

Quick selection guide

P/N	NTSC	PAL	SECAM	Frequency Range	Default Frequency	I2C write address
AS44CC373CAEF, R2	✓	✓	✓	UHF	591.25	0xCA
AS44CC373CASEF, R2	✓	✓	✓	UHF	591.25	0xCE
AS44CC374CAEF, R2	✓	✓	no	UHF	591.25	0xCA
AS44CC374T1AEF, R2	✓	✓	no	UHF	871.25	0xCA
AS44CC375AVEF, R2	✓	no	no	US ch 3/4		N/A