SIEMENS

Product Brief

TUA 6014XS,-S,-K

Single Chip for Terrestrial Television

Mixer, Oscillator, PLL IC for PAL and NTSC tuners. Due to its 25 GHz technology it combines wide dynamic range with good decoupling of the integrated RF and PLL blocks. The PLL system with dual - modulus - prescaler offers quick channel access and low phase noise. The heart of a tuner is the one chip Mixer-Oscillator-PLL IC TUA 6014. In this IC the analog tuner functions and the digital PLL part are combined. The Tuner IC meets the high demands for the PAL standard.

Potential Application

- TV
- Videorecorder
- Cable set-top-boxes for analog and digital TV

Features

- Double balanced mixer with wide dynamic range and high-impedance input for the VHF low or VHF high and a low-impedance input pair for the UHF frequency range
- Frequency and amplitude-stable balanced oscillators for the VHF low, VHF high and UHF frequency range
- Optimum decoupling of input frequency from oscillator
- PLL with short lock-in time; no asynchronous divider stage
- Short pull-in time for quick channel access and optimized loop stability
- High voltage VCO tuning output (35 V)
- Fast I^2C-Bus mode possible
- 4 programmable chip addresses
- 4 high current switch outputs
- 5-level A/D converter
- Lock-in flag
- Power-down flag
- Few external components
- Internal band switch
- Internal low noise reference voltage source
- Full ESD protection

Price Projection

- Standard price list
- For Key and Focus accounts or high volumes you may contact your regional Siemens sales partner

Development and Support Tools

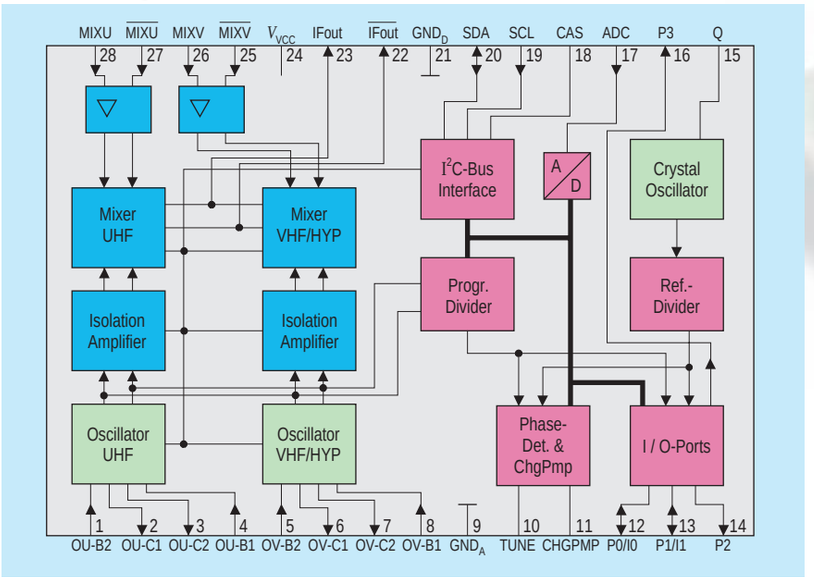
- Evaluation Board TUA 6014
- Reference Design PAL-Tuner
- I^2C-Bus-Interface & DOS or Windows 3.11 control-software

Features	Benefits
High-ohmic VHF input	Simplified interstage filter design
Low-ohmic UHF input	No adjacent channel problem (N+/+1)
Quick dynamic range	Quick channel access
Fast dual modulus prog. divider	More suitable for digital TV reception
Expensive foil cap in loop filter	Not necessary (lower BOM)
Package	Space saving

Packing

Type	Ordering Code	Package
TUA 6014XS	Q67036-A1001-A701	P-TSSOP-28-1
TUA 6014-K	Q67036-A1006-A702	P-TSSOP-28-1
TUA 6014-S	Q67036-A1020-A701	P-TSSOP-28-1

Block Diagram

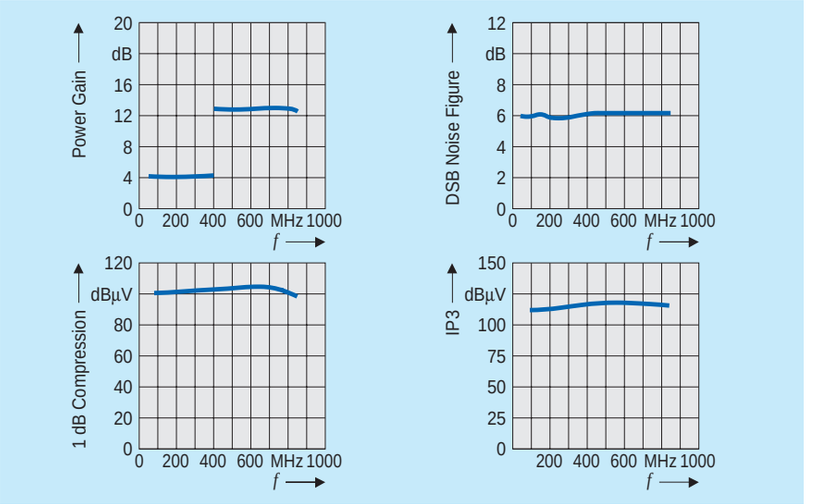


Feature Requirements

PAL	NTSC
3 Ports (VHF low, VHF high, UHF)	4 Ports (VHF low, VHF high, FM trap, UHF)
Balanced (or unbalanced) IF output to drive SWF	Unbalanced 75 Ω IF output
4-Pin VHF Oscillator	2-Pin VHF Oscillator
4-Pin UHF Oscillator	4-Pin UHF Oscillator
I^2C Bus	I^2C Bus

Documentation	Date of Issue/Version
Specification	6/98
Application Note (Tuner)	6/98
Application Note (EVA Board)	10/98
Articles/Press Releases – Components (p. 43) – Components (p. 23-25)	 3/97 4/97

Test on EVA Boards



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Availability

ES available;
Product development release 04/98

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