

MT2170

Product Categories

[Multi-function SoC](#) [Video Processing](#) [AV](#) [Broadband Receivers](#) [IC-Based Solutions](#)

Description

The MicroTuner™ MT2170 is an advanced, low-power single-chip wide-band tuner that has been optimised for high-performance DOCSIS 3.0-compliant cable modems and digital cable set-top boxes that require low composite distortion and low noise under digital cable environments. The MT2170 is capable of receiving frequencies in the 48 MHz to 1 GHz range and of converting a selected channel to a standard intermediate frequency (IF) between 26 MHz and 122 MHz.

The MT2170's dualconversion architecture yields the desirable characteristics of DOCSIS 3.0 broadband functionality. Together with the MicroTune® differential 2nd IF Filter, the MT2170 provides an optimized IF signal needed for DOCSIS 3.0 demodulators.

The MT2170 provides excellent in-band flatness as well as very repeatable gain characteristics across the complete reception band.

The MT2170 has a field proven, onboard, fully autonomous AGC which requires only one signal connection between the tuner and the demodulator. This allows signals of poor quality to be adequately conditioned for further processing to deliver extremely low bit error rates.

Key Features

- 48MHz to 1GHz input frequency range
- 5 V and 3.3 V power supply
- Works seamlessly with DOCSIS 3.0 digital demodulators
- 1.5 W typical dual-conversion architecture
- Single-ended RF input reduces BOM by eliminating input balun
- Minimal external components
- No manually tunable parts required
- Integrated IF variable gain amplifier for direct connection to digital demodulators
- Fully compatible with DOCSIS 3.0, EuroDOCSIS 3.0, and other standards

Product Details

Applications

- DOCSIS 3.0 Wideband Cable Modems
- Video over IP Digital Set-top Boxes
- DOCSIS 3.0 VoIP Telephony Modem
- PacketCable™ E-MTA's
- Home Gateways
- Multimedia Applications

Recommended Operating Conditions

Parameter	Mn	Typ	Max	Unit
Second intermediate center frequency (programmable)	26		122	MHz
Supply voltage 5V	4.75	5.0	5.25	V
Supply voltage 3.3V	3.15	3.3	3.45	V
Supply voltage ripple			15	mV
Operating junction temperature			125	°C
VGA output load impedance	500			Ω
Serial control clock			400	kHz

Absolute Ratings

Parameter	Mn	Max	Unit
Supply voltage 5V	6		V
Supply voltage 3.3V	3.6		V
Storage temperature range	-50	+150	°C
Lead-free temperature (soldering 4 seconds)		+260	°C
Input voltage	-0.3	VCC +0.3	V

Tuner Electrical Characteristics

Parameter	Mn	Typ	Max	Unit
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Power Supply

Active Current 5V	270	mA
Active Current 3.3V	85	mA

RF Signal Path

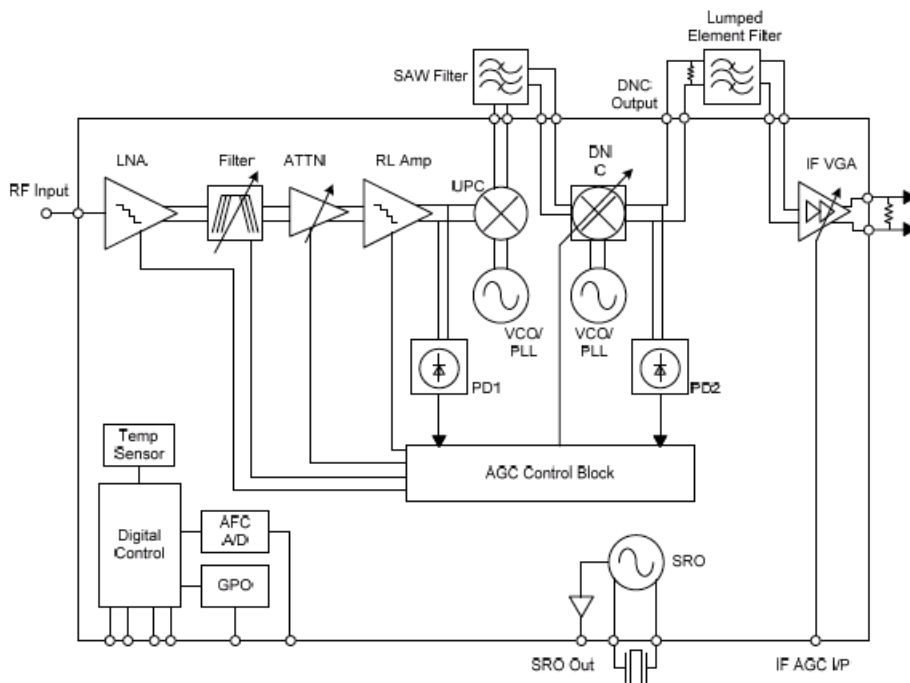
Input frequency range	48	1000	MHz
Noise Figure	9		dB
Voltage gain	42		dB
RF AGC range	55		dB
Image rejection	70		dBc
LO phase noise (10 kHz)	84		dBc/Hz
LO phase noise (100 kHz)	104		dBc/Hz
LO step size	50		kHz

IFVGA

Frequency range	26	126	MHz
Maximum output voltage	1.0		V _{p-p}
Maximum voltage gain	30		dB
IF AGC range	46		dB

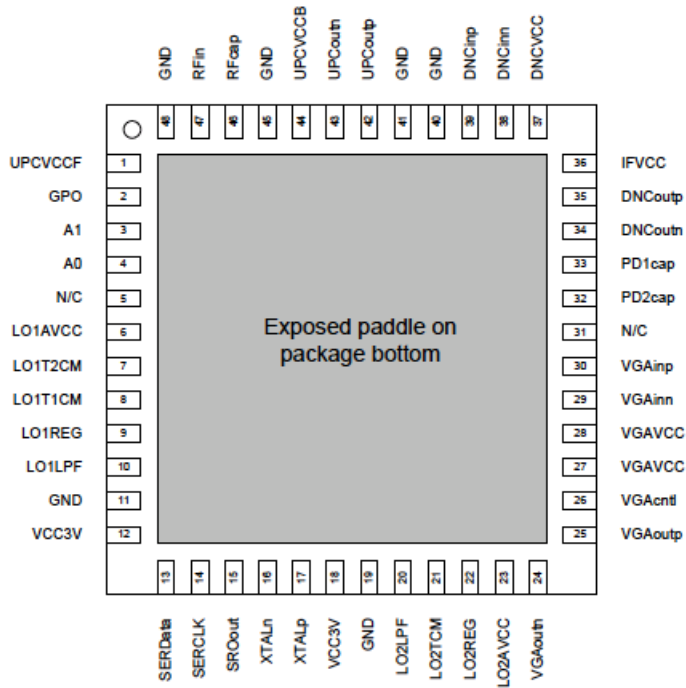
Subject to approval, a datasheet can be made available for this product via CSR Support.

Related Images



MT2170 Block Diagram

M2170 bd



MT2170 Pin Diagram

M2170 pin

Sales Offices

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Click on www.csr.com/contact/sales-representatives to contact your local sales representative.

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