MICROTUNE®

RF SILICON AND SUBSYSTEMS SOLUTIONS
FOR BROADBAND COMMUNICATIONS AND AUTOMOTIVE ELECTRONICS

MT2062 SINGLE-CHIP BROADBAND TUNER

PRODUCT BRIEF

The MT2062 is a low-power 3.3 V single-chip broadband tuner with integrated loop-through for all-digital set-top boxes.

MT2062 Single-Chip Broadband Tuner

The MicroTuner™ MT2062 is an advanced, low-power single-chip broadband tuner, with loop-through, optimized for Digital Video Broadcast via Cable (DVB-C) set-top boxes.

The MT2062 is capable of receiving frequencies in the 48 MHz to 862 MHz range and of converting a selected channel to a standard intermediate frequency (IF) between 30 MHz and 60 MHz.

The MT2062 dual-conversion architecture, without any need for tracking filters, yields the desirable characteristics of traditional cable television tuners. This is achieved by careful control of the input impedance across the entire input band, low in-band emissions, and outstanding image rejection.

To keep the total Bill of Materials (BOM) cost of a digital set-top box low, the MT2062 has an integrated on-chip loop-through function. In addition, the MT2062 provides excellent in-band flatness as well as very repeatable gain characteristics across the complete reception band.

APPLICATIONS

- DVB-C Set-top Boxes with loop-through

FEATURES

- 48 MHz to 862 MHz input frequency range
- 3.3 V power supply
- Works seamlessly with all digital demodulators
- Low-power 1 Watt dual-conversion architecture
- Integrated first IF filter
- Integrated loop-through function
- 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 all DVB-C standards
- Capable of driving multiple SAW filters

PRELIMINARY

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RECOMMENDED OPERATING CONDITIONS

PARAMETER	MIN	TYP	MAX	UNIT
Input frequency range	48		862	MHz
Second intermediate center frequency (programmable)	30		60	MHz
Supply voltage	3.15	3.3	3.45	V
Supply voltage ripple			25	mVp-p
Operating junction temperature			100	°C
VGA output load impedance	200			Ω
Serial control clock			400	kHz

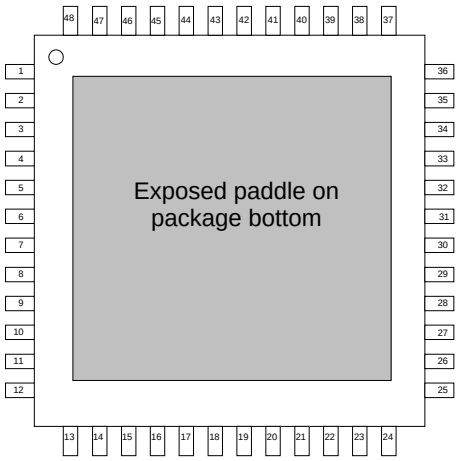
ABSOLUTE MAXIMUM RATINGS

PARAMETER	MIN	MAX	UNIT
Supply voltage		3.6	V
Storage temperature range	-40	+150	°C
Lead temperature (soldering 4 seconds)		+245	°C
Input voltage	-0.3	VCC +0.3	V

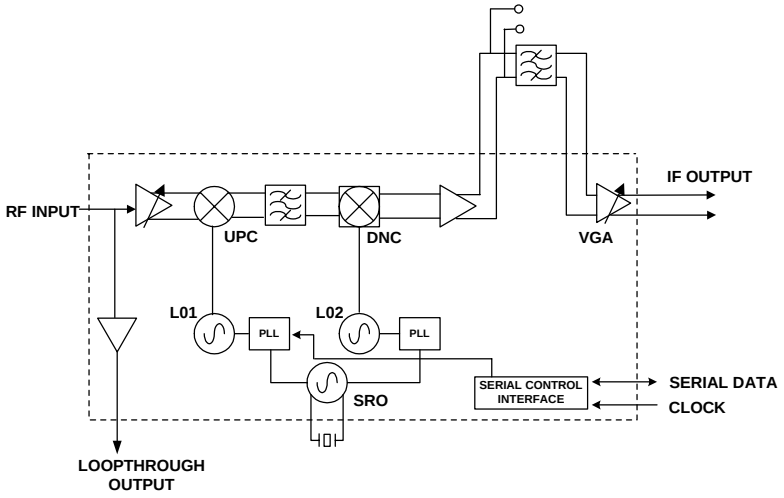
TUNER ELECTRICAL CHARACTERISTICS

PARAMETER	MIN	TYP	MAX	UNIT
Power Supply				
Active current		280		mA
RF Signal Path				
Input frequency range	48		862	MHz
Return loss		7		dB
Noise figure at max gain		7		dB
Terminal voltage gain		48		dB
RF AGC range		35		dB
Image rejection		70		dBc
LO phase noise (10 kHz)		-87		dBc/Hz
LO phase noise (100 kHz)		-105		dBc/Hz
LO step size	50			kHz
IF VGA				
Frequency range	30		60	MHz
Output voltage			2.0	Vp-p
Terminal voltage gain		52		dB
Loop-through gain		2		dB

PRELIMINARY



MT2062 Pin Diagram



MT2062 Block Diagram

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