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MT2084
World-Standard Digital Cable Tuner

The MicroTuner™ MT2084 is an advanced, low-power companion tuner to the MT2082, enabling low cost multi-tuner STBs.

Product Overview

The MicroTuner MT2084 is a single-chip digital cable tuner specifically designed to receive the splitter output of the MT2082 tuner to enable an advanced, multi-tuner set top box (STB) with a minimal number of external components. The integrated circuit delivers best-in-class performance for all world-wide standards of digital cable broadcast. Its high level of on-chip integration enables the design of a triple tuner set-top box (STB) at a very low cost.

The MT2084 is designed to tune in challenging digital cable environments. The integrated low noise amplifier (LNA) with automatic gain control (AGC) delivers excellent sensitivity. The ClearTune on-chip filtering provides for optimal performance in tilted and heavily loaded cable environments.

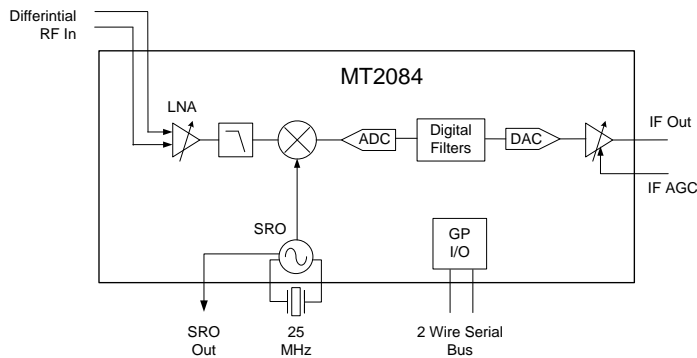
MT2084 Key Features and Performance
Applications

- Multiple tuner digital cable STBs
- Digital cable gateways
- Digital cable DVR/PVRs

MT2084 Key Features

- Differential RF input with direct interface to the splitter output of the MT2082 tuner
- 44 MHz to 1002 MHz frequency tuning range
- On chip filtering for standard and low IF output (1-60 MHz) providing simple interfacing to QAM demodulators
- Integrated RF ClearTune® filtering for optimal performance in tilted cable conditions
- Exceeds ITU –T J.83 Annex A/B/C cable performance requirements (64/256 QAM)
- Exceeds the stringent sensitivity and adjacent channel rejection requirements of China cable networks.
- Complies with North American RNG/DSG and SCTE40 digital cable performance requirements
- Integrated power detectors for closed loop RF AGC
- 2.5 V (analog) and 1.2V (digital) power supply operation
- General-purpose input/output (GPIO) controllable via serial-control interface
- Less than 1.0 W power consumption
- Small 6 mm x 6 mm 40 pin Quad Flat No-Lead (QFN) package

Block Diagram



Recommended Operating Conditions

Parameter	Min	Typ	Max	Unit
Supply voltage – Analog		2.5		V
Supply voltage – Digital		1.2		V
Input frequency Range	44		1002	MHz
Intermediate Frequency (programmable)	1		60	MHz
Serial clock frequency			400	kHz

Tuner Performance

Parameter	Condition	Typ	Unit
Input return loss (75 Ω)	Over entire frequency range and AGC range	12	dB
Phase Noise	1 kHz offset	-85	dB/Hz
	10 kHz offset	-85	dB/Hz
	20 kHz offset	-90	dB/Hz
	100 kHz offset	-105	dB/Hz
	1 MHz offset	-125	dB/Hz

Electrical Characteristics

Parameter	Condition	Typ	Unit
Power Supply			
Active Current, Digital		70	mA
Active Current, Analog		380	mA
Signal Path: RFIN to IF Out (receiving splitter output of MT2082)			
Voltage Gain	$Z_S = 75 \Omega$, $Z_L = 1k\Omega 5pF$, $P_{in} = -30 \text{ dBmV}$	63	dB
Noise Figure	$Z_S = 75 \Omega$, $P_{in} = -30 \text{ dBmV}$	7	dB
Image Rejection	Over IF output frequency, calibrated	60	dB

Contact and Ordering Information

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Related Documents

- PB-00182 – MT2082 Product Brief
- PB-00185 – MT2081 Product Brief
- DS-00124– MT2084 Data Sheet
- DS-00117– MT2082 Data Sheet