

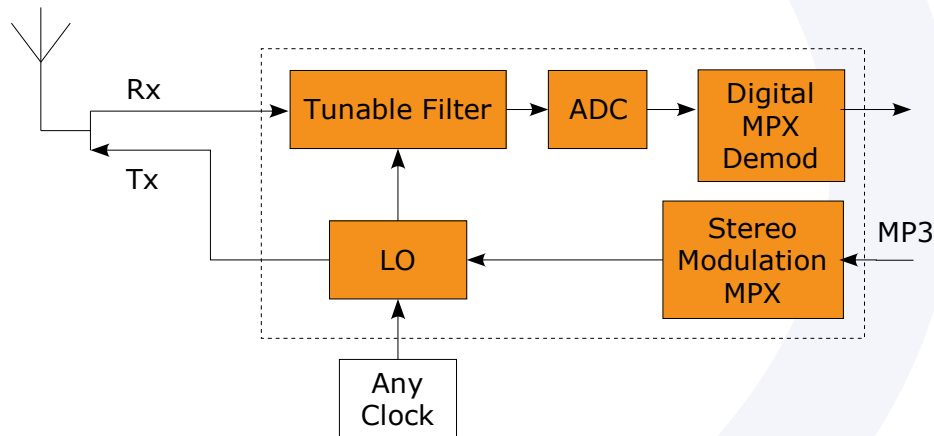
*"The Industry's First FM Tuner IP Block
Ready for Integration into a Standard Product"*

Features

- Worldwide FM Tuner 65 to 108 MHz
- FM Transmitter
- RDS and RDBS Demodulation
- Fully Integrated FM IF Selectivity and Demodulation
- Built-in AGC
- Sensitivity 2 μ V
- Alternate Channel Selectivity 70 dB
- Fast Mute, Soft Mute
- Switchable de-emphasis
- Integrated Stereo Audio DACs
- Signal Dependent Stereo Blend
- Stereo Channel Separation 30 dB
- Stereo Modulation Phase Calibration
- Integrated Fractional-N Synthesizer allows for any reference frequency from 5 to 30 MHz
- I2C, 3-wire Serial Interface, OCP
- Standby Mode
- Voltage Supply 1.0 - 1.2 V
- Single Supply Connected to SoC Core Supply
- 32.768 kHz Reference Clock
- Originally designed TSMC 90 nm process

Applications

- Miniature FM Radio
- Miniature Audio Systems
- Miniature Clock Radios
- USB FM radios
- MP3 players
- PDAs
- Cell Phones
- PCs
- FM Transmitter for MP3 Players, Cell Phones, PCs
- Consumer electronics



KR-FM-TSMC90-01 FM Tuner

FM Tuner

KR-FM-TSMC90-01 Preliminary Data Sheet

Description

The Kaben KR-FM-TSMC90-01 is the industry's first low power FM/AM Tuner IP block for integration into an SoC. This Tuner is ideal for manufacturing as a stand alone product, or for integration into any SoC.

The Kaben KR-FM-TSMC90-01 cell has an FM operating frequency of 65 to 108 MHz for reception anywhere in the world.

High performance is delivered without sacrificing power consumption. The cell operates using 20 mA from a 1.1 V supply.

The Kaben KR-FM-TSMC90-01 also provides a low power FM transmitter IP block. This transmitter block is ideal for modulating and transmitting audio files stored in a host MP3 player, cell phone, or PC, directly to an unconnected FM receiver powering an automobile's speaker system, a portable "boom box" speaker system, or any other unassociated FM receiver.

Support

Support can be provided for all phases of the life cycle of your chip. For system design, we provide a kit that includes high-level models in Matlab/Simulink.

Originally designed for the TSMC 90 nm process, this IP block can be ported to other technologies.

Electrical Characteristics

Parameter	Conditions	Min	Typ	Max	Units
Operating Frequency	FM	65		108	MHz
Sensitivity	SNR = 26 dB		2		μ V
Input IP3			90		dB μ V
Image Rejection			60		dB
AM Suppression			20		dB
Adjacent Channel Selectivity			30		dB
Alternate Channel Selectivity			70		dB
Settling Time	Within 5 kHz of desired channel		40		ms
Audio					
Audio Bandwidth				15	kHz
Audio SNR			65		dB
Audio Spurious Products	Full scale		-60		dB
Total Harmonic Distortion			0.3	0.6	%
Stereo Channel Separation			30		dB
Supply Voltage		1.0	1.1	1.2	V
Current				20	mA
Operating Temperature		-40		100	deg C

