

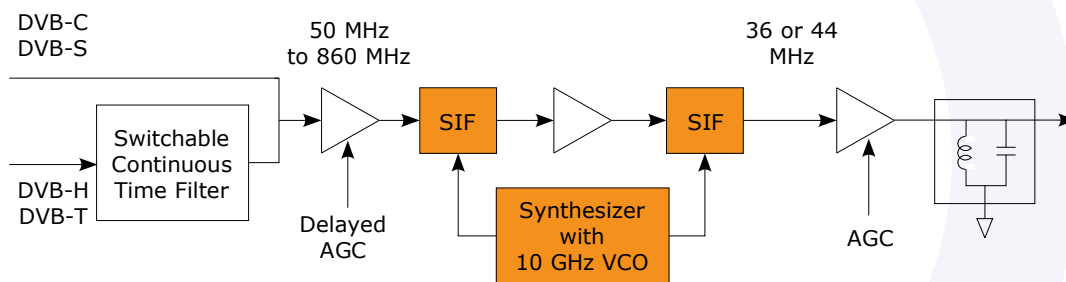
*"A Digital Video Broadcast IP Block
for Integration into a Standard Product"*

Features

- DVB Tuner 50 to 860 MHz
- DVB-C, -S, -H, -T
- Channel Bandwidth 8 MHz
- Adjacent Channel Selectivity 70 dB
- Built-in AGC
- First SIF Output Bandwidth 10 Channels
- Second SIF Output Bandwidth 1 Channel
- Analog Output Frequency 36 or 44 MHz
- Integrated Fractional-N Synthesizer
- Synthesizer Reference frequency from 5 to 30 MHz
- Synthesizer VCO 10 GHz
- Voltage Supply 1.0 - 1.2 V
- Single Supply Connected to SoC Core Supply
- Replacement for Tuner and SAW Filter

Applications

- Consumer Electronics
- PDAs
- Cell Phones
- PCs



KR-DVB-01 DVB Receiver

Digital Video Broadcast

KR-DVB-01 Preliminary Data Sheet

Description

The Kaben KR-DVB-01 is a low power DVB Tuner IP block for integration into an SoC or for manufacturing a stand alone product.

The Kaben KR-DVB-01 cell has an operating frequency of 50 to 860 MHz for reception anywhere in the world.

For Satellite channels, a millimeter wave LNB unit proceeds the tuner. For Terrestrial channels and Hand-held channels, the signals are first directed to an off-chip Switchable, Continuous Time filter which provides some light filtering to help address the near-far channel problem.

The complete band is then amplified in an LNA having a delayed AGC, and passed to the first SIF. This first SIF is tunable over the complete broadcast band extending from 50 MHz to 860 MHz, and has a passband bandwidth of 80 MHz, thereby passing 10 adjacent channels, including the desired channel, at a time. The desired channel need not be centered in the passband; in fact, for Terrestrial and Hand-held channel service, the first SIF should be tuned to include the desired channel, while also rejecting at least the closest, high power, undesired channel.

To tune over the band of 50 MHz to 860 MHz, the first SIF is clocked with a synthesizer having a VCO running at 10

GHz. The 10 selected channels emerge from the first SIF in a sampled-analog IF form, are amplified (buffered) in a gain stage, and directed to the second SIF. The second SIF isolates the desired channel and passes it, at 36 or 44 MHz, and still in sampled-analog form, to the second AGC amplifier. Finally, the sampled-analog desired channel is converted to analog form for connection to the television's back-end analog circuits for channel equalization, demodulation, error correction, encoding etc.

The first SIF band selection, and the synthesizer clock frequency, are determined by the channel select and control logic. The exact group of 10 channels to be passed by the first SIF, and the corresponding clock frequency to be generated by the synthesizer, is dependent on the presence of near channels having excessive power levels (as will occur in Terrestrial and Hand-held services, but not in Cable or Satellite services). The presence and channel frequency of all high power channels is determined by sensing, intermittently, the power level at the output of the first SIF.

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.

Electrical Characteristics

Parameter	Conditions	Min	Typ	Max	Units
Operating Frequency		50		860	MHz
Channel Bandwidth			8		MHz
Output Level	50 Ω		100		mV
Sensitivity	50 Ω		-100		dBm
Output IP3			+18		dBm
Image Rejection			55		dB
Adjacent Channel Selectivity			60		dB
First SIF output bandwidth			10		Channels
Second SIF output bandwidth			1		Channel
Analog Output Frequency			36 or 44		MHz
Synthesizer Reference frequency		5		30	MHz
Synthesizer VCO Frequency			10		GHz
Supply Voltage	4 Vdd pins, 4 Gnd pins	1.0	1.1	1.2	V
	1 Vdd pin, 1 Gnd pin	1.7	1.8	1.9	V
Current				20	mA
Operating Temperature		-40		100	deg C

