



RadiX

Multistandard CMOS TV Tuner

Product Brief

ESS's **RadiX** tuner is the industry's lowest power and most highly integrated CMOS based multi-standard silicon TV tuner enabling the lowest bill of materials. With built-in SAW filters, the RadiX supports digital TV standards such as ATSC (8-VSB), DVB-T and DVB-C, analog TV standards such as NTSC, PAL and SECAM, as well as FM radio formats.

Frequency	Sensitivity	Image Rejection	Power	Package
48-1005 MHz	-84 dBm	65 dB	< 400 mW	40 QFN

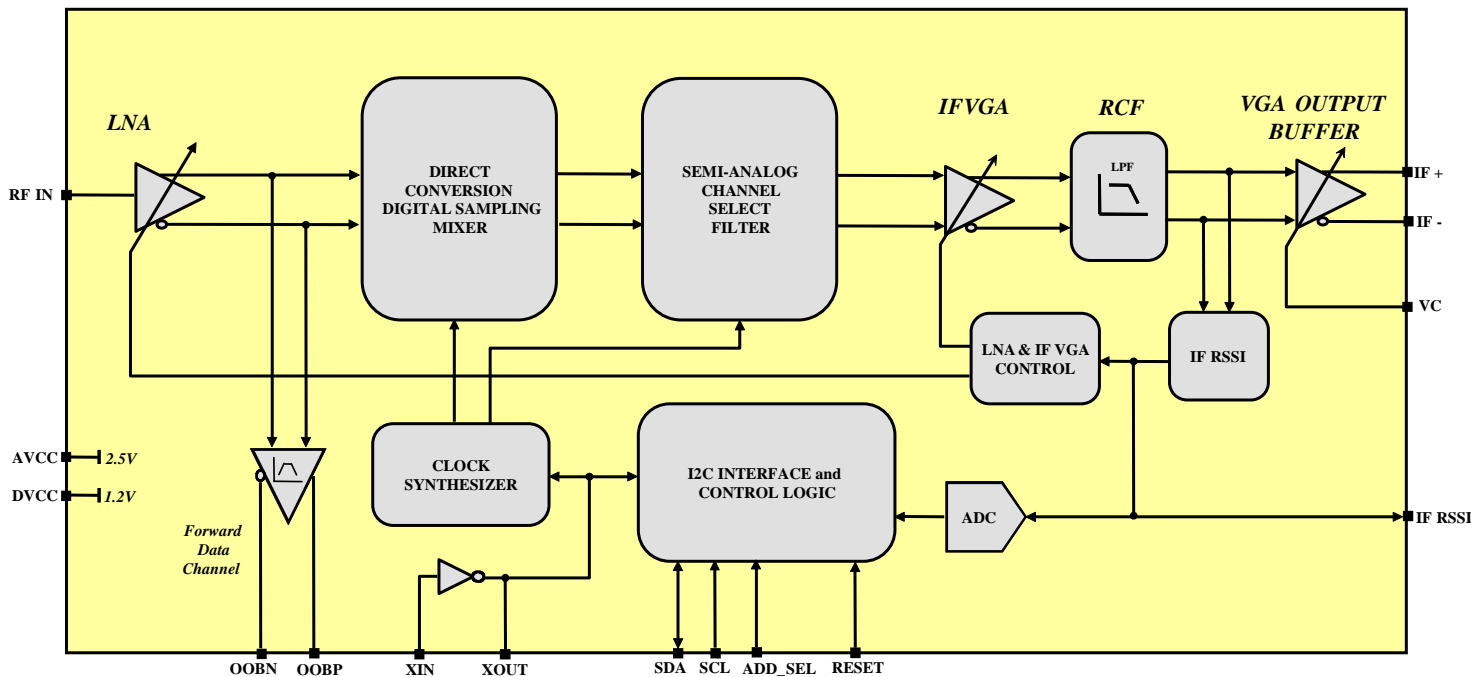
The RadiX is based on the ESS patented Direct Sampling Mixer (DSM) plus **18** more patent-pending circuits including: Channel Selection Filter, Virtual Weaver architecture, and Advanced High Resolution Synthesizer. It uses a fast systolic analog array integrated in a discrete signal processing engine and a digital signal processing unit to tune the channels. The result is a high performance, low-power tuner with an extremely fast channel locking time.

The discrete signal processor replaces several power hungry blocks found in traditional tuner. This technology dramatically reduces the power consumption of the tuner to less than 400 mW. A sleep mode can be enabled for a minimal 1.2 mW power consumption.

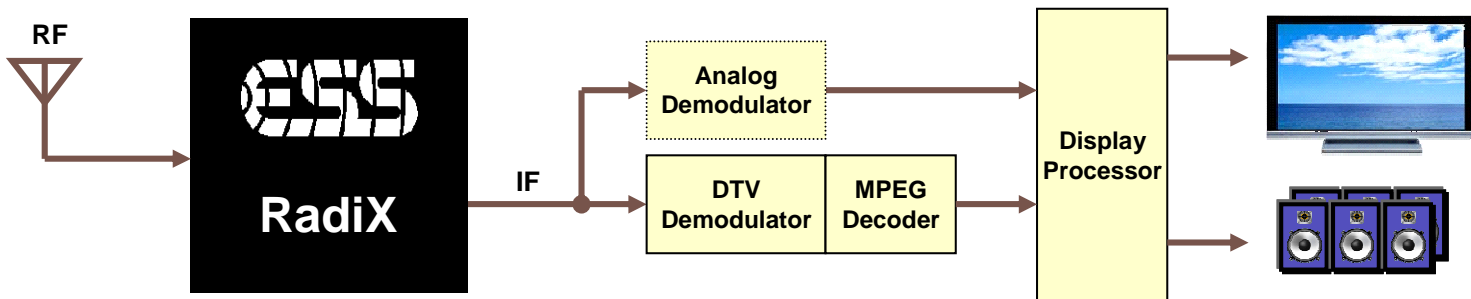
FEATURE	BENEFIT
Low Bill of Materials	<ul style="list-style-type: none"> Integrated SAW filters and low external component count reduce system cost
Low power (< 400mW) consumption with sleep mode	<ul style="list-style-type: none"> Simplifies power supply design Low stand-by power of less than 1.2mW (with instant restart)
<i>Patented</i> Direct Sampling Mixer (DSM)	<ul style="list-style-type: none"> Replaces conventional RF mixer and local oscillator Very fast tuning ability Low running frequency Low power consumption
<i>Patent-pending</i> Channel Selection Filter	<ul style="list-style-type: none"> Very fast frequency change enabling fast tuning Consistent, reliable and sharp filtering Low power operation
<i>Patent-pending</i> Virtual Weaver	<ul style="list-style-type: none"> Very high image rejection No need for matched filters
<i>Patent-pending</i> Advanced High resolution synthesizer	<ul style="list-style-type: none"> Best in class phase noise Very fast frequency switching (1 Hz accuracy)
Configurable IF frequency	<ul style="list-style-type: none"> 36 and 44 MHz IF, tailored for DTV demodulator requirement
40-QFN package	<ul style="list-style-type: none"> Reduces PCB footprint and simplifies board layout



FUNCTIONAL BLOCK DIAGRAM



APPLICATION DIAGRAM



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