



World's First SiGe Receive Front End

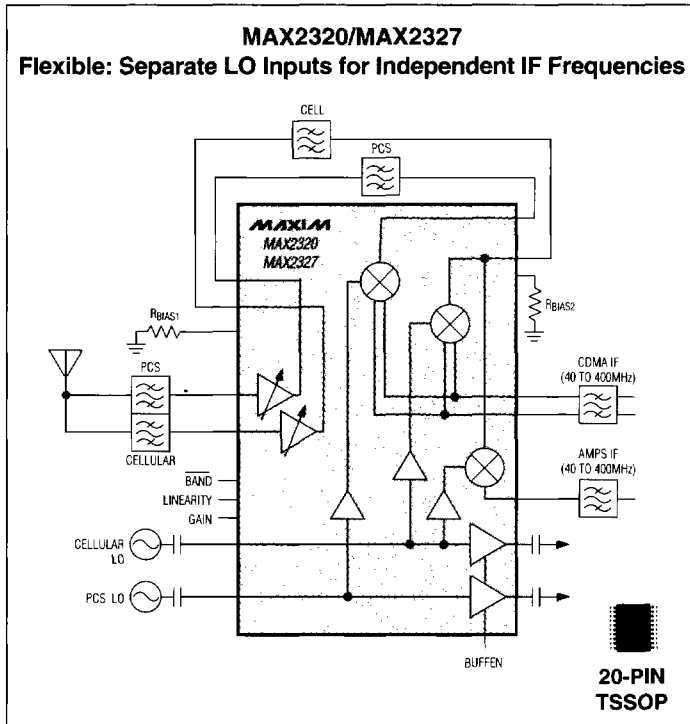
Get Incredible Linearity and Noise Performance

Maxim's new family of SiGe receive front-end ICs sets the industry standard for noise, linearity, and supply current for the LNA+mixer function in CDMA, W-CDMA, TDMA, PDC, and GSM cellular phones. The MAX2320 family incorporates a variety of unique new features such as integrated VCO doublers or dividers, VCO buffers, dual LNA gain settings, independently adjustable LNA and mixer linearity, and a pin-selectable low-current paging mode that extends phone standby time. These devices also reduce supply current, space, component count, and design time. The excellent linearity specifications of the LNA and balanced mixer reduce cross modulation and eliminate multiple IF filters for further cost and space reduction.

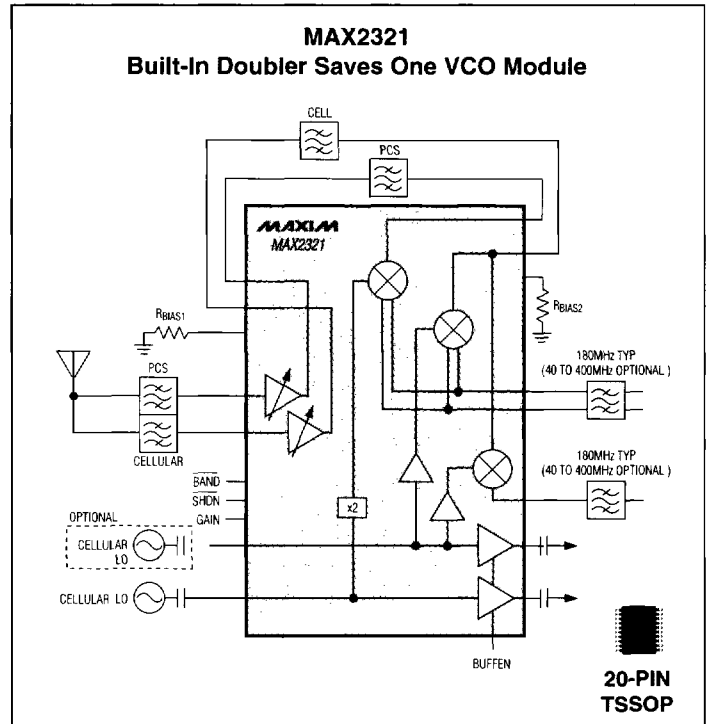
Enhance Your Cell Phone Design with These SiGe Receive Front Ends

Part	Cellular Paths	PCS Paths	Cellular VCO Inputs	PCS VCO Inputs	IF Outputs	Comments
MAX2320‡	1	1	1	1	1 differential, 1 single-ended	Triple mode: PCS and dual-mode cellular
MAX2321‡	1	1	2	-	1 differential, 1 single-ended	MAX2320 with VCO doubler
MAX2322‡	-	1	-	1	1 differential	PCS-only device
MAX2324‡	1	-	1	-	1 differential, 1 single-ended	Dual-mode cellular
MAX2326‡	1	-	1	1	1 differential, 1 single-ended	MAX2320 with VCO divide-by-2
MAX2327‡	1	1	1	1	1 differential, 1 single-ended	MAX2320 with independently controllable VCO buffers
MAX2329‡	-	2	-	1	1 differential	PCS-only device. Allows the use of SAW duplexers and "split-band" filters

‡General sample availability: August 1999. Contact factory for engineering samples.



The MAX2320/MAX2327 allow use of independent single-ended and differential IF frequencies. The MAX2320 is the most flexible member of this product family.



Use the MAX2321 with a high IF frequency and save one VCO module—thanks to a built-in doubler.

Front-End ICs for Cellular Phones

Performance at Ultra-Low Supply Current!

The MAX2320 family includes seven ICs: four operate at both cellular and PCS frequencies, one operates at cellular frequencies, one operates at PCS frequencies, and one is configured as a dual PCS device. The ICs are pin compatible so that a dual-band phone can easily be converted to a single-band phone, simply by replacing the dual-band IC with a single-band version and omitting unused external components such as filters and VCOs.

• Impressive LNA Performance

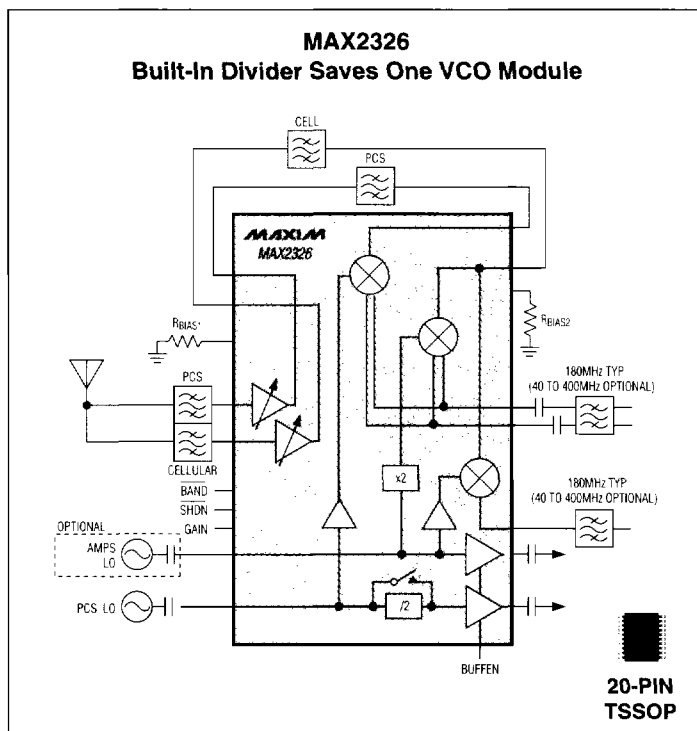
Specification (at I _{CC} = 7mA)	881MHz	1960MHz
IIP3*	+8dBm	+7dBm
Noise Figure	1.3dB	1.5dB
Gain	15dB	14dB

• Balanced Mixer Performance

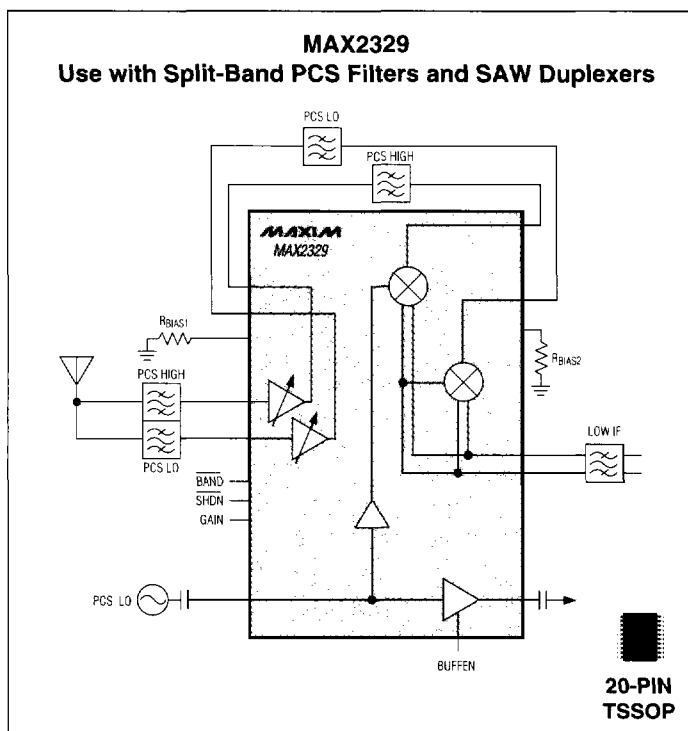
Specification (at I _{CC} = 12mA)	881MHz	1960MHz
IIP3*	+4dBm	+3.5dBm
Noise Figure	7dB	8dB
Gain*	12dB	12dB

*For the LNA, IIP3 can be individually adjusted. For the mixer, both gain and IIP3 can be independently adjusted.

- +2.7V to +3.6V Operation
- Pin-Selectable Low-Gain Mode Reduces Gain by 14dB and Current by 3mA
- Pin-Selectable Paging Mode Reduces Current Draw by 6mA when Transmitter is Not in Use
- LO Output Buffers
- LO Frequency Doubler (MAX2321)
- LO Frequency Divider (MAX2326)
- 0.1µA Shutdown Current
- 20-Pin TSSOP Package



Use the MAX2326 with a high IF frequency and save one VCO module—thanks to a built-in divider.



Use the MAX2329 in conjunction with split-band PCS filters. It allows use of small SAW duplexers and split-band filters.