

BlueAmp™

**The World's First CMOS
Bluetooth™ Power Amplifier**

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Bluetooth Power Amplifier

with digital output power control

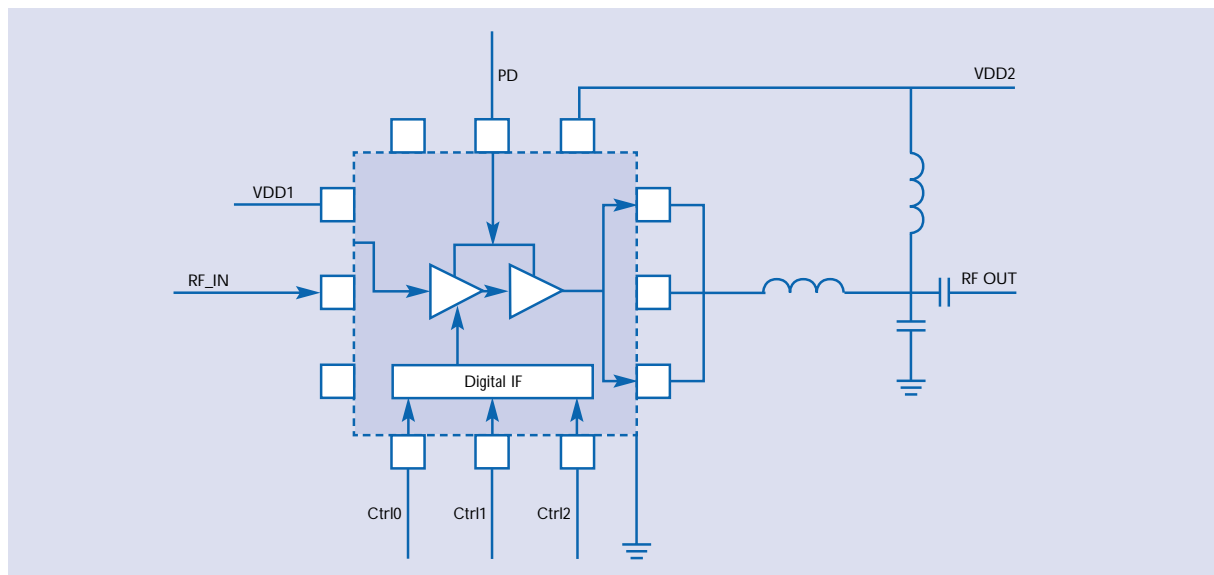
Product Description

The BlueAmp™ is a low cost and small sized power amplifier. The circuit is implemented in CMOS 0.18μm process and is intended for applications in the 2.4GHz-2.5GHz band. It features a four level power control scheme to satisfy e.g. Bluetooth class 1 specification.

Key Features

1. 22 dBm typical output power
2. Digital controlled output power
3. Low standby current
4. On-chip intermediate matching
5. On-chip power down mode
6. Small size and low cost by using standard CMOS 0.18μm technology
7. Operates with the Spirea BlueTraC™ Radio Transceiver or other 2.4GHz radios

Typical Application Schematic



DC Electrical Characteristics

Conditions: TA = 25°C, RF input power = +2dBm. Input is externally matched to 50 Ohm.

Parameter	Description	Min	Typ	Max	Unit	Note
VDD1	Supply voltage input stage	1.6	1.8	2.0	V	
VDD2	Supply voltage output stage	3.0	3.3	3.6	V	
LOL	Digital input low level			0.1xVDD2	V	
HIL	Digital input high level	0.9xVDD1			V	

AC Electrical Characteristics

Conditions: TA = 25°C, RF input power = +2dBm. Input is externally matched to 50 Ohm.

Parameter	Description	Min	Typ	Max	Unit	Note
Freq.	Frequency range	2.4		2.5	GHz	
	Input Impedance		50		ohm	
P _{out}	Maximum output power		22		dBm	
S11	Input reflection coefficient		-20		dB	
S22	Output reflection coefficient		-8		dB	
Second harmonic			-33		dBc	1
Third harmonic			-31		dBc	1

Notes:

1. Harmonics levels are affected by the implementation of the matching network, and the choice of the chip packaging.

About Spirea

- Wireless communications
- Expertise in RF CMOS
- Focus on low cost solutions

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