



ADF4000 Series

Integer-N PLL Frequency Synthesizers

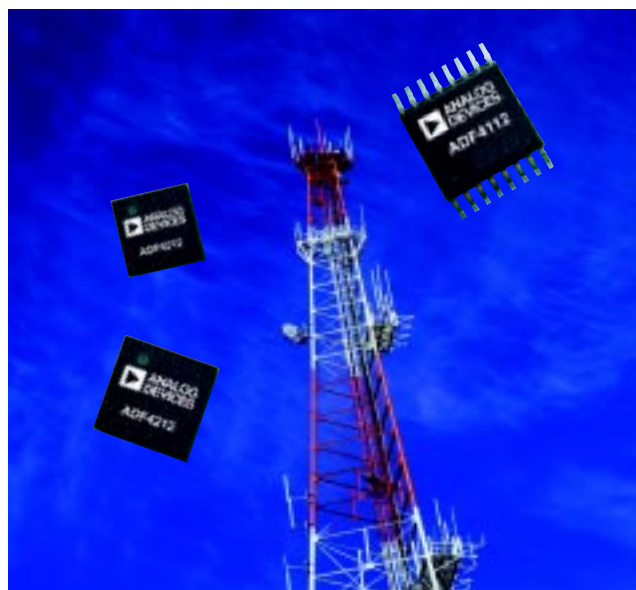
Analog Devices' ADF4000 series offer a choice of industry-standard pinout with improved performance, or new pinout with increased software programmability.

IMPROVE PERFORMANCE TO 6GHz WITH NEW PLL SYNTHESIZERS IN PROPRIETARY AND INDUSTRY-STANDARD PINOUTS

The ADF4000 series of PLL synthesizers consists of single and dual devices in a range of configurations and frequency ranges up to 6GHz (ADF4106). Using a high-performance BiCMOS process technology, phase noise is typically 6 dB better than next best performing product currently available.

The ADF4116, ADF4117, and ADF4118 are pin-compatible lower-phase-noise replacements for the LMX2306, LMX2316, and LMX2326, single devices respectively. These devices use fixed dual-modulus prescalers, and can operate up to 3.0GHz (ADF4112). Drop-in replacements for the LMX dual devices are also available.

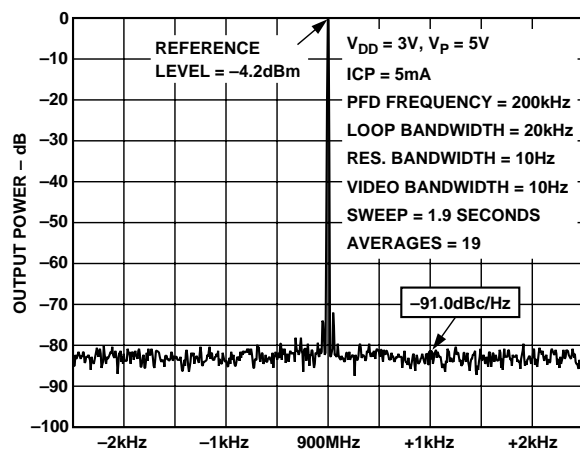
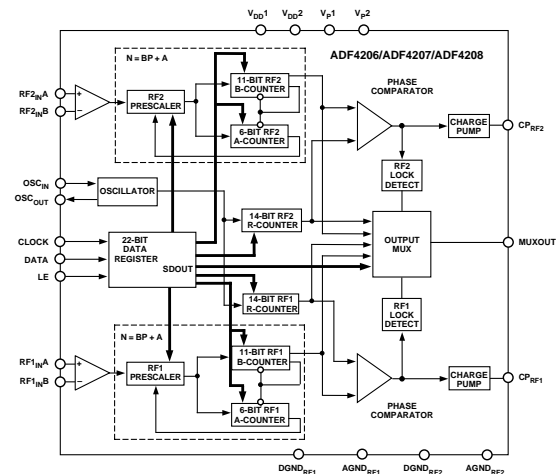
The ADF4110 through ADF4113 single devices (and ADF4210 through 4213 dual devices) offer additional functions in a nearly identical pin configuration. This change allows many more features to be software-controlled, including prescaler division ratio, anti-backlash pulse width, and charge-pump current. Operation up to 6.0GHz is possible.



FEATURES

- Pin-compatibility with LMX-23xx series synthesizers allows easy system performance improvements with no hardware or software changes.
- Proprietary pinout versions allow additional flexibility and system optimization.
- All devices available in 16-pin TSSOP and 20-lead LPCC 4 x 4 mm chip-scale packages.
- Wide operating power supply range (+2.7 to +5.5 Volts), with separate V_p for extended tuning range in 3-Volt systems.
- Low supply current (typically 4.5 mA for the lower-frequency devices, slightly higher for devices operating above 1.2 GHz); all devices include low-current standby mode.
- Evaluation boards and software are available for all devices.





ADI Part Number	National Semiconductor Part Number	Maximum Frequency	Package Types	Performance Upgrade Replacement Part
Single Channel				
ADF4110	-	550MHz	TSSOP / Chip Scale	-
ADF4111	-	1.2GHz	TSSOP / Chip Scale	-
ADF4112	-	3.0GHz	TSSOP / Chip Scale	-
ADF4113	-	4.0GHz	TSSOP / Chip Scale	-
ADF4106	-	6.0GHz	TSSOP / Chip Scale	-
ADF4116	LMX2306	550MHz	TSSOP / Chip Scale	Yes
ADF4117	LMX2316	1.2GHz	TSSOP / Chip Scale	Yes
ADF4118	LMX2326	2.8GHz	TSSOP / Chip Scale	Yes
Dual Channel				
ADF4210	-	0.55/1.2GHz	TSSOP / Chip Scale	-
ADF4211	-	0.55/2.0GHz	TSSOP / Chip Scale	-
ADF4212	-	0.9/2.7GHz	TSSOP / Chip Scale	-
ADF4213	-	0.9/3.0GHz	TSSOP / Chip Scale	-
ADF4206	LMX2337	0.5/0.5GHz	TSSOP / Chip Scale	Yes
ADF4207	LMX2335	1.1/1.1GHz	TSSOP / Chip Scale	Yes
ADF4208	LMX2336	1.1/2.0GHz	TSSOP / Chip Scale	Yes
ADF4216	LMX2332	0.5/1.2GHz	TSSOP / Chip Scale	Yes
ADF4217	LMX2331	0.5/2.0GHz	TSSOP / Chip Scale	Yes
ADF4218	LMX2330	0.5/2.5GHz	TSSOP / Chip Scale	Yes

