



Blue Tops RF Modules > Low Noise High Frequency Quadrupler

Features:

- Output Frequency to 40 MHz
- Multiplication Factor: x4
- Low Conversion Loss
- Intrinsic Phase Noise to -176 dBc/Hz
- Integral Bandpass Filter
- Low Power Consumption

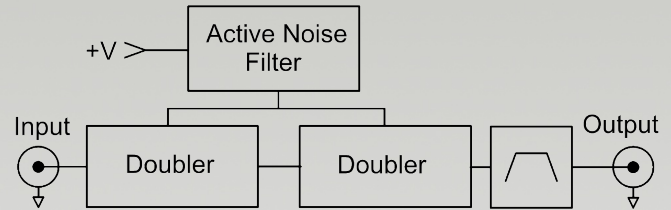
Applications:

- Synthesizer Building Block
- Communication Systems
- Radar Systems
- Electronic Warfare Systems



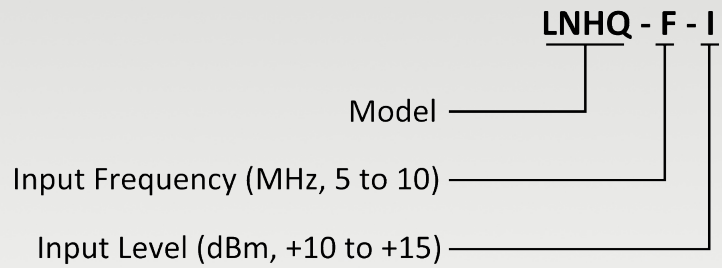
Description:

The LNHQ is a fixed frequency HF quadrupler that combines two LNHD doublers into a single package. The quadrupler exhibits exceptionally low phase noise performance and low conversion loss, and incorporates specially selected FETs and an output bandpass filter. With a total power consumption of only 40 mA, the LNHQ is particularly useful in HF x4 multiplication applications where power is limited.



Electrical Specifications	
Multiplication Factor	x4
Input Frequency	5 MHz to 10 MHz, fixed
Input Level	+10 dBm to +15 dBm, fixed (±1 dB)
Output Frequency	to 40 MHz
Conversion Loss	0 dB, typical (±2 dB)
Phase Noise, Residual (Intrinsic, Input Referred, 5 MHz Model)	-155 dBc/Hz (10 Hz offset) -176 dBc/Hz (100 kHz offset)
Harmonics	≤ -30 dBc
Sub-Harmonics	≤ -45 dBc
Spurious (Excluding Supply Line Related Spurs)	≤ -80 dBc
Supply Voltage	+15 VDC ±2%
Current Draw	≤ 40 mA
Operating Temperature	0 to +50°C
Storage Temperature	-40 to +85°C
Mechanical	
Dimensions	2" x 1.25" x 0.8"
DC Supply	Feed Thru Capacitor Solder Pin
Ground	Turret Terminal Solder Pin
RF Input / Output	SMA female *
* SMA female connectors are used unless otherwise specified. Other options include SMA male, right angle SMAs, BNC female and others. Contact factory for custom configurations.	

Ordering Information:



Standard P/N	Input Frequency	Multiplier Factor	Input Level	Output Level	Output Frequency	Input Referred Residual Phase Noise (100 kHz offset)	Supply Voltage
LNHQ-5-10	5 MHz	x4	+10 dBm	+10 dBm	20 MHz	≤ -176 dBc/Hz	+15 VDC
LNHQ-5-13	5 MHz	x4	+13 dBm	+13 dBm	20 MHz	≤ -176 dBc/Hz	+15 VDC
LNHQ-5-15	5 MHz	x4	+15 dBm	+15 dBm	20 MHz	≤ -176 dBc/Hz	+15 VDC
LNHQ-10-10	10 MHz	x4	+10 dBm	+10 dBm	40 MHz	≤ -175 dBc/Hz	+15 VDC
LNHQ-10-13	10 MHz	x4	+13 dBm	+13 dBm	40 MHz	≤ -175 dBc/Hz	+15 VDC
LNHQ-10-15	10 MHz	x4	+15 dBm	+15 dBm	40 MHz	≤ -175 dBc/Hz	+15 VDC



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