Our new ultralow noise, integer-N frequency synthesizers provide best-in-class phase noise and spurious performance. The LTC®6946 is a complete frequency synthesizer that includes a high performance, low noise, 6.39GHz phase-locked loop (PLL) with a fully integrated, low phase noise VCO. The LTC6945 separates the low 1/f corner PLL core for use with an external VCO up to 6GHz. The free, easy-to-use PLLWizard™ CAD tool quickly and accurately simulates synthesizer performance to ensure an optimal design.

**Features**

- Integrated VCO, Up to 6.39GHz (LTC6946)
- 350MHz to 6GHz VCO Input Range (LTC6945)
- Low −226dBc/Hz Normalized In-Band Phase Noise Floor
- −157dBc/Hz Wideband Output Phase Noise Floor
- Industry’s Lowest −274dBc/Hz Normalized In-Band 1/f Noise
- Spurious Levels < −100dBc
- High Current 11mA Output Charge Pump Minimizes Loop Compensation Thermal Noise
- Programmable Output Divider for Wide Operating Frequency Range
- 28-Pin (4mm x 5mm) QFN Packages

### Frequency Coverage Options

| OUT DIV = 1 | 2.240 to 3.740 | 3.080 to 4.910 | 3.840 to 5.790 | 4.200 to 6.390 |
| OUT DIV = 2 | 1.120 to 1.870 | 1.540 to 2.455 | 1.920 to 2.895 | 2.100 to 3.195 |
| OUT DIV = 3 | 0.747 to 1.247 | 1.027 to 1.637 | 1.280 to 1.930 | 1.400 to 2.130 |
| OUT DIV = 4 | 0.560 to 0.935 | 0.770 to 1.228 | 0.960 to 1.448 | 1.050 to 1.598 |
| OUT DIV = 5 | 0.448 to 0.748 | 0.616 to 0.982 | 0.768 to 1.158 | 0.840 to 1.278 |
| OUT DIV = 6 | 0.373 to 0.623 | 0.513 to 0.818 | 0.640 to 0.965 | 0.700 to 1.065 |
PLLWizard Tool Provides Design Support

Design Features
- Find Part Parameters Based on Your Frequency Plan
- Design Noise-Optimized Loop Filters
- Simulate Loop Frequency Response and Stability
- Simulate VCO and Reference Source Noise
- Simulate Output Noise Characteristics and Statistics

Evaluation Features
- Read and Write All Device Registers
- Configure Using a Block Diagram Programming Interface
- Troubleshoot Common Set-Up Problems
- Receive Alerts Due to Programming Errors

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