CML Microcircuits
COMMUNICATION SEMICONDUCTORS

Product Preview

PP/979/12 August 2019

CMX979 Dual PLL + VCO

338MHz - 3.6GHz and 31MHz - 1GHz

The CMX979 is a low power dual RF/IF synthesiser that supports signal generation over a wide range of frequencies. It directly supports both single conversion and super-heterodyne radio architectures and minimises the number of external components. The CMX979 provides flexible, LO generation in a small 6x6mm VQFN package.

Features

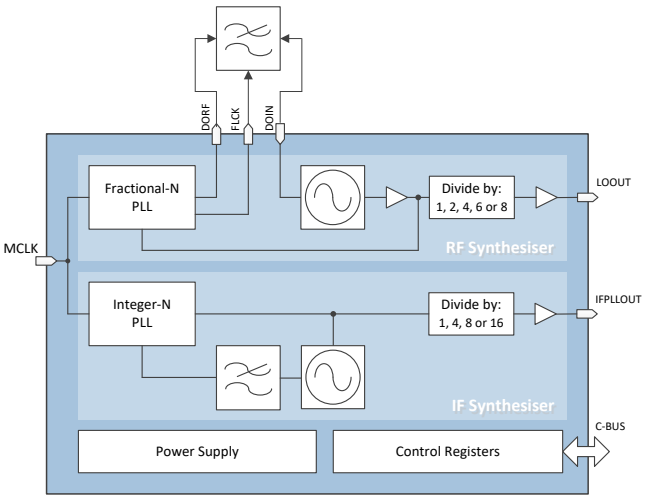
- RF synthesiser/PLL
  - Low operating power 35-44mA typ.
    RF PLL + RF VCO + RF LO output divider
  - 2.7-3.6 GHz frequency range
    Plus 1/2/4/6/8 output frequency divider
  - Fractional-N 16 or 24 bit
  - Fully integrated 2.7-3.6 GHz VCO
  - Charge pump
  - Configurable current
  - Fast lock with configurable current and timing
  - Comparison frequency up to 40MHz
  - Output level: -7dBm
- IF synthesiser/PLL
  - Low operating power10mA typ.
    (IF PLL + IF VCO)
  - 500-1000 MHz frequency range
    (plus 1/4/8/16 output frequency divider)
  - Integer-N (14-bit divider)
  - Integrated VCO
    External inductor selects operating sub-band
    +/-22% tuning range within selected frequency sub-band
  - Output level: -15dBm
- Control Interface
  Serial C-BUS (SPI compatible)
- Power management
  Single 2.7-3.6 V main supply (3.0 V typical)
  1.7-3.6 V digital supply range
  Integrated LDO regulators for PLL core
- Operating temperature range: -40 to +85°C
- Small VQFN package 6x6 mm

Applications

- Custom ISM modems
- Wireless data links
- L-band satellite modems
- CATV equipment
- General purpose RF

The **RF synthesiser** operates over the range 2.7-3.6 GHz with a fully-integrated VCO and PLL. It is capable of operating in fractional-N and integer-N modes and supports output frequencies in the range 338MHz to 3.6GHz via a configurable output frequency divider. An external loop filter provides the flexibility to optimise noise performance and spurious rejection. A configurable, automatic fast-lock mode reduces frequency tuning time. Advanced RF PLL options include selectable PLL delta-sigma modulator type, dither, bleed current, and charge pump current.

The **IF synthesiser** is an integer-N type and operates over the range 500-1,000MHz. It includes a fully-integrated loop filter and a VCO that only requires an external inductor. A configurable output divider supports a wide range of IF output frequencies down to 31MHz.



CMX979 Block Diagram

CMX979 Advantage

- Single chip Dual Synthesiser + VCO solution
- Wide operating frequency range
- Low operating current
- Small package footprint

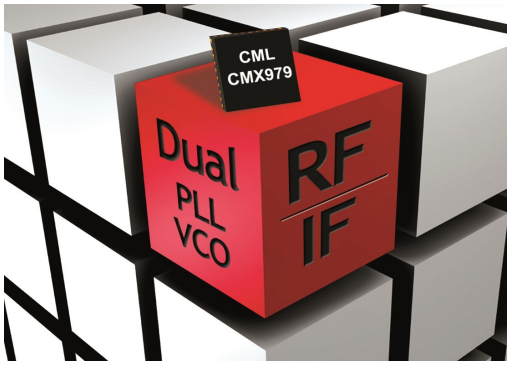


Small VQFN package (6mm x 6mm)

© 2019 CML Microsystems Plc

Competitive Edge

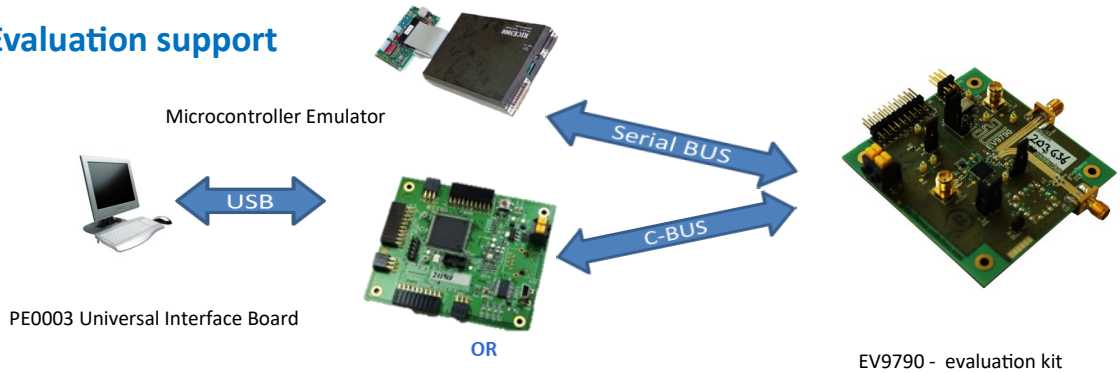
The CMX979 enables the designer to develop smaller and lower powered RF solutions due to its highly integrated nature. Whilst there are many PLL/VCO solutions in the market, few combine such a wide operating frequency range and level of integration with low power consumption. Most fully integrated solutions are only single synthesisers and so require a second synthesiser on the PCB in many applications.



The CMX979 has been designed to trade power consumption against phase noise performance and is therefore targeted towards low pow, low cost RF solutions.

The CMX979 features on-chip VCO calibration for both synthesisers to ensure consistent performance across temperature and supply voltage variations, together with calibration monitoring and reporting to allow full user control if desired.

Evaluation support



Click here to view the online

PRODUCT DATA RESOURCE

WHAT TO DO NEXT

Download: **Datasheet**

Find: **Distributor**

CML Microcircuits Benefits

Faster time to market

Developing proven high performance and field tested ASSP ICs, CML is helping engineers to cope with increasing pressure in delivering shorter project design cycles.

Design flexibility

CML's *FirmASIC*® reconfigurable technology with the use of a Function Image upload enables a single hardware platform to be used for multiple communications systems.

High Quality

With 100% of products being tested before shipping, customers are assured of the highest reliability.

Product Longevity

Designing with CML products, manufacturers are rewarded with longer product life cycles and a stable BOM, ensuring minimum engineering costs and maximum profit.

Low Power

Being at the forefront of low power chip technology, manufacturers can develop smaller equipment with extended battery life.

Superior Support

Internal and field based applications teams worldwide provide focused customer support to ease the development process.

www.cmlmicro.com

United Kingdom Tel: +44 (0) 1621 875500 email: sales@cmlmicro.com
United States Tel: +1 336 744 5050 email: us.sales@cmlmicro.com
Singapore Tel: +65 62888129 email: sg.sales@cmlmicro.com

© 2019 CML Microsystems Plc