

## CMX7146

### BPSK Wireless Data Modulator

The CMX7146 is a flexible data transmitter supporting BPSK (Binary Phase Shift Keying) and Differential BPSK modulation (sometimes called PRK, Phase Reversal Keying or 2PSK). BPSK is often used when robust, long-range data communication is required. It is also simple to demodulate and power efficient.

#### Functional Summary

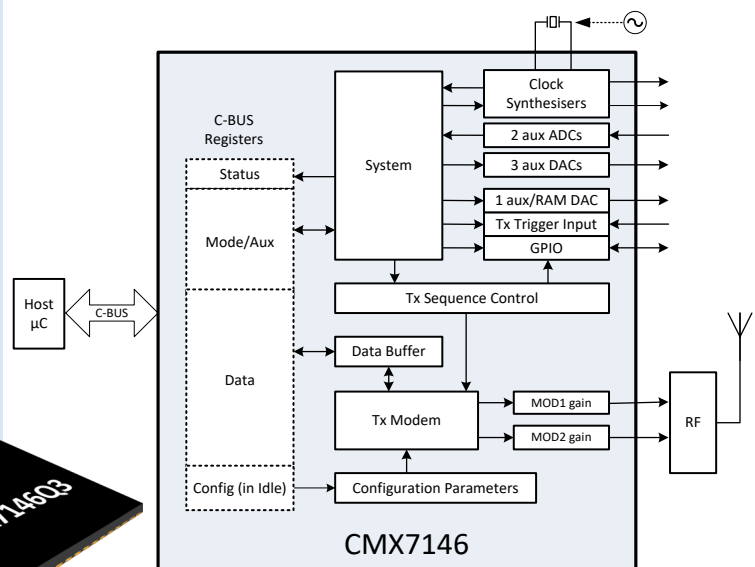
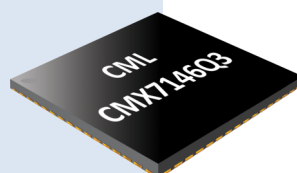
- Data rates supported  
600/1200/2400/3600/4800/9600bps
- Up to 13 bytes per burst
- PA ramp DAC
- Baseband IQ outputs for RF modulation
- Additional data converters
- C-BUS (SPI compatible) serial control interface

#### Technical features

- Plain or differential BPSK
- Programmable RRC filter
  - $\alpha=0.2/0.3/0.35$
- Low power consumption
  - 7mA TX 1200bps
  - 15mA 9600bps
- Flexible clocking options
- Through port control for IQ up-converter
- Auxiliary converters for sensor interfacing
- 3.3V supply
- Small 48QFN package (Q3)

#### Applications

- Emergency beacons
- IIoT transmitters
- Cube SAT communications



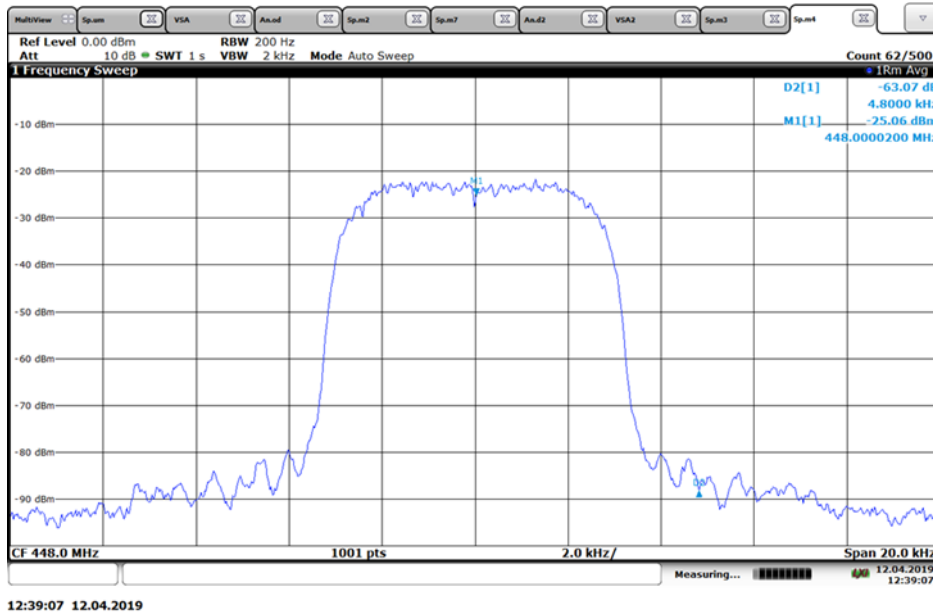
The CMX7146 generates precise baseband analogue in-phase and quadrature signals, which allow the transmitted signal to be generated with high accuracy, making it suitable for up-conversion to an RF carrier of the user's choice.

The device supports raw (bits in, modulation data out) and preloaded (messages in, modulation data out) transmissions and also features a transmit (Tx) trigger input to enable precisely timed data transfers. A power amplifier ramping DAC can also be employed to control transmission bursts which can be synchronised as part of the transmit sequence.

In addition to the modulation function, when used in sensor interfacing solutions, the CMX7146 integrates low power analogue to digital converters, featuring programmable thresholds and 4 GPIO interfaces.

Operating from a 3.3V supply, the CMX7146 is designed using CML's FirmASIC<sup>®</sup> technology. A Function Image™ (FI) file, which defines the operational capabilities of the device, is available from the CML Technical Portal. The Function Image™ is uploaded from either the host controller or external memory into the device during the power-up sequence.

## Typical Modulation Output



## Information Resource

### Website

- Product Preview
- Datasheet

### Technical Portal (Contact CML for access)

- Datasheet/User manual
- Software updates

## Ordering Information

- CMX7146Q3

## WHAT TO DO NEXT

Visit: [www.cmlmicro.com](http://www.cmlmicro.com)

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.