CML Microcircuits

Product Preview

1 February 2018

DE9945

SDR Demonstrator: PMR/LMR Common Platform Processor

The DE9945 is a compact demonstration/evaluation platform for a range of digital and analogue PMR technologies including 2-slot TDMA Digital Radio (DMR) and 6.25kHz FDMA systems.

Features

- Direct Conversion Digital Radio Demonstrator
- Provides a demonstration platform for: - Direct Conversion Receiver CMX994A - PMR Common Platform Processor CMX7341
- On-board ARM Host Processor: (Cortex M0/ M4 with internal flash and RAM)
- 16-button (4 x 4) Keypad
- 2 x 16-character LCD Display
- Can function in the following modes:
  - Completely stand-alone
  - Controlled by scripts running via a PC
  - User-defined host controller interface
- On-board Frac-N PLL and VCO for 444MHz to 450MHz Operation
- 1W Power Amplifier
- On-board Microphone
- On-board Loudspeaker
- Jack sockets for audio in/audio out

Supply Requirement

- 4.5 V

For further information, please refer to the 'Design Resources' section on the CMX7341/CMX994A/ CMX994E product page at cmlmicro.com

The design incorporates the CMX7341 PMR Common Platform Processor and the CMX994A Direct Conversion Receiver. The DE9945E is now also available incorporating the CMX7341 and the CMX994E for high-performance DMR applications.

The board can be used to demonstrate a complete RF transceiver and baseband function supporting a direct conversion receiver and VCO 2-point modulation transmitter.

The DE9945 features a built-in keyboard, display, AMBE+2 vocoder, microphone and loudspeaker and so can be used to demonstrate DMR peer-to-peer operation in a stand-alone configuration. The board has an ARM processor which handles initial board power up and loading of the Function Images™ . Once the system is powered up, the processor will handle basic radio functionality (channel selection etc) and baseband control, allowing demonstration of a simple voice call and data transfer.

The DE9945 provides a Fractional-N PLL and VCO plus associated circuits to provide local oscillator signals for the CMX994A. The design also includes a 1W power amplifier, harmonic filter and Tx/Rx switch. The RF performance is designed to be compliant with EN 300 086 / EN 300 113 / EN 301 166 and all the circuits are provided with power-down capability to allow standby functionality.

DE9945

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