CML Semiconductor Products

PRODUCT INFORMATION

FX836 Radiocom 2000 System Audio Processor

Product Summary

Features/Applications

- **Full-Duplex Audio Processing for R2000 Cellular System**
- **On-Chip Speech and Data Facilities**
  - **Tx/Rx/Data Filtering & Gain**
  - **Pre-/De-Emphasis – Deviation Limiter**
- **Serial μProcessor Interface**
- **Tx and Rx LF-Data Paths**
- **FFSK and (50 Baud) LF-Data Facilities**
- **Hands-Free Compatibility**
- **Access to External Processes**
  - ***Compression – Expansion***
  - ***Signalling/Data Mixing***
  - ***VSR Codec (Store/Play)***
- **Powersave (Low-Current) Settings**

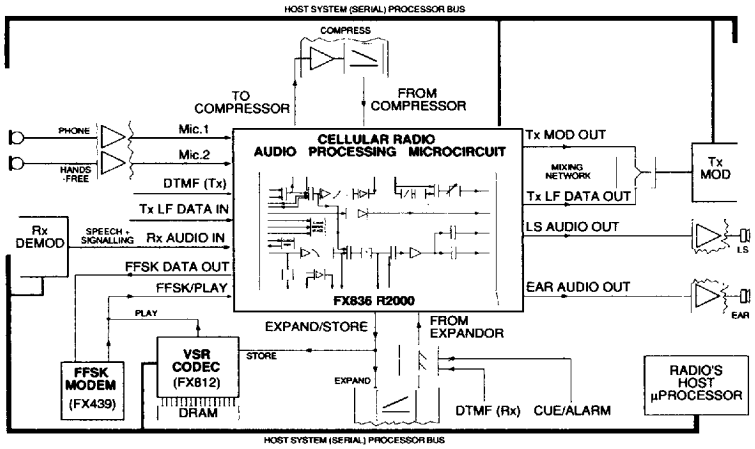


Fig.1 The FX836 R2000 Audio Processor within a Cellular System

FX836

Brief Description

The FX836 is a μProcessor controlled full-duplex audio processor on a single-chip with separate Tx, Rx and LF (50 baud) data paths to provide all the filter/gain/limiting functions necessary to pre-process audio, data and signalling in the Radiocom 2000 (R2000) Cellular communications system.

Selectable inputs available for transmission are: a choice of two microphones, DTMF/signalling or FFSK/data, with access, in this path, to external voice compression circuitry. Operationally the Tx path provides input gain/filtering, pre-emphasis, a deviation limiter and Tx Modulation Drive controls. Available to the transmit function is a separate path to process LF system control data for amalgamation externally with Tx voiceband audio.

The Rx path consists of an input gain/de-emphasis/filter block for voice and data, inputs from an external audio expansion system and output gain controls driving loudspeaker and earpiece circuitry.

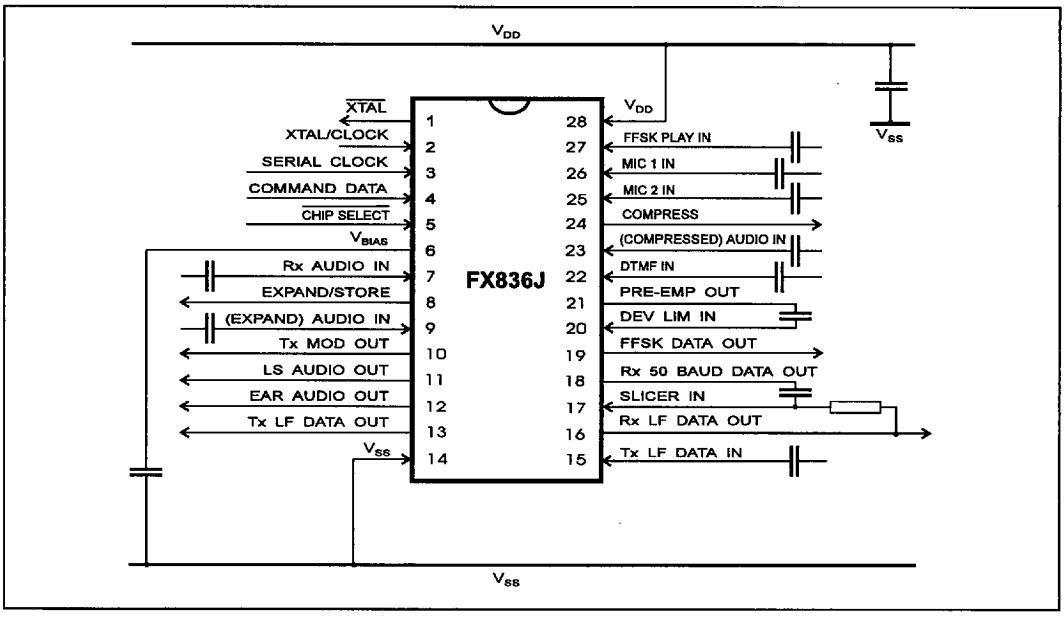
In the Rx path LF data signals are separated from the incoming audio via an LF filter and made available at a separate pin for use by the system μProcessor

Unique to the FX816/826/836 cellular audio processors is the ability to route audio (Tx or Rx) to an external Voice Store and Retrieve (VSR) device such as the FX802 or FX812 thus providing the radio system with a voice answering and announcement facility using external DRAM.

The FX836, a low-power CMOS device, which reduces the amount of microcircuits and components required in a cellular audio system by providing more functions on a single chip, is available in 28-pin plastic small outline (S.O.I.C.) surface mount and cerdip DIL packages.

FX836 - Brief Specification

Function	R2000 System Audio Processor	
Supply Voltage Range	4.5 to 5.5 volts	
Supply Current	(5.0V) 10.0 mA typical	
Powersave Current	(5.0V) 0.6mA typical	
Duplex	Full	
Control	Clocked Serial Data	
Facilities	Voiceband Filtering	Pre and De-Emphasis
	50 Baud LF Data Path	Deviation Limiting
	DTMF and FFSK Compatibility	Gain/Attenuation Level Setting
	VSR Codec, Store and Replay Compatibility	
Xtal/Clock Frequency	4.032 MHz	
Package Styles	28-pin plastic S.O.I.C. (FX836DW);	
	28-pin cerdip DIL (FX836J)	
Maximum PCB Area	192.1 sq. mm (FX836DW); 640 sq. mm (FX836J)	



Package Styles Available

FX836DW 28-pin plastic S.O.I.C. (D1)

FX836J 28-pin cerdip DIL (J5)

Full details of this product are available from CML or its distributors