
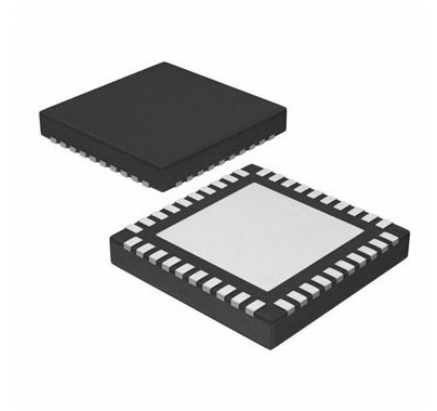


AFE General Purpose 1 ADC 22bit 40-Pin VQFN EP T/R

Manufacturer:	Texas Instruments, Inc
Package/Case:	VQFN40
Product Type:	Data Conversion ICs
RoHS:	RoHS Compliant/Lead free 
Lifecycle:	Active



Images are for reference only

[Inquiry](#)

General Description

The AFE4400 is a fully-integrated analog front-end (AFE) ideally suited for pulse oximeter applications. The device consists of a low-noise receiver channel with an integrated analog-to-digital converter (ADC), an LED transmit section, and diagnostics for sensor and LED fault detection. The device is a very configurable timing controller. This flexibility enables the user to have complete control of the device timing characteristics. To ease clocking requirements and provide a low-jitter clock to the AFE4400, an oscillator is also integrated that functions from an external crystal. The device communicates to an external microcontroller or host processor using an SPI interface.

The device is a complete AFE solution packaged in a single, compact VQFN-40 package (6 mm × 6 mm) and is specified over the operating temperature range of 0°C to 70°C.

Key Features

Fully-Integrated Analog Front-End for Pulse Oximeter Applications:
Flexible Pulse Sequencing and Timing Control

Transmit:
Integrated LED Driver (H-Bridge, Push, or Pull)

Dynamic Range: 95 dB

LED Current:
Programmable to 50 mA with 8-Bit Current Resolution

Low Power:
100 μ A + Average LED Current

Programmable LED On-Time

Independent LED2 and LED1 Current Reference

Receive Channel with High Dynamic Range:
13 Noise-Free Bits

Low Power: < 670 μ A at 3.3-V Supply

Integrated Digital Ambient Estimation and Subtraction

Flexible Receive Sample Time

Flexible Transimpedance Amplifier with Programmable LED Settings

Integrated Fault Diagnostics:
Photodiode and LED Open and Short Detection

Cable On and Off Detection

Supplies:
Rx = 2.0 V to 3.6 V

Tx = 3.0 V to 5.25 V

Package: Compact VQFN-40 (6 mm \times 6 mm)

Specified Temperature Range: 0°C to 70°C

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Recommended For You

AFE5807ZCF

Texas Instruments, Inc

BGA

AFE1205E

Texas Instruments, Inc

XX

AFE1104E

Texas Instruments, Inc

SSOP

AFE2124E

Texas Instruments, Inc
SSOP48

AFE4300PNR

Texas Instruments, Inc
LQFP80

AFE1103E

Texas Instruments, Inc
SSOP

AFE5818ZBV

Texas Instruments, Inc
BGA

AFE4403YZPT

Texas Instruments, Inc
DSBGA36

AFE4403YZPR

Texas Instruments, Inc
DSBGA36

AFE4404YZPR

Texas Instruments, Inc
DSBGA15

AFE4490RHAT

Texas Instruments, Inc
QFN

AFE4405YZR

Texas Instruments, Inc
DSBGA

AFE4404YZPT

Texas Instruments, Inc
DSBGA15

AFE5808AZCF

Texas Instruments, Inc
BGA

AFE5812ZCF

Texas Instruments, Inc
BGA135