c-Link Systems, Inc.

cLS-FSTS-IMU

Inertial Measurement Unit

Product Brief—Revision A   15 October 2010

System Highlights

- Conforms Freescale Semiconductor 's Tower system

- Jumper configurable

- 3-Axis Accelerometer (MMA7331)

- 3-Axis Gyro configuration

- Magnetic Compass (MAG3110)

- IIC inter-tower communications

- Jumper selectable output interrupt request

Description

The cLS-FSTS-IMU is a system level card for robotic or vehicle work. The board contains an X-Y-Z axis accelerometers, X-Y-Z gyros and a magnetic sensing compass. The board is connected via a jumper selection group to the Tower System with a selectable interrupt output service request. The FSTS-IMU board is a sensor only and requires a form of processing or interpretation added to the Tower System.
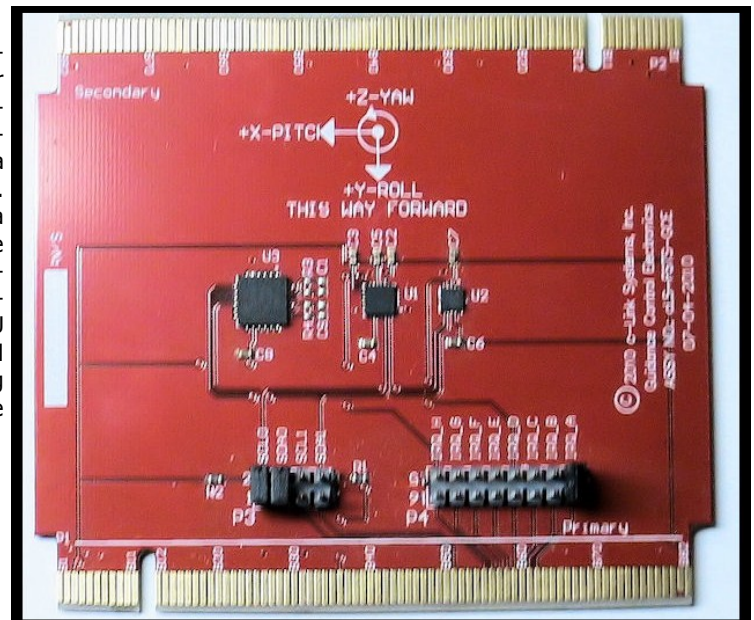
Accelerometer Features:

Selectable sensitivity (±4g, ±12g)
Low current consumption—400µA
Fast Turn On
Self-test

Gyroscope Features:

Motion sensing ±100°/s
Low current consumption
Self-test

Magnetic Compass Features:

Dynamic Range: 1,000µT
Sample Rate: 80Hz max.
Noise: 0.14µT ms

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Corporate Brief

For the past seven years c-Link Systems, Inc. has focused on industrial control/automation of process lines in metal rolling and paper mills. Out of this emerged our expertise in Industrial Robotics and high speed fiber optic communications. A previous background in mechanics, dynamics and satellite guidance systems has positioned the company to support our customers in the growing field of robotics as it relates to autonomous robotic vehicles (ARV) with numerous commercial/industrial applications.—SEA

Omni-Chassis Information

SPECIFICATIONS

Interface:

Selectable as required to conform to Tower System.
IIC or SPI

Physical Characteristics:

Freescale Tower System format .

Power Requirements:

Supply Voltage (Typical)	3.3V (3.0V—3.6V)
Current (typical)	TBA

Environmental Characteristics:

Operating Temperature: -20°C to 90°C

Storage Temperature: -40°C to 105°C

Relative Humidity: 0 to 90% non-Condensing

Model Numbers

cLS-FSTS-GCE-128: Guidance board w/128KB MCU

cLS-FSTS-GCE-96: Guidance board w/96KB MCU