The World's First E-Field-Based 3D Gesture Controller

MGC3130 with GestIC® Technology Colibri Suite

Introduction

The design of the User Interface (UI) plays a crucial role in a consumer's buying decision.

Over 40 years ago, the mouse revolutionized the way in which humans communicated with the PC. Fifteen years later, touch technology was introduced to the mass market and continues to dominate the way we interact with our devices.

Microchip has created a solution which marks the next breakthrough in UI design: the MGC3130 3D Gesture Controller. By introducing the world's first chip to use E-field sensing for free-space input control, Microchip is conquering the third dimension in user interface design.

The Third Dimension in User Interface Design

Based on Microchip's patented GestIC Technology, the MGC3130 is a three-dimensional gesture recognition and position tracking controller that enables user command input with natural hand and finger movements in free-space.

Implemented as a low-power mixed-signal chip, the MGC3130 offers a rich set of smart functional features. The on-board digital signal processing unit takes care of the x/y/z tracking, the gesture recognition and the low-power approach detection using the features of the GestIC Technology Colibri Suite.

GestIC Technology Embedded

The MGC3130 delivers direct and immediately usable results. Gestures, x/y/z positions and approach are detected on chip. A single chip solution for the next generation of user interface, the MGC3130 successfully enables embedded gesture-based UI applications.

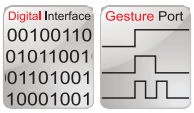
The integrated GestIC Technology Colibri Suite of gesture recognition, hand position control and approach detection algorithms minimizes software development for a faster time-to-revenue. The chip's inherently low power consumption combined with advanced power modes enables always-on 3D sensing even for battery driven, mobile devices. No compromises are needed to integrate gestures into your user interface.

GestIC Technology: Sensing Method

The MGC3130 utilizes thin sensing electrodes made of any conductive material that allows an invisible integration behind the device's housing. Even the reuse of existing conductive structures—such as a display's ITO coating—is feasible, making the MGC3130 a very cost effective system solution overall.

GestIC Technology Colibri Suite

MGC3130 Interfaces



MGC3130 Features

- 0 (touch) to 15 cm detection range
- No detection blind spots
- 150 dpi resolution
- Super low-noise analog front end
- Automated frequency hopping against noise
- Auto-calibration
- Power modes
  - Processing operation: 20 mA @ 3.3V
  - Auto wake-up on approach: 70 µA @ 3.3V
  - Sleep mode: 9 µA @ 3.3V
- 32-bit digital signal processing unit
- Fast data sampling and updating at 200 Hz
- Field upgradable
- 100 kHz frequency range, no RF interference
- Digital interface: I²C™ and concurrently Gesture Port
- GestIC Technology Colibri Suite on-chip

Initial MGC3130 Applications

- Windows® 8 Control
  - Notebooks/keyboards/peripherals
- Audio products/docking stations
- Electronic readers
- Air conditioning user interface
- Game controllers

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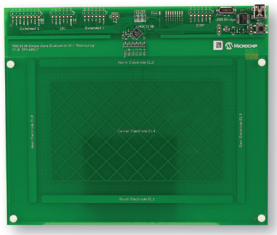
Evaluation Tools

Get started with easy-to-use tools from Microchip.

Sabrewing Evaluation Tool (DM160217)



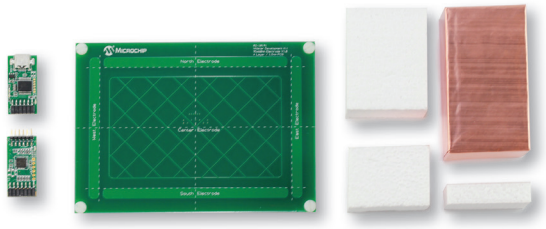
A complete solution for exploring the low-cost, high-performance MGC3130. Evaluation of the MGC3130 3D Gesture Controller's next-generation UI includes sensor output data display, visualization of real-time positional data, gesture recognition and auto wake-up.

Features:

- 7" GestIC Technology electrodes
- On-board MGC3130 (GestIC Technology Colibri Suite)
- On-board USB communication
- USB powered
- Microchip's AUREA Graphical User Interface (GUI) for Windows 7 and Windows 8

The AUREA GUI provides full control of the MGC3130's parameters and settings making it easy to update and save parameters.

Hillstar Development Kit (DM160218)



A complete modular solution for designing in the low-cost, high-performance MGC3130. System paramertization is guided by Microchip's AUREA design in software (GUI).

Features:

- 5" electrode and variety of electrode reference designs
- GestIC Technology electrode design guide
- MGC3130 unit (GestIC Technology Colibri Suite)
- I²C™/USB bridge (USB powered)
- GestIC Technology library manual
- I²C interface reference code
- Microchip's AUREA Graphical User Interface (GUI) for Windows 7 and Windows 8
- AUREA manual
- SDK for Windows 7 and Windows 8

The AUREA GUI provides full control of the MGC3130's parameters and settings, makeing it easy to update and save parameters. The AUREA also provides out-of-the-box MGC3130 3D Gesture Controller sensor output data display, visualization of real-time positional data gesture recognition and auto wake-up.

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www.microchip.com/GestIC

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