MGC3030/3130

GestIC® Technology Quick Start Guide

1.0 INTRODUCTION

MGC3030/3130 is Microchip's first generation of 3D gesture controllers. This document provides information about the comprehensive but easy-to-use development tools and technical information. Microchip also offers post-design support through our industry leading global sales and distribution network.

To kickstart the user's understanding, the product brief provides an overview and describes the main features of the MGC3030/3130.

The MGC3030/3130 data sheet lists performance and other technical characteristics of the MGC3030/3130 and is the reference for all GestIC® Technology based designs.

To enable short development cycles, Microchip provides a complete set of tools to implement 3D gesture user interfaces based on the MGC3030/3130. Available are: development kit, reference firmware, software, documentation, design guides, reference designs. The Microchip resources described in the following sections are available on the Microchip web site.

2.0 DEVELOPMENT TOOLS

2.1 MGC3130 Single-Zone Development Kit Hillstar

The Hillstar kit is a complete modular solution for designing a low-cost, high-performance MGC3130 gesture recognition/position tracking system. Parameterization is guided by Microchip's Aurea design in software (GUI).

2.1.1 HILLSTAR KIT 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
- SDK for Windows 7 and Windows 8

The Aurea GUI provides full control of the parameters of the MGC3130, making it easy to update and save them.

Aurea provides an out-of-the-box MGC3130 3D Gesture Controller sensor output data display, allowing visualization of 3D, real-time positional data and offers gesture recognition and auto-wake-up.

2.2 MGC3030 Development Kit Woodstar

The Woodstar kit supports the design-in of MGC3030. Thus, it includes the MGC3030 unit and does not support the parameterization of position tracking.

All other package contents, interfaces and software support is identical to Hillstar.

3.0 SOFTWARE

3.1 Aurea Software Package

The package contains Aurea GUI software, GestIC library (FW for MGC3030/3130, providing all features) and Windows 7/8 communication drivers.

3.2 MGC3030/3130 Software Development Kit (SDK)

The package contains the GestIC API. This library is the reference implementation of an abstract interface for communication with the MGC3030/3130. It consists of an API library and examples of how to use the SDK.

The API library is provided as C source code, allowing easy integration into embedded applications as well as in PC software applications. The API is also offered as a statically-linked and dynamically-linked library (DLL) for seamless integration in the user's software. The API is fully documented using .html help format.

3.3 MGC3030/3130 PIC18F14K50 Host Reference Code

This package contains the reference code for use on the PIC18F14K50, providing I²C code and message decoding. To get started, please open the MPLAB® X project and use the Documentation folder.

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4.0   DOCUMENTATION

4.1   MGC3030/3130 Product Brief

4.1.1   MGC3130 SINGLE-ZONE 3D TRACKING AND GESTURE CONTROLLER PRODUCT BRIEF (DS40001662)

The product brief provides an overview of the MGC3130 3D Tracking and Gesture Controller features and specifications.

4.1.2   MGC3030 3D GESTURE CONTROLLER PRODUCT BRIEF (DS40001781)

The product brief provides an overview of the MGC3030 3D Gesture Controller features and specifications.

4.2   Data Sheet

4.2.1   MGC3030/3130 3D GESTURE CONTROLLER DATA SHEET (DS40001667)

The data sheet provides detailed information regarding the MGC3030/3130 3D Tracking and Gesture Controller.

4.3   GestIC® Guides

4.3.1   GestIC® DESIGN GUIDE (DS40001716)

The design guide describes the GestIC technology system characteristics and the design process. It allows the generation of customized electrode designs and the parameterization of the MGC3030/3130. The design guide is fundamental for the GestIC design-in process.

4.3.2   MGC3030/3130 GestIC® LIBRARY INTERFACE DESCRIPTION USER'S GUIDE (DS40001718)

This user's guide describes the I^2C interface of the MGC3030/3130 GestIC Library. It includes the description of the I^2C interface, the message format and the complete message reference to control and operation of the MGC3030/3130 system. The Interface guide is fundamental for all embedded GestIC solutions.

4.3.3   AUREA GRAPHICAL USER INTERFACE USER'S GUIDE (DS40001681)

The Aurea guide describes the installation and use of Aurea. Microchip's Aurea is a Windows-based GUI, the central tool for designing in the MGC3030/3130. Aurea configures and parameterizes the MGC3030/3130 and allows out-of-the-box demonstration and evaluation of Microchip's MGC3030/3130 3D Tracking and Gesture Controller.

4.3.4   MGC3130 HILLSTAR DEVELOPMENT KIT USER'S GUIDE (DS40001721)

This document describes the Hillstar Development Kit. Hillstar allows easy and guided design-in of Microchip's MGC3130 3D Tracking and Gesture Controller into the user's applications.

4.3.5   MGC3030 WOODSTAR DEVELOPMENT KIT USER'S GUIDE (DS40001777)

This document describes the MGC3030 Development Kit Woodstar. As Hillstar, the Woodstar Kit enables easy and guided design-in for Microchip's MGC3030 3D Gesture Controller.

4.4   Schematics

4.4.1   GestIC HARDWARE REFERENCES

The package provides the Gerber files for Hillstar/Woodstar boards and reference electrodes:

- 2-layer GestIC Electrode Reference Designs
- 4-layer GestIC Electrode Reference Designs
- GestIC Electrode Designs with backside mounted components

5.0   SUMMARY

With MGC3030/3130 documentation and software package, design-in is easily accomplished in five steps:

- Feature Definition
- Electrode Design
- MGC3030/3130 Parameterization
- Host Application Programming
- Verification

Depending on the design progress and phase, additional recommended documents are listed below in Table 1.

TABLE 1: MGC3030/3130 RESOURCES AND DESIGN STEPS

			MGC3030/3130 Design Steps				
		MGC3030/3130 Resources	**Feature Definition and Evaluation**	**Electrode Design**	**HW Integration and Parameterization**	**Host Application Programming**	**Verification**
Documentation	Product Brief	MGC3130 Single-Zone 3D Gesture Controller Product Brief	✓				
	Data Sheet	MGC3030/3130 3D Gesture Controller Data Sheet		✓	✓	✓	✓
	User's Guides	GestIC® Design Guide		✓	✓		✓
		MGC3030/3130 GestIC® Library Interface Description User's Guide				✓	✓
		Aurea Graphical User Interface User's Guide	✓	✓	✓	✓	✓
		MGC3030 Woodstar Development Kit User's Guide	✓				
		MGC3130 Hillstar Development Kit User's Guide	✓	✓	✓	✓	✓
	Schematics	GestIC® Hardware References		✓	✓		✓
Development Tools	Software	MGC3030/3130 Software Development kit (SDK)				✓(1)	✓
		Aurea Software Package	✓	✓	✓	✓	✓
		MGC3030/3130 PIC18F14K50 Host Reference Code				✓(2)	
	Development Tools	MGC3030 Development Kit Woodstar	✓				
		MGC3130 Single-Zone Development Kit Hillstar	✓	✓	✓	✓	✓

Note 1: The MGC3030/3130 Software Development Kit (SDK) is needed when the Host application program is based on the GestIC® API.
2: The MGC3030/3130 PIC18F14K50 Host Reference Code is needed when the Host application is using a PIC18F14K50 microcontroller.

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