
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.

MGC3030/3130

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 I²C interface of the MGC3030/3130 GestIC Library. It includes the description of the I²C 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 Resources		MGC3030/3130 Design Steps					
		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		✓	✓		✓
	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.
Note 2: The MGC3030/3130 PIC18F14K50 Host Reference Code is needed when the Host application is using a PIC18F14K50 microcontroller.

Note the following details of the code protection feature on Microchip devices:

- Microchip products meet the specification contained in their particular Microchip Data Sheet.
- Microchip believes that its family of products is one of the most secure families of its kind on the market today, when used in the intended manner and under normal conditions.
- There are dishonest and possibly illegal methods used to breach the code protection feature. All of these methods, to our knowledge, require using the Microchip products in a manner outside the operating specifications contained in Microchip's Data Sheets. Most likely, the person doing so is engaged in theft of intellectual property.
- Microchip is willing to work with the customer who is concerned about the integrity of their code.
- Neither Microchip nor any other semiconductor manufacturer can guarantee the security of their code. Code protection does not mean that we are guaranteeing the product as "unbreakable."

Code protection is constantly evolving. We at Microchip are committed to continuously improving the code protection features of our products. Attempts to break Microchip's code protection feature may be a violation of the Digital Millennium Copyright Act. If such acts allow unauthorized access to your software or other copyrighted work, you may have a right to sue for relief under that Act.

Information contained in this publication regarding device applications and the like is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that your application meets with your specifications. MICROCHIP MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION, INCLUDING BUT NOT LIMITED TO ITS CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE. Microchip disclaims all liability arising from this information and its use. Use of Microchip devices in life support and/or safety applications is entirely at the buyer's risk, and the buyer agrees to defend, indemnify and hold harmless Microchip from any and all damages, claims, suits, or expenses resulting from such use. No licenses are conveyed, implicitly or otherwise, under any Microchip intellectual property rights.

Trademarks

The Microchip name and logo, the Microchip logo, dsPIC, FlashFlex, flexPWR, JukeBlox, KEELOQ, KEELOQ logo, Klear, LANCheck, MediaLB, MOST, MOST logo, MPLAB, OptoLyzer, PIC, PICSTART, PIC³² logo, RightTouch, SpyNIC, SST, SST Logo, SuperFlash and UNI/O are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

The Embedded Control Solutions Company and mTouch are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Analog-for-the-Digital Age, BodyCom, chipKIT, chipKIT logo, CodeGuard, dsPICDEM, dsPICDEM.net, ECAN, In-Circuit Serial Programming, ICSP, Inter-Chip Connectivity, KlearNet, KlearNet logo, MiWi, MPASM, MPF, MPLAB Certified logo, MPLIB, MPLINK, MultiTRAK, NetDetach, Omniscient Code Generation, PICDEM, PICDEM.net, PICkit, PICtail, RightTouch logo, REAL ICE, SQI, Serial Quad I/O, Total Endurance, TSHARC, USBCheck, VariSense, ViewSpan, WiperLock, Wireless DNA, and ZENA are trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

SQTP is a service mark of Microchip Technology Incorporated in the U.S.A.

Silicon Storage Technology is a registered trademark of Microchip Technology Inc. in other countries.

GestIC is a registered trademarks of Microchip Technology Germany II GmbH & Co. KG, a subsidiary of Microchip Technology Inc., in other countries.

All other trademarks mentioned herein are property of their respective companies.

© 2013-2015, Microchip Technology Incorporated, Printed in the U.S.A., All Rights Reserved.

ISBN: 978-1-63276-970-1

QUALITY MANAGEMENT SYSTEM
CERTIFIED BY DNV
== ISO/TS 16949 ==

Microchip received ISO/TS-16949:2009 certification for its worldwide headquarters, design and wafer fabrication facilities in Chandler and Tempe, Arizona; Gresham, Oregon and design centers in California and India. The Company's quality system processes and procedures are for its PIC® MCUs and dsPIC® DSCs, KEELOQ® code hopping devices, Serial EEPROMs, microperipherals, nonvolatile memory and analog products. In addition, Microchip's quality system for the design and manufacture of development systems is ISO 9001:2000 certified.



MICROCHIP

Worldwide Sales and Service

AMERICAS

Corporate Office
2355 West Chandler Blvd.
Chandler, AZ 85224-6199
Tel: 480-792-7200
Fax: 480-792-7277
Technical Support:
<http://www.microchip.com/support>
Web Address:
www.microchip.com

Atlanta
Duluth, GA
Tel: 678-957-9614
Fax: 678-957-1455

Austin, TX
Tel: 512-257-3370

Boston
Westborough, MA
Tel: 774-760-0087
Fax: 774-760-0088

Chicago
Itasca, IL
Tel: 630-285-0071
Fax: 630-285-0075

Cleveland
Independence, OH
Tel: 216-447-0464
Fax: 216-447-0643

Dallas
Addison, TX
Tel: 972-818-7423
Fax: 972-818-2924

Detroit
Novi, MI
Tel: 248-848-4000

Houston, TX
Tel: 281-894-5983

Indianapolis
Noblesville, IN
Tel: 317-773-8323
Fax: 317-773-5453

Los Angeles
Mission Viejo, CA
Tel: 949-462-9523
Fax: 949-462-9608

New York, NY
Tel: 631-435-6000

San Jose, CA
Tel: 408-735-9110

Canada - Toronto
Tel: 905-673-0699
Fax: 905-673-6509

ASIA/PACIFIC

Asia Pacific Office
Suites 3707-14, 37th Floor
Tower 6, The Gateway
Harbour City, Kowloon
Hong Kong
Tel: 852-2943-5100
Fax: 852-2401-3431

Australia - Sydney
Tel: 61-2-9868-6733
Fax: 61-2-9868-6755

China - Beijing
Tel: 86-10-8569-7000
Fax: 86-10-8528-2104

China - Chengdu
Tel: 86-28-8665-5511
Fax: 86-28-8665-7889

China - Chongqing
Tel: 86-23-8980-9588
Fax: 86-23-8980-9500

China - Hangzhou
Tel: 86-571-8792-8115
Fax: 86-571-8792-8116

China - Hong Kong SAR
Tel: 852-2943-5100
Fax: 852-2401-3431

China - Nanjing
Tel: 86-25-8473-2460
Fax: 86-25-8473-2470

China - Qingdao
Tel: 86-532-8502-7355
Fax: 86-532-8502-7205

China - Shanghai
Tel: 86-21-5407-5533
Fax: 86-21-5407-5066

China - Shenyang
Tel: 86-24-2334-2829
Fax: 86-24-2334-2393

China - Shenzhen
Tel: 86-755-8864-2200
Fax: 86-755-8203-1760

China - Wuhan
Tel: 86-27-5980-5300
Fax: 86-27-5980-5118

China - Xian
Tel: 86-29-8833-7252
Fax: 86-29-8833-7256

China - Xiamen
Tel: 86-592-2388138
Fax: 86-592-2388130

China - Zhuhai
Tel: 86-756-3210040
Fax: 86-756-3210049

ASIA/PACIFIC

India - Bangalore
Tel: 91-80-3090-4444
Fax: 91-80-3090-4123

India - New Delhi
Tel: 91-11-4160-8631
Fax: 91-11-4160-8632

India - Pune
Tel: 91-20-3019-1500

Japan - Osaka
Tel: 81-6-6152-7160
Fax: 81-6-6152-9310

Japan - Tokyo
Tel: 81-3-6880-3770
Fax: 81-3-6880-3771

Korea - Daegu
Tel: 82-53-744-4301
Fax: 82-53-744-4302

Korea - Seoul
Tel: 82-2-554-7200
Fax: 82-2-558-5932 or
82-2-558-5934

Malaysia - Kuala Lumpur
Tel: 60-3-6201-9857
Fax: 60-3-6201-9859

Malaysia - Penang
Tel: 60-4-227-8870
Fax: 60-4-227-4068

Philippines - Manila
Tel: 63-2-634-9065
Fax: 63-2-634-9069

Singapore
Tel: 65-6334-8870
Fax: 65-6334-8850

Taiwan - Hsin Chu
Tel: 886-3-5778-366
Fax: 886-3-5770-955

Taiwan - Kaohsiung
Tel: 886-7-213-7830

Taiwan - Taipei
Tel: 886-2-2508-8600
Fax: 886-2-2508-0102

Thailand - Bangkok
Tel: 66-2-694-1351
Fax: 66-2-694-1350

EUROPE

Austria - Wels
Tel: 43-7242-2244-39
Fax: 43-7242-2244-393

Denmark - Copenhagen
Tel: 45-4450-2828
Fax: 45-4485-2829

France - Paris
Tel: 33-1-69-53-63-20
Fax: 33-1-69-30-90-79

Germany - Dusseldorf
Tel: 49-2129-3766400

Germany - Munich
Tel: 49-89-627-144-0
Fax: 49-89-627-144-44

Germany - Pforzheim
Tel: 49-7231-424750

Italy - Milan
Tel: 39-0331-742611
Fax: 39-0331-466781

Italy - Venice
Tel: 39-049-7625286

Netherlands - Drunen
Tel: 31-416-690399
Fax: 31-416-690340

Poland - Warsaw
Tel: 48-22-3325737

Spain - Madrid
Tel: 34-91-708-08-90
Fax: 34-91-708-08-91

Sweden - Stockholm
Tel: 46-8-5090-4654

UK - Wokingham
Tel: 44-118-921-5800
Fax: 44-118-921-5820

03/25/14