

IGLOO Icicle Evaluation Kit Quickstart Card

Kit Contents – AGL-ICICLE-KIT

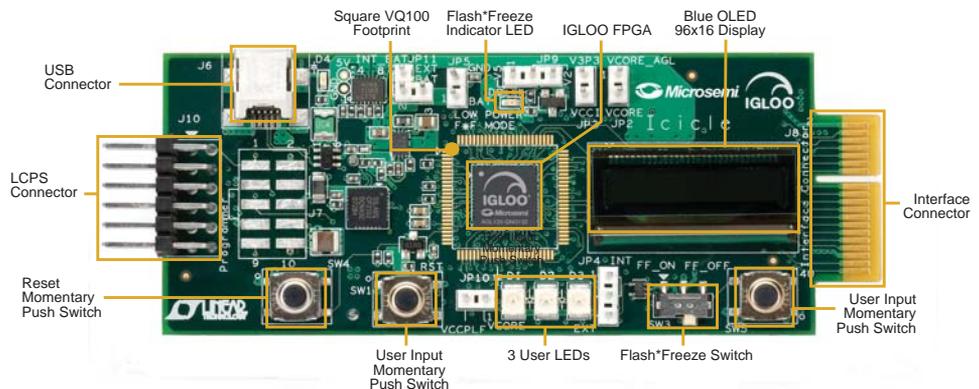
Quantity	Description
1	IGLOO [®] Icicle Evaluation Board with an AGL125-QNG132 low power FPGA
1	Low-cost programming stick (LCPS)
2	USB 2.0 A to mini-B cable

Note: Compatible with Lithium Ion Battery (part number: LIR2450 3.6 V).

Overview

Microsemi's IGLOO Icicle Evaluation Kit, based on the 5 μ W IGLOO FPGA, is a low-cost, portable, low power demonstration platform powered by USB cable or rechargeable lithium ion battery. The Icicle evaluation board enables you to measure power consumption (dynamic, static, and Flash*Freeze) with the core operating at either 1.2 V or 1.5 V.

The Flash*Freeze technology used in IGLOO FPGAs enables entering and exiting an ultra-low power mode that consumes as little as 5 μ W (on AGL030) while retaining SRAM and register data. Flash*Freeze technology simplifies power management through I/O and clock management, with rapid recovery to operation mode. The IGLOO Icicle Evaluation Kit is ideal for testing the operation of signals, device interactions, and system functions during Flash*Freeze mode.



Jumpers Settings, Programming, and Debug

Prior to powering up the AGL-ICICLE-KIT for the first time, make sure the jumpers are in the following positions:

Table 1 · Default Jumper Settings and Current Measurement

Jumper	Default Position	Comment
JP2	1-2	Power for VCC, current measurement okay
JP3	1-2	3.3 V power for VCCI, current measurement okay
JP4	2-3	Flash*Freeze signal from SW3; position (1, 2) is for internal Flash*Freeze signal (mode 2)
JP5	Empty	External power source can be applied.
JP9	2-3	VCC is 1.2 V except in programming; position (1, 2) fixes VCC
JP10	1-2	Applies power to VCCPLF
JP11	1-2	Vertical orientation for battery and USB power

Note: Do not connect a DMM across pins (1, 2) of JP11 for current measurement because the USB change-over circuit is sensitive to inductance. Connect an external 5 V supply to JP5 and measure current across (2, 3) for board power.

Table 2 · User Peripherals

Peripheral	Comment	AGL125 I/O Name	Pin on QN132	Pin on VQ100
D1	LED	IO96RSB1	A17	33
D2	LED	IO95RSB1	B16	34
D3	LED	IO94RSV1	A18	35
SW1	Reset Switch	GAA2/IO67RSB1	C1	2
Clock	20 MHz	GFB0/IO123RSB1	A7	11
Flash*Freeze	SW3 and JP4	FF/GEB2/IO105RSB1	B12	27

Note: For other peripherals and details on the interface card, see the User Guide

Running the Demo Design

The IGLOO Icicle Evaluation kit comes with a demo design preloaded. Upon power-up, the display will default to a random pattern. Do the following in order to display the message associated with the default design shipped with the Icicle kit:

1. Press SW1 to reset the board.
2. Press SW5 to enable and initialize the display.
3. “ACTEL IGLOO” is displayed.

Note: If the message is not displayed or flickers, the board may have a manufacturing test design installed. In this case, reprogram the board with the STAPL file included on the IGLOO Icicle Kit CD.

To have the display scroll continuously:

1. Press SW5 again. Subsequent presses of SW5 will have no effect on the display.
2. Pressing SW1 will reset the board and freeze the message.

If Flash*Freeze mode is enabled while the display is active, the display retains its current state. The FPGA will no longer be driving the display. The data has already been written to the OLED assembly and the display will continue to show the same message. Once out of Flash*Freeze mode, the display will also retain its current state and function as described above.

1. In Flash*Freeze mode, the Current Sense LED will turn on to show Low Current Mode.
2. The LED counter design will stop and restart from the same count when it comes out of Flash*Freeze mode.

If the board is not preprogrammed, the programming file and the source files for the demo are provided on the IGLOO Icicle Evaluation Kit page. The design file for the demo is provided standalone as a zip file under the *IGLOO Icicle Evaluation Kit User's Guide*.

http://www.microsemi.com/soc/products/hardware/devkits_boards/igloo_icicle.aspx

Software and Licensing

The IGLOO Icicle Evaluation Kit is supported by Libero® System-on-Chip (SoC) software v10.0 or later, which includes a web install option. SoftConsole Software IDE and FlashPro are enabled by default in the web install; these software tools can be used for software design and debug. Refer to the *IGLOO Icicle Evaluation Kit User's Guide* for more information.

Software releases: www.microsemi.com/soc/download/software/libero

Libero SoC v10.0 requires a valid Gold, Platinum, or Standalone Libero license.



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If you need a new license, select FREE Libero Gold license and request a new one from your Microsemi Customer Portal account. This license supports all tools for designing with the IGLOO Icicle family and associated development kits.

License updates: www.actel.com/Portal/default.aspx?r=1

Documentation Resources

For further kit information, including user's guide, tutorial, and full design examples, refer to the IGLOO Icicle Evaluation Kit page:

Documentation: www.microsemi.com/soc/products/hardware/devkits_boards/igloo_icicle.aspx

As new demos and tutorials become available, they will be posted on the IGLOO Icicle Evaluation Kit page. Microsemi recommends that you sign up for product updates to be notified when new material is available. You can sign up for product updates from your Microsemi Customer Portal account.

Product updates: www.actel.com/portal/default.aspx?r=2

Technical Support and Contacts

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