

# UG301: Si5332-12EX-EVB User's Guide

The Si5332-12EX-EVB is used for evaluating the Si5332 Low Jitter Any-Frequency Clock Generator. The Si5332 uses the patented Multisynth<sup>™</sup> technology to generate up to twelve independent clock frequencies each with 0 ppm synthesis error. The Si5332-12EX-EVB has three independent

input clocks. The Si5332-12EX-EVB can be controlled and configured using the Clock Builder Pro<sup>™</sup> (CB Pro<sup>™</sup>) software tool.

#### EVB FEATURES

- Powered from USB port or external power supply.
- Onboard 25 MHz XTAL allows free-run mode of operation on the Si5332 or up to 2 input clocks for synchronous clocking.
- CBPro<sup>™</sup> GUI programmable VDD supply allows device to operate from 3.3, 2.5, or 1.8 V.
- CBPro GUI programmable VDDO supplies allow each of the 10 outputs to have its own power supply voltage selectable from 3.3, 2.5, or 1.8 V.
- CBPro GUI-controlled voltage, current, and power measurements of VDD and all VDDO supplies.
- SMA connectors for input and output clocks.



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#### 1. Functional Block Diagram

Below is a functional block diagram of the Si5332-12EX-EVB. This EVB can be connected to a PC via the main USB connector for programming, control and monitoring. See section "2. Quick start" or section "7. Installing CBPro Desktop Software" for more information.



Figure 1.1. Si5332-12EX-EVB Functional Block Diagram

## 2. Si5332 CBPro<sup>™</sup>

The Si5332 is intended to be part of the CBPro software and this initial software release "showcases" that trait. This software contains:

- 1. An EVB GUI that communicates and controls the EVB by allowing the user to set VDD supplies
- 2. The ability to modify frequency plan (from the starting point CBPro file provided with this limited release) from an existing CBPro file.

CB ClockBuilder Pro Wizard - Skyworks	- 🗆 X
<ul> <li>ClockBuilder Pro Wizard</li> <li>We Make Timing Simple</li> </ul>	SKYWORKS
Work With a Design	Quick Links
Create New Project	Skyworks Timing Solutions Knowledge Base
🖶 <u>Open Project</u>	Custom Part Number Lookup
Convert Existing Project/NVM File	Applications Documentation           10/40/100G Line Card Whitepaper
ex Open Sample Project	Clock Generators for Cloud Data Centers Optimizing Si534x Jitter Performance Selecting the Right Clocks for Timing Synchronization
Evaluation Board Detected Si5332-GM2 EVB Open Default Plan EVB GUI	Applications PCIe Gen 4.0 Jitter Requirements Selecting a PCIe Reference Clock Source Making Accurate Clock Jitter Measurements ClockBuilder Pro Documentation
	CBPro Overview CBPro Tools & Support for In-System Programming CLI User's Guide Release Notes
٥,	Version 4.1 Built on 9/22/2021

Figure 2.1. CBPro Start Screen

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#### 3. Si5332-12EX-EVB Schematics

The schematic and layout files are provided in the here: schematics and layouts.

Please review the files, especially the DUT page in order to get familiar with using the EVB through CBPro<sup>™</sup>.

### 4. Si5332 CBPro<sup>™</sup> EVB GUI

The EVB GUI can be used to communicate the part for register access:

The first page shows the board's identity.

CB Si5332-GM2 EVB - Clock	Builder Pro	- 🗆 X									
File Help											
Info DUT Settings Editor	DUT Register Editor Regulators GPIO Status Registers	<ul> <li>Control Registers</li> </ul>									
Board Identification: Board ID Code:	2 (Si5332GM2-QFN-40)	Reset and Modes Active Mode									
Board SN:	00-00-1F-52-5C-12	Ready Mode									
DUT ID Registers:		Reset									
DEVICE_PN_BASE	Si5332										
DEVICE_REV:	D										
DEVICE_PACKAGE	QFN_40										
DEVICE_GRADE	A										
OPN_ID	00005										
OPN_REVISION	0										
DESIGN_ID	zeroA										
TOOL_VERSION	ClockBuilderPro v4.1.1.15	Ū.									
Log Filtered 💽 Auto Scr	ili: On 💽 Insert Marker Clear Copy to Clipboard (	Pause									
Timestamp Source	Message										
15:12:49.272 EVB	Starting Read_Voltage_Level(regulator=VDDO_D)	<b>A</b>									
15:12:49.280 EVB	Finished Read_Voltage_Level(regulator=VDDO_D) => V3P30										
15:12:49.280 EVB	Starting Read_Voltage_Level(regulator=VDDO_E)										
15:12:49.287 EVB	Finished Read_Voltage_Level(regulator=VDDO_E) => V3P30	•									
i5332QFN-40		ClockBuilder Pro v4.1 [2021-09-2									

Figure 4.1. Board ID Page

The other pages are for register access, VDD control, and GPIO control.

CB Si5332-GM2 EVB - ClockBuilder Pro	- 🗆 X
File Help	
Info DUT Settings Editor DUT Register Editor Regulators GPIO Status Registers	Control Registers
Register Peek/Poke         Hex       Decimal         Address: $0x021$ $33$ # Bytes:       1       Read       Write         Hex: $0x6A$ Unsigned Int: $106$ Binary:       0       1       0       1 $0$ (binary edit is only supported with 16 bits or less)	Reset and Modes Active Mode Ready Mode Reset
Log	
Filtered 🔽 Auto Scroll: On 🔽 Insert Marker Clear Copy to Clipboard	
Timestamp Source Message	
15:17:20.124 EVB Starting Read_DUT_Byte(address=0x21)	
15:17:20.128 EVB Finished Read_DUT_Byte(address=0x21) => 0x6A	
15:17:36.383 EVB Starting Read_DUT_Bytes(address=0x21, num_bytes=1)	
15:17:36.402 EVB Finished Read_DUT_Bytes(address=0x21, num_bytes=1) => 0x6A	
Si5332QFN-40 C	ClockBuilder Pro v4.1 [2021-09-22]

Figure 4.2. Register Access

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### 5. Installing ClockBuilderPro (CBPro) Desktop Software

To install the CBOPro software on any Windows 7 (or above) PC:

Download the ClockBuilderPro software. Both installation instructions and User's Guide for ClockBuilderPro can be found at this link. Please follow the instructions as indicated.

## SKYWORKS

## **ClockBuilder Pro**

Customize Skyworks clock generators, jitter attenuators and network synchronizers with a single tool. With CBPro you can control evaluation boards, access documentation, request a custom part number, export for in-system programming and more!

www.skyworksinc.com/CBPro



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Portfolio www.skyworksinc.com/ia/timing

www.skyworksinc.com/CBPro



Quality www.skyworksinc.com/quality



Support & Resources www.skyworksinc.com/support

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