

UG300: Si5332-8EX-EVB User's Guide

The Si5332-8EX-EVB is used for evaluating the Si5332 Low Jitter Any-Frequency Clock Generator. The Si5332 uses the patented MultisynthTM technology to generate up to twelve independent clock frequencies each with 0 ppm synthesis error. The Si5332-8EX-EVB has three independent input clocks. The Si5332-8EX-EVB can be controlled and configured using the Clock Builder Pro[™] (CB Pro[™]) 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[™] 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 Si5332-8EX-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.

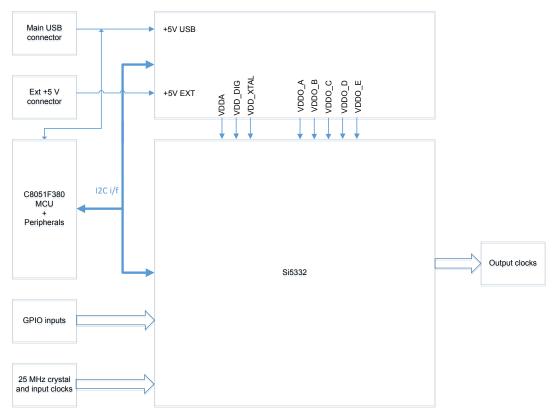


Figure 1.1. Si5332-8EX-EVB Functional Block Diagram

2. Si5332 CBPro[™]

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
 ClockBuilder Pro Wizard We Make Timing Simple 	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 <u>Open Sample Project</u>	Clock Generators for Cloud Data Centers Optimizing Si534x Jitter Performance
Evaluation Board Detected Si5332-GM2 EVB Open Default Plan EVB GUI	Selecting the Right Clocks for Timing Synchronization Applications PCle Gen 4.0 Jitter Requirements Selecting a PCle 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
0,	Version 4.1 Built on 9/22/2021

Figure 2.1. CBPro Start Screen

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3. Si5332-8EX-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[™].

4. Si5332 CBPro[™] 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 - ClockB	uilder Pro	- 🗆 X
File Help		
Info DUT Settings Editor	DUT Register Editor Regulators GPIO Status Registers	 Control Registers
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	U.
Log Filtered 💽 Auto Scrol		
	Message	
15:12:49.272 EVB 15:12:49.280 EVB	Starting Read_Voltage_Level(regulator=VDDO_D) , 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		
Si5332QFN-40		ClockBuilder Pro v4.1 [2021-09-22

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 1 0 (binary edit is only supported with 16 bits or less) 0 0 0	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	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.