AVB-DC Quick Start Guide

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This guide is intended for customers who have purchased the AVB-DC kit based on sliceKIT (XK-SK-AVB-DC). It applies to version 1.0 of the AVB-DC firmware. An AVB-capable Apple Mac running OS X 10.9 Mavericks is required.

1 Obtaining the latest firmware

- 1. Log into xmos.com and access My XMOS ► Reference Designs
- 2. Request access to the XMOS AVB-DC Software Release by clicking the Request Access link under AVB DAISY-CHAIN KIT. An email will be sent to your registered email address when access is granted.
- 3. A *Download* link will appear where the *Request Access* link previously appeared. Click and download the firmware zip.

2 Installing xTIMEcomposer Tools Suite

The AVB-DC software requires xTIMEcomposer version 13.0.0 or greater. It can be downloaded at the following URL

https://www.xmos.com/en/support/downloads/xtimecomposer

3 Importing and building the firmware

To import and build the firmware, open xTIMEcomposer Studio and follow these steps:

- 1. Choose *File* ► *Import*.
- 2. Choose *General* ► *Existing Projects into Workspace* and click **Next**.
- 3. Click **Browse** next to 'Select archive file' and select the firmware .zip file downloaded in section 1.

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- 4. Make sure that all projects are ticked in the Projects list.
- 5. Click Finish.
- 6. Select the app_daisy_chain project in the Project Explorer and click the **Build** icon in the main toolbar.

4 Installing the application onto flash memory

- 1. Connect the xTAG-2 debug adapter (XA-SK-XTAG2) to the first sliceKIT core board.
- 2. Connect the xTAG-2 to the debug adapter.
- 3. Plug the xTAG-2 into your development system via USB.
- 4. Plug in the 12V power adapter and connect it to the sliceKIT core board.
- 5. In xTIMEcomposer, right-click on the binary within the *app_daisy_chain/bin* folder of the project.
- 6. Choose Flash As ► Flash Configurations.
- 7. Double click *xCORE Application* in the left panel.
- 8. Choose *hardware* in *Device options* and select the relevant xTAG-2 adapter.
- 9. Click on Apply if configuration has changed.
- 10. Click on **Flash**. Once completed, disconnect the power from the sliceKIT core board.
- 11. Repeat steps 1 through 8 for the second sliceKIT.

5 Setting up the hardware

Refer to Figure 1 for the correct setup of the I/O sliceCARDs to the sliceKIT core boards.

- 1. The Ethernet sliceCARDs (XA-SK-E100) must be inserted into the slots denoted by the Circle and Square symbols.
- 2. The audio sliceCARD (XA-SK-AUDIO-PLL) must be inserted into the slot denoted by the Triangle symbol.
- 3. Connect the two sliceKITs together using an Ethernet cable between either of the Ethernet ports.
- 4. Connect one of the remaining Ethernet ports to an AVB-capable Apple Mac running OS X 10.9 Mavericks.
- 5. Connect the provided 12V power supplies to the input power jacks of the boards and power them on.





Figure 1: XK-SK-AVB-DC

6 Apple Mac OS X Setup

All Apple Macs with a Thunderbolt port are AVB capable.

To enumerate and stream audio between a Mac and XMOS AVB-DC endpoints:

- 1. Install/upgrade to OS X Mavericks Version >=10.9
- 2. Connect the XMOS AVB daisy chain to the Mac via the Ethernet port or Thunderbolt Ethernet adapter.
- 3. Open the Audio MIDI Setup utility.
- 4. In the menu bar, select *Window* ► *Show Network Device Browser*.

, 🐔	Audio MIDI Setup	Edit	View	Window	Help	
				Hide Au	ж1	
				Show MIDI Window		Ж2
				Show N	etwork Device Browser	ЖЗ
				Close		жw
				Minimiz	e	жM
				Zoom		
				Bring A	ll to Front	
			12 Mar	🗸 Audio 🛛	Devices	

5. XMOS AVB-DC endpoints will enumerate in this list as AVB 4in/4out. Select the checkbox to the left of the entries to connect the devices. Pressing the *Identify*

button will identify the particular device by lighting LED1 and LED2 on the audio sliceCARD.

Sort by Davisa Nama	Network Devic	e Browser	Browser		
Solt by Device Name +		4			
Device	Manufacturer	Model	Capabilities		
AAR				<u></u>	
AVB 4in/4out	XMOS	AVB-DC	M)	Identify	
🗹 AVB 4in/4out	XMOS	AVB-DC	N)	Identify	
	No Device S	elected			

- 6. On successful connection, the devices will appear as Audio Devices in the *Audio MIDI Setup* window.
- 7. The devices can be streamed to individually, aggregated as an 8in/8out device, or treated as a Multi-Output Device. Aggregate or Multi-Output devices can be created in the Audio MIDI Setup window by clicking on the plus in the bottom left corner.

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8. Once created, an Aggregate or Multi-Output device can be configured to use the XMOS AVB-DC endpoints by selecting the 'Use' checkboxes beside the Audio Devices.

00	Audio Devices	
AVB 4in/4out:Audio Unit 0 4 in/ 4 out	Aggregate Device	
AVB 4in/4out:Audio Unit 0	Clock Source: AVB 4in/4out:Audio Unit Sample Rate: 48000.0 Hz	• ?
Built-in Input 2 in/ 0 out	Subdevices: AVB 4in/4out:Audio Unit 0 AVB 4i	n/4out:Audio Unit 0
Built-in Output 0 in/ 2 out	Input Channels:	7 8
Aggregate Device	Output Channels:	7 8
	Use Audio Device	In Out Drift.
	AVB 4in/4out:Audio Unit 0	4 4
	Built-in Input	2 0
	Built-in Output	0 2
+ - 🔆 -	Co	nfigure Speakers

9. To enable audio streaming to/from a device, right click on the device in the left pane and select *Use this device for sound input* and *Use this device for sound output*.

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10. Audio can now be played and recorded via the endpoints.



Note: Volume and sample rate control of AVB audio devices is not currently available via Audio MIDI Setup



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