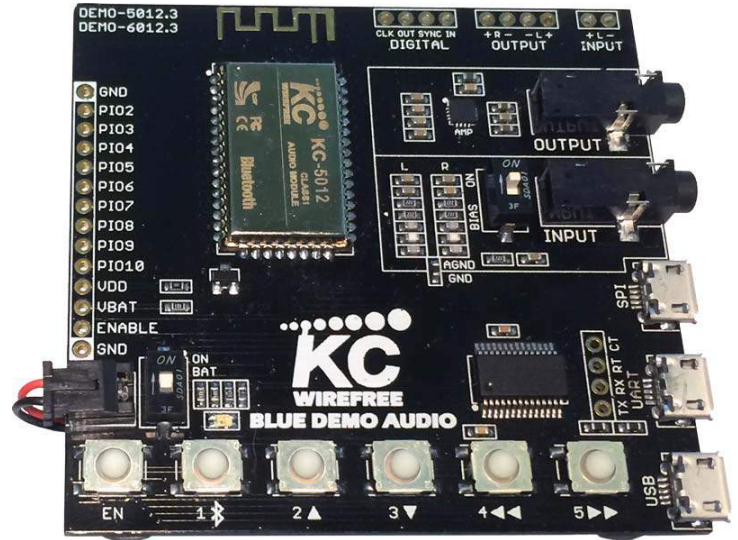


BlueDemo Kit Includes

- BlueDemo Audio Board
- Li-Ion Rechargeable Battery
- USB Micro-B Cable
- 3.5mm Audio Cable M/M

Features

- KC-5012 or 6012 Bluetooth Audio Module
- Easy firmware updates via USB
- Analog stereo input and output
- 3.5mm jack and differential audio pins
- USB, UART, and SPI interfaces
- 6 user buttons
- Red and blue indicator leds



70 x 66 mm

Bluetooth Audio Profiles

Note: Profiles available in various firmware editions, and not all available in a single edition.

- A2DP - Advanced Audio Distribution Profile
Full range stereo streaming with SBC compression. Both source and sink available.
- AVRCP - Audio Video Remote Control Profile
Standard remote playback controls.
- HFP – Handsfree Profile
Cell phone headset connectivity.
- AGHFP - Audio Gateway Hands Free Profile
Phone audio profile connects to standard cell phone mono headsets.
- SPP - Serial Port Profile
Serial communications for custom applications.

Description

Use our BlueDemo Board as a fast introduction to wireless audio capabilities and performance of our kcAudio hardware and firmware systems. The BlueDemo board can be easily reprogrammed with different firmware, useful for trying various editions, or for use while developing some customizations. Also, the BlueDemo Board is useful as a performance benchmark for customer prototypes and products.

Firmware Overview

Our firmware comes in two major editions: kcAudioGateway and kcAudioHeadset. BlueDemo boards can be reprogrammed with either of these firmware editions.

kcAudioGateway (Transmitter)

AGHFP mode is the default mode, implementing Bluetooth AGHFP profile which is intended to connect to a standard Bluetooth cell phone mono headset. The audio is sampled at 8kHz, and operates two-way communications. The kcAudioGateway does not implement "phone calls" like a phone gateway would, but rather opens the bi-directional audio channel automatically, without the call answer or hang up states.

A2DP mode implements Bluetooth A2DP Source profile which is intended to connect to standard Bluetooth stereo headsets or speakers. The audio is sampled at 44.1kHz, and transmits stereo audio.

For additional hardware related information, please refer to the KC-5012 or KC-6012 Bluetooth Module Datasheets. For additional firmware related information, please refer to the kcAudioGateway User Guide.

kcAudioHeadset (Receiver)

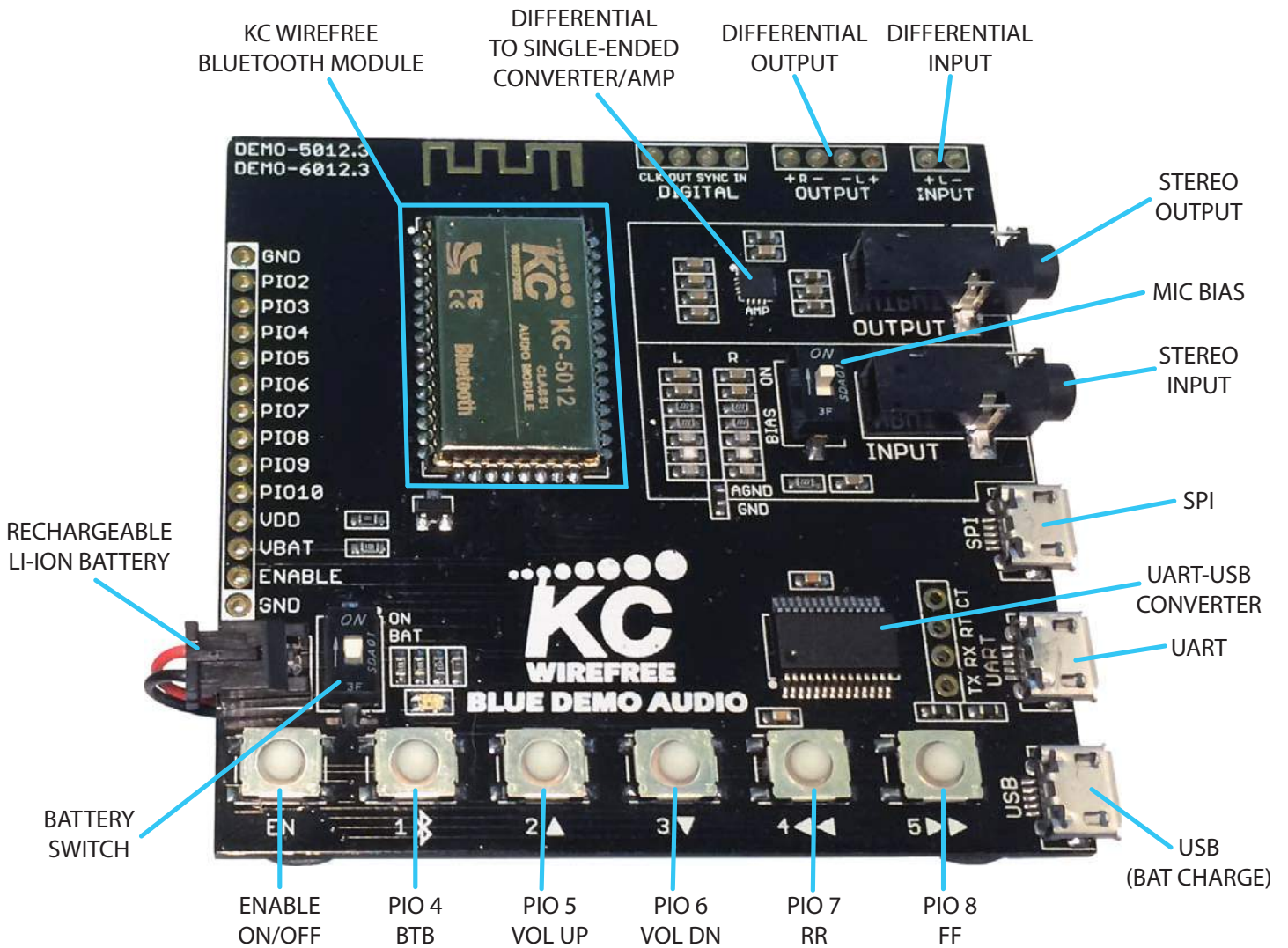
The kcAudioHeadset firmware can connect to both an A2DP stereo transmitter, and an AGHFP two-way mono transmitter. It is fully compatible as a Bluetooth A2DP "Sink" device, and simultaneously as a Bluetooth HFP "Mono Headset" device. Our kcAudioHeadset has an SPP service available for simultaneous data transmissions.

For additional hardware related information, please refer to the KC-5012 or KC-6012 Bluetooth Module Datasheets. For additional firmware related information, please refer to the kcAudioHeadset User Guide.

Other Firmware

Other firmware editions are available, such as independent stereo receivers, and stereo+intercom three-way audio communications.

Hardware



Notes

Power

The battery switch must be ON, to connect the battery to the VDD pin on the module. Most firmware editions use the ENABLE button for power ON/OFF.

Recharging

Battery is recharged via the USB port cable. The battery switch must be ON. Do not turn off the battery switch when the USB port is plugged in. The charging current has no load, and oscillations can damage the module.

USB Labeled Connector

The USB connector is directly connected to the USB data pins on the module, and the 5.0V power is connected to the CHARGE pin on the module.

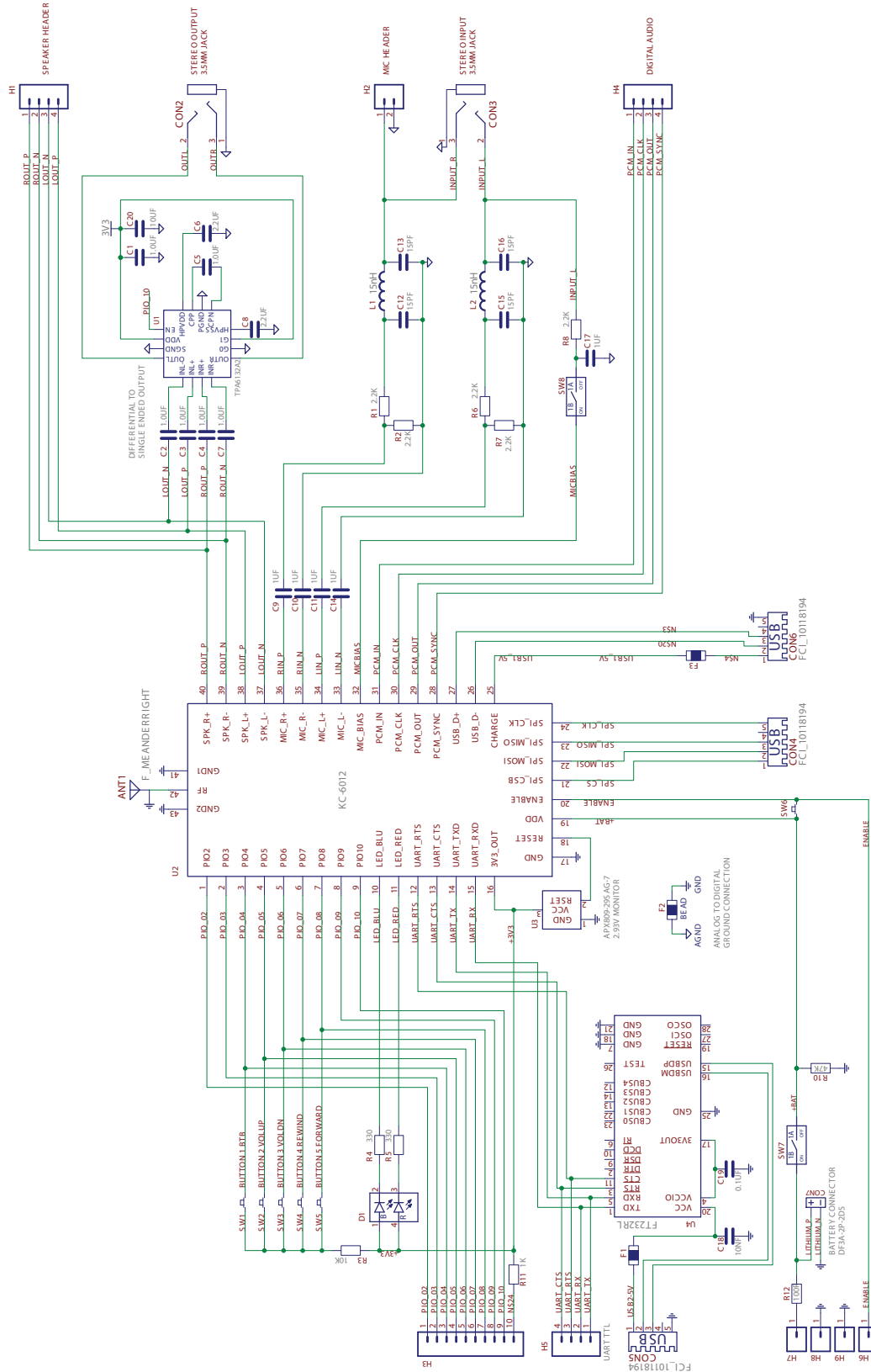
UART Labeled Connector

While the connector is a USB connector, it is connected to a UART-USB converter chip. The converter chip enumerates a virtual COM port with the host computer, and the converter chip is also connected to the module UART pins. The converter is powered by the USB cable connection, and will enumerate the virtual COM port even if the DEMO board battery switch is off.

SPI Labeled Connector

Do not plug a USB cable into this port. The SPI connector is directly connected to the SPI pins on the module. This port is designed for use with a KC Wirefree SPI adapter. The SPI port only provides access to CSR programming tool applications.

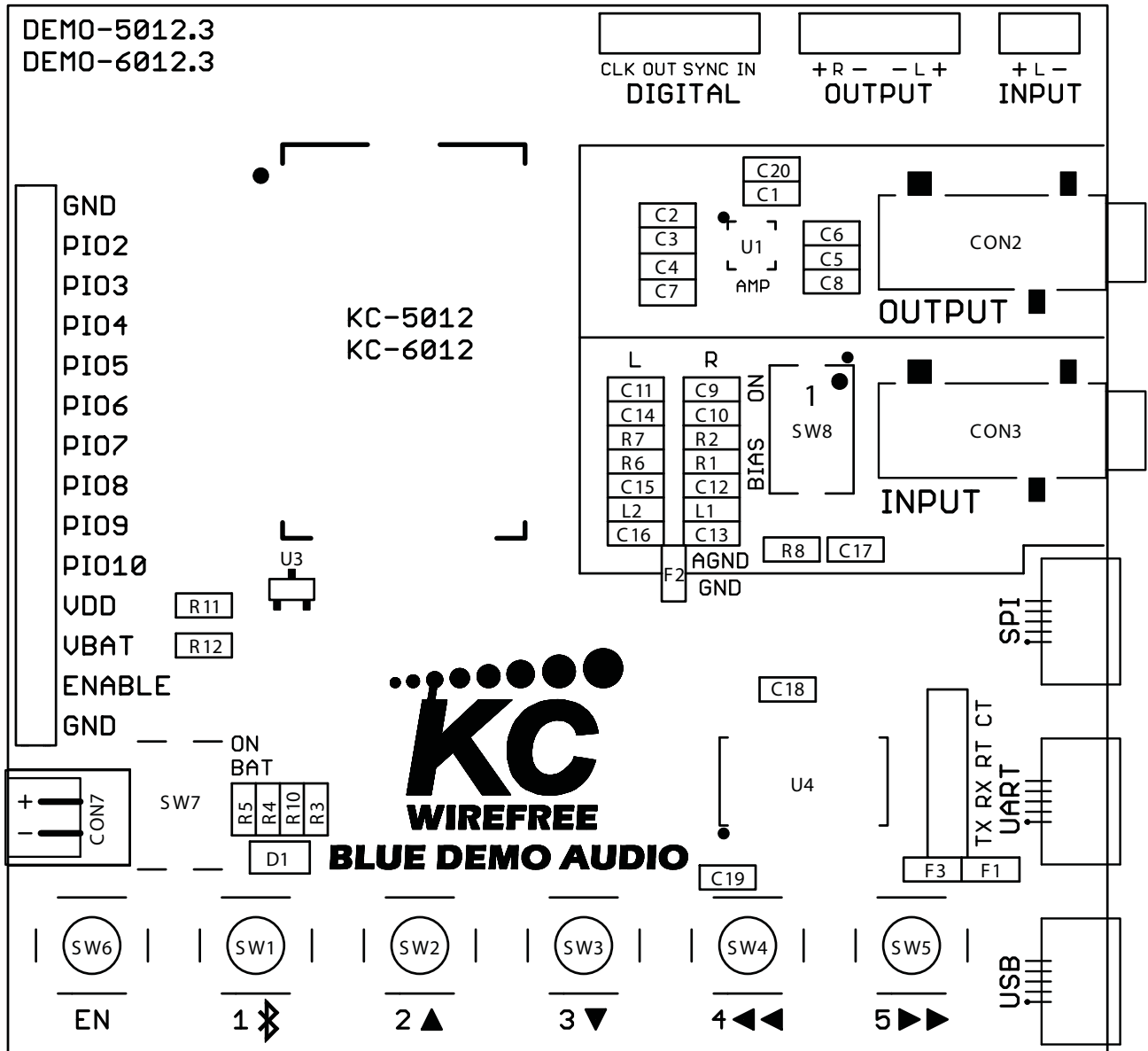
BlueDemo Rev 3 Schematic



BlueDemo BOM

Qty	Location	Description	Size	Manf	Manf Part
1	PCB	PCB		KCC	PCB.DEMO-6012.3
1	U1	STEREO AMPLIFIER	WQFN-16	TI	TPA6132A2RTER
1	U2	CLASS 2 AUDIO MODULE		KCC	KC-6012
1	U3	VOLTAGE MONITOR	SC-70-3	DIODES INC	APX809-29SAG-7
1	U4	USB-UART BRIDGE	SSOB-28	FTDI	FT232RL
3	C6,8	CAP CER 2.2UF 6.3V X5R	0603	KEMET	C0603C225K9PACTU
1	C19	CAP CER 0.1UF 16V X7R	0603	KEMET	C0603C104K4RACTU
11	C1,2,3,4,5,7,9,10,11,14,17	CAP CER 1.0UF 10V X5R	0603	KEMET	C0603C105K8PACTU
4	C12,13,15,16	CAP CER 15PF	0603	KEMET	C0603C150J5GACTU
1	C18	CAP CER 10000PF / 10NF	0603	KEMET	C0603C103K5RACTU
1	C20	CAP CER 10UF	0603	KEMET	C0603C106M9PACTU
2	CON2,3	CONN AUDIO JACK 3.5MM STEREO		CUI	SJ-3523-SMT
1	CON7	BATTERY CONNECTOR		HIROSE	DF3A-2P-2DS
3	CON4,5,6	CONN USB MICRO-B		FCI	10118194
1	D1	LED DUAL RED+BLUE	2.0x1.2	KINGBRIGHT	APHBM2012QBDSURKC
3	F1,2,3	FERRITE CHIP BEAD 40 OHM	0603	TDK	MMZ1608S400A
2	L1,2	INDUCTOR 15NH	0603	JOHANSON	L-14C15NJV4T
5	R1,2,6,7,8	2.2K OHM 1/10W 1%	0603	VISHAY	CRCW06032K20FKEA
1	R3	10K OHM 1/10W 5%	0603	VISHAY	CRCW060310K0JNEA
2	R4,5	330R OHM 1/10W 5%	0603	VISHAY	CRCW0603330RJNEA
1	R9	0R OHM 1/10W 5%	0603	VISHAY	CRCW06030000Z0EA
1	R10	47K OHM 1/10W 5%	0603	VISHAY	CRCW060347R0JNEA
1	R11	1K OHM 1/10W 5%	0603	VISHAY	CRCW06031K00JNEA
6	SW1,2,3,4,5,6	PUSH BUTTON SWITCH 160GF	6MM DIA	PANASONIC	EVQ-Q2P03W
2	SW7,8	DIP 1 POS		C&K	SDA01H1SBD

BlueDemo Layout



Ordering Information

Product Series	DEMO-5012, DEMO-6012
Product Version	Rev 3
Country of Manufacture	USA
Order Part Number	Description
DEMO-5012-GW	Class 1 BlueDemo Board w/ kcAudioGateway firmware
DEMO-5012-HS	Class 1 BlueDemo Board w/ kcAudioHeadset firmware
DEMO-6012-GW	Class 2 BlueDemo Board w/ kcAudioGateway firmware
DEMO-6012-HS	Class 2 BlueDemo Board w/ kcAudioHeadset firmware

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