

Features

- KC-5012/6012 Class 1/2 Bluetooth Audio Module
- Schematics, parts list, and layout files included
- Analog stereo input and output
- 3.5mm jack and differential audio pins
- 16-bit ADC/DAC stereo CODEC
- 16 Mbit flash memory
- USB, UART, and SPI interfaces
- 5 user buttons
- Li-Ion battery onboard
- Red and blue indicator leds



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.



Custom Audio Profiles

- Stereo + Intercom
A KC Wirefree custom low latency, 3 channel audio with full stereo streaming with live voice back channel.
- Low Latency Stereo
Low latency, high quality stereo for real time applications – TV, Video Games, Interactive
- Push-To-Talk
Push to talk features available

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.

BlueDemo Kit Includes

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

Firmware Overview

Our firmware comes in three major editions: kcAudioAdapter, kcAudioGateway, kcAudioHeadset. BlueDemo boards can be reprogrammed with any of these firmware editions.

kcAudioAdapter (Stereo Transmitter)

The kcAudioAdapter firmware streams high quality stereo audio to a headset. It is fully compatible as a Bluetooth A2DP "Source" device, and also supports AVRCP profile. The kcAudioAdapter will transmit the analog audio from the LIN and RIN input pins, or optionally, from the digital audio from the USB or PCM interfaces. The stereo signal is then compressed, segmented into Bluetooth packets, and transmitted wirelessly to the kcAudioHeadset.

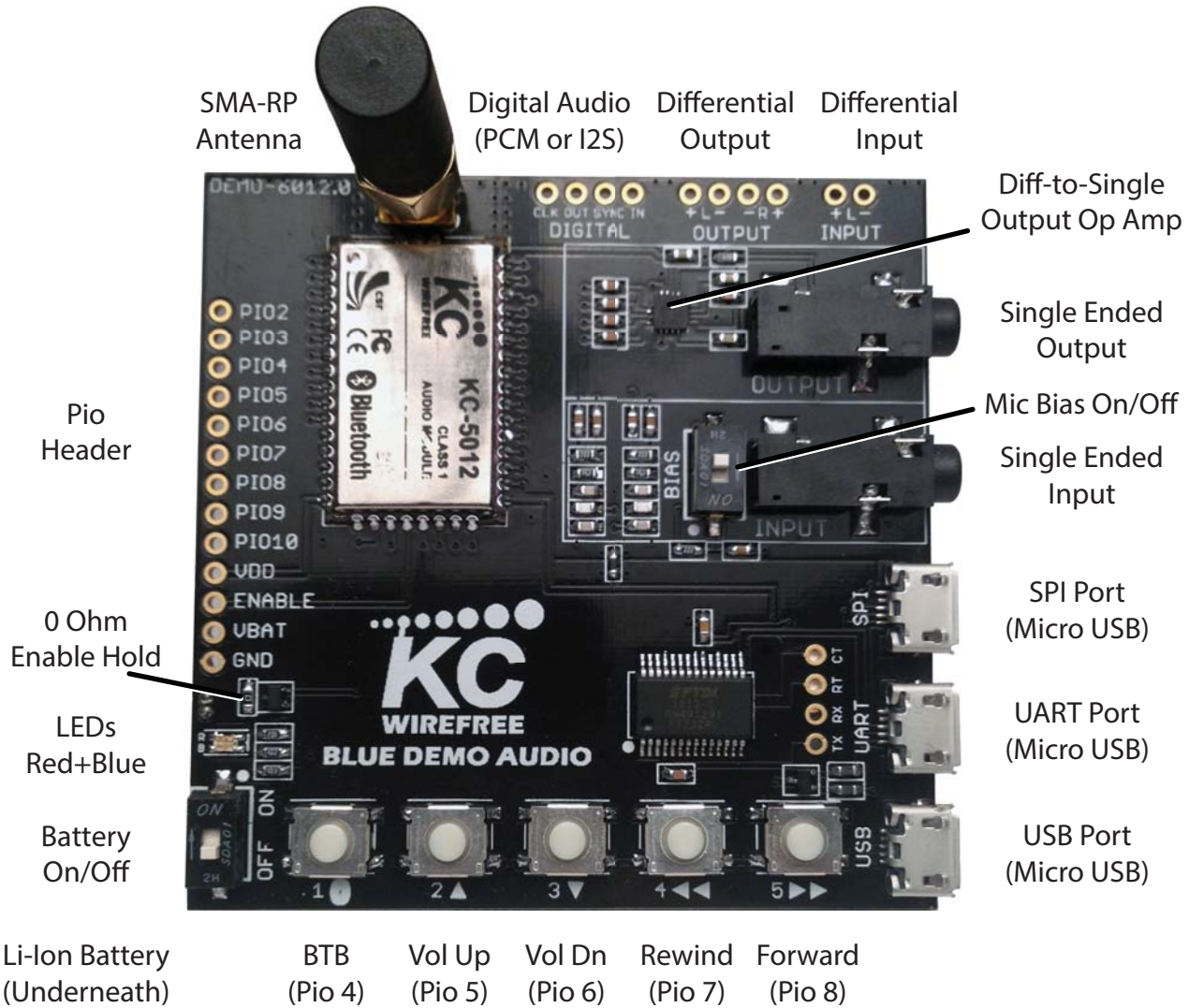
kcAudioGateway (Mono Bi-Directional Gateway)

The kcAudioGateway firmware provides two-way voice communications to a standard Bluetooth cell phone headset. It is fully compatible as a Bluetooth AGHFP device. The kcAudioGateway will transmit the analog mono audio from the LIN input pins, or optionally, as digital audio from the USB or PCM interfaces. The input signal is then compressed, segmented into Bluetooth packets, and transmitted wirelessly to a Bluetooth headset. Also, the microphone signal from the headset is received, and available through the LOUT output pins, or optionally as digital audio to USB or PCM.

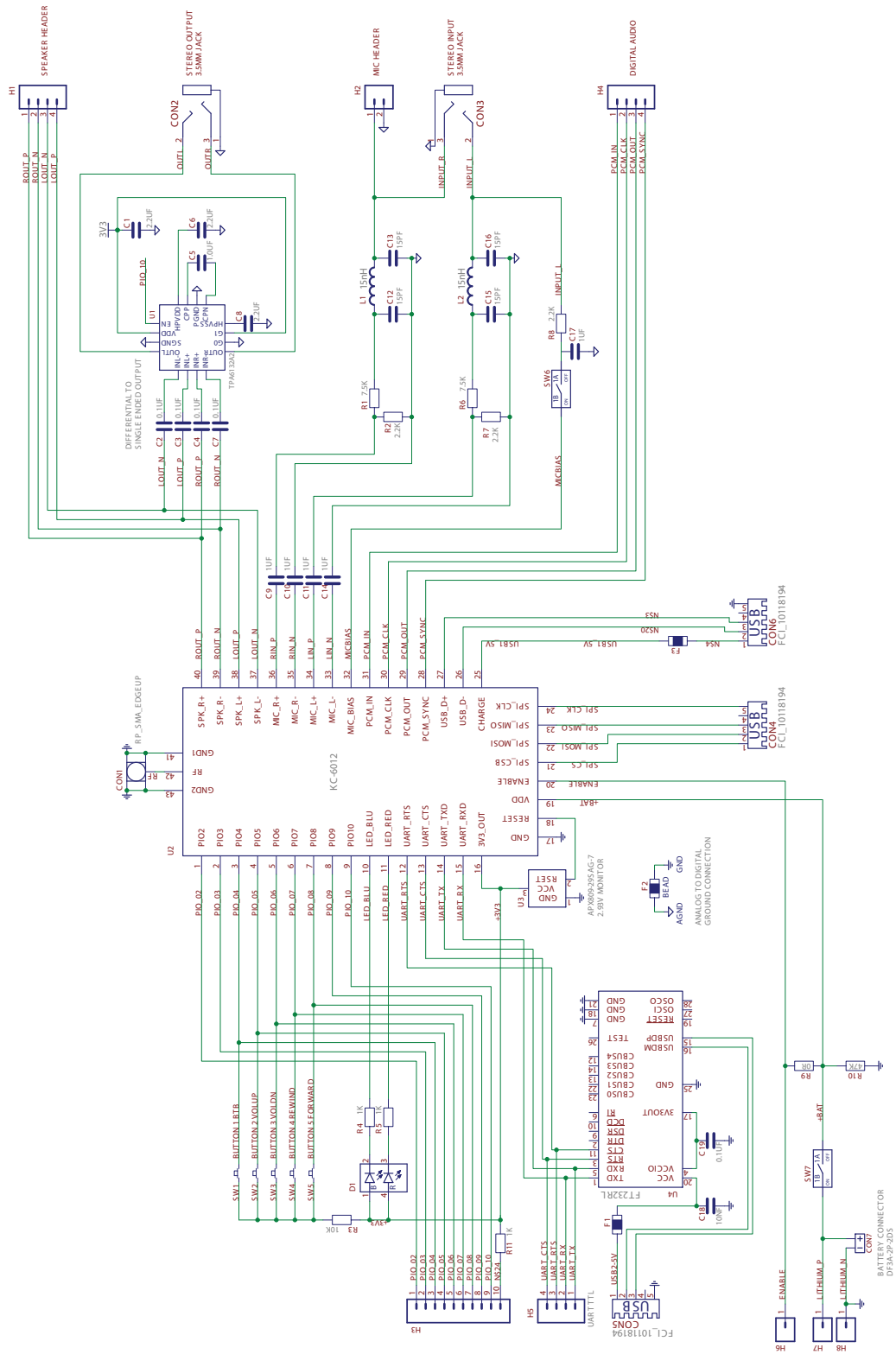
kcAudioHeadset (Stereo & Mono Bi-Directional Receiver)

The kcAudioHeadset firmware will receive the wireless stereo signal, decompress, and convert to analog audio available on the LOUT and ROUT output pins. Optionally, the output can be directed to the USB or PCM interfaces. It is fully compatible as a Bluetooth A2DP "Sink" device, and simultaneously as a Bluetooth cell phone "Mono Headset" device supporting HFP profile. Our kcAudioHeadset has an SPP service available for simultaneous data transmissions.

Hardware



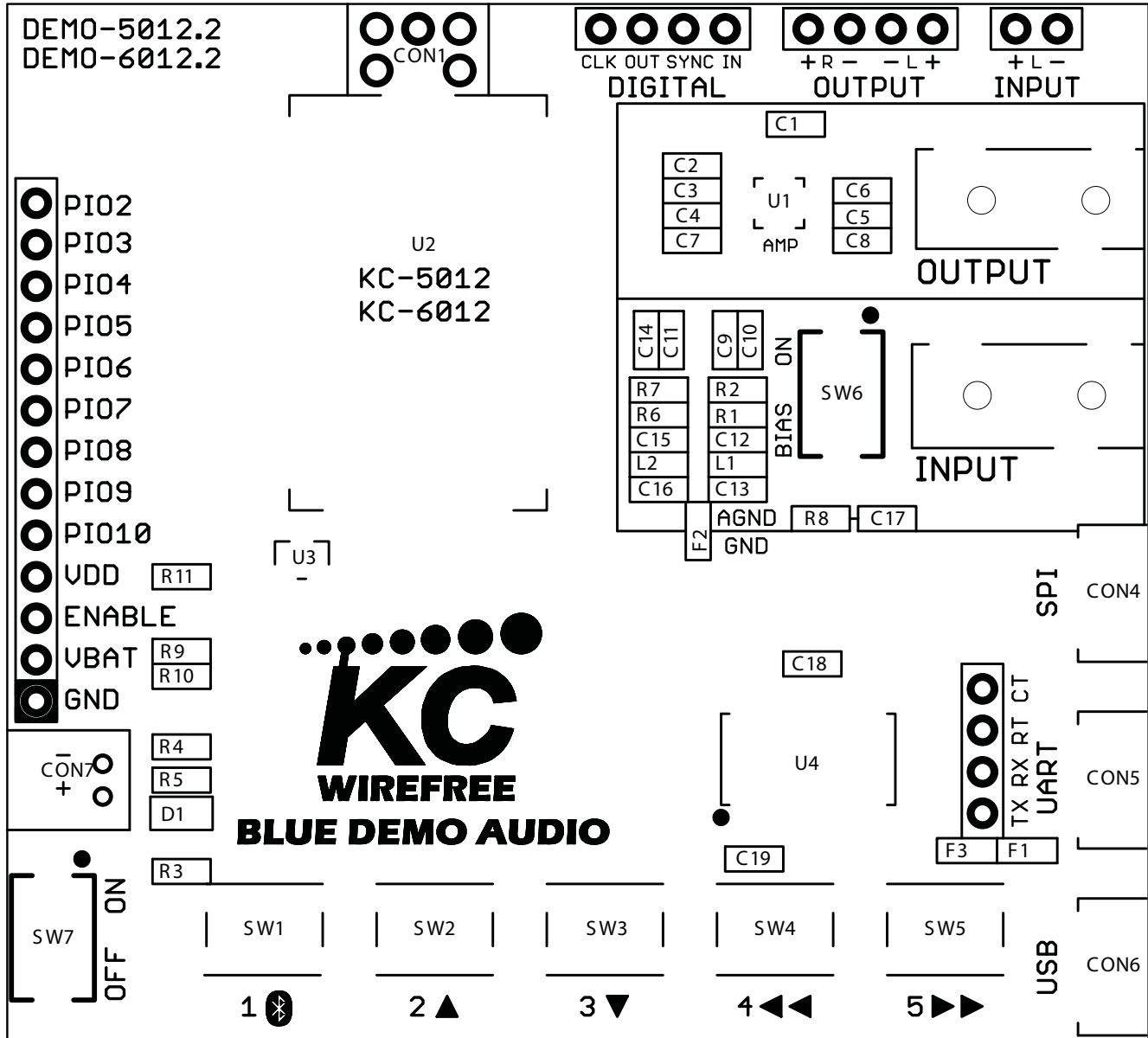
BlueDemo Rev 2 Schematic



BlueDemo Rev 2 BOM

Qty	Location	Description	Size	Manufacturer	Manufacturer Part
1	PCB	PCB		KCC	PCB.DEMO-6012.2
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	C1,6,8	CAP CER 2.2UF 6.3V X5R	0603	KEMET	C0603C225K9PACTU
5	C2,3,4,7,19	CAP CER 0.1UF 16V X7R	0603	KEMET	C0603C104K4RACTU
6	C5,9,10,11,14,17	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	CON1	RP-SMA ANTENNA JACK, 062 EDGE		LINX	CONREVSMA003.062
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
2	R1,6	7.5K OHM 1/10W 1%	0603	VISHAY	CRCW06037K50FKEA
3	R2,7,8	2.2K OHM 1/10W 1%	0603	VISHAY	CRCW06032K20FKEA
1	R3	10K OHM 1/10W 5%	0603	VISHAY	CRCW060310K0JNEA
3	R4,5,11	1K OHM 1/10W 5%	0603	VISHAY	CRCW06031K00FKEA
1	R9	0R OHM 1/10W 5%	0603	VISHAY	CRCW06030000Z0EA
1	R10	47K OHM 1/10W 5%	0603	VISHAY	
5	SW1,2,3,4,5	PUSH BUTTON SWITCH 160GF	6MM DIA	PANASONIC	EVQ-Q2P03W
2	SW6,7	DIP 1 POS		C&K	SDA01H1SBD

BlueDemo Rev 2 Layout



Ordering Information

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