

# Bluetooth® and MSP430 Audio Source Reference Design Quick Start Guide

The BT-MSPAUDSOURCE-RD is a TI Design that enables streaming out Bluetooth audio (SBC encoded) using the SimpleLink™ CC2560 Bluetooth controller, the MSP430F5229 ultra-low power microcontroller, and the TLV320ADC3101 low-power ADC plus a BQ24055 USB charge management device. This reference design is a cost-effective Bluetooth audio implementation with full design files provided for evaluation and end-product development. The software supported includes Stonestreet One Bluetopia® Bluetooth stack (certified and royalty free).

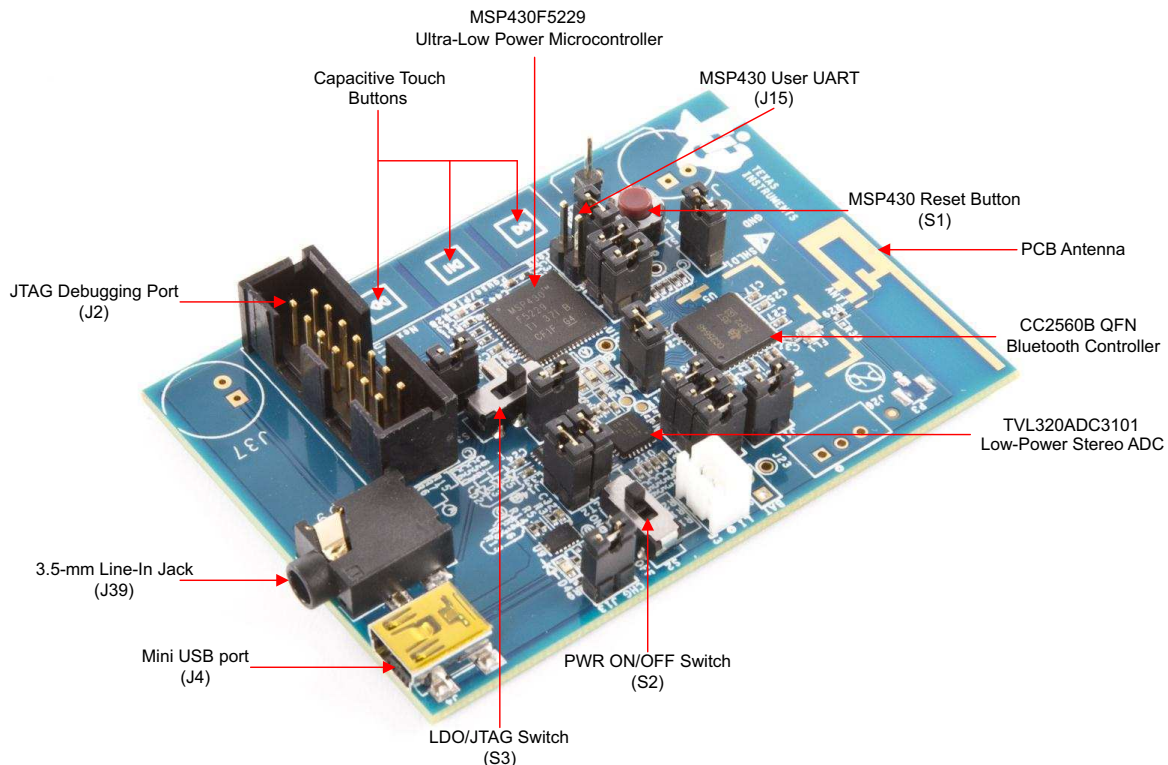
This document will help you quickly get started on the BT-MSPAUDSOURCE out-of-the-box experience demo.

This design is compliant with the following standards:

- FCC/IC Regulatory Compliance
- FCC Part 15 Class A Compliant
- IC ICES-003 Class A Compliant

This kit contains:

- One BT-MSPAUDSOURCE board
- One mini-USB cable
- One stereo audio cable with 3.5-mm plug connectors



**Figure 1. BT-MSPAUDSOURCE Board**

## Step 1: Set Remote Bluetooth Audio Sink Device Ready

Turn on the remote Bluetooth audio sink device and make sure it is ready to connect.

**NOTE:** The remote Bluetooth device must support the A2DP profile and sink role (for example, a Bluetooth speaker or Bluetooth headphones).

**NOTE:** TI's Bluetooth and MSP430 Audio Sink Reference Design (BT-MSPAUDSINK board) can be used as the remote Bluetooth device.



Figure 2. Bluetooth Audio Sink Device Examples

## Step 2: Connect Audio Line-In

Connect an audio source device to the BT-MSPAUDSOURCE board by plugging in the stereo audio cable to the 3.5-mm line-in jack (J39). The audio source can be any device with a 3.5-mm audio stereo output, such as laptops, phones, and so on.

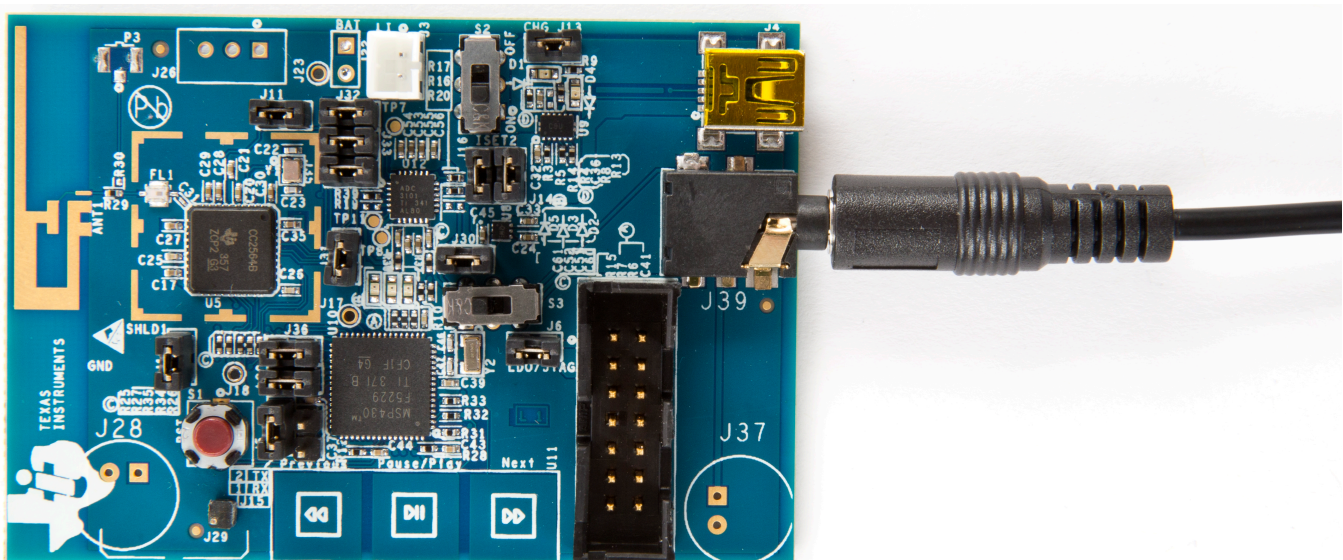


Figure 3. Audio Line-In Connection

### Step 3: Turn On the BT-MSPAUDSOURCE Board

Connect the mini-USB cable to the mini-USB port (J4) to apply power to the board. Turn on the board using the PWR ON/OFF Switch (S2) so that the switch points towards the inside of the board.

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**NOTE:** The board can also be powered from rechargeable batteries (J3), which can be purchased separately.

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### Step 4: Automated Pairing and Connection Process

Check the green and red LEDs. These LEDs remain lit when the connection is established and the audio is being played correspondingly.

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**NOTE:** The BT-MSPAUDSOURCE automatically scans for Bluetooth audio sink devices available in range. The device lists the Bluetooth audio sink devices in the order they were discovered and gives priority to the BT-MSPAUDSINK boards. The BT-MSPAUDSOURCE will connect to the first device available in this list. This procedure can take up to 10 seconds after turning on the board.

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### Step 5: Listen to the Audio

Use the capacitive touch buttons to play and pause the audio.

For further information, see the [Bluetooth and MSP430 Audio Source User's Guide](#).

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**BT-MSPAUDSOURCE-RD Rev A History**

<b>Changes from Original (August 2014) to A Revision</b>	<b>Page</b>
• Added compliance standards .....	1

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NOTE: Page numbers for previous revisions may differ from page numbers in the current version.



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### CAUTION

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### 3.2 Canada

#### 3.2.1 For EVMs issued with an Industry Canada Certificate of Conformance to RSS-210

##### **Concerning EVMs Including Radio Transmitters:**

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

##### **Concernant les EVMs avec appareils radio:**

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante. Le présent émetteur radio a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés dans le manuel d'usage et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

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2. Use EVMs only after User obtains the license of Test Radio Station as provided in Radio Law of Japan with respect to EVMs, or
3. Use of EVMs only after User obtains the Technical Regulations Conformity Certification as provided in Radio Law of Japan with respect to EVMs. Also, do not transfer EVMs, unless User gives the same notice above to the transferee. Please note that if User does not follow the instructions above, User will be subject to penalties of Radio Law of Japan.

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