



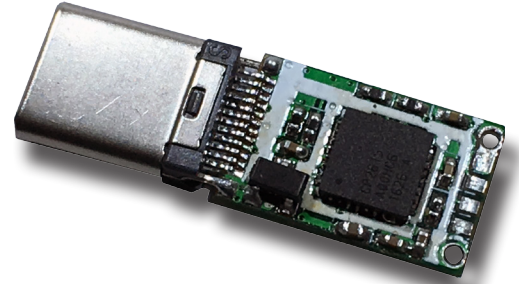
USB-C100 / C101 Turn-Key Module for USB-C Connected Headphones & Headsets

Applications

The USB-C100 / C101 Modules are the absolute simplest conversion path for ANY Tier 1, Tier 2, or Tier 3 ODM or OEM to convert their current 3.5mm Headphones or Headsets designs that employ with the “Android™-compatible” 1-button or 3-button resistor-ladder network as well ALL single-button solutions into a fully functional all-digital USB-C connected solution with support for the following functions REGARDLESS of a device’s operating system.

Near Universal Operating System Support

- Android™ 5.0 and later
- MacOS X 10.0.0 and later
- Microsoft® Windows® CE, XP, Vista, 7, 8, 8.1, 10 and later
- Any modern Linux® distribution (kernel 2.73) and later



Features

- For 3-button resistor-ladder Android-compliant (or ANY single-button) Headphones or Headsets (as indicated)*:
 - Volume Up (volume up button)
 - Volume Down (volume down button)
 - Pause / Play (single short press of middle button)*
 - Voice Assistant “OK Google”, “Hey Bixby”, “Hi Cortana” (long press of middle button)**
 - Skip from Current Track to Next Track (quick double press of middle button)*
 - Scan Current Track Forward (quick press of middle button followed by second press with hold)*
 - Skip Current Track to Previous Track (quick triple press of middle button)*
 - Scan Current Track Forward (quick double press of middle button followed by a third press with hold)*
- 24-bit stereo digital audio playback and audio capture capability at 48kHz
- Supports high-resolution telephony sessions
- Integrated support for low-cost resistor ladder networks three button interface
- Simplest and fastest time-to-market solution available
- Pre-programmed USB Audio Bridge. No coding required. Zero development time.
- Secure bootloader ensures there is no possible way to load any sort of malware / virus / trojan / spyware / etc. via USB-C port
- TSCS25xx low-power 32-bit Stereo Audio Codec with integrated ground-center referenced HP amplifier
- Lowest measured power for any equivalent performance & feature solution on the market

3.5mm Headphone or Headset Conversion / USB-C Headphone or Headset Design Process

- Cut the 3.5mm jack from current Headphone or Headset and exposes all four of the wires.
- Solder these 4 wires to the respective soldering pads (Mic, Left, Right, GND - from bottom to top) on the USB-C100 module PCB as shown on the pic on the reverse side.
- Cover USB-C100 module in plastic or non-static material and coat as necessary to meet final product aesthetic requirements.

Technical Details

- Tempo Semiconductor TSCS25xx - Low-Power Audio Codec - 96kHz / 32-bit with integrated 24-bit signal processing engine
- 32-bit, 90dB SNR ADC / 96kHz-capable enables support for external analog mics for telephony support
- 32-bit DAC, 96kHz capable, with a combined classless HP amplifier measure and incredible 124dB SNR
- Ultra-low-latency ensures optimal A/V sync performance for all applications
- Complimentary Android App enables customization of a wide variety of DSP audio enhancements with end-user personalization save capability

Where to Buy

- The USB-C100 and USB-C101 turn-key modules are currently sampling directly from the factory.

Please contact sales@temposemi.com to request product pricing, samples and the latest leadtimes.

**Note: The USB-C100 module has been designed to meet the exacting needs of customers that are ONLY looking to replace the same level of functionality their headphones with no buttons or Android-compatible headsets offered when they had a 3.5mm jack with either 1 button or 3 buttons.*

***Note: The latest firmware in the CP2615 has been confirmed to 100% compliant to the latest available Android USB Headset specification as of 10/3/2017, including the long press of the center button to bring up the Voice Assistant. Changes to the latest publicly available Android release and/or SDK may need to be made to ensure 100% compliance with this specification that was last updated on July 27th, 2017. <https://source.android.com/devices/accessories/headset/usb-headset-spec>*

Please note that the [TDTSI010 turn-key reference design](#), which is composed of the exact same components on the USB-C100 / C101 module is also available for customers wanting to make schematic or PCB layout adjustments to their USB-C Headset or USB-C Adapter. This solution uses GPIO signaling instead of a resistor-ladder network which can save BOM cost. This turn-key reference, just like the USB-C101 turn-key module also includes such premium differentiating features like access to a DSP-based implementation in the TSCS25xx Audio Codec such as multiband EQ (up to 12 bands of stereo parametric EQ) to enable a flat frequency response of the headphone and/or enable content EQ settings (e.g. "Rock", "Pop", "Jazz", etc.), a 3D stereo enhancement for surround encoded content, a psychoacoustic bass enhancement, high-frequency content restoration, wideband DRC, multiband compressor / limiter / expander as well as a complementary Android App that enables the consumer to adjust and save these parameters to the flash memory inside the CP2615.

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