Qualcomm® MAPX Soundbar Platform

Solution Highlights

Comprehensive example design kit for soundbars

The MAPX Soundbar example design kit includes software and hardware design packages, including schematics, bill of materials (BOM) and PCB layout files. Configuration files are also provided, together with a comprehensive tool set to help customers customize the design to their own needs.

Multiple audio post-processing and decoding options

Extensive choice of decoding and post-processing options help to offer a truly immersive listening experience; whether using Qualcomm® meloD™ audio processing suite or third party processing, such as Dolby, DTS and others.

Flexible platform options

Supports differentiation of target end-products by providing a choice of flexible platform option.

Supports the DTS Virtual:X post processing audio solution

DTS Virtual:X technology helps to support development of highly differentiated and cost effective soundbars that are designed to deliver superior audio experiences.
### Features

#### PLATFORM
- AllPlay smart media platform extension*
- DTS Virtual:X technology
- HDMI inputs and output, HDMI CEC/ARC
- Support for IR & Bluetooth low energy remote controls
- LCD or VFD display & LED supported for UI
- Auto power-down (power saving)
- Wake-up from HDMI CEC, Bluetooth, NFC, analog and SPDIF inputs
- Wireless subwoofer auto-wake-up after bar is powered on
- Voice prompts

#### AUDIO
- Variety of pre-programmed audio decoding and post processing modules available
- 32 bit, floating point audio DSP with up to 2592 MIPS total
- Multichannel, up to 192kHz internal audio processing
- Audio Delay (for Audio/Video sync)
- Coaxial and optical SPDIF input
- Superior performance ADCs and DACs embedded in audio SoC
- USB host (audio file playback and firmware update from an USB storage device)

#### BLUETOOTH/WIFI
- A2DP (SBC, mp3, AAC, Qualcomm® aptX™ audio options)
- AVRCP
- Wireless subwoofer via Bluetooth (SWAT)
- GAIA over Bluetooth Low Energy
- Party Mode
- NFC initiated Bluetooth pairing
- Support for AllPlay smart media platform*

---

### MAPX Soundbar Principle Block Diagram

- **Soundbar PCB**
  - Choice of Bluetooth Processor
  - Choice of MAPX Processor
  - Power Stage

- **Subwoofer PCB (optional)**
  - Power Stage

---

### Available Pre-programmed Audio Processing Modules

- **meloD suite:**
  - meloD MATRIX (Upmixer, Matrix Decoder)
  - meloD VOICE+ (Voice Enhancer)
  - meloD AROUND Pro (Virtualizer)
  - meloD BASS+ (Bass Enhancer)
  - meloD NIGHT+ (Night Listening Mode)
  - meloD VOLUME+ (Automatic Volume Leveler)
  - meloD SOUNDFIELD+ (Room Simulator)
  - Audio Delay (for Audio/Video sync)
  - Bass Management
  - Tone Control (Bass/Treble/Loudness)
  - Graphic Equalizer
  - Parametric Equalizer
  - Biquad Filter
  - FIR Filter
  - Multiband Dynamic Range Compressor
  - Multiband Output Limiter
  - Volume control & Master Volume control
  - Multichannel Mixer blocks
  - Speaker Downmix
  - Signal Generator and Analyzer
  - 2- and 3-Way Active Crossover
  - Tab Delay
  - Audio Playback & Firmware Update from USB
  - FLAC decoding from USB
  - WAV file playback from USB
  - Playback Voice Prompts from SPI Flash

---

### Available Only to Licensees of the Respective Technology

- Dolby TrueHD
- Dolby Digital
- Dolby Digital Plus
- Dolby Digital EX
- Dolby ProLogic IIx
- Dolby ProLogic II
- Dolby Volume
- Dolby Virtual Speaker
- Dolby Headphone
- DTS-HD (M6)
- DTS Digital Surround 96/24
- DTS Core Decoder
- DTS Virtual:X
- DTS StudioSound II
- DTS:Neo6
- DTS TruVolume HD (Multichannel)
- DTS TruSurround HD and HD4
- WMA-9 decoding from USB
- mp3 decoding from USB
- AAC-LC, HE-AAC
- ZIRENE SOUND - Audio Enhancement by AM3D (via Qualcomm® eXtension program)
- HFx - High Frequency Effect for restoring and enhancing audio bandwidth by Oxford Digital Limited (via Qualcomm eXtension program)
**MAPX Soundbar Platform**

Comprehensive soundbar example design kit including software, tools and hardware design packages to help offer a truly immersive listening experience.

---

**Example Design Development Kit**

- Soundbar main board with MAPX audio processor, CSRA65610 Bluetooth module
- Power adaptor board 24 V-to-5 V for soundbar main board
- Subwoofer main board with CSRA68xxx Bluetooth module assembled
- Power adaptor board 24 V-to-5 V for subwoofer main board
- HDMI board and 24-way ribbon cable
- UI-Display board and 20-way ribbon cable
- Infrared remote control
- 2x AAA batteries for the remote control
- 2x Power supplies, 24V
- USB 3-in-1 adaptor (Programmer with UART, I2C and SPI interfaces)
- 8-way interconnect cable
- USB cable (A to Mini-B)

---

**Ordering Information**

<table>
<thead>
<tr>
<th>Product</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soundbar Development Kit</td>
<td>DK-MRSB2.0-10234-1A</td>
</tr>
</tbody>
</table>

---

To learn more visit: [qualcomm.com](http://qualcomm.com)

©2018 Qualcomm Technologies, Inc. All Rights Reserved. Qualcomm is a trademark of Qualcomm Incorporated, registered in the United States and other countries. aptX, meloD and DDFA are trademarks of Qualcomm Technologies International, Ltd., registered in the United States and other countries. AllPlay is a trademark of Qualcomm Connected Experiences, Inc., registered in the United States and other countries. The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Qualcomm Technologies, Inc. is under license. Other product and brand names may be trademarks or registered trademarks of their respective owners.