RT-RK Computer Based Systems

RT-RK Enables World's First Single Chip Implementation of Dolby Atmos Technology for Soundbars

Dolby Atmos technology for AVRs has been widely accepted by audio enthusiasts and consumers who desire to replicate movie theater experience in their homes. A typical home theater setup with multiple speakers in 3-D space is illustrated in Figure 1.

Figure 1

While many homes can accommodate multiple discrete speakers including height and ceiling speakers, the practical reality of smaller homes and many city apartments is such that a much more compact implementation of Dolby Atmos technology is preferred.

The answer is Dolby Atmos for Soundbars.

Please refer to Figures 2 and 3 how typical consumer will experience an unprecedented audio quality of Dolby Atmos for Soundbars.
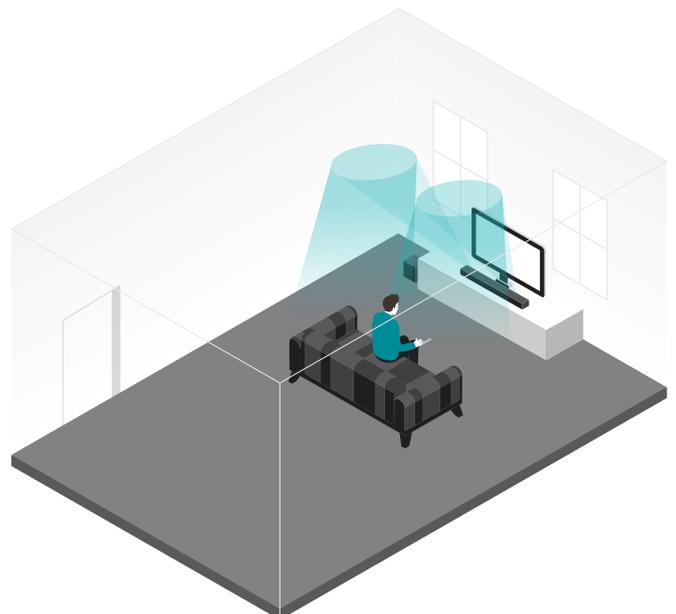

Figure 2

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RT-RK engineering team had brought Dolby Atmos for Soundbars to reality by implementing all Atmos features including DAP (Dolby Audio Processing) on a single chip CS49844 (Figure 4) supplied by Cirrus Logic. Single chip implementation is extremely important for soundbars where board space is at the premium.
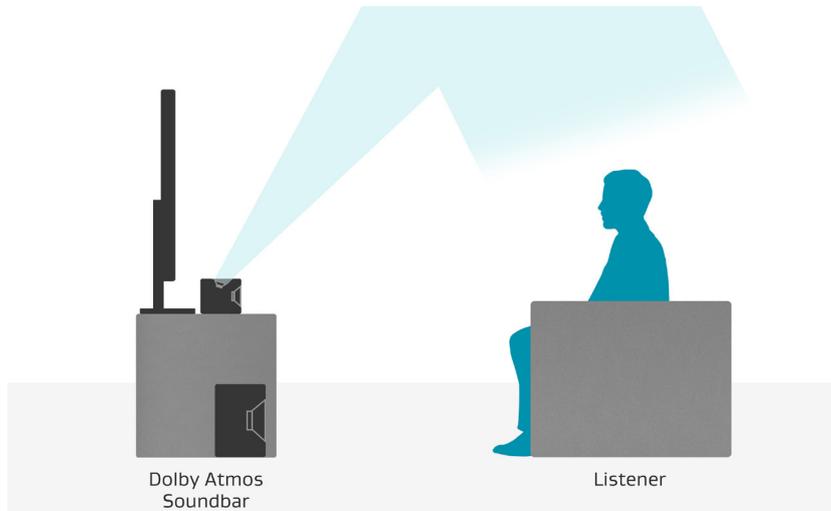

Figure 3

Figure 4

In addition to already well known Dolby Atmos audio features including audio object and audio channels rendering, as well as both lossy and lossless audio decoding, DAP processing brings a plethora of new audio processing algorithms uniquely designed for Soundbars systems.

Key additional features are:

- volume leveling
- volume modelling
- intelligent audio equalizing
- dialog enhancements
- surround sound upmixing and virtualizing
- many others

Even with this increase in complexity, and higher requirements for both memory as well as processing power, RT-RK's DSP engineering team managed to implement the entire processing chain for Dolby Atmos for Soundbars on a single chip, providing a unique value to the customers who adopt RT-RK's SW solution running on Cirrus Logic's DSP device CS49844.

RT-RK's DSP engineering team worked very closely with Dolby certification team and as of November 2016, RT-RK's DSP SW implementation of Dolby Atmos for Soundbars, with all of its components, has been fully certified by Dolby and is ready for production. Several major OEMs are already in production with RT-RK's DSP SW solution running on Cirrus Logic's CS49844 device.