

# Silicon Labs Introduces Advanced DVB Demodulators

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[Silicon Labs](#) [1] (Austin, TX) has introduced a new family of universal digital video broadcast (DVB) demodulators that support the latest worldwide DVB standards for cable, terrestrial, and satellite reception. Designed to simplify the design of complex, high-performance video front-ends for integrated digital TVs (iDTVs) and set-top boxes (STBs), Silicon Labs' new Si216x/6x2 family includes dual-channel DVB demodulators targeting multi-receiver iDTV and STB applications.

Silicon Labs' Si216x/6x2 demodulator family supports all first and second-generation DVB broadcast standards for cable (DVB-C2/C, ITU J.83 Annex A/B/C), terrestrial (DVB-T2/T), and satellite (DVB-S2/S, DSS). Leveraging Silicon Labs' industry-leading digital demodulation architecture, the single-channel Si216x and dual-channel Si216x2 demodulators enable excellent reception performance for each DVB standard while minimizing front-end design complexity, footprint size, system cost, and power dissipation. For TV and STB makers looking to add additional features like personal video recorder (PVR) and picture-in-picture, multiple demodulators are essential components. Silicon Labs' dual demodulators enable TV/STB makers to simplify and reduce the cost of these multi-receiver designs.

The Si216x/6x2 family includes single and dual demodulators that comply with the recent DVB-C2 specification for cable reception, enabling highly efficient use of existing cable networks for delivery of innovative new services such as video-on-demand (VOD) and high-definition television (HDTV). The rapidly emerging DVB-C2 standard is increasingly important in the German TV market and is also becoming a "must-have" feature for the broader European market. High-end TVs designed for European consumers have begun supporting DVB-C2, and this trend will continue to accelerate. Many of Western Europe's leading cable operators, representing more than 22 million households, have chosen to adopt the new DVB-C2 standard.

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The Si216x/6x2 family supports the latest DVB-T2 specification (ETSI EN 302 755-V1.3.1), also known as DVB-T2-Lite. New markets that are migrating to digital terrestrial TV broadcasting are switching directly from analog to DVB-T2-Lite. DVB-T2 adoption continues to expand to various African countries, as well as Singapore, Russia, India, Malaysia, and Colombia. To date, 35 countries have adopted DVB-T2, 19 have deployed, and nine are running trials. The field experience gained as a result of Silicon Labs' leading market position is integrated into its latest generation of DVB-T2 demodulators.

The DVB-T2-Lite specification allows simpler receiver implementations for mobile and handheld reception. Additionally, the specification enables "scrambling of L1 post-signaling," an attractive feature for new DVB-T2 infrastructure deployments that reduces the cost of the power amplifier in the broadcast transmitter. Emerging countries recently deploying DVB-T2 have implemented these lower cost transmitters. Legacy DVB-T2 demodulators that do not support DVB-T2-Lite will not be able to receive T2-Lite broadcasts. Therefore, it is imperative that TV and STB makers use a demodulator that supports DVB-T2-Lite to address the global terrestrial broadcast market.

Silicon Labs' Si216x/6x2 family is designed to reduce demodulator lock times across the DVB-C2/C/T2/T/S2/S standards. The new demodulators demonstrate very short lock times in DVB-C2 mode, even in the presence of co-channel interference (CCI), which is an important consideration in countries where DVB-T2 and analog broadcasting coexist. Fast lock time is a critical feature for TV and STB makers since it enables shorter "zapping" time (the speed of changing channels), an attractive consumer experience feature for TV viewers. Noticeably long zap time can be irritating for TV viewers while very fast zapping can be a key performance consideration and differentiator when selecting a new TV or STB in the retail market.

The single-channel Si216x demodulators, using the same 7 x 7 mm QFN-48 package as Silicon Labs' previous demodulator family:

- Provide pin-to-pin compatibility.
- Simplify board design.
- Reduce cost.
- The dual Si216x2 demodulators are pin-compatible in a compact 8 x 8 mm QFN-68 package.
- The Si216x and Si216x2 demodulators share the same API software, enabling customers to easily adapt their application software to these new demodulators and upgrade their iDTV and STB products to the latest DVB-T2-Lite and DVB-C2 features.

For more information, please visit [www.silabs.com](http://www.silabs.com) [1]

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[1] <http://www.silabs.com>