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MaxLinear and Peregrine Semiconductor Team on Dual-RF-Input Digital TV Reference Design

Digital cable and terrestrial front-end reference design supports China's digital TV mandate

CARLSBAD, Calif. & SAN DIEGO--(BUSINESS WIRE)-- MaxLinear Inc. (NYSE: MXL), a leading provider of integrated radio frequency (RF) and mixed-signal integrated circuits for broadband communications applications, announced today a collaboration with Peregrine Semiconductor Corp. (NASDAQ: PSMI), founder of RF SOI (silicon on insulator) and pioneer of advanced RF solutions, to produce a dual-RF-input digital TV (DTV) front-end reference design.

Television sets incorporating this dual-RF-input front end will support reception of both digital terrestrial TV and cable TV for seamless channel browsing.

The reference design pairs MaxLinear's MxL600 family (MxL601 and MxL661) of software-programmable, low power, global hybrid-television tuners with Peregrine's low-power PE42750 RF switch in a fully tested, end-to-end solution including complete schematics, bill of materials and the Gerber files required to quickly implement a high-performance DTV solution.

The new front-end design gives OEMs a way to respond to the ever-increasing demand for DTV. This demand is driven, in part, by countries like China, where the Ministry of Industry and Information Technology (MIIT) has mandated that all televisions 40 inches and larger must integrate digital terrestrial receivers as of Jan. 1, 2014. This digital-receiver mandate expands to every television after Jan. 1, 2015.

"We have worked closely with our customers to develop a reference design that will meet all of their needs – from using proven, high-performance devices to delivering a complete blueprint that eases design of digital-TV front ends," said Brian Sprague, MaxLinear's Vice President and General Manager, Broadband and Consumer Products. "Peregrine has been a key partner in this effort, providing RF switches that deliver the isolation required for reliable reception of both terrestrial and cable TV, now a necessity in China."

Technical Highlights
Peregrine's PE42750 is a 75-Ohm, single-pole, double-throw (SPDT) RF switch for broadband consumer applications. Manufactured on Peregrine's UltraCMOS® technology, the HaRP™-enhanced device features high linearity (IIP3 of 47.5 dBm @ 2200 MHz) and high isolation performance (80 dB @ 220 MHz and 63 dB @ 1 GHz).

In compliance with the FCC 15.115 standard, these performance levels are maintained in the unpowered state to prevent reflected signals between the terrestrial antenna and cable feed. This high level of isolation ensures reliable performance in consumer TV applications. The PE42750 covers a broad frequency range from 5 MHz to 2200 MHz, delivers low insertion loss (0.7 dB @ 5 MHz and 1.0 dB @ 1 GHz) and high ESD rating of 2000 V HBM on all ports.

“The PE42750 broadband switch leverages Peregrine’s UltraCMOS technology and HaRP enhancements to deliver isolation performance that is critical for digital TV applications where multiple tuners are common,” said Mark Schrepferman, Product Line Director for Communication and Industrial Products at Peregrine Semiconductor Corp. “We are pleased to work with an industry leader like MaxLinear to bring these benefits to a reference-design platform that will simplify design for manufacturers bringing digital television sets to market.”

The MxL600 family of tuners delivers exceptional performance for all global analog and digital television reception standards in cable and terrestrial reception environments. They offer market-leading, low power consumption of 350mW in typical applications. The very low power consumption and compact 4 x 4 mm footprint in a standard 24-pin QFN package make it possible for customers to design ultra-small form factors and to support multi-tuner applications.

The software-configurable MxL600 devices allow manufacturers to design a common front-end for all global broadcast standards. Supported standards include: PAL, SECAM, NTSC, DVB-T/T2, ISDB-T, ISDB-Tmm, ATSC, ATSC M/H, DTMB, ITU-T J.83 Annex A (DVB-C) / B (US Cable) / C (Japan).

Availability
The RF reference design is available now from MaxLinear. MaxLinear's fifth-generation MxL601 CMOS tuner is shipping in millions of unit volumes. MaxLinear’s sixth-generation MxL661 CMOS tuner IC started mass production in the third quarter of 2013.

Peregrine’s PE42750 is shipping in volume quantities and has been integrated into digital and cable televisions, multi-tuner digital-video recorders and set-top boxes worldwide.

About MaxLinear, Inc.
MaxLinear, Inc. is a leading provider of radio-frequency and mixed-signal semiconductor solutions for broadband communications applications. MaxLinear is headquartered in Carlsbad, California. For more information, please visit www.maxlinear.com.

About Peregrine Semiconductor
Peregrine Semiconductor (NASDAQ: PSMI), founder of RF SOI (silicon on insulator), is a leading fabless provider of high-performance, integrated RF solutions. Since 1988 Peregrine has been perfecting UltraCMOS® technology – a patented, advanced form of SOI – to deliver the performance edge needed to solve the RF market’s biggest challenges, such as linearity. With products that deliver best-in-class performance and monolithic integration, Peregrine is the trusted choice for market leaders in automotive, broadband, industrial, Internet of Things, military, mobile devices, smartphones, space, test-and-measurement equipment and wireless infrastructure. Peregrine holds more than 150 filed and pending patents and has shipped 2 billion UltraCMOS units. For more information, visit http://www.psemi.com.

Cautionary Note About Forward-Looking Statements

This press release contains “forward-looking” statements within the meaning of federal securities laws. Forward-looking statements include, among others, statements concerning or implying future financial performance or trends and growth opportunities affecting Peregrine Semiconductor and MaxLinear, in particular statements relating the parties’ collaboration to produce a dual RF input digital TV (DTV) front-end reference design, and the performance capabilities and features of MaxLinear’s MxL600 family of tuners and Peregrine Semiconductor’s PE42750 RF switch. These forward-looking statements involve known and unknown risks, uncertainties, and other factors that may cause actual results to differ materially from any future results expressed or implied by these forward-looking statements. The parties cannot predict whether or to what extent either company will realize additional revenues from the collaboration. Forward-looking statements are based on the parties’ current, preliminary expectations and are subject to various risks and uncertainties, including (among others) intense competition in our industry; the ability of our customers to cancel or reduce orders; uncertainties concerning how end user markets for our products will develop; our lack of long-term supply contracts and dependence on limited sources of supply; and potential decreases in average selling prices for our products. In addition to these risks and uncertainties, investors should review the risks and uncertainties contained in each party’s filings with the United States Securities and Exchange Commission. All forward-looking statements are qualified in their entirety by this cautionary statement. The parties are providing this information as of the date of this release and do not undertake any obligation to update any forward-looking statements contained in this release as a result of new information, future events, or otherwise.

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