WiLink 8.0 fFamily: Five-in-one Wireless Connectivity Solutions for Next-generation Mobile Experiences

Achieving another wireless connectivity milestone, Texas Instruments introduced the WiLink 8.0 product family: a collection of 45-nanometer single-chip solutions that integrate up to five different radios, and set the stage for next-generation mobile Wi-Fi, GNSS, NFC, *Bluetooth* and FM transmit/receive applications. The WiLink 8.0 architecture supports various combinations of these technologies, allowing for customized solutions to address the unique needs and price points of all mobile markets. Each chip variant comes in a compact WSP package that can be mounted directly on a PCB, and includes all required RF front ends, a complete power management system, and comprehensive coexistence mechanisms. At the system level, the five-radio WiLink 8.0 chip offers a 60 percent cost reduction, 45 percent decrease in size and 30 percent lower power consumption compared to traditional multi-chip offerings. Complete details: www.ti.com/wilink8 [1].

“With annual shipments of more than three billion connected mobile devices expected by 2015*, manufacturers demand semiconductor solutions that not only fuel the best user experiences, but scale to address distinct product platforms. One size does not fit all: Applications have different size, power consumption and performance requirements,” said Mark Hung, Research Director, Gartner. “Innovations in functional integration, power reduction, and scalable offerings will shorten time to market and allow manufacturers to shape future on-the-go connections.”

WiLink 8.0 family: Fifteen product offerings, endless mobile opportunities

The WiLink 8.0 family includes highly integrated, five-radio WL189x solutions, tailored for smartphones, tablets, eBooks, ultrathin computing devices and other feature-rich mobile products. The WL187x, WL185x and WL183x solutions provide additional options for higher to mid-tier devices, while the WL180x solutions address lower-cost mobile markets. The product family includes integrated RF front ends for both 2.4GHz and 5GHz.

Available technology options	WL189x solutions	WL187x solutions	WL185x solutions	WL183x solutions	W s
Dual-band 2x2 MIMO mobile	WL1897	WL1877	WL1857	WL1837	W
Wi-Fi 802.11 a/b/g/n	WL1893	WL1873	WL1853	WL1833	W
Wi-Fi 802.11 b/g/n	WL1891	WL1871	WL1851	WL1831	W
Wi-Fi SS 40MHz (HT40)	*	*	*	*	*
GNSS	*	*			
Bluetooth technology	*	*	*	*	
Bluetooth low energy technology	*	*	*	*	
ANT+™	*	*	*	*	
NFC	*		*		
FM receive/transmit	*	*	*	*	

“Bringing a highly integrated, five-in-one radio chip like WiLink 8.0 to market requires the careful development of complex wireless technologies with co-existence and low-power mechanisms, among other things. This level of expertise is one that TI has mastered over the past decade,” said Haviv Ilan, Vice President And General Manager, Wireless Connectivity Solutions, TI. “Our innovation leadership is reflected in the comprehensive WiLink 8.0 family, which will forge the path to next-generation connected experiences across all mobile devices.”

Key features and benefits

Best-in-class Wi-Fi for mobile applications: WiLink 8 solutions are available for all Wi-Fi throughput ranges, either using 2x2 MIMO or SISO 40MHz. Capable of reaching more than 100Mbps Wi-Fi TCP throughput on the 2.4GHz and 5GHz bands, the chips promise the fastest mobile streaming and high-definition (HD) mobile video capabilities, including Wi-Fi Direct™ and wireless display – all with low latency, low power consumption, and open source software support. WiLink 8.0 chips with integrated Wi-Fi MIMO yield 25 percent smaller size and 50 percent power savings

as compared to other MIMO solutions.

Industry's first integrated NFC controller solution: As the first combo chip family to embed a complete NFC controller solution, WiLink 8.0 devices make NFC integration possible – and more simplified – on any mobile device. The WiLink 8.0 combo chip with integrated NFC yields a more than 50 percent size reduction as compared to non-combo solutions. WiLink 8.0 solutions are paired and pre-tested with best-in-class Secure Element technologies from industry leaders, including Infineon and NXP, which allow highly protected NFC transactions:

"TI's new WiLink single-chip solutions will trigger new innovations in design of portable platforms," said Juergen Spaenkuch, Vice President and General Manager Platform Security of the Chip Card & Security Division at Infineon Technologies. "The new WiLink family pairs perfectly with Infineon's embedded Secure Element solutions using the open and high-performance DCLB-interface, which offers an optimized connection between the eSE and the NFC modem. The eSE is EMVCo and Common Criteria EAL 5+ (high) certified, and offers the level of security needed across the full range of applications envisioned for NFC, including mobile payment, access control, ticketing and electronic keys."

"NXP is pleased to partner with TI's first-to-market five-in-one combo connectivity solution. By combining NXP chips with wireless connectivity solutions, NXP continues to lead the mobile transactions market in its evolution and growth. NXP continues to innovate and provide best-in-class Secure Elements and standalone NFC controllers," said Jeff Miles, VP Mobile Transactions, NXP Semiconductors. "As the mobile transactions market faces accelerated growth, it is vital that highly capable innovators provide complementary solutions that fill all market segments and further enable the market."

Ubiquitous positioning, always-aware hybrid location: Beyond standard GPS and GLONASS receivers, the WiLink 8.0 GNSS core includes a complete position engine on chip. This dramatically reduces system-level power consumption and enables host-independent, on-chip geo-fencing and location buffering for enhanced context awareness. WiLink 8.0 solutions blend superior GNSS and Wi-Fi sensor systems, complemented by *Bluetooth* low energy, ANT+ and NFC augmentation, to provide best-in-class positioning.

Availability

WiLink 8.0 solutions are sampling today to top-tier mobile OEMs, and will be demonstrated at TI's booth [2], 8A84, at Mobile World Congress in Barcelona, February 27 to March 1. Products with WiLink 8.0 solutions inside are expected to ship in the second half of 2012.

More information

- WiLink 8.0 introduction video: www.ti.com/wilink8-v [3]
- TI's MobileMomentum blog: http://ti.com/mobilemomentum [4]

- TI's wireless connectivity solutions: www.ti.com/wirelessconnectivity [5]

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Links:
[1] http://www.ti.com/wilink8
[2] http://ti.com/mwc2012
[3] http://www.ti.com/wilink8-v
[4] http://ti.com/mobilemomentum
[5] http://www.ti.com/wirelessconnectivity