Wi-Fi™ Driver Package for Real-time OSes Now Available

Murata Manufacturing

Overview

Murata Manufacturing Co., Ltd. has developed Wi-Fi™ driver software that enables Murata Wi-Fi™ modules to be used with µITRON[*1] or other real-time OSes[*2] (RTOSes) . The solution makes it easy to bring Wi-Fi™ to resource-constrained,[*3] energy-efficient RTOS devices running at low clock speeds,[*4] which opens the door for Wi-Fi™ in OSes other than relatively full-featured alternatives such as Linux®[*5] and Android®.[*6]

Background

Wireless LAN environments are now more common, even in homes, fueled in part by greater popularity of Wi-Fi™ in smartphones, portable game consoles, and other small, lightweight devices. At the same time, more Internet-based cloud services are launched every day. Network connectivity and use of network services on these devices has extended beyond Linux®, Android®, and other relatively full-featured OSes to the realm of embedded devices,[*7] a field previously unrelated to this kind of wireless networking.

In response, Murata has developed Wi-Fi™ drivers compatible with the RTOS used in many of these small, resource-constrained embedded devices, providing a one-stop solution for hardware and software with Murata Wi-Fi™ devices.

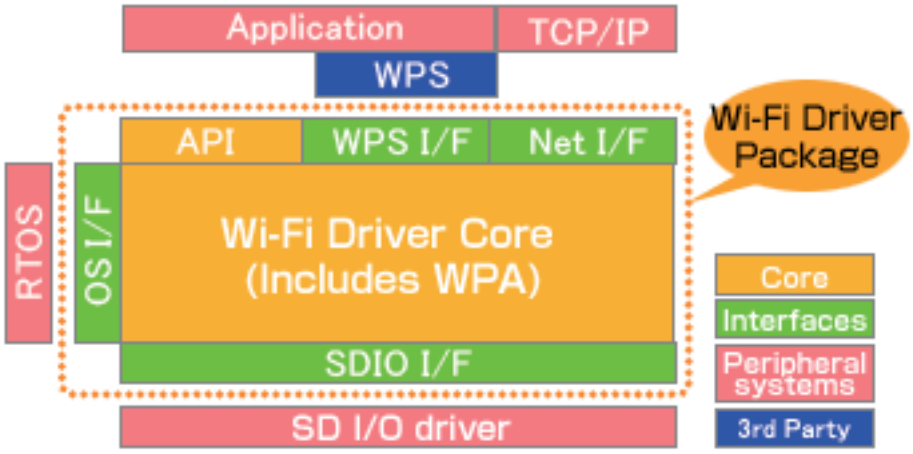
Availability of the drivers makes implementation of sophisticated Wi-Fi™ functionality in embedded devices easier, faster, and more economical, demonstrating Murata's commitment to supporting Wi-Fi™ development.

Features

- Designed for resource-constrained CPUs at low clock frequencies, yet compatible with the latest high-speed wireless specification (IEEE-802.11n) , for high-speed communication.
- In addition to client mode (for operation similar to that of a wireless extension handset), access point mode is included, for operation similar to that of the main wireless handset. Providing more robust security than ad hoc connectivity,[*8] this mode enables easy connections from smartphones and support for an array of products and services.
- Supports WPA/WPA2[*9] Personal encryption without additional software.

- Also supports WPS 2.0.[*10] Wi-Fi™ certified, in conjunction with WPS products from Ubiquitous Corporation. Support is planned for other WPS 2.0-compatible products.
- Also supports Wi-Fi Direct™, enabling direct connection between Wi-Fi™ devices.

- The driver package consists of a Wi-Fi™ driver core and interfaces, which can be developed to suit the environment of use. Sample code for interfaces is also included.



- Extended platform support is planned.
- Existing resources can be used while adding network connectivity to RTOS devices.
- Used with Murata Wi-Fi™ modules, offers an integrated (hardware+software) , one-stop solution.

Applications

- RTOS devices with a low-spec 32-bit CPU
- Wi-Fi™ functionality for machine-to-machine (M2M) devices
- RTOS digital still or video cameras, printers, home appliances, and so on

License Fees

¥3,000,000

Terminology

*1	µITRON (Micro Industrial TRON) :	An RTOS specification. Offers ample performance even with limited processing power and memory, enabling use even on low-performance computers.

*2	Real-time OS (RTOS) :	An operating system that implements functions for real-time processing. Includes a scheduler to determine required processing time, as well as functions enabling execution within the allotted time even with multitasking.
*3	Resources:	CPU processing speed and memory capacity required for computer operation.
*4	Clock:	Signals that coordinate the timing of processing by circuitry that runs on a specific frequency, such as CPUs. The number of clocks per second is referred to as the clock speed or frequency, with a low value indicating a low clock frequency. Low clock frequency indicates limited processing power, while a high clock frequency indicates higher power.
*5	Linux®:	A type of OS. Originally a computer OS, Linux® is now used in many mobile phones, digital appliances, and other embedded devices. Notable for its standard network functions and stability.
*6	Android®:	General name for a platform mainly used in smartphones and tablet computers, including elements such as the OS, middleware, interfaces, and applications. Currently the leading smartphone OS in the U.S. and Japan.
*7	Embedded devices:	Electronic devices with built-in computer systems designed to implement specific functionality.
*8	Ad hoc connection:	A wireless LAN protocol.

*9	WPA/WPA2:	Devices communicate directly, without an intermediate access point. Encryption methods established by the Wi-Fi Alliance, an industry organization involved in wireless LAN technology.
*10	WPS2.0:	Encryption method established by the Wi-Fi Alliance. Enables easy configuration of connection and security settings for wireless LAN devices.

*Wi-Fi is a registered trademark of Wi-Fi Alliance.

*Android is a registered trademark of Google Inc.

*Linux is a registered trademark of Mr.Linux Torvalds.

*Wi-Fi Direct is a registered trademark of Wi-Fi Alliance.

SOURCE [1]

Source URL (retrieved on *05/25/2013 - 10:42am*):
http://www.ecnmag.com/news/2011/11/wi-fi%E2%84%A2-driver-package-real-time-oses-now-available

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[1] http://rss.murata.co.jp/item_148281_3013621_7978.html