

CYPRESS PRODUCT SELECTOR GUIDE
INTERNET OF THINGS (IOT) SOLUTIONS



WIRELESS CONNECTIVITY

Internet of Things



Everything
Connected
to the network

Connectivity



Smart Devices
Control and Analyze

Wearables

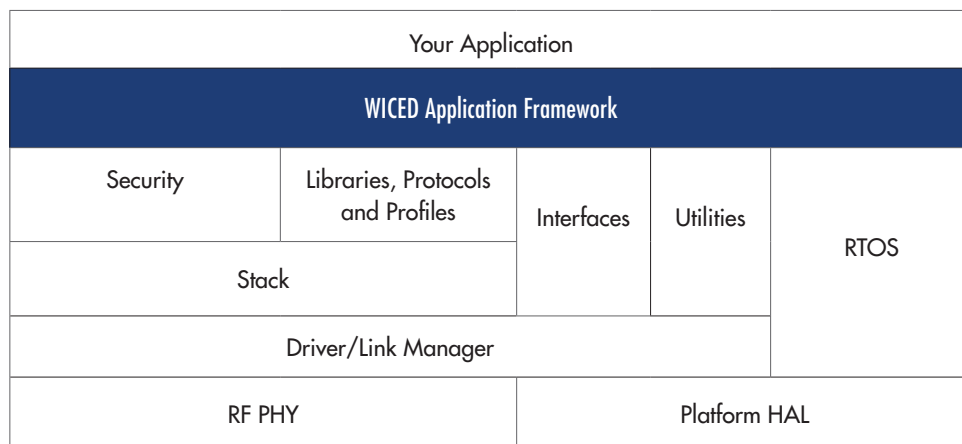


Body-borne
Computing
and Sensors



WICED STUDIO THE ONLY SDK THAT INTEGRATES BLUETOOTH, WI-FI AND ZIGBEE

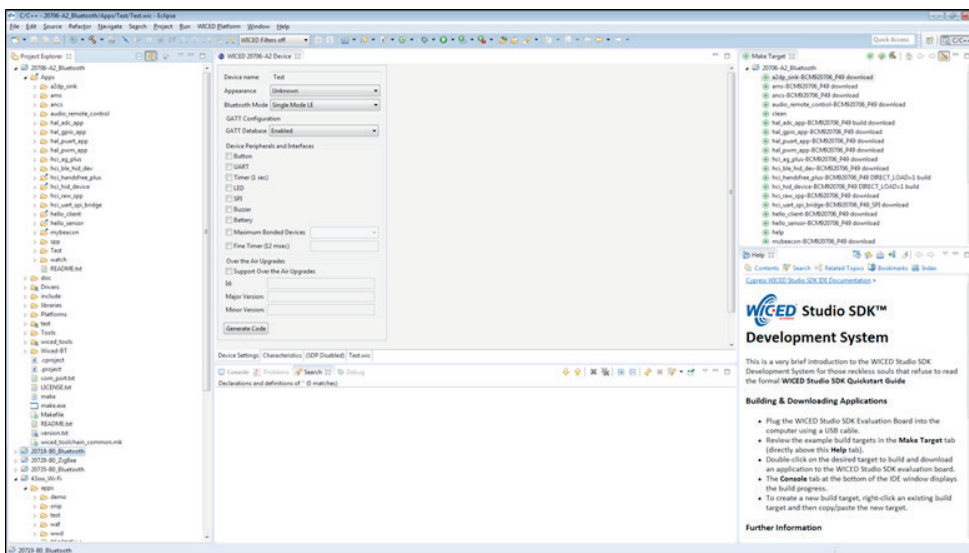
WICED APIs and Application Framework abstract complexity



Extensive support for industry standards



An intuitive graphical IDE simplifies development



HIGHLIGHTS

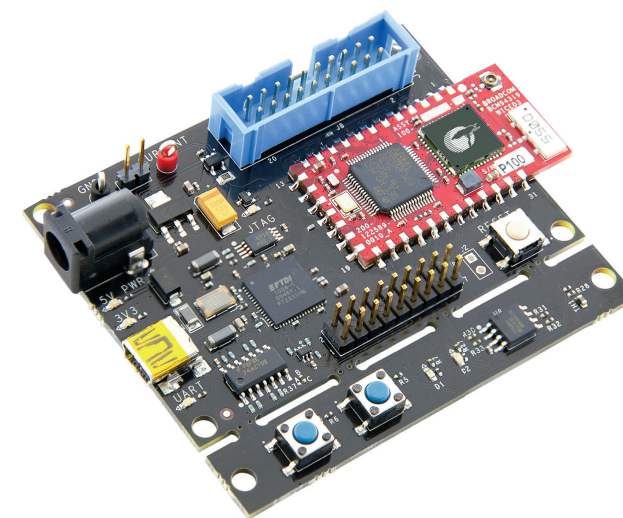
- Runs on Windows, OS X, and Linux through Eclipse-based integrated development environment (IDE)
- Single installer package with support for:
 - Wi-Fi
 - Bluetooth (BR/EDR and BLE)
 - ZigBee (802.15.4)
- Sample applications for many popular use cases
- Code snippets for understanding WICED APIs
- Applications for manufacturing and certification
- Applications support for leveraging low-level drivers
- WICED Studio standardizes on tools, naming conventions, and structure from previous WICED SDKs



WICED™

WICED Wi-Fi. Cypress provides a full-featured WICED Development Kit and is working with partners to deliver turnkey hardware solutions of various form factors to readily enable Wi-Fi connectivity in system designs. The following reference WICED boards are available for development and device prototyping:

- **BCM943362WCD4_EVB:** The BCM943362WCD4 SIP module is mounted on a full-featured USB-based evaluation and development board that is fully compatible with the WICED Wi-Fi Software Development Kit (SDK). The onboard SIP module leverages the CYW43362 802.11n 2.4 GHz Wi-Fi controller with integrated antennas and diversity to improve the quality and reliability of a wireless link, plus the STM32F205 32-bit ARM microcontroller.
- **BCM943364WCD1_EVB:** The BCM943364WCD1 SIP module is mounted on a full-featured USB-based evaluation and development board that is fully compatible with the WICED Wi-Fi Software Development Kit (SDK). Designed to be a lower cost alternative to the popular CYW43362, the onboard SIP module leverages the CYW43364 2.4 GHz WLAN IEEE 802.11b/g/n MAC/baseband/radio. In addition, the module integrates a power amplifier (PA) that meets the output power requirements of most handheld systems, a low-noise amplifier (LNA) for best-in-class receiver sensitivity, and an internal transmit/receive (iTR) RF switch, further reducing the overall solution cost and printed circuit board area. Powered by the STM32F411 32-bit ARM microcontroller, the board is also provisioned to support the authentication chip utilized by Apple's HomeKit offering.
- **BCM94343WWCD1_EVB:** The BCM94343WWCD1 SIP module is mounted on a full-featured USB-based evaluation and development board that is fully compatible with the WICED Wi-Fi SDK. Designed to be a lower cost alternative to the popular CYW4334X series, the onboard SIP module leverages the CYW4343W featuring an 802.11b/g/n MAC/baseband /radio and Bluetooth 4.x support. In addition, the module integrates a power amplifier (PA) that meets the output power requirements of most handheld systems, a low-noise amplifier (LNA) for best-in-class receiver sensitivity, and an internal transmit/receive (iTR) RF switch, further reducing the overall solution cost and printed circuit board area. Powered by the STM32F411 32-bit ARM microcontroller, the board is also provisioned to support the authentication chip utilized by Apple's HomeKit offering.



The BCM943362WCD4 WICED module mounted on a full-featured BCM943362WCD4_EVB development board.



WICED™

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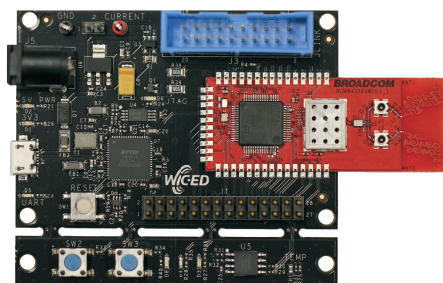
WICED Wi-Fi Software Development Kit. The WICED Wi-Fi SDK includes the following:

- An open-source build system and toolchain based on GNU 'make'.
- A GUI development environment based on Eclipse CDT that seamlessly integrates with a JTAG programmer and single-step, thread-aware debugger based on OpenOCD and gdb.
- A comprehensive software stack with a choice of several RTOS/TCP stack options including ThreadX/NetX, ThreadX/NetX Duo, and FreeRTOS/LwIP*.
- Advanced security and networking features, incorporating SSL/TLS, IPv4/IPv6 networking, and mDNS (Bonjour) device discovery.
- WICED Application Framework incorporating production-ready features, including bootloader, Flash storage API, over-the-air (OTA) upgrades, factory reset, and system monitor.
- Production-ready sample applications and application snippets that demonstrate how to use the WICED API feature set, including examples of Wi-Fi to Bluetooth (BT/BLE) bridging and Apple HomeKit (requires MFi license).
- Support for Amazon Web Services (AWS), Alibaba Aliyun and IBM Bluemix.
- Various test applications to aid manufacturing and certification.
- Full documentation included in the SDK.

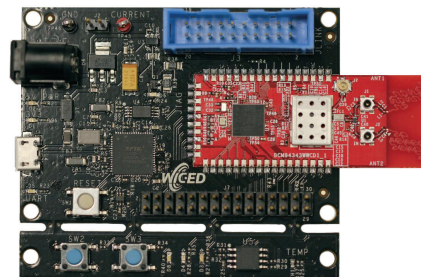
For additional information on WICED modules currently in production, go to:

<http://community.Cypress.com/community/wiced-wifi>

*FreeRTOS/LwIP support not available within WICED Studio 4.x.



The BCM943364WCD1 WICED module mounted on a full-featured BCM943364WCD1_EVB development board.



The BCM94343WWCD1 SIP module mounted on a full-featured BCM94343WWCD1_EVB evaluation board.

WICED™ SMART

WICED™ SMART (Embedded Bluetooth Low Energy): WICED SMART is a very low-power family of pin-compatible modules that, when paired with the included SDK, vastly reduces the effort required to add “Bluetooth Smart” wireless connectivity and cable replacement capabilities to a range of embedded applications.

- Pin-Compatible Family: CYW20732, CYW20736 (Wireless Charging), and CYW20737 (RSA).
- BCM92073X_LE_KIT: A complete evaluation and development kit that includes the CYW20737, a fully integrated Bluetooth Smart SoC, and is configured for easy evaluation and software development.
- CYW20732S/CYW20736S/CYW20736E/CYW20737S/CYW20737L: A production module providing cable replacement functionality via an integrated Bluetooth Smart solution that includes onboard stack, crystal, antenna, and regulatory approvals (internal antenna and regulatory approvals not available on the CYW20736E).
- BCM92073X_LE_TAG4: Adds sensors for pressure, magnetometer, humidity, temperature, accelerometer, and gyroscope. Support for these products is available within the Cypress Support Community forums at: <http://community.cypress.com/welcome>

WICED SMART Software Development Kit: Cypress provides a WICED SMART SDK and is working with partners to deliver turnkey hardware solutions to enable Bluetooth Smart connectivity. Cypress’s WICED SMART Development Kit eases development effort and simplifies the implementation of wireless connectivity in an array of consumer, medical, fitness, and home automation devices—especially those without existing networking support.

Developers use the WICED SMART Development Kit to create secure Bluetooth SMART wireless applications. The development kit contains the following:

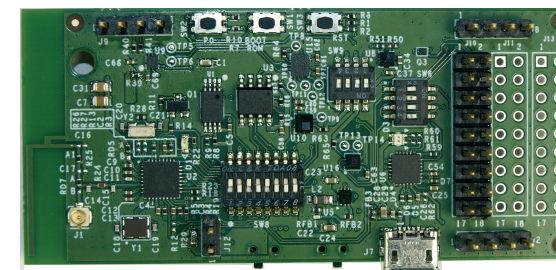
- WICED SMART BCM92073X_LE_TAG4 small form-factor development board (includes coin cell holder) with added sensors for pressure, magnetometer, humidity, temperature, accelerometer, and gyroscope.
- SDK
- A full suite of documentation (data sheet, hardware user’s guide, quick start guide, etc.).
- Integrated Eclipse-based IDE allowing access to peripherals, timers, stack, and profiles.
- Support for ARM RealView RVDS and CodeSourcery G++ Lite toolchains.
- Linux, OSX, or Windows development support.
- Sample profiles include: Proximity, Heart Rate Monitor, Health Thermometer, Blood Pressure Monitor, Time, Automation I/O, Glucose Meter, Cycling Speed Cadence, Running Speed Cadence, I2C Temperature Sensor, SPI Master and Slave, SPI Pressure Sensor, multiple beacons, OTA Firmware Upgrade, UART Firmware Upgrade, Indoor Position, Location and Navigation, Long Characteristics, Rezenze-based (A4WP) Power Transmitting Unit (PTU) and Power Receiving Unit (PRU) profiles, support for Simultaneous Master/Slave, PWM tones (pwm_tones), the ability to test data transfer speed/throughput (speed_test), and a wearables (watch) sample (which includes Apple Notification Center Service, Find Me client, Time client, and HID service).

WICED™ SmartBridge/Bluetooth Internet Gateway:

A multiple-connection Bluetooth SmartBridge/Bluetooth Internet Gateway with the following features: whitelist, bond storage, attribute caching, GATT procedures, configurable maximum concurrent connections, directed advertisements, and device address initialization for seamless bridging between Wi-Fi and Bluetooth low energy products.

WICED™ Sense:

The best out-of-box development experience for WICED SMART. Includes a gyroscope, accelerometer, eCompass, pressure, humidity, and temperature sensors.



CYW20737 mounted on a BCM92073X_LE_TAG4 full-featured WICED SMART development board with sensors.



BCM9WICED_SENSE2: A WICED low-energy board housed in a sturdy plastic case.

WICED™ SMART PRODUCT SELECTOR

WICED™ SMART (Embedded Bluetooth Low Energy): WICED SMART is a very low-power family of pin-compatible modules that, when paired with the included SDK, vastly reduces the effort required to add “Bluetooth Smart” wireless connectivity and cable replacement capabilities to a range of embedded applications.

Devices		Description	Key Features	Software	Status
Value/Price	CYW20732	5 × 5 QFN	On-chip stack, ARM Cortex M3, 1.2V operation	Base device with embedded stack and key Bluetooth profiles preloaded in ROM. Supported by SDK 1.x.	Available
	CYW20732S	6.5 × 6.5 SIP Module (includes BT SMART, Crystal, EEPROM, BPF, Antenna, Passives, and Regulatory).			
Value/Features	CYW20736	QFN	On-chip stack, ARM Cortex M3, 1.2V operation, wireless charging, simultaneous central and peripheral operation	Adds Wireless Charging, Simultaneous Central, and Peripheral Operation to BCM20732-based products. Supported by SDK 2.x.	Available
	CYW20736S	SIP Module (includes BT SMART, Crystal, EEPROM, BPF, Antenna, Passives, and Regulatory).			
	CYW20736E	SIP Module (includes BT SMART, Crystal, EEPROM, BPF, and Passives).			
Performance	CYW20737	QFN	On-chip stack, ARM Cortex M3, 1.2V operation, wireless charging, simultaneous central and peripheral operation, NFC pairing, RSA security library, LE audio	Adds NFC Pairing, RSA Security Library, LE Audio, and Mesh Capabilities to BCM20736-based products. Supported by SDK 2.x.	Available
	CYW20737S	SIP Module (includes BT SMART, Crystal, EEPROM, BPF, Antenna, Passives, and Regulatory).			
	CYW20737L	SIP Module (includes BT SMART, Crystal, EEPROM, BPF, Antenna, Passives, and Regulatory). Supports an external DC-DC regulator to optimize power consumption.			
Evaluation	BCM920732_BLE_KIT	Full-featured development board for the CYW20732.	USB support for PC dev. Integrated Eclipse-based IDE	Supported by SDK 1.x.	Available
	BCM92073X_LE_KIT	Full-featured development board for the CYW20737.	USB support for PC dev. Integrated Eclipse-based IDE	Supported by SDK 2.x.	
	BCM92073X_LE_TAG4	Full-featured development board for the CYW20737 with added sensors for pressure, magnetometer, humidity, temperature, accelerometer, and gyroscope.	USB support for PC dev. Integrated Eclipse-based IDE	Supported by SDK 2.x.	
	WICED Sense	Experience kit for the CYW20737S.	Fast and Easy Setup USB support for PC dev.	Supported by SDK 2.x.	
	WICED Sense 2	Next-Generation Experience kit for the CYW20737S with added usability and low-power features.	Fast and Easy Setup USB support for PC dev.	Supported by SDK 2.x.	

WICED™ WI-FI AND BLUETOOTH PARTNER MODULES

Partner	PN	Wi-Fi /BT PN	Wi-Fi /BT Support	MCU	CPU	Area (mm)	Regulatory	Diversity	Linux	Interfaces	Highlights
Anaren	A20737A/C	CYW20737	BLE	ARM CM3-Internal	24 MHz	11 x 13	FCC/IC/ACMA/ETSI RSM/NCC/RRRC/WPC MIC /NRRR/Customs Union (Russia)	No	No	UART x2,SPI, I2C, GPIO	64 KB onboard Flash. Choice of internal/external antenna. Easy-to-use drag-and-drop atmosphere development
Anaren	A43364	CYW43364	2.4 GHz, 802.11b/g/n	ARM CM4-STM32F412	120MHz	11 x 19	FCC/IC/ACMA/ETSI RSM/NCC/RRRC/WPC MIC/NRRR/Customs Union [Russia]	No	No	UART, SPI, I ² S, I ² C, USB, JTAG and GPIO	Micro controller with 1MB flash providing plenty of head room to load customers app and OTA. Choice of internal/external antenna. Easy to use Drag and Drop Atmosphere Development.
Inventek	ISM 43362-L36	CYW 43362	2.4 GHz, 802.11b/g/n	Radio Only	N/A	14.5 x 24	FCC/IC/CE/TELEC	No	Yes	SDIO	Virtual WICED or Linux drivers
Inventek	ISM43362-M3G-L44-E/U	CYW 43362	2.4 GHz, 802.11b/g/n	ARM CM3-STM32F205	120MHz	15 x 30	FCC/IC/CE/TELEC	No	No	UART, SPI	Configurable through AT Commands or WICED, OnBoard Antenna, or U.FL.
Inventek	ISM43362-B81	CYW 43362	2.4 GHz, 802.11b/g/n	Radio Only	N/A	8 x 8	No	No	Yes	SDIO	Virtual WICED or Linux drivers
Inventek	ISM 43364-WM-L44-C/U	CYW 43364	2.4 GHz, 802.11b/g/n	ARM CM3-STM32F411	100 MHz	15 x 34	FCC/IC/CE	No	No	UART	Configurable through AT Commands or WICED, OnBoard Antenna, or U.FL.
Inventek	ISM 4390-L57	CYW 4390	2.4 GHz, 802.11b/g/n	ARM CM3-Internal	48MHz	10.5 x 10.5	None	Yes	No	UART	Configurable through AT commands or WICED
Inventek	ISM4390-M3H-L44-ED	CYW 4390	2.4 GHz, 802.11b/g/n	ARM CM3-Internal	48MHz	14.5 x 30	FCC/IC/CE	Yes	No	UART	Configurable though AT commands or WICED, On-Board Etched Antenna and U.FL
Inventek	ISM43340-M4G-L44-C/U	CYW 43340	2.4 / 5GHz, 802.11a/b/g/n, BT/BLE	ARM CM4-STM32F405	168MHz	14.5 x 34	FCC/IC/CE	No	No	UART, SPI	Configurable though AT commands or WICED, On-Board Chip Antenna or U.FL
Inventek	ISM43340-M4G-L44-10C/U	CYW 43340	2.4 / 5GHz, 802.11a/b/g/n, BT/BLE	ARM CM4-STM32F405	168MHz	14.5 x 34	FCC/IC/CE	No	No	UART, SPI	Configurable though AT commands or WICED, On-Board Chip Antenna or U.FL 10 Additional I/O added for MFI (LGA44+10) etc
Inventek	ISM43340-L77	CYW 43340	2.4 / 5GHz, 802.11a/b/g/n, BT/BLE	Radio Only	NA	13 x 14	FCC/IC/CE	No	Yes	SDIO	Virtual WICED or Linux Drivers External Chip Antenna

WICED™ WI-FI AND BLUETOOTH PARTNER MODULES (Cont.)

Partner	PN	Wi-Fi /BT PN	Wi-Fi /BT Support	MCU	CPU	Area (mm)	Regulatory	Diversity	Linux	Interfaces	Highlights
Inventek	ISM4343-WBM-L44-10C/U	CYW4343W	2.4 GHz, 802.11b/g/n, BT/BLE	ARM CM4-STM32F411	100MHz	14.5 x 30	FCC/IC/CE	No	No	UART, SPI	Configurable through AT commands or WICED, On-Board Chip Antenna or U.FL, 10 Additional I/O added for MFI
Inventek	ISM4343-WBM-L151	CYW4343W	2.4 GHz, 802.11b/g/n, BT/BLE	ARM CM4-STM32F411	100MHz	10 x 10	FCC/IC/CE	No	No	UART, SPI	Configurable through AT commands or WICED
Inventek	ISM4343-WBM-L44-C/U	CYW4343W	2.4 GHz, 802.11b/g/n, BT/BLE	ARM CM4-STM32F412	100MHz	15 x 34	FCC/IC/CE	No	No	UART	Configurable through AT Commands or WICED, On-Board Antenna or U.FL
Inventek	ISM4343-L77	CYW4343W	2.4 GHz, 802.11b/g/n, BT/BLE	Radio Only	NA	13 x 14	FCC/IC/CE	No	Yes	SDIO	Virtual WICED or Linux Drivers
Inventek	ISM43907-WM-L170	CYW43907	2.4/5 GHz, 802.11b/g/n	ARM CR4-Internal	160/300MHz	11 x 11	FCC/IC/CE	No	No	UART, SPI, USB	Configurable through AT commands or WICED
Inventek	ISM43907-WM-L44	CYW43907	2.4/5 GHz, 802.11b/g/n	ARM CR4-Internal	160/300MHz	14.5 x 30	FCC/IC/CE	No	No	UART, SPI, USB	Configurable through AT commands or WICED, On-Board Chip Antenna or U.FL
Inventek	ISM43903-R48-L54-E/U	CYW43903	2.4/5 GHz, 802.11b/g/n	ARM CR4-Internal	160/300MHz	14.5 x 30	FCC/IC/CE	No	No	UART, SPI, USB	Configurable through AT commands or WICED, On-Board Chip Antenna or U.FL
Inventek	ISM20732S	CYW20732	BLE	ARM CM3-Internal	24MHz	6.5 x 6.5	FCC/IC/CE	No	No	SPI, I ² C, JTAG	Lowest Cost BLE SIP Module Solution
Inventek	ISM20736S	CYW20736	BLE	ARM CM3-Internal	24MHz	6.5 x 6.5	FCC/IC/CE	No	No	SPI, I ² C, JTAG	Wireless charging, simultaneous central and peripheral operation
Inventek	ISM20706A2S	CYW20706	BT 4.2	ARM CM3-Internal	96MHz	6.0 x 8.6	FCC/IC/CE	No	No	SPI, I ² C, JTAG	Embedded Antenna BT4.2+HS SIP Module

WICED™ WI-FI AND BLUETOOTH PARTNER MODULES (Cont.)

Partner	PN	Wi-Fi/ BT PN	Wi-Fi/ BT Support	MCU	CPU	Area (mm)	Regulatory	Diversity	Linux	Interfaces	Highlights
Lantronix	XPCW1003 100B	CYW 43362	2.4 GHz, 802.11n	ARM CM3- STM32F205	120 MHz	30.1 x 18.3	FCC/IC/ CE/TELEC	No	No	UART x2, SPI, USB, 8 GPIOs	On-module antenna, 1 MB + 8 MB Flash and 128 KB RAM, production-ready S/W, file system, OTA, config, SDK, serial-to-Wi-Fi, Ethernet-over-USB to Wi-Fi.
Lantronix	XPCW1002 100B	CYW 43362	2.4 GHz, 802.11n	ARM CM3- STM32F205	120 MHz	26.1x 18.3	FCC/IC/ CE/TELEC	No	No	UART x2, SPI, USB, 8 GPIOs	U.FL antenna, 1 MB + 8 MB Flash and 128 KB RAM, production-ready S/W, file system, OTA, config, SDK, serial-to-Wi-Fi, Ethernet-over-USB to Wi-Fi.
Lantronix	XPW1001 00B-01	CYW 43362	2.4 GHz, 802.11n	ARM CM3- STM32F205	120 MHz	24 x 16.5	FCC/IC/ CE/TELEC	No	No	UART x2, SPI, USB, 8 GPIOs	U.FL Antenna, 1 MB + 8 MB Flash and 128 KB RAM, production-ready S/W, file system, OTA, config, SDK, Serial-to-Wi-Fi, Ethernet-over-USB to Wi-Fi.
LSR	TiWi-C-W (450-0118)	CYW 4390	2.4 GHz, 802.11b /g/n	ARM CM3- Internal	48 MHz	10.5 x 10.5	FCC/IC /CE	Yes	No	I ² C, USB, JTAG	Pre-integrated cloud agent for TiWiConnect IoT Platform (www.tiwiconnect.com), Multiple 2.4 GHz antenna options: SMT Chip, Dipole, FlexPIFA™, Industrial Temp Rated: -40 to 85 C, Dev Kit featuring TiWiConnect available.
LSR	Sterling-LWB (450-0152)	CYW 4343W	2.4 GHz 802.11b /g/n, BLE/BT	Radio Only	N/A	15.5 x 21 (Int. Antenna)	FCC/IC/ CE/Giteki /C-Tick	No	Yes	SDIO, UART, I ² S	On-Module Antenna Version with advanced chip antenna with greater resistance to de-tuning vs. other chip or trace antennas, Nearly 60% lower Active Rx power consumption vs. LSR's current TiWi-BLE module, Multiple 2.4 GHz antenna options: SMT Chip, Dipole, FlexPIFA™ & FlexNotch™, Industrial Temp Rated: -40 to +85° C, On-Module version with U.FL external antenna port (Item # 450-0148) also available. New 'Sterling-LWB for WICED' reference platform enables Sterling-LWB to be used for embedded MCU applications, validated with STM32F411 (Evaluation board 450-0173)
LSR	Sterling-LWB (450-0148)	CYW 4343W	2.4 GHz 802.11b /g/n, BLE/BT	Radio Only	N/A	15.5 x 21 (Int. Antenna)	FCC/IC/ CE/Giteki/ C-Tick	No	Yes	SDIO, UART, I ² S	On-Module version with U.FL external antenna port for simplified integration, Nearly 60% lower Active Rx power consumption vs. LSR's current TiWi-BLE module, Multiple 2.4 GHz antenna options: SMT Chip, Dipole, FlexPIFA™ & FlexNotch™, Industrial Temp Rated: -40 to +85° C, On-Module Antenna Version (Item # 450-0152) also available, with advanced chip antenna with greater resistance to de-tuning vs. other chip or trace antennas. New 'Sterling-LWB for WICED' reference platform enables Sterling-LWB to be used for embedded MCU applications, validated with STM32F411 (Evaluation board 450-0173)
LSR	Sterling-LWB (450-0159)	CYW 4343W	2.4 GHz 802.11b /g/n, BLE/BT	Radio Only	N/A	10x10 (SiP only, no antenna)	FCC/IC/ CE/Giteki/ C-Tick	No	Yes	SDIO, UART, I ² S	Nearly 60% lower Active Rx power consumption vs. LSR's current TiWi-BLE module, Multiple 2.4 GHz antenna options: SMT Chip, Dipole, FlexPIFA™ & FlexNotch™, Industrial Temp Rated: -40 to +85° C, On-Module Antenna Version available (Item # 450-0152), with advanced chip antenna with greater resistance to de-tuning vs. other chip or trace antennas, On-Module version with U.FL external antenna port (Item # 450-0148) also available. New 'Sterling-LWB for WICED' reference platform enables Sterling-LWB to be used for embedded MCU applications, validated with STM32F411 (Evaluation board 450-0173)
LSR	Sterling-LWB5 (450-0162)	CYW 43353	2.4/5GHz, 802.11ac/ a/b/g/n, BLE/BT	Radio Only	N/A	10x10 (SiP only, no antenna)	FCC/IC/ CE/Giteki/ C-Tick	No	Yes	SDIO, UART, I ² S	Industry leading dual-band Wi-Fi/Combo module that supports 802.11 ac for ultra-high data rate applications, Broad country certifications and multiple certified antenna options, Industrial Temp Rated: -40 to 85 C. Similar to Sterling-LWB, will also come in configurations that include on-module chip antennas OR U.FL connectors. Module versions (450-0168, 450-0169) will be pin and footprint compatible with Sterling-LWB.
LSR	Sterling-LWB5 (450-0169)	CYW 43353	2.4/5GHz, 802.11ac/ a/b/g/n, BLE/BT	Radio Only	N/A	15.5 x 21 (Int. Antenna)	FCC/IC/ CE/Giteki/ C-Tick	No	Yes	SDIO, UART, I ² S	Industry leading dual-band Wi-Fi/Combo module that supports 802.11 ac for ultra-high data rate applications, Broad country certifications and multiple certified antenna options, Industrial Temp Rated: -40 to 85 C. Similar to Sterling-LWB, will also come in configurations that include on-module chip antennas OR U.FL connectors. Module versions (450-0168, 450-0169) will be pin and footprint compatible with Sterling-LWB.
LSR	Sterling-LWB5 (450-0168)	CYW 43353	2.4/5GHz, 802.11ac/ a/b/g/n, BLE/BT	Radio Only	N/A	15.5 x 21 (Ext. Antenna)	FCC/IC/ CE/Giteki/ C-Tick	No	Yes	SDIO, UART, I ² S	Industry leading dual-band Wi-Fi/Combo module that supports 802.11 ac for ultra-high data rate applications, Broad country certifications and multiple certified antenna options, Industrial Temp Rated: -40 to 85 C. Similar to Sterling-LWB, will also come in configurations that include on-module chip antennas OR U.FL connectors. Module versions (450-0168, 450-0169) will be pin and footprint compatible with Sterling-LWB.

WICED™ WI-FI AND BLUETOOTH PARTNER MODULES (Cont.)

Partner	PN	Wi-Fi/ BT PN	Wi-Fi/ BT Support	MCU	CPU	Area (mm)	Regulatory	Diversity	Linux	Interfaces	Highlights
Murata	Type 1GR (LBCA1ZZ1GR-084)	CYW 20736	BLE	CM3 (Internal)	N/A	9.0 x 7.0 x 1.2	CE/FCC/IC	External	No	UART, SPI	Bluetooth 4.1, with Antenna,
Murata	Type 1BW (LBEH5DU1BW-777)	CYW 43340	2.4 / 5GHz, 802.11a/b/ g/n, BT/BLE	Radio Only	N/A	8 x 7.5	No	External	Yes	WLAN: SDIO BT: UART	Part of i.MX6 platform with Linux drivers integrated in NXP/Freescale Linux distribution, -20 to +75° C
Murata	SN8000 (88-00153-00)	CYW 43362	2.4 GHz, 802.11b /g/n	Radio Only	N/A	24 x 11.4	CE/FCC/IC	External	Yes	SDIO, SPI	WiFi Only SiP 88-00153-XX Both WICED and Linux support Part of i.MX6 platform with Linux drivers integrated in NXP/Freescale Linux distribution, -40 °C to +85 °C
Murata	SN8000UFL (88-00153-02)	CYW 43362	2.4 GHz, 802.11b /g/n	Radio Only	N/A	24 x 11.4	CE/FCC/IC	External	Yes	SDIO, SPI	Same Wi-Fi only SiP as SN8000 with external Antenna supported through U.FL connector, -40 °C to +85 °C
Murata	Type 1CD Imp003 (LBWA1ZV1CD-716)	CYW 43362	2.4 G, b/g/n	ARM CM4- STM32F405	168 MHz	10 x 7.9	CE/FCC/IC	External	No	UART, SPI	Same as YD but with Electric Imp Cloud support. Modular Cert., -20 °C to +70 °C
Murata	Type YD (LBWA1ZYDZ-679)	CYW 43362	2.4 GHz, 802.11b /g/n	ARM CM3- STM32F205	120 MHz	10 x 7.9	CE/FCC/IC/TELEC	External	No	UART, SPI	WICED, 1024KB FLASH 128KB RAM 32KHZ OSC, -20 °C to +70 °C. Reference Cert
Murata	Type YD (LBWA1ZYDZ-739)	CYW 43362	2.4 GHz, 802.11b /g/n	ARM CM3- STM32F205	120 MHz	10 x 7.9	CE/FCC/IC/TELEC	No	No	UART, SPI	WICED, 1024KB FLASH 128KB RAM 32KHZ OSC, -20 °C to +70 °C. Reference Cert
Murata	Type YDD (LBWB1ZZYDZ-683)	CYW 43362	2.4 GHz, 802.11b /g/n	ARM CM3- STM32F205	120 MHz	33 x 18	CE/FCC/IC/TELEC	No	No	UART, SPI	Ayla Cloud Support, 1024KB FLASH 128KB RAM 32KHZ OSC, -40 °C to +85 °C
Murata	Type YDD (LBWB1ZZYDZ-713)	CYW 43362	2.4 GHz, 802.11b /g/n	ARM CM3- STM32F205	120 MHz	33 x 18	CE/FCC/IC/TELEC	No	No	UART, SPI	WICED, 1024KB FLASH 128KB RAM 32KHZ OSC, -40 °C to +85 °C
Murata	Type YDD (LBWB1ZZYDZ-740)	CYW 43362	2.4 GHz, 802.11b /g/n	ARM CM3- STM32F205	120 MHz	33 x 18	CE/FCC/IC/TELEC	No	No	UART	SNIC-UART, 1024KB FLASH 128KB RAM 32KHZ OSC, -40 °C to +85 °C
Murata	Type 1FX (LBWA1KL1FX-875)	CYW 43364	2.4 GHz, 802.11b /g/n	Radio Only	N/A	6.95 x 5.15	CE/FCC/IC	External	Yes	SDIO, SPI	Pin to Pin compatible to 1DX. Diversity w/ SW control pins. Part of i.MX6 platform with Linux drivers integrated in NXP/Freescale Linux distribution, -20 °C to +75 °C. Reference Certified
Murata	Type 1CK (LBEE5ZZ1CK-982)	CYW 4339	2.4 GHz, 802.11b /g/n	Radio Only	N/A	33 x 18	FCC/IC	External	Yes	WLAN: SDIO BT: UART	Part of i.MX6 platform with Linux drivers integrated in NXP/Freescale Linux distribution, -20 to +75° C This is a daughter card based on ZP module with on board antenna

WICED™ WI-FI AND BLUETOOTH PARTNER MODULES (Cont.)

Partner	PN	Wi-Fi/ BT PN	Wi-Fi/ BT Support	MCU	CPU	Area (mm)	Regulatory	Diversity	Linux	Interfaces	Highlights
Murata	Type ZP (LBEH5HMZPC-869)	CYW 4339	2.4 / 5GHz, 802.11a/b/g/n + ac, BT/BLE	Radio Only	N/A	7.8 x 7.4	No	External	Yes	WLAN: SDIO BT: UART	Part of i.MX6 platform with Linux drivers integrated in NXP/Freescale Linux distribution, -20 to +75 deg.C
Murata	Type 1HD (LBWA1ZZ1HD-004)	CYW 43438	2.4 / 5GHz, 802.11a/b/g/n + ac, BT/BLE	ARM CM4- STM32F412	100 MHz	21 x 17.5	CE/FCC/IC/TELEC	External	No	UART, SPI	1024KB FLASH 256KB RAM WICED, Apple HomeKit support, Low current, Certified with embedded antenna, -20 °C to +75 °C
Murata	Type 1LD (LBEE5PA1LD-005)	CYW 43438	2.4 GHz, 802.11b/g/n	ARM CM4- STM32F412	100 MHz	8.9 x 7.8	CE/FCC/IC/TELEC	External	No	UART, SPI, I ² C, I ² S, GPIO	1024KB FLASH 256KB RAM WICED, Apple HomeKit support, Low current, -20 °C to +75 °C
Murata	Type 1MD Imp004m (LBWA1ZZ1MD-011)	CYW 43438	2.4 GHz, 802.11b/g/n, BT/BLE	ARM CM4- STM32F412	100 MHz	21 x 17.5	CE/FCC/IC/TELEC	External	No	UART, SPI, I ² C, PWM, GPIO, ADC	1024KB FLASH 256KB RAM, ElectricImp Imp004m, Certified with embeded antenna, -20 °C to +75 °C
Murata	Type 1DX (LBEE5KL1DX-883)	CYW 4343W	2.4 GHz, 802.11b/g/n, BT/BLE	Radio Only	N/A	6.95 x 5.15	CE/FCC/IC	External	Yes	WLAN: SDIO BT: UART	Part of i.MX6 platform with Linux drivers integrated in NXP/Freescale Linux distribution, -20 °C to +75 °C, Reference Certified
Murata	Type 1AD (LBWA1CS1AD-806)	CYW 4390	2.4 GHz, 802.11b/g/n	ARM CM3- Internal	48 MHz	9.4 x 8.9	CE/FCC/IC/TELEC	External	No	I ² C, USB, JTAG	Lowest cost cloud enabled module CYW4390. 2MB FLASH and 448KB SRAM Supported with Ayla software only. Modular Cert., -30 °C to +85 °C
Murata	Type 1AD-D (LBWB1ZZ1AD-812)	CYW 4390	2.4 GHz, 802.11b/g/n	ARM CM3- Internal	48 MHz	33 x 18	CE/FCC/IC/TELEC	External	No	I ² C, USB, JTAG	Same as 1AD but with Antenna. For Japan markets, -30 °C to +85 °C
Murata	Type 1GC (LBWA1UZ1GC-958)	CYW 43907	2.4 / 5GHz, 802.11a/b/g/n	ARM CR4- Internal	320 MHz	10 x 10	CE/FCC/IC	External	No	UART, SPI, I ² C, I ² S, PWM, GPIO, USB, Ethernet	WICED, High performance CPU. Gateway for WLAN and Ethernet. Audio streaming. Modular Cert. RAM 2MB, -20 °C to +70 °C
Murata	Type 1GC Imp005 (LBWA1UZ1GC-901)	CYW 43907	2.4 / 5GHz, 802.11a/b/g/n	ARM CR4- Internal	320 MHz	10 x10	CE/FCC/IC	External	No	UART, SPI, I ² C, I ² S, PWM, GPIO, USB, Ethernet	Electric Imp, High performance CPU. Gateway for WLAN and Ethernet. Audio streaming. Modular Cert. RAM 2MB. ElectricImp Imp005,-20 °C to +70 °C

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