

# BT85x Series

## Bluetooth 4.2 Class I USB HCI Modules & Adapter



BT850-SA



BT850-ST



BT851

The BT85x series of USB HCI modules and Adapter leverage the **Cypress CYW20704 A2** chipset to provide exceptionally low power consumption with outstanding range for OEMs needing both **Classic Bluetooth** and **Bluetooth Low Energy** support. The **Bluetooth v4.2** core specification shortens your development time and provides enhanced throughput, security and privacy.

The BT850 modules are ideal when designers need both performance and minimum size. For maximum flexibility in integration, they support a **host USB** interface, **I<sup>2</sup>S** and **PCM** audio interfaces, **GPIO**, and Cypress' **GCI coexistence (2-Wire)**. The modules provide excellent RF performance and identical footprint options for integrated antenna or an external antenna via a trace pin.

These modules present a Bluetooth standard HCI interface with native support for **Windows, Linux and Android** Bluetooth software stacks for operating system backed devices. The BT851 Pluggable USB Adapter with inbuilt Bluetooth stack simply plugs into any Windows, Android or Linux device via **external** USB connection.

Additionally, Laird has partnered with [Searan](#) for support of their ultra small, flexible 'dotstack' platform for embedded Cortex M3 and M4 implementations.

- **Bluetooth v4.2 – Dual Mode** – BR / EDR / LE
  - Classic Bluetooth
  - Bluetooth Low Energy (BLE)
- **Compact Footprint** – As small as 8.5x13 mm
- **Class 1 Output** – up to 8 dBm
- **USB v2.0** Host interface
- **GPIO, GCI, I<sup>2</sup>S** and **PCM**
- **Industrial Operating Temp:** -30° to +85°C
- **Bluetooth SIG approved** – Hardware Controller Subsystem
- **International regulatory approvals** – FCC, IC, CE, RCM, & Japan approvals
- **Two form factors:** BT850 Module or BT851 packaged USB Adapter. Embed or plug in, design your way.
- **Broad OS Support** – Windows, Linux, Android
- **Fully-Featured Development Kit** – Low cost kit for prototyping/debugging/integration testing to speed development time

### Features at a Glance



#### DEPLOY TO EVEN MORE DEVICES

Support for Windows/Linux/Android via USB interface, plus external USB pluggable adapter variant.



#### OUTSTANDING RF PERFORMANCE IN A TINY FOOTPRINT

Class I +8dBm output power in an 8.5 x 13 mm package means no need to compromise one for the other



#### EVEN MORE WAYS TO DEVELOP

Wide array of Operating System support, as well as embedded MCU support for Searan's flexible DotStack platform give you even more design choices



#### BROAD CERTIFICATION AND INTERNATIONAL APPROVALS

Certifications and approvals for FCC (USA), IC (Canada), ETSI (Europe), Giteki (Japan), RCM (AUS/NZ), Bluetooth SIG



#### PERSONAL SUPPORT FROM DESIGN TO MANUFACTURE

Industry-recognized integration and support organization dedicated to reducing your time to market

### Application Areas



AIDC Products / Barcode Scanners



Industrial Cable Replacement



IoT Platforms



Medical Devices



Automotive Diagnostics

# BT85x Series – Bluetooth 4.2 Class 1 USB HCI Modules and Adapter

Product Brief



## SHARED SPECIFICATIONS

CATEGORIES	FEATURE	IMPLEMENTATION
<b>Wireless Specification</b>	Bluetooth®	V4.2 Dual Mode – BR / EDR / LE
	Frequency	2.402 – 2.480 GHz
	Max. Transmit Power	Class 1 +8 dBm from antenna +8 dBm from trace pin
	Receive Sensitivity	-94 dBm
	Range	Circa 100 meters
	Data Rates	Up to 3 Mbps (over the air)
	<b>Host Interface</b>	USB
<b>Operational Modes</b>	HCI	Host Controller Interface over USB
<b>Coexistence</b>	802.11 (Wi-Fi)	2-wire Cypress Global Coexistence Interface (GCI)
<b>Supply Voltage</b>	Supply	3.0V – 3.6V (BT850-SA and BT850-ST) 5V via USB port (BT851)
<b>Power Consumption</b>	Current	Tx Max. < 55 mA Sleep < 120 us
<b>Antenna Option</b>	Internal	Multilayer Ceramic (BT850-SA)
	External	SMT Pad (BT850-ST)
<b>Physical</b>	Dimensions	8.5 x 13 x 2.2 mm (BT850-SA) 8.5 x 13 x 1.9 mm BT850-ST) 43 x 16 x 11 mm (BT851)
<b>Environmental</b>	Operating	-30° to +85°C
	Storage	-40° to +85°C
<b>Miscellaneous</b>	Lead Free	Lead-free and RoHS compliant
	Warranty	One-Year Warranty
<b>Approvals</b>	Bluetooth®	Hardware Controller Subsystem
	FCC / IC / CE / RCM / Giteki	All BT85x series

## ORDERING INFORMATION

<b>BT850-SA</b>	BT V4.2 Dual Mode USB HCI Module (Integrated Antenna)
<b>BT850-ST</b>	BT V4.2 Dual Mode USB HCI Module (SMT Pad for External Antenna)
<b>BT851</b>	BT V4.2 Dual Mode USB Adapter
<b>DVK-BT850-SA</b>	Development Kit for BT850-SA Module
<b>DVK-BT850-ST</b>	Development Kit for BT850-ST Module

## Did You Know?

LSR, a Laird Business, is a leader in Wireless Product Development, offering true end-to-end solutions through its array of services & technical expertise



### Design Services

- RF Hardware & Antenna Design
- Software/Firmware Development
- Mobile App / Cloud Development
- Industrial Design
- Mechanical Engineering



### EMC Testing & Certification

- On-Site FCC/IC/CE/Giteki/RCM EMC Certification
- Wireless & Antenna Testing
- EMC Emissions Testing
- International Testing Services

To learn more about LSR visit:  
[www.lsr.com](http://www.lsr.com)