



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 v5.0** 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, **I²S** 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 simply plugs into any Windows, Android, or Linux device via **external USB** connection.

Additionally, we have partnered with **Searan** for support of their ultra small, flexible 'dotstack' platform for embedded Cortex M3 and M4 implementations.

- **Bluetooth v5.0 – Dual Mode:** BR/EDR/LE
 - Classic Bluetooth
 - Bluetooth Low Energy (LE)
- **Compact Footprint:** As small as 8.5 x 13 mm
- **Class 1 Output:** up to 8 dBm
- **USB v2.0** Host interface
- **GPIO, GCI, I²S, and PCM**
- **Industrial Operating Temp:** -30° to +85°C
- **Bluetooth SIG approved:** Hardware Controller Subsystem
- **International regulatory approvals:** FCC, ISED, EU, UKCA, RCM, KC, and 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), ISED (Canada), EU (Europe), UKCA (UK), 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

SHARED SPECIFICATIONS

CATEGORIES	FEATURE	IMPLEMENTATION
Wireless Specification	Bluetooth®	V5.0 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)
Host Interface	USB	Full-speed USB 2.0
Operational Modes	HCI	Host Controller Interface over USB
Coexistence	802.11 (Wi-Fi)	2-wire Cypress Global Coexistence Interface (GCI)
Supply Voltage	Supply	3.0V – 3.6V (BT850-SA and BT850-ST) 5V via USB port (BT851)
Power Consumption	Current	Tx Max. < 55 mA Sleep < 120 us
Antenna Option	Internal	Multilayer Ceramic (BT850-SA)
	External	SMT Pad (BT850-ST)
Physical	Dimensions	8.5 x 13 x 2.2 mm (BT850-SA)
		8.5 x 13 x 1.9 mm BT850-ST)
		17.4 (± 0.2) x 46.75 (± 0.4) x 12 (± 0.15) mm (BT851 – USB Dongle)
Environmental	Operating	-30° to +85°C
	Storage	-40° to +85°C
Miscellaneous	Lead Free	Lead-free and RoHS compliant
	Warranty	One-Year Warranty
Approvals	Bluetooth®	Hardware Controller Subsystem
	FCC/ISED/EU/UKCA/RCM/KC/Giteki	All BT85x series

ORDERING INFORMATION

BT850-SA	BT V5.0 Dual Mode USB HCI Module (Integrated Antenna)
BT850-ST	BT V5.0 Dual Mode USB HCI Module (SMT Pad for External Antenna)
BT851	BT V5.0 Dual Mode USB Adapter
DVK-BT850-SA	Development Kit for BT850-SA Module
DVK-BT850-ST	Development Kit for BT850-ST Module