PRODUCTION GRADE BTV5 ADAPTER FOR NORDIC/ZEPHYR DEVELOPMENT

Building on Laird's expertise with Nordic from the BL600 and BL652 series comes the most powerful yet - the BL654 series! It provides OEMs with the maximum design flexibility and performance. A complete multi-protocol embedded wireless offering with exceptional processing capability, all at a micro power budget.

Powered by **Nordic's nRF52840** silicon, the small form factor BL654 module with integrated antenna (part # 451-00001) is embedded inside the robust, packaged USB Adapter. The **new** BL654 USB Adapter **variant # 451-00004** enables complete flexibility to utilize the hardware with the **Nordic SDK** and **Zephyr** environments.

Note: Looking for a *smart*BASIC, virtual COM version?
Choose **Laird part # 451-00003**.

- **Bluetooth v5** Bluetooth Low Energy (BLE)
  - BLE Peripheral/Central roles with DTM embedded
  - **2 Mbps and LE Long Range:** Support for 2 Mbps, 1 Mbps, and 125 Kbps coded
- Capable of **Hostless** operation – Internal MCU reduces BOM
- **Temp Range:** Industrial Temp Rating (-40º to +85º C)
- **Robust design:** Production use ready
- **Powerful Core:** Cortex-M4F (1 MB Flash, 256 KB RAM)
- **Development Choice:** Optimized for Nordic SDK or Zephyr RTOS
- **Fully certified:** FCC, IC, CE, MIC, RCM, plus Bluetooth SIG
- **White Labelling:** Options available for OEM branding

FEATURES AT A GLANCE

SECURE PRE-PROGRAMMED BOOTLOADER
Integrated bootloader enables use of any Nordic nRF Connect software or utility. Jump right into development out-of-the-box yet capable of secure, signed firmware images via Public/Private key.

DEVELOPMENT FLEXIBILITY
Combination of on-module MCU and preloading a Nordic/Zephyr application enables simultaneous central/peripheral role support for powerful hostless/hosted sensor applications.

GLOBAL APPROVALS – MAKE YOURSELF AT HOME
Carries several modular FCC, IC, RCM, and Bluetooth SIG approvals.

PERSONAL SUPPORT FROM DESIGN TO MANUFACTURE
Laird's industry-renowned support is passionate about helping you speed your design to market.

APPLICATION AREAS

Beacons and Proximity Applications

Secure Medical Peripherals

Industrial Monitoring

BLE Mesh

Contact Sales -   Americas: +1 262 375 4400   Korea: +82 10 2622 3935
                  Europe: +44 1628 940 ext. 958   Hong Kong: +852 2923 0610

For documentation, software, sample apps and more visit:
http://www.lairdtech.com/products/bl654-ble-thread-nfc-modules

KEY SPECIFICATIONS

Category	Feature	Specification	
Wireless Specification	Bluetooth®	v5 – Single-Mode (Peripheral and Central Roles)	
	Frequency	2.402 - 2.480 GHz	
	Transmit Power	+ 8 dBm (maximum). Configurable down to -40 dBm	
	Receive Sensitivity	-95 dBm (typical @ BLE 1 Mbps) -92 dBm (typical @ BLE 2 Mbps -103 dBm (typical @ BLE 125 Kbps)	
	Link Budget	103 dB (@ BLE I Mbps), 111 db (@ BLE 125 Kbps)	
	Antenna Options	PCB Trace antenna	
	Raw Data Rates (Air)	1 Mbps, 2 Mbps, 125 Kbps	
Host Interface and Peripherals	Interface	USB	
	Other	Configurable LED	
Key BLE Features	Bluetooth Low Energy	▪ GATT client and GATT server – Any Adopted/Custom Services ▪ Central/Peripheral roles ▪ Anything from Nordic SDK ▪ BLE mesh ▪ CODED PHY ▪ 2M PHY	▪ LE advertising extensions ▪ LE secure connections ▪ Data packet length extensions ▪ LE privacy v1.2 ▪ LE ping ▪ Anything from Zephyr RTOS
Programmability Options	Nordic SDK	www.nordicsemi.com	
	Zephyr RTOS	www.zephyrproject.org	
	Firmware Upgrade	Via USB/Bootloader	
Support	Operating Systems	Windows 7 and 10 Mac OSX Linux and Android	
Power	Consumption - Current	Max Peak Radio Current (@ +8 dBm TX) – TBC mA (DCDC at 3V) Max Peak Radio Current (@ 0 dBm TX) – TBC mA (DCDC at 3V)	
	Supply Voltage	5.0V +/- 10% Powered by standard USB port	
Physical	Dimensions	18.39 mm x 50.74 mm x 11 mm	
Environmental	Temp Range	-40°C to +85°C	
Miscellaneous	Lead Free	Lead-free and RoHS compliant	
Development Tools	Utilities	Nordic nRFConnect Tools and Utilities	
Qualifications	Bluetooth®	Complete Declaration ID	
Regulatory	Approvals	FCC/IC/RCM/CE/MIC	

For full specifications on BL654 module on which the BL654 USB Adapter – Nordic SDK is based, please see the BL654 datasheet.

Part #	Description
451-00004	BL654 (nRF52840) Bluetooth v5 Adapter – Nordic SDK / Zephyr

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Laird Connectivity](#):
  [451-00004](#)