

# Release Notes

## BT900

Version 9.1.12.8

February 2018

This document provides release notes for the Laird BT900 *smart*BASIC-based dual-mode Bluetooth firmware.

These release notes are a summary of new and enhanced features, resolved issues, and known issues present with this release.

**Note:** BT900 firmware version numbers consist of four numbers in the format W.X.Y.Z which can be read back from the module by submitting the command AT I 3 when it is in command mode.

**W:** Indicates the module (9 signifies that the firmware is for the BT900).

**X:** Used to indicate the underlying dual mode stack version.

**Y:** Indicates the build number. An even number indicates a production image and an odd number indicates an engineering image.

**Z:** Sub-build number. A 0 or an even number signifies that the firmware image has been fully regression tested. When both X and Y are odd numbers, it typically means that the firmware image was released to do a quick field test and a full regression test has not yet been performed.

- [Version 9.1.12.8](#)
- [Version 9.1.12.5](#)
- [Version 9.1.12.0](#)
- [Version 9.1.10.18](#)
- [Version 9.1.10.3](#)
- [Version 9.1.10.0](#)
- [Version 9.1.9.1](#)
- [Version 9.1.7.5](#)
- [Version 9.1.7.3](#)
- [Version 9.1.7.1](#)
- [Version 9.1.6.4](#)
- [Version 9.1.4.0](#)
- [Version 9.1.2.0 – Initial Release](#)

## VERSION 9.1.12.8

Release February 2018

### New Features

The following are new features in the current version. Refer to the user guide for additional information.

- **CORE** – CFG Keys are now persistent of a file system erase. Refer to the manual for details.

### Resolved Issues

The following are previous known issues which have been fixed or cleaned up in the current release:

- **BLE GAP Device Name** – The BLE GAP service device name is not writable.
- **BLE GATT** – Maximum characteristics that can be scanned with the GATT client is 240.
- **BTC** – Inquiry results may appears after the timeout event as the radio clears up.

- **BTC SPP** – SPP from Apple Mac to the BT900 is slow (approximately 33 kbps). Because communication on both Windows and Linux operates at expected speeds, this issue appears to be an Apple Mac artifact. The Apple Mac appears to wait 250 ms after receiving RFCOMM credits from the BT900 module before sending data. Apple Mac receiving is unaffected.

## Known Issues

The following are known issues in the current version:

- **BTC SPP** – Whilst streaming data and then issuing a disconnect, trailing data may be lost on the receiving end. (12512)
- **BLE GATT** – Server incorrectly allows specifying a CCCD as requiring encryption to read. (12406)
- **BLE Connection/Disconnection** – BLE connection and disconnection in quick succession after approximately 300 cycles may result in the radio attempting an unexpected connection. (6563)
- Workaround: Slow the connection / disconnections.
- **BLE VSP** – Hardware VSP stalls with extended periods of transmission and reception. (9546)

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## VERSION 9.1.12.5

*Release September 2017*

### New Features

The following are new features in the current version. Refer to the user guide for additional information.

- **BTC** – Added config key to limit the maximum power output in classic.

### Resolved Issues

The following are previous known issues which have been fixed in the current release:

- **BTC** – Require link level encryption for legacy products.

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## VERSION 9.1.12.0

*Release September 2016*

### New Features

The following are new features in the current version. Refer to the user guide for additional information.

- **CORE** – Added ability to throw strings in messages.

### Resolved Issues

The following are previous known issues which have been fixed in the current release:

- **SPP** – Enforce the teardown of an ACL connection when SPP is disconnected.
- **BLE** – Fixed an issue when a rollover in number transactions would cause a connection to hang.
- **BLE** – Ensure scan-able adverts are generated when requested.

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## VERSION 9.1.10.18

Release June 2016

### New Features

The following are new features in the current version. Refer to the user guide for additional information.

- **UART** – Added support for 2 Mbaud.
- **BLE** – Added the ability to manually disable and control parameter updates in both the central and peripheral.
- **BLE** – Whitelist support.
- **BLE** – Added ability to obtain RSSI from adverts.

### Resolved Issues

The following are previous known issues which have been fixed in the current release:

- **BLE VSP** – Inbuilt service now includes ModemIn/ModemOut characteristics in bridge mode.
- **BTC SPP** – Allow clearing up of the ACL connection when SPP is dropped.
- **1.8V** – Operation has been confirmed with this firmware however existing hardware, BT900-SA-03, BT900-SC-03 and associated devkits will not work.
- **UART** – Tightened RTS timings to be more responsive at higher baud rates.
- **I2C** – Fixed a case where a timeout would cause the module to pause.

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## VERSION 9.1.10.3

October 2015

### New Features

The following are new features in the current version, refer to manual for usage:

- **BTC SPP** – Added Modem Status Control functions and events to allow sending of RTS/CTS and BREAK.
- **BLE** – Added ability to return both the 16bit and full 128bit UUIDs from handles.
- **Module** – Added config to delay checking of DTS for autorun applications.

### Resolved Issues

The following are previous known issues which have been fixed in the current release:

- **Timers** – Fix to bug where a timer event might not be transmitted if the timer was set up as a one shot timer and there were other higher priority timers running at the same time.
- **SPIOpen** – Fix to bug where the nMode parameter had been implemented incorrectly. Values of 0 and 1 would actually result in SPI Modes 2 and 0 respectively being configured. The nMode parameter now matches the table shown in the core and extension manuals.

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## VERSION 9.1.10.0

September 2015

### New Features

The following are new features in the current version, refer to manual for usage:

- **RADIO** – Adjusted crystal drive strengths to ensure stability at higher temperatures.

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## VERSION 9.1.9.1

September 2015

### New Features

The following are new features in the current version, refer to manual for usage:

- **Stream** – Add config function to stream bridges and idle timeout event.

### Resolved Issues

The following are previous known issues which have been fixed in the current release:

- **SPP** – Race condition with fast connects and disconnects before channel status is received.

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## VERSION 9.1.7.5

July 2015

### New Features

The following are new features in the current version, refer to manual for usage:

- **HID** – Enhanced Bluetooth HID API and added report construction and extraction functions.
- **BTC INQ** – Obtain class of device when doing inquiries.
- **BTC** – Querying remote device friendly name.
- **UART** – Support for Odd/Even parity.

### Resolved Issues

The following are previous known issues which have been fixed in the current release:

- **BTC SPP** – Delayed signaling open SPP port until channel signals clear to send.
- **SPI** – Extended supported frequencies.
- **RADIO** – Radio powers down in deep sleep mode, achieving lower power consumption.
- **UART** – Removed 1200 Baud from configuration, not supported.
- **BLE GATT Server** – Using a central device as a GATT server, with two bonded peripheral GATT clients can result in unexpected CCCD data.

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## VERSION 9.1.7.3

June 2015

### New Features

The following are new features in the current version, refer to manual for usage:

- **HID** – Added pre-release HID functions.

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## VERSION 9.1.7.1

June 2015

### New Features

The following are new features in the current version, refer to manual for usage:

- **BLE** – Ability to change the Bluetooth address type.
- **BLE ADV** – Ability to specify channels to advertise on.
- **BTC COD** – Class of Device functions.
- **BTC SSP** – Full range of Secure Simple Pairing options.

### Resolved Issues

The following are previous known issues which have been fixed in the current release:

- **UART** – On power-up RTS line asserts when ready.
- **SIO18** - After a reset this line will be configured as an output and output a high level, 3.3V.

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## VERSION 9.1.6.4

March 2015

### Resolved Issues

The following are previous known issues which have been fixed in the current release:

- **BTC SPP** – The BT900 can now accept more SPP connections from other BT900's.
- **BTC SPP** – Added ability to configure SPP parameters in smartBASIC, setting values larger than the default will limit the number of maximum opened SPP connections.
- **BTC SPP** – Resolved SPP data events getting out of sync with data availability.
- **BTC SPP** – Resolved an issue regarding a limit of maximum outgoing SPP connections.
- **BLE / BTC SPP** – Issues regarding incorrect handle generation in some circumstances have been resolved.
- **BLE GATT Server** – Ensure notifications are queued properly.
- **BLE GATT Client** – Resolved a memory leak in BleGattcWrite.

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## VERSION 9.1.4.0

February 2015

### Resolved Issues

The following are previous known issues which have been fixed in the current release:

- **BT900** – RTC timer module added to *smartBASIC*.
- **BT900** – General improvements to the overall stability of the module.
- **StreamUnBridge** – StreamUnBridge now works as expected and no longer requires module restart.
- **BTC Pairing** – BTC failed legacy pairing now gives a failure response in the form of a timeout event.
- **BTC Pairing** – BTC pairing when the database is full now results in a device being correctly added to the rolling database.
- **BTC SPP** – SPP now successfully connects to six concurrent connections.
- **BTC SPP** – SPP 900 to 900 RTS now clears properly, ensuring continuous data flow.
- **BTC SPP** – Improvements to SPP throughput and reliability.
- **BLE GATT Server** – Encrypted CCCD values can now not be read and written without bonding.
- **General** – Coexistence now uses the correct pins and polarity.

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## VERSION 9.1.2.0 – INITIAL RELEASE