

8.17.11 Bit counter

RADIO implements a simple counter that can be configured to generate an event after a specific number of bits has been transmitted or received.

By using shortcuts, this counter can be started from different events generated by RADIO and count relative to these events.

The bit counter is started by triggering the **BCSTART** task, and stopped by triggering the **BCSTOP** task. A **BCMATCH** event will be generated when the bit counter has counted the bits specified in register **BCC**. The bit counter will continue to count bits until the **DISABLED** event is generated or until the **BCSTOP** task is triggered. After the **BCMATCH** event, the CPU can reconfigure the value **BCC** for new **BCMATCH** events within the same packet.

The bit counter can only be started after RADIO has received the **ADDRESS** event.

The bit counter will stop and reset for the tasks **BCSTOP**, **STOP**, or **DISABLE**, or the event **END**.

The following figure shows how the bit counter can be used to generate the **BCMATCH** event in the beginning of the packet payload, and again generate a second **BCMATCH** event after sending 2 bytes (16 bits) of the payload.

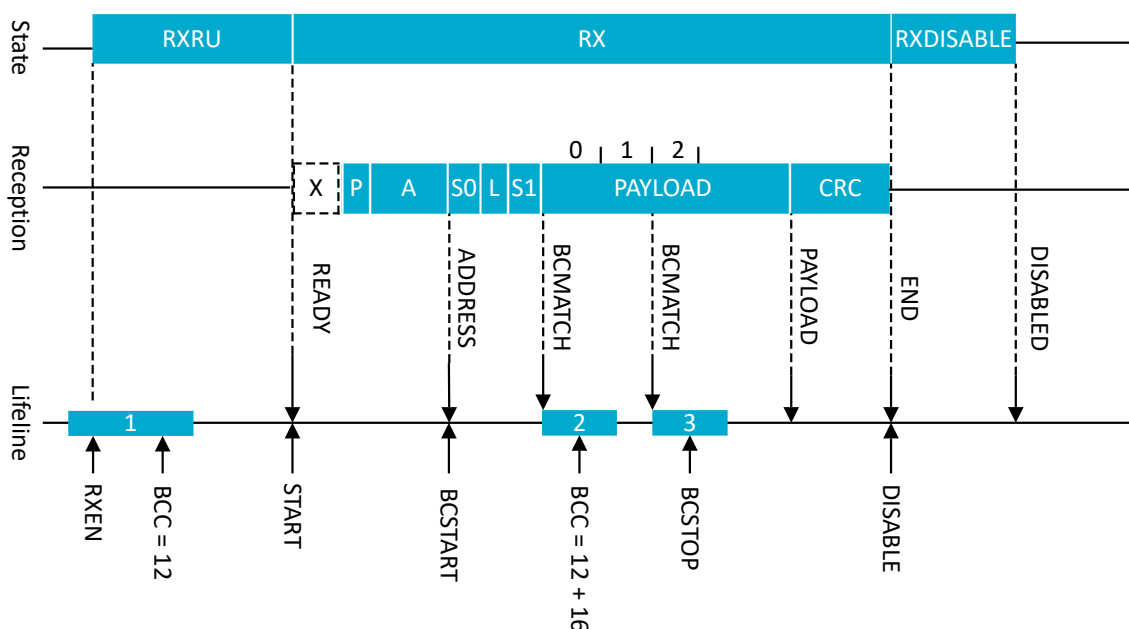


Figure 122: Bit counter example

RXRU assumes that the total combined length of S0, L, and S1 is 12 bits.

8.17.12 IEEE 802.15.4 operation

The IEEE standard 802.15.4 differs from the Nordic proprietary and Bluetooth Low Energy modes. Differences include modulation scheme, channel structure, packet structure, security, and medium access control.

The following are the main features of the IEEE 802.15.4 mode:

- Ultra-low power 250 kbps, 2450 MHz, IEEE 802.15.4-2020 compliant link
- Clear channel assessment (CCA)
- Energy detection (ED) scan
- CRC generation

To enable RADIO to comply with the IEEE 802.15.4-2020 standard, set **MODE** = `ieee802154_250kbit`.