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NA557427 – RF Duty Cycle Attestation

The NA557427 Bluetooth Low Energy (BLE) module design includes the ability to connect to a central device for data transfer. The device operates in its highest transmit duty cycle in this mode. The maximum transmit duty cycle is locked in by the device's firmware (hard-coded) and cannot be influenced by the BT central (network).

Connected Data Transfer
Minimum connection interval is 7.5ms
Maximum MTU is 252 bytes (2,016 bits)

- 1Mbps TX time = 2.016ms
- 2Mbps TX time = 1.008ms

At 1Mbps, TX duty cycle maximum is: 2.016ms / 7.5ms = **26.9%**

At 2Mbps, TX duty cycle maximum is: 1.008ms / 7.5ms = **13.4%**

Advertising
When not connected, the NA557427 module transmits interleaved standard advertisements and ESRs. Since these alternate every two seconds, this scenario is detailed as:

Event Time	Advertisement	Duration
0ms	ESR	2.112ms
2000ms	Standard	0.376ms

This cycle will occur 90 times in a 6 minute interval (360 seconds / 4 second cycle).
Advertising maximum duty cycle = (2.112ms + 0.376ms)*90 / 360,000ms = **0.062%**

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