Application Report

Bluetooth® Low Energy – Missing Length Check for UNPI Packets Over SPI on CC1350 and CC26x0 Devices

TI-PSIRT-2020-060056

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Summary

A local attacker able to interfere with the physical serial peripheral interface (SPI) bus between the host and the network processor may send a malformed uniformed network processor interface (UNPI) packet that can corrupt dynamic memory in the host processor, thus potentially achieving code execution.

CVSS base score: 7.6


Affected products and versions

• CC1350 SDK, BLE-STACK (SDK v4.10.01 and prior versions)
• CC26x0 BLE-STACK (v2.2.4 and prior versions)

Potentially impacted features

The potential vulnerability can impact Bluetooth® Low Energy devices running affected SDK versions that have configured the devices to run in network processor mode and uses UNPI with SPI transport layer as the serial interface between the Bluetooth Low Energy device and the external host processor.

Suggested mitigations

The following SDK releases address the potential vulnerability:

<table>
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<th>Affected SDK</th>
<th>SDK version with mitigations</th>
<th>SDK releases with mitigations</th>
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<tbody>
<tr>
<td>CC13x0 SDK, BLE-STACK</td>
<td>4.10.02</td>
<td>25-Aug-2020</td>
</tr>
<tr>
<td>BLE-STACK (support for CC2640 and CC2650)</td>
<td>BLE-STACK v2.2.5</td>
<td>31-Aug-2020</td>
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Acknowledgment

• Ruben Santamarta, IOActive

Revision history

• Version 1.0 initial publication
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