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Overview

Particle has identified an unarticulated, carrier-level network change that leads to intermittent increased connection times for some customers.

- The main observed symptom of the issue was that devices would connect to the AT&T network and then the cell modem would fall into an error state. Only a power cycle of the modem would resolve this, either manually by customer firmware or through the Device OS built-in 10 minute timeout.
- Not all devices were equally impacted by this connectivity issue - its impact was most observed on devices that operated from battery sources and whom periodically turned on the modem to access the network and then went back to sleep again. Devices that remain connected to the Particle cloud 24/7 would have an elongated initial connection time after a power on, but would otherwise remain connected to the network without any disruption once over this initial connection challenge.
- The severity of the issue for the general fleet dramatically reduced around the 3rd November, leaving a long tail of devices in a subset of our customers fleets having ongoing and measurable impact.

Who is impacted?

This notice is specific to devices using the SARA-R410M LTE Cat M1 cellular modem:

- B-Series SoM B402, B404
- Boron BRN402, BRN404

The following are **not** affected:

- E-Series E402, E404 (Gen 2 devices are not affected)
- Electron ELC402 (Gen 2 devices are not affected)
- BRN404X and B404X are not affected (has a SARA-R510 modem)
- Tracker One ONE402, ONE404 are not affected (has a BG96-MC modem)
- Tracker SoM T402, T404 are not affected (has a BG96-MC modem)
- All 2G/3G and LTE Cat 1 models are not affected (SARA-U201, SARA-U260, SARA-U270, SARA-G350, EG91-E, EG91-EX)

This condition impacts customers who terminate connection attempts manually, e.g. using SEMI_AUTOMATIC or MANUAL mode, after a period of less than 10 minutes. Customers who do not manually terminate connection attempts in firmware are significantly less impacted, though this issue can also be noticeable in time-sensitive operations.

A previous version of this statement said that EtherSIM (E404, B404, BRN404) devices were not affected. We have observed some impact after this statement was made.

We have not seen evidence that 2G/3G, or LTE Cat 1 devices are experiencing this issue.

What is Particle doing about it?

A series of new Device OS builds have been created to resolve this issue, as follows:

Device OS	Status
2.3.1	Preview binaries: 11th November
3.3.1	Preview binaries: 11th November
4.0.1	Target date: 15th November
5.1.1	Target date: 21st November

Who should upgrade?

- Any customer impacted this network connection issue is advised to immediately upgrade to the preview release and validate the fix on their impacted product line.

- Any customer who is affected by [TAN010](TAN010), which can also affect connectivity.

You will typically:

- Create new product firmware that targets the approved Device OS version (2.3.1, for example). Test this with a subset of devices in your product, then deploy to your product fleet.

- If you flash devices on your manufacturing line, you should update your flash images to use this new firmware and Device OS version.

Revision history

TAN released November, 2022.