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Affected devices:

- Boron 404X (BRN404X)
- B-Series SoM 404X (B404X)
- E-Series SoM 404X (E404X)

Cellular band selection was modified in Device OS 5.9.0, 6.2.0, and again in 6.2.1. This note explains the reason for the change, and how it affects operation and certification.

Action required: In most cases, no action is required. Using Device OS 6.2.1 or later, or 5.8.2 and earlier, is recommended. If you have completed your own intentional radiator certification, see note below.

Detailed explanation

On SARA-R410M devices (BRN402, BRN404, B402, B404, E402, E404), the cellular modem was restricted to use only LTE Cat M1 bands 2, 4, 5, 12, and 13. These correspond to bands used in the United States, Canada, and Mexico. This was necessary for performance reasons as this modem took an excessively long time to connect with all bands enabled.

Only these bands were certified with the FCC and ISED, as well, however the band restriction was not for certification reasons. No other cellular devices have band restrictions, and this is acceptable with the FCC, ISED, and CE, because cellular devices only transmit on a band after receiving data on the band. Thus cellular devices will never spontaneously transmit on an out-of-area band.

This band restriction was carried forward to R510 devices listed above, however it was not necessary for performance reasons. Band restrictions were removed in Device OS 5.9.0 and 6.2.0. This made it possible to use the device in areas such as Europe, Australia, and New Zealand which use different bands, if the device has been certified.

In Device OS 6.2.1, this was modified to continue to remove band restrictions, except for Band 71 (600 MHz), which remains restricted. This is because the devices above were not certified for use on B71, however T-Mobile in the United States does have licenses to use B71. It is believed that it is only used for LTE Cat 1, not LTE Cat M1, but to prevent using an uncertified band, this option has been removed. B71 is not used outside of the United States.

If you are utilizing the Particle FCC or ISED certification for the devices above, we recommended using Device OS 6.2.1 or later instead of 6.2.0 out of an abundance of caution to comply with certification requirements. You can also use Device OS 5.8.2 or older.

If you have done your own intentional radiator certification of the affected devices, you should make sure that you have certified all bands that are used in your location for LTE Cat M1. If you are in the United States and certified bands 2, 4, 5, 12, and 13 you will continue to be compliant with no changes when using Device OS 6.2.1 or later.

Summary of modem supported bands

Visit the cellular carrier list to see which carriers are in use in each region for a given device.

Device OS versions	Modem Supported bands
5.8.2 and earlier	2, 4, 5, 12, 13
5.9.0 and 6.2.0	1, 2, 3, 4, 5, 8, 12, 13, 18, 19, 20, 25, 26, 28, 66, 71, 85
6.2.1 and later	1, 2, 3, 4, 5, 8, 12, 13, 18, 19, 20, 25, 26, 28, 66, 85

Revision history

TAN released December 11, 2024.