

This notification is intended to inform Quake customers of network support and network date/time rollovers or Epoch events that are outside Quake's control but could impact customer's systems. The networks referenced are Cellular and/or, GPS/Satellite.

Date: Jan 22, 2020

Quake Global products operate on a variety of communication networks around the world in support of our customers, but those communication networks are owned and operated by other parties and are outside of Quake's direct control. Changes to those networks occur over time that could affect the use of Quake products. This notification is a general notification for known network related activities that may impact your communication devices.

Cellular Networks:

Around the globe, many carriers (network providers) in many regions have either begun to turn off or sunset their 2G and 3G networks, or they have announced plans to do so. The most accurate source of information on 2G/3G sunsetting will be from your specific carrier. In general, much of 2G is already sunset in the US, while much of Europe still supports 2G. 3G is generally still supported in the Asia Pacific region, but most of the carriers around the globe will move to 4G/LTE technology.

In support of this global move to 4G/LTE, Quake Global has updated our Q4000 and QPRO product lines to enable LTE support. The QPRO and Q4000 will have the same form/fit/function but will support the LTE network bands with some fallback to 3G or 2G depending on the region of use as the products will be regional products (North America, APAC, and EU versions will be available).

We are happy to offer Quake's newest product, QConnect, which is a global product supporting LTE bands around the world with 3G and 2G fallback, as well as other wireless and wired communication technologies including Wi-Fi, Bluetooth, and Ethernet and is positioned to support our customer base for many years to come.

Satellite Networks:

Quake products may provide one or more of the network services related to GPS, Orbcomm, or Iridium. These networks typically do not change often, but changes do occur, most often related to the date/time, known as the epoch for the network. Each of these networks has their own internal date and time output which is controlled by the network.

NOTICE: There is an upcoming halftime event on the Iridium network on June 25, 2020 at 13:29.21 UTC. Iridium wants to ensure that each customer is properly using the Iridium Time in their application(s) and is requesting that each Iridium customer complete a survey to assist verification of customers' proper usage of Iridium Time as an unsigned 32-bit integer in user applications. During prior Iridium Halftime transitions, Iridium noted that some partners were using the IRT in a manner that might cause issues when signed instead of unsigned 32-bit integer variables are used. Please check the iridium survey link provided to determine if your system might be affected.: The link to the survey is: https://www.surveymonkey.com/r/IRT_halftime_2020_survey

If your system uses the Iridium time as the primary time source in your application, then this Epoch event will affect your units. If you use cellular or GPS time as the primary time source in your application, then your system may not be affected by this Epoch event.

Future Network Rollover Events for Satellite Networks:

The date/time is stored using some number of bits (determined by the network), which means that at some point you will run out of bits and have a roll over event. Customers use this date/time to establish accurate data, but this

date/time will have a limit based on the number of bits used in their network systems to count the date. This date start time, often referred to as an Epoch, can vary, and the length of time of accurate counting will have a limit. When this limit is reached the date will revert to an earlier inaccurate date/time. This was most recently seen with the GPS network epoch (roll over) on April 6, 2019.

Quake does not control the rollover dates of the networks, but feel it is necessary to notify our customers so that they may plan for upcoming dates. These dates could change based on the network, but these are the most accurate dates that Quake has as of the date of this notification.

Network Epoch and Events Estimated Dates:

Expected Date Code Rollover from Network

Quake Product	Orbcomm	Iridium	Iridium Halftime	GPS
Q4000	11/06/2032	1/1/2024*	6/25/2020	11/13/2038
QPRO	11/06/2032	1/1/2024*	6/25/2020	11/13/2038
QLOCATE	N/A	1/1/2024*	6/25/2020	11/13/2038
Q1000	11/06/2032	N/A	N/A	N/A
Q1200SG	11/06/2032	N/A	N/A	N/A

*The Iridium date is estimated and is expected to be announced in 2023.

Please contact Quake Customer Support if you have further questions.

Thank you,



Kevin Harris
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