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FIELD SERVICE BULLETIN

FSB #: 098-50620-010**DATE: January 13 2009****System: ET60X0****Product Identity:****Product Code:**

ET6000-xxx

Description

ET 6000 Time and Frequency Generator

CLEI Code: N/A**Technical Support:** Worldwide 1-408-428-7907 (1) (1) or USA toll free 1-888-367-7966 (1) (1)**Customer Relations:** Worldwide 1-408-428-7907 (2) (1) or USA toll free 1-888-367-7966 (2) (1)

NOTE: Find a copy of this FSB in the Support section on the Symmetricom website:<http://www.symmetricom.com/support/online-support/tm-product-support/field-service-bulletins/>**General Behavior:**

Some of the Symmetricom ExacTime 6000 (ET6000) and ET6010 GPS Time and Frequency Generators experienced a time keeping error related to the insertion of a leap second on December 31th, 2008 .

After the leap second insertion, the ET6000 incorrectly applied 16 leap seconds rather than the current number of 15 to GPS time. This results in the ET6000 reporting time that is 1 second behind UTC. Insertion of a leap second occurred on December 30th, 2008, and again on December 31th, 2008 .

A corrective action is described in the following section, which restores the ET6000 to normal operation. This problem could recur, however, when the next leap second is introduced. The date of next leap second event is unknown. The International Earth Rotation Service (IERS) provides six months notice when the next leap second will occur. The last leap second prior to December 31, 2008 was on December 31, 2005.

Cause:

Improper leap second handling when a leap second occurs at the end of a leap year. In 2008 (a leap year) some ET6000 units inserted a leap second on December 30th, 2008, and again on December 31th, 2008.

Recommended Actions:**Immediate Solution:****Corrective Action (Immediate)**

The ET6000 can be immediately restored to normal operation by placing the unit through a "cold reset". After this operation, the ET6000 will correctly apply 15 leap seconds to GPS time and supply accurate UTC. The "cold reset" operation clears all user configuration settings to factory defaults so this information must be re-entered after the operation completes. The following procedure describes the "cold reset" operation.

Cold Reset Procedure (Section 5.2.6 in the ET6000 manual)

<http://www.symmetricom.com/media/files/support/ttm/product-manual/8500-0105.pdf>

1. Record the user configuration setting of the ET6000.
2. Turn off or disconnect AC power.
3. While holding down the MENU key of the keyboard, reapply power and observe the LCD display to read:
COLD RESET DONE, UNIT SET TO DEFAULT
PLEASE RELEASE COLD RESET SWITCH
4. Release the MENU key of the keyboard.
5. Re-enter the user configuration settings.
6. Wait for the "Locked" LED on the ET6000 front panel to illuminate.
7. Validate ET6000 leap second count equals 15 (See manual page 3-10, section 3.3.3)
 - Press the "Menu" key twice to enter the "Setup Menu Screen"
 - Press the #0 keyboard switch
 - The current leap second count (15) and software version will appear in the lower right corner of the display.

Note: Some older versions of the ET6000 software do not support the display of leap seconds and software version. To validate correct leap second handling with these units, visually compare the time on the ET6000 front panel to another UTC source.

8. The ET6000 has now been restored to normal operation until the next leap second is introduced.

Related Information:

IERS and Future Leap Second Notifications

The International Earth Rotation and Reference Systems Service (IERS) determines when leap seconds are to be introduced into the UTC time scale. The IERS issues Bulletin C every 6 months (January and July) which advises if a leap second will be introduced in the next following date (i.e. end of June 30 or December 31). The latest Bulletin C is available at: <http://hpiers.obspm.fr/iers/bul/bulc/bulletinc.dat>.

USNO Time Service

The U.S. Naval Observatory's time service can be accessed by telephone. The phone numbers are 719-567-6742 (Colorado Springs), 202-762-1069 or 202-762-1401. The time announced by USNO can be used to visually confirm the time displayed on the ET 6000 front panel is synchronous with UTC(USNO).

Contact Information

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