



## Testing Results

### Leap Second Testing

Model Name: SyncServer S200, S250, S250i

CPU Firmware 1.0

Date Tested: September 29th, 2005

Leap Second tested product from Symmetricom provides Time of Year information across the boundary between December 31, 2005, and January 1, 2006. This includes, but is not limited to, handling of the Time information provided via integrated displays and output ports.

Symmetricom products that report time information will do so as described below.

**Simulation Start Time:** December 31<sup>st</sup>, 2005 at 23:15:00 (test run time 1 hour)

**Expected Results:** The system time, and all of its related outputs, should increment time monotonically except for the following discontinuity, which is expected:

1. December 31<sup>st</sup>, 2005 23:59:59
2. December 31<sup>st</sup>, 2005 23:59:60 (some clocks may display a repeated value of 59 sec)
3. January 1<sup>st</sup>, 2006 00:00:00

Actual results on IRIG and Sysplex outputs when HW Clock reference is GPS or IRIG-B 1344:

365:23:59:58  
365:23:59:59  
365:23:59:60  
001:00:00:00  
001:00:00:01

Actual results on NTP timestamps when HW Clock reference is GPS or IRIG-B 1344 or the NTP daemon is set by an external NTP peer:

365:23:59:58  
365:23:59:59  
365:23:59:59  
001:00:00:00  
001:00:00:01

Actual results on Front Panel clock (UTC) time when HW Clock reference is GPS or IRIG-B 1344 or the NTP daemon is set by an external NTP peer:

365:23:59:58  
365:23:59:59  
001:00:00:00  
001:00:00:00  
001:00:00:01

When GPS is the HW Clock reference, the NTP Leap Indicator is set during the last 24 hours before the event. However, when IRIG-B 1344 is the HW clock reference, the NTP Leap Indicator is not set until the last minute before the event, as defined by the 1344 specification, so it is

unlikely that the NTP peers synchronizing to the server will poll in time to pick up the NTP Indicator flag. Upon subsequent polls these peers should resynchronize to the server. Leap event information is not available for any other HW Clock references (i.e. std. IRIG-B, 1PPS, etc.).

Symmetricon is not responsible for the correct processing of this information by any external program or device, only the transition from the year 2005 to the year 2006 as provided by integrated displays and output ports.

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