

NISTIR 8346-10

NIST Time and Frequency Bulletin

Kelsey Rodriguez, Editor

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U.S. Department of Commerce
Gina M. Raimondo, Secretary

National Institute of Standards and Technology
*James K. Olthoff, Performing the Non-Exclusive Functions and Duties of the Under Secretary of
Commerce for Standards and Technology & Director, National Institute of Standards and Technology*

5. UTC(NIST) – AT1 PARAMETERS

The table below lists parameters that are used to define UTC(NIST) with respect to our real-time scale AT1. To find the value of UTC(NIST) - AT1 at any time T (expressed as a Modified Julian Date, including a fraction if needed), the appropriate equation to use is the one for which the desired T is greater than or equal to the entry in the T_0 column and less than the entry in the last column. The values of x_{ls} , x , and y for that month are then used in the equation below to find the desired value. The parameters x and y represent the offsets in time and frequency, respectively, between UTC(NIST) and AT1; the parameter x_{ls} is the number of leap seconds applied to both UTC(NIST) and UTC, as specified by the IERS. Leap seconds are not applied to AT1.

$UTC(NIST) - AT1 = x_{ls} + x + y(T - T_0)$					
Month	x_{ls} (s)	x (ns)	y (ns/d)	T_0 (MJD)	Valid until 0000 on: (MJD)
Sep 21	-37	-504173.41	-37.81†	59487	59488
Sep 21	-37	-503910.14	-37.61†	59480	59487
Sep 21	-37	-503647.57	-37.51†	59473	59480
Sep 21	-37	-503385.7	-37.41†	59466	59473
Sep 21	-37	-503087.22	-37.31	58458	59466
Aug 21	-37	-502602.19	-37.31†	59445	59458
Aug 21	-37	-502078.45	-37.41†	59431	59445
Aug 21	-37	-501928.21	-37.56	59427	59431
Jul 21	-37	-501552.61	-37.56†	59417	59427
Jul 21	-37	-500767	-37.41	59396	59417
Jun 21	-37	-499719.48	-37.41†	59368	59396*
Jun 21	-37	-499644.96	-37.26	59366	59368
May 21	-37	-499458.66	-37.26†	59361	59366
May 21	-37	-498939.82	-37.06†	59347	59361
May 21	-37	-498493.9	-37.16	59335	59347
Apr 21	-37	-497897.74	-37.26†	59319	59335
Apr 21	-37	-497377.5	-37.16	59305	59319
Mar 21	-37	-496855.16	-37.31†	59291	59035
Mar 21	-37	-496334.22	-37.21†	59277	59291
Mar 21	-37	-496222.74	-37.16	59274	59277
Feb 21	-37	-495293.74	-37.16†	59249	59274
Feb 21	-37	-495181.81	-37.31	59246	59249
Jan 21	-37	-494771.4	-37.31	59235	59246
Jan 21	-37	-494026.4	-37.25	59215	59235
Dec 20	-37	-492946.15	-37.25†	59186	59215*
Dec 20	-37	-492872.05	-37.05	59184	59186
Nov 20	-37	-492427.45	-37.05†	59172	59184
Nov 20	-37	-491758.75	-37.15	59154	59172
Oct 20	-37	-491647.3	-37.15†	59151	59154

† Rate change in mid-month

*Provisional value