

Definitions

XP: From external reference to 1PPS in

XO: From 1PPS in to internal reference (i.e. 20 MHz in inverted, delayed by 15.8 ns (Meas 3.1) or 20 MHz out advanced by 2.4 ns (Meas 3.2), first positive zero crossing)

XC, XD: Cables etc... from antenna to receiver (typically XC is long cable, XD is short cable(s) + splitter if needed)

XR: receiver internal delay; XS antenna delay

BIPC values (TM116: June 2002): XR1=281.1 ns; XR2=295.4 ns; XR1+XS1=305.6 ns; XR2+XS2=321.9 ns)

Set-up at NMIJ April 2002

		ITRF 97					
	X	Y	Z	1PPS DA to 1PPS in	Meas 3.1 / ns	Meas 3.2 / ns	Ant. Cable / ns
BIPC	x	y	z	49.3 ns XP = 49.3 ns	5.7 (5.6 to 5.8) Int ref - 1PPSin (XO) = 21.2 ns (3.1: 21.5; 3.2: 20.9)	23.3 (23.2 to 23.4)	XC = 237.6 ns; XD = 5.1 ns Short base: XC+XD = 242.7 ns Zero base: XC+XD = 242.7 ns
NMIJ	x	y	z	13.8 ns XP = 13.8 ns	3.8 (3.4 to 4.2) Int ref - 1PPSin (XO) = 19.6 ns	Not available	rt base: XC = 234.1 ns Short base: XC+XD = 234.1 ns Zero base: XC+XD = 251.4 ns (incl. 0.7 ns splitter and 13.1 ns cable)

Observations

Short baseline: doy 91-98 (1-8 Apr 2002)

Zero baseline: doy 100-107 (10-17 Apr 2002)

Measurement results

Preliminary: 13/05/2002 (Z. Jiang)

Short baseline: from Doy 93-95

Delta (-XP-XO+XR1+XC+XD+XS1) (NMIJ - BIPC) = 33.1 ns

Delta (-XP-XO+XR2+XC+XD+XS2) (NMIJ - BIPC) = 28.6 ns

Zero baseline: from Doy 101-102

Delta (-XP-XO+XR1+XC+XD) (NMIJ - BIPC) = 50.3 ns

Delta (-XP-XO+XR2+XC+XD) (NMIJ - BIPC) = 48.2 ns

Calibration results

09/07/2002 (G. Petit)

Short baseline

BIPC: -XP-XO+XR1+XC+XD+XS1 = 477.8 ns

BIPC: -XP-XO+XR2+XC+XD+XS2 = 494.1 ns

NMIJ: -XP-XO+XC+XD = 200.7 ns

Therefore

NMIJ: XR1+XS1 = 310.2 ns

NMIJ: XR2+XS2 = 322.0 ns

Zero baseline

BIPC: -XP-XO+XR1+XC+XD = 453.3 ns

BIPC: -XP-XO+XR2+XC+XD = 467.6 ns

NMIJ: -XP-XO+XC+XD = 218.0 ns

Therefore

NMIJ: XR1 = 285.6 ns

NMIJ: XR2 = 297.6 ns

Therefore

NMIJ: XS1 = 24.6 ns

NMIJ: XS2 = 24.2 ns