

Definitions

XP: From external reference to 1PPS in

Z12T:XO: From 1PPS in to internal reference (i.e. 20 MHz in inverted, delayed by 15.8 ns (Meas 3.3) or 20 MHz out advanced by 2.4 ns (Meas 3.2), first positive zero crossing)

PolaRx2 XO: From 1PPS in to internal reference (i.e. 1PPS out (Meas 3.4) delayed by 8.7 ns)

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

Reference values for BP0T (May 2012): XR1+XS1 = -3.0 ns XR2+XS2 = -3.0 ns

Set-up at ORB October 2012

	ITRF						
	x	y	Z	Ampli to 1PPS in	Meas 3.1 / ns	Meas 3.2 / ns	Ant. Cable / ns
BP0T (GTR 50)				7.5 ns XP = 7.5 ns REF DLY = 48.2 ns	N/A Int ref - 1PPSin (XO) = 0.0 ns		XC=129.4 ns ; XD=0.0 ns Short base: XC+XD = 129.4 ns CAB DLY = 128.5 ns
BRUX (PolaRx4TR)				5.4 ns XP = 5.4 ns XP+XO= 147.9 ns.		142.5 ns Int ref - 1PPSin (XO) = 142.5 ns	XC = 237 ns; XD=0.0 ns Short baseline: XC+XD = 237.0 ns
ZTBR (PolaRx2)				10.5 ns XP = 10.5 ns XP+XO= 251.2 ns.		232 ns Int ref - 1PPSin (XO) = 240.7 ns	XC = 156.5 ns; XD=6.0 ns (including 2.1 ns splitter) Short baseline: XC+XD = 162.5 ns
ZTB1 (Ashtech Z12T)				10.0 ns XP = 10.0 ns XP+XO= 36.3 ns.	10.5 ns Int ref - 1PPSin (XO) = 26.3 ns	N/A	XC = 156.5 ns; XD=7.6 ns (including 2.1 ns splitter) Short baseline: XC+XD = 164.1 ns

Observations

Short baseline: MJD 56198-56207, doy 272-281 (28 Sept to 7 Oct 2012)

Measurement results

26 Oct. 2012 L. Tisserand (R2CGGTTs)

Delta (-XP-XO+XR1+XC+XD+XS1) (BRUX - BP0T) = +104.4 ns

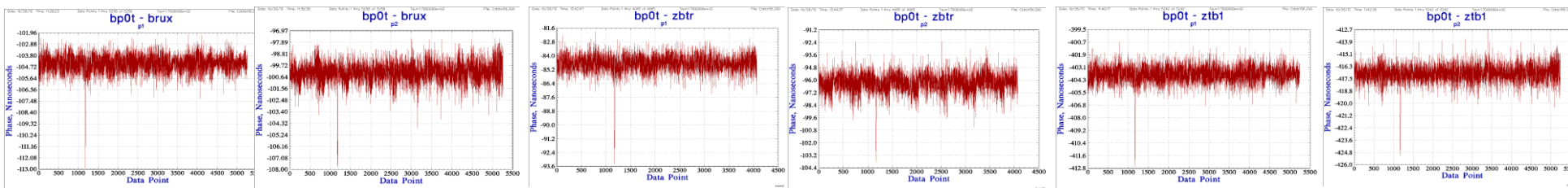
Delta (-XP-XO+XR2+XC+XD+XS2) (BRUX - BP0T) = +100.3 ns

Delta (-XP-XO+XR1+XC+XD+XS1) (ZTBR - BP0T) = +84.7 ns

Delta (-XP-XO+XR2+XC+XD+XS2) (ZTBR - BP0T) = +96.2 ns

Delta (-XP-XO+XR1+XC+XD+XS1) (ZTB1 - BP0T) = +403.8 ns

Delta (-XP-XO+XR2+XC+XD+XS2) (ZTB1 - BP0T) = +417.1 ns



Calibration results

6 Nov. 2012 (G. Petit)

Short baseline

BP0T: -XP-XO+XR1+XC+XD+XS1 = 38.6 ns

BP0T: -XP-XO+XR2+XC+XD+XS2 = 38.6 ns

BRUX: -XP-XO+XC+XD = 89.1 ns

Therefore

BRUX: XR1+XS1 = 53.9 ns

BRUX: XR2+XS2 = 49.8 ns

For BP0T, XC+XD-XP-XO is the difference between the actual value (129.4-7.5 = 121.9 ns) and the value entered in the receiver (128.5-48.2 = 80.3 ns) = 41.6 ns

ZTBR: -XP-XO+XC+XD = -88.7 ns

Therefore

ZTBR: XR1+XS1 = 212.0 ns

ZTBR: XR2+XS2 = 223.5 ns

ZTB1: -XP-XO+XC+XD = 127.8 ns

Therefore

ZTB1: XR1+XS1 = 314.6 ns

ZTB1: XR2+XS2 = 327.9 ns