

ONRJ GPS calibration information sheet December 14, 2011

Name Laboratory:	ONRJ (Rio de Janeiro, Brasil)

Receiver setup information

Type:	TTS4
Serial Number:	110
Receiver Internal Delay (GPS)	-42,11ns ±0.90ns (from PIKTIME)
Receiver Internal Delay (GLO)	-348,08ns ±2.70ns (from PIKTIME)
Antenna cable identification:	Cable TTS4_110
Antena cable delay:	+187,07ns ±0.05ns (from PIKTIME)
UTC (Reference Delay):	
cable used:	Cable 3A and cable C
Pulse Distribution Unit Identification:	Serial number 0104 (TIMETECH)
Delay (cable 3A + Pulse Distribution + cable C)	-62,10ns ±0.04ns (from calibration)
Coordinates reference frame:	
Latitude or X m	+4283645.81 m (GPS,GLONASS)
Longitude or Y m	-4026023.84 m (GPS,GLONASS)
Height or Z m	-2466092.55 m (GPS,GLONASS)

Antenna information

Type:	TSA – 100 Temperature Stabilized Antenna
Serial Number:	
The antenna is temperature stabilized	
Set temperature value:	35 ± 1°C

General information

Rise time of the local UTC pulse:	4 ns
The laboratory is air conditioned:	
Set temperature value and uncertainty:	25.0 ± 0.5°C
Set humidity value and uncertainty:	50.0 ± 5% C

Description of the local method of reference cable delay (cable 3A + Pulse Distribution + cable C) measurement

Plot of the measurement setup diagram:

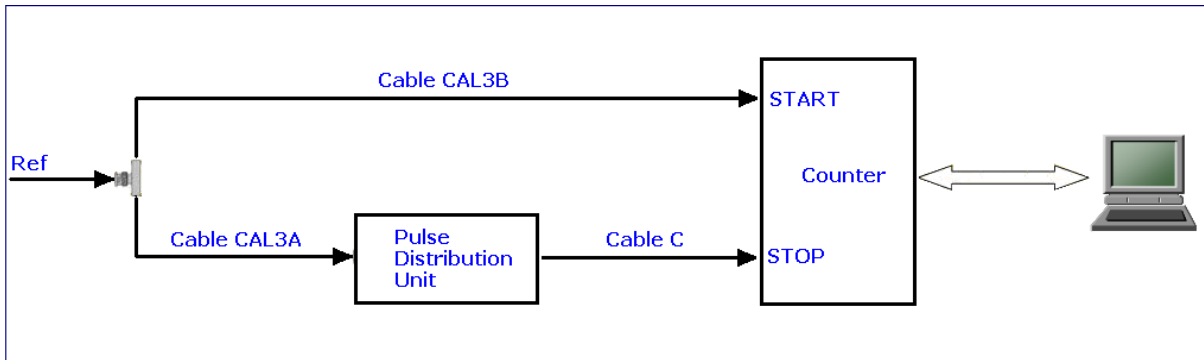


Diagram 1

The method used to calibrate the reference cable delay (cable 3A + Pulse Distribution + cable C) was taken 600 measurements with resulting mean value equal 51.32ns ±0.03ns.

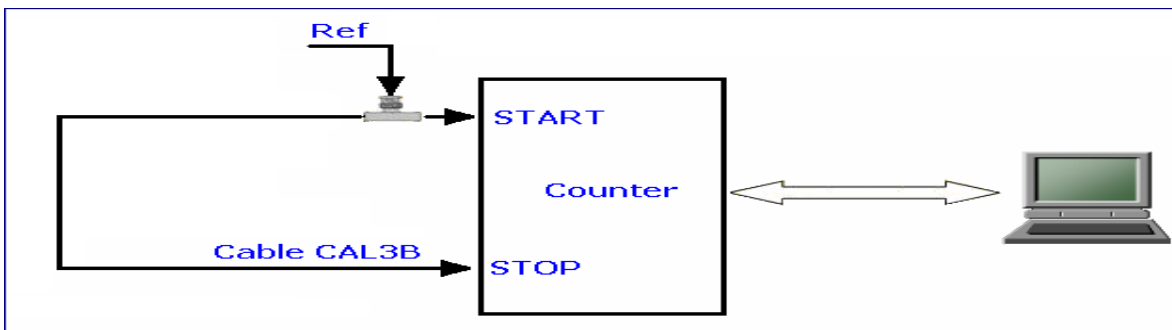


Diagram 2

The method used to calibrate the cable 3B was taken 600 measurements with resulting mean value equal 10.78ns ±0.03ns to cable 3B delay.

So, the value of reference cable delay is then obtained by the following formula:

(cable 3A + Pulse Distribution + cable C)delay = mean value + cable 3B delay so

(cable 3A + Pulse Distribution + cable C)delay = 51.32ns + 10.78ns = 62.1ns ±0.03ns.

The counter used was Stanford SR-620.