

# Time link calibration between UTC(JATC) and UTC(NTSC)

## Abstract

UTC(JATC) and UTC(NTSC) are compared through two cables and one SR620 every hour. The **internal cable link** was calibrated in 28 December, 2017. The link delay is 110.54ns with **1ns of uncertainty**. 110.54ns of link delay has been subtracted in UTC(JATC) data which is submitted to BIPM by NTSC.

## Measurement

Two cables, named C1 and C2, are connected to SR620 and UTC(JATC) or UTC(NTSC) points separately in our time keeping work. In order to measure delay of C1 and C2, one auxiliary cable, named C3, was used, please see the Figure 1. The time link delay is equal to C2-C1 between UTC(JATC) and UTC(NTSC).

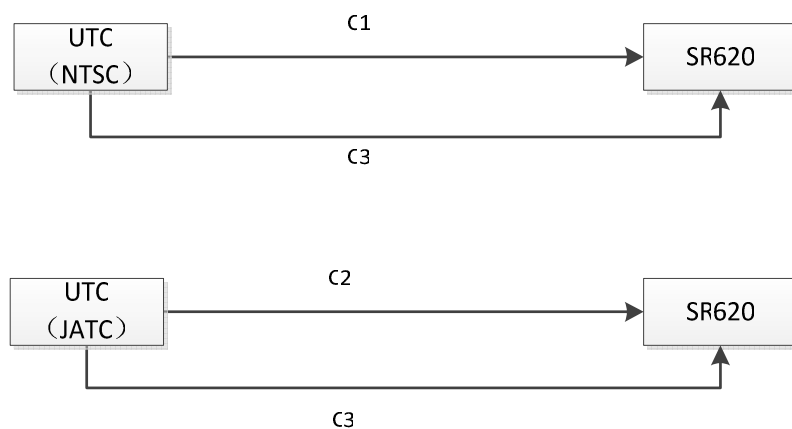


Fig. 1 the connection for the measurement

The uncertainty of SR620 is about  $0.5\text{ns}^{[1]}$ . Three independent measurements were performed in our calibration. So, the total uncertainty of time link is  $0.5 \times \sqrt{4} = 1.0\text{ns}$  between UTC(JATC) and UTC(NTSC).

## **Reference**

- [1] SRS, Model SR620 universal time interval counter, Operation manual, 2006