Calibration Report No. 2001-2021/UF
Laboratory of the National Time and Frequency Standard
(Designated Institute of the Czech Metrology Institute)

Instrument: Name: GNSS Time Transfer Receiver
Type: GTR 55
SN: 2010010

Antenna: Type: Novatel GNSS-850
SN: NMLK20420007H

Antenna Cable: Type: Belden 50Ω LOW LOSS H155 PVC
Length: 30 m

Reference: Signal: 1 PPS and 10 MHz signals of UTC(TP) generated from
the Cesium clock 5071A SN 2476
Receiver: GPS Time Transfer Receiver GTR 55, SN 1711887,
calibrated by BIPM, Cal. ID 1015-2019

Measurement Date: 7 January 2021, 00:00:00–23:59:59 UTC

Measurement Results:

Internal Receiver Delays:

GPS L1 C/A: (14.5 ± 1.0) ns
GPS L1P: (13.7 ± 1.0) ns
GPS L2P: (10.0 ± 1.0) ns

Measurement performed by: Alexander Kuna, Ph.D.

Attachment: Graphs with measured values.

Prague, 8 January 2021

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Alexander Kuna, Ph.D.
Head of the LNTFS
TEST MEASUREMENT

TESTED RECEIVER: GTR55 S/N 2010010
ANTENNA: NOV-850 S/N NMLK20420007H
REFERENCE RECEIVER: GTR55 S/N: 1711887
DATE: 2021-01-07
SITE: PRAGUE
BASELINE: 8 m

OUTPUT DATA: CGGTTS
SATELLITES: ALL IN VIEW
SIGNAL: GPS L1C/A

SIGMA = 140 ps

TIME DIFFERENCE [ns]

POINTS = TRACKS
COLOR = SATELLITE
RED LINE = AVERAGE OVER ALL SATELLITES IN VIEW
OUTPUT DATA: CCGTTS
SATELLITES: ALL IN VIEW
SIGNAL: GPS L1P

SIGMA = 140 ps

TIME DIFFERENCE [ns]
SIGMA = 180 ps

OUTPUT DATA: CCGTTS
SATELLITES: ALL IN VIEW
SIGNAL: GPS L2P

TIME DIFFERENCE [ns]

SIGMA = 180 ps

OUTPUT DATA: CCGTTS
SATELLITES: ALL IN VIEW
SIGNAL: GPS L2P

TIME DIFFERENCE [ns]

POINTS = TRACKS
COLOR = SATELLITE
RED LINE = AVERAGE OVER ALL SATELLITES IN VIEW
OUTPUT DATA: RAW
SATELLITE: PRN 1
SIGNAL: GPS L1C/A

SATELLITE ELEVATION [deg]

UTC [hour]
OUTPUT DATA: RAW
SATELLITE: PRN 1
SIGNAL: GPS L1C/A

CODE MEASUREMENT

SIGMA = 0.4 ns

TIME DIFFERENCE [ns]
OUTPUT DATA: RAW
SATELLITE: PRN 1
SIGNAL: GPS L1C/A

CARRIER PHASE MEASUREMENT

SIGMA = 10 ps

TIME difference [ns]