



## Time Transfer System TTS-4 Product specification

## Introduction - confidence through experience

It has been over 20 years since first "TTS" was introduced. Single frequency TTS-1 as first in the family, a very successful TTS-2, then TTS-3 with GLONASS, now TTS-4. Till the date more than 140 units have been delivered to over 30 countries. As our core product, TTS is being continuously improved towards better observation results and deployment of the recent time & frequency knowledge. Software upgrades are provided free of charge every 3 months on average. **Excellent observation results, long and stable operation, wide configuration possibilities, as well as user friendly solutions are main advantages of the system.** TTS-4 generates data on its own and requires no daily assistance. The system is working under LINUX providing multitasking and integration with networks.



Time Transfer System TTS-4

Observation_				Options (F2)				Quit (F5)	
Change Order (F1)	GPS			SN-L1C	SN-L1P	SN-L2C	SN-L2P	SN-L5P	Time Transfer System 4
PRN	Az	Elev	SN-L1C	SN-L1P	SN-L2C	SN-L2P	SN-L5P	SN:0138 HW:133.29 SN:2.19c	GPS dt(ns): -0.81
10	292	31	48	36	-	36	-	-	GLONASS dt(ns): -445.11
4	274	51	52	44	-	44	-	-	Temperature: 34.00
32	110	14	42	22	-	22	-	-	Freq. Sync: locked
2	310	10	43	30	-	30	-	-	Freq. Level: ok
13	234	69	56	48	-	48	-	-	Sync. Status: ok
31	34	10	42	22	37	22	-	-	1PPS status: ok
30	72	17	45	25	-	25	-	-	Antenna DC: normal
23	72	72	55	48	-	48	-	-	GPS Delays Info (F3)
16	98	6	43	23	-	23	-	-	x 3738370.5907
7	184	17	44	27	40	27	-	-	u 1140161.3775
20	120	42	50	39	-	39	-	-	z 5021009.7665
27	-	-	38	22	-	22	-	-	lat 52° 16' 36.72"
GLONASS				SN-L2C	SN-L1P	SN-L2P	lon 17° 4' 23.63"		
slot	Freq	Az	Elev	SN-L1C	SN-L1P	SN-L2P	hgt 124.49		
10	-3	264	27	40	48	45	IP: 10.103.2.170		
12	-1	182	53	55	54	49	2012-11-20 17:56:38		
2	-4	74	63	56	56	45			
3	5	306	54	54	53	50			
11	-	30	27	45	45	36			
13	-2	162	23	44	43	42			
1	1	98	11	32	32	30			
19	3	326	25	49	48	42			

Main screen of TTS-4

## Access, Operation & Configuration

- 12,1" built-in touch screen offers immediate access to observations, configuration and main parameters: delays, antenna position, key system status indicators.
- via WEB interface
- via USB keyboard
- via membrane keypads



WEB interface main menu

## Data recording & storage

- Date can be:
- downloaded from WEB interface (using WEB browser)
  - downloaded from integrated FTP server
  - sent to external FTP server (using WEB browser)
  - saved on USB memory (using console or WEB interface)
  - stored on a hard disk (1TB)

### Tracking features

Supported navigation systems:  
GPS, GLONASS, Galileo, WAAS/Egnos  
Number of channels: 216  
Number of satellites: all-in-view  
Supported frequencies:  
GPS: L1, L2, L5  
GLONASS: L1,L2 option: L3  
GALILEO: E1, E5A , option: E5B, altBoc  
Supported codes:  
GPS: L1C, L2C, L1P, L2P, L5P  
GLONASS: L1C, L2C, L1P, L2P option: L3  
GALILEO: E1, E5A , option: E5B, altBoc

### Input/Output

3-20 MHz frequency input (adjustable)  
Local 1 PPS input  
Antenna TNC connector  
1000BASE-T Ethernet port  
Internal PS/2 keyboard connectors  
Internal VGA display connectors  
2 USB connectors on front panel

### Data characteristics & availability

Data type: Code and Carrier  
Data output format: CGGTTS, RINEX. **The only CGGTTS Glonass receiver on the market.**  
Data formats meet all formal requirements.  
Data availability:  
CGGTTS: 30 sec after each 13-min. observation session is finished  
RINEX: real time

### Physical & Environmental

Main unit dimensions - 19"/5U  
(470mm x 431mm x 220mm)  
Rack ready chassis made of heavy duty metal  
**Screen - 12,1" TFT LCD**  
Resolution 1024 x 768 (XGA)  
Operating voltage: AC 230V +/-10%, 45 to 60 Hz,  
or AC 110V +/-10%, 55 to 65 Hz  
Redundant power supply support  
Operating temperature: 0°C to +50 °C

### Antennas



Standard antenna



Choke ring antenna



Temperature stabilized  
choke ring antenna

**PIK TIME SYSTEMS®**

PikTime Systems sp. z o.o., ul. Mazowiecka 59, 61-623 Poznan, Poland  
piktime@piktime.com, tts4@piktime.com  
T: +48 61 624 3637, F: +48 61 624 3876

Time Transfer System TTS-4 has been tested by approved independent laboratory and is in compliance with the essential requirements and other relevant provisions of European Union laws.

Continuous improvement process . We reserve a right to provide you with better solutions than covered in the brochure.

Brochure released - 05.2013

