

FT-001A Remote Time and frequency calibration system

Adapter type



FT-001 series devices are developed for the remote time and frequency calibration.

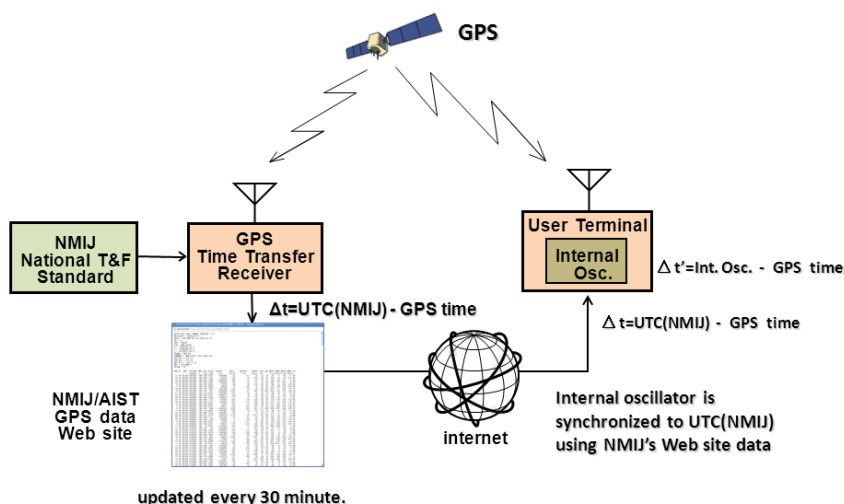
It uses the GPS common-view method to calibrate the time and frequency remotely and automatically between the client site and the calibration laboratory site.

It has a special function called NMI-DO which realizes synchronization of the internal oscillator with the national time and frequency standard, if the NMI publishes the GPS data on its web site.

The adapter type model is designed to operate with the measurement equipment to provide the reference signal with traceability.

Features:

- Highly accurate time and frequency transfer using the common-view method by GPS L1 C/A code
- Synchronization with the National time and frequency standard using published data of the National Metrology Institute on the web site (NMI-DO function)
- Provides the traceability for external DUT
- Operates as time transfer receiver
- Several kinds of internal oscillators are prepared to meet the client's demands



Conceptual picture of synchronization with National Time and Frequency Standard

Freqtime corporation is a venture company which is accredited as a AIST start-ups on December 1, 2011.

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FT-001A Adapter type Specification

		Specification
GPS receiver unit	Receiving signal	L1(1574.42 MHz), C/A code
	Number of receiving channels	50 channels
	Sensitivity	-160 dBm
Reference signal	Input (for time transfer mode)	1 pps or 10 MHz
	Output (for internal oscillator mode)	10 MHz/1 port +13 dBm± 1 dBm @ 50 Ω
		1 pps/1 port
Time and frequency Transfer function	Data exchange format	CGGTTs format (1 s and 15 s output interval also available)
	Synchronization function	NMI(J)-DO or GPS-DO
	Data transmission protocol	HTTP protocol
Internal Oscillator	Standard version	TCXO SSB Phase noise < -80 dBc@10 Hz, < -110 dBc@1 kHz Allan deviation < 2×10^{-10} @1 s
	Option #01	OCXO SSB Phase noise < -105 dBc@10 Hz, < -135 dBc@1 kHz Allan deviation < 5×10^{-11} @1 s
	Option #05	CSAC(Chip Scale Atomic Clock) SSB Phase noise < -78 dBc@10 Hz, < -128 dBc@1 kHz Allan deviation < 1.5×10^{-10} @1 s, 1.5×10^{-11} @ 100 s
Data communication Interface	Standard type	Ethernet (10/100 BASE-T) and USB
	Option #11	
	Option #12	
	Option #13	RS232C
Receiving antenna	Option #51	Small size antenna with 5 m cable
	Option #52	Out side mount type
Synchronization to UTC(NMIJ) *2		Uncertainty < 50 ns (Preliminary value)
Frequency transfer *2		< 1×10^{-13} @ 1 day
Dimension		< 40(H) × 95(W) × 140(D) mm
Power supply		5 Vdc, < 3 W (AC adapter or USB bus power can be used)
Operational temperature and humidity		0~+50 °C and 20~70 %

*1 Data communication function is depends on the network situation at client site.
Detail should be asked to our company.

*2 Uncertainties are depends on the receiving situation of GPS satellites.

The specification will be changed for improvement.