Freqtime

Freqtime corporation Ltd.

FT-001S Remote Time and frequency calibration terminal

Standalone type

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

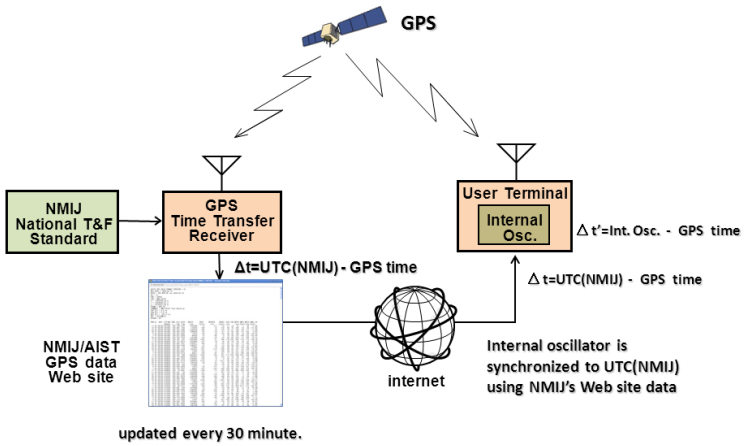
It uses the GPS common-view method to realize remote time and frequency calibration between the client site and the calibration laboratory site automatically.

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

The standalone type model is designed to be used at the calibration room of the client site.

Features:

- Precise time and frequency transfer using the common-view method by GPS L1 C/A code
- Synchronization to the National time and frequency standard using published data of the National Metrology Institute on the web site (NMI-DO function)
- Realize the traceability for external DUT
- Operate as time transfer receiver
- Several kinds of internal oscillators are prepared to meet the client's needs
- A μSD card is used for data storage



Concept of synchronization to 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-001S Standalone 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 #02	Double oven type OCXO SSB Phase noise < -115 dBc@10 Hz, < -135 dBc@1 kHz Allan deviation < 2×10^{-12}@1 s
	Option #03	BVAタイプOCXO SSB Phase noise < -137 dBc@10 Hz, -145 dBc@1 kHz Allan deviation < 3×10^{-13}@1 - 30 s
	Option #04	Rubidium Oscillator SSB Phase noise < -130 dBc@10 Hz, < -150 dBc@1 kHz Allan deviation < 2×10^{-11}@1 s, 2×10^{-12}@ 100 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	Blue tooth (Under development)
	Option #12	Zigbee (Under development)
	Option #13	RS232C
NTP function	Option #31	Precision <1 μs ; Maximum access <50
Distribution amplifier	Option #41	10 MHz 8 ports
	Option #42	10 MHz 4 ports
	Option #43	1 pps 8 ports
	Option #44	1 pps 4 ports
Receiving antenna	Option #51	Small size antenna with 5 m cable
	Option #52	Out side mount type
Time display and time code	Option #61	Yyyymmdd hhmmdd (Under development)
	Option #62	IRIG-B (Under development)
Synchronization to UTC(NMIJ) *2		Uncertainty < 50 ns (Preliminary value)
Frequency transfer *2		＜ 1×10^{-13} @ 1 day
Dimension		19 inches EIA rack 2U size (88(H) × 430(W) × 350(D) mm)
Power supply		100-240 Vac, < 50 W
Operational temperature		0～+50 ℃

*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.