SEIKO

Time Server Pro.

TS-2950 / TS-2910

PTP Grandmaster Clock for more highly accurate time synchronization

TS-2950

PTP NTP 1PPS 10MHz ToD Relay GNSS IPv6

TS-2950 is suitable for a wide range of applications that require high accurate time synchronization

Broadcasting service next generation broadcast network	**Mobile network service** synchronization among base stations	**Finance service** stock exchange / high frequency trading
Railway service traffic control system / electric transmission control system	**Power service** power system protection	**IoT service** infrastructure monitoring

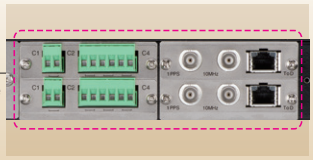
TS-2950 can easily build a time synchronization environment in L2/L3 network with PTP and supports simultaneously a popular time protocol NTP.

Power supply units and fan units, hot-swap configuration of security.

Even if a failure occurs, TS-2950 realizes high availability by redundant power supplies and fan units.

Versatile option output units corresponding to various application.

Up to 4 option units are available which can be easily installed and replaced.



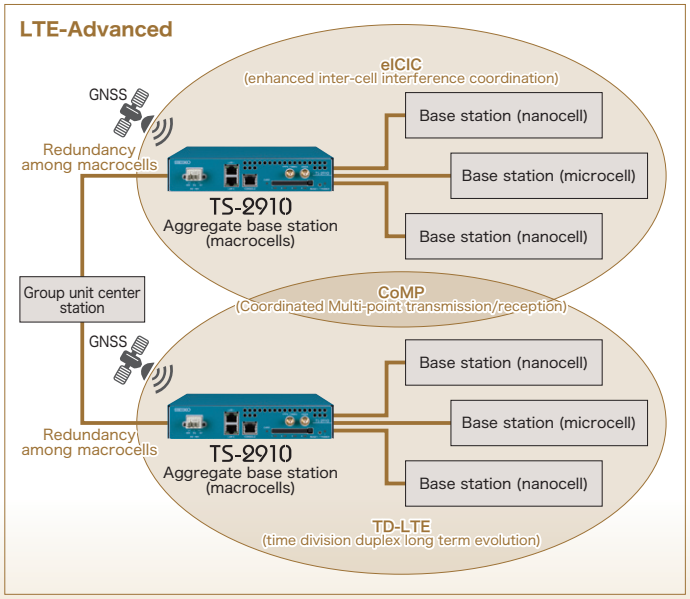
(AC model)

(DC model)

TS-2910

PTP 1PPS/10MHz GNSS

Compact size model most suitable for multipoint base station deployment



TS-2910 is a best choice for highly accurate time synchronization among mobile backhaul base stations.

By installing TS-2910 into LTE-Advanced aggregate base stations it can deliver nanosecond time, frequency and phase synchronization to lower base stations. Redundant time source among aggregate base stations provides high reliability in operation.

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Time Server Pro. Specifications

Model		TS-2950	TS-2910	
Time source		GNSS (GPS)	GNSS (GPS, QZSS)	
Holdover accuracy*1		CSAC (Cesium): 1us/1Hrs*2 OCXO Type-A :400ns/5Hrs 1.5us/24Hrs	OCXO Type-A : 400ns/5Hrs 1.5us/24Hrs OCXO Type-C : 1.5us/2Hrs 50us/24Hrs	
Leap second adjustment		Yes	Yes	
Summer time		Yes	Yes	
Pulse output		1PPS, 10MHz	1PPS, 10MHz	
Relay contact output		Yes	-	
LAN interface		10BASE-T / 100BASE-TX / 1000BASE-T	100BASE-TX / 1000BASE-T SFP-optical, 1000BASE-X (to be supported later)	
PTP	Number of available interface port	1	2	
	Correction accuracy (GPS lock)	±50nsec	±50nsec	
	Profile	Default profile SMPTE ST 2059 (to be supported later)	Telecom profile for frequency (G.8265.1) Telecom profile for phase/time (G.8275.1 , G.8275.2)	
	Protocol	IPv4 UDP/ IPv6 UDP/Ethernet	IPv4 UDP/Ethernet	
	Delay mechanism	Delay request-response Peer delay	Delay request-response	
	Sync. message transmission type	1 step/2 step*3	1 step	
	Processing capability (max.) TS-2950 : Default profile TS-2910 : Telecom profile	Sync :16 packets/sec Delay_request (receive) : 16,384 packets/sec Delay_response (send) : 8 packets/sec Announce : 8 packets/sec	Sync :128 packets/sec*4 Delay_request (receive) : 128 packets/sec*4 Announce : 8 packets/sec	
	Maximum connectable number of slave devices	-	128*3	
NTP	Number of available interface port	3*5	-	
	Correction accuracy (GPS lock)	±1msec	-	
	SNTP	Yes	-	
	Autokey authentification	Yes	-	
	MD5 authentification	Yes	-	
	Processing capability (max.)	14,000 packets/sec	-	
TIME, DAYTIME		Yes	-	
HTTP, HTTPS		Yes	-	
Telnet, SSH		Yes	Yes	
SNMP		Yes	Yes	
syslog		Yes	Yes	
Mail notification		Yes	-	
IPv6		Yes	To be supported later	
VLAN		-	Yes	
Characteristics		**TS-2950**	**TS-2910**	
Rated voltage		AC100V~AC240V±10% (50/60Hz) *6	AC100V~AC240V±10% (50/60Hz) *6	DC -40.5V ~-57V
Rated current		0.39A	0.36A/0.2A	0.38A
Power consumption		32W	20W	19W
Calorific value		115kJ/h	72.0kJ/h	68.4kJ/h
Operation temperature		0 ~ 40 ℃	0 ~ 50 ℃	
Operation humidity		20 ~ 80% RH (no condensation)	15 ~ 85% RH (no condensation)	
Installation style		Rack mount (fittings included)	On the shelf (horizontal)	
Dimensions		430(W) x 500(D) x 44(H) mm (projection not included)	208(W) x 282(D) x 44(H) mm (projection not included)	
Weight		Approx. 10kg	Approx. 2kg	
Certificates		VCCI-A, RoHS, PSE	VCCI-A, RoHS	
Option		GNSS antenna antenna holder power unit module fan module expansion module Cesium oscillator	GNSS antenna antenna holder	

*1 Depending on the Oscillator (hardware) selected for the required holdover performance.
*2 CSAC is very surperior to OCXO in long term stability of frequency.0.3ppb/month (unlock to GPS)
*3 In case of IPv6 UDP the operation of the time synchronization can be carried out only in two-step, and the peer delay measurement can be carried out only in two-step too.
*4 Maximum processing capability depending on the number of the slave are 128 packets/sec for up to 32 nodes, 64 packets/sec for up to 64 nodes and 32 packets/sec for up to 128 nodes.
*5 It supports source address based routing. *6 In case the device is used at AC 240V an applicable AC power cord is necessary.

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1702-SSO4-2NC