IS3300

IEEE1588v2 PTP Boundary Clock

Key Features

- IEEE1588v2-2008 Precision Time Protocol(PTP) Boundary Clock
- Lock to PTP master based on PTP standard protocol
- Pass through for user traffic via LAN port
- Up to 3 ports 100/1000Mbps for PTP clients interface
- Supporting up to 3 IP domains for PTP clients
- Supporting BMCA based on PTP standard
- Up to 64 clients at 128/sec PTP rate
- Hardware-based PTP packet processing, No performance degradation and accuracy
- 10MHz, 1PPS signals out via BNC ports
- ToD signal out via IRIG-B, RS232 ports
- IRIG-B000/B120 type by factory option
- DC or AC power by factory option
- WEB UI, and CLI management

Application

- 4G/LTE-FDD/TDD, LTE-Advanced networks
- Ethernet backhaul networks
- WiMAX backhaul networks
- Passive Optical Network(PON)
- Electric Power network: substation

Overview

The Springwave's IS3300 series is a IEEE1588v2 PTP (Precision Time Protocol) boundary clock to build the precision time and frequency synchronization based on the IEEE1588v2-2008 standard. Especially, it is designed for the economic deployment and precision synchronization in the SCADA system and the 4G/LTE mobile network. Also it supports up to three different IP domain to accommodate different groups of the PTP clients. There are three UTP connectors in the front to interface PTP clients. Also it supports pass-through mode to by-pass the user traffic from mixed user and PTP packets.

Precision Time Synchronization

Currently the base stations in the 4G/LTE small cell networks are increasing caused by the tremendous mobile data traffic growth, like smartphone. Furthermore, these base stations are demanded on the precision time/frequency synchronization, and the equipment is increasing coming from their narrow RF coverage.

The IS3300 boundary clock is integrated advanced Springwave's own algorithm(SPW1588™) to synchronize precise time to the PTP master.

PTP Boundary Network Connection
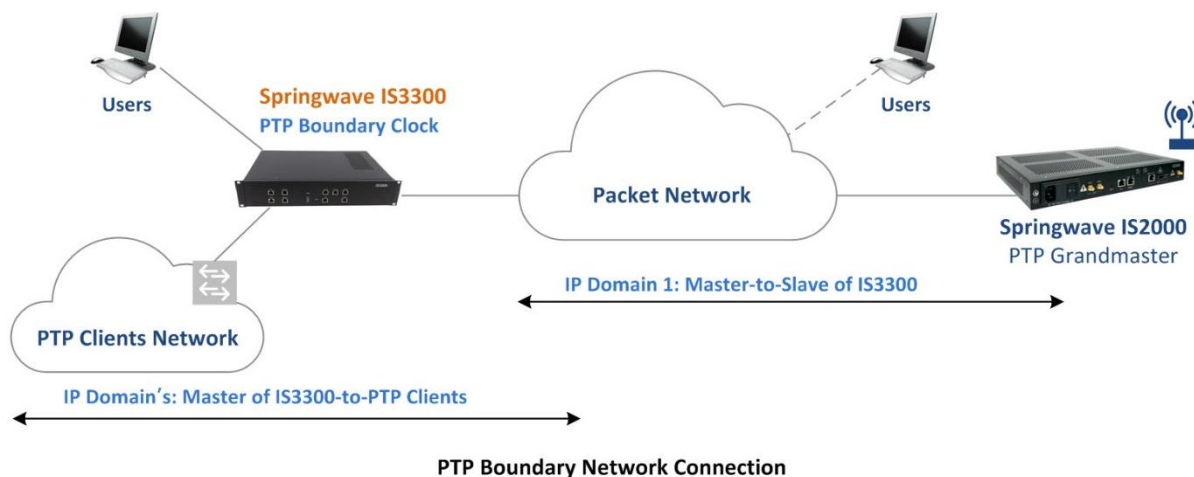
Specification

> PTP master interface
- RJ45 modular, IEEE802.3 physical IF
- 100M/1000M base Ethernet
- PTP over IPv4
- Fully comply with IEEE1588v2-2008 standard

> Mechanical
- Case size: 438 x 264.6 x 86.8 mm (WxDxH)
- 2U rack mountable

> Environmental
- Operating temperature: 0 ~ 50℃
- Operating humidity: 0 ~ 90% RH non-condensing
- Storage temperature: -40 ~ +70℃

> Power Supply
- Factory option: AC or DC input
- AC input: 220Vac±10% @60Hz
- DC input: -42 ~ -60Vdc
- Power consumption: max 35[W]

> I/O Port in Rear Panel
- Monitoring
 - 1PPS output: 50Ω BNC [female] x4
 - 10MHz clock output: 50Ω BNC [female] x1
- IRIG-B out: 50Ω BNC [female] x4
- ToD out: RS232, RJ45 x4

> I/O Port in Front Panel
- PTP-S, LAN, PTP-M: RJ45 modular, 100M/1000M copper, Ethernet
- CLI: RS232, RJ45(CLI-M, CLI-S)
- Management:
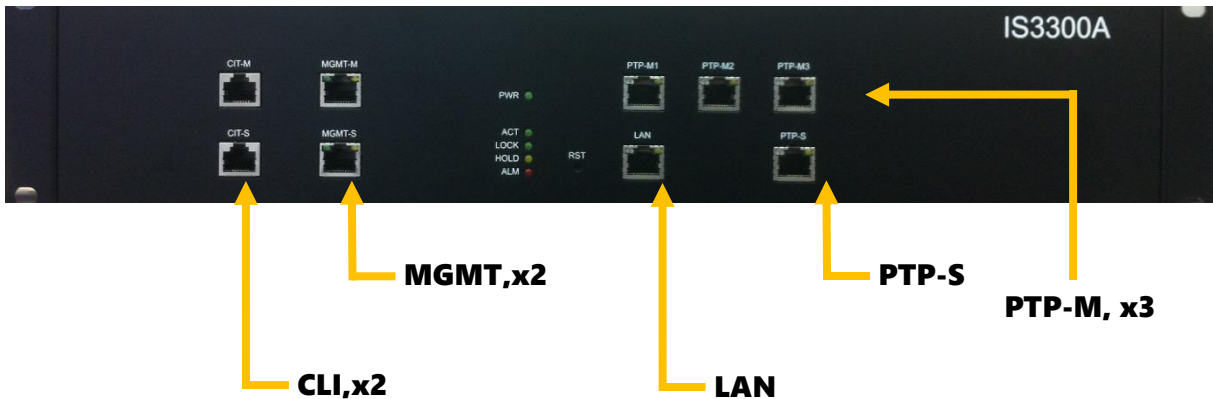 - RJ45 modular, 100M/1000M copper, Ethernet (MGMT-M, MGMT-S)

> Monitoring Output
- 10MHz clock: LVTTL, disable by configuration
- 1PPS: LVTTL, disable by configuration
- IRIG-B000: LVTTL, 100pps
- IRIG-B120: AM Sinewave, 100pps

> IEEE1588v2 PTP Master Interface(PTP-S)
- Up to 128 PTP messages per second per client
- PTP over IPv4
- Best Master Clock Algorithm(BMCA), with default profile. Supporting Alternate Master
- IEEE1588v2 PTP End-to-End
Local pass-through user traffic (LAN)
- By-passed the user traffic from mixed traffic mixed traffic: user & PTP traffic
- 100M/1000M ethernet interface
IEEE1588v2 PTP Master Interface (PTP-M)
- Up to 128 PTP messages per second per client
- PTP over IPv4
- 1 or 2 step PTP mode

IS3300 – front view

CLI,x2

MGMT,x2

LAN

PTP-S

PTP-M, x3

IS3300 – rear view

PWR Input (DC or AC)

1PPS out

IRIG-B out & 10MHZ out

DTMF & ALARM

ToD out (RS232)

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