Metronome Timing System (MTS)

Enable Time-Synchronized Testing

Problem: Time-Sensitive Networked Applications are Difficult to Validate

Time-synchronized testing is critical for many emerging network technologies such as datacenter network, audio/video bridging (AVB), time-sensitive networking (TSN), industrial automation, and Internet of things (IoT). All of these network applications require a very accurate awareness of time, which is best achieved by using an industry-standard time reference such as Coordinated Universal Time (UTC).

Solution: Precision Time-Synchronized Testing

Ixia's Metronome is a precision test instrument that seamlessly integrates with Ixia test solutions to enable large-scale, time-synchronized testing of complex networks.

Metronome enables devices under test (DUT) and an IxNetwork test system to use the same time reference. It enables large-scale time-synchronized testing using up to 8 directly connected Ixia chassis in the *Single Level Topology*. For even larger scale and extended distance, the *Distribute GPS Topology* allows time-synchronized testing limited only by GPS. If massive scale is required, the Metronome-STAR topology can be used for up to 48 AresONE connected in a synchronization system. Metronome and Metronome Timing System Extender together provide connection and distance flexibility between Metronome and the attached chassis.

Highlights

- Perform complex, time-synchronized testing for:
  - Synchronized IxNetwork testing
  - Large-scale data center test using RFC 2544/2889/3918
- Accept industry standard timing inputs enabling a single timing reference
- Leverage robust connection guidelines allowing for widespread node placement

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Key Features

- Seamless integration with Ixia's IxNetwork and IxExplorer
- Large-scale testing with synchronized timing
- Scalable time distribution platform
- Support for industry-standard timing inputs
- Robust connection guidelines allowing for widespread placement of chassis
- Flexible topologies that allow massive scale testing
- Any combination of XGS Chassis, AresONE and Novus ONE PLUS allowed

Metronome Timing System Extender

The Metronome Timing System Extender (MTSx) works in conjunction with the Metronome and the Ixia chassis to provide connection flexibility, which allows up to 200m between chassis and Metronome. This provides up to 400m between chassis in a single Metronome system. One MTSx is required for each chassis.

Metronome Timing System Extender

Specifications

Feature	Details
Ixia Chassis Support	• XGS12-SD • XGS12-SDL • XGS12-HSL • XGS2-SD • XGS2-SDL • XGS2-HSL • AresONE • Novus ONE PLUS
IxOS Support	IxOS/IxNetwork Version 9.00 supports any combination of XGS- XGS-SD, XGS-SDL, AresONE and Novus ONE PLUS

Feature	Details
Output Ports	• 8 Timing ports allowing connection to Ixia Chassis or additional MTS • 1 Management Port • 4 BNC Ports
Metronome Level 1 Systems Supported	Up to 8 XGS, AresONE or Novus ONE PLUS
Metronome-STAR Level 2 Systems Supported	Up to 48 AresONE or a mix of XGS, AresONE and Novus ONE PLUS (see manual for restrictions and configuration guide)
Input Ports	• GPS – SMA male 50 ohm • 4 BNC • RS422-TOD+1PPS (CMCC format) • 1 Management Port
Clock Inputs/Sources	• GPS • Internal OCXO Metronome Clock • BNC • RS422-TOD+1PPS (CMCC format)

User Interface	• Remote monitoring and control via 10/100/1000 RJ45 Ethernet port
	• Intuitive and interactive web GUI interface
	• RESTful API allows test automation and complete control of all functionality programmatically
	• The following browsers and versions are supported
	  ◦ Internet Explorer version 11 or higher
	  ◦ Mozilla Firefox version 24 or higher
	  ◦ Chrome Version 50.0.2661.102 m

Feature		Details
Cable Lengths Supported – MTS to MTSx	MTS to MTS Extender distance	2m - 200m max
	Cable Type	Metronome Sync Cable (zero skew video cable)
	Standard Lengths	5m / 50m / 200m
Cable Lengths Supported – Chassis to MTSx	MTS Extender to Chassis distance	6 feet Note: 2 cables included in each MTSx
	Cable Type	Metronome Extender Sync Cable

Feature	Details

Metronome Chassis	• Rack-mount and desktop-mounting hardware included
	• 1U rack-mountable
	• Dimensions: 1U - 1.73 x 17.3 x 12.25 in (4.6 x 43.9 x 31.1 cm)
	• Weight: 10lb. (4.54 kg)
	• Thermal
	  ○ Operating temperature: 0° to 40° C (32 to 104° F)
	  ○ Operating humidity: 10 to 85% (RH), non-condensing
	  ○ Storage temperature: –40°C to 70°C (-40 to 158 F)
	  ○ Storage humidity: 5 to 95% (RH), non-condensing
	• Input power (internal AC/DC converter)
	  ○ Input voltage: 100-240VAC
	  ○ Input frequency: 47-63Hz
	• Max. power consumption: 100W (typical), 175 (max)
	• Internal power supply

Metronome Extender Chassis	• Rack mount and desktop mounting hardware included
	• 1U rack-mountable
	• Dimensions: 1U - 1.63 x 7.38 x 6.25 in (4.1 x 18.7 x 15.9 cm)
	• Weight: 2.3 lbs (1.04kg)
	• Thermal
	  ○ Operating temperature: 0° to 40° C (32 to 104° F)
	  ○ Operating humidity: 10 to 85% (RH), non-condensing
	  ○ Storage temperature: –40°C to 70°C (-40 to 158 F)
	  ○ Storage humidity: 5 to 95% (RH), non-condensing
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Regulatory Approvals	• CE • UL 60950-1, 2nd Edition • FCC Class A • ROHS compliant • UL File #: E255262

Ordering Information

942-0090

IXIA Metronome Timing System and Metronome Timing Software enabling advanced chassis timing. Includes Sync Cable 5m (942-0096). Compatible with the XGS-SD chassis, XGS-SDL chassis, XGS-HSL chassis, AresONE fixed chassis and Novus ONE PLUS fixed chassis.

942-0091

IXIA Metronome Timing System Extender. Requires Metronome Timing System 942-0090. Includes 2 MTS to chassis 6' cables (942-0095). Compatible with the XGS-SD chassis, XGS-SDL chassis, XGS-HSL chassis, AresONE fixed chassis and Novus ONE PLUS fixed chassis.

942-0095

IXIA Metronome Timing System Extender to Chassis 6-foot cable. Compatible with Metronome Timing System 942-0091.

942-0096

IXIA Metronome Timing System (942-0090) to Metronome Timing System Extender (942-0091) 5-meter cable.

942-0097

IXIA Metronome Timing System (942-0090) to Metronome Timing System Extender (942-0091) 50-meter cable.

942-0098

IXIA Metronome Timing System (942-0090) to Metronome Timing System Extender (942-0091) 200-meter cable.

942-0100

IXIA Metronome Timing System Extender Rackmount kit for 2 Metronome Extender units.

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