DarYu-X series high performance network tester

With high performance, high density, high speed, and multiple chassises cascading, DarYu-X series launched by Xinertel are designed for high end routers, high end switches, data center switches, and high performance security devices test.

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Product Introduction

The DarYu-X series high-performance network tester features modular design and consists of chassis, test modules, and test software. The test port covers a variety of ethernet speeds from 1G to 400G and offers the scalable expansion capabilities, enabling users to easily cope with the rapid growth of test business and future business development.

With the new generation of test software RENIX based on the PCT architecture and X series test modules, DarYu-X series supports L2-7 traffic test and protocol simulation for network devices and network systems, providing comprehensive test solutions in terms of functionality, performance, and security to meet the testing needs in the process of research and development, experimentation, and quality control.

DarYu 3000

The DarYu3000 is a rack-mount chassis which supports Xinetel's new generation of 1G to 400G multi-rate test modules. With built-in LCD screen, intelligent power supplies, fan control, and fast firmware upgrades, DarYu3000 reduces the costs of network equipment effectively .

With the new generation of test software RENIX based on the PCT architecture and X series test modules, DarYu 3000 supports L2-7 traffic test and protocol simulation for network devices and network systems, providing comprehensive test solutions in terms of functionality, performance, and security to meet the testing needs in the process of research and development, experimentation, and quality control.

Key features

- A unified platform for high-performance L2-7 test, supporting large-scale routing and switch protocol simulation and application test
- Ultra-high performance 3-slot chassis, support up to 12 *100GE ports
- Support 400G/100G/40G/25G/10G/5G/2.5G/GE
- Modular design, power supply and fan can be replaced on site
- Support for multiple chassis cascades of daisy chains for easy expansion for large-scale test
- Support hot swap of test module
- Support multiple management IP modification methods
- Support to download client software based on web browsers
- Support API interface for Renix and supports TCL automated test

Ordering information

Product Name	Product Description	Product classification
DarYu 3000 chassis	DarYu 3000 3-slot chassis, including a main control module (running the Linux CentOS system), a clock module, a power module, a fan module, and power cords	DarYu series chassis
DarYu 3000 main control module	DarYu 3000 main control module (running Linux CentOS system)	DarYu 3000 chassis accessories
DarYu 3000 power module	DarYu 3000 110V AC/220V AC power module	DarYu 3000 chassis accessories
DarYu 3000 fan module	DarYu 3000 Fan Module	DarYu 3000 chassis accessories
DarYu 3000 clock module	DarYu 3000 clock module	DarYu 3000 chassis accessories

Specifications

Slot	3
Dimensions (WxDxH)	482.6mm × 178mm × 686mm
Weight	Chassis only : about 25kg; Chassis with 2 test modules: about 46kg
Chassis power supply	The empty chassis power is 300W, and the maximum power fully loaded with test modules is 3300W
Switch/Display	• Rear AC power supply • Power, Fan, Temp, Link LED indicator, LCD • Reset button of the main control of the chassis • LCD control button of the chassis
I/O	1 DB15 display interface 1 RJ45 10/100/1000M management interface 1 RJ45 10/100/1000M 1588 clock input interface (reserved) 1 RJ45 RS232 serial port 1 SYNC-OUT, 1 SYNC-IN chassis cascade interface 1 DB9 GPS RS232 serial port 1 PPS, 1 10MHz input BNC 2 USB Type A interfaces
Temperature	Storage: -40° C to 70° C
Humidity	Storage: 20% to 85%
Chassis power supply	4*110V AC/220V AC 50/60Hz @10A single-phase power input
Operating system	CentOS 7.X, 64bit
Network management	• IPv4 management network; support panel button to modify IP address and query status • Support Telnet/SSH terminal to modify IP and query status • Support external display and keyboard to modify IP and query status • Support web page download client, modify IP, query status • Support License management and hardware management through client software
Client software	Renix, ALPS
Client system requirements	• System: Microsoft Windows 7/ Windows 10/Windows Server 2012 R2 Standard Edition CPU: i3-6100 CPU @ 3.70GHz and above • Memory: 4 GB and above
Test modules supported	• X2-10G-16F-HD, fiber port test module (1G/10G) • X2-10G-16C-HQ, cooper port card (100M/1G/2.5G/5G/10G) • X2-100G-4QSFP28, 4-port 100G multi-rate test module (10G/25G/40G/100G) • X2-400G-2QDD-HQ, 2-port 400G high-rate test module

DarYu 12000

The DarYu12000 is a rack-mount chassis which supports Xinetel's new generation of 1G to 400G multi-rate test modules. With built-in LCD screen, intelligent power supplies, fan control, and fast firmware upgrades, DarYu3000 reduces the costs of network equipment effectively .

With the new generation of test software RENIX based on the PCT architecture and X series test modules, DarYu 12000 supports L2-7 traffic test and protocol simulation for network devices and network systems, providing comprehensive test solutions in terms of functionality, performance, and security to meet the testing needs in the process of research and development, experimentation, and quality control.

Key features

- A unified platform for high-performance L2-7 test, supporting large-scale routing and switch protocol simulation and application test
- Ultra-high performance 12-slot chassis, support up to 48 *100GE ports
- Support 400G/100G/40G/25G/10G/5G/2.5G/GE
- Modular design, power supply and fan can be replaced on site
- Support for multiple chassis cascades of daisy chains for easy expansion for large-scale test
- Support hot swap of test module
- Support multiple management IP modification methods
- Support to download client software based on web browsers
- Support API interface for Renix and supports TCL automated test
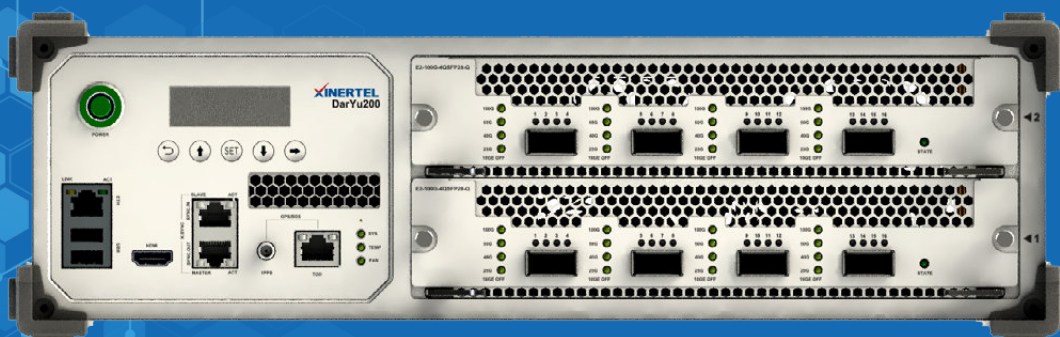
Ordering information

Product Name	Product Description	Product classification
DarYu 12000 chassis	DarYu 12000 12 slot chassis, including main control module (running Linux CentOS system), power module, fan module, power cord	DarYu series chassis
DarYu 12000 main control module	DarYu 12000 main control module (running Linux CentOS system)	DarYu 12000 chassis accessories
DarYu 12000 power module	DarYu 12000 110V AC/220V AC power module	DarYu 12000 chassis accessories
DarYu 12000 fan module	DarYu 12000 fan module	DarYu 12000 chassis accessories
DarYu 12000 clock module	DarYu 12000 clock module	DarYu 12000 chassis accessories

▋ Specifications

Slot	12
Dimensions (WxDxH)	442mm × 622.3mm × 815mm
Weight	Chassis only : about 108kg; Chassis with 2 test modules: about 209kg
Chassis power supply	The power of the empty frame is 650W, and the maximum power can be 12000W (4 power modules) or 24000W (8 power modules) The empty chassis power is 650W, and the maximum power with 4 power modules is 12000W, 24000W with 8 power modules
Switch/display	Rear AC power supply Power, Fan, Temp, Link LED indicators, LCD Chassis master reset button Chassis LCD control button
I/O	One DB15 display interface One RJ45 10/100/1000M management interface One RJ45 10/100/1000M 1588 clock input interface (reserved) One RJ45 RS232 serial port 5 SYNC-OUT, 1 SYNC-IN chassis cascade interface One DB9 GPS RS232 serial port One 1PPS, one 10MHz input BNC 4 USB Type A interfaces
Temperature	Working: 0 ° C to 35 ° C Storage: -40 ° C to 70 ° C
Humidity	Working: 20% to 85%; Storage: 20% to 85%
Chassis power supply	8 x 110V AC/220V AC 50/60Hz @ 16A single-phase power input
Operating system	CentOS 7.X, 64bit
Network management	• IPv4 management network; support panel button to modify IP address and query status • Support Telnet/SSH terminal to modify IP and query status • Support external display and keyboard to modify IP and query status • Support web page download client, modify IP, query status • Support License management and hardware management through client software
Client software	Renix, ALPS
Client system requirements	• System: Microsoft Windows 7/ Windows 10/Windows Server 2012 R2 Standard Edition CPU: i3-6100 CPU @ 3.70GHz and above • Memory: 4 GB and above
Test modules supported	• X2-10G-16F-HD, fiber port test module (1G/10G) • X2-10G-16C-HQ, cooper port card (100M/1G/2.5G/5G/10G) • X2-100G-4QSFP28, 4-port 100G multi-rate test module (10G/25G/40G/100G) • X2-400G-2QDD-HQ, 2-port 400G high-rate test module

DarYu 200

The DarYu 200 is a portable chassis which supports Xinetel's new generation of 1G to 100G multi-rate test modules. With built-in LCD screen, intelligent power supplies, fan control, and fast firmware upgrades, DarYu 200 reduces the costs of network equipment effectively .

With the new generation of test software RENIX based on the PCT architecture and X series test modules, DarYu 200 supports L2-7 traffic test and protocol simulation for network devices and network systems, providing comprehensive test solutions in terms of functionality, performance, and security to meet the testing needs in the process of research and development, experimentation, and quality control.

Key features

- A unified platform for high-performance L2-7 test, supporting large-scale routing and switch protocol simulation and application test (E2 series test module supports L23 test, U3 series test module supports L47 test)
- Support 100G/50G/40G/25G/10G/5G/2.5G/GE (planned)
- 2.5U height, strong portability
- Support for multiple chassis cascades of daisy chains for easy expansion for large-scale test
- Supports multiple management IP modification methods
- No need to learn new GUI of software
- Support to download client software based on web browsers
- Support API interface for Renix and supports TCL automated test

Ordering information

Product Name	Product Description	Product classification
DarYu 200 chassis	DarYu 200 2-slot chassis	DarYu 200 Chassis
E2-100G-4QSFP28-Q	4-port, 5-speed 100G/50G/40G/25G/10G test module (planned)	DarYu 200 Chassis test module

Specifications

Slot	2 slots
Dimensions (WxDxH)	390mm× 113mm× 420mm
Weight	Chassis only : about 10.5kg; Chassis with 2 test modules: about 15kg
Switch/Display	• Rear AC power supply • Power, Fan, Temp, Link LED indicator, LCD • Reset button of the main control of the chassis • LCD control button of the chassis
I/O	• 1 HDMI display interface • 1 RJ45 10/100/1000M management interface • 1 SYNC-OUT, 1 SYNC-IN chassis cascade interface • 1 RJ45 GPS RS232 serial port • 1 PPS input BNC • 2 USB Type A interfaces
Temperature	Storage: -40° C to 70° C
Humidity	Working : 20% to 85%; Storage : 20% to 85%
Chassis power supply	1 x 110V AC/220V AC 50/60Hz @10A single-phase power input
Noise	The noise of the complete machine is ≤ 69dba at typical speed and ≤ 85dba at full speed
Operating system	CentOS6.7 and above, 64bit
Network management	• IPv4 management network; support panel button to modify IP address and query status • Support Telnet/SSH terminal to modify IP and query status • Support external display and keyboard to modify IP and query status • Support web page download client, modify IP, query status • Support License management and hardware management through client software

High density 400G Appliance

5G, cloud, and data centers have brought people unprecedented internet experiences.The ultra-high bandwidth, massive connectivity, low latency and high reliability of 5G will become a strong foundation for building a digital society. Service providers and large-scale data centers are deploying multi-rate network infrastructure solutions to meet the growing market demands. Due to these multi-rate requirements, customers require higher density tester, and verifying next-generation routers and data center structures requires flexibility. The X5 400G appliance is launched by Xinertel for high-end routers, high-end switches,and data center switch to help operators, network equipment manufacturers, and enterprise users easily cope with the rapid testing business growth and future business development.

With the leading L2-3 traffic generation and analysis capabilities, Xinertel X5 400G appliance multi-speed test module supports large-scale routing and switching protocols and traffic test, and benchmark tests(such as RFC2544/RFC2889/RFC3918),functional testing, performance testing, long-term stability and reliability testing for network equipment. 4/RFC2889/RFC3918), function tests, performance tests, long-term stability and reliability tests on 100GE network equipment.

▌ Key features

- Native QSFP-DD 400G interface, support 8/16 400G ports, and 400G/200G/100G
- Support large-scale 2-3 layer traffic and routing switching protocol simulation
- Support the performance test of routing, multicast, access, MPLS, VXLAN, segmented routing (SR) and other protocols
- FPGA based 100% line speed traffic generation, statistics and capture
- Support RFC2544, RFC2889, RFC3918 and other benchmark test suites
- Support Chinese and English test operation software
- Support Chinese and English test report system

▌ Models

Product name	Product description	Product classification
X5-400G-8QDD, X5-400G-16QDD	8/16 port 400G multi-rate appliance	X5 series appliance

Specifications

Hardware and electrical characteristics	
Port speed	400G/200G/100G
Port density	8/16
User reservation	Reservation by port
Port speed switching	Switch speed by port
Weight (kg)	8KG
Module size (W * H * D)	444mm * 87mm *730mm
Temperature	0 ° C to 35 ° C
Humidity	20% to 85%
Max power consumption (W)	3000W

Traffic	
Max streams per port	400G: Tx=16K; 200G: Tx=8K; 100G: Tx=4K
Frame length (byte)	64~16004 bytes
Frame length controls	Fixed, Increment, Decrement, Random, Auto, and IMIX
Dynamic fields	6 dynamic fields are available for each stream ; Support multiple dynamic controls such as Fixed, increment, Decrement, List, and Random.
Transmit mode	Continuous, Burst, and Time Burst modes based on port; Continuous and Burst modes based on flow
Bandwidth modification	Modify by port or flow
Latency and jitter	LIFO, FIFO , LILO, and FILO
Timestamp resolution	2.5 nanoseconds
Built-in protocol templates	Built in multiple message templates, such as VLAN, ICMP, PPPoE, GRE, DHCP, L2TP, IPv6, MPLS, GTP, GOOSE, VXLAN, OSPF, TCP, UDP, etc
Customized frame	Support user-defined message, and the edited message template can be saved; Supports the checksum check of custom fields
User defined data	Support importing the 16K bytes customized payload and the first 256 bytes can be adjusted with jumping
Flow control	Full duplex flow control
Packet error generation	CRC error, Oversize frame

Statistics	
Statistical streams per port	400G: Tx=32K; 200G: Tx=16K; 100G: Tx=8K
Statistical pattern	Csv statistics, chart statistics, automatic saving of csv files
Statistics(Port)	Tx/Rx Frames, Tx/Rx Frame Rate, Rx Bandwidth, Error Frame Statistics, Filter Statistics, and Customized Statistics, FCS Error Statistics, TCP/UDP Checksum Errors, Pause Frame Statistics, etc.
Statistics(Flow)	Tx/Rx Frames, Tx/Rx Flow rate, Rx Bandwidth, Error frame statistics, Real-time packet loss statistics, out of order statistics, delay, jitter and customized statistics, etc.
Statistics operation	Support sorting of statistical results, performing mathematical operations such as addition, subtraction, multiplication, and division, and customizing the number of statistical entries for each page, etc..

Capture	
Capture buffer (Byte)	400G: 1MB; 200G: 512KB; 100G: 256KB
Capture pattern	Capture of data and receive frames of the control plane, ; Capture of transmitted and received frames of the control plane; Capture based on filter templates; Capture filtered error packets; Capture buffer overwriting; Support specifying the number of downloaded capture packets.

Protocol emulation	
Routing and MPLS	RIPv1v2, RIPng, OSPFv2, OSPFv3, ISISv4, ISISv6, BGP, BGP4+, LDP, MPLS L3VPN, VPLS, VLL, 6VPE, 6PE
Access	PPPoE Client/Server, DHCPv4 Client/Server, DHCPv6 Client/Server, DHCPv6 PD Client/Server, L2TPv2, 802.1x
Multicast	IGMPv1/v2/v3, MLDv1/v2, IGMP/MLD Querier, PIM-SM
Data center	VXLAN, OpenFlow, OVSDB, EVPN, LACP
other	BFD, 802.1ag, 802.1ah, IPv6 automatic configuration
test suite	RFC2544, RFC2889, RFC3918, Asymmetric Test, Smart Scripter
Stateful L47 Protocol	HTTP, Raw TCP

Software platform	
Client software	Renix
API	Tcl, Python3.x, GUIToTcl, GUIToPython
GUI language	English , Simplified Chinese

Hardware platform	
Chassis operating system	Linux CentOS7. 1