BigTao-V series product manual

Xinertel makes network testing easier

Summary

Xinertel BigTao-V series network tester is a R & D test product for middle and low-end routers, switches and network forwarding equipment of the same level with Xinertel's global leading architecture.It adopts modular design and composed of chassis, board and software.The chassis can provide 2 or 6 slots, support any combination of test modules from 10M to 100G, and it is also the tester with the smallest volume and the lowest power consumption to support the new 100G multi speed interface (10G / 25G / 40G / 100G).

The portable handle is specially added on the side of the two slot BigTao 220 frame, which greatly meets the needs of field test. Meanwhile, professional noise reduction technology is adopted. The maximum operating noise is only 65 dB, which is allowed to be put in the office for testing.The latest energy-saving technology is adopted in the design. The maximum power of the whole machine is only 150W at full load, which can effectively reduce the long-term test cost.

With the new generation of test software renix and BigTao-V series network tester based on PCT architecture of Xinertel, it can realize layer2-3 traffic test and protocol simulation for network equipment and network system, provide comprehensive test solutions in terms of function, performance and security, and meet the test requirements in the process of R & D, experiment and quality control.

Contents

BigTao220

BigTao220 portable chassis is a new generation R&D test chassis with Xinertel global leading architecture. It adopts a modular design and provides 2 slots, supporting any combination of test modules from 10M to 100G speeds. It is also the smallest chassis that supports Xinertel new 100G multi-speed card (10G/25G/40G/100G).

BigTao220 has a compact frame and a portable handle on the side, which greatly meets the needs of field testing. At the same time, using professional noise reduction technology, the maximum operating noise is only 65 dB, which can be tested in the office. The design uses the latest energy-saving technology, green and environmental protection, the maximum power consumption of the whole machine is only 150W, which can effectively reduce the cost of long-term network testing.

In conjunction with Xinertel new generation of PCT-based test software Renix and V series test modules, BigTao220 can achieve Layer2-3 traffic testing and protocol simulation for network equipment and network systems, providing comprehensive testing in terms of function, performance and security. Solutions to meet testing needs during R & D, experimentation and quality control.

Key Features

- Support 100G, 40G, 25 , 10G and 10/100/1000Mbps
- Chassis has strong portability, low power consumption and low noise
- Support multiple management IP modification methods
- Support local software download based on Web browser
- Support network sharing and remote control to improve test efficiency
- Support Chinese and English software platform and test report
- Provide Renix API interface, support TCL and python automation testing

Specification list

Slots	2
Size	400mm×340mm×95mm
Weight	Empty chassis: about 6.6kg Full board card: about 9.2kg
Maximum power supply capacity of the system	200W
Indicators and Controls	• Rear AC power switch • Power, Fan, Temp, Link LED indicator, 16 * 02 character LCD • Chassis master reset button • Chassis LCD control buttons
Connectors	• 1 DB15 display interface • 1 RJ45 10/100 / 1000M management interface • 1 RJ45 10/100 / 1000M 1588 clock input interface • 1 RJ45 RS232 serial port • 1 SYNC-OUT, 1 SYNC-IN chassis cascade interface • 1 DB9 GPS RS232 serial port • 1 1PPS, 1 10MHz input BNC • 1 IRIG-B DC TTL input BNC • 2 USB Type A ports
Temperature	Work: 0℃ to 35℃ Storage: -40° C to 70° C
Humidity	Work: 20% to 85% RH, no condensation Storage: 20% to 85% RH
Power	One 110VAC / 220VAC 50 / 60Hz @ 3A single-phase power input
Noise	≤ 65dba
Operating System	CentOS7.X, 64bit
Administration and Operation	• IPv4 Management Network • Support panel keys 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 webpage download client, modify IP, query status • Supports license management and hardware management through client software
Client software	Renix test application: For control and data plane performance testing of routers and switches with complex protocol support including BGP, OSPF, IS-IS, MPLS, IP multicast, including IPv4 and IPv6 variations and many more protocols
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
Board support	• V6000 series Gigabit functional test module (10M/100M/1000M) • V8000 series 10G functional test module (1G/10G) • V2-10G series 10G multi-speed functional test module (100M/ 1G/2.5G/5G/10G) • V2-100G series 100G multi-speed functional test module (10G/25G/40G/100G)

BigTao6200

BigTao6200 rack type machine frame is a new generation of R&D test machine frame with the global leading architecture. It adopts modular design, provides 6 slots, and supports any combination of test modules of various speeds from 10m to 100g. It is the rack frame with the highest port density in the industry under the same volume.

BigTao6200 frame has an efficient hardware architecture, unique fan/noise control and energy-saving technology, which can effectively reduce noise and power consumption while providing efficient operation, and save costs for enterprises. The BigTao6200 frame can not only run all the existing V2 series test modules, but also be compatible with all the previous V series test modules, and will also be compatible with the 200g/400g test modules developed in the future, providing the maximum protection for customers' assets.

With Xinertel new generation of test software Renix based on PCT architecture and V-series test modules, BigTao6200 can realize layer 2-3 traffic test and protocol simulation for network devices and network systems, provide comprehensive test solutions in terms of function, performance and security, and meet the test requirements in the process of R & D, experiment and quality control.

Key Features

- Support 100G, 40G, 10G and 10/100/1000Mbps
- High port density, space saving
- Support multiple management IP modification methods
- Support local software download based on Web browser
- Support network sharing and remote control to improve test efficiency
- Support Chinese and English software platform and test report
- Provide Renix API interface, support TCL and python automatic testing

Specification list

|	
Slots	6
Size	446 mm × 413 mm× 132 mm
Weight	Empty chassis: about 12.5kg Full board card: about 20kg
Maximum power supply capacity of the system	600W
Switch / Display	• Rear AC power switch • Power, fan, temp, link, Sys LED indicator, OLED display • Reset button of main control of chassis • Chassis OLED control button
IO Interface	• 1 DB15 display interface • 1 RJ45 10/100/1000M management interface • 1 RJ45 10/100/1000M 1588 clock input interface • 1 RJ45 RS232 serial port • 1 SYNC-OUT, 1 SYNC-IN chassis cascade interface • 1 DB9 GPS RS232 serial port • 1 1PPS, 1 10MHz input BNC • 1 IRIG-B DC TTL input BNC • 4 USB Type A ports
Temperature	Work: 0° C-35° C Storage: -40° C to 70° C
Humidity	Work: 20% to 85% RH, no condensation Storage: 20% to 85% RH
Chassis power supply	One 110VAC / 220VAC 50 / 60Hz @ 8.5A single-phase power input
Noise	≤ 75dba
Operating System	CentOS7.X, 64bit
Network management	• IPv4 Management Network • Support panel keys 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 webpage download client, modify IP, query status • Supports license management and hardware management through client software
Client software	Renix test application: For control and data plane performance testing of routers and switches with complex protocol support including BGP, OSPF, IS-IS, MPLS, IP multicast, including IPv4 and IPv6 variations and many more protocols
Client system requirements	System: Microsoft Windows 7/Windows 10/Windows Server 2012 R2 Standard Edition CPU: i7-4700EQ CPU @ 2.40GHz and above Memory: 4 GB and above
Board card support	• V6000 series Gigabit functional test module (10M/100M/1000M) • V8000 series 10G functional test module (1G/10G) • V2-10G series 10G multi-speed functional test module (100M/ 1G/2.5G/5G/10G) • V2-100G series 100G multi-speed functional test module (10G/25G/40G/100G)

V6000 series board

The V6 series board card is a new generation of test board card with global leading architecture, which can meet the requirements of equipment manufacturers from basic function test, consistency test to high-density port performance test. At the same time, it can verify whether the network system can achieve the expected goal when the enterprise, the operator and the data center deploy the network solution.

Key Features

• 10 / 100 / 1000M RJ45 self-adaption (electrical interface)

• 100 / 1000M SFP (optical interface)

• Support 2-3 layer traffic test and protocol simulation

• 100% line speed traffic generation, statistics and capture function based on FPGA

• Support RFC2544, RFC2889, RFC3918 and other benchmarking test suites

• Support Chinese and English operating software

• Support Chinese and English test report system

Model List
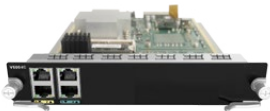
V6004C Test Module
4 Port , RJ45 1 Gigabit
Function Test Module

V6004F Test Module
4 Port , SFP 1 Gigabit
Function Test Module

V6008C Test Module
8 Port , RJ45 1 Gigabit
Function Test Module

V6016C Test Module
16 Port , RJ45 1 Gigabit
Function Test Module

V6008M Test Module
4 Port RJ45 and 4 Port
SFP 1 Gigabit Function
Test Module

V6016M Test Module
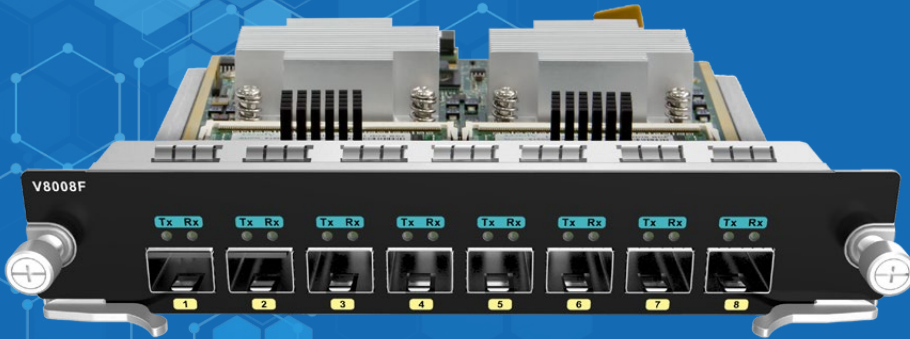8 Port RJ45 and 8 Port
SFP 1 Gigabit Function
Test Module

V6016F Test Module
16 Port , SFP 1 Gigabit
Function Test Module

Specification list

Hardware and electrical characteristics	
Port Rate	electrical port : 10M/100M/1000M optical port : 100M/1000M
Port Density	up to 16 interfaces per slot(MAX)
Interface Standard	1000BASE-SX、1000BASE-LX、10/100/1000BASE-T、100BASE-FX
Port Occupancy	Occupied by single port
Rate Switching	Self-adaption
Module Weight (kg)	1.1
Module Size (w * h * d)	196mm x 35.5mm x 271mm
Operating Temperature Range	0° C to 35° C
Working Relative Humidity	20% to 85%
Maximum Power Consumption (W)	31 watts
Traffic transmission	
Number of Streams per Port	64
Frame Length Range (bytes)	Electrical port: 60-16383; 1000M optical port: 60-16383; 100M optical port: 60-9215.
Frame Length Type	Support fixed, increasing, decreasing, random, automatic,IMIX and other frame length types
VFDs Per Stream	Each stream supports 4 VFDs; Support fixed, increment, decrement, list and random modes.
Generation Model	Port-based: Continuous, Burst and Time burst Stream-based : Continuous, Burst
Speed Regulation Mode	Based on Port, based On Stream;
Delay and Jitter Settings	Four delay modes are supported: LIFO (store and forward), FIFO (cut-through), LILO and FILO
Frame Time Stamp Resolutio	8 ns ;
Built-in Frame Template	Built-in multiple frame templates, such as VLAN, ICMP, PPPoE, GRE, DHCP, L2TP, IPv6, MPLS, GTP, GOOSE, VXLAN, OSPF, TCP, UDP.
Custom Data	Support user-defined message, and the edited message template can be saved; Support the checksum checking of user-defined field;
User Defined Data	Support 32k bytes user-defined data, in which the first 256 bytes support configuration jump
Error Frame	CRC error, undersize frame, oversize frame;
Flow Control	Full duplex flow control, half duplex back pressure;
Traffic Statistics	
Number of Statistics Streams per Port	256
Statistical Form	Table statistics, chart statistics, automatic saving of Excel files;
Statistics Item (port)	Tx/Rx frames, Tx/Rx frame rate, Rx bandwidth, error frame statistics, filtering statistics and custom statistics, FCS error statistics, TCP / UDP Checksum error, Pause frame statistics and average delay;
Statistics Item (stream)	Tx/Rx frames, Tx/Rx stream rate, Rx bandwidth, error frame statistics, real-time packet loss statistics, out of order statistics, delay jitter and custom statistics, etc;
Statistical Operation	Support sorting statistics results, adding, subtracting, multiplying and dividing, and customizing paging statistics quantity;
Traffic Capture	
Capture Buffer Size (bytes)	512M (per port)
Capture Type	Capture the Rx frame of data and control plane; Capture Tx and Rx frame of control plane; Capture frame based on filter template; Capture frame based on error message; Support cycle capture; Support downloading a specified number of captured messages;
Protocol simulation	
Routing	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
Others	Automatic configuration of BFD, 802.1ag, 802.3ah and IPv6
Test Suites	RFC2544, RFC2889, RFC3918, Asymmetric Performance, Smart Script
software platform	
Client	Renix test platform: Layer2-3 traffic test and protocols simulation
API Development	TCL、Python3.x、GUIToTCL、GUIToPython
GUI Language	English, simplified Chinese
hardware platform	
Adaptive Chassis	BigTao220、BigTao6200
Chassis operating system	Linux CentOS7.X

V8000 series board

The V8000 series test module is a new generation test board with a world-leading architecture. It can meet the needs of equipment manufacturers from basic functional test, compliance test and high-density port performance test requirements. At the same time, it can verify whether the network system can achieve the expected goals when deploying network solutions in enterprises, operators and data centers.

Key Features

• Support 10G SFP+（optical interface）
• Support 10G RJ45 (electrical interface)
• Support L2-3 traffic test and protocol simulation
• 100% line-rate traffic generation, statistics and capture based on FPGA
• Supports RFC2544, RFC2889, RFC3918 and other benchmark test suites
• Support Chinese and English test software
• Support Chinese and English test report system

Model List

V8008F Test Module
8 Ports,SFP+ 10G functional Test Module

V8004F Test Module
4 Ports,SFP+ 10G functional Test Module

V8008D Test Module
8 Ports,SFP+ 1G/10G functional Test Module

Specification list

Hardware and electrical characteristics	
Port Speed	Copper cable media ：10G ; fiber cable media : 1G, 10G
Number of Ports	8 ports per card(MAX)
Interface Standard	1000MBASE-SX/LX、10GBASE-SR/SW、10GBASE-LR/LW、10GBASE-T
Port Reservation	Occupied by single port
Rate switching	self-adaption
Module weight (kg)	1.2
Module size (width * height * depth)	196mm x 35.5mm x 271mm
Range of working Temperature	0° C to 35° C
Range of Working humidity	20% to 85%
Maximum power consumption (watts)	29W

Traffic Generation	
Stream per port	256
Frame length (bytes)	60-16383
Frame Length Type	Support fixed, increasing, decreasing, random, automatic, IMIX and other frame length types
Jump	Each stream supports 4 jump fields; Support fixed, increasing, decreasing, list and random jump modes.
Transmitting Mode	Port-based Continuous transmission, Burst and Time burst Flow-based Continuous transmission and Burst
Load profile type	Port speed regulation and flow speed regulation
Latency and Jitter	Four delay test modes are supported: LIFO (Store-and-Forward), FIFO (Straight-Through Switching), LILO and FILO
Frame Timestamp Resolution	8 nanoseconds
Frame Temple	A variety of newspaper templates are built in, such as VLAN, ICMP, PPPoE, GRE, DHCP, L2TP, IPv6, MPLS, GTP, GOOSE, VXLAN,OSPF、TCP、UDP...
Custom Packet	User-defined messages are supported, and the edited message template can be saved; Checksum checking of custom fields is supported.
User-Defined Data	Support user-defined message import of 16 kbytes, in which the first 256 bytes support configuration jump
Flow Control	Full duplex flow control
Error Frame	CRC error, undersize frame, oversize frame;

Traffic statistics	
Stream Per Port	1024
Statistical Mode	Statistics results can be displayed in the form of data table and graph. Statistics can also save Excel files automatically.
Statistics item (port)	Number of transmitted / received frames, transmitted / received frame rate, received bandwidth, Rx Filter Frames and custom statistics, FCS error statistics, TCP / UDP Checksum error, Rx Pause Frames, Port Average Latency Statistic, etc.
Statistics Item (stream)	Number of transmitted/received frames, transmitted / received frame rate, received bandwidth , error frame statistics, real-time packet loss statistics, out-of-order statistics, latency jitter, and custom statistics, etc.
Statistical Operation	Support sorting statistical results, performing mathematical operations such as addition, subtraction, multiplication, division, and custom paging statistics, etc.

Traffic Capture	
Capture Buffer/port(bytes)	1024M
Capture Type	Capture data and control plane receive frames Capture the transmit and receive frames of the control plane Frame capture based on filter template Frame capture based on error packet Support wrap capture Support to specify the number of download capture packets

Protocol Simulation	
Routing	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	Automatic configuration of BFD, 802.1ag, 802.3ah and IPv6
Test Suite	RFC2544, RFC2889, RFC3918, Asymmetric Testing, Intelligent Script

Software Platform	
Client Software	Renix test platform: Support layer 2-3 traffic test and protocol simulation
API Secondary Development	TCL、Python3.x、GUIToTCL , GUIToPython
GUI Language	English, Simplified Chinese

Hardware Platform	
Chassis	BigTao220, BigTao6200
Chassis OS	Linux CentOS7.X

V2-10G series boards

The V2-10G series test module cooperates with Xinertel's new-generation test software Renix based on the PCT architecture to provide a complete test solution for Layer2-3. Each port of the V2-10G series test module supports wire-speed traffic generation and analysis, high-performance routing/multicast/user access emulation, and so on.

Key Features

- Support 10G/5G/2.5G/1G/100M five speeds
- Support 2-3 layer stream test and protocol simulation
- FPGA-based 100% line rate traffic generation, statistics and capture
- Supports RFC2544, RFC2889 and RFC3918 benchmark test suites
- Support Chinese and English test operation software
- Support Chinese and English test report system

Model List

V2-10G-8C-Q test module
8-port RJ45 100M/1G/2.5G/5G/10G five-speed function test module

Specification list

Hardware and electrical characteristics	
Port rate	Electrical port: 10G/5G/2.5G/1G/100M (full duplex)
Port density	Up to 8 interfaces per slot
Interface standard	100BASE-T、1000BASE-T、2.5GBASE-T、5GBASE-T、10GBASE-T、802.3 bz、NBASE-T、MGBASE-T
Port occupation	Occupied by single port
Rate switching	self-adaption
Module weight (kg)	1.1
Module size (width* height * depth)	196mm x 35.5mm x 271mm
Range of working temperature	0° C to 35° C
Working relative humidity	20% to 85%
Maximum power consumption	41 watts

Traffic Sending	
Stream per port	256
Frame length (bytes)	60-16383
Frame length type	Support fixed, increasing, decreasing, random, automatic, IMIX and other frame length types
Jump	Each stream supports 4 jump fields Support fixed, increasing, decreasing, list and random jump modes
Send mode	Port-based continuous transmission, burst and time burst Stream-based continuous transmission and burst
Speed mode	base on port , base on stream
Latency and jitter settings	Supports four latency test modes: LIFO (store and forward), FIFO (through-exchange), LILO, and FILO
Frame timestamp resolution	8ns
Built-in message template	A variety of newspaper templates are built in, such as VLAN, ICMP, PPPoE, GRE, DHCP, L2TP, IPv6, MPLS, GTP, GOOSE, VXLAN,OSPF、TCP、UDP...
Custom message	Support custom messages, and edited message templates can be saved; support checksum check of custom segments
User-defined data	Supports 16K bytes of user-defined message import, where the first 256 bytes support configuration jumps
Error frame	CRC error, undersize frame, oversize frame;
Flow Control	Full duplex flow control
Traffic Statistics	
Stream per port	1024
Statistical mode	Table statistics, chart statistics, automatically save EXCEL files
Statistics item (port)	Number of sent / received frames, sent / received frame rate, received bandwidth, errored frame statistics, filtering statistics and custom statistics, FCS error statistics, TCP / UDP Checksum errors, Pause frame statistics, average delay statistics
Statistics item (stream)	Send / receive frame number, send / receive stream rate, receive bandwidth, error frame statistics, real-time packet loss statistics, out-of-order statistics, delay jitter, and custom statistics
Statistical operation	Supports sorting statistical results, performing mathematical operations such as addition, subtraction, multiplication and division, and custom paging statistics
Traffic Capture	
Capture space/port (bytes)	1024M
Capture type	Capture data and control plane receive frames Capture the transmit and receive frames of the control plane Frame capture based on filtering template Frame capture based on error message Support cyclic capture Support to specify the number of captured capture packets
Protocol Simulation	
Routing	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	Automatic configuration of BFD, 802.1ag, 802.3ah and IPv6
Test suite	RFC2544, RFC2889, RFC3918, Asymmetric Testing, Intelligent Script
Software Platform	
Client software	Renix test platform: 2~3 layer stream test and protocol simulation
API secondary development	TCL、Python3.x、GUIToTCL、GUIToPython
Interface language	English、Simplified Chinese
Hardware platform	
Adapter chassis	BigTao220、BigTao6200
Chassis operating system	Linux CentOS7.X

V2-100G series boards

The V2-100G series module is a new generation test board of Xinertel with a global leading architecture, which can meet the needs of equipment manufacturers from basic functional testing to performance testing of high density ports. At the same time, it can verify whether the network system can achieve the expected goals when deploying network solutions in enterprises, ISP and data centers.

Key Features

- QSFP28 100G native interface
- Compatible with 40G / 100G interface
- Detachable support 10G / 25G interface
- Support layer 2-3 traffic test and protocol simulation
- Support 100% line-rate traffic generating , statistic and capture based on FPGA
- Support RFC2544, RFC2889, RFC3918 benchmark test
- Support Chinese and English test operation software
- Support Chinese and English test report system

Model List

V2-100G-4QSFP28-Q Test module
4-port 100G/40G/25G/10G
functional test module

V2-100G-2QSFP28-Q Test module
2-port 100G/40G/25G/10G
functional test module

V2-100G-4QSFP28-T Test module
4-port 100G/40G/10G
functional test module

V2-100G-2QSFP28-T Test module
2-port 100G/40G/10G
functional test module

V2-100G-4QSFP28-D Test module
4-port 100G/25G
functional test module

V2-100G-2QSFP28-D Test module
2-port 100G/25G
functional test module

V2-100G-4QSFP28-S Test module
4-port 100G
functional test module

V2-100G-2QSFP28-S Test module
2-port 100G
functional test module

Specification list

Hardware and electrical characteristics	
Port rate	Optical port: 100G/40G/25G/10G
Port density	Up to 4 interfaces in a single slot
Interface standard	100G：100GBASE-SR4、100GBASE-LR4 ；40G：40GBASE-SR4、40GBASE-LR4 ；25G：802.3by 25GBASE-SR ；10G：10GBASE-SR ；100G FEC: 100GBase-SR4 RS-FEC91 ；25G FEC: 25GBase-SR RS-FEC108、25GBase-SR FEC CL74、25GBase-SR RS-FEC CL91。
Port occupation	Occupied by single port
Rate switching	Two ports are grouped, and the rate is switched according to the port group
Module weight (kg)	1.2
Module size (width* height * depth)	196mm x 35.5mm x 271mm
Range of working temperature	0° C to 35° C
Working relative humidity	20% to 85%
Maximum power consumption	48 watts

Traffic Generation	
Stream per port	100G/40G: 1024 25G/10G: 256
Frame length (bytes)	64-16383
Frame length type	Support fixed, increasing, decreasing, random, automatic, IMIX and other frame length types
Jump	Each stream supports 4 jump fields; Support fixed, increasing, decreasing, list and random jump modes.
Transmit mode	Port-based Continuous transmission, Burst and Time burst Flow-based Continuous transmission and Burst
Load profile type	Port speed regulation and flow speed regulation
latency and jitter settings	Four delay test modes are supported: LIFO (Store-and-Forward), FIFO (Straight-Through Switching), LILO and FILO
Frame timestamp resolution	8 nanoseconds
Stream Template	Built-in message templates, such as VLAN, ICMP, PPPoE, GRE, DHCP, L2TP, IPv6, MPLS, GTP, GOOSE, VXLAN, OSPF、TCP、UDP...
Custom packet	User-defined messages are supported, and the edited message template can be saved; Checksum checking of custom fields is supported.
User-defined data	Support user-defined message import of 16 kbytes, in which the first 256 bytes support configuration jump
Flow Control	Full duplex flow control
Error frame	CRC error, oversize frame;

Traffic Statistics	
Stream per port	100G/40G: 2048 25G/10G: 512
Statistical mode	Statistics results can be displayed in the form of data table and graph. Statistics can also save Excel files automatically.
Statistics item (port)	Number of transmitted / received frames, transmitted / received frame rate, received bandwidth, Rx Filter Frames and custom statistics, FCS error statistics, TCP / UDP Checksum error, Rx Pause Frames, Port Average Latency Statistic, etc.
Statistics item (stream)	Number of transmitted/received frames, transmitted / received frame rate, received bandwidth , error frame statistics, real-time packet loss statistics, out-of-order statistics, latency jitter, and custom statistics, etc.
Statistical operation	Support sorting statistical results, performing mathematical operations such as addition, subtraction, multiplication, division, and custom paging statistics, etc.

Traffic Capture	
Capture space/port (bytes)	32K
Capture type	Capture data and control plane receive frames;Capture the transmit and receive frames of the control plane;Frame capture based on filter template;Frame capture based on error packet;Support wrap capture;Support to specify the number of download capture packets

Protocol Simulation	
Routing	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
Carrier Ethernet	VXLAN、OpenFlow、OVSDB、EVPN、LACP
Data Center	Automatic configuration of BFD, 802.1ag, 802.3ah and IPv6
Other	RFC2544, RFC2889, RFC3918, Asymmetric Testing, Intelligent Script
Test suite	RIPv1v2、RIPng、OSPFv2、OSPFv3、ISISv4、ISISv6、BGP、BGP4+、LDP、MPLS L3VPN、VPLS、VLL、6VPE、6PE

Software Platform	
Client software	Renix test platform: Support layer 2-3 traffic test and protocol simulation
API secondary development	TCL, Python3.x, GUIToTCL, GUIToPython
Interface language	English, Simplified Chinese

Hardware Platform	
Adapter chassis	BigTao220, BigTao6200
Chassis operating system	Linux CentOS7.X

Renix test software

Renix is a datacom integrated test software launched by Xinertel for R & D testing scenarios. This software, together with appropriate Xinertel chassis and interface card, can perform traffic test, protocol simulation and performance test on DUT .

It is suitable for the testing of complex network equipment in the research and development stage, such as switches, routers, firewalls, etc.

With the continuous evolution of communication network, the hardware and software architecture of network equipment is becoming increasingly complex, the protocols supported by network equipment are more abundant, the scale of network traffic on the Internet is rapidly expanding, and the characteristics of 5G such as ultra-high bandwidth, massive connection, low delay and super reliability put forward higher requirements for network tester.

As a leading provider of L2-3 layer test solutions in the industry, Xinertel has launched Renix, a new generation test software platform based on PCT architecture, which can meet the complex test scenarios faced by large-scale network equipment manufacturers, telecom operators and data centers. The new Renix platform has been comprehensively improved in ease of use, functionality and scalability.

Key Features

- Unified 2~3 layer test platform
- Ease of use design+bilingual in Chinese and English
- The port rate covers 10M~400GE
- Powerful traffic configuration function
- Efficient and convenient configuration Wizard (wizard)
- Nestable packet capture and analysis function
- Enrich professional statistical views
- Convenient Smartscript smartscript function
- Customizable test report and result analysis system
- Support secondary development of Tcl and Python API

Platform advantages

◆ **Usability**

Renix adopts advanced PCT architecture design, which deeply optimizes the test operation flow, function module setting and configuration item function setting, and provides a more professional configuration field Face, based on Ribbon Menu operation mode and more convenient multi-interface navigation, provides users with a configuration process that is more in line with the line and usage habits. At the same time, the new protocol simulation configuration wizard greatly reduces the complexity of protocol simulation configuration and greatly improves the configuration efficiency. In addition, detailed help documents and convenient log query function provide more convenience for new users.

◆ **Functionality**

Renix provides offline operation function of test item configuration, which can view test results and operate protocols during software running, and record operation history. The flow of Renix capture, filtering, analysis and protocol parameter verification are powerful, such as arbitrarily customizable flow templates, query and grouping based on configuration and statistics, etc., which provide users with richer tools for traffic production and result analysis, and meet more comprehensive testing requirements.

◆ **Expansibility**

The new software architecture provides unprecedented scalability for Renix. Renix has a unified automation interface, which can script configuration, stability and compatibility of all parameters Stronger. The reconstructed basic protocol and newly developed data center protocol provide convenience for the rapid addition of subsequent new protocols.

◆ **Support Chinese and English interface and test report**

The unique Chinese-English switching function fully considers the reading and using habits of domestic operators, industry users and testers of equipment manufacturers.

◆ **Provide automatic interface and customized service**

Based on the existing software and hardware platforms, according to customer requirements, provide secondary development of API and testing services for proprietary technologies and protocols.

Software

Renix feature summary

Machine frame management	
Adapting machine frame	BigTao 220、BigTao 6200、DarYu3000、DarYu12000
Frame operating system	Linux CentOS 7.6
Machine frame management	Add, delete, connect and disconnect the boot box
Machine frame operation	Restart, close, upgrade the frame, and the frame status
Port management	
Port management	Port migration, online, offline, delete
License management	
License management and operation	Install, clean, merge, delete and download licenses
Multiple users/processes	
multiuser	Support (up to 32 users)
multiprocess	support
Send	
Frame length type	Fixed, Increment (supporting step setting), Decrement (supporting step setting), Random (supporting random seed),iMIX
Sending mode	Port based: Continuous, Burst,Time Flow based: Continuous, Burst Transmission mode: synchronous transmission and asynchronous transmission
Speed regulation mode	Port speed regulation and flow speed regulation
Stream template	Layer 2, IPv4, IPv6, TCP, UDP, ARP, pause, goose, PPPoE, VLAN, MPLS, ICMP, IGMP, GRE, GTP, L2TPV2, L2TPv3, IPv6, OSPF,STP, MLD, IS-IS, etc
Delay mode	LILO、FIFO、LIFO、FILO Support delay mode configuration
Error frame	CRC error, undersize frame, oversize frame;
Statistics	
Statistical form	Table statistics (paging statistics), chart statistics
Statistical sampling	Real time statistics
Functional support	Filter statistics
Statistical item	Send/receive stream frame number, send/receive rate, receive bandwidth,Packet error statistics, stream frame delay,delay jitter, real-time packet loss rate, filtering statistics, etc.
Catch	
Capture type	• Pattern custom capture: 8 stream templates/custom bytes • Error frame capture: FCS Error/PRBS Error/IPv4 Checksum Error/TCP Checksum Error/ UDP Checksum Error/ IGMP Checksum Error/ICMP Checksum Error • Length and ID capture: Ultra-short/ultra-long/jumbo frame/specific length frame/Singature Present ID • frame type capture: IPv4/TCP/UDP/IPv6/IGMP • Event capture: Qualify Event/ Start Event/Stop Event
Protocol simulation	
Routing	RIPv2, RIPng, OSPFv2, OSPFv3, BGP4 , BGP4+, IS-IS
Access	PPPoE Client/Server, DHCPv4 Client/Server, DHCPv6 Client/Server, L2TPv2, 802.1X, SAA

Multicast	• IGMPv1/v2/v3
	• IGMP/MLD querier
	• MLDv1/v2
	• PIM-SMv4/v6
Carrier Ethernet	• Link OAM 802.3ah
	• Service OAM 802.1ag
MPLS	• LDP
	• MPLS IP VPN
	• 6VPE/6PE
	• BGP VPLS
	• LDP VPLS
	• PWE
	• LSP Ping
Multicast	• IGMPv1/v2/v3
	• IGMP/MLD querier
	• MLDv1/v2
	• PIM-SMv4/v6
	• PPPoE over Multicast
Data Center	• VXLAN
	• VXLAN EVPN
	• OVSDB
	• OpenFlow 1.3 Controller
	• BGP/EVPN for VxLAN
	• LACP
High Availability	• BFD
	• OSPFv2 BFD
	• OSPFv4 BFD
	• IS-IS BFD
	• BGP BFD
Protocol Wizard support and protocol binding flow support	• OSPFv2/v3
	• BGP4/BGP4+
	• IS-ISv4/v6
	• PPPoE Client/Server
	• DHCPv4/v6 Client/Server
	• IGMPv1/v2/v3
	• MLDv1/v2
Test suite	• RFC2544
	• RFC2889
	• RFC3918
	• Asymmetric Performance

Automatization	
API	TCL、Python3.x、GUIToTCL , GUIToPython

Other	
Smart Scripter	Support
Interface language	English Chinese

XINERTEL

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