HoloWAN®

HoloWAN High Precision WAN Emulators

Exceptional Performance, Easy to Use, cost-effective.
Enulates: Bandwidth, Latency, Packet loss,
jitter,Other impairments.

Recruit global agency

HoloWAN HPP

WAN Emulator

Product Data Sheets

HoloWAN HPP Features :

- **Easy to use :** Plug and play, no need to install any applications, quickly issue damage configurations through a simple and easy-to-use Web GUI.

- **Ultra-high-performance link :** Supports the simulation of virtual links from 1bps to 100Gbps, bandwidth limitation control granularity accurate to 1bps, and 64-byte small packets can be forwarded at line speed.

- **Nanosecond-level delay :** One-way can construct up to 8 seconds of delay and delay jitter, delay control granularity is 1ns, and delay accuracy is accurate to ±4ns.

- **Packet loss :** Supports multiple packet loss modes such as random, periodic, and burst loss, the packet loss range is 0-100%, and packet loss accuracy can reach 0.000001%.

- **Bit errors :** Supports bit errors in the CRC and preamble fields of packets, with a bit error range of 0-100%, and bit errors accuracy can reach 0.000001%.

- **Comprehensive impairment functionality :** HoloWAN HPP also supports packet modify, reordering, duplication, queue limit, frame overhead damage.

- **Packet classifier :** Filter packets based on IPv4 addresses, IPv6 addresses, MAC addresses, TCP/UDP protocol port numbers, and packet offsets, and inflict precise impairments on each packet.

- **Open API :** Every atomic function can be controlled through Python API or Restful API, integrated with various automated testing tools to improve testing efficiency and productivity.

- **Statistics list and charts :** The statistical list provides real-time tallies of damaged packets and supports the saving and downloading of all damage statistics data since the device was powered on. Furthermore, statistical charts present the real-time fluctuations of the packet rate in the form of a line graph, helping users to more intuitively understand the changes in packet rate before and after damage occurs.

HoloWAN HPP can be used in :

- **Telecom Network Simulation**

Telecom operators use HoloWAN HPP to simulate nanosecond-level network latency and high-precision packet loss in order to test and optimize high-speed network technologies such as 5G. Additionally, HoloWAN HPP can build up to 100Gbps of bandwidth and simulate complex backbone networks. Operators can use this to analyze the performance of their products in high-speed backbone networks and optimize the performance of their products specifically, ensuring stable and efficient operation of the products.

- **Development and Testing of Network Equipment and Protocols**

HoloWAN HPP can simulate ultra-high bandwidth and precise latency in a laboratory environment to help test the performance of network devices and protocols in high-speed network environments. HoloWAN HPP can also accurately simulate key damages such as packet tampering, packet loss, and bit errors, enabling developers to optimize algorithms against these damages and ensure the stability of products and protocols in actual use.

- **AI System Testing**

When testing distributed AI and machine learning, cloud computing and edge computing, IoT and smart devices, autonomous driving and AI technology, remote medical treatment and remote surgery systems, HoloWAN HPP can build up to 100Gbps of bandwidth and introduce nanosecond-level delay, high-precision packet loss, and bit errors in high-speed networks to ensure that AI systems can run stably in real high-speed networks.

- **Big Data Application Testing**

HoloWAN HPP has ultra-high data stream processing capabilities, capable of accurately simulating key network issues such as changing network latency and packet loss, enabling big data analytics, cloud computing, and other big data transmission applications to undergo comprehensive testing under

nearly real network conditions, ensuring the performance of applications in actual network environments.

- **Financial System Testing**

The financial market, such as stocks and foreign exchanges, is highly dynamic and rapidly changing. High-frequency trading algorithms can automatically execute massive orders at the microsecond level, and minimal delay can significantly affect trading results. By using HoloWAN HPP to simulate bandwidth limitations, latency, packet loss, and bit errors, the financial system can be tested. It ensures that the financial system can efficiently and stably operate in any network environment, safeguarding customers' assets.

- **Military and Defense System Testing**

In modern military communication and control systems, high-precision time synchronization and accurate network condition simulation are key elements in military system testing. By using HoloWAN HPP to simulate nanosecond-level delay, packet loss, and bit errors, a comprehensive test can be conducted on military and defense systems. This not only improves the accuracy and efficiency of tactical decision-making but also ensures the robustness and reliability of the communication system in complex and hostile environments.

Web GUI :
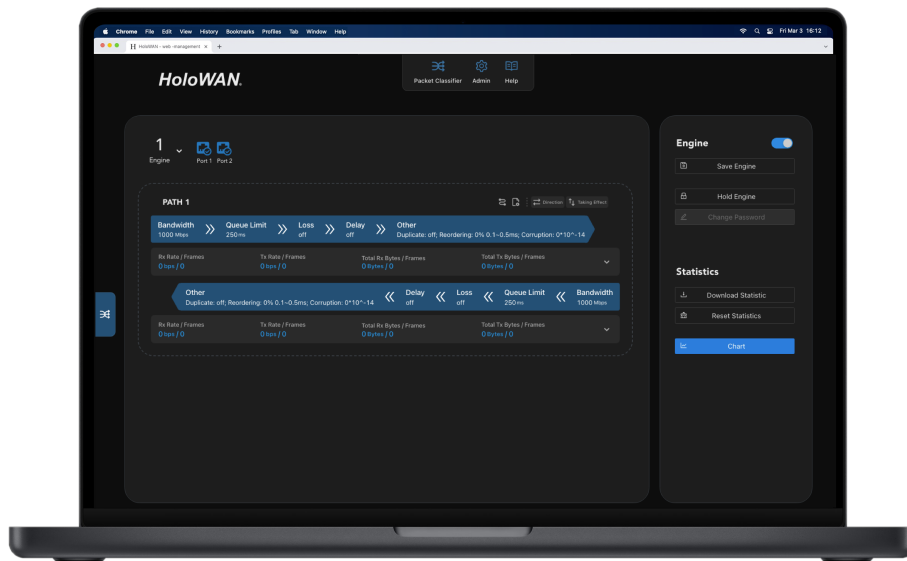
Products :

HoloWAN 10GEH
two 10 Gbps emulation engines

HoloWAN 25GEH
two 25Gbps emulation engines

HoloWAN 100GEH
one 100Gbps emulation engines

Comparison of HoloWAN HPP models :

Models	10GEH	25GEH	100GEH
Capacity			
Engine Number	2	2	1
Maximum Bandwidth	10Gbps	25Gbps	100Gbps
Maximum Delay	800ms	200ms	100ms
Maximum Packet Rate	30Mpps	75Mpps	300Mpps
Emulation Capabilities			
Bandwidth	Bandwidth Fixed		
Corruption	Single , Burst , Cycle , Random		
Delay	Constant , Uniform , Jitter , Step		
Loss	Single , Burst , Cycle , Random , Possion		
Modify	Normal , Probability		
Recordering	Single , Cycle		
Duplication	Single , Burst , Cycle , Random		
Other Damage	Frame Overhead		
Packet Classification	IPv4 address , IPv6 address , MAC address , TCP/UDP/SCTP port number , RAW 1-Byte offsets , RAW 4-Byte offsets , Combination		
Other Key Information			
Size	2U	2U	4U
Management	1 * Gigabit Ethernet	1 * Gigabit Ethernet	1 * Gigabit Ethernet
Ethernet Ports	4 * SFP+ 10Gbps	4 * SFP28 25Gbps	2 * QSFP28 100Gbps
GUI	web		
Support & Warranty			
Hardware Warranty	1 year		
API	restful API , python API		
Technical Support	API technical support , Remote technical support		

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