迈思源信息技术有限公司
maisiyuan information technology


# HoloWAN®

## WAN Emulator

## Product Data Sheets

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# Comparison of HoloWAN Ultra model :

| Model | 100GEU |
|---|---|
| **Capacity** | |
| **Engine Number** | 2 |
| **Maximum Bandwidth** | 100Gbps |
| **Path Number Of Per Engine** | 15 |
| **Maximum Packet Rate** | 300Mpps |
| **Emulation Capabilities** | |
| **Bandwidth** | Fixed、Jitter、Token Bucket |
| **Queue Limit** | Simple、Drop Tail、RED |
| **Corruption** | Bit Error、Bit Range Error、Packet Error |
| **Delay** | Constant、Uniform、Normal、Custom、Jitter、Gamma、Accumulate&Burst, Step |
| **Loss** | Random、Cycle、Burst、Gilbert-Elliott、Jitter、4-State-Markov , Possion , Single |
| **Modify** | Normal、Cycle、Random |
| **Recordering** | Normal、Jitter、Cycle , Single |
| **Duplication** | Normal、Jitter , Single , Burst |
| **Other Damage** | Frame Overhead、Background Utilization、MTU Limit |
| **Packet Classification** | IPv4 address、IPv6 address、MAC address、VLAN、TCP/UDP/SCTP port number、MPLS Label、PPPoE、RAW 1-Byte offsets、RAW 4-Byte offsets、Tunnel(GRE)、Combination |
| **Additional Parameters** | • Packet capture and analysis, comparing the message before and after the damage, Gantt chart display of the damage process ;<br>• Recording and playback of network bandwidth, latency, and packet loss, with a playback parameter change frequency of 0.1s, visualization of the network scenario playback process, and updates to the network scenario database ;<br>• Basic Network Data Template ;<br>• GRE Tunnel. |
| **Other Key Information** | |
| **Size** | 2U |
| **Ethernet Ports** | 4* SFP+ 100Gbps |
| **GUI** | web |
| **Hardware Warranty** | 3 year |
| **API** | restful API , python API |
| **Technical Support** | API technical support、Remote technical support |

# HoloWAN Ultra Features:

- **No installation required, easy to use：** HoloWAN Ultrais a standalone device that can be powered on simply by plugging it in. Control of the device is done through a web-based GUI on a browser, eliminating the need for any additional installation or software programs.

- **Single Engine with 15 links：** HoloWAN Ultraprovides 15 links through a pair of physical engines. The links share bandwidth between them, and any impairment on one link will not affect the others. Each link can be considered as an independent network impairment device!

- **Powerful Packet Classifier：** HoloWAN Ultrasupports packet classification based on IPv4 addresses, IPv6 addresses, MAC addresses, TCP/UDP/SCTP protocol port numbers, MPLS, PPPoE, packet offset, and combination classification rules. It can accurately classify and forward packets to specific links, enabling precise impairment for each packet.

- **High performance links：** HoloWAN Ultra models are equipped with different business network ports, and can simulate a 0-100Gbps network link. The link is downward compatible with 50G/40G/25G/10G.

- **Delay and jitter：** HoloWAN Ultra can add delay or uniform distribution delay jitter to each packet. The maximum delay that can be added is 10 seconds, the delay control granularity is 1ns, and the delay accuracy is ±4ns. It supports delay jitter, meeting all your testing needs.

- **Packet loss and bit error：** HoloWAN Ultrasupports truly random packet loss and bit error. The precision of packet loss can reach 0.0001%, and the bit error is accurate to the bit level. The packets affected by bit error can also choose whether to recalculate CRC.

- **Comprehensive impairment functionality :** HoloWAN Ultraalso supports packet modify, reordering, duplication, queue limit, frame overhead, background utilization, and MTU damage. The comprehensive impairment functionality can better simulate a real wide area network link.

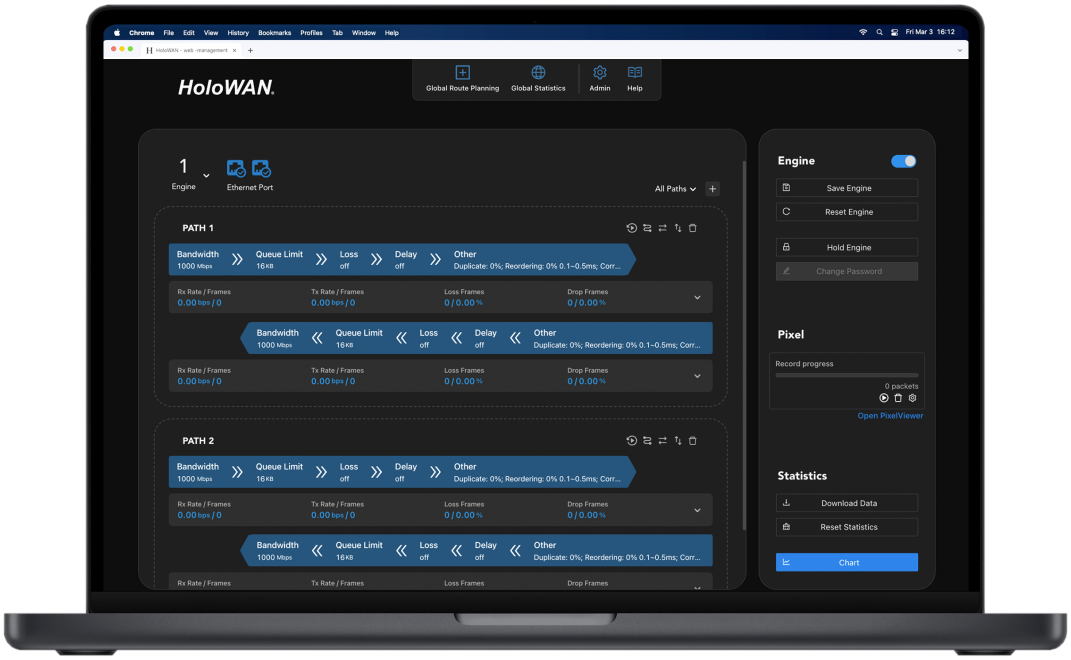
- **Packet capture and analysis capability :** HoloWAN Ultracan capture test packets and display the delay, packet loss, bit errors, and other impairments suffered by each packet in the form of a Gantt chart. It also allows for online comparison of packets before and after impairment or exporting of packets as a PCAP file.

- **Network recording and playback :** HoloWAN provides a free network recording tool that allows you to record changes in network bandwidth, latency, and packet loss over a period of time. The recorded data can be imported into HoloWAN for playback, accurately reproducing real network scenarios within HoloWAN.

- **OpenAPI :** HoloWAN Ultraprovides full access to every atomic function through Python API or Restful API, allowing for control and automation of testing through scripting, thus enhancing productivity.

- **Statistics list and charts :** HoloWAN Ultimate's statistics list provides real-time display of packet damage, allowing users to see the status of packet damage in real-time. It also allows users to save and download all the damage data since the device was started. The statistical charts show the variation of packet rate in the form of line graphs, helping users to better understand the damage situation and making testing simpler.

# Interface & Products :




## HoloWAN 100GEU

两个 100 Gbps 仿真引擎

# HoloWAN Ultra can be used in：

## ● simulate wireless networks,such as 2G、3G、4G、5G

Wireless networks such as 2G, 3G, 4G and networks have a lot of instability factors, and there are relatively large delays and delay jitters, packet loss, congestion and other phenomena. HoloWAN can simulate this complex network environment to verify the stability and adaptability of your wireless applications.

## ● Simulating satellite networks

The bandwidth of satellite networks is relatively small, and the delay is very high, often exceeding 500 milliseconds. The bit error rate is as high as 1x10-6. Satellite networks can damage protocols and applications. HoloWAN is specially designed to adapt to the high delay and high bit error rate of satellite network. It has been successfully applied to Beijing Shenzhou Aerospace Software Technology Co., Ltd. in this field.

## ● Industrial Network Simulation

HoloWAN ULTRA supports simulating industrial-grade Ethernet of 10Gbps and 100Gbps.

## ● High Bandwidth Application Testing

Use HoloWAN to simulate real high-bandwidth networks, test the performance of applications such as video streaming services, big data analysis, cloud computing, and other applications that require large amounts of data transmission in real networks.

## Evaluating the required network bandwidth

Simulate bandwidth, delay and other loss characteristics. Determine how much bandwidth you need to keep your application running steadily.

## Network Authentication

When you are conducting network deployment and equipment selection between different offices of the company, you need to evaluate the delay, jitter, packet loss caused by various equipment or network solutions, and how much bandwidth can provide the corresponding quality of service.

## Product testing

HoloWAN can be used to verify the true performance of network accelerator, application delivery equipment, compression equipment, WAN optimization equipment, flow control equipment, network behavior monitoring equipment, network security equipment, etc. in the WAN environment.

## Application testing

At the development stage of your C/S and B/S systems, use HoloWAN to simulate the actual network environment to adjust the algorithms and policies of the server and client systems.

For example, financial system, stock trading system, online banking, medical management system, etc.

## Website Testing

Use HoloWAN to simulate the actual network environment to verify whether your website platform will not stop because of the slow network connection.

## ● Audio and video applications

Test VoIP, Video over IP, and online games in a real network environment, such as Skype, QQ, Sohu HD, Sina HD, Shanda Games, Nine Cities, and Video Cloud.

## ● Product demonstration

When you need to show your customers the application of your product in the actual network, take the HoloWAN and your device.

# Connect us :

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