



ALL-ZC-2321P-PoE PCoIP PoE Zero Client Overview

TERA2321 PCoIP PoE Zero Client Overview

Teradici is the developer of the PC-over-IP (PCoIP) remote desktop protocol, which is leveraged in several VDI solutions and provided with Teradici hardware solutions which are OEMéd by several vendors. PCoIP is the standard remote desktop protocol from VMware Horizon View to setup small, medium and large VDI environments.

To get access to your virtual desktop and working with it, you no longer need to have a large and power consuming PC under your desk. You can use a small zero client from ALLNET, to get the usual desktop environment and much more for your work.

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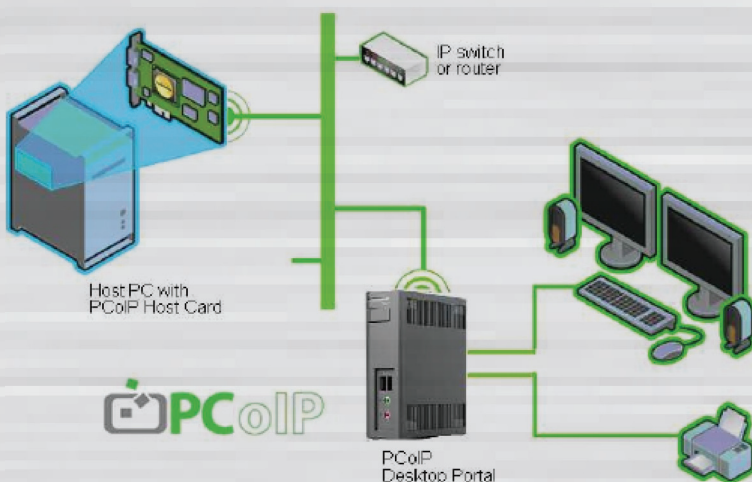
TERA2321 PCoIP PoE Zero Client Overview

The PCoIP technology is designed to deliver a user's desktop from a centralized host PC or server with an immaculate, uncompromised end user experience across standard IP networks – including full quad or dual DVI monitor video, complete USB compatibility, and full-duplex high-definition audio. The new TERA2321 PCoIP zero client is a portal device (5.906 x 5.118 x 1.772 inches) based on the proprietary Teradici TERA2321 Portal processor that resides in a remote client access device.

The PCoIP Host/Client system separates the user from the PC or workstation, which provides both increased security and needs minimal IT administration and support overhead for the enterprise while giving end users complete remote display and I/O functionality for personal computer (PC) or workstation graphics user interfaces. The system includes a PCoIP Software Agent or PCoIP Host Processor at the host Virtual Machine or PC/Workstation that encodes the display, USB and audio signals before transmitting them over an IP network. The PCoIP Zero Client at the remote site receives and decodes these signals, creating standard PC interfaces for the display, USB peripherals and PC audio. The PCoIP system also supports a reverse communication path for items like USB keyboards, mouse, microphone audio and other peripherals. It is connected to the network via standard Ethernet using RJ45 at 10/100/1000Mbps.

The second-generation PCoIP Host/Client system provides the following benefits:

- Wide range of applications from very robust personal workstations to simple kiosks
- Support for up to four 1920x1200 high-resolution, perception-free DVI video outputs and USB 2.0 peripherals allows PC or workstation relocation to the datacenter or computer room without compromising end user experience or productivity
- High cost effectiveness when integrated into PCs or workstations
- Robust PC experience delivered to the end user without the need for Terminal Services protocols
- Performance using existing enterprise networks, enabling low cost, straightforward kiosk or digital signage functionality.



The TERA2321 PCoIP zero client ships with two 2Gbit of DDR3 memory and supports two DVI, four USB, a Speaker, a Microphone, a Headphone and a RJ45 Ethernet connectors. Output is driven by the DVI ports for video and USB 2.0 ports for peripheral and I/O connections. The TERA2321 PoE zero client features Power-over-Ethernet (PoE) which allows a single cable to provide both Ethernet connection and electrical power to the device. The net result is a fan-less and reliable client-side device that requires minimal IT administration and support since all processing resides on the host PC or workstation. This client device is compatible with TERA22xx host cards, and VMware View 4.5 or later.



Key Features

Processor

- Processor: TERA2321 PCoIP Portal Processor
- Process: 65nm G-process CMOS
- Package size: 396-ball FCBGA (21 x 21 mm package), 1.0 mm ball pitch

Board

- 6 layer printed circuit board (PCB) and 2-layer LED/button daughter printed circuit board (PCB)
- Main PCB physical dimensions: 5.256 inches (height) X 4.724 inches (length)
- Device physical dimensions: 5.906 inches (height) x 5.118 inches (length) x 1.772 inches (thinness)
- Board power: 8.06 watts without USB devices attached 26.45 watts with 6 high power consumed USB devices attached
 - 19.0 watts with 4 high power consumed USB devices and the external power adapter attached
- Thermal: Passive heat sink

Connectors

- One single-link DVI-D connector
- One single-link DVI-I connector
 - Note: The TERA2321 device can support
 - One display with a maximum of 2560x1600 resolution using an external custom dual-link DVI cable
 - Two displays, each with a maximum of 1920x1200 resolution
- Two front Type-A USB 2.0 connectors
- Two rear Type-A USB 2.0 connectors
- 3.5mm Headphone jack
- 3.5mm Microphone jack
- 3.5mm Speaker jack
- Ethernet connector
- 10/100/1000Base-T copper interface with Link and Activity LEDs
- Supports Power-over-Ethernet (PoE)
- 12VDC Power jack (optional for external power adapter)

Memory

- 2 x 2048 Mbit 16-bit DDR3 DRAM devices (512MB DDR3)
- 256 Mbit of parallel flash for high-speed system booting

Audio

- High Definition Audio serial link. Supports a single audio codec.



USB

- Six type-A USB 2.0 interfaces
- USB 2.0 bulk support
- USB 1.1 isochronous support
- Support up to 500mA per USB port
 - In IEEE 802.3af PoE mode, the two rear USB ports can only support 100mA, 0.5 watts USB devices. We highly suggest connecting keyboard and mouse in the rear USB ports
 - In IEEE 802.3at PoE mode, if you are using 2-Event Classification protocol, you are able to get full (500mA) powered rear USB ports. LLDP support requires future firmware support.
- Support configurable Wake-on-USB (WoUSB) for remote-wakeup capable USB devices
- Overcurrent and power down logic to complement standard power regulators

10/100/1000 Ethernet Media Access Controller

- Dedicated for PCoIP traffic
- Auto-negotiation of link speed and duplex mode
- Flow control using back pressure for half-duplex mode and pause frames (IEEE 802.3x) for full-duplex mode
- Support Wake-on-LAN (WoL) using magic packet

Security

- Wire speed AES GCM 128/256 bit encryption/decryption for network traffic
- Management communication protected by SSL

Processor Description

The TERA2321 PCoIP zero client uses the TERA2321 PCoIP Portal Processor. The TERA2321 resides inside a small, simple, stateless access device under any usage scenario. It receives and decodes these signals from the host Virtual Machine or PCoIP Host board to create standard PC interfaces for the display, USB peripherals, and audio. The PCoIP Portal processor also supports a reverse communication path for items like USB keyboards, mouse, microphone, audio, and other peripherals. The TERA2321 PCoIP zero client device offers functions such as:

Perception-Free Remote GUI

- By interfacing at the physical layer, and using specialized encoding algorithms running on a high-performance multi-core processing engine, the PCoIP system provides a perception-free remote GUI that is completely independent of any operating system
- This enables all of a PC's active components to be centralized for better management and security while ensures that the user maintains a 100% full, rich PC experience.

Image Processing Technology

- Encodes digital video input in real time and is capable of dynamically adjusting the compression to the available network bandwidth
- Image compression is achieved by first decomposing the input video image into different types of image objects. Each image object is then compressed using a set of image processing algorithms that are optimized for the specific type of object. The final stage of image processing is to encapsulate the compressed image data streams into the payload of Ethernet packets to be sent to the portal device
- Optimizes compression algorithms and quality in real time to achieve the best possible image quality for the available network bandwidth, thus allowing the PCoIP system to operate in various types of networks and data rates.



Security and Authentication

- A TLS tunnel is used for all non-media communications between both the PCoIP Host Processors and TERA2321 Portal Processor and between the PCoIP host and portal processors and the CMS
- Mutual certificate-based device authentication occurs as part of the TLS handshake protocol. PCoIP Host Processor media traffic is encrypted using an IPSec ESP tunnel whose keying information is established securely over the TLS tunnel.

Display Options

The TERA2321 PCoIP zero client device supports one DVI-D and one DVI-I outputs. A dual single-link DVI to one dual-link DVI cable is required to support a dual-link DVI output.

- One digital flat panel display with a maximum of 2560x1600 resolution using an external custom dual-link DVI cable
- Two digital flat panel displays, each with a maximum of 1920x1200 resolution
- One analog CRT display

Configurations

This table lists the configuration currently available for the TERA2140 PCoIP zero client device.

Specification	Description
Chip	TREA2321 Portal Processor
Chip package size	21 mm x 21 mm
Memory type	2pcs 2048 Mbit 16-bit DDR3 DRAM (512MB DDR3)
Physical dimensions	5.906 inches (height) x 5.118 inches (length) x 1.772 inches (thickness)
Maximum device power	6.5 watts without USB devices attached 19.0 watts with 4 high power consumed USB devices and the external power adapter attached
Connectors	One DVI-D connector One DVI-I connector Two front USB 2.0 connectors Two rear USB 2.0 connectors 3.5mm Headphone jack 3.5mm Microphone jack 3.5mm Speaker jack RJ45 Ethernet connector for 10/100/1000Mbps Ethernet connection and Power-over-Ethernet (PoE) 12VDC Power jack (optional for external power adapter)
LEDs on the bracket	PCoIP connect LED for PCoIP session Power LED on Portal Power Button
Button	Portal Power Button
Thermal cooling solution	Passive heat sink
Mean time between failure (MTBF)	145,636 hours at controlled 55°C environment



Mechanical Specifications

Device

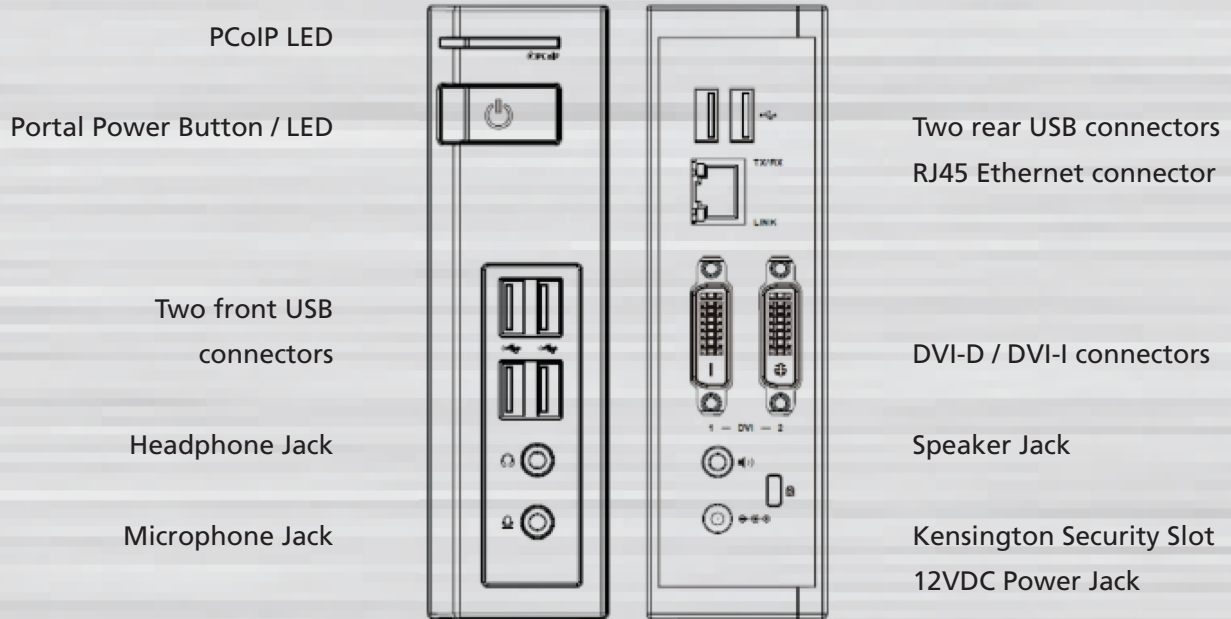
The TERA2321 PCoIP zero client conforms to the small, simple (5.906 inches by 5.118 inches) device using the TERA2321 Portal processor.



TERA2321 PCoIP Zero Client PoE



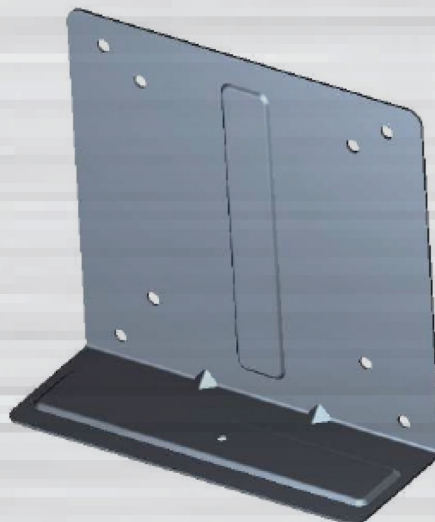
Placement of Standard I/O Connectors



Standard Connector Placement (RJ45 Edition)

VESA Mount (Optional)

The dimension of the optional VESA Mount kit is 4.921x4.646x1.811 inches.

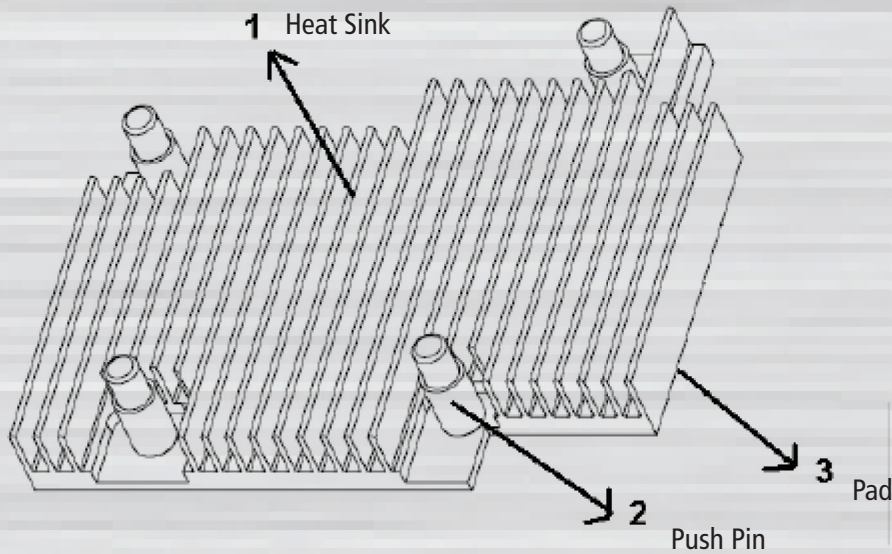




Thermal Specifications

Cooling Solution

The TERA2321 PCoIP zero client utilizes a passive heat sink over the Processor for cooling.



Support Information

Operating System Support

Completely operating system independent

- Windows® 2000 / XP / Vista / 7 / 8
- Linux

System Requirements

- One DVI or one VGA compatible monitors
- USB keyboard and mouse
- Optional: PC speakers and other USB peripherals
- Ethernet LAN switch or router (10/100/1000 Mbps), or SFP Fiber switch or router
- TERA2321 PCoIP client device is compatible TERA2 PCoIP host cards as well as software PCoIP client solutions (However, to take full advantage of the advanced features of the TERA2 family of devices, a host card based on the TERA2 host processors must be used.)



Package Content

- TERA2321 PCoIP zero client device
- Power adapter and power Cord
- Dual single-link DVI to one dual-link DVI cable x 1 (Optional)
- Quick installation guide

Certificates and Agencies

- Conformité Européenne (CE)
- Federal Communications Commission (FCC)
- CAN ICES-3(B)/NMB-3(B)
- Voluntary Control Council for Interference (VCCI)
- Underwriters Laboratories (UL)
- TUV-GS
- C-Tick
- GOST
- BSMI
- RoHS