

Zero Client Data Sheet

Amulet Hotkey® zero clients are desktop devices that connect to a remotely located computer workstation using the Teradici® PC-over-IP® (PCoIP®) protocol. They must be paired (MAC and IP) with a 'host' device located in or near to the remote workstation. The host device takes the USB, audio and video output from the workstation, compresses and encrypts the data before transmitting it across a standard IP connection to the zero client. The distance over which this system operates will depend on the network latency between host and zero client. Amulet Hotkey produce a range of hardware host devices suitable for a variety of applications. In addition, a software PCoIP host is built into VMware® View 4® and above allowing certain Amulet Hotkey zero clients to be used with virtual machines hosted by VMware.

All Amulet Hotkey zero clients are designed for long term reliable use in business and mission critical applications. All are low power, high performance devices that deliver a no-compromise experience with pixel

perfect, real-time graphics. By replacing the workstation at the desk, zero clients reduce heat, noise and the demand for power at the desktop. Workstations can be moved to secure, optimised data centres where they are easy to maintain and data is properly protected.

Amulet Hotkey manufacture a range of zero clients which consist of dual and quad video head devices with variations that include copper network connections or modular (SFP) network connections supporting either copper or fibre formats. In most cases, dual redundant network connections are provided. There are also specialist versions of the dual video head zero clients available with integrated smart card readers and with support for legacy serial (RS232) devices.

This document details the specifications of each Amulet Hotkey zero client and also includes a PCoIP host compatibility chart.

Dual Video Head Zero Clients

DXR-iP / DXR2-iP / DXR2-iPM



Amulet Hotkey dual video head zero clients provide a simple and effective method for back-racking dual head workstations without compromising on performance. They can be linked to either a hard or software PCoIP host and provide support, out of the box, for dual wide screen (1920 x 1200) monitors, a wide range of USB devices and stereo bi-directional audio.

USB devices are managed using 'white' and 'black' lists ensuring that the remote workstation is protected from any attempt at unauthorized access. No data is stored on the zero client

The zero state zero client is compact, secure and perfect for all demanding applications.

- Compact, rugged metal case
- Dual head video support
- Video resolutions up to & including 1920 x 1200 @60Hz CVT-RB (WUXGA) or 1600 x 1200 CVT
- Bidirectional stereo audio link - line level, headphones, microphone
- 4 USB sockets - keyboard & mouse, 2 spare.
- Dual redundant network connections (**single only on DXR-iP**)
- Dual redundant copper or fibre network connections using SFP modules (**DXR2-iPM model only**)
- Compatible with all major operating systems - no drivers or software required, simply plug and play
- Flash programmable over Ethernet
- Hardware hosts support wake on LAN controlled from the zero client
- Remotely power-cycle remote workstation from zero client (may require a bespoke jumper cable to be fitted to workstation)
- Uses less than 20W power at the desktop (excluding USB devices)
- Very low noise and heat signature
- Secure protocol using 128 bit encryption with host to client device pairing by unique MAC address & IP
- Integrated configuration utility with GUI

DXR2-iPS / DXR2-iPC - Special Order Only



The **DXR2-iPC** (shown above) is based on the DXR2-iPM and therefore has modular SFP network connections which can support either copper or fiber links. It is fitted with an integral smart card reader which further enhances the security built into the PCoIP protocol making this zero client perfect for 'locked down' applications in very secure environments.

The **DXR2-iPS** is based on the standard DXR2-iP described above and inherits most of the the features already described. However, it incorporates additional circuitry and a rear panel 9 way D-type socket for the connection of serial (RS232) devices. In all other respects this zero client operates and performs in the same way as the standard DXR2-iP.

DXR2-iPC

- Dual redundant copper / fibre network connections using SFP modules (**DXR2-iPM model only**)
- Card reader:
 - T=0, T=1 protocol support
 - Memory card support through SCM MCARD API
 - Communication speed up to 344,105 bps (PPS, FI parameter)
 - Frequency up to 8 MHz (PPS, DI parameter)
 - Support ISO 7816 Class A and AB smart card
 - 8 contacts - ISO location
 - Sliding contact

DXR2-iPS

- Dual redundant copper network connections
- RS232 Serial support (preliminary and subject to change):
 - Maximum Baud rate 57,600 bi-directional
 - No parity, 8 data bits, 1 stop bit, no hardware flow control (no handshaking signals: DCD, DTR, DSR, RTS, CTS or RI)
 - 9 pin D-type connector

Quad Video Head Zero Clients

DXR4-iP / DXR4-iPM



The **DXR4-iP** and **DXR4-iPM** are class leading quad video head zero clients for use in demanding mission critical applications. The -iP has standard copper network connections whilst the -iPM supports either copper or fibre SFP modules. Both are capable of supporting up to 4 wide screen monitors at 1920 x 1200.

Suitable for mounting either above or below the desk in a cable tray, these zero clients have connections for USB keyboard and mouse and bi-directional stereo audio. Front panel switches are provided for control of the device and for power cycling the remote workstation. LEDs give a continuous visual indication of the device and link status.

- Compact, rugged metal case
- Quad head video support
- Video resolutions up to & including 1920 x 1200 @60Hz CVT-RB (WUXGA) or 1600 x 1200 CVT
- Bidirectional stereo audio link - line level, headphones, microphone
- 4 USB sockets - keyboard & mouse, 2 spare.
- Dual redundant copper network connections (**DXR4-iP**)
- Dual redundant copper or fibre network connections using SFP modules (**DXR4-iPM**)
- Compatible with all major operating systems - no drivers or software required, simply plug and play
- Flash programmable over Ethernet
- Hardware hosts support wake on LAN controlled from the zero client
- Remotely power-cycle remote workstation from zero client (may require a bespoke jumper cable to be fitted to workstation)
- Uses less than 28W power at the desktop (excluding USB devices)
- Very low noise and heat signature
- Secure protocol using 128 bit encryption with host to client device pairing by unique MAC address & URL
- Integrated configuration utility with GUI

Features & connection matrix

Zero Clients				Compatible PCoIP Hosts				
Device	Video screens	Network Copper on RJ45 Fiber on SFP	Special features	DXHK	DXPC	DXiP-2	DXM610	VMware View 4.0 & above
DXR-iP	2	Copper	Compact format, metal case					
DXR2-iP	2	Dual redundant Copper	Robust metal case					
DXR2-iPM	2	Dual redundant copper / fiber	Modular network connections SFP format					
DXR2-iPS*	2	Dual redundant copper	Support for legacy serial RS232 devices					Dual screen only
DXR2-iPC*	2	Dual redundant fiber	Integrated card reader					
DXR4-iP	4	Dual redundant copper	Robust metal case					
DXR4-iPM	4	Dual redundant Copper / fiber	Modular network connections SFP format					

*Products available only to special order.
Note 1: Support for quad screen configurations can be arranged by cascading either two DXHK or two DXPC cards in a single computer or, in the DXiP Rack, two DXiP-2 cards.

PCoIP performance is dependent on network latency. For latencies up to approximately 40 ms the operation is perception free. That is, the user will notice little or no change in the performance of their workstation. For longer latencies up to and including 150 ms, PCoIP deploys a selection of WAN optimisation features which minimise the impact on performance to an acceptable level. Typical bandwidth requirement will depend on video content and rate of change. However, a quad head system can give 'perception free' performance on less than 25Mb/s. If changes to the display are minimal the bandwidth can drop to a few kilobits.

European Sales Office

Amulet Hotkey Ltd
32 Southwark Bridge Road
London SE1 9EU
t. +44 (0)207 9602400
Tech. Support:
eurossupport@amulethotkey.com

US Sales Office

Amulet Hotkey Inc.
11 Hanover Square
19th Floor, New York
NY 10005
t. +1 212 269 9300
Tech. Support:
ussupport@amulethotkey.com

Technical Specifications

General				Connections						Parts
Device	Weight kg / lbs	Dimensions H x W x D mm / inches	Power consumption	Video	Audio I/O	PSU	USB	RS232	Network ¹ up 1Gb/s	The following items are included in the standard kits of parts for each product.
DXR-iP KT-DVR2-0001	0.5 / 1.2	30 x 164 x 110 1.8 x 6.6 x 4.3	15W	2 x DVI					Single, copper	DXR-iP zero client, external power supply c/w IEC lead, Resource CD.
DXR2-iP KT-DSR2-0001	1.6 / 3.5	30 x 220 x 160 1.8 x 8.7 x 6.3					4 x Type A	NA	Dual redundant, copper	DXR2-iP zero client, external power supply c/w IEC lead, monitor adaptor cable, Resource CD
DXR2-iPM KT-DMR2-0001	1.6 / 3.5	31 x 220 x 160 1.8 x 8.7 x 6.3							Dual redundant, modular SFP Copper / fiber	DXR2-iPM zero client, external power supply c/w IEC lead, monitor adaptor cable, Resource CD. Note: SFP network modules must be specified and purchased separately.
DXR2-iPS* KT-DSR2-0004	1.6 / 3.5	32 x 220 x 160 1.8 x 8.7 x 6.3	18W	1 x DMS59	3.5mm Jack stereo	60W external	2 x Type A	9 way D type	Dual redundant, copper	DXR2-iPS zero client, external power supply c/w IEC lead, monitor adaptor cable, resource CD
DXR2-iPC* KT-DCR2-0001	1.7 / 3.8	33 x 220 x 160 1.8 x 8.7 x 6.3							Dual redundant fiber SFP	DXR2-iPC zero client, external power supply c/w IEC lead, monitor adaptor cable, resource CD. Note: SFP network modules must be specified and purchased separately.
DXR4-iP KT-DSR4-0001	1.7 / 3.8	34 x 220 x 160 1.8 x 8.7 x 6.3					4 x Type A	NA	Dual redundant, copper	DXR4-iP zero client, external power supply c/w IEC lead, 2 x monitor adaptor cable, Resource CD
DXR4-iPM KT-DMR4-0001	1.7 / 3.8	35 x 220 x 160 1.8 x 8.7 x 6.3	26W	2 x DMS59					Dual redundant, modular SFP Copper / fiber	DXR4-iPM zero client, external power supply c/w IEC lead, 2 x monitor adaptor cable, Resource CD. Note: SFP network modules must be specified and purchased separately.

Conforms to relevant parts of EN55024, EN55022 and FCC Part 15b. Tested to Tempest Level B. USB 2.0 devices are supported but not in high speed mode.
*Products available only to special order. Note 1: Copper connectors are RJ45. Fiber network connections are modular and use SFP format devices at 10, 100 or 1000 baseT.

